



FCC ID: M82-AIM75L
Report No.: T201102D09-SF

Page: 1 / 124
Rev.: 00

FCC TEST REPORT

FCC 47 CFR § 2.1093
IEEE Std 1528-2013

for
Tablet PC

Model Name.:

AIM-75S-6; AIM-75H-6;

AIM-75S-6XXXXXXXXXXXXXXXXXX ; AIM75S-6XXXXXXXXXXXXXXXXXX ;

AIM-75H-6XXXXXXXXXXXXXXXXXX ; AIM75H-6XXXXXXXXXXXXXXXXXX

(where "X" may be any alphanumeric character, "-" or blank)

Issued to:

Advantech Co.Ltd.

No. 1, Alley 20, Lane 26, Rueiguang Road, Neihu District,
Taipei 114, Taiwan, R.O.C.

Issued by

Compliance Certification Services Inc.

Wugu Lab.

No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City, Taiwan. (R.O.C.)

Issued Date: 9/6/2021

Statements of Conformity
Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Note: This document may be altered or revised by Compliance Certification Services Inc. personnel only, and shall be noted in the revision section of the document. The client should not use it to claim product endorsement by TAF, A2LA, NIST or any government agencies. The test results in the report only apply to the tested sample.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com.tw/Terms-and-Conditions> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com.tw/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: T201102D09-SF

Page: 2 / 124
Rev.: 00

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	9/6/2021	Initial Issue	ALL	Sky Zhou

Table of Contents

1	Attestation of Test Results	5
2	Test Specification, Methods and Procedures	6
3	Device Under Test (DUT) Information.....	7
3.1	DUT Description	7
3.2	Wireless Technologies	8
3.3	General LTE SAR Test and Reporting Considerations	10
3.4	LTE (TDD) Considerations	13
3.5	LTE Down-Link Carrier Aggregation.....	14
4	SAR Measurement System & Test Equipment	15
4.1	SAR Measurement System	15
4.2	System Components	16
4.3	SAR Scan Procedures.....	19
5	Measurement Uncertainty	21
6	RF Exposure Conditions (Test Configurations)	22
6.1	Standalone SAR Test Exclusion Considerations.....	22
6.2	Required Test Configurations.....	27
7	Tissue Dielectric Properties	28
7.1	Test Liquid Confirmation.....	28
7.2	Typical Composition of Ingredients for Liquid Tissue Phantoms	29
7.3	Simulating Liquids Parameter Check Results	30
8	System Performance Check.....	31
8.1	System Performance Check Results.....	32
9	power Reduction by Proximity Sensing.....	33
9.1	Proximity Sensor Triggering Distance (KDB 616217 D04 section 6.2)	34
9.2	Proximity Sensor Status Table of trigger distance.....	34
9.3	Proximity Sensor Triggering Coverage (KDB 616217 D04 section 6.3).....	36
9.4	Tilt angle influences to proximity sensor triggering (KDB 616217 D04 section 6.4).....	37
9.5	Power Reduction per Air-interface.....	38
10	Conducted Output Power Measurements	40
10.1	W-CDMA	40
10.2	LTE	45
10.3	LTE Down-Link Carrier Aggregation.....	72
10.4	Wi-Fi 2.4GHz (DTS Band)	73
10.5	Wi-Fi 5GHz (U-NII Bands)	74



Report No.: T201102D09-SF

Page: 4 / 124
Rev.: 00

10.6	Bluetooth	76
11	Measured and Reported (Scaled) SAR Results	78
11.1	W-CDMA Band II	80
11.2	W-CDMA Band IV	80
11.3	W-CDMA Band V	80
11.4	LTE Band 2 (20MHz Bandwidth)	81
11.5	LTE Band 4 (20MHz Bandwidth)	81
11.6	LTE Band 5 (10MHz Bandwidth)	81
11.7	LTE Band 7 (20MHz Bandwidth)	81
11.8	LTE Band 12 (10MHz Bandwidth)	81
11.9	LTE Band 13 (10MHz Bandwidth)	82
11.10	LTE Band 25 (20MHz Bandwidth)	82
11.11	LTE Band 26 (15MHz Bandwidth)	83
11.12	LTE Band 30 (10MHz Bandwidth)	83
11.13	LTE Band 41 (20MHz Bandwidth)	84
11.14	LTE Band 66 (20MHz Bandwidth)	84
11.15	Wi-Fi (DTS Band)	85
11.16	Wi-Fi (U-NII Band)	85
11.17	Bluetooth	86
12	SAR Measurement Variability	87
13	Simultaneous Transmission SAR Analysis	89
14	Equipment List & Calibration Status	123
15	Facilities	124
16	Attachments	124

1 Attestation of Test Results

Applicant Name	Advantech Co., Ltd.			
Trade Name:	ADVANTECH			
Model Name	AIM-75S-6; AIM-75H-6; AIM-75S-6XXXXXXXXXXXXXXXXXX ; AIM75S-6XXXXXXXXXXXXXXXXXX ; AIM-75H-6XXXXXXXXXXXXXXXXXX ; AIM75H-6XXXXXXXXXXXXXXXXXX (where "X" may be any alphanumeric character, "-" or blank)			
Applicable Standards	FCC 47 CFR § 2.1093 Published RF exposure KDB procedures IEEE Std 1528-2013			
Exposure Category	SAR Limits (W/Kg)			
	Peak spatial-average (1g of tissue)	Extremities (hands, wrists, ankles, etc.) (10g of tissue)		
General population / Uncontrolled exposure	1.6	4		
RF Exposure Conditions	Equipment Class - Highest Reported SAR (W/kg)			
	Licensed	DTS	NII	DSS
Body-worn	1.08	0.64	0.97	0.05
Simultaneous TX	1.59			
Receive EUT Date:	11/6/2020			
Date Tested	12/14/2020 to 5/3/2021			
Device Category:	PORTABLE DEVICES			
Exposure Category:	GENERAL POPULATION/UNCONTROLLED EXPOSURE			
Test Results	Pass			
The test results in this report apply only to the tested sample of the stated device/equipment. Other similar device/equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.				
Approved by:		Tested by:		
				
Sky Zhou Asst. Section Manager Compliance Certification Services Inc.		WJ Lin Engineer Compliance Certification Services Inc.		

2 Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE STD 1528-2013, the following FCC Published RF exposure [KDB](#) procedures:

- 248227 D01 802.11 Wi-Fi SAR v02r02
- 447498 D01 General RF Exposure Guidance v06
- 616217 D04 SAR for laptop and tablets v01r02
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- 865664 D02 RF Exposure Reporting v01r02
- 941225 D01 3G SAR Procedures v03r01
- 941225 D05 SAR for LTE Devices v02r05
- 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02

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

- [TCB workshop](#) October, 2014; Page 36, RF Exposure Procedures Update (Overlapping LTE Bands)
- [TCB workshop](#) October, 2014; Page 37, RF Exposure Procedures Update (Other LTE Considerations)
- [TCB workshop](#) April 2015; Page 33, RF Exposure Procedures (Overlapping LTE Bands)
- [TCB workshop](#) October, 2015; Page 6, RF Exposure Procedures (KDB 941225 D05A)
- [TCB workshop](#) April, 2016; Page 13, RF Exposure Procedures (LTE Carrier Aggregation for DL)
- [TCB workshop](#) October, 2016; Page 7, RF Exposure Procedures (Bluetooth Duty Factor)
- [TCB workshop](#) October 2016; Page 18, RF Exposure Procedures (DUT Holder Perturbations)
- [TCB workshop](#) November 2017; Page 3, RF Exposure Procedures (LTE UL/DL Carrier Aggregation SAR)
- [TCB workshop](#) April 2018; Page 3, RF Exposure Procedures (LTE DL CA SAR Test Exclusion)

3 Device Under Test (DUT) Information

3.1 DUT Description

Applicant	Advantech Co., Ltd. No. 1, Alley 20, Lane 26, Rueiguang Road, Neihu District, Taipei 114, Taiwan, R.O.C.		
Manufacturer	Advantech Co., Ltd. No. 1, Alley 20, Lane 26, Rueiguang Road, Neihu District, Taipei 114, Taiwan, R.O.C.		
Product	Tablet PC		
Trade Name	ADVANTECH		
Model No.	AIM-75S-6; AIM-75H-6 AIM-75S-6XXXXXXXXXXXXXXXXXX; AIM-75H-6XXXXXXXXXXXXXXXXXX; AIM75S-6XXXXXXXXXXXXXXXXXX; AIM75H-6XXXXXXXXXXXXXXXXXX (where “X” may be any alphanumeric character, “-” or blank)		
Model Discrepancy	Model	Adapter	Tablet Color
	AIM-75S-6	FSP / FSP045-A1BR I/P: 100-240VAC, 50-60Hz, 1.2A O/P: 5.0VDC, 3.0A 15.0W 9.0VDC, 3.0A 27.0W 12.0VDC, 3.0A 36.0W 15.0VDC, 3.0A 45.0W 20.0VDC, 2.25A 45.0W	Black
	AIM-75H-6	GlobTek, Inc / GTM96605-GEN2-A1-T2 I/P: 100-240VAC, 50-60Hz, 1.5A O/P: 5VDC, 4.6A 5.8VDC, 4.6A 9VDC, 4.4A 12VDC, 4A 15VDC, 3.6A 20VDC, 3A DELTA,Inc / MEA-045AA2C IP: 100-240VVAC, 50-60Hz, 1.0A O/P: 5VDC, 3A 9VDC, 3A 10VDC, 3A 12VDC, 3A 15VDC, 3A 20VDC, 2.25A	White
	AIM-75S-6XXXXXXXXXXXXXXXXXX; AIM-75H-6XXXXXXXXXXXXXXXXXX; AIM75S-6XXXXXXXXXXXXXXXXXX; AIM75H-6XXXXXXXXXXXXXXXXXX (where “X” may be any alphanumeric character, “-” or blank)	All the above models are identical except for the designation of model numbers. The suffix of (where “X” may be any alphanumeric character , “-” or blank) on model number is just for marketing purpose only.	
Device Dimension	Overall (Length x Width): 239 mm x 143 mm Overall Diagonal: 271 mm Display Diagonal: 246 mm		
Back Cover	☒ Normal Battery Cover		
Battery Options	☒ Standard – Lithium-ion battery, Rating 3.8Vdc, 18.62Wh		
Test sample information	S/N 200CT32E00162	IMEI 866680040264050	
Hardware Version	AX2		
Software Version	0.3.6.9_20201021.021551		
Sample Stage	PVT		

3.2 Wireless Technologies

Wireless technologies	Frequency bands	Peak Antenna Gain (dBi)	Operating mode	Duty Cycle used for SAR testing
W-CDMA (UMTS)	Band II Band IV Band V	2.14 2.14 -0.97	UMTS Rel. 99 (Data) HSDPA (Rel. 5) HSUPA (Rel. 6)	100%
LTE	FDD Band 2 FDD Band 4 FDD Band 5 FDD Band 7 FDD Band 12 FDD Band 13 FDD Band 25 FDD Band 26 FDD Band 29 (Rx Only) FDD Band 30 TDD Band 41 FDD Band 66	2.14 2.14 -0.97 2.14 -0.97 -0.97 2.14 -0.97 2.14 2.14 2.14	QPSK 16QAM 64QAM Rel. 10 Carrier Aggregation support downlink only (Carrier Aggregation is only supported for downlink and not for uplink.)	100% (FDD) 63.3% (TDD) ¹
WWAN Main Antenna Specification	Brand Name	YAGEO		
	Type	PIFA		
	Parts Number	6036B0281601		
Wi-Fi	2.4 GHz	1.78	802.11b 802.11g 802.11n (HT20) 802.11n (HT40)	99.54% (802.11b) 97.92% (802.11g) 99.25% (802.11n 20MHz BW) 94.3% (802.11n 40MHz BW)
	5 GHz	2.83	802.11a 802.11n (HT20) 802.11n (HT40) 802.11ac (VHT20) 802.11ac (VHT40) 802.11ac (VHT80)	99.52% (802.11a) 98% (802.11n/ac 20MHz BW) 83.33% (802.11n/ac 40MHz BW) 75% (802.11ac 80MHz BW)
Bluetooth	2.4 GHz	1.78	Version 2.1 LE	77.95%
WLAN Main Antenna Specification	Brand Name	YAGEO		
	Type	Omni-directional antenna		
	Parts Number	ANTA0AA14081WLAN1		
Wi-Fi	2.4 GHz	1.96	802.11b 802.11g 802.11n (HT20) 802.11n (HT40)	99.54% (802.11b) 97.92% (802.11g) 99.25% (802.11n 20MHz BW) 94.3% (802.11n 40MHz BW)
	5 GHz	2.78	802.11a 802.11n (HT20) 802.11n (HT40) 802.11ac (VHT20) 802.11ac (VHT40) 802.11ac (VHT80)	99.52% (802.11a) 98% (802.11n/ac 20MHz BW) 83.33% (802.11n/ac 40MHz BW) 75% (802.11ac 80MHz BW)
WLAN Anx Antenna Specification	Brand Name	YAGEO		
	Type	Omni-directional antenna		
	Parts Number	ANTA0AA14081WLAN2		
NFC	13.56MHz	ISO 14443A/B and ISO 18092 Type y		NA ⁵

Notes:

1. This device supports uplink-downlink configuration 0-6. The configuration with the highest duty cycle was used (Subframe Number 0 at 63.3%).
2. The sample selected for test was prototype that representative to production product and was provided by manufacturer
3. Variant information between/among model numbers / trademarks is provided by the applicant, test results of this report are applicable to the sample EUT received of main test model name.



Report No.: T201102D09-SF

Page: 9 / 124

Rev.: 00

4. Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received
5. Measured Duty Cycle is not required due to SAR test exemption.

3.3 General LTE SAR Test and Reporting Considerations

Item	Description						
Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 2	Frequency range: 1850 - 1910 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	18700/ 1860	18675/ 1857.5	18650/ 1855	18625/ 1852.5	18615/ 1851.5	18607/ 1850.7
	Mid	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880
	High	19100/ 1900	19125/ 1902.5	19150/ 1905	19175/ 1907.5	19185/ 1908.5	19193/ 1909.3
	Band 4	Frequency range: 1710 - 1755 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	20050/ 1720	20025/ 1717.5	20000/ 1715	19975/ 1712.5	19965/ 1711.5	19957/ 1710.7
	Mid	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5
	High	20300/ 1745	20325/ 1747.5	20350/ 1750	20375/ 1752.5	20385/ 1753.5	20393/ 1754.3
	Band 5	Frequency range: 824 - 849 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			20450/ 829	20425/ 826.5	20415/ 825.5	20407/ 824.7
	Mid			20525/ 836.5	20525/ 836.5	20525/ 836.5	20525/ 836.5
	High			20600/ 844	20625/ 846.5	20635/ 847.5	20643/ 848.3
	Band 7	Frequency range: 2500 - 2570 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	20850 2510	20825 2507.5	20800 2505	20775 2502.5		
	Mid	21100 2535	21100 2535	21100 2535	21100 2535		
	High	21350 2560	21375 2562.5	21400 2565	21425 2567.5		
	Band 12	Frequency range: 699 – 716 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			23060/ 704	23035/ 701.5	23025/ 700.5	23017/ 699.7
	Mid			23095/ 707.5	23095/ 707.5	23095/ 707.5	23095/ 707.5
	High			23130/ 711	23155/ 713.5	23165/ 714.5	23173/ 715.3
	Band 13	Frequency range: 777 - 787 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low				23205/ 779.5		
	Mid			23230/ 782	23230/ 782		
	High				23255/ 784.5		

General LTE SAR Test and Reporting Considerations (Continued)

Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 25	Frequency range: 1850 - 1915 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	26140/ 1860	26115/ 1857.5	26090/ 1855	26065/ 1852.5	26055/ 1851.5	26047/ 1850.7
	Mid	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5
	High	26590/ 1905	26615/ 1907.5	26640/ 1910	26665/ 1912.5	26675/ 1913.5	26683/ 1914.3
	Band 26	Frequency range: 814 - 849 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low		26765/ 821.5	26740/ 819	26715/ 816.5	26705/ 815.5	26697/ 814.7
	Mid		26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5
	High		26965/ 841.5	26990/ 844	27015/ 846.5	27025/ 847.5	27033/ 848.3
	Band 30	Frequency range: 2305 - 2315 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low				27685/ 2307.5		
	Mid			27710/ 2310	27710/ 2310		
	High				27735/ 2312.5		
	Band 41	Frequency range: 2496 - 2690 MHz					
		Channel Bandwidth					
20 MHz		15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz	
Low	39750 / 2506.0	39725/ 2503.5	39700/ 2501	39675/ 2498.5			
Low-Mid	40185 / 2549.5	40173/ 2548.3	40160/ 2547	40148/ 2545.8			
Mid	40620 / 2593.0	40620 / 2593.0	40620 / 2593.0	40620 / 2593.0			
Mid-High	41055 / 2636.5	41068/ 2637.8	41080/ 2639	41093/ 2640.3			
High	41490 / 2680.0	41515/ 2682.5	41540/ 2685	41565/ 2687.5			
Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 66	Frequency range: 1710 - 1780 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	132072/ 1720	132047/ 1717.5	132022/ 1715	131997/ 1712.5	131987/ 1711.5	131979/ 1710.7
	Mid	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745
	High	132572/ 1770	132597/ 1772.5	132622/ 1775	132647/ 1777.5	132657/ 1778.5	132665/ 1779.3
LTE transmitter and antenna implementation	Refer to Appendix 4. T201102D09-SF PHOTOS.						

General LTE SAR Test and Reporting Considerations (Continued)

Maximum power reduction (MPR)	Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3							
	Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)
		1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
	QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
	16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
	16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
	64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
	64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
	256 QAM	≥ 1						≤ 5
	MPR Built-in by design							
The manufacturer MPR values are always within the 3GPP maximum MPR allowance but may not follow the default MPR values.								
A-MPR (additional MPR) was disabled during SAR testing								
Power reduction	Yes							
Spectrum plots for RB configurations	A properly configured base station simulator was used for the SAR and power measurements; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.							

Notes:

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

3.4 LTE (TDD) Considerations

According to KDB 941225 D05 SAR for LTE Devices v02r02, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

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

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

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

Calculated Duty Cycle

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

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

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:

Calculated Duty Cycle = $5120 \times [1/(15000 \times 2048)] \times 2 + 6 \text{ ms} = 63.33\%$

where

$T_s = 1/(15000 \times 2048)$ seconds

Note(s):

This device supports uplink-downlink configurations 0-6. The configuration with highest duty cycle was used for SAR Testing: configuration 0 at 63.3% duty cycle and Special Subframe 7.

3.5 LTE Down-Link Carrier Aggregation

This device supports LTE down link Carrier Aggregation (CA).

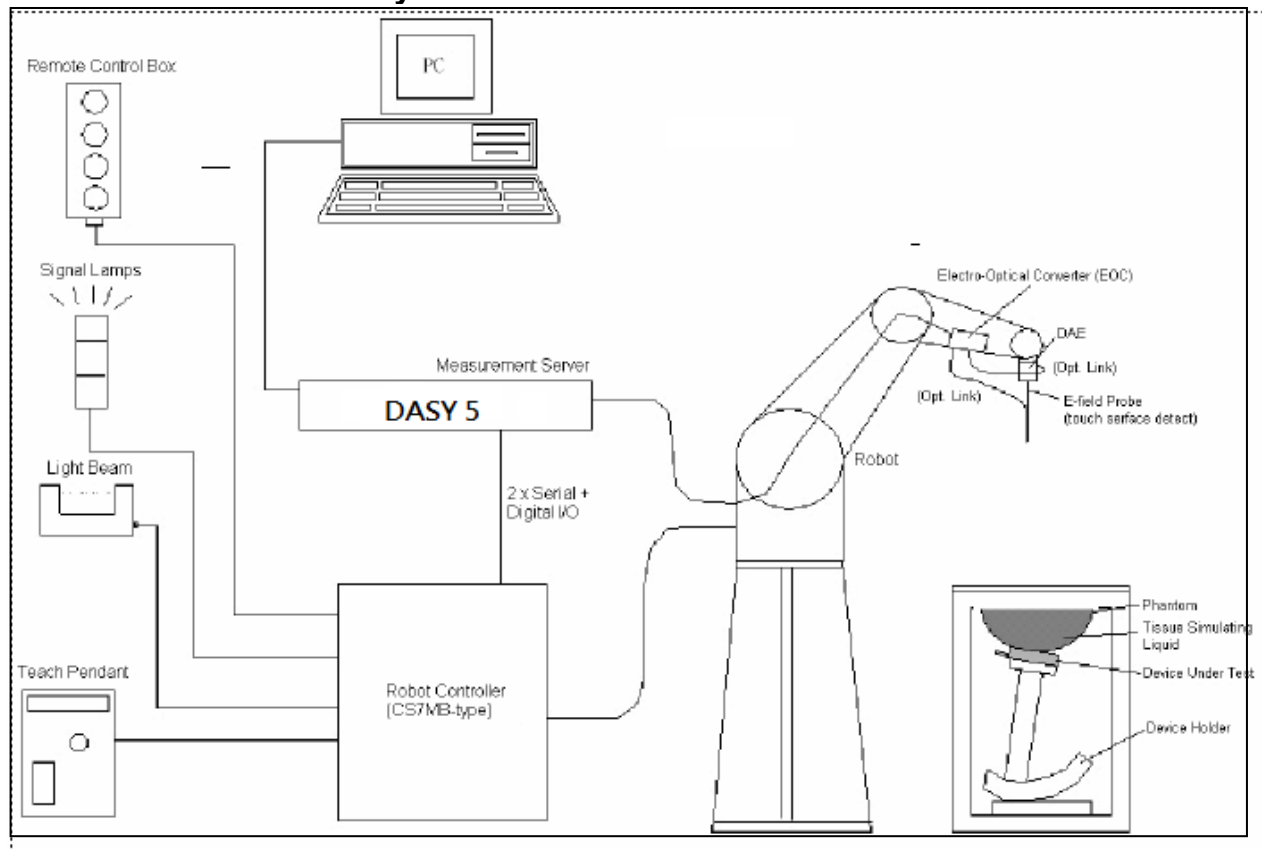
Combination	CA configuration	Bandwidth (MHz)											
		Carrier 1						Carrier 2					
		20	15	10	5	3	1.4	20	15	10	5	3	1.4
Inter-Band non-contiguous	2A-5A	√								√			
			√		√						√		
	2A-12A			√						√	√		
					√						√		
	2A-13A	√	√	√	√					√			
	2A-29A	√								√			
			√		√						√		
	4A-5A	√								√			
			√		√						√		
	4A-12A	√								√			
			√								√		
					√							√	
	4A-13A	√	√	√	√					√			
	4A-29A	√								√			
					√						√	√	
	7A-5A	√								√			
			√								√		
				√									√
	7A-12A	√								√			
			√		√						√		
	7A-26A	√							√		√		
					√						√		
	25A-5A	√								√	√		
			√	√	√					√	√		
	25A-12A	√								√			
			√								√		
	25A-26A	√							√				
			√									√	
						√							√
	30A-5A			√						√	√		
					√						√		
	30A-12A			√						√	√		
					√						√		
	30A-29A			√						√	√		
					√						√		
	66A-5A			√						√	√		
					√						√		
	66A-12A			√						√	√		
					√						√		
	66A-13A			√						√	√		
					√						√		
	66A-29A			√						√	√		
					√						√		

Note(s):

For supported channels, please refer to §3.3

4 SAR Measurement System & Test Equipment

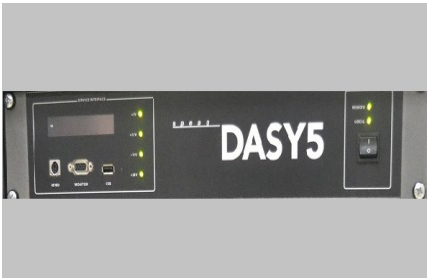
4.1 SAR Measurement System



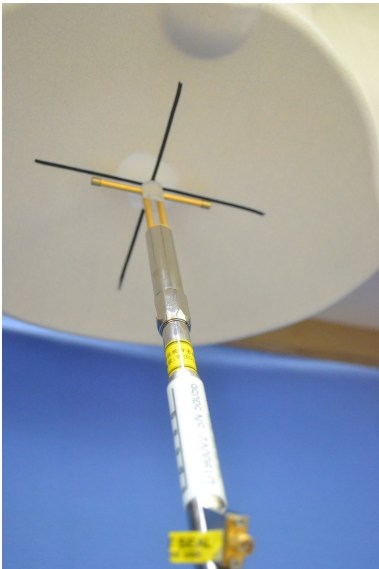
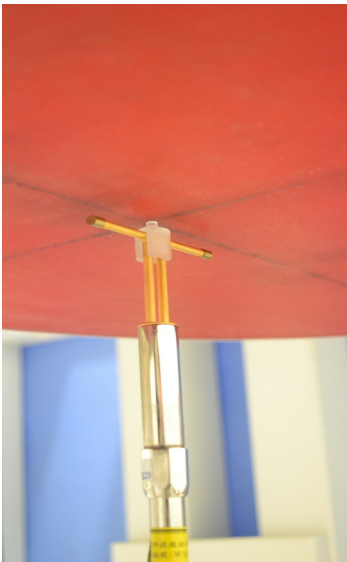
The DASY5 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Stäubli RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- 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 between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected 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.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 7 or Windows XP.
- DASY software version: NEO52 D10.3 S14.6.13.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing validating the proper functioning of the system.

4.2 System Components

DASY5 Measurement Server	
	The DASY5 measurement server is based on a PC/104 CPU board with a 166MHz low-power Pentium, 32MB chip disk and 64MB RAM. The necessary circuits for communication with either the DAE4 electronic box as well as the 16-bit AD-converter system for optical detection and digital I/O interface are contained on the DASY5 I/O-board, which is directly connected to the PC/104 bus of the CPU board. The measurement server performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation.
	The PC-operating system cannot interfere with these time critical processes. All connections are supervised by a watchdog, and disconnection of any of the cables to the measurement server will automatically disarm the robot and disable all program-controlled robot movements. Furthermore, the measurement server is equipped with two expansion slots which are reserved for future applications. Please note that the expansion slots do not have a standardized pinout and therefore only the expansion cards provided by SPEAG can be inserted. Expansion cards from any other supplier could seriously damage the measurement server. Calibration: No calibration required.
Data Acquisition Electronics (DAE)	
	The data acquisition electronics (DAE4) 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 mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection. The input impedance of the DAE4 box is 200MΩm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

EX3DV4 Isotropic E-Field Probe for Dosimetric Measurements	
	Construction: Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE) Calibration: Basic Broad Band Calibration in air: 10-3000 MHz. Conversion Factors (CF) for HSL 900 and HSL 1800 CF-Calibration for other liquids and frequencies upon request. Frequency: 10 MHz to > 6 GHz; Linearity: ± 0.2 dB (30 MHz to 3 GHz) Directivity: ± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in HSL (rotation normal to probe axis) Dynamic Range: 10 μW/g to > 100 mW/g; Linearity: ± 0.2 dB (noise: typically < 1 μW/g)
	Dimensions: Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Distance from probe tip to dipole centers: 1 mm Application: High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.
SAM Phantom	
	Construction: The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 2013, CENELEC 50361 and IEC 62209. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points with the robot. Shell Thickness: 2 ± 0.2 mm Filling Volume: Approx. 25 liters Dimensions: Height: 810mm; Length: 1000mm; Width: 500mm
ELI Phantom	
	Construction: Phantom 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 the latest draft of the standard IEC 62209 Part II and all known tissue simulating liquids. ELI4 has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is supported by software version DASY5 and higher and is compatible with all SPEAG dosimetric probes and dipoles Shell Thickness: 2.0 ± 0.2 mm (sagging: <1%) Filling Volume: Approx. 25 liters Dimensions: Major ellipse axis: 600 mm Minor axis: 400 mm 500mm

Device Holder for SAM Twin Phantom	
	Construction: In combination with the Twin SAM Phantom V4.0 or Twin SAM, the Mounting Device (made from POM) enables the rotation of the mounted transmitter in spherical coordinates, whereby the rotation point is the ear opening. The devices can be easily and accurately positioned according to IEC, IEEE, CENELEC, FCC or other specifications. The device holder can be locked at different phantom locations (left head, right head, and flat phantom).
System Validation Kits for SAM Phantom	
	Construction: Symmetrical dipole with I/4 balun Enables measurement of feedpoint impedance with NWA Matched for use near flat phantoms filled with brain simulating solutions Includes distance holder and tripod adaptor. Frequency: 2450, 5300, 5600, 5800 MHz Return loss: > 20 dB at specified validation position Power capability: > 100 W (f < 1GHz); > 40 W (f > 1GHz) Dimensions: D2450V2: dipole length: 51.5 mm; overall height: 290 mm D5GHzV2: dipole length: 20.6 mm; overall height: 300 mm
System Validation Kits for ELI phantom	
	Construction: Symmetrical dipole with I/4 balun Enables measurement of feedpoint impedance with NWA Matched for use near flat phantoms filled with brain simulating solutions Includes distance holder and tripod adaptor. Frequency: 2450, 5300, 5600, 5800 MHz Return loss: > 20 dB at specified validation position Power capability: > 100 W (f < 1GHz); > 40 W (f > 1GHz) Dimensions: D2450V2: dipole length: 51.5 mm; overall height: 290 mm D5GHzV2: dipole length: 20.6 mm; overall height: 300 mm

4.3 SAR Scan Procedures

Step 1: Power Reference Measurement

The reference and drift jobs are useful jobs for monitoring the power drift of the device under test in the batch process. Both jobs measure the field at a specified reference position, at a selectable distance from the phantom surface. The reference position can be either the selected section's grid reference point or a user point in this section. The reference job projects the selected point onto the phantom surface, orients the probe perpendicularly to the surface, and approaches the surface using the selected detection method.

Step 2: Area Scan

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

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

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: Δx_{Zoom} , Δy_{Zoom}	≤ 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 $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

Step 3: Zoom Scan

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

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

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

Step 4: Power drift measurement

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

Step 5: Z-Scan (FCC only)

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

5 Measurement Uncertainty

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

Therefore, the measurement uncertainty is not required.

6 RF Exposure Conditions (Test Configurations)

Refer to T201102D09-SF PHOTOS for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.

6.1 Standalone SAR Test Exclusion Considerations

Since the *Dedicated Host Approach* is applied, the standalone SAR test exclusion procedure in KDB 447498 is applied in conjunction with KDB 616217 § 4.3 to determine the minimum test separation distance:

- When the separation distance from the antenna to an adjacent edge is ≤ 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.
- When the separation distance from the antenna to an adjacent edge is > 5 mm, the actual antenna-to-edge separation distance is applied to determine SAR test exclusion.

SAR Test Exclusion Calculations for WWAN

Antennas < 50mm to adjacent edges

Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)					Calculated Threshold Value				
		dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Rear	Edge 1	Edge 2	Edge 3	Edge 4
Full Power, Proximity Sensor Off													
WCDMA Band II	1907.6	24.00	251	5	21	7.9	44.945	224.1	69.3	16.5	43.3	7.7	> 50 mm
WCDMA Band IV	1752.6	24.00	251	5	21	7.9	44.945	224.1	66.5	15.8	41.5	7.4	> 50 mm
WCDMA Band V	846.6	24.00	251	5	21	7.9	44.945	224.1	46.2	11	28.9	5.1	> 50 mm
LTE Band 2	1909.3	24.00	251	5	21	7.9	44.945	224.1	69.4	16.5	43.4	7.7	> 50 mm
LTE Band 4	1754.3	24.00	251	5	21	7.9	44.945	224.1	66.5	15.8	41.6	7.4	> 50 mm
LTE Band 5	848.3	24.00	251	5	21	7.9	44.945	224.1	46.2	11	28.9	5.1	> 50 mm
LTE Band 7	2567.5	24.00	251	5	21	7.9	44.945	224.1	80.4	19.2	50.3	8.9	> 50 mm
LTE Band 12	715.3	24.00	251	5	21	7.9	44.945	224.1	42.5	10.1	26.5	4.7	> 50 mm
LTE Band 13	782	24.00	251	5	21	7.9	44.945	224.1	44.4	10.6	27.7	4.9	> 50 mm
LTE Band 25	1914.3	24.00	251	5	21	7.9	44.945	224.1	69.5	16.5	43.4	7.7	> 50 mm
LTE Band 26	848.3	24.00	251	5	21	7.9	44.945	224.1	46.2	11	28.9	5.1	> 50 mm
LTE Band 30	2310	24.00	251	5	21	7.9	44.945	224.1	76.3	18.2	47.7	8.5	> 50 mm
LTE Band 41	2680	24.00	251	5	21	7.9	44.945	224.1	82.2	19.6	51.4	9.1	> 50 mm
LTE Band 66	1779.3	24.00	251	5	21	7.9	44.945	224.1	67	15.9	41.9	7.4	> 50 mm

Note(s):

According to KDB 447498, if the calculated threshold value is >3 then SAR testing is required.

Antennas > 50mm to adjacent edges

Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)					Calculated Threshold Value				
		dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Rear	Edge 1	Edge 2	Edge 3	Edge 4
Full Power, Proximity Sensor Off													
WCDMA Band II	1907.6	24.00	251	5	21	7.9	44.945	224.1	< 50 mm	< 50 mm	< 50 mm	< 50 mm	1849.6 mW -EXEMPT-
WCDMA Band IV	1752.6	24.00	251	5	21	7.9	44.945	224.1	< 50 mm	< 50 mm	< 50 mm	< 50 mm	1854.3 mW -EXEMPT-
WCDMA Band V	846.6	24.00	251	5	21	7.9	44.945	224.1	< 50 mm	< 50 mm	< 50 mm	< 50 mm	1145.6 mW -EXEMPT-
LTE Band 2	1909.3	24.00	251	5	21	7.9	44.945	224.1	< 50 mm	< 50 mm	< 50 mm	< 50 mm	1849.6 mW -EXEMPT-
LTE Band 4	1754.3	24.00	251	5	21	7.9	44.945	224.1	< 50 mm	< 50 mm	< 50 mm	< 50 mm	1854.3 mW -EXEMPT-
LTE Band 5	848.3	24.00	251	5	21	7.9	44.945	224.1	< 50 mm	< 50 mm	< 50 mm	< 50 mm	1147.5 mW -EXEMPT-
LTE Band 7	2567.5	24.00	251	5	21	7.9	44.945	224.1	< 50 mm	< 50 mm	< 50 mm	< 50 mm	1834.6 mW -EXEMPT-
LTE Band 12	715.3	24.00	251	5	21	7.9	44.945	224.1	< 50 mm	< 50 mm	< 50 mm	< 50 mm	1007.6 mW -EXEMPT-
LTE Band 13	782	24.00	251	5	21	7.9	44.945	224.1	< 50 mm	< 50 mm	< 50 mm	< 50 mm	1077.3 mW -EXEMPT-
LTE Band 25	1914.3	24.00	251	5	21	7.9	44.945	224.1	< 50 mm	< 50 mm	< 50 mm	< 50 mm	1849.4 mW -EXEMPT-
LTE Band 26	848.3	24.00	251	5	21	7.9	44.945	224.1	< 50 mm	< 50 mm	< 50 mm	< 50 mm	1147.5 mW -EXEMPT-
LTE Band 30	2310	24.00	251	5	21	7.9	44.945	224.1	< 50 mm	< 50 mm	< 50 mm	< 50 mm	1839.7 mW -EXEMPT-
LTE Band 41	2680	24.00	251	5	21	7.9	44.945	224.1	< 50 mm	< 50 mm	< 50 mm	< 50 mm	1832.6 mW -EXEMPT-
LTE Band 66	1779.3	24.00	251	5	21	7.9	44.945	224.1	< 50 mm	< 50 mm	< 50 mm	< 50 mm	1853.5 mW -EXEMPT-

Note(s):

According to KDB 447498, if the calculated Power threshold is less than the output power then SAR testing is required.

SAR Test Exclusion Calculations for WLAN**Antennas < 50mm to adjacent edges**

Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)					Calculated Threshold Value				
		dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Rear	Edge 1	Edge 2	Edge 3	Edge 4
Main Antenna													
Wi-Fi 2.4 GHz	2462	18.00	63	5	129.94	121.5	8	93.5	19.8 -MEASURE-	> 50 mm	> 50 mm	12.4 -MEASURE-	> 50 mm
Wi-Fi 5.2 GHz	5240	12.00	16	5	129.94	121.5	8	93.5	7.3 -MEASURE-	> 50 mm	> 50 mm	4.6 -MEASURE-	> 50 mm
Wi-Fi 5.3 GHz	5320	12.50	18	5	129.94	121.5	8	93.5	8.3 -MEASURE-	> 50 mm	> 50 mm	5.2 -MEASURE-	> 50 mm
Wi-Fi 5.5 GHz	5700	13.00	20	5	129.94	121.5	8	93.5	9.5 -MEASURE-	> 50 mm	> 50 mm	6 -MEASURE-	> 50 mm
Wi-Fi 5.8 GHz	5825	13.00	20	5	129.94	121.5	8	93.5	9.7 -MEASURE-	> 50 mm	> 50 mm	6 -MEASURE-	> 50 mm
Bluetooth	2480	5.50	4	5	129.94	121.5	8	93.5	1.3 -EXEMPT-	> 50 mm	> 50 mm	0.8 -EXEMPT-	> 50 mm
Aux Antenna													
Wi-Fi 2.4 GHz	2462	18.00	63	5	7.1	58	130.94	158	19.8 -MEASURE-	14.1 -MEASURE-	> 50 mm	> 50 mm	> 50 mm
Wi-Fi 5.2 GHz	5240	12.00	16	5	7.1	58	130.94	158	7.3 -MEASURE-	5.2 -MEASURE-	> 50 mm	> 50 mm	> 50 mm
Wi-Fi 5.3 GHz	5320	12.50	18	5	7.1	58	130.94	158	8.3 -MEASURE-	5.9 -MEASURE-	> 50 mm	> 50 mm	> 50 mm
Wi-Fi 5.5 GHz	5700	13.00	20	5	7.1	58	130.94	158	9.5 -MEASURE-	6.8 -MEASURE-	> 50 mm	> 50 mm	> 50 mm
Wi-Fi 5.8 GHz	5825	13.00	20	5	7.1	58	130.94	158	9.7 -MEASURE-	6.9 -MEASURE-	> 50 mm	> 50 mm	> 50 mm
Wi-Fi MIMO													
Wi-Fi 2.4 GHz	2462	20.00	100	5	7.1	58	8	93.5	31.4 -MEASURE-	22.4 -MEASURE-	> 50 mm	19.6 -MEASURE-	> 50 mm
Wi-Fi 5.2 GHz	5240	16.00	40	5	7.1	58	8	93.5	18.3 -MEASURE-	13.1 -MEASURE-	> 50 mm	11.4 -MEASURE-	> 50 mm
Wi-Fi 5.3 GHz	5320	15.50	35	5	7.1	58	8	93.5	16.1 -MEASURE-	11.5 -MEASURE-	> 50 mm	10.1 -MEASURE-	> 50 mm
Wi-Fi 5.5 GHz	5700	16.00	40	5	7.1	58	8	93.5	19.1 -MEASURE-	13.6 -MEASURE-	> 50 mm	11.9 -MEASURE-	> 50 mm
Wi-Fi 5.8 GHz	5825	15.50	35	5	7.1	58	8	93.5	16.9 -MEASURE-	12.1 -MEASURE-	> 50 mm	10.6 -MEASURE-	> 50 mm

Note(s):

According to KDB 447498, if the calculated threshold value is >3 then SAR testing is required.

SAR Test Exclusion Calculations for WLAN**Antennas > 50mm to adjacent edges**

Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)					Calculated Threshold Value				
		dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Rear	Edge 1	Edge 2	Edge 3	Edge 4
Main Antenna													
Wi-Fi 2.4 GHz	2462	18.00	63	5	129.94	121.5	8	93.5	< 50 mm	895 mW -EXEMPT-	810.6 mW -EXEMPT-	< 50 mm	530.6 mW -EXEMPT-
Wi-Fi 5.2 GHz	5240	12.00	16	5	129.94	121.5	8	93.5	< 50 mm	864.9 mW -EXEMPT-	780.5 mW -EXEMPT-	< 50 mm	500.5 mW -EXEMPT-
Wi-Fi 5.3 GHz	5320	12.50	18	5	129.94	121.5	8	93.5	< 50 mm	864.4 mW -EXEMPT-	780 mW -EXEMPT-	< 50 mm	500 mW -EXEMPT-
Wi-Fi 5.5 GHz	5700	13.00	20	5	129.94	121.5	8	93.5	< 50 mm	862.2 mW -EXEMPT-	777.8 mW -EXEMPT-	< 50 mm	497.8 mW -EXEMPT-
Wi-Fi 5.8 GHz	5825	13.00	20	5	129.94	121.5	8	93.5	< 50 mm	861.6 mW -EXEMPT-	777.2 mW -EXEMPT-	< 50 mm	497.2 mW -EXEMPT-
Bluetooth	2480	5.50	4	5	129.94	121.5	8	93.5	< 50 mm	894.7 mW -EXEMPT-	810.3 mW -EXEMPT-	< 50 mm	530.3 mW -EXEMPT-
Aux Antenna													
Wi-Fi 2.4 GHz	2462	18.00	63	5	7.1	58	130.94	158	< 50 mm	< 50 mm	175.6 mW -EXEMPT-	905 mW -EXEMPT-	1175.6 mW -EXEMPT-
Wi-Fi 5.2 GHz	5240	12.00	16	5	7.1	58	130.94	158	< 50 mm	< 50 mm	145.5 mW -EXEMPT-	874.9 mW -EXEMPT-	1145.5 mW -EXEMPT-
Wi-Fi 5.3 GHz	5320	12.50	18	5	7.1	58	130.94	158	< 50 mm	< 50 mm	145 mW -EXEMPT-	874.4 mW -EXEMPT-	1145 mW -EXEMPT-
Wi-Fi 5.5 GHz	5700	13.00	20	5	7.1	58	130.94	158	< 50 mm	< 50 mm	142.8 mW -EXEMPT-	872.2 mW -EXEMPT-	1142.8 mW -EXEMPT-
Wi-Fi 5.8 GHz	5825	13.00	20	5	7.1	58	130.94	158	< 50 mm	< 50 mm	142.2 mW -EXEMPT-	871.6 mW -EXEMPT-	1142.2 mW -EXEMPT-
Wi-Fi MIMO													
Wi-Fi 2.4 GHz	2462	20.00	100	5	7.1	58	8	93.5	< 50 mm	< 50 mm	175.6 mW -EXEMPT-	< 50 mm	530.6 mW -EXEMPT-
Wi-Fi 5.2 GHz	5240	16.00	40	5	7.1	58	8	93.5	< 50 mm	< 50 mm	145.5 mW -EXEMPT-	< 50 mm	500.5 mW -EXEMPT-
Wi-Fi 5.3 GHz	5320	15.50	35	5	7.1	58	8	93.5	< 50 mm	< 50 mm	145 mW -EXEMPT-	< 50 mm	500 mW -EXEMPT-
Wi-Fi 5.5 GHz	5700	16.00	40	5	7.1	58	8	93.5	< 50 mm	< 50 mm	142.8 mW -EXEMPT-	< 50 mm	497.8 mW -EXEMPT-
Wi-Fi 5.8 GHz	5825	15.50	35	5	7.1	58	8	93.5	< 50 mm	< 50 mm	142.2 mW -EXEMPT-	< 50 mm	497.2 mW -EXEMPT-

Note(s):

According to KDB 447498, if the calculated Power threshold is less than the output power then SAR testing is required.

