FCC SAR Test Report

FCC ID: QISVIE-L29

Project No.	:	1602C121
Equipment	:	Smart Phone
Model Name	:	VIE-L29
Applicant	:	Huawei Technologies Co., Ltd.
Address	:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District Shenzhen China

Date of Receipt	:	Mar. 03, 2016
Date of Test	:	Mar. 06, 2016 ~ Apr. 30, 2016
Issued Date	:	May 03, 2016
Tested by	:	BTL Inc.

PREPARED BY : (Super Jiang/ Technical Engineer)

APPROVED BY : (Steven Lu / Technical Manager)

BTL INC.

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Testing Laboratory 2640

Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**), or National Institute of Standards and Technology (**NIST**) .

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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BTL's laboratory quality assurance procedures are in compliance with the **ISO Guide17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCC SAR-1-1602C121	Original Issue	May 03, 2016

1. GENERAL SUMMARY

Equipment	Smart Phone
Brand Name	HUAWEI
Model Name	VIE-L29
Model difference	N/A
Manufacturer	Huawei Technologies Co.,Ltd.
Address	Administration Building, Huawei Base, Bantian, Longgang District , Shenzhen 518129, P.R.China
Standard(s)	**ANSI Std C95.1-1992** Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.(IEEE Std C95.1-1991) **IEEE Std 1528-2013** Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques **KDB941225 D01** 3G SAR Procedures v03r01 **KDB941225 D05** SAR for LTE Devices v02r05 **KDB941225 D06** Hotspot Mode V02r01 **KDB 941225 D05A** LTE Rel.10 KDB Inquiry Sheet v01r02 **KDB447498 D01** General RF Exposure Guidance v06 **KDB648474 D04** Handset SAR v01r03 **KDB248227 D01** 802. 11 Wi-Fi SAR v02r02 **KDB865664 D01** SAR measurement 100 MHz to 6 GHz v01r04 **KDB865664 D02** SAR Reporting v01r02 **KDB690783 D01** SAR Listings on Grants v01r03

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCC SAR-1-1602C121) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. RF EMISSIONS MEASUREMENT

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **SAR room** at the location of No.3,Jinshagang 1st Road, ShiXia, Dalang Town,Dong Guan, China.523792

2.2 MEASUREMENT UNCERTAINTY

Note: Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04,when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6) is applied to extremity and occupational exposure conditions.

3. GENERAL INFORMATION

3.1 STATEMENT OF COMPLIANCE

Ant	Mode	Highest Head SAR-1g (W/kg)	Highest Body-worn(15mm) SAR-1g(W/kg)*	Highest Hotspot(10mm) SAR-1g(W/kg)	Highest product specific 10-g SAR (W/kg)**
PCE(Top Ant)	GSM850(Main Modem)	1.24	0.23	0.55	-
	GSM850(Second Modem)	1.14	0.42	0.80	-
	GSM1900(Main Modem)	1.31	0.17	0.32	-
	GSM1900(Second Modem)	1.06	0.13	0.28	-
	UMTS Band 2	1.09	0.09	0.22	-
	UMTS Band 4	0.84	0.05	0.15	-
	UMTS Band 5	1.25	0.31	0.55	-
	LTE Band 2	1.26	0.14	0.24	1.33
	LTE Band 4	0.49	0.07	0.11	-
	LTE Band 5	0.93	0.24	0.50	-
	LTE Band 7	1.16	0.10	0.27	1.25
	LTE Band 12	1.37	0.33	0.66	-
	LTE Band 17	1.07	0.23	0.47	-
	LTE Band 26	1.09	0.30	0.65	-
	LTE Band 38	1.15	0.13	0.32	-
	LTE Band 40	1.02	0.06	0.06	-
	LTE Band 41	1.18	0.06	0.24	-
PCE(Bottom Ant)	GSM850(Main Modem)	0.40	0.34	0.40	-
	GSM850(Second Modem)	0.33	0.27	0.34	-
	GSM1900(Main Modem)	0.51	0.53	0.94	-
	GSM1900 (Second Modem)	0.49	0.52	1.17	-
	UMTS Band 2	0.55	0.55	0.48	-
	UMTS Band 4	0.56	0.47	0.64	-
	UMTS Band 5	0.28	0.21	0.30	-
	LTE Band 2	1.04	0.61	0.59	3.62
	LTE Band 4	0.77	0.68	0.96	3.61
	LTE Band 5	0.41	0.29	0.44	-
	LTE Band 7	0.41	0.26	0.76	-
	LTE Band 12	0.21	0.26	0.32	-
	LTE Band 17	0.17	0.25	0.32	-
	LTE Band 26	0.31	0.26	0.27	-
	LTE Band 38	0.21	0.01	0.33	-
	LTE Band 40	0.47	0.07	0.63	-
	LTE Band 41	0.37	0.20	0.63	-
DTS	2.4G WLAN	0.93	0.04	0.09	-

NII	5.2G WLAN	-	-	0.07	-
	5.3G WLAN	0.53	0.05	-	0.55
	5.5G WLAN	0.76	0.12	-	0.85
	5.8G WLAN	0.61	0.08	0.22	-
The highest simultaneous SAR_{1g} value is 1.59 W/kg per KDB690783 D01					

Note:

1)* For body-worn operation, this device has been tested and meets FCC RF exposure guidelines when used with any accessory that contains no metal and that positions the handset a minimum of 15mm from the body. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

2)**For product specific 10-g SAR operation, this device has been tested and meets the10-g SAR limits of 4.0 W/kg for general population/ uncontrolled exposure limits according to the ANSI C95.1:1992/IEEE C95.1:1991.

The device is in compliance with Specific Absorption Rate(SAR)for general population uncontrolled exposure limits according to the FCC rule §2.1093, the ANSI C95.1:1992/IEEE C95.1:1991, the NCRP Report Number 86 for uncontrolled environment,and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013 .

3.2 GENERAL DESCRIPTION OF EUT

Equipment	Smart Phone		
Model Name	VIE-L29		
IMEI Code	IMEI 1: 004401725648527 IMEI 2: 004401725652321 (Sample 1)		
	IMEI 1: 004401725647438 IMEI 2: 004401725651232(Sample 2)		
	IMEI 1: 004401725648915 IMEI 2: 004401725652719(Sample 3)		
S/N	YED0116106000262(Sample 1)		
	YED0116106000153(Sample 2)		
	YED0116106000301(Sample 3)		
HW Version	HL1AVIENNAM		
SW Version	VIE-L29C900B071		
Modulation	GSM(GMSK/8PSK),UMTS(QPSK),LTE(QPSK/16QAM), WiFi(DSSS/OFDM),BT(GFSK/π /4-DQPSK/8-DPSK),NFC(ASK)		
Operation Frequency Range(s)	Band	TX (MHz)	RX (MHz)
	GSM850	824-849	869-894
	GSM1900	1850-1910	1930-1990
	UMTS Band 2	1850-1910	1930-1990
	UMTS Band 4	1710-1755	2110-2155
	UMTS Band 5	824-849	869-894
	FDD-LTE Band 2	1850-1910	1930-1990
	FDD-LTE Band 4	1710-1755	2110-2155
	FDD-LTE Band 5	824-849	869-894
	FDD-LTE Band 7	2500-2570	2620-2690
	FDD-LTE Band 12	699-716	729-746
	FDD-LTE Band 17	704-716	734-746
	FDD-LTE Band 26	814-849	859-894
	TDD-LTE Band 38	2570-2620	2570-2620
	TDD-LTE Band 41	2555-2655	2555-2655
	Bluetooth	2400-2483.5	
	NFC	13.56	
	2.4GWIFI	2412-2462	
	5GWIFI	5160-5260 5260-5360 5500-5700 5745-5825	
GPRS/EDGE Multislot Class(12)	Max Number of Timeslots in Uplink:	4	
	Max Number of Timeslots in Downlink:	4	
	Max Total Timeslot:	5	
GSM Device class	Class B		
HSDPA UE Category	14		
HSUPA UE Category	6		
DC-HSDPA UE Category	24		
Power Class:	4,tested with power level 5(GSM850)		
	1,tested with power level 0(GSM1900)		
	3, tested with power control “all 1”(UMTS Band 2/4/5)		
	3, tested with power control “all Max” (LTE Band 2/4/5/7/12/17/26 /38 /41)		
Test Channels (low-mid-high):	128-190-251 (GSM850)		
	512-661-810 (GSM1900)		
	9262-9400-9538(UMTS Band 2)		
	1312-1413-1513 (UMTS Band 4)		
	4132-4182-4233 (UMTS Band 5)		

<table>
<tr><td rowspan="15"></td><td colspan="5">18700-18900-19100(LTE Band 2 BW=20MHz)</td></tr>
<tr><td colspan="5">20050-20175-20300(LTE Band 4 BW=20MHz)</td></tr>
<tr><td colspan="5">20450-20525-20600(LTE Band 5 BW=10MHz)</td></tr>
<tr><td colspan="5">20850-21100-21350(LTE Band 7 BW=20MHz)</td></tr>
<tr><td colspan="5">23060-23095-23130(LTE Band 12 BW=10MHz)</td></tr>
<tr><td colspan="5">23780-23790-23800 (LTE Band 17 BW=10MHz)</td></tr>
<tr><td colspan="5">26765-26865-26965 (LTE Band 26 BW=15MHz)</td></tr>
<tr><td colspan="5">37850- 38000- 38150(LTE Band 38 BW=20MHz)</td></tr>
<tr><td colspan="5">40340- 40740- 41141(LTE Band 41 BW=20MHz)</td></tr>
<tr><td colspan="5">1-6 -11 (2.4G WIFI 802.11b/g/n HT20)</td></tr>
<tr><td colspan="5">3-6 - 9 (2.4G WIFI 802.11n HT40)</td></tr>
<tr><td>5G WIFI</td><td>Band 1</td><td>Band 2</td><td>Band 3</td><td>Band 4</td></tr>
<tr><td>a/n20/ac20</td><td>36-40-44-48</td><td>52-56-60-64</td><td>100-104-108-112-116-120-124-128-132-136-140</td><td>149-153-157-161-165</td></tr>
<tr><td>n40/ac40</td><td>38-46</td><td>54-62</td><td>102-110-118-126-134</td><td>151-159</td></tr>
<tr><td>ac80</td><td>42</td><td>58</td><td>106-122-138</td><td>155</td></tr>
<tr><td rowspan="13">Antenna Gain</td><td colspan="5">BT/2.4G WiFi: -2dBi</td></tr>
<tr><td colspan="5">5G WiFi: 0.7dBi</td></tr>
<tr><td colspan="2">2G/3G/LTE Ant</td><td colspan="3">Top/Bottom</td></tr>
<tr><td colspan="2">GSM850/ UMTS B5/LTE B5</td><td colspan="3">-2.6 dBi</td></tr>
<tr><td colspan="2">GSM1900/UMTS B2/LTE B2</td><td colspan="3">-1.2 dBi</td></tr>
<tr><td colspan="2">UMTS B4/LTE B4</td><td colspan="3">-1.4 dBi</td></tr>
<tr><td colspan="2">LTE Band 7</td><td colspan="3">-0.5 dBi</td></tr>
<tr><td colspan="2">LTE Band 12</td><td colspan="3">-3.2 dBi</td></tr>
<tr><td colspan="2">LTE Band 17</td><td colspan="3">-3.2 dBi</td></tr>
<tr><td colspan="2">LTE Band 26</td><td colspan="3">-2.6 dBi</td></tr>
<tr><td colspan="2">LTE Band 38</td><td colspan="3">-0.8 dBi</td></tr>
<tr><td colspan="2">LTE Band 41</td><td colspan="3">-0.8 dBi</td></tr>
<tr><td colspan="6">Other Information</td></tr>
<tr><td>Battery</td><td colspan="5">Huawei Technologies Co., Ltd.
Battery Model: HB376883ECW
Rated capacity: 3320mAh
Nominal Voltage: ⎓ +3.82V
Charging Voltage: ⎓ +4.4V
1. SCUD (FUJIAN) Electronics Co., Ltd
2. Sunwoda Electronic Co., LTD
3. Desay Battery Co., Ltd.</td></tr>
<tr><td>Earphone</td><td colspan="5">1. BOLUO COUNTY QUANCHENG ELECTRONIC CO., LTD
Model: 1311-3291-3.5mm-229
2. Jiangxi Lianchuang Hongsheng Electronic Co., LTD.
Model: MEMD1632B580C00</td></tr>
</table>

3.3 POWER REDUCTION SPECIFICATION

The device uses a single fixed level of power reduction through static table look-up for SAR compliance and it is triggered by a single event or operation. A fixed level power reduction is applied for some frequency bands when simultaneously transmitting with the WiFi antenna in certain simultaneous transmission conditions. The standalone SAR compliance still uses the standalone SAR results tested at the maximum output power level without any power reduction. The PAG requirements can be excluded per KDB 388624D02.

1) A fixed level power reduction is applied for some frequency bands when hotspot mode becomes active. When the hotspot is disabled, the power value will be recovered.
2) A fixed level power reduction is applied for some frequency bands when simultaneously transmitting with the other antennas in certain simultaneous transmission conditions. The standalone SAR compliance still uses the standalone SAR results tested at the maximum output power level without any power reduction.The PAG requirements can be excluded per KDB 388624D02.

The following tables summerize the key power reduction information.The detailed full power and reduced tune-up specifications and conducted power measurement results are provided in Section 8.1 of this report.

Bottom antenna Modem1(Main Modem) and WiFi antenna :

Band\Config.		Power Reduciton (dB)				
		Modem1+ Modem2	Modem1+WiFi station	Modem1+ Modem2+ WiFi station	Modem1 + Hotspot on	Modem1+ Modem2+ Hotspot on
Bottom antenna Modem1 (Main Modem)	GSM 850	0.0	0.0	0.0	0.0	0.0
	GSM 1900	0.0	0.0	0.0	0.0	0.0
	UMTS B2	0.0	0.0	4.0	4.0	4.0
	UMTS B4	2.0	0.0	2.0	2.0	2.0
	UMTS B5	0.0	0.0	0.0	0.0	0.0
	LTE B2	3.5	0.0	3.5	3.5	3.5
	LTE B4	1.0	0.0	1.0	1.0	1.0
	LTE B5	0.0	0.0	0.0	0.0	0.0
	LTE B7	0.0	0.0	0.0	0.0	0.0
	LTE B12	0.0	0.0	0.0	0.0	0.0
	LTE B17	0.0	0.0	0.0	0.0	0.0
	LTE B26	0.0	0.0	0.0	0.0	0.0
	LTE B38	0.0	0.0	0.0	0.0	0.0
	LTE B41	0.0	0.0	0.0	0.0	0.0
WiFi 2.4G		-	2.0	3.0	2.0	3.0
WiFi 5G		-	2.0	3.0	2.0	3.0

Second antenna Modem1(Main Modem) and WiFi antenna:

Band\Config.		Power Reduciton (dB)				
		Modem1+ Modem2	Modem1+ WiFi station	Modem1+ Modem2+ WiFi station	Hotspot on	Modem1+ Modem2+ Hotspot on
Top antenna Modem1 (Main Modem)	GSM 850	1.5	1.5	1.5	1.5	1.5
	GSM 1900	1.5	1.5	1.5	1.5	1.5
	UMTS B2	5.0	5.0	5.0	5.0	5.0
	UMTS B4	6.0	6.0	6.0	6.0	6.0
	UMTS B5	2.5	2.5	2.5	2.5	2.5
	LTE B2	6.5	6.5	6.5	6.5	6.5
	LTE B4	6.0	6.0	6.0	6.0	6.0
	LTE B5	1.5	1.5	1.5	1.5	1.5
	LTE B7	9.0	9.0	9.0	9.0	9.0
	LTE B12	1.5	1.5	3.5	1.5	3.5
	LTE B17	1.0	1.0	1.0	1.0	1.0
	LTE B26	2.0	2.0	2.0	2.0	2.0
	LTE B38	3.0	3.0	3.0	3.0	3.0
	LTE B41	4.0	4.0	4.0	4.0	4.0
WiFi 2.4G		-	2.0	3.0	2.0	3.0
WiFi 5G		-	2.0	3.0	2.0	3.0

Main antenna and Modem2(Second Modem):

Band\Config.		Power Reduciton (dB)				
		Modem1+ Modem2	Modem2+ WiFi station	Modem1+ Modem2+ WiFi station	Hotspot on	Modem1+ Modem2 + Hotspot on
Bottom Ant Modem2 (Second Modem)	GSM 850	2.0	/	2.0	/	2.0
	GSM 1900	2.0	/	2.0	/	2.0

Second antenna and Modem2(Second Modem):

Band\Config.		Power Reduciton (dB)				
		Modem1+ Modem2	Modem2+ WiFi station	Modem1+ Modem2+ WiFi station	Hotspot on	Modem1+ Modem2 + Hotspot on
Top Ant Modem2 (Second Modem)	GSM 850	3.0	/	3.0	/	3.0
	GSM 1900	3.5	/	3.5	/	3.5

3.4 DOWNLINK LTE CA SPECIFICATION

The device supports downlink Release 10 LTE Carrier Aggregation (CA) only. It supports a maximum of 2 carriers in the downlink. Other Release 10 features are not supported, including Uplink Carrier Aggregation, Enhanced SC-FDMA and Uplink MIMO or other antenna diversity configurations etc. All uplink communications are identical to the Release 8 Specifications. The possible downlink LTE CA combinations supported by this device are as below tables per 3GPP TS 36.101 V12.8.0. The conducted power measurement results of downlink LTE CA are provided in Section 7 of this report per 3GPP TS 36.521-1 V12.6.0. According to KDB 941225 D05A, the downlink LTE CA SAR test is not required and PAG requirements can be excluded.

intra-band contiguous CA (per 3GPP TS 36.101 V12.8.0 Table 5.6A.1-1)

E-UTRA CA configuration / Bandwidth combination set					
E-UTRA CA configuration	Uplink CA configurations (NOTE 3)	Component carriers in order of increasing carrier frequency		Maximum aggregated bandwidth [MHz]	Bandwidth combination set
		Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_7C	CA_7C	15	15	40	0
		20	20		
		10	20	40	1
		15	15, 20		
		20	10, 15, 20		
		15	10, 15	40	2
		20	15, 20		
CA_38C	CA_38C	15	15	40	0
		20	20		

Table: Test frequencies for CA_7C

Range	CC-Combo / N_{RB_agg} [RB]	CC1 Note1					CC2 Note1				
		BW [RB]	N_{UL}	f_{UL} [MHz]	N_{DL}	f_{DL} [MHz]	BW [RB]	N_{UL}	f_{UL} [MHz]	N_{DL}	f_{DL} [MHz]
Low	75+75	75	20825	2507.5	2825	2627.5	75	20975	2522.5	2975	2642.5
	100+100	100	20850	2510	2850	2630	100	21048	2529.8	3048	2649.8
Mid	75+75	75	21025	2527.5	3025	2647.5	75	21175	2542.5	3175	2662.5
	100+100	100	21000	2525	3000	2645	100	21198	2544.8	3198	2664.8
High	75+75	75	21225	2547.5	3225	2667.5	75	21375	2562.5	3375	2682.5
	100+100	100	21152	2540.2	3152	2660.2	100	21350	2560	3350	2680
Note 1: Carriers in increasing frequency order.											

Table: Test frequencies for CA_38C

Range	CC-Combo / N_{RB_agg} [RB]	CC1 Note1			CC2 Note1		
		BW [RB]	$N_{UL/DL}$	$f_{UL/DL}$ [MHz]	BW [RB]	$N_{UL/DL}$	$f_{UL/DL}$ [MHz]
Low	75+75	75	37825	2577.5	75	37975	2592.5
	100+100	100	37850	2580	100	38048	2599.8
Mid	75+75	75	37925	2587.5	75	38075	2602.5
	100+100	100	37900	2585	100	38098	2604.8
High	75+75	75	38025	2597.5	75	38175	2612.5
	100+100	100	37952	2590.2	100	38150	2610
Note 1: Carriers in increasing frequency order.							

inter-band CA (per 3GPP TS 36.101 V12.8.0 Table 5.6A.1-2)

E-UTRA CA configuration / Bandwidth combination set										
E-UTRA CA Configuration	**Uplink CA configurations (NOTE 4)**	**E-UTRA Bands**	**1.4 MHz**	**3 MHz**	**5 MHz**	**10 MHz**	**15 MHz**	**20 MHz**	**Maximum aggregated bandwidth [MHz]**	**Bandwidth combination set**
CA_2A-4A	CA_2A-4A	2	Yes	Yes	Yes	Yes	Yes	Yes	40	0
		4			Yes	Yes	Yes	Yes		
		2			Yes	Yes			20	1
		4			Yes	Yes				
		2			Yes	Yes	Yes	Yes	40	2
		4			Yes	Yes	Yes	Yes		
CA_2A-17A	-	2			Yes	Yes			20	0
		17			Yes	Yes				
CA_3A-5A	CA_3A-5A	3				Yes	Yes	Yes	30	0
		5			Yes	Yes				
		3				Yes			20	1
		5			Yes	Yes				
		3			Yes	Yes	Yes	Yes	30	2
		5			Yes	Yes				
CA_3A-7A	CA_3A-7A	3			Yes	Yes	Yes	Yes	40	0
		7				Yes	Yes	Yes		
CA_4A-17A	CA_4A-17A	4			Yes	Yes			20	0
		17			Yes	Yes				
CA_7A-20A	CA_7A-20A	7				Yes	Yes	Yes	30	0
		20			Yes	Yes				
		7				Yes	Yes	Yes	40	1
		20			Yes	Yes	Yes	Yes		
CA_7A-28A	CA_7A-28A	7			Yes	Yes	Yes	Yes	35	0
		28			Yes	Yes	Yes			

NOTE 1: The CA Configuration refers to a combination of an operating band and a CA bandwidth class specified in Table 5.6A-1 (the indexing letter). Absence of a CA bandwidth class for an operating band implies support of all classes.

NOTE 2: For each band combination, all combinations of indicated bandwidths belong to the set.

NOTE 3: For the supported CC bandwidth combinations, the CC downlink and uplink bandwidths are equal.

NOTE 4: Uplink CA configurations are the configurations supported by the present release of specifications.

Note:

1）In the CA configurations of CA_4A-17A, B17 cannot be used as PCC.

2) Except note 1，for the other inter-band CA combinations, all the listed bands above can be used as PCC or SCC.

3) The channel spacing and aggregated channel bandwidth for CA are identical to the associated specification in 3GPP TS 36.101 V12.8.0.

4) The reference test frequencies for CA refer to 3GPP TS 36.508 V12.5.0.

