FCC 47 CFR § 2.1093
IEEE Std 1528-2013

SAR EVALUATION REPORT

FOR

WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n

MODEL NUMBER: SM-L335U, SM-L335F

FCC ID: A3LSML335

REPORT NUMBER: S-4791706372-S1V2

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Prepared for
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IAS ACCREDITED

Testing Laboratory

TL-637

Revision History

Rev.	Date	Revisions	Revised By
V1	2025-04-11	Initial Issue	--
V2	2025-04-22	Updated BLE in Sec.9.5	Seungyeon.Kim

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1. Attestation of Test Results

Applicant Name		SAMSUNG ELECTRONICS CO.,LTD.	
FCC ID		A3LSML335	
Model Number		SM-L335U, SM-L335F	
Applicable Standards		FCC 47 CFR § 2.1093 IEEE Std 1528-2013 Published RF exposure KDB procedures	
Exposure Category		SAR Limits (W/Kg)	
		1-g SAR	10-g SAR
General population / Uncontrolled exposure		1.6	4.0
RF Exposure Conditions		The Highest Reported SAR (W/kg)	
Next-to-Mouth 1-g SAR		0.26	
Extremity (Wrist) 10-g SAR		0.56	
Simultaneous transmission	1-g SAR	0.48	
	10-g SAR	1.17	
SAR test distance (mm)			
Next-to-Mouth		10 mm	
Extremity (Wrist)		0 mm	
Date Tested		2025-03-19 to 2025-04-08	
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 Results

Equipment Class	Band	The Highest Reported SAR (W/kg) of RF exposure conditions	
		1g of tissue	10g of tissue
		Next-to-Mouth	Extremity
PCT	WCDMA Band II	0.142	0.384
	WCDMA Band IV	0.116	0.129
	WCDMA Band V	<0.001	0.264
	LTE Band 25(2)	**0.262**	**0.563**
	LTE Band 66(4)	0.154	0.150
	LTE Band 7	0.158	0.071
	LTE Band 12	<0.001	0.191
	LTE Band 13	<0.001	0.265
	LTE Band 14	<0.001	0.247
	LTE Band 26(5)	<0.001	0.257
	LTE Band 71	<0.001	0.127
DTS	2.4GHz WLAN	**0.106**	**0.220**
NII	5GHz WLAN	**0.025**	**0.230**
DSS	Bluetooth	**0.195**	**0.381**
Simultaneous Transmission SAR		**0.482**	**1.174**

Note(s):

1. The Highest Reported SAR Results were listed for each RF exposure conditions for each supported bands based on SAR test results of Section.10.

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
- 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
- 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 April, 2019; RF Exposure Procedures (Tissue Simulating Liquids (TSL))

3. Facilities and Accreditation

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

Suwon
SAR 8 Room

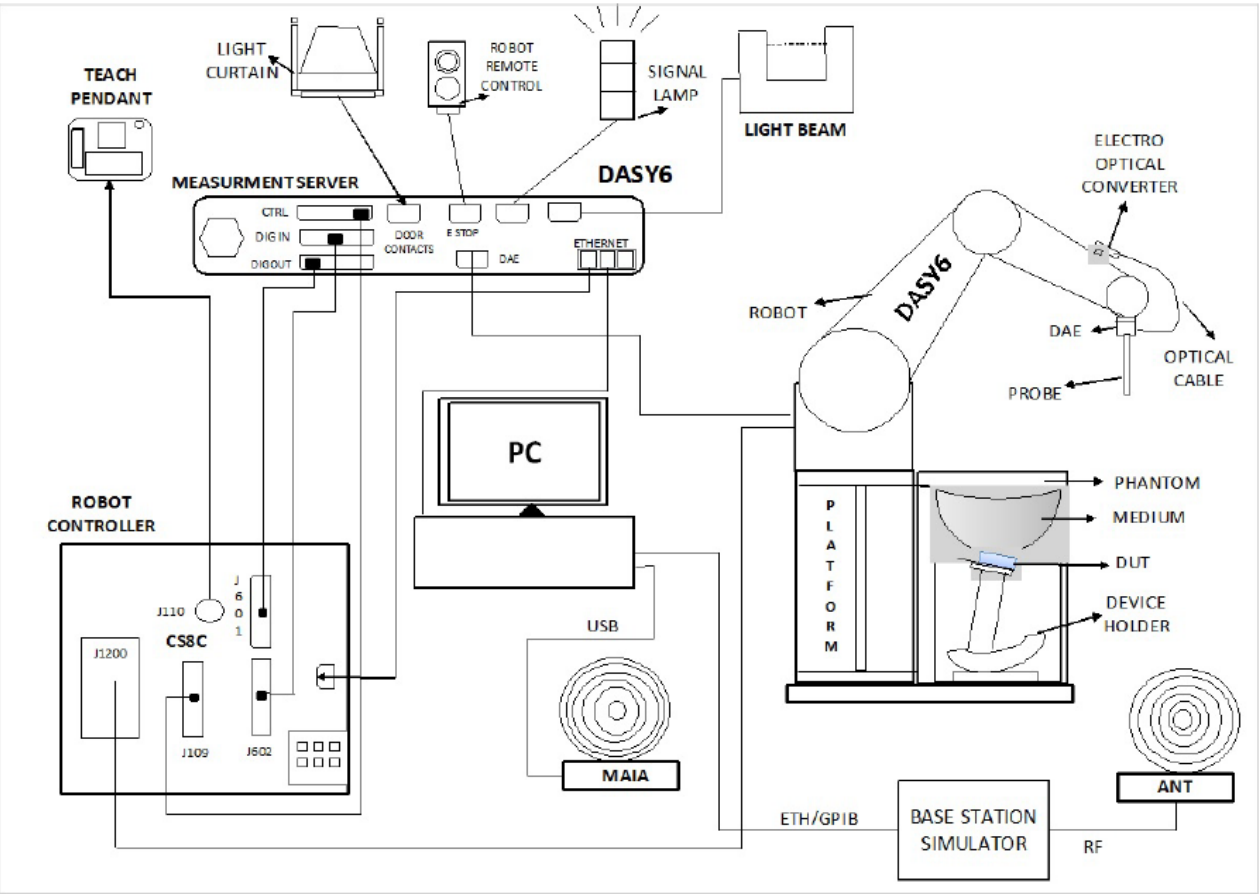
UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637.
The full scope of accreditation can be viewed at;

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·$\Delta z_{Zoom}(n-1)$	
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	ROHDE & SCHWARZ	ZNB 20	102256	2025-07-22
Dielectric Assessment Kit	SPEAG	DAK-3.5	1133	2026-03-18
Dielectric Assessment Kit	SPEAG	DAK-3.5	1134	2025-04-22
Dielectric Assessment Kit	SPEAG	DAK-3.5	1196	2025-06-10
Vector Network Analyzer	SPEAG	DAKS_VNA R140	SN0050221	2025-04-15
Vector Network Analyzer	SPEAG	DAKS_VNA R140	SN0060221	2026-03-20
Shorting block	SPEAG	DAK-3.5 Short	SM DAK 200 BA	N/A
Thermometer	LKM	DTM3000	3862	2025-07-23

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
MXG Analog Signal Generator	Keysight	N5173B	MY59101083	2025-07-23
Power Sensor	KEYSIGHT	U2000A	MY61010010	2025-12-16
Power Sensor	KEYSIGHT	U2000A	MY60160004	2025-07-23
Power Amplifier	EXODUS	AMP2027ADB	10002	2025-12-16
Directional Coupler	KRYTAR	100318010	215542	2026-01-02
Low Pass Filter	KRYTAR	WLKX10-11000-13640-21000-60TS	1	2025-07-23
Attenuator	KEYSIGHT	BW-S3W10+	N/A	2026-01-02
Attenuator	KEYSIGHT	8491B010	MY39272293	2025-07-25
Attenuator	KEYSIGHT	8491B/020	MY39271973	2025-07-23
E-Field Probe	SPEAG	EX3DV4	7313	2026-02-24
Data Acquisition Electronics	SPEAG	DAE4	1667	2026-03-19
Data Acquisition Electronics	SPEAG	DAE4	1670	2026-03-15
Data Acquisition Electronics	SPEAG	DAE4	1671	2025-04-18
System Validation Dipole	SPEAG	D750V3	1122	2026-02-22
System Validation Dipole	SPEAG	D835V2	4d174	2025-09-16
System Validation Dipole	SPEAG	D1750V2	1125	2025-11-18
System Validation Dipole	SPEAG	D1750V2	1180	2025-10-15
System Validation Dipole	SPEAG	D1900V2	5d199	2026-03-13
System Validation Dipole	SPEAG	D2450V2	939	2025-07-10
System Validation Dipole	SPEAG	D5GHzV2	1184	2025-11-21
System Validation Dipole	SPEAG	D2600V2	1097	2025-09-13
Thermometer	Lutron	MHB-382SD	AK.12102	2025-07-24

Others

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Base Station Simulator	R & S	CMW500	150314	2025-07-25
Base Station Simulator	R & S	CMW500	169801	2026-01-02

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.

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 is not supported					
Wi-Fi Direct	Wi-Fi Direct enabled devices transfer data directly between each other ☒ Wi-Fi Direct (Wi-Fi 2.4 GHz, Wi-Fi 5GHz (36~48ch, 149~165ch)					
Test Sample Information	**No.**	**S/N**	**Notes**	**No.**	**S/N**	**Notes**
	1	R3AY1007WWZ	Main Conduction	6	R3AY1007JND	SAR
	2	R3AY1007WWZ	Main Conduction	7	R3AY1007ESX	SAR
	3	R3AY1007X8I	Main Conduction	8	R3AY3006X7W	SAR
	4	R3AY1007LZR	WLAN Conduction	9	R3AY3006XZE	SAR
	5	R3AY1007E2W	SAR	10	R3AY3006X9J	SAR

6.2. Wireless Technologies

Wireless technologies	Frequency bands	Operating mode	Duty Cycle used for SAR testing
W-CDMA (UMTS)	Band II / IV / V	UMTS Rel. 99 (Voice & Data) HSDPA (Category 24) HSUPA (Category 6) DC-HSDPA (Category 24) HSPA+ (DL only)	100%
LTE	**FDD Bands** 2 / 4 / 5 / 7 / 12 / 13 / 14 / 25 / 26 / 66 / 71	QPSK 16QAM Cat.1, Rel.10 (Does not support Carrier Aggregation)	100% (FDD)
	Does this device support SV-LTE (1xRTT-LTE)? ☐ Yes ☒ No		
Wi-Fi	2.4 GHz	802.11b, 802.11g, 802.11n (HT20)	98.5% (802.11b)
	5 GHz	802.11a / 802.11n (HT20)	95.0% (802.11a)
	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)
NFC	NFC Card Emulation mode only (RX only)		

Notes:

1. Wi-Fi & Bluetooth were tested SAR using highest duty cycle. Measured duty cycle plots are in Section.9.

6.3. Maximum Allowed Output power

WWAN Bands maximum allowed output power

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

WCDMA Bands

RF Air interface	Mode	Maximum allowed output power (dBm)
		Target
W-CDMA Band II	Rel 99	**23.50**
	HSDPA	**23.50**
	HSUPA	**23.50**
	DC-HSDPA	**23.50**
W-CDMA Band IV	Rel 99	**23.50**
	HSDPA	**23.50**
	HSUPA	**23.50**
	DC-HSDPA	**23.50**
W-CDMA Band V	Rel 99	**24.00**
	HSDPA	**24.00**
	HSUPA	**24.00**
	DC-HSDPA	**24.00**

LTE Bands

RF Air interface	Mode	Maximum allowed output power (dBm)
		Target
LTE Band 2	QPSK	**24.00**
LTE Band 4	QPSK	**24.00**
LTE Band 5	QPSK	**24.00**
LTE Band 7	QPSK	**23.00**
LTE Band 12	QPSK	**24.00**
LTE Band 13	QPSK	**24.00**
LTE Band 14	QPSK	**24.00**
LTE Band 25	QPSK	**24.00**
LTE Band 26	QPSK	**24.00**
LTE Band 66	QPSK	**24.00**
LTE Band 71	QPSK	**24.00**

WLAN Bands maximum allowed output power

Maximum allowed output power means that Target Power+ 1dB device uncertainty.