6.2 Required Test Configurations

The table below identifies the standalone test configurations required for this device according to the findings in Section 6.1:

Test Configurations	Rear	Edge 1	Edge 2	Edge 3	Edge 4
W-CDMA Band 2 Full Power	Yes	Yes	Yes	Yes	No
W-CDMA Band 2 w/ Power Reduction	Yes	No	Yes	No	No
W-CDMA Band 4 Full Power	Yes	Yes	Yes	Yes	No
W-CDMA Band 4 w/ Power Reduction	Yes	No	Yes	No	No
W-CDMA Band 5 Full Power	Yes	Yes	Yes	Yes	No
W-CDMA Band 5 w/ Power Reduction	Yes	No	Yes	No	No
LTE Band 2 Full Power	Yes	Yes	Yes	Yes	No
LTE Band 2 w/ Power Reduction	Yes	No	Yes	No	No
LTE Band 4 Full Power	Yes	Yes	Yes	Yes	No
LTE Band 4 w/ Power Reduction	Yes	No	Yes	No	No
LTE Band 5 Full Power	Yes	Yes	Yes	Yes	No
LTE Band 5 w/ Power Reduction	Yes	No	Yes	No	No
LTE Band 7 Full Power	Yes	Yes	Yes	Yes	No
LTE Band 7 w/ Power Reduction	Yes	No	Yes	No	No
LTE Band 12 Full Power	Yes	Yes	Yes	Yes	No
LTE Band 12 w/ Power Reduction	Yes	No	Yes	No	No
LTE Band 13 Full Power	Yes	Yes	Yes	Yes	No
LTE Band 13 w/ Power Reduction	Yes	No	Yes	No	No
LTE Band 25 Full Power	Yes	Yes	Yes	Yes	No
LTE Band 25 w/ Power Reduction	Yes	No	Yes	No	No
LTE Band 26 Full Power	Yes	Yes	Yes	Yes	No
LTE Band 26 w/ Power Reduction	Yes	No	Yes	No	No
LTE Band 30 Full Power	Yes	Yes	Yes	Yes	No
LTE Band 30 w/ Power Reduction	Yes	No	Yes	No	No
LTE Band 41 Full Power	Yes	Yes	Yes	Yes	No
LTE Band 41 w/ Power Reduction	Yes	No	Yes	No	No
LTE Band 66 Full Power	Yes	Yes	Yes	Yes	No
LTE Band 66 w/ Power Reduction	Yes	No	Yes	No	No
Wi-Fi 2.4 GHz SISO (Main Antenna)	Yes	No	No	Yes	No
Wi-Fi 2.4 GHz SISO (Aux Antenna)	Yes	Yes	Yes	No	No
Wi-Fi 2.4 GHz MIMO	Yes	Yes	Yes	Yes	No
Wi-Fi 5 GHz SISO (Main Antenna)	Yes	No	No	Yes	No
Wi-Fi 5 GHz SISO (Aux Antenna)	Yes	Yes	Yes	No	No
Wi-Fi 5 GHz MIMO	Yes	Yes	Yes	Yes	No
Bluetooth	Yes	Yes	Yes	No	No

Note(s):

Yes = Testing is required.; No = Testing is not required.

7 Tissue Dielectric Properties

7.1 Test Liquid Confirmation

Simulating Liquids Parameter Check

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine if the dielectric parameters are within the tolerances of the specified target values

The relative permittivity and conductivity of the tissue material should be within $\pm 5\%$ of the values given in the table below 5% may not be easily achieved at certain frequencies.

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in IEEE 1528 2013 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head tissue parameters that have not been specified in IEEE 1528 2013 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations and extrapolated according to the head parameters specified in IEEE 1528 2013

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

IEEE Std 1528-2013

Refer to Table 3 within the IEEE Std 1528-2013

7.2 Typical Composition of Ingredients for Liquid Tissue Phantoms

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.

Ingredients (% by weight)	Frequency (MHz)									
	450		835		915		1900		2450	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	38.56	51.16	41.45	52.4	41.05	56.0	54.9	40.4	62.7	73.2
Salt (NaCl)	3.95	1.49	1.45	1.4	1.35	0.76	0.18	0.5	0.5	0.04
Sugar	56.32	46.78	56.0	45.0	56.5	41.76	0.0	58.0	0.0	0.0
HEC	0.98	0.52	1.0	1.0	1.0	1.21	0.0	1.0	0.0	0.0
Bactericide	0.19	0.05	0.1	0.1	0.1	0.27	0.0	0.1	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0
DGBE	0.0	0.0	0.0	0.0	0.0	0.0	44.92	0.0	0.0	26.7
Dielectric Constant	43.42	58.0	42.54	56.1	42.0	56.8	39.9	54.0	39.8	52.5
Conductivity (S/m)	0.85	0.83	0.91	0.95	1.0	1.07	1.42	1.45	1.88	1.78

alt: 99+% Pure Sodium Chloride

Sugar: 98+% Pure Sucrose

Water: De-ionized, 16 MΩ⁺ resistivity

HEC: Hydroxy thyl Cellulose

DGBE: 99+% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]

Triton X-100 (ultra-pure): Polyethylene glycol mono [4-(1, 1, 3, 3-tetramethylbutyl)phenyl]ether

Simulating Liquids for 5 GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	78
Mineral oil	11
Emulsifiers	9
Additives and Salt	2

7.3 Simulating Liquids Parameter Check Results

Date	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
			Measured	Target	Delta (%)	Measured	Target	Delta (%)
2021/1/26	Head	700	43.55	42.17	3.27	0.85	0.89	-3.72
		750	42.91	41.90	2.41	0.90	0.89	1.46
		790	42.36	41.71	1.56	0.94	0.90	4.47
2020/12/21	Head	820	42.27	41.57	1.68	0.87	0.90	-2.90
		835	42.09	41.50	1.42	0.89	0.90	-1.33
		920	41.00	41.46	-1.11	0.97	0.98	-0.92
2021/1/27	Head	820	42.94	41.57	3.30	0.87	0.90	-3.23
		835	42.71	41.50	2.91	0.89	0.90	-1.22
		910	41.78	41.48	0.72	0.96	0.97	-1.44
2020/12/16	Head	1710	38.82	40.14	-3.29	1.31	1.35	-2.82
		1750	38.72	40.10	-3.44	1.34	1.37	-2.19
		1800	38.59	40.00	-3.52	1.38	1.40	-1.29
2020/12/17	Head	1710	38.94	40.14	-2.99	1.31	1.35	-3.04
		1750	38.78	40.10	-3.29	1.34	1.37	-2.26
		1800	38.62	40.00	-3.45	1.38	1.40	-1.36
2020/12/15	Head	1800	38.66	40.00	-3.35	1.38	1.40	-1.36
		1850	38.46	40.00	-3.85	1.42	1.40	1.29
		1900	38.30	40.00	-4.25	1.46	1.40	4.21
2020/12/16	Head	1800	38.74	40.00	-3.15	1.38	1.40	-1.36
		1850	38.57	40.00	-3.58	1.42	1.40	1.43
		1900	38.45	40.00	-3.87	1.46	1.40	3.93
2021/1/27	Head	2300	40.68	39.50	2.99	1.67	1.67	0.24
		2350	40.55	39.40	2.92	1.73	1.71	0.88
		2400	40.32	39.30	2.60	1.78	1.76	1.42
2021/4/20	Head	2400	39.19	39.30	-0.28	1.77	1.76	0.51
		2450	38.98	39.20	-0.56	1.83	1.80	1.39
		2500	38.84	39.13	-0.74	1.88	1.85	1.46
2020/12/14	Head	2500	37.85	39.13	-3.27	1.92	1.85	3.56
		2550	37.71	39.07	-3.48	1.98	1.91	3.62
		2600	37.52	39.00	-3.79	2.03	1.96	3.78
2021/1/28	Head	2500	37.92	39.13	-3.09	1.93	1.85	4.05
		2600	37.56	39.00	-3.69	2.04	1.96	4.29
		2680	37.31	38.90	-4.09	2.14	2.05	4.39
2021/4/29	Head	5180	36.08	36.02	0.17	4.50	4.64	-3.10
		5200	36.00	36.00	0.00	4.51	4.66	-3.28
		5250	35.85	35.95	-0.28	4.59	4.71	-2.59
2021/4/29	Head	5250	35.85	35.95	-0.28	4.59	4.71	-2.59
		5300	35.69	35.90	-0.58	4.62	4.76	-2.88
		5350	35.47	35.85	-1.06	4.73	4.81	-1.62
2021/5/3	Head	5250	36.27	35.95	0.89	4.71	4.71	-0.04
		5300	36.15	35.90	0.70	4.77	4.76	0.17
		5350	35.95	35.85	0.28	4.84	4.81	0.60
2021/4/22	Head	5550	36.35	35.58	2.16	5.12	5.02	2.07
		5600	36.20	35.50	1.97	5.18	5.07	2.19
		5650	36.11	35.45	1.86	5.24	5.12	2.34
2021/4/23	Head	5550	35.58	35.58	0.00	5.07	5.02	0.98
		5600	35.28	35.50	-0.62	5.15	5.07	1.52
		5650	35.16	35.45	-0.82	5.21	5.12	1.72
2021/4/26	Head	5750	35.92	35.35	1.61	5.17	5.22	-0.98
		5800	36.02	35.30	2.04	5.17	5.27	-1.86
		5850	35.17	35.25	-0.23	5.21	5.32	-2.12
2021/4/29	Head	5750	34.26	35.35	-3.08	5.19	5.22	-0.67
		5800	33.95	35.30	-3.82	5.27	5.27	-0.08
		5825	33.90	35.28	-3.91	5.31	5.30	0.28

8 System Performance Check

The system performance check is performed prior to any usage of the system in order to guarantee reproducible results. The system performance check verifies that the system operates within its specifications. The system performance check results are tabulated below. And also the corresponding SAR plot is attached as well in the SAR plots files.

System Performance Check Measurement Conditions

- The measurements were performed in the flat section of the SAM twin phantom filled with Head simulating liquid of the following parameters.
- The DASY5 system with an E-field probe EX3DV4 SN: 3665 was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 15 mm (below 1 GHz) and 10 mm (above 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 10mm was aligned with the dipole.
- Special 7x7x7 fine cube was chosen for cube integration (dx=dy= 5 mm, dz= 5 mm).
- Distance between probe sensors and phantom surface was set to 3.0 mm.
- The dipole input power (forward power) was 250 mW $\pm$ 3% (below 2GHz) and 100 mW $\pm$ 3%
- The results are normalized to 1 W input power.

Reference SAR Values for System Performance Check

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

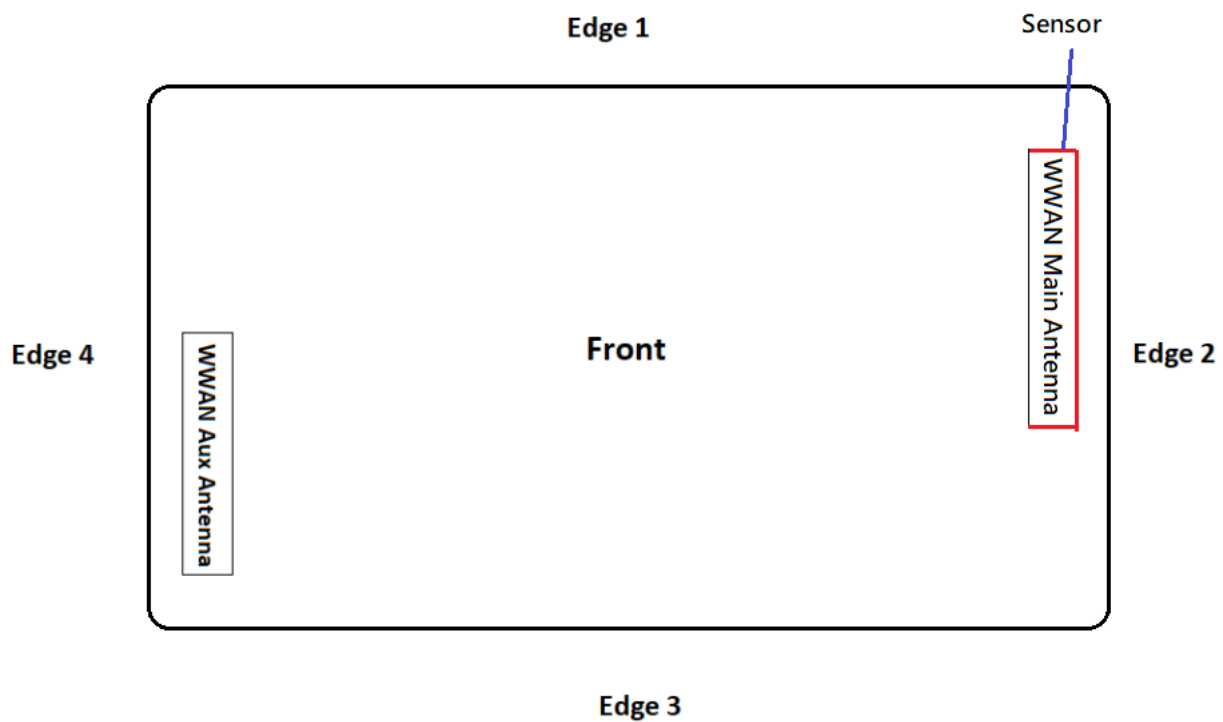
System Dipole	Serial No.	Cal. Date	Freq. (MHz)	Target SAR Values (W/kg)	
				1g/10g	Head
D750V3	1015	2020/08/13	750	1g	8.48
				10g	5.53
D835V2	4d063	2020/8/13	835	1g	9.52
				10g	6.21
D1750V2	1008	2020/8/14	1750	1g	36.00
				10g	18.90
D1900V2	5d173	2020/4/22	1900	1g	39.40
				10g	20.50
D2300V2	1023	2020/8/13	2300	1g	49.0
				10g	23.7
D2450V2	727	2020/4/22	2450	1g	52.6
				10g	24.7
D2600V2	1005	2020/1/29	2600	1g	57.3
				10g	25.5
D5GHzV2	1023	2021/1/26	5200	1g	77.9
				10g	22.2
D5GHzV2	1023	2021/1/26	5300	1g	80.4
				10g	22.8
D5GHzV2	1023	2021/1/26	5600	1g	83.9
				10g	23.6
D5GHzV2	1023	2021/1/26	5800	1g	80.9
				10g	22.6

8.1 System Performance Check Results

Date	Tissue Type	Dipole S/N	Input Power (mW)	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Delta 1g ± 10 (%)	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Delta 10g ± 10 (%)	Plot No.
2021/1/26	Head	D750V3-1015	250	2.00	8.48	8	-5.66	1.25	5.53	5	-9.58	1
2020/12/21	Head	D835V2-4d063	250	2.35	9.52	9.4	-1.26	1.46	6.21	5.84	-5.96	2
2021/1/27	Head	D835V2-4d063	250	2.37	9.52	9.48	-0.42	1.47	6.21	5.88	-5.31	3
2020/12/16	Head	D1750V2-1008	250	8.44	36.00	33.76	-6.22	4.50	18.90	18	-4.76	4
2020/12/17	Head	D1750V2-1008	250	8.70	36.00	34.8	-3.33	4.62	18.90	18.48	-2.22	5
2020/12/15	Head	D1900V2-5d173	250	9.48	39.40	37.92	-3.76	4.86	20.50	19.44	-5.17	6
2020/12/16	Head	D1900V2-5d173	250	9.90	39.40	39.6	0.51	5.08	20.50	20.32	-0.88	7
2021/1/27	Head	D2300V2-1023	250	11.40	49.00	45.6	-6.94	5.52	23.70	22.08	-6.84	8
2021/4/20	Head	D2450V2-727	250	12.50	52.60	50	-4.94	6.08	24.70	24.32	-1.54	9
2020/12/14	Head	D2600V2-1005	250	14.20	57.30	56.8	-0.87	6.42	25.50	25.68	0.71	10
2021/1/28	Head	D2600V2-1005	250	13.40	57.30	53.6	-6.46	6.08	25.50	24.32	-4.63	11
2021/4/29	Head	D5GHzV2-1023-5200	100	7.47	77.90	74.7	-4.11	2.17	22.20	21.7	-2.25	12
2021/4/29	Head	D5GHzV2-1023-5300	100	8.43	80.40	84.3	4.85	2.43	22.80	24.3	6.58	13
2021/5/3	Head	D5GHzV2-1023-5300	100	8.52	80.40	85.2	5.97	2.46	22.80	24.6	7.89	14
2021/4/22	Head	D5GHzV2-1023-5600	100	8.46	83.90	84.6	0.83	2.42	23.60	24.2	2.54	15
2021/4/23	Head	D5GHzV2-1023-5600	100	8.36	83.90	83.6	-0.36	2.39	23.60	23.9	1.27	16
2021/4/26	Head	D5GHzV2-1023-5800	100	8.08	80.90	80.8	-0.12	2.33	22.60	23.3	3.10	17
2021/4/29	Head	D5GHzV2-1023-5800	100	7.82	80.90	78.2	-3.34	2.23	22.60	22.3	-1.33	18

9 Power Reduction by Proximity Sensing

The DUT has one proximity sensors to reduce the output power. The position of the sensors and antenna are as shown in the graphic.



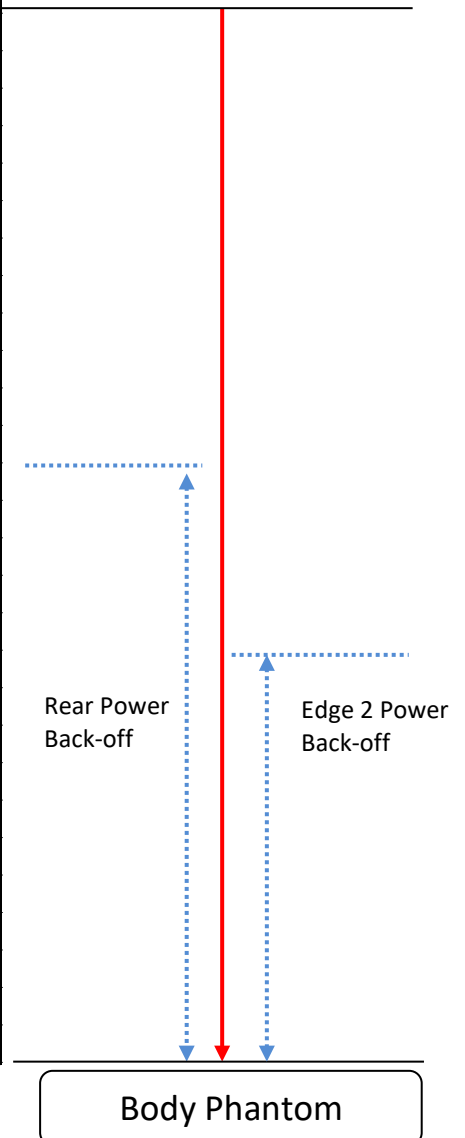
9.1 Proximity Sensor Triggering Distance (KDB 616217 D04 section 6.2)

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 “P-Sensor operational description”, and the shortest triggering distances were reported and used for SAR assessment.

9.2 Proximity Sensor Status Table of trigger distance

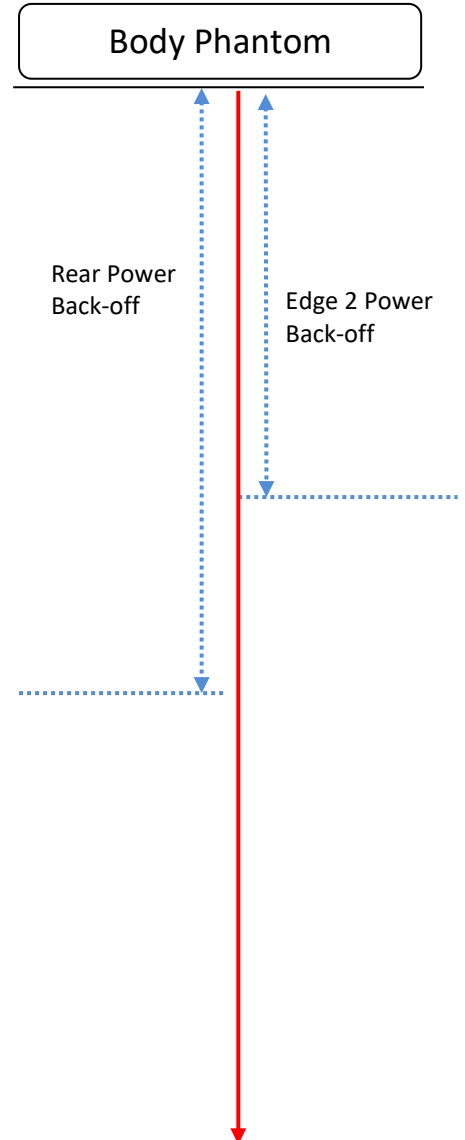
Proximity Sensor Status Table when DUT is moving towards the phantom

Distance to the DUT (mm)	Proximity Sensor Status – Rear Surface	Proximity Sensor Status – Edge 2
30	OFF	OFF
27	OFF	OFF
25	OFF	OFF
24	OFF	OFF
23	OFF	OFF
22	OFF	OFF
21	OFF	OFF
20	OFF	OFF
19	OFF	OFF
18	OFF	OFF
17	OFF	OFF
16	OFF	OFF
15	ON	OFF
14	ON	OFF
13	ON	OFF
12	ON	OFF
11	ON	OFF
10	ON	ON
9	ON	ON
8	ON	ON
7	ON	ON
6	ON	ON
5	ON	ON
4	ON	ON
3	ON	ON
2	ON	ON
1	ON	ON
0	ON	ON



Proximity Sensor Status Table when DUT is moving away from the phantom

Distance to the DUT (mm)	Proximity Sensor Status – Rear Surface	Proximity Sensor Status – Edge 2
0	ON	ON
1	ON	ON
2	ON	ON
3	ON	ON
4	ON	ON
5	ON	ON
6	ON	ON
7	ON	ON
8	ON	ON
9	ON	ON
10	ON	ON
11	ON	OFF
12	ON	OFF
13	ON	OFF
14	ON	OFF
15	ON	OFF
16	OFF	OFF
17	OFF	OFF
18	OFF	OFF
19	OFF	OFF
20	OFF	OFF
21	OFF	OFF
22	OFF	OFF
23	OFF	OFF
24	OFF	OFF
25	OFF	OFF
27	OFF	OFF
30	OFF	OFF



Proximity Sensor Trigger Distance (mm)		
Position	Rear	Edge 2
Minimum	15	10



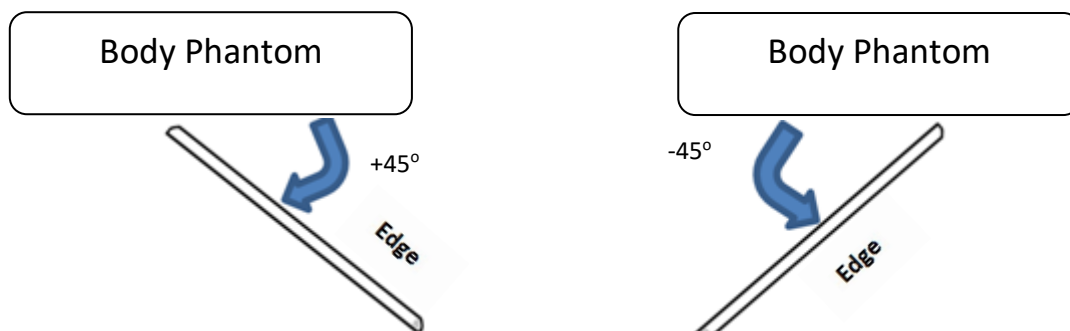
9.3 Proximity Sensor Triggering Coverage (KDB 616217 D04 section 6.3)

If a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For p-sensor coverage testing, the device is moved and “along the direction of maximum antenna and sensor offset”.

Although the sensor is spatially offset, there is no trigger condition where the antenna is next to the user but the sensor is laterally further away, therefore proximity sensor coverage testing is not required.

9.4 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 12 mm separation. Rotating the tablet around the edge next to the phantom in $\leq 10^\circ$ increments until the tablet is $\pm 45^\circ$ from the vertical position at 0° , and the maximum output power remains in the reduced mode.



Distance to the DUT (mm)	Proximity Sensor Status 0° to $+45^\circ$	Proximity Sensor Status 0° to -45°
12	ON	ON
11	ON	ON
10	ON	ON
9	ON	ON
8	ON	ON
7	ON	ON
6	ON	ON
5	ON	ON
4	ON	ON
3	ON	ON
2	ON	ON
1	ON	ON
0	ON	ON

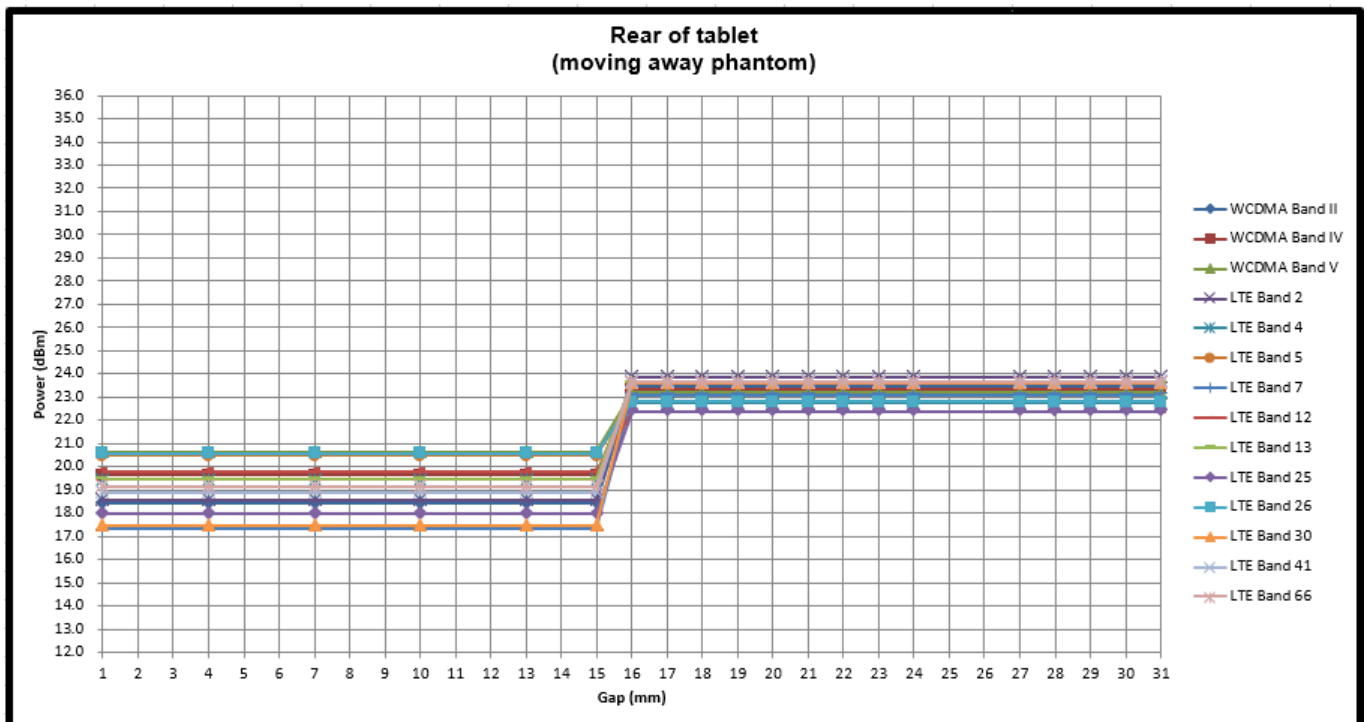
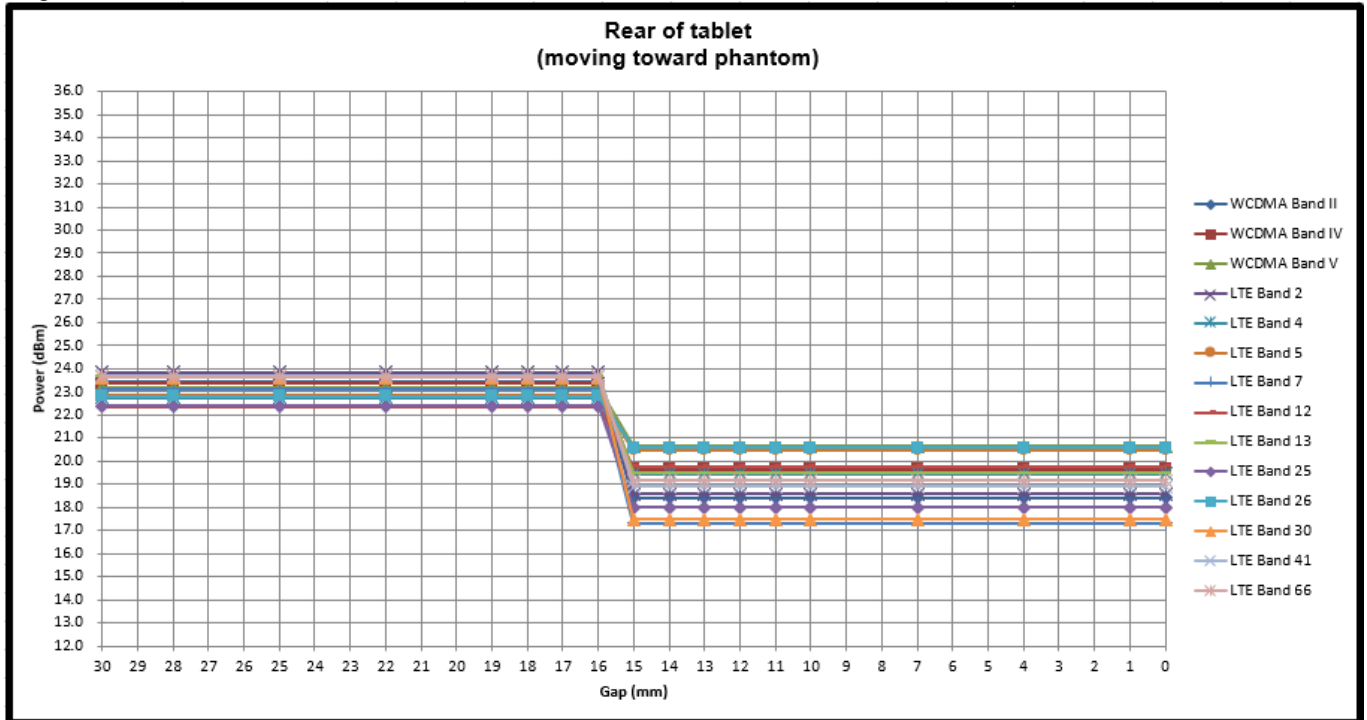
The Sensor Trigger Distance (mm)	
Position	Edge 2
Minimum	12

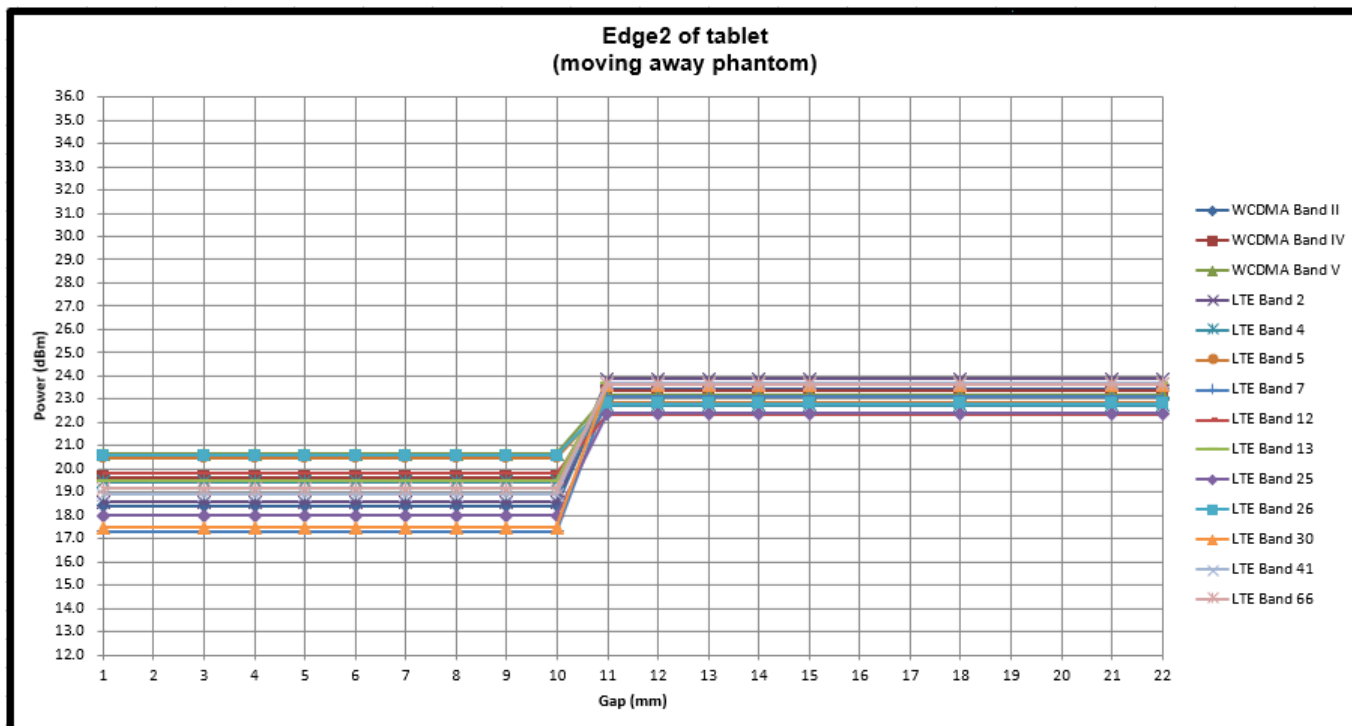
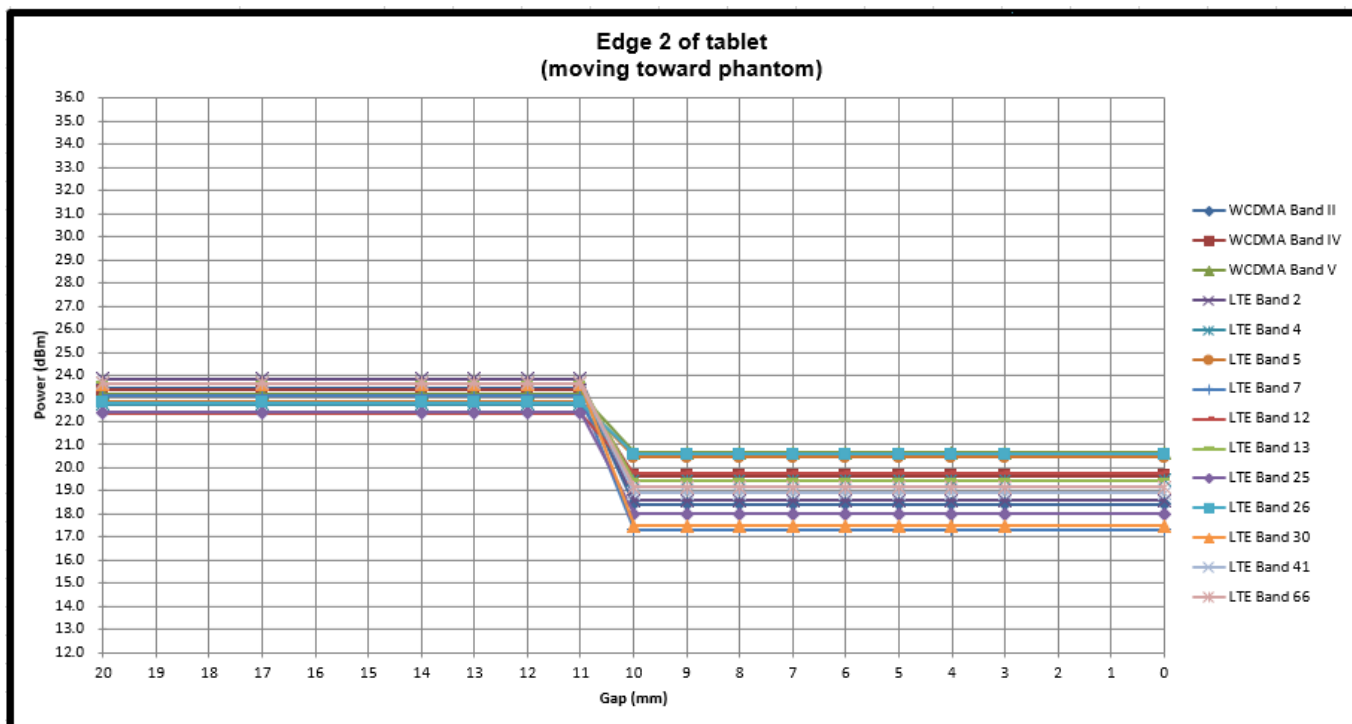
Remark:

- 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:
Rear : 14 mm
Edge 2 : 9 mm

9.5 Power Reduction per Air-interface

The following graphs show the power level and the distance from the DUT to the flat phantom for the Rear and Edge 2 Surface.





10 Conducted Output Power Measurements

10.1 W-CDMA

Release 99 Setup Procedures used to establish the test signals

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

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

HSDPA Setup Procedures used to establish the test signals

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

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

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

The following 5 Sub-tests were completed according to Release 6 procedures in table C,11.1.3 of 3GPP TS 34.121-1 v13.

