FCC SAR TEST REPORT

FCC ID	:	**2AFZZJ3SG**
Equipment	:	**Mobile Phone**
Brand Name	:	**MI**
Model Name	:	**M2007J3SG, M2007J3SY**
Applicant	:	**Xiaomi Communications Co., Ltd. #019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085**
Manufacturer	:	**Xiaomi Communications Co., Ltd. #019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085**
Standard	:	**FCC 47 CFR Part 2 (2.1093)**

The product was received on Jul. 21, 2020 and testing was started from Jul. 26, 2020 and completed on Aug. 18, 2020. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample provide by manufacturer and the test data has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been pass the FCC requirement.

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

Approved by: Cona Huang / Deputy Manager

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FA072112	01	Initial issue of report	Aug. 28, 2020

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for Xiaomi Communications Co., Ltd., Mobile Phone, M2007J3SG, M2007J3SY, are as follows.

Equipment Class	Frequency Band	Highest SAR Summary				Highest Simultaneous Transmission 1g SAR (W/kg)
		Head (Separation 0mm)	Body-worn (Separation 15mm)	Hotspot (Separation 10mm)	Product Specific (Separation 0mm)	
		1g SAR (W/kg)			10g SAR (W/kg)	
Licensed	GSM850	0.64	0.30	0.44		1.56
	GSM1900	0.71	0.42	0.34		
	WCDMA II	0.97	0.98	0.74	2.52	
	WCDMA IV	0.67	0.82	0.77	1.66	
	WCDMA V	0.61	0.37	0.55		
	LTE Band 2	0.89	0.94	0.79	2.41	
	LTE Band 4	0.95	0.81	1.06	1.60	
	LTE Band 5	0.71	0.34	0.55		
	LTE Band 7	0.89	0.48	0.18		
	LTE Band 38 / 41	0.66	0.32	0.40		
DTS	2.4GHz WLAN	0.34	0.06	0.25		1.56
NII	5GHz WLAN	0.61	0.17	0.04	0.25	1.56
DSS	Bluetooth	0.04	0.02	0.04		1.25
Date of Testing:		2020/7/26~2020/8/18				

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

Reviewed by: Jason Wang
Report Producer: Daisy Peng

2. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards, if the KDB standards were not list within TAF approval, because it is include in the FCC KDB 447498.

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01
- FCC KDB 941225 D07 UMPC Mini Tablet v01r02

3. Equipment Under Test (EUT) Information

3.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Phone
Brand Name	MI
Model Name	M2007J3SG, M2007J3SY
FCC ID	2AFZZJ3SG
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz WLAN 2.4GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.5GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8GHz Band: 5725 MHz ~ 5825 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz NFC : 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+ (16QAM uplink) LTE: QPSK, 16QAM, 64QAM WLAN: 802.11a/b/g/n/ac/ax HT20/HT40/VHT20/VHT40/VHT80/HE20/HE40/HE80 Bluetooth BR/EDR/LE NFC:ASK
HW Version	P2
SW Version	MIUI12
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype
Remark: 1. This device has two kinds of samples, RF exposure chose Sample 1 as the main test.	

Sample List
1. Sample 1 Memory(8+256GB)
2. Sample 2 Memory(8+128GB)

3.2 Maximum Tune-up Limit

General Note:

1. For each cellular band, the device has several WWAN antennas, the antenna selection is based on the connection quality condition, and only one antenna will transmit at a time.
2. The device implements the power management and sensor detection for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity) by DSI and the device will manage to ensure the power level not exceeding the associated power table. Details about the power management decision and sensor detection are provided in the operational description.
3. Below table shows maximum tune up output power configured for this EUT for various transmit conditions (Device State Index DSI) by manufacturer, and the detail power measurement and tune-up limit refer to appendix D
4. In the table below which the DSI may have difference output power level. If some DSI output power measurement was not include in the appendix D, because the same output power level has been presented within the other DSI and use the same level to do SAR tested.
5. When the device operates in body-worn condition may power reduction in some bands and transmit antennas by sensor detection, but in this report which the full output power state is using in body-worn SAR tested to show compliance.

<WWAN Tune-up Limit>

Radio Tech	Band	Antenna	Maximum Transmit Power Level (dBm)			
			Full Power	DSI_3	DSI_17	DSI_7
				Head	Hotspot	Body-worn/Extremity
GSM4Tx	850	ANT2	27.5	27.5	27.5	27.5
GSM4Tx	850	ANT1	27.5	24.5	24.5	27.5
GSM4Tx	1900	ANT2	24.5	24.5	20.5	20.5
GSM4Tx	1900	ANT1	24.5	23.5	23.5	24.5
WCDMA RMC	B2	ANT2	25.0	25.0	18.0	21.0
WCDMA RMC	B2	ANT1	25.0	20.0	20.0	25.0
WCDMA RMC	B4	ANT2	25.0	25.0	19.0	20.0
WCDMA RMC	B4	ANT1	25.0	20.0	20.0	25.0
WCDMA RMC	B5	ANT2	25.0	25.0	25.0	25.0
WCDMA RMC	B5	ANT1	25.0	21.0	21.0	25.0
LTE	B2	ANT2	25.0	25.0	18.0	21.0
LTE	B2	ANT1	25.0	20.0	20.0	25.0
LTE	B4	ANT2	25.0	25.0	20.0	20.0
LTE	B4	ANT1	25.0	21.0	21.0	25.0
LTE	B5	ANT2	25.0	25.0	25.0	25.0
LTE	B5	ANT1	25.0	21.0	21.0	25.0
LTE	B7	ANT2	25.0	25.0	18.0	23.0
LTE	B7	ANT1	24.5	17.5	17.5	21.5
LTE	B7	ANT6	24.0	20.0	20.0	20.0
LTE	B38	ANT2	25.0	25.0	19.0	25.0
LTE	B38	ANT1	24.5	19.5	19.5	23.5
LTE	B38	ANT6	24.0	20.0	20.0	20.0
LTE	B38	ANT8	23.5	23.5	23.5	23.5
LTE	B41	ANT2	25.0	25.0	19.0	22.0
LTE	B41	ANT1	24.5	19.5	19.5	23.5
LTE	B41	ANT6	24.0	20.0	20.0	20.0
LTE	B41	ANT8	23.5	23.5	23.5	23.5

<Bluetooth Maximum Power>

Ant 4 & Ant 5

Mode	Average power (dBm)		
	BR / EDR		
	1Mbps	2Mbps	3Mbps
Tune-up Limit	14.50	12.00	12.00

Mode	Channel	Frequency (MHz)	Average power (dBm)
			Tune-up Limit
LE	CH 00	2402	5.00
	CH 19	2440	6.50
	CH 39	2480	5.00

<WLAN Tune-up Limit>

General Note:

1. The device implements the power management for WLAN SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The control logic about the power management decision is provided in the operational description.
2. The WLAN power table relate to each exposure condition is description below:
   a. Power Table 1: when operate at head exposure condition.
   b. Power Table 2: when operate at hotspot exposure condition.
   c. Power Table 3: when operate at body-worn and extremity exposure conditions.

<Power Table 1>

<2.4GHz WLAN>

Transmit Antenna				SISO	SISO	MIMO
	Mode	Channel	Frequency (MHz)	Ant 4 Tune-Up Limit	Ant 5 Tune-Up Limit	Ant 4+5 Tune-Up Limit
2.4GHz WLAN	802.11b 1Mbps	1	2412	14.50	14.50	17.50
		6	2437	14.50	14.50	17.50
		11	2462	14.50	14.50	17.50
	802.11g 6Mbps	1	2412	14.50	14.50	17.50
		6	2437	14.50	14.50	17.50
		11	2462	14.50	14.50	17.50
	802.11n-HT20 MCS0	1	2412	14.50	14.50	17.50
		6	2437	14.50	14.50	17.50
		11	2462	14.50	14.50	17.50
	802.11n-HT40 MCS0	3	2422	14.50	14.50	17.50
		6	2437	14.50	14.50	17.50
		9	2452	14.50	14.50	17.50
	802.11ax-HE20 MCS0	1	2412	14.50	14.50	17.50
		6	2437	14.50	14.50	17.50
		11	2462	14.50	14.50	17.50
	802.11ax-HE40 MCS0	3	2422	14.50	14.50	17.50
		6	2437	14.50	14.50	17.50
		9	2452	14.50	14.50	17.50

<5GHz WLAN>

Transmit Antenna				SISO	SISO	MIMO
	Mode	Channel	Frequency (MHz)	Ant 4 Tune-Up Limit	Ant 5 Tune-Up Limit	Ant 4+5 Tune-Up Limit
5.2GHz WLAN	802.11a 6Mbps	36	5180	14.00	14.00	17.00
		40	5200	14.00	14.00	17.00
		44	5220	14.00	14.00	17.00
		48	5240	14.00	14.00	17.00
	802.11n-HT20 MCS0	36	5180	14.00	14.00	17.00
		40	5200	14.00	14.00	17.00
		44	5220	14.00	14.00	17.00
		48	5240	14.00	14.00	17.00
	802.11n-HT40 MCS0	38	5190	13.50	13.50	16.50
		46	5230	13.50	13.50	16.50
	802.11ac-VHT20 MCS0	36	5180	14.00	14.00	17.00
		40	5200	14.00	14.00	17.00
		44	5220	14.00	14.00	17.00
		48	5240	14.00	14.00	17.00
	802.11ac-VHT40 MCS0	38	5190	13.50	13.50	16.50
		46	5230	13.50	13.50	16.50
	802.11ac-VHT80 MCS0	42	5210	13.50	13.50	16.50
	802.11ax-HE20 MCS0	36	5180	14.00	14.00	17.00
		40	5200	14.00	14.00	17.00
		44	5220	14.00	14.00	17.00
		48	5240	14.00	14.00	17.00
	802.11ax-HE40 MCS0	38	5190	13.50	13.50	16.50
		46	5230	13.50	13.50	16.50
	802.11ax-HE80 MCS0	42	5210	13.50	13.50	16.50

Transmit Antenna				SISO	SISO	MIMO
	Mode	Channel	Frequency (MHz)	Ant 4 Tune-Up Limit	Ant 5 Tune-Up Limit	Ant 4+5 Tune-Up Limit
5.3GHz WLAN	802.11a 6Mbps	52	5260	14.00	14.00	17.00
		56	5280	14.00	14.00	17.00
		60	5300	14.00	14.00	17.00
		64	5320	14.00	14.00	17.00
	802.11n-HT20 MCS0	52	5260	14.00	14.00	17.00
		56	5280	14.00	14.00	17.00
		60	5300	14.00	14.00	17.00
		64	5320	14.00	14.00	17.00
	802.11n-HT40 MCS0	54	5270	13.50	13.50	16.50
		62	5310	13.50	13.50	16.50
	802.11ac-VHT20 MCS0	52	5260	14.00	14.00	17.00
		56	5280	14.00	14.00	17.00
		60	5300	14.00	14.00	17.00
		64	5320	14.00	14.00	17.00
	802.11ac-VHT40 MCS0	54	5270	13.50	13.50	16.50
		62	5310	13.50	13.50	16.50
	802.11ac-VHT80 MCS0	58	5290	13.50	13.50	16.50
	802.11ax-HE20 MCS0	52	5260	14.00	14.00	17.00
		56	5280	14.00	14.00	17.00
		60	5300	14.00	14.00	17.00
		64	5320	14.00	14.00	17.00
	802.11ax-HE40 MCS0	54	5270	13.50	13.50	16.50
		62	5310	13.50	13.50	16.50
	802.11ax-HE80 MCS0	58	5290	13.50	13.50	16.50

Transmit Antenna				SISO	SISO	MIMO
	Mode	Channel	Frequency (MHz)	Ant 4 Tune-Up Limit	Ant 5 Tune-Up Limit	Ant 4+5 Tune-Up Limit
5.5GHz WLAN	802.11a 6Mbps	100	5500	15.50	15.50	18.50
		116	5580	15.50	15.50	18.50
		124	5620	15.50	15.50	18.50
		132	5660	15.50	15.50	18.50
		144	5720	15.50	15.50	18.50
	802.11n-HT20 MCS0	100	5500	15.50	15.50	18.50
		116	5580	15.50	15.50	18.50
		124	5620	15.50	15.50	18.50
		132	5660	15.50	15.50	18.50
		144	5720	15.50	15.50	18.50
	802.11n-HT40 MCS0	102	5510	15.00	15.00	18.00
		110	5550	15.00	15.00	18.00
		126	5630	15.00	15.00	18.00
		134	5670	15.00	15.00	18.00
		142	5710	15.00	15.00	18.00
	802.11ac-VHT20 MCS0	100	5500	15.50	15.50	18.50
		116	5580	15.50	15.50	18.50
		124	5620	15.50	15.50	18.50
		132	5660	15.50	15.50	18.50
		144	5720	15.50	15.50	18.50
	802.11ac-VHT40 MCS0	102	5510	15.00	15.00	18.00
		110	5550	15.00	15.00	18.00
		126	5630	15.00	15.00	18.00
		134	5670	15.00	15.00	18.00
		142	5710	15.00	15.00	18.00
	802.11ac-VHT80 MCS0	106	5530	15.00	15.00	18.00
		122	5610	15.00	15.00	18.00
		138	5690	15.00	15.00	18.00
	802.11ax-HE20 MCS0	100	5500	15.50	15.50	18.50
		116	5580	15.50	15.50	18.50
		124	5620	15.50	15.50	18.50
		132	5660	15.50	15.50	18.50
		144	5720	15.50	15.50	18.50
	802.11ax-HE40 MCS0	102	5510	15.00	15.00	18.00
		110	5550	15.00	15.00	18.00
		126	5630	15.00	15.00	18.00
		134	5670	15.00	15.00	18.00
		142	5710	15.00	15.00	18.00
	802.11ax-HE80 MCS0	106	5530	15.00	15.00	18.00
		122	5610	15.00	15.00	18.00
		138	5690	15.00	15.00	18.00

Transmit Antenna				SISO	SISO	MIMO
	Mode	Channel	Frequency (MHz)	Ant 4 Tune-Up Limit	Ant 5 Tune-Up Limit	Ant 4+5 Tune-Up Limit
5.8GHz WLAN	802.11a 6Mbps	149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	16.00	16.00	19.00
	802.11n-HT20 MCS0	149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	16.00	16.00	19.00
	802.11n-HT40 MCS0	151	5755	15.50	15.50	18.50
		159	5795	15.50	15.50	18.50
	802.11ac-VHT20 MCS0	149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	16.00	16.00	19.00
	802.11ac-VHT40 MCS0	151	5755	15.50	15.50	18.50
		159	5795	15.50	15.50	18.50
	802.11ac-VHT80 MCS0	155	5775	15.50	15.50	18.50
	802.11ax-HE20 MCS0	149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	16.00	16.00	19.00
	802.11ax-HE40 MCS0	151	5755	15.50	15.50	18.50
		159	5795	15.50	15.50	18.50
	802.11ax-HE80 MCS0	155	5775	15.50	15.50	18.50

<Power Table 2>

<2.4GHz WLAN>

Transmit Antenna				SISO	SISO	MIMO
	Mode	Channel	Frequency (MHz)	Ant 4 Tune-Up Limit	Ant 5 Tune-Up Limit	Ant 4+5 Tune-Up Limit
2.4GHz WLAN	802.11b 1Mbps	1	2412	12.00	12.00	15.00
		6	2437	12.00	12.00	15.00
		11	2462	12.00	12.00	15.00
	802.11g 6Mbps	1	2412	12.00	12.00	15.00
		6	2437	12.00	12.00	15.00
		11	2462	12.00	12.00	15.00
	802.11n-HT20 MCS0	1	2412	12.00	12.00	15.00
		6	2437	12.00	12.00	15.00
		11	2462	12.00	12.00	15.00
	802.11n-HT40 MCS0	3	2422	12.00	12.00	15.00
		6	2437	12.00	12.00	15.00
		9	2452	12.00	12.00	15.00
	802.11ax-HE20 MCS0	1	2412	12.00	12.00	15.00
		6	2437	12.00	12.00	15.00
		11	2462	12.00	12.00	15.00
	802.11ax-HE40 MCS0	3	2422	12.00	12.00	15.00
		6	2437	12.00	12.00	15.00
		9	2452	12.00	12.00	15.00

<5GHz WLAN>

Transmit Antenna				SISO	SISO	MIMO
	Mode	Channel	Frequency (MHz)	Ant 4 Tune-Up Limit	Ant 5 Tune-Up Limit	Ant 4+5 Tune-Up Limit
5.2GHz WLAN	802.11a 6Mbps	36	5180	12.00	12.00	15.00
		40	5200	12.00	12.00	15.00
		44	5220	12.00	12.00	15.00
		48	5240	12.00	12.00	15.00
	802.11n-HT20 MCS0	36	5180	12.00	12.00	15.00
		40	5200	12.00	12.00	15.00
		44	5220	12.00	12.00	15.00
		48	5240	12.00	12.00	15.00
	802.11n-HT40 MCS0	38	5190	12.00	12.00	15.00
		46	5230	12.00	12.00	15.00
	802.11ac-VHT20 MCS0	36	5180	12.00	12.00	15.00
		40	5200	12.00	12.00	15.00
		44	5220	12.00	12.00	15.00
		48	5240	12.00	12.00	15.00
	802.11ac-VHT40 MCS0	38	5190	12.00	12.00	15.00
		46	5230	12.00	12.00	15.00
	802.11ac-VHT80 MCS0	42	5210	12.00	12.00	15.00
	802.11ax-HE20 MCS0	36	5180	12.00	12.00	15.00
		40	5200	12.00	12.00	15.00
		44	5220	12.00	12.00	15.00
		48	5240	12.00	12.00	15.00
	802.11ax-HE40 MCS0	38	5190	12.00	12.00	15.00
		46	5230	12.00	12.00	15.00
	802.11ax-HE80 MCS0	42	5210	12.00	12.00	15.00

Transmit Antenna				SISO	SISO	MIMO
	Mode	Channel	Frequency (MHz)	Ant 4 Tune-Up Limit	Ant 5 Tune-Up Limit	Ant 4+5 Tune-Up Limit
5.8GHz WLAN	802.11a 6Mbps	149	5745	12.00	12.00	15.00
		157	5785	12.00	12.00	15.00
		165	5825	12.00	12.00	15.00
		149	5745	12.00	12.00	15.00
	802.11n-HT20 MCS0	157	5785	12.00	12.00	15.00
		165	5825	12.00	12.00	15.00
		151	5755	12.00	12.00	15.00
		159	5795	12.00	12.00	15.00
	802.11n-HT40 MCS0	149	5745	12.00	12.00	15.00
		157	5785	12.00	12.00	15.00
	802.11ac-VHT20 MCS0	165	5825	12.00	12.00	15.00
		151	5755	12.00	12.00	15.00
		159	5795	12.00	12.00	15.00
		155	5775	12.00	12.00	15.00
	802.11ac-VHT40 MCS0	149	5745	12.00	12.00	15.00
		157	5785	12.00	12.00	15.00
	802.1118.00ac-VHT80 MCS0	165	5825	12.00	12.00	15.00
	802.11ax-HE20 MCS0	151	5755	12.00	12.00	15.00
		159	5795	12.00	12.00	15.00
		155	5775	12.00	12.00	15.00
	802.11ax-HE40 MCS0	149	5745	12.00	12.00	15.00
		157	5785	12.00	12.00	15.00
	802.11ax-HE80 MCS0	165	5825	12.00	12.00	15.00

<Power Table 3>

<2.4GHz WLAN>

Transmit Antenna				SISO	SISO	MIMO
	Mode	Channel	Frequency (MHz)	Ant 4 Tune-Up Limit	Ant 5 Tune-Up Limit	Ant 4+5 Tune-Up Limit
2.4GHz WLAN	802.11b 1Mbps	1	2412	16.00	16.00	19.00
		6	2437	16.00	16.00	19.00
		11	2462	16.00	16.00	19.00
	802.11g 6Mbps	1	2412	16.00	16.00	19.00
		6	2437	16.00	16.00	19.00
		11	2462	16.00	16.00	19.00
	802.11n-HT20 MCS0	1	2412	16.00	16.00	19.00
		6	2437	16.00	16.00	19.00
		11	2462	16.00	16.00	19.00
	802.11n-HT40 MCS0	3	2422	16.00	16.00	19.00
		6	2437	16.00	16.00	19.00
		9	2452	16.00	16.00	19.00
	802.11ax-HE20 MCS0	1	2412	16.00	16.00	19.00
		6	2437	16.00	16.00	19.00
		11	2462	16.00	16.00	19.00
	802.11ax-HE40 MCS0	3	2422	16.00	16.00	19.00
		6	2437	16.00	16.00	19.00
		9	2452	16.00	16.00	19.00

<5GHz WLAN>

Transmit Antenna				SISO	SISO	MIMO
	Mode	Channel	Frequency (MHz)	Ant 4 Tune-Up Limit	Ant 5 Tune-Up Limit	Ant 4+5 Tune-Up Limit
5.2GHz WLAN	802.11a 6Mbps	36	5180	15.00	15.00	18.00
		40	5200	15.00	15.00	18.00
		44	5220	15.00	15.00	18.00
		48	5240	15.00	15.00	18.00
	802.11n-HT20 MCS0	36	5180	15.00	15.00	18.00
		40	5200	15.00	15.00	18.00
		44	5220	15.00	15.00	18.00
		48	5240	15.00	15.00	18.00
	802.11n-HT40 MCS0	38	5190	15.00	15.00	18.00
		46	5230	15.00	15.00	18.00
	802.11ac-VHT20 MCS0	36	5180	15.00	15.00	18.00
		40	5200	15.00	15.00	18.00
		44	5220	15.00	15.00	18.00
		48	5240	15.00	15.00	18.00
	802.11ac-VHT40 MCS0	38	5190	15.00	15.00	18.00
		46	5230	15.00	15.00	18.00
	802.11ac-VHT80 MCS0	42	5210	15.00	15.00	18.00
	802.11ax-HE20 MCS0	36	5180	15.00	15.00	18.00
		40	5200	15.00	15.00	18.00
		44	5220	15.00	15.00	18.00
		48	5240	15.00	15.00	18.00
	802.11ax-HE40 MCS0	38	5190	15.00	15.00	18.00
		46	5230	15.00	15.00	18.00
	802.11ax-HE80 MCS0	42	5210	15.00	15.00	18.00

Transmit Antenna				SISO	SISO	MIMO
	Mode	Channel	Frequency (MHz)	Ant 4 Tune-Up Limit	Ant 5 Tune-Up Limit	Ant 4+5 Tune-Up Limit
5.3GHz WLAN	802.11a 6Mbps	52	5260	15.00	15.00	18.00
		56	5280	15.00	15.00	18.00
		60	5300	15.00	15.00	18.00
		64	5320	15.00	15.00	18.00
	802.11n-HT20 MCS0	52	5260	15.00	15.00	18.00
		56	5280	15.00	15.00	18.00
		60	5300	15.00	15.00	18.00
		64	5320	15.00	15.00	18.00
	802.11n-HT40 MCS0	54	5270	15.00	15.00	18.00
		62	5310	15.00	15.00	18.00
	802.11ac-VHT20 MCS0	52	5260	15.00	15.00	18.00
		56	5280	15.00	15.00	18.00
		60	5300	15.00	15.00	18.00
		64	5320	15.00	15.00	18.00
	802.11ac-VHT40 MCS0	54	5270	15.00	15.00	18.00
		62	5310	15.00	15.00	18.00
	802.11ac-VHT80 MCS0	58	5290	15.00	15.00	18.00
	802.11ac-VHT160 MCS0	50	5250	15.00	15.00	18.00
	802.11ax-HE20 MCS0	52	5260	15.00	15.00	18.00
		56	5280	15.00	15.00	18.00
		60	5300	15.00	15.00	18.00
		64	5320	15.00	15.00	18.00
	802.11ax-HE40 MCS0	54	5270	15.00	15.00	18.00
		62	5310	15.00	15.00	18.00
	802.11ax-HE80 MCS0	58	5290	15.00	15.00	18.00
	802.11ax-HE160 MCS0	50	5250	15.00	15.00	18.00

