SAR EVALUATION REPORT

FCC 47 CFR § 2.1093
IEEE Std 1528-2013

For
LTE Smart Phone

FCC ID: 2ADINS6006L
Model Name: S6006L, NUU X7, X7

Report Number: 4791221995-1-SAR-1
Issue Date: July 23, 2024

Prepared for
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Revision History

Rev.	Date	Revisions	Revised By
V1.0	July 23, 2024	Initial Issue	\

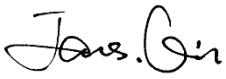
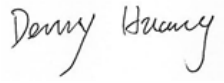
Note:

1. The Measurement result for the sample received is<Pass> according to < IEEE Std. 1528-2013> when <Accuracy Method> decision rule is applied.
2. This report is only published to and used by the applicant, and it is not for evidence purpose in China.

Table of Contents

1. Attestation of Test Results

Applicant Name	Sun Cupid Technology (HK) Ltd.			
Address	16/F, CEO Tower, 77 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong			
Manufacturer	Sun Cupid Technology (HK) Ltd.			
Address	16/F, CEO Tower, 77 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong			
EUT Name	LTE Smart Phone			
Model	S6006L			
Series Model	NUU X7, X7			
Model Difference	NUU X7, X7 have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction with S6006L. The difference lies only the model number. all these changes do not degrade the unwanted emissions of the certified product.			
Brand	NUU			
Sample ID	7066315			
Sample Status	Normal			
Sample Received Date	March 28, 2024			
Date of Tested	May 7, 2024 ~ July 4, 2024			
Applicable Standards	FCC 47 CFR § 2.1093 IEEE Std. 1528-2013 KDB publication			
SAR Limits (W/Kg)				
Exposure Category	Peak spatial-average (1g of tissue)		Extremities (hands, wrists, ankles, etc.) (10g of tissue)	
General population / Uncontrolled exposure	1.6		4	
Occupational / Controlled exposure	8		20	
The Highest Reported SAR (W/kg)				
RF Exposure Conditions	**Equipment Class**			
	PCE	**DTS**	**NII**	**DSS**
Head (0mm)	0.853	0.431	0.968	0.128
Body-worn (10mm)	1.183	0.109	0.631	0.027
Hotspot (10mm)	1.183	0.109	0.631	0.027
Extremity (0mm)	\	\	1.148	\
Simultaneous Transmission (1-g)	Head	1.583		
	Body-worn	1.546		
	Hotspot	1.546		
Simultaneous	Extremity	\		

Transmission (10-g)			
Test Results		Pass	
Prepared By:  James Qin Project Engineer		Reviewed By:  Denny Huang Senior Project Engineer	Approved By:  Stephen Guo Laboratory Manager

2. Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with IEEE Std.1528-2013 the following FCC Published RF exposure KDB procedures:

- 248227 D01 802.11 Wi-Fi SAR v02
- 447498 D01 General RF Exposure Guidance v06
- 690783 D01 SAR Listings on Grants v01
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01
- 865664 D02 RF Exposure Reporting v01
- 941225 D01 3G SAR Procedures v03
- 941225 D05 SAR for LTE Devices v02
- 648474 D04 Handset SAR v01r03

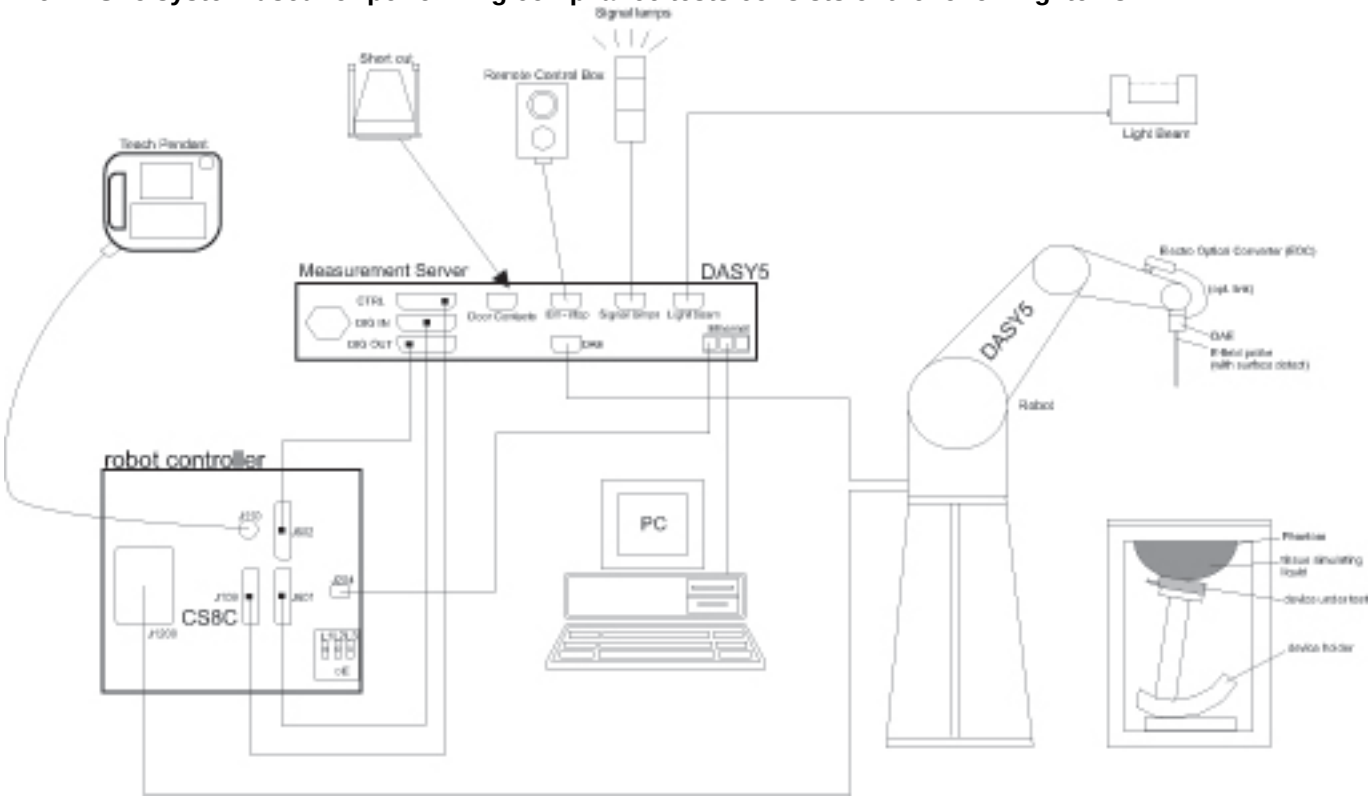
3. Facilities and Accreditation

Test Location	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.
Address	Building 10, Innovation Technology Park, Song Shan Lake Hi-tech Development Zone, Dongguan, 523808, China
Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules. **ISED (Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046. **VCCI (Registration No.: G-20192, C-20153, T-20155 and R-20202)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20192 and R-20202. Shielding Room B, the VCCI registration No. is C-20153 and T-20155.
Description	All measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi-tech Development Zone, Dongguan, 523808, China.

4. SAR Measurement System & Test Equipment

4.1. SAR Measurement System

The DASY5 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 Win7 and the DASY5 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 v01r04 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 mm ± 1 mm	½·δ·ln(2) mm ± 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 v01r04 SAR Measurement 100 MHz to 6 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·$\Delta z_{Zoom}(n-1)$ mm	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

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.

Step 5: Z-Scan (FCC only)

The Z Scan measures points along a vertical straight line. The line runs along the Z-axis of a one-dimensional grid. In order to get a reasonable extrapolation the extrapolated distance should not be greater than the step size in Z-direction.

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.

Name of equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
ENA Network Analyzer	Keysight	E5080A	MY55100583	2024.10.11
Dielectric Probe kit	SPEAG	SM DAK 040 SA	1155	2025.02.27
DC power supply	Keysight	E36103A	MY55350020	2024.10.11
Signal Generator	Rohde & Schwarz	SME06	837633\001	2024.08.06
BI-Directional Coupler	KRYTAR	1850	54733	2024.10.11
Peak and Average Power Sensor	Keysight	E9325A	MY62220002	2024.10.11
Peak and Average Power Sensor	Keysight	E9325A	MY62220003	2024.10.11
Dual Channel PK Power Meter	Keysight	N1912A	MY55416024	2024.10.11
Amplifier	CORAD TECHNOLOGY LTD	AMF-4D-00400600-50-30P	1983561	NCR
Dosimetric E-Field Probe	SPEAG	EX3DV4	7733	2025.02.20
Data Acquisition Electronic	SPEAG	DAE4	1739	2025.01.22
Dipole Kit 750 MHz	SPEAG	D750V3	1153	2024.12.14
Dipole Kit 835 MHz	SPEAG	D835V2	4d206	2024.12.16
Dipole Kit 1800 MHz	SPEAG	D1800V2	2d212	2024.12.20
Dipole Kit 2450 MHz	SPEAG	D2450V2	977	2024.12.16
Dipole Kit 2600 MHz	SPEAG	D2600V2	1117	2024.12.19
Dipole Kit 5 GHz	SPEAG	D5GHzV2	1231	2024.12.15
Software	SPEAG	DASY52	N/A	NCR
Twin Phantom	SPEAG	SAM 5.0	1805	NCR
Thermometer	/	GX-138	150709653	2024.10.18
Thermometer	VICTOR	ITHX-SD-5	18470005	2024.10.18

Note:

1) As per KDB865664D01 requirements for dipole calibration, the test laboratory has adopted three-year extended calibration interval. Each measured dipole is expected to evaluate with the following criteria at least on annual interval in Appendix C.
   a) There is no physical damage on the dipole;
   b) System check with specific dipole is within 10% of calibrated value;
   c) The most recent return-loss result, measured at least annually, deviates by no more than 20% from the previous measurement.
   d) The most recent measurement of the real or imaginary parts of the impedance, measured at least annually is within 5Ω from the previous measurement.
2) Dielectric assessment kit is calibrated against air, distilled water and a shorting block performed before measuring liquid parameters.
3) NCR is short for "No Calibration Requirement".

5. Measurement Uncertainty

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. Therefore, the measurement uncertainty is not required.

6. Device Under Test (DUT) Information

6.1. DUT Description

EUT is a LTE smart phone with GSM/WCDMA/LTE/IEEE 802.11a/ b/g/n/ac, Bluetooth radio	
Dimension	Overall (Length x Width x Height): 156 mm x 74.5 mm x 11 mm
Accessory	Earphone Battery: Model: NUBS6006, Rated Voltage: 3.8V Rated Capacity: 2950mAh/11.21Wh

EUT configurations:

Material type	First resources material information		Second resources material information	
	Part number	Supplier	Part number	Supplier
MODU(Baseband chips)	MT6761V/WBA	MTK	MT8766V/WBA	MTK

Note:

1. Based on preliminary testing, there were no significant differences between the two models and therefore model [MT6761 version] was fully tested.

6.2. Wireless Technology

Wireless technologies	Frequency bands	Operating mode	
GSM	850 1900	☒ Voice (GMSK) ☒ GPRS (GMSK) ☒ EGPRS (8PSK)	GPRS Multi-Slot Class: ☐ Class 8 - 1 Up, 4 Down ☐ Class 10 - 2 Up, 4 Down ☒ Class 12 - 4 Up, 4 Down ☐ Class 33 - 4 Up, 5 Down
	Does this device support DTM (Dual Transfer Mode)? ☐ Yes ☒ No		
WCDMA (UMTS)	Band II Band IV Band V	☒UMTS Rel. 99 (Voice & Data) ☒ HSDPA (Rel. 5) ☒ HSUPA (Rel. 6) ☐ DC-HSDPA (Rel. 8) ☐ HSPA+ (Rel. 7)	
LTE	FDD Band2 FDD Band4 FDD Band5 FDD Band7 FDD Band12 FDD Band13 FDD Band25 FDD Band26 FDD Band66 FDD Band71 TDD Band41	QPSK 16QAM ☐ Rel. 10 Does not support Carrier Aggregation (CA) ☒ Rel. 10 Carrier Aggregation (Downlink only) ☐ Rel. 11 Carrier Aggregation (2 Uplink and 2 Downlinks)	
Wi-Fi	2.4GHz	☒ 802.11b ☒ 802.11g ☒ 802.11n (HT20) ☒ 802.11n (HT40) ☐ 802.11ax (HE20) ☐ 802.11ax (HE40)	
Wi-Fi	5GHz	☒ 802.11a ☒ 802.11n (HT20) ☒ 802.11n (HT40) ☒ 802.11ac (VHT20) ☒ 802.11ac (VHT40) ☒ 802.11ac (VHT80) ☐ 802.11ax (HE20) ☐ 802.11ax (HE40) ☐ 802.11ax (HE80)	
BT/BLE	2.4GHz	V5.0	

7. Test Configuration

7.1. 3G SAR Test Reduction Procedure

According to KDB 941225D01, in the following procedures, the mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. 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. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as “otherwise” in the applicable procedures; SAR measurement is required for the secondary mode.

7.1.1. GSM Test Configuration

SAR tests for GSM 850 and GSM 1900, a communication link is set up with a base station by air link. Using CMW500 the power lever is set to “5”and “0” in SAR of GSM 850 and GSM 1900. The tests in the band of GSM 850 and GSM 1900 are performed in the mode of GPRS/EGPRS function. Since the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslot is 5. The EGPRS class is 12 for this EUT, it has at most 4 timeslots in uplink, and at most 4 timeslots in downlink, the maximum total timeslot is 5.

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

When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode

7.1.2. UMTS Test Configuration

1. Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the procedures description in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all “1s” for WCDMA/HSDPA or applying the required inner loop power control procedure to maintain maximum output power while HSUPA is active. Result for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HSDPA, HSPA) Should be tabulated in the SAR report. All configuration that are not supported by the DUT or cannot be measured due to technical or equipment limitation should be clearly identified.

2. WCDMA

Body SAR Measurements

SAR for body-worn accessory configurations is measured using a 12.2 kbps RMC with TPC bits configured to all “1"s”. The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode.

3. HSDPA

SAR for body exposure configurations is measured according to the “Body SAR Measurements"" procedures of 3G device. 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. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as “otherwise” in the applicable procedures; SAR measurement is required for the secondary mode.

As per KDB941225 D01, the 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the HSDPA body SAR procedures for the highest reported SAR body exposure configuration in 12.2 kbps RMC.

HSDPA should be configured according to UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HAPRQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission condition, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. The □c and □d gain factors for DPCCH and DPDCH were set according to the values in the below table, □hs for HS-DPCCH is set automatically to the correct value when ΔACK, ΔNACK, ΔCQI = 8. The variation of the □c /□d ratio causes a power reduction at sub-tests 2 - 4.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	CM(dB)(2)	MPR (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0	0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: △ACK, △NACK and △CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

Note 2 : CM=1 for β_c/β_d= 12/15, β_{hs}/β_c = 24/15. For all other combinations of DPDCH,DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 3 : For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1,TF1) to β_c = 11/15 and β_d = 15/15

The measurements were performed with a Fixed Reference Channel (FRC) and H-Set 1 QPSK.
Settings of required H-Set 1 QPSK acc. to 3GPP 34.121

Parameter	Value
Nominal average inf. bit rate	534 kbit/s
Inter-TTI Distance	3 TTI"s
Number of HARQ Processes	2 Processes
Information Bit Payload	3202 Bits
MAC-d PDU size	336 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	4800 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	9600 SMLs
Coding Rate	0.67
Number of Physical Channel Codes	5

HSDPA UE category

HS-DSCH Category	Maximum HS-DSCH Codes Received	Minimum Inter-TTI Interval	Maximum HS-DSCH Transport Block Bits/HS-DSCH TTI	Total Soft Channel Bits
1	5	3	7298	19200
2	5	3	7298	28800
3	5	2	7298	28800
4	5	2	7298	38400
5	5	1	7298	57600
6	5	1	7298	67200
7	10	1	14411	115200
8	10	1	14411	134400
9	15	1	25251	172800
10	15	1	27952	172800
11	5	2	3630	14400
12	5	1	3630	28800
13	15	1	34800	259200
14	15	1	42196	259200
15	15	1	23370	345600
16	15	1	27952	345600

4. HSUPA

SAR for body exposure configurations is measured according to the “Body SAR Measurements"" procedures of 3G device. 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.

As per KDB941225 D01v03, the 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures for the highest reported body exposure SAR configuration in 12.2 kbps RMC.

Due to inner loop power control requirements in HSDPA, a commercial communication test set should be used for the output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSDPA should be configured according to the values indicated below as well as other applicable procedures described in the „WCDMA Handset" and „Release 5 HSDPA Data Device" sections of 3G device.

Subtests for WCDMA Release 6 HSUPA

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs}(1)	β_{ec}	β_{ed}	β_{ec} (SF)	β_{ed} (code)	CM(2) (dB)	MPR (dB)	AG(4) Index	E-TFCI
1	11/15(3)	15/15(3)	64	11/15(3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}:47/15 β_{ed2}:47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15(4)	15/15(4)	64	15/15(4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ ACK, Δ NACK and Δ CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference

Note 3 : For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$

Note 4 : For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$

Note 5 : Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g

Note 6: β_{ed} can not be set directly; it is set by Absolute Grant Value.

HSUPA UE category

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCH TTI(ms)	Minimum Speading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	2.00
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	10	2SF2&2SF4	11484	5.76
	4	4	2		20000	2.00
7 (No DPDCH)	4	8	2	2SF2&2SF4	22996	?
	4	4	10		20000	?

Note:

1) When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4.UE categories 1 to 6 support QPSK only. UE category 7 supports QPSK and 16QAM. (TS25.306-7.3.0).

5. DC-HSDPA

SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a Second serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS 34.108 v9.5.0. A summary of these setting is illustrated below:

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

The measurements were performed with a Fixed Reference Channel (FRC) H-Set 12 with QPSK

Parameter	Value
Nominal average inf. bit rate	60 kbit/s
Inter-TTI Distance	1 TTI"s
Number of HARQ Processes	6 Processes
Information Bit Payload	120 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	960 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	3200 SMLs
Coding Rate	0.15
Number of Physical Channel Codes	1

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 above.
2) Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.

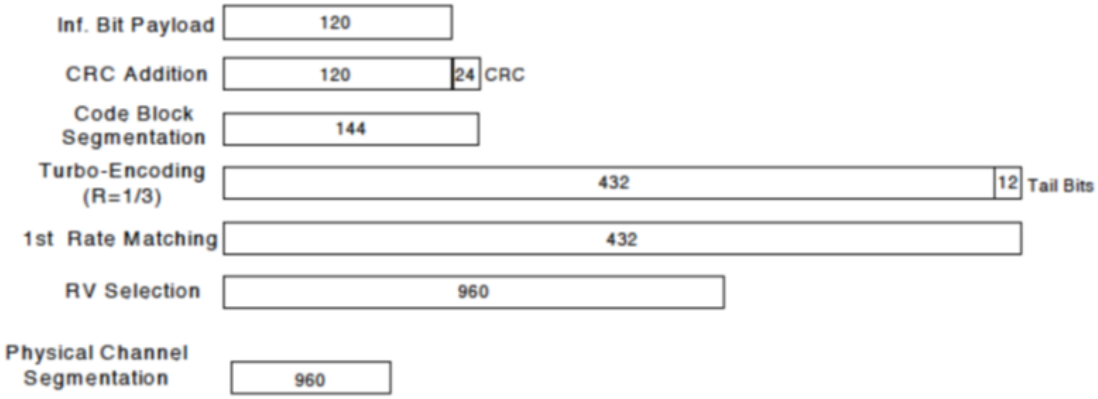


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 5 procedures. A summary of subtest setting is illustrated below:

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	CM(dB)(2)	MPR (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0	0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ ACK, Δ NACK and Δ CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

Note 2: CM=1 for β_c/β_d= 12/15, β_{hs}/β_c = 24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15

Up commands are set continuously to set the UE to Max power.

Note:

1) The Dual Carriers transmission only applies to HSDPA physical channels.
2) The Dual Carriers belong to the same Node and are on adjacent carriers.
3) The Dual Carriers do not support MIMO to serve UEs configured for dual cell operation.
4) The Dual Carriers operate in the same frequency band.
5) The device doesn't support the modulation of 16QAM in uplink but 64QAM in downlink for DC-HSDPA mode.