A summary of these settings are illustrated below:

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

W-CDMA Band II Measured Results

Band	Mode		UL Ch No.	Freq. (MHz)	MPR (dB)	Max. Meas. Avg Pwr (dBm)	Tune-up	MPR (dB)	Reduced Meas. Avg Pwr	Tune-up
W-CDMA Band II	Rel 99	RMC, 12.2 kbps	9262	1852.4	N/A	23.33	24.00	N/A	18.50	19.00
			9400	1880.0	N/A	23.50		N/A	18.65	
			9538	1907.6	N/A	23.45		N/A	18.42	
	HSDPA	Subtest 1	9262	1852.4	0	22.33	24.00	0	18.30	19.00
			9400	1880.0	0	22.37		0	18.50	
			9538	1907.6	0	22.37		0	18.19	
		Subtest 2	9262	1852.4	0	22.27	24.00	0	18.30	
			9400	1880.0	0	22.25		0	18.50	
			9538	1907.6	0	22.53		0	18.15	
		Subtest 3	9262	1852.4	0.5	21.84	23.50	0	17.86	
			9400	1880.0	0.5	21.75		0	17.95	
			9538	1907.6	0.5	21.96		0	17.58	
		Subtest 4	9262	1852.4	0.5	21.79	23.50	0	17.87	
			9400	1880.0	0.5	21.72		0	17.94	
			9538	1907.6	0.5	21.97		0	17.61	
	HSUPA	Subtest 1	9262	1852.4	0	22.28	24.00	0	18.26	19.00
			9400	1880.0	0	22.25		0	18.41	
			9538	1907.6	0	22.55		0	18.11	
		Subtest 2	9262	1852.4	2	21.73	22.00	0	17.77	
			9400	1880.0	2	21.61		0	17.92	
			9538	1907.6	2	21.87		0	17.66	
		Subtest 3	9262	1852.4	1	22.26	23.00	0	18.24	
			9400	1880.0	1	22.21		0	18.39	
			9538	1907.6	1	22.41		0	18.07	
		Subtest 4	9262	1852.4	2	21.72	22.00	0	18.27	
			9400	1880.0	2	21.86		0	18.46	
			9538	1907.6	2	21.80		0	18.17	
		Subtest 5	9262	1852.4	0	22.23	24.00	0	18.26	
			9400	1880.0	0	22.21		0	18.43	
			9538	1907.6	0	22.50		0	18.12	

W-CDMA Band IV Measured Results

Band	Mode		UL Ch No.	Freq. (MHz)	MPR (dB)	Max. Meas. Avg Pwr (dBm)	Tune-up	MPR (dB)	Reduced Meas. Avg Pwr	Tune-up
W-CDMA Band IV	Rel 99	RMC, 12.2 kbps	1312	1712.4	N/A	23.07	24.00	N/A	19.19	20.00
			1413	1732.6	N/A	23.32		N/A	19.33	
			1513	1752.6	N/A	23.36		N/A	19.65	
	HSDPA	Subtest 1	1312	1712.4	0	22.20	24.00	0	18.87	20.00
			1413	1732.6	0	22.24		0	19.08	
			1513	1752.6	0	22.17		0	19.35	
		Subtest 2	1312	1712.4	0	23.05	24.00	0	18.89	
			1413	1732.6	0	22.30		0	19.06	
			1513	1752.6	0	22.75		0	19.36	
		Subtest 3	1312	1712.4	0.5	22.75	23.50	0	18.46	
			1413	1732.6	0.5	21.87		0	18.53	
			1513	1752.6	0.5	22.76		0	18.84	
		Subtest 4	1312	1712.4	0.5	22.84	23.50	0	18.43	
			1413	1732.6	0.5	21.83		0	18.51	
			1513	1752.6	0.5	22.77		0	18.85	
	HSUPA	Subtest 1	1312	1712.4	0	22.66	24.00	0	18.83	20.00
			1413	1732.6	0	22.25		0	19.03	
			1513	1752.6	0	22.83		0	19.31	
		Subtest 2	1312	1712.4	2	21.86	22.00	0	18.34	
			1413	1732.6	2	21.45		0	18.53	
			1513	1752.6	2	21.20		0	18.79	
		Subtest 3	1312	1712.4	1	22.86	23.00	0	18.86	
			1413	1732.6	1	22.37		0	19.02	
			1513	1752.6	1	22.81		0	19.31	
		Subtest 4	1312	1712.4	2	21.81	22.00	0	18.80	
			1413	1732.6	2	21.62		0	19.03	
			1513	1752.6	2	21.90		0	19.30	
		Subtest 5	1312	1712.4	0	22.96	24.00	0	18.80	
			1413	1732.6	0	22.26		0	19.00	
			1513	1752.6	0	23.07		0	19.33	

W-CDMA Band V Measured Results

Band	Mode		UL Ch No.	Freq. (MHz)	MPR (dB)	Max. Meas. Avg Pwr (dBm)	Tune-up	MPR (dB)	Reduced Meas. Avg Pwr	Tune-up
W-CDMA Band V	Rel 99	RMC, 12.2 kbps	4132	826.4	N/A	23.17	24.00	N/A	20.58	21.00
			4183	836.6	N/A	23.15		N/A	20.42	
			4233	846.6	N/A	23.21		N/A	20.65	
	HSDPA	Subtest 1	4132	826.4	0	22.06	24.00	0	19.97	21.00
			4183	836.6	0	22.06		0	19.74	
			4233	846.6	0	22.22		0	20.00	
		Subtest 2	4132	826.4	0	22.03	24.00	0	20.03	
			4183	836.6	0	22.05		0	19.75	
			4233	846.6	0	22.23		0	19.93	
		Subtest 3	4132	826.4	0.5	21.68	23.50	0	19.58	
			4183	836.6	0.5	21.61		0	19.37	
			4233	846.6	0.5	21.70		0	19.50	
		Subtest 4	4132	826.4	0.5	21.71	23.50	0	19.68	
			4183	836.6	0.5	21.70		0	19.31	
			4233	846.6	0.5	21.74		0	19.53	
	HSUPA	Subtest 1	4132	826.4	0	22.08	24.00	0	20.08	21.00
			4183	836.6	0	22.14		0	19.73	
			4233	846.6	0	22.21		0	19.93	
		Subtest 2	4132	826.4	2	21.45	22.00	0	19.46	
			4183	836.6	2	21.53		0	19.23	
			4233	846.6	2	21.55		0	19.41	
		Subtest 3	4132	826.4	1	21.99	23.00	0	20.13	
			4183	836.6	1	21.95		0	19.76	
			4233	846.6	1	22.04		0	19.94	
		Subtest 4	4132	826.4	2	21.86	22.00	0	19.95	
			4183	836.6	2	21.78		0	19.70	
			4233	846.6	2	21.92		0	19.96	
		Subtest 5	4132	826.4	0	22.06	24.00	0	20.03	
			4183	836.6	0	22.13		0	19.77	
			4233	846.6	0	22.15		0	19.92	

10.2 LTE

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

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

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

[illegible]

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

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

Network Signalling value	Requirements (subclause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	N/A
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36, 66, 70	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2, 6.6.3.3.19	41	5, 10, 15, 20	Table 6.2.4-4, Table 6.2.4-4a	
NS_05	6.6.3.3.1	1	10, 15, 20	≥ 50 (NOTE 1)	≤ 1 (NOTE 1)
			15, 20	Table 6.2.4-18 (NOTE 2)	
		65 (NOTE 3)	10, 15, 20	≥ 50	≤ 1 (NOTE 1)
			15, 20	Table 6.2.4-18 (NOTE 2)	
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	N/A
NS_07	6.6.2.2.3	13	10	Table 6.2.4-2	
NS_08	6.6.3.3.2				
NS_09	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_10	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_11	6.6.2.2.1	23	1.4, 3, 5, 10, 15, 20	Table 6.2.4-3	
NS_12	6.6.3.3.13			Table 6.2.4-5	
NS_13	6.6.3.3.5	26	1.4, 3, 5, 10, 15	Table 6.2.4-6	
NS_14	6.6.3.3.6	26	5	Table 6.2.4-7	
NS_15	6.6.3.3.7	26	10, 15	Table 6.2.4-8	
NS_16	6.6.3.3.8	26	1.4, 3, 5, 10, 15	Table 6.2.4-9	
				Table 6.2.4-10	
NS_17	6.6.3.3.9	27	3, 5, 10	Table 6.2.4-11, Table 6.2.4-12, Table 6.2.4-13	
NS_18	6.6.3.3.10	28	5, 10	Table 5.6-1	N/A
NS_19	6.6.3.3.11	28	5	≥ 2	≤ 1
			10, 15, 20	≥ 1	≤ 4
NS_20	6.6.3.3.12	44	10, 15, 20	Table 6.2.4-14	
NS_21	6.2.2, 6.6.2.2.1, 6.6.3.3.14	23	5, 10, 15, 20	Table 6.2.4-15	
NS_22	6.6.3.3.15	30	5, 10	Table 6.2.4-16	
NS_23	6.6.3.3.16	42, 43	5, 10, 15, 20	Table 6.2.4-17	
NS_24	6.6.3.3.17	42, 43	5, 10, 15, 20	N/A	
NS_25	6.6.3.3.20	65 (NOTE 4)	5, 10, 15, 20	Table 6.2.4-19	
NS_26	6.6.3.3.21	65 (NOTE 4)	5, 10, 15, 20	Table 6.2.4-20	
NS_27	6.6.3.3.22	68	10, 15	Table 6.2.4-21	
NS_28	6.6.2.2.5, 6.6.3.3.23	48	5, 10, 15, 20	Table 6.2.4-22	
NS_29	6.2.2A, 6.6.3.3.24	46 (NOTE 5)	20	Table 6.2.4-23	
NS_30	6.2.2A, 6.6.2.3.1a, 6.6.3.3.25	46 (NOTE 5)	20	Table 6.2.4-24	
NS_31	6.2.2A, 6.6.3.3.26	46 (NOTE 5)	20	Table 6.2.4-25	
NS_32	6.2.2A, 6.6.3.3.27	46 (NOTE 5)	20	Table 6.2.4-26	
NS_32	-	-	-	-	-

NOTE 1: Applicable when the lower edge of the assigned E-UTRA UL channel bandwidth frequency is larger than or equal to the upper edge of PHS band (1915.7 MHz) + 4 MHz + the channel BW assigned, where channel BW is as defined in subclause 5.6. A-MPR for

LTE Band 2 Measured Results

SAR for LTE Band 2 (Frequency range: 1850-1910 MHz) is covered by LTE Band 25 (Frequency range: 1850-1915 MHz) due to similar frequency range, same maximum tune-up limit and same channel bandwidth.

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						18700	18900	19100			18700	18900	19100	
						1860 MHz	1880 MHz	1900 MHz			1860 MHz	1880 MHz	1900 MHz	
LTE Band 2	20	QPSK	1	0	0	23.88	23.89	23.86	24.00	0	18.56	18.70	18.57	19.00
			1	49	0	23.85	23.74	23.78		0	17.54	17.54	17.47	
			1	99	0	23.42	23.28	23.13		0	18.00	18.05	17.89	
			50	0	1	22.38	22.45	22.34	23.00	0	18.06	18.21	18.17	
			50	24	1	22.10	22.12	21.99		0	17.81	17.89	17.79	
			50	50	1	22.34	22.25	22.28		0	17.82	17.87	17.77	
			100	0	1	22.91	22.83	22.99		0	17.99	18.11	18.00	
		16QAM	1	0	1	22.90	22.87	22.80	23.00	0	18.84	18.96	18.92	
			1	49	1	22.25	22.13	22.04		0	17.82	17.95	17.78	
			1	99	1	22.81	22.58	22.26		0	18.31	18.37	18.34	
			50	0	2	21.25	21.48	21.23	22.00	0	18.08	18.23	18.14	
			50	24	2	21.13	21.12	20.97		0	17.83	17.91	17.82	
			50	50	2	21.06	21.10	20.95		0	17.82	17.88	17.76	
			100	0	2	21.47	21.29	21.15		0	17.98	18.08	17.98	
		64QAM	1	0	2	21.89	21.87	21.69	22.00	0	18.50	18.54	18.56	
			1	49	2	21.86	21.78	21.24		0	17.52	17.56	17.44	
			1	99	2	20.72	21.85	20.61		0	17.95	17.99	17.86	
			50	0	3	20.90	20.86	20.68	21.00	0	17.75	17.91	17.82	
			50	24	3	20.41	20.58	20.50		0	17.49	17.60	17.50	
			50	50	3	20.34	20.57	20.44		0	17.49	17.55	17.40	
			100	0	3	20.68	20.82	20.63		0	17.68	17.75	17.71	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						18675	18900	19125			18675	18900	19125	
						1857.5 MHz	1880 MHz	1902.5 MHz			1857.5 MHz	1880 MHz	1902.5 MHz	
LTE Band 2	15	QPSK	1	0	0	23.85	23.75	23.79	24.00	0	18.33	18.48	18.38	19.00
			1	37	0	23.05	23.08	23.34		0	17.74	17.66	17.61	
			1	74	0	23.39	23.22	23.06		0	17.94	18.12	17.97	
			36	0	1	22.27	22.11	22.23	23.00	0	18.05	18.23	18.19	
			36	18	1	22.07	22.06	21.92		0	17.77	17.94	17.84	
			36	39	1	21.87	22.01	21.61		0	17.76	17.94	17.89	
			75	0	1	22.88	22.77	22.92		0	17.89	18.07	17.94	
		16QAM	1	0	1	22.86	22.81	22.77	23.00	0	18.39	18.59	18.43	
			1	37	1	22.59	22.75	22.39		0	17.88	18.24	17.81	
			1	74	1	22.78	22.52	22.19		0	17.94	18.38	18.00	
			36	0	2	21.53	21.24	21.51	22.00	0	18.01	18.20	18.22	
			36	18	2	21.10	21.06	20.90		0	17.82	17.87	17.84	
			36	39	2	21.31	21.09	20.81		0	17.82	18.00	17.68	
			75	0	2	21.44	21.23	21.08		0	17.86	18.01	17.90	
		64QAM	1	0	2	21.91	21.27	21.71	22.00	0	18.32	18.33	18.23	
			1	37	2	21.15	21.00	21.20		0	17.16	17.11	17.21	
			1	74	2	21.69	21.77	21.36		0	17.22	17.45	17.20	
			36	0	3	20.61	20.74	20.67	21.00	0	17.38	17.61	17.58	
			36	18	3	20.35	20.52	20.46		0	17.21	17.31	17.17	
			36	39	3	20.15	20.55	20.51		0	17.18	17.32	17.37	
			75	0	3	20.51	20.70	20.50		0	17.24	17.43	17.39	



Report No.: T201102D09-SF

Page: 48 / 124
Rev.: 00

LTE Band 2 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						18650	18900	19150			18650	18900	19150	
						1855 MHz	1880 MHz	1905 MHz			1855 MHz	1880 MHz	1905 MHz	
LTE Band 2	10	QPSK	1	0	0	23.84	23.74	23.78	24.00	0	17.96	18.14	18.02	19.00
			1	25	0	23.23	22.81	23.12		0	17.49	17.53	17.73	
			1	49	0	23.38	23.21	23.05		0	17.56	17.63	17.85	
			25	0	1	22.39	22.23	21.97	23.00	0	17.78	17.86	17.93	
			25	12	1	22.06	22.05	21.91		0	17.62	17.78	17.84	
			25	25	1	21.93	22.05	22.01		0	17.70	17.86	17.81	
			50	0	1	22.87	22.76	22.91		0	17.69	17.83	17.95	
		16QAM	1	0	1	22.98	22.84	22.93	23.00	0	18.37	18.17	18.46	
			1	25	1	22.97	22.33	22.87		0	17.82	17.97	17.92	
			1	49	1	22.77	22.51	22.18		0	17.84	18.17	17.77	
			25	0	2	21.24	21.14	21.03	22.00	0	17.85	17.86	17.84	
			25	12	2	21.09	21.05	20.89		0	17.71	17.71	17.88	
			25	25	2	21.24	20.96	20.88		0	17.72	17.75	17.78	
			50	0	2	21.43	21.22	21.07		0	17.74	17.90	17.76	
		64QAM	1	0	2	21.76	21.90	21.89	22.00	0	17.86	18.04	17.99	
			1	25	2	21.72	21.91	21.92		0	17.60	17.41	17.74	
			1	49	2	21.80	21.96	21.35		0	17.64	17.70	17.77	
			25	0	3	20.87	20.96	20.93	21.00	0	17.84	17.82	17.91	
			25	12	3	20.68	20.93	20.78		0	17.70	17.80	17.82	
			25	25	3	20.58	20.90	20.80		0	17.70	17.72	17.83	
			50	0	3	20.70	20.89	20.80		0	17.65	17.75	17.88	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						18625	18900	19175			18625	18900	19175	
						1852.5 MHz	1880 MHz	1907.5 MHz			1852.5 MHz	1880 MHz	1907.5 MHz	
LTE Band 2	5	QPSK	1	0	0	23.82	23.72	23.75	24.00	0	17.67	17.79	17.86	19.00
			1	12	0	23.56	23.38	23.41		0	17.64	17.70	17.58	
			1	24	0	23.36	23.19	23.02		0	17.56	17.64	17.57	
			12	0	1	22.34	22.12	22.03	23.00	0	17.63	17.76	17.67	
			12	6	1	22.04	22.03	21.88		0	17.58	17.73	17.75	
			12	13	1	22.01	21.95	21.81		0	17.62	17.79	17.68	
			25	0	1	22.85	22.74	22.88		0	17.65	17.66	17.69	
		16QAM	1	0	1	22.89	22.80	22.79	23.00	0	17.60	18.18	18.17	
			1	12	1	22.93	22.87	22.81		0	18.00	17.44	18.00	
			1	24	1	22.75	22.49	22.15		0	17.71	17.83	17.55	
			12	0	2	21.78	21.53	21.19	22.00	0	17.70	17.74	17.79	
			12	6	2	21.07	21.03	20.86		0	17.65	17.67	17.76	
			12	13	2	21.02	21.08	20.93		0	17.73	17.80	17.66	
			25	0	2	21.41	21.20	21.04		0	17.56	17.69	17.70	
		64QAM	1	0	2	21.73	21.79	21.87	22.00	0	17.79	18.08	17.95	
			1	12	2	21.69	21.73	21.83		0	17.95	17.80	17.97	
			1	24	2	21.57	21.83	21.64		0	17.72	18.11	17.79	
			12	0	3	20.63	20.91	20.68	21.00	0	17.61	17.70	17.57	
			12	6	3	20.60	20.87	20.60		0	17.61	17.78	17.82	
			12	13	3	20.56	20.81	20.67		0	17.58	17.76	17.69	
			25	0	3	20.58	20.85	20.73		0	17.69	17.73	17.76	



Report No.: T201102D09-SF

Page: 49 / 124
Rev.: 00

LTE Band 2 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						18615	18900	19185			18615	18900	19185	
						1851.5 MHz	1880 MHz	1908.5 MHz			1851.5 MHz	1880 MHz	1908.5 MHz	
LTE Band 2	3	QPSK	1	0	0	23.77	23.68	23.70	24.00	0	17.55	17.73	17.81	19.00
			1	8	0	23.63	23.45	23.65		0	17.52	17.60	17.83	
			1	14	0	23.31	23.15	22.97		0	17.39	17.63	17.67	
			8	0	1	22.03	22.01	21.86	23.00	0	17.59	17.68	17.65	
			8	4	1	21.99	21.99	21.83		0	17.64	17.70	17.73	
			8	7	1	21.95	21.94	21.71		0	17.58	17.60	17.59	
		16QAM	15	0	1	22.80	22.70	22.83	23.00	0	17.63	17.69	17.68	
			1	0	1	22.91	22.98	22.90		0	18.11	17.83	17.97	
			1	8	1	22.86	22.78	22.63		0	17.50	17.88	18.04	
			1	14	1	22.70	22.45	22.10	22.00	0	17.69	17.49	17.63	
			8	0	2	21.08	21.04	20.89		0	17.70	17.83	17.68	
			8	4	2	21.02	20.99	20.81		0	17.88	17.83	17.66	
		64QAM	8	7	2	20.96	20.93	20.76	22.00	0	17.74	17.75	17.75	
			15	0	2	21.36	21.16	20.99		0	17.76	17.88	17.74	
			1	0	2	21.54	21.85	21.78	21.00	0	17.66	17.83	17.85	
			1	8	2	21.58	21.91	21.72		0	17.78	17.79	17.91	
			1	14	2	21.62	21.88	21.60		0	17.67	17.74	17.73	
			8	0	3	20.71	20.98	20.79	21.00	0	17.64	17.67	17.87	
			8	4	3	20.67	20.92	20.75		0	17.58	17.80	17.78	
			8	7	3	20.63	20.97	20.74		0	17.72	17.72	17.71	
			15	0	3	20.60	20.82	20.72		0	17.61	17.83	17.86	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						18607	18900	19193			18607	18900	19193	
						1850.7 MHz	1880 MHz	1909.3 MHz			1850.7 MHz	1880 MHz	1909.3 MHz	
LTE Band 2	1.4	QPSK	1	0	0	23.76	23.67	23.68	24.00	0	17.57	17.68	17.72	19.00
			1	3	0	23.60	23.59	23.53		0	17.55	17.63	17.69	
			1	5	0	23.30	23.14	22.95		0	17.47	17.45	17.54	
			3	0	0	22.73	22.57	22.67	23.00	0	17.52	17.62	17.65	
			3	1	0	22.71	22.49	22.59		0	17.57	17.66	17.60	
			3	2	0	22.33	22.23	22.33		0	17.47	17.61	17.49	
		16QAM	6	0	1	22.79	22.69	22.81	23.00	0	17.44	17.57	17.62	
			1	0	1	22.96	22.97	22.88		0	17.98	17.95	17.82	
			1	3	1	22.93	22.84	22.78		0	17.74	17.65	17.50	
			1	5	1	22.69	22.44	22.08	22.00	0	17.51	17.63	17.73	
			3	0	1	22.69	22.48	22.32		0	17.49	17.55	17.54	
			3	2	1	22.55	22.35	22.21		0	17.58	17.58	17.60	
		64QAM	3	3	1	22.41	22.20	22.01	22.00	0	17.52	17.64	17.62	
			6	0	2	21.35	21.15	20.97		0	17.66	17.67	17.59	
			1	0	2	21.67	21.69	21.85	21.00	0	17.79	17.40	17.74	
			1	3	2	21.65	21.67	21.68		0	17.51	17.80	17.72	
			1	5	2	21.64	21.64	21.52		0	17.56	17.82	17.45	
			3	0	2	21.77	21.91	21.58		0	17.52	17.71	17.65	
			3	2	2	21.70	21.82	21.48	21.00	0	17.76	17.71	17.46	
			3	3	2	21.74	21.85	21.53		0	17.58	17.60	17.33	
			6	0	3	20.60	20.78	20.53		0	17.54	17.69	17.48	

LTE Band 4 Measured Results

SAR for LTE Band 4 (Frequency range: 1710-1755 MHz) is covered by LTE Band 66 (Frequency range: 1710-1780 MHz) due to similar frequency range, same maximum tune-up limit and same channel bandwidth.

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						20050	20175	20300			20050	20175	20300	
						1720 MHz	1732.5 MHz	1745 MHz			1720 MHz	1732.5 MHz	1745 MHz	
LTE Band 4	20	QPSK	1	0	0	22.68	22.75	22.85	24.00	0	19.37	19.46	19.50	20.00
			1	49	0	22.56	22.04	22.67		0	19.31	19.38	19.44	
			1	99	0	22.41	22.55	22.77		0	19.33	19.40	19.42	
			50	0	1	21.83	21.77	21.97	23.00	0	19.45	19.54	19.57	
			50	24	1	21.65	21.59	21.93		0	19.37	19.47	19.55	
			50	50	1	21.68	21.50	21.91		0	19.40	19.48	19.49	
			100	0	1	21.85	21.81	21.98		0	19.42	19.48	19.46	
		16QAM	1	0	1	21.86	22.01	22.09	23.00	0	19.51	19.58	19.61	
			1	49	1	21.78	21.08	21.91		0	19.53	19.61	19.65	
			1	99	1	21.53	21.59	21.81		0	19.57	19.67	19.70	
			50	0	2	20.84	20.79	21.13	22.00	0	19.43	19.49	19.51	
			50	24	2	20.62	20.58	20.92		0	19.37	19.45	19.49	
			50	50	2	20.46	20.50	20.87		0	19.39	19.46	19.52	
			100	0	2	20.54	20.62	20.93		0	19.35	19.45	19.48	
		64QAM	1	0	2	21.52	21.80	21.64	22.00	0	19.42	19.51	19.54	
			1	49	2	21.36	21.02	21.32		0	19.45	19.53	19.57	
			1	99	2	21.16	21.64	20.20		0	19.31	19.40	19.43	
			50	0	3	20.78	20.92	20.83	21.00	0	19.36	19.46	19.51	
			50	24	3	20.61	20.69	20.52		0	19.31	19.43	19.45	
			50	50	3	20.58	20.62	20.47		0	19.33	19.44	19.48	
100	0		3	19.57	20.70	20.44	0	19.35		19.45	19.50			
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						20025	20175	20325			20025	20175	20325	
						1717.5 MHz	1732.5 MHz	1747.5 MHz			1717.5 MHz	1732.5 MHz	1747.5 MHz	
LTE Band 4	15	QPSK	1	0	0	22.60	22.69	22.83	24.00	0	19.38	19.26	19.53	20.00
			1	37	0	22.26	22.08	22.46		0	18.62	18.66	18.69	
			1	74	0	22.33	22.49	22.72		0	18.66	19.01	19.01	
			36	0	1	21.85	21.74	22.19	23.00	0	18.98	18.96	19.07	
			36	18	1	21.57	21.53	21.88		0	18.81	18.80	18.89	
			36	39	1	21.52	21.28	22.15		0	18.91	18.73	18.81	
			75	0	1	21.77	21.75	21.93		0	18.81	18.96	18.90	
		16QAM	1	0	1	21.78	21.95	22.07	23.00	0	19.56	19.54	19.52	
			1	37	1	21.23	21.52	21.65		0	18.46	18.47	18.83	
			1	74	1	21.45	21.53	21.76		0	19.23	18.89	19.30	
			36	0	2	20.81	20.79	20.72	22.00	0	18.82	18.80	18.87	
			36	18	2	20.54	20.52	20.87		0	18.62	18.54	18.62	
			36	39	2	20.33	20.32	20.75		0	18.63	18.49	18.59	
			75	0	2	20.46	20.56	20.88		0	18.72	18.61	18.71	
		64QAM	1	0	2	21.90	21.94	21.88	22.00	0	19.18	19.20	19.38	
			1	37	2	21.89	21.62	21.57		0	18.06	18.42	18.31	
			1	74	2	21.63	21.64	21.49		0	18.61	19.24	18.46	
			36	0	3	20.85	20.82	20.73	21.00	0	18.46	18.72	18.56	
			36	18	3	20.46	20.59	20.65		0	18.21	18.50	18.41	
			36	39	3	20.12	20.46	20.57		0	18.32	18.64	18.22	
75	0		3	19.45	20.72	20.58	0	18.38		18.57	18.46			

Note(s):

20 MHz Bandwidths does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices

LTE Band 4 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						20000	20175	20350			20000	20175	20350	
						1715 MHz	1732.5 MHz	1750 MHz			1715 MHz	1732.5 MHz	1750 MHz	
LTE Band 4	10	QPSK	1	0	0	22.57	22.67	22.81	24.00	0	19.03	19.08	19.15	20.00
			1	25	0	22.02	22.21	22.97		0	18.76	18.79	18.91	
			1	49	0	22.30	22.47	22.70		0	18.78	18.95	18.89	
			25	0	1	21.35	21.53	21.73	23.00	0	18.98	18.88	19.11	
			25	12	1	21.54	21.51	21.86		0	18.88	18.93	18.96	
			25	25	1	21.23	21.71	21.48		0	18.81	18.88	18.87	
			50	0	1	21.74	21.73	21.91		0	18.90	18.92	19.03	
		16QAM	1	0	1	21.75	21.93	22.05	23.00	0	19.23	19.49	19.10	
			1	25	1	21.69	21.43	21.93		0	19.15	19.18	18.92	
			1	49	1	21.42	21.51	21.74		0	19.01	19.28	18.95	
			25	0	2	20.27	20.46	20.62	22.00	0	18.74	18.89	18.91	
			25	12	2	20.51	20.50	20.85		0	18.82	18.74	18.90	
			25	25	2	20.48	20.23	20.31		0	18.80	18.81	18.87	
			50	0	2	20.43	20.54	20.86		0	18.83	18.77	18.88	
		64QAM	1	0	2	21.87	21.75	21.37	22.00	0	19.01	19.05	19.04	
			1	25	2	21.48	21.61	20.75		0	18.83	18.81	18.90	
			1	49	2	21.96	21.88	21.93		0	18.96	18.82	18.66	
			25	0	3	20.68	20.85	20.96	21.00	0	18.73	18.85	18.83	
			25	12	3	20.86	20.80	20.76		0	18.82	18.74	18.78	
			25	25	3	20.82	20.81	20.65		0	18.70	18.87	18.71	
			50	0	3	20.89	20.83	20.80		0	18.80	18.83	18.82	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						19975	20175	20375			19975	20175	20375	
						1712.5 MHz	1732.5 MHz	1752.5 MHz			1712.5 MHz	1732.5 MHz	1752.5 MHz	
LTE Band 4	5	QPSK	1	0	0	22.56	22.65	22.80	24.00	0	18.63	18.62	18.81	20.00
			1	12	0	22.13	22.59	22.42		0	18.61	18.69	18.54	
			1	24	0	22.29	22.45	22.67		0	18.71	18.62	18.69	
			12	0	1	21.04	21.57	22.06	23.00	0	18.78	18.78	18.87	
			12	6	1	21.53	21.49	21.83		0	18.64	18.74	18.79	
			12	13	1	21.11	21.59	21.68		0	18.71	18.69	18.73	
			25	0	1	21.73	21.71	21.88		0	18.63	18.73	18.65	
		16QAM	1	0	1	21.74	21.91	22.04	23.00	0	18.91	18.94	19.21	
			1	12	1	21.15	21.52	21.83		0	18.67	18.70	19.13	
			1	24	1	21.41	21.49	21.71		0	18.50	18.60	18.91	
			12	0	2	20.55	20.58	20.63	22.00	0	18.79	18.78	18.84	
			12	6	2	20.50	20.48	20.82		0	18.74	18.77	18.86	
			12	13	2	20.21	20.52	20.78		0	18.72	18.69	18.59	
			25	0	2	20.42	20.52	20.83		0	18.65	18.78	18.75	
		64QAM	1	0	2	21.92	21.90	21.93	22.00	0	19.02	18.91	19.07	
			1	12	2	21.91	21.75	21.84		0	18.78	18.78	18.85	
			1	24	2	21.71	21.62	21.82		0	18.74	18.72	18.75	
			12	0	3	20.76	20.79	20.57	21.00	0	18.68	18.73	18.93	
			12	6	3	20.82	20.84	20.79		0	18.69	18.79	18.78	
			12	13	3	20.78	20.90	20.71		0	18.72	18.71	18.78	
			25	0	3	20.76	20.81	20.89		0	18.74	18.78	18.61	

LTE Band 4 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						19965	20175	20385			19965	20175	20385	
						1711.5 MHz	1732.5 MHz	1753.5 MHz			1711.5 MHz	1732.5 MHz	1753.5 MHz	
LTE Band 4	3	QPSK	1	0	0	22.54	22.64	22.79	24.00	0	18.71	18.71	18.74	20.00
			1	8	0	22.09	22.73	22.86		0	18.79	18.83	18.96	
			1	14	0	22.27	22.44	22.66		0	18.62	18.60	18.59	
			8	0	1	21.87	21.34	21.88	23.00	0	18.71	18.72	18.85	
			8	4	1	21.51	21.48	21.82		0	18.78	18.79	18.81	
			8	7	1	21.49	21.39	21.86		0	18.78	18.73	18.85	
		16QAM	15	0	1	21.71	21.70	21.87	23.00	0	18.75	18.77	18.78	
			1	0	1	21.72	21.90	22.03		0	19.03	19.17	19.16	
			1	8	1	21.17	21.95	22.20		0	18.86	18.79	18.92	
			1	14	1	21.39	21.48	21.70	22.00	0	18.72	18.74	18.76	
			8	0	2	20.21	20.36	20.82		0	18.91	18.77	18.91	
			8	4	2	20.48	20.47	20.81		0	18.74	18.91	18.94	
		64QAM	8	7	2	20.14	20.38	20.91	22.00	0	18.84	18.84	19.01	
			15	0	2	20.40	20.51	20.82		0	18.66	18.76	18.87	
			1	0	2	21.51	21.69	21.75	21.00	0	18.96	19.07	18.93	
			1	8	2	21.52	21.91	21.72		0	18.70	18.79	18.82	
			1	14	2	20.90	21.47	21.69		0	18.75	18.79	18.77	
			8	0	3	20.14	20.99	20.94	21.00	0	18.86	18.76	18.71	
			8	4	3	20.73	20.86	20.82		0	18.87	18.83	18.76	
			8	7	3	20.69	20.92	20.78		0	18.77	18.74	18.68	
			15	0	3	20.66	20.93	20.76		0	18.90	18.87	18.86	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						19957	20175	20393			19957	20175	20393	
						1710.7 MHz	1732.5 MHz	1754.3 MHz			1710.7 MHz	1732.5 MHz	1754.3 MHz	
LTE Band 4	1.4	QPSK	1	0	0	22.53	22.63	22.78	24.00	0	18.58	18.54	18.57	20.00
			1	3	0	22.11	22.50	22.80		0	18.70	18.68	18.78	
			1	5	0	22.26	22.43	22.65		0	18.62	18.49	18.62	
			3	0	0	22.26	22.38	22.57	23.00	0	18.69	18.57	18.68	
			3	2	0	22.21	22.25	22.61		0	18.59	18.61	18.74	
			3	3	0	22.01	22.17	22.65		0	18.52	18.64	18.70	
		16QAM	6	0	1	21.70	21.69	21.86	23.00	0	18.65	18.65	18.64	
			1	0	1	21.71	21.89	22.02		0	18.97	18.88	19.16	
			1	3	1	21.45	21.53	22.17		0	18.82	18.77	19.00	
			1	5	1	21.38	21.47	21.69	22.00	0	18.66	18.75	18.73	
			3	0	1	21.87	21.53	22.10		0	18.43	18.62	18.66	
			3	2	1	21.31	21.45	21.82		0	18.57	18.71	18.73	
		64QAM	3	3	1	21.26	21.53	21.85	22.00	0	18.51	18.57	18.56	
			6	0	2	20.39	20.50	20.81		0	18.80	18.86	18.76	
			1	0	2	21.72	21.57	21.71	21.00	0	18.74	18.92	19.17	
			1	3	2	21.98	21.91	21.73		0	18.64	18.59	19.06	
			1	5	2	21.59	21.53	21.81		0	18.54	18.49	18.72	
			3	0	2	21.63	21.57	21.94		0	18.70	18.57	18.66	
			3	2	2	21.76	21.94	21.80	21.00	0	18.69	18.66	18.92	
			3	3	2	21.55	21.72	21.87		0	18.64	18.58	18.69	
			6	0	3	20.62	20.96	20.80		0	18.60	18.74	18.68	

LTE Band 5 Measured Results

SAR for LTE Band 5 (Frequency range: 824-849 MHz) is covered by LTE Band 26 (Frequency range: 814-849 MHz) due to similar frequency range, same maximum tune-up limit and same channel bandwidth.

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						20450	20525	20600			20450	20525	20600	
						829 MHz	836.5 MHz	844 MHz			829 MHz	836.5 MHz	844 MHz	
LTE Band 5	10	QPSK	1	0	0	22.92	22.84	22.96	24.00	0	20.40	20.47	20.42	21.00
			1	25	0	22.89	22.77	22.91		0	20.55	20.64	20.56	
			1	49	0	22.86	22.78	22.81		0	20.67	20.73	20.67	
			25	0	1	21.28	22.04	21.98	23.00	0	20.47	20.55	20.51	
			25	12	1	21.04	21.96	21.89		0	20.51	20.58	20.53	
			25	25	1	21.07	21.97	21.86		0	20.45	20.55	20.50	
		16QAM	50	0	1	21.02	21.97	21.82	23.00	0	20.52	20.61	20.52	
			1	0	1	22.41	21.96	22.06		0	20.77	20.81	20.74	
			1	25	1	22.29	22.92	21.96		0	20.90	20.97	20.90	
			1	49	1	22.19	21.94	21.80	22.00	0	20.86	20.96	20.86	
			25	0	2	21.03	20.09	20.87		0	20.51	20.58	20.52	
			25	12	2	20.98	20.14	20.81		0	20.47	20.57	20.50	
			25	25	2	20.95	20.18	20.76		0	20.46	20.52	20.46	
			50	0	2	20.41	21.21	20.66		0	20.51	20.62	20.56	
		64QAM	1	0	2	21.21	21.88	21.03	22.00	0	20.55	20.64	20.57	
			1	25	2	21.16	21.78	20.94		0	20.56	20.68	20.60	
			1	49	2	21.19	21.77	20.75		0	20.49	20.55	20.52	
			25	0	3	20.82	20.79	20.74		0	20.48	20.54	20.47	
			25	12	3	20.98	20.93	20.81	21.00	0	20.46	20.56	20.50	
			25	25	3	20.78	20.86	20.71		0	20.43	20.53	20.45	
			50	0	3	19.87	20.91	19.79		0	20.51	20.60	20.52	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						20425	20525	20625			20425	20525	20625	
						826.5 MHz	836.5 MHz	846.5 MHz			826.5 MHz	836.5 MHz	846.5 MHz	
LTE Band 5	5	QPSK	1	0	0	22.67	22.88	22.69	24.00	0	20.00	20.07	20.52	21.00
			1	12	0	22.75	22.72	22.75		0	19.83	20.21	20.49	
			1	24	0	22.62	22.86	22.55		0	20.03	20.15	20.40	
			12	0	1	21.78	21.95	21.81	23.00	0	20.08	20.27	20.62	
			12	6	1	21.79	21.99	21.80		0	20.16	20.27	20.59	
			12	13	1	21.84	21.80	21.84		0	20.18	20.09	20.48	
		16QAM	25	0	1	21.82	21.85	21.70	23.00	0	20.14	20.13	20.54	
			1	0	1	22.18	21.96	21.54		0	20.17	20.28	20.68	
			1	12	1	22.54	22.53	21.53		0	20.39	20.67	20.85	
			1	24	1	21.93	22.01	21.37	22.00	0	20.34	20.46	20.49	
			12	0	2	21.02	20.95	20.75		0	20.18	20.52	20.63	
			12	6	2	20.91	21.01	20.79		0	20.08	20.61	20.73	
			12	13	2	21.10	20.96	20.74		0	20.17	20.56	20.64	
			25	0	2	20.83	20.93	20.78		0	20.30	20.50	20.66	
		64QAM	1	0	2	21.91	21.95	21.65	22.00	0	20.27	20.62	20.73	
			1	12	2	21.82	21.77	21.58		0	20.20	20.61	20.43	
			1	24	2	21.84	21.67	21.71		0	20.16	20.54	20.64	
			12	0	3	20.74	20.88	20.70	21.00	0	20.21	20.66	20.68	
			12	6	3	20.89	20.94	20.74		0	20.13	20.61	20.85	
			12	13	3	20.99	20.81	20.71		0	20.14	20.49	20.65	
			25	0	3	20.84	20.85	20.77		0	20.28	20.48	20.80	

Note(s):

10 MHz Bandwidths does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices



Report No.: T201102D09-SF

Page: 54 / 124
Rev.: 00

LTE Band 5 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						20415	20525	20635			20415	20525	20635	
						825.5 MHz	836.5 MHz	847.5 MHz			825.5 MHz	836.5 MHz	847.5 MHz	
LTE Band 5	3	QPSK	1	0	0	22.75	22.79	22.63	24.00	0	19.97	19.86	20.18	21.00
			1	8	0	22.74	22.75	22.80		0	19.91	20.03	20.43	
			1	14	0	22.81	22.79	22.63		0	19.80	19.93	20.21	
			8	0	1	21.86	21.86	21.69	23.00	0	19.94	19.93	20.31	
			8	4	1	21.74	21.91	21.69		0	19.97	20.01	20.23	
			8	7	1	21.88	21.98	21.74		0	19.93	19.99	20.40	
			15	0	1	21.71	21.80	21.59		0	19.83	19.95	20.31	
		16QAM	1	0	1	21.90	22.02	22.06	23.00	0	20.13	20.51	20.55	
			1	8	1	22.27	22.25	22.24		0	20.34	20.66	20.69	
			1	14	1	21.86	22.08	21.95		0	20.17	20.52	20.64	
			8	0	2	20.81	20.97	20.89	22.00	0	20.03	20.52	20.62	
			8	4	2	20.82	20.89	20.75		0	20.16	20.61	20.64	
			8	7	2	20.95	21.07	21.03		0	20.06	20.58	20.65	
			15	0	2	20.81	20.80	20.72		0	20.00	20.59	20.64	
		64QAM	1	0	2	21.86	21.83	21.84	22.00	0	20.13	20.60	20.64	
			1	8	2	21.73	21.81	21.77		0	20.26	20.65	20.61	
			1	14	2	21.89	21.99	21.79		0	20.20	20.56	20.58	
			8	0	3	20.55	20.70	20.72	21.00	0	20.09	20.39	20.52	
			8	4	3	20.81	20.83	20.78		0	20.29	20.48	20.54	
			8	7	3	20.93	20.86	20.85		0	20.11	20.55	20.50	
			15	0	3	20.77	20.72	20.65		0	20.16	20.51	20.53	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						20407	20525	20635			20407	20525	20635	
						824.7 MHz	836.5 MHz	848.3 MHz			824.7 MHz	836.5 MHz	848.3 MHz	
LTE Band 5	1.4	QPSK	1	0	0	22.62	22.73	22.49	24.00	0	19.76	19.74	20.23	21.00
			1	3	0	22.59	22.88	22.57		0	20.04	20.08	20.29	
			1	5	0	22.57	22.52	22.39		0	19.87	19.87	20.19	
			3	0	0	22.47	22.19	22.26		0	19.80	19.83	20.23	
			3	2	0	22.65	22.66	22.54		0	19.93	19.98	20.06	
			3	3	0	22.42	22.30	22.16		0	19.85	19.89	20.29	
			6	0	1	21.68	21.66	21.60	23.00	0	19.84	20.01	20.29	
		16QAM	1	0	1	21.84	21.89	21.98	23.00	0	20.15	20.58	20.66	
			1	3	1	22.49	22.00	22.12		0	20.29	20.64	20.74	
			1	5	1	21.78	21.89	21.85		0	20.22	20.43	20.70	
			3	0	1	21.55	21.65	21.59		0	19.89	20.45	20.71	
			3	2	1	21.75	21.72	21.53		0	19.99	20.55	20.58	
			3	3	1	21.69	21.59	21.02		0	19.97	20.41	20.52	
			6	0	2	20.73	20.88	20.58	22.00	0	20.04	20.48	20.69	
		64QAM	1	0	2	21.52	21.74	21.68	22.00	0	20.09	20.36	20.90	
			1	3	2	20.91	21.90	21.32		0	19.95	20.58	20.79	
			1	5	2	21.60	21.89	21.58		0	20.10	20.46	20.52	
			3	0	2	21.91	21.87	20.63		0	19.96	20.35	20.28	
			3	2	2	21.71	21.88	21.56		0	20.13	20.35	20.41	
			3	3	2	21.57	21.69	21.62		0	20.00	20.28	20.46	
			6	0	3	20.65	20.79	20.56	21.00	0	19.93	20.33	20.35	

LTE Band 7 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						20850	21100	21350			20850	21100	21350	
						2510 MHz	2535 MHz	2560 MHz			2510 MHz	2535 MHz	2560 MHz	
LTE Band 7	20	QPSK	1	0	0	23.27	23.29	23.11	24.00	0	17.69	17.53	17.33	18.00
			1	49	0	22.59	22.13	22.49		0	16.94	16.79	16.65	
			1	99	0	22.64	23.07	22.55		0	17.21	17.09	17.06	
			50	0	1	21.78	22.33	21.60	23.00	0	17.07	17.00	16.94	
			50	24	1	21.62	21.73	21.35		0	16.90	16.81	16.72	
			50	50	1	21.65	21.62	21.49		0	17.05	16.94	16.91	
		16QAM	100	0	1	22.31	22.25	22.15	23.00	0	17.09	16.95	16.71	
			1	0	1	22.35	22.32	22.13		0	17.86	17.72	17.54	
			1	49	1	21.36	21.09	21.08		0	17.07	16.91	16.87	
			1	99	1	21.68	22.15	21.62	22.00	0	17.46	17.26	17.38	
			50	0	2	20.79	21.41	20.16		0	16.89	17.01	16.93	
			50	24	2	20.54	20.68	20.29		0	16.87	16.79	16.72	
		64QAM	50	50	2	20.64	20.94	20.56	22.00	0	16.82	16.89	16.84	
			100	0	2	20.77	21.19	20.66		0	16.96	17.00	16.84	
			1	0	2	21.72	21.37	21.64	22.00	0	17.49	17.42	17.46	
			1	49	2	21.67	21.18	20.74		0	16.84	16.59	16.66	
			1	99	2	21.58	21.69	21.05		0	17.53	17.39	17.13	
			50	0	3	20.36	20.25	19.69	21.00	0	16.91	17.00	16.88	
			50	24	3	20.23	20.17	19.76		0	16.79	16.73	16.72	
			50	50	3	20.25	20.42	19.90		0	16.88	16.78	17.00	
			100	0	3	19.39	19.23	20.10		0	17.17	16.96	16.90	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						20825	21100	21375			20825	21100	21375	
						2507.5 MHz	2535 MHz	2562.5 MHz			2507.5 MHz	2535 MHz	2562.5 MHz	
LTE Band 7	15	QPSK	1	0	0	23.24	23.13	23.04	24.00	0	17.69	17.52	17.38	18.00
			1	37	0	22.41	22.65	22.17		0	16.65	16.55	16.51	
			1	74	0	22.61	23.01	22.48		0	16.74	16.81	16.76	
			36	0	1	21.72	21.84	21.38	23.00	0	16.95	16.77	16.76	
			36	18	1	21.59	21.67	21.28		0	16.73	16.75	16.55	
			36	39	1	21.55	21.87	21.24		0	16.71	16.65	16.61	
		16QAM	75	0	1	22.28	22.19	22.08	23.00	0	16.77	16.76	16.66	
			1	0	1	22.32	22.26	22.06		0	17.13	17.48	17.04	
			1	37	1	21.32	21.55	21.23		0	16.61	16.66	16.97	
			1	74	1	21.65	22.09	21.55	22.00	0	17.04	17.33	17.27	
			36	0	2	20.73	20.79	20.37		0	16.92	16.75	16.73	
			36	18	2	20.51	20.62	20.22		0	16.78	16.61	16.55	
		64QAM	36	39	2	20.53	20.58	20.19	22.00	0	16.63	16.62	16.69	
			75	0	2	20.74	21.13	20.59		0	16.81	16.76	16.62	
			1	0	2	21.47	21.53	21.42	22.00	0	17.13	17.34	17.06	
			1	37	2	20.47	21.06	20.12		0	17.02	16.61	16.45	
			1	74	2	20.81	21.20	20.87		0	16.75	16.88	16.91	
			36	0	3	20.26	20.05	19.85	21.00	0	16.90	16.74	16.75	
			36	18	3	19.99	19.90	19.75		0	16.71	16.54	16.56	
			36	39	3	20.06	19.77	19.62		0	16.70	16.73	16.70	
			75	0	3	19.95	20.01	19.97		0	16.81	16.73	16.72	



