SAR EVALUATION REPORT

FCC 47 CFR § 2.1093
IEEE Std 1528-2013

For
LTE Smart Phone

FCC ID: 2ADINS6603L
Model Name: S6603L, NUU N10, N10

Report Number: 4791434720-1-SAR-1
Issue Date: September 4, 2024

Prepared for
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Revision History

Rev.	Date	Revisions	Revised By
V1.0	September 4, 2024	Initial Issue	\

Note:

1. The Measurement result for the sample received is<Pass> according to < IEEE Std. 1528-2013> when <Simple Acceptance> 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.

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1. Attestation of Test Results

Applicant Name	Sun Cupid Technology (HK) Ltd.			
Address	16/F, CEO Tower, 77 Wing Hong St, Cheung Sha Wan, Kowloon Hong Kong			
Manufacturer	Sun Cupid Technology (HK) Ltd.			
Address	16/F, CEO Tower, 77 Wing Hong St, Cheung Sha Wan, Kowloon Hong Kong			
EUT Name	LTE Smart Phone			
Model	S6603L			
Series Model	NUU N10, N10			
Model Difference:	NUU N10, N10 have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction with S6603L. The difference lies only the model number. all these changes do not degrade the unwanted emissions of the certified product.			
Brand	NUU			
Sample ID	7477483			
Sample Status	Normal			
Sample Received Date	August 5, 2024			
Date of Tested	August 12, 2024 ~ August 29, 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)	0.151	0.682	0.489	0.125
Body-worn (10mm)	0.492	0.153	0.105	0.019
Hotspot (10mm)	0.956	0.185	0.143	0.019
Extremity (0mm)	/	/	1.142	/
Simultaneous Transmission (1-g)	Head	0.780		
	Body-worn	0.645		
	Hotspot	0.956		
Test Results	Pass			

Prepared By:	Reviewed By:	Approved By:
Burt Hu Laboratory Engineer	Kebo Zhang Senior Project Engineer	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

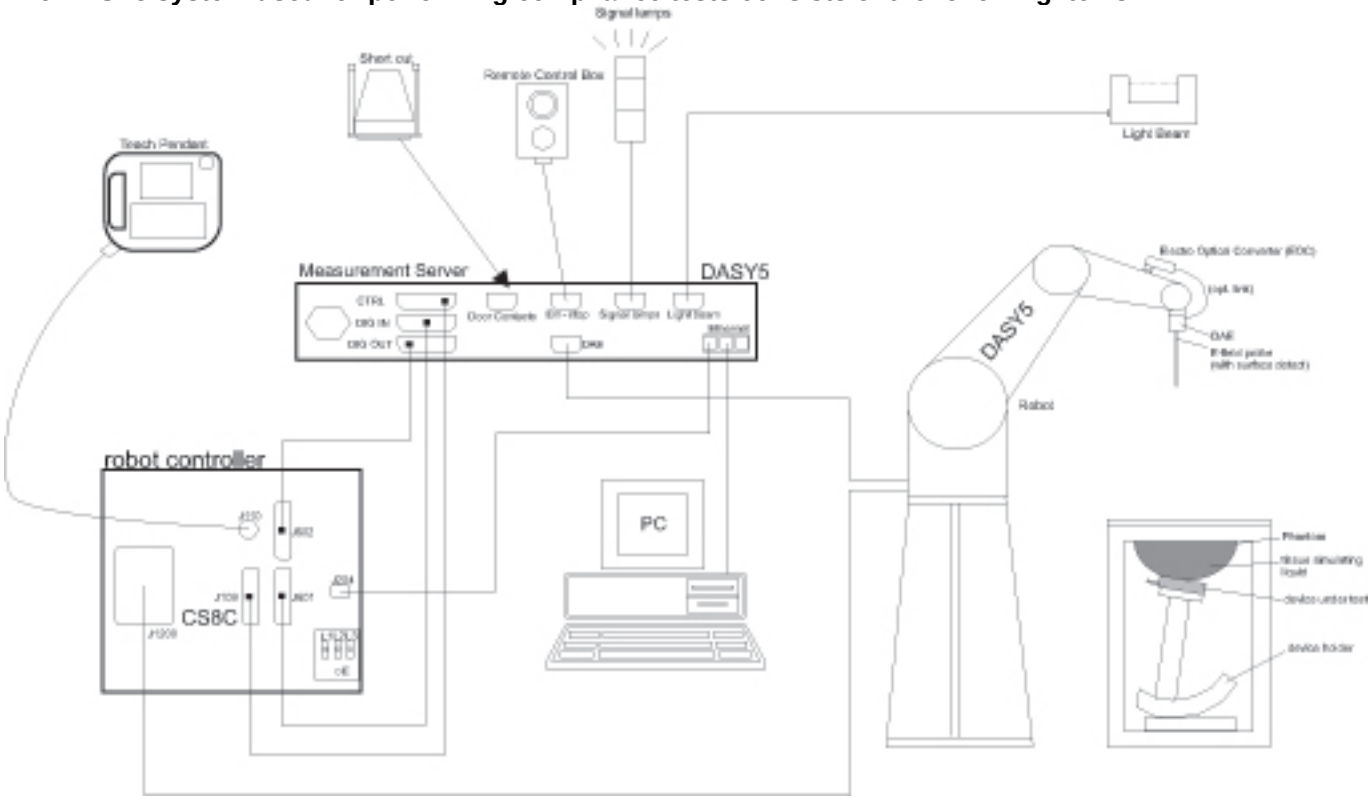
3. Facilities and Accreditation

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	SMB100A	178553	2024.10.11
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 1900 MHz	SPEAG	D1900V2	5d212	2024.12.19
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): 164.8 mm x 75.9 mm x 10 mm
Accessory	None

6.2. Wireless Technology

Wireless technologies	Frequency bands	Operating mode	
GSM	850 1900	☒ Voice (GMSK) ☒ GPRS (GMSK) ☒ EGPRS (8PSK)	GSM Class: B 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 Band12 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)	
Wi-Fi	5GHz	☒ 802.11a ☒ 802.11n (HT20) ☒ 802.11n (HT40) ☒ 802.11ac (VHT20) ☒ 802.11ac (VHT40) ☒ 802.11ac (VHT80)	
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.

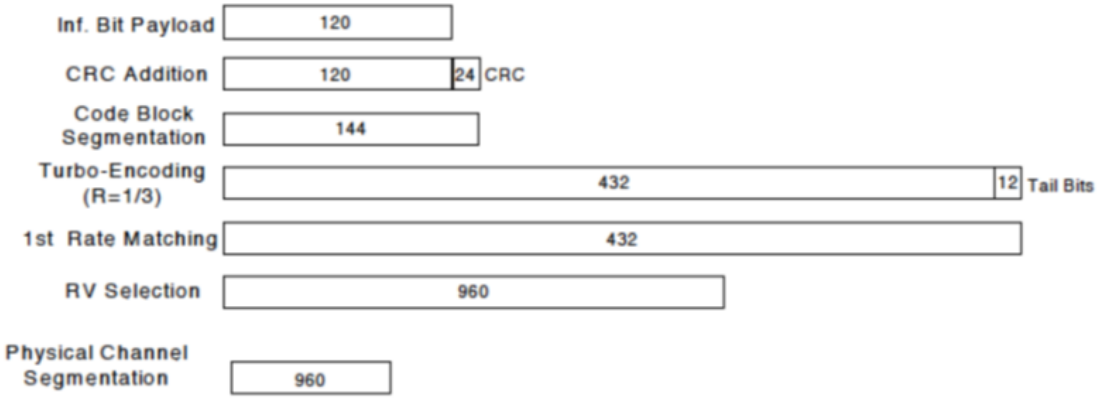


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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. 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.

7.3.6. 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.

7.3.7. 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 / 2M SISO modes are tested on the maximum average output power mode.

7.4. 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. Conducted Output Power Measurement and tune-up tolerance

8.1. GSM850

GSM850		Channel No. 128 Fre. (MHz) 824.2	Channel No. 190 Fre. (MHz) 836.6	Channel No. 251 Fre. (MHz) 848.8	Tune-up Limit (dBm)	Division Factor	Channel 128 Fre. (MHz) 824.2	Channel 190 Fre. (MHz) 836.6	Channel 251 Fre. (MHz) 848.8	Tune-up Limit (dBm)
CS		32.06	32.00	31.92	32.5	\	\	\	\	32.5
GPRS/EGPRS (GMSK)	1 TimeSlot	32.04	32.00	31.92	32.5	-9.03	23.01	22.97	22.89	23.5
	2 TimeSlots	29.78	29.80	29.84	30.0	-6.02	23.76	23.78	23.82	24.0
	3 TimeSlots	28.06	28.03	28.05	28.5	-4.26	23.80	23.77	23.79	**24.2**
	4 TimeSlots	26.08	26.08	26.07	26.5	-3.01	23.07	23.07	23.06	23.5
EGPRS (8PSK)	1 TimeSlot	24.73	24.79	24.85	25.0	-9.03	15.70	15.76	15.82	16.0
	2 TimeSlots	23.74	23.89	24.44	24.5	-6.02	17.72	17.87	18.42	18.5
	3 TimeSlots	21.50	21.46	21.51	22.0	-4.26	17.24	17.20	17.25	17.7
	4 TimeSlots	19.27	19.30	19.04	19.5	-3.01	16.26	16.29	16.03	16.5

8.2. GSM1900

GSM1900		Channel No. 512 Fre. (MHz) 1850.2	Channel No. 661 Fre. (MHz) 1880	Channel No. 810 Fre. (MHz) 1909.8	Tune-up Limit (dBm)	Division Factor	Channel No. 512 Fre. (MHz) 1850.2	Channel No. 661 Fre. (MHz) 1880	Channel No. 810 Fre. (MHz) 1909.8	Tune-up Limit (dBm)
CS		28.56	28.75	28.79	29.0	\	\	\	\	29.0
GPRS/EGPRS (GMSK)	1 TimeSlot	28.55	28.72	28.79	29.0	-9.03	19.52	19.69	19.76	20.0
	2 TimeSlots	26.65	26.80	26.92	27.0	-6.02	20.63	20.78	20.90	21.0
	3 TimeSlots	25.13	25.19	25.37	25.5	-4.26	20.87	20.93	21.11	**21.2**
	4 TimeSlots	23.28	23.34	23.42	23.5	-3.01	20.27	20.33	20.41	20.5
EGPRS (8PSK)	1 TimeSlot	25.78	26.35	26.17	26.5	-9.03	16.75	17.32	17.14	17.5
	2 TimeSlots	24.34	25.03	24.76	25.5	-6.02	18.32	19.01	18.74	**19.5**
	3 TimeSlots	22.38	22.26	22.14	22.5	-4.26	18.12	18.00	17.88	18.2
	4 TimeSlots	20.49	20.15	20.70	21.0	-3.01	17.48	17.14	17.69	18.0

8.3. WCDMA Band 2

Band Ⅱ		Channel No.	Channel No.	Channel No.	Tune-up Limit (dBm)
		9262	9400	9538	
		Fre. (MHz)	Fre. (MHz)	Fre. (MHz)	
		1852.4	1880	1907.6	
WCDMA	12.2kbps RMC	20.70	21.08	21.40	21.5
HSDPA	Subtest 1	20.96	20.94	20.76	21.0
	Subtest 2	20.72	20.73	20.51	21.0
	Subtest 3	19.80	19.84	19.65	20.0
	Subtest 4	20.50	20.57	20.29	21.0
HSUPA	Subtest 1	20.92	20.96	20.86	21.0
	Subtest 2	20.88	20.98	20.78	21.0
	Subtest 3	20.86	20.91	20.71	21.0
	Subtest 4	20.85	20.91	20.71	21.0
	Subtest 5	20.84	20.90	20.76	21.0

8.4. WCDMA Band 4

Band IV		Channel No.	Channel No.	Channel No.	Tune-up Limit (dBm)
		1312	1413	1513	
		Fre. (MHz)	Fre. (MHz)	Fre. (MHz)	
		1712.4	1732.6	1752.6	
WCDMA	12.2kbps RMC	22.21	21.92	21.72	22.5
HSDPA	Subtest 1	21.12	21.99	21.09	22.0
	Subtest 2	21.44	22.09	21.38	22.5
	Subtest 3	21.42	22.03	21.33	22.5
	Subtest 4	21.43	22.05	21.35	22.5
HSUPA	Subtest 1	21.47	22.11	21.37	22.5
	Subtest 2	21.37	22.06	21.32	22.5
	Subtest 3	21.41	22.07	21.33	22.5
	Subtest 4	21.37	22.07	21.30	22.5
	Subtest 5	21.42	22.07	21.32	22.5

8.5. WCDMA Band 5

Band V		Channel No.	Channel No.	Channel No.	Tune-up Limit (dBm)
		4132	4183	4233	
		Fre. (MHz)	Fre. (MHz)	Fre. (MHz)	
		826.4	836.4	846.6	
WCDMA	12.2kbps RMC	21.98	22.12	22.02	22.5
HSDPA	Subtest 1	20.54	20.64	20.03	21.0
	Subtest 2	20.56	20.49	20.10	21.0
	Subtest 3	20.25	20.20	19.77	20.5
	Subtest 4	20.16	20.05	19.74	20.5
HSUPA	Subtest 1	21.56	21.52	21.11	22.0
	Subtest 2	21.50	21.45	21.07	22.0
	Subtest 3	21.51	21.49	21.11	22.0
	Subtest 4	21.48	21.44	21.04	21.5
	Subtest 5	21.53	21.50	21.12	22.0