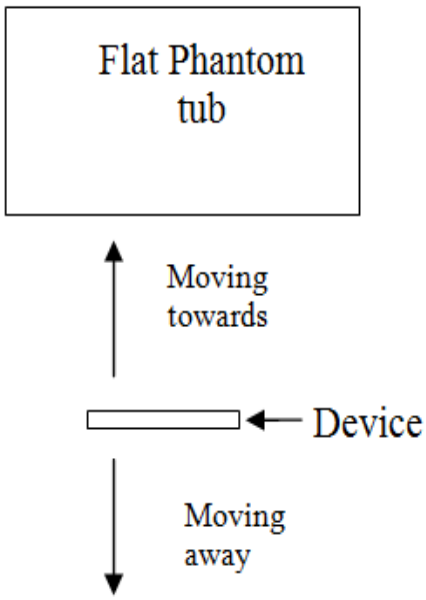
Transmit Antenna				SISO	SISO	MIMO
	Mode	Channel	Frequency (MHz)	Ant 4 Tune-Up Limit	Ant 5 Tune-Up Limit	Ant 4+5 Tune-Up Limit
5.5GHz WLAN	802.11a 6Mbps	100	5500	15.00	15.00	18.00
		116	5580	15.00	15.00	18.00
		124	5620	15.00	15.00	18.00
		132	5660	15.00	15.00	18.00
		144	5720	15.00	15.00	18.00
	802.11n-HT20 MCS0	100	5500	15.00	15.00	18.00
		116	5580	15.00	15.00	18.00
		124	5620	15.00	15.00	18.00
		132	5660	15.00	15.00	18.00
		144	5720	15.00	15.00	18.00
	802.11n-HT40 MCS0	102	5510	15.00	15.00	18.00
		110	5550	15.00	15.00	18.00
		126	5630	15.00	15.00	18.00
		134	5670	15.00	15.00	18.00
		142	5710	15.00	15.00	18.00
	802.11ac-VHT20 MCS0	100	5500	15.00	15.00	18.00
		116	5580	15.00	15.00	18.00
		124	5620	15.00	15.00	18.00
		132	5660	15.00	15.00	18.00
		144	5720	15.00	15.00	18.00
	802.11ac-VHT40 MCS0	102	5510	15.00	15.00	18.00
		110	5550	15.00	15.00	18.00
		126	5630	15.00	15.00	18.00
		134	5670	15.00	15.00	18.00
		142	5710	15.00	15.00	18.00
	802.11ac-VHT80 MCS0	106	5530	15.00	15.00	18.00
		122	5610	15.00	15.00	18.00
		138	5690	15.00	15.00	18.00
	802.11ax-HE20 MCS0	100	5500	15.00	15.00	18.00
		116	5580	15.00	15.00	18.00
		124	5620	15.00	15.00	18.00
		132	5660	15.00	15.00	18.00
		144	5720	15.00	15.00	18.00
	802.11ax-HE40 MCS0	102	5510	15.00	15.00	18.00
		110	5550	15.00	15.00	18.00
		126	5630	15.00	15.00	18.00
		134	5670	15.00	15.00	18.00
		142	5710	15.00	15.00	18.00
	802.11ax-HE80 MCS0	106	5530	15.00	15.00	18.00
		122	5610	15.00	15.00	18.00
		138	5690	15.00	15.00	18.00

Transmit Antenna				SISO	SISO	MIMO
	Mode	Channel	Frequency (MHz)	Ant 4 Tune-Up Limit	Ant 5 Tune-Up Limit	Ant 4+5 Tune-Up Limit
5.8GHz WLAN	802.11a 6Mbps	149	5745	15.00	15.00	18.00
		157	5785	15.00	15.00	18.00
		165	5825	15.00	15.00	18.00
	802.11n-HT20 MCS0	149	5745	15.00	15.00	18.00
		157	5785	15.00	15.00	18.00
		165	5825	15.00	15.00	18.00
	802.11n-HT40 MCS0	151	5755	15.00	15.00	18.00
		159	5795	15.00	15.00	18.00
	802.11ac-VHT20 MCS0	149	5745	15.00	15.00	18.00
		157	5785	15.00	15.00	18.00
		165	5825	15.00	15.00	18.00
	802.11ac-VHT40 MCS0	151	5755	15.00	15.00	18.00
		159	5795	15.00	15.00	18.00
	802.11ac-VHT80 MCS0	155	5775	15.00	15.00	18.00
	802.11ax-HE20 MCS0	149	5745	15.00	15.00	18.00
		157	5785	15.00	15.00	18.00
		165	5825	15.00	15.00	18.00
	802.11ax-HE40 MCS0	151	5755	15.00	15.00	18.00
		159	5795	15.00	15.00	18.00
	802.11ax-HE80 MCS0	155	5775	15.00	15.00	18.00

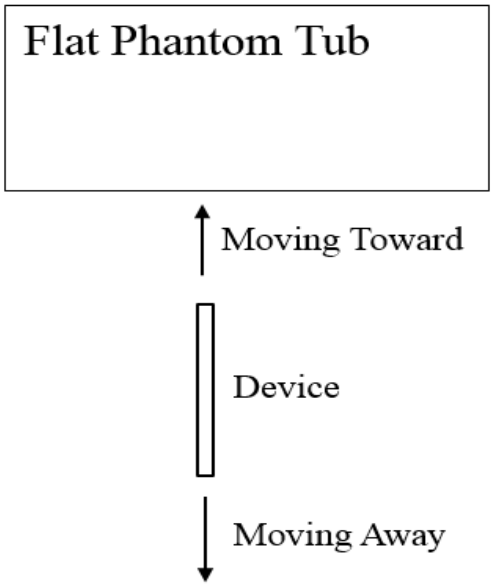
3.3 Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance>:

1. Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed and the tissue-equivalent medium for highest frequency (3700MHz) and lowest (750MHz) frequency was used for proximity sensor triggering testing.
2. Capacitive proximity sensors placed coincident with antenna elements at the top and bottom ends of the phone are utilized to determine when the device comes in proximity of the user's body at the front or back of the device.
3. When the sensor is active, the device will reduce maximum output powers on the GSM1900, WCDMA B2/B4, and LTE B2 / B4 / B7 / B38 / B41 transmitter.
4. Extremity SAR was tested at 0mm separation, at the reduced power level in each associated power table. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance -1 was performed:
   a. For Body-worn and Extremity:
      Front: 16 mm
      Back: 16 mm
      Bottom: 22 mm



Sensor detection test set-up, front and back faces



Sensor detection test set-up, bottom face

3.4 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05	
FCC ID	2AFZZJ3SG
Equipment Name	Mobile Phone
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz
Channel Bandwidth	LTE Band 02:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 04:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 05:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 07: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz
uplink modulations used	QPSK / 16QAM / 64QAM
LTE Voice / Data requirements	Voice and Data
LTE MPR permanently built-in by design	**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3**

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

LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 12.
LTE Carrier Aggregation Additional Information	1. This device supports LTE Carrier Aggregation (CA) in the uplink for LTE B7/B38 with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance. 2. This device supports maximum of 3 carriers in the downlink and 2 carriers in the uplink. Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.

Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844
LTE Band 7								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560
LTE Band 38								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580
M	38000	2595	38000	2595	38000	2595	38000	2595
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610
LTE Band 41								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506
L M	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593
H M	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680

4. RF Exposure Limits

4.1 Uncontrolled Environment

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

4.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

5. Specific Absorption Rate (SAR)

5.1 Introduction

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

5.2 SAR Definition

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

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

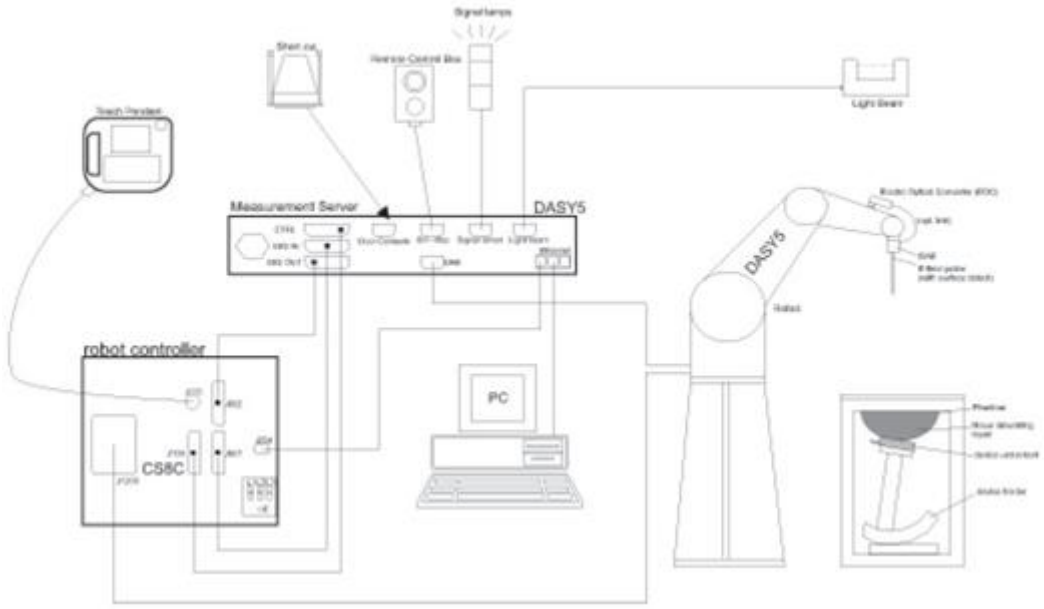
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

6. System Description and Setup

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



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

6.1 Test Side Location

Sporton Lab and below test site location are accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190 and 0007) and the FCC designation No. TW1190 and TW0007 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test.

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory			
Test Site Location	TW1190 No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, CHINESE TAIPEI		TW0007 No. 58, Aly. 75, Ln. 564, Wehnua 3rd, Rd., Guishan Dist., Taoyuan City, CHINESE TAIPEI	
Test Site No.	SAR01-HY	SAR03-HY	SAR08-HY	SAR09-HY
	SAR04-HY	SAR05-HY	SAR11-HY	SAR12-HY
	SAR06-HY	SAR10-HY		

6.2 E-Field Probe

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

<ES3DV3 Probe>

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

<EX3DV4 Probe>

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

6.3 Data Acquisition Electronics (DAE)

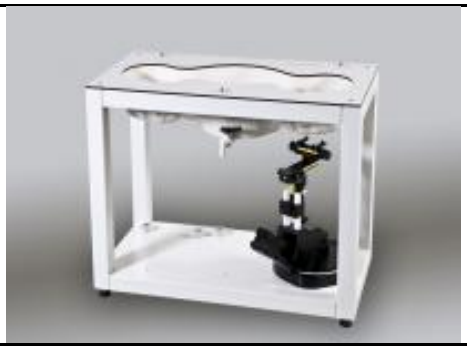
The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an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

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

Fig 5.1 Photo of DAE

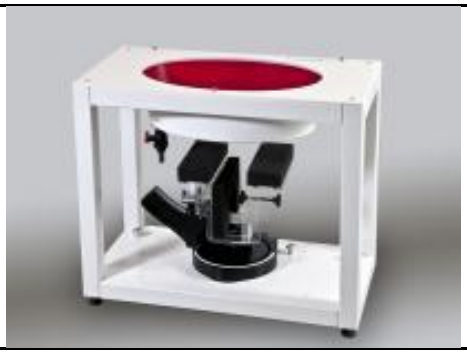
6.4 Phantom

<SAM Twin Phantom>

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

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

<ELI Phantom>

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

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

6.5 Device Holder

<Mounting Device for Hand-Held Transmitter>

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

Mounting Device for Hand-Held Transmitters

Mounting Device Adaptor for Wide-Phones

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

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

Mounting Device for Laptops

7. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

7.1 Spatial Peak SAR Evaluation

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

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

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

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

7.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

7.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0 is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

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

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

7.4 Zoom Scan

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

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

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

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

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

7.5 Volume Scan Procedures

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

7.6 Power Drift Monitoring

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

8. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	835MHz System Validation Kit	D835V2	4d167	Nov. 25, 2019	Nov. 24, 2020
SPEAG	1750MHz System Validation Kit(2)	D1750V2	1112	Mar. 07, 2019	Mar. 05, 2021
SPEAG	1900MHz System Validation Kit(2)	D1900V2	5d041	Sep. 11, 2018	Sep. 09, 2020
SPEAG	2450MHz System Validation Kit(2)	D2450V2	736	Aug. 31, 2018	Aug. 29, 2020
SPEAG	2600MHz System Validation Kit(2)	D2600V2	1008	Aug. 31, 2018	Aug. 29, 2020
SPEAG	5GHz System Validation Kit	D5GHzV2	1128	Dec. 16, 2019	Dec. 15, 2020
SPEAG	Data Acquisition Electronics	DAE4	679	May. 06, 2020	May. 05, 2021
SPEAG	Data Acquisition Electronics	DAE4	778	Jun. 04, 2020	Jun. 03, 2021
SPEAG	Data Acquisition Electronics	DAE4	854	May. 26, 2020	May. 25, 2021
SPEAG	Dosimetric E-Field Probe	EX3DV4	3925	Sep. 20, 2019	Sep. 19, 2020
SPEAG	Dosimetric E-Field Probe	EX3DV4	3887	Sep. 20, 2019	Sep. 19, 2020
SPEAG	Dosimetric E-Field Probe	EX3DV4	7515	Oct. 22, 2019	Oct. 21, 2020
RCPTWN	Thermometer	HTC-1	TM685-1	Nov. 12, 2019	Nov. 11, 2020
RCPTWN	Thermometer	HTC-1	TM560-2	Nov. 12, 2019	Nov. 11, 2020
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Oct. 31, 2019	Oct. 30, 2020
Agilent	Wireless Communication Test Set	E5515C	MY50267236	Mar. 18, 2020	Mar. 17, 2021
R&S	BT Base Station	CBT	100815	Feb. 15, 2020	Feb. 14, 2021
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Nov. 20, 2019	Nov. 19, 2020
Agilent	ENA Network Analyzer	E5071C	MY46104758	Sep. 06, 2019	Sep. 05, 2020
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 18, 2019	Sep. 17, 2020
LINE SEIKI	Digital Thermometer	DTM3000-spezial	2942	Nov. 18, 2019	Nov. 17, 2020
Anritsu	Power Meter	ML2495A	932001	Oct. 03, 2019	Oct. 02, 2020
Anritsu	Power Sensor	MA2411B	846202	Oct. 03, 2019	Oct. 02, 2020
Anritsu	Power Meter	ML2495A	1218006	Oct. 14, 2019	Oct. 13, 2020
Anritsu	Power Sensor	MA2411B	1207363	Oct. 14, 2019	Oct. 13, 2020
Agilent	Spectrum Analyzer	E4408B	MY44211028	Aug. 27, 2019	Aug. 26, 2020
Anritsu	Spectrum Analyzer	N9010A	MY53470118	Mar. 12, 2020	Mar. 11, 2021
Mini-Circuits	Power Amplifier	ZVE-8G+	6418	Oct. 16, 2019	Oct. 15, 2020
Mini-Circuits	Power Amplifier	ZHL-42W+	715701915	May. 07, 2020	May. 06, 2021
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005- 3	N/A	Note 1	

General Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.
2. The dipole calibration interval can be extended to 3 years with justification according to KDB 865664 D01. The dipoles are also not physically damaged, or repaired during the interval. The justification data in appendix C can be found which the return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration for each dipole.

9. System Verification

9.1 Tissue Simulating Liquids

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

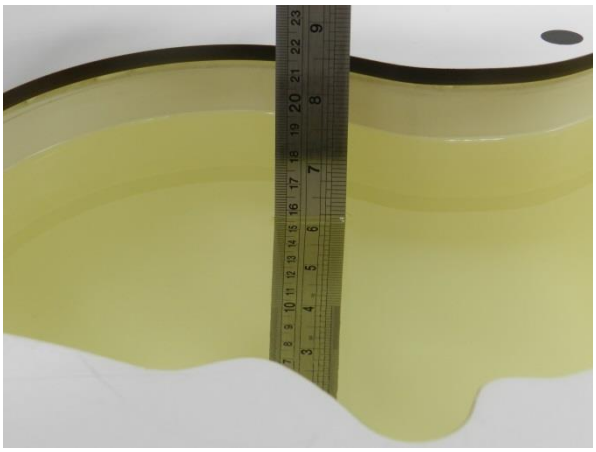


Fig 10.1Photo of Liquid Height for Head SAR

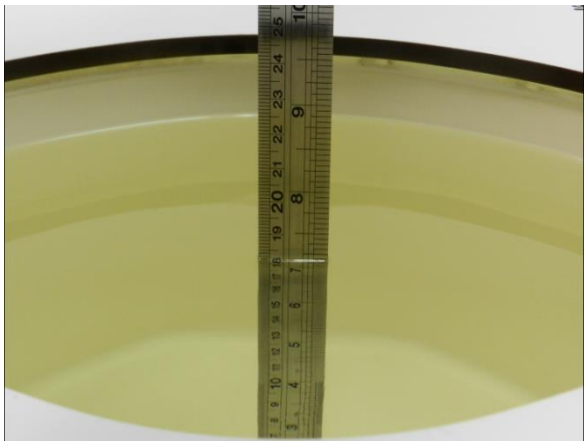


Fig 10.2 Photo of Liquid Height for Body SAR

9.2 Tissue Verification

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

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0

Simulating Liquid for 5GHz, Manufactured by SPEAG

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

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
835	22.5	0.933	43.390	0.90	41.50	3.67	4.55	±5	2020/7/27
835	22.3	0.934	43.410	0.90	41.50	3.78	4.60	±5	2020/7/31
835	22.5	0.934	42.461	0.90	41.50	3.78	2.32	±5	2020/8/13
835	22.5	0.939	43.510	0.90	41.50	4.33	4.84	±5	2020/8/16
1750	22.5	1.369	40.623	1.37	40.10	-0.07	1.30	±5	2020/7/26
1750	22.3	1.373	40.944	1.37	40.10	0.22	2.10	±5	2020/7/31
1750	22.5	1.358	40.842	1.37	40.10	-0.88	1.85	±5	2020/8/14
1750	22.5	1.357	40.568	1.37	40.10	-0.95	1.17	±5	2020/8/16
1750	22.5	1.277	41.345	1.37	40.10	-6.79	3.10	±5	2020/8/18
1900	22.5	1.384	40.370	1.40	40.00	-1.14	0.92	±5	2020/7/26
1900	22.3	1.388	40.691	1.40	40.00	-0.86	1.73	±5	2020/7/31
1900	22.5	1.452	38.360	1.40	40.00	3.71	-4.10	±5	2020/8/13
1900	22.5	1.405	38.726	1.40	40.00	0.36	-3.19	±5	2020/8/16
1900	22.5	1.417	40.819	1.40	40.00	1.21	2.05	±5	2020/8/18
2450	22.2	1.834	38.719	1.80	39.20	1.89	-1.23	±5	2020/8/15
2600	22.5	1.953	38.251	1.96	39.00	-0.36	-1.92	±5	2020/7/27
2600	22.3	2.010	39.740	1.96	39.00	2.55	1.90	±5	2020/7/28
2600	22.5	2.045	37.933	1.96	39.00	4.34	-2.74	±5	2020/8/14
2600	22.2	1.999	38.129	1.96	39.00	1.99	-2.23	±5	2020/8/15
5250	22.5	4.668	35.952	4.71	35.95	-0.89	0.01	±5	2020/8/17
5600	22.5	5.008	35.477	5.07	35.50	-1.22	-0.06	±5	2020/8/17
5750	22.5	5.165	35.271	5.22	35.35	-1.05	-0.22	±5	2020/8/17

9.3 System Performance Check Results

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

Date	Frequency (MHz)2	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2020/7/27	835	250	D835V2-4d167	EX3DV4 - SN3925	DAE4 Sn778	2.50	9.55	10	4.71
2020/7/31	835	250	D835V2-4d167	EX3DV4 - SN3925	DAE4 Sn778	2.52	9.55	10.08	5.55
2020/8/13	835	250	D835V2-4d167	EX3DV4 - SN3925	DAE4 Sn778	2.51	9.55	10.04	5.13
2020/8/16	835	250	D835V2-4d167	EX3DV4 - SN3925	DAE4 Sn778	2.52	9.55	10.08	5.55
2020/7/26	1750	250	D1750V2-1112	EX3DV4 - SN7515	DAE4 Sn679	8.78	36.70	35.12	-4.31
2020/7/31	1750	250	D1750V2-1112	EX3DV4 - SN3925	DAE4 Sn778	9.30	36.70	37.2	1.36
2020/8/14	1750	250	D1750V2-1112	EX3DV4 - SN3925	DAE4 Sn778	9.20	36.70	36.8	0.27
2020/8/16	1750	250	D1750V2-1112	EX3DV4 - SN3925	DAE4 Sn778	9.21	36.70	36.84	0.38
2020/8/18	1750	250	D1750V2-1112	EX3DV4 - SN3925	DAE4 Sn778	8.66	36.70	34.64	-5.61
2020/7/26	1900	250	D1900V2-5d041	EX3DV4 - SN7515	DAE4 Sn679	9.63	40.20	38.52	-4.18
2020/7/31	1900	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn778	9.29	40.20	37.16	-7.56
2020/8/13	1900	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn778	9.72	40.20	38.88	-3.28
2020/8/16	1900	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn778	9.58	40.20	38.32	-4.68
2020/8/18	1900	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn778	9.66	40.20	38.64	-3.88
2020/8/15	2450	250	D2450V2-736	EX3DV4 - SN3925	DAE4 Sn778	13.50	52.70	54	2.47
2020/7/27	2600	250	D2600V2-1008	EX3DV4 - SN3925	DAE4 Sn778	13.60	56.40	54.4	-3.55
2020/7/28	2600	250	D2600V2-1008	EX3DV4 - SN3925	DAE4 Sn778	14.00	56.40	56	-0.71
2020/8/14	2600	250	D2600V2-1008	EX3DV4 - SN3925	DAE4 Sn778	14.20	56.40	56.8	0.71
2020/8/15	2600	250	D2600V2-1008	EX3DV4 - SN3925	DAE4 Sn778	13.90	56.40	55.6	-1.42
2020/8/17	5250	100	D5GHzV2-1128-5250	EX3DV4 - SN3887	DAE4 Sn854	7.60	80.00	76	-5.00
2020/8/17	5600	100	D5GHzV2-1128-5600	EX3DV4 - SN3887	DAE4 Sn854	8.18	82.40	81.8	-0.73
2020/8/17	5750	100	D5GHzV2-1128-5750	EX3DV4 - SN3887	DAE4 Sn854	7.87	79.10	78.7	-0.51

Date	Frequency (MHz)	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2020/8/16	1750	250	D1750V2-1112	EX3DV4 - SN3925	DAE4 Sn778	4.91	19.40	19.64	1.24
2020/8/16	1900	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn778	4.97	21.20	19.88	-6.23
2020/8/17	5250	100	D5GHzV2-1128-5250	EX3DV4 - SN3887	DAE4 Sn854	2.13	22.90	21.3	-6.99
2020/8/17	5600	100	D5GHzV2-1128-5600	EX3DV4 - SN3887	DAE4 Sn854	2.24	23.60	22.4	-5.08

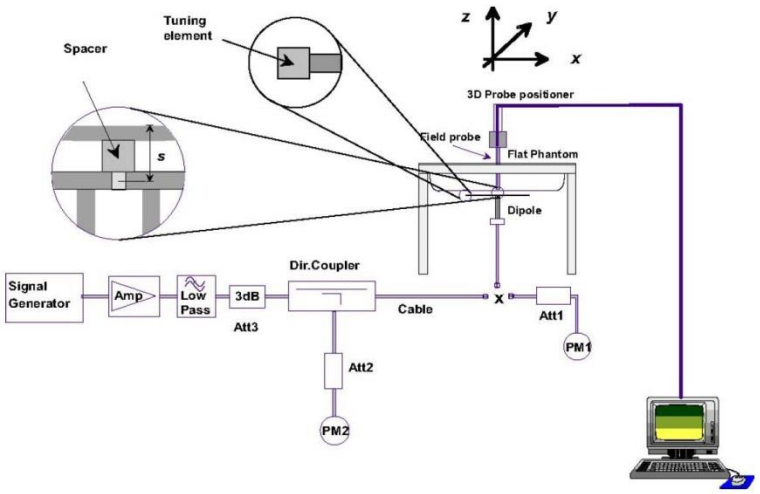


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

10. RF Exposure Positions

10.1 Ear and handset reference point

Figure 9.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M,” the left ear reference point (ERP) is marked “LE,” and the right ERP is marked “RE.” Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 9.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 9.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 9.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

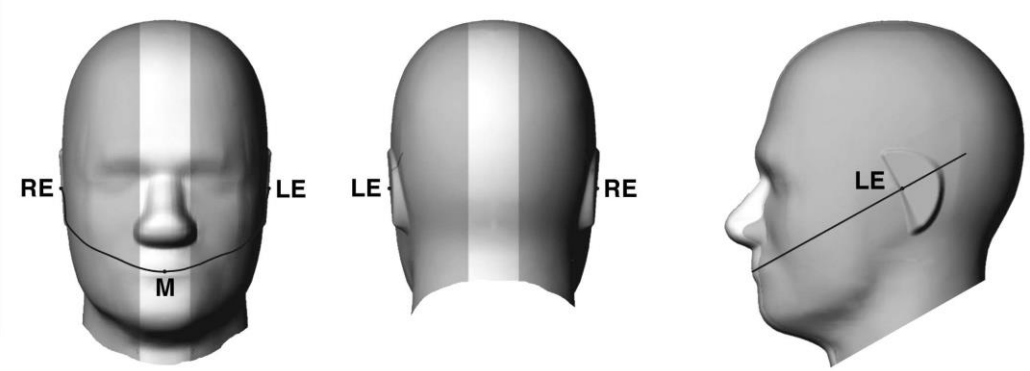


Fig 9.1.1 Front, back, and side views of SAM twin phantom

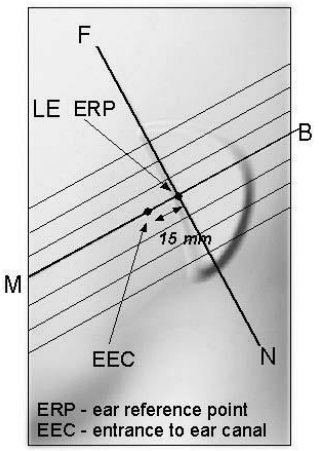


Fig 9.1.2 Close-up side view of phantom showing the ear region.

