TEST REPORT

Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-31-285-0894 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR23-SPF0002-A Page (1) of (358)	eurofins | KCTL

1. Client

- Name : Samsung Electronics Co., Ltd.
- Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
- Date of Receipt : 2022-10-17

2. Use of Report : Certification

3. Name of Product and Model : Mobile Phone
- Model Name : SM-A346B/DSN
- Manufacturer and Country of Origin : Samsung Electronics Co., Ltd. / VIETNAM

4. FCC ID : A3LSMA346B

5. Date of Test : 2022-12-17 ~ 2023-01-11

6. Location of Test : ■ Permanent Testing Lab ☐ On Site Testing
(Address: 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea)

7. Test Standards : IEEE 1528-2013, ANSI/IEEE C95.1, KDB Publication

8. Test Results : Refer to the test result in the test report

	Tested by	Technical Manager
Affirmation	Name : Hankyul Jung (Signature)	Name : Jongwon Ma (Signature)

2023-01-20

Eurofins KCTL Co.,Ltd.

REPORT REVISION HISTORY

Date	Revision	Page No
2023-01-17	Originally issued	-
2023-01-20	Appendix A replaced	207~

Note: The Report No. KR23-SPF0002 is superseded by the report No. KR23-SPF0002-A.

General remarks for test reports

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the testing laboratory that conducted the testing.

☒ **Statement not required by the standard or client used for type testing**

1. Identification when information is provided by the customer: Information marked " # " is provided by the customer. - Disclaimer: This information is provided by the customer and can affect the validity of results.

CONTENTS

1. General information

Client	:	Samsung Electronics Co., Ltd.
Address	:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
Manufacturer	:	Samsung Electronics Co., Ltd.
Address	:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
Factory	:	Samsung Electronics Vietnam Thai Nguyen Co., Ltd
Address	:	Yen Binh Industrial Park, Dong Tien Ward, Pho Yen Town, Thai Nguyen Province, Vietnam
Laboratory	:	Eurofins KCTL Co.,Ltd.
Address	:	65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea
Accreditations	:	FCC Site Designation No: KR0040, FCC Site Registration No: 687132 VCCI Registration No. : R-3327, G-198, C-3706, T-1849 CAB Identifier: KR0040, ISED Number: 8035A KOLAS No.: KT231

1.1 Report Overview

This report details the results of testing carried out on the samples listed in section 2, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this test report is used in any configuration other than that detailed in the test report, the manufacturer must ensure the new configuration complies with all relevant standards and certification requirements. Any mention of Eurofins KCTL Co.,Ltd. Wireless lab or testing done by Eurofins KCTL Co.,Ltd. Wireless lab made in connection with the distribution or use of the tested product must be approved in writing by Eurofins KCTL Co.,Ltd. Wireless lab.

2. Device information

2.1 Basic description

Product Name		Mobile Phone		
Product Model Name		SM-A346B/DSN		
Product Manufacturer		Samsung Electronics Co., Ltd.		
Product Serial Number	Radiation	R3CTA0N82LP, R3CTA0N82DY, R3CTA0N80ZZ		
	Conduction	R3CTA0N813K, R3CTA0N83AA		
Device Overview		Band & Mode	Operating Modes	Tx Frequency (㎒)
		GSM/GPRS/EDGE 850	Voice/Data	824.2 ~ 848.8
		GSM/GPRS/EDGE 1900	Voice/Data	1 850.2 ~ 1 909.8
		WCDMA Band II	Voice/Data	1 852.4 ~ 1 907.6
		WCDMA Band IV	Voice/Data	1 712.4 ~ 1 752.6
		WCDMA Band V	Voice/Data	826.4 ~ 846.6
		LTE Band 2	Voice/Data	1 850.7 ~ 1 909.3
		LTE Band 4	Voice/Data	1 710.7 ~ 1 754.3
		LTE Band 5	Voice/Data	824.7 ~ 848.3
		LTE Band 12	Voice/Data	699.7 ~ 715.3
		LTE Band 17	Voice/Data	706.5 ~ 713.5
		LTE Band 26	Voice/Data	814.7 ~ 848.3
		LTE Band 41	Voice/Data	2 498.5 ~ 2 687.5
		LTE Band 66	Voice/Data	1 710.7 ~ 1 779.3
		U-NII-1	Voice/Data	5 180.0 ~ 5 240.0
		U-NII-2A	Voice/Data	5 260.0 ~ 5 320.0
		U-NII-2C	Voice/Data	5 500.0 ~ 5 720.0
		U-NII-3	Voice/Data	5 745.0 ~ 5 825.0
		Bluetooth	Data	2 402.0 ~ 2 480.0
		NFC	Data	13.56
TDWR Information		5.60 ㎓~ 5.65 ㎓ band (TDWR) is supported by the device.		

2.1.1 Introduction for Data referencing

This report referenced from the FCC ID: A3LSMA346M.
Based on their similarity, the SAR reuses the original model's result and do spot-check, following the FCC KDB 484596 D01 v01.
And the applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID.

2.1.2 Difference for Depopulated model

The FCC ID: A3LSMA346B shares the same enclosure and circuit board as FCC ID: A3LSMA346M. The WIFI/BT/BLE/NFC/WCDMA/LTE antenna and surrounding circuitry and layout are identical between these two units.
As for all bands, they have been verified and the parent model test results under FCC ID: A3LSMA346M shall remain representative of FCC ID: A3LSMA346B.

Note: The Product equality letter includes detailed information about the differences between FCC ID: A3LSMA346M and FCC ID: A3LSMA346B.

2.1.3 Spot check Verification data

Exposure Condition /Position		Distance (mm)	Frequency (㎒)	Scaled SAR (W/kg)		Deviation (%)	Remark
				SM-A346M /DSN	SM-A346B /DSN		
GSM850							
Head	Right Cheek	0	836.6	0.370	0.355	-4.1	
Body-worn	Rear	15	836.6	0.452	0.433	-4.3	
Hotspot	Rear	10	836.6	0.545	0.470	-13.8	
GSM1900							
Head	Right Cheek	0	1 880.0	0.087	0.086	-0.6	
Body-worn	Rear	15	1 880.0	0.692	0.672	-2.9	
Hotspot	Bottom	10	1 909.8	1.228	1.198	-2.4	
Phablet	Bottom	0	1 850.2	2.539	2.451	-3.5	
WCDMA Band 2							
Head	Right Cheek	0	1 880.0	0.088	0.104	18.6	
Body-worn	Rear	15	1 880.0	0.762	0.741	-2.7	
Hotspot	Bottom	10	1 907.6	1.060	1.065	0.5	
Phablet	Bottom	0	1 852.4	2.211	2.260	2.2	
WCDMA Band 4							
Head	Right Cheek	0	1 732.4	0.085	0.100	18.0	
Body-worn	Rear	15	1 732.4	0.590	0.671	13.8	
Hotspot	Bottom	10	1 752.6	1.152	1.020	-11.5	
Phablet	Bottom	0	1 752.6	2.886	2.692	-6.7	
WCDMA Band 5							
Head	Right Cheek	0	836.6	0.248	0.193	-22.3	
Body-worn	Rear	15	836.6	0.275	0.268	-2.7	
Hotspot	Rear	10	836.6	0.489	0.426	-12.9	
LTE Band 2							
Head	Right Cheek	0	1 880.0	0.071	0.079	12.0	
Body-worn	Rear	15	1 880.0	0.330	0.427	29.3	
Hotspot	Bottom	10	1 880.0	0.624	0.728	16.6	
Phablet	Bottom	0	1 880.0	1.704	1.590	-6.7	
LTE Band 5							
Head	Right Cheek	0	836.5	0.278	0.221	-20.6	
Body-worn	Rear	15	836.5	0.319	0.236	-25.9	
Hotspot	Rear	10	836.5	0.660	0.552	-16.3	
LTE Band 12							
Head	Right Cheek	0	707.5	0.141	0.147	4.6	
Body-worn	Rear	15	707.5	0.207	0.217	5.0	
Hotspot	Rear	10	707.5	0.219	0.221	1.0	

Exposure Condition /Position		Distance (mm)	Frequency (㎒)	Scaled SAR (W/kg)		Deviation (%)	Remark
				SM-A346M /DSN	SM-A346B /DSN		
LTE Band 26							
Head	Right Cheek	0	831.5	0.208	0.188	-9.6	
Body-worn	Rear	15	831.5	0.243	0.243	0.0	
Hotspot	Rear	10	831.5	0.388	0.410	5.6	
LTE Band 41							
Head	Left Cheek	0	2 680.0	0.131	0.121	-7.3	
Body-worn	Rear	15	2 680.0	0.175	0.154	-12.0	
Hotspot	Rear	10	2 680.0	0.235	0.191	-18.5	
LTE Band 66							
Head	Right Cheek	0	1 720.0	0.076	0.096	26.7	
Body-worn	Rear	15	1 720.0	0.596	0.738	23.9	
Hotspot	Bottom	10	1 720.0	0.658	0.644	-2.1	
Phablet	Bottom	0	1 745.0	1.781	1.701	-4.5	
2.4 ㎓ WLAN_Wi-fi1(Sub5)							
Head	Right Cheek	0	2 462.0	0.217	0.054	-75.1	
Body-worn	Rear	15	2 412.0	0.208	0.033	-84.2	
Hotspot	Rear	10	2 412.0	0.325	0.108	-66.7	
2.4 ㎓ WLAN_Wi-fi2(Sub8)							
Head	Right Cheek	0	2 412.0	0.022	0.005	-75.8	
Body-worn	Rear	15	2 437.0	0.075	0.050	-33.8	
Hotspot	Rear	10	2 437.0	0.160	0.023	-85.8	
2.4 ㎓ WLAN_MIMO							
Head	Right Cheek	0	2 462.0	0.267	0.078	-70.9	
Body-worn	Rear	15	2 437.0	0.198	0.049	-75.2	
Hotspot	Rear	10	2 437.0	0.346	0.093	-73.1	
NII_Wi-fi1(Sub4)							
Head	Right Cheek	0	5 690.0	0.054	0.020	-62.0	
Body-worn	Rear	15	5 500.0	0.271	0.047	-82.7	
Hotspot	Left	10	5 785.0	0.402	0.048	-88.1	
Phablet	Rear	0	5 320.0	1.324	0.284	-78.6	
NII__Wi-fi2(Sub5)							
Head	Right Cheek	0	5 775.0	0.325	0.277	-14.9	
Body-worn	Rear	15	5 500.0	0.137	0.036	-73.8	
Hotspot	Left	10	5 785.0	0.300	0.141	-52.9	
Phablet	Left	0	5 500.0	1.599	0.342	-78.6	

Exposure Condition /Position		Distance (mm)	Frequency (㎒)	Scaled SAR (W/kg)		Deviation (%)	Remark
				SM-A346M /DSN	SM-A346B /DSN		
NII_MIMO							
Head	Right Cheek	0	5 690.0	0.410	0.061	-85.2	
Body-worn	Rear	15	5 500.0	0.394	0.106	-73.1	
Hotspot	Left	10	5 745.0	0.617	0.183	-70.4	
Phablet	Left	0	5 500.0	2.346	0.524	-77.7	
Bluetooth							
Head	Right Cheek	0	2 441.0	0.333	0.402	20.7	
Body-worn	Rear	15	2 441.0	0.038	0.044	14.9	
Hotspot	Left	10	2 441.0	0.108	0.113	4.8	
NFC							
Phablet	Rear	0	13.6	0.023	0.024	4.3	

Notes:

1. For FCC ID: A3LSMA346B has been verified the performance as for RF exposure identical with the FCC ID: A3LSMA346M.
2. Compared worst configuration of the reference model, please refer to section 11 for detailed results.

2.1.4 Reference Detail

Reference application that contains the reused reference data in the individual test reports.

ITEM	Reference FCC ID	Application Type	Reference Test report Number	Exhibit Type	Variant Test Report Number	Date Re-used
RF Exposure	A3LSMA346M	Original	KR23-SPF0001	Test report	KR23-SPF0002	All

For this application the data reuse is summarized below for each equipment class

Equipment Class	Reference FCC ID	Application Type	Test Item	Data Re-used
PCE	A3LSMA346M	Original	2G, 3G	GSM 850, GSM 1900, WCDMA II, WCDMA IV, WCDMA V
			LTE	Band 2 ,4, 5, 12, 17, 26, 41, 66
DTS	A3LSMA346M	Original	WLAN (802.11b/g/n)	All
			Bluetooth LE	All
NII	A3LSMA346M	Original	WLAN (802.11a/n/ac)	All
DSS	A3LSMA346M	Original	Bluetooth	All
DXX	A3LSMA346M	Original	NFC	All

2.2 Summary of SAR Test Results

Band	Equipment Class	Highest Reported			
		1g SAR (W/kg)			10g SAR (W/kg)
		Head	Body-Worn	Hotspot	Phablet
GSM/GPRS/EDGE 850	PCE	**0.37**	0.45	0.55	N/A
GSM/GPRS/EDGE 1900	PCE	< 0.10	0.69	**1.23**	2.54
WCDMA Band II	PCE	< 0.10	**0.76**	1.06	2.21
WCDMA Band IV	PCE	< 0.10	0.59	1.15	**2.89**
WCDMA Band V	PCE	0.25	0.28	0.49	N/A
LTE Band 2	PCE	< 0.10	0.33	0.62	1.70
LTE Band 4	PCE	N/A	N/A	N/A	N/A
LTE Band 5	PCE	0.28	0.32	0.66	N/A
LTE Band 12	PCE	0.14	0.21	0.22	N/A
LTE Band 17	PCE	N/A	N/A	N/A	N/A
LTE Band 26	PCE	0.21	0.24	0.39	N/A
LTE Band 41	PCE	0.13	0.18	0.24	N/A
LTE Band 66	PCE	< 0.10	0.60	0.66	1.78
2.4 ㎓ WLAN	DTS	0.27	0.21	0.35	N/A
U-NII-1	NII	N/A	N/A	N/A	N/A
U-NII-2A	NII	0.22	0.30	N/A	2.05
U-NII-2C	NII	0.41	0.39	N/A	2.35
U-NII-3	NII	0.33	0.25	0.62	N/A
Bluetooth	DSS	0.33	< 0.10	0.11	N/A
NFC	DXX	N/A	N/A	N/A	< 0.10
Simultaneous SAR per KDB 690783 D01v01r03		1.03	1.16	1.23	3.68

2.3 #Antenna information

Antenna Type		Metal Ant												
Band		GSM		WCDMA			LTE							
		850	1900	II	IV	V	2	4	5	12	17	26	41	66
Peak gain (dBi)	Main 1	-5.5	-4.8	-4.8	-4.7	-5.5	-4.8	-4.7	-5.5	-5.9	-5.9	-6.5	-	-5.0
	Main 2	-	-	-	-	-	-	-	-	-		-	-4.8	-

Antenna Type		LDS Antenna			
Band		WLAN 2.4 ㎓ / Bluetooth	UNII-2A	UNII-2C	UNII-3
Peak gain (dBi)	Sub 4	-	-8.89	-8.70	-9.03
	Sub 5	-9.43	-9.78	-9.51	-9.43
	Sub 8	-9.03	-	-	-

2.4 Measurement date and environment

Shield room	Date	Environment	
		Temperature (°C)	Humidity (%)
8F - 1	2023-01-02	20.1 ~ 20.2	49.5
	2023-01-03	20.1 ~ 20.6	48.9
	2023-01-04	21.2 ~ 21.4	43.9
8F - 2	2023-01-06	22.1 ~ 22.3	41.7
	2023-01-09	21.9 ~ 22.2	41.8
	2023-01-10	21.8 ~ 22.1	40.9
	2023-01-11	21.7 ~ 22.0	41.5
8F - 4	2022-12-17	20.8 ~ 21.0	49.3
	2022-12-27	21.3 ~ 21.6	49.6
	2023-01-04	20.5 ~ 21.1	46.4
	2023-01-05	20.7 ~ 21.2	48.3

2.5 Power Reduction for SAR

This device utilizes a power reduction mechanism for some wireless modes and bands for SAR compliance under portable hotspot conditions. All hotspot SAR evaluations for this device were performed at the maximum allowed output power when hotspot is enabled.

This device uses an independent fixed level power reduction mechanism for WLAN operations during VoWIFI held to ear scenarios. Per FCC Guidance, the held-to-ear exposure conditions were evaluated at reduced power according to the Head SAR positions described in IEEE 1528-2013. Detailed descriptions of the power reduction mechanism are included in the operational description.

2.6 #Maximum Tune-up power

This device operates using the following maximum output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB Publication 447498 D04v01.

Band	Mode	Output Power(dBm)			
		Normal		Back-off (Grip Sensor, Hotspot, Ear-jack)	
		Target	Max. Allowed	Target	Max. Allowed
GSM 850	GSM Voice	33.80	**34.80**	**Not Supported**	
	GPRS 1 TX	33.80	**34.80**		
	GPRS 2 TX	32.80	**33.80**		
	GPRS 3 TX	29.80	**30.80**		
	GPRS 4 TX	28.50	**29.50**		
	EGPRS 1 TX	27.50	**28.50**		
	EGPRS 2 TX	26.50	**27.50**		
	EGPRS 3 TX	24.50	**25.50**		
	EGPRS 4 TX	23.50	**24.50**		
GSM 1900	GSM Voice	30.80	**31.80**	27.80	**28.80**
	GPRS 1 TX	30.80	**31.80**	27.80	**28.80**
	GPRS 2 TX	29.80	**30.80**	26.80	**27.80**
	GPRS 3 TX	26.80	**27.80**	23.80	**24.80**
	GPRS 4 TX	25.50	**26.50**	22.50	**23.50**
	EGPRS 1 TX	25.00	**26.00**	22.00	**23.00**
	EGPRS 2 TX	24.00	**25.00**	21.00	**22.00**
	EGPRS 3 TX	22.00	**23.00**	19.00	**20.00**
	EGPRS 4 TX	21.00	**22.00**	18.00	**19.00**

Band	Mode	Output Power(dBm)			
		Normal		Back-off (Grip Sensor, Hotspot, Ear-jack)	
		Target	Max. Allowed	Target	Max. Allowed
WCDMA Band II					
RMC		23.60	**24.60**	19.60	**20.60**
AMR		23.60	**24.60**	19.60	**20.60**
HSDPA	Subtest 1	22.60	**23.60**	18.60	**19.60**
	Subtest 2	22.60	**23.60**	18.60	**19.60**
	Subtest 3	22.10	**23.10**	18.60	**19.60**
	Subtest 4	22.10	**23.10**	18.60	**19.60**
HSUPA	Subtest 1	20.60	**21.60**	16.60	**17.60**
	Subtest 2	18.60	**19.60**	16.60	**17.60**
	Subtest 3	19.60	**20.60**	16.60	**17.60**
	Subtest 4	18.60	**19.60**	16.60	**17.60**
	Subtest 5	20.60	**21.60**	16.60	**17.60**
DC-HSDPA	Subtest 1	22.60	**23.60**	18.60	**19.60**
	Subtest 2	22.60	**23.60**	18.60	**19.60**
	Subtest 3	22.10	**23.10**	18.60	**19.60**
	Subtest 4	22.10	**23.10**	18.60	**19.60**
WCDMA Band IV					
RMC		23.60	**24.60**	20.60	**21.60**
AMR		23.60	**24.60**	20.60	**21.60**
HSDPA	Subtest 1	22.60	**23.60**	19.60	**20.60**
	Subtest 2	22.60	**23.60**	19.60	**20.60**
	Subtest 3	22.10	**23.10**	19.60	**20.60**
	Subtest 4	22.10	**23.10**	19.60	**20.60**
HSUPA	Subtest 1	20.60	**21.60**	17.60	**18.60**
	Subtest 2	18.60	**19.60**	17.60	**18.60**
	Subtest 3	19.60	**20.60**	17.60	**18.60**
	Subtest 4	18.60	**19.60**	17.60	**18.60**
	Subtest 5	20.60	**21.60**	17.60	**18.60**
DC-HSDPA	Subtest 1	22.60	**23.60**	19.60	**20.60**
	Subtest 2	22.60	**23.60**	19.60	**20.60**
	Subtest 3	22.10	**23.10**	19.60	**20.60**
	Subtest 4	22.10	**23.10**	19.60	**20.60**
WCDMA Band V					
RMC		24.50	**25.50**	**Not Supported**	
AMR		24.50	**25.50**		
HSDPA	Subtest 1	23.50	**24.50**		
	Subtest 2	23.50	**24.50**		
	Subtest 3	23.00	**24.00**		
	Subtest 4	23.00	**24.00**		
HSUPA	Subtest 1	21.50	**22.50**		
	Subtest 2	19.50	**20.50**		
	Subtest 3	20.50	**21.50**		
	Subtest 4	19.50	**20.50**		
	Subtest 5	21.50	**22.50**		
DC-HSDPA	Subtest 1	23.50	**24.50**		
	Subtest 2	23.50	**24.50**		
	Subtest 3	23.00	**24.00**		
	Subtest 4	23.00	**24.00**		

Band	Output Power(dBm)									
	Normal		Back-off							
			Grip Sensor		Ear-jack		Hotspot		RCV	
	Target	Max. Allowed	Target	Max. Allowed	Target	Max. Allowed	Target	Max. Allowed	Target	Max. Allowed
LTE Band 2	23.30	**24.30**	20.30	**21.30**	20.30	**21.30**	18.30	**19.30**	**Not Supported**	
*LTE Band 4	24.00	**25.00**	21.00	**22.00**	21.00	**22.00**	19.00	**20.00**	**Not Supported**	
LTE Band 5	24.80	**25.80**	**Not Supported**							
LTE Band 12	24.00	**25.00**	**Not Supported**							
*LTE Band 17	24.00	**25.00**	**Not Supported**							
LTE Band 26	24.00	**25.00**	**Not Supported**							
LTE Band 41	23.00	**24.00**	20.00	**21.00**	20.00	**21.00**	20.00	**21.00**	**Not Supported**	
LTE Band 66	24.00	**25.00**	21.00	**22.00**	21.00	**22.00**	19.00	**20.00**	**Not Supported**	

Notes:

***LTE Band 4 Measured Results**

SAR for LTE Band 4 (Frequency range: 1 710.7 ~ 1 754.3 ㎒) is covered by LTE Band 66 (Frequency range: 1 710.7 ~ 1 779.3 ㎒) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

***LTE Band 17 Measured Results**

SAR for LTE Band 17 (Frequency range: 706.5 ~ 713.5 ㎒) is covered by LTE Band 12 (Frequency range: 699.7 ~ 715.3 ㎒) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

Band/ Ant.	Mode	Channel	Output Power(dBm)			
			Normal		Back-off (RCV)	
			Target	Max. Allowed	Target	Max. Allowed
WLAN 2.4 GHz/ SISO	802.11b	1 – 10	18.00	**19.00**	10.00	**11.00**
		11	17.00	**18.00**	10.00	**11.00**
		12	5.00	**6.00**	5.00	**6.00**
		13	2.00	**3.00**	2.00	**3.00**
	802.11g	1 – 10	16.00	**17.00**	10.00	**11.00**
		11	14.00	**15.00**	10.00	**11.00**
		12	5.00	**6.00**	5.00	**6.00**
		13	1.00	**2.00**	1.00	**2.00**
	802.11n(HT20)	1 – 10	16.00	**17.00**	10.00	**11.00**
		11	14.00	**15.00**	10.00	**11.00**
		12	5.00	**6.00**	5.00	**6.00**
		13	1.00	**2.00**	1.00	**2.00**
WLAN 2.4 GHz/ MIMO	802.11b	1 – 10	21.00	**22.00**	13.00	**14.00**
		11	20.00	**21.00**	13.00	**14.00**
		12	8.00	**9.00**	8.00	**9.00**
		13	5.00	**6.00**	5.00	**6.00**
	802.11g	1 – 10	19.00	**20.00**	13.00	**14.00**
		11	17.00	**18.00**	13.00	**14.00**
		12	8.00	**9.00**	8.00	**9.00**
		13	4.00	**5.00**	4.00	**5.00**
	802.11n(HT20)	1 – 10	19.00	**20.00**	13.00	**14.00**
		11	17.00	**18.00**	13.00	**14.00**
		12	8.00	**9.00**	8.00	**9.00**
		13	4.00	**5.00**	4.00	**5.00**

Band/ Ant.	Mode	Channel	Output Power(dBm)			
			Normal		Back-off (RCV)	
			Target	Max. Allowed	Target	Max. Allowed
U-NII-1/ SISO	802.11a	All Channel	17.00	**18.00**	9.00	**10.00**
	802.11n(HT20)	All Channel	16.00	**17.00**	9.00	**10.00**
	802.11n(HT40)	Except 38	16.00	**17.00**	9.00	**10.00**
		38	13.00	**14.00**	9.00	**10.00**
	802.11ac(VHT20)	All Channel	15.00	**16.00**	9.00	**10.00**
	802.11ac(VHT40)	Except 38	14.00	**15.00**	9.00	**10.00**
		38	12.00	**13.00**	9.00	**10.00**
	802.11ac(VHT80)	All Channel	9.00	**10.00**	9.00	**10.00**
U-NII-1/ MIMO	802.11a	All Channel	20.00	**21.00**	12.00	**13.00**
	802.11n(HT20)	All Channel	19.00	**20.00**	12.00	**13.00**
	802.11n(HT40)	Except 38	19.00	**20.00**	12.00	**13.00**
		38	16.00	**17.00**	12.00	**13.00**
	802.11ac(VHT20)	All Channel	18.00	**19.00**	12.00	**13.00**
	802.11ac(VHT40)	Except 38	17.00	**18.00**	12.00	**13.00**
		38	15.00	**16.00**	12.00	**13.00**
	802.11ac(VHT80)	All Channel	12.00	**13.00**	12.00	**13.00**
U-NII-2A/ SISO	802.11a	All Channel	17.00	**18.00**	9.00	**10.00**
	802.11n(HT20)	All Channel	16.00	**17.00**	9.00	**10.00**
	802.11n(HT40)	Except 62	16.00	**17.00**	9.00	**10.00**
		62	14.00	**15.00**	9.00	**10.00**
	802.11ac(VHT20)	All Channel	15.00	**16.00**	9.00	**10.00**
	802.11ac(VHT40)	All Channel	14.00	**15.00**	9.00	**10.00**
	802.11ac(VHT80)	All Channel	12.00	**13.00**	9.00	**10.00**
U-NII-2A/ MIMO	802.11a	All Channel	20.00	**21.00**	12.00	**13.00**
	802.11n(HT20)	All Channel	19.00	**20.00**	12.00	**13.00**
	802.11n(HT40)	Except 62	19.00	**20.00**	12.00	**13.00**
		62	17.00	**18.00**	12.00	**13.00**
	802.11ac(VHT20)	All Channel	18.00	**19.00**	12.00	**13.00**
	802.11ac(VHT40)	All Channel	17.00	**18.00**	12.00	**13.00**
	802.11ac(VHT80)	All Channel	15.00	**16.00**	12.00	**13.00**

Band/ Ant.	Mode	Channel	Output Power(dBm)			
			Normal		Back-off (RCV)	
			Target	Max. Allowed	Target	Max. Allowed
U-NII-2C/ SISO	802.11a	All Channel	17.00	**18.00**	9.00	**10.00**
	802.11n(HT20)	All Channel	16.00	**17.00**	9.00	**10.00**
	802.11n(HT40)	Except 102	16.00	**17.00**	9.00	**10.00**
		102	14.00	**15.00**	9.00	**10.00**
	802.11ac(VHT20)	All Channel	15.00	**16.00**	9.00	**10.00**
	802.11ac(VHT40)	All Channel	14.00	**15.00**	9.00	**10.00**
	802.11ac(VHT80)	Except 106	13.00	**14.00**	9.00	**10.00**
		106	11.00	**12.00**	9.00	**10.00**
U-NII-2C/ MIMO	802.11a	All Channel	20.00	**21.00**	12.00	**13.00**
	802.11n(HT20)	All Channel	19.00	**20.00**	12.00	**13.00**
	802.11n(HT40)	Except 102	19.00	**20.00**	12.00	**13.00**
		102	17.00	**18.00**	12.00	**13.00**
	802.11ac(VHT20)	All Channel	18.00	**19.00**	12.00	**13.00**
	802.11ac(VHT40)	All Channel	17.00	**18.00**	12.00	**13.00**
	802.11ac(VHT80)	Except 106	16.00	**17.00**	12.00	**13.00**
		106	14.00	**15.00**	12.00	**13.00**
U-NII-3/ SISO	802.11a	All Channel	17.00	**18.00**	9.00	**10.00**
	802.11n(HT20)	All Channel	16.00	**17.00**	9.00	**10.00**
	802.11n(HT40)	All Channel	16.00	**17.00**	9.00	**10.00**
	802.11ac(VHT20)	All Channel	15.00	**16.00**	9.00	**10.00**
	802.11ac(VHT40)	All Channel	14.00	**15.00**	9.00	**10.00**
	802.11ac(VHT80)	All Channel	13.00	**14.00**	9.00	**10.00**
U-NII-3/ MIMO	802.11a	All Channel	20.00	**21.00**	12.00	**13.00**
	802.11n(HT20)	All Channel	19.00	**20.00**	12.00	**13.00**
	802.11n(HT40)	All Channel	19.00	**20.00**	12.00	**13.00**
	802.11ac(VHT20)	All Channel	18.00	**19.00**	12.00	**13.00**
	802.11ac(VHT40)	All Channel	17.00	**18.00**	12.00	**13.00**
	802.11ac(VHT80)	All Channel	16.00	**17.00**	12.00	**13.00**

Band	Mode	Channel	Output Power (dB m)	
			Target	Max. Allowed
Bluetooth	BDR(GFSK)	All Channel	12.00	**13.00**
	EDR (π/4DQPSK)	All Channel	10.00	**11.00**
	EDR(8DPSK)	All Channel	10.00	**11.00**
	LE(GFSK)	0	8.00	**9.00**
		19	8.50	**9.50**
		39	9.00	**10.00**

2.7 #DUT Antenna Locations

The overall dimensions of this device are > 9 x 5 ㎝. A diagram showing the location of the device antennas can be found in Appendix D. Since the diagonal dimension of this device is > 160 ㎜ and < 200 ㎜, it is considered a “Phablet”.

Mode	Device Edge for SAR Testing (Rear View)					
	Front	Rear	Left Edge	Right Edge	Top	Bottom
GPRS 850	Yes	Yes	Yes	Yes	No	Yes
GPRS 1900	Yes	Yes	Yes	Yes	No	Yes
WCDMA Band II	Yes	Yes	Yes	Yes	No	Yes
WCDMA Band IV	Yes	Yes	Yes	Yes	No	Yes
WCDMA Band V	Yes	Yes	Yes	Yes	No	Yes
LTE Band 2	Yes	Yes	Yes	Yes	No	Yes
LTE Band 5	Yes	Yes	Yes	Yes	No	Yes
LTE Band 12	Yes	Yes	Yes	Yes	No	Yes
LTE Band 26	Yes	Yes	Yes	Yes	No	Yes
LTE Band 41	Yes	Yes	Yes	No	No	Yes
LTE Band 66	Yes	Yes	Yes	Yes	No	Yes
2.4 ㎓ WLAN	Yes	Yes	Yes	No	Yes	No
5 ㎓ WLAN	Yes	Yes	Yes	No	Yes	No
Bluetooth	Yes	Yes	Yes	No	Yes	No

Note: Particular DUT edges were not required to be evaluated for Hotspot SAR or Phablet SAR if the edges were greater than 2.5 cm from the transmitting antenna according to FCC KDB Publication 941225 D06v02r01 and FCC KDB Publication 648474 D04v01r03. The antenna document shows the distances between the transmit antennas and the edges of the device. When Hotspot mode is enabled, U-NII-1, U-NII-2A, U-NII-2C operations is disabled.

2.8 Near Field Communications (NFC) Antenna

This DUT has NFC operations. The NFC antenna is integrated into the device for the model. Therefore, all SAR test were performed with the device which already incorporates the NFC antenna.
A diagram showing the location of the NFC antenna can be found in Appendix D.

2.9 #Simultaneous Transmission Configurations

According to FCC KDB 447498 D04v01, transmitters are considered to be transmitting simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds.
This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis according to FCC KDB Publication 447498 D04v01 4.3.2 procedures.

No	Scenario	RF Exposure Condition			
		Head	Body-Worn	Hotspot	Phablet
1	[GSM or WCDMA or LTE] + WLAN 2.4 ㎓ Ant.1	Yes	Yes	Yes	Yes
2	[GSM or WCDMA or LTE] + WLAN 2.4 ㎓ Ant.2	Yes	Yes	Yes	Yes
3	[GSM or WCDMA or LTE] + WLAN 2.4 ㎓ MIMO	Yes	Yes	Yes	Yes
4	[GSM or WCDMA or LTE] + WLAN 5 ㎓ Ant.1	Yes	Yes	Yes	Yes
5	[GSM or WCDMA or LTE] + WLAN 5 ㎓ Ant.2	Yes	Yes	Yes	Yes
6	[GSM or WCDMA or LTE] + WLAN 5 ㎓ MIMO	Yes	Yes	Yes	Yes
7	[GSM or WCDMA or LTE] + 2.4 ㎓ Bluetooth	Yes	Yes	Yes	Yes
8	[GSM or WCDMA or LTE] + WLAN 2.4 ㎓ Ant.2 + 2.4 ㎓ Bluetooth	Yes	Yes	Yes	Yes
9	[GSM or WCDMA or LTE] + WLAN 5 ㎓ Ant.2 + 2.4 ㎓ Bluetooth	Yes	Yes	Yes	Yes
10	All scenario + NFC	No	No	No	Yes

Notes:

- It does not to transmit simultaneously the Bluetooth and 2.4 / 5 GHz WLAN Ant.1.
- It is to use the Bluetooth and 2.4 ㎓ WLAN same antenna path.
- This device supports Bluetooth Tethering.
- This device supports VoLTE.
- This device supports VoWIFI.
- WLAN Hotspot is supported for 2.4 ㎓ and UNII-3 of 5 ㎓ WLAN.
- 5 ㎓ Hotspot mode is only supported for the UNII-3, therefore U-NII-1, U-NII-2A, U-NII-2C were not evaluated for Hotspot mode conditions.
- NFC operation is handheld only, simultaneous operation is considered a phablet.