8.6. LTE Band 2

Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				18607	18900	19193	
				1850.70	1880.00	1909.30	
1.4	QPSK	1	0	22.27	21.89	22.51	**23.0**
		1	2	22.09	22.28	22.54	
		1	5	**22.39**	**22.51**	**22.69**	
		3	0	22.15	22.06	22.42	23.0
		3	1	22.15	**22.49**	22.57	
		3	3	**22.34**	22.35	**22.63**	
		6	0	21.11	21.33	**21.58**	22.0
	16QAM	1	0	21.24	21.43	21.31	22.0
		1	2	21.07	21.39	21.46	
		1	5	21.18	21.29	21.47	
		3	0	21.87	21.88	21.73	22.0
		3	1	21.94	21.89	21.82	
		3	3	21.87	21.89	21.80	
		6	0	20.03	20.39	20.85	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				18615	18900	19185	
				1851.50	1880.00	1908.50	
3	QPSK	1	0	**22.36**	22.19	22.38	**23.0**
		1	8	22.27	22.32	22.55	
		1	14	22.15	**22.55**	**22.62**	
		8	0	21.18	21.10	21.55	22.0
		8	4	**21.24**	21.32	21.33	
		8	7	21.15	**21.35**	**21.68**	
		15	0	21.11	21.49	**21.65**	22.0
	16QAM	1	0	22.24	21.81	22.73	**23.0**
		1	8	21.67	21.79	22.87	
		1	14	21.86	22.06	22.86	
		8	0	20.28	20.26	20.54	21.0
		8	4	20.35	20.50	20.68	
		8	7	20.32	20.29	20.57	
		15	0	20.14	20.52	20.58	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				18625	18900	19175	
				1852.50	1880.00	1907.50	
5	QPSK	1	0	22.23	21.92	22.45	**23.0**
		1	12	22.11	22.28	**22.73**	
		1	24	**22.39**	**22.33**	22.54	
		12	0	21.26	21.22	**21.64**	22.0
		12	6	21.14	**21.46**	21.58	
		12	13	**21.28**	21.22	21.60	
		25	0	21.15	21.43	**21.45**	22.0
	16QAM	1	0	22.12	21.71	22.69	**23.0**
		1	12	21.71	21.89	22.72	

		1	24	21.86	22.01	22.75	
		12	0	20.23	20.30	20.40	21.0
		12	6	20.24	20.45	20.50	
		12	13	20.42	20.30	20.47	
		25	0	20.17	20.46	20.58	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 18650 Fre. (MHz) 1855.00	Channel No. 18900 Fre. (MHz) 1880.00	Channel No. 19150 Fre. (MHz) 1905.00	Tune-up Limit (dBm)
10	QPSK	1	0	22.12	22.07	22.38	**23.0**
		1	24	22.12	22.37	22.51	
		1	49	**22.20**	**22.47**	**22.72**	
		25	0	21.02	21.34	21.47	22.0
		25	12	21.14	**21.41**	**21.56**	
		25	25	**21.18**	21.19	21.43	
		50	0	21.17	21.38	**21.41**	22.0
	16QAM	1	0	22.26	21.72	22.82	**23.0**
		1	24	21.94	21.99	22.76	
		1	49	21.91	22.07	22.95	
		25	0	20.15	20.29	20.45	21.0
		25	12	20.32	20.39	20.53	
		25	25	20.36	20.30	20.63	
		50	0	20.27	20.32	20.62	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 18675 Fre. (MHz) 1857.50	Channel No. 18900 Fre. (MHz) 1880.00	Channel No. 19125 Fre. (MHz) 1902.50	Tune-up Limit (dBm)
15	QPSK	1	0	22.19	21.98	22.60	**23.0**
		1	38	22.09	**22.41**	**22.77**	
		1	74	**22.27**	22.35	22.70	
		36	0	**21.21**	21.28	21.54	22.0
		36	18	21.18	21.30	21.34	
		36	37	21.11	**21.40**	**21.65**	
		75	0	21.21	**21.50**	21.47	22.0
	16QAM	1	0	22.24	21.80	22.66	**23.0**
		1	38	21.66	22.00	22.69	
		1	74	21.83	21.90	22.85	
		36	0	20.25	20.32	20.42	21.0
		36	18	20.19	20.44	20.52	
		36	37	20.29	20.41	20.38	
		75	0	20.36	20.49	20.80	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 18700 Fre. (MHz) 1860.00	Channel No. 18900 Fre. (MHz) 1880.00	Channel No. 19100 Fre. (MHz) 1900.00	Tune-up Limit (dBm)
20	QPSK	1	0	22.24	22.04	22.45	**23.0**
		1	49	22.12	22.38	22.65	
		1	99	**22.27**	**22.45**	**22.68**	
		50	0	21.13	21.22	**21.58**	22.0
		50	25	**21.28**	**21.35**	21.45	

		50	50	21.14	21.34	21.55	
		100	0	21.20	21.37	**21.52**	22.0
	16QAM	1	0	22.12	21.80	22.75	**23.0**
		1	49	21.81	21.88	22.82	
		1	99	21.93	22.04	22.82	
		50	0	20.25	20.39	20.51	21.0
		50	25	20.26	20.40	20.54	
		50	50	20.34	20.40	20.53	
		100	0	20.23	20.43	20.68	21.0

8.7. LTE Band 4

Bandwidth	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				19957 / 1710.70	20175 / 1732.50	20393 / 1754.30	
1.4	QPSK	1	0	**22.91**	22.45	22.92	**23.0**
		1	2	22.79	22.35	**22.94**	
		1	5	22.67	**22.58**	22.71	
		3	0	**21.66**	22.49	22.74	23.0
		3	1	**22.84**	22.36	**22.94**	
		3	3	22.53	**22.57**	22.67	
		6	0	**21.89**	21.47	21.45	22.0
	16QAM	1	0	21.83	21.70	21.38	22.0
		1	2	21.91	21.62	21.33	
		1	5	21.71	21.53	21.50	
		3	0	21.85	21.75	21.99	22.0
		3	1	21.15	21.69	21.82	
		3	3	21.15	21.84	21.74	
		6	0	20.68	20.53	20.42	21.0
Bandwidth	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				19965 / 1711.50	20175 / 1732.50	20385 / 1753.50	
3	QPSK	1	0	**22.81**	22.50	22.58	**23.0**
		1	8	22.78	22.42	**22.95**	
		1	14	22.61	**22.52**	22.76	
		8	0	21.79	21.52	21.30	22.0
		8	4	**21.89**	**21.75**	21.34	
		8	7	21.86	21.56	**21.49**	
		15	0	**21.66**	21.51	21.52	22.0
	16QAM	1	0	22.11	22.29	21.74	**22.5**
		1	8	21.31	21.98	21.89	
		1	14	21.94	22.05	21.63	
		8	0	20.85	20.73	20.68	21.0
		8	4	20.97	20.74	20.74	
		8	7	20.88	20.83	20.70	
		15	0	20.82	20.61	20.44	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				19975 / 1712.50	20175 / 1732.50	20375 / 1752.50	
5	QPSK	1	0	**22.67**	**22.66**	22.78	**23.0**
		1	12	**22.70**	22.51	**22.83**	
		1	24	22.57	22.41	22.79	
		12	0	21.94	**21.70**	21.55	22.0
		12	6	**21.97**	21.66	21.42	
		12	13	21.80	21.62	**21.57**	
		25	0	**21.93**	21.46	21.32	22.0
	16QAM	1	0	22.06	22.29	21.89	**22.5**
		1	12	21.31	21.91	21.88	

		1	24	22.06	22.09	21.74	
		12	0	20.88	20.88	20.75	21.0
		12	6	20.90	20.81	20.72	
		12	13	20.97	20.73	20.68	
		25	0	20.96	20.70	20.66	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 20000 Fre. (MHz) 1715.00	Channel No. 20175 Fre. (MHz) 1732.50	Channel No. 20350 Fre. (MHz) 1750.00	Tune-up Limit (dBm)
10	QPSK	1	0	**22.81**	22.58	**22.91**	**23.0**
		1	24	**22.89**	22.36	22.81	
		1	49	22.65	**22.61**	22.68	
		25	0	21.93	21.50	21.27	22.0
		25	12	**21.94**	**21.66**	21.31	
		25	25	21.88	21.59	**21.61**	
		50	0	21.65	**21.70**	21.29	22.0
	16QAM	1	0	22.15	22.23	22.00	**22.5**
		1	24	21.16	22.06	21.80	
		1	49	22.10	22.30	21.57	
		25	0	20.76	20.97	20.47	21.0
		25	12	20.86	20.97	20.74	
		25	25	20.98	20.76	20.65	
		50	0	20.96	20.61	20.72	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 20025 Fre. (MHz) 1717.50	Channel No. 20175 Fre. (MHz) 1732.50	Channel No. 20325 Fre. (MHz) 1747.50	Tune-up Limit (dBm)
15	QPSK	1	0	22.56	**22.63**	**22.88**	**23.0**
		1	38	**22.71**	22.27	22.83	
		1	74	22.64	22.41	22.65	
		36	0	21.88	**21.62**	**21.44**	22.0
		36	18	21.87	21.61	21.35	
		36	37	**21.91**	21.45	21.40	
		75	0	**21.72**	21.45	21.48	22.0
	16QAM	1	0	22.06	22.10	21.84	**22.5**
		1	38	21.14	22.09	21.80	
		1	74	22.17	22.33	21.62	
		36	0	20.80	20.84	20.70	21.0
		36	18	20.89	20.79	20.70	
		36	37	20.89	20.84	20.70	
		75	0	20.77	20.45	20.47	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 20050 Fre. (MHz) 1720.00	Channel No. 20175 Fre. (MHz) 1732.50	Channel No. 20300 Fre. (MHz) 1745.00	Tune-up Limit (dBm)
20	QPSK	1	0	**22.96**	**22.54**	**22.87**	**23.0**
		1	49	22.80	22.39	22.82	
		1	99	22.68	22.47	22.72	
		50	0	21.93	**21.61**	21.42	22.0
		50	25	21.93	**21.61**	21.45	

		50	50	**21.94**	21.56	**21.46**	
		100	0	**21.78**	21.57	21.43	22.0
	16QAM	1	0	22.11	22.14	21.89	**22.5**
		1	49	21.23	21.99	21.76	
		1	99	22.03	22.20	21.68	
		50	0	20.91	20.86	20.60	21.0
		50	25	20.95	20.88	20.59	
		50	50	20.96	20.75	20.60	
		100	0	20.88	20.59	20.58	21.0

8.8. LTE Band 5

Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				20407 / 824.70	20525 / 836.50	20643 / 848.30	
1.4	QPSK	1	0	22.97	22.95	**23.09**	**23.5**
		1	2	**23.04**	**23.07**	22.98	
		1	5	23.01	23.00	22.88	
		3	0	22.95	**23.10**	**23.03**	23.5
		3	1	**23.05**	22.86	**23.03**	
		3	3	22.93	23.02	22.89	
		6	0	22.06	21.93	**22.07**	22.5
	16QAM	1	0	22.05	21.98	22.05	22.5
		1	2	21.97	22.00	22.10	
		1	5	22.14	22.10	22.14	
		3	0	22.09	21.92	22.08	22.5
		3	1	22.23	21.96	21.91	
		3	3	22.15	21.95	21.95	
		6	0	21.30	21.06	20.86	22.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				20415 / 825.50	20525 / 836.50	20635 / 847.50	
3	QPSK	1	0	22.77	22.97	**23.09**	**23.5**
		1	8	**23.06**	22.96	22.96	
		1	14	23.00	**23.00**	23.01	
		8	0	**22.20**	**22.14**	22.10	22.5
		8	4	22.18	22.13	21.95	
		8	7	21.95	22.08	**22.13**	
		15	0	21.89	**22.10**	22.04	22.5
	16QAM	1	0	22.09	22.66	22.76	**23.0**
		1	8	22.28	22.85	22.73	
		1	14	22.26	22.78	22.71	
		8	0	21.51	21.12	21.08	22.0
		8	4	21.45	21.13	21.06	
		8	7	21.50	20.86	20.92	
		15	0	20.99	21.03	20.79	22.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				20425 / 826.50	20525 / 836.50	20625 / 846.50	
5	QPSK	1	0	**22.97**	22.98	22.92	**23.5**
		1	12	22.89	23.03	22.87	
		1	24	22.94	**23.10**	**23.10**	
		12	0	21.98	**22.11**	22.09	22.5
		12	6	**22.00**	21.98	21.95	
		12	13	21.96	22.06	**22.21**	
		25	0	**22.14**	21.87	22.00	22.5
	16QAM	1	0	22.21	22.80	22.60	**23.0**
		1	12	22.20	22.81	22.63	