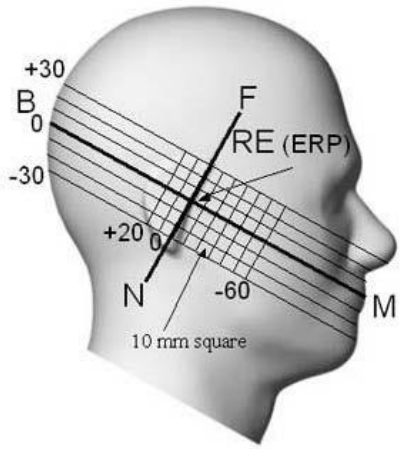


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

10.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width wt of the handset at the level of the acoustic output (point A in Figure 9.2.1 and Figure 9.2.2), and the midpoint of the width wb of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 9.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 9.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
3. Position the handset 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 9.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
4. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP.
5. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
6. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.
7. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 9.2.3. The actual rotation angles should be documented in the test report.

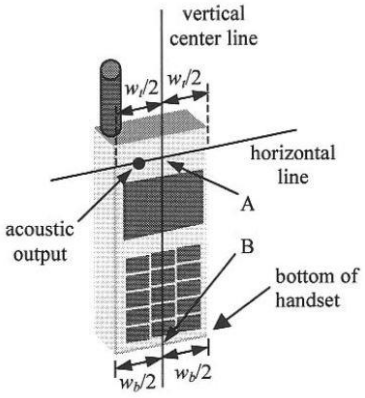


Fig 9.2.1 Handset vertical and horizontal reference lines—"fixed case

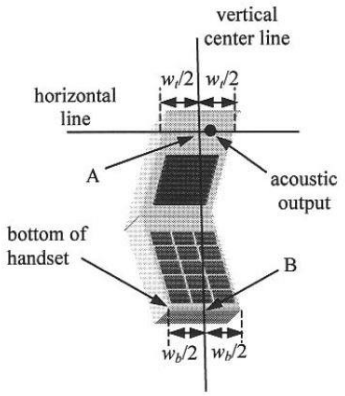


Fig 9.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

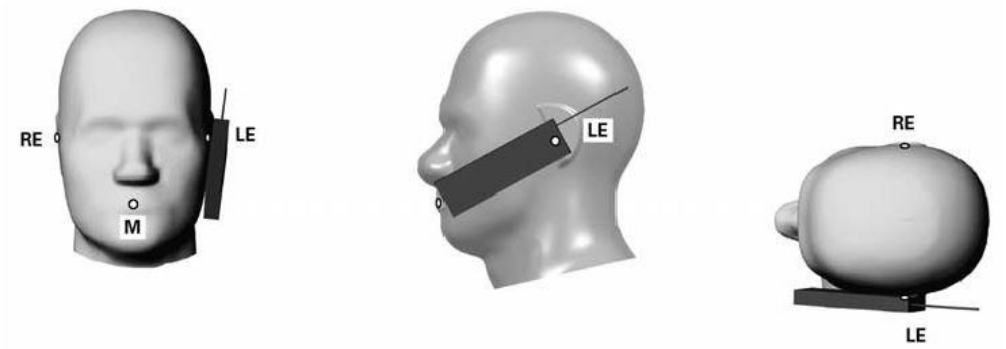


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

10.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 9.3.1. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point

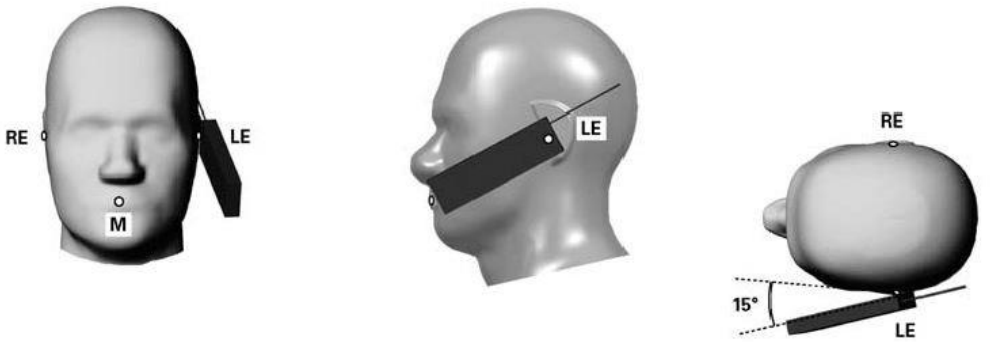


Fig 9.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

10.4 Body Worn Accessory

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 9.4). Per KDB648474 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 447498 D01v06 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 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 handset attached to the handset.

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 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 test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-chip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

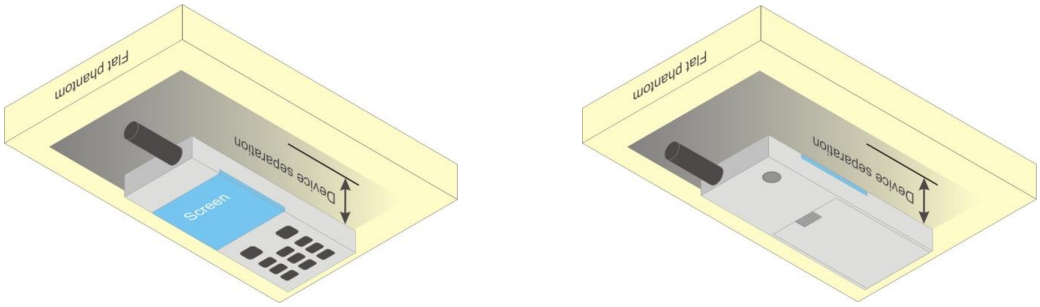


Fig 9.4 Body Worn Position

10.5 Product Specific Exposure

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, According to KDB648474 D04v01r03, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance

1. The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.

2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions.6 The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

10.6 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined form 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 D01v06 publication 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.

11. Measurement procedure for output power and SAR

Power measurements for licensed transmitters are performed using a base station simulator under digital average power, and the detail output power measurement include in appendix D

<GSM Note>

1. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the GPRS (4Tx slots) for GSM850/GSM1900 is considered as the primary mode.
2. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

<WCDMA Note>

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA/ HSPA+ is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA/ HSPA+ to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA/ HSPA+, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA, DC-HSDPA/ HSPA+) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA/ HSPA+.
3. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
4. The procedures in KDB 941225 D01v03r01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
5. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

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

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

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.

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

Note 3: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

Setup Configuration

HSUPA Setup Configuration:

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

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

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 4) (Note 5)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed}1$: 47/15 $\beta_{ed}2$: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

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

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

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

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

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

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

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

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

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

C.8.1.12 Fixed Reference Channel Definition H-Set 12

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

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

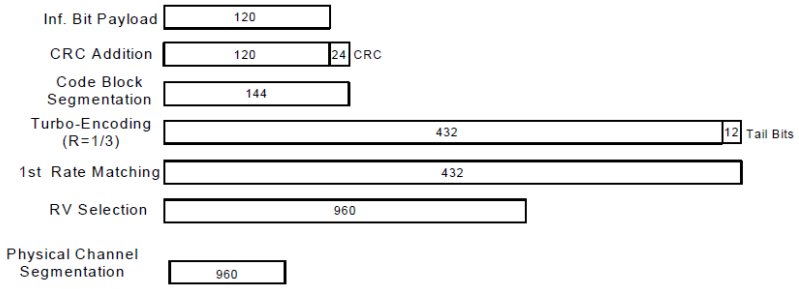


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

HSPA+ 3GPP release 7 (uplink category 7) 16QAM, Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2E:HSPA+:UL with 16QAM
   ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.4, quoted from the TS 34.121-1 s5.2E
   iii. Set Channel Parms
   iv. Set Cell Power = -86 dBm
   v. Set Channel Type = HSPA
   vi. Set UE Target Power =21 dBm
   vii. Power Ctrl Mode= All Up Bits
   viii. Set Manual Uplink DPCH Bc/Bd = Manual
   ix. Set Manual Uplink DPCH Bc and Bd=15,15(for 34.121-1 v8.10.0 table C11.1.4 sub-test 1)
   x. Set HSPA Conn DL Channel Levels
   xi. Set HS-SCCH Configs
   xii. Set RB Test Mode Setup
   xiii. Set Common HSUPA Parameters
   xiv. Set Serving Grant
   xv. Confirm that E-TFCI is equal to the target E-TFCI of 105 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM

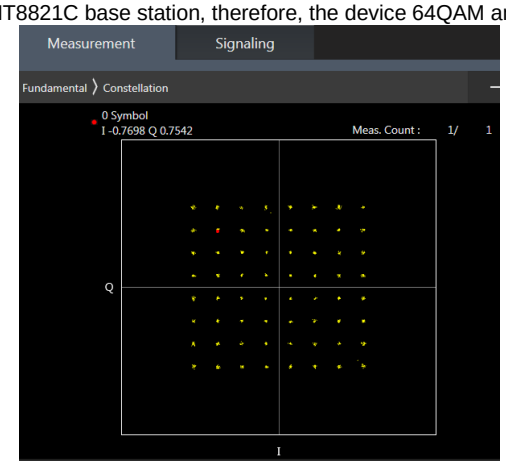
Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed}1: 30/15 β_{ed}2: 30/15	β_{ed}3: 24/15 β_{ed}4: 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.
Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
Note 3: DPDCH is not configured, therefore the β_c is set to 1 and β_d = 0 by default.
Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.
Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signaled to use the extrapolation algorithm.

Setup Configuration

<LTE Note>

1. Anritsu MT8821C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4/B5 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE B38 SAR test was covered by B41; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
10. According to 2017 TCB workshop, for 64 QAM and 16 QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 64QAM and 16QAM signal modulation are correct.



64QAM

16QAM

<Additional information for TDD LTE>

TDD LTE configuration setup for SAR measurement

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

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

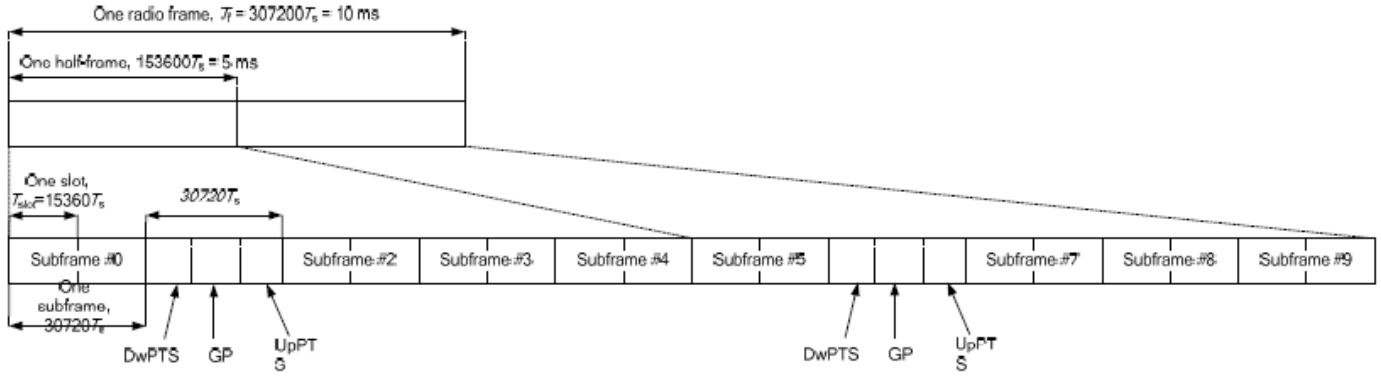


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

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

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

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

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

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

The highest duty factor is resulted from:

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

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

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

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

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

vi. The device supports Power Class 3 uplink-downlink configurations 0 and 6, and Power Class 2 uplink-downlink configurations 1 to 5.

vii. The highest available duty cycle for Power Class 2 operation is 43.3% using UL-DL configuration 1, for Power Class 3 operation is 63.3% using UL-DL configuration 0. Per FCC Guidance, all SAR tests were performed using Power Class 3. SAR with Power Class 2 at the available duty factor was additionally performed for the Power Class 3 configuration with the highest SAR among all exposure condition.

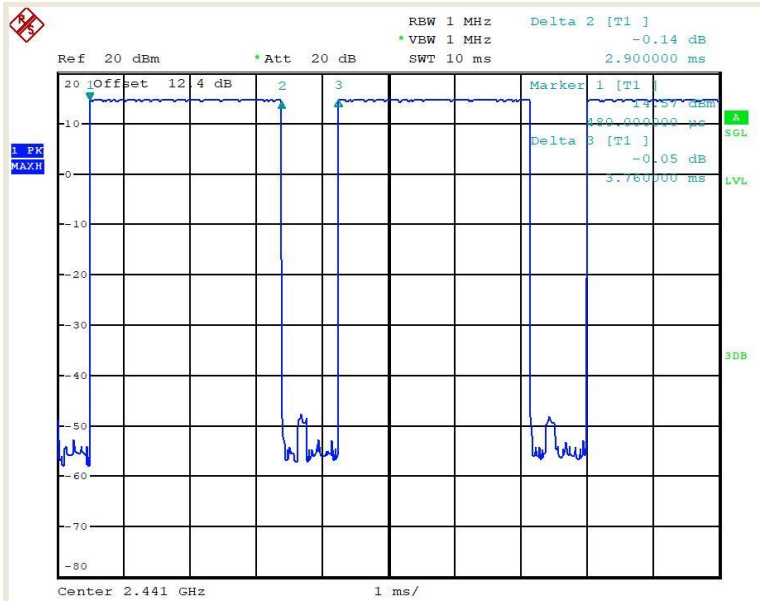
<WLAN Note>

1. For each antenna transmit power in SISO operation is equal to the power in MIMO mode per chain, therefore, RF exposure is using MIMO operation to be tested
2. In appendix D, the maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures. For “Not required”, SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band or when MIMO mode was not performed, due to for each antenna, transmit power in SISO operation is larger than (or equal to) the power in MIMO operation, RF exposure compliance of MIMO mode can be deduced from the compliance simultaneous transmission of antennas operating in SISO mode. Additional output power measurements were not necessary.
3. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration must be determined for each standalone and aggregated frequency band, according to the transmission mode configuration with the highest maximum output power specified for production units to perform SAR measurements. If the same highest maximum output power applies to different combinations of channel bandwidths, modulations and data rates, additional procedures are applied to determine which test configurations require SAR measurement. When applicable, an initial test position may be applied to reduce the number of SAR measurements required for next to the ear, UMPC mini-tablet or hotspot mode configurations with multiple test positions.
4. For 2.4 GHz 802.11b DSSS, either the initial test position procedure for multiple exposure test positions or the DSSS procedure for fixed exposure position is applied; these are mutually exclusive. For 2.4 GHz and 5 GHz OFDM configurations, the initial test configuration is applied to measure SAR using either the initial test position procedure for multiple exposure test position configurations or the initial test configuration procedures for fixed exposure test conditions. Based on the reported SAR of the measured configurations and maximum output power of the transmission mode configurations that are not included in the initial test configuration, the subsequent test configuration and initial test position procedures are applied to determine if SAR measurements are required for the remaining OFDM transmission configurations. In general, the number of test channels that require SAR measurement is minimized based on maximum output power measured for the test sample(s).
5. For OFDM transmission configurations in the 2.4 GHz and 5 GHz bands, When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel for each frequency band.
6. DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures.18 The initial test position procedure is described in the following:
    a. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band.
    b. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
    c. For all positions/configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
7. Per 201904 TCBC workshops, General principles of FCC KDB Publication 248227 D01 can be applied to determine the SAR Initial Test Configurations and test reduction for 802.11ax SAR testing. For the table below the 802.11ax maximum power is SU (non-OFDMA), and the SU maximum power also higher than RU (OFDMA)
8. In applying the test guidance, the IEEE 802.11 mode with the maximum output power (out of all modes) should be considered for testing
9. For modes with the same maximum output power, the guidance from section 5.3.2 a) of FCC KDB Publication 248227 D01 should be applied, with 802.11ax being considered as the highest 802.11 mode for the appropriate frequency bands
10. When SAR testing for 802.11ax is required
    a. If the maximum output power is highest for OFDMA scenarios, choose the tone size with the maximum number of tones and the highest maximum output power
    b. Otherwise, consider the fully allocated channel for SAR testing
    c. When SAR testing is required on RU sizes less than the fully allocated channel, use the RU number closest to the middle of the channel, choosing the higher RU number when two RUs are equidistant to the middle of the channel

<Bluetooth>

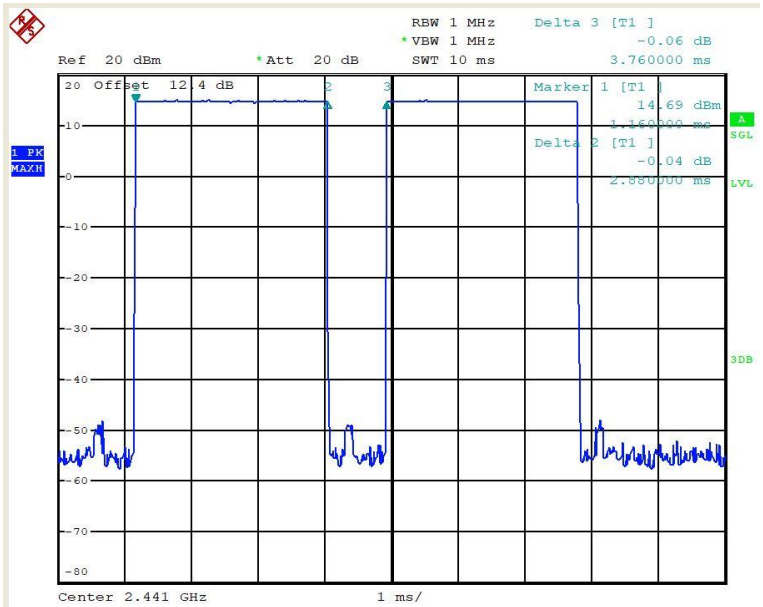
Ant4

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps due to its highest average power and duty cycle is 77.13% considered in SAR testing, and the duty cycle would be scaled to theoretical 83.3% in reported SAR calculation, for the duty cycle figure include in appendix D.



Ant 5

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



12. DL/UL carrier aggregation

<LTE Carrier Aggregation combinations>

General Note:

1. This device supports Carrier Aggregation on downlink for inter and intra band. For the device supports combination bands and configurations are according to 3GPP.
2. In applying the existing power measurement procedure of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of the frequency band and CCs in each row need consideration, and that configurations require power measurement should be highlighted in the below table.

2CC Downlink Carrier Aggregation			3CC Downlink Carrier Aggregation		
Number	Combination	Covered by Measurement Superset	Number	Combination	Covered by Measurement Superset
1	7C	9	9	2A-7C	
2	38C		10	5A-7A-7A	
3	5A-7A	10			
4	2A-7A				
5	4A-5A				
6	4A-7A				
7	7A-32A				
8	7A-7A				

<Power verification when LTE Carrier Aggregation Active>

General Note:

i. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.

ii. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.

iii. The device supports downlink two carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.

iv. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.

v. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.

vi. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

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

<Two Carrier power verification>

Ant 1

Configure		CA Configuration (BCS)	PCC							SCC				Power	
			LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Inter-Band		2A-7A	2	20	1880	18900	QPSK	1	0	7	20	2655	3100	23.54	23.61
		4A-5A	4	20	1732.5	20175	QPSK	1	0	5	10	881.5	2525	23.48	23.59
		4A-7A	4	20	1732.5	20175	QPSK	1	0	7	20	2655	3100	23.55	23.59
Intra-Band	Non-Contiguous	7A-7A	7	20	2535	21100	QPSK	1	0	7	5	2687.5	3425	23.33	23.40
	Contiguous	38C	38	20	2595	38000	QPSK	1	0	38	20	2614.8	38198	23.19	23.32

Ant 2

Configure		CA Configuration (BCS)	PCC							SCC				Power	
			LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Inter-Band		2A-7A	2	20	1880	18900	QPSK	1	0	7	20	2655	3100	23.82	23.93
		4A-5A	4	20	1732.5	20175	QPSK	1	0	5	10	889	2600	23.75	23.84
		4A-7A	4	20	1732.5	20175	QPSK	1	0	7	20	2680	3350	23.97	23.93
Intra-Band	Non-Contiguous	7A-7A	7	20	2535	21100	QPSK	1	0	7	5	2687.5	3425	23.90	23.99
	Contiguous	38C	38	20	2595	38000	QPSK	1	0	38	20	2614.8	38198	24.05	23.99

Ant 6

Configure		CA Configuration (BCS)	PCC							SCC				Power	
			LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Intra-Band	Non-Contiguous	7A-7A	7	20	2560	21350	QPSK	1	0	7	5	2687.5	3425	22.72	22.79
	Contiguous	38C	38	20	2595	38000	QPSK	1	0	38	20	2614.8	38198	22.63	22.58
		7C	7	20	2535	21100	QPSK	1	0	7	20	2554.8	21298	22.50	22.59

Ant 8

Configure		CA Configuration (BCS)	PCC							SCC				Power	
			LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Intra-Band	Contiguous	38C	38	20	2595	38000	QPSK	1	0	38	20	2614.8	38198	22.24	22.18

<Three Carrier power verification>

Ant 1

Configure	CA Configuration (BCS)	PCC							SCC				SCC2				Power	
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Inter-Band	2A-7C	2	20	1880	18900	QPSK	1	0	7	20	2655	3100	7	20	2674.8	3298	23.55	23.61
	5A-7A-7A	5	10	1732.5	20175	QPSK	1	0	7	20	2655	3100	7	5	2687.5	3425	23.62	23.59

Ant 2

Configure	CA Configuration (BCS)	PCC							SCC				SCC2				Power	
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Inter-Band	2A-7C	2	20	1880	18900	QPSK	1	0	7	20	2655	3100	7	20	2674.8	3298	23.85	23.93
	5A-7A-7A	5	10	836.5	20525	QPSK	1	0	7	20	2655	3100	7	5	2687.5	3425	23.92	23.89

<Uplink Carrier Aggregation Active>

<Intra-Band Uplink carrier aggregation>

General Note:

1. The device supports intra-band uplink carrier aggregation for LTE B7/38 with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre 3GPP requirement.
2. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
3. Uplink CA is only operating with power class3, and additional SAR measurement for LTE UL CA whit other DL CA combinations active were not required since the maximum output power for this configuration was not > 0.25dB higher than the maximum output power for UL CA active.

2CC uplink Carrier Aggregation		
Number	Combination	Covered by Measurement Superset
1	7C	
2	38C	

Ant 1

CA_7C_DSI 3/17										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	1	0	17.07	17.5
21100	20902	QPSK	1	0	1	99	2	0	17.38	17.5
21350	21152	QPSK	1	0	1	99	2	0	17.21	17.5

CA_38C_DSI 3/17										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	1	0	18.18	19.5
37901	38099	QPSK	1	99	1	0	1	0	18.14	19.5
38150	37952	QPSK	1	0	1	99	2	0	18.19	19.5

CA_7C_DSI 7										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	1	0	21.07	21.5
21100	20902	QPSK	1	0	1	99	2	0	21.02	21.5
21350	21152	QPSK	1	0	1	99	2	0	21.31	21.5

CA_38C_DSI 7										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	1	0	22.18	23.5
37901	38099	QPSK	1	99	1	0	1	0	22.12	23.5
38150	37952	QPSK	1	0	1	99	2	0	22.2	23.5

Ant 2

CA_7C_DSI 3										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	1	0	23.82	25
21100	20902	QPSK	1	0	1	99	2	0	23.85	25
21350	21152	QPSK	1	0	1	99	2	0	23.95	25

CA_38C_DSI 3										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	1	0	23.79	25
37901	38099	QPSK	1	99	1	0	1	0	23.82	25
38150	37952	QPSK	1	0	1	99	2	0	23.9	25

CA_7C_DSI 7										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	1	0	22.45	23
21100	20902	QPSK	1	0	1	99	2	0	22.63	23
21350	21152	QPSK	1	0	1	99	2	0	22.79	23

CA_38C_DSI 7										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	1	0	24.36	25
37901	38099	QPSK	1	99	1	0	1	0	24.3	25
38150	37952	QPSK	1	0	1	99	2	0	24.43	25

CA_7C_DSI 17										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	1	0	17.6	18
21100	20902	QPSK	1	0	1	99	2	0	17.51	18
21350	21152	QPSK	1	0	1	99	2	0	17.73	18

CA_38C_DSI 17										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	1	0	18.6	19
37901	38099	QPSK	1	99	1	0	1	0	18.58	19
38150	37952	QPSK	1	0	1	99	2	0	18.7	19

Ant 6

CA_7C_DSI 3/7/17										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	1	0	19.52	20
21100	20902	QPSK	1	0	1	99	2	0	19.45	20
21350	21152	QPSK	1	0	1	99	2	0	19.47	20

13. RF Exposure position consideration

Distance of the Antenna to the EUT surface/edge						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN Ant 2	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	≤ 25mm	≤ 25mm
WWAN Ant 1	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	>25mm	≤ 25mm
WWAN Ant 6	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm	≤ 25mm
WWAN Ant 8	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	≤ 25mm	>25mm
BT&WLAN Ant 4/5	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm

Positions for SAR tests; Hotspot mode						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN Ant 2	Yes	Yes	No	Yes	Yes	Yes
WWAN Ant 1	Yes	Yes	Yes	No	No	Yes
WWAN Ant 6	Yes	Yes	No	Yes	No	Yes
WWAN Ant 8	Yes	Yes	No	Yes	Yes	No
BT&WLAN Ant 4/5	Yes	Yes	Yes	No	Yes	No

General Note:

1. Referring to KDB 941225 D06 v02r01, when the overall device length and width are ≥ 9cm*5cm, the test distance is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge

14. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
   e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
4. Per KDB 648474 D04v01r03, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.
5. When the device operates in body-worn condition may power reduction in some bands and transmit antennas by sensor detection, but in this report which the full output power state is using in body-worn SAR tested to show compliance.
6. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g product specific SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold, for this device the WWAN transmitter scaled to maximum output power is higher than 1.2W/kg for WCDMA B2/4 and LTE B2/4, therefore product specific SAR is necessary.
7. For 5.3GHz / 5.5GHz WLAN product specific SAR is necessary too, due to an overall diagonal dimension is > 16cm.

