FCC SAR TEST REPORT

FCC ID	**: 2ABVH-INARI8B2**
Equipment	**: Tablet**
Brand Name	**: AAVA**
Model Name	**: INARI8B-LTG-1**
Applicant	**: Aava Mobile Oy NAHKATEHTAANKATU 2 90130 OULU FINLAND**
Manufacturer	**: Aava Mobile Oy NAHKATEHTAANKATU 2 90130 OULU FINLAND**
Standard	**: FCC 47 CFR Part 2 (2.1093) ANSI/IEEE C95.1-1992 IEEE 1528-2013**

The product was received on Oct. 16, 2018 and testing was started from Oct. 16,, 2018 and completed on Nov. 20, 2018. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERTIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Cona Huang / Deputy Manager

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History of this test report

Report No.	Version	Description	Issued Date
FA890633	01	Initial issue of report	Jan. 07, 2019

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for Aava Mobile Oy, Tablet, INARI8B-LTG-1, are as follows.

Equipment Class	Frequency Band	Highest SAR Summary Body 1g SAR (W/kg)	Highest Simultaneous Transmission 1g SAR (W/kg)
Licensed	WCDMA II	1.17	1.59
	WCDMA IV	1.16	
	WCDMA V	1.08	
	LTE Band 7	1.18	
	LTE Band 12 / 17	1.18	
	LTE Band 13	1.08	
	LTE Band 2 / 25	1.14	
	LTE Band 5 / 26	1.14	
	LTE Band 30	1.12	
	LTE Band 38 / 41	1.19	
	LTE Band 4 / 66	1.18	
DTS	2.4GHz WLAN	1.17	1.59
NII	5GHz WLAN	1.20	1.56
DSS	Bluetooth	0.53	1.52
Date of Testing:		2018/10/16 ~ 2018/11/20	

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications

Reviewed by: Jason Wang
Report Producer: Wan Liu

2. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02

3. Equipment Under Test (EUT) Information

3.1 General Information

Product Feature & Specification	
Equipment Name	Tablet
Brand Name	AAVA
Model Name	INARI8B-LTG-1
FCC ID	2ABVH-INARI8B2
S/N	XAGC2F82502516
Wireless Technology and Frequency Range	WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 30: 2307.5 MHz ~ 2312.5 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz LTE Band 66: 1710.7 MHz ~ 1779.3 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA DC-HSDPA LTE: QPSK, 16QAM WLAN 2.4GHz : 802.11b/g/n HT20/HT40 WLAN 5GHz : 802.11a/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE NFC:ASK
HW Version	DV1
SW Version	Windows 10
EUT Stage	Identical Prototype

3.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05	
FCC ID	2ABVH-INARI8B2
Equipment Name	Tablet
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 30: 2307.5 MHz ~ 2312.5 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz LTE Band 66: 1710.7 MHz ~ 1779.3 MHz
Channel Bandwidth	LTE Band 02:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 04:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 05:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 07: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 17: 5MHz, 10MHz LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 30: 5MHz, 10MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
uplink modulations used	QPSK / 16QAM
LTE Voice / Data requirements	Data only
LTE MPR permanently built-in by design	**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3**

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

LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.
Power reduction applied to satisfy SAR compliance	Yes, Proximity Sensor.
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 12.
LTE Carrier Aggregation Additional Information	This device supports maximum of 3 carriers in the downlink. Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.

Transmission (H, M, L) channel numbers and frequencies in each LTE band

LTE Band 2

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900

LTE Band 4

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745

LTE Band 5

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844

LTE Band 7

	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560

LTE Band 12

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711

LTE Band 13

	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	23205	779.5	23230	782
M	23230	782		
H	23255	784.5		

LTE Band 17

	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq. (MHz)
L	23755	706.5	23780	709
M	23790	710	23790	710
H	23825	713.5	23800	711

LTE Band 25

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905

LTE Band 26										
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5

LTE Band 30				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	27685	2307.5	27710	2310
M	27710	2310		
H	27735	2312.5		

LTE Band 38								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580
M	38000	2595	38000	2595	38000	2595	38000	2595
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610

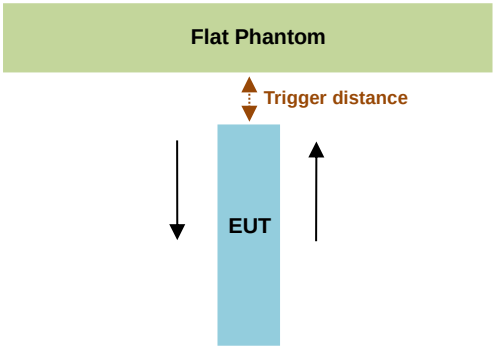
LTE Band 41								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506
L M	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593
H M	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680

LTE Band 66												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770

4. Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance (KDB 616217 D04 section 6.2)>:

Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed. The details are illustrated in the exhibit “operational description”, and the shortest triggering distances were reported and used for SAR assessment.



Proximity Sensor Trigger Distance (mm)		
Position	Bottom Face	Edge 1
Minimum	15	13

Back side trigger 3mm steps													
40mm	37mm	34mm	31mm	28mm	25mm	22mm	19mm	16mm	13mm	10mm	7mm	4mm	0mm
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON
Back side trigger 1mm steps													
18mm	17mm	16mm	15mm	14mm	13mm	12mm	11mm	10mm	9mm	8mm	7mm	6mm	0mm
OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

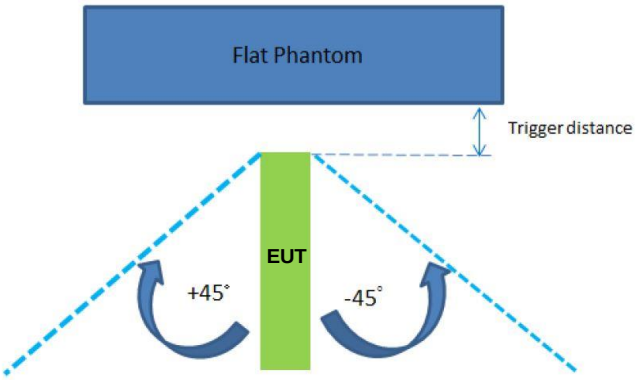
Top edge trigger 3mm steps													
40mm	37mm	34mm	31mm	28mm	25mm	22mm	19mm	16mm	13mm	10mm	7mm	4mm	0mm
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON
Top edge trigger 1mm steps													
15mm	14mm	13mm	12mm	11mm	10mm	9mm	8mm	7mm	6mm	5mm	4mm	3mm	0mm
OFF	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

<Proximity Sensor Triggering Coverage (KDB 616217 D04 section 6.3)>:

Since the proximity sensing elements are placed on two sides of the transmitting WWAN antenna and the fact that the traces (inside thin red rectangular box in Figure 3 of operation description) also detect proximity, the antenna and sensor are not spatially offset and therefore proximity coverage area does not need to be determined as described in FCC 616217 D04 SAR v01r02 paragraph 6.3.

<Tablet Tilt angle influences to proximity sensor triggering (KDB 616217 D04 section 6.4)>:

The influence of table tilt angles to proximity sensor triggering was determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom, at 13 mm separation.
Rotating the tablet around the edge next to the phantom in ≤ 10° increments until the tablet is ± 45° from the vertical position at 0°, and the maximum output power remains in the reduced mode.



The Sensor Trigger Distance (mm)	
Position	Edge 1
Minimum	13

Tilt angle test, distance 13mm													
-50°	-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°	50°	60°
OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

Proximity sensor power reduction

Exposure Position / wireless mode	Bottom Face[(1)] (Back side)	Edge 1[(1)] (Top edge)	Edge 2	Edge 3	Edge 4
WCDMA Band II	6 dB	6 dB	0 dB	0 dB	0 dB
WCDMA Band IV	5.5 dB	5.5 dB	0 dB	0 dB	0 dB
WCDMA Band V	2.5 dB	2.5 dB	0 dB	0 dB	0 dB
LTE Band 2	6 dB	6 dB	0 dB	0 dB	0 dB
LTE Band 4	5 dB	5 dB	0 dB	0 dB	0 dB
LTE Band 5	1.5 dB	1.5 dB	0 dB	0 dB	0 dB
LTE Band 7	10.5 dB	10.5 dB	0 dB	0 dB	0 dB
LTE Band 12	2.5 dB	2.5 dB	0 dB	0 dB	0 dB
LTE Band 13	2 dB	2 dB	0 dB	0 dB	0 dB
LTE Band 17	2.5 dB	2.5 dB	0 dB	0 dB	0 dB
LTE Band 25	8 dB	8 dB	0 dB	0 dB	0 dB
LTE Band 26	1.5 dB	1.5 dB	0 dB	0 dB	0 dB
LTE Band 30	5.5 dB	5.5 dB	0 dB	0 dB	0 dB
LTE Band 38	10 dB	10 dB	0 dB	0 dB	0 dB
LTE Band 41	9 dB	9 dB	0 dB	0 dB	0 dB
LTE Band 66	5 dB	5 dB	0 dB	0 dB	0 dB

Remark:

1. [(1)]: Reduced maximum limit applied by activation of proximity sensor.
2. Power reduction is not applicable for WLAN and Bluetooth.
3. Tests were performed in accordance with KDB 616217 D04 section 6.1, 6.2, 6.3, 6.4 and 6.5 and compliant results are shown and described in exhibit “P-Sensor operational description
4. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance was performed:
   - Bottom Face: 14 mm
   - Edge1: 12 mm

5. RF Exposure Limits

5.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

5.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

1. Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

6. Specific Absorption Rate (SAR)

6.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

6.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

$$\mathbf{SAR} = \frac{\mathbf{d}}{\mathbf{dt}}\left(\frac{\mathbf{dW}}{\mathbf{dm}}\right) = \frac{\mathbf{d}}{\mathbf{dt}}\left(\frac{\mathbf{dW}}{\boldsymbol{\rho}\mathbf{dv}}\right)$$

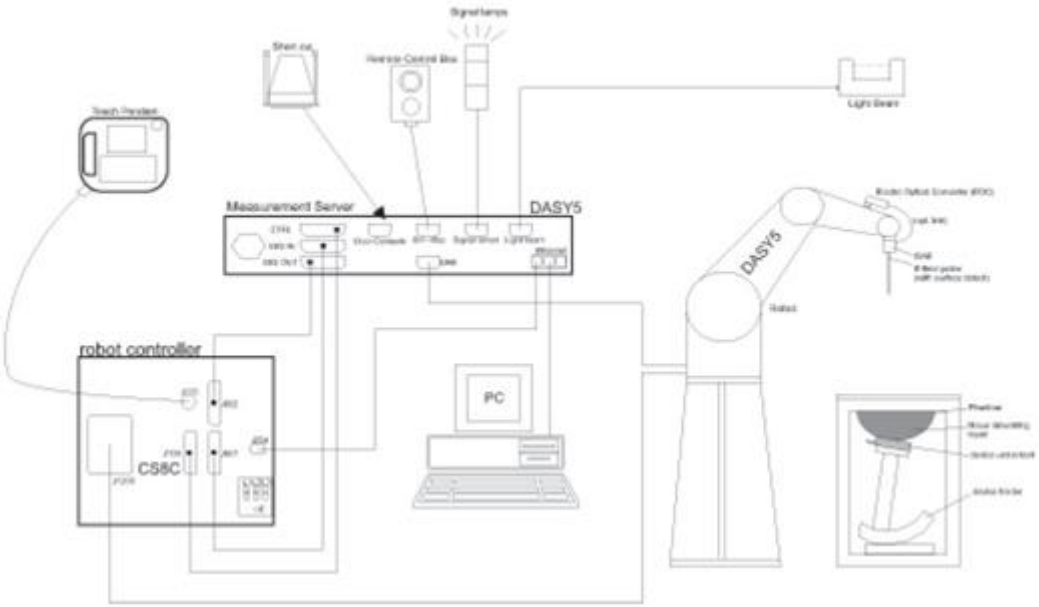
SAR is expressed in units of Watts per kilogram (W/kg)

$$\mathbf{SAR} = \frac{\boldsymbol{\sigma}|\mathbf{E}|^2}{\boldsymbol{\rho}}$$

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

7. System Description and Setup

The DASY 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 WinXP or 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.

7.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

<ES3DV3 Probe>

Construction	Symmetric design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz – 4 GHz; Linearity: ±0.2 dB (30 MHz – 4 GHz)	
Directivity	±0.2 dB in TSL (rotation around probe axis) ±0.3 dB in TSL (rotation normal to probe axis)	
Dynamic Range	5 µW/g – >100 mW/g; Linearity: ±0.2 dB	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 3.9 mm (body: 12 mm) Distance from probe tip to dipole centers: 3.0 mm	

<EX3DV4 Probe>

Construction	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz – >6 GHz Linearity: ±0.2 dB (30 MHz – 6 GHz)	
Directivity	±0.3 dB in TSL (rotation around probe axis) ±0.5 dB in TSL (rotation normal to probe axis)	
Dynamic Range	10 µW/g – >100 mW/g Linearity: ±0.2 dB (noise: typically <1 µW/g)	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

7.2 Data Acquisition Electronics (DAE)

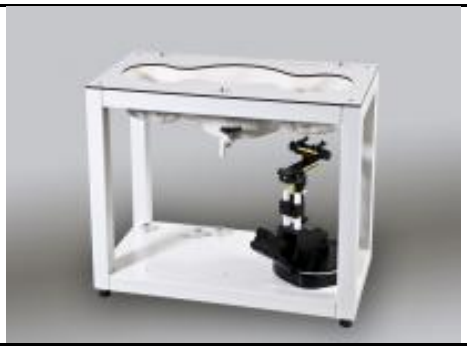
The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Fig 5.1 Photo of DAE

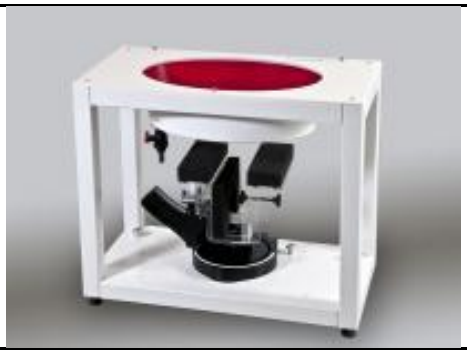
7.3 Phantom

<SAM Twin Phantom>

Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm	
Filling Volume	Approx. 25 liters	
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet	
Measurement Areas	Left Hand, Right Hand, Flat Phantom	

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

<ELI Phantom>

Shell Thickness	2 ± 0.2 mm (sagging: <1%)	
Filling Volume	Approx. 30 liters	
Dimensions	Major ellipse axis: 600 mm Minor axis: 400 mm	

The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

7.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). And upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.

Mounting Device for Hand-Held Transmitters

Mounting Device Adaptor for Wide-Phones

<Mounting Device for Laptops and other Body-Worn Transmitters>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.

Mounting Device for Laptops

8. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

(a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
(b) Read the WWAN RF power level from the base station simulator.
(c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band
(d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power

<SAR measurement>

(a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
(b) Place the EUT in the positions as Appendix D demonstrates.
(c) Set scan area, grid size and other setting on the DASY software.
(d) Measure SAR results for the highest power channel on each testing position.
(e) Find out the largest SAR result on these testing positions of each band
(f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

8.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

8.2 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. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

8.3 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 found in the scanned area, within a range of the global maximum. The range (in dB0 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 FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

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

8.4 Zoom Scan

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes 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 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

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

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

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

8.5 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

8.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

9. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1107	Feb. 27, 2018	Feb. 26, 2019
SPEAG	835MHz System Validation Kit	D835V2	499	Sep. 06, 2018	Sep. 05, 2019
SPEAG	1750MHz System Validation Kit	D1750V2	1112	Feb. 28, 2018	Feb. 27, 2019
SPEAG	1900MHz System Validation Kit	D1900V2	5d041	Sep. 11, 2018	Sep. 10, 2019
SPEAG	2300MHz System Validation Kit	D2300V2	1006	Jan. 17, 2018	Jan. 16, 2019
SPEAG	2450MHz System Validation Kit	D2450V2	736	Aug. 31, 2018	Sep. 30, 2019
SPEAG	2600MHz System Validation Kit	D2600V2	1008	Aug. 31, 2018	Aug. 30, 2019
SPEAG	5GHz System Validation Kit	D5GHzV2	1006	Sep. 27, 2018	Sep. 26, 2019
SPEAG	Data Acquisition Electronics	DAE3	577	Sep. 19, 2018	Sep. 18, 2019
SPEAG	Data Acquisition Electronics	DAE4	778	May. 25, 2018	May. 24, 2019
SPEAG	Data Acquisition Electronics	DAE4	1326	Sep. 18, 2018	Sep. 17, 2019
SPEAG	Dosimetric E-Field Probe	EX3DV4	3925	May. 31, 2018	May. 30, 2019
SPEAG	Dosimetric E-Field Probe	EX3DV4	7306	Jul. 26, 2018	Jul. 25, 2019
RCPTWN	Thermometer	HTC-1	TM685-1	Mar. 16, 2018	Mar. 15, 2019
RCPTWN	Thermometer	HTC-1	TM281-1	Mar. 16, 2018	Mar. 15, 2019
RCPTWN	Thermometer	HTC-1	TM560-1	Mar. 16, 2018	Mar. 15, 2019
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Apr. 17, 2018	Apr. 16, 2019
Agilent	Wireless Communication Test Set	E5515C	MY50266977	May. 21, 2018	May. 20, 2019
R&S	BT Base Station	CBT	100815	Feb. 05, 2018	Feb. 04, 2019
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Dec. 07, 2017	Dec. 06, 2018
Agilent	ENA Network Analyzer	E5071C	MY46316648	Jan. 17, 2018	Jan. 16, 2019
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 19, 2018	Sep. 18, 2019
LINE SEIKI	Digital Thermometer	DTM3000-spezial	2942	Dec. 08, 2017	Dec. 07, 2018
Anritsu	Power Meter	ML2495A	1419002	May. 18, 2018	May. 17, 2019
Anritsu	Power Sensor	MA2411B	1339124	May. 18, 2018	May. 17, 2019
Anritsu	Power Meter	ML2495A	1240001	Sep. 13, 2018	Sep. 12, 2019
Anritsu	Power Sensor	MA2411B	1207349	Sep. 13, 2018	Sep. 12, 2019
Agilent	Spectrum Analyzer	E4408B	MY44211028	Aug. 28, 2018	Aug. 27, 2019
Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jun. 23, 2018	Jun. 22, 2019
Mini-Circuits	Power Amplifier	ZVE-8G+	070501814	Oct. 08, 2018	Oct. 07, 2019
Mini-Circuits	Power Amplifier	ZVE-8G+	6382	Aug. 09, 2018	Aug. 08, 2019
AR	Power Amplifier	5S1G4	0325228	Jul. 04, 2018	Jul. 03, 2019
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005- 3	N/A	Note 1	

General Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.

10. System Verification

10.1 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 10.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 10.2.

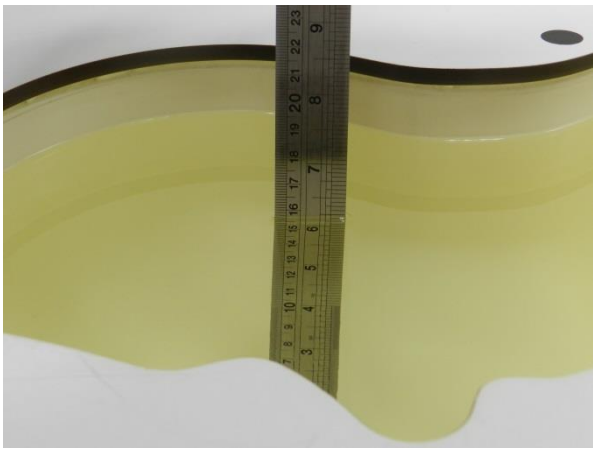


Fig 10.1Photo of Liquid Height for Head SAR

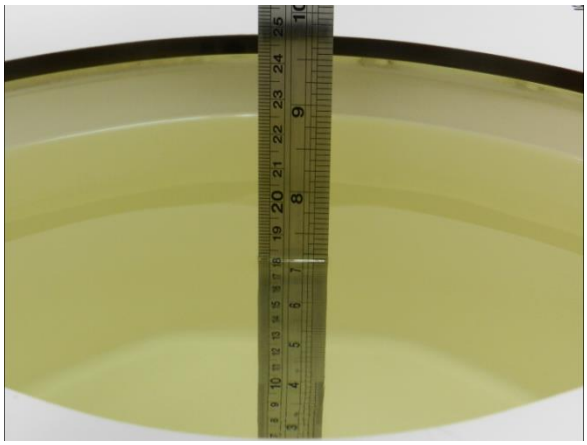


Fig 10.2 Photo of Liquid Height for Body SAR

10.2 Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0
For Body								
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
900	50.8	48.2	0	0.9	0.1	0	1.05	55.0
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7
2600	68.1	0	0	0.1	0	31.8	2.16	52.5

Simulating Liquid for 5GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	64~78%
Mineral oil	11~18%
Emulsifiers	9~15%
Additives and Salt	2~3%

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	MSL	22.6	0.957	54.024	0.96	55.50	-0.31	-2.66	±5	2018/10/16
835	MSL	22.6	0.989	57.189	0.97	55.20	1.96	3.60	±5	2018/10/16
835	MSL	22.7	0.970	55.222	0.97	55.20	0.00	0.04	±5	2018/10/17
1750	MSL	22.4	1.527	54.161	1.49	53.40	2.48	1.43	±5	2018/10/19
1750	MSL	22.2	1.517	54.061	1.49	53.40	1.81	1.24	±5	2018/10/22
1900	MSL	22.4	1.517	53.498	1.52	53.30	-0.20	0.37	±5	2018/10/19
1900	MSL	22.2	1.571	52.505	1.52	53.30	3.36	-1.49	±5	2018/10/22
2300	MSL	22.7	1.794	52.919	1.81	52.90	-0.88	0.04	±5	2018/10/17
2450	MSL	22.2	2.039	51.103	1.95	52.70	4.56	-3.03	±5	2018/11/18
2600	MSL	22.7	2.194	52.500	2.16	52.50	1.57	0.00	±5	2018/10/17
2600	MSL	22.8	2.181	52.968	2.16	52.50	0.97	0.89	±5	2018/10/18
5250	MSL	22.5	5.396	48.870	5.36	48.95	0.67	-0.16	±5	2018/11/18
5250	MSL	22.4	5.539	49.408	5.36	48.95	3.34	0.94	±5	2018/11/20
5600	MSL	22.5	5.778	48.382	5.77	48.50	0.14	-0.24	±5	2018/11/18
5600	MSL	22.4	5.994	48.790	5.77	48.50	3.88	0.60	±5	2018/11/20
5750	MSL	22.5	5.938	48.179	5.94	48.28	-0.03	-0.21	±5	2018/11/18
5750	MSL	22.4	6.207	48.541	5.94	48.28	4.49	0.54	±5	2018/11/20

10.3 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2018/10/16	750	MSL	250	D750V3-1107	EX3DV4 - SN3925	DAE4 Sn1326	2.25	8.52	9	5.63
2018/10/16	835	MSL	250	D835V2-499	EX3DV4 - SN3925	DAE4 Sn1326	2.58	9.82	10.32	5.09
2018/10/17	835	MSL	250	D835V2-499	EX3DV4 - SN3925	DAE4 Sn1326	2.56	9.82	10.24	4.28
2018/10/19	1750	MSL	250	D1750V2-1112	EX3DV4 - SN3925	DAE4 Sn1326	9.35	38.10	37.4	-1.84
2018/10/22	1750	MSL	250	D1750V2-1112	EX3DV4 - SN3925	DAE4 Sn1326	9.83	38.10	39.32	3.20
2018/10/19	1900	MSL	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn1326	9.77	40.20	39.08	-2.79
2018/10/22	1900	MSL	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn1326	9.94	40.20	39.76	-1.09
2018/10/17	2300	MSL	250	D2300V2-1006	EX3DV4 - SN3925	DAE4 Sn1326	12.70	47.30	50.8	7.40
2018/11/18	2450	MSL	250	D2450V2-736	EX3DV4 - SN7306	DAE3 Sn577	12.60	51.50	50.4	-2.14
2018/10/17	2600	MSL	250	D2600V2-1008	EX3DV4 - SN3925	DAE4 Sn1326	14.10	55.30	56.4	1.99
2018/10/18	2600	MSL	250	D2600V2-1008	EX3DV4 - SN3925	DAE4 Sn1326	14.00	55.30	56	1.27
2018/11/18	5250	MSL	100	D5GHzV2-1006	EX3DV4 - SN7306	DAE3 Sn577	7.85	78.30	78.5	0.26
2018/11/20	5250	MSL	100	D5GHzV2-1006	EX3DV4 - SN3925	DAE4 Sn778	8.25	78.30	82.5	5.36
2018/11/18	5600	MSL	100	D5GHzV2-1006	EX3DV4 - SN7306	DAE3 Sn577	8.37	81.00	83.7	3.33
2018/11/20	5600	MSL	100	D5GHzV2-1006	EX3DV4 - SN3925	DAE4 Sn778	8.74	81.00	87.4	7.90
2018/11/18	5750	MSL	100	D5GHzV2-1006	EX3DV4 - SN7306	DAE3 Sn577	7.57	77.40	75.7	-2.20
2018/11/20	5750	MSL	100	D5GHzV2-1006	EX3DV4 - SN3925	DAE4 Sn778	8.19	77.40	81.9	5.81

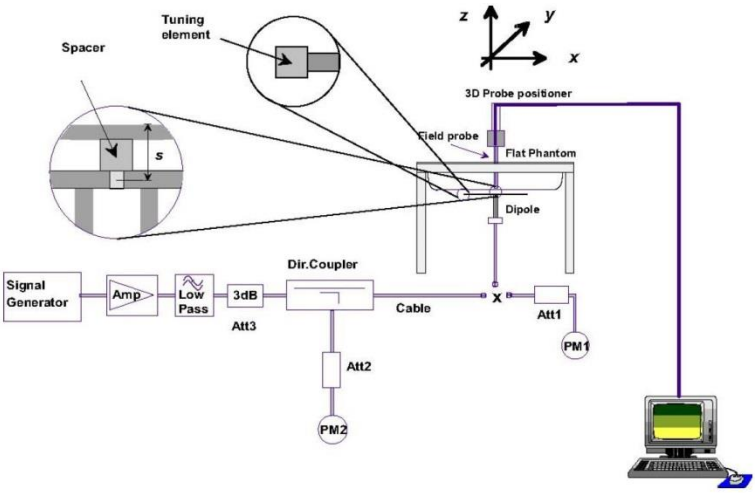


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

11. RF Exposure Positions

11.1 SAR Testing for Tablet

This device can be used also in full sized tablet exposure conditions, due to its size. Per FCC KDB 616217, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR exclusion threshold in KDB 447498 D01v06 can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

12. Conducted RF Output Power (Unit: dBm)

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01v03r01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
3. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set Gain Factors (β_c and β_d) and parameters were set according to each
   ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
   iii. Set RMC 12.2Kbps + HSDPA mode.
   iv. Set Cell Power = -86 dBm
   v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
   vi. Select HSDPA Uplink Parameters
   vii. Set Delta ACK, Delta NACK and Delta CQI = 8
   viii. Set Ack-Nack Repetition Factor to 3
   ix. Set CQI Feedback Cycle (k) to 4 ms
   x. Set CQI Repetition Factor to 2
   xi. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	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} = 30/15 with β_{hs} = 30/15 * β_c.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with β_{hs} = 30/15 * β_c, and Δ_{CQI} = 24/15 with β_{hs} = 24/15 * β_c.

Note 3: 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 4: 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.

Setup Configuration

HSUPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
   ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
   iii. Set Cell Power = -86 dBm
   iv. Set Channel Type = 12.2k + HSPA
   v. Set UE Target Power
   vi. Power Ctrl Mode= Alternating bits
   vii. Set and observe the E-TFCI
   viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 4) (Note 5)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	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	$\beta_{ed}1$: 47/15 $\beta_{ed}2$: 47/15	4 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	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c . For sub-test 5, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 5/15 with β_{hs} = 5/15 * β_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, 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 β_c = 10/15 and β_d = 15/15.

Note 4: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.

Note 5: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 6: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration below
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set RMC 12.2Kbps + HSDPA mode.
   ii. Set Cell Power = -25 dBm
   iii. Set HS-DSCH Configuration Type to FRC (H-set 12, QPSK)
   iv. Select HSDPA Uplink Parameters
   v. Set Gain Factors (β_c and β_d) and parameters were set according to each Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
      a). Subtest 1: β_c/β_d=2/15
      b). Subtest 2: β_c/β_d=12/15
      c). Subtest 3: β_c/β_d=15/8
      d). Subtest 4: β_c/β_d=15/4
   vi. Set Delta ACK, Delta NACK and Delta CQI = 8
   vii. Set Ack-Nack Repetition Factor to 3
   viii. Set CQI Feedback Cycle (k) to 4 ms
   ix. Set CQI Repetition Factor to 2
   x. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
A summary of these settings are illustrated below:

C.8.1.12 Fixed Reference Channel Definition H-Set 12

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

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

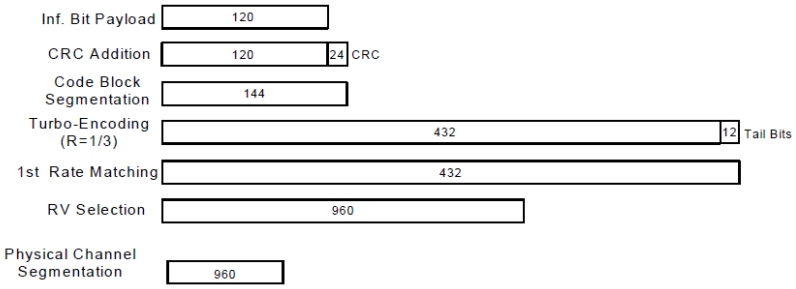


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

<WCDMA Conducted Power>

General Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA, DC-HSDPA) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

<Default Power Mode>

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	23.47	23.66	23.58	24.50	23.59	23.75	23.82	24.50	23.57	23.84	23.30	24.50
3GPP Rel 6	HSDPA Subtest-1	22.44	22.64	23.54	24.00	22.69	22.81	22.88	24.00	22.84	22.98	22.47	24.00
3GPP Rel 6	HSDPA Subtest-2	22.49	22.63	23.51	24.00	22.68	22.95	22.90	24.00	22.81	22.94	22.58	24.00
3GPP Rel 6	HSDPA Subtest-3	21.97	22.17	21.89	23.50	22.23	22.50	22.45	23.50	22.26	22.52	22.07	23.50
3GPP Rel 6	HSDPA Subtest-4	21.98	22.16	21.88	23.50	22.21	22.52	22.36	23.50	22.32	22.48	22.09	23.50
3GPP Rel 8	DC-HSDPA Subtest-1	22.42	22.61	22.42	24.00	22.67	22.78	22.82	24.00	22.82	22.92	22.44	24.00
3GPP Rel 8	DC-HSDPA Subtest-2	22.47	22.58	22.43	24.00	22.55	22.92	22.81	24.00	22.79	22.90	22.53	24.00
3GPP Rel 8	DC-HSDPA Subtest-3	21.96	22.14	21.92	23.50	22.19	22.46	22.42	23.50	22.24	22.48	22.04	23.50
3GPP Rel 8	DC-HSDPA Subtest-4	21.97	22.13	21.94	23.50	22.17	22.48	22.33	23.50	22.29	22.46	22.06	23.50
3GPP Rel 6	HSUPA Subtest-1	22.47	22.63	22.42	24.00	22.70	23.19	22.89	24.00	22.67	22.99	22.36	24.00
3GPP Rel 6	HSUPA Subtest-2	20.49	20.65	20.45	22.00	20.72	21.20	20.01	22.00	20.69	20.99	20.38	22.00
3GPP Rel 6	HSUPA Subtest-3	21.48	21.65	21.44	23.00	21.70	22.17	21.08	23.00	21.49	21.76	21.18	23.00
3GPP Rel 6	HSUPA Subtest-4	20.50	20.66	20.52	22.00	20.69	21.18	20.07	22.00	20.65	20.95	20.34	22.00
3GPP Rel 6	HSUPA Subtest-5	22.48	22.66	22.51	24.00	22.73	23.13	22.93	24.00	22.71	23.01	22.37	24.00

<Reduced Power Mode>

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	17.59	17.65	17.63	18.50	18.06	18.16	17.99	19.00	21.89	21.98	21.82	22.00
3GPP Rel 6	HSDPA Subtest-1	16.54	16.64	16.58	18.00	17.05	17.11	16.92	18.50	20.77	20.94	20.78	21.50
3GPP Rel 6	HSDPA Subtest-2	16.55	16.63	16.59	18.00	17.04	17.05	16.90	18.50	20.78	20.90	20.95	21.50
3GPP Rel 6	HSDPA Subtest-3	15.97	16.05	16.02	17.50	16.52	16.55	16.45	18.00	20.25	20.48	20.40	21.00
3GPP Rel 6	HSDPA Subtest-4	15.98	16.04	16.00	17.50	16.49	16.57	16.46	18.00	20.22	20.48	20.45	21.00
3GPP Rel 8	DC-HSDPA Subtest-1	16.42	16.61	16.53	18.00	17.04	17.10	16.94	18.50	20.81	20.92	20.76	21.50
3GPP Rel 8	DC-HSDPA Subtest-2	16.47	16.58	16.51	18.00	17.03	17.08	17.01	18.50	20.79	20.84	20.83	21.50
3GPP Rel 8	DC-HSDPA Subtest-3	15.96	16.02	16.00	17.50	16.49	16.51	16.42	18.00	20.21	20.46	20.33	21.00
3GPP Rel 8	DC-HSDPA Subtest-4	15.97	16.03	15.99	17.50	16.46	16.53	16.43	18.00	20.19	20.37	20.33	21.00
3GPP Rel 6	HSUPA Subtest-1	16.57	16.63	16.61	17.50	17.01	17.04	17.09	18.50	20.67	20.91	20.65	21.50
3GPP Rel 6	HSUPA Subtest-2	14.59	14.64	14.55	15.50	15.11	15.25	15.05	16.50	18.69	18.96	18.70	19.50
3GPP Rel 6	HSUPA Subtest-3	15.52	15.60	15.58	16.50	16.08	16.22	16.01	17.50	19.47	19.71	19.48	20.50
3GPP Rel 6	HSUPA Subtest-4	14.50	14.59	14.57	15.50	15.07	15.15	15.11	16.50	18.65	18.91	18.65	19.50
3GPP Rel 6	HSUPA Subtest-5	16.53	16.62	16.59	17.50	17.11	17.15	17.12	18.50	20.64	21.01	20.69	21.50

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, 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.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, 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 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.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B12 / B26 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE band 17 / 2 / 5 / 38 / 4 SAR test was covered by Band 12 / 25 / 26 / 41 / 66; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band

<Default Power Mode>

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	23.21	23.19	23.24	24	0
20	QPSK	1	49	23.05	23.05	23.15		
20	QPSK	1	99	23.16	23.23	23.02		
20	QPSK	50	0	21.29	21.20	21.22	23	1
20	QPSK	50	24	21.27	21.16	21.19		
20	QPSK	50	50	21.26	21.19	21.21		
20	QPSK	100	0	21.26	21.38	21.31		
20	16QAM	1	0	22.41	22.40	22.44	23	1
20	16QAM	1	49	22.31	22.29	22.41		
20	16QAM	1	99	22.31	22.50	22.34		
20	16QAM	50	0	20.31	20.18	20.20	22	2
20	16QAM	50	24	20.26	20.18	20.25		
20	16QAM	50	50	20.24	20.21	20.19		
20	16QAM	100	0	20.26	20.15	20.30		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	23.06	23.23	23.12	24	0
15	QPSK	1	37	22.63	22.51	22.62		
15	QPSK	1	74	22.86	22.93	22.53		
15	QPSK	36	0	21.32	21.25	21.32	23	1
15	QPSK	36	20	21.03	21.00	21.04		
15	QPSK	36	39	21.15	21.05	21.06		
15	QPSK	75	0	21.16	21.10	21.20		
15	16QAM	1	0	22.70	22.87	22.69	23	1
15	16QAM	1	37	22.18	22.06	22.10		
15	16QAM	1	74	22.43	22.50	22.18		
15	16QAM	36	0	20.30	20.23	20.31	22	2
15	16QAM	36	20	20.07	20.01	20.06		
15	16QAM	36	39	20.09	20.02	20.02		
15	16QAM	75	0	20.16	20.07	20.13		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	23.20	23.18	23.11	24	0
10	QPSK	1	25	22.86	22.89	22.76		
10	QPSK	1	49	23.11	23.15	22.62		
10	QPSK	25	0	21.08	21.08	21.01	23	1
10	QPSK	25	12	21.08	21.00	21.05		
10	QPSK	25	25	21.06	21.09	21.05		
10	QPSK	50	0	21.03	21.08	21.05		
10	16QAM	1	0	22.47	22.53	22.43	23	1
10	16QAM	1	25	22.11	22.17	22.02		
10	16QAM	1	49	22.39	22.40	22.01		
10	16QAM	25	0	20.09	20.08	20.00	22	2
10	16QAM	25	12	20.01	20.01	20.06		
10	16QAM	25	25	20.05	20.09	20.03		
10	16QAM	50	0	20.03	20.09	20.04		

Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	23.09	23.11	22.93	24	0
5	QPSK	1	12	22.92	22.90	22.70		
5	QPSK	1	24	22.90	22.97	22.39		
5	QPSK	12	0	21.01	21.00	21.00	23	1
5	QPSK	12	7	21.01	21.06	21.07		
5	QPSK	12	13	21.02	21.03	21.05		
5	QPSK	25	0	21.09	21.06	21.04		
5	16QAM	1	0	22.35	22.31	22.17	23	1
5	16QAM	1	12	22.26	22.21	22.02		
5	16QAM	1	24	22.20	22.19	21.69		
5	16QAM	12	0	20.04	20.04	20.00	22	2
5	16QAM	12	7	20.05	20.01	20.08		
5	16QAM	12	13	20.09	20.07	20.05		
5	16QAM	25	0	20.04	20.09	20.08		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	23.01	23.06	22.82	24	0
3	QPSK	1	8	23.00	22.93	22.67		
3	QPSK	1	14	22.93	22.88	22.55		
3	QPSK	8	0	21.03	21.04	21.06	23	1
3	QPSK	8	4	21.04	21.08	21.08		
3	QPSK	8	7	21.09	21.01	21.05		
3	QPSK	15	0	21.01	21.08	21.04		
3	16QAM	1	0	22.35	22.24	22.05	23	1
3	16QAM	1	8	22.29	22.20	22.02		
3	16QAM	1	14	22.25	22.17	21.90		
3	16QAM	8	0	20.08	20.09	20.01	22	2
3	16QAM	8	4	20.10	20.06	20.05		
3	16QAM	8	7	20.03	20.07	20.01		
3	16QAM	15	0	20.05	20.00	20.09		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	22.94	22.93	22.71	24	0
1.4	QPSK	1	3	23.00	22.95	22.69		
1.4	QPSK	1	5	22.91	22.85	22.58		
1.4	QPSK	3	0	23.00	22.94	22.68		
1.4	QPSK	3	1	23.03	23.01	22.70		
1.4	QPSK	3	3	22.98	22.97	22.61		
1.4	QPSK	6	0	21.03	21.03	21.00	23	1
1.4	16QAM	1	0	22.23	22.21	21.88	23	1
1.4	16QAM	1	3	22.25	22.25	21.87		
1.4	16QAM	1	5	22.17	22.15	21.76		
1.4	16QAM	3	0	22.04	22.00	21.68		
1.4	16QAM	3	1	22.07	22.05	21.69		
1.4	16QAM	3	3	22.01	21.97	21.60		
1.4	16QAM	6	0	20.05	20.04	20.07	22	2