3.5 LABORATORY ENVIRONMENT

Temperature	Min. = 18ºC, Max. = 25ºC
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

3.6 MAIN TEST INSTRUMENTS

Item	Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. Interval
1	Data Acquisition Electronics	Speag	DAE4	1390	Sep. 18, 2015	1 Year
2	E-field Probe	Speag	EX3DV4	3932	Feb. 19, 2016	1 Year
3	E-field Probe	Speag	EX3DV4	3661	Apr. 24, 2015	1 Year
4	E-field Probe	Speag	EX3DV4	3578	Mar. 31, 2015	1 Year
5	System Validation Dipole	Speag	D750V3	1095	Sep. 30, 2015	1 Year
6	System Validation Dipole	Speag	D835V2	4d160	Sep. 30, 2015	1 Year
7	System Validation Dipole	Speag	D1750V2	1101	Sep. 22, 2015	1 Year
8	System Validation Dipole	Speag	D1900V2	5d179	Sep. 29, 2015	1 Year
9	System Validation Dipole	Speag	D2450V2	919	Sep. 28, 2015	1 Year
10	System Validation Dipole	Speag	D2600V2	1067	Sep. 28, 2015	1 Year
11	System Validation Dipole	Speag	D5GHzV2	1160	Oct. 05, 2015	1 Year
12	Twin Sam Phantom	Speag	Twin Sam Phantom V5.0	1784	N/A	N/A
13	Twin Sam Phantom	Speag	Twin Sam Phantom V5.0	1896	N/A	N/A
14	8960 Series 10 Wireless Com Test set	Agilent	E5515E	MY52112163	Aug. 03, 2015	1 Year
15	8960 Series 10 Wireless Com Test set	Agilent	E5515E	MY52111002	Sep. 09, 2015	1 Year
16	CMW500-Wideband Radio Communication Tester	RS	CMW500	153083	May. 06, 2015	1 Year
17	Power Amplifier	Mini-Circuits	ZHL-42W+	QA1333003	NA	N/A
18	Power Amplifier	Mini-Circuits	ZVE-8G+	520701341	NA	N/A
19	ENA Network Analyzer	Agilent	E5071C	MY46102965	Mar. 29, 2015	1 Year
20	ENA Network Analyzer	Agilent	E5071C	MY46102965	Mar. 27, 2016	1 Year
21*	MXG Analog Signal Generator	Agilent	N5181A	MY49060710	Oct .11, 2015	1 Year
22	P-series power meter	Agilent	N1911A	MY45100473	Oct. 26, 2015	1 Year
23	wideband power sensor	Agilent	N1921A	MY51100041	Oct. 26, 2015	1 Year
24	Power Meter	Anritsu	ML2495A	1128009	Mar. 28, 2015	1 Year
25	Pulse Power Sensor	Anritsu	MA 2411B	1027500	Mar. 28, 2015	1 Year
26	power Meter	Anritsu	ML2495A	1128009	Mar. 27, 2016	1 Year
27*	Pulse Power Sensor	Anritsu	MA 2411B	1027500	Mar. 27, 2016	1 Year
28*	Dielectric Assessment Kit	Speag	DAK-3.5	1226	Aug. 04, 2015	1 Year
29	Dual directional coupler	Agilent	777D	50208	Mar. 29, 2015	1 Year
30	Dual directional coupler	Woken	TS-PCC0M-05	107090019	Mar. 16, 2016	1 Year

Remark: 1.” N/A” denotes no model name, serial No. or calibration specified.
All calibration period of equipment list is one year.
2. * These test equipments have been recalibrated between the test periods. All these test equipments were within the valid period when the tests were performed.

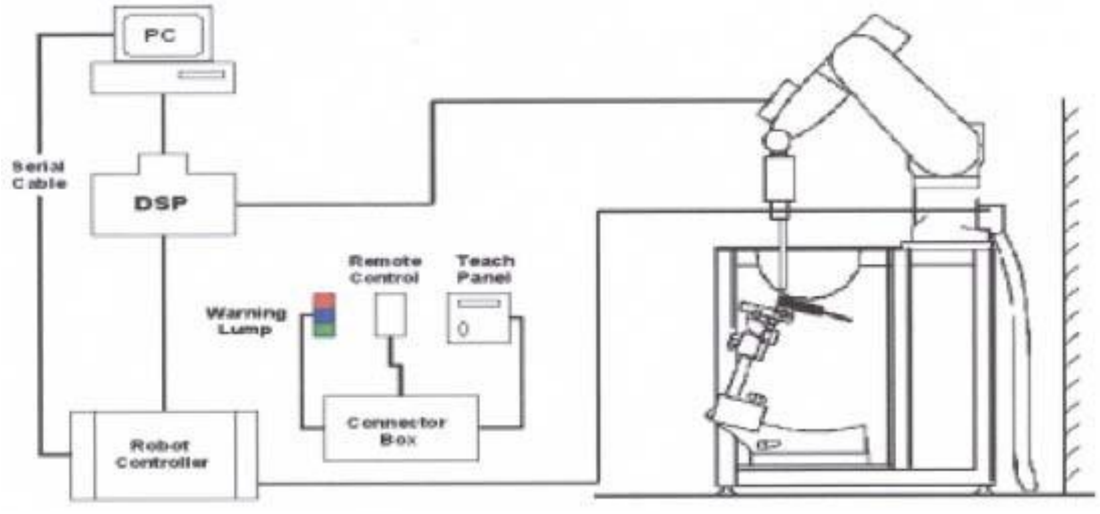
4.SAR MEASUREMENTS SYSTEM CONFIGURATION

4.1SAR MEASUREMENT SET-UP

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

1. A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
2. A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
3. A data acquisition electronic (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.
4. A unit to operate the optical surface detector which is connected to the EOC.
5. The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5 measurement server.
6. TheDASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 7
7. DASY5 software and SEMCAD data evaluation software.
8. Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
9. The generic twin phantom enabling the testing of left-hand and right-hand usage.
10. The device holder for handheld mobile phones.
11. Tissue simulating liquid mixed according to the given recipes.
12. System validation dipoles allowing to validate the proper functioning of the system.

4.1.1Test Setup Layout



4.2DASY5E-FIELDPROBESYSTEM

The SAR measurements were conducted with the dosimetric probe EX3DV4(manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

4.2.1EX3DV4 PROBE SPECIFICATION

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 µW/g to > 100 mW/g Linearity:± 0.2dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Distance from probe tip to dipole centers: 1.0 mm

EX3DV4 E-field Probe

4.2.2E-FIELD PROBE CALIBRATION

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than ±10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$SAR = C\frac{\Delta T}{\Delta t}$$

Where: Δt = Exposure time (30 seconds),

C = Heat capacity of tissue (brain or muscle),

ΔT = Temperature increase due to RF exposure.

Or

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

Where: σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m3).

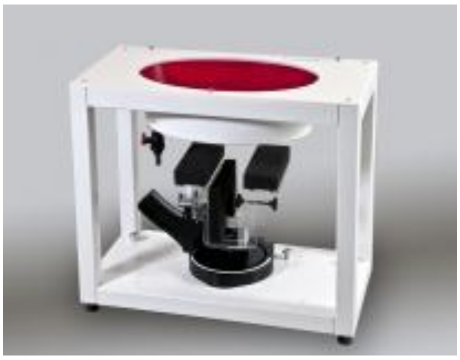
4.2.3OTHER TEST EQUIPMENT

4.2.3.1. Device Holder for Transmitters

Construction: Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices (e.g., laptops, cameras, etc.) It is light weight and fits easily on the upper part of the Mounting Device in place of the phone positioner. The extension is fully compatible with the Twin SAM, ELI4and SAM v6.0Phantoms.
Material: POM, Acrylic glass, Foam

4.2.3.2 Phantom

Model	ELI4 Phantom
Construction	Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.
Shell Thickness	2±0.1 mm
Filling Volume	Approx. 30 liters
Dimensions	Length: 600 mm ; Width: 190mm Height: adjustable feet
Aailable	Special



Model	Twin SAM
Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.
Shell Thickness	2 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length:1000mm; Width: 500mm Height: adjustable feet
Aailable	Special

4.2.4SCANNING PROCEDURE

The DASY5 installation includes predefined files with recommended procedures for measurements and validation. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.

The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT’s output power and should vary max. ± 5 %.

The “surface check” measurement tests the optical surface detection system of the DASY5 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above ± 0.1mm). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within ± 30°.)

- Area Scan

The “area scan” measures the SAR above the DUT or verification dipole on a parallel plane to the surface. It is used to locate the approximate location of the peak SAR with 2D spline interpolation. The robot performs a stepped movement along one grid axis while the local electrical field strength is measured by the probe. The probe is touching the surface of the SAM during acquisition of measurement values. The standard scan uses large grid spacing for faster measurement.

Standard grid spacing for head measurements is 15 mm in x- and y- dimension(≤2GHz)，12 mm in x- and y- dimension(2-4 GHz) and 10mm in x- and y- dimension(4-6GHz). If a finer resolution is needed, the grid spacing can be reduced. Grid spacing and orientation have no influence on the SAR result. For special applications where the standard scan method does not find the peak SAR within the grid, e.g. mobile phones with flip cover, the grid can be adapted in orientation.

- Zoom Scan

A “zoom scan” measures the field in a volume around the 2D peak SAR value acquired in the previous “coarse” scan. This is a fine grid with maximum scan spatial resolution: Δx_{zoom}, $\Delta y_{zoom} \leq$ 2GHz -≤8mm, 2-4GHz -≤5 mm and 4-6 GHz-≤4mm; $\Delta z_{zoom} \leq$3GHz -≤5 mm, 3-4 GHz-≤4mm and 4-6GHz-≤2mm where the robot additionally moves the probe along the z-axis away from the bottom of the Phantom. DASY is also able to perform repeated zoom scans if more than 1 peak is found during area scan. In this document, the evaluated peak 1g and 10g averaged SAR values are shown in the 2D-graphics in Appendix B. Test results relevant for the specified standard (see chapter 1.4.)are shown in table form form in chapter 7.2.

A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 2 mm steps. This measurement shows the continuity of the liquid and can - depending in the field strength – also show the liquid depth.

The following table summarizes the area scan and zoom scan resolutions per FCC KDB 865664D01:

Frequency	Maximun Area Scan resolution (Δx_{area}, Δy_{area})	Maximun Zoom Scan spatial resolution (Δx_{Zoom}, Δy_{Zoom})	Maximun Zoom Scan spatial resolution			Minimum zoom scan volume (x,y,z)
			Uniform Grid	Graded Grad		
			$\Delta z_{Zoom}(n)$	$\Delta z_{Zoom}(1)$*	$\Delta z_{Zoom}(n>1)$*	
≤2GHz	≤15mm	≤8mm	≤5mm	≤4mm	≤1.5*Δz_{Zoom}(n-1)	≥30mm
2-3GHz	≤12mm	≤5mm	≤5mm	≤4mm	≤1.5*Δz_{Zoom}(n-1)	≥30mm
3-4GHz	≤12mm	≤5mm	≤4mm	≤3mm	≤1.5*Δz_{Zoom}(n-1)	≥28mm
4-5GHz	≤10mm	≤4mm	≤3mm	≤2.5mm	≤1.5*Δz_{Zoom}(n-1)	≥25mm
5-6GHz	≤10mm	≤4mm	≤2mm	≤2mm	≤1.5*Δz_{Zoom}(n-1)	≥22mm

4.2.5SPATIAL PEAK SAR EVALUATION

The spatial peak SAR - value for 1 and 10 g is evaluated after the Cube measurements have been done. The basis of the evaluation are the SAR values measured at the points of the fine cube grid consisting of 5 x 5 x 7 points(with 8mm horizontal resolution) or 7 x 7 x 7 points(with 5mm horizontal resolution) or 8 x 8 x 7 points(with 4mm horizontal resolution). The algorithm that finds the maximal averaged volume is separated into three different stages.

- The data between the dipole center of the probe and the surface of the phantom are extrapolated. This data cannot be measured since the center of the dipole is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is about 1 mm (see probe calibration sheet). The extrapolated data from a cube measurement can be visualized by selecting "Graph Evaluated".
- The maximum interpolated value is searched with a straight-forward algorithm. Around this maximum the SAR - values averaged over the spatial volumes (1g or 10 g) are computed using the 3d-spline interpolation algorithm. If the volume cannot be evaluated (i.e., if a part of the grid was cut off by the boundary of the measurement area) the evaluation will be started on the corners of the bottom plane of the cube.
- All neighboring volumes are evaluated until no neighboring volume with a higher average value is found.

Extrapolation

The extrapolation is based on a least square algorithm [W. Gander, Computermathematik, p.168-180]. Through the points in the first 3 cm along the z-axis, polynomials of order four are calculated. These polynomials are then used to evaluate the points between the surface and the probe tip. The points, calculated from the surface, have a distance of 1 mm from each other.

Interpolation

The interpolation of the points is done with a 3d-Spline. The 3d-Spline is composed of three one-dimensional splines with the "Not a knot"-condition [W. Gander, Computermathematik, p.141-150] (x, y and z -direction) [Numerical Recipes in C, Second Edition, p.123ff].

Volume Averaging

At First the size of the cube is calculated. Then the volume is integrated with the trapezoidal algorithm. 8000 points (20x20x20) are interpolated to calculate the average.

Advanced Extrapolation

DASY5 uses the advanced extrapolation option which is able to compansate boundary effects on E-field probes.

4.2.6DATA STORAGE AND EVALUATION

4.2.5.1Data Storage

The DASY5 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DAE4". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [mW/g], [mW/cm^2], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

4.4.2 Data Evaluation by SEMCAD

The SEMCAD software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:	Sensitivity	Normi, a_{i0}, a_{i1}, a_{i2}
	Conversion factor	$ConvF_i$
	Diode compression point	Dcp_i
Device parameters:	Frequency	f
	Crest factor	cf
Media parameters:	Conductivity	
	Density	

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY5 components. In the direct measuring mode of the multi meter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics.

If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot cf / dcp_i$$

With V_i = compensated signal of channel i (i = x, y, z)

U_i = input signal of channel i (i = x, y, z)

cf = crest factor of exciting field (DASY parameter)

dcp_i = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes: $E_i = (V_i \,/\, Norm_i \cdot ConvF \,)^{1/2}$

H-field probes: $H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1} f + a_{i2} f^2) \,/\, f$

With V_i = compensated signal of channel i (i = x, y, z)

$Norm_i$ = sensor sensitivity of channel i (i = x, y, z)
[mV/(V/m)^2] for E-field Probes

ConvF = sensitivity enhancement in solution

aij = sensor sensitivity factors for H-field probes

f = carrier frequency [GHz]

E_i = electric field strength of channel i in V/m

H_i = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = (E_X{}^2 + E_Y{}^2 + E_Z{}^2)^{1/2}$$

The primary field data are used to calculate the derived field units.

$$SAR = (E_{tot})^2 \cdot \sigma \,/\, (\rho \cdot 1000)$$

With SAR = local specific absorption rate in mW/g

E_{tot} = total field strength in V/m
= conductivity in [mho/m] or [Siemens/m]
= equivalent tissue density in g/cm^3

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid. The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{pwe} = E_{tot}{}^2 \,/\, 3770 \text{ or } P_{pwe} = H_{tot}{}^2 \cdot 37.7$$

With P_{pwe} = equivalent power density of a plane wave in mW/cm^2

E_{tot} = total field strength in V/m

H_{tot} = total magnetic field strength in A/m

5. SYSTEM VERIFICATION PROCEDURE

5.1 TISSUE VERIFICATION

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine of the dielectic parameter are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within ± 5% of the target values.

The following materials are used for producing the tissue-equivalent materials.

Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono-hexylether
Head 750	0.2	-	0.2	1.5	56.0	-	42.1	-
Head 835	0.2	-	0.2	1.5	57.0	-	41.1	-
Head 1750	-	47.0	-	0.4	-	-	52.6	-
Head 1900	-	44.5	-	0.2	-	-	55.3	-
Head 2450	-	45.0	-	0.1	-	-	54.9	-
Head 2600	-	45.1	-	0.1	-	-	54.8	-
Head 5G	-	-	-	-	-	17.2	65.5	17.3

Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono-hexylether
Body 750	0.2	-	0.2	0.8	48.8	-	50.0	-
Body 835	0.2	-	0.2	0.9	48.5	-	50.2	-
Body 1750	-	31.0	-	0.2	-	-	68.8	-
Body 1900	-	29.5	-	0.3	-	-	70.2	-
Body 2450	-	31.4	-	0.1	-	-	68.5	-
Body 2600	-	31.8	-	0.1	-	-	68.1	-
Body 5G	-	-	-	-	-	10.7	78.6	10.7

Salt: 99+% Pure Sodium Chloride; Sugar: 98+% Pure Sucrose; Water: De-ionized, 16M + resistivity
HEC: Hydroxyethyl Cellulose; DGBE: 99+% Di(ethylene glycol) butyl ether,[2-(2-butoxyethoxy)ethanol]
Triton X-100(ultra pure): Polyethylene glycol mono [4-(1,1,3,3-tetramethylbutyl)phenyl]ether

Tissue Verification									
Tissue Type	Frequency (MHz)	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (εr)	Targeted Conductivity (σ)	Targeted Permittivity (εr)	Deviation Conductivity (σ) (%)	Deviation Permittivity (εr) (%)	Date
Head	750	22.2	0.864	41.270	0.89	41.9	-2.90	-1.50	Mar. 26, 2016
Head	750	22.3	0.909	40.260	0.89	41.9	2.11	-3.91	Mar. 31, 2016
Head	750	22.2	0.869	41.210	0.89	41.9	-2.36	-1.65	Apr. 22, 2016
Head	835	22.3	0.886	42.270	0.90	41.5	-1.59	1.86	Mar. 08, 2016
Head	835	22.3	0.878	41.760	0.90	41.5	-2.44	0.63	Mar. 09, 2016
Head	835	22.4	0.881	41.930	0.90	41.5	-2.07	1.04	Mar. 14, 2016
Head	835	22.1	0.887	42.430	0.90	41.5	-1.41	2.24	Mar. 16, 2016
Head	835	22.2	0.885	42.210	0.90	41.5	-1.69	1.71	Mar. 25, 2016
Head	835	22.4	0.904	42.590	0.90	41.5	0.42	2.63	Mar. 31, 2016
Head	835	22.4	0.908	42.159	0.90	41.5	0.89	1.59	Apr. 14, 2016
Head	835	22.1	0.920	42.680	0.90	41.5	2.22	2.84	Apr. 29, 2016
Head	1750	22.5	1.366	40.580	1.37	40.1	-0.29	1.20	Mar. 09, 2016
Head	1750	22.6	1.365	40.650	1.37	40.1	-0.36	1.37	Mar. 20, 2016
Head	1900	22.1	1.408	40.790	1.40	40.0	0.57	1.98	Mar. 13, 2016
Head	1900	22.4	1.365	41.470	1.40	40.0	-2.50	3.68	Mar. 22, 2016
Head	1900	22.3	1.358	40.580	1.40	40.0	-3.00	1.45	Mar. 24, 2016
Head	1900	22.2	1.401	41.340	1.40	40.0	0.07	3.35	Apr. 29, 2016
Head	2450	22.5	1.799	39.220	1.80	39.2	-0.06	0.05	Apr. 07, 2016
Head	2450	22.4	1.759	39.340	1.80	39.2	-2.28	0.36	Apr. 14, 2016
Head	2600	22.1	2.024	38.320	1.96	39.0	3.27	-1.74	Mar. 13, 2016
Head	2600	22.4	2.011	38.470	1.96	39.0	2.60	-1.36	Mar. 24, 2016
Head	2600	22.1	2.028	38.340	1.96	39.0	3.47	-1.69	Mar. 31, 2016
Head	5200	22.5	4.700	35.400	4.66	36.0	0.86	-1.67	Apr. 08, 2016
Head	5200	22.4	4.621	37.210	4.66	36.0	-0.84	3.36	Apr. 14, 2016
Head	5300	22.5	4.872	35.080	4.76	35.9	2.35	-2.28	Apr. 08, 2016
Head	5300	22.4	4.771	36.950	4.76	35.9	0.23	2.92	Apr. 14, 2016
Head	5600	22.5	5.254	34.130	5.07	35.5	3.63	-3.86	Apr. 08, 2016
Head	5600	22.4	5.134	36.320	5.07	35.5	1.26	2.31	Apr. 14, 2016
Head	5800	22.5	5.445	34.060	5.27	35.3	3.32	-3.51	Apr. 08, 2016
Head	5800	22.4	5.353	35.970	5.27	35.3	1.57	1.90	Apr. 14, 2016
Body	750	22.2	0.966	55.180	0.96	55.5	0.61	-0.58	Mar. 24, 2016
Body	750	22.1	0.959	55.750	0.96	55.5	-0.10	0.45	Mar. 25, 2016
Body	835	22.3	0.973	54.210	0.97	55.2	0.31	-1.79	Mar. 18, 2016
Body	835	22.2	0.948	54.420	0.97	55.2	-2.27	-1.41	Mar. 22, 2016
Body	835	22.2	0.978	55.640	0.97	55.2	0.79	0.80	Mar. 24, 2016
Body	835	22.1	0.973	55.330	0.97	55.2	0.31	0.24	Apr. 30, 2016
Body	1750	22.4	1.471	52.360	1.49	53.4	-1.28	-1.95	Mar. 25, 2016
Body	1900	22.1	1.552	51.920	1.52	53.3	2.11	-2.59	Mar. 20, 2016
Body	1900	22.3	1.554	51.840	1.52	53.3	2.24	-2.74	Mar. 23, 2016
Body	1900	22.4	1.550	52.040	1.52	53.3	1.97	-2.36	Mar. 24, 2016
Body	1900	22.3	1.499	51.990	1.52	53.3	-1.38	-2.46	Apr. 28, 2016
Body	2450	22.5	1.934	51.830	1.95	52.7	-0.82	-1.65	Apr. 09, 2016
Body	2600	22.3	2.226	52.020	2.16	52.5	3.06	-0.91	Mar. 18, 2016
Body	2600	22.2	2.199	52.430	2.16	52.5	1.81	-0.13	Mar. 20, 2016
Body	2600	22.4	2.134	52.620	2.16	52.5	-1.20	0.23	Mar. 24, 2016
Body	2600	22.1	2.146	52.590	2.16	52.5	-0.65	0.17	Apr. 15, 2016
Body	5200	22.6	5.214	49.320	5.30	49.0	-1.62	0.65	Apr. 09, 2016
Body	5300	22.6	5.334	48.860	5.42	48.9	-1.59	-0.08	Apr. 09, 2016

Body	5600	22.6	5.644	46.650	5.77	48.5	-2.18	-3.81	Apr. 09, 2016
Body	5800	22.6	6.013	48.210	6.00	48.2	0.22	0.02	Apr. 09, 2016

Note:
1)The dielectric parameters of the tissue-equivalent liquid should be measured under similar ambient conditions and within 2 °C of the conditions expected during the SAR evaluation to satisfy protocol requirements.
2)KDB 865664 was ensured to be applied for probe calibration frequencies greater than or equal to 50MHz of the EUT frequencies.
3)The above measured tissue parameters were used in the DASY software to perform interpolation via the DASY software to determine actual dielectric parameters at the test frequencies. The SAR test plots may slightly differ from the table above since the DASY rounds to three significant digits.

5.2 SYSTEM CHECK

The system check is performed for verifying the accuracy of the complete measurement system and performance of the software. The system check is performed with tissue equivalent material according to IEEE P1528 (described above). The following table shows system check results for all frequency bands and tissue liquids used during the tests.

