SAR TEST REPORT

No. 25T04Z100480-001

For

Shanghai Sunmi Technology Co.,Ltd.

Smart POS System

Model Name: T6F10

with

Hardware Version: V1.0(LA+EU)

Software Version: V3.0.0

FCC ID: 2AH25T6F10

Issued Date: 2025-05-26

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

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REPORT HISTORY

Report Number	Revision	Issue Date	Description
25T04Z100480-001	Rev.0	2025-05-26	Initial creation of test report

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1 Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under American Association for Laboratory Accreditation (A2LA) with lab code 7049.01, and is also an FCC accredited test laboratory (CN1349), and ISED accredited test laboratory (CAB identifier:CN0066). The detail accreditation scope can be found on A2LA website.

1.2. Testing Location

Location 1: CTTL(huayuan North Road)
Address: No. 52, Huayuan North Road, Haidian District, Beijing,
P. R. China 100191

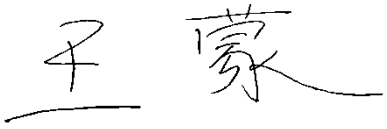
1.3. Testing Environment

Normal Temperature:	18-25℃
Relative Humidity:	30-70%

1.4. Project data

Testing Start Date:	2025-04-24
Testing End Date:	2025-05-21

1.5. Signature



Wang Meng

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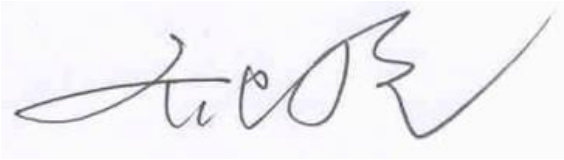
(Reviewed this test report)



Qi Dianyuan

Deputy Director of the laboratory

(Approved this test report)

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2 Statement of Compliance

This project is a variant project based on the original report 24T04I300102-022.

In this project, we conducted spot checks and tests on the worst mode of each frequency band. Based on the verification results, a complete test was carried out on the exposure scenarios of the following frequency bands:

Body SAR (Body-worn&HotSpot 5mm): GSM850/WCDMA BandⅣ/LTE Band 7/Wi-Fi 5G U-NII-2A.

Limb SAR (0mm): GSM850/LTE Band 40/Wi-Fi 2.4G/Wi-Fi 5G U-NII-1/Wi-Fi 5G U-NII-2A.

The maximum values in Table 2.1 are composed of the following three scenarios:

1、If the spot checks results are less than or equal to the reference model and the maximum difference is less than 25%, the SAR value of the reference model shall be used. It includes the following frequency bands:

Body SAR (Body-worn&HotSpot 5mm): GSM1900; WCDMA BandⅡ/Ⅴ; LTE Band 2/4/40(2305MHz -2315MHz)/40(2350MHz -2360MHz)/41/Wi-Fi 5G U-NII-2C.

Limb SAR (0mm): GSM1900; WCDMA BandⅡ/Ⅳ; LTE Band 2/4/7/41/Wi-Fi 5G U-NII-2C.

2、The spot checks results are greater than those of the reference model and the maximum difference is less than 25%, using the SAR value of the variant model. It includes the following frequency bands:

Body SAR (Body-worn&HotSpot 5mm): LTE Band 26; Wi-Fi 2.4G/Wi-Fi 5G U-NII-1/U-NII-3; BT

Limb SAR (0mm): WCDMA BandⅤ; LTE Band 26; Wi-Fi 5G U-NII-3; BT

3、If the maximum difference between the spot checks results and the reference model exceeds 25% or the worst position of the variant product has changed, then a complete test should be conducted on the exposed scene and the SAR value of the variant model should be used. It includes the following frequency bands:

Body SAR (Body-worn&HotSpot 5mm): GSM850; WCDMA BandⅣ; LTE Band 7; Wi-Fi 5G U-NII-2A

Limb SAR (0mm): GSM850; LTE Band 40(2305MHz -2315MHz)/40(2350MHz -2360MHz); Wi-Fi 2.4G/Wi-Fi 5G U-NII-1/U-NII-2A

The maximum results of Specific Absorption Rate (SAR) found during testing for Shanghai Sunmi Technology Co.,Ltd. Smart POS System T6F10 are as follows:

Table 2.1: Highest Reported SAR

Band	Antenna	**Highest Reported SAR (1g)**	**Highest Reported SAR (10g)**
		1g SAR Body-worn& Hotspot	**10g SAR Limb**
GSM 850	Main ANT	0.97	1.30
PCS 1900	Main ANT	0.94	1.29
WCDMA BandⅡ	Main ANT	0.92	1.23
WCDMA BandⅣ	Main ANT	0.96	1.32
WCDMA BandⅤ	Main ANT	0.72	0.56
LTE Band 2	Main ANT	1.00	1.26
LTE Band 4	Main ANT	0.97	1.30
LTE Band 7	Main ANT	0.99	0.85
LTE Band 26/5	Main ANT	0.82	1.11
LTE Band 40	Main ANT	0.61	0.54
LTE Band 41/38	Main ANT	0.83	0.71

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WLAN 2.4 GHz	Wi-Fi/BT ANT	0.50	0.34
WLAN 5 GHz	Wi-Fi/BT ANT	0.51	0.38
BT	Wi-Fi/BT ANT	0.17	0.10

Note1: The device have similar frequency in some LTE bands ：LTE Band26/5, LTE Band41/38 since the supported frequency spans for the smaller LTE bands are completely cover by the larger LTE bands and the channel bandwidth and other operating parameters for the smaller band be fully supported by the larger band, therefore, only larger LTE bands were required to be tested for SAR.

The SAR values found for the Mobile Phone are below the maximum recommended levels of 1.6 W/kg as averaged over any 1g tissue according to the ANSI C95.1-1992.

For body operation, this device has been tested and meets FCC RF exposure guidelines when used with any accessory that contains no metal and which provides a minimum separation distance of 5 mm between this device and the body of the user. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output.

The measurement together with the test system set-up is described in annex C of this test report. A detailed description of the equipment under test can be found in chapter 4 of this test report. The highest reported SAR value is obtained at the case of **(Table 2.1),** and the values are**:**

Body-worn&Hotspot: 1.00 W/kg(1g)

Limb: 1.32 W/kg(10g)

Table 2.2: Simultaneous Transmission- Body-worn&Hotspot

	Position	**Main antenna**	**WiFi**	**Sum**
Highest SAR value for Body	Right 5mm	0.97 (GSM850)	0.51 (WiFi5G)	**1.48**

Note1: the test positions of above tables are for the worse case that have been evaluated.

Table 2.3: Simultaneous Transmission-Limb

	Position	**Main antenna**	**WiFi**	**Sum**
Highest SAR value for Limb	Right 0mm	1.26 (WCDMA BandⅣ)	0.38 (WiFi5G)	**1.64**

Note1: the test positions of above tables are for the worse case that have been evaluated.

According to the above tables, the highest sum of reported SAR values is **1.48 W/kg (1g) and 1.62 W/kg (10g)** . The detail for simultaneous transmission consideration is described in chapter 13.

Conclusion:

According to the above table, the sum of reported SAR values for partial-body GSM/WCDMA/LTE and Wi-Fi/BT < 1.6W/kg; the sum of reported SAR values for Limb GSM/WCDMA/LTE and Wi-Fi/BT < 4.0W/kg.

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3 Client Information

3.1 Applicant Information

Company Name:	Shanghai Sunmi Technology Co.,Ltd.
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3.2 Manufacturer Information

Company Name:	Shanghai Sunmi Technology Co.,Ltd.
Address/Post:	Room 505, No.388,Song Hu Road, Yang Pu District, Shanghai, China
Contact Person:	chenxuanfei
Contact Email:	chenxuanfei@sunmi.com
Telephone:	18826519551
Fax	/

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4 Equipment Under Test (EUT) and Ancillary Equipment (AE)

4.1 About EUT

Description:	Smart POS System
Model name:	T6F10
Tested Band:	GSM850/900/1800/1900 WCDMA Band I/II/IV/V/VI/VIII/XIX LTE Band FDD: 1/2/3/4/5/7/8/18/19/20/26/28 LTE Band TDD: 34/38/39/40/41 BT, Wi-Fi(2.4G), Wi-Fi(5G), NFC
Tx Frequency:	824 – 849 MHz (GSM 850)
	1850 – 1910 MHz (GSM 1900)
	1850–1910 MHz (WCDMA1900 Band II)
	1710 – 1755 MHz (WCDMA 1700 Band IV)
	824–849 MHz (WCDMA 850 Band V)
	1850 – 1910 MHz(LTE Band 2)
	1710 – 1755 MHz (LTE Band 4)
	824 – 849 MHz (LTE Band 5)
	2500 – 2570 MHz(LTE Band 7)
	814 – 849 MHz (LTE Band 26)
	2570 – 2620 MHz (LTE Band 38)
	2305 – 2315 MHz/2350 – 2360 MHz (LTE Band 40)
	2496 – 2690 MHz (LTE Band 41)
	2412 – 2462 MHz (WLAN 2.4G)
	5180 – 5240 MHz (WLAN 5G UNII-1)
	5260 – 5320 MHz (WLAN 5G UNII-2A)
	5500 – 5700 MHz (WLAN 5G UNII-2C)
	5745 – 5825 MHz (WLAN 5G UNII-3)
	2402 – 2480 MHz (Bluetooth)
	13.56 MHz (NFC)
GPRS/EGPRS Multislot Class:	33
Test device production information:	Production unit
Device type:	Portable device
Antenna type:	Integrated antenna

4.2 Internal Identification of EUT used during the test

EUT ID*	IMEI	HW Version	SW Version
EUT1	866413070769607/866413070771470	V1.0(LA+EU)	V3.0.0

*EUT ID: is used to identify the test sample in the lab internally.

Note: It is performed to test SAR with the EUT1.

4.3 Internal Identification of AE used during the test

AE ID*	Description	Model	SN	Manufacturer
AE1	Battery	FHPS	E150140574CW144B6	Guangdong Fenghua New Energy Co., Ltd.

*AE ID: is used to identify the test sample in the lab internally.

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5 TEST METHODOLOGY

5.1 Applicable Limit Regulations

ANSI C95.1–1992:IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

It specifies the maximum exposure limit of **1.6 W/kg** as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

It specifies the maximum exposure limit of **4.0** W/kg as averaged over any 10 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

5.2 Applicable Measurement Standards

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.

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5.3 KDB and Workshop Procedures

KDB447498 D01: General RF Exposure Guidance v06: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

KDB941225 D01 SAR test for 3G devices v03r01: SAR Measurement Procedures for 3G Devices

KDB941225 D05 SAR for LTE Devices v02r05: SAR Evaluation Considerations for LTE Devices

KDB941225 D06 Hotspot Mode SAR v02r01: SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities

KDB248227 D01 802.11 Wi-Fi SAR v02r02: SAR GUIDANCE FOR IEEE 802.11 (Wi-Fi) TRANSMITTERS

KDB 616217 D04 SAR for laptop and tablets v01r02: SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers

KDB865664 D01 SAR measurement 100 MHz to 6 GHz v01r04: SAR Measurement Requirements for 100 MHz to 6 GHz.