2.10 SAR Test Methods and Procedures

The tests documented in this report were performed in accordance with IEEE 1528-2013 and the following published KDB procedures:

- IEEE 1528-2013
- 447498 D04 Interim General RF Exposure Guidance v01
- 484596 D01 Referencing Test Data v01
- 616217 D04 SAR for laptop and tablets v01r02 (Proximity Sensor)
- 865664 D01 SAR measurement 100 ㎒ to 6 ㎓ v01r04
- 865664 D02 RF Exposure Reporting v01r02
- October 2016 TCB Workshop Notes (Bluetooth Duty Factor)
- April 2019 TCB Workshop Notes (Tissue Simulation Liquids)
- April 2018 TCB Workshop Notes (LTE DL CA SAR Test Exclusion Update)
- October 2020 TCB Workshop Notes (Data Referencing)

3. #LTE Information

LTE Information					
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	LTE Band 2 (1 850.7 ~ 1 909.3) ㎒ LTE Band 4 (1 710.7 ~ 1 754.3) ㎒ LTE Band 5 (824.7 ~ 848.3) ㎒ LTE Band 12 (699.7 ~ 715.3) ㎒ LTE Band 17 (706.5 ~ 713.5) ㎒ LTE Band 26 (814.7 ~ 848.3) ㎒ LTE Band 41 (2 498.5 ~ 2 687.5) ㎒ LTE Band 66 (1 710.7 ~ 1 779.3) ㎒				
Channel Bandwidths	LTE Band 2: 1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒ LTE Band 4: 1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒ LTE Band 5: 1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒ LTE Band 12: 1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒ LTE Band 17: 5 ㎒, 10 ㎒ LTE Band 26: 1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒, 15 ㎒ LTE Band 41: 5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒ LTE Band 66: 1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒				
Channel Numbers and Frequencies (㎒)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 2: 1.4 ㎒	1 850.7 (18 607)		1 880.0 (18 900)		1 909.3 (19 193)
LTE Band 2: 3 ㎒	1 851.5 (18 615)		1 880.0 (18 900)		1 908.5 (19 185)
LTE Band 2: 5 ㎒	1 852.5 (18 625)		1 880.0 (18 900)		1 907.5 (19 175)
LTE Band 2: 10 ㎒	1 855.0 (18 650)		1 880.0 (18 900)		1 905.0 (19 150)
LTE Band 2: 15 ㎒	1 857.5 (18 675)		1 880.0 (18 900)		1 902.5 (19 125)
LTE Band 2: 20 ㎒	1 860.0 (18 700)		1 880.0 (18 900)		1 900.0 (19 100)
LTE Band 4: 1.4 ㎒	1 710.7 (19 957)		1 732.5 (20 175)		1 754.3 (20 393)
LTE Band 4: 3 ㎒	1 711.5 (19 965)		1 732.5 (20 175)		1 753.5 (20 385)
LTE Band 4: 5 ㎒	1 712.5 (19 975)		1 732.5 (20 175)		1 752.5 (20 375)
LTE Band 4: 10 ㎒	1 715.0 (20 000)		1 732.5 (20 175)		1 750.0 (20 350)
LTE Band 4: 15 ㎒	1 717.5 (20 025)		1 732.5 (20 175)		1 747.5 (20 325)
LTE Band 4: 20 ㎒	1 720.0 (20 050)		1 732.5 (20 175)		1 745.0 (20 300)
LTE Band 5: 1.4 ㎒	824.7 (20 407)		836.5 (20 525)		848.3 (20 643)
LTE Band 5: 3 ㎒	825.5 (20 415)		836.5 (20 525)		847.5 (20 635)
LTE Band 5: 5 ㎒	826.5 (20 425)		836.5 (20 525)		846.5 (20 625)
LTE Band 5: 10 ㎒	829.0 (20 450)		836.5 (20 525)		844.0 (20 600)
LTE Band 12: 1.4 ㎒	699.7 (23 017)		707.5 (23 095)		715.3 (23 173)
LTE Band 12: 3 ㎒	700.5 (23 025)		707.5 (23 095)		714.5 (23 655)
LTE Band 12: 5 ㎒	701.5 (23 035)		707.5 (23 095)		713.5 (23 155)
LTE Band 12: 10 ㎒	704.0 (23 060)		707.5 (23 095)		711.0 (23 130)

Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 17: 5 MHz	706.5 (23 755)		710.0 (23 790)		713.5 (23 825)
LTE Band 17: 10 MHz	709.0 (23 780)		710.0 (23 790)		711.0 (23 800)
LTE Band 26: 1.4 MHz	814.7 (26 697)		831.5 (26 865)		848.3 (27 033)
LTE Band 26: 3 MHz	815.5 (26 705)		831.5 (26 865)		847.5 (27 025)
LTE Band 26: 5 MHz	816.5 (26 715)		831.5 (26 865)		846.5 (27 015)
LTE Band 26: 10 MHz	819.0 (26 740)		831.5 (26 865)		844.0 (26 990)
LTE Band 26: 15 MHz	821.5 (26 765)		831.5 (26 865)		841.5 (26 965)
LTE Band 41: 5 MHz	2 506.0 (39 750)	2 549.5 (40 185)	2 593.0 (40 620)	2 636.5 (41 055)	2 680.0 (41 490)
LTE Band 41: 10 MHz	2 506.0 (39 750)	2 549.5 (40 185)	2 593.0 (40 620)	2 636.5 (41 055)	2 680.0 (41 490)
LTE Band 41: 15 MHz	2 506.0 (39 750)	2 549.5 (40 185)	2 593.0 (40 620)	2 636.5 (41 055)	2 680.0 (41 490)
LTE Band 41: 20 MHz	2 506.0 (39 750)	2 549.5 (40 185)	2 593.0 (40 620)	2 636.5 (41 055)	2 680.0 (41 490)
LTE Band 66: 1.4 MHz	1 710.7 (131 979)		1 745.0 (132 322)		1 779.3 (132 665)
LTE Band 66: 3 MHz	1 711.5 (131 987)		1 745.0 (132 322)		1 778.5 (132 657)
LTE Band 66: 5 MHz	1 712.5 (131 997)		1 745.0 (132 322)		1 777.5 (132 647)
LTE Band 66: 10 MHz	1 715.0 (132 022)		1 745.0 (132 322)		1 775.0 (132 622)
LTE Band 66: 15 MHz	1 717.5 (132 047)		1 745.0 (132 322)		1 772.5 (132 597)
LTE Band 66: 20 MHz	1 720.0 (132 072)		1 745.0 (132 322)		1 770.0 (132 572)
UE Category	UL:13, DL:18				
Modulations Supported in UL	QPSK, 16QAM, 64QAM				
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3 ~ 6.2.5?(manufacturer attestation to be provided)	YES				
A-MPR(Additional MPR) disabled for SAR Testing?	YES				
LTE Carrier Aggregation Possible Combinations	This device supports LTE DL CA aggregation.				
LTE Additional Information	This device does not support full CA features on 3GPP Release 15. It supports carrier aggregation as shown in Appendix C. Uplink communications are done on the PCC. The following LTE Release 15 Features are not supported: Relay, HetNet, Enhanced MIMO, eICIC, WIFI Offloading, MDH, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

4. Specific Absorption Rate

4.1 Introduction

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

4.2 SAR Definition

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

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

SAR is expressed in units of Watts per kilogram (W/kg)
SAR measurement can be either related to the temperature elevation in tissue by

$$SAR = C\left(\frac{\delta T}{\delta t}\right)$$

Where: C is the specific head capacity, δT is the temperature rise and δt is the exposure duration, or related to the electrical field in the tissue by

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

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength. However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

5. SAR Measurement Procedures

5.1 SAR Scan Procedures

Step 1: Power Reference Measurement
The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The Minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 1.4 mm. This distance cannot be smaller than the Distance of sensor calibration points to probe tip as defined in the probe properties.
Step 2: Area Scan & Zoom 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 and Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing1 g and 10 g of simulated tissue. 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 & Zoom Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04.

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5 mm ± 1 mm</td><td>½·δ·ln(2) mm 0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30° ± 1°</td><td>20° ± 1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}</td><td>≤ 2 GHz: ≤ 15 mm
2 – 3 GHz: ≤ 12 mm</td><td>3 – 4 GHz: ≤ 12 mm
4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}</td><td>≤ 2 GHz: ≤ 8 mm
2 – 3 GHz: ≤ 5 mm*</td><td>3 – 4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>≤ 5 mm</td><td>3 – 4 GHz: ≤ 4 mm
4 – 5 GHz: ≤ 3 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>≤ 4 mm</td><td>3 – 4 GHz: ≤ 3 mm
4 – 5 GHz: ≤ 2.5 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">≤ 1.5·$\Delta z_{Zoom}(n-1)$ mm</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3 – 4 GHz: ≥ 28 mm
4 – 5 GHz: ≥ 25 mm
5 – 6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.
* When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

Step 3: 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.

6. SAR Measurement Configurations

6.1 Ear Reference Point

Figure 1shows the front, back and side views of the SAM phantom. The “M” is the reference point for the center of the mouth, “LE” is the left ear reference point (ERP), and “RE” is the right ERP. The ERPs are 15 mm posterior to the entrance to the Ear canal (EEC) along the B-M line (Back-Mouth), as shown in Figure 1. The plane Passing, through the two ear canals and M is defined as the Reference Plane. The line N-F (Neck – Front) is perpendicular to the reference plane and passing through the LE (or RE) is called the Reference Pivoting Line. Both N-F and B-M lines are marked on the external phantom shell to facilitate handset positioning.

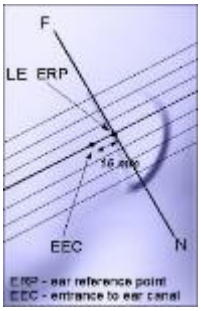


Figure 1
Close-Up Side view of ERP

6.2 Handset Reference Points

Two imaginary lines on the handset were established: the vertical centerline and the horizontal line. The test device was placed in a normal operating position with the acoustic output located along the “vertical centerline” on the front of the device aligned to the “ear reference point” (See Figure 3). The acoustic output was than located at the same level as the center of the ear reference point. The test device was positioned so that the “vertical centerline” was bisecting the front surface of the handset at its top and bottom edges, positioning the “ear reference point” on the outer surface of the both the left and right head phantoms on the ear reference point.

Figure 2
Front, back and side view of SAM Twin Phantom

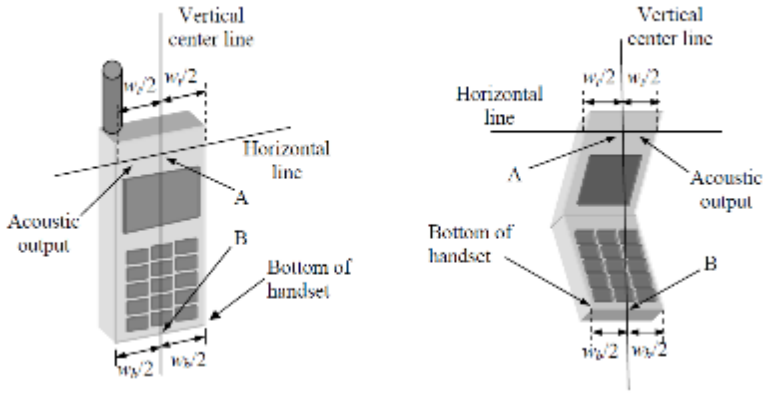


Figure 3
Handset Vertical Center & Horizontal Line Reference Points

6.3 Device Holder

The device holder is made out of low-loss POM material having the following dielectric parameters: relative permittivity ε = 3 and loss tangent δ = 0.02.

6.4 Positioning for Cheek/Touch

1. The test device was positioned with the device close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 4), such that the plane defined by the vertical center line and the horizontal line of the phone is approximately parallel to the sagittal plane of the phantom.

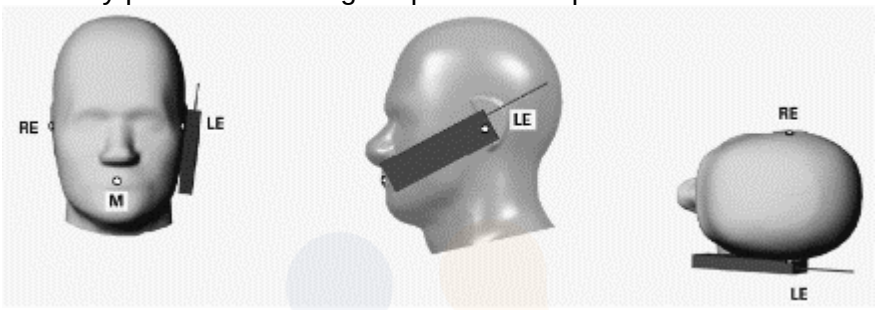


Figure 4: Front, Side and Top View of Cheek Position

2. The handset was translated towards the phantom along the line passing through RE & LE until the handset touches the pinna.
3. While maintaining the handset in this plane, the handset was rotated around the LE-RE line until the vertical centerline was in the reference plane.
4. The phone was then rotated around the vertical centerline until the phone (horizontal line) was symmetrical was respect to the line NF.
5. While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE, and maintaining the device contact with the ear, the device was rotated about the NF line until any point on the handset made contact with a phantom point below the ear (cheek) (See Figure 5).

6.5 Positioning for Ear / 15˚ Tilt

With the test device aligned in the “Cheek Position”:

1. While maintaining the orientation of the phone, the phone was retracted parallel to the reference plane far enough to enable a rotation of the phone by 15 degrees.
2. The phone was then rotated around the horizontal line by 15 degrees.
3. While maintaining the orientation of the phone, the phone was moved parallel to the reference plane until any part of the handset touched the head. (In this position, point A was located on the line RE-LE). The tilted position is obtained when the contact is on the pinna. If the contact was at any location other than the pinna, the angle of the phone would then be reduced. In this situation, the tilted position was obtained when any part of the phone was in contact of the ear as well as a second part of the phone was in contact with the head (see Figure 5).

Figure 5: Front, Side and Top View of Ear/ 15˚ Tilt

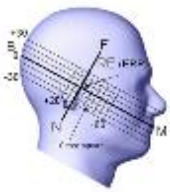


Figure 6: Side view w/ relevant markings

6.6 Body-Worn Accessory Configurations

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 7). Per FCC KDB Publication 648474 D04v01r03, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D04v01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Figure 7
Sample Body-Worn Diagram

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented. Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

6.7 Wireless Router Configurations

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06v02r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10 mm from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D04v01 procedures. The "Portable Hotspot" feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

6.8 Proximity Sensor Considerations

This device uses a power reduction mechanism to reduce output powers in certain use conditions when the device is used close to the user's body.
When the device's antenna is within a certain distance of the user, the sensor activates and reduces the maximum allowed output power. However, the sensor is not active when the device is moved beyond the sensor triggering distance and the maximum output power is no longer limited. Therefore, additional evaluation is needed in the vicinity of the triggering distance to ensure SAR is compliant when the device is allowed to operate at a non-reduced output power level. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device at these additional test positions.

6.9 Phablet Configurations

For smart phones with a display diagonal dimension > 150 ㎜ or an overall diagonal dimension > 160 ㎜ that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the phablets procedures outlined in KDB Publication 648474 D04v01r03 should be applied to evaluate SAR compliance. A device marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance. In addition to the normally required head and body-worn accessory SAR test procedures required for handsets, the UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna <=25 ㎜ from that surface or edge, in direct contact with the phantom, for 10g SAR. The UMPC mini-tablet 1g SAR at 5 ㎜ is not required. When hotspot mode applies, 10g SAR is required only for the surfaces and edges with hotspot mode 1g SAR > 1.2 W/kg.

7. RF Exposure Limits

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

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

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Partial Peak SAR [1] (Partial)	1.60 mW/g	8.00 mW/g
Partial Average SAR [2] (Whole Body)	0.08 mW/g	0.40 mW/g
Partial Peak SAR [3] (Hands/Feet/Ankle/Wrist)	4.00 mW/g	20.00 mW/g

1) The spatial Peak value of the SAR averaged over any 1g gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
2) The spatial Average value of the SAR averaged over the whole body.
3) The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

8. FCC SAR General Measurement Procedures

8.1 Measured and Reported SAR

Per FCC KDB Publication 447498 D04v01, When SAR is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance. For simultaneous transmission, the measured aggregate SAR must be scaled according to the sum of the differences between the maximum tune-up tolerance and actual power used to test each transmitter. When SAR is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as reported SAR. Test highest reported SAR results are identified on the grant of equipment authorization according to procedures in KDB 690783 D01v01r03.

9. RF Average Conducted Output Power

9.1 GSM Average Conducted Output Power

Maximum Burst-Average Output Power (dB m)										
Band	Channel	GSM	GPRS (GMSK)				EGPRS (8-PSK)			
		Voice	1Tx	2Tx	3Tx	4Tx	1Tx	2Tx	3Tx	4Tx
GSM 850	128	33.64	33.65	32.15	29.36	28.06	27.28	26.00	23.71	22.64
	190	33.63	33.64	**32.12**	29.31	28.02	27.17	25.76	23.61	22.55
	251	33.68	33.69	32.17	29.37	28.06	27.17	25.91	23.62	22.54
GSM 1900	512	30.36	30.35	28.80	26.04	24.79	25.77	24.44	22.17	20.66
	661	30.56	30.56	**28.99**	26.26	25.00	25.98	24.81	22.47	21.07
	810	30.49	30.49	28.92	26.22	24.94	25.97	24.76	22.44	21.06

Maximum Frame-Average Output Power (dB m)										
Band	Channel	GSM	GPRS (GMSK)				EGPRS (8-PSK)			
		Voice	1Tx	2Tx	3Tx	4Tx	1Tx	2Tx	3Tx	4Tx
GSM 850	128	24.61	24.62	26.13	25.10	25.05	18.25	19.98	19.45	19.63
	190	24.60	24.61	26.10	25.05	25.01	18.14	19.74	19.35	19.54
	251	24.65	24.66	26.15	25.11	25.05	18.14	19.89	19.36	19.53
GSM 1900	512	21.33	21.32	22.78	21.78	21.78	16.74	18.42	17.91	17.65
	661	21.53	21.53	22.97	22.00	21.99	16.95	18.79	18.21	18.06
	810	21.46	21.46	22.90	21.96	21.93	16.94	18.74	18.18	18.05
GSM 850	Frame Avg, Target	25.77	25.77	27.78	26.54	26.49	19.47	21.48	21.24	21.49
GSM 1900		22.77	22.77	24.78	23.54	23.49	16.97	18.98	18.74	18.99

9.2 GSM Reduced Average Conducted Output Power (Ear-jack, Grip Sensor, Hotspot)

Maximum Burst-Average Output Power (dB m)										
Band	Channel	GSM	GPRS (GMSK)				EGPRS (8-PSK)			
		Voice	1Tx	2Tx	3Tx	4Tx	1Tx	2Tx	3Tx	4Tx
GSM 1900	512	26.85	26.90	**25.81**	23.03	21.86	22.66	21.40	19.06	17.69
	661	26.98	27.03	**25.93**	23.29	22.14	22.96	21.88	19.40	18.03
	810	26.96	27.01	**25.87**	23.27	22.13	22.95	21.85	19.43	18.05

Maximum Frame-Average Output Power (dB m)										
Band	Channel	GSM	GPRS (GMSK)				EGPRS (8-PSK)			
		Voice	1Tx	2Tx	3Tx	4Tx	1Tx	2Tx	3Tx	4Tx
GSM 1900	512	17.82	17.87	19.79	18.77	18.85	13.63	15.38	14.80	14.68
	661	17.95	18.00	19.91	19.03	19.13	13.93	15.86	15.14	15.02
	810	17.93	17.98	19.85	19.01	19.12	13.92	15.83	15.17	15.04
GSM 1900	Frame Avg, Target	19.77	19.77	21.78	20.54	20.49	13.97	15.98	15.74	15.99

9.3 WCDMA Average Conducted Output Power

Band	Mode	Average Conducted Power (dBm)			MPR [dB]
		Channel			
		9 262	9 400	9 538	
		1 852.4 MHz	1 880.0 MHz	1 907.6 MHz	
WCDMA II	RMC	23.20	**23.39**	23.38	-
	AMR	23.18	23.37	23.33	-
	HSDPA-Subtest 1	22.17	22.38	22.34	0
	HSDPA-Subtest 2	21.40	21.45	21.56	0
	HSDPA-Subtest 3	20.88	20.84	20.83	0.5
	HSDPA-Subtest 4	20.61	20.75	20.69	0.5
	HSUPA-Subtest 1	20.23	20.41	20.35	0
	HSUPA-Subtest 2	18.75	18.86	18.81	2
	HSUPA-Subtest 3	19.27	19.40	19.34	1
	HSUPA-Subtest 4	18.70	18.85	18.80	2
	HSUPA-Subtest 5	20.59	20.80	20.74	0
	DC-HSDPA-Subtest 1	22.15	22.38	22.39	0
	DC-HSDPA-Subtest 2	22.20	22.40	22.38	0
	DC-HSDPA-Subtest 3	21.68	21.91	21.85	0.5
	DC-HSDPA-Subtest 4	21.67	21.88	21.86	0.5

Band	Mode	Average Conducted Power (dBm)			MPR [dB]
		Channel			
		1 312	1 412	1 513	
		1 712.4 MHz	1 732.4 MHz	1 752.6 MHz	
WCDMA IV	RMC	23.47	**23.34**	23.37	-
	AMR	23.39	23.26	23.35	-
	HSDPA-Subtest 1	22.38	22.22	22.35	0
	HSDPA-Subtest 2	21.65	21.33	21.62	0
	HSDPA-Subtest 3	20.92	20.86	20.87	0.5
	HSDPA-Subtest 4	20.75	20.66	20.61	0.5
	HSUPA-Subtest 1	20.83	20.71	20.80	0
	HSUPA-Subtest 2	18.98	18.80	18.91	2
	HSUPA-Subtest 3	19.50	19.42	19.46	1
	HSUPA-Subtest 4	18.91	18.75	18.87	2
	HSUPA-Subtest 5	20.82	20.68	20.78	0
	DC-HSDPA-Subtest 1	22.39	22.22	22.37	0
	DC-HSDPA-Subtest 2	22.44	22.27	22.39	0
	DC-HSDPA-Subtest 3	21.87	21.73	21.86	0.5
	DC-HSDPA-Subtest 4	21.91	21.73	21.91	0.5

Band	Mode	Average Conducted Power (dBm)			MPR [dB]
		Channel			
		4 132	4 183	4 233	
		826.4 ㎒	836.6 ㎒	846.6 ㎒	
WCDMA V	RMC	24.09	**24.08**	24.12	-
	AMR	24.03	24.01	24.08	-
	HSDPA-Subtest 1	23.06	23.01	23.09	0
	HSDPA-Subtest 2	22.31	22.23	22.47	0
	HSDPA-Subtest 3	21.65	21.65	21.51	0.5
	HSDPA-Subtest 4	21.72	21.51	21.74	0.5
	HSUPA-Subtest 1	21.48	21.41	21.53	0
	HSUPA-Subtest 2	19.45	19.39	19.50	2
	HSUPA-Subtest 3	19.96	19.89	19.99	1
	HSUPA-Subtest 4	19.42	19.34	19.43	2
	HSUPA-Subtest 5	21.96	21.92	21.98	0
	DC-HSDPA-Subtest 1	23.04	23.00	23.10	0
	DC-HSDPA-Subtest 2	23.07	23.03	23.10	0
	DC-HSDPA-Subtest 3	22.56	22.51	22.61	0.5
	DC-HSDPA-Subtest 4	22.57	22.50	22.60	0.5

9.4 WCDMA Reduced Average Conducted Output Power (Grip Sensor, Hotspot, Ear-jack)

Band	Mode	Average Conducted Power (dBm)			MPR [dB]
		Channel			
		9 262	9 400	9 538	
		1 852.4 ㎒	1 880.0 ㎒	1 907.6 ㎒	
WCDMA II	RMC	**19.34**	**19.56**	**19.47**	-
	AMR	19.31	19.49	19.46	-
	HSDPA-Subtest 1	18.27	18.45	18.43	0
	HSDPA-Subtest 2	17.48	17.47	17.59	0
	HSDPA-Subtest 3	17.25	17.45	17.42	0.0
	HSDPA-Subtest 4	17.13	17.27	17.26	0.0
	HSUPA-Subtest 1	16.68	16.84	16.81	0
	HSUPA-Subtest 2	15.16	15.29	15.26	0
	HSUPA-Subtest 3	15.67	15.80	15.74	0
	HSUPA-Subtest 4	15.13	15.26	15.21	0
	HSUPA-Subtest 5	17.24	17.39	17.37	0
	DC-HSDPA-Subtest 1	18.29	18.48	18.44	0
	DC-HSDPA-Subtest 2	18.26	18.47	18.45	0
	DC-HSDPA-Subtest 3	17.75	17.95	17.92	0.5
	DC-HSDPA-Subtest 4	17.75	17.96	17.92	0.5

Band	Mode	Average Conducted Power (dBm)			MPR [dB]
		Channel			
		1 312	1 412	1 513	
		1 712.4 ㎒	1 732.4 ㎒	1 752.6 ㎒	
WCDMA IV	RMC	**20.62**	**20.39**	**20.54**	-
	AMR	20.50	20.35	20.46	-
	HSDPA-Subtest 1	19.50	19.32	19.46	0
	HSDPA-Subtest 2	18.86	18.58	18.72	0
	HSDPA-Subtest 3	18.50	18.31	18.44	0.0
	HSDPA-Subtest 4	18.37	18.15	18.33	0.0
	HSUPA-Subtest 1	18.28	18.18	18.22	0
	HSUPA-Subtest 2	16.22	16.13	16.16	0
	HSUPA-Subtest 3	16.72	16.67	16.69	0
	HSUPA-Subtest 4	16.20	16.11	16.17	0
	HSUPA-Subtest 5	18.26	18.13	18.23	0
	DC-HSDPA-Subtest 1	19.51	19.36	19.46	0
	DC-HSDPA-Subtest 2	19.50	19.37	19.49	0
	DC-HSDPA-Subtest 3	19.01	18.83	18.95	0.0
	DC-HSDPA-Subtest 4	19.02	18.86	19.00	0.0

9.5 LTE Average Conducted Output Power

9.5.1 LTE Band 2

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 700	18 900	19 100	
				1 860.0 ㎒	1 880.0 ㎒	1 900.0 ㎒	
20 ㎒	QPSK	1	0	23.29	23.41	23.42	0
		1	49	23.47	**23.62**	23.54	0
		1	99	23.41	23.48	23.53	0
		50	0	22.17	22.46	22.40	1
		50	24	22.30	**22.48**	22.41	1
		50	50	22.25	22.45	22.23	1
		100	0	22.22	22.43	22.29	1
	16QAM	1	0	22.39	22.52	22.52	1
		1	49	22.57	22.65	22.55	1
		1	99	22.49	22.54	22.57	1
		50	0	21.37	21.42	21.35	2
		50	24	21.42	21.35	21.34	2
		50	50	21.40	21.39	21.22	2
		100	0	21.38	21.36	21.24	2
	64QAM	1	0	21.42	21.42	21.46	2
		1	49	21.57	21.57	21.47	2
		1	99	21.40	21.44	21.42	2
		50	0	20.32	20.59	20.55	3
		50	24	20.45	20.51	20.52	3
		50	50	20.42	20.54	20.39	3
		100	0	20.39	20.55	20.39	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 675	18 900	19 125	
				1 857.5 ㎒	1 880.0 ㎒	1 902.5 ㎒	
15 ㎒	QPSK	1	0	23.17	23.29	23.35	0
		1	36	23.31	23.47	23.40	0
		1	74	23.33	23.38	23.40	0
		36	0	22.18	22.41	22.37	1
		36	18	22.19	22.32	22.34	1
		36	37	22.25	22.39	22.28	1
		75	0	22.24	22.41	22.39	1
	16QAM	1	0	22.34	22.44	22.59	1
		1	36	22.49	22.58	22.52	1
		1	74	22.49	22.66	22.60	1
		36	0	21.35	21.39	21.37	2
		36	18	21.37	21.37	21.32	2
		36	37	21.47	21.39	21.27	2
		75	0	21.39	21.39	21.36	2
	64QAM	1	0	21.46	21.31	21.42	2
		1	36	21.58	21.53	21.48	2
		1	74	21.56	21.44	21.45	2
		36	0	20.27	20.58	20.54	3
		36	18	20.40	20.55	20.54	3
		36	37	20.44	20.55	20.49	3
		75	0	20.33	20.55	20.50	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 650	18 900	19 150	
				1 855.0 ㎒	1 880.0 ㎒	1 905.0 ㎒	
10 ㎒	QPSK	1	0	23.25	23.40	23.41	0
		1	25	23.33	23.47	23.45	0
		1	49	23.35	23.50	23.46	0
		25	0	22.16	22.43	22.46	1
		25	12	22.24	22.39	22.34	1
		25	25	22.28	22.40	22.36	1
		50	0	22.24	22.41	22.42	1
	16QAM	1	0	22.47	22.70	22.52	1
		1	25	22.54	22.60	22.51	1
		1	49	22.47	22.71	22.69	1
		25	0	21.35	21.40	21.48	2
		25	12	21.45	21.37	21.41	2
		25	25	21.45	21.41	21.36	2
		50	0	21.41	21.41	21.36	2
	64QAM	1	0	21.47	21.53	21.41	2
		1	25	21.57	21.55	21.51	2
		1	49	21.59	21.60	21.45	2
		25	0	20.32	20.60	20.65	3
		25	12	20.43	20.55	20.56	3
		25	25	20.39	20.57	20.52	3
		50	0	20.41	20.58	20.55	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 625	18 900	19 175	
				1 852.5 ㎒	1 880.0 ㎒	1 907.5 ㎒	
5 ㎒	QPSK	1	0	23.31	23.42	23.44	0
		1	12	23.37	23.51	23.46	0
		1	24	23.36	23.49	23.50	0
		12	0	22.24	22.44	22.48	1
		12	7	22.21	22.43	22.43	1
		12	13	22.26	22.40	22.38	1
		25	0	22.26	22.41	22.45	1
	16QAM	1	0	22.50	22.71	22.69	1
		1	12	22.49	22.70	22.71	1
		1	24	22.54	22.74	22.62	1
		12	0	21.38	21.44	21.46	2
		12	7	21.39	21.38	21.37	2
		12	13	21.42	21.34	21.38	2
		25	0	21.40	21.42	21.42	2
	64QAM	1	0	21.56	21.53	21.55	2
		1	12	21.58	21.65	21.54	2
		1	24	21.61	21.66	21.55	2
		12	0	20.38	20.59	20.66	3
		12	7	20.41	20.61	20.55	3
		12	13	20.42	20.58	20.52	3
		25	0	20.43	20.58	20.59	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 615	18 900	19 185	
				1 851.5 ㎒	1 880.0 ㎒	1 908.5 ㎒	
3 ㎒	QPSK	1	0	23.24	23.41	23.38	0
		1	8	23.25	23.43	23.40	0
		1	14	23.25	23.45	23.43	0
		8	0	22.24	22.43	22.39	1
		8	4	22.19	22.38	22.37	1
		8	7	22.21	22.42	22.38	1
		15	0	22.22	22.42	22.38	1
	16QAM	1	0	22.51	22.62	22.52	1
		1	8	22.50	22.62	22.49	1
		1	14	22.51	22.59	22.56	1
		8	0	21.49	21.44	21.41	2
		8	4	21.45	21.49	21.46	2
		8	7	21.47	21.43	21.41	2
		15	0	21.42	21.40	21.39	2
	64QAM	1	0	21.52	21.55	21.46	2
		1	8	21.45	21.49	21.50	2
		1	14	21.50	21.58	21.52	2
		8	0	20.37	20.61	20.61	3
		8	4	20.43	20.58	20.56	3
		8	7	20.42	20.54	20.55	3
		15	0	20.37	20.53	20.51	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 607	18 900	19 193	
				1 850.7 ㎒	1 880.0 ㎒	1 909.3 ㎒	
1.4 ㎒	QPSK	1	0	23.21	23.43	23.39	0
		1	3	23.27	23.42	23.41	0
		1	5	23.22	23.41	23.42	0
		3	0	23.26	23.43	23.43	0
		3	1	23.24	23.44	23.42	0
		3	3	23.25	23.41	23.44	0
		6	0	22.21	22.42	22.38	1
	16QAM	1	0	22.45	22.59	22.49	1
		1	3	22.50	22.65	22.59	1
		1	5	22.38	22.70	22.58	1
		3	0	22.21	22.41	22.43	1
		3	1	22.19	22.39	22.47	1
		3	3	22.27	22.42	22.43	1
		6	0	21.48	21.41	21.44	2
	64QAM	1	0	21.42	21.57	21.52	2
		1	3	21.51	21.56	21.52	2
		1	5	21.43	21.52	21.45	2
		3	0	21.44	21.49	21.48	2
		3	1	21.50	21.49	21.50	2
		3	3	21.46	21.44	21.45	2
		6	0	20.32	20.46	20.50	3

9.5.2 LTE Band 5

Band width	Modulation	RB Size	RB offset	Maximum Average Power 20 525 836.5 ㎒	MPR
10 ㎒	QPSK	1	0	24.63	0
		1	25	**24.64**	0
		1	49	24.52	0
		25	0	**23.62**	1
		25	12	23.50	1
		25	25	23.60	1
		50	0	23.61	1
	16QAM	1	0	23.77	1
		1	25	23.77	1
		1	49	23.60	1
		25	0	22.53	2
		25	12	22.53	2
		25	25	22.58	2
		50	0	22.55	2
	64QAM	1	0	22.62	2
		1	25	22.68	2
		1	49	22.60	2
		25	0	21.51	3
		25	12	21.53	3
		25	25	21.55	3
		50	0	21.55	3

10 ㎒ 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.