System Check	Date	Frequency (MHz)	Targeted SAR-1g (W/kg)	Measured SAR-1g (W/kg)	normalized SAR-1g (W/kg)	Deviation (%)	Dipole S/N
Head	Mar. 26, 2016	750	8.27	1.99	7.96	-3.75	1095
Head	Mar. 31, 2016	750	8.27	2.01	8.04	-2.78	1095
Head	Apr. 22, 2016	750	8.27	2.06	8.24	-0.36	1095
Head	Mar. 08, 2016	835	9.50	2.41	9.64	1.47	4d160
Head	Mar. 09, 2016	835	9.50	2.27	9.08	-4.42	4d160
Head	Mar. 14, 2016	835	9.50	2.43	9.72	2.32	4d160
Head	Mar. 16, 2016	835	9.50	2.45	9.80	3.16	4d160
Head	Mar. 25, 2016	835	9.50	2.35	9.40	-1.05	4d160
Head	Mar. 31, 2016	835	9.50	2.32	9.28	-2.32	4d160
Head	Apr. 14, 2016	835	9.50	2.33	9.32	-1.89	4d160
Head	Apr. 29, 2016	835	9.50	2.45	9.80	3.16	4d160
Head	Mar. 09, 2016	1750	36.60	9.28	37.12	1.42	1101
Head	Mar. 20, 2016	1750	36.60	9.23	36.92	0.87	1101
Head	Mar. 13, 2016	1900	39.70	10.03	40.12	1.06	5d179
Head	Mar. 22, 2016	1900	39.70	9.53	38.12	-3.98	5d179
Head	Mar. 24, 2016	1900	39.70	9.66	38.64	-2.67	5d179
Head	Apr. 29, 2016	1900	39.70	9.56	38.24	-3.68	5d179
Head	Apr. 07, 2016	2450	52.00	12.79	51.16	-1.62	919
Head	Apr. 14, 2016	2450	52.00	12.48	49.92	-4.00	919
Head	Mar. 13, 2016	2600	56.80	14.70	58.80	3.52	1067
Head	Mar. 24, 2016	2600	56.80	14.82	59.28	4.37	1067
Head	Mar. 31, 2016	2600	56.80	14.45	57.80	1.76	1067
Head	Apr. 08, 2016	5200	80.70	8.23	82.30	1.98	1160
Head	Apr. 14, 2016	5200	80.70	7.83	78.30	-2.97	1160
Head	Apr. 08, 2016	5300	82.70	8.34	83.40	0.85	1160
Head	Apr. 14, 2016	5300	82.70	7.95	79.50	-3.87	1160
Head	Apr. 08, 2016	5600	87.00	8.92	89.20	2.53	1160
Head	Apr. 14, 2016	5600	87.00	8.42	84.20	-3.22	1160
Head	Apr. 08, 2016	5800	82.00	8.39	83.90	2.32	1160
Head	Apr. 14, 2016	5800	82.00	8.35	83.50	1.83	1160
Body	Mar. 24, 2016	750	8.65	2.17	8.68	0.35	1095
Body	Mar. 25, 2016	750	8.65	2.21	8.84	2.20	1095
Body	Mar. 18, 2016	835	9.52	2.45	9.80	2.94	4d160
Body	Mar. 22, 2016	835	9.52	2.37	9.48	-0.42	4d160
Body	Mar. 24, 2016	835	9.52	2.41	9.64	1.26	4d160
Body	Apr. 30, 2016	835	9.52	2.43	9.72	2.10	4d160
Body	Mar. 25, 2016	1750	35.70	9.22	36.88	3.31	1101
Body	Mar. 20, 2016	1900	39.60	10.01	40.04	1.11	5d179
Body	Mar. 23, 2016	1900	39.60	9.87	39.48	-0.30	5d179
Body	Mar. 24, 2016	1900	39.60	9.83	39.32	-0.71	5d179
Body	Apr. 28, 2016	1900	39.60	9.51	38.04	-3.94	5d179
Body	Apr. 09, 2016	2450	51.10	12.26	49.04	-4.03	919
Body	Mar. 18, 2016	2600	54.10	13.40	53.60	-0.92	1067
Body	Mar. 20, 2016	2600	54.10	13.63	54.52	0.78	1067
Body	Mar. 24, 2016	2600	54.10	14.02	56.08	3.66	1067
Body	Apr. 15, 2016	2600	54.10	13.76	55.04	1.74	1067
Body	Apr. 09, 2016	5200	77.80	7.48	74.80	-3.86	1160

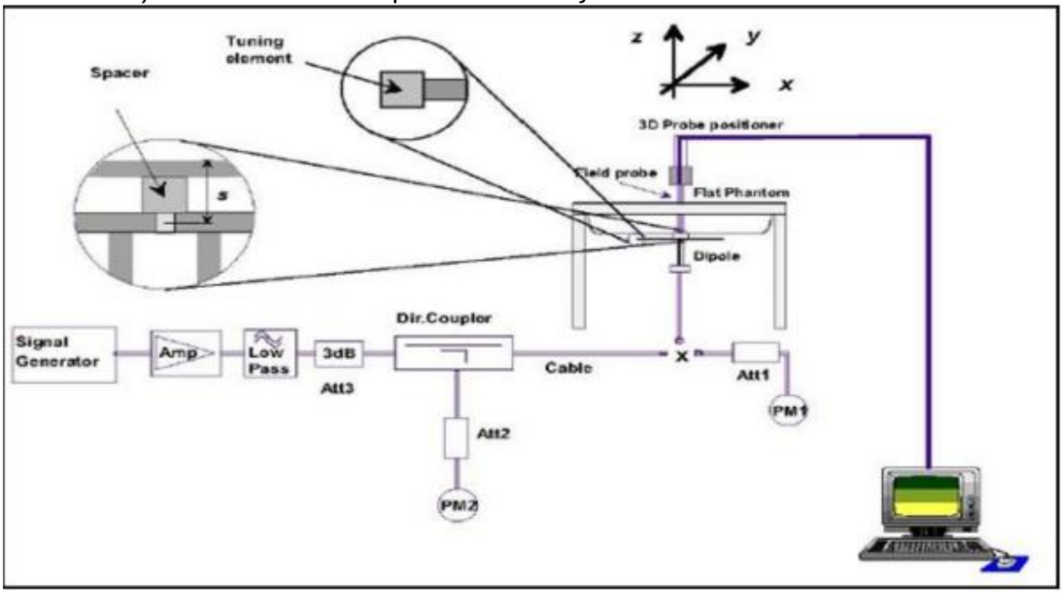
Body	Apr. 09, 2016	5300	78.40	7.56	75.60	-3.57	1160
Body	Apr. 09, 2016	5600	81.50	8.22	82.20	0.86	1160
Body	Apr. 09, 2016	5800	78.30	7.74	77.40	-1.15	1160

System Check	Date	Frequency (MHz)	Targeted SAR-10g (W/kg)	Measured SAR-10g (W/kg)	normalized SAR-10g (W/kg)	Deviation (%)	Dipole S/N
Body	Mar. 25, 2016	1750	19.00	4.86	19.44	2.32	1101
Body	Mar. 20, 2016	1900	20.80	5.38	21.52	3.46	5d179
Body	Mar. 24, 2016	1900	20.80	5.41	21.64	4.04	5d179
Body	Mar. 24, 2016	2600	24.00	6.20	24.80	3.33	1067
Body	Apr. 09, 2016	5300	21.90	2.21	22.10	0.91	1160
Body	Apr. 09, 2016	5600	22.80	2.32	23.20	1.75	1160

5.3 SYSTEM CHECK PROCEDURE

The system check is performed by using a system check dipole which is positioned parallel to the planar part of the SAM phantom at the reference point. The distance of the dipole to the SAM phantom is determined by a plexiglass spacer. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SMA. It is fed with a power of 250 mW(below 5GHz) or 100mW(above 5GHz). To adjust this power a power meter is used. The power sensor is connected to the cable before the system check to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the system check to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test.

System check results have to be equal or near the values determined during dipole calibration (target SAR in table above) with the relevant liquids and test system.



6.SAR MEASUREMENT VARIABILITY AND UNCERTAINTY

6.1SAR MEASUREMENT VARIABILITY

Per KDB865664 D01 SAR measurement 100 MHz to 6 GHz v01r04, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. The additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

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.

The detailed repeated measurement results are shown in Section 8.2.

6.2SAR MEASUREMENT UNCERTAINTY

Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04,when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis.

7. OPERATIONAL CONDITIONS DURING TEST

7.1 SAR TEST CONFIGURATION

7.1.1 GSM TEST CONFIGURATION

SAR tests for GSM850 and GSM1900, a communication link is set up with a base station by air link. Using 8960 Series the power lever is set to "5"and "0" in SAR of GSM850 and GSM1900. The tests in the band of GSM850 and GSM1900 are performed in the mode of GPRS/EGPRS function. Since the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslot is 5. The EGPRS class is 12 for this EUT, it has at most 4 timeslots in uplink, and at most 4 timeslots in downlink, the maximum total timeslot is 5.
When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

7.1.2UMTS TEST CONFIGURATION

1. Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the procedures description in section 5.2 of 3GPP TS 34.121,using the appropriate RMC or AMR with TPC(transmit power control) set to all “1s” for WCDMA/HSDPA or applying the required inner loop power control procedure to maintain maximum output power while HSUPA is active. Result for all applicable physical channel configurations(DPCCH,DPDCHn and spreading codes, HSDPA, HSPA)
Should be tabulated in the SAR report .All configuration that are not supported by the DUT or cannot be measured due to technical or equipment limitation should be clearly identified.

2. WCDMA

(1).Head SAR Measurements
SAR for Head exposure configurations in voice mode is measured using a 12.2 kbps RMC with TPC bits configured to all “1s”. SAR in AMR configurations is not required when the maximum average output of each RF channel for 12.2 kbps AMR is less than ¼ dB higher than that measured in 12.2 kbps RMC. Otherwise SAR is measured on the maximum output channel in 12.2 kbps AMR with 3.4kbps SRB(signalling radio bearer) using the exposure configuration that results in the highest SAR in12.2kbps RMC for that RF channel.

(2).Body SAR Measurements
SAR for body exposure configurations is measured using the 12.2 kbps RMC with the TPC bits configured to all “1s”. SAR for other spreading codes and multiple DPDCHn, when supported by the EUT, are not required when the maximum average outputs of each RF channel, for each spreading code and DPDCHn configuration, are less than ¼ dB higher than those measured in 12.2 kbps RMC.

3. HSDPA

SAR for body exposure configurations is measured according to the “Body SAR Measurements"" procedures of 3G device. In addition, body SAR is also measured for HSDPA when the maximum average outputs of each RF channel with HSDPA active is at ¼ dB higher than that measured without HSDPA using 12.2kbps RMC or the maximum SAR 12.2kbps RMC is above 75% of the SAR limit. Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2kbps RMC configured in Test Loop Mode 1, using the highest body SAR configuration in 12.2 kbps RMC without HSDPA.
HSDPA should be configured according to UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HAPRQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission condition, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. The β_c andβ_d gain factors for DPCCH and DPDCH were set according to the values in the below table,β_{hs} for HS-DPCCH is set automatically to the correct value when Δ ACK,Δ NACK, Δ CQI = 8. The variation of theβ_c /β_d ratio causes a power reduction at sub-tests 2 - 4.

Sub-test	β_c	β_d	β_d (SF)	β_c /β_d	β_{hs} (1)	CM(dB)(2)	MPR (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0	0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: ΔACK, ΔNACK and ΔCQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$
Note 2 : CM=1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH,DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.
Note 3 : For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1,TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$

The measurements were performed with a Fixed Reference Channel (FRC) and H-Set 1 QPSK.

Settings of required H-Set 1 QPSK acc. to 3GPP 34.121

Parameter	Value
Nominal average inf. bit rate	534 kbit/s
Inter-TTI Distance	3 TTI‟s
Number of HARQ Processes	2 Processes
Information Bit Payload	3202 Bits
MAC-d PDU size	336 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	4800 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	9600 SMLs
Coding Rate	0.67
Number of Physical Channel Codes	5

HSDPA UE category

HS-DSCH Category	Maximum HS-DSCH Codes Received	Minimum Inter-TTI Interval	Maximum HS-DSCH Transport Block Bits/HS-DSCH TTI	Total Soft Channel Bits
1	5	3	7298	19200
2	5	3	7298	28800
3	5	2	7298	28800
4	5	2	7298	38400
5	5	1	7298	57600
6	5	1	7298	67200
7	10	1	14411	115200
8	10	1	14411	134400
9	15	1	25251	172800
10	15	1	27952	172800
11	5	2	3630	14400
12	5	1	3630	28800
13	15	1	34800	259200
14	15	1	42196	259200
15	15	1	23370	345600
16	15	1	27952	345600

4. HSUPA

SAR for Body exposure configurations is measured according to the "Body SAR Measurements" procedures of 3G device. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the primary mode and the adjusted SAR is ≤ 1.2W/kg, SAR measurement is not required for the secondary mode.

Per KDB941225 D01v03r01, the 3G SAR test reduction procedures is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures for the highest reported body exposure SAR configuration in 12.2 kbps RMC.

Due to inner loop power control requirements in HSUPA, a commercial communication test set should be used for the output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSDPA should be configured according to the values indicated below as well as other applicable procedures described in the "WCDMA Handset" and „Release 5 HSDPA Data Device" sections of 3G device.

Subtests for WCDMA Release 6 HSUPA

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	β_{ec}	β_{ed}	β_{ec} (SF)	β_{ed} (code)	CM (2) (dB)	MPR (dB)	AG (4) Index	E-TFCI
1	11/15 (3)	15/15 (3)	64	11/15 (3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}:47/15 β_{ed2}:47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 (4)	15/15 (4)	64	15/15 (4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: ΔACK, ΔNACK and ΔCQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

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

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

Note 4 : For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1,TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$

Note 5 : Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g

Note 6: β_{ed} can not be set directly; it is set by Absolute Grant Value.

HSUPA UE category

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCH TTI(ms)	Minimum Speading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	2.00
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	10	2SF2&2SF4	11484	5.76
	4	4	2		20000	2.00
7 (No DPDCH)	4	8	2	2SF2&2SF4	22996	?
	4	4	10		20000	?

NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4.UE categories 1 to 6 support QPSK only. UE category 7 supports QPSK and 16QAM.(TS25.306-7.3.0).

5. DC-HSDPA

In DC-HSDPA implementation of this device, the uplink parameters are the same as HSDPA. No additional channels and modulations (16 QAM, and 64 QAM) are supported in uplink. The difference is only in the downlink parameters, where two carriers are supported. HSDPA settings were used on uplink.

For Rel. 8 DC-HSDPA apply the four subtests from HSDPA Release 5 except use fixed reference channel H-Set 12 for DC-HSDPA. And we can apply the same SAR test exclusion criteria used for Rel. 6 HSPA for Rel. 7 HSPA+ and Rel. 8 DC-HSDPA. That is, if the HSPA, HSPA+, or the DC-HSDPA maximum output is not more than 0.25 dB higher than WCDMA, SAR measurement for those modes is not required.

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS 34.108 v9.5.0. A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH _Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13
The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.
The measurements were performed with a Fixed Reference Channel (FRC) H-Set 12 with QPSK

Parameter	Value
Nominal average inf. bit rate	60 kbit/s
Inter-TTI Distance	1 TTI"s
Number of HARQ Processes	6 Processes
Information Bit Payload	120 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	960 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	3200 SMLs
Coding Rate	0.15
Number of Physical Channel Codes	1

Note:
1.The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table above.
2.Maximum number of transmission is limited to 1,i.e.,retransmission is not allowed. The redundancy and constellation version 0 shall be used.

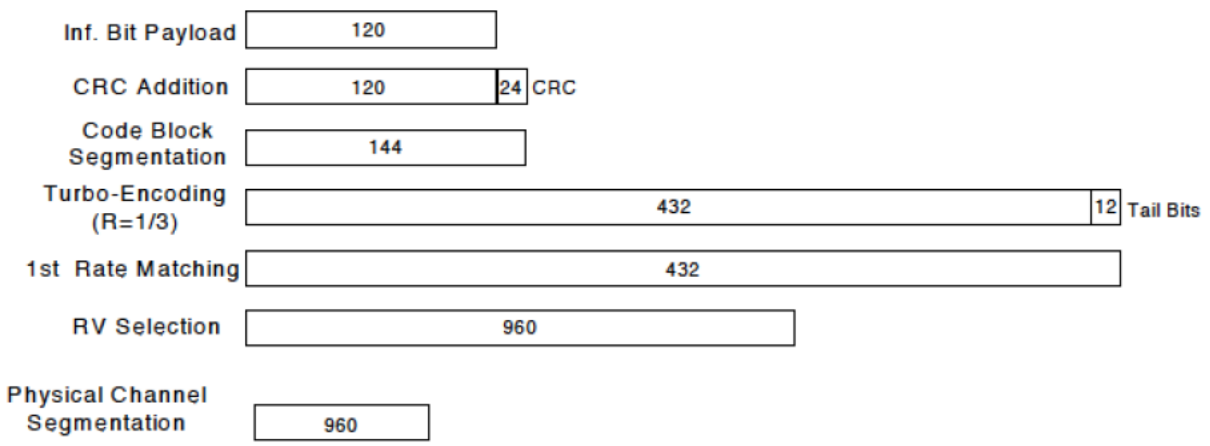


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 5 procedures. A summary of subtest settings are illustrated below:

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	CM(dB)(2)	MPR (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0	0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ ACK, Δ NACK and Δ CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$
Note 2 : CM=1 for β_c/β_d= 12/15, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH,DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.
Note 3 : For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1,TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$

Up commands are set continuously to set the UE to Max power.

Note:
1.The Dual Carriers transmission only applies to HSDPA physical channels
2.The Dual Carriers belong to the same Node and are on adjacent carriers.
3.The Dual Carriers do not support MIMO to serve UEs configured for dual cell operation
4.The Dual Carriers operate in the same frequency band .
5.The device doesn't support the modulation of 16QAM in uplink but 64QAM in downlink for DC-HSDPA mode.
6.The device doesn’t support carrier aggregation for it just can operate in Release 8.

7.1.3 LTE TEST CONFIGURATION

SAR for LTE band exposure configurations is measured according to the procedures of KDB 941225 D05 SAR for LTE Devices v02r05. The CMW500 Wide Band Radio Communication Tester was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR test were performed with the same number of RB and RB offsets transmitting on all TTI frames(Maximum TTI)

1. Spectrum Plots for RB configurations

A properly configured base station simulator was used for LTE output power measurements and SAR testing. Therefore, spectrum plots for RB configurations were not required to be included in this report.

2. MPR

When MPR is implemented permanently within the UE, regardless of network requirements, only those RB configurations allowed by 3GPP for the channel bandwidth and modulation combinations may be tested with MPR active. Configurations with RB allocations less than the RB thresholds required by 3GPP must be tested without MPR.
The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101:

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

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

3. A-MPR

A-MPR(Additional MPR) has been disabled for all SAR tests by using Network Signalling Value of “NS_01”on the base station simulator.

4. LTE procedures for SAR testing

A) Largest channel bandwidth standalone SAR test requirements

i) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

ii) QPSK with 50% RB allocation

The procedures required for 1 RB allocation in i) are applied to measure the SAR for QPSK with 50% RB allocation.

iii) QPSK with 100% RB allocation

For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in i) and ii) are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

iv) Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

B) Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

LTE (TDD) Test Configuration

According to KDB 941225 D05 SAR for LTE Devices V02r05, for Time-Division Duplex(TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.
TDD LTE Band 38/41 supports 3GPP TS 36 For Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.
TDD LTE Band 38/41 supports 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Figure 4.2-1: Frame structure type 2

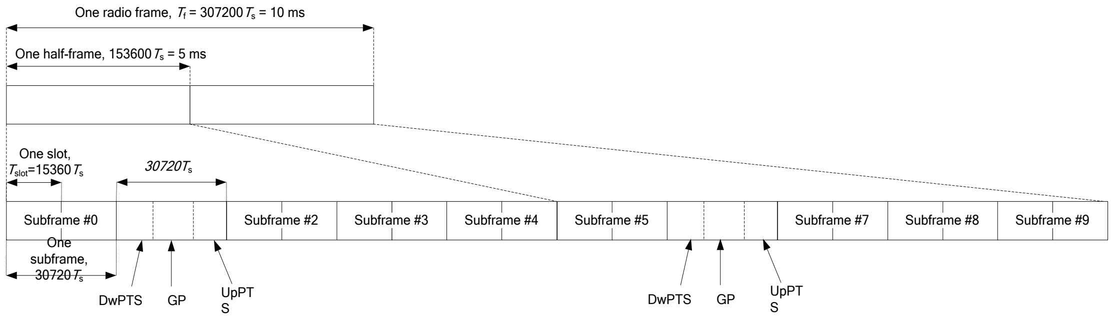


Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

<table>
<tr><th rowspan="3">Special subframe configuration</th><th colspan="3">Normal cyclic prefix in downlink</th><th colspan="3">Extended cyclic prefix in downlink</th></tr>
<tr><th>DwPTS</th><th colspan="2">UpPTS</th><th>DwPTS</th><th colspan="2">UpPTS</th></tr>
<tr><th></th><th>Normal cyclic prefix in uplink</th><th>Extended cyclic prefix in uplink</th><th></th><th>Normal cyclic prefix in uplink</th><th>Extended cyclic prefix in uplink</th></tr>
<tr><td>0</td><td>$6592 \cdot T_s$</td><td rowspan="5">$2192 \cdot T_s$</td><td rowspan="5">$2560 \cdot T_s$</td><td>$7680 \cdot T_s$</td><td rowspan="4">$2192 \cdot T_s$</td><td rowspan="4">$2560 \cdot T_s$</td></tr>
<tr><td>1</td><td>$19760 \cdot T_s$</td><td>$20480 \cdot T_s$</td></tr>
<tr><td>2</td><td>$21952 \cdot T_s$</td><td>$23040 \cdot T_s$</td></tr>
<tr><td>3</td><td>$24144 \cdot T_s$</td><td>$25600 \cdot T_s$</td></tr>
<tr><td>4</td><td>$26336 \cdot T_s$</td><td>$7680 \cdot T_s$</td><td rowspan="4">$4384 \cdot T_s$</td><td rowspan="4">$5120 \cdot T_s$</td></tr>
<tr><td>5</td><td>$6592 \cdot T_s$</td><td rowspan="5">$4384 \cdot T_s$</td><td rowspan="5">$5120 \cdot T_s$</td><td>$20480 \cdot T_s$</td></tr>
<tr><td>6</td><td>$19760 \cdot T_s$</td><td>$23040 \cdot T_s$</td></tr>
<tr><td>7</td><td>$21952 \cdot T_s$</td><td>$12800 \cdot T_s$</td></tr>
<tr><td>8</td><td>$24144 \cdot T_s$</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>9</td><td>$13168 \cdot T_s$</td><td>-</td><td>-</td><td>-</td></tr>
</table>

Table 4.2-2: Uplink-downlink configurations

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

According to Figure 4.2-1, one radio frame is configured by 10 subframes, which consist of Uplink-subframe, Downlink-subframe and Special subframe. For TDD-LTE, the Duty Cycle should be calculated on Uplink-subframes and Special subframes, due to Special subframe containing both Uplink transmissions. So for one radio frame, Duty Cycle can be calculated with formula as below. The count of Uplink subframes are according to Table 4.2-2:

Duty cycle =(30720Ts*Ups+Uplink Component*Specials)/(307200Ts)

About the uplink component of Special subframes, we can figure out by Table 4.2-1:

Uplink Component=UpPTS

In conclusion, for the TDD LTE Band 38/41, Duty Cycle can be calculated with formula as below .all these sets are ok when we test, or we can set as below.
Duty cycle =[(30720Ts*Ups)+ UpPTS *Specials]/(307200Ts)
And we can get different Duty cycles under different configurations:

Uplink-downlink configuratin	Subframe number			Configuration of special subframe							
				Normal cyclic prefix in downlink				Extended cyclic prefix in downlink			
				Normal cyclic prefix in uplink		Extended cyclic prefix in uplink		Normal cyclic prefix in uplink		Extended cyclic prefix in uplink	
	D	S	U	configuration 0-4	configuration 5-9	configuration 0-4	configuration 5-9	configuration 0-3	configuration 4-7	configuration 0-3	configuration
0	2	2	6	61.43%	62.85%	61.67%	63.33%	61.43%	62.85%	61.67%	63.33%
1	4	2	4	41.43%	42.85%	41.67%	43.33%	41.43%	42.85%	41.67%	43.33%
2	6	2	2	21.43%	22.85%	21.67%	23.33%	21.43%	22.85%	21.67%	23.33%
3	6	1	3	30.71%	31.43%	30.83%	31.67%	30.71%	31.43%	30.83%	31.67%
4	7	1	2	20.71%	21.43%	20.83%	21.67%	20.71%	21.43%	20.83%	21.67%
5	8	1	1	10.71%	11.43%	10.83%	11.67%	10.71%	11.43%	10.83%	11.67%
6	3	2	5	51.43%	52.85%	51.67%	53.33%	51.43%	52.85%	51.67%	53.33%

For TDD LTE, SAR should be tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7 for Frame structure type 2.