Maximum Power

RF Air interface	Band		Maximum allowed output power (dBm)			
			802.11 mode			
			a	b	g	n
WiFi 2.4 GHz	DTS	Ch 1 - 11		18.0	17.0	17.0
		Ch12		9.0	9.0	9.0
		Ch 13		9.0	9.0	9.0
WiFi 5 GHz (BW : 20MHz)	UNII-1		17.0			17.0
	UNII-2A		17.0			17.0
	UNII-2C		17.0			17.0
	UNII-3		17.0			17.0
	UNII-4		17.0			17.0

BT(Bluetooth) Max power

RF Air interface	Max. Output Power (dBm)
Bluetooth (BDR) (1Mbps)	18.5
Bluetooth (EDR)	12.0
Bluetooth LE (1M)	9.0 (ch.0 : 8.0)
Bluetooth LE (2M)	9.0 (ch.0 : 8.0)
Bluetooth LE (125k)	9.0 (ch.0 : 8.0)
Bluetooth LE (500k)	9.0 (ch.0 : 8.0)

6.4. General LTE SAR Test and Reporting Considerations

Item	Description						
Frequency range, Channel Bandwidth, Numbers and Frequencues	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 25	Frequency range: 1850 - 1915 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	26140/ 1860	26115/ 1857.5	26090/ 1855	26065/ 1852.5	26055/ 1851.5	26047/ 1850.7
	Mid	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5
	High	26590/ 1905	26615/ 1907.5	26640/ 1910	26665/ 1912.5	26675/ 1913.5	26683/ 1914.3
	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
	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 26	Frequency range: 814 - 849 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low		26765/ 821.5	26740/ 819	26715/ 816.5	26705/ 815.5	26697/ 814.7
	Mid		26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5
	High		26965/ 841.5	26990/ 844	27015/ 846.5	27025/ 847.5	27033/ 848.3
	Band 7	Frequency range: 2500 - 2570 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	20850/ 2510	20825/ 2507.5	20800/ 2505	20775/ 2502.5		
	Mid	21100/ 2535	21100/ 2535	21100/ 2535	21100/ 2535		
	High	21350/ 2560	21375/ 2562.5	21400/ 2565	21425/ 2567.5		

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. SAR Testing for LTE was performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

General LTE SAR Test and Reporting Considerations (Continued)

	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 14	Frequency range: 788 - 798 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low				23305/ 790.5		
	Mid			23330/ 793	23330/ 793		
	High				23355/ 795.5		
	Band 71	Frequency range: 663 - 698 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	133222/ 673	133197/ 670.5	133172/ 668	133147/ 665.5		
	Mid	133297/ 680.5	133297/ 680.5	133297/ 680.5	133297/ 680.5		
	High	133372/ 688	133397/ 690.5	133422/ 693	133447/ 695.5		

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. SAR Testing for LTE was performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

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.

Wireless technologies	RF Exposure Conditions	DUT-to-User Separation	Test Positions		Antenna-to-edge/surface	SAR Required
			Rear	Front		
WWAN	Extremity	0 mm	**Yes**		N/A	Yes
	Next-to-Mouth	10 mm		**Yes**	N/A	Yes
WLAN / BT	Extremity	0 mm	**Yes**		N/A	Yes
	Next-to-Mouth	10 mm		**Yes**	N/A	Yes

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.

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

Dielectric Property Measurements Results:

SAR 8 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
2025-03-20	Head 750	e'	42.0200	Relative Permittivity (ε_r):	42.02	41.96	0.14	5
		e''	21.6500	Conductivity (σ):	0.90	0.89	1.09	5
	Head 660	e'	42.5700	Relative Permittivity (ε_r):	42.57	42.42	0.35	5
		e''	23.4700	Conductivity (σ):	0.86	0.89	-2.80	5
	Head 800	e'	41.7200	Relative Permittivity (ε_r):	41.72	41.71	0.04	5
		e''	20.7800	Conductivity (σ):	0.92	0.90	3.06	5
2025-03-20	Head 835	e'	41.5200	Relative Permittivity (ε_r):	41.52	41.50	0.05	5
		e''	20.1800	Conductivity (σ):	0.94	0.90	4.10	5
	Head 820	e'	41.5900	Relative Permittivity (ε_r):	41.59	41.60	-0.03	5
		e''	20.4400	Conductivity (σ):	0.93	0.90	3.73	5
	Head 850	e'	41.4700	Relative Permittivity (ε_r):	41.47	41.50	-0.07	5
		e''	19.9400	Conductivity (σ):	0.94	0.92	3.00	5
2025-03-27	Head 2450	e'	38.0700	Relative Permittivity (ε_r):	38.07	39.20	-2.88	5
		e''	13.3200	Conductivity (σ):	1.81	1.80	0.81	5
	Head 2400	e'	38.1200	Relative Permittivity (ε_r):	38.12	39.30	-2.99	5
		e''	13.2800	Conductivity (σ):	1.77	1.75	1.17	5
	Head 2500	e'	38.0200	Relative Permittivity (ε_r):	38.02	39.14	-2.85	5
		e''	13.4000	Conductivity (σ):	1.86	1.85	0.47	5
2025-03-31	Head 1750	e'	40.7900	Relative Permittivity (ε_r):	40.79	40.08	1.76	5
		e''	13.8500	Conductivity (σ):	1.35	1.37	-1.56	5
	Head 1710	e'	40.8900	Relative Permittivity (ε_r):	40.89	40.15	1.85	5
		e''	13.9300	Conductivity (σ):	1.32	1.35	-1.63	5
	Head 1780	e'	40.7000	Relative Permittivity (ε_r):	40.70	40.04	1.65	5
		e''	13.8000	Conductivity (σ):	1.37	1.39	-1.45	5
2025-03-31	Head 1900	e'	40.5400	Relative Permittivity (ε_r):	40.54	40.00	1.35	5
		e''	13.6700	Conductivity (σ):	1.44	1.40	3.16	5
	Head 1850	e'	40.5500	Relative Permittivity (ε_r):	40.55	40.00	1.37	5
		e''	13.6900	Conductivity (σ):	1.41	1.40	0.59	5
	Head 1915	e'	40.5400	Relative Permittivity (ε_r):	40.54	40.00	1.35	5
		e''	13.6600	Conductivity (σ):	1.45	1.40	3.89	5
2025-03-31	Head 2450	e'	38.6300	Relative Permittivity (ε_r):	38.63	39.20	-1.45	5
		e''	13.2300	Conductivity (σ):	1.80	1.80	0.13	5
	Head 2400	e'	38.7600	Relative Permittivity (ε_r):	38.76	39.30	-1.37	5
		e''	13.1900	Conductivity (σ):	1.76	1.75	0.49	5
	Head 2500	e'	38.5000	Relative Permittivity (ε_r):	38.50	39.14	-1.63	5
		e''	13.3000	Conductivity (σ):	1.85	1.85	-0.28	5
2025-03-31	Head 2600	e'	38.2200	Relative Permittivity (ε_r):	38.22	39.01	-2.03	5
		e''	13.3700	Conductivity (σ):	1.93	1.96	-1.49	5
	Head 2495	e'	38.5100	Relative Permittivity (ε_r):	38.51	39.14	-1.62	5
		e''	13.3000	Conductivity (σ):	1.85	1.85	-0.19	5
	Head 2700	e'	38.0000	Relative Permittivity (ε_r):	38.00	38.88	-2.28	5
		e''	13.4000	Conductivity (σ):	2.01	2.07	-2.83	5
2025-04-04	Head 5200	e'	36.7700	Relative Permittivity (ε_r):	36.77	35.99	2.17	5
		e''	15.8700	Conductivity (σ):	4.59	4.65	-1.34	5
	Head 5250	e'	36.6200	Relative Permittivity (ε_r):	36.62	35.93	1.91	5
		e''	15.8300	Conductivity (σ):	4.62	4.70	-1.72	5
	Head 5600	e'	35.9800	Relative Permittivity (ε_r):	35.98	35.53	1.26	5
		e''	16.1900	Conductivity (σ):	5.04	5.06	-0.38	5
	Head 5750	e'	35.3400	Relative Permittivity (ε_r):	35.34	35.36	-0.06	5
		e''	16.4400	Conductivity (σ):	5.26	5.21	0.81	5
	Head 5800	e'	35.2300	Relative Permittivity (ε_r):	35.23	35.30	-0.20	5
		e''	16.4300	Conductivity (σ):	5.30	5.27	0.54	5
	Head 5925	e'	34.7900	Relative Permittivity (ε_r):	34.79	35.20	-1.16	5
		e''	16.1600	Conductivity (σ):	5.32	5.40	-1.41	5
2025-04-08	Head 750	e'	43.7500	Relative Permittivity (ε_r):	43.75	41.96	4.26	5
		e''	21.6800	Conductivity (σ):	0.90	0.89	1.24	5
	Head 660	e'	44.2000	Relative Permittivity (ε_r):	44.20	42.42	4.19	5
		e''	23.8700	Conductivity (σ):	0.88	0.89	-1.15	5
	Head 800	e'	43.5700	Relative Permittivity (ε_r):	43.57	41.71	4.47	5
		e''	20.7000	Conductivity (σ):	0.92	0.90	2.66	5
2025-04-08	Head 1750	e'	41.2200	Relative Permittivity (ε_r):	41.22	40.08	2.83	5
		e''	13.8700	Conductivity (σ):	1.35	1.37	-1.41	5
	Head 1710	e'	41.2500	Relative Permittivity (ε_r):	41.25	40.15	2.75	5
		e''	14.0700	Conductivity (σ):	1.34	1.35	-0.64	5
	Head 1780	e'	41.4000	Relative Permittivity (ε_r):	41.40	40.04	3.40	5
		e''	13.7000	Conductivity (σ):	1.36	1.39	-2.16	5

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.

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.