Report No.: T201102D09-SF

LTE Band 7 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						20800	21100	21400			20800	21100	21400	
						2505 MHz	2535 MHz	2565 MHz			2505 MHz	2535 MHz	2565 MHz	
LTE Band 7	10	QPSK	1	0	0	23.23	23.12	23.03	24.00	0	17.05	17.18	17.15	18.00
			1	25	0	22.63	22.55	22.46		0	16.73	16.63	16.62	
			1	49	0	22.60	23.00	22.47		0	16.77	16.69	16.74	
			25	0	1	21.51	21.70	21.51	23.00	0	16.77	16.75	16.81	
			25	12	1	21.58	21.66	21.27		0	16.79	16.80	16.59	
			25	25	1	21.51	21.70	21.73		0	16.72	16.81	16.74	
			50	0	1	22.27	22.18	22.07		0	16.82	16.74	16.79	
		16QAM	1	0	1	22.31	22.25	22.05	23.00	0	16.94	16.92	17.07	
			1	25	1	22.44	22.39	21.46		0	16.81	17.11	16.69	
			1	49	1	21.64	22.08	21.54		0	16.80	16.68	16.82	
			25	0	2	20.44	20.53	20.22	22.00	0	16.81	16.73	16.80	
			25	12	2	20.50	20.61	20.21		0	16.74	16.74	16.66	
			25	25	2	20.42	20.64	20.15		0	16.72	16.86	16.67	
			50	0	2	20.73	21.12	20.58		0	16.81	16.77	16.80	
		64QAM	1	0	2	21.56	21.63	21.25	22.00	0	16.89	17.05	16.93	
			1	25	2	21.18	21.72	20.93		0	17.02	16.72	17.11	
			1	49	2	21.23	21.39	20.45		0	16.58	16.92	16.78	
			25	0	3	20.58	20.22	20.49	21.00	0	16.86	16.71	16.88	
			25	12	3	20.36	20.32	20.33		0	16.81	16.80	16.70	
			25	25	3	20.34	20.30	20.72		0	16.71	16.77	16.68	
			50	0	3	20.28	20.28	20.22		0	16.72	16.73	16.77	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						20775	21100	21425			20775	21100	21425	
						2502.5 MHz	2535 MHz	2567.5 MHz			2502.5 MHz	2535 MHz	2567.5 MHz	
LTE Band 7	5	QPSK	1	0	0	23.21	23.10	23.00	24.00	0	17.03	17.10	16.97	18.00
			1	12	0	22.64	22.82	22.63		0	16.57	16.57	16.81	
			1	24	0	22.58	22.98	22.44		0	16.71	16.69	16.58	
			12	0	1	21.58	21.60	21.51	23.00	0	16.78	16.78	16.68	
			12	6	1	21.56	21.64	21.24		0	16.70	16.72	16.78	
			12	13	1	21.44	21.54	21.12		0	16.64	16.78	16.61	
			25	0	1	22.25	22.16	22.04		0	16.67	16.79	16.62	
		16QAM	1	0	1	22.29	22.23	22.02	23.00	0	16.90	17.03	16.85	
			1	12	1	22.74	21.69	21.80		0	16.76	16.80	16.82	
			1	24	1	21.62	22.06	21.51		0	16.71	16.91	16.88	
			12	0	2	20.57	20.56	20.57	22.00	0	16.95	16.82	16.80	
			12	6	2	20.48	20.59	20.18		0	16.64	16.73	16.77	
			12	13	2	20.40	20.60	20.12		0	16.72	16.75	16.66	
			25	0	2	20.71	21.10	20.55		0	16.63	16.72	16.65	
		64QAM	1	0	2	21.38	21.45	21.66	22.00	0	16.88	16.85	16.85	
			1	12	2	21.89	21.15	21.39		0	16.76	16.72	16.75	
			1	24	2	21.50	21.19	21.60		0	17.00	16.81	16.85	
			12	0	3	20.55	20.29	20.62	21.00	0	16.61	16.74	16.65	
			12	6	3	20.38	20.24	20.11		0	16.72	16.79	16.76	
			12	13	3	20.29	20.14	20.51		0	16.80	16.75	16.67	
			25	0	3	20.37	20.22	20.29		0	16.67	16.76	16.68	



Report No.: T201102D09-SF

Page: 57 / 124
Rev.: 00

LTE Band 12 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						23060	23095	23130			23060	23095	23130	
						704 MHz	707.5 MHz	711 MHz			704 MHz	707.5 MHz	711 MHz	
LTE Band 12	10	QPSK	1	0	0	22.51	22.46	22.37	24.00	0	19.93	19.88	19.79	20.50
			1	25	0	22.48	22.44	22.35		0	19.85	19.81	19.72	
			1	49	0	22.47	22.43	22.30		0	19.87	19.83	18.79	
			25	0	1	22.69	22.67	22.71	23.00	0	20.17	20.13	20.14	
			25	12	1	22.65	22.65	22.68		0	20.02	20.02	20.05	
			25	25	1	22.63	22.64	22.66		0	20.08	20.09	20.11	
			50	0	1	22.62	22.68	22.67		0	19.95	20.01	20.00	
		16QAM	1	0	1	22.95	22.62	22.59	23.00	0	20.38	20.05	20.02	
			1	25	1	22.83	22.51	22.48		0	20.40	20.08	20.05	
			1	49	1	21.94	22.60	22.56		0	19.43	20.09	20.05	
			25	0	2	21.79	21.84	21.90	22.00	0	19.98	20.05	20.10	
			25	12	2	21.80	21.90	21.93		0	19.94	20.02	20.07	
			25	25	2	21.75	21.81	21.86		0	19.95	20.02	20.07	
			50	0	2	21.80	21.83	21.82		0	20.01	20.06	20.04	
		64QAM	1	0	2	21.81	21.61	21.70	22.00	0	20.18	19.06	20.03	
			1	25	2	21.77	21.54	21.63		0	20.18	19.07	20.04	
			1	49	2	21.99	21.72	21.65		0	19.28	19.02	19.00	
			25	0	3	20.76	20.75	20.82	21.00	0	19.02	19.05	19.09	
			25	12	3	20.80	20.83	20.87		0	18.99	19.01	19.05	
			25	25	3	20.84	20.99	20.92		0	19.00	19.03	19.07	
			50	0	3	20.79	20.81	19.89		0	18.97	19.01	18.54	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						23035	23095	23155			23035	23095	23155	
						701.5 MHz	707.5 MHz	713.5 MHz			701.5 MHz	707.5 MHz	713.5 MHz	
LTE Band 12	5	QPSK	1	0	0	22.45	22.24	22.23	24.00	0	19.82	19.87	19.93	20.50
			1	12	0	22.21	22.18	22.15		0	19.96	19.82	19.81	
			1	24	0	22.29	22.25	22.32		0	19.99	19.92	20.05	
			12	0	1	22.37	22.57	22.44	23.00	0	20.04	20.02	19.94	
			12	6	1	22.45	22.43	22.38		0	20.14	20.18	20.11	
			12	13	1	22.38	22.46	22.31		0	20.02	20.01	19.96	
			25	0	1	22.38	22.40	22.33		0	20.02	20.02	19.92	
		16QAM	1	0	1	22.23	22.55	22.41	23.00	0	20.00	20.02	20.13	
			1	12	1	22.30	22.53	22.53		0	19.99	19.86	20.26	
			1	24	1	22.45	22.60	22.55		0	19.91	19.94	20.05	
			12	0	2	21.91	21.92	21.87	22.00	0	19.90	19.86	20.04	
			12	6	2	21.82	21.87	21.81		0	19.84	19.84	20.02	
			12	13	2	21.75	21.80	21.91		0	19.81	19.78	19.88	
			25	0	2	21.81	21.66	21.89		0	19.89	19.94	20.00	
		64QAM	1	0	2	21.80	21.85	21.85	22.00	0	19.98	19.74	19.99	
			1	12	2	21.81	21.76	21.45		0	19.92	19.88	20.08	
			1	24	2	21.42	21.71	21.81		0	19.85	19.87	20.06	
			12	0	3	20.56	20.52	20.65	21.00	0	19.86	19.86	20.10	
			12	6	3	20.77	20.77	20.80		0	19.89	19.79	20.05	
			12	13	3	20.69	20.61	20.94		0	19.84	19.93	20.01	
			25	0	3	20.75	20.82	20.72		0	19.99	19.78	20.13	

LTE Band 12 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						23025	23095	23165			23025	23095	23165	
						700.5 MHz	707.5 MHz	714.5 MHz			700.5 MHz	707.5 MHz	714.5 MHz	
LTE Band 12	3	QPSK	1	0	0	22.48	22.31	22.16	24.00	0	19.87	19.90	19.93	20.50
			1	8	0	22.69	22.55	22.12		0	19.90	20.04	19.77	
			1	14	0	22.53	22.35	22.22		0	19.87	20.03	19.97	
			8	0	1	22.61	22.40	22.32	23.00	0	19.98	20.19	20.06	
			8	4	1	22.68	22.39	22.30		0	19.94	20.08	20.03	
			8	7	1	22.71	22.38	22.27		0	19.96	19.97	19.98	
			15	0	1	22.67	22.40	22.12		0	19.97	20.12	20.03	
		16QAM	1	0	1	22.25	22.34	22.31	23.00	0	20.09	20.17	20.16	
			1	8	1	22.20	22.32	22.23		0	20.11	20.32	20.26	
			1	14	1	22.40	22.09	22.40		0	20.09	20.27	20.25	
			8	0	2	21.92	21.37	21.41	22.00	0	19.90	20.08	20.05	
			8	4	2	21.87	21.31	21.38		0	19.98	20.16	20.09	
			8	7	2	21.80	21.34	21.25		0	20.07	20.22	20.20	
			15	0	2	21.75	21.42	21.38		0	20.00	20.02	20.20	
		64QAM	1	0	2	21.83	21.79	21.43	22.00	0	19.96	20.13	20.19	
			1	8	2	21.74	21.67	21.24		0	20.09	20.24	20.22	
			1	14	2	21.70	21.83	21.36		0	19.87	19.92	20.06	
			8	0	3	20.78	20.20	20.32	21.00	0	19.92	20.11	20.02	
			8	4	3	20.81	20.54	20.21		0	19.81	20.09	19.99	
			8	7	3	20.74	20.46	20.17		0	19.81	19.93	19.98	
			15	0	3	20.67	20.42	20.33		0	19.91	20.11	20.10	
LTE Band 12	1.4	QPSK	1	0	0	22.28	22.31	22.05	24.00	0	19.68	19.81	19.76	20.50
			1	3	0	22.38	22.54	22.04		0	19.69	19.85	19.89	
			1	5	0	22.15	22.31	22.05		0	19.65	19.91	19.90	
			3	0	0	22.36	22.28	22.06		0	19.82	19.91	20.03	
			3	2	0	22.48	22.21	22.15		0	19.81	20.00	19.87	
			3	3	0	22.43	22.24	22.01		0	19.86	19.91	19.75	
		16QAM	6	0	1	22.54	22.31	22.17	23.00	0	19.83	19.95	19.88	
			1	0	1	22.75	22.38	22.07	23.00	0	20.00	20.13	19.67	
			1	3	1	22.90	22.49	22.40		0	19.99	19.90	20.07	
			1	5	1	22.56	22.33	21.89		0	19.78	20.03	20.04	
			3	0	1	22.40	22.04	22.11		0	19.82	20.03	19.85	
			3	2	1	22.34	22.34	22.05		0	19.73	20.04	19.90	
		64QAM	3	3	1	22.24	22.21	21.95	22.00	0	19.84	19.92	19.78	
			6	0	2	21.90	21.66	21.48		0	19.97	20.11	19.92	
			1	0	2	21.74	21.34	21.09		0	19.94	19.78	19.91	
			1	3	2	21.90	21.36	20.97		0	19.94	20.02	19.80	
			1	5	2	21.76	21.27	21.08		0	19.88	19.93	19.90	
			3	0	2	21.43	21.15	21.12		0	19.91	20.03	19.95	
			3	2	2	21.54	21.26	21.03	21.00	0	19.95	20.07	19.95	
			3	3	2	21.52	21.32	20.92		0	19.81	20.02	19.93	
			6	0	3	20.91	20.51	20.43	21.00	0	19.89	20.00	19.94	

LTE Band 13 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
							23230					23230		
							782 MHz					782 MHz		
LTE Band 13	10	QPSK	1	0	0		23.64		24.00	0		19.47		20.00
			1	25	0		23.57			0		19.39		
			1	49	0		23.50			0		19.28		
			25	0	1		22.94		23.00	0		19.56		
			25	12	1		22.82			0		19.45		
			25	25	1		22.88			0		19.50		
		16QAM	50	0	1		22.86			0		19.49		
			1	0	1		22.68		23.00	0		19.69		
			1	25	1		21.29			0		19.55		
			1	49	1		22.71			0		19.53		
			25	0	2		21.87		22.00	0		19.67		
			25	12	2		21.81			0		19.64		
			25	25	2		21.94			0		19.65		
			50	0	2		21.76			0		19.62		
		64QAM	1	0	2		21.89		22.00	0		19.64		
			1	25	2		21.85			0		19.63		
			1	49	2		21.78			0		19.60		
			25	0	3		20.64		21.00	0		19.61		
			25	12	3		20.75			0		19.60		
			25	25	3		20.75			0		19.62		
			50	0	3		20.73			0		19.63		
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						23205	23230	23255			23205	23230	23255	
						779.5 MHz	782 MHz	784.5 MHz			779.5 MHz	782 MHz	784.5 MHz	
LTE Band 13	5	QPSK	1	0	0	23.49	23.46	23.35	24.00	0	19.24	19.21	19.10	20.00
			1	12	0	23.78	23.75	23.64		0	19.46	19.43	19.32	
			1	24	0	23.45	23.44	23.19		0	19.36	19.35	19.10	
			12	0	1	22.67	22.52	22.45	23.00	0	19.58	19.43	19.36	
			12	6	1	22.64	22.58	22.39		0	19.42	19.36	19.17	
			12	13	1	22.62	22.55	22.34		0	19.46	19.39	19.18	
		16QAM	25	0	1	22.57	22.57	22.33		0	19.43	19.43	19.19	
			1	0	1	22.43	22.58	22.35	23.00	0	19.44	19.59	19.36	
			1	12	1	22.66	22.88	22.56		0	19.32	19.54	19.22	
			1	24	1	22.46	22.46	22.35		0	19.58	19.58	19.47	
			12	0	2	21.64	21.43	21.45	22.00	0	19.79	19.58	19.60	
			12	6	2	21.62	21.44	21.40		0	19.73	19.55	19.51	
			12	13	2	21.59	21.48	21.36		0	19.71	19.60	19.48	
			25	0	2	21.54	21.43	21.32		0	19.75	19.64	19.53	
		64QAM	1	0	2	21.78	21.63	21.64	22.00	0	19.56	19.42	19.39	
			1	12	2	21.82	21.72	21.69		0	19.69	19.60	19.50	
			1	24	2	21.80	21.64	21.56		0	19.66	19.49	19.39	
			12	0	3	20.81	20.54	20.55	21.00	0	19.91	19.59	19.59	
			12	6	3	20.83	20.66	20.62		0	19.73	19.57	19.54	
			12	13	3	20.87	20.72	20.70		0	19.68	19.56	19.51	
			25	0	3	20.76	20.63	20.63		0	19.74	19.59	19.58	



Report No.: T201102D09-SF

Page: 60 / 124
Rev.: 00

LTE Band 25 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						26140	26365	26590			26140	26365	26590	
						1860 MHz	1882.5 MHz	1905 MHz			1860 MHz	1882.5 MHz	1905 MHz	
LTE Band 25	20	QPSK	1	0	0	22.68	22.57	22.38	24.00	0	18.19	18.07	17.99	19.00
			1	49	0	22.12	22.05	22.08		0	17.99	17.96	17.77	
			1	99	0	22.38	22.31	22.15		0	18.16	17.98	17.95	
			50	0	1	21.64	21.67	21.44	23.00	0	18.70	18.57	18.47	
			50	24	1	21.61	21.51	21.33		0	18.68	18.54	18.43	
			50	50	1	21.51	21.41	21.24		0	18.64	18.52	18.45	
			100	0	1	21.83	21.67	21.63		0	18.72	18.55	18.51	
		16QAM	1	0	1	21.88	21.71	21.51	23.00	0	18.41	18.38	18.28	
			1	49	1	22.03	21.10	22.08		0	18.23	18.26	18.16	
			1	99	1	21.54	21.43	21.43		0	18.36	18.26	18.34	
			50	0	2	20.92	20.31	20.15	22.00	0	18.13	18.24	18.31	
			50	24	2	20.88	20.45	20.22		0	18.26	18.30	18.42	
			50	50	2	21.03	20.46	20.19		0	18.39	18.38	18.43	
			100	0	2	20.61	20.41	20.27		0	18.22	18.42	18.45	
		64QAM	1	0	2	21.74	21.86	21.45	22.00	0	18.39	18.24	18.42	
			1	49	2	21.81	21.74	21.77		0	18.21	18.39	18.40	
			1	99	2	21.56	21.80	21.28		0	18.45	18.59	18.51	
			50	0	3	20.52	20.61	20.53	21.00	0	18.11	18.15	18.16	
			50	24	3	20.59	20.76	20.48		0	18.28	18.33	18.15	
			50	50	3	20.64	20.68	20.60		0	18.38	18.16	18.40	
			100	0	3	20.75	20.81	20.48		0	18.20	18.37	18.20	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						26115	26365	26615			26115	26365	26615	
						1857.5 MHz	1882.5 MHz	1907.5 MHz			1857.5 MHz	1882.5 MHz	1907.5 MHz	
LTE Band 25	15	QPSK	1	0	0	22.65	22.51	22.31	24.00	0	18.73	18.68	18.57	19.00
			1	37	0	22.31	22.22	22.13		0	18.03	18.19	17.88	
			1	74	0	22.35	22.25	22.08		0	18.46	18.46	18.41	
			36	0	1	21.90	21.64	21.34	23.00	0	18.57	18.62	18.30	
			36	18	1	21.58	21.45	21.26		0	18.22	18.45	18.16	
			36	39	1	21.65	21.46	21.15		0	18.30	18.33	18.07	
			75	0	1	21.80	21.61	21.56		0	18.46	18.48	18.27	
		16QAM	1	0	1	21.85	21.65	21.44	23.00	0	18.99	18.95	18.94	
			1	37	1	21.44	21.47	21.26		0	18.52	18.82	18.57	
			1	74	1	21.51	21.37	21.36		0	18.61	18.64	18.55	
			36	0	2	21.08	20.54	20.12	22.00	0	18.59	18.62	18.52	
			36	18	2	20.85	20.39	20.15		0	18.22	18.44	18.53	
			36	39	2	20.87	20.34	20.08		0	18.17	18.23	18.40	
			75	0	2	20.58	20.35	20.20		0	18.49	18.53	18.72	
		64QAM	1	0	2	21.77	21.82	21.64	22.00	0	18.82	18.70	18.73	
			1	37	2	21.55	21.01	21.19		0	18.31	18.67	18.53	
			1	74	2	21.73	21.93	21.96		0	18.63	18.38	18.45	
			36	0	3	20.76	20.86	19.71	21.00	0	18.47	18.47	18.61	
			36	18	3	20.49	20.77	19.70		0	18.24	18.33	18.44	
			36	39	3	20.51	20.78	19.35		0	18.33	18.36	18.40	
			75	0	3	20.55	20.81	20.85		0	18.50	18.53	18.63	

LTE Band 25 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						26090	26365	26640			26090	26365	26640	
						1855 MHz	1882.5 MHz	1910 MHz			1855 MHz	1882.5 MHz	1910 MHz	
LTE Band 25	10	QPSK	1	0	0	22.64	22.50	22.30	24.00	0	18.51	18.60	18.27	19.00
			1	25	0	22.23	22.19	22.02		0	18.22	18.20	17.69	
			1	49	0	22.34	22.24	22.70		0	18.08	18.31	18.07	
			25	0	1	21.67	21.51	21.37	23.00	0	18.43	18.50	18.15	
			25	12	1	21.57	21.44	21.25		0	18.34	18.48	18.22	
			25	25	1	21.60	21.48	21.25		0	18.34	18.44	18.10	
			50	0	1	21.79	21.60	21.55		0	18.33	18.58	18.54	
		16QAM	1	0	1	21.84	21.64	21.43	23.00	0	18.91	18.78	18.80	
			1	25	1	21.17	21.33	21.50		0	18.23	18.51	18.41	
			1	49	1	21.50	21.36	21.35		0	18.63	18.57	18.73	
			25	0	2	20.96	20.45	20.28	22.00	0	18.34	18.62	18.51	
			25	12	2	20.84	20.38	20.14		0	18.18	18.44	18.43	
			25	25	2	20.76	20.39	20.13		0	18.26	18.53	18.43	
			50	0	2	20.57	20.34	20.19		0	18.24	18.50	18.41	
		64QAM	1	0	2	21.32	21.56	21.83	22.00	0	18.69	18.59	18.68	
			1	25	2	21.78	21.78	21.96		0	18.17	18.51	18.52	
			1	49	2	21.22	21.41	21.61		0	18.35	18.58	18.60	
			25	0	3	20.03	20.42	20.32	21.00	0	18.46	18.57	18.58	
			25	12	3	19.92	20.33	20.28		0	18.42	18.52	18.42	
			25	25	3	20.01	20.24	20.25		0	18.28	18.57	18.44	
			50	0	3	19.97	20.47	20.31		0	18.22	18.43	18.44	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						26065	26365	26665			26065	26365	26665	
						1852.5 MHz	1882.5 MHz	1912.5 MHz			1852.5 MHz	1882.5 MHz	1912.5 MHz	
LTE Band 25	5	QPSK	1	0	0	22.62	22.48	22.27	24.00	0	18.14	18.49	18.00	19.00
			1	12	0	22.39	22.21	22.03		0	18.10	18.39	17.99	
			1	24	0	22.32	22.22	22.04		0	18.18	18.32	17.96	
			12	0	1	21.52	21.39	21.03	23.00	0	18.28	18.37	18.18	
			12	6	1	21.55	21.42	21.22		0	18.25	18.49	18.03	
			12	13	1	21.37	21.42	21.24		0	18.21	18.38	18.01	
			25	0	1	21.77	21.58	21.52		0	18.15	18.43	18.37	
		16QAM	1	0	1	21.82	21.62	21.40	23.00	0	18.57	18.60	18.54	
			1	12	1	22.32	21.57	21.21		0	18.56	18.49	18.24	
			1	24	1	21.48	21.34	21.32		0	18.12	18.54	18.51	
			12	0	2	20.52	20.36	20.45	22.00	0	18.32	18.43	18.42	
			12	6	2	20.82	20.36	20.11		0	18.21	18.38	18.47	
			12	13	2	20.65	20.25	20.06		0	18.14	18.27	18.49	
			25	0	2	20.55	20.32	20.16		0	18.23	18.37	18.45	
		64QAM	1	0	2	21.14	21.50	21.14	22.00	0	18.45	18.43	18.58	
			1	12	2	21.42	21.72	21.01		0	18.33	18.28	18.57	
			1	24	2	20.80	21.42	20.89		0	18.37	18.25	18.33	
			12	0	3	20.03	20.33	19.98	21.00	0	18.27	18.30	18.53	
			12	6	3	19.97	20.38	20.02		0	18.30	18.24	18.39	
			12	13	3	19.99	20.29	19.73		0	18.10	18.33	18.23	
			25	0	3	19.98	20.37	19.95		0	18.22	18.40	18.35	



Report No.: T201102D09-SF

Page: 62 / 124
Rev.: 00

LTE Band 25 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						26055	26365	26675			26055	26365	26675	
						1851.5 MHz	1882.5 MHz	1913.5 MHz			1851.5 MHz	1882.5 MHz	1913.5 MHz	
LTE Band 25	3	QPSK	1	0	0	22.57	22.44	22.22	24.00	0	18.05	18.25	17.86	19.00
			1	8	0	22.56	22.23	22.37		0	18.10	18.36	17.68	
			1	14	0	22.27	22.18	22.21		0	18.16	18.26	17.91	
			8	0	1	21.50	21.43	21.04	23.00	0	18.15	18.40	17.94	
			8	4	1	21.50	21.38	21.17		0	18.21	18.36	17.95	
			8	7	1	21.40	21.26	21.07		0	18.15	18.32	18.04	
		16QAM	15	0	1	21.72	21.54	21.47	23.00	0	18.19	18.38	18.31	
			1	0	1	21.77	21.58	21.35		0	18.22	18.50	18.55	
			1	8	1	21.70	21.51	21.30		0	18.80	18.60	18.56	
			1	14	1	21.43	21.30	21.27	22.00	0	18.38	18.33	18.38	
			8	0	2	20.70	20.32	20.02		0	18.32	18.54	18.45	
			8	4	2	20.77	20.32	20.06		0	18.20	18.35	18.54	
		64QAM	8	7	2	20.61	20.36	20.21	22.00	0	18.25	18.51	18.28	
			15	0	2	20.50	20.28	20.11		0	18.22	18.57	18.44	
			1	0	2	21.82	21.86	21.49	21.00	0	18.26	18.48	18.34	
			1	8	2	21.91	21.97	21.94		0	18.46	18.48	18.55	
			1	14	2	21.66	21.96	21.32		0	18.06	18.43	18.42	
			8	0	3	20.72	20.83	20.35	21.00	0	18.31	18.42	18.25	
			8	4	3	20.98	20.80	20.29		0	18.17	18.39	18.39	
			8	7	3	20.79	20.67	20.26		0	18.27	18.56	18.43	
			15	0	3	20.89	20.78	20.20		0	18.28	18.37	18.43	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						26047	26365	26683			26047	26365	26683	
						1850.7 MHz	1882.5 MHz	1914.3 MHz			1850.7 MHz	1882.5 MHz	1914.3 MHz	
LTE Band 25	1.4	QPSK	1	0	0	22.56	22.43	22.20	24.00	0	18.02	18.26	17.85	19.00
			1	3	0	22.29	22.43	22.72		0	18.11	18.34	17.94	
			1	5	0	22.26	22.17	22.19		0	18.10	18.17	17.85	
			3	0	0	22.38	22.41	22.16	23.00	0	18.26	18.33	17.92	
			3	2	0	22.34	22.36	22.12		0	18.13	18.40	17.99	
			3	3	0	22.29	22.33	22.10		0	18.17	18.46	18.03	
		16QAM	6	0	1	21.71	21.53	21.45	23.00	0	18.09	18.28	18.35	
			1	0	1	21.76	21.57	21.33		0	18.59	18.79	18.32	
			1	3	1	22.11	22.24	21.11		0	18.45	18.45	18.58	
			1	5	1	21.42	21.29	21.25	22.00	0	18.77	18.45	18.53	
			3	0	1	21.16	21.40	21.21		0	18.57	18.37	18.23	
			3	2	1	21.35	21.31	21.11		0	18.56	18.44	18.45	
		64QAM	3	3	1	21.34	21.31	21.02	22.00	0	18.49	18.35	18.28	
			6	0	2	20.49	20.27	20.09		0	18.62	18.37	18.45	
			1	0	2	21.17	21.61	21.08	21.00	0	18.59	18.16	18.17	
			1	3	2	21.76	21.56	21.00		0	18.24	18.66	18.58	
			1	5	2	21.02	21.63	21.21		0	18.07	18.42	18.26	
			3	0	2	21.26	21.64	21.32		0	18.46	18.37	18.42	
			3	2	2	21.21	21.52	21.13	21.00	0	18.30	18.45	18.46	
			3	3	2	21.37	21.61	20.95		0	18.12	18.29	18.35	
			6	0	3	20.14	20.43	20.09		0	18.06	18.32	18.24	

LTE Band 26 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						26765	26865	26965			26765	26865	26965	
						821.5 MHz	831.5 MHz	841.5 MHz			821.5 MHz	831.5 MHz	841.5 MHz	
LTE Band 26	15	QPSK	1	0	0	22.83	22.78	22.81	24.00	0	20.56	20.61	20.59	21.00
			1	37	0	22.75	22.72	22.74		0	20.34	20.37	20.36	
			1	74	0	22.70	22.67	22.65		0	20.46	20.48	19.04	
			36	0	1	22.01	21.99	21.92	23.00	0	20.66	20.68	20.62	
			36	19	1	21.94	21.92	21.86		0	20.61	20.63	20.58	
			36	39	1	21.92	21.90	21.88		0	20.54	20.56	20.51	
			75	0	1	21.84	21.91	21.78		0	20.50	20.51	20.49	
		16QAM	1	0	1	22.27	21.97	21.86	23.00	0	20.42	20.63	20.31	
			1	37	1	21.74	21.85	21.76		0	20.63	20.46	20.54	
			1	74	1	22.78	21.96	21.53		0	20.79	20.79	20.36	
			36	0	2	20.95	21.89	20.83	22.00	0	20.76	20.71	20.70	
			36	19	2	20.97	20.91	20.86		0	20.70	20.67	20.65	
			36	39	2	20.80	20.79	20.72		0	20.73	20.68	20.66	
			75	0	2	20.88	20.89	20.69		0	20.64	20.60	20.44	
		64QAM	1	0	2	21.92	21.80	21.07	22.00	0	20.02	20.52	20.29	
			1	37	2	21.93	21.57	21.78		0	20.19	20.69	20.40	
			1	74	2	21.90	21.78	20.45		0	20.55	20.73	19.22	
			36	0	3	20.92	20.85	20.87	21.00	0	20.64	20.60	20.66	
			36	19	3	20.93	20.87	20.89		0	20.69	20.69	20.69	
			36	39	3	20.85	20.81	20.76		0	20.72	20.70	20.67	
			75	0	3	20.90	20.86	20.75		0	20.54	20.53	20.43	

LTE Band 26 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						26740	26865	26990			26740	26865	26990	
						819 MHz	831.5 MHz	844 MHz			819 MHz	831.5 MHz	844 MHz	
LTE Band 26	10	QPSK	1	0	0	22.75	22.80	22.94	24.00	0	20.35	20.40	20.65	21.00
			1	25	0	23.06	22.80	22.52		0	20.42	20.64	20.52	
			1	49	0	22.82	22.74	22.72		0	20.32	20.46	20.14	
			25	0	1	21.74	21.81	22.03	23.00	0	20.53	20.53	20.66	
			25	12	1	21.82	21.87	21.98		0	20.58	20.57	20.63	
			25	25	1	21.71	21.85	21.94		0	20.60	20.59	20.58	
		16QAM	50	0	1	21.92	21.98	21.97	23.00	0	20.43	20.55	20.59	
			1	0	1	21.99	21.18	22.05		0	20.68	20.75	20.84	
			1	25	1	22.15	21.19	21.66		0	20.54	20.66	20.65	
			1	49	1	21.97	22.23	21.85	22.00	0	20.55	20.72	20.51	
			25	0	2	20.89	20.98	21.06		0	20.54	20.44	20.51	
			25	12	2	20.91	20.96	20.97		0	20.58	20.68	20.54	
		64QAM	25	25	2	20.96	20.96	21.28	22.00	0	20.54	20.67	20.48	
			50	0	2	20.94	20.95	20.94		0	20.50	20.68	20.65	
			1	0	2	21.81	21.79	21.57	22.00	0	20.70	20.49	20.72	
			1	25	2	21.98	21.90	21.63		0	20.69	20.70	20.71	
			1	49	2	21.66	21.67	21.29		0	20.67	20.78	20.50	
			25	0	3	20.90	20.72	20.92	21.00	0	20.59	20.62	20.62	
			25	12	3	20.92	21.00	20.93		0	20.60	20.72	20.68	
			25	25	3	20.55	20.90	20.59		0	20.56	20.48	20.55	
			50	0	3	19.94	20.95	19.84		0	20.49	20.52	20.64	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						26715	26865	27015			26715	26865	27015	
						816.5 MHz	831.5 MHz	846.5 MHz			816.5 MHz	831.5 MHz	846.5 MHz	
LTE Band 26	5	QPSK	1	0	0	22.68	22.99	22.94	24.00	0	20.35	20.35	20.55	21.00
			1	12	0	22.49	22.94	22.74		0	20.42	20.55	20.43	
			1	24	0	22.76	22.94	22.82		0	20.47	20.51	20.36	
			12	0	1	21.94	21.98	22.21	23.00	0	20.48	20.55	20.55	
			12	6	1	21.93	21.95	21.85		0	20.43	20.63	20.62	
			12	13	1	21.91	21.92	21.80		0	20.43	20.66	20.56	
		16QAM	25	0	1	21.76	21.89	21.73	23.00	0	20.42	20.57	20.52	
			1	0	1	21.68	22.09	22.08		0	20.70	20.74	20.72	
			1	12	1	21.68	22.12	22.11		0	20.50	20.61	20.75	
			1	24	1	21.72	22.02	21.92	22.00	0	20.54	20.76	20.84	
			12	0	2	21.04	20.99	20.56		0	20.58	20.58	20.61	
			12	6	2	20.97	20.98	20.80		0	20.63	20.76	20.63	
		64QAM	12	13	2	20.94	20.96	20.41	22.00	0	20.53	20.74	20.63	
			25	0	2	20.80	20.82	20.72		0	20.48	20.66	20.67	
			1	0	2	21.90	21.99	21.70	22.00	0	20.59	20.65	20.63	
			1	12	2	21.70	21.54	21.86		0	20.28	20.76	20.62	
			1	24	2	21.93	21.98	21.71		0	20.43	20.51	20.68	
			12	0	3	20.58	20.92	20.30	21.00	0	20.46	20.55	20.54	
			12	6	3	20.66	20.95	20.64		0	20.48	20.60	20.49	
			12	13	3	20.62	20.85	20.13		0	20.52	20.72	20.47	
			25	0	3	20.79	20.91	20.79		0	20.59	20.70	20.66	

LTE Band 26 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						26705	26865	27025			26705	26865	27025	
						815.5 MHz	831.5 MHz	847.5 MHz			815.5 MHz	831.5 MHz	847.5 MHz	
LTE Band 26	3	QPSK	1	0	0	22.60	22.86	22.65	24.00	0	20.37	20.42	20.45	21.00
			1	8	0	22.79	23.11	22.67		0	20.34	20.47	20.52	
			1	14	0	22.56	22.84	22.69		0	20.24	20.43	20.27	
			8	0	1	21.82	21.97	21.67	23.00	0	20.35	20.51	20.44	
			8	4	1	21.84	22.05	21.73		0	20.51	20.57	20.40	
			8	7	1	21.77	22.06	21.66		0	20.45	20.49	20.43	
			15	0	1	21.79	21.89	21.67		0	20.55	20.60	20.46	
		16QAM	1	0	1	22.15	22.02	22.00	23.00	0	20.70	20.78	20.86	
			1	8	1	22.36	22.00	21.63		0	20.69	20.77	20.83	
			1	14	1	21.97	22.05	21.83		0	20.60	20.67	20.85	
			8	0	2	20.88	20.93	20.86	22.00	0	20.56	20.72	20.63	
			8	4	2	20.91	20.96	20.85		0	20.82	20.81	20.69	
			8	7	2	20.81	20.91	20.77		0	20.44	20.73	20.59	
			15	0	2	20.88	20.86	20.70		0	20.50	20.62	20.50	
		64QAM	1	0	2	21.99	21.84	21.68	22.00	0	20.53	20.76	20.60	
			1	8	2	21.97	21.75	21.42		0	20.50	20.74	20.81	
			1	14	2	21.88	21.83	21.42		0	20.47	20.72	20.70	
			8	0	3	20.81	20.72	20.92	21.00	0	20.51	20.63	20.78	
			8	4	3	20.93	20.98	20.72		0	20.57	20.73	20.41	
			8	7	3	20.71	21.00	20.85		0	20.39	20.76	20.55	
			15	0	3	20.76	20.89	20.74		0	20.43	20.63	20.65	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						26697	26865	27033			26697	26865	27033	
						814.7 MHz	831.5 MHz	848.3 MHz			814.7 MHz	831.5 MHz	848.3 MHz	
LTE Band 26	1.4	QPSK	1	0	0	22.42	22.80	22.46	24.00	0	20.32	20.48	20.42	21.00
			1	3	0	22.56	22.70	22.59		0	20.44	20.55	20.54	
			1	5	0	22.42	22.84	22.37		0	20.36	20.41	20.29	
			3	0	0	22.67	22.84	22.59		0	20.41	20.60	20.53	
			3	2	0	22.64	22.83	22.58		0	20.48	20.58	20.49	
			3	3	0	22.66	22.76	22.97		0	20.36	20.49	20.33	
			6	0	1	21.61	21.83	21.62	23.00	0	20.35	20.57	20.27	
		16QAM	1	0	1	21.90	21.83	21.68	23.00	0	20.47	20.61	20.79	
			1	3	1	22.15	21.84	21.36		0	20.65	20.81	20.71	
			1	5	1	21.95	21.81	21.57		0	20.48	20.64	20.59	
			3	0	1	21.71	21.90	21.95		0	20.52	20.76	20.31	
			3	2	1	21.68	21.89	21.55		0	20.51	20.67	20.49	
			3	3	1	21.83	21.95	21.77		0	20.44	20.46	20.70	
			6	0	2	20.70	20.84	20.67	22.00	0	20.53	20.69	20.66	
		64QAM	1	0	2	21.83	21.55	21.73	22.00	0	20.54	20.80	20.74	
			1	3	2	21.27	21.62	21.44		0	20.36	20.64	20.55	
			1	5	2	21.73	21.70	21.69		0	20.60	20.65	20.67	
			3	0	2	21.90	21.78	21.66		0	20.42	20.63	20.51	
			3	2	2	21.79	21.86	21.35		0	20.50	20.72	20.73	
			3	3	2	21.57	21.51	21.44		0	20.61	20.69	20.59	
			6	0	3	20.79	20.86	20.57	21.00	0	20.43	20.56	20.59	

LTE Band 30 (10MHz Bandwidth)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						27710	2310 MHz				27710	2310 MHz		
LTE Band 30	10	QPSK	1	0	0	23.61			24.00	0	17.47			18.00
			1	25	0	23.53				0	17.23			
			1	49	0	23.12				0	17.17			
			25	0	1	22.33			23.00	0	17.19			
			25	12	1	22.21				0	16.95			
			25	25	1	22.32				0	16.87			
		16QAM	50	0	1	22.64				0	16.85			
			1	0	1	22.66			23.00	0	17.71			
			1	25	1	22.55				0	17.45			
			1	49	1	22.31				0	17.41			
			25	0	2	21.41			22.00	0	17.46			
			25	12	2	21.21				0	17.21			
			25	25	2	21.37				0	17.18			
			50	0	2	21.35				0	17.12			
		64QAM	1	0	2	21.65			22.00	0	17.62			
			1	25	2	21.46				0	17.35			
			1	49	2	21.47				0	17.34			
			25	0	3	20.29			21.00	0	17.35			
			25	12	3	20.17				0	17.13			
			25	25	3	20.22				0	17.11			
			50	0	3	20.23				0	17.04			
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						27685	27710	27735			27685	27710	27735	
LTE Band 30	5	QPSK	1	0	0	23.55	23.53	23.59	24.00	0	17.17	17.15	17.21	18.00
			1	12	0	23.48	23.46	23.52		0	17.09	17.07	17.13	
			1	24	0	23.06	23.04	23.10		0	17.07	17.05	17.11	
			12	0	1	21.93	21.73	21.91	23.00	0	17.40	17.20	17.38	
			12	6	1	22.15	22.13	22.19		0	16.98	16.96	17.02	
			12	13	1	21.96	21.84	21.98		0	16.84	16.72	16.86	
		16QAM	25	0	1	22.58	22.56	22.62		0	16.71	16.69	16.75	
			1	0	1	22.60	22.61	22.64	23.00	0	17.41	17.42	17.45	
			1	12	1	22.38	22.39	22.42		0	17.33	17.34	17.37	
			1	24	1	22.25	22.23	22.29		0	17.31	17.29	17.35	
			12	0	2	21.16	21.06	21.22	22.00	0	17.50	17.40	17.56	
			12	6	2	21.15	21.13	21.19		0	17.23	17.21	17.27	
			12	13	2	20.88	20.78	21.02		0	17.25	17.15	17.39	
			25	0	2	21.29	21.27	21.33		0	17.12	17.10	17.16	
		64QAM	1	0	2	21.42	21.51	21.35	22.00	0	17.16	17.25	17.09	
			1	12	2	21.29	21.31	21.26		0	17.32	17.34	17.29	
			1	24	2	21.21	21.29	21.02		0	17.23	17.31	17.04	
			12	0	3	20.27	20.34	20.26	21.00	0	17.11	17.18	17.10	
			12	6	3	20.12	20.15	20.16		0	17.12	17.15	17.16	
			12	13	3	20.29	20.48	20.37		0	16.64	16.83	16.72	
			25	0	3	20.11	20.15	20.07		0	16.94	16.98	16.90	