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	23.25	23.23	23.28	24	0
20	QPSK	1	49	22.95	22.96	22.98		
20	QPSK	1	99	22.98	23.01	22.89		
20	QPSK	50	0	21.19	21.17	21.08	23	1
20	QPSK	50	24	21.29	21.32	21.23		
20	QPSK	50	50	21.23	21.18	21.04		
20	QPSK	100	0	21.23	21.27	21.16		
20	16QAM	1	0	22.15	22.36	22.19	23	1
20	16QAM	1	49	22.58	22.54	22.46		
20	16QAM	1	99	22.33	22.25	22.14		
20	16QAM	50	0	20.22	20.15	20.10	22	2
20	16QAM	50	24	20.32	20.30	20.25		
20	16QAM	50	50	20.23	20.18	20.09		
20	16QAM	100	0	20.19	20.32	20.16		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.89	22.91	22.84	24	0
15	QPSK	1	37	23.22	23.18	23.18		
15	QPSK	1	74	22.85	22.86	22.77		
15	QPSK	36	0	21.18	21.11	21.14	23	1
15	QPSK	36	20	21.24	21.30	21.21		
15	QPSK	36	39	21.13	21.14	21.08		
15	QPSK	75	0	21.18	21.12	21.15		
15	16QAM	1	0	22.06	22.09	22.09	23	1
15	16QAM	1	37	22.41	22.32	22.36		
15	16QAM	1	74	22.22	22.13	22.00		
15	16QAM	36	0	20.13	20.07	20.11	22	2
15	16QAM	36	20	20.25	20.31	20.24		
15	16QAM	36	39	20.11	20.12	20.02		
15	16QAM	75	0	20.09	20.14	20.14		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	23.26	23.27	23.21	24	0
10	QPSK	1	25	23.23	23.24	23.11		
10	QPSK	1	49	23.26	23.20	23.27		
10	QPSK	25	0	21.26	21.26	21.19	23	1
10	QPSK	25	12	21.30	21.25	21.19		
10	QPSK	25	25	21.29	21.34	21.22		
10	QPSK	50	0	21.36	21.30	21.19		
10	16QAM	1	0	22.62	22.68	22.63	23	1
10	16QAM	1	25	22.52	22.54	22.39		
10	16QAM	1	49	22.62	22.70	22.61		
10	16QAM	25	0	20.20	20.22	20.19	22	2
10	16QAM	25	12	20.30	20.28	20.17		
10	16QAM	25	25	20.25	20.33	20.18		
10	16QAM	50	0	20.42	20.29	20.22		

Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	23.25	23.27	23.21	24	0
5	QPSK	1	12	23.19	23.16	23.11		
5	QPSK	1	24	23.27	23.20	23.08		
5	QPSK	12	0	21.24	21.26	21.19	23	1
5	QPSK	12	7	21.27	21.31	21.17		
5	QPSK	12	13	21.23	21.28	21.13		
5	QPSK	25	0	21.29	21.22	21.14		
5	16QAM	1	0	22.54	22.55	22.47	23	1
5	16QAM	1	12	22.45	22.45	22.35		
5	16QAM	1	24	22.55	22.50	22.33		
5	16QAM	12	0	20.27	20.30	20.23	22	2
5	16QAM	12	7	20.28	20.34	20.15		
5	16QAM	12	13	20.27	20.32	20.15		
5	16QAM	25	0	20.32	20.25	20.16		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	23.17	23.23	23.13	24	0
3	QPSK	1	8	23.12	23.26	23.08		
3	QPSK	1	14	23.16	23.22	23.02		
3	QPSK	8	0	21.18	21.28	21.17	23	1
3	QPSK	8	4	21.27	21.31	21.17		
3	QPSK	8	7	21.28	21.22	21.14		
3	QPSK	15	0	21.20	21.21	21.14		
3	16QAM	1	0	22.43	22.52	22.41	23	1
3	16QAM	1	8	22.49	22.56	22.38		
3	16QAM	1	14	22.61	22.48	22.30		
3	16QAM	8	0	20.25	20.38	20.21	22	2
3	16QAM	8	4	20.31	20.41	20.21		
3	16QAM	8	7	20.33	20.32	20.19		
3	16QAM	15	0	20.21	20.27	20.16		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	23.04	23.15	23.04	24	0
1.4	QPSK	1	3	23.25	23.27	23.10		
1.4	QPSK	1	5	23.20	23.17	23.03		
1.4	QPSK	3	0	23.17	23.22	23.08		
1.4	QPSK	3	1	23.13	23.23	23.12		
1.4	QPSK	3	3	23.21	23.26	23.08		
1.4	QPSK	6	0	21.12	21.15	21.11	23	1
1.4	16QAM	1	0	22.26	22.44	22.34	23	1
1.4	16QAM	1	3	22.38	22.58	22.40		
1.4	16QAM	1	5	22.38	22.44	22.32		
1.4	16QAM	3	0	22.10	22.22	22.15		
1.4	16QAM	3	1	22.18	22.24	22.17		
1.4	16QAM	3	3	22.25	22.25	22.11		
1.4	16QAM	6	0	20.24	20.28	20.15	22	2

<LTE Band 5>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	23.32	23.17	23.27	24	0
10	QPSK	1	25	23.23	23.38	23.36		
10	QPSK	1	49	23.28	23.18	23.30		
10	QPSK	25	0	21.87	21.44	21.34	23	1
10	QPSK	25	12	21.84	21.41	21.27		
10	QPSK	25	25	21.74	21.26	21.21		
10	QPSK	50	0	21.80	21.50	21.26		
10	16QAM	1	0	22.80	22.76	22.23	23	1
10	16QAM	1	25	22.75	22.30	22.58		
10	16QAM	1	49	22.73	22.52	22.45		
10	16QAM	25	0	21.85	21.43	21.29	22	2
10	16QAM	25	12	21.80	21.40	21.23		
10	16QAM	25	25	21.70	21.24	21.13		
10	16QAM	50	0	21.79	21.46	21.25		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	23.24	23.35	23.33	24	0
5	QPSK	1	12	23.30	23.33	23.27		
5	QPSK	1	24	23.30	23.22	23.20		
5	QPSK	12	0	21.90	21.47	21.29	23	1
5	QPSK	12	7	21.77	21.51	21.18		
5	QPSK	12	13	21.81	21.25	21.28		
5	QPSK	25	0	21.87	21.53	21.25		
5	16QAM	1	0	22.67	22.77	22.83	23	1
5	16QAM	1	12	22.42	22.49	22.65		
5	16QAM	1	24	22.76	22.61	22.48		
5	16QAM	12	0	21.82	21.42	21.23	22	2
5	16QAM	12	7	21.75	21.47	21.13		
5	16QAM	12	13	21.71	21.28	21.18		
5	16QAM	25	0	21.70	21.41	21.29		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	23.16	23.23	23.18	24	0
3	QPSK	1	8	23.21	23.29	23.19		
3	QPSK	1	14	23.22	23.19	23.16		
3	QPSK	8	0	21.86	21.46	21.32	23	1
3	QPSK	8	4	21.83	21.41	21.22		
3	QPSK	8	7	21.84	21.25	21.26		
3	QPSK	15	0	21.86	21.52	21.27		
3	16QAM	1	0	22.78	22.88	22.73	23	1
3	16QAM	1	8	22.42	22.86	22.35		
3	16QAM	1	14	22.60	22.89	22.43		
3	16QAM	8	0	21.80	21.44	21.25	22	2
3	16QAM	8	4	21.75	21.44	21.10		
3	16QAM	8	7	21.67	21.21	21.22		
3	16QAM	15	0	21.76	21.45	21.19		

Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	23.19	23.20	23.18	24	0
1.4	QPSK	1	3	23.19	23.27	23.08		
1.4	QPSK	1	5	23.30	23.23	23.14		
1.4	QPSK	3	0	23.28	23.28	23.30		
1.4	QPSK	3	1	23.26	23.29	23.30		
1.4	QPSK	3	3	23.28	23.22	23.22		
1.4	QPSK	6	0	21.82	21.54	21.23	23	1
1.4	16QAM	1	0	22.54	22.56	22.52	23	1
1.4	16QAM	1	3	22.79	22.76	22.58		
1.4	16QAM	1	5	22.52	22.61	22.21		
1.4	16QAM	3	0	22.25	22.49	22.44		
1.4	16QAM	3	1	22.73	22.49	22.25		
1.4	16QAM	3	3	22.47	22.74	22.08		
1.4	16QAM	6	0	21.80	21.49	21.20	22	2

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	23.88	23.70	23.68	24	0
20	QPSK	1	49	23.72	23.44	23.31		
20	QPSK	1	99	23.87	23.37	23.15		
20	QPSK	50	0	21.95	21.52	21.36	23	1
20	QPSK	50	24	21.86	21.51	21.27		
20	QPSK	50	50	21.84	21.34	21.28		
20	QPSK	100	0	21.89	21.54	21.33		
20	16QAM	1	0	22.92	22.93	22.69	23	1
20	16QAM	1	49	22.92	22.84	22.57		
20	16QAM	1	99	22.92	22.66	22.49		
20	16QAM	50	0	20.82	20.53	20.34	22	2
20	16QAM	50	24	20.82	20.49	20.17		
20	16QAM	50	50	20.80	20.37	20.18		
20	16QAM	100	0	20.77	20.46	20.15		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	23.76	23.61	23.11	24	0
15	QPSK	1	37	23.80	23.15	23.25		
15	QPSK	1	74	23.79	23.26	22.91		
15	QPSK	36	0	21.81	21.53	21.01	23	1
15	QPSK	36	20	21.87	21.51	21.09		
15	QPSK	36	39	21.85	21.41	21.05		
15	QPSK	75	0	21.89	21.52	21.09		
15	16QAM	1	0	22.93	22.88	22.27	23	1
15	16QAM	1	37	21.06	22.46	21.97		
15	16QAM	1	74	21.03	22.45	22.08		
15	16QAM	36	0	20.72	20.47	20.09	22	2
15	16QAM	36	20	20.83	20.43	20.05		
15	16QAM	36	39	20.80	20.35	20.05		
15	16QAM	75	0	20.82	20.43	20.07		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	23.87	23.79	23.27	24	0
10	QPSK	1	25	23.69	23.35	22.81		
10	QPSK	1	49	23.87	23.50	23.10		
10	QPSK	25	0	21.85	21.59	21.02	23	1
10	QPSK	25	12	21.80	21.49	21.07		
10	QPSK	25	25	21.89	21.45	21.15		
10	QPSK	50	0	21.86	21.58	21.14		
10	16QAM	1	0	22.93	22.82	22.52	23	1
10	16QAM	1	25	22.92	22.57	22.03		
10	16QAM	1	49	22.93	22.72	22.31		
10	16QAM	25	0	20.78	20.58	20.09	22	2
10	16QAM	25	12	20.77	20.49	20.00		
10	16QAM	25	25	20.89	20.41	20.03		
10	16QAM	50	0	20.86	20.56	20.01		

Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	23.75	23.51	22.90	24	0
5	QPSK	1	12	23.71	23.32	22.75		
5	QPSK	1	24	23.70	23.31	22.81		
5	QPSK	12	0	21.76	21.44	21.14	23	1
5	QPSK	12	7	21.78	21.43	21.15		
5	QPSK	12	13	21.70	21.29	21.08		
5	QPSK	25	0	21.80	21.45	21.13		
5	16QAM	1	0	22.92	22.73	22.20	23	1
5	16QAM	1	12	22.93	22.65	22.10		
5	16QAM	1	24	22.91	22.60	21.94		
5	16QAM	12	0	20.73	20.47	20.08	22	2
5	16QAM	12	7	20.78	20.47	20.03		
5	16QAM	12	13	20.69	20.35	20.02		
5	16QAM	25	0	20.77	20.44	20.01		

<LTE Band 12>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23060	23095	23130		
Frequency (MHz)				704	707.5	711		
10	QPSK	1	0	23.24	23.27	23.26	24	0
10	QPSK	1	25	23.34	23.34	23.37		
10	QPSK	1	49	23.41	23.47	23.29		
10	QPSK	25	0	22.67	22.83	22.59	23	1
10	QPSK	25	12	22.81	22.68	22.70		
10	QPSK	25	25	22.87	22.76	22.70		
10	QPSK	50	0	22.75	22.66	22.62		
10	16QAM	1	0	22.62	22.67	22.85	23	1
10	16QAM	1	25	22.83	22.71	22.70		
10	16QAM	1	49	22.85	22.80	22.70		
10	16QAM	25	0	21.97	21.98	21.93	22	2
10	16QAM	25	12	21.95	21.89	21.94		
10	16QAM	25	25	21.80	21.93	21.94		
10	16QAM	50	0	21.93	21.97	21.89		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	23.34	23.22	23.21	24	0
5	QPSK	1	12	23.13	23.36	23.08		
5	QPSK	1	24	23.11	23.28	23.24		
5	QPSK	12	0	22.60	22.51	22.59	23	1
5	QPSK	12	7	22.81	22.62	22.63		
5	QPSK	12	13	22.84	22.70	22.62		
5	QPSK	25	0	22.71	22.60	22.58		
5	16QAM	1	0	22.59	22.69	22.48	23	1
5	16QAM	1	12	22.63	22.74	22.39		
5	16QAM	1	24	22.68	22.57	22.62		
5	16QAM	12	0	21.87	21.97	21.87	22	2
5	16QAM	12	7	21.94	21.83	21.86		
5	16QAM	12	13	21.77	21.93	21.89		
5	16QAM	25	0	21.85	21.92	21.82		
Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	23.27	23.29	23.16	24	0
3	QPSK	1	8	23.34	23.35	23.19		
3	QPSK	1	14	23.36	23.24	23.15		
3	QPSK	8	0	22.67	22.50	22.53	23	1
3	QPSK	8	4	22.75	22.65	22.69		
3	QPSK	8	7	22.87	22.74	22.70		
3	QPSK	15	0	22.66	22.58	22.53		
3	16QAM	1	0	22.68	22.78	22.51	23	1
3	16QAM	1	8	22.67	22.79	22.56		
3	16QAM	1	14	22.72	22.90	22.53		
3	16QAM	8	0	21.97	21.89	21.91	22	2
3	16QAM	8	4	21.87	21.79	21.88		
3	16QAM	8	7	21.80	21.84	21.84		
3	16QAM	15	0	21.85	21.90	21.82		

Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	23.31	23.25	23.26	24	0
1.4	QPSK	1	3	23.34	23.37	23.27		
1.4	QPSK	1	5	23.35	23.23	23.13		
1.4	QPSK	3	0	23.30	23.26	23.27		
1.4	QPSK	3	1	23.35	23.37	23.29		
1.4	QPSK	3	3	23.39	23.31	23.27		
1.4	QPSK	6	0	22.68	22.61	22.54	23	1
1.4	16QAM	1	0	22.57	22.70	22.42	23	1
1.4	16QAM	1	3	22.68	22.61	22.54		
1.4	16QAM	1	5	22.61	22.51	22.43		
1.4	16QAM	3	0	22.32	22.31	22.19		
1.4	16QAM	3	1	22.40	22.55	22.35		
1.4	16QAM	3	3	22.44	22.33	22.26		
1.4	16QAM	6	0	21.84	21.95	21.89	22	2

<LTE Band 13>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23230				
Frequency (MHz)				782				
10	QPSK	1	0	23.43			24	0
10	QPSK	1	25	23.35				
10	QPSK	1	49	23.40				
10	QPSK	25	0	22.72			23	1
10	QPSK	25	12	22.70				
10	QPSK	25	25	22.70				
10	QPSK	50	0	22.62				
10	16QAM	1	0	22.68			23	1
10	16QAM	1	25	22.13				
10	16QAM	1	49	22.77				
10	16QAM	25	0	21.98			22	2
10	16QAM	25	12	21.94				
10	16QAM	25	25	21.94				
10	16QAM	50	0	21.89				
Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		
5	QPSK	1	0	22.68	23.12	23.18	24	0
5	QPSK	1	12	22.13	22.92	22.35		
5	QPSK	1	24	22.77	23.23	22.47		
5	QPSK	12	0	22.63	22.45	22.55	23	1
5	QPSK	12	7	22.73	22.62	22.63		
5	QPSK	12	13	22.86	22.67	22.63		
5	QPSK	25	0	22.75	22.64	22.55		
5	16QAM	1	0	22.63	22.51	22.51	23	1
5	16QAM	1	12	22.77	22.59	22.69		
5	16QAM	1	24	22.79	22.68	22.70		
5	16QAM	12	0	21.81	21.94	21.87	22	2
5	16QAM	12	7	21.89	21.82	21.78		
5	16QAM	12	13	21.77	21.84	21.87		
5	16QAM	25	0	21.80	21.91	21.72		

<LTE Band 17>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	23.35	23.24	23.24	24	0
10	QPSK	1	25	23.12	23.30	23.27		
10	QPSK	1	49	23.05	23.02	22.84		
10	QPSK	25	0	22.67	22.53	22.59	23	1
10	QPSK	25	12	22.81	22.68	22.70		
10	QPSK	25	25	22.87	22.76	22.70		
10	QPSK	50	0	22.75	22.66	22.62		
10	16QAM	1	0	22.68	22.50	22.65	23	1
10	16QAM	1	25	22.49	22.76	22.69		
10	16QAM	1	49	22.41	22.64	22.45		
10	16QAM	25	0	21.97	21.93	21.83	22	2
10	16QAM	25	12	21.85	21.89	21.84		
10	16QAM	25	25	21.95	21.93	21.84		
10	16QAM	50	0	21.83	21.97	21.89		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	23.25	23.30	23.31	24	0
5	QPSK	1	12	23.28	23.33	23.20		
5	QPSK	1	24	23.25	23.26	23.30		
5	QPSK	12	0	22.67	22.46	22.56	23	1
5	QPSK	12	7	22.76	22.63	22.67		
5	QPSK	12	13	22.85	22.75	22.60		
5	QPSK	25	0	22.69	22.58	22.58		
5	16QAM	1	0	22.57	22.65	22.69	23	1
5	16QAM	1	12	22.64	22.64	22.58		
5	16QAM	1	24	22.67	22.57	22.63		
5	16QAM	12	0	21.96	21.86	21.74	22	2
5	16QAM	12	7	21.81	21.84	21.81		
5	16QAM	12	13	21.89	21.85	21.82		
5	16QAM	25	0	21.74	21.89	21.81		

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	23.46	23.46	23.51	24	0
20	QPSK	1	49	23.35	23.29	23.25		
20	QPSK	1	99	23.54	23.58	22.13		
20	QPSK	50	0	21.43	21.37	21.40	23	1
20	QPSK	50	24	21.41	21.37	21.39		
20	QPSK	50	50	21.45	21.48	21.42		
20	QPSK	100	0	21.41	21.43	21.22		
20	16QAM	1	0	22.76	22.74	22.05	23	1
20	16QAM	1	49	22.56	22.54	22.33		
20	16QAM	1	99	22.72	22.78	21.57		
20	16QAM	50	0	20.39	20.38	20.48	22	2
20	16QAM	50	24	20.40	20.37	20.54		
20	16QAM	50	50	20.45	20.46	20.58		
20	16QAM	100	0	20.44	20.39	20.37		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	23.24	23.30	23.37	24	0
15	QPSK	1	37	23.18	23.15	22.83		
15	QPSK	1	74	23.37	23.46	22.08		
15	QPSK	36	0	21.25	21.35	21.45	23	1
15	QPSK	36	20	21.31	21.29	21.48		
15	QPSK	36	39	21.31	21.35	21.44		
15	QPSK	75	0	21.35	21.32	21.58		
15	16QAM	1	0	22.47	22.52	22.68	23	1
15	16QAM	1	37	22.46	22.39	22.07		
15	16QAM	1	74	22.61	22.67	21.13		
15	16QAM	36	0	20.19	20.30	20.38	22	2
15	16QAM	36	20	20.30	20.28	20.48		
15	16QAM	36	39	20.28	20.31	20.46		
15	16QAM	75	0	20.30	20.29	20.53		
Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	23.15	23.10	23.04	24	0
10	QPSK	1	25	23.12	23.01	22.80		
10	QPSK	1	49	23.34	23.29	23.48		
10	QPSK	25	0	21.17	21.08	21.36	23	1
10	QPSK	25	12	21.19	21.05	21.29		
10	QPSK	25	25	21.26	21.14	21.41		
10	QPSK	50	0	21.24	21.09	21.35		
10	16QAM	1	0	22.49	22.41	22.29	23	1
10	16QAM	1	25	22.44	22.30	22.10		
10	16QAM	1	49	22.65	22.60	21.06		
10	16QAM	25	0	20.14	20.04	20.31	22	2
10	16QAM	25	12	20.18	20.09	20.28		
10	16QAM	25	25	20.20	20.10	20.37		
10	16QAM	50	0	20.20	20.10	20.34		

Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	23.20	23.17	23.03	24	0
5	QPSK	1	12	23.08	23.02	22.82		
5	QPSK	1	24	23.10	23.02	22.01		
5	QPSK	12	0	21.14	21.12	21.28	23	1
5	QPSK	12	7	21.14	21.03	21.24		
5	QPSK	12	13	21.08	21.09	21.24		
5	QPSK	25	0	21.13	21.02	21.28		
5	16QAM	1	0	22.49	22.40	22.29	23	1
5	16QAM	1	12	22.43	22.31	22.11		
5	16QAM	1	24	22.38	22.26	21.29		
5	16QAM	12	0	20.14	20.15	20.28	22	2
5	16QAM	12	7	20.16	20.08	20.25		
5	16QAM	12	13	20.11	20.08	20.25		
5	16QAM	25	0	20.11	20.05	20.30		
Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	23.08	23.11	22.61	24	0
3	QPSK	1	8	23.06	23.06	22.25		
3	QPSK	1	14	23.05	23.04	22.02		
3	QPSK	8	0	21.17	21.01	21.30	23	1
3	QPSK	8	4	21.12	21.04	21.26		
3	QPSK	8	7	21.10	21.01	21.20		
3	QPSK	15	0	21.08	21.01	21.26		
3	16QAM	1	0	22.43	22.42	22.00	23	1
3	16QAM	1	8	22.33	22.32	21.79		
3	16QAM	1	14	22.33	22.31	21.16		
3	16QAM	8	0	20.21	20.08	20.37	22	2
3	16QAM	8	4	20.18	20.13	20.35		
3	16QAM	8	7	20.14	20.06	20.28		
3	16QAM	15	0	20.12	20.06	20.31		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	23.03	22.95	22.58	24	0
1.4	QPSK	1	3	23.14	23.06	22.05		
1.4	QPSK	1	5	23.07	22.95	22.04		
1.4	QPSK	3	0	23.13	23.03	22.23		
1.4	QPSK	3	1	23.16	23.08	22.05		
1.4	QPSK	3	3	23.14	23.05	22.02		
1.4	QPSK	6	0	21.11	21.08	21.19	23	1
1.4	16QAM	1	0	22.37	22.25	21.79	23	1
1.4	16QAM	1	3	22.46	22.36	21.36		
1.4	16QAM	1	5	22.37	22.25	21.18		
1.4	16QAM	3	0	22.13	22.03	21.37		
1.4	16QAM	3	1	22.21	22.10	21.21		
1.4	16QAM	3	3	22.13	22.06	21.05		
1.4	16QAM	6	0	20.18	20.06	20.24	22	2

<LTE Band 26>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	22.60	22.54	22.57	24	0
15	QPSK	1	37	22.91	22.97	22.63		
15	QPSK	1	74	22.75	22.61	22.30		
15	QPSK	36	0	22.32	22.22	22.02	23	1
15	QPSK	36	20	22.39	22.21	22.11		
15	QPSK	36	39	22.34	22.18	22.06		
15	QPSK	75	0	22.30	22.18	22.13		
15	16QAM	1	0	21.78	21.64	21.66	23	1
15	16QAM	1	37	21.99	21.82	21.73		
15	16QAM	1	74	21.82	21.84	21.51		
15	16QAM	36	0	21.89	21.73	21.57	22	2
15	16QAM	36	20	21.36	21.45	21.64		
15	16QAM	36	39	21.13	21.78	21.57		
15	16QAM	75	0	21.58	21.73	21.63		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	22.68	22.58	22.62	24	0
10	QPSK	1	25	22.72	22.55	22.42		
10	QPSK	1	49	22.72	22.53	22.35		
10	QPSK	25	0	22.28	22.17	21.97	23	1
10	QPSK	25	12	22.35	22.11	22.11		
10	QPSK	25	25	22.31	22.13	22.04		
10	QPSK	50	0	22.24	22.11	22.07		
10	16QAM	1	0	22.11	21.85	22.29	23	1
10	16QAM	1	25	21.97	21.84	21.78		
10	16QAM	1	49	22.01	21.98	21.76		
10	16QAM	25	0	21.84	21.64	21.55	22	2
10	16QAM	25	12	21.26	21.36	21.54		
10	16QAM	25	25	21.11	21.74	21.48		
10	16QAM	50	0	21.56	21.68	21.53		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	22.81	22.80	22.75	24	0
5	QPSK	1	12	22.73	22.47	22.31		
5	QPSK	1	24	22.76	22.63	22.51		
5	QPSK	12	0	22.29	22.13	21.92	23	1
5	QPSK	12	7	22.37	22.17	22.01		
5	QPSK	12	13	22.31	22.16	22.00		
5	QPSK	25	0	22.22	22.09	22.10		
5	16QAM	1	0	21.95	21.98	21.90	23	1
5	16QAM	1	12	22.11	21.90	21.77		
5	16QAM	1	24	22.23	21.97	21.87		
5	16QAM	12	0	21.88	21.63	21.48	22	2
5	16QAM	12	7	21.33	21.42	21.62		
5	16QAM	12	13	21.10	21.69	21.57		
5	16QAM	25	0	21.51	21.68	21.58		

Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	22.84	22.86	22.63	24	0
3	QPSK	1	8	22.70	22.55	22.39		
3	QPSK	1	14	22.92	22.73	22.45		
3	QPSK	8	0	22.25	22.14	21.98	23	1
3	QPSK	8	4	22.36	22.20	22.11		
3	QPSK	8	7	22.32	22.16	21.97		
3	QPSK	15	0	22.26	22.09	22.07		
3	16QAM	1	0	22.07	21.99	21.80	23	1
3	16QAM	1	8	22.10	21.94	21.81		
3	16QAM	1	14	22.19	22.46	21.77		
3	16QAM	8	0	21.87	21.65	21.48	22	2
3	16QAM	8	4	21.31	21.43	21.63		
3	16QAM	8	7	21.04	21.76	21.49		
3	16QAM	15	0	21.52	21.73	21.62		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	22.78	22.81	22.58	24	0
1.4	QPSK	1	3	22.93	22.63	22.47		
1.4	QPSK	1	5	22.85	22.58	22.38		
1.4	QPSK	3	0	22.78	22.67	22.48		
1.4	QPSK	3	1	22.91	22.63	22.49		
1.4	QPSK	3	3	22.83	22.63	22.48		
1.4	QPSK	6	0	22.26	22.09	22.07	23	1
1.4	16QAM	1	0	21.99	21.88	21.72	23	1
1.4	16QAM	1	3	22.20	21.89	21.72		
1.4	16QAM	1	5	22.15	21.86	21.68		
1.4	16QAM	3	0	21.87	21.69	21.44		
1.4	16QAM	3	1	22.01	21.67	21.56		
1.4	16QAM	3	3	21.86	21.67	21.53		
1.4	16QAM	6	0	21.55	21.69	21.53	22	2

<LTE Band 30>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				27710				
Frequency (MHz)				2310				
10	QPSK	1	0	21.55			22	0
10	QPSK	1	25	21.42				
10	QPSK	1	49	21.25				
10	QPSK	25	0	19.59			21	1
10	QPSK	25	12	19.41				
10	QPSK	25	25	19.29				
10	QPSK	50	0	19.49				
10	16QAM	1	0	20.90			21	1
10	16QAM	1	25	20.65				
10	16QAM	1	49	20.59				
10	16QAM	25	0	18.37			20	2
10	16QAM	25	12	18.41				
10	16QAM	25	25	18.34				
10	16QAM	50	0	18.38				
Channel				27685	27710	27735	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2307.5	2310	2312.5		
5	QPSK	1	0	21.28	21.36	21.51	22	0
5	QPSK	1	12	21.30	21.40	21.21		
5	QPSK	1	24	21.21	21.37	21.22		
5	QPSK	12	0	19.45	19.45	19.24	21	1
5	QPSK	12	7	19.53	19.36	19.34		
5	QPSK	12	13	19.39	19.36	19.33		
5	QPSK	25	0	19.32	19.41	19.32		
5	16QAM	1	0	20.57	20.64	20.57	21	1
5	16QAM	1	12	20.50	20.59	20.46		
5	16QAM	1	24	20.51	20.61	20.56		
5	16QAM	12	0	18.42	18.50	18.47	20	2
5	16QAM	12	7	18.50	18.37	18.21		
5	16QAM	12	13	18.34	18.24	18.34		
5	16QAM	25	0	18.24	18.24	18.35		

<LTE Band 66>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	22.91	23.05	22.98	24	0
20	QPSK	1	49	23.22	23.30	23.38		
20	QPSK	1	99	22.93	22.99	23.04		
20	QPSK	50	0	21.24	21.16	21.29	23	1
20	QPSK	50	24	21.34	21.32	21.35		
20	QPSK	50	50	21.24	21.10	21.17		
20	QPSK	100	0	21.27	21.19	21.32		
20	16QAM	1	0	22.23	22.37	22.32	23	1
20	16QAM	1	49	22.54	22.59	21.90		
20	16QAM	1	99	22.30	22.41	22.37		
20	16QAM	50	0	20.26	20.18	20.27	22	2
20	16QAM	50	24	20.37	20.35	20.33		
20	16QAM	50	50	20.28	20.12	20.22		
20	16QAM	100	0	20.26	20.18	20.27		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	22.88	22.95	22.99	24	0
15	QPSK	1	37	23.27	23.22	23.17		
15	QPSK	1	74	22.79	22.91	22.93		
15	QPSK	36	0	21.24	21.18	21.21	23	1
15	QPSK	36	20	21.30	21.28	21.33		
15	QPSK	36	39	21.27	21.17	21.13		
15	QPSK	75	0	21.24	21.18	21.19		
15	16QAM	1	0	22.17	22.19	22.24	23	1
15	16QAM	1	37	22.52	22.43	22.46		
15	16QAM	1	74	22.20	22.19	22.17		
15	16QAM	36	0	20.20	20.11	20.17	22	2
15	16QAM	36	20	20.37	20.24	20.37		
15	16QAM	36	39	20.11	20.12	20.11		
15	16QAM	75	0	20.21	20.21	20.19		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	23.10	23.13	23.15	24	0
10	QPSK	1	25	23.08	23.12	23.05		
10	QPSK	1	49	23.26	23.29	23.27		
10	QPSK	25	0	21.21	21.13	21.16	23	1
10	QPSK	25	12	21.16	21.16	21.16		
10	QPSK	25	25	21.29	21.24	21.24		
10	QPSK	50	0	21.27	21.10	21.22		
10	16QAM	1	0	22.17	22.51	22.50	23	1
10	16QAM	1	25	22.45	22.31	22.27		
10	16QAM	1	49	22.68	22.71	22.58		
10	16QAM	25	0	20.18	20.13	20.14	22	2
10	16QAM	25	12	20.18	20.15	20.16		
10	16QAM	25	25	20.28	20.20	20.28		
10	16QAM	50	0	20.32	20.13	20.24		

Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	23.09	23.19	23.18	24	0
5	QPSK	1	12	23.07	23.12	23.16		
5	QPSK	1	24	23.16	23.19	23.07		
5	QPSK	12	0	21.09	21.19	21.15	23	1
5	QPSK	12	7	21.12	21.13	21.27		
5	QPSK	12	13	21.04	21.07	21.11		
5	QPSK	25	0	21.08	21.14	21.11		
5	16QAM	1	0	22.34	22.42	22.43	23	1
5	16QAM	1	12	22.36	22.41	22.46		
5	16QAM	1	24	22.30	22.33	22.32		
5	16QAM	12	0	20.12	20.26	20.20	22	2
5	16QAM	12	7	20.15	20.17	20.26		
5	16QAM	12	13	20.10	20.14	20.20		
5	16QAM	25	0	20.09	20.16	20.17		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	23.01	23.15	23.14	24	0
3	QPSK	1	8	22.99	23.13	23.10		
3	QPSK	1	14	23.06	23.03	23.02		
3	QPSK	8	0	21.08	21.09	21.20	23	1
3	QPSK	8	4	21.13	21.14	21.11		
3	QPSK	8	7	21.09	21.07	21.11		
3	QPSK	15	0	21.09	21.12	21.07		
3	16QAM	1	0	22.32	22.46	22.52	23	1
3	16QAM	1	8	22.29	22.39	22.42		
3	16QAM	1	14	22.34	22.28	22.37		
3	16QAM	8	0	20.13	20.19	20.27	22	2
3	16QAM	8	4	20.20	20.23	20.26		
3	16QAM	8	7	20.14	20.15	20.23		
3	16QAM	15	0	20.13	20.15	20.14		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	22.94	22.98	23.03	24	0
1.4	QPSK	1	3	23.05	23.20	23.09		
1.4	QPSK	1	5	22.93	22.98	23.01		
1.4	QPSK	3	0	23.06	23.14	23.20		
1.4	QPSK	3	1	23.08	23.13	23.20		
1.4	QPSK	3	3	23.10	23.10	23.14		
1.4	QPSK	6	0	21.06	21.04	21.13	23	1
1.4	16QAM	1	0	22.26	22.35	22.36	23	1
1.4	16QAM	1	3	22.35	22.45	22.41		
1.4	16QAM	1	5	22.21	22.21	22.31		
1.4	16QAM	3	0	22.11	22.15	22.27		
1.4	16QAM	3	1	22.15	22.23	22.27		
1.4	16QAM	3	3	22.14	22.12	22.24		
1.4	16QAM	6	0	20.05	20.13	20.29	22	2

<Reduced Power Mode>

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	17.70	17.79	17.84	18	0
20	QPSK	1	49	17.33	17.39	17.37		
20	QPSK	1	99	17.63	17.51	17.49		
20	QPSK	50	0	17.47	17.66	17.50	18	0
20	QPSK	50	24	17.53	17.47	17.50		
20	QPSK	50	50	17.51	17.55	17.51		
20	QPSK	100	0	17.49	17.57	17.49		
20	16QAM	1	0	17.78	17.62	17.76	18	0
20	16QAM	1	49	17.67	17.57	17.58		
20	16QAM	1	99	17.58	17.74	17.74		
20	16QAM	50	0	17.47	17.45	17.48	18	0
20	16QAM	50	24	17.52	17.53	17.51		
20	16QAM	50	50	17.49	17.52	17.55		
20	16QAM	100	0	17.52	17.48	17.50		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	17.71	17.71	17.67	18	0
15	QPSK	1	37	17.06	17.37	17.36		
15	QPSK	1	74	17.69	17.68	17.72		
15	QPSK	36	0	17.70	17.77	17.78	18	0
15	QPSK	36	20	17.47	17.49	17.45		
15	QPSK	36	39	17.56	17.56	17.50		
15	QPSK	75	0	17.64	17.64	17.72		
15	16QAM	1	0	17.33	17.37	17.37	18	0
15	16QAM	1	37	17.43	17.45	17.76		
15	16QAM	1	74	17.70	17.80	17.78		
15	16QAM	36	0	17.66	17.79	17.76	18	0
15	16QAM	36	20	17.49	17.51	17.54		
15	16QAM	36	39	17.53	17.51	17.47		
15	16QAM	75	0	17.60	17.60	17.71		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	17.74	17.64	17.77	18	0
10	QPSK	1	25	17.31	17.44	17.42		
10	QPSK	1	49	17.71	17.66	17.73		
10	QPSK	25	0	17.64	17.64	17.59	18	0
10	QPSK	25	12	17.56	17.55	17.50		
10	QPSK	25	25	17.68	17.65	17.61		
10	QPSK	50	0	17.62	17.66	17.55		
10	16QAM	1	0	17.68	17.77	17.77	18	0
10	16QAM	1	25	17.75	17.71	17.67		
10	16QAM	1	49	17.80	17.64	17.64		
10	16QAM	25	0	17.65	17.58	17.52	18	0
10	16QAM	25	12	17.52	17.55	17.50		
10	16QAM	25	25	17.65	17.65	17.57		
10	16QAM	50	0	17.59	17.64	17.53		

Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	17.53	17.63	17.59	18	0
5	QPSK	1	12	17.45	17.44	17.48		
5	QPSK	1	24	17.43	17.52	17.53		
5	QPSK	12	0	17.53	17.59	17.51	18	0
5	QPSK	12	7	17.59	17.53	17.49		
5	QPSK	12	13	17.50	17.54	17.46		
5	QPSK	25	0	17.53	17.54	17.49		
5	16QAM	1	0	17.77	17.71	17.81	18	0
5	16QAM	1	12	17.73	17.71	17.80		
5	16QAM	1	24	17.77	17.78	17.63		
5	16QAM	12	0	17.50	17.62	17.55	18	0
5	16QAM	12	7	17.52	17.59	17.50		
5	16QAM	12	13	17.48	17.52	17.46		
5	16QAM	25	0	17.53	17.56	17.52		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	17.52	17.61	17.49	18	0
3	QPSK	1	8	17.54	17.58	17.50		
3	QPSK	1	14	17.50	17.52	17.48		
3	QPSK	8	0	17.59	17.57	17.53	18	0
3	QPSK	8	4	17.58	17.60	17.57		
3	QPSK	8	7	17.52	17.55	17.52		
3	QPSK	15	0	17.55	17.59	17.54		
3	16QAM	1	0	17.77	17.80	17.83	18	0
3	16QAM	1	8	17.74	17.74	17.78		
3	16QAM	1	14	17.78	17.80	17.82		
3	16QAM	8	0	17.62	17.66	17.51	18	0
3	16QAM	8	4	17.66	17.68	17.57		
3	16QAM	8	7	17.58	17.62	17.59		
3	16QAM	15	0	17.57	17.64	17.64		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	17.47	17.42	17.42	18	0
1.4	QPSK	1	3	17.51	17.58	17.51		
1.4	QPSK	1	5	17.47	17.43	17.41		
1.4	QPSK	3	0	17.52	17.59	17.56		
1.4	QPSK	3	1	17.56	17.58	17.64		
1.4	QPSK	3	3	17.51	17.49	17.54		
1.4	QPSK	6	0	17.50	17.48	17.49	18	0
1.4	16QAM	1	0	17.64	17.75	17.72	18	0
1.4	16QAM	1	3	17.75	17.81	17.81		
1.4	16QAM	1	5	17.65	17.78	17.74		
1.4	16QAM	3	0	17.59	17.54	17.47		
1.4	16QAM	3	1	17.53	17.58	17.56		
1.4	16QAM	3	3	17.57	17.61	17.42		
1.4	16QAM	6	0	17.52	17.65	17.54	18	0

LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	18.68	18.79	18.81	19	0
20	QPSK	1	49	18.44	18.53	18.61		
20	QPSK	1	99	18.53	18.64	18.67		
20	QPSK	50	0	18.62	18.53	18.62	19	0
20	QPSK	50	24	18.70	18.54	18.66		
20	QPSK	50	50	18.64	18.70	18.61		
20	QPSK	100	0	18.64	18.59	18.65		
20	16QAM	1	0	18.78	18.78	18.79	19	0
20	16QAM	1	49	18.74	18.62	18.75		
20	16QAM	1	99	18.72	18.72	18.78		
20	16QAM	50	0	18.62	18.55	18.55	19	0
20	16QAM	50	24	18.71	18.57	18.56		
20	16QAM	50	50	18.77	18.65	18.55		
20	16QAM	100	0	18.77	18.56	18.58		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	18.11	18.05	18.01	19	0
15	QPSK	1	37	18.59	18.20	18.28		
15	QPSK	1	74	18.18	18.26	17.86		
15	QPSK	36	0	18.49	18.33	18.30	19	0
15	QPSK	36	20	18.39	18.37	18.30		
15	QPSK	36	39	18.29	18.35	18.18		
15	QPSK	75	0	18.48	18.29	18.31		
15	16QAM	1	0	18.31	18.33	18.16	19	0
15	16QAM	1	37	18.52	18.38	18.41		
15	16QAM	1	74	18.24	18.54	18.09		
15	16QAM	36	0	18.35	18.34	18.20	19	0
15	16QAM	36	20	18.37	18.39	18.27		
15	16QAM	36	39	18.24	18.32	18.07		
15	16QAM	75	0	18.41	18.31	18.30		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	18.21	17.98	17.99	19	0
10	QPSK	1	25	18.02	18.63	18.46		
10	QPSK	1	49	18.11	18.56	17.88		
10	QPSK	25	0	18.39	18.19	18.31	19	0
10	QPSK	25	12	18.33	18.36	18.47		
10	QPSK	25	25	18.33	18.30	18.09		
10	QPSK	50	0	18.33	18.24	18.28		
10	16QAM	1	0	18.54	18.07	18.21	19	0
10	16QAM	1	25	18.70	18.69	18.59		
10	16QAM	1	49	18.38	18.44	18.24		
10	16QAM	25	0	18.45	18.19	18.32	19	0
10	16QAM	25	12	18.41	18.33	18.47		
10	16QAM	25	25	18.33	18.25	18.15		
10	16QAM	50	0	18.38	18.25	18.26		

Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	18.61	18.54	18.62	19	0
5	QPSK	1	12	18.60	18.52	18.43		
5	QPSK	1	24	18.57	18.72	18.46		
5	QPSK	12	0	18.62	18.62	18.55	19	0
5	QPSK	12	7	18.58	18.61	18.64		
5	QPSK	12	13	18.66	18.57	18.49		
5	QPSK	25	0	18.67	18.61	18.56		
5	16QAM	1	0	18.76	18.76	18.78	19	0
5	16QAM	1	12	18.79	18.77	18.67		
5	16QAM	1	24	18.75	18.77	18.77		
5	16QAM	12	0	18.67	18.65	18.60	19	0
5	16QAM	12	7	18.66	18.58	18.50		
5	16QAM	12	13	18.68	18.64	18.51		
5	16QAM	25	0	18.77	18.60	18.50		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	18.53	18.47	18.60	19	0
3	QPSK	1	8	18.68	18.53	18.62		
3	QPSK	1	14	18.53	18.46	18.57		
3	QPSK	8	0	18.60	18.61	18.63	19	0
3	QPSK	8	4	18.63	18.60	18.68		
3	QPSK	8	7	18.58	18.60	18.57		
3	QPSK	15	0	18.56	18.59	18.64		
3	16QAM	1	0	18.77	18.80	18.75	19	0
3	16QAM	1	8	18.77	18.74	18.73		
3	16QAM	1	14	18.71	18.76	18.76		
3	16QAM	8	0	18.67	18.62	18.69	19	0
3	16QAM	8	4	18.67	18.64	18.71		
3	16QAM	8	7	18.63	18.66	18.63		
3	16QAM	15	0	18.65	18.61	18.64		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	18.35	18.52	18.49	19	0
1.4	QPSK	1	3	18.37	18.63	18.49		
1.4	QPSK	1	5	18.36	18.55	18.42		
1.4	QPSK	3	0	18.44	18.58	18.48		
1.4	QPSK	3	1	18.45	18.60	18.56		
1.4	QPSK	3	3	18.49	18.58	18.46		
1.4	QPSK	6	0	18.34	18.58	18.55	19	0
1.4	16QAM	1	0	18.68	18.75	18.71	19	0
1.4	16QAM	1	3	18.60	18.71	18.73		
1.4	16QAM	1	5	18.52	18.72	18.72		
1.4	16QAM	3	0	18.33	18.55	18.58		
1.4	16QAM	3	1	18.48	18.69	18.68		
1.4	16QAM	3	3	18.47	18.56	18.56		
1.4	16QAM	6	0	18.42	18.60	18.53	19	0

<LTE Band 5>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	22.24	22.29	22.35	22.5	0
10	QPSK	1	25	22.29	22.42	22.40		
10	QPSK	1	49	22.21	22.33	22.29		
10	QPSK	25	0	21.39	21.30	20.99	21.5	1
10	QPSK	25	12	20.64	20.89	20.70		
10	QPSK	25	25	20.90	20.99	20.63		
10	QPSK	50	0	21.04	21.06	21.01		
10	16QAM	1	0	22.31	22.13	22.06	22.5	0
10	16QAM	1	25	22.13	21.97	22.02		
10	16QAM	1	49	22.05	22.02	22.02		
10	16QAM	25	0	19.87	20.26	20.03	21.5	1
10	16QAM	25	12	19.71	19.94	19.63		
10	16QAM	25	25	19.89	19.93	19.69		
10	16QAM	50	0	19.68	20.05	20.09		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	22.32	22.40	22.36	22.5	0
5	QPSK	1	12	22.41	22.36	22.22		
5	QPSK	1	24	22.40	22.40	22.33		
5	QPSK	12	0	21.32	21.34	21.38	21.5	1
5	QPSK	12	7	20.79	21.13	21.17		
5	QPSK	12	13	20.61	21.26	21.33		
5	QPSK	25	0	21.18	21.27	21.40		
5	16QAM	1	0	22.18	22.37	22.10	22.5	0
5	16QAM	1	12	22.21	22.21	22.38		
5	16QAM	1	24	22.38	22.25	22.31		
5	16QAM	12	0	19.99	20.01	19.89	21.5	1
5	16QAM	12	7	19.58	20.19	19.85		
5	16QAM	12	13	19.50	19.93	19.82		
5	16QAM	25	0	20.28	20.23	20.48		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	22.40	22.40	22.27	22.5	0
3	QPSK	1	8	22.41	22.39	22.27		
3	QPSK	1	14	22.37	22.41	22.23		
3	QPSK	8	0	21.50	21.20	21.32	21.5	1
3	QPSK	8	4	21.28	21.33	21.25		
3	QPSK	8	7	21.10	21.44	21.10		
3	QPSK	15	0	21.28	21.17	21.22		
3	16QAM	1	0	20.85	20.74	20.79	22.5	0
3	16QAM	1	8	22.17	22.24	22.01		
3	16QAM	1	14	22.31	22.34	22.16		
3	16QAM	8	0	20.43	20.21	20.30	21.5	1
3	16QAM	8	4	20.10	20.14	20.18		
3	16QAM	8	7	20.06	20.15	20.03		
3	16QAM	15	0	20.28	20.26	20.20		

Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	22.31	22.35	22.15	22.5	0
1.4	QPSK	1	3	22.32	22.39	22.30		
1.4	QPSK	1	5	22.21	22.30	22.25		
1.4	QPSK	3	0	22.40	22.39	22.27		
1.4	QPSK	3	1	22.39	22.38	22.32		
1.4	QPSK	3	3	22.31	22.38	22.30		
1.4	QPSK	6	0	21.32	21.21	21.25	21.5	1
1.4	16QAM	1	0	22.00	22.19	22.26	22.5	0
1.4	16QAM	1	3	22.18	22.16	22.27		
1.4	16QAM	1	5	22.08	22.07	21.85		
1.4	16QAM	3	0	21.95	22.05	21.87		
1.4	16QAM	3	1	21.99	22.04	21.97		
1.4	16QAM	3	3	21.94	22.01	21.90		
1.4	16QAM	6	0	20.29	20.10	20.31	21.5	1

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	12.87	12.73	12.20	13.5	0
20	QPSK	1	49	12.67	12.33	11.91		
20	QPSK	1	99	12.79	12.37	12.16		
20	QPSK	50	0	12.80	12.57	12.07	13.5	0
20	QPSK	50	24	12.71	12.50	12.03		
20	QPSK	50	50	12.78	12.37	12.05		
20	QPSK	100	0	12.78	12.48	12.04		
20	16QAM	1	0	12.80	12.79	12.43	13.5	0
20	16QAM	1	49	12.83	12.65	12.15		
20	16QAM	1	99	12.86	12.65	12.27		
20	16QAM	50	0	12.74	12.56	12.06	13.5	0
20	16QAM	50	24	12.73	12.43	12.06		
20	16QAM	50	50	12.76	12.36	12.07		
20	16QAM	100	0	12.76	12.44	12.03		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	12.68	12.50	12.07	13.5	0
15	QPSK	1	37	12.53	12.36	11.90		
15	QPSK	1	74	12.80	12.24	12.02		
15	QPSK	36	0	12.72	12.48	12.13	13.5	0
15	QPSK	36	20	12.73	12.38	12.05		
15	QPSK	36	39	12.83	12.34	12.05		
15	QPSK	75	0	12.72	12.43	12.07		
15	16QAM	1	0	12.86	12.79	12.28	13.5	0
15	16QAM	1	37	12.79	12.47	12.07		
15	16QAM	1	74	12.79	12.65	12.22		
15	16QAM	36	0	12.68	12.48	12.05	13.5	0
15	16QAM	36	20	12.69	12.38	12.03		
15	16QAM	36	39	12.81	12.28	11.99		
15	16QAM	75	0	12.79	12.37	12.08		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	12.82	12.79	12.35	13.5	0
10	QPSK	1	25	12.61	12.31	11.96		
10	QPSK	1	49	12.86	12.53	12.29		
10	QPSK	25	0	12.71	12.48	12.16	13.5	0
10	QPSK	25	12	12.69	12.35	12.04		
10	QPSK	25	25	12.82	12.34	12.09		
10	QPSK	50	0	12.72	12.48	12.12		
10	16QAM	1	0	12.72	12.77	12.56	13.5	0
10	16QAM	1	25	12.78	12.64	12.28		
10	16QAM	1	49	12.73	12.78	12.48		
10	16QAM	25	0	12.62	12.48	12.19	13.5	0
10	16QAM	25	12	12.64	12.35	12.04		
10	16QAM	25	25	12.79	12.31	12.13		
10	16QAM	50	0	12.75	12.41	12.07		

Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	12.76	12.40	12.14	13.5	0
5	QPSK	1	12	12.68	12.32	11.98		
5	QPSK	1	24	12.65	12.29	12.02		
5	QPSK	12	0	12.65	12.35	12.05	13.5	0
5	QPSK	12	7	12.59	12.34	12.03		
5	QPSK	12	13	12.58	12.30	12.03		
5	QPSK	25	0	12.57	12.30	12.01		
5	16QAM	1	0	12.83	12.68	12.31	13.5	0
5	16QAM	1	12	12.84	12.59	12.37		
5	16QAM	1	24	12.82	12.47	12.26		
5	16QAM	12	0	12.73	12.37	12.11	13.5	0
5	16QAM	12	7	12.62	12.38	12.06		
5	16QAM	12	13	12.61	12.38	12.02		
5	16QAM	25	0	12.59	12.38	12.05		

<LTE Band 12>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23060	23095	23130		
Frequency (MHz)				704	707.5	711		
10	QPSK	1	0	20.87	20.83	20.83	21.5	0
10	QPSK	1	25	20.88	20.84	20.80		
10	QPSK	1	49	20.84	21.00	20.94		
10	QPSK	25	0	20.76	20.74	20.71	21.5	0
10	QPSK	25	12	20.76	20.42	20.76		
10	QPSK	25	25	20.73	20.82	20.79		
10	QPSK	50	0	20.79	20.81	20.70		
10	16QAM	1	0	20.96	20.92	20.97	21.5	0
10	16QAM	1	25	20.97	20.90	20.91		
10	16QAM	1	49	20.96	20.95	20.89		
10	16QAM	25	0	20.14	20.61	20.05	21.5	0
10	16QAM	25	12	20.13	20.09	20.06		
10	16QAM	25	25	20.30	20.07	20.03		
10	16QAM	50	0	20.11	20.09	20.06		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	20.81	20.98	20.82	21.5	0
5	QPSK	1	12	20.80	20.82	20.76		
5	QPSK	1	24	20.92	20.84	20.77		
5	QPSK	12	0	20.71	20.77	20.81	21.5	0
5	QPSK	12	7	20.76	20.79	20.68		
5	QPSK	12	13	20.74	20.72	20.69		
5	QPSK	25	0	20.70	20.02	20.87		
5	16QAM	1	0	20.93	20.92	20.98	21.5	0
5	16QAM	1	12	20.92	20.90	20.91		
5	16QAM	1	24	20.94	20.90	20.93		
5	16QAM	12	0	20.05	20.52	20.19	21.5	0
5	16QAM	12	7	20.05	20.18	20.22		
5	16QAM	12	13	20.03	20.01	20.42		
5	16QAM	25	0	20.06	20.28	20.16		
Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	20.82	20.85	20.88	21.5	0
3	QPSK	1	8	20.91	20.80	20.86		
3	QPSK	1	14	20.83	20.89	20.84		
3	QPSK	8	0	20.79	20.68	20.76	21.5	0
3	QPSK	8	4	20.82	20.79	20.78		
3	QPSK	8	7	20.69	20.76	20.77		
3	QPSK	15	0	20.79	20.80	20.82		
3	16QAM	1	0	20.94	20.97	20.93	21.5	0
3	16QAM	1	8	20.96	20.93	20.99		
3	16QAM	1	14	20.96	20.95	20.98		
3	16QAM	8	0	20.19	20.61	20.36	21.5	0
3	16QAM	8	4	20.15	20.39	20.41		
3	16QAM	8	7	20.06	20.33	20.39		
3	16QAM	15	0	20.01	20.41	20.37		

Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	20.73	20.81	20.80	21.5	0
1.4	QPSK	1	3	20.84	20.85	20.94		
1.4	QPSK	1	5	20.81	20.84	20.82		
1.4	QPSK	3	0	20.86	20.91	20.79		
1.4	QPSK	3	1	20.89	20.90	20.93		
1.4	QPSK	3	3	20.88	20.90	20.82		
1.4	QPSK	6	0	20.66	20.73	20.73	21.5	0
1.4	16QAM	1	0	20.96	20.92	20.90	21.5	0
1.4	16QAM	1	3	20.98	20.93	20.90		
1.4	16QAM	1	5	20.99	20.94	20.94		
1.4	16QAM	3	0	20.93	20.99	20.88		
1.4	16QAM	3	1	20.78	20.90	20.91		
1.4	16QAM	3	3	20.93	20.76	20.85		
1.4	16QAM	6	0	20.06	20.36	20.53	21.5	0

<LTE Band 13>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23230				
Frequency (MHz)				782				
10	QPSK	1	0	21.99			22	0
10	QPSK	1	25	21.06				
10	QPSK	1	49	21.00				
10	QPSK	25	0	20.85			21	1
10	QPSK	25	12	20.52				
10	QPSK	25	25	20.55				
10	QPSK	50	0	20.69				
10	16QAM	1	0	21.91			22	0
10	16QAM	1	25	21.86				
10	16QAM	1	49	21.61				
10	16QAM	25	0	20.31			21	1
10	16QAM	25	12	19.99				
10	16QAM	25	25	20.06				
10	16QAM	50	0	20.18				
Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		
5	QPSK	1	0	21.66	21.25	21.51	22	0
5	QPSK	1	12	21.03	21.09	21.01		
5	QPSK	1	24	21.05	21.04	21.00		
5	QPSK	12	0	20.71	20.62	20.78	21	1
5	QPSK	12	7	20.33	20.46	20.25		
5	QPSK	12	13	20.40	20.53	20.45		
5	QPSK	25	0	20.59	20.62	20.62		
5	16QAM	1	0	21.74	21.71	21.95	22	0
5	16QAM	1	12	21.23	21.53	21.16		
5	16QAM	1	24	21.86	21.84	21.22		
5	16QAM	12	0	20.56	20.20	19.83	21	1
5	16QAM	12	7	19.87	20.08	19.32		
5	16QAM	12	13	19.96	20.15	19.54		
5	16QAM	25	0	20.17	20.24	19.70		

<LTE Band 17>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	21.34	21.40	21.39	21.5	0
10	QPSK	1	25	21.39	21.44	21.41		
10	QPSK	1	49	21.29	21.31	21.24		
10	QPSK	25	0	21.06	21.05	21.03	21.5	0
10	QPSK	25	12	21.06	21.11	21.02		
10	QPSK	25	25	20.99	20.97	21.09		
10	QPSK	50	0	20.98	21.07	21.05		
10	16QAM	1	0	21.21	21.21	21.20	21.5	0
10	16QAM	1	25	21.26	21.24	21.19		
10	16QAM	1	49	21.26	21.20	21.15		
10	16QAM	25	0	19.39	19.22	19.07	20.5	1
10	16QAM	25	12	19.19	19.19	19.15		
10	16QAM	25	25	19.11	19.13	19.21		
10	16QAM	50	0	19.00	19.18	19.06		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	21.39	21.42	21.30	21.5	0
5	QPSK	1	12	21.37	21.38	21.42		
5	QPSK	1	24	21.43	21.41	21.39		
5	QPSK	12	0	21.00	21.00	20.89	21.5	0
5	QPSK	12	7	21.00	21.07	20.93		
5	QPSK	12	13	21.06	20.94	21.07		
5	QPSK	25	0	21.05	20.95	20.93		
5	16QAM	1	0	21.35	21.33	21.24	21.5	0
5	16QAM	1	12	21.39	21.26	21.39		
5	16QAM	1	24	21.33	21.19	21.23		
5	16QAM	12	0	19.41	19.40	19.36	20.5	1
5	16QAM	12	7	19.42	19.40	19.15		
5	16QAM	12	13	19.33	19.42	19.36		
5	16QAM	25	0	19.09	19.13	19.06		

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	17.81	17.92	17.91	18	0
20	QPSK	1	49	17.72	17.68	17.78		
20	QPSK	1	99	17.95	17.99	17.90		
20	QPSK	50	0	17.82	17.83	17.94	18	0
20	QPSK	50	24	17.81	17.77	17.87		
20	QPSK	50	50	17.83	17.98	17.92		
20	QPSK	100	0	17.78	17.93	17.85		
20	16QAM	1	0	17.85	17.78	17.88	18	0
20	16QAM	1	49	17.79	17.80	17.82		
20	16QAM	1	99	17.91	17.86	17.80		
20	16QAM	50	0	17.78	17.80	17.90	18	0
20	16QAM	50	24	17.74	17.79	17.91		
20	16QAM	50	50	17.86	17.90	17.91		
20	16QAM	100	0	17.82	17.76	17.93		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	17.74	17.84	17.91	18	0
15	QPSK	1	37	17.66	17.54	17.43		
15	QPSK	1	74	17.81	17.96	17.93		
15	QPSK	36	0	17.70	17.89	17.95	18	0
15	QPSK	36	20	17.74	17.88	17.86		
15	QPSK	36	39	17.89	17.98	17.84		
15	QPSK	75	0	17.78	17.89	17.97		
15	16QAM	1	0	17.94	17.81	17.83	18	0
15	16QAM	1	37	17.75	17.84	17.82		
15	16QAM	1	74	17.77	17.78	17.81		
15	16QAM	36	0	17.69	17.88	17.84	18	0
15	16QAM	36	20	17.79	17.84	17.83		
15	16QAM	36	39	17.85	17.88	17.74		
15	16QAM	75	0	17.90	17.89	17.87		
Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	17.73	17.85	17.89	18	0
10	QPSK	1	25	17.70	17.70	17.82		
10	QPSK	1	49	17.81	17.87	17.81		
10	QPSK	25	0	17.82	17.80	17.87	18	0
10	QPSK	25	12	17.78	17.75	17.95		
10	QPSK	25	25	17.87	17.86	17.90		
10	QPSK	50	0	17.79	17.85	17.95		
10	16QAM	1	0	17.87	17.92	17.88	18	0
10	16QAM	1	25	17.85	17.83	17.87		
10	16QAM	1	49	17.92	17.76	17.91		
10	16QAM	25	0	17.74	17.76	17.87	18	0
10	16QAM	25	12	17.78	17.78	17.93		
10	16QAM	25	25	17.82	17.86	17.91		
10	16QAM	50	0	17.74	17.84	17.94		

Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	17.84	17.90	17.93	18	0
5	QPSK	1	12	17.75	17.85	17.84		
5	QPSK	1	24	17.77	17.77	17.77		
5	QPSK	12	0	17.89	17.89	17.96	18	0
5	QPSK	12	7	17.79	17.84	17.89		
5	QPSK	12	13	17.77	17.79	17.82		
5	QPSK	25	0	17.73	17.80	17.89		
5	16QAM	1	0	17.82	17.86	17.81	18	0
5	16QAM	1	12	17.71	17.79	17.78		
5	16QAM	1	24	17.76	17.76	17.74		
5	16QAM	12	0	17.89	17.88	17.98	18	0
5	16QAM	12	7	17.86	17.88	17.81		
5	16QAM	12	13	17.83	17.83	17.82		
5	16QAM	25	0	17.80	17.79	17.88		
Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	17.65	17.88	17.82	18	0
3	QPSK	1	8	17.65	17.79	17.81		
3	QPSK	1	14	17.65	17.84	17.74		
3	QPSK	8	0	17.77	17.81	17.90	18	0
3	QPSK	8	4	17.64	17.84	17.82		
3	QPSK	8	7	17.64	17.77	17.81		
3	QPSK	15	0	17.64	17.78	17.83		
3	16QAM	1	0	17.88	17.77	17.86	18	0
3	16QAM	1	8	17.87	17.83	17.72		
3	16QAM	1	14	17.83	17.87	17.65		
3	16QAM	8	0	17.82	17.85	17.97	18	0
3	16QAM	8	4	17.77	17.90	17.95		
3	16QAM	8	7	17.78	17.88	17.83		
3	16QAM	15	0	17.66	17.86	17.90		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	17.62	17.71	17.62	18	0
1.4	QPSK	1	3	17.67	17.80	17.67		
1.4	QPSK	1	5	17.62	17.74	17.62		
1.4	QPSK	3	0	17.70	17.77	17.70		
1.4	QPSK	3	1	17.72	17.85	17.72		
1.4	QPSK	3	3	17.67	17.80	17.67		
1.4	QPSK	6	0	17.61	17.72	17.61	18	0
1.4	16QAM	1	0	17.80	17.74	17.80	18	0
1.4	16QAM	1	3	17.79	17.83	17.92		
1.4	16QAM	1	5	17.77	17.70	17.77		
1.4	16QAM	3	0	17.70	17.74	17.70		
1.4	16QAM	3	1	17.73	17.81	17.73		
1.4	16QAM	3	3	17.74	17.83	17.74		
1.4	16QAM	6	0	17.69	17.85	17.69	18	0

<LTE Band 26>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	22.09	21.85	21.88	22.5	0
15	QPSK	1	37	22.13	22.38	22.27		
15	QPSK	1	74	21.87	21.81	21.99		
15	QPSK	36	0	19.75	19.89	19.82	20.5	2
15	QPSK	36	20	19.57	19.96	19.57		
15	QPSK	36	39	19.55	19.92	19.55		
15	QPSK	75	0	19.82	19.85	19.54		
15	16QAM	1	0	21.95	21.50	21.58	22.5	0
15	16QAM	1	37	21.45	21.50	21.77		
15	16QAM	1	74	21.59	21.36	21.51		
15	16QAM	36	0	18.99	18.79	19.16	20.5	2
15	16QAM	36	20	18.64	18.67	18.54		
15	16QAM	36	39	18.65	18.94	18.55		
15	16QAM	75	0	18.62	18.79	18.77		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	21.89	22.04	22.05	22.5	0
10	QPSK	1	25	21.90	22.15	21.96		
10	QPSK	1	49	21.88	22.13	21.76		
10	QPSK	25	0	20.31	20.38	20.39	20.5	2
10	QPSK	25	12	20.16	20.09	19.61		
10	QPSK	25	25	20.06	20.34	20.00		
10	QPSK	50	0	20.15	20.29	20.12		
10	16QAM	1	0	21.94	21.68	21.72	22.5	0
10	16QAM	1	25	21.73	21.92	21.66		
10	16QAM	1	49	21.91	21.79	21.63		
10	16QAM	25	0	19.27	19.35	19.02	20.5	2
10	16QAM	25	12	19.04	19.19	18.76		
10	16QAM	25	25	18.63	19.23	18.87		
10	16QAM	50	0	19.13	19.29	18.80		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	22.28	21.86	22.01	22.5	0
5	QPSK	1	12	22.26	21.92	22.02		
5	QPSK	1	24	22.21	21.93	21.99		
5	QPSK	12	0	20.41	20.25	20.26	20.5	2
5	QPSK	12	7	20.40	20.18	20.19		
5	QPSK	12	13	20.46	20.37	20.23		
5	QPSK	25	0	20.41	20.36	20.43		
5	16QAM	1	0	22.15	21.61	21.83	22.5	0
5	16QAM	1	12	22.13	21.91	21.77		
5	16QAM	1	24	22.04	21.75	21.83		
5	16QAM	12	0	19.45	19.26	19.43	20.5	2
5	16QAM	12	7	19.68	19.13	19.33		
5	16QAM	12	13	19.56	19.25	19.34		
5	16QAM	25	0	19.69	19.32	19.36		

Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	22.11	22.00	21.92	22.5	0
3	QPSK	1	8	22.21	22.02	21.91		
3	QPSK	1	14	22.11	21.94	21.87		
3	QPSK	8	0	20.32	20.47	20.39	20.5	2
3	QPSK	8	4	20.31	20.45	20.33		
3	QPSK	8	7	20.32	20.48	20.38		
3	QPSK	15	0	20.24	20.45	20.39		
3	16QAM	1	0	22.03	21.75	21.65	22.5	0
3	16QAM	1	8	22.10	21.76	21.63		
3	16QAM	1	14	21.81	21.88	21.61		
3	16QAM	8	0	19.88	19.47	19.44	20.5	2
3	16QAM	8	4	19.89	19.35	19.54		
3	16QAM	8	7	19.93	19.48	19.27		
3	16QAM	15	0	19.77	19.46	19.46		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	22.21	22.13	21.82	22.5	0
1.4	QPSK	1	3	22.17	22.08	21.77		
1.4	QPSK	1	5	22.20	21.99	21.74		
1.4	QPSK	3	0	22.27	22.10	21.92		
1.4	QPSK	3	1	22.13	22.16	21.92		
1.4	QPSK	3	3	22.22	22.13	21.89		
1.4	QPSK	6	0	20.32	20.31	20.38	20.5	2
1.4	16QAM	1	0	21.88	21.78	21.65	22.5	0
1.4	16QAM	1	3	21.90	21.89	21.64		
1.4	16QAM	1	5	21.88	21.79	21.59		
1.4	16QAM	3	0	21.70	21.52	21.30		
1.4	16QAM	3	1	21.78	21.66	21.37		
1.4	16QAM	3	3	21.52	21.61	21.47		
1.4	16QAM	6	0	19.49	19.32	19.28	20.5	2

<LTE Band 30>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				27710				
Frequency (MHz)				2310				
10	QPSK	1	0	16.49			16.5	0
10	QPSK	1	25	16.46				
10	QPSK	1	49	16.47				
10	QPSK	25	0	16.45			16.5	0
10	QPSK	25	12	16.37				
10	QPSK	25	25	16.36				
10	QPSK	50	0	16.41				
10	16QAM	1	0	16.48			16.5	0
10	16QAM	1	25	16.44				
10	16QAM	1	49	16.44				
10	16QAM	25	0	16.39			16.5	0
10	16QAM	25	12	16.37				
10	16QAM	25	25	16.31				
10	16QAM	50	0	16.42				
Channel				27685	27710	27735	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2307.5	2310	2312.5		
5	QPSK	1	0	16.39	16.48	16.44	16.5	0
5	QPSK	1	12	16.21	16.45	16.40		
5	QPSK	1	24	16.31	16.41	16.41		
5	QPSK	12	0	16.35	16.40	16.44	16.5	0
5	QPSK	12	7	16.36	16.38	16.36		
5	QPSK	12	13	16.38	16.37	16.37		
5	QPSK	25	0	16.34	16.40	16.36		
5	16QAM	1	0	16.43	16.46	16.46	16.5	0
5	16QAM	1	12	16.46	16.48	16.47		
5	16QAM	1	24	16.40	16.48	16.47		
5	16QAM	12	0	16.39	16.45	16.41	16.5	0
5	16QAM	12	7	16.32	16.42	16.40		
5	16QAM	12	13	16.42	16.48	16.41		
5	16QAM	25	0	16.32	16.47	16.39		

<LTE Band 66>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	18.25	18.25	18.33	19	0
20	QPSK	1	49	18.65	18.70	18.84		
20	QPSK	1	99	17.97	18.13	18.37		
20	QPSK	50	0	18.51	18.43	18.56	19	0
20	QPSK	50	24	18.62	18.53	18.70		
20	QPSK	50	50	18.41	18.36	18.55		
20	QPSK	100	0	18.46	18.46	18.58		
20	16QAM	1	0	18.49	18.51	18.68	19	0
20	16QAM	1	49	18.77	18.73	18.74		
20	16QAM	1	99	18.47	18.77	18.78		
20	16QAM	50	0	18.47	18.39	18.55	19	0
20	16QAM	50	24	18.59	18.61	18.70		
20	16QAM	50	50	18.38	18.40	18.61		
20	16QAM	100	0	18.49	18.42	18.56		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	18.20	18.30	18.33	19	0
15	QPSK	1	37	18.63	18.70	18.74		
15	QPSK	1	74	18.14	18.32	18.21		
15	QPSK	36	0	18.55	18.56	18.64	19	0
15	QPSK	36	20	18.68	18.64	18.71		
15	QPSK	36	39	18.42	18.59	18.79		
15	QPSK	75	0	18.55	18.49	18.70		
15	16QAM	1	0	18.42	18.57	18.54	19	0
15	16QAM	1	37	18.79	18.69	18.77		
15	16QAM	1	74	18.38	18.48	18.32		
15	16QAM	36	0	18.53	18.51	18.60	19	0
15	16QAM	36	20	18.57	18.51	18.74		
15	16QAM	36	39	18.37	18.50	18.65		
15	16QAM	75	0	18.48	18.51	18.65		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	18.71	18.75	18.80	19	0
10	QPSK	1	25	18.45	18.52	18.67		
10	QPSK	1	49	18.66	18.76	18.78		
10	QPSK	25	0	18.57	18.61	18.70	19	0
10	QPSK	25	12	18.69	18.66	18.82		
10	QPSK	25	25	18.76	18.71	18.72		
10	QPSK	50	0	18.69	18.74	18.76		
10	16QAM	1	0	18.73	18.75	18.76	19	0
10	16QAM	1	25	18.71	18.72	18.72		
10	16QAM	1	49	18.69	18.75	18.72		
10	16QAM	25	0	18.64	18.60	18.73	19	0
10	16QAM	25	12	18.69	18.64	18.79		
10	16QAM	25	25	18.74	18.67	18.76		
10	16QAM	50	0	18.70	18.68	18.71		

Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	18.72	18.74	18.70	19	0
5	QPSK	1	12	18.66	18.50	18.72		
5	QPSK	1	24	18.64	18.53	18.42		
5	QPSK	12	0	18.62	18.69	18.60	19	0
5	QPSK	12	7	18.60	18.67	18.63		
5	QPSK	12	13	18.66	18.66	18.73		
5	QPSK	25	0	18.72	18.63	18.69		
5	16QAM	1	0	18.76	18.76	18.79	19	0
5	16QAM	1	12	18.70	18.70	18.70		
5	16QAM	1	24	18.72	18.73	18.74		
5	16QAM	12	0	18.71	18.77	18.79	19	0
5	16QAM	12	7	18.59	18.69	18.81		
5	16QAM	12	13	18.75	18.76	18.74		
5	16QAM	25	0	18.67	18.70	18.76		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	18.63	18.71	18.78	19	0
3	QPSK	1	8	18.71	18.67	18.70		
3	QPSK	1	14	18.62	18.49	18.57		
3	QPSK	8	0	18.69	18.67	18.79	19	0
3	QPSK	8	4	18.73	18.73	18.72		
3	QPSK	8	7	18.65	18.70	18.72		
3	QPSK	15	0	18.75	18.70	18.73		
3	16QAM	1	0	18.74	18.72	18.77	19	0
3	16QAM	1	8	18.76	18.72	18.75		
3	16QAM	1	14	18.72	18.71	18.73		
3	16QAM	8	0	18.77	18.76	18.71	19	0
3	16QAM	8	4	18.69	18.78	18.71		
3	16QAM	8	7	18.75	18.68	18.73		
3	16QAM	15	0	18.71	18.65	18.71		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	18.55	18.57	18.60	19	0
1.4	QPSK	1	3	18.60	18.69	18.62		
1.4	QPSK	1	5	18.51	18.53	18.61		
1.4	QPSK	3	0	18.60	18.70	18.76		
1.4	QPSK	3	1	18.68	18.67	18.78		
1.4	QPSK	3	3	18.69	18.67	18.72		
1.4	QPSK	6	0	18.55	18.56	18.68	19	0
1.4	16QAM	1	0	18.63	18.78	18.79	19	0
1.4	16QAM	1	3	18.77	18.72	18.77		
1.4	16QAM	1	5	18.79	18.77	18.77		
1.4	16QAM	3	0	18.57	18.56	18.70		
1.4	16QAM	3	1	18.66	18.80	18.73		
1.4	16QAM	3	3	18.67	18.64	18.72		
1.4	16QAM	6	0	18.68	18.73	18.72	19	0

<TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

SAR was tested with a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by 3GPP.

a. 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations
b. "special subframe S" contains both uplink and downlink transmissions, it has been taken into consideration to determine the transmission duty factor according to the worst case uplink and downlink cyclic prefix requirements for UpPTS
c. Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Anritsu MT8820C (firmware: #22.52#004) was used for LTE output power measurements and SAR testing.

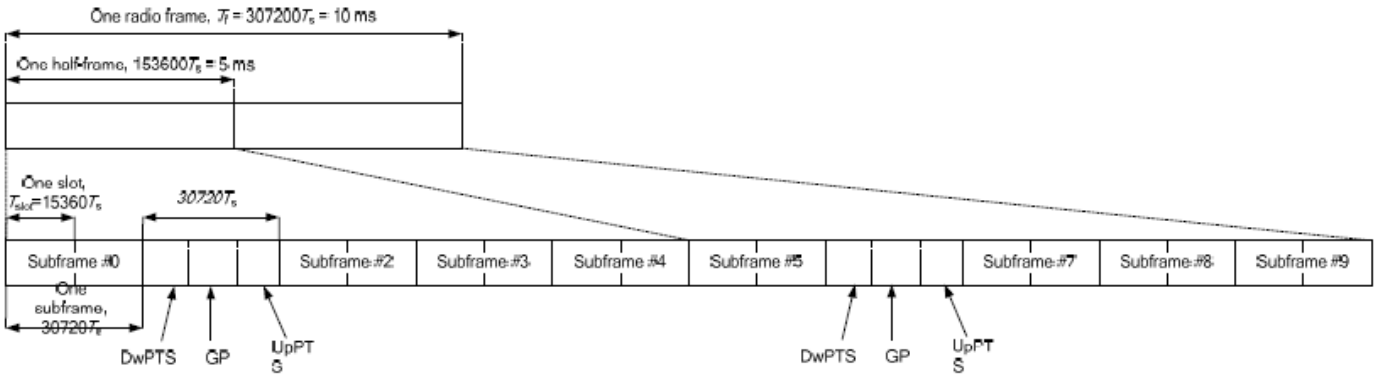


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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

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	$13168 \cdot T_s$			-	-	-

Special subframe (30720·T_s): Normal cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	**Normal cyclic prefix in uplink**	**Extended cyclic prefix in uplink**
Uplink duty factor in one special subframe	**0~4**	7.13%	8.33%
	5~9	14.3%	16.7%

Special subframe(30720·T_s): Extended cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	**Normal cyclic prefix in uplink**	**Extended cyclic prefix in uplink**
Uplink duty factor in one special subframe	**0~3**	7.13%	8.33%
	4~7	14.3%	16.7%

The highest duty factor is resulted from:

i. Uplink-downlink configuration: 0. In a half-frame consisted of 5 subfames, uplink operation is in 3 uplink subframes and 1 special subframe.

ii. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink

iii. for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (3+0.167)/5 = 63.3%

iv. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (3+0.143)/5 = 62.9%

v. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

<Default Power Mode>

<LTE Band 38>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				37850	38000	38150		
Frequency (MHz)				2580	2595	2610		
20	QPSK	1	0	23.66	23.55	23.46	24	0
20	QPSK	1	49	22.83	22.89	22.81		
20	QPSK	1	99	22.97	23.15	23.14		
20	QPSK	50	0	21.37	21.24	21.16	23	1
20	QPSK	50	24	21.08	21.03	21.05		
20	QPSK	50	50	21.00	21.11	21.04		
20	QPSK	100	0	21.17	21.06	21.11		
20	16QAM	1	0	22.68	22.66	22.55	23	1
20	16QAM	1	49	21.98	21.90	21.95		
20	16QAM	1	99	22.07	22.10	22.15		
20	16QAM	50	0	20.39	20.27	20.19	22	2
20	16QAM	50	24	20.10	20.01	20.05		
20	16QAM	50	50	20.00	20.10	20.01		
20	16QAM	100	0	20.17	20.08	20.12		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	23.51	23.36	23.32	24	0
15	QPSK	1	37	22.70	22.73	22.75		
15	QPSK	1	74	22.98	23.07	23.13		
15	QPSK	36	0	21.31	21.14	21.16	23	1
15	QPSK	36	20	21.04	21.04	21.03		
15	QPSK	36	39	21.00	21.05	21.02		
15	QPSK	75	0	21.15	21.02	21.07		
15	16QAM	1	0	22.56	22.45	22.36	23	1
15	16QAM	1	37	21.80	21.70	21.75		
15	16QAM	1	74	22.09	22.18	21.99		
15	16QAM	36	0	20.23	20.08	20.08	22	2
15	16QAM	36	20	20.01	20.00	21.01		
15	16QAM	36	39	20.03	20.08	20.06		
15	16QAM	75	0	20.11	20.08	20.00		

Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	23.34	23.08	23.07	24	0
10	QPSK	1	25	23.04	22.87	22.95		
10	QPSK	1	49	23.03	22.88	22.95		
10	QPSK	25	0	21.25	21.01	21.03	23	1
10	QPSK	25	12	21.15	21.07	21.02		
10	QPSK	25	25	21.06	21.01	21.09		
10	QPSK	50	0	21.18	21.00	21.07		
10	16QAM	1	0	22.41	22.10	22.13	23	1
10	16QAM	1	25	22.08	21.90	21.99		
10	16QAM	1	49	22.06	21.94	21.94		
10	16QAM	25	0	20.23	20.09	20.01	22	2
10	16QAM	25	12	20.14	20.03	20.03		
10	16QAM	25	25	20.07	20.01	20.08		
10	16QAM	50	0	20.20	20.08	20.07		
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	23.24	23.01	23.06	24	0
5	QPSK	1	12	23.08	22.87	22.94		
5	QPSK	1	24	23.06	22.87	22.95		
5	QPSK	12	0	21.20	21.03	21.07	23	1
5	QPSK	12	7	21.18	21.06	21.03		
5	QPSK	12	13	21.14	21.00	21.00		
5	QPSK	25	0	21.16	21.02	21.09		
5	16QAM	1	0	22.27	22.08	22.11	23	1
5	16QAM	1	12	22.29	22.00	22.04		
5	16QAM	1	24	22.11	21.86	22.02		
5	16QAM	12	0	20.17	20.01	20.02	22	2
5	16QAM	12	7	20.17	20.04	20.02		
5	16QAM	12	13	20.10	20.00	20.06		
5	16QAM	25	0	20.21	20.08	20.06		

<LTE Band 41>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	23.42	23.17	23.07	23.12	22.88	24	0
20	QPSK	1	49	23.39	22.91	22.83	22.83	22.75		
20	QPSK	1	99	23.26	23.08	22.91	22.83	22.67		
20	QPSK	50	0	21.49	21.28	21.17	21.07	21.12	23	1
20	QPSK	50	24	21.33	21.22	21.11	21.03	21.10		
20	QPSK	50	50	21.40	21.27	21.16	21.01	21.05		
20	QPSK	100	0	21.43	21.20	21.08	21.06	21.04		
20	16QAM	1	0	22.45	21.91	22.48	21.83	21.82	23	1
20	16QAM	1	49	22.41	22.05	22.16	22.02	21.83		
20	16QAM	1	99	22.30	22.31	22.01	21.83	21.83		
20	16QAM	50	0	20.47	20.25	20.07	20.01	20.07	22	2
20	16QAM	50	24	20.51	20.30	20.16	20.04	20.04		
20	16QAM	50	50	20.46	20.27	20.17	20.04	20.03		
20	16QAM	100	0	20.47	20.22	20.09	20.08	20.10		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	23.39	23.00	23.17	22.63	22.40	24	0
15	QPSK	1	37	23.32	22.52	22.93	23.18	22.69		
15	QPSK	1	74	23.36	22.89	22.87	22.74	22.97		
15	QPSK	36	0	21.44	21.19	21.03	21.05	21.01	23	1
15	QPSK	36	20	21.47	21.22	21.09	21.02	21.02		
15	QPSK	36	39	21.40	21.23	21.16	21.01	21.07		
15	QPSK	75	0	21.45	21.18	21.07	21.03	21.04		
15	16QAM	1	0	22.45	21.92	22.34	22.29	21.46	23	1
15	16QAM	1	37	22.46	21.99	21.78	21.63	21.77		
15	16QAM	1	74	22.33	22.16	21.95	21.99	21.88		
15	16QAM	36	0	20.38	20.10	20.09	20.08	20.03	22	2
15	16QAM	36	20	20.46	20.20	20.09	20.02	20.02		
15	16QAM	36	39	20.35	20.15	20.04	20.03	20.06		
15	16QAM	75	0	20.45	20.16	20.08	20.07	20.01		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	23.36	23.09	23.14	23.10	22.88	24	0
10	QPSK	1	25	23.28	23.10	23.17	23.04	22.89		
10	QPSK	1	49	23.33	23.12	23.02	23.06	22.99		
10	QPSK	25	0	21.37	21.27	21.14	21.05	21.03	23	1
10	QPSK	25	12	21.41	21.27	21.18	21.05	21.14		
10	QPSK	25	25	21.39	21.29	21.19	21.05	21.06		
10	QPSK	50	0	21.45	21.33	21.19	21.07	21.04		
10	16QAM	1	0	22.49	22.06	22.35	22.31	21.90	23	1
10	16QAM	1	25	22.28	22.09	22.01	21.98	21.92		
10	16QAM	1	49	22.29	22.12	21.96	22.46	21.98		
10	16QAM	25	0	20.42	20.30	20.16	20.05	20.00	22	2
10	16QAM	25	12	20.47	20.30	20.19	20.06	20.09		
10	16QAM	25	25	20.43	20.29	20.19	20.04	20.08		
10	16QAM	50	0	20.53	20.34	20.23	20.02	20.01		

Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	23.41	23.34	23.27	23.06	23.02	24	0
5	QPSK	1	12	22.79	22.93	23.18	22.72	22.85		
5	QPSK	1	24	23.12	22.99	23.06	23.21	22.87		
5	QPSK	12	0	21.61	21.29	21.16	21.04	21.35	23	1
5	QPSK	12	7	21.34	21.26	21.17	21.04	21.00		
5	QPSK	12	13	21.35	21.24	21.13	21.06	21.00		
5	QPSK	25	0	21.33	21.25	21.16	21.02	21.05		
5	16QAM	1	0	22.48	21.99	22.28	22.45	21.99	23	1
5	16QAM	1	12	22.08	22.07	22.39	22.28	21.94		
5	16QAM	1	24	22.51	22.13	22.12	21.91	21.89		
5	16QAM	12	0	20.48	20.24	20.13	21.03	21.04	22	2
5	16QAM	12	7	20.36	20.27	20.16	21.01	21.09		
5	16QAM	12	13	20.34	20.21	20.10	21.03	21.02		
5	16QAM	25	0	20.40	20.30	20.20	21.06	20.05		

<Reduced Power Mode>

<LTE Band 38>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				37850	38000	38150		
Frequency (MHz)				2580	2595	2610		
20	QPSK	1	0	13.23	13.15	13.63	14	0
20	QPSK	1	49	12.74	13.13	13.45		
20	QPSK	1	99	13.30	13.20	13.50		
20	QPSK	50	0	12.76	13.04	13.47	14	0
20	QPSK	50	24	12.89	12.82	13.45		
20	QPSK	50	50	12.68	12.85	13.36		
20	QPSK	100	0	12.73	12.64	13.08		
20	16QAM	1	0	13.21	13.46	13.42	14	0
20	16QAM	1	49	13.03	13.43	13.33		
20	16QAM	1	99	13.20	13.15	13.22		
20	16QAM	50	0	12.75	13.01	13.21	14	0
20	16QAM	50	24	12.89	12.82	13.46		
20	16QAM	50	50	12.64	12.85	13.35		
20	16QAM	100	0	12.64	12.82	13.38		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	13.19	13.05	13.56	14	0
15	QPSK	1	37	12.69	13.11	13.42		
15	QPSK	1	74	13.30	13.20	13.43		
15	QPSK	36	0	12.68	12.95	13.43	14	0
15	QPSK	36	20	12.85	12.74	13.43		
15	QPSK	36	39	12.63	12.77	13.31		
15	QPSK	75	0	12.68	12.63	13.07		
15	16QAM	1	0	13.11	13.40	13.39	14	0
15	16QAM	1	37	13.03	13.35	13.23		
15	16QAM	1	74	13.19	13.05	13.22		
15	16QAM	36	0	12.74	12.99	13.13	14	0
15	16QAM	36	20	12.79	12.80	13.43		
15	16QAM	36	39	12.59	12.85	13.27		
15	16QAM	75	0	12.55	12.82	13.37		
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	13.18	13.06	13.62	14	0
10	QPSK	1	25	12.74	13.10	13.45		
10	QPSK	1	49	13.29	13.10	13.46		
10	QPSK	25	0	12.68	13.01	13.45	14	0
10	QPSK	25	12	12.79	12.72	13.39		
10	QPSK	25	25	12.62	12.77	13.27		
10	QPSK	50	0	12.70	12.62	12.98		
10	16QAM	1	0	13.20	13.43	13.35	14	0
10	16QAM	1	25	12.93	13.38	13.27		
10	16QAM	1	49	13.13	13.13	13.21		
10	16QAM	25	0	12.72	12.96	13.14	14	0
10	16QAM	25	12	12.83	12.77	13.42		
10	16QAM	25	25	12.63	12.82	13.27		
10	16QAM	50	0	12.56	12.80	13.33		

Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	13.18	13.14	13.58	14	0
5	QPSK	1	12	12.66	13.11	13.45		
5	QPSK	1	24	13.23	13.16	13.44		
5	QPSK	12	0	12.66	13.00	13.42	14	0
5	QPSK	12	7	12.89	12.80	13.38		
5	QPSK	12	13	12.62	12.78	13.28		
5	QPSK	25	0	12.65	12.63	13.01		
5	16QAM	1	0	13.12	13.45	13.36	14	0
5	16QAM	1	12	13.02	13.34	13.26		
5	16QAM	1	24	13.11	13.08	13.22		
5	16QAM	12	0	12.66	12.96	13.17	14	0
5	16QAM	12	7	12.83	12.78	13.37		
5	16QAM	12	13	12.59	12.81	13.32		
5	16QAM	25	0	12.63	12.75	13.31		

<LTE Band 41>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	14.95	14.60	14.76	14.83	14.88	15	0
20	QPSK	1	49	14.69	14.40	14.56	14.72	14.72		
20	QPSK	1	99	14.75	14.38	14.69	14.66	14.81		
20	QPSK	50	0	14.81	14.49	14.67	14.75	14.80	15	0
20	QPSK	50	24	14.75	14.46	14.61	14.74	14.78		
20	QPSK	50	50	14.65	14.39	14.64	14.65	14.79		
20	QPSK	100	0	14.75	14.36	14.64	14.70	14.72		
20	16QAM	1	0	14.82	14.64	14.73	14.88	14.94	15	0
20	16QAM	1	49	14.85	14.55	14.72	14.80	14.92		
20	16QAM	1	99	14.83	14.46	14.75	14.74	14.94		
20	16QAM	50	0	14.73	14.43	14.59	14.72	14.77	15	0
20	16QAM	50	24	14.71	14.41	14.63	14.69	14.79		
20	16QAM	50	50	14.65	14.34	14.60	14.63	14.75		
20	16QAM	100	0	14.76	14.44	14.67	14.73	14.85		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	14.53	14.23	14.24	14.54	14.35	15	0
15	QPSK	1	37	14.55	14.05	14.32	14.44	14.36		
15	QPSK	1	74	14.86	14.16	14.69	14.53	14.75		
15	QPSK	36	0	14.58	14.23	14.31	14.54	14.47	15	0
15	QPSK	36	20	14.70	14.21	14.42	14.58	14.55		
15	QPSK	36	39	14.80	14.15	14.55	14.57	14.64		
15	QPSK	75	0	14.70	14.20	14.46	14.56	14.54		
15	16QAM	1	0	14.60	14.34	14.33	14.65	14.47	15	0
15	16QAM	1	37	14.57	14.13	14.37	14.46	14.50		
15	16QAM	1	74	14.94	14.21	14.76	14.58	14.81		
15	16QAM	36	0	14.55	14.15	14.27	14.51	14.38	15	0
15	16QAM	36	20	14.67	14.17	14.43	14.58	14.51		
15	16QAM	36	39	14.70	14.07	14.50	14.49	14.59		
15	16QAM	75	0	14.68	14.17	14.43	14.51	14.54		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	14.69	14.53	14.57	14.82	14.71	15	0
10	QPSK	1	25	14.66	14.30	14.55	14.63	14.72		
10	QPSK	1	49	14.89	14.35	14.76	14.69	14.90		
10	QPSK	25	0	14.58	14.43	14.55	14.73	14.71	15	0
10	QPSK	25	12	14.73	14.37	14.60	14.72	14.76		
10	QPSK	25	25	14.74	14.36	14.69	14.67	14.82		
10	QPSK	50	0	14.76	14.44	14.65	14.72	14.77		
10	16QAM	1	0	14.72	14.62	14.63	14.89	14.82	15	0
10	16QAM	1	25	14.77	14.41	14.66	14.73	14.81		
10	16QAM	1	49	14.85	14.38	14.79	14.68	14.91		
10	16QAM	25	0	14.59	14.38	14.53	14.72	14.71	15	0
10	16QAM	25	12	14.71	14.33	14.60	14.69	14.76		
10	16QAM	25	25	14.74	14.31	14.66	14.63	14.80		
10	16QAM	50	0	14.78	14.41	14.66	14.76	14.79		

Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	14.42	14.21	14.13	14.58	14.26	15	0
5	QPSK	1	12	14.56	14.06	14.34	14.49	14.36		
5	QPSK	1	24	14.84	14.04	14.64	14.43	14.66		
5	QPSK	12	0	14.70	14.23	14.36	14.63	14.47	15	0
5	QPSK	12	7	14.76	14.25	14.57	14.64	14.61		
5	QPSK	12	13	14.87	14.16	14.65	14.61	14.66		
5	QPSK	25	0	14.67	14.16	14.47	14.60	14.52		
5	16QAM	1	0	14.56	14.36	14.25	14.73	14.43	15	0
5	16QAM	1	12	14.76	14.24	14.54	14.68	14.58		
5	16QAM	1	24	14.94	14.15	14.73	14.53	14.80		
5	16QAM	12	0	14.71	14.26	14.35	14.64	14.49	15	0
5	16QAM	12	7	14.76	14.21	14.53	14.67	14.60		
5	16QAM	12	13	14.88	14.15	14.66	14.59	14.65		
5	16QAM	25	0	14.71	14.17	14.45	14.61	14.54		

<LTE Carrier Aggregation combinations>

General Note:

1. This device supports Carrier Aggregation on downlink only for inter and intra band, Uplink CA is not supported. For the device supports combination bands and configurations are according to 3GPP.
2. In applying the existing power measurement procedure of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of the frequency band and CCs in each row need consideration, and that configurations require power measurement should be highlighted in the below table.
3. Only LTE Band 29A is limited to Scell.

Number	Combination	Restriction	Covered by Measurement Superset	Number	Combination	Restriction	Covered by Measurement Superset
1	2A-2A		36	36	2A-2A-12A		
2	2A-4A		38	37	2A-2A-13A		
3	2A-5A		38	38	2A-4A-5A		
4	2A-12A		36	39	2A-4A-12A		
5	2A-13A		40	40	2A-4A-13A		
6	2A-17A			41	2A-4A-29A	B29 SCC Only	
7	2A-29A	B29 SCC Only	41	42	2A-5A-30A		
8	2A-30A		42	43	2A-5A-66A		
9	2A-66A		43	44	2A-12B		
10	2C			45	2A-12A-30A		
11	4A-4A		50	46	2A-13A-66A		
12	4A-5A		50	47	2A-29A-30A	B29 SCC Only	
13	4A-7A		51	48	2A-66B		
14	4A-12A		52	49	2A-66C		
15	4A-13A		53	50	4A-4A-5A		
16	4A-17A			51	4A-4A-7A		
17	4A-29A	B29 SCC Only	41	52	4A-4A-12A		
18	4A-30A		54	53	4A-4A-13A		
19	5A-30A		54	54	4A-5A-30A		
20	5A-66A		58	55	4A-12B		
21	12A-30A		45	56	4A-12A-30A		
22	12A-66A		59	57	4A-29A-30A	B29 SCC Only	
23	12B		55	58	5A-66A-66A		
24	13A-66A		46	59	12A-66A-66A		
25	25A-25A			60	13A-66A-66A		
26	25A-26A			61	25A-41A-41A		
27	25A-41A		61	62	26A-41A-41A		
28	26A-41A		62	63	41D		
29	29A-30A	B29 SCC Only	47				
30	29A-66A	B29 SCC Only					
31	41A-41A		61				
32	41C		63				
33	66A-66A		59				
34	66B		48				
35	66C		49				

<Power verification when LTE Downlink Carrier Aggregation Active>

General Note:

1. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.
2. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.
3. The device supports downlink two carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
4. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.
5. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.
6. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

$$\text{Nominal channel spacing} = \left\lfloor \frac{BW_{Channel(1)} + BW_{Channel(2)} - 0.1\left|BW_{Channel(1)} - BW_{Channel(2)}\right|}{0.6} \right\rfloor 0.3 \ \ [\text{MHz}]$$

<Two Carrier power verification>

Configure		CA Configuration (BCS)	PCC							SCC				Power	
			LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Inter-Band		2A-17A	2	10	1905	19150	QPSK	1	0	17	10	740	5790	23.21	23.20
		4A-17A	4	10	1750	20350	QPSK	1	0	17	10	740	5790	23.27	23.27
		25A-26A	25	20	1880	26340	QPSK	1	99	26	15	876.5	8865	23.59	23.58
		66A-29A	66	20	1770	132572	QPSK	1	49	29	10	722.5	9715	23.40	23.38
Intra-Band	Non-Contiguous	25A-25A	25	20	1880	26340	QPSK	1	99	25	20	1940	8140	23.56	23.58
	Contiguous	2C	2	20	1900	19100	QPSK	1	0	2	20	1960.2	902	23.19	23.20
		66B	66	15	1772.5	132597	QPSK	1	37	66	5	2163.2	66968	23.28	23.27
		66C	66	20	1770	132572	QPSK	1	49	66	20	2150.2	66838	23.38	23.38

<Three Carrier power verification>

Configure		CA Configuration (BCS)	PCC							SCC				SCC2				Power	
			LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Inter-Band		2A-2A-12A	2	20	1900	19100	QPSK	1	0	2	20	1960	900	12	10	737.5	5095	23.19	23.20
		2A-2A-13A	2	20	1900	19100	QPSK	1	0	2	20	1960	900	13	10	751	5230	23.18	23.20
		2A-4A-12A	2	20	1900	19100	QPSK	1	0	4	20	2132.5	2175	12	10	737.5	5095	23.22	23.20
		2A-4A-13A	2	20	1900	19100	QPSK	1	0	4	20	2132.5	2175	13	10	751	5230	23.18	23.20
		2A-4A-29A	2	20	1900	19100	QPSK	1	0	4	20	2132.5	2175	29	10	722.5	9715	23.18	23.20
		2A-5A-30A	2	20	1900	19100	QPSK	1	0	5	10	881.5	2525	30	10	2355	9820	23.21	23.20
		2A-5A-66A	2	20	1900	19100	QPSK	1	0	5	10	881.5	2525	66	20	2155	66886	23.20	23.20
		2A-12B	2	20	1900	19100	QPSK	1	0	12	10	737.5	5095	12	5	744.7	5167	23.20	23.20
		2A-12A-30A	2	20	1900	19100	QPSK	1	0	12	10	737.5	5095	30	10	2355	9820	23.19	23.20
		2A-13A-66A	2	20	1900	19100	QPSK	1	0	13	10	751	5230	66	10	2155	66886	23.22	23.20
		2A-29A-30A	2	20	1900	19100	QPSK	1	0	29	10	722.5	9715	30	10	2355	9820	23.19	23.20
		2A-66B	2	20	1900	19100	QPSK	1	0	66	15	2155	66886	66	5	2163.2	66968	23.18	23.20
		2A-66C	2	20	1900	19100	QPSK	1	0	66	20	2155	66886	66	20	2150.2	66838	23.20	23.20
		4A-4A-5A	4	20	1745	20300	QPSK	1	0	4	20	2120	2150	5	10	881.5	2525	23.29	23.28
		4A-4A-7A	4	20	1745	20300	QPSK	1	0	4	20	2120	2150	7	20	2655	3100	23.30	23.28
		4A-4A-12A	4	20	1745	20300	QPSK	1	0	4	20	2120	2150	12	10	737.5	5095	23.28	23.28
		4A-4A-13A	4	20	1745	20300	QPSK	1	0	4	20	2120	2150	13	10	751	5230	23.27	23.28
		4A-5A-30A	4	20	1745	20300	QPSK	1	0	5	10	881.5	2525	30	10	2355	9820	23.28	23.28
		4A-12B	4	20	1745	20300	QPSK	1	0	12	10	737.5	5095	12	5	744.7	5167	23.29	23.28
		4A-12A-30A	4	20	1745	20300	QPSK	1	0	12	10	737.5	5095	30	10	2355	9820	23.30	23.28
		4A-29A-30A	4	20	1745	20300	QPSK	1	0	29	10	722.5	9715	30	10	2355	9820	23.27	23.28
		5A-66A-66A	5	10	836.5	20525	QPSK	1	25	66	20	2155	66886	66	20	2120	65536	23.37	23.38
		12A-66A-66A	12	10	707.5	23095	QPSK	1	49	66	20	2155	66886	66	20	2120	65536	23.49	23.47
		13A-66A-66A	13	10	782	23230	QPSK	1	0	66	20	2155	66886	66	20	2120	65536	23.22	23.24
		25A-41A-41A	25	20	1880	26340	QPSK	1	99	41	20	2593	40620	41	20	2506	39750	23.56	23.58
		26A-41A-41A	26	15	831.5	26865	QPSK	1	37	41	20	2593	40620	41	20	2506	39750	22.99	22.97
Intra-Band	Contiguous	41D	41	20	2506	39750	QPSK	1	0	41	20	2525.8	39948	41	20	2545.6	40146	23.43	23.42

<WLAN Conducted Power>

General Note:

1. For each antenna, transmit power in SISO operation is larger than (or equal to) the power in MIMO operation, RF exposure compliance of MIMO mode can be deduced from the compliance simultaneous transmission of antennas operating in SISO mode.
2. Per KDB 248227 D01v02r02, the simultaneous SAR provisions in KDB publication 447498 should be applied to determine simultaneous transmission SAR test exclusion for WiFi MIMO. If the sum of 1g single transmission chain SAR measurements is < 1.6W/kg and SAR peak to location ratio ≤ 0.04, no additional SAR measurements for MIMO.
3. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration must be determined for each standalone and aggregated frequency band, according to the transmission mode configuration with the highest maximum output power specified for production units to perform SAR measurements. If the same highest maximum output power applies to different combinations of channel bandwidths, modulations and data rates, additional procedures are applied to determine which test configurations require SAR measurement. When applicable, an initial test position may be applied to reduce the number of SAR measurements required for next to the ear, UMPC mini-tablet or hotspot mode configurations with multiple test positions.
4. For 2.4 GHz 802.11b DSSS, either the initial test position procedure for multiple exposure test positions or the DSSS procedure for fixed exposure position is applied; these are mutually exclusive. For 2.4 GHz and 5 GHz OFDM configurations, the initial test configuration is applied to measure SAR using either the initial test position procedure for multiple exposure test position configurations or the initial test configuration procedures for fixed exposure test conditions. Based on the reported SAR of the measured configurations and maximum output power of the transmission mode configurations that are not included in the initial test configuration, the subsequent test configuration and initial test position procedures are applied to determine if SAR measurements are required for the remaining OFDM transmission configurations. In general, the number of test channels that require SAR measurement is minimized based on maximum output power measured for the test sample(s).
5. For OFDM transmission configurations in the 2.4 GHz and 5 GHz bands, When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel for each frequency band.
6. DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures.18 The initial test position procedure is described in the following:
   a. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band.
   b. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
   c. For all positions/configurations, 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.

<2.4GHz WLAN ANT 1>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	13.21	13.50	98.56
		6	2437	13.24	13.50	
		11	2462	13.20	13.50	
	802.11g 6Mbps	1	2412	13.23	13.50	97.14
		6	2437	13.14	13.50	
		11	2462	13.22	13.50	
	802.11n-HT20 MCS0	1	2412	13.14	13.50	97.94
		6	2437	13.02	13.50	
		11	2462	13.07	13.50	
	802.11n-HT40 MCS0	3	2422	13.17	13.50	96.91
		6	2437	13.05	13.50	
		9	2452	13.12	13.50	

<2.4GHz WLAN ANT 2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	12.40	12.50	98.56
		6	2437	12.34	12.50	
		11	2462	12.37	12.50	
	802.11g 6Mbps	1	2412	12.38	12.50	97.14
		6	2437	12.27	12.50	
		11	2462	12.30	12.50	
	802.11n-HT20 MCS0	1	2412	12.33	12.50	97.94
		6	2437	12.15	12.50	
		11	2462	12.20	12.50	
	802.11n-HT40 MCS0	3	2422	12.27	12.50	95.92
		6	2437	12.03	12.50	
		9	2452	12.10	12.50	

<2.4GHz WLAN ANT 1+2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	15.27	15.50	99.03
		6	2437	15.16	15.50	
		11	2462	15.21	15.50	
	802.11g 6Mbps	1	2412	15.33	15.50	97.14
		6	2437	15.26	15.50	
		11	2462	15.35	15.50	
	802.11n-HT20 MCS0	1	2412	15.27	15.50	97.94
		6	2437	15.07	15.50	
		11	2462	15.15	15.50	
	802.11n-HT40 MCS0	3	2422	15.08	15.50	95.92
		6	2437	15.13	15.50	
		9	2452	15.19	15.50	

<5GHz WLAN ANT1>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	9.45	10.00	98.08
		40	5200	9.46	10.00	
		44	5220	9.52	10.00	
		48	5240	9.51	10.00	
	802.11n-HT20 MCS0	36	5180	9.48	10.00	97.95
		40	5200	9.45	10.00	
		44	5220	9.46	10.00	
		48	5240	9.43	10.00	
	802.11n-HT40 MCS0	38	5190	9.48	10.00	96.89
		46	5230	9.52	10.00	
	802.11ac-VHT20 MCS0	36	5180	9.48	10.00	97.96
		40	5200	9.48	10.00	
		44	5220	9.42	10.00	
		48	5240	9.53	10.00	
	802.11ac-VHT40 MCS0	38	5190	9.52	10.00	96.91
		46	5230	9.49	10.00	
	802.11ac-VHT80 MCS0	42	5210	9.54	10.00	94.48

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	9.62	10.00	98.08
		56	5280	9.60	10.00	
		60	5300	9.59	10.00	
		64	5320	9.61	10.00	
	802.11n-HT20 MCS0	52	5260	9.69	10.00	97.95
		56	5280	9.63	10.00	
		60	5300	9.66	10.00	
		64	5320	9.65	10.00	
	802.11n-HT40 MCS0	54	5270	9.71	10.00	96.89
		62	5310	9.70	10.00	
	802.11ac-VHT20 MCS0	52	5260	9.64	10.00	97.96
		56	5280	9.60	10.00	
		60	5300	9.62	10.00	
		64	5320	9.62	10.00	
	802.11ac-VHT40 MCS0	54	5270	9.64	10.00	96.91
		62	5310	9.65	10.00	
	802.11ac-VHT80 MCS0	58	5290	9.83	10.00	94.48

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	9.98	10.00	98.08
		116	5580	9.98	10.00	
		124	5620	9.97	10.00	
		132	5660	9.93	10.00	
		144	5720	9.94	10.00	
	802.11n-HT20 MCS0	100	5500	9.94	10.00	97.95
		116	5580	9.98	10.00	
		124	5620	9.96	10.00	
		132	5660	9.97	10.00	
		144	5720	9.93	10.00	
	802.11n-HT40 MCS0	102	5510	9.99	10.00	96.89
		110	5550	9.99	10.00	
		126	5630	9.99	10.00	
		134	5670	9.98	10.00	
		142	5710	9.98	10.00	
	802.11ac-VHT20 MCS0	100	5500	9.99	10.00	97.96
		116	5580	9.93	10.00	
		124	5620	9.96	10.00	
		132	5660	9.95	10.00	
		144	5720	9.97	10.00	
	802.11ac-VHT40 MCS0	102	5510	9.99	10.00	96.91
		110	5550	9.92	10.00	
		126	5630	9.97	10.00	
		134	5670	9.97	10.00	
		142	5710	9.95	10.00	
	802.11ac-VHT80 MCS0	106	5530	9.99	10.00	94.48
		122	5610	9.66	10.00	
		138	5690	9.70	10.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a MCS0	149	5745	9.52	10.00	98.08
		157	5785	9.54	10.00	
		165	5825	9.50	10.00	
	802.11n-HT20 MCS0	149	5745	9.54	10.00	97.95
		157	5785	9.51	10.00	
		165	5825	9.53	10.00	
	802.11n-HT40 MCS0	151	5755	9.55	10.00	96.89
		159	5795	9.58	10.00	
	802.11ac-VHT20 MCS0	149	5745	9.50	10.00	97.96
		157	5785	9.49	10.00	
		165	5825	9.45	10.00	
	802.11ac-VHT40 MCS0	151	5755	9.52	10.00	96.91
		159	5795	9.48	10.00	
	802.11ac-VHT80 MCS0	155	5775	9.63	10.00	94.48

<5GHz WLAN ANT2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	11.45	11.50	97.62
		40	5200	11.42	11.50	
		44	5220	11.40	11.50	
		48	5240	11.44	11.50	
	802.11n-HT20 MCS0	36	5180	11.42	11.50	97.45
		40	5200	11.41	11.50	
		44	5220	11.41	11.50	
		48	5240	11.39	11.50	
	802.11n-HT40 MCS0	38	5190	11.34	11.50	96.89
		46	5230	11.41	11.50	
	802.11ac-VHT20 MCS0	36	5180	11.44	11.50	97.46
		40	5200	11.43	11.50	
		44	5220	11.41	11.50	
		48	5240	11.43	11.50	
	802.11ac-VHT40 MCS0	38	5190	11.45	11.50	97.42
		46	5230	11.44	11.50	
	802.11ac-VHT80 MCS0	42	5210	11.46	11.50	93.87

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	CH 52	5260	11.32	11.50	97.62
		56	5280	11.31	11.50	
		60	5300	11.38	11.50	
		64	5320	11.37	11.50	
	802.11n-HT20 MCS0	52	5260	11.30	11.50	97.45
		56	5280	11.35	11.50	
		60	5300	11.29	11.50	
		64	5320	11.32	11.50	
	802.11n-HT40 MCS0	54	5270	11.40	11.50	96.89
		62	5310	11.43	11.50	
	802.11ac-VHT20 MCS0	52	5260	11.34	11.50	97.46
		56	5280	11.33	11.50	
		60	5300	11.35	11.50	
		64	5320	11.32	11.50	
	802.11ac-VHT40 MCS0	54	5270	11.42	11.50	97.42
		62	5310	11.37	11.50	
	802.11ac-VHT80 MCS0	58	5290	11.46	11.50	93.87

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	11.32	11.50	97.62
		116	5580	11.30	11.50	
		124	5620	11.28	11.50	
		132	5660	11.29	11.50	
		144	5720	11.25	11.50	
	802.11n-HT20 MCS0	100	5500	11.28	11.50	97.45
		116	5580	11.30	11.50	
		124	5620	11.31	11.50	
		132	5660	11.32	11.50	
		144	5720	11.27	11.50	
	802.11n-HT40 MCS0	102	5510	11.27	11.50	96.89
		110	5550	11.35	11.50	
		126	5630	11.29	11.50	
		134	5670	11.29	11.50	
		142	5710	11.27	11.50	
	802.11ac-VHT20 MCS0	100	5500	11.26	11.50	97.46
		116	5580	11.32	11.50	
		124	5620	11.29	11.50	
		132	5660	11.26	11.50	
		144	5720	11.26	11.50	
	802.11ac-VHT40 MCS0	102	5510	11.30	11.50	97.42
		110	5550	11.26	11.50	
		126	5630	11.23	11.50	
		134	5670	11.30	11.50	
		142	5710	11.28	11.50	
	802.11ac-VHT80 MCS0	106	5530	11.45	11.50	93.87
		122	5610	10.99	11.50	
		138	5690	11.27	11.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a MCS0	149	5745	11.25	11.50	97.62
		157	5785	11.28	11.50	
		165	5825	11.29	11.50	
	802.11n-HT20 MCS0	149	5745	11.26	11.50	97.45
		157	5785	11.26	11.50	
		165	5825	11.28	11.50	
	802.11n-HT40 MCS0	151	5755	11.31	11.50	96.89
		159	5795	11.36	11.50	
	802.11ac-VHT20 MCS0	149	5745	11.30	11.50	97.46
		157	5785	11.27	11.50	
		165	5825	11.28	11.50	
	802.11ac-VHT40 MCS0	151	5755	11.29	11.50	97.42
		159	5795	11.33	11.50	
	802.11ac-VHT80 MCS0	155	5775	11.44	11.50	93.87

<5GHz WLAN ANT1+2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	13.57	14.00	97.62
		40	5200	13.56	14.00	
		44	5220	13.57	14.00	
		48	5240	13.59	14.00	
	802.11n-HT20 MCS0	36	5180	13.57	14.00	96.95
		40	5200	13.55	14.00	
		44	5220	13.55	14.00	
		48	5240	13.53	14.00	
	802.11n-HT40 MCS0	38	5190	13.52	14.00	96.39
		46	5230	13.58	14.00	
	802.11ac-VHT20 MCS0	36	5180	13.58	14.00	96..95
		40	5200	13.57	14.00	
		44	5220	13.54	14.00	
		48	5240	13.59	14.00	
	802.11ac-VHT40 MCS0	38	5190	13.60	14.00	95.94
		46	5230	13.58	14.00	
	802.11ac-VHT80 MCS0	42	5210	13.62	14.00	92.17

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	13.56	14.00	97.62
		56	5280	13.55	14.00	
		60	5300	13.59	14.00	
		64	5320	13.59	14.00	
	802.11n-HT20 MCS0	52	5260	13.58	14.00	96.95
		56	5280	13.58	14.00	
		60	5300	13.56	14.00	
		64	5320	13.58	14.00	
	802.11n-HT40 MCS0	54	5270	13.65	14.00	96.39
		62	5310	13.66	14.00	
	802.11ac-VHT20 MCS0	52	5260	13.58	14.00	96.95
		56	5280	13.56	14.00	
		60	5300	13.58	14.00	
		64	5320	13.56	14.00	
	802.11ac-VHT40 MCS0	54	5270	13.63	14.00	95.94
		62	5310	13.60	14.00	
	802.11ac-VHT80 MCS0	58	5290	13.73	14.00	92.17

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	13.72	14.00	97.62
		116	5580	13.70	14.00	
		124	5620	13.68	14.00	
		132	5660	13.67	14.00	
		144	5720	13.65	14.00	
	802.11n-HT20 MCS0	100	5500	13.67	14.00	96.95
		116	5580	13.70	14.00	
		124	5620	13.70	14.00	
		132	5660	13.71	14.00	
		144	5720	13.66	14.00	
	802.11n-HT40 MCS0	102	5510	13.73	14.00	96.39
		110	5550	13.79	14.00	
		126	5630	13.73	14.00	
		134	5670	13.71	14.00	
		142	5710	13.71	14.00	
	802.11ac-VHT20 MCS0	100	5500	13.68	14.00	96.95
		116	5580	13.69	14.00	
		124	5620	13.69	14.00	
		132	5660	13.66	14.00	
		144	5720	13.67	14.00	
	802.11ac-VHT40 MCS0	102	5510	13.70	14.00	95.94
		110	5550	13.65	14.00	
		126	5630	13.66	14.00	
		134	5670	13.70	14.00	
		142	5710	13.68	14.00	
	802.11ac-VHT80 MCS0	106	5530	13.86	14.00	92.17
		122	5610	13.39	14.00	
		138	5690	13.57	14.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a MCS0	149	5745	13.48	14.00	97.62
		157	5785	13.51	14.00	
		165	5825	13.50	14.00	
	802.11n-HT20 MCS0	149	5745	13.49	14.00	96.95
		157	5785	13.48	14.00	
		165	5825	13.50	14.00	
	802.11n-HT40 MCS0	151	5755	13.53	14.00	96.39
		159	5795	13.57	14.00	
	802.11ac-VHT20 MCS0	149	5745	13.50	14.00	96.95
		157	5785	13.48	14.00	
		165	5825	13.47	14.00	
	802.11ac-VHT40 MCS0	151	5755	13.50	14.00	95.94
		159	5795	13.51	14.00	
	802.11ac-VHT80 MCS0	155	5775	13.64	14.00	92.17

<2.4GHz Bluetooth>

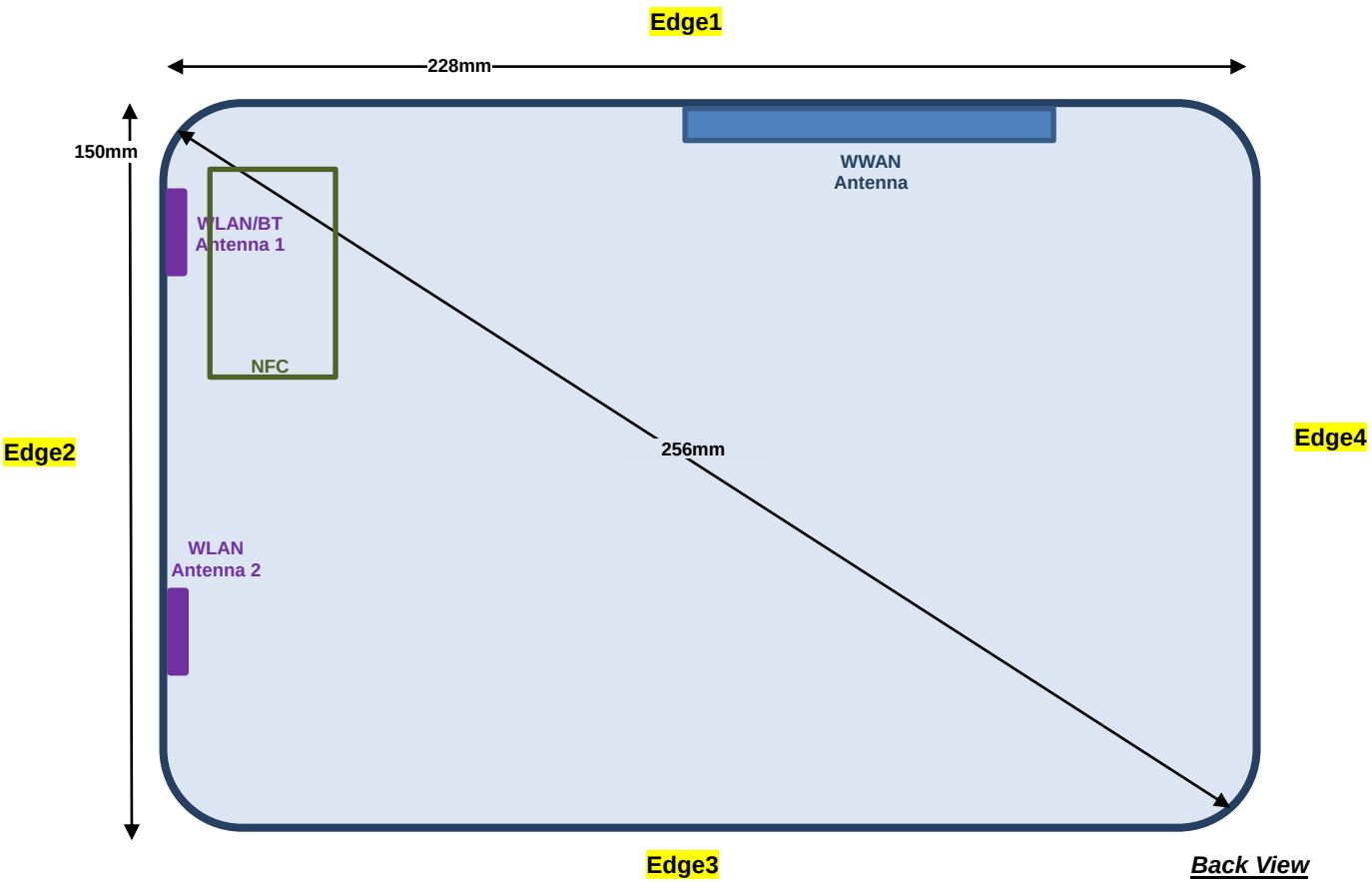
Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	8.50	5.32	4.20
	CH 39	2441	9.72	6.23	5.31
	CH 78	2480	8.51	4.74	3.97
Tune-up Limit			10.00	6.50	5.50

Mode	Channel	Frequency (MHz)	Average power (dBm)
			GFSK
LE	CH 00	2402	4.19
	CH 19	2440	4.98
	CH 39	2480	3.72
Tune-up Limit			5.00

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps due to its highest average power and duty cycle is 76.6% considered in SAR testing, and the duty cycle would be scaled to theoretical 83.3% in reported SAR calculation.

13. Antenna Location



The separation distance for antenna to edge:

Antenna	To Edge1 (mm)	To Edge2 (mm)	To Edge3 (mm)	To Edge4 (mm)
WLAN/BT Antenna 1	20	<5	120	222
WLAN Antenna 2	102	<5	38	222
WWAN Antenna	<5	120	135	37

<SAR test exclusion table>

General Note:

1. The below table, when the distance is < 50 mm exclusion threshold is "Ratio", when the distance is > 50 mm exclusion threshold is "mW"
2. Maximum power is the source-based time-average power and represents the maximum RF output power among production units
3. Per KDB 447498 D01v06, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
4. Per KDB 447498 D01v06, standalone SAR test exclusion threshold is applied; If the test separation distance is < 5mm, 5mm is used to determine SAR exclusion threshold.
5. Per KDB 447498 D01v06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:
   [(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR
   - f(GHz) is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation
   - The result is rounded to one decimal place for comparison
6. Per KDB 447498 D01v06, at 100 MHz to 6 GHz and for *test separation distances* > 50 mm, the SAR test exclusion threshold is determined according to the following
   a) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz to 1500 MHz
   b) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz

	Wireless Interface	WCDMA Band V	WCDMA Band IV	WCDMA Band II	LTE Band 12	LTE Band 17	LTE Band 13	LTE Band 5	LTE Band 26	LTE Band 4	LTE Band 66	LTE Band 2	LTE Band 25	LTE Band 30	LTE Band 7	LTE Band 38	LTE Band 41
Exposure Position	Calculated Frequency	846MHz	1750MHz	1907MHz	715MHz	713MHz	784MHz	848MHz	848MHz	1754MHz	1779MHz	1909MHz	1914MHz	2312MHz	2567MHz	2617MHz	2687MHz
	Maximum power (dBm)	24.5	24.5	24.5	24	24	24	24	24	24	24	24	24	22	24	24	24
	Maximum rated power(mW)	282.0	282.0	282.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0	158.0	251.0	251.0	251.0
Bottom Face	Separation distance(mm)	5.0															
	exclusion threshold	51.9	74.6	77.9	42.5	42.4	44.5	46.2	46.2	66.5	67.0	69.4	69.5	48.1	80.4	81.2	82.3
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 1	Separation distance(mm)	5.0															
	exclusion threshold	51.9	74.6	77.9	42.5	42.4	44.5	46.2	46.2	66.5	67.0	69.4	69.5	48.1	80.4	81.2	82.3
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 2	Separation distance(mm)	120.0															
	exclusion threshold	558.0	813.0	809.0	511.0	510.0	535.0	559.0	559.0	813.0	812.0	809.0	808.0	799.0	794.0	793.0	792.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Edge 3	Separation distance(mm)	135.0															
	exclusion threshold	642.0	963.0	959.0	583.0	582.0	614.0	643.0	643.0	963.0	962.0	959.0	958.0	949.0	944.0	943.0	942.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Edge 4	Separation distance(mm)	37.0															
	exclusion threshold	7.0	10.1	10.5	5.7	5.7	6.0	6.3	6.3	9.0	9.1	9.4	9.4	6.5	10.9	11.0	11.1
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Exposure Position	Wireless Interface	BT	2.4GHz WLAN ANT 1	2.4GHz WLAN ANT 2	5GHz WLAN ANT 1	5GHz WLAN ANT 2
	Calculated Frequency	2480MHz	2462MHz	2462MHz	5825MHz	5825MHz
	Maximum power (dBm)	10	13.5	12.5	10	12
	Maximum rated power(mW)	10.0	22.0	18.0	10.0	16.0
Bottom Face	Separation distance(mm)	5.0	5.0	5.0	5.0	5.0
	exclusion threshold	3.2	6.9	5.7	4.8	7.7
	Testing required?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Edge 1	Separation distance(mm)	20.0	20.0	102.0	20.0	102.0
	exclusion threshold	0.8	1.7	616.0	1.2	582.0
	Testing required?	**No**	**No**	**No**	**No**	**No**
Edge 2	Separation distance(mm)	5.0	5.0	5.0	5.0	5.0
	exclusion threshold	3.2	6.9	5.7	4.8	7.7
	Testing required?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Edge 3	Separation distance(mm)	120.0	120.0	38.0	120.0	38.0
	exclusion threshold	795.0	796.0	0.7	762.0	1.0
	Testing required?	**No**	**No**	**No**	**No**	**No**
Edge 4	Separation distance(mm)	222.0	222.0	222.0	222.0	222.0
	exclusion threshold	1815.0	1816.0	1816.0	1782.0	1782.0
	Testing required?	**No**	**No**	**No**	**No**	**No**

14. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
   e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
4. For the exposure positions that proximity sensor power reduction is applied for SAR compliance, additional SAR testing with EUT transmitting full power in normal mode was performed; 14mm for bottom face, 12mm for edge1

UMTS Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA, DC-HSDPA) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

LTE Note:

1. Per KDB 941225 D05v02r05, 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.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, 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 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.
4. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B12 / B26 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE band 17 / 2 / 5 / 38 / 4 SAR test was covered by Band 12 / 25 / 26 / 41 / 66; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. The maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion.
   b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

WLAN Note:

1. Per KDB 248227 D01v02r02, for 2.4GHz 802.11g/n SAR testing is not required 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.
2. Per KDB 248227 D01v02r02, U-NII-1 SAR testing is not required when the U-NII-2A band highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band.
3. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
4. For all positions / configurations, 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.
5. For WLAN SAR testing was performed on single antenna RF power in SISO mode is larger or equal to the single antenna RF power in MIMO mode, and for RF exposure assessment of MIMO mode simultaneous transmission exclusion analysis was performed with SAR test results of each antenna in SISO mode.
6. Per KDB 248227 D01v02r02, the simultaneous SAR provisions in KDB publication 447498 should be applied to determine simultaneous transmission SAR test exclusion for WiFi MIMO. If the sum of 1g single transmission chain SAR measurements is < 1.6W/kg and SAR peak to location ratio ≤ 0.04, no additional SAR measurements for MIMO.
7. During SAR testing the WLAN transmission was verified using a spectrum analyzer.