KDB865664 D02 RF Exposure Reporting v01r02: RF Exposure Compliance Reporting and Documentation Considerations

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6 Specific Absorption Rate (SAR)

6.1 Introduction

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

6.2 SAR Definition

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

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

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

$$SAR = c(\frac{\delta T}{\delta t})$$

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

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

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

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

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7 Tissue Simulating Liquids

7.1 Targets for tissue simulating liquid

Table 7.1: Targets for tissue simulating liquid(frequency <3GHz)

Frequency(MHz)	Liquid Type	Conductivity(σ)	±5% Range	Permittivity(ε)	± 5% Range
835	Head	0.90	0.86～0.95	41.5	39.4～43.6
1750	Head	1.37	1.30～1.44	40.08	38.1～42.1
1900	Head	1.40	1.33～1.47	40.0	38.0～42.0
2450	Head	1.80	1.62～1.98	39.2	35.28～43.12
2600	Head	1.96	1.76～2.16	39.01	35.11～42.91

Table 7.2: Targets for tissue simulating liquid(frequency >3GHz)

Frequency(MHz)	Liquid Type	Conductivity(σ)	± 5% Range	Permittivity(ε)	± 5% Range
3300	Head	2.71	2.57～2.85	38.2	36.29～40.11
3500	Head	2.91	2.76～3.06	37.93	36.03～39.83
3700	Head	3.22	3.06~3.38	37.6	35.72~39.48
3900	Head	3.32	3.15~3.49	37.5	35.63~39.38
4200	Head	3.63	3.45~3.81	37.1	35.25~38.96
5250	Head	4.71	4.47～4.95	35.93	34.13～37.73
5600	Head	5.07	4.82～5.32	35.53	33.8～37.3
5750	Head	5.22	4.96～5.48	35.36	33.59～37.13

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7.2 Dielectric Performance

Table 7.3: Dielectric Performance of Tissue Simulating Liquid

Measurement Date (yyyy-mm-dd)	Type	Frequency	Permittivity ε	Drift (%)	Conductivity σ (S/m)	Drift (%)
2025-04-28	Head	835 MHz	43.108	3.87	0.913	1.44
2025-05-12	Head	835 MHz	43.123	3.91	0.913	1.44
2025-05-21	Head	835 MHz	42.293	1.91	0.930	3.33
2025-04-29	Head	1750 MHz	39.173	-2.31	1.322	-3.50
2025-05-21	Head	1750 MHz	39.181	-2.29	1.322	-3.50
2025-04-29	Head	1900 MHz	39.017	-2.46	1.411	0.79
2025-05-21	Head	1900 MHz	39.024	-2.44	1.411	0.79
2025-04-24	Head	2300 MHz	38.625	-2.22	1.731	3.65
2025-04-24	Head	2450 MHz	38.333	-2.21	1.848	2.67
2025-05-13	Head	2450 MHz	40.030	2.12	1.835	1.94
2025-04-24	Head	2600 MHz	38.064	-2.40	1.964	0.20
2025-05-13	Head	2600 MHz	39.773	1.98	1.956	-0.20
2025-05-07	Head	5200 MHz	36.107	0.30	4.732	1.55
2025-05-07	Head	5300 MHz	35.899	0.00	4.848	1.85
2025-04-30	Head	5600 MHz	35.665	0.46	5.205	2.66
2025-04-30	Head	5800 MHz	35.279	-0.06	5.445	3.32

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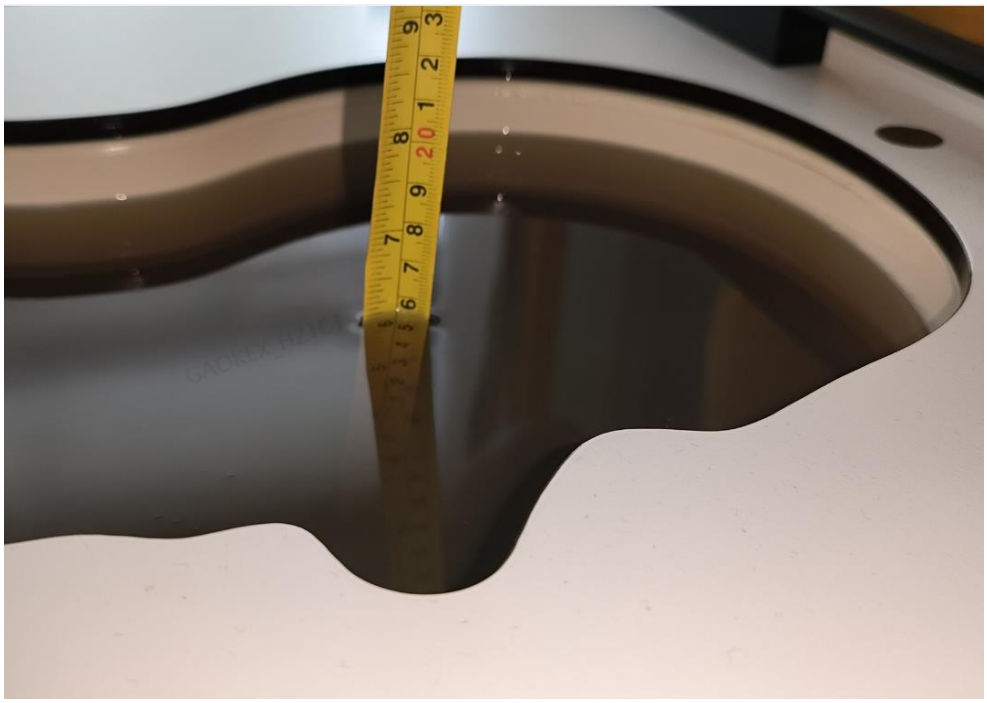
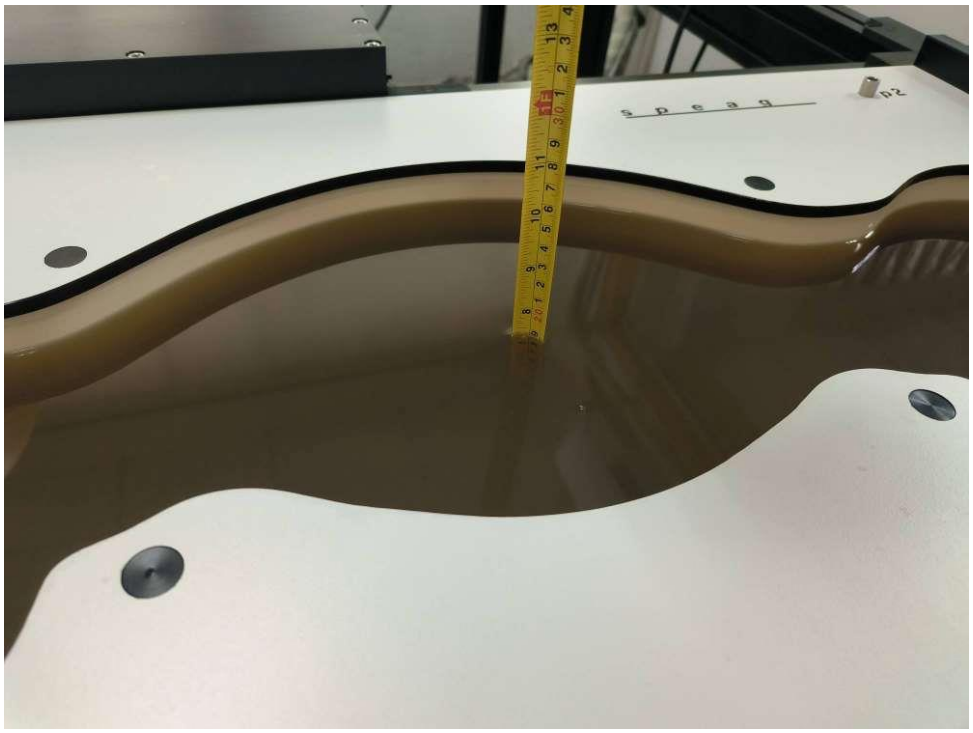


Picture 1 Liquid depth in the Head Phantom



Picture 2 Liquid depth in the Flat Phantom

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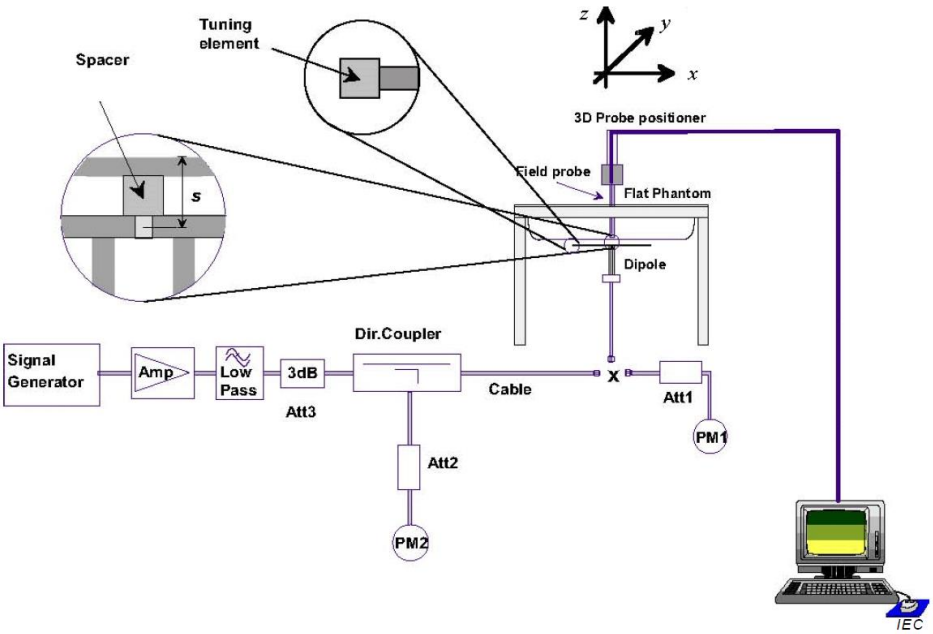
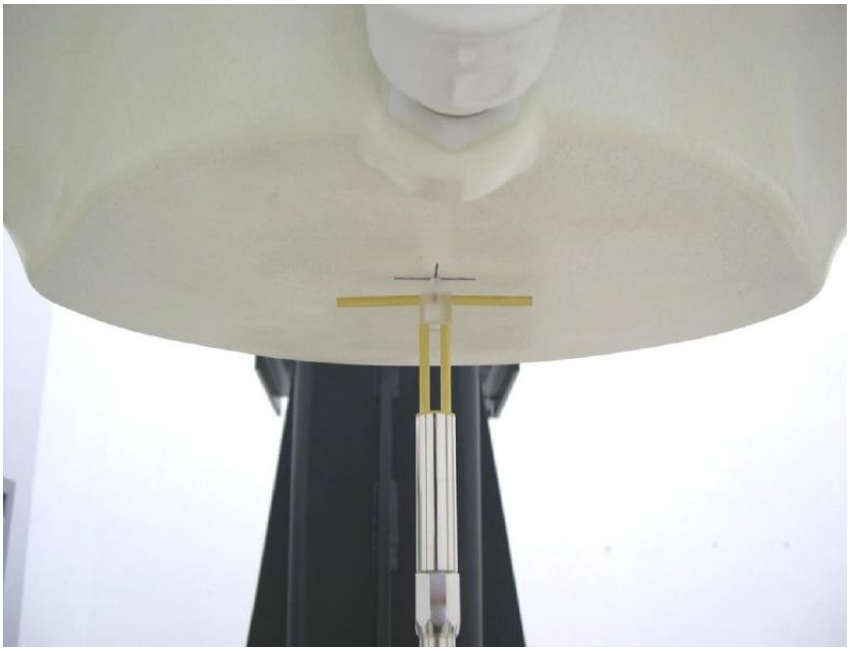
8 System verification

8.1 System Setup

In the simplified setup for system evaluation, the DUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave that comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:



Picture 3 System Setup for System Evaluation



Picture 4 Photo of Dipole Setup

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8.2 System Verification

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device.