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	Target SAR Values (W/kg)	
				1g/10g	Head
D750V3	1122	2024-02-22	2026-02-22	1g	8.58
				10g	5.62
D835V2	4d174	2024-09-16	2025-09-16	1g	9.44
				10g	6.09
D1750V2	1125	2024-11-18	2025-11-18	1g	37.40
				10g	19.70
D1750V2	1180	2024-10-15	2025-10-15	1g	37.00
				10g	19.70
D1900V2	5d199	2024-03-13	2026-03-13	1g	39.70
				10g	20.70
D2450V2	939	2024-07-10	2025-07-10	1g	52.2
				10g	24.4
D2600V2	1097	2024-09-13	2025-09-13	1g	57.3
				10g	25.6
D5GHzV2 (5250 MHz)	1184	2024-11-21	2025-11-21	1g	81.2
				10g	23.2
D5GHzV2 (5600 MHz)	1184	2024-11-21	2025-11-21	1g	84
				10g	24
D5GHzV2 (5750 MHz)	1184	2024-11-21	2025-11-21	1g	79.9
				10g	22.9
D5GHzV2 (5800 MHz)	1184	2024-11-21	2025-11-21	1g	77.5
				10g	22.2

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

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 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			
2025-03-20	D750V3	1122	Head	1g	0.83	8.3	8.58	-3.73	1
				10g	0.55	5.5	5.62	-2.67	
2025-03-20	D835V2	4d174	Head	1g	0.98	9.8	9.44	4.03	2
				10g	0.64	6.4	6.09	5.75	
2025-03-21	D750V3	1122	Head	1g	0.87	8.7	8.58	1.75	
				10g	0.58	5.8	5.62	2.67	
2025-03-21	D835V2	4d174	Head	1g	0.94	9.4	9.44	-0.21	
				10g	0.62	6.2	6.09	1.48	
2025-03-27	D2450V2	939	Head	1g	5.05	50.5	52.20	-3.26	3
				10g	2.37	23.7	24.40	-2.87	
2025-03-31	D1750V2	1180	Head	1g	3.54	35.4	37.00	-4.32	
				10g	1.91	19.1	19.70	-3.05	
2025-03-31	D1900V2	5d199	Head	1g	3.96	39.6	39.70	-0.25	
				10g	2.06	20.6	20.70	-0.48	
2025-03-31	D2600V2	1097	Head	1g	5.50	55.0	57.30	-4.01	
				10g	2.50	25.0	25.60	-2.34	
2025-04-01	D1750V2	1125	Head	1g	3.46	34.6	36.60	-5.46	
				10g	1.85	18.5	19.50	-5.13	
2025-04-01	D1900V2	5d199	Head	1g	4.06	40.6	39.70	2.27	4
				10g	2.11	21.1	20.70	1.93	
2025-04-01	D2600V2	1097	Head	1g	5.39	53.9	57.30	-5.93	5
				10g	2.45	24.5	25.60	-4.30	
2025-04-02	D1750V2	1125	Head	1g	3.68	36.8	36.60	0.55	
				10g	1.97	19.7	19.50	1.03	
2025-04-03	D2450V2	939	Head	1g	5.29	52.9	52.20	1.34	
				10g	2.47	24.7	24.40	1.23	
2025-04-04	D5GHzV2 (5250)	1184	Head	1g	8.18	81.8	81.20	0.74	
				10g	2.36	23.6	23.20	1.72	
2025-04-04	D5GHzV2 (5600)	1184	Head	1g	8.64	86.4	84.00	2.86	
				10g	2.50	25.0	24.00	4.17	
2025-04-04	D5GHzV2 (5750)	1184	Head	1g	7.95	79.5	79.90	-0.50	
				10g	2.30	23.0	22.90	0.44	
2025-04-04	D5GHzV2 (5800)	1184	Head	1g	8.16	81.6	77.50	5.29	
				10g	2.35	23.5	22.20	5.86	
2025-04-07	D5GHzV2 (5250)	1184	Head	1g	7.70	77.0	81.20	-5.17	
				10g	2.23	22.3	23.20	-3.88	
2025-04-07	D5GHzV2 (5600)	1184	Head	1g	8.73	87.3	84.00	3.93	
				10g	2.51	25.1	24.00	4.58	
2025-04-07	D5GHzV2 (5750)	1184	Head	1g	8.18	81.8	79.90	2.38	
				10g	2.35	23.5	22.90	2.62	
2025-04-07	D5GHzV2 (5800)	1184	Head	1g	8.20	82.0	77.50	5.81	6
				10g	2.35	23.5	22.20	5.86	
2025-04-08	D750V3	1122	Head	1g	0.87	8.7	8.58	1.28	
				10g	0.57	5.7	5.62	1.96	
2025-04-08	D1750V2	1125	Head	1g	3.41	34.1	36.60	-6.83	7
				10g	1.83	18.3	19.50	-6.15	

9. Conducted Output Power Measurements

9.1. 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.		

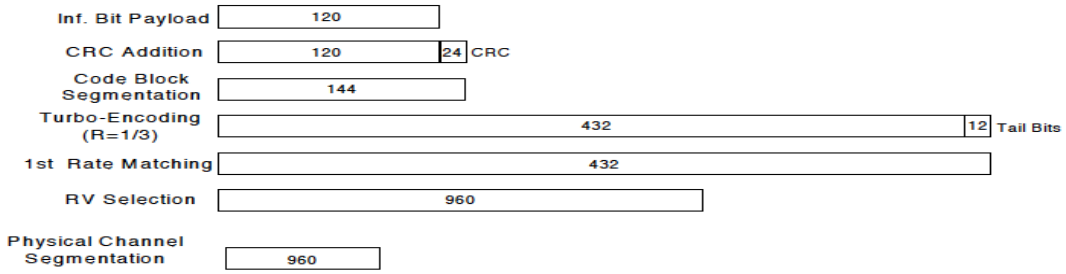


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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 II Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)		
				Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	22.88	N/A	23.5
		9400	1880.0	22.80		
		9538	1907.6	22.86		
HSDPA	Subtest 1	9262	1852.4	22.35	0	23.5
		9400	1880.0	22.20		
		9538	1907.6	22.32		
	Subtest 2	9262	1852.4	22.40	0	23.5
		9400	1880.0	22.20		
		9538	1907.6	22.30		
	Subtest 3	9262	1852.4	22.36	0.5	23.0
		9400	1880.0	22.20		
		9538	1907.6	22.30		
	Subtest 4	9262	1852.4	22.43	0.5	23.0
		9400	1880.0	22.25		
		9538	1907.6	22.26		
HSUPA	Subtest 1	9262	1852.4	23.15	0	23.5
		9400	1880.0	23.03		
		9538	1907.6	22.97		
	Subtest 2	9262	1852.4	20.00	2	21.5
		9400	1880.0	19.80		
		9538	1907.6	19.92		
	Subtest 3	9262	1852.4	22.37	1	22.5
		9400	1880.0	22.24		
		9538	1907.6	22.30		
	Subtest 4	9262	1852.4	19.88	2	21.5
		9400	1880.0	19.76		
		9538	1907.6	19.83		
	Subtest 5	9262	1852.4	22.22	0	23.5
		9400	1880.0	22.36		
		9538	1907.6	22.26		
DC-HSDPA	Subtest 1	9262	1852.4	21.87	0	23.5
		9400	1880.0	21.62		
		9538	1907.6	22.00		
	Subtest 2	9262	1852.4	22.22	0	23.5
		9400	1880.0	21.55		
		9538	1907.6	21.82		
	Subtest 3	9262	1852.4	21.93	0.5	23.0
		9400	1880.0	21.62		
		9538	1907.6	21.71		
	Subtest 4	9262	1852.4	21.75	0.5	23.0
		9400	1880.0	21.64		
		9538	1907.6	21.70		

W-CDMA Band IV Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)		
				Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	22.96	N/A	23.5
		1413	1732.6	22.88		
		1513	1752.6	23.01		
HSDPA	Subtest 1	1312	1712.4	22.94	0	23.5
		1413	1732.6	22.84		
		1513	1752.6	22.97		
	Subtest 2	1312	1712.4	22.98	0	23.5
		1413	1732.6	22.92		
		1513	1752.6	23.01		
	Subtest 3	1312	1712.4	22.98	0.5	23.0
		1413	1732.6	22.86		
		1513	1752.6	22.88		
	Subtest 4	1312	1712.4	22.95	0.5	23.0
		1413	1732.6	22.85		
		1513	1752.6	22.90		
HSUPA	Subtest 1	1312	1712.4	22.44	0	23.5
		1413	1732.6	22.31		
		1513	1752.6	22.47		
	Subtest 2	1312	1712.4	20.45	2	21.5
		1413	1732.6	20.32		
		1513	1752.6	20.44		
	Subtest 3	1312	1712.4	22.45	1	22.5
		1413	1732.6	22.35		
		1513	1752.6	22.42		
	Subtest 4	1312	1712.4	20.47	2	21.5
		1413	1732.6	20.38		
		1513	1752.6	20.46		
	Subtest 5	1312	1712.4	22.98	0	23.5
		1413	1732.6	22.88		
		1513	1752.6	22.95		
DC-HSDPA	Subtest 1	1312	1712.4	22.02	0	23.5
		1413	1732.6	21.80		
		1513	1752.6	22.10		
	Subtest 2	1312	1712.4	21.90	0	23.5
		1413	1732.6	21.63		
		1513	1752.6	22.03		
	Subtest 3	1312	1712.4	21.85	0.5	23.0
		1413	1732.6	21.76		
		1513	1752.6	22.10		
	Subtest 4	1312	1712.4	22.02	0.5	23.0
		1413	1732.6	21.66		
		1513	1752.6	22.04		

W-CDMA Band V Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)		
				Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	4132	826.4	23.22	N/A	24.0
		4183	836.6	23.00		
		4233	846.6	22.89		
HSDPA	Subtest 1	4132	826.4	23.20	0	24.0
		4183	836.6	23.02		
		4233	846.6	22.85		
	Subtest 2	4132	826.4	23.17	0	24.0
		4183	836.6	23.00		
		4233	846.6	22.91		
	Subtest 3	4132	826.4	23.22	0.5	23.5
		4183	836.6	23.00		
		4233	846.6	22.92		
	Subtest 4	4132	826.4	23.21	0.5	23.5
		4183	836.6	22.97		
		4233	846.6	22.87		
HSUPA	Subtest 1	4132	826.4	23.00	0	24.0
		4183	836.6	22.86		
		4233	846.6	23.02		
	Subtest 2	4132	826.4	20.67	2	22.0
		4183	836.6	20.60		
		4233	846.6	20.55		
	Subtest 3	4132	826.4	22.48	1	23.0
		4183	836.6	22.45		
		4233	846.6	22.42		
	Subtest 4	4132	826.4	20.77	2	22.0
		4183	836.6	20.56		
		4233	846.6	20.35		
	Subtest 5	4132	826.4	23.16	0	24.0
		4183	836.6	22.95		
		4233	846.6	22.86		
DC-HSDPA	Subtest 1	4132	826.4	22.30	0	24.0
		4183	836.6	22.04		
		4233	846.6	22.05		
	Subtest 2	4132	826.4	22.48	0	24.0
		4183	836.6	22.64		
		4233	846.6	22.23		
	Subtest 3	4132	826.4	22.82	0.5	23.5
		4183	836.6	22.74		
		4233	846.6	22.44		
	Subtest 4	4132	826.4	22.24	0.5	23.5
		4183	836.6	21.90		
		4233	846.6	21.44		