7.1.4 OTHER TEST CONFIGURATION: DYNAMIC ANTENNA TUNING

The device supports the dynamic antenna tuning function to optimize transmission efficiency for 2500MHz ~2570MHz(Main antenna: LTE Band7) frequency operations, especially in any hand usage scenario. The dynamic antenna tuning function is only applicable for the main Tx antenna. The main antenna has two fixed states for some bands: the state 1 and state 2.The two states have the same test channel, antenna RF path and conductive power. The software will choose better RSSI as the main state of the main TX antenna based on the antenna RSSI comparison and switch algorithm.

For dynamic antenna tuning SAR test,

a) Firstly, some AT commands are used to fix the tuning state at state1 or state 2, so that only one antenna tuning state is chosen at a time for SAR test. The antenna is set to the MAX transmit output power level.

b) Secondly, in order to reduce the number of SAR tests required to demonstrate compliance for the numerous tuning states, one single point zoom scan SAR measurement between state1 and state 2 for each antenna tuning band and applicable RF exposure condition is considered to identify the higher SAR tuning state that need the full set of normally required SAR measurements and allow SAR test reduction for the lower SAR conditions.

c) Thirdly, full normally required SAR measurements are performed for the higher SAR tuning state. Moreover, the SAR worst case will also be tested for the other tuning state in each antenna tuning band and applicable RF exposure condition to ensure the SAR compliance.

7.1.5 WIFI TEST CONFIGURATION

For WLAN SAR testing, WLAN engineering testing software installed on the DUT can provide continuous transmitting RF signal.

2.4G

Mode	802.11b	802.11g	802.11n HT20
Duty cycle	100%		
Crest factor	1		

5G

Mode	802.11a	802.11n HT20	802.11n HT40	802.11ac HT20	802.11ac HT40	802.11ac VH80
Duty cycle	100%					
Crest factor	1					

For WiFi SAR testing, a communication link is set up with the test mode software for WiFi mode test. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode. The RF signal utilized in SAR measurement has 100% duty cycle and its crest factor is 1. The test procedures in KDB 248227D01v02r02 are applied.

7.1.5.1 2.4G SAR Test Requirements

✧ **802.11b DSSS SAR Test Requirements**

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

1) When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
2) When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

✧ **2.4 GHz 802.11g/n OFDM SAR Test Exclusion Requirements**

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied. SAR is not required for the following 2.4 GHz OFDM conditions.

1) When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.
2) When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

✧ **SAR Test Requirements for OFDM configurations**

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, each standalone And frequency aggregated band is considered separately for SAR test reduction. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

7.1.5.2 5G SAR Test Requirements

✧ **U-NII-1 and U-NII-2A Band**

For devices that operate in both U-NII-1 and U-NII-2A bands, When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, both bands are tested independently for SAR. When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, both bands are tested independently for SAR.

✧ **U-NII-2C, U-NII-3 Bands**

The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. When Terminal Doppler Weather Radar (TDWR) restriction applies, the channels at 5.60 – 5.65 GHz in U-NII-2C band must be disabled with acceptable mechanisms and documented in the equipment certification.

Unless band gap channels are permanently disabled, they must be considered for SAR testing. To maintain SAR measurement accuracy and to facilitate test reduction, the channels in U-NII-2C band above 5.65 GHz may be grouped with the 5.8 GHz channels in U-NII-3 or §15.247 band to enable two SAR probe calibration frequency points to cover the bands, including the band gap channels.11 When band gap channels are supported and the bands are not aggregated for SAR testing, band gap channels must be considered independently in each band according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

7.1.5.3 OFDM transmission mode and SAR test channel selection

For the 2.4GHz and 5GHz bands, when the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate. When the maximum output power of a channel is the same for equivalent OFDM configurations(for example 802.11a,802.11n and 802.11ac,or 802.11g and 802.11n,with the same channel bandwidth, modulation, and data rate, etc.),the lower order 802.11 mode(i.e.802.11a then 802.11n and 802.11ac,or 802.11g then 802.11n) is used for SAR measurement. When the maximum output power are the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

7.1.5.4 Initial test configuration procedure

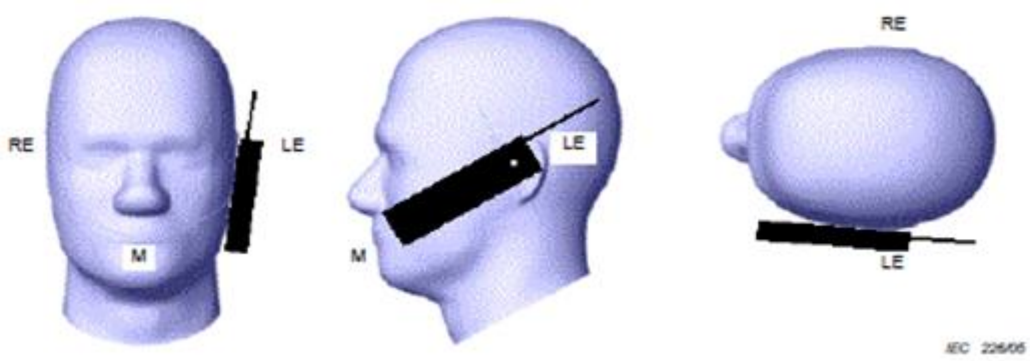
For OFDM, in both 2.4G and 5GHz bands, an initial test configuration is determined for each frequency band and aggregated band , according to the transmission mode with the highest maximum output power specified for SAR measurements. When the same maximum output power is specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration(s) with the largest channel bandwidth, lowest order modulation, and lowest data rate. If the average RF output powers of the highest identical transmission modes are within 0.25 dB of each other, mid channel of the transmission mode with highest average RF output powers is the initial test channel. Otherwise, the channel of the transmission mode with the highest average RF output power will be the initial test configuration.

When the reported SAR is≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurement.

7.2 TEST POSITION

7.2.1 Head test configuration

Measurements were made in “cheek” and “tilt” positions on both the left hand and right hand sides of the phantom.

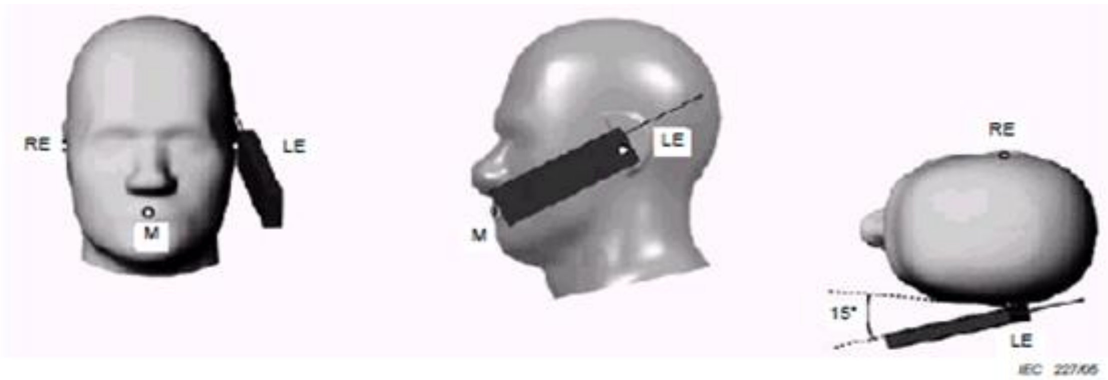


Key

M	Mouth reference point
LE	Left ear reference point (ERP)
RE	Right ear reference point (ERP)

Figure 1 Cheek position of the wireless device on the left side of SAM

Note1: Cheek position of the wireless device on Right side of SAM also is similar to the left side represented above.



Key

M	Mouth reference point
LE	Left ear reference point (ERP)
RE	Right ear reference point (ERP)

Figure 2 Tilt position of the wireless device on the left side of SAM

Note2: Tilt position of the wireless device on Right side of SAM also is similar to the left side represented above.

7.2.2 Body-worn test configuration

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations. Devices with a headset output should be tested with a headset connected to the device. The distance between the device and the phantom was kept 15mm.

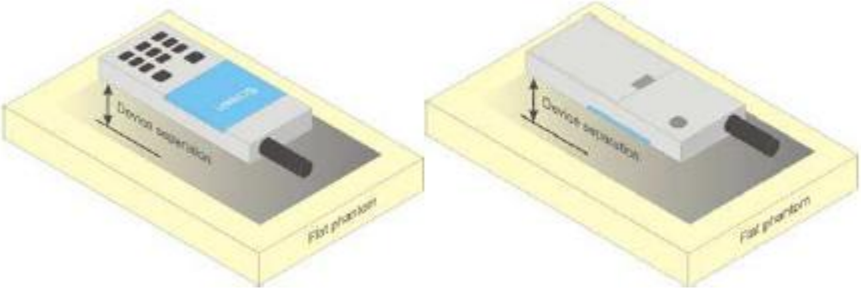


Figure 3 Test positions for body-worn device

7.2.3 Hotspot test configuration

Per FCC KDB 941225D06,The SAR test separation distance for hotspot mode is determined according to device form factor. When the overall length and width of a device is>9cm×5cm, a test separation distance of 10mm is required for hotspot mode SAR measurements. A test separation distance of 5mm or less is required for smaller devices. Hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25mm from that surface or edge; for the data modes, wireless technologies and frequency bands supporting hotspot mode. The SAR results are used to determine simultaneous transmission SAR test exclusion for hotspot mode; otherwise, simultaneous transmission SAR measurement is required.

7.2.4 Product specific 10-g SAR test configuration

Per KDB 648474 D04, for smart phones with a display diagonal dimension>15.0cm or an overall diagonal dimension>16.0cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the device is marketed as “Phablet”.

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

The size of the mobile phone is152mm (length) X 75.3mm (width).

The location of the antennas inside mobile phone is shown as below picture:

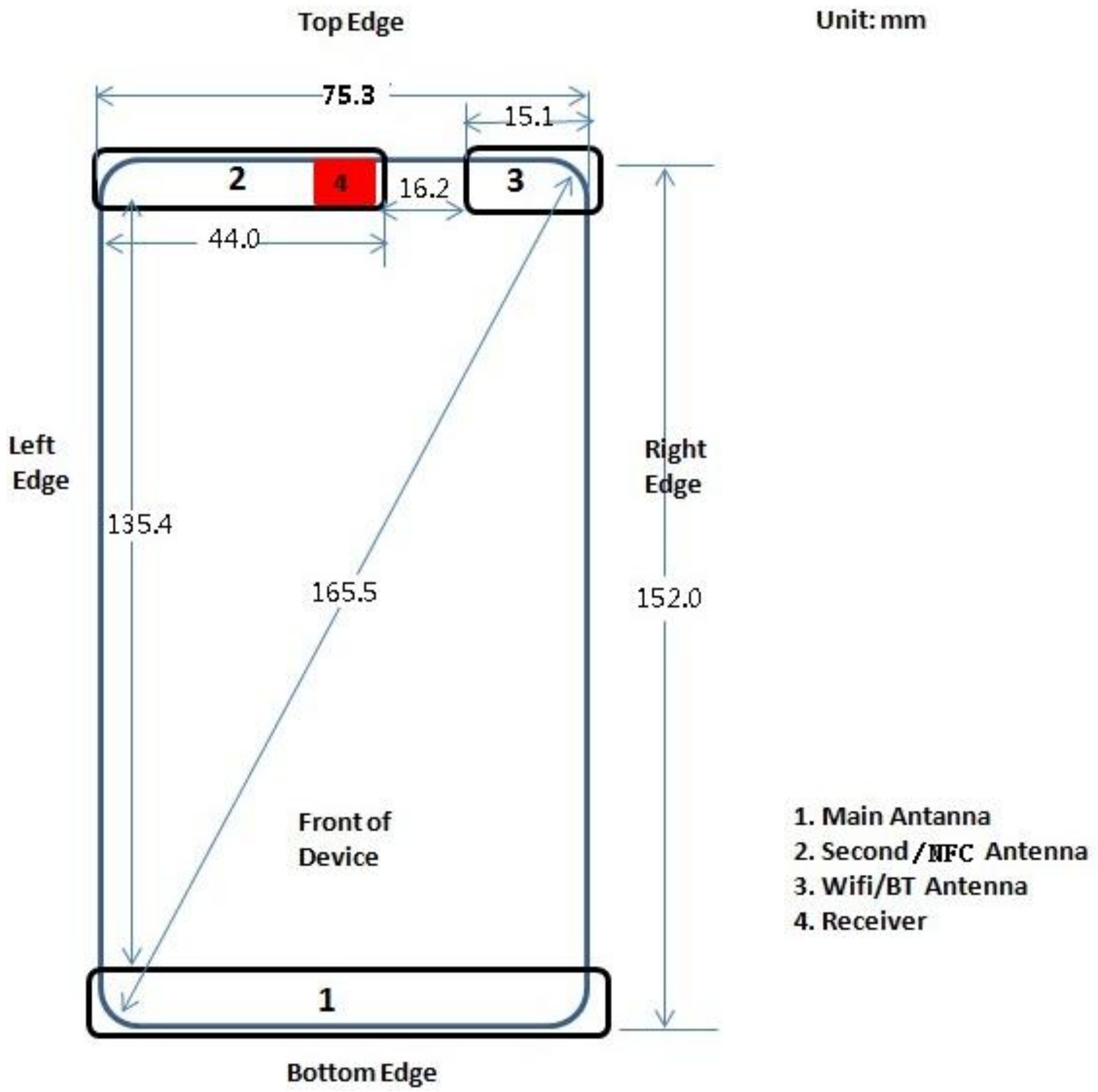


Table 7.2.2 Sides For Hotspot and product specific 10-g SAR Testing

ANT	Mode	Front Side	Rear Side	Left Side	Right Side	Top Side	Bottom Side
1	2G/3G/LTE	YES	YES	YES	YES	NO	YES
2	2G/3G/LTE	YES	YES	YES	YES	YES	NO
3	WIFI	YES	YES	NO	YES	YES	NO

Note: Per KDB 941225 D06, particular DUT edges were not required to be evaluated for Hotspot SAR if the antenna-to-edge distance is greater than 2.5cm.

8.TEST RESULT

8.1CONDUCTED POWER RESULTS

8.1.1CONDUCTED POWER MEASUREMENTS OF GSM850 (FULL POWER)

GSM850 Main Modem (Top Ant)		Tune-up	Max Burst Average Power (dBm)			Tune-up	Max Frame Average Power (dBm)		
			128CH	190CH	251CH		128CH	190CH	251CH
			824.2MHz	836.6MHz	848.8MHz		824.2MHz	836.6MHz	848.8MHz
GSM (CS)		33.50	32.22	32.41	32.39	24.31	23.03	23.22	23.20
GPRS/ EDGE (GMSK)	1 Tx Slot	33.50	32.02	32.31	32.36	24.31	22.83	23.12	23.17
	2 Tx Slots	31.00	29.67	29.99	29.98	**24.87**	23.54	23.86	23.85
	3 Tx Slots	29.00	27.28	27.64	27.61	24.58	22.86	23.22	23.19
	4 Tx Slots	27.00	25.19	25.46	25.53	23.82	22.01	22.28	22.35
EDGE (8PSK)	1 Tx Slot	27.00	25.64	25.77	25.71	17.81	16.45	16.58	16.52
	2 Tx Slots	25.00	23.52	23.55	23.54	18.87	17.39	17.42	17.41
	3 Tx Slots	23.00	21.64	21.73	21.80	18.58	17.22	17.31	17.38
	4 Tx Slots	21.00	19.62	19.89	19.88	17.82	16.44	16.71	16.70

GSM850 Main Modem (Bottom Ant)		Tune-up	Max Burst Average Power (dBm)			Tune-up	Max Frame Average Power (dBm)		
			128CH	190CH	251CH		128CH	190CH	251CH
			824.2MHz	836.6MHz	848.8MHz		824.2MHz	836.6MHz	848.8MHz
GSM (CS)		33.50	32.16	32.37	32.35	24.31	22.97	23.18	23.16
GPRS/ EDGE (GMSK)	1 Tx Slot	33.50	32.25	32.48	32.47	24.31	23.06	23.29	23.28
	2 Tx Slots	31.00	29.77	30.07	30.05	**24.87**	23.64	23.94	23.92
	3 Tx Slots	29.00	27.41	27.58	27.54	24.58	22.99	23.16	23.12
	4 Tx Slots	27.00	25.12	25.39	25.44	23.82	21.94	22.21	22.26
EDGE (8PSK)	1 Tx Slot	27.00	25.84	26.07	25.88	17.81	16.65	16.88	16.69
	2 Tx Slots	25.00	23.55	23.57	23.54	18.87	17.42	17.44	17.41
	3 Tx Slots	23.00	21.59	21.77	21.81	18.58	17.17	17.35	17.39
	4 Tx Slots	21.00	19.61	19.58	19.64	17.82	16.43	16.40	16.46

Note:
1) The conducted power of GSM850 is measured with RMS detector.
2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 time slots.
3) Per KDB941225 D01v03r01, the bolded GPRS2Tx mode was selected for SAR testing according to the highest frame –averaged output power table.
4) The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:
Frame-averaged power=10 x log(Burst-averaged power mW x Slot used/8)

GSM850 Second Modem (Top Ant)		Tune-up	Max Burst Average Power (dBm)			Tune-up	Max Frame Average Power (dBm)		
			128CH	190CH	251CH		128CH	190CH	251CH
			824.2MHz	836.6MHz	848.8MHz		824.2MHz	836.6MHz	848.8MHz
GSM (CS)		33.50	32.52	32.61	32.59	24.31	23.33	23.42	23.40
GPRS/ EDGE (GMSK)	1 Tx Slot	33.50	31.99	32.20	32.28	24.31	22.80	23.01	23.09
	2 Tx Slots	31.00	29.77	30.45	29.93	**24.87**	23.64	24.32	23.80
	3 Tx Slots	29.00	27.15	27.13	27.14	24.58	22.73	22.71	22.72
	4 Tx Slots	27.00	25.07	25.16	25.02	23.82	21.89	21.98	21.84
EDGE (8PSK)	1 Tx Slot	27.00	25.63	25.66	25.77	17.81	16.44	16.47	16.58
	2 Tx Slots	25.00	23.58	23.62	23.55	18.87	17.45	17.49	17.42
	3 Tx Slots	23.00	21.71	21.74	21.68	18.58	17.29	17.32	17.26
	4 Tx Slots	21.00	19.53	19.55	19.59	17.82	16.35	16.37	16.41

GSM850 Second Modem (Bottom Ant)		Tune-up	Max Burst Average Power (dBm)			Tune-up	Max Frame Average Power (dBm)		
			128CH	190CH	251CH		128CH	190CH	251CH
			824.2MHz	836.6MHz	848.8MHz		824.2MHz	836.6MHz	848.8MHz
GSM (CS)		33.50	32.18	32.58	32.61	24.31	22.99	23.39	23.42
GPRS/ EDGE (GMSK)	1 Tx Slot	33.50	32.02	32.54	32.53	24.31	22.83	23.35	23.34
	2 Tx Slots	31.00	29.45	29.90	30.04	**24.87**	23.32	23.77	23.91
	3 Tx Slots	29.00	27.18	27.43	27.31	24.58	22.76	23.01	22.89
	4 Tx Slots	27.00	25.09	25.22	25.35	23.82	21.91	22.04	22.17
EDGE (8PSK)	1 Tx Slot	27.00	25.97	26.02	25.91	17.81	16.78	16.83	16.72
	2 Tx Slots	25.00	23.47	23.48	23.54	18.87	17.34	17.35	17.41
	3 Tx Slots	23.00	21.54	21.63	21.62	18.58	17.12	17.21	17.20
	4 Tx Slots	21.00	19.54	19.82	19.66	17.82	16.36	16.64	16.48

Note:
1) The conducted power of GSM850 is measured with RMS detector.
2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 time slots.
3) Per KDB941225 D01v03r01, the bolded GPRS2Tx mode was selected for SAR testing according to the highest frame –averaged output power table.
4) The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:
Frame-averaged power=10 x log(Burst-averaged power mW x Slot used/8)

8.1.2CONDUCTED POWER MEASUREMENTS OF GSM850 (ADDITIONAL POWER)

(Modem1+Modem2)/(Modem1+WiFi station)/(Modem1+Modem2+WiFi station)/(Modem1+ Hotspot on)/(Modem1+Modem2+ Hotspot on)

GSM850 Main Modem (Top Ant)		Tune-up	Max Burst Average Power (dBm)			Tune-up	Max Frame Average Power (dBm)		
			128CH	190CH	251CH		128CH	190CH	251CH
			824.2MHz	836.6MHz	848.8MHz		824.2MHz	836.6MHz	848.8MHz
GSM (CS)		32.00	30.93	31.05	31.01	22.81	21.74	21.86	21.82
GPRS/ EDGE (GMSK)	1 Tx Slot	32.00	30.02	30.20	30.28	22.81	20.83	21.01	21.09
	2 Tx Slots	30.00	28.55	28.60	28.57	**23.87**	22.42	22.47	22.44
	3 Tx Slots	28.00	26.07	26.12	26.04	23.58	21.65	21.70	21.62
	4 Tx Slots	26.00	24.05	24.18	24.06	22.82	20.87	21.00	20.88
EDGE (8PSK)	1 Tx Slot	25.50	23.63	23.66	23.77	16.31	14.44	14.47	14.58
	2 Tx Slots	23.50	21.58	21.62	21.55	17.37	15.45	15.49	15.42
	3 Tx Slots	21.50	19.71	19.74	19.68	17.08	15.29	15.32	15.26
	4 Tx Slots	19.50	17.53	17.55	17.59	16.32	14.35	14.37	14.41

Note:
1) The conducted power of GSM850 is measured with RMS detector.
2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 time slots.
3) Per KDB941225 D01v03r01, the bolded GPRS2Tx mode was selected for SAR testing according to the highest frame –averaged output power table.
4) The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:
Frame-averaged power=10 x log(Burst-averaged power mW x Slot used/8)

(Modem1+Modem2)/(Modem1+Modem2+WiFi station)/(Modem1+Modem2+ Hotspot on)

