FCC 47 CFR § 2.1093
IEEE Std 1528-2013

SAR EVALUATION REPORT
(Part 1 : Test in Static Transmission Condition)

FOR

GSM/WCDMA/LTE/5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax, NFC and WPT

MODEL NUMBER: SC-51E, SCG25

FCC ID: A3LSMS921JPN

REPORT NUMBER: 4790976580-S1V3

ISSUE DATE: 2/6/2024

Prepared for
SAMSUNG ELECTRONICS CO., LTD.
129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI,
GYEONGGI-DO, 16677, KOREA

Prepared by

UL Korea, Ltd.

26th floor, 152, Teheran-ro, Gangnam-gu Seoul, 06236, Korea

Suwon Test Site: UL Korea, Ltd. Suwon Laboratory
218 Maeyeong-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16675, Korea
TEL: (031) 337-9902
FAX: (031) 213-5433

Testing Laboratory

TL-637

Revision History

Rev.	Date	Revisions	Revised By
V1	1/22/2024	Initial Issue	--
V2	2/1/2024	- Revised BT Pmax power in Sec.6.3 - Due to the change to non-support for DC-HSDPA of WCDMA5, Deleted the power data in Sec.9.2.	Seungyeon.Kim
V3	2/6/2024	- Revised table in Sec.1 - Revised note.1 in Sec.6.8	Seungyeon.Kim

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1. Attestation of Test Results

Applicant Name		SAMSUNG ELECTRONICS CO.,LTD.				
FCC ID		A3LSMS921JPN				
Model Number		SC-51E, SCG25				
Applicable Standards		FCC 47 CFR § 2.1093 IEEE Std 1528-2013 Published RF exposure KDB procedures				
Exposure Category		SAR Limits (W/Kg)				
		Peak spatial-average (1g of tissue)			Product Specific & Extremity 10g (10g of tissue)	
General population / Uncontrolled exposure		1.6			4.0	
RF Exposure Conditions		Equipment Class - The Highest Reported SAR (W/kg)				
		PCE	DTS	NII	DSS	DXX
Phablet-Head		1.12	0.98	0.79	0.49	N/A
Phablet-Body-worn		0.80	0.41	0.59	0.09	N/A
Phablet-Hotspot		0.98	0.47	N/A	0.27	N/A
Phablet-Product Specific 10g		N/A	N/A	3.11	N/A	< 0.10
Simultaneous TX	Head	1.57	1.57	1.57	1.57	N/A
	Body-worn	1.58	1.58	1.58	1.58	N/A
	Hotspot	1.58	1.58	1.58	1.58	N/A
	Product Specific 10g	N/A	N/A	3.12	N/A	3.12
Date Tested		12/5/2023 to 1/22/2024				
Test Results		Pass				

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released By:	Prepared By:
	
Justin Park Operations Leader UL Korea, Ltd. Suwon Laboratory	Seungyeon Kim Laboratory Engineer UL Korea, Ltd. Suwon Laboratory

1.1. The Highest Reported SAR for RF exposure conditions for each bands

Equipment Class	Band	Antenna	The Highest Reported SAR (W/kg)			
			Phablet mode			
			1g of tissue			10g of tissue
			Head Exposure condition	Body-worn Exposure condition	Hotspot Exposure condition	Product Specific Exposure condition
PCE	GSM 850	Ant.A	0.247	0.631	0.631	N/A
	GSM 850	Ant.E	0.781	0.802	0.802	N/A
	GSM 1900	Ant.A	0.128	0.304	0.652	N/A
	WCDMA Band V	Ant.A	0.253	0.496	0.496	N/A
	WCDMA Band V	Ant.E	0.871	0.593	0.593	N/A
	LTE Band 12	Ant.A	0.157	0.315	0.315	N/A
	LTE Band 12	Ant.E	0.968	0.486	0.486	N/A
	LTE Band 13	Ant.A	0.226	0.474	0.474	N/A
	LTE Band 13	Ant.E	1.115	0.394	0.438	N/A
	LTE Band 5	Ant.A	0.222	0.511	0.511	N/A
	LTE Band 5	Ant.E	0.969	0.605	0.605	N/A
	LTE Band 66	Ant.A	0.299	0.543	0.928	N/A
	LTE Band 4	Ant.A	N/A	N/A	N/A	N/A
	LTE Band 2	Ant.A	0.146	0.487	0.979	N/A
	LTE Band 41 (PC3)	Ant.B	0.201	0.516	0.542	N/A
	LTE Band 41 (PC3)	Ant.F	0.927	0.351	0.426	N/A
	NR Band n5	Ant.A	0.244	0.749	0.749	N/A
	NR Band n5	Ant.E	1.099	0.714	0.714	N/A
	NR Band n66	Ant.A	0.232	0.555	0.842	N/A
	NR Band n66	Ant.F	0.621	0.449	0.643	N/A
	NR Band n41	Ant.F	1.091	0.413	0.526	N/A
	NR Band n41	Ant.B	0.151	0.508	0.782	N/A
DTS	2.4GHz WLAN		0.982	0.412	0.466	N/A
NII	UNII 1 / 2A		0.696	0.591	N/A	2.216
	UNII 2C		0.712	0.512	N/A	2.595
	UNII 3		0.775	0.585	N/A	3.098
	UNII 4		0.787	0.564	N/A	3.108
DSS	Bluetooth		0.485	0.094	0.267	N/A
DXX	NFC		N/A	N/A	N/A	0.015

2. Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE STD 1528-2013, ANSI C63.26-2015 the following FCC Published RF exposure KDB procedures:

- 248227 D01 802.11 Wi-Fi SAR v02r02
- 447498 D04 Interim General RF Exposure Guidance v01
- 648474 D04 Handset SAR v01r03
- 690783 D01 SAR Listings on Grants v01r03
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- 865664 D02 RF Exposure Reporting v01r02
- 941225 D01 3G SAR Procedures v03r01
- 941225 D05 SAR for LTE Devices v02r05
- 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02
- 941225 D06 Hotspot Mode v02r01
- 941225 D07 UMPC Mini Tabletv01r02
- 971168 D01 Power Meas License Digital System v03r01

In addition to the above, the following information was used:

- TCB workshop October, 2014; RF Exposure Procedures Update (Overlapping LTE Bands)
- TCB workshop October, 2014; RF Exposure Procedures Update (Other LTE Considerations)
- TCB workshop October, 2016; RF Exposure Procedures (DUT Holder Perturbations)
- TCB workshop May, 2017; RF Exposure Procedures (LTE Test Conditions)
- TCB workshop November, 2017; RF Exposure Procedures (LTE UL/DL Carrier Aggregation SAR)
- TCB workshop April, 2018; RF Exposure Procedures (LTE DL CA SAR Test Exclusion Update)
- TCB workshop April, 2019; RF Exposure Procedures (Tissue Simulating Liquids (TSL))
- TCB workshop October, 2020; 5G RFX Policies (Intra-band and Inter-band NSA-EN-DC evaluation)
- TCB workshop April, 2022; RF Exposure Procedures (5G NR FR1 Measurement)

3. Facilities and Accreditation

The test sites and measurement facilities used to collect data are located at

Suwon
SAR 6 Room
SAR 7 Room
SAR 8 Room
SAR 9 Room

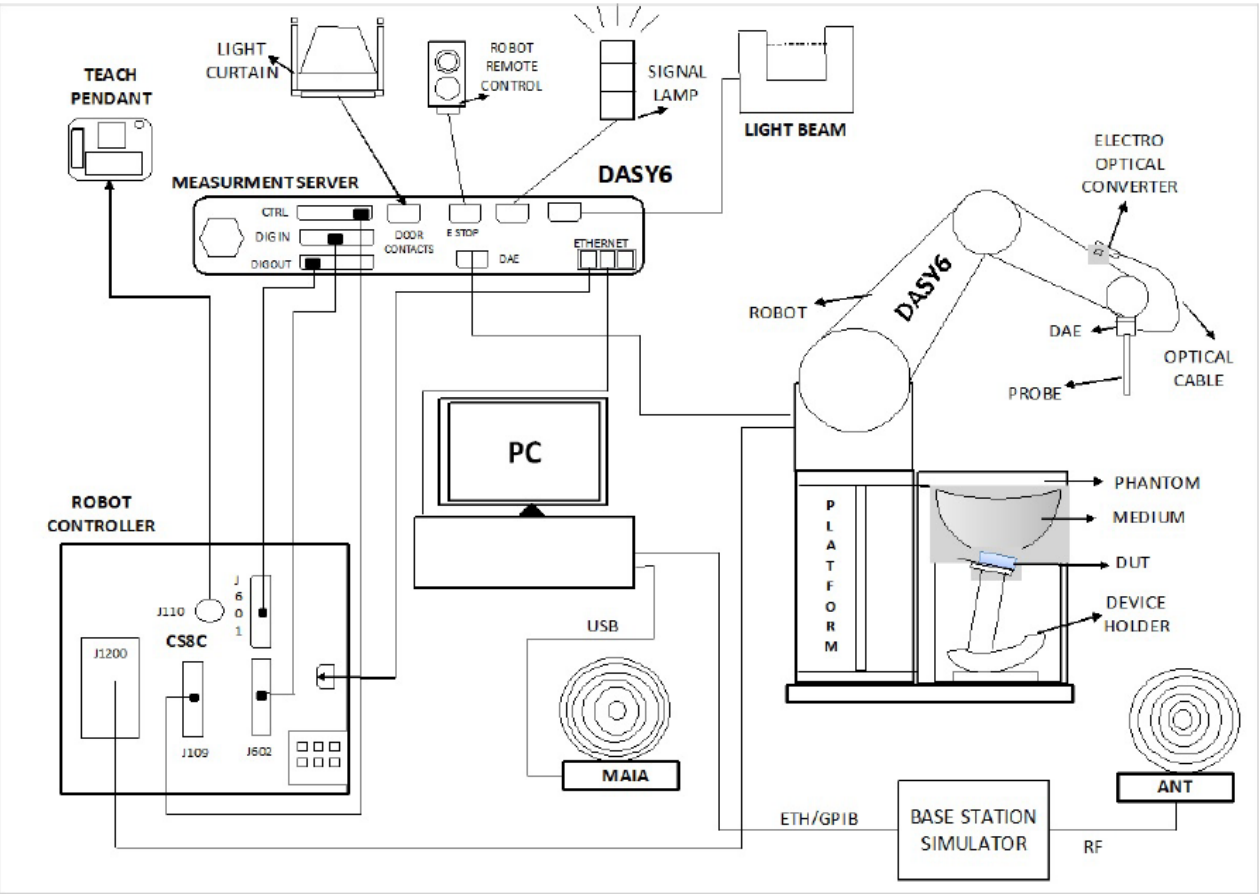
UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637.
The full scope of accreditation can be viewed at;

https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf.

4. SAR Measurement System & Test Equipment

4.1. SAR Measurement System

The DASY6 & 8 system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win10 and the DASY6 or 8 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

4.2. SAR Scan Procedures

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 2.1 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE Standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan). If only one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of Zoom Scans has to be increased accordingly.

Area Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

Step 3: Zoom Scan

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures points (refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the Zoom Scan evaluates the averaged SAR for 1 g and 10 g and displays these values next to the job's label.

Zoom Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ $1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

Step 4: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

4.3. Test Equipment

The measuring equipment used to perform the tests documented in this report has been calibrated in accordance with the manufacturers' recommendations, and is traceable to recognized national standards.

Dielectric Property Measurements

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Network Analyzer	Agilent	E5071C	MY46522054	7/24/2024
Network Analyzer	ROHDE & SCHWARZ	ZNB 20	102256	7/24/2024
Dielectric Assessment Kit	SPEAG	DAK-12	1158	9/20/2024
Dielectric Assessment Kit	SPEAG	DAK-3.5	1196	7/17/2024
Shorting block	SPEAG	DAK-3.5 Short	SM DAK 200 BA	N/A
Shorting block	SPEAG	DAK-12 Short	SM DAK 220 AD	N/A
Thermometer	LKM	DTM3000	3851	7/25/2024
Thermometer	LKM	DTM3000	3862	7/25/2024

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
MXG Analog Signal Generator	Aglient	N5181A	MY50145882	7/26/2024
MXG Analog Signal Generator	Keysight	N5181B	MY59100587	7/26/2024
MXG Analog Signal Generator	Keysight	N5173B	MY59101083	7/27/2024
Power Sensor	KEYSIGHT	U2000A	MY60180020	7/26/2024
Power Sensor	KEYSIGHT	U2000A	MY60490008	7/25/2024
Power Sensor	KEYSIGHT	U2000A	MY60160004	7/25/2024
Power Sensor	KEYSIGHT	U2000A	MY61010010	7/25/2024
Power Amplifier	MINI-CIRCUITS	TVA-R5-13A+	2111006	**1/6/2024**
				1/3/2025
Power Amplifier	EXODUS	AMP2027ADB	10002	**1/6/2024**
				1/5/2025
Directional Coupler	Aglient	772D	MY52180193	7/25/2024
Directional Coupler	H.P	778D	16133	7/25/2024
Directional Coupler	NARDA	4216-10	2835	7/25/2024
Directional Coupler	MINI-CIRCUITS	ZMDC-30-1+	SF569102123	7/25/2024
Directional Coupler	KRYTAR	100318010	215541	**1/5/2024**
				1/4/2025
Low Pass Filter	FILTRON	L140012FL	1410003S	7/25/2024
Low Pass Filter	MICROLAB	LA-60N	3942	7/25/2024
Low Pass Filter	MINI-CIRCUITS	VLF-6000+	S0142	7/25/2024
Low Pass Filter	MINI-CIRCUITS	VLF-3000+	S0143	7/25/2024
Low Pass Filter	MINI-CIRCUITS	NLP-1200	VUU19301915	**1/5/2024**
				1/4/2025
Attenuator	KEYSIGHT	8491B/003	MY39272276	7/25/2024
Attenuator	KEYSIGHT	8491B/010	MY39271981	7/24/2024
Attenuator	KEYSIGHT	8491B/010	MY39272011	7/25/2024
Attenuator	KEYSIGHT	8491B/020	MY39272301	7/25/2024
Attenuator	KEYSIGHT	8491B/020	MY39272302	7/24/2024
Attenuator	KEYSIGHT	8491B/003	MY39272275	7/25/2024
E-Field Probe	SPEAG	EX3DV4	7545	8/25/2024
E-Field Probe	SPEAG	EX3DV4	7645	9/20/2024
E-Field Probe	SPEAG	EX3DV4	7652	4/24/2024
E-Field Probe	SPEAG	EX3DV4	7646	5/23/2024
E-Field Probe	SPEAG	EX3DV4	7376	7/25/2024
Data Acquisition Electronics	SPEAG	DAE4	1447	3/22/2024
Data Acquisition Electronics	SPEAG	DAE4	1468	8/24/2024
Data Acquisition Electronics	SPEAG	DAE4	1670	5/24/2024
Data Acquisition Electronics	SPEAG	DAE4	1343	6/30/2024

Note(s):

1. All equipments were used until Cal.Due data.

Test Equipment (Continued)

System Validation Dipole	SPEAG	CLA-13	1015	8/22/2024
System Validation Dipole	SPEAG	D750V3	1122	**2/24/2024**
System Validation Dipole	SPEAG	D835V2	4d174	**9/21/2024**
System Validation Dipole	SPEAG	D835V2	4d194	**3/24/2024**
System Validation Dipole	SPEAG	D1750V2	1125	**11/30/2024**
System Validation Dipole	SPEAG	D1750V2	1180	**9/21/2024**
System Validation Dipole	SPEAG	D1900V2	5d190	**11/16/2024**
System Validation Dipole	SPEAG	D1900V2	5d199	**3/25/2024**
System Validation Dipole	SPEAG	D2450V2	939	7/19/2024
System Validation Dipole	SPEAG	D2450V2	960	**3/24/2024**
System Validation Dipole	SPEAG	D2600V2	1097	9/26/2024
System Validation Dipole	SPEAG	D5GHzV2	1209	2/28/2024
System Validation Dipole	SPEAG	D5GHzV2	1325	4/21/2024
Thermometer	Lutron	MHB-382SD	AJ.42446	7/26/2024
Thermometer	Lutron	MHB-382SD	AK.12102	7/31/2024
Thermometer	Lutron	MHB-382SD	AK.12103	7/31/2024
Thermometer	Lutron	MHB-382SD	AK.18789	7/27/2024

Others

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Base Station Simulator	R & S	CMW500	150313	7/27/2024
Base Station Simulator	R & S	CMW500	150314	7/26/2024
Base Station Simulator	R & S	CMW500	162790	7/26/2024
Base Station Simulator	R & S	CMW500	169803	**1/5/2024**
				1/3/2025
Base Station Simulator	R & S	CMW500	169801	**1/5/2024**
				1/3/2025
Base Station Simulator	R & S	CMW500	169799	7/26/2024
Base Station Simulator	R & S	CMW500	169800	7/27/2024
Base Station Simulator	R & S	CMW500	169798	7/27/2024
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY57510596	7/27/2024
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY59150850	**1/9/2024**
				1/3/2025
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY58120110	**1/10/2024**
				1/3/2025
Radio Communication Test Station	Anritsu	MT8000A	6272466165	10/18/2024
Radio Communication Analyzer	Anritsu	MT8821C	6161094351	11/30/2024

Note(s):

1. For System Validation Dipole, Calibration interval applied every 2 years according to referencing KDB 865664 guidance.
2. Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations. (for blue box items)
3. All equipments were used until Cal.Due data.

5. Measurement Uncertainty

Measurement Uncertainty of 100MHz to 6GHz

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be ≤ 30%, for a confidence interval of k = 2. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

Measurement Uncertainty of 9MHz to 19MHz

Measurement uncertainty for 9 MHz to 19 MHz

(According to IEEE 62209-1528)

a	b	c		d	e	f	g	h =	l =	k
					f(d,k)			*c×f/e*	*c×g/e*	
Uncertainty component	Reference	Tol. 1 g (±%)	Tol. 10 g (±%)	Prob. Dist.	Div.	*ci* (1 g)	*ci* (10 g)	1 g *ui* (± %)	10 g *ui* (± %)	vi
Measurement System Errors										
Probe Calibration	8.4.1.1	13.3		Normal	2	1	1	6.7	6.7	∞
Probe Calibration Drift	8.4.1.2	1.7		Rectangular	1.732	1	1	1.0	1.0	∞
Probe Linearity	8.4.1.3	4.7		Rectangular	1.732	1	1	2.7	2.7	∞
Broadband Signal	8.4.1.4	0.8		Rectangular	1.732	1	1	0.5	0.5	∞
Probe Isotropy	8.4.1.5	7.6		Rectangular	1.732	1	1	4.4	4.4	∞
Data Acquisition	8.4.1.6	0.3		Normal	1	1	1	0.3	0.3	∞
RF Ambient	8.4.1.7	1.8		Normal	1	1	1	1.8	1.8	∞
Probe Positioning	8.4.1.8	0.006		Normal	1	0.14	0.14	0.10	0.10	∞
Data Processing	8.4.1.9	1.2		Normal	1	1	1	1.2	1.2	∞
Phantom and Device Errors										
Conductivity (meas.)DAK	8.4.2.1	2.5		Normal	1	0.78	0.71	2.0	1.8	∞
Conductivity (temp.)BB	8.4.2.2	5.4		Rectangular	1.732	0.78	0.71	2.4	2.2	∞
Phantom Permittivity	8.4.2.3	14.0		Rectangular	1.732	0	0	0.0	0.0	∞
Distance DUT -TSL	8.4.2.4	2.0		Normal	1	2	2	4.0	4.0	∞
Device Positioning	8.4.2.5	0.5	0.6	Normal	1	1	1	0.5	0.6	40
Device Holder	8.4.2.6	3.6		Normal	1	1	1	3.6	3.6	∞
DUT Modulation	8.4.2.7	2.4		Rectangular	1.732	1	1	1.4	1.4	∞
Time-average SAR	8.4.2.8	1.7		Rectangular	1.732	1	1	1.0	1.0	∞
DUT drift	8.4.2.9	5.0		Normal	1	1	1	5.0	5.0	∞
Correction to the SAR results										
Deviation to Target	8.4.3.1	1.9		Normal	1	1	0.84	1.9	1.6	∞
Combined Standard Uncertainty Uc(y) =				RSS				12.13	12.02	
Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence =								**24.26**	**24.05**	

5.1. DECISION RULE

Measurement Uncertainty is not applied when providing statements of conformity in accordance with IEC Guide 115:2023, 4.3.3.

6. Device Under Test (DUT) Information

6.1. DUT Description

Device Dimension	Refer to Appendix A.
Back Cover	☒ The Back Cover is not removable.
Battery Options	☒ The rechargeable battery is not user accessible
Wireless Router (Hotspot)	Wi-Fi Hotspot mode permits the device to share its cellular data connection with other Wi-Fi-enabled devices. ☒ Mobile Hotspot (Wi-Fi 2.4 GHz)
Wi-Fi Direct	Wi-Fi Direct enabled devices transfer data directly between each other ☒ Wi-Fi Direct (Wi-Fi 2.4 GHz) ☒ Wi-Fi Direct (Wi-Fi 5.2 GHz_UNII-1, Wi-Fi 5.8 GHz_UNII-3)
Test Sample Information	**No. / S/N / Notes** 1 / R3CWB0FGVYP / Main Conducted 2 / R3CWB0FGWBX / Main Conducted 3 / R3CWB0FGX1A / Main Conducted 4 / R3CWB0FGWYV / Main Conducted 5 / R3CWC03B7DY / Main Conducted 6 / R3CWB0FGWAL / WLAN/BT Conducted 7 / R3CWB0FGWFP / WLAN/BT Conducted 8 / R3CWB0FGXTF / SAR 9 / R3CWB0FGWEW / SAR 10 / R3CWB0FGWGM / SAR 11 / R3CWB0FGXKM / SAR 12 / R3CWB0FGWRB / SAR 13 / R3CWB0FGW9N / SAR 14 / R3CWB0FGVRN / SAR 15 / R3CWB0FGWXX / SAR 21 / R3CWC03B84J / SAR 22 / R3CWC03B7RH / SAR

6.2. Wireless Technologies

Wireless technologies	Frequency bands	Operating mode		Duty Cycle used for SAR testing
GSM	850 1900	Voice (GMSK) GPRS (GMSK) EGPRS (8PSK)	GPRS Multi-Slot Class: ☐ Class 8 - 1 Up, 4 Down ☐ Class 10 - 2 Up, 4 Down ☐ Class 12 - 4 Up, 4 Down ☒ Class 33 - 4 Up, 5 Down	GSM Voice: 12.5% (E)GPRS: 1 Slot: 12.5% 2 Slots: 25% 3 Slots: 37.5% 4 Slots: 50%
	Does this device support DTM (Dual Transfer Mode)? ☐ Yes ☒ No			
W-CDMA (UMTS)	Band V	UMTS Rel. 99 (Voice & Data) HSDPA (Category 24) HSUPA (Category 6) HSPA+ (DL only)		100%
LTE	FDD Band 12 / FDD Band 13 FDD Band 5 / FDD Band 66 FDD Band 4 / FDD Band 2 TDD Band 41-PC3 **UL CA intraband-contiguous (2CC)** 41C	QPSK 16QAM 64QAM Rel. 16 Carrier Aggregation (2 Uplink and 6 Downlinks)		100% (FDD) 63.3% (TDD) Power Class 3
	Does this device support SV-LTE (1xRTT-LTE)? ☐ Yes ☒ No			
NR (Sub6)	FDD Band n5 / Band n66 TDD Band n41-PC3	DFT-s-ODFM: ■ π/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-ODFM: ■QPSK, 16QAM, 64QAM, 256QAM		100%
Wi-Fi	2.4 GHz	802.11b / 802.11g / 802.11n (HT20) 802.11ac (VHT20) / 802.11ax (HE20)		98.8% (802.11b-SISO) 98.8% (802.11b-MIMO)
	5 GHz	802.11a / 802.11n (HT20) & (HT40) 802.11ac (VHT20) & (VHT40) & (VHT80) & (VHT160) 802.11ax (HE20) & (HE40) & (HE80) & (HE160)		97.1% (802.11ac (VHT80-SISO) 98.2% (802.11n (HT40-SISO) 94.5% (802.11ac (VHT80-MIMO) 98.2% (802.11n (HT40-MIMO)
	6 GHz	802.11a 802.11ax (HE20) & (HE40) & (HE80) & (HE160)		99.6% (802.11ax (HE160-SISO/MIMO)
	Does this device support bands 5.60 ~ 5.65 GHz? ☒ Yes ☐ No			
	Does this device support Band gap channel(s)? ☒ Yes ☐ No			
Bluetooth	2.4 GHz	Version 5.3 LE		76.8% (BDR-DH5)
NFC	13.56 MHz	Type A/B/F		100%

Notes:

1. Wi-Fi & Bluetooth were tested SAR using highest duty cycle. Measured duty cycle plots are in Section.9.
2. This device supports UL CA intra band in LTE Band. Detail of configuration refer to appendix.G.
3. 6GHz RF Exposure report has test results of WiFi 6GHz.

6.3. Time-Averaging feature

The equipment under test (EUT) contains the Qualcomm modems supporting 2G/3G/4G/5G technologies and WLAN/BT technologies. these modems are enabled with Qualcomm Smart Transmit feature to control and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is in compliance with the FCC requirement. Refer to Compliance Summary document for detailed description of Qualcomm Smart Transmit feature.

The Smart Transmit algorithm maintains the time-averaged transmit power, in turn, time-averaged RF exposure of *SAR_design_target*, below the predefined time-average power limit, for each characterized technology and band.

Smart Transmit allows the device to transmit at higher power instantaneously as high as P_{max}, when needed, but enforces power limiting to maintain time-averaged transmit power to P_{Limit}. Below table shows P_{Limit} EFS settings and maximum tune up output power P_{max} configured for this EUT for various transmit conditions (DSI Device State Index).

The maximum time-averaged output power (dBm) for any 2G/3G/4G/5G/WLAN/BT technology bands, and DSI = minimum of " P_{Limit} EFS" and "Maximum tune up output power P_{max}" + 1 dB device uncertainty. SAR values in this report were scaled to this maximum time-averaged output power to determine compliance per KDB 447498 D04.

The purpose of this report (Part 1 test) is to demonstrate that the EUT meets FCC SAR limits when transmitting in static transmission scenario at maximum allowable time-averaged power levels.

SAR Characterizations

Exposure condition			Head (RCV)	Bodyworn & Hotspot	Phablet 10-g SAR	Pmax (Maximum tune-up Power) (dBm)
Spatial-average			1g	1g	10g	
Test distance (mm)			0	10	0	
DSI :			1	0	0	
RF Air Interface	Antenna	Antenna Group	Plimit corresponding to 1.0 W/kg (SAR_design_target) (1g) / 2.5 W/kg (SAR_design_target) (10g)			
GSM 850	A	AG0	28.8	28.3	27.6	25.3
GSM 850	E	AG1	21.8	26.3	26.3	25.3
GSM 1900	A	AG0	28.2	18.8	18.8	22.1
WCDMA 5	A	AG0	27.4	28.0	26.3	24.0
WCDMA 5	E	AG1	22.0	27.2	27.2	24.0
LTE Band 2	A	AG0	29.0	19.0	19.0	23.2
LTE Band 5	A	AG0	27.9	27.9	26.3	24.0
LTE Band 5	E	AG1	22.0	26.1	26.1	24.0
LTE Band 12	A	AG0	28.4	29.0	27.4	23.0
LTE Band 12	E	AG1	21.5	27.1	27.7	23.0
LTE Band 13	A	AG0	26.9	27.2	27.1	23.0
LTE Band 13	E	AG1	23.2	26.3	26.3	23.0
LTE Band 66(4)	A	AG0	25.8	19.0	19.0	23.2
LTE Band 41	B	AG0	26.3	21.0	21.0	22.0
LTE Band 41	F	AG1	17.0	19.5	19.5	22.0
NR Band n5	A	AG0	27.5	26.2	26.4	24.0
NR Band n5	E	AG1	22.0	26.4	27.4	24.0
NR Band n66	A	AG0	26.7	19.0	19.0	23.0
NR Band n66	F	AG1	17.5	21.0	21.0	23.0
NR Band n41	F	AG1	17.0	19.5	19.5	24.0
NR Band n41	B	AG0	21.0	21.0	21.0	24.0
DTS SISO Ant. 1	H	AG1	14.0	23.0	20.1	18.0
DTS SISO Ant. 2	J	AG1	14.0	26.8	21.9	18.0
DTS MIMO	H+J	AG1	14.0	22.0	19.6	18.0
UNII-2A SISO Ant. 1	H	AG1	13.0	16.0	16.0	17.0
UNII-2A SISO Ant. 2	E	AG1	13.0	16.0	16.0	17.0
UNII-2A MIMO	H+E	AG1	13.0	16.0	16.0	17.0
UNII-2C SISO Ant. 1	H	AG1	13.0	16.0	16.0	17.0
UNII-2C SISO Ant. 2	E	AG1	13.0	16.0	16.0	17.0
UNII-2C MIMO	H+E	AG1	13.0	16.0	16.0	17.0
UNII-3 SISO Ant. 1	H	AG1	13.0	16.0	16.0	17.0
UNII-3 SISO Ant. 2	E	AG1	13.0	16.0	16.0	17.0
UNII-3 MIMO	H+E	AG1	13.0	16.0	16.0	17.0
UNI-4 SISO Ant. 1	H	AG1	13.0	16.0	16.0	17.0
UNI-4 SISO Ant. 2	E	AG1	13.0	16.0	16.0	17.0
UNI-4 MIMO	H+E	AG1	13.0	16.0	16.0	17.0
WiFi 6E SISO Ant. 1	H	AG1	9.0	9.0	9.0	15.0
WiFi 6E SISO Ant. 2	E	AG1	9.0	9.0	9.0	15.0
WiFi 6E MIMO	H+E	AG1	9.0	9.0	9.0	15.0
Bluetooth Ant. 1	H	AG1	22.2	24.8	22.4	18.0
Bluetooth Ant. 2	J	AG1	20.9	30.3	24.1	16.0
Bluetooth MIMO	H+J	AG1	17.0	22.4	19.1	14.5

Notes:

1. All P_{Limit} EFS and maximum tune up output P_{max} levels entered in above Table correspond to average power levels after accounting for duty cycle in the case of LTE TDD modulation schemes.
2. Maximum tune up output power P_{max} is used to configure EUT during RF tune up procedures. The maximum allowed output power is equal to maximum tune up output power + 1dB device design uncertainty.
3. Measurement Condition : All conducted power and SAR measurements in this report (Part 1 test) were performed by setting *Reserve_power_margin* (Smart Transmit EFS entry) to 0 dB.
4. If P_{Limit} is higher than P_{max} for some modes / bands, The modes/bands will operate at a power level up to P_{max}.

6.4. Maximum Allowed Output power

Maximum allowed output power means that Pmax or PLimit + 1dB device uncertainty for each DSI.

GSM Bands

RF Air interface	Antenna	Mode	Time Slots	Maximum allowed output power (dBm)					
				Pmax		Plimit			
						DSI = 0 (Body)		DSI = 1 (Head)	
				Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM 850	Ant.A	Voice	1	**33.00**	**23.97**	**33.00**	**23.97**	**33.00**	**23.97**
		GPRS	1	**33.00**	**23.97**	**33.00**	**23.97**	**33.00**	**23.97**
		GPRS	2	**32.50**	**26.48**	**32.50**	**26.48**	**32.50**	**26.48**
		GPRS	3	**30.50**	**26.24**	**30.50**	**26.24**	**30.50**	**26.24**
		GPRS	4	**28.50**	**25.49**	**28.50**	**25.49**	**28.50**	**25.49**
		EGPRS	1	**28.00**	**18.97**	**28.00**	**18.97**	**28.00**	**18.97**
		EGPRS	2	**26.00**	**19.98**	**26.00**	**19.98**	**26.00**	**19.98**
		EGPRS	3	**25.50**	**21.24**	**25.50**	**21.24**	**25.50**	**21.24**
		EGPRS	4	**25.50**	**22.49**	**25.50**	**22.49**	**25.50**	**22.49**
	Ant.E	Voice	1	**33.00**	**23.97**	**33.00**	**23.97**	**32.00**	**22.97**
		GPRS	1	**33.00**	**23.97**	**33.00**	**23.97**	**32.00**	**22.97**
		GPRS	2	**32.50**	**26.48**	**32.50**	**26.48**	**29.00**	**22.98**
		GPRS	3	**30.50**	**26.24**	**30.50**	**26.24**	**27.20**	**22.94**
		GPRS	4	**28.50**	**25.49**	**28.50**	**25.49**	**26.00**	**22.99**
		EGPRS	1	**28.00**	**18.97**	**28.00**	**18.97**	**28.00**	**18.97**
		EGPRS	2	**26.00**	**19.98**	**26.00**	**19.98**	**26.00**	**19.98**
		EGPRS	3	**25.50**	**21.24**	**25.50**	**21.24**	**25.50**	**21.24**
		EGPRS	4	**25.50**	**22.49**	**25.50**	**22.49**	**25.50**	**22.49**
GSM 1900	Ant.A	Voice	1	**30.00**	**20.97**	**29.00**	**19.97**	**30.00**	**20.97**
		GPRS	1	**30.00**	**20.97**	**29.00**	**19.97**	**30.00**	**20.97**
		GPRS	2	**29.00**	**22.98**	**26.00**	**19.98**	**29.00**	**22.98**
		GPRS	3	**27.50**	**23.24**	**24.20**	**19.94**	**27.50**	**23.24**
		GPRS	4	**25.50**	**22.49**	**23.00**	**19.99**	**25.50**	**22.49**
		EGPRS	1	**27.00**	**17.97**	**27.00**	**17.97**	**27.00**	**17.97**
		EGPRS	2	**25.00**	**18.98**	**25.00**	**18.98**	**25.00**	**18.98**
		EGPRS	3	**24.50**	**20.24**	**24.20**	**19.94**	**24.50**	**20.24**
		EGPRS	4	**24.50**	**21.49**	**23.00**	**19.99**	**24.50**	**21.49**

WCDMA Bands

RF Air interface	Antenna	Mode	Maximum allowed output power (dBm)		
			Pmax	Plimit	
				DSI = 0 (Body)	DSI = 1 (Head)
W-CDMA Band V	Ant.A	R99	**25.00**	**25.00**	**25.00**
		HSDPA	**24.00**	**24.00**	**24.00**
		HSUPA	**24.00**	**24.00**	**24.00**
		DC-HSDPA	**24.00**	**24.00**	**24.00**
W-CDMA Band V	Ant.E	R99	**25.00**	**25.00**	**23.00**
		HSDPA	**24.00**	**24.00**	**22.00**
		HSUPA	**24.00**	**24.00**	**22.00**
		DC-HSDPA	**24.00**	**24.00**	**22.00**

Note(s):

Detail of DSI(Device State Index) conditions, please refer to Sec.6.5.

Maximum allowed output power means that Pmax or PLimit + 1dB device uncertainty for each DSI.

LTE Bands

RF Air interface	Antenna	Mode	Maximum allowed output power (dBm)		
			Pmax	Plimit	
				DSI = 0 (Body)	DSI = 1 (Head)
LTE Band 12	Ant.A	QPSK	**24.00**	**24.00**	**24.00**
LTE Band 12	Ant.E	QPSK	**24.00**	**24.00**	**22.50**
LTE Band 13	Ant.A	QPSK	**24.00**	**24.00**	**24.00**
LTE Band 13	Ant.E	QPSK	**24.00**	**24.00**	**24.00**
LTE Band 5	Ant.A	QPSK	**25.00**	**25.00**	**25.00**
LTE Band 5	Ant.E	QPSK	**25.00**	**25.00**	**23.00**
LTE Band 66	Ant.A	QPSK	**24.20**	**20.00**	**24.20**
LTE Band 4	Ant.A	QPSK	**24.20**	**20.00**	**24.20**
LTE Band 2	Ant.A	QPSK	**24.20**	**20.00**	**24.20**
LTE Band 41 (PC3)	Ant.B	QPSK	**25.00**	**24.00**	**25.00**
LTE Band 41 (PC3)	Ant.F	QPSK	**25.00**	**22.50**	**20.00**

Note(s):

1. Detail of DSI(Device State Index) conditions, please refer to Sec.6.5.
2. LTE Band 41 supports ULCA intra-continuous. Each PCC and SCC has same target power as standalone LTE.

NR-Sub6 Bands

RF Air interface	Antenna	Mode	Maximum allowed output power (dBm)		
			Pmax	Plimit	
				DSI = 0 (Body)	DSI = 1 (Head)
NR Band n5	Ant.A	DFT-s-OFDM QPSK	**25.00**	**25.00**	**25.00**
NR Band n5	Ant.E	DFT-s-OFDM QPSK	**25.00**	**25.00**	**23.00**
NR Band n66	Ant.A	DFT-s-OFDM QPSK	**24.00**	**20.00**	**24.00**
NR Band n66	Ant.F	DFT-s-OFDM QPSK	**24.00**	**22.00**	**18.50**
NR Band n41	Ant.F	DFT-s-OFDM QPSK	**25.00**	**20.50**	**18.00**
NR Band n41	Ant.B	DFT-s-OFDM QPSK	**25.00**	**22.00**	**22.00**

Note(s):

1. Detail of DSI(Device State Index) conditions, please refer to Sec.6.5.
2. NR Bands only opereates NSA mode.

Maximum allowed output power means that Pmax or PLimit + 1dB device uncertainty for each DSI.

WLAN output power-dBm (Pmax)

a. Maximum Power (Pmax)
Ch12, 13 Airplane mode only (SISO - Ch12 : 5, Ch13 : -1 / MIMO – SISO+3dB)

Mode	Band	SISO(ANT 1 / ANT 2)						MIMO					
		a	b	g	n	Ac	ax(SU)	a	b	g	n	ac	ax(SU)
2.4GHz	2.45GHz		18	17 1ch : 15	17 1ch : 15	17	17 1ch : 15		Ant1+2	Ant1+2	Ant1+2	Ant1+2	Ant1+2
5GHZ (20MHz)	UNII 1	17			17	17	17	Ant1+2			Ant1+2	Ant1+2	Ant1+2
	UNII 2A	17			17	17	17	Ant1+2			Ant1+2	Ant1+2	Ant1+2
	UNII 2C	17			17	17	17	Ant1+2			Ant1+2	Ant1+2	Ant1+2
	UNII 3	17			17	17	17	Ant1+2			Ant1+2	Ant1+2	Ant1+2
	UNII 4	17			17	17	17	Ant1+2			Ant1+2	Ant1+2	Ant1+2
5GHZ (40MHz)	UNII 1				17 Ch38:15.5	17 Ch38:15.5	17 Ch38:15.5				Ant1+2	Ant1+2	Ant1+2
	UNII 2A				17 Ch62:15.5	17 Ch62:15.5	17 Ch62:15.5				Ant1+2	Ant1+2	Ant1+2
	UNII 2C				17 Ch102:14.5	17 Ch102:14.5	17 Ch102:14.5				Ant1+2	Ant1+2	Ant1+2
	UNII 3				17	17	17				Ant1+2	Ant1+2	Ant1+2
	UNII 4				17	17	17				Ant1+2	Ant1+2	Ant1+2
5GHZ (80MHz)	UNII 1					15.5	15.5					Ant1+2	Ant1+2
	UNII 2A					14.5	14.5					Ant1+2	Ant1+2
	UNII 2C					17 Ch106:16	17 Ch106:16					Ant1+2	Ant1+2
	UNII 3					17	17					Ant1+2	Ant1+2
	UNII 4					17	17					Ant1+2	Ant1+2
5GHz (160MHz)	UNII 1&2A					15	15					Ant1+2	Ant1+2
	UNII 2C					14.5	14.5					Ant1+2	Ant1+2
	UNII 3&4					17	17					Ant1+2	Ant1+2

(Upper tolerance target +1.0dB)

WLAN output power-dBm (Plimit of DSI 0-Body)

b. Plimit – Body (DSI = 0)

Mode	Band	SISO(ANT 1 / ANT 2)						MIMO					
		a	b	g	n	ac	ax(SU)	a	b	g	n	ac	ax(SU)
2.4GHz	2.45GHz		18	17 1ch : 15	17 1ch : 15	17	17 1ch : 15		Ant1+2	Ant1+2	Ant1+2	Ant1+2	Ant1+2
5GHZ (20MHz)	UNII 1	16			16	16	16	Ant1+2			Ant1+2	Ant1+2	Ant1+2
	UNII 2A	16			16	16	16	Ant1+2			Ant1+2	Ant1+2	Ant1+2
	UNII 2C	16			16	16	16	Ant1+2			Ant1+2	Ant1+2	Ant1+2
	UNII 3	16			16	16	16	Ant1+2			Ant1+2	Ant1+2	Ant1+2
	UNII 4	16			16	16	16	Ant1+2			Ant1+2	Ant1+2	Ant1+2
5GHZ (40MHz)	UNII 1				16 Ch38:15.5	16 Ch38:15.5	16 Ch38:15.5				Ant1+2	Ant1+2	Ant1+2
	UNII 2A				16 Ch62:15.5	16 Ch62:15.5	16 Ch62:15.5				Ant1+2	Ant1+2	Ant1+2
	UNII 2C				16 Ch102:14.5	16 Ch102:14.5	16 Ch102:14.5				Ant1+2	Ant1+2	Ant1+2
	UNII 3				16	16	16				Ant1+2	Ant1+2	Ant1+2
	UNII 4				16	16	16				Ant1+2	Ant1+2	Ant1+2
5GHZ (80MHz)	UNII 1					15.5	15.5					Ant1+2	Ant1+2
	UNII 2A					14.5	14.5					Ant1+2	Ant1+2
	UNII 2C					16 Ch106:16	16 Ch106:16					Ant1+2	Ant1+2
	UNII 3					16	16					Ant1+2	Ant1+2
	UNII 4					16	16					Ant1+2	Ant1+2
5GHz (160MHz)	UNII 1&2A					15	15					Ant1+2	Ant1+2
	UNII 2C					14.5	14.5					Ant1+2	Ant1+2
	UNII 3&4					16	16					Ant1+2	Ant1+2

(Upper tolerance target +1.0dB)

Notes:

1. WLAN has support SISO & MIMO mode.
2. WLAN has support RSDB scenarios. detail of RSDB scenarios refer to section.12 in report.
3. Above table, the Power is not consider Upper tolerance target (1.0dB). When testing SAR, we scaled up to target power + upper tolerance target (1.0dB) for Reported SAR.

Maximum allowed output power means that Pmax or PLimit + 1dB device uncertainty for each DSI.

WLAN output power-dBm (Plimit of DSI 1-Head)

c. P limit – Head (DSI = 1)

Mode	Band	SISO(ANT 1 / ANT 2)						MIMO					
		a	b	g	n	ac	ax(SU)	a	b	g	n	ac	ax(SU)
2.4GHz	2.45GHz		14	14	14	14	14		Ant1+2	Ant1+2	Ant1+2	Ant1+2	Ant1+2
5GHZ (20MHz)	UNII 1	13			13	13	13	Ant1+2			Ant1+2	Ant1+2	Ant1+2
	UNII 2A	13			13	13	13	Ant1+2			Ant1+2	Ant1+2	Ant1+2
	UNII 2C	13			13	13	13	Ant1+2			Ant1+2	Ant1+2	Ant1+2
	UNII 3	13			13	13	13	Ant1+2			Ant1+2	Ant1+2	Ant1+2
	UNII 4	13			13	13	13	Ant1+2			Ant1+2	Ant1+2	Ant1+2
5GHZ (40MHz)	UNII 1				13	13	13				Ant1+2	Ant1+2	Ant1+2
	UNII 2A				13	13	13				Ant1+2	Ant1+2	Ant1+2
	UNII 2C				13	13	13				Ant1+2	Ant1+2	Ant1+2
	UNII 3				13	13	13				Ant1+2	Ant1+2	Ant1+2
	UNII 4				13	13	13				Ant1+2	Ant1+2	Ant1+2
5GHZ (80MHz)	UNII 1					13	13					Ant1+2	Ant1+2
	UNII 2A					13	13					Ant1+2	Ant1+2
	UNII 2C					13	13					Ant1+2	Ant1+2
	UNII 3					13	13					Ant1+2	Ant1+2
	UNII 4					13	13					Ant1+2	Ant1+2
5GHz (160MHz)	UNII 1&2A					13	13					Ant1+2	Ant1+2
	UNII 2C					13	13					Ant1+2	Ant1+2
	UNII 3&4					13	13					Ant1+2	Ant1+2

(Upper tolerance target +1.0dB)

RSDB_DTS 2.4GHz output power-dBm (Pmax, DSI=0, 1)

Mode	Band	SISO(ANT 1 / ANT 2)						MIMO					
		a	b	g	n	ac	ax(SU)	a	b	g	n	ac	ax(SU)
2.4GHz	2.45GHz		7	7	7	7	7		Ant1+2	Ant1+2	Ant1+2	Ant1+2	Ant1+2

(Upper tolerance target +1.0dB)

Notes:

1. WLAN has support SISO & MIMO mode.
2. WLAN has support RSDB scenarios. detail of RSDB scenarios refer to section.12 in report.
3. Above table, the Power is not consider Upper tolerance target (1.0dB). When testing SAR, we scaled up to target power + upper tolerance target (1.0dB) for Reported SAR.
4. DTS 2.4GHz Band operate specific target power during RSDB scenarios in Pmax and DSI=0,1.

Bluetooth & Bluetooth LE maximum output power (Pmax, Plimit (DSI=0, 1))

a. Maximum (= Pmax)

MODE	DATA RATE	SISO		Dual(iPA, ANT1 + ANT2)		
		ANT1	ANT2	ANT1	ANT2	Dual
BDR(in dBm)	1Mbps	18	16	12	11	14.5
EDR(in dBm)	2Mbps	15	13	10.5	8	12.5
	3Mbps	15	13	10.5	8	12.5
LE	1M	10	9	n/a	n/a	n/a
	2M	10	9	n/a	n/a	n/a
	125K	10	9	n/a	n/a	n/a
	500k	10	9	n/a	n/a	n/a

b. P Limit Body (DSI=0)

MODE	DATA RATE	SISO		Dual(iPA, ANT1 + ANT2)		
		ANT1	ANT2	ANT1	ANT2	Dual
BDR(in dBm)	1Mbps	18	16	12	11	14.5
EDR(in dBm)	2Mbps	15	13	10.5	8	12.5
	3Mbps	15	13	10.5	8	12.5
LE	1M	10	9	n/a	n/a	n/a
	2M	10	9	n/a	n/a	n/a
	125K	10	9	n/a	n/a	n/a
	500k	10	9	n/a	n/a	n/a

c. P Limit Head (DSI=1)

MODE	DATA RATE	SISO		Dual(iPA, ANT1 + ANT2)		
		ANT1	ANT2	ANT1	ANT2	Dual
BDR(in dBm)	1Mbps	18	16	12	11	14.5
EDR(in dBm)	2Mbps	15	13	10.5	8	12.5
	3Mbps	15	13	10.5	8	12.5
LE	1M	10	9	n/a	n/a	n/a
	2M	10	9	n/a	n/a	n/a
	125K	10	9	n/a	n/a	n/a
	500k	10	9	n/a	n/a	n/a

(Upper tolerance target +1.0dB)

Notes:

1. BT has support SISO & MIMO(Dual) mode.
2. Above table, the Power is not consider Upper tolerance target (1.0dB). When testing SAR, we scaled up to target power + upper tolerance target (1.0dB) for Reported SAR.

6.5. DSI (Device State Index) Scenarios

This device supports multiple DSI Scenarios and Each DSIs operate to each RF exposure Conditions.

Please below table;

RF exposure Conditions	Technologuies Supported	DSI conditions	Description
Head	WWAN/WLAN/BT bands	DSI = 1 (Head)	1. Device positioned next to head. 2. Receiver Active.
Body-worn	WWAN/WLAN/BT bands	DSI = 0 (Body)	1. Device being used with a body-worn accessory.
Hotspot	WWAN/WLAN/BT bands		1. Device transmits in hotspot mode near body. 2. Hotspot Mode Active.
Product Specific 10-g	WWAN/WLAN/BT bands		1. Device is held with hand.

Note(s):

1. DSI Scenarios priority : DSI=1 → DSI=0.

6.6. General LTE SAR Test and Reporting Considerations

Item	Description						
Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 2	Frequency range: 1850 - 1910 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	18700/ 1860	18675/ 1857.5	18650/ 1855	18625/ 1852.5	18615/ 1851.5	18607/ 1850.7
	Mid	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880
	High	19100/ 1900	19125/ 1902.5	19150/ 1905	19175/ 1907.5	19185/ 1908.5	19193/ 1909.3
	Band 4	Frequency range: 1710 - 1755 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	20050/ 1720	20025/ 1717.5	20000/ 1715	19975/ 1712.5	19965/ 1711.5	19957/ 1710.7
	Mid	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5
	High	20300/ 1745	20325/ 1747.5	20350/ 1750	20375/ 1752.5	20385/ 1753.5	20393/ 1754.3
	Band 5	Frequency range: 824 - 849 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			20450/ 829	20425/ 826.5	20415/ 825.5	20407/ 824.7
	Mid			20525/ 836.5	20525/ 836.5	20525/ 836.5	20525/ 836.5
	High			20600/ 844	20625/ 846.5	20635/ 847.5	20643/ 848.3
	Band 12	Frequency range: 699 - 716 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			23060/ 704	23035/ 701.5	23025/ 700.5	23017/ 699.7
	Mid			23095/ 707.5	23095/ 707.5	23095/ 707.5	23095/ 707.5
	High			23130/ 711	23155/ 713.5	23165/ 714.5	23173/ 715.3
	Band 13	Frequency range: 777 - 787 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low				23205/ 779.5		
	Mid			23230/ 782	23230/ 782		
	High				23255/ 784.5		
	Band 41	Frequency range: 2496 - 2690 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	39750 / 2506.0					
	Low-Mid	40185 / 2549.5					
	Mid	40620 / 2593.0					
	Mid-High	41055 / 2636.5					
	High	41490 / 2680.0					
	Band 66	Frequency range: 1710 - 1780 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	132072/ 1720	132047/ 1717.5	132022/ 1715	131997/ 1712.5	131987/ 1711.5	131979/ 1710.7
	Mid	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745
	High	132572/ 1770	132597/ 1772.5	132622/ 1775	132647/ 1777.5	132657/ 1778.5	132665/ 1779.3
LTE transmitter and antenna implementation	Refer to Appendix A.						
Maximum power reduction (MPR)	**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3**						
	Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})					MPR (dB)
		1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz
	QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
	16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
	16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
	64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
	64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
	256 QAM	≥ 1						≤ 5
	MPR Built-in by design The manufacturer MPR values are always within the 3GPP maximum MPR allowance but may not follow the default MPR values. A-MPR (additional MPR) was disabled during SAR testing							
Power reduction	Yes.							
Spectrum plots for RB configurations	A properly configured base station simulator was used for the SAR and power measurements; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.							

Notes:

1. Maximum bandwidth does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports Overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE devices.
2. LTE Band 41 test channels in accordance with October 2014 TCB workshop for all channels bandwidths.
3. SAR Testing for LTE was performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

6.7. LTE (TDD) Considerations

According to KDB 941225 D05 SAR for LTE Devices, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

LTE TDD Bands support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

Calculated Duty Cycle

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle (%)
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	63.33
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.33
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.33
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.67
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.67
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.67
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33

Calculated Duty Cycle = Extended cyclic prefix in uplink x (T_s) x # of S + # of U

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:
Calculated Duty Cycle = 5120 x [1/(15000 x 2048)] x 2 + 6 ms = 63.33%
where
T_s = 1/(15000 x 2048) seconds

Note(s):
This device supports uplink-downlink configurations 0-6. The configuration with highest duty cycle was used for SAR Testing: configuration 0 at 63.3% duty cycle.

6.8. NR (Sub 6GHz) SAR Test and Reporting Considerations

Item	Description													
Frequency range, Channel Bandwidth, Numbers and Frequencues	Band n5	Frequency range: 824 - 849 MHz												
		Channel Bandwidth												
		100 MHz	90 MHz	80 MHz	70 MHz	60 MHz	50 MHz	40 MHz	35 MHz	30 MHz	25 MHz	20 MHz	15 MHz	10 MHz	5 MHz
	Low											166800/ 834	166300/ 831.5	165800/ 829	165300/ 826.5
	Mid											167300/ 836.5	167300/ 836.5	167300/ 836.5	167300/ 836.5
	High											167800/ 839	168300/ 841.5	168800/ 844	169300/ 846.5
	Band n41	Frequency range: 2496 - 2690 MHz												
		Channel Bandwidth												
		100 MHz	90 MHz	80 MHz	70 MHz	60 MHz	50 MHz	40 MHz	35 MHz	30 MHz	25 MHz	20 MHz	15 MHz	10 MHz	5 MHz
	Low	509202/ 2546.01	508200/ 2541	507204/ 2536.02	506202/ 2531.01	505200/ 2526	504204/ 2512.02	503202/ 2516.01		552200/ 2511	501696/ 2508.48	501204/ 2506.02	500700/ 2503.5	500202/ 2501.01	
	Low-Mid							516468/ 2567.34		510402/ 2552.01	510150/ 2550.75	509898/ 2549.49	509652/ 2548.26	509400/ 2547	
	Mid	518598/ 2592.99				518598/ 2592.99	518598/ 2592.99			518598/ 2592.99	518598/ 2592.99	518598/ 2592.99	518598/ 2592.99	518598/ 2592.99	
	Mid-High	528000/ 2640	528996/ 2644.98	529998/ 2649.99	531000/ 2655	529998/ 2649.99	523734/ 2618.67	523734/ 2618.67		526800/ 2634	527046/ 2635.23	527298/ 2636.49	527550/ 2637.75	527802/ 2639.01	
	High							534000/ 2670		534996/ 2674.98	535500/ 2677.5	535998/ 2679.99	536496/ 2682.48	537000/ 2685	
	Band n66	Frequency range: 1710 - 1780 MHz												
		Channel Bandwidth												
		100 MHz	90 MHz	80 MHz	70 MHz	60 MHz	50 MHz	40 MHz	35 MHz	30 MHz	25 MHz	20 MHz	15 MHz	10 MHz	5 MHz
	Low							346000/ 1730	345500/ 1727.5	345000/ 1725	344500/ 1722.5	344000 /1720	343500 /1717.5	343000 /1715	342500 /1712.5
	Mid							349000/ 1745	349000/ 1745	349000/ 1745	349000/ 1745	349000/ 1745	349000/ 1745	349000/ 1745	349000/ 1745
	High							352000/ 1760	352500/ 1762.5	353000/ 1765	353500/ 1767.5	354000 /1770	354500 /1772.5	355000 /1775	355500 /1777.5
SCS	NR FDD Bands : 15 kHz, NR TDD Bands : 30kHz														
Modulations Supported in UL	DFT-s-OFDM: π/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM & CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM														
A-MPR (Additional MPR) disabled for SAR Testing?	Yes														
EN-DC Carrier Aggregation Possible Combinations															
LTE Anchor Bands for NR Band n5	LTE Band 2/66														
LTE Anchor Bands for NR Band n41	LTE Band 66														
LTE Anchor Bands for NR Band n66	LTE Band 2/13														

Notes:

1. SAR test for NR bands and LTE anchor Bands were performed separately due to limitations in SAR probe calibration factors.
   Due to test setup limitations, SAR testing for NR FDD modes was performed using the base band simulator and NR TDD mode were tested using test modes to enable 100% duty factor.
2. NR configurations of SAR test were determined according to Section 5.2 of KDB 941225 D05.

6.9. Dynamic Antenna tuner testing

This Device applies Qualcomm chipset solution's Dynamic Antenna tuning technology to some 3G /4G /5G sub6 bands. (WCDMA B5 / LTE B12/13/5/4/66/2 NR Band n5/n66)
Dynamic Antenna tuning was tested in accordance with the April 2019 FCC TCBC Workshop notes.

Per 2019, April TCBC Workshop document

- SAR is measured according to required procedures with dynamic tuner active allowing device to automatically tune. Auto-tune state determined by device during normal SAR measurement verified and listed alongside the reported SAR results.
- Additional single point SAR (time-sweep) measurements were evaluated for other tuner states to determine that the other configurations would result in equivalent or lower SAR values.
- Single point measurements performed at the peak SAR location of the highest measured SAR configuration for each combination. SAR probe remains stationary throughout the entire series of single point measurements for each combination.
- Total number tuner states divided evenly among each supported band / air interface and exposure condition combination. If any single point SAR measurement result is > 1.2 W/kg for a band / exposure condition combination set, all supported tuner states are evaluated with single point SAR measurements for the combination. Tuner state is established remotely so that the device is not moved for the entire series of single point SAR measurements for the tuner states in each combination.

The following test procedures were followed to demonstrate that the SAR results in Section 10 represented the appropriate SAR test conditions. For bands with dynamic tuning implemented, SAR was measured according to the required FCC SAR test procedures with the dynamic tuning active to allow the device to automatically to the antenna state for the respective RF exposure test configurations. Additional single point SAR time-sweep measurements were evaluated for other tuner states to determine that the other configurations would result in equivalent or lower SAR values. The additional tuner hardware has no influence on the antenna characteristics, other impedance matching.