Report No.: T201102D09-SF

Page: 67 / 124
Rev.: 00

LTE Band 41 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)					Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)					Tune-up
						39750	40185	40620	41055	41490			39750	40185	40620	41055	41490	
						2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz	
LTE Band 41	20	QPSK	1	0	0	23.68	23.66	23.71	23.54	23.67	24.00	0	18.77	18.58	18.84	18.72	18.91	19.00
			1	49	0	22.93	22.92	23.01	22.83	22.85		0	17.81	18.13	17.98	18.05	18.32	
			1	99	0	23.31	23.33	23.41	23.26	23.53		0	18.17	18.43	18.32	18.55	18.55	
			50	0	1	22.24	22.23	22.32	22.26	22.28	23.00	0	18.28	18.43	18.33	18.22	18.75	
			50	24	1	22.00	22.05	22.15	22.04	22.20		0	17.92	18.26	18.10	18.06	18.48	
			50	50	1	21.98	22.08	22.29	22.10	22.15		0	17.95	18.33	18.02	18.16	18.49	
			100	0	1	22.17	22.18	22.31	22.06	22.20		0	18.06	18.35	18.02	18.20	18.63	
		16QAM	1	0	1	22.80	22.78	22.83	22.63	22.93	23.00	0	18.85	18.59	18.90	18.80	18.95	
			1	49	1	21.94	21.97	22.08	21.96	22.15		0	17.98	18.23	18.05	18.04	18.38	
			1	99	1	22.34	22.38	22.76	22.41	22.53		0	18.21	18.44	18.29	18.49	18.53	
			50	0	2	21.33	21.22	21.29	21.27	21.37	22.00	0	18.34	18.47	18.34	18.23	18.72	
			50	24	2	21.05	21.04	21.14	21.05	21.16		0	17.96	18.27	18.08	18.00	18.46	
			50	50	2	20.99	21.03	21.26	21.02	21.17		0	17.92	18.30	18.00	18.10	18.47	
			100	0	2	21.15	21.10	21.29	21.14	21.07		0	18.10	18.31	18.04	18.19	18.52	
		64QAM	1	0	2	21.81	21.57	21.64	21.23	21.67	22.00	0	18.64	18.31	18.62	18.50	18.71	
			1	49	2	21.70	21.73	21.80	21.65	21.78		0	17.68	17.89	17.75	17.78	18.09	
			1	99	2	21.44	21.21	21.55	21.25	21.47		0	18.00	18.18	18.03	18.20	18.31	
			50	0	3	20.75	20.64	20.69	20.70	20.75	21.00	0	18.23	18.37	18.20	18.15	18.62	
			50	24	3	20.50	20.46	20.57	20.50	20.56		0	17.87	18.21	18.01	17.93	18.39	
			50	50	3	20.40	20.52	20.69	20.45	20.54		0	17.83	18.24	17.96	18.05	18.34	
			100	0	3	20.74	20.62	20.80	20.75	20.87		0	18.18	18.38	18.10	18.25	18.62	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)					Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)					Tune-up
						39725	40173	40620	41068	41515			39725	40173	40620	41068	41515	
						2503.5 MHz	2548.3 MHz	2593 MHz	2637.8 MHz	2682.5 MHz			2503.5 MHz	2548.3 MHz	2593 MHz	2637.8 MHz	2682.5 MHz	
LTE Band 41	15	QPSK	1	0	0	23.27	23.35	23.37	23.37	23.67	24.00	0	18.41	18.16	18.58	18.46	18.72	19.00
			1	37	0	22.81	22.85	23.00	22.87	23.07		0	17.88	18.24	18.10	18.23	18.55	
			1	74	0	22.87	22.97	23.22	22.95	23.26		0	17.89	18.14	18.00	18.14	18.29	
			36	0	1	21.94	22.13	22.14	22.10	22.17	23.00	0	18.08	18.32	18.16	18.11	18.59	
			36	18	1	21.92	21.92	22.02	21.94	22.04		0	17.81	18.11	17.94	17.93	18.43	
			36	39	1	22.00	21.93	22.14	21.94	22.25		0	17.80	18.16	17.90	18.01	18.49	
			75	0	1	21.82	22.01	22.13	22.01	22.24		0	17.86	18.21	17.89	18.08	18.54	
		16QAM	1	0	1	22.52	22.45	22.50	22.47	22.73	23.00	0	18.65	18.25	18.58	18.47	18.79	
			1	37	1	21.81	21.83	21.89	22.11	22.04		0	17.71	18.08	18.03	18.03	18.35	
			1	74	1	22.06	22.05	22.32	22.06	22.60		0	17.95	18.16	18.04	18.21	18.36	
			36	0	2	21.01	21.08	21.05	21.07	21.16	22.00	0	17.97	18.29	18.13	18.05	18.54	
			36	18	2	20.95	20.91	20.99	20.96	20.97		0	17.80	18.13	17.94	17.99	18.40	
			36	39	2	20.94	20.89	21.09	20.91	21.24		0	17.78	18.12	17.87	17.99	18.42	
			75	0	2	21.02	20.98	21.09	21.01	21.10		0	17.89	18.18	17.89	18.06	18.53	
		64QAM	1	0	2	21.59	21.36	21.46	21.36	21.90	22.00	0	18.33	18.01	18.36	18.25	18.59	
			1	37	2	20.63	20.59	20.73	20.71	20.74		0	17.29	17.82	17.76	17.77	18.16	
			1	74	2	20.96	20.94	21.25	21.03	21.40		0	17.73	17.91	17.82	17.98	18.14	
			36	0	3	20.70	20.79	20.79	20.86	20.90	21.00	0	18.06	18.34	18.18	18.11	18.59	
			36	18	3	20.71	20.64	20.73	20.63	20.77		0	17.82	18.16	17.99	17.96	18.41	
			36	39	3	20.68	20.61	20.76	20.66	20.94		0	17.80	18.14	17.88	18.00	18.48	
			75	0	3	20.76	20.72	20.81	20.74	20.76		0	17.92	18.21	17.92	18.07	18.54	

LTE Band 41 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)					Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)					Tune-up
						39700	40160	40620	41080	41540			39700	40160	40620	41080	41540	
						2501 MHz	2547 MHz	2593 MHz	2639 MHz	2685 MHz			2501 MHz	2547 MHz	2593 MHz	2639 MHz	2685 MHz	
LTE Band 41	10	QPSK	1	0	0	22.99	23.05	23.24	23.23	23.46	24.00	0	17.95	17.83	18.33	18.26	18.51	19.00
			1	25	0	22.88	22.91	23.06	22.83	23.24		0	17.74	18.11	18.00	18.01	18.40	
			1	49	0	22.85	22.89	23.15	23.03	23.29		0	17.64	17.96	17.77	18.03	18.14	
			25	0	1	21.93	21.93	22.09	22.01	22.13	23.00	0	17.89	18.13	18.11	18.02	18.50	
			25	12	1	21.91	21.90	22.01	21.93	22.14		0	17.79	18.14	17.87	18.01	18.50	
			25	25	1	21.93	21.82	22.07	21.94	22.04		0	17.77	18.05	17.85	18.03	18.36	
		16QAM	50	0	1	21.94	21.95	22.03	22.00	22.18	23.00	0	17.79	18.09	17.73	18.04	18.56	
			1	0	1	22.06	22.13	22.26	22.15	22.46		0	18.24	17.89	18.33	18.28	18.54	
			1	25	1	21.90	21.88	22.06	21.98	22.10		0	17.85	18.10	18.03	18.06	18.42	
			1	49	1	21.93	21.91	22.08	21.98	22.22	22.00	0	17.75	17.91	17.80	18.07	18.16	
			25	0	2	20.92	20.87	21.04	21.07	21.08		0	17.90	18.12	18.11	17.98	18.47	
			25	12	2	20.93	20.88	21.02	20.98	21.11		0	17.77	18.13	17.91	17.99	18.49	
		64QAM	25	25	2	20.94	20.78	21.05	20.92	21.04	22.00	0	17.73	18.03	17.80	18.02	18.32	
			50	0	2	20.97	20.86	21.00	21.03	21.14		0	17.81	18.10	17.82	18.04	18.53	
			1	0	2	21.84	21.57	21.72	21.67	21.91	22.00	0	18.01	17.66	18.13	18.08	18.30	
			1	25	2	21.42	21.33	21.54	21.32	21.58		0	17.59	17.90	17.86	17.78	18.34	
			1	49	2	21.38	21.38	21.54	21.47	21.70		0	17.49	17.70	17.54	17.81	17.92	
			25	0	3	20.75	20.64	20.89	20.84	20.93	21.00	0	17.87	18.09	18.04	17.95	18.43	
			25	12	3	20.72	20.67	20.78	20.81	20.90		0	17.72	18.07	17.81	17.92	18.47	
			25	25	3	20.73	20.61	20.82	20.75	20.87		0	17.71	18.03	17.78	17.99	18.28	
			50	0	3	20.74	20.70	20.83	20.80	20.92		0	17.73	18.01	17.73	17.99	18.45	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)					Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)					Tune-up
						39675	40148	40620	41093	41565			39675	40148	40620	41093	41565	
						2498.5 MHz	2545.8 MHz	2593 MHz	2640.3 MHz	2687.5 MHz			2498.5 MHz	2545.8 MHz	2593 MHz	2640.3 MHz	2687.5 MHz	
LTE Band 41	5	QPSK	1	0	0	22.78	22.70	22.95	22.92	23.02	24.00	0	17.95	17.62	18.09	18.01	18.20	19.00
			1	12	0	22.85	22.81	23.02	22.83	23.14		0	17.74	18.06	17.97	17.95	18.35	
			1	24	0	22.81	22.70	22.95	22.82	23.13		0	17.72	17.75	17.63	17.88	18.07	
			12	0	1	21.86	21.85	21.93	21.89	22.05	23.00	0	17.87	18.07	17.96	17.87	18.42	
			12	6	1	21.85	21.85	22.01	21.94	21.96		0	17.76	18.04	17.94	17.92	18.39	
			12	13	1	21.79	21.77	21.94	21.82	21.91		0	17.65	18.04	17.74	17.92	18.32	
		16QAM	25	0	1	21.84	21.77	21.99	21.83	22.05	23.00	0	17.72	17.96	17.73	17.88	18.40	
			1	0	1	21.80	21.83	22.00	21.88	22.25		0	17.93	17.63	18.12	18.04	18.21	
			1	12	1	21.89	21.80	22.03	21.82	22.12		0	17.80	18.04	18.04	18.01	18.47	
			1	24	1	21.88	21.73	21.98	21.82	22.13	22.00	0	17.73	17.75	17.69	17.94	18.08	
			12	0	2	20.85	20.70	20.93	20.87	21.03		0	17.85	18.03	17.96	17.80	18.44	
			12	6	2	20.89	20.81	21.02	20.88	21.06		0	17.75	18.05	17.94	17.91	18.41	
		64QAM	12	13	2	20.79	20.74	20.89	20.84	20.91	22.00	0	17.58	18.00	17.69	17.87	18.25	
			25	0	2	20.84	20.76	21.02	20.93	21.01		0	17.74	17.98	17.82	17.91	18.42	
			1	0	2	21.66	21.65	21.80	21.62	21.81	22.00	0	17.79	17.38	17.91	17.83	18.07	
			1	12	2	21.62	21.72	21.85	21.67	21.85		0	17.67	17.85	17.89	17.90	18.20	
			1	24	2	21.69	21.50	21.75	21.54	21.88		0	17.52	17.56	17.44	17.71	17.84	
			12	0	3	20.79	20.67	20.82	20.83	20.98	21.00	0	17.82	17.99	17.92	17.79	18.40	
			12	6	3	20.82	20.69	20.97	20.83	20.99		0	17.74	18.01	17.92	17.88	18.36	
			12	13	3	20.74	20.64	20.89	20.79	20.87		0	17.59	17.99	17.67	17.86	18.21	
			25	0	3	20.77	20.67	20.93	20.86	20.92		0	17.66	17.95	17.72	17.79	18.38	

LTE Band 66 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						132072	132322	132572			132072	132322	132572	
						1720 MHz	1745 MHz	1770 MHz			1720 MHz	1745 MHz	1770 MHz	
LTE Band 66	20	QPSK	1	0	0	23.53	23.45	23.66	24.00	0	18.89	18.92	19.16	20.00
			1	49	0	22.84	22.54	22.88		0	18.78	18.79	18.99	
			1	99	0	23.22	23.11	23.35		0	18.76	18.84	19.16	
			50	0	1	22.44	22.49	22.92	23.00	0	18.90	18.82	19.13	
			50	24	1	22.21	22.14	22.61		0	18.84	18.79	19.06	
			50	50	1	22.24	22.19	22.55		0	18.82	18.73	19.07	
			100	0	1	22.55	22.48	22.76		0	18.80	18.71	19.09	
		16QAM	1	0	1	22.62	22.51	22.68	23.00	0	19.15	19.15	19.46	
			1	49	1	22.09	22.29	22.13		0	18.98	19.16	19.31	
			1	99	1	22.45	22.22	22.36		0	19.11	19.21	19.44	
			50	0	2	21.55	21.38	21.84	22.00	0	18.85	18.85	18.97	
			50	24	2	21.25	21.11	21.55		0	18.78	18.99	18.89	
			50	50	2	21.32	21.04	21.60		0	18.86	18.85	19.04	
			100	0	2	21.48	21.49	21.65		0	18.83	18.86	18.90	
		64QAM	1	0	2	21.86	21.57	21.72	22.00	0	18.71	19.19	18.95	
			1	49	2	21.56	21.39	21.55		0	18.56	18.95	18.72	
			1	99	2	21.75	21.55	21.76		0	19.21	18.91	19.09	
			50	0	3	20.69	20.86	20.80	21.00	0	18.74	18.86	19.03	
			50	24	3	20.42	20.57	20.51		0	18.79	18.95	18.86	
			50	50	3	20.59	20.54	20.48		0	18.77	18.90	18.95	
			100	0	3	20.47	20.44	20.51		0	18.97	18.89	18.90	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						132047	132322	132597			132047	132322	132597	
						1717.5 MHz	1745 MHz	1772.5 MHz			1717.5 MHz	1745 MHz	1772.5 MHz	
LTE Band 66	15	QPSK	1	0	0	23.50	23.39	23.59	24.00	0	19.34	19.14	19.40	20.00
			1	37	0	22.81	22.48	22.81		0	18.76	18.42	18.73	
			1	74	0	23.19	23.05	23.28		0	18.93	18.64	18.95	
			36	0	1	22.41	22.43	22.85	23.00	0	19.03	18.77	19.19	
			36	18	1	22.18	22.08	22.54		0	18.82	18.48	18.83	
			36	39	1	22.21	22.13	22.48		0	18.82	18.49	18.87	
			75	0	1	22.52	22.42	22.69		0	18.91	18.73	18.91	
		16QAM	1	0	1	22.59	22.45	22.61	23.00	0	19.42	19.44	19.49	
			1	37	1	22.06	22.23	22.06		0	18.50	19.19	19.45	
			1	74	1	22.42	22.16	22.29		0	18.68	19.14	19.10	
			36	0	2	21.52	21.32	21.77	22.00	0	18.84	18.97	19.37	
			36	18	2	21.22	21.05	21.48		0	18.58	18.66	19.01	
			36	39	2	21.29	20.98	21.53		0	18.68	18.70	19.17	
			75	0	2	21.45	21.43	21.58		0	18.77	18.95	19.25	
		64QAM	1	0	2	21.52	21.81	21.54	22.00	0	19.33	19.47	19.20	
			1	37	2	20.89	21.13	20.31		0	18.63	18.66	19.19	
			1	74	2	21.14	21.20	21.21		0	19.04	19.05	19.28	
			36	0	3	20.62	20.88	20.76	21.00	0	18.86	18.95	19.39	
			36	18	3	20.41	20.54	20.48		0	18.69	18.62	19.13	
			36	39	3	20.50	20.56	20.31		0	18.60	18.69	19.09	
			75	0	3	20.41	20.60	20.58		0	18.61	18.97	19.19	

LTE Band 66 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						132022	132322	132622			132022	132322	132622	
						1715 MHz	1745 MHz	1775 MHz			1715 MHz	1745 MHz	1775 MHz	
LTE Band 66	10	QPSK	1	0	0	23.49	23.38	23.58	24.00	0	18.96	18.95	18.86	20.00
			1	25	0	22.78	22.98	23.31		0	18.57	18.77	18.62	
			1	49	0	23.18	23.04	23.27		0	18.71	18.61	18.63	
			25	0	1	22.34	22.17	22.62	23.00	0	18.80	18.88	18.79	
			25	12	1	22.17	22.07	22.53		0	18.56	18.76	18.72	
			25	25	1	22.21	22.10	22.43		0	18.55	18.64	18.63	
			50	0	1	22.51	22.41	22.68		0	18.57	18.79	18.78	
		16QAM	1	0	1	22.58	22.44	22.60	23.00	0	19.40	19.15	18.81	
			1	25	1	22.07	22.58	22.07		0	18.93	18.88	18.64	
			1	49	1	22.41	22.15	22.28		0	19.18	18.81	18.96	
			25	0	2	21.35	21.02	21.37	22.00	0	18.62	18.86	18.75	
			25	12	2	21.21	21.04	21.47		0	18.58	18.84	18.67	
			25	25	2	21.27	20.83	21.35		0	18.55	18.66	18.72	
			50	0	2	21.44	21.42	21.57		0	18.56	18.76	18.77	
		64QAM	1	0	2	21.71	21.65	21.64	22.00	0	19.29	19.36	18.98	
			1	25	2	21.84	21.08	21.90		0	18.92	19.20	18.48	
			1	49	2	21.38	21.38	21.28		0	18.76	18.84	18.66	
			25	0	3	20.91	20.84	20.57	21.00	0	18.63	18.78	18.73	
			25	12	3	20.66	20.74	20.72		0	18.52	18.86	18.71	
			25	25	3	20.67	20.76	20.56		0	18.56	18.65	18.50	
			50	0	3	20.66	19.70	20.78		0	18.53	18.77	18.67	
			50	0	3	20.66	19.70	20.78		0	18.53	18.77	18.67	

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						131997	132322	132647			131997	132322	132647	
						1712.5 MHz	1745 MHz	1777.5 MHz			1712.5 MHz	1745 MHz	1777.5 MHz	
LTE Band 66	5	QPSK	1	0	0	23.47	23.36	23.55	24.00	0	18.67	18.68	18.76	20.00
			1	12	0	23.45	23.42	23.27		0	18.51	18.60	18.70	
			1	24	0	23.16	23.02	23.24		0	18.51	18.71	18.61	
			12	0	1	22.16	21.90	22.61	23.00	0	18.59	18.65	18.67	
			12	6	1	22.15	22.05	22.50		0	18.56	18.86	18.70	
			12	13	1	22.13	22.00	22.43		0	18.49	18.71	18.68	
			25	0	1	22.49	22.39	22.65		0	18.52	18.69	18.50	
		16QAM	1	0	1	22.56	22.42	22.57	23.00	0	19.14	18.59	18.86	
			1	12	1	22.40	22.50	22.22		0	18.79	18.83	19.10	
			1	24	1	22.39	22.13	22.25		0	18.59	18.56	19.04	
			12	0	2	21.16	20.97	21.46	22.00	0	18.55	18.65	18.79	
			12	6	2	21.19	21.02	21.44		0	18.59	18.75	18.64	
			12	13	2	21.21	21.10	21.43		0	18.58	18.64	18.59	
			25	0	2	21.42	21.40	21.54		0	18.60	18.68	18.55	
		64QAM	1	0	2	21.28	21.85	21.45	22.00	0	19.09	19.03	18.81	
			1	12	2	21.00	21.67	21.44		0	18.65	18.80	18.96	
			1	24	2	21.12	21.57	21.28		0	18.52	19.06	18.66	
			12	0	3	20.33	20.63	20.89	21.00	0	18.54	18.53	18.81	
			12	6	3	20.46	20.68	20.68		0	18.70	18.80	18.71	
			12	13	3	20.47	20.62	20.80		0	18.55	18.67	18.49	
			25	0	3	20.40	20.57	20.67		0	18.58	18.57	18.62	
			25	0	3	20.40	20.57	20.67		0	18.58	18.57	18.62	

LTE Band 66 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						131987	132322	132657			131987	132322	132657	
						1711.5 MHz	1745 MHz	1778.5 MHz			1711.5 MHz	1745 MHz	1778.5 MHz	
LTE Band 66	3	QPSK	1	0	0	23.42	23.32	23.50	24.00	0	18.53	18.57	18.65	20.00
			1	8	0	23.59	23.38	23.64		0	18.68	18.70	18.66	
			1	14	0	23.11	22.98	23.19		0	18.51	18.49	18.41	
			8	0	1	22.05	21.96	22.46	23.00	0	18.64	18.69	18.67	
			8	4	1	22.10	22.01	22.45		0	18.57	18.82	18.59	
			8	7	1	22.09	21.95	22.46		0	18.51	18.55	18.52	
			15	0	1	22.44	22.35	22.60		0	18.54	18.78	18.56	
		16QAM	1	0	1	22.51	22.38	22.52	23.00	0	18.71	18.77	19.07	
			1	8	1	22.70	22.43	22.41		0	19.01	18.90	19.13	
			1	14	1	22.34	22.09	22.20		0	18.91	18.81	18.98	
			8	0	2	21.22	20.88	21.32	22.00	0	18.70	18.70	18.73	
			8	4	2	21.14	20.98	21.39		0	18.60	18.81	18.67	
			8	7	2	21.17	20.71	21.31		0	18.54	18.79	18.73	
			15	0	2	21.37	21.36	21.49		0	18.46	18.78	18.58	
		64QAM	1	0	2	21.51	21.76	21.77	22.00	0	18.94	18.89	18.57	
			1	8	2	21.73	21.81	21.79		0	18.86	18.85	18.94	
			1	14	2	21.34	21.67	21.76		0	18.69	18.77	18.39	
			8	0	3	20.48	20.48	20.55	21.00	0	18.74	18.57	18.63	
			8	4	3	20.57	20.76	20.86		0	18.48	18.76	18.52	
			8	7	3	20.70	20.63	20.59		0	18.51	18.63	18.54	
			15	0	3	20.55	20.76	20.84		0	18.49	18.62	18.52	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			Tune-up	MPR	Reduced Meas. Avg Pwr (dBm)			Tune-up
						131979	132322	132665			131979	132322	132665	
						1710.7 MHz	1745 MHz	1779.3 MHz			1710.7 MHz	1745 MHz	1779.3 MHz	
LTE Band 66	1.4	QPSK	1	0	0	23.41	23.31	23.48	24.00	0	18.33	18.53	18.47	20.00
			1	3	0	23.24	23.33	23.35		0	18.60	18.57	18.66	
			1	5	0	23.10	22.97	23.17		0	18.44	18.67	18.50	
			3	0	0	22.22	22.05	22.23	23.00	0	18.51	18.66	18.62	
			3	2	0	22.21	22.18	22.27		0	18.59	18.79	18.71	
			3	3	0	22.23	22.05	22.13		0	18.54	18.75	18.60	
			6	0	1	22.43	22.34	22.58		0	18.48	18.64	18.56	
		16QAM	1	0	1	22.50	22.37	22.50	23.00	0	18.94	18.60	18.93	
			1	3	1	22.76	22.45	22.64		0	18.42	18.73	18.72	
			1	5	1	22.33	22.08	22.18		0	18.33	18.52	18.49	
			3	0	1	22.43	22.08	22.09	22.00	0	18.46	18.49	18.54	
			3	2	1	22.29	22.15	22.32		0	18.65	18.68	18.63	
			3	3	1	22.32	22.03	22.02		0	18.58	18.79	18.60	
			6	0	2	21.36	21.35	21.47		0	18.48	18.68	18.61	
		64QAM	1	0	2	21.59	21.71	21.56	22.00	0	18.92	18.94	18.41	
			1	3	2	21.85	21.38	21.41		0	18.92	19.07	18.59	
			1	5	2	21.58	21.76	21.67		0	18.62	18.70	18.95	
			3	0	2	21.44	21.63	21.31	21.00	0	18.40	18.65	18.71	
			3	2	2	21.77	21.79	21.47		0	18.69	18.78	18.72	
			3	3	2	21.76	21.52	21.38		0	18.66	18.85	18.64	
			6	0	3	20.69	20.90	20.93		0	18.40	18.65	18.44	

10.3 LTE Down-Link Carrier Aggregation

The following power measurements were performed with a single carrier uplink; CA for this particular project is only supported in the downlinks. The CA combination is one (1) Uplink and two (2) Downlinks.

Type	LTE CA combinations			PCC (UL)				SCC (DL)			Aggregated BW	CA Inactive (dBm)	CA Active (dBm)	Delta
				BW (MHz)	Freq. (MHz)	Channel	RB/Offset	BW (MHz)	Freq. (MHz)	Channel				
Inter Non-Contiguous	2A	+	5A	20	1880.0	18900	1,0	10	881.5	2525	30	23.89	23.60	-0.29
	2A	+	12A	10	1855.0	18650	1,0	10	734.0	5060	10	23.84	23.64	-0.20
	2A	+	13A	20	1880.0	18900	1,0	10	751.0	5230	30	23.89	23.68	-0.21
	2A	+	29A	20	1880.0	18900	1,0	10	725.5	27435	30	23.89	23.65	-0.24
	4A	+	5A	20	1732.5	20175	1,0	10	881.5	2525	30	22.75	22.51	-0.24
	4A	+	12A	20	1732.5	20175	1,0	10	737.5	5095	30	22.75	22.63	-0.12
	4A	+	13A	20	1732.5	20175	1,0	10	751.0	5230	30	22.75	22.70	-0.05
	4A	+	29A	20	1732.5	20175	1,0	10	725.5	27435	30	22.75	22.62	-0.13
	7A	+	5A	20	2535.0	21100	1,0	10	881.5	2525	30	23.29	23.17	-0.12
	7A	+	12A	20	2535.0	21100	1,0	10	737.5	5095	30	23.29	23.05	-0.24
	7A	+	26A	20	2535.0	21100	1,0	15	876.5	8865	35	23.29	23.05	-0.24
	25A	+	5A	20	1860.0	26140	1,0	10	874.0	2450	30	22.68	22.55	-0.13
	25A	+	12A	20	1860.0	26140	1,0	10	734.0	5060	30	22.68	22.67	-0.01
	25A	+	26A	20	1860.0	26140	1,0	15	866.5	8765	35	22.68	22.61	-0.07
	30A	+	5A	10	2310.0	27710	1,0	10	881.5	2525	20	23.61	23.47	-0.14
	30A	+	12A	10	2310.0	27710	1,0	10	737.5	5095	20	23.61	23.36	-0.25
	30A	+	29A	10	2310.0	27710	1,0	10	725.5	27435	20	23.61	23.53	-0.08
	66A	+	5A	10	1775.0	132622	1,0	10	889.0	2600	20	23.58	23.54	-0.04
	66A	+	12A	10	1775.0	132622	1,0	10	741.0	5130	20	23.58	23.42	-0.16
	66A	+	13A	10	1775.0	132622	1,0	10	751.0	5230	20	23.58	23.48	-0.10
	66A	+	29A	10	1775.0	132622	1,0	10	743.0	27610	20	23.58	23.540	-0.04

Note(s):

Per KDB 941225 D05A LTE Rel. 10 KDB Inquiry Sheet: SAR is excluded for Carrier Aggregation when 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.

10.4 Wi-Fi 2.4GHz (DTS Band)

Measured Results

Band	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)			Duty Cycle %	Tune-up Limit (dBm)			SAR Test (Yes/No)		
					Chain 0	Chain 1	Total		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total
2.4GHz (DTS)	802.11b	1 Mbps	1	2412	17.42	17.32		99.54	18.0	18.0		Yes	Yes	No
			6	2437	17.39	17.36								
			11	2462	17.27	17.28								
	802.11g	6 Mbps	1	2412	Not Required			97.92	18.0	18.0		No	No	No
			6	2437										
			11	2462										
	802.11n (HT20)	MCS0	1	2412	Not Required			99.25	16.5	17.0	20.0	No	No	No
			6	2437										
			11	2462										
	802.11n (HT40)	MCS0	3	2422	15.45	16.05	18.77	94.30	16.5	17.0	20.0	No	No	Yes
			6	2437	15.83	16.70	19.30							
			9	2452	15.49	16.52	19.05							

Note(s):

- SAR is not required for 802.11g/n modes when the adjusted SAR for 802.11b is < 1.2 W/kg.
- For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.



Report No.: T201102D09-SF

Page: 74 / 124
Rev.: 00

10.5 Wi-Fi 5GHz (U-NII Bands)

Measured Results

Band	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)			Duty Cycle %	Tune-up Limit (dBm)			SAR Test (Yes/No)			
					Chain 0	Chain 1	Total		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total	
5.2GHz (U-NII 1)	802.11a	6 Mbps	36	5180	10.52	11.52		99.52	12.0	12.0		No	No	No	
			40	5200	10.68	11.72									
			44	5220	11.21	11.95									
			48	5240	11.53	11.82									
	802.11n (HT20)	MCS0	36	5180	12.03	12.41	15.23	98	12.4	13.5	16.0	No	No	Yes	
			40	5200	11.98	12.75	15.39								
			44	5220	11.96	13.06	15.56								
			48	5240	10.99	11.60	14.32								
	802.11n (HT40)	MCS0	38	5190	Not Required			83.33	12.0	12.5	15.3	No	No	No	
			46	5230											
	802.11ac (VHT20)	MCS0	36	5180				98	12.4	13.5	16.0	No	No	No	
			40	5200											
			44	5220											
				48				5240	83.33	12.0	12.5	15.3	No	No	No
				38				5190							
	802.11ac (VHT40)	MCS0	46	5230				75	11.4	12.5	15.0	No	No	No	
42			5210												
5.3GHz (U-NII 2A)	802.11a	6 Mbps	52	5260	12.32	12.22		99.52	12.5	12.5		Yes	Yes	No	
			56	5280	11.76	11.77									
			60	5300	11.55	11.93									
			64	5320	11.50	12.01									
	802.11n (HT20)	MCS0	52	5260	Not Required			98	12.4	12.5	15.5	No	No	No	
			56	5280											
			60	5300											
			64	5320											
	802.11n (HT40)	MCS0	54	5270	10.97	11.84	14.44	83.33	12.0	12.9	15.5	No	No	Yes	
			62	5310	11.04	11.52	14.30								
	802.11ac (VHT20)	MCS0	52	5260	Not Required			98	12.4	12.5	15.5	No	No	No	
			56	5280											
			60	5300											
			64	5320											
	802.11ac (VHT40)	MCS0	54	5270				83.33	12.0	12.9	15.5	No	No	No	
			62	5310											
802.11ac (VHT80)	MCS0	58	5290	75				11.4	12.5	15.0	No	No	No		

Measured Results(continued)

Band	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)			Duty Cycle %	Tune-up Limit (dBm)			SAR Test (Yes/No)		
					Chain 0	Chain 1	Total		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total
5.5GHz (U-NII 2C)	802.11a	6 Mbps	100	5500	12.50	12.50		99.52	13.0	13.0		Yes	Yes	No
			116	5580	12.87	12.75								
			132	5660	12.56	12.79								
			140	5700	12.53	12.89								
	802.11n (HT20)	MCS0	100	5500	11.85	12.45	15.17	98	12.3	13.5	16.0	No	No	Yes
			116	5580	11.81	12.08	14.96							
			132	5660	11.82	12.65	15.27							
			140	5700	11.85	13.01	15.48							
	802.11n (HT40)	MCS0	102	5510				83.33	12.4	12.5	15.5	No	No	No
			110	5550										
			126	5630										
			134	5670										
	802.11ac (VHT20)	MCS0	100	5500	Not Required			98	12.3	13.5	16.0	No	No	No
			116	5580										
			132	5660										
			140	5700										
	802.11ac (VHT40)	MCS0	102	5510	Not Required			83.33	12.4	12.5	15.5	No	No	No
			110	5550										
			126	5630										
			134	5670										
	802.11ac (VHT80)	MCS0	106	5530	Not Required			75	12.0	12.9	15.5	No	No	No
			122	5610										
			138	5690										
5.8GHz (U-NII 3)	802.11a	6 Mbps	149	5745	12.83	12.94		99.52	13.0	13.0		Yes	Yes	No
			157	5785	12.85	12.93								
			165	5825	12.56	12.65								
	802.11n (HT20)	MCS0	149	5745	11.82	12.50	15.18	98	12	12.9	15.5	No	No	Yes
			157	5785	11.81	12.46	15.16							
			165	5825	11.66	12.11	14.90							
	802.11n (HT40)	MCS0	151	5755	Not Required			83.33	11.5	12.9	15.3	No	No	No
			159	5795										
	802.11ac (VHT20)	MCS0	149	5745				98	12	12.9	15.5	No	No	No
			157	5785										
			165	5825										
	802.11ac (VHT40)	MCS0	151	5755				83.33	11.5	12.9	15.3	No	No	No
			159	5795										
	802.11ac (VHT80)	MCS0	155	5775				75	12.0	12.5	15.3	No	No	No

Note(s):

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

10.6 Bluetooth.

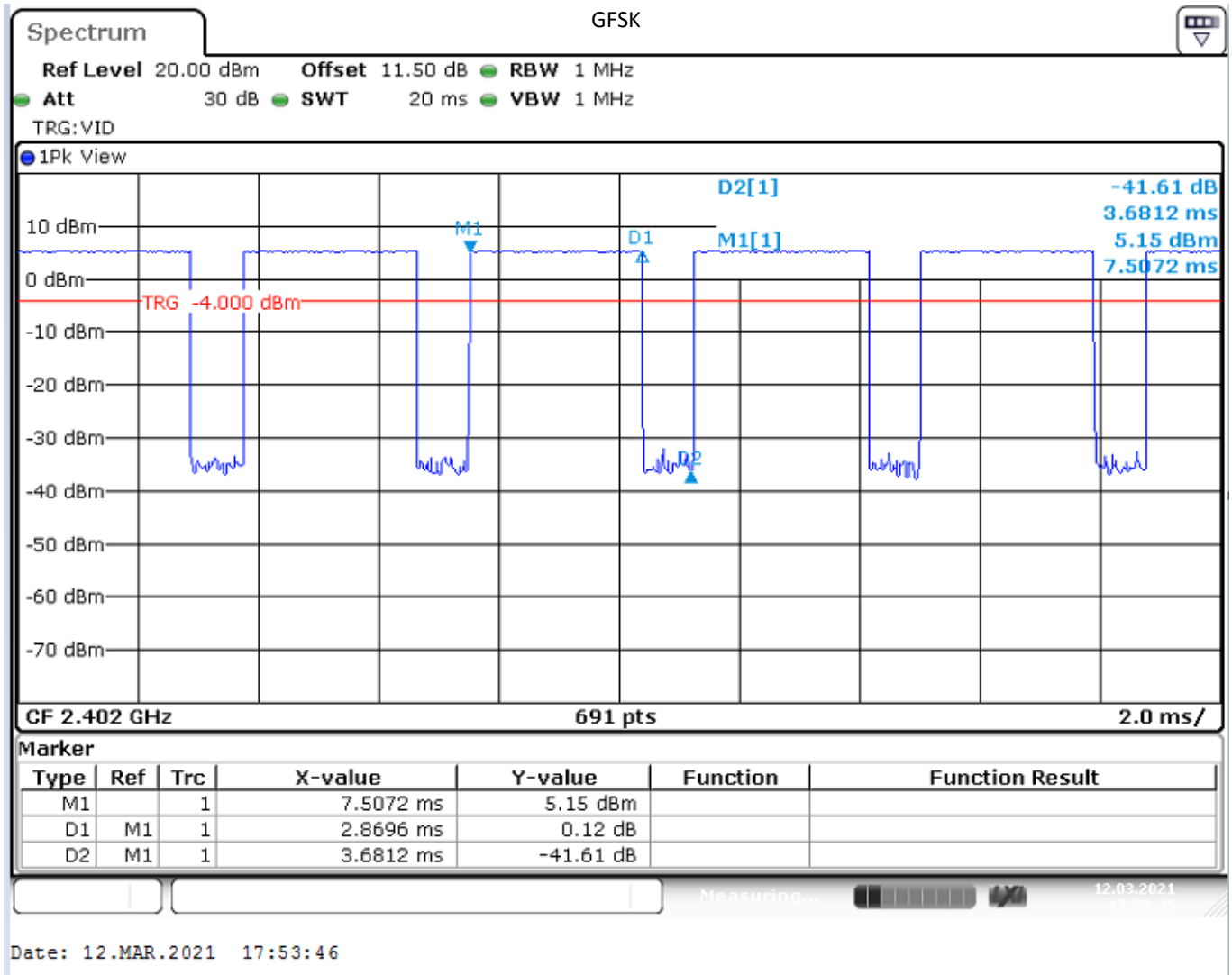
Average Power Measured Results

Band	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)	Tune-up Limit (dBm)	SAR Test (Yes/No)
					Chain 0		
Bluetooth	BR	1 Mbps	0	2402	4.43	5.5	Yes
			39	2441	3.93		
			78	2480	5.25		
	EDR	3 Mbps	0	2402	1.72	3.0	No
			39	2441	1.32		
			78	2480	2.46		
Bluetooth	BLE	1 Mbps	0	2402	4.10	5.0	No
			19	2440	3.47		
			39	2480	4.79		

Duty Factor Measured Results

Mode	Type	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
GFSK	DH5	2.8696	3.6812	77.95%	1.28

Duty Cycle plots



11 Measured and Reported (Scaled) SAR Results

KDB 447498 D01 General RF Exposure Guidance:

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

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

KDB 941225 D01 SAR test for 3G devices:

When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode

KDB 941225 D05 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

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

KDB 248227 D01 SAR meas for 802.11:

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

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

- ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.

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

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

11.1 W-CDMA Band II

Mode	Power Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
						Tune-up Limit	Meas.	Meas.	Scaled	
RMC, 12.2 kbps	On	0	Rear	9400	1880.0	19.0	18.65	0.641	0.695	1
	On	0	Edge 2	9400	1880.0	19.0	18.65	0.163	0.177	
	Off	14	Rear	9400	1880.0	24.0	23.50	0.409	0.459	
	Off	0	Edge 1	9400	1880.0	24.0	23.50	0.109	0.122	
	Off	9	Edge 2	9400	1880.0	24.0	23.50	0.198	0.222	
	Off	0	Edge 3	9400	1880.0	24.0	23.50	0.045	0.050	

11.2 W-CDMA Band IV

Mode	Power Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
						Tune-up Limit	Meas.	Meas.	Scaled	
RMC, 12.2 kbps	On	0	Rear	1513	1752.6	20.0	19.65	0.522	0.566	2
	On	0	Edge 2	1513	1752.6	20.0	19.65	0.198	0.215	
	Off	14	Rear	1513	1752.6	24.0	23.36	0.380	0.440	
	Off	0	Edge 1	1513	1752.6	24.0	23.36	0.066	0.076	
	Off	9	Edge 2	1513	1752.6	24.0	23.36	0.237	0.275	
	Off	0	Edge 3	1513	1752.6	24.0	23.36	0.061	0.071	

11.3 W-CDMA Band V

Mode	Power Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
						Tune-up Limit	Meas.	Meas.	Scaled	
RMC, 12.2 kbps	On	0	Rear	4132	826.4	21.0	20.58	0.820	0.903	
	On	0	Rear	4183	836.6	21.0	20.42	0.809	0.925	
	On	0	Rear	4233	846.6	21.0	20.65	0.813	0.881	
	On	0	Edge 2	4132	826.4	21.0	20.58	0.687	0.757	
	On	0	Edge 2	4233	846.6	21.0	20.65	0.744	0.806	
	Off	14	Rear	4132	826.4	24.0	23.17	0.673	0.815	
	Off	14	Rear	4183	836.6	24.0	23.15	0.682	0.829	
	Off	14	Rear	4233	846.6	24.0	23.21	0.692	0.830	
	Off	0	Edge 1	4233	846.6	24.0	23.21	0.185	0.222	
	Off	9	Edge 2	4132	826.4	24.0	23.17	0.767	0.929	
	Off	9	Edge 2	4183	836.6	24.0	23.15	0.776	0.944	3
	Off	9	Edge 2	4233	846.6	24.0	23.21	0.745	0.894	
	Off	0	Edge 3	4233	846.6	24.0	23.21	0.292	0.350	

11.4 LTE Band 2 (20MHz Bandwidth)

SAR for LTE Band 2 (Frequency Range: 1850-1910 MHz) is covered by LTE Band 25 (Frequency Range: 1850-1915 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

11.5 LTE Band 4 (20MHz Bandwidth)

SAR for LTE Band 4 (Frequency range: 1710-1755 MHz) is covered by LTE Band 66 (Frequency range: 1710-1780 MHz) due to similar frequency range, same maximum tune-up limit and same channel bandwidth.