Table 8.1: System Verification of Head

Measurement Date (yyyy-mm-dd)	Frequency	Target value (W/kg)		Measured value(W/kg)		Deviation	
		10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average
2025-04-28	835 MHz	6.09	9.47	6.00	9.28	-1.48%	-2.01%
2025-05-12	835 MHz	6.09	9.47	6.12	9.44	0.49%	-0.32%
2025-05-21	835 MHz	6.09	9.47	6.20	9.60	1.81%	1.37%
2025-04-29	1750 MHz	19.80	37.20	19.96	37.68	0.81%	1.29%
2025-05-21	1750 MHz	19.80	37.20	19.72	37.20	-0.40%	0.00%
2025-04-29	1900 MHz	20.60	39.10	20.52	39.88	-0.39%	1.99%
2025-05-21	1900 MHz	20.60	39.10	20.60	39.92	0.00%	2.10%
2025-04-24	2300 MHz	23.30	48.20	23.32	49.20	0.09%	2.07%
2025-04-24	2450 MHz	24.50	52.20	25.08	54.00	2.37%	3.45%
2025-05-13	2450 MHz	24.50	52.20	24.92	53.60	1.71%	2.68%
2025-04-24	2600 MHz	24.80	54.90	25.44	56.40	2.58%	2.73%
2025-05-13	2600 MHz	24.80	54.90	25.48	56.40	2.74%	2.73%
2025-05-07	5200 MHz	21.80	76.50	22.40	77.50	2.75%	1.31%
2025-05-07	5300 MHz	22.80	79.50	23.40	81.50	2.63%	2.52%
2025-04-30	5600 MHz	23.20	81.70	24.20	84.80	4.31%	3.79%
2025-04-30	5800 MHz	22.20	78.70	22.70	79.80	2.25%	1.40%

Note: The 1g and 10g SAR measured with a reference dipole,using the required tissue-equivalent medium at the test frequency, must be within 10% of the manufacturer calibrated dipole SAR target.

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9 Measurement Procedures

9.1 Tests to be performed

In order to determine the highest value of the peak spatial-average SAR of a handset, all device positions, configurations and operational modes shall be tested for each frequency band according to steps 1 to 3 below. A flowchart of the test process is shown in picture 5.

Step 1: The tests described in 9.2 shall be performed at the channel that is closest to the centre of the transmit frequency band (f_c) for:

a) all device positions (cheek and tilt, for both left and right sides of the SAM phantom, as described in annex D),
b) all configurations for each device position in a), e.g., antenna extended and retracted, and
c) all operational modes, e.g., analogue and digital, for each device position in a) and configuration in b) in each frequency band.

If more than three frequencies need to be tested according to 11.1 (i.e., $N_c > 3$), then all frequencies, configurations and modes shall be tested for all of the above test conditions.

Step 2: For the condition providing highest peak spatial-average SAR determined in Step 1,perform all tests described in 10.2 at all other test frequencies, i.e., lowest and highest frequencies. In addition, for all other conditions (device position, configuration and operational mode) where the peak spatial-average SAR value determined in Step 1 is within3 dB of the applicable SAR limit, it is recommended that all other test frequencies shall be tested as well.

Step 3: Examine all data to determine the highest value of the peak spatial-average SAR found in Steps 1 to 2.

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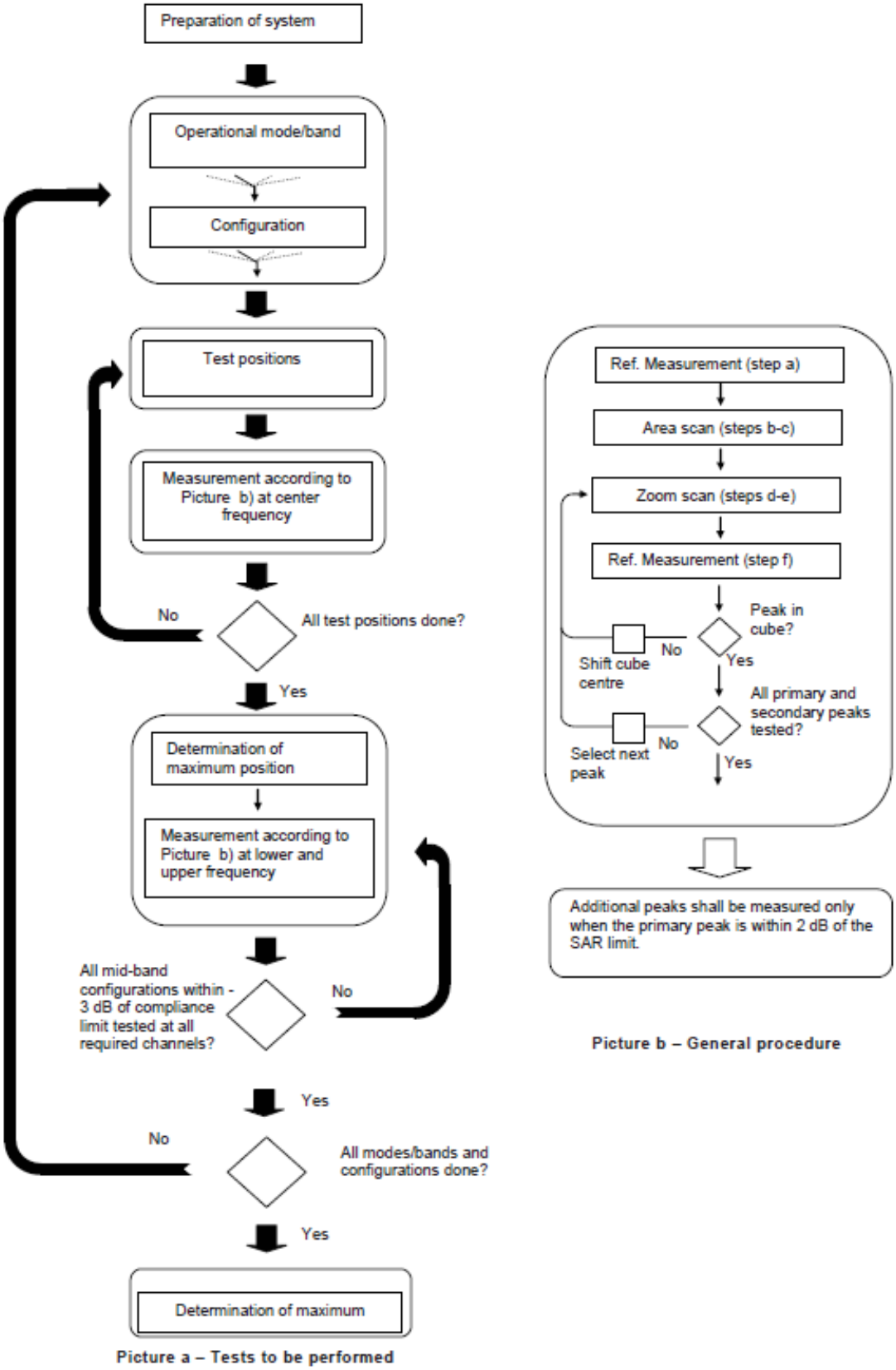

Picture 5 Block diagram of the tests to be performed

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9.2 General Measurement Procedure

The area and zoom scan resolutions specified in the table below must be applied to the SAR measurements and fully documented in SAR reports to qualify for TCB approval. Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1-g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std 1528-2003. The results should be documented as part of the system validation records and may be requested to support test results when all the measurement parameters in the following table are not satisfied.

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

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

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

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9.3 WCDMA Measurement Procedures for SAR

The following procedures are applicable to WCDMA handsets operating under 3GPP Release99, Release 5 and Release 6. The default test configuration is to measure SAR with an established radio link between the DUT and a communication test set using a 12.2kbps RMC (reference measurement channel) configured in Test Loop Mode 1. SAR is selectively confirmed for other physical channel configurations (DPCCH & $DPDCH_n$), HSDPA and HSPA (HSUPA/HSDPA) modes according to output power, exposure conditions and device operating capabilities. Both uplink and downlink should be configured with the same RMC or AMR, when required. SAR for Release 5 HSDPA and Release 6 HSPA are measured using the applicable FRC (fixed reference channel) and E-DCH reference channel configurations. Maximum output power is verified according to applicable versions of 3GPP TS 34.121 and SAR must be measured according to these maximum output conditions. When Maximum Power Reduction (MPR) is not implemented according to Cubic Metric (CM) requirements for Release 6 HSPA, the following procedures do not apply.

For Release 5 HSDPA Data Devices:

Sub-test	β_c	β_d	β_d （SF）	β_c/β_d	β_{hs}	CM/dB
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15	15/15	64	12/15	24/25	1.0
3	15/15	8/15	64	15/8	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5

For Release 6 HSPA Data Devices

Sub-test	β_c	β_d	β_d （SF）	β_c/β_d	β_{hs}	β_{ec}	β_{ed}	β_{ed} （SF）	β_{ed} （codes）	CM (dB)	MPR (dB)	AG Index	E-TFCI
1	11/15	15/15	64	11/15	22/15	209/225	1039/225	4	1	1.5	1.5	20	75
2	6/15	15/15	64	6/15	12/15	12/15	12/15	4	1	1.5	1.5	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}:47/15 β_{ed2}:47/15	4	2	1.5	1.5	15	92
4	2/15	15/15	64	2/15	4/15	4/15	56/75	4	1	1.5	1.5	17	71
5	15/15	15/15	64	15/15	24/15	30/15	134/15	4	1	1.5	1.5	21	81

Rel.8 DC-HSDPA (Cat 24)

SAR test exclusion for Rel.8 DC-HSDPA must satisfy the SAR test exclusion requirements of Rel.5 HSDPA. SAR test exclusion for DC-HSDPA devices is determined by power measurements according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to qualify for SAR test exclusion.