The device doesn't support carrier aggregation for it just can operate in Release 8.

7.2. LTE Test Configuration

Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR. The R&S CMW500 was used for LTE output power measurements and SAR testing. Max power control was used so the UE transmits with maximum output power during SAR testing. SAR must be measured with the maximum TTI (transmit time interval) supported by the device in each LTE configuration.

1) Spectrum Plots for RB configurations

A properly configured base station simulator was used for LTE output power measurements and SAR testing. Therefore, spectrum plots for RB configurations were not required to be included in this report.

2) MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3-6.2.5 under Table 6.2.3-1.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 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

3) A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by using Network Signaling Value of “NS=01” on the base station simulator.

4) SAR test requirements

A) Largest channel bandwidth standalone SAR test requirements

i) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for 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 of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

ii) QPSK with 50% RB allocation

The procedures required for 1 RB allocation in i) are applied to measure the SAR for QPSK with 50% RB allocation.

iii) QPSK with 100% RB allocation

For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in i) and ii) are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

iv) Higher order modulations

For each modulation besides QPSK e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

B) Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

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

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

Table 4.2-2: Uplink-downlink configurations

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

According to Figure 4.2-1, one radio frame is configured by 10 subframes, which consist of Uplink-subframe, Downlink-subframe and Special subframe. For TDD-LTE, the Duty Cycle should be calculated on Uplink-subframes and Special subframes, due to Special subframe containing both Uplink transmissions. So for one radio frame, Duty Cycle can be calculated with formula as below. The count of Uplink subframes are according to Table 4.2-2:

Duty cycle = (30720Ts*Ups + Uplink Component*Specials)/(307200Ts)

About the uplink component of Special subframes, we can figure out by Table 4.2-1:

Uplink Component = UpPTS

In conclusion, for the TDD LTE Band, Duty Cycle can be calculated with formula as below. all these sets are ok when we test, or we can set as below.

Duty cycle =[(30720Ts*Ups) + UpPTS * Specials]/(307200Ts)

And we can get different Duty cycles under different configurations:

Uplink-downlink configuratin	Subframe number			Configuration of special subframe							
				Normal cyclic prefix in downlink				Extended cyclic prefix in downlink			
				Normal cyclic prefix in uplink		Extended cyclic prefix in uplink		Normal cyclic prefix in uplink		Extended cyclic prefix in uplink	
	D	S	U	configuration 0-4	configuration 5-9	configuration 0-4	configuration 5-9	configuration 0-3	configuration 4-7	configuration 0-3	configuration
0	2	2	6	61.43%	62.85%	61.67%	63.33%	61.43%	62.85%	61.67%	63.33%
1	4	2	4	41.43%	42.85%	41.67%	43.33%	41.43%	42.85%	41.67%	43.33%
2	6	2	2	21.43%	22.85%	21.67%	23.33%	21.43%	22.85%	21.67%	23.33%
3	6	1	3	30.71%	31.43%	30.83%	31.67%	30.71%	31.43%	30.83%	31.67%
4	7	1	2	20.71%	21.43%	20.83%	21.67%	20.71%	21.43%	20.83%	21.67%
5	8	1	1	10.71%	11.43%	10.83%	11.67%	10.71%	11.43%	10.83%	11.67%
6	3	2	5	51.43%	52.85%	51.67%	53.33%	51.43%	52.85%	51.67%	53.33%

For TDD LTE, SAR should be tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7 for Frame structure type 2.

7.3. Wi-Fi Test Configuration

For Wi-Fi SAR testing, a communication link is set up with the testing software for Wi-Fi mode test. During the test, at each test frequency channel, the EUT is operated at the RF continuous emission mode. The test procedures in KDB 248227D01 are applied.

7.3.1. Initial Test Position Procedure

For exposure condition with multiple test position, such as handsets operating next to the ear, devices with hotspot mode or UMPC mini-tablet, procedures for initial test position can be applied. Using the transmission mode determined by the DSSS procedure or initial test configuration, area scans are measured for all position in an exposure condition. The test position with the highest extrapolated (peak) SAR is used as the initial test position. When reported SAR for the initial test position is ≤ 0.4W/kg, no additional testing for the remaining test position is required. Otherwise, SAR is evaluated at the subsequent highest peak SAR position until the reported SAR result is ≤ 0.8W/kg or all test position are measured. For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

7.3.2. Initial Test Configuration Procedure

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 (see section 5.3.2 of KDB 248227D01). SAR test reduction of subsequent highest output test channels is based on the reported SAR of the initial test configuration.

For next to the ear, hotspot mode and UMC mini-tablet exposure configurations where multiple test positions are required, the initial test position procedure is applied to minimize the number of test positions required for SAR measurement using the initial test configuration transmission mode. For fixed exposure conditions that do not have multiple SAR test positions, SAR is measured in the transmission mode determined by the initial test configuration.

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

7.3.3. Sub Test Configuration Procedure

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.

When the highest reported SAR for the initial test configuration, 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.

7.3.4. 2.4GHz Wi-Fi SAR Test Procedures

Separate SAR procedures are applied to DSSS and OFDM configurations in the 2.4 GHz band to simplify DSSS test requirements. For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure test position and initial test position procedure applies to multiple exposure test positions.

A) 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. SAR test reduction is determined according to the following:

1) When the reported SAR of the highest measured maximum output power channel (section 3.1 of KDB 248227D01) for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
2) 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 i.e., all channels require testing.

B) 2.4GHz 802.11g/n OFDM SAR Test Exclusion Requirements

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied (section 5.3 of KDB 248227D01). SAR is not required for the following 2.4 GHz OFDM conditions.

1) When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.
2) When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

C) SAR Test Requirements for OFDM configurations

When SAR measurement is required for 802.11 g/n OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

7.3.5. 5GHz Wi-Fi SAR Test Procedures

U-NII-1 and U-NII-2A Bands

For devices that operate in only one of the U-NII-1 and U-NII-2A bands, the normally required SAR procedures for OFDM configurations are applied. For devices that operate in both U-NII bands using the same transmitter and antenna(s), SAR test reduction is determined according to the following:

1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, both bands are tested independently for SAR.
2) When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, both bands are tested independently for SAR.
3) The two U-NII bands may be aggregated to support a 160 MHz channel on channel number 50. Without additional testing, the maximum output power for this is limited to the lower of the maximum output power certified for the two bands. When SAR measurement is required for at least one of the bands and the highest reported SAR adjusted by the ratio of specified maximum output power of aggregated to standalone band is > 1.2 W/kg, SAR is required for the 160 MHz channel. This procedure does not apply to an aggregated band with maximum output higher than the standalone band(s); the aggregated band must be tested independently for SAR. SAR is not required when the 160 MHz channel is operating at a reduced maximum power and also

qualifies for SAR test exclusion.

U-NII-2C and U-NII-3 Bands

The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. when Terminal Doppler Weather Radar (TDWR) restriction applies, all channels that operate at 5.60 – 5.65 GHz must be included to apply the SAR test reduction and measurement procedures.

When the same transmitter and antenna(s) are used for U-NII-2C band and U-NII-3 band or 5.8 GHz band of §15.247, the bands may be aggregated to enable additional channels with 20, 40 or 80 MHz bandwidth to span across the band gap, as illustrated in Appendix B. The maximum output power for the additional band gap channels is limited to the lower of those certified for the bands. Unless band gap channels are permanently disabled, they must be considered for SAR testing. The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. To maintain SAR measurement accuracy and to facilitate test reduction, the channels in U-NII-2C band above 5.65 GHz may be grouped with the 5.8 GHz channels in U-NII-3 or §15.247 band to enable two SAR probe calibration frequency points to cover the bands, including the band gap channels. When band gap channels are supported and the bands are not aggregated for SAR testing, band gap channels must be considered independently in each band according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

7.3.6. OFDM Transmission Mode and SAR Test Channel Selection

When the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate. When the maximum output power of a channel is the same for equivalent OFDM configurations; for example, 802.11a, 802.11n and 802.11ac or 802.11g and 802.11n with the same channel bandwidth, modulation and data rate etc., the lower order 802.11 mode i.e., 802.11a, then 802.11n and 802.11ac or 802.11g then 802.11n, is used for SAR measurement. When the maximum output power are the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

7.3.7. 2.4GHz BT/BLE SAR Test Requirements

2.4GHz BT operating modes are tested independently according to the service requirements in each frequency band for each antenna. DH5 / 3DH5 / 1M SISO modes are tested on the maximum average output power mode.

7.3.8. Repeated measurements

Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg.18 If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations, which may introduce significant compliance concerns. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%, which are often related to device and measurement setup difficulties. The following procedures are applied to determine if repeated measurements are required. The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.19 The repeated measurement results must be clearly identified in the SAR report. All measured SAR, including the repeated results, must be considered to determine compliance and for reporting according to KDB Publication 690783.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.80 W/kg, 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 W/kg (~ 10% from the 1-g SAR limit).
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

8. Power reduction specification

8.1. Power reduction mechanism

This device uses a single fixed level of power reduction through static table look-up for SAR compliance and it is triggered by a single event or operation.

1) A fixed level power reduction is applied for some frequency bands when handset operate "held to the ear" condition, the power reduction triggered by audio receiver detection. The audio receiver detection is used to determine head or body scenario.

The following tables summarize the key power reduction information. The detailed full power which is the Max. power the state can use and reduced tune-up specifications and conducted power measurement results are provided in section 9 of this report.

standalone power level(dBm)								
Power Reduction Scenario	GSM850	WCDMA B4	WCDMA B5	LTE B2	LTE B4	LTE B5	LTE B26	LTE B66
Receiver on	28.5	23.5	23.0	24.0	24.0	21.5	23.0	24.0
Receiver off	33.0	22.5	24.5	22.5	23.0	24.5	24.0	23.0

8.2. Extremity exposure conditions

Per FCC KDB 648474D04, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the device is marketed as “Phablet”.
The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for Product Specific 10-g SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, Product Specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

9. Conducted Output Power Measurement and tune-up tolerance

9.1. GSM850

ANT2

GSM850		Channel 128	Channel 190	Channel 251	Tune-up Limit (dBm)	Division Factor	Channel 128	Channel 190	Channel 251	Tune-up Limit (dBm)
CS		32.30	32.59	32.69	33.0	\	\	\	\	33.0
GPRS/EGPRS (GMSK)	1 TimeSlot	32.38	32.53	32.60	33.0	-9.03	23.35	23.50	23.57	24.0
	2 TimeSlots	31.58	31.80	31.90	32.0	-6.02	25.56	25.78	25.88	26.0
	3 TimeSlots	29.76	29.99	30.13	30.5	-4.26	25.50	25.73	25.87	26.2
	4 TimeSlots	28.60	28.83	29.02	29.5	-3.01	25.59	25.82	26.01	**26.5**
EGPRS (8PSK)	1 TimeSlot	26.14	25.48	25.56	26.5	-9.03	17.11	16.45	16.53	17.5
	2 TimeSlots	24.96	24.48	24.68	25.0	-6.02	18.94	18.46	18.66	19.0
	3 TimeSlots	22.55	22.18	22.32	23.0	-4.26	18.29	17.92	18.06	18.7
	4 TimeSlots	21.09	20.80	20.94	21.5	-3.01	18.08	17.79	17.93	18.5

Receiver on
ANT2

GSM850		Channel 128	Channel 190	Channel 251	Tune-up Limit (dBm)	Division Factor	Channel 128	Channel 190	Channel 251	Tune-up Limit (dBm)
CS		27.85	28.17	28.21	28.5	\	\	\	\	28.5
GPRS/EGPRS (GMSK)	1 TimeSlot	27.90	28.19	28.10	28.5	-9.03	18.87	19.16	19.07	19.5
	2 TimeSlots	27.28	27.49	27.42	27.5	-6.02	21.26	21.47	21.40	21.5
	3 TimeSlots	25.35	25.56	25.79	26.0	-4.26	21.09	21.30	21.53	21.7
	4 TimeSlots	24.11	24.45	24.70	25.0	-3.01	21.10	21.44	21.69	**22.0**
EGPRS (8PSK)	1 TimeSlot	21.75	21.16	21.08	22.0	-9.03	12.72	12.13	12.05	13.0
	2 TimeSlots	20.64	20.10	20.18	21.0	-6.02	14.62	14.08	14.16	15.0
	3 TimeSlots	18.21	17.69	17.97	18.5	-4.26	13.95	13.43	13.71	14.2
	4 TimeSlots	16.71	16.40	16.51	17.0	-3.01	13.70	13.39	13.50	14.0

9.2. GSM1900

ANT1

GSM1900		Channel 512	Channel 661	Channel 810	Tune-up Limit (dBm)	Division Factor	Channel 512	Channel 661	Channel 810	Tune-up Limit (dBm)
CS		29.43	29.00	27.94	29.5	\	\	\	\	29.5
GPRS/EGPRS (GMSK)	1 TimeSlot	29.47	28.93	27.89	29.5	-9.03	20.44	19.90	18.86	20.5
	2 TimeSlots	28.69	28.26	27.24	29.0	-6.02	22.67	22.24	21.22	23.0
	3 TimeSlots	26.90	26.52	26.58	27.0	-4.26	22.64	22.26	22.32	22.7
	4 TimeSlots	25.74	25.41	25.51	26.0	-3.01	22.73	22.40	22.50	**23.0**
EGPRS (8PSK)	1 TimeSlot	25.52	24.48	24.15	26.0	-9.03	16.49	15.45	15.12	17.0
	2 TimeSlots	24.35	23.55	23.18	24.5	-6.02	18.33	17.53	17.16	**18.5**
	3 TimeSlots	21.64	21.05	20.95	22.0	-4.26	17.38	16.79	16.69	17.7
	4 TimeSlots	20.12	19.57	19.30	20.5	-3.01	17.11	16.56	16.29	17.5

9.3. WCDMA Band 2

ANT1

Band 2		Average Power (dBm)			Tune-up Limit (dBm)
		9262CH	9400CH	9538CH	
WCDMA	12.2kbps RMC	23.97	23.83	23.65	24.0
HSDPA	Subtest 1	23.02	22.82	22.68	23.5
	Subtest 2	22.95	22.81	22.52	23.0
	Subtest 3	22.94	22.71	22.51	23.0
	Subtest 4	22.93	22.58	22.52	23.0
HSUPA	Subtest 1	20.99	20.89	20.69	21.0
	Subtest 2	21.01	20.91	20.65	21.5
	Subtest 3	21.00	20.89	20.65	21.5
	Subtest 4	20.54	20.40	20.23	21.0
	Subtest 5	21.94	21.85	21.64	22.0

9.4. WCDMA Band 4

ANT1

Band 4		Average Power (dBm)			Tune-up Limit (dBm)
		1312CH	1413CH	1513CH	
WCDMA	12.2kbps RMC	23.44	23.34	23.44	23.5
HSDPA	Subtest 1	22.48	22.41	22.54	23.0
	Subtest 2	22.50	22.40	22.53	23.0
	Subtest 3	22.52	22.40	22.52	23.0
	Subtest 4	22.46	22.39	22.53	23.0
HSUPA	Subtest 1	20.49	20.51	20.57	21.0
	Subtest 2	20.55	20.47	20.58	21.0
	Subtest 3	21.59	21.48	21.57	22.0
	Subtest 4	20.08	19.99	20.08	20.5
	Subtest 5	21.52	21.45	21.55	22.0

Receiver off

ANT1

Band 4		Average Power (dBm)			Tune-up Limit (dBm)
		1312CH	1413CH	1513CH	
WCDMA	12.2kbps RMC	22.43	22.38	22.41	22.5
HSDPA	Subtest 1	21.50	21.38	21.53	22.0
	Subtest 2	21.50	21.42	21.53	22.0
	Subtest 3	21.49	21.45	21.57	22.0
	Subtest 4	21.46	21.44	21.53	22.0
HSUPA	Subtest 1	19.53	19.55	19.54	20.0
	Subtest 2	19.52	19.50	19.57	20.0
	Subtest 3	20.55	20.53	20.52	21.0
	Subtest 4	19.06	18.98	19.05	19.5
	Subtest 5	20.48	20.48	20.57	21.0

9.5. WCDMA Band 5

ANT2

Band 5		Average Power (dBm)			Tune-up Limit (dBm)
		4132CH	4183CH	4233CH	
WCDMA	12.2kbps RMC	23.86	23.94	24.02	24.5
HSDPA	Subtest 1	22.88	22.92	23.07	23.5
	Subtest 2	22.86	22.95	23.09	23.5
	Subtest 3	22.92	22.90	23.02	23.5
	Subtest 4	22.85	22.86	23.03	23.5
HSUPA	Subtest 1	20.87	20.95	21.02	21.5
	Subtest 2	20.92	20.93	21.03	21.5
	Subtest 3	21.92	21.96	22.08	22.5
	Subtest 4	20.87	20.54	20.64	21.0
	Subtest 5	21.85	21.90	22.09	22.5

Receiver on
ANT2

Band 5		Average Power (dBm)			Tune-up Limit (dBm)
		4132CH	4183CH	4233CH	
WCDMA	12.2kbps RMC	22.37	22.46	22.55	23.0
HSDPA	Subtest 1	21.40	21.45	21.60	22.0
	Subtest 2	21.38	21.49	21.63	22.0
	Subtest 3	21.46	21.45	21.54	22.0
	Subtest 4	21.35	21.41	21.55	22.0
HSUPA	Subtest 1	19.42	19.50	19.54	20.0
	Subtest 2	19.44	19.47	19.57	20.0
	Subtest 3	20.42	20.47	20.61	21.0
	Subtest 4	19.42	19.04	19.19	19.5
	Subtest 5	20.37	20.40	20.63	21.0

9.6. LTE Band 2

ANT1

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				18607	18900	19193	
1.4MHz	QPSK	1	0	23.62	23.57	23.28	24.0
		1	2	**23.86**	**23.87**	**23.52**	
		1	5	23.68	23.47	23.39	
		3	0	23.64	23.48	23.24	24.0
		3	1	**23.89**	**23.99**	**23.42**	
		3	3	23.67	23.63	23.38	
		6	0	**22.89**	22.63	22.37	23.0
	16QAM	1	0	22.99	22.82	22.41	23.0
		1	2	22.76	22.72	22.42	
		1	5	22.72	22.55	22.43	
		3	0	22.70	22.55	22.62	23.0
		3	1	22.75	22.97	22.48	
		3	3	22.67	22.46	22.37	
		6	0	22.00	21.48	21.70	22.0
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				18615	18900	19185	
3MHz	QPSK	1	0	23.65	23.72	**23.42**	24.0
		1	8	**23.75**	**23.87**	23.42	
		1	14	23.49	23.56	23.23	
		8	0	22.77	**22.83**	22.57	23.0
		8	4	22.84	**22.83**	**22.64**	
		8	7	**22.90**	22.55	22.50	
		15	0	**22.91**	22.64	22.36	23.0
	16QAM	1	0	22.65	22.43	22.45	23.0
		1	8	22.82	22.71	22.55	
		1	14	22.75	22.53	22.44	
		8	0	21.73	21.55	21.69	22.0
		8	4	21.90	21.80	21.50	
		8	7	21.96	21.53	21.42	
		15	0	21.84	21.68	21.43	22.0
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				18625	18900	19175	
5MHz	QPSK	1	0	23.79	23.53	23.39	24.0
		1	12	**23.90**	**23.94**	**23.59**	
		1	24	23.63	23.59	23.38	
		12	0	**22.99**	**22.68**	**22.59**	23.0
		12	6	22.79	22.59	22.40	
		12	13	22.87	22.64	22.54	
		25	0	**22.73**	22.48	22.57	23.0
	16QAM	1	0	22.70	22.67	22.55	23.0
		1	12	22.96	22.98	22.64	
		1	24	22.74	22.51	22.36	
		12	0	21.77	21.83	21.60	22.0
		12	6	21.97	21.76	21.59	
		12	13	21.67	21.81	21.57	
		25	0	21.70	21.50	21.53	22.0
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				18650	18900	19150	