Band width	Modulation	RB Size	RB offset	Maximum Average Power 20 425 826.5 ㎒	20 525 836.5 ㎒	20 625 846.5 ㎒	MPR
5 ㎒	QPSK	1	0	24.56	24.61	24.53	0
		1	12	24.61	24.59	24.54	0
		1	24	24.58	24.54	24.58	0
		12	0	23.53	23.57	23.54	1
		12	7	23.49	23.50	23.52	1
		12	13	23.48	23.55	23.47	1
		25	0	23.51	23.57	23.53	1
	16QAM	1	0	23.77	23.72	23.66	1
		1	12	23.77	23.75	23.70	1
		1	24	23.71	23.72	23.80	1
		12	0	22.48	22.52	22.48	2
		12	7	22.45	22.43	22.46	2
		12	13	22.41	22.47	22.41	2
		25	0	22.49	22.55	22.52	2
	64QAM	1	0	22.70	22.68	22.57	2
		1	12	22.69	22.65	22.62	2
		1	24	22.73	22.66	22.65	2
		12	0	21.48	21.48	21.48	3
		12	7	21.47	21.45	21.46	3
		12	13	21.41	21.49	21.42	3
		25	0	21.42	21.53	21.49	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				20 407	20 525	20 643	
				824.7 ㎒	836.5 ㎒	848.3 ㎒	
3 ㎒	QPSK	1	0	24.47	24.58	24.49	0
		1	8	24.47	24.55	24.50	0
		1	14	24.55	24.49	24.52	0
		8	0	23.45	23.53	23.49	1
		8	4	23.47	23.47	23.50	1
		8	7	23.43	23.43	23.53	1
		15	0	23.44	23.50	23.50	1
	16QAM	1	0	23.74	23.78	23.72	1
		1	8	23.76	23.64	23.75	1
		1	14	23.80	23.65	23.74	1
		8	0	22.54	22.57	22.53	2
		8	4	22.52	22.52	22.55	2
		8	7	22.54	22.54	22.55	2
		15	0	22.49	22.47	22.51	2
	64QAM	1	0	22.53	22.70	22.50	2
		1	8	22.63	22.62	22.67	2
		1	14	22.69	22.50	22.63	2
		8	0	21.49	21.51	21.42	3
		8	4	21.45	21.45	21.48	3
		8	7	21.47	21.44	21.49	3
		15	0	21.42	21.41	21.48	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				20 407	20 525	20 643	
				824.7 ㎒	836.5 ㎒	848.3 ㎒	
1.4 ㎒	QPSK	1	0	24.45	24.54	24.50	0
		1	3	24.49	24.55	24.54	0
		1	5	24.48	24.51	24.52	0
		3	0	24.49	24.57	24.48	0
		3	1	24.49	24.55	24.50	0
		3	3	24.49	24.50	24.52	0
		6	0	23.48	23.54	23.54	1
	16QAM	1	0	23.66	23.76	23.69	1
		1	3	23.73	23.76	23.79	1
		1	5	23.75	23.72	23.71	1
		3	0	23.51	23.49	23.41	1
		3	1	23.48	23.53	23.44	1
		3	3	23.50	23.40	23.51	1
		6	0	22.49	22.57	22.58	2
	64QAM	1	0	22.63	22.63	22.64	2
		1	3	22.61	22.66	22.60	2
		1	5	22.58	22.55	22.60	2
		3	0	22.51	22.55	22.52	2
		3	1	22.50	22.56	22.59	2
		3	3	22.53	22.53	22.56	2
		6	0	21.38	21.46	21.43	3

9.5.3 LTE Band 12

Band width	Modulation	RB Size	RB offset	Maximum Average Power 23 095 707.5 ㎒	MPR
10 ㎒	QPSK	1	0	23.95	0
		1	25	**23.96**	0
		1	49	23.88	0
		25	0	22.94	1
		25	12	22.90	1
		25	25	22.83	1
		50	0	22.89	1
	16QAM	1	0	23.11	1
		1	25	23.17	1
		1	49	23.17	1
		25	0	21.89	2
		25	12	21.87	2
		25	25	21.81	2
		50	0	21.85	2
	64QAM	1	0	22.03	2
		1	25	22.09	2
		1	49	21.98	2
		25	0	20.86	3
		25	12	20.84	3
		25	25	20.78	3
		50	0	20.75	3

10 ㎒ 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.

Band width	Modulation	RB Size	RB offset	Maximum Average Power 23 035 701.5 ㎒	23 095 707.5 ㎒	23 155 713.5 ㎒	MPR
5 ㎒	QPSK	1	0	23.93	23.91	23.93	0
		1	12	23.92	23.96	23.97	0
		1	24	23.93	23.96	23.91	0
		12	0	22.88	22.92	22.93	1
		12	7	22.87	22.90	22.93	1
		12	13	22.90	22.83	22.79	1
		25	0	22.92	22.88	22.90	1
	16QAM	1	0	23.29	23.05	23.19	1
		1	12	23.18	23.21	23.07	1
		1	24	23.07	23.15	23.17	1
		12	0	21.86	21.86	21.90	2
		12	7	21.81	21.84	21.83	2
		12	13	21.85	21.79	21.72	2
		25	0	21.86	21.88	21.86	2
	64QAM	1	0	22.04	22.00	22.01	2
		1	12	22.02	22.08	21.99	2
		1	24	22.01	21.99	21.96	2
		12	0	20.87	20.86	20.87	3
		12	7	20.86	20.83	20.86	3
		12	13	20.84	20.82	20.79	3
		25	0	20.85	20.80	20.81	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				23 025	23 095	23 165	
				700.5 ㎒	707.5 ㎒	714.5 ㎒	
3 ㎒	QPSK	1	0	23.90	23.91	23.88	0
		1	8	23.87	23.89	23.88	0
		1	14	23.89	23.89	23.90	0
		8	0	22.86	22.88	22.93	1
		8	4	22.87	22.87	22.89	1
		8	7	22.89	22.81	22.89	1
		15	0	22.90	22.84	22.87	1
	16QAM	1	0	23.01	23.16	23.11	1
		1	8	23.06	23.08	23.15	1
		1	14	23.16	23.15	23.19	1
		8	0	21.92	21.92	21.95	2
		8	4	21.90	21.86	21.91	2
		8	7	21.89	21.89	21.86	2
		15	0	21.88	21.87	21.85	2
	64QAM	1	0	21.98	21.97	21.98	2
		1	8	21.92	22.06	21.94	2
		1	14	21.93	21.94	22.02	2
		8	0	20.86	20.84	20.87	3
		8	4	20.87	20.82	20.83	3
		8	7	20.85	20.84	20.79	3
		15	0	20.87	20.79	20.80	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				23 017	23 095	23 173	
				699.7 ㎒	707.5 ㎒	715.3 ㎒	
1.4 ㎒	QPSK	1	0	23.85	23.89	23.90	0
		1	3	23.89	23.89	23.91	0
		1	5	23.87	23.86	23.89	0
		3	0	23.90	23.89	23.94	0
		3	1	23.91	23.88	23.96	0
		3	3	23.88	23.88	23.95	0
		6	0	22.88	22.89	22.90	1
	16QAM	1	0	23.05	23.07	23.16	1
		1	3	23.07	23.20	23.15	1
		1	5	23.18	23.11	23.09	1
		3	0	22.88	22.90	22.93	1
		3	1	22.86	22.85	22.94	1
		3	3	22.83	22.86	22.91	1
		6	0	21.90	21.94	21.94	2
	64QAM	1	0	21.96	22.06	22.02	2
		1	3	22.03	22.05	22.09	2
		1	5	21.96	21.96	22.03	2
		3	0	21.89	21.85	21.99	2
		3	1	21.89	21.94	21.95	2
		3	3	21.92	21.86	21.94	2
		6	0	20.79	20.78	20.77	3

9.5.4 LTE Band 26

Band width	Modulation	RB Size	RB offset	Maximum Average Power 26 865 831.5 ㎒	MPR
15 ㎒	QPSK	1	0	24.66	0
		1	36	**24.81**	0
		1	74	24.73	0
		36	0	23.85	1
		36	18	23.75	1
		36	37	23.74	1
		75	0	23.83	1
	16QAM	1	0	23.82	1
		1	36	23.89	1
		1	74	23.93	1
		36	0	22.80	2
		36	18	22.74	2
		36	37	22.74	2
		75	0	22.79	2
	64QAM	1	0	22.82	2
		1	36	22.94	2
		1	74	22.92	2
		36	0	21.77	3
		36	18	21.72	3
		36	37	21.74	3
		75	0	21.72	3

15 ㎒ 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.

Band width	Modulation	RB Size	RB offset	Maximum Average Power 26 740 819.0 ㎒	26 865 831.5 ㎒	26 990 844.0 ㎒	MPR
10 ㎒	QPSK	1	0	24.65	24.75	24.79	0
		1	25	24.73	24.80	24.75	0
		1	49	24.67	24.76	24.75	0
		25	0	23.68	23.85	23.78	1
		25	12	23.68	23.78	23.73	1
		25	25	23.74	23.73	23.63	1
		50	0	23.75	23.84	23.78	1
	16QAM	1	0	23.83	23.75	23.92	1
		1	25	23.89	23.85	23.76	1
		1	49	23.81	23.96	23.97	1
		25	0	22.63	22.81	22.77	2
		25	12	22.64	22.73	22.69	2
		25	25	22.74	22.73	22.62	2
		50	0	22.71	22.81	22.69	2
	64QAM	1	0	22.80	22.79	22.98	2
		1	25	22.78	22.88	22.87	2
		1	49	22.80	22.91	22.93	2
		25	0	21.65	21.80	21.75	3
		25	12	21.63	21.72	21.70	3
		25	25	21.69	21.76	21.63	3
		50	0	21.68	21.79	21.68	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				26 715	26 865	27 015	
				816.5 ㎒	831.5 ㎒	846.5 ㎒	
5 ㎒	QPSK	1	0	24.68	24.74	24.79	0
		1	12	24.65	24.83	24.77	0
		1	24	24.73	24.84	24.82	0
		12	0	23.70	23.81	23.75	1
		12	7	23.67	23.77	23.76	1
		12	13	23.65	23.74	23.68	1
		25	0	23.69	23.80	23.77	1
	16QAM	1	0	23.76	23.91	23.81	1
		1	12	23.82	23.88	23.79	1
		1	24	23.85	23.87	23.95	1
		12	0	22.67	22.75	22.70	2
		12	7	22.64	22.69	22.72	2
		12	13	22.63	22.70	22.66	2
		25	0	22.65	22.77	22.73	2
	64QAM	1	0	22.75	22.88	22.94	2
		1	12	22.85	22.92	22.86	2
		1	24	22.88	22.88	22.87	2
		12	0	21.68	21.78	21.77	3
		12	7	21.63	21.75	21.72	3
		12	13	21.63	21.69	21.66	3
		25	0	21.63	21.74	21.74	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				26 705	26 865	27 025	
				815.5 ㎒	831.5 ㎒	847.5 ㎒	
3 ㎒	QPSK	1	0	24.66	24.73	24.68	0
		1	8	24.59	24.76	24.75	0
		1	14	24.63	24.76	24.78	0
		8	0	23.65	23.76	23.73	1
		8	4	23.61	23.74	23.76	1
		8	7	23.65	23.73	23.73	1
		15	0	23.65	23.73	23.76	1
	16QAM	1	0	23.82	23.80	23.85	1
		1	8	23.69	23.89	23.94	1
		1	14	23.79	23.90	23.98	1
		8	0	22.62	22.78	22.76	2
		8	4	22.68	22.78	22.77	2
		8	7	22.67	22.71	22.78	2
		15	0	22.60	22.76	22.72	2
	64QAM	1	0	22.79	22.94	22.92	2
		1	8	22.73	22.89	22.89	2
		1	14	22.79	22.88	22.91	2
		8	0	21.64	21.71	21.73	3
		8	4	21.58	21.72	21.72	3
		8	7	21.58	21.73	21.69	3
		15	0	21.61	21.70	21.70	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				26 697	26 865	27 033	
				814.7 ㎒	831.5 ㎒	848.3 ㎒	
1.4 ㎒	QPSK	1	0	24.62	24.77	24.79	0
		1	3	24.73	24.75	24.77	0
		1	5	24.65	24.78	24.81	0
		3	0	24.63	24.72	24.76	0
		3	1	24.65	24.79	24.72	0
		3	3	24.69	24.75	24.74	0
		6	0	23.61	23.75	23.79	1
	16QAM	1	0	23.82	23.76	23.81	1
		1	3	23.81	23.83	23.90	1
		1	5	23.81	23.78	23.92	1
		3	0	23.63	23.68	23.63	1
		3	1	23.55	23.76	23.74	1
		3	3	23.59	23.72	23.73	1
		6	0	22.69	22.77	22.86	2
	64QAM	1	0	22.76	22.90	22.94	2
		1	3	22.86	22.87	22.91	2
		1	5	22.81	22.87	22.93	2
		3	0	22.71	22.86	22.81	2
		3	1	22.73	22.87	22.82	2
		3	3	22.76	22.79	22.83	2
		6	0	21.53	21.66	21.71	3

9.5.5 LTE Band 41

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 MHz	2 549.5 MHz	2 593.0 MHz	2 636.5 MHz	2 680.0 MHz	
20 MHz	QPSK	1	0	23.48	23.51	23.57	23.38	23.62	0
		1	49	23.64	23.59	23.61	23.45	**23.65**	0
		1	99	23.48	23.48	23.45	23.33	23.49	0
		50	0	22.57	22.65	22.65	22.55	22.79	1
		50	24	22.68	22.66	22.63	22.52	22.80	1
		50	50	22.72	22.64	22.59	22.52	22.70	1
		100	0	22.68	22.67	22.64	22.53	22.74	1
	16QAM	1	0	22.60	22.62	22.66	22.49	22.62	1
		1	49	22.72	22.71	22.72	22.59	22.70	1
		1	99	22.62	22.57	22.53	22.45	22.53	1
		50	0	21.60	21.68	21.69	21.56	21.67	2
		50	24	21.68	21.71	21.67	21.55	21.69	2
		50	50	21.75	21.63	21.64	21.53	21.61	2
		100	0	21.68	21.66	21.61	21.54	21.63	2
	64QAM	1	0	21.18	21.23	21.25	21.10	21.18	2
		1	49	21.32	21.27	21.31	21.16	21.31	2
		1	99	21.19	21.17	21.25	21.04	21.10	2
		50	0	20.52	20.63	20.61	20.52	20.64	3
		50	24	20.57	20.63	20.61	20.50	20.65	3
		50	50	20.67	20.59	20.58	20.47	20.58	3
		100	0	20.54	20.58	20.58	20.44	20.58	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 MHz	2 549.5 MHz	2 593.0 MHz	2 636.5 MHz	2 680.0 MHz	
15 MHz	QPSK	1	0	23.47	23.52	23.59	23.40	23.49	0
		1	36	23.58	23.58	23.61	23.45	23.56	0
		1	74	23.54	23.55	23.51	23.39	23.52	0
		36	0	22.60	22.61	22.63	22.51	22.60	1
		36	18	22.63	22.65	22.59	22.51	22.62	1
		36	37	22.64	22.62	22.64	22.49	22.62	1
		75	0	22.67	22.64	22.65	22.53	22.66	1
	16QAM	1	0	22.64	22.63	22.68	22.50	22.65	1
		1	36	22.74	22.70	22.73	22.57	22.73	1
		1	74	22.65	22.63	22.60	22.48	22.62	1
		36	0	21.56	21.60	21.58	21.45	21.61	2
		36	18	21.59	21.59	21.63	21.46	21.59	2
		36	37	21.63	21.57	21.59	21.42	21.58	2
		75	0	21.66	21.63	21.66	21.50	21.62	2
	64QAM	1	0	21.23	21.30	21.27	21.12	21.21	2
		1	36	21.31	21.29	21.38	21.17	21.29	2
		1	74	21.25	21.24	21.22	21.06	21.21	2
		36	0	20.66	20.61	20.58	20.48	20.60	3
		36	18	20.47	20.57	20.63	20.49	20.60	3
		36	37	20.63	20.55	20.58	20.44	20.57	3
		75	0	20.55	20.63	20.63	20.49	20.61	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 MHz	2 549.5 MHz	2 593.0 MHz	2 636.5 MHz	2 680.0 MHz	
10 MHz	QPSK	1	0	23.57	23.62	23.63	23.39	23.55	0
		1	25	23.63	23.60	23.63	23.45	23.58	0
		1	49	23.53	23.59	23.56	23.36	23.51	0
		25	0	22.60	22.65	22.61	22.48	22.64	1
		25	12	22.63	22.65	22.62	22.46	22.64	1
		25	25	22.67	22.61	22.60	22.46	22.61	1
		50	0	22.68	22.65	22.64	22.51	22.66	1
	16QAM	1	0	22.72	22.71	22.70	22.54	22.67	1
		1	25	22.73	22.69	22.73	22.56	22.70	1
		1	49	22.68	22.68	22.67	22.51	22.64	1
		25	0	21.60	21.67	21.65	21.54	21.66	2
		25	12	21.65	21.65	21.66	21.52	21.63	2
		25	25	21.72	21.64	21.64	21.50	21.60	2
		50	0	21.66	21.67	21.66	21.54	21.65	2
	64QAM	1	0	21.29	21.30	21.30	21.14	21.25	2
		1	25	21.29	21.28	21.34	21.14	21.26	2
		1	49	21.25	21.28	21.27	21.09	21.26	2
		25	0	20.43	20.69	20.65	20.54	20.65	3
		25	12	20.62	20.68	20.70	20.53	20.67	3
		25	25	20.70	20.66	20.64	20.50	20.64	3
		50	0	20.60	20.64	20.59	20.50	20.60	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 MHz	2 549.5 MHz	2 593.0 MHz	2 636.5 MHz	2 680.0 MHz	
5 MHz	QPSK	1	0	23.59	23.64	23.65	23.45	23.62	0
		1	12	23.60	23.61	23.65	23.43	23.62	0
		1	24	23.55	23.64	23.61	23.44	23.64	0
		12	0	22.61	22.63	22.59	22.45	22.62	1
		12	7	22.64	22.62	22.65	22.43	22.57	1
		12	13	22.62	22.58	22.60	22.40	22.58	1
		25	0	22.61	22.62	22.64	22.48	22.63	1
	16QAM	1	0	22.70	22.70	22.76	22.57	22.68	1
		1	12	22.72	22.68	22.72	22.54	22.67	1
		1	24	22.71	22.71	22.69	22.56	22.67	1
		12	0	21.56	21.60	21.42	21.42	21.58	2
		12	7	21.55	21.55	21.46	21.39	21.54	2
		12	13	21.57	21.55	21.53	21.38	21.50	2
		25	0	21.64	21.66	21.61	21.49	21.63	2
	64QAM	1	0	21.32	21.31	21.45	21.16	21.30	2
		1	12	21.31	21.28	21.36	21.14	21.28	2
		1	24	21.31	21.31	21.31	21.12	21.26	2
		12	0	20.64	20.64	20.64	20.52	20.62	3
		12	7	20.63	20.61	20.62	20.45	20.58	3
		12	13	20.63	20.61	20.61	20.43	20.60	3
		25	0	20.70	20.65	20.65	20.54	20.63	3

9.5.6 LTE Band 66

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 072	132 322	132 572	
				1 720.0 ㎒	1 745.0 ㎒	1 770.0 ㎒	
20 ㎒	QPSK	1	0	23.21	23.22	23.15	0
		1	49	**23.36**	23.34	23.25	0
		1	99	23.35	23.27	23.20	0
		50	0	**22.40**	22.22	22.30	1
		50	24	22.36	22.34	22.23	1
		50	50	22.38	22.26	22.28	1
		100	0	22.37	22.23	22.19	1
	16QAM	1	0	22.51	22.43	22.31	1
		1	49	22.55	22.53	22.34	1
		1	99	22.58	22.53	22.42	1
		50	0	21.31	21.21	21.12	2
		50	24	21.32	21.27	21.19	2
		50	50	21.37	21.25	21.22	2
		100	0	21.30	21.18	21.13	2
	64QAM	1	0	21.25	21.27	21.22	2
		1	49	21.46	21.36	21.31	2
		1	99	21.40	21.38	21.26	2
		50	0	20.49	20.39	20.30	3
		50	24	20.51	20.42	20.37	3
		50	50	20.51	20.35	20.40	3
		100	0	20.44	20.35	20.30	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 047	132 322	132 597	
				1 717.5 ㎒	1 745.0 ㎒	1 772.5 ㎒	
15 ㎒	QPSK	1	0	23.24	23.25	23.17	0
		1	36	23.33	23.38	23.19	0
		1	74	23.31	23.34	23.23	0
		36	0	22.34	22.25	22.12	1
		36	18	22.32	22.30	22.16	1
		36	37	22.31	22.31	22.19	1
		75	0	22.33	22.26	22.17	1
	16QAM	1	0	22.51	22.50	22.33	1
		1	36	22.63	22.43	22.46	1
		1	74	22.57	22.57	22.37	1
		36	0	21.28	21.21	21.11	2
		36	18	21.28	21.25	21.15	2
		36	37	21.28	21.26	21.14	2
		75	0	21.28	21.24	21.11	2
	64QAM	1	0	21.34	21.36	21.27	2
		1	36	21.36	21.44	21.26	2
		1	74	21.37	21.45	21.28	2
		36	0	20.49	20.42	20.28	3
		36	18	20.42	20.46	20.30	3
		36	37	20.48	20.42	20.35	3
		75	0	20.46	20.44	20.29	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 022	132 322	132 622	
				1 715.0 ㎒	1 745.0 ㎒	1 775.0 ㎒	
10 ㎒	QPSK	1	0	23.35	23.33	23.19	0
		1	25	23.34	23.37	23.23	0
		1	49	23.36	23.42	23.23	0
		25	0	22.33	22.24	22.12	1
		25	12	22.30	22.27	22.19	1
		25	25	22.30	22.33	22.16	1
		50	0	22.34	22.26	22.16	1
	16QAM	1	0	22.61	22.57	22.34	1
		1	25	22.57	22.54	22.34	1
		1	49	22.47	22.65	22.36	1
		25	0	21.34	21.25	21.10	2
		25	12	21.28	21.28	21.19	2
		25	25	21.30	21.30	21.18	2
		50	0	21.29	21.27	21.15	2
	64QAM	1	0	21.37	21.40	21.33	2
		1	25	21.50	21.41	21.30	2
		1	49	21.45	21.48	21.32	2
		25	0	20.47	20.42	20.24	3
		25	12	20.45	20.41	20.35	3
		25	25	20.40	20.48	20.37	3
		50	0	20.45	20.45	20.27	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 997	132 322	132 647	
				1 712.5 ㎒	1 745.0 ㎒	1 777.5 ㎒	
5 ㎒	QPSK	1	0	23.35	23.38	23.25	0
		1	12	23.44	23.41	23.30	0
		1	24	23.34	23.42	23.27	0
		12	0	22.37	22.33	22.18	1
		12	7	22.32	22.31	22.18	1
		12	13	22.27	22.24	22.18	1
		25	0	22.34	22.26	22.17	1
	16QAM	1	0	22.58	22.56	22.35	1
		1	12	22.57	22.43	22.46	1
		1	24	22.59	22.62	22.44	1
		12	0	21.32	21.28	21.11	2
		12	7	21.27	21.23	21.10	2
		12	13	21.20	21.20	21.12	2
		25	0	21.34	21.28	21.10	2
	64QAM	1	0	21.43	21.50	21.31	2
		1	12	21.53	21.51	21.28	2
		1	24	21.47	21.48	21.32	2
		12	0	20.53	20.41	20.30	3
		12	7	20.52	20.44	20.29	3
		12	13	20.39	20.41	20.29	3
		25	0	20.48	20.40	20.31	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 987	132 322	132 657	
				1 711.5 ㎒	1 745.0 ㎒	1 778.5 ㎒	
3 ㎒	QPSK	1	0	23.33	23.33	23.13	0
		1	8	23.33	23.35	23.21	0
		1	14	23.30	23.35	23.19	0
		8	0	22.35	22.30	22.17	1
		8	4	22.29	22.28	22.16	1
		8	7	22.31	22.25	22.18	1
		15	0	22.30	22.26	22.12	1
	16QAM	1	0	22.46	22.47	22.25	1
		1	8	22.47	22.58	22.31	1
		1	14	22.50	22.59	22.44	1
		8	0	21.32	21.29	21.21	2
		8	4	21.34	21.30	21.20	2
		8	7	21.36	21.30	21.24	2
		15	0	21.33	21.23	21.13	2
	64QAM	1	0	21.39	21.41	21.20	2
		1	8	21.43	21.37	21.27	2
		1	14	21.44	21.40	21.29	2
		8	0	20.47	20.44	20.31	3
		8	4	20.50	20.42	20.34	3
		8	7	20.50	20.42	20.32	3
		15	0	20.46	20.37	20.21	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 979	132 322	132 665	
				1 710.7 ㎒	1 745.0 ㎒	1 779.3 ㎒	
1.4 ㎒	QPSK	1	0	23.31	23.31	23.22	0
		1	3	23.34	23.33	23.25	0
		1	5	23.33	23.34	23.21	0
		3	0	23.32	23.33	23.19	0
		3	1	23.34	23.31	23.23	0
		3	3	23.36	23.33	23.24	0
		6	0	22.31	22.31	22.18	1
	16QAM	1	0	22.56	22.50	22.29	1
		1	3	22.53	22.61	22.40	1
		1	5	22.46	22.47	22.37	1
		3	0	22.35	22.30	22.16	1
		3	1	22.29	22.26	22.19	1
		3	3	22.31	22.30	22.20	1
		6	0	21.35	21.30	21.21	2
	64QAM	1	0	21.45	21.42	21.30	2
		1	3	21.40	21.41	21.28	2
		1	5	21.31	21.50	21.22	2
		3	0	21.40	21.27	21.21	2
		3	1	21.34	21.38	21.24	2
		3	3	21.34	21.33	21.19	2
		6	0	20.38	20.41	20.27	3

9.6 LTE Reduced Average Conducted Output Power

9.6.1 LTE Band 2(Grip Sensor, Ear-jack)

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 700	18 900	19 100	
				1 860.0 ㎒	1 880.0 ㎒	1 900.0 ㎒	
20 ㎒	QPSK	1	0	19.79	19.95	19.98	0
		1	49	19.98	**20.17**	20.08	0
		1	99	19.94	20.02	20.02	0
		50	0	19.98	20.13	20.16	0
		50	24	20.05	**20.22**	20.17	0
		50	50	20.04	20.15	19.99	0
		100	0	19.97	20.14	20.04	0
	16QAM	1	0	20.03	20.13	20.33	0
		1	49	20.31	20.50	20.40	0
		1	99	20.21	20.34	20.38	0
		50	0	19.95	20.18	20.15	0
		50	24	20.01	20.14	20.15	0
		50	50	20.03	20.19	20.01	0
		100	0	19.95	20.13	20.01	0
	64QAM	1	0	20.01	20.08	20.15	0
		1	49	20.20	20.26	20.32	0
		1	99	20.17	20.25	20.24	0
		50	0	19.98	20.24	20.16	0
		50	24	20.03	20.16	20.13	0
		50	50	20.07	20.14	20.02	0
		100	0	20.02	20.17	20.01	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 675	18 900	19 125	
				1 857.5 ㎒	1 880.0 ㎒	1 902.5 ㎒	
15 ㎒	QPSK	1	0	19.85	20.00	19.99	0
		1	36	19.94	20.07	20.04	0
		1	74	19.94	20.07	20.03	0
		36	0	19.85	20.13	20.10	0
		36	18	19.96	20.11	20.08	0
		36	37	20.01	20.14	20.05	0
		75	0	19.94	20.16	20.07	0
	16QAM	1	0	20.16	20.34	20.22	0
		1	36	20.17	20.49	20.40	0
		1	74	20.18	20.42	20.29	0
		36	0	19.85	20.12	20.15	0
		36	18	20.01	20.11	20.08	0
		36	37	20.02	20.11	20.06	0
		75	0	19.98	20.17	20.11	0
	64QAM	1	0	20.05	20.15	20.17	0
		1	36	20.17	20.34	20.28	0
		1	74	20.15	20.30	20.25	0
		36	0	19.93	20.14	20.14	0
		36	18	20.01	20.10	20.09	0
		36	37	20.05	20.17	20.08	0
		75	0	19.98	20.15	20.09	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 650	18 900	19 150	
				1 855.0 ㎒	1 880.0 ㎒	1 905.0 ㎒	
10 ㎒	QPSK	1	0	19.91	20.07	20.05	0
		1	25	19.94	20.14	20.08	0
		1	49	20.00	20.12	20.11	0
		25	0	19.92	20.12	20.17	0
		25	12	19.97	20.11	20.12	0
		25	25	19.98	20.09	20.10	0
		50	0	19.99	20.15	20.14	0
	16QAM	1	0	20.26	20.47	20.35	0
		1	25	20.16	20.52	20.36	0
		1	49	20.20	20.39	20.37	0
		25	0	19.93	20.16	20.26	0
		25	12	19.99	20.14	20.15	0
		25	25	20.02	20.19	20.11	0
		50	0	19.97	20.14	20.19	0
	64QAM	1	0	20.09	20.17	20.29	0
		1	25	20.13	20.30	20.33	0
		1	49	20.12	20.31	20.25	0
		25	0	19.94	20.17	20.26	0
		25	12	20.04	20.17	20.16	0
		25	25	20.05	20.14	20.11	0
		50	0	20.01	20.19	20.19	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 625	18 900	19 175	
				1 852.5 ㎒	1 880.0 ㎒	1 907.5 ㎒	
5 ㎒	QPSK	1	0	19.93	20.14	20.09	0
		1	12	20.00	20.16	20.14	0
		1	24	19.97	20.18	20.13	0
		12	0	19.98	20.13	20.18	0
		12	7	19.97	20.15	20.16	0
		12	13	20.01	20.12	20.13	0
		25	0	19.95	20.14	20.15	0
	16QAM	1	0	20.15	20.44	20.31	0
		1	12	20.31	20.49	20.45	0
		1	24	20.22	20.50	20.45	0
		12	0	19.98	20.17	20.16	0
		12	7	20.00	20.12	20.15	0
		12	13	20.00	20.15	20.11	0
		25	0	20.02	20.20	20.20	0
	64QAM	1	0	20.10	20.33	20.23	0
		1	12	20.17	20.39	20.32	0
		1	24	20.16	20.33	20.31	0
		12	0	19.98	20.16	20.24	0
		12	7	20.01	20.19	20.22	0
		12	13	20.01	20.19	20.14	0
		25	0	20.01	20.23	20.22	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 615	18 900	19 185	
				1 851.5 ㎒	1 880.0 ㎒	1 908.5 ㎒	
3 ㎒	QPSK	1	0	19.90	20.14	20.09	0
		1	8	19.91	20.14	20.07	0
		1	14	19.95	20.11	20.06	0
		8	0	19.94	20.12	20.10	0
		8	4	19.93	20.14	20.09	0
		8	7	19.95	20.13	20.08	0
		15	0	19.93	20.12	20.09	0
	16QAM	1	0	20.21	20.41	20.43	0
		1	8	20.15	20.48	20.40	0
		1	14	20.22	20.46	20.29	0
		8	0	20.05	20.21	20.21	0
		8	4	20.05	20.23	20.21	0
		8	7	20.03	20.22	20.22	0
		15	0	20.03	20.14	20.18	0
	64QAM	1	0	20.05	20.38	20.28	0
		1	8	20.07	20.28	20.36	0
		1	14	20.14	20.34	20.30	0
		8	0	20.00	20.21	20.21	0
		8	4	20.02	20.20	20.14	0
		8	7	19.98	20.17	20.19	0
		15	0	19.98	20.13	20.15	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 607	18 900	19 193	
				1 850.7 ㎒	1 880.0 ㎒	1 909.3 ㎒	
1.4 ㎒	QPSK	1	0	19.85	20.10	20.06	0
		1	3	19.88	20.15	20.05	0
		1	5	19.86	20.12	20.08	0
		3	0	19.94	20.08	20.08	0
		3	1	19.91	20.12	20.10	0
		3	3	19.92	20.09	20.09	0
		6	0	19.92	20.13	20.11	0
	16QAM	1	0	20.27	20.34	20.36	0
		1	3	20.22	20.42	20.40	0
		1	5	20.17	20.51	20.43	0
		3	0	19.96	20.10	20.20	0
		3	1	19.97	20.09	20.19	0
		3	3	19.96	20.14	20.11	0
		6	0	20.04	20.25	20.23	0
	64QAM	1	0	20.15	20.36	20.26	0
		1	3	20.16	20.27	20.30	0
		1	5	20.07	20.33	20.25	0
		3	0	20.07	20.30	20.26	0
		3	1	20.04	20.26	20.26	0
		3	3	20.11	20.23	20.24	0
		6	0	19.94	20.11	20.11	0