GSM850 Second Modem (Bottom Ant)		Tune-up	Max Burst Average Power (dBm)			Tune-up	Max Frame Average Power (dBm)		
			128CH	190CH	251CH		128CH	190CH	251CH
			824.2MHz	836.6MHz	848.8MHz		824.2MHz	836.6MHz	848.8MHz
GSM (CS)		31.50	30.56	31.02	31.03	22.31	21.37	21.83	21.84
GPRS/ EDGE (GMSK)	1 Tx Slot	31.50	30.44	30.93	30.96	22.31	21.25	21.74	21.77
	2 Tx Slots	29.00	27.88	28.27	28.40	**22.87**	21.75	22.14	22.27
	3 Tx Slots	27.00	25.56	25.83	25.75	22.58	21.14	21.41	21.33
	4 Tx Slots	25.00	23.71	23.79	23.97	21.82	20.53	20.61	20.79
EDGE (8PSK)	1 Tx Slot	25.00	24.37	24.38	24.33	15.81	15.18	15.19	15.14
	2 Tx Slots	23.00	21.89	21.88	21.97	16.87	15.76	15.75	15.84
	3 Tx Slots	21.00	19.92	20.07	20.04	16.58	15.50	15.65	15.62
	4 Tx Slots	19.00	17.96	18.21	18.09	15.82	14.78	15.03	14.91

Note:
1) The conducted power of GSM850 is measured with RMS detector.
2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 time slots.
3) Per KDB941225 D01v03r01, the bolded GPRS2Tx mode was selected for SAR testing according to the highest frame –averaged output power table.
4) The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:
Frame-averaged power=10 x log(Burst-averaged power mW x Slot used/8)

(Modem1+Modem2)/(Modem1+Modem2+WiFi station)/(Modem1+Modem2+ Hotspot on)

GSM850 Second Modem (Top Ant)		Tune-up	Max Burst Average Power (dBm)			Tune-up	Max Frame Average Power (dBm)		
			128CH	190CH	251CH		128CH	190CH	251CH
			824.2MHz	836.6MHz	848.8MHz		824.2MHz	836.6MHz	848.8MHz
GSM (CS)		30.50	29.57	29.81	29.63	21.31	20.38	20.62	20.44
GPRS/ EDGE (GMSK)	1 Tx Slot	30.50	28.94	29.17	29.15	21.31	19.75	19.98	19.96
	2 Tx Slots	28.50	28.03	28.04	27.95	**22.37**	21.90	21.91	21.82
	3 Tx Slots	26.50	24.51	24.56	24.62	22.08	20.09	20.14	20.20
	4 Tx Slots	24.50	22.53	22.62	22.54	21.32	19.35	19.44	19.36
EDGE (8PSK)	1 Tx Slot	24.00	22.61	22.68	22.76	14.81	13.42	13.49	13.57
	2 Tx Slots	22.00	20.56	20.71	20.57	15.87	14.43	14.58	14.44
	3 Tx Slots	20.00	18.75	18.79	18.64	15.58	14.33	14.37	14.22
	4 Tx Slots	18.00	16.57	16.52	16.53	14.82	13.39	13.34	13.35

Note:
1) The conducted power of GSM850 is measured with RMS detector.
2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 time slots.
3) Per KDB941225 D01v03r01, the bolded GPRS2Tx mode was selected for SAR testing according to the highest frame –averaged output power table.
4) The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:
Frame-averaged power=10 x log(Burst-averaged power mW x Slot used/8)

8.1.3CONDUCTED POWER MEASUREMENTS OF GSM1900(FULL POWER)

GSM1900 Main Modem (Top Ant)		Tune-up	Max Burst Average Power (dBm)			Tune-up	Max Frame Average Power (dBm)		
			512CH	661CH	810CH		512CH	661CH	810CH
			1850.2MHz	1880MHz	1909.8MHz		1850.2MHz	1880MHz	1909.8MHz
GSM (CS)		30.50	28.96	29.02	29.01	21.31	19.77	19.83	19.82
GPRS /EDGE (GMSK)	1 Tx Slot	30.50	28.97	28.89	29.02	21.31	19.78	19.70	19.83
	2 Tx Slots	28.00	26.54	26.58	26.51	21.87	20.41	20.45	20.38
	3 Tx Slots	26.50	24.84	24.89	24.87	**22.08**	20.42	20.47	20.45
	4 Tx Slots	24.00	22.29	22.24	22.22	20.82	19.11	19.06	19.04
EDGE (8PSK)	1 Tx Slot	26.50	24.82	24.79	24.74	17.31	15.63	15.60	15.55
	2 Tx Slots	24.00	22.63	22.32	22.53	17.87	16.50	16.19	16.40
	3 Tx Slots	22.00	20.59	20.45	20.33	17.58	16.17	16.03	15.91
	4 Tx Slots	20.00	18.44	18.29	18.26	16.82	15.26	15.11	15.08

GSM1900 Main Modem (Bottom Ant)		Tune-up	Max Burst Average Power (dBm)			Tune-up	Max Frame Average Power (dBm)		
			512CH	661CH	810CH		512CH	661CH	810CH
			1850.2MHz	1880MHz	1909.8MHz		1850.2MHz	1880MHz	1909.8MHz
GSM (CS)		30.50	28.93	28.96	28.95	21.31	19.74	19.77	19.76
GPRS /EDGE (GMSK)	1 Tx Slot	30.50	29.00	28.89	29.01	21.31	19.81	19.70	19.82
	2 Tx Slots	28.00	26.59	26.96	26.64	21.87	20.46	20.83	20.51
	3 Tx Slots	26.50	25.92	25.93	25.82	**22.08**	21.50	21.51	21.40
	4 Tx Slots	24.00	22.23	22.24	22.21	20.82	19.05	19.06	19.03
EDGE (8PSK)	1 Tx Slot	26.50	24.73	24.77	24.87	17.31	15.54	15.58	15.68
	2 Tx Slots	24.00	22.66	22.22	22.54	17.87	16.53	16.09	16.41
	3 Tx Slots	22.00	20.57	20.22	20.31	17.58	16.15	15.80	15.89
	4 Tx Slots	20.00	18.02	18.09	18.04	16.82	14.84	14.91	14.86

Note:
1) The conducted power of GSM1900 is measured with RMS detector.
2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 time slots.
3) Per KDB941225 D01v03r01, the bolded GPRS 3Tx mode was selected for SAR testing according to the highest frame –averaged output power table.
4) The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:
Frame-averaged power=10 x log(Burst-averaged power mW x Slot used/8)

GSM1900 Second Modem (Top Ant)		Tune-up	Max Burst Average Power (dBm)			Tune-up	Max Frame Average Power (dBm)		
			512CH	661CH	810CH		512CH	661CH	810CH
			1850.2MHz	1880MHz	1909.8MHz		1850.2MHz	1880MHz	1909.8MHz
GSM (CS)		30.50	29.51	29.54	29.49	21.31	20.32	20.35	20.30
GPRS /EDGE (GMSK)	1 Tx Slot	30.50	29.48	29.45	29.43	21.31	20.29	20.26	20.24
	2 Tx Slots	28.00	27.06	27.08	27.04	21.87	20.93	20.95	20.91
	3 Tx Slots	26.50	24.75	24.76	24.73	**22.08**	20.33	20.34	20.31
	4 Tx Slots	24.00	22.44	22.34	22.37	20.82	19.26	19.16	19.19
EDGE (8PSK)	1 Tx Slot	26.50	25.18	24.84	24.83	17.31	15.99	15.65	15.64
	2 Tx Slots	24.50	22.82	22.74	22.75	18.37	16.69	16.61	16.62
	3 Tx Slots	22.00	20.68	20.45	20.38	17.58	16.26	16.03	15.96
	4 Tx Slots	20.00	18.52	18.20	18.34	16.82	15.34	15.02	15.16

GSM1900 Second Modem (Bottom Ant)		Tune-up	Max Burst Average Power (dBm)			Tune-up	Max Frame Average Power (dBm)		
			512CH	661CH	810CH		512CH	661CH	810CH
			1850.2MHz	1880MHz	1909.8MHz		1850.2MHz	1880MHz	1909.8MHz
GSM (CS)		30.50	29.68	29.47	29.52	21.31	20.49	20.28	20.33
GPRS /EDGE (GMSK)	1 Tx Slot	30.50	29.60	29.49	29.51	21.31	20.41	20.30	20.32
	2 Tx Slots	28.00	27.19	27.06	27.24	21.87	21.06	20.93	21.11
	3 Tx Slots	26.50	25.74	25.73	25.82	**22.08**	21.32	21.31	21.40
	4 Tx Slots	24.00	22.43	22.24	22.41	20.82	19.25	19.06	19.23
EDGE (8PSK)	1 Tx Slot	26.50	25.33	25.37	25.47	17.31	16.14	16.18	16.28
	2 Tx Slots	24.50	23.26	22.82	23.14	18.37	17.13	16.69	17.01
	3 Tx Slots	22.00	21.17	20.82	20.91	17.58	16.75	16.40	16.49
	4 Tx Slots	20.00	18.62	18.49	18.64	16.82	15.44	15.31	15.46

Note:
1) The conducted power of GSM1900 is measured with RMS detector.
2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 time slots.
3) Per KDB941225 D01v03r01, the bolded GPRS 3Tx mode was selected for SAR testing according to the highest frame –averaged output power table.
4) The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:
Frame-averaged power=10 x log(Burst-averaged power mW x Slot used/8)

8.1.4CONDUCTED POWER MEASUREMENTS OF GSM1900(ADDITIONAL POWER)

(Modem1+Modem2)/(Modem1+WiFi station)/(Modem1+Modem2+WiFi station)/ (Modem1+ Hotspot on)/(Modem1+Modem2+ Hotspot on)

GSM1900 Main Modem (Top Ant)		Tune-up	Max Burst Average Power (dBm)			Tune-up	Max Frame Average Power (dBm)		
			512CH	661CH	810CH		512CH	661CH	810CH
			1850.2MHz	1880MHz	1909.8MHz		1850.2MHz	1880MHz	1909.8MHz
GSM (CS)		29.00	27.53	27.61	27.57	19.81	18.34	18.42	18.38
GPRS /EDGE (GMSK)	1 Tx Slot	29.00	27.96	27.94	27.94	19.81	18.77	18.75	18.75
	2 Tx Slots	27.00	25.60	25.56	25.55	**20.87**	19.47	19.43	19.42
	3 Tx Slots	25.00	23.06	23.09	23.07	20.58	18.64	18.67	18.65
	4 Tx Slots	23.00	21.12	21.18	21.14	19.82	17.94	18.00	17.96
EDGE (8PSK)	1 Tx Slot	25.00	23.67	23.35	23.38	15.81	14.48	14.16	14.19
	2 Tx Slots	22.50	21.34	21.22	21.22	16.37	15.21	15.09	15.09
	3 Tx Slots	20.50	19.16	19.15	19.08	16.08	14.74	14.73	14.66
	4 Tx Slots	18.50	17.01	17.18	17.13	15.32	13.83	14.00	13.95

Note:
1) The conducted power of GSM1900 is measured with RMS detector.
2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 time slots.
3) Per KDB941225 D01v03r01, the bolded GPRS 2Tx mode was selected for SAR testing according to the highest frame –averaged output power table.
4) The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:
Frame-averaged power=10 x log(Burst-averaged power mW x Slot used/8)

(Modem1+Modem2)/ (Modem1+Modem2+WiFi station)/(Modem1+Modem2+ Hotspot on)

GSM1900 Second Modem (Bottom Ant)		Tune-up	Max Burst Average Power (dBm)			Tune-up	Max Frame Average Power (dBm)		
			512CH	661CH	810CH		512CH	661CH	810CH
			1850.2MHz	1880MHz	1909.8MHz		1850.2MHz	1880MHz	1909.8MHz
GSM (CS)		28.50	28.05	27.89	27.90	19.31	18.86	18.70	18.71
GPRS /EDGE (GMSK)	1 Tx Slot	28.50	27.98	27.92	27.88	19.31	18.79	18.73	18.69
	2 Tx Slots	26.00	25.65	25.44	25.62	19.87	19.52	19.31	19.49
	3 Tx Slots	24.50	24.15	24.09	24.24	**20.08**	19.73	19.67	19.82
	4 Tx Slots	22.00	20.85	20.64	20.84	18.82	17.67	17.46	17.66
EDGE (8PSK)	1 Tx Slot	24.50	23.70	23.79	23.85	15.31	14.51	14.60	14.66
	2 Tx Slots	22.50	21.66	21.19	21.56	16.37	15.53	15.06	15.43
	3 Tx Slots	20.00	19.54	19.24	19.31	15.58	15.12	14.82	14.89
	4 Tx Slots	18.00	17.04	16.88	17.06	14.82	13.86	13.70	13.88

Note:
1) The conducted power of GSM1900 is measured with RMS detector.
2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 time slots.
3) Per KDB941225 D01v03r01, the bolded GPRS 3Tx mode was selected for SAR testing according to the highest frame –averaged output power table.
4) The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:
Frame-averaged power=10 x log(Burst-averaged power mW x Slot used/8)

(Modem1+Modem2)/(Modem1+Modem2+WiFi station)/(Modem1+Modem2+ Hotspot on)

GSM1900 Second Modem (Top Ant)		Tune-up	Max Burst Average Power (dBm)			Tune-up	Max Frame Average Power (dBm)		
			512CH	661CH	810CH		512CH	661CH	810CH
			1850.2MHz	1880MHz	1909.8MHz		1850.2MHz	1880MHz	1909.8MHz
GSM (CS)		27.00	26.09	26.14	26.12	17.81	16.90	16.95	16.93
GPRS /EDGE (GMSK)	1 Tx Slot	27.00	25.97	25.93	25.96	17.81	16.78	16.74	16.77
	2 Tx Slots	24.50	22.58	22.54	22.57	18.37	16.45	16.41	16.44
	3 Tx Slots	23.00	21.29	21.18	21.14	**18.58**	16.87	16.76	16.72
	4 Tx Slots	20.50	18.85	18.83	18.86	17.32	15.67	15.65	15.68
EDGE (8PSK)	1 Tx Slot	26.50	25.18	24.84	24.83	17.31	15.99	15.65	15.64
	2 Tx Slots	24.50	22.82	22.74	22.75	18.37	16.69	16.61	16.62
	3 Tx Slots	22.00	20.68	20.45	20.38	17.58	16.26	16.03	15.96
	4 Tx Slots	20.50	18.97	18.76	18.87	17.32	15.79	15.58	15.69

Note:
1) The conducted power of GSM1900 is measured with RMS detector.
2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 time slots.
3) Per KDB941225 D01v03r01, the bolded GPRS 3Tx mode was selected for SAR testing according to the highest frame –averaged output power table.
4) The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:
Frame-averaged power=10 x log(Burst-averaged power mW x Slot used/8)

8.1.5CONDUCTED POWER MEASUREMENTS OF UMTS BAND 2(FULL POWER)

UMTS Band 2 (Top Ant)		Tune-up	SAR Conducted Power (dBm)		
			9262CH	9400CH	9538CH
			1852.4	1880	1907.6
WCDMA	12.2kbps RMC	24.00	23.42	23.44	23.43
	64kbps RMC	24.00	23.41	23.42	23.41
	144kbps RMC	24.00	23.39	23.41	23.40
	384kbps RMC	24.00	23.37	23.39	23.39
HSDPA	Subtest 1	24.00	23.32	23.39	23.57
	Subtest 2	23.00	22.28	22.21	22.23
	Subtest 3	22.50	21.79	21.69	21.59
	Subtest 4	22.50	21.69	21.68	21.29
HSUPA	Subtest 1	21.00	20.56	20.50	20.48
	Subtest 2	21.00	20.41	20.27	20.36
	Subtest 3	21.00	19.82	19.72	19.79
	Subtest 4	21.00	20.46	20.42	20.39
	Subtest 5	21.00	20.57	21.47	20.58
DC-HSDPA	Subtest 1	24.00	23.32	23.39	23.57
	Subtest 2	23.00	22.28	22.21	22.23
	Subtest 3	22.50	21.79	21.69	21.59
	Subtest 4	22.50	21.69	21.68	21.29

UMTS Band 2 (Bottom Ant)		Tune-up	SAR Conducted Power (dBm)		
			9262CH	9400CH	9538CH
			1852.4	1880	1907.6
WCDMA	12.2kbps RMC	24.00	23.53	23.55	23.54
	64kbps RMC	24.00	23.52	23.53	23.52
	144kbps RMC	24.00	23.50	23.52	23.51
	384kbps RMC	24.00	23.48	23.50	23.50
HSDPA	Subtest 1	24.00	23.47	23.54	23.72
	Subtest 2	23.00	22.43	22.36	22.38
	Subtest 3	22.50	21.94	21.84	21.74
	Subtest 4	22.50	21.84	21.83	21.44
HSUPA	Subtest 1	21.00	20.71	20.65	20.63
	Subtest 2	21.00	20.56	20.42	20.51
	Subtest 3	21.00	19.97	19.87	19.94
	Subtest 4	21.00	20.61	20.57	20.54
	Subtest 5	21.00	20.72	21.62	20.73
DC-HSDPA	Subtest 1	24.00	23.47	23.54	23.72
	Subtest 2	23.00	22.43	22.36	22.38
	Subtest 3	22.50	21.94	21.84	21.74
	Subtest 4	22.50	21.84	21.83	21.44

HSPA+

Since 16QAM is not used for uplink, the uplink category and release is same as HSUPA,i.e,CAT6 Rel 6.Therefore,the RF conducted power is not measured.

Note: 1) The conducted power of UMTS Band 2 is measured with RMS detector.
2) Per KDB941225 D01v03r01, When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

8.1.6CONDUCTED POWER MEASUREMENTS OF UMTS BAND 2(ADDITIONAL POWER)

(Modem1+Modem2)/(Modem1+WiFi station)(Modem1+Modem2+WiFi station)/ (Modem1+Hotspot on)/(Modem1+Modem2+ Hotspot on)

UMTS Band 2 (Top Ant)		Tune-up	SAR Conducted Power (dBm)		
			9262CH	9400CH	9538CH
			1852.4	1880	1907.6
WCDMA	12.2kbps RMC	19.00	18.51	18.52	18.48
	64kbps RMC	19.00	18.50	18.54	18.51
	144kbps RMC	19.00	18.51	18.51	18.50
	384kbps RMC	19.00	18.50	18.48	18.51
HSDPA	Subtest 1	19.00	18.51	18.52	18.71
	Subtest 2	18.00	17.42	17.33	17.42
	Subtest 3	17.50	16.93	16.85	16.73
	Subtest 4	17.50	16.82	16.84	16.48
HSUPA	Subtest 1	16.00	15.69	15.64	15.67
	Subtest 2	16.00	15.54	15.41	15.50
	Subtest 3	16.00	14.98	14.92	14.91
	Subtest 4	16.00	15.59	15.54	15.53
	Subtest 5	16.00	15.74	15.96	15.65
DC-HSDPA	Subtest 1	19.00	18.50	18.52	18.73
	Subtest 2	18.00	17.45	17.37	17.36
	Subtest 3	17.50	16.96	16.83	16.75
	Subtest 4	17.50	16.75	16.85	16.42

(Modem1+Modem2+WiFi station)/ (Modem1+Hotspot on)/(Modem1+Modem2+ Hotspot on)

UMTS Band 2 (Bottom Ant)		Tune-up	SAR Conducted Power (dBm)		
			9262CH	9400CH	9538CH
			1852.4	1880	1907.6
WCDMA	12.2kbps RMC	20.00	19.66	19.78	19.77
	64kbps RMC	20.00	19.64	19.74	19.73
	144kbps RMC	20.00	19.59	19.67	19.68
	384kbps RMC	20.00	19.65	19.77	19.75
HSDPA	Subtest 1	20.00	18.69	18.73	18.72
	Subtest 2	19.00	18.86	18.97	18.94
	Subtest 3	18.50	18.18	18.21	18.27
	Subtest 4	18.50	18.16	18.22	18.21
HSUPA	Subtest 1	17.00	16.19	16.38	16.62
	Subtest 2	17.00	16.05	16.27	16.51
	Subtest 3	17.00	15.38	15.72	15.93
	Subtest 4	17.00	16.09	16.15	16.45
	Subtest 5	17.00	16.12	16.19	16.51
DC-HSDPA	Subtest 1	20.00	18.69	18.73	18.72
	Subtest 2	19.00	18.86	18.97	18.94
	Subtest 3	18.50	18.18	18.21	18.27
	Subtest 4	18.50	18.16	18.22	18.21

HSPA+

Since 16QAM is not used for uplink, the uplink category and release is same as HSUPA,i.e,CAT6 Rel 6.Therefore,the RF conducted power is not measured.

Note: 1) The conducted power of UMTS Band 2 is measured with RMS detector.

2) Per KDB941225 D01v03r01, When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

8.1.7CONDUCTED POWER MEASUREMENTS OF UMTS BAND 4(FULL POWER)

UMTS Band 4 (Top Ant)		Tune-up	SAR Conducted Power (dBm)		
			1312CH	1413CH	1513CH
			1712.4	1732.6	1752.6
WCDMA	12.2kbps RMC	24.00	23.66	23.68	23.64
	64kbps RMC	24.00	23.63	23.61	23.60
	144kbps RMC	24.00	23.62	23.64	23.62
	384kbps RMC	24.00	23.65	23.67	23.58
HSDPA	Subtest 1	23.50	23.01	22.98	22.96
	Subtest 2	23.00	22.27	22.20	22.32
	Subtest 3	22.50	21.98	21.98	22.00
	Subtest 4	22.50	22.08	22.07	22.12
HSUPA	Subtest 1	21.50	20.65	20.59	20.57
	Subtest 2	21.00	20.50	20.36	20.45
	Subtest 3	21.00	19.91	19.81	19.88
	Subtest 4	21.50	20.55	20.51	20.48
	Subtest 5	21.50	20.66	21.56	20.67
DC-HSDPA	Subtest 1	23.50	23.01	22.98	22.96
	Subtest 2	23.00	22.27	22.20	22.32
	Subtest 3	22.50	21.98	21.98	22.00
	Subtest 4	22.50	22.08	22.07	22.12

UMTS Band 4 (Bottom Ant)		Tune-up	SAR Conducted Power (dBm)		
			1312CH	1413CH	1513CH
			1712.4	1732.6	1752.6
WCDMA	12.2kbps RMC	24.00	23.83	23.85	23.81
	64kbps RMC	24.00	23.80	23.78	23.77
	144kbps RMC	24.00	23.79	23.81	23.79
	384kbps RMC	24.00	23.82	23.84	23.75
HSDPA	Subtest 1	23.50	23.18	23.15	23.13
	Subtest 2	23.00	22.44	22.37	22.49
	Subtest 3	22.50	22.15	22.15	22.17
	Subtest 4	22.50	22.25	22.24	22.29
HSUPA	Subtest 1	21.50	20.82	20.76	20.74
	Subtest 2	21.00	20.67	20.53	20.62
	Subtest 3	21.00	20.08	19.98	20.05
	Subtest 4	21.50	20.72	20.68	20.65
	Subtest 5	21.50	20.83	21.43	20.84
DC-HSDPA	Subtest 1	23.50	23.18	23.15	23.13
	Subtest 2	23.00	22.44	22.37	22.49
	Subtest 3	22.50	22.15	22.15	22.17
	Subtest 4	22.50	22.25	22.24	22.29

HSPA+
Since 16QAM is not used for uplink, the uplink category and release is same as HSUPA,i.e,CAT6 Rel 6.Therefore,the RF conducted power is not measured.