To evaluate all the tuner states, the 144 tuner states were divided among the aggregate band, mode and exposure combinations so that each combination was evaluated for at least 20 tuner states and also so that at least 2 single point SAR measurements were made for every available tuner state. Single point time-sweep measurements were performed at the peak SAR location determined by the zoom scan of the configuration with the highest reported SAR for each combination. The tuner state was able to be established remotely so that the device was not moved for the entire series of single point SAR for the tuner states in each combination. The SAR probe remained stationary at the same position throughout the entire series of single point measurements for each combination. When the single point SAR or 1g SAR was > 1.2 W/kg for a particular band / mode / exposure condition, point SAR measurements were made for all 144 tuner states.

The Evaluation of Dynamic antenna tuner was only evaluated for the band with the larger transmission frequency range. The operational description contains more information about the design and implementation of the dynamic antenna tuning.

Note(s):

All test results are refer to Appendix H "Dynamic Antenna tuner testing".

7. RF Exposure Conditions (Test Configurations)

Refer to Appendix A for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.

WWAN Bands

Wireless technologies	RF Exposure Conditions	Antenaa	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
WWAN	Head	Ant. A, E, B, F	0 mm	Left Touch	N/A	Yes	
				Left Tilt (15°)	N/A	Yes	
				Right Touch	N/A	Yes	
				Right Tilt (15°)	N/A	Yes	
	Body-worn & Hotspot	Ant. A, E, B, F	10 mm	Rear	N/A	Yes	
				Front	N/A	Yes	
	Hotspot	Ant.A	10 mm	Top	> 25 mm	No	1
				Left	< 25 mm	Yes	
				Bottom	< 25 mm	Yes	
				Right	< 25 mm	Yes	
		Ant.E	10 mm	Top	< 25 mm	Yes	
				Left	> 25 mm	No	1
				Bottom	> 25 mm	No	1
				Right	< 25 mm	Yes	
		Ant.B	10 mm	Top	> 25 mm	No	1
				Left	< 25 mm	Yes	
				Bottom	< 25 mm	Yes	
				Right	> 25 mm	No	1
		Ant.F	10 mm	Top	< 25 mm	Yes	
				Left	< 25 mm	Yes	
				Bottom	> 25 mm	No	1
				Right	> 25 mm	No	1
	Product Specific 10-g	Ant. A, E, B, F	0 mm	Rear	Refer to notes 2 & 3		
				Front			
				Top			
				Left			
				Bottom			
				Right			

Notes:

1. SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR.
2. For Phablet devices: When hotspot mode applies, Product specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.
3. For Phablet devices: When hotspot mode applies and power reduction applies to hotspot mode, Product specific 10-g SAR is required for each test position that has and adjusted SAR to maximum power that is > 1.2 W/kg.
4. For Phablet devices: When hotspot mode is not supported, Product specific 10-g SAR is required for all surfaces and edges with an antenna located at ≤ 25mm from that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions.

WLAN/BT Bands

Wireless technologies	RF Exposure Conditions	Antenaa	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
WLAN/BT	Head	Ant. H, J, E	0 mm	Left Touch	N/A	Yes	
				Left Tilt (15°)	N/A	Yes	
				Right Touch	N/A	Yes	
				Right Tilt (15°)	N/A	Yes	
	Body-worn	Ant. H, J, E	10 mm	Rear	N/A	Yes	
				Front	N/A	Yes	
	Hotspot	Ant.H	10mm	Top	< 25 mm	Yes	
				Left	< 25 mm	Yes	
				Bottom	> 25 mm	No	1
				Right	> 25 mm	No	1
	Hotspot	Ant.J	10mm	Top	< 25 mm	Yes	
				Left	> 25 mm	No	1
				Bottom	> 25 mm	No	1
				Right	< 25 mm	Yes	
	Hotspot	Ant.E	10mm	Top	< 25 mm	Yes	
				Left	> 25 mm	No	1
				Bottom	> 25 mm	No	1
				Right	< 25 mm	Yes	
	Product Specific 10-g	Ant. H, J, E	0 mm	Rear	Refer to notes 2 & 4		
				Front			
				Top			
				Left			
				Bottom			
				Right			

NFC

Wireless technologies	RF Exposure Conditions	Antenaa	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
NFC	Product Specific (Hand) 10-g	NFC Ant.	0 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Top	< 25 mm	Yes	
				Left	< 25 mm	Yes	
				Bottom	> 25 mm	No	1
				Right	> 25 mm	No	1

Notes:

1. SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR.
2. For Phablet devices: When hotspot mode applies, Product specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.
3. For Phablet devices: When hotspot mode applies and power reduction applies to hotspot mode, Product specific 10-g SAR is required for each test position that has and adjusted SAR to maximum power that is > 1.2 W/kg.
4. For Phablet devices: When hotspot mode is not supported, Product specific 10-g SAR is required for all surfaces and edges with an antenna located at ≤ 25mm from that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions.
5. Per manufacturer guide, NFC SAR was considered about only hand held condition (Product Specific 10-g).

8. Dielectric Property Measurements & System Check

8.1. Dielectric Property Measurements

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized.

The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The Tissue Dielectric parameters (100MHz to 6GHz) should be re-measured after each 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.

Tissue dielectric parameters were measured at the low, middle and high frequency of each operating frequency range of the test device.

For The Tissue Dielectric parameters (4MHz to 30MHz). The parameters must be measured before 24 hours.

1. Tissue Dielectric Parameters (100MHz to 6GHz)

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

Target Frequency (MHz)	Head	
	ε_r	σ (S/m)
150	52.3	0.76
300	45.3	0.87
450	43.5	0.87
835	41.5	0.90
900	41.5	0.97
915	41.5	0.98
1450	40.5	1.20
1610	40.3	1.29
1800 – 2000	40.0	1.40
2450	39.2	1.80
3000	38.5	2.40
5000	36.2	4.45
5100	36.1	4.55
5200	36.0	4.66
5300	35.9	4.76
5400	35.8	4.86
5500	35.6	4.96
5600	35.5	5.07
5700	35.4	5.17
5800	35.3	5.27
6000	35.1	5.48

SAR test were performed in All RF exposure conditions using Head tissue according to TCB workshop note of April. 2019.

IEEE Std 1528-2013

Refer to Table 3 within the IEEE Std 1528-2013

2. Tissue Dielectric Parameters (4MHz to 30MHz)

Target Frequency (MHz)	Head	
	ε_r	σ (S/m)
4	55.0	0.75
13	55.0	0.75
30	55.0	0.75

IEC_IEEE Std 62209-1528 : 2020

Refer to Table 2 within the IEC_IEEE Std 62209-1528 : 2020.

Dielectric Property Measurements Results:

SAR 6 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
12-26-2023	Head 750	e'	42.6600	Relative Permittivity (ϵ_r):	42.66	41.96	1.66	5
		e"	21.7200	Conductivity (σ):	0.91	0.89	1.42	5
	Head 660	e'	43.1600	Relative Permittivity (ϵ_r):	43.16	42.42	1.74	5
		e"	23.6500	Conductivity (σ):	0.87	0.89	-2.06	5
	Head 800	e'	42.4000	Relative Permittivity (ϵ_r):	42.40	41.71	1.67	5
		e"	20.8200	Conductivity (σ):	0.93	0.90	3.26	5
01-02-24	Head 750	e'	41.8800	Relative Permittivity (ϵ_r):	41.88	41.96	-0.19	5
		e"	21.2500	Conductivity (σ):	0.89	0.89	-0.77	5
	Head 660	e'	42.2900	Relative Permittivity (ϵ_r):	42.29	42.42	-0.31	5
		e"	23.3300	Conductivity (σ):	0.86	0.89	-3.38	5
	Head 800	e'	41.6900	Relative Permittivity (ϵ_r):	41.69	41.71	-0.04	5
		e"	20.2600	Conductivity (σ):	0.90	0.90	0.48	5
12-26-23	Head 835	e'	42.2300	Relative Permittivity (ϵ_r):	42.23	41.50	1.76	5
		e"	20.2800	Conductivity (σ):	0.94	0.90	4.62	5
	Head 810	e'	42.3500	Relative Permittivity (ϵ_r):	42.35	41.65	1.67	5
		e"	20.6600	Conductivity (σ):	0.93	0.90	3.65	5
	Head 850	e'	42.1700	Relative Permittivity (ϵ_r):	42.17	41.50	1.61	5
		e"	20.0600	Conductivity (σ):	0.95	0.92	3.62	5
01-12-24	Head 835	e'	41.4400	Relative Permittivity (ϵ_r):	41.44	41.50	-0.14	5
		e"	19.5400	Conductivity (σ):	0.91	0.90	0.80	5
	Head 810	e'	41.5200	Relative Permittivity (ϵ_r):	41.52	41.65	-0.32	5
		e"	19.9800	Conductivity (σ):	0.90	0.90	0.24	5
	Head 850	e'	41.4100	Relative Permittivity (ϵ_r):	41.41	41.50	-0.22	5
		e"	19.2900	Conductivity (σ):	0.91	0.92	-0.36	5
12-11-23	Head 1750	e'	39.8600	Relative Permittivity (ϵ_r):	39.86	40.08	-0.56	5
		e"	13.4800	Conductivity (σ):	1.31	1.37	-4.19	5
	Head 1710	e'	39.8600	Relative Permittivity (ϵ_r):	39.86	40.15	-0.71	5
		e"	13.6400	Conductivity (σ):	1.30	1.35	-3.68	5
	Head 1780	e'	39.8500	Relative Permittivity (ϵ_r):	39.85	40.04	-0.47	5
		e"	13.3900	Conductivity (σ):	1.33	1.39	-4.38	5
12-19-23	Head 1750	e'	40.9000	Relative Permittivity (ϵ_r):	40.90	40.08	2.03	5
		e"	13.8700	Conductivity (σ):	1.35	1.37	-1.41	5
	Head 1710	e'	40.8900	Relative Permittivity (ϵ_r):	40.89	40.15	1.85	5
		e"	13.9500	Conductivity (σ):	1.33	1.35	-1.49	5
	Head 1780	e'	40.8500	Relative Permittivity (ϵ_r):	40.85	40.04	2.03	5
		e"	13.8500	Conductivity (σ):	1.37	1.39	-1.09	5
12-15-23	Head 1900	e'	39.9500	Relative Permittivity (ϵ_r):	39.95	40.00	-0.12	5
		e"	13.6200	Conductivity (σ):	1.44	1.40	2.78	5
	Head 1850	e'	39.9300	Relative Permittivity (ϵ_r):	39.93	40.00	-0.18	5
		e"	13.5900	Conductivity (σ):	1.40	1.40	-0.15	5
	Head 1915	e'	39.9600	Relative Permittivity (ϵ_r):	39.96	40.00	-0.10	5
		e"	13.6100	Conductivity (σ):	1.45	1.40	3.51	5
12-19-23	Head 1900	e'	40.5500	Relative Permittivity (ϵ_r):	40.55	40.00	1.37	5
		e"	13.6700	Conductivity (σ):	1.44	1.40	3.16	5
	Head 1850	e'	40.6600	Relative Permittivity (ϵ_r):	40.66	40.00	1.65	5
		e"	13.7100	Conductivity (σ):	1.41	1.40	0.73	5
	Head 1915	e'	40.5200	Relative Permittivity (ϵ_r):	40.52	40.00	1.30	5
		e"	13.6500	Conductivity (σ):	1.45	1.40	3.82	5
01-03-24	Head 2450	e'	39.4800	Relative Permittivity (ϵ_r):	39.48	39.20	0.71	5
		e"	12.9300	Conductivity (σ):	1.76	1.80	-2.14	5
	Head 2400	e'	39.5300	Relative Permittivity (ϵ_r):	39.53	39.30	0.59	5
		e"	12.9200	Conductivity (σ):	1.72	1.75	-1.57	5
	Head 2500	e'	39.4400	Relative Permittivity (ϵ_r):	39.44	39.14	0.77	5
		e"	12.9900	Conductivity (σ):	1.81	1.85	-2.61	5
01-09-24	Head 2450	e'	39.3600	Relative Permittivity (ϵ_r):	39.36	39.20	0.41	5
		e"	12.8000	Conductivity (σ):	1.74	1.80	-3.13	5
	Head 2400	e'	39.4100	Relative Permittivity (ϵ_r):	39.41	39.30	0.29	5
		e"	12.8300	Conductivity (σ):	1.71	1.75	-2.26	5
	Head 2500	e'	39.3300	Relative Permittivity (ϵ_r):	39.33	39.14	0.49	5
		e"	12.8100	Conductivity (σ):	1.78	1.85	-3.96	5

SAR 7 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
01-02-24	Head 13	e'	54.3900	Relative Permittivity (ϵ_r):	54.39	55.00	-1.11	5
		e"	1011.0000	Conductivity (σ):	0.73	0.75	-2.56	5
	Head 12	e'	54.4100	Relative Permittivity (ϵ_r):	54.41	55.00	-1.07	5
		e"	1095.0000	Conductivity (σ):	0.73	0.75	-2.58	5
	Head 14	e'	54.4700	Relative Permittivity (ϵ_r):	54.47	55.00	-0.96	5
		e"	939.0000	Conductivity (σ):	0.73	0.75	-2.54	5
12-12-23	Head 835	e'	41.5000	Relative Permittivity (ϵ_r):	41.50	41.50	0.00	5
		e"	20.0200	Conductivity (σ):	0.93	0.90	3.28	5
	Head 810	e'	41.5600	Relative Permittivity (ϵ_r):	41.56	41.65	-0.23	5
		e"	20.4500	Conductivity (σ):	0.92	0.90	2.60	5
	Head 850	e'	41.4500	Relative Permittivity (ϵ_r):	41.45	41.50	-0.12	5
		e"	19.7700	Conductivity (σ):	0.93	0.92	2.12	5
12-18-23	Head 835	e'	42.2000	Relative Permittivity (ϵ_r):	42.20	41.50	1.69	5
		e"	20.2000	Conductivity (σ):	0.94	0.90	4.21	5
	Head 810	e'	42.3100	Relative Permittivity (ϵ_r):	42.31	41.65	1.58	5
		e"	20.7100	Conductivity (σ):	0.93	0.90	3.91	5
	Head 850	e'	42.1400	Relative Permittivity (ϵ_r):	42.14	41.50	1.54	5
		e"	19.9100	Conductivity (σ):	0.94	0.92	2.84	5
01-03-24	Head 1900	e'	39.7900	Relative Permittivity (ϵ_r):	39.79	40.00	-0.53	5
		e"	13.6500	Conductivity (σ):	1.44	1.40	3.00	5
	Head 1850	e'	39.8200	Relative Permittivity (ϵ_r):	39.82	40.00	-0.45	5
		e"	13.6100	Conductivity (σ):	1.40	1.40	0.00	5
	Head 1915	e'	39.7800	Relative Permittivity (ϵ_r):	39.78	40.00	-0.55	5
		e"	13.6500	Conductivity (σ):	1.45	1.40	3.82	5

SAR 8 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
12-18-23	Head 750	e'	41.9100	Relative Permittivity (ϵ_r):	41.91	41.96	-0.12	5
		e"	21.2900	Conductivity (σ):	0.89	0.89	-0.59	5
	Head 680	e'	42.1300	Relative Permittivity (ϵ_r):	42.13	42.32	-0.45	5
		e"	23.0200	Conductivity (σ):	0.87	0.89	-1.95	5
	Head 790	e'	41.7800	Relative Permittivity (ϵ_r):	41.78	41.76	0.06	5
		e"	20.4500	Conductivity (σ):	0.90	0.90	0.24	5
12-22-23	Head 750	e'	41.3700	Relative Permittivity (ϵ_r):	41.37	41.96	-1.41	5
		e"	22.1700	Conductivity (σ):	0.92	0.89	3.52	5
	Head 680	e'	41.6300	Relative Permittivity (ϵ_r):	41.63	42.32	-1.63	5
		e"	23.8100	Conductivity (σ):	0.90	0.89	1.42	5
	Head 790	e'	41.2100	Relative Permittivity (ϵ_r):	41.21	41.76	-1.31	5
		e"	21.3500	Conductivity (σ):	0.94	0.90	4.65	5
01-11-24	Head 835	e'	40.1800	Relative Permittivity (ϵ_r):	40.18	41.50	-3.18	5
		e"	19.5200	Conductivity (σ):	0.91	0.90	0.70	5
	Head 820	e'	40.2300	Relative Permittivity (ϵ_r):	40.23	41.60	-3.30	5
		e"	19.8000	Conductivity (σ):	0.90	0.90	0.48	5
	Head 850	e'	40.1200	Relative Permittivity (ϵ_r):	40.12	41.50	-3.33	5
		e"	19.2600	Conductivity (σ):	0.91	0.92	-0.52	5
01-08-24	Head 1750	e'	39.7800	Relative Permittivity (ϵ_r):	39.78	40.08	-0.76	5
		e"	13.7100	Conductivity (σ):	1.33	1.37	-2.55	5
	Head 1710	e'	39.8800	Relative Permittivity (ϵ_r):	39.88	40.15	-0.66	5
		e"	13.8200	Conductivity (σ):	1.31	1.35	-2.41	5
	Head 1780	e'	39.7200	Relative Permittivity (ϵ_r):	39.72	40.04	-0.80	5
		e"	13.6100	Conductivity (σ):	1.35	1.39	-2.80	5
01-15-24	Head 1750	e'	41.3900	Relative Permittivity (ϵ_r):	41.39	40.08	3.26	5
		e"	13.6700	Conductivity (σ):	1.33	1.37	-2.83	5
	Head 1710	e'	41.5000	Relative Permittivity (ϵ_r):	41.50	40.15	3.37	5
		e"	13.8000	Conductivity (σ):	1.31	1.35	-2.55	5
	Head 1780	e'	41.3300	Relative Permittivity (ϵ_r):	41.33	40.04	3.23	5
		e"	13.5600	Conductivity (σ):	1.34	1.39	-3.16	5
01-15-24	Head 1900	e'	41.2200	Relative Permittivity (ϵ_r):	41.22	40.00	3.05	5
		e"	13.2100	Conductivity (σ):	1.40	1.40	-0.32	5
	Head 1850	e'	41.2600	Relative Permittivity (ϵ_r):	41.26	40.00	3.15	5
		e"	13.3300	Conductivity (σ):	1.37	1.40	-2.06	5
	Head 1915	e'	41.2100	Relative Permittivity (ϵ_r):	41.21	40.00	3.03	5
		e"	13.1800	Conductivity (σ):	1.40	1.40	0.24	5

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
12/27/23	Head 2450	e'	40.7000	Relative Permittivity (ϵ_r):	40.70	39.20	3.83	5
		e"	13.0800	Conductivity (σ):	1.78	1.80	-1.01	5
	Head 2400	e'	40.7600	Relative Permittivity (ϵ_r):	40.76	39.30	3.72	5
		e"	13.1300	Conductivity (σ):	1.75	1.75	0.03	5
	Head 2480	e'	40.6800	Relative Permittivity (ϵ_r):	40.68	39.16	3.88	5
		e"	13.0600	Conductivity (σ):	1.80	1.83	-1.72	5
1/15/24	Head 2450	e'	40.2400	Relative Permittivity (ϵ_r):	40.24	39.20	2.65	5
		e"	12.8300	Conductivity (σ):	1.75	1.80	-2.90	5
	Head 2400	e'	40.2600	Relative Permittivity (ϵ_r):	40.26	39.30	2.45	5
		e"	12.9300	Conductivity (σ):	1.73	1.75	-1.49	5
	Head 2500	e'	40.2300	Relative Permittivity (ϵ_r):	40.23	39.14	2.79	5
		e"	12.7700	Conductivity (σ):	1.78	1.85	-4.26	5
12/13/23	Head 2600	e'	40.3000	Relative Permittivity (ϵ_r):	40.30	39.01	3.30	5
		e"	13.5400	Conductivity (σ):	1.96	1.96	-0.24	5
	Head 2495	e'	40.4900	Relative Permittivity (ϵ_r):	40.49	39.14	3.44	5
		e"	13.5000	Conductivity (σ):	1.87	1.85	1.31	5
	Head 2700	e'	40.0800	Relative Permittivity (ϵ_r):	40.08	38.88	3.07	5
		e"	13.5500	Conductivity (σ):	2.03	2.07	-1.74	5
12/18/23	Head 2600	e'	39.3200	Relative Permittivity (ϵ_r):	39.32	39.01	0.79	5
		e"	13.1400	Conductivity (σ):	1.90	1.96	-3.19	5
	Head 2495	e'	39.5700	Relative Permittivity (ϵ_r):	39.57	39.14	1.09	5
		e"	12.9900	Conductivity (σ):	1.80	1.85	-2.52	5
	Head 2700	e'	39.0400	Relative Permittivity (ϵ_r):	39.04	38.88	0.40	5
		e"	13.2100	Conductivity (σ):	1.98	2.07	-4.21	5
12/4/23	Head 5250	e'	36.9700	Relative Permittivity (ϵ_r):	36.97	35.93	2.89	4
		e"	15.5900	Conductivity (σ):	4.55	4.70	-3.21	4
	Head 5260	e'	36.9600	Relative Permittivity (ϵ_r):	36.96	35.92	2.89	4
		e"	15.6000	Conductivity (σ):	4.56	4.71	-3.18	4
	Head 5600	e'	36.2900	Relative Permittivity (ϵ_r):	36.29	35.53	2.13	4
		e"	15.9300	Conductivity (σ):	4.96	5.06	-1.98	4
	Head 5800	e'	35.9200	Relative Permittivity (ϵ_r):	35.92	35.30	1.76	4
		e"	16.1500	Conductivity (σ):	5.21	5.27	-1.17	4
	Head 5925	e'	35.7100	Relative Permittivity (ϵ_r):	35.71	35.20	1.45	4
		e"	16.2700	Conductivity (σ):	5.36	5.40	-0.74	4
1/22/2024	Head 5250	e'	35.7100	Relative Permittivity (ϵ_r):	35.71	35.93	-0.62	4
		e"	15.6600	Conductivity (σ):	4.57	4.70	-2.78	4
	Head 5260	e'	35.6900	Relative Permittivity (ϵ_r):	35.69	35.92	-0.65	4
		e"	15.6700	Conductivity (σ):	4.58	4.71	-2.74	4
	Head 5600	e'	35.0800	Relative Permittivity (ϵ_r):	35.08	35.53	-1.28	4
		e"	15.9400	Conductivity (σ):	4.96	5.06	-1.91	4
	Head 5800	e'	34.7100	Relative Permittivity (ϵ_r):	34.71	35.30	-1.67	4
		e"	16.0800	Conductivity (σ):	5.19	5.27	-1.60	4
	Head 5925	e'	34.4800	Relative Permittivity (ϵ_r):	34.48	35.20	-2.05	4
		e"	16.1500	Conductivity (σ):	5.32	5.40	-1.47	4

SAR 9 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
12-05-23	Head 2450	e'	38.2600	Relative Permittivity (ϵ_r):	38.26	39.20	-2.40	5
		e"	13.1600	Conductivity (σ):	1.79	1.80	-0.40	5
	Head 2400	e'	38.3400	Relative Permittivity (ϵ_r):	38.34	39.30	-2.43	5
		e"	13.2800	Conductivity (σ):	1.77	1.75	1.17	5
	Head 2500	e'	38.2700	Relative Permittivity (ϵ_r):	38.27	39.14	-2.22	5
		e"	13.0400	Conductivity (σ):	1.81	1.85	-2.23	5
12-18-23	Head 2600	e'	38.0700	Relative Permittivity (ϵ_r):	38.07	39.01	-2.41	5
		e"	13.5800	Conductivity (σ):	1.96	1.96	0.05	5
	Head 2495	e'	38.3200	Relative Permittivity (ϵ_r):	38.32	39.14	-2.10	5
		e"	13.5000	Conductivity (σ):	1.87	1.85	1.31	5
	Head 2700	e'	37.7800	Relative Permittivity (ϵ_r):	37.78	38.88	-2.84	5
		e"	13.5900	Conductivity (σ):	2.04	2.07	-1.45	5
12-27-23	Head 5250	e'	36.1500	Relative Permittivity (ϵ_r):	36.15	35.93	0.60	4
		e"	15.9000	Conductivity (σ):	4.64	4.70	-1.29	4
	Head 5260	e'	36.1300	Relative Permittivity (ϵ_r):	36.13	35.92	0.58	4
		e"	15.9100	Conductivity (σ):	4.65	4.71	-1.25	4
	Head 5600	e'	35.5400	Relative Permittivity (ϵ_r):	35.54	35.53	0.02	4
		e"	16.1800	Conductivity (σ):	5.04	5.06	-0.44	4
	Head 5750	e'	35.3000	Relative Permittivity (ϵ_r):	35.30	35.36	-0.18	4
		e"	16.3200	Conductivity (σ):	5.22	5.21	0.08	4
	Head 5925	e'	35.0600	Relative Permittivity (ϵ_r):	35.06	35.20	-0.40	4
		e"	16.4800	Conductivity (σ):	5.43	5.40	0.54	4
01-02-24	Head 5250	e'	36.8700	Relative Permittivity (ϵ_r):	36.87	35.93	2.61	4
		e"	15.6200	Conductivity (σ):	4.56	4.70	-3.03	4
	Head 5260	e'	36.8500	Relative Permittivity (ϵ_r):	36.85	35.92	2.58	4
		e"	15.6200	Conductivity (σ):	4.57	4.71	-3.05	4
	Head 5600	e'	36.2400	Relative Permittivity (ϵ_r):	36.24	35.53	1.99	4
		e"	15.8500	Conductivity (σ):	4.94	5.06	-2.47	4
	Head 5750	e'	35.9700	Relative Permittivity (ϵ_r):	35.97	35.36	1.72	4
		e"	15.9600	Conductivity (σ):	5.10	5.21	-2.13	4
	Head 5925	e'	35.6900	Relative Permittivity (ϵ_r):	35.69	35.20	1.39	4
		e"	16.0700	Conductivity (σ):	5.29	5.40	-1.96	4
01-08-24	Head 5600	e'	35.6600	Relative Permittivity (ϵ_r):	35.66	35.53	0.35	4
		e"	16.1300	Conductivity (σ):	5.02	5.06	-0.75	4
	Head 5750	e'	35.3900	Relative Permittivity (ϵ_r):	35.39	35.36	0.08	4
		e"	16.2700	Conductivity (σ):	5.20	5.21	-0.23	4
	Head 5925	e'	35.1000	Relative Permittivity (ϵ_r):	35.10	35.20	-0.28	4
		e"	16.4200	Conductivity (σ):	5.41	5.40	0.18	4

8.2. System Check

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification of 100MHZ to 6GHz frequency range should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are re-measured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.
For The System verification of 4MHz to 30MHz frequency range, The System verification must be performed before 24 hours.

System Performance Check Measurement Conditions (100MHz to 6GHz):

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ±0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements ≤ 3 GHz and ≥ 10.0 cm for measurements > 3 GHz.
- The DASY system with an E-Field Probe was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1 GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 15 mm was aligned with the dipole.
  For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 7x7x7 (below 3 GHz) and/or 8x8x7 (above 3 GHz) fine cube was chosen for the cube.
- Distance between probe sensors and phantom surface was set to 2.5 mm.
  For 5 GHz band - Distance between probe sensors and phantom surface was set to 1.4 mm
- The dipole input power (forward power) was 100 mW.
- The results are normalized to 1 W input power.

System Performance Check Measurement Conditions (4MHz to 30MHz):

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ±0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements
- The DASY system with an E-Field Probe was used for the measurements.
- The CLA(Confined Loop Antennas) was mounted on the small tripod so that the CLA feed point was positioned below the center marking of the flat phantom section and the CLA was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 0 mm separation distance from CLA center to the Phantom surface.
- The CLA input power (forward power) was 100 mW.
- The results are normalized to 1 W input power.

Reference Target SAR Values

The reference SAR values can be obtained from the calibration certificate of system validation dipoles.

System Dipole	Serial No.	Cal. Date	Cal.Due Date	Freq. (MHz)	Target SAR Values (mW/g)	
					1g/10g	Head
D750V2	1122	2/24/2022	2/24/2024	750	1g	8.58
					10g	5.65
D835V2	4d174	9/21/2022	9/21/2024	835	1g	9.63
					10g	6.29
D835V2	4d194	3/24/2022	3/24/2024	835	1g	9.77
					10g	6.39
D1750V2	1125	11/30/2022	11/30/2024	1750	1g	37.4
					10g	19.7
D1750V2	1180	9/21/2022	9/21/2024	1750	1g	35.60
					10g	18.90
D1900V2	5d190	11/16/2022	11/16/2024	1900	1g	39.70
					10g	20.70
D1900V2	5d199	3/25/2022	3/25/2024	1900	1g	39.40
					10g	20.50
D2450V2	939	7/19/2023	7/19/2024	2450	1g	52.30
					10g	24.70
D2450V2	960	3/24/2022	3/24/2024	2450	1g	51.90
					10g	24.00
D2600V2	1097	9/26/2023	9/26/2024	2600	1g	57.30
					10g	25.70
D5GHzV2	1209	2/28/2023	2/28/2024	5250	1g	80.40
					10g	22.90
				5600	1g	83.10
					10g	23.60
				5750	1g	78.90
					10g	22.20
				5800	1g	81.20
					10g	22.90
D5GHzV2	1325	4/21/2023	4/21/2024	5250	1g	79.60
					10g	22.70
				5600	1g	83.90
					10g	23.80
				5750	1g	80.40
					10g	22.70
				5800	1g	80.50
					10g	22.50
CLA-13	1015	8/22/2023	8/22/2024	2600	10g	0.33

Note(s):

1. For System Validation Dipole, Calibration interval applied every 2 years according to referencing KDB 865664 guidance.
2. For CLA, Calibration interval applied every year.
3. Refer to Appendix F that mentioned about justification
4. CLA-13 is only consider 10-g target value according to NFC test configurations of Section.7

System Check Results

The 1-g and 10-g SAR measured with a reference dipole, using the required tissue-equivalent medium at the test frequency, must be within 10% of the manufacturer calibrated dipole SAR target.

SAR 6 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
12-26-2023	D750V2	1122	Head	1g	0.86	8.6	8.58	0.23	
				10g	0.58	5.8	5.65	2.12	
1-2-2024	D750V2	1122	Head	1g	0.82	8.2	8.58	-4.90	1
				10g	0.54	5.4	5.65	-3.72	
12-26-2023	D835V2	4d174	Head	1g	0.94	9.4	9.63	-2.18	
				10g	0.63	6.3	6.29	-0.32	
1-12-2024	D835V2	4d194	Head	1g	1.03	10.3	9.77	5.42	
				10g	0.69	6.9	6.39	8.45	
12-11-2023	D1750V2	1125	Head	1g	3.52	35.2	37.40	-5.88	
				10g	1.87	18.7	19.70	-5.08	
12-19-2023	D1750V2	1125	Head	1g	3.50	35.0	37.40	-6.42	2
				10g	1.86	18.6	19.70	-5.58	
12-15-2023	D1900V2	5d190	Head	1g	3.96	39.6	39.70	-0.25	
				10g	2.08	20.8	20.70	0.48	
12-19-2023	D1900V2	5d190	Head	1g	3.89	38.9	39.70	-2.02	
				10g	2.01	20.1	20.70	-2.90	
1-3-2024	D2450V2	939	Head	1g	5.24	52.4	52.30	0.19	
				10g	2.43	24.3	24.70	-1.62	
1-9-2024	D2450V2	939	Head	1g	5.12	51.2	52.30	-2.10	
				10g	2.64	26.4	24.70	6.88	

SAR 7 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
1/2/2024	CLA-13	1015	Head	10g	0.04	0.4	0.33	8.11	3
12/12/2023	D835V2	4d174	Head	1g	0.93	9.3	9.63	-3.43	
				10g	0.61	6.1	6.29	-3.18	
12/18/2024	D835V2	4d174	Head	1g	0.92	9.2	9.63	-4.88	4
				10g	0.60	6.0	6.29	-3.97	
1/3/2024	D1900V2	5d190	Head	1g	4.10	41.0	39.70	3.27	5
				10g	2.10	21.0	20.70	1.45	

SAR 8 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
12/18/2023	D750V3	1122	Head	1g	0.87	8.7	8.58	0.93	
				10g	0.60	6.0	5.65	5.31	
12/22/2023	D750V3	1122	Head	1g	0.86	8.6	8.58	0.23	
				10g	0.58	5.8	5.65	2.30	
1/11/2024	D835V2	4d194	Head	1g	0.89	8.9	9.77	-8.60	6
				10g	0.59	5.9	6.39	-7.20	
1/8/2024	D1750V2	1180	Head	1g	3.54	35.4	35.60	-0.56	
				10g	1.92	19.2	18.90	1.59	
1/15/2024	D1750V2	1180	Head	1g	3.36	33.6	35.60	-5.62	7
				10g	1.86	18.6	18.90	-1.59	
1/15/2024	D1900V2	5d199	Head	1g	3.87	38.7	39.40	-1.78	8
				10g	2.07	20.7	20.50	0.98	
12/27/2023	D2450V2	960	Head	1g	4.97	49.7	51.90	-4.24	9
				10g	2.32	23.2	24.00	-3.33	
1/15/2024	D2450V2	939	Head	1g	4.99	49.9	52.30	-4.59	
				10g	2.40	24.0	24.70	-2.83	
12/13/2023	D2600V2	1097	Head	1g	5.49	54.9	57.30	-4.19	10
				10g	2.48	24.8	25.70	-3.50	
12/18/2023	D2600V2	1097	Head	1g	5.54	55.4	57.30	-3.32	
				10g	2.55	25.5	25.70	-0.78	
12/4/2023	D5GHzV2 (5250)	1325	Head	1g	8.45	84.5	79.60	6.16	11
				10g	2.46	24.6	22.70	8.37	
12/4/2023	D5GHzV2 (5600)	1325	Head	1g	8.83	88.3	83.90	5.24	12
				10g	2.57	25.7	23.80	7.98	
12/4/2023	D5GHzV2 (5800)	1325	Head	1g	8.02	80.2	80.50	-0.37	
				10g	2.32	23.2	22.50	3.11	
1/22/2024	D5GHzV2 (5800)	1325	Head	1g	7.87	78.7	80.50	-2.24	
				10g	2.28	22.8	22.50	1.33	

SAR 9 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
12-5-2023	D2450V2	939	Head	1g	4.80	48.0	52.30	-8.22	13
				10g	2.24	22.4	24.70	-9.31	
12-18-2023	D2600V2	1097	Head	1g	5.58	55.8	57.30	-2.62	
				10g	2.58	25.8	25.70	0.39	
12-27-2023	D5GHzV2 (5600)	1325	Head	1g	8.42	84.2	83.90	0.36	
				10g	2.53	25.3	23.80	6.30	
12-27-2023	D5GHzV2 (5800)	1325	Head	1g	8.04	80.4	80.50	-0.12	
				10g	2.40	24.0	22.50	6.67	
1-2-2024	D5GHzV2 (5250)	1325	Head	1g	7.57	75.7	79.60	-4.90	
				10g	2.20	22.0	22.70	-3.08	
1-2-2024	D5GHzV2 (5600)	1325	Head	1g	8.48	84.8	83.90	1.07	
				10g	2.43	24.3	23.80	2.10	
1-2-2024	D5GHzV2 (5800)	1325	Head	1g	7.85	78.5	80.50	-2.48	14
				10g	2.29	22.9	22.50	1.78	
1-8-2024	D5GHzV2 (5600)	1209	Head	1g	8.49	84.9	83.10	2.17	15
				10g	2.42	24.2	23.60	2.54	
1-8-2024	D5GHzV2 (5800)	1209	Head	1g	8.49	84.9	81.20	4.56	16
				10g	2.41	24.1	22.90	5.24	

9. Conducted Output Power Measurements

9.1. GSM

Per KDB 941225 D01 3G SAR Procedures:

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

GSM850 Ant.A Measured Results

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)			
					DSI = 0, 1			
					Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM (Voice)	CS1	1	128	824.2	31.84	22.81	33.0	24.0
			190	836.6	31.97	22.94		
			251	848.8	31.91	22.88		
GPRS (GMSK)	CS1	1	128	824.2	31.84	22.81	33.0	24.0
			190	836.6	31.90	22.87		
			251	848.8	31.80	22.77		
		2	128	824.2	30.60	24.58	32.5	26.5
			190	836.6	30.64	24.62		
			251	848.8	30.63	24.61		
		3	128	824.2	28.87	24.61	30.5	26.2
			190	836.6	28.80	24.54		
			251	848.8	28.78	24.52		
		4	128	824.2	27.00	23.99	28.5	25.5
			190	836.6	27.09	24.08		
			251	848.8	27.09	24.08		
EGPRS (8PSK)	MCS5	1	128	824.2	26.43	17.40	28.0	19.0
			190	836.6	26.93	17.90		
			251	848.8	26.94	17.91		
		2	128	824.2	24.76	18.74	26.0	20.0
			190	836.6	25.62	19.60		
			251	848.8	25.51	19.49		
		3	128	824.2	23.87	19.61	25.5	21.2
			190	836.6	24.74	20.48		
			251	848.8	24.64	20.38		
		4	128	824.2	23.44	20.43	25.5	22.5
			190	836.6	24.31	21.30		
			251	848.8	24.22	21.21		

Notes:

The worst-case configuration and mode for SAR testing is determined to be as follows:

- GMSK (GPRS) mode with 2 time slots for DSI=0,1, based on the Tune-up Procedure. Refer to §6.3.
- SAR is not required for EGPRS (8PSK) mode because the maximum output power and tune-up limit is ≤ 1/4dB higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is ≤ 1.2W/kg.

GSM850_Ant.E Measured Results

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)							
					DSI = 0				DSI = 1			
					Measured		Tune-up Limit		Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM (Voice)	CS1	1	128	824.2	32.24	23.21	33.0	24.0	30.76	21.73	32.0	23.0
			190	836.6	32.49	23.46			31.55	22.52		
			251	848.8	32.42	23.39			31.07	22.04		
GPRS (GMSK)	CS1	1	128	824.2	32.38	23.35	33.0	24.0	31.28	22.25	32.0	23.0
			190	836.6	32.63	23.60			31.48	22.45		
			251	848.8	32.26	23.23			31.45	22.42		
		2	128	824.2	31.07	25.05	32.5	26.5	28.46	22.44	29.0	23.0
			190	836.6	31.24	25.22			28.53	22.51		
			251	848.8	31.19	25.17			28.51	22.49		
		3	128	824.2	29.32	25.06	30.5	26.2	25.89	21.63	27.2	22.9
			190	836.6	29.31	25.05			26.69	22.43		
			251	848.8	29.30	25.04			26.65	22.39		
		4	128	824.2	27.60	24.59	28.5	25.5	23.75	20.74	26.0	23.0
			190	836.6	27.66	24.65			24.90	21.89		
			251	848.8	27.64	24.63			24.89	21.88		
EGPRS (8PSK)	MCS5	1	128	824.2	26.88	17.85	28.0	19.0	26.86	17.83	28.0	19.0
			190	836.6	27.51	18.48			27.46	18.43		
			251	848.8	27.49	18.46			27.42	18.39		
		2	128	824.2	25.21	19.19	26.0	20.0	25.07	19.05	26.0	20.0
			190	836.6	25.98	19.96			25.95	19.93		
			251	848.8	25.78	19.76			25.88	19.86		
		3	128	824.2	24.32	20.06	25.5	21.2	24.17	19.91	25.5	21.2
			190	836.6	25.20	20.94			25.07	20.81		
			251	848.8	25.28	21.02			25.15	20.89		
		4	128	824.2	23.90	20.89	25.5	22.5	23.77	20.76	25.5	22.5
			190	836.6	24.76	21.75			24.66	21.65		
			251	848.8	24.85	21.84			24.75	21.74		

Notes:

The worst-case configuration and mode for SAR testing is determined to be as follows:

- GMSK (GPRS) mode with 2 time slots for DSI=0, based on the Tune-up Procedure. Refer to §6.3.
- GMSK (GPRS) mode with 4 time slots for DSI=1, based on the Tune-up Procedure. Refer to §6.3.
- SAR is not required for EGPRS (8PSK) mode because the maximum output power and tune-up limit is ≤ 1/4dB higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is ≤ 1.2W/kg.

GSM1900 Measured Results

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)				Maximum Allowed Average Power (dBm)			
					DSI 1				DSI = 0			
					Measured		Tune-up Limit		Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM (Voice)	CS1	1	512	1850.2	28.89	19.70	30.0	21.0	28.36	19.17	29.0	20.0
			661	1880.0	29.35	20.16			28.13	18.94		
			810	1909.8	28.98	19.79			27.92	18.73		
GPRS (GMSK)	CS1	1	512	1850.2	28.90	19.71	30.0	21.0	28.30	19.11	29.0	20.0
			661	1880.0	29.26	20.07			28.05	18.86		
			810	1909.8	29.03	19.84			27.82	18.63		
		2	512	1850.2	27.59	21.41	29.0	23.0	24.74	18.56	26.0	20.0
			661	1880.0	28.03	21.85			24.89	18.71		
			810	1909.8	27.84	21.66			24.64	18.46		
		3	512	1850.2	26.31	21.89	27.5	23.2	22.79	18.37	24.2	19.9
			661	1880.0	26.04	21.62			23.48	19.06		
			810	1909.8	25.20	20.78			23.42	19.00		
		4	512	1850.2	24.33	21.16	25.5	22.5	21.27	18.10	23.0	20.0
			661	1880.0	24.61	21.44			21.99	18.82		
			810	1909.8	24.53	21.36			21.88	18.71		
EGPRS (8PSK)	MCS5	1	512	1850.2	25.28	16.09	27.0	18.0	25.23	16.04	27.0	18.0
			661	1880.0	25.78	16.59			25.62	16.43		
			810	1909.8	25.61	16.42			25.45	16.26		
		2	512	1850.2	24.09	17.91	25.0	19.0	24.01	17.83	25.0	19.0
			661	1880.0	24.73	18.55			24.13	17.95		
			810	1909.8	24.55	18.37			23.94	17.76		
		3	512	1850.2	23.28	18.86	24.5	20.2	22.90	18.48	24.2	19.9
			661	1880.0	23.97	19.55			23.30	18.88		
			810	1909.8	23.76	19.34			23.22	18.80		
		4	512	1850.2	22.93	19.76	24.5	21.5	21.48	18.31	23.0	20.0
			661	1880.0	23.65	20.48			21.89	18.72		
			810	1909.8	23.48	20.31			21.83	18.66		

Notes:

The worst-case configuration and mode for SAR testing is determined to be as follows:

- GMSK (GPRS) mode with 4 time slots for DSI=0, based on the Tune-up Procedure. Refer to §6.3.
- GMSK (GPRS) mode with 3 time slots for DSI=1, based on the Tune-up Procedure. Refer to §6.3.
- SAR is not required for EGPRS (8PSK) mode because the maximum output power and tune-up limit is ≤ 1/4dB higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is ≤ 1.2W/kg.

9.2. W-CDMA

Release 99 Setup Procedures used to establish the test signals

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 2
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	βc/βd	8/15

HSDPA Setup Procedures used to establish the test signals

The following 4 Sub-tests were completed according to Release 5 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set 1			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	11/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	βc/βd	2/15	11/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR (dB)	0	0	0.5	0.5
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs=βhs/βc	30/15			

HSPA (HSDPA & HSUPA) Setup Procedures used to establish the test signals

The following 5 Sub-tests were completed according to Release 6 procedures in table C,11.1.3 of 3GPP TS 34.121-1 v13.
A summary of these settings are illustrated below:

	Mode	HSPA				
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2 kbps RMC				
	HSDPA FRC	H-Set 1				
	HSUPA Test	HSPA				
	Power Control Algorithm	Algorithm 2				Algorithm 1
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	0
	βec	209/225	12/15	30/15	2/15	5/15
	βc/βd	11/15	6/15	15/9	2/15	-
	βhs	22/15	12/15	30/15	4/15	5/15
	βed	1309/225	94/75	47/15	56/75	47/15
	CM (dB)	1	3	2	3	1
	MPR (dB)	0	2	1	2	0
HSDPA Specific Settings	DACK	8				0
	DNAK	8				0
	DCQI	8				0
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = βhs/βc	30/15				
HSUPA Specific Settings	E-DPDCH	6	8	8	5	0
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	12
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	67
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E-TFCIs	5	5	2	5	1
	Reference E-TFCI	11	11	11	11	67
	Reference E-TFCI PO	4	4	4	4	18
	Reference E-TFCI	67	67	92	67	67
	Reference E-TFCI PO	18	18	18	18	18
	Reference E-TFCI	71	71	71	71	71
	Reference E-TFCI PO	23	23	23	23	23
	Reference E-TFCI	75	75	75	75	75
	Reference E-TFCI PO	26	26	26	26	26
	Reference E-TFCI	81	81	81	81	81
	Reference E-TFCI PO	27	27	27	27	27
	Maximum Channelization Codes	2xSF2				SF4

DC-HSDPA Setup Procedures used to establish the test signals

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS34.108 v9.5.0. A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Table E.5.0: Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH _Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13

The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

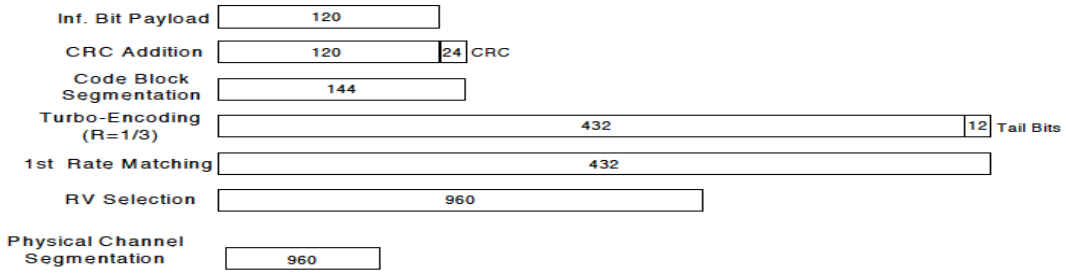


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 8 procedures in section 5.2 of 3GPP TS34.121. A summary of subtest settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set 12			
	Power Control Algorithm	Algorithm2			
	βc	2/15	11/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	βd (SF)	64			
	βc/βd	2/15	11/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR (dB)	0	0	0.5	0.5
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack Repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	Ahs = βhs/ βc	30/15			

HSPA+

HSPA+ is only supported to down link. Therefore, the RF conducted power is not measured.

W-CDMA Band V_Ant.A Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)		
				Pmax = Plimit		
				Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	4132	826.4	23.65	N/A	25.0
		4183	836.6	23.64		
		4233	846.6	23.70		
HSDPA	Subtest 1	4132	826.4	22.65	0	24.0
		4183	836.6	22.67		
		4233	846.6	22.70		
	Subtest 2	4132	826.4	22.65	0	24.0
		4183	836.6	22.66		
		4233	846.6	22.68		
	Subtest 3	4132	826.4	22.15	0.5	23.5
		4183	836.6	22.14		
		4233	846.6	22.17		
	Subtest 4	4132	826.4	22.15	0.5	23.5
		4183	836.6	22.12		
		4233	846.6	22.19		
HSUPA	Subtest 1	4132	826.4	21.51	0	24.0
		4183	836.6	21.64		
		4233	846.6	21.66		
	Subtest 2	4132	826.4	19.91	2	22.0
		4183	836.6	20.77		
		4233	846.6	19.85		
	Subtest 3	4132	826.4	21.62	1	23.0
		4183	836.6	21.11		
		4233	846.6	21.25		
	Subtest 4	4132	826.4	21.74	2	22.0
		4183	836.6	21.66		
		4233	846.6	21.70		
	Subtest 5	4132	826.4	22.60	0	24.0
		4183	836.6	22.67		
		4233	846.6	22.63		

W-CDMA Band V_Ant.E_Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)			Maximum Allowed Average Power (dBm)		
				DSI 0			DSI = 1		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	4132	826.4	24.38	N/A	25.0	22.63	N/A	23.0
		4183	836.6	24.34			22.64		
		4233	846.6	24.41			22.67		
HSDPA	Subtest 1	4132	826.4	23.34	0	24.0	21.63	0	22.0
		4183	836.6	23.35			21.64		
		4233	846.6	23.39			21.64		
	Subtest 2	4132	826.4	23.36	0	24.0	21.64	0	22.0
		4183	836.6	23.35			21.64		
		4233	846.6	23.36			21.67		
	Subtest 3	4132	826.4	22.84	0.5	23.5	21.13	0.5	21.5
		4183	836.6	22.76			21.14		
		4233	846.6	22.91			21.22		
	Subtest 4	4132	826.4	22.84	0.5	23.5	21.12	0.5	21.5
		4183	836.6	22.78			21.13		
		4233	846.6	22.89			21.21		
HSUPA	Subtest 1	4132	826.4	21.91	0	24.0	21.07	0	22.0
		4183	836.6	21.87			21.14		
		4233	846.6	21.56			21.15		
	Subtest 2	4132	826.4	21.86	2	22.0	19.30	2	20.0
		4183	836.6	21.80			19.81		
		4233	846.6	21.50			19.46		
	Subtest 3	4132	826.4	21.76	1	23.0	20.12	1	21.0
		4183	836.6	22.44			20.11		
		4233	846.6	21.80			20.18		
	Subtest 4	4132	826.4	21.24	2	22.0	19.53	2	20.0
		4183	836.6	21.31			19.60		
		4233	846.6	21.30			19.60		
	Subtest 5	4132	826.4	23.23	0	24.0	21.57	0	22.0
		4183	836.6	23.34			21.61		
		4233	846.6	23.33			21.63		

9.3. LTE

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3

Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
256 QAM	≥ 1						≤ 5

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”.

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (subclause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	N/A

Maximum Output Power (Tune-up Limit) for LTE

According to April 2015 TCB workshop, SAR test exclusion can be applied for testing overlapping LTE bands as follows:

a) The maximum output power, including tolerance, for the smaller band must be ≤ the larger band to qualify for the SAR test exclusion.
b) The channel bandwidth and other operating parameters for the smaller band must be fully supported by the larger band.
   - LTE Band 4 (1710 – 1755 MHz) is covered by LTE Band 66 (1710 – 1780 MHz)

Maximum bandwidth does not support at least three non-overlapping channels in certain channel bandwidths.

When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices.

LTE QPSK configuration has the highest maximum average output power per 3GPP standard.

SAR measurement is not required for Higher order modulations. When the highest maximum output power for Higher order modulations are ≤ 0.5 dB higher than the QPSK or when the reported SAR for QPSK configuration is ≤ 1.45 W/kg.