9.6.2 LTE Band 2(Hotspot)

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 700	18 900	19 100	
				1 860.0 ㎒	1 880.0 ㎒	1 900.0 ㎒	
20 ㎒	QPSK	1	0	17.74	17.90	17.98	0
		1	49	17.92	**18.13**	18.02	0
		1	99	17.92	17.98	18.04	0
		50	0	17.92	18.08	18.12	0
		50	24	17.95	**18.15**	18.09	0
		50	50	17.99	18.12	17.92	0
		100	0	17.91	18.11	17.99	0
	16QAM	1	0	18.08	18.08	18.15	0
		1	49	18.25	18.43	18.20	0
		1	99	18.09	18.23	18.24	0
		50	0	17.89	18.17	18.12	0
		50	24	18.01	18.10	18.10	0
		50	50	17.91	18.13	17.95	0
		100	0	17.94	18.11	17.98	0
	64QAM	1	0	17.88	18.04	18.05	0
		1	49	18.06	18.28	18.25	0
		1	99	18.08	18.12	18.11	0
		50	0	17.89	18.17	18.11	0
		50	24	18.01	18.09	18.08	0
		50	50	17.93	18.11	17.93	0
		100	0	17.93	18.09	17.99	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 675	18 900	19 125	
				1 857.5 ㎒	1 880.0 ㎒	1 902.5 ㎒	
15 ㎒	QPSK	1	0	17.80	17.91	17.89	0
		1	36	17.91	18.11	18.00	0
		1	74	17.87	18.02	17.95	0
		36	0	17.78	18.06	18.05	0
		36	18	17.91	18.05	18.01	0
		36	37	17.94	18.04	17.99	0
		75	0	17.92	18.08	18.06	0
	16QAM	1	0	18.10	18.23	18.16	0
		1	36	18.22	18.37	18.24	0
		1	74	18.18	18.22	18.20	0
		36	0	17.79	18.09	18.07	0
		36	18	17.92	18.07	18.03	0
		36	37	17.96	18.06	18.03	0
		75	0	17.94	18.10	18.05	0
	64QAM	1	0	17.95	18.19	18.13	0
		1	36	18.02	18.30	18.16	0
		1	74	18.09	18.16	18.21	0
		36	0	17.83	18.07	18.11	0
		36	18	17.89	18.05	18.07	0
		36	37	18.00	18.09	18.04	0
		75	0	17.93	18.09	18.04	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 650	18 900	19 150	
				1 855.0 ㎒	1 880.0 ㎒	1 905.0 ㎒	
10 ㎒	QPSK	1	0	17.88	18.00	17.98	0
		1	25	17.92	18.12	18.03	0
		1	49	17.93	18.11	18.01	0
		25	0	17.83	18.11	18.11	0
		25	12	17.91	18.05	18.02	0
		25	25	17.90	18.07	18.01	0
		50	0	17.93	18.12	18.13	0
	16QAM	1	0	18.15	18.22	18.19	0
		1	25	18.22	18.37	18.24	0
		1	49	18.13	18.39	18.27	0
		25	0	17.87	18.12	18.16	0
		25	12	17.95	18.07	18.10	0
		25	25	17.93	18.10	18.05	0
		50	0	17.95	18.07	18.13	0
	64QAM	1	0	18.00	18.21	18.20	0
		1	25	18.11	18.30	18.10	0
		1	49	18.05	18.28	18.17	0
		25	0	17.86	18.10	18.16	0
		25	12	17.94	18.07	18.07	0
		25	25	17.93	18.09	18.01	0
		50	0	17.95	18.08	18.12	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 625	18 900	19 175	
				1 852.5 ㎒	1 880.0 ㎒	1 907.5 ㎒	
5 ㎒	QPSK	1	0	17.89	18.05	18.03	0
		1	12	17.96	18.13	18.06	0
		1	24	17.92	18.12	18.10	0
		12	0	17.91	18.04	18.06	0
		12	7	17.91	18.10	18.06	0
		12	13	17.92	18.09	18.06	0
		25	0	17.90	18.11	18.10	0
	16QAM	1	0	18.10	18.30	18.27	0
		1	12	18.22	18.29	18.43	0
		1	24	18.21	18.44	18.26	0
		12	0	17.91	18.07	18.12	0
		12	7	17.93	18.10	18.07	0
		12	13	17.94	18.03	18.03	0
		25	0	17.90	18.13	18.13	0
	64QAM	1	0	18.08	18.18	18.24	0
		1	12	18.16	18.27	18.26	0
		1	24	18.02	18.32	18.23	0
		12	0	17.92	18.08	18.16	0
		12	7	17.92	18.12	18.07	0
		12	13	17.97	18.09	18.05	0
		25	0	17.94	18.14	18.10	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 615	18 900	19 185	
				1 851.5 ㎒	1 880.0 ㎒	1 908.5 ㎒	
3 ㎒	QPSK	1	0	17.85	18.07	17.99	0
		1	8	17.87	18.08	17.98	0
		1	14	17.91	18.08	18.00	0
		8	0	17.86	18.09	18.04	0
		8	4	17.86	18.08	18.06	0
		8	7	17.89	18.06	18.02	0
		15	0	17.89	18.08	18.04	0
	16QAM	1	0	18.05	18.34	18.35	0
		1	8	18.04	18.26	18.35	0
		1	14	18.09	18.40	18.35	0
		8	0	17.99	18.12	18.15	0
		8	4	18.00	18.13	18.16	0
		8	7	17.97	18.16	18.13	0
		15	0	17.94	18.11	18.09	0
	64QAM	1	0	18.04	18.19	18.26	0
		1	8	18.04	18.26	18.24	0
		1	14	18.11	18.25	18.20	0
		8	0	17.93	18.12	18.07	0
		8	4	17.94	18.10	18.11	0
		8	7	17.92	18.07	18.10	0
		15	0	17.94	18.07	18.07	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 607	18 900	19 193	
				1 850.7 ㎒	1 880.0 ㎒	1 909.3 ㎒	
1.4 ㎒	QPSK	1	0	17.89	18.08	17.98	0
		1	3	17.84	18.13	18.02	0
		1	5	17.84	18.07	18.00	0
		3	0	17.91	18.06	18.07	0
		3	1	17.90	18.06	18.02	0
		3	3	17.90	18.03	18.05	0
		6	0	17.85	18.07	18.07	0
	16QAM	1	0	18.07	18.34	18.30	0
		1	3	18.21	18.41	18.35	0
		1	5	18.17	18.24	18.18	0
		3	0	17.90	18.03	18.05	0
		3	1	17.97	18.06	18.00	0
		3	3	17.92	18.12	18.09	0
		6	0	18.00	18.18	18.18	0
	64QAM	1	0	18.07	18.38	18.16	0
		1	3	18.06	18.34	18.23	0
		1	5	17.98	18.24	18.21	0
		3	0	17.99	18.21	18.15	0
		3	1	18.00	18.19	18.22	0
		3	3	18.00	18.13	18.15	0
		6	0	17.92	18.08	18.07	0

9.6.3 LTE Band 41(Grip Sensor, Hotspot, Ear-jack)

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 ㎒	2 549.5 ㎒	2 593.0 ㎒	2 636.5 ㎒	2 680.0 ㎒	
20 ㎒	QPSK	1	0	20.41	20.46	20.55	20.43	**20.61**	0
		1	49	20.52	20.52	20.51	20.48	20.56	0
		1	99	20.43	20.42	20.44	20.37	20.41	0
		50	0	20.46	20.62	20.65	20.57	20.68	0
		50	24	20.58	20.65	20.63	20.55	20.66	0
		50	50	20.62	20.58	20.63	20.51	20.62	0
		100	0	20.58	20.59	20.56	20.56	20.60	0
	16QAM	1	0	20.56	20.59	20.67	20.50	20.59	0
		1	49	20.71	20.71	20.75	20.56	20.69	0
		1	99	20.58	20.54	20.54	20.42	20.50	0
		50	0	20.52	20.62	20.65	20.58	20.65	0
		50	24	20.63	20.64	20.63	20.51	20.66	0
		50	50	20.67	20.62	20.63	20.48	20.59	0
		100	0	20.61	20.64	20.63	20.52	20.61	0
	64QAM	1	0	20.14	20.21	20.24	20.12	20.18	0
		1	49	20.25	20.26	20.36	20.14	20.28	0
		1	99	20.20	20.15	20.28	20.02	20.06	0
		50	0	20.52	20.63	20.60	20.53	20.64	0
		50	24	20.62	20.65	20.61	20.52	20.61	0
		50	50	20.62	20.56	20.57	20.46	20.57	0
		100	0	20.61	20.57	20.57	20.49	20.60	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 ㎒	2 549.5 ㎒	2 593.0 ㎒	2 636.5 ㎒	2 680.0 ㎒	
15 ㎒	QPSK	1	0	20.53	20.53	20.52	20.38	20.43	0
		1	36	20.58	20.58	20.61	20.43	20.50	0
		1	74	20.55	20.56	20.52	20.37	20.40	0
		36	0	20.63	20.63	20.60	20.51	20.53	0
		36	18	20.63	20.65	20.57	20.51	20.53	0
		36	37	20.66	20.61	20.60	20.49	20.49	0
		75	0	20.69	20.67	20.63	20.54	20.55	0
	16QAM	1	0	20.66	20.65	20.67	20.52	20.55	0
		1	36	20.73	20.70	20.75	20.57	20.61	0
		1	74	20.64	20.66	20.62	20.48	20.50	0
		36	0	20.56	20.58	20.63	20.46	20.51	0
		36	18	20.60	20.62	20.60	20.46	20.46	0
		36	37	20.65	20.59	20.63	20.44	20.44	0
		75	0	20.66	20.68	20.65	20.53	20.55	0
	64QAM	1	0	20.22	20.25	20.28	20.12	20.13	0
		1	36	20.31	20.31	20.45	20.17	20.18	0
		1	74	20.25	20.22	20.23	20.07	20.11	0
		36	0	20.55	20.61	20.59	20.49	20.50	0
		36	18	20.42	20.61	20.61	20.45	20.47	0
		36	37	20.62	20.59	20.57	20.44	20.48	0
		75	0	20.54	20.59	20.62	20.50	20.51	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 ㎒	2 549.5 ㎒	2 593.0 ㎒	2 636.5 ㎒	2 680.0 ㎒	
10 ㎒	QPSK	1	0	20.58	20.61	20.54	20.44	20.45	0
		1	25	20.63	20.59	20.56	20.49	20.46	0
		1	49	20.56	20.59	20.52	20.42	20.48	0
		25	0	20.59	20.66	20.54	20.52	20.55	0
		25	12	20.65	20.64	20.57	20.50	20.53	0
		25	25	20.69	20.63	20.53	20.49	20.52	0
		50	0	20.65	20.68	20.59	20.54	20.58	0
	16QAM	1	0	20.72	20.73	20.66	20.55	20.59	0
		1	25	20.73	20.71	20.72	20.58	20.60	0
		1	49	20.69	20.68	20.65	20.54	20.56	0
		25	0	20.62	20.68	20.60	20.54	20.58	0
		25	12	20.64	20.63	20.62	20.53	20.55	0
		25	25	20.69	20.58	20.60	20.49	20.54	0
		50	0	20.66	20.63	20.61	20.55	20.58	0
	64QAM	1	0	20.30	20.30	20.29	20.15	20.17	0
		1	25	20.30	20.28	20.32	20.16	20.19	0
		1	49	20.28	20.27	20.26	20.11	20.17	0
		25	0	20.63	20.68	20.66	20.57	20.56	0
		25	12	20.55	20.66	20.67	20.55	20.56	0
		25	25	20.72	20.63	20.64	20.52	20.55	0
		50	0	20.54	20.65	20.59	20.47	20.53	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 ㎒	2 549.5 ㎒	2 593.0 ㎒	2 636.5 ㎒	2 680.0 ㎒	
5 ㎒	QPSK	1	0	20.52	20.56	20.67	20.43	20.46	0
		1	12	20.56	20.55	20.65	20.44	20.51	0
		1	24	20.53	20.56	20.61	20.39	20.46	0
		12	0	20.53	20.59	20.61	20.43	20.55	0
		12	7	20.57	20.57	20.59	20.41	20.51	0
		12	13	20.58	20.54	20.59	20.40	20.49	0
		25	0	20.57	20.58	20.57	20.45	20.53	0
	16QAM	1	0	20.49	20.69	20.76	20.56	20.60	0
		1	12	20.59	20.64	20.73	20.50	20.59	0
		1	24	20.69	20.71	20.72	20.51	20.59	0
		12	0	20.28	20.55	20.44	20.45	20.49	0
		12	7	20.32	20.54	20.58	20.38	20.45	0
		12	13	20.41	20.51	20.52	20.36	20.43	0
		25	0	20.40	20.63	20.72	20.50	20.57	0
	64QAM	1	0	20.28	20.31	20.56	20.16	20.19	0
		1	12	20.42	20.29	20.44	20.13	20.19	0
		1	24	20.32	20.32	20.33	20.14	20.18	0
		12	0	20.78	20.63	20.64	20.52	20.55	0
		12	7	20.51	20.63	20.63	20.51	20.49	0
		12	13	20.42	20.61	20.62	20.47	20.59	0
		25	0	20.66	20.66	20.68	20.52	20.54	0

9.6.4 LTE Band 66(Grip Sensor, Ear-jack)

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 072	132 322	132 572	
				1 720.0 ㎒	1 745.0 ㎒	1 770.0 ㎒	
20 ㎒	QPSK	1	0	20.30	20.27	20.23	0
		1	49	20.41	**20.50**	20.32	0
		1	99	20.41	20.36	20.24	0
		50	0	20.49	20.51	20.33	0
		50	24	20.47	**20.52**	20.32	0
		50	50	20.48	20.46	20.41	0
		100	0	20.40	20.45	20.35	0
	16QAM	1	0	20.58	20.48	20.55	0
		1	49	20.67	20.78	20.63	0
		1	99	20.74	20.60	20.56	0
		50	0	20.47	20.37	20.28	0
		50	24	20.49	20.42	20.34	0
		50	50	20.51	20.42	20.39	0
		100	0	20.46	20.38	20.31	0
	64QAM	1	0	20.46	20.40	20.42	0
		1	49	20.53	20.62	20.42	0
		1	99	20.55	20.62	20.40	0
		50	0	20.45	20.37	20.28	0
		50	24	20.50	20.48	20.32	0
		50	50	20.55	20.42	20.40	0
		100	0	20.51	20.38	20.36	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 047	132 322	132 597	
				1 717.5 ㎒	1 745.0 ㎒	1 772.5 ㎒	
15 ㎒	QPSK	1	0	20.32	20.29	20.21	0
		1	36	20.40	20.40	20.24	0
		1	74	20.38	20.46	20.26	0
		36	0	20.40	20.32	20.26	0
		36	18	20.39	20.40	20.25	0
		36	37	20.44	20.39	20.26	0
		75	0	20.45	20.42	20.32	0
	16QAM	1	0	20.67	20.64	20.49	0
		1	36	20.73	20.77	20.61	0
		1	74	20.78	20.70	20.58	0
		36	0	20.47	20.36	20.26	0
		36	18	20.44	20.37	20.29	0
		36	37	20.46	20.45	20.35	0
		75	0	20.47	20.44	20.28	0
	64QAM	1	0	20.52	20.50	20.45	0
		1	36	20.51	20.63	20.50	0
		1	74	20.52	20.63	20.46	0
		36	0	20.46	20.37	20.25	0
		36	18	20.48	20.47	20.36	0
		36	37	20.43	20.44	20.35	0
		75	0	20.45	20.44	20.29	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 022	132 322	132 622	
				1 715.0 ㎒	1 745.0 ㎒	1 775.0 ㎒	
10 ㎒	QPSK	1	0	20.45	20.38	20.27	0
		1	25	20.39	20.41	20.26	0
		1	49	20.40	20.45	20.28	0
		25	0	20.48	20.38	20.26	0
		25	12	20.41	20.42	20.28	0
		25	25	20.44	20.41	20.27	0
		50	0	20.43	20.43	20.30	0
	16QAM	1	0	20.69	20.74	20.58	0
		1	25	20.76	20.65	20.53	0
		1	49	20.64	20.74	20.54	0
		25	0	20.49	20.42	20.26	0
		25	12	20.48	20.48	20.35	0
		25	25	20.48	20.50	20.38	0
		50	0	20.44	20.45	20.31	0
	64QAM	1	0	20.63	20.55	20.49	0
		1	25	20.56	20.51	20.47	0
		1	49	20.59	20.64	20.49	0
		25	0	20.51	20.41	20.31	0
		25	12	20.42	20.47	20.34	0
		25	25	20.49	20.50	20.35	0
		50	0	20.43	20.46	20.31	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 997	132 322	132 647	
				1 712.5 ㎒	1 745.0 ㎒	1 777.5 ㎒	
5 ㎒	QPSK	1	0	20.44	20.42	20.25	0
		1	12	20.45	20.45	20.33	0
		1	24	20.40	20.48	20.32	0
		12	0	20.48	20.40	20.32	0
		12	7	20.43	20.43	20.27	0
		12	13	20.42	20.40	20.29	0
		25	0	20.45	20.40	20.26	0
	16QAM	1	0	20.80	20.77	20.54	0
		1	12	20.73	20.77	20.59	0
		1	24	20.73	20.72	20.66	0
		12	0	20.51	20.44	20.28	0
		12	7	20.48	20.43	20.32	0
		12	13	20.43	20.41	20.26	0
		25	0	20.51	20.45	20.33	0
	64QAM	1	0	20.67	20.61	20.50	0
		1	12	20.60	20.59	20.49	0
		1	24	20.56	20.58	20.51	0
		12	0	20.57	20.44	20.30	0
		12	7	20.53	20.47	20.32	0
		12	13	20.45	20.41	20.32	0
		25	0	20.49	20.45	20.29	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 987	132 322	132 657	
				1 711.5 ㎒	1 745.0 ㎒	1 778.5 ㎒	
3 ㎒	QPSK	1	0	20.39	20.36	20.22	0
		1	8	20.41	20.41	20.24	0
		1	14	20.41	20.42	20.26	0
		8	0	20.43	20.39	20.21	0
		8	4	20.45	20.36	20.28	0
		8	7	20.38	20.39	20.26	0
		15	0	20.42	20.38	20.25	0
	16QAM	1	0	20.74	20.63	20.55	0
		1	8	20.73	20.61	20.56	0
		1	14	20.60	20.67	20.57	0
		8	0	20.54	20.46	20.34	0
		8	4	20.55	20.49	20.39	0
		8	7	20.55	20.50	20.39	0
		15	0	20.50	20.46	20.30	0
	64QAM	1	0	20.53	20.58	20.51	0
		1	8	20.62	20.65	20.49	0
		1	14	20.60	20.60	20.44	0
		8	0	20.52	20.42	20.31	0
		8	4	20.48	20.47	20.33	0
		8	7	20.51	20.45	20.33	0
		15	0	20.48	20.40	20.29	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 979	132 322	132 665	
				1 710.7 ㎒	1 745.0 ㎒	1 779.3 ㎒	
1.4 ㎒	QPSK	1	0	20.39	20.37	20.25	0
		1	3	20.40	20.40	20.23	0
		1	5	20.40	20.39	20.24	0
		3	0	20.44	20.39	20.27	0
		3	1	20.43	20.38	20.27	0
		3	3	20.44	20.40	20.29	0
		6	0	20.46	20.38	20.27	0
	16QAM	1	0	20.75	20.77	20.48	0
		1	3	20.72	20.74	20.52	0
		1	5	20.80	20.78	20.58	0
		3	0	20.52	20.44	20.36	0
		3	1	20.38	20.44	20.31	0
		3	3	20.52	20.42	20.33	0
		6	0	20.57	20.51	20.41	0
	64QAM	1	0	20.66	20.56	20.49	0
		1	3	20.59	20.58	20.48	0
		1	5	20.63	20.57	20.39	0
		3	0	20.57	20.52	20.38	0
		3	1	20.53	20.50	20.44	0
		3	3	20.57	20.51	20.44	0
		6	0	20.43	20.39	20.35	0

9.6.5 LTE Band 66(Hotspot)

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 072	132 322	132 572	
				1 720.0 ㎒	1 745.0 ㎒	1 770.0 ㎒	
20 ㎒	QPSK	1	0	18.28	18.32	18.28	0
		1	49	18.45	**18.53**	18.38	0
		1	99	18.43	18.42	18.25	0
		50	0	18.42	18.41	18.23	0
		50	24	18.36	**18.50**	18.33	0
		50	50	18.41	18.41	18.34	0
		100	0	18.35	18.39	18.30	0
	16QAM	1	0	18.51	18.54	18.53	0
		1	49	18.66	18.70	18.48	0
		1	99	18.71	18.53	18.39	0
		50	0	18.44	18.32	18.23	0
		50	24	18.39	18.37	18.27	0
		50	50	18.44	18.35	18.31	0
		100	0	18.42	18.26	18.28	0
	64QAM	1	0	18.42	18.43	18.33	0
		1	49	18.53	18.55	18.39	0
		1	99	18.54	18.50	18.32	0
		50	0	18.38	18.33	18.22	0
		50	24	18.41	18.41	18.29	0
		50	50	18.43	18.33	18.31	0
		100	0	18.43	18.30	18.22	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 047	132 322	132 597	
				1 717.5 ㎒	1 745.0 ㎒	1 772.5 ㎒	
15 ㎒	QPSK	1	0	18.34	18.32	18.26	0
		1	36	18.45	18.46	18.32	0
		1	74	18.44	18.46	18.28	0
		36	0	18.45	18.38	18.29	0
		36	18	18.40	18.44	18.30	0
		36	37	18.47	18.42	18.34	0
		75	0	18.50	18.46	18.32	0
	16QAM	1	0	18.50	18.47	18.53	0
		1	36	18.68	18.71	18.55	0
		1	74	18.68	18.67	18.50	0
		36	0	18.37	18.33	18.22	0
		36	18	18.39	18.38	18.24	0
		36	37	18.40	18.33	18.24	0
		75	0	18.36	18.38	18.23	0
	64QAM	1	0	18.42	18.48	18.46	0
		1	36	18.48	18.58	18.45	0
		1	74	18.54	18.50	18.38	0
		36	0	18.39	18.34	18.24	0
		36	18	18.36	18.35	18.23	0
		36	37	18.43	18.42	18.27	0
		75	0	18.39	18.37	18.24	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 022	132 322	132 622	
				1 715.0 ㎒	1 745.0 ㎒	1 775.0 ㎒	
10 ㎒	QPSK	1	0	18.43	18.39	18.29	0
		1	25	18.47	18.45	18.32	0
		1	49	18.43	18.49	18.31	0
		25	0	18.49	18.43	18.30	0
		25	12	18.45	18.45	18.35	0
		25	25	18.41	18.46	18.34	0
		50	0	18.49	18.47	18.36	0
	16QAM	1	0	18.67	18.57	18.50	0
		1	25	18.62	18.57	18.45	0
		1	49	18.68	18.74	18.46	0
		25	0	18.45	18.34	18.17	0
		25	12	18.40	18.37	18.22	0
		25	25	18.42	18.41	18.28	0
		50	0	18.39	18.37	18.25	0
	64QAM	1	0	18.46	18.50	18.39	0
		1	25	18.53	18.52	18.32	0
		1	49	18.48	18.54	18.41	0
		25	0	18.45	18.36	18.23	0
		25	12	18.40	18.38	18.26	0
		25	25	18.42	18.40	18.27	0
		50	0	18.41	18.38	18.22	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 997	132 322	132 647	
				1 712.5 ㎒	1 745.0 ㎒	1 777.5 ㎒	
5 ㎒	QPSK	1	0	18.45	18.45	18.32	0
		1	12	18.51	18.48	18.38	0
		1	24	18.42	18.46	18.35	0
		12	0	18.52	18.44	18.35	0
		12	7	18.48	18.46	18.32	0
		12	13	18.44	18.42	18.31	0
		25	0	18.45	18.44	18.30	0
	16QAM	1	0	18.61	18.67	18.49	0
		1	12	18.75	18.68	18.52	0
		1	24	18.70	18.70	18.55	0
		12	0	18.42	18.37	18.19	0
		12	7	18.40	18.36	18.21	0
		12	13	18.31	18.34	18.23	0
		25	0	18.44	18.37	18.25	0
	64QAM	1	0	18.57	18.47	18.32	0
		1	12	18.57	18.54	18.37	0
		1	24	18.46	18.49	18.51	0
		12	0	18.41	18.37	18.28	0
		12	7	18.42	18.38	18.25	0
		12	13	18.38	18.39	18.27	0
		25	0	18.43	18.36	18.24	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 987	132 322	132 657	
				1 711.5 ㎒	1 745.0 ㎒	1 778.5 ㎒	
3 ㎒	QPSK	1	0	18.47	18.42	18.25	0
		1	8	18.46	18.39	18.27	0
		1	14	18.43	18.39	18.27	0
		8	0	18.45	18.43	18.28	0
		8	4	18.47	18.41	18.30	0
		8	7	18.45	18.41	18.33	0
		15	0	18.43	18.40	18.28	0
	16QAM	1	0	18.57	18.60	18.53	0
		1	8	18.58	18.50	18.48	0
		1	14	18.67	18.68	18.52	0
		8	0	18.39	18.37	18.29	0
		8	4	18.43	18.38	18.32	0
		8	7	18.47	18.37	18.29	0
		15	0	18.39	18.39	18.18	0
	64QAM	1	0	18.61	18.53	18.35	0
		1	8	18.53	18.53	18.38	0
		1	14	18.46	18.58	18.39	0
		8	0	18.41	18.37	18.28	0
		8	4	18.42	18.37	18.27	0
		8	7	18.45	18.37	18.26	0
		15	0	18.37	18.34	18.18	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 979	132 322	132 665	
				1 710.7 ㎒	1 745.0 ㎒	1 779.3 ㎒	
1.4 ㎒	QPSK	1	0	18.41	18.46	18.27	0
		1	3	18.43	18.46	18.32	0
		1	5	18.40	18.43	18.27	0
		3	0	18.48	18.44	18.33	0
		3	1	18.44	18.38	18.31	0
		3	3	18.44	18.42	18.31	0
		6	0	18.47	18.44	18.32	0
	16QAM	1	0	18.52	18.65	18.42	0
		1	3	18.74	18.64	18.46	0
		1	5	18.60	18.64	18.45	0
		3	0	18.36	18.38	18.20	0
		3	1	18.36	18.33	18.23	0
		3	3	18.40	18.30	18.26	0
		6	0	18.44	18.42	18.35	0
	64QAM	1	0	18.53	18.51	18.35	0
		1	3	18.47	18.56	18.42	0
		1	5	18.51	18.54	18.39	0
		3	0	18.47	18.41	18.33	0
		3	1	18.48	18.44	18.33	0
		3	3	18.49	18.42	18.30	0
		6	0	18.37	18.34	18.23	0

9.7 WLAN Average Conducted Output Power

Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02:

- Power measurements were performed for the transmission mode configuration with the highest maximum output power specified for production units.
- For transmission modes with the same maximum output power specification, powers were measured for the largest channel bandwidth, lowest order modulation and lowest data rate.
- For transmission modes with identical maximum specified output power, channel bandwidth, modulation and data rates, power measurements were required for all identical configurations.
- For each transmission mode configuration, powers were measured for the highest and lowest channels; and at the mid-band channel(s) when there were at least 3 channels supported. For configurations with multiple mid-band channels, due to an even number of channels, both channels were measured.

Power Measurement Setup

9.7.1 WLAN Average Conducted Output Power-SISO

Band	Freq. [㎒]	Channel	Ant.1 (dBm)			Ant.2 (dBm)		
			802.11b	802.11g	802.11n	802.11b	802.11g	802.11n
WLAN 2.4 ㎓	2 412.0	1	**18.19**	Not required		18.12	Not required	
	2 437.0	6	17.88			**18.50**		
	2 462.0	11	17.43			17.67		
	2 467.0	12	5.97			5.34		
	2 472.0	13	2.60			2.65		
Band	**Freq. [㎒]**	**Channel**	**802.11a**	**802.11n**	**802.11ac**	**802.11a**	**802.11n**	**802.11ac**
NII (20 ㎒)	5 180.0	36	17.16	Not required		17.73	Not required	
	5 200.0	40	17.06			17.13		
	5 220.0	44	17.40			16.99		
	5 240.0	48	17.72			16.88		
	5 260.0	52	16.78			17.09		
	5 280.0	56	17.05			17.09		
	5 300.0	60	17.18			16.98		
	5 320.0	64	**17.49**			**17.01**		
	5 500.0	100	**17.93**			**16.71**		
	5 600.0	120	17.73			16.68		
	5 620.0	124	17.72			16.66		
	5 720.0	144	17.53			16.95		
	5 745.0	149	16.70			**17.05**		
	5 785.0	157	**16.69**			17.16		
	5 825.0	165	16.73			17.18		
Band	**Freq. [㎒]**	**Channel**	**802.11n**		**802.11ac**	**802.11n**		**802.11ac**
NII (40 ㎒)	5 190.0	38	Not required			Not required		
	5 230.0	46						
	5 270.0	54						
	5 310.0	62						
	5 510.0	102						
	5 590.0	118						
	5 630.0	126						
	5 710.0	142						
	5 755.0	151						
	5 795.0	159						
Band	**Freq. [㎒]**	**Channel**	**802.11ac**			**802.11ac**		
NII (80 ㎒)	5 210.0	42	Not required			Not required		
	5 290.0	58						
	5 530.0	106						
	5 610.0	122						
	5 690.0	138						
	5 775.0	155						

9.7.2 WLAN Average Conducted Output Power-MIMO

Band	Freq. [㎒]	Channel	Mode		
			802.11b	802.11g	802.11n
WLAN 2.4 ㎓	2 412.0	1	20.96	Not required	
	2 437.0	6	**20.94**		
	2 462.0	11	19.92		
	2 467.0	12	8.73		
	2 472.0	13	5.55		

Band	Freq. [㎒]	Channel	Mode		
			802.11a	802.11n	802.11ac
NII (20 ㎒)	5 180.0	36	19.81	Not required	
	5 200.0	40	19.43		
	5 220.0	44	19.57		
	5 240.0	48	19.75		
	5 260.0	52	19.40		
	5 280.0	56	19.48		
	5 300.0	60	19.49		
	5 320.0	64	**19.60**		
	5 500.0	100	**19.85**		
	5 600.0	120	19.63		
	5 620.0	124	19.65		
	5 720.0	144	19.59		
	5 745.0	149	**19.29**		
	5 785.0	157	19.36		
	5 825.0	165	19.46		

Band	Freq. [㎒]	Channel	Mode	
			802.11n	802.11ac
NII (40 ㎒)	5 190.0	38	Not required	
	5 230.0	46		
	5 270.0	54		
	5 310.0	62		
	5 510.0	102		
	5 590.0	118		
	5 630.0	126		
	5 710.0	142		
	5 755.0	151		
	5 795.0	159		

Band	Freq. [㎒]	Channel	Mode
			802.11ac
NII (80 ㎒)	5 210.0	42	Not required
	5 290.0	58	
	5 530.0	106	
	5 610.0	122	
	5 690.0	138	
	5 775.0	155	

9.8 WLAN Reduced Average Conducted Output Power

9.8.1 WLAN Reduced Average Conducted Output Power(RCV)-SISO

Band	Freq. [MHz]	Channel	Ant.1 (dBm)			Ant.2 (dBm)		
			802.11b	802.11g	802.11n	802.11b	802.11g	802.11n
WLAN 2.4 GHz	2 412.0	1	10.35	Not required		**10.86**	Not required	
	2 437.0	6	10.16			10.73		
	2 462.0	11	**10.75**			10.67		
	2 467.0	12	5.83			5.41		
	2 472.0	13	2.49			2.68		
Band	**Freq. [MHz]**	**Channel**	**802.11a**	**802.11n**	**802.11ac**	**802.11a**	**802.11n**	**802.11ac**
NII (20 MHz)	5 180.0	36	Not required			Not required		
	5 200.0	40						
	5 220.0	44						
	5 240.0	48						
	5 260.0	52						
	5 280.0	56						
	5 300.0	60						
	5 320.0	64						
	5 500.0	100						
	5 600.0	120						
	5 620.0	124						
	5 720.0	144						
	5 745.0	149						
	5 785.0	157						
	5 825.0	165						
Band	**Freq. [MHz]**	**Channel**	**802.11n**		**802.11ac**	**802.11n**		**802.11ac**
NII (40 MHz)	5 190.0	38	Not required			Not required		
	5 230.0	46						
	5 270.0	54						
	5 310.0	62						
	5 510.0	102						
	5 590.0	118						
	5 630.0	126						
	5 710.0	142						
	5 755.0	151						
	5 795.0	159						
Band	**Freq. [MHz]**	**Channel**	**802.11ac**			**802.11ac**		
NII (80 MHz)	5 210.0	42	9.36			9.07		
	5 290.0	58	**8.89**			**8.99**		
	5 530.0	106	9.88			**9.80**		
	5 610.0	122	9.73			9.63		
	5 690.0	138	**10.23**			9.48		
	5 775.0	155	**9.27**			**9.52**		