		1	24	22.17	22.64	22.65	
		12	0	21.31	21.16	20.99	22.0
		12	6	21.55	21.27	20.98	
		12	13	21.36	21.15	21.01	
		25	0	20.91	20.97	20.78	22.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No.	Channel No.	Channel No.	Tune-up Limit (dBm)
				20450	20525	20600	
				Fre. (MHz)	Fre. (MHz)	Fre. (MHz)	
				829.00	836.50	844.00	
10	QPSK	1	0	22.88	**23.04**	22.99	**23.5**
		1	24	22.95	22.97	22.95	
		1	49	**23.00**	22.96	**23.00**	
		25	0	**22.10**	22.05	21.99	22.5
		25	12	**22.10**	**22.06**	22.03	
		25	25	**22.10**	**22.06**	**22.10**	
		50	0	**22.00**	21.95	21.91	22.5
	16QAM	1	0	22.15	22.73	22.71	**23.0**
		1	24	22.26	22.84	22.63	
		1	49	22.11	22.69	22.61	
		25	0	21.46	21.09	20.98	22.0
		25	12	21.47	21.14	21.00	
		25	25	21.50	21.01	21.00	
		50	0	20.99	21.08	20.87	22.0

8.9. LTE Band 12

Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				23017 / 699.70	23095 / 707.50	23173 / 715.30	
1.4	QPSK	1	0	**23.09**	23.09	22.85	**23.5**
		1	2	22.95	22.93	22.85	
		1	5	22.86	**23.15**	**23.10**	
		3	0	**22.99**	23.10	**22.99**	23.5
		3	1	22.93	22.76	22.88	
		3	3	22.87	**23.16**	22.92	
		6	0	21.93	**22.06**	21.89	22.5
	16QAM	1	0	21.92	22.05	21.87	22.5
		1	2	21.76	22.04	22.03	
		1	5	22.04	22.14	22.14	
		3	0	22.02	22.20	22.06	22.5
		3	1	21.95	22.27	22.05	
		3	3	21.83	22.21	22.05	
		6	0	20.89	21.26	20.74	21.5
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				23025 / 700.50	23095 / 707.50	23165 / 714.50	
3	QPSK	1	0	22.84	23.16	22.91	**23.5**
		1	8	**23.03**	22.80	22.87	
		1	14	22.98	**23.21**	**22.97**	
		8	0	21.95	22.10	21.95	22.5
		8	4	**22.04**	**22.18**	22.03	
		8	7	21.81	22.01	**22.05**	
		15	0	21.85	22.10	**22.12**	22.5
	16QAM	1	0	21.71	22.81	22.82	**23.0**
		1	8	21.72	22.52	22.44	
		1	14	21.74	22.65	22.57	
		8	0	20.97	21.06	20.90	21.5
		8	4	21.02	21.06	20.99	
		8	7	20.98	21.31	20.75	
		15	0	20.85	20.86	21.34	21.5
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				23035 / 701.50	23095 / 707.50	23155 / 713.50	
5	QPSK	1	0	**22.97**	23.01	**23.08**	**23.5**
		1	12	22.91	22.99	23.07	
		1	24	22.85	**23.03**	23.07	
		12	0	21.86	22.09	22.00	22.5
		12	6	21.92	**22.16**	**22.16**	
		12	13	**22.04**	22.15	21.99	
		25	0	21.82	**22.24**	22.01	22.5
	16QAM	1	0	21.95	22.69	22.63	**23.0**
		1	12	21.64	22.52	22.48	

		1	24	21.89	22.94	22.77	
		12	0	21.01	21.11	20.94	21.5
		12	6	21.13	21.15	20.85	
		12	13	20.89	21.28	20.90	
		25	0	20.86	21.02	21.39	21.5
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 23060 Fre. (MHz) 704.00	Channel No. 23095 Fre. (MHz) 707.50	Channel No. 23130 Fre. (MHz) 711.00	Tune-up Limit (dBm)
10	QPSK	1	0	**22.94**	23.02	23.00	**23.5**
		1	24	22.89	22.89	22.96	
		1	49	22.91	**23.06**	**23.02**	
		25	0	**21.91**	**22.14**	22.02	22.5
		25	12	**21.91**	22.13	**22.03**	
		25	25	21.90	22.13	22.02	
		50	0	21.88	**22.13**	22.01	22.5
	16QAM	1	0	21.83	22.76	22.72	**23.0**
		1	24	21.71	22.46	22.46	
		1	49	21.85	22.80	22.69	
		25	0	21.01	21.18	20.87	21.5
		25	12	20.99	21.20	20.88	
		25	25	21.03	21.21	20.88	
		50	0	20.85	20.89	21.43	21.5

8.10. LTE Band 25

Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				26047	26365	26683	
				1850.70	1882.50	1914.30	
1.4	QPSK	1	0	22.25	21.91	22.50	**23.0**
		1	2	22.03	22.31	**22.63**	
		1	5	**22.40**	**22.44**	22.56	
		3	0	22.16	22.05	**22.59**	23.0
		3	1	22.07	22.25	22.52	
		3	3	**22.20**	**22.56**	22.56	
		6	0	21.26	21.29	**21.59**	22.0
	16QAM	1	0	21.34	21.27	21.68	22.0
		1	2	21.07	21.46	21.61	
		1	5	21.19	21.25	21.48	
		3	0	21.87	21.79	21.77	22.0
		3	1	21.71	21.78	21.87	
		3	3	21.86	22.00	21.92	
		6	0	20.23	20.56	20.75	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				26055	26365	26675	
				1851.50	1882.50	1913.50	
3	QPSK	1	0	22.11	21.97	22.35	**23.0**
		1	8	22.00	22.27	**22.76**	
		1	14	**22.37**	**22.44**	22.57	
		8	0	21.13	21.33	21.68	22.0
		8	4	**21.39**	**21.36**	21.53	
		8	7	21.00	21.21	**21.69**	
		15	0	21.20	**21.52**	21.38	22.0
	16QAM	1	0	22.19	21.80	22.81	**23.0**
		1	8	21.74	22.03	22.95	
		1	14	21.86	22.04	22.83	
		8	0	20.14	20.28	20.39	21.0
		8	4	20.23	20.25	20.67	
		8	7	20.21	20.44	20.44	
		15	0	20.26	20.55	20.67	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				26065	26365	26665	
				1852.50	1882.50	1912.50	
5	QPSK	1	0	**22.18**	22.06	22.30	**23.0**
		1	12	22.06	22.33	22.59	
		1	24	22.13	**22.50**	**22.74**	
		12	0	21.24	21.10	**21.68**	22.0
		12	6	**21.29**	**21.25**	21.48	
		12	13	21.24	21.23	21.48	
		25	0	21.11	21.45	**21.58**	22.0
	16QAM	1	0	21.99	21.92	22.88	**23.0**
		1	12	21.68	21.99	22.80	

		1	24	21.93	22.17	22.78	
		12	0	20.22	20.35	20.53	21.0
		12	6	20.19	20.42	20.58	
		12	13	20.29	20.41	20.53	
		25	0	20.30	20.29	20.69	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No.	Channel No.	Channel No.	Tune-up Limit (dBm)
				26090	26365	26640	
				Fre. (MHz)	Fre. (MHz)	Fre. (MHz)	
				1855.00	1882.50	1910.00	
10	QPSK	1	0	**22.37**	22.19	22.39	**23.0**
		1	24	22.20	22.28	**22.70**	
		1	49	22.29	**22.54**	22.69	
		25	0	21.12	21.30	**21.61**	22.0
		25	12	21.16	**21.49**	21.46	
		25	25	**21.21**	21.35	21.49	
		50	0	21.19	**21.52**	21.44	22.0
	16QAM	1	0	22.22	21.70	22.69	**23.0**
		1	24	21.76	21.95	22.93	
		1	49	21.85	22.08	22.87	
		25	0	20.23	20.38	20.62	21.0
		25	12	20.11	20.41	20.52	
		25	25	20.27	20.49	20.67	
		50	0	20.21	20.44	20.63	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No.	Channel No.	Channel No.	Tune-up Limit (dBm)
				26115	26365	26615	
				Fre. (MHz)	Fre. (MHz)	Fre. (MHz)	
				1857.50	1882.50	1907.50	
15	QPSK	1	0	**22.36**	22.02	22.40	**23.0**
		1	38	21.97	22.29	22.72	
		1	74	22.15	**22.56**	**22.82**	
		36	0	21.16	**21.32**	**21.60**	22.0
		36	18	**21.25**	21.30	21.56	
		36	37	21.20	21.31	21.55	
		75	0	21.12	21.38	**21.41**	22.0
	16QAM	1	0	22.04	21.67	22.78	**23.0**
		1	38	21.74	21.98	22.75	
		1	74	21.84	22.06	22.92	
		36	0	20.30	20.25	20.43	21.0
		36	18	20.35	20.39	20.58	
		36	37	20.31	20.35	20.43	
		75	0	20.21	20.41	20.77	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No.	Channel No.	Channel No.	Tune-up Limit (dBm)
				26140	26365	26590	
				Fre. (MHz)	Fre. (MHz)	Fre. (MHz)	
				1860.00	1882.50	1905.00	
20	QPSK	1	0	22.24	22.04	22.45	**23.0**
		1	49	22.12	22.38	22.65	
		1	99	**22.27**	**22.45**	**22.68**	
		50	0	21.13	21.22	**21.58**	22.0
		50	25	**21.28**	**21.35**	**21.58**	

		50	50	21.14	21.34	21.55	
		100	0	21.20	21.37	**21.52**	22.0
	16QAM	1	0	22.12	21.80	22.75	**23.0**
		1	49	21.81	21.88	22.82	
		1	99	21.93	22.04	22.82	
		50	0	20.25	20.39	20.51	21.0
		50	25	20.26	20.40	20.54	
		50	50	20.34	20.40	20.53	
		100	0	20.23	20.43	20.68	21.0

8.11. LTE Band 26

Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				26697 / 814.70	26865 / 831.50	27033 / 848.30	
1.4	QPSK	1	0	22.80	23.00	23.07	**23.5**
		1	2	22.73	23.08	**23.22**	
		1	5	**22.96**	**23.25**	23.04	
		3	0	22.85	23.09	23.06	23.5
		3	1	**23.01**	**23.10**	**23.23**	
		3	3	22.75	23.08	23.10	
		6	0	21.64	22.28	**22.39**	22.5
	16QAM	1	0	21.71	21.92	22.29	22.5
		1	2	21.70	22.22	22.10	
		1	5	21.66	22.37	22.38	
		3	0	22.30	22.21	22.36	22.5
		3	1	22.29	22.43	22.35	
		3	3	22.42	22.37	21.96	
		6	0	21.10	21.10	21.33	22.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				26705 / 815.50	26865 / 831.50	27025 / 847.50	
3	QPSK	1	0	22.64	23.27	**23.08**	**23.5**
		1	8	**22.86**	23.02	23.01	
		1	14	22.75	**23.28**	22.98	
		8	0	21.68	22.28	22.18	**22.5**
		8	4	21.68	22.12	22.21	
		8	7	**21.78**	**22.29**	**22.27**	
		15	0	21.91	**22.49**	22.44	22.5
	16QAM	1	0	22.31	22.07	22.44	**23.0**
		1	8	22.27	22.64	22.51	
		1	14	22.56	22.59	22.09	
		8	0	21.62	21.33	21.41	**22.0**
		8	4	21.43	21.28	21.44	
		8	7	21.48	21.18	21.19	
		15	0	21.15	21.05	21.27	22.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Channel No. / Fre. (MHz)	Tune-up Limit (dBm)
				26715 / 816.50	26865 / 831.50	27015 / 846.50	
5	QPSK	1	0	22.60	23.07	23.16	**23.5**
		1	12	22.79	**23.26**	**23.17**	
		1	24	**22.80**	22.99	23.13	
		12	0	21.69	**22.26**	**22.32**	22.5
		12	6	21.76	22.16	22.17	
		12	13	**21.90**	22.13	22.14	
		25	0	21.91	22.23	**22.35**	22.5
	16QAM	1	0	22.33	22.26	22.41	**23.0**
		1	12	22.48	22.61	22.26	

		1	24	22.62	22.37	21.91	
		12	0	21.42	21.17	21.21	22.0
		12	6	21.53	21.37	21.37	
		12	13	21.25	21.35	21.10	
		25	0	20.89	21.25	21.42	22.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 26740 Fre. (MHz) 819.00	Channel No. 26865 Fre. (MHz) 831.50	Channel No. 26990 Fre. (MHz) 844.00	Tune-up Limit (dBm)
10	QPSK	1	0	22.85	**23.23**	22.93	**23.5**
		1	24	22.92	22.98	**23.25**	
		1	49	**22.92**	23.10	22.97	
		25	0	21.92	22.18	**22.33**	22.5
		25	12	**21.93**	21.93	22.27	
		25	25	21.84	**22.39**	22.00	
		50	0	21.80	22.31	**22.42**	22.5
	16QAM	1	0	22.15	22.12	22.37	**23.0**
		1	24	22.41	22.44	22.47	
		1	49	22.42	22.56	21.91	
		25	0	21.47	21.32	21.14	22.0
		25	12	21.28	21.27	21.37	
		25	25	21.32	21.12	21.19	
		50	0	21.12	21.20	21.35	22.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 26765 Fre. (MHz) 821.50	Channel No. 26865 Fre. (MHz) 831.50	Channel No. 26965 Fre. (MHz) 841.50	Tune-up Limit (dBm)
15	QPSK	1	0	22.75	**23.14**	23.03	**23.5**
		1	38	**22.86**	23.11	**23.13**	
		1	74	22.81	23.13	23.01	
		36	0	21.77	22.23	22.27	22.5
		36	18	21.80	22.05	**22.31**	
		36	37	**21.81**	**22.28**	22.12	
		75	0	21.78	22.35	**22.45**	22.5
	16QAM	1	0	22.24	22.16	22.33	**23.0**
		1	38	22.38	22.53	22.36	
		1	74	22.52	22.49	21.94	
		36	0	21.54	21.30	21.27	22.0
		36	18	21.42	21.27	21.37	
		36	37	21.38	21.22	21.21	
		75	0	21.00	21.11	21.30	22.0