9.2. 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 2 (1850 – 1910 MHz) is covered by LTE Band 25 (1850 – 1915 MHz)
- LTE Band 4 (1710 – 1755 MHz) is covered by LTE Band 66 (1710 – 1780 MHz)
- LTE Band 5 (824 - 849 MHz) is covered by LTE Band 26 (814 – 849 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 7 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				20850	21100	21350		
				2510 MHz	2535 MHz	2560 MHz		
20 MHz	QPSK	1	0	22.01	22.00	**22.12**	0.0	23.0
		1	49	21.57	21.57	21.71	0.0	23.0
		1	99	21.42	21.44	21.57	0.0	23.0
		50	0	20.81	20.83	**20.93**	1.0	22.0
		50	24	20.62	20.65	20.74	1.0	22.0
		50	50	20.51	20.53	20.64	1.0	22.0
		100	0	20.64	20.69	20.77	1.0	22.0
	16QAM	1	0	21.22	21.18	21.27	1.0	22.0
		1	49	20.75	20.74	20.81	1.0	22.0
		1	99	20.62	20.61	20.66	1.0	22.0
		50	0	19.80	19.80	19.92	2.0	21.0
		50	24	19.60	19.61	19.72	2.0	21.0
		50	50	19.49	19.48	19.61	2.0	21.0
		100	0	19.61	19.65	19.74	2.0	21.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20825	21100	21375		
				2507.5 MHz	2535 MHz	2562.5 MHz		
15 MHz	QPSK	1	0	21.93	22.00	22.15	0.0	23.0
		1	37	21.61	21.68	21.83	0.0	23.0
		1	74	21.50	21.56	21.72	0.0	23.0
		36	0	20.79	20.86	20.95	1.0	22.0
		36	20	20.65	20.71	20.78	1.0	22.0
		36	39	20.56	20.63	20.71	1.0	22.0
		75	0	20.64	20.73	20.80	1.0	22.0
	16QAM	1	0	21.12	20.72	21.31	1.0	22.0
		1	37	20.76	20.41	20.97	1.0	22.0
		1	74	20.68	20.30	20.84	1.0	22.0
		36	0	19.72	19.83	19.99	2.0	21.0
		36	20	19.57	19.67	19.84	2.0	21.0
		36	39	19.49	19.59	19.75	2.0	21.0
		75	0	19.64	19.68	19.81	2.0	21.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20800	21100	21400		
				2505 MHz	2535 MHz	2565 MHz		
10 MHz	QPSK	1	0	22.27	22.53	22.45	0.0	23.0
		1	25	22.10	22.34	22.29	0.0	23.0
		1	49	22.02	22.23	22.16	0.0	23.0
		25	0	21.25	21.37	21.40	1.0	22.0
		25	12	21.16	21.28	21.31	1.0	22.0
		25	25	21.10	21.21	21.26	1.0	22.0
		50	0	21.15	21.28	21.34	1.0	22.0
	16QAM	1	0	21.10	21.67	21.25	1.0	22.0
		1	25	20.92	21.48	21.01	1.0	22.0
		1	49	20.81	21.38	20.91	1.0	22.0
		25	0	20.29	20.30	20.38	2.0	21.0
		25	12	20.19	20.24	20.30	2.0	21.0
		25	25	20.14	20.19	20.23	2.0	21.0
		50	0	20.18	20.25	20.26	2.0	21.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20775	21100	21425		
				2502.5 MHz	2535 MHz	2567.5 MHz		
5 MHz	QPSK	1	0	22.29	22.30	22.38	0.0	23.0
		1	12	22.21	22.21	22.29	0.0	23.0
		1	24	22.14	22.15	22.24	0.0	23.0
		12	0	21.15	21.26	21.32	1.0	22.0
		12	7	21.11	21.21	21.26	1.0	22.0
		12	13	21.07	21.18	21.24	1.0	22.0
		25	0	21.09	21.22	21.26	1.0	22.0
	16QAM	1	0	21.04	21.39	21.29	1.0	22.0
		1	12	20.95	21.30	21.20	1.0	22.0
		1	24	20.91	21.24	21.16	1.0	22.0
		12	0	20.16	20.35	20.30	2.0	21.0
		12	7	20.11	20.30	20.24	2.0	21.0
		12	13	20.09	20.25	20.23	2.0	21.0
		25	0	20.09	20.23	20.25	2.0	21.0

LTE Band 12 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)			MPR	Tune-up Limit
				Measured Pwr (dBm)				
				23060	23095	23130		
				704 MHz	707.5 MHz	711 MHz		
10 MHz	QPSK	1	0	22.83	**22.97**	22.94	0.0	24.0
		1	25	22.74	22.74	22.83	0.0	24.0
		1	49	22.70	22.70	22.78	0.0	24.0
		25	0	21.78	**21.89**	21.81	1.0	23.0
		25	12	21.75	21.74	21.83	1.0	23.0
		25	25	21.73	21.71	21.78	1.0	23.0
		50	0	21.78	21.77	21.84	1.0	23.0
	16QAM	1	0	21.62	21.62	22.17	1.0	23.0
		1	25	21.51	21.47	22.05	1.0	23.0
		1	49	21.45	21.45	21.52	1.0	23.0
		25	0	20.86	20.86	20.90	2.0	22.0
		25	12	20.84	20.82	20.89	2.0	22.0
		25	25	20.81	20.78	20.85	2.0	22.0
		50	0	20.82	20.79	20.89	2.0	22.0

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	22.92	22.90	22.84	0.0	24.0
		1	12	22.90	22.85	22.78	0.0	24.0
		1	24	22.88	22.81	22.77	0.0	24.0
		12	0	21.83	21.76	21.81	1.0	23.0
		12	7	21.80	21.74	21.76	1.0	23.0
		12	13	21.79	21.73	21.75	1.0	23.0
		25	0	21.80	21.75	21.76	1.0	23.0
	16QAM	1	0	21.94	21.90	21.92	1.0	23.0
		1	12	21.92	21.61	21.66	1.0	23.0
		1	24	21.67	21.59	21.65	1.0	23.0
		12	0	20.80	20.76	20.81	2.0	22.0
		12	7	20.81	20.73	20.77	2.0	22.0
		12	13	20.80	20.72	20.76	2.0	22.0
		25	0	20.80	20.74	20.78	2.0	22.0

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	22.80	22.75	22.84	0.0	24.0
		1	8	22.78	22.71	22.78	0.0	24.0
		1	14	22.78	22.69	22.78	0.0	24.0
		8	0	21.81	21.73	21.83	1.0	23.0
		8	4	21.82	21.73	21.81	1.0	23.0
		8	7	21.81	21.73	21.81	1.0	23.0
		15	0	21.82	21.72	21.82	1.0	23.0
	16QAM	1	0	21.61	21.54	21.62	1.0	23.0
		1	8	21.57	21.49	21.59	1.0	23.0
		1	14	21.56	21.46	21.57	1.0	23.0
		8	0	20.83	20.74	20.83	2.0	22.0
		8	4	20.83	20.74	20.83	2.0	22.0
		8	7	20.82	20.74	20.82	2.0	22.0
		15	0	20.85	20.76	20.84	2.0	22.0

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	22.82	22.81	22.89	0.0	24.0
		1	3	22.83	22.78	22.84	0.0	24.0
		1	5	22.84	22.80	22.86	0.0	24.0
		3	0	22.83	22.67	22.79	0.0	24.0
		3	1	22.80	22.69	22.80	0.0	24.0
		3	3	22.80	22.70	22.81	0.0	24.0
		6	0	21.82	21.71	21.82	1.0	23.0
	16QAM	1	0	21.81	21.46	22.07	1.0	23.0
		1	3	21.79	21.92	22.03	1.0	23.0
		1	5	21.82	21.93	21.83	1.0	23.0
		3	0	21.82	21.72	21.84	1.0	23.0
		3	1	21.81	21.71	21.83	1.0	23.0
		3	3	21.82	21.72	21.92	1.0	23.0
		6	0	20.90	20.89	20.96	2.0	22.0

LTE Band 13 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)			MPR	Tune-up Limit
				Measured Pwr (dBm)				
					23230			
					782 MHz			
10 MHz	QPSK	1	0		**22.93**		0.0	24.0
		1	25		22.71		0.0	24.0
		1	49		22.63		0.0	24.0
		25	0		**21.84**		1.0	23.0
		25	12		21.77		1.0	23.0
		25	25		21.71		1.0	23.0
		50	0		21.77		1.0	23.0
	16QAM	1	0		22.14		1.0	23.0
		1	25		21.97		1.0	23.0
		1	49		21.85		1.0	23.0
		25	0		20.86		2.0	22.0
		25	12		20.77		2.0	22.0
		25	25		20.71		2.0	22.0
		50	0		20.77		2.0	22.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23205	23230	23255		
				779.5 MHz	782 MHz	784.5 MHz		
5 MHz	QPSK	1	0	22.88	22.91	22.82	0.0	24.0
		1	12	22.77	22.82	22.73	0.0	24.0
		1	24	22.71	22.78	22.69	0.0	24.0
		12	0	21.80	21.80	21.74	1.0	23.0
		12	7	21.75	21.75	21.71	1.0	23.0
		12	13	21.72	21.73	21.67	1.0	23.0
		25	0	21.73	21.75	21.69	1.0	23.0
	16QAM	1	0	21.81	21.80	21.73	1.0	23.0
		1	12	21.70	21.71	21.64	1.0	23.0
		1	24	21.76	21.66	21.73	1.0	23.0
		12	0	20.87	20.89	20.83	2.0	22.0
		12	7	20.82	20.85	20.79	2.0	22.0
		12	13	20.78	20.82	20.76	2.0	22.0
		25	0	20.78	20.80	20.74	2.0	22.0

LTE Band 14 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
					23330			
					793 MHz			
10 MHz	QPSK	1	0		**22.97**		0.0	24.0
		1	25		22.83		0.0	24.0
		1	49		22.79		0.0	24.0
		25	0		**21.94**		1.0	23.0
		25	12		21.88		1.0	23.0
		25	25		21.85		1.0	23.0
		50	0		21.91		1.0	23.0
	16QAM	1	0		21.80		1.0	23.0
		1	25		21.64		1.0	23.0
		1	49		21.59		1.0	23.0
		25	0		21.01		2.0	22.0
		25	12		20.96		2.0	22.0
		25	25		20.86		2.0	22.0
		50	0		20.88		2.0	22.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23305	23330	23355		
				790.5 MHz	793 MHz	795.5 MHz		
5 MHz	QPSK	1	0	22.98	23.02	23.03	0.0	24.0
		1	12	22.93	22.96	22.99	0.0	24.0
		1	24	22.89	22.92	22.97	0.0	24.0
		12	0	21.91	21.90	21.93	1.0	23.0
		12	7	21.90	21.87	21.91	1.0	23.0
		12	13	21.88	21.85	21.89	1.0	23.0
		25	0	21.89	21.88	21.92	1.0	23.0
	16QAM	1	0	21.92	21.83	21.85	1.0	23.0
		1	12	21.85	21.76	21.81	1.0	23.0
		1	24	21.82	21.77	21.77	1.0	23.0
		12	0	20.91	20.90	20.91	2.0	22.0
		12	7	20.88	20.89	20.89	2.0	22.0
		12	13	20.86	20.87	20.87	2.0	22.0
		25	0	20.88	20.85	20.90	2.0	22.0

LTE Band 25 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				26140	26365	26590		
				1860 MHz	1882.5 MHz	1905 MHz		
20 MHz	QPSK	1	0	22.70	22.55	**22.74**	0.0	24.0
		1	49	22.26	22.11	22.27	0.0	24.0
		1	99	22.12	21.95	22.08	0.0	24.0
		50	0	21.54	21.39	**21.56**	1.0	23.0
		50	24	21.37	21.20	21.31	1.0	23.0
		50	50	21.24	21.10	21.12	1.0	23.0
		100	0	21.39	21.25	21.28	1.0	23.0
	16QAM	1	0	21.86	21.83	21.81	1.0	23.0
		1	49	21.43	21.28	21.32	1.0	23.0
		1	99	21.29	21.10	21.15	1.0	23.0
		50	0	20.50	20.38	20.47	2.0	22.0
		50	24	20.33	20.21	20.26	2.0	22.0
		50	50	20.24	20.09	20.14	2.0	22.0
		100	0	20.37	20.22	20.32	2.0	22.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26115	26365	26615		
				1857.5 MHz	1882.5 MHz	1907.5 MHz		
15 MHz	QPSK	1	0	22.59	22.49	22.47	0.0	24.0
		1	37	22.28	22.17	22.14	0.0	24.0
		1	74	22.16	22.03	22.00	0.0	24.0
		36	0	21.47	21.36	21.36	1.0	23.0
		36	20	21.33	21.24	21.23	1.0	23.0
		36	39	21.26	21.15	21.14	1.0	23.0
		75	0	21.34	21.25	21.20	1.0	23.0
	16QAM	1	0	21.83	21.27	21.73	1.0	23.0
		1	37	21.00	20.94	21.36	1.0	23.0
		1	74	20.88	21.24	21.22	1.0	23.0
		36	0	20.45	20.31	20.41	2.0	22.0
		36	20	20.31	20.17	20.26	2.0	22.0
		36	39	20.18	20.09	20.15	2.0	22.0
		75	0	20.34	20.24	20.21	2.0	22.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26090	26365	26640		
				1855 MHz	1882.5 MHz	1910 MHz		
10 MHz	QPSK	1	0	22.95	22.96	23.09	0.0	24.0
		1	25	22.75	22.77	22.88	0.0	24.0
		1	49	22.67	22.68	22.76	0.0	24.0
		25	0	21.89	21.80	21.89	1.0	23.0
		25	12	21.82	21.69	21.81	1.0	23.0
		25	25	21.74	21.64	21.75	1.0	23.0
		50	0	21.82	21.72	21.83	1.0	23.0
	16QAM	1	0	22.20	22.10	21.76	1.0	23.0
		1	25	22.00	21.91	21.57	1.0	23.0
		1	49	21.91	21.79	21.44	1.0	23.0
		25	0	20.84	20.84	20.92	2.0	22.0
		25	12	20.76	20.71	20.87	2.0	22.0
		25	25	20.73	20.66	20.81	2.0	22.0
		50	0	20.76	20.71	20.86	2.0	22.0