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9.4 SAR Measurement for LTE

SAR tests for LTE are performed with a base station simulator, Rohde & Rchwarz CMW500. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. All powers were measured with the CMW 500.

It is performed for conducted power and SAR based on the KDB941225 D05.

SAR is evaluated separately according to the following procedures for the different test positions in each exposure condition – head, body, body-worn accessories and other use conditions. The procedures in the following subsections are applied separately to test each LTE frequency band.

1) 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 among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing 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.

2) QPSK with 50% RB allocation

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

3) 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 1) and 2) 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.

TDD test:

TDD testing is performed using guidance from FCC KDB 941225 D05 and the SAR test guidance provided in April 2013 TCB works hop notes. TDD is tested at the highest duty factor using UL-DL configuration 0 with special subframe configuration 6 and applying the FDD LTE procedures in KDB 941225 D05. SAR testing is performed using the extended cyclic prefix listed in 3GPP TS 36.211.

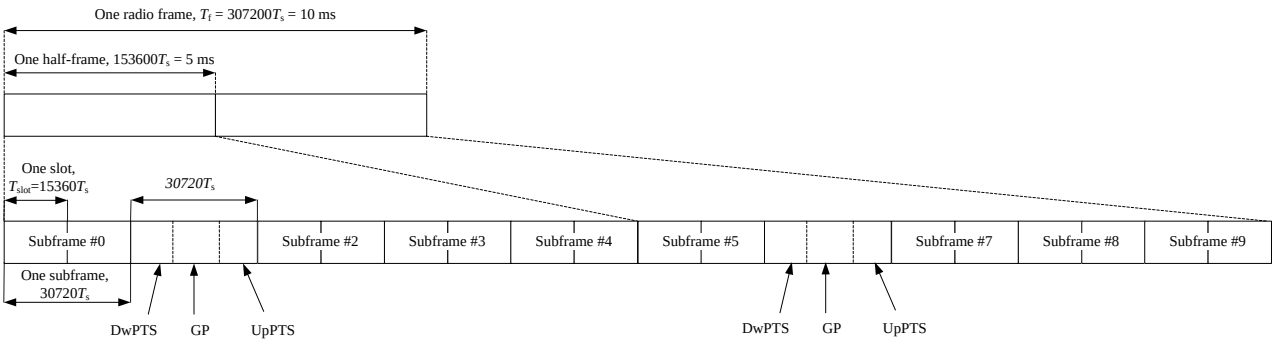

Figure 6: Frame structure type 2 (for 5 ms switch-point periodicity)

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Table 9.1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

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

Table 9.2: 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

Duty factor is calculated by:

Duty factor = uplink frame*6+UpPTS*2/one frame length

= (30720.T_s * 6+5120. T_s*2)/307200.T_s

= 0.633

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9.5 Bluetooth & Wi-Fi Measurement Procedures for SAR

Normal network operating configurations are not suitable for measuring the SAR of 802.11 transmitters in general. Unpredictable fluctuations in network traffic and antenna diversity conditions can introduce undesirable variations in SAR results. The SAR for these devices should be measured using chipset based test mode software to ensure that the results are consistent and reliable.

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in a test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters. The test frequencies should correspond to actual channel frequencies defined for domestic use. SAR for devices with switched diversity should be measured with only one antenna transmitting at a time during each SAR measurement, according to a fixed modulation and data rate. The same data pattern should be used for all measurements.

9.6 Power Drift

To control the output power stability during the SAR test, DASY5 system calculates the power drift by measuring the E-field at the same location at the beginning and at the end of the measurement for each test position. These drift values can be found in section14 labeled as: (Power Drift [dB]). This ensures that the power drift during one measurement is within 5%.

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10 Conducted Output Power

The device uses a proximity sensor to reduce the maximum output power of main transmitting antenna in selected wireless modes and operating configurations to ensure SAR compliance. The procedures in KDB 616217 are applied to determine proximity sensor triggering distances, and sensor coverage for normal and tilt positions.

The following tables summarize the key power reduction information of main transmitting antenna triggered by specific use conditions.

Main Antenna				
Band	**Mode**	**Full Power (Tune Up)dBm**	**Sensor on (Tune Up)dBm**	**Power Reduction(dB)**
GSM850	GPRS 1TS	33.50	24.50	9.00
	GPRS 2TS	32.50	24.50	8.00
	GPRS 3TS	30.50	24.50	6.00
	GPRS 4TS	30.00	24.50	5.50
	EGPRS 1TS	27.00	17.50	9.50
	EGPRS 2TS	25.50	17.50	8.00
	EGPRS 3TS	23.00	17.50	5.50
	EGPRS 4TS	22.00	17.50	4.50
GSM1900	GPRS 1TS	30.00	23.00	7.00
	GPRS 2TS	29.50	23.00	6.50
	GPRS 3TS	27.50	23.00	4.50
	GPRS 4TS	26.50	22.50	4.00
	EGPRS 1TS	27.00	19.00	8.00
	EGPRS 2TS	25.50	19.00	6.50
	EGPRS 3TS	23.50	19.00	4.50
	EGPRS 4TS	22.00	19.00	3.00
WCDMA Band Ⅱ	RMC	23.50	18.50	5.00
WCDMA BandⅣ	RMC	23.50	21.50	2.00
WCDMA Band Ⅴ	RMC	24.50	21.50	3.00
LTE Band 2	QPSK	23.00	18.00	5.00
LTE Band 4	QPSK	23.00	20.00	3.00
LTE Band 5	QPSK	23.50	21.00	2.50
LTE Band 7	QPSK	23.50	16.50	7.00
LTE Band 26	QPSK	23.50	21.00	2.50
LTE Band 38	QPSK	24.00	18.00	6.00
LTE Band 40	QPSK	23.50	17.50	6.00
LTE Band 41	QPSK	24.00	18.00	6.00

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10.1 GSM Measurement result

GSM850

GSM850			Full power								
Mode	Modulation	Time Slot	Tune up (dBm)	Measure Power(dBm)			Devision Factor (dB)	Tune up Max	Average Power(dBm)		
				128/824.2	190/836.6	251/848.8			128/824.2	190/836.6	251/848.8
GPRS	GMSK	1 Tx	33.50	32.81	32.95	33.02	-9.03	24.47	23.78	23.92	23.99
		2 Tx	32.50	32.05	32.16	32.25	-6.02	26.48	26.03	26.14	26.23
		3 Tx	30.50	30.24	30.36	30.44	-4.26	26.24	25.98	26.10	26.18
		4 Tx	30.00	29.12	29.38	29.36	-3.01	26.99	26.11	26.37	26.35
EGPRS	8PSK	1 Tx	27.00	26.38	26.47	26.42	-9.03	17.97	17.35	17.44	17.39
		2 Tx	25.50	24.94	25.11	25.14	-6.02	19.48	18.92	19.09	19.12
		3 Tx	23.00	22.66	22.76	22.75	-4.26	18.74	18.40	18.50	18.49
		4 Tx	22.00	21.57	21.71	21.72	-3.01	18.99	18.56	18.70	18.71

GSM850			Sensor on								
Mode	Modulation	Time Slot	Tune up (dBm)	Measure Power(dBm)			Devision Factor (dB)	Tune up Max	Average Power(dBm)		
				128/824.2	190/836.6	251/848.8			128/824.2	190/836.6	251/848.8
GPRS	GMSK	1 Tx	24.50	23.95	24.06	24.18	-9.03	15.47	14.92	15.03	15.15
		2 Tx	24.50	23.88	23.99	24.12	-6.02	18.48	17.86	17.97	18.10
		3 Tx	24.50	23.76	23.85	23.98	-4.26	20.24	19.50	19.59	19.72
		4 Tx	24.50	23.67	23.81	23.80	-3.01	21.49	20.66	20.80	20.79
EGPRS	8PSK	1 Tx	17.50	16.63	16.79	16.78	-9.03	8.47	7.60	7.76	7.75
		2 Tx	17.50	16.39	16.52	16.53	-6.02	11.48	10.37	10.50	10.51
		3 Tx	17.50	16.11	16.24	16.21	-4.26	13.24	11.85	11.98	11.95
		4 Tx	17.50	16.06	16.03	16.01	-3.01	14.49	13.05	13.02	13.00

GSM1900

GSM1900			Full power								
Mode	Modulation	Time Slot	Tune up (dBm)	Measure Power(dBm)			Devision Factor (dB)	Tune up Max	Average Power(dBm)		
				512/1850.2	661/1880	810/1909.8			512/1850.2	661/1880	810/1909.8
GPRS	GMSK	1 Tx	30.00	29.74	29.62	29.37	-9.03	20.97	20.71	20.59	20.34
		2 Tx	29.50	29.01	28.91	28.78	-6.02	23.48	22.99	22.89	22.76
		3 Tx	27.50	27.26	27.24	27.17	-4.26	23.24	23.00	22.98	22.91
		4 Tx	26.50	26.13	26.14	26.11	-3.01	23.49	23.12	23.13	23.10
EGPRS	8PSK	1 Tx	27.00	26.68	26.34	26.14	-9.03	17.97	17.65	17.31	17.11
		2 Tx	25.50	25.25	25.04	24.88	-6.02	19.48	19.23	19.02	18.86
		3 Tx	23.50	23.01	22.78	22.51	-4.26	19.24	18.75	18.52	18.25
		4 Tx	22.00	21.76	21.48	21.23	-3.01	18.99	18.75	18.47	18.22

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GSM1900			Sensor on								
Mode	Modulation	Time Slot	Tune up (dBm)	Measure Power(dBm)			Devision Factor (dB)	Tune up Max	Average Power(dBm)		
				512/1850.2	661/1880	810/1909.8			512/1850.2	661/1880	810/1909.8
GPRS	GMSK	1 Tx	23.00	22.45	22.48	22.51	-9.03	13.97	13.42	13.45	13.48
		2 Tx	23.00	22.38	22.44	22.47	-6.02	16.98	16.36	16.42	16.45
		3 Tx	23.00	22.35	22.39	22.44	-4.26	18.74	18.09	18.13	18.18
		4 Tx	22.50	22.31	22.44	22.42	-3.01	19.99	19.30	19.37	19.41
EGPRS	8PSK	1 Tx	19.00	18.60	18.49	18.31	-9.03	9.97	9.57	9.46	9.28
		2 Tx	19.00	18.50	18.26	18.11	-6.02	12.98	12.48	12.24	12.09
		3 Tx	19.00	18.46	18.26	18.13	-4.26	14.74	14.20	14.00	13.87
		4 Tx	19.00	18.55	18.24	18.14	-3.01	15.99	15.54	15.23	15.13

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10.2 WCDMA Measurement result