8.12. LTE Band 41

Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 39675 Fre. (MHz) 2498.50	Channel No. 40620 Fre. (MHz) 2593.00	Channel No. 41565 Fre. (MHz) 2687.50	Tune-up Limit (dBm)
5	QPSK	1	0	21.46	**22.34**	**21.57**	**22.5**
		1	12	21.56	22.20	21.49	
		1	24	**21.79**	22.17	21.37	
		12	0	**21.08**	**21.43**	20.37	21.5
		12	6	20.93	21.28	**20.39**	
		12	13	20.92	21.26	20.19	
		25	0	20.97	**21.30**	20.33	21.5
	16QAM	1	0	21.26	21.47	21.61	**22.0**
		1	12	21.15	21.43	21.36	
		1	24	21.41	21.56	21.64	
		12	0	20.21	20.77	19.56	21.0
		12	6	19.89	20.65	19.35	
		12	13	19.94	20.49	19.42	
		25	0	20.01	20.64	19.51	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 39700 Fre. (MHz) 2501.00	Channel No. 40620 Fre. (MHz) 2593.00	Channel No. 41540 Fre. (MHz) 2685.00	Tune-up Limit (dBm)
10	QPSK	1	0	21.74	**22.46**	21.46	**22.5**
		1	24	**21.80**	22.07	21.51	
		1	49	21.76	22.25	**21.59**	
		25	0	**21.01**	21.34	20.32	**21.5**
		25	12	20.90	**21.35**	**20.39**	
		25	25	20.89	21.31	20.19	
		50	0	20.95	**21.31**	20.31	21.5
	16QAM	1	0	21.01	21.98	21.56	**22.0**
		1	24	21.06	21.85	21.42	
		1	49	21.19	21.64	21.68	
		25	0	19.99	20.73	19.48	**21.0**
		25	12	20.05	20.58	19.32	
		25	25	20.17	20.72	19.57	
		50	0	19.91	20.49	19.50	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 39725 Fre. (MHz) 2503.50	Channel No. 40620 Fre. (MHz) 2593.00	Channel No. 41515 Fre. (MHz) 2682.50	Tune-up Limit (dBm)
15	QPSK	1	0	21.48	**22.37**	**21.73**	**22.5**
		1	38	21.55	22.27	21.39	
		1	74	**21.82**	22.21	21.66	
		36	0	20.83	21.35	**20.37**	21.5
		36	18	**21.09**	21.34	20.34	
		36	37	20.76	**21.42**	20.18	
		75	0	21.00	**21.43**	20.42	21.5
	16QAM	1	0	21.03	21.54	21.58	**22.0**
		1	38	21.17	21.79	21.35	

		1	74	21.33	21.67	21.53	
		36	0	20.07	20.68	19.47	21.0
		36	18	20.05	20.53	19.37	
		36	37	20.09	20.62	19.60	
		75	0	19.74	20.73	19.40	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No.	Channel No.	Channel No.	Tune-up Limit (dBm)
				39750	40620	41490	
				Fre. (MHz)	Fre. (MHz)	Fre. (MHz)	
				2506.00	2593.00	2680.00	
20	QPSK	1	0	21.61	**22.41**	**21.58**	**22.5**
		1	49	21.65	22.15	21.54	
		1	99	**21.76**	22.14	21.51	
		50	0	20.93	**21.43**	**20.40**	21.5
		50	25	**20.94**	21.38	20.26	
		50	50	20.80	21.39	20.20	
		100	0	20.90	**21.43**	20.30	21.5
	16QAM	1	0	21.16	21.55	21.52	**22.0**
		1	49	21.18	21.82	21.50	
		1	99	21.29	21.36	21.60	
		50	0	20.06	20.64	19.45	21.0
		50	25	20.02	20.56	19.47	
		50	50	20.03	20.57	19.49	
		100	0	19.88	20.62	19.47	21.0

8.13. LTE Band 66

Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 131979 Fre. (MHz) 1710.70	Channel No. 132322 Fre. (MHz) 1745.00	Channel No. 132665 Fre. (MHz) 1779.30	Tune-up Limit (dBm)
1.4	QPSK	1	0	**23.09**	**22.56**	22.24	**23.5**
		1	2	22.87	22.27	**22.41**	
		1	5	22.81	22.49	22.23	
		3	0	**22.96**	**22.60**	22.21	23.5
		3	1	22.76	22.56	22.32	
		3	3	22.62	22.37	**22.39**	
		6	0	**21.90**	21.36	21.17	22.0
	16QAM	1	0	21.73	21.44	21.39	22.0
		1	2	22.00	21.33	21.30	
		1	5	21.54	21.35	21.17	
		3	0	21.72	21.95	21.88	22.0
		3	1	21.53	21.37	21.98	
		3	3	21.64	21.41	21.89	
		6	0	20.79	20.29	20.16	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 131987 Fre. (MHz) 1711.50	Channel No. 132322 Fre. (MHz) 1745.00	Channel No. 132657 Fre. (MHz) 1778.50	Tune-up Limit (dBm)
3	QPSK	1	0	**23.03**	22.33	22.23	**23.5**
		1	8	22.98	**22.56**	**22.28**	
		1	14	22.68	22.49	22.18	
		8	0	21.84	21.30	**21.43**	22.0
		8	4	21.83	**21.36**	21.38	
		8	7	**21.91**	21.24	21.22	
		15	0	**21.63**	21.40	21.20	22.0
	16QAM	1	0	22.32	21.93	22.08	**22.5**
		1	8	22.48	21.36	22.03	
		1	14	22.37	21.34	21.87	
		8	0	20.90	20.64	20.38	21.0
		8	4	20.97	20.74	20.42	
		8	7	20.79	20.61	20.28	
		15	0	20.83	20.41	20.21	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 131997 Fre. (MHz) 1712.50	Channel No. 132322 Fre. (MHz) 1745.00	Channel No. 132647 Fre. (MHz) 1777.50	Tune-up Limit (dBm)
5	QPSK	1	0	**22.96**	22.51	**22.50**	**23.5**
		1	12	22.83	22.29	22.27	
		1	24	22.58	**22.57**	22.38	
		12	0	21.79	21.33	**21.30**	22.0
		12	6	**21.89**	**21.47**	21.25	
		12	13	21.83	21.45	21.28	
		25	0	**21.70**	21.37	21.04	22.0
	16QAM	1	0	22.47	21.96	22.11	**22.5**
		1	12	22.28	21.65	22.04	

		1	24	22.31	21.50	21.95	
		12	0	20.72	20.75	20.44	21.0
		12	6	20.77	20.75	20.52	
		12	13	20.78	20.51	20.45	
		25	0	20.85	20.32	20.19	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 132022 Fre. (MHz) 1715.00	Channel No. 132322 Fre. (MHz) 1745.00	Channel No. 132622 Fre. (MHz) 1775.00	Tune-up Limit (dBm)
10	QPSK	1	0	**23.05**	**22.50**	**22.31**	**23.5**
		1	24	22.86	22.43	22.23	
		1	49	22.70	22.46	22.28	
		25	0	**21.95**	21.37	21.37	22.0
		25	12	21.75	**21.47**	**21.48**	
		25	25	21.80	21.28	21.27	
		50	0	**21.69**	21.53	21.24	22.0
	16QAM	1	0	22.23	22.02	21.92	**22.5**
		1	24	22.26	21.66	21.75	
		1	49	22.40	21.47	21.86	
		25	0	20.91	20.57	20.36	21.0
		25	12	20.87	20.69	20.45	
		25	25	20.76	20.67	20.39	
		50	0	20.73	20.45	20.39	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 132047 Fre. (MHz) 1717.50	Channel No. 132322 Fre. (MHz) 1745.00	Channel No. 132597 Fre. (MHz) 1772.50	Tune-up Limit (dBm)
15	QPSK	1	0	**23.12**	22.39	22.41	**23.5**
		1	38	22.78	22.38	**22.49**	
		1	74	22.59	**22.53**	22.48	
		36	0	**21.95**	**21.50**	21.36	22.0
		36	18	**21.95**	21.45	21.25	
		36	37	21.89	21.47	**21.43**	
		75	0	**21.53**	21.49	21.29	22.0
	16QAM	1	0	22.23	22.07	21.94	**22.5**
		1	38	22.11	21.62	21.83	
		1	74	22.35	21.30	21.86	
		36	0	20.98	20.68	20.37	21.0
		36	18	20.75	20.77	20.24	
		36	37	20.74	20.39	20.34	
		75	0	20.90	20.39	20.33	21.0
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 132072 Fre. (MHz) 1720.00	Channel No. 132322 Fre. (MHz) 1745.00	Channel No. 132572 Fre. (MHz) 1770.00	Tune-up Limit (dBm)
20	QPSK	1	0	**23.05**	**22.46**	22.35	**23.5**
		1	49	22.89	22.41	**22.36**	
		1	99	22.66	22.44	22.33	
		50	0	**21.88**	21.39	21.30	22.0
		50	25	**21.88**	**21.49**	**21.34**	

		50	50	**21.88**	21.39	21.32	
		100	0	**21.66**	21.48	21.16	22.0
	16QAM	1	0	22.05	21.98	22.05	**22.5**
		1	49	22.11	21.51	21.89	
		1	99	22.10	21.40	21.99	
		50	0	20.86	20.65	20.40	21.0
		50	25	20.89	20.63	20.38	
		50	50	20.88	20.52	20.34	
		100	0	20.82	20.43	20.29	21.0

8.14. LTE Band 71

Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No.	Channel No.	Channel No.	Tune-up Limit (dBm)
				133147	133297	133447	
				Fre. (MHz)	Fre. (MHz)	Fre. (MHz)	
				665.50	680.50	695.50	
5MHz	QPSK	1	0	22.85	22.70	22.81	23.5
		1	12	**23.29**	22.77	22.90	
		1	24	23.04	**23.08**	**22.91**	
		12	0	22.18	**21.88**	**22.03**	22.5
		12	6	22.27	21.78	21.90	
		12	13	**22.42**	21.78	21.90	
		25	0	**22.18**	21.67	21.80	22.5
	16QAM	1	0	22.65	22.10	22.35	23.0
		1	12	22.80	22.46	22.51	
		1	24	22.47	22.35	22.94	
		12	0	21.22	21.30	20.91	21.5
		12	6	21.31	21.30	21.11	
		12	13	21.08	21.36	20.91	
		25	0	21.33	20.55	20.82	21.5
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No.	Channel No.	Channel No.	Tune-up Limit (dBm)
				133172	133297	133422	
				Fre. (MHz)	Fre. (MHz)	Fre. (MHz)	
				668.00	680.50	693.00	
10MHz	QPSK	1	0	22.67	22.72	22.66	23.5
		1	24	**23.42**	22.87	22.91	
		1	49	23.21	**23.19**	**22.96**	
		25	0	22.39	21.70	21.92	22.5
		25	12	22.22	**21.91**	**22.09**	
		25	25	**22.41**	21.82	22.03	
		50	0	**22.23**	21.67	21.90	22.5
	16QAM	1	0	22.51	22.23	22.26	23.0
		1	24	22.80	22.29	22.40	
		1	49	22.60	22.33	22.82	
		25	0	21.27	21.42	20.94	21.5
		25	12	21.25	21.27	21.03	
		25	25	21.11	21.40	20.92	
		50	0	21.19	20.69	20.76	21.5
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No.	Channel No.	Channel No.	Tune-up Limit (dBm)
				133197	133297	133397	
				Fre. (MHz)	Fre. (MHz)	Fre. (MHz)	
				670.50	680.50	690.50	
15MHz	QPSK	1	0	22.74	**22.93**	22.83	23.5
		1	38	**23.19**	22.73	23.04	
		1	74	23.10	22.91	**23.07**	
		36	0	22.13	21.91	21.91	22.5
		36	18	**22.25**	**21.98**	**22.15**	
		36	37	22.15	21.76	21.95	
		75	0	**22.34**	21.85	21.87	22.5
	16QAM	1	0	22.63	21.97	22.36	23.0
		1	38	23.02	22.25	22.39	
		1	74	22.66	22.36	22.98	
		36	0	21.32	21.45	20.90	21.5
		36	18	21.12	21.34	20.85	