GSM Note:

3. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the GPRS (4Tx slots) for GSM850/GSM1900 is considered as the primary mode.
4. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

UMTS Note:

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

LTE Note:

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4/B5 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE band 38 SAR test was covered by Band 41; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. The maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion.
   b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

WLAN Note:

1. According to tune-up limit, for each antenna transmit power in SISO operation is equal to the power in MIMO mode per chain, therefore, RF exposure is using MIMO operation to be tested
2. Per KDB 248227 D01v02r02, for 2.4GHz 802.11g/n SAR testing is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
3. Per KDB 248227 D01v02r02, U-NII-1 SAR testing is not required when the U-NII-2A band highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band.
4. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
5. For all positions / configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions / configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
6. During SAR testing the WLAN transmission was verified using a spectrum analyzer.

14.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850_Ant 2	GPRS (4 Tx slots)	Right Cheek	0mm	DSI 3	189	836.4	26.60	27.50	1.230	-0.11	0.107	0.132
	GSM850_Ant 2	GPRS (4 Tx slots)	Right Tilted	0mm	DSI 3	189	836.4	26.60	27.50	1.230	0.08	0.076	0.094
	GSM850_Ant 2	GPRS (4 Tx slots)	Left Cheek	0mm	DSI 3	189	836.4	26.60	27.50	1.230	-0.1	0.127	0.156
	GSM850_Ant 2	GPRS (4 Tx slots)	Left Tilted	0mm	DSI 3	189	836.4	26.60	27.50	1.230	-0.11	0.069	0.085
01	GSM850_Ant 1	GPRS (4 Tx slots)	Right Cheek	0mm	DSI 3	189	836.4	23.10	24.50	1.380	-0.04	0.464	0.640
	GSM850_Ant 1	GPRS (4 Tx slots)	Right Tilted	0mm	DSI 3	189	836.4	23.10	24.50	1.380	-0.06	0.450	0.621
	GSM850_Ant 1	GPRS (4 Tx slots)	Left Cheek	0mm	DSI 3	189	836.4	23.10	24.50	1.380	0.08	0.423	0.584
	GSM850_Ant 1	GPRS (4 Tx slots)	Left Tilted	0mm	DSI 3	189	836.4	23.10	24.50	1.380	0.11	0.368	0.508
	GSM1900_Ant 2	GPRS (4 Tx slots)	Right Cheek	0mm	DSI 3	512	1850.2	23.60	24.50	1.230	-0.16	0.041	0.050
	GSM1900_Ant 2	GPRS (4 Tx slots)	Right Tilted	0mm	DSI 3	512	1850.2	23.60	24.50	1.230	-0.11	0.029	0.036
	GSM1900_Ant 2	GPRS (4 Tx slots)	Left Cheek	0mm	DSI 3	512	1850.2	23.60	24.50	1.230	0.06	0.034	0.042
	GSM1900_Ant 2	GPRS (4 Tx slots)	Left Tilted	0mm	DSI 3	512	1850.2	23.60	24.50	1.230	0	0.025	0.031
02	GSM1900_Ant 1	GPRS (4 Tx slots)	Right Cheek	0mm	DSI 3	810	1909.8	22.19	23.50	1.352	-0.13	0.523	0.707
	GSM1900_Ant 1	GPRS (4 Tx slots)	Right Tilted	0mm	DSI 3	810	1909.8	22.19	23.50	1.352	-0.15	0.157	0.212
	GSM1900_Ant 1	GPRS (4 Tx slots)	Left Cheek	0mm	DSI 3	810	1909.8	22.19	23.50	1.352	0.09	0.204	0.276
	GSM1900_Ant 1	GPRS (4 Tx slots)	Left Tilted	0mm	DSI 3	810	1909.8	22.19	23.50	1.352	0.06	0.182	0.246

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA II_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	DSI 3	9262	1852.4	24.30	25.00	1.175	-0.11	0.148	0.174
	WCDMA II_Ant 2	RMC 12.2Kbps	Right Tilted	0mm	DSI 3	9262	1852.4	24.30	25.00	1.175	-0.15	0.091	0.107
	WCDMA II_Ant 2	RMC 12.2Kbps	Left Cheek	0mm	DSI 3	9262	1852.4	24.30	25.00	1.175	0.19	0.088	0.103
	WCDMA II_Ant 2	RMC 12.2Kbps	Left Tilted	0mm	DSI 3	9262	1852.4	24.30	25.00	1.175	0.13	0.070	0.082
	WCDMA II_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	DSI 3	9262	1852.4	18.84	20.00	1.306	0.17	0.691	0.903
	WCDMA II_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	DSI 3	9400	1880	18.70	20.00	1.349	0.13	0.716	0.966
03	WCDMA II_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	DSI 3	9538	1907.6	18.62	20.00	1.374	0.09	0.709	0.974
	WCDMA II_Ant 1	RMC 12.2Kbps	Right Tilted	0mm	DSI 3	9262	1852.4	18.84	20.00	1.306	0.11	0.468	0.611
	WCDMA II_Ant 1	RMC 12.2Kbps	Left Cheek	0mm	DSI 3	9262	1852.4	18.84	20.00	1.306	0.08	0.396	0.517
	WCDMA II_Ant 1	RMC 12.2Kbps	Left Tilted	0mm	DSI 3	9262	1852.4	18.84	20.00	1.306	-0.05	0.306	0.400
	WCDMA IV_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	DSI 3	1413	1732.6	24.21	25.00	1.199	-0.12	0.154	0.185
	WCDMA IV_Ant 2	RMC 12.2Kbps	Right Tilted	0mm	DSI 3	1413	1732.6	24.21	25.00	1.199	-0.18	0.082	0.098
	WCDMA IV_Ant 2	RMC 12.2Kbps	Left Cheek	0mm	DSI 3	1413	1732.6	24.21	25.00	1.199	-0.05	0.097	0.116
	WCDMA IV_Ant 2	RMC 12.2Kbps	Left Tilted	0mm	DSI 3	1413	1732.6	24.21	25.00	1.199	-0.13	0.074	0.089
04	WCDMA IV_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	DSI 3	1312	1712.4	18.87	20.00	1.297	-0.08	0.513	0.665
	WCDMA IV_Ant 1	RMC 12.2Kbps	Right Tilted	0mm	DSI 3	1312	1712.4	18.87	20.00	1.297	-0.07	0.382	0.496
	WCDMA IV_Ant 1	RMC 12.2Kbps	Left Cheek	0mm	DSI 3	1312	1712.4	18.87	20.00	1.297	0.11	0.262	0.340
	WCDMA IV_Ant 1	RMC 12.2Kbps	Left Tilted	0mm	DSI 3	1312	1712.4	18.87	20.00	1.297	0.06	0.248	0.322
	WCDMA V_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	DSI 3	4132	826.4	24.17	25.00	1.211	-0.1	0.173	0.209
	WCDMA V_Ant 2	RMC 12.2Kbps	Right Tilted	0mm	DSI 3	4132	826.4	24.17	25.00	1.211	0.02	0.104	0.126
	WCDMA V_Ant 2	RMC 12.2Kbps	Left Cheek	0mm	DSI 3	4132	826.4	24.17	25.00	1.211	-0.15	0.211	0.255
	WCDMA V_Ant 2	RMC 12.2Kbps	Left Tilted	0mm	DSI 3	4132	826.4	24.17	25.00	1.211	-0.08	0.092	0.111
05	WCDMA V_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	DSI 3	4182	836.4	19.98	21.00	1.265	0.03	0.485	0.613
	WCDMA V_Ant 1	RMC 12.2Kbps	Right Tilted	0mm	DSI 3	4182	836.4	19.98	21.00	1.265	-0.07	0.438	0.554
	WCDMA V_Ant 1	RMC 12.2Kbps	Left Cheek	0mm	DSI 3	4182	836.4	19.98	21.00	1.265	0.11	0.442	0.559
	WCDMA V_Ant 1	RMC 12.2Kbps	Left Tilted	0mm	DSI 3	4182	836.4	19.98	21.00	1.265	-0.05	0.396	0.501

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Note
	LTE Band 2_Ant 2	20M	QPSK	1	0	Right Cheek	0mm	DSI 3	18900	1880	23.93	25.00	1.279	-0.15	0.166	0.212	
	LTE Band 2_Ant 2	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	18900	1880	23.04	24.00	1.247	-0.1	0.132	0.165	
	LTE Band 2_Ant 2	20M	QPSK	1	0	Right Tilted	0mm	DSI 3	18900	1880	23.93	25.00	1.279	-0.19	0.105	0.134	
	LTE Band 2_Ant 2	20M	QPSK	50	0	Right Tilted	0mm	DSI 3	18900	1880	23.04	24.00	1.247	-0.1	0.083	0.104	
	LTE Band 2_Ant 2	20M	QPSK	1	0	Left Cheek	0mm	DSI 3	18900	1880	23.93	25.00	1.279	0.09	0.097	0.124	
	LTE Band 2_Ant 2	20M	QPSK	50	0	Left Cheek	0mm	DSI 3	18900	1880	23.04	24.00	1.247	0.11	0.088	0.110	
	LTE Band 2_Ant 2	20M	QPSK	1	0	Left Tilted	0mm	DSI 3	18900	1880	23.93	25.00	1.279	0.15	0.064	0.082	
	LTE Band 2_Ant 2	20M	QPSK	50	0	Left Tilted	0mm	DSI 3	18900	1880	23.04	24.00	1.247	0.06	0.051	0.064	
	LTE Band 2_Ant 1	20M	QPSK	1	0	Right Cheek	0mm	DSI 3	18700	1860	18.90	20.00	1.288	-0.07	0.617	0.795	
	LTE Band 2_Ant 1	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	18700	1860	18.86	20.00	1.300	0.08	0.643	0.836	
	LTE Band 2_Ant 1	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	18900	1880	18.63	20.00	1.371	0.1	0.633	0.868	
	LTE Band 2_Ant 1	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	19100	1900	18.63	20.00	1.371	0.05	0.620	0.850	
06	LTE Band 2_Ant 1	20M	QPSK	100	0	Right Cheek	0mm	DSI 3	18700	1860	18.58	20.00	1.387	0.06	0.643	0.892	
	LTE Band 2_Ant 1	20M	QPSK	1	0	Right Tilted	0mm	DSI 3	18700	1860	18.90	20.00	1.288	-0.19	0.393	0.506	
	LTE Band 2_Ant 1	20M	QPSK	50	0	Right Tilted	0mm	DSI 3	18700	1860	18.86	20.00	1.300	-0.1	0.407	0.529	
	LTE Band 2_Ant 1	20M	QPSK	1	0	Left Cheek	0mm	DSI 3	18700	1860	18.90	20.00	1.288	0.09	0.230	0.296	
	LTE Band 2_Ant 1	20M	QPSK	50	0	Left Cheek	0mm	DSI 3	18700	1860	18.86	20.00	1.300	0.11	0.233	0.303	
	LTE Band 2_Ant 1	20M	QPSK	1	0	Left Tilted	0mm	DSI 3	18700	1860	18.90	20.00	1.288	0.15	0.226	0.291	
	LTE Band 2_Ant 1	20M	QPSK	50	0	Left Tilted	0mm	DSI 3	18700	1860	18.86	20.00	1.300	0.06	0.231	0.300	
	LTE Band 4_Ant 2	20M	QPSK	1	0	Right Cheek	0mm	DSI 3	20175	1732.5	23.84	25.00	1.306	-0.08	0.143	0.187	
	LTE Band 4_Ant 2	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	20175	1732.5	22.81	24.00	1.315	-0.13	0.117	0.154	
	LTE Band 4_Ant 2	20M	QPSK	1	0	Right Tilted	0mm	DSI 3	20175	1732.5	23.84	25.00	1.306	-0.02	0.078	0.102	
	LTE Band 4_Ant 2	20M	QPSK	50	0	Right Tilted	0mm	DSI 3	20175	1732.5	22.81	24.00	1.315	0.01	0.061	0.080	
	LTE Band 4_Ant 2	20M	QPSK	1	0	Left Cheek	0mm	DSI 3	20175	1732.5	23.84	25.00	1.306	0.06	0.088	0.115	
	LTE Band 4_Ant 2	20M	QPSK	50	0	Left Cheek	0mm	DSI 3	20175	1732.5	22.81	24.00	1.315	0.08	0.067	0.088	
	LTE Band 4_Ant 2	20M	QPSK	1	0	Left Tilted	0mm	DSI 3	20175	1732.5	23.84	25.00	1.306	0.01	0.055	0.072	
	LTE Band 4_Ant 2	20M	QPSK	50	0	Left Tilted	0mm	DSI 3	20175	1732.5	22.81	24.00	1.315	-0.04	0.043	0.057	
	LTE Band 4_Ant 1	20M	QPSK	1	0	Right Cheek	0mm	DSI 3	20175	1732.5	19.89	21.00	1.291	-0.08	0.657	0.848	
	LTE Band 4_Ant 1	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	20175	1732.5	19.60	21.00	1.380	-0.01	0.680	0.939	
07	LTE Band 4_Ant 1	20M	QPSK	100	0	Right Cheek	0mm	DSI 3	20175	1732.5	19.53	21.00	1.403	-0.04	0.680	0.954	
	LTE Band 4_Ant 1	20M	QPSK	1	0	Right Tilted	0mm	DSI 3	20175	1732.5	19.89	21.00	1.291	0	0.443	0.572	
	LTE Band 4_Ant 1	20M	QPSK	50	0	Right Tilted	0mm	DSI 3	20175	1732.5	19.60	21.00	1.380	-0.06	0.462	0.638	
	LTE Band 4_Ant 1	20M	QPSK	1	0	Left Cheek	0mm	DSI 3	20175	1732.5	19.89	21.00	1.291	0.1	0.292	0.377	
	LTE Band 4_Ant 1	20M	QPSK	50	0	Left Cheek	0mm	DSI 3	20175	1732.5	19.60	21.00	1.380	0.11	0.305	0.421	
	LTE Band 4_Ant 1	20M	QPSK	1	0	Left Tilted	0mm	DSI 3	20175	1732.5	19.89	21.00	1.291	0.17	0.275	0.355	
	LTE Band 4_Ant 1	20M	QPSK	50	0	Left Tilted	0mm	DSI 3	20175	1732.5	19.60	21.00	1.380	0.02	0.299	0.413	
	LTE Band 5_Ant 2	10M	QPSK	1	0	Right Cheek	0mm	DSI 3	20525	836.5	23.89	25.00	1.291	0.1	0.150	0.194	
	LTE Band 5_Ant 2	10M	QPSK	25	0	Right Cheek	0mm	DSI 3	20525	836.5	22.92	24.00	1.282	0.11	0.123	0.158	
	LTE Band 5_Ant 2	10M	QPSK	1	0	Right Tilted	0mm	DSI 3	20525	836.5	23.89	25.00	1.291	-0.05	0.090	0.116	
	LTE Band 5_Ant 2	10M	QPSK	25	0	Right Tilted	0mm	DSI 3	20525	836.5	22.92	24.00	1.282	0.17	0.081	0.104	
	LTE Band 5_Ant 2	10M	QPSK	1	0	Left Cheek	0mm	DSI 3	20525	836.5	23.89	25.00	1.291	0.02	0.195	0.252	
	LTE Band 5_Ant 2	10M	QPSK	25	0	Left Cheek	0mm	DSI 3	20525	836.5	22.92	24.00	1.282	0.03	0.184	0.236	
	LTE Band 5_Ant 2	10M	QPSK	1	0	Left Tilted	0mm	DSI 3	20525	836.5	23.89	25.00	1.291	-0.11	0.082	0.106	
	LTE Band 5_Ant 2	10M	QPSK	25	0	Left Tilted	0mm	DSI 3	20525	836.5	22.92	24.00	1.282	-0.01	0.074	0.095	
	LTE Band 5_Ant 1	10M	QPSK	1	0	Right Cheek	0mm	DSI 3	20525	836.5	19.75	21.00	1.334	0	0.505	0.673	
08	LTE Band 5_Ant 1	10M	QPSK	25	0	Right Cheek	0mm	DSI 3	20525	836.5	19.57	21.00	1.390	-0.06	0.514	0.714	
	LTE Band 5_Ant 1	10M	QPSK	1	0	Right Tilted	0mm	DSI 3	20525	836.5	19.75	21.00	1.334	0.02	0.468	0.624	
	LTE Band 5_Ant 1	10M	QPSK	25	0	Right Tilted	0mm	DSI 3	20525	836.5	19.57	21.00	1.390	0.03	0.472	0.656	
	LTE Band 5_Ant 1	10M	QPSK	1	0	Left Cheek	0mm	DSI 3	20525	836.5	19.75	21.00	1.334	0.11	0.430	0.573	
	LTE Band 5_Ant 1	10M	QPSK	25	0	Left Cheek	0mm	DSI 3	20525	836.5	19.57	21.00	1.390	0.17	0.437	0.607	
	LTE Band 5_Ant 1	10M	QPSK	1	0	Left Tilted	0mm	DSI 3	20525	836.5	19.75	21.00	1.334	-0.05	0.381	0.508	
	LTE Band 5_Ant 1	10M	QPSK	25	0	Left Tilted	0mm	DSI 3	20525	836.5	19.57	21.00	1.390	0.08	0.392	0.545	

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Note
	LTE Band 7_Ant 2	20M	QPSK	1	0	Right Cheek	0mm	DSI 3	21100	2535	23.99	25.00	1.262	-0.14	0.024	0.030	
	LTE Band 7_Ant 2	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	21100	2535	23.06	24.00	1.242	0.1	0.020	0.025	
	LTE Band 7_Ant 2	20M	QPSK	1	0	Right Tilted	0mm	DSI 3	21100	2535	23.99	25.00	1.262	0.02	0.015	0.019	
	LTE Band 7_Ant 2	20M	QPSK	50	0	Right Tilted	0mm	DSI 3	21100	2535	23.06	24.00	1.242	-0.05	0.011	0.014	
	LTE Band 7_Ant 2	20M	QPSK	1	0	Left Cheek	0mm	DSI 3	21100	2535	23.99	25.00	1.262	0.08	0.019	0.024	
	LTE Band 7_Ant 2	20M	QPSK	50	0	Left Cheek	0mm	DSI 3	21100	2535	23.06	24.00	1.242	0.16	0.018	0.022	
	LTE Band 7_Ant 2	20M	QPSK	1	0	Left Tilted	0mm	DSI 3	21100	2535	23.99	25.00	1.262	0.08	0.010	0.013	
	LTE Band 7_Ant 2	20M	QPSK	50	0	Left Tilted	0mm	DSI 3	21100	2535	23.06	24.00	1.242	-0.11	0.008	0.010	
	LTE Band 7C_Ant 2	20M	QPSK	1	0	Right Cheek	0mm	DSI 3	21350+21152	2560	23.95	25.00	1.274	-0.14	0.020	0.025	UL CA
	LTE Band 7_Ant 1	20M	QPSK	1	0	Right Cheek	0mm	DSI 3	21350	2560	16.66	17.50	1.213	-0.03	0.620	0.752	
	LTE Band 7_Ant 1	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	21350	2560	16.32	17.50	1.312	-0.11	0.631	0.828	
	LTE Band 7_Ant 1	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	20850	2510	16.21	17.50	1.346	-0.06	0.533	0.717	
	LTE Band 7_Ant 1	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	21100	2535	16.25	17.50	1.334	-0.01	0.570	0.760	
	LTE Band 7_Ant 1	20M	QPSK	100	0	Right Cheek	0mm	DSI 3	21350	2560	16.01	17.50	1.409	0	0.594	0.837	
	LTE Band 7_Ant 1	20M	QPSK	1	0	Right Tilted	0mm	DSI 3	21350	2560	16.66	17.50	1.213	0.1	0.398	0.483	
	LTE Band 7_Ant 1	20M	QPSK	50	0	Right Tilted	0mm	DSI 3	21350	2560	16.32	17.50	1.312	-0.02	0.411	0.539	
	LTE Band 7_Ant 1	20M	QPSK	1	0	Left Cheek	0mm	DSI 3	21350	2560	16.66	17.50	1.213	0.03	0.195	0.237	
	LTE Band 7_Ant 1	20M	QPSK	50	0	Left Cheek	0mm	DSI 3	21350	2560	16.32	17.50	1.312	0.09	0.203	0.266	
	LTE Band 7_Ant 1	20M	QPSK	1	0	Left Tilted	0mm	DSI 3	21350	2560	16.66	17.50	1.213	0.11	0.155	0.188	
	LTE Band 7_Ant 1	20M	QPSK	50	0	Left Tilted	0mm	DSI 3	21350	2560	16.32	17.50	1.312	-0.08	0.168	0.220	
	LTE Band 7C_Ant 1	20M	QPSK	1	0	Right Cheek	0mm	DSI 3	21100+20902	2535	17.38	17.50	1.028	0.1	0.793	0.815	UL CA
	LTE Band 7_Ant 6	20M	QPSK	1	0	Right Cheek	0mm	DSI 3	21100	2535	18.87	20.00	1.297	-0.01	0.658	0.854	
	LTE Band 7_Ant 6	20M	QPSK	1	0	Right Cheek	0mm	DSI 3	20850	2510	18.71	20.00	1.346	-0.07	0.583	0.785	
	LTE Band 7_Ant 6	20M	QPSK	1	0	Right Cheek	0mm	DSI 3	21350	2560	18.76	20.00	1.330	-0.1	0.661	0.879	
	LTE Band 7_Ant 6	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	21100	2535	18.75	20.00	1.334	-0.1	0.645	0.860	
	LTE Band 7_Ant 6	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	20850	2510	18.66	20.00	1.361	-0.08	0.620	0.844	
09	LTE Band 7_Ant 6	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	21350	2560	18.69	20.00	1.352	-0.04	0.659	0.891	
	LTE Band 7_Ant 6	20M	QPSK	100	0	Right Cheek	0mm	DSI 3	20850	2510	18.61	20.00	1.377	-0.13	0.611	0.841	
	LTE Band 7_Ant 6	20M	QPSK	1	0	Right Tilted	0mm	DSI 3	21100	2535	18.87	20.00	1.297	0.09	0.388	0.503	
	LTE Band 7_Ant 6	20M	QPSK	50	0	Right Tilted	0mm	DSI 3	21100	2535	18.75	20.00	1.334	0.05	0.392	0.523	
	LTE Band 7_Ant 6	20M	QPSK	1	0	Left Cheek	0mm	DSI 3	21100	2535	18.87	20.00	1.297	-0.03	0.226	0.293	
	LTE Band 7_Ant 6	20M	QPSK	50	0	Left Cheek	0mm	DSI 3	21100	2535	18.75	20.00	1.334	0.08	0.236	0.315	
	LTE Band 7_Ant 6	20M	QPSK	1	0	Left Tilted	0mm	DSI 3	21100	2535	18.87	20.00	1.297	0.11	0.189	0.245	
	LTE Band 7_Ant 6	20M	QPSK	50	0	Left Tilted	0mm	DSI 3	21100	2535	18.75	20.00	1.334	-0.08	0.197	0.263	
	LTE Band 7C_Ant 6	20M	QPSK	1	99	Right Cheek	0mm	DSI 3	20850+21408	2510	19.52	20.00	1.117	-0.04	0.772	0.862	UL CA