Note: 1) The conducted power of UMTS Band 4 is measured with RMS detector.
2) Per KDB941225 D01v03r01, When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

8.1.8CONDUCTED POWER MEASUREMENTS OF UMTS BAND 4(ADDITIONAL POWER)

(Modem1+Modem2)/(Modem1+WiFi station)/(Modem1+Modem2+WiFi station)/ (Modem1+Hotspot on)/(Modem1+Modem2+ Hotspot on)

UMTS Band 4 (Top Ant)		Tune-up	SAR Conducted Power (dBm)		
			1312CH	1413CH	1513CH
			1712.4	1732.6	1752.6
WCDMA	12.2kbps RMC	18.00	17.31	17.32	17.25
	64kbps RMC	18.00	17.28	17.29	17.26
	144kbps RMC	18.00	17.30	17.30	17.28
	384kbps RMC	18.00	17.34	17.32	17.26
HSDPA	Subtest 1	17.50	16.72	16.63	16.62
	Subtest 2	17.00	16.93	16.84	16.85
	Subtest 3	16.50	15.64	15.66	15.66
	Subtest 4	15.50	14.73	14.75	14.83
HSUPA	Subtest 1	15.50	14.30	14.25	14.28
	Subtest 2	15.00	14.15	14.02	14.11
	Subtest 3	15.00	14.59	14.53	14.52
	Subtest 4	15.50	14.20	14.15	14.14
	Subtest 5	15.50	14.35	14.98	14.26
DC-HSDPA	Subtest 1	17.50	16.72	16.63	16.62
	Subtest 2	17.00	16.93	16.84	16.85
	Subtest 3	16.50	15.64	15.66	15.66
	Subtest 4	15.50	14.73	14.75	14.83

(Modem1+Modem2)/(Modem1+Modem2+WiFi station)/ (Modem1+Hotspot on)/ (Modem1+Modem2+ Hotspot on)

UMTS Band 4 (Bottom Ant)		Tune-up	SAR Conducted Power (dBm)		
			1312CH	1413CH	1513CH
			1712.4	1732.6	1752.6
WCDMA	12.2kbps RMC	22.00	21.85	21.88	21.82
	64kbps RMC	22.00	21.82	21.83	21.78
	144kbps RMC	22.00	21.68	21.67	21.64
	384kbps RMC	22.00	21.79	21.82	21.79
HSDPA	Subtest 1	21.50	20.76	20.79	20.77
	Subtest 2	21.00	20.76	20.89	20.81
	Subtest 3	20.50	20.23	20.33	20.35
	Subtest 4	20.50	20.27	20.29	20.32
HSUPA	Subtest 1	19.50	18.72	18.86	18.64
	Subtest 2	19.00	18.57	18.63	18.52
	Subtest 3	19.00	17.98	18.08	17.95
	Subtest 4	19.50	18.62	18.78	18.55
	Subtest 5	19.50	18.73	18.83	18.74
DC-HSDPA	Subtest 1	21.50	20.76	20.79	20.77
	Subtest 2	21.00	20.76	20.89	20.81
	Subtest 3	20.50	20.23	20.33	20.35
	Subtest 4	20.50	20.27	20.29	20.32

HSPA+

Since 16QAM is not used for uplink, the uplink category and release is same as HSUPA,i.e,CAT6 Rel 6.Therefore,the RF conducted power is not measured.

Note: 1) The conducted power of UMTS Band 4 is measured with RMS detector.

2) Per KDB941225 D01v03r01, When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

8.1.9CONDUCTED POWER MEASUREMENTS OF UMTS BAND 5(FULL POWER)

UMTS Band 5 (Top Ant)		Tune-up	SAR Conducted Power (dBm)		
			4132CH	4182CH	4233CH
			826.4	836.4	846.6
WCDMA	12.2kbps RMC	24.50	23.77	23.81	23.76
	64kbps RMC	24.50	23.75	23.79	23.74
	144kbps RMC	24.50	23.73	23.76	23.72
	384kbps RMC	24.50	23.74	23.78	23.75
HSDPA	Subtest 1	24.00	23.60	23.67	23.55
	Subtest 2	23.50	22.56	22.49	22.21
	Subtest 3	23.00	22.07	21.97	21.99
	Subtest 4	23.00	21.97	21.96	22.01
HSUPA	Subtest 1	22.00	20.54	20.48	20.46
	Subtest 2	21.00	20.39	20.25	20.34
	Subtest 3	21.00	19.80	19.70	19.77
	Subtest 4	21.00	20.44	20.40	20.37
	Subtest 5	21.50	20.55	21.45	20.56
DC-HSDPA	Subtest 1	24.00	23.60	23.67	23.55
	Subtest 2	23.50	22.56	22.49	22.21
	Subtest 3	23.00	22.07	21.97	21.99
	Subtest 4	23.00	21.97	21.96	22.01

UMTS Band 5 (Bottom Ant)		Tune-up	SAR Conducted Power (dBm)		
			4132CH	4182CH	4233CH
			826.4	836.4	846.6
WCDMA	12.2kbps RMC	24.50	24.07	24.11	24.06
	64kbps RMC	24.50	24.05	24.09	24.04
	144kbps RMC	24.50	24.03	24.06	24.02
	384kbps RMC	24.50	24.04	24.08	24.05
HSDPA	Subtest 1	24.00	23.75	23.82	23.70
	Subtest 2	23.50	22.71	22.64	22.36
	Subtest 3	23.00	22.22	22.12	22.14
	Subtest 4	23.00	22.12	22.11	22.16
HSUPA	Subtest 1	21.00	20.69	20.63	20.61
	Subtest 2	21.00	20.54	20.40	20.49
	Subtest 3	21.00	19.95	19.85	19.92
	Subtest 4	21.00	20.59	20.55	20.52
	Subtest 5	21.50	20.70	20.96	20.71
DC-HSDPA	Subtest 1	24.00	23.75	23.82	23.70
	Subtest 2	23.50	22.71	22.64	22.36
	Subtest 3	23.00	22.22	22.12	22.14
	Subtest 4	23.00	22.12	22.11	22.16

HSPA+

Since 16QAM is not used for uplink, the uplink category and release is same as HSUPA,i.e,CAT6 Rel 6.Therefore,the RF conducted power is not measured.

Note: 1) The conducted power of UMTS Band 5 is measured with RMS detector.
2) Per KDB941225 D01v03r01, When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

8.1.10CONDUCTED POWER MEASUREMENTS OF UMTS BAND 5(ADDITIONAL POWER)

(Modem1+Modem2)/(Modem1+WiFi station)/(Modem1+Modem2+WiFi station)/ (Modem1+Hotspot on)/(Modem1+Modem2+ Hotspot on)

UMTS Band 5 (Top Ant)		Tune-up	SAR Conducted Power (dBm)		
			4132CH	4182CH	4233CH
			826.4	836.4	846.6
WCDMA	12.2kbps RMC	22.00	21.54	21.65	21.57
	64kbps RMC	22.00	21.56	21.58	21.56
	144kbps RMC	22.00	21.52	21.55	21.50
	384kbps RMC	22.00	21.52	21.59	21.56
HSDPA	Subtest 1	21.50	21.23	21.31	21.17
	Subtest 2	21.00	20.18	20.15	19.90
	Subtest 3	20.50	19.73	19.61	19.68
	Subtest 4	20.50	19.63	19.65	19.65
HSUPA	Subtest 1	19.50	18.18	18.17	18.15
	Subtest 2	18.50	18.03	17.89	17.91
	Subtest 3	18.50	17.50	17.32	17.41
	Subtest 4	18.50	18.06	18.04	17.99
	Subtest 5	19.00	18.22	18.45	18.15
DC-HSDPA	Subtest 1	21.50	21.23	21.33	21.18
	Subtest 2	21.00	20.22	20.13	19.83
	Subtest 3	20.50	19.73	19.54	19.58
	Subtest 4	20.50	19.61	19.69	19.65

HSPA+

Since 16QAM is not used for uplink, the uplink category and release is same as HSUPA,i.e,CAT6 Rel 6.Therefore,the RF conducted power is not measured.

Note: 1) The conducted power of UMTS Band 5 is measured with RMS detector.
2) Per KDB941225 D01v03r01, When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

8.1.11CONDUCTED POWER MEASUREMENTS OF LTE BAND 2(FULL POWER)

FDD LTE B2(Top Ant)					Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18607	18900	19193
					1850.7	1880	1909.3
1.4MHz	QPSK	1	0	**24.00**	23.16	23.10	23.04
		1	2	**24.00**	23.14	23.06	23.01
		1	5	**24.00**	23.05	22.89	22.87
		3	0	**24.00**	22.49	22.43	22.28
		3	1	**24.00**	22.52	22.40	22.28
		3	3	**24.00**	22.48	22.35	22.33
		6	0	**23.00**	21.59	22.05	22.03
	16QAM	1	0	**23.00**	21.77	22.34	22.16
		1	2	**23.00**	21.76	22.27	22.11
		1	5	**23.00**	21.66	22.09	22.02
		3	0	**23.00**	21.67	22.17	21.99
		3	1	**23.00**	21.66	22.14	21.97
		3	3	**23.00**	21.65	22.15	22.06
		6	0	**22.00**	20.62	21.04	20.94
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18615	18900	19185
					1851.5	1880	1908.5
3MHz	QPSK	1	0	**24.00**	23.00	23.08	22.94
		1	7	**24.00**	22.67	23.07	22.98
		1	14	**24.00**	22.84	22.75	22.75
		8	0	**23.00**	22.10	22.20	22.10
		8	3	**23.00**	22.10	22.09	22.01
		8	7	**23.00**	22.05	21.96	21.94
		15	0	**23.00**	22.15	22.08	21.99
	16QAM	1	0	**23.00**	22.14	22.33	22.30
		1	7	**23.00**	21.87	22.30	22.27
		1	14	**23.00**	21.60	22.00	22.00
		8	0	**22.00**	21.20	21.11	21.06
		8	3	**22.00**	20.99	21.00	20.88
		8	7	**22.00**	21.03	20.87	20.90
		15	0	**22.00**	21.11	21.04	20.85

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18625	18900	19175
					1852.5	1880	1907.5
5MHz	QPSK	1	0	**24.00**	23.14	23.15	23.00
		1	12	**24.00**	23.13	23.13	23.06
		1	24	**24.00**	23.11	23.10	23.11
		12	0	**23.00**	22.24	22.29	22.22
		12	6	**23.00**	22.33	22.25	22.23
		12	13	**23.00**	22.19	22.06	22.07
		25	0	**23.00**	22.19	22.13	22.02
	16QAM	1	0	**23.00**	22.28	22.61	22.42
		1	12	**23.00**	21.92	22.47	22.46
		1	24	**23.00**	21.64	22.04	21.98
		12	0	**22.00**	21.13	21.24	21.19
		12	6	**22.00**	21.16	21.21	21.21
		12	13	**22.00**	21.10	21.03	21.07
		25	0	**22.00**	21.03	21.05	21.02

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18650	18900	19150
					1855	1880	1905
10MHz	QPSK	1	0	**24.00**	22.84	23.18	23.21
		1	24	**24.00**	22.80	23.14	23.29
		1	49	**24.00**	22.97	23.00	23.14
		25	0	**23.00**	22.68	22.26	22.41
		25	12	**23.00**	22.76	22.18	22.25
		25	25	**23.00**	22.73	21.90	21.98
		50	0	**23.00**	22.76	22.09	22.12
	16QAM	1	0	**23.00**	22.15	22.79	22.69
		1	24	**23.00**	22.04	22.49	22.48
		1	49	**23.00**	22.24	22.38	22.44
		25	0	**22.00**	21.52	21.16	21.36
		25	12	**22.00**	21.61	21.11	21.23
		25	25	**22.00**	21.58	21.52	20.90
		50	0	**22.00**	21.53	21.01	21.07

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 18675 1857.5	Mid 18900 1880	High 19125 1902.5
15MHz	QPSK	1	0	**24.00**	22.23	23.11	22.89
		1	37	**24.00**	22.92	23.13	23.37
		1	74	**24.00**	22.59	22.25	22.43
		36	0	**23.00**	21.81	22.25	22.28
		36	19	**23.00**	21.86	22.24	22.34
		36	39	**23.00**	21.75	21.82	21.97
		75	0	**23.00**	21.74	22.05	22.13
	16QAM	1	0	**23.00**	21.58	22.43	22.40
		1	37	**23.00**	22.18	22.52	22.44
		1	74	**23.00**	21.80	21.68	21.96
		36	0	**22.00**	21.02	21.68	21.21
		36	19	**22.00**	21.12	21.19	21.34
		36	39	**22.00**	20.93	20.99	20.98
		75	0	**22.00**	20.97	20.97	21.11
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 18700 1860	Mid 18900 1880	High 19100 1900
20MHz	QPSK	1	0	**24.00**	23.39	23.42	23.41
		1	50	**24.00**	23.41	23.56	23.43
		1	99	**24.00**	23.24	23.16	23.17
		50	0	**23.00**	22.72	22.75	22.65
		50	25	**23.00**	22.32	22.15	22.43
		50	50	**23.00**	21.88	22.21	21.92
		100	0	**23.00**	22.12	21.96	22.01
	16QAM	1	0	**23.00**	21.87	22.62	22.13
		1	50	**23.00**	22.28	22.64	22.67
		1	99	**23.00**	22.62	21.99	22.21
		50	0	**22.00**	21.53	21.12	21.03
		50	25	**22.00**	21.59	21.07	21.38
		50	50	**22.00**	21.64	21.06	20.89
		100	0	**22.00**	21.65	20.87	20.93

FDD LTE B2(Bottom Ant)					Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18607	18900	19193
					1850.7	1880	1909.3
1.4MHz	QPSK	1	0	**24.00**	23.32	23.26	23.20
		1	2	**24.00**	23.30	23.22	23.17
		1	5	**24.00**	23.21	23.05	23.03
		3	0	**24.00**	22.65	22.59	22.44
		3	1	**24.00**	22.68	22.56	22.44
		3	3	**24.00**	22.64	22.51	22.49
		6	0	**23.00**	21.75	22.21	22.19
	16QAM	1	0	**23.00**	21.93	22.50	22.32
		1	2	**23.00**	21.92	22.43	22.27
		1	5	**23.00**	21.82	22.25	22.18
		3	0	**23.00**	21.83	22.33	22.15
		3	1	**23.00**	21.82	22.30	22.13
		3	3	**23.00**	21.81	22.31	22.22
		6	0	**22.00**	20.78	21.20	21.10
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18615	18900	19185
					1851.5	1880	1908.5
3MHz	QPSK	1	0	**24.00**	23.16	23.24	23.10
		1	7	**24.00**	22.83	23.23	23.14
		1	14	**24.00**	23.00	22.91	22.91
		8	0	**23.00**	22.26	22.36	22.26
		8	3	**23.00**	22.26	22.25	22.17
		8	7	**23.00**	22.21	22.12	22.10
		15	0	**23.00**	22.31	22.24	22.15
	16QAM	1	0	**23.00**	22.30	22.49	22.46
		1	7	**23.00**	22.03	22.46	22.43
		1	14	**23.00**	21.76	22.16	22.16
		8	0	**22.00**	21.36	21.27	21.22
		8	3	**22.00**	21.15	21.16	21.04
		8	7	**22.00**	21.19	21.03	21.06
		15	0	**22.00**	21.27	21.20	21.01

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18625	18900	19175
					1852.5	1880	1907.5
5MHz	QPSK	1	0	**24.00**	23.30	23.31	23.16
		1	12	**24.00**	23.29	23.29	23.22
		1	24	**24.00**	23.27	23.26	23.27
		12	0	**23.00**	22.40	22.45	22.38
		12	6	**23.00**	22.49	22.41	22.39
		12	13	**23.00**	22.35	22.22	22.23
		25	0	**23.00**	22.35	22.29	22.18
	16QAM	1	0	**23.00**	22.44	22.77	22.58
		1	12	**23.00**	22.08	22.63	22.62
		1	24	**23.00**	21.80	22.20	22.14
		12	0	**22.00**	21.29	21.40	21.35
		12	6	**22.00**	21.32	21.37	21.37
		12	13	**22.00**	21.26	21.19	21.23
		25	0	**22.00**	21.19	21.21	21.18
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18650	18900	19150
					1855	1880	1905
10MHz	QPSK	1	0	**24.00**	23.00	23.34	23.37
		1	24	**24.00**	22.96	23.30	23.45
		1	49	**24.00**	23.13	23.16	23.30
		25	0	**23.00**	22.84	22.42	22.57
		25	12	**23.00**	22.92	22.34	22.41
		25	25	**23.00**	22.89	22.06	22.14
		50	0	**23.00**	22.92	22.25	22.28
	16QAM	1	0	**23.00**	22.31	22.95	22.85
		1	24	**23.00**	22.20	22.65	22.64
		1	49	**23.00**	22.40	22.54	22.60
		25	0	**22.00**	21.68	21.32	21.52
		25	12	**22.00**	21.77	21.27	21.39
		25	25	**22.00**	21.74	21.68	21.06
		50	0	**22.00**	21.69	21.17	21.23

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18675	18900	19125
					1857.5	1880	1902.5
15MHz	QPSK	1	0	**24.00**	22.39	23.27	23.05
		1	37	**24.00**	23.08	23.29	23.53
		1	74	**24.00**	22.75	22.41	22.59
		36	0	**23.00**	21.97	22.41	22.44
		36	19	**23.00**	22.02	22.40	22.50
		36	39	**23.00**	21.91	21.98	22.13
		75	0	**23.00**	21.90	22.21	22.29
	16QAM	1	0	**23.00**	21.74	22.59	22.56
		1	37	**23.00**	22.34	22.68	22.60
		1	74	**23.00**	21.96	21.84	22.12
		36	0	**22.00**	21.18	21.84	21.37
		36	19	**22.00**	21.28	21.35	21.50
		36	39	**22.00**	21.09	21.15	21.14
		75	0	**22.00**	21.13	21.13	21.27
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18700	18900	19100
					1860	1880	1900
20MHz	QPSK	1	0	**24.00**	23.23	23.48	23.27
		1	50	**24.00**	23.59	23.62	23.56
		1	99	**24.00**	23.40	23.32	23.33
		50	0	**23.00**	22.81	22.89	22.31
		50	25	**23.00**	22.48	22.31	22.59
		50	50	**23.00**	22.04	22.37	22.08
		100	0	**23.00**	22.28	22.12	22.17
	16QAM	1	0	**23.00**	22.03	22.78	22.29
		1	50	**23.00**	22.44	22.80	22.83
		1	99	**23.00**	22.78	22.15	22.37
		50	0	**22.00**	21.69	21.28	21.19
		50	25	**22.00**	21.75	21.23	21.54
		50	50	**22.00**	21.80	21.22	21.05
		100	0	**22.00**	21.81	21.03	21.09

8.1.12CONDUCTED POWER MEASUREMENTS OF LTE BAND 2(ADDITIONAL POWER)

(Modem1+Modem2)/(Modem1+WiFi station)/(Modem1+Modem2+WiFi station)/ (Modem1+Hotspot on)/(Modem1+Modem2+ Hotspot on)

FDD LTE B2(Top Ant)					Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18607	18900	19193
					1850.7	1880	1909.3
1.4MHz	QPSK	1	0	**16.50**	16.27	16.19	16.16
		1	2	**16.50**	16.23	16.13	16.14
		1	5	**16.50**	16.17	15.97	15.96
		3	0	**16.50**	15.57	15.52	15.42
		3	1	**16.50**	15.63	15.48	15.37
		3	3	**16.50**	15.59	15.43	15.45
		6	0	**15.50**	14.67	15.19	15.11
	16QAM	1	0	**15.50**	14.86	15.42	15.30
		1	2	**15.50**	14.85	15.41	15.21
		1	5	**15.50**	14.73	15.21	15.13
		3	0	**15.50**	14.75	15.29	15.08
		3	1	**15.50**	14.74	15.15	15.09
		3	3	**15.50**	14.79	15.26	15.14
		6	0	**14.50**	13.64	14.13	14.03
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18615	18900	19185
					1851.5	1880	1908.5
3MHz	QPSK	1	0	**16.50**	16.32	16.36	16.25
		1	7	**16.50**	16.01	16.35	16.27
		1	14	**16.50**	16.13	16.02	16.06
		8	0	**15.50**	15.39	15.31	15.19
		8	3	**15.50**	15.38	15.20	15.15
		8	7	**15.50**	15.33	15.05	15.08
		15	0	**15.50**	15.43	15.17	15.08
	16QAM	1	0	**15.50**	15.45	15.48	15.37
		1	7	**15.50**	15.15	15.37	15.36
		1	14	**15.50**	14.92	15.12	15.02
		8	0	**14.50**	14.47	14.22	14.24
		8	3	**14.50**	14.32	14.28	14.19
		8	7	**14.50**	14.30	14.18	14.19
		15	0	**14.50**	14.35	14.35	14.07

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 18625 1852.5	Mid 18900 1880	High 19175 1907.5
5MHz	QPSK	1	0	**16.50**	16.22	16.22	16.04
		1	12	**16.50**	16.21	16.24	16.15
		1	24	**16.50**	16.22	16.19	16.20
		12	0	**15.50**	15.36	15.37	15.33
		12	6	**15.50**	15.47	15.33	15.32
		12	13	**15.50**	15.28	15.13	15.18
		25	0	**15.50**	15.28	15.24	15.11
	16QAM	1	0	**15.50**	15.36	15.20	15.48
		1	12	**15.50**	15.00	15.42	15.46
		1	24	**15.50**	14.72	15.13	15.07
		12	0	**14.50**	14.24	14.39	14.26
		12	6	**14.50**	14.24	14.28	14.30
		12	13	**14.50**	14.22	14.15	14.09
		25	0	**14.50**	14.10	14.16	14.20
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 18650 1855	Mid 18900 1880	High 19150 1905
10MHz	QPSK	1	0	**16.50**	15.67	15.96	16.02
		1	24	**16.50**	15.59	15.95	16.08
		1	49	**16.50**	15.81	15.82	15.92
		25	0	**15.50**	15.47	15.10	15.19
		25	12	**15.50**	15.49	14.97	15.02
		25	25	**15.50**	15.45	14.69	14.79
		50	0	**15.50**	15.44	14.87	14.93
	16QAM	1	0	**15.50**	14.95	15.48	15.48
		1	24	**15.50**	14.85	15.27	15.27
		1	49	**15.50**	15.03	15.19	15.29
		25	0	**14.50**	14.34	13.94	14.13
		25	12	**14.50**	14.39	13.93	14.05
		25	25	**14.50**	14.37	14.29	13.71
		50	0	**14.50**	14.30	13.84	13.85

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 18675 1857.5	Mid 18900 1880	High 19125 1902.5
15MHz	QPSK	1	0	**16.50**	15.02	15.93	15.67
		1	37	**16.50**	15.69	15.96	16.15
		1	74	**16.50**	15.37	15.04	15.24
		36	0	**15.50**	14.60	15.09	15.10
		36	19	**15.50**	14.64	15.03	15.18
		36	39	**15.50**	14.53	14.64	14.76
		75	0	**15.50**	14.58	14.83	14.92
	16QAM	1	0	**15.50**	14.36	15.27	15.18
		1	37	**15.50**	15.02	15.32	15.22
		1	74	**15.50**	14.62	14.49	14.74
		36	0	**14.50**	13.84	14.47	14.02
		36	19	**14.50**	13.83	14.01	14.12
		36	39	**14.50**	13.74	13.77	13.80
		75	0	**14.50**	13.76	13.76	13.88