14.1 Body SAR

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA II	RMC 12.2Kbps	Bottom Face	0mm	ON	9400	1880	17.65	18.50	1.216	-0.12	0.813	0.989
	WCDMA II	RMC 12.2Kbps	Bottom Face	0mm	ON	9262	1852.4	17.59	18.50	1.233	0.03	0.744	0.917
	WCDMA II	RMC 12.2Kbps	Bottom Face	0mm	ON	9538	1907.6	17.63	18.50	1.222	-0.12	0.738	0.902
01	WCDMA II	RMC 12.2Kbps	Edge 1	0mm	ON	9400	1880	17.65	18.50	1.216	0.05	0.962	1.170
	WCDMA II	RMC 12.2Kbps	Edge 1	0mm	ON	9262	1852.4	17.59	18.50	1.233	0.09	0.893	1.101
	WCDMA II	RMC 12.2Kbps	Edge 1	0mm	ON	9538	1907.6	17.63	18.50	1.222	0.13	0.890	1.087
	WCDMA II	RMC 12.2Kbps	Bottom Face	14mm	OFF	9400	1880	23.66	24.50	1.213	-0.18	0.348	0.422
	WCDMA II	RMC 12.2Kbps	Edge 1	12mm	OFF	9400	1880	23.66	24.50	1.213	-0.02	0.440	0.534
	WCDMA II	RMC 12.2Kbps	Edge 4	0mm	OFF	9400	1880	23.66	24.50	1.213	0.04	0.924	1.121
	WCDMA II	RMC 12.2Kbps	Edge 4	0mm	OFF	9262	1852.4	23.47	24.50	1.268	0.09	0.816	1.034
	WCDMA II	RMC 12.2Kbps	Edge 4	0mm	OFF	9538	1907.6	23.58	24.50	1.236	0.05	0.902	1.115
02	WCDMA IV	RMC 12.2Kbps	Bottom Face	0mm	ON	1413	1732.6	18.16	19.00	1.213	-0.09	0.952	1.155
	WCDMA IV	RMC 12.2Kbps	Bottom Face	0mm	ON	1312	1712.4	18.06	19.00	1.242	-0.02	0.917	1.139
	WCDMA IV	RMC 12.2Kbps	Bottom Face	0mm	ON	1513	1752.6	17.99	19.00	1.262	-0.13	0.887	1.119
	WCDMA IV	RMC 12.2Kbps	Edge 1	0mm	ON	1413	1732.6	18.16	19.00	1.213	0.18	0.825	1.001
	WCDMA IV	RMC 12.2Kbps	Edge 1	0mm	ON	1312	1712.4	18.06	19.00	1.242	0.04	0.827	1.027
	WCDMA IV	RMC 12.2Kbps	Edge 1	0mm	ON	1513	1752.6	17.99	19.00	1.262	0.12	0.809	1.021
	WCDMA IV	RMC 12.2Kbps	Bottom Face	14mm	OFF	1513	1752.6	23.82	24.50	1.170	-0.1	0.546	0.639
	WCDMA IV	RMC 12.2Kbps	Edge 1	12mm	OFF	1513	1752.6	23.82	24.50	1.170	-0.07	0.733	0.857
	WCDMA IV	RMC 12.2Kbps	Edge 1	12mm	OFF	1312	1712.4	23.59	24.50	1.233	0.09	0.767	0.946
	WCDMA IV	RMC 12.2Kbps	Edge 1	12mm	OFF	1413	1732.6	23.75	24.50	1.189	0.09	0.715	0.850
	WCDMA IV	RMC 12.2Kbps	Edge 4	0mm	OFF	1513	1752.6	23.82	24.50	1.170	0.06	0.769	0.900
	WCDMA IV	RMC 12.2Kbps	Edge 4	0mm	OFF	1312	1712.4	23.59	24.50	1.233	0.12	0.932	1.150
	WCDMA IV	RMC 12.2Kbps	Edge 4	0mm	OFF	1413	1732.6	23.75	24.50	1.189	0.11	0.886	1.053
	WCDMA V	RMC 12.2Kbps	Bottom Face	0mm	ON	4182	836.4	21.98	22.00	1.005	-0.18	0.960	0.964
03	WCDMA V	RMC 12.2Kbps	Bottom Face	0mm	ON	4132	826.4	21.89	22.00	1.026	0.03	1.050	1.077
	WCDMA V	RMC 12.2Kbps	Bottom Face	0mm	ON	4233	846.6	21.82	22.00	1.042	0.03	0.969	1.010
	WCDMA V	RMC 12.2Kbps	Edge 1	0mm	ON	4182	836.4	21.98	22.00	1.005	0.15	0.885	0.889
	WCDMA V	RMC 12.2Kbps	Edge 1	0mm	ON	4132	826.4	21.89	22.00	1.026	0.02	0.974	0.999
	WCDMA V	RMC 12.2Kbps	Edge 1	0mm	ON	4233	846.6	21.82	22.00	1.042	-0.11	0.901	0.939
	WCDMA V	RMC 12.2Kbps	Bottom Face	14mm	OFF	4182	836.4	23.84	24.50	1.165	-0.13	0.532	0.620
	WCDMA V	RMC 12.2Kbps	Edge 1	12mm	OFF	4182	836.4	23.84	24.50	1.165	-0.05	0.434	0.506
	WCDMA V	RMC 12.2Kbps	Edge 4	0mm	OFF	4182	836.4	23.84	24.50	1.165	0.07	0.754	0.879
	WCDMA V	RMC 12.2Kbps	Edge 4	0mm	OFF	4132	826.4	23.57	24.50	1.240	0.07	0.750	0.930
	WCDMA V	RMC 12.2Kbps	Edge 4	0mm	OFF	4233	846.6	23.30	24.50	1.320	-0.12	0.662	0.874

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 7	20M	QPSK	1	0	Bottom Face	0mm	ON	20850	2510	12.87	13.50	1.156	-0.12	0.408	0.472
	LTE Band 7	20M	QPSK	50	0	Bottom Face	0mm	ON	20850	2510	12.80	13.50	1.175	-0.17	0.380	0.446
	LTE Band 7	20M	QPSK	1	0	Edge 1	0mm	ON	20850	2510	12.87	13.50	1.156	-0.02	0.697	0.806
	LTE Band 7	20M	QPSK	1	0	Edge 1	0mm	ON	21100	2535	12.73	13.50	1.194	-0.07	0.624	0.745
04	LTE Band 7	20M	QPSK	1	0	Edge 1	0mm	ON	21350	2560	12.20	13.50	1.349	-0.19	0.875	1.180
	LTE Band 7	20M	QPSK	50	0	Edge 1	0mm	ON	20850	2510	12.80	13.50	1.175	-0.15	0.660	0.775
	LTE Band 7	20M	QPSK	100	0	Edge 1	0mm	ON	20850	2510	12.78	13.50	1.180	-0.1	0.655	0.773
	LTE Band 7	20M	QPSK	1	0	Bottom Face	14mm	OFF	20850	2510	23.88	24.00	1.028	-0.01	0.508	0.522
	LTE Band 7	20M	QPSK	50	0	Bottom Face	14mm	OFF	20850	2510	21.95	23.00	1.274	-0.12	0.306	0.390
	LTE Band 7	20M	QPSK	1	0	Edge 1	12mm	OFF	20850	2510	23.88	24.00	1.028	-0.01	0.866	0.890
	LTE Band 7	20M	QPSK	1	0	Edge 1	12mm	OFF	21100	2535	23.70	24.00	1.072	-0.04	0.958	1.027
	LTE Band 7	20M	QPSK	1	0	Edge 1	12mm	OFF	21350	2560	23.68	24.00	1.076	0.16	0.985	1.060
	LTE Band 7	20M	QPSK	50	0	Edge 1	12mm	OFF	20850	2510	21.95	23.00	1.274	-0.04	0.555	0.707
	LTE Band 7	20M	QPSK	100	0	Edge 1	12mm	OFF	20850	2510	21.89	23.00	1.291	0.12	0.541	0.699
	LTE Band 7	20M	QPSK	1	0	Edge 4	0mm	OFF	20850	2510	23.88	24.00	1.028	-0.18	0.941	0.967
	LTE Band 7	20M	QPSK	1	0	Edge 4	0mm	OFF	21100	2535	23.70	24.00	1.072	-0.14	0.853	0.914
	LTE Band 7	20M	QPSK	1	0	Edge 4	0mm	OFF	21350	2560	23.68	24.00	1.076	-0.11	1.060	1.141
	LTE Band 7	20M	QPSK	50	0	Edge 4	0mm	OFF	20850	2510	21.95	23.00	1.274	-0.14	0.620	0.790
	LTE Band 7	20M	QPSK	100	0	Edge 4	0mm	OFF	20850	2510	21.89	23.00	1.291	-0.1	0.605	0.781
05	LTE Band 12	10M	QPSK	1	49	Bottom Face	0mm	ON	23095	707.5	21.00	21.50	1.122	-0.19	1.050	1.178
	LTE Band 12	10M	QPSK	25	25	Bottom Face	0mm	ON	23095	707.5	20.82	21.50	1.169	-0.04	1.000	1.169
	LTE Band 12	10M	QPSK	50	0	Bottom Face	0mm	ON	23095	707.5	20.81	21.50	1.172	0.08	0.994	1.165
	LTE Band 12	10M	QPSK	1	49	Edge 1	0mm	ON	23095	707.5	21.00	21.50	1.122	-0.07	0.733	0.822
	LTE Band 12	10M	QPSK	25	25	Edge 1	0mm	ON	23095	707.5	20.82	21.50	1.169	0.11	0.731	0.855
	LTE Band 12	10M	QPSK	50	0	Edge 1	0mm	ON	23095	707.5	20.81	21.50	1.172	0	0.732	0.858
	LTE Band 12	10M	QPSK	1	49	Bottom Face	14mm	OFF	23095	707.5	23.47	24.00	1.130	-0.13	0.315	0.356
	LTE Band 12	10M	QPSK	25	0	Bottom Face	14mm	OFF	23095	707.5	22.83	23.00	1.040	-0.09	0.223	0.232
	LTE Band 12	10M	QPSK	1	49	Edge 1	12mm	OFF	23095	707.5	23.47	24.00	1.130	-0.01	0.184	0.208
	LTE Band 12	10M	QPSK	25	0	Edge 1	12mm	OFF	23095	707.5	22.83	23.00	1.040	-0.03	0.119	0.124
	LTE Band 12	10M	QPSK	1	49	Edge 4	0mm	OFF	23095	707.5	23.47	24.00	1.130	0.12	0.368	0.416
	LTE Band 12	10M	QPSK	25	0	Edge 4	0mm	OFF	23095	707.5	22.83	23.00	1.040	0	0.233	0.242
06	LTE Band 13	10M	QPSK	1	0	Bottom Face	0mm	ON	23230	782	21.99	22.00	1.002	-0.01	1.080	1.082
	LTE Band 13	10M	QPSK	25	0	Bottom Face	0mm	ON	23230	782	20.85	21.00	1.035	-0.13	0.976	1.010
	LTE Band 13	10M	QPSK	50	0	Bottom Face	0mm	ON	23230	782	20.69	21.00	1.074	-0.02	0.945	1.015
	LTE Band 13	10M	QPSK	1	0	Edge 1	0mm	ON	23230	782	21.99	22.00	1.002	-0.06	0.757	0.759
	LTE Band 13	10M	QPSK	25	0	Edge 1	0mm	ON	23230	782	20.85	21.00	1.035	-0.18	0.753	0.779
	LTE Band 13	10M	QPSK	1	0	Bottom Face	14mm	OFF	23230	782	23.43	24.00	1.140	-0.03	0.390	0.445
	LTE Band 13	10M	QPSK	25	0	Bottom Face	14mm	OFF	23230	782	22.72	23.00	1.067	-0.06	0.274	0.292
	LTE Band 13	10M	QPSK	1	0	Edge 1	12mm	OFF	23230	782	23.43	24.00	1.140	-0.07	0.237	0.270
	LTE Band 13	10M	QPSK	25	0	Edge 1	12mm	OFF	23230	782	22.72	23.00	1.067	0.1	0.182	0.194
	LTE Band 13	10M	QPSK	1	0	Edge 4	0mm	OFF	23230	782	23.43	24.00	1.140	0.12	0.406	0.463
	LTE Band 13	10M	QPSK	25	0	Edge 4	0mm	OFF	23230	782	22.72	23.00	1.067	-0.12	0.257	0.274

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 25	20M	QPSK	1	99	Bottom Face	0mm	ON	26340	1880	17.99	18.00	1.002	-0.14	0.744	0.746
	LTE Band 25	20M	QPSK	50	50	Bottom Face	0mm	ON	26340	1880	17.98	18.00	1.005	-0.12	0.729	0.732
	LTE Band 25	20M	QPSK	1	99	Edge 1	0mm	ON	26340	1880	17.99	18.00	1.002	-0.13	0.882	0.884
	LTE Band 25	20M	QPSK	1	99	Edge 1	0mm	ON	26140	1860	17.95	18.00	1.012	-0.02	0.859	0.869
07	LTE Band 25	20M	QPSK	1	99	Edge 1	0mm	ON	26590	1905	17.90	18.00	1.023	-0.09	1.110	1.136
	LTE Band 25	20M	QPSK	50	50	Edge 1	0mm	ON	26340	1880	17.98	18.00	1.005	-0.08	0.844	0.848
	LTE Band 25	20M	QPSK	50	50	Edge 1	0mm	ON	26140	1860	17.83	18.00	1.040	-0.09	0.837	0.870
	LTE Band 25	20M	QPSK	50	50	Edge 1	0mm	ON	26590	1905	17.92	18.00	1.019	-0.05	1.060	1.080
	LTE Band 25	20M	QPSK	100	0	Edge 1	0mm	ON	26340	1880	17.93	18.00	1.016	-0.1	0.854	0.868
	LTE Band 25	20M	QPSK	1	99	Bottom Face	14mm	OFF	26340	1880	23.58	24.00	1.102	-0.15	0.146	0.161
	LTE Band 25	20M	QPSK	50	50	Bottom Face	14mm	OFF	26340	1880	21.48	23.00	1.419	-0.15	0.128	0.182
	LTE Band 25	20M	QPSK	1	99	Edge 1	12mm	OFF	26340	1880	23.58	24.00	1.102	-0.13	0.248	0.273
	LTE Band 25	20M	QPSK	50	50	Edge 1	12mm	OFF	26340	1880	21.48	23.00	1.419	0.03	0.212	0.301
	LTE Band 25	20M	QPSK	1	99	Edge 4	0mm	OFF	26340	1880	23.58	24.00	1.102	-0.04	0.364	0.401
	LTE Band 25	20M	QPSK	50	50	Edge 4	0mm	OFF	26340	1880	21.48	23.00	1.419	0.08	0.327	0.464
08	LTE Band 26	15M	QPSK	1	37	Bottom Face	0mm	ON	26865	831.5	22.38	22.50	1.028	-0.06	1.110	1.141
	LTE Band 26	15M	QPSK	36	20	Bottom Face	0mm	ON	26865	831.5	19.96	20.50	1.132	-0.13	0.884	1.001
	LTE Band 26	15M	QPSK	75	0	Bottom Face	0mm	ON	26865	831.5	19.85	20.50	1.161	-0.03	0.853	0.991
	LTE Band 26	15M	QPSK	1	37	Edge 1	0mm	ON	26865	831.5	22.38	22.50	1.028	-0.17	0.991	1.019
	LTE Band 26	15M	QPSK	36	20	Edge 1	0mm	ON	26865	831.5	19.96	20.50	1.132	-0.03	0.741	0.839
	LTE Band 26	15M	QPSK	75	0	Edge 1	0mm	ON	26865	831.5	19.85	20.50	1.161	-0.12	0.748	0.869
	LTE Band 26	15M	QPSK	1	37	Bottom Face	14mm	OFF	26865	831.5	22.97	24.00	1.268	-0.03	0.539	0.683
	LTE Band 26	15M	QPSK	36	0	Bottom Face	14mm	OFF	26865	831.5	22.22	23.00	1.197	-0.18	0.327	0.391
	LTE Band 26	15M	QPSK	1	37	Edge 1	12mm	OFF	26865	831.5	22.97	24.00	1.268	0.03	0.454	0.576
	LTE Band 26	15M	QPSK	36	0	Edge 1	12mm	OFF	26865	831.5	22.22	23.00	1.197	-0.01	0.278	0.333
	LTE Band 26	15M	QPSK	1	37	Edge 4	0mm	OFF	26865	831.5	22.97	24.00	1.268	0.06	0.697	0.884
	LTE Band 26	15M	QPSK	36	0	Edge 4	0mm	OFF	26865	831.5	22.22	23.00	1.197	-0.07	0.424	0.507
	LTE Band 26	15M	QPSK	75	0	Edge 4	0mm	OFF	26865	831.5	22.18	23.00	1.208	0.09	0.444	0.536

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 30	10M	QPSK	1	0	Bottom Face	0mm	ON	27710	2310	16.49	16.50	1.002	-0.18	0.914	0.916
	LTE Band 30	10M	QPSK	25	0	Bottom Face	0mm	ON	27710	2310	16.45	16.50	1.012	-0.18	0.914	0.925
	LTE Band 30	10M	QPSK	50	0	Bottom Face	0mm	ON	27710	2310	16.41	16.50	1.021	-0.16	0.945	0.965
	LTE Band 30	10M	QPSK	1	0	Edge 1	0mm	ON	27710	2310	16.49	16.50	1.002	-0.03	1.090	1.093
	LTE Band 30	10M	QPSK	25	0	Edge 1	0mm	ON	27710	2310	16.45	16.50	1.012	-0.07	1.080	1.093
09	LTE Band 30	10M	QPSK	50	0	Edge 1	0mm	ON	27710	2310	16.41	16.50	1.021	-0.11	1.100	1.123
	LTE Band 30	10M	QPSK	1	0	Bottom Face	14mm	OFF	27710	2310	21.55	22.00	1.109	-0.01	0.375	0.416
	LTE Band 30	10M	QPSK	25	0	Bottom Face	14mm	OFF	27710	2310	19.59	21.00	1.384	-0.06	0.282	0.390
	LTE Band 30	10M	QPSK	1	0	Edge 1	12mm	OFF	27710	2310	21.55	22.00	1.109	-0.04	0.276	0.306
	LTE Band 30	10M	QPSK	25	0	Edge 1	12mm	OFF	27710	2310	19.59	21.00	1.384	0.02	0.225	0.311
	LTE Band 30	10M	QPSK	1	0	Edge 4	0mm	OFF	27710	2310	21.55	22.00	1.109	-0.05	0.462	0.512
	LTE Band 30	10M	QPSK	25	0	Edge 4	0mm	OFF	27710	2310	19.59	21.00	1.384	-0.06	0.418	0.578
	LTE Band 66	20M	QPSK	1	49	Bottom Face	0mm	ON	132572	1770	18.84	19.00	1.038	-0.18	1.010	1.048
	LTE Band 66	20M	QPSK	1	49	Bottom Face	0mm	ON	132072	1720	18.65	19.00	1.084	-0.1	1.060	1.149
	LTE Band 66	20M	QPSK	1	49	Bottom Face	0mm	ON	132322	1745	18.70	19.00	1.072	-0.17	1.050	1.125
	LTE Band 66	20M	QPSK	50	24	Bottom Face	0mm	ON	132572	1770	18.70	19.00	1.072	-0.17	1.030	1.104
10	LTE Band 66	20M	QPSK	50	24	Bottom Face	0mm	ON	132072	1720	18.62	19.00	1.091	-0.19	1.080	1.179
	LTE Band 66	20M	QPSK	50	24	Bottom Face	0mm	ON	132322	1745	18.53	19.00	1.114	-0.07	1.030	1.148
	LTE Band 66	20M	QPSK	100	0	Bottom Face	0mm	ON	132572	1770	18.58	19.00	1.102	-0.17	0.983	1.083
	LTE Band 66	20M	QPSK	1	49	Edge 1	0mm	ON	132572	1770	18.84	19.00	1.038	0.04	0.988	1.025
	LTE Band 66	20M	QPSK	1	49	Edge 1	0mm	ON	132072	1720	18.65	19.00	1.084	0	1.020	1.106
	LTE Band 66	20M	QPSK	1	49	Edge 1	0mm	ON	132322	1745	18.70	19.00	1.072	0.05	0.979	1.049
	LTE Band 66	20M	QPSK	50	24	Edge 1	0mm	ON	132572	1770	18.70	19.00	1.072	-0.01	1.030	1.104
	LTE Band 66	20M	QPSK	50	24	Edge 1	0mm	ON	132072	1720	18.62	19.00	1.091	0.01	1.010	1.102
	LTE Band 66	20M	QPSK	50	24	Edge 1	0mm	ON	132322	1745	18.53	19.00	1.114	0	1.020	1.137
	LTE Band 66	20M	QPSK	100	0	Edge 1	0mm	ON	132572	1770	18.58	19.00	1.102	0.04	1.000	1.102
	LTE Band 66	20M	QPSK	1	49	Bottom Face	14mm	OFF	132572	1770	23.38	24.00	1.153	-0.12	0.274	0.316
	LTE Band 66	20M	QPSK	50	24	Bottom Face	14mm	OFF	132572	1770	21.35	23.00	1.462	-0.05	0.174	0.254
	LTE Band 66	20M	QPSK	1	49	Edge 1	12mm	OFF	132572	1770	23.38	24.00	1.153	0.02	0.512	0.591
	LTE Band 66	20M	QPSK	50	24	Edge 1	12mm	OFF	132572	1770	21.35	23.00	1.462	0.06	0.329	0.481
	LTE Band 66	20M	QPSK	1	49	Edge 4	0mm	OFF	132572	1770	23.38	24.00	1.153	0.08	0.768	0.886
	LTE Band 66	20M	QPSK	1	49	Edge 4	0mm	OFF	132072	1720	23.22	24.00	1.197	0.09	0.857	1.026
	LTE Band 66	20M	QPSK	1	49	Edge 4	0mm	OFF	132322	1745	23.30	24.00	1.175	0.17	0.631	0.741
	LTE Band 66	20M	QPSK	50	24	Edge 4	0mm	OFF	132572	1770	21.35	23.00	1.462	-0.19	0.496	0.725
	LTE Band 66	20M	QPSK	100	0	Edge 4	0mm	OFF	132572	1770	21.32	23.00	1.472	0.18	0.342	0.504

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0mm	ON	39750	2506	14.95	15.00	1.012	62.9	1.006	-0.05	0.393	0.400
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0mm	ON	39750	2506	14.81	15.00	1.045	62.9	1.006	0.11	0.384	0.404
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	39750	2506	14.95	15.00	1.012	62.9	1.006	-0.01	0.614	0.625
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	40185	2549.5	14.60	15.00	1.096	62.9	1.006	0.04	0.713	0.786
11	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	40620	2593	14.76	15.00	1.057	62.9	1.006	-0.06	1.120	1.191
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	41055	2636.5	14.83	15.00	1.040	62.9	1.006	0.01	1.010	1.057
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	41490	2680	14.88	15.00	1.028	62.9	1.006	0.17	0.813	0.841
	LTE Band 41	20M	QPSK	50	0	Edge 1	0mm	ON	39750	2506	14.81	15.00	1.045	62.9	1.006	0.12	0.596	0.626
	LTE Band 41	20M	QPSK	50	0	Edge 1	0mm	ON	40185	2549.5	14.49	15.00	1.125	62.9	1.006	0.11	0.723	0.818
	LTE Band 41	20M	QPSK	50	0	Edge 1	0mm	ON	40620	2593	14.67	15.00	1.079	62.9	1.006	-0.1	1.070	1.161
	LTE Band 41	20M	QPSK	50	0	Edge 1	0mm	ON	41055	2636.5	14.75	15.00	1.059	62.9	1.006	0.06	1.030	1.098
	LTE Band 41	20M	QPSK	50	0	Edge 1	0mm	ON	41490	2680	14.80	15.00	1.047	62.9	1.006	-0.17	0.824	0.868
	LTE Band 41	20M	QPSK	100	0	Edge 1	0mm	ON	39750	2506	14.75	15.00	1.059	62.9	1.006	0.11	0.494	0.526
	LTE Band 41	20M	QPSK	1	0	Bottom Face	14mm	OFF	39750	2506	23.42	24.00	1.143	62.9	1.006	-0.06	0.215	0.247
	LTE Band 41	20M	QPSK	50	0	Bottom Face	14mm	OFF	39750	2506	21.49	23.00	1.416	62.9	1.006	-0.03	0.139	0.198
	LTE Band 41	20M	QPSK	1	0	Edge 1	12mm	OFF	39750	2506	23.42	24.00	1.143	62.9	1.006	-0.02	0.418	0.481
	LTE Band 41	20M	QPSK	50	0	Edge 1	12mm	OFF	39750	2506	21.49	23.00	1.416	62.9	1.006	0.08	0.270	0.385
	LTE Band 41	20M	QPSK	1	0	Edge 4	0mm	OFF	39750	2506	23.42	24.00	1.143	62.9	1.006	-0.04	0.812	0.934
	LTE Band 41	20M	QPSK	1	0	Edge 4	0mm	OFF	40185	2549.5	23.17	24.00	1.211	62.9	1.006	-0.15	0.732	0.891
	LTE Band 41	20M	QPSK	1	0	Edge 4	0mm	OFF	40620	2593	23.07	24.00	1.239	62.9	1.006	-0.02	0.523	0.652
	LTE Band 41	20M	QPSK	1	0	Edge 4	0mm	OFF	41055	2636.5	23.12	24.00	1.225	62.9	1.006	0.01	0.387	0.477
	LTE Band 41	20M	QPSK	1	0	Edge 4	0mm	OFF	41490	2680	22.88	24.00	1.294	62.9	1.006	-0.02	0.568	0.740
	LTE Band 41	20M	QPSK	50	0	Edge 4	0mm	OFF	39750	2506	21.49	23.00	1.416	62.9	1.006	0.05	0.531	0.756
	LTE Band 41	20M	QPSK	50	0	Edge 4	0mm	OFF	40185	2549.5	21.28	23.00	1.486	62.9	1.006	-0.17	0.465	0.695
	LTE Band 41	20M	QPSK	50	0	Edge 4	0mm	OFF	40620	2593	21.17	23.00	1.524	62.9	1.006	-0.09	0.325	0.498
	LTE Band 41	20M	QPSK	50	0	Edge 4	0mm	OFF	41055	2636.5	21.07	23.00	1.560	62.9	1.006	0	0.225	0.353
	LTE Band 41	20M	QPSK	50	0	Edge 4	0mm	OFF	41490	2680	21.12	23.00	1.542	62.9	1.006	-0.17	0.134	0.208
	LTE Band 41	20M	QPSK	100	0	Edge 4	0mm	OFF	39750	2506	21.43	23.00	1.435	62.9	1.006	0.1	0.525	0.758

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 1	6	2437	13.24	13.50	1.062	98.56	1.015	-0.14	0.927	0.999
	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 1	1	2412	13.21	13.50	1.069	98.56	1.015	-0.18	0.937	1.017
	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 1	11	2462	13.20	13.50	1.072	98.56	1.015	-0.17	1.050	1.142
	WLAN2.4GHz	802.11b 1Mbps	Edge 2	0mm	Ant 1	6	2437	13.24	13.50	1.062	98.56	1.015	-0.17	0.688	0.741
	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 2	1	2412	12.40	12.50	1.023	98.56	1.015	-0.05	1.050	1.091
12	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 2	6	2437	12.34	12.50	1.038	98.56	1.015	0.03	1.110	1.169
	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 2	11	2462	12.37	12.50	1.030	98.56	1.015	-0.15	1.060	1.109
	WLAN2.4GHz	802.11b 1Mbps	Edge 2	0mm	Ant 2	1	2412	12.40	12.50	1.023	98.56	1.015	0.04	0.917	0.952
	WLAN2.4GHz	802.11b 1Mbps	Edge 2	0mm	Ant 2	6	2437	12.34	12.50	1.038	98.56	1.015	0.05	0.954	1.005
	WLAN2.4GHz	802.11b 1Mbps	Edge 2	0mm	Ant 2	11	2462	12.37	12.50	1.030	98.56	1.015	0.06	0.941	0.984
	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 1	58	5290	9.83	10.00	1.040	94.48	1.058	-0.18	0.490	0.539
	WLAN5GHz	802.11ac-VHT80 MCS0	Edge 2	0mm	Ant 1	58	5290	9.83	10.00	1.040	94.48	1.058	-0.08	0.937	1.031
	WLAN5GHz	802.11n-HT40 MCS0	Edge 2	0mm	Ant 1	54	5270	9.71	10.00	1.069	96.89	1.032	0.06	0.977	1.078
	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 2	58	5290	11.46	11.50	1.009	93.87	1.065	-0.01	0.822	0.884
	WLAN5GHz	802.11n-HT40 MCS0	Bottom Face	0mm	Ant 2	62	5310	11.43	11.50	1.016	96.89	1.032	-0.13	0.908	0.952
	WLAN5GHz	802.11ac-VHT80 MCS0	Edge 2	0mm	Ant 2	58	5290	11.46	11.50	1.009	93.87	1.065	-0.19	1.070	1.150
13	WLAN5GHz	802.11n-HT40 MCS0	Edge 2	0mm	Ant 2	62	5310	11.43	11.50	1.016	96.89	1.032	-0.08	1.120	1.175
	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 1	106	5530	9.99	10.00	1.002	94.48	1.058	-0.15	0.579	0.614
14	WLAN5GHz	802.11ac-VHT80 MCS0	Edge 2	0mm	Ant 1	106	5530	9.99	10.00	1.002	94.48	1.058	0.17	0.982	1.041
	WLAN5GHz	802.11ac-VHT80 MCS0	Edge 2	0mm	Ant 1	122	5610	9.66	10.00	1.081	94.48	1.058	0.12	0.881	1.008
	WLAN5GHz	802.11ac-VHT80 MCS0	Edge 2	0mm	Ant 1	138	5690	9.70	10.00	1.072	94.48	1.058	0.01	0.893	1.012
	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 2	106	5530	11.45	11.50	1.012	93.87	1.065	-0.15	0.921	0.992
	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 2	122	5610	10.99	11.50	1.125	93.87	1.065	-0.05	0.788	0.944
	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 2	138	5690	11.27	11.50	1.054	93.87	1.065	-0.09	0.809	0.908
	WLAN5GHz	802.11ac-VHT80 MCS0	Edge 2	0mm	Ant 2	106	5530	11.45	11.50	1.012	93.87	1.065	-0.11	0.918	0.989
	WLAN5GHz	802.11ac-VHT80 MCS0	Edge 2	0mm	Ant 2	122	5610	10.99	11.50	1.125	93.87	1.065	-0.03	0.775	0.928
	WLAN5GHz	802.11ac-VHT80 MCS0	Edge 2	0mm	Ant 2	138	5690	11.27	11.50	1.054	93.87	1.065	-0.12	0.708	0.795
	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 1	155	5775	9.63	10.00	1.089	94.48	1.058	-0.15	0.576	0.664
	WLAN5GHz	802.11ac-VHT80 MCS0	Edge 2	0mm	Ant 1	155	5775	9.63	10.00	1.089	94.48	1.058	-0.07	0.999	1.151
	WLAN5GHz	802.11n-HT40 MCS0	Edge 2	0mm	Ant 1	159	5795	9.58	10.00	1.102	96.89	1.032	0.04	1.010	1.148
15	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 2	155	5775	11.44	11.50	1.014	93.87	1.065	-0.11	1.110	1.199
	WLAN5GHz	802.11n-HT40 MCS0	Bottom Face	0mm	Ant 2	159	5795	11.36	11.50	1.033	96.89	1.032	-0.05	1.090	1.162
	WLAN5GHz	802.11ac-VHT80 MCS0	Edge 2	0mm	Ant 2	155	5775	11.44	11.50	1.014	93.87	1.065	-0.09	0.943	1.018
	WLAN5GHz	802.11n-HT40 MCS0	Edge 2	0mm	Ant 2	159	5795	11.36	11.50	1.033	96.89	1.032	-0.12	0.962	1.025

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
16	Bluetooth	1Mbps	Bottom Face	0mm	Ant 1	39	2441	9.72	10.00	1.067	76.6	1.087	-0.07	0.455	0.528
	Bluetooth	1Mbps	Bottom Face	0mm	Ant 1	0	2402	8.50	10.00	1.413	76.6	1.087	-0.06	0.330	0.507
	Bluetooth	1Mbps	Bottom Face	0mm	Ant 1	78	2480	8.51	10.00	1.409	76.6	1.087	-0.01	0.318	0.487
	Bluetooth	1Mbps	Edge 2	0mm	Ant 1	39	2441	9.72	10.00	1.067	76.6	1.087	0.02	0.347	0.402

14.2 Repeated SAR Measurement

No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	LTE Band 13	10M	QPSK	1	0	Bottom Face	0mm	ON	23230	782	21.99	22.00	1.002	-	1.000	-0.01	1.080	-	1.082
2nd	LTE Band 13	10M	QPSK	1	0	Bottom Face	0mm	ON	23230	782	21.99	22.00	1.002	-	1.000	-0.05	1.020	1.06	1.022
1st	LTE Band 25	20M	QPSK	1	99	Edge 1	0mm	ON	26590	1905	17.90	18.00	1.023	-	1.000	-0.09	1.110	-	1.136
2nd	LTE Band 25	20M	QPSK	1	99	Edge 1	0mm	ON	26590	1905	17.90	18.00	1.023	-	1.000	0.12	1.050	1.06	1.074
1st	LTE Band 26	15M	QPSK	1	37	Bottom Face	0mm	ON	26865	831.5	22.38	22.50	1.028	-	1.000	-0.06	1.110	-	1.141
2nd	LTE Band 26	15M	QPSK	1	37	Bottom Face	0mm	ON	26865	831.5	22.38	22.50	1.028	-	1.000	-0.02	1.070	1.04	1.100
1st	LTE Band 30	10M	QPSK	50	0	Edge 1	0mm	ON	27710	2310	16.41	16.50	1.021	-	1.000	-0.11	1.100	-	1.123
2nd	LTE Band 30	10M	QPSK	50	0	Edge 1	0mm	ON	27710	2310	16.41	16.50	1.021	-	1.000	-0.1	1.050	1.05	1.072
1st	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	40620	2593	14.76	15.00	1.057	62.9	1.006	-0.06	1.120	-	1.191
2nd	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	40620	2593	14.76	15.00	1.057	62.9	1.006	0.14	1.060	1.06	1.127
1st	LTE Band 66	20M	QPSK	50	24	Bottom Face	0mm	ON	132072	1720	18.62	19.00	1.091	-	1.000	-0.19	1.080	-	1.179
2nd	LTE Band 66	20M	QPSK	50	24	Bottom Face	0mm	ON	132072	1720	18.62	19.00	1.091	-	1.000	-0.17	1.020	1.06	1.113

No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 2	6	2437	12.34	12.50	1.038	98.56	1.015	0.03	1.110	-	1.169
2nd	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 2	6	2437	12.34	12.50	1.038	98.56	1.015	0.01	1.070	1.04	1.127
1st	WLAN5GHz	802.11n-HT40 MCS0	Edge 2	0mm	Ant 2	62	5310	11.43	11.50	1.016	96.89	1.032	-0.08	1.120	-	1.175
2nd	WLAN5GHz	802.11n-HT40 MCS0	Edge 2	0mm	Ant 2	62	5310	11.43	11.50	1.016	96.89	1.032	-0.01	1.080	1.04	1.133
1st	WLAN5GHz	802.11ac-VHT80 MCS0	Edge 2	0mm	Ant 1	106	5530	9.99	10.00	1.002	94.48	1.058	0.17	0.982	-	1.041
2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Edge 2	0mm	Ant 1	106	5530	9.99	10.00	1.002	94.48	1.058	-0.18	0.967	1.02	1.025
1st	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 2	155	5775	11.44	11.50	1.014	93.87	1.065	-0.11	1.110	-	1.199
2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 2	155	5775	11.44	11.50	1.014	93.87	1.065	0.11	1.070	1.04	1.155

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. The ratio is the difference in percentage between original and repeated *measured SAR*.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

15. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Body
1.	WWAN + 2.4GHz WLAN ANT 1+ 2.4GHz WLAN ANT 2	Yes
2.	WWAN + 5GHz WLAN ANT 1+ 5GHz WLAN ANT 2	Yes
3.	WWAN + Bluetooth ANT 1+ 2.4GHz WLAN ANT 2	Yes
4.	WWAN + Bluetooth ANT 1+ 5GHz WLAN ANT 2	Yes

General Note:

1. For SAR testing was performed on single antenna RF power in SISO mode is larger or equal to the single antenna RF power in MIMO mode, and for RF exposure assessment of MIMO mode simultaneous transmission exclusion analysis was performed with SAR test results of each antenna in SISO mode.
2. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
3. All licensed modes share the same antenna part and cannot transmit simultaneously.
4. EUT will choose either WLAN 2.4GHz or WLAN 5GHz according to the network signal condition; therefore, 2.4GHz WLAN and 5GHz WLAN will not operate simultaneously at any moment.
5. The Scaled SAR summation is calculated based on the same configuration and test position.
6. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
   i) Scalar SAR summation < 1.6W/kg.
   ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
   iii) If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary.
   iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
   v) The SPLSR calculated results please refer to section 15.2.