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 41_Ant 2	20M	QPSK	1	0	Right Cheek	0mm	DSI 3	40620	2593	23.99	25.00	1.262	62.9	1.006	-0.08	0.021	0.027
	LTE Band 41_Ant 2	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	40620	2593	23.19	24.00	1.205	62.9	1.006	0.02	0.016	0.019
	LTE Band 41_Ant 2	20M	QPSK	1	0	Right Tilted	0mm	DSI 3	40620	2593	23.99	25.00	1.262	62.9	1.006	0.06	0.018	0.023
	LTE Band 41_Ant 2	20M	QPSK	50	0	Right Tilted	0mm	DSI 3	40620	2593	23.19	24.00	1.205	62.9	1.006	-0.1	0.011	0.013
	LTE Band 41_Ant 2	20M	QPSK	1	0	Left Cheek	0mm	DSI 3	40620	2593	23.99	25.00	1.262	62.9	1.006	-0.15	0.020	0.025
	LTE Band 41_Ant 2	20M	QPSK	50	0	Left Cheek	0mm	DSI 3	40620	2593	23.19	24.00	1.205	62.9	1.006	0.03	0.015	0.018
	LTE Band 41_Ant 2	20M	QPSK	1	0	Left Tilted	0mm	DSI 3	40620	2593	23.99	25.00	1.262	62.9	1.006	0.13	0.008	0.010
	LTE Band 41_Ant 2	20M	QPSK	50	0	Left Tilted	0mm	DSI 3	40620	2593	23.19	24.00	1.205	62.9	1.006	-0.08	0.005	0.006
	LTE Band 41_Ant 1	20M	QPSK	1	0	Right Cheek	0mm	DSI 3	39750	2506	18.45	19.50	1.274	62.9	1.006	-0.02	0.467	0.598
	LTE Band 41_Ant 1	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	39750	2506	18.19	19.50	1.352	62.9	1.006	-0.05	0.441	0.600
	LTE Band 41_Ant 1	20M	QPSK	1	0	Right Tilted	0mm	DSI 3	39750	2506	18.45	19.50	1.274	62.9	1.006	0.08	0.289	0.370
	LTE Band 41_Ant 1	20M	QPSK	50	0	Right Tilted	0mm	DSI 3	39750	2506	18.19	19.50	1.352	62.9	1.006	-0.11	0.271	0.369
	LTE Band 41_Ant 1	20M	QPSK	1	0	Left Cheek	0mm	DSI 3	39750	2506	18.45	19.50	1.274	62.9	1.006	-0.12	0.159	0.204
	LTE Band 41_Ant 1	20M	QPSK	50	0	Left Cheek	0mm	DSI 3	39750	2506	18.19	19.50	1.352	62.9	1.006	0.09	0.148	0.201
	LTE Band 41_Ant 1	20M	QPSK	1	0	Left Tilted	0mm	DSI 3	39750	2506	18.45	19.50	1.274	62.9	1.006	0.07	0.122	0.156
	LTE Band 41_Ant 1	20M	QPSK	50	0	Left Tilted	0mm	DSI 3	39750	2506	18.19	19.50	1.352	62.9	1.006	0.14	0.109	0.148
	LTE Band 41_Ant 6	20M	QPSK	1	0	Right Cheek	0mm	DSI 3	39750	2506	18.84	20.00	1.306	62.9	1.006	0.13	0.456	0.599
10	LTE Band 41_Ant 6	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	39750	2506	18.60	20.00	1.380	62.9	1.006	0	0.477	0.662
	LTE Band 41_Ant 6	20M	QPSK	1	0	Right Tilted	0mm	DSI 3	39750	2506	18.84	20.00	1.306	62.9	1.006	-0.11	0.275	0.361
	LTE Band 41_Ant 6	20M	QPSK	50	0	Right Tilted	0mm	DSI 3	39750	2506	18.60	20.00	1.380	62.9	1.006	-0.12	0.283	0.393
	LTE Band 41_Ant 6	20M	QPSK	1	0	Left Cheek	0mm	DSI 3	39750	2506	18.84	20.00	1.306	62.9	1.006	-0.02	0.151	0.198
	LTE Band 41_Ant 6	20M	QPSK	50	0	Left Cheek	0mm	DSI 3	39750	2506	18.60	20.00	1.380	62.9	1.006	-0.05	0.163	0.226
	LTE Band 41_Ant 6	20M	QPSK	1	0	Left Tilted	0mm	DSI 3	39750	2506	18.84	20.00	1.306	62.9	1.006	0.09	0.121	0.159
	LTE Band 41_Ant 6	20M	QPSK	50	0	Left Tilted	0mm	DSI 3	39750	2506	18.60	20.00	1.380	62.9	1.006	0.07	0.133	0.185
	LTE Band 41_Ant 8	20M	QPSK	1	0	Right Cheek	0mm	DSI 3	39750	2506	22.56	23.50	1.242	62.9	1.006	-0.14	0.237	0.296
	LTE Band 41_Ant 8	20M	QPSK	50	0	Right Cheek	0mm	DSI 3	39750	2506	21.41	22.50	1.285	62.9	1.006	-0.18	0.189	0.244
	LTE Band 41_Ant 8	20M	QPSK	1	0	Right Tilted	0mm	DSI 3	39750	2506	22.56	23.50	1.242	62.9	1.006	0	0.064	0.080
	LTE Band 41_Ant 8	20M	QPSK	50	0	Right Tilted	0mm	DSI 3	39750	2506	21.41	22.50	1.285	62.9	1.006	-0.11	0.055	0.071
	LTE Band 41_Ant 8	20M	QPSK	1	0	Left Cheek	0mm	DSI 3	39750	2506	22.56	23.50	1.242	62.9	1.006	-0.05	0.137	0.171
	LTE Band 41_Ant 8	20M	QPSK	50	0	Left Cheek	0mm	DSI 3	39750	2506	21.41	22.50	1.285	62.9	1.006	0.09	0.122	0.158
	LTE Band 41_Ant 8	20M	QPSK	1	0	Left Tilted	0mm	DSI 3	39750	2506	22.56	23.50	1.242	62.9	1.006	0.07	0.116	0.145
	LTE Band 41_Ant 8	20M	QPSK	50	0	Left Tilted	0mm	DSI 3	39750	2506	21.41	22.50	1.285	62.9	1.006	0.09	0.101	0.131

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Table	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 4+5	1	1	2412	17.33	17.50	1.040	100	1.000	0.07	0.163	0.170
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 4+5	1	1	2412	17.33	17.50	1.040	100	1.000	0.11	0.128	0.133
11	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 4+5	1	1	2412	17.33	17.50	1.040	100	1.000	-0.06	0.322	0.335
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 4+5	1	1	2412	17.33	17.50	1.040	100	1.000	-0.13	0.290	0.302
	WLAN5GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 4+5	1	52	5260	16.61	17.00	1.095	98.82	1.012	0.1	0.181	0.201
	WLAN5GHz	802.11a 6Mbps	Right Tilted	0mm	Ant 4+5	1	52	5260	16.61	17.00	1.095	98.82	1.012	0.08	0.165	0.183
12	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 4+5	1	52	5260	16.61	17.00	1.095	98.82	1.012	-0.01	0.553	0.613
	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 4+5	1	52	5260	16.61	17.00	1.095	98.82	1.012	0.11	0.427	0.473
	WLAN5GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 4+5	1	100	5500	18.49	18.50	1.003	98.82	1.012	0.1	0.155	0.157
	WLAN5GHz	802.11a 6Mbps	Right Tilted	0mm	Ant 4+5	1	100	5500	18.49	18.50	1.003	98.82	1.012	0.02	0.135	0.137
13	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 4+5	1	100	5500	18.49	18.50	1.003	98.82	1.012	-0.19	0.491	0.498
	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 4+5	1	100	5500	18.49	18.50	1.003	98.82	1.012	-0.15	0.418	0.424
	WLAN5GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 4+5	1	165	5825	18.88	19.00	1.027	98.82	1.012	0.08	0.197	0.205
	WLAN5GHz	802.11a 6Mbps	Right Tilted	0mm	Ant 4+5	1	165	5825	18.88	19.00	1.027	98.82	1.012	0.09	0.167	0.174
14	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 4+5	1	165	5825	18.88	19.00	1.027	98.82	1.012	-0.15	0.462	0.480
	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 4+5	1	165	5825	18.88	19.00	1.027	98.82	1.012	0.11	0.402	0.418

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	Bluetooth	1Mbps	Right Cheek	0mm	Ant 4	39	2441	14.33	14.50	1.040	77.13	1.080	-0.03	0.030	0.034
	Bluetooth	1Mbps	Right Tilted	0mm	Ant 4	39	2441	14.33	14.50	1.040	77.13	1.080	0.1	0.022	0.025
	Bluetooth	1Mbps	Left Cheek	0mm	Ant 4	39	2441	14.33	14.50	1.040	77.13	1.080	0.06	0.028	0.031
	Bluetooth	1Mbps	Left Tilted	0mm	Ant 4	39	2441	14.33	14.50	1.040	77.13	1.080	-0.15	0.020	0.022
15	Bluetooth	1Mbps	Right Cheek	0mm	Ant 5	78	2480	14.04	14.50	1.112	76.6	1.087	-0.13	0.033	0.040
	Bluetooth	1Mbps	Right Tilted	0mm	Ant 5	78	2480	14.04	14.50	1.112	76.6	1.087	0.05	0.020	0.024
	Bluetooth	1Mbps	Left Cheek	0mm	Ant 5	78	2480	14.04	14.50	1.112	76.6	1.087	-0.12	0.026	0.031
	Bluetooth	1Mbps	Left Tilted	0mm	Ant 5	78	2480	14.04	14.50	1.112	76.6	1.087	0.1	0.018	0.022

14.2 Hotspot SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850_Ant 2	GPRS (4 Tx slots)	Front	10mm	DSI 17	189	836.4	26.60	27.50	1.230	0.05	0.226	0.278
16	GSM850_Ant 2	GPRS (4 Tx slots)	Back	10mm	DSI 17	189	836.4	26.60	27.50	1.230	-0.11	0.355	0.437
	GSM850_Ant 2	GPRS (4 Tx slots)	Left Side	10mm	DSI 17	189	836.4	26.60	27.50	1.230	0.11	0.090	0.111
	GSM850_Ant 2	GPRS (4 Tx slots)	Right side	10mm	DSI 17	189	836.4	26.60	27.50	1.230	0.08	0.047	0.058
	GSM850_Ant 2	GPRS (4 Tx slots)	Bottom side	10mm	DSI 17	189	836.4	26.60	27.50	1.230	0.14	0.206	0.253
	GSM850_Ant 1	GPRS (4 Tx slots)	Front	10mm	DSI 17	189	836.4	23.10	24.50	1.380	0.05	0.167	0.231
	GSM850_Ant 1	GPRS (4 Tx slots)	Back	10mm	DSI 17	189	836.4	23.10	24.50	1.380	-0.11	0.260	0.359
	GSM850_Ant 1	GPRS (4 Tx slots)	Left Side	10mm	DSI 17	189	836.4	23.10	24.50	1.380	-0.11	0.062	0.086
	GSM850_Ant 1	GPRS (4 Tx slots)	Top Side	10mm	DSI 17	189	836.4	23.10	24.50	1.380	0.18	0.145	0.200
	GSM1900_Ant 2	GPRS (4 Tx slots)	Front	10mm	DSI 17	661	1880	19.98	20.50	1.127	-0.11	0.259	0.292
17	GSM1900_Ant 2	GPRS (4 Tx slots)	Back	10mm	DSI 17	661	1880	19.98	20.50	1.127	-0.19	0.305	0.344
	GSM1900_Ant 2	GPRS (4 Tx slots)	Left Side	10mm	DSI 17	661	1880	19.98	20.50	1.127	-0.06	0.105	0.118
	GSM1900_Ant 2	GPRS (4 Tx slots)	Right Side	10mm	DSI 17	661	1880	19.98	20.50	1.127	0.06	0.047	0.053
	GSM1900_Ant 2	GPRS (4 Tx slots)	Bottom Side	10mm	DSI 17	661	1880	19.98	20.50	1.127	0.11	0.168	0.189
	GSM1900_Ant 1	GPRS (4 Tx slots)	Front	10mm	DSI 17	810	1909.8	22.19	23.50	1.352	-0.06	0.110	0.149
	GSM1900_Ant 1	GPRS (4 Tx slots)	Back	10mm	DSI 17	810	1909.8	22.19	23.50	1.352	-0.11	0.137	0.185
	GSM1900_Ant 1	GPRS (4 Tx slots)	Left Side	10mm	DSI 17	810	1909.8	22.19	23.50	1.352	-0.03	0.099	0.134
	GSM1900_Ant 1	GPRS (4 Tx slots)	Top Side	10mm	DSI 17	810	1909.8	22.19	23.50	1.352	0.17	0.130	0.176

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA II_Ant 2	RMC 12.2Kbps	Front	10mm	DSI 17	9262	1852.4	17.40	18.00	1.148	-0.04	0.556	0.638
	WCDMA II_Ant 2	RMC 12.2Kbps	Back	10mm	DSI 17	9262	1852.4	17.40	18.00	1.148	0.11	0.345	0.396
	WCDMA II_Ant 2	RMC 12.2Kbps	Left Side	10mm	DSI 17	9262	1852.4	17.40	18.00	1.148	0.09	0.152	0.175
	WCDMA II_Ant 2	RMC 12.2Kbps	Right Side	10mm	DSI 17	9262	1852.4	17.40	18.00	1.148	0.06	0.060	0.069
18	WCDMA II_Ant 2	RMC 12.2Kbps	Bottom Side	10mm	DSI 17	9262	1852.4	17.40	18.00	1.148	-0.09	0.648	0.744
	WCDMA II_Ant 1	RMC 12.2Kbps	Front	10mm	DSI 17	9262	1852.4	18.84	20.00	1.306	0.15	0.142	0.185
	WCDMA II_Ant 1	RMC 12.2Kbps	Back	10mm	DSI 17	9262	1852.4	18.84	20.00	1.306	-0.14	0.171	0.223
	WCDMA II_Ant 1	RMC 12.2Kbps	Left Side	10mm	DSI 17	9262	1852.4	18.84	20.00	1.306	0.09	0.133	0.174
	WCDMA II_Ant 1	RMC 12.2Kbps	Top Side	10mm	DSI 17	9262	1852.4	18.84	20.00	1.306	-0.18	0.159	0.208
	WCDMA IV_Ant 2	RMC 12.2Kbps	Front	10mm	DSI 17	1312	1712.4	18.43	19.00	1.140	-0.06	0.374	0.426
	WCDMA IV_Ant 2	RMC 12.2Kbps	Back	10mm	DSI 17	1312	1712.4	18.43	19.00	1.140	0.04	0.387	0.441
	WCDMA IV_Ant 2	RMC 12.2Kbps	Left Side	10mm	DSI 17	1312	1712.4	18.43	19.00	1.140	-0.1	0.095	0.108
	WCDMA IV_Ant 2	RMC 12.2Kbps	Right Side	10mm	DSI 17	1312	1712.4	18.43	19.00	1.140	0.06	0.074	0.084
19	WCDMA IV_Ant 2	RMC 12.2Kbps	Bottom Side	10mm	DSI 17	1312	1712.4	18.43	19.00	1.140	-0.09	0.672	0.766
	WCDMA IV_Ant 1	RMC 12.2Kbps	Front	10mm	DSI 17	1312	1712.4	18.87	20.00	1.297	-0.13	0.078	0.101
	WCDMA IV_Ant 1	RMC 12.2Kbps	Back	10mm	DSI 17	1312	1712.4	18.87	20.00	1.297	-0.14	0.126	0.163
	WCDMA IV_Ant 1	RMC 12.2Kbps	Left Side	10mm	DSI 17	1312	1712.4	18.87	20.00	1.297	0.06	0.091	0.118
	WCDMA IV_Ant 1	RMC 12.2Kbps	Top Side	10mm	DSI 17	1312	1712.4	18.87	20.00	1.297	-0.11	0.118	0.153
	WCDMA V_Ant 2	RMC 12.2Kbps	Front	10mm	DSI 17	4132	826.4	24.17	25.00	1.211	0.08	0.312	0.378
20	WCDMA V_Ant 2	RMC 12.2Kbps	Back	10mm	DSI 17	4132	826.4	24.17	25.00	1.211	-0.07	0.450	0.545
	WCDMA V_Ant 2	RMC 12.2Kbps	Left Side	10mm	DSI 17	4132	826.4	24.17	25.00	1.211	0.04	0.105	0.127
	WCDMA V_Ant 2	RMC 12.2Kbps	Right Side	10mm	DSI 17	4132	826.4	24.17	25.00	1.211	0.15	0.056	0.068
	WCDMA V_Ant 2	RMC 12.2Kbps	Bottom Side	10mm	DSI 17	4132	826.4	24.17	25.00	1.211	0.01	0.258	0.312
	WCDMA V_Ant 1	RMC 12.2Kbps	Front	10mm	DSI 17	4182	836.4	19.98	21.00	1.265	0.08	0.162	0.205
	WCDMA V_Ant 1	RMC 12.2Kbps	Back	10mm	DSI 17	4182	836.4	19.98	21.00	1.265	-0.17	0.224	0.283
	WCDMA V_Ant 1	RMC 12.2Kbps	Left Side	10mm	DSI 17	4182	836.4	19.98	21.00	1.265	-0.1	0.106	0.134
	WCDMA V_Ant 1	RMC 12.2Kbps	Top Side	10mm	DSI 17	4182	836.4	19.98	21.00	1.265	0.09	0.175	0.221

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Note
	LTE Band 2_Ant 2	20M	QPSK	1	0	Front	10mm	DSI 17	18700	1860	17.42	18.00	1.143	0.09	0.462	0.528	
	LTE Band 2_Ant 2	20M	QPSK	50	0	Front	10mm	DSI 17	18700	1860	17.21	18.00	1.199	-0.13	0.470	0.564	
	LTE Band 2_Ant 2	20M	QPSK	1	0	Back	10mm	DSI 17	18700	1860	17.42	18.00	1.143	-0.06	0.606	0.693	
	LTE Band 2_Ant 2	20M	QPSK	50	0	Back	10mm	DSI 17	18700	1860	17.21	18.00	1.199	-0.06	0.611	0.733	
	LTE Band 2_Ant 2	20M	QPSK	1	0	Left Side	10mm	DSI 17	18700	1860	17.42	18.00	1.143	0.04	0.118	0.135	
	LTE Band 2_Ant 2	20M	QPSK	50	0	Left Side	10mm	DSI 17	18700	1860	17.21	18.00	1.199	0.15	0.123	0.148	
	LTE Band 2_Ant 2	20M	QPSK	1	0	Right Side	10mm	DSI 17	18700	1860	17.42	18.00	1.143	0	0.001	0.001	
	LTE Band 2_Ant 2	20M	QPSK	50	0	Right Side	10mm	DSI 17	18700	1860	17.21	18.00	1.199	0	0.001	0.001	
	LTE Band 2_Ant 2	20M	QPSK	1	0	Bottom Side	10mm	DSI 17	18700	1860	17.42	18.00	1.143	-0.11	0.630	0.720	
21	LTE Band 2_Ant 2	20M	QPSK	50	0	Bottom Side	10mm	DSI 17	18700	1860	17.21	18.00	1.199	-0.01	0.658	0.789	
	LTE Band 2_Ant 1	20M	QPSK	1	0	Front	10mm	DSI 17	18700	1860	18.90	20.00	1.288	0.06	0.125	0.161	
	LTE Band 2_Ant 1	20M	QPSK	50	0	Front	10mm	DSI 17	18700	1860	18.86	20.00	1.300	0.09	0.133	0.173	
	LTE Band 2_Ant 1	20M	QPSK	1	0	Back	10mm	DSI 17	18700	1860	18.90	20.00	1.288	0.09	0.150	0.193	
	LTE Band 2_Ant 1	20M	QPSK	50	0	Back	10mm	DSI 17	18700	1860	18.86	20.00	1.300	-0.13	0.159	0.207	
	LTE Band 2_Ant 1	20M	QPSK	1	0	Left Side	10mm	DSI 17	18700	1860	18.90	20.00	1.288	-0.06	0.107	0.138	
	LTE Band 2_Ant 1	20M	QPSK	50	0	Left Side	10mm	DSI 17	18700	1860	18.86	20.00	1.300	0.04	0.110	0.143	
	LTE Band 2_Ant 1	20M	QPSK	1	0	Top Side	10mm	DSI 17	18700	1860	18.90	20.00	1.288	0	0.136	0.175	
	LTE Band 2_Ant 1	20M	QPSK	50	0	Top Side	10mm	DSI 17	18700	1860	18.86	20.00	1.300	0.01	0.141	0.183	
	LTE Band 4_Ant 2	20M	QPSK	1	0	Front	10mm	DSI 17	20175	1732.5	19.38	20.00	1.153	-0.12	0.339	0.391	
	LTE Band 4_Ant 2	20M	QPSK	50	0	Front	10mm	DSI 17	20175	1732.5	19.16	20.00	1.213	-0.16	0.351	0.426	
	LTE Band 4_Ant 2	20M	QPSK	1	0	Back	10mm	DSI 17	20175	1732.5	19.38	20.00	1.153	0.04	0.452	0.521	
	LTE Band 4_Ant 2	20M	QPSK	50	0	Back	10mm	DSI 17	20175	1732.5	19.16	20.00	1.213	-0.1	0.461	0.559	
	LTE Band 4_Ant 2	20M	QPSK	1	0	Left Side	10mm	DSI 17	20175	1732.5	19.38	20.00	1.153	-0.1	0.047	0.054	
	LTE Band 4_Ant 2	20M	QPSK	50	0	Left Side	10mm	DSI 17	20175	1732.5	19.16	20.00	1.213	-0.08	0.055	0.067	
	LTE Band 4_Ant 2	20M	QPSK	1	0	Right Side	10mm	DSI 17	20175	1732.5	19.38	20.00	1.153	-0.1	0.001	0.001	
	LTE Band 4_Ant 2	20M	QPSK	50	0	Right Side	10mm	DSI 17	20175	1732.5	19.16	20.00	1.213	0.11	0.001	0.001	
	LTE Band 4_Ant 2	20M	QPSK	1	0	Bottom Side	10mm	DSI 17	20175	1732.5	19.38	20.00	1.153	-0.11	0.853	0.984	
22	LTE Band 4_Ant 2	20M	QPSK	50	0	Bottom Side	10mm	DSI 17	20175	1732.5	19.16	20.00	1.213	-0.01	0.874	1.061	
	LTE Band 4_Ant 2	20M	QPSK	100	0	Bottom Side	10mm	DSI 17	20175	1732.5	19.05	20.00	1.245	0	0.812	1.011	
	LTE Band 4_Ant 1	20M	QPSK	1	0	Front	10mm	DSI 17	20175	1732.5	19.89	21.00	1.291	0.04	0.119	0.154	
	LTE Band 4_Ant 1	20M	QPSK	50	0	Front	10mm	DSI 17	20175	1732.5	19.60	21.00	1.380	0.1	0.120	0.166	
	LTE Band 4_Ant 1	20M	QPSK	1	0	Back	10mm	DSI 17	20175	1732.5	19.89	21.00	1.291	-0.1	0.153	0.198	
	LTE Band 4_Ant 1	20M	QPSK	50	0	Back	10mm	DSI 17	20175	1732.5	19.60	21.00	1.380	-0.1	0.159	0.219	
	LTE Band 4_Ant 1	20M	QPSK	1	0	Left Side	10mm	DSI 17	20175	1732.5	19.89	21.00	1.291	-0.08	0.125	0.161	
	LTE Band 4_Ant 1	20M	QPSK	50	0	Left Side	10mm	DSI 17	20175	1732.5	19.60	21.00	1.380	-0.1	0.128	0.177	
	LTE Band 4_Ant 1	20M	QPSK	1	0	Top Side	10mm	DSI 17	20175	1732.5	19.89	21.00	1.291	-0.16	0.138	0.178	
	LTE Band 4_Ant 1	20M	QPSK	50	0	Top Side	10mm	DSI 17	20175	1732.5	19.60	21.00	1.380	0.05	0.142	0.196	