WCDMA Band Ⅱ

Full power					
WCDMA Band Ⅱ		Maximum Output Power (dBm)			
Mode	Test Mode	Tune up	Channel/Frequency(MHz)		
			9262/1852.4	9400/1880	9538/1907.6
WCDMA	RMC	23.50	23.05	23.08	23.06
HSDPA	Subtest1	22.50	21.93	22.18	21.92
	Subtest2	22.50	22.11	22.02	22.02
	Subtest3	22.00	21.47	21.54	21.44
	Subtest4	22.00	21.61	21.70	21.46
HSUPA	Subtest1	20.50	20.15	20.04	20.04
	Subtest2	20.50	20.03	20.06	20.00
	Subtest3	21.50	21.11	21.08	21.22
	Subtest4	20.00	19.41	19.52	19.60
	Subtest5	21.50	21.11	20.96	21.20

Sensor on					
WCDMA Band Ⅱ		Maximum Output Power (dBm)			
Mode	Test Mode	Tune up	Channel/Frequency(MHz)		
			9262/1852.4	9400/1880	9538/1907.6
WCDMA	RMC	18.50	18.07	18.03	18.02
HSDPA	Subtest1	17.50	17.11	17.11	17.08
	Subtest2	17.50	17.03	17.11	16.90
	Subtest3	17.50	16.61	16.47	16.68
	Subtest4	17.50	16.59	16.57	16.58
HSUPA	Subtest1	15.50	14.93	15.03	14.88
	Subtest2	15.50	14.93	14.89	15.08
	Subtest3	16.50	16.09	16.17	15.98
	Subtest4	15.50	14.63	14.59	14.36
	Subtest5	16.50	16.07	16.03	15.94

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WCDMA Band Ⅳ

Full power					
WCDMA BandⅣ		Maximum Output Power (dBm)			
Mode	Test Mode	Tune up	Channel/Frequency(MHz)		
			1312/1712.4	1413/1732.6	1513/1752.6
WCDMA	RMC	23.50	23.11	23.13	23.06
HSDPA	Subtest1	22.50	22.01	22.11	22.14
	Subtest2	22.50	22.05	22.25	21.90
	Subtest3	22.00	21.55	21.77	21.44
	Subtest4	22.00	21.55	21.55	21.44
HSUPA	Subtest1	20.50	20.25	20.17	20.06
	Subtest2	20.50	20.03	20.01	20.10
	Subtest3	21.50	21.01	21.09	21.16
	Subtest4	20.00	19.73	19.61	19.48
	Subtest5	21.50	20.99	21.07	21.18

Sensor on					
WCDMA BandⅣ		Maximum Output Power (dBm)			
Mode	Test Mode	Tune up	Channel/Frequency(MHz)		
			1312/1712.4	1413/1732.6	1513/1752.6
WCDMA	RMC	21.50	21.14	21.06	21.09
HSDPA	Subtest1	20.50	20.08	20.06	19.95
	Subtest2	20.50	20.18	19.94	19.97
	Subtest3	20.50	19.80	19.54	19.47
	Subtest4	20.00	19.64	19.56	19.43
HSUPA	Subtest1	18.50	18.00	18.18	17.99
	Subtest2	18.50	18.06	17.98	17.99
	Subtest3	19.50	19.18	19.16	19.25
	Subtest4	18.00	17.72	17.52	17.53
	Subtest5	19.50	19.06	19.18	18.99

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WCDMA Band Ⅴ

Full power					
WCDMA Band Ⅴ		Maximum Output Power (dBm)			
Mode	Test Mode	Tune up	Channel/Frequency(MHz)		
			4132/826.4	4183/836.6	4233/846.6
WCDMA	RMC	24.50	23.76	23.78	23.73
HSDPA	Subtest1	23.50	22.80	22.64	22.89
	Subtest2	23.50	22.76	22.74	22.85
	Subtest3	23.00	22.10	22.28	22.37
	Subtest4	22.50	22.24	22.24	22.27
HSUPA	Subtest1	21.50	20.74	20.82	20.73
	Subtest2	21.50	20.80	20.92	20.69
	Subtest3	22.00	21.66	21.64	21.63
	Subtest4	20.50	20.20	20.24	20.19
	Subtest5	22.50	21.62	21.86	21.75

Sensor on					
WCDMA Band Ⅴ		Maximum Output Power (dBm)			
Mode	Test Mode	Tune up	Channel/Frequency(MHz)		
			4132/826.4	4183/836.6	4233/846.6
WCDMA	RMC	21.50	20.65	20.66	20.65
HSDPA	Subtest1	20.00	19.49	19.68	19.61
	Subtest2	20.00	19.69	19.68	19.73
	Subtest3	20.00	19.17	19.30	19.27
	Subtest4	19.50	19.27	19.08	19.23
HSUPA	Subtest1	18.50	17.59	17.70	17.81
	Subtest2	18.00	17.63	17.76	17.51
	Subtest3	19.00	18.61	18.70	18.49
	Subtest4	17.50	17.27	17.12	17.13
	Subtest5	19.00	18.65	18.50	18.57

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10.3 LTE Measurement result

LTE Band 2

Full power						
LTE B2			Maximum Output Power (dBm)			
Modulation	RB	RB Offset	Tune up	1.4MHz		
				Channel/Frequency(MHz)		
				18607/1850.7	18900/1880	19193/1909.3
QPSK	1	Low	23.00	22.06	22.12	22.11
		Middle		22.29	22.27	22.25
		High		21.97	21.98	22.01
	50%	Low	23.00	22.19	22.33	22.28
		Middle		22.20	22.25	22.17
		High		22.17	22.27	22.05
	100%	/	22.00	21.27	21.38	21.25
16QAM	1	Low	22.00	21.41	21.57	21.52
		Middle		21.39	21.44	21.47
		High		21.40	21.37	21.31
	50%	Low	22.00	21.35	21.28	21.25
		Middle		21.33	21.26	21.35
		High		21.34	21.32	21.26
	100%	/	21.00	20.34	20.42	20.36
Modulation	RB	RB Offset	Tune up	3MHz		
				Channel/Frequency(MHz)		
				18615/1851.5	18900/1880	19185/1908.5
QPSK	1	Low	23.00	22.08	22.16	22.14
		Middle		22.27	22.30	22.29
		High		22.00	22.03	22.05
	50%	Low	22.00	21.29	21.55	21.41
		Middle		21.32	21.35	21.29
		High		21.27	21.38	21.15
	100%	/	22.00	21.27	21.42	21.28
16QAM	1	Low	22.00	21.44	21.59	21.55
		Middle		21.42	21.44	21.51
		High		21.42	21.41	21.34
	50%	Low	21.00	20.46	20.41	20.37
		Middle		20.44	20.39	20.47
		High		20.44	20.44	20.39
	100%	/	21.00	20.37	20.46	20.39
Modulation	RB	RB Offset	Tune up	5MHz		
				Channel/Frequency(MHz)		

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				18625/1852.5	18900/1880	19175/1907.5
QPSK	1	Low	23.00	22.05	22.14	22.10
		Middle		22.35	22.31	22.26
		High		21.97	21.98	22.01
	50%	Low	22.00	21.26	21.50	21.37
		Middle		21.30	21.31	21.24
		High		21.25	21.36	21.11
	100%	/	22.00	21.27	21.41	21.26
16QAM	1	Low	22.00	21.41	21.55	21.52
		Middle		21.39	21.42	21.48
		High		21.39	21.39	21.30
	50%	Low	21.00	20.44	20.37	20.34
		Middle		20.41	20.34	20.43
		High		20.41	20.39	20.35
	100%	/	21.00	20.35	20.42	20.34
Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				18650/1855	18900/1880	19150/1905
QPSK	1	Low	23.00	22.07	22.15	22.13
		Middle		22.31	22.21	22.30
		High		21.99	22.02	22.04
	50%	Low	22.00	21.29	21.55	21.41
		Middle		21.33	21.36	21.28
		High		21.27	21.40	21.16
	100%	/	22.00	21.31	21.43	21.30
16QAM	1	Low	22.00	21.43	21.58	21.54
		Middle		21.42	21.46	21.51
		High		21.42	21.41	21.33
	50%	Low	21.00	20.47	20.42	20.38
		Middle		20.43	20.38	20.46
		High		20.44	20.44	20.39
	100%	/	21.00	20.38	20.47	20.38
Modulation	RB	RB Offset	Tune up	15MHz		
				Channel/Frequency(MHz)		
				18675/1857.5	18900/1880	19125/1902.5
QPSK	1	Low	23.00	22.06	22.11	22.11
		Middle		22.33	22.34	22.27
		High		21.96	21.97	22.00
	50%	Low	22.00	21.27	21.51	21.38
		Middle		21.30	21.31	21.24
		High		21.24	21.37	21.12
	100%	/	22.00	21.29	21.39	21.25

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16QAM	1	Low	22.00	21.38	21.56	21.52
		Middle		21.40	21.43	21.49
		High		21.39	21.37	21.30
	50%	Low	21.00	20.44	20.40	20.35
		Middle		20.40	20.33	20.42
		High		20.42	20.40	20.36
	100%	/	21.00	20.35	20.42	20.34
Modulation	RB	RB Offset	Tune up	20MHz		
				Channel/Frequency(MHz)		
				18700/1860	18900/1880	19100/1900
QPSK	1	Low	23.00	22.03	22.07	22.08
		Middle		22.35	**22.36**	22.25
		High		21.94	21.96	21.97
	50%	Low	22.00	21.24	**21.56**	21.34
		Middle		21.28	21.27	21.21
		High		21.21	21.32	21.08
	100%	/	22.00	21.26	21.34	21.21
16QAM	1	Low	22.00	21.46	21.52	21.47
		Middle		21.36	21.41	21.45
		High		21.37	21.34	21.28
	50%	Low	21.00	20.41	20.36	20.32
		Middle		20.37	20.31	20.39
		High		20.39	20.35	20.32
	100%	/	21.00	20.33	20.38	20.31
Sensor on						
LTE B2			**Maximum Output Power (dBm)**			
Modulation	RB	RB Offset	Tune up	1.4MHz		
				Channel/Frequency(MHz)		
				18607/1850.7	18900/1880	19193/1909.3
QPSK	1	Low	18.00	17.14	17.17	17.07
		Middle		17.29	17.27	17.28
		High		16.90	17.01	16.91
	50%	Low	18.00	17.09	17.21	17.15
		Middle		17.09	17.05	17.00
		High		17.07	17.08	17.08
	100%	/	18.00	17.09	17.17	17.12
16QAM	1	Low	18.00	17.06	17.03	16.97
		Middle		17.04	17.08	17.04
		High		17.12	17.17	17.06
	50%	Low	18.00	17.11	17.03	17.29
		Middle		17.11	17.16	17.11
		High		17.27	17.15	17.26