15.1 Body Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN Ant 1 1g SAR (W/kg)	3 2.4GHz WLAN Ant 2 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+2+3 Summed 1g SAR (W/kg)	1+2 1+3 1+2+3 SPLSR	1+2 1+3 1+2+3 Case No
WCDMA	WCDMA II	Bottom Face at 14 mm	0.422	1.142	1.169	1.564	1.591	2.733	0.04	Case 1
		Edge 1 at 12 mm	0.534			0.534	0.534	0.534		
		Bottom Face at 0mm	0.989	1.142	1.169	2.131	2.158	3.300	0.04	Case 2
		Edge 1 at 0mm	1.17			1.170	1.170	1.170		
		Edge 4 at 0mm	1.121			1.121	1.121	1.121		
	WCDMA IV	Bottom Face at 14 mm	0.639	1.142	1.169	1.781	1.808	2.950	0.04	Case 3
		Edge 1 at 12 mm	0.946			0.946	0.946	0.946		
		Bottom Face at 0mm	1.155	1.142	1.169	2.297	2.324	3.466	0.04	Case 4
		Edge 1 at 0mm	1.027			1.027	1.027	1.027		
		Edge 4 at 0mm	1.15			1.150	1.150	1.150		
	WCDMA V	Bottom Face at 14 mm	0.62	1.142	1.169	1.762	1.789	2.931	0.04	Case 5
		Edge 1 at 12 mm	0.506			0.506	0.506	0.506		
		Bottom Face at 0mm	1.077	1.142	1.169	2.219	2.246	3.388	0.04	Case 6
		Edge 1 at 0mm	0.999			0.999	0.999	0.999		
		Edge 4 at 0mm	0.93			0.930	0.930	0.930		
LTE	LTE Band 7	Bottom Face at 14 mm	0.522	1.142	1.169	1.664	1.691	2.833	0.04	Case 7
		Edge 1 at 12 mm	1.06			1.060	1.060	1.060		
		Bottom Face at 0mm	0.472	1.142	1.169	1.614	1.641	2.783	0.04	Case 8
		Edge 1 at 0mm	1.18			1.180	1.180	1.180		
		Edge 4 at 0mm	1.141			1.141	1.141	1.141		
	LTE Band 12	Bottom Face at 14 mm	0.356	1.142	1.169	1.498	1.525	2.667	0.04	Case 9
		Edge 1 at 12 mm	0.208			0.208	0.208	0.208		
		Bottom Face at 0mm	1.178	1.142	1.169	2.320	2.347	3.489	0.04	Case 10
		Edge 1 at 0mm	0.858			0.858	0.858	0.858		
		Edge 4 at 0mm	0.416			0.416	0.416	0.416		
	LTE Band 13	Bottom Face at 14 mm	0.445	1.142	1.169	1.587	1.614	2.756	0.04	Case 11
		Edge 1 at 12 mm	0.27			0.270	0.270	0.270		
		Bottom Face at 0mm	1.082	1.142	1.169	2.224	2.251	3.393	0.04	Case 12
		Edge 1 at 0mm	0.779			0.779	0.779	0.779		
		Edge 4 at 0mm	0.463			0.463	0.463	0.463		
	LTE Band 25	Bottom Face at 14 mm	0.182	1.142	1.169	1.324	1.351	2.493	0.04	Case 13
		Edge 1 at 12 mm	0.301			0.301	0.301	0.301		
		Bottom Face at 0mm	0.746	1.142	1.169	1.888	1.915	3.057	0.04	Case 14
		Edge 1 at 0mm	1.136			1.136	1.136	1.136		
		Edge 4 at 0mm	0.464			0.464	0.464	0.464		
	LTE Band 26	Bottom Face at 14 mm	0.683	1.142	1.169	1.825	1.852	2.994	0.04	Case 15
		Edge 1 at 12 mm	0.576			0.576	0.576	0.576		
		Bottom Face at 0mm	1.141	1.142	1.169	2.283	2.310	3.452	0.04	Case 16
		Edge 1 at 0mm	1.019			1.019	1.019	1.019		
		Edge 4 at 0mm	0.884			0.884	0.884	0.884		
	LTE Band 30	Bottom Face at 14 mm	0.416	1.142	1.169	1.558	1.585	2.727	0.04	Case 17
		Edge 1 at 12 mm	0.306			0.306	0.306	0.306		
		Bottom Face at 0mm	0.965	1.142	1.169	2.107	2.134	3.276	0.04	Case 18
		Edge 1 at 0mm	1.123			1.123	1.123	1.123		
		Edge 4 at 0mm	0.512			0.512	0.512	0.512		

		Bottom Face at 14 mm	0.247	1.142	1.169	**1.389**	**1.416**	**2.558**	**0.04**	**Case 19**
		Edge 1 at 12 mm	0.481			**0.481**	**0.481**	**0.481**		
	LTE Band 41	Bottom Face at 0mm	0.404	1.142	1.169	**1.546**	**1.573**	**2.715**	**0.04**	**Case 20**
		Edge 1 at 0mm	1.191			**1.191**	**1.191**	**1.191**		
		Edge 4 at 0mm	0.934			**0.934**	**0.934**	**0.934**		
		Bottom Face at 14 mm	0.316	1.142	1.169	**1.458**	**1.485**	**2.627**	**0.04**	**Case 21**
		Edge 1 at 12 mm	0.591			**0.591**	**0.591**	**0.591**		
	LTE Band 66	Bottom Face at 0mm	1.179	1.142	1.169	**2.321**	**2.348**	**3.490**	**0.04**	**Case 22**
		Edge 1 at 0mm	1.137			**1.137**	**1.137**	**1.137**		
		Edge 4 at 0mm	1.026			**1.026**	**1.026**	**1.026**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	4 5GHz WLAN Ant 1 1g SAR (W/kg)	5 5GHz WLAN Ant 2 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	1+5 Summed 1g SAR (W/kg)	1+4+5 Summed 1g SAR (W/kg)	1+4 1+5 1+4+5 SPLSR	1+4 1+5 1+4+5 Case No
WCDMA	WCDMA II	Bottom Face at 14 mm	0.422	0.664	1.199	1.086	1.621	2.285	0.03	Case 23
		Edge 1 at 12 mm	0.534			0.534	0.534	0.534		
		Bottom Face at 0mm	0.989	0.664	1.199	1.653	2.188	2.852	0.03	Case 24
		Edge 1 at 0mm	1.17			1.170	1.170	1.170		
		Edge 4 at 0mm	1.121			1.121	1.121	1.121		
	WCDMA IV	Bottom Face at 14 mm	0.639	0.664	1.199	1.303	1.838	2.502	0.03	Case 25
		Edge 1 at 12 mm	0.946			0.946	0.946	0.946		
		Bottom Face at 0mm	1.155	0.664	1.199	1.819	2.354	3.018	0.03	Case 26
		Edge 1 at 0mm	1.027			1.027	1.027	1.027		
		Edge 4 at 0mm	1.15			1.150	1.150	1.150		
	WCDMA V	Bottom Face at 14 mm	0.62	0.664	1.199	1.284	1.819	2.483	0.03	Case 27
		Edge 1 at 12 mm	0.506			0.506	0.506	0.506		
		Bottom Face at 0mm	1.077	0.664	1.199	1.741	2.276	2.940	0.03	Case 28
		Edge 1 at 0mm	0.999			0.999	0.999	0.999		
		Edge 4 at 0mm	0.93			0.930	0.930	0.930		
LTE	LTE Band 7	Bottom Face at 14 mm	0.522	0.664	1.199	1.186	1.721	2.385	0.03	Case 29
		Edge 1 at 12 mm	1.06			1.060	1.060	1.060		
		Bottom Face at 0mm	0.472	0.664	1.199	1.136	1.671	2.335	0.03	Case 30
		Edge 1 at 0mm	1.18			1.180	1.180	1.180		
		Edge 4 at 0mm	1.141			1.141	1.141	1.141		
	LTE Band 12	Bottom Face at 14 mm	0.356	0.664	1.199	1.020	1.555	2.219	0.03	Case 31
		Edge 1 at 12 mm	0.208			0.208	0.208	0.208		
		Bottom Face at 0mm	1.178	0.664	1.199	1.842	2.377	3.041	0.03	Case 32
		Edge 1 at 0mm	0.858			0.858	0.858	0.858		
		Edge 4 at 0mm	0.416			0.416	0.416	0.416		
	LTE Band 13	Bottom Face at 14 mm	0.445	0.664	1.199	1.109	1.644	2.308	0.03	Case 33
		Edge 1 at 12 mm	0.27			0.270	0.270	0.270		
		Bottom Face at 0mm	1.082	0.664	1.199	1.746	2.281	2.945	0.03	Case 34
		Edge 1 at 0mm	0.779			0.779	0.779	0.779		
		Edge 4 at 0mm	0.463			0.463	0.463	0.463		
	LTE Band 25	Bottom Face at 14 mm	0.182	0.664	1.199	0.846	1.381	2.045	0.03	Case 35
		Edge 1 at 12 mm	0.301			0.301	0.301	0.301		
		Bottom Face at 0mm	0.746	0.664	1.199	1.410	1.945	2.609	0.03	Case 36
		Edge 1 at 0mm	1.136			1.136	1.136	1.136		
		Edge 4 at 0mm	0.464			0.464	0.464	0.464		
	LTE Band 26	Bottom Face at 14 mm	0.683	0.664	1.199	1.347	1.882	2.546	0.03	Case 37
		Edge 1 at 12 mm	0.576			0.576	0.576	0.576		
		Bottom Face at 0mm	1.141	0.664	1.199	1.805	2.340	3.004	0.03	Case 38
		Edge 1 at 0mm	1.019			1.019	1.019	1.019		
		Edge 4 at 0mm	0.884			0.884	0.884	0.884		
	LTE Band 30	Bottom Face at 14 mm	0.416	0.664	1.199	1.080	1.615	2.279	0.03	Case 39
		Edge 1 at 12 mm	0.306			0.306	0.306	0.306		
		Bottom Face at 0mm	0.965	0.664	1.199	1.629	2.164	2.828	0.03	Case 40
		Edge 1 at 0mm	1.123			1.123	1.123	1.123		
		Edge 4 at 0mm	0.512			0.512	0.512	0.512		

	LTE Band 41	Bottom Face at 14 mm	0.247	0.664	1.199	**0.911**	**1.446**	**2.110**	**0.03**	**Case 41**
		Edge 1 at 12 mm	0.481			**0.481**	**0.481**	**0.481**		
		Bottom Face at 0mm	0.404	0.664	1.199	**1.068**	**1.603**	**2.267**	**0.03**	**Case 42**
		Edge 1 at 0mm	1.191			**1.191**	**1.191**	**1.191**		
		Edge 4 at 0mm	0.934			**0.934**	**0.934**	**0.934**		
	LTE Band 66	Bottom Face at 14 mm	0.316	0.664	1.199	**0.980**	**1.515**	**2.179**	**0.03**	**Case 43**
		Edge 1 at 12 mm	0.591			**0.591**	**0.591**	**0.591**		
		Bottom Face at 0mm	1.179	0.664	1.199	**1.843**	**2.378**	**3.042**	**0.03**	**Case 44**
		Edge 1 at 0mm	1.137			**1.137**	**1.137**	**1.137**		
		Edge 4 at 0mm	1.026			**1.026**	**1.026**	**1.026**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	3 2.4GHz WLAN Ant 2 1g SAR (W/kg)	5 5GHz WLAN Ant 2 1g SAR (W/kg)	6 Bluetooth Ant 1 1g SAR (W/kg)	1+6 Summed 1g SAR (W/kg)	1+3+6 Summed 1g SAR (W/kg)	1+5+6 Summed 1g SAR (W/kg)	1+6 1+3+6 SPLSR	1+6 1+3+6 Case No	1+5+6 SPLSR	1+5+6 Case No
WCDMA	WCDMA II	Bottom Face at 14 mm	0.422	1.169	1.199	0.528	0.950	2.119	2.149	0.02	Case 45	0.03	Case 67
		Edge 1 at 12 mm	0.534				0.534	0.534	0.534				
		Bottom Face at 0mm	0.989	1.169	1.199	0.528	1.517	2.686	2.716	0.02	Case 46	0.03	Case 68
		Edge 1 at 0mm	1.17				1.170	1.17	1.17				
		Edge 4 at 0mm	1.121				1.121	1.121	1.121				
	WCDMA IV	Bottom Face at 14 mm	0.639	1.169	1.199	0.528	1.167	2.336	2.366	0.02	Case 47	0.03	Case 69
		Edge 1 at 12 mm	0.946				0.946	0.946	0.946				
		Bottom Face at 0mm	1.155	1.169	1.199	0.528	1.683	2.852	2.882	0.02	Case 48	0.03	Case 70
		Edge 1 at 0mm	1.027				1.027	1.027	1.027				
		Edge 4 at 0mm	1.15				1.150	1.15	1.15				
	WCDMA V	Bottom Face at 14 mm	0.62	1.169	1.199	0.528	1.148	2.317	2.347	0.02	Case 49	0.03	Case 71
		Edge 1 at 12 mm	0.506				0.506	0.506	0.506				
		Bottom Face at 0mm	1.077	1.169	1.199	0.528	1.605	2.774	2.804	0.02	Case 50	0.03	Case 72
		Edge 1 at 0mm	0.999				0.999	0.999	0.999				
		Edge 4 at 0mm	0.93				0.930	0.93	0.93				
LTE	LTE Band 7	Bottom Face at 14 mm	0.522	1.169	1.199	0.528	1.050	2.219	2.249	0.02	Case 51	0.03	Case 73
		Edge 1 at 12 mm	1.06				1.060	1.06	1.06				
		Bottom Face at 0mm	0.472	1.169	1.199	0.528	1.000	2.169	2.199	0.02	Case 52	0.03	Case 74
		Edge 1 at 0mm	1.18				1.180	1.18	1.18				
		Edge 4 at 0mm	1.141				1.141	1.141	1.141				
	LTE Band 12	Bottom Face at 14 mm	0.356	1.169	1.199	0.528	0.884	2.053	2.083	0.02	Case 53	0.03	Case 75
		Edge 1 at 12 mm	0.208				0.208	0.208	0.208				
		Bottom Face at 0mm	1.178	1.169	1.199	0.528	1.706	2.875	2.905	0.02	Case 54	0.03	Case 76
		Edge 1 at 0mm	0.858				0.858	0.858	0.858				
		Edge 4 at 0mm	0.416				0.416	0.416	0.416				
	LTE Band 13	Bottom Face at 14 mm	0.445	1.169	1.199	0.528	0.973	2.142	2.172	0.02	Case 55	0.03	Case 77
		Edge 1 at 12 mm	0.27				0.270	0.27	0.27				
		Bottom Face at 0mm	1.082	1.169	1.199	0.528	1.610	2.779	2.809	0.02	Case 56	0.03	Case 78
		Edge 1 at 0mm	0.779				0.779	0.779	0.779				
		Edge 4 at 0mm	0.463				0.463	0.463	0.463				
	LTE Band 25	Bottom Face at 14 mm	0.182	1.169	1.199	0.528	0.710	1.879	1.909	0.02	Case 57	0.03	Case 79
		Edge 1 at 12 mm	0.301				0.301	0.301	0.301				
		Bottom Face at 0mm	0.746	1.169	1.199	0.528	1.274	2.443	2.473	0.02	Case 58	0.03	Case 80
		Edge 1 at 0mm	1.136				1.136	1.136	1.136				
		Edge 4 at 0mm	0.464				0.464	0.464	0.464				
	LTE Band 26	Bottom Face at 14 mm	0.683	1.169	1.199	0.528	1.211	2.38	2.41	0.02	Case 59	0.03	Case 81
		Edge 1 at 12 mm	0.576				0.576	0.576	0.576				
		Bottom Face at 0mm	1.141	1.169	1.199	0.528	1.669	2.838	2.868	0.02	Case 60	0.03	Case 82
		Edge 1 at 0mm	1.019				1.019	1.019	1.019				
		Edge 4 at 0mm	0.884				0.884	0.884	0.884				
	LTE Band 30	Bottom Face at 14 mm	0.416	1.169	1.199	0.528	0.944	2.113	2.143	0.02	Case 61	0.03	Case 83
		Edge 1 at 12 mm	0.306				0.306	0.306	0.306				
		Bottom Face at 0mm	0.965	1.169	1.199	0.528	1.493	2.662	2.692	0.02	Case 62	0.03	Case 84
		Edge 1 at 0mm	1.123				1.123	1.123	1.123				
		Edge 4 at 0mm	0.512				0.512	0.512	0.512				

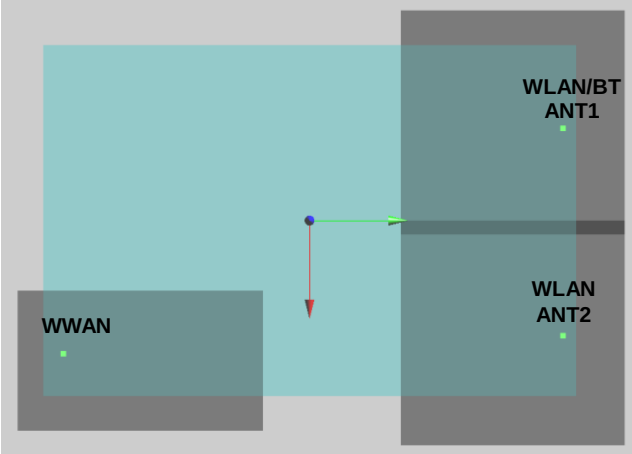
	LTE Band 41	Bottom Face at 14 mm	0.247	1.169	1.199	0.528	**0.775**	**1.944**	**1.974**	**0.02**	**Case 63**	**0.03**	**Case 85**
		Edge 1 at 12 mm	0.481				**0.481**	**0.481**	**0.481**				
		Bottom Face at 0mm	0.404	1.169	1.199	0.528	**0.932**	**2.101**	**2.131**	**0.02**	**Case 64**	**0.03**	**Case 86**
		Edge 1 at 0mm	1.191				**1.191**	**1.191**	**1.191**				
		Edge 4 at 0mm	0.934				**0.934**	**0.934**	**0.934**				
	LTE Band 66	Bottom Face at 14 mm	0.316	1.169	1.199	0.528	**0.844**	**2.013**	**2.043**	**0.02**	**Case 65**	**0.03**	**Case 87**
		Edge 1 at 12 mm	0.591				**0.591**	**0.591**	**0.591**				
		Bottom Face at 0mm	1.179	1.169	1.199	0.528	**1.707**	**2.876**	**2.906**	**0.02**	**Case 66**	**0.03**	**Case 88**
		Edge 1 at 0mm	1.137				**1.137**	**1.137**	**1.137**				
		Edge 4 at 0mm	1.026				**1.026**	**1.026**	**1.026**				

15.2 SPLSR Evaluation and Analysis

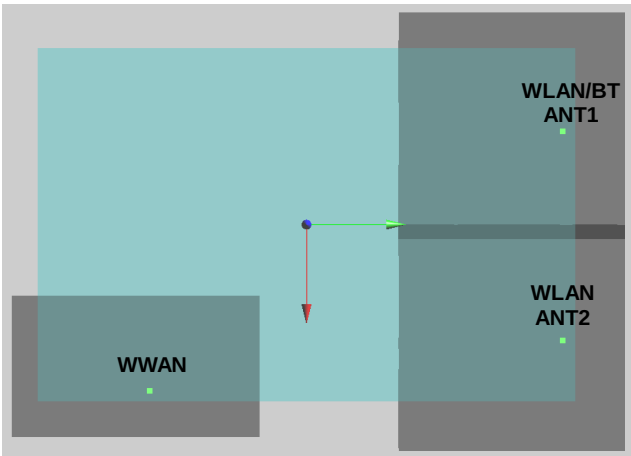
General Note:

1. SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*). If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary.

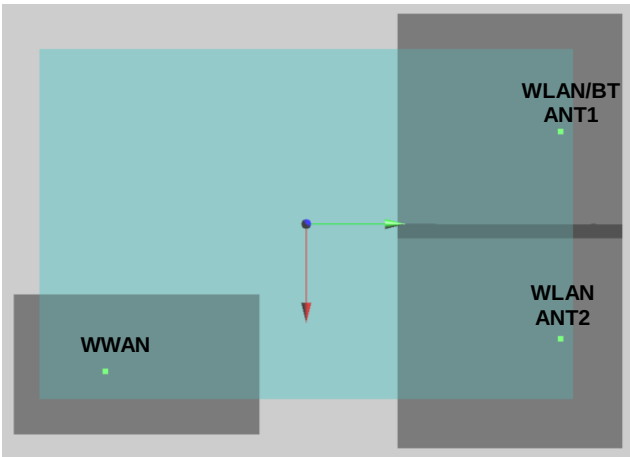
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 1	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	WCDMA II	Bottom Face	0.422	14	57	-103.9	-8.61	208.1	1.56	0.01	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	WCDMA II	Bottom Face	0.422	14	57	-103.9	-8.61	229.6	1.59	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



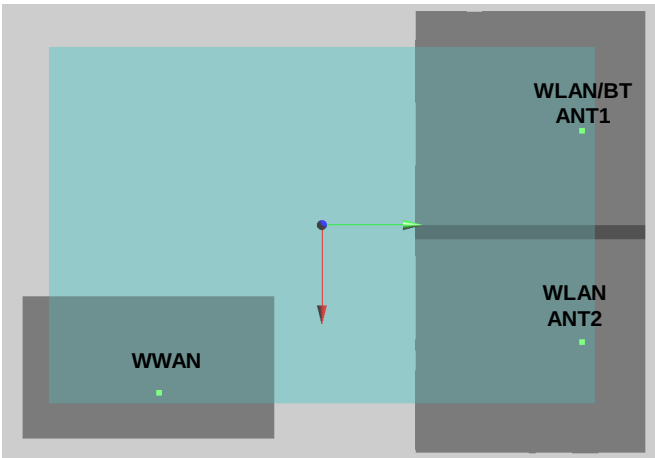
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 2	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	WCDMA II	Bottom Face	0.989	0	68.9	-68.1	-7.51	173.1	2.13	0.02	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	WCDMA II	Bottom Face	0.989	0	68.9	-68.1	-7.51	203.9	2.16	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



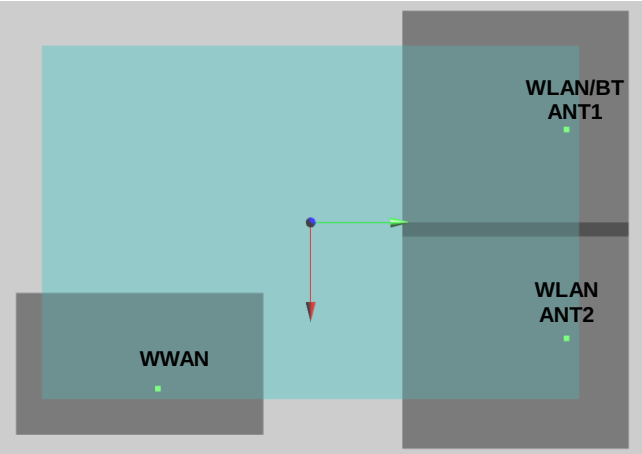
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 3	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	WCDMA IV	Bottom Face	0.639	14	64.6	-81.2	-8.9	185.8	1.78	0.01	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	WCDMA IV	Bottom Face	0.639	14	64.6	-81.2	-8.9	212.9	1.81	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



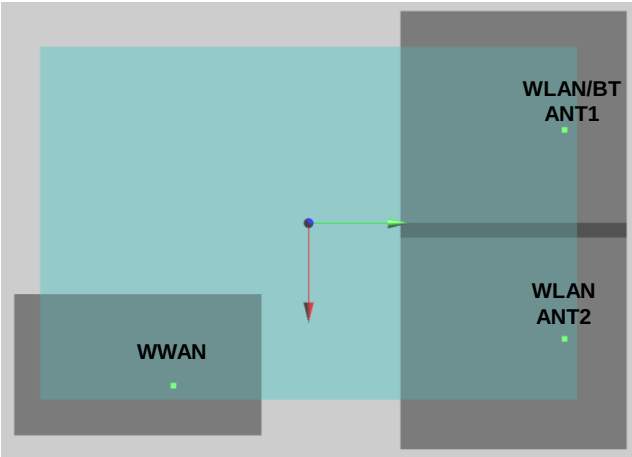
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 4	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	WCDMA IV	Bottom Face	1.155	0	68.9	-69.6	-8.18	174.6	2.30	0.02	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	WCDMA IV	Bottom Face	1.155	0	68.9	-69.6	-8.18	205.2	2.32	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



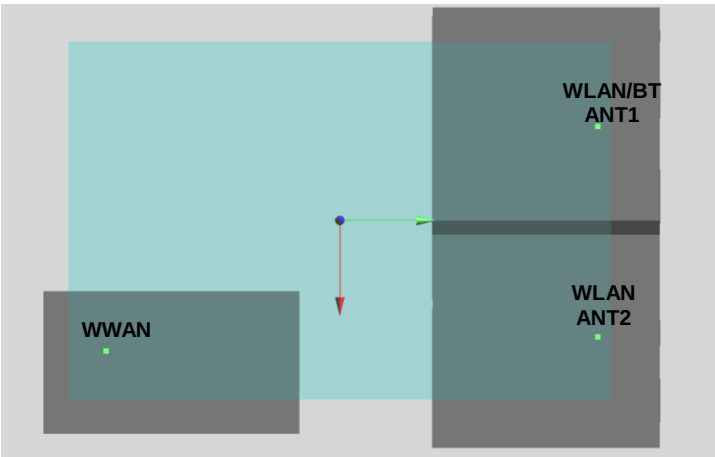
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 5	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	WCDMA V	Bottom Face	0.62	14	70.5	-65	-9.67	170.3	1.76	0.01	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	WCDMA V	Bottom Face	0.62	14	70.5	-65	-9.67	202.2	1.79	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



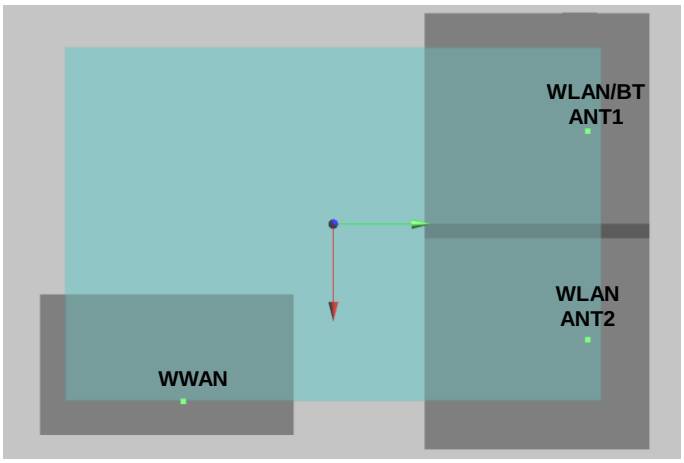
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 6	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	WCDMA V	Bottom Face	1.077	0	69	-57.5	-9.4	162.6	2.22	0.02	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	WCDMA V	Bottom Face	1.077	0	69	-57.5	-9.4	195.2	2.25	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



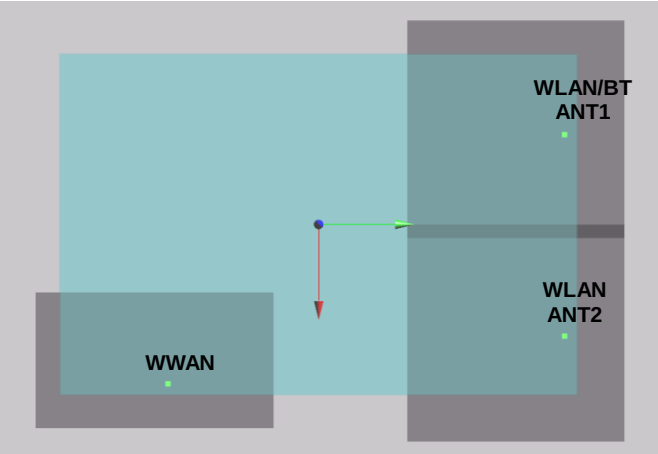
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 7	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B7	Bottom Face	0.522	14	54.2	-98.6	-1.19	202.6	1.66	0.01	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B7	Bottom Face	0.522	14	54.2	-98.6	-1.19	223.4	1.69	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



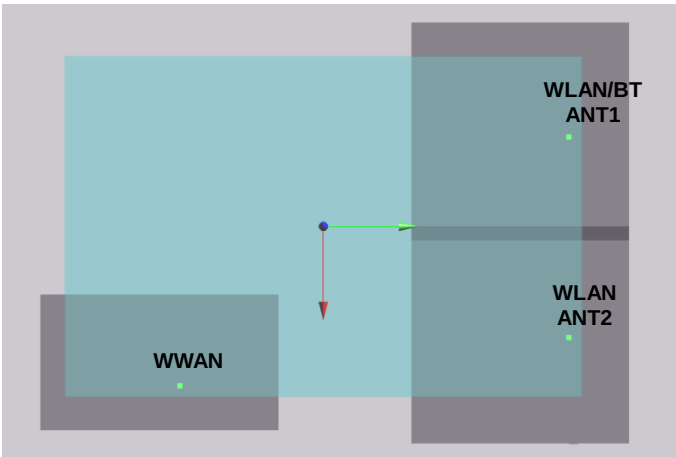
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 8	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B7	Bottom Face	0.472	0	77.6	-67.8	-0.86	173.6	1.61	0.01	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B7	Bottom Face	0.472	0	77.6	-67.8	-0.86	208.2	1.64	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



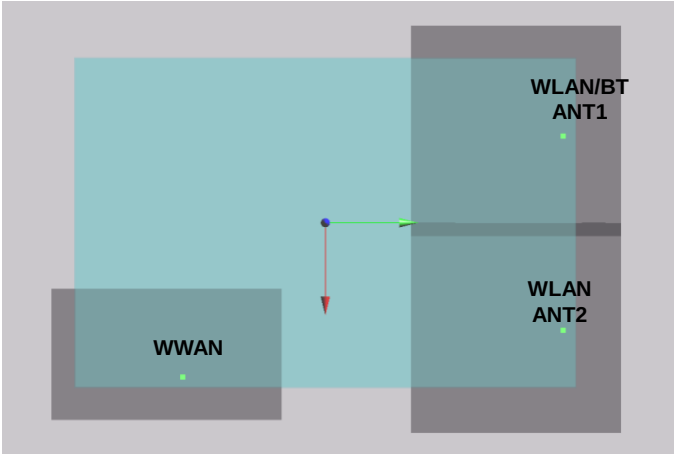
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 9	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B12	Bottom Face	0.356	14	68.9	-66.5	-9.69	171.6	1.50	0.01	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B12	Bottom Face	0.356	14	68.9	-66.5	-9.69	202.6	1.53	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



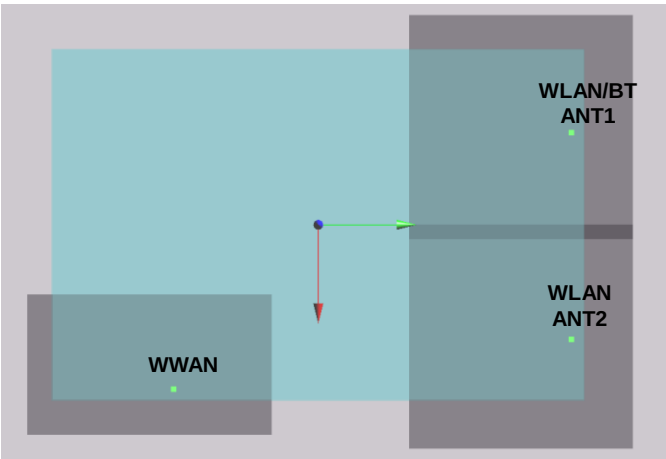
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 10	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B12	Bottom Face	1.178	0	68.9	-55.5	-9.46	160.6	2.32	0.02	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B12	Bottom Face	1.178	0	68.9	-55.5	-9.46	193.5	2.35	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



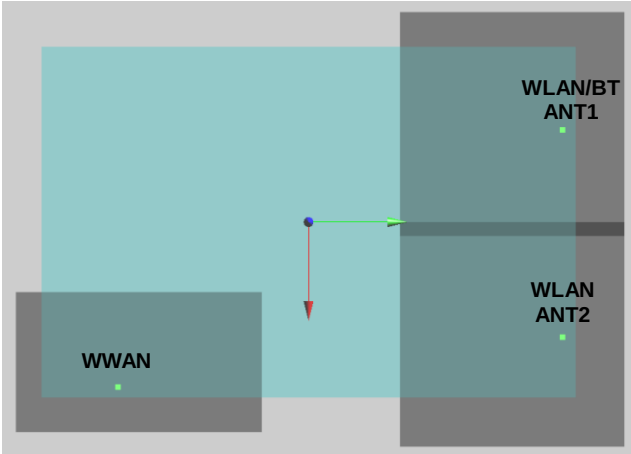
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 11	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B13	Bottom Face	0.445	14	70.5	-60.2	-9.75	165.5	1.59	0.01	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B13	Bottom Face	0.445	14	70.5	-60.2	-9.75	198.3	1.61	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



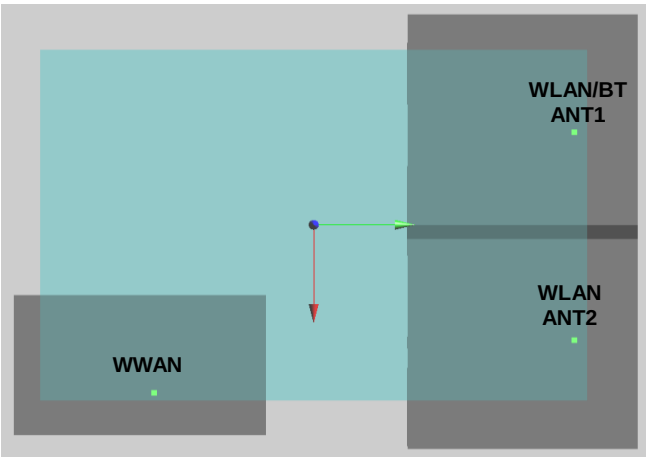
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 12	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B13	Bottom Face	1.082	0	68.9	-54	-9.89	159.2	2.22	0.02	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B13	Bottom Face	1.082	0	68.9	-54	-9.89	192.3	2.25	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



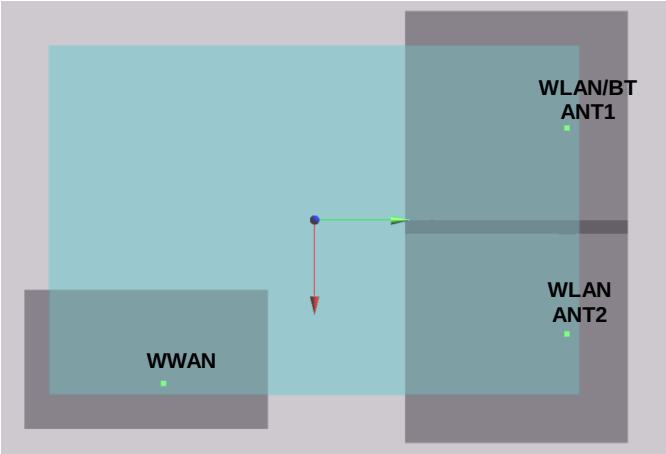
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 13	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B25	Bottom Face	0.182	14	70.5	-76.7	-8.96	181.8	1.32	0.01	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B25	Bottom Face	0.182	14	70.5	-76.7	-8.96	212.1	1.35	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



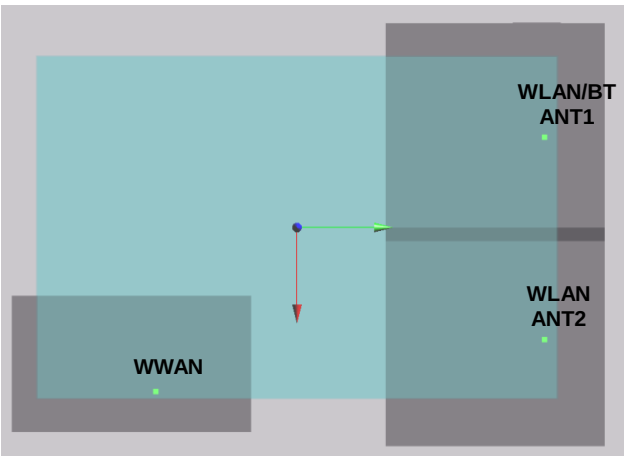
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 14	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B25	Bottom Face	0.746	0	70.4	-69.7	-8.36	174.8	1.89	0.01	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B25	Bottom Face	0.746	0	70.4	-69.7	-8.36	206.1	1.92	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



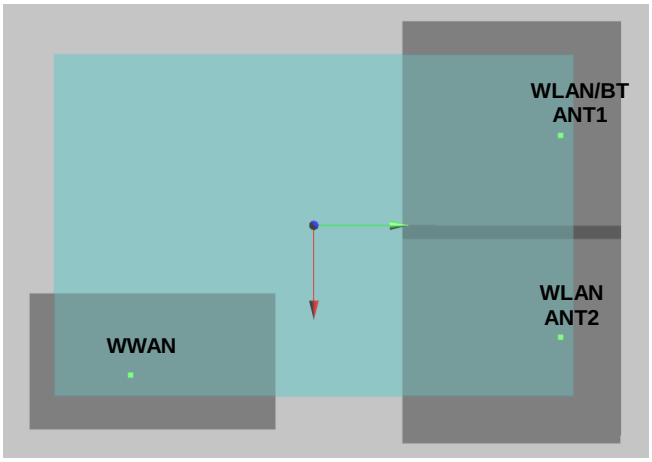
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 15	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B26	Bottom Face	0.683	14	70.5	-65	-9.67	170.3	1.83	0.01	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B26	Bottom Face	0.683	14	70.5	-65	-9.67	202.2	1.85	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



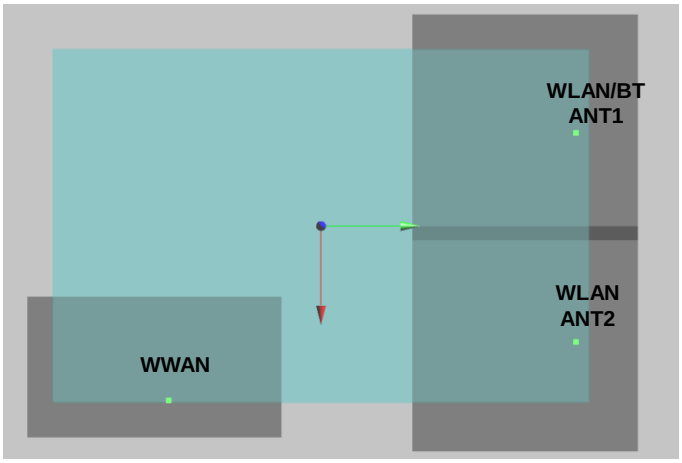
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 16	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B26	Bottom Face	1.141	0	68.8	-55.6	-9.81	160.8	2.28	0.02	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B26	Bottom Face	1.141	0	68.8	-55.6	-9.81	193.5	2.31	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



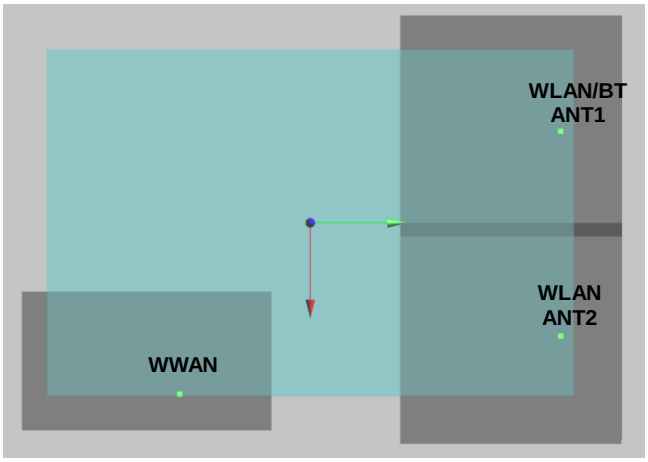
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 17	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B30	Bottom Face	0.416	14	66	-80.6	-1.19	185.1	1.56	0.01	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B30	Bottom Face	0.416	14	66	-80.6	-1.19	212.9	1.59	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



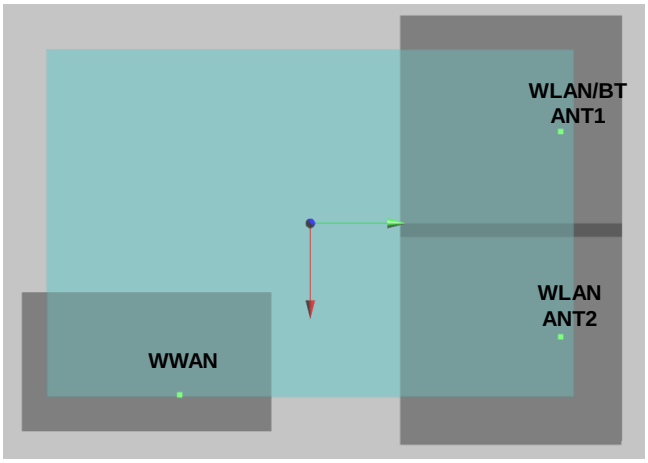
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 18	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B30	Bottom Face	0.965	0	72.4	-70	-0.18	175.1	2.11	0.02	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B30	Bottom Face	0.965	0	72.4	-70	-0.18	207.2	2.13	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