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Note
	LTE Band 5_Ant 2	10M	QPSK	1	0	Front	10mm	DSI 17	20525	836.5	23.89	25.00	1.291	-0.1	0.274	0.354	
	LTE Band 5_Ant 2	10M	QPSK	25	0	Front	10mm	DSI 17	20525	836.5	22.92	24.00	1.282	0.11	0.233	0.299	
23	LTE Band 5_Ant 2	10M	QPSK	1	0	Back	10mm	DSI 17	20525	836.5	23.89	25.00	1.291	-0.12	0.428	0.553	
	LTE Band 5_Ant 2	10M	QPSK	25	0	Back	10mm	DSI 17	20525	836.5	22.92	24.00	1.282	-0.16	0.343	0.440	
	LTE Band 5_Ant 2	10M	QPSK	50	0	Back	10mm	DSI 17	20525	836.5	22.93	24.00	1.279	0.04	0.323	0.413	
	LTE Band 5_Ant 2	10M	QPSK	1	0	Left Side	10mm	DSI 17	20525	836.5	23.89	25.00	1.291	0.06	0.090	0.116	
	LTE Band 5_Ant 2	10M	QPSK	25	0	Left Side	10mm	DSI 17	20525	836.5	22.92	24.00	1.282	0.11	0.072	0.092	
	LTE Band 5_Ant 2	10M	QPSK	1	0	Right Side	10mm	DSI 17	20525	836.5	23.89	25.00	1.291	0.08	0.048	0.062	
	LTE Band 5_Ant 2	10M	QPSK	25	0	Right Side	10mm	DSI 17	20525	836.5	22.92	24.00	1.282	-0.13	0.039	0.050	
	LTE Band 5_Ant 2	10M	QPSK	1	0	Bottom Side	10mm	DSI 17	20525	836.5	23.89	25.00	1.291	-0.19	0.229	0.296	
	LTE Band 5_Ant 2	10M	QPSK	25	0	Bottom Side	10mm	DSI 17	20525	836.5	22.92	24.00	1.282	0.05	0.193	0.247	
	LTE Band 5_Ant 1	10M	QPSK	1	0	Front	10mm	DSI 17	20525	836.5	19.75	21.00	1.334	-0.16	0.151	0.201	
	LTE Band 5_Ant 1	10M	QPSK	25	0	Front	10mm	DSI 17	20525	836.5	19.57	21.00	1.390	0.05	0.156	0.217	
	LTE Band 5_Ant 1	10M	QPSK	1	0	Back	10mm	DSI 17	20525	836.5	19.75	21.00	1.334	-0.11	0.198	0.264	
	LTE Band 5_Ant 1	10M	QPSK	25	0	Back	10mm	DSI 17	20525	836.5	19.57	21.00	1.390	-0.11	0.207	0.288	
	LTE Band 5_Ant 1	10M	QPSK	1	0	Left Side	10mm	DSI 17	20525	836.5	19.75	21.00	1.334	0.11	0.050	0.067	
	LTE Band 5_Ant 1	10M	QPSK	25	0	Left Side	10mm	DSI 17	20525	836.5	19.57	21.00	1.390	0.08	0.059	0.082	
	LTE Band 5_Ant 1	10M	QPSK	1	0	Top Side	10mm	DSI 17	20525	836.5	19.75	21.00	1.334	-0.1	0.154	0.205	
	LTE Band 5_Ant 1	10M	QPSK	25	0	Top Side	10mm	DSI 17	20525	836.5	19.57	21.00	1.390	-0.08	0.161	0.224	
	LTE Band 7_Ant 2	20M	QPSK	1	0	Front	10mm	DSI 17	21100	2535	17.41	18.00	1.146	-0.11	0.042	0.048	
	LTE Band 7_Ant 2	20M	QPSK	50	0	Front	10mm	DSI 17	21100	2535	17.20	18.00	1.202	0.11	0.044	0.053	
	LTE Band 7_Ant 2	20M	QPSK	1	0	Back	10mm	DSI 17	21100	2535	17.41	18.00	1.146	-0.16	0.047	0.054	
	LTE Band 7_Ant 2	20M	QPSK	50	0	Back	10mm	DSI 17	21100	2535	17.20	18.00	1.202	0.05	0.051	0.061	
	LTE Band 7_Ant 2	20M	QPSK	1	0	Left Side	10mm	DSI 17	21100	2535	17.41	18.00	1.146	0.04	0.046	0.053	
	LTE Band 7_Ant 2	20M	QPSK	50	0	Left Side	10mm	DSI 17	21100	2535	17.20	18.00	1.202	0.06	0.048	0.058	
	LTE Band 7_Ant 2	20M	QPSK	1	0	Right Side	10mm	DSI 17	21100	2535	17.41	18.00	1.146	0.03	0.113	0.129	
	LTE Band 7_Ant 2	20M	QPSK	50	0	Right Side	10mm	DSI 17	21100	2535	17.20	18.00	1.202	-0.01	0.118	0.142	
	LTE Band 7_Ant 2	20M	QPSK	1	0	Bottom Side	10mm	DSI 17	21100	2535	17.41	18.00	1.146	0.04	0.089	0.102	
	LTE Band 7_Ant 2	20M	QPSK	50	0	Bottom Side	10mm	DSI 17	21100	2535	17.20	18.00	1.202	0.1	0.094	0.113	
	LTE Band 7C_Ant 2	20M	QPSK	1	0	Right Side	10mm	DSI 17	21350+21152	2560	17.73	18.00	1.064	-0.01	0.128	0.136	UL_CA
	LTE Band 7_Ant 1	20M	QPSK	1	0	Front	10mm	DSI 17	21350	2560	16.66	17.50	1.213	0.09	0.058	0.070	
	LTE Band 7_Ant 1	20M	QPSK	50	0	Front	10mm	DSI 17	21350	2560	16.32	17.50	1.312	-0.13	0.069	0.091	
	LTE Band 7_Ant 1	20M	QPSK	1	0	Back	10mm	DSI 17	21350	2560	16.66	17.50	1.213	-0.15	0.113	0.137	
	LTE Band 7_Ant 1	20M	QPSK	50	0	Back	10mm	DSI 17	21350	2560	16.32	17.50	1.312	-0.11	0.118	0.155	
	LTE Band 7_Ant 1	20M	QPSK	1	0	Left Side	10mm	DSI 17	21350	2560	16.66	17.50	1.213	0.08	0.082	0.099	
	LTE Band 7_Ant 1	20M	QPSK	50	0	Left Side	10mm	DSI 17	21350	2560	16.32	17.50	1.312	-0.17	0.088	0.115	
	LTE Band 7_Ant 1	20M	QPSK	1	0	Top Side	10mm	DSI 17	21350	2560	16.66	17.50	1.213	-0.1	0.067	0.081	
	LTE Band 7_Ant 1	20M	QPSK	50	0	Top Side	10mm	DSI 17	21350	2560	16.32	17.50	1.312	0.06	0.071	0.093	
	LTE Band 7C_Ant 1	20M	QPSK	1	0	Back	10mm	DSI 17	21100+20902	2535	17.38	17.50	1.028	0.1	0.138	0.142	UL_CA
	LTE Band 7_Ant 6	20M	QPSK	1	0	Front	10mm	DSI 17	21100	2535	18.87	20.00	1.297	0.1	0.084	0.109	
	LTE Band 7_Ant 6	20M	QPSK	50	0	Front	10mm	DSI 17	21100	2535	18.75	20.00	1.334	0.08	0.074	0.099	
24	LTE Band 7_Ant 6	20M	QPSK	1	0	Back	10mm	DSI 17	21100	2535	18.87	20.00	1.297	-0.12	0.142	0.184	
	LTE Band 7_Ant 6	20M	QPSK	50	0	Back	10mm	DSI 17	21100	2535	18.75	20.00	1.334	0.17	0.124	0.165	
	LTE Band 7_Ant 6	20M	QPSK	1	0	Left Side	10mm	DSI 17	21100	2535	18.87	20.00	1.297	0.09	0.078	0.101	
	LTE Band 7_Ant 6	20M	QPSK	50	0	Left Side	10mm	DSI 17	21100	2535	18.75	20.00	1.334	0.11	0.064	0.085	
	LTE Band 7_Ant 6	20M	QPSK	1	0	Top Side	10mm	DSI 17	21100	2535	18.87	20.00	1.297	0.01	0.069	0.090	
	LTE Band 7_Ant 6	20M	QPSK	50	0	Top Side	10mm	DSI 17	21100	2535	18.75	20.00	1.334	0.03	0.058	0.077	
	LTE Band 7C_Ant 6	20M	QPSK	1	99	Back	10mm	DSI 17	20850+21048	2510	19.52	20.00	1.117	0.15	0.157	0.175	UL_CA

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 41_Ant 2	20M	QPSK	1	0	Front	10mm	DSI 17	39750	2506	18.89	19.00	1.026	62.9	1.006	-0.09	0.089	0.092
	LTE Band 41_Ant 2	20M	QPSK	50	0	Front	10mm	DSI 17	39750	2506	18.88	19.00	1.028	62.9	1.006	0	0.090	0.093
	LTE Band 41_Ant 2	20M	QPSK	1	0	Back	10mm	DSI 17	39750	2506	18.89	19.00	1.026	62.9	1.006	-0.15	0.102	0.105
	LTE Band 41_Ant 2	20M	QPSK	50	0	Back	10mm	DSI 17	39750	2506	18.88	19.00	1.028	62.9	1.006	-0.11	0.105	0.109
	LTE Band 41_Ant 2	20M	QPSK	1	0	Left Side	10mm	DSI 17	39750	2506	18.89	19.00	1.026	62.9	1.006	0.08	0.049	0.051
	LTE Band 41_Ant 2	20M	QPSK	50	0	Left Side	10mm	DSI 17	39750	2506	18.88	19.00	1.028	62.9	1.006	-0.17	0.055	0.057
	LTE Band 41_Ant 2	20M	QPSK	1	0	Right Side	10mm	DSI 17	39750	2506	18.89	19.00	1.026	62.9	1.006	0	0.075	0.077
	LTE Band 41_Ant 2	20M	QPSK	50	0	Right Side	10mm	DSI 17	39750	2506	18.88	19.00	1.028	62.9	1.006	0.02	0.078	0.081
	LTE Band 41_Ant 2	20M	QPSK	1	0	Bottom Side	10mm	DSI 17	39750	2506	18.89	19.00	1.026	62.9	1.006	-0.18	0.221	0.228
	LTE Band 41_Ant 2	20M	QPSK	50	0	Bottom Side	10mm	DSI 17	39750	2506	18.88	19.00	1.028	62.9	1.006	-0.14	0.224	0.232
	LTE Band 41_Ant 1	20M	QPSK	1	0	Front	10mm	DSI 17	39750	2506	18.45	19.50	1.274	62.9	1.006	0.05	0.058	0.074
	LTE Band 41_Ant 1	20M	QPSK	50	0	Front	10mm	DSI 17	39750	2506	18.19	19.50	1.352	62.9	1.006	-0.17	0.055	0.075
	LTE Band 41_Ant 1	20M	QPSK	1	0	Back	10mm	DSI 17	39750	2506	18.45	19.50	1.274	62.9	1.006	0.08	0.079	0.101
	LTE Band 41_Ant 1	20M	QPSK	50	0	Back	10mm	DSI 17	39750	2506	18.19	19.50	1.352	62.9	1.006	0	0.064	0.087
	LTE Band 41_Ant 1	20M	QPSK	1	0	Left Side	10mm	DSI 17	39750	2506	18.45	19.50	1.274	62.9	1.006	-0.15	0.001	0.001
	LTE Band 41_Ant 1	20M	QPSK	50	0	Left Side	10mm	DSI 17	39750	2506	18.19	19.50	1.352	62.9	1.006	-0.11	0.001	0.001
	LTE Band 41_Ant 1	20M	QPSK	1	0	Top Side	10mm	DSI 17	39750	2506	18.45	19.50	1.274	62.9	1.006	0.1	0.090	0.115
	LTE Band 41_Ant 1	20M	QPSK	50	0	Top Side	10mm	DSI 17	39750	2506	18.19	19.50	1.352	62.9	1.006	-0.16	0.087	0.118
	LTE Band 41_Ant 6	20M	QPSK	1	0	Front	10mm	DSI 17	39750	2506	18.84	20.00	1.306	62.9	1.006	0.08	0.062	0.081
	LTE Band 41_Ant 6	20M	QPSK	50	0	Front	10mm	DSI 17	39750	2506	18.60	20.00	1.380	62.9	1.006	0.05	0.060	0.083
	LTE Band 41_Ant 6	20M	QPSK	1	0	Back	10mm	DSI 17	39750	2506	18.84	20.00	1.306	62.9	1.006	-0.1	0.070	0.092
	LTE Band 41_Ant 6	20M	QPSK	50	0	Back	10mm	DSI 17	39750	2506	18.60	20.00	1.380	62.9	1.006	-0.15	0.070	0.097
	LTE Band 41_Ant 6	20M	QPSK	1	0	Left Side	10mm	DSI 17	39750	2506	18.84	20.00	1.306	62.9	1.006	0.08	0.050	0.066
	LTE Band 41_Ant 6	20M	QPSK	50	0	Left Side	10mm	DSI 17	39750	2506	18.60	20.00	1.380	62.9	1.006	0.14	0.049	0.068
	LTE Band 41_Ant 6	20M	QPSK	1	0	Bottom Side	10mm	DSI 17	39750	2506	18.84	20.00	1.306	62.9	1.006	-0.15	0.051	0.067
	LTE Band 41_Ant 6	20M	QPSK	50	0	Bottom Side	10mm	DSI 17	39750	2506	18.60	20.00	1.380	62.9	1.006	-0.11	0.052	0.072
	LTE Band 41_Ant 8	20M	QPSK	1	0	Front	10mm	DSI 17	39750	2506	22.56	23.50	1.242	62.9	1.006	-0.12	0.244	0.305
	LTE Band 41_Ant 8	20M	QPSK	50	0	Front	10mm	DSI 17	39750	2506	21.41	22.50	1.285	62.9	1.006	-0.09	0.213	0.275
	LTE Band 41_Ant 8	20M	QPSK	1	0	Back	10mm	DSI 17	39750	2506	22.56	23.50	1.242	62.9	1.006	-0.15	0.222	0.277
	LTE Band 41_Ant 8	20M	QPSK	50	0	Back	10mm	DSI 17	39750	2506	21.41	22.50	1.285	62.9	1.006	-0.17	0.178	0.230
25	LTE Band 41_Ant 8	20M	QPSK	1	0	Right Side	10mm	DSI 17	39750	2506	22.56	23.50	1.242	62.9	1.006	-0.02	0.316	0.395
	LTE Band 41_Ant 8	20M	QPSK	50	0	Right Side	10mm	DSI 17	39750	2506	21.41	22.50	1.285	62.9	1.006	-0.1	0.242	0.313
	LTE Band 41_Ant 8	20M	QPSK	1	0	Bottom Side	10mm	DSI 17	39750	2506	22.56	23.50	1.242	62.9	1.006	0.08	0.087	0.109
	LTE Band 41_Ant 8	20M	QPSK	50	0	Bottom Side	10mm	DSI 17	39750	2506	21.41	22.50	1.285	62.9	1.006	0.14	0.078	0.101

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Table	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 4+5	2	1	2412	14.61	15.00	1.094	100	1.000	0.02	0.121	0.132
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 4+5	2	1	2412	14.61	15.00	1.094	100	1.000	-0.15	0.127	0.139
	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 4+5	2	1	2412	14.61	15.00	1.094	100	1.000	0.11	0.156	0.171
26	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 4+5	2	1	2412	14.61	15.00	1.094	100	1.000	-0.17	0.224	0.245
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	10mm	Ant 4+5	2	42	5210	14.42	15.00	1.142	100	1.000	-0.15	0.020	0.023
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 4+5	2	42	5210	14.42	15.00	1.142	100	1.000	-0.17	0.024	0.027
27	WLAN5GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Ant 4+5	2	42	5210	14.42	15.00	1.142	100	1.000	0.19	0.026	0.030
	WLAN5GHz	802.11ac-VHT80 MCS0	Top Side	10mm	Ant 4+5	2	42	5210	14.42	15.00	1.142	100	1.000	0.08	0.016	0.018
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	10mm	Ant 4+5	2	155	5775	14.60	15.00	1.096	100	1.000	-0.15	0.022	0.024
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 4+5	2	155	5775	14.60	15.00	1.096	100	1.000	-0.09	0.031	0.034
28	WLAN5GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Ant 4+5	2	155	5775	14.60	15.00	1.096	100	1.000	0.16	0.038	0.042
	WLAN5GHz	802.11ac-VHT80 MCS0	Top Side	10mm	Ant 4+5	2	155	5775	14.60	15.00	1.096	100	1.000	0.14	0.023	0.025

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	Bluetooth	1Mbps	Front	10mm	Ant 4	39	2441	14.33	14.50	1.040	77.13	1.080	0.1	0.010	0.011
	Bluetooth	1Mbps	Back	10mm	Ant 4	39	2441	14.33	14.50	1.040	77.13	1.080	-0.05	0.024	0.027
	Bluetooth	1Mbps	Right Side	10mm	Ant 4	39	2441	14.33	14.50	1.040	77.13	1.080	0.12	0.002	0.002
	Bluetooth	1Mbps	Top Side	10mm	Ant 4	39	2441	14.33	14.50	1.040	77.13	1.080	-0.03	0.015	0.017
	Bluetooth	1Mbps	Front	10mm	Ant 5	78	2480	14.04	14.50	1.112	76.6	1.087	0.1	0.015	0.018
29	Bluetooth	1Mbps	Back	10mm	Ant 5	78	2480	14.04	14.50	1.112	76.6	1.087	-0.13	0.031	0.037
	Bluetooth	1Mbps	Right Side	10mm	Ant 5	78	2480	14.04	14.50	1.112	76.6	1.087	0.1	0.005	0.006
	Bluetooth	1Mbps	Top Side	10mm	Ant 5	78	2480	14.04	14.50	1.112	76.6	1.087	0.19	0.022	0.027

14.3 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850_Ant 2	GPRS (4 Tx slots)	Front	15mm	DSI 7	189	836.4	26.60	27.50	1.230	-0.1	0.117	0.144
	GSM850_Ant 2	GPRS (4 Tx slots)	Back	15mm	DSI 7	189	836.4	26.60	27.50	1.230	-0.09	0.175	0.215
	GSM850_Ant 1	GPRS (4 Tx slots)	Front	15mm	DSI 7	189	836.4	26.29	27.50	1.321	0.14	0.176	0.233
30	GSM850_Ant 1	GPRS (4 Tx slots)	Back	15mm	DSI 7	189	836.4	26.29	27.50	1.321	-0.16	0.224	0.296
	GSM1900_Ant 2	GPRS (4 Tx slots)	Front	15mm	DSI 7	512	1850.2	23.60	24.50	1.230	0.06	0.222	0.273
31	GSM1900_Ant 2	GPRS (4 Tx slots)	Back	15mm	DSI 7	512	1850.2	23.60	24.50	1.230	-0.13	0.337	0.415
	GSM1900_Ant 1	GPRS (4 Tx slots)	Front	15mm	DSI 7	661	1880	23.78	24.50	1.180	0.02	0.069	0.081
	GSM1900_Ant 1	GPRS (4 Tx slots)	Back	15mm	DSI 7	661	1880	23.78	24.50	1.180	-0.15	0.102	0.120

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA II_Ant 2	RMC 12.2Kbps	Front	15mm	DSI 7	9262	1852.4	24.30	25.00	1.175	0.1	0.668	0.785
32	WCDMA II_Ant 2	RMC 12.2Kbps	Back	15mm	DSI 7	9262	1852.4	24.30	25.00	1.175	-0.03	0.831	0.976
	WCDMA II_Ant 2	RMC 12.2Kbps	Back	15mm	DSI 7	9400	1880	24.20	25.00	1.202	-0.05	0.804	0.967
	WCDMA II_Ant 2	RMC 12.2Kbps	Back	15mm	DSI 7	9538	1907.6	24.14	25.00	1.219	-0.04	0.800	0.975
	WCDMA II_Ant 1	RMC 12.2Kbps	Front	15mm	DSI 7	9262	1852.4	23.90	25.00	1.288	0.08	0.179	0.231
	WCDMA II_Ant 1	RMC 12.2Kbps	Back	15mm	DSI 7	9262	1852.4	23.90	25.00	1.288	-0.14	0.281	0.362
	WCDMA IV_Ant 2	RMC 12.2Kbps	Front	15mm	DSI 7	1413	1732.6	24.21	25.00	1.199	-0.11	0.537	0.644
33	WCDMA IV_Ant 2	RMC 12.2Kbps	Back	15mm	DSI 7	1413	1732.6	24.14	25.00	1.219	0.01	0.674	0.822
	WCDMA IV_Ant 2	RMC 12.2Kbps	Back	15mm	DSI 7	1312	1712.4	24.10	25.00	1.230	-0.02	0.665	0.818
	WCDMA IV_Ant 2	RMC 12.2Kbps	Back	15mm	DSI 7	1513	1752.6	24.21	25.00	1.199	-0.03	0.664	0.796
	WCDMA IV_Ant 1	RMC 12.2Kbps	Front	15mm	DSI 7	1312	1712.4	23.87	25.00	1.297	0.05	0.161	0.209
	WCDMA IV_Ant 1	RMC 12.2Kbps	Back	15mm	DSI 7	1312	1712.4	23.87	25.00	1.297	-0.14	0.218	0.283
	WCDMA V_Ant 2	RMC 12.2Kbps	Front	15mm	DSI 7	4132	826.4	24.17	25.00	1.211	0.1	0.126	0.153
	WCDMA V_Ant 2	RMC 12.2Kbps	Back	15mm	DSI 7	4132	826.4	24.17	25.00	1.211	-0.01	0.155	0.188
	WCDMA V_Ant 1	RMC 12.2Kbps	Front	15mm	DSI 7	4182	836.4	23.86	25.00	1.300	0.02	0.248	0.322
34	WCDMA V_Ant 1	RMC 12.2Kbps	Back	15mm	DSI 7	4182	836.4	23.86	25.00	1.300	-0.08	0.288	0.374

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 2_Ant 2	20M	QPSK	1	0	Front	15mm	DSI 7	18900	1880	23.93	25.00	1.279	0.1	0.590	0.755
	LTE Band 2_Ant 2	20M	QPSK	50	0	Front	15mm	DSI 7	18900	1880	23.04	24.00	1.247	-0.01	0.491	0.612
35	LTE Band 2_Ant 2	20M	QPSK	1	0	Back	15mm	DSI 7	18900	1880	23.93	25.00	1.279	-0.06	0.737	0.943
	LTE Band 2_Ant 2	20M	QPSK	1	0	Back	15mm	DSI 7	18700	1860	23.89	25.00	1.291	-0.11	0.706	0.912
	LTE Band 2_Ant 2	20M	QPSK	1	0	Back	15mm	DSI 7	19100	1900	23.88	25.00	1.294	-0.05	0.699	0.905
	LTE Band 2_Ant 2	20M	QPSK	50	0	Back	15mm	DSI 7	18900	1880	23.04	24.00	1.247	-0.04	0.608	0.758
	LTE Band 2_Ant 2	20M	QPSK	50	0	Back	15mm	DSI 7	18700	1860	22.95	24.00	1.274	-0.14	0.592	0.754
	LTE Band 2_Ant 2	20M	QPSK	50	0	Back	15mm	DSI 7	19100	1900	22.84	24.00	1.306	-0.01	0.550	0.718
	LTE Band 2_Ant 2	20M	QPSK	100	0	Back	15mm	DSI 7	18900	1880	22.89	24.00	1.291	0	0.588	0.759
	LTE Band 2_Ant 1	20M	QPSK	1	0	Front	15mm	DSI 7	18900	1880	23.61	25.00	1.377	0.06	0.192	0.264
	LTE Band 2_Ant 1	20M	QPSK	50	0	Front	15mm	DSI 7	18900	1880	22.69	24.00	1.352	0.12	0.143	0.193
	LTE Band 2_Ant 1	20M	QPSK	1	0	Back	15mm	DSI 7	18900	1880	23.61	25.00	1.377	-0.19	0.282	0.388
	LTE Band 2_Ant 1	20M	QPSK	50	0	Back	15mm	DSI 7	18900	1880	22.69	24.00	1.352	0.09	0.230	0.311
	LTE Band 4_Ant 2	20M	QPSK	1	0	Front	15mm	DSI 7	20175	1732.5	23.84	25.00	1.306	0.03	0.514	0.671
	LTE Band 4_Ant 2	20M	QPSK	50	0	Front	15mm	DSI 7	20175	1732.5	22.81	24.00	1.315	0.09	0.392	0.516
36	LTE Band 4_Ant 2	20M	QPSK	1	0	Back	15mm	DSI 7	20175	1732.5	23.84	25.00	1.306	-0.06	0.621	0.811
	LTE Band 4_Ant 2	20M	QPSK	50	0	Back	15mm	DSI 7	20175	1732.5	22.81	24.00	1.315	-0.02	0.508	0.668
	LTE Band 4_Ant 1	20M	QPSK	1	0	Front	15mm	DSI 7	20175	1732.5	23.59	25.00	1.384	0.06	0.160	0.221
	LTE Band 4_Ant 1	20M	QPSK	50	0	Front	15mm	DSI 7	20175	1732.5	22.68	24.00	1.355	0.05	0.125	0.169
	LTE Band 4_Ant 1	20M	QPSK	1	0	Back	15mm	DSI 7	20175	1732.5	23.59	25.00	1.384	-0.17	0.217	0.300
	LTE Band 4_Ant 1	20M	QPSK	50	0	Back	15mm	DSI 7	20175	1732.5	22.68	24.00	1.355	-0.08	0.169	0.229
	LTE Band 5_Ant 2	10M	QPSK	1	0	Front	15mm	DSI 7	20525	836.5	23.89	25.00	1.291	0.11	0.170	0.220
	LTE Band 5_Ant 2	10M	QPSK	25	0	Front	15mm	DSI 7	20525	836.5	22.92	24.00	1.282	0.06	0.131	0.168
	LTE Band 5_Ant 2	10M	QPSK	1	0	Back	15mm	DSI 7	20525	836.5	23.89	25.00	1.291	0.01	0.238	0.307
	LTE Band 5_Ant 2	10M	QPSK	25	0	Back	15mm	DSI 7	20525	836.5	22.92	24.00	1.282	-0.1	0.160	0.205
	LTE Band 5_Ant 1	10M	QPSK	1	0	Front	15mm	DSI 7	20525	836.5	23.63	25.00	1.371	0.03	0.199	0.273
	LTE Band 5_Ant 1	10M	QPSK	25	0	Front	15mm	DSI 7	20525	836.5	22.75	24.00	1.334	0.05	0.156	0.208
37	LTE Band 5_Ant 1	10M	QPSK	1	0	Back	15mm	DSI 7	20525	836.5	23.63	25.00	1.371	0.19	0.248	0.340
	LTE Band 5_Ant 1	10M	QPSK	25	0	Back	15mm	DSI 7	20525	836.5	22.75	24.00	1.334	-0.09	0.209	0.279
	LTE Band 7_Ant 2	20M	QPSK	1	0	Front	15mm	DSI 7	21100	2535	22.39	23.00	1.151	0.05	0.246	0.283
	LTE Band 7_Ant 2	20M	QPSK	50	0	Front	15mm	DSI 7	21100	2535	22.31	23.00	1.172	0.19	0.209	0.245
38	LTE Band 7_Ant 2	20M	QPSK	1	0	Back	15mm	DSI 7	21100	2535	22.39	23.00	1.151	0.01	0.417	0.480
	LTE Band 7_Ant 2	20M	QPSK	50	0	Back	15mm	DSI 7	21100	2535	22.31	23.00	1.172	0	0.355	0.416
	LTE Band 7C_Ant 2	20M	QPSK	1	0	Front	15mm	DSI 7	21350+21152	2560	22.79	23.00	1.050	-0.01	0.434	0.456
	LTE Band 7_Ant 1	20M	QPSK	1	0	Front	15mm	DSI 7	21350	2560	20.64	21.50	1.219	-0.12	0.156	0.190
	LTE Band 7_Ant 1	20M	QPSK	50	0	Front	15mm	DSI 7	21350	2560	20.39	21.50	1.291	-0.01	0.158	0.204
	LTE Band 7_Ant 1	20M	QPSK	1	0	Back	15mm	DSI 7	21350	2560	20.64	21.50	1.219	0.05	0.134	0.163
	LTE Band 7_Ant 1	20M	QPSK	50	0	Back	15mm	DSI 7	21350	2560	20.39	21.50	1.291	0.1	0.140	0.181
	LTE Band 7C_Ant 1	20M	QPSK	1	0	Back	15mm	DSI 7	21350+21152	2560	21.31	21.50	1.045	-0.01	0.178	0.186
	LTE Band 7_Ant 6	20M	QPSK	1	0	Front	15mm	DSI 7	21100	2535	18.87	20.00	1.297	-0.11	0.065	0.084
	LTE Band 7_Ant 6	20M	QPSK	50	0	Front	15mm	DSI 7	21100	2535	18.75	20.00	1.334	-0.06	0.066	0.088
	LTE Band 7_Ant 6	20M	QPSK	1	0	Back	15mm	DSI 7	21100	2535	18.87	20.00	1.297	-0.07	0.071	0.092
	LTE Band 7_Ant 6	20M	QPSK	50	0	Back	15mm	DSI 7	21100	2535	18.75	20.00	1.334	-0.1	0.074	0.099
	LTE Band 7C_Ant 6	20M	QPSK	1	99	Back	15mm	DSI 7	20850+21048	2510	19.52	20.00	1.117	0.05	0.082	0.092