10MHz	QPSK	1	0	23.59	23.66	23.27	24.0
		1	24	**23.97**	**23.98**	**23.68**	
		1	49	23.41	23.39	23.21	
		25	0	22.78	22.78	22.37	23.0
		25	12	**22.88**	**22.84**	22.48	
		25	25	22.88	22.54	**22.58**	
		50	0	**22.81**	22.36	22.57	23.0
	16QAM	1	0	22.87	22.70	22.60	23.0
		1	24	22.91	22.75	22.57	
		1	49	22.74	22.45	22.34	
		25	0	21.80	21.63	21.61	22.0
		25	12	21.84	21.63	21.54	
		25	25	21.70	21.60	21.65	
		50	0	21.97	21.58	21.47	22.0
Bandwidth	Modulation	RB size	RB offset	Channel 18675	Channel 18900	Channel 19125	Tune-up Limit (dBm)
15MHz	QPSK	1	0	23.49	23.68	23.50	24.0
		1	38	**23.68**	**23.86**	**23.51**	
		1	74	23.40	23.62	23.40	
		36	0	**23.00**	**22.77**	22.50	23.0
		36	18	22.85	22.65	**22.54**	
		36	37	22.66	22.61	22.35	
		75	0	**22.72**	22.45	22.45	23.0
	16QAM	1	0	22.65	22.62	22.74	23.0
		1	38	22.73	22.83	22.53	
		1	74	22.61	22.54	22.53	
		36	0	21.75	21.78	21.50	22.0
		36	18	21.89	21.87	21.43	
		36	37	21.77	21.79	21.45	
		75	0	21.92	21.63	21.43	22.0
Bandwidth	Modulation	RB size	RB offset	Channel 18700	Channel 18900	Channel 19100	Tune-up Limit (dBm)
20MHz	QPSK	1	0	23.64	23.60	23.37	24.0
		1	49	**23.82**	**23.89**	**23.56**	
		1	99	23.54	23.50	23.35	
		50	0	**22.85**	**22.73**	**22.49**	23.0
		50	25	**22.85**	**22.73**	**22.49**	
		50	50	22.75	22.66	22.45	
		100	0	**22.79**	22.50	22.49	23.0
	16QAM	1	0	22.79	22.57	22.59	23.0
		1	49	22.86	22.83	22.60	
		1	99	22.71	22.42	22.41	
		50	0	21.87	21.69	21.56	22.0
		50	25	21.92	21.72	21.53	
		50	50	21.81	21.68	21.51	
		100	0	21.85	21.57	21.52	22.0

Receiver off							
ANT1							
Bandwidth	Modulation	RB size	RB offset	Channel 18607	Channel 18900	Channel 19193	Tune-up Limit (dBm)
1.4MHz	QPSK	1	0	23.14	23.07	22.78	23.5
		1	2	**23.40**	**23.42**	**23.04**	
		1	5	23.20	23.02	22.90	
		3	0	23.19	22.99	22.76	23.5
		3	1	**23.39**	**23.42**	**22.94**	
		3	3	23.18	23.15	22.92	
		6	0	**22.44**	22.15	21.87	22.5
	16QAM	1	0	22.49	22.33	21.93	22.5
		1	2	22.29	22.27	21.96	
		1	5	22.27	22.09	21.94	
		3	0	22.25	22.10	22.12	22.5
		3	1	22.28	22.52	21.99	
		3	3	22.19	22.00	21.90	
		6	0	21.50	21.00	21.20	21.5
Bandwidth	Modulation	RB size	RB offset	Channel 18615	Channel 18900	Channel 19185	Tune-up Limit (dBm)
3MHz	QPSK	1	0	23.16	23.25	22.92	23.5
		1	8	**23.27**	**23.42**	**22.95**	
		1	14	23.01	23.10	22.77	
		8	0	22.29	**22.37**	22.07	22.5
		8	4	22.36	**22.37**	**22.17**	
		8	7	**22.43**	22.06	22.05	
		15	0	**22.46**	22.17	21.86	22.5
	16QAM	1	0	22.20	21.94	21.95	22.5
		1	8	22.37	22.22	22.08	
		1	14	22.29	22.05	21.98	
		8	0	21.25	21.05	21.20	21.5
		8	4	21.44	21.35	21.00	
		8	7	21.51	21.06	20.96	
		15	0	21.36	21.21	20.98	21.5
Bandwidth	Modulation	RB size	RB offset	Channel 18625	Channel 18900	Channel 19175	Tune-up Limit (dBm)
5MHz	QPSK	1	0	23.29	23.03	22.92	23.5
		1	12	**23.42**	**23.48**	**23.09**	
		1	24	23.16	23.14	22.88	
		12	0	**22.51**	**22.19**	**22.09**	22.5
		12	6	22.33	22.13	21.95	
		12	13	22.40	22.15	22.05	
		25	0	**22.23**	22.02	22.10	22.5
	16QAM	1	0	22.22	22.21	22.05	22.5
		1	12	22.47	22.53	22.14	
		1	24	22.27	22.01	21.91	
		12	0	21.30	21.34	21.10	21.5
		12	6	21.51	21.26	21.10	
		12	13	21.19	21.34	21.11	
		25	0	21.24	21.01	21.03	21.5
Bandwidth	Modulation	RB size	RB offset	Channel 18650	Channel 18900	Channel 19150	Tune-up Limit (dBm)

10MHz	QPSK	1	0	23.13	23.21	22.82	23.5
		1	24	**23.52**	**23.48**	**23.21**	
		1	49	22.96	22.92	22.73	
		25	0	22.28	22.33	21.91	22.5
		25	12	**22.38**	**22.37**	21.99	
		25	25	22.38	22.06	**22.11**	
		50	0	**22.31**	21.88	22.08	22.5
	16QAM	1	0	22.37	22.21	22.10	22.5
		1	24	22.46	22.30	22.10	
		1	49	22.24	21.97	21.88	
		25	0	21.33	21.14	21.16	21.5
		25	12	21.36	21.18	21.08	
		25	25	21.22	21.11	21.20	
		50	0	21.47	21.11	21.01	21.5
Bandwidth	Modulation	RB size	RB offset	Channel 18675	Channel 18900	Channel 19125	Tune-up Limit (dBm)
15MHz	QPSK	1	0	23.00	23.22	23.03	23.5
		1	38	**23.19**	**23.37**	**23.06**	
		1	74	22.94	23.16	22.92	
		36	0	**22.53**	**22.32**	22.05	22.5
		36	18	22.38	22.17	**22.07**	
		36	37	22.18	22.14	21.90	
		75	0	**22.22**	21.96	21.95	22.5
	16QAM	1	0	22.18	22.17	22.25	22.5
		1	38	22.28	22.33	22.07	
		1	74	22.13	22.09	22.06	
		36	0	21.27	21.29	21.01	21.5
		36	18	21.39	21.42	20.98	
		36	37	21.29	21.31	20.95	
		75	0	21.46	21.16	20.96	21.5
Bandwidth	Modulation	RB size	RB offset	Channel 18700	Channel 18900	Channel 19100	Tune-up Limit (dBm)
20MHz	QPSK	1	0	23.18	23.12	22.89	23.5
		1	49	**23.36**	**23.41**	**23.07**	
		1	99	23.06	23.00	22.87	
		50	0	**22.35**	**22.31**	**22.08**	22.5
		50	25	**22.35**	22.28	22.04	
		50	50	22.26	22.18	21.95	
		100	0	**22.31**	22.02	22.03	22.5
	16QAM	1	0	22.30	22.08	22.12	22.5
		1	49	22.36	22.33	22.13	
		1	99	22.21	21.92	21.94	
		50	0	21.38	21.24	21.09	21.5
		50	25	21.47	21.22	21.08	
		50	50	21.34	21.23	21.04	
		100	0	21.40	21.12	21.04	21.5

9.7. LTE Band 4

ANT1

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				19957	20175	20393	
1.4MHz	QPSK	1	0	23.34	23.18	23.16	24.0
		1	2	**23.64**	**23.47**	**23.38**	
		1	5	23.19	23.14	23.24	
		3	0	23.05	23.16	23.16	24.0
		3	1	**23.57**	**23.32**	**23.44**	
		3	3	23.11	23.06	23.16	
		6	0	**22.39**	22.31	22.20	22.5
	16QAM	1	0	22.39	22.07	22.13	22.5
		1	2	22.47	22.12	22.23	
		1	5	22.28	22.11	22.20	
		3	0	21.91	22.04	21.98	22.5
		3	1	22.32	22.14	22.29	
		3	3	22.27	21.95	22.16	
		6	0	21.23	21.35	21.35	21.5
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				19965	20175	20385	
3MHz	QPSK	1	0	23.35	23.16	23.18	24.0
		1	8	**23.67**	**23.32**	**23.35**	
		1	14	23.22	23.14	23.24	
		8	0	**22.43**	**22.26**	22.19	22.5
		8	4	**22.43**	22.16	22.10	
		8	7	22.29	22.11	**22.29**	
		15	0	**22.48**	22.20	22.05	22.5
	16QAM	1	0	22.04	22.06	22.13	22.5
		1	8	22.51	22.28	22.31	
		1	14	22.24	22.04	22.10	
		8	0	21.44	21.29	20.98	21.5
		8	4	21.31	21.12	21.23	
		8	7	21.35	21.17	21.40	
		15	0	21.33	21.10	21.13	21.5
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				19975	20175	20375	
5MHz	QPSK	1	0	23.31	23.28	23.14	24.0
		1	12	**23.50**	**23.47**	**23.50**	
		1	24	23.35	23.09	23.24	
		12	0	**22.47**	22.12	22.26	22.5
		12	6	22.27	**22.34**	**22.27**	
		12	13	22.28	22.12	22.12	
		25	0	**22.46**	22.09	22.16	22.5
	16QAM	1	0	22.01	22.07	22.07	22.5
		1	12	22.50	22.24	22.32	
		1	24	22.06	21.81	22.07	
		12	0	21.42	21.30	21.05	21.5
		12	6	21.23	21.31	21.20	
		12	13	21.40	21.12	21.40	
		25	0	21.43	21.08	21.10	21.5
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				20000	20175	20350	

10MHz	QPSK	1	0	23.14	23.17	23.16	24.0
		1	24	**23.58**	**23.31**	**23.50**	
		1	49	23.14	23.11	23.12	
		25	0	22.25	**22.21**	22.17	22.5
		25	12	22.26	22.20	22.13	
		25	25	**22.52**	22.09	**22.33**	
		50	0	**22.38**	22.28	22.06	22.5
	16QAM	1	0	22.14	22.14	22.06	22.5
		1	24	22.27	22.27	22.36	
		1	49	22.08	21.96	22.27	
		25	0	21.33	21.16	21.24	21.5
		25	12	21.18	21.27	21.04	
		25	25	21.43	21.05	21.33	
		50	0	21.21	21.28	21.15	21.5

Bandwidth	Modulation	RB size	RB offset	Channel 20025	Channel 20175	Channel 20325	Tune-up Limit (dBm)
15MHz	QPSK	1	0	23.14	23.18	23.22	24.0
		1	38	**23.53**	**23.47**	**23.32**	
		1	74	23.23	23.12	23.11	
		36	0	**22.29**	22.26	22.15	22.5
		36	18	22.28	**22.34**	**22.35**	
		36	37	22.27	22.27	22.22	
		75	0	**22.27**	22.03	22.17	22.5
	16QAM	1	0	22.02	22.17	22.00	22.5
		1	38	22.37	22.04	22.50	
		1	74	22.17	21.92	22.29	
		36	0	21.42	21.39	21.28	21.5
		36	18	21.39	21.42	21.09	
		36	37	21.48	21.10	21.28	
		75	0	21.49	21.10	21.20	21.5

Bandwidth	Modulation	RB size	RB offset	Channel 20050	Channel 20175	Channel 20300	Tune-up Limit (dBm)
20MHz	QPSK	1	0	23.20	23.21	23.07	24.0
		1	49	**23.53**	**23.38**	**23.37**	
		1	99	23.25	23.07	23.13	
		50	0	22.32	22.20	22.12	22.5
		50	25	22.30	**22.22**	22.20	
		50	50	**22.38**	22.20	**22.23**	
		100	0	**22.37**	22.18	22.17	22.5
	16QAM	1	0	22.03	22.10	22.10	22.5
		1	49	22.38	22.19	22.44	
		1	99	22.14	21.95	22.19	
		50	0	21.35	21.26	21.13	21.5
		50	25	21.31	21.27	21.16	
		50	50	21.42	21.17	21.29	
		100	0	21.35	21.15	21.15	21.5

Receiver off							
ANT1							
Bandwidth	Modulation	RB size	RB offset	Channel 19957	Channel 20175	Channel 20393	Tune-up Limit (dBm)
1.4MHz	QPSK	1	0	21.89	21.77	21.79	22.5
		1	2	22.25	22.03	21.94	
		1	5	21.81	21.81	21.83	
		3	0	21.59	21.68	21.78	22.5
		3	1	22.08	21.94	21.95	
		3	3	21.77	21.70	21.78	
		6	0	20.99	20.99	20.90	21.0
	16QAM	1	0	21.09	20.70	20.65	21.0
		1	2	21.02	20.62	20.80	
		1	5	20.94	20.81	20.83	
		3	0	20.42	20.73	20.66	21.0
		3	1	20.83	20.80	20.84	
		3	3	20.93	20.53	20.86	
		6	0	19.80	19.97	20.00	20.5
Bandwidth	Modulation	RB size	RB offset	Channel 19965	Channel 20175	Channel 20385	Tune-up Limit (dBm)
3MHz	QPSK	1	0	22.04	21.78	21.78	22.5
		1	8	22.26	21.93	21.91	
		1	14	21.86	21.73	21.89	
		8	0	21.02	20.91	20.71	21.0
		8	4	21.03	20.70	20.62	
		8	7	20.95	20.69	20.80	
		15	0	21.15	20.82	20.73	21.0
	16QAM	1	0	20.74	20.56	20.81	21.5
		1	8	21.01	20.88	20.88	
		1	14	20.89	20.57	20.74	
		8	0	20.01	19.81	19.63	20.5
		8	4	19.93	19.78	19.88	
		8	7	19.90	19.71	20.00	
		15	0	19.91	19.75	19.69	20.5
Bandwidth	Modulation	RB size	RB offset	Channel 19975	Channel 20175	Channel 20375	Tune-up Limit (dBm)
5MHz	QPSK	1	0	21.97	21.95	21.69	22.5
		1	12	22.18	22.11	22.15	
		1	24	21.85	21.63	21.74	
		12	0	20.99	20.66	20.77	21.0
		12	6	20.84	20.87	20.90	
		12	13	20.87	20.70	20.73	
		25	0	21.05	20.78	20.73	21.0
	16QAM	1	0	20.58	20.57	20.57	21.5
		1	12	21.09	20.81	20.89	
		1	24	20.63	20.50	20.67	
		12	0	20.00	19.90	19.63	20.5
		12	6	19.90	19.88	19.73	
		12	13	19.90	19.79	19.90	
		25	0	20.08	19.74	19.70	20.5
Bandwidth	Modulation	RB size	RB offset	Channel 20000	Channel 20175	Channel 20350	Tune-up Limit (dBm)

10MHz	QPSK	1	0	21.78	21.85	21.67	22.5
		1	24	22.22	21.94	22.10	
		1	49	21.83	21.79	21.71	
		25	0	20.91	20.72	20.87	21.0
		25	12	20.80	20.78	20.69	
		25	25	21.12	20.63	21.02	
		50	0	21.00	20.90	20.63	21.0
	16QAM	1	0	20.79	20.74	20.61	21.5
		1	24	20.78	20.97	20.96	
		1	49	20.67	20.54	20.79	
		25	0	20.01	19.67	19.75	20.5
		25	12	19.69	19.84	19.59	
		25	25	20.12	19.61	19.92	
		50	0	19.73	19.79	19.67	20.5
Bandwidth	Modulation	RB size	RB offset	Channel 20025	Channel 20175	Channel 20325	Tune-up Limit (dBm)
15MHz	QPSK	1	0	21.69	21.71	21.76	22.5
		1	38	22.14	22.08	22.02	
		1	74	21.73	21.62	21.73	
		36	0	20.91	20.81	20.76	21.0
		36	18	20.93	20.91	20.97	
		36	37	20.90	20.90	20.90	
		75	0	20.97	20.54	20.72	21.0
	16QAM	1	0	20.63	20.84	20.54	21.5
		1	38	20.88	20.59	21.00	
		1	74	20.67	20.53	20.85	
		36	0	19.96	20.09	19.97	20.5
		36	18	19.97	19.93	19.76	
		36	37	19.98	19.80	19.92	
		75	0	20.06	19.65	19.84	20.5
Bandwidth	Modulation	RB size	RB offset	Channel 20050	Channel 20175	Channel 20300	Tune-up Limit (dBm)
20MHz	QPSK	1	0	21.82	21.73	21.58	22.5
		1	49	**22.16**	**21.98**	**21.97**	
		1	99	21.86	21.76	21.83	
		50	0	**20.97**	20.80	20.72	21.0
		50	25	20.81	20.80	20.76	
		50	50	**20.97**	**20.82**	**20.91**	
		100	0	**20.90**	20.85	20.85	21.0
	16QAM	1	0	20.54	20.61	20.67	21.5
		1	49	21.03	20.87	21.10	
		1	99	20.66	20.46	20.71	
		50	0	19.86	19.82	19.78	20.5
		50	25	19.88	19.94	19.77	
		50	50	20.05	19.67	19.94	
		100	0	19.88	19.75	19.74	20.5

9.8. LTE Band 5

ANT2

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				20407	20525	20643	
1.4MHz	QPSK	1	0	**24.05**	23.89	**24.25**	24.5
		1	2	23.93	**24.31**	24.05	
		1	5	23.99	24.28	24.24	
		3	0	23.99	24.01	24.14	24.5
		3	1	23.90	**24.09**	24.12	
		3	3	**24.04**	24.07	**24.31**	
		6	0	22.93	**23.12**	23.06	23.5
	16QAM	1	0	23.07	23.10	23.17	23.5
		1	2	22.88	23.20	23.09	
		1	5	23.10	23.11	23.19	
		3	0	23.24	23.19	23.27	23.5
		3	1	23.04	23.00	23.35	
		3	3	22.93	23.14	23.16	
		6	0	22.12	22.33	22.15	22.5
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				20415	20525	20635	
3MHz	QPSK	1	0	**24.12**	24.04	24.08	24.5
		1	8	24.05	24.05	**24.13**	
		1	14	24.04	**24.23**	24.07	
		8	0	**23.20**	23.32	**23.19**	23.5
		8	4	23.16	23.15	23.05	
		8	7	23.02	**23.37**	23.14	
		15	0	22.96	**23.19**	23.06	23.5
	16QAM	1	0	23.01	22.94	23.23	23.5
		1	8	23.06	22.97	23.29	
		1	14	22.95	23.15	23.33	
		8	0	22.22	22.18	22.16	22.5
		8	4	22.19	22.13	22.33	
		8	7	21.95	22.31	22.09	
		15	0	21.97	22.36	22.00	22.5
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				20425	20525	20625	
5MHz	QPSK	1	0	24.09	23.88	24.18	24.5
		1	12	**24.11**	24.13	**24.27**	
		1	24	23.91	**24.14**	**24.27**	
		12	0	23.02	23.12	23.07	23.5
		12	6	**23.17**	23.17	**23.26**	
		12	13	22.93	**23.28**	23.12	
		25	0	23.10	23.25	**23.28**	23.5
	16QAM	1	0	23.13	23.20	23.03	23.5
		1	12	23.16	22.99	23.11	
		1	24	23.22	23.28	23.35	
		12	0	22.17	22.34	22.31	22.5
		12	6	22.21	22.17	22.08	
		12	13	21.94	22.35	22.07	
		25	0	22.09	22.33	22.09	22.5
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				20450	20525	20600	

10MHz	QPSK	1	0	**24.07**	24.02	24.13	24.5
		1	24	24.04	**24.16**	24.12	
		1	49	23.98	24.15	**24.16**	
		25	0	**23.06**	23.08	23.10	23.5
		25	12	23.02	23.08	**23.12**	
		25	25	22.94	**23.11**	23.04	
		50	0	23.06	**23.19**	23.15	23.5
	16QAM	1	0	23.09	23.09	23.18	23.5
		1	24	23.07	23.12	23.22	
		1	49	23.07	23.19	23.21	
		25	0	22.09	22.20	22.16	22.5
		25	12	22.10	22.26	22.18	
		25	25	21.97	22.23	22.12	
		50	0	22.05	22.24	22.11	22.5