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	100%	/	18.00	16.92	16.99	16.92
Modulation	RB	RB Offset	Tune up	3MHz		
				Channel/Frequency(MHz)		
				18615/1851.5	18900/1880	19185/1908.5
QPSK	1	Low	18.00	17.16	17.21	17.10
		Middle		17.27	17.30	17.32
		High		16.93	17.06	16.95
	50%	Low	18.00	17.27	17.27	17.24
		Middle		17.17	17.27	17.20
		High		17.17	17.23	17.20
	100%	/	18.00	17.09	17.21	17.15
16QAM	1	Low	18.00	17.09	17.05	17.00
		Middle		17.07	17.08	17.08
		High		17.14	17.21	17.09
	50%	Low	18.00	17.22	17.16	17.11
		Middle		17.22	17.29	17.23
		High		16.87	16.97	16.89
	100%	/	18.00	16.95	17.03	16.95
Modulation	RB	RB Offset	Tune up	5MHz		
				Channel/Frequency(MHz)		
				18625/1852.5	18900/1880	19175/1907.5
QPSK	1	Low	18.00	17.13	17.19	17.06
		Middle		17.25	17.35	17.29
		High		16.90	17.01	16.91
	50%	Low	18.00	17.24	17.22	17.20
		Middle		17.15	17.23	17.15
		High		17.15	17.21	17.16
	100%	/	18.00	17.09	17.20	17.13
16QAM	1	Low	18.00	17.06	17.01	16.97
		Middle		17.04	17.06	17.05
		High		17.11	17.19	17.05
	50%	Low	18.00	17.20	17.12	17.08
		Middle		17.19	17.24	17.19
		High		16.84	16.92	16.85
	100%	/	18.00	16.93	16.99	16.90
Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				18650/1855	18900/1880	19150/1905
QPSK	1	Low	18.00	17.15	17.20	17.09
		Middle		17.28	17.31	17.33
		High		16.92	17.05	16.94
	50%	Low	18.00	17.27	17.27	17.24

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		Middle		17.18	17.23	17.19
		High		17.17	17.25	17.21
	100%	/	18.00	17.13	17.22	17.17
16QAM	1	Low	18.00	17.08	17.04	16.99
		Middle		17.07	17.10	17.08
		High		17.14	17.21	17.08
	50%	Low	18.00	17.23	17.17	17.12
		Middle		17.21	17.23	17.22
		High		16.87	16.97	16.89
	100%	/	18.00	16.96	17.04	16.94
Modulation	RB	RB Offset	Tune up	15MHz		
				Channel/Frequency(MHz)		
				18675/1857.5	18900/1880	19125/1902.5
QPSK	1	Low	18.00	17.14	17.16	17.07
		Middle		17.26	17.30	17.30
		High		16.89	17.00	16.90
	50%	Low	18.00	17.25	17.23	17.21
		Middle		17.15	17.23	17.15
		High		17.14	17.22	17.17
	100%	/	18.00	17.11	17.18	17.12
16QAM	1	Low	18.00	17.03	17.02	16.97
		Middle		17.05	17.07	17.06
		High		17.11	17.17	17.05
	50%	Low	18.00	17.20	17.15	17.09
		Middle		17.18	17.23	17.18
		High		16.85	16.93	16.86
	100%	/	18.00	16.93	16.99	16.90
Modulation	RB	RB Offset	Tune up	20MHz		
				Channel/Frequency(MHz)		
				18700/1860	18900/1880	19100/1900
QPSK	1	Low	18.00	17.11	17.12	17.04
		Middle		17.25	17.36	17.28
		High		16.87	16.99	16.87
	50%	Low	18.00	17.22	17.28	17.17
		Middle		17.13	17.19	17.12
		High		17.11	17.17	17.13
	100%	/	18.00	17.08	17.13	17.08
16QAM	1	Low	18.00	16.92	16.98	16.92
		Middle		17.01	17.05	17.02
		High		17.09	17.14	17.03
	50%	Low	18.00	17.17	17.11	17.06
		Middle		17.15	17.21	17.15

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		High		16.82	16.88	16.82
	100%	/	18.00	16.91	16.95	16.87

LTE Band 4

Full power						
LTE B4			Maximum Output Power (dBm)			
Modulation	RB	RB Offset	Tune up	1.4MHz		
				Channel/Frequency(MHz)		
				19957/1710.7	20175/1732.5	20393/1754.3
QPSK	1	Low	23.00	21.97	22.02	21.88
		Middle		22.09	22.07	22.15
		High		21.75	21.79	21.82
	50%	Low	23.00	22.09	22.15	22.09
		Middle		22.09	22.12	22.10
		High		21.98	22.03	22.01
	100%	/	22.00	21.04	21.13	21.07
16QAM	1	Low	22.00	21.18	21.33	21.27
		Middle		21.16	21.22	21.14
		High		21.19	21.28	21.31
	50%	Low	22.00	21.06	21.09	21.06
		Middle		21.07	21.10	21.07
		High		21.07	20.98	20.86
	100%	/	21.00	20.19	20.10	20.07
Modulation	RB	RB Offset	Tune up	3MHz		
				Channel/Frequency(MHz)		
				19965/1711.5	20175/1732.5	20385/1753.5
QPSK	1	Low	23.00	21.99	22.06	21.91
		Middle		22.07	22.09	22.04
		High		21.78	21.84	21.86
	50%	Low	22.00	21.19	21.28	21.22
		Middle		21.21	21.22	21.25
		High		21.08	21.14	21.11
	100%	/	22.00	21.04	21.17	21.10
16QAM	1	Low	22.00	21.21	21.35	21.30
		Middle		21.19	21.22	21.18
		High		21.21	21.32	21.34
	50%	Low	21.00	20.17	20.22	20.18
		Middle		20.18	20.23	20.19
		High		20.17	20.10	19.99
	100%	/	21.00	20.22	20.14	20.10
Modulation	RB	RB Offset	Tune up	5MHz		

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				Channel/Frequency(MHz)		
				19975/1712.5	20175/1732.5	20375/1752.5
QPSK	1	Low	23.00	21.96	22.04	21.87
		Middle		22.05	22.06	22.07
		High		21.75	21.79	21.82
	50%	Low	22.00	21.16	21.23	21.18
		Middle		21.19	21.28	21.17
		High		21.06	21.12	21.07
	100%	/	22.00	21.04	21.16	21.08
16QAM	1	Low	22.00	21.18	21.31	21.27
		Middle		21.16	21.20	21.15
		High		21.18	21.30	21.30
	50%	Low	21.00	20.15	20.18	20.15
		Middle		20.15	20.18	20.15
		High		20.14	20.05	19.95
	100%	/	21.00	20.20	20.10	20.05
Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				20000/1715	20175/1732.5	20350/1750
QPSK	1	Low	23.00	21.98	22.05	21.90
		Middle		22.08	22.14	22.12
		High		21.77	21.83	21.85
	50%	Low	22.00	21.19	21.28	21.22
		Middle		21.22	21.23	21.21
		High		21.08	21.16	21.12
	100%	/	22.00	21.08	21.18	21.12
16QAM	1	Low	22.00	21.20	21.34	21.29
		Middle		21.19	21.24	21.18
		High		21.21	21.32	21.33
	50%	Low	21.00	20.18	20.23	20.19
		Middle		20.17	20.22	20.18
		High		20.17	20.10	19.99
	100%	/	21.00	20.23	20.15	20.09
Modulation	RB	RB Offset	Tune up	15MHz		
				Channel/Frequency(MHz)		
				20025/1717.5	20175/1732.5	20325/1747.5
QPSK	1	Low	23.00	21.97	22.01	21.88
		Middle		22.06	22.11	22.07
		High		21.74	21.78	21.81
	50%	Low	22.00	21.17	21.24	21.19
		Middle		21.19	21.28	21.17
		High		21.05	21.13	21.08

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	100%	/	22.00	21.06	21.14	21.07
16QAM	1	Low	22.00	21.15	21.32	21.27
		Middle		21.17	21.21	21.16
		High		21.18	21.28	21.30
	50%	Low	21.00	20.15	20.21	20.16
		Middle		20.14	20.17	20.14
		High		20.15	20.06	19.96
	100%	/	21.00	20.20	20.10	20.05
Modulation	RB	RB Offset	Tune up	20MHz		
				Channel/Frequency(MHz)		
				20050/1720	20175/1732.5	20300/1745
QPSK	1	Low	23.00	21.94	21.97	21.85
		Middle		22.05	**22.16**	22.15
		High		21.72	21.77	21.78
	50%	Low	22.00	21.14	**21.29**	21.15
		Middle		21.11	21.24	21.14
		High		21.02	21.08	21.04
	100%	/	22.00	21.03	21.09	21.03
16QAM	1	Low	22.00	21.16	21.28	21.22
		Middle		21.13	21.19	21.12
		High		21.16	21.25	21.28
	50%	Low	21.00	20.12	20.17	20.13
		Middle		20.11	20.15	20.11
		High		20.12	20.01	19.92
	100%	/	21.00	20.18	20.06	20.02
Sensor on						
LTE B4			**Maximum Output Power (dBm)**			
Modulation	RB	RB Offset	Tune up	1.4MHz		
				Channel/Frequency(MHz)		
				19957/1710.7	20175/1732.5	20393/1754.3
QPSK	1	Low	20.00	19.04	19.10	19.11
		Middle		19.19	19.23	19.17
		High		19.14	19.03	18.97
	50%	Low	20.00	19.05	19.10	19.04
		Middle		19.14	19.06	19.16
		High		19.05	19.15	19.04
	100%	/	20.00	19.16	19.25	19.22
16QAM	1	Low	20.00	19.07	19.17	19.12
		Middle		19.05	19.10	19.04
		High		19.14	19.06	19.16
	50%	Low	20.00	19.07	19.17	19.12
		Middle		19.08	19.12	19.04

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		High		19.12	19.06	19.11
	100%	/	20.00	19.10	19.06	19.12
Modulation	RB	RB Offset	Tune up	3MHz		
				Channel/Frequency(MHz)		
				19965/1711.5	20175/1732.5	20385/1753.5
QPSK	1	Low	20.00	19.06	19.14	19.14
		Middle		19.17	19.26	19.21
		High		19.17	19.08	19.01
	50%	Low	20.00	19.19	19.22	19.23
		Middle		19.26	19.17	19.21
		High		19.25	19.20	19.15
	100%	/	20.00	19.16	19.19	19.25
16QAM	1	Low	20.00	19.10	19.19	19.15
		Middle		19.08	19.10	19.08
		High		19.16	19.10	19.19
	50%	Low	20.00	19.12	19.18	19.23
		Middle		19.19	19.27	19.21
		High		19.08	19.18	19.22
	100%	/	20.00	19.13	19.10	19.15
Modulation	RB	RB Offset	Tune up	5MHz		
				Channel/Frequency(MHz)		
				19975/1712.5	20175/1732.5	20375/1752.5
QPSK	1	Low	20.00	19.03	19.12	19.10
		Middle		19.15	19.22	19.18
		High		19.14	19.03	18.97
	50%	Low	20.00	19.16	19.27	19.19
		Middle		19.24	19.23	19.26
		High		19.23	19.18	19.11
	100%	/	20.00	19.16	19.28	19.23
16QAM	1	Low	20.00	19.07	19.15	19.12
		Middle		19.05	19.08	19.05
		High		19.13	19.08	19.15
	50%	Low	20.00	19.10	19.14	19.20
		Middle		19.16	19.22	19.17
		High		19.05	19.13	19.18
	100%	/	20.00	19.11	19.06	19.10
Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				20000/1715	20175/1732.5	20350/1750
QPSK	1	Low	20.00	19.05	19.13	19.13
		Middle		19.18	19.27	19.22
		High		19.16	19.07	19.00