LTE Band 25 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26065	26365	26665		
				1852.5 MHz	1882.5 MHz	1912.5 MHz		
5 MHz	QPSK	1	0	22.92	22.79	23.00	0.0	24.0
		1	12	22.85	22.70	22.91	0.0	24.0
		1	24	22.79	22.65	22.86	0.0	24.0
		12	0	21.81	21.75	21.93	1.0	23.0
		12	7	21.79	21.70	21.89	1.0	23.0
		12	13	21.71	21.67	21.86	1.0	23.0
		25	0	21.75	21.71	21.85	1.0	23.0
	16QAM	1	0	21.79	21.89	21.92	1.0	23.0
		1	12	21.71	21.81	21.83	1.0	23.0
		1	24	21.65	21.75	21.77	1.0	23.0
		12	0	20.75	20.84	20.91	2.0	22.0
		12	7	20.72	20.80	20.86	2.0	22.0
		12	13	20.71	20.78	20.90	2.0	22.0
		25	0	20.71	20.74	20.88	2.0	22.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26055	26365	26675		
				1851.5 MHz	1882.5 MHz	1913.5 MHz		
3 MHz	QPSK	1	0	22.7	22.8	22.9	0.0	24.0
		1	8	22.7	22.8	22.9	0.0	24.0
		1	14	22.6	22.7	22.8	0.0	24.0
		8	0	21.7	21.7	21.9	1.0	23.0
		8	4	21.7	21.7	21.9	1.0	23.0
		8	7	21.7	21.7	21.9	1.0	23.0
		15	0	21.7	21.7	21.9	1.0	23.0
	16QAM	1	0	21.9	22.0	22.2	1.0	23.0
		1	8	21.9	21.9	22.1	1.0	23.0
		1	14	21.9	21.9	21.6	1.0	23.0
		8	0	20.8	20.8	21.0	2.0	22.0
		8	4	20.7	20.7	21.0	2.0	22.0
		8	7	20.7	20.7	21.0	2.0	22.0
		15	0	20.7	20.7	20.9	2.0	22.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26047	26365	26683		
				1850.7 MHz	1882.5 MHz	1914.3 MHz		
1.4 MHz	QPSK	1	0	22.6	22.8	22.9	0.0	24.0
		1	3	22.6	22.7	22.9	0.0	24.0
		1	5	22.6	22.7	22.9	0.0	24.0
		3	0	22.6	22.7	22.9	0.0	24.0
		3	1	22.6	22.7	23.0	0.0	24.0
		3	3	22.6	22.7	23.0	0.0	24.0
		6	0	21.6	21.7	22.0	1.0	23.0
	16QAM	1	0	21.6	21.9	22.2	1.0	23.0
		1	3	21.6	21.9	21.9	1.0	23.0
		1	5	21.6	21.9	21.9	1.0	23.0
		3	0	21.6	21.7	22.0	1.0	23.0
		3	1	21.6	21.7	22.0	1.0	23.0
		3	3	21.6	21.6	22.0	1.0	23.0
		6	0	20.7	20.5	21.1	2.0	22.0

LTE Band 26 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				26765	26865	26965		
				821.5 MHz	831.5 MHz	841.5 MHz		
15 MHz	QPSK	1	0	23.24	**23.25**	23.10	0.0	24.0
		1	37	23.05	22.95	22.84	0.0	24.0
		1	74	22.97	22.87	22.75	0.0	24.0
		36	0	22.07	**22.13**	21.98	1.0	23.0
		36	20	21.97	21.99	21.87	1.0	23.0
		36	39	21.92	21.92	21.81	1.0	23.0
		75	0	21.98	21.99	21.89	1.0	23.0
	16QAM	1	0	22.31	22.32	21.82	1.0	23.0
		1	37	22.15	22.10	22.21	1.0	23.0
		1	74	22.05	22.04	21.85	1.0	23.0
		36	0	21.04	21.14	21.11	2.0	22.0
		36	20	20.95	20.96	20.86	2.0	22.0
		36	39	20.89	20.89	20.88	2.0	22.0
		75	0	20.98	20.97	20.91	2.0	22.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26740	26865	26990		
				819 MHz	831.5 MHz	844 MHz		
10 MHz	QPSK	1	0	23.17	23.16	22.93	0.0	24.0
		1	25	23.05	23.04	22.78	0.0	24.0
		1	49	23.00	22.96	22.72	0.0	24.0
		25	0	22.12	22.04	21.86	1.0	23.0
		25	12	22.04	21.96	21.76	1.0	23.0
		25	25	22.00	21.92	21.73	1.0	23.0
		50	0	22.05	21.96	21.79	1.0	23.0
	16QAM	1	0	22.37	21.87	22.09	1.0	23.0
		1	25	22.26	21.70	21.97	1.0	23.0
		1	49	21.71	21.60	21.45	1.0	23.0
		25	0	21.11	21.09	20.85	2.0	22.0
		25	12	21.05	21.04	20.84	2.0	22.0
		25	25	20.99	20.99	20.80	2.0	22.0
		50	0	21.03	21.02	20.85	2.0	22.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26715	26865	27015		
				816.5 MHz	831.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	23.13	23.13	22.93	0.0	24.0
		1	12	23.09	23.07	22.87	0.0	24.0
		1	24	23.06	22.98	22.85	0.0	24.0
		12	0	22.05	22.01	21.83	1.0	23.0
		12	7	22.00	21.98	21.78	1.0	23.0
		12	13	22.00	21.95	21.78	1.0	23.0
		25	0	22.01	21.95	21.78	1.0	23.0
	16QAM	1	0	22.04	22.10	21.79	1.0	23.0
		1	12	22.12	21.83	21.89	1.0	23.0
		1	24	22.08	21.80	21.86	1.0	23.0
		12	0	21.01	21.00	20.80	2.0	22.0
		12	7	21.00	20.97	20.78	2.0	22.0
		12	13	20.98	20.92	20.77	2.0	22.0
		25	0	21.00	20.93	20.77	2.0	22.0

LTE Band 26 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26705	26865	27025		
				815.5 MHz	831.5 MHz	847.5 MHz		
3 MHz	QPSK	1	0	23.02	23.06	22.82	0.0	24.0
		1	8	23.00	23.03	22.80	0.0	24.0
		1	14	23.00	23.01	22.78	0.0	24.0
		8	0	22.05	21.97	21.76	1.0	23.0
		8	4	22.03	21.93	21.72	1.0	23.0
		8	7	22.00	21.94	21.73	1.0	23.0
		15	0	22.04	21.95	21.74	1.0	23.0
	16QAM	1	0	22.27	21.80	21.56	1.0	23.0
		1	8	22.24	21.73	21.51	1.0	23.0
		1	14	21.75	22.13	21.50	1.0	23.0
		8	0	21.09	20.99	20.80	2.0	22.0
		8	4	21.08	20.98	20.80	2.0	22.0
		8	7	21.06	21.00	20.73	2.0	22.0
		15	0	21.04	20.98	20.71	2.0	22.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26697	26865	27033		
				814.7 MHz	831.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	23.06	23.02	22.76	0.0	24.0
		1	3	23.06	23.00	22.71	0.0	24.0
		1	5	23.07	23.01	22.70	0.0	24.0
		3	0	23.07	22.92	22.69	0.0	24.0
		3	1	23.06	22.94	22.69	0.0	24.0
		3	3	23.07	22.94	22.71	0.0	24.0
		6	0	22.12	21.93	21.73	1.0	23.0
	16QAM	1	0	22.10	21.71	21.74	1.0	23.0
		1	3	21.85	22.11	21.70	1.0	23.0
		1	5	21.90	22.14	21.72	1.0	23.0
		3	0	22.22	21.94	21.69	1.0	23.0
		3	1	22.07	21.93	21.70	1.0	23.0
		3	3	22.09	21.94	21.71	1.0	23.0
		6	0	21.18	21.02	20.80	2.0	22.0

LTE Band 66 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				132072	132322	132572		
				1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	**23.32**	23.17	23.00	0.0	24.0
		1	49	22.91	22.75	22.56	0.0	24.0
		1	99	22.75	22.57	22.40	0.0	24.0
		50	0	**22.10**	21.98	21.81	1.0	23.0
		50	24	21.95	21.81	21.64	1.0	23.0
		50	50	21.85	21.70	21.53	1.0	23.0
		100	0	21.99	21.82	21.66	1.0	23.0
	16QAM	1	0	22.49	22.33	22.16	1.0	23.0
		1	49	22.07	21.91	21.74	1.0	23.0
		1	99	21.94	21.78	21.57	1.0	23.0
		50	0	21.12	20.97	20.84	2.0	22.0
		50	24	20.95	20.80	20.66	2.0	22.0
		50	50	20.84	20.70	20.51	2.0	22.0
		100	0	20.95	20.81	20.70	2.0	22.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				132047	132322	132597		
				1717.5 MHz	1745 MHz	1772.5 MHz		
15 MHz	QPSK	1	0	23.34	23.18	23.09	0.0	24.0
		1	37	23.02	22.86	22.76	0.0	24.0
		1	74	22.91	22.70	22.58	0.0	24.0
		36	0	22.17	22.04	21.95	1.0	23.0
		36	20	22.04	21.88	21.81	1.0	23.0
		36	39	21.96	21.75	21.64	1.0	23.0
		75	0	22.04	21.87	21.77	1.0	23.0
	16QAM	1	0	21.79	22.36	22.21	1.0	23.0
		1	37	21.95	22.04	21.89	1.0	23.0
		1	74	21.79	21.87	21.70	1.0	23.0
		36	0	21.00	21.02	20.89	2.0	22.0
		36	20	20.86	20.87	20.75	2.0	22.0
		36	39	20.76	20.76	20.64	2.0	22.0
		75	0	20.85	20.87	20.78	2.0	22.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				132022	132322	132622		
				1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	23.10	23.04	23.02	0.0	24.0
		1	25	22.90	22.87	22.83	0.0	24.0
		1	49	22.81	22.79	22.71	0.0	24.0
		25	0	22.03	21.96	21.85	1.0	23.0
		25	12	21.95	21.87	21.75	1.0	23.0
		25	25	21.89	21.82	21.70	1.0	23.0
		50	0	21.95	21.88	21.77	1.0	23.0
	16QAM	1	0	21.91	21.81	22.15	1.0	23.0
		1	25	21.70	21.61	21.96	1.0	23.0
		1	49	21.60	21.52	21.85	1.0	23.0
		25	0	21.09	20.96	20.88	2.0	22.0
		25	12	21.02	20.90	20.79	2.0	22.0
		25	25	20.95	20.81	20.71	2.0	22.0
		50	0	21.00	20.87	20.76	2.0	22.0