11.6 LTE Band 5 (10MHz Bandwidth)

SAR for LTE Band 5 (Frequency Range: 824-849 MHz) is covered by LTE Band 26 (Frequency Range: 814-849 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

11.7 LTE Band 7 (20MHz Bandwidth)

Mode	Power Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up Limit	Meas.	Meas.	Scaled	
QPSK	On	0	Rear	20850	2510.0	1	0	18.0	17.69	0.879	0.944	4
	On	0	Rear			50	0	18.0	17.07	0.802	0.994	
	On	0	Rear			100	0	18.0	17.09	0.831	1.025	
	On	0	Rear	21100	2535.0	1	0	18.0	17.53	0.857	0.955	
	On	0	Rear			50	0	18.0	17.00	0.818	1.030	
	On	0	Rear	21350	2560.0	1	0	18.0	17.33	0.831	0.970	
	On	0	Rear			50	0	18.0	16.94	0.776	0.991	
	On	0	Edge 2	20850	2510.0	1	0	18.0	17.69	0.470	0.505	
	On	0	Edge 2			50	0	18.0	17.07	0.435	0.539	
	Off	14	Rear	21100	2535.0	1	0	24.0	23.29	0.575	0.677	
	Off	14	Rear			50	0	23.0	22.33	0.429	0.501	
	Off	0	Edge 1	21100	2535.0	1	0	24.0	23.29	0.194	0.228	
	Off	0	Edge 1			50	0	23.0	22.33	0.146	0.170	
	Off	9	Edge 2	21100	2535.0	1	0	24.0	23.29	0.377	0.444	
	Off	9	Edge 2			50	0	23.0	22.33	0.282	0.329	
	Off	0	Edge 3	21100	2535.0	1	0	24.0	23.29	0.370	0.436	
	Off	0	Edge 3			50	0	23.0	22.33	0.287	0.335	

11.8 LTE Band 12 (10MHz Bandwidth)

Mode	Power Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up Limit	Meas.	Meas.	Scaled	
QPSK	On	0	Rear	23095	707.5	1	0	20.5	19.88	0.553	0.638	5
	On	0	Rear			25	0	20.5	20.13	0.572	0.623	
	On	0	Edge 2	23095	707.5	1	0	20.5	19.88	0.445	0.513	
	On	0	Edge 2			25	0	20.5	20.13	0.484	0.527	
	Off	14	Rear	23095	707.5	1	0	24.0	22.46	0.216	0.308	
	Off	14	Rear			25	0	23.0	22.67	0.232	0.250	
	Off	0	Edge 1	23095	707.5	1	0	24.0	22.46	0.024	0.034	
	Off	0	Edge 1			25	0	23.0	22.67	0.021	0.023	
	Off	9	Edge 2	23095	707.5	1	0	24.0	22.46	0.126	0.180	
	Off	9	Edge 2			25	0	23.0	22.67	0.138	0.149	
	Off	0	Edge 3	23095	707.5	1	0	24.0	22.46	0.026	0.037	
	Off	0	Edge 3			25	0	23.0	22.67	0.027	0.029	

11.9 LTE Band 13 (10MHz Bandwidth)

Mode	Power Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up Limit	Meas.	Meas.	Scaled	
QPSK	On	0	Rear	23230	782.0	1	0	20.0	19.47	0.563	0.636	6
	On	0	Rear			25	0	20.0	19.56	0.572	0.633	
	On	0	Edge 2	23230	782.0	1	0	20.0	19.47	0.350	0.395	
	On	0	Edge 2			25	0	20.0	19.56	0.364	0.403	
	Off	14	Rear	23230	782.0	1	0	24.0	23.64	0.419	0.455	
	Off	14	Rear			25	0	23.0	22.94	0.437	0.443	
	Off	0	Edge 1	23230	782.0	1	0	24.0	23.64	0.098	0.106	
	Off	0	Edge 1			25	0	23.0	22.94	0.112	0.114	
	Off	9	Edge 2	23230	782.0	1	0	24.0	23.64	0.285	0.310	
	Off	9	Edge 2			25	0	23.0	22.94	0.303	0.307	
	Off	0	Edge 3	23230	782.0	1	0	24.0	23.64	0.098	0.106	
	Off	0	Edge 3			25	0	23.0	22.94	0.108	0.110	

11.10 LTE Band 25 (20MHz Bandwidth)

Mode	Power Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up Limit	Meas.	Meas.	Scaled	
QPSK	On	0	Rear	26140	1860.0	1	0	19.0	18.19	0.570	0.687	7
	On	0	Rear			50	0	19.0	18.70	0.569	0.610	
	On	0	Edge 2	26140	1860.0	1	0	19.0	18.19	0.137	0.165	
	On	0	Edge 2			50	0	19.0	18.70	0.141	0.151	
	Off	14	Rear	26140	1860.0	1	0	24.0	22.68	0.351	0.476	
	Off	14	Rear			50	0	23.0	21.64	0.364	0.498	
	Off	0	Edge 1	26140	1860.0	1	0	24.0	22.68	0.081	0.110	
	Off	0	Edge 1			50	0	23.0	21.64	0.087	0.119	
	Off	9	Edge 2	26140	1860.0	1	0	24.0	22.68	0.134	0.182	
	Off	9	Edge 2			50	0	23.0	21.64	0.140	0.191	
	Off	0	Edge 3	26140	1860.0	1	0	24.0	22.68	0.045	0.061	
	Off	0	Edge 3			50	0	23.0	21.64	0.047	0.064	

11.11 LTE Band 26 (15MHz Bandwidth)

Mode	Power Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up Limit	Meas.	Meas.	Scaled	
QPSK	On	0	Rear	26765	821.5	1	0	21.0	20.56	0.773	0.855	
	On	0	Rear			36	0	21.0	20.66	0.801	0.866	
	On	0	Rear	26865	831.5	1	0	21.0	20.61	0.817	0.894	
	On	0	Rear			36	0	21.0	20.68	0.838	0.902	
	On	0	Rear			75	0	21.0	20.51	0.857	0.959	
	On	0	Rear	26965	841.5	1	0	21.0	20.59	0.771	0.847	
	On	0	Rear			36	0	21.0	20.62	0.810	0.884	
	On	0	Edge 2	26865	831.5	1	0	21.0	20.61	0.657	0.719	
	On	0	Edge 2			36	0	21.0	20.68	0.705	0.759	
	Off	14	Rear	26765	821.5	1	0	24.0	22.83	0.495	0.648	
	Off	14	Rear			36	0	23.0	22.01	0.516	0.648	
	Off	0	Edge 1	26765	821.5	1	0	24.0	22.83	0.150	0.196	
	Off	0	Edge 1			36	0	23.0	22.01	0.158	0.198	
	Off	9	Edge 2	26765	821.5	1	0	24.0	22.83	0.737	0.965	9
	Off	9	Edge 2			36	0	23.0	22.01	0.612	0.769	
	Off	9	Edge 2	26865	831.5	1	0	24.0	22.78	0.584	0.773	
	Off	9	Edge 2			36	0	23.0	21.99	0.590	0.744	
	Off	9	Edge 2			75	0	23.0	21.91	0.583	0.749	
	Off	9	Edge 2	26965	841.5	1	0	24.0	22.81	0.595	0.783	
	Off	9	Edge 2			36	0	23.0	21.92	0.500	0.641	
	Off	0	Edge 3	26765	821.5	1	0	24.0	22.83	0.254	0.333	
	Off	0	Edge 3			36	0	23.0	22.01	0.271	0.340	

11.12 LTE Band 30 (10MHz Bandwidth)

Mode	Power Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up Limit	Meas.	Meas.	Scaled	
QPSK	On	0	Rear	27710	2310.0	1	0	18.0	17.47	0.839	0.948	
	On	0	Rear			25	0	18.0	17.19	0.825	0.994	
	On	0	Rear			50	0	18.0	16.85	0.822	1.071	9
	On	0	Edge 2	27710	2310.0	1	0	18.0	17.47	0.541	0.611	
	On	0	Edge 2			25	0	18.0	17.19	0.540	0.651	
	Off	14	Rear	27710	2310.0	1	0	24.0	23.61	0.807	0.883	
	Off	14	Rear			25	0	23.0	22.33	0.661	0.771	
	Off	14	Rear			50	0	23.0	22.64	0.627	0.681	
	Off	0	Edge 1	27710	2310.0	1	0	24.0	23.61	0.135	0.148	
	Off	0	Edge 1			25	0	23.0	22.33	0.036	0.042	
	Off	9	Edge 2	27710	2310.0	1	0	24.0	23.61	0.606	0.663	
	Off	9	Edge 2			25	0	23.0	22.33	0.475	0.554	
	Off	0	Edge 3	27710	2310.0	1	0	24.0	23.61	0.068	0.074	
	Off	0	Edge 3			25	0	23.0	22.33	0.066	0.077	

11.13 LTE Band 41 (20MHz Bandwidth)

Mode	Power Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up Limit	Meas.	Meas.	Scaled	
QPSK	On	0	Rear	39750	2506.0	1	0	19.0	18.77	0.775	0.817	
	On	0	Rear			50	0	19.0	18.28	0.715	0.844	
	On	0	Rear	40185	2549.5	1	0	19.0	18.58	0.809	0.891	
	On	0	Rear			50	0	19.0	18.43	0.747	0.852	
	On	0	Rear	40620	2593.0	1	0	19.0	18.84	0.981	1.018	
	On	0	Rear			50	0	19.0	18.33	0.892	1.041	
	On	0	Rear	41055	2636.5	1	0	19.0	18.72	0.874	0.932	
	On	0	Rear			50	0	19.0	18.22	0.806	0.965	
	On	0	Rear	41490	2680.0	1	0	19.0	18.91	1.060	1.082	10
	On	0	Rear			50	0	19.0	18.75	0.965	1.022	
	On	0	Rear			100	0	19.0	18.63	0.838	0.913	
	On	0	Edge 2	41490	2680.0	1	0	19.0	18.91	0.348	0.355	
	On	0	Edge 2			50	0	19.0	18.75	0.312	0.330	
	Off	14	Rear	39750	2506.0	1	0	24.0	23.68	0.425	0.457	
	Off	14	Rear			50	0	23.0	22.24	0.323	0.385	
	Off	14	Rear	40620	2593.0	1	0	24.0	23.71	0.796	0.851	
	Off	14	Rear			50	0	23.0	22.32	0.581	0.679	
	Off	14	Rear			100	0	23.0	22.31	0.374	0.438	
	Off	0	Edge 1	40620	2593.0	1	0	24.0	23.71	0.064	0.068	
	Off	0	Edge 1			50	0	23.0	22.32	0.042	0.049	
	Off	9	Edge 2	40620	2593.0	1	0	24.0	23.71	0.235	0.251	
	Off	9	Edge 2			50	0	23.0	22.32	0.196	0.229	
	Off	0	Edge 3	40620	2593.0	1	0	24.0	23.71	0.320	0.342	
	Off	0	Edge 3			50	0	23.0	22.32	0.225	0.263	

11.14 LTE Band 66 (20MHz Bandwidth)

Mode	Power Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up Limit	Meas.	Meas.	Scaled	
QPSK	On	0	Rear	132572	1770.0	1	0	20.0	19.16	0.356	0.432	
	On	0	Rear			50	0	20.0	19.13	0.360	0.440	11
	On	0	Edge 2	132572	1770.0	1	0	20.0	19.16	0.188	0.228	
	On	0	Edge 2			50	0	20.0	19.13	0.182	0.222	
	Off	14	Rear	132572	1770.0	1	0	24.0	23.66	0.273	0.295	
	Off	14	Rear			50	0	23.0	22.92	0.227	0.231	
	Off	0	Edge 1	132572	1770.0	1	0	24.0	23.66	0.034	0.037	
	Off	0	Edge 1			50	0	23.0	22.92	0.030	0.031	
	Off	9	Edge 2	132572	1770.0	1	0	24.0	23.66	0.181	0.196	
	Off	9	Edge 2			50	0	23.0	22.92	0.148	0.151	
	Off	0	Edge 3	132572	1770.0	1	0	24.0	23.66	0.046	0.050	
	Off	0	Edge 3			50	0	23.0	22.92	0.036	0.037	

11.15 Wi-Fi (DTS Band)

Mode	Antenna	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up Limit	Meas.	Meas.	Scaled	
802.11b	Main 0	0	Rear	1	2412	99.54%	18.0	17.42	0.249		
			Edge 3	1	2412	99.54%	18.0	17.42	0.494	0.567	12
802.11b	Aux 1	0	Rear	6	2437	99.54%	18.0	17.36	0.547	0.637	13
			Edge 1	6	2437	99.54%	18.0	17.36	0.207	0.241	
			Edge 2	6	2437	99.54%	18.0	17.36	0.048	0.056	
802.11n (HT40)	MIMO 0+1	0	Rear	6	2437	94.30%	20.0	19.30	0.482	0.601	14
			Edge 1	6	2437	94.30%	20.0	19.30	0.182	0.227	
			Edge 2	6	2437	94.30%	20.0	19.30	0.034	0.042	
			Edge 3	6	2437	94.30%	20.0	19.30	0.375	0.467	

11.16 Wi-Fi (U-NII Band)

Frequency Band	Mode	Antenna	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up Limit	Meas.	Meas.	Scaled	
5.3 (U-NII 2A)	802.11a	Main 0	0	Rear	52	5260	99.52%	12.5	12.32	0.178	0.186	
				Edge 3	52	5260	99.52%	12.5	12.32	0.605	0.634	15
	802.11a	Aux 1	0	Rear	52	5260	99.52%	12.5	12.22	0.544	0.583	
				Edge 1	52	5260	99.52%	12.5	12.22	0.617	0.661	16
5.5 (U-NII 2C)	802.11a	Main 0	0	Rear	116	5580	99.52%	13.0	12.87	0.115	0.119	
				Edge 3	116	5580	99.52%	13.0	12.87	0.449	0.465	17
	802.11a	Aux 1	0	Rear	140	5700	99.52%	13.0	12.89	0.396	0.408	
				Edge 1	140	5700	99.52%	13.0	12.89	0.674	0.695	18
				Edge 2	140	5700	99.52%	13.0	12.89	0.000	0.000	
5.8 (U-NII 3)	802.11a	Main 0	0	Rear	157	5785	99.52%	13.0	12.85	0.176	0.183	
				Edge 3	157	5785	99.52%	13.0	12.85	0.453	0.471	19
	802.11a	Aux 1	0	Rear	149	5745	99.52%	13.0	12.94	0.388	0.395	
				Edge 1	149	5745	99.52%	13.0	12.94	0.953	0.971	20
				Edge 1	157	5785	99.52%	13.0	12.93	0.841	0.859	
5.2GHz (U-NII 1)	802.11n (HT20)	MIMO 0+1	0	Edge 2	149	5745	99.52%	13.0	12.94	0.017	0.017	
				Rear	40	5200	98.00%	16.0	15.39	0.714	0.838	
				Rear	44	5220	98.00%	16.0	15.56	0.724	0.818	
				Edge 1	40	5200	98.00%	16.0	15.39	0.717	0.842	21
				Edge 1	44	5220	98.00%	16.0	15.56	0.727	0.821	
				Edge 2	44	5220	98.00%	16.0	15.56	0.022	0.025	
5.3 (U-NII 2A)	802.11n (HT40)	MIMO 0+1	0	Edge 3	44	5220	98.00%	16.0	15.56	0.534	0.603	
				Rear	54	5270	83.33%	15.5	14.44	0.474	0.726	
				Edge 1	54	5270	83.33%	15.5	14.44	0.594	0.910	22
				Edge 1	62	5310	83.33%	15.5	14.30	0.542	0.858	
				Edge 2	54	5270	83.33%	15.5	14.44	0.027	0.042	
5.5 (U-NII 2C)	802.11n (HT20)	MIMO 0+1	0	Edge 3	54	5270	83.33%	15.5	14.44	0.452	0.692	
				Rear	140	5700	98.00%	16.0	15.48	0.353	0.406	
				Edge 1	132	5660	98.00%	16.0	15.27	0.621	0.750	
				Edge 1	140	5700	98.00%	16.0	15.48	0.798	0.918	23
				Edge 2	140	5700	98.00%	16.0	15.48	0.004	0.005	
5.8GHz (U-NII 3)	802.11n (HT20)	MIMO 0+1	0	Edge 3	140	5700	98.00%	16.0	15.48	0.415	0.477	
				Rear	149	5745	98.00%	15.5	15.18	0.463	0.509	
				Edge 1	149	5745	98.00%	15.5	15.18	0.806	0.885	24
				Edge 1	157	5785	98.00%	15.5	15.16	0.736	0.813	
				Edge 2	149	5745	98.00%	15.5	15.18	0.021	0.023	
				Edge 3	149	5745	98.00%	15.5	15.18	0.393	0.432	



11.17 Bluetooth

Mode	Antenna	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up Limit	Meas.	Meas.	Scaled	
GFSK	Main 0	0	Rear	78	2480	77.95%	5.5	5.25	0.034	0.046	25
			Edge 1	78	2480	77.95%	5.5	5.25	0.000	0.000	
			Edge 2	78	2480	77.95%	5.5	5.25	0.000	0.000	

12 SAR Measurement Variability

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

- 1) Repeated measurement is not required when the original highest measured SAR is < 0.8 or 2 W/kg (1-g or 10-g respectively); steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is ≥ 0.8 or 2 W/kg (1-g or 10-g respectively), repeat that measurement once.
- 3) Perform a second repeated measurement only if the **ratio of largest to smallest SAR** for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 or 3.6 W/kg ($\sim 10\%$ from the 1-g or 10-g respective SAR limit).
- 4) Perform a third repeated measurement only if the original, first, or second repeated measurement is ≥ 1.5 or 3.75 W/kg (1-g or 10-g respectively) and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .

WCDMA Band V

Mode	Pwr Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio
						Original	Repeated	
RMC, 12.2 kbps	On	0	Rear	4132	826.4	0.820	0.819	1.00

LTE Band 7

Mode	Pwr Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio
								Original	Repeated	
QPSK	On	0	Rear	20850	2510	1	0	0.879	0.910	1.04

LTE Band 26

Mode	Pwr Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio
								Original	Repeated	
QPSK	On	0	Rear	26865	831.5	75	0	0.857	0.827	1.04

LTE Band 30

Mode	Pwr Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio
								Original	Repeated	
QPSK	On	0	Rear	27710	2310	1	0	0.839	0.840	1.00

LTE Band 41

Mode	Pwr Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio
								Original	Repeated	
QPSK	On	0	Rear	41490	2680	1	0	1.060	0.908	1.17

WiFi 5.8GHz

Mode	Antenna	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Duty Cycle	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio
							Original	Repeated	
802.11a	Aux 1	0	Edge 1	149	5745	99.52%	0.953	0.929	1.03
802.11n (HT20)	MIMO 0+1	0	Edge 1	149	5745	98.00%	0.806	0.811	1.01

Note(s):

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

13 Simultaneous Transmission SAR Analysis

KDB 447498 D01 General RF Exposure Guidance explains how to calculate the SAR to Peak Location Ratio (SPLSR) between pairs of simultaneously transmitting antennas:

$$\text{SPLSR} = (\text{SAR}_1 + \text{SAR}_2)^{1.5} / R_i$$

Where:

SAR₁ is the highest measured or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition

SAR₂ is the highest measured or estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first

R_i is the separation distance between the pair of simultaneous transmitting antennas. When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of $[(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2]$

In order for a pair of simultaneous transmitting antennas with the sum of 1-g SAR > 1.6 W/kg to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:

$$(\text{SAR}_1 + \text{SAR}_2)^{1.5} / R_i \leq 0.04$$

Simultaneous Transmission Condition

RF Exposure Condition	Item	Capable Transmit Configurations				
Standalone	1	WCDMA	+	DTS(Aux Antenna)		
	2	WCDMA	+	U-NII(Aux Antenna)		
	3	WCDMA	+	DTS(Aux Antenna)	+	BT
	4	WCDMA	+	U-NII(Aux Antenna)	+	BT
	5	WCDMA	+	DTS(MIMO)	+	BT
	6	WCDMA	+	U-NII(MIMO)	+	BT
	7	WCDMA	+	BT		
	8	LTE	+	DTS(Aux Antenna)		
	9	LTE	+	U-NII(Aux Antenna)		
	10	LTE	+	DTS(Aux Antenna)	+	BT
	11	LTE	+	U-NII(Aux Antenna)	+	BT
	12	LTE	+	DTS(MIMO)	+	BT
	13	LTE	+	U-NII(MIMO)	+	BT
	14	LTE	+	BT		

Estimated SAR for Simultaneous Transmission SAR Analysis Considerations for SAR estimation

1. When standalone SAR test exclusion applies, standalone SAR must also be estimated to determine simultaneous transmission SAR test exclusion.
2. Dedicated Host Approach criteria for SAR test exclusion is likewise applied to SAR estimation, with certain distinctions between test exclusion and SAR estimation:
 - When the separation distance from the antenna to an adjacent edge is ≤ 5 mm, a distance of 5 mm is applied for SAR estimation; this is the same between test exclusion and SAR estimation calculations.
 - When the separation distance from the antenna to an adjacent edge is > 5 mm but ≤ 50 mm, the actual antenna-to-edge separation distance is applied for SAR estimation.
 - When the minimum test separation distance is > 50 mm, the estimated SAR value is 0.4 W/kg
3. Please refer to Estimated SAR Tables to see which test positions are inherently compliant as they consist of only estimated SAR values for all applicable transmitters and consequently will always have sum of SAR values < 1.2 W/kg. Simultaneous transmission SAR analysis was therefore not performed for these test positions.

Estimated SAR for WWAN

Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)					Estimated 1-g SAR Value (W/kg)				
		dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Rear	Edge 1	Edge 2	Edge 3	Edge 4
Full Power, Proximity Sensor Off													
WCDMA Band II	1907.6	24.00	251	5	21	7.9	44.945	224.1	-MEASURE-	-MEASURE-	-MEASURE-	-MEASURE-	0.400
WCDMA Band IV	1752.6	24.00	251	5	21	7.9	44.945	224.1	-MEASURE-	-MEASURE-	-MEASURE-	-MEASURE-	0.400
WCDMA Band V	846.6	24.00	251	5	21	7.9	44.945	224.1	-MEASURE-	-MEASURE-	-MEASURE-	-MEASURE-	0.400
LTE Band 2	1909.3	24.00	251	5	21	7.9	44.945	224.1	-MEASURE-	-MEASURE-	-MEASURE-	-MEASURE-	0.400
LTE Band 4	1754.3	24.00	251	5	21	7.9	44.945	224.1	-MEASURE-	-MEASURE-	-MEASURE-	-MEASURE-	0.400
LTE Band 5	848.3	24.00	251	5	21	7.9	44.945	224.1	-MEASURE-	-MEASURE-	-MEASURE-	-MEASURE-	0.400
LTE Band 7	2567.5	24.00	251	5	21	7.9	44.945	224.1	-MEASURE-	-MEASURE-	-MEASURE-	-MEASURE-	0.400
LTE Band 12	715.3	24.00	251	5	21	7.9	44.945	224.1	-MEASURE-	-MEASURE-	-MEASURE-	-MEASURE-	0.400
LTE Band 13	782	24.00	251	5	21	7.9	44.945	224.1	-MEASURE-	-MEASURE-	-MEASURE-	-MEASURE-	0.400
LTE Band 25	1914.3	24.00	251	5	21	7.9	44.945	224.1	-MEASURE-	-MEASURE-	-MEASURE-	-MEASURE-	0.400
LTE Band 26	848.3	24.00	251	5	21	7.9	44.945	224.1	-MEASURE-	-MEASURE-	-MEASURE-	-MEASURE-	0.400
LTE Band 30	2310	24.00	251	5	21	7.9	44.945	224.1	-MEASURE-	-MEASURE-	-MEASURE-	-MEASURE-	0.400
LTE Band 41	2680	24.00	251	5	21	7.9	44.945	224.1	-MEASURE-	-MEASURE-	-MEASURE-	-MEASURE-	0.400
LTE Band 66	1779.3	24.00	251	5	21	7.9	44.945	224.1	-MEASURE-	-MEASURE-	-MEASURE-	-MEASURE-	0.400

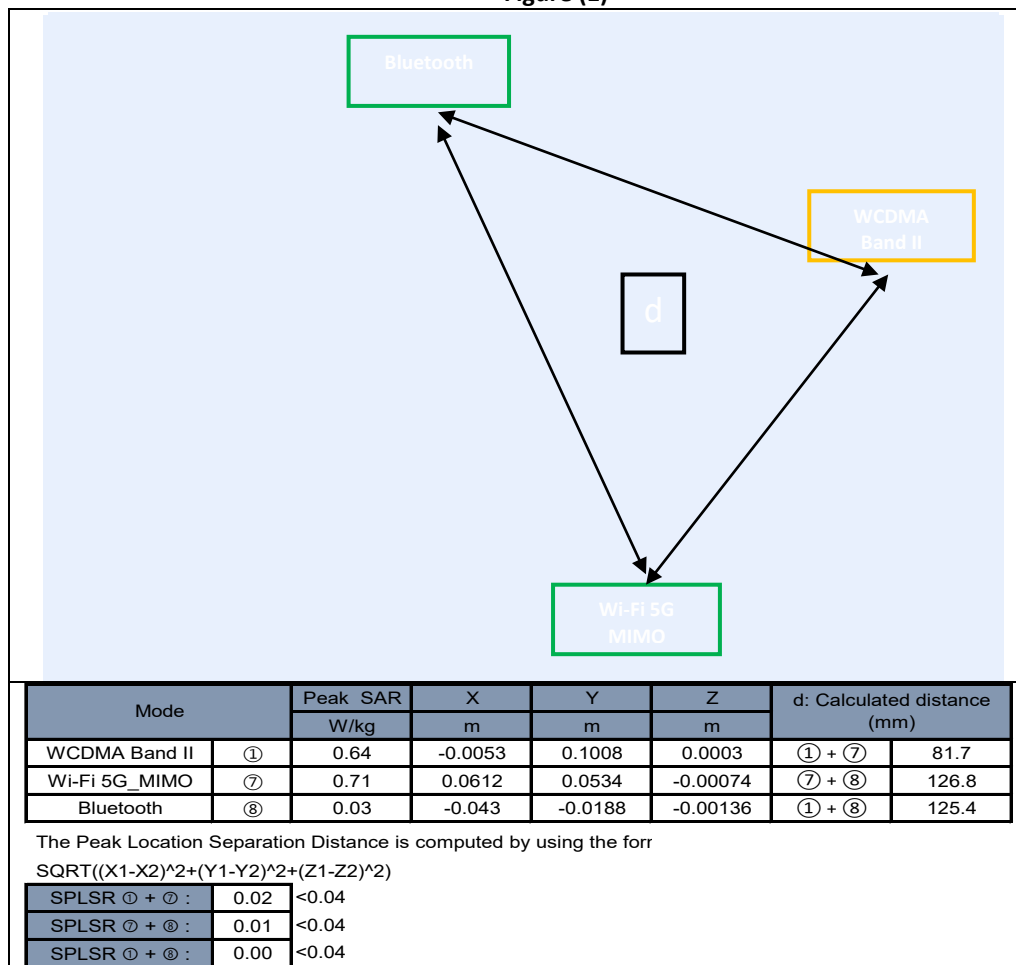
**Estimated SAR for WLAN**

Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)					Estimated 1-g SAR Value (W/kg)				
		dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Rear	Edge 1	Edge 2	Edge 3	Edge 4
Main Antenna													
Wi-Fi 2.4 GHz	2462	18.00	63	5	129.94	121.5	8	93.5	-MEASURE-	0.400	0.400	-MEASURE-	0.400
Wi-Fi 5.2 GHz	5240	12.00	16	5	129.94	121.5	8	93.5	-MEASURE-	0.400	0.400	-MEASURE-	0.400
Wi-Fi 5.3 GHz	5320	12.50	18	5	129.94	121.5	8	93.5	-MEASURE-	0.400	0.400	-MEASURE-	0.400
Wi-Fi 5.5 GHz	5700	13.00	20	5	129.94	121.5	8	93.5	-MEASURE-	0.400	0.400	-MEASURE-	0.400
Wi-Fi 5.8 GHz	5825	13.00	20	5	129.94	121.5	8	93.5	-MEASURE-	0.400	0.400	-MEASURE-	0.400
Bluetooth	2480	5.50	4	5	129.94	121.5	8	93.5	0.168	0.400	0.400	0.105	0.400
Aux Antenna													
Wi-Fi 2.4 GHz	2462	18.00	63	5	7.1	58	130.94	158	-MEASURE-	-MEASURE-	0.400	0.400	0.400
Wi-Fi 5.2 GHz	5240	12.00	16	5	7.1	58	130.94	158	-MEASURE-	-MEASURE-	0.400	0.400	0.400
Wi-Fi 5.3 GHz	5320	12.50	18	5	7.1	58	130.94	158	-MEASURE-	-MEASURE-	0.400	0.400	0.400
Wi-Fi 5.5 GHz	5700	13.00	20	5	7.1	58	130.94	158	-MEASURE-	-MEASURE-	0.400	0.400	0.400
Wi-Fi 5.8 GHz	5825	13.00	20	5	7.1	58	130.94	158	-MEASURE-	-MEASURE-	0.400	0.400	0.400
Wi-Fi MIMO													
Wi-Fi 2.4 GHz	2462	20.00	100	5	7.1	58	8	93.5	-MEASURE-	-MEASURE-	0.400	-MEASURE-	0.400
Wi-Fi 5.2 GHz	5240	16.00	40	5	7.1	58	8	93.5	-MEASURE-	-MEASURE-	0.400	-MEASURE-	0.400
Wi-Fi 5.3 GHz	5320	15.50	35	5	7.1	58	8	93.5	-MEASURE-	-MEASURE-	0.400	-MEASURE-	0.400
Wi-Fi 5.5 GHz	5700	16.00	40	5	7.1	58	8	93.5	-MEASURE-	-MEASURE-	0.400	-MEASURE-	0.400
Wi-Fi 5.8 GHz	5825	15.50	35	5	7.1	58	8	93.5	-MEASURE-	-MEASURE-	0.400	-MEASURE-	0.400

13.1 Sum of the SAR for WCDMA Band II & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)								Σ 1-g SAR (W/kg)							
	WWAN	DTS			U-NII			BT	WWAN + DTS	WWAN + DTS + BT	WWAN + DTS + BT	WWAN + U-NII	WWAN + U-NII + BT	WWAN + U-NII + BT	WWAN + BT	
	①	Chain 0 ②	Chain 1 ③	MIMO ④	Chain 0 ⑤	Chain 1 ⑥	MIMO ⑦	⑧	① + ③	① + ③ + ⑧	① + ④ + ⑧	① + ⑥	① + ⑥ + ⑧	① + ⑦ + ⑧	① + ⑧	
Rear	0.695	0.286	0.637	0.601	0.186	0.583	0.838	0.046	1.332	1.378	1.342	1.278	1.324	1.579	0.741	
Edge 1	0.122	0.400	0.241	0.227	0.400	0.971	0.918	0.000	0.363	0.363	0.349	1.093	1.093	1.040	0.122	
Edge 2	0.222	0.400	0.056	0.042	0.400	0.030	0.042	0.000	0.278	0.278	0.264	0.252	0.252	0.264	0.222	
Edge 3	0.050	0.567	0.400	0.467	0.634	0.400	0.692	0.105	0.450	0.555	0.622	0.450	0.555	0.847	0.155	

Figure (1)



13.2 Sum of the SAR for WCDMA Band IV & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)								Σ 1-g SAR (W/kg)							
	WWAN	DTS			U-NII			BT	WWAN + DTS	WWAN + DTS + BT	WWAN + DTS + BT	WWAN + U-NII	WWAN + U-NII + BT	WWAN + U-NII + BT	WWAN + BT	
	①	Chain 0 ②	Chain 1 ③	MiMO ④	Chain 0 ⑤	Chain 1 ⑥	MiMO ⑦	⑧	① + ③	① + ③ + ⑧	① + ④ + ⑧	① + ⑥	① + ⑥ + ⑧	① + ⑦ + ⑧	① + ⑧	
Rear	0.566	0.286	0.637	0.601	0.186	0.583	0.838	0.046	1.203	1.249	1.213	1.149	1.195	1.450	0.612	
Edge 1	0.076	0.400	0.241	0.227	0.400	0.971	0.918	0.000	0.317	0.317	0.303	1.047	1.047	0.994	0.076	
Edge 2	0.275	0.400	0.056	0.042	0.400	0.030	0.042	0.000	0.331	0.331	0.317	0.305	0.305	0.317	0.275	
Edge 3	0.071	0.567	0.400	0.467	0.634	0.400	0.692	0.105	0.471	0.576	0.643	0.471	0.576	0.868	0.176	

13.3 Sum of the SAR for WCDMA Band V & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)								Σ 1-g SAR (W/kg)							
	WWAN	DTS			U-NII			BT	WWAN + DTS	WWAN + DTS + BT	WWAN + DTS + BT	WWAN + U-NII	WWAN + U-NII + BT	WWAN + U-NII + BT	WWAN + BT	
	①	Chain 0 ②	Chain 1 ③	MIMO ④	Chain 0 ⑤	Chain 1 ⑥	MIMO ⑦	⑧	① + ③	① + ③ + ⑧	① + ④ + ⑧	① + ⑥	① + ⑥ + ⑧	① + ⑦ + ⑧	① + ⑧	
Rear	0.925	0.286	0.637	0.601	0.186	0.583	0.838	0.046	1.562	1.608	1.572	1.508	1.554	1.809	0.971	
Edge 1	0.222	0.400	0.241	0.227	0.400	0.971	0.918	0.000	0.463	0.463	0.449	1.193	1.193	1.140	0.222	
Edge 2	0.944	0.400	0.056	0.042	0.400	0.030	0.042	0.000	1.000	1.000	0.986	0.974	0.974	0.986	0.944	
Edge 3	0.350	0.567	0.400	0.467	0.634	0.400	0.692	0.105	0.750	0.855	0.922	0.750	0.855	1.147	0.455	

Figure (1)

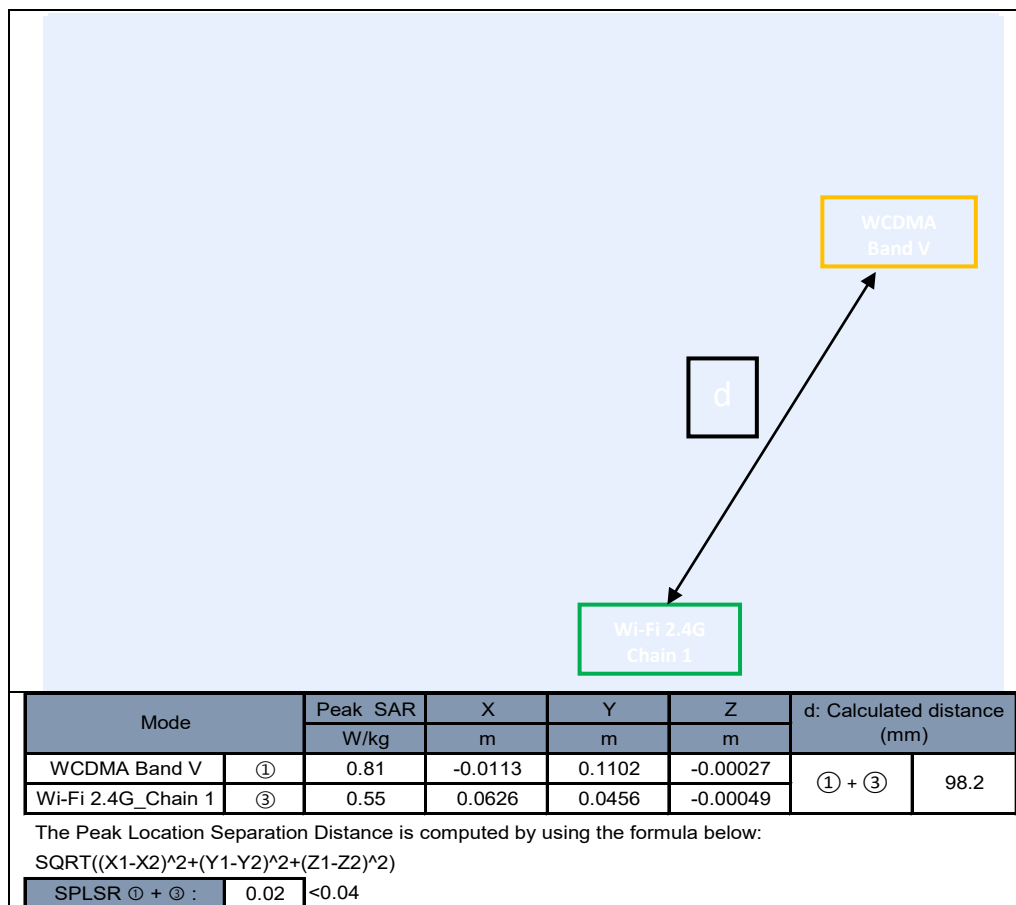


Figure (2)

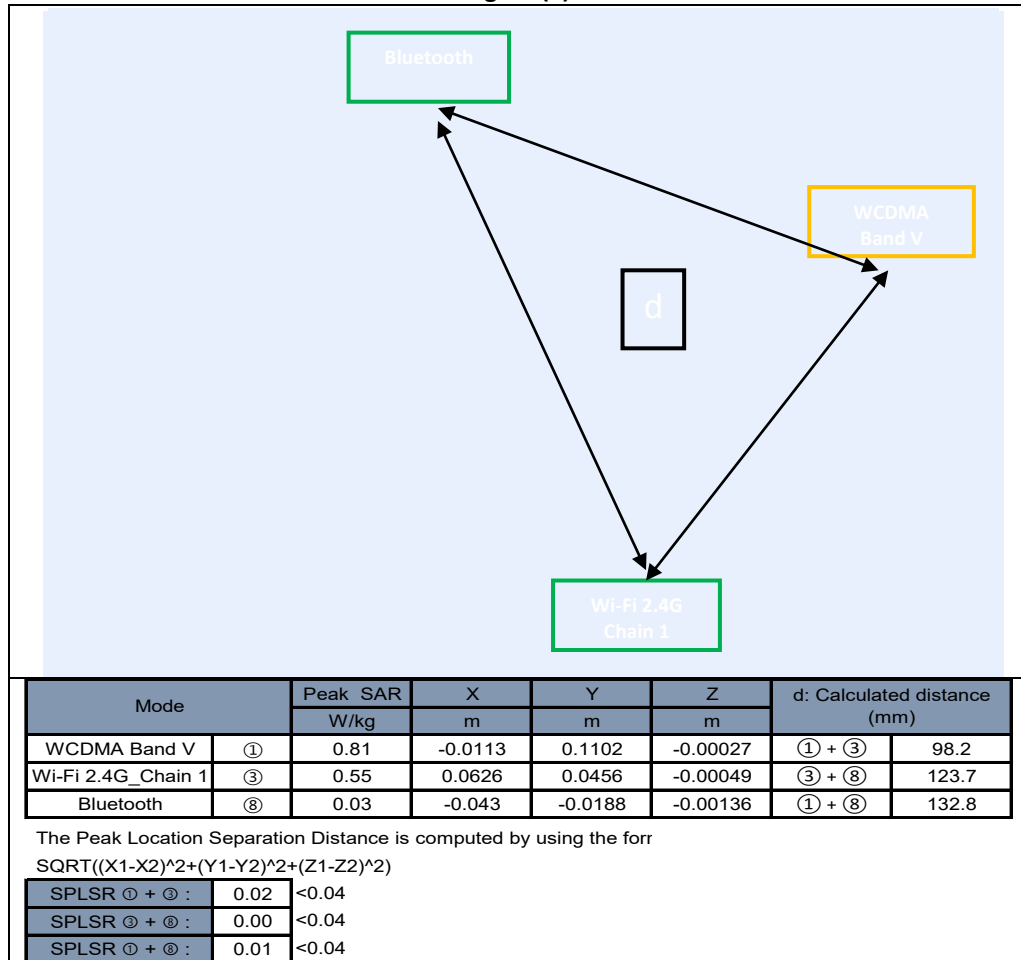


Figure (3)

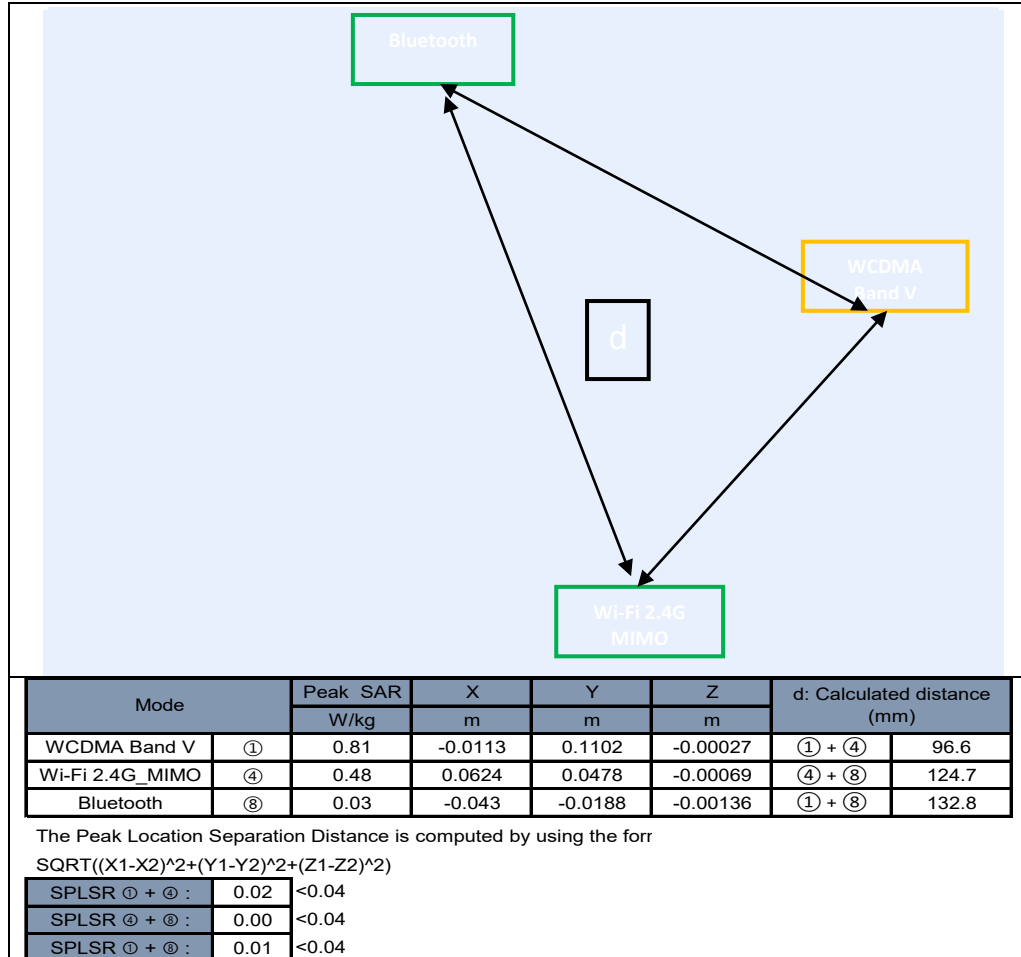
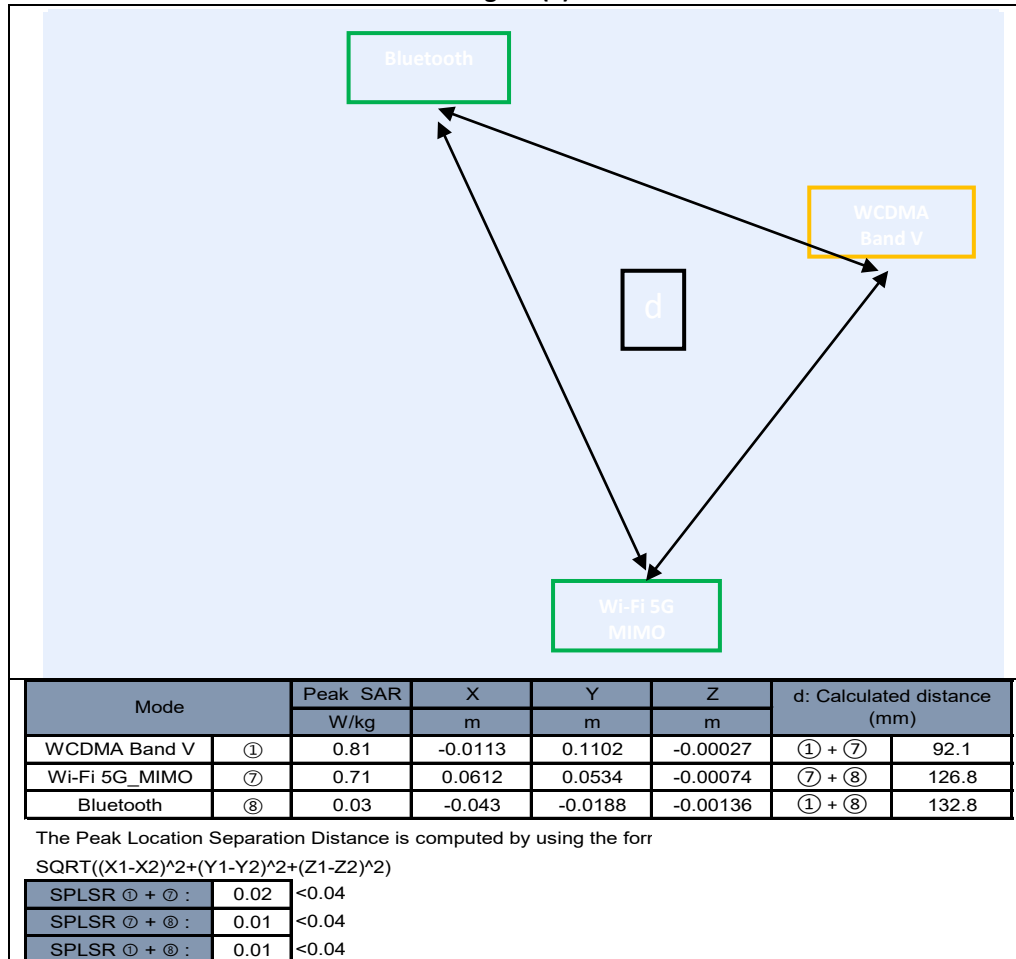


Figure (4)





Report No.: T201102D09-SF

Page: 97 / 124
Rev.: 00

13.4 Sum of the SAR for LTE Band 2 & Wi-Fi & BT

SAR for LTE Band 2 (Frequency range: 1850-1910 MHz) is covered by LTE Band 25 (Frequency range: 1850-1915 MHz) due to similar frequency range, same maximum tune-up limit and same channel bandwidth.

13.5 Sum of the SAR for LTE Band 4 & Wi-Fi & BT

SAR for LTE Band 4 (Frequency range: 1710-1755 MHz) is covered by LTE Band 66 (Frequency range: 1710-1780 MHz) due to similar frequency range, same maximum tune-up limit and same channel bandwidth.

13.6 Sum of the SAR for LTE Band 5 & Wi-Fi & BT

SAR for LTE Band 5 (Frequency range: 824-849 MHz) is covered by LTE Band 26 (Frequency range: 814-849 MHz) due to similar frequency range, same maximum tune-up limit and same channel bandwidth.