		36	37	21.25	21.37	20.95	
		75	0	21.37	20.58	21.00	21.5
Bandwidth (MHz)	Modulation	RB size	RB offset	Channel No. 133222 Fre. (MHz) 673.00	Channel No. 133322 Fre. (MHz) 683.00	Channel No. 133372 Fre. (MHz) 688.00	Tune-up Limit (dBm)
20MHz	QPSK	1	0	22.79	22.80	22.81	23.5
		1	49	**23.33**	22.87	22.96	
		1	99	23.07	**23.05**	**23.04**	
		50	0	22.26	**21.84**	22.03	22.5
		50	25	**22.32**	21.83	**22.04**	
		50	50	22.29	**21.84**	**22.04**	
		100	0	**22.21**	21.72	21.79	22.5
	16QAM	1	0	22.61	22.10	22.29	23.0
		1	49	22.89	22.37	22.44	
		1	99	22.51	22.31	22.90	
		50	0	21.20	21.31	20.94	21.5
		50	25	21.20	21.33	21.00	
		50	50	21.21	21.35	21.00	
		100	0	21.28	20.67	20.86	21.5

8.15. 2.4GHz Wi-Fi

Mode	Frequency (MHz)	AV Power [dBm]	Tune-up Limit (dBm)
11B	2412	12.42	13.0
	2437	12.38	
	2462	12.67	
11G	2412	10.42	11.5
	2437	11.14	
	2462	10.49	
11n20	2412	10.36	11.5
	2437	11.08	
	2462	10.38	
11n40	2422	9.56	10.0
	2437	9.75	
	2452	9.52	

8.16. 5GHz Wi-Fi

Mode	Frequency (MHz)	AV Power [dBm]	Tune-up Limit (dBm)
11A	5180	16.59	17.0
	5200	16.56	
	5240	16.72	
	5260	17.73	18.0
	5280	17.95	
	5320	17.94	
	5500	14.18	14.5
	5580	13.94	
	5700	14.3	
	5745	17	17.5
	5785	16.94	
	5825	17.33	
11n20	5180	16.95	17.0
	5200	16.87	
	5240	16.67	
	5260	18.15	19.0
	5280	18.53	
	5320	18.69	
	5500	14.28	14.5
	5580	14.09	
	5700	13.77	
	5745	17.40	17.5
	5785	17.27	
	5825	17.40	
11n40	5190	13.64	14.0
	5230	13.62	
	5270	13.22	14.0
	5310	13.68	
	5510	12.17	13.0
	5550	12.64	
	5670	12.65	
	5755	17.12	17.5
	5795	17.16	
11ac80	5210	14.18	14.5
	5290	13.71	14.0
	5530	13.54	14.0
	5610	13.92	
	5775	16.01	16.5

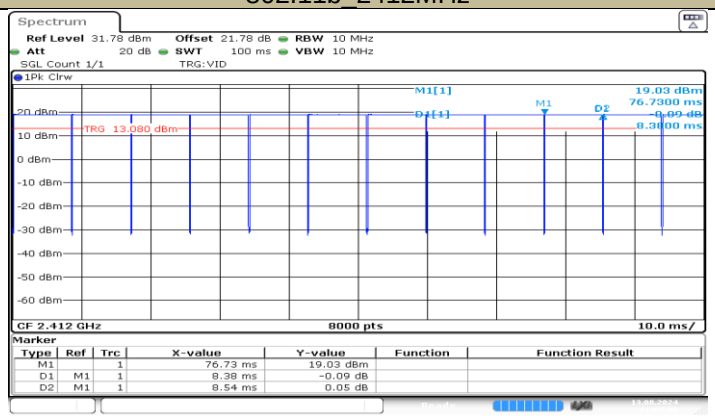
8.17. BT

Mode	Frequency (MHz)	AV Power [dBm]	Tune-up Limit (dBm)
DH5	2402	7.83	8.0
	2441	7.7	
	2480	7.29	
3DH5	2402	7.05	7.5
	2441	7.2	
	2480	6.27	
BLE_1M	2402	1.04	1.5
	2440	1.09	
	2480	0.88	
BLE_2M	2402	1	1.5
	2440	1.04	
	2480	0.84	

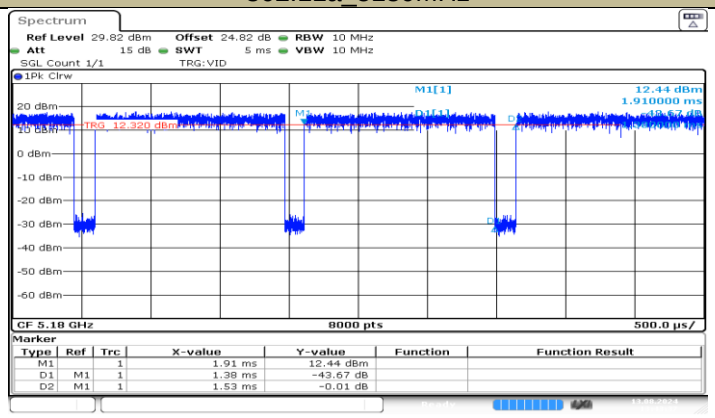
8.18. Duty Cycle

Test Mode	Duty Cycle (%)
802.11b	98.13
11a	90.20
11n20	87.12
11n40	85.07
DH5	77.54

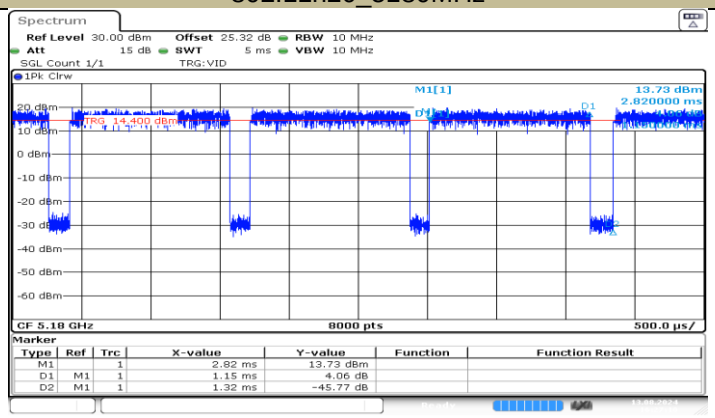
802.11b_2412MHz



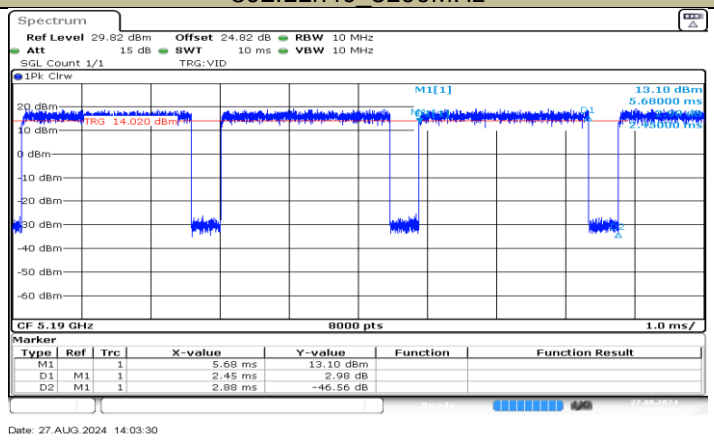
802.11a_5180MHz



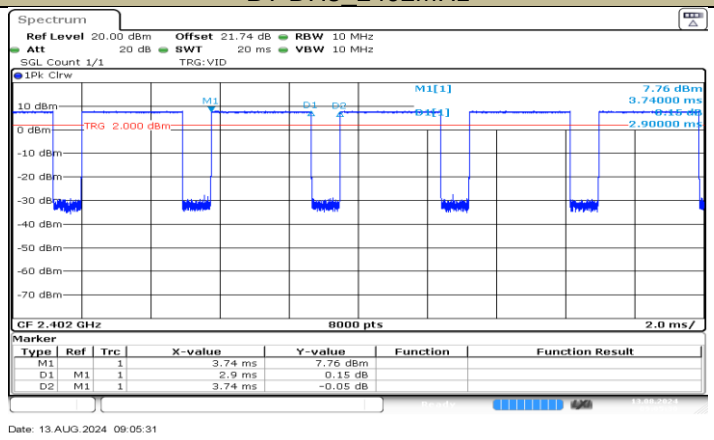
802.11n20_5180MHz



802.11n40_5190MHz



BT DH5_2402MHz



9. 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 4791434720-1-SAR-1_App A Photo.

Antenna	Front Surface	Back Surface	Left Edge	Right Edge	Top Edge	Bottom Edge
WWAN	Yes	Yes	Yes	Yes	No	Yes
WiFi/BT	Yes	Yes	No	Yes	Yes	No

10. Dielectric Property Measurements & System Check

10.1. 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	650	42.410	0.868	42.43	0.88	-0.05	-1.36	±5	21.5	August 14, 2024
	750	41.720	0.900	41.94	0.89	-0.52	1.12			
	790	41.640	0.911	41.73	0.90	-0.22	1.22			
Head 750	650	42.580	0.870	42.43	0.88	0.35	-1.14	±5	22.7	August 26, 2024
	750	42.220	0.902	41.94	0.89	0.67	1.35			
	790	42.140	0.914	41.73	0.90	0.98	1.56			
Head 835	805	40.690	0.879	41.66	0.90	-2.33	-2.33	±5	21.5	August 14, 2024
	835	40.600	0.886	41.50	0.90	-2.17	-1.56			
	905	40.610	0.932	41.50	0.97	-2.14	-3.92			
Head 835	805	41.190	0.882	41.66	0.90	-1.13	-2.00	±5	22.7	August 26, 2024
	835	41.100	0.888	41.50	0.90	-0.96	-1.33			
	905	41.110	0.935	41.50	0.97	-0.94	-3.61			
Head 1800	1720	39.090	1.398	40.13	1.35	-2.59	3.56	±5	21.2	August 12, 2024
	1800	39.090	1.437	40.00	1.40	-2.27	2.64			
	1890	39.110	1.442	40.00	1.40	-2.23	3.00			
Head 1800	1720	39.590	1.403	40.13	1.35	-1.35	3.93	±5	22.7	August 26, 2024
	1800	39.580	1.443	40.00	1.40	-1.05	3.07			
	1890	39.520	1.452	40.00	1.40	-1.20	3.71			
Head 1800	1720	40.000	1.397	40.13	1.35	-0.32	3.48	±5	21.1	August 29, 2024
	1800	40.000	1.433	40.00	1.40	0.00	2.36			
	1890	39.960	1.456	40.00	1.40	-0.10	4.00			
Head 1900	1850	38.600	1.365	40.00	1.40	-3.50	-2.50	±5	22.3	August 12, 2024
	1900	38.570	1.395	40.00	1.40	-3.58	-0.36			
	1920	38.540	1.402	40.00	1.40	-3.65	0.14			
Head 1900	1850	39.100	1.372	40.00	1.40	-2.25	-2.00	±5	22.7	August 26, 2024
	1900	39.070	1.401	40.00	1.40	-2.33	0.07			
	1920	39.040	1.409	40.00	1.40	-2.40	0.64			
Head 1900	1850	39.520	1.378	40.00	1.40	-1.20	-1.57	±5	21.1	August 29, 2024
	1900	39.480	1.408	40.00	1.40	-1.30	0.57			
	1920	39.450	1.416	40.00	1.40	-1.37	1.14			
Head 2450	2400	38.270	1.707	39.29	1.76	-2.60	-3.01	±5	21.1	August 29, 2024
	2450	38.300	1.756	39.20	1.80	-2.30	-2.44			
	2480	38.220	1.774	39.16	1.83	-2.40	-3.06			
Head 2600	2500	37.780	1.777	39.14	1.85	-3.47	-3.95	±5	22.7	August 26, 2024
	2600	37.650	1.869	39.01	1.96	-3.49	-4.64			
	2700	37.440	1.969	38.88	2.07	-3.70	-4.88			
Head 5250	5160	34.730	4.472	36.03	4.61	-3.61	-2.99	±5	22.4	August 28, 2024

	5250	34.630	4.560	35.93	4.71	-3.62	-3.18			
	5340	34.500	4.644	35.83	4.80	-3.71	-3.25			
Head 5600	5500	35.370	4.782	35.64	4.96	-0.76	-3.59	±5	21.1	August 29, 2024
	5600	35.340	4.893	35.53	5.07	-0.53	-3.49			
	5700	35.290	4.985	35.41	5.17	-0.34	-3.58			
Head 5750	5660	34.220	5.026	35.46	5.13	-3.50	-2.03	±5	21.1	August 29, 2024
	5750	34.130	5.260	35.36	5.22	-3.48	0.77			
	5840	34.080	5.443	35.27	5.30	-3.37	2.70			