LTE Band 5_Ant A Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)			MPR	Tune-up Limit
				DSI = 0, 1				
				Measured Pwr (dBm)				
				[redacted]	20525	[redacted]		
					836.5 MHz			
10 MHz	QPSK	1	0		**24.05**		0.0	25.0
		1	25		24.01		0.0	25.0
		1	49		23.87		0.0	25.0
		25	0		22.97		1.0	24.0
		25	12		**23.07**		1.0	24.0
		25	25		22.95		1.0	24.0
		50	0		22.93		1.0	24.0
	16QAM	1	0		23.40		1.0	24.0
		1	25		23.33		1.0	24.0
		1	49		23.19		1.0	24.0
		25	0		22.00		2.0	23.0
		25	12		21.99		2.0	23.0
		25	25		21.99		2.0	23.0
		50	0		21.95		2.0	23.0
	64QAM	1	0		22.18		2.0	23.0
		1	25		22.24		2.0	23.0
		1	49		22.13		2.0	23.0
		25	0		21.01		3.0	22.0
		25	12		21.00		3.0	22.0
		25	25		21.05		3.0	22.0
		50	0		20.98		3.0	22.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20425	20525	20625		
				826.5 MHz	836.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	24.06	24.05	23.74	0.0	25.0
		1	12	23.98	24.00	23.56	0.0	25.0
		1	24	24.00	23.98	23.26	0.0	25.0
		12	0	22.67	22.99	22.94	1.0	24.0
		12	7	22.88	22.95	22.97	1.0	24.0
		12	13	22.97	22.99	23.03	1.0	24.0
		25	0	22.66	22.93	22.95	1.0	24.0
	16QAM	1	0	23.40	23.39	23.15	1.0	24.0
		1	12	23.38	23.36	23.00	1.0	24.0
		1	24	23.40	23.33	22.71	1.0	24.0
		12	0	21.83	22.04	21.98	2.0	23.0
		12	7	22.02	22.01	22.02	2.0	23.0
		12	13	22.06	22.04	22.05	2.0	23.0
		25	0	21.87	21.94	21.93	2.0	23.0
	64QAM	1	0	22.26	22.28	22.26	2.0	23.0
		1	12	22.28	22.25	22.15	2.0	23.0
		1	24	22.28	22.19	21.81	2.0	23.0
		12	0	20.73	20.94	21.04	3.0	22.0
		12	7	21.11	20.90	21.05	3.0	22.0
		12	13	21.05	20.94	21.09	3.0	22.0
		25	0	21.09	20.99	20.98	3.0	22.0

LTE Band 5_Ant A Measured Results_(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20415	20525	20635		
				825.5 MHz	836.5 MHz	847.5 MHz		
3 MHz	QPSK	1	0	23.93	23.93	23.75	0.0	25.0
		1	8	23.98	23.94	23.58	0.0	25.0
		1	14	23.90	23.87	23.31	0.0	25.0
		8	0	22.72	22.94	22.93	1.0	24.0
		8	4	22.82	22.92	23.04	1.0	24.0
		8	7	22.84	22.99	23.03	1.0	24.0
		15	0	22.68	22.93	23.04	1.0	24.0
	16QAM	1	0	23.24	23.42	23.03	1.0	24.0
		1	8	23.35	23.39	22.92	1.0	24.0
		1	14	23.22	23.31	22.64	1.0	24.0
		8	0	21.79	22.01	22.01	2.0	23.0
		8	4	21.90	22.00	22.07	2.0	23.0
		8	7	21.97	22.05	22.10	2.0	23.0
		15	0	21.86	21.98	22.04	2.0	23.0
	64QAM	1	0	22.26	22.16	21.90	2.0	23.0
		1	8	22.29	22.23	21.78	2.0	23.0
		1	14	22.21	22.15	21.50	2.0	23.0
		8	0	20.72	20.99	20.96	3.0	22.0
		8	4	21.04	21.00	21.05	3.0	22.0
		8	7	21.10	21.03	21.06	3.0	22.0
		15	0	21.07	20.99	21.09	3.0	22.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20407	20525	20643		
				824.7 MHz	836.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	23.96	23.88	23.60	0.0	25.0
		1	3	24.01	23.88	23.53	0.0	25.0
		1	5	24.03	23.93	23.41	0.0	25.0
		3	0	23.50	23.87	23.94	0.0	25.0
		3	1	23.47	23.86	23.89	0.0	25.0
		3	3	23.57	23.86	23.89	0.0	25.0
		6	0	22.64	22.83	22.93	1.0	24.0
	16QAM	1	0	23.40	23.28	22.77	1.0	24.0
		1	3	23.31	23.30	22.75	1.0	24.0
		1	5	23.41	23.29	22.67	1.0	24.0
		3	0	22.66	23.07	23.09	1.0	24.0
		3	1	22.74	23.03	23.08	1.0	24.0
		3	3	22.80	23.06	23.05	1.0	24.0
		6	0	21.80	21.92	22.08	2.0	23.0
	64QAM	1	0	22.29	22.28	21.69	2.0	23.0
		1	3	22.32	22.26	21.64	2.0	23.0
		1	5	22.28	22.31	21.50	2.0	23.0
		3	0	21.88	22.09	22.14	2.0	23.0
		3	1	21.91	22.09	22.09	2.0	23.0
		3	3	21.92	22.08	22.14	2.0	23.0
		6	0	20.97	21.01	20.97	3.0	22.0

LTE Band 5_Ant E Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)					Maximum Allowed Average Power (dBm)				
				DSI = 0					DSI = 1				
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					20525					20525			
					836.5 MHz					836.5 MHz			
10 MHz	QPSK	1	0		**24.74**		0.0	25.0		22.37		0.0	23.0
		1	25		24.70		0.0	25.0		22.36		0.0	23.0
		1	49		24.62		0.0	25.0		22.26		0.0	23.0
		25	0		23.66		1.0	24.0		22.39		0.0	23.0
		25	12		23.67		1.0	24.0		22.34		0.0	23.0
		25	25		23.60		1.0	24.0		22.34		0.0	23.0
		50	0		23.59		1.0	24.0		22.32		0.0	23.0
	16QAM	1	0		23.98		1.0	24.0		22.66		0.0	23.0
		1	25		23.99		1.0	24.0		22.68		0.0	23.0
		1	49		23.90		1.0	24.0		22.62		0.0	23.0
		25	0		22.65		2.0	23.0		22.36		0.0	23.0
		25	12		22.65		2.0	23.0		22.38		0.0	23.0
		25	25		22.65		2.0	23.0		22.40		0.0	23.0
		50	0		22.63		2.0	23.0		22.36		0.0	23.0
	64QAM	1	0		22.97		2.0	23.0		22.60		0.0	23.0
		1	25		22.95		2.0	23.0		22.62		0.0	23.0
		1	49		22.87		2.0	23.0		22.50		0.0	23.0
		25	0		21.68		3.0	22.0		21.65		0.0	23.0
		25	12		21.69		3.0	22.0		21.59		0.0	23.0
		25	25		21.69		3.0	22.0		21.63		0.0	23.0
		50	0		21.63		3.0	22.0		21.58		0.0	23.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				20425	20525	20625			20425	20525	20625		
				826.5 MHz	836.5 MHz	846.5 MHz			826.5 MHz	836.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	24.37	24.34	23.80	0.0	25.0	22.02	22.10	22.04	0.0	23.0
		1	12	24.30	24.30	23.64	0.0	25.0	22.01	22.04	22.05	0.0	23.0
		1	24	24.31	24.30	23.49	0.0	25.0	22.00	22.04	22.08	0.0	23.0
		12	0	23.08	23.27	23.30	1.0	24.0	22.16	22.06	22.04	0.0	23.0
		12	7	23.32	23.27	23.31	1.0	24.0	22.16	22.03	22.05	0.0	23.0
		12	13	23.34	23.30	23.36	1.0	24.0	22.11	22.06	22.09	0.0	23.0
		25	0	23.08	23.19	23.27	1.0	24.0	22.11	22.00	22.02	0.0	23.0
	16QAM	1	0	23.66	23.74	23.25	1.0	24.0	22.42	22.46	22.48	0.0	23.0
		1	12	23.68	23.63	23.00	1.0	24.0	22.44	22.43	22.35	0.0	23.0
		1	24	23.69	23.62	22.89	1.0	24.0	22.47	22.35	22.45	0.0	23.0
		12	0	22.14	22.33	22.36	2.0	23.0	22.16	22.08	22.08	0.0	23.0
		12	7	22.38	22.29	22.36	2.0	23.0	22.18	22.12	22.10	0.0	23.0
		12	13	22.36	22.33	22.41	2.0	23.0	22.15	22.10	22.13	0.0	23.0
		25	0	22.27	22.32	22.30	2.0	23.0	22.16	22.05	22.04	0.0	23.0
	64QAM	1	0	22.54	22.56	22.33	2.0	23.0	22.32	22.37	22.26	0.0	23.0
		1	12	22.54	22.58	22.15	2.0	23.0	22.27	22.31	22.09	0.0	23.0
		1	24	22.49	22.49	21.96	2.0	23.0	22.28	22.33	21.86	0.0	23.0
		12	0	21.18	21.36	21.21	3.0	22.0	21.46	21.34	21.36	0.0	23.0
		12	7	21.43	21.34	21.19	3.0	22.0	21.45	21.33	21.39	0.0	23.0
		12	13	21.40	21.36	21.24	3.0	22.0	21.46	21.34	21.43	0.0	23.0
		25	0	21.39	21.26	21.31	3.0	22.0	21.39	21.27	21.30	0.0	23.0

LTE Band 5_Ant E Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				20415	20525	20635			20415	20525	20635		
				825.5 MHz	836.5 MHz	847.5 MHz			825.5 MHz	836.5 MHz	847.5 MHz		
3 MHz	QPSK	1	0	24.24	24.27	23.70	0.0	25.0	22.05	22.07	21.96	0.0	23.0
		1	8	24.30	24.28	23.60	0.0	25.0	22.08	22.03	22.07	0.0	23.0
		1	14	24.30	24.20	23.43	0.0	25.0	21.97	21.96	22.00	0.0	23.0
		8	0	23.00	23.26	23.28	1.0	24.0	22.09	22.00	22.01	0.0	23.0
		8	4	23.12	23.25	23.34	1.0	24.0	22.10	22.01	22.09	0.0	23.0
		8	7	23.23	23.32	23.34	1.0	24.0	22.10	22.07	22.06	0.0	23.0
		15	0	23.03	23.24	23.33	1.0	24.0	22.06	21.99	22.06	0.0	23.0
	16QAM	1	0	23.53	23.68	23.00	1.0	24.0	22.36	22.35	22.39	0.0	23.0
		1	8	23.66	23.68	22.93	1.0	24.0	22.40	22.30	22.38	0.0	23.0
		1	14	23.59	23.66	22.77	1.0	24.0	22.34	22.29	22.48	0.0	23.0
		8	0	22.05	22.33	22.33	2.0	23.0	22.13	22.06	22.10	0.0	23.0
		8	4	22.27	22.34	22.41	2.0	23.0	22.19	22.05	22.19	0.0	23.0
		8	7	22.34	22.38	22.41	2.0	23.0	22.17	22.15	22.19	0.0	23.0
		15	0	22.23	22.28	22.40	2.0	23.0	22.13	22.04	22.11	0.0	23.0
	64QAM	1	0	22.58	22.51	21.93	2.0	23.0	22.25	22.38	22.08	0.0	23.0
		1	8	22.63	22.54	21.94	2.0	23.0	22.40	22.36	21.94	0.0	23.0
		1	14	22.55	22.50	21.74	2.0	23.0	22.38	22.33	21.75	0.0	23.0
		8	0	21.18	21.30	21.33	3.0	22.0	21.21	21.30	21.33	0.0	23.0
		8	4	21.30	21.28	21.42	3.0	22.0	21.38	21.30	21.43	0.0	23.0
		8	7	21.35	21.35	21.41	3.0	22.0	21.47	21.38	21.41	0.0	23.0
		15	0	21.38	21.29	21.38	3.0	22.0	21.54	21.29	21.38	0.0	23.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				20407	20525	20643			20407	20525	20643		
				824.7 MHz	836.5 MHz	848.3 MHz			824.7 MHz	836.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	24.23	24.23	23.50	0.0	25.0	22.05	21.98	21.99	0.0	23.0
		1	3	24.22	24.21	23.47	0.0	25.0	22.01	21.95	21.98	0.0	23.0
		1	5	24.26	24.25	23.39	0.0	25.0	22.03	21.97	22.03	0.0	23.0
		3	0	23.66	24.16	24.28	0.0	25.0	21.98	21.95	22.01	0.0	23.0
		3	1	23.75	24.18	24.25	0.0	25.0	22.00	21.87	21.97	0.0	23.0
		3	3	23.88	24.19	24.23	0.0	25.0	21.92	21.92	21.98	0.0	23.0
		6	0	22.81	23.15	23.29	1.0	24.0	22.05	21.90	22.03	0.0	23.0
	16QAM	1	0	23.49	23.59	22.66	1.0	24.0	22.35	22.17	22.36	0.0	23.0
		1	3	23.45	23.68	22.70	1.0	24.0	22.31	22.17	22.29	0.0	23.0
		1	5	23.52	23.62	22.57	1.0	24.0	22.29	22.18	22.34	0.0	23.0
		3	0	22.88	23.38	23.42	1.0	24.0	22.13	22.05	22.17	0.0	23.0
		3	1	22.98	23.41	23.44	1.0	24.0	22.17	22.06	22.17	0.0	23.0
		3	3	23.05	23.35	23.36	1.0	24.0	22.17	22.07	22.15	0.0	23.0
		6	0	21.98	22.22	22.39	2.0	23.0	22.07	22.00	22.07	0.0	23.0
	64QAM	1	0	22.55	22.41	21.94	2.0	23.0	22.37	22.39	22.44	0.0	23.0
		1	3	22.60	22.42	21.95	2.0	23.0	22.39	22.42	22.50	0.0	23.0
		1	5	22.56	22.40	21.87	2.0	23.0	22.33	22.36	22.46	0.0	23.0
		3	0	22.13	22.35	22.37	2.0	23.0	22.28	22.26	22.38	0.0	23.0
		3	1	22.18	22.35	22.36	2.0	23.0	22.29	22.23	22.44	0.0	23.0
		3	3	22.24	22.35	22.38	2.0	23.0	22.29	22.30	22.34	0.0	23.0
		6	0	21.17	21.27	21.43	3.0	22.0	22.14	22.24	22.30	0.0	23.0

LTE Band 12_Ant A Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)			MPR	Tune-up Limit
				DSI = 0, 1				
				Measured Pwr (dBm)				
				[redacted]	23095	[redacted]		
					707.5 MHz			
10 MHz	QPSK	1	0		22.99		0.0	24.0
		1	25		22.98		0.0	24.0
		1	49		23.01		0.0	24.0
		25	0		22.01		1.0	23.0
		25	12		21.99		1.0	23.0
		25	25		22.07		1.0	23.0
		50	0		21.97		1.0	23.0
	16QAM	1	0		22.43		1.0	23.0
		1	25		22.41		1.0	23.0
		1	49		22.32		1.0	23.0
		25	0		21.06		2.0	22.0
		25	12		21.04		2.0	22.0
		25	25		21.11		2.0	22.0
		50	0		21.00		2.0	22.0
	64QAM	1	0		21.33		2.0	22.0
		1	25		21.33		2.0	22.0
		1	49		21.20		2.0	22.0
		25	0		20.00		3.0	21.0
		25	12		20.02		3.0	21.0
		25	25		20.05		3.0	21.0
		50	0		20.00		3.0	21.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23035	23095	23155		
				701.5 MHz	707.5 MHz	713.5 MHz		
5 MHz	QPSK	1	0	22.99	23.04	23.14	0.0	24.0
		1	12	23.04	23.08	23.10	0.0	24.0
		1	24	22.97	23.01	23.04	0.0	24.0
		12	0	22.01	22.02	21.98	1.0	23.0
		12	7	22.15	22.07	22.02	1.0	23.0
		12	13	22.09	22.08	22.05	1.0	23.0
		25	0	22.04	21.99	21.96	1.0	23.0
	16QAM	1	0	22.43	22.35	22.39	1.0	23.0
		1	12	22.52	22.46	22.42	1.0	23.0
		1	24	22.33	22.29	22.43	1.0	23.0
		12	0	21.13	21.04	21.04	2.0	22.0
		12	7	21.24	21.08	21.08	2.0	22.0
		12	13	21.20	21.10	21.10	2.0	22.0
		25	0	21.10	21.00	21.00	2.0	22.0
	64QAM	1	0	21.32	21.20	21.39	2.0	22.0
		1	12	21.37	21.32	21.45	2.0	22.0
		1	24	21.25	21.17	21.29	2.0	22.0
		12	0	20.20	19.99	20.01	3.0	21.0
		12	7	20.31	20.02	20.04	3.0	21.0
		12	13	20.25	20.02	20.05	3.0	21.0
		25	0	20.13	20.02	20.00	3.0	21.0

LTE Band 12_Ant A Measured Results_(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23025	23095	23165		
				700.5 MHz	707.5 MHz	714.5 MHz		
3 MHz	QPSK	1	0	23.02	22.93	22.98	0.0	24.0
		1	8	23.13	23.10	23.09	0.0	24.0
		1	14	22.99	22.90	22.94	0.0	24.0
		8	0	22.11	22.02	22.02	1.0	23.0
		8	4	22.13	22.03	22.09	1.0	23.0
		8	7	22.13	22.09	22.06	1.0	23.0
		15	0	22.10	22.00	22.04	1.0	23.0
	16QAM	1	0	22.32	22.36	22.33	1.0	23.0
		1	8	22.49	22.48	22.44	1.0	23.0
		1	14	22.32	22.35	22.31	1.0	23.0
		8	0	21.16	21.10	21.05	2.0	22.0
		8	4	21.18	21.09	21.13	2.0	22.0
		8	7	21.13	21.15	21.21	2.0	22.0
		15	0	21.13	21.02	21.08	2.0	22.0
	64QAM	1	0	21.27	21.18	21.13	2.0	22.0
		1	8	21.43	21.33	21.27	2.0	22.0
		1	14	21.27	21.16	21.09	2.0	22.0
		8	0	20.14	20.08	20.05	3.0	21.0
		8	4	20.15	20.11	20.18	3.0	21.0
		8	7	20.15	20.18	20.15	3.0	21.0
		15	0	20.12	20.02	20.07	3.0	21.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23017	23095	23173		
				699.7 MHz	707.5 MHz	715.3 MHz		
1.4 MHz	QPSK	1	0	22.94	22.93	22.95	0.0	24.0
		1	3	22.98	22.99	22.96	0.0	24.0
		1	5	22.97	22.93	22.93	0.0	24.0
		3	0	22.90	22.94	22.94	0.0	24.0
		3	1	22.92	22.94	22.94	0.0	24.0
		3	3	22.87	22.98	22.96	0.0	24.0
		6	0	21.95	21.91	21.95	1.0	23.0
	16QAM	1	0	22.10	22.17	22.28	1.0	23.0
		1	3	22.22	22.25	22.34	1.0	23.0
		1	5	22.12	22.18	22.31	1.0	23.0
		3	0	22.06	22.08	22.11	1.0	23.0
		3	1	22.09	22.06	22.14	1.0	23.0
		3	3	22.06	22.09	22.11	1.0	23.0
		6	0	21.08	20.99	21.02	2.0	22.0
	64QAM	1	0	21.35	21.07	21.32	2.0	22.0
		1	3	21.37	21.19	21.32	2.0	22.0
		1	5	21.27	21.08	21.26	2.0	22.0
		3	0	21.08	21.06	21.12	2.0	22.0
		3	1	21.11	21.12	21.16	2.0	22.0
		3	3	21.07	21.13	21.14	2.0	22.0
		6	0	20.16	19.99	20.05	3.0	21.0

LTE Band 12_Ant E Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				Maximum Allowed Average Power (dBm)			
				DSI = 0				DSI = 1			
				Measured Pwr (dBm)		MPR	Tune-up Limit	Measured Pwr (dBm)		MPR	Tune-up Limit
				23095				23095			
				707.5 MHz				707.5 MHz			
10 MHz	QPSK	1	0	23.45		0.0	24.0	21.84		0.0	22.5
		1	25	**23.47**		0.0	24.0	**21.90**		0.0	22.5
		1	49	23.35		0.0	24.0	21.75		0.0	22.5
		25	0	22.43		1.0	23.0	21.74		0.0	22.5
		25	12	22.43		1.0	23.0	21.78		0.0	22.5
		25	25	22.49		1.0	23.0	**21.98**		0.0	22.5
		50	0	22.40		1.0	23.0	21.76		0.0	22.5
	16QAM	1	0	22.83		1.0	23.0	22.07		0.0	22.5
		1	25	22.73		1.0	23.0	22.16		0.0	22.5
		1	49	22.71		1.0	23.0	22.11		0.0	22.5
		25	0	21.49		2.0	22.0	21.52		0.0	22.5
		25	12	21.47		2.0	22.0	21.51		0.0	22.5
		25	25	21.50		2.0	22.0	21.53		0.0	22.5
		50	0	21.40		2.0	22.0	21.48		0.0	22.5
	64QAM	1	0	21.57		2.0	22.0	21.69		0.0	22.5
		1	25	21.64		2.0	22.0	21.77		0.0	22.5
		1	49	21.61		2.0	22.0	21.69		0.0	22.5
		25	0	20.45		3.0	21.0	20.51		0.0	22.5
		25	12	20.46		3.0	21.0	20.50		0.0	22.5
		25	25	20.48		3.0	21.0	20.55		0.0	22.5
		50	0	20.41		3.0	21.0	20.48		0.0	22.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				23035	23095	23155			23035	23095	23155		
				701.5 MHz	707.5 MHz	713.5 MHz			701.5 MHz	707.5 MHz	713.5 MHz		
5 MHz	QPSK	1	0	23.07	23.15	23.13	0.0	24.0	21.33	21.42	21.44	0.0	22.5
		1	12	23.12	23.16	23.14	0.0	24.0	21.38	21.47	21.47	0.0	22.5
		1	24	23.04	23.10	23.12	0.0	24.0	21.31	21.36	21.38	0.0	22.5
		12	0	22.12	22.12	22.09	1.0	23.0	21.40	21.41	21.38	0.0	22.5
		12	7	22.22	22.13	22.10	1.0	23.0	21.46	21.44	21.38	0.0	22.5
		12	13	22.17	22.16	22.14	1.0	23.0	21.45	21.47	21.42	0.0	22.5
		25	0	22.15	22.05	22.05	1.0	23.0	21.43	21.32	21.32	0.0	22.5
	16QAM	1	0	22.49	22.45	22.56	1.0	23.0	21.86	21.76	21.86	0.0	22.5
		1	12	22.61	22.51	22.49	1.0	23.0	21.91	21.86	21.71	0.0	22.5
		1	24	22.46	22.47	22.45	1.0	23.0	21.76	21.73	21.86	0.0	22.5
		12	0	21.28	21.11	21.12	2.0	22.0	21.19	21.16	21.12	0.0	22.5
		12	7	21.42	21.12	21.12	2.0	22.0	21.26	21.18	21.15	0.0	22.5
		12	13	21.33	21.14	21.17	2.0	22.0	21.23	21.23	21.19	0.0	22.5
		25	0	21.19	21.09	21.04	2.0	22.0	21.19	21.10	21.05	0.0	22.5
	64QAM	1	0	21.39	21.36	21.33	2.0	22.0	21.42	21.39	21.36	0.0	22.5
		1	12	21.50	21.45	21.36	2.0	22.0	21.49	21.41	21.38	0.0	22.5
		1	24	21.40	21.30	21.25	2.0	22.0	21.36	21.30	21.21	0.0	22.5
		12	0	20.20	20.13	20.22	3.0	21.0	20.17	20.14	20.11	0.0	22.5
		12	7	20.32	20.15	20.21	3.0	21.0	20.30	20.19	20.11	0.0	22.5
		12	13	20.29	20.17	20.25	3.0	21.0	20.24	20.17	20.14	0.0	22.5
		25	0	20.19	20.10	20.06	3.0	21.0	20.20	20.13	20.05	0.0	22.5

LTE Band 12_Ant E Measured Results_(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				23025	23095	23165			23025	23095	23165		
				700.5 MHz	707.5 MHz	714.5 MHz			700.5 MHz	707.5 MHz	714.5 MHz		
3 MHz	QPSK	1	0	23.10	23.07	23.03	0.0	24.0	21.32	21.33	21.30	0.0	22.5
		1	8	23.19	23.19	23.12	0.0	24.0	21.43	21.45	21.46	0.0	22.5
		1	14	23.07	23.01	23.01	0.0	24.0	21.31	21.28	21.26	0.0	22.5
		8	0	22.18	22.10	22.05	1.0	23.0	21.46	21.36	21.34	0.0	22.5
		8	4	22.19	22.11	22.19	1.0	23.0	21.48	21.39	21.45	0.0	22.5
		8	7	22.19	22.18	22.18	1.0	23.0	21.48	21.44	21.41	0.0	22.5
		15	0	22.19	22.07	22.12	1.0	23.0	21.42	21.35	21.39	0.0	22.5
	16QAM	1	0	22.42	22.43	22.40	1.0	23.0	21.70	21.70	21.74	0.0	22.5
		1	8	22.54	22.51	22.55	1.0	23.0	21.81	21.75	21.86	0.0	22.5
		1	14	22.39	22.33	22.42	1.0	23.0	21.67	21.59	21.68	0.0	22.5
		8	0	21.26	21.15	21.17	2.0	22.0	21.28	21.16	21.14	0.0	22.5
		8	4	21.26	21.17	21.24	2.0	22.0	21.30	21.17	21.24	0.0	22.5
		8	7	21.26	21.25	21.25	2.0	22.0	21.30	21.24	21.26	0.0	22.5
		15	0	21.22	21.10	21.19	2.0	22.0	21.22	21.10	21.18	0.0	22.5
	64QAM	1	0	21.21	21.29	21.34	2.0	22.0	21.25	21.37	21.18	0.0	22.5
		1	8	21.40	21.45	21.49	2.0	22.0	21.35	21.52	21.40	0.0	22.5
		1	14	21.23	21.29	21.21	2.0	22.0	21.20	21.39	21.26	0.0	22.5
		8	0	20.26	20.21	20.18	3.0	21.0	20.26	20.16	20.16	0.0	22.5
		8	4	20.28	20.22	20.26	3.0	21.0	20.28	20.15	20.27	0.0	22.5
		8	7	20.29	20.27	20.23	3.0	21.0	20.28	20.24	20.25	0.0	22.5
		15	0	20.24	20.10	20.17	3.0	21.0	20.21	20.12	20.14	0.0	22.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				23017	23095	23173			23017	23095	23173		
				699.7 MHz	707.5 MHz	715.3 MHz			699.7 MHz	707.5 MHz	715.3 MHz		
1.4 MHz	QPSK	1	0	23.02	22.97	22.95	0.0	24.0	21.27	21.29	21.25	0.0	22.5
		1	3	23.06	23.02	23.00	0.0	24.0	21.31	21.34	21.27	0.0	22.5
		1	5	23.03	22.97	22.99	0.0	24.0	21.24	21.29	21.28	0.0	22.5
		3	0	23.01	22.98	22.99	0.0	24.0	21.30	21.25	21.26	0.0	22.5
		3	1	23.00	22.98	22.98	0.0	24.0	21.28	21.28	21.26	0.0	22.5
		3	3	23.01	22.98	23.02	0.0	24.0	21.27	21.28	21.29	0.0	22.5
		6	0	22.11	22.02	22.03	1.0	23.0	21.34	21.25	21.29	0.0	22.5
	16QAM	1	0	22.26	22.15	22.31	1.0	23.0	21.57	21.60	21.52	0.0	22.5
		1	3	22.36	22.20	22.37	1.0	23.0	21.52	21.71	21.55	0.0	22.5
		1	5	22.30	22.25	22.34	1.0	23.0	21.57	21.61	21.51	0.0	22.5
		3	0	22.18	22.18	22.19	1.0	23.0	21.45	21.46	21.45	0.0	22.5
		3	1	22.18	22.14	22.15	1.0	23.0	21.48	21.49	21.47	0.0	22.5
		3	3	22.12	22.18	22.18	1.0	23.0	21.49	21.50	21.50	0.0	22.5
		6	0	21.17	21.06	21.09	2.0	22.0	21.15	21.10	21.12	0.0	22.5
	64QAM	1	0	21.35	21.27	21.26	2.0	22.0	21.49	21.18	21.34	0.0	22.5
		1	3	21.35	21.36	21.23	2.0	22.0	21.47	21.29	21.43	0.0	22.5
		1	5	21.27	21.23	21.16	2.0	22.0	21.32	21.17	21.33	0.0	22.5
		3	0	21.20	21.13	21.17	2.0	22.0	21.16	21.19	21.15	0.0	22.5
		3	1	21.22	21.17	21.18	2.0	22.0	21.15	21.22	21.13	0.0	22.5
		3	3	21.21	21.23	21.18	2.0	22.0	21.16	21.22	21.13	0.0	22.5
		6	0	20.22	20.12	20.16	3.0	21.0	20.15	20.13	20.18	0.0	22.5

LTE Band 13_Ant A Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				DSI = 0, 1				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				[redacted]	23230	[redacted]		
				[redacted]	782 MHz	[redacted]		
10 MHz	QPSK	1	0	[redacted]	23.02	[redacted]	0.0	24.0
		1	25	[redacted]	**23.09**	[redacted]	0.0	24.0
		1	49	[redacted]	23.00	[redacted]	0.0	24.0
		25	0	[redacted]	22.02	[redacted]	1.0	23.0
		25	12	[redacted]	**22.05**	[redacted]	1.0	23.0
		25	25	[redacted]	22.03	[redacted]	1.0	23.0
		50	0	[redacted]	21.98	[redacted]	1.0	23.0
	16QAM	1	0	[redacted]	22.38	[redacted]	1.0	23.0
		1	25	[redacted]	22.41	[redacted]	1.0	23.0
		1	49	[redacted]	22.19	[redacted]	1.0	23.0
		25	0	[redacted]	21.03	[redacted]	2.0	22.0
		25	12	[redacted]	21.04	[redacted]	2.0	22.0
		25	25	[redacted]	21.08	[redacted]	2.0	22.0
		50	0	[redacted]	21.00	[redacted]	2.0	22.0
	64QAM	1	0	[redacted]	21.11	[redacted]	2.0	22.0
		1	25	[redacted]	21.18	[redacted]	2.0	22.0
		1	49	[redacted]	21.14	[redacted]	2.0	22.0
		25	0	[redacted]	19.78	[redacted]	3.0	21.0
		25	12	[redacted]	20.04	[redacted]	3.0	21.0
		25	25	[redacted]	20.06	[redacted]	3.0	21.0
		50	0	[redacted]	19.98	[redacted]	3.0	21.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				[redacted]	23230	[redacted]		
				[redacted]	782 MHz	[redacted]		
5 MHz	QPSK	1	0	[redacted]	23.13	[redacted]	0.0	24.0
		1	12	[redacted]	23.11	[redacted]	0.0	24.0
		1	24	[redacted]	23.07	[redacted]	0.0	24.0
		12	0	[redacted]	22.04	[redacted]	1.0	23.0
		12	7	[redacted]	22.07	[redacted]	1.0	23.0
		12	13	[redacted]	22.08	[redacted]	1.0	23.0
		25	0	[redacted]	21.99	[redacted]	1.0	23.0
	16QAM	1	0	[redacted]	22.41	[redacted]	1.0	23.0
		1	12	[redacted]	22.48	[redacted]	1.0	23.0
		1	24	[redacted]	22.39	[redacted]	1.0	23.0
		12	0	[redacted]	21.14	[redacted]	2.0	22.0
		12	7	[redacted]	21.17	[redacted]	2.0	22.0
		12	13	[redacted]	21.16	[redacted]	2.0	22.0
		25	0	[redacted]	21.06	[redacted]	2.0	22.0
	64QAM	1	0	[redacted]	21.32	[redacted]	2.0	22.0
		1	12	[redacted]	21.36	[redacted]	2.0	22.0
		1	24	[redacted]	21.28	[redacted]	2.0	22.0
		12	0	[redacted]	20.14	[redacted]	3.0	21.0
		12	7	[redacted]	20.23	[redacted]	3.0	21.0
		12	13	[redacted]	20.20	[redacted]	3.0	21.0
		25	0	[redacted]	20.02	[redacted]	3.0	21.0

LTE Band 13_Ant E Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)			
				DSI = 0, 1			
				Measured Pwr (dBm)		MPR	Tune-up Limit
				[redacted]	23230		
					782 MHz		
10 MHz	QPSK	1	0		23.62	0.0	24.0
		1	25		**23.94**	0.0	24.0
		1	49		23.49	0.0	24.0
		25	0		22.61	1.0	23.0
		25	12		**22.65**	1.0	23.0
		25	25		22.62	1.0	23.0
		50	0		22.55	1.0	23.0
	16QAM	1	0		22.85	1.0	23.0
		1	25		22.87	1.0	23.0
		1	49		22.57	1.0	23.0
		25	0		21.57	2.0	22.0
		25	12		21.61	2.0	22.0
		25	25		21.64	2.0	22.0
		50	0		21.58	2.0	22.0
	64QAM	1	0		21.70	2.0	22.0
		1	25		21.82	2.0	22.0
		1	49		21.78	2.0	22.0
		25	0		20.14	3.0	21.0
		25	12		20.65	3.0	21.0
		25	25		20.65	3.0	21.0
		50	0		20.58	3.0	21.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)		MPR	Tune-up Limit
				[redacted]	23230		
					782 MHz		
5 MHz	QPSK	1	0		23.57	0.0	24.0
		1	12		23.58	0.0	24.0
		1	24		23.58	0.0	24.0
		12	0		22.59	1.0	23.0
		12	7		22.63	1.0	23.0
		12	13		22.65	1.0	23.0
		25	0		22.56	1.0	23.0
	16QAM	1	0		22.83	1.0	23.0
		1	12		22.88	1.0	23.0
		1	24		22.94	1.0	23.0
		12	0		21.63	2.0	22.0
		12	7		21.67	2.0	22.0
		12	13		21.68	2.0	22.0
		25	0		21.59	2.0	22.0
	64QAM	1	0		21.90	2.0	22.0
		1	12		21.98	2.0	22.0
		1	24		21.88	2.0	22.0
		12	0		20.69	3.0	21.0
		12	7		20.70	3.0	21.0
		12	13		20.73	3.0	21.0
		25	0		20.56	3.0	21.0

LTE Band 41-PC3_Ant B Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)							Maximum Allowed Average Power (dBm)						
				DSI = 1							DSI = 0						
				Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
20 MHz	QPSK	1	0	24.12	24.05	24.05	**24.33**	24.13	0.0	25.0	23.35	23.46	23.28	**23.55**	23.42	0.0	24.0
		1	49	24.18	24.14	24.19	24.31	24.28	0.0	25.0	23.32	23.43	23.43	23.54	23.53	0.0	24.0
		1	99	24.07	24.16	24.16	24.28	23.96	0.0	25.0	23.35	23.42	23.35	23.47	23.41	0.0	24.0
		50	0	23.11	23.14	23.08	**23.38**	23.17	1.0	24.0	23.15	23.22	23.17	**23.41**	23.24	0.0	24.0
		50	24	23.21	23.22	23.19	23.36	23.22	1.0	24.0	23.25	23.31	23.27	23.39	23.28	0.0	24.0
		50	50	23.17	23.17	23.18	23.33	23.25	1.0	24.0	23.24	23.28	23.28	23.37	23.32	0.0	24.0
		100	0	23.16	23.17	23.15	23.31	23.16	1.0	24.0	23.22	23.25	23.22	23.46	23.22	0.0	24.0
	16QAM	1	0	23.38	23.29	23.21	23.30	23.25	1.0	24.0	23.32	23.48	23.20	23.32	23.41	0.0	24.0
		1	49	23.40	23.27	23.33	23.34	23.39	1.0	24.0	23.38	23.40	23.35	23.51	23.47	0.0	24.0
		1	99	23.37	23.24	23.30	23.27	23.12	1.0	24.0	23.28	23.41	23.28	23.38	23.26	0.0	24.0
		50	0	22.12	22.24	22.06	22.23	22.20	2.0	23.0	22.21	22.24	22.16	22.30	22.24	1.0	23.0
		50	24	22.19	22.22	22.29	22.34	22.22	2.0	23.0	22.28	22.31	22.28	22.43	22.29	1.0	23.0
		50	50	22.19	22.17	22.18	22.34	22.27	2.0	23.0	22.26	22.27	22.26	22.39	22.32	1.0	23.0
		100	0	22.17	22.15	22.26	22.30	22.17	2.0	23.0	22.26	22.28	22.22	22.36	22.23	1.0	23.0
	64QAM	1	0	22.01	22.06	22.09	22.22	22.13	2.0	23.0	22.23	22.24	22.12	22.23	22.35	1.0	23.0
		1	49	22.20	22.12	22.23	22.31	22.27	2.0	23.0	22.18	22.33	22.25	22.41	22.46	1.0	23.0
		1	99	22.16	22.02	22.24	22.26	22.07	2.0	23.0	22.19	22.39	22.21	22.30	22.28	1.0	23.0
		50	0	21.00	21.09	21.07	21.20	21.18	3.0	22.0	21.15	21.19	21.13	21.27	21.24	2.0	22.0
		50	24	21.13	21.18	21.19	21.33	21.21	3.0	22.0	21.26	21.28	21.26	21.38	21.34	2.0	22.0
		50	50	21.12	21.15	21.17	21.28	21.22	3.0	22.0	21.24	21.27	21.21	21.35	21.31	2.0	22.0
		100	0	21.09	21.17	21.14	21.27	21.14	3.0	22.0	21.24	21.23	21.24	21.35	21.21	2.0	22.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
15 MHz	QPSK	1	0	24.07	24.10	24.18	24.28	24.19	0.0	25.0	23.48	23.30	23.37	23.46	23.40	0.0	24.0
		1	37	24.08	24.14	24.25	24.35	24.29	0.0	25.0	23.51	23.42	23.47	23.66	23.52	0.0	24.0
		1	74	24.05	24.10	24.20	24.34	24.26	0.0	25.0	23.45	23.37	23.49	23.54	23.44	0.0	24.0
		36	0	23.01	23.06	23.23	23.24	23.19	1.0	24.0	23.28	23.17	23.25	23.29	23.22	0.0	24.0
		36	20	23.15	23.09	23.27	23.35	23.21	1.0	24.0	23.30	23.22	23.28	23.40	23.23	0.0	24.0
		36	39	23.13	23.14	23.22	23.34	23.27	1.0	24.0	23.26	23.26	23.25	23.39	23.29	0.0	24.0
		75	0	23.06	23.10	23.18	23.28	23.17	1.0	24.0	23.23	23.24	23.22	23.34	23.18	0.0	24.0
	16QAM	1	0	23.11	23.02	23.20	23.30	23.15	1.0	24.0	23.27	23.16	23.21	23.35	23.13	0.0	24.0
		1	37	23.15	23.13	23.29	23.34	23.19	1.0	24.0	23.33	23.18	23.30	23.54	23.25	0.0	24.0
		1	74	23.09	23.09	23.24	23.33	23.16	1.0	24.0	23.29	23.14	23.28	23.43	23.18	0.0	24.0
		36	0	22.03	22.07	22.24	22.25	22.19	2.0	23.0	22.20	22.23	22.26	22.31	22.22	1.0	23.0
		36	20	22.13	22.10	22.26	22.35	22.21	2.0	23.0	22.29	22.23	22.27	22.40	22.24	1.0	23.0
		36	39	22.14	22.15	22.24	22.34	22.28	2.0	23.0	22.26	22.27	22.26	22.37	22.28	1.0	23.0
		75	0	22.11	22.13	22.21	22.29	22.17	2.0	23.0	22.24	22.25	22.26	22.36	22.21	1.0	23.0
	64QAM	1	0	22.11	22.03	22.17	22.28	22.13	2.0	23.0	22.21	22.21	22.15	22.33	22.15	1.0	23.0
		1	37	22.17	22.11	22.34	22.44	22.21	2.0	23.0	22.25	22.25	22.30	22.38	22.25	1.0	23.0
		1	74	22.15	22.09	22.27	22.37	22.23	2.0	23.0	22.30	22.19	22.17	22.29	22.13	1.0	23.0
		36	0	21.04	21.04	21.24	21.24	21.18	3.0	22.0	21.16	21.16	21.22	21.24	21.19	2.0	22.0
		36	20	21.14	21.07	21.27	21.36	21.22	3.0	22.0	21.23	21.17	21.24	21.33	21.21	2.0	22.0
		36	39	21.14	21.13	21.24	21.34	21.26	3.0	22.0	21.23	21.20	21.23	21.32	21.23	2.0	22.0
		75	0	21.09	21.13	21.23	21.33	21.17	3.0	22.0	21.22	21.20	21.20	21.31	21.18	2.0	22.0

LTE Band 41-PC3_Ant B Measured Results_(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
10 MHz	QPSK	1	0	24.05	24.07	24.22	24.31	24.23	0.0	25.0	23.40	23.35	23.36	23.57	23.42	0.0	24.0
		1	25	24.16	24.17	24.22	24.40	24.26	0.0	25.0	23.47	23.39	23.48	23.56	23.46	0.0	24.0
		1	49	24.03	24.07	24.16	24.28	24.22	0.0	25.0	23.40	23.36	23.41	23.48	23.41	0.0	24.0
		25	0	23.11	23.06	23.24	23.32	23.20	1.0	24.0	23.34	23.19	23.27	23.39	23.21	0.0	24.0
		25	12	23.14	23.19	23.26	23.36	23.20	1.0	24.0	23.23	23.32	23.31	23.41	23.36	0.0	24.0
		25	25	23.12	23.15	23.27	23.33	23.29	1.0	24.0	23.26	23.30	23.28	23.40	23.30	0.0	24.0
		50	0	23.11	23.23	23.24	23.33	23.20	1.0	24.0	23.23	23.27	23.26	23.39	23.19	0.0	24.0
	16QAM	1	0	23.13	23.05	23.15	23.40	23.15	1.0	24.0	23.34	23.07	23.19	23.44	23.19	0.0	24.0
		1	25	23.24	23.04	23.25	23.46	23.18	1.0	24.0	23.34	23.23	23.31	23.43	23.22	0.0	24.0
		1	49	23.20	22.96	23.21	23.42	23.05	1.0	24.0	23.34	23.11	23.27	23.44	23.13	0.0	24.0
		25	0	22.15	22.11	22.23	22.34	22.21	2.0	23.0	22.24	22.20	22.27	22.40	22.20	1.0	23.0
		25	12	22.21	22.20	22.26	22.36	22.21	2.0	23.0	22.33	22.34	22.30	22.41	22.22	1.0	23.0
		25	25	22.18	22.20	22.25	22.37	22.29	2.0	23.0	22.24	22.29	22.29	22.39	22.39	1.0	23.0
		50	0	22.14	22.18	22.23	22.38	22.17	2.0	23.0	22.28	22.31	22.27	22.36	22.19	1.0	23.0
	64QAM	1	0	22.18	22.04	22.21	22.34	22.21	2.0	23.0	22.32	22.04	22.14	22.24	22.20	1.0	23.0
		1	25	22.20	22.09	22.28	22.41	22.18	2.0	23.0	22.31	22.16	22.28	22.32	22.29	1.0	23.0
		1	49	22.13	22.03	22.24	22.39	22.14	2.0	23.0	22.19	22.14	22.21	22.30	22.18	1.0	23.0
		25	0	21.12	21.06	21.21	21.31	21.19	3.0	22.0	21.19	21.14	21.20	21.31	21.15	2.0	22.0
		25	12	21.15	21.20	21.27	21.36	21.25	3.0	22.0	21.18	21.24	21.25	21.33	21.19	2.0	22.0
		25	25	21.13	21.16	21.32	21.38	21.40	3.0	22.0	21.18	21.21	21.24	21.31	21.25	2.0	22.0
		50	0	21.11	21.12	21.21	21.35	21.23	3.0	22.0	21.20	21.24	21.19	21.31	21.13	2.0	22.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
5 MHz	QPSK	1	0	24.00	24.10	24.24	24.27	24.20	0.0	25.0	23.35	23.34	23.44	23.61	23.43	0.0	24.0
		1	12	24.12	24.18	24.21	24.34	24.28	0.0	25.0	23.39	23.41	23.44	23.60	23.53	0.0	24.0
		1	24	24.04	24.04	24.20	24.25	24.19	0.0	25.0	23.35	23.29	23.35	23.51	23.38	0.0	24.0
		12	0	23.10	23.06	23.25	23.33	23.22	1.0	24.0	23.15	23.17	23.24	23.38	23.22	0.0	24.0
		12	7	23.14	23.18	23.23	23.33	23.29	1.0	24.0	23.18	23.26	23.28	23.37	23.29	0.0	24.0
		12	13	23.09	23.13	23.29	23.31	23.27	1.0	24.0	23.18	23.24	23.27	23.38	23.29	0.0	24.0
		25	0	23.07	23.12	23.19	23.32	23.18	1.0	24.0	23.16	23.22	23.24	23.34	23.18	0.0	24.0
	16QAM	1	0	23.05	23.22	23.26	23.33	23.40	1.0	24.0	23.36	23.24	23.45	23.40	23.30	0.0	24.0
		1	12	23.14	23.33	23.38	23.34	23.45	1.0	24.0	23.37	23.30	23.43	23.43	23.30	0.0	24.0
		1	24	23.18	23.22	23.20	23.33	23.42	1.0	24.0	23.21	23.27	23.36	23.32	23.21	0.0	24.0
		12	0	22.09	22.07	22.17	22.43	22.17	2.0	23.0	22.10	22.34	22.30	22.43	22.17	1.0	23.0
		12	7	22.11	22.16	22.20	22.43	22.35	2.0	23.0	22.10	22.38	22.29	22.46	22.26	1.0	23.0
		12	13	22.07	22.12	22.18	22.40	22.24	2.0	23.0	22.09	22.38	22.27	22.41	22.22	1.0	23.0
		25	0	22.10	22.15	22.19	22.36	22.17	2.0	23.0	22.19	22.28	22.37	22.34	22.14	1.0	23.0
	64QAM	1	0	22.02	22.06	22.28	22.30	22.31	2.0	23.0	22.12	22.04	22.17	22.18	22.19	1.0	23.0
		1	12	22.19	22.21	22.38	22.41	22.28	2.0	23.0	22.17	22.11	22.32	22.29	22.15	1.0	23.0
		1	24	22.04	22.08	22.23	22.28	22.30	2.0	23.0	22.15	22.12	22.27	22.34	22.20	1.0	23.0
		12	0	21.10	21.12	21.21	21.31	21.22	3.0	22.0	21.16	21.17	21.13	21.16	21.14	2.0	22.0
		12	7	21.13	21.18	21.34	21.34	21.33	3.0	22.0	21.20	21.17	21.15	21.24	21.14	2.0	22.0
		12	13	21.12	21.06	21.21	21.33	21.30	3.0	22.0	21.15	21.18	21.14	21.25	21.27	2.0	22.0
		25	0	21.14	21.16	21.28	21.30	21.21	3.0	22.0	21.10	21.10	21.07	21.16	21.09	2.0	22.0

LTE Band 41-PC3_Ant F Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)							Maximum Allowed Average Power (dBm)						
				DSI = 0							DSI = 1						
				Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
20 MHz	QPSK	1	0	21.58	21.58	21.43	21.39	**21.65**	0.0	22.5	19.09	18.97	19.04	19.05	**19.13**	0.0	20.0
		1	49	21.55	21.44	21.54	21.54	21.63	0.0	22.5	19.08	18.94	19.01	19.02	19.12	0.0	20.0
		1	99	21.55	21.44	21.41	21.50	21.57	0.0	22.5	19.05	18.92	18.97	18.98	19.02	0.0	20.0
		50	0	21.58	21.46	21.47	21.48	**21.73**	0.0	22.5	19.12	18.93	19.06	19.07	**19.19**	0.0	20.0
		50	24	21.69	21.45	21.57	21.62	21.72	0.0	22.5	19.08	18.92	19.01	18.99	19.17	0.0	20.0
		50	50	21.64	21.49	21.56	21.59	21.68	0.0	22.5	19.11	18.96	19.01	19.05	19.16	0.0	20.0
		100	0	21.62	21.42	21.55	21.57	21.66	0.0	22.5	19.07	18.89	19.00	19.02	19.13	0.0	20.0
	16QAM	1	0	21.81	21.60	21.50	21.69	21.63	0.0	22.5	19.12	19.12	19.10	19.05	19.14	0.0	20.0
		1	49	21.83	21.53	21.62	21.77	21.72	0.0	22.5	19.37	19.07	19.24	19.10	19.24	0.0	20.0
		1	99	21.78	21.71	21.48	21.69	21.64	0.0	22.5	19.15	19.04	19.12	19.05	19.09	0.0	20.0
		50	0	21.61	21.47	21.48	21.48	21.62	0.0	22.5	19.04	18.93	18.95	18.97	19.09	0.0	20.0
		50	24	21.68	21.48	21.60	21.60	21.74	0.0	22.5	19.12	18.92	19.07	19.07	19.18	0.0	20.0
		50	50	21.66	21.50	21.56	21.58	21.70	0.0	22.5	19.10	18.97	19.00	19.04	19.15	0.0	20.0
		100	0	21.64	21.43	21.55	21.56	21.68	0.0	22.5	19.11	18.88	19.02	19.06	19.12	0.0	20.0
	64QAM	1	0	21.52	21.56	21.46	21.50	21.61	0.0	22.5	19.03	18.96	18.93	19.01	18.89	0.0	20.0
		1	49	21.56	21.58	21.47	21.63	21.81	0.0	22.5	19.09	18.86	19.03	19.06	19.08	0.0	20.0
		1	99	21.62	21.60	21.40	21.50	21.73	0.0	22.5	19.08	18.86	18.92	19.07	18.98	0.0	20.0
		50	0	21.06	20.98	20.96	20.97	21.11	0.0	22.5	19.02	18.90	18.96	18.98	19.07	0.0	20.0
		50	24	21.14	20.98	21.07	21.09	21.22	0.0	22.5	19.10	18.92	19.08	19.08	19.18	0.0	20.0
		50	50	21.14	21.02	21.06	21.05	21.17	0.0	22.5	19.08	18.97	19.04	19.06	19.15	0.0	20.0
		100	0	21.11	20.96	21.01	21.05	21.22	0.0	22.5	19.02	18.92	19.06	19.03	19.14	0.0	20.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
15 MHz	QPSK	1	0	21.53	21.39	21.49	21.51	21.65	0.0	22.5	19.06	18.88	18.94	18.88	19.10	0.0	20.0
		1	37	21.58	21.48	21.56	21.58	21.65	0.0	22.5	19.08	18.95	19.06	19.07	19.17	0.0	20.0
		1	74	21.55	21.43	21.50	21.54	21.61	0.0	22.5	19.05	18.90	19.02	18.99	19.10	0.0	20.0
		36	0	21.56	21.43	21.50	21.48	21.60	0.0	22.5	18.99	18.88	18.93	18.93	19.06	0.0	20.0
		36	20	21.64	21.45	21.59	21.62	21.71	0.0	22.5	19.10	18.87	19.05	19.03	19.17	0.0	20.0
		36	39	21.63	21.51	21.56	21.58	21.68	0.0	22.5	19.08	18.93	19.01	19.00	19.15	0.0	20.0
		75	0	21.59	21.38	21.55	21.54	21.65	0.0	22.5	19.01	18.83	18.98	18.99	19.10	0.0	20.0
	16QAM	1	0	21.55	21.41	21.55	21.45	21.54	0.0	22.5	18.91	18.89	18.95	18.87	19.01	0.0	20.0
		1	37	21.51	21.47	21.62	21.65	21.71	0.0	22.5	19.01	18.87	19.04	18.98	19.03	0.0	20.0
		1	74	21.56	21.39	21.58	21.55	21.68	0.0	22.5	19.06	18.78	18.96	18.92	18.99	0.0	20.0
		36	0	21.57	21.45	21.51	21.52	21.65	0.0	22.5	19.01	18.87	18.96	18.94	19.08	0.0	20.0
		36	20	21.68	21.46	21.60	21.62	21.75	0.0	22.5	19.11	18.89	19.06	19.06	19.19	0.0	20.0
		36	39	21.67	21.52	21.58	21.59	21.71	0.0	22.5	19.09	18.94	19.03	19.04	19.16	0.0	20.0
		75	0	21.64	21.42	21.57	21.58	21.68	0.0	22.5	19.05	18.84	19.00	18.99	19.13	0.0	20.0
	64QAM	1	0	21.62	21.50	21.57	21.46	21.66	0.0	22.5	19.09	18.99	18.97	19.02	19.07	0.0	20.0
		1	37	21.63	21.54	21.62	21.58	21.75	0.0	22.5	19.07	18.88	19.06	19.05	19.23	0.0	20.0
		1	74	21.54	21.57	21.66	21.55	21.63	0.0	22.5	19.07	18.87	19.02	19.05	19.06	0.0	20.0
		36	0	21.03	20.96	21.02	21.01	21.14	0.0	22.5	19.02	18.87	18.97	18.99	19.04	0.0	20.0
		36	20	21.14	20.98	21.11	21.10	21.22	0.0	22.5	19.16	18.89	19.06	19.05	19.14	0.0	20.0
		36	39	21.15	21.01	21.09	21.08	21.19	0.0	22.5	19.12	18.94	19.05	19.03	19.13	0.0	20.0
		75	0	21.10	20.95	21.06	21.09	21.20	0.0	22.5	19.07	18.92	19.02	19.04	19.11	0.0	20.0

LTE Band 41-PC3_Ant F Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
10 MHz	QPSK	1	0	21.52	21.46	21.51	21.54	21.55	0.0	22.5	19.02	18.90	18.98	18.90	18.99	0.0	20.0
		1	25	21.59	21.39	21.58	21.65	21.64	0.0	22.5	19.10	18.94	19.07	19.03	19.09	0.0	20.0
		1	49	21.54	21.38	21.49	21.53	21.53	0.0	22.5	19.10	18.87	19.03	18.92	19.07	0.0	20.0
		25	0	21.53	21.43	21.50	21.52	21.59	0.0	22.5	18.99	18.88	18.94	18.93	19.03	0.0	20.0
		25	12	21.65	21.45	21.62	21.64	21.69	0.0	22.5	19.09	18.92	19.02	19.05	19.14	0.0	20.0
		25	25	21.60	21.50	21.62	21.61	21.69	0.0	22.5	19.06	18.99	19.05	19.05	19.15	0.0	20.0
		50	0	21.62	21.42	21.59	21.59	21.68	0.0	22.5	19.06	18.89	19.01	19.02	19.11	0.0	20.0
	16QAM	1	0	21.60	21.47	21.65	21.59	21.48	0.0	22.5	19.11	18.84	18.94	19.06	18.97	0.0	20.0
		1	25	21.72	21.41	21.58	21.71	21.60	0.0	22.5	19.01	18.87	19.01	19.08	19.11	0.0	20.0
		1	49	21.70	21.40	21.56	21.70	21.47	0.0	22.5	18.96	18.90	18.98	19.02	18.97	0.0	20.0
		25	0	21.53	21.47	21.52	21.56	21.57	0.0	22.5	19.04	18.92	19.01	18.93	19.03	0.0	20.0
		25	12	21.63	21.49	21.62	21.63	21.72	0.0	22.5	19.09	18.94	19.09	19.03	19.16	0.0	20.0
		25	25	21.63	21.56	21.68	21.60	21.69	0.0	22.5	19.14	19.01	19.09	19.03	19.12	0.0	20.0
		50	0	21.63	21.47	21.62	21.64	21.70	0.0	22.5	19.04	18.93	19.03	19.00	19.13	0.0	20.0
	64QAM	1	0	21.67	21.51	21.60	21.58	21.58	0.0	22.5	19.04	18.93	18.97	18.88	19.07	0.0	20.0
		1	25	21.76	21.49	21.65	21.63	21.58	0.0	22.5	19.10	18.98	19.06	19.03	19.08	0.0	20.0
		1	49	21.65	21.38	21.54	21.53	21.56	0.0	22.5	19.08	18.84	18.99	19.04	19.03	0.0	20.0
		25	0	21.04	20.96	21.01	21.00	21.12	0.0	22.5	19.02	18.93	18.98	18.97	19.07	0.0	20.0
		25	12	21.17	20.97	21.10	21.09	21.23	0.0	22.5	19.12	18.95	19.09	19.15	19.19	0.0	20.0
		25	25	21.15	21.03	21.11	21.10	21.19	0.0	22.5	19.07	19.00	19.10	19.05	19.16	0.0	20.0
		50	0	21.12	20.94	21.08	21.06	21.22	0.0	22.5	19.11	18.92	19.06	19.07	19.12	0.0	20.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
5 MHz	QPSK	1	0	21.52	21.55	21.55	21.55	21.66	0.0	22.5	19.03	18.95	18.91	18.92	19.10	0.0	20.0
		1	12	21.56	21.55	21.58	21.66	21.68	0.0	22.5	19.08	18.96	19.06	19.10	19.11	0.0	20.0
		1	24	21.56	21.56	21.53	21.51	21.62	0.0	22.5	19.02	18.85	18.94	18.98	18.99	0.0	20.0
		12	0	21.60	21.46	21.63	21.56	21.62	0.0	22.5	19.07	18.89	19.05	18.95	19.06	0.0	20.0
		12	7	21.63	21.47	21.65	21.65	21.80	0.0	22.5	19.05	18.91	19.01	19.06	19.14	0.0	20.0
		12	13	21.62	21.53	21.62	21.61	21.68	0.0	22.5	19.02	18.95	19.03	19.03	19.13	0.0	20.0
		25	0	21.62	21.45	21.59	21.59	21.67	0.0	22.5	19.02	18.88	19.02	19.00	19.12	0.0	20.0
	16QAM	1	0	21.74	21.58	21.60	21.69	21.72	0.0	22.5	19.21	19.14	19.02	19.10	19.10	0.0	20.0
		1	12	21.78	21.59	21.60	21.82	21.90	0.0	22.5	19.29	19.17	19.06	19.21	19.26	0.0	20.0
		1	24	21.73	21.59	21.55	21.70	21.70	0.0	22.5	19.19	19.01	18.97	19.14	19.11	0.0	20.0
		12	0	21.64	21.52	21.57	21.51	21.57	0.0	22.5	19.09	18.99	19.06	19.03	18.99	0.0	20.0
		12	7	21.67	21.52	21.59	21.61	21.65	0.0	22.5	19.10	19.01	19.08	19.13	19.09	0.0	20.0
		12	13	21.67	21.57	21.56	21.60	21.61	0.0	22.5	19.08	19.04	19.05	19.13	19.06	0.0	20.0
		25	0	21.61	21.43	21.65	21.68	21.63	0.0	22.5	19.03	18.92	19.06	19.01	19.13	0.0	20.0
	64QAM	1	0	21.60	21.49	21.58	21.61	21.67	0.0	22.5	19.01	18.99	19.08	19.08	19.16	0.0	20.0
		1	12	21.56	21.53	21.60	21.60	21.67	0.0	22.5	19.08	19.08	19.13	19.21	19.20	0.0	20.0
		1	24	21.53	21.44	21.51	21.53	21.54	0.0	22.5	19.04	18.95	19.07	19.02	19.17	0.0	20.0
		12	0	21.10	20.88	21.24	21.01	21.04	0.0	22.5	19.07	18.97	19.02	19.02	19.19	0.0	20.0
		12	7	21.13	20.91	21.22	21.10	21.15	0.0	22.5	19.13	18.80	19.02	19.09	19.25	0.0	20.0
		12	13	21.10	20.96	21.23	21.10	21.09	0.0	22.5	19.08	18.87	18.99	19.09	19.22	0.0	20.0
		25	0	21.09	20.87	21.07	21.07	21.16	0.0	22.5	19.15	18.91	19.09	19.07	19.16	0.0	20.0

LTE Band 66 Ant A Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)					Maximum Allowed Average Power (dBm)				
				DSI = 1					DSI = 0				
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				132072	132322	132572			132072	132322	132572		
				1720 MHz	1745 MHz	1770 MHz			1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	22.96	23.34	23.36	0.0	24.2	18.82	18.94	18.95	0.0	20.0
		1	49	22.60	**23.39**	23.28	0.0	24.2	18.93	**18.99**	18.90	0.0	20.0
		1	99	23.14	23.29	23.19	0.0	24.2	18.88	18.90	18.88	0.0	20.0
		50	0	22.20	22.38	22.32	1.0	23.2	18.86	18.98	18.93	0.0	20.0
		50	24	22.27	22.36	22.36	1.0	23.2	18.94	18.97	18.98	0.0	20.0
		50	50	22.28	**22.39**	22.29	1.0	23.2	18.92	**18.99**	18.89	0.0	20.0
		100	0	22.27	22.33	22.34	1.0	23.2	18.91	18.97	18.96	0.0	20.0
	16QAM	1	0	22.00	22.79	22.65	1.0	23.2	19.15	19.27	19.34	0.0	20.0
		1	49	21.72	22.75	22.61	1.0	23.2	19.27	19.45	19.37	0.0	20.0
		1	99	22.36	22.67	22.57	1.0	23.2	19.18	19.29	19.25	0.0	20.0
		50	0	21.24	21.40	21.32	2.0	22.2	18.90	19.01	18.96	0.0	20.0
		50	24	21.31	21.38	21.38	2.0	22.2	18.99	19.01	19.01	0.0	20.0
		50	50	21.30	21.39	21.30	2.0	22.2	18.99	19.01	18.93	0.0	20.0
		100	0	21.29	21.34	21.37	2.0	22.2	18.96	18.97	18.95	0.0	20.0
	64QAM	1	0	21.53	21.61	21.59	2.0	22.2	19.21	19.22	19.17	0.0	20.0
		1	49	21.20	21.63	21.60	2.0	22.2	19.29	19.31	19.14	0.0	20.0
		1	99	21.57	21.53	21.43	2.0	22.2	19.24	19.18	19.05	0.0	20.0
		50	0	20.18	20.35	20.29	3.0	21.2	18.89	19.01	18.96	0.0	20.0
		50	24	20.28	20.33	20.31	3.0	21.2	18.94	18.99	18.99	0.0	20.0
		50	50	20.27	20.36	20.25	3.0	21.2	18.94	19.03	18.91	0.0	20.0
		100	0	20.26	20.34	20.33	3.0	21.2	18.95	18.98	18.97	0.0	20.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				132047	132322	132597			132047	132322	132597		
				1717.5 MHz	1745 MHz	1772.5 MHz			1717.5 MHz	1745 MHz	1772.5 MHz		
15 MHz	QPSK	1	0	23.07	23.48	23.42	0.0	24.2	18.98	19.01	19.01	0.0	20.0
		1	37	22.79	23.46	23.44	0.0	24.2	18.99	19.05	19.08	0.0	20.0
		1	74	22.92	23.43	23.32	0.0	24.2	18.92	18.94	18.94	0.0	20.0
		36	0	22.24	22.40	22.34	1.0	23.2	18.88	19.01	18.95	0.0	20.0
		36	20	22.34	22.41	22.39	1.0	23.2	18.98	19.00	19.00	0.0	20.0
		36	39	22.33	22.46	22.36	1.0	23.2	18.96	19.05	18.98	0.0	20.0
		75	0	22.29	22.36	22.38	1.0	23.2	18.92	18.96	18.98	0.0	20.0
	16QAM	1	0	21.28	22.83	22.79	1.0	23.2	19.23	19.33	19.35	0.0	20.0
		1	37	21.10	22.79	22.73	1.0	23.2	19.23	19.42	19.21	0.0	20.0
		1	74	21.19	22.69	22.62	1.0	23.2	19.23	19.24	19.20	0.0	20.0
		36	0	21.27	21.43	21.38	2.0	22.2	18.95	19.05	19.02	0.0	20.0
		36	20	21.35	21.41	21.46	2.0	22.2	19.02	19.06	19.07	0.0	20.0
		36	39	21.34	21.47	21.38	2.0	22.2	19.03	19.06	19.03	0.0	20.0
		75	0	21.31	21.39	21.40	2.0	22.2	19.00	19.00	19.07	0.0	20.0
	64QAM	1	0	20.87	21.68	21.60	2.0	22.2	19.30	19.33	19.21	0.0	20.0
		1	37	20.57	21.66	21.55	2.0	22.2	19.24	19.28	19.20	0.0	20.0
		1	74	20.61	21.57	21.47	2.0	22.2	19.21	19.21	19.16	0.0	20.0
		36	0	20.25	20.43	20.37	3.0	21.2	18.91	19.06	19.02	0.0	20.0
		36	20	20.36	20.40	20.40	3.0	21.2	19.01	19.06	19.04	0.0	20.0
		36	39	20.34	20.46	20.36	3.0	21.2	18.97	19.09	19.01	0.0	20.0
		75	0	20.32	20.37	20.39	3.0	21.2	18.98	19.01	19.06	0.0	20.0