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	50%	Low	20.00	19.19	19.12	19.23
		Middle		19.27	19.18	19.20
		High		19.25	19.22	19.16
	100%	/	20.00	19.20	19.20	19.27
16QAM	1	Low	20.00	19.09	19.18	19.14
		Middle		19.08	19.12	19.08
		High		19.16	19.10	19.18
	50%	Low	20.00	19.13	19.19	19.24
		Middle		19.18	19.26	19.20
		High		19.08	19.18	19.22
	100%	/	20.00	19.14	19.11	19.14
Modulation	RB	RB Offset	Tune up	15MHz		
				Channel/Frequency(MHz)		
				20025/1717.5	20175/1732.5	20325/1747.5
QPSK	1	Low	20.00	19.04	19.09	19.11
		Middle		19.16	19.26	19.19
		High		19.13	19.02	18.96
	50%	Low	20.00	19.17	19.28	19.20
		Middle		19.24	19.23	19.26
		High		19.22	19.19	19.12
	100%	/	20.00	19.18	19.26	19.22
16QAM	1	Low	20.00	19.04	19.16	19.12
		Middle		19.06	19.09	19.06
		High		19.13	19.06	19.15
	50%	Low	20.00	19.10	19.17	19.21
		Middle		19.15	19.21	19.16
		High		19.06	19.14	19.19
	100%	/	20.00	19.11	19.06	19.10
Modulation	RB	RB Offset	Tune up	20MHz		
				Channel/Frequency(MHz)		
				20050/1720	20175/1732.5	20300/1745
QPSK	1	Low	20.00	19.01	19.05	19.08
		Middle		19.15	**19.22**	19.17
		High		19.11	19.01	18.93
	50%	Low	20.00	19.22	**19.29**	19.23
		Middle		19.21	19.28	19.20
		High		19.19	19.14	19.08
	100%	/	20.00	19.15	19.21	19.18
16QAM	1	Low	20.00	19.06	19.12	19.07
		Middle		19.02	19.07	19.02
		High		19.11	19.03	19.13
	50%	Low	20.00	19.07	19.13	19.18

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		Middle		19.12	19.19	19.13
		High		19.03	19.09	19.15
	100%	/	20.00	19.09	19.02	19.07

LTE Band 5

Full power						
LTE B5			**Maximum Output Power (dBm)**			
Modulation	RB	RB Offset	Tune up	1.4MHz		
				Channel/Frequency(MHz)		
				20407/824.7	20525/836.5	20643/848.3
QPSK	1	Low	23.50	22.31	22.44	21.94
		Middle		22.42	22.36	21.94
		High		22.42	22.37	21.93
	50%	Low	23.50	22.37	22.44	22.36
		Middle		22.33	22.44	22.37
		High		22.27	22.30	22.24
	100%	/	22.50	21.29	21.40	21.45
16QAM	1	Low	22.50	21.47	21.46	21.51
		Middle		21.45	21.50	21.43
		High		21.51	21.49	21.48
	50%	Low	22.50	21.28	21.37	21.46
		Middle		21.45	21.36	21.44
		High		21.42	21.38	21.43
	100%	/	21.50	20.33	20.41	20.37
Modulation	RB	RB Offset	Tune up	3MHz		
				Channel/Frequency(MHz)		
				20415/825.5	20525/836.5	20635/847.5
QPSK	1	Low	23.50	22.32	22.37	21.96
		Middle		22.41	22.40	21.99
		High		22.44	22.41	21.96
	50%	Low	22.50	21.47	21.56	21.49
		Middle		21.46	21.55	21.48
		High		21.37	21.43	21.35
	100%	/	22.50	21.33	21.45	21.50
16QAM	1	Low	22.50	21.49	21.47	21.53
		Middle		21.48	21.52	21.47
		High		21.53	21.53	21.50
	50%	Low	21.50	20.40	20.51	20.59
		Middle		20.55	20.48	20.55
		High		20.52	20.50	20.56
	100%	/	21.50	20.37	20.46	20.39

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Modulation	RB	RB Offset	Tune up	5MHz		
				Channel/Frequency(MHz)		
				20425/826.5	20525/836.5	20625/846.5
QPSK	1	Low	23.50	22.31	22.43	21.94
		Middle		22.39	22.39	21.96
		High		22.41	22.36	21.92
	50%	Low	22.50	21.45	21.52	21.46
		Middle		21.43	21.50	21.44
		High		21.34	21.40	21.31
	100%	/	22.50	21.31	21.41	21.45
16QAM	1	Low	22.50	21.44	21.45	21.51
		Middle		21.46	21.49	21.45
		High		21.50	21.49	21.47
	50%	Low	21.50	20.37	20.49	20.56
		Middle		20.52	20.43	20.51
		High		20.50	20.46	20.53
	100%	/	21.50	20.34	20.41	20.35
Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				20450/829	20525/836.5	20600/844
QPSK	1	Low	23.50	22.28	22.39	21.91
		Middle		22.38	22.45	21.94
		High		22.39	22.35	21.89
	50%	Low	22.50	21.42	21.57	21.42
		Middle		21.41	21.46	21.41
		High		21.31	21.35	21.27
	100%	/	22.50	21.28	21.36	21.41
16QAM	1	Low	22.50	21.48	21.41	21.46
		Middle		21.42	21.47	21.41
		High		21.48	21.46	21.45
	50%	Low	21.50	20.34	20.45	20.53
		Middle		20.49	20.41	20.48
		High		20.47	20.41	20.49
	100%	/	21.50	20.32	20.37	20.32
Sensor on						
LTE B5			**Maximum Output Power (dBm)**			
Modulation	RB	RB Offset	Tune up	1.4MHz		
				Channel/Frequency(MHz)		
				20407/824.7	20525/836.5	20643/848.3
QPSK	1	Low	21.00	20.48	20.48	20.51
		Middle		20.41	20.47	20.51
		High		20.39	20.43	20.52

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	50%	Low	21.00	20.36	20.54	20.46
		Middle		20.30	20.54	20.44
		High		20.20	20.32	20.28
	100%	/	21.00	20.27	20.43	20.36
16QAM	1	Low	21.00	20.43	20.41	20.33
		Middle		20.41	20.28	20.31
		High		20.44	20.49	20.40
	50%	Low	21.00	20.46	20.33	20.21
		Middle		20.41	20.28	20.23
		High		20.44	20.35	20.35
	100%	/	21.00	20.40	20.37	20.51
Modulation	RB	RB Offset	Tune up	3MHz		
				Channel/Frequency(MHz)		
				20415/825.5	20525/836.5	20635/847.5
QPSK	1	Low	21.00	20.49	20.51	20.53
		Middle		20.50	20.51	20.55
		High		20.41	20.47	20.55
	50%	Low	21.00	20.46	20.56	20.49
		Middle		20.43	20.55	20.55
		High		20.30	20.45	20.39
	100%	/	21.00	20.31	20.48	20.41
16QAM	1	Low	21.00	20.45	20.42	20.35
		Middle		20.44	20.30	20.35
		High		20.46	20.53	20.42
	50%	Low	21.00	20.48	20.47	20.34
		Middle		20.51	20.40	20.34
		High		20.54	20.47	20.48
	100%	/	21.00	20.44	20.42	20.53
Modulation	RB	RB Offset	Tune up	5MHz		
				Channel/Frequency(MHz)		
				20425/826.5	20525/836.5	20625/846.5
QPSK	1	Low	21.00	20.48	20.47	20.51
		Middle		20.48	20.50	20.53
		High		20.38	20.42	20.51
	50%	Low	21.00	20.44	20.52	20.56
		Middle		20.40	20.50	20.51
		High		20.27	20.42	20.35
	100%	/	21.00	20.29	20.44	20.36
16QAM	1	Low	21.00	20.40	20.40	20.33
		Middle		20.42	20.27	20.33
		High		20.43	20.49	20.39
	50%	Low	21.00	20.55	20.45	20.31

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		Middle		20.48	20.35	20.30
		High		20.52	20.43	20.45
	100%	/	21.00	20.41	20.37	20.49
Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				20450/829	20525/836.5	20600/844
QPSK	1	Low	21.00	20.45	20.53	20.48
		Middle		20.47	20.56	20.51
		High		20.36	20.41	20.48
	50%	Low	21.00	20.41	20.57	20.52
		Middle		20.38	20.56	20.48
		High		20.24	20.37	20.31
	100%	/	21.00	20.26	20.39	20.32
16QAM	1	Low	21.00	20.41	20.36	20.28
		Middle		20.38	20.25	20.29
		High		20.41	20.46	20.37
	50%	Low	21.00	20.52	20.41	20.28
		Middle		20.45	20.33	20.27
		High		20.49	20.38	20.41
	100%	/	21.00	20.39	20.33	20.46

LTE Band 7

Full power						
LTE B7			**Maximum Output Power (dBm)**			
Modulation	RB	RB Offset	Tune up	5MHz		
				Channel/Frequency(MHz)		
				20775/2502.5	21100/2535	21425/2567.5
QPSK	1	Low	23.50	22.19	22.08	22.16
		Middle		22.54	22.47	22.48
		High		22.34	22.29	22.22
	50%	Low	22.50	21.44	21.52	21.46
		Middle		21.38	21.51	21.40
		High		21.41	21.49	21.42
	100%	/	22.50	21.43	21.54	21.40
16QAM	1	Low	22.50	21.50	21.35	21.44
		Middle		21.48	21.54	21.45
		High		21.37	21.49	21.39
	50%	Low	21.50	20.44	20.53	20.43
		Middle		20.48	20.51	20.43
		High		20.61	20.58	20.51
	100%	/	21.50	20.48	20.63	20.47

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Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				20800/2505	21100/2535	21400/2565
QPSK	1	Low	23.50	22.21	22.09	22.19
		Middle		22.47	22.52	22.52
		High		22.36	22.33	22.25
	50%	Low	22.50	21.47	21.57	21.50
		Middle		21.41	21.56	21.44
		High		21.43	21.53	21.47
	100%	/	22.50	21.47	21.56	21.44
16QAM	1	Low	22.50	21.52	21.38	21.46
		Middle		21.51	21.58	21.48
		High		21.40	21.51	21.42
	50%	Low	21.50	20.47	20.58	20.47
		Middle		20.50	20.55	20.46
		High		20.64	20.63	20.55
	100%	/	21.50	20.51	20.68	20.51