10.2. 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
		Result of 0.1W input power (W/Kg)	Normalize to 1W (W/Kg)					
Head 750	1-g	0.925	9.25	8.50	8.82	±10	21.5	August 14, 2024
	10-g	0.602	6.02	5.61	7.31			
Head 750	1-g	0.802	8.02	8.50	-5.65	±10	22.7	August 26, 2024
	10-g	0.586	5.86	5.61	4.46			
Head 835	1-g	0.993	9.93	9.64	3.01	±10	21.5	August 14, 2024
	10-g	0.617	6.17	6.26	-1.44			
Head 835	1-g	0.994	9.94	9.64	3.11	±10	22.7	August 26, 2024
	10-g	0.641	6.41	6.26	2.40			
Head 1800	1-g	3.890	38.90	38.70	0.52	±10	21.2	August 12, 2024
	10-g	2.020	20.20	19.90	1.51			
Head 1800	1-g	3.920	39.20	38.70	1.29	±10	21.5	August 14, 2024
	10-g	2.060	20.60	19.90	3.52			
Head 1800	1-g	4.010	40.10	38.70	3.62	±10	22.7	August 26, 2024
	10-g	2.110	21.10	19.90	6.03			
Head 1800	1-g	3.880	38.80	38.70	0.26	±10	21.1	August 29, 2024
	10-g	1.980	19.80	19.90	-0.50			
Head 1900	1-g	3.790	37.90	39.60	-4.29	±10	21.2	August 12, 2024
	10-g	1.950	19.50	20.20	-3.47			
Head 1900	1-g	3.960	39.60	39.60	0.00	±10	22.7	August 26, 2024
	10-g	2.030	20.30	20.20	0.50			
Head 1900	1-g	4.030	40.30	39.60	1.77	±10	21.1	August 29, 2024
	10-g	2.080	20.80	20.20	2.97			
Head 2450	1-g	4.860	48.60	53.20	-8.65	±10	21.1	August 29, 2024
	10-g	2.280	22.80	24.20	-5.79			
Head 2600	1-g	5.370	53.70	55.40	-3.07	±10	22.7	August 26, 2024
	10-g	2.420	24.20	24.50	-1.22			
Head 5250	1-g	7.250	72.50	77.90	-6.93	±10	22.4	August 28, 2024
	10-g	2.140	21.40	22.60	-5.31			
Head 5600	1-g	8.290	82.90	80.90	2.47	±10	21.1	August 29, 2024
	10-g	2.330	23.30	23.30	0.00			
Head 5750	1-g	8.080	80.80	78.30	3.19	±10	21.1	August 29, 2024
	10-g	2.330	23.30	22.40	4.02			

11. 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.
6) KDB 648474 D04 Handset SAR (Phablet Only): For smart phones, with a display diagonal dimension>15.0 cm or an overall diagonal dimension>16.0 cm. When hotspot mode does not apply, 10-g Extremity SAR is required for all surfaces and edges with an antenna located at s 25 mm from that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR >1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.10-g Extremity SAR testing is not required since all 1-g reported SAR < 1.2 W/kg for hotspot mode.

11.1. 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 3 Slots	Left Cheek	0	190	30.0	29.80	0.112	0.02	0.117
Head	GPRS 3 Slots	Left Tilt	0	190	30.0	29.80	0.084	-0.04	0.088
Head	GPRS 3 Slots	Right Cheek	0	190	30.0	29.80	0.098	-0.08	0.102
Head	GPRS 3 Slots	Right Tilt	0	190	30.0	29.80	0.072	-0.15	0.075
Body-worn & Hotspot	GPRS 3 Slots	Front Surface	10	190	30.0	29.80	0.273	0.02	0.286
Body-worn & Hotspot	GPRS 3 Slots	Back Surface	10	190	30.0	29.80	0.310	-0.06	0.325
Hotspot	GPRS 3 Slots	Left Edge	10	190	30.0	29.80	0.018	-0.03	0.019
Hotspot	GPRS 3 Slots	Right Edge	10	190	30.0	29.80	0.081	0.15	0.085
Hotspot	GPRS 3 Slots	Bottom Edge	10	190	30.0	29.80	0.257	-0.01	0.269

Notes:

1. Based on the Maximum Output Power, GPRS/EDGE (GMSK) mode with 3 time slots have maximum frame-averaged power, cs mode is covered by 1 time slot, so 3 time slots mode is selected for SAR evaluation to represent the worst configuration.

11.2. 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 3 Slots	Left Cheek	0	661	25.5	25.19	0.101	0.15	0.108
Head	GPRS 3 Slots	Left Tilt	0	661	25.5	25.19	0.071	-0.07	0.076
Head	GPRS 3 Slots	Right Cheek	0	661	25.5	25.19	0.067	-0.13	0.072
Head	GPRS 3 Slots	Right Tilt	0	661	25.5	25.19	0.070	0.04	0.075
Body-worn & Hotspot	GPRS 3 Slots	Front Surface	10	661	25.5	25.19	0.246	0.02	0.264
Body-worn & Hotspot	GPRS 3 Slots	Back Surface	10	661	25.5	25.19	0.382	0.10	0.411
Hotspot	GPRS 3 Slots	Left Edge	10	661	25.5	25.19	0.102	0.01	0.110
Hotspot	GPRS 3 Slots	Right Edge	10	661	25.5	25.19	0.041	0.09	0.044
Hotspot	GPRS 3 Slots	Bottom Edge	10	661	25.5	25.19	0.721	0.11	0.774
Hotspot	GPRS 3 Slots	Bottom Edge	10	512	25.5	25.13	0.678	-0.07	0.739
Hotspot	GPRS 3 Slots	Bottom Edge	10	810	25.5	25.37	0.684	-0.11	0.705

Notes:

1. Based on the Maximum Output Power, GPRS/EDGE (GMSK) mode with 3 time slots have maximum frame-averaged power, cs mode is covered by 1 time slot, so 3 time slots mode is selected for SAR evaluation to represent the worst configuration.

11.3. 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	RMC 12.2kbps	Left Cheek	0	9400	21.5	21.08	0.082	-0.10	0.090
Head	RMC 12.2kbps	Left Tilt	0	9400	21.5	21.08	0.066	-0.03	0.073
Head	RMC 12.2kbps	Right Cheek	0	9400	21.5	21.08	0.069	0.10	0.076
Head	RMC 12.2kbps	Right Tilt	0	9400	21.5	21.08	0.061	0.08	0.067
Body-worn & Hotspot	RMC 12.2kbps	Front Surface	10	9400	21.5	21.08	0.264	0.01	0.290
Body-worn & Hotspot	RMC 12.2kbps	Back Surface	10	9400	21.5	21.08	0.333	-0.05	0.367
Hotspot	RMC 12.2kbps	Left Edge	10	9400	21.5	21.08	0.079	-0.15	0.087
Hotspot	RMC 12.2kbps	Right Edge	10	9400	21.5	21.08	0.076	-0.14	0.084
Hotspot	RMC 12.2kbps	Bottom Edge	10	9400	21.5	21.08	0.547	0.06	0.603
Hotspot	RMC 12.2kbps	Bottom Edge	10	9262	21.5	20.70	0.437	0.11	0.526
Hotspot	RMC 12.2kbps	Bottom Edge	10	9538	21.5	21.40	0.741	-0.13	0.758

11.4. 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	RMC 12.2kbps	Left Cheek	0	1413	22.5	21.92	0.099	-0.01	0.113
Head	RMC 12.2kbps	Left Tilt	0	1413	22.5	21.92	0.084	-0.14	0.096
Head	RMC 12.2kbps	Right Cheek	0	1413	22.5	21.92	0.094	0.00	0.108
Head	RMC 12.2kbps	Right Tilt	0	1413	22.5	21.92	0.091	0.02	0.104
Body-worn & Hotspot	RMC 12.2kbps	Front Surface	10	1413	22.5	21.92	0.177	-0.12	0.202
Body-worn & Hotspot	RMC 12.2kbps	Back Surface	10	1413	22.5	21.92	0.209	0.07	0.239
Hotspot	RMC 12.2kbps	Left Edge	10	1413	22.5	21.92	0.158	0.04	0.181
Hotspot	RMC 12.2kbps	Right Edge	10	1413	22.5	21.92	0.169	-0.13	0.193
Hotspot	RMC 12.2kbps	Bottom Edge	10	1413	22.5	21.92	0.422	-0.15	0.482

11.5. 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	RMC 12.2kbps	Left Cheek	0	4183	22.5	22.12	0.103	-0.14	0.113
Head	RMC 12.2kbps	Left Tilt	0	4183	22.5	22.12	0.072	0.10	0.079
Head	RMC 12.2kbps	Right Cheek	0	4183	22.5	22.12	0.121	-0.08	0.132
Head	RMC 12.2kbps	Right Tilt	0	4183	22.5	22.12	0.065	0.05	0.071
Body-worn & Hotspot	RMC 12.2kbps	Front Surface	10	4183	22.5	22.12	0.227	-0.05	0.247
Body-worn & Hotspot	RMC 12.2kbps	Back Surface	10	4183	22.5	22.12	0.240	0.11	0.262
Hotspot	RMC 12.2kbps	Left Edge	10	4183	22.5	22.12	0.113	-0.06	0.123
Hotspot	RMC 12.2kbps	Right Edge	10	4183	22.5	22.12	0.145	0.00	0.158
Hotspot	RMC 12.2kbps	Bottom Edge	10	4183	22.5	22.12	0.230	0.00	0.251

11.6. 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 1RB#99	Left Cheek	0	19100	23.0	22.68	0.019	0.08	0.021
Head	20M QPSK 50RB#0	Left Cheek	0	19100	22.0	21.58	0.016	-0.08	0.018
Head	20M QPSK 1RB#99	Left Tilt	0	19100	23.0	22.68	0.026	0.08	0.028
Head	20M QPSK 50RB#0	Left Tilt	0	19100	22.0	21.58	0.023	0.12	0.025
Head	20M QPSK 1RB#99	Right Cheek	0	19100	23.0	22.68	0.031	0.03	0.033
Head	20M QPSK 50RB#0	Right Cheek	0	19100	22.0	21.58	0.024	-0.10	0.026
Head	20M QPSK 1RB#99	Right Tilt	0	19100	23.0	22.68	0.022	0.08	0.023
Head	20M QPSK 50RB#0	Right Tilt	0	19100	22.0	21.58	0.019	0.05	0.021
Body-worn & Hotspot	20M QPSK 1RB#99	Front Surface	10	19100	23.0	22.68	0.313	0.01	0.337
Body-worn & Hotspot	20M QPSK 50RB#0	Front Surface	10	19100	22.0	21.58	0.232	0.07	0.256
Body-worn & Hotspot	20M QPSK 1RB#99	Back Surface	10	19100	23.0	22.68	0.403	-0.07	0.434
Body-worn & Hotspot	20M QPSK 50RB#0	Back Surface	10	19100	22.0	21.58	0.309	0.11	0.340
Hotspot	20M QPSK 1RB#99	Left Edge	10	19100	23.0	22.68	0.120	0.11	0.129
Hotspot	20M QPSK 50RB#0	Left Edge	10	19100	22.0	21.58	0.094	-0.08	0.103
Hotspot	20M QPSK 1RB#99	Right Edge	10	19100	23.0	22.68	0.107	0.03	0.116
Hotspot	20M QPSK 50RB#0	Right Edge	10	19100	22.0	21.58	0.090	0.09	0.100
Hotspot	20M QPSK 1RB#99	Bottom Edge	10	19100	23.0	22.68	0.848	-0.15	0.913
Hotspot	20M QPSK 1RB#99	Bottom Edge	10	18700	23.0	22.27	0.544	0.14	0.644
Hotspot	20M QPSK 1RB#99	Bottom Edge	10	19100	23.0	22.45	0.695	0.01	0.789
Hotspot	20M QPSK 50RB#0	Bottom Edge	10	19100	22.0	21.58	0.638	0.13	0.702
Hotspot	20M QPSK 50RB#25	Bottom Edge	10	18700	22.0	21.28	0.432	0.04	0.510
Hotspot	20M QPSK 50RB#25	Bottom Edge	10	18900	22.0	21.35	0.531	-0.03	0.617
Hotspot	20M QPSK 100RB#25	Bottom Edge	10	19100	22.0	21.52	0.595	0.12	0.665
Worst mode retest									
Hotspot	20M QPSK 1RB#99	Bottom Edge	10	19100	23.0	22.68	0.821	-0.01	0.884

Note:

1) Due to 0.848/0.821 = 1.03 < 1.20, and SAR value of original and repeated measurement is ≤ 1.45 W/kg, so only one repeated measurement is required.