LTE Band 66 Ant A Measured Results_(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				132022	132322	132622			132022	132322	132622		
				1715 MHz	1745 MHz	1775 MHz			1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	23.00	23.41	23.38	0.0	24.2	18.94	19.02	18.99	0.0	20.0
		1	25	22.94	23.44	23.39	0.0	24.2	19.00	19.08	19.07	0.0	20.0
		1	49	22.81	23.41	23.31	0.0	24.2	18.93	18.96	18.95	0.0	20.0
		25	0	22.24	22.42	22.34	1.0	23.2	18.88	19.02	18.95	0.0	20.0
		25	12	22.36	22.42	22.44	1.0	23.2	18.98	19.05	19.03	0.0	20.0
		25	25	22.30	22.47	22.38	1.0	23.2	18.95	19.07	18.99	0.0	20.0
		50	0	22.32	22.49	22.41	1.0	23.2	18.96	18.98	18.99	0.0	20.0
	16QAM	1	0	21.13	22.76	22.70	1.0	23.2	19.12	19.34	19.24	0.0	20.0
		1	25	21.15	22.82	22.75	1.0	23.2	19.21	19.44	19.33	0.0	20.0
		1	49	21.07	22.74	22.65	1.0	23.2	19.16	19.28	19.19	0.0	20.0
		25	0	21.26	21.47	21.37	2.0	22.2	18.93	19.03	19.02	0.0	20.0
		25	12	21.36	21.48	21.44	2.0	22.2	19.08	19.01	19.10	0.0	20.0
		25	25	21.33	21.54	21.42	2.0	22.2	19.02	19.08	19.07	0.0	20.0
		50	0	21.34	21.45	21.44	2.0	22.2	18.99	19.02	19.03	0.0	20.0
	64QAM	1	0	20.78	21.71	21.50	2.0	22.2	19.21	19.28	19.16	0.0	20.0
		1	25	20.67	21.77	21.52	2.0	22.2	19.27	19.39	19.20	0.0	20.0
		1	49	20.51	21.64	21.41	2.0	22.2	19.18	19.30	19.11	0.0	20.0
		25	0	20.26	20.42	20.36	3.0	21.2	18.95	19.08	19.00	0.0	20.0
		25	12	20.37	20.42	20.41	3.0	21.2	19.00	19.10	19.05	0.0	20.0
		25	25	20.36	20.47	20.37	3.0	21.2	19.02	19.13	19.05	0.0	20.0
		50	0	20.34	20.40	20.39	3.0	21.2	18.99	19.05	19.04	0.0	20.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				131997	132322	132647			131997	132322	132647		
				1712.5 MHz	1745 MHz	1777.5 MHz			1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	22.96	23.49	23.29	0.0	24.2	18.85	19.06	19.03	0.0	20.0
		1	12	23.02	23.56	23.38	0.0	24.2	18.99	19.12	19.08	0.0	20.0
		1	24	22.79	23.49	23.30	0.0	24.2	18.84	19.05	18.98	0.0	20.0
		12	0	22.33	22.43	22.36	1.0	23.2	18.93	19.01	18.92	0.0	20.0
		12	7	22.39	22.47	22.47	1.0	23.2	19.02	19.04	19.02	0.0	20.0
		12	13	22.34	22.50	22.41	1.0	23.2	18.93	19.08	18.95	0.0	20.0
		25	0	22.33	22.40	22.38	1.0	23.2	18.96	18.99	18.96	0.0	20.0
	16QAM	1	0	21.31	22.88	22.68	1.0	23.2	19.30	19.42	19.39	0.0	20.0
		1	12	21.44	22.87	22.79	1.0	23.2	19.45	19.47	19.41	0.0	20.0
		1	24	21.22	22.86	22.74	1.0	23.2	19.35	19.40	19.33	0.0	20.0
		12	0	21.44	21.49	21.39	2.0	22.2	18.99	19.08	19.06	0.0	20.0
		12	7	21.50	21.53	21.48	2.0	22.2	19.06	19.12	19.17	0.0	20.0
		12	13	21.45	21.53	21.46	2.0	22.2	19.01	19.12	19.11	0.0	20.0
		25	0	21.35	21.45	21.44	2.0	22.2	19.01	19.00	18.98	0.0	20.0
	64QAM	1	0	20.73	21.66	21.70	2.0	22.2	19.25	19.29	19.29	0.0	20.0
		1	12	20.85	21.71	21.73	2.0	22.2	19.26	19.32	19.34	0.0	20.0
		1	24	20.56	21.74	21.58	2.0	22.2	19.16	19.21	19.25	0.0	20.0
		12	0	20.38	20.47	20.30	3.0	21.2	19.02	19.12	18.95	0.0	20.0
		12	7	20.42	20.50	20.46	3.0	21.2	19.10	19.19	19.10	0.0	20.0
		12	13	20.40	20.51	20.39	3.0	21.2	19.02	19.21	19.06	0.0	20.0
		25	0	20.32	20.41	20.37	3.0	21.2	19.00	19.06	19.01	0.0	20.0

LTE Band 66 Ant A Measured Results_(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				131987	132322	132657			131987	132322	132657		
				1711.5 MHz	1745 MHz	1778.5 MHz			1711.5 MHz	1745 MHz	1778.5 MHz		
3 MHz	QPSK	1	0	22.14	23.38	23.31	0.0	24.2	18.92	18.96	18.87	0.0	20.0
		1	8	22.16	23.51	23.45	0.0	24.2	18.98	19.09	19.06	0.0	20.0
		1	14	22.09	23.41	23.29	0.0	24.2	18.90	18.97	18.87	0.0	20.0
		8	0	22.31	22.42	22.41	1.0	23.2	18.94	19.01	18.90	0.0	20.0
		8	4	22.32	22.45	22.34	1.0	23.2	18.99	19.05	18.95	0.0	20.0
		8	7	22.34	22.53	22.41	1.0	23.2	18.98	19.12	19.03	0.0	20.0
		15	0	22.33	22.42	22.31	1.0	23.2	18.93	19.01	18.90	0.0	20.0
	16QAM	1	0	21.32	22.84	22.62	1.0	23.2	19.21	19.40	19.21	0.0	20.0
		1	8	21.35	22.96	22.80	1.0	23.2	19.31	19.55	19.34	0.0	20.0
		1	14	21.32	22.80	22.64	1.0	23.2	19.18	19.39	19.25	0.0	20.0
		8	0	21.39	21.45	21.38	2.0	22.2	19.03	19.10	18.99	0.0	20.0
		8	4	21.43	21.50	21.38	2.0	22.2	19.07	19.12	19.01	0.0	20.0
		8	7	21.45	21.55	21.47	2.0	22.2	19.08	19.21	19.09	0.0	20.0
		15	0	21.38	21.49	21.33	2.0	22.2	19.03	19.04	18.98	0.0	20.0
	64QAM	1	0	20.95	21.62	21.45	2.0	22.2	19.25	19.23	19.11	0.0	20.0
		1	8	20.95	21.82	21.55	2.0	22.2	19.29	19.38	19.25	0.0	20.0
		1	14	20.87	21.63	21.46	2.0	22.2	19.21	19.30	19.05	0.0	20.0
		8	0	20.38	20.52	20.32	3.0	21.2	19.01	19.12	19.03	0.0	20.0
		8	4	20.37	20.52	20.36	3.0	21.2	19.08	19.13	19.07	0.0	20.0
		8	7	20.38	20.58	20.44	3.0	21.2	19.05	19.20	19.14	0.0	20.0
		15	0	20.37	20.43	20.32	3.0	21.2	18.99	19.10	18.95	0.0	20.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				131979	132322	132665			131979	132322	132665		
				1710.7 MHz	1745 MHz	1779.3 MHz			1710.7 MHz	1745 MHz	1779.3 MHz		
1.4 MHz	QPSK	1	0	22.58	23.41	23.30	0.0	24.2	18.91	19.03	18.91	0.0	20.0
		1	3	22.51	23.39	23.26	0.0	24.2	18.91	19.01	18.94	0.0	20.0
		1	5	22.44	23.37	23.30	0.0	24.2	18.89	18.99	18.94	0.0	20.0
		3	0	23.19	23.43	23.27	0.0	24.2	18.91	19.00	18.94	0.0	20.0
		3	1	23.22	23.38	23.32	0.0	24.2	18.88	19.01	18.94	0.0	20.0
		3	3	23.23	23.39	23.31	0.0	24.2	18.89	19.00	18.92	0.0	20.0
		6	0	22.27	22.44	22.33	1.0	23.2	18.90	19.02	18.91	0.0	20.0
	16QAM	1	0	21.50	22.70	22.69	1.0	23.2	19.08	19.39	19.20	0.0	20.0
		1	3	21.60	22.60	22.67	1.0	23.2	19.07	19.38	19.19	0.0	20.0
		1	5	21.56	22.65	22.64	1.0	23.2	19.10	19.44	19.15	0.0	20.0
		3	0	22.41	22.58	22.44	1.0	23.2	19.03	19.17	19.10	0.0	20.0
		3	1	22.35	22.55	22.46	1.0	23.2	19.02	19.14	19.04	0.0	20.0
		3	3	22.34	22.57	22.40	1.0	23.2	19.04	19.13	19.04	0.0	20.0
		6	0	21.40	21.49	21.39	2.0	22.2	18.97	19.05	19.04	0.0	20.0
	64QAM	1	0	21.36	21.66	21.58	2.0	22.2	19.15	19.33	19.14	0.0	20.0
		1	3	21.23	21.60	21.57	2.0	22.2	19.16	19.38	19.13	0.0	20.0
		1	5	21.10	21.59	21.60	2.0	22.2	19.15	19.30	19.08	0.0	20.0
		3	0	21.42	21.62	21.41	2.0	22.2	19.08	19.21	19.08	0.0	20.0
		3	1	21.40	21.61	21.38	2.0	22.2	19.07	19.18	19.03	0.0	20.0
		3	3	21.41	21.58	21.39	2.0	22.2	19.06	19.17	19.05	0.0	20.0
		6	0	20.38	20.61	20.28	3.0	21.2	19.02	19.21	18.92	0.0	20.0

9.4. NR (Sub 6GHz)

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS 138.521-1 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS138.521-1.

Table 6.2.2.3-1: Maximum Power Reduction (MPR) for Power 3

Modulation	MPR (dB)		
	Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM PI/2 BPSK	≤ 3.5[1]	≤ 1.2[1]	≤ 0.2[1]
	≤ 0.5[2]		0[2]
DFT-s-OFDM QPSK	≤ 1		0
DFT-s-OFDM 16 QAM	≤ 2		≤ 1
DFT-s-OFDM 64 QAM	≤ 2.5		
DFT-s-OFDM 256 QAM	≤ 4.5		
CP-OFDM QPSK	≤ 3		≤ 1.5
CP-OFDM 16 QAM	≤ 3		≤ 2
CP-OFDM 64 QAM	≤ 3.5		
CP-OFDM 256 QAM	≤ 6.5		

NOTE 1: Applicable for UE operating in TDD mode with PI/2 BPSK modulation and UE indicates support for UE capability *powerBoosting-pi2BPSK* and if the IE *powerBoostPi2BPSK* is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0dB MPR is 26dBm.

NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 and if the IE *powerBoostPi2BPSK* is set to 0 and if more than 40% of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.

The allowed A-MPR values specified below in Table 6.2.3.3.1-1 of 3GPP TS138.521-1 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”

Table 6.2.3.3.1-1: Additional maximum power reduction (A-MPR)

Network Signalling label	Requirements (subclause)	NR Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01		Table 5.2-1	5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 90, 100	Table 5.3.2-1	N/A

Uplink RB allocations were used to Table 6.1-1 of the 3GPP TS 138.521-1.

Channel Bandwidth	SCS(kHz)	OFDM	RB allocation							
			Edge_Full_Left	Edge_Full_Right	Edge_1RB_Left	Edge_1RB_Right	Outer_Full	Inner_Full	Inner_1RB_Left	Inner_1RB_Right
5MHz	15	DFT-s	2@0	2@23	1@0	1@24	25@0	12@6	1@1	1@23
		CP	2@0	2@23	1@0	1@24	25@0	13@6	1@1	1@23
	30	DFT-s	2@0	2@9	1@0	1@10	10@0	5@2[1]	1@1	1@9
		CP	2@0	2@9	1@0	1@10	11@0	5@2[1]	1@1	1@9
	60	DFT-s	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10MHz	15	DFT-s	2@0	2@50	1@0	1@51	50@0	25@12	1@1	1@50
		CP	2@0	2@50	1@0	1@51	52@0	26@13	1@1	1@50
	30	DFT-s	2@0	2@22	1@0	1@23	24@0	12@6	1@1	1@22
		CP	2@0	2@22	1@0	1@23	24@0	12@6	1@1	1@22
	60	DFT-s	2@0	2@9	1@0	1@10	10@0	5@2[1]	1@1	1@9
		CP	2@0	2@9	1@0	1@10	11@0	5@2[1]	1@1	1@9
15MHz	15	DFT-s	2@0	2@77	1@0	1@78	75@0	36@18	1@1	1@77
		CP	2@0	2@77	1@0	1@78	79@0	39@19[1]	1@1	1@77
	30	DFT-s	2@0	2@36	1@0	1@37	36@0	18@9	1@1	1@36
		CP	2@0	2@36	1@0	1@37	38@0	19@9	1@1	1@36
	60	DFT-s	2@0	2@16	1@0	1@17	18@0	9@4	1@1	1@16
		CP	2@0	2@16	1@0	1@17	18@0	9@4	1@1	1@16
20MHz	15	DFT-s	2@0	2@104	1@0	1@105	100@0	50@25	1@1	1@104
		CP	2@0	2@104	1@0	1@105	106@0	53@26	1@1	1@104
	30	DFT-s	2@0	2@49	1@0	1@50	50@0	25@12	1@1	1@49
		CP	2@0	2@49	1@0	1@50	51@0	25@12[1]	1@1	1@49
	60	DFT-s	2@0	2@22	1@0	1@23	24@0	12@6	1@1	1@22
		CP	2@0	2@22	1@0	1@23	24@0	12@6	1@1	1@22

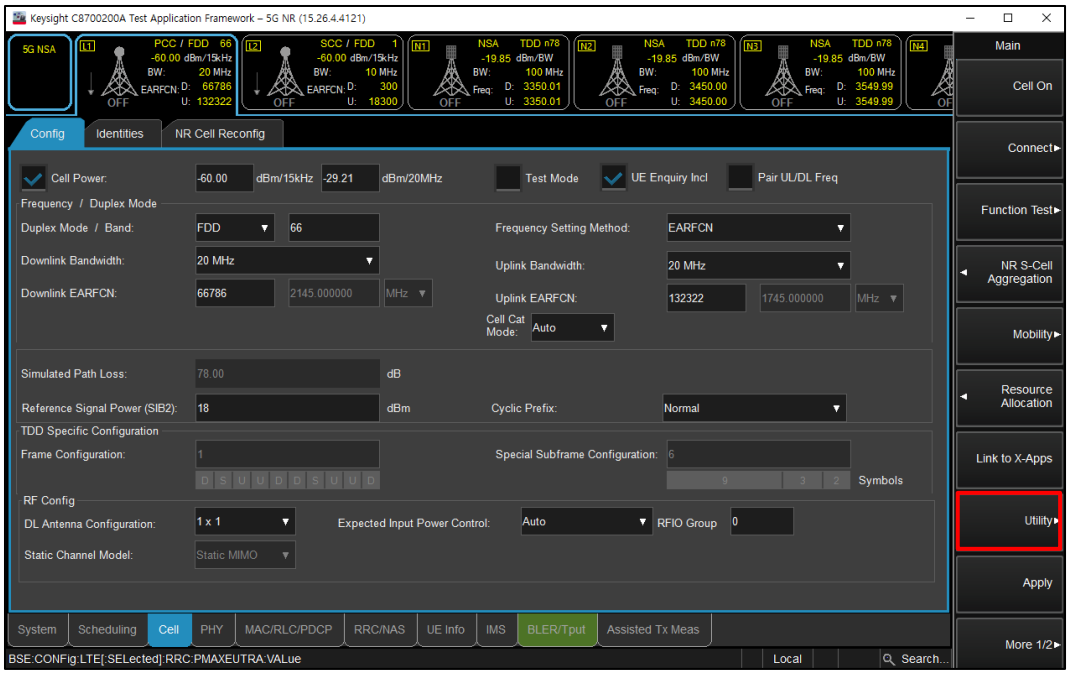
SAR test exclusion can be applied for testing overlapping NR bands as follows:

a) The maximum output power, including tolerance, for the smaller band must be ≤ the larger band to qualify for the SAR test exclusion.
b) The channel bandwidth and other operating parameters for the smaller band must be fully supported by the larger band.

Procedures used to establish power measurement for NR Bands

Switching to NSA mode or SA mode

- Click the “Utility” button in the right of Test application screen
- Select “5G NR NSA” in the “TA Mode Switch” for NSA mode
- Select “5G NR Standalone” in the “TA Mode Switch” for SA mode

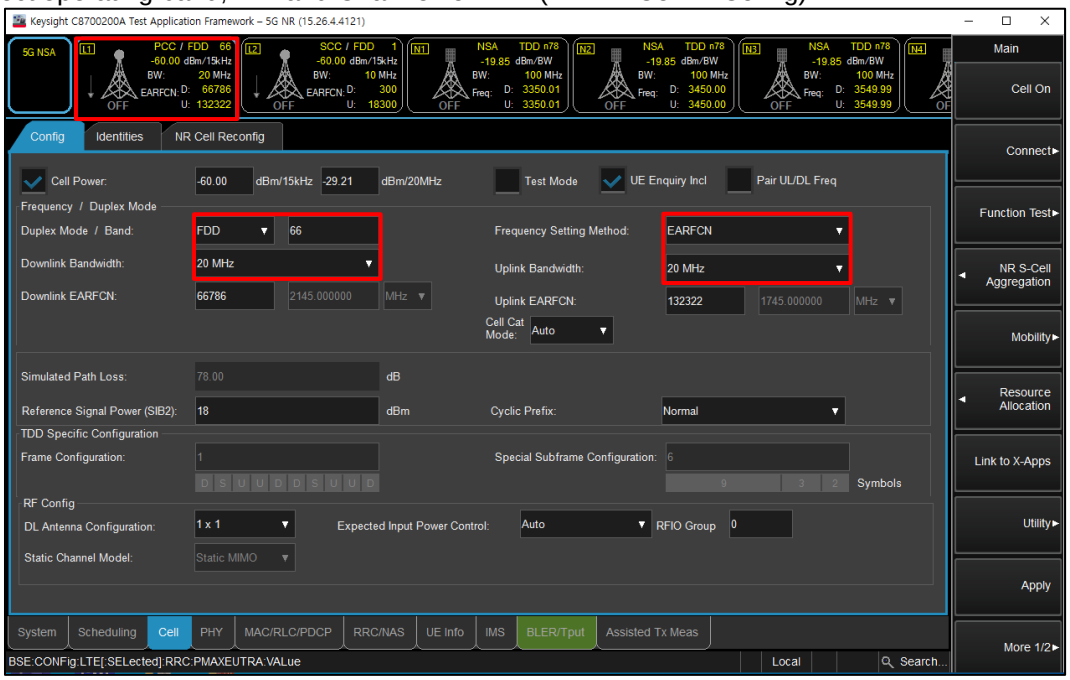


(Figure 1-1)

(Figure 1-2)

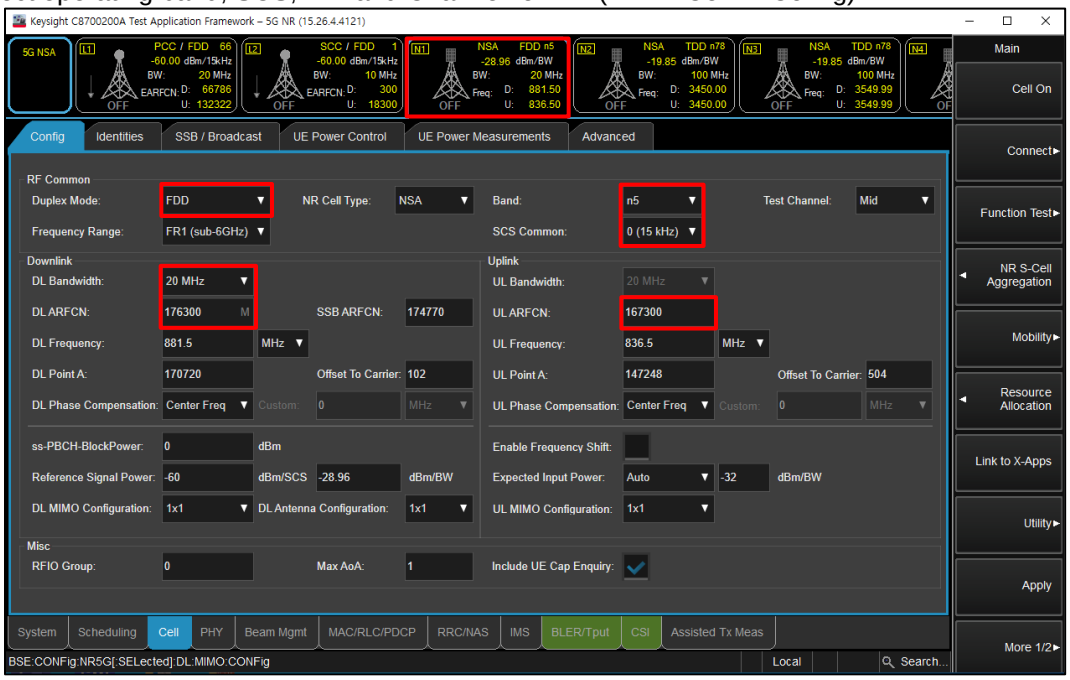
NSA Mode

- Select operating band, BW and Channel for LTE (LTE -> Cell -> Config)



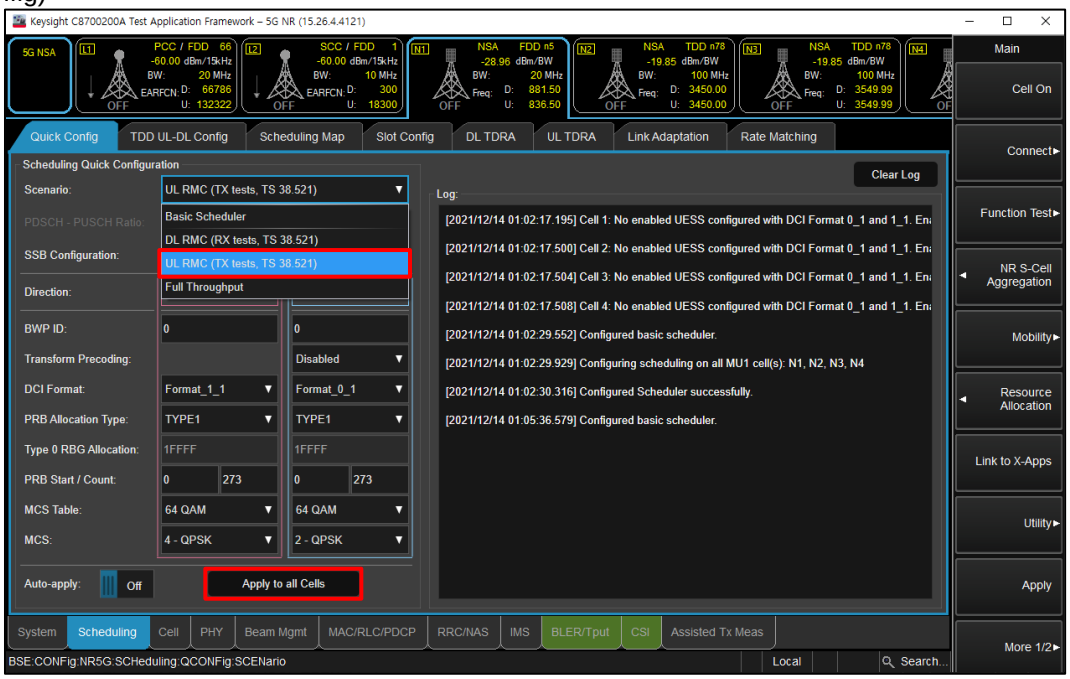
(Figure 2-1)

- Select operating band, SCS, BW and Channel for NR (NR -> Cell -> Config)



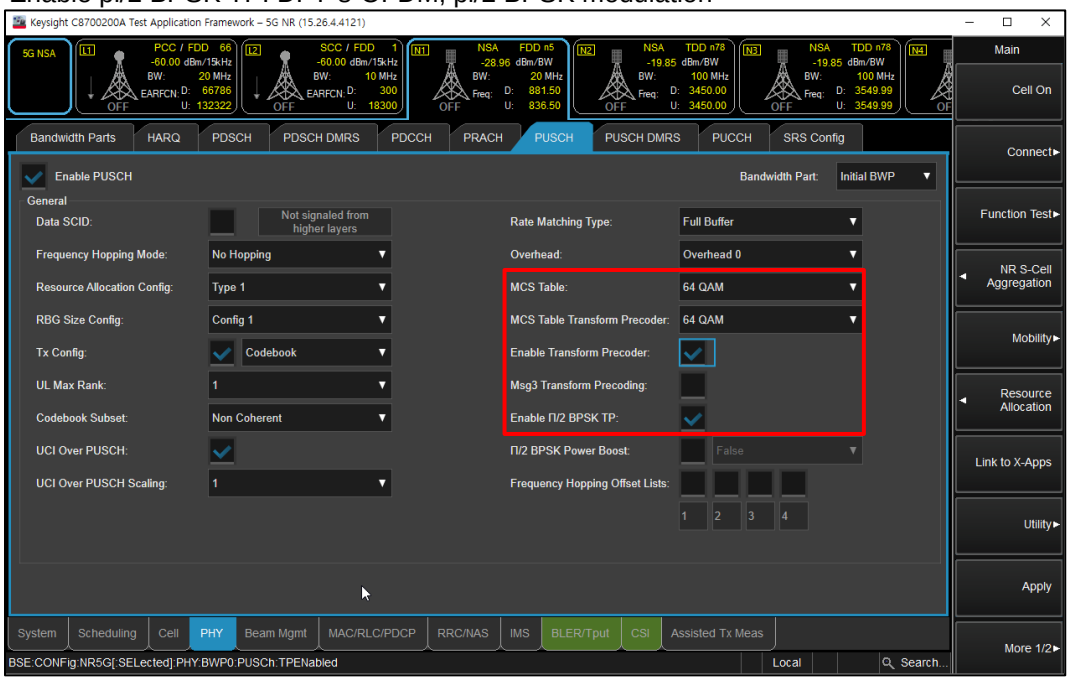
(Figure 2-2)

- Select “UL RMC (TX tests, TS 38.521)” for maximum power RB scheduling (NR -> Scheduling -> Quick Config)



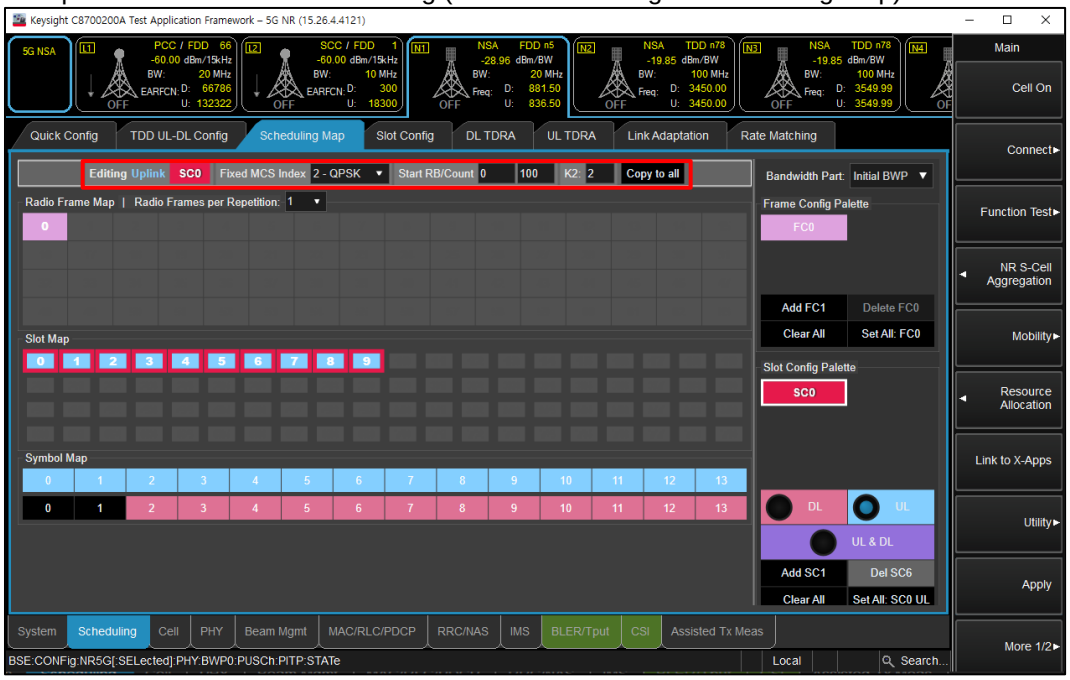
(Figure 2-3)

- To set waveform for NR Band (NR -> PHY -> PUSCH)
  - Select highest modulation in the MCS Table and MCS Table Transform Precoder
  - Enable Transform Precoder: DFT-s-OFDM / disable for CP-OFDM
  - Enable pi/2 BPSK TP: DFT-s-OFDM, pi/2 BPSK modulation



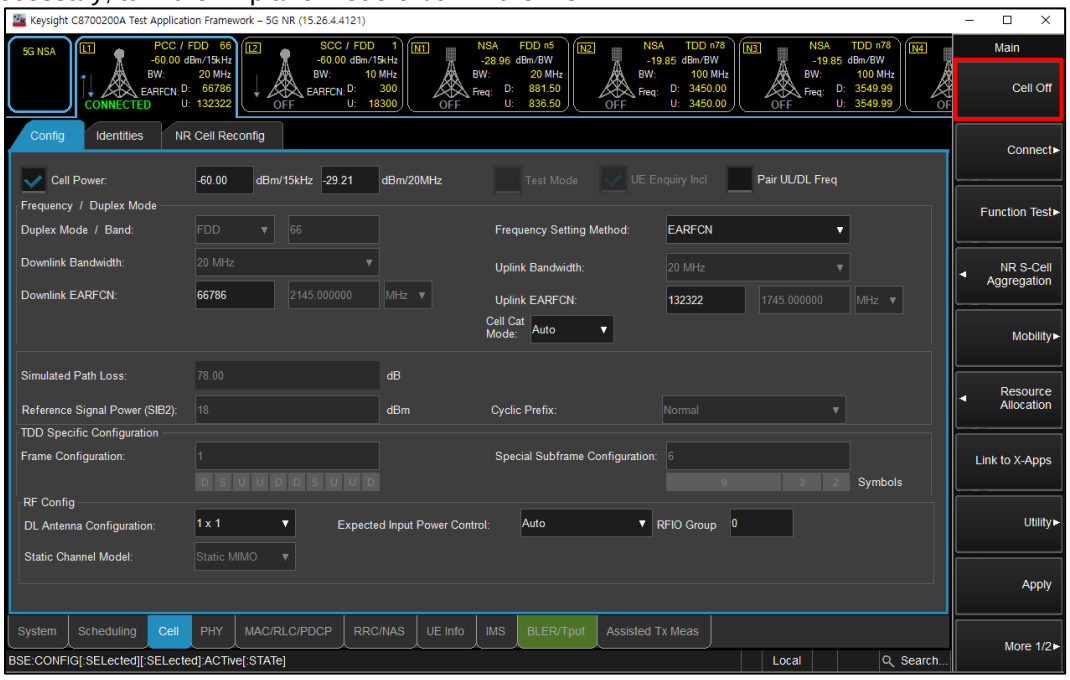
(Figure 2-4)

- Select Uplink Modulation and RB setting (NR -> Scheduling -> Scheduling Map)



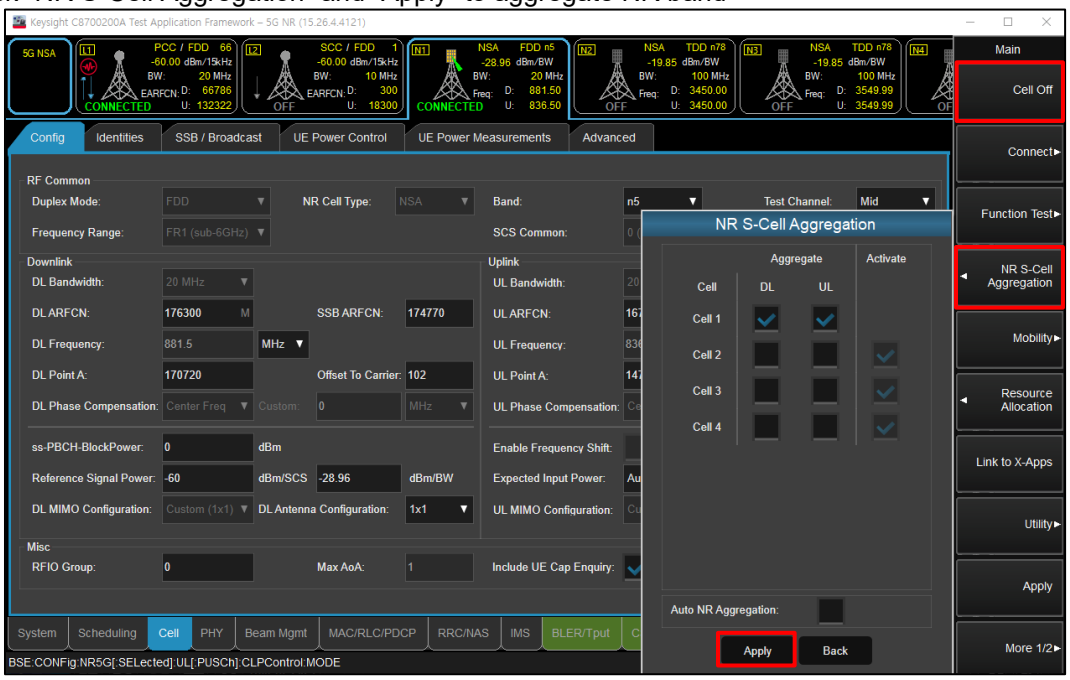
(Figure 2-5)

- Click “Cell On” button in the right of Test application screen in the LTE tab
- If necessary, turn the Airplane Mode on/off in the DUT



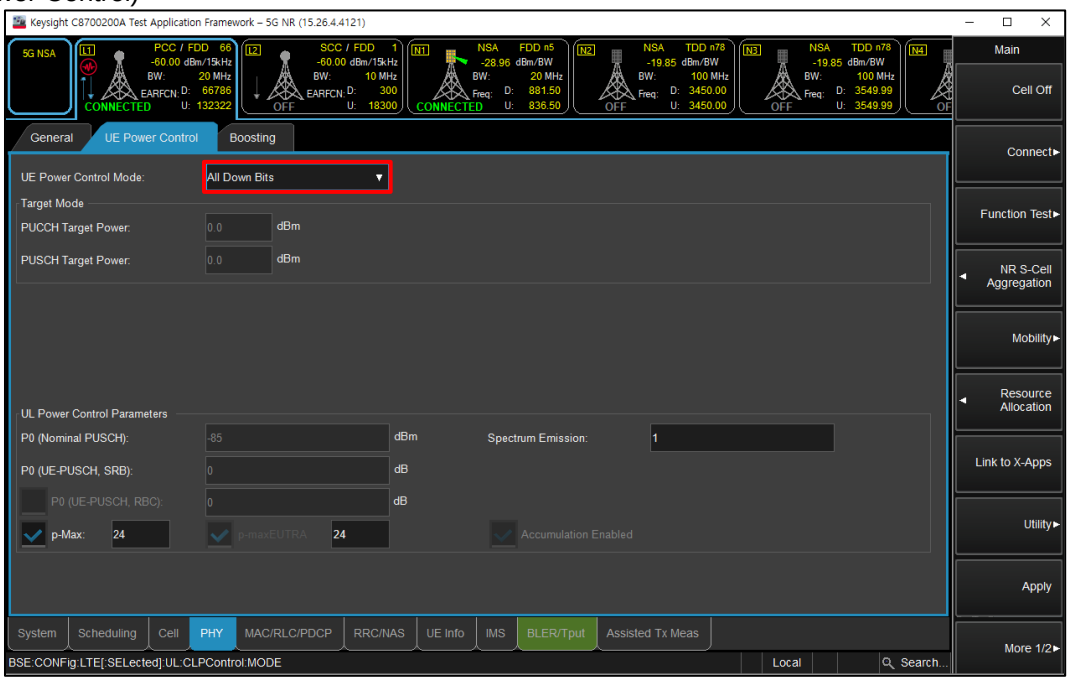
(Figure 2-6)

- Click “Cell On” button in the right of Test application screen in the NR tab
- Click “NR S-Cell Aggregation” and “Apply” to aggregate NR band



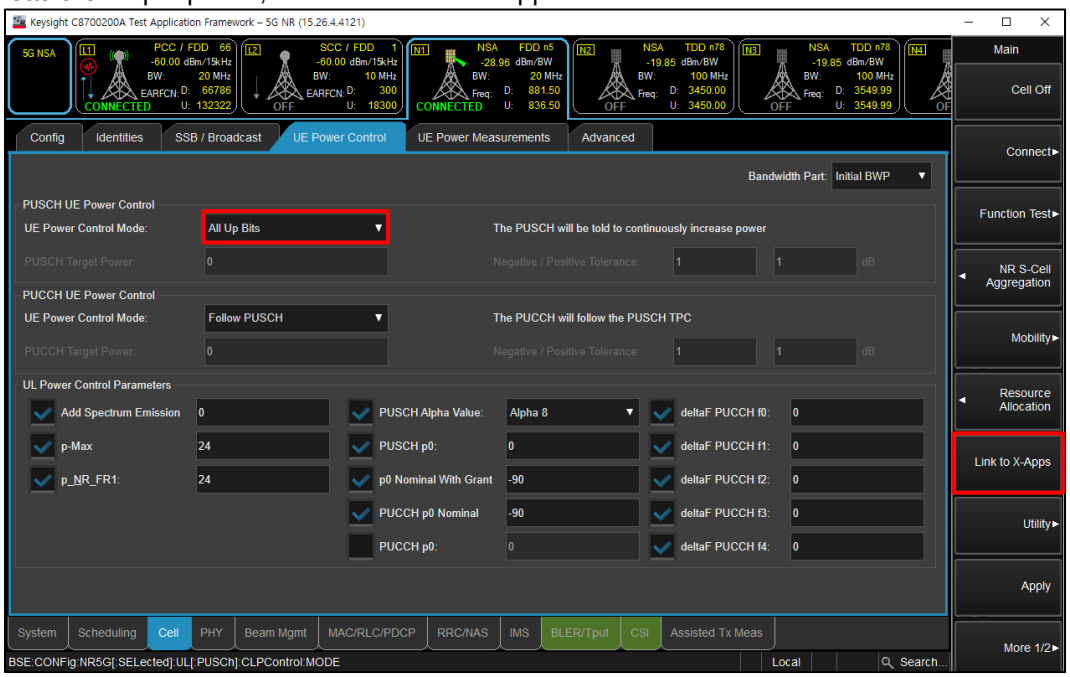
(Figure 2-7)

- Select “All Down Bits” of UL Power control Mode in LTE tab for NR maximum power (LTE -> PHY -> UE Power Control)



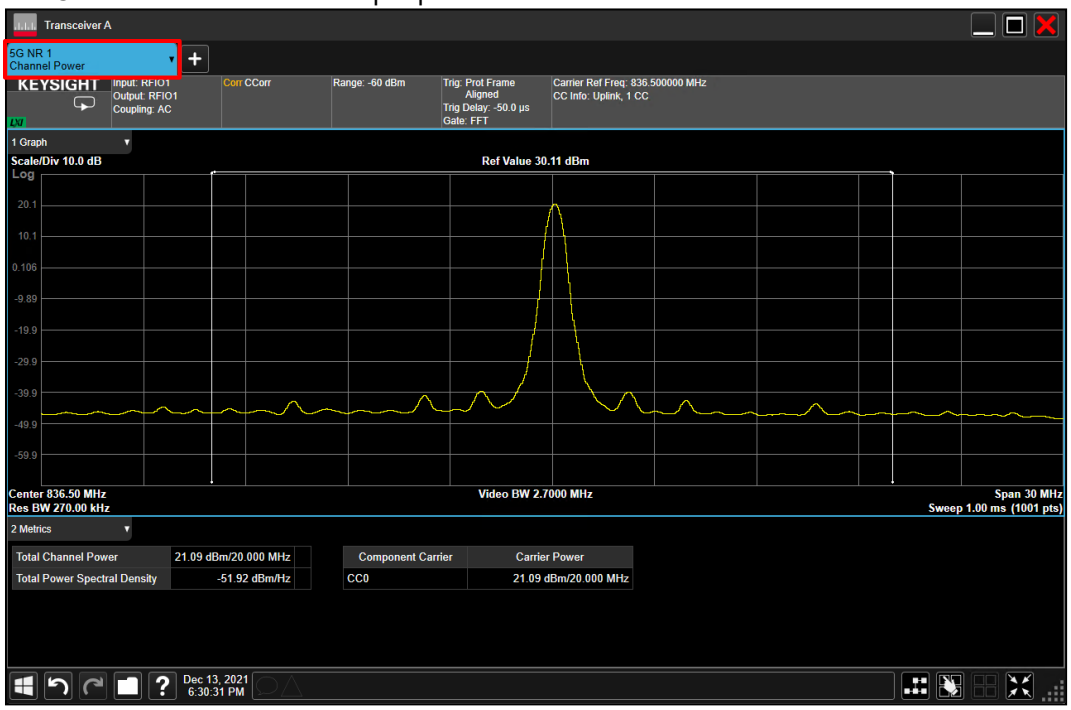
(Figure 2-8)

- Select “All Up Bits” of UL Power control Mode in NR tab for NR maximum power (NR -> Cell -> UE Power Control)
- To read the output power, click the “Link to X-Apps”



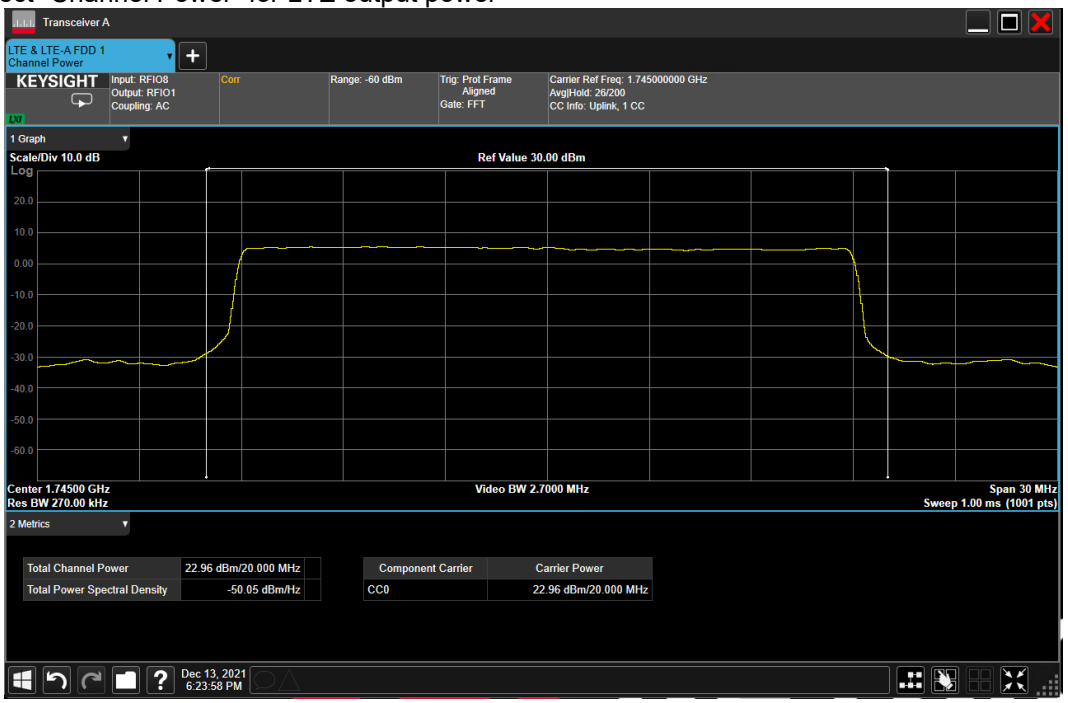
(Figure 2-9)

- Select “Channel Power” for NR output power



(Figure 2-10)

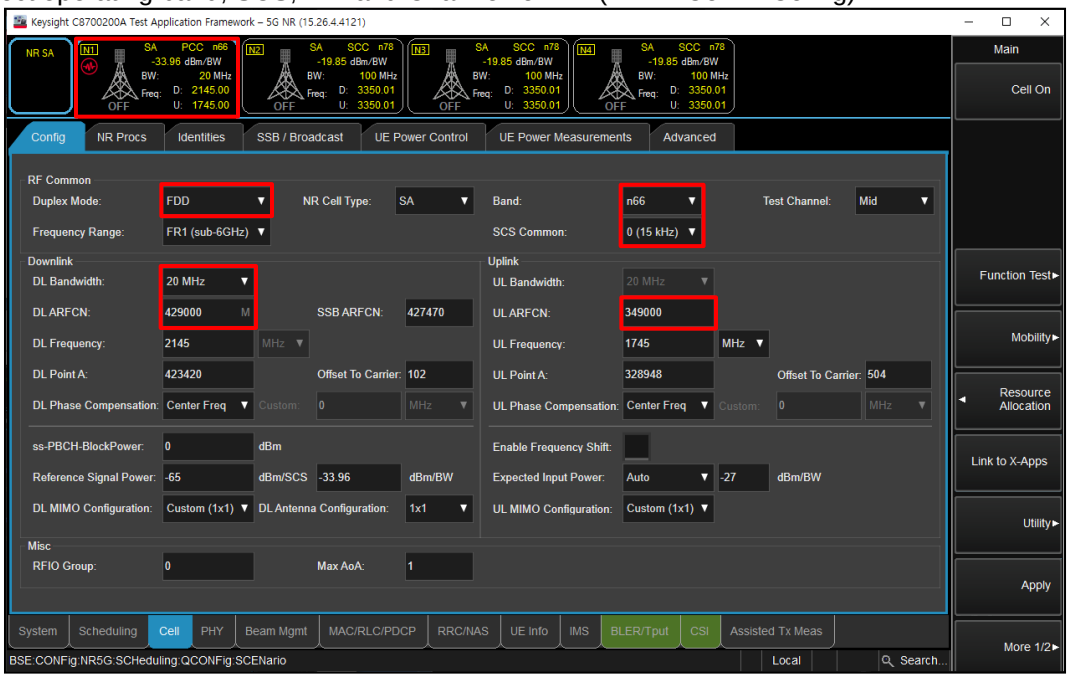
- Select “Channel Power” for LTE output power



(Figure 2-11)

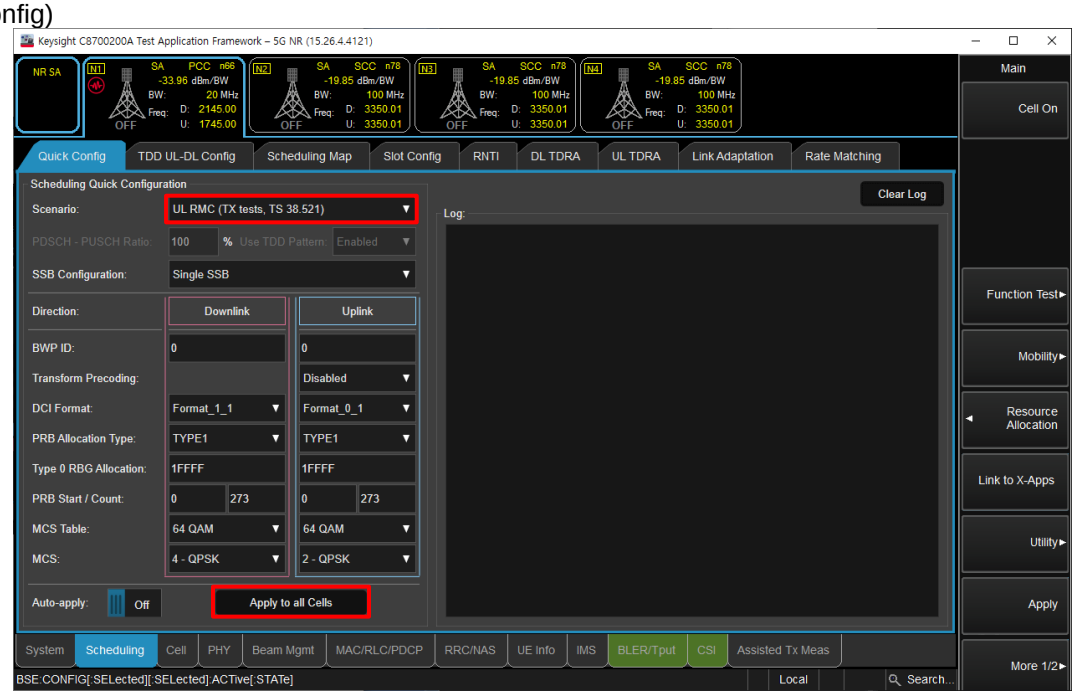
SA Mode

- Select operating band, SCS, BW and Channel for NR (NR -> Cell -> Config)



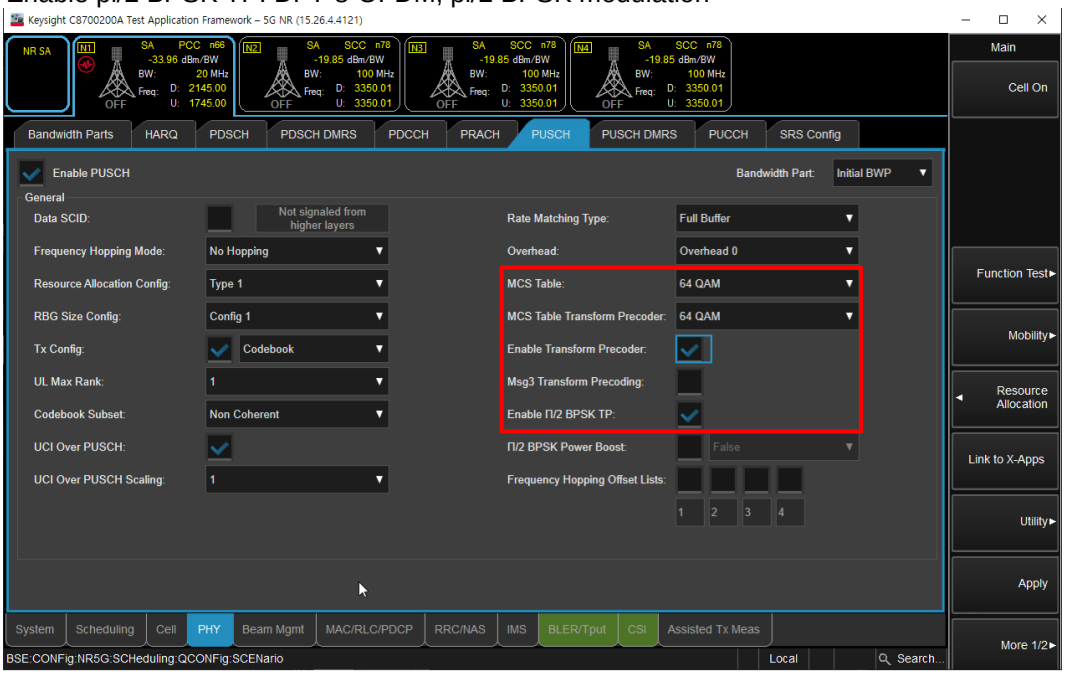
(Figure 3-1)

- Select “UL RMC (TX tests, TS 38.521)” for maximum power RB scheduling (NR -> Scheduling -> Quick Config)



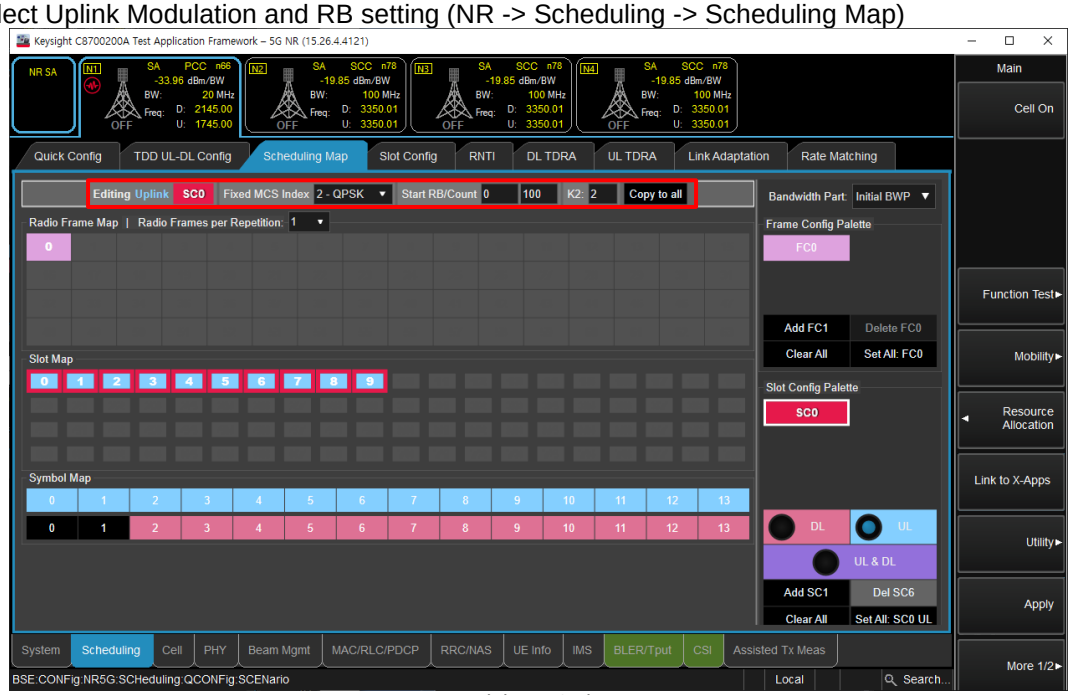
(Figure 3-2)

- To set waveform for NR Band (NR -> PHY -> PUSCH)
  - Select highest modulation in the MCS Table and MCS Table Transform Precoder
  - Enable Transform Precoder: DFT-s-OFDM / disable for CP-OFDM
  - Enable pi/2 BPSK TP: DFT-s-OFDM, pi/2 BPSK modulation



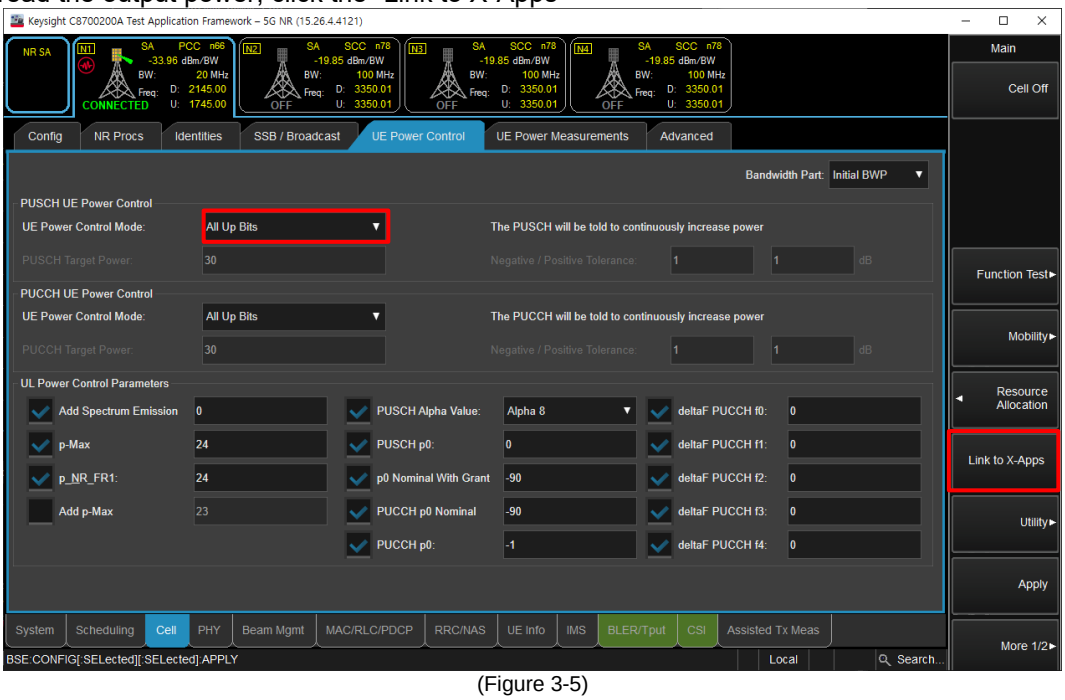
(Figure 3-3)

- Select Uplink Modulation and RB setting (NR -> Scheduling -> Scheduling Map)



(Figure 3-4)