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 41_Ant 2	20M	QPSK	1	0	Front	15mm	DSI 7	40620	2593	23.99	25.00	1.262	62.9	1.006	-0.09	0.232	0.295
	LTE Band 41_Ant 2	20M	QPSK	50	0	Front	15mm	DSI 7	40620	2593	23.19	24.00	1.205	62.9	1.006	0.02	0.173	0.210
39	LTE Band 41_Ant 2	20M	QPSK	1	0	Back	15mm	DSI 7	40620	2593	23.99	25.00	1.262	62.9	1.006	-0.01	0.253	0.321
	LTE Band 41_Ant 2	20M	QPSK	50	0	Back	15mm	DSI 7	40620	2593	23.19	24.00	1.205	62.9	1.006	-0.06	0.194	0.235
	LTE Band 41_Ant 1	20M	QPSK	1	0	Front	15mm	DSI 7	39750	2506	22.57	23.50	1.239	62.9	1.006	-0.15	0.129	0.161
	LTE Band 41_Ant 1	20M	QPSK	50	0	Front	15mm	DSI 7	39750	2506	21.51	23.50	1.581	62.9	1.006	-0.11	0.108	0.172
	LTE Band 41_Ant 1	20M	QPSK	1	0	Back	15mm	DSI 7	39750	2506	22.57	23.50	1.239	62.9	1.006	-0.06	0.110	0.137
	LTE Band 41_Ant 1	20M	QPSK	50	0	Back	15mm	DSI 7	39750	2506	21.51	23.50	1.581	62.9	1.006	0	0.095	0.151
	LTE Band 41_Ant 6	20M	QPSK	1	0	Front	15mm	DSI 7	39750	2506	18.84	20.00	1.306	62.9	1.006	-0.11	0.015	0.020
	LTE Band 41_Ant 6	20M	QPSK	50	0	Front	15mm	DSI 7	39750	2506	18.60	20.00	1.380	62.9	1.006	-0.06	0.017	0.024
	LTE Band 41_Ant 6	20M	QPSK	1	0	Back	15mm	DSI 7	39750	2506	18.84	20.00	1.306	62.9	1.006	-0.12	0.039	0.051
	LTE Band 41_Ant 6	20M	QPSK	50	0	Back	15mm	DSI 7	39750	2506	18.60	20.00	1.380	62.9	1.006	-0.17	0.039	0.054
	LTE Band 41_Ant 8	20M	QPSK	1	0	Front	15mm	DSI 7	39750	2506	22.56	23.50	1.242	62.9	1.006	0.09	0.142	0.177
	LTE Band 41_Ant 8	20M	QPSK	50	0	Front	15mm	DSI 7	39750	2506	21.41	22.50	1.285	62.9	1.006	0.06	0.126	0.163
	LTE Band 41_Ant 8	20M	QPSK	1	0	Back	15mm	DSI 7	39750	2506	22.56	23.50	1.242	62.9	1.006	-0.01	0.112	0.140
	LTE Band 41_Ant 8	20M	QPSK	50	0	Back	15mm	DSI 7	39750	2506	21.41	22.50	1.285	62.9	1.006	-0.08	0.097	0.125

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Table	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Front	15mm	Ant 4+5	3	1	2412	18.28	19.00	1.180	100	1.000	0.1	0.042	0.050
40	WLAN2.4GHz	802.11b 1Mbps	Back	15mm	Ant 4+5	3	1	2412	18.28	19.00	1.180	100	1.000	-0.17	0.049	0.058
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 4+5	3	58	5290	16.79	18.00	1.321	100	1.000	-0.1	0.121	0.160
41	WLAN5GHz	802.11ac-VHT80 MCS0	Back	15mm	Ant 4+5	3	58	5290	16.79	18.00	1.321	100	1.000	-0.02	0.127	0.168
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 4+5	3	106	5530	17.15	18.00	1.216	100	1.000	0.05	0.064	0.078
42	WLAN5GHz	802.11ac-VHT80 MCS0	Back	15mm	Ant 4+5	3	106	5530	17.15	18.00	1.216	100	1.000	-0.19	0.087	0.106
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 4+5	3	155	5775	16.97	18.00	1.268	100	1.000	0.1	0.081	0.103
43	WLAN5GHz	802.11ac-VHT80 MCS0	Back	15mm	Ant 4+5	3	155	5775	16.97	18.00	1.268	100	1.000	-0.07	0.097	0.123

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	Bluetooth	1Mbps	Front	15mm	Ant 4	39	2441	14.33	14.50	1.040	77.13	1.080	0.07	0.005	0.006
	Bluetooth	1Mbps	Back	15mm	Ant 4	39	2441	14.33	14.50	1.040	77.13	1.080	-0.1	0.009	0.010
	Bluetooth	1Mbps	Front	15mm	Ant 5	78	2480	14.04	14.50	1.112	76.6	1.087	0.1	0.010	0.012
44	Bluetooth	1Mbps	Back	15mm	Ant 5	78	2480	14.04	14.50	1.112	76.6	1.087	-0.19	0.016	0.019

14.4 Product Specific SAR

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	WCDMA II_Ant 2	RMC 12.2Kbps	Front	0mm	DSI 7	9262	1852.4	20.48	21.00	1.127	0.03	1.770	1.995
	WCDMA II_Ant 2	RMC 12.2Kbps	Back	0mm	DSI 7	9262	1852.4	20.48	21.00	1.127	-0.1	2.150	2.423
45	WCDMA II_Ant 2	RMC 12.2Kbps	Back	0mm	DSI 7	9400	1880	20.34	21.00	1.164	-0.13	2.160	2.515
	WCDMA II_Ant 2	RMC 12.2Kbps	Back	0mm	DSI 7	9538	1907.6	20.23	21.00	1.194	-0.16	2.100	2.507
	WCDMA II_Ant 2	RMC 12.2Kbps	Bottom Side	0mm	DSI 7	9262	1852.4	20.48	21.00	1.127	0.17	1.480	1.668
	WCDMA II_Ant 2	RMC 12.2Kbps	Front	15mm	Full	9262	1852.4	24.30	25.00	1.175	0.1	0.487	0.572
	WCDMA II_Ant 2	RMC 12.2Kbps	Back	15mm	Full	9262	1852.4	24.30	25.00	1.175	-0.03	0.544	0.639
	WCDMA II_Ant 2	RMC 12.2Kbps	Bottom Side	21mm	Full	9262	1852.4	24.30	25.00	1.175	0.13	0.506	0.594
	WCDMA IV_Ant 2	RMC 12.2Kbps	Front	0mm	DSI 7	1312	1712.4	19.44	20.00	1.138	0.15	1.260	1.433
46	WCDMA IV_Ant 2	RMC 12.2Kbps	Back	0mm	DSI 7	1312	1712.4	19.44	20.00	1.138	-0.14	1.460	1.661
	WCDMA IV_Ant 2	RMC 12.2Kbps	Bottom Side	0mm	DSI 7	1312	1712.4	19.44	20.00	1.138	-0.06	1.320	1.502
	WCDMA IV_Ant 2	RMC 12.2Kbps	Front	15mm	Full	1413	1732.6	24.21	25.00	1.199	-0.11	0.400	0.480
	WCDMA IV_Ant 2	RMC 12.2Kbps	Back	15mm	Full	1413	1732.6	24.21	25.00	1.199	0.01	0.410	0.492
	WCDMA IV_Ant 2	RMC 12.2Kbps	Bottom Side	21mm	Full	1413	1732.6	24.21	25.00	1.199	0.09	0.259	0.311

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	LTE Band 2_Ant 2	20M	QPSK	1	0	Front	0mm	DSI 7	18900	1880	20.21	21.00	1.199	0.14	1.650	1.979
	LTE Band 2_Ant 2	20M	QPSK	50	0	Front	0mm	DSI 7	18900	1880	20.03	21.00	1.250	0.13	1.540	1.925
47	LTE Band 2_Ant 2	20M	QPSK	1	0	Back	0mm	DSI 7	18900	1880	20.21	21.00	1.199	-0.13	2.010	2.411
	LTE Band 2_Ant 2	20M	QPSK	1	0	Back	0mm	DSI 7	18700	1860	19.96	21.00	1.271	-0.17	1.890	2.401
	LTE Band 2_Ant 2	20M	QPSK	1	0	Back	0mm	DSI 7	19100	1900	19.99	21.00	1.262	-0.08	1.900	2.397
	LTE Band 2_Ant 2	20M	QPSK	50	0	Back	0mm	DSI 7	18900	1880	20.03	21.00	1.250	-0.07	1.830	2.288
	LTE Band 2_Ant 2	20M	QPSK	1	0	Bottom Side	0mm	DSI 7	18900	1880	20.21	21.00	1.199	0.07	1.150	1.379
	LTE Band 2_Ant 2	20M	QPSK	50	0	Bottom Side	0mm	DSI 7	18900	1880	20.03	21.00	1.250	0.11	1.070	1.338
	LTE Band 2_Ant 2	20M	QPSK	1	0	Front	15mm	Full	18900	1880	23.93	25.00	1.279	0.1	0.422	0.540
	LTE Band 2_Ant 2	20M	QPSK	50	0	Front	15mm	Full	18900	1880	23.04	24.00	1.247	-0.01	0.411	0.513
	LTE Band 2_Ant 2	20M	QPSK	1	0	Back	15mm	Full	18900	1880	23.93	25.00	1.279	-0.06	0.437	0.559
	LTE Band 2_Ant 2	20M	QPSK	50	0	Back	15mm	Full	18900	1880	23.04	24.00	1.247	-0.04	0.359	0.448
	LTE Band 2_Ant 2	20M	QPSK	1	0	Bottom Side	21mm	Full	18900	1880	23.93	25.00	1.279	0.11	0.476	0.609
	LTE Band 2_Ant 2	20M	QPSK	50	0	Bottom Side	21mm	Full	18900	1880	23.04	24.00	1.247	0.13	0.397	0.495
	LTE Band 4_Ant 2	20M	QPSK	1	0	Front	0mm	DSI 7	20175	1732.5	19.38	20.00	1.153	-0.1	1.130	1.303
	LTE Band 4_Ant 2	20M	QPSK	50	0	Front	0mm	DSI 7	20175	1732.5	19.13	20.00	1.222	-0.11	1.050	1.283
48	LTE Band 4_Ant 2	20M	QPSK	1	0	Back	0mm	DSI 7	20175	1732.5	19.38	20.00	1.153	0.01	1.390	1.603
	LTE Band 4_Ant 2	20M	QPSK	50	0	Back	0mm	DSI 7	20175	1732.5	19.13	20.00	1.222	0	1.310	1.601
	LTE Band 4_Ant 2	20M	QPSK	1	0	Bottom Side	0mm	DSI 7	20175	1732.5	19.38	20.00	1.153	0.05	1.080	1.246
	LTE Band 4_Ant 2	20M	QPSK	50	0	Bottom Side	0mm	DSI 7	20175	1732.5	19.13	20.00	1.222	0.09	1.010	1.234
	LTE Band 4_Ant 2	20M	QPSK	1	0	Front	15mm	Full	20175	1732.5	23.84	25.00	1.306	0.03	0.287	0.375
	LTE Band 4_Ant 2	20M	QPSK	50	0	Front	15mm	Full	20175	1732.5	22.81	24.00	1.315	0.09	0.257	0.338
	LTE Band 4_Ant 2	20M	QPSK	1	0	Back	15mm	Full	20175	1732.5	23.84	25.00	1.306	-0.06	0.379	0.495
	LTE Band 4_Ant 2	20M	QPSK	50	0	Back	15mm	Full	20175	1732.5	22.81	24.00	1.315	-0.02	0.310	0.408
	LTE Band 4_Ant 2	20M	QPSK	1	0	Bottom Side	21mm	Full	20175	1732.5	23.84	25.00	1.306	0.11	0.327	0.427
	LTE Band 4_Ant 2	20M	QPSK	50	0	Bottom Side	21mm	Full	20175	1732.5	22.81	24.00	1.315	0.05	0.310	0.408

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Table	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 4+5	3	58	5290	16.79	18.00	1.321	100	1.000	-0.1	0.128	0.169
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 4+5	3	58	5290	16.79	18.00	1.321	100	1.000	-0.02	0.073	0.096
49	WLAN5GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 4+5	3	58	5290	16.79	18.00	1.321	100	1.000	-0.15	0.188	0.248
	WLAN5GHz	802.11ac-VHT80 MCS0	Top Side	0mm	Ant 4+5	3	58	5290	16.79	18.00	1.321	100	1.000	0.06	0.097	0.128
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 4+5	3	106	5530	17.15	18.00	1.216	100	1.000	0.1	0.068	0.083
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 4+5	3	106	5530	17.15	18.00	1.216	100	1.000	-0.17	0.046	0.056
50	WLAN5GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 4+5	3	106	5530	17.15	18.00	1.216	100	1.000	0.11	0.105	0.128
	WLAN5GHz	802.11ac-VHT80 MCS0	Top Side	0mm	Ant 4+5	3	106	5530	17.15	18.00	1.216	100	1.000	0.07	0.041	0.050

14.5 Repeated SAR Measurement

No.	Band	Mode	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	LTE Band 4_Ant 2	20M_QPSK_50_0	Bottom Side	10mm	DSI 17	20175	1732.5	19.16	20.00	1.213	-0.01	0.874	-	1.061
2nd	LTE Band 4_Ant 2	20M_QPSK_50_0	Bottom Side	10mm	DSI 17	20175	1732.5	19.16	20.00	1.213	0	0.864	1.01	1.048
1st	WCDMA II_Ant 2	RMC 12.2Kbps	Back	15mm	DSI 7	9262	1852.4	24.30	25.00	1.175	-0.03	0.831	-	0.976
2nd	WCDMA II_Ant 2	RMC 12.2Kbps	Back	15mm	DSI 7	9262	1852.4	24.30	25.00	1.175	-0.05	0.824	1.01	0.968

No.	Band	Mode	Test Position	Gap (mm)	Output power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Ratio	Reported 10g SAR (W/kg)
1st	WCDMA II_Ant 2	RMC 12.2Kbps	Back	0mm	DSI 7	9400	1880	20.34	21.00	1.164	-0.13	2.160	-	2.515
2nd	WCDMA II_Ant 2	RMC 12.2Kbps	Back	0mm	DSI 7	9400	1880	20.34	21.00	1.164	-0.13	2.110	1.02	2.456

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. The ratio is the difference in percentage between original and repeated *measured SAR*.
5. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

15. Simultaneous Transmission Analysis

NO	Simultaneous Transmission Configurations	Portable Handset			
		Head	Body-worn	Hotspot	Product Specific
1.	WWAN + 2.4GHz WLAN Ant 4+5 + 5GHz WLAN Ant 4+5	Yes	Yes	Yes	Yes
2.	WWAN + 5GHz WLAN Ant 4+5 + Bluetooth Ant 4	Yes	Yes	Yes	Yes
3.	WWAN + 5GHz WLAN Ant 4+5 + Bluetooth Ant 5	Yes	Yes	Yes	Yes

General Note:

1. This device WLAN 2.4GHz / 5.2GHz / 5.8GHz supports Hotspot operation and Bluetooth support tethering applications.
2. For SAR testing was performed on single antenna RF power in SISO mode is larger or equal to the single antenna RF power in MIMO mode, and for RF exposure assessment of MIMO mode simultaneous transmission exclusion analysis was performed with SAR test results of each antenna in SISO mode.
3. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
4. All licensed modes share the same antenna part and cannot transmit simultaneously
5. EUT will choose either WLAN 2.4GHz or WLAN 5GHz according to the network signal condition; therefore, 2.4GHz WLAN and 5GHz WLAN will not operate simultaneously at any moment.
6. The Scaled SAR summation is calculated based on the same configuration and test position.
7. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
   i) Scalar SAR summation < 1.6W/kg.
   ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
   iii) If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary.
   iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.

15.1 Head Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	5	1+2+3 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)	1+3+5 Summed 1g SAR (W/kg)
		WWAN	2.4GHz WLAN Ant 4+5	5GHz WLAN Ant 4+5	Bluetooth Ant 4	Bluetooth Ant 5			
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
GSM850_Ant 1	Right Cheek	0.640	0.170	0.205	0.034	0.040	**1.015**	**0.879**	**0.885**
	Right Tilted	0.621	0.133	0.183	0.025	0.024	**0.937**	**0.829**	**0.828**
	Left Cheek	0.584	0.335	0.613	0.031	0.031	**1.532**	**1.228**	**1.228**
	Left Tilted	0.508	0.302	0.473	0.022	0.022	**1.283**	**1.003**	**1.003**
GSM850_Ant 2	Right Cheek	0.132	0.170	0.205	0.034	0.040	**0.507**	**0.371**	**0.377**
	Right Tilted	0.094	0.133	0.183	0.025	0.024	**0.410**	**0.302**	**0.301**
	Left Cheek	0.156	0.335	0.613	0.031	0.031	**1.104**	**0.800**	**0.800**
	Left Tilted	0.085	0.302	0.473	0.022	0.022	**0.860**	**0.580**	**0.580**
GSM1900_Ant 1	Right Cheek	0.707	0.170	0.205	0.034	0.040	**1.082**	**0.946**	**0.952**
	Right Tilted	0.212	0.133	0.183	0.025	0.024	**0.528**	**0.420**	**0.419**
	Left Cheek	0.276	0.335	0.613	0.031	0.031	**1.224**	**0.920**	**0.920**
	Left Tilted	0.246	0.302	0.473	0.022	0.022	**1.021**	**0.741**	**0.741**
GSM1900_Ant 2	Right Cheek	0.050	0.170	0.205	0.034	0.040	**0.425**	**0.289**	**0.295**
	Right Tilted	0.036	0.133	0.183	0.025	0.024	**0.352**	**0.244**	**0.243**
	Left Cheek	0.042	0.335	0.613	0.031	0.031	**0.990**	**0.686**	**0.686**
	Left Tilted	0.031	0.302	0.473	0.022	0.022	**0.806**	**0.526**	**0.526**
WCDMA II_Ant 1	Right Cheek	0.974	0.170	0.205	0.034	0.040	**1.349**	**1.213**	**1.219**
	Right Tilted	0.611	0.133	0.183	0.025	0.024	**0.927**	**0.819**	**0.818**
	Left Cheek	0.517	0.335	0.613	0.031	0.031	**1.465**	**1.161**	**1.161**
	Left Tilted	0.400	0.302	0.473	0.022	0.022	**1.175**	**0.895**	**0.895**
WCDMA II_Ant 2	Right Cheek	0.174	0.170	0.205	0.034	0.040	**0.549**	**0.413**	**0.419**
	Right Tilted	0.107	0.133	0.183	0.025	0.024	**0.423**	**0.315**	**0.314**
	Left Cheek	0.103	0.335	0.613	0.031	0.031	**1.051**	**0.747**	**0.747**
	Left Tilted	0.082	0.302	0.473	0.022	0.022	**0.857**	**0.577**	**0.577**
WCDMA IV_Ant 1	Right Cheek	0.665	0.170	0.205	0.034	0.040	**1.040**	**0.904**	**0.910**
	Right Tilted	0.496	0.133	0.183	0.025	0.024	**0.812**	**0.704**	**0.703**
	Left Cheek	0.340	0.335	0.613	0.031	0.031	**1.288**	**0.984**	**0.984**
	Left Tilted	0.322	0.302	0.473	0.022	0.022	**1.097**	**0.817**	**0.817**
WCDMA IV_Ant 2	Right Cheek	0.185	0.170	0.205	0.034	0.040	**0.560**	**0.424**	**0.430**
	Right Tilted	0.098	0.133	0.183	0.025	0.024	**0.414**	**0.306**	**0.305**
	Left Cheek	0.116	0.335	0.613	0.031	0.031	**1.064**	**0.760**	**0.760**
	Left Tilted	0.089	0.302	0.473	0.022	0.022	**0.864**	**0.584**	**0.584**
WCDMA V_Ant 1	Right Cheek	0.613	0.170	0.205	0.034	0.040	**0.988**	**0.852**	**0.858**
	Right Tilted	0.554	0.133	0.183	0.025	0.024	**0.870**	**0.762**	**0.761**
	Left Cheek	0.559	0.335	0.613	0.031	0.031	**1.507**	**1.203**	**1.203**
	Left Tilted	0.501	0.302	0.473	0.022	0.022	**1.276**	**0.996**	**0.996**
WCDMA V_Ant 2	Right Cheek	0.209	0.170	0.205	0.034	0.040	**0.584**	**0.448**	**0.454**
	Right Tilted	0.126	0.133	0.183	0.025	0.024	**0.442**	**0.334**	**0.333**
	Left Cheek	0.255	0.335	0.613	0.031	0.031	**1.203**	**0.899**	**0.899**
	Left Tilted	0.111	0.302	0.473	0.022	0.022	**0.886**	**0.606**	**0.606**
LTE Band 2_Ant 1	Right Cheek	0.892	0.170	0.205	0.034	0.040	**1.267**	**1.131**	**1.137**
	Right Tilted	0.529	0.133	0.183	0.025	0.024	**0.845**	**0.737**	**0.736**
	Left Cheek	0.303	0.335	0.613	0.031	0.031	**1.251**	**0.947**	**0.947**
	Left Tilted	0.300	0.302	0.473	0.022	0.022	**1.075**	**0.795**	**0.795**
LTE Band 2_Ant 2	Right Cheek	0.212	0.170	0.205	0.034	0.040	**0.587**	**0.451**	**0.457**
	Right Tilted	0.134	0.133	0.183	0.025	0.024	**0.450**	**0.342**	**0.341**
	Left Cheek	0.124	0.335	0.613	0.031	0.031	**1.072**	**0.768**	**0.768**
	Left Tilted	0.082	0.302	0.473	0.022	0.022	**0.857**	**0.577**	**0.577**