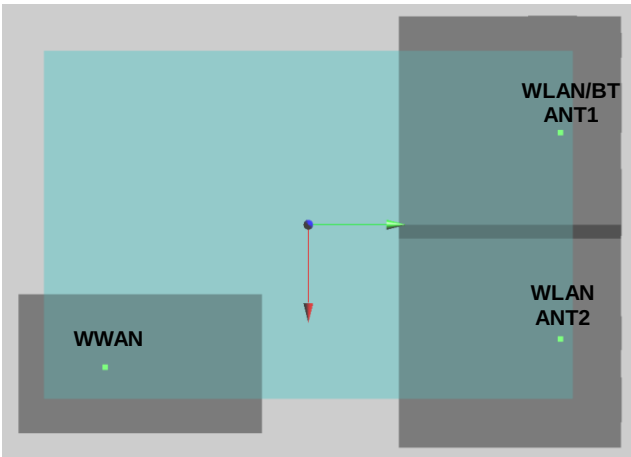
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 19	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B41	Bottom Face	0.247	14	74.4	-57.6	-1.19	163.1	1.39	0.01	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B41	Bottom Face	0.247	14	74.4	-57.6	-1.19	198.1	1.42	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



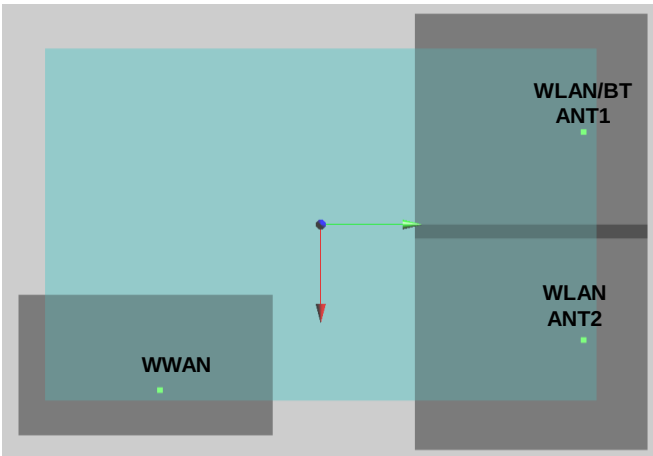
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 20	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B41	Bottom Face	0.404	0	82.6	-67.8	-0.37	174.4	1.55	0.01	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B41	Bottom Face	0.404	0	82.6	-67.8	-0.37	211.1	1.57	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



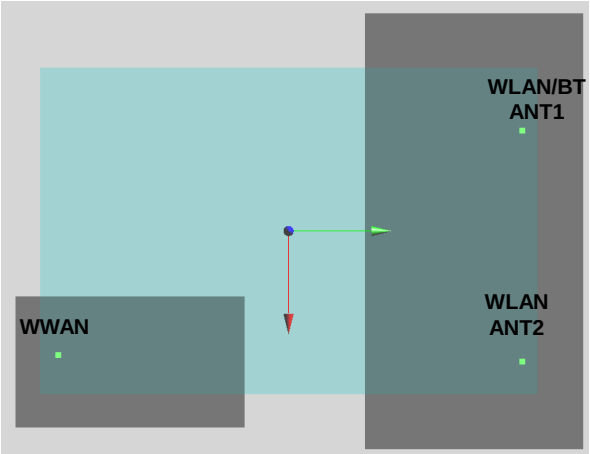
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 21	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B66	Bottom Face	0.316	14	63.1	-84.3	-8.94	188.8	1.46	0.01	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B66	Bottom Face	0.316	14	63.1	-84.3	-8.94	214.9	1.49	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



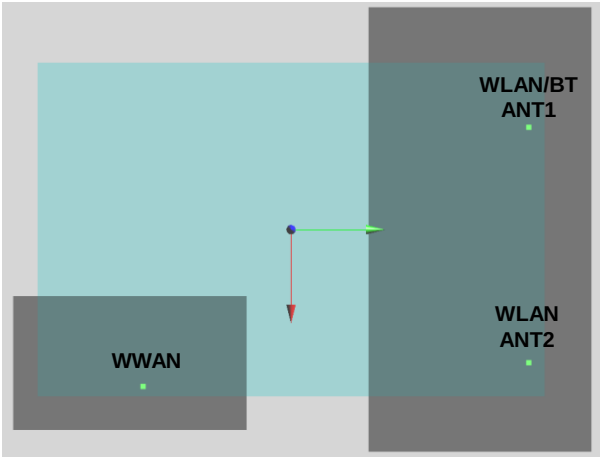
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 22	WLAN2.4G_Ant 1	Bottom Face	1.142	0	52.46	104	0.29	92.8	2.31	0.04	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B66	Bottom Face	1.179	0	68.9	-68.7	-7.93	173.7	2.32	0.02	Not required
	WLAN2.4G_Ant 1		1.142	0	52.46	104	0.29				
	LTE B66	Bottom Face	1.179	0	68.9	-68.7	-7.93	204.4	2.35	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				



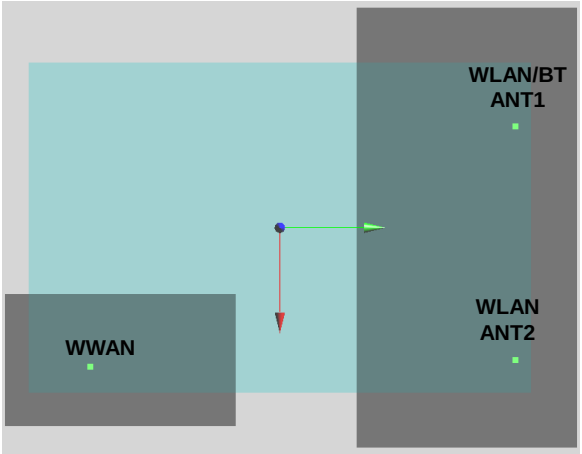
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 23	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	WCDMA II	Bottom Face	0.422	14	57	-103.9	-8.61	210.3	1.09	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	WCDMA II	Bottom Face	0.422	14	57	-103.9	-8.61	230.6	1.62	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



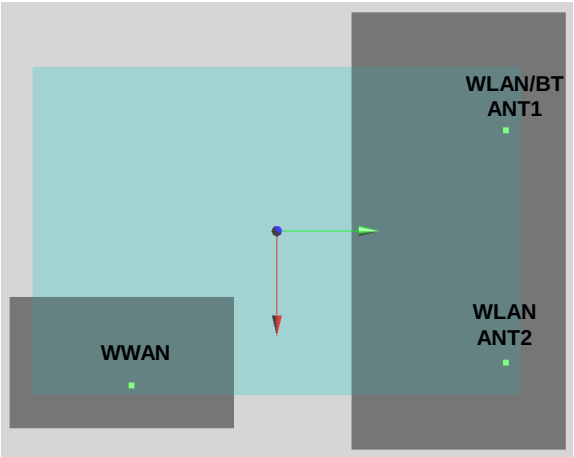
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 24	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	WCDMA II	Bottom Face	0.989	0	68.9	-68.1	-7.51	174.7	1.65	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	WCDMA II	Bottom Face	0.989	0	68.9	-68.1	-7.51	204.4	2.19	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



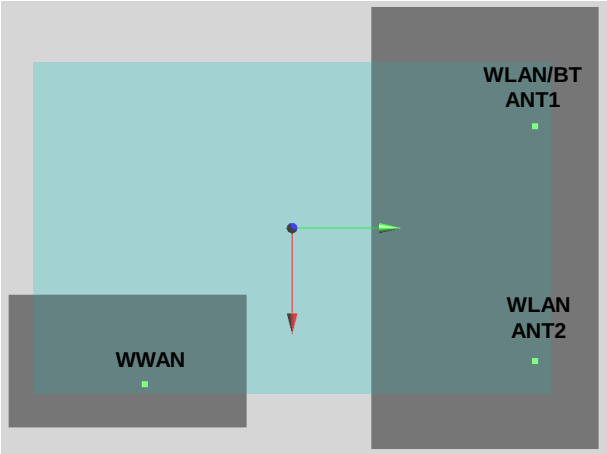
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 25	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	WCDMA IV	Bottom Face	0.639	14	64.6	-81.2	-8.9	187.7	1.30	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	WCDMA IV	Bottom Face	0.639	14	64.6	-81.2	-8.9	213.7	1.84	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



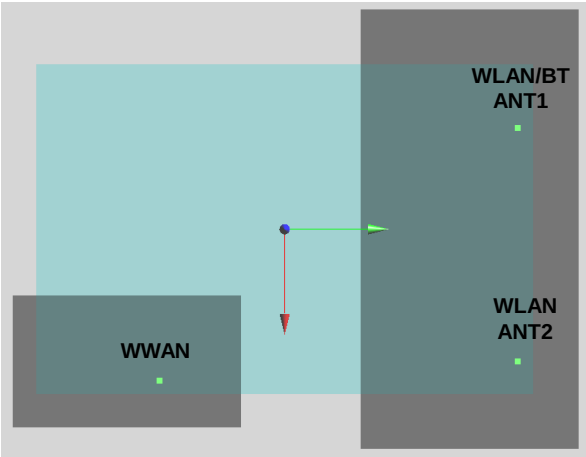
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 26	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	WCDMA IV	Bottom Face	1.155	0	68.9	-69.6	-8.18	176.2	1.82	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	WCDMA IV	Bottom Face	1.155	0	68.9	-69.6	-8.18	205.7	2.35	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



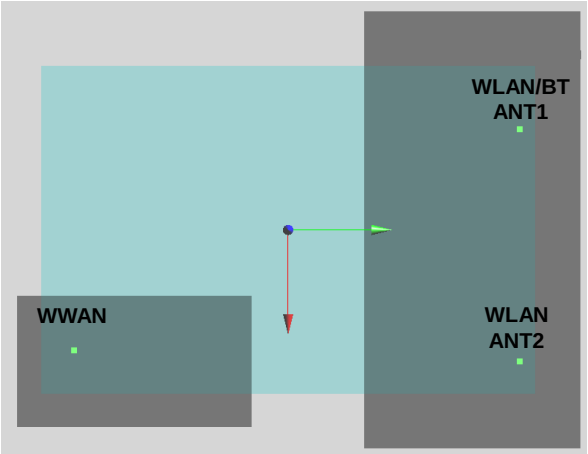
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 27	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	WCDMA V	Bottom Face	0.62	14	70.5	-65	-9.67	171.8	1.28	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	WCDMA V	Bottom Face	0.62	14	70.5	-65	-9.67	202.7	1.82	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



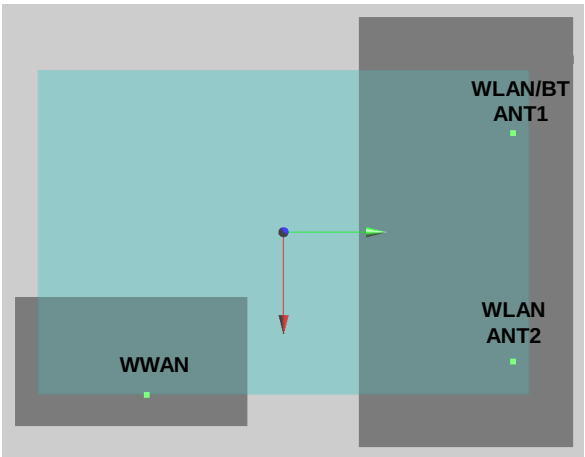
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 28	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	WCDMA V	Bottom Face	1.077	0	69	-57.5	-9.4	164.2	1.74	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	WCDMA V	Bottom Face	1.077	0	69	-57.5	-9.4	195.6	2.28	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



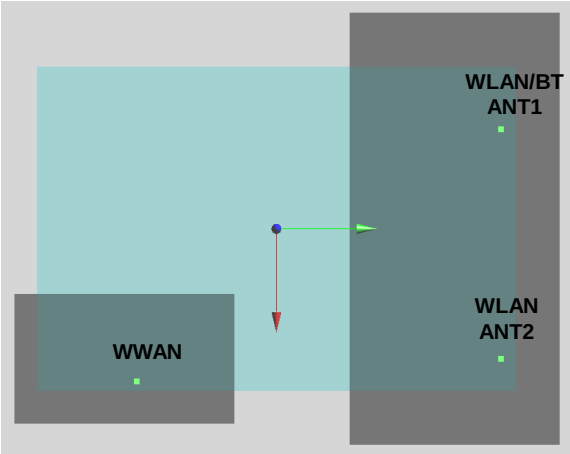
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 29	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B7	Bottom Face	0.522	14	54.2	-98.6	-1.19	204.9	1.19	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	LTE B7	Bottom Face	0.522	14	54.2	-98.6	-1.19	224.5	1.72	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



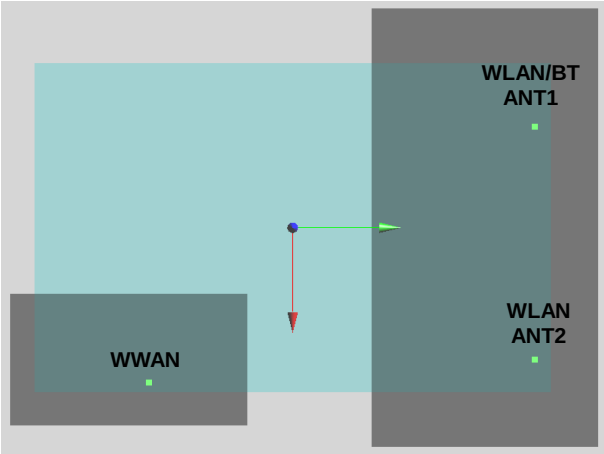
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 30	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B7	Bottom Face	0.472	0	72.6	-67.8	-0.86	174.4	1.14	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	LTE B7	Bottom Face	0.472	0	72.6	-67.8	-0.86	205.9	1.67	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



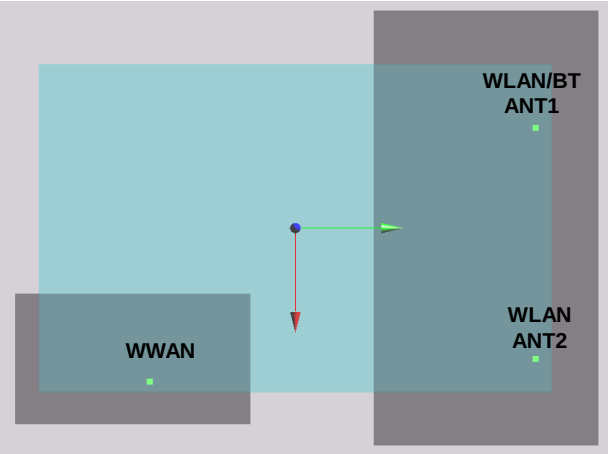
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 31	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B12	Bottom Face	0.356	14	68.9	-66.5	-9.69	173.2	1.02	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	LTE B12	Bottom Face	0.356	14	68.9	-66.5	-9.69	203.1	1.56	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



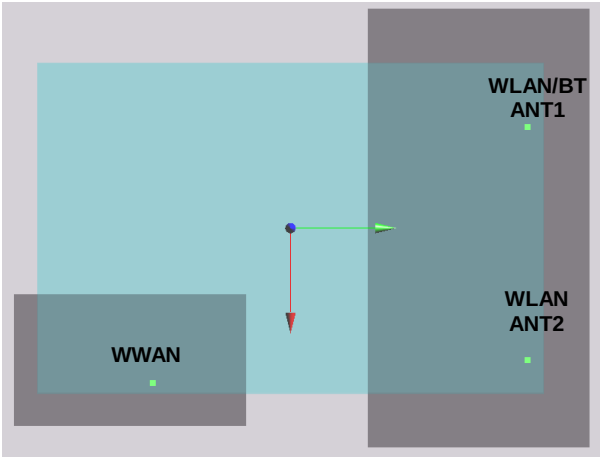
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 32	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B12	Bottom Face	1.178	0	68.9	-55.5	-9.46	162.2	1.84	0.02	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	LTE B12	Bottom Face	1.178	0	68.9	-55.5	-9.46	193.8	2.38	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



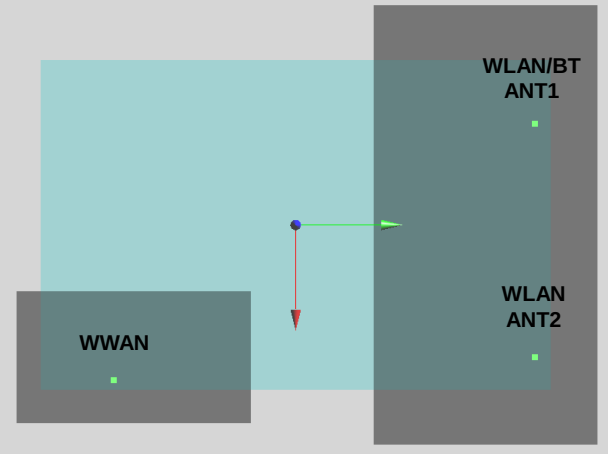
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 33	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B13	Bottom Face	0.445	14	70.5	-60.2	-9.75	167.0	1.11	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	LTE B13	Bottom Face	0.445	14	70.5	-60.2	-9.75	198.7	1.64	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



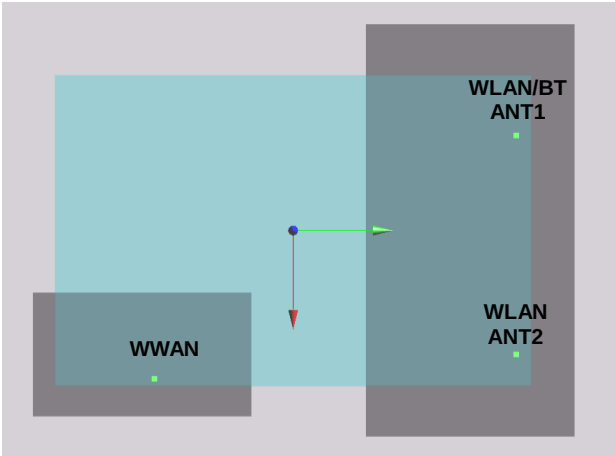
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 34	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B13	Bottom Face	1.082	0	68.9	-54	-9.89	160.7	1.75	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	LTE B13	Bottom Face	1.082	0	68.9	-54	-9.89	192.6	2.28	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



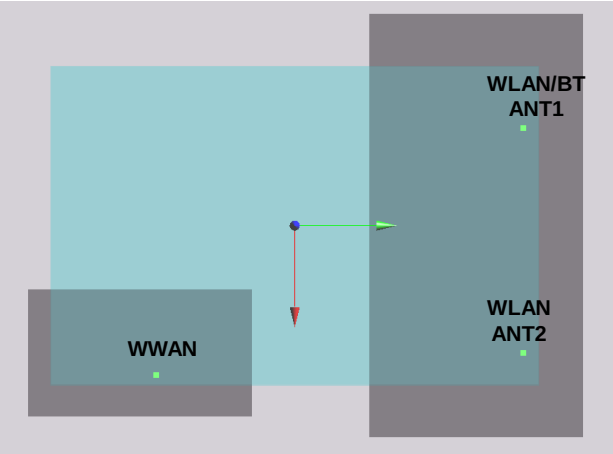
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 35	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B25	Bottom Face	0.182	14	70.5	-76.7	-8.96	183.4	0.85	0.00	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	LTE B25	Bottom Face	0.182	14	70.5	-76.7	-8.96	212.6	1.38	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



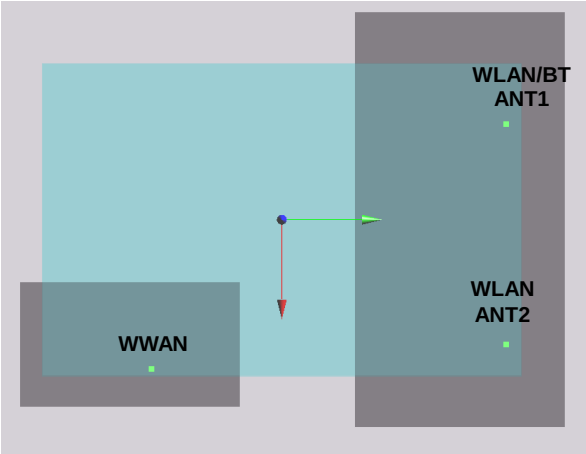
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 36	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B25	Bottom Face	0.746	0	70.5	-76.7	-8.96	183.4	1.39	0.01	Not required
	WLAN5GHz_Ant 1		0.639	0	60.8	106.2	0.22				
	LTE B25	Bottom Face	0.746	0	70.5	-76.7	-8.96	214.7	1.93	0.01	Not required
	WLAN5GHz_Ant 2		1.187	0	-38.78	107.8	2.43				



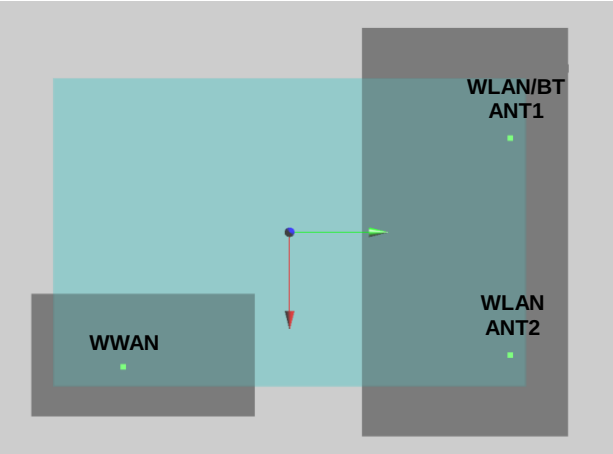
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 37	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B26	Bottom Face	0.683	14	70.5	-65	-9.67	171.8	1.35	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	LTE B26	Bottom Face	0.683	14	70.5	-65	-9.67	202.7	1.88	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



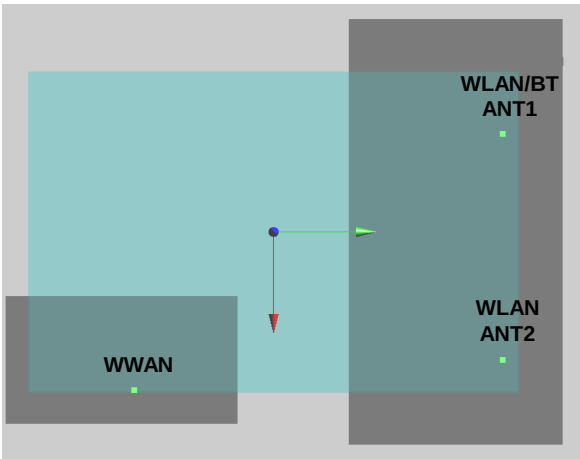
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 38	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B26	Bottom Face	1.141	0	68.8	-55.6	-9.81	162.3	1.81	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	LTE B26	Bottom Face	1.141	0	68.8	-55.6	-9.81	193.9	2.34	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



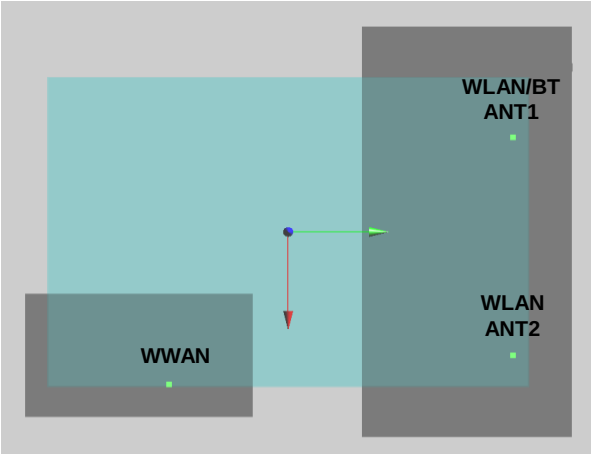
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 39	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B30	Bottom Face	0.416	14	66	-80.6	-1.19	186.9	1.08	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	LTE B30	Bottom Face	0.416	14	66	-80.6	-1.19	213.6	1.62	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



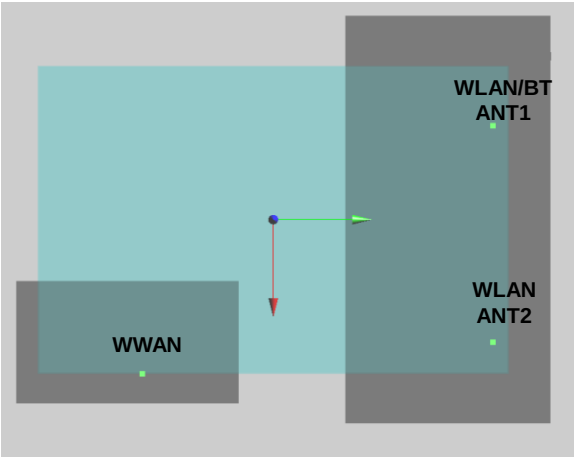
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 40	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B30	Bottom Face	0.965	0	72.4	-70	-0.18	176.6	1.63	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	LTE B30	Bottom Face	0.965	0	72.4	-70	-0.18	207.7	2.16	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



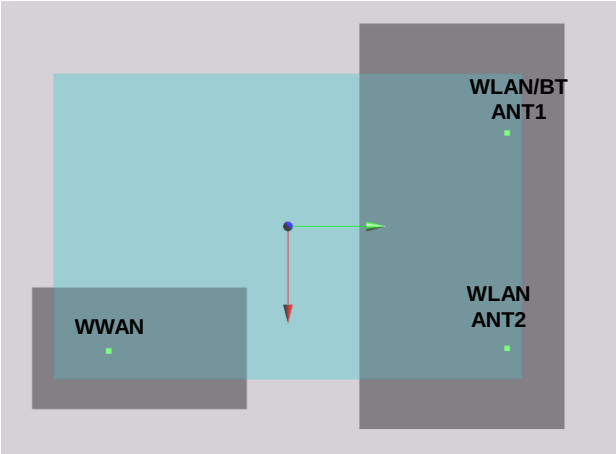
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 41	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B41	Bottom Face	0.247	14	74.4	-57.6	-1.19	164.4	0.91	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	LTE B41	Bottom Face	0.247	14	74.4	-57.6	-1.19	198.4	1.45	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



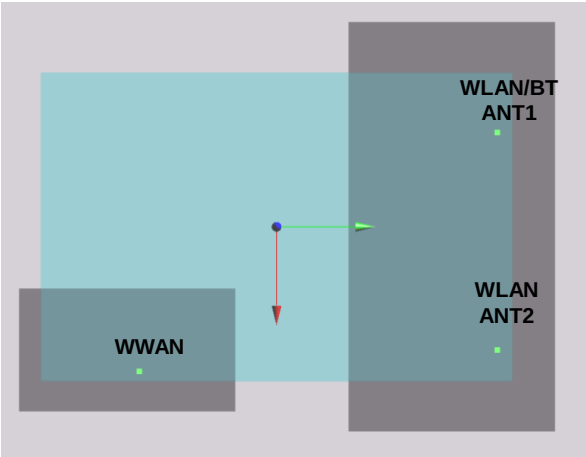
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 42	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B41	Bottom Face	0.404	0	82.6	-67.8	-0.37	175.4	1.07	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	LTE B41	Bottom Face	0.404	0	82.6	-67.8	-0.37	211.4	1.60	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



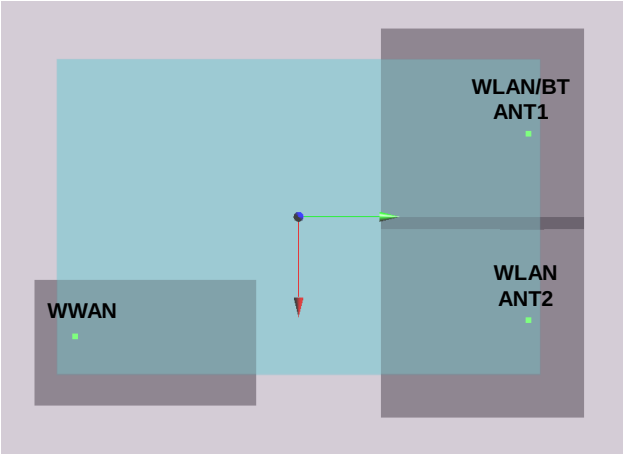
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 43	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B66	Bottom Face	0.316	14	63.1	-84.3	-8.94	190.7	0.98	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	LTE B66	Bottom Face	0.316	14	63.1	-84.3	-8.94	215.7	1.52	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



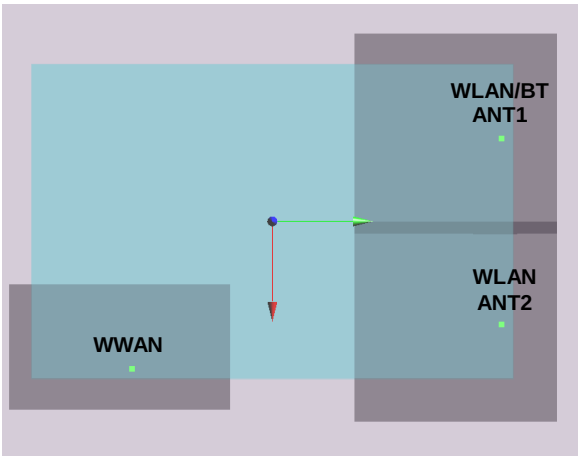
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 44	WLAN5G_Ant 1	Bottom Face	0.664	0	60.8	106.2	0.22	98.0	1.86	0.03	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B66	Bottom Face	1.179	0	68.9	-68.7	-7.93	175.3	1.84	0.01	Not required
	WLAN5G_Ant 1		0.664	0	60.8	106.2	0.22				
	LTE B66	Bottom Face	1.179	0	68.9	-68.7	-7.93	204.9	2.38	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				



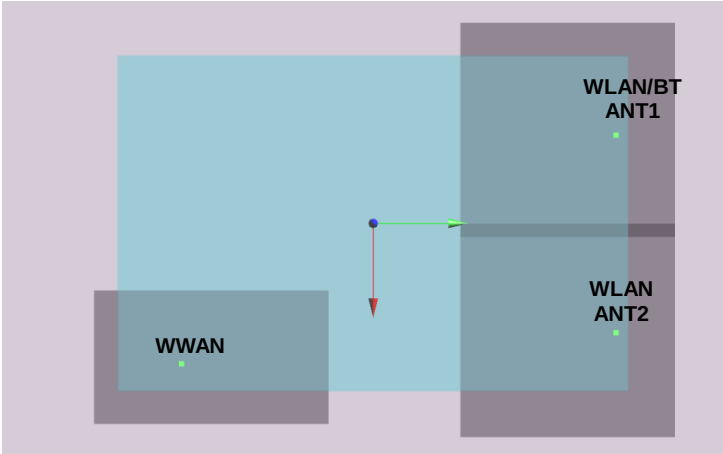
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 45	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	WCDMA II	Bottom Face	0.422	14	57	-103.9	-8.61	229.6	1.59	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	WCDMA II	Bottom Face	0.422	14	57	-103.9	-8.61	212.9	0.95	0.00	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



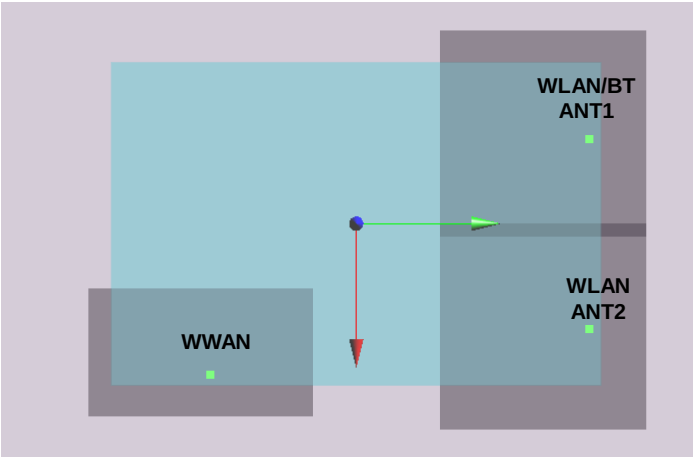
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 46	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	WCDMA II	Bottom Face	0.989	0	68.9	-68.1	-7.51	203.9	2.16	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	WCDMA II	Bottom Face	0.989	0	68.9	-68.1	-7.51	177.7	1.52	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



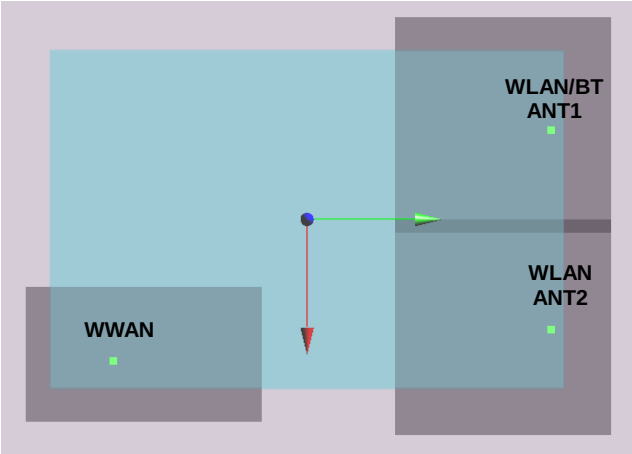
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 47	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	WCDMA IV	Bottom Face	0.639	14	64.6	-81.2	-8.9	212.9	1.81	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	WCDMA IV	Bottom Face	0.639	14	64.6	-81.2	-8.9	190.5	1.17	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



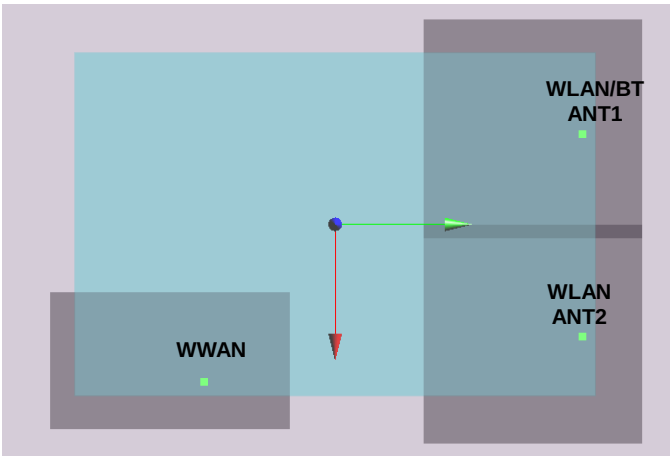
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 48	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	WCDMA IV	Bottom Face	1.155	0	68.9	-69.6	-8.18	205.2	2.32	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	WCDMA IV	Bottom Face	1.155	0	68.9	-69.6	-8.18	179.3	1.68	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



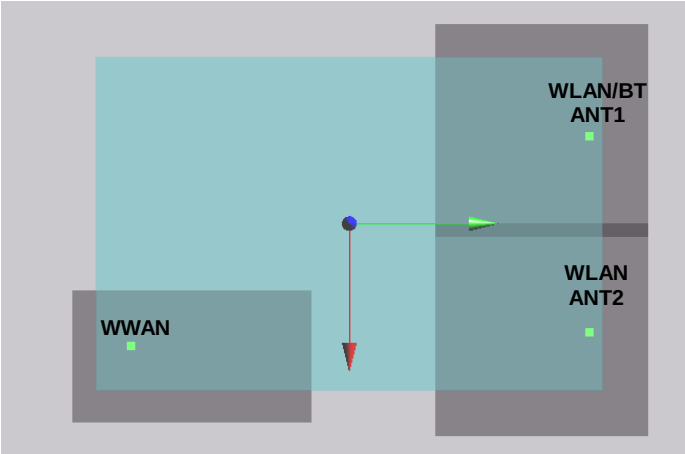
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 49	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	WCDMA V	Bottom Face	0.62	14	70.5	-65	-9.67	202.2	1.79	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	WCDMA V	Bottom Face	0.62	14	70.5	-65	-9.67	174.9	1.15	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



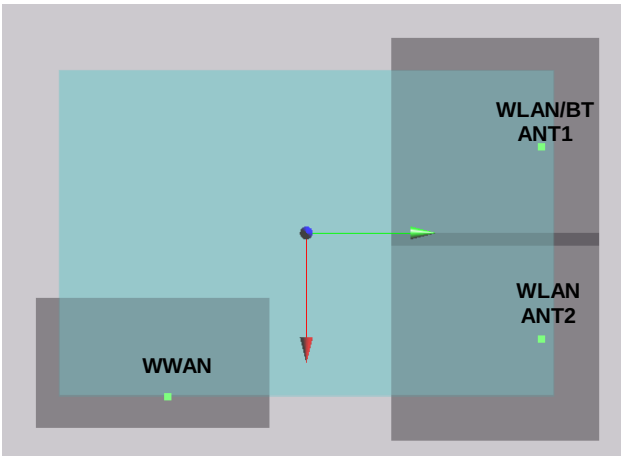
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 50	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	WCDMA V	Bottom Face	1.077	0	69	-57.5	-9.4	195.2	2.25	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	WCDMA V	Bottom Face	1.077	0	69	-57.5	-9.4	167.3	1.61	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



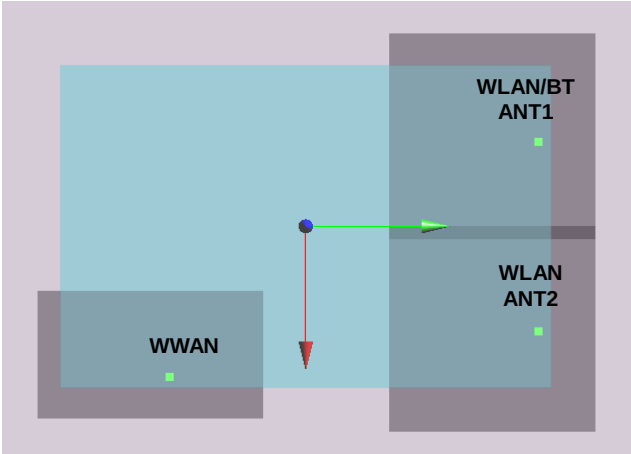
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 51	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B7	Bottom Face	0.522	14	54.2	-98.6	-1.19	229.3	1.68	0.01	Not required
	WLAN2.4G_Ant 2		1.153	0	-37.55	111.59	-1.13				
	LTE B7	Bottom Face	0.522	14	54.2	-98.6	-1.19	207.3	1.05	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



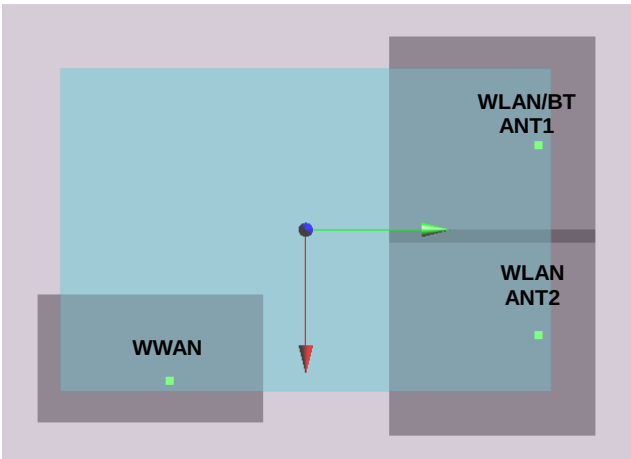
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 52	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B7	Bottom Face	0.472	0	72.6	-67.8	-0.86	205.5	1.64	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B7	Bottom Face	0.472	0	72.6	-67.8	-0.86	177.5	1.00	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



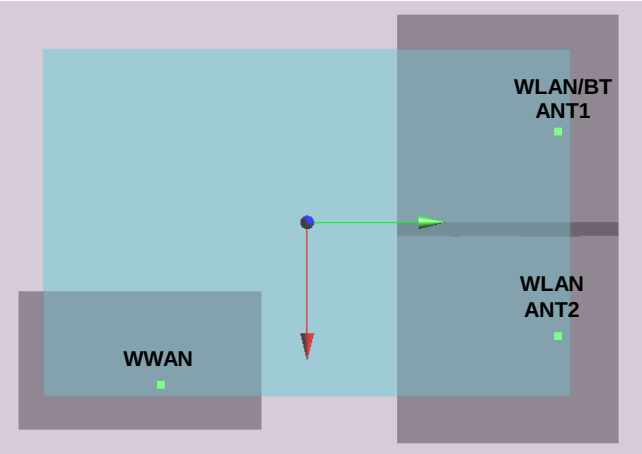
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 53	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B12	Bottom Face	0.356	14	68.9	-66.5	-9.69	202.6	1.53	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B12	Bottom Face	0.356	14	68.9	-66.5	-9.69	176.3	0.88	0.00	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