13.7 Sum of the SAR for LTE Band 7 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)								Σ 1-g SAR (W/kg)							
	WWAN	DTS			U-NII			BT	WWAN + DTS	WWAN + DTS + BT	WWAN + DTS + BT	WWAN + U-NII	WWAN + U-NII + BT	WWAN + U-NII + BT	WWAN + BT	
	①	Chain 0 ②	Chain 1 ③	MiMO ④	Chain 0 ⑤	Chain 1 ⑥	MiMO ⑦	⑧	① + ③	① + ③ + ⑧	① + ④ + ⑧	① + ⑥	① + ⑥ + ⑧	① + ⑦ + ⑧	① + ⑧	
Rear	1.030	0.286	0.637	0.601	0.186	0.583	0.838	0.046	1.667	1.713	1.677	1.613	1.659	1.914	1.076	
Edge 1	0.228	0.400	0.241	0.227	0.400	0.971	0.918	0.000	0.469	0.469	0.455	1.199	1.199	1.146	0.228	
Edge 2	0.539	0.400	0.056	0.042	0.400	0.030	0.042	0.000	0.595	0.595	0.581	0.569	0.569	0.581	0.539	
Edge 3	0.436	0.567	0.400	0.467	0.634	0.400	0.692	0.105	0.836	0.941	1.008	0.836	0.941	1.233	0.541	

Figure (1)

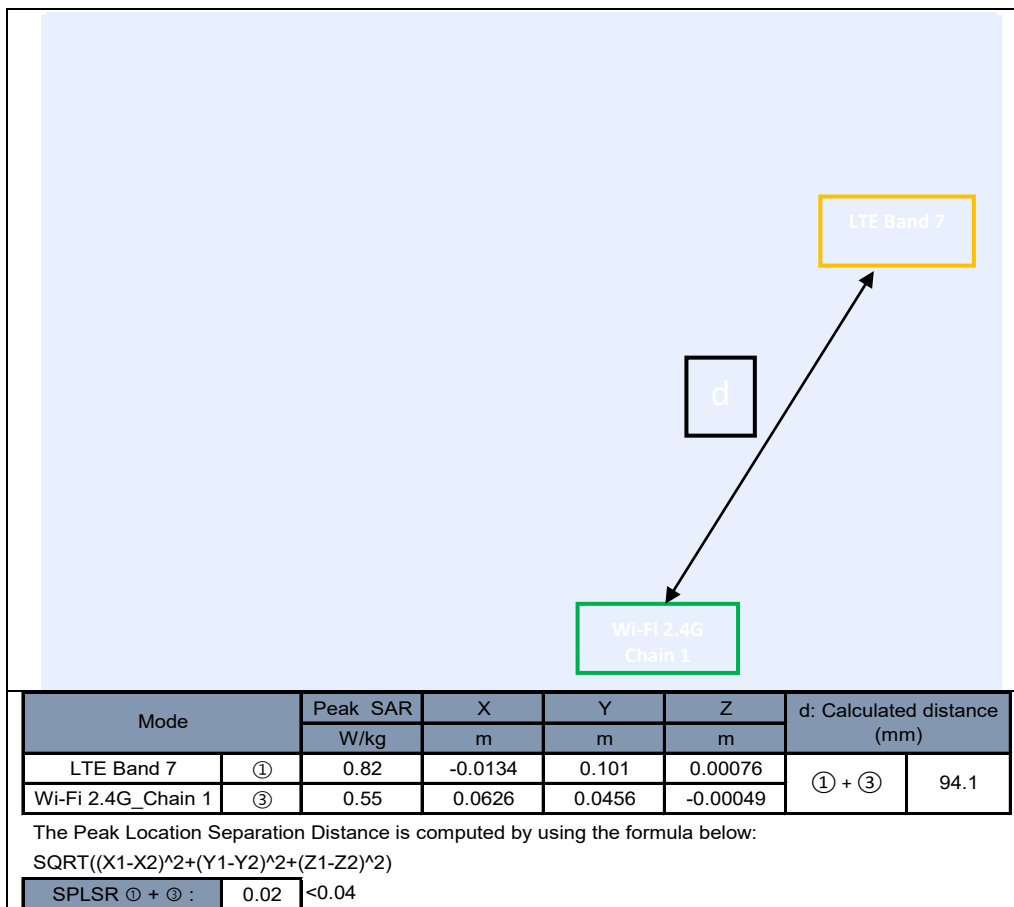


Figure (2)

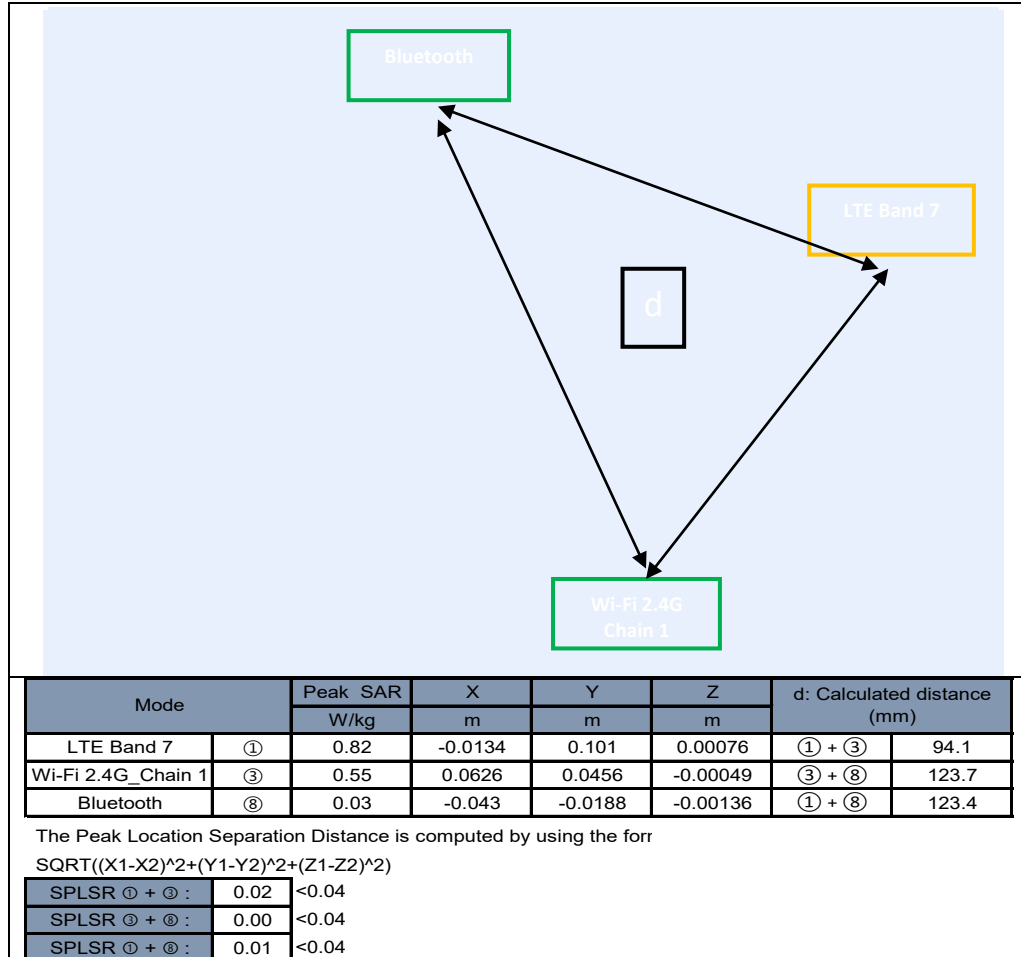


Figure (3)

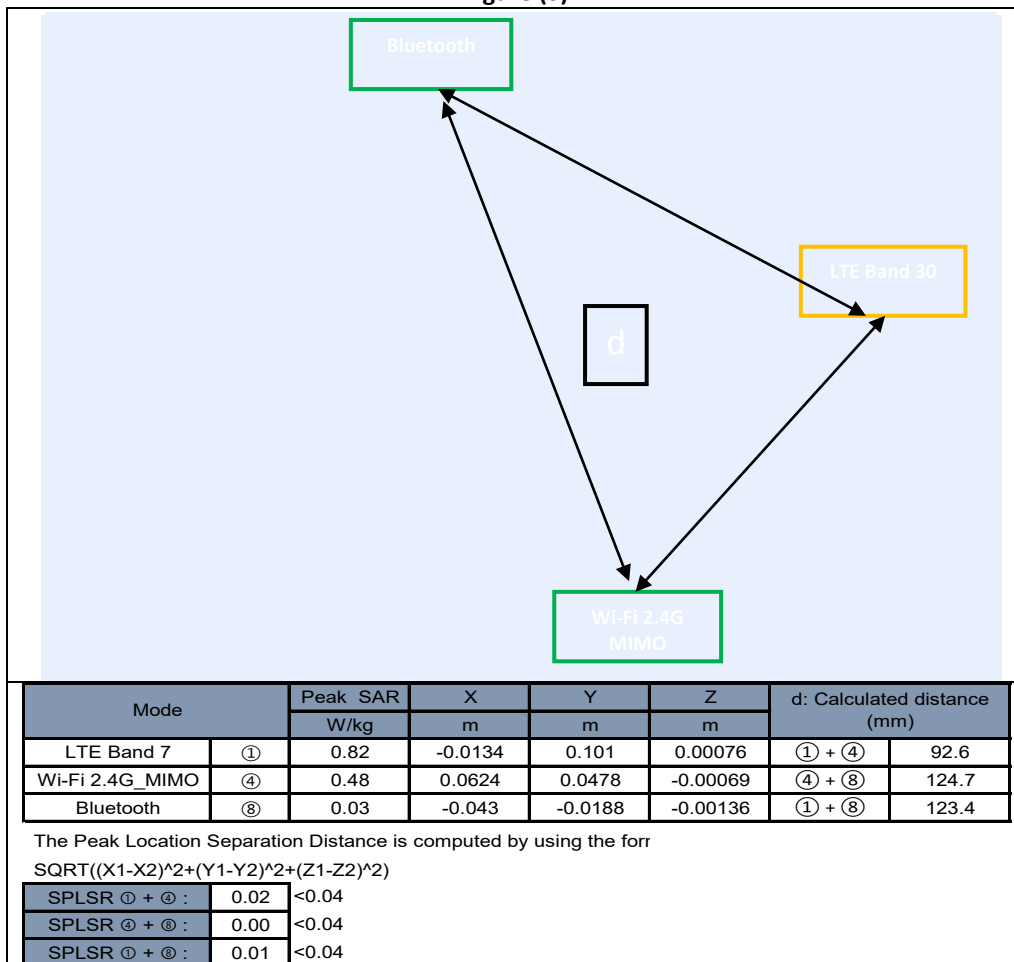


Figure (4)

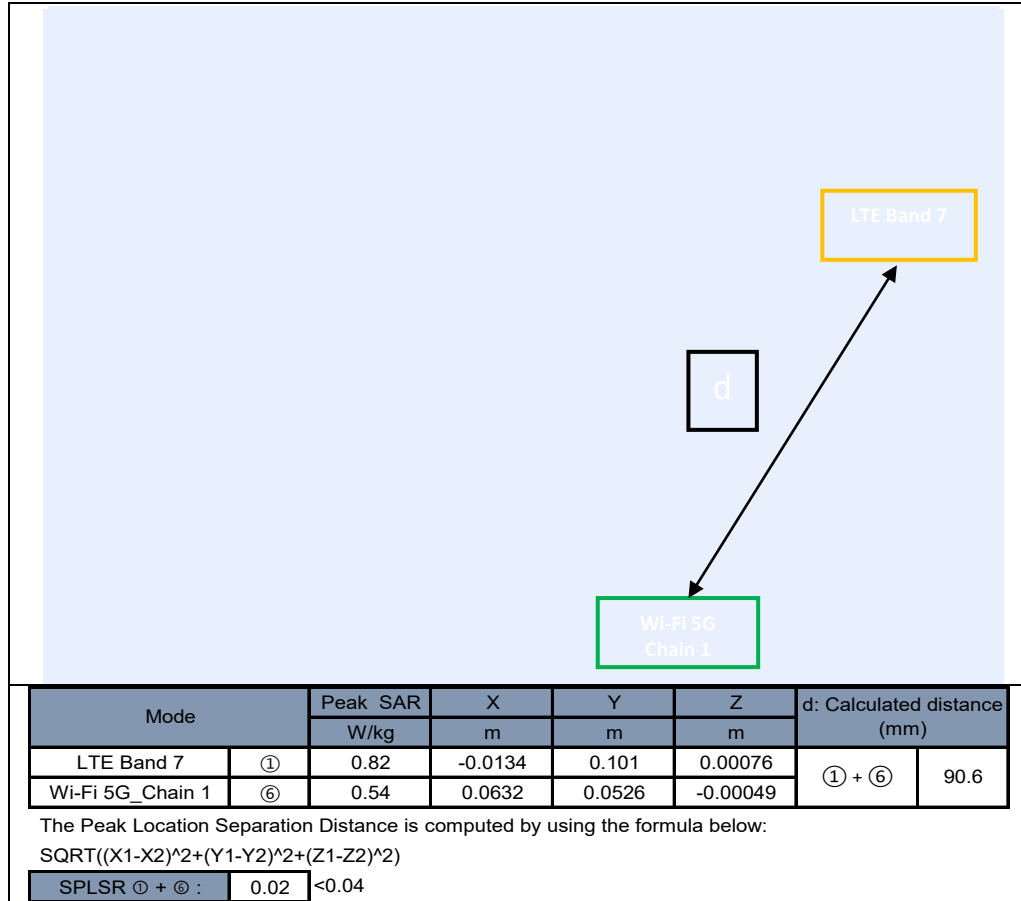


Figure (5)

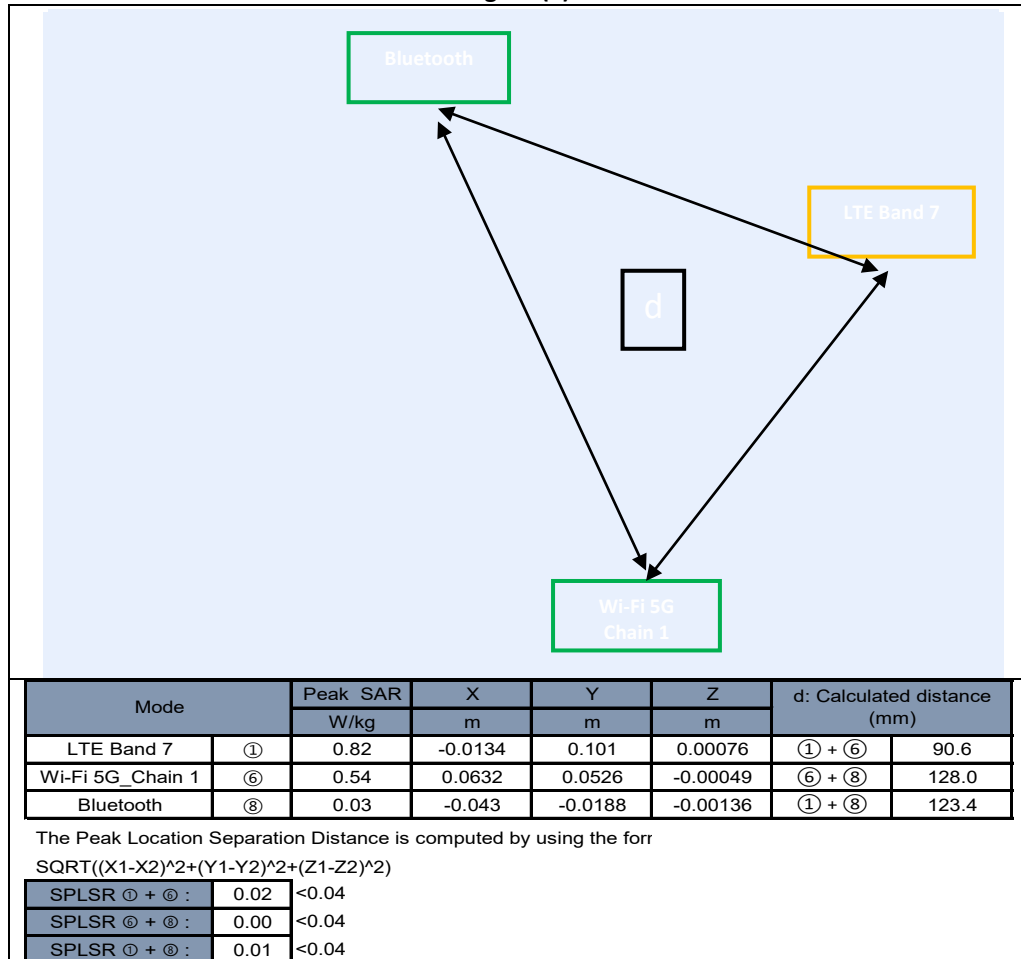
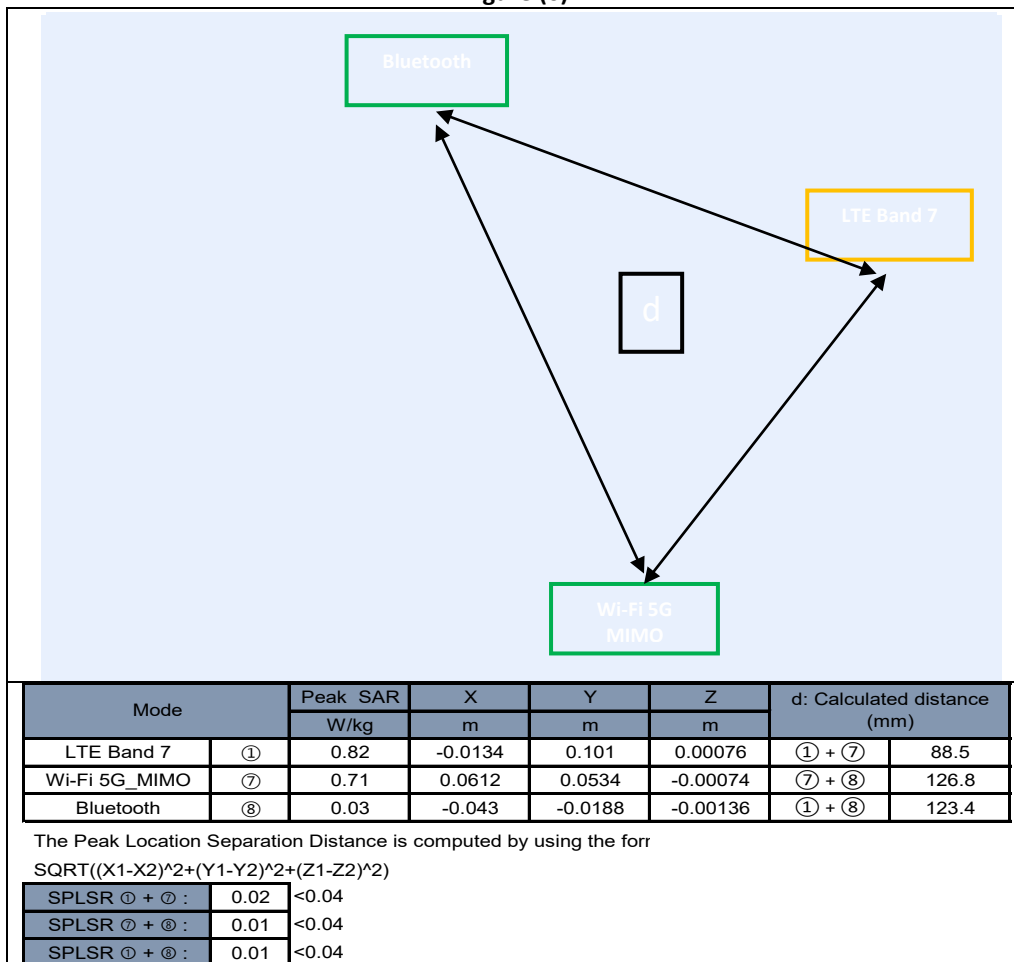


Figure (6)



13.8 Sum of the SAR for LTE Band 12 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)								Σ 1-g SAR (W/kg)						
	WWAN	DTS			U-NII			BT	WWAN + DTS	WWAN + DTS + BT	WWAN + DTS + BT	WWAN + U-NII	WWAN + U-NII + BT	WWAN + U-NII + BT	WWAN + BT
	①	Chain 0 ②	Chain 1 ③	MIMO ④	Chain 0 ⑤	Chain 1 ⑥	MIMO ⑦	⑧	① + ③	① + ③ + ⑧	① + ④ + ⑧	① + ⑥	① + ⑥ + ⑧	① + ⑦ + ⑧	① + ⑧
Rear	0.638	0.286	0.637	0.601	0.186	0.583	0.838	0.046	1.275	1.321	1.285	1.221	1.267	1.522	0.684
Edge 1	0.034	0.400	0.241	0.227	0.400	0.971	0.918	0.000	0.275	0.275	0.261	1.005	1.005	0.952	0.034
Edge 2	0.527	0.400	0.056	0.042	0.400	0.030	0.042	0.000	0.583	0.583	0.569	0.557	0.557	0.569	0.527
Edge 3	0.037	0.567	0.400	0.467	0.634	0.400	0.692	0.105	0.437	0.542	0.609	0.437	0.542	0.834	0.142

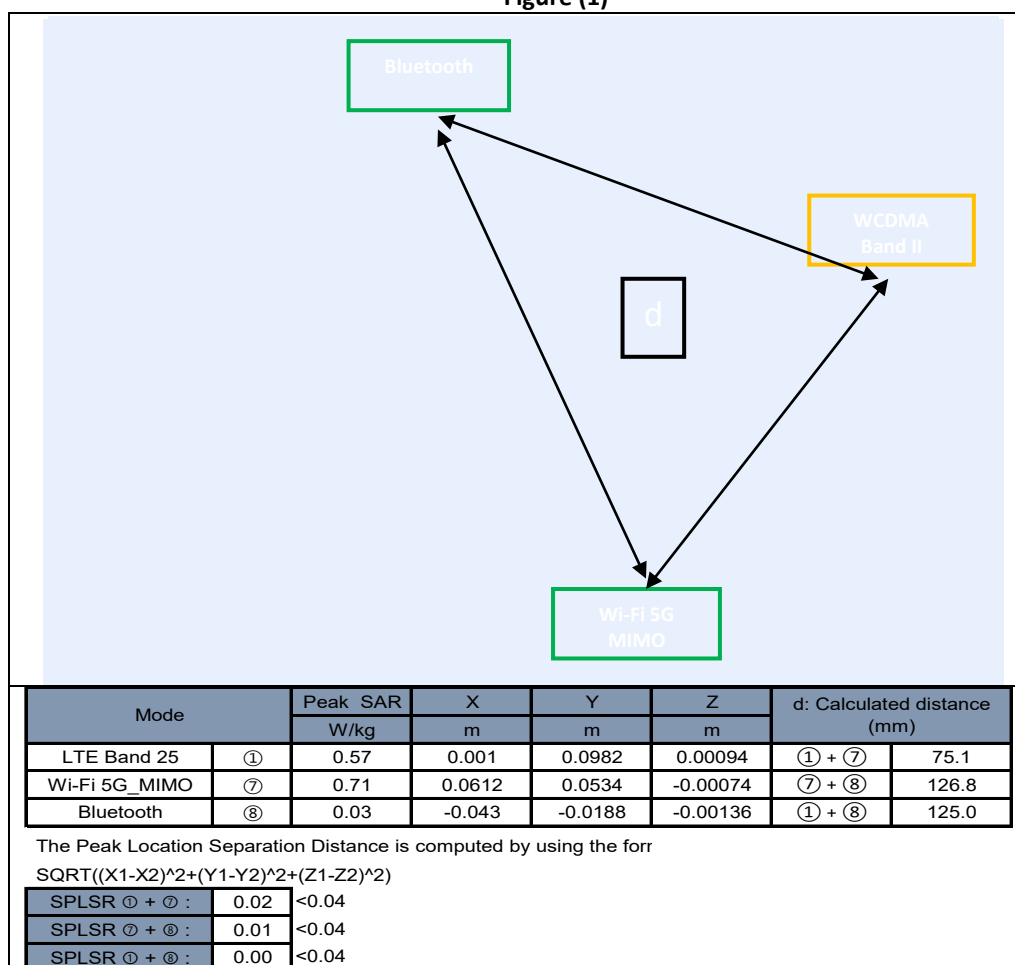
13.9 Sum of the SAR for LTE Band 13 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)								Σ 1-g SAR (W/kg)						
	WWAN	DTS			U-NII			BT	WWAN + DTS	WWAN + DTS + BT	WWAN + DTS + BT	WWAN + U-NII	WWAN + U-NII + BT	WWAN + U-NII + BT	WWAN + BT
	①	Chain 0 ②	Chain 1 ③	MIMO ④	Chain 0 ⑤	Chain 1 ⑥	MIMO ⑦	⑧	① + ③	① + ③ + ⑧	① + ④ + ⑧	① + ⑥	① + ⑥ + ⑧	① + ⑦ + ⑧	① + ⑧
Rear	0.636	0.286	0.637	0.601	0.186	0.583	0.838	0.046	1.273	1.319	1.283	1.219	1.265	1.520	0.682
Edge 1	0.114	0.400	0.241	0.227	0.400	0.971	0.918	0.000	0.355	0.355	0.341	1.085	1.085	1.032	0.114
Edge 2	0.403	0.400	0.056	0.042	0.400	0.030	0.042	0.000	0.459	0.459	0.445	0.433	0.433	0.445	0.403
Edge 3	0.110	0.567	0.400	0.467	0.634	0.400	0.692	0.105	0.510	0.615	0.682	0.510	0.615	0.907	0.215

13.10 Sum of the SAR for LTE Band 25 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)								Σ 1-g SAR (W/kg)						
	WWAN	DTS			U-NII			BT	WWAN + DTS	WWAN + DTS + BT	WWAN + DTS + BT	WWAN + U-NII	WWAN + U-NII + BT	WWAN + U-NII + BT	WWAN + BT
	①	Chain 0 ②	Chain 1 ③	MIMO ④	Chain 0 ⑤	Chain 1 ⑥	MIMO ⑦	⑧	① + ③	① + ③ + ⑧	① + ④ + ⑧	① + ⑥	① + ⑥ + ⑧	① + ⑦ + ⑧	① + ⑧
Rear	0.687	0.286	0.637	0.601	0.186	0.583	0.838	0.046	1.324	1.370	1.334	1.270	1.316	1.571	0.733
Edge 1	0.119	0.400	0.241	0.227	0.400	0.971	0.918	0.000	0.360	0.360	0.346	1.090	1.090	1.037	0.119
Edge 2	0.191	0.400	0.056	0.042	0.400	0.030	0.042	0.000	0.247	0.247	0.233	0.221	0.221	0.233	0.191
Edge 3	0.064	0.567	0.400	0.467	0.634	0.400	0.692	0.105	0.464	0.569	0.636	0.464	0.569	0.861	0.169

Figure (1)



13.11 Sum of the SAR for LTE Band 26 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)								Σ 1-g SAR (W/kg)						
	WWAN	DTS			U-NII			BT	WWAN + DTS	WWAN + DTS + BT	WWAN + DTS + BT	WWAN + U-NII	WWAN + U-NII + BT	WWAN + U-NII + BT	WWAN + BT
	①	Chain 0 ②	Chain 1 ③	MIMO ④	Chain 0 ⑤	Chain 1 ⑥	MIMO ⑦	⑧	① + ③	① + ③ + ⑧	① + ④ + ⑧	① + ⑥	① + ⑥ + ⑧	① + ⑦ + ⑧	① + ⑧
Rear	0.959	0.296	0.637	0.601	0.196	0.583	0.838	0.046	1.596	1.642	1.606	1.542	1.588	1.843	1.005
Edge 1	0.198	0.400	0.241	0.227	0.400	0.971	0.918	0.000	0.439	0.439	0.425	1.169	1.169	1.116	0.198
Edge 2	0.965	0.400	0.056	0.042	0.400	0.030	0.042	0.000	1.021	1.021	1.007	0.995	0.995	1.007	0.965
Edge 3	0.340	0.567	0.400	0.467	0.634	0.400	0.692	0.105	0.740	0.845	0.912	0.740	0.845	1.137	0.445

Figure (1)

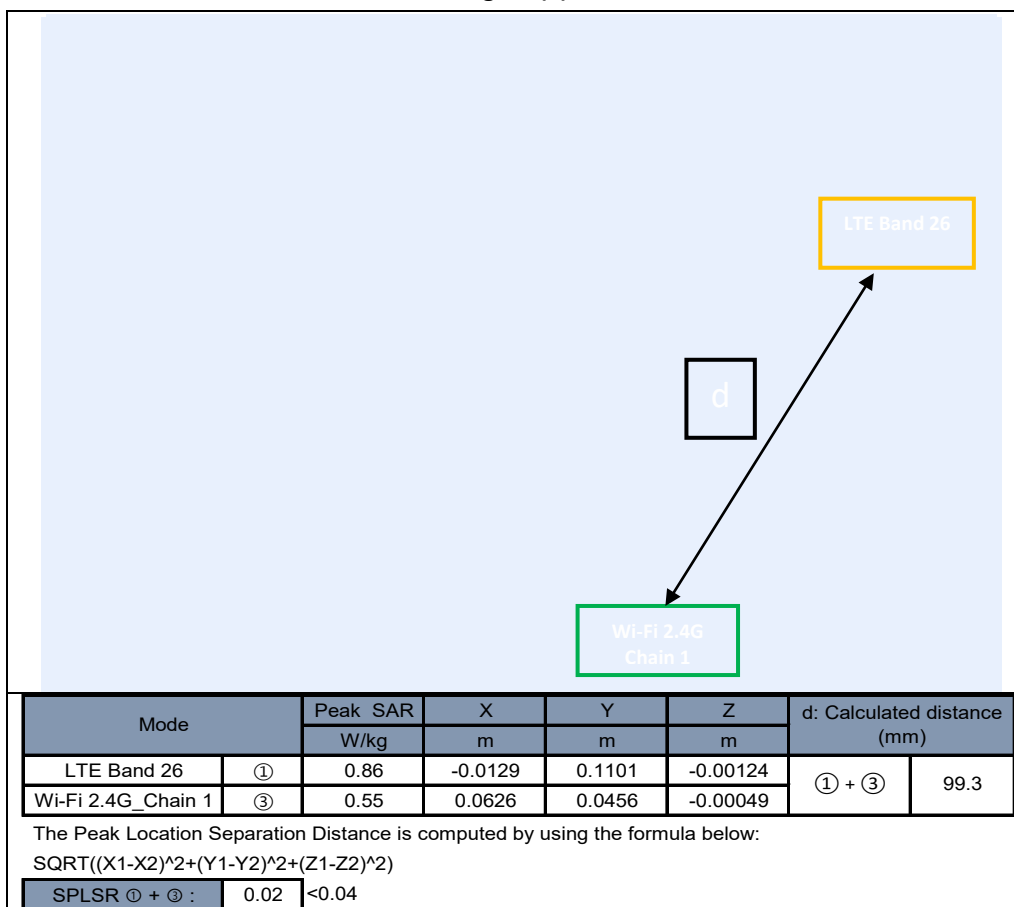


Figure (2)

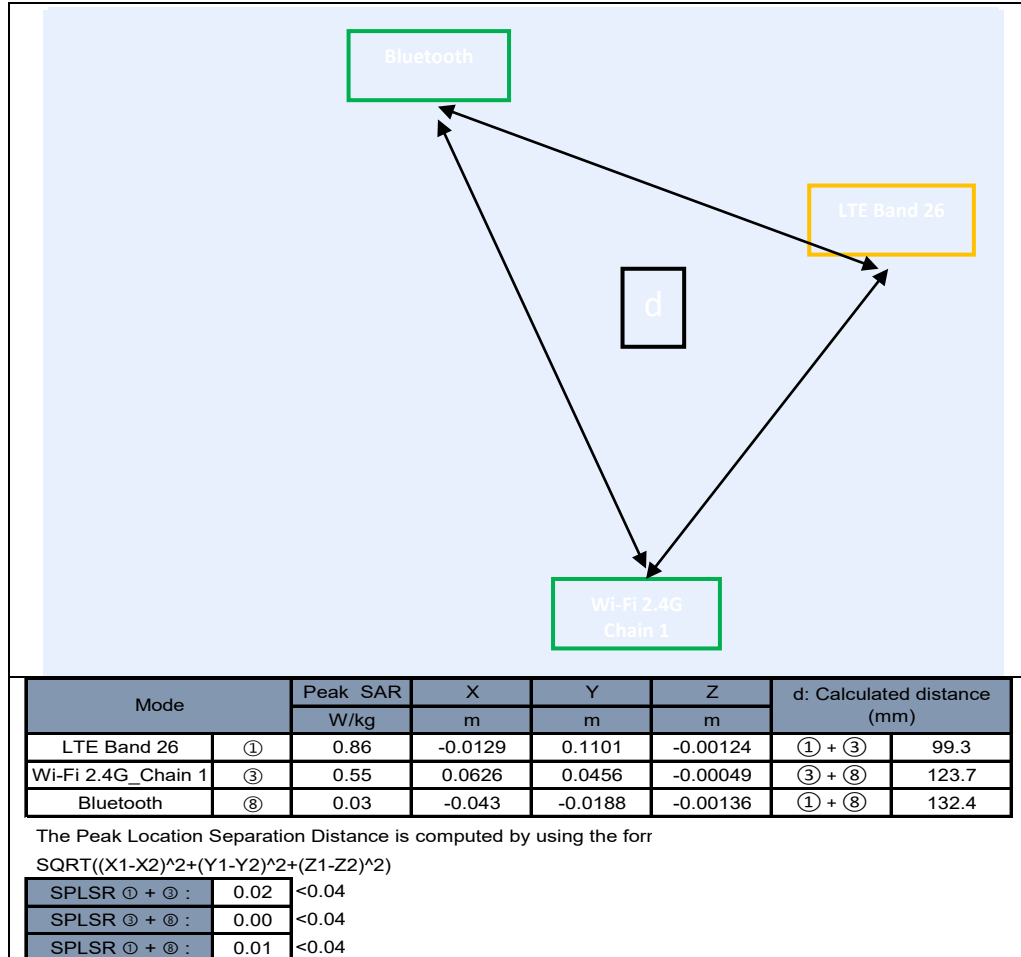


Figure (3)

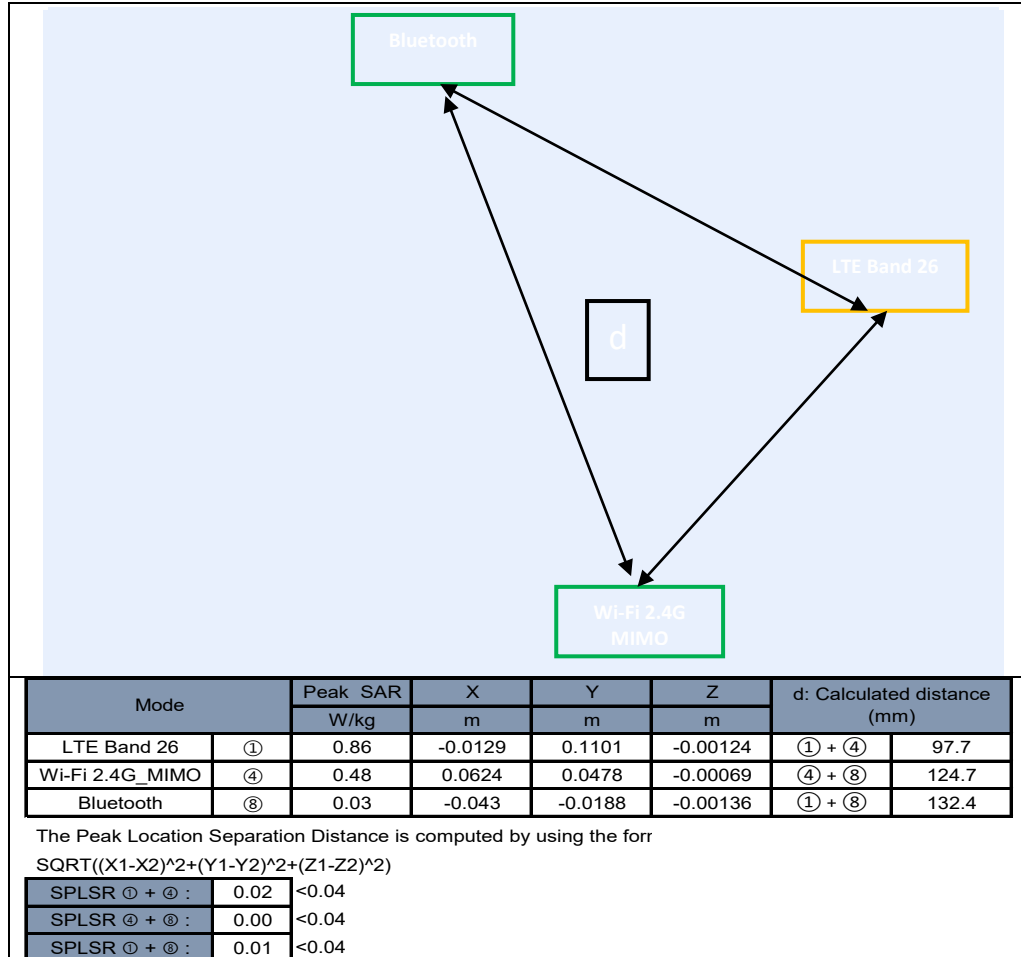


Figure (4)

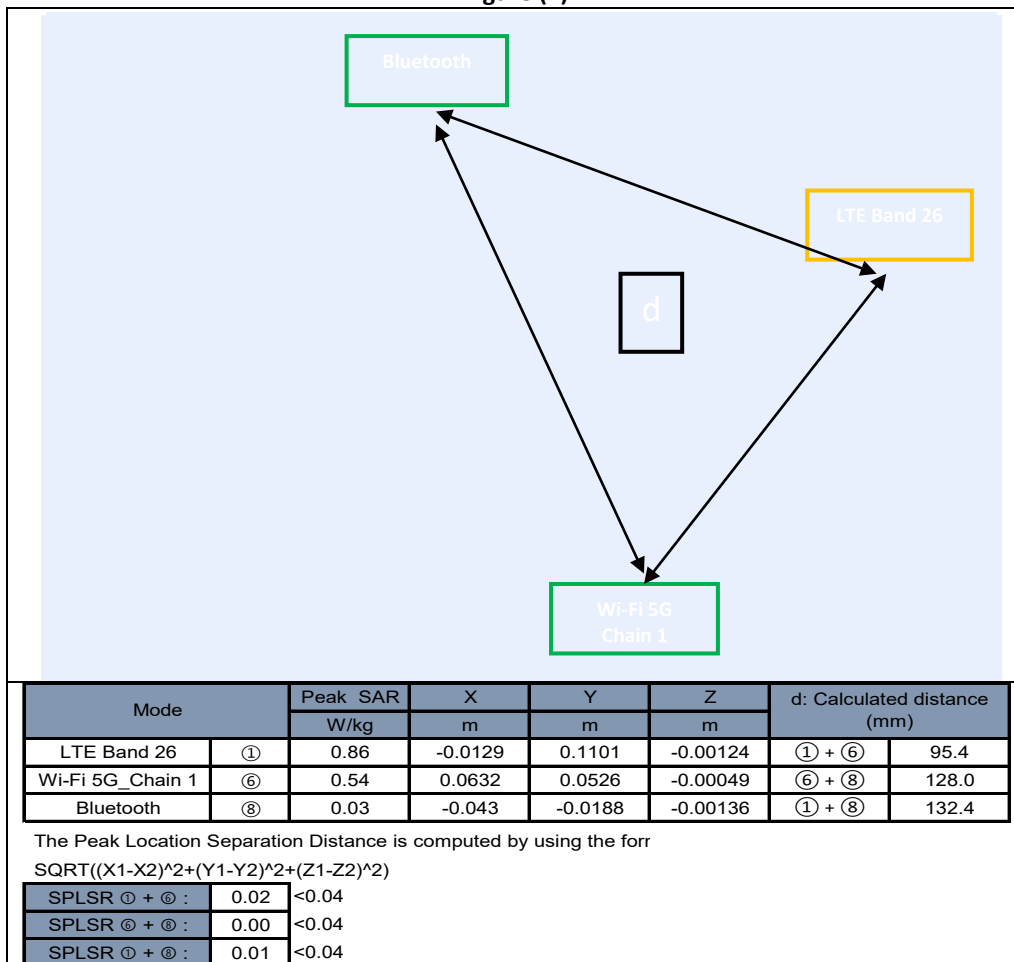
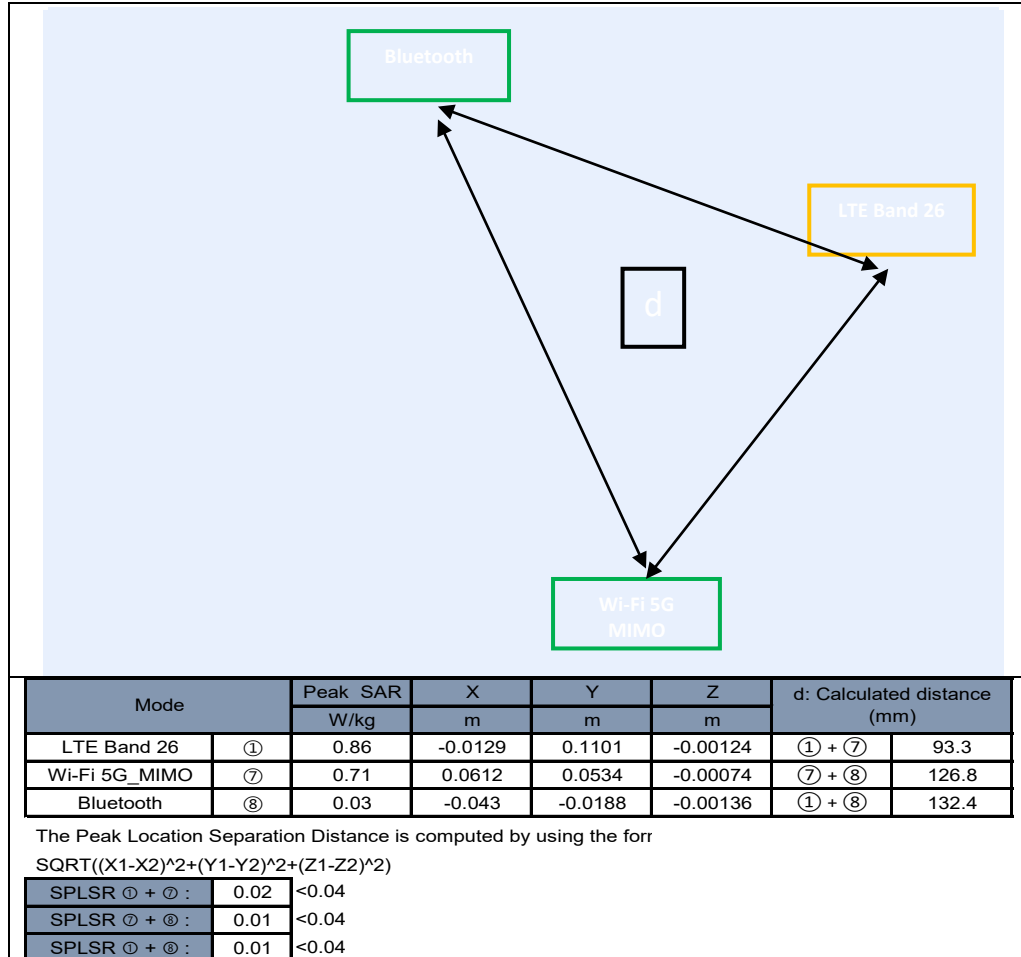


Figure (5)