WWAN Band	Exposure Position	1	2	3	4	5	1+2+3 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)	1+3+5 Summed 1g SAR (W/kg)
		WWAN	2.4GHz WLAN Ant 4+5	5GHz WLAN Ant 4+5	Bluetooth Ant 4	Bluetooth Ant 5			
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
LTE Band 4_Ant 1	Right Cheek	0.954	0.170	0.205	0.034	0.040	**1.329**	**1.193**	**1.199**
	Right Tilted	0.638	0.133	0.183	0.025	0.024	**0.954**	**0.846**	**0.845**
	Left Cheek	0.421	0.335	0.613	0.031	0.031	**1.369**	**1.065**	**1.065**
	Left Tilted	0.413	0.302	0.473	0.022	0.022	**1.188**	**0.908**	**0.908**
LTE Band 4_Ant 2	Right Cheek	0.187	0.170	0.205	0.034	0.040	**0.562**	**0.426**	**0.432**
	Right Tilted	0.102	0.133	0.183	0.025	0.024	**0.418**	**0.310**	**0.309**
	Left Cheek	0.115	0.335	0.613	0.031	0.031	**1.063**	**0.759**	**0.759**
	Left Tilted	0.072	0.302	0.473	0.022	0.022	**0.847**	**0.567**	**0.567**
LTE Band 5_Ant 1	Right Cheek	0.714	0.170	0.205	0.034	0.040	**1.089**	**0.953**	**0.959**
	Right Tilted	0.656	0.133	0.183	0.025	0.024	**0.972**	**0.864**	**0.863**
	Left Cheek	0.607	0.335	0.613	0.031	0.031	**1.555**	**1.251**	**1.251**
	Left Tilted	0.545	0.302	0.473	0.022	0.022	**1.320**	**1.040**	**1.040**
LTE Band 5_Ant 2	Right Cheek	0.194	0.170	0.205	0.034	0.040	**0.569**	**0.433**	**0.439**
	Right Tilted	0.116	0.133	0.183	0.025	0.024	**0.432**	**0.324**	**0.323**
	Left Cheek	0.252	0.335	0.613	0.031	0.031	**1.200**	**0.896**	**0.896**
	Left Tilted	0.106	0.302	0.473	0.022	0.022	**0.881**	**0.601**	**0.601**
LTE Band 7_Ant 1	Right Cheek	0.837	0.170	0.205	0.034	0.040	**1.212**	**1.076**	**1.082**
	Right Tilted	0.539	0.133	0.183	0.025	0.024	**0.855**	**0.747**	**0.746**
	Left Cheek	0.266	0.335	0.613	0.031	0.031	**1.214**	**0.910**	**0.910**
	Left Tilted	0.220	0.302	0.473	0.022	0.022	**0.995**	**0.715**	**0.715**
LTE Band 7_Ant 2	Right Cheek	0.030	0.170	0.205	0.034	0.040	**0.405**	**0.269**	**0.275**
	Right Tilted	0.019	0.133	0.183	0.025	0.024	**0.335**	**0.227**	**0.226**
	Left Cheek	0.024	0.335	0.613	0.031	0.031	**0.972**	**0.668**	**0.668**
	Left Tilted	0.013	0.302	0.473	0.022	0.022	**0.788**	**0.508**	**0.508**
LTE Band 7_Ant 6	Right Cheek	0.891	0.170	0.205	0.034	0.040	**1.266**	**1.130**	**1.136**
	Right Tilted	0.523	0.133	0.183	0.025	0.024	**0.839**	**0.731**	**0.730**
	Left Cheek	0.315	0.335	0.613	0.031	0.031	**1.263**	**0.959**	**0.959**
	Left Tilted	0.263	0.302	0.473	0.022	0.022	**1.038**	**0.758**	**0.758**
LTE Band 41_Ant 1	Right Cheek	0.600	0.170	0.205	0.034	0.040	**0.975**	**0.839**	**0.845**
	Right Tilted	0.370	0.133	0.183	0.025	0.024	**0.686**	**0.578**	**0.577**
	Left Cheek	0.204	0.335	0.613	0.031	0.031	**1.152**	**0.848**	**0.848**
	Left Tilted	0.156	0.302	0.473	0.022	0.022	**0.931**	**0.651**	**0.651**
LTE Band 41_Ant 2	Right Cheek	0.027	0.170	0.205	0.034	0.040	**0.402**	**0.266**	**0.272**
	Right Tilted	0.023	0.133	0.183	0.025	0.024	**0.339**	**0.231**	**0.230**
	Left Cheek	0.025	0.335	0.613	0.031	0.031	**0.973**	**0.669**	**0.669**
	Left Tilted	0.010	0.302	0.473	0.022	0.022	**0.785**	**0.505**	**0.505**
LTE Band 41_Ant 6	Right Cheek	0.662	0.170	0.205	0.034	0.040	**1.037**	**0.901**	**0.907**
	Right Tilted	0.393	0.133	0.183	0.025	0.024	**0.709**	**0.601**	**0.600**
	Left Cheek	0.226	0.335	0.613	0.031	0.031	**1.174**	**0.870**	**0.870**
	Left Tilted	0.185	0.302	0.473	0.022	0.022	**0.960**	**0.680**	**0.680**
LTE Band 41_Ant 8	Right Cheek	0.296	0.170	0.205	0.034	0.040	**0.671**	**0.535**	**0.541**
	Right Tilted	0.080	0.133	0.183	0.025	0.024	**0.396**	**0.288**	**0.287**
	Left Cheek	0.171	0.335	0.613	0.031	0.031	**1.119**	**0.815**	**0.815**
	Left Tilted	0.145	0.302	0.473	0.022	0.022	**0.920**	**0.640**	**0.640**

15.2 Hotspot Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	5	1+2+3 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)	1+3+5 Summed 1g SAR (W/kg)
		WWAN	2.4GHz WLAN Ant 4+5	5GHz WLAN Ant 4+5	Bluetooth Ant 4	Bluetooth Ant 5			
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
GSM850_Ant 1	Front	0.231	0.132	0.024	0.011	0.018	**0.387**	**0.266**	**0.273**
	Back	0.359	0.139	0.034	0.027	0.037	**0.532**	**0.420**	**0.430**
	Left side	0.086					**0.086**	**0.086**	**0.086**
	Right side		0.171	0.042	0.002	0.006	**0.213**	**0.044**	**0.048**
	Top side	0.200	0.245	0.025	0.017	0.027	**0.470**	**0.242**	**0.252**
GSM850_Ant 2	Front	0.278	0.132	0.024	0.011	0.018	**0.434**	**0.313**	**0.320**
	Back	0.437	0.139	0.034	0.027	0.037	**0.610**	**0.498**	**0.508**
	Left side	0.111					**0.111**	**0.111**	**0.111**
	Right side	0.058	0.171	0.042	0.002	0.006	**0.271**	**0.102**	**0.106**
	Top side		0.245	0.025	0.017	0.027	**0.270**	**0.042**	**0.052**
	Bottom side	0.253					**0.253**	**0.253**	**0.253**
GSM1900_Ant 1	Front	0.149	0.132	0.024	0.011	0.018	**0.305**	**0.184**	**0.191**
	Back	0.185	0.139	0.034	0.027	0.037	**0.358**	**0.246**	**0.256**
	Left side	0.134					**0.134**	**0.134**	**0.134**
	Right side		0.171	0.042	0.002	0.006	**0.213**	**0.044**	**0.048**
	Top side	0.176	0.245	0.025	0.017	0.027	**0.446**	**0.218**	**0.228**
GSM1900_Ant 2	Front	0.292	0.132	0.024	0.011	0.018	**0.448**	**0.327**	**0.334**
	Back	0.344	0.139	0.034	0.027	0.037	**0.517**	**0.405**	**0.415**
	Left side	0.118					**0.118**	**0.118**	**0.118**
	Right side	0.053	0.171	0.042	0.002	0.006	**0.266**	**0.097**	**0.101**
	Top side		0.245	0.025	0.017	0.027	**0.270**	**0.042**	**0.052**
	Bottom side	0.189					**0.189**	**0.189**	**0.189**
WCDMA II_Ant 1	Front	0.185	0.132	0.024	0.011	0.018	**0.341**	**0.220**	**0.227**
	Back	0.223	0.139	0.034	0.027	0.037	**0.396**	**0.284**	**0.294**
	Left side	0.174					**0.174**	**0.174**	**0.174**
	Right side		0.171	0.042	0.002	0.006	**0.213**	**0.044**	**0.048**
	Top side	0.208	0.245	0.025	0.017	0.027	**0.478**	**0.250**	**0.260**
WCDMA II_Ant 2	Front	0.638	0.132	0.024	0.011	0.018	**0.794**	**0.673**	**0.680**
	Back	0.396	0.139	0.034	0.027	0.037	**0.569**	**0.457**	**0.467**
	Left side	0.175					**0.175**	**0.175**	**0.175**
	Right side	0.069	0.171	0.042	0.002	0.006	**0.282**	**0.113**	**0.117**
	Top side		0.245	0.025	0.017	0.027	**0.270**	**0.042**	**0.052**
	Bottom side	0.744					**0.744**	**0.744**	**0.744**
WCDMA IV_Ant 1	Front	0.101	0.132	0.024	0.011	0.018	**0.257**	**0.136**	**0.143**
	Back	0.163	0.139	0.034	0.027	0.037	**0.336**	**0.224**	**0.234**
	Left side	0.118					**0.118**	**0.118**	**0.118**
	Right side		0.171	0.042	0.002	0.006	**0.213**	**0.044**	**0.048**
	Top side	0.153	0.245	0.025	0.017	0.027	**0.423**	**0.195**	**0.205**
WCDMA IV_Ant 2	Front	0.426	0.132	0.024	0.011	0.018	**0.582**	**0.461**	**0.468**
	Back	0.441	0.139	0.034	0.027	0.037	**0.614**	**0.502**	**0.512**
	Left side	0.108					**0.108**	**0.108**	**0.108**
	Right side	0.084	0.171	0.042	0.002	0.006	**0.297**	**0.128**	**0.132**
	Top side		0.245	0.025	0.017	0.027	**0.270**	**0.042**	**0.052**
	Bottom side	0.766					**0.766**	**0.766**	**0.766**

WWAN Band	Exposure Position	1	2	3	4	5	1+2+3 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)	1+3+5 Summed 1g SAR (W/kg)
		WWAN	2.4GHz WLAN Ant 4+5	5GHz WLAN Ant 4+5	Bluetooth Ant 4	Bluetooth Ant 5			
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
WCDMA V_Ant 1	Front	0.205	0.132	0.024	0.011	0.018	**0.361**	**0.240**	**0.247**
	Back	0.283	0.139	0.034	0.027	0.037	**0.456**	**0.344**	**0.354**
	Left side	0.134					**0.134**	**0.134**	**0.134**
	Right side		0.171	0.042	0.002	0.006	**0.213**	**0.044**	**0.048**
	Top side	0.221	0.245	0.025	0.017	0.027	**0.491**	**0.263**	**0.273**
WCDMA V_Ant 2	Front	0.378	0.132	0.024	0.011	0.018	**0.534**	**0.413**	**0.420**
	Back	0.545	0.139	0.034	0.027	0.037	**0.718**	**0.606**	**0.616**
	Left side	0.127					**0.127**	**0.127**	**0.127**
	Right side	0.068	0.171	0.042	0.002	0.006	**0.281**	**0.112**	**0.116**
	Top side		0.245	0.025	0.017	0.027	**0.270**	**0.042**	**0.052**
	Bottom side	0.312					**0.312**	**0.312**	**0.312**
LTE Band 2_Ant 1	Front	0.173	0.132	0.024	0.011	0.018	**0.329**	**0.208**	**0.215**
	Back	0.207	0.139	0.034	0.027	0.037	**0.380**	**0.268**	**0.278**
	Left side	0.143					**0.143**	**0.143**	**0.143**
	Right side		0.171	0.042	0.002	0.006	**0.213**	**0.044**	**0.048**
	Top side	0.183	0.245	0.025	0.017	0.027	**0.453**	**0.225**	**0.235**
LTE Band 2_Ant 2	Front	0.564	0.132	0.024	0.011	0.018	**0.720**	**0.599**	**0.606**
	Back	0.733	0.139	0.034	0.027	0.037	**0.906**	**0.794**	**0.804**
	Left side	0.148					**0.148**	**0.148**	**0.148**
	Right side	0.001	0.171	0.042	0.002	0.006	**0.214**	**0.045**	**0.049**
	Top side		0.245	0.025	0.017	0.027	**0.270**	**0.042**	**0.052**
	Bottom side	0.789					**0.789**	**0.789**	**0.789**
LTE Band 4_Ant 1	Front	0.166	0.132	0.024	0.011	0.018	**0.322**	**0.201**	**0.208**
	Back	0.219	0.139	0.034	0.027	0.037	**0.392**	**0.280**	**0.290**
	Left side	0.177					**0.177**	**0.177**	**0.177**
	Right side		0.171	0.042	0.002	0.006	**0.213**	**0.044**	**0.048**
	Top side	0.196	0.245	0.025	0.017	0.027	**0.466**	**0.238**	**0.248**
LTE Band 4_Ant 2	Front	0.426	0.132	0.024	0.011	0.018	**0.582**	**0.461**	**0.468**
	Back	0.559	0.139	0.034	0.027	0.037	**0.732**	**0.620**	**0.630**
	Left side	0.067					**0.067**	**0.067**	**0.067**
	Right side	0.001	0.171	0.042	0.002	0.006	**0.214**	**0.045**	**0.049**
	Top side		0.245	0.025	0.017	0.027	**0.270**	**0.042**	**0.052**
	Bottom side	1.061					**1.061**	**1.061**	**1.061**
LTE Band 5_Ant 1	Front	0.217	0.132	0.024	0.011	0.018	**0.373**	**0.252**	**0.259**
	Back	0.288	0.139	0.034	0.027	0.037	**0.461**	**0.349**	**0.359**
	Left side	0.082					**0.082**	**0.082**	**0.082**
	Right side		0.171	0.042	0.002	0.006	**0.213**	**0.044**	**0.048**
	Top side	0.224	0.245	0.025	0.017	0.027	**0.494**	**0.266**	**0.276**
LTE Band 5_Ant 2	Front	0.354	0.132	0.024	0.011	0.018	**0.510**	**0.389**	**0.396**
	Back	0.553	0.139	0.034	0.027	0.037	**0.726**	**0.614**	**0.624**
	Left side	0.116					**0.116**	**0.116**	**0.116**
	Right side	0.062	0.171	0.042	0.002	0.006	**0.275**	**0.106**	**0.110**
	Top side		0.245	0.025	0.017	0.027	**0.270**	**0.042**	**0.052**
	Bottom side	0.296					**0.296**	**0.296**	**0.296**

WWAN Band	Exposure Position	1	2	3	4	5	1+2+3 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)	1+3+5 Summed 1g SAR (W/kg)
		WWAN	2.4GHz WLAN Ant 4+5	5GHz WLAN Ant 4+5	Bluetooth Ant 4	Bluetooth Ant 5			
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
LTE Band 7_Ant 1	Front	0.091	0.132	0.024	0.011	0.018	**0.247**	**0.126**	**0.133**
	Back	0.155	0.139	0.034	0.027	0.037	**0.328**	**0.216**	**0.226**
	Left side	0.115					**0.115**	**0.115**	**0.115**
	Right side		0.171	0.042	0.002	0.006	**0.213**	**0.044**	**0.048**
	Top side	0.093	0.245	0.025	0.017	0.027	**0.363**	**0.135**	**0.145**
LTE Band 7_Ant 2	Front	0.053	0.132	0.024	0.011	0.018	**0.209**	**0.088**	**0.095**
	Back	0.061	0.139	0.034	0.027	0.037	**0.234**	**0.122**	**0.132**
	Left side	0.058					**0.058**	**0.058**	**0.058**
	Right side	0.142	0.171	0.042	0.002	0.006	**0.355**	**0.186**	**0.190**
	Top side		0.245	0.025	0.017	0.027	**0.270**	**0.042**	**0.052**
	Bottom side	0.113					**0.113**	**0.113**	**0.113**
LTE Band 7_Ant 6	Front	0.109	0.132	0.024	0.011	0.018	**0.265**	**0.144**	**0.151**
	Back	0.184	0.139	0.034	0.027	0.037	**0.357**	**0.245**	**0.255**
	Left side	0.101					**0.101**	**0.101**	**0.101**
	Right side		0.171	0.042	0.002	0.006	**0.213**	**0.044**	**0.048**
	Top side	0.090	0.245	0.025	0.017	0.027	**0.360**	**0.132**	**0.142**
LTE Band 41_Ant 1	Front	0.075	0.132	0.024	0.011	0.018	**0.231**	**0.110**	**0.117**
	Back	0.101	0.139	0.034	0.027	0.037	**0.274**	**0.162**	**0.172**
	Left side	0.001					**0.001**	**0.001**	**0.001**
	Right side		0.171	0.042	0.002	0.006	**0.213**	**0.044**	**0.048**
	Top side	0.118	0.245	0.025	0.017	0.027	**0.388**	**0.160**	**0.170**
LTE Band 41_Ant 2	Front	0.093	0.132	0.024	0.011	0.018	**0.249**	**0.128**	**0.135**
	Back	0.109	0.139	0.034	0.027	0.037	**0.282**	**0.170**	**0.180**
	Left side	0.057					**0.057**	**0.057**	**0.057**
	Right side	0.081	0.171	0.042	0.002	0.006	**0.294**	**0.125**	**0.129**
	Top side		0.245	0.025	0.017	0.027	**0.270**	**0.042**	**0.052**
	Bottom side	0.232					**0.232**	**0.232**	**0.232**
LTE Band 41_Ant 6	Front	0.083	0.132	0.024	0.011	0.018	**0.239**	**0.118**	**0.125**
	Back	0.097	0.139	0.034	0.027	0.037	**0.270**	**0.158**	**0.168**
	Left side	0.068					**0.068**	**0.068**	**0.068**
	Right side		0.171	0.042	0.002	0.006	**0.213**	**0.044**	**0.048**
	Top side		0.245	0.025	0.017	0.027	**0.270**	**0.042**	**0.052**
	Bottom side	0.072					**0.072**	**0.072**	**0.072**
LTE Band 41_Ant 8	Front	0.305	0.132	0.024	0.011	0.018	**0.461**	**0.340**	**0.347**
	Back	0.277	0.139	0.034	0.027	0.037	**0.450**	**0.338**	**0.348**
	Left side						**0.000**	**0.000**	**0.000**
	Right side	0.395	0.171	0.042	0.002	0.006	**0.608**	**0.439**	**0.443**
	Top side		0.245	0.025	0.017	0.027	**0.270**	**0.042**	**0.052**
	Bottom side	0.109					**0.109**	**0.109**	**0.109**

15.3 Body-Worn Accessory Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	5	1+2+3 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)	1+3+5 Summed 1g SAR (W/kg)
		WWAN	2.4GHz WLAN Ant 4+5	5GHz WLAN Ant 4+5	Bluetooth Ant 4	Bluetooth Ant 5			
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
GSM850_Ant 1	Front	0.233	0.050	0.160	0.006	0.012	**0.443**	**0.399**	**0.405**
	Back	0.296	0.058	0.168	0.010	0.019	**0.522**	**0.474**	**0.483**
GSM850_Ant 2	Front	0.144	0.050	0.160	0.006	0.012	**0.354**	**0.310**	**0.316**
	Back	0.215	0.058	0.168	0.010	0.019	**0.441**	**0.393**	**0.402**
GSM1900_Ant 1	Front	0.081	0.050	0.160	0.006	0.012	**0.291**	**0.247**	**0.253**
	Back	0.120	0.058	0.168	0.010	0.019	**0.346**	**0.298**	**0.307**
GSM1900_Ant 2	Front	0.273	0.050	0.160	0.006	0.012	**0.483**	**0.439**	**0.445**
	Back	0.415	0.058	0.168	0.010	0.019	**0.641**	**0.593**	**0.602**
WCDMA II_Ant 1	Front	0.231	0.050	0.160	0.006	0.012	**0.441**	**0.397**	**0.403**
	Back	0.362	0.058	0.168	0.010	0.019	**0.588**	**0.540**	**0.549**
WCDMA II_Ant 2	Front	0.785	0.050	0.160	0.006	0.012	**0.995**	**0.951**	**0.957**
	Back	0.976	0.058	0.168	0.010	0.019	**1.202**	**1.154**	**1.163**
WCDMA IV_Ant 1	Front	0.209	0.050	0.160	0.006	0.012	**0.419**	**0.375**	**0.381**
	Back	0.283	0.058	0.168	0.010	0.019	**0.509**	**0.461**	**0.470**
WCDMA IV_Ant 2	Front	0.644	0.050	0.160	0.006	0.012	**0.854**	**0.810**	**0.816**
	Back	0.822	0.058	0.168	0.010	0.019	**1.048**	**1.000**	**1.009**
WCDMA V_Ant 1	Front	0.322	0.050	0.160	0.006	0.012	**0.532**	**0.488**	**0.494**
	Back	0.374	0.058	0.168	0.010	0.019	**0.600**	**0.552**	**0.561**
WCDMA V_Ant 2	Front	0.153	0.050	0.160	0.006	0.012	**0.363**	**0.319**	**0.325**
	Back	0.188	0.058	0.168	0.010	0.019	**0.414**	**0.366**	**0.375**
LTE Band 2_Ant 1	Front	0.264	0.050	0.160	0.006	0.012	**0.474**	**0.430**	**0.436**
	Back	0.388	0.058	0.168	0.010	0.019	**0.614**	**0.566**	**0.575**
LTE Band 2_Ant 2	Front	0.755	0.050	0.160	0.006	0.012	**0.965**	**0.921**	**0.927**
	Back	0.943	0.058	0.168	0.010	0.019	**1.169**	**1.121**	**1.130**
LTE Band 4_Ant 1	Front	0.221	0.050	0.160	0.006	0.012	**0.431**	**0.387**	**0.393**
	Back	0.300	0.058	0.168	0.010	0.019	**0.526**	**0.478**	**0.487**
LTE Band 4_Ant 2	Front	0.671	0.050	0.160	0.006	0.012	**0.881**	**0.837**	**0.843**
	Back	0.811	0.058	0.168	0.010	0.019	**1.037**	**0.989**	**0.998**
LTE Band 5_Ant 1	Front	0.273	0.050	0.160	0.006	0.012	**0.483**	**0.439**	**0.445**
	Back	0.340	0.058	0.168	0.010	0.019	**0.566**	**0.518**	**0.527**
LTE Band 5_Ant 2	Front	0.220	0.050	0.160	0.006	0.012	**0.430**	**0.386**	**0.392**
	Back	0.307	0.058	0.168	0.010	0.019	**0.533**	**0.485**	**0.494**
LTE Band 7_Ant 1	Front	0.204	0.050	0.160	0.006	0.012	**0.414**	**0.370**	**0.376**
	Back	0.181	0.058	0.168	0.010	0.019	**0.407**	**0.359**	**0.368**
LTE Band 7_Ant 2	Front	0.283	0.050	0.160	0.006	0.012	**0.493**	**0.449**	**0.455**
	Back	0.480	0.058	0.168	0.010	0.019	**0.706**	**0.658**	**0.667**
LTE Band 7_Ant 6	Front	0.088	0.050	0.160	0.006	0.012	**0.298**	**0.254**	**0.260**
	Back	0.099	0.058	0.168	0.010	0.019	**0.325**	**0.277**	**0.286**
LTE Band 41_Ant 1	Front	0.172	0.050	0.160	0.006	0.012	**0.382**	**0.338**	**0.344**
	Back	0.151	0.058	0.168	0.010	0.019	**0.377**	**0.329**	**0.338**
LTE Band 41_Ant 2	Front	0.295	0.050	0.160	0.006	0.012	**0.505**	**0.461**	**0.467**
	Back	0.321	0.058	0.168	0.010	0.019	**0.547**	**0.499**	**0.508**
LTE Band 41_Ant 6	Front	0.024	0.050	0.160	0.006	0.012	**0.234**	**0.190**	**0.196**
	Back	0.054	0.058	0.168	0.010	0.019	**0.280**	**0.232**	**0.241**
LTE Band 41_Ant 8	Front	0.177	0.050	0.160	0.006	0.012	**0.387**	**0.343**	**0.349**
	Back	0.140	0.058	0.168	0.010	0.019	**0.366**	**0.318**	**0.327**

15.4 Product Specific Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	5	1+2+3 Summed 10g SAR (W/kg)	1+3+4 Summed 10g SAR (W/kg)	1+3+5 Summed 10g SAR (W/kg)
		WWAN	2.4GHz WLAN Ant 4+5	5GHz WLAN Ant 4+5	Bluetooth Ant 4	Bluetooth Ant 5			
		10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)			
WCDMA II_Ant 2	Front	1.995		0.169			2.164	2.164	2.164
	Back	2.515		0.096			2.611	2.611	2.611
	Right side			0.248			0.248	0.248	0.248
	Top side			0.128			0.128	0.128	0.128
	Bottom side	1.668					1.668	1.668	1.668
WCDMA IV_Ant 2	Front	1.433		0.169			1.602	1.602	1.602
	Back	1.661		0.096			1.757	1.757	1.757
	Right side			0.248			0.248	0.248	0.248
	Top side			0.128			0.128	0.128	0.128
	Bottom side	1.502					1.502	1.502	1.502
LTE Band 2_Ant 2	Front	1.979		0.169			2.148	2.148	2.148
	Back	2.411		0.096			2.507	2.507	2.507
	Right side			0.248			0.248	0.248	0.248
	Top side			0.128			0.128	0.128	0.128
	Bottom side	1.379					1.379	1.379	1.379
LTE Band 4_Ant 2	Front	1.303		0.169			1.472	1.472	1.472
	Back	1.603		0.096			1.699	1.699	1.699
	Right side			0.248			0.248	0.248	0.248
	Top side			0.128			0.128	0.128	0.128
	Bottom side	1.246					1.246	1.246	1.246

Test Engineer： Willy Yu, Ken Lin and Jay Jian

16. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be ≤ 30%, for a confidence interval of k = 2. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg and highest measured 10-g SAR is less 3.75W/kg. Therefore, the measurement uncertainty table is not required in this report.
Declaration of Conformity:
The test results with all measurement uncertainty excluded is presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

17. References

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

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

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

[4] SPEAG DASY System Handbook

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

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

[7] FCC KDB 648474 D04 v01r03, “SAR Evaluation Considerations for Wireless Handsets”, Oct 2015.

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

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

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

[11] FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.

[12] FCC KDB 941225 D07 v01r02, " SAR Evaluation Procedures for UMPC Mini-Tablet Devices", Oct 2015.

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

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