Receiver on ANT2							
Bandwidth	Modulation	RB size	RB offset	Channel 20407	Channel 20525	Channel 20643	Tune-up Limit (dBm)
1.4MHz	QPSK	1	0	21.10	20.93	21.32	21.5
		1	2	21.01	21.36	21.09	
		1	5	21.03	21.36	21.33	
		3	0	21.07	21.03	21.15	21.5
		3	1	20.97	21.16	21.14	
		3	3	21.06	21.13	21.40	
		6	0	20.01	20.18	20.15	20.5
	16QAM	1	0	20.07	20.14	20.22	20.5
		1	2	19.95	20.23	20.13	
		1	5	20.17	20.20	20.21	
		3	0	20.25	20.28	20.28	20.5
		3	1	20.04	20.07	20.44	
		3	3	19.99	20.21	20.16	
		6	0	19.12	19.42	19.19	19.5
Bandwidth	Modulation	RB size	RB offset	Channel 20415	Channel 20525	Channel 20635	Tune-up Limit (dBm)
3MHz	QPSK	1	0	21.18	21.13	21.17	21.5
		1	8	21.10	21.13	21.13	
		1	14	21.05	21.29	21.09	
		8	0	20.20	20.39	20.23	20.5
		8	4	20.19	20.22	20.11	
		8	7	20.05	20.39	20.23	
		15	0	20.03	20.20	20.14	20.5
	16QAM	1	0	20.05	19.96	20.23	20.5
		1	8	20.07	20.04	20.29	
		1	14	20.01	20.20	20.37	
		8	0	19.30	19.18	19.18	19.5
		8	4	19.19	19.15	19.35	
		8	7	19.04	19.36	19.17	
		15	0	19.03	19.38	19.04	19.5
Bandwidth	Modulation	RB size	RB offset	Channel 20425	Channel 20525	Channel 20625	Tune-up Limit (dBm)
5MHz	QPSK	1	0	21.10	20.88	21.21	21.5
		1	12	21.13	21.18	21.30	
		1	24	21.00	21.23	21.27	
		12	0	20.05	20.17	20.13	20.5
		12	6	20.25	20.19	20.28	
		12	13	20.01	20.31	20.12	
		25	0	20.18	20.29	20.30	20.5
	16QAM	1	0	20.21	20.26	20.13	20.5
		1	12	20.24	20.06	20.14	
		1	24	20.31	20.30	20.43	
		12	0	19.23	19.44	19.36	19.5
		12	6	19.27	19.18	19.09	
		12	13	19.03	19.41	19.12	
		25	0	19.09	19.34	19.11	19.5
Bandwidth	Modulation	RB size	RB offset	Channel 20450	Channel 20525	Channel 20600	Tune-up Limit (dBm)

10MHz	QPSK	1	0	21.17	21.11	21.15	21.5
		1	24	21.08	21.25	21.14	
		1	49	21.03	21.22	21.17	
		25	0	20.16	20.11	20.19	20.5
		25	12	20.06	20.09	20.19	
		25	25	19.95	20.14	20.05	
		50	0	20.11	20.25	20.18	20.5
	16QAM	1	0	20.15	20.19	20.19	20.5
		1	24	20.17	20.21	20.32	
		1	49	20.13	20.28	20.21	
		25	0	19.09	19.20	19.18	19.5
		25	12	19.19	19.34	19.28	
		25	25	19.01	19.31	19.16	
		50	0	19.14	19.34	19.21	19.5

9.9. LTE Band 12

ANT2

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				23017	23095	23173	
1.4MHz	QPSK	1	0	24.26	24.12	24.02	24.5
		1	2	**24.38**	24.15	24.01	
		1	5	24.17	**24.25**	**24.08**	
		3	0	24.26	24.25	24.20	24.5
		3	1	**24.30**	**24.34**	**24.22**	
		3	3	24.16	24.08	24.13	
		6	0	**23.42**	23.16	23.11	23.5
	16QAM	1	0	23.23	23.11	23.02	23.5
		1	2	23.15	23.23	23.07	
		1	5	23.33	23.02	23.15	
		3	0	23.03	23.00	23.12	23.5
		3	1	23.31	22.88	23.15	
		3	3	23.17	23.07	23.09	
		6	0	22.18	22.31	22.07	22.5
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				23025	23095	23165	
3MHz	QPSK	1	0	24.09	**24.35**	24.00	24.5
		1	8	**24.28**	**24.35**	**24.21**	
		1	14	24.04	24.04	24.06	
		8	0	23.27	23.04	23.05	23.5
		8	4	**23.45**	**23.22**	**23.17**	
		8	7	23.32	23.09	23.15	
		15	0	**23.43**	22.95	23.17	23.5
	16QAM	1	0	23.28	22.94	23.07	23.5
		1	8	23.33	23.03	23.07	
		1	14	23.09	23.03	23.12	
		8	0	22.23	22.28	22.00	22.5
		8	4	22.34	22.07	21.92	
		8	7	22.24	22.13	22.10	
		15	0	22.40	22.07	22.03	22.5
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				23035	23095	23155	
5MHz	QPSK	1	0	24.29	**24.16**	23.91	24.5
		1	12	**24.35**	**24.16**	**24.15**	
		1	24	24.19	24.01	24.04	
		12	0	23.29	23.07	23.05	23.5
		12	6	23.28	**23.08**	**23.23**	
		12	13	**23.43**	23.00	23.09	
		25	0	**23.29**	23.00	22.99	23.5
	16QAM	1	0	23.25	22.93	23.03	23.5
		1	12	23.36	23.00	23.15	
		1	24	23.19	23.11	23.03	
		12	0	22.42	22.06	22.20	22.5
		12	6	22.32	22.29	22.14	
		12	13	22.38	22.17	22.15	
		25	0	22.41	22.02	22.15	22.5
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				23060	23095	23130	

10MHz	QPSK	1	0	24.22	24.21	24.06	24.5
		1	24	**24.35**	**24.28**	**24.14**	
		1	49	24.14	24.14	24.12	
		25	0	**23.34**	23.12	23.10	23.5
		25	12	**23.34**	**23.14**	23.11	
		25	25	23.30	23.09	**23.15**	
		50	0	**23.31**	23.06	23.14	23.5
	16QAM	1	0	23.13	23.06	23.10	23.5
		1	24	23.31	22.98	23.18	
		1	49	23.04	22.98	23.13	
		25	0	22.34	22.17	22.07	22.5
		25	12	22.35	22.19	22.04	
		25	25	22.33	22.13	22.11	
		50	0	22.37	22.15	22.10	22.5

9.10. LTE Band 13

ANT2

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				23205	23230	23255	
5MHz	QPSK	1	0	24.07	24.19	24.11	24.5
		1	12	**24.37**	**24.31**	**24.49**	
		1	24	23.95	23.96	24.03	
		12	0	23.17	23.21	**23.47**	23.5
		12	6	23.08	**23.25**	23.46	
		12	13	**23.34**	23.08	23.37	
		25	0	**23.34**	23.15	23.14	23.5
	16QAM	1	0	23.17	23.08	23.24	23.5
		1	12	23.34	23.27	23.20	
		1	24	23.10	23.05	23.15	
		12	0	22.22	22.17	22.50	22.5
		12	6	22.41	22.46	22.34	
		12	13	22.33	22.34	22.12	
		25	0	22.18	22.09	22.36	22.5
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				N/A	23230	N/A	
10MHz	QPSK	1	0	N/A	24.18	N/A	24.5
		1	24	N/A	**24.30**	N/A	
		1	49	N/A	24.10	N/A	
		25	0	N/A	**23.28**	N/A	23.5
		25	12	N/A	23.27	N/A	
		25	25	N/A	23.23	N/A	
		50	0	N/A	**23.24**	N/A	23.5
	16QAM	1	0	N/A	23.24	N/A	23.5
		1	24	N/A	23.31	N/A	
		1	49	N/A	23.06	N/A	
		25	0	N/A	22.30	N/A	22.5
		25	12	N/A	22.26	N/A	
		25	25	N/A	22.24	N/A	
		50	0	N/A	22.25	N/A	22.5

9.11. LTE Band 25

ANT2

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				26047	26365	26683	
1.4MHz	QPSK	1	0	23.52	23.57	23.30	24.0
		1	2	**23.89**	**23.87**	**23.63**	
		1	5	23.52	23.53	23.11	
		3	0	23.64	23.49	23.49	24.0
		3	1	**23.88**	**23.93**	**23.62**	
		3	3	23.64	23.55	23.22	
		6	0	**22.82**	22.68	21.91	23.0
	16QAM	1	0	22.76	22.81	22.04	23.0
		1	2	22.71	22.57	22.19	
		1	5	22.61	22.62	22.15	
		3	0	22.56	22.45	22.68	23.0
		3	1	22.78	22.78	22.57	
		3	3	22.51	22.37	22.17	
		6	0	21.96	21.80	21.14	22.0
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				26055	26365	26675	
3MHz	QPSK	1	0	23.46	**23.72**	23.53	24.0
		1	8	**23.92**	23.68	**23.79**	
		1	14	23.57	23.56	23.13	
		8	0	22.78	**22.71**	21.68	23.0
		8	4	**22.88**	22.61	21.87	
		8	7	22.78	22.48	**22.26**	
		15	0	**22.88**	22.68	22.11	23.0
	16QAM	1	0	22.51	22.62	22.64	23.0
		1	8	22.96	22.73	22.47	
		1	14	22.35	22.52	22.15	
		8	0	21.92	21.62	20.77	22.0
		8	4	21.78	21.57	21.12	
		8	7	21.79	21.45	21.09	
		15	0	21.88	21.63	21.11	22.0
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				26065	26365	26665	
5MHz	QPSK	1	0	23.49	23.49	23.40	24.0
		1	12	**23.91**	**23.72**	**23.70**	
		1	24	23.60	23.41	23.27	
		12	0	22.73	**22.81**	21.97	23.0
		12	6	**22.81**	22.73	21.91	
		12	13	22.78	22.45	**22.19**	
		25	0	**22.83**	22.63	22.11	23.0
	16QAM	1	0	22.48	22.57	22.53	23.0
		1	12	22.83	22.59	22.59	
		1	24	22.50	22.37	22.10	
		12	0	21.92	21.73	20.81	22.0
		12	6	21.95	21.65	21.22	
		12	13	21.70	21.56	21.03	
		25	0	21.79	21.57	21.07	22.0
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				26090	26365	26640	

10MHz	QPSK	1	0	23.72	23.74	23.40	24.0
		1	24	**23.95**	**23.76**	**23.74**	
		1	49	23.40	23.57	23.32	
		25	0	22.90	**22.61**	21.93	23.0
		25	12	22.80	22.59	21.89	
		25	25	**22.94**	22.43	**22.14**	
		50	0	**22.80**	22.60	22.11	23.0
	16QAM	1	0	22.43	22.60	22.70	23.0
		1	24	22.66	22.49	22.71	
		1	49	22.60	22.37	22.13	
		25	0	21.75	21.86	20.74	22.0
		25	12	21.75	21.67	21.02	
		25	25	21.77	21.61	21.15	
		50	0	21.88	21.73	20.98	22.0
Bandwidth	Modulation	RB size	RB offset	Channel 26115	Channel 26365	Channel 26615	Tune-up Limit (dBm)
15MHz	QPSK	1	0	23.56	23.66	23.53	24.0
		1	38	**23.95**	**23.69**	**23.56**	
		1	74	23.51	23.41	23.10	
		36	0	22.74	**22.81**	21.86	23.0
		36	18	22.80	22.77	21.85	
		36	37	**22.89**	22.59	**22.20**	
		75	0	**22.76**	22.69	22.16	23.0
	16QAM	1	0	22.41	22.51	22.59	23.0
		1	38	22.75	22.55	22.65	
		1	74	22.56	22.34	22.15	
		36	0	21.93	21.72	20.95	22.0
		36	18	21.92	21.64	21.16	
		36	37	21.62	21.45	21.11	
		75	0	21.72	21.60	21.17	22.0
Bandwidth	Modulation	RB size	RB offset	Channel 26140	Channel 26365	Channel 26590	Tune-up Limit (dBm)
20MHz	QPSK	1	0	23.60	23.60	23.40	24.0
		1	49	**23.94**	**23.80**	**23.67**	
		1	99	23.55	23.42	23.25	
		50	0	**22.83**	22.69	21.82	23.0
		50	25	**22.83**	**22.72**	21.98	
		50	50	22.79	22.53	**22.20**	
		100	0	**22.76**	22.60	22.22	23.0
	16QAM	1	0	22.50	22.51	22.57	23.0
		1	49	22.81	22.64	22.62	
		1	99	22.48	22.37	22.09	
		50	0	21.89	21.72	20.86	22.0
		50	25	21.88	21.68	21.13	
		50	50	21.76	21.57	21.06	
		100	0	21.80	21.60	21.08	22.0

9.12. LTE Band 26

ANT2

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				26697	26865	27033	
1.4MHz	QPSK	1	0	**23.73**	**23.87**	23.30	24.0
		1	2	23.63	23.68	**23.66**	
		1	5	23.54	23.43	23.53	
		3	0	23.57	**23.72**	23.41	24.0
		3	1	23.64	23.41	**23.62**	
		3	3	**23.73**	23.25	23.60	
		6	0	22.39	**22.65**	22.57	23.0
	16QAM	1	0	22.74	22.66	22.60	23.0
		1	2	22.84	22.51	22.48	
		1	5	22.73	22.64	22.57	
		3	0	22.56	22.57	22.27	23.0
		3	1	22.41	22.56	22.37	
		3	3	22.54	22.49	22.42	
		6	0	22.82	22.66	22.39	23.0
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				26705	26865	27025	
3MHz	QPSK	1	0	23.47	**23.88**	23.29	24.0
		1	8	**23.80**	23.54	**23.69**	
		1	14	23.72	23.49	23.42	
		8	0	22.51	**22.79**	22.58	23.0
		8	4	22.51	22.53	**22.59**	
		8	7	**22.95**	22.57	22.33	
		15	0	**22.76**	22.69	22.62	23.0
	16QAM	1	0	22.39	22.60	22.09	23.0
		1	8	22.28	22.67	22.49	
		1	14	22.62	22.64	22.26	
		8	0	22.83	22.72	22.52	23.0
		8	4	22.68	22.65	22.57	
		8	7	22.89	22.63	22.60	
		15	0	21.59	21.59	21.43	23.0
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				26715	26865	27015	
5MHz	QPSK	1	0	23.56	**23.84**	23.37	24.0
		1	12	**23.78**	23.68	**23.69**	
		1	24	23.66	23.45	23.41	
		12	0	22.52	22.59	**22.65**	23.0
		12	6	22.57	22.59	22.49	
		12	13	**22.80**	**22.68**	22.40	
		25	0	22.54	**22.56**	22.51	23.0
	16QAM	1	0	22.45	22.69	22.32	23.0
		1	12	22.40	22.45	22.24	
		1	24	22.39	22.46	22.37	
		12	0	22.83	22.69	22.62	23.0
		12	6	22.80	22.58	22.42	
		12	13	22.81	22.70	22.50	
		25	0	21.60	21.55	21.68	23.0
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune-up Limit (dBm)
				26740	26865	26990	

10MHz	QPSK	1	0	23.72	**23.81**	23.47	24.0
		1	24	**23.72**	23.45	**23.76**	
		1	49	23.51	23.39	23.55	
		25	0	22.62	22.49	**22.65**	23.0
		25	12	22.52	22.61	22.44	
		25	25	**22.67**	**22.62**	22.48	
		50	0	**22.79**	22.65	22.46	23.0
	16QAM	1	0	22.38	22.57	22.06	23.0
		1	24	22.32	22.46	22.43	
		1	49	22.42	22.53	22.19	
		25	0	22.81	22.55	22.53	23.0
		25	12	22.85	22.63	22.49	
		25	25	22.64	22.71	22.44	
		50	0	21.78	21.65	21.65	23.0

Bandwidth	Modulation	RB size	RB offset	Channel 26765	Channel 26865	Channel 26965	Tune-up Limit (dBm)
15MHz	QPSK	1	0	23.61	**23.76**	23.42	24.0
		1	38	**23.69**	23.54	**23.63**	
		1	74	23.59	23.35	23.50	
		36	0	22.54	**22.64**	**22.51**	23.0
		36	18	22.60	22.59	22.48	
		36	37	**22.81**	22.60	22.47	
		75	0	**22.68**	22.56	22.53	23.0
	16QAM	1	0	22.46	22.72	22.17	23.0
		1	38	22.43	22.54	22.38	
		1	74	22.50	22.56	22.27	
		36	0	22.73	22.60	22.51	23.0
		36	18	22.82	22.66	22.54	
		36	37	22.79	22.56	22.50	
		75	0	21.64	21.63	21.58	23.0

Receiver on ANT2							
Bandwidth	Modulation	RB size	RB offset	Channel 26697	Channel 26865	Channel 27033	Tune-up Limit (dBm)
1.4MHz	QPSK	1	0	22.77	22.86	22.31	23.0
		1	2	22.61	22.72	22.62	
		1	5	22.49	22.41	22.55	
		3	0	22.52	22.74	22.39	23.0
		3	1	22.64	22.36	22.63	
		3	3	22.76	22.30	22.57	
		6	0	21.44	21.64	21.58	22.0
	16QAM	1	0	21.77	21.68	21.64	22.0
		1	2	21.85	21.52	21.53	
		1	5	21.73	21.63	21.52	
		3	0	21.61	21.60	21.30	22.0
		3	1	21.36	21.53	21.35	
		3	3	21.52	21.51	21.46	
		6	0	21.79	21.69	21.35	22.0
Bandwidth	Modulation	RB size	RB offset	Channel 26705	Channel 26865	Channel 27025	Tune-up Limit (dBm)
3MHz	QPSK	1	0	22.48	22.84	22.28	23.0
		1	8	22.80	22.52	22.69	
		1	14	22.72	22.53	22.44	
		8	0	21.46	21.75	21.58	22.0
		8	4	21.50	21.49	21.64	
		8	7	21.95	21.60	21.38	
		15	0	21.71	21.68	21.58	22.0
	16QAM	1	0	21.38	21.61	21.08	22.0
		1	8	21.32	21.62	21.52	
		1	14	21.60	21.65	21.31	
		8	0	21.79	21.73	21.50	22.0
		8	4	21.69	21.65	21.55	
		8	7	21.86	21.63	21.63	
		15	0	20.58	20.57	20.43	22.0
Bandwidth	Modulation	RB size	RB offset	Channel 26715	Channel 26865	Channel 27015	Tune-up Limit (dBm)
5MHz	QPSK	1	0	22.57	22.82	22.40	23.0
		1	12	22.79	22.70	22.69	
		1	24	22.69	22.49	22.43	
		12	0	21.54	21.58	21.70	22.0
		12	6	21.61	21.64	21.52	
		12	13	21.77	21.72	21.41	
		25	0	21.51	21.61	21.48	22.0
	16QAM	1	0	21.48	21.67	21.37	22.0
		1	12	21.37	21.41	21.21	
		1	24	21.38	21.46	21.34	
		12	0	21.83	21.66	21.64	22.0
		12	6	21.83	21.63	21.37	
		12	13	21.82	21.71	21.52	
		25	0	20.62	20.57	20.64	22.0
Bandwidth	Modulation	RB size	RB offset	Channel 26740	Channel 26865	Channel 26990	Tune-up Limit (dBm)

10MHz	QPSK	1	0	22.69	22.84	22.52	23.0
		1	24	22.74	22.42	22.72	
		1	49	22.50	22.34	22.60	
		25	0	21.65	21.52	21.64	22.0
		25	12	21.54	21.65	21.46	
		25	25	21.67	21.60	21.43	
		50	0	21.74	21.64	21.42	22.0
	16QAM	1	0	21.43	21.54	21.05	22.0
		1	24	21.30	21.49	21.47	
		1	49	21.37	21.56	21.20	
		25	0	21.80	21.57	21.48	22.0
		25	12	21.83	21.64	21.50	
		25	25	21.59	21.76	21.43	
		50	0	20.78	20.68	20.65	22.0
Bandwidth	Modulation	RB size	RB offset	Channel 26765	Channel 26865	Channel 26965	Tune-up Limit (dBm)
15MHz	QPSK	1	0	22.66	**22.76**	22.38	23.0
		1	38	**22.74**	22.59	**22.58**	
		1	74	22.56	22.36	22.54	
		36	0	21.53	**21.64**	**21.52**	22.0
		36	18	21.65	**21.64**	21.48	
		36	37	**21.79**	**21.64**	21.44	
		75	0	**21.73**	21.53	21.50	22.0
	16QAM	1	0	21.43	21.73	21.20	22.0
		1	38	21.38	21.57	21.41	
		1	74	21.53	21.58	21.26	
		36	0	21.69	21.60	21.55	22.0
		36	18	21.87	21.66	21.54	
		36	37	21.83	21.61	21.55	
		75	0	20.62	20.58	20.63	22.0