- Click “Cell On” button in the right of Test application screen
- If necessary, turn the Airplane Mode on/off in the DUT
- Select “All Up Bits” of UL Power control Mode (Cell -> UE Power Control)
- To read the output power, click the “Link to X-Apps”



(Figure 3-5)

- Select “Channel Power”

(Figure 3-6)

NR Band n5 Ant.A Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)			
					DSI = 0, 1			
					Measured Pwr (dBm)		MPR	Tune-up Limit
					[redacted]	167300		
						836.50 MHz		
20 MHz	DFT-s-OFDM	π/2 BPSK	1	1		23.93	0.0	25.0
			1	52		23.85	0.0	25.0
			1	104		23.75	0.0	25.0
			50	0		22.84	0.5	24.5
			50	28		23.83	0.0	25.0
			50	56		22.86	0.5	24.5
			100	0		22.89	0.5	24.5
		QPSK	1	1		**23.92**	0.0	25.0
			1	52		23.85	0.0	25.0
			1	104		23.73	0.0	25.0
			50	0		22.93	1.0	24.0
			50	28		**23.87**	0.0	25.0
			50	56		22.85	1.0	24.0
			100	0		22.86	1.0	24.0
		16QAM	1	1		22.75	1.0	24.0
			1	52		22.71	1.0	24.0
			1	104		22.56	1.0	24.0
		64QAM	1	1		21.56	2.5	22.5
		256QAM	1	1		18.74	4.5	20.5
	CP-OFDM	QPSK	1	1		22.49	1.5	23.5
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)		MPR	Tune-up Limit
					[redacted]	167300		
						836.50 MHz		
15 MHz	DFT-s-OFDM	π/2 BPSK	1	1		23.96	0.0	25.0
			1	39		23.82	0.0	25.0
			1	77		23.82	0.0	25.0
			36	0		22.93	0.5	24.5
			36	21		23.83	0.0	25.0
			36	43		22.83	0.5	24.5
			75	0		22.87	0.5	24.5
		QPSK	1	1		23.94	0.0	25.0
			1	39		23.82	0.0	25.0
			1	77		23.82	0.0	25.0
			36	0		22.93	1.0	24.0
			36	21		23.87	0.0	25.0
			36	43		22.90	1.0	24.0
			75	0		22.84	1.0	24.0
		16QAM	1	1		22.79	1.0	24.0
			1	39		22.78	1.0	24.0
			1	77		22.67	1.0	24.0
		64QAM	1	1		21.61	2.5	22.5
		256QAM	1	1		18.92	4.5	20.5
	CP-OFDM	QPSK	1	1		22.55	1.5	23.5

NR Band n5 Ant.A Measured Results_(Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					165800	[redacted]	168800		
					829.00 MHz		844.00 MHz		
10 MHz	DFT-s-OFDM	π/2 BPSK	1	1	23.91		23.84	0.0	25.0
			1	25	24.01		23.74	0.0	25.0
			1	50	23.89		23.81	0.0	25.0
			25	0	22.90		22.84	0.5	24.5
			25	13	23.90		23.72	0.0	25.0
			25	27	22.92		22.81	0.5	24.5
			50	0	22.96		22.79	0.5	24.5
		QPSK	1	1	23.92		23.75	0.0	25.0
			1	25	23.89		23.75	0.0	25.0
			1	50	23.96		23.83	0.0	25.0
			25	0	22.96		22.82	1.0	24.0
			25	13	23.92		23.73	0.0	25.0
			25	27	22.98		22.76	1.0	24.0
			50	0	23.00		22.81	1.0	24.0
		16QAM	1	1	22.74		22.58	1.0	24.0
			1	25	22.70		22.55	1.0	24.0
			1	50	22.81		22.66	1.0	24.0
		64QAM	1	1	21.54		21.37	2.5	22.5
		256QAM	1	1	18.75		18.58	4.5	20.5
	CP-OFDM	QPSK	1	1	22.47		22.31	1.5	23.5

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					165300	167300	169300		
					826.50 MHz	836.50 MHz	846.50 MHz		
5 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.01	23.97	23.89	0.0	25.0
			1	12	23.91	23.83	23.83	0.0	25.0
			1	23	24.06	23.82	23.97	0.0	25.0
			12	0	22.96	22.87	22.72	0.5	24.5
			12	6	23.84	23.81	23.71	0.0	25.0
			12	13	22.97	22.76	22.82	0.5	24.5
			25	0	22.93	22.86	22.78	0.5	24.5
		QPSK	1	1	24.05	24.03	23.92	0.0	25.0
			1	12	23.93	23.88	23.78	0.0	25.0
			1	23	24.04	23.78	23.95	0.0	25.0
			12	0	22.87	22.84	22.77	1.0	24.0
			12	6	23.83	23.79	23.74	0.0	25.0
			12	13	22.94	22.76	22.84	1.0	24.0
			25	0	23.01	22.92	22.78	1.0	24.0
		16QAM	1	1	22.80	22.87	22.64	1.0	24.0
			1	12	22.77	22.68	22.56	1.0	24.0
			1	23	22.91	22.68	22.75	1.0	24.0
		64QAM	1	1	21.59	21.56	21.49	2.5	22.5
		256QAM	1	1	18.92	18.86	18.78	4.5	20.5
	CP-OFDM	QPSK	1	1	22.64	22.51	22.40	1.5	23.5

NR Band n5 Ant.E Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)			Maximum Allowed Average Power (dBm)		
					DSI = 0			DSI = 1		
					Measured Pwr (dBm)	MPR	Tune-up Limit	Measured Pwr (dBm)	MPR	Tune-up Limit
					167300			167300		
					836.50 MHz			836.50 MHz		
20 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.64	0.0	25.0	22.38	0.0	23.0
			1	52	24.49	0.0	25.0	22.37	0.0	23.0
			1	104	24.42	0.0	25.0	22.31	0.0	23.0
			50	0	23.51	0.5	24.5	22.40	0.0	23.0
			50	28	24.56	0.0	25.0	22.32	0.0	23.0
			50	56	23.52	0.5	24.5	22.32	0.0	23.0
			100	0	23.54	0.5	24.5	22.36	0.0	23.0
		QPSK	1	1	**24.59**	0.0	25.0	**22.80**	0.0	23.0
			1	52	24.54	0.0	25.0	22.27	0.0	23.0
			1	104	24.47	0.0	25.0	22.31	0.0	23.0
			50	0	23.55	1.0	24.0	22.35	0.0	23.0
			50	28	**24.53**	0.0	25.0	**22.56**	0.0	23.0
			50	56	23.58	1.0	24.0	22.31	0.0	23.0
			100	0	23.59	1.0	24.0	22.60	0.0	23.0
		16QAM	1	1	23.49	1.0	24.0	22.33	0.0	23.0
			1	52	23.34	1.0	24.0	22.14	0.0	23.0
			1	104	23.30	1.0	24.0	22.12	0.0	23.0
		64QAM	1	1	22.20	2.5	22.5	22.13	0.5	22.5
		256QAM	1	1	19.46	4.5	20.5	19.40	2.5	20.5
	CP-OFDM	QPSK	1	1	23.16	1.5	23.5	22.39	0.0	23.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)	MPR	Tune-up Limit	Measured Pwr (dBm)	MPR	Tune-up Limit
					167300			167300		
					836.50 MHz			836.50 MHz		
15 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.58	0.0	25.0	22.35	0.0	23.0
			1	39	24.47	0.0	25.0	22.14	0.0	23.0
			1	77	24.53	0.0	25.0	22.25	0.0	23.0
			36	0	23.57	0.5	24.5	22.41	0.0	23.0
			36	21	24.50	0.0	25.0	22.30	0.0	23.0
			36	43	23.57	0.5	24.5	22.36	0.0	23.0
			75	0	23.50	0.5	24.5	22.31	0.0	23.0
		QPSK	1	1	24.53	0.0	25.0	22.37	0.0	23.0
			1	39	24.46	0.0	25.0	22.25	0.0	23.0
			1	77	24.54	0.0	25.0	22.41	0.0	23.0
			36	0	23.62	1.0	24.0	22.40	0.0	23.0
			36	21	24.50	0.0	25.0	22.31	0.0	23.0
			36	43	23.56	1.0	24.0	22.34	0.0	23.0
			75	0	23.48	1.0	24.0	22.32	0.0	23.0
		16QAM	1	1	23.52	1.0	24.0	22.24	0.0	23.0
			1	39	23.30	1.0	24.0	22.08	0.0	23.0
			1	77	23.43	1.0	24.0	22.25	0.0	23.0
		64QAM	1	1	22.15	2.5	22.5	22.18	0.5	22.5
		256QAM	1	1	19.47	4.5	20.5	19.49	2.5	20.5
	CP-OFDM	QPSK	1	1	23.18	1.5	23.5	22.37	0.0	23.0

NR Band n5 Ant.E Measured Results_(Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					165800		168800			165800		168800		
					829.00 MHz		844.00 MHz			829.00 MHz		844.00 MHz		
10 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.55		24.53	0.0	25.0	22.43		22.31	0.0	23.0
			1	25	24.67		24.48	0.0	25.0	22.47		22.21	0.0	23.0
			1	50	24.56		24.53	0.0	25.0	22.36		22.32	0.0	23.0
			25	0	23.66		23.50	0.5	24.5	22.44		22.28	0.0	23.0
			25	13	24.55		24.38	0.0	25.0	22.36		22.21	0.0	23.0
			25	27	23.64		23.49	0.5	24.5	22.38		22.25	0.0	23.0
			50	0	23.61		23.44	0.5	24.5	22.40		22.27	0.0	23.0
		QPSK	1	1	24.61		24.57	0.0	25.0	22.34		22.31	0.0	23.0
			1	25	24.68		24.49	0.0	25.0	22.46		22.28	0.0	23.0
			1	50	24.59		24.51	0.0	25.0	22.37		22.33	0.0	23.0
			25	0	23.54		23.49	1.0	24.0	22.37		22.29	0.0	23.0
			25	13	24.49		24.41	0.0	25.0	22.39		22.19	0.0	23.0
			25	27	23.56		23.45	1.0	24.0	22.37		22.27	0.0	23.0
			50	0	23.64		23.51	1.0	24.0	22.40		22.26	0.0	23.0
		16QAM	1	1	23.45		23.37	1.0	24.0	22.30		22.20	0.0	23.0
			1	25	23.54		23.27	1.0	24.0	22.31		22.07	0.0	23.0
			1	50	23.44		23.42	1.0	24.0	22.27		22.23	0.0	23.0
		64QAM	1	1	22.14		22.13	2.5	22.5	22.12		22.14	0.5	22.5
		256QAM	1	1	19.43		19.43	4.5	20.5	19.40		19.39	2.5	20.5
	CP-OFDM	QPSK	1	1	23.12		23.06	1.5	23.5	22.37		22.37	0.0	23.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					165300	167300	169300			165300	167300	169300		
					826.50 MHz	836.50 MHz	846.50 MHz			826.50 MHz	836.50 MHz	846.50 MHz		
5 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.69	24.65	24.59	0.0	25.0	22.57	22.42	22.36	0.0	23.0
			1	12	24.67	24.61	24.50	0.0	25.0	22.46	22.39	22.34	0.0	23.0
			1	23	24.75	24.68	24.69	0.0	25.0	22.52	22.40	22.42	0.0	23.0
			12	0	23.65	23.50	23.45	0.5	24.5	22.41	22.31	22.30	0.0	23.0
			12	6	24.53	24.50	24.40	0.0	25.0	22.37	22.34	22.26	0.0	23.0
			12	13	23.58	23.52	23.51	0.5	24.5	22.39	22.30	22.28	0.0	23.0
			25	0	23.63	23.55	23.53	0.5	24.5	22.47	22.40	22.36	0.0	23.0
		QPSK	1	1	24.70	24.69	24.62	0.0	25.0	22.55	22.43	22.37	0.0	23.0
			1	12	24.69	24.59	24.47	0.0	25.0	22.43	22.37	22.34	0.0	23.0
			1	23	24.75	24.59	24.68	0.0	25.0	22.48	22.43	22.42	0.0	23.0
			12	0	23.54	23.53	23.48	1.0	24.0	22.44	22.28	22.25	0.0	23.0
			12	6	24.49	24.49	24.46	0.0	25.0	22.39	22.33	22.18	0.0	23.0
			12	13	23.65	23.58	23.55	1.0	24.0	22.39	22.33	22.30	0.0	23.0
			25	0	23.61	23.54	23.50	1.0	24.0	22.46	22.39	22.30	0.0	23.0
		16QAM	1	1	23.57	23.49	23.40	1.0	24.0	22.34	22.28	22.18	0.0	23.0
			1	12	23.49	23.31	23.30	1.0	24.0	22.35	22.21	22.15	0.0	23.0
			1	23	23.67	23.46	23.49	1.0	24.0	22.40	22.24	22.24	0.0	23.0
		64QAM	1	1	22.21	22.24	22.16	2.5	22.5	22.29	22.28	22.16	0.5	22.5
		256QAM	1	1	19.57	19.53	19.46	4.5	20.5	19.53	19.50	19.43	2.5	20.5
	CP-OFDM	QPSK	1	1	23.22	23.19	23.13	1.5	23.5	22.59	22.46	22.37	0.0	23.0

NR Band n66 Ant.A Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm) DSI = 1 Measured Pwr (dBm) 349000 1745.00 MHz	MPR	Tune-up Limit	Maximum Allowed Average Power (dBm) DSI = 0 Measured Pwr (dBm) 349000 1745.00 MHz	MPR	Tune-up Limit
40 MHz	DFT-s-OFDM	π/2 BPSK	1	1	23.07	0.0	24.0	19.05	0.0	20.0
			1	107	23.11	0.0	24.0	19.15	0.0	20.0
			1	214	23.20	0.0	24.0	19.24	0.0	20.0
			108	0	22.09	0.5	23.5	19.01	0.0	20.0
			108	54	23.10	0.0	24.0	19.19	0.0	20.0
			108	108	22.13	0.5	23.5	19.12	0.0	20.0
			216	0	22.05	0.5	23.5	19.10	0.0	20.0
		QPSK	1	1	23.09	0.0	24.0	19.07	0.0	20.0
			1	107	23.10	0.0	24.0	19.14	0.0	20.0
			1	214	**23.18**	0.0	24.0	**19.15**	0.0	20.0
			108	0	22.11	1.0	23.0	19.02	0.0	20.0
			108	54	**23.15**	0.0	24.0	**19.16**	0.0	20.0
			108	108	22.22	1.0	23.0	19.14	0.0	20.0
			216	0	22.11	1.0	23.0	19.12	0.0	20.0
		16QAM	1	1	22.01	1.0	23.0	18.93	0.0	20.0
			1	107	22.04	1.0	23.0	18.97	0.0	20.0
			1	214	22.11	1.0	23.0	18.89	0.0	20.0
		64QAM	1	1	20.67	2.5	21.5	19.14	0.0	20.0
		256QAM	1	1	17.96	4.5	19.5	18.01	0.5	19.5
	CP-OFDM	QPSK	1	1	21.65	1.5	22.5	19.14	0.0	20.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm) 345500 1727.50 MHz	352500 1762.50 MHz	MPR	Tune-up Limit	Measured Pwr (dBm) 345500 1727.50 MHz	352500 1762.50 MHz	MPR	Tune-up Limit
35 MHz	DFT-s-OFDM	π/2 BPSK	1	1	22.93	23.03	0.0	24.0	18.94	19.08	0.0	20.0
			1	93	23.16	23.18	0.0	24.0	19.06	19.25	0.0	20.0
			1	186	23.08	23.05	0.0	24.0	19.05	19.10	0.0	20.0
			90	0	21.98	22.17	0.5	23.5	19.01	19.12	0.0	20.0
			90	49	23.14	23.21	0.0	24.0	19.02	19.14	0.0	20.0
			90	98	22.14	22.15	0.5	23.5	19.14	19.11	0.0	20.0
			180	0	22.07	22.15	0.5	23.5	19.03	19.17	0.0	20.0
		QPSK	1	1	22.98	23.02	0.0	24.0	18.97	19.09	0.0	20.0
			1	93	23.17	23.22	0.0	24.0	19.22	19.27	0.0	20.0
			1	186	23.11	23.08	0.0	24.0	19.15	19.04	0.0	20.0
			90	0	22.00	22.23	1.0	23.0	19.07	19.07	0.0	20.0
			90	49	23.16	23.18	0.0	24.0	19.08	19.23	0.0	20.0
			90	98	22.15	22.13	1.0	23.0	19.07	19.09	0.0	20.0
			180	0	22.11	22.13	1.0	23.0	19.01	19.15	0.0	20.0
		16QAM	1	1	21.97	21.93	1.0	23.0	18.90	18.91	0.0	20.0
			1	93	22.03	22.03	1.0	23.0	18.87	19.01	0.0	20.0
			1	186	21.97	21.97	1.0	23.0	18.95	18.92	0.0	20.0
		64QAM	1	1	20.58	20.69	2.5	21.5	19.08	19.16	0.0	20.0
		256QAM	1	1	17.89	17.93	4.5	19.5	17.96	18.04	0.5	19.5
	CP-OFDM	QPSK	1	1	21.59	21.76	1.5	22.5	19.13	19.22	0.0	20.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm) 345000 1725.00 MHz	353000 1765.00 MHz	MPR	Tune-up Limit	Measured Pwr (dBm) 345000 1725.00 MHz	353000 1765.00 MHz	MPR	Tune-up Limit
30 MHz	DFT-s-OFDM	π/2 BPSK	1	1	23.08	23.36	0.0	24.0	19.04	19.20	0.0	20.0
			1	79	23.17	23.24	0.0	24.0	19.03	19.09	0.0	20.0
			1	158	23.20	23.22	0.0	24.0	19.23	19.15	0.0	20.0
			80	0	22.56	22.35	0.5	23.5	19.06	19.16	0.0	20.0
			80	40	22.08	23.36	0.0	24.0	19.07	19.21	0.0	20.0
			80	80	22.24	22.28	0.5	23.5	19.07	19.11	0.0	20.0
			160	0	22.14	22.30	0.5	23.5	19.01	19.12	0.0	20.0
		QPSK	1	1	23.14	23.38	0.0	24.0	19.03	19.24	0.0	20.0
			1	79	23.10	23.28	0.0	24.0	19.04	19.13	0.0	20.0
			1	158	23.28	23.22	0.0	24.0	19.15	19.12	0.0	20.0
			80	0	22.16	22.31	1.0	23.0	19.03	19.21	0.0	20.0
			80	40	23.18	23.32	0.0	24.0	19.09	19.18	0.0	20.0
			80	80	22.17	22.26	1.0	23.0	19.09	19.11	0.0	20.0
			160	0	22.15	22.28	1.0	23.0	19.06	19.16	0.0	20.0
		16QAM	1	1	22.14	22.26	1.0	23.0	18.92	19.02	0.0	20.0
			1	79	22.11	22.20	1.0	23.0	18.89	18.96	0.0	20.0
			1	158	22.07	22.20	1.0	23.0	18.85	19.05	0.0	20.0
		64QAM	1	1	20.63	20.94	2.5	21.5	19.12	19.27	0.0	20.0
		256QAM	1	1	17.99	18.26	4.5	19.5	18.07	18.19	0.5	19.5
	CP-OFDM	QPSK	1	1	21.66	21.91	1.5	22.5	19.17	19.29	0.0	20.0

NR Band n66 Ant.A Measured Results_(Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					344500		353500			344500		353500		
					1722.50 MHz		1767.50 MHz			1722.50 MHz		1767.50 MHz		
25 MHz	DFT-s-OFDM	π/2 BPSK	1	1	22.99		23.20	0.0	24.0	19.00		19.17	0.0	20.0
			1	66	23.10		23.20	0.0	24.0	19.10		19.25	0.0	20.0
			1	131	23.08		23.17	0.0	24.0	19.07		19.13	0.0	20.0
			64	0	22.00		22.21	0.5	23.5	18.97		19.11	0.0	20.0
			64	34	23.08		23.17	0.0	24.0	19.01		19.18	0.0	20.0
			64	69	22.08		22.18	0.5	23.5	19.08		19.13	0.0	20.0
			128	0	21.95		22.22	0.5	23.5	19.00		19.15	0.0	20.0
		QPSK	1	1	23.00		23.27	0.0	24.0	19.01		19.19	0.0	20.0
			1	66	23.08		23.26	0.0	24.0	19.11		19.24	0.0	20.0
			1	131	23.06		23.07	0.0	24.0	19.08		19.13	0.0	20.0
			64	0	21.94		22.20	1.0	23.0	18.95		19.20	0.0	20.0
			64	34	23.03		23.17	0.0	24.0	18.97		19.19	0.0	20.0
			64	69	22.05		22.16	1.0	23.0	19.08		19.14	0.0	20.0
			128	0	22.09		22.16	1.0	23.0	18.97		19.18	0.0	20.0
		16QAM	1	1	22.02		22.14	1.0	23.0	18.85		18.99	0.0	20.0
			1	66	21.96		22.11	1.0	23.0	18.87		18.93	0.0	20.0
			1	131	21.95		22.02	1.0	23.0	18.92		18.97	0.0	20.0
		64QAM	1	1	20.63		20.86	2.5	21.5	19.07		19.26	0.0	20.0
		256QAM	1	1	17.96		18.16	4.5	19.5	18.00		18.14	0.5	19.5
	CP-OFDM	QPSK	1	1	21.63		21.81	1.5	22.5	19.11		19.28	0.0	20.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					344000	349000	354000			344000	349000	354000		
					1720.00 MHz	1745.00 MHz	1770.00 MHz			1720.00 MHz	1745.00 MHz	1770.00 MHz		
20 MHz	DFT-s-OFDM	π/2 BPSK	1	1	22.80	22.98	23.05	0.0	24.0	18.80	18.99	19.03	0.0	20.0
			1	52	22.92	23.12	23.02	0.0	24.0	18.72	19.03	19.03	0.0	20.0
			1	104	22.90	23.10	23.07	0.0	24.0	18.91	19.13	18.97	0.0	20.0
			50	0	22.00	22.03	22.12	0.5	23.5	18.85	19.03	19.06	0.0	20.0
			50	28	22.99	23.03	23.04	0.0	24.0	18.87	19.06	19.06	0.0	20.0
			50	56	21.98	22.11	22.02	0.5	23.5	18.96	19.06	18.97	0.0	20.0
			100	0	21.99	22.02	22.06	0.5	23.5	18.87	19.02	19.07	0.0	20.0
		QPSK	1	1	22.80	22.95	23.07	0.0	24.0	18.80	19.00	19.04	0.0	20.0
			1	52	22.83	23.00	23.04	0.0	24.0	18.73	19.05	18.99	0.0	20.0
			1	104	22.92	23.10	23.10	0.0	24.0	18.88	19.13	18.95	0.0	20.0
			50	0	21.92	22.07	22.08	1.0	23.0	18.87	19.05	19.07	0.0	20.0
			50	28	22.95	23.04	23.08	0.0	24.0	19.00	19.04	19.05	0.0	20.0
			50	56	21.99	22.12	22.08	1.0	23.0	19.00	19.01	18.97	0.0	20.0
			100	0	21.88	22.00	22.09	1.0	23.0	18.83	19.02	19.06	0.0	20.0
		16QAM	1	1	21.73	21.84	21.91	1.0	23.0	18.67	18.79	18.84	0.0	20.0
			1	52	21.78	21.93	21.87	1.0	23.0	18.74	18.87	18.77	0.0	20.0
			1	104	21.82	21.98	22.02	1.0	23.0	18.84	18.91	18.76	0.0	20.0
		64QAM	1	1	20.44	20.56	20.67	2.5	21.5	18.91	19.09	19.10	0.0	20.0
		256QAM	1	1	17.72	17.92	17.98	4.5	19.5	17.80	18.01	18.01	0.5	19.5
	CP-OFDM	QPSK	1	1	21.45	21.61	21.66	1.5	22.5	18.92	19.14	19.13	0.0	20.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					343500	349000	354500			343500	349000	354500		
					1717.50 MHz	1745.00 MHz	1772.50 MHz			1717.50 MHz	1745.00 MHz	1772.50 MHz		
15 MHz	DFT-s-OFDM	π/2 BPSK	1	1	22.94	23.18	23.09	0.0	24.0	18.96	19.10	19.10	0.0	20.0
			1	39	22.88	23.09	22.98	0.0	24.0	18.87	19.02	19.01	0.0	20.0
			1	77	22.95	23.11	22.95	0.0	24.0	19.03	19.16	18.96	0.0	20.0
			36	0	21.90	22.13	22.07	0.5	23.5	18.93	19.06	19.05	0.0	20.0
			36	21	22.93	23.09	23.02	0.0	24.0	18.93	19.08	19.06	0.0	20.0
			36	43	21.96	22.14	22.01	0.5	23.5	18.96	19.02	19.00	0.0	20.0
			75	0	21.91	22.13	22.03	0.5	23.5	18.92	19.02	19.03	0.0	20.0
		QPSK	1	1	22.93	23.07	23.10	0.0	24.0	18.94	19.13	19.10	0.0	20.0
			1	39	22.81	23.08	22.86	0.0	24.0	18.89	19.04	19.00	0.0	20.0
			1	77	22.88	23.16	22.95	0.0	24.0	18.99	19.07	18.98	0.0	20.0
			36	0	21.95	22.18	22.07	1.0	23.0	18.88	19.09	19.03	0.0	20.0
			36	21	22.98	23.10	23.05	0.0	24.0	18.88	19.07	19.01	0.0	20.0
			36	43	22.03	22.17	22.08	1.0	23.0	18.99	19.04	19.01	0.0	20.0
			75	0	22.00	22.01	22.01	1.0	23.0	18.87	19.07	19.06	0.0	20.0
		16QAM	1	1	21.90	21.94	22.01	1.0	23.0	18.72	19.01	19.00	0.0	20.0
			1	39	21.87	21.97	21.89	1.0	23.0	18.68	18.92	18.86	0.0	20.0
			1	77	21.80	22.00	21.98	1.0	23.0	18.79	19.04	18.93	0.0	20.0
		64QAM	1	1	20.69	20.52	20.70	2.5	21.5	19.03	19.24	19.21	0.0	20.0
		256QAM	1	1	17.97	18.58	18.04	4.5	19.5	17.95	18.12	18.13	0.5	19.5
	CP-OFDM	QPSK	1	1	21.64	21.73	21.69	1.5	22.5	19.05	19.26	19.28	0.0	20.0

NR Band n66 Ant.A Measured Results_(Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					343000	349000	355000			343000	349000	355000		
					1715.00 MHz	1745.00 MHz	1775.00 MHz			1715.00 MHz	1745.00 MHz	1775.00 MHz		
10 MHz	DFT-s-OFDM	π/2 BPSK	1	1	22.93	22.98	22.97	0.0	24.0	18.91	19.10	18.98	0.0	20.0
			1	25	22.98	23.01	22.93	0.0	24.0	18.96	19.07	19.09	0.0	20.0
			1	50	22.99	22.97	22.94	0.0	24.0	19.04	19.05	19.00	0.0	20.0
			25	0	22.04	22.11	22.13	0.5	23.5	18.97	19.11	19.06	0.0	20.0
			25	13	22.95	23.01	23.00	0.0	24.0	18.88	19.04	19.01	0.0	20.0
			25	27	22.07	22.14	22.12	0.5	23.5	19.09	19.10	19.03	0.0	20.0
			50	0	22.02	22.09	22.09	0.5	23.5	18.95	19.04	19.07	0.0	20.0
		QPSK	1	1	22.99	23.06	23.05	0.0	24.0	18.91	19.10	18.99	0.0	20.0
			1	25	23.04	22.95	23.10	0.0	24.0	18.98	19.07	19.09	0.0	20.0
			1	50	22.98	22.97	23.01	0.0	24.0	18.99	19.03	19.01	0.0	20.0
			25	0	22.07	22.15	22.11	1.0	23.0	18.98	19.09	19.06	0.0	20.0
			25	13	23.00	23.04	23.06	0.0	24.0	19.01	19.05	19.01	0.0	20.0
			25	27	22.11	22.13	22.10	1.0	23.0	19.09	19.06	19.02	0.0	20.0
			50	0	22.08	22.10	22.12	1.0	23.0	18.98	19.04	19.02	0.0	20.0
		16QAM	1	1	21.80	21.93	21.92	1.0	23.0	18.79	18.84	18.82	0.0	20.0
			1	25	21.82	21.98	21.99	1.0	23.0	18.85	18.87	18.92	0.0	20.0
			1	50	21.88	21.95	21.94	1.0	23.0	18.89	18.80	18.95	0.0	20.0
		64QAM	1	1	20.61	20.69	20.68	2.5	21.5	19.01	19.13	19.06	0.0	20.0
		256QAM	1	1	17.89	18.00	17.99	4.5	19.5	17.91	18.04	17.97	0.5	19.5
	CP-OFDM	QPSK	1	1	21.48	21.66	21.66	1.5	22.5	19.04	19.19	19.06	0.0	20.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					342500	349000	355500			342500	349000	355500		
					1712.50 MHz	1745.00 MHz	1777.50 MHz			1712.50 MHz	1745.00 MHz	1777.50 MHz		
5 MHz	DFT-s-OFDM	π/2 BPSK	1	1	22.95	23.21	23.01	0.0	24.0	18.90	19.11	19.03	0.0	20.0
			1	12	22.92	23.18	22.97	0.0	24.0	19.00	19.10	18.96	0.0	20.0
			1	23	22.95	23.19	22.97	0.0	24.0	18.89	19.09	18.98	0.0	20.0
			12	0	21.90	22.07	21.95	0.5	23.5	18.82	19.02	18.92	0.0	20.0
			12	6	22.93	23.10	22.99	0.0	24.0	18.94	19.05	19.00	0.0	20.0
			12	13	21.86	22.11	21.94	0.5	23.5	18.89	19.02	18.95	0.0	20.0
			25	0	21.98	22.19	22.01	0.5	23.5	18.90	19.08	19.01	0.0	20.0
		QPSK	1	1	22.97	23.17	23.06	0.0	24.0	18.92	19.11	19.02	0.0	20.0
			1	12	22.97	23.16	23.02	0.0	24.0	19.01	19.10	19.06	0.0	20.0
			1	23	22.95	23.17	23.01	0.0	24.0	18.99	19.10	19.01	0.0	20.0
			12	0	21.88	22.11	21.97	1.0	23.0	18.81	19.04	18.94	0.0	20.0
			12	6	22.98	23.14	22.97	0.0	24.0	18.87	19.06	19.00	0.0	20.0
			12	13	21.91	22.09	21.98	1.0	23.0	18.77	19.03	18.94	0.0	20.0
			25	0	21.89	22.13	22.02	1.0	23.0	18.98	19.09	19.00	0.0	20.0
		16QAM	1	1	21.74	22.01	21.95	1.0	23.0	18.76	18.94	18.95	0.0	20.0
			1	12	21.89	22.02	21.96	1.0	23.0	18.76	18.94	18.95	0.0	20.0
			1	23	21.90	22.03	21.97	1.0	23.0	18.88	18.94	18.93	0.0	20.0
		64QAM	1	1	20.46	20.77	20.62	2.5	21.5	18.91	19.16	19.09	0.0	20.0
		256QAM	1	1	17.81	18.11	17.99	4.5	19.5	17.90	18.09	18.01	0.5	19.5
	CP-OFDM	QPSK	1	1	21.58	21.69	21.64	1.5	22.5	19.01	19.19	19.16	0.0	20.0

NR Band n66 Ant.F Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm) DSI = 0 Measured Pwr (dBm) 349000 1745.00 MHz	MPR	Tune-up Limit	Maximum Allowed Average Power (dBm) DSI = 1 Measured Pwr (dBm) 349000 1745.00 MHz	MPR	Tune-up Limit
40 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.17	0.0	22.0	17.83	0.0	18.5
			1	107	21.24	0.0	22.0	17.93	0.0	18.5
			1	214	21.11	0.0	22.0	17.56	0.0	18.5
			108	0	21.37	0.0	22.0	17.91	0.0	18.5
			108	54	21.35	0.0	22.0	17.95	0.0	18.5
			108	108	21.20	0.0	22.0	17.74	0.0	18.5
			216	0	21.30	0.0	22.0	17.89	0.0	18.5
		QPSK	1	1	21.19	0.0	22.0	17.73	0.0	18.5
			1	107	**21.25**	0.0	22.0	**17.96**	0.0	18.5
			1	214	21.12	0.0	22.0	17.59	0.0	18.5
			108	0	21.35	0.0	22.0	17.98	0.0	18.5
			108	54	**21.39**	0.0	22.0	**18.02**	0.0	18.5
			108	108	21.27	0.0	22.0	17.80	0.0	18.5
			216	0	21.26	0.0	22.0	17.86	0.0	18.5
		16QAM	1	1	21.22	0.0	22.0	17.79	0.0	18.5
			1	107	21.24	0.0	22.0	17.85	0.0	18.5
			1	214	21.13	0.0	22.0	17.57	0.0	18.5
		64QAM	1	1	20.71	0.5	21.5	17.79	0.0	18.5
		256QAM	1	1	18.33	2.5	19.5	17.39	0.0	18.5
	CP-OFDM	QPSK	1	1	21.47	0.0	22.0	17.97	0.0	18.5

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm) 345500 1727.50 MHz	352500 1762.50 MHz	MPR	Tune-up Limit	Measured Pwr (dBm) 345500 1727.50 MHz	352500 1762.50 MHz	MPR	Tune-up Limit
35 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.00	20.98	0.0	22.0	17.45	17.54	0.0	18.5
			1	93	21.02	20.82	0.0	22.0	17.59	17.42	0.0	18.5
			1	186	20.95	20.87	0.0	22.0	17.37	17.36	0.0	18.5
			90	0	21.06	20.95	0.0	22.0	17.52	17.53	0.0	18.5
			90	49	21.15	20.96	0.0	22.0	17.43	17.51	0.0	18.5
			90	98	21.18	20.83	0.0	22.0	17.59	17.42	0.0	18.5
			180	0	20.98	20.94	0.0	22.0	17.49	17.42	0.0	18.5
		QPSK	1	1	21.03	20.96	0.0	22.0	17.40	17.58	0.0	18.5
			1	93	21.12	20.83	0.0	22.0	17.57	17.45	0.0	18.5
			1	186	20.93	20.80	0.0	22.0	17.35	17.32	0.0	18.5
			90	0	21.05	20.97	0.0	22.0	17.53	17.51	0.0	18.5
			90	49	21.05	20.94	0.0	22.0	17.58	17.40	0.0	18.5
			90	98	21.08	20.87	0.0	22.0	17.54	17.46	0.0	18.5
			180	0	20.99	20.88	0.0	22.0	17.47	17.36	0.0	18.5
		16QAM	1	1	20.75	20.89	0.0	22.0	17.37	17.49	0.0	18.5
			1	93	20.92	20.76	0.0	22.0	17.45	17.34	0.0	18.5
			1	186	20.90	20.82	0.0	22.0	17.19	17.35	0.0	18.5
		64QAM	1	1	20.06	20.52	0.5	21.5	17.36	17.45	0.0	18.5
		256QAM	1	1	18.19	18.27	2.5	19.5	17.04	17.14	0.0	18.5
	CP-OFDM	QPSK	1	1	20.97	21.12	0.0	22.0	17.56	17.72	0.0	18.5

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm) 345000 1725.00 MHz	353000 1765.00 MHz	MPR	Tune-up Limit	Measured Pwr (dBm) 345000 1725.00 MHz	353000 1765.00 MHz	MPR	Tune-up Limit
30 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.06	20.93	0.0	22.0	17.49	17.55	0.0	18.5
			1	79	20.89	20.82	0.0	22.0	17.44	17.49	0.0	18.5
			1	158	21.02	20.94	0.0	22.0	17.42	17.43	0.0	18.5
			80	0	21.14	20.92	0.0	22.0	17.51	17.63	0.0	18.5
			80	40	21.18	20.96	0.0	22.0	17.57	17.55	0.0	18.5
			80	80	21.05	20.86	0.0	22.0	17.56	17.49	0.0	18.5
			160	0	21.03	20.99	0.0	22.0	17.62	17.68	0.0	18.5
		QPSK	1	1	21.13	21.01	0.0	22.0	17.43	17.50	0.0	18.5
			1	79	20.99	20.84	0.0	22.0	17.50	17.47	0.0	18.5
			1	158	21.08	20.95	0.0	22.0	17.48	17.40	0.0	18.5
			80	0	20.99	20.96	0.0	22.0	17.55	17.57	0.0	18.5
			80	40	21.20	20.99	0.0	22.0	17.59	17.52	0.0	18.5
			80	80	21.07	20.92	0.0	22.0	17.52	17.52	0.0	18.5
			160	0	21.05	20.94	0.0	22.0	17.60	17.39	0.0	18.5
		16QAM	1	1	21.01	21.00	0.0	22.0	17.49	17.52	0.0	18.5
			1	79	21.18	20.83	0.0	22.0	17.45	17.45	0.0	18.5
			1	158	21.08	20.93	0.0	22.0	17.43	17.43	0.0	18.5
		64QAM	1	1	20.25	20.55	0.5	21.5	17.48	17.34	0.0	18.5
		256QAM	1	1	18.35	18.32	2.5	19.5	17.08	17.22	0.0	18.5
	CP-OFDM	QPSK	1	1	21.07	21.22	0.0	22.0	17.49	17.74	0.0	18.5

NR Band n66 Ant.F Measured Results_(Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					344500		353500			344500		353500		
					1722.50 MHz		1767.50 MHz			1722.50 MHz		1767.50 MHz		
25 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.02		20.91	0.0	22.0	17.41		17.23	0.0	18.5
			1	66	20.90		21.03	0.0	22.0	17.42		17.58	0.0	18.5
			1	131	20.94		20.98	0.0	22.0	17.69		17.42	0.0	18.5
			64	0	20.88		20.97	0.0	22.0	17.39		17.50	0.0	18.5
			64	34	21.03		20.88	0.0	22.0	17.42		17.47	0.0	18.5
			64	69	20.98		20.95	0.0	22.0	17.47		17.49	0.0	18.5
			128	0	21.00		20.88	0.0	22.0	17.53		17.45	0.0	18.5
		QPSK	1	1	21.04		20.88	0.0	22.0	17.33		17.32	0.0	18.5
			1	66	21.00		21.03	0.0	22.0	17.47		17.54	0.0	18.5
			1	131	20.93		20.92	0.0	22.0	17.55		17.34	0.0	18.5
			64	0	21.03		20.89	0.0	22.0	17.41		17.55	0.0	18.5
			64	34	21.16		20.94	0.0	22.0	17.50		17.50	0.0	18.5
			64	69	21.10		21.01	0.0	22.0	17.57		17.46	0.0	18.5
			128	0	21.08		20.91	0.0	22.0	17.43		17.43	0.0	18.5
		16QAM	1	1	20.92		20.89	0.0	22.0	17.35		17.41	0.0	18.5
			1	66	21.01		20.97	0.0	22.0	17.32		17.42	0.0	18.5
			1	131	20.93		20.94	0.0	22.0	17.50		17.33	0.0	18.5
		64QAM	1	1	20.20		20.41	0.5	21.5	17.25		17.28	0.0	18.5
		256QAM	1	1	18.26		18.36	2.5	19.5	17.02		16.97	0.0	18.5
	CP-OFDM	QPSK	1	1	21.07		21.13	0.0	22.0	17.47		17.63	0.0	18.5

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					344000	349000	354000			344000	349000	354000		
					1720.00 MHz	1745.00 MHz	1770.00 MHz			1720.00 MHz	1745.00 MHz	1770.00 MHz		
20 MHz	DFT-s-OFDM	π/2 BPSK	1	1	20.75	20.87	20.67	0.0	22.0	17.30	17.34	17.33	0.0	18.5
			1	52	20.84	20.92	20.81	0.0	22.0	17.28	17.49	17.30	0.0	18.5
			1	104	20.64	20.75	20.76	0.0	22.0	17.42	17.41	17.25	0.0	18.5
			50	0	20.89	20.96	20.89	0.0	22.0	18.06	17.48	17.37	0.0	18.5
			50	28	20.90	21.02	20.90	0.0	22.0	17.51	17.48	17.30	0.0	18.5
			50	56	20.88	21.03	20.84	0.0	22.0	17.45	17.45	17.30	0.0	18.5
			100	0	21.00	20.95	20.89	0.0	22.0	17.33	17.44	17.33	0.0	18.5
		QPSK	1	1	20.78	20.85	20.75	0.0	22.0	17.25	17.41	17.29	0.0	18.5
			1	52	20.84	20.99	20.82	0.0	22.0	17.24	17.36	17.35	0.0	18.5
			1	104	20.70	20.79	20.70	0.0	22.0	17.23	17.44	17.21	0.0	18.5
			50	0	20.84	21.05	20.89	0.0	22.0	17.33	17.48	17.35	0.0	18.5
			50	28	20.96	21.07	20.82	0.0	22.0	17.42	17.47	17.49	0.0	18.5
			50	56	21.03	21.09	20.79	0.0	22.0	17.52	17.51	17.38	0.0	18.5
			100	0	20.78	20.94	20.74	0.0	22.0	17.32	17.41	17.35	0.0	18.5
		16QAM	1	1	20.76	20.95	20.81	0.0	22.0	17.23	17.41	17.33	0.0	18.5
			1	52	20.79	21.00	20.82	0.0	22.0	17.23	17.38	17.25	0.0	18.5
			1	104	20.78	20.85	20.80	0.0	22.0	17.36	17.46	17.24	0.0	18.5
		64QAM	1	1	20.34	20.48	20.21	0.5	21.5	17.27	17.41	17.25	0.0	18.5
		256QAM	1	1	18.11	18.26	18.05	2.5	19.5	16.84	17.05	16.91	0.0	18.5
	CP-OFDM	QPSK	1	1	20.89	21.01	20.97	0.0	22.0	17.38	17.57	17.53	0.0	18.5

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					343500	349000	354500			343500	349000	354500		
					1717.50 MHz	1745.00 MHz	1772.50 MHz			1717.50 MHz	1745.00 MHz	1772.50 MHz		
15 MHz	DFT-s-OFDM	π/2 BPSK	1	1	20.86	20.93	20.89	0.0	22.0	17.37	17.61	17.40	0.0	18.5
			1	39	20.91	20.94	20.77	0.0	22.0	17.34	17.42	17.22	0.0	18.5
			1	77	20.84	20.91	20.77	0.0	22.0	17.36	17.41	17.25	0.0	18.5
			36	0	21.01	21.02	20.93	0.0	22.0	17.44	17.65	17.47	0.0	18.5
			36	21	21.09	21.07	20.85	0.0	22.0	17.45	17.52	17.32	0.0	18.5
			36	43	21.06	21.03	20.87	0.0	22.0	17.45	17.39	17.32	0.0	18.5
			75	0	20.90	21.07	20.83	0.0	22.0	17.45	17.52	17.32	0.0	18.5
		QPSK	1	1	20.94	20.95	20.96	0.0	22.0	17.34	17.58	17.39	0.0	18.5
			1	39	20.84	20.97	20.78	0.0	22.0	17.36	17.50	17.21	0.0	18.5
			1	77	20.81	20.90	20.77	0.0	22.0	17.23	17.31	17.23	0.0	18.5
			36	0	20.90	20.98	20.84	0.0	22.0	17.47	17.64	17.48	0.0	18.5
			36	21	20.98	21.12	20.84	0.0	22.0	17.46	17.43	17.39	0.0	18.5
			36	43	20.98	21.04	20.87	0.0	22.0	17.43	17.52	17.34	0.0	18.5
			75	0	21.03	21.04	20.84	0.0	22.0	17.52	17.58	17.40	0.0	18.5
		16QAM	1	1	20.86	20.97	20.89	0.0	22.0	17.31	17.60	17.25	0.0	18.5
			1	39	20.85	20.94	20.80	0.0	22.0	17.23	17.43	17.19	0.0	18.5
			1	77	20.84	20.89	20.77	0.0	22.0	17.34	17.32	17.19	0.0	18.5
		64QAM	1	1	20.47	20.56	20.45	0.5	21.5	17.33	17.55	17.33	0.0	18.5
		256QAM	1	1	18.27	18.18	18.19	2.5	19.5	17.04	17.28	17.12	0.0	18.5
	CP-OFDM	QPSK	1	1	21.05	21.13	21.01	0.0	22.0	17.46	17.71	17.60	0.0	18.5

NR Band n66 Ant.F Measured Results_(Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					343000	349000	355000			343000	349000	355000		
					1715.00 MHz	1745.00 MHz	1775.00 MHz			1715.00 MHz	1745.00 MHz	1775.00 MHz		
10 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.18	21.15	20.84	0.0	22.0	17.75	17.69	17.19	0.0	18.5
			1	25	21.12	21.24	20.83	0.0	22.0	17.63	17.75	17.29	0.0	18.5
			1	50	21.11	21.09	20.77	0.0	22.0	17.61	17.73	17.25	0.0	18.5
			25	0	21.18	21.22	20.89	0.0	22.0	17.82	17.82	17.44	0.0	18.5
			25	13	21.23	21.24	20.85	0.0	22.0	17.72	17.72	17.31	0.0	18.5
			25	27	21.08	21.33	20.88	0.0	22.0	17.82	17.81	17.40	0.0	18.5
			50	0	21.28	21.27	20.90	0.0	22.0	17.67	17.77	17.39	0.0	18.5
		QPSK	1	1	21.20	21.18	20.80	0.0	22.0	17.61	17.77	17.25	0.0	18.5
			1	25	21.11	21.21	20.83	0.0	22.0	17.72	17.75	17.26	0.0	18.5
			1	50	21.21	21.09	20.74	0.0	22.0	17.60	17.74	17.23	0.0	18.5
			25	0	21.22	21.20	20.96	0.0	22.0	17.77	17.83	17.43	0.0	18.5
			25	13	21.13	21.17	20.79	0.0	22.0	17.52	17.74	17.33	0.0	18.5
			25	27	21.22	21.26	20.92	0.0	22.0	17.61	17.82	17.40	0.0	18.5
			50	0	21.34	21.27	20.93	0.0	22.0	17.76	17.80	17.40	0.0	18.5
		16QAM	1	1	21.16	21.23	20.84	0.0	22.0	17.62	17.74	17.18	0.0	18.5
			1	25	21.06	21.22	20.78	0.0	22.0	17.59	17.82	17.22	0.0	18.5
			1	50	21.16	21.22	20.81	0.0	22.0	17.63	17.75	17.22	0.0	18.5
		64QAM	1	1	20.09	20.83	20.36	0.5	21.5	17.61	17.69	17.21	0.0	18.5
		256QAM	1	1	18.39	18.43	18.11	2.5	19.5	17.29	17.41	16.89	0.0	18.5
	CP-OFDM	QPSK	1	1	21.23	21.38	20.93	0.0	22.0	17.68	17.95	17.35	0.0	18.5
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					342500	349000	355500			342500	349000	355500		
					1712.50 MHz	1745.00 MHz	1777.50 MHz			1712.50 MHz	1745.00 MHz	1777.50 MHz		
5 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.04	21.11	21.11	0.0	22.0	17.42	17.57	17.62	0.0	18.5
			1	12	21.00	21.22	21.16	0.0	22.0	17.61	17.63	17.65	0.0	18.5
			1	23	21.01	21.12	21.13	0.0	22.0	17.53	17.64	17.63	0.0	18.5
			12	0	21.04	21.10	21.04	0.0	22.0	17.50	17.59	17.59	0.0	18.5
			12	6	21.07	21.20	21.14	0.0	22.0	17.49	17.57	17.65	0.0	18.5
			12	13	21.04	21.11	21.05	0.0	22.0	17.43	17.65	17.61	0.0	18.5
			25	0	21.14	21.20	21.21	0.0	22.0	17.55	17.70	17.69	0.0	18.5
		QPSK	1	1	21.14	21.10	21.16	0.0	22.0	17.48	17.57	17.63	0.0	18.5
			1	12	21.02	21.22	21.15	0.0	22.0	17.55	17.63	17.68	0.0	18.5
			1	23	21.09	21.18	21.12	0.0	22.0	17.49	17.71	17.61	0.0	18.5
			12	0	21.12	21.12	21.03	0.0	22.0	17.46	17.59	17.62	0.0	18.5
			12	6	20.99	21.18	21.10	0.0	22.0	17.47	17.55	17.61	0.0	18.5
			12	13	21.08	21.23	21.17	0.0	22.0	17.40	17.63	17.55	0.0	18.5
			25	0	21.17	21.20	21.16	0.0	22.0	17.56	17.71	17.76	0.0	18.5
		16QAM	1	1	21.15	21.20	21.06	0.0	22.0	17.54	17.63	17.71	0.0	18.5
			1	12	21.06	21.22	21.05	0.0	22.0	17.55	17.66	17.77	0.0	18.5
			1	23	21.09	21.07	21.02	0.0	22.0	17.51	17.74	17.71	0.0	18.5
		64QAM	1	1	20.27	20.73	20.59	0.5	21.5	17.33	17.41	17.54	0.0	18.5
		256QAM	1	1	18.36	18.38	18.40	2.5	19.5	17.11	17.23	17.28	0.0	18.5
	CP-OFDM	QPSK	1	1	21.25	21.18	21.19	0.0	22.0	17.64	17.68	17.87	0.0	18.5

NR Band n41 Ant.F Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm) DSI = 0 Measured Pwr (dBm)					MPR	Tune-up Limit	Maximum Allowed Average Power (dBm) DSI = 1 Measured Pwr (dBm)					MPR	Tune-up Limit
							518598							518598				
							2592.99 MHz							2592.99 MHz				
100 MHz	DFT-s-OFDM	π/2 BPSK	1	1			19.99			0.0	20.5			17.38			0.0	18.0
			1	136			19.77			0.0	20.5			17.24			0.0	18.0
			1	271			19.92			0.0	20.5			17.29			0.0	18.0
			135	0			19.79			0.0	20.5			17.29			0.0	18.0
			135	69			19.68			0.0	20.5			17.26			0.0	18.0
			135	138			19.75			0.0	20.5			17.29			0.0	18.0
			270	0			19.86			0.0	20.5			17.32			0.0	18.0
		QPSK	1	1			**19.98**			0.0	20.5			**17.42**			0.0	18.0
			1	136			19.76			0.0	20.5			17.25			0.0	18.0
			1	271			19.95			0.0	20.5			17.32			0.0	18.0
			135	0			19.67			0.0	20.5			17.24			0.0	18.0
			135	69			19.68			0.0	20.5			17.19			0.0	18.0
			135	138			**19.84**			0.0	20.5			**17.25**			0.0	18.0
			270	0			19.79			0.0	20.5			17.23			0.0	18.0
		16QAM	1	1			19.93			0.0	20.5			17.37			0.0	18.0
			1	136			19.68			0.0	20.5			17.09			0.0	18.0
			1	271			19.83			0.0	20.5			17.39			0.0	18.0
		64QAM	1	1			19.93			0.0	20.5			17.36			0.0	18.0
		256QAM	1	1			19.95			0.0	20.5			17.33			0.0	18.0
	CP-OFDM	QPSK	1	1			20.02			0.0	20.5			17.45			0.0	18.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm) 508200				528996	MPR	Tune-up Limit	Measured Pwr (dBm) 508200				528996	MPR	Tune-up Limit
					2541.00 MHz				2644.98 MHz			2541.00 MHz				2644.98 MHz		
90 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.68				19.81	0.0	20.5	17.03				17.23	0.0	18.0
			1	122	19.67				19.90	0.0	20.5	17.11				17.12	0.0	18.0
			1	243	19.65				20.02	0.0	20.5	17.05				17.37	0.0	18.0
			120	0	19.65				19.78	0.0	20.5	17.01				17.21	0.0	18.0
			120	62	19.61				19.89	0.0	20.5	17.07				17.23	0.0	18.0
			120	125	19.49				19.87	0.0	20.5	16.97				17.32	0.0	18.0
			243	0	19.56				19.81	0.0	20.5	16.95				17.28	0.0	18.0
		QPSK	1	1	19.66				19.82	0.0	20.5	17.07				17.24	0.0	18.0
			1	122	19.53				19.79	0.0	20.5	17.07				17.17	0.0	18.0
			1	243	19.59				20.03	0.0	20.5	16.97				17.47	0.0	18.0
			120	0	19.56				19.78	0.0	20.5	17.07				17.25	0.0	18.0
			120	62	19.54				19.79	0.0	20.5	17.05				17.30	0.0	18.0
			120	125	19.50				19.92	0.0	20.5	17.05				17.36	0.0	18.0
			243	0	19.56				19.80	0.0	20.5	17.00				17.27	0.0	18.0
		16QAM	1	1	19.35				19.79	0.0	20.5	17.02				17.19	0.0	18.0
			1	122	19.38				19.64	0.0	20.5	16.92				17.10	0.0	18.0
			1	243	19.43				20.02	0.0	20.5	16.98				17.40	0.0	18.0
		64QAM	1	1	19.59				19.74	0.0	20.5	16.96				17.26	0.0	18.0
		256QAM	1	1	19.54				19.80	0.0	20.5	17.06				17.30	0.0	18.0
	CP-OFDM	QPSK	1	1	19.60				19.89	0.0	20.5	17.26				17.35	0.0	18.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm) 507204				529998	MPR	Tune-up Limit	Measured Pwr (dBm) 507204				529998	MPR	Tune-up Limit
					2536.02 MHz				2649.99 MHz			2536.02 MHz				2649.99 MHz		
80 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.63				19.83	0.0	20.5	17.01				17.17	0.0	18.0
			1	108	19.59				19.76	0.0	20.5	16.94				17.18	0.0	18.0
			1	215	19.54				19.96	0.0	20.5	17.01				17.41	0.0	18.0
			108	0	19.62				19.74	0.0	20.5	17.09				17.20	0.0	18.0
			108	54	19.62				19.85	0.0	20.5	17.12				17.38	0.0	18.0
			108	109	19.61				19.87	0.0	20.5	16.98				17.31	0.0	18.0
			216	0	19.58				19.79	0.0	20.5	17.06				17.29	0.0	18.0
		QPSK	1	1	19.60				19.75	0.0	20.5	17.01				17.21	0.0	18.0
			1	108	19.45				19.79	0.0	20.5	16.89				17.13	0.0	18.0
			1	215	19.58				19.97	0.0	20.5	17.00				17.35	0.0	18.0
			108	0	19.53				19.73	0.0	20.5	17.04				17.20	0.0	18.0
			108	54	19.55				19.88	0.0	20.5	17.06				17.21	0.0	18.0
			108	109	19.50				19.91	0.0	20.5	17.07				17.36	0.0	18.0
			216	0	19.57				19.82	0.0	20.5	17.05				17.24	0.0	18.0
		16QAM	1	1	19.52				19.62	0.0	20.5	17.02				17.09	0.0	18.0
			1	108	19.44				19.63	0.0	20.5	16.98				17.15	0.0	18.0
			1	215	19.51				19.90	0.0	20.5	16.95				17.42	0.0	18.0
		64QAM	1	1	19.55				19.68	0.0	20.5	17.02				17.15	0.0	18.0
		256QAM	1	1	19.49				19.68	0.0	20.5	17.04				17.27	0.0	18.0
	CP-OFDM	QPSK	1	1	19.53				19.61	0.0	20.5	17.13				17.20	0.0	18.0

Notes:

NR Band n41 were measured output power through FTM mode provided by manufacturer.