9.8.2 WLAN Reduced Average Conducted Output Power(RCV)-MIMO

Band	Freq. [㎒]	Channel	Mode		
			802.11b	802.11g	802.11n
WLAN 2.4 ㎓	2 412.0	1	13.62	Not required	
	2 437.0	6	13.46		
	2 462.0	11	**13.72**		
	2 467.0	12	8.76		
	2 472.0	13	5.63		

Band	Freq. [㎒]	Channel	Mode		
			802.11a	802.11n	802.11ac
NII (20 ㎒)	5 180.0	36	Not required		
	5 200.0	40			
	5 220.0	44			
	5 240.0	48			
	5 260.0	52			
	5 280.0	56			
	5 300.0	60			
	5 320.0	64			
	5 500.0	100			
	5 600.0	120			
	5 620.0	124			
	5 720.0	144			
	5 745.0	149			
	5 785.0	157			
	5 825.0	165			

Band	Freq. [㎒]	Channel	Mode	
			802.11n	802.11ac
NII (40 ㎒)	5 190.0	38	Not required	
	5 230.0	46		
	5 270.0	54		
	5 310.0	62		
	5 510.0	102		
	5 590.0	118		
	5 630.0	126		
	5 710.0	142		
	5 755.0	151		
	5 795.0	159		

Band	Freq. [㎒]	Channel	Mode
			802.11ac
NII (80 ㎒)	5 210.0	42	12.64
	5 290.0	58	**11.85**
	5 530.0	106	12.39
	5 610.0	122	12.19
	5 690.0	138	**12.79**
	5 775.0	155	**12.38**

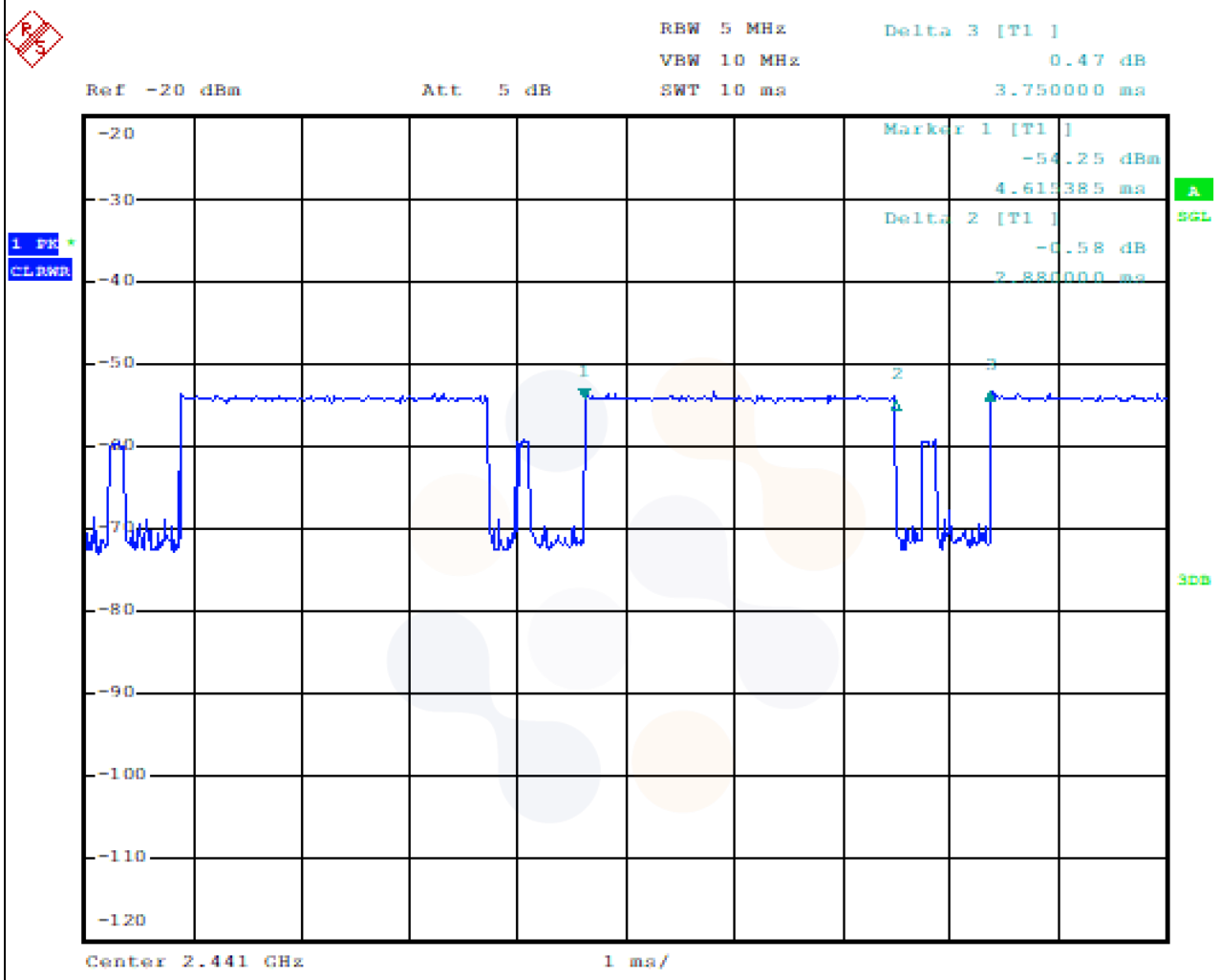
9.9 Bluetooth Average Conducted Output Power

Mode	Freq. [㎒]	Channel	Conducted Powers (dBm)
BDR_DH5 (1 Mbps)	2 402.0	0	12.59
	2 441.0	39	**12.80**
	2 480.0	78	12.49
EDR_3-DH5 (3 Mbps)	2 402.0	0	9.99
	2 441.0	39	10.05
	2 480.0	78	9.71
LE (1 Mbps 37)	2 402.0	0	7.71
	2 440.0	19	9.09
	2 480.0	39	8.11
LE (1 Mbps 255)	2 402.0	0	7.77
	2 440.0	19	9.19
	2 480.0	39	8.10
LE (2 Mbps 37)	2 402.0	0	7.84
	2 440.0	19	9.28
	2 480.0	39	8.21
LE (2 Mbps 255)	2 402.0	0	7.84
	2 440.0	19	9.27
	2 480.0	39	8.20

9.10 Wireless Band Duty Cycle

Wireless Bands		Frequency Bands		Mode	Duty Cycle (%)
GSM		850 1900		Voice, GPRS(GMSK), EGPRS(8PSK)	Voice: 12.5
					(E)GPRS 1Tx : 12.5
					(E)GPRS 2Tx : 25.0
					(E)GPRS 3Tx : 37.5
					(E)GPRS 4Tx : 50.0
WCDMA		Band II		RMC, AMR, HSDPA, HSUPA,DC-HSDPA	100
		Band IV			
		Band V			
LTE		FDD Band 2		QPSK, 16QAM, 64QAM	100
		FDD Band 5			
		FDD Band 12			
		FDD Band 26			
		FDD Band 66			
		TDD Band 41			63.33
WLAN	Head	2.4 ㎓	Sub 5	802.11b	98.2
			Sub 8		99.0
			MIMO		98.8
		NII		802.11ac(VHT80)	88.0
	Body-Worn	2.4 ㎓	Sub 5	802.11b	99.0
			Sub 8		
			MIMO		98.8
		U-NII-2A U-NII-2C	Sub 4	802.11a	93.4
			Sub 5		
			MIMO		93.5
		U-NII-3			97.5
	Hotspot	2.4 ㎓	Sub 5	802.11b	99.0
			Sub 8		
			MIMO		98.8
		U-NII-3	Sub 4	802.11a	93.4
			Sub 5		
			MIMO		97.5
	Phablet	NII	Sub 4	802.11a	93.4
			Sub 5		
			MIMO		93.5
Bluetooth					76.8

Wireless Bands	Frequency Bands		Mode		Duty Cycle
	Mode	Packet	On Time (ms)	On-Off Time (ms)	Duty Cycle (%)
Bluetooth	BDR(GFSK)	DH5	2.88	3.75	76.8



10. System Verification

10.1 Tissue Verification

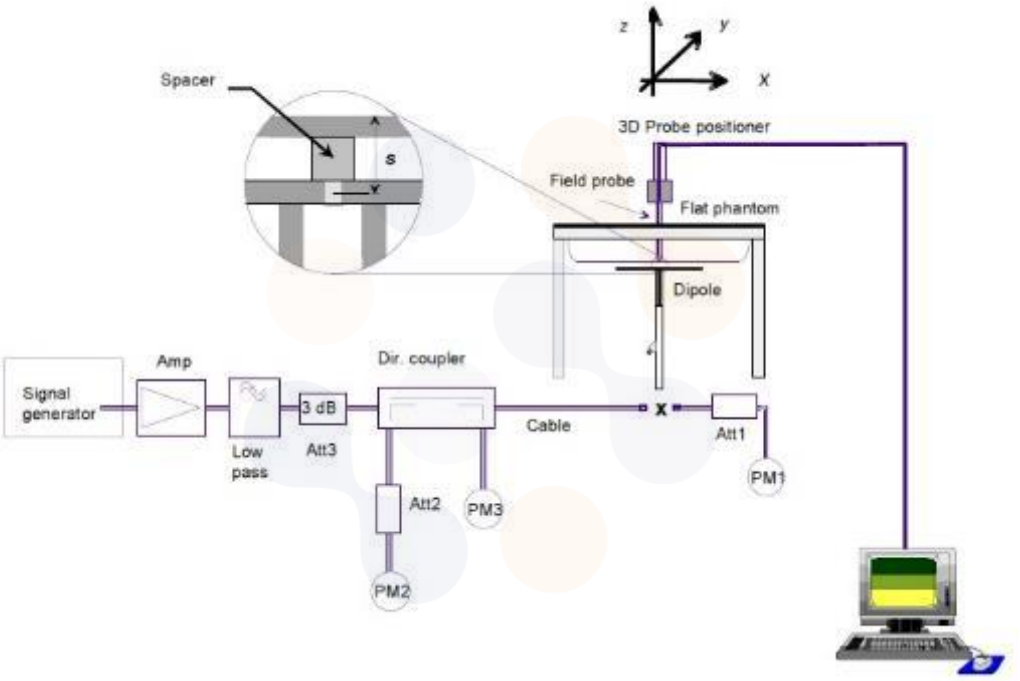
The dielectric properties for this Tissue Simulant Liquids were measured by using the SPEAG Model DAK3.5 Dielectric Probe in conjunction with Agilent E5071B Network Analyzer (300 ㎑ – 8 500 ㎒). The Conductivity (σ) and Permittivity (ρ) are listed in Table 1.For the SAR measurement given in this report. The temperature variation of the Tissue Simulant Liquids was (22 ± 2) ℃.

Freq. (㎒)	Limit/Measured		Permittivity (ρ)	Conductivity (σ)	Temp. (°C)
13.0	Recommended Limit		55.00 ± 5 % (52.25 ~ 57.75)	0.75 ± 5 % (0.71 ~ 0.79)	22 ± 2
	Measured	2022-12-27	55.00	0.76	20.81
750.0	Recommended Limit		41.90 ± 5 % (39.81 ~ 44.00)	0.89 ± 5 % (0.85 ~ 0.93)	22 ± 2
	Measured	2023-01-06	40.94	0.89	20.91
900.0	Recommended Limit		41.50 ± 5 % (39.43 ~ 43.58)	0.92 ± 5 % (0.87 ~ 0.97)	22 ± 2
	Measured	2023-01-06	40.63	0.94	20.91
	Measured	2023-01-11	40.65	0.96	20.87
1 750.0	Recommended Limit		40.07 ± 5 % (38.07 ~ 42.07)	1.37 ± 5 % (1.30 ~ 1.44)	22 ± 2
	Measured	2023-01-04	38.64	1.39	20.82
		2023-01-09	38.27	1.34	20.84
1 900.0	Recommended Limit		40.00 ± 5 % (38.00 ~ 42.00)	1.40 ± 5 % (1.33 ~ 1.47)	22 ± 2
	Measured	2023-01-05	40.01	1.37	21.03
		2023-01-10	38.40	1.46	20.68
2 450.0	Recommended Limit		39.20 ± 5 % (37.24 ~ 41.16)	1.80 ± 5 % (1.71 ~ 1.89)	22 ± 2
	Measured	2023-01-02	39.00	1.85	20.20
		2023-01-03	39.38	1.86	20.10
2 600.0	Recommended Limit		39.00 ± 5 % (37.05 ~ 40.95)	1.96 ± 5 % (1.86 ~ 2.06)	22 ± 2
	Measured	2022-12-17	37.76	1.94	20.94
5 250.0	Recommended Limit		35.90 ± 5 % (34.15 ~ 37.75)	4.71 ± 5 % (4.47 ~ 4.95)	22 ± 2
	Measured	2023-01-04	35.24	4.71	21.40
5 600.0	Recommended Limit		35.50 ± 5 % (33.73~37.28)	5.07 ± 5 % (4.82~5.32)	22 ± 2
	Measured	2023-01-04	34.58	5.11	21.40
5 800.0	Recommended Limit		35.30 ± 5 % (33.54~37.07)	5.27 ± 5 % (5.01~5.53)	22 ± 2
	Measured	2023-01-04	34.13	5.34	21.40

<Table 1. Measurement result Tissue electric parameters>

10.2 Test System Verification

The microwave circuit arrangement for system verification is sketched below picture.
The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within ± 10% from the t arget SAR values. The tests were conducted on the same days as the measurement of the EUT. The obtained results from the system accuracy verification are displayed in the Table 2. During the tests, the ambient temperature of the laboratory was in the range (22 ± 2) ℃, th e relative humidity was in the range(50 ± 20)% and the liquid depth Above the ear/grid refer ence points was above 15 ㎝ in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.



Verification Kit	Probe S/N	Frequency (㎒)	Tissue Type	Limit/Measured (Normalized to 1 W)		
CLA13 SN: 1019	EX3DV4 SN: 3928	13.0	HSL	Recommended Limit 10g (Normalized)		0.356 ± 10 % (0.32~0.39)
				Measured	2022-12-27	0.38
D750V3 SN: 1183	EX3DV4 SN: 7770	750.0	HSL	Recommended Limit 1g (Normalized)		8.36 ± 10 % (7.52~9.20)
				Measured	2023-01-06	8.80
D900V2 SN: 1d138	EX3DV4 SN: 7770	900.0	HSL	Recommended Limit 1g (Normalized)		10.10 ±10 % (9.09~11.11)
				Measured	2023-01-06	10.56
				Measured	2023-01-11	10.76
D1750V2 SN: 1072	EX3DV4 SN: 3928	1 750.0	HSL	Recommended Limit 1g (Normalized)		36.50 ± 10 % (32.85~40.15)
				Measured	2023-01-04	37.52
				Recommended Limit 10g (Normalized)		19.30 ± 10 % (17.37~21.23)
				Measured	2023-01-04	20.16
D1750V2 SN: 1072	EX3DV4 SN: 7770			Recommended Limit 1g (Normalized)		36.50 ± 10 % (32.85~40.15)
				Measured	2023-01-09	35.48
				Recommended Limit 10g (Normalized)		19.30 ± 10 % (17.37~21.23)
				Measured	2023-01-09	18.76
D1900V2 SN: 5d160	EX3DV4 SN: 3928	1 900.0	HSL	Recommended Limit 1g (Normalized)		39.60 ± 10 % (35.64~43.56)
				Measured	2023-01-05	38.56
				Recommended Limit 10g (Normalized)		20.80 ± 10 % (18.72~22.88)
				Measured	2023-01-05	20.52
D1900V2 SN: 5d160	EX3DV4 SN: 7770			Recommended Limit 1g (Normalized)		39.60 ± 10 % (35.64~43.56)
				Measured	2023-01-10	40.80
				Recommended Limit 10g (Normalized)		20.80 ± 10 % (18.72~22.88)
				Measured	2023-01-10	21.32
D2450V2 SN: 895	EX3DV4 SN: 3697	2 450.0	HSL	Recommended Limit 1g (Normalized)		52.40 ± 10 % (47.16 ~ 57.64)
				Measured	2023-01-02	52.20
					2023-01-03	52.00
D2600V2 SN: 1050	EX3DV4 SN: 3928	2 600.0	HSL	Recommended Limit 1g (Normalized)		56.70 ± 10 % (51.03 ~ 62.37)
				Measured	2022-12-17	54.70

Verification Kit	Probe S/N	Frequency (㎒)	Tissue Type	Limit/Measured (Normalized to 1 W)		
D5GHzV2 SN: 1134	EX3DV4 SN: 3697	5 250.0	HSL	Recommended Limit 1g (Normalized)		81.40 ± 10 % (73.26~89.54)
				Measured	2023-01-04	83.10
				Recommended Limit 10g (Normalized)		23.20 ± 10 % (20.88~25.52)
				Measured	2023-01-04	23.80
		5 600.0	HSL	Recommended Limit 1g (Normalized)		84.50 ± 10 % (76.05~92.95)
				Measured	2023-01-04	85.40
				Recommended Limit 10g (Normalized)		23.90 ± 10 % (21.51~26.29)
				Measured	2023-01-04	24.50
		5 800.0	HSL	Recommended Limit 1g (Normalized)		82.60 ± 10 % (74.34~90.86)
				Measured	2023-01-04	81.50

<Table 2. System Verification Result>

11. SAR Spot check Results

11.1 Standalone Head SAR Test Results

GSM 850 Band											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
Voice	Right Cheek	0	836.6	34.80	0.258						
	Right Tilt	0	836.6	34.80	0.121						
	Left Cheek	0	836.6	34.80	0.176						
	Left Tilt	0	836.6	34.80	0.128						
GPRS 2Tx	Right Cheek	0	836.6	33.80	**0.370**	32.12	1.472	0.241	**0.355**	-4.1	1
	Right Tilt	0	836.6	33.80	0.209						
	Left Cheek	0	836.6	33.80	0.294						
	Left Tilt	0	836.6	33.80	0.247						

GSM 1900 Band											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
Voice	Right Cheek	0	1 880.0	31.80	0.050						
	Right Tilt	0	1 880.0	31.80	0.037						
	Left Cheek	0	1 880.0	31.80	0.030						
	Left Tilt	0	1 880.0	31.80	0.031						
GPRS 2Tx	Right Cheek	0	1 880.0	30.80	**0.087**	28.99	1.517	0.057	**0.086**	-0.6	2
	Right Tilt	0	1 880.0	30.80	0.056						
	Left Cheek	0	1 880.0	30.80	0.080						
	Left Tilt	0	1 880.0	30.80	0.051						

WCDMA Band II											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
RMC	Right Cheek	0	1 880.0	24.60	**0.088**	23.39	1.321	0.079	**0.104**	18.6	3
	Right Tilt	0	1 880.0	24.60	0.055						
	Left Cheek	0	1 880.0	24.60	0.073						
	Left Tilt	0	1 880.0	24.60	0.043						

WCDMA Band IV											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
RMC	Right Cheek	0	1 732.4	24.60	**0.085**	23.34	1.337	0.075	**0.100**	18.0%	4
	Right Tilt	0	1 732.4	24.60	0.050						
	Left Cheek	0	1 732.4	24.60	0.062						
	Left Tilt	0	1 732.4	24.60	0.052						

WCDMA Band V											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
RMC	Right Cheek	0	836.6	25.50	**0.248**	24.08	1.387	0.139	**0.193**	-22.3	5
	Right Tilt	0	836.6	25.50	0.132						
	Left Cheek	0	836.6	25.50	0.192						
	Left Tilt	0	836.6	25.50	0.120						

LTE Band 2											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 20M 1RB 49Offset	Right Cheek	0	1 880.0	24.30	**0.071**	23.62	1.169	0.068	**0.079**	12.0	6
QPSK 20M 50RB 24Offset	Right Cheek	0	1 880.0	23.30	0.060						
QPSK 20M 1RB 49Offset	Right Tilt	0	1 880.0	24.30	0.036						
QPSK 20M 50RB 24Offset	Right Tilt	0	1 880.0	23.30	0.026						
QPSK 20M 1RB 49Offset	Left Cheek	0	1 880.0	24.30	0.060						
QPSK 20M 50RB 24Offset	Left Cheek	0	1 880.0	23.30	0.044						
QPSK 20M 1RB 49Offset	Left Tilt	0	1 880.0	24.30	0.040						
QPSK 20M 50RB 24Offset	Left Tilt	0	1 880.0	23.30	0.033						

LTE Band 5											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 10M 1RB 25Offset	Right Cheek	0	836.5	25.80	**0.278**	24.64	1.306	0.169	**0.221**	-20.6	7
QPSK 10M 25RB 0Offset	Right Cheek	0	836.5	24.80	0.208						
QPSK 10M 1RB 25Offset	Right Tilt	0	836.5	25.80	0.127						
QPSK 10M 25RB 0Offset	Right Tilt	0	836.5	24.80	0.093						
QPSK 10M 1RB 25Offset	Left Cheek	0	836.5	25.80	0.233						
QPSK 10M 25RB 0Offset	Left Cheek	0	836.5	24.80	0.178						
QPSK 10M 1RB 25Offset	Left Tilt	0	836.5	25.80	0.138						
QPSK 10M 25RB 0Offset	Left Tilt	0	836.5	24.80	0.104						

LTE Band 12											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 10M 1RB 25Offset	Right Cheek	0	707.5	25.00	**0.141**	23.96	1.271	0.116	**0.147**	4.6	8
QPSK 10M 25RB 0Offset	Right Cheek	0	707.5	24.00	0.112						
QPSK 10M 1RB 25Offset	Right Tilt	0	707.5	25.00	0.084						
QPSK 10M 25RB 0Offset	Right Tilt	0	707.5	24.00	0.063						
QPSK 10M 1RB 25Offset	Left Cheek	0	707.5	25.00	0.120						
QPSK 10M 25RB 0Offset	Left Cheek	0	707.5	24.00	0.095						
QPSK 10M 1RB 25Offset	Left Tilt	0	707.5	25.00	0.058						
QPSK 10M 25RB 0Offset	Left Tilt	0	707.5	24.00	0.050						

LTE Band 26											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 15M 1RB 36Offset	Right Cheek	0	831.5	25.00	**0.208**	24.81	1.045	0.180	**0.188**	-9.6	9
QPSK 15M 36RB 0Offset	Right Cheek	0	831.5	24.00	0.169						
QPSK 15M 1RB 36Offset	Right Tilt	0	831.5	25.00	0.107						
QPSK 15M 36RB 0Offset	Right Tilt	0	831.5	24.00	0.088						
QPSK 15M 1RB 36Offset	Left Cheek	0	831.5	25.00	0.095						
QPSK 15M 36RB 0Offset	Left Cheek	0	831.5	24.00	0.132						
QPSK 15M 1RB 36Offset	Left Tilt	0	831.5	25.00	0.096						
QPSK 15M 36RB 0Offset	Left Tilt	0	831.5	24.00	0.090						

LTE Band 41											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 20M 1RB 49Offset	Right Cheek	0	2 680.0	24.00	0.095						
QPSK 20M 50RB 24Offset	Right Cheek	0	2 680.0	23.00	0.049						
QPSK 20M 1RB 49Offset	Right Tilt	0	2 680.0	24.00	0.113						
QPSK 20M 50RB 24Offset	Right Tilt	0	2 680.0	23.00	0.086						
QPSK 20M 1RB 49Offset	Left Cheek	0	2 680.0	24.00	**0.131**	23.65	1.084	0.112	**0.121**	-7.3	10
QPSK 20M 50RB 24Offset	Left Cheek	0	2 680.0	23.00	0.101						
QPSK 20M 1RB 49Offset	Left Tilt	0	2 680.0	24.00	0.057						
QPSK 20M 50RB 24Offset	Left Tilt	0	2 680.0	23.00	0.043						

LTE Band 66											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 20M 1RB 49Offset	Right Cheek	0	1 720.0	25.00	**0.076**	23.36	1.459	0.066	**0.096**	26.7	11
QPSK 20M 50RB 0Offset	Right Cheek	0	1 720.0	24.00	0.050						
QPSK 20M 1RB 49Offset	Right Tilt	0	1 720.0	25.00	0.057						
QPSK 20M 50RB 0Offset	Right Tilt	0	1 720.0	24.00	0.010						
QPSK 20M 1RB 49Offset	Left Cheek	0	1 720.0	25.00	0.062						
QPSK 20M 50RB 0Offset	Left Cheek	0	1 720.0	24.00	0.039						
QPSK 20M 1RB 49Offset	Left Tilt	0	1 720.0	25.00	0.038						
QPSK 20M 50RB 0Offset	Left Tilt	0	1 720.0	24.00	0.026						

2.4 ㎓ WLAN												
Reference Data						Variant Measurement						
Mode/ Ant.	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
802.11b/ Wi-fi 1 (Sub 5)	Right Cheek	0	2 462.0	11.00	**0.217**	10.75	1.059	1.018	0.050	**0.054**	-75.1	12
	Right Tilt	0	2 462.0	11.00	-							
	Left Cheek	0	2 462.0	11.00	-							
	Left Tilt	0	2 462.0	11.00	-							
802.11b/ Wi-fi 2 (Sub 8)	Right Cheek	0	2 412.0	11.00	-							
	Right Tilt	0	2 412.0	11.00	-							
	Left Cheek	0	2 412.0	11.00	**0.022**	10.86	1.033	1.010	0.005	**0.005**	-75.8	13
	Left Tilt	0	2 412.0	11.00	-							
802.11b/ MIMO	Right Cheek	0	2 462.0	14.00	**0.267**	13.72	1.067	1.012	0.072	**0.078**	-70.9	14
	Right Tilt	0	2 462.0	14.00	-							
	Left Cheek	0	2 462.0	14.00	-							
	Left Tilt	0	2 462.0	14.00	-							

U-NII-2A												
Reference Data						Variant Measurement						
Mode/ Ant.	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
802.11ac (VHT80)/ Wi-fi 1 (Sub 4)	Right Cheek	0	5 290.0	10.00	**0.041**	8.89	1.291	1.136	0.009	**0.013**	-67.7	15
	Right Tilt	0	5 290.0	10.00	-							
	Left Cheek	0	5 290.0	10.00	-							
	Left Tilt	0	5 290.0	10.00	-							
802.11ac (VHT80)/ Wi-fi 2 (Sub 5)	Right Cheek	0	5 290.0	10.00	**0.176**	8.99	1.262	1.136	0.029	**0.042**	-76.3	16
	Right Tilt	0	5 290.0	10.00	-							
	Left Cheek	0	5 290.0	10.00	-							
	Left Tilt	0	5 290.0	10.00	-							
802.11ac (VHT80)/ MIMO	Right Cheek	0	5 290.0	13.00	**0.219**	11.85	1.303	1.136	0.011	**0.016**	-92.6	17
	Right Tilt	0	5 290.0	13.00	-							
	Left Cheek	0	5 290.0	13.00	-							
	Left Tilt	0	5 290.0	13.00	-							

U-NII-2C												
Reference Data						Variant Measurement						
Mode/ Ant.	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
802.11ac (VHT80)/ Wi-fi 1 (Sub 4)	Right Cheek	0	5 690.0	10.00	**0.054**	10.23	0.948	1.136	0.019	**0.020**	-62.0	18
	Right Tilt	0	5 690.0	10.00	-							
	Left Cheek	0	5 690.0	10.00	-							
	Left Tilt	0	5 690.0	10.00	-							
802.11ac (VHT80)/ Wi-fi 2 (Sub 5)	Right Cheek	0	5 530.0	10.00	**0.305**	9.80	1.047	1.136	0.078	**0.093**	-69.6	19
	Right Tilt	0	5 530.0	10.00	-							
	Left Cheek	0	5 530.0	10.00	-							
	Left Tilt	0	5 530.0	10.00	-							
802.11ac (VHT80)/ MIMO	Right Cheek	0	5 690.0	13.00	**0.410**	12.79	1.050	1.136	0.051	**0.061**	-85.2	20
	Right Tilt	0	5 690.0	13.00	-							
	Left Cheek	0	5 690.0	13.00	-							
	Left Tilt	0	5 690.0	13.00	-							

U-NII-3												
Reference Data						Variant Measurement						
Mode/ Ant.	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
802.11ac (VHT80)/ Wi-fi 1 (Sub 4)	Right Cheek	0	5 775.0	10.00	**0.034**	9.27	1.183	1.136	0.014	**0.019**	-44.4	21
	Right Tilt	0	5 775.0	10.00	-							
	Left Cheek	0	5 775.0	10.00	-							
	Left Tilt	0	5 775.0	10.00	-							
802.11ac (VHT80)/ Wi-fi 2 (Sub 5)	Right Cheek	0	5 775.0	10.00	**0.325**	9.52	1.117	1.136	0.218	**0.277**	-14.9	22
	Right Tilt	0	5 775.0	10.00	-							
	Left Cheek	0	5 775.0	10.00	-							
	Left Tilt	0	5 775.0	10.00	-							
802.11ac (VHT80)/ MIMO	Right Cheek	0	5 775.0	13.00	**0.218**	12.38	1.153	1.136	0.058	**0.076**	-65.2	23
	Right Tilt	0	5 775.0	13.00	-							
	Left Cheek	0	5 775.0	13.00	-							
	Left Tilt	0	5 775.0	13.00	-							

Bluetooth												
Reference Data						Variant Measurement						
Mode/ Ant.	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
BDR_ DH1/ Wi-fi 1 (Sub 5)	Right Cheek	0	2 441.0	13.00	**0.333**	12.80	1.047	1.016	0.378	**0.402**	20.7	24
	Right Tilt	0	2 441.0	13.00	0.105							
	Left Cheek	0	2 441.0	13.00	0.071							
	Left Tilt	0	2 441.0	13.00	0.025							

11.2 Standalone Body-Worn SAR Test Results

GSM 850 Band											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
Voice	Front	15	836.6	34.80	0.357						
	Rear	15	836.6	34.80	0.316						
GPRS 2Tx	Front	15	836.6	33.80	0.391						
	Rear	15	836.6	33.80	**0.452**	32.12	1.472	0.294	**0.433**	-4.3	25

GSM 1900 Band											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
Voice	Front	15	1 880.0	31.80	0.271						
	Rear	15	1 880.0	31.80	0.377						
GPRS 2Tx	Front	15	1 880.0	30.80	0.498	28.99	1.517	0.265	0.402	-19.3	
	Rear	15	1880.0	30.80	**0.692**	28.99	1.517	0.443	**0.672**	-2.9	26

WCDMA Band II											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
RMC	Front	15	1 880.0	24.60	0.459	23.39	1.321	0.321	0.424	-7.6	
	Rear	15	1 880.0	24.60	**0.762**	23.39	1.321	0.561	**0.741**	-2.7	27

WCDMA Band IV											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
RMC	Front	15	1 732.4	24.60	0.369						
	Rear	15	1 732.4	24.60	**0.590**	23.34	1.337	0.502	**0.671**	13.8	28

WCDMA Band V											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
RMC	Front	15	836.6	25.50	0.244						
	Rear	15	836.6	25.50	**0.275**	24.08	1.387	0.193	**0.268**	-2.7	29

LTE Band 2											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 20M 1RB 49Offset	Front	15	1 880.0	24.30	0.214						
QPSK 20M 50RB 24Offset	Front	15	1 880.0	23.30	0.320						
QPSK 20M 1RB 49Offset	Rear	15	1 880.0	24.30	**0.330**	23.62	1.169	0.365	**0.427**	29.3	30
QPSK 20M 50RB 24Offset	Rear	15	1 880.0	23.30	0.260						

LTE Band 5											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 10M 1RB 25Offset	Front	15	836.5	25.80	0.287						
QPSK 10M 25RB 0Offset	Front	15	836.5	24.80	0.227						
QPSK 10M 1RB 25Offset	Rear	15	836.5	25.80	**0.319**	24.64	1.306	0.181	**0.236**	-25.9	31
QPSK 10M 25RB 0Offset	Rear	15	836.5	24.80	0.250						

LTE Band 12											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 10M 1RB 25Offset	Front	15	707.5	25.00	0.170						
QPSK 10M 25RB 0Offset	Front	15	707.5	24.00	0.137						
QPSK 10M 1RB 25Offset	Rear	15	707.5	25.00	**0.207**	23.96	1.271	0.171	**0.217**	5.0	32
QPSK 10M 25RB 0Offset	Rear	15	707.5	24.00	0.160						

LTE Band 26											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 15M 1RB 36Offset	Front	15	831.5	25.00	0.199						
QPSK 15M 36RB 0Offset	Front	15	831.5	24.00	0.172						
QPSK 15M 1RB 36Offset	Rear	15	831.5	25.00	**0.243**	24.81	1.045	0.233	**0.243**	0.0	33
QPSK 15M 36RB 0Offset	Rear	15	831.5	24.00	0.195						

LTE Band 41											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 20M 1RB 49Offset	Front	15	2 680.0	24.00	0.153						
QPSK 20M 50RB 24Offset	Front	15	2 680.0	23.00	0.119						
QPSK 20M 1RB 49Offset	Rear	15	2 680.0	24.00	**0.175**	23.65	1.084	0.142	**0.154**	-12.0	34
QPSK 20M 50RB 24Offset	Rear	15	2 680.0	23.00	0.140						