9.13. LTE Band 41

ANT1

Bandwidth	Modulation	RB size	RB offset	Channel 39675	Channel 40620	Channel 41565	Tune-up Limit (dBm)
5MHz	QPSK	1	0	22.26	22.03	21.92	22.5
		1	12	**22.47**	**22.28**	**22.11**	
		1	24	22.12	21.99	21.75	
		12	0	21.18	21.09	20.88	21.5
		12	6	21.22	**21.15**	**20.95**	
		12	13	**21.41**	21.11	20.88	
		25	0	**21.25**	21.10	21.13	21.5
	16QAM	1	0	21.21	20.84	20.54	21.5
		1	12	21.44	21.32	20.64	
		1	24	21.19	20.95	20.46	
		12	0	20.13	20.18	20.00	20.5
		12	6	20.28	20.07	20.21	
		12	13	20.24	20.18	20.16	
		25	0	20.20	20.01	19.98	20.5

Bandwidth	Modulation	RB size	RB offset	Channel 39700	Channel 40620	Channel 41540	Tune-up Limit (dBm)
10MHz	QPSK	1	0	22.02	21.98	21.83	22.5
		1	24	**22.48**	**22.13**	**21.96**	
		1	49	22.32	22.01	21.82	
		25	0	21.20	20.95	**21.08**	21.5
		25	12	**21.38**	21.17	21.06	
		25	25	21.21	**21.18**	21.03	
		50	0	21.22	**21.25**	20.85	21.5
	16QAM	1	0	21.16	21.13	20.59	21.5
		1	24	21.49	21.22	20.66	
		1	49	21.14	21.01	20.27	
		25	0	20.24	20.01	20.23	20.5
		25	12	20.09	20.09	20.00	
		25	25	20.40	20.04	20.14	
		50	0	20.31	20.08	20.09	20.5

Bandwidth	Modulation	RB size	RB offset	Channel 39725	Channel 40620	Channel 41515	Tune-up Limit (dBm)
15MHz	QPSK	1	0	22.15	21.96	22.06	22.5
		1	38	**22.37**	**22.38**	**22.11**	
		1	74	22.07	22.01	21.88	
		36	0	21.27	**21.14**	**21.11**	21.5
		36	18	21.27	21.13	20.99	
		36	37	**21.33**	21.00	20.88	
		75	0	**21.31**	21.05	21.06	21.5
	16QAM	1	0	21.19	20.88	20.53	21.5
		1	38	21.43	21.45	20.55	
		1	74	21.20	21.14	20.42	
		36	0	20.31	20.03	20.17	20.5
		36	18	20.04	20.24	20.04	
		36	37	20.31	20.31	19.90	
		75	0	20.15	20.28	19.92	20.5

Bandwidth	Modulation	RB size	RB offset	Channel 39750	Channel 40620	Channel 41490	Tune-up Limit (dBm)

20MHz	QPSK	1	0	22.15	21.98	21.91	22.5
		1	49	**22.47**	**22.26**	**22.07**	
		1	99	22.20	21.97	21.79	
		50	0	21.22	21.05	**21.03**	21.5
		50	25	21.24	21.10	21.02	
		50	50	**21.29**	**21.14**	20.92	
		100	0	**21.26**	21.10	20.98	21.5
	16QAM	1	0	21.13	20.99	20.52	21.5
		1	49	21.48	21.32	20.65	
		1	99	21.21	21.03	20.39	
		50	0	20.21	20.13	20.11	20.5
		50	25	20.19	20.12	20.14	
		50	50	20.27	20.17	20.03	
		100	0	20.23	20.13	20.04	20.5

9.14. LTE Band 66

ANT1

Bandwidth	Modulation	RB size	RB offset	Channel 131979	Channel 132322	Channel 132665	Tune-up Limit (dBm)
1.4MHz	QPSK	1	0	23.28	23.14	**22.99**	24.0
		1	2	**23.81**	**23.39**	22.99	
		1	5	23.28	23.14	22.66	
		3	0	23.39	23.19	23.05	24.0
		3	1	**23.88**	**23.58**	**23.17**	
		3	3	23.45	23.15	22.72	
		6	0	**22.42**	22.33	22.16	22.5
	16QAM	1	0	22.46	22.44	22.01	22.5
		1	2	22.49	22.26	21.87	
		1	5	22.50	22.32	21.78	
		3	0	22.15	22.26	22.26	22.5
		3	1	22.49	22.15	22.05	
		3	3	22.28	22.11	21.71	
		6	0	21.69	21.49	21.10	22.0
Bandwidth	Modulation	RB size	RB offset	Channel 131987	Channel 132322	Channel 132657	Tune-up Limit (dBm)
3MHz	QPSK	1	0	23.32	23.18	**23.22**	24.0
		1	8	**23.78**	**23.52**	23.19	
		1	14	23.46	23.40	22.90	
		8	0	22.44	22.40	22.00	22.5
		8	4	**22.47**	**22.45**	**22.20**	
		8	7	22.44	22.39	21.86	
		15	0	22.37	**22.40**	21.90	22.5
	16QAM	1	0	22.22	22.10	22.10	23.0
		1	8	22.61	22.27	22.22	
		1	14	22.25	21.99	21.69	
		8	0	21.34	21.20	21.16	22.0
		8	4	21.38	21.39	21.22	
		8	7	21.44	21.44	20.79	
		15	0	21.59	21.47	20.78	22.0
Bandwidth	Modulation	RB size	RB offset	Channel 131997	Channel 132322	Channel 132647	Tune-up Limit (dBm)
5MHz	QPSK	1	0	23.32	23.36	23.18	24.0
		1	12	**23.88**	**23.38**	**23.20**	
		1	24	23.49	23.32	22.89	
		12	0	22.42	22.38	21.92	22.5
		12	6	**22.43**	**22.46**	**22.24**	
		12	13	**22.43**	22.45	21.78	
		25	0	22.44	**22.46**	21.95	22.5
	16QAM	1	0	22.28	22.16	22.29	23.0
		1	12	22.56	22.43	22.02	
		1	24	22.45	22.13	21.76	
		12	0	21.48	21.19	21.16	22.0
		12	6	21.65	21.39	21.12	
		12	13	21.68	21.26	20.68	
		25	0	21.47	21.36	21.02	22.0
Bandwidth	Modulation	RB size	RB offset	Channel 132022	Channel 132322	Channel 132622	Tune-up Limit (dBm)

10MHz	QPSK	1	0	23.49	23.20	23.02	24.0
		1	24	**23.78**	**23.62**	**23.06**	
		1	49	23.26	23.22	22.81	
		25	0	22.40	22.39	**22.18**	22.5
		25	12	**22.43**	**22.41**	22.04	
		25	25	**22.43**	22.25	21.89	
		50	0	**22.47**	22.32	21.88	22.5
	16QAM	1	0	22.16	22.12	22.27	23.0
		1	24	22.48	22.30	22.25	
		1	49	22.16	22.08	21.71	
		25	0	21.54	21.40	21.21	22.0
		25	12	21.50	21.31	21.16	
		25	25	21.48	21.40	20.78	
		50	0	21.63	21.20	20.91	22.0
Bandwidth	Modulation	RB size	RB offset	Channel 132047	Channel 132322	Channel 132597	Tune-up Limit (dBm)
15MHz	QPSK	1	0	23.30	23.12	**23.18**	24.0
		1	38	**23.83**	**23.38**	23.13	
		1	74	23.46	23.20	22.90	
		36	0	22.47	22.28	**22.03**	22.5
		36	18	**22.50**	**22.35**	21.96	
		36	37	22.49	22.25	21.90	
		75	0	**22.43**	22.41	22.04	22.5
	16QAM	1	0	22.10	22.03	22.08	23.0
		1	38	22.68	22.44	22.01	
		1	74	22.39	21.96	21.83	
		36	0	21.35	21.31	21.27	22.0
		36	18	21.50	21.44	21.12	
		36	37	21.59	21.46	20.69	
		75	0	21.43	21.24	21.02	22.0
Bandwidth	Modulation	RB size	RB offset	Channel 132072	Channel 132322	Channel 132572	Tune-up Limit (dBm)
20MHz	QPSK	1	0	23.34	23.26	23.10	24.0
		1	49	**23.75**	**23.53**	**23.13**	
		1	99	23.36	23.27	22.76	
		50	0	22.48	22.32	22.07	22.5
		50	25	22.45	**22.35**	**22.09**	
		50	50	**22.49**	**22.35**	21.81	
		100	0	**22.41**	22.38	21.91	22.5
	16QAM	1	0	22.18	22.12	22.14	23.0
		1	49	22.56	22.30	22.13	
		1	99	22.31	22.06	21.78	
		50	0	21.47	21.27	21.12	22.0
		50	25	21.51	21.35	21.11	
		50	50	21.56	21.35	20.83	
		100	0	21.50	21.33	20.91	22.0

Receiver off							
ANT1							
Bandwidth	Modulation	RB size	RB offset	Channel 131979	Channel 132322	Channel 132665	Tune-up Limit (dBm)
1.4MHz	QPSK	1	0	22.33	22.11	21.97	23.0
		1	2	22.76	22.37	22.04	
		1	5	22.27	22.14	21.68	
		3	0	22.40	22.17	22.06	23.0
		3	1	22.93	22.53	22.21	
		3	3	22.48	22.17	21.67	
		6	0	21.44	21.30	21.13	21.5
	16QAM	1	0	21.49	21.49	20.96	21.5
		1	2	21.49	21.31	20.87	
		1	5	21.47	21.34	20.80	
		3	0	21.17	21.28	21.26	21.5
		3	1	21.51	21.13	21.05	
		3	3	21.27	21.13	20.68	
		6	0	20.74	20.45	20.11	21.0
Bandwidth	Modulation	RB size	RB offset	Channel 131987	Channel 132322	Channel 132657	Tune-up Limit (dBm)
3MHz	QPSK	1	0	22.31	22.20	22.22	23.0
		1	8	22.80	22.52	22.18	
		1	14	22.42	22.45	21.92	
		8	0	21.49	21.38	21.04	21.5
		8	4	21.45	21.40	21.20	
		8	7	21.44	21.39	20.86	
		15	0	21.36	21.36	20.85	21.5
	16QAM	1	0	21.25	21.12	21.06	22.0
		1	8	21.56	21.25	21.20	
		1	14	21.28	20.99	20.67	
		8	0	20.35	20.25	20.21	21.0
		8	4	20.41	20.41	20.26	
		8	7	20.41	20.41	19.76	
		15	0	20.57	20.48	19.82	21.0
Bandwidth	Modulation	RB size	RB offset	Channel 131997	Channel 132322	Channel 132647	Tune-up Limit (dBm)
5MHz	QPSK	1	0	22.33	22.32	22.15	23.0
		1	12	22.92	22.39	22.15	
		1	24	22.50	22.36	21.87	
		12	0	21.38	21.43	20.97	21.5
		12	6	21.44	21.49	21.21	
		12	13	21.40	21.48	20.83	
		25	0	21.48	21.42	20.96	21.5
	16QAM	1	0	21.31	21.12	21.25	22.0
		1	12	21.57	21.46	21.01	
		1	24	21.43	21.18	20.71	
		12	0	20.43	20.15	20.21	21.0
		12	6	20.60	20.41	20.08	
		12	13	20.70	20.30	19.68	
		25	0	20.44	20.36	19.99	21.0
Bandwidth	Modulation	RB size	RB offset	Channel 132022	Channel 132322	Channel 132622	Tune-up Limit (dBm)

10MHz	QPSK	1	0	22.53	22.17	21.99	23.0
		1	24	22.75	22.60	22.11	
		1	49	22.23	22.17	21.79	
		25	0	21.37	21.42	21.13	21.5
		25	12	21.40	21.43	21.00	
		25	25	21.40	21.21	20.87	
		50	0	21.43	21.36	20.88	21.5
	16QAM	1	0	21.18	21.09	21.31	22.0
		1	24	21.44	21.34	21.24	
		1	49	21.17	21.11	20.68	
		25	0	20.53	20.37	20.21	21.0
		25	12	20.45	20.30	20.14	
		25	25	20.49	20.39	19.76	
		50	0	20.65	20.18	19.92	21.0
Bandwidth	Modulation	RB size	RB offset	Channel 132047	Channel 132322	Channel 132597	Tune-up Limit (dBm)
15MHz	QPSK	1	0	22.35	22.09	22.19	23.0
		1	38	22.83	22.43	22.13	
		1	74	22.43	22.22	21.92	
		36	0	21.45	21.23	21.00	21.5
		36	18	21.53	21.40	20.94	
		36	37	21.48	21.21	20.91	
		75	0	21.44	21.43	21.09	21.5
	16QAM	1	0	21.15	21.00	21.09	22.0
		1	38	21.67	21.40	21.01	
		1	74	21.35	20.96	20.82	
		36	0	20.30	20.33	20.31	21.0
		36	18	20.55	20.49	20.15	
		36	37	20.61	20.42	19.68	
		75	0	20.43	20.28	20.04	21.0
Bandwidth	Modulation	RB size	RB offset	Channel 132072	Channel 132322	Channel 132572	Tune-up Limit (dBm)
20MHz	QPSK	1	0	22.37	22.28	22.12	23.0
		1	49	**22.78**	**22.50**	**22.17**	
		1	99	22.33	22.26	21.73	
		50	0	21.46	21.31	**21.07**	21.5
		50	25	21.46	21.37	21.04	
		50	50	**21.47**	**21.48**	20.86	
		100	0	**21.36**	21.34	20.90	21.5
	16QAM	1	0	21.22	21.17	21.15	22.0
		1	49	21.58	21.28	21.11	
		1	99	21.29	21.07	20.77	
		50	0	20.45	20.30	20.07	21.0
		50	25	20.46	20.36	20.08	
		50	50	20.55	20.34	19.82	
		100	0	20.49	20.32	19.96	21.0

9.15. LTE Band 71

ANT2

Bandwidth	Modulation	RB size	RB offset	Channel 133147	Channel 133297	Channel 133447	Tune-up Limit (dBm)
5MHz	QPSK	1	0	24.16	23.62	23.60	24.5
		1	12	**24.33**	**23.84**	**23.84**	
		1	24	24.10	23.61	23.60	
		12	0	22.48	22.93	22.66	23.5
		12	6	**22.68**	22.92	22.68	
		12	13	22.67	**23.15**	**22.86**	
		25	0	22.72	**23.11**	22.71	23.5
	16QAM	1	0	23.12	22.69	22.74	23.5
		1	12	23.48	22.86	22.98	
		1	24	22.67	22.58	22.60	
		12	0	21.67	22.01	21.58	22.5
		12	6	21.65	22.23	21.73	
		12	13	21.92	22.00	21.68	
		25	0	21.78	22.19	21.75	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 133172	Channel 133297	Channel 133422	Tune-up Limit (dBm)
10MHz	QPSK	1	0	24.22	23.79	23.51	24.5
		1	24	**24.50**	**24.02**	**23.87**	
		1	49	24.31	23.82	23.68	
		25	0	22.44	23.04	22.64	23.5
		25	12	22.52	23.08	22.60	
		25	25	**22.53**	**23.12**	**22.68**	
		50	0	22.74	**22.88**	22.53	23.5
	16QAM	1	0	23.05	22.59	22.80	23.5
		1	24	23.28	22.80	23.03	
		1	49	22.54	22.74	22.72	
		25	0	21.58	22.18	21.59	22.5
		25	12	21.39	22.09	21.58	
		25	25	21.92	22.17	21.79	
		50	0	21.76	21.96	21.79	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 133197	Channel 133297	Channel 133397	Tune-up Limit (dBm)
15MHz	QPSK	1	0	24.20	23.61	23.77	24.5
		1	38	**24.38**	**24.08**	**23.86**	
		1	74	24.06	23.67	23.79	
		36	0	**22.67**	**23.19**	**22.68**	23.5
		36	18	22.48	22.89	22.64	
		36	37	22.55	23.07	22.67	
		75	0	22.74	**22.87**	22.74	23.5
	16QAM	1	0	22.99	22.44	22.71	23.5
		1	38	23.26	22.73	23.08	
		1	74	22.52	22.49	22.85	
		36	0	21.43	21.98	21.82	22.5
		36	18	21.66	21.96	21.71	
		36	37	21.90	22.05	21.83	
		75	0	21.77	22.15	21.79	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 133222	Channel 133322	Channel 133372	Tune-up Limit (dBm)

20MHz	QPSK	1	0	24.16	23.65	23.65	24.5
		1	49	**24.46**	**23.94**	**23.91**	
		1	99	24.16	23.75	23.64	
		50	0	22.57	23.04	22.68	23.5
		50	25	22.57	23.00	22.68	
		50	50	**22.60**	**23.06**	**22.79**	
		100	0	22.74	**22.99**	22.67	23.5
	16QAM	1	0	23.05	22.56	22.76	23.5
		1	49	23.34	22.86	23.08	
		1	99	22.61	22.61	22.74	
		50	0	21.55	22.04	21.73	22.5
		50	25	21.51	22.11	21.72	
		50	50	21.80	22.03	21.81	
		100	0	21.63	22.05	21.75	22.5

9.16. 2.4GHz WiFi

Mode	Freq.(MHz)	Conducted AVG Output Power (dBm)	Tune-up Limit (dBm)
802.11b	2412	12.35	13.5
	2437	13.58	14.0
	2462	14.56	**15.0**
802.11g	2412	14.18	14.5
	2437	13.58	14.5
	2462	14.34	14.5
802.11n 20M	2412	14.09	14.5
	2437	13.51	14.5
	2462	14.38	14.5
802.11n 40M	2422	13.2	13.5
	2437	12.93	13.5
	2452	11.9	13.5

9.17. 5GHz WiFi

Mode	Freq(MHz)	Conducted AVG Output Power (dBm)	Tune-up Limit (dBm)
802.11a	5180	18.62	19.0
	5200	18.39	19.0
	5240	18.48	19.0
	5260	18.46	18.5
	5280	18.4	18.5
	5320	18.34	18.5
	5500	17.11	18.0
	5580	17.65	18.0
	5700	15.56	18.0
	5720-2C	14.09	15.0
	5720-3	6.11	7.0
	5745	15.81	16.0
	5785	15.26	16.0
	5825	15.6	16.0
802.11n 20M	5180	18.35	18.5
	5200	18.36	18.5
	5240	18.26	18.5
	5260	18.37	18.5
	5280	18.25	18.5
	5320	18.21	18.5
	5500	16.18	16.5
	5580	17.61	18.0
	5700	13.70	14.0
	5720-2C	14.00	16.0
	5720-3	6.44	7.0
	5745	15.81	16.0
	5785	15.30	16.0
	5825	15.44	16.0
802.11n 40M	5190	16.14	18.0
	5230	18.23	18.5
	5270	18.22	18.5
	5310	16.49	16.5
	5510	14.23	14.5
	5550	17.42	17.5
	5670	16.48	16.5
	5710-2C	14.21	14.5
	5710-3	1.33	2.0

	5755	15.66	16.0
	5795	15.17	15.5
802.11ac 20M	5180	18.31	18.5
	5200	18.40	18.5
	5240	18.25	18.5
	5260	18.40	18.5
	5280	18.20	18.5
	5320	18.19	18.5
	5500	16.20	16.5
	5580	17.59	18.0
	5700	13.74	14.0
	5720-2C	14.11	16.0
	5720-3	6.54	7.0
	5745	15.81	16.0
	5785	15.31	16.0
	5825	15.51	16.0
802.11ac 40M	5190	16.23	18.0
	5230	18.29	18.5
	5270	18.18	18.5
	5310	16.40	16.5
	5510	14.23	14.5
	5550	17.44	17.5
	5670	16.41	16.5
	5710-2C	14.23	14.5
	5710-3	1.37	2.0
	5755	15.70	16.0
	5795	15.13	15.5
802.11ac 80M	5210	16.75	17.0
	5290	16.21	16.5
	5530	14.18	15.0
	5610	15.5	16.0
	5690-2C	12.85	13.0
	5690-3	-3.29	-3.0
	5775	13.65	14.0