NR Band n41 Ant.F Measured Results_(Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
					506202				531000			506202				531000		
					2531.01 MHz				2655.00 MHz			2531.01 MHz				2655.00 MHz		
70 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.55				19.71	0.0	20.5	16.94				17.17	0.0	18.0
			1	94	19.58				19.84	0.0	20.5	17.02				17.05	0.0	18.0
			1	187	19.57				19.95	0.0	20.5	16.98				17.35	0.0	18.0
			90	0	19.58				19.76	0.0	20.5	17.10				17.17	0.0	18.0
			90	49	19.60				19.87	0.0	20.5	17.20				17.38	0.0	18.0
			90	99	19.60				19.81	0.0	20.5	17.11				17.34	0.0	18.0
			180	0	19.59				19.80	0.0	20.5	17.15				17.33	0.0	18.0
		QPSK	1	1	19.54				19.65	0.0	20.5	16.93				17.03	0.0	18.0
			1	94	19.48				19.68	0.0	20.5	16.97				17.17	0.0	18.0
			1	187	19.66				19.94	0.0	20.5	17.02				17.32	0.0	18.0
			90	0	19.58				19.74	0.0	20.5	17.07				17.20	0.0	18.0
			90	49	19.57				19.70	0.0	20.5	17.03				17.25	0.0	18.0
			90	99	19.53				19.86	0.0	20.5	17.05				17.28	0.0	18.0
			180	0	19.60				19.76	0.0	20.5	17.11				17.34	0.0	18.0
		16QAM	1	1	19.35				19.68	0.0	20.5	17.00				17.06	0.0	18.0
			1	94	19.45				19.59	0.0	20.5	16.96				17.12	0.0	18.0
			1	187	19.44				19.75	0.0	20.5	17.01				17.29	0.0	18.0
		64QAM	1	1	19.43				19.58	0.0	20.5	16.85				17.05	0.0	18.0
		256QAM	1	1	19.49				19.61	0.0	20.5	16.89				17.07	0.0	18.0
	CP-OFDM	QPSK	1	1	19.59				19.68	0.0	20.5	17.10				17.22	0.0	18.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
					505200		518598		531996			505200		518598		531996		
					2526.00 MHz		2592.99 MHz		2659.98 MHz			2526.00 MHz		2592.99 MHz		2659.98 MHz		
60 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.29		19.74		19.66	0.0	20.5	16.98		17.07		17.22	0.0	18.0
			1	80	19.38		19.69		19.68	0.0	20.5	17.03		17.06		17.15	0.0	18.0
			1	160	19.50		19.75		19.89	0.0	20.5	17.00		17.16		17.30	0.0	18.0
			81	0	19.54		19.65		19.58	0.0	20.5	17.01		17.22		17.19	0.0	18.0
			81	40	19.49		19.69		19.69	0.0	20.5	17.00		17.16		17.11	0.0	18.0
			81	81	19.45		19.73		19.78	0.0	20.5	16.92		17.25		17.31	0.0	18.0
			162	0	19.53		19.75		19.68	0.0	20.5	16.96		17.18		17.12	0.0	18.0
		QPSK	1	1	19.52		19.74		19.65	0.0	20.5	16.92		17.13		17.04	0.0	18.0
			1	80	19.40		19.65		19.57	0.0	20.5	16.89		17.14		17.12	0.0	18.0
			1	160	19.52		19.77		19.79	0.0	20.5	16.98		17.21		17.31	0.0	18.0
			81	0	19.48		19.70		19.61	0.0	20.5	16.94		17.14		17.18	0.0	18.0
			81	40	19.40		19.66		19.76	0.0	20.5	16.87		17.12		17.05	0.0	18.0
			81	81	19.47		19.75		19.81	0.0	20.5	16.94		17.20		17.27	0.0	18.0
			162	0	19.50		19.62		19.71	0.0	20.5	16.98		17.15		17.11	0.0	18.0
		16QAM	1	1	19.47		19.69		19.62	0.0	20.5	16.93		17.11		17.00	0.0	18.0
			1	80	19.36		19.53		19.69	0.0	20.5	16.85		17.07		17.06	0.0	18.0
			1	160	19.44		19.57		19.84	0.0	20.5	16.95		17.18		17.28	0.0	18.0
		64QAM	1	1	19.48		19.63		19.67	0.0	20.5	16.95		17.11		16.95	0.0	18.0
		256QAM	1	1	19.43		19.62		19.64	0.0	20.5	16.92		17.04		16.99	0.0	18.0
	CP-OFDM	QPSK	1	1	19.57		19.70		19.60	0.0	20.5	17.05		17.21		17.20	0.0	18.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
					504204		518598		532998			504204		518598		532998		
					2521.02 MHz		2592.99 MHz		2664.99 MHz			2521.02 MHz		2592.99 MHz		2664.99 MHz		
50 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.77		19.91		19.95	0.0	20.5	17.35		17.35		17.31	0.0	18.0
			1	66	19.82		19.82		20.03	0.0	20.5	17.37		17.42		17.41	0.0	18.0
			1	131	19.77		19.97		20.08	0.0	20.5	17.23		17.46		17.00	0.0	18.0
			64	0	19.80		19.91		19.97	0.0	20.5	17.35		17.51		17.47	0.0	18.0
			64	34	19.87		19.98		20.02	0.0	20.5	17.51		17.53		17.67	0.0	18.0
			64	69	19.81		19.93		20.09	0.0	20.5	17.35		17.46		17.63	0.0	18.0
			128	0	19.79		20.02		19.98	0.0	20.5	17.40		17.48		17.54	0.0	18.0
		QPSK	1	1	19.71		19.84		19.87	0.0	20.5	17.22		17.42		17.33	0.0	18.0
			1	66	19.69		19.87		19.91	0.0	20.5	17.25		17.41		17.45	0.0	18.0
			1	131	19.81		19.98		20.06	0.0	20.5	17.33		17.53		17.53	0.0	18.0
			64	0	19.70		19.88		19.99	0.0	20.5	17.37		17.40		17.56	0.0	18.0
			64	34	19.83		19.99		20.04	0.0	20.5	17.35		17.35		17.57	0.0	18.0
			64	69	19.77		19.89		20.07	0.0	20.5	17.34		17.40		17.55	0.0	18.0
			128	0	19.76		19.91		19.95	0.0	20.5	17.34		17.42		17.57	0.0	18.0
		16QAM	1	1	19.65		19.78		19.84	0.0	20.5	17.18		17.31		17.31	0.0	18.0
			1	66	19.68		19.79		19.87	0.0	20.5	17.19		17.41		17.43	0.0	18.0
			1	131	19.74		19.85		20.01	0.0	20.5	17.27		17.39		17.51	0.0	18.0
		64QAM	1	1	19.71		19.77		19.84	0.0	20.5	17.19		17.21		17.39	0.0	18.0
		256QAM	1	1	19.77		19.83		19.86	0.0	20.5	17.20		17.36		17.41	0.0	18.0
	CP-OFDM	QPSK	1	1	19.78		19.97		19.97	0.0	20.5	17.31		17.40		17.51	0.0	18.0

Notes:

NR Band n41 were measured output power through FTM mode provided by manufacturer.

NR Band n41 Ant.F Measured Results_(Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
					503202	513468		523734	534000			503202	513468		523734	534000		
					2516.01 MHz	2567.34 MHz		2618.67 MHz	2670.00 MHz			2516.01 MHz	2567.34 MHz		2618.67 MHz	2670.00 MHz		
40 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.61	19.76		19.76	19.81	0.0	20.5	17.08	17.14		17.14	17.21	0.0	18.0
			1	52	19.76	19.85		19.85	19.86	0.0	20.5	17.12	17.29		17.26	17.37	0.0	18.0
			1	104	19.70	19.89		19.76	19.94	0.0	20.5	17.08	17.27		17.24	17.31	0.0	18.0
			50	0	19.69	19.91		19.80	19.91	0.0	20.5	17.21	17.26		17.21	17.39	0.0	18.0
			50	28	19.77	19.94		19.79	19.94	0.0	20.5	17.33	17.32		17.23	17.43	0.0	18.0
			50	56	19.71	19.82		19.87	19.99	0.0	20.5	17.25	17.41		17.21	17.42	0.0	18.0
			100	0	19.71	19.83		19.79	19.89	0.0	20.5	17.19	17.29		17.31	17.38	0.0	18.0
		QPSK	1	1	19.69	20.16		19.72	19.71	0.0	20.5	17.04	17.15		17.16	17.11	0.0	18.0
			1	52	19.67	19.73		19.68	19.84	0.0	20.5	17.18	17.21		17.25	17.24	0.0	18.0
			1	104	19.67	19.79		19.73	19.89	0.0	20.5	17.09	17.26		17.24	17.26	0.0	18.0
			50	0	19.68	19.84		19.75	19.89	0.0	20.5	17.25	17.29		17.20	17.32	0.0	18.0
			50	28	19.77	19.83		19.75	19.88	0.0	20.5	17.19	17.27		17.28	17.37	0.0	18.0
			50	56	19.76	19.82		19.81	19.87	0.0	20.5	17.17	17.34		17.24	17.44	0.0	18.0
			100	0	19.70	19.81		19.78	19.91	0.0	20.5	17.16	17.26		17.27	17.35	0.0	18.0
		16QAM	1	1	19.71	19.61		19.64	19.65	0.0	20.5	17.01	17.12		17.08	17.15	0.0	18.0
			1	52	19.65	19.63		19.66	19.78	0.0	20.5	17.11	17.18		17.22	17.23	0.0	18.0
			1	104	19.54	19.75		19.66	19.88	0.0	20.5	17.15	17.19		17.18	17.27	0.0	18.0
		64QAM	1	1	19.62	19.70		19.63	19.71	0.0	20.5	16.96	17.16		17.10	17.12	0.0	18.0
		256QAM	1	1	19.58	19.64		19.65	19.67	0.0	20.5	17.01	17.17		17.12	17.07	0.0	18.0
	CP-OFDM	QPSK	1	1	19.61	19.74		19.72	19.76	0.0	20.5	17.09	17.21		17.16	17.14	0.0	18.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
					502200	510402	518598	526800	534996			502200	510402	518598	526800	534996		
					2511.00 MHz	2552.01 MHz	2592.99 MHz	2634.00 MHz	2674.98 MHz			2511.00 MHz	2552.01 MHz	2592.99 MHz	2634.00 MHz	2674.98 MHz		
30 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.68	19.69	19.87	19.86	19.92	0.0	20.5	17.22	17.11	17.27	17.26	17.34	0.0	18.0
			1	39	19.73	19.61	19.83	19.86	19.98	0.0	20.5	17.14	17.11	17.18	17.19	17.37	0.0	18.0
			1	76	19.77	19.66	19.95	19.91	20.01	0.0	20.5	17.25	17.17	17.44	17.34	17.42	0.0	18.0
			36	0	19.65	19.64	19.83	19.73	19.84	0.0	20.5	17.18	17.11	17.27	17.25	17.29	0.0	18.0
			36	21	19.69	19.64	19.82	19.82	19.91	0.0	20.5	17.24	17.17	17.33	17.27	17.45	0.0	18.0
			36	42	19.74	19.60	19.79	19.87	19.94	0.0	20.5	17.19	17.05	17.27	17.23	17.44	0.0	18.0
			75	0	19.62	19.66	19.80	19.76	19.84	0.0	20.5	17.17	17.11	17.25	17.28	17.37	0.0	18.0
		QPSK	1	1	19.75	19.68	19.77	19.84	19.92	0.0	20.5	17.20	17.19	17.32	17.31	17.35	0.0	18.0
			1	39	19.59	19.59	19.75	19.74	19.81	0.0	20.5	17.20	17.06	17.25	17.21	17.25	0.0	18.0
			1	76	19.72	19.66	19.82	19.87	19.98	0.0	20.5	17.11	17.15	17.37	17.33	17.39	0.0	18.0
			36	0	19.65	19.65	19.81	19.77	19.89	0.0	20.5	17.16	17.13	17.30	17.31	17.31	0.0	18.0
			36	21	19.59	19.57	19.75	19.69	19.83	0.0	20.5	17.18	17.03	17.26	17.18	17.25	0.0	18.0
			36	42	19.76	19.61	19.80	19.89	20.00	0.0	20.5	17.22	17.13	17.31	17.25	17.44	0.0	18.0
			75	0	19.68	19.51	19.82	19.76	19.89	0.0	20.5	17.21	17.11	17.28	17.26	17.31	0.0	18.0
		16QAM	1	1	19.65	19.54	19.76	19.70	19.81	0.0	20.5	17.14	17.08	17.21	17.18	17.33	0.0	18.0
			1	39	19.57	19.57	19.72	19.71	19.81	0.0	20.5	17.11	17.07	17.20	17.15	17.21	0.0	18.0
			1	76	19.66	19.57	19.78	19.81	19.89	0.0	20.5	17.14	17.05	17.25	17.27	17.35	0.0	18.0
		64QAM	1	1	19.71	19.61	19.75	19.79	19.79	0.0	20.5	17.18	17.10	17.24	17.26	17.31	0.0	18.0
		256QAM	1	1	19.74	19.57	19.81	19.77	19.81	0.0	20.5	17.15	17.13	17.21	17.27	17.32	0.0	18.0
	CP-OFDM	QPSK	1	1	19.70	19.67	19.82	19.81	19.87	0.0	20.5	17.16	17.20	17.29	17.36	17.40	0.0	18.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
					501702	510150	518598	527052	535500			501702	510150	518598	527052	535500		
					2508.51 MHz	2550.75 MHz	2592.99 MHz	2635.26 MHz	2677.50 MHz			2508.51 MHz	2550.75 MHz	2592.99 MHz	2635.26 MHz	2677.50 MHz		
25 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.72	19.70	19.85	19.87	19.97	0.0	20.5	17.18	17.08	17.27	17.21	17.44	0.0	18.0
			1	32	19.70	19.74	19.85	19.91	19.99	0.0	20.5	17.25	17.09	17.39	17.35	17.46	0.0	18.0
			1	63	19.75	19.64	19.91	19.86	20.01	0.0	20.5	17.21	17.01	17.31	17.26	17.38	0.0	18.0
			32	0	19.66	19.58	19.78	19.83	19.91	0.0	20.5	17.16	17.09	17.25	17.31	17.44	0.0	18.0
			32	16	19.75	19.59	19.80	19.89	19.93	0.0	20.5	17.21	17.15	17.29	17.36	17.46	0.0	18.0
			32	33	19.69	19.66	19.76	19.84	19.87	0.0	20.5	17.16	17.05	17.31	17.32	17.41	0.0	18.0
			64	0	19.75	19.57	19.83	19.86	19.93	0.0	20.5	17.19	17.09	17.34	17.32	17.45	0.0	18.0
		QPSK	1	1	19.74	19.61	19.82	19.83	19.98	0.0	20.5	17.12	17.07	17.25	17.30	17.34	0.0	18.0
			1	32	19.71	19.72	19.78	19.81	19.94	0.0	20.5	17.24	17.10	17.27	17.22	17.41	0.0	18.0
			1	63	19.78	19.66	19.78	19.86	19.91	0.0	20.5	17.08	17.01	17.35	17.31	17.36	0.0	18.0
			32	0	19.71	19.61	19.79	19.83	19.89	0.0	20.5	17.05	17.11	17.27	17.31	17.32	0.0	18.0
			32	16	19.63	19.51	19.73	19.72	19.88	0.0	20.5	17.25	16.99	17.19	17.15	17.37	0.0	18.0
			32	33	19.69	19.56	19.76	19.81	19.92	0.0	20.5	17.19	17.05	17.26	17.37	17.43	0.0	18.0
			64	0	19.70	19.61	19.76	19.82	19.94	0.0	20.5	17.21	17.12	17.27	17.27	17.44	0.0	18.0
		16QAM	1	1	19.52	19.58	19.77	19.71	19.81	0.0	20.5	17.04	17.07	17.22	17.21	17.27	0.0	18.0
			1	32	19.58	19.51	19.71	19.75	19.84	0.0	20.5	17.10	16.96	17.16	17.15	17.32	0.0	18.0
			1	63	19.61	19.61	19.68	19.70	19.92	0.0	20.5	17.08	16.94	17.23	17.23	17.34	0.0	18.0
		64QAM	1	1	19.74	19.62	19.82	19.71	19.85	0.0	20.5	17.11	17.05	17.22	17.21	17.31	0.0	18.0
		256QAM	1	1	19.68	19.66	19.89	19.74	19.85	0.0	20.5	17.10	17.05	17.35	17.32	17.36	0.0	18.0
	CP-OFDM	QPSK	1	1	19.71	19.73	19.90	19.80	19.90	0.0	20.5	17.17	17.14	17.31	17.30	17.37	0.0	18.0

Notes:

NR Band n41 were measured output power through FTM mode provided by manufacturer.

NR Band n41 Ant.F Measured Results_(Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
					501702	510150	518598	527052	535500			501702	510150	518598	527052	535500		
					2508.51 MHz	2550.75 MHz	2592.99 MHz	2635.26 MHz	2677.50 MHz			2508.51 MHz	2550.75 MHz	2592.99 MHz	2635.26 MHz	2677.50 MHz		
25 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.72	19.70	19.85	19.87	19.97	0.0	20.5	17.18	17.08	17.27	17.21	17.44	0.0	18.0
			1	32	19.70	19.74	19.85	19.91	19.99	0.0	20.5	17.25	17.09	17.39	17.35	17.46	0.0	18.0
			1	63	19.75	19.64	19.91	19.86	20.01	0.0	20.5	17.21	17.01	17.31	17.26	17.38	0.0	18.0
			32	0	19.66	19.58	19.78	19.83	19.91	0.0	20.5	17.16	17.09	17.25	17.31	17.44	0.0	18.0
			32	16	19.75	19.59	19.80	19.89	19.93	0.0	20.5	17.21	17.15	17.29	17.36	17.46	0.0	18.0
			32	33	19.69	19.66	19.76	19.84	19.87	0.0	20.5	17.16	17.05	17.31	17.32	17.41	0.0	18.0
			64	0	19.75	19.57	19.83	19.86	19.93	0.0	20.5	17.19	17.09	17.34	17.32	17.45	0.0	18.0
		QPSK	1	1	19.74	19.61	19.82	19.83	19.98	0.0	20.5	17.12	17.07	17.25	17.30	17.34	0.0	18.0
			1	32	19.71	19.72	19.78	19.81	19.94	0.0	20.5	17.24	17.10	17.27	17.22	17.41	0.0	18.0
			1	63	19.78	19.66	19.78	19.86	19.91	0.0	20.5	17.08	17.01	17.35	17.31	17.36	0.0	18.0
			32	0	19.71	19.61	19.79	19.83	19.89	0.0	20.5	17.05	17.11	17.27	17.31	17.32	0.0	18.0
			32	16	19.63	19.51	19.73	19.72	19.88	0.0	20.5	17.25	16.99	17.19	17.15	17.37	0.0	18.0
			32	33	19.69	19.56	19.76	19.81	19.92	0.0	20.5	17.19	17.05	17.26	17.37	17.43	0.0	18.0
			64	0	19.70	19.61	19.76	19.82	19.94	0.0	20.5	17.21	17.12	17.27	17.27	17.44	0.0	18.0
		16QAM	1	1	19.52	19.58	19.77	19.71	19.81	0.0	20.5	17.04	17.07	17.22	17.21	17.27	0.0	18.0
			1	32	19.58	19.51	19.71	19.75	19.84	0.0	20.5	17.10	16.96	17.16	17.15	17.32	0.0	18.0
			1	63	19.61	19.61	19.68	19.70	19.92	0.0	20.5	17.08	16.94	17.23	17.23	17.34	0.0	18.0
		64QAM	1	1	19.74	19.62	19.82	19.71	19.85	0.0	20.5	17.11	17.05	17.22	17.21	17.31	0.0	18.0
		256QAM	1	1	19.68	19.66	19.89	19.74	19.85	0.0	20.5	17.10	17.05	17.35	17.32	17.36	0.0	18.0
	CP-OFDM	QPSK	1	1	19.71	19.73	19.90	19.80	19.90	0.0	20.5	17.17	17.14	17.31	17.30	17.37	0.0	18.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
					501204	509904	518598	527298	535998			501204	509904	518598	527298	535998		
					2506.02 MHz	2549.52 MHz	2592.99 MHz	2636.49 MHz	2679.99 MHz			2506.02 MHz	2549.52 MHz	2592.99 MHz	2636.49 MHz	2679.99 MHz		
20 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.86	19.54	19.70	19.70	19.79	0.0	20.5	17.12	17.02	17.21	17.15	17.38	0.0	18.0
			1	25	19.81	19.56	19.84	19.79	19.84	0.0	20.5	17.19	17.03	17.33	17.29	17.40	0.0	18.0
			1	49	19.89	19.53	19.80	19.83	19.79	0.0	20.5	17.15	16.95	17.25	17.20	17.32	0.0	18.0
			25	0	19.74	19.55	19.68	19.73	19.82	0.0	20.5	17.10	17.03	17.19	17.25	17.38	0.0	18.0
			25	13	19.80	19.60	19.89	19.78	19.89	0.0	20.5	17.15	17.09	17.23	17.30	17.40	0.0	18.0
			25	26	19.81	19.61	19.82	19.75	19.81	0.0	20.5	17.10	16.99	17.25	17.26	17.35	0.0	18.0
			50	0	19.79	19.59	19.72	19.75	19.85	0.0	20.5	17.13	17.03	17.28	17.26	17.39	0.0	18.0
		QPSK	1	1	19.68	19.46	19.71	19.72	19.81	0.0	20.5	17.06	17.01	17.19	17.24	17.28	0.0	18.0
			1	25	19.64	19.55	19.68	19.77	19.83	0.0	20.5	17.18	17.04	17.21	17.16	17.35	0.0	18.0
			1	49	19.81	19.51	19.72	19.70	19.80	0.0	20.5	17.02	16.95	17.29	17.25	17.30	0.0	18.0
			25	0	19.78	19.55	19.73	19.79	19.84	0.0	20.5	16.99	17.05	17.21	17.25	17.26	0.0	18.0
			25	13	19.66	19.59	19.66	19.71	19.81	0.0	20.5	17.19	16.93	17.13	17.09	17.31	0.0	18.0
			25	26	19.72	19.63	19.83	19.77	19.85	0.0	20.5	17.13	16.99	17.20	17.31	17.37	0.0	18.0
			50	0	19.77	19.64	19.72	19.76	19.86	0.0	20.5	17.15	17.06	17.21	17.21	17.38	0.0	18.0
		16QAM	1	1	19.60	19.44	19.66	19.58	19.69	0.0	20.5	16.98	17.01	17.16	17.15	17.21	0.0	18.0
			1	25	19.62	19.45	19.70	19.71	19.79	0.0	20.5	17.04	16.90	17.10	17.09	17.26	0.0	18.0
			1	49	19.68	19.43	19.71	19.65	19.79	0.0	20.5	17.02	16.88	17.17	17.17	17.28	0.0	18.0
		64QAM	1	1	19.61	19.50	19.65	19.52	19.74	0.0	20.5	17.05	16.99	17.16	17.15	17.25	0.0	18.0
		256QAM	1	1	19.74	19.49	19.64	19.61	19.71	0.0	20.5	17.04	16.99	17.29	17.26	17.30	0.0	18.0
	CP-OFDM	QPSK	1	1	19.77	19.54	19.65	19.72	19.75	0.0	20.5	17.11	17.08	17.25	17.24	17.31	0.0	18.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
					500700	509652	518598	527550	536496			500700	509652	518598	527550	536496		
					2503.50 MHz	2548.26 MHz	2592.99 MHz	2637.75 MHz	2682.48 MHz			2503.50 MHz	2548.26 MHz	2592.99 MHz	2637.75 MHz	2682.48 MHz		
15 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.65	19.59	19.84	19.77	19.88	0.0	20.5	17.18	17.09	17.31	17.20	17.29	0.0	18.0
			1	18	19.71	19.61	19.72	19.86	19.86	0.0	20.5	17.21	17.01	17.24	17.18	17.25	0.0	18.0
			1	36	19.71	19.73	19.86	19.90	19.91	0.0	20.5	17.24	17.07	17.32	17.22	17.29	0.0	18.0
			18	0	19.69	19.61	19.77	19.76	19.87	0.0	20.5	17.19	17.11	17.24	17.14	17.30	0.0	18.0
			18	10	19.78	19.69	19.93	19.83	19.93	0.0	20.5	17.20	17.01	17.24	17.27	17.28	0.0	18.0
			18	20	19.68	19.71	19.88	19.77	19.87	0.0	20.5	17.20	17.08	17.28	17.26	17.30	0.0	18.0
			36	0	19.65	19.51	19.72	19.73	19.80	0.0	20.5	17.04	17.06	17.16	17.14	17.22	0.0	18.0
		QPSK	1	1	19.67	19.60	19.74	19.75	19.85	0.0	20.5	17.18	17.01	17.22	17.14	17.20	0.0	18.0
			1	18	19.65	19.51	19.68	19.70	19.83	0.0	20.5	17.12	16.97	17.16	17.06	17.16	0.0	18.0
			1	36	19.68	19.65	19.79	19.74	19.88	0.0	20.5	17.27	17.02	17.27	17.11	17.22	0.0	18.0
			18	0	19.73	19.55	19.76	19.78	19.90	0.0	20.5	17.09	17.12	17.24	17.14	17.26	0.0	18.0
			18	10	19.64	19.57	19.78	19.76	19.84	0.0	20.5	17.14	16.98	17.14	17.12	17.19	0.0	18.0
			18	20	19.75	19.59	19.82	19.80	19.90	0.0	20.5	17.12	17.10	17.28	17.21	17.30	0.0	18.0
			36	0	19.64	19.57	19.76	19.71	19.85	0.0	20.5	17.06	17.06	17.21	17.12	17.21	0.0	18.0
		16QAM	1	1	19.54	19.46	19.76	19.73	19.82	0.0	20.5	17.15	17.07	17.17	17.17	17.21	0.0	18.0
			1	18	19.58	19.44	19.71	19.70	19.80	0.0	20.5	16.99	16.91	17.10	17.11	17.14	0.0	18.0
			1	36	19.64	19.56	19.77	19.75	19.81	0.0	20.5	17.09	17.12	17.18	17.05	17.21	0.0	18.0
		64QAM	1	1	19.62	19.51	19.64	19.75	19.88	0.0	20.5	17.08	17.15	17.20	17.12	17.19	0.0	18.0
		256QAM	1	1	19.65	19.54	19.73	19.71	19.91	0.0	20.5	17.16	17.11	17.15	17.08	17.22	0.0	18.0
	CP-OFDM	QPSK	1	1	19.64	19.62	19.71	19.81	19.86	0.0	20.5	17.16	17.14	17.26	17.22	17.24	0.0	18.0

Notes:

NR Band n41 were measured output power through FTM mode provided by manufacturer.

NR Band n41 Ant.F Measured Results_(Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
					500202	509400	518598	527802	537000			500202	509400	518598	527802	537000		
					2501.01 MHz	2547.00 MHz	2592.99 MHz	2639.01 MHz	2685.00 MHz			2501.01 MHz	2547.00 MHz	2592.99 MHz	2639.01 MHz	2685.00 MHz		
10 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.64	19.63	19.75	19.72	19.79	0.0	20.5	17.15	17.06	17.28	17.17	17.26	0.0	18.0
			1	12	19.66	19.62	19.71	19.66	19.79	0.0	20.5	17.18	16.98	17.21	17.15	17.22	0.0	18.0
			1	22	19.67	19.67	19.83	19.69	19.83	0.0	20.5	17.21	17.04	17.29	17.19	17.26	0.0	18.0
			12	0	19.61	19.52	19.76	19.68	19.77	0.0	20.5	17.16	17.08	17.21	17.11	17.27	0.0	18.0
			12	6	19.60	19.53	19.63	19.62	19.76	0.0	20.5	17.17	16.98	17.21	17.24	17.25	0.0	18.0
			12	12	19.64	19.56	19.71	19.67	19.82	0.0	20.5	17.17	17.05	17.25	17.23	17.27	0.0	18.0
			24	0	19.61	19.51	19.65	19.58	19.68	0.0	20.5	17.01	17.03	17.13	17.11	17.19	0.0	18.0
		QPSK	1	1	19.62	19.57	19.71	19.68	19.73	0.0	20.5	17.15	16.98	17.19	17.11	17.17	0.0	18.0
			1	12	19.62	19.54	19.65	19.59	19.74	0.0	20.5	17.09	16.94	17.13	17.03	17.13	0.0	18.0
			1	22	19.65	19.58	19.71	19.78	19.75	0.0	20.5	17.24	16.99	17.24	17.08	17.19	0.0	18.0
			12	0	19.65	19.57	19.70	19.61	19.75	0.0	20.5	17.06	17.09	17.21	17.11	17.23	0.0	18.0
			12	6	19.55	19.52	19.65	19.59	19.69	0.0	20.5	17.11	16.95	17.11	17.09	17.16	0.0	18.0
			12	12	19.68	19.56	19.76	19.68	19.79	0.0	20.5	17.09	17.07	17.25	17.18	17.27	0.0	18.0
			24	0	19.58	19.52	19.66	19.61	19.67	0.0	20.5	17.03	17.03	17.18	17.09	17.18	0.0	18.0
		16QAM	1	1	19.62	19.57	19.67	19.61	19.61	0.0	20.5	17.12	17.04	17.14	17.14	17.18	0.0	18.0
			1	12	19.54	19.41	19.62	19.62	19.57	0.0	20.5	16.96	16.88	17.07	17.08	17.11	0.0	18.0
			1	22	19.63	19.52	19.72	19.71	19.72	0.0	20.5	17.06	17.09	17.15	17.02	17.18	0.0	18.0
		64QAM	1	1	19.59	19.53	19.67	19.65	19.67	0.0	20.5	17.05	17.12	17.17	17.09	17.16	0.0	18.0
		256QAM	1	1	19.34	19.53	19.66	19.59	19.72	0.0	20.5	17.13	17.08	17.12	17.05	17.19	0.0	18.0
	CP-OFDM	QPSK	1	1	19.61	19.63	19.74	19.66	19.75	0.0	20.5	17.13	17.11	17.23	17.19	17.21	0.0	18.0

Notes:

NR Band n41 were measured output power through FTM mode provided by manufacturer.

NR Band n41 Ant.B Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)					MPR	Tune-up Limit
					DSI = 0, 1						
					Measured Pwr (dBm)						
							518598				
							2592.99 MHz				
100 MHz	DFT-s-OFDM	π/2 BPSK	1	1			21.46			0.0	22.0
			1	136			21.34			0.0	22.0
			1	271			21.62			0.0	22.0
			135	0			21.36			0.0	22.0
			135	69			21.29			0.0	22.0
			135	138			21.39			0.0	22.0
			270	0			21.36			0.0	22.0
		QPSK	1	1			21.49			0.0	22.0
			1	136			21.25			0.0	22.0
			1	271			**21.68**			0.0	22.0
			135	0			21.29			0.0	22.0
			135	69			21.24			0.0	22.0
			135	138			**21.36**			0.0	22.0
			270	0			21.36			0.0	22.0
		16QAM	1	1			21.38			0.0	22.0
			1	136			21.19			0.0	22.0
			1	271			21.51			0.0	22.0
		64QAM	1	1			21.05			0.0	22.0
		256QAM	1	1			19.45			1.5	20.5
	CP-OFDM	QPSK	1	1			21.44			0.0	22.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					508200				528996		
					2541.00 MHz				2644.98 MHz		
90 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.33				21.44	0.0	22.0
			1	122	20.56				21.49	0.0	22.0
			1	243	21.41				20.70	0.0	22.0
			120	0	21.32				21.43	0.0	22.0
			120	62	21.38				21.32	0.0	22.0
			120	125	21.33				21.35	0.0	22.0
			243	0	21.22				21.33	0.0	22.0
		QPSK	1	1	21.36				21.44	0.0	22.0
			1	122	21.30				21.30	0.0	22.0
			1	243	21.35				21.13	0.0	22.0
			120	0	21.23				21.34	0.0	22.0
			120	62	21.22				21.28	0.0	22.0
			120	125	21.25				21.34	0.0	22.0
			243	0	21.28				21.30	0.0	22.0
		16QAM	1	1	21.18				21.46	0.0	22.0
			1	122	21.17				21.19	0.0	22.0
			1	243	21.32				19.82	0.0	22.0
		64QAM	1	1	21.30				21.38	0.0	22.0
		256QAM	1	1	19.90				19.93	1.5	20.5
	CP-OFDM	QPSK	1	1	21.40				21.61	0.0	22.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					507204				529998		
					2536.02 MHz				2649.99 MHz		
80 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.27				21.48	0.0	22.0
			1	108	21.22				21.44	0.0	22.0
			1	215	21.25				21.38	0.0	22.0
			108	0	21.26				21.45	0.0	22.0
			108	54	21.31				21.46	0.0	22.0
			108	109	21.28				21.41	0.0	22.0
			216	0	21.28				21.38	0.0	22.0
		QPSK	1	1	21.22				21.39	0.0	22.0
			1	108	21.20				21.35	0.0	22.0
			1	215	21.25				21.26	0.0	22.0
			108	0	21.22				21.46	0.0	22.0
			108	54	21.28				21.41	0.0	22.0
			108	109	21.33				21.42	0.0	22.0
			216	0	21.29				21.41	0.0	22.0
		16QAM	1	1	21.27				21.42	0.0	22.0
			1	108	21.16				21.36	0.0	22.0
			1	215	21.11				20.13	0.0	22.0
		64QAM	1	1	21.22				21.25	0.0	22.0
		256QAM	1	1	19.90				19.63	1.5	20.5
	CP-OFDM	QPSK	1	1	21.31				21.59	0.0	22.0

Notes:

NR Band n41 were measured output power through FTM mode provided by manufacturer.

NR Band n41 Ant.B Measured Results_(Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					506202				531000		
					2531.01 MHz				2655.00 MHz		
70 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.18				21.52	0.0	22.0
			1	94	21.34				21.46	0.0	22.0
			1	187	21.34				20.08	0.0	22.0
			90	0	21.36				21.53	0.0	22.0
			90	49	21.41				21.51	0.0	22.0
			90	99	21.36				21.47	0.0	22.0
			180	0	21.34				21.52	0.0	22.0
		QPSK	1	1	21.26				21.52	0.0	22.0
			1	94	21.22				21.30	0.0	22.0
			1	187	21.33				19.92	0.0	22.0
			90	0	21.31				21.58	0.0	22.0
			90	49	21.30				21.49	0.0	22.0
			90	99	21.34				21.52	0.0	22.0
			180	0	21.36				21.52	0.0	22.0
		16QAM	1	1	21.15				21.24	0.0	22.0
			1	94	21.24				20.38	0.0	22.0
			1	187	21.32				19.80	0.0	22.0
		64QAM	1	1	21.17				20.05	0.0	22.0
		256QAM	1	1	19.78				18.58	1.5	20.5
	CP-OFDM	QPSK	1	1	21.41				20.88	0.0	22.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					505200		518598		531996		
					2526.00 MHz		2592.99 MHz		2659.98 MHz		
60 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.24		21.28		21.41	0.0	22.0
			1	80	21.17		21.29		21.33	0.0	22.0
			1	160	21.32		21.41		19.87	0.0	22.0
			81	0	21.24		21.38		21.44	0.0	22.0
			81	40	21.18		21.34		21.32	0.0	22.0
			81	81	21.24		21.36		21.33	0.0	22.0
			162	0	21.22		21.38		21.31	0.0	22.0
		QPSK	1	1	21.13		21.35		21.43	0.0	22.0
			1	80	21.16		21.31		21.19	0.0	22.0
			1	160	21.32		21.38		19.77	0.0	22.0
			81	0	21.23		21.33		21.37	0.0	22.0
			81	40	21.11		21.28		21.28	0.0	22.0
			81	81	21.26		21.40		21.35	0.0	22.0
			162	0	21.17		21.35		21.36	0.0	22.0
		16QAM	1	1	21.12		21.22		20.80	0.0	22.0
			1	80	21.13		21.33		20.16	0.0	22.0
			1	160	21.21		21.19		19.52	0.0	22.0
		64QAM	1	1	20.77		19.64		21.44	0.0	22.0
		256QAM	1	1	19.12		18.25		18.81	1.5	20.5
	CP-OFDM	QPSK	1	1	21.23		20.64		20.21	0.0	22.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					504204		518598		532998		
					2521.02 MHz		2592.99 MHz		2664.99 MHz		
50 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.44		21.59		21.56	0.0	22.0
			1	66	21.45		21.55		21.24	0.0	22.0
			1	131	21.46		21.65		19.75	0.0	22.0
			64	0	21.54		21.58		21.65	0.0	22.0
			64	34	21.54		21.69		21.64	0.0	22.0
			64	69	21.55		21.64		21.53	0.0	22.0
			128	0	21.47		21.62		21.57	0.0	22.0
		QPSK	1	1	21.39		21.52		21.56	0.0	22.0
			1	66	21.32		21.51		21.00	0.0	22.0
			1	131	21.52		21.61		19.65	0.0	22.0
			64	0	21.46		21.57		21.56	0.0	22.0
			64	34	21.42		21.65		21.60	0.0	22.0
			64	69	21.55		21.64		21.57	0.0	22.0
			128	0	21.42		21.62		21.60	0.0	22.0
		16QAM	1	1	21.39		21.51		20.76	0.0	22.0
			1	66	21.37		21.45		20.17	0.0	22.0
			1	131	21.44		21.22		21.54	0.0	22.0
		64QAM	1	1	20.43		19.92		20.52	0.0	22.0
		256QAM	1	1	19.07		18.47		18.75	1.5	20.5
	CP-OFDM	QPSK	1	1	21.36		20.97		20.01	0.0	22.0

Notes:

NR Band n41 were measured output power through FTM mode provided by manufacturer.

NR Band n41 Ant.B Measured Results_(Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					503202	513468		523734	534000		
					2516.01 MHz	2567.34 MHz		2618.67 MHz	2670.00 MHz		
40 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.22	21.30		21.39	21.38	0.0	22.0
			1	52	21.34	21.48		21.46	20.75	0.0	22.0
			1	104	21.23	21.54		21.37	20.12	0.0	22.0
			50	0	21.38	21.45		21.53	21.48	0.0	22.0
			50	28	21.41	21.55		21.63	21.56	0.0	22.0
			50	56	21.36	21.56		21.52	21.48	0.0	22.0
			100	0	21.38	21.45		21.54	21.44	0.0	22.0
		QPSK	1	1	21.18	21.31		21.42	21.20	0.0	22.0
			1	52	21.31	21.45		21.44	20.52	0.0	22.0
			1	104	21.23	21.41		21.21	21.44	0.0	22.0
			50	0	21.27	21.48		21.45	21.54	0.0	22.0
			50	28	21.37	21.51		21.54	21.46	0.0	22.0
			50	56	21.34	21.47		21.52	21.43	0.0	22.0
			100	0	21.34	21.46		21.50	21.47	0.0	22.0
		16QAM	1	1	21.13	20.56		21.28	20.30	0.0	22.0
			1	52	21.28	21.03		20.84	19.55	0.0	22.0
			1	104	21.26	21.38		20.32	21.24	0.0	22.0
		64QAM	1	1	20.98	21.40		20.51	20.23	0.0	22.0
		256QAM	1	1	19.14	19.31		19.02	18.68	1.5	20.5
	CP-OFDM	QPSK	1	1	21.25	19.63		21.42	19.63	0.0	22.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					502200	510402	518598	526800	534996		
					2511.00 MHz	2552.01 MHz	2592.99 MHz	2634.00 MHz	2674.98 MHz		
30 MHz	DFT-s-OFDM	π/2 BPSK	1	1	22.00	21.44	21.61	21.55	21.86	0.0	22.0
			1	39	21.34	21.42	21.55	21.04	21.43	0.0	22.0
			1	76	21.39	21.40	21.63	20.96	20.90	0.0	22.0
			36	0	21.40	21.30	21.53	21.48	21.45	0.0	22.0
			36	21	21.42	21.35	21.60	21.50	21.45	0.0	22.0
			36	42	21.39	21.26	21.53	21.51	21.37	0.0	22.0
			75	0	21.37	21.30	21.52	21.52	21.34	0.0	22.0
		QPSK	1	1	21.35	21.38	21.60	21.58	21.35	0.0	22.0
			1	39	21.36	21.23	21.48	21.44	21.31	0.0	22.0
			1	76	21.38	21.30	21.58	21.49	21.34	0.0	22.0
			36	0	21.39	21.35	21.51	21.47	21.35	0.0	22.0
			36	21	21.36	21.29	21.49	21.47	21.39	0.0	22.0
			36	42	21.38	21.33	21.53	21.55	21.36	0.0	22.0
			75	0	21.37	21.28	21.51	21.50	21.44	0.0	22.0
		16QAM	1	1	21.40	21.16	21.61	21.37	20.85	0.0	22.0
			1	39	21.32	21.04	21.44	20.99	19.97	0.0	22.0
			1	76	21.43	21.32	21.55	20.63	19.58	0.0	22.0
		64QAM	1	1	20.54	19.65	20.67	20.39	20.30	0.0	22.0
		256QAM	1	1	19.05	18.20	19.02	18.86	19.77	1.5	20.5
	CP-OFDM	QPSK	1	1	21.32	20.43	21.41	21.32	19.95	0.0	22.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					501702	510150	518598	527052	535500		
					2508.51 MHz	2550.75 MHz	2592.99 MHz	2635.26 MHz	2677.50 MHz		
25 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.73	21.81	21.97	21.82	21.31	0.0	22.0
			1	32	21.49	21.49	21.52	21.53	20.89	0.0	22.0
			1	63	21.45	21.42	21.48	21.47	20.51	0.0	22.0
			32	0	21.35	21.39	21.50	21.46	21.49	0.0	22.0
			32	16	21.50	21.54	21.52	21.48	21.56	0.0	22.0
			32	33	21.42	21.48	21.51	21.50	21.48	0.0	22.0
			64	0	21.33	21.36	21.48	21.49	21.50	0.0	22.0
		QPSK	1	1	21.41	21.43	21.38	21.49	21.59	0.0	22.0
			1	32	21.40	21.42	21.50	21.57	20.82	0.0	22.0
			1	63	21.46	21.49	21.47	21.48	20.50	0.0	22.0
			32	0	21.34	21.36	21.40	21.49	21.47	0.0	22.0
			32	16	21.28	21.31	21.42	21.54	21.34	0.0	22.0
			32	33	21.37	21.42	21.21	21.52	21.48	0.0	22.0
			64	0	21.39	21.39	21.47	21.51	21.38	0.0	22.0
		16QAM	1	1	21.35	21.31	21.42	21.44	20.54	0.0	22.0
			1	32	21.28	21.25	21.44	20.54	19.92	0.0	22.0
			1	63	21.37	21.41	21.58	20.23	19.55	0.0	22.0
		64QAM	1	1	20.55	20.36	20.75	19.65	21.07	0.0	22.0
		256QAM	1	1	18.77	18.97	19.04	18.12	18.68	1.5	20.5
	CP-OFDM	QPSK	1	1	21.27	21.30	21.38	20.75	19.92	0.0	22.0

Notes:

NR Band n41 were measured output power through FTM mode provided by manufacturer.

NR Band n41 Ant.B Measured Results_(Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					501204	509904	518598	527298	535998		
					2506.02 MHz	2549.52 MHz	2592.99 MHz	2636.49 MHz	2679.99 MHz		
20 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.31	21.65	21.35	21.44	21.86	0.0	22.0
			1	25	21.39	21.28	21.43	21.43	21.10	0.0	22.0
			1	49	21.36	21.26	21.41	21.29	20.64	0.0	22.0
			25	0	21.33	21.27	21.39	21.44	21.31	0.0	22.0
			25	13	21.35	21.28	21.42	21.50	21.46	0.0	22.0
			25	26	21.37	21.38	21.45	21.43	21.36	0.0	22.0
			50	0	21.26	21.32	21.45	21.48	21.40	0.0	22.0
		QPSK	1	1	21.26	21.18	21.38	21.44	21.37	0.0	22.0
			1	25	21.25	21.31	21.41	21.45	20.92	0.0	22.0
			1	49	21.27	21.28	21.47	21.01	20.43	0.0	22.0
			25	0	21.30	21.35	21.31	21.56	21.38	0.0	22.0
			25	13	21.27	21.32	21.48	21.45	21.32	0.0	22.0
			25	26	21.31	21.42	21.34	21.58	21.29	0.0	22.0
			50	0	21.34	21.38	21.46	21.50	21.30	0.0	22.0
		16QAM	1	1	21.26	21.18	21.24	20.89	20.65	0.0	22.0
			1	25	21.30	21.36	21.31	20.40	19.94	0.0	22.0
			1	49	21.22	21.28	21.30	20.00	21.34	0.0	22.0
		64QAM	1	1	20.57	21.24	21.28	20.91	20.01	0.0	22.0
		256QAM	1	1	18.00	19.69	19.40	20.02	18.43	1.5	20.5
	CP-OFDM	QPSK	1	1	21.29	21.26	21.40	20.40	19.93	0.0	22.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	.					MPR	Tune-up Limit
					500700	509652	518598	527550	536496		
					2503.50 MHz	2548.26 MHz	2592.99 MHz	2637.75 MHz	2682.48 MHz		
15 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.57	21.35	21.57	21.59	21.51	0.0	22.0
			1	18	21.32	21.34	21.38	21.44	21.30	0.0	22.0
			1	36	21.31	21.40	21.48	21.48	21.32	0.0	22.0
			18	0	21.35	21.35	21.34	21.47	21.40	0.0	22.0
			18	10	21.45	21.41	21.47	21.54	21.41	0.0	22.0
			18	20	21.36	21.38	21.52	21.51	21.38	0.0	22.0
			36	0	21.27	21.15	21.23	21.30	21.22	0.0	22.0
		QPSK	1	1	21.35	21.23	21.24	21.35	21.29	0.0	22.0
			1	18	21.25	21.23	21.27	21.38	21.29	0.0	22.0
			1	36	21.26	21.34	21.34	21.45	21.28	0.0	22.0
			18	0	21.25	21.28	21.33	21.40	21.38	0.0	22.0
			18	10	21.34	21.34	21.38	21.42	21.38	0.0	22.0
			18	20	21.26	21.27	21.39	21.46	21.30	0.0	22.0
			36	0	21.29	21.23	21.22	21.31	21.28	0.0	22.0
		16QAM	1	1	21.15	21.24	21.29	21.40	21.35	0.0	22.0
			1	18	21.17	21.14	21.26	21.42	20.84	0.0	22.0
			1	36	21.25	21.31	21.34	21.48	20.55	0.0	22.0
		64QAM	1	1	20.68	21.12	21.27	20.38	19.77	0.0	22.0
		256QAM	1	1	19.05	19.65	19.79	18.88	18.21	1.5	20.5
	CP-OFDM	QPSK	1	1	20.14	21.36	21.25	21.39	20.69	0.0	22.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					500202	509400	518598	527802	537000		
					2501.01 MHz	2547.00 MHz	2592.99 MHz	2639.01 MHz	2685.00 MHz		
10 MHz	DFT-s-OFDM	π/2 BPSK	1	1	21.13	21.25	21.29	21.36	21.19	0.0	22.0
			1	12	21.21	21.24	21.31	21.42	21.22	0.0	22.0
			1	22	21.26	21.28	21.38	21.36	21.25	0.0	22.0
			12	0	21.15	21.15	21.21	21.36	21.25	0.0	22.0
			12	6	21.26	21.24	21.33	21.31	21.26	0.0	22.0
			12	12	21.12	21.27	21.37	21.38	21.24	0.0	22.0
			24	0	21.11	21.13	21.19	21.28	21.16	0.0	22.0
		QPSK	1	1	21.27	21.18	21.23	21.32	21.18	0.0	22.0
			1	12	21.24	21.19	21.24	21.34	21.19	0.0	22.0
			1	22	21.31	21.22	21.29	21.39	21.23	0.0	22.0
			12	0	21.12	21.21	21.27	21.33	21.23	0.0	22.0
			12	6	21.15	21.11	21.24	21.27	21.18	0.0	22.0
			12	12	21.15	21.23	21.27	21.35	21.24	0.0	22.0
			24	0	21.10	21.16	21.23	21.33	21.19	0.0	22.0
		16QAM	1	1	21.22	21.13	21.14	21.35	21.27	0.0	22.0
			1	12	21.09	21.08	21.11	21.25	21.18	0.0	22.0
			1	22	21.17	21.23	21.22	21.38	20.84	0.0	22.0
		64QAM	1	1	20.23	21.23	21.27	20.48	20.18	0.0	22.0
		256QAM	1	1	19.06	19.65	19.84	19.34	18.53	1.5	20.5
	CP-OFDM	QPSK	1	1	21.21	21.23	21.28	21.33	21.16	0.0	22.0

Notes:

NR Band n41 were measured output power through FTM mode provided by manufacturer.

9.5. Wi-Fi 2.4 GHz (DTS Band)

WLAN SISO mode output power results

Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Maximum Allowed Average Power (dBm)					
					DSI = 0			DSI = 1		
					Meas. Avg Pwr	Tune-up Limit	SAR Test (Yes/No)	Meas. Avg Pwr	Max. Tune-up Limit	SAR Test (Yes/No)
WiFi 2.4G SISO Ant.H	802.11b	1 Mbps	1	2412.0	17.97	19.00	Yes	14.00	15.00	Yes
			6	2437.0	18.52			14.44		
			11	2462.0	17.81			13.94		
			12	2467.0	Not Required	6.00	No	Not Required	6.00	No
			13	2474.0	Not Required	0.00		Not Required	0.00	
	802.11g	6 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No
	802.11n	6.5 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No
	802.11ac	6.5 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No
	802.11ax	7.3 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No
WiFi 2.4G SISO Ant.J	802.11b	1 Mbps	1	2412.0	18.61	19.00	Yes	14.47	15.00	Yes
			6	2437.0	18.32			13.88		
			11	2462.0	18.11			13.74		
			12	2467.0	Not Required	6.00	No	Not Required	6.00	No
			13	2474.0	Not Required	0.00		Not Required	0.00	
	802.11g	6 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No
	802.11n	6.5 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No
	802.11ac	6.5 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No
	802.11ax	7.3 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No

WLAN MIMO mode output power results

Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Maximum Allowed Average Power (dBm)					
					DSI = 0			DSI = 1		
					Meas. Avg Pwr	Tune-up Limit	SAR Test (Yes/No)	Meas. Avg Pwr	Max. Tune-up Limit	SAR Test (Yes/No)
WiFi 2.4G MIMO Ant.H	802.11b	1 Mbps	1	2412.0	17.86	19.00	Yes	14.00	15.00	Yes
			6	2437.0	18.50			14.47		
			11	2462.0	17.67			13.68		
			12	2467.0	Not Required	6.00	No	Not Required	6.00	No
			13	2474.0	Not Required	0.00		Not Required	0.00	
	802.11g	6 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No
	802.11n	6.5 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No
	802.11ac	6.5 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No
	802.11ax	7.3 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No
WiFi 2.4G MIMO Ant.J	802.11b	1 Mbps	1	2412.0	18.74	19.00	Yes	14.58	15.00	Yes
			6	2437.0	18.01			14.46		
			11	2462.0	17.82			13.98		
			12	2467.0	Not Required	6.00	No	Not Required	6.00	No
			13	2474.0	Not Required	0.00		Not Required	0.00	
	802.11g	6 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No
	802.11n	6.5 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No
	802.11ac	6.5 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No
	802.11ax	7.3 Mbps	1-13	2412-2474	Not Required	18.00	No	Not Required	15.00	No

Note(s):

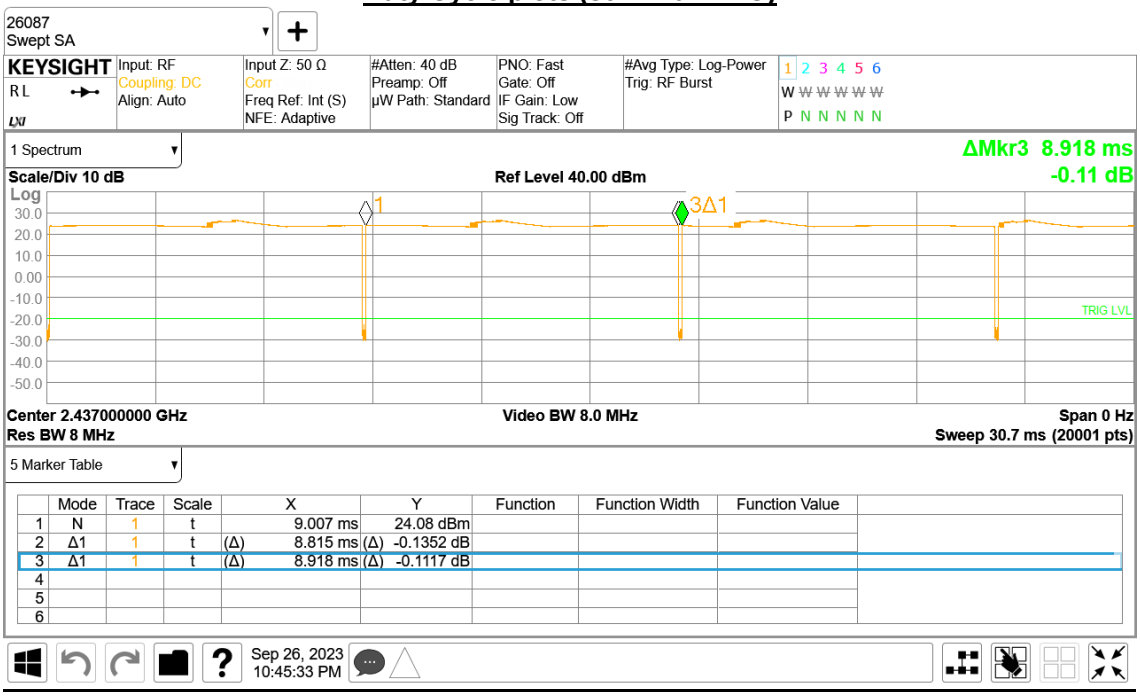
1. SAR is not required for 802.11g/n modes when the adjusted SAR for 802.11b is < 1.2 W/kg.
2. For “Not required”, SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11n/g/ax mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.
3. Additionally, SAR is not required for Channels 12 and 13 because the tune-up limit and the measured output power for these two channels are no greater than those for the default test channels. Refer to §6.3.

Duty Factor Measured Results

Mode	T on (ms)	Period (ms)	Maximum Duty Cyle	Measured Duty Cycle	Crest Factor (maximum duty/ measured duty cycle)
802.11b-SISO	8.817	8.920	100.00%	98.8%	1.01
802.11b-MIMO	8.815	8.918	100.00%	98.8%	1.01

Duty Cycle plots (802.11b-SISO)

Duty Cycle plots (802.11b-MIMO)



9.6. Wi-Fi 5GHz (U-NII Bands)

WLAN SISO Ant.H output power Results

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Maximum Allowed Averag power (dBm)					
						DSI = 0			DSI = 1		
						Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
5GHz SISO Ant.H	5.3 (UNII 2A)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	54	5270.0	15.98	17.0	Yes	Not Required	14.0	No
				62	5310.0	15.73	16.5				
		802.11ac (VHT80)	29.3 Mbps	Not Required			16.5	No	12.92	14.0	Yes
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	36.0 Mbps	Not Required			16.5	No	Not Required	14.0	No
	UNII 1 & UNII 2A	802.11ac (VHT160)	58.5 Mbps	Not Required			16.0	No	Not Required	14.0	No
		802.11ax (HE160)	72.0 Mbps	Not Required			16.0	No	Not Required	14.0	No
	5.5 (U-NII 2C)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT80)	29.3 Mbps	106	5530.0	16.80	17.0	Yes	12.92	14.0	Yes
				122	5610.0	16.63			12.74		
				138	5690.0	16.62			12.53		
		802.11ac (VHT160)	58.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	36.0 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE160)	72.0 Mbps	Not Required			17.0	No	Not Required	14.0	No
	5.8 (UNII 3)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	16.40	17.0	Yes	12.41	14.0	Yes
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	36.0 Mbps	Not Required			17.0	No	Not Required	14.0	No
	5.9 (U-NII 4)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT80)	29.3 Mbps	171	5855.0	15.98	17.0	Yes	12.08	14.0	Yes
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	30.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
	UNII 3 & UNII 4	802.11ac (VHT160)	58.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE160)	72.0 Mbps	Not Required			17.0	No	Not Required	14.0	No

Note(s):

1. For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac/ax mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.
2. When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac/ax modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n ac then ax) is selected.
3. When the specified maximum output power is the same for both UNII band I and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest *reported* SAR for UNII band 2A is
   - ≤ 1.2 W/kg, SAR is not required for UNII band I
   - > 1.2 W/kg, both bands should be tested independently for SAR.

WLAN SISO Ant.E output power Results

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Maximum Allowed Averag power (dBm)					
						DSI = 0			DSI = 1		
						Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
5GHz SISO Ant.E	5.3 (UNII 2A)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	54	5270.0	16.11	17.0	Yes	Not Required	14.0	No
				62	5310.0	15.81	16.5				
		802.11ac (VHT80)	29.3 Mbps	Not Required			16.5	No	12.97	14.0	Yes
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	36.0 Mbps	Not Required			16.5	No	Not Required	14.0	No
	UNII 1 & UNII 2A	802.11ac (VHT160)	58.5 Mbps	Not Required			16.0	No	Not Required	14.0	No
		802.11ax (HE160)	72.0 Mbps	Not Required			16.0	No	Not Required	14.0	No
	5.5 (U-NII 2C)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT80)	29.3 Mbps	106	5530.0	16.94	17.0	Yes	13.88	14.0	Yes
				122	5610.0	16.36			13.15		
				138	5690.0	16.14			13.22		
		802.11ac (VHT160)	58.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	36.0 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE160)	72.0 Mbps	Not Required			17.0	No	Not Required	14.0	No
	5.8 (UNII 3)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	16.56	17.0	Yes	13.20	14.0	Yes
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	36.0 Mbps	Not Required			17.0	No	Not Required	14.0	No
	5.9 (U-NII 4)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT80)	29.3 Mbps	171	5855.0	16.45	17.0	Yes	12.00	14.0	Yes
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	30.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
	UNII 3 & UNII 4	802.11ac (VHT160)	58.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE160)	72.0 Mbps	Not Required			17.0	No	Not Required	14.0	No

Note(s):

1. For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac/ax mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.
2. When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac/ax modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n ac then ax) is selected.
3. When the specified maximum output power is the same for both UNII band I and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest *reported* SAR for UNII band 2A is
   - ≤ 1.2 W/kg, SAR is not required for UNII band I
   - > 1.2 W/kg, both bands should be tested independently for SAR.

WLAN MIMO Ant.H output power Results

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Maximum Allowed Averag power (dBm)					
						DSI = 0			DSI = 1		
						Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
5GHz MIMO Ant.H	5.3 (UNII 2A)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	54	5270.0	16.32	17.0	Yes	Not Required	14.0	No
				62	5310.0	15.59	16.5				
		802.11ac (VHT80)	29.3 Mbps	Not Required			16.5	No	12.42	14.0	Yes
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	36.0 Mbps	Not Required			16.5	No	Not Required	14.0	No
	UNII 1 & UNII 2A	802.11ac (VHT160)	58.5 Mbps	Not Required			16.0	No	Not Required	14.0	No
		802.11ax (HE160)	72.0 Mbps	Not Required			16.0	No	Not Required	14.0	No
	5.5 (U-NII 2C)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT80)	29.3 Mbps	106	5530.0	16.30	17.0	Yes	12.18	14.0	Yes
				122	5610.0	16.51			11.85		
				138	5690.0	16.27			12.15		
		802.11ac (VHT160)	58.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	36.0 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE160)	72.0 Mbps	Not Required			17.0	No	Not Required	14.0	No
	5.8 (UNII 3)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	16.22	17.0	Yes	12.05	14.0	Yes
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	36.0 Mbps	Not Required			17.0	No	Not Required	14.0	No
	5.9 (U-NII 4)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT80)	29.3 Mbps	171	5855.0	16.05	17.0	Yes	13.35	14.0	Yes
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	30.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
	UNII 3 & UNII 4	802.11ac (VHT160)	58.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE160)	72.0 Mbps	Not Required			17.0	No	Not Required	14.0	No

Note(s):

1. For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac/ax mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.
2. When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac/ax modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n ac then ax) is selected.
3. When the specified maximum output power is the same for both UNII band I and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest *reported* SAR for UNII band 2A is
   - ≤ 1.2 W/kg, SAR is not required for UNII band I
   - > 1.2 W/kg, both bands should be tested independently for SAR.