LTE Band 66											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 20M 1RB 49Offset	Front	15	1 720.0	25.00	0.378						
QPSK 20M 50RB 0Offset	Front	15	1 720.0	24.00	0.292						
QPSK 20M 1RB 49Offset	Rear	15	1 720.0	25.00	**0.596**	23.36	1.459	0.506	**0.738**	23.9	35
QPSK 20M 50RB 0Offset	Rear	15	1 720.0	24.00	0.460	22.40	1.445	0.395	0.571	24.1	

2.4 GHz WLAN												
Reference Data						Variant Measurement						
Mode/ Ant.	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
802.11b/ Wi-fi 1 (Sub 5)	Front	15	2 412.0	19.00	-							
	Rear	15	2 412.0	19.00	**0.208**	18.19	1.205	1.010	0.027	**0.033**	-84.2	36
802.11b/ Wi-fi 2 (Sub 8)	Front	15	2 437.0	19.00	-							
	Rear	15	2 437.0	19.00	**0.075**	18.50	1.122	1.010	0.044	**0.050**	-33.8	37
802.11b/ MIMO	Front	15	2 437.0	22.00	-							
	Rear	15	2 437.0	22.00	**0.198**	20.94	1.276	1.012	0.038	**0.049**	-75.2	38

U-NII-2A												
Reference Data						Variant Measurement						
Mode/ Ant.	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
802.11a/ Wi-fi 1 (Sub 4)	Front	15	5 320.0	18.00	-							
	Rear	15	5 320.0	18.00	**0.164**	17.49	1.125	1.071	0.025	**0.030**	-81.6	39
802.11a/ Wi-fi 2 (Sub 5)	Front	15	5 320.0	18.00	-							
	Rear	15	5 320.0	18.00	**0.105**	17.01	1.256	1.071	0.006	**0.008**	-92.3	40
802.11a/ MIMO	Front	15	5 320.0	21.00	-							
	Rear	15	5 320.0	21.00	**0.299**	19.60	1.380	1.070	0.035	**0.053**	-82.2	41

U-NII-2C												
Reference Data						Variant Measurement						
Mode/ Ant.	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
802.11a/ Wi-fi 1 (Sub 4)	Front	15	5 500.0	18.00	-							
	Rear	15	5 500.0	18.00	**0.271**	17.93	1.016	1.071	0.043	**0.047**	-82.7	42
802.11a/ Wi-fi 2 (Sub 5)	Front	15	5 500.0	18.00	-							
	Rear	15	5 500.0	18.00	**0.137**	16.71	1.346	1.071	0.025	**0.036**	-73.8	43
802.11a/ MIMO	Front	15	5 500.0	21.00	-							
	Rear	15	5 500.0	21.00	**0.394**	19.85	1.303	1.070	0.076	**0.106**	-73.1	44

U-NII-3												
Reference Data						Variant Measurement						
Mode/ Ant.	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
802.11a/ Wi-fi 1 (Sub 4)	Front	15	5 785.0	18.00	-							
	Rear	15	5 785.0	18.00	**0.147**	16.69	1.352	1.071	0.023	**0.033**	-77.4	45
802.11a/ Wi-fi 2 (Sub 5)	Front	15	5 745.0	18.00	-							
	Rear	15	5 745.0	18.00	**0.113**	17.05	1.245	1.071	0.021	**0.028**	-75.2	46
802.11a/ MIMO	Front	15	5 745.0	21.00	-							
	Rear	15	5 745.0	21.00	**0.248**	19.29	1.483	1.026	0.053	**0.081**	-67.5	47

Bluetooth												
Reference Data						Variant Measurement						
Mode/ Ant.	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
BDR_ DH1/ Wi-fi 1 (Sub 5)	Front	15	2 441.0	13.00	0.030							
	Rear	15	2 441.0	13.00	**0.038**	12.80	1.047	1.016	0.041	**0.044**	14.9	48

11.3 Standalone Hotspot SAR Test Results

GSM 850 Band											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
GPRS 2Tx	Front	10	836.6	33.80	0.428	32.12	1.472	0.322	**0.474**	10.7	49
	Rear	10	836.6	33.80	**0.545**	32.12	1.472	0.319	0.470	-13.8	
	Left	10	836.6	33.80	0.199						
	Right	10	836.6	33.80	0.458	32.12	1.472	0.319	0.470	2.5	
	Bottom	10	836.6	33.80	0.278						

GSM 1900 Band											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
GPRS 2Tx	Front	10	1 880.0	27.80	0.395						
	Rear	10	1 880.0	27.80	0.625	25.93	1.538	0.406	0.624	-0.1	
	Left	10	1 880.0	27.80	0.085						
	Right	10	1 880.0	27.80	0.067						
	Bottom	10	1 880.0	27.80	1.137	25.93	1.538	0.732	1.126	-1.0	
	Bottom	10	1 850.2	27.80	0.973	25.81	1.581	0.595	0.941	-3.3	
	Bottom	10	1 909.8	27.80	**1.228**	25.87	1.560	0.768	**1.198**	-2.4	50

WCDMA Band II											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
RMC	Front	10	1 880.0	20.60	0.352						
	Rear	10	1 880.0	20.60	0.580	19.56	1.271	0.455	0.578	-0.3	
	Left	10	1 880.0	20.60	0.076						
	Right	10	1 880.0	20.60	0.050						
	Bottom	10	1 880.0	20.60	1.059	19.56	1.271	0.795	1.010	-4.6	
	Bottom	10	1 852.4	20.60	1.005	19.34	1.337	0.728	0.973	-3.2	
	Bottom	10	1 907.6	20.60	**1.060**	19.47	1.297	0.821	**1.065**	0.5	51

WCDMA Band IV											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
RMC	Front	10	1 732.4	21.60	0.378						
	Rear	10	1 732.4	21.60	0.602	20.39	1.321	0.498	0.658	9.3	
	Left	10	1 732.4	21.60	0.069						
	Right	10	1 732.4	21.60	0.068						
	Bottom	10	1 732.4	21.60	0.933	20.39	1.321	0.765	1.011	8.3	
	Bottom	10	1 712.4	21.60	**0.978**	20.62	1.253	0.857	**1.074**	9.8	52
	Bottom	10	1 752.6	21.60	1.152	20.54	1.276	0.799	1.020	-11.5	

WCDMA Band V											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
RMC	Front	10	836.6	25.50	0.315						
	Rear	10	836.6	25.50	**0.489**	24.08	1.387	0.307	**0.426**	-12.9	53
	Left	10	836.6	25.50	0.141						
	Right	10	836.6	25.50	0.251						
	Bottom	10	836.6	25.50	0.219						

LTE Band 2											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 20M 1RB 49Offset	Front	10	1 880.0	19.30	0.200						
QPSK 20M 50RB 24Offset	Front	10	1 880.0	19.30	0.203						
QPSK 20M 1RB 49Offset	Rear	10	1 880.0	19.30	0.364						
QPSK 20M 50RB 24Offset	Rear	10	1 880.0	19.30	0.322						
QPSK 20M 1RB 49Offset	Left	10	1 880.0	19.30	0.050						
QPSK 20M 50RB 24Offset	Left	10	1 880.0	19.30	0.050						
QPSK 20M 1RB 49Offset	Right	10	1 880.0	19.30	0.048						
QPSK 20M 50RB 24Offset	Right	10	1 880.0	19.30	0.049						
QPSK 20M 1RB 49Offset	Bottom	10	1 880.0	19.30	**0.624**	18.13	1.309	0.556	**0.728**	16.6	54
QPSK 20M 50RB 24Offset	Bottom	10	1 880.0	19.30	0.544	18.15	1.303	0.530	0.691	26.9	

LTE Band 5											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 10M 1RB 25Offset	Front	10	836.5	25.80	0.500	24.64	1.306	0.246	0.321	-35.7	
QPSK 10M 25RB 0Offset	Front	10	836.5	24.80	0.387						
QPSK 10M 1RB 25Offset	Rear	10	836.5	25.80	**0.660**	24.64	1.306	0.423	**0.552**	-16.3	55
QPSK 10M 25RB 0Offset	Rear	10	836.5	24.80	0.517	23.62	1.312	0.334	0.438	-15.2	
QPSK 10M 1RB 25Offset	Left	10	836.5	25.80	0.192						
QPSK 10M 25RB 0Offset	Left	10	836.5	24.80	0.149						
QPSK 10M 1RB 25Offset	Right	10	836.5	25.80	0.327						
QPSK 10M 25RB 0Offset	Right	10	836.5	24.80	0.253						
QPSK 10M 1RB 25Offset	Bottom	10	836.5	25.80	0.238						
QPSK 10M 25RB 0Offset	Bottom	10	836.5	24.80	0.187						

LTE Band 12											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 10M 1RB 25Offset	Front	10	707.5	25.00	0.169						
QPSK 10M 25RB 0Offset	Front	10	707.5	24.00	0.137						
QPSK 10M 1RB 25Offset	Rear	10	707.5	25.00	**0.219**	23.96	1.271	0.174	**0.221**	1.0	56
QPSK 10M 25RB 0Offset	Rear	10	707.5	24.00	0.189						
QPSK 10M 1RB 25Offset	Left	10	707.5	25.00	0.194						
QPSK 10M 25RB 0Offset	Left	10	707.5	24.00	0.140						
QPSK 10M 1RB 25Offset	Right	10	707.5	25.00	0.127						
QPSK 10M 25RB 0Offset	Right	10	707.5	24.00	0.094						
QPSK 10M 1RB 25Offset	Bottom	10	707.5	25.00	0.032						
QPSK 10M 25RB 0Offset	Bottom	10	707.5	24.00	0.027						

LTE Band 26											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 15M 1RB 36Offset	Front	10	831.5	25.00	0.308						
QPSK 15M 36RB 0Offset	Front	10	831.5	24.00	0.247						
QPSK 15M 1RB 36Offset	Rear	10	831.5	25.00	**0.388**	24.81	1.045	0.392	**0.410**	5.6	57
QPSK 15M 36RB 0Offset	Rear	10	831.5	24.00	0.330						
QPSK 15M 1RB 36Offset	Left	10	831.5	25.00	0.163						
QPSK 15M 36RB 0Offset	Left	10	831.5	24.00	0.136						
QPSK 15M 1RB 36Offset	Right	10	831.5	25.00	0.275						
QPSK 15M 36RB 0Offset	Right	10	831.5	24.00	0.218						
QPSK 15M 1RB 36Offset	Bottom	10	831.5	25.00	0.152						
QPSK 15M 36RB 0Offset	Bottom	10	831.5	24.00	0.113						

LTE Band 41											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 20M 1RB 0Offset	Front	10	2 680.0	21.00	0.175						
QPSK 20M 50RB 0Offset	Front	10	2 680.0	21.00	0.178						
QPSK 20M 1RB 0Offset	Rear	10	2 680.0	21.00	**0.235**	20.61	1.094	0.175	**0.191**	-18.5	58
QPSK 20M 50RB 0Offset	Rear	10	2 680.0	21.00	0.230						
QPSK 20M 1RB 0Offset	Left	10	2 680.0	21.00	0.066						
QPSK 20M 50RB 0Offset	Left	10	2 680.0	21.00	0.056						
QPSK 20M 1RB 0Offset	Bottom	10	2 680.0	21.00	0.207						
QPSK 20M 50RB 0Offset	Bottom	10	2 680.0	21.00	0.218						

LTE Band 66											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
QPSK 20M 1RB 49Offset	Front	10	1 745.0	20.00	0.259						
QPSK 20M 50RB 24Offset	Front	10	1 745.0	20.00	0.278						
QPSK 20M 1RB 49Offset	Rear	10	1 745.0	20.00	0.337						
QPSK 20M 50RB 24Offset	Rear	10	1 745.0	20.00	0.364						
QPSK 20M 1RB 49Offset	Left	10	1 745.0	20.00	0.083						
QPSK 20M 50RB 24Offset	Left	10	1 745.0	20.00	0.083						
QPSK 20M 1RB 49Offset	Right	10	1 745.0	20.00	0.039						
QPSK 20M 50RB 24Offset	Right	10	1 745.0	20.00	0.091						
QPSK 20M 1RB 49Offset	Bottom	10	1 745.0	20.00	0.600	18.53	1.403	0.454	0.637	6.2	
QPSK 20M 50RB 24Offset	Bottom	10	1 745.0	20.00	**0.658**	18.50	1.413	0.456	**0.644**	-2.1	59

2.4 GHz WLAN												
Reference Data						Variant Measurement						
Mode/ Ant.	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
802.11b/ Wi-fi 1 (Sub 5)	Front	10	2 412.0	19.00	-							
	Rear	10	2 412.0	19.00	**0.325**	18.19	1.205	1.010	0.089	**0.108**	-66.7	60
	Left	10	2 412.0	19.00	-							
	Top	10	2 412.0	19.00	-							
802.11b/ Wi-fi 2 (Sub 8)	Front	10	2 437.0	19.00	-							
	Rear	10	2 437.0	19.00	**0.160**	18.50	1.122	1.010	0.020	**0.023**	-85.8	61
	Top	10	2 437.0	19.00	-							
802.11b/ MIMO	Front	10	2 437.0	22.00	-							
	Rear	10	2 437.0	22.00	**0.346**	20.94	1.276	1.012	0.072	**0.093**	-73.1	62
	Left	10	2 437.0	22.00								
	Top	10	2 437.0	22.00								

U-NII-3												
Reference Data						Variant Measurement						
Mode/ Ant.	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
802.11a/ Wi-fi 1 (Sub 4)	Front	10	5 785.0	18.00	-							
	Rear	10	5 785.0	18.00	0.299							
	Left	10	5 785.0	18.00	**0.402**	16.69	1.352	1.071	0.033	**0.048**	-88.1	63
	Top	10	5 785.0	18.00	-							
802.11a/ Wi-fi 2 (Sub 5)	Front	10	5 745.0	18.00	-							
	Rear	10	5 745.0	18.00	0.170							
	Left	10	5 745.0	18.00	**0.300**	17.05	1.245	1.071	0.106	**0.141**	-52.9	64
	Top	10	5 745.0	18.00	-							
802.11a/ MIMO	Front	10	5 745.0	21.00	-							
	Rear	10	5 745.0	21.00	0.309							
	Left	10	5 745.0	21.00	**0.617**	19.29	1.483	1.026	0.120	**0.183**	-70.4	65
	Top	10	5 745.0	21.00	-							

Bluetooth												
Reference Data						Variant Measurement						
Mode/ Ant.	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
BDR_ DH5/ Wi-fi 1 (Sub 5)	Front	10	2 441.0	13.00	0.062							
	Rear	10	2 441.0	13.00	0.081							
	Left	10	2 441.0	13.00	**0.108**	12.80	1.047	1.016	0.106	**0.113**	4.8	66
	Top	10	2 441.0	13.00	0.013							

11.4 Standalone Phablet SAR Test Results

GSM 1900 Band											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
GPRS 2Tx	Grip Sensor off										
	Front	7	1 880.0	30.80	0.650	28.99	1.517	0.451	0.684	5.3	
	Rear	10	1 880.0	30.80	0.741	28.99	1.517	0.493	0.748	0.9	
	Left	0	1 880.0	30.80	0.504	28.99	1.517	0.247	0.375	-25.7	
	Right	0	1 880.0	30.80	0.203						
	Bottom	14	1 880.0	30.80	0.747	28.99	1.517	0.485	0.736	-1.5	
	Grip Sensor on										
	Front	0	1 880.0	27.80	1.051	25.93	1.538	0.696	1.070	1.9	
	Rear	0	1 880.0	27.80	1.726	25.93	1.538	1.150	1.769	2.5	
	Bottom	0	1 880.0	27.80	2.483	25.93	1.538	1.550	2.384	-4.0	
	Bottom	0	1 850.2	27.80	**2.539**	25.81	1.581	1.550	**2.451**	-3.5	67
	Bottom	0	1 909.8	27.80	2.270	25.87	1.560	1.410	2.200	-3.1	

WCDMA Band II											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
RMC	Grip Sensor off										
	Front	7	1 880.0	24.60	0.750	23.39	1.321	0.556	0.734	-2.1	
	Rear	10	1 880.0	24.60	0.849	23.39	1.321	0.617	0.815	-4.0	
	Left	0	1 880.0	24.60	0.583	23.39	1.321	0.300	0.396	-32.0	
	Right	0	1 880.0	24.60	0.235						
	Bottom	14	1 880.0	24.60	0.829	23.39	1.321	0.597	0.789	-4.9	
	Grip Sensor on										
	Front	0	1 880.0	20.60	0.975	19.56	1.271	0.758	0.963	-1.2	
	Rear	0	1 880.0	20.60	1.525	19.56	1.271	1.230	1.563	2.5	
	Bottom	0	1 880.0	20.60	2.097	19.56	1.271	1.680	2.135	1.8	
	Bottom	0	1 852.4	20.60	**2.211**	19.34	1.337	1.690	**2.260**	2.2	68
	Bottom	0	1 907.6	20.60	1.985	19.47	1.297	1.600	2.075	4.5	

WCDMA Band IV											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
RMC	Grip Sensor off										
	Front	7	1 732.4	24.60	0.621	23.34	1.337	0.516	0.690	11.1	
	Rear	10	1 732.4	24.60	0.693	23.34	1.337	0.548	0.733	5.7	
	Left	0	1 732.4	24.60	0.349						
	Right	0	1 732.4	24.60	0.236						
	Bottom	14	1 732.4	24.60	0.619	23.34	1.337	0.490	0.655	5.8	
	Grip Sensor on										
	Front	0	1 732.4	21.60	1.045	20.39	1.321	0.832	1.099	5.2	
	Rear	0	1 732.4	21.60	1.888	20.39	1.321	1.660	2.193	16.1	
	Bottom	0	1 732.4	21.60	2.692	20.39	1.321	2.220	**2.933**	8.9	69
	Bottom	0	1 712.4	21.60	2.189	20.62	1.253	2.050	2.569	17.3	
	Bottom	0	1 752.6	21.60	**2.886**	20.54	1.276	2.110	2.692	-6.7	

LTE Band 2											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
Grip Sensor off											
QPSK 20M 1RB 49Offset	Front	7	1 880.0	24.30	0.535	23.62	1.169	0.565	0.660	23.5	
QPSK 20M 50RB 24Offset	Front	7	1 880.0	23.30	0.435	22.48	1.208	0.445	0.538	23.6	
QPSK 20M 1RB 49Offset	Rear	10	1 880.0	24.30	0.606	23.62	1.169	0.563	0.658	8.6	
QPSK 20M 50RB 24Offset	Rear	10	1 880.0	23.30	0.485	22.48	1.208	0.448	0.541	11.6	
QPSK 20M 1RB 49Offset	Left	0	1 880.0	24.30	0.345						
QPSK 20M 50RB 24Offset	Left	0	1 880.0	23.30	0.155						
QPSK 20M 1RB 49Offset	Right	0	1 880.0	24.30	0.341						
QPSK 20M 50RB 24Offset	Right	0	1 880.0	23.30	0.263						
QPSK 20M 1RB 49Offset	Bottom	14	1 880.0	24.30	0.586	23.62	1.169	0.584	0.683	16.5	
QPSK 20M 50RB 24Offset	Bottom	14	1 880.0	23.30	0.476	22.48	1.208	0.462	0.558	17.2	
Grip Sensor on											
QPSK 20M 1RB 49Offset	Front	0	1 880.0	21.30	0.704	20.17	1.297	0.530	0.687	-2.4	
QPSK 20M 50RB 24Offset	Front	0	1 880.0	21.30	0.550	20.22	1.282	0.532	0.682	24.0	
QPSK 20M 1RB 49Offset	Rear	0	1 880.0	21.30	1.149	20.17	1.297	0.889	1.153	0.4	
QPSK 20M 50RB 24Offset	Rear	0	1 880.0	21.30	1.164	20.22	1.282	0.857	1.099	-5.6	
QPSK 20M 1RB 49Offset	Bottom	0	1 880.0	21.30	1.611	20.17	1.297	1.230	**1.595**	-1.0	70
QPSK 20M 50RB 24Offset	Bottom	0	1 880.0	21.30	**1.704**	20.22	1.282	1.240	1.590	-6.7	

LTE Band 66											
Reference Data						Variant Measurement					
Mode	EUT Position	Distance (㎜)	Frequency (㎒)	Max. Tune-up Power (dBm)	Scaled 1 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	SAR Deviation (%)	Plot No.
Grip Sensor off											
QPSK 20M 1RB 49Offset	Front	7	1 745.0	25.00	0.569	23.36	1.459	0.408	0.595	4.6	
QPSK 20M 50RB 0Offset	Front	7	1 745.0	24.00	0.441	22.40	1.445	0.335	0.484	9.8	
QPSK 20M 1RB 49Offset	Rear	10	1 745.0	25.00	0.611	23.36	1.459	0.417	0.608	-0.4	
QPSK 20M 50RB 0Offset	Rear	10	1 745.0	24.00	0.479	22.40	1.445	0.342	0.494	3.2	
QPSK 20M 1RB 49Offset	Left	0	1 745.0	25.00	0.411	23.36	1.459	0.316	0.461	12.2	
QPSK 20M 50RB 0Offset	Left	0	1 745.0	24.00	0.301						
QPSK 20M 1RB 49Offset	Right	0	1 745.0	25.00	0.204						
QPSK 20M 50RB 0Offset	Right	0	1 745.0	24.00	0.148						
QPSK 20M 1RB 49Offset	Bottom	14	1 745.0	25.00	0.581	23.36	1.459	0.394	0.575	-1.1	
QPSK 20M 50RB 0Offset	Bottom	14	1 745.0	24.00	0.451	22.40	1.445	0.312	0.451	0.0	
Grip Sensor on											
QPSK 20M 1RB 49Offset	Front	0	1 745.0	22.00	0.859	20.50	1.413	0.451	0.637	-25.8	
QPSK 20M 50RB 24Offset	Front	0	1 745.0	22.00	0.955	20.52	1.406	0.449	0.631	-33.9	
QPSK 20M 1RB 49Offset	Rear	0	1 745.0	22.00	1.064	20.50	1.413	0.851	1.202	13.0	
QPSK 20M 50RB 24Offset	Rear	0	1 745.0	22.00	1.156	20.52	1.406	0.848	1.192	3.1	
QPSK 20M 1RB 49Offset	Bottom	0	1 745.0	22.00	1.772	20.50	1.413	1.190	1.681	-5.1	
QPSK 20M 50RB 24Offset	Bottom	0	1 745.0	22.00	**1.781**	20.52	1.406	1.210	**1.701**	-4.5	71

U-NII-2A												
Reference Data						Variant Measurement						
Mode/ Ant.	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 10 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 10 g SAR (W/kg)	Scaled 10 g SAR (W/kg)	SAR Deviation (%)	Plot No.
802.11a/ Wi-fi 1 (Sub 4)	Front	0	5 320.0	18.00	-							
	Rear	0	5 320.0	18.00	**1.324**	17.49	1.125	1.071	0.252	**0.284**	-78.6	72
	Left	0	5 320.0	18.00	1.068	17.49	1.125	1.071	0.196	0.221	-79.4	
	Top	0	5 320.0	18.00	-							
802.11a/ Wi-fi 2 (Sub 5)	Front	0	5 320.0	18.00	-							
	Rear	0	5 320.0	18.00	0.774	17.01	1.256	1.071	0.110	0.138	-82.1	
	Left	0	5 320.0	18.00	**1.360**	17.01	1.256	1.071	0.161	**0.202**	-85.1	73
	Top	0	5 240.0	18.00	-							
802.11a/ MIMO	Front	0	5 320.0	21.00	-							
	Rear	0	5 320.0	21.00	1.679	19.60	1.380	1.070	0.224	0.309	-81.6	
	Left	0	5 320.0	21.00	**2.051**	19.60	1.380	1.070	0.231	**0.319**	-84.5	74
	Top	0	5 320.0	21.00	-							

U-NII-2C												
Reference Data						Variant Measurement						
Mode/ Ant.	EUT Position	Distance (mm)	Frequency (MHz)	Max. Tune-up Power (dBm)	Scaled 10 g SAR (W/kg)	Measured Conducted Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 10 g SAR (W/kg)	Scaled 10 g SAR (W/kg)	SAR Deviation (%)	Plot No.
802.11a/ Wi-fi 1 (Sub 4)	Front	0	5 500.0	18.00	-							
	Rear	0	5 500.0	18.00	1.047	17.93	1.016	1.071	0.249	**0.253**	-75.8	75
	Left	0	5 500.0	18.00	**1.202**	17.93	1.016	1.071	0.190	0.193	-83.9	
	Top	0	5 500.0	18.00	-							
802.11a/ Wi-fi 2 (Sub 5)	Front	0	5 500.0	18.00	1.225	16.71	1.346	1.071	0.220	0.296	-75.8	
	Rear	0	5 500.0	18.00	-							
	Left	0	5 500.0	18.00	**1.599**	16.71	1.346	1.071	0.254	**0.342**	-78.6	76
	Top	0	5 500.0	18.00	-							
802.11a/ MIMO	Front	0	5 500.0	21.00	-							
	Rear	0	5 500.0	21.00	1.772	19.85	1.303	1.070	0.463	**0.603**	-65.9	77
	Left	0	5 500.0	21.00	**2.346**	19.85	1.303	1.070	0.402	0.524	-77.7	
	Left	0	5 600.0	21.00	-							

11.5 Standalone NFC SAR Test Results

NFC									
Reference Data							Variant Measurement		
Mode	EUT Position	Distance (㎜)	Test setup		Frequency (㎒)	Scaled 10 SAR (W/kg)	Measured 10 g SAR (W/kg)	SAR Deviation (%)	Plot No.
			Type	Bitrate					
PBRS	Rear	0	A	106	13.6	0.023			
		0	B	106	13.6	0.023			
		0	F	106	13.6	0.000			
		0	B	212	13.6	**0.023**	**0.024**	4.3	78
		0	B	424	13.6	0.023			
	Front	0	B	212	13.6	0.000			
	Left	0	B	212	13.6	0.000			
	Right	0	B	212	13.6	0.000			
	Top	0	B	212	13.6	0.000			
	Bottom	0	B	212	13.6	0.000			

12. Simultaneous Transmission

The following procedures adopted from FCC KDB Publication 447498 D04v01 are applicable to devices with built in unlicensed transmitters such as 802.11 and Bluetooth devices which may simultaneously transmit with the licensed transmitter.
This device contains transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per FCC KDB Publication 447498 D04v01 4.3.2 and IEEE 1528-2013 Section 6.3.4.1.2, simultaneous transmission SAR test exclusion may be applied when the sum of the 1g or 10g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is within SAR limits. The different test positions in an exposure condition may be considered collectively to determine SAR test exclusion according to the sum of 1g or 10g SAR.

12.1 Simultaneous Transmission Analysis

Band / Position		Licensed										
		GSM/GPRS		WCDMA			LTE					
		850 Band	1900 Band	Ⅱ	Ⅳ	Ⅴ	2	5	12	26	41	66
		Main 1 Ant.	Main 1 Ant.	Main 1 Ant.	Main 1 Ant.	Main 1 Ant.	Main 1 Ant.	Main 1 Ant.	Main 1 Ant.	Main 1 Ant.	Main 2 Ant.	Main 1 Ant.
		[①]										
Head	Right Cheek	0.370	0.087	0.088	0.085	0.248	0.071	0.278	0.141	0.208	0.095	0.057
	Right Tilt	0.209	0.056	0.055	0.050	0.132	0.036	0.127	0.084	0.107	0.113	0.062
	Left Cheek	0.294	0.080	0.073	0.062	0.192	0.060	0.233	0.120	0.132	0.131	0.038
	Left Tilt	0.247	0.051	0.043	0.052	0.120	0.040	0.138	0.058	0.096	0.057	0.378
Body-worn	Front	0.391	0.498	0.459	0.369	0.244	0.320	0.287	0.170	0.199	0.153	0.596
	Rear	0.452	0.692	0.762	0.590	0.275	0.330	0.319	0.207	0.243	0.175	0.278
Hotspot	Front	0.428	0.395	0.352	0.378	0.315	0.203	0.500	0.169	0.308	0.178	0.364
	Rear	0.545	0.625	0.580	0.602	0.489	0.364	0.660	0.219	0.388	0.235	0.083
	Left	0.199	0.085	0.076	0.069	0.141	0.050	0.192	0.194	0.163	0.066	0.091
	Right	0.458	0.067	0.050	0.068	0.251	0.049	0.327	0.127	0.275	-	-
	Top	-	-	-	-	-	-	-	-	-	-	0.658
	Bottom	0.278	1.228	1.060	1.152	0.219	0.624	0.238	0.032	0.152	0.218	0.955
Phablet	Front	-	1.051	0.975	1.045	-	0.704	-	-	-	-	1.156
	Rear	-	1.726	1.525	1.888	-	1.164	-	-	-	-	0.412
	Left	-	0.504	0.583	0.349	-	0.345	-	-	-	-	0.204
	Right	-	0.203	0.235	0.236	-	0.341	-	-	-	-	-
	Top	-	-	-	-	-	-	-	-	-	-	1.781
	Bottom	-	2.539	2.211	2.886	-	1.704	-	-	-	-	0.057

Band / Position		WLAN						Bluetooth	NFC
		2.4 ㎓ WIFI1	2.4 ㎓ WIFI2	2.4 ㎓ MIMO	5 ㎓ WIFI1	5 ㎓ WIFI2	5 ㎓ MIMO		
		Sub5 Ant.	Sub8 Ant.		Sub4 Ant.	Sub5 Ant.			
		[②]	[③]	[④]	[⑤]	[⑥]	[⑦]	[⑧]	[⑨]
Head	Right Cheek	0.217	0.022	0.267	0.054	0.325	0.410	0.333	-
	Right Tilt	0.217	0.022	0.267	0.054	0.325	0.046	0.105	-
	Left Cheek	0.217	0.022	0.267	0.054	0.325	0.410	0.071	-
	Left Tilt	0.217	0.022	0.267	0.054	0.325	0.410	0.025	-
Body-worn	Front	0.208	0.075	0.198	0.271	0.137	0.394	0.030	-
	Rear	0.208	0.075	0.198	0.271	0.137	0.394	0.038	-
Hotspot	Front	0.325	0.160	0.346	0.402	0.300	0.617	0.062	-
	Rear	0.325	0.160	0.346	0.299	0.170	0.309	0.081	-
	Left	0.325	-	0.346	0.402	0.300	0.617	0.108	-
	Right	-	-	-	-	-	-	-	-
	Top	0.325	0.160	0.346	0.402	0.300	0.617	0.013	-
	Bottom	-	-	-	-	-	-	-	-
Phablet	Front	-	-	-	1.324	1.225	2.346	-	0.000
	Rear	-	-	-	1.324	0.774	1.772	-	0.023
	Left	-	-	-	1.202	1.599	2.346	-	0.000
	Right	-	-	-	-	-	-	-	0.000
	Top	-	-	-	1.324	1.599	2.346	-	0.000
	Bottom	-	-	-	-	-	-	-	0.000

Summation										
GSM/GPRS 850 Band (Main 1 Ant.)										
Band / Position		**1)**	**2)**	**3)**	**4)**	**5)**	**6)**	**7)**	**8)**	**9)**
		[①+②+⑨]	[①+③+⑨]	[①+④+⑨]	[①+⑤+⑨]	[①+⑥+⑨]	[①+⑦+⑨]	[①+⑧+⑨]	[①+③+⑧+⑨]	[①+⑥+⑧+⑨]
Head	Right Cheek	0.587	0.392	0.637	0.424	0.695	0.780	0.703	0.725	1.028
	Right Tilt	0.426	0.231	0.476	0.263	0.534	0.255	0.314	0.336	0.639
	Left Cheek	0.511	0.316	0.561	0.348	0.619	0.704	0.365	0.387	0.690
	Left Tilt	0.464	0.269	0.514	0.301	0.572	0.657	0.272	0.294	0.597
Body-worn	Front	0.599	0.466	0.589	0.662	0.528	0.785	0.421	0.496	0.558
	Rear	0.660	0.527	0.650	0.723	0.589	0.846	0.490	0.565	0.627
Hotspot	Front	0.753	0.588	0.774	0.830	0.728	1.045	0.490	0.650	0.790
	Rear	0.870	0.705	0.891	0.844	0.715	0.854	0.626	0.786	0.796
	Left	0.524	0.199	0.545	0.601	0.499	0.816	0.307	0.307	0.607
	Right	0.458	0.458	0.458	0.458	0.458	0.458	0.458	0.458	0.458
	Top	0.325	0.160	0.346	0.402	0.300	0.617	0.013	0.173	0.313
	Bottom	0.278	0.278	0.278	0.278	0.278	0.278	0.278	0.278	0.278
Phablet	Front	-	-	-	1.324	1.225	2.346	-	-	1.225
	Rear	0.023	0.023	0.023	1.347	0.797	1.795	0.023	0.023	0.797
	Left	-	-	-	1.202	1.599	2.346	-	-	1.599
	Right	-	-	-	-	-	-	-	-	-
	Top	-	-	-	1.324	1.599	2.346	-	-	1.599
	Bottom	-	-	-	-	-	-	-	-	-
GSM/GPRS 1900 Band (Main 1 Ant.)										
Head	Right Cheek	0.304	0.109	0.354	0.141	0.412	0.497	0.420	0.442	0.745
	Right Tilt	0.273	0.078	0.323	0.110	0.381	0.102	0.161	0.183	0.486
	Left Cheek	0.297	0.102	0.347	0.134	0.405	0.490	0.151	0.173	0.476
	Left Tilt	0.268	0.073	0.318	0.105	0.376	0.461	0.076	0.098	0.401
Body-worn	Front	0.706	0.573	0.696	0.769	0.635	0.892	0.528	0.603	0.665
	Rear	0.900	0.767	0.890	0.963	0.829	1.086	0.730	0.805	0.867
Hotspot	Front	0.720	0.555	0.741	0.797	0.695	1.012	0.457	0.617	0.757
	Rear	0.950	0.785	0.971	0.924	0.795	0.934	0.706	0.866	0.876
	Left	0.410	0.085	0.431	0.487	0.385	0.702	0.193	0.193	0.493
	Right	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067
	Top	0.325	0.160	0.346	0.402	0.300	0.617	0.013	0.173	0.313
	Bottom	1.228	1.228	1.228	1.228	1.228	1.228	1.228	1.228	1.228
Phablet	Front	1.051	1.051	1.051	2.375	2.276	3.397	1.051	1.051	2.276
	Rear	1.749	1.749	1.749	3.073	2.523	3.521	1.749	1.749	2.523
	Left	0.504	0.504	0.504	1.706	2.103	2.850	0.504	0.504	2.103
	Right	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203
	Top	-	-	-	1.324	1.599	2.346	-	-	1.599
	Bottom	2.539	2.539	2.539	2.539	2.539	2.539	2.539	2.539	2.539