Receiver On			
Mode	Freq(MHz)	Conducted AVG Output Power (dBm)	Tune-up Limit (dBm)
802.11a	5180	16.32	16.5
	5200	16.09	16.5
	5240	16.1	16.5
	5260	15.98	16.0
	5280	15.94	16.0
	5320	15.97	16.0
	5500	16.24	16.5
	5580	16.02	16.5
	5700	15.56	16.5
	5745	14.64	15.0
	5785	14.58	15.0
	5825	14.43	15.0
802.11n 20M	5180	16.24	16.5
	5200	16.33	16.5
	5240	16.28	16.5
	5260	15.95	16.0
	5280	15.92	16.0
	5320	15.53	16.0
	5500	16.18	16.5
	5580	16.05	16.5
	5700	13.7	14.0
	5745	14.52	15.0
	5785	14.36	15.0
	5825	14.35	15.0
802.11n 40M	5190	15.78	16.0
	5230	15.95	16.0
	5270	15.91	16.0
	5310	15.88	16.0
	5510	14.23	16.0
	5550	15.68	16.0
	5670	15.84	16.0
	5755	14.57	15.0
	5795	14.59	15.0
802.11ac 20M	5180	16.32	16.5
	5200	16.43	16.5
	5240	16.3	16.5
	5260	15.81	16.0

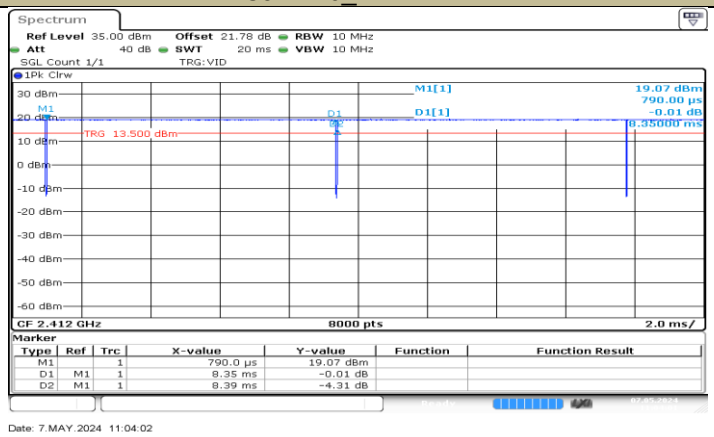
	5280	15.82	16.0
	5320	15.49	16.0
	5500	16.12	16.5
	5580	16.01	16.5
	5700	13.77	14.0
	5745	14.48	15.0
	5785	14.44	15.0
	5825	14.37	15.0
802.11ac 40M	5190	15.75	16.0
	5230	15.83	16.0
	5270	15.83	16.0
	5310	15.79	16.0
	5510	14.19	16.0
	5550	15.76	16.0
	5670	15.82	16.0
	5755	14.48	15.0
	5795	14.38	15.0
802.11ac 80M	5210	15.64	16.0
	5290	15.93	16.0
	5530	14.18	14.5
	5610	15.66	16.0
	5775	14.12	14.5

9.18. BT

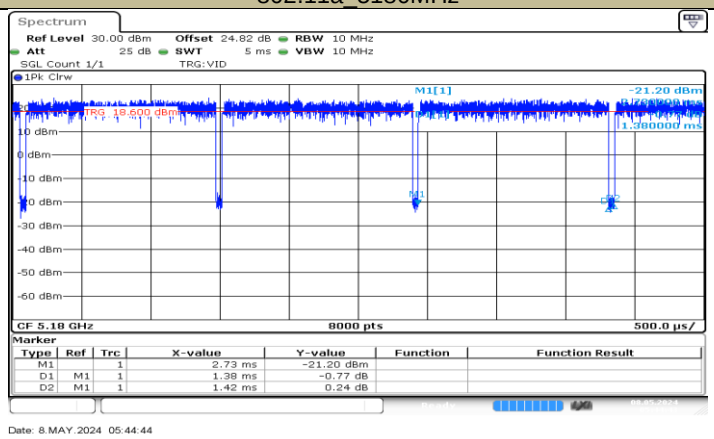
Test Mode	Frequency[MHz]	Result[dBm]	Tune-up Limit (dBm)
DH5	2402	4.05	6.0
	2441	5.44	6.0
	2480	5.77	6.0
3DH5	2402	3.72	5.5
	2441	4.63	5.5
	2480	5.04	5.5
BLE_1M	2402	1.55	3.0
	2440	2.71	3.0
	2480	1.53	3.0
BLE_2M	2404	2.55	4.5
	2440	4.47	5.0
	2478	3.72	4.5

9.19. Duty Cycle

Test Mode	Duty Cycle (%)
802.11b	99.52
802.11a	97.18
802.11n40	94.12
DH5	76.74
802.11b_2412MHz	



802.11a_5180MHz



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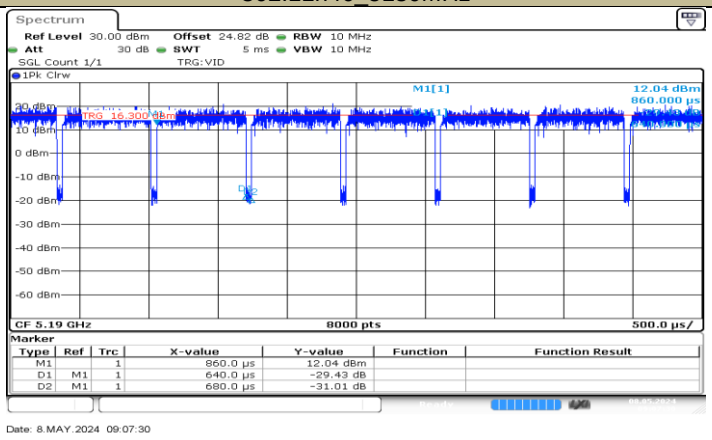
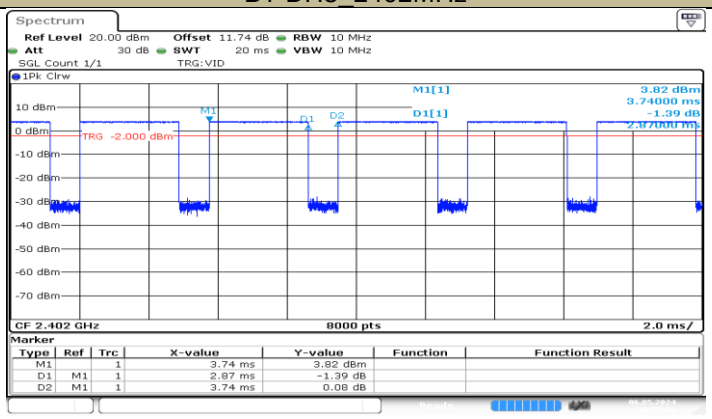


BT DH5_2402MHz



10. RF Exposure Conditions

Refer to the diagram inside the device which attached below for the specific details of the antenna-to-edges distances. As per KDB 941225 D06, when the antenna to-edge-distance is greater than 2.5 cm, SAR evaluation is not required for the corresponding position.

Antenna location detail referred to 4791221995-1-SAR-1_App A Photo.

Antenna	Band	Front Surface	Back Surface	Left Edge	Right Edge	Top Edge	Bottom Edge
Ant1	GSM: 1900 WCDMA: B2/4 LTE: B2/4/25/66/41	Yes	Yes	Yes	Yes	No	Yes
Ant2	GSM: 850 WCDMA: B5 LTE: B5/12/13/26/71	Yes	Yes	Yes	Yes	Yes	No
Ant3	2.4/5GHz WiFi, BT	Yes	Yes	No	Yes	Yes	No

11. Dielectric Property Measurements & System Check

11.1. 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 parameters 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

FCC KDB 865664 D01 v01r04 SAR Measurement 100 MHz to 6 GHz

Target Frequency (MHz)	Head		Body	
	ε_r	σ (S/m)	ε_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 – 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5000	36.2	4.45	49.3	5.07
5100	36.1	4.55	49.1	5.18
5200	36.0	4.66	49.0	5.30
5300	35.9	4.76	48.9	5.42
5400	35.8	4.86	48.7	5.53
5500	35.6	4.96	48.6	5.65
5600	35.5	5.07	48.5	5.77
5700	35.4	5.17	48.3	5.88
5800	35.3	5.27	48.2	6.00

IEEE Std 1528-2013
Refer to Table 3 within the IEEE Std 1528-2013

Dielectric Property Measurements Results:

Liquid	Freq.	Liquid Parameters				Deviation(%)		Limit (%)	Temp. (℃)	Test Date
		Measured		Target						
		ε_r	σ	ε_r	σ	ε_r	σ			
Head 750	695	41.540	0.861	42.23	0.89	-1.63	-3.26	±5	22.9	May 17, 2024
	750	41.880	0.886	41.94	0.89	-0.14	-0.45			
	790	41.820	0.896	41.73	0.90	0.22	-0.44			
Head 835	805	41.750	0.901	41.66	0.90	0.22	0.11	±5	22.3	May 11, 2024
	835	41.570	0.912	41.50	0.90	0.17	1.33			
	905	42.100	0.937	41.50	0.97	1.45	-3.40			
Head 835	805	41.740	0.908	41.66	0.90	0.19	0.89	±5	21.1	July 3, 2024
	835	41.630	0.941	41.50	0.90	0.31	4.56			
	905	42.300	0.939	41.50	0.97	1.93	-3.20			
Head 835	805	41.560	0.911	41.66	0.90	-0.24	1.22	±5	22.1	July 15, 2024
	835	41.590	0.938	41.50	0.90	0.22	4.22			
	905	42.200	0.934	41.50	0.97	1.69	-3.71			
Head 1800	1720	41.160	1.287	40.13	1.35	2.57	-4.67	±5	22.3	May 11, 2024
	1800	41.060	1.349	40.00	1.40	2.65	-3.64			
	1900	40.790	1.333	40.03	1.39	1.90	-4.10			
Head 1800	1720	41.150	1.285	40.13	1.35	2.54	-4.81	±5	22.7	May 15, 2024
	1800	41.090	1.352	40.00	1.40	2.73	-3.43			
	1900	40.850	1.341	40.00	1.40	2.13	-4.21			
Head 1800	1720	41.470	1.309	40.13	1.35	3.34	-3.04	±5	21.6	July 2, 2024
	1800	41.480	1.382	40.00	1.40	3.70	-1.29			
	1900	40.750	1.344	40.00	1.40	1.88	-4.00			
Head 2450	2400	40.350	1.775	39.29	1.76	2.70	0.85	±5	22.2	May 27, 2024
	2450	40.550	1.860	39.20	1.80	3.44	3.33			
	2540	40.36	1.91	39.09	1.90	3.25	0.53			
Head 2600	2500	40.140	1.804	39.14	1.85	2.55	-2.49	±5	22.9	May 17, 2024
	2600	40.140	1.924	39.01	1.96	2.90	-1.84			
	2700	39.980	2.067	38.88	2.07	2.83	-0.14			
Head 5250	5160	36.910	4.384	36.03	4.61	2.44	-4.90	±5	21.8	July 4, 2024
	5250	37.110	4.479	35.93	4.71	3.28	-4.90			
	5340	36.950	4.581	35.83	4.80	3.13	-4.56			
Head 5600	5500	36.170	4.720	35.64	4.96	1.49	-4.84	±5	21.8	July 4, 2024
	5600	35.940	4.953	35.53	5.07	1.15	-2.31			
	5700	35.860	5.060	35.41	5.17	1.27	-2.13			
Head 5750	5660	36.250	4.991	35.46	5.13	2.23	-2.71	±5	21.8	July 4, 2024
	5750	36.030	5.135	35.36	5.22	1.89	-1.63			
	5840	35.920	5.233	35.27	5.30	1.84	-1.26			

11.2. 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 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:

- 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 10mm (above 1GHZ) and 15mm (below 1GHz) from dipole center to the simulating liquid surface.
- For area scan, standard grid spacing for head measurements is 15 mm in x- and y- dimension(≤2GHz), 12 mm in x- and y-dimension(2-4 GHz) and 10mm in x- and y- dimension(4-6GHz).
- For zoom scan, Δx_{zoom}, Δy_{zoom}≤ 2GHz - ≤8mm, 2-4GHz - ≤5 mm and 4-6 GHz-≤4mm; Δz_{zoom} ≤3GHz - ≤5 mm, 3-4 GHz- ≤4mm and 4-6GHz-≤2mm.
- Distance between probe sensors and phantom surface was set to 3 mm except for 5 GHz band. For 5GHz band, Distance between probe sensors and phantom surface was set to 2.5 mm
- The dipole input power (forward power) was set to 100 mW or 250 mW depend on the certificate of the dipoles.
- The results are normalized to 1 W input power.

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.

T.S. Liquid		Measured Results		Target (Ref. value)	Delta (%)	Limit (%)	Temp. (℃)	Test Date
		Zoom Scan (W/Kg)	Normalize to 1W (W/Kg)					
Head 750	1-g	0.845	8.45	8.50	-0.59	±10	22.9	May 17, 2024
	10-g	0.551	5.51	5.61	-1.78			
Head 835	1-g	0.990	9.90	9.64	2.70	±10	22.3	May 11, 2024
	10-g	0.643	6.43	6.26	2.72			
Head 835	1-g	1.000	10.00	9.64	3.73	±10	21.1	July 3, 2024
	10-g	0.65	6.50	6.26	3.83			
Head 835	1-g	1.010	10.10	9.64	4.77	±10	22.1	July 15, 2024
	10-g	0.653	6.53	6.26	4.31			
Head 1800	1-g	3.620	36.20	38.70	-6.46	±10	22.3	May 11, 2024
	10-g	1.900	19.00	19.90	-4.52			
Head 1800	1-g	3.680	36.80	38.70	-4.91	±10	22.7	May 15, 2024
	10-g	1.930	19.30	19.90	-3.02			
Head 1800	1-g	3.710	37.10	38.70	-4.13	±10	21.6	July 2, 2024
	10-g	1.950	19.50	19.90	-2.01			
Head 2450	1-g	5.240	52.40	53.20	-1.50	±10	22.2	May 27, 2024
	10-g	2.460	24.60	24.20	1.65			
Head 2600	1-g	5.690	56.90	55.40	2.71	±10	22.9	May 17, 2024
	10-g	2.540	25.40	24.50	3.67			
Head 5250	1-g	8.090	80.90	77.90	3.85	±10	21.8	July 4, 2024
	10-g	2.310	23.10	22.60	2.21			
Head 5600	1-g	8.130	81.30	80.90	0.49	±10	21.8	July 4, 2024
	10-g	2.290	22.90	23.30	-1.72			
Head 5750	1-g	7.710	77.10	78.30	-1.53	±10	21.8	July 4, 2024
	10-g	2.180	21.80	22.40	-2.68			

12. Measured and Reported (Scaled) SAR Results

General Notes:

1) As per KDB447498 D01, all SAR measurement results are scaled to the maximum tune-up tolerance limit to demonstrate SAR compliance.
2) As per KDB447498 D01, 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:
   ● ≤ 0.8W/kg for 1-g or 2.0W/kg for 10-g respectively, when the transmission band is ≤ 100MHz.
   ● ≤ 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.
   When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used.
3) As per KDB865664 D01 for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/Kg; if the deviation among the repeated measurement is ≤20%, and the measured SAR <1.45W/Kg, only one repeated measurement is required.
4) As per KDB865664 D02, SAR plot is only required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination; Plots are also required when the measured SAR is > 1.5 W/kg, or > 7.0 W/kg for occupational exposure. The published RF exposure KDB procedures may require additional plots; for example, to support SAR to peak location separation ratio test exclusion and/or volume scan post-processing (Refer to appendix B for detailed SAR plots).
5) Additional SAR tests in simultaneous transmission fixed power reduction scenario are also tested in some frequency bands and required test positions for the SAR worst case, which are only used to ensure simultaneous transmission SAR test exclusion. The standalone SAR compliance still uses the SAR results tested at the maximum output power level.

12.1. SAR Test Results of GSM850

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up Limit	Meas.	1-g (W/Kg)		
Head	GPRS 4TS	Left Cheek	0	190	25.0	24.45	0.528	-0.05	0.600
Head	GPRS 4TS	Left Tilt	0	190	25.0	24.45	0.396	0.04	0.450
Head	GPRS 4TS	Right Cheek	0	190	25.0	24.45	**0.652**	-0.11	0.740
Head	GPRS 4TS	Right Tilt	0	190	25.0	24.45	0.505	0.18	0.573
Body-worn & Hotspot	GPRS 4TS	Front Surface	10	190	29.5	28.83	0.337	-0.19	0.393
Body-worn & Hotspot	GPRS 4TS	Back Surface	10	190	29.5	28.83	**0.504**	0.10	0.588
Hotspot	GPRS 4TS	Left Edge	10	190	29.5	28.83	0.375	-0.15	0.438
Hotspot	GPRS 4TS	Right Edge	10	190	29.5	28.83	0.253	0.16	0.295
Hotspot	GPRS 4TS	Top Edge	10	190	29.5	28.83	0.495	-0.10	0.578

12.2. SAR Test Results of GSM1900

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up Limit	Meas.	1-g (W/Kg)		
Head	GPRS 4TS	Left Cheek	0	661	26.0	25.41	**0.194**	-0.04	0.222
Head	GPRS 4TS	Left Tilt	0	661	26.0	25.41	0.114	-0.11	0.131
Head	GPRS 4TS	Right Cheek	0	661	26.0	25.41	0.116	0.14	0.133
Head	GPRS 4TS	Right Tilt	0	661	26.0	25.41	0.108	-0.07	0.124
Body-worn & Hotspot	GPRS 4TS	Front Surface	10	661	26.0	25.41	0.357	0.14	0.409
Body-worn & Hotspot	GPRS 4TS	Back Surface	10	661	26.0	25.41	0.739	-0.13	0.847
Body-worn & Hotspot	GPRS 4TS	Back Surface	10	512	26.0	25.74	0.768	-0.18	0.815
Body-worn & Hotspot	GPRS 4TS	Back Surface	10	810	26.0	24.51	0.588	-0.04	0.829
Hotspot	GPRS 4TS	Left Edge	10	661	26.0	25.41	0.210	-0.11	0.241
Hotspot	GPRS 4TS	Right Edge	10	661	26.0	25.41	0.020	-0.03	0.023
Hotspot	GPRS 4TS	Bottom Edge	10	661	26.0	25.41	0.905	0.05	1.037
Hotspot	GPRS 4TS	Bottom Edge	10	512	26.0	25.74	**1.040**	0.01	1.104
Hotspot	GPRS 4TS	Bottom Edge	10	810	26.0	24.51	0.780	-0.18	1.099
Worst mode retest									
Hotspot	GPRS 4TS	Bottom Edge	10	512	26.0	25.74	1.010	-0.03	1.072

Note:

1. Due to 1.04/1.01 = 1.03 < 1.20, and SAR value of original and repeated measurement is ≤ 1.45 W/kg, so only one repeated measurement is required.