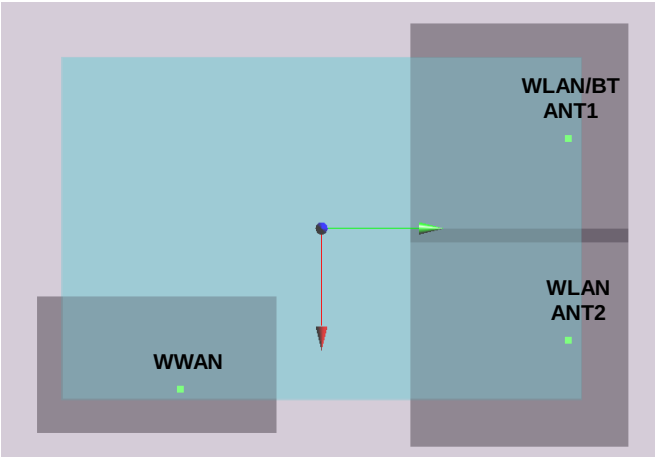
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 54	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B12	Bottom Face	1.178	0	68.9	-55.5	-9.46	193.5	2.35	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B12	Bottom Face	1.178	0	68.9	-55.5	-9.46	165.3	1.71	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



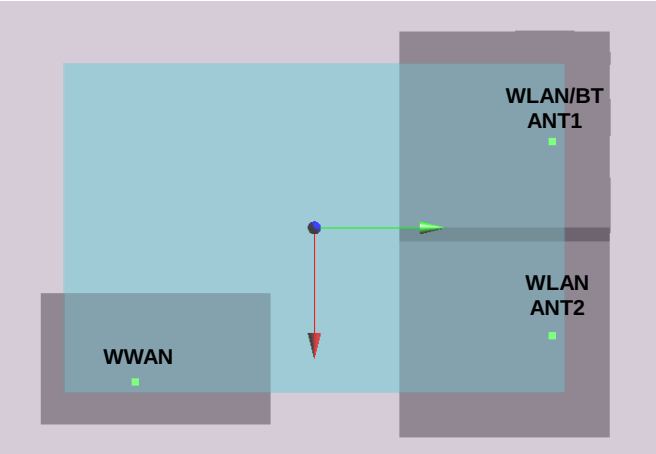
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 55	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B13	Bottom Face	0.445	14	70.5	-60.2	-9.75	198.3	1.61	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B13	Bottom Face	0.445	14	70.5	-60.2	-9.75	170.2	0.97	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



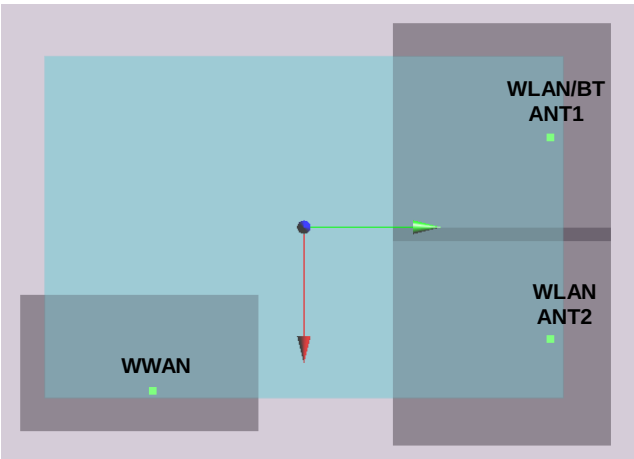
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 56	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B13	Bottom Face	1.082	0	68.9	-54	-9.89	192.3	2.25	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B13	Bottom Face	1.082	0	68.9	-54	-9.89	163.9	1.61	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



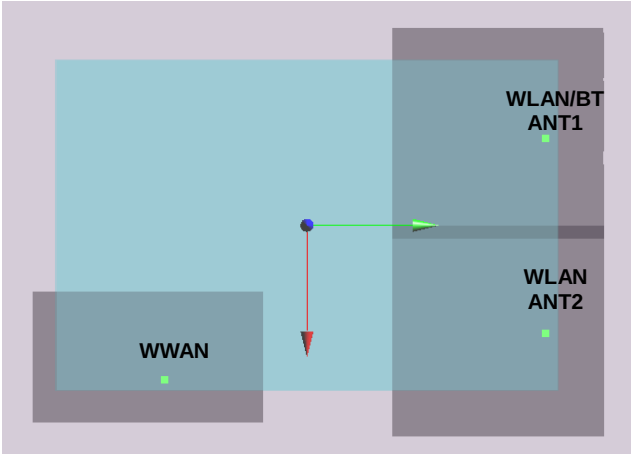
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 57	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B25	Bottom Face	0.182	14	70.5	-76.7	-8.96	212.1	1.35	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B25	Bottom Face	0.182	14	70.5	-76.7	-8.96	186.5	0.71	0.00	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



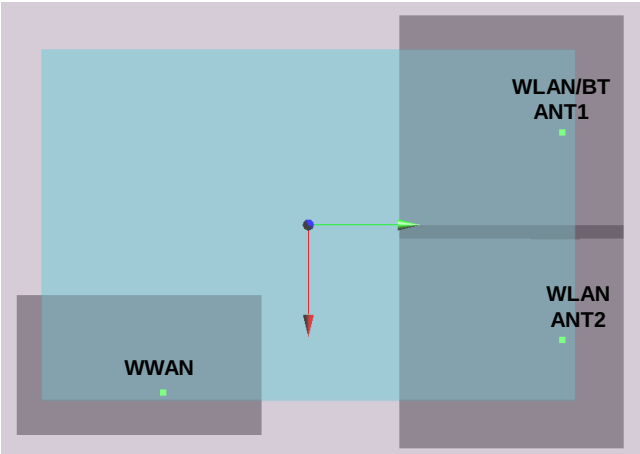
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 58	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B25	Bottom Face	0.746	0	70.4	-69.7	-8.36	206.1	1.92	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B25	Bottom Face	0.746	0	70.4	-69.7	-8.36	179.5	1.27	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



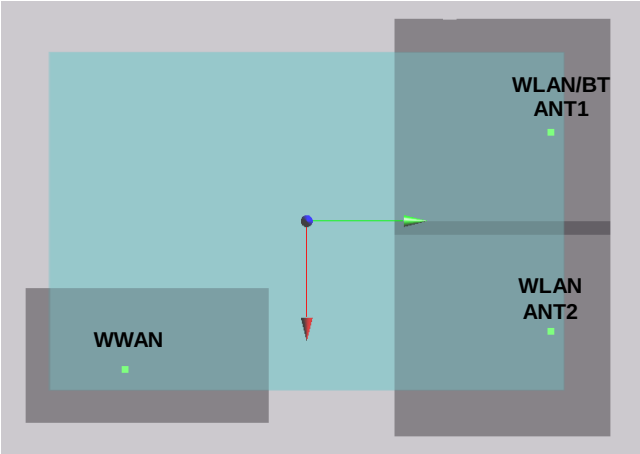
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 59	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B26	Bottom Face	0.683	14	70.5	-65	-9.67	202.2	1.85	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B26	Bottom Face	0.683	14	70.5	-65	-9.67	174.9	1.21	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



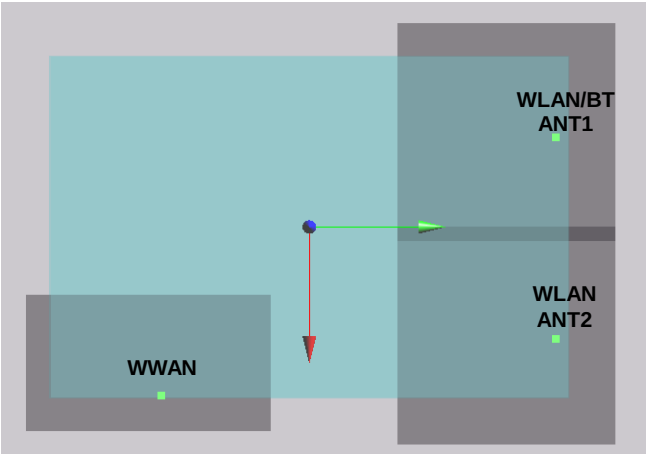
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 60	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B26	Bottom Face	1.141	0	68.8	-55.6	-9.81	193.5	2.31	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B26	Bottom Face	1.141	0	68.8	-55.6	-9.81	165.5	1.67	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



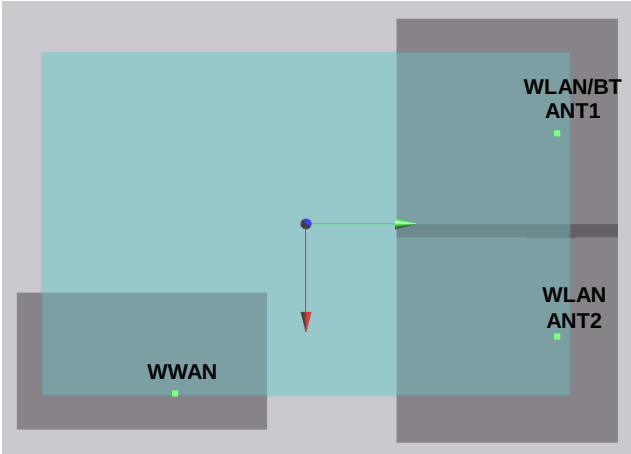
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 61	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B30	Bottom Face	0.416	14	66	-80.6	-1.19	212.9	1.59	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B30	Bottom Face	0.416	14	66	-80.6	-1.19	189.7	0.94	0.00	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



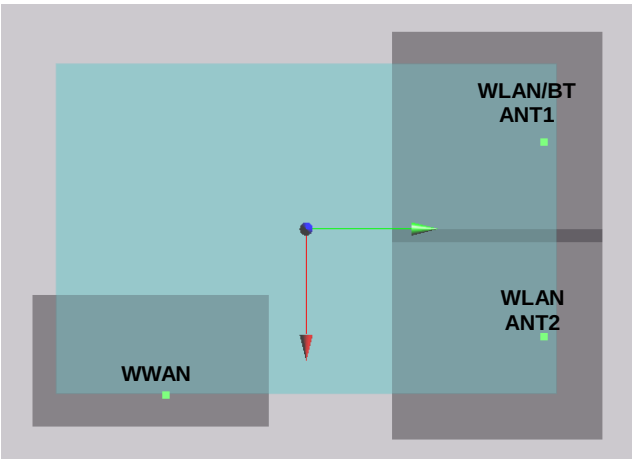
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 62	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B30	Bottom Face	0.965	0	72.4	-70	-0.18	207.2	2.13	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B30	Bottom Face	0.965	0	72.4	-70	-0.18	179.7	1.49	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



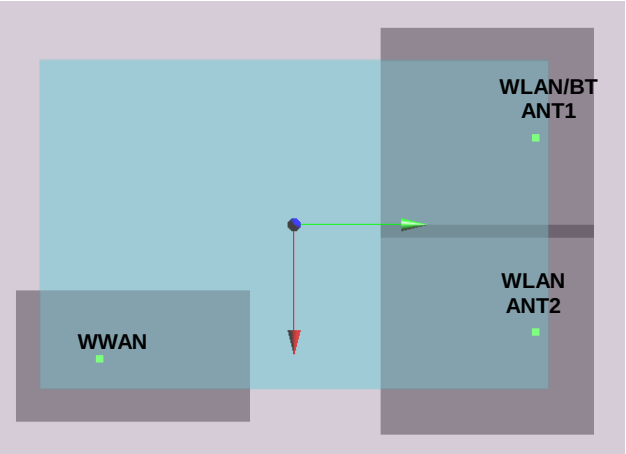
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 63	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B41	Bottom Face	0.247	14	74.4	-57.6	-1.19	198.1	1.42	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B41	Bottom Face	0.247	14	74.4	-57.6	-1.19	167.6	0.78	0.00	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



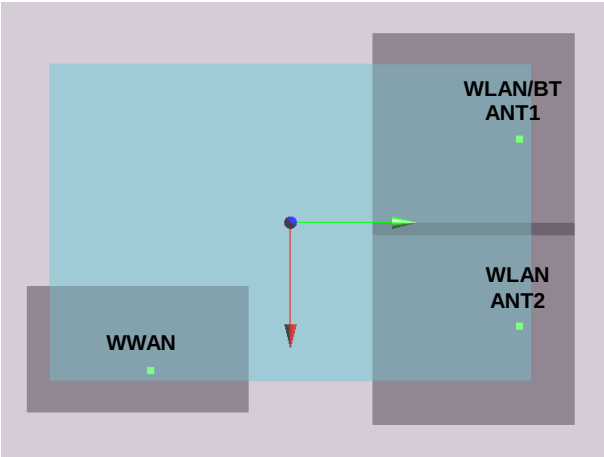
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 64	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B41	Bottom Face	0.404	0	82.6	-67.8	-0.37	211.1	1.57	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B41	Bottom Face	0.404	0	82.6	-67.8	-0.37	178.9	0.93	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



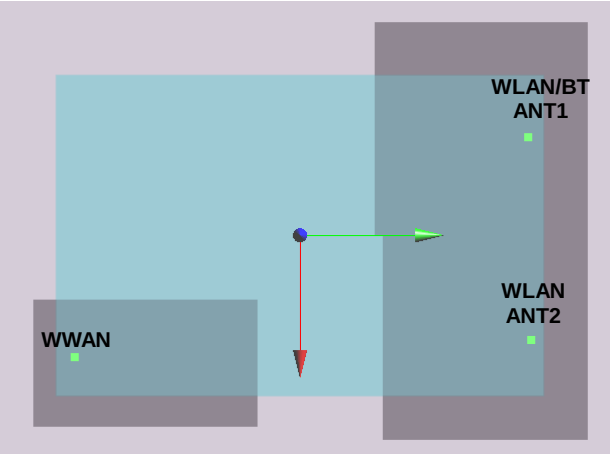
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 65	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B66	Bottom Face	0.316	14	63.1	-84.3	-8.94	214.9	1.49	0.01	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B66	Bottom Face	0.316	14	63.1	-84.3	-8.94	193.5	0.84	0.00	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



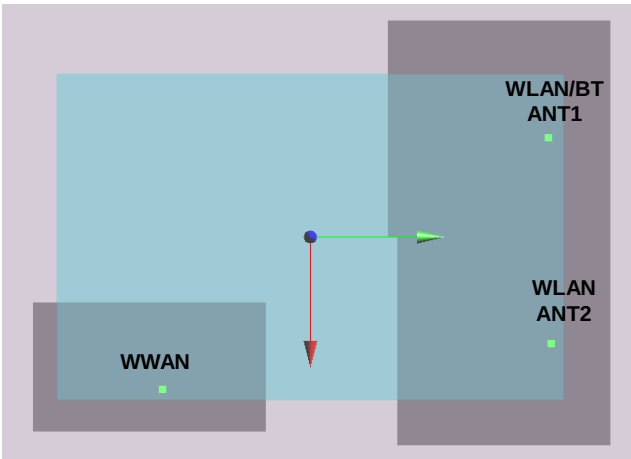
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 66	WLAN2.4G_Ant 2	Bottom Face	1.169	0	-40.37	103.8	1.26	93.7	1.70	0.02	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B66	Bottom Face	1.179	0	68.9	-68.7	-7.93	204.4	2.35	0.02	Not required
	WLAN2.4G_Ant 2		1.169	0	-40.37	103.8	1.26				
	LTE B66	Bottom Face	1.179	0	68.9	-68.7	-7.93	178.4	1.71	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



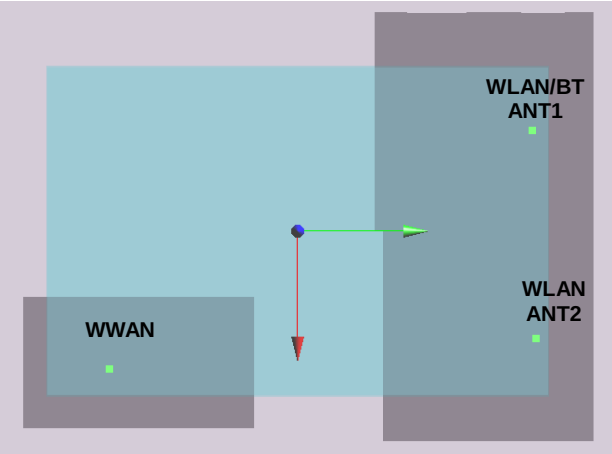
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 67	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	WCDMA II	Bottom Face	0.422	14	57	-103.9	-8.61	230.6	1.62	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	WCDMA II	Bottom Face	0.422	14	57	-103.9	-8.61	212.9	0.95	0.00	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



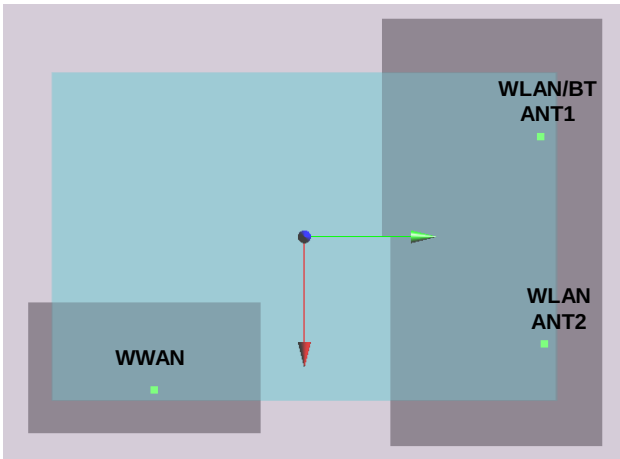
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 68	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	WCDMA II	Bottom Face	0.989	0	68.9	-68.1	-7.51	204.4	2.19	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	WCDMA II	Bottom Face	0.989	0	68.9	-68.1	-7.51	177.7	1.52	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



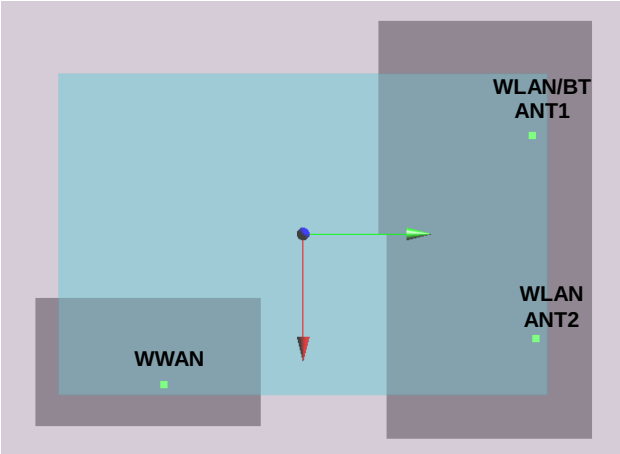
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 69	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	WCDMA IV	Bottom Face	0.639	14	64.6	-81.2	-8.9	213.7	1.84	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	WCDMA IV	Bottom Face	0.639	14	64.6	-81.2	-8.9	190.5	1.17	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



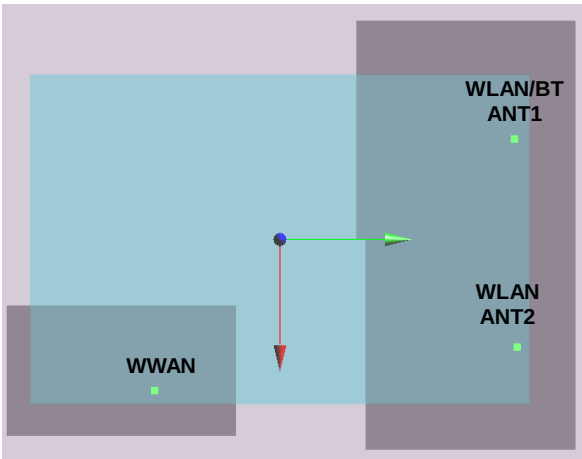
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 70	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	WCDMA IV	Bottom Face	1.155	0	68.9	-69.6	-8.18	205.7	2.35	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	WCDMA IV	Bottom Face	1.155	0	68.9	-69.6	-8.18	179.3	1.68	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



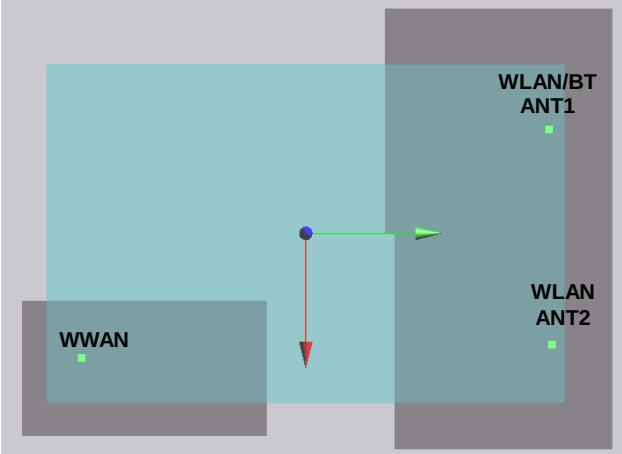
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 71	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	WCDMA V	Bottom Face	0.62	14	70.5	-65	-9.67	202.7	1.82	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	WCDMA V	Bottom Face	0.62	14	70.5	-65	-9.67	174.9	1.15	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



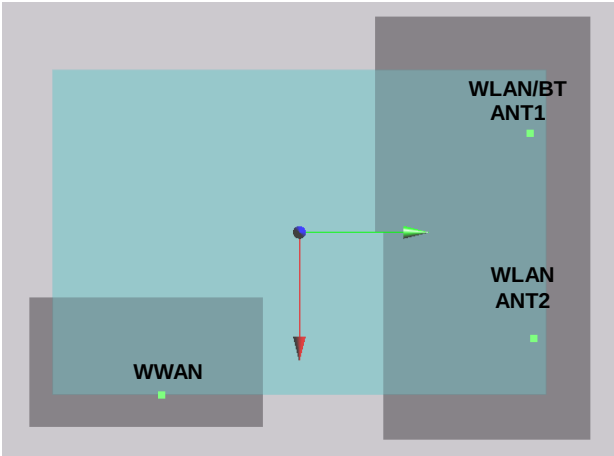
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 72	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	WCDMA V	Bottom Face	1.077	0	69	-57.5	-9.4	195.6	2.28	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	WCDMA V	Bottom Face	1.077	0	69	-57.5	-9.4	167.3	1.61	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



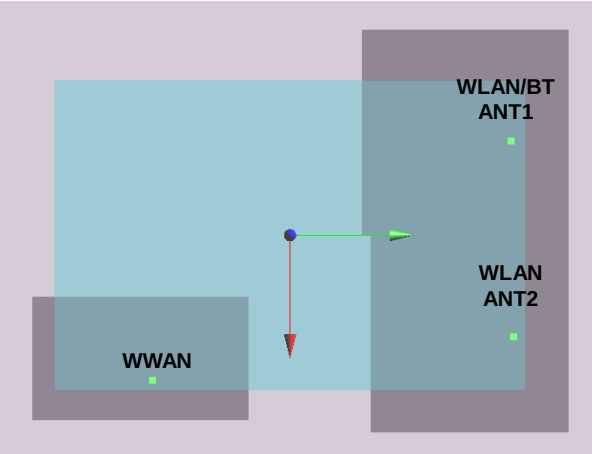
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 73	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B7	Bottom Face	0.522	14	54.2	-98.6	-1.19	224.5	1.72	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B7	Bottom Face	0.522	14	54.2	-98.6	-1.19	207.3	1.05	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



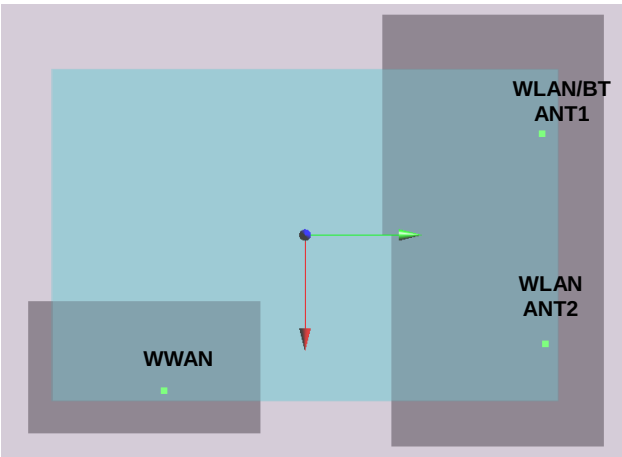
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 74	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B7	Bottom Face	0.472	0	72.6	-67.8	-0.86	205.9	1.67	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B7	Bottom Face	0.472	0	72.6	-67.8	-0.86	177.5	1.00	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



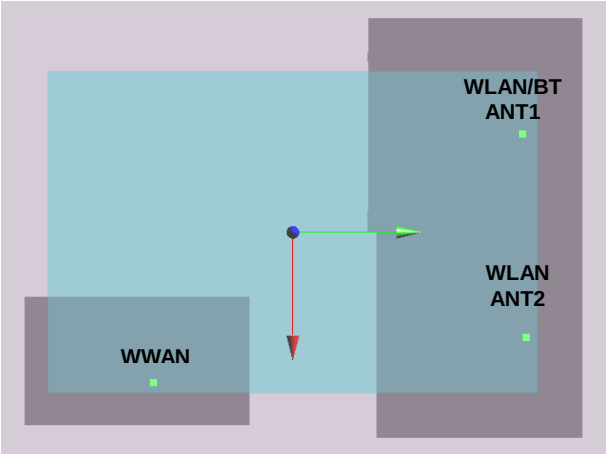
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 75	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B12	Bottom Face	0.356	14	68.9	-66.5	-9.69	203.1	1.56	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B12	Bottom Face	0.356	14	68.9	-66.5	-9.69	176.3	0.88	0.00	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



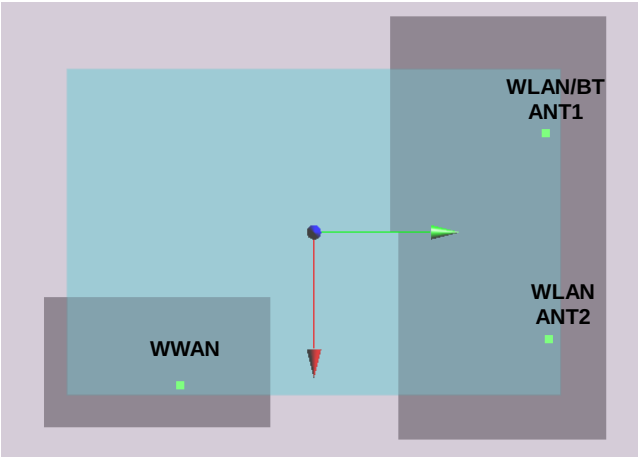
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 76	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B12	Bottom Face	1.178	0	68.9	-55.5	-9.46	193.8	2.38	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B12	Bottom Face	1.178	0	68.9	-55.5	-9.46	165.3	1.71	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



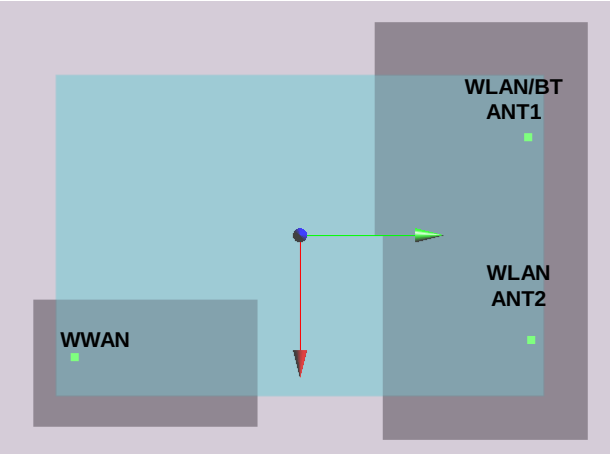
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 77	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B13	Bottom Face	0.445	14	70.5	-60.2	-9.75	198.7	1.64	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B13	Bottom Face	0.445	14	70.5	-60.2	-9.75	170.2	0.97	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



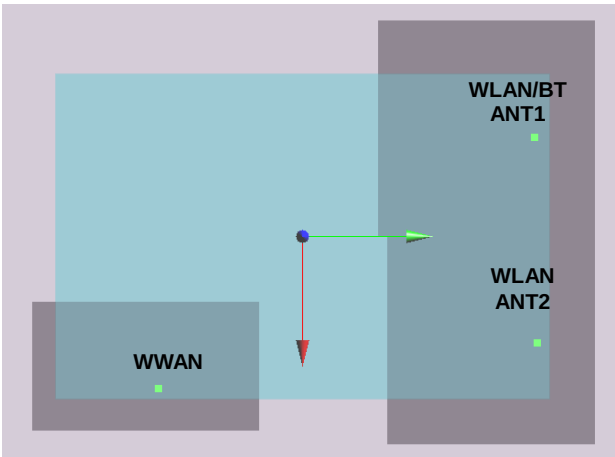
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 78	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B13	Bottom Face	1.082	0	68.9	-54	-9.89	192.6	2.28	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B13	Bottom Face	1.082	0	68.9	-54	-9.89	163.9	1.61	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



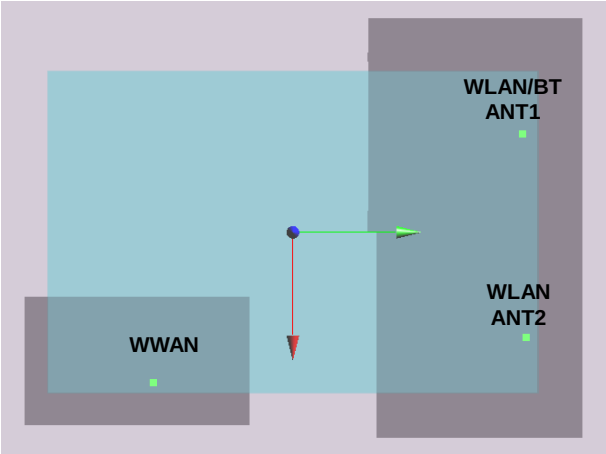
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 79	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B25	Bottom Face	0.182	14	70.5	-76.7	-8.96	212.6	1.38	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B25	Bottom Face	0.182	14	70.5	-76.7	-8.96	186.5	0.71	0.00	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



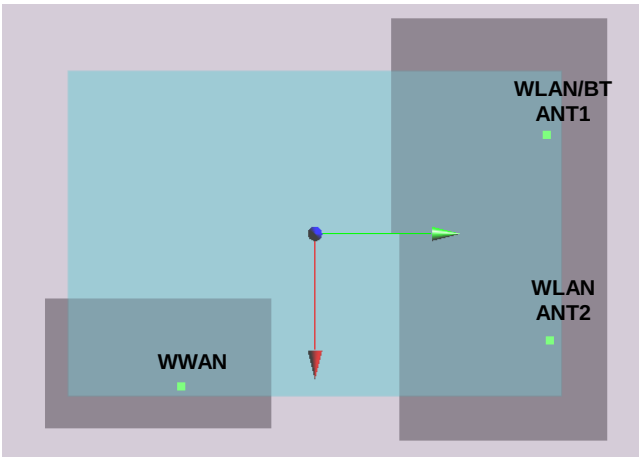
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 80	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B25	Bottom Face	0.746	0	70.4	-69.7	-8.36	206.6	1.95	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B25	Bottom Face	0.746	0	70.4	-69.7	-8.36	179.5	1.27	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



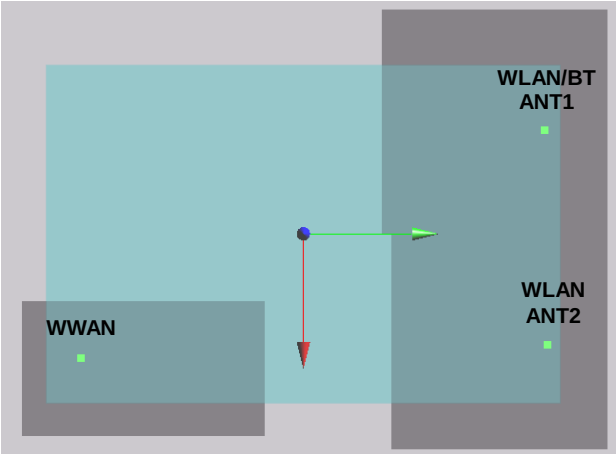
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 81	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B26	Bottom Face	0.683	14	70.5	-65	-9.67	202.7	1.88	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B26	Bottom Face	0.683	14	70.5	-65	-9.67	174.9	1.21	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



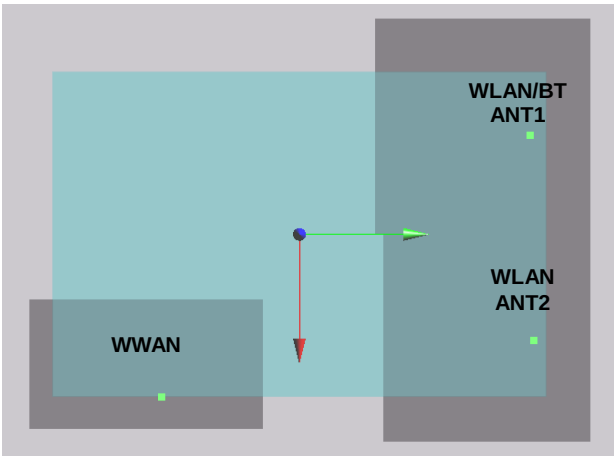
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 82	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B26	Bottom Face	1.141	0	68.8	-55.6	-9.81	193.9	2.34	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B26	Bottom Face	1.141	0	68.8	-55.6	-9.81	165.5	1.67	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



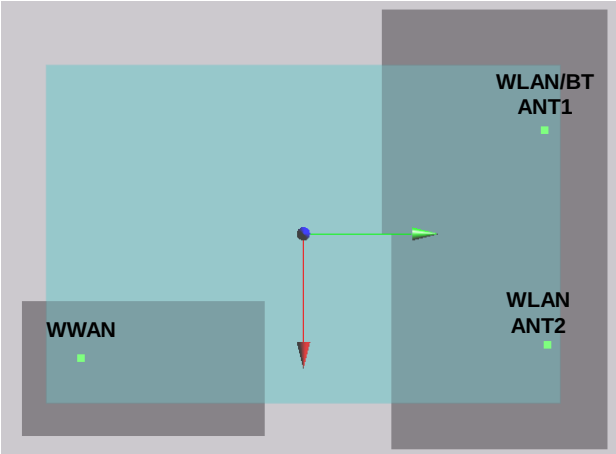
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 83	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B30	Bottom Face	0.416	14	66	-80.6	-1.19	213.6	1.62	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B30	Bottom Face	0.416	14	66	-80.6	-1.19	189.7	0.94	0.00	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



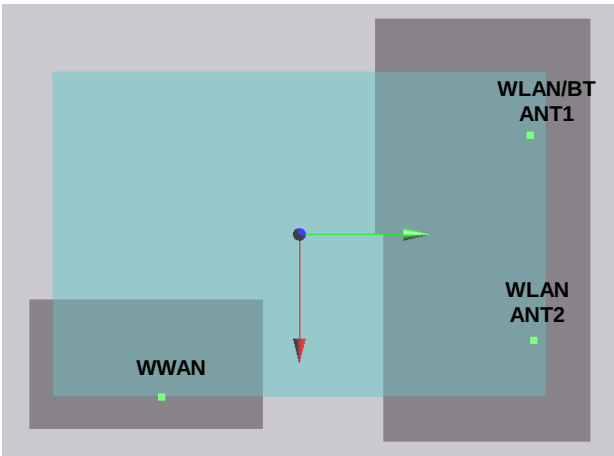
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 84	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B30	Bottom Face	0.965	0	72.4	-70	-0.18	207.7	2.16	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B30	Bottom Face	0.965	0	72.4	-70	-0.18	179.7	1.49	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



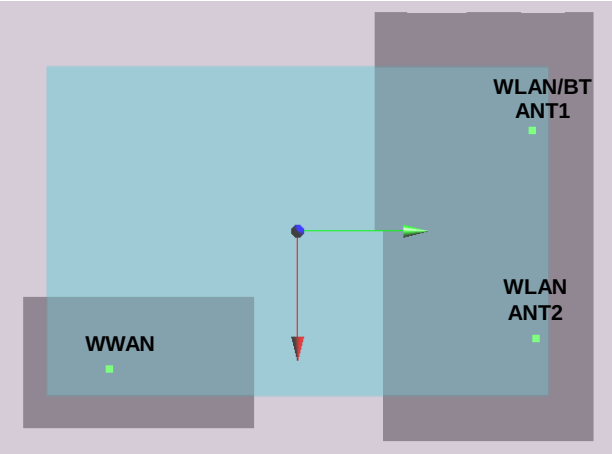
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 85	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B41	Bottom Face	0.247	14	74.4	-57.6	-1.19	198.4	1.45	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B41	Bottom Face	0.247	14	74.4	-57.6	-1.19	167.6	0.78	0.00	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



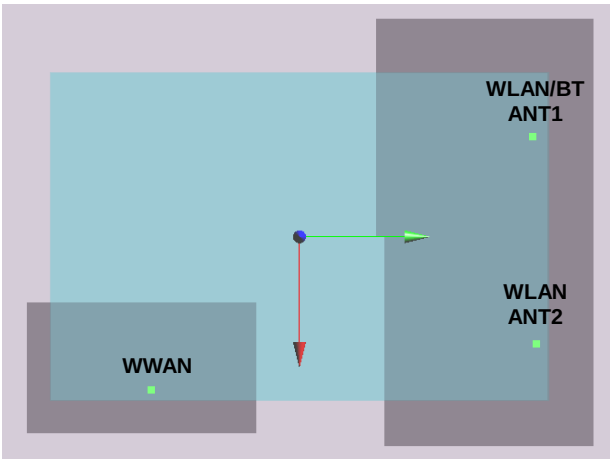
	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 86	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B41	Bottom Face	0.404	0	82.6	-67.8	-0.37	211.4	1.60	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B41	Bottom Face	0.404	0	82.6	-67.8	-0.37	178.9	0.93	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 87	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B66	Bottom Face	0.316	14	63.1	-84.3	-8.94	215.7	1.52	0.01	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B66	Bottom Face	0.316	14	63.1	-84.3	-8.94	193.5	0.84	0.00	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 88	WLAN5G_Ant 2	Bottom Face	1.199	0	-37.2	106.4	0.75	90.5	1.73	0.03	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				
	LTE B66	Bottom Face	1.179	0	68.9	-68.7	-7.93	204.9	2.38	0.02	Not required
	WLAN5G_Ant 2		1.199	0	-37.2	106.4	0.75				
	LTE B66	Bottom Face	1.179	0	68.9	-68.7	-7.93	178.4	1.71	0.01	Not required
	BT_Ant 1		0.528	0	53.2	108.6	3.36				



Test Engineer: Tom Jiang Galen Chang Iran Wang Mood Huang Wilson Lin White Huang Jay Jian Willy Yu Andy Jiang Randy Lin Neil Hsiang Carter Chuang and Ted Hsieh

16. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, 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. For this device, the highest measured 1-g SAR is less 1.5W/kg. Therefore, the measurement uncertainty table is not required in this report.

17. References

[1] FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules and Regulations”

[2] ANSI/IEEE Std. C95.1-1992, “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz”, September 1992

[3] IEEE Std. 1528-2013, “IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, Sep 2013

[4] SPEAG DASY System Handbook

[5] FCC KDB 248227 D01 v02r02, “SAR Guidance for IEEE 802.11 (WiFi) Transmitters”, Oct 2015.

[6] FCC KDB 447498 D01 v06, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, Oct 2015

[7] FCC KDB 941225 D01 v03r01, “3G SAR MEAUREMENT PROCEDURES”, Oct 2015

[8] FCC KDB 941225 D05 v02r05, “SAR Evaluation Considerations for LTE Devices”, Dec 2015

[9] FCC KDB 941225 D05A v01r02, “Rel. 10 LTE SAR Test Guidance and KDB Inquiries”, Oct 2015

[10] FCC KDB 616217 D04 v01r02, “SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers”, Oct 2015

[11] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.

[12] FCC KDB 865664 D02 v01r02, “RF Exposure Compliance Reporting and Documentation Considerations” Oct 2015.