Summation										
WCDMA B.2 (Main 1 Ant.)										
Band / Position		**1)**	**2)**	**3)**	**4)**	**5)**	**6)**	**7)**	**8)**	**9)**
		[①+②+⑨]	**[①+③+⑨]**	**[①+④+⑨]**	**[①+⑤+⑨]**	**[①+⑥+⑨]**	**[①+⑦+⑨]**	**[①+⑧+⑨]**	**[①+③+⑧+⑨]**	**[①+⑥+⑧+⑨]**
Head	Right Cheek	0.305	0.110	0.355	0.142	0.413	0.498	0.421	0.443	0.746
	Right Tilt	0.272	0.077	0.322	0.109	0.380	0.101	0.160	0.182	0.485
	Left Cheek	0.290	0.095	0.340	0.127	0.398	0.483	0.144	0.166	0.469
	Left Tilt	0.260	0.065	0.310	0.097	0.368	0.453	0.068	0.090	0.393
Body-worn	Front	0.667	0.534	0.657	0.730	0.596	0.853	0.489	0.564	0.626
	Rear	0.970	0.837	0.960	1.033	0.899	1.156	0.800	0.875	0.937
Hotspot	Front	0.677	0.512	0.698	0.754	0.652	0.969	0.414	0.574	0.714
	Rear	0.905	0.740	0.926	0.879	0.750	0.889	0.661	0.821	0.831
	Left	0.401	0.076	0.422	0.478	0.376	0.693	0.184	0.184	0.484
	Right	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
	Top	0.325	0.160	0.346	0.402	0.300	0.617	0.013	0.173	0.313
	Bottom	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060
Phablet	Front	0.975	0.975	0.975	2.299	2.200	3.321	0.975	0.975	2.200
	Rear	1.548	1.548	1.548	2.872	2.322	3.320	1.548	1.548	2.322
	Left	0.583	0.583	0.583	1.785	2.182	2.929	0.583	0.583	2.182
	Right	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235
	Top	-	-	-	1.324	1.599	2.346	-	-	1.599
	Bottom	2.211	2.211	2.211	2.211	2.211	2.211	2.211	2.211	2.211
WCDMA B.4 (Main 1 Ant.)										
Head	Right Cheek	0.302	0.107	0.352	0.139	0.410	0.495	0.418	0.440	0.743
	Right Tilt	0.267	0.072	0.317	0.104	0.375	0.096	0.155	0.177	0.480
	Left Cheek	0.279	0.084	0.329	0.116	0.387	0.472	0.133	0.155	0.458
	Left Tilt	0.269	0.074	0.319	0.106	0.377	0.462	0.077	0.099	0.402
Body-worn	Front	0.577	0.444	0.567	0.640	0.506	0.763	0.399	0.474	0.536
	Rear	0.798	0.665	0.788	0.861	0.727	0.984	0.628	0.703	0.765
Hotspot	Front	0.703	0.538	0.724	0.780	0.678	0.995	0.440	0.600	0.740
	Rear	0.927	0.762	0.948	0.901	0.772	0.911	0.683	0.843	0.853
	Left	0.394	0.069	0.415	0.471	0.369	0.686	0.177	0.177	0.477
	Right	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
	Top	0.325	0.160	0.346	0.402	0.300	0.617	0.013	0.173	0.313
	Bottom	1.152	1.152	1.152	1.152	1.152	1.152	1.152	1.152	1.152
Phablet	Front	1.045	1.045	1.045	2.369	2.270	3.391	1.045	1.045	2.270
	Rear	1.911	1.911	1.911	3.235	2.685	**3.683**	1.911	1.911	2.685
	Left	0.349	0.349	0.349	1.551	1.948	2.695	0.349	0.349	1.948
	Right	0.236	0.236	0.236	0.236	0.236	0.236	0.236	0.236	0.236
	Top	-	-	-	1.324	1.599	2.346	-	-	1.599
	Bottom	2.886	2.886	2.886	2.886	2.886	2.886	2.886	2.886	2.886

Summation										
WCDMA B.5 (Main 1 Ant.)										
Band / Position		**1)**	**2)**	**3)**	**4)**	**5)**	**6)**	**7)**	**8)**	**9)**
		[①+②+⑨]	**[①+③+⑨]**	**[①+④+⑨]**	**[①+⑤+⑨]**	**[①+⑥+⑨]**	**[①+⑦+⑨]**	**[①+⑧+⑨]**	**[①+③+⑧+⑨]**	**[①+⑥+⑧+⑨]**
Head	Right Cheek	0.465	0.270	0.515	0.302	0.573	0.658	0.581	0.603	0.906
	Right Tilt	0.349	0.154	0.399	0.186	0.457	0.178	0.237	0.259	0.562
	Left Cheek	0.409	0.214	0.459	0.246	0.517	0.602	0.263	0.285	0.588
	Left Tilt	0.337	0.142	0.387	0.174	0.445	0.530	0.145	0.167	0.470
Body-worn	Front	0.452	0.319	0.442	0.515	0.381	0.638	0.274	0.349	0.411
	Rear	0.483	0.350	0.473	0.546	0.412	0.669	0.313	0.388	0.450
Hotspot	Front	0.640	0.475	0.661	0.717	0.615	0.932	0.377	0.537	0.677
	Rear	0.814	0.649	0.835	0.788	0.659	0.798	0.570	0.730	0.740
	Left	0.466	0.141	0.487	0.543	0.441	0.758	0.249	0.249	0.549
	Right	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251
	Top	0.325	0.160	0.346	0.402	0.300	0.617	0.013	0.173	0.313
	Bottom	0.219	0.219	0.219	0.219	0.219	0.219	0.219	0.219	0.219
Phablet	Front	-	-	-	1.324	1.225	2.346	-	-	1.225
	Rear	0.023	0.023	0.023	1.347	0.797	1.795	0.023	0.023	0.797
	Left	-	-	-	1.202	1.599	2.346	-	-	1.599
	Right	-	-	-	-	-	-	-	-	-
	Top	-	-	-	1.324	1.599	2.346	-	-	1.599
	Bottom	-	-	-	-	-	-	-	-	-
LTE B.2 (Main 1 Ant.)										
Hed	Right Cheek	0.288	0.093	0.338	0.125	0.396	0.481	0.404	0.426	0.729
	Right Tilt	0.253	0.058	0.303	0.090	0.361	0.082	0.141	0.163	0.466
	Left Cheek	0.277	0.082	0.327	0.114	0.385	0.470	0.131	0.153	0.456
	Left Tilt	0.257	0.062	0.307	0.094	0.365	0.450	0.065	0.087	0.390
Body-worn	Front	0.528	0.395	0.518	0.591	0.457	0.714	0.350	0.425	0.487
	Rear	0.538	0.405	0.528	0.601	0.467	0.724	0.368	0.443	0.505
Hotspot	Front	0.528	0.363	0.549	0.605	0.503	0.820	0.265	0.425	0.565
	Rear	0.689	0.524	0.710	0.663	0.534	0.673	0.445	0.605	0.615
	Left	0.375	0.050	0.396	0.452	0.350	0.667	0.158	0.158	0.458
	Right	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049
	Top	0.325	0.160	0.346	0.402	0.300	0.617	0.013	0.173	0.313
	Bottom	0.624	0.624	0.624	0.624	0.624	0.624	0.624	0.624	0.624
Phablet	Front	0.704	0.704	0.704	2.028	1.929	3.050	0.704	0.704	1.929
	Rear	1.187	1.187	1.187	2.511	1.961	2.959	1.187	1.187	1.961
	Left	0.345	0.345	0.345	1.547	1.944	2.691	0.345	0.345	1.944
	Right	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
	Top	-	-	-	1.324	1.599	2.346	-	-	1.599
	Bottom	1.704	1.704	1.704	1.704	1.704	1.704	1.704	1.704	1.704

Summation										
LTE B.5 (Main 1 Ant.)										
Band / Position		**1)**	**2)**	**3)**	**4)**	**5)**	**6)**	**7)**	**8)**	**9)**
		[①+②+⑨]	[①+③+⑨]	[①+④+⑨]	[①+⑤+⑨]	[①+⑥+⑨]	[①+⑦+⑨]	[①+⑧+⑨]	[①+③+⑧+⑨]	[①+⑥+⑧+⑨]
Head	Right Cheek	0.495	0.300	0.545	0.332	0.603	0.688	0.611	0.633	0.936
	Right Tilt	0.344	0.149	0.394	0.181	0.452	0.173	0.232	0.254	0.557
	Left Cheek	0.450	0.255	0.500	0.287	0.558	0.643	0.304	0.326	0.629
	Left Tilt	0.355	0.160	0.405	0.192	0.463	0.548	0.163	0.185	0.488
Body-worn	Front	0.495	0.362	0.485	0.558	0.424	0.681	0.317	0.392	0.454
	Rear	0.527	0.394	0.517	0.590	0.456	0.713	0.357	0.432	0.494
Hotspot	Front	0.825	0.660	0.846	0.902	0.800	1.117	0.562	0.722	0.862
	Rear	0.985	0.820	1.006	0.959	0.830	0.969	0.741	0.901	0.911
	Left	0.517	0.192	0.538	0.594	0.492	0.809	0.300	0.300	0.600
	Right	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
	Top	0.325	0.160	0.346	0.402	0.300	0.617	0.013	0.173	0.313
	Bottom	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238
Phablet	Front	-	-	-	1.324	1.225	2.346	-	-	1.225
	Rear	0.023	0.023	0.023	1.347	0.797	1.795	0.023	0.023	0.797
	Left	-	-	-	1.202	1.599	2.346	-	-	1.599
	Right	-	-	-	-	-	-	-	-	-
	Top	-	-	-	1.324	1.599	2.346	-	-	1.599
	Bottom	-	-	-	-	-	-	-	-	-
LTE B.12 (Main 1 Ant.)										
Head	Right Cheek	0.358	0.163	0.408	0.195	0.466	0.551	0.474	0.496	0.799
	Right Tilt	0.301	0.106	0.351	0.138	0.409	0.130	0.189	0.211	0.514
	Left Cheek	0.337	0.142	0.387	0.174	0.445	0.530	0.191	0.213	0.516
	Left Tilt	0.275	0.080	0.325	0.112	0.383	0.468	0.083	0.105	0.408
Body-worn	Front	0.378	0.245	0.368	0.441	0.307	0.564	0.200	0.275	0.337
	Rear	0.415	0.282	0.405	0.478	0.344	0.601	0.245	0.320	0.382
Hotspot	Front	0.494	0.329	0.515	0.571	0.469	0.786	0.231	0.391	0.531
	Rear	0.544	0.379	0.565	0.518	0.389	0.528	0.300	0.460	0.470
	Left	0.519	0.194	0.540	0.596	0.494	0.811	0.302	0.302	0.602
	Right	0.127	0.127	0.127	0.127	0.127	0.127	0.127	0.127	0.127
	Top	0.325	0.160	0.346	0.402	0.300	0.617	0.013	0.173	0.313
	Bottom	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032
Phablet	Front	-	-	-	1.324	1.225	2.346	-	-	1.225
	Rear	0.023	0.023	0.023	1.347	0.797	1.795	0.023	0.023	0.797
	Left	-	-	-	1.202	1.599	2.346	-	-	1.599
	Right	-	-	-	-	-	-	-	-	-
	Top	-	-	-	1.324	1.599	2.346	-	-	1.599
	Bottom	-	-	-	-	-	-	-	-	-

Summation										
LTE B.26 (Main 1 Ant.)										
Head	Right Cheek	0.425	0.230	0.475	0.262	0.533	0.618	0.541	0.563	0.866
	Right Tilt	0.324	0.129	0.374	0.161	0.432	0.153	0.212	0.234	0.537
	Left Cheek	0.349	0.154	0.399	0.186	0.457	0.542	0.203	0.225	0.528
	Left Tilt	0.313	0.118	0.363	0.150	0.421	0.506	0.121	0.143	0.446
Body-worn	Front	0.407	0.274	0.397	0.470	0.336	0.593	0.229	0.304	0.366
	Rear	0.451	0.318	0.441	0.514	0.380	0.637	0.281	0.356	0.418
Hotspot	Front	0.633	0.468	0.654	0.710	0.608	0.925	0.370	0.530	0.670
	Rear	0.713	0.548	0.734	0.687	0.558	0.697	0.469	0.629	0.639
	Left	0.488	0.163	0.509	0.565	0.463	0.780	0.271	0.271	0.571
	Right	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275
	Top	0.325	0.160	0.346	0.402	0.300	0.617	0.013	0.173	0.313
	Bottom	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152
Phablet	Front	-	-	-	1.324	1.225	2.346	-	-	1.225
	Rear	0.023	0.023	0.023	1.347	0.797	1.795	0.023	0.023	0.797
	Left	-	-	-	1.202	1.599	2.346	-	-	1.599
	Right	-	-	-	-	-	-	-	-	-
	Top	-	-	-	1.324	1.599	2.346	-	-	1.599
	Bottom	-	-	-	-	-	-	-	-	-
LTE B.41 (Main 2 Ant.)										
Band / Position		**1)**	**2)**	**3)**	**4)**	**5)**	**6)**	**7)**	**8)**	**9)**
		[①+②+⑨]	**[①+③+⑨]**	**[①+④+⑨]**	**[①+⑤+⑨]**	**[①+⑥+⑨]**	**[①+⑦+⑨]**	**[①+⑧+⑨]**	**[①+③+⑧+⑨]**	**[①+⑥+⑧+⑨]**
Head	Right Cheek	0.312	0.117	0.362	0.149	0.420	0.505	0.428	0.450	0.753
	Right Tilt	0.330	0.135	0.380	0.167	0.438	0.159	0.218	0.240	0.543
	Left Cheek	0.348	0.153	0.398	0.185	0.456	0.541	0.202	0.224	0.527
	Left Tilt	0.274	0.079	0.324	0.111	0.382	0.467	0.082	0.104	0.407
Body-worn	Front	0.361	0.228	0.351	0.424	0.290	0.547	0.183	0.258	0.320
	Rear	0.383	0.250	0.373	0.446	0.312	0.569	0.213	0.288	0.350
Hotspot	Front	0.503	0.338	0.524	0.580	0.478	0.795	0.240	0.400	0.540
	Rear	0.560	0.395	0.581	0.534	0.405	0.544	0.316	0.476	0.486
	Left	0.391	0.066	0.412	0.468	0.366	0.683	0.174	0.174	0.474
	Right	-	-	-	-	-	-	-	-	-
	Top	0.325	0.160	0.346	0.402	0.300	0.617	0.013	0.173	0.313
	Bottom	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218
Phablet	Front	-	-	-	1.324	1.225	2.346	-	-	1.225
	Rear	0.023	0.023	0.023	1.347	0.797	1.795	0.023	0.023	0.797
	Left	-	-	-	1.202	1.599	2.346	-	-	1.599
	Right	-	-	-	-	-	-	-	-	-
	Top	-	-	-	1.324	1.599	2.346	-	-	1.599
	Bottom	-	-	-	-	-	-	-	-	-

Summation										
LTE B.66 (Main 1 Ant.)										
Head	Right Cheek	0.293	0.098	0.343	0.130	0.401	0.486	0.409	0.431	0.734
	Right Tilt	0.274	0.079	0.324	0.111	0.382	0.103	0.162	0.184	0.487
	Left Cheek	0.279	0.084	0.329	0.116	0.387	0.472	0.133	0.155	0.458
	Left Tilt	0.255	0.060	0.305	0.092	0.363	0.448	0.063	0.085	0.388
Body-worn	Front	0.586	0.453	0.576	0.649	0.515	0.772	0.408	0.483	0.545
	Rear	0.804	0.671	0.794	0.867	0.733	0.990	0.634	0.709	0.771
Hotspot	Front	0.603	0.438	0.624	0.680	0.578	0.895	0.340	0.500	0.640
	Rear	0.689	0.524	0.710	0.663	0.534	0.673	0.445	0.605	0.615
	Left	0.408	0.083	0.429	0.485	0.383	0.700	0.191	0.191	0.491
	Right	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091
	Top	0.325	0.160	0.346	0.402	0.300	0.617	0.013	0.173	0.313
	Bottom	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
Phablet	Front	0.955	0.955	0.955	2.279	2.180	3.301	0.955	0.955	2.180
	Rear	1.179	1.179	1.179	2.503	1.953	2.951	1.179	1.179	1.953
	Left	0.412	0.412	0.412	1.614	2.011	2.758	0.412	0.412	2.011
	Right	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204
	Top	-	-	-	1.324	1.599	2.346	-	-	1.599
	Bottom	1.781	1.781	1.781	1.781	1.781	1.781	1.781	1.781	1.781

Notes: Simultaneous transmission SAR test exclusion considerations

- Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneously transmitting antenna. When the sum of 1-g or 10-g SAR of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration. Per KDB Publication 447498 D04v01.

- When the sum of SAR1g of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR1g 1.6 W/kg), the SPLSR procedures is not required. When the sum of SAR1g is greater than the SAR limit (SAR1g 1.6 W/kg), SAR test exclusion is determined by the SPLSR.

- " - " = SAR test exclusion

13. SAR Measurement Variability

Per FCC KDB Publication 865664 D01v01r04, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:

1) **Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg.**
2) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
3) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

14. Measurement Uncertainty

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

15. Test Equipment Information

Test Platform	SPEAG DASY5 System SPEAG DASY6 System			
Version	DASY52: 52.10.4.1535 / SEMCAD: 14.6.14 (7501) DASY6: 16.0.2.136			
Location	Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea			
Manufacture	SPEAG			
Hardware Reference				
Equipment	Model	Serial Number	Date of Calibration	Due date of next Calibration
Shield Room	-	8F - 1	-	-
Shield Room	-	8F - 2	-	-
Shield Room	-	8F - 4	-	-
DASY5 Robot	TX90XL speag	F12/5L7FA1/A/01	-	-
DASY6 Robot	TX60 Lspeag	F/19/0007289/A/001	-	-
Phantom	Twin SAM Phantom	1724	-	-
Phantom	Twin SAM Phantom	1728	-	-
Phantom	Twin SAM Phantom	1984	-	-
Phantom	2mm Oval Phantom ELI5	2098	-	-
Mounting Device	Mounting Device	-	-	-
DAE	DAE4	1342	2022-05-31	2023-05-31
DAE	DAE4	1567	2022-03-24	2023-03-24
DAE	DAE4	1587	2022-07-20	2023-07-20
Probe	EX3DV4	3697	2022-03-28	2023-03-28
Probe	EX3DV4	7770	2022-11-18	2023-11-18
Probe	EX3DV4	3928	2022-03-03	2023-03-03
ESG Vector Signal Generator	E4438C	MY42080486	2022-05-02	2023-05-02
ESG Vector Signal Generator	E4438C	MY42080845	2022-02-24	2023-02-24
Power Sensor	8481H	3318A 19377	2022-05-02	2023-05-02
Power Sensor	8481H	3318A 19379	2022-05-02	2023-05-02
Dual Power Meter	E4419B	GB43312301	2022-05-02	2023-05-02
Dual Power Meter	EPM-442A	GB37480680	2022-05-02	2023-05-02
Power Sensor	8481H	2703A11902	2022-05-02	2023-05-02
Power Sensor	8481H	3318A18090	2022-05-02	2023-05-02
Attenuator	8491B 3dB	17387	2022-05-02	2023-05-02
Attenuator	8491B-6dB	MY39270294	2022-05-02	2023-05-02
Attenuator	8491B 10dB	29425	2022-05-02	2023-05-02
Attenuator	8491A	21552	2022-05-02	2023-05-02
Attenuator	8491A	35560	2022-05-02	2023-05-02
Attenuator	8491A	35934	2022-05-02	2023-05-02
Dual Directional Coupler	772D	2839A00719	2022-05-02	2023-05-02
Dual Directional Coupler	772D	2839A160504	2022-05-02	2023-05-02
Dual Directional Coupler	778D	16059	2022-05-02	2023-05-02
Dual Directional Coupler	ZMDC-30-1+	F708102210	2022-12-14	2023-12-14

Hardware Reference				
Equipment	Model	Serial Number	Date of Calibration	Due date of next Calibration
Power Amplifier	GRF5039	1062	2022-05-02	2023-05-02
Power Amplifier	2055-BBS3Q7E9I	1005D/C0521	2022-02-24	2023-02-24
Power Amplifier	5190FE	1012	2022-05-02	2023-05-02
Power Amplifier	AMP2027	10010	2022-05-02	2023-05-02
Power Amplifier	TVA-R5-13A+	2202007	2022-12-14	2023-12-14
Low Pass Filter	VLF-3000+	31831	2022-05-02	2023-05-02
Low Pass Filter	LA-15N	36543	2022-05-02	2023-05-02
Low Pass Filter	LA-30N	40058	2022-05-02	2023-05-02
Low Pass Filter	LA-60N	40059	2022-05-02	2023-05-02
Confined Loop Antennas	CLA13	1019	2022-06-03	2024-06-03
Dipole Validation Kits	D750V3	1183	2022-09-21	2024-09-21
Dipole Validation Kits	D900V2	1d138	2022-05-25	2024-05-25
Dipole Validation Kits	D1750V2	1072	2022-04-27	2024-04-27
Dipole Validation Kits	D1900V2	5d160	2022-04-29	2024-04-29
Dipole Validation Kits	D2450V2	895	2022-07-15	2024-07-15
Dipole Validation Kits	D2600V2	1050	2022-07-15	2024-07-15
Dipole Validation Kits	D5GHzV2	1134	2022-01-27	2024-01-27
Network Analyzer	E5071B	MY42403524	2022-02-15	2023-02-15
Dielectric Assessment Kit	DAK-3.5	1078	2022-05-30	2023-05-30
Dielectric Assessment Kit	DAK-12	1165	2022-06-13	2023-06-13
Humidity/Temp	MHB-382SD	73871	2022-05-04	2023-05-04
Humidity/Temp	MHB-382SD	25737	2022-05-04	2023-05-04
Humidity/Temp	MHB-382SD	46301	2022-02-25	2023-02-25
Spectrum Analyzer	FSP7	100289	2022-12-08	2023-12-08
Wideband Radio Communication Tester	CMW500	132120	2022-05-02	2023-05-02
Wideband Radio Communication Tester	CMW500	132423	2022-02-24	2023-02-24
Radio Communication Test Station	MT8821C	6201807233	2022-01-19	2023-01-19
Radio Communication Test Station	MT8821C	6262170371	2022-11-03	2023-11-03
Radio Communication Test Station	MT8821C	6262170372	2022-11-03	2023-11-03

16. Test System Verification Results

Eurofins KCTL Co.,Ltd.

Measurement Report for Device, FRONT, CLA13, UID 0 -, Channel 4 (13.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
CLA13, Speag	220.0 x 220.0 x 100.0	1019	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	FRONT, 0.00	CLA13	CW, 0--	13.0, 4	15.42	0.759	55.0

Hardware Setup

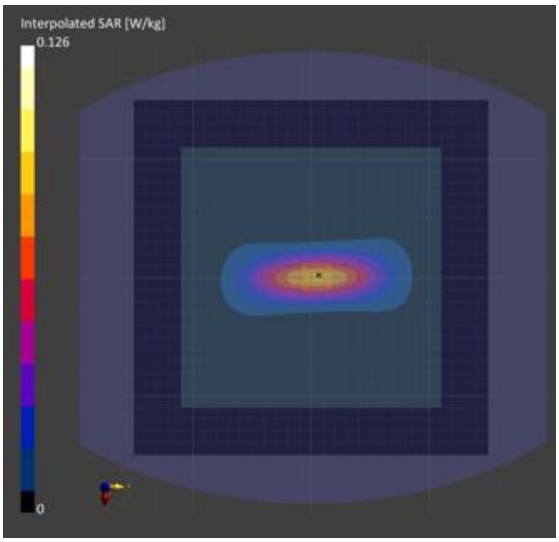
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2098	HBBL-4-250 , 2022-Dec-27	EX3DV4 - SN3928, 2022-03-03	DAE4 Sn1342, 2022-05-31

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	300.0 x 300.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	N/A	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-27	2022-12-27
psSAR1g [W/kg]	0.065	0.061
psSAR8g [W/kg]	0.054	0.040
psSAR10g [W/kg]	0.052	0.038
psAPD (1.0cm2, sq) [W/m2]		0.613
psAPD (4.0cm2, sq) [W/m2]		0.804
Power Drift [dB]		0.01



Date: 2023-01-06

Test Laboratory: Eurofins KCTL Co.,Ltd.
File Name: 750 MHz Verification Input Power 250 mW 2023-01-06.da52:0

DUT: Dipole 750 MHz D750V3, Type: D750V3, Serial: D750V3 - SN:1183

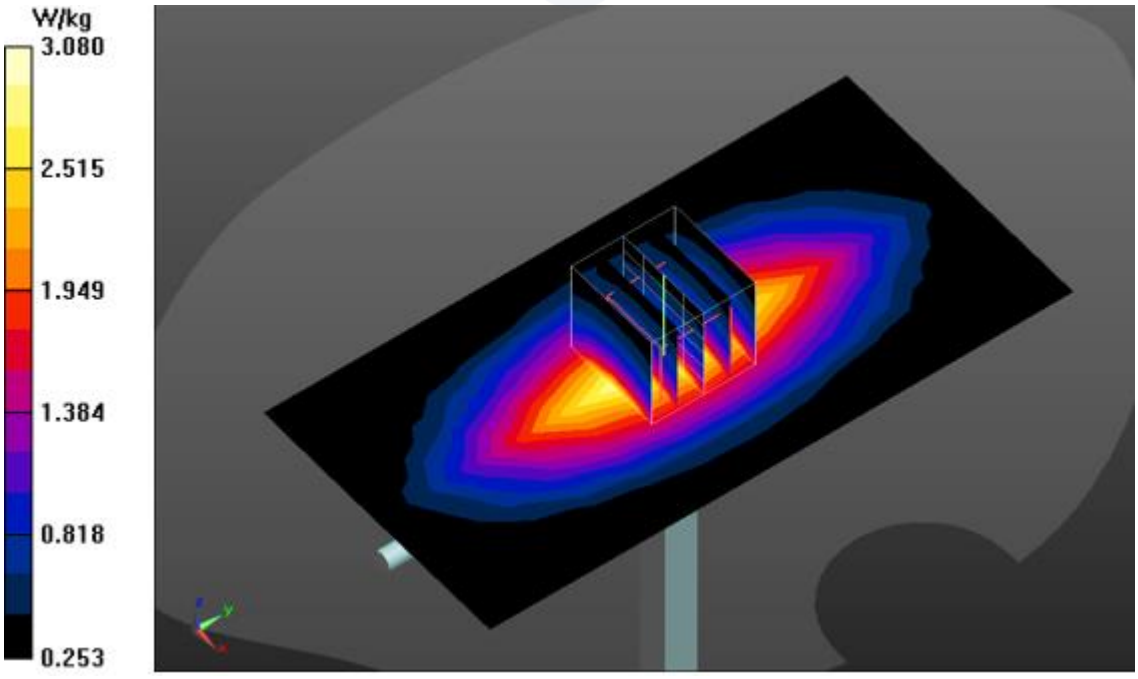
Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.886 S/m; ε_r = 40.943; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7770;ConvF(8.92, 8.92, 8.92) @ 750 MHz; Calibrated: 2022-11-18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1567; Calibrated: 2022-03-24
- Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1728
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/750 MHz Verification Input Power 250 mW 2023-01-06/Area Scan (7x13x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.08 W/kg

Configuration/750 MHz Verification Input Power 250 mW 2023-01-06/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 59.59 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 3.66 W/kg
SAR(1 g) = 2.2 W/kg; SAR(10 g) = 1.43 W/kg
Maximum value of SAR (measured) = 3.08 W/kg



Date: 2023-01-06

Test Laboratory: Eurofins KCTL Co.,Ltd.
File Name: 900 MHz Verification Input Power 250 mW 2023-01-06.da52:0

DUT: Dipole 900 MHz D900V2, Type: D900V2, Serial: D900V2 - SN:1d138

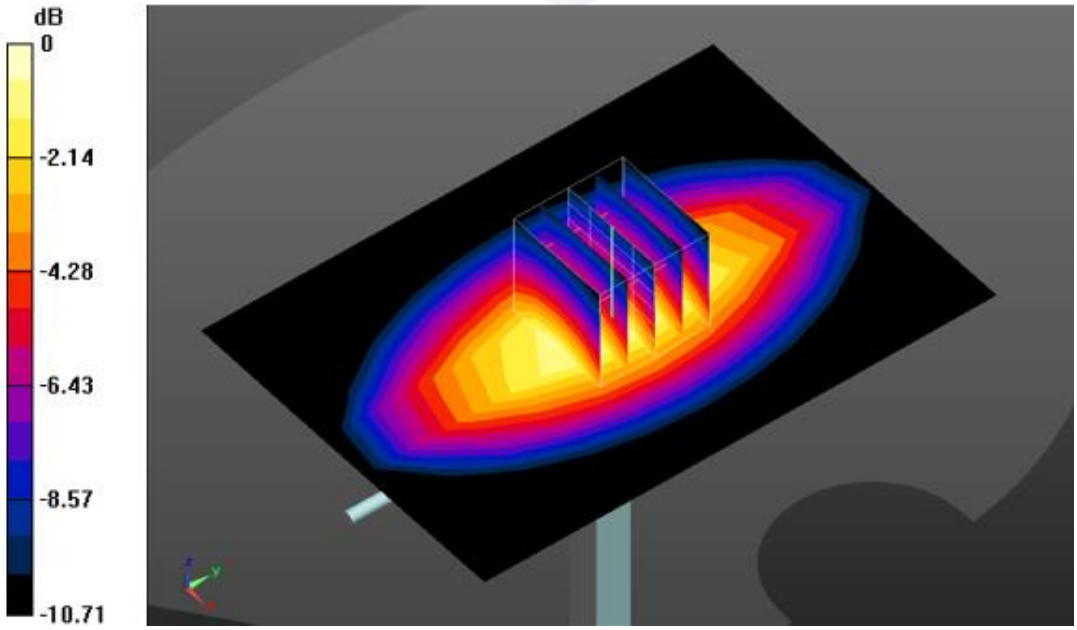
Communication System: UID 0, CW (0); Frequency: 900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 900 MHz; σ = 0.942 S/m; ε_r = 40.631; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7770;ConvF(8.71, 8.71, 8.71) @ 900 MHz; Calibrated: 2022-11-18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1567; Calibrated: 2022-03-24
- Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1728
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/900 MHz Verification Input Power 250 mW 2023-01-06/Area Scan (8x11x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.21 W/kg

Configuration/900 MHz Verification Input Power 250 mW 2023-01-06/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 64.08 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.98 W/kg
SAR(1 g) = 2.64 W/kg; SAR(10 g) = 1.73 W/kg
Maximum value of SAR (measured) = 3.51 W/kg



0 dB = 3.51 W/kg = 5.45 dBW/kg

Date: 2023-01-11

Test Laboratory: Eurofins KCTL Co.,Ltd.
File Name: 900 MHz Verification Input Power 250 mW 2023-01-11.da52:0