LTE Band 66 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				131997	132322	132647		
				1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	22.95	22.93	22.92	0.0	24.0
		1	12	22.91	22.85	22.82	0.0	24.0
		1	24	22.83	22.80	22.77	0.0	24.0
		12	0	21.84	21.89	21.82	1.0	23.0
		12	7	21.81	21.85	21.76	1.0	23.0
		12	13	21.80	21.81	21.73	1.0	23.0
		25	0	21.82	21.85	21.77	1.0	23.0
	16QAM	1	0	21.78	22.03	21.96	1.0	23.0
		1	12	21.70	21.95	21.87	1.0	23.0
		1	24	21.66	21.89	21.83	1.0	23.0
		12	0	20.86	20.99	20.93	2.0	22.0
		12	7	20.81	20.93	20.87	2.0	22.0
		12	13	20.79	20.91	20.84	2.0	22.0
		25	0	20.82	20.89	20.83	2.0	22.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				131987	132322	132657		
				1711.5 MHz	1745 MHz	1778.5 MHz		
3 MHz	QPSK	1	0	22.78	22.94	22.81	0.0	24.0
		1	8	22.77	22.91	22.78	0.0	24.0
		1	14	22.75	22.88	22.75	0.0	24.0
		8	0	21.81	21.87	21.80	1.0	23.0
		8	4	21.79	21.81	21.80	1.0	23.0
		8	7	21.78	21.84	21.76	1.0	23.0
		15	0	21.79	21.84	21.80	1.0	23.0
	16QAM	1	0	21.64	21.67	21.64	1.0	23.0
		1	8	21.57	21.61	22.00	1.0	23.0
		1	14	21.53	21.56	21.98	1.0	23.0
		8	0	20.82	20.86	20.84	2.0	22.0
		8	4	20.82	20.84	20.83	2.0	22.0
		8	7	20.84	20.84	20.83	2.0	22.0
		15	0	20.84	20.81	20.82	2.0	22.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				131979	132322	132665		
				1710.7 MHz	1745 MHz	1779.3 MHz		
1.4 MHz	QPSK	1	0	22.71	22.92	22.89	0.0	24.0
		1	3	22.73	22.89	22.78	0.0	24.0
		1	5	22.72	22.89	22.79	0.0	24.0
		3	0	22.73	22.89	22.79	0.0	24.0
		3	1	22.74	22.83	22.81	0.0	24.0
		3	3	22.75	22.83	22.80	0.0	24.0
		6	0	21.76	21.85	21.80	1.0	23.0
	16QAM	1	0	21.55	21.87	21.58	1.0	23.0
		1	3	21.68	21.82	21.57	1.0	23.0
		1	5	21.71	21.62	21.61	1.0	23.0
		3	0	21.75	21.95	21.77	1.0	23.0
		3	1	21.74	21.95	21.75	1.0	23.0
		3	3	21.75	21.94	21.73	1.0	23.0
		6	0	20.83	20.99	20.63	2.0	22.0

LTE Band 71 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)			MPR	Tune-up Limit
				Measured Pwr (dBm)				
				133222	133297	133372		
				673 MHz	680.5 MHz	688 MHz		
20 MHz	QPSK	1	0	22.49	**22.54**	22.49	0.0	24
		1	49	22.11	22.27	22.21	0.0	24
		1	99	21.99	22.10	22.02	0.0	24
		50	0	21.33	**21.40**	21.37	1.0	23
		50	24	21.20	21.29	21.23	1.0	23
		50	50	21.11	21.21	21.13	1.0	23
		100	0	21.23	21.29	21.25	1.0	23
	16QAM	1	0	21.69	21.62	21.58	1.0	23
		1	49	21.33	21.35	21.31	1.0	23
		1	99	21.19	21.20	21.11	1.0	23
		50	0	20.32	20.38	20.35	2.0	22
		50	24	20.18	20.26	20.21	2.0	22
		50	50	20.09	20.19	20.15	2.0	22
		100	0	20.21	20.31	20.28	2.0	22
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				133197	133297	133397		
				670.5 MHz	680.5 MHz	690.5 MHz		
15 MHz	QPSK	1	0	22.48	22.47	22.58	0.0	24
		1	37	22.15	22.25	22.36	0.0	24
		1	74	22.07	22.16	22.21	0.0	24
		36	0	21.31	21.38	21.42	1.0	23
		36	20	21.20	21.28	21.32	1.0	23
		36	39	21.12	21.25	21.24	1.0	23
		75	0	21.20	21.31	21.31	1.0	23
	16QAM	1	0	21.64	21.19	21.72	1.0	23
		1	37	21.34	20.97	21.48	1.0	23
		1	74	21.26	20.90	21.33	1.0	23
		36	0	20.27	20.36	20.44	2.0	22
		36	20	20.13	20.28	20.35	2.0	22
		36	39	20.06	20.23	20.26	2.0	22
		75	0	20.21	20.29	20.34	2.0	22

LTE Band 71 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				133172	133297	133422		
				668 MHz	680.5 MHz	693 MHz		
10 MHz	QPSK	1	0	22.43	22.40	22.46	0.0	24
		1	25	22.21	22.27	22.32	0.0	24
		1	49	22.10	22.22	22.21	0.0	24
		25	0	21.34	21.35	21.32	1.0	23
		25	12	21.24	21.31	21.26	1.0	23
		25	25	21.18	21.27	21.19	1.0	23
		50	0	21.27	21.31	21.24	1.0	23
	16QAM	1	0	21.21	21.14	21.59	1.0	23
		1	25	20.99	21.01	21.44	1.0	23
		1	49	20.87	20.93	21.33	1.0	23
		25	0	20.43	20.36	20.33	2.0	22
		25	12	20.32	20.30	20.30	2.0	22
		25	25	20.26	20.25	20.23	2.0	22
		50	0	20.30	20.30	20.25	2.0	22
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				133147	133297	133447		
				665.5 MHz	680.5 MHz	695.5 MHz		
5 MHz	QPSK	1	0	22.40	22.41	22.36	0.0	24
		1	12	22.28	22.34	22.29	0.0	24
		1	24	22.21	22.31	22.23	0.0	24
		12	0	21.27	21.27	21.32	1.0	23
		12	7	21.28	21.24	21.28	1.0	23
		12	13	21.23	21.22	21.24	1.0	23
		25	0	21.24	21.24	21.27	1.0	23
	16QAM	1	0	21.30	21.15	21.44	1.0	23
		1	12	21.21	21.08	21.35	1.0	23
		1	24	21.14	21.07	21.09	1.0	23
		12	0	20.30	20.26	20.33	2.0	22
		12	7	20.25	20.24	20.28	2.0	22
		12	13	20.22	20.22	20.27	2.0	22
		25	0	20.25	20.26	20.28	2.0	22

9.3. Wi-Fi 2.4 GHz (DTS Band)

Maximum output power results

Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
WiFi 2.4G	802.11b	1 Mbps	1	2412	17.02	18	Yes
			6	2437	16.89		
			11	2462	17.29		
			12	2467	Not Required	9	No
			13	2472		9	
	802.11g	6 Mbps	Not Required			17	No
	802.11n (HT20)	MCS 0	Not Required			17	No

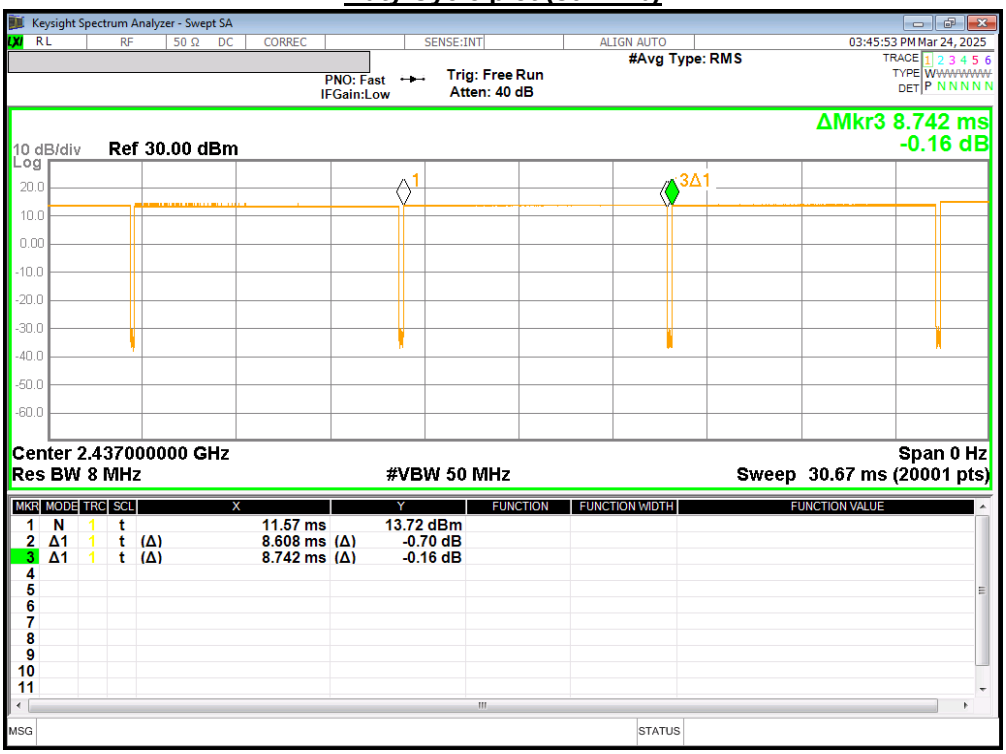
Note(s):

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 Result

Mode	T on (ms)	Period (ms)	Maximum Duty Cyle	Measured Duty Cycle	Crest Factor (maximum duty/ measured duty cycle)
802.11b	8.608	8.742	100.00%	98.47%	1.02

Duty Cycle plot (802.11b)



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

Maximum output power Results

Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Normal WLAN mode power		
					Max. Average Power		
					Avg Pwr (dBm)	Target Pwr	SAR Test (Yes/No)
UNII-2A	802.11a	6 Mbps	52	5260	16.04	17	Yes
			56	5280	16.02		
			60	5300	16.20		
			64	5320	15.89		
	802.11n (HT20)	MCS0	Not Required			17	No
UNII-2C	802.11a	6 Mbps	100	5500	16.33	17	Yes
			120	5600	16.29		
			124	5620	15.83		
			144	5720	15.97		
	802.11n (HT20)	MCS0	Not Required			17	No
UNII-3 or §15.247	802.11a	6 Mbps	149	5745	16.30	17	Yes
			157	5785	16.25		
			165	5825	16.09		
	802.11n (HT20)	MCS0	Not Required			17	No
UNII-4	802.11a	6 Mbps	169	5845	16.18	17	Yes
			173	5865	16.23		
			177	5885	15.97		
	802.11n (HT20)	MCS0	Not Required			17	No