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 18700 1860	Mid 18900 1880	High 19100 1900
20MHz	QPSK	1	0	**16.50**	16.17	16.23	16.22
		1	50	**16.50**	16.19	16.35	16.20
		1	99	**16.50**	16.01	15.97	16.01
		50	0	**15.50**	15.49	15.42	15.49
		50	25	**15.50**	15.13	14.99	15.22
		50	50	**15.50**	14.67	15.05	14.76
		100	0	**15.50**	14.91	14.75	14.73
	16QAM	1	0	**15.50**	14.72	15.39	14.92
		1	50	**15.50**	15.05	15.43	15.44
		1	99	**15.50**	15.44	14.71	14.95
		50	0	**14.50**	14.34	14.00	13.82
		50	25	**14.50**	14.37	13.88	14.16
		50	50	**14.50**	14.45	13.85	13.66
		100	0	**14.50**	14.46	13.59	13.67

(Modem1+Modem2)/ (Modem1+Modem2+WiFi station)/ (Modem1+Hotspot on)/(Modem1+Modem2+ Hotspot on)

FDD LTE B2(Bottom Ant)					Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18607	18900	19193
					1850.7	1880	1909.3
1.4MHz	QPSK	1	0	**20.50**	19.67	19.59	19.56
		1	2	**20.50**	19.63	19.53	19.54
		1	5	**20.50**	19.57	19.37	19.36
		3	0	**20.50**	18.97	18.92	18.82
		3	1	**20.50**	19.03	18.88	18.77
		3	3	**20.50**	18.99	18.83	18.85
		6	0	**19.50**	18.07	18.59	18.51
	16QAM	1	0	**19.50**	18.26	18.82	18.70
		1	2	**19.50**	18.25	18.81	18.61
		1	5	**19.50**	18.13	18.61	18.53
		3	0	**19.50**	18.15	18.69	18.48
		3	1	**19.50**	18.14	18.55	18.49
		3	3	**19.50**	18.19	18.66	18.54
		6	0	**18.50**	17.04	17.53	17.43
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18615	18900	19185
					1851.5	1880	1908.5
3MHz	QPSK	1	0	**20.50**	19.48	19.59	19.43
		1	7	**20.50**	19.18	19.56	19.47
		1	14	**20.50**	19.36	19.23	19.26
		8	0	**19.50**	18.64	18.68	18.59
		8	3	**19.50**	18.59	18.56	18.55
		8	7	**19.50**	18.54	18.47	18.43
		15	0	**19.50**	18.63	18.59	18.53
	16QAM	1	0	**19.50**	18.62	18.82	18.84
		1	7	**19.50**	18.35	18.79	18.76
		1	14	**19.50**	18.11	18.55	18.47
		8	0	**18.50**	17.68	17.58	17.55
		8	3	**18.50**	17.51	17.52	17.30
		8	7	**18.50**	17.50	17.38	17.48
		15	0	**18.50**	17.64	17.52	17.36

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18625	18900	19175
					1852.5	1880	1907.5
5MHz	QPSK	1	0	**20.50**	19.61	19.59	19.49
		1	12	**20.50**	19.64	19.62	19.58
		1	24	**20.50**	19.60	19.59	19.59
		12	0	**19.50**	18.72	18.80	18.73
		12	6	**19.50**	18.81	18.74	18.70
		12	13	**19.50**	18.66	18.60	18.55
		25	0	**19.50**	18.70	18.62	18.56
	16QAM	1	0	**19.50**	18.79	19.15	18.91
		1	12	**19.50**	18.41	19.01	19.00
		1	24	**19.50**	18.13	18.53	18.40
		12	0	**18.50**	17.68	17.71	17.68
		12	6	**18.50**	17.63	17.70	17.68
		12	13	**18.50**	17.62	17.45	17.51
		25	0	**18.50**	17.54	17.63	17.51
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18650	18900	19150
					1855	1880	1905
10MHz	QPSK	1	0	**20.50**	19.31	19.71	19.69
		1	24	**20.50**	19.28	19.63	19.80
		1	49	**20.50**	19.46	19.54	19.66
		25	0	**19.50**	19.16	18.75	18.95
		25	12	**19.50**	19.24	18.70	18.74
		25	25	**19.50**	19.27	18.38	18.47
		50	0	**19.50**	19.24	18.63	18.60
	16QAM	1	0	**19.50**	18.69	19.29	19.17
		1	24	**19.50**	18.56	19.00	18.96
		1	49	**19.50**	18.76	18.87	18.95
		25	0	**18.50**	17.93	17.68	17.84
		25	12	**18.50**	18.12	17.59	17.75
		25	25	**18.50**	18.07	18.01	17.37
		50	0	**18.50**	18.01	17.48	17.60

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18675	18900	19125
					1857.5	1880	1902.5
15MHz	QPSK	1	0	**20.50**	18.67	19.60	19.40
		1	37	**20.50**	19.41	19.65	19.85
		1	74	**20.50**	19.08	18.73	18.89
		36	0	**19.50**	18.32	18.76	18.83
		36	19	**19.50**	18.35	18.71	18.88
		36	39	**19.50**	18.29	18.30	18.50
		75	0	**19.50**	18.23	18.59	18.61
	16QAM	1	0	**19.50**	18.12	18.92	18.88
		1	37	**19.50**	18.72	19.06	18.93
		1	74	**19.50**	18.29	18.10	18.44
		36	0	**18.50**	17.49	18.17	17.69
		36	19	**18.50**	17.61	17.66	17.85
		36	39	**18.50**	17.35	17.43	17.47
		75	0	**18.50**	17.55	17.46	17.63
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18700	18900	19100
					1860	1880	1900
20MHz	QPSK	1	0	**20.50**	19.87	19.89	19.85
		1	50	**20.50**	19.89	20.07	19.92
		1	99	**20.50**	19.75	19.65	19.66
		50	0	**19.50**	19.24	19.23	19.16
		50	25	**19.50**	18.86	18.63	18.92
		50	50	**19.50**	18.37	18.68	18.46
		100	0	**19.50**	18.61	18.47	18.50
	16QAM	1	0	**19.50**	18.35	19.13	18.67
		1	50	**19.50**	18.76	19.13	19.21
		1	99	**19.50**	19.10	18.48	18.70
		50	0	**18.50**	18.04	17.67	17.50
		50	25	**18.50**	18.07	17.54	17.87
		50	50	**18.50**	18.16	17.58	17.31
		100	0	**18.50**	18.12	17.38	17.51

8.1.13CONDUCTED POWER MEASUREMENTS OF LTE BAND 4(FULL POWER)

FDD LTE B4(Top Ant)					Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					19957	20175	20393
					1710.7	1732.5	1754.3
1.4MHz	QPSK	1	0	**23.80**	21.87	21.84	21.89
		1	2	**23.80**	22.04	21.85	21.90
		1	5	**23.80**	22.00	22.07	22.17
		3	0	**23.80**	21.82	21.83	21.82
		3	1	**23.80**	21.81	21.84	21.83
		3	3	**23.80**	21.81	21.81	21.86
		6	0	**23.00**	21.19	21.06	21.23
	16QAM	1	0	**23.00**	21.73	21.71	21.80
		1	2	**23.00**	21.88	21.74	21.87
		1	5	**23.00**	21.83	21.61	21.69
		3	0	**23.00**	21.70	21.59	21.76
		3	1	**23.00**	21.78	21.58	21.70
		3	3	**23.00**	21.78	21.56	21.68
		6	0	**22.00**	20.16	20.08	20.21
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					19965	20175	20385
					1711.5	1732.5	1753.5
3MHz	QPSK	1	0	**23.80**	22.65	22.35	22.48
		1	7	**23.80**	22.39	22.56	22.42
		1	14	**23.80**	22.29	22.22	22.35
		8	0	**23.00**	21.29	21.47	21.75
		8	3	**23.00**	21.40	21.58	21.70
		8	7	**23.00**	21.36	21.47	21.59
		15	0	**23.00**	21.34	21.52	21.71
	16QAM	1	0	**23.00**	21.24	21.62	21.90
		1	7	**23.00**	21.32	21.71	21.61
		1	14	**23.00**	21.53	21.48	21.63
		8	0	**22.00**	20.66	20.50	20.81
		8	3	**22.00**	20.77	20.54	20.74
		8	7	**22.00**	20.74	20.46	20.62
		15	0	**22.00**	20.77	20.46	20.72

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					19975	20175	20375
					1712.5	1732.5	1752.5
5MHz	QPSK	1	0	**23.80**	22.27	22.30	22.51
		1	12	**23.80**	22.30	22.56	22.41
		1	24	**23.80**	22.20	22.20	22.19
		12	0	**23.00**	21.11	21.60	21.04
		12	6	**23.00**	21.27	21.71	21.03
		12	13	**23.00**	21.26	21.61	21.15
		25	0	**23.00**	21.17	21.61	21.19
	16QAM	1	0	**23.00**	21.77	21.62	21.40
		1	12	**23.00**	21.45	21.26	21.26
		1	24	**23.00**	21.10	21.52	21.68
		12	0	**22.00**	20.83	20.59	20.95
		12	6	**22.00**	21.03	20.66	20.95
		12	13	**22.00**	20.98	20.61	20.84
		25	0	**22.00**	20.83	20.54	21.13
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20000	20175	20350
					1715	1732.5	1750
10MHz	QPSK	1	0	**23.80**	22.70	22.35	22.37
		1	24	**23.80**	22.40	22.59	22.11
		1	49	**23.80**	22.34	22.41	22.32
		25	0	**23.00**	21.17	21.65	21.44
		25	12	**23.00**	21.43	21.70	21.13
		25	25	**23.00**	21.51	21.63	21.26
		50	0	**23.00**	21.62	21.64	21.31
	16QAM	1	0	**23.00**	21.64	21.75	21.52
		1	24	**23.00**	21.57	21.56	21.25
		1	49	**23.00**	21.08	21.78	21.49
		25	0	**22.00**	20.93	20.55	21.36
		25	12	**22.00**	21.15	20.60	21.05
		25	25	**22.00**	20.96	20.58	20.84
		50	0	**22.00**	20.91	20.59	21.24

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20025	20175	20325
					1717.5	1732.5	1747.5
15MHz	QPSK	1	0	**23.80**	21.82	22.47	22.15
		1	37	**23.80**	22.22	22.62	22.34
		1	74	**23.80**	22.41	21.89	22.37
		36	0	**23.00**	21.24	21.67	21.61
		36	19	**23.00**	21.31	21.70	21.54
		36	39	**23.00**	21.14	21.50	21.37
		75	0	**23.00**	21.17	21.70	21.51
	16QAM	1	0	**23.00**	21.02	21.23	21.57
		1	37	**23.00**	21.41	21.06	21.77
		1	74	**23.00**	21.71	21.21	21.13
		36	0	**22.00**	21.10	21.21	21.51
		36	19	**22.00**	20.23	20.64	20.47
		36	39	**22.00**	20.04	20.74	20.41
		75	0	**22.00**	20.04	20.69	20.45
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20050	20175	20300
					1720	1732.5	1745
20MHz	QPSK	1	0	**23.80**	22.73	22.78	22.71
		1	50	**23.80**	22.67	22.71	22.63
		1	99	**23.80**	22.20	22.56	22.34
		50	0	**23.00**	21.75	21.89	21.86
		50	25	**23.00**	21.66	21.75	21.52
		50	50	**23.00**	21.71	21.71	21.43
		100	0	**23.00**	21.10	21.73	21.32
	16QAM	1	0	**23.00**	22.19	21.83	22.01
		1	50	**23.00**	22.47	22.02	22.07
		1	99	**23.00**	21.62	22.36	21.81
		50	0	**22.00**	20.43	20.72	20.62
		50	25	**22.00**	20.52	20.67	20.42
		50	50	**22.00**	20.72	20.66	20.43
		100	0	**22.00**	20.76	20.68	20.25

FDD LTE B4(Bottom Ant)					Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					19957	20175	20393
					1710.7	1732.5	1754.3
1.4MHz	QPSK	1	0	**24.00**	22.07	22.04	22.09
		1	2	**24.00**	22.24	22.05	22.10
		1	5	**24.00**	22.20	22.27	22.37
		3	0	**24.00**	22.06	22.03	22.02
		3	1	**24.00**	22.01	22.04	22.04
		3	3	**24.00**	22.03	22.01	22.12
		6	0	**23.00**	21.39	21.26	21.43
	16QAM	1	0	**23.00**	21.93	21.91	22.00
		1	2	**23.00**	22.08	21.94	22.07
		1	5	**23.00**	22.03	21.81	21.89
		3	0	**23.00**	21.90	21.79	21.96
		3	1	**23.00**	21.98	21.78	21.90
		3	3	**23.00**	21.98	21.76	21.88
		6	0	**22.00**	20.36	20.28	20.41
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					19965	20175	20385
					1711.5	1732.5	1753.5
3MHz	QPSK	1	0	**24.00**	22.85	22.55	22.68
		1	7	**24.00**	22.59	22.76	22.62
		1	14	**24.00**	22.49	22.42	22.55
		8	0	**23.00**	21.49	21.67	21.95
		8	3	**23.00**	21.60	21.78	21.90
		8	7	**23.00**	21.56	21.67	21.79
		15	0	**23.00**	21.54	21.72	21.91
	16QAM	1	0	**23.00**	21.44	21.82	22.10
		1	7	**23.00**	21.52	21.91	21.81
		1	14	**23.00**	21.73	21.68	21.83
		8	0	**22.00**	20.86	20.70	21.01
		8	3	**22.00**	20.97	20.74	20.94
		8	7	**22.00**	20.94	20.66	20.82
		15	0	**22.00**	20.97	20.66	20.92

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 19975 1712.5	Mid 20175 1732.5	High 20375 1752.5
5MHz	QPSK	1	0	**24.00**	22.47	22.50	22.71
		1	12	**24.00**	22.50	22.76	22.61
		1	24	**24.00**	22.40	22.40	22.39
		12	0	**23.00**	21.31	21.80	21.24
		12	6	**23.00**	21.47	21.91	21.23
		12	13	**23.00**	21.46	21.81	21.12
		25	0	**23.00**	21.37	21.81	21.39
	16QAM	1	0	**23.00**	21.97	21.82	21.60
		1	12	**23.00**	21.65	21.13	21.46
		1	24	**23.00**	21.30	21.72	21.88
		12	0	**22.00**	21.03	20.79	21.15
		12	6	**22.00**	21.23	20.86	21.15
		12	13	**22.00**	21.18	20.81	21.04
		25	0	**22.00**	21.03	20.74	21.33
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 20000 1715	Mid 20175 1732.5	High 20350 1750
10MHz	QPSK	1	0	**24.00**	22.90	22.55	22.57
		1	24	**24.00**	22.60	22.79	22.31
		1	49	**24.00**	22.54	22.61	22.52
		25	0	**23.00**	21.37	21.85	21.64
		25	12	**23.00**	21.63	21.90	21.33
		25	25	**23.00**	21.71	21.83	21.06
		50	0	**23.00**	21.82	21.84	21.51
	16QAM	1	0	**23.00**	21.84	21.95	21.72
		1	24	**23.00**	21.77	21.76	21.45
		1	49	**23.00**	21.28	21.98	21.69
		25	0	**22.00**	21.13	20.75	21.56
		25	12	**22.00**	21.35	20.80	21.25
		25	25	**22.00**	21.16	20.78	21.04
		50	0	**22.00**	21.11	20.79	21.44

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 20025 1717.5	Mid 20175 1732.5	High 20325 1747.5
15MHz	QPSK	1	0	**24.00**	22.02	22.67	22.35
		1	37	**24.00**	22.42	22.82	22.54
		1	74	**24.00**	22.61	22.09	22.57
		36	0	**23.00**	21.44	21.87	21.81
		36	19	**23.00**	21.51	21.90	21.74
		36	39	**23.00**	21.34	21.70	21.57
		75	0	**23.00**	21.37	21.90	21.71
	16QAM	1	0	**23.00**	21.22	21.13	21.77
		1	37	**23.00**	21.61	21.26	21.97
		1	74	**23.00**	21.91	21.41	21.03
		36	0	**22.00**	21.30	21.41	21.71
		36	19	**22.00**	20.43	20.84	20.67
		36	39	**22.00**	20.24	20.94	20.61
		75	0	**22.00**	20.24	20.89	20.65
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 20050 1720	Mid 20175 1732.5	High 20300 1745
20MHz	QPSK	1	0	**24.00**	22.83	22.78	22.76
		1	50	**24.00**	23.37	23.41	22.83
		1	99	**24.00**	22.40	22.76	22.54
		50	0	**23.00**	21.95	21.99	21.86
		50	25	**23.00**	21.86	21.95	21.72
		50	50	**23.00**	21.91	21.91	21.63
		100	0	**23.00**	21.30	21.93	21.52
	16QAM	1	0	**23.00**	22.39	22.03	22.21
		1	50	**23.00**	22.67	22.22	22.27
		1	99	**23.00**	21.82	22.56	22.01
		50	0	**22.00**	20.63	20.92	20.82
		50	25	**22.00**	20.72	20.87	20.62
		50	50	**22.00**	20.92	20.86	20.63
		100	0	**22.00**	20.96	20.88	20.45

8.1.14CONDUCTED POWER MEASUREMENTS OF LTE BAND 4(ADDITIONAL POWER)

(Modem1+Modem2)/(Modem1+WiFi station)/(Modem1+Modem2+WiFi station)/ (Modem1+Hotspot on)/(Modem1+Modem2+ Hotspot on)

FDD LTE B4(Top Ant)					Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					19957	20175	20393
					1710.7	1732.5	1754.3
1.4MHz	QPSK	1	0	**17.80**	17.18	17.13	17.21
		1	2	**17.80**	17.33	17.12	17.23
		1	5	**17.80**	17.32	17.35	17.46
		3	0	**17.80**	17.10	17.12	17.16
		3	1	**17.80**	17.12	17.12	17.12
		3	3	**17.80**	17.11	17.09	17.18
		6	0	**17.00**	16.47	16.40	16.51
	16QAM	1	0	**17.00**	16.82	16.79	16.94
		1	2	**17.00**	16.97	16.88	16.97
		1	5	**17.00**	16.90	16.73	16.80
		3	0	**17.00**	16.78	16.71	16.85
		3	1	**17.00**	16.86	16.59	16.82
		3	3	**17.00**	16.92	16.67	16.76
		6	0	**16.00**	15.18	15.17	15.30
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					19965	20175	20385
					1711.5	1732.5	1753.5
3MHz	QPSK	1	0	**17.80**	17.65	17.35	17.48
		1	7	**17.80**	17.39	17.56	17.42
		1	14	**17.80**	17.29	17.22	17.35
		8	0	**17.00**	16.29	16.47	16.75
		8	3	**17.00**	16.40	16.58	16.70
		8	7	**17.00**	16.36	16.47	16.59
		15	0	**17.00**	16.34	16.52	16.71
	16QAM	1	0	**17.00**	16.24	16.62	16.90
		1	7	**17.00**	16.32	16.71	16.61
		1	14	**17.00**	16.53	16.48	16.63
		8	0	**16.00**	15.66	15.50	15.81
		8	3	**16.00**	15.77	15.54	15.74
		8	7	**16.00**	15.74	15.46	15.62
		15	0	**16.00**	15.77	15.46	15.72

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					19975	20175	20375
					1712.5	1732.5	1752.5
5MHz	QPSK	1	0	**17.80**	17.56	17.59	17.79
		1	12	**17.80**	17.58	17.87	17.72
		1	24	**17.80**	17.48	17.49	17.46
		12	0	**17.00**	16.38	16.91	16.38
		12	6	**17.00**	16.58	16.95	16.37
		12	13	**17.00**	16.57	16.95	16.44
		25	0	**17.00**	16.46	16.95	16.53
	16QAM	1	0	**17.00**	16.95	16.91	16.62
		1	12	**17.00**	16.80	16.53	16.55
		1	24	**17.00**	16.37	16.81	16.95
		12	0	**16.00**	15.75	15.81	15.79
		12	6	**16.00**	15.94	15.96	15.84
		12	13	**16.00**	15.86	15.92	15.72
		25	0	**16.00**	15.74	15.83	15.96
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20000	20175	20350
					1715	1732.5	1750
10MHz	QPSK	1	0	**17.80**	17.50	17.64	17.69
		1	24	**17.80**	17.69	17.86	17.44
		1	49	**17.80**	17.66	17.69	17.61
		25	0	**17.00**	16.45	16.94	16.78
		25	12	**17.00**	16.74	16.98	16.42
		25	25	**17.00**	16.82	16.91	16.58
		50	0	**17.00**	16.90	16.98	16.59
	16QAM	1	0	**17.00**	16.93	16.95	16.86
		1	24	**17.00**	16.86	16.90	16.55
		1	49	**17.00**	16.35	16.85	16.80
		25	0	**16.00**	15.81	15.87	15.97
		25	12	**16.00**	15.96	15.81	15.94
		25	25	**16.00**	15.90	15.89	15.96
		50	0	**16.00**	15.73	15.88	15.90

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20025	20175	20325
					1717.5	1732.5	1747.5
15MHz	QPSK	1	0	**17.80**	17.13	17.76	17.47
		1	37	**17.80**	17.51	17.89	17.67
		1	74	**17.80**	17.73	17.17	17.66
		36	0	**17.00**	16.52	16.96	16.95
		36	19	**17.00**	16.62	16.98	16.83
		36	39	**17.00**	16.45	16.78	16.69
		75	0	**17.00**	16.45	16.95	16.79
	16QAM	1	0	**17.00**	16.31	16.51	16.91
		1	37	**17.00**	16.70	16.40	16.95
		1	74	**17.00**	16.98	16.53	16.44
		36	0	**16.00**	15.98	15.97	15.96
		36	19	**16.00**	15.51	15.85	15.79
		36	39	**16.00**	15.38	15.97	15.69
		75	0	**16.00**	15.26	15.98	15.74
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20050	20175	20300
					1720	1732.5	1745
20MHz	QPSK	1	0	**17.80**	17.73	17.75	17.74
		1	50	**17.80**	17.72	17.70	17.65
		1	99	**17.80**	17.37	17.71	17.46
		50	0	**17.00**	16.88	16.94	16.83
		50	25	**17.00**	16.85	16.88	16.68
		50	50	**17.00**	16.86	16.84	16.57
		100	0	**17.00**	16.26	16.86	16.46
	16QAM	1	0	**17.00**	16.95	16.99	16.87
		1	50	**17.00**	16.98	16.94	16.89
		1	99	**17.00**	16.75	16.92	16.98
		50	0	**16.00**	15.57	15.84	15.78
		50	25	**16.00**	15.64	15.85	15.55
		50	50	**16.00**	15.86	15.78	15.59
		100	0	**16.00**	15.83	15.77	15.41

(Modem1+Modem2)/(Modem1+Modem2+WiFi station)/ (Modem1+Hotspot on)/ (Modem1+Modem2+ Hotspot on)