WLAN MIMO Ant.E output power Results

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Maximum Allowed Averag power (dBm)					
						DSI = 0			DSI = 1		
						Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
5GHz MIMO Ant.E	5.3 (UNII 2A)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	54	5270.0	16.61	17.0	Yes	Not Required	14.0	No
				62	5310.0	16.25	16.5				
		802.11ac (VHT80)	29.3 Mbps	Not Required			16.5	No	12.76	14.0	Yes
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	36.0 Mbps	Not Required			16.5	No	Not Required	14.0	No
	UNII 1 & UNII 2A	802.11ac (VHT160)	58.5 Mbps	Not Required			16.0	No	Not Required	14.0	No
		802.11ax (HE160)	72.0 Mbps	Not Required			16.0	No	Not Required	14.0	No
	5.5 (U-NII 2C)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT80)	29.3 Mbps	106	5530.0	16.14	17.0	Yes	13.10	14.0	Yes
				122	5610.0	16.04			12.74		
				138	5690.0	15.87			12.84		
		802.11ac (VHT160)	58.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	36.0 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE160)	72.0 Mbps	Not Required			17.0	No	Not Required	14.0	No
	5.8 (UNII 3)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	16.48	17.0	Yes	12.93	14.0	Yes
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	36.0 Mbps	Not Required			17.0	No	Not Required	14.0	No
	5.9 (U-NII 4)	802.11a	6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ac (VHT80)	29.3 Mbps	171	5855.0	16.44	17.0	Yes	13.01	14.0	Yes
		802.11ax (HE20)	7.3 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE80)	30.6 Mbps	Not Required			17.0	No	Not Required	14.0	No
	UNII 3 & UNII 4	802.11ac (VHT160)	58.5 Mbps	Not Required			17.0	No	Not Required	14.0	No
		802.11ax (HE160)	72.0 Mbps	Not Required			17.0	No	Not Required	14.0	No

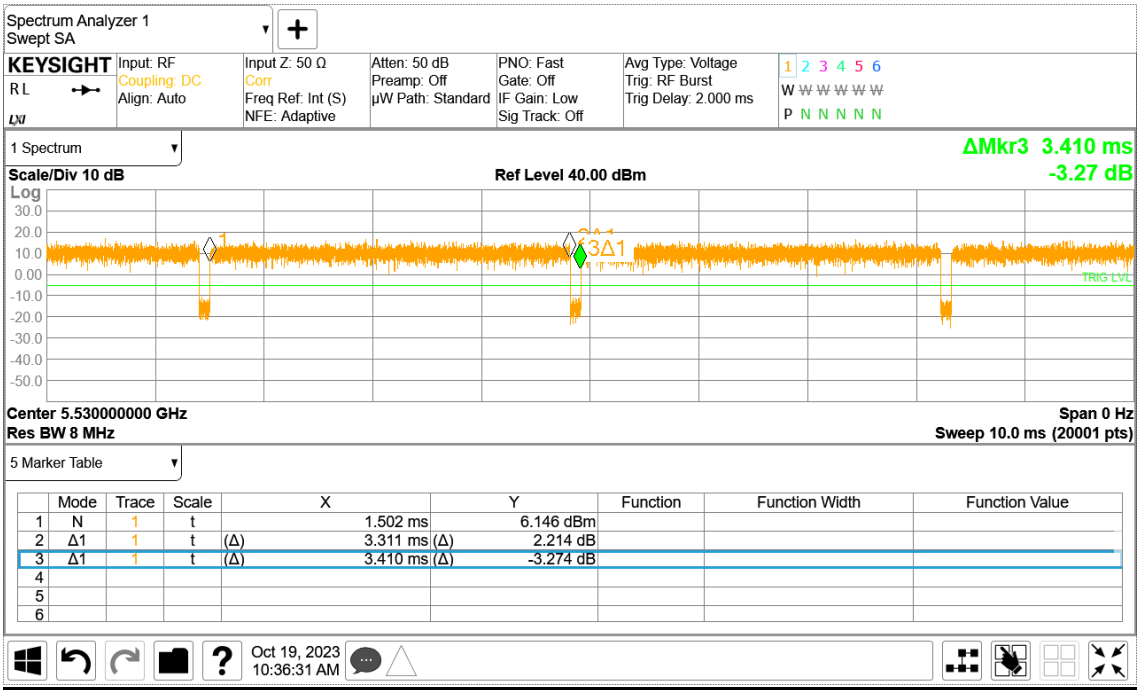
Note(s):

1. For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac/ax mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.
2. When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac/ax modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n ac then ax) is selected.
3. When the specified maximum output power is the same for both UNII band I and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest *reported* SAR for UNII band 2A is
   - ≤ 1.2 W/kg, SAR is not required for UNII band I
   - > 1.2 W/kg, both bands should be tested independently for SAR.

Duty Factor Measured Results (SISO mode)

Mode	Data Rate	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
802.11ac (VHT 80)	29.3 Mbps	3.311	3.410	97.1%	1.03
802.11n (HT 40)	13.5 Mbps	5.347	5.446	98.2%	1.02

802.11ac (VHT80)

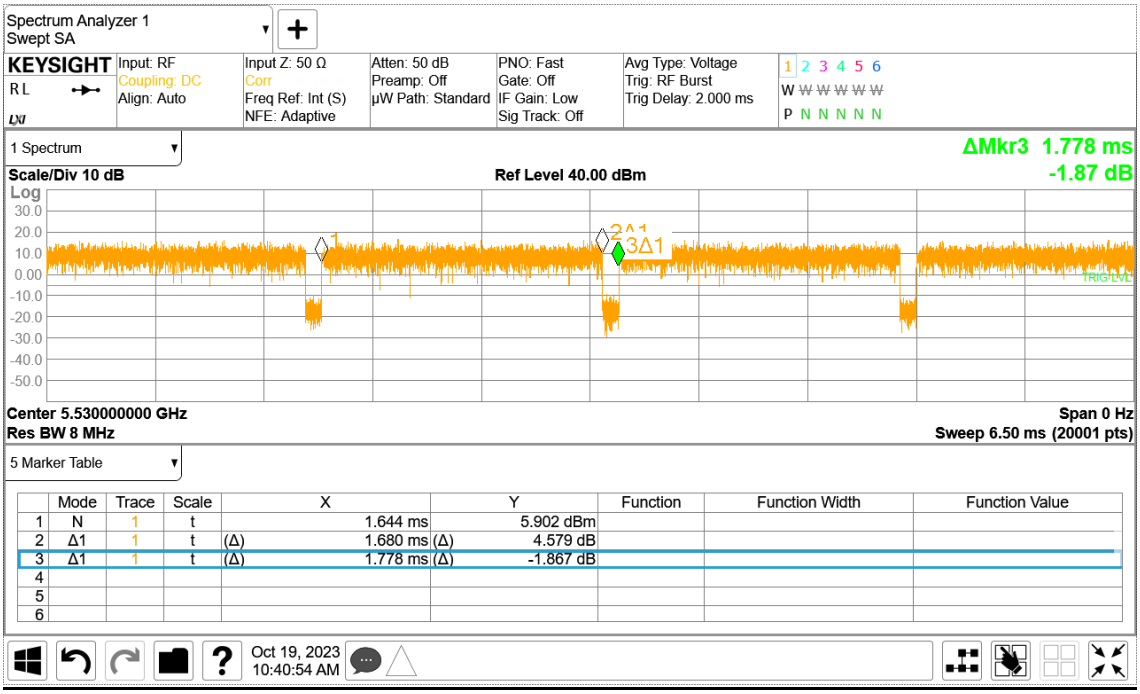


802.11n (HT40)

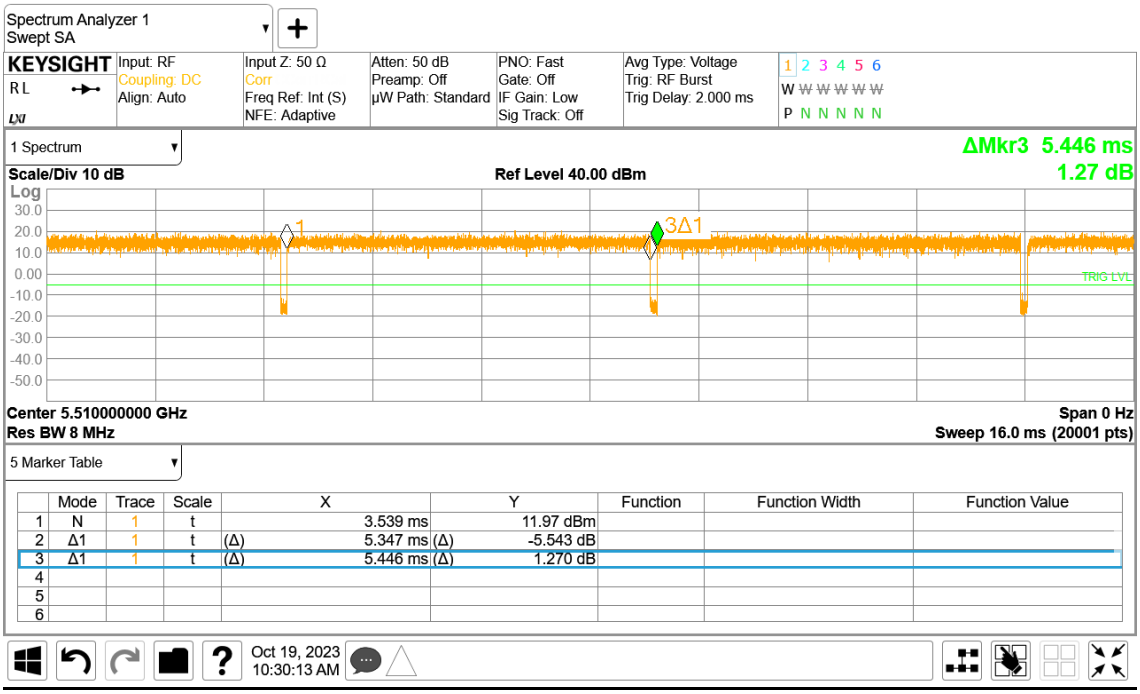
Duty Factor Measured Results (MIMO mode)

Mode	Data Rate	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
802.11ac (VHT 80)	29.3 Mbps	1.680	1.778	94.5%	1.06
802.11n (HT 40)	13.5 Mbps	5.347	5.446	98.2%	1.02

802.11ac (VHT80)



802.11n (HT40)



9.7. Bluetooth

Bluetooth SISO output power Results

Band (GHz)	Antenna	Mode	Ch #	Freq. (MHz)	Maximum Allowed Average power (dBm)	
					DSI = 0, 1	
					Meas Pwr	Tune-up Limit
2.4	BT SISO Ant.H	Bluetooth(BDR) (1M)	0	2402	17.91	19.0
			39	2441	18.01	
			78	2480	17.50	
2.4	BT SISO Ant.J	Bluetooth(BDR) (1M)	0	2402	15.04	17.0
			39	2441	15.85	
			78	2480	14.49	

Bluetooth dual(MIMO) output power Results

Band (GHz)	Antenna	Mode	Ch #	Freq. (MHz)	Maximum Allowed Average power (dBm)	
					DSI = 0, 1	
					Meas Pwr	Tune-up Limit
2.4	BT dual(MIMO) Ant.H	Bluetooth(BDR) (1M)	0	2402	11.53	13.0
			39	2441	11.87	
			78	2480	11.22	
2.4	BT dual(MIMO) Ant.J	Bluetooth(BDR) (1M)	0	2402	9.77	12.0
			39	2441	10.92	
			78	2480	9.78	

Duty Factor Measured Results

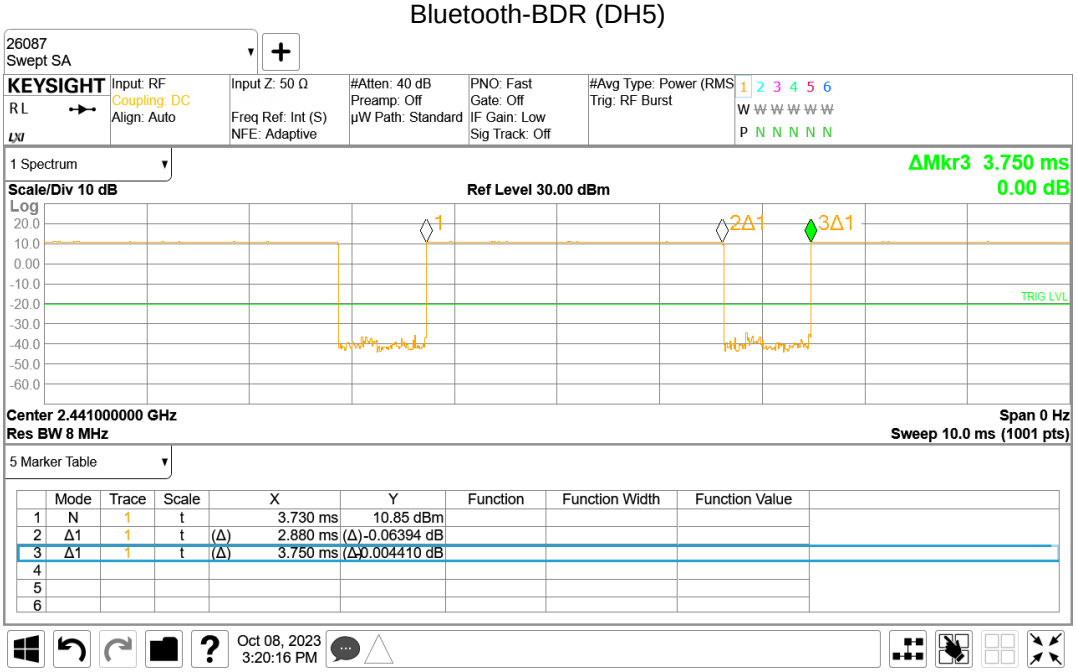
Mode	Type	T on (ms)	Period (ms)	Maximum Duty Cyle	Measured Duty Cycle	Crest Factor (maximum duty/ measured duty cycle)
BDR	DH5	2.880	3.750	79.00%	76.80%	1.03

Note(s):

Maximum Duty Cycle is mentioned in Operational description. Detail of BT Duty Cycle refer to Operational description.

Duty Cycle plots

Bluetooth-BDR (DH5)



	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	t	3.730 ms	10.85 dBm			
2	Δ1	1	t	(Δ) 2.880 ms	(Δ)-0.06394 dB			
3	Δ1	1	t	(Δ) 3.750 ms	(Δ)0.004410 dB			
4								
5								
6								

10. Measured and Reported (Scaled) SAR Results

SAR Test Reduction criteria are as follows:

- Reported SAR(W/kg) for WWAN= Measured SAR *Tune-up Scaling Factor
- Reported SAR(W/kg) for Wi-Fi and Bluetooth= Measured SAR * Tune-up scaling factor * Duty Cycle scaling factor
- Wi-Fi Duty Cycle scaling factor = 1 / Duty cycle (%)
- BT Duty Cycle scaling factor = Maximum Duty cycle / Duty cycle (%)

KDB 447498 D01 General RF Exposure Guidance:

Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

KDB 648474 D04 Handset SAR:

With headset attached, when the reported SAR for body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

When the separation distance required for body-worn accessory testing is greater than or equal to that tested for hotspot mode, using the same wireless mode test configuration for voice and data, the hotspot SAR data may be used to support body-worn accessory SAR compliance for that particular configuration.

KDB 648474 D04 Handset SAR (Phablet Only):

For smart phones, with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm.
When hotspot mode does not apply, 10-g extremity SAR is required for all surfaces and edges with an antenna located at ≤ 25mm From that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; However, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, Including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

Additional 1-g SAR testing at 5 mm is not required when hotspot mode 10-g extremity SAR is not required for the surfaces and edges; since all 1-g reported SAR < 1.2 W/kg.

KDB 941225 D01 SAR test for 3G devices:

When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

KDB 941225 D05 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

- Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel.
- When the reported SAR is > 0.8 W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
- Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are > 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
- Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
- Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.
- For LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth

configuration, the middle channel of the group of overlapping channels should be selected for testing; therefore, the requirement for H, M and L channels may not fully apply.

KDB 248227 D01 SAR meas for 802.11:

SAR test reduction for 802.11 Wi-Fi transmission mode configurations are considered separately for DSSS and OFDM. An initial test position is determined to reduce the number of tests required for certain exposure configurations with multiple test positions. An initial test configuration is determined for each frequency band and aggregated band according to maximum output power, channel bandwidth, wireless mode configurations and other operating parameters to streamline the measurement requirements. For 2.4 GHz DSSS, either the initial test position or DSSS procedure is applied to reduce the number of SAR tests; these are mutually exclusive. For OFDM, an initial test position is only applicable to next to the ear, UMPC mini-tablet and hotspot mode configurations, which is tested using the initial test configuration to facilitate test reduction. For other exposure conditions with a fixed test position, SAR test reduction is determined using only the initial test configuration.

The multiple test positions require SAR measurements in head, hotspot mode or UMPC mini-tablet configurations may be reduced according to the highest reported SAR determined using the *initial test position(s)* by applying the DSSS or OFDM SAR measurement procedures in the required wireless mode test configuration(s). The *initial test position(s)* is measured using the highest measured maximum output power channel in the required wireless mode test configuration(s). When the *reported* SAR for the *initial test position* is:

- ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.
- > 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the *initial test position* to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the *reported* SAR is ≤ 0.8 W/kg or all required test positions are tested.
  - For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
  - When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the *initial test position* and subsequent test positions, when the *reported* SAR is > 0.8 W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the *reported* SAR is ≤ 1.2 W/kg or all required test channels are considered.
  - The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.
- When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is ≤ 1.2 W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.
- When the specified maximum output power is different between UNII 1 and UNII 2A, begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is ≤ 1.2 W/kg, testing for the band with the lower specified output power is not required; otherwise test the remaining bands independently for SAR.

To determine the *initial test position*, Area Scans were performed to determine the position with the *Maximum Value of SAR (measured)*. The position that produced the highest *Maximum Value of SAR* is considered the worst case position; thus used as the *initial test position*.

10.1 GSM 850

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Reported	
Ant.A	Head	GPRS 2 Slots	0	Left Touch	190	836.6	32.50	30.64	0.145	0.223	
				Left Tilt	190	836.6	32.50	30.64	0.080	0.123	
				Right Touch	190	836.6	32.50	30.64	0.161	0.247	1
				Right Tilt	190	836.6	32.50	30.64	0.092	0.141	
	Body-worn & Hotspot	GPRS 2 Slots	10	Rear	190	836.6	32.50	30.64	0.411	0.631	2
				Front	190	836.6	32.50	30.64	0.269	0.413	
	Hotspot	GPRS 2 Slots	10	Left	190	836.6	32.50	30.64	0.171	0.262	
				Bottom	190	836.6	32.50	30.64	0.197	0.302	
				Right	190	836.6	32.50	30.64	0.219	0.336	

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Reported	
Ant.E	Head	GPRS 4 Slots	0	Left Touch	190	836.6	26.00	24.90	0.606	0.781	3
				Left Tilt	190	836.6	26.00	24.90	0.534	0.688	
				Right Touch	190	836.6	26.00	24.90	0.453	0.584	
				Right Tilt	190	836.6	26.00	24.90	0.424	0.546	
	Body-worn & Hotspot	GPRS 2 Slots	10	Rear	190	836.6	32.50	31.24	0.600	0.802	4
				Front	190	836.6	32.50	31.24	0.362	0.484	
	Hotspot	GPRS 2 Slots	10	Top	190	836.6	32.50	31.24	0.389	0.520	
				Right	190	836.6	32.50	31.24	0.481	0.643	

10.2 GSM 1900

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Reported	
Ant.A	Head	GPRS 3 Slots	0	Left Touch	512	1850.2	27.50	26.31	0.097	0.128	5
				Left Tilt	512	1850.2	27.50	26.31	0.040	0.053	
				Right Touch	512	1850.2	27.50	26.31	0.041	0.054	
				Right Tilt	512	1850.2	27.50	26.31	0.035	0.046	
	Body-worn & Hotspot	GPRS 4 Slots	10	Rear	661	1880.0	23.00	21.99	0.241	0.304	
				Front	661	1880.0	23.00	21.99	0.211	0.266	
	Hotspot	GPRS 4 Slots	10	Left	661	1880.0	23.00	21.99	0.043	0.054	
				Bottom	661	1880.0	23.00	21.99	0.517	0.652	6
				Right	661	1880.0	23.00	21.99	0.062	0.078	

10.3 WCDMA Band V

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch#.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Reported	
Ant.A	Head	Rel.99 RMC	0	Left Touch	4183	836.6	25.00	23.64	0.163	0.223	
				Left Tilt	4183	836.6	25.00	23.64	0.104	0.142	
				Right Touch	4183	836.6	25.00	23.64	0.185	0.253	7
				Right Tilt	4183	836.6	25.00	23.64	0.104	0.142	
	Body-worn & Hotspot	Rel.99 RMC	10	Rear	4183	836.6	25.00	23.64	0.363	0.496	8
				Front	4183	836.6	25.00	23.64	0.270	0.369	
	Hotspot	Rel.99 RMC	10	Left	4183	836.6	25.00	23.64	0.186	0.254	
				Bottom	4183	836.6	25.00	23.64	0.202	0.276	
				Right	4183	836.6	25.00	23.64	0.297	0.406	

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch#.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Reported	
Ant.E	Head	Rel.99 RMC	0	Left Touch	4132	826.4	23.00	22.63	0.788	0.858	
					4183	836.6	23.00	22.64	0.802	0.871	9
					4233	846.6	23.00	22.67	0.785	0.847	
				Left Tilt	4132	826.4	23.00	22.63	0.752	0.819	
					4183	836.6	23.00	22.64	0.782	0.850	
					4233	846.6	23.00	22.67	0.755	0.815	
				Right Touch	4183	836.6	23.00	22.64	0.653	0.709	
				Right Tilt	4183	836.6	23.00	22.64	0.611	0.664	
	Body-worn & Hotspot	Rel.99 RMC	10	Rear	4183	836.6	25.00	24.34	0.509	0.593	10
				Front	4183	836.6	25.00	24.34	0.181	0.211	
	Hotspot	Rel.99 RMC	10	Top	4183	836.6	25.00	24.34	0.415	0.483	
				Right	4183	836.6	25.00	24.34	0.330	0.384	

10.4 LTE Band 2 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Reported	
Ant.A	Head	QPSK	0	Left Touch	18700	1860.0	1	49	24.20	23.47	0.123	0.146	11
							50	24	23.20	22.54	0.123	0.143	
				Left Tilt	18700	1860.0	1	49	24.20	23.47	0.067	0.079	
							50	24	23.20	22.54	0.064	0.075	
				Right Touch	18700	1860.0	1	49	24.20	23.47	0.074	0.088	
							50	24	23.20	22.54	0.076	0.088	
				Right Tilt	18700	1860.0	1	49	24.20	23.47	0.048	0.057	
							50	24	23.20	22.54	0.050	0.058	
	Body-worn & Hotspot	QPSK	10	Rear	18700	1860.0	1	49	20.00	19.15	0.397	0.483	
							50	24	20.00	19.18	0.403	0.487	
				Front	18700	1860.0	1	49	20.00	19.15	0.347	0.422	
							50	24	20.00	19.18	0.349	0.422	
	Hotspot	QPSK	10	Left	18700	1860.0	1	49	20.00	19.15	0.059	0.072	
							50	24	20.00	19.18	0.059	0.071	
				Bottom	18700	1860.0	1	49	20.00	19.15	0.739	0.899	
							50	24	20.00	19.18	0.737	0.890	
							100	0	20.00	19.11	0.729	0.895	
					18900	1880.0	1	49	20.00	19.13	0.747	0.913	
							50	24	20.00	19.10	0.733	0.902	
					19100	1900.0	1	49	20.00	18.94	0.767	0.979	12
							50	24	20.00	19.06	0.762	0.946	
				Right	18700	1860.0	1	49	20.00	19.15	0.079	0.096	
							50	24	20.00	19.18	0.081	0.098	

10.5 LTE Band 5 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Reported	
Ant.A	Head	QPSK	0	Left Touch	20525	836.5	1	0	25.00	24.05	0.168	0.209	
							25	0	24.00	23.07	0.134	0.166	
				Left Tilt	20525	836.5	1	0	25.00	24.05	0.088	0.110	
							25	0	24.00	23.07	0.091	0.113	
				Right Touch	20525	836.5	1	0	25.00	24.05	0.178	0.222	13
							25	0	24.00	23.07	0.139	0.172	
				Right Tilt	20525	836.5	1	0	25.00	24.05	0.089	0.111	
							25	0	24.00	23.07	0.069	0.085	
	Body-worn & Hotspot	QPSK	10	Rear	20525	836.5	1	0	25.00	24.05	0.411	0.511	14
							25	0	24.00	23.07	0.387	0.479	
				Front	20525	836.5	1	0	25.00	24.05	0.308	0.383	
							25	0	24.00	23.07	0.237	0.294	
	Hotspot	QPSK	10	Left	20525	836.5	1	0	25.00	24.05	0.186	0.231	
							25	0	24.00	23.07	0.144	0.178	
				Bottom	20525	836.5	1	0	25.00	24.05	0.182	0.227	
							25	0	24.00	23.07	0.142	0.176	
				Right	20525	836.5	1	0	25.00	24.05	0.288	0.358	
							25	0	24.00	23.07	0.233	0.289	

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Reported	
Ant.E	Head	QPSK	0	Left Touch	20525	836.5	1	0	23.00	22.37	0.838	0.969	15
							25	0	23.00	22.39	0.819	0.943	
							50	0	23.00	22.32	0.734	0.858	
				Left Tilt	20525	836.5	1	0	23.00	22.37	0.756	0.874	
							25	0	23.00	22.39	0.776	0.893	
							50	0	23.00	22.32	0.776	0.908	
				Right Touch	20525	836.5	1	0	23.00	22.37	0.644	0.745	
							25	0	23.00	22.39	0.704	0.810	
				Right Tilt	20525	836.5	1	0	23.00	22.37	0.656	0.758	
							25	0	23.00	22.39	0.635	0.731	
	Body-worn & Hotspot	QPSK	10	Rear	20525	836.5	1	0	25.00	24.74	0.570	0.605	16
							25	0	24.00	23.66	0.554	0.599	
				Front	20525	836.5	1	0	25.00	24.74	0.403	0.428	
							25	0	24.00	23.66	0.317	0.343	
	Hotspot	QPSK	10	Top	20525	836.5	1	0	25.00	24.74	0.390	0.414	
							25	0	24.00	23.66	0.312	0.337	
				Right	20525	836.5	1	0	25.00	24.74	0.485	0.515	
							25	0	24.00	23.66	0.385	0.416	

10.6 LTE Band 12 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Reported	
Ant.A	Head	QPSK	0	Left Touch	23095	707.5	1	49	24.00	23.01	0.124	0.156	
							25	25	23.00	22.07	0.108	0.134	
				Left Tilt	23095	707.5	1	49	24.00	23.01	0.083	0.104	
							25	25	23.00	22.07	0.067	0.083	
				Right Touch	23095	707.5	1	49	24.00	23.01	0.125	0.157	17
							25	25	23.00	22.07	0.096	0.119	
				Right Tilt	23095	707.5	1	49	24.00	23.01	0.085	0.107	
							25	25	23.00	22.07	0.067	0.083	
	Body-worn & Hotspot	QPSK	10	Rear	23095	707.5	1	49	24.00	23.01	0.251	0.315	18
							25	25	23.00	22.07	0.207	0.256	
				Front	23095	707.5	1	49	24.00	23.01	0.142	0.178	
							25	25	23.00	22.07	0.119	0.147	
	Hotspot	QPSK	10	Left	23095	707.5	1	49	24.00	23.01	0.166	0.209	
							25	25	23.00	22.07	0.136	0.168	
				Bottom	23095	707.5	1	49	24.00	23.01	0.043	0.054	
							25	25	23.00	22.07	0.036	0.045	
				Right	23095	707.5	1	49	24.00	23.01	0.109	0.137	
							25	25	23.00	22.07	0.088	0.109	

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Reported	
Ant.E	Head	QPSK	0	Left Touch	23095	707.5	1	25	22.50	21.90	0.843	0.968	19
							25	25	22.50	21.98	0.808	0.911	
							50	0	22.50	21.76	0.793	0.940	
				Left Tilt	23095	707.5	1	25	22.50	21.90	0.729	0.837	
							25	25	22.50	21.98	0.712	0.803	
							50	0	22.50	21.76	0.733	0.869	
				Right Touch	23095	707.5	1	25	22.50	21.90	0.696	0.799	
							25	25	22.50	21.98	0.647	0.729	
				Right Tilt	23095	707.5	1	25	22.50	21.90	0.528	0.606	
							25	25	22.50	21.98	0.515	0.581	
	Body-worn & Hotspot	QPSK	10	Rear	23095	707.5	1	25	24.00	23.48	0.431	0.486	20
							25	25	23.00	22.51	0.354	0.396	
				Front	23095	707.5	1	25	24.00	23.48	0.353	0.398	
							25	25	23.00	22.51	0.280	0.313	
	Hotspot	QPSK	10	Top	23095	707.5	1	25	24.00	23.48	0.352	0.397	
							25	25	23.00	22.51	0.282	0.316	
				Right	23095	707.5	1	25	24.00	23.48	0.304	0.343	
							25	25	23.00	22.51	0.246	0.275	

10.7 LTE Band 13 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Reported	
Ant.A	Head	QPSK	0	Left Touch	23230	782.0	1	25	24.00	23.09	0.141	0.174	
							25	12	23.00	22.05	0.112	0.139	
				Left Tilt	23230	782.0	1	25	24.00	23.09	0.086	0.106	
							25	12	23.00	22.05	0.070	0.087	
				Right Touch	23230	782.0	1	25	24.00	23.09	0.183	0.226	21
							25	12	23.00	22.05	0.145	0.180	
				Right Tilt	23230	782.0	1	25	24.00	23.09	0.094	0.116	
							25	12	23.00	22.05	0.076	0.095	
	Body-worn & Hotspot	QPSK	10	Rear	23230	782.0	1	25	24.00	23.09	0.384	0.474	22
							25	12	23.00	22.05	0.306	0.381	
				Front	23230	782.0	1	25	24.00	23.09	0.257	0.317	
							25	12	23.00	22.05	0.202	0.251	
	Hotspot	QPSK	10	Left	23230	782.0	1	25	24.00	23.09	0.257	0.317	
							25	12	23.00	22.05	0.199	0.248	
				Bottom	23230	782.0	1	25	24.00	23.09	0.107	0.132	
							25	12	23.00	22.05	0.085	0.106	
				Right	23230	782.0	1	25	24.00	23.09	0.269	0.332	
							25	12	23.00	22.05	0.211	0.263	

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Reported	
Ant.E	Head	QPSK	0	Left Touch	23230	782.0	1	25	24.00	23.94	1.100	1.115	23
							25	12	23.00	22.65	0.895	0.970	
							50	0	23.00	22.55	0.880	0.976	
				Left Tilt	23230	782.0	1	25	24.00	23.94	0.989	1.003	
							25	12	23.00	22.65	0.783	0.849	
							50	0	23.00	22.55	0.791	0.877	
				Right Touch	23230	782.0	1	25	24.00	23.94	0.859	0.871	
							25	12	23.00	22.65	0.688	0.746	
				Right Tilt	23230	782.0	1	25	24.00	23.94	0.748	0.758	
							25	12	23.00	22.65	0.610	0.661	
	Body-worn & Hotspot	QPSK	10	Rear	23230	782.0	1	25	24.00	23.94	0.389	0.394	
							25	12	23.00	22.65	0.309	0.335	
				Front	23230	782.0	1	25	24.00	23.94	0.308	0.312	
							25	12	23.00	22.65	0.248	0.269	
	Hotspot	QPSK	10	Top	23230	782.0	1	25	24.00	23.94	0.305	0.309	
							25	12	23.00	22.65	0.246	0.267	
				Right	23230	782.0	1	25	24.00	23.94	0.432	0.438	24
							25	12	23.00	22.65	0.339	0.367	

10.8 LTE Band 41 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Reported	
Ant.B	Head	QPSK	0	Left Touch	41055	2636.5	1	0	25.00	24.33	0.165	0.193	
							50	0	24.00	23.38	0.130	0.150	
				Left Tilt	41055	2636.5	1	0	25.00	24.33	0.053	0.062	
							50	0	24.00	23.38	0.040	0.046	
				Right Touch	41055	2636.5	1	0	25.00	24.33	0.051	0.060	
							50	0	24.00	23.38	0.037	0.043	
				Right Tilt	41055	2636.5	1	0	25.00	24.33	0.039	0.046	
							50	0	24.00	23.38	0.028	0.032	
	Body-worn & Hotspot	QPSK	10	Rear	41055	2636.5	1	0	24.00	23.55	0.465	0.516	
							50	0	24.00	23.41	0.438	0.502	
				Front	41055	2636.5	1	0	24.00	23.55	0.359	0.398	
							50	0	24.00	23.41	0.337	0.386	
	Hotspot	QPSK	10	Left	41055	2636.5	1	0	24.00	23.55	0.386	0.428	
							50	0	24.00	23.41	0.365	0.418	
				Bottom	41055	2636.5	1	0	24.00	23.55	0.489	0.542	25
							50	0	24.00	23.41	0.463	0.530	

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Reported	
Ant.F	Head	QPSK	0	Left Touch	41490	2680.0	1	0	20.00	19.13	0.368	0.450	
							50	0	20.00	19.19	0.364	0.439	
				Left Tilt	41490	2680.0	1	0	20.00	19.13	0.442	0.540	
							50	0	20.00	19.19	0.434	0.523	
				Right Touch	39750	2506.0	1	0	20.00	19.09	0.558	0.688	
							50	0	20.00	19.12	0.564	0.691	
					40185	2549.5	1	0	20.00	18.97	0.621	0.787	
							50	0	20.00	18.93	0.612	0.783	
					40620	2593.0	1	0	20.00	19.04	0.693	0.864	
							50	0	20.00	19.06	0.688	0.854	
					41055	2636.5	1	0	20.00	19.05	0.635	0.790	
							50	0	20.00	19.07	0.674	0.835	
					41490	2680.0	1	0	20.00	19.13	0.738	0.902	
							50	0	20.00	19.19	0.715	0.862	
							100	0	20.00	19.13	0.704	0.860	
				Right Tilt	39750	2506.0	1	0	20.00	19.09	0.524	0.646	
							50	0	20.00	19.12	0.524	0.642	
					40185	2549.5	1	0	20.00	18.97	0.573	0.726	
							50	0	20.00	18.93	0.561	0.718	
					40620	2593.0	1	0	20.00	19.04	0.645	0.805	
							50	0	20.00	19.06	0.645	0.801	
					41055	2636.5	1	0	20.00	19.05	0.668	0.831	
							50	0	20.00	19.07	0.652	0.808	
					41490	2680.0	1	0	20.00	19.13	0.759	0.927	26
							50	0	20.00	19.19	0.752	0.906	
							100	0	20.00	19.13	0.739	0.903	
	Body-worn & Hotspot	QPSK	10	Rear	41490	2680.0	1	0	22.50	21.65	0.289	0.351	
							50	0	22.50	21.73	0.286	0.341	
				Front	41490	2680.0	1	0	22.50	21.65	0.213	0.259	
							50	0	22.50	21.73	0.211	0.252	
	Hotspot	QPSK	10	Top	41490	2680.0	1	0	22.50	21.65	0.350	0.426	27
							50	0	22.50	21.73	0.356	0.425	
				Right	41490	2680.0	1	0	22.50	21.65	0.022	0.027	
							50	0	22.50	21.73	0.022	0.026	

UL CA (Intraband-contiguous)_41C test results

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	PCC UL				SCC UL				Power (dBm)		1-g SAR (W/kg)		Plot No.
					Ch #.	Freq. (MHz)	RB Allocation	RB offest	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Tune-up limit	Meas.	Meas.	Scaled	
Ant.B	Head	QPSK	0	Left Touch	41055	2636.5	1	0	40857	2616.7	1	99	25.00	24.38	0.174	0.201	28
	Body-worn & Hotspot	QPSK	10	Bottom	41055	2636.5	1	0	40857	2616.7	1	99	24.00	23.30	0.441	0.518	

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	PCC UL				SCC UL				Power (dBm)		1-g SAR (W/kg)		Plot No.
					Ch #.	Freq. (MHz)	RB Allocation	RB offest	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Tune-up limit	Meas.	Meas.	Scaled	
Ant.F	Head	QPSK	0	Right tilt	41490	2680.0	1	0	41292	2660.2	1	99	20.00	19.03	0.705	0.881	
	Body-worn & Hotspot	QPSK	10	Top	41490	2680.0	1	0	41292	2660.2	1	99	22.50	21.40	0.217	0.280	

10.9 LTE Band 66 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Reported	
Ant.A	Head	QPSK	0	Left Touch	132322	1745.0	1	49	24.20	23.39	0.248	0.299	29
							50	50	23.20	22.39	0.187	0.225	
				Left Tilt	132322	1745.0	1	49	24.20	23.39	0.096	0.116	
							50	50	23.20	22.39	0.081	0.098	
				Right Touch	132322	1745.0	1	49	24.20	23.39	0.107	0.129	
							50	50	23.20	22.39	0.087	0.105	
				Right Tilt	132322	1745.0	1	49	24.20	23.39	0.058	0.070	
							50	50	23.20	22.39	0.049	0.059	
	Body-worn & Hotspot	QPSK	10	Rear	132322	1745.0	1	49	20.00	18.99	0.425	0.536	
							50	50	20.00	18.99	0.430	0.543	
				Front	132322	1745.0	1	49	20.00	18.99	0.382	0.482	
							50	50	20.00	18.99	0.384	0.485	
	Hotspot	QPSK	10	Left	132322	1745.0	1	49	20.00	18.99	0.091	0.115	
							50	50	20.00	18.99	0.087	0.110	
				Bottom	132072	1720.0	1	49	20.00	18.93	0.615	0.787	
							50	50	20.00	18.92	0.629	0.807	
					132322	1745.0	1	49	20.00	18.99	0.686	0.866	
							50	50	20.00	18.99	0.697	0.879	
							100	0	20.00	18.97	0.685	0.868	
					132572	1770.0	1	49	20.00	18.90	0.720	0.928	30
							50	50	20.00	18.89	0.719	0.928	
				Right	132322	1745.0	1	49	20.00	18.99	0.058	0.073	
							50	50	20.00	18.99	0.059	0.074	

10.10 NR Band n5 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Modulation	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Ant.A	Head	DFT-s-OFDM	QPSK	0	Left Touch	167300	836.5	1	1	25.00	23.92	0.105	0.135	
								50	28	25.00	23.87	0.104	0.135	
					Left Tilt	167300	836.5	1	1	25.00	23.92	0.058	0.074	
								50	28	25.00	23.87	0.060	0.078	
					Right Touch	167300	836.5	1	1	25.00	23.92	0.133	0.171	
								50	28	25.00	23.87	0.188	0.244	31
					Right Tilt	167300	836.5	1	1	25.00	23.92	0.099	0.127	
								50	28	25.00	23.87	0.098	0.127	
		CP-OFDM	QPSK	0	Right Touch	167300	836.5	1	1	23.50	22.49	0.182	0.230	
	Body-worn & Hotspot	DFT-s-OFDM	QPSK	10	Rear	167300	836.5	1	1	25.00	23.92	0.584	0.749	32
								50	28	25.00	23.87	0.570	0.739	
					Front	167300	836.5	1	1	25.00	23.92	0.303	0.389	
								50	28	25.00	23.87	0.304	0.394	
	Hotspot	DFT-s-OFDM	QPSK	10	Left	167300	836.5	1	1	25.00	23.92	0.178	0.228	
								50	28	25.00	23.87	0.174	0.226	
					Bottom	167300	836.5	1	1	25.00	23.92	0.170	0.218	
								50	28	25.00	23.87	0.179	0.232	
					Right	167300	836.5	1	1	25.00	23.92	0.230	0.295	
								50	28	25.00	23.87	0.274	0.355	
		CP-OFDM	QPSK	10	Rear	167300	836.5	1	1	23.50	22.49	0.588	0.742	

Antenna	RF Exposure Conditions	Modulation	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Ant.E	Head	DFT-s-OFDM	QPSK	0	Left Touch	167300	836.5	1	1	23.00	22.80	1.050	1.099	33
								50	28	23.00	22.56	0.908	1.005	
								100	0	23.00	22.60	0.973	1.067	
					Left Tilt	167300	836.5	1	1	23.00	22.80	0.860	0.901	
								50	28	23.00	22.56	0.829	0.917	
								100	0	23.00	22.60	0.763	0.837	
					Right Touch	167300	836.5	1	1	23.00	22.80	0.641	0.671	
								50	28	23.00	22.56	0.642	0.710	
					Right Tilt	167300	836.5	1	1	23.00	22.80	0.616	0.645	
								50	28	23.00	22.56	0.611	0.676	
		CP-OFDM	QPSK	0	Left Touch	167300	836.5	1	1	23.00	22.39	0.772	0.888	
	Body-worn & Hotspot	DFT-s-OFDM	QPSK	10	Rear	167300	836.5	1	1	25.00	24.59	0.605	0.665	
								50	28	25.00	24.53	0.641	0.714	34
					Front	167300	836.5	1	1	25.00	24.59	0.521	0.573	
								50	28	25.00	24.53	0.584	0.651	
	Hotspot	DFT-s-OFDM	QPSK	10	Top	167300	836.5	1	1	25.00	24.59	0.356	0.391	
								50	28	25.00	24.53	0.390	0.435	
					Right	167300	836.5	1	1	25.00	24.59	0.466	0.512	
								50	28	25.00	24.53	0.492	0.548	
		CP-OFDM	QPSK	10	Rear	167300	836.5	1	1	23.50	23.16	0.560	0.606	

Note(s):

CP-OFDM mode were evaluated at worst configuration of DFT-s-OFDM in each exposure conditions.

10.11 NR Band n41 (100MHz Bandwidth)

Antenna	RF Exposure Conditions	Modulation	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Ant.B	Head	DFT-s-OFDM	QPSK	0	Left Touch	518598	2593.0	1	271	22.00	21.68	0.129	0.139	
								135	138	22.00	21.36	0.130	0.151	35
					Left Tilt	518598	2593.0	1	271	22.00	21.68	0.054	0.058	
								135	138	22.00	21.36	0.060	0.070	
					Right Touch	518598	2593.0	1	271	22.00	21.68	0.050	0.054	
								135	138	22.00	21.36	0.052	0.060	
					Right Tilt	518598	2593.0	1	271	22.00	21.68	0.028	0.030	
								135	138	22.00	21.36	0.032	0.037	
		CP-OFDM	QPSK	0	Left Touch	518598	2593.0	1	1	22.00	21.44	0.130	0.148	
	Body-worn & Hotspot	DFT-s-OFDM	QPSK	10	Rear	518598	2593.0	1	271	22.00	21.68	0.422	0.454	
								135	138	22.00	21.36	0.438	0.508	
					Front	518598	2593.0	1	271	22.00	21.68	0.326	0.351	
								135	138	22.00	21.36	0.315	0.365	
	Hotspot	DFT-s-OFDM	QPSK	10	Left	518598	2593.0	1	271	22.00	21.68	0.378	0.407	
								135	138	22.00	21.36	0.374	0.433	
					Bottom	518598	2593.0	1	271	22.00	21.68	0.690	0.743	
								135	138	22.00	21.36	0.675	0.782	36
		CP-OFDM	QPSK	10	Bottom	518598	2593	1	1	22.00	21.44	0.679	0.772	

Antenna	RF Exposure Conditions	Modulation	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Ant.F	Head	DFT-s-OFDM	QPSK	0	Left Touch	518598	2593.0	1	1	18.00	17.42	0.469	0.536	
								135	138	18.00	17.25	0.393	0.467	
					Left Tilt	518598	2593.0	1	1	18.00	17.42	0.483	0.552	
								135	138	18.00	17.25	0.430	0.511	
					Right Touch	518598	2593.0	1	1	18.00	17.42	0.932	1.065	
								135	138	18.00	17.25	0.843	1.002	
								270	0	18.00	17.23	0.914	1.091	37
					Right Tilt	518598	2593.0	1	1	18.00	17.42	0.923	1.055	
								135	138	18.00	17.25	0.894	1.063	
								270	0	18.00	17.23	0.864	1.032	
		CP-OFDM	QPSK	0	Right Touch	518598	2593.0	1	1	18.00	17.45	0.919	1.043	
	Body-worn & Hotspot	DFT-s-OFDM	QPSK	10	Rear	518598	2593.0	1	1	20.50	19.98	0.337	0.380	
								135	138	20.50	19.84	0.355	0.413	
					Front	518598	2593.0	1	1	20.50	19.98	0.258	0.291	
								135	138	20.50	19.84	0.223	0.260	
	Hotspot	DFT-s-OFDM	QPSK	10	Top	518598	2593.0	1	1	20.50	19.98	0.467	0.526	38
								135	138	20.50	19.84	0.449	0.523	
					Left	518598	2593.0	1	1	20.50	19.98	0.069	0.078	
								135	138	20.50	19.84	0.059	0.069	
		CP-OFDM	QPSK	10	Top	518598	2593	1	1	18.00	17.45	0.396	0.449	

Note(s):

1. CP-OFDM mode were evaluated at worst configuration of DFT-s-OFDM in each exposure conditions.

10.12 NR Band n66 (40MHz Bandwidth)

Antenna	RF Exposure Conditions	Modulation	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Ant.A	Head	DFT-s-OFDM	QPSK	0	Left Touch	349000	1745.0	1	214	24.00	23.18	0.162	0.196	
								108	54	24.00	23.15	0.191	0.232	39
					Left Tilt	349000	1745.0	1	214	24.00	23.18	0.076	0.092	
								108	54	24.00	23.15	0.075	0.091	
					Right Touch	349000	1745.0	1	214	24.00	23.18	0.093	0.112	
								108	54	24.00	23.15	0.104	0.126	
					Right Tilt	349000	1745.0	1	214	24.00	23.18	0.069	0.083	
								108	54	24.00	23.15	0.064	0.078	
		CP-OFDM	QPSK	0	Left Touch	349000	1745.0	1	1	22.50	21.65	0.149	0.181	
	Body-worn & Hotspot	DFT-s-OFDM	QPSK	10	Rear	349000	1745.0	1	214	20.00	19.15	0.456	0.555	
								108	54	20.00	19.16	0.435	0.528	
					Front	349000	1745.0	1	214	20.00	19.15	0.395	0.480	
								108	54	20.00	19.16	0.396	0.481	
	Hotspot	DFT-s-OFDM	QPSK	10	Left	349000	1745.0	1	214	20.00	19.15	0.043	0.052	
								108	54	20.00	19.16	0.045	0.055	
					Bottom	349000	1745.0	1	214	20.00	19.15	0.692	0.842	40
								108	54	20.00	19.16	0.642	0.779	
					Right	349000	1745.0	1	214	20.00	19.15	0.065	0.079	
								108	54	20.00	19.16	0.055	0.067	
		CP-OFDM	QPSK	10	Bottom	349000	1745	1	1	20.00	19.14	0.651	0.794	

Antenna	RF Exposure Conditions	Modulation	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Ant.F	Head	DFT-s-OFDM	QPSK	0	Left Touch	349000	1745.0	1	107	18.50	17.96	0.250	0.283	
								108	54	18.50	18.02	0.252	0.281	
					Left Tilt	349000	1745.0	1	107	18.50	17.96	0.355	0.402	
								108	54	18.50	18.02	0.359	0.401	
					Right Touch	349000	1745.0	1	107	18.50	17.96	0.437	0.495	
								108	54	18.50	18.02	0.453	0.506	
					Right Tilt	349000	1745.0	1	107	18.50	17.96	0.548	0.621	41
								108	54	18.50	18.02	0.543	0.606	
		CP-OFDM	QPSK	0	Right tilt	349000	1745.0	1	1	18.50	17.97	0.548	0.619	
	Body-worn & Hotspot	DFT-s-OFDM	QPSK	10	Rear	349000	1745.0	1	107	22.00	21.25	0.378	0.449	
								108	54	22.00	21.39	0.375	0.432	
					Front	349000	1745.0	1	107	22.00	21.25	0.282	0.335	
								108	54	22.00	21.39	0.280	0.322	
	Hotspot	DFT-s-OFDM	QPSK	10	Top	349000	1745.0	1	107	22.00	21.25	0.541	0.643	42
								108	54	22.00	21.39	0.546	0.628	
					Left	349000	1745.0	1	107	22.00	21.25	0.103	0.122	
								108	54	22.00	21.39	0.090	0.104	
		CP-OFDM	QPSK	10	Top	349000	1745	1	1	22.00	21.47	0.508	0.574	

Note(s):

CP-OFDM mode were evaluated at worst configuration of DFT-s-OFDM in each exposure conditions.

10.13 Wi-Fi (DTS Band)

DTS SISO SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled		
WLAN SISO Ant.H	2.4GHz	802.11b 1 Mbps	Head	0	Left Touch	6	2437.0	0.177	98.8%	15.00	14.44				
					Left Tilt	6	2437.0	0.085	98.8%	15.00	14.44				
					Right Touch	6	2437.0	0.797	98.8%	15.00	14.44	0.678	0.780		43
					Rightt Tilt	6	2437.0	0.324	98.8%	15.00	14.44	0.256	0.295	2	
			Body-worn & Hotspot	10	Rear	6	2437.0	0.329	98.8%	19.0	18.52	0.269	0.304	4	
					Front	6	2437.0	0.346	98.8%	19.0	18.52	0.283	0.320	4	
			Hotspot	10	Top	6	2437.0	0.105	98.8%	19.0	18.52				
					Left	6	2437.0	0.441	98.8%	19.0	18.52	0.350	0.395	1	44
WLAN SISO Ant.J	2.4GHz	802.11b 1 Mbps	Head	0	Left Touch	1	2412.0	0.789	98.8%	15.0	14.47	0.566	0.647		
					Left Tilt	1	2412.0	0.176	98.8%	15.0	14.47	0.115	0.131	4	
					Right Touch	1	2412.0	0.348	98.8%	15.0	14.47	0.299	0.342	2	
					Rightt Tilt	1	2412.0	0.063	98.8%	15.0	14.47	0.049	0.056	4	
			Body-worn & Hotspot	10	Rear	1	2412.0	0.124	98.8%	19.0	18.61	0.118	0.131	4	
					Front	1	2412.0	0.179	98.8%	19.0	18.61	0.149	0.165	1	
			Hotspot	10	Top	1	2412.0	0.002	98.8%	19.0	18.61				
					Right	1	2412.0	0.095	98.8%	19.0	18.61	0.070	0.077	4	

DTS MIMO SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled		
WLAN MIMO Ant.H	2.4GHz	802.11b 1 Mbps	Head	0	Left Touch	1	2412.0	0.851	98.8%	15.0	14.00	0.613	0.781	2	
					Left Tilt	1	2412.0	0.175	98.8%	15.0	14.00				
					Right Touch	1	2412.0	0.919	98.8%	15.0	14.00	0.770	0.981		45
						6	2437.0	0.796	98.8%	15.0	14.47	0.665	0.760	3	
					Rightt Tilt	1	2412.0	0.214	98.8%	15.0	14.00	0.215	0.274	4	
			Body-worn & Hotspot	10	Rear	1	2412.0	0.366	98.8%	19.0	17.86	0.307	0.404	2	
					Front	1	2412.0	0.397	98.8%	19.0	17.86	0.313	0.412	4	
			Hotspot	10	Top	1	2412.0	0.119	98.8%	19.0	17.86				
					Left	1	2412.0	0.443	98.8%	19.0	17.86	0.354	0.466		46
					Right	1	2412.0	0.109	98.8%	19.0	17.86				
WLAN MIMO Ant.J	2.4GHz	802.11b 1 Mbps	Head	0	Left Touch	1	2412.0	0.851	98.8%	15.0	14.58				
					Left Tilt	1	2412.0	0.175	98.8%	15.0	14.58				
					Right Touch	1	2412.0	0.920	98.8%	15.0	14.58				
						6	2437.0	0.797	98.8%	15.0	14.46				
						11	2462.0	0.805	98.8%	15.0	13.98				
					Rightt Tilt	1	2412.0	0.296	98.8%	15.0	14.58				
			Body-worn & Hotspot	10	Rear	1	2412.0	0.366	98.8%	19.0	18.74				
					Front	1	2412.0	0.397	98.8%	19.0	18.74				
			Hotspot	10	Top	1	2412.0	0.119	98.8%	19.0	18.74				
					Left	1	2412.0	0.443	98.8%	19.0	18.74				
					Right	1	2412.0	0.109	98.8%	19.0	18.74	0.062	0.067	4	

Note(s):

1. When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
2. Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.
3. Testing for a second channel was required because the reported SAR for this test position was > 0.8 or 2.0 W/kg (1-g or 10-g respectively).
4. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.

10.14 Wi-Fi (U-NII Bands)

U-NII 2A SISO SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
WLAN SISO Ant.H	5.3 GHz U-NII 2A	802.11ac VHT 80	Head	0	Left Touch	58	5290.0	0.162	97.1%	14.00	12.92						
					Left Tilt	58	5290.0	0.176	97.1%	14.00	12.92						
					Right Touch	58	5290.0	0.789	97.1%	14.00	12.92	0.527	0.696				47
					Right Tilt	58	5290.0	0.422	97.1%	14.00	12.92	0.255	0.337			2	
		802.11n HT40	Body-worn	10	Rear	54	5270.0	0.422	98.2%	17.00	15.98	0.330	0.425				48
					Front	54	5270.0	0.177	98.2%	17.00	15.98	0.128	0.165			2	
		802.11n HT40	Product Specific 10-g	0	Rear	54	5270.0	5.890	98.2%	17.00	15.98			0.936	1.206	2	
					Front	54	5270.0	3.600	98.2%	17.00	15.98						
					Top	54	5270.0	2.140	98.2%	17.00	15.98						
					Left	54	5270.0	11.600	98.2%	17.00	15.98			1.720	2.216		49
						62	5310.0	7.040	98.2%	17.00	15.73			1.280	1.747	3	
WLAN SISO Ant.E	5.3 GHz U-NII 2A	802.11ac VHT 80	Head	0	Left Touch	58	5290.0	0.327	97.1%	14.00	12.97	0.215	0.281			1	
					Left Tilt	58	5290.0	0.236	97.1%	14.00	12.97						
					Right Touch	58	5290.0	0.190	97.1%	14.00	12.97						
					Right Tilt	58	5290.0	0.244	97.1%	14.00	12.97						
		802.11n HT40	Body-worn	10	Rear	54	5270.0	0.411	98.2%	17.00	16.11	0.293	0.366			1	
					Front	54	5270.0	0.087	98.2%	17.00	16.11						
		802.11n HT40	Product Specific 10-g	0	Rear	54	5270.0	4.280	98.2%	17.00	16.11			0.797	0.996	1	
					Front	54	5270.0	0.978	98.2%	17.00	16.11						
					Top	54	5270.0	1.150	98.2%	17.00	16.11						
					Right	54	5270.0	0.897	98.2%	17.00	16.11						

U-NII 2A MIMO SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
WLAN MIMO Ant.H	5.3 GHz U-NII 2A	802.11ac VHT 80	Head	0	Left Touch	58	5290.0	0.344	94.5%	14.00	12.42						
					Left Tilt	58	5290.0	0.283	94.5%	14.00	12.42						
					Right Touch	58	5290.0	0.632	94.5%	14.00	12.42	0.445	0.678				50
					Right Tilt	58	5290.0	0.373	94.5%	14.00	12.42	0.262	0.399			2	
		802.11n HT40	Body-worn	10	Rear	54	5270.0	0.608	98.2%	17.00	16.32	0.496	0.591				51
					Front	54	5270.0	0.304	98.2%	17.00	16.32	0.236	0.281			2	
		802.11n HT40	Product Specific 10-g	0	Rear	54	5270.0	4.650	98.2%	17.00	16.32			0.877	1.045	2	
					Front	54	5270.0	3.120	98.2%	17.00	16.32						
					Top	54	5270.0	2.280	98.2%	17.00	16.32						
					Left	54	5270.0	11.800	98.2%	17.00	16.32			1.660	1.977		52
					Right	62	5310.0	2.480	98.2%	17.00	16.32						
WLAN MIMO Ant.E	5.3 GHz U-NII 2A	802.11ac VHT 80	Head	0	Left Touch	58	5290.0	0.344	94.5%	14.00	12.76						
					Left Tilt	58	5290.0	0.283	94.5%	14.00	12.76						
					Right Touch	58	5290.0	0.632	94.5%	14.00	12.76						
					Right Tilt	58	5290.0	0.373	94.5%	14.00	12.76						
		802.11n HT40	Body-worn	10	Rear	54	5270.0	0.608	98.2%	17.00	16.61						
					Front	54	5270.0	0.304	98.2%	17.00	16.61						
		802.11n HT40	Product Specific 10-g	0	Rear	54	5270.0	4.650	98.2%	17.00	16.61						
					Front	54	5270.0	3.120	98.2%	17.00	16.61						
					Top	54	5270.0	2.280	98.2%	17.00	16.61						
					Left	54	5270.0	11.800	98.2%	17.00	16.61						
					Right	54	5270.0	2.480	98.2%	17.00	16.61						

Note(s):

1. When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
2. Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.
3. Testing for a second channel was required because the reported SAR for this test position was > 0.8 or 2.0 W/kg (1-g or 10-g respectively).
4. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.