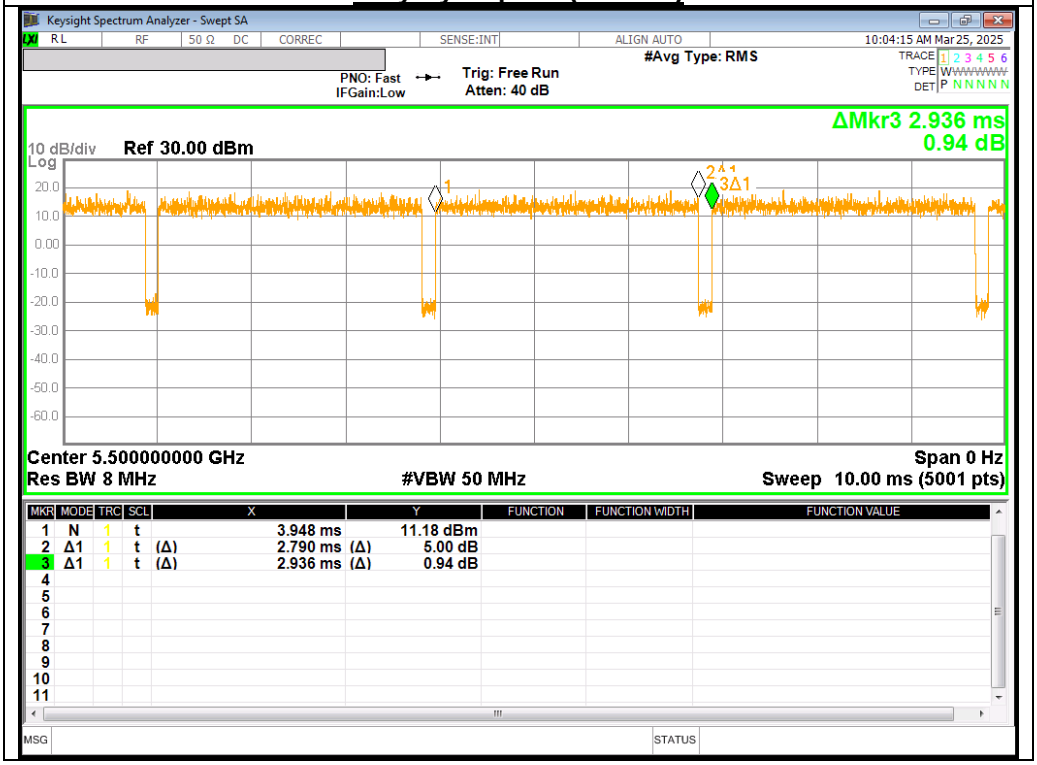
Note(s):

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 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 modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n and ac) 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

Mode	T on (ms)	Period (ms)	Maximum Duty Cycle	Measured Duty Cycle	Crest Factor (Maximum duty/ Measured duty cycle)
802.11a	2.790	2.936	100.00%	95.03%	1.05

Duty Cycle plots (802.11a)



9.5. Bluetooth

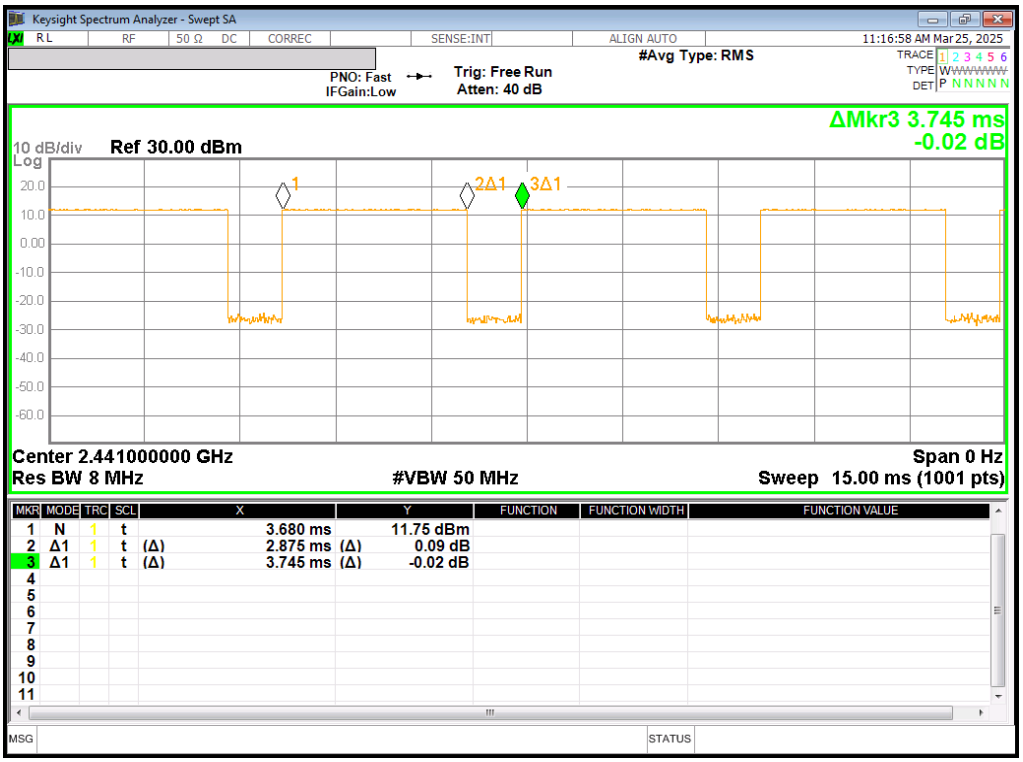
Bluetooth Maximum output power Results

Band (GHz)	Mode	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
Bluetooth 2.4G	Bluetooth (BDR)	0	2402	18.21	18.5	Yes
		39	2441	18.13		
		78	2480	17.24		
	Bluetooth (EDR)	0	2402	Not Required	12	No
		39	2441			
		78	2480			
	Bluetooth (LE 1M)	37	2402	Not Required	9	No
		17	2440			
		39	2480			
	Bluetooth (LE 2M)	0	2404	Not Required	9	No
		17	2440			
		36	2478			

Duty Factor Measured Results

Mode	T on (ms)	Period (ms)	Maximum Duty Cyle	Measured Duty Cycle	Crest Factor (maximum duty/ measured duty cycle)
BDR - DH5	2.875	3.745	78.00%	76.77%	1.02

Duty Cycle plot (BDR-DH5)



Note(s):

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

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 D04 Interim 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 447498 D04 Interim General RF Exposure Guidance Wrist watch SAR:

Transmitters that are built-in within a wristwatch, or similar wrist-worn devices, typically operate in speakerphone mode for voice communication, with the device worn on the wrist and positioned next to the mouth. Operations next to the mouth requires 1-g SAR measurement, while the wrist-worn condition requires 10-g extremity SAR measurement. Next-to-mouth use is evaluated with the front of the device positioned at 10 mm from a flat phantom to measure head SAR. The wrist bands shall be strapped together to represent normal use conditions. SAR for wrist exposure is evaluated with the back of the device positioned in direct contact against a flat phantom filled with body tissue-equivalent medium. The wrist bands shall be unstrapped and touching the phantom.

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;

KDB 248227 D01 SAR meas for 802.11:

The SAR measurement and test reduction procedures are structured according to either the DSSS or OFDM transmission mode configurations used in each standalone frequency band and aggregated band. SAR is measured using the highest measured maximum output power channel for the initial test configuration. SAR measurement and test reduction for the remaining 802.11 modes and test channels are determined according to measured or specified maximum output power and reported SAR of the initial measurements. The general test reduction and SAR measurement approaches are summarized in the following:

- The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures.
- For OFDM transmission configurations in the 2.4 GHz and 5 GHz bands, an “initial test configuration” is first determined for each standalone and aggregated frequency band according to the maximum output power and tune-up tolerance specified for production units.
- The Initial test configuration does not apply to DSSS. The 2.4 GHz band SAR test requirements and 802.11b DSSS procedures are used to establish the transmission configurations required for SAR measurement.
- An “initial test position” is applied to further reduce the number of SAR tests for devices operating in next to the ear, UMPC mini-tablet or hotspot mode exposure configurations that require multiple test positions.
  - SAR is measured for 802.11b according to the 2.4 GHz DSSS procedure using the exposure condition established by the initial test position.
  - SAR is measured for 2.4 GHz and 5 GHz OFDM configurations using the initial test configuration.
- The Initial test position does not apply to devices that require a fixed exposure test position.
- The “subsequent test configuration” procedures are applied to determine if additional SAR measurements are required for the remaining OFDM transmission modes that have not been tested in the initial test configuration.
- 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.

802.11b DSSS SAR Test Requirements

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed test position or, when applicable, the initial test position procedure.

- When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
- When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel.

OFDM Transmission Mode SAR Test Configuration and Channel Selection Requirements

The initial test configuration for 2.4 GHz and 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. When multiple channel bandwidth configurations in a frequency band have the same specified maximum output power, the initial test configuration is determined by applying the following steps sequentially.

- The largest channel bandwidth configuration is selected among the multiple configurations in a frequency band with the same specified maximum output power.
- If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.
- If multiple configurations have the same specified maximum output power, largest channel bandwidth and lowest order modulation, the lowest data rate configuration among these configurations is selected.
- When multiple transmission modes (802.11a/g/n/ac/ax/be) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected.

After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following.

- The channel closest to mid-band frequency is selected for SAR measurement.
- For channels with equal separation from mid-band frequency the higher frequency (number) channel is selected for SAR measurement.

Initial Test Configuration Procedures

An initial test configuration is determined for OFDM transmission modes according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. SAR is measured using the highest measured maximum output power channel. For configurations with the same specified or measured maximum output power, additional transmission mode and test channel selection procedures are required. SAR test reduction for subsequent highest output test channels is determined according to reported SAR of the initial test configuration.

- When the reported SAR of the initial test configuration is > 0.8 W/kg, SAR measurement is required for subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is ≤ 1.2 W/kg or all required channels are tested.

Subsequent Test Configuration Procedures

SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units. Additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration.

- When SAR test exclusion provisions of KDB Publication 447498 D01 are applicable and SAR measurement is not required for the initial test configuration, SAR is also not required for the next highest maximum output power transmission mode subsequent test configuration(s) in that frequency band or aggregated band and exposure configuration.
- When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.
- When SAR measurement is required for a subsequent test configuration and the channel bandwidth is smaller than that in the initial test configuration, all channels in the subsequent test configuration that overlap with the larger bandwidth channel tested in the initial test configuration should be used to determine the highest maximum output power channel.
    - SAR should first be measured for the channel with highest measured output power in the subsequent test configuration.
    - SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is > 1.2 W/kg or until all required channels are tested. For channels with the same measured maximum output power, SAR should be measured using the channel closest to the center frequency of the larger channel bandwidth channel in the initial test configuration.
- SAR measurements for the remaining highest specified maximum output power OFDM transmission mode configurations that have not been tested in the initial test configuration or subsequent test configuration is determined by recursively applying the subsequent test configuration procedures in this subclause to the remaining configurations according to the following:
    - replace “subsequent test configuration” with “next subsequent test configuration”
    - replace “initial test configuration” with “all tested higher output power configurations”

10.1. WCDMA Band II

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	Rel 99 RMC	10	Front	9400	1880.0	23.5	22.80	0.121	0.142			1
Extremity	Rel 99 RMC	0	Rear	9400	1880.0	23.5	22.80			0.327	0.384	2

10.2. WCDMA Band IV

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	Rel 99 RMC	10	Front	1413	1732.5	23.5	22.88	0.101	0.116			3
Extremity	Rel 99 RMC	0	Rear	1413	1732.5	23.5	22.88			0.112	0.129	4

10.3. WCDMA Band V

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	Rel 99 RMC	10	Front	4183	836.6	23.5	23.0	<0.001	<0.001			
Extremity	Rel 99 RMC	0	Rear	4183	836.6	23.5	23.0			0.210	0.264	5

10.4. LTE Band 7 (20MHz Bandwidth)

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	QPSK	10	Front	21350	2560	1	0	23.0	22.12	0.129	0.158			6
						50	0	22.0	20.93	0.092	0.118			
Extremity	QPSK	0	Rear	21350	2560	1	0	24.0	22.12			0.058	0.071	7
						50	0	23.0	20.93			0.032	0.041	

10.5. LTE Band 12 (10MHz Bandwidth)

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	QPSK	10	Front	23095	707.5	1	0	24.0	22.97	<0.001	<0.001			
						25	0	23.0	21.89	<0.001	<0.001			
Extremity	QPSK	0	Rear	23095	707.5	1	0	24.0	22.97			0.151	0.191	8
						50	0	23.0	21.89			0.108	0.139	

10.6. LTE Band 13 (10MHz Bandwidth)

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	QPSK	10	Front	23230	782	1	0	24.0	22.93	<0.001	<0.001			
						25	0	23.0	21.84	<0.001	<0.001			
Extremity	QPSK	0	Rear	23230	782	1	0	24.0	22.93			0.207	0.265	9
						50	0	23.0	21.84			0.170	0.222	