FDD LTE B4(Bottom Ant)					Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					19957	20175	20393
					1710.7	1732.5	1754.3
1.4MHz	QPSK	1	0	**23.00**	22.16	22.16	22.17
		1	2	**23.00**	22.31	22.18	22.18
		1	5	**23.00**	21.68	21.76	21.88
		3	0	**23.00**	21.51	21.57	21.54
		3	1	**23.00**	21.49	21.53	21.57
		3	3	**23.00**	21.48	21.53	21.55
		6	0	**22.00**	21.53	21.34	21.52
	16QAM	1	0	**22.00**	21.01	21.05	21.08
		1	2	**22.00**	21.22	21.04	21.15
		1	5	**22.00**	21.15	21.92	21.97
		3	0	**22.00**	21.17	21.88	21.07
		3	1	**22.00**	21.99	21.90	21.98
		3	3	**22.00**	21.09	21.84	21.00
		6	0	**21.00**	20.45	20.37	20.48
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					19965	20175	20385
					1711.5	1732.5	1753.5
3MHz	QPSK	1	0	**23.00**	22.65	22.35	22.48
		1	7	**23.00**	22.39	22.56	22.42
		1	14	**23.00**	22.29	22.22	22.35
		8	0	**22.00**	21.29	21.47	21.75
		8	3	**22.00**	21.40	21.58	21.70
		8	7	**22.00**	21.36	21.47	21.59
		15	0	**22.00**	21.34	21.52	21.71
	16QAM	1	0	**22.00**	21.24	21.62	21.90
		1	7	**22.00**	21.32	21.71	21.61
		1	14	**22.00**	21.53	21.48	21.63
		8	0	**21.00**	20.66	20.50	20.81
		8	3	**21.00**	20.77	20.54	20.74
		8	7	**21.00**	20.74	20.46	20.62
		15	0	**21.00**	20.77	20.46	20.72

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 19975 1712.5	Mid 20175 1732.5	High 20375 1752.5
5MHz	QPSK	1	0	**23.00**	22.34	22.34	22.60
		1	12	**23.00**	22.41	22.65	22.53
		1	24	**23.00**	22.29	22.29	22.27
		12	0	**22.00**	21.19	21.71	21.15
		12	6	**22.00**	21.35	21.80	21.10
		12	13	**22.00**	21.33	21.75	21.23
		25	0	**22.00**	21.28	21.70	21.33
	16QAM	1	0	**22.00**	21.88	21.76	21.49
		1	12	**22.00**	21.54	21.40	21.40
		1	24	**22.00**	21.19	21.61	21.70
		12	0	**21.00**	20.98	20.66	20.04
		12	6	**21.00**	20.10	20.75	20.02
		12	13	**21.00**	20.10	20.63	20.88
		25	0	**21.00**	20.94	20.72	20.22
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 20000 1715	Mid 20175 1732.5	High 20350 1750
10MHz	QPSK	1	0	**23.00**	22.77	22.38	22.39
		1	24	**23.00**	22.48	22.62	22.17
		1	49	**23.00**	22.38	22.47	22.36
		25	0	**22.00**	21.26	21.72	21.47
		25	12	**22.00**	21.47	21.79	21.16
		25	25	**22.00**	21.58	21.67	21.28
		50	0	**22.00**	21.65	21.68	21.37
	16QAM	1	0	**22.00**	21.73	21.78	21.58
		1	24	**22.00**	21.62	21.59	21.29
		1	49	**22.00**	21.14	21.81	21.53
		25	0	**21.00**	20.97	20.61	20.46
		25	12	**21.00**	20.22	20.63	20.07
		25	25	**21.00**	20.99	20.65	20.91
		50	0	**21.00**	20.95	20.61	20.30

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20025	20175	20325
					1717.5	1732.5	1747.5
15MHz	QPSK	1	0	**23.00**	22.04	22.46	22.19
		1	37	**23.00**	22.28	22.66	22.41
		1	74	**23.00**	22.45	22.06	22.40
		36	0	**22.00**	21.27	21.73	21.67
		36	19	**22.00**	21.34	21.74	21.56
		36	39	**22.00**	21.16	21.59	21.40
		75	0	**22.00**	21.23	21.74	21.60
	16QAM	1	0	**22.00**	21.08	21.32	21.61
		1	37	**22.00**	21.45	21.15	21.86
		1	74	**22.00**	21.75	21.25	21.10
		36	0	**21.00**	20.20	20.23	20.55
		36	19	**21.00**	20.25	20.68	20.49
		36	39	**21.00**	20.11	20.71	20.40
		75	0	**21.00**	20.10	20.82	20.49

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20050	20175	20300
					1720	1732.5	1745
20MHz	QPSK	1	0	**23.00**	22.81	22.81	22.77
		1	50	**23.00**	22.71	22.77	22.67
		1	99	**23.00**	22.29	22.63	22.37
		50	0	**22.00**	21.79	21.96	21.89
		50	25	**22.00**	21.73	21.79	21.54
		50	50	**22.00**	21.74	21.75	21.49
		100	0	**22.00**	21.19	21.76	21.38
	16QAM	1	0	**22.00**	21.24	21.86	21.47
		1	50	**22.00**	21.53	21.05	21.11
		1	99	**22.00**	21.66	21.42	21.91
		50	0	**21.00**	20.50	20.75	20.64
		50	25	**21.00**	20.55	20.74	20.49
		50	50	**21.00**	20.76	20.68	20.49
		100	0	**21.00**	20.78	20.76	20.28

8.1.15CONDUCTED POWER MEASUREMENTS OF LTE BAND 5(FULL POWER)

FDD LTE B5(Top Ant)					Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 20407 824.7	Mid 20525 836.5	High 20643 848.3
1.4MHz	QPSK	1	0	**24.00**	22.69	22.27	22.77
		1	2	**24.00**	22.70	22.45	22.79
		1	5	**24.00**	22.60	22.36	22.34
		3	0	**23.00**	21.43	21.71	21.35
		3	1	**23.00**	21.46	21.29	21.37
		3	3	**23.00**	21.44	21.73	21.39
		6	0	**23.00**	21.03	21.35	21.17
	16QAM	1	0	**23.00**	21.87	22.46	22.09
		1	2	**23.00**	21.92	22.52	22.09
		1	5	**23.00**	21.74	22.41	22.08
		3	0	**23.00**	21.82	22.19	21.93
		3	1	**23.00**	21.90	22.20	21.92
		3	3	**23.00**	21.87	22.26	21.91
		6	0	**22.00**	20.79	21.24	21.05
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 20415 825.5	Mid 20525 836.5	High 20635 847.5
3MHz	QPSK	1	0	**24.00**	22.65	22.25	22.17
		1	7	**24.00**	22.14	22.20	22.30
		1	14	**24.00**	22.54	22.53	22.42
		8	0	**23.00**	21.73	21.54	21.40
		8	3	**23.00**	21.71	21.63	21.40
		8	7	**23.00**	21.74	21.58	21.35
		15	0	**23.00**	21.75	21.62	21.42
	16QAM	1	0	**23.00**	21.72	22.37	22.02
		1	7	**23.00**	21.96	22.59	22.21
		1	14	**23.00**	21.64	22.31	22.00
		8	0	**22.00**	20.69	21.18	20.84
		8	3	**22.00**	20.72	21.26	20.91
		8	7	**22.00**	20.65	21.17	20.87
		15	0	**22.00**	20.65	21.11	20.90

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20425	20525	20625
					826.5	836.5	846.5
5MHz	QPSK	1	0	**24.00**	22.58	22.73	22.72
		1	12	**24.00**	22.29	22.36	22.27
		1	24	**24.00**	22.43	22.72	22.47
		12	0	**23.00**	21.77	21.58	21.44
		12	6	**23.00**	21.53	21.68	21.55
		12	13	**23.00**	21.69	21.53	21.52
		25	0	**23.00**	21.65	21.51	21.43
	16QAM	1	0	**23.00**	21.72	21.67	21.47
		1	12	**23.00**	22.01	21.99	21.81
		1	24	**23.00**	21.60	21.54	21.39
		12	0	**22.00**	21.28	21.08	20.88
		12	6	**22.00**	21.37	21.21	21.03
		12	13	**22.00**	21.21	21.07	21.07
		25	0	**22.00**	21.13	21.00	20.86
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20450	20525	20600
					829	836.5	844
10MHz	QPSK	1	0	**24.00**	22.65	22.75	22.67
		1	24	**24.00**	22.68	22.76	22.70
		1	49	**24.00**	22.62	22.73	22.49
		25	0	**23.00**	21.82	21.81	21.76
		25	12	**23.00**	21.70	21.04	21.02
		25	25	**23.00**	21.56	21.38	21.44
		50	0	**23.00**	21.57	21.85	21.99
	16QAM	1	0	**23.00**	21.57	21.82	21.96
		1	24	**23.00**	22.04	22.52	22.03
		1	49	**23.00**	22.34	22.56	22.10
		25	0	**22.00**	21.13	20.87	20.77
		25	12	**22.00**	21.31	21.00	20.90
		25	25	**22.00**	21.10	20.75	20.78
		50	0	**22.00**	21.09	20.74	20.94

FDD LTE B5(Bottom Ant)					Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20407	20525	20643
					824.7	836.5	848.3
1.4MHz	QPSK	1	0	**24.00**	22.82	22.40	22.90
		1	2	**24.00**	22.83	22.58	22.92
		1	5	**24.00**	22.73	22.49	22.47
		3	0	**23.00**	21.56	21.84	21.48
		3	1	**23.00**	21.59	21.42	21.50
		3	3	**23.00**	21.57	21.86	21.52
		6	0	**23.00**	21.16	21.48	21.30
	16QAM	1	0	**23.00**	22.00	22.59	22.22
		1	2	**23.00**	22.05	22.65	22.22
		1	5	**23.00**	21.87	22.54	22.21
		3	0	**23.00**	21.95	22.32	22.06
		3	1	**23.00**	22.03	22.33	22.05
		3	3	**23.00**	22.00	22.39	22.04
		6	0	**22.00**	20.92	21.37	21.18
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20415	20525	20635
					825.5	836.5	847.5
3MHz	QPSK	1	0	**24.00**	22.78	22.38	22.30
		1	7	**24.00**	22.27	22.33	22.43
		1	14	**24.00**	22.67	22.66	22.55
		8	0	**23.00**	21.86	21.67	21.53
		8	3	**23.00**	21.84	21.76	21.53
		8	7	**23.00**	21.87	21.71	21.48
		15	0	**23.00**	21.88	21.75	21.55
	16QAM	1	0	**23.00**	21.85	22.50	22.15
		1	7	**23.00**	22.09	22.72	22.34
		1	14	**23.00**	21.77	22.44	22.13
		8	0	**22.00**	20.82	21.31	20.97
		8	3	**22.00**	20.85	21.39	21.04
		8	7	**22.00**	20.78	21.30	21.00
		15	0	**22.00**	20.78	21.24	21.03

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20425	20525	20625
					826.5	836.5	846.5
5MHz	QPSK	1	0	**24.00**	22.71	22.86	22.85
		1	12	**24.00**	22.42	22.49	22.40
		1	24	**24.00**	22.56	22.85	22.60
		12	0	**23.00**	21.90	21.71	21.57
		12	6	**23.00**	21.66	21.81	21.68
		12	13	**23.00**	21.82	21.66	21.65
		25	0	**23.00**	21.78	21.64	21.56
	16QAM	1	0	**23.00**	21.85	21.80	21.60
		1	12	**23.00**	22.14	22.12	21.94
		1	24	**23.00**	21.73	21.67	21.52
		12	0	**22.00**	21.41	21.21	21.01
		12	6	**22.00**	21.50	21.34	21.16
		12	13	**22.00**	21.34	21.20	21.20
		25	0	**22.00**	21.26	21.13	20.99

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20450	20525	20600
					829	836.5	844
10MHz	QPSK	1	0	**24.00**	22.28	22.18	22.50
		1	24	**24.00**	22.51	23.37	22.65
		1	49	**24.00**	22.50	22.82	22.62
		25	0	**23.00**	21.95	21.90	21.89
		25	12	**23.00**	21.83	21.17	21.15
		25	25	**23.00**	21.69	21.51	21.57
		50	0	**23.00**	21.70	21.98	22.12
	16QAM	1	0	**23.00**	21.70	21.95	22.09
		1	24	**23.00**	22.17	22.65	22.16
		1	49	**23.00**	22.47	22.69	22.23
		25	0	**22.00**	21.26	21.00	20.90
		25	12	**22.00**	21.44	21.13	21.03
		25	25	**22.00**	21.23	20.88	20.91
		50	0	**22.00**	21.22	20.87	21.07

8.1.16CONDUCTED POWER MEASUREMENTS OF LTE BAND 5(ADDITIONAL POWER)

(Modem1+Modem2)/(Modem1+WiFi station)/(Modem1+Modem2+WiFi station)/ (Modem1+Hotspot on)/(Modem1+Modem2+ Hotspot on)

FDD LTE B5(Top Ant)					Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20407	20525	20643
					824.7	836.5	848.3
1.4MHz	QPSK	1	0	**22.50**	21.18	20.81	21.29
		1	2	**22.50**	21.18	20.94	21.33
		1	5	**22.50**	21.08	20.88	20.83
		3	0	**21.50**	20.77	20.99	20.64
		3	1	**21.50**	20.74	20.63	20.65
		3	3	**21.50**	20.78	21.03	20.67
		6	0	**21.50**	19.55	19.86	19.65
	16QAM	1	0	**21.50**	20.39	20.95	20.60
		1	2	**21.50**	20.33	21.04	20.57
		1	5	**21.50**	20.25	20.89	20.60
		3	0	**21.50**	20.31	20.68	20.40
		3	1	**21.50**	20.38	20.67	20.45
		3	3	**21.50**	20.34	20.75	20.38
		6	0	**20.50**	19.31	19.66	19.49
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20415	20525	20635
					825.5	836.5	847.5
3MHz	QPSK	1	0	**22.50**	21.09	20.74	20.68
		1	7	**22.50**	20.63	20.72	20.78
		1	14	**22.50**	21.03	21.01	20.88
		8	0	**21.50**	20.24	20.05	19.95
		8	3	**21.50**	20.20	20.10	19.94
		8	7	**21.50**	20.25	20.12	19.84
		15	0	**21.50**	20.24	20.16	19.96
	16QAM	1	0	**21.50**	20.26	20.86	20.50
		1	7	**21.50**	20.50	21.13	20.70
		1	14	**21.50**	20.13	20.73	20.48
		8	0	**20.50**	19.16	19.67	19.32
		8	3	**20.50**	19.21	19.73	19.42
		8	7	**20.50**	19.07	19.61	19.36
		15	0	**20.50**	19.23	19.60	19.42

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 20425 826.5	Mid 20525 836.5	High 20625 846.5
5MHz	QPSK	1	0	**22.50**	21.12	21.21	21.21
		1	12	**22.50**	20.78	20.83	20.78
		1	24	**22.50**	20.92	21.23	20.96
		12	0	**21.50**	20.25	20.09	19.98
		12	6	**21.50**	20.01	20.17	20.09
		12	13	**21.50**	20.17	20.02	20.01
		25	0	**21.50**	20.16	20.06	19.90
	16QAM	1	0	**21.50**	20.20	20.14	19.96
		1	12	**21.50**	20.53	20.51	20.23
		1	24	**21.50**	20.07	20.05	19.97
		12	0	**20.50**	19.81	19.56	19.39
		12	6	**20.50**	19.84	19.72	19.52
		12	13	**20.50**	19.65	19.58	19.49
		25	0	**20.50**	19.62	19.49	19.44
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low 20450 829	Mid 20525 836.5	High 20600 844
10MHz	QPSK	1	0	**22.50**	21.16	21.24	21.19
		1	24	**22.50**	21.17	21.26	21.18
		1	49	**22.50**	21.10	21.24	21.00
		25	0	**21.50**	20.30	20.30	20.23
		25	12	**21.50**	20.17	19.55	19.56
		25	25	**21.50**	20.07	19.87	19.98
		50	0	**21.50**	20.08	20.39	20.48
	16QAM	1	0	**21.50**	20.06	20.36	20.50
		1	24	**21.50**	20.53	21.01	20.45
		1	49	**21.50**	20.89	21.03	20.59
		25	0	**20.50**	19.60	19.36	19.24
		25	12	**20.50**	19.83	19.42	19.34
		25	25	**20.50**	19.61	19.33	19.27
		50	0	**20.50**	19.57	19.25	19.42

8.1.17CONDUCTED POWER MEASUREMENTS OF LTE BAND 7(FULL POWER)

FDD LTE B7(Top Ant)					Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20775	21100	21425
					2502.5	2535	2567.5
5MHz	QPSK	1	0	**24.00**	22.13	22.15	22.28
		1	12	**24.00**	22.56	22.32	22.29
		1	24	**24.00**	22.23	22.54	22.22
		12	0	**23.00**	21.09	21.50	21.78
		12	6	**23.00**	21.15	21.56	21.72
		12	13	**23.00**	21.07	21.43	21.69
		25	0	**23.00**	21.04	21.39	21.71
	16QAM	1	0	**23.00**	21.57	21.04	21.18
		1	12	**23.00**	21.27	21.25	21.25
		1	24	**23.00**	21.63	21.58	21.56
		12	0	**22.00**	20.25	20.60	20.31
		12	6	**22.00**	20.36	20.66	20.31
		12	13	**22.00**	20.28	20.52	20.18
		25	0	**22.00**	20.14	20.48	20.17
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20800	21100	21400
					2505	2535	2565
10MHz	QPSK	1	0	**24.00**	22.31	22.21	22.01
		1	24	**24.00**	22.49	22.16	22.42
		1	49	**24.00**	22.33	22.29	22.25
		25	0	**23.00**	21.14	21.39	21.39
		25	12	**23.00**	21.21	21.47	21.67
		25	25	**23.00**	21.12	21.43	21.63
		50	0	**23.00**	21.12	21.36	21.72
	16QAM	1	0	**23.00**	21.50	21.14	21.33
		1	24	**23.00**	21.05	21.48	21.25
		1	49	**23.00**	21.65	21.15	21.54
		25	0	**22.00**	20.20	20.61	21.27
		25	12	**22.00**	20.37	20.59	21.19
		25	25	**22.00**	20.29	20.57	21.16
		50	0	**22.00**	20.26	20.44	21.23

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20825	21100	21375
					2507.5	2535	2562.5
15MHz	QPSK	1	0	**24.00**	22.04	22.39	22.40
		1	37	**24.00**	22.35	22.58	22.43
		1	74	**24.00**	22.57	22.07	22.05
		36	0	**23.00**	21.14	21.35	21.27
		36	19	**23.00**	21.30	21.49	21.46
		36	39	**23.00**	21.16	21.43	21.29
		75	0	**23.00**	21.11	21.31	21.59
	16QAM	1	0	**23.00**	21.51	21.83	21.28
		1	37	**23.00**	21.15	21.47	21.39
		1	74	**23.00**	21.61	21.11	21.42
		36	0	**22.00**	20.33	20.46	20.46
		36	19	**22.00**	20.46	20.68	20.56
		36	39	**22.00**	20.35	20.50	20.79
		75	0	**22.00**	20.30	20.51	20.35

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20850	21100	21350
					2510	2535	2560
20MHz	QPSK	1	0	**24.00**	22.51	22.65	22.06
		1	50	**24.00**	22.47	22.61	22.60
		1	99	**24.00**	22.02	22.34	22.29
		50	0	**23.00**	21.63	21.65	21.47
		50	25	**23.00**	21.65	21.68	21.56
		50	50	**23.00**	21.14	21.44	21.37
		100	0	**23.00**	21.15	21.36	21.30
	16QAM	1	0	**23.00**	21.42	21.53	21.79
		1	50	**23.00**	21.76	21.49	21.42
		1	99	**23.00**	21.28	21.76	21.33
		50	0	**22.00**	20.41	20.44	20.26
		50	25	**22.00**	20.50	20.55	20.66
		50	50	**22.00**	20.33	20.54	20.41
		100	0	**22.00**	20.32	20.52	20.51

FDD LTE B7(Bottom Ant)					Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20775	21100	21425
					2502.5	2535	2567.5
5MHz	QPSK	1	0	**24.00**	22.20	22.22	22.35
		1	12	**24.00**	22.63	22.39	22.36
		1	24	**24.00**	22.30	22.61	22.29
		12	0	**23.00**	21.16	21.57	21.85
		12	6	**23.00**	21.22	21.63	21.79
		12	13	**23.00**	21.14	21.50	21.76
		25	0	**23.00**	21.11	21.46	21.78
	16QAM	1	0	**23.00**	21.64	21.11	21.05
		1	12	**23.00**	21.04	21.32	21.02
		1	24	**23.00**	21.70	21.65	21.63
		12	0	**22.00**	20.32	20.67	20.38
		12	6	**22.00**	20.43	20.73	20.38
		12	13	**22.00**	20.35	20.59	20.25
		25	0	**22.00**	20.21	20.55	20.24
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20800	21100	21400
					2505	2535	2565
10MHz	QPSK	1	0	**24.00**	22.38	22.28	22.08
		1	24	**24.00**	22.56	22.03	22.49
		1	49	**24.00**	22.40	22.36	22.32
		25	0	**23.00**	21.21	21.46	21.46
		25	12	**23.00**	21.28	21.54	21.74
		25	25	**23.00**	21.19	21.50	21.70
		50	0	**23.00**	21.19	21.43	21.79
	16QAM	1	0	**23.00**	21.57	21.21	21.40
		1	24	**23.00**	21.12	21.55	21.02
		1	49	**23.00**	21.72	21.22	21.61
		25	0	**22.00**	20.27	20.68	21.34
		25	12	**22.00**	20.44	20.66	21.26
		25	25	**22.00**	20.36	20.64	21.23
		50	0	**22.00**	20.33	20.51	21.30

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20825	21100	21375
					2507.5	2535	2562.5
15MHz	QPSK	1	0	**24.00**	22.11	22.46	22.47
		1	37	**24.00**	22.42	22.65	22.50
		1	74	**24.00**	22.64	22.14	22.12
		36	0	**23.00**	21.21	21.42	21.04
		36	19	**23.00**	21.37	21.56	21.53
		36	39	**23.00**	21.23	21.50	21.36
		75	0	**23.00**	21.18	21.38	21.66
	16QAM	1	0	**23.00**	21.58	21.90	21.35
		1	37	**23.00**	21.22	21.54	21.46
		1	74	**23.00**	21.68	21.18	21.49
		36	0	**22.00**	20.40	20.53	20.53
		36	19	**22.00**	20.53	20.75	20.07
		36	39	**22.00**	20.42	20.57	20.86
		75	0	**22.00**	20.37	20.58	20.42
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20850	21100	21350
					2510	2535	2560
20MHz	QPSK	1	0	**24.00**	22.18	22.22	22.13
		1	50	**24.00**	22.54	22.68	22.67
		1	99	**24.00**	22.09	22.41	22.36
		50	0	**23.00**	21.30	21.30	21.44
		50	25	**23.00**	21.39	21.83	21.43
		50	50	**23.00**	21.21	21.51	21.44
		100	0	**23.00**	21.22	21.43	21.07
	16QAM	1	0	**23.00**	21.49	21.60	21.86
		1	50	**23.00**	21.83	21.56	21.49
		1	99	**23.00**	21.35	21.83	21.40
		50	0	**22.00**	20.48	20.51	20.03
		50	25	**22.00**	20.57	20.62	20.73
		50	50	**22.00**	20.40	20.61	20.48
		100	0	**22.00**	20.39	20.59	20.58