DUT: Dipole 900 MHz D900V2, Type: D900V2, Serial: D900V2 - SN:1d138

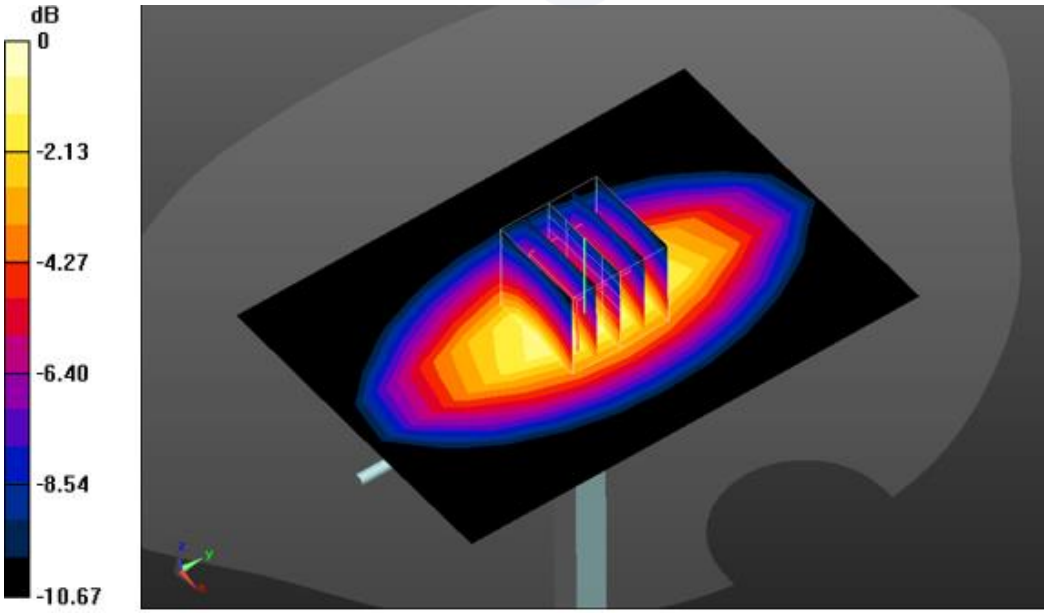
Communication System: UID 0, CW (0); Frequency: 900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 900 MHz; σ = 0.957 S/m; ε_r = 40.652; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7770;ConvF(8.71, 8.71, 8.71) @ 900 MHz; Calibrated: 2022-11-18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1567; Calibrated: 2022-03-24
- Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1728
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/900 MHz Verification Input Power 250 mW 2023-01-11/Area Scan (8x11x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.29 W/kg

Configuration/900 MHz Verification Input Power 250 mW 2023-01-11/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 64.40 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 4.06 W/kg
SAR(1 g) = 2.69 W/kg; SAR(10 g) = 1.77 W/kg
Maximum value of SAR (measured) = 3.59 W/kg



0 dB = 3.59 W/kg = 5.55 dBW/kg

Date: 1/4/2023

Test Laboratory: Eurofins KCTL Co.,Ltd.
File Name: 1750 MHz Verification Input Power 250 mW 2023-01-04.da52:0

DUT: Dipole 1750 MHz D1750V2, Type: D1750V2, Serial: D1750V2 - SN:1072

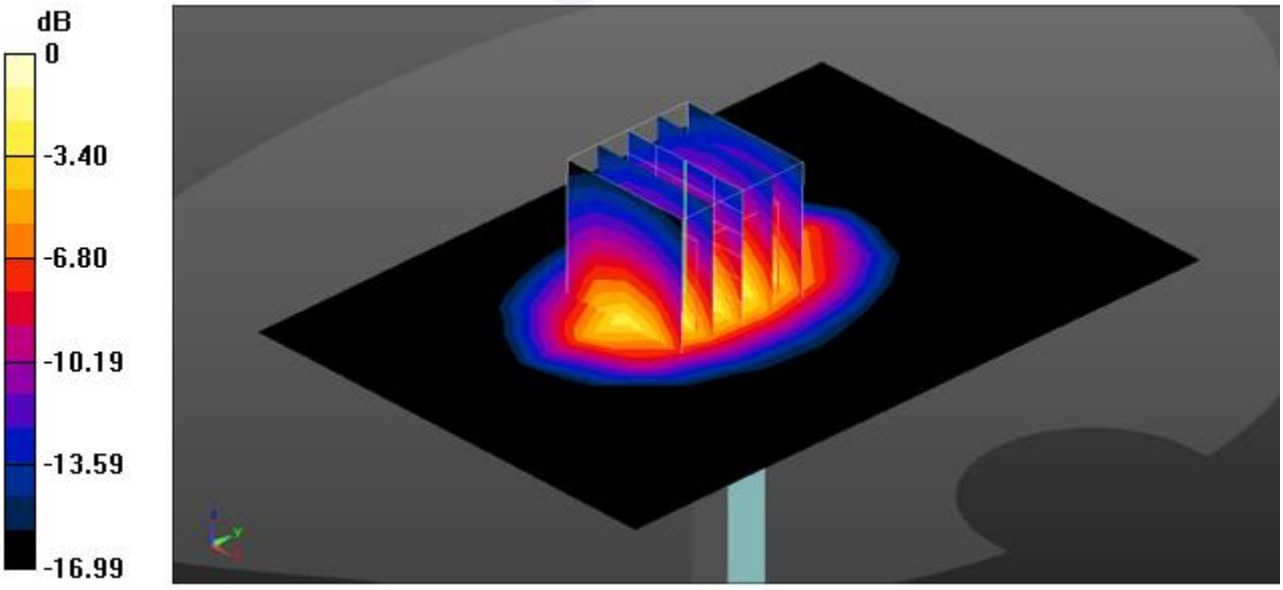
Communication System: UID 0, CW (0); Frequency: 1750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.389 S/m; ε_r = 38.636; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928;ConvF(8.01, 8.01, 8.01) @ 1750 MHz; Calibrated: 3/3/2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1342; Calibrated: 5/31/2022
- Phantom: Twin-SAM V8.0_Right; Type: QD 000 P41 Ax; Serial: 1984
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/1750 MHz Verification Input Power 250 mW 2023-01-04/Area Scan (8x11x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 13.6 W/kg

Configuration/1750 MHz Verification Input Power 250 mW 2023-01-04/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 94.32 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 17.0 W/kg
SAR(1 g) = 9.38 W/kg; SAR(10 g) = 5.04 W/kg
Maximum value of SAR (measured) = 14.2 W/kg



0 dB = 14.2 W/kg = 11.52 dBW/kg

Date: 2023-01-09

Test Laboratory: Eurofins KCTL Co.,Ltd.
File Name: 1750 MHz Verification Input Power 250 mW 2023-01-09.da52:0

DUT: Dipole 1750 MHz D1750V2, Type: D1750V2, Serial: D1750V2 - SN:1072

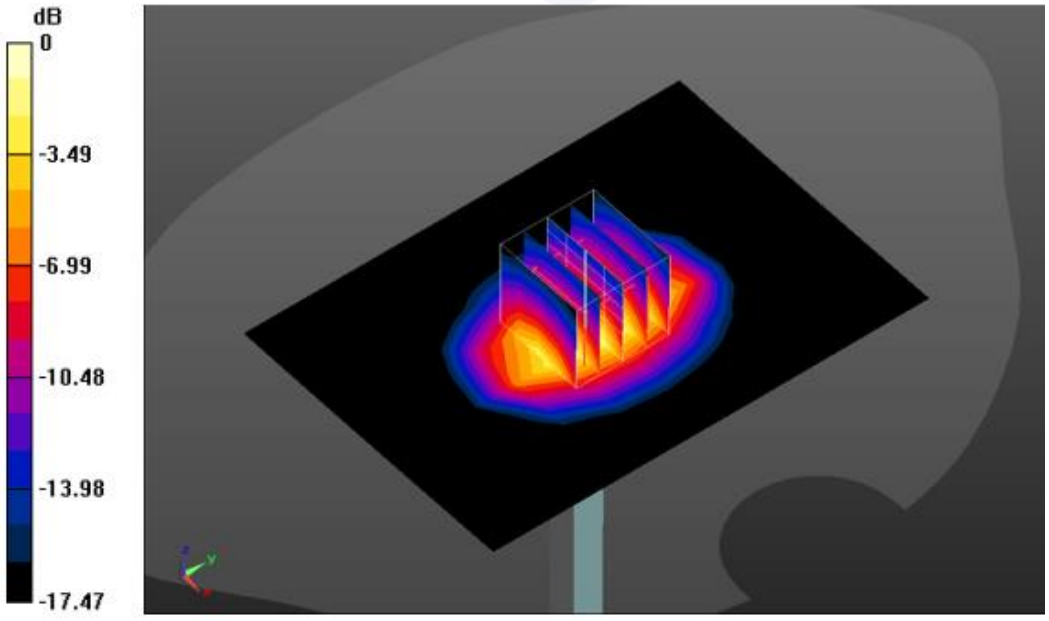
Communication System: UID 0, CW (0); Frequency: 1750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.344 S/m; ε_r = 38.272; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7770;ConvF(7.99, 7.99, 7.99) @ 1750 MHz; Calibrated: 2022-11-18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1567; Calibrated: 2022-03-24
- Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1728
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/1750 MHz Verification Input Power 250 mW 2023-01-09/Area Scan (8x11x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 11.5 W/kg

Configuration/1750 MHz Verification Input Power 250 mW 2023-01-09/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 103.2 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 16.4 W/kg
SAR(1 g) = 8.87 W/kg; SAR(10 g) = 4.69 W/kg
Maximum value of SAR (measured) = 13.7 W/kg



0 dB = 13.7 W/kg = 11.37 dBW/kg

Date: 1/5/2023

Test Laboratory: Eurofins KCTL Co.,Ltd.
File Name: 1900 MHz Verification Input Power 250 mW 2023-01-05.da52:0

DUT: Dipole 1900 MHz D1900V2, Type: D1900V2, Serial: D1900V2 - SN:5d160

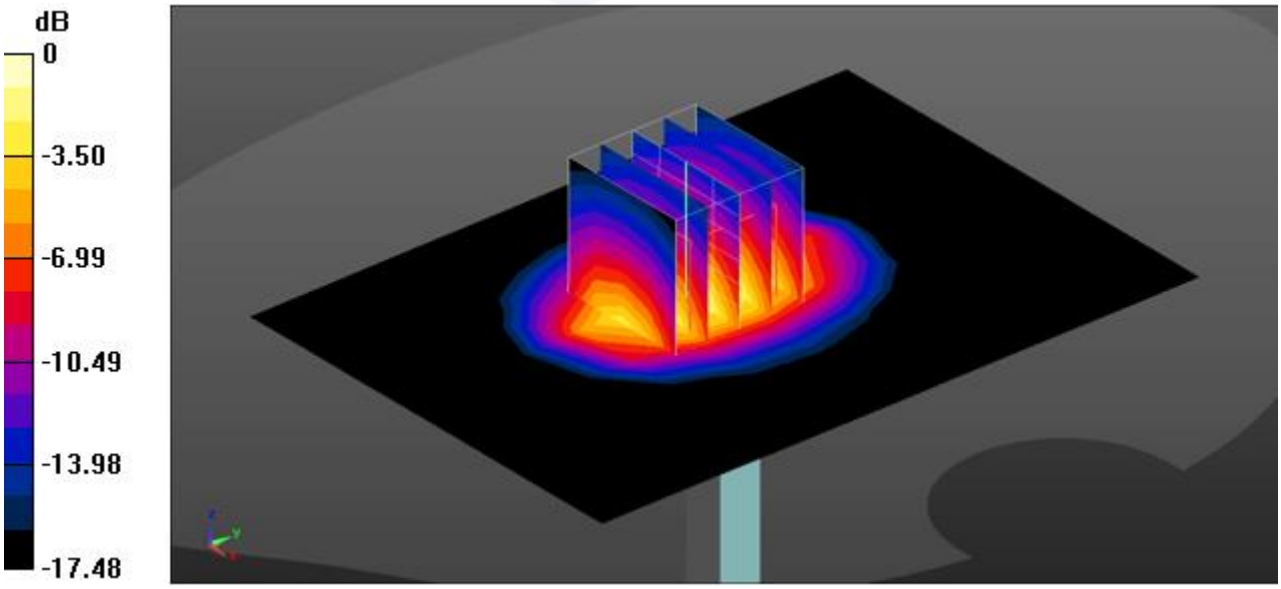
Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.367 S/m; ε_r = 40.012; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928;ConvF(7.72, 7.72, 7.72) @ 1900 MHz; Calibrated: 3/3/2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1342; Calibrated: 5/31/2022
- Phantom: Twin-SAM V8.0_Right; Type: QD 000 P41 Ax; Serial: 1984
- Measurement SW: DASY52, Version 52.10 (4);

System Performance Check/1900 MHz Verification Input Power 250 mW 2023-01-05/Area Scan (8x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 13.7 W/kg

System Performance Check/1900 MHz Verification Input Power 250 mW 2023-01-05/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 99.39 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 17.8 W/kg
SAR(1 g) = 9.64 W/kg; SAR(10 g) = 5.13 W/kg
Maximum value of SAR (measured) = 14.7 W/kg



0 dB = 14.7 W/kg = 11.67 dBW/kg

Date: 2023-01-10

Test Laboratory: Eurofins KCTL Co.,Ltd.
File Name: 1900 MHz Verification Input Power 250 mW 2023-01-10.da52:0

DUT: Dipole 1900 MHz D1900V2, Type: D1900V2, Serial: D1900V2 - SN:5d160

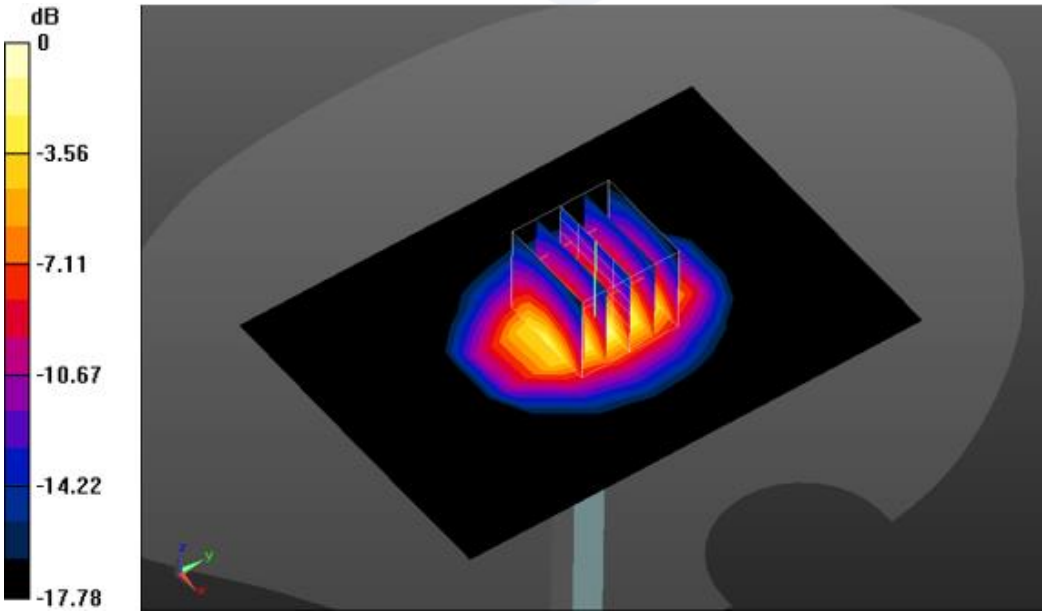
Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.462 S/m; ε_r = 38.403; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7770;ConvF(7.57, 7.57, 7.57) @ 1900 MHz; Calibrated: 2022-11-18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1567; Calibrated: 2022-03-24
- Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1728
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/1900 MHz Verification Input Power 250 mW 2023-01-10/Area Scan (8x11x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 10.4 W/kg

Configuration/1900 MHz Verification Input Power 250 mW 2023-01-10/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 107.2 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 18.8 W/kg
SAR(1 g) = 10.2 W/kg; SAR(10 g) = 5.33 W/kg
Maximum value of SAR (measured) = 15.8 W/kg



0 dB = 15.8 W/kg = 11.99 dBW/kg

Date: 2023-01-02

Test Laboratory: Eurofins KCTL Co.,Ltd.
File Name: 2450 MHz Verification Input Power 100 mW 2023-01-02.da5.da53:0

DUT: Dipole 2450 MHz D2450V2, Type: D2450V2, Serial: D2450V2 - SN:895

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2450 MHz; σ = 1.854 S/m; ε_r = 38.999; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

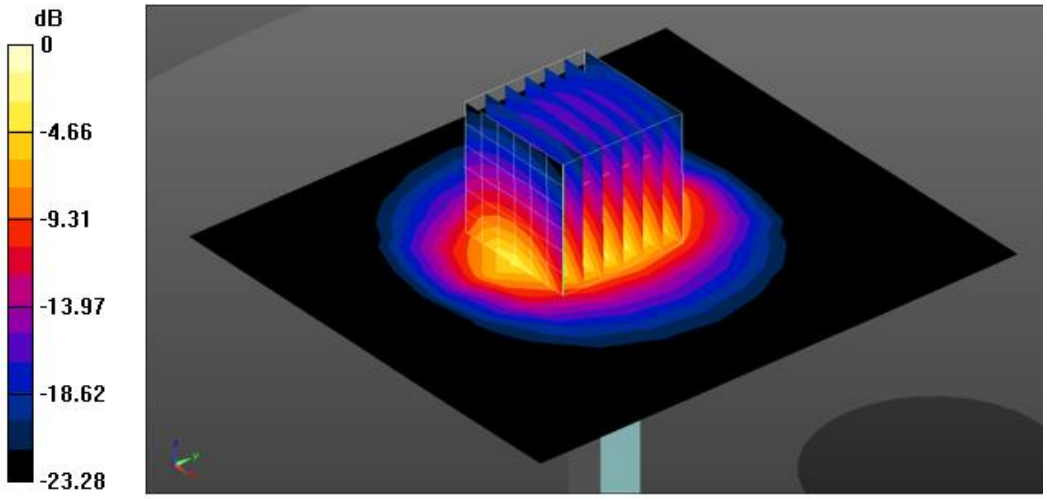
- Probe: EX3DV4 - SN3697;ConvF(7.14, 7.14, 7.14) @ 2450 MHz; Calibrated: 2022-03-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1587; Calibrated: 2022-07-20
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1724
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/2450 MHz Verification Input Power 100 mW 2023-01-02/Area Scan (10x11x1):
Measurement grid: dx=12mm, dy=12mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 8.06 W/kg

Configuration/2450 MHz Verification Input Power 100 mW 2023-01-02/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 59.88 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 11.5 W/kg
SAR(1 g) = 5.22 W/kg; SAR(10 g) = 2.39 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 8.99 W/kg



0 dB = 8.99 W/kg = 9.54 dBW/kg

Date: 2023-01-03

Test Laboratory: Eurofins KCTL Co.,Ltd.
File Name: 2450 MHz Verification Input Power 100 mW 20223-01-03.da5.da53:0

DUT: Dipole 2450 MHz D2450V2, Type: D2450V2, Serial: D2450V2 - SN:895

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2450 MHz; σ = 1.856 S/m; ε_r = 39.383; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

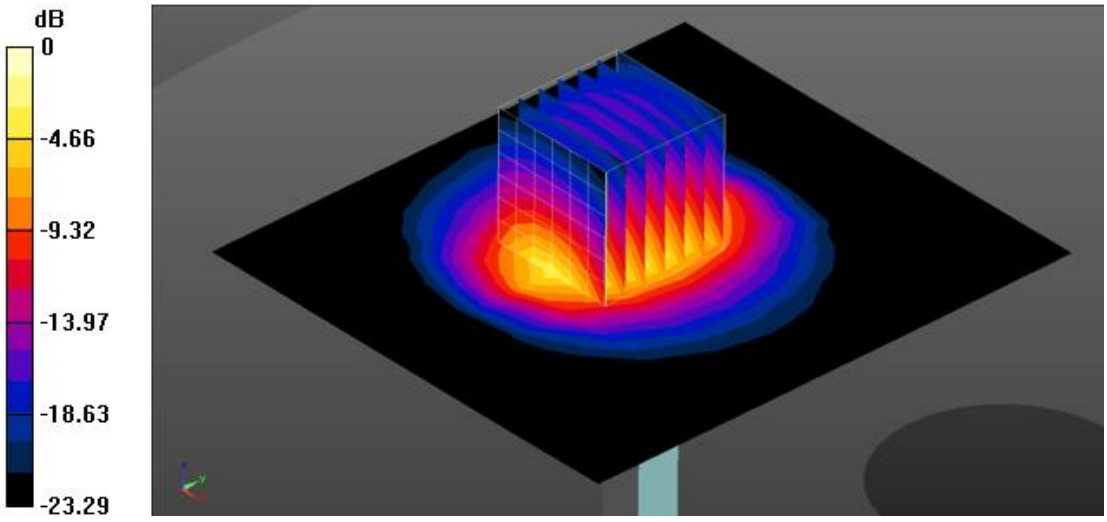
- Probe: EX3DV4 - SN3697;ConvF(7.14, 7.14, 7.14) @ 2450 MHz; Calibrated: 2022-03-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1587; Calibrated: 2022-07-20
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1724
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/2450 MHz Verification Input Power 100 mW 2023-01-03/Area Scan (10x11x1):
Measurement grid: dx=12mm, dy=12mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 8.55 W/kg

Configuration/2450 MHz Verification Input Power 100 mW 2023-01-03/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 58.44 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 11.4 W/kg
SAR(1 g) = 5.2 W/kg; SAR(10 g) = 2.39 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 8.85 W/kg



0 dB = 8.85 W/kg = 9.47 dBW/kg

Date: 12/17/2022

Test Laboratory: Eurofins KCTL Co.,Ltd.
File Name: 2600 MHz Verification Input Power 100 mW 2022-12-17.da5:0

DUT: Dipole 2600 MHz D2600V2, Type: D2600V2, Serial: D2600V2 - SN:1050

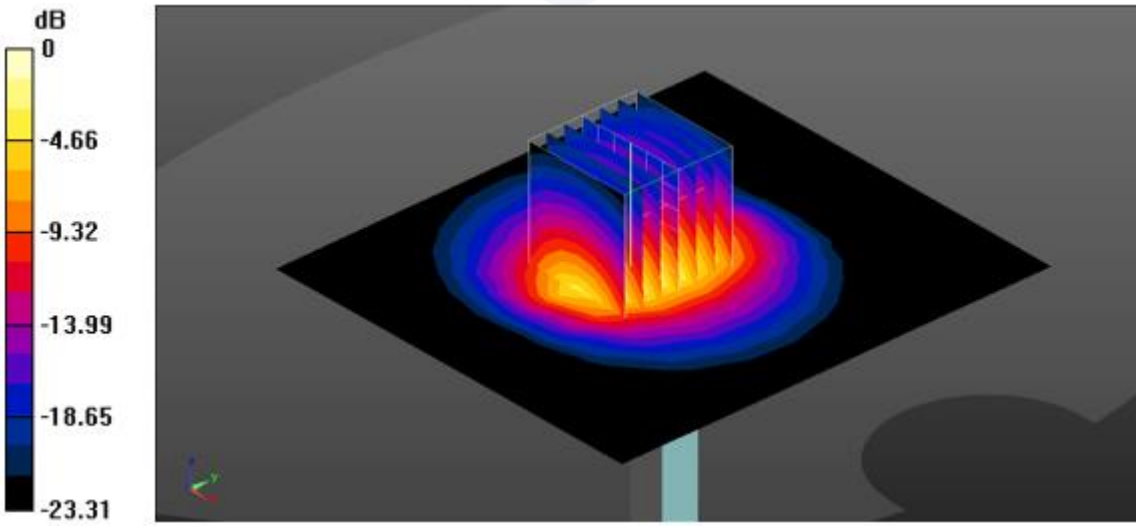
Communication System: UID 0, CW (0); Frequency: 2600 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 1.944 S/m; ε_r = 37.759; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928;ConvF(7.17, 7.17, 7.17) @ 2600 MHz; Calibrated: 3/3/2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1342; Calibrated: 5/31/2022
- Phantom: Twin-SAM V8.0_Right; Type: QD 000 P41 Ax; Serial: 1984
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/2600 MHz Verification Input Power 100 mW 2022-12-17/Area Scan (10x11x1):
Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 8.98 W/kg

Configuration/2600 MHz Verification Input Power 100 mW 2022-12-17/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 64.98 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 11.8 W/kg
SAR(1 g) = 5.47 W/kg; SAR(10 g) = 2.47 W/kg
Maximum value of SAR (measured) = 9.26 W/kg



0 dB = 9.26 W/kg = 9.67 dBW/kg

Date: 2023-01-04

Test Laboratory: Eurofins KCTL Co.,Ltd.
File Name: 5250 MHz Verification Input Power 100 mW 2023-01-04.da5:0

DUT: Dipole D5GHzV2, Type: D5GHzV2, Serial: D5GHzV2 - SN:1134

Communication System: UID 0, CW (0); Frequency: 5250 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5250 MHz; σ = 4.714 S/m; ε_r = 35.236; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

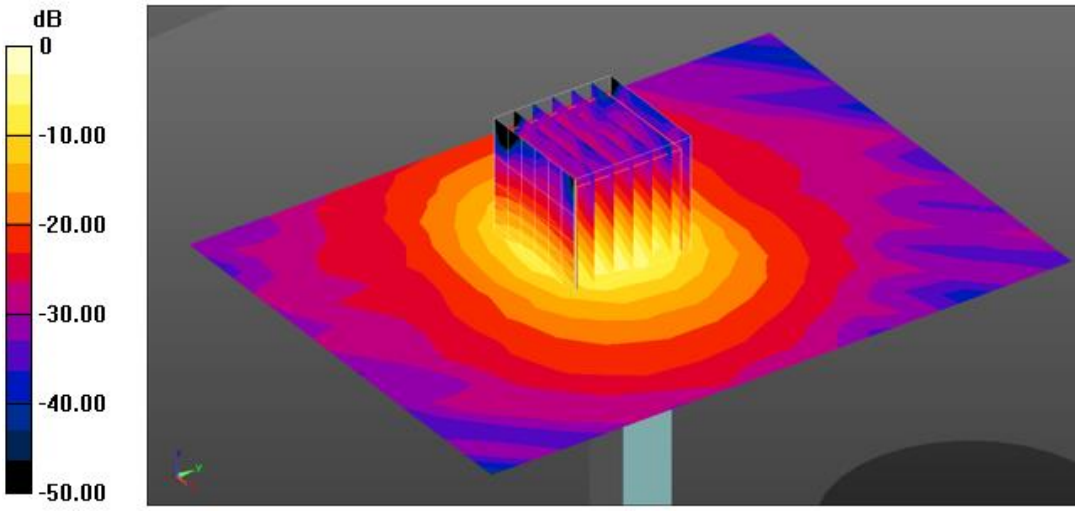
- Probe: EX3DV4 - SN3697;ConvF(4.7, 4.7, 4.7) @ 5250 MHz; Calibrated: 2022-03-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1587; Calibrated: 2022-07-20
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1724
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/5250 MHz Verification Input Power 100 mW 2023-01-04/Area Scan (10x13x1):
Measurement grid: dx=10mm, dy=10mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 18.4 W/kg

Configuration/5250 MHz Verification Input Power 100 mW 2023-01-04/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 56.34 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 35.0 W/kg
SAR(1 g) = 8.31 W/kg; SAR(10 g) = 2.38 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 21.2 W/kg



0 dB = 21.2 W/kg = 13.26 dBW/kg

Date: 2023-01-04

Test Laboratory: Eurofins KCTL Co.,Ltd.
File Name: 5600 MHz Verification Input Power 100 mW 2023-01-04.da5:0

DUT: Dipole D5GHzV2, Type: D5GHzV2, Serial: D5GHzV2 - SN:1134

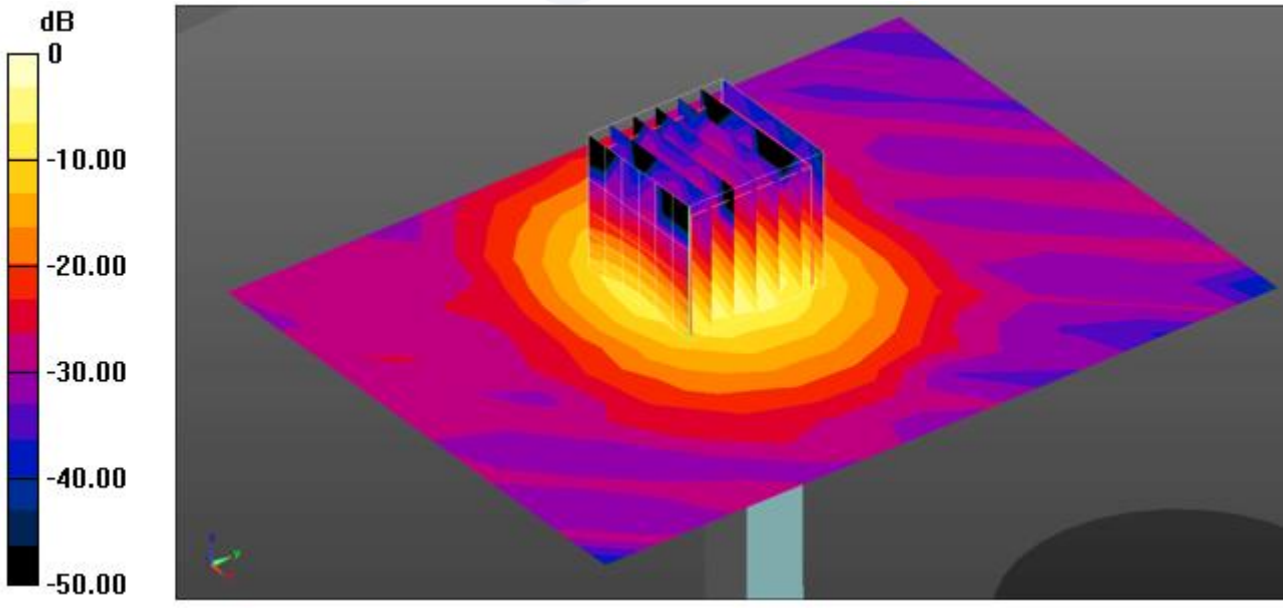
Communication System: UID 0, CW (0); Frequency: 5600 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5600 MHz; σ = 5.109 S/m; ε_r = 34.576; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3697;ConvF(4.39, 4.39, 4.39) @ 5600 MHz; Calibrated: 2022-03-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1587; Calibrated: 2022-07-20
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1724
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/5600 MHz Verification Input Power 100 mW 2023-01-04/Area Scan (10x13x1):
Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 19.3 W/kg

Configuration/5600 MHz Verification Input Power 100 mW 2023-01-04/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 56.65 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 38.8 W/kg
SAR(1 g) = 8.54 W/kg; SAR(10 g) = 2.45 W/kg
Maximum value of SAR (measured) = 22.4 W/kg



0 dB = 22.4 W/kg = 13.50 dBW/kg

Date: 2023-01-04

Test Laboratory: Eurofins KCTL Co.,Ltd.
File Name: 5800 MHz Verification Input Power 100 mW 2023-01-04.da5:0

DUT: Dipole D5GHzV2, Type: D5GHzV2, Serial: D5GHzV2 - SN:1134

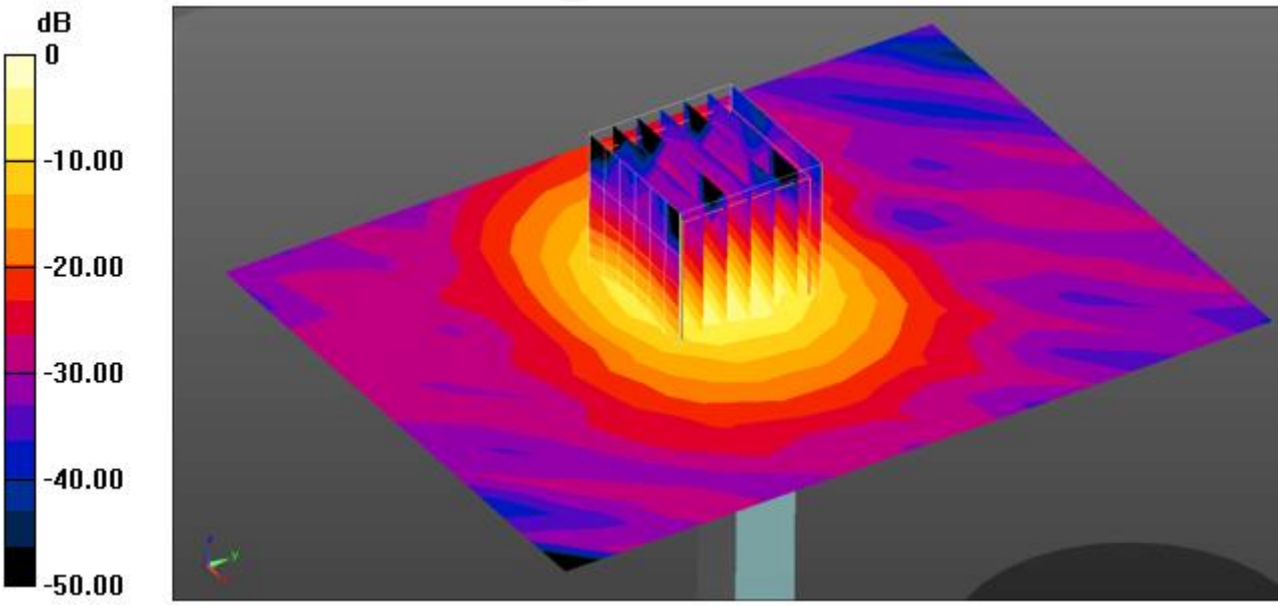
Communication System: UID 0, CW (0); Frequency: 5800 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5800 MHz; σ = 5.34 S/m; ε_r = 34.133; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3697;ConvF(4.36, 4.36, 4.36) @ 5800 MHz; Calibrated: 2022-03-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1587; Calibrated: 2022-07-20
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1724
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/5800 MHz Verification Input Power 100 mW 2023-01-04/Area Scan (10x13x1):
Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 19.1 W/kg

Configuration/5800 MHz Verification Input Power 100 mW 2023-01-04/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 51.26 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 38.9 W/kg
SAR(1 g) = 8.15 W/kg; SAR(10 g) = 2.32 W/kg
Maximum value of SAR (measured) = 21.7 W/kg



0 dB = 21.7 W/kg = 13.36 dBW/kg