11.7. 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 1RB#0	Left Cheek	0	20050	23.0	22.96	0.000	-0.12	0.000
Head	20M QPSK 50RB#50	Left Cheek	0	20050	22.0	21.94	0.000	-0.05	0.000
Head	20M QPSK 1RB#0	Left Tilt	0	20050	23.0	22.96	0.000	-0.01	0.000
Head	20M QPSK 50RB#50	Left Tilt	0	20050	22.0	21.94	0.000	0.03	0.000
Head	20M QPSK 1RB#0	Right Cheek	0	20050	23.0	22.96	0.000	-0.13	0.000
Head	20M QPSK 50RB#50	Right Cheek	0	20050	22.0	21.94	0.000	0.02	0.000
Head	20M QPSK 1RB#0	Right Tilt	0	20050	23.0	22.96	0.000	0.09	0.000
Head	20M QPSK 50RB#50	Right Tilt	0	20050	22.0	21.94	0.000	-0.13	0.000
Body-worn & Hotspot	20M QPSK 1RB#0	Front Surface	10	20050	23.0	22.96	0.173	-0.08	0.175
Body-worn & Hotspot	20M QPSK 50RB#50	Front Surface	10	20050	22.0	21.94	0.135	-0.03	0.137
Body-worn & Hotspot	20M QPSK 1RB#0	Back Surface	10	20050	23.0	22.96	0.189	-0.12	0.191
Body-worn & Hotspot	20M QPSK 50RB#50	Back Surface	10	20050	22.0	21.94	0.151	0.06	0.153
Hotspot	20M QPSK 1RB#0	Left Edge	10	20050	23.0	22.96	0.167	0.07	0.169
Hotspot	20M QPSK 50RB#50	Left Edge	10	20050	22.0	21.94	0.132	-0.15	0.133
Hotspot	20M QPSK 1RB#0	Right Edge	10	20050	23.0	22.96	0.124	-0.09	0.125
Hotspot	20M QPSK 50RB#50	Right Edge	10	20050	22.0	21.94	0.116	-0.10	0.117
Hotspot	20M QPSK 1RB#0	Bottom Edge	10	20050	23.0	22.96	0.451	0.15	0.455
Hotspot	20M QPSK 50RB#50	Bottom Edge	10	20050	22.0	21.94	0.361	-0.10	0.366

Note:

1. due to the measured SAR is zero, so there is not plot attached in 4791434720-1-SAR-1_App C Highest Test Plots.

11.8. 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 1RB#0	Left Cheek	0	20525	23.5	23.04	0.103	-0.10	0.114
Head	10M QPSK 25RB#0	Left Cheek	0	20450	22.5	22.10	0.084	-0.14	0.092
Head	10M QPSK 1RB#0	Left Tilt	0	20525	23.5	23.04	0.073	0.07	0.081
Head	10M QPSK 25RB#0	Left Tilt	0	20450	22.5	22.10	0.058	-0.08	0.063
Head	10M QPSK 1RB#0	Right Cheek	0	20525	23.5	23.04	0.136	0.13	0.151
Head	10M QPSK 25RB#0	Right Cheek	0	20450	22.5	22.10	0.107	0.09	0.118
Head	10M QPSK 1RB#0	Right Tilt	0	20525	23.5	23.04	0.073	0.09	0.081
Head	10M QPSK 25RB#0	Right Tilt	0	20450	22.5	22.10	0.056	0.09	0.062
Body-worn & Hotspot	10M QPSK 1RB#0	Front Surface	10	20525	23.5	23.04	0.293	0.08	0.326
Body-worn & Hotspot	10M QPSK 25RB#0	Front Surface	10	20450	22.5	22.10	0.233	-0.05	0.255
Body-worn & Hotspot	10M QPSK 1RB#0	Back Surface	10	20525	23.5	23.04	0.312	0.11	0.347
Body-worn & Hotspot	10M QPSK 25RB#0	Back Surface	10	20450	22.5	22.10	0.254	0.07	0.279
Hotspot	10M QPSK 1RB#0	Left Edge	10	20525	23.5	23.04	0.017	-0.08	0.019
Hotspot	10M QPSK 25RB#0	Left Edge	10	20450	22.5	22.10	0.014	-0.04	0.016
Hotspot	10M QPSK 1RB#0	Right Edge	10	20525	23.5	23.04	0.068	-0.15	0.076
Hotspot	10M QPSK 25RB#0	Right Edge	10	20450	22.5	22.10	0.060	0.08	0.066
Hotspot	10M QPSK 1RB#0	Bottom Edge	10	20525	23.5	23.04	0.310	0.02	0.344
Hotspot	10M QPSK 25RB#0	Bottom Edge	10	20450	22.5	22.10	0.247	-0.05	0.271

11.9. 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 1RB#49	Left Cheek	0	23095	23.5	23.06	0.122	0.06	0.135
Head	10M QPSK 25RB#0	Left Cheek	0	23095	22.5	22.14	0.098	-0.11	0.107
Head	10M QPSK 1RB#49	Left Tilt	0	23095	23.5	23.06	0.074	0.09	0.081
Head	10M QPSK 25RB#0	Left Tilt	0	23095	22.5	22.14	0.058	0.12	0.063
Head	10M QPSK 1RB#49	Right Cheek	0	23095	23.5	23.06	0.134	0.11	0.148
Head	10M QPSK 25RB#0	Right Cheek	0	23095	22.5	22.14	0.106	0.01	0.115
Head	10M QPSK 1RB#49	Right Tilt	0	23095	23.5	23.06	0.075	0.00	0.083
Head	10M QPSK 25RB#0	Right Tilt	0	23095	22.5	22.14	0.058	-0.05	0.063
Body-worn & Hotspot	10M QPSK 1RB#49	Front Surface	10	23095	23.5	23.06	0.278	-0.03	0.308
Body-worn & Hotspot	10M QPSK 25RB#0	Front Surface	10	23095	22.5	22.14	0.232	-0.02	0.252
Body-worn & Hotspot	10M QPSK 1RB#49	Back Surface	10	23095	23.5	23.06	0.321	-0.13	0.355
Body-worn & Hotspot	10M QPSK 25RB#0	Back Surface	10	23095	22.5	22.14	0.270	0.14	0.294
Hotspot	10M QPSK 1RB#49	Left Edge	10	23095	23.5	23.06	0.052	-0.09	0.057
Hotspot	10M QPSK 25RB#0	Left Edge	10	23095	22.5	22.14	0.077	0.06	0.084
Hotspot	10M QPSK 1RB#49	Right Edge	10	23095	23.5	23.06	0.142	-0.06	0.157
Hotspot	10M QPSK 25RB#0	Right Edge	10	23095	22.5	22.14	0.197	0.05	0.215
Hotspot	10M QPSK 1RB#49	Bottom Edge	10	23095	23.5	23.06	0.194	-0.09	0.215
Hotspot	10M QPSK 25RB#0	Bottom Edge	10	23095	22.5	22.14	0.157	0.03	0.170

11.10. 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 1RB#99	Left Cheek	0	26590	23.0	22.68	0.094	0.00	0.101
Head	20M QPSK 50RB#25	Left Cheek	0	26590	22.0	21.58	0.071	-0.01	0.078
Head	20M QPSK 1RB#99	Left Tilt	0	26590	23.0	22.68	0.054	0.05	0.058
Head	20M QPSK 50RB#25	Left Tilt	0	26590	22.0	21.58	0.052	0.12	0.057
Head	20M QPSK 1RB#99	Right Cheek	0	26590	23.0	22.68	0.067	-0.01	0.072
Head	20M QPSK 50RB#25	Right Cheek	0	26590	22.0	21.58	0.054	0.13	0.059
Head	20M QPSK 1RB#99	Right Tilt	0	26590	23.0	22.68	0.055	-0.05	0.059
Head	20M QPSK 50RB#25	Right Tilt	0	26590	22.0	21.58	0.044	-0.15	0.048
Body-worn & Hotspot	20M QPSK 1RB#99	Front Surface	10	26590	23.0	22.68	0.354	0.13	0.381
Body-worn & Hotspot	20M QPSK 50RB#25	Front Surface	10	26590	22.0	21.58	0.276	0.00	0.304
Body-worn & Hotspot	20M QPSK 1RB#99	Back Surface	10	26590	23.0	22.68	0.457	-0.14	0.492
Body-worn & Hotspot	20M QPSK 50RB#25	Back Surface	10	26590	22.0	21.58	0.336	-0.13	0.371
Hotspot	20M QPSK 1RB#99	Left Edge	10	26590	23.0	22.68	0.141	-0.12	0.152
Hotspot	20M QPSK 50RB#25	Left Edge	10	26590	22.0	21.58	0.115	-0.11	0.126
Hotspot	20M QPSK 1RB#99	Right Edge	10	26590	23.0	22.68	0.095	-0.11	0.102
Hotspot	20M QPSK 50RB#25	Right Edge	10	26590	22.0	21.58	0.093	-0.15	0.103
Hotspot	20M QPSK 1RB#99	Bottom Edge	10	26590	23.0	22.68	0.888	0.13	0.956
Hotspot	20M QPSK 1RB#99	Bottom Edge	10	26140	23.0	22.27	0.581	-0.04	0.687
Hotspot	20M QPSK 1RB#99	Bottom Edge	10	26365	23.0	22.45	0.713	-0.11	0.809
Hotspot	20M QPSK 50RB#25	Bottom Edge	10	26590	22.0	21.58	0.688	0.14	0.758
Hotspot	20M QPSK 50RB#25	Bottom Edge	10	26140	22.0	21.28	0.442	-0.13	0.522
Hotspot	20M QPSK 50RB#25	Bottom Edge	10	26365	22.0	21.35	0.539	0.07	0.626
Hotspot	20M QPSK 100RB#0	Bottom Edge	10	26590	22.0	21.52	0.649	0.04	0.724
Worst mode retest									
Hotspot	20M QPSK 1RB#99	Bottom Edge	10	26590	23.0	22.68	0.851	0.02	0.916

Note:

1) Due to 0.888/0.851 = 1.04 < 1.20, and SAR value of original and repeated measurement is ≤ 1.45 W/kg, so only one repeated measurement is required.

11.11. 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 1RB#0	Left Cheek	0	26865	23.5	23.14	0.111	0.12	0.121
Head	15M QPSK 36RB#18	Left Cheek	0	26965	22.5	22.31	0.089	0.13	0.093
Head	15M QPSK 1RB#0	Left Tilt	0	26865	23.5	23.14	0.074	-0.10	0.081
Head	15M QPSK 36RB#18	Left Tilt	0	26965	22.5	22.31	0.060	-0.08	0.063
Head	15M QPSK 1RB#0	Right Cheek	0	26865	23.5	23.14	0.137	-0.02	0.149
Head	15M QPSK 36RB#18	Right Cheek	0	26965	22.5	22.31	0.119	0.04	0.125
Head	15M QPSK 1RB#0	Right Tilt	0	26865	23.5	23.14	0.074	0.02	0.081
Head	15M QPSK 36RB#18	Right Tilt	0	26965	22.5	22.31	0.060	-0.12	0.063
Body-worn & Hotspot	15M QPSK 1RB#0	Front Surface	10	26865	23.5	23.14	0.331	0.15	0.359
Body-worn & Hotspot	15M QPSK 36RB#18	Front Surface	10	26965	22.5	22.31	0.272	0.13	0.284
Body-worn & Hotspot	15M QPSK 1RB#0	Back Surface	10	26865	23.5	23.14	0.337	0.09	0.366
Body-worn & Hotspot	15M QPSK 36RB#18	Back Surface	10	26965	22.5	22.31	0.285	0.00	0.298
Hotspot	15M QPSK 1RB#0	Left Edge	10	26865	23.5	23.14	0.020	0.02	0.021
Hotspot	15M QPSK 36RB#18	Left Edge	10	26965	22.5	22.31	0.014	-0.04	0.015
Hotspot	15M QPSK 1RB#0	Right Edge	10	26865	23.5	23.14	0.082	-0.07	0.089
Hotspot	15M QPSK 36RB#18	Right Edge	10	26965	22.5	22.31	0.065	-0.02	0.068
Hotspot	15M QPSK 1RB#0	Bottom Edge	10	26865	23.5	23.14	0.345	0.03	0.375
Hotspot	15M QPSK 36RB#18	Bottom Edge	10	26965	22.5	22.31	0.284	-0.02	0.296

11.12. 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 1RB#0	Left Cheek	0	40620	22.5	22.41	0.000	0.01	0.000
Head	20M QPSK 50RB#0	Left Cheek	0	40620	21.5	21.43	0.000	0.10	0.000
Head	20M QPSK 1RB#0	Left Tilt	0	40620	22.5	22.41	0.000	0.08	0.000
Head	20M QPSK 50RB#0	Left Tilt	0	40620	21.5	21.43	0.000	-0.11	0.000
Head	20M QPSK 1RB#0	Right Cheek	0	40620	22.5	22.41	0.000	0.10	0.000
Head	20M QPSK 50RB#0	Right Cheek	0	40620	21.5	21.43	0.000	-0.08	0.000
Head	20M QPSK 1RB#0	Right Tilt	0	40620	22.5	22.41	0.000	-0.13	0.000
Head	20M QPSK 50RB#0	Right Tilt	0	40620	21.5	21.43	0.000	0.13	0.000
Body-worn & Hotspot	20M QPSK 1RB#0	Front Surface	10	40620	22.5	22.41	0.139	-0.05	0.142
Body-worn & Hotspot	20M QPSK 50RB#0	Front Surface	10	40620	21.5	21.43	0.104	-0.12	0.106
Body-worn & Hotspot	20M QPSK 1RB#0	Back Surface	10	40620	22.5	22.41	0.169	-0.10	0.173
Body-worn & Hotspot	20M QPSK 50RB#0	Back Surface	10	40620	21.5	21.43	0.152	0.09	0.154
Hotspot	20M QPSK 1RB#0	Left Edge	10	40620	22.5	22.41	0.056	-0.01	0.057
Hotspot	20M QPSK 50RB#0	Left Edge	10	40620	21.5	21.43	0.044	0.13	0.045
Hotspot	20M QPSK 1RB#0	Right Edge	10	40620	22.5	22.41	0.075	0.04	0.077
Hotspot	20M QPSK 50RB#0	Right Edge	10	40620	21.5	21.43	0.063	0.13	0.064
Hotspot	20M QPSK 1RB#0	Bottom Edge	10	40620	22.5	22.41	0.249	0.04	0.254
Hotspot	20M QPSK 50RB#0	Bottom Edge	10	40620	21.5	21.43	0.206	-0.01	0.209

Note:

1. due to the measured SAR is zero, so there is not plot attached in 4791434720-1-SAR-1_App C Highest Test Plots.