10.7. LTE Band 14 (10MHz Bandwidth)

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	QPSK	10	Front	23330	793	1	0	24.0	22.97	<0.001	<0.001			
						25	0	23.0	21.94	<0.001	<0.001			
Extremity	QPSK	0	Rear	23330	793	1	0	24.0	22.97			0.195	0.247	10
						25	0	23.0	21.94			0.149	0.190	

10.8. LTE Band 25 (20MHz Bandwidth)

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	QPSK	10	Front	26590	1905	1	0	24.0	22.74	0.196	0.262			11
						50	0	23.0	21.56	0.101	0.141			
Extremity	QPSK	0	Rear	26590	1905	1	0	24.0	22.74			0.421	0.563	12
						50	0	23.0	21.56			0.299	0.417	

10.9. LTE Band 26 (15MHz Bandwidth)

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	QPSK	10	Front	26865	831.5	1	0	24.0	23.25	<0.001	<0.001			
						36	0	23.0	22.13	<0.001	<0.001			
Extremity	QPSK	0	Rear	26865	831.5	1	0	24.0	23.25			0.216	0.257	13
						36	0	23.0	22.13			0.166	0.203	

10.10. LTE Band 66 (20MHz Bandwidth)

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	QPSK	10	Front	132072	1720.0	1	0	24.0	23.32	0.132	0.154			14
						50	0	23.0	22.10	0.103	0.127			
Extremity	QPSK	0	Rear	132072	1720.0	1	0	24.0	23.32			0.128	0.150	15
						50	0	23.0	22.10			0.101	0.124	

10.11. LTE Band 71 (20MHz Bandwidth)

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	QPSK	10	Front	133297	680.5	1	0	24.0	22.54	<0.001	<0.001			
						50	0	23.0	21.40	<0.001	<0.001			
Extremity	QPSK	0	Rear	133297	680.5	1	0	24.0	22.54			0.091	0.127	16
						50	0	23.0	21.40			0.071	0.103	

10.12. Wi-Fi (DTS Band)

DTS SISO SAR results

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Dudy cycle	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	802.11b 1Mbps	10	Front	11	2462.0	0.113	98.47%	18.0	17.29	0.089	0.106			17
Extremity	802.11b 1Mbps	0	Rear	11	2462.0	0.549	98.47%	18.0	17.29			0.184	0.220	18

10.13. Wi-Fi (U-NII Bands)

U-NII 2A SAR results

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Dudy cycle	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	802.11a 6Mbps	10	Front	60	5300.0	0.021	95.03%	17.0	16.20	0.016	0.020			
Extremity	802.11a 6Mbps	0	Rear	60	5300.0	0.423	95.03%	17.0	16.20			0.087	0.110	

U-NII 2C SAR results

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Dudy cycle	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	802.11a 6Mbps	10	Front	100	5500.0	0.014	95.03%	17.0	16.33	0.007	0.009			
Extremity	802.11a 6Mbps	0	Rear	100	5500.0	0.626	95.03%	17.0	16.33			0.112	0.138	

U-NII 3 SAR results

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Dudy cycle	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	802.11a 6Mbps	10	Front	149	5745.0	0.032	95.03%	17.0	16.30	0.020	0.025			19
Extremity	802.11a 6Mbps	0	Rear	149	5745.0	1.170	95.03%	17.0	16.30			0.186	0.230	20

U-NII 4 SAR results

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Dudy cycle	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	802.11a 6Mbps	10	Front	173	5865.0	0.019	95.03%	17.0	16.23	0.013	0.016			
Extremity	802.11a 6Mbps	0	Rear	173	5865.0	0.677	95.03%	17.0	16.23			0.163	0.205	

10.14. Bluetooth

RF Exposure Condition	Mode	Dist (mm)	Test Position	Channel	Freq. (MHz)	Dudy cycle	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Plot No.
Next-to-Mouth	GFSK DH5	10	Front	0	2402.0	76.77%	18.5	18.21	0.180	0.195			21
Extremity	GFSK DH5	0	Rear	0	2402.0	76.77%	18.5	18.21			0.351	0.381	22

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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 (1-g respectively); steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.8 (1-g), repeat that measurement once.
3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 (~ 10% from the 1-g respective SAR limit).
4) Perform a third repeated measurement only if the original, first, or second repeated measurement is ≥ 1.5 (1-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	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 Band 12	Next-to-Mouth	Front	No	0.000	N/A	N/A
	LTE Band 13	Next-to-Mouth	Front	No	0.000	N/A	N/A
	LTE Band 14	Next-to-Mouth	Front	No	0.000	N/A	N/A
	LTE Band 71	Next-to-Mouth	Front	No	0.000	N/A	N/A
850	WCDMA 5	Next-to-Mouth	Front	No	0.000	N/A	N/A
	LTE Band 26	Next-to-Mouth	Front	No	0.000	N/A	N/A
1750	WCDMA 4	Next-to-Mouth	Front	No	0.016	N/A	N/A
	LTE Band 66	Next-to-Mouth	Front	No	0.109	N/A	N/A
1900	WCDMA Band II	Next-to-Mouth	Front	No	0.121	N/A	N/A
	LTE Band 25	Next-to-Mouth	Front	No	0.196	N/A	N/A
2450	DTS	Next-to-Mouth	Front	No	0.089	N/A	N/A
	Bluetooth	Next-to-Mouth	Front	No	0.096	N/A	N/A
2600	LTE Band 7	Next-to-Mouth	Front	No	0.129	N/A	N/A
5300	U-NII 2A	Next-to-Mouth	Front	No	0.016	N/A	N/A
5600	U-NII 2C	Next-to-Mouth	Front	No	0.007	N/A	N/A
5800	U-NII 3	Next-to-Mouth	Front	No	0.020	N/A	N/A
5900	U-NII 4	Next-to-Mouth	Front	No	0.013	N/A	N/A

Peak spatial-average (10g of tissue)

Frequency Band (MHz)	Air Interface	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 Band 12	Extremity	Rear	No	0.151	N/A	N/A
	LTE Band 13	Extremity	Rear	No	0.207	N/A	N/A
	LTE Band 14	Extremity	Rear	No	0.195	N/A	N/A
	LTE Band 71	Extremity	Rear	No	0.091	N/A	N/A
850	WCDMA 5	Extremity	Rear	No	0.210	N/A	N/A
	LTE Band 26	Extremity	Rear	No	0.216	N/A	N/A
1750	WCDMA 4	Extremity	Rear	No	0.112	N/A	N/A
	LTE Band 66	Extremity	Rear	No	0.128	N/A	N/A
1900	WCDMA Band II	Extremity	Rear	No	0.327	N/A	N/A
	LTE Band 25	Extremity	Rear	No	0.421	N/A	N/A
2450	DTS	Extremity	Rear	No	0.184	N/A	N/A
	Bluetooth	Extremity	Rear	No	0.246	N/A	N/A
2600	LTE Band 7	Extremity	Rear	No	0.058	N/A	N/A
5300	U-NII 2A	Extremity	Rear	No	0.087	N/A	N/A
5600	U-NII 2C	Extremity	Rear	No	0.112	N/A	N/A
5800	U-NII 3	Extremity	Rear	No	0.186	N/A	N/A
5900	U-NII 4	Extremity	Rear	No	0.163	N/A	N/A

Note(s):

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
Next-to-Mouth & Extremity	1	WWAN (3G/LTE) + DTS
	2	WWAN (3G/LTE) + UNII
	3	WWAN (3G/LTE) + BT
	4	WWAN (3G/LTE) + BT + UNII

Notes:

1. DTS supports Wi-Fi Direct, Hotspot and VoIP.
2. U-NII supports Wi-Fi Direct, Hotspot and VoIP.
3. U-NII Radio can transmit simultaneously with Bluetooth Radio.

Simultaneous transmission SAR test exclusion considerations

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.

12.1. Sum of the SAR for WWAN & WiFi & BT

Band	RF Exposure	Test Position	Standalone SAR (W/kg)				Sum of SAR (W/kg)			
			WWAN	DTS	UNII	BT	WWAN + DTS	WWAN + UNII	WWAN + BT	WWAN + UNII + BT
			1	2	3	4	1+2	1+3	1+4	1+3+4
WCDMA II	Next-to-Mouth (1-g SAR)	Front	0.142	0.106	0.025	0.195	0.248	0.167	0.337	0.362
	Limb (10-g SAR)	Rear	0.384	0.220	0.230	0.381	0.604	0.614	0.765	0.995
WCDMA IV	Next-to-Mouth (1-g SAR)	Front	0.116	0.106	0.025	0.195	0.222	0.141	0.311	0.336
	Limb (10-g SAR)	Rear	0.129	0.220	0.230	0.381	0.349	0.359	0.510	0.740
WCDMA V	Next-to-Mouth (1-g SAR)	Front	0.000	0.106	0.025	0.195	0.106	0.025	0.195	0.220
	Limb (10-g SAR)	Rear	0.264	0.220	0.230	0.381	0.484	0.494	0.645	0.875
LTE Band 7	Next-to-Mouth (1-g SAR)	Front	0.158	0.106	0.025	0.195	0.264	0.183	0.353	0.378
	Limb (10-g SAR)	Rear	0.071	0.220	0.230	0.381	0.291	0.301	0.452	0.682
LTE Band 12	Next-to-Mouth (1-g SAR)	Front	0.000	0.106	0.025	0.195	0.106	0.025	0.195	0.220
	Limb (10-g SAR)	Rear	0.191	0.220	0.230	0.381	0.411	0.421	0.572	0.802
LTE Band 13	Next-to-Mouth (1-g SAR)	Front	0.000	0.106	0.025	0.195	0.106	0.025	0.195	0.220
	Limb (10-g SAR)	Rear	0.265	0.220	0.230	0.381	0.485	0.495	0.646	0.876
LTE Band 14	Next-to-Mouth (1-g SAR)	Front	0.000	0.106	0.025	0.195	0.106	0.025	0.195	0.220
	Limb (10-g SAR)	Rear	0.247	0.220	0.230	0.381	0.467	0.477	0.628	0.858
LTE Band 25	Next-to-Mouth (1-g SAR)	Front	0.262	0.106	0.025	0.195	0.368	0.287	0.457	0.482
	Limb (10-g SAR)	Rear	0.563	0.220	0.230	0.381	0.783	0.793	0.944	1.174
LTE Band 26	Next-to-Mouth (1-g SAR)	Front	0.000	0.106	0.025	0.195	0.106	0.025	0.195	0.220
	Limb (10-g SAR)	Rear	0.257	0.220	0.230	0.381	0.477	0.487	0.638	0.868
LTE Band 66	Next-to-Mouth (1-g SAR)	Front	0.154	0.106	0.025	0.195	0.260	0.179	0.349	0.374
	Limb (10-g SAR)	Rear	0.150	0.220	0.230	0.381	0.370	0.380	0.531	0.761
LTE Band 71	Next-to-Mouth (1-g SAR)	Front	0.000	0.106	0.025	0.195	0.106	0.025	0.195	0.220
	Limb (10-g SAR)	Rear	0.127	0.220	0.230	0.381	0.347	0.357	0.508	0.738

Conclusion:

Simultaneous Transmission SAR analysis results is satisfied the FCC Limit requirement according to follow procedures with "Sum of SAR"

Appendixes

Refer to separated files for the following appendixes.

S-4791706372-S1 FCC Report SAR App A Photos

S-4791706372-S1 FCC Report SAR App B Test Plots

S-4791706372-S1 FCC Report SAR App C System Plots

S-4791706372-S1 FCC Report SAR App D SAR Tissue

S-4791706372-S1 FCC Report SAR App E Probe Certi

S-4791706372-S1 FCC Report SAR App F Dipole Certi

END OF REPORT