13.12 Sum of the SAR for LTE Band 30 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)								Σ 1-g SAR (W/kg)							
	WWAN	DTS			U-NII			BT	WWAN + DTS	WWAN + DTS + BT	WWAN + DTS + BT	WWAN + U-NII	WWAN + U-NII + BT	WWAN + U-NII + BT	WWAN + BT	
	①	Chain 0 ②	Chain 1 ③	MiMO ④	Chain 0 ⑤	Chain 1 ⑥	MiMO ⑦	⑧	① + ③	① + ③ + ⑧	① + ④ + ⑧	① + ⑥	① + ⑥ + ⑧	① + ⑦ + ⑧	① + ⑧	
Rear	1.071	0.286	0.637	0.601	0.186	0.583	0.838	0.046	1.708	1.754	1.718	1.654	1.700	1.955	1.117	
Edge 1	0.148	0.400	0.241	0.227	0.400	0.971	0.918	0.000	0.389	0.389	0.375	1.119	1.119	1.066	0.148	
Edge 2	0.663	0.400	0.056	0.042	0.400	0.030	0.042	0.000	0.719	0.719	0.705	0.693	0.693	0.705	0.663	
Edge 3	0.077	0.567	0.400	0.467	0.634	0.400	0.692	0.105	0.477	0.582	0.649	0.477	0.582	0.874	0.182	

Figure (1)

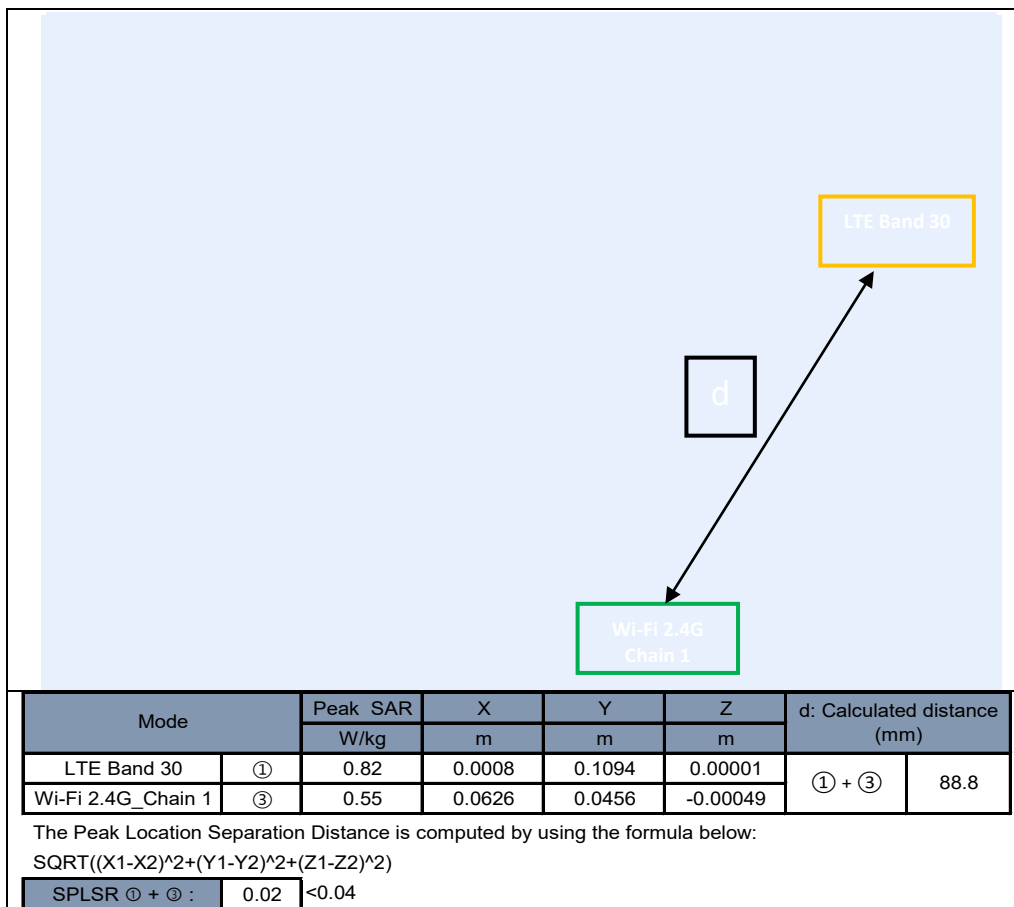


Figure (2)

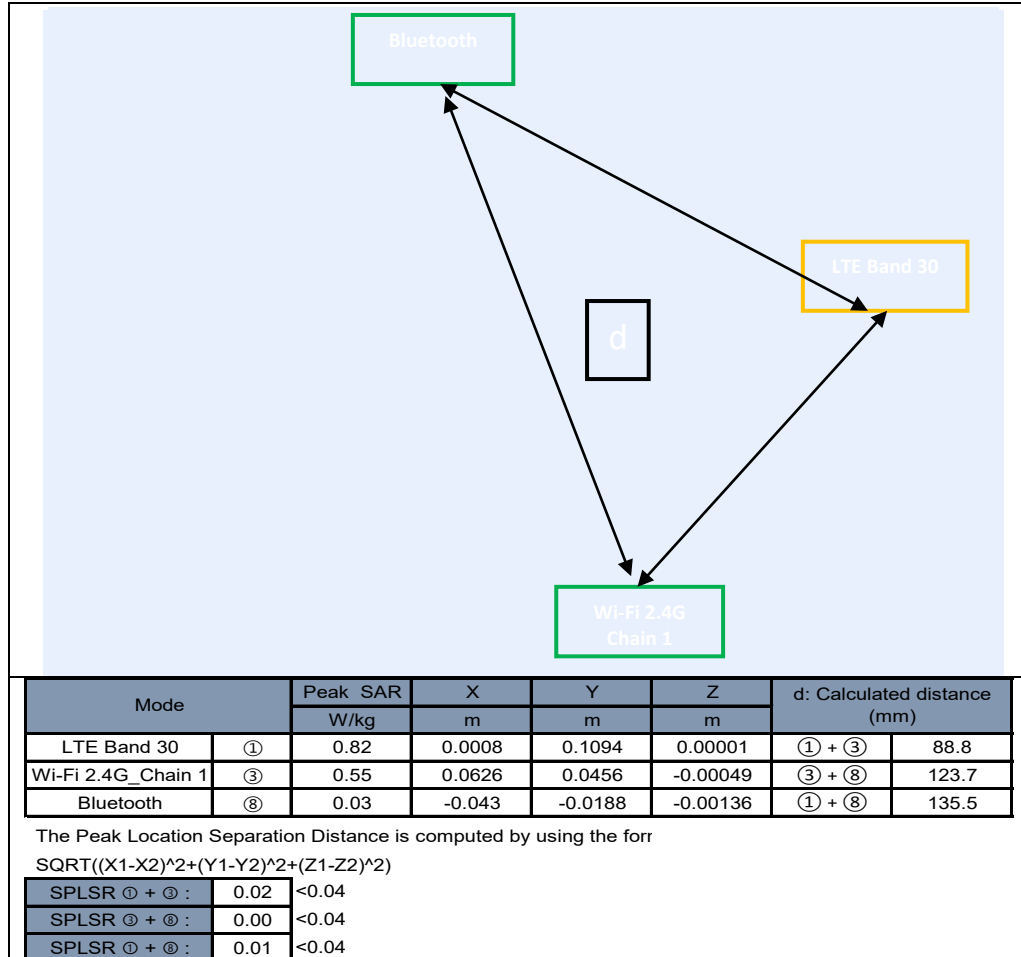


Figure (3)

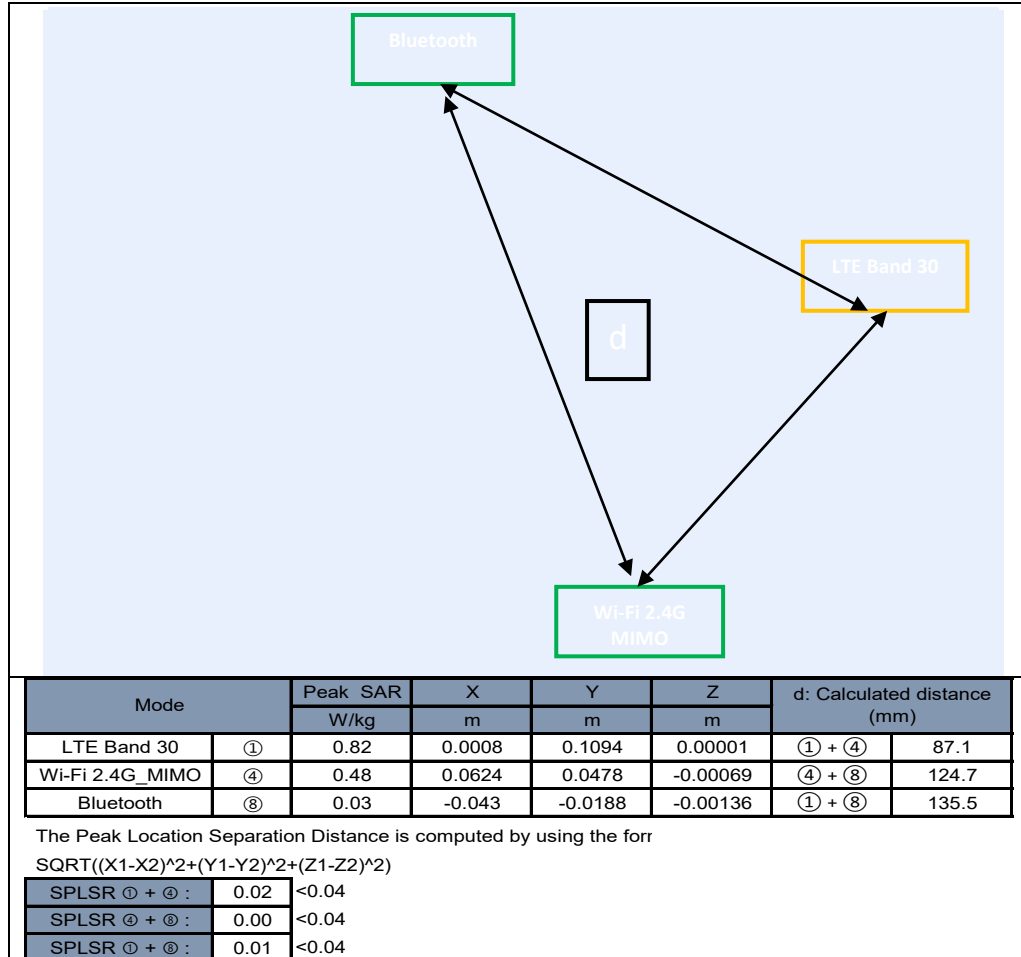


Figure (4)

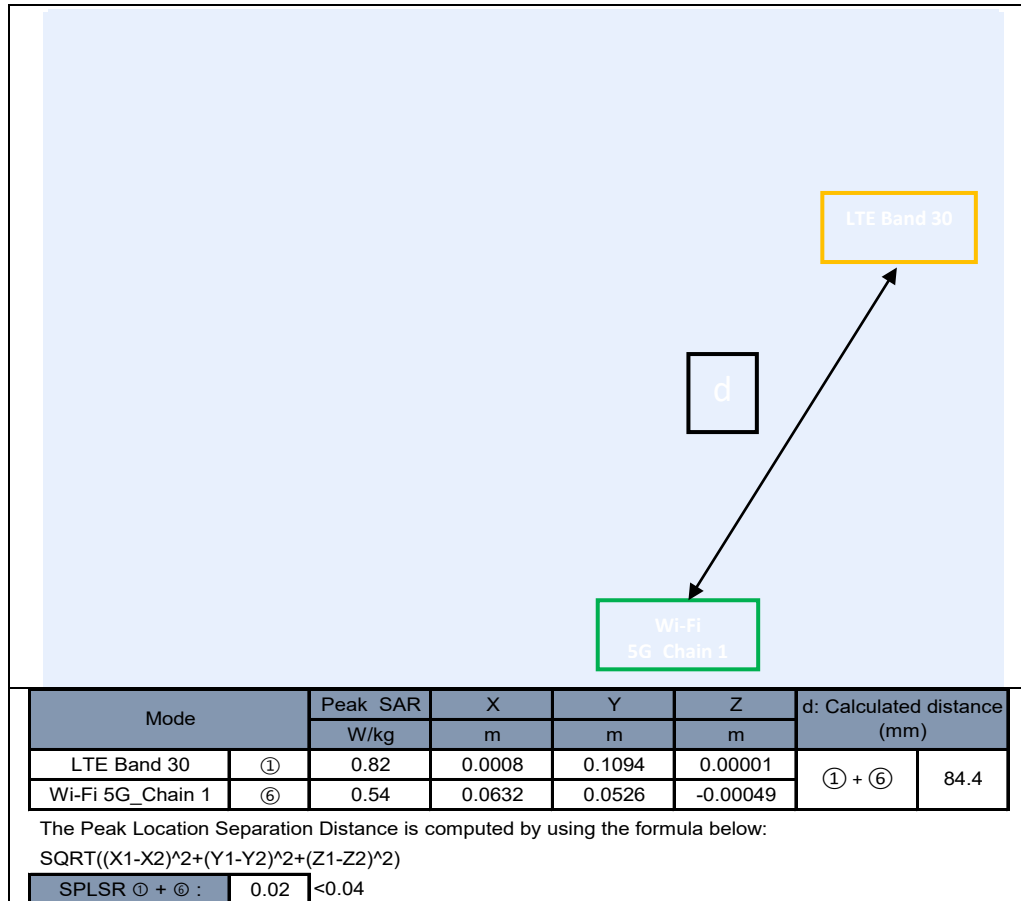


Figure (5)

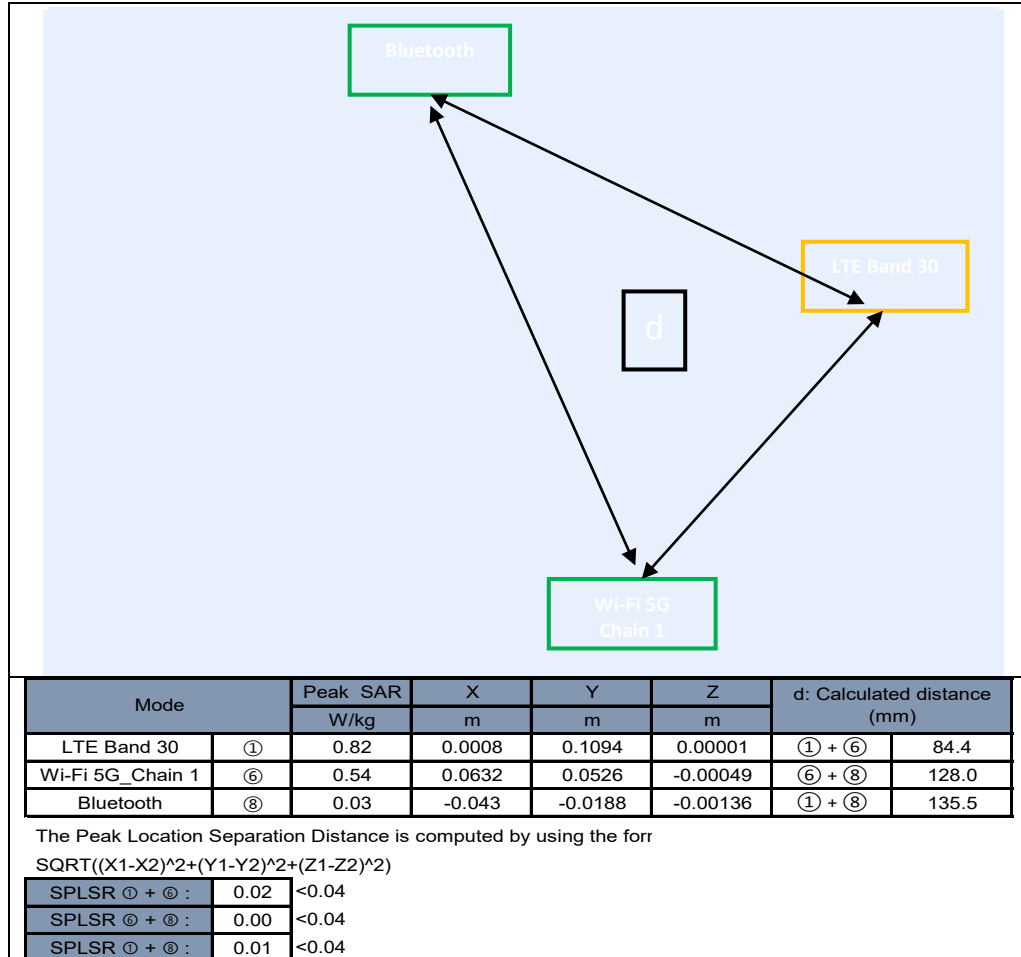
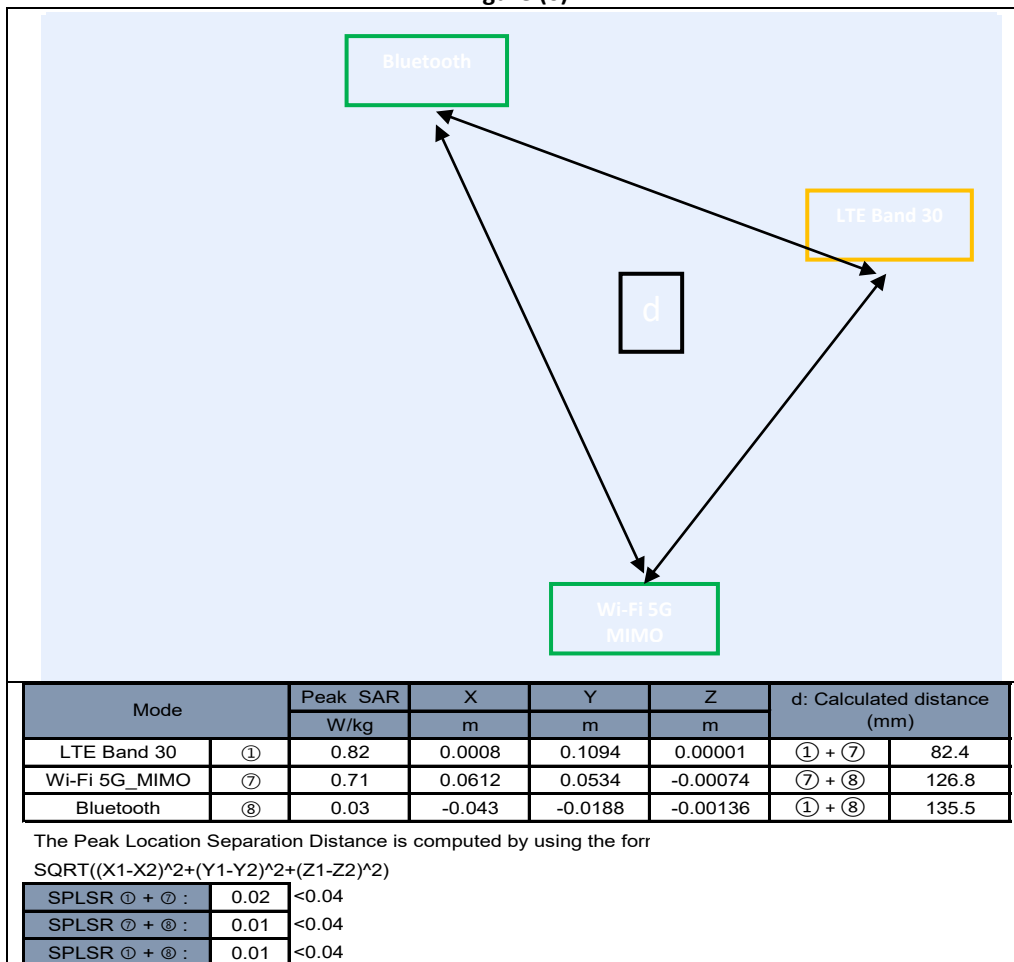


Figure (6)



13.13 Sum of the SAR for LTE Band 41 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)								Σ 1-g SAR (W/kg)							
	WWAN		DTS		U-NII		BT	WWAN + DTS	WWAN + DTS + BT	WWAN + DTS + BT	WWAN + U-NII	WWAN + U-NII + BT	WWAN + U-NII + BT	WWAN + BT		
	①	Chain 0 ②	Chain 1 ③	MIMO ④	Chain 0 ⑤	Chain 1 ⑥	MIMO ⑦	⑧	① + ③	① + ③ + ⑧	① + ④ + ⑧	① + ⑥	① + ⑥ + ⑧	① + ⑦ + ⑧	① + ⑧	
Rear	1.082	0.286	0.637	0.601	0.186	0.583	0.838	0.046	1.719	1.765	1.729	1.665	1.711	1.966	1.128	
Edge 1	0.068	0.400	0.241	0.227	0.400	0.971	0.918	0.000	0.309	0.309	0.295	1.039	1.039	0.986	0.068	
Edge 2	0.355	0.400	0.056	0.042	0.400	0.030	0.042	0.000	0.411	0.411	0.397	0.385	0.385	0.397	0.355	
Edge 3	0.342	0.567	0.400	0.467	0.634	0.400	0.692	0.105	0.742	0.847	0.914	0.742	0.847	1.139	0.447	

Figure (1)

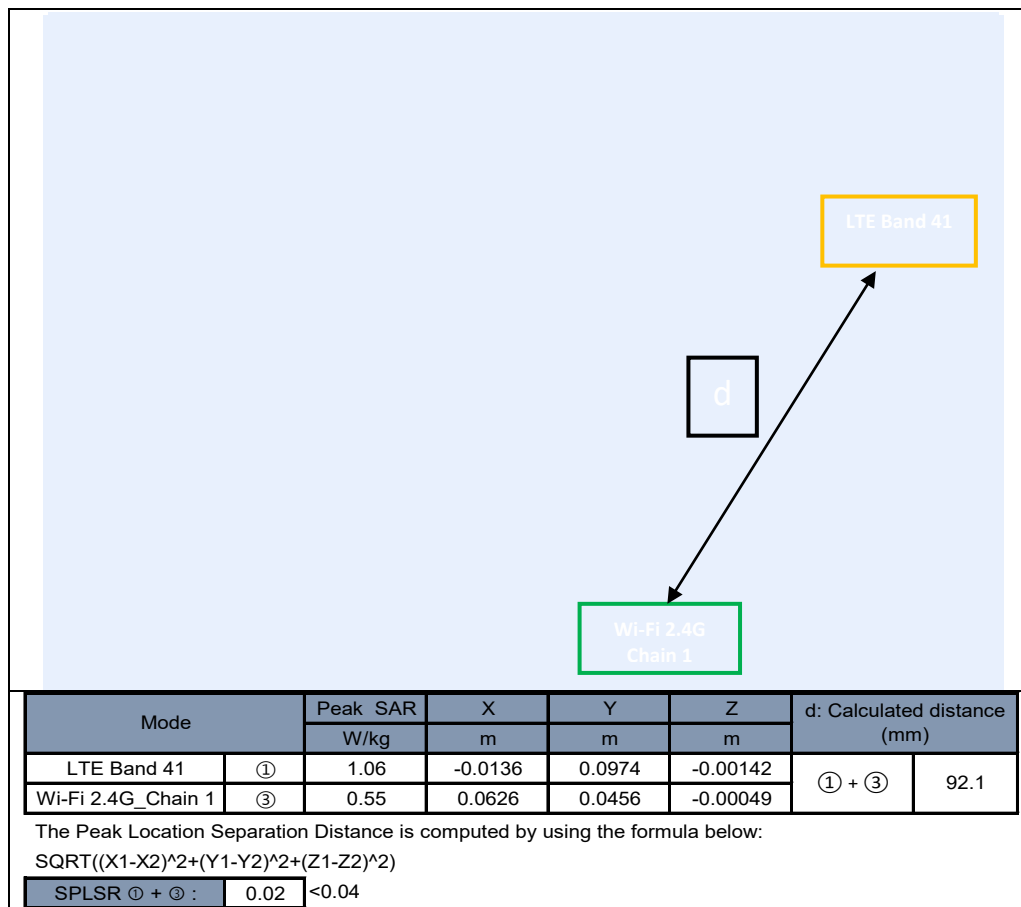


Figure (2)

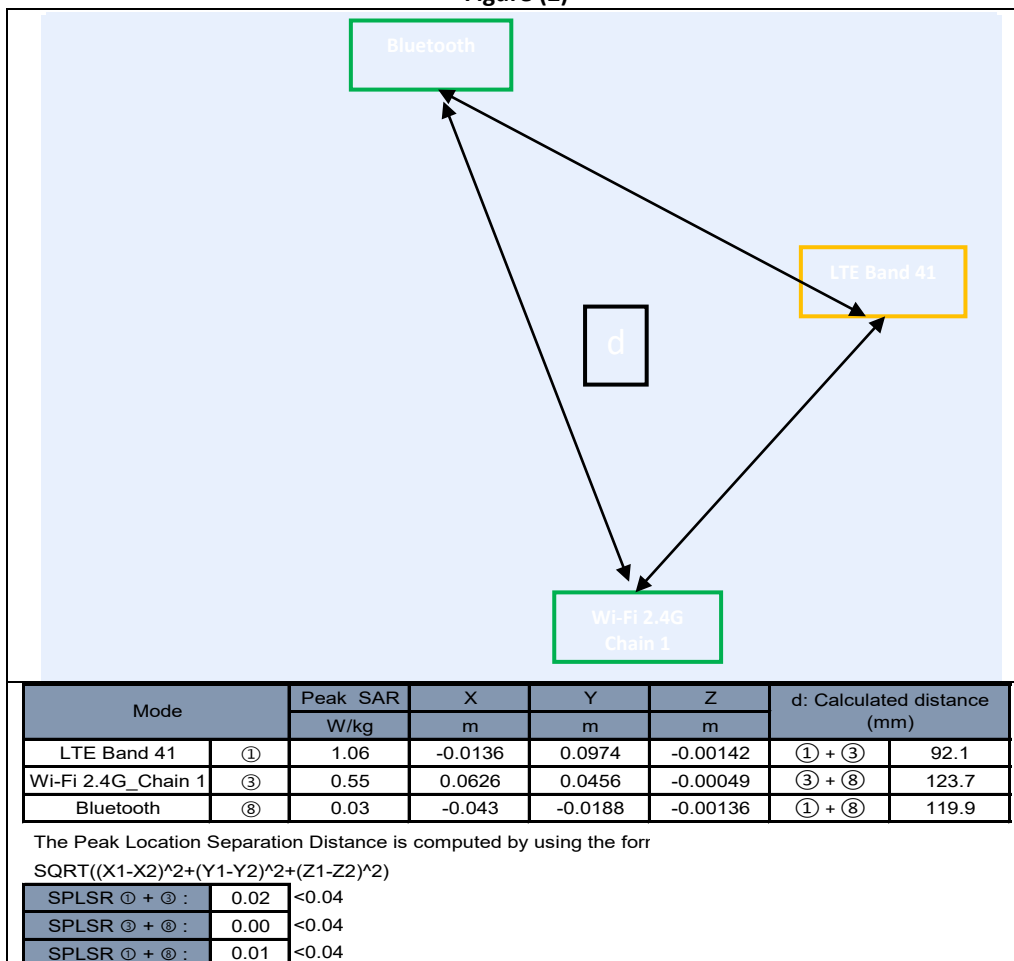


Figure (3)

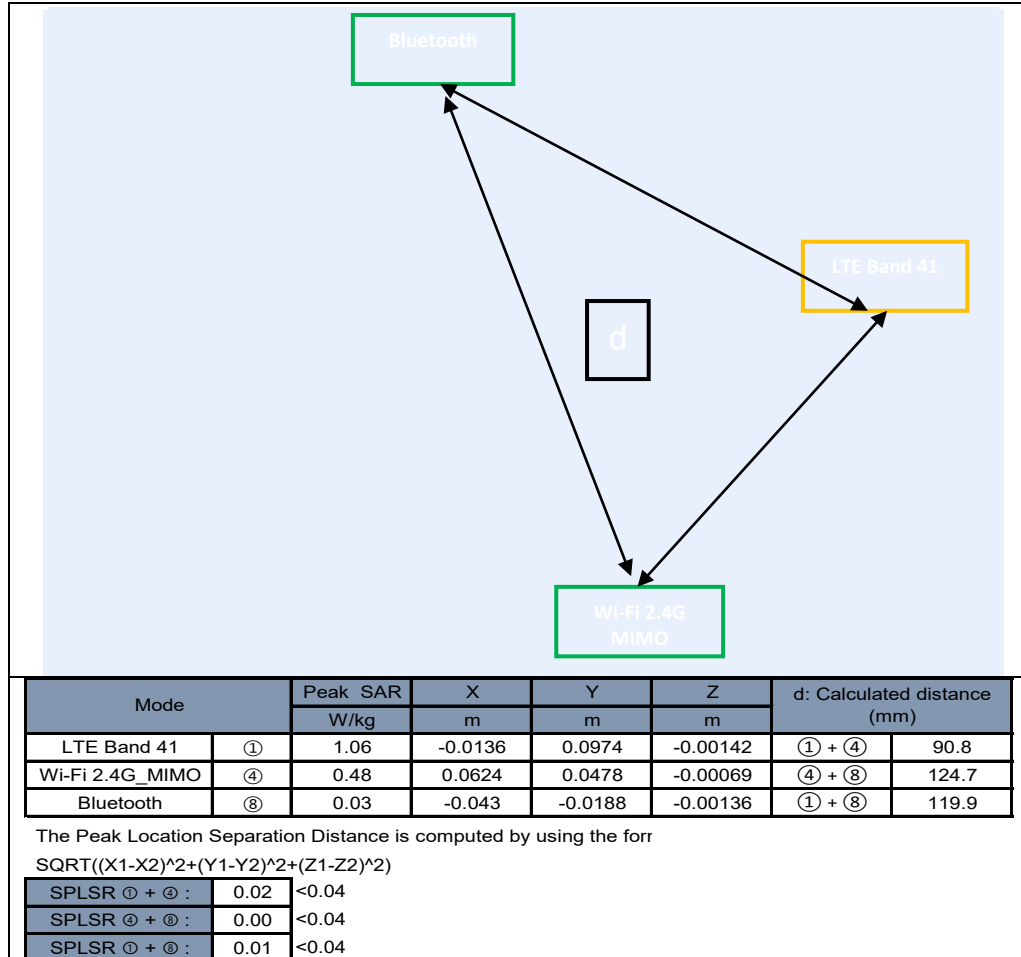


Figure (4)

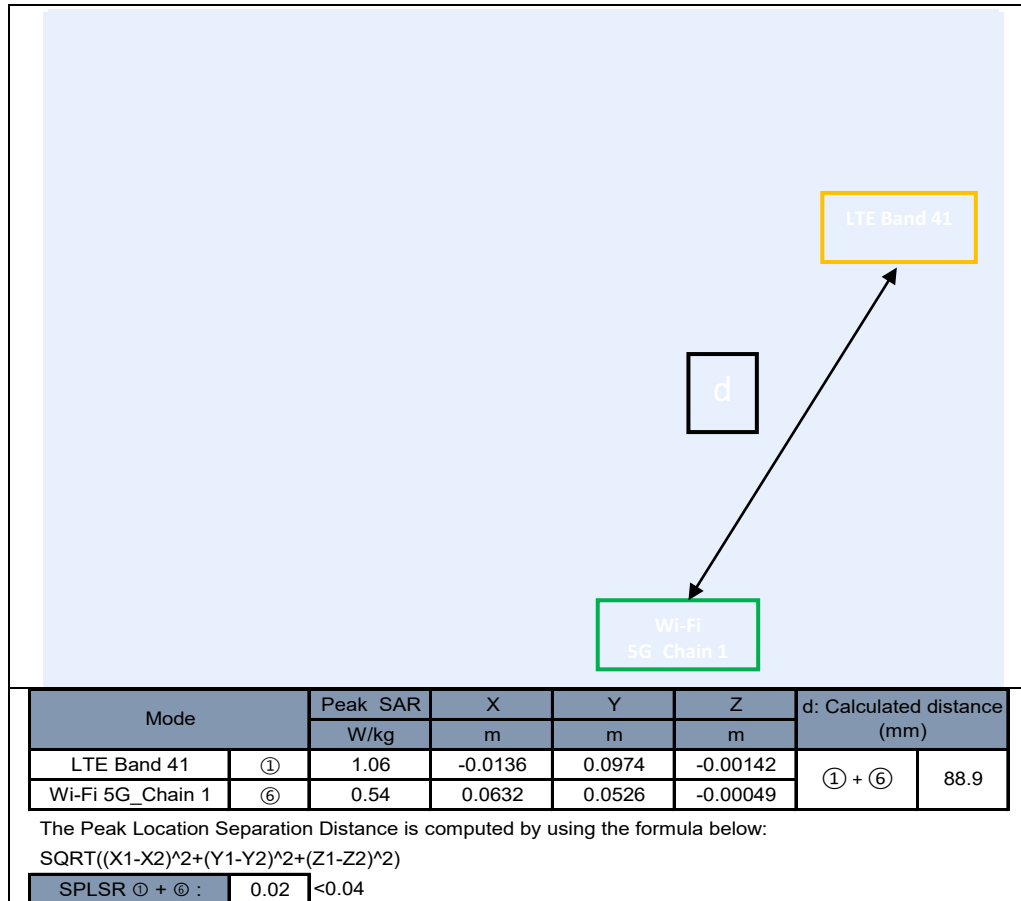


Figure (5)

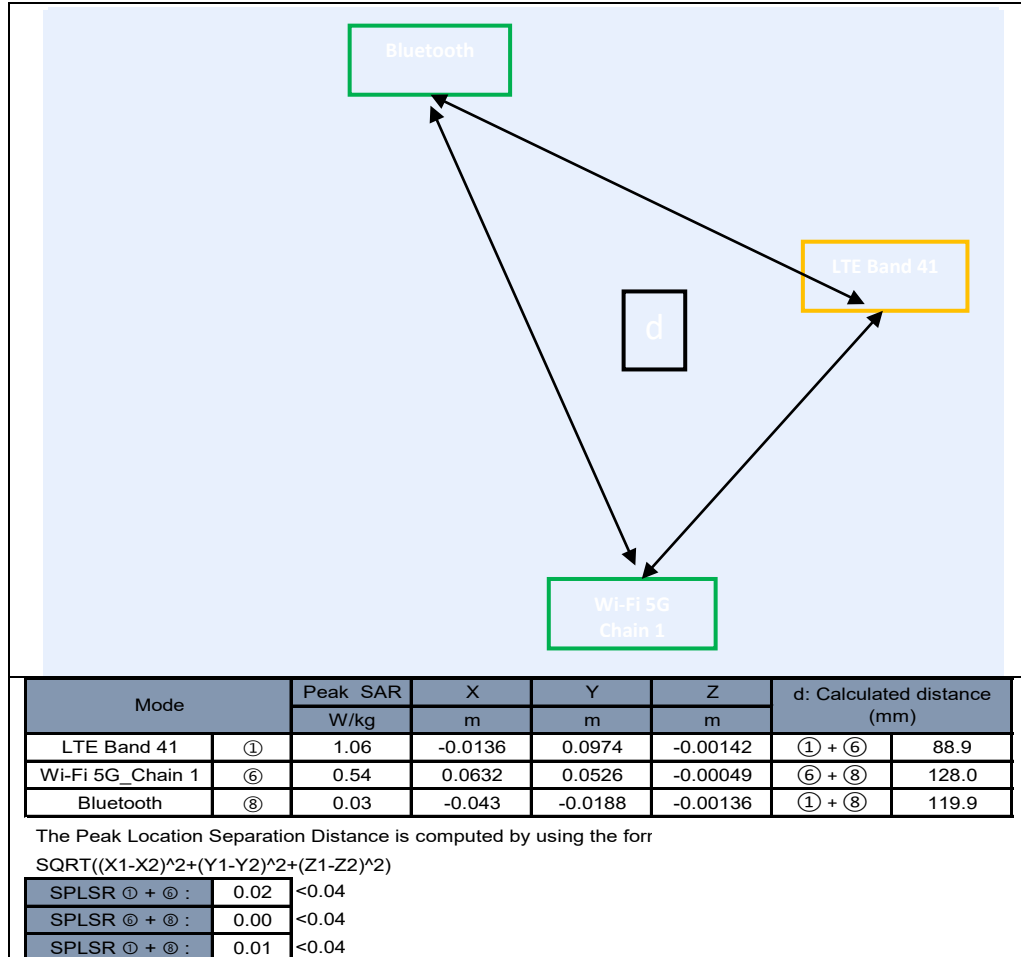
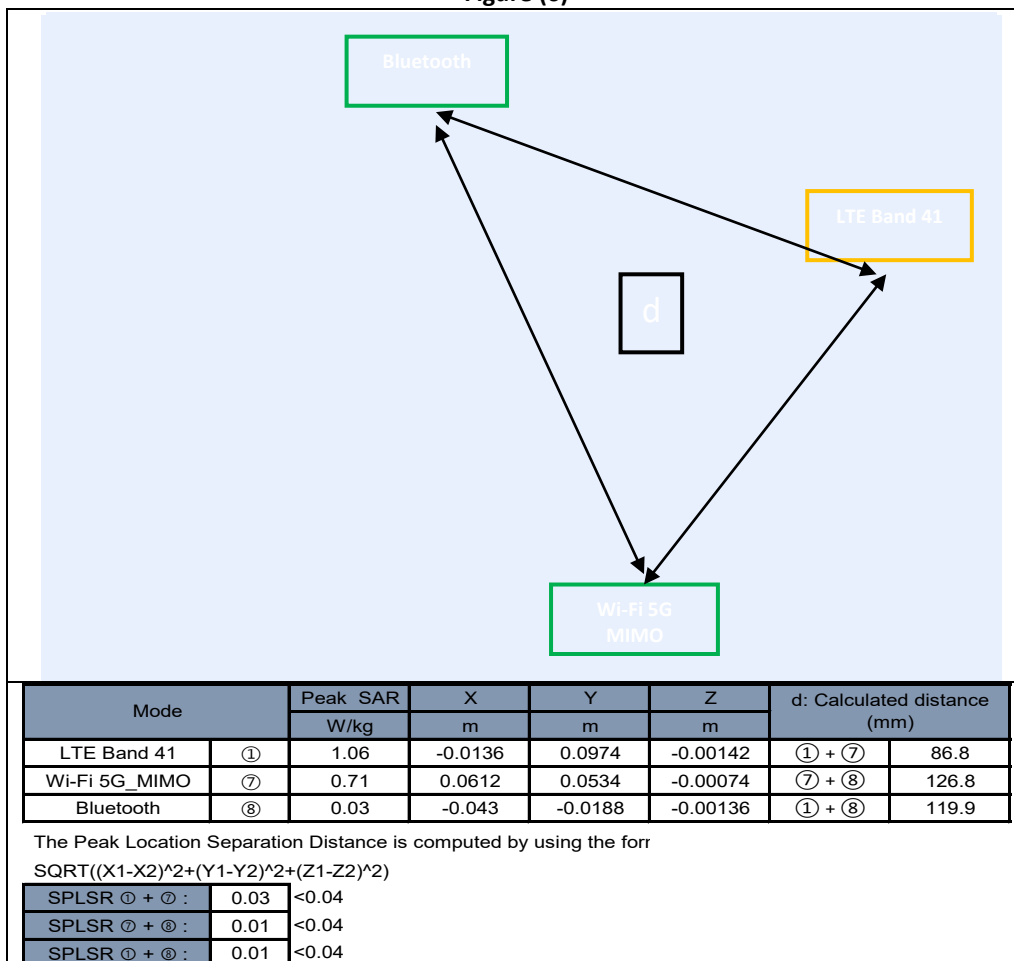


Figure (6)



13.14 Sum of the SAR for LTE Band 66 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)								Σ 1-g SAR (W/kg)						
	WWAN	DTS			U-NII			BT	WWAN + DTS	WWAN + DTS + BT	WWAN + DTS + BT	WWAN + U-NII	WWAN + U-NII + BT	WWAN + U-NII + BT	WWAN + BT
	①	Chain 0 ②	Chain 1 ③	MIMO ④	Chain 0 ⑤	Chain 1 ⑥	MIMO ⑦	⑧	① + ③	① + ③ + ⑧	① + ④ + ⑧	① + ⑥	① + ⑥ + ⑧	① + ⑦ + ⑧	① + ⑧
Rear	0.440	0.286	0.637	0.601	0.186	0.583	0.838	0.046	1.077	1.123	1.087	1.023	1.069	1.324	0.486
Edge 1	0.037	0.400	0.241	0.227	0.400	0.971	0.918	0.000	0.278	0.278	0.264	1.008	1.008	0.955	0.037
Edge 2	0.228	0.400	0.056	0.042	0.400	0.030	0.042	0.000	0.284	0.284	0.270	0.258	0.258	0.270	0.228
Edge 3	0.050	0.567	0.400	0.467	0.634	0.400	0.692	0.105	0.450	0.555	0.622	0.450	0.555	0.847	0.155

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because either the sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.



Report No.: T201102D09-SF

Page: 123 / 124
Rev.: 00

14 Equipment List & Calibration Status

Dielectric Property Measurements				
Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Dielectric Assessment Kit	SPEAG	DAKS-3.5	1101	2021/5/26
Thermometer	LKM	DTM3000	EC14010603	2021/10/12

System Check				
Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
MXG Analog Signal Generator	Agilent	N5181A	MY50141235	2021/5/3
Power Meter	Agilent	E4417A	MY52240003	2021/10/17
Power Sensor	Agilent	E9301H	MY52200004	2021/10/18
Power Sensor	Agilent	E9301H	MY52200004	2021/10/18
Dual Directional Coupler	Agilent	772D	MY46151242	2021/8/16
Amplifier	EMCI	ZHL-42	980189	N/A
Amplifier	EMCI	ZVE-8G	980190	N/A
Data Acquisition Electronics	SPEAG	DAE4	558	2021/11/24
Dosimetric E-Field Probe	SPEAG	EX3DV4	3665	2021/8/19
System Validation Dipole	SPEAG	D750V3	1015	2021/8/13
System Validation Dipole	SPEAG	D835V2	4d063	2021/8/13
System Validation Dipole	SPEAG	D1750V2	1008	2021/8/14
System Validation Dipole	SPEAG	D1900V2	5d173	2021/4/22
System Validation Dipole	SPEAG	D2300V2	1023	2021/8/13
System Validation Dipole	SPEAG	D2450V2	727	2021/4/22
System Validation Dipole	SPEAG	D2600V2	1005	2021/1/29
System Validation Dipole	SPEAG	D5GHzV2	1023	2022/1/26
Humidity/Temp meter	TECPEL	DTM-303A	TP130077	2021/9/29
Thermometer	LKM	DTM3000	EC14010603	2021/10/12

Software Version	
DASY NEO52 D10.3 S14.6.13	
SEMCAD-X-PostPro	



Report No.: T201102D09-SF

Page: 124 / 124
Rev.: 00

15 Facilities

All measurement facilities used to collect the measurement data are located at

☒ No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)

16 Attachments

Exhibit	Content
1	System Performance Check Plots
2	SAR Test Data Plots
3	SAR Equipment calibration report
4	T201102D09-SF PHOTOS

END OF REPORT