12.3. SAR Test Results of WCDMA Band II

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up Limit	Meas.	1-g (W/Kg)		
Head	RCM 12.2kbps	Left Cheek	0	9400	24.0	23.83	**0.249**	-0.15	0.259
Head	RCM 12.2kbps	Left Tilt	0	9400	24.0	23.83	0.112	-0.11	0.116
Head	RCM 12.2kbps	Right Cheek	0	9400	24.0	23.83	0.149	-0.14	0.155
Head	RCM 12.2kbps	Right Tilt	0	9400	24.0	23.83	0.112	0.18	0.116
Body-worn & Hotspot	RCM 12.2kbps	Front Surface	10	9400	24.0	23.83	0.313	0.09	0.326
Body-worn & Hotspot	RCM 12.2kbps	Back Surface	10	9400	24.0	23.83	**0.743**	-0.07	0.773
Body-worn & Hotspot	RCM 12.2kbps	Back Surface	10	9262	24.0	23.97	0.646	-0.17	0.650
Body-worn & Hotspot	RCM 12.2kbps	Back Surface	10	9538	24.0	23.65	0.678	0.05	0.735
Hotspot	RCM 12.2kbps	Left Edge	10	9400	24.0	23.83	0.203	0.01	0.212
Hotspot	RCM 12.2kbps	Right Edge	10	9400	24.0	23.83	0.080	-0.06	0.083
Hotspot	RCM 12.2kbps	Bottom Edge	10	9400	24.0	23.83	0.643	0.15	0.669
Hotspot	RCM 12.2kbps	Bottom Edge	10	9262	24.0	23.97	0.665	0.12	0.670
Hotspot	RCM 12.2kbps	Bottom Edge	10	9538	24.0	23.65	0.614	-0.05	0.665

12.4. SAR Test Results of WCDMA Band IV

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up Limit	Meas.	1-g (W/Kg)		
Head	RCM 12.2kbps	Left Cheek	0	1413	23.5	23.34	**0.132**	0.17	0.137
Head	RCM 12.2kbps	Left Tilt	0	1413	23.5	23.34	0.098	0.19	0.102
Head	RCM 12.2kbps	Right Cheek	0	1413	23.5	23.34	0.118	-0.16	0.122
Head	RCM 12.2kbps	Right Tilt	0	1413	23.5	23.34	0.095	-0.09	0.099
Body-worn & Hotspot	RCM 12.2kbps	Front Surface	10	1413	22.5	22.38	0.215	-0.18	0.221
Body-worn & Hotspot	RCM 12.2kbps	Back Surface	10	1413	22.5	22.38	0.609	-0.16	0.626
Body-worn & Hotspot	RCM 12.2kbps	Back Surface	10	1312	22.5	22.43	**0.724**	0.00	0.735
Body-worn & Hotspot	RCM 12.2kbps	Back Surface	10	1513	22.5	22.41	0.540	-0.14	0.551
Hotspot	RCM 12.2kbps	Left Edge	10	1413	22.5	22.38	0.139	-0.19	0.143
Hotspot	RCM 12.2kbps	Right Edge	10	1413	22.5	22.38	0.039	-0.06	0.040
Hotspot	RCM 12.2kbps	Bottom Edge	10	1413	22.5	22.38	0.593	-0.17	0.610

12.5. SAR Test Results of WCDMA Band V

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up Limit	Meas.	1-g (W/Kg)		
Head	RCM 12.2kbps	Left Cheek	0	4183	23.0	22.46	0.306	-0.19	0.347
Head	RCM 12.2kbps	Left Cheek	0	4132	23.0	22.37	0.285	0.06	0.329
Head	RCM 12.2kbps	Left Cheek	0	4233	23.0	22.55	0.317	-0.02	0.351
Head	RCM 12.2kbps	Left Tilt	0	4183	23.0	22.46	0.239	-0.09	0.270
Head	RCM 12.2kbps	Right Cheek	0	4183	23.0	22.46	0.421	0.07	0.477
Head	RCM 12.2kbps	Right Cheek	0	4132	23.0	22.37	0.402	-0.17	0.465
Head	RCM 12.2kbps	Right Cheek	0	4233	23.0	22.55	**0.434**	0.00	0.481
Head	RCM 12.2kbps	Right Tilt	0	4183	23.0	22.46	0.302	0.16	0.342
Body-worn & Hotspot	RCM 12.2kbps	Front Surface	10	4183	24.5	23.94	0.256	0.12	0.291
Body-worn & Hotspot	RCM 12.2kbps	Back Surface	10	4183	24.5	23.94	0.292	-0.12	0.333
Hotspot	RCM 12.2kbps	Left Edge	10	4183	24.5	23.94	**0.299**	-0.09	0.340
Hotspot	RCM 12.2kbps	Right Edge	10	4183	24.5	23.94	0.126	0.08	0.143
Hotspot	RCM 12.2kbps	Top Edge	10	4183	24.5	23.94	0.251	-0.18	0.286

12.6. SAR Test Results of LTE B2

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up Limit	Meas.	1-g (W/Kg)		
Head	20M QPSK 1B#49	Left Cheek	0	18900	24.0	23.89	**0.228**	0.00	0.234
Head	20M QPSK 50B#0	Left Cheek	0	18700	23.0	22.85	0.165	0.00	0.171
Head	20M QPSK 1B#49	Left Tilt	0	18900	24.0	23.89	0.134	-0.03	0.137
Head	20M QPSK 50B#0	Left Tilt	0	18700	23.0	22.85	0.106	-0.04	0.110
Head	20M QPSK 1B#49	Right Cheek	0	18900	24.0	23.89	0.157	0.02	0.161
Head	20M QPSK 50B#0	Right Cheek	0	18700	23.0	22.85	0.121	-0.06	0.125
Head	20M QPSK 1B#49	Right Tilt	0	18900	24.0	23.89	0.114	0.00	0.117
Head	20M QPSK 50B#0	Right Tilt	0	18700	23.0	22.85	0.095	-0.14	0.098
Body-worn & Hotspot	20M QPSK 1B#49	Front Surface	10	18900	23.5	23.41	0.442	-0.18	0.451
Body-worn & Hotspot	20M QPSK 50B#0	Front Surface	10	18700	22.5	22.35	0.331	-0.06	0.343
Body-worn & Hotspot	20M QPSK 1B#49	Back Surface	10	18900	23.5	23.41	**0.871**	-0.19	0.889
Body-worn & Hotspot	20M QPSK 1B#49	Back Surface	10	18700	23.5	23.36	0.762	-0.02	0.787
Body-worn & Hotspot	20M QPSK 1B#49	Back Surface	10	19100	23.5	23.07	0.856	0.01	0.945
Body-worn & Hotspot	20M QPSK 50B#0	Back Surface	10	18700	22.5	22.35	0.625	0.08	0.647
Body-worn & Hotspot	20M QPSK 50B#0	Back Surface	10	18900	22.5	22.31	0.629	0.07	0.657
Body-worn & Hotspot	20M QPSK 50B#0	Back Surface	10	19100	22.5	22.08	0.690	0.04	0.760
Body-worn & Hotspot	20M QPSK 100B#0	Back Surface	10	18700	22.5	22.31	0.647	-0.14	0.676
Hotspot	20M QPSK 1B#49	Left Edge	10	18900	23.5	23.41	0.275	-0.15	0.281
Hotspot	20M QPSK 50B#0	Left Edge	10	18700	22.5	22.35	0.205	-0.19	0.212
Hotspot	20M QPSK 1B#49	Right Edge	10	18900	23.5	23.41	0.098	0.02	0.100
Hotspot	20M QPSK 50B#0	Right Edge	10	18700	22.5	22.35	0.061	0.18	0.063
Hotspot	20M QPSK 1B#49	Bottom Edge	10	18900	23.5	23.41	0.852	-0.06	0.870
Hotspot	20M QPSK 1B#49	Bottom Edge	10	18700	23.5	23.36	0.867	-0.12	0.895
Hotspot	20M QPSK 1B#49	Bottom Edge	10	19100	23.5	23.07	0.851	-0.15	0.939
Hotspot	20M QPSK 50B#0	Bottom Edge	10	18700	22.5	22.35	0.709	-0.04	0.734
Hotspot	20M QPSK 50B#0	Bottom Edge	10	18900	22.5	22.31	0.688	-0.17	0.718
Hotspot	20M QPSK 50B#0	Bottom Edge	10	19100	22.5	22.08	0.725	-0.04	0.799
Hotspot	20M QPSK 100B#0	Bottom Edge	10	18700	22.5	22.31	0.709	0.07	0.741
Worst mode retest									
Body-worn & Hotspot	20M QPSK 1B#49	Back Surface	10	18900	23.5	23.41	0.865	-0.01	0.883

Note:

1. Due to 0.889 /0.883= 1.01 < 1.20, and SAR value of original and repeated measurement is ≤ 1.45 W/kg, so only one repeated measurement is required.

12.7. SAR Test Results of LTE B4

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up Limit	Meas.	1-g (W/Kg)		
Head	20M QPSK 1B#49	Left Cheek	0	20050	24.0	23.53	**0.116**	0.17	0.129
Head	20M QPSK 50B#50	Left Cheek	0	20050	22.5	22.38	0.086	-0.11	0.088
Head	20M QPSK 1B#49	Left Tilt	0	20050	24.0	23.53	0.091	-0.09	0.102
Head	20M QPSK 50B#50	Left Tilt	0	20050	22.5	22.38	0.073	-0.10	0.075
Head	20M QPSK 1B#49	Right Cheek	0	20050	24.0	23.53	0.103	-0.11	0.115
Head	20M QPSK 50B#50	Right Cheek	0	20050	22.5	22.38	0.072	-0.15	0.074
Head	20M QPSK 1B#49	Right Tilt	0	20050	24.0	23.53	0.076	-0.18	0.085
Head	20M QPSK 50B#50	Right Tilt	0	20050	22.5	22.38	0.059	-0.03	0.061
Body-worn & Hotspot	20M QPSK 1B#49	Front Surface	10	20050	22.5	22.16	0.253	-0.19	0.274
Body-worn & Hotspot	20M QPSK 50B#50	Front Surface	10	20050	21.0	20.97	0.200	-0.03	0.201
Body-worn & Hotspot	20M QPSK 1B#49	Back Surface	10	20050	22.5	22.16	**0.613**	0.08	0.663
Body-worn & Hotspot	20M QPSK 50B#50	Back Surface	10	20050	21.0	20.97	0.556	0.03	0.559
Hotspot	20M QPSK 1B#49	Left Edge	10	20050	22.5	22.16	0.135	-0.17	0.146
Hotspot	20M QPSK 50B#50	Left Edge	10	20050	21.0	20.97	0.101	0.08	0.102
Hotspot	20M QPSK 1B#49	Right Edge	10	20050	22.5	22.16	0.044	-0.12	0.048
Hotspot	20M QPSK 50B#50	Right Edge	10	20050	21.0	20.97	0.035	-0.05	0.035
Hotspot	20M QPSK 1B#49	Bottom Edge	10	20050	22.5	22.16	0.570	-0.08	0.616
Hotspot	20M QPSK 50B#50	Bottom Edge	10	20050	21.0	20.97	0.476	-0.06	0.479

12.8. SAR Test Results of LTE B5

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up Limit	Meas.	1-g (W/Kg)		
Head	10M QPSK 1B#24	Left Cheek	0	20525	21.5	21.25	0.332	0.05	0.352
Head	10M QPSK 25B#12	Left Cheek	0	20600	20.5	20.19	0.301	-0.08	0.323
Head	10M QPSK 1B#24	Left Tilt	0	20525	21.5	21.25	0.295	0.17	0.312
Head	10M QPSK 25B#12	Left Tilt	0	20600	20.5	20.19	0.274	-0.12	0.294
Head	10M QPSK 1B#24	Right Cheek	0	20600	21.5	21.25	**0.733**	0.16	0.776
Head	10M QPSK 25B#12	Right Cheek	0	20600	20.5	20.19	0.695	0.16	0.746
Head	10M QPSK 1B#24	Right Tilt	0	20525	21.5	21.25	0.684	0.12	0.725
Head	10M QPSK 25B#12	Right Tilt	0	20600	20.5	20.19	0.657	0.02	0.706
Body-worn & Hotspot	10M QPSK 1B#24	Front Surface	10	20525	24.5	24.16	0.285	0.11	0.308
Body-worn & Hotspot	10M QPSK 25B#12	Front Surface	10	20600	23.5	23.12	0.233	-0.08	0.254
Body-worn & Hotspot	10M QPSK 1B#24	Back Surface	10	20525	24.5	24.16	0.282	-0.15	0.305
Body-worn & Hotspot	10M QPSK 25B#12	Back Surface	10	20600	23.5	23.12	0.227	-0.19	0.248
Hotspot	10M QPSK 1B#24	Left Edge	10	20525	24.5	24.16	**0.312**	-0.18	0.337
Hotspot	10M QPSK 25B#12	Left Edge	10	20600	23.5	23.12	0.205	0.12	0.224
Hotspot	10M QPSK 1B#24	Right Edge	10	20525	24.5	24.16	0.125	-0.13	0.135
Hotspot	10M QPSK 25B#12	Right Edge	10	20600	23.5	23.12	0.115	-0.16	0.126
Hotspot	10M QPSK 1B#24	Top Edge	10	20525	24.5	24.16	0.292	0.08	0.316
Hotspot	10M QPSK 25B#12	Top Edge	10	20600	23.5	23.12	0.261	-0.08	0.285

12.9. SAR Test Results of LTE B12

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up Limit	Meas.	1-g (W/Kg)		
Head	10M QPSK 1B#24	Left Cheek	0	23060	24.5	24.35	0.516	-0.11	0.534
Head	10M QPSK 25B#12	Left Cheek	0	23060	23.5	23.34	0.398	-0.04	0.413
Head	10M QPSK 1B#24	Left Tilt	0	23060	24.5	24.35	0.382	-0.06	0.395
Head	10M QPSK 25B#12	Left Tilt	0	23060	23.5	23.34	0.295	-0.03	0.306
Head	10M QPSK 1B#24	Right Cheek	0	23060	24.5	24.35	**0.699**	-0.09	0.724
Head	10M QPSK 25B#12	Right Cheek	0	23060	23.5	23.34	0.539	0.10	0.559
Head	10M QPSK 1B#24	Right Tilt	0	23060	24.5	24.35	0.476	0.17	0.493
Head	10M QPSK 25B#12	Right Tilt	0	23060	23.5	23.34	0.378	0.16	0.392
Body-worn & Hotspot	10M QPSK 1B#24	Front Surface	10	23060	24.5	24.35	0.199	-0.06	0.206
Body-worn & Hotspot	10M QPSK 25B#12	Front Surface	10	23060	23.5	23.34	0.153	-0.01	0.159
Body-worn & Hotspot	10M QPSK 1B#24	Back Surface	10	23060	24.5	24.35	0.166	0.16	0.172
Body-worn & Hotspot	10M QPSK 25B#12	Back Surface	10	23060	23.5	23.34	0.124	0.18	0.129
Hotspot	10M QPSK 1B#24	Left Edge	10	23060	24.5	24.35	**0.243**	0.00	0.252
Hotspot	10M QPSK 25B#12	Left Edge	10	23060	23.5	23.34	0.203	0.01	0.211
Hotspot	10M QPSK 1B#24	Right Edge	10	23060	24.5	24.35	0.146	0.06	0.151
Hotspot	10M QPSK 25B#12	Right Edge	10	23060	23.5	23.34	0.111	0.06	0.115
Hotspot	10M QPSK 1B#24	Top Edge	10	23060	24.5	24.35	0.201	-0.04	0.208
Hotspot	10M QPSK 25B#12	Top Edge	10	23060	23.5	23.34	0.185	0.01	0.192

12.10. SAR Test Results of LTE B13

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up Limit	Meas.	1-g (W/Kg)		
Head	10M QPSK 1B#24	Left Cheek	0	23230	24.5	24.30	0.528	0.05	0.553
Head	10M QPSK 25B#0	Left Cheek	0	23230	23.5	23.28	0.424	0.01	0.446
Head	10M QPSK 1B#24	Left Tilt	0	23230	24.5	24.30	0.391	-0.01	0.409
Head	10M QPSK 25B#0	Left Tilt	0	23230	23.5	23.28	0.315	-0.03	0.331
Head	10M QPSK 1B#24	Right Cheek	0	23230	24.5	24.30	**0.815**	-0.09	0.853
Head	10M QPSK 25B#0	Right Cheek	0	23230	23.5	23.28	0.756	-0.08	0.795
Head	10M QPSK 1B#24	Right Tilt	0	23230	24.5	24.30	0.489	-0.04	0.512
Head	10M QPSK 25B#0	Right Tilt	0	23230	23.5	23.28	0.390	-0.07	0.410
Body-worn & Hotspot	10M QPSK 1B#24	Front Surface	10	23230	24.5	24.30	0.212	-0.03	0.222
Body-worn & Hotspot	10M QPSK 25B#0	Front Surface	10	23230	23.5	23.28	0.187	-0.04	0.197
Body-worn & Hotspot	10M QPSK 1B#24	Back Surface	10	23230	24.5	24.30	0.205	-0.07	0.215
Body-worn & Hotspot	10M QPSK 25B#0	Back Surface	10	23230	23.5	23.28	0.160	-0.11	0.168
Hotspot	10M QPSK 1B#24	Left Edge	10	23230	24.5	24.30	**0.307**	-0.05	0.321
Hotspot	10M QPSK 25B#0	Left Edge	10	23230	23.5	23.28	0.205	0.03	0.216
Hotspot	10M QPSK 1B#24	Right Edge	10	23230	24.5	24.30	0.141	-0.01	0.148
Hotspot	10M QPSK 25B#0	Right Edge	10	23230	23.5	23.28	0.113	-0.05	0.119
Hotspot	10M QPSK 1B#24	Top Edge	10	23230	24.5	24.30	0.144	-0.11	0.151
Hotspot	10M QPSK 25B#0	Top Edge	10	23230	23.5	23.28	0.115	-0.14	0.121
Worst mode retest									
Head	10M QPSK 1B#24	Right Cheek	0	23230	24.5	24.30	0.808	-0.09	0.846

Note:

1. Due to 0.853/0.846 = 1.01 < 1.20, and SAR value of original and repeated measurement is ≤ 1.45 W/kg, so only one repeated measurement is required.

12.11. SAR Test Results of LTE B25

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up Limit	Meas.	1-g (W/Kg)		
Head	20M QPSK 1B#49	Left Cheek	0	26140	24.0	23.94	**0.190**	0.04	0.193
Head	20M QPSK 50B#0	Left Cheek	0	26140	23.0	22.83	0.128	0.17	0.133
Head	20M QPSK 1B#49	Left Tilt	0	26140	24.0	23.94	0.091	0.13	0.093
Head	20M QPSK 50B#0	Left Tilt	0	26140	23.0	22.83	0.076	0.06	0.079
Head	20M QPSK 1B#49	Right Cheek	0	26140	24.0	23.94	0.138	-0.04	0.140
Head	20M QPSK 50B#0	Right Cheek	0	26140	23.0	22.83	0.112	-0.08	0.116
Head	20M QPSK 1B#49	Right Tilt	0	26140	24.0	23.94	0.082	0.12	0.083
Head	20M QPSK 50B#0	Right Tilt	0	26140	23.0	22.83	0.069	-0.17	0.072
Body-worn & Hotspot	20M QPSK 1B#49	Front Surface	10	26140	24.0	23.94	0.411	-0.03	0.417
Body-worn & Hotspot	20M QPSK 50B#0	Front Surface	10	26140	23.0	22.83	0.338	0.16	0.351
Body-worn & Hotspot	20M QPSK 1B#49	Back Surface	10	26140	24.0	23.94	0.823	0.14	0.834
Body-worn & Hotspot	20M QPSK 1B#49	Back Surface	10	26365	24.0	23.80	0.834	-0.15	0.873
Body-worn & Hotspot	20M QPSK 1B#49	Back Surface	10	26590	24.0	23.67	0.786	0.00	0.848
Body-worn & Hotspot	20M QPSK 50B#0	Back Surface	10	26140	23.0	22.83	0.721	-0.18	0.750
Body-worn & Hotspot	20M QPSK 100B#0	Back Surface	10	26140	23.0	22.76	0.706	0.14	0.746
Hotspot	20M QPSK 1B#49	Left Edge	10	26140	24.0	23.94	0.292	0.12	0.296
Hotspot	20M QPSK 50B#0	Left Edge	10	26140	23.0	22.83	0.237	-0.17	0.246
Hotspot	20M QPSK 1B#49	Right Edge	10	26140	24.0	23.94	0.098	0.05	0.099
Hotspot	20M QPSK 50B#0	Right Edge	10	26140	23.0	22.83	0.077	-0.11	0.080
Hotspot	20M QPSK 1B#49	Bottom Edge	10	26365	24.0	23.80	**1.130**	-0.01	1.183
Hotspot	20M QPSK 1B#49	Bottom Edge	10	26590	24.0	23.67	0.975	0.12	1.052
Hotspot	20M QPSK 50B#0	Bottom Edge	10	26140	23.0	22.83	0.845	0.05	0.879
Hotspot	20M QPSK 50B#25	Bottom Edge	10	26365	23.0	22.72	0.809	0.18	0.863
Hotspot	20M QPSK 50B#25	Bottom Edge	10	26590	23.0	21.98	0.772	-0.17	0.976
Hotspot	20M QPSK 100B#0	Bottom Edge	10	26140	23.0	22.76	0.833	-0.05	0.880
Worst mode retest									
Hotspot	20M QPSK 1B#49	Bottom Edge	10	26365	24.0	23.80	1.110	-0.09	1.162

Note:

1. Due to 1.183/1.162 = 1.02 < 1.20, and SAR value of original and repeated measurement is ≤ 1.45 W/kg, so only one repeated measurement is required.