Wi-Fi (U-NII Bands) (Continued)

U-NII 2C SISO SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
WLAN SISO Ant.H	5.5 GHz U-NII 2C	802.11ac VHT 80	Head	0	Left Touch	106	5530.0	0.105	97.1%	14.00	12.92						
					Left Tilt	106	5530.0	0.129	97.1%	14.00	12.92						
					Right Touch	106	5530.0	0.635	97.1%	14.00	12.92	0.539	0.712				53
					Right Tilt	106	5530.0	0.434	97.1%	14.00	12.92	0.270	0.357			2	
		802.11ac VHT 80	Body-worn	10	Rear	106	5530.0	0.559	97.1%	17.00	16.80	0.444	0.479				
					Front	106	5530.0	0.269	97.1%	17.00	16.80	0.195	0.210			2	
		802.11ac VHT 80	Product Specific 10-g	0	Rear	106	5530.0	3.750	97.1%	17.00	16.80			1.120	1.208	4	
					Front	106	5530.0	7.210	97.1%	17.00	16.80			1.120	1.208	2	
					Top	106	5530.0	1.670	97.1%	17.00	16.80						
					Left	106	5530.0	13.000	97.1%	17.00	16.80			2.200	2.373		
						122	5610.0	13.500	97.1%	17.00	16.63			2.290	2.568	3	54
WLAN SISO Ant.E	5.5 GHz U-NII 2C	802.11ac VHT 80	Head	0	Left Touch	106	5530.0	0.200	97.1%	14.00	13.88	0.147	0.156			1	
					Left Tilt	106	5530.0	0.168	97.1%	14.00	13.88						
					Right Touch	106	5530.0	0.103	97.1%	14.00	13.88						
					Right Tilt	106	5530.0	0.142	97.1%	14.00	13.88						
		802.11ac VHT 80	Body-worn	10	Rear	106	5530.0	0.605	97.1%	17.00	16.94	0.464	0.485				55
					Front	106	5530.0	0.077	97.1%	17.00	16.94	0.043	0.045			2	
		802.11ac VHT 80	Product Specific 10-g	0	Rear	106	5530.0	6.880	97.1%	17.00	16.94			1.160	1.211		
					Front	106	5530.0	0.624	97.1%	17.00	16.94						
					Top	106	5530.0	1.020	97.1%	17.00	16.94						
					Right	106	5530.0	1.150	97.1%	17.00	16.94			0.178	0.186	2	

U-NII 2C MIMO SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
WLAN MIMO Ant.H	5.5 GHz U-NII 2C	802.11ac VHT 80	Head	0	Left Touch	106	5530.0	0.146	94.5%	14.00	12.18						
					Left Tilt	106	5530.0	0.132	94.5%	14.00	12.18						
					Right Touch	106	5530.0	0.546	94.5%	14.00	12.18	0.381	0.613				56
					Right Tilt	106	5530.0	0.173	94.5%	14.00	12.18	0.126	0.203			2	
		802.11ac VHT 80	Body-worn	10	Rear	106	5530.0	0.528	94.5%	17.00	16.30						
					Front	106	5530.0	0.136	94.5%	17.00	16.30	0.093	0.116			2	
		802.11ac VHT 80	Product Specific 10-g	0	Rear	106	5530.0	4.670	94.5%	17.00	16.30						
					Front	106	5530.0	2.550	94.5%	17.00	16.30						
					Top	106	5530.0	1.360	94.5%	17.00	16.30						
					Left	106	5530.0	11.000	94.5%	17.00	16.30			1.910	2.375		57
						122	12.6	12.000	94.5%	17.00	16.51			2.190	2.595	3	
					Right	106	5530.0	1.190	94.5%	17.00	16.30						
WLAN MIMO Ant.E	5.5 GHz U-NII 2C	802.11ac VHT 80	Head	0	Left Touch	106	5530.0	0.146	94.5%	14.00	13.10						
					Left Tilt	106	5530.0	0.132	94.5%	14.00	13.10						
					Right Touch	106	5530.0	0.546	94.5%	14.00	13.10						
					Right Tilt	106	5530.0	0.173	94.5%	14.00	13.10						
		802.11ac VHT 80	Body-worn	10	Rear	106	5530.0	0.528	94.5%	17.00	16.14	0.397	0.512				58
					Front	106	5530.0	0.136	94.5%	17.00	16.14						
		802.11ac VHT 80	Product Specific 10-g	0	Rear	106	5530.0	4.670	94.5%	17.00	16.14			0.816	1.053	2	
					Front	106	5530.0	2.550	94.5%	17.00	16.14						
					Top	106	5530.0	1.360	94.5%	17.00	16.14						
					Left	106	5530.0	11.000	94.5%	17.00	16.14						
						122	5610.0	12.600	94.5%	17.00	16.04						
					Right	106	5530.0	1.190	94.5%	17.00	16.14						

Note(s):

1. When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
2. Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.
3. Testing for a second channel was required because the reported SAR for this test position was > 0.8 or 2.0 W/kg (1-g or 10-g respectively).
4. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.

Wi-Fi (U-NII Bands) (Continued)

U-NII 3 SISO SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
WLAN SISO Ant.H	5.8 GHz U-NII 3	802.11ac VHT 80	Head	0	Left Touch	155	5775.0	0.141	97.1%	14.00	12.41						
					Left Tilt	155	5775.0	0.147	97.1%	14.00	12.41						
					Right Touch	155	5775.0	0.568	97.1%	14.00	12.41	0.522	0.775				59
					Right Tilt	155	5775.0	0.332	97.1%	14.00	12.41	0.204	0.303			2	
		802.11ac VHT 80	Body-worn & Hotspot	10	Rear	155	5775.0	0.601	97.1%	17.00	16.40	0.495	0.585				60
					Front	155	5775.0	0.280	97.1%	17.00	16.40	0.194	0.229			2	
		802.11ac VHT 80	Product Specific 10-g	0	Rear	155	5775.0	4.170	97.1%	17.00	16.40			0.758	0.896	2	
					Front	155	5775.0	3.510	97.1%	17.00	16.40						
					Top	155	5775.0	1.680	97.1%	17.00	16.40						
					Left	155	5775.0	18.100	97.1%	17.00	16.40			2.620	3.098		61
WLAN SISO Ant.E	5.8 GHz U-NII 3	802.11ac VHT 80	Head	0	Left Touch	155	5775.0	0.085	97.1%	14.00	13.20	0.033	0.041	0.007	0.009	1	
					Left Tilt	155	5775.0	0.056	97.1%	14.00	13.20						
					Right Touch	155	5775.0	0.055	97.1%	14.00	13.20						
					Right Tilt	155	5775.0	0.065	97.1%	14.00	13.20						
		802.11ac VHT 80	Body-worn & Hotspot	10	Rear	155	5775.0	0.408	97.1%	17.00	16.56	0.332	0.378	0.111	0.127	1	
					Front	155	5775.0	0.033	97.1%	17.00	16.56						
		802.11ac VHT 80	Product Specific 10-g	0	Rear	155	5775.0	4.200	97.1%	17.00	16.56			0.907	1.034		
					Front	155	5775.0	0.320	97.1%	17.00	16.56						
					Top	155	5775.0	0.584	97.1%	17.00	16.56			0.112	0.128	2	
					Right	155	5775.0	0.377	97.1%	17.00	16.56						

U-NII 3 MIMO SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
WLAN MIMO Ant.H	5.8 GHz U-NII 3	802.11ac VHT 80	Head	0	Left Touch	155	5775.0	0.115	94.5%	14.00	12.05						
					Left Tilt	155	5775.0	0.099	94.5%	14.00	12.05						
					Right Touch	155	5775.0	0.416	94.5%	14.00	12.05	0.380	0.630				62
					Right Tilt	155	5775.0	0.256	94.5%	14.00	12.05	0.149	0.247			2	
		802.11ac VHT 80	Body-worn & Hotspot	10	Rear	155	5775.0	0.511	94.5%	17.00	16.22	0.421	0.533				63
					Front	155	5775.0	0.184	94.5%	17.00	16.22	0.111	0.141			2	
		802.11ac VHT 80	Product Specific 10-g	0	Rear	155	5775.0	3.040	94.5%	17.00	16.22			0.746	0.945	2	
					Front	155	5775.0	2.680	94.5%	17.00	16.22						
					Top	155	5775.0	1.600	94.5%	17.00	16.22						
					Left	155	5775.0	15.200	94.5%	17.00	16.22			2.300	2.913		64
					Right	155	5775.0	1.020	94.5%	17.00	16.22						
WLAN MIMO Ant.E	5.8 GHz U-NII 3	802.11ac VHT 80	Head	0	Left Touch	155	5775.0	0.115	94.5%	14.00	12.93						
					Left Tilt	155	5775.0	0.099	94.5%	14.00	12.93						
					Right Touch	155	5775.0	0.416	94.5%	14.00	12.93						
					Right Tilt	155	5775.0	0.256	94.5%	14.00	12.93						
		802.11ac VHT 80	Body-worn & Hotspot	10	Rear	155	5775.0	0.511	94.5%	17.00	16.48						
					Front	155	5775.0	0.199	94.5%	17.00	16.48						
		802.11ac VHT 80	Product Specific 10-g	0	Top	155	5775.0	3.040	94.5%	17.00	16.48						
					Left	155	5775.0	2.680	94.5%	17.00	16.48						
					Right	155	5775.0	1.600	94.5%	17.00	16.48						
					Left	155	5775.0	15.200	94.5%	17.00	16.48						
					Right	155	5775.0	1.020	94.5%	17.00	16.48						

Note(s):

1. When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
2. Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.
3. Testing for a second channel was required because the reported SAR for this test position was > 0.8 or 2.0 W/kg (1-g or 10-g respectively).
4. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.

Wi-Fi (U-NII Bands) (Continued)

U-NII 4 SISO SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
WLAN SISO Ant.H	5.9 GHz U-NII 4	802.11ac VHT 80	Head	0	Left Touch	171	5855.0	0.141	97.1%	14.00	12.08						
					Left Tilt	171	5855.0	0.118	97.1%	14.00	12.08						
					Right Touch	171	5855.0	0.415	97.1%	14.00	12.08	0.491	0.787				65
					Right Tilt	171	5855.0	0.262	97.1%	14.00	12.08	0.165	0.264			2	
		802.11ac VHT 80	Body-worn	10	Rear	171	5855.0	0.569	97.1%	17.00	15.98	0.433	0.564				66
					Front	171	5855.0	0.144	97.1%	17.00	15.98	0.130	0.169			2	
		802.11ac VHT 80	Product Specific 10-g	0	Rear	171	5855.0	3.630	97.1%	17.00	15.98			0.645	0.840	2	
					Front	171	5855.0	3.160	97.1%	17.00	15.98						
					Top	171	5855.0	1.390	97.1%	17.00	15.98						
					Left	171	5855.0	13.200	97.1%	17.00	15.98			2.380	3.100		
WLAN SISO Ant.E	5.9 GHz U-NII 4	802.11ac VHT 80	Head	0	Left Touch	171	5855.0	0.065	97.1%	14.00	12.00	0.020	0.033			1	
					Left Tilt	171	5855.0	0.060	97.1%	14.00	12.00						
					Right Touch	171	5855.0	0.033	97.1%	14.00	12.00						
					Right Tilt	171	5855.0	0.035	97.1%	14.00	12.00						
		802.11ac VHT 80	Body-worn	10	Rear	171	5855.0	0.392	97.1%	17.00	16.45	0.308	0.360			1	
					Front	171	5855.0	0.019	97.1%	17.00	16.45						
		802.11ac VHT 80	Product Specific 10-g	0	Rear	171	5855.0	4.290	97.1%	17.00	16.45			0.828	0.968	1	67
					Front	171	5855.0	0.463	97.1%	17.00	16.45						
					Top	171	5855.0	0.480	97.1%	17.00	16.45						
					Right	171	5855.0	0.577	97.1%	17.00	16.45						

U-NII 4 MIMO SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
WLAN MIMO Ant.H	5.9 GHz U-NII 4	802.11ac VHT 80	Head	0	Left Touch	171	5855.0	0.131	94.5%	14.00	13.35						
					Left Tilt	171	5855.0	0.119	94.5%	14.00	13.35						
					Right Touch	171	5855.0	0.426	94.5%	14.00	13.35	0.443	0.545				68
					Right Tilt	171	5855.0	0.373	94.5%	14.00	13.35	0.226	0.278			2	
		802.11ac VHT 80	Body-worn	10	Rear	171	5855.0	0.441	94.5%	17.00	16.05	0.363	0.478				69
					Front	171	5855.0	0.156	94.5%	17.00	16.05	0.116	0.153			2	
		802.11ac VHT 80	Product Specific 10-g	0	Rear	171	5855.0	2.690	94.5%	17.00	16.05			0.716	0.943	4	
					Front	171	5855.0	3.960	94.5%	17.00	16.05			0.720	0.948	2	
					Top	171	5855.0	1.610	94.5%	17.00	16.05						
					Left	171	5855.0	12.200	94.5%	17.00	16.05			2.360	3.108		70
					Right	171	5855.0	0.713	94.5%	17.00	16.05						
WLAN MIMO Ant.E	5.9 GHz U-NII 4	802.11ac VHT 80	Head	0	Left Touch	171	5855.0	0.131	94.5%	14.00	13.01						
					Left Tilt	171	5855.0	0.119	94.5%	14.00	13.01						
					Right Touch	171	5855.0	0.426	94.5%	14.00	13.01						
					Right Tilt	171	5855.0	0.373	94.5%	14.00	13.01						
		802.11ac VHT 80	Body-worn	10	Rear	171	5855.0	0.441	94.5%	14.00	13.01						
					Front	171	5855.0	0.156	94.5%	14.00	13.01						
		802.11ac VHT 80	Product Specific 10-g	0	Rear	171	5855.0	2.690	94.5%	14.00	13.01						
					Front	171	5855.0	3.960	94.5%	14.00	13.01						
					Top	171	5855.0	1.610	94.5%	14.00	13.01						
					Left	171	5855.0	12.200	94.5%	14.00	13.01						
					Right	171	5855.0	0.713	94.5%	14.00	13.01						

Note(s):

1. When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
2. Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.
3. Testing for a second channel was required because the reported SAR for this test position was > 0.8 or 2.0 W/kg (1-g or 10-g respectively).
4. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.

10.15 Bluetooth

Bluetooth SISO SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
BT SISO Ant.H	2.4GHz	BDR 1Mbps	Head	0	Left Touch	39	2441.0	76.80%	19.00	18.01	0.088	0.114	
					Left Tilt	39	2441.0	76.80%	19.00	18.01	0.037	0.048	
					Right Touch	39	2441.0	76.80%	19.00	18.01	0.376	0.485	71
					Rightt Tilt	39	2441.0	76.80%	19.00	18.01	0.102	0.132	
			Body-worn & Hotspot	10	Rear	39	2441.0	76.80%	19.00	18.01	0.064	0.083	
					Front	39	2441.0	76.80%	19.00	18.01	0.061	0.079	
			Hotspot	10	Top	39	2441.0	76.8%	19.00	18.01	0.050	0.065	
					Left	39	2441.0	76.8%	19.00	18.01	0.207	0.267	72
BT SISO Ant.J	2.4GHz	BDR 1Mbps	Head	0	Left Touch	39	2441.0	76.80%	17.00	15.85	0.306	0.411	
					Left Tilt	39	2441.0	76.80%	17.00	15.85	0.038	0.051	
					Right Touch	39	2441.0	76.80%	17.00	15.85	0.153	0.205	
					Rightt Tilt	39	2441.0	76.80%	17.00	15.85	0.018	0.024	
			Body-worn & Hotspot	10	Rear	39	2441.0	76.80%	17.00	15.85	0.019	0.025	
					Front	39	2441.0	76.80%	17.00	15.85	0.035	0.047	
			Hotspot	10	Top	39	2441.0	76.80%	17.00	15.85	0.004	0.005	
					Right	39	2441.0	76.80%	17.00	15.85	0.025	0.034	

Bluetooth MIMO SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
BT MIMO Ant.H	2.4GHz	BDR 1Mbps	Head	0	Left Touch	39	2441.0	76.80%					
					Left Tilt	39	2441.0	76.80%					
					Right Touch	39	2441.0	76.80%	13.00	11.87	0.250	0.334	73
					Rightt Tilt	39	2441.0	76.80%	13.00	11.87	0.118	0.158	
			Body-worn & Hotspot	10	Rear	39	2441.0	76.80%					
					Front	39	2441.0	76.80%					
			Hotspot	10	Top	39	2441.0	76.8%	13.00	11.87	0.003	0.004	
					Left	39	2441.0	76.8%	13.00	11.87	0.002	0.003	
					Right	39	2441.0	76.8%					
BT MIMO Ant.J	2.4GHz	BDR 1Mbps	Head	0	Left Touch	39	2441.0	76.80%	12.00	10.92	0.243	0.320	
					Left Tilt	39	2441.0	76.80%	12.00	10.92	0.065	0.086	
					Right Touch	39	2441.0	76.80%					
					Rightt Tilt	39	2441.0	76.80%					
			Body-worn & Hotspot	10	Rear	39	2441.0	76.80%	12.00	10.92	0.050	0.066	
					Front	39	2441.0	76.80%	12.00	10.92	0.071	0.094	74
			Hotspot	10	Top	39	2441.0	76.80%					
					Left	39	2441.0	76.80%					
					Right	39	2441.0	76.80%	12.00	10.92	0.024	0.032	

10.16 NFC

Antenna	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Test setup		Freq. (MHz)	10-g SAR (W/kg)	Plot No.
					Type	Bitrate		Meas.	
NFC	PBRS	Product Specific 10-g	0	Rear	A	106	13.6	0.015	75
				Front	A	106	13.6	0.000	
				Top	A	106	13.6	0.000	
				Left	A	106	13.6	0.000	

11 SAR Measurement Variability

In accordance with published RF Exposure KDB 865664 D01 SAR measurement 100 MHz to 6 GHz. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

1) Repeated measurement is not required when the original highest measured SAR is <0.8 or 2 W/kg (1-g or 10-g respectively); steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.8 or 2 W/kg (1-g or 10-g respectively)
3) Perform a third repeated measurement only if the original, first, or second repeated measurement is ≥ 1.5 or 3.75 W/kg (1-g or 10-g respectively) and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Peak spatial-average (1g of tissue)

Frequency Band (MHz)	Air Interface	Antenna	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	Repeated Measured SAR (W/kg)	Largest to Smallest SAR Ratio
750	LTE B13	Ant.E	Head	Left Touch	Y	1.100	1.090	1.01
835	NR Bn5	Ant.E	Head	Left Touch	Y	1.050	1.030	1.02
2600	NR Bn41	Ant.F	Head	Right Touch	Y	0.932	0.911	1.02

Peak spatial-average (10g of tissue)

Frequency Band (MHz)	Air Interface	Antenna	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	Repeated Measured SAR (W/kg)	Largest to Smallest SAR Ratio
5600	UNII-2C	Ant.H	Product 10-g	Left	Y	2.290	2.290	1.00
5900	UNII-4	Ant.H	Product 10-g	Left	Y	2.380	2.320	1.03

Note(s):

1. In above table, Only some bands above 0.8 or 2.0 W/kg (1-g or 10-g Measured SAR) were listed.

2. Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not > 1.20.

12 Simultaneous Transmission SAR Analysis

Simultaneous Transmission Condition

RF Exposure Condition	Item	Simultaneous transmission scenarios								
Head & Body-worn & Hotspot & Phablet-10g	1	WWAN (2G/3G/LTE/NR)	+	(DTS Ant.1	and/or	DTS Ant.2)				
	2	WWAN (2G/3G/LTE/NR)	+	(UNII Ant.1	and/or	UNII Ant.2)				
	3	WWAN (2G/3G/LTE/NR)	+	(BT Ant.1	and/or	BT Ant.2)				
	4	WWAN (2G/3G/LTE/NR)	+	(BT Ant.1	+	DTS Ant.2)				
	5	WWAN (2G/3G/LTE/NR)	+	(UNII Ant.1	and/or	UNII Ant.2)	+	(BT Ant.1	and/or	BT Ant.2)
	6	WWAN (2G/3G/LTE/NR)	+	(UNII Ant.1	and/or	UNII Ant.2)	+	(DTS Ant.1	and/or	DTS Ant.2)
	7	WWAN (2G/3G/LTE/NR)	+	(UNII Ant.1	+	DTS Ant.2)	+	(BT Ant.1)		
	8	WWAN (2G/3G/LTE/NR)	+	(UNII Ant.2	+	DTS Ant.2)	+	(BT Ant.1)		
	9	WWAN (2G/3G/LTE/NR)	+	(UNII MIMO	+	DTS Ant.2)	+	(BT Ant.1)		
	10	WWAN (ENDC/ULCA)	+	(DTS Ant.1	and/or	DTS Ant.2)				
	11	WWAN (ENDC/ULCA)	+	(UNII Ant.1	and/or	UNII Ant.2)				
	12	WWAN (ENDC/ULCA)	+	(BT Ant.1	and/or	BT Ant.2)				
	13	WWAN (ENDC/ULCA)	+	(BT Ant.1	and/or	DTS Ant.2)				
	14	WWAN (ENDC/ULCA)	+	(UNII Ant.1	and/or	UNII Ant.2)	+	(BT Ant.1	and/or	BT Ant.2)
	15	WWAN (ENDC/ULCA)	+	(UNII Ant.1	and/or	UNII Ant.2)	+	(DTS Ant.1	and/or	DTS Ant.2)
	16	WWAN (ENDC/ULCA)	+	(UNII Ant.1	+	DTS Ant.2)	+	(BT Ant.1)		
	17	WWAN (ENDC/ULCA)	+	(UNII Ant.2	+	DTS Ant.2)	+	(BT Ant.1)		
	18	WWAN (ENDC/ULCA)	+	(UNII MIMO	+	DTS Ant.2)	+	(BT Ant.1)		
Phablet-10g	19	Scenatios item (1-18)	+	NFC						

Notes:

1. DTS supports Wi-Fi Direct, Hotspot and VoIP.
2. U-NII supports Wi-Fi Direct and VoIP.
3. GPRS, W-CDMA, LTE, NR supports Hotspot and VoIP
4. U-NII Radio can transmit simultaneously with Bluetooth Radio.
5. Orange box means RSDB operations. (RSDB mode operates up to 4Tx.)
6. DTS Radio can transmit simultaneously with Bluetooth Radio in only RSDB operations
7. NR Radio support to NSA(ENDC) Radio.
8. LTE Radio support to ULCA Radio.
9. BT tethering is considered about each RF exposure conditions.
10. NFC can transmit simultaneously with other Radios in Phablet-10g condition.

Note(s):

Qualcomm Smart Transmit algorithm support to WWAN/WLAN/BT except NFC. And This device has support 2 Antenna groups.

Each antenna group has controls the total RF exposure from all transmitter to not exceed FCC limit. Therefore, in Part.1 report, it is evaluated whether the sum of the groups of each antenna does not exceed FCC limit or spatial separation is applied. In addition, each antenna group need to satisfies simultaneous transmission analysis with External radios (NFC) in Part.1 report.

For Qualcomm Smart Transmit algorithm verification of each antenna group, please refer to the Part.2 test report.

12.1 Sub6 Antenna Groups

The 2nd Generation phase V of Smart Transmit (GEN2.5) operates based on pre-defined antenna groups of Sub6 antennas. Sub6 Tx antennas in UE are grouped based on spatial variation of RF exposure distributions, where the RF exposure of one AG is mutually exclusive from the other AG. This is accomplished by demonstrating below conditions for all RF exposure scenarios (This procedures are follow according to Qualcomm's document (80-W2112-4));

1. (Condition#1 Sum of SAR) : Demonstrate that the sum of maximum *adjusted* SAR from each of the sub6 AGs and the *adjusted* SAR values from radios outside Smart Transmit (NFC) should be less than the regulatory limit for each supported DSI.

2. If the condition#1 is not met for only Sub6 antennas, then for a given antenna grouping scheme plus external radios/antennas (ERs), demonstrate all AG pairs, all ER pairs and all (AG, ER) pairs in the configuration meet SPLSR (SAR to Peak Location Ratio) criteria for each supported DSI (each RF exposure scenarios).
   For a conservative assessment of SPLSR, the separation distance between each AGs were determined using only the y-axis coordinates of the peak locations.

$$SPLSR = (SAR_1 + SAR_2)^{1.5} / Ri$$

Note : Adjusted SAR;

a. Adjusted SAR followed below procedures.
   Exposure scaling for su6 antennas/radios (referred to as 'adjusted SAR' values):
   If EFS Plimit =< NV setting Pax, then SAR exposure should be scaled to EFS Plimit + device uncertainty, else SAR exposure should be scaled to maximum {EFS Plimit, NV setting Pmax + device uncertainty}.

This device supports antenna groups like below table.

DSI No.	Antenna Groups	Grouped antenna list					
DSI=0	AG0	Ant.A(Sub6)	Ant.B(Sub.6)				
	AG1	Ant.E(Sub6)	Ant.F(Sub6)	Ant.J(Sub6)	Ant.H(Sub6)		
DSI=1	AG0	Ant.A(Sub6)	Ant.B(Sub.6)				
	AG1	Ant.E(Sub6)	Ant.F(Sub6)	Ant.J(Sub6)	Ant.H(Sub6)		
	ER(s)	NFC Ant.					
	ER = Exteral radios/antennas suppored ourtside of Smart Transmit						

This section is a step in evaluating whether each AGs are mutually exclusive using Condition#1 and Condition#2 guide. And If it is evaluated that each AGs are mutually exclusive for all DSIs (each RF exposure scenarios),

Additional analysis for Simultaneous transmission SAR test exclusion for Both AGs and ER(s) compliance demonstration evaluate at Section.12.2.

12.1.1 Head (DSI=1) exposure Antenna group analysis

Condition#1

Antenna Group 0 : Ant.A, Ant.B

Antenna Group		AG0		AG0		AG0		AG0		AG0		AG0	
Antenna		Ant.A		Ant.A		Ant.A		Ant.A		Ant.A		Ant.A	
RF exposure	Test position	GSM850		GSM1900		WCDMA B5		LTE B2		LTE B5		LTE B12	
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)
	Plimit (dBm)	26.3	28.8	23.2	28.2	25.0	27.4	24.2	29.0	25.0	27.9	24.0	28.4
Head	Left Touch	0.223	0.397	0.128	0.405	0.223	0.388	0.146	0.441	0.209	0.408	0.156	0.430
	Left Tilt	0.123	0.219	0.053	0.168	0.142	0.247	0.079	0.239	0.113	0.220	0.104	0.286
	Right Touch	0.247	0.439	0.054	0.171	0.253	0.440	0.088	0.266	0.222	0.433	0.157	0.432
	Right Tilt	0.141	0.251	0.046	0.145	0.142	0.247	0.058	0.175	0.111	0.216	0.107	0.295

Antenna Group		AG0		AG0		AG0		AG0		AG0_Ant.A
Antenna		Ant.A		Ant.A		Ant.A		Ant.A		
RF exposure	Test position	LTE B13		LTE B66		NR Bn5		NR Bn66		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	24.0	26.9	24.2	25.8	25.0	27.5	24.0	26.7	
Head	Left Touch	0.174	0.341	0.299	0.432	0.135	0.240	0.232	0.432	0.441
	Left Tilt	0.106	0.208	0.116	0.168	0.078	0.139	0.092	0.171	0.286
	Right Touch	0.226	0.443	0.129	0.186	0.244	0.434	0.126	0.235	0.443
	Right Tilt	0.116	0.227	0.070	0.101	0.127	0.226	0.083	0.155	0.295

Antenna Group		AG0		AG0		AG0_Ant.B
Antenna		Ant.B		Ant.B		
RF exposure	Test position	LTE B41		NR Bn41		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	23.0	26.5	22.0	22.0	
Head	Left Touch	0.201	0.450	0.151	0.151	0.450
	Left Tilt	0.062	0.139	0.070	0.070	0.139
	Right Touch	0.06	0.134	0.060	0.060	0.134
	Right Tilt	0.046	0.103	0.037	0.037	0.103

Antenna Group 1 : Ant.E, Ant.F, Ant.H, Ant,J, Ant.H+J, Ant.H+E

Antenna Group		AG1		AG1		AG1		AG1		AG1		AG1	
Antenna		Ant.E		Ant.E		Ant.E		Ant.E		Ant.E		Ant.E	
RF exposure	Test position	GSM850		WCDMA B5		LTE B5		LTE B12		LTE B13		NR Bn5	
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)
	Plimit (dBm)	22.8	22.8	23.0	23.0	23.0	23.0	22.5	22.5	24.0	24.0	23.0	23.0
Head	Left Touch	0.781	0.781	0.871	0.871	0.969	0.969	0.968	0.968	1.115	1.115	1.099	1.099
	Left Tilt	0.688	0.688	0.85	0.850	0.908	0.908	0.869	0.869	1.003	1.003	0.917	0.917
	Right Touch	0.584	0.584	0.709	0.709	0.81	0.810	0.799	0.799	0.871	0.871	0.710	0.710
	Right Tilt	0.546	0.546	0.664	0.664	0.758	0.758	0.606	0.606	0.758	0.758	0.676	0.676

Antenna Group		AG1		AG1		AG1		AG1		AG1		AG1_Ant.E
Antenna		Ant.E		Ant.E		Ant.E		Ant.E		Ant.E		
RF exposure	Test position	UNII_5.3GHz		UNII_5.5GHz		UNII_5.8GHz		UNII_5.9GHz		UNII_6GHz		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	10.0	10.0	
Head	Left Touch	0.281	0.281	0.156	0.156	0.041	0.041	0.033	0.033	0.010	0.010	1.115
	Left Tilt	0.281	0.281	0.156	0.156	0.041	0.041	0.033	0.033	0.000	0.000	1.003
	Right Touch	0.281	0.281	0.156	0.156	0.041	0.041	0.033	0.033	0.000	0.000	0.871
	Right Tilt	0.281	0.281	0.156	0.156	0.041	0.041	0.033	0.033	0.000	0.000	0.758

Antenna Group		AG1		AG1		AG1		AG1_Ant.F
Antenna		Ant.F		Ant.F		Ant.F		
RF exposure	Test position	LTE B41		NR Bn66		NR Bn 41		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	18.0	18.0	17.5	17.5	18.0	18.0	
Head	Left Touch	0.450	0.450	0.283	0.283	0.536	0.536	0.450
	Left Tilt	0.540	0.540	0.402	0.402	0.552	0.552	0.540
	Right Touch	0.902	0.902	0.506	0.506	1.091	1.091	0.902
	Right Tilt	0.927	0.927	0.621	0.621	1.063	1.063	0.927

Antenna Group		AG1		AG1		AG1		AG1		AG1		AG1		AG1		AG1_Ant.H
Antenna		Ant.H		Ant.H		Ant.H		Ant.H		Ant.H		Ant.H		Ant.H		
RF exposure	Test position	DTS_2.4GHz		UNII_5.3GHz		UNII_5.5GHz		UNII_5.8GHz		UNII_5.9GHz		UNII_6GHz		Bluetooth		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	15.0	15.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	10.0	10.0	19.0	22.1	
Head	Left Touch	0.780	0.780	0.696	0.696	0.712	0.712	0.775	0.775	0.787	0.787	0.000	0.000	0.114	0.233	0.787
	Left Tilt	0.780	0.780	0.696	0.696	0.712	0.712	0.775	0.775	0.787	0.787	0.000	0.000	0.048	0.098	0.787
	Right Touch	0.780	0.780	0.696	0.696	0.712	0.712	0.775	0.775	0.787	0.787	0.278	0.278	0.485	0.990	0.990
	Right Tilt	0.295	0.295	0.337	0.337	0.357	0.357	0.303	0.303	0.264	0.264	0.000	0.000	0.132	0.270	0.357

Antenna Group		AG1		AG1		AG1_Ant.J
Antenna		Ant.J		Ant.J		
RF exposure	Test position	DTS_2.4GHz		Bluetooth		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	15.0	15.0	17.0	20.8	
Head	Left Touch	0.647	0.647	0.411	0.986	0.986
	Left Tilt	0.131	0.131	0.051	0.122	0.131
	Right Touch	0.342	0.342	0.205	0.492	0.492
	Right Tilt	0.056	0.056	0.024	0.058	0.058

Antenna Group		AG1		AG1		AG1_Ant.H+J
Antenna		Ant.H+J		Ant.H+J		
RF exposure	Test position	DTS_2.4GHz		Bluetooth		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	15.0	15.0	15.5	17.0	
Head	Left Touch	0.781	0.781	0.32	0.452	0.781
	Left Tilt	0.981	0.981	0.086	0.121	0.981
	Right Touch	0.981	0.981	0.334	0.472	0.981
	Right Tilt	0.274	0.274	0.158	0.223	0.274

Antenna Group		AG1		AG1		AG1		AG1		AG1		AG1_Ant.H+E
Antenna		Ant.H+E		Ant.H+E		Ant.H+E		Ant.H+E		Ant.H+E		
RF exposure	Test position	UNII_5.3GHz		UNII_5.5GHz		UNII_5.8GHz		UNII_5.9GHz		UNII_6GHz		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	10.0	10.0	
Head	Left Touch	0.678	0.678	0.613	0.613	0.63	0.630	0.545	0.545	0.011	0.011	0.678
	Left Tilt	0.678	0.678	0.613	0.613	0.63	0.630	0.545	0.545	0.024	0.024	0.678
	Right Touch	0.678	0.678	0.613	0.613	0.63	0.630	0.545	0.545	0.366	0.366	0.678
	Right Tilt	0.399	0.399	0.203	0.203	0.247	0.247	0.278	0.278	0.050	0.050	0.399

Note(s):

Green value mean is highest reported SAR of initial SAR test procedure.

Summation of AG0 and AG1

Antenna Group		AG0_Ant.A	AG0_Ant.B	**AG0**
Antenna		Highest Reported SAR (W/kg)	Highest Reported SAR (W/kg)	**Highest Reported SAR (W/kg)**
RF exposure	Test position			
Head	Left Touch	0.441	0.450	0.450
	Left Tilt	0.286	0.139	0.286
	Right Touch	0.443	0.134	0.443
	Right Tilt	0.295	0.103	0.295

Antenna Group		AG1_Ant.E	AG1_Ant.F	AG1_Ant.H	**AG1**
Antenna		Highest Reported SAR (W/kg)	Highest Reported SAR (W/kg)	Highest Reported SAR (W/kg)	**Highest Reported SAR (W/kg)**
RF exposure	Test position				
Head	Left Touch	1.115	0.450	0.787	1.115
	Left Tilt	1.003	0.540	0.787	1.003
	Right Touch	0.871	0.902	0.990	0.990
	Right Tilt	0.758	0.927	0.357	0.927

Antenna Group		AG1_Ant.J	AG1_Ant.H+J	AG1_Ant.H+E
Antenna		Highest Reported SAR (W/kg)	Highest Reported SAR (W/kg)	Highest Reported SAR (W/kg)
RF exposure	Test position			
Head	Left Touch	0.986	0.781	0.678
	Left Tilt	0.131	0.981	0.678
	Right Touch	0.492	0.981	0.678
	Right Tilt	0.058	0.274	0.399

Antenna Group		AG0	AG1	AG0 + AG1 (W/kg)	FCC 1-g SAR Limit (W/kg)
Antenna		**Highest Reported SAR (W/kg)**	**Highest Reported SAR (W/kg)**		
RF exposure	Test position				
Head	Left Touch	0.450	1.115	1.565	1.6
	Left Tilt	0.286	1.003	1.289	
	Right Touch	0.443	0.990	1.433	
	Right Tilt	0.295	0.927	1.222	

Note(s):

Additional evaluation is not required due to below FCC limit.

12.1.2 Body/Hotspot (DSI=0) exposure Antenna group analysis

Condition#1

Antenna Group 0 : Ant.A, Ant.B

Antenna Group		AG0		AG0		AG0		AG0		AG0		AG0	
Antenna		Ant.A		Ant.A		Ant.A		Ant.A		Ant.A		Ant.A	
RF exposure	Test position	GSM850		GSM1900		WCDMA B5		LTE B2		LTE B5		LTE B12	
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)
	Plimit (dBm)	26.4	27.6	19.8	19.8	25.0	26.3	20.0	20.0	25.0	26.3	24.0	27.4
Body-worn & Hotspot	Rear	0.631	0.832	0.304	0.304	0.496	0.669	0.487	0.487	0.511	0.689	0.315	0.689
	Front	0.413	0.544	0.266	0.266	0.369	0.498	0.422	0.422	0.383	0.517	0.178	0.389
	Top		0.000		0.000		0.000		0.000		0.000		0.000
	Left	0.262	0.345	0.054	0.054	0.254	0.343	0.072	0.072	0.231	0.312	0.209	0.457
	Bottom	0.302	0.398	0.652	0.652	0.276	0.372	0.979	0.979	0.227	0.306	0.054	0.118
	Right	0.336	0.443	0.078	0.078	0.406	0.548	0.098	0.098	0.358	0.483	0.137	0.300

Antenna Group		AG0		AG0		AG0		AG0		AG0_Ant.A
Antenna		Ant.A		Ant.A		Ant.A		Ant.A		
RF exposure	Test position	LTE B13		LTE B66		NR Bn5		NR Bn66		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	24.0	27.1	20.0	20.0	25.0	26.2	20.0	20.0	
Body-worn & Hotspot	Rear	0.474	0.968	0.543	0.543	0.749	0.987	0.555	0.555	0.987
	Front	0.317	0.647	0.485	0.485	0.394	0.519	0.481	0.481	0.647
	Top		0.000		0.000		0.000		0.000	0.000
	Left	0.317	0.647	0.115	0.115	0.228	0.301	0.055	0.055	0.647
	Bottom	0.132	0.270	0.928	0.928	0.232	0.306	0.842	0.842	0.979
	Right	0.332	0.678	0.074	0.074	0.355	0.468	0.079	0.079	0.678

Antenna Group		AG0		AG0		AG0_Ant.B
Antenna		Ant.B		Ant.B		
RF exposure	Test position	LTE B41		NR Bn41		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	22.0	22.0	22.0	22.0	
Body-worn & Hotspot	Rear	0.516	0.516	0.508	0.508	0.516
	Front	0.398	0.398	0.365	0.365	0.398
	Top		0.000		0.000	0.000
	Left	0.428	0.428	0.433	0.433	0.433
	Bottom	0.542	0.542	0.782	0.782	0.782
	Right		0.000		0.000	0.000

Antenna Group 1 : Ant.E, Ant.F, Ant.H, Ant J

Antenna Group		AG1		AG1		AG1		AG1		AG1		AG1	
Antenna		Ant.E		Ant.E		Ant.E		Ant.E		Ant.E		Ant.E	
RF exposure	Test position	GSM850		WCDMA B5		LTE B5		LTE B12		LTE B13		NR Bn5	
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)
	Plimit (dBm)	26.3	26.3	25.0	27.2	25.0	26.1	24.0	27.1	24.0	26.3	25.0	26.4
Body-worn & Hotspot	Rear	0.802	0.802	0.593	0.984	0.605	0.779	0.486	0.992	0.394	0.669	0.714	0.986
	Front	0.484	0.484	0.211	0.350	0.428	0.551	0.398	0.813	0.312	0.530	0.651	0.899
	Top	0.52	0.520	0.483	0.802	0.414	0.533	0.397	0.811	0.309	0.525	0.435	0.600
	Left		0.000		0.000		0.000		0.000		0.000		0.000
	Bottom		0.000		0.000		0.000		0.000		0.000		0.000
	Right	0.643	0.643	0.384	0.637	0.515	0.663	0.343	0.700	0.438	0.744	0.548	0.756

Antenna Group		AG1		AG1		AG1		AG1		AG1		AG1_Ant.E
Antenna		Ant.E		Ant.E		Ant.E		Ant.E		Ant.E		
RF exposure	Test position	UNII_5.3GHz		UNII_5.5GHz		UNII_5.8GHz		UNII_5.9GHz		UNII_6GHz		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	10.0	10.0	
Body-worn & Hotspot	Rear	0.366	0.366	0.485	0.485	0.378	0.378	0.36	0.360	0.038	0.038	0.992
	Front	0.366	0.366	0.045	0.045	0.378	0.378	0.36	0.360	0.000	0.000	0.899
	Top		0.000		0.000		0.000		0.000		0.000	0.811
	Left		0.000		0.000		0.000		0.000		0.000	0.000
	Bottom		0.000		0.000		0.000		0.000		0.000	0.000
	Right		0.000		0.000		0.000		0.000		0.000	0.756

Antenna Group		AG1		AG1		AG1		AG1_Ant.F
Antenna		Ant.F		Ant.F		Ant.F		
RF exposure	Test position	LTE B41		NR Bn66		NR Bn 41		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	20.5	20.5	22.0	22.0	20.5	20.5	
Body-worn & Hotspot	Rear	0.351	0.351	0.449	0.449	0.413	0.413	0.449
	Front	0.259	0.259	0.335	0.335	0.291	0.291	0.335
	Top	0.426	0.426	0.643	0.643	0.526	0.526	0.643
	Left	0.027	0.027	0.122	0.122	0.078	0.078	0.122
	Bottom		0.000		0.000		0.000	0.000
	Right		0.000		0.000		0.000	0.000

Antenna Group		AG1		AG1		AG1		AG1		AG1		AG1		AG1		AG1_Ant.H
Antenna		Ant.H		Ant.H		Ant.H		Ant.H		Ant.H		Ant.H		Ant.H		
RF exposure	Test position	DTS_2.4GHz		UNII_5.3GHz		UNII_5.5GHz		UNII_5.8GHz		UNII_5.9GHz		UNII_6GHz		Bluetooth		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	19.0	23.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	10.0	10.0	19.0	24.8	
Body-worn & Hotspot	Rear	0.304	0.764	0.425	0.425	0.479	0.479	0.585	0.585	0.564	0.564	0.120	0.120	0.083	0.316	0.764
	Front	0.32	0.804	0.165	0.165	0.21	0.210	0.229	0.229	0.169	0.169	0.007	0.007	0.079	0.300	0.804
	Top	0.395	0.992		0.000		0.000		0.000		0.000		0.000	0.065	0.247	0.992
	Left	0.395	0.992		0.000		0.000		0.000		0.000		0.000	0.267	1.015	1.015
	Bottom		0.000		0.000		0.000		0.000		0.000		0.000		0.000	0.000
	Right		0.000		0.000		0.000		0.000		0.000		0.000		0.000	0.000

Antenna Group		AG1		AG1		AG1_Ant.J
Antenna		Ant.J		Ant.J		
RF exposure	Test position	DTS_2.4GHz		Bluetooth		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	19.0	26.8	17.0	30.3	
Body-worn & Hotspot	Rear	0.131	0.789	0.025	0.534	0.789
	Front	0.165	0.994	0.047	1.005	1.005
	Top	0.165	0.994	0.005	0.107	0.994
	Left		0.000		0.000	0.000
	Bottom		0.000		0.000	0.000
	Right	0.077	0.464	0.034	0.727	0.727

Antenna Group		AG1		AG1		AG1_Ant.H+J
Antenna		Ant.H+J		Ant.H+J		
RF exposure	Test position	DTS_2.4GHz		Bluetooth		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	19.0	22.3	13.5	22.4	
Body-worn & Hotspot	Rear	0.404	0.864	0.066	0.512	0.864
	Front	0.412	0.881	0.094	0.730	0.881
	Top	0.466	0.996	0.004	0.031	0.996
	Left	0.466	0.996	0.003	0.023	0.996
	Bottom		0.000		0.000	0.000
	Right	0.067	0.143	0.032	0.248	0.248

Antenna Group		AG1		AG1		AG1		AG1		AG1		AG1_Ant.H+E
Antenna		Ant.H+E		Ant.H+E		Ant.H+E		Ant.H+E		Ant.H+E		
RF exposure	Test position	UNII_5.3GHz		UNII_5.5GHz		UNII_5.8GHz		UNII_5.9GHz		UNII_6GHz		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	10.0	10.0	
Body-worn & Hotspot	Rear	0.591	0.591	0.512	0.512	0.533	0.533	0.478	0.478	0.086	0.086	0.591
	Front	0.281	0.281	0.116	0.116	0.141	0.141	0.153	0.153	0.000	0.000	0.281
	Top		0.000		0.000		0.000		0.000		0.000	0.000
	Left		0.000		0.000		0.000		0.000		0.000	0.000
	Bottom		0.000		0.000		0.000		0.000		0.000	0.000
	Right		0.000		0.000		0.000		0.000		0.000	0.000

Note(s):

Green value mean is highest reported SAR of initial SAR test procedure.

Summation of AG0 and AG1

Antenna Group		AG0_Ant.A	AG0_Ant.B	**AG0**
Antenna		Highest Reported SAR (W/kg)	Highest Reported SAR (W/kg)	**Highest Reported SAR (W/kg)**
RF exposure	Test position			
Body-worn & Hotspot	Rear	0.987	0.516	0.987
	Front	0.647	0.398	0.647
	Top	0.000	0.000	0.000
	Left	0.647	0.433	0.647
	Bottom	0.979	0.782	0.979
	Right	0.678	0.000	0.678

Antenna Group		AG1_Ant.E	AG1_Ant.F	AG1_Ant.H	**AG1**
Antenna		Highest Reported SAR (W/kg)	Highest Reported SAR (W/kg)	Highest Reported SAR (W/kg)	**Highest Reported SAR (W/kg)**
RF exposure	Test position				
Body-worn & Hotspot	Rear	0.992	0.449	0.764	0.992
	Front	0.899	0.335	0.804	1.005
	Top	0.811	0.643	0.992	0.992
	Left	0.000	0.122	1.015	1.015
	Bottom	0.000	0.000	0.000	0.000
	Right	0.756	0.000	0.000	0.756

Antenna Group		AG1_Ant.J	AG1_Ant.H+J	AG1_Ant.H+E
Antenna		Highest Reported SAR (W/kg)	Highest Reported SAR (W/kg)	Highest Reported SAR (W/kg)
RF exposure	Test position			
Body-worn & Hotspot	Rear	0.789	0.864	0.591
	Front	1.005	0.881	0.281
	Top	0.994	0.996	0.000
	Left	0.000	0.996	0.000
	Bottom	0.000	0.000	0.000
	Right	0.727	0.248	0.000

Antenna Group		AG0	AG1	AG0 + AG1 (W/kg)	FCC 1-g SAR Limit (W/kg)
Antenna		**Highest Reported SAR (W/kg)**	**Highest Reported SAR (W/kg)**		
RF exposure	Test position				
Body-worn & Hotspot	Rear	0.987	0.992	1.979	1.6
	Front	0.647	1.005	1.652	
	Top	0.000	0.992	0.992	
	Left	0.647	1.015	1.662	
	Bottom	0.979	0.000	0.979	
	Right	0.678	0.756	1.434	

Note(s):

For Rear/Front/Left positions, additional SPLSR calculation is required.

Summation of AG0 and AG1 (Continued)

Position	AG0		AG1		AG0+AG1	SPLSR of AG0 & AG1
Rear	Ant.A	0.987	Ant.E	0.992	1.979	Y
		0.987	Ant.F	0.449	1.436	N/A
		0.987	Ant.H	0.764	1.751	Y
		0.987	Ant.J	0.789	1.776	Y
		0.987	Ant.H+J	0.864	1.851	Y
		0.987	Ant.H+E	0.591	1.578	N/A
	Ant.B	0.516	Ant.E	0.992	1.508	N/A
		0.516	Ant.F	0.449	0.965	N/A
		0.516	Ant.H	0.764	1.280	N/A
		0.516	Ant.J	0.789	1.305	N/A
		0.516	Ant.H+J	0.864	1.380	N/A
		0.516	Ant.H+E	0.591	1.107	N/A
Front	Ant.A	0.647	Ant.E	0.899	1.546	N/A
		0.647	Ant.F	0.335	0.982	N/A
		0.647	Ant.H	0.804	1.451	N/A
		0.647	Ant.J	1.005	1.652	Y
		0.647	Ant.H+J	0.881	1.528	N/A
		0.647	Ant.H+E	0.281	0.928	N/A
	Ant.B	0.398	Ant.E	0.899	1.297	N/A
		0.398	Ant.F	0.335	0.733	N/A
		0.398	Ant.H	0.804	1.202	N/A
		0.398	Ant.J	1.005	1.403	N/A
		0.398	Ant.H+J	0.881	1.279	N/A
		0.398	Ant.H+E	0.281	0.679	N/A

Position	AG0		AG1		AG0+AG1	Note.
Left	Ant.A	0.647	Ant.E	0.000	0.647	N/A
		0.647	Ant.F	0.122	0.769	N/A
		0.647	Ant.H	1.015	1.662	Y
		0.647	Ant.J	0.000	0.647	N/A
		0.647	Ant.H+J	0.996	1.643	Y
		0.647	Ant.H+E	0.000	0.647	N/A
	Ant.B	0.398	AG1	1.015	1.413	N/A

AG0(Sub6) & AG1(Sub6) SPLSR combinations

Test Position	No.	Antenna pairs		AG0		AG1		AG0+AG1 SUM SAR (W/kg)	SPLSR Results
		AG0	AG1	SAR (W/kg)	Y-axis location (mm)	SAR (W/kg)	Y-axis location (mm)		
Rear	1	Ant.A	Ant.E	0.987	76.300	0.992	-81.100	1.979	-0.018
	2	Ant.A	Ant.H	0.987	76.300	0.764	-55.600	1.751	-0.018
	3	Ant.A	Ant.J	0.987	76.300	0.789	-35.000	1.776	-0.021
	4	Ant.A	Ant.H+J	0.987	76.300	0.864	-39.500	1.851	-0.022
Front	5	Ant.A	Ant. J	0.647	55.800	1.005	-33.000	1.652	-0.024
Left	6	Ant.A	Ant. H	0.647	8.100	1.015	-47.000	1.662	-0.039
	7	Ant.A	Ant. H+J	0.647	8.100	0.996	-46.000	1.643	-0.039

Note(s):

SPLSR criteria results is not over 0.04 (1-g SAR) in Sub6 antenna configurations. So additional test is not required.

Conclusion:

All Antennas (Sub6) is satisfy FCC limit according to sum SAR or SPLSR criteria(sub6 combinations).

12.1.3 Product Specific 10-g (DSI=0) exposure Antenna group analysis

Condition#1

Antenna Group 0 : Ant.A, Ant.B

All Reported SAR is not over 1.2 W/kg for all techs in AG0's antennas. So Product Specific 10-g SAR is not required.

Antenna Group 1 : Ant.E, Ant.H, Ant.H+E

Antenna Group		AG1		AG1		AG1		AG1		AG1		AG1
Antenna		Ant.E		Ant.E		Ant.E		Ant.E		Ant.E		Ant.E
RF exposure	Test position	UNII_5.3GHz		UNII_5.5GHz		UNII_5.8GHz		UNII_5.9GHz		UNII_6GHz		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	10.0	10.0	
Product Specific 10g Reported SAR	Rear	0.996	0.996	1.211	1.211	1.034	1.034	0.968	0.968	0.103	0.103	1.211
	Front	0.996	0.996	1.211	1.211	1.034	1.034	0.968	0.968	0.010	0.010	1.211
	Top	0.996	0.996	1.211	1.211	0.128	0.128	0.968	0.968	0.007	0.007	1.211
	Left		0.000		0.000		0.000		0.000		0.000	0.000
	Bottom		0.000		0.000		0.000		0.000		0.000	0.000
	Right	0.996	0.996	0.186	0.186	1.034	1.034	0.968	0.968	0.019	0.019	1.034

Antenna Group		AG1		AG1		AG1		AG1		AG1		AG1
Antenna		Ant.H		Ant.H		Ant.H		Ant.H		Ant.H		Ant.H
RF exposure	Test position	UNII_5.3GHz		UNII_5.5GHz		UNII_5.8GHz		UNII_5.9GHz		UNII_6GHz		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	10.0	10.0	
Product Specific 10g Reported SAR	Rear	1.206	1.206	1.208	1.208	0.896	0.896	0.840	0.840	0.039	0.039	1.208
	Front	2.216	2.216	1.208	1.208	3.098	3.098	3.100	3.100	0.017	0.017	3.100
	Top	2.216	2.216	2.568	2.568	3.098	3.098	3.100	3.100	0.000	0.000	3.100
	Left	2.216	2.216	2.568	2.568	3.098	3.098	3.100	3.100	0.660	0.660	3.100
	Bottom		0.000		0.000		0.000		0.000		0.000	0.000
	Right		0.000		0.000		0.000		0.000		0.000	0.000

Antenna Group		AG1		AG1		AG1		AG1		AG1		AG1
Antenna		Ant.H+E		Ant.H+E		Ant.H+E		Ant.H+E		Ant.H+E		AG1_Ant.H+E
RF exposure	Test position	UNII_5.3GHz		UNII_5.5GHz		UNII_5.8GHz		UNII_5.9GHz		UNII_6GHz		Highest Adjusted SAR
		Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	Reported SAR (W/kg)	Adjusted SAR (W/kg)	
	Plimit (dBm)	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	10.0	10.0	
Product Specific 10g Reported SAR	Rear	1.045	1.045	1.053	1.053	0.945	0.945	0.943	0.943	0.114	0.114	1.053
	Front	1.977	1.977	2.595	2.595	2.913	2.913	0.948	0.948	0.091	0.091	2.913
	Top	1.977	1.977	2.595	2.595	2.913	2.913	3.108	3.108	0.018	0.018	3.108
	Left	1.977	1.977	2.595	2.595	2.913	2.913	3.108	3.108	0.507	0.507	3.108
	Bottom		0.000		0.000		0.000		0.000		0.000	0.000
	Right	1.977	1.977	2.595	2.595	2.913	2.913	3.108	3.108	0.000	0.000	3.108

Note(s):

Green value mean is highest reported SAR of initial SAR test procedure.

Summation of AG0 and AG1

Antenna Group		AG1_Ant.E	AG1_Ant.H	AG1_Ant.H+E	**AG1**
Antenna		Highest Reported SAR (W/kg)	Highest Reported SAR (W/kg)	Highest Reported SAR (W/kg)	**Highest Reported SAR (W/kg)**
RF exposure	Test position				
Product Specific 10g Reported SAR	Rear	1.211	1.208	1.053	1.211
	Front	1.211	3.100	2.913	3.100
	Top	1.211	3.100	3.108	3.108
	Left	0.000	3.100	3.108	3.108
	Bottom	0.000	0.000	0.000	0.000
	Right	1.034	0.000	3.108	3.108

Antenna Group		AG0	AG1	AG0 + AG1 (W/kg)	FCC 1-g SAR Limit (W/kg)
Antenna		**Highest Reported SAR (W/kg)**	**Highest Reported SAR (W/kg)**		
RF exposure	Test position				
Product Specific 10g Reported SAR	Rear	0.000	1.211	1.211	4.0
	Front		3.100	3.100	
	Top		3.108	3.108	
	Left		3.108	3.108	
	Bottom		0.000	0.000	
	Right		3.108	3.108	

Note(s):

Additional evaluation is not required due to below FCC limit.

Conclusion:

All Antennas (Sub 6) is satisfy FCC limit according to Sum SAR.

Simultaneous transmission SAR test exclusion considerations

KDB 447498 D01 General RF Exposure Guidance provides two procedures for determining simultaneous transmission SAR test exclusion: Sum of SAR and SAR to Peak Location Ratio (SPLSR)

Sum of SAR

To qualify for simultaneous transmission SAR test exclusion based upon Sum of SAR the sum of the reported standalone SARs for all simultaneously transmitting antennas shall be below the applicable standalone SAR limit. If the sum of the SARs is above the applicable limit then simultaneous transmission SAR test exclusion may still apply if the requirements of the SAR to Peak Location Ratio (SPLSR) evaluation are met.

12.2 Simultaneous transmission analysis

ER(External Radio-NFC) only evaluated at Product Specific 10-g.

12.2.1 Product Specific 10-g exposure condition

RF Exposure	Test Position	Highest SAR of each groups (W/kg)		SUM SAR (W/kg)
		AG1(Ant.H)	ER-NFC	
Product Specific10-g	All positions	3.108	0.015	3.123

Conclusion:

Simultaneous Transmission SAR analysis results is satisfied the FCC Limit requirement.

Appendixes

Refer to separated files for the following appendixes.

4790976580-S1 FCC Report SAR_App A_Photos & Ant. Locations

4790976580-S1 FCC Report SAR_App B_Highest SAR Test Plots

4790976580-S1 FCC Report SAR_App C_System Check Plots

4790976580-S1 FCC Report SAR_App D_SAR Tissue Ingredients

4790976580-S1 FCC Report SAR_App E_Probe Cal. Certificates

4790976580-S1 FCC Report SAR_App F_Dipole Cal. Certificates

4790976580-S1 FCC Report SAR_App G_LTE Carrier Aggregation

4790976580-S1 FCC Report SAR_App H_Dynamic Antenna tuner testing

END OF REPORT