11.13. 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 1RB#0	Left Cheek	0	132072	23.5	23.05	0.128	0.07	0.142
Head	20M QPSK 50RB#0	Left Cheek	0	132072	22.0	21.88	0.090	-0.10	0.093
Head	20M QPSK 1RB#0	Left Tilt	0	132072	23.5	23.05	0.088	-0.03	0.098
Head	20M QPSK 50RB#0	Left Tilt	0	132072	22.0	21.88	0.067	-0.03	0.069
Head	20M QPSK 1RB#0	Right Cheek	0	132072	23.5	23.05	0.088	0.15	0.098
Head	20M QPSK 50RB#0	Right Cheek	0	132072	22.0	21.88	0.067	0.05	0.069
Head	20M QPSK 1RB#0	Right Tilt	0	132072	23.5	23.05	0.078	0.12	0.087
Head	20M QPSK 50RB#0	Right Tilt	0	132072	22.0	21.88	0.060	0.05	0.062
Body-worn & Hotspot	20M QPSK 1RB#0	Front Surface	10	132072	23.5	23.05	0.164	0.13	0.182
Body-worn & Hotspot	20M QPSK 50RB#0	Front Surface	10	132072	22.0	21.88	0.132	0.05	0.136
Body-worn & Hotspot	20M QPSK 1RB#0	Back Surface	10	132072	23.5	23.05	0.188	0.03	0.209
Body-worn & Hotspot	20M QPSK 50RB#0	Back Surface	10	132072	22.0	21.88	0.154	0.05	0.158
Hotspot	20M QPSK 1RB#0	Left Edge	10	132072	23.5	23.05	0.175	-0.06	0.194
Hotspot	20M QPSK 50RB#0	Left Edge	10	132072	22.0	21.88	0.142	0.00	0.146
Hotspot	20M QPSK 1RB#0	Right Edge	10	132072	23.5	23.05	0.134	0.03	0.148
Hotspot	20M QPSK 50RB#0	Right Edge	10	132072	22.0	21.88	0.118	0.06	0.121
Hotspot	20M QPSK 1RB#0	Bottom Edge	10	132072	23.5	23.05	0.436	-0.01	0.484
Hotspot	20M QPSK 50RB#0	Bottom Edge	10	132072	22.0	21.88	0.342	0.10	0.352

11.14. 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 1RB#49	Left Cheek	0	133222	23.5	23.33	0.088	0.03	0.092
Head	20M QPSK 50RB#25	Left Cheek	0	133222	22.5	22.32	0.069	0.04	0.072
Head	20M QPSK 1RB#49	Left Tilt	0	133222	23.5	23.33	0.050	0.10	0.052
Head	20M QPSK 50RB#25	Left Tilt	0	133222	22.5	22.32	0.039	-0.02	0.041
Head	20M QPSK 1RB#49	Right Cheek	0	133222	23.5	23.33	0.095	-0.07	0.099
Head	20M QPSK 50RB#25	Right Cheek	0	133222	22.5	22.32	0.072	0.11	0.075
Head	20M QPSK 1RB#49	Right Tilt	0	133222	23.5	23.33	0.049	0.12	0.051
Head	20M QPSK 50RB#25	Right Tilt	0	133222	22.5	22.32	0.041	-0.02	0.043
Body-worn & Hotspot	20M QPSK 1RB#49	Front Surface	10	133222	23.5	23.33	0.219	-0.10	0.228
Body-worn & Hotspot	20M QPSK 50RB#25	Front Surface	10	133222	22.5	22.32	0.174	-0.02	0.181
Body-worn & Hotspot	20M QPSK 1RB#49	Back Surface	10	133222	23.5	23.33	0.250	0.04	0.260
Body-worn & Hotspot	20M QPSK 50RB#25	Back Surface	10	133222	22.5	22.32	0.201	-0.01	0.209
Hotspot	20M QPSK 1RB#49	Left Edge	10	133222	23.5	23.33	0.100	0.06	0.104
Hotspot	20M QPSK 50RB#25	Left Edge	10	133222	22.5	22.32	0.091	0.15	0.095
Hotspot	20M QPSK 1RB#49	Right Edge	10	133222	23.5	23.33	0.210	0.05	0.219
Hotspot	20M QPSK 50RB#25	Right Edge	10	133222	22.5	22.32	0.164	0.06	0.171
Hotspot	20M QPSK 1RB#49	Bottom Edge	10	133222	23.5	23.33	0.139	-0.11	0.144
Hotspot	20M QPSK 50RB#25	Bottom Edge	10	133222	22.5	22.32	0.108	-0.06	0.112

11.15. SAR Test Results of 2.4GHz Wi-Fi

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		DC. (%)	Measured 1-g (W/Kg)	Pwr. Drift	Scaled (W/Kg)
					Tune-up	Meas.				
Head	802.11 b	Left Cheek	0	11	13.0	12.67	98.13	0.572	-0.11	0.629
Head	802.11 b	Left Tilt	0	11	13.0	12.67	98.13	0.620	-0.10	0.682
Head	802.11 b	Right Cheek	0	11	13.0	12.67	98.13	0.209	-0.06	0.230
Head	802.11 b	Right Tilt	0	11	13.0	12.67	98.13	0.232	0.03	0.255
Body-worn & Hotspot	802.11 b	Front Surface	10	11	13.0	12.67	98.13	0.076	0.05	0.083
Body-worn & Hotspot	802.11 b	Back Surface	10	11	13.0	12.67	98.13	0.139	-0.13	0.153
Hotspot	802.11 b	Right Edge	10	11	13.0	12.67	98.13	0.062	0.07	0.068
Hotspot	802.11 b	Top Edge	10	11	13.0	12.67	98.13	0.168	-0.13	0.185

11.16. SAR Test Results of U-NII-1

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)		
Body-worn & Hotspot	802.11 a	Front Surface	10	48	17.0	16.72	90.20	0.032	-0.09	0.038
Body-worn & Hotspot	802.11 a	Back Surface	10	48	17.0	16.72	90.20	0.062	0.15	0.073
Hotspot	802.11 a	Right Edge	10	48	17.0	16.72	90.20	0.016	-0.04	0.019
Hotspot	802.11 a	Top Edge	10	48	17.0	16.72	90.20	0.121	0.04	0.143

Note:

1. due to U-NII-2A doesn't support hotspot mode, so hotspot mode is evaluated with U-NII-1.

11.17. SAR Test Results of U-NII-2A

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	802.11 n 20M	Left Cheek	0	64	19.0	18.69	87.12	0.329	0.13	0.406
Head	802.11 n 20M	Left Tilt	0	64	19.0	18.69	87.12	0.368	0.13	0.454
Head	802.11 n 20M	Right Cheek	0	64	19.0	18.69	87.12	0.323	0.08	0.398
Head	802.11 n 20M	Right Tilt	0	64	19.0	18.69	87.12	0.360	0.03	0.444
Body-worn	802.11 n 20M	Front Surface	10	64	19.0	18.69	87.12	0.055	-0.11	0.068
Body-worn	802.11 n 20M	Back Surface	10	64	19.0	18.69	87.12	0.085	0.10	0.105

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	802.11 n 20M	Front Surface	0	64	19.0	18.69	87.12	0.183	-0.12	0.225
Extremity	802.11 n 20M	Back Surface	0	64	19.0	18.69	87.12	0.339	-0.11	0.418
Extremity	802.11 n 20M	Right Edge	0	64	19.0	18.69	87.12	0.068	-0.05	0.084
Extremity	802.11 n 20M	Top Edge	0	64	19.0	18.69	87.12	0.926	-0.01	1.142

Note:

1. When hotspot is not supported, extremity SAR is required.

11.18. SAR Test Results of U-NII-2C

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	802.11 a	Left Cheek	0	140	14.5	14.30	90.20	0.171	-0.06	0.199
Head	802.11 a	Left Tilt	0	140	14.5	14.30	90.20	0.265	0.07	0.308
Head	802.11 a	Right Cheek	0	140	14.5	14.30	90.20	0.177	-0.01	0.206
Head	802.11 a	Right Tilt	0	140	14.5	14.30	90.20	0.246	-0.09	0.286
Body-worn	802.11 a	Front Surface	10	140	14.5	14.30	90.20	0.022	-0.07	0.026
Body-worn	802.11 a	Back Surface	10	140	14.5	14.30	90.20	0.026	0.00	0.030

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	802.11 a	Front Surface	0	140	14.5	14.30	90.20	0.098	-0.13	0.114
Extremity	802.11 a	Back Surface	0	140	14.5	14.30	90.20	0.166	-0.15	0.193
Extremity	802.11 a	Right Edge	0	140	14.5	14.30	90.20	0.044	-0.01	0.051
Extremity	802.11 a	Top Edge	0	140	14.5	14.30	90.20	0.323	-0.08	0.375

11.19. SAR Test Results of U-NII-3

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	802.11 n 40M	Left Cheek	0	159	17.5	17.16	85.07	0.247	-0.05	0.314
Head	802.11 n 40M	Left Tilt	0	159	17.5	17.16	85.07	0.385	0.07	0.489
Head	802.11 n 40M	Right Cheek	0	159	17.5	17.16	85.07	0.358	0.04	0.455
Head	802.11 n 40M	Right Tilt	0	159	17.5	17.16	85.07	0.348	0.06	0.443
Body-worn & Hotspot	802.11 n 40M	Front Surface	10	159	17.5	17.16	85.07	0.010	0.13	0.013
Body-worn & Hotspot	802.11 n 40M	Back Surface	10	159	17.5	17.16	85.07	0.075	0.00	0.095
Hotspot	802.11 n 40M	Right Edge	10	159	17.5	17.16	85.07	0.031	0.01	0.039
Hotspot	802.11 n 40M	Top Edge	10	159	17.5	17.16	85.07	0.048	-0.15	0.061

11.20. 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	0	8.0	7.83	77.54	0.085	-0.05	0.114
Head	DH5	Left Tilt	0	0	8.0	7.83	77.54	0.093	0.03	0.125
Head	DH5	Right Cheek	0	0	8.0	7.83	77.54	0.025	0.11	0.033
Head	DH5	Right Tilt	0	0	8.0	7.83	77.54	0.029	-0.11	0.039
Body-worn & Hotspot	DH5	Front Surface	10	0	8.0	7.83	77.54	0.014	0.02	0.019
Body-worn & Hotspot	DH5	Back Surface	10	0	8.0	7.83	77.54	0.010	-0.01	0.013
Hotspot	DH5	Right Edge	10	0	8.0	7.83	77.54	0.005	0.01	0.007
Hotspot	DH5	Top Edge	10	0	8.0	7.83	77.54	0.012	-0.03	0.016

12. Simultaneous Transmission SAR Analysis

Simultaneous transmission possibilities					
NO	Simultaneous TX Combination	Head	Body- worn	Hotspot	Extremity
1	WWAN+BT	Y	Y	Y	N
2	WWAN+2.4GHz Wi-Fi	Y	Y	Y	N
3	WWAN+U-NII	Y	Y	Y	N

12.1. Analysis for WWAN & Wi-Fi & U-NII & BT

RF Exposure Condition	Test Position	WWAN Max	2.4G Wi-Fi	BT	U-NII Max	WWAN Max+2.4G Wi-Fi	WWAN Max+BT	WWAN Max+U-NII Max
Head	Left Cheek	0.142	0.629	0.130	0.406	0.771	0.272	0.548
	Left Tilt	0.098	0.682	0.125	0.489	0.780	0.223	0.587
	Right Cheek	0.151	0.230	0.033	0.455	0.381	0.184	0.606
	Right Tilt	0.104	0.255	0.039	0.444	0.359	0.143	0.548
Body-worn & Hotspot	Front Surface	0.381	0.083	0.019	0.060	0.464	0.400	0.441
	Back Surface	0.492	0.153	0.013	0.105	0.645	0.505	0.597
Hotspot	Left Edge	0.194	/	/	/	0.194	0.194	0.194
	Right Edge	0.219	0.068	0.007	0.039	0.287	0.226	0.258
	Top Edge	/	0.188	0.016	0.143	0.188	0.016	0.143
	Bottom Edge	0.956	/	/	/	0.956	0.956	0.956

Appendixes

Refer to separated files for the following appendixes.

4791434720-1-SAR-1_App A Photo

4791434720-1-SAR-1_App B System Check Plots

4791434720-1-SAR-1_App C Highest Test Plots

4791434720-1-SAR-1_App D Cal. Certificates

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