12.12. SAR Test Results of LTE B26

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up Limit	Meas.	1-g (W/Kg)		
Head	15M QPSK 1B#0	Left Cheek	0	26865	23.0	22.76	0.283	-0.07	0.299
Head	15M QPSK 36B#37	Left Cheek	0	26765	22.0	21.79	0.229	-0.06	0.241
Head	15M QPSK 1B#0	Left Tilt	0	26865	23.0	22.76	0.210	-0.13	0.222
Head	15M QPSK 36B#37	Left Tilt	0	26765	22.0	21.79	0.182	-0.12	0.190
Head	15M QPSK 1B#0	Right Cheek	0	26865	23.0	22.76	0.411	-0.17	0.434
Head	15M QPSK 1B#38	Right Cheek	0	26765	23.0	22.74	0.415	0.09	0.441
Head	15M QPSK 1B#38	Right Cheek	0	26965	23.0	22.58	**0.439**	0.01	0.484
Head	15M QPSK 36B#37	Right Cheek	0	26765	22.0	21.79	0.342	-0.06	0.359
Head	15M QPSK 1B#0	Right Tilt	0	26865	23.0	22.76	0.276	0.19	0.292
Head	15M QPSK 36B#37	Right Tilt	0	26765	22.0	21.79	0.234	-0.13	0.246
Body-worn & Hotspot	15M QPSK 1B#0	Front Surface	10	26865	24.0	23.76	0.237	0.01	0.250
Body-worn & Hotspot	15M QPSK 36B#37	Front Surface	10	26765	23.0	22.81	0.217	-0.06	0.227
Body-worn & Hotspot	15M QPSK 1B#0	Back Surface	10	26865	24.0	23.76	**0.258**	0.01	0.273
Body-worn & Hotspot	15M QPSK 36B#37	Back Surface	10	26765	23.0	22.81	0.229	0.14	0.239
Hotspot	15M QPSK 1B#0	Left Edge	10	26865	24.0	23.76	0.216	-0.03	0.228
Hotspot	15M QPSK 36B#37	Left Edge	10	26765	23.0	22.81	0.185	-0.05	0.193
Hotspot	15M QPSK 1B#0	Right Edge	10	26865	24.0	23.76	0.091	0.03	0.096
Hotspot	15M QPSK 36B#37	Right Edge	10	26765	23.0	22.81	0.074	0.19	0.077
Hotspot	15M QPSK 1B#0	Top Edge	10	26865	24.0	23.76	0.234	0.05	0.247
Hotspot	15M QPSK 36B#37	Top Edge	10	26765	23.0	22.81	0.201	0.19	0.210

12.13. SAR Test Results of LTE B41

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up Limit	Meas.	1-g (W/Kg)		
Head	20M QPSK 1B#0	Left Cheek	0	39750	22.5	22.47	**0.101**	-0.19	0.102
Head	20M QPSK 50B#50	Left Cheek	0	39750	21.5	21.29	0.092	-0.07	0.097
Head	20M QPSK 1B#0	Left Tilt	0	39750	22.5	22.47	0.058	-0.16	0.058
Head	20M QPSK 50B#50	Left Tilt	0	39750	21.5	21.29	0.042	-0.12	0.044
Head	20M QPSK 1B#0	Right Cheek	0	39750	22.5	22.47	0.064	-0.04	0.064
Head	20M QPSK 50B#50	Right Cheek	0	39750	21.5	21.29	0.050	0.17	0.052
Head	20M QPSK 1B#0	Right Tilt	0	39750	22.5	22.47	0.051	-0.16	0.051
Head	20M QPSK 50B#50	Right Tilt	0	39750	21.5	21.29	0.041	0.09	0.043
Body-worn & Hotspot	20M QPSK 1B#0	Front Surface	10	39750	22.5	22.47	0.221	0.12	0.223
Body-worn & Hotspot	20M QPSK 50B#50	Front Surface	10	39750	21.5	21.29	0.176	-0.06	0.185
Body-worn & Hotspot	20M QPSK 1B#0	Back Surface	10	39750	22.5	22.47	**0.304**	0.07	0.306
Body-worn & Hotspot	20M QPSK 50B#50	Back Surface	10	39750	21.5	21.29	0.238	-0.14	0.250
Hotspot	20M QPSK 1B#0	Left Edge	10	39750	22.5	22.47	0.160	0.08	0.161
Hotspot	20M QPSK 50B#50	Left Edge	10	39750	21.5	21.29	0.124	0.08	0.130
Hotspot	20M QPSK 1B#0	Right Edge	10	39750	22.5	22.47	0.016	0.10	0.016
Hotspot	20M QPSK 50B#50	Right Edge	10	39750	21.5	21.29	0.013	0.13	0.014
Hotspot	20M QPSK 1B#0	Bottom Edge	10	39750	22.5	22.47	0.280	0.17	0.282
Hotspot	20M QPSK 50B#50	Bottom Edge	10	39750	21.5	21.29	0.234	0.06	0.246

12.14. SAR Test Results of LTE B66

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up Limit	Meas.	1-g (W/Kg)		
Head	20M QPSK 1B#49	Left Cheek	0	132072	24.0	23.75	**0.137**	0.11	0.145
Head	20M QPSK 50B#50	Left Cheek	0	132072	22.5	22.49	0.098	-0.04	0.098
Head	20M QPSK 1B#49	Left Tilt	0	132072	24.0	23.75	0.071	0.10	0.076
Head	20M QPSK 50B#50	Left Tilt	0	132072	22.5	22.49	0.054	0.01	0.054
Head	20M QPSK 1B#49	Right Cheek	0	132072	24.0	23.75	0.101	-0.17	0.107
Head	20M QPSK 50B#50	Right Cheek	0	132072	22.5	22.49	0.089	0.12	0.089
Head	20M QPSK 1B#49	Right Tilt	0	132072	24.0	23.75	0.062	-0.12	0.066
Head	20M QPSK 50B#50	Right Tilt	0	132072	22.5	22.49	0.049	-0.09	0.049
Body-worn & Hotspot	20M QPSK 1B#49	Front Surface	10	132072	23.0	22.78	0.228	0.19	0.239
Body-worn & Hotspot	20M QPSK 50B#50	Front Surface	10	132322	21.5	21.48	0.179	-0.12	0.180
Body-worn & Hotspot	20M QPSK 1B#49	Back Surface	10	132072	23.0	22.78	0.551	-0.19	0.580
Body-worn & Hotspot	20M QPSK 50B#50	Back Surface	10	132072	21.5	21.48	0.424	-0.06	0.426
Hotspot	20M QPSK 1B#49	Left Edge	10	132072	23.0	22.78	0.127	0.11	0.133
Hotspot	20M QPSK 50B#50	Left Edge	10	132072	21.5	21.48	0.096	-0.18	0.096
Hotspot	20M QPSK 1B#49	Right Edge	10	132072	23.0	22.78	0.043	0.14	0.045
Hotspot	20M QPSK 50B#50	Right Edge	10	132072	21.5	21.48	0.033	0.13	0.033
Hotspot	20M QPSK 1B#49	Bottom Edge	10	132072	23.0	22.78	**0.578**	-0.19	0.608
Hotspot	20M QPSK 50B#50	Bottom Edge	10	132072	21.5	21.48	0.488	-0.02	0.491

12.15. SAR Test Results of LTE B71

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up Limit	Meas.	1-g (W/Kg)		
Head	20M QPSK 1B#49	Left Cheek	0	133222	24.5	24.46	0.472	-0.16	0.476
Head	20M QPSK 50B#50	Left Cheek	0	133322	23.5	23.06	0.386	-0.19	0.427
Head	20M QPSK 1B#49	Left Tilt	0	133222	24.5	24.46	0.388	0.11	0.392
Head	20M QPSK 50B#50	Left Tilt	0	133322	23.5	23.06	0.287	-0.03	0.318
Head	20M QPSK 1B#49	Right Cheek	0	133222	24.5	24.46	**0.699**	0.07	0.705
Head	20M QPSK 50B#50	Right Cheek	0	133322	23.5	23.06	0.504	0.12	0.558
Head	20M QPSK 1B#49	Right Tilt	0	133222	24.5	24.46	0.479	-0.03	0.483
Head	20M QPSK 50B#50	Right Tilt	0	133322	23.5	23.06	0.388	-0.06	0.429
Body-worn & Hotspot	20M QPSK 1B#49	Front Surface	10	133222	24.5	24.46	0.192	0.07	0.194
Body-worn & Hotspot	20M QPSK 50B#50	Front Surface	10	133322	23.5	23.06	0.145	-0.15	0.160
Body-worn & Hotspot	20M QPSK 1B#49	Back Surface	10	133222	24.5	24.46	0.166	-0.19	0.168
Body-worn & Hotspot	20M QPSK 50B#50	Back Surface	10	133322	23.5	23.06	0.119	0.13	0.132
Hotspot	20M QPSK 1B#49	Left Edge	10	133222	24.5	24.46	**0.216**	-0.07	0.218
Hotspot	20M QPSK 50B#50	Left Edge	10	133322	23.5	23.06	0.178	-0.11	0.197
Hotspot	20M QPSK 1B#49	Right Edge	10	133222	24.5	24.46	0.129	-0.13	0.130
Hotspot	20M QPSK 50B#50	Right Edge	10	133322	23.5	23.06	0.111	0.13	0.123
Hotspot	20M QPSK 1B#49	Top Edge	10	133222	24.5	24.46	0.069	-0.17	0.070
Hotspot	20M QPSK 50B#50	Top Edge	10	133322	23.5	23.06	0.057	-0.11	0.063

12.16. SAR Test Results of 2.4GHz Wi-Fi

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		DC. (%)	Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up	Meas.		1-g (W/Kg)		
Head	11b	Left Cheek	0	11	15.0	14.56	99.52	**0.390**	-0.15	0.434
Head	11b	Left Tilt	0	11	15.0	14.56	99.52	0.263	-0.06	0.292
Head	11b	Right Cheek	0	11	15.0	14.56	99.52	0.139	0.07	0.155
Head	11b	Right Tilt	0	11	15.0	14.56	99.52	0.126	-0.10	0.140
Body-worn & Hotspot	11b	Front Surface	10	11	15.0	14.56	99.52	0.091	-0.19	0.101
Body-worn & Hotspot	11b	Back Surface	10	11	15.0	14.56	99.52	**0.099**	-0.14	0.110
Hotspot	11b	Right Edge	10	11	15.0	14.56	99.52	0.089	-0.16	0.099
Hotspot	11b	Top Edge	10	11	15.0	14.56	99.52	0.067	-0.06	0.075

12.17. SAR Test Results of 5GHz Wi-Fi

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		DC. (%)	Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up	Meas.		1-g (W/Kg)		
5.1G										
Head	11a	Left Cheek	0	36	16.5	16.32	97.18	0.798	0.12	0.856
Head	11a	Left Cheek	0	40	16.5	16.09	97.18	0.624	-0.04	0.705
Head	11a	Left Cheek	0	48	16.5	16.10	97.18	0.590	-0.02	0.666
Head	11a	Left Tilt	0	36	16.5	16.32	97.18	0.843	0.08	0.904
Head	11a	Left Tilt	0	40	16.5	16.09	97.18	0.798	-0.01	0.903
Head	11a	Left Tilt	0	48	16.5	16.10	97.18	0.809	0.09	0.913
Head	11a	Right Cheek	0	36	16.5	16.32	97.18	0.507	-0.16	0.544
Head	11a	Right Tilt	0	36	16.5	16.32	97.18	0.510	0.13	0.547
Body-worn & Hotspot	11a	Front Surface	10	36	19.0	18.62	97.18	0.242	0.12	0.272
Body-worn & Hotspot	11a	Back Surface	10	36	19.0	18.62	97.18	**0.379**	0.01	0.426
Hotspot	11a	Right Edge	10	36	19.0	18.62	97.18	0.267	0.07	0.300
Hotspot	11a	Top Edge	10	36	19.0	18.62	97.18	0.562	-0.11	0.631
Worst mode retest										
Head	11a	Left Tilt	0	36	16.5	16.32	97.18	0.838	0.01	0.899
5.3G										
Body-worn	11a	Front Surface	10	52	18.5	18.46	97.18	0.201	0.05	0.209
Body-worn	11a	Back Surface	10	52	18.5	18.46	97.18	**0.269**	0.03	0.279
RF Exposure Condition	**Test Mode**	**Test Position**	**Dist. (mm)**	**Channel**	**Pwr. (dBm)**		**DC. (%)**	**Measured**	**Pwr. Drift**	**Scaled (W/Kg)**
					Tune-up	**Meas.**		**10-g (W/Kg)**		
Extremity	11a	Front Surface	0	52	18.5	18.46	97.18	0.493	-0.01	0.512
Extremity	11a	Back Surface	0	52	18.5	18.46	97.18	0.525	-0.08	0.545
Extremity	11a	Right Edge	0	52	18.5	18.46	97.18	0.314	-0.11	0.326
Extremity	11a	Top Edge	0	52	18.5	18.46	97.18	**0.647**	-0.02	0.672
RF Exposure Condition	**Test Mode**	**Test Position**	**Dist. (mm)**	**Channel**	**Pwr. (dBm)**		**DC. (%)**	**Measured**	**Pwr. Drift**	**Scaled (W/Kg)**
					Tune-up	**Meas.**		**1-g (W/Kg)**		
5.6G										
Head	11a	Left Cheek	0	100	16.5	16.24	97.18	0.575	0.12	0.628
Head	11a	Left Tilt	0	100	16.5	16.24	97.18	0.758	-0.01	0.828
Head	11a	Left Tilt	0	116	16.5	16.02	97.18	**0.804**	-0.07	0.924
Head	11a	Left Tilt	0	140	16.5	15.56	97.18	0.758	-0.06	0.968
Head	11a	Right Cheek	0	100	16.5	16.24	97.18	0.570	-0.04	0.622
Head	11a	Right Tilt	0	100	16.5	16.24	97.18	0.560	0.19	0.611
Body-worn & Hotspot	11a	Front Surface	10	116	18.0	17.61	97.18	0.150	-0.16	0.169
Body-worn & Hotspot	11a	Back Surface	10	116	18.0	17.61	97.18	**0.513**	-0.19	0.577
RF Exposure Condition	**Test Mode**	**Test Position**	**Dist. (mm)**	**Channel**	**Pwr. (dBm)**		**DC. (%)**	**Measured**	**Pwr. Drift**	**Scaled (W/Kg)**
					Tune-up	**Meas.**		**10-g (W/Kg)**		
Extremity	11a	Front Surface	0	116	18.0	17.61	97.18	0.540	-0.19	0.608
Extremity	11a	Back Surface	0	116	18.0	17.61	97.18	0.591	-0.02	0.665
Extremity	11a	Right Edge	0	116	18.0	17.61	97.18	0.457	-0.03	0.514
Extremity	11a	Top Edge	0	116	18.0	17.61	97.18	**1.020**	-0.15	1.148
Worst mode retest										
Head	11a	Left Tilt	0	116	16.5	16.02	97.18	0.801	-0.15	0.921
RF Exposure Condition	**Test Mode**	**Test Position**	**Dist. (mm)**	**Channel**	**Pwr. (dBm)**		**DC. (%)**	**Measured**	**Pwr. Drift**	**Scaled (W/Kg)**
					Tune-up	**Meas.**		**1-g (W/Kg)**		
5.8G										
Head	11n40	Left Cheek	0	159	15.0	14.59	94.12	0.373	-0.14	0.435
Head	11n40	Left Tilt	0	159	15.0	14.59	94.12	0.495	-0.17	0.578
Head	11n40	Right Cheek	0	159	15.0	14.59	94.12	0.436	0.02	0.509
Head	11n40	Right Tilt	0	159	15.0	14.59	94.12	**0.571**	0.15	0.667

Body-worn & Hotspot	11n40	Front Surface	10	151	16.0	15.66	94.12	0.219	0.09	0.252
Body-worn & Hotspot	11n40	Back Surface	10	151	16.0	15.66	94.12	0.374	0.17	0.430
Hotspot	11n40	Right Edge	10	151	16.0	15.66	94.12	0.226	0.14	0.260
Hotspot	11n40	Top Edge	10	151	16.0	15.66	94.12	**0.507**	0.08	0.583

Note:

1. Due to 0.947/0.941 = 1.01 < 1.20, and SAR value of original and repeated measurement is ≤ 1.45 W/kg, so only one repeated measurement is required.
2. Due to 0.924/0.921 = 1.00 < 1.20, and SAR value of original and repeated measurement is ≤ 1.45 W/kg, so only one repeated measurement is required.

12.18. SAR Test Results of Bluetooth

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		DC. (%)	Measured	Pwr. Drift	Scaled (W/Kg)
					Tune-up	Meas.		1-g (W/Kg)		
Head	DH5	Left Cheek	0	78	6.0	5.77	76.74	**0.093**	-0.15	0.128
Head	DH5	Left Tilt	0	78	6.0	5.77	76.74	0.072	-0.13	0.099
Head	DH5	Right Cheek	0	78	6.0	5.77	76.74	0.034	-0.10	0.047
Head	DH5	Right Tilt	0	78	6.0	5.77	76.74	0.033	0.01	0.045
Body-worn & Hotspot	DH5	Front Surface	10	78	6.0	5.77	76.74	0.020	0.07	0.027
Body-worn & Hotspot	DH5	Back Surface	10	78	6.0	5.77	76.74	0.017	-0.11	0.023
Hotspot	DH5	Right Edge	10	78	6.0	5.77	76.74	**0.020**	-0.06	0.027
Hotspot	DH5	Top Edge	10	78	6.0	5.77	76.74	0.011	-0.11	0.015

13. Simultaneous Transmission SAR Analysis

Simultaneous transmission possibilities					
NO	Simultaneous TX Combination	Head	Body- worn	Hotspot	Product Specific 10-g (0mm)
1	WWAN+BT	Y	Y	Y	Y
2	WWAN+2.4GHz WiFi	Y	Y	Y	Y
3	WWAN+5GHz WiFi	Y	Y	Y	Y
4	WWAN+5GHz WiFi+BT	Y	Y	Y	Y
5	BT+5GHz WiFi	Y	Y	Y	Y

13.1. Analysis for WWAN (ANT 0) & Wi-Fi & BT

RF Exposure Condition	Test Position	SUM				
		WWAN(Max) + 2.4GWiFi	WWAN(Max) + BT	WWAN(Max) + U-NII(Max)	WWAN(Max) + U-NII (Max) + BT	U-NII (Max) + BT
Head	Left Cheek	1.033	0.727	1.456	1.583	1.033
	Left Tilt	0.742	0.549	1.418	1.517	0.742
	Right Cheek	1.008	0.900	1.476	1.522	1.008
	Right Tilt	0.865	0.770	1.391	1.437	0.865
Body-worn & Hotspot	Front Surface	0.552	0.479	0.723	0.750	0.552
	Back Surface	1.055	0.968	1.522	1.546	1.055
Hotspot	Left Edge	0.438	0.438	0.438	0.438	0.438
	Right Edge	0.394	0.322	0.595	0.622	0.394
	Top Edge	0.652	0.593	1.209	1.224	0.652
	Bottom Edge	1.183	1.183	1.183	1.183	1.183
Extremity	Front Surface	\	\	\	\	\
	Back Surface	\	\	\	\	\
	Left Edge	\	\	\	\	\
	Right Edge	\	\	\	\	\
	Top Edge	\	\	\	\	\
	Bottom Edge	\	\	\	\	\

Appendixes

Refer to separated files for the following appendixes.

4791221995-1-SAR-1_App A Photo

4791221995-1-SAR-1_App B System Check Plots

4791221995-1-SAR-1_App C Highest Test Plots

4791221995-1-SAR-1_App D Cal. Certificates

---------End of Report---------