Modulation	RB	RB Offset	Tune up	15MHz		
				Channel/Frequency(MHz)		
				20825/2507.5	21100/2535	21375/2562.5
QPSK	1	Low	23.50	22.20	22.05	22.17
		Middle		22.55	22.51	22.49
		High		22.33	22.28	22.21
	50%	Low	22.50	21.45	21.53	21.47
		Middle		21.38	21.51	21.40
		High		21.40	21.50	21.43
	100%	/	22.50	21.45	21.52	21.39
16QAM	1	Low	22.50	21.47	21.36	21.44
		Middle		21.49	21.55	21.46
		High		21.37	21.47	21.39
	50%	Low	21.50	20.44	20.56	20.44
		Middle		20.47	20.50	20.42
		High		20.62	20.59	20.52
	100%	/	21.50	20.48	20.63	20.47

Modulation	RB	RB Offset	Tune up	20MHz		
				Channel/Frequency(MHz)		
				20850/2510	21100/2535	21350/2560
QPSK	1	Low	23.50	22.17	22.01	22.14
		Middle		22.54	**22.57**	22.47
		High		22.31	22.27	22.18
	50%	Low	22.50	21.42	**21.58**	21.43
		Middle		21.36	21.47	21.37

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		High		21.37	21.45	21.39
	100%	/	22.50	21.42	21.47	21.35
16QAM	1	Low	22.50	21.39	21.32	21.39
		Middle		21.45	21.53	21.42
		High		21.35	21.44	21.37
	50%	Low	21.50	20.41	20.52	20.41
		Middle		20.44	20.48	20.39
		High		20.59	20.54	20.48
	100%	/	21.50	20.46	20.59	20.44
Sensor on						
LTE B7			**Maximum Output Power (dBm)**			
Modulation	RB	RB Offset	Tune up	5MHz		
				Channel/Frequency(MHz)		
				20775/2502.5	21100/2535	21425/2567.5
QPSK	1	Low	16.50	15.58	15.73	15.59
		Middle		15.98	16.05	15.89
		High		15.74	15.77	15.66
	50%	Low	16.50	15.78	16.06	15.82
		Middle		15.88	15.98	15.87
		High		15.86	15.96	15.82
	100%	/	16.50	15.90	16.02	15.92
16QAM	1	Low	16.50	15.78	15.92	15.84
		Middle		15.76	15.84	15.81
		High		15.75	15.90	15.78
	50%	Low	16.50	15.72	15.80	15.75
		Middle		15.70	15.78	15.72
		High		15.81	15.90	15.84
	100%	/	16.50	15.70	15.86	15.81
Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				20800/2505	21100/2535	21400/2565
QPSK	1	Low	16.50	15.60	15.74	15.62
		Middle		16.01	16.04	15.93
		High		15.76	15.81	15.69
	50%	Low	16.50	15.81	15.95	15.86
		Middle		15.91	16.03	15.91
		High		15.88	16.00	15.87
	100%	/	16.50	15.94	16.01	15.96
16QAM	1	Low	16.50	15.80	15.95	15.86
		Middle		15.79	15.88	15.84
		High		15.78	15.92	15.81
	50%	Low	16.50	15.75	15.85	15.79

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		Middle		15.72	15.82	15.75
		High		15.84	15.95	15.88
	100%	/	16.50	15.73	15.91	15.85
Modulation	RB	RB Offset	Tune up	15MHz		
				Channel/Frequency(MHz)		
				20825/2507.5	21100/2535	21375/2562.5
QPSK	1	Low	16.50	15.59	15.70	15.60
		Middle		15.99	16.01	15.90
		High		15.73	15.76	15.65
	50%	Low	16.50	15.79	16.01	15.83
		Middle		15.88	15.98	15.87
		High		15.85	15.97	15.83
	100%	/	16.50	15.92	16.02	15.91
16QAM	1	Low	16.50	15.75	15.93	15.84
		Middle		15.77	15.85	15.82
		High		15.75	15.88	15.78
	50%	Low	16.50	15.72	15.83	15.76
		Middle		15.69	15.77	15.71
		High		15.82	15.91	15.85
	100%	/	16.50	15.70	15.86	15.81
Modulation	RB	RB Offset	Tune up	20MHz		
				Channel/Frequency(MHz)		
				20850/2510	21100/2535	21350/2560
QPSK	1	Low	16.50	15.56	15.66	15.57
		Middle		15.98	16.05	15.88
		High		15.71	15.75	15.62
	50%	Low	16.50	15.76	16.02	15.79
		Middle		15.71	15.94	15.78
		High		15.70	15.92	15.75
	100%	/	16.50	15.89	16.01	15.87
16QAM	1	Low	16.50	15.81	15.89	15.79
		Middle		15.73	15.83	15.78
		High		15.73	15.85	15.76
	50%	Low	16.50	15.69	15.79	15.73
		Middle		15.66	15.75	15.68
		High		15.79	15.86	15.81
	100%	/	16.50	15.68	15.82	15.78

LTE Band 26

Full power	
LTE B26	**Maximum Output Power (dBm)**

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Modulation	RB	RB Offset	Tune up	1.4MHz		
				Channel/Frequency(MHz)		
				26697/814.7	26865/831.5	27033/848.3
QPSK	1	Low	23.50	22.40	22.33	22.43
		Middle		22.37	22.36	22.36
		High		22.35	22.38	22.36
	50%	Low	23.50	22.49	22.55	22.39
		Middle		22.38	22.54	22.47
		High		22.48	22.49	22.44
	100%	/	22.50	21.42	21.52	21.45
16QAM	1	Low	22.50	21.58	21.60	21.51
		Middle		21.56	21.57	21.48
		High		21.39	21.51	21.35
	50%	Low	22.50	21.30	21.37	21.46
		Middle		21.45	21.37	21.52
		High		21.42	21.39	21.29
	100%	/	21.50	20.46	20.56	20.53
Modulation	RB	RB Offset	Tune up	3MHz		
				Channel/Frequency(MHz)		
				26705/815.5	26865/831.5	27025/847.5
QPSK	1	Low	23.50	22.39	22.35	22.42
		Middle		22.33	22.35	22.37
		High		22.35	22.38	22.36
	50%	Low	22.50	21.56	21.52	21.48
		Middle		21.48	21.50	21.54
		High		21.56	21.48	21.50
	100%	/	22.50	21.42	21.55	21.46
16QAM	1	Low	22.50	21.58	21.58	21.51
		Middle		21.56	21.55	21.49
		High		21.38	21.53	21.34
	50%	Low	21.50	20.39	20.46	20.55
		Middle		20.53	20.45	20.60
		High		20.49	20.46	20.38
	100%	/	21.50	20.47	20.56	20.51
Modulation	RB	RB Offset	Tune up	5MHz		
				Channel/Frequency(MHz)		
				26715/816.5	26865/831.5	27015/846.5
QPSK	1	Low	23.50	22.41	22.36	22.45
		Middle		22.36	22.40	22.41
		High		22.37	22.42	22.39
	50%	Low	22.50	21.49	21.57	21.52
		Middle		21.51	21.55	21.48

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		High		21.48	21.52	21.55
	100%	/	22.50	21.46	21.57	21.50
16QAM	1	Low	22.50	21.60	21.61	21.53
		Middle		21.59	21.59	21.52
		High		21.41	21.55	21.37
	50%	Low	21.50	20.42	20.51	20.59
		Middle		20.55	20.49	20.63
		High		20.52	20.51	20.42
	100%	/	21.50	20.50	20.61	20.55
Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				26740/819	26865/831.5	26990/844
QPSK	1	Low	23.50	22.40	22.32	22.43
		Middle		22.34	22.39	22.38
		High		22.34	22.37	22.35
	50%	Low	22.50	21.57	21.53	21.49
		Middle		21.48	21.50	21.54
		High		21.55	21.49	21.51
	100%	/	22.50	21.44	21.53	21.45
16QAM	1	Low	22.50	21.55	21.59	21.51
		Middle		21.57	21.56	21.50
		High		21.38	21.51	21.34
	50%	Low	21.50	20.39	20.49	20.56
		Middle		20.52	20.44	20.59
		High		20.50	20.47	20.39
	100%	/	21.50	20.47	20.56	20.51
Modulation	RB	RB Offset	Tune up	15MHz		
				Channel/Frequency(MHz)		
				26765/821.5	26865/831.5	26965/841.5
QPSK	1	Low	23.50	22.37	22.28	22.40
		Middle		22.33	22.45	22.36
		High		22.32	22.36	22.32
	50%	Low	22.50	21.54	21.58	21.45
		Middle		21.46	21.56	21.51
		High		21.52	21.54	21.47
	100%	/	22.50	21.41	21.48	21.41
16QAM	1	Low	22.50	21.47	21.55	21.46
		Middle		21.53	21.54	21.46
		High		21.36	21.48	21.32
	50%	Low	21.50	20.36	20.45	20.53
		Middle		20.49	20.42	20.56
		High		20.47	20.42	20.35

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	100%	/	21.50	20.45	20.52	20.48
Sensor on						
LTE B26			**Maximum Output Power (dBm)**			
Modulation	RB	RB Offset	Tune up	1.4MHz		
				Channel/Frequency(MHz)		
				26697/814.7	26865/831.5	27033/848.3
QPSK	1	Low	21.00	20.72	20.84	20.78
		Middle		20.86	20.78	20.78
		High		20.79	20.78	20.82
	50%	Low	21.00	20.41	20.56	20.41
		Middle		20.44	20.55	20.40
		High		20.42	20.48	20.40
	100%	/	21.00	20.46	20.55	20.45
16QAM	1	Low	21.00	20.40	20.46	20.42
		Middle		20.38	20.50	20.37
		High		20.45	20.41	20.28
	50%	Low	21.00	20.33	20.26	20.32
		Middle		20.43	20.36	20.31
		High		20.37	20.35	20.26
	100%	/	21.00	20.46	20.38	20.32
Modulation	RB	RB Offset	Tune up	3MHz		
				Channel/Frequency(MHz)		
				26705/815.5	26865/831.5	27025/847.5
QPSK	1	Low	21.00	20.71	20.86	20.87
		Middle		20.82	20.77	20.79
		High		20.79	20.78	20.82
	50%	Low	21.00	20.48	20.53	20.50
		Middle		20.54	20.51	20.47
		High		20.50	20.57	20.46
	100%	/	21.00	20.46	20.58	20.46
16QAM	1	Low	21.00	20.40	20.44	20.42
		Middle		20.38	20.48	20.38
		High		20.44	20.43	20.27
	50%	Low	21.00	20.42	20.35	20.41
		Middle		20.51	20.44	20.39
		High		20.44	20.42	20.35
	100%	/	21.00	20.47	20.38	20.30
Modulation	RB	RB Offset	Tune up	5MHz		
				Channel/Frequency(MHz)		
				26715/816.5	26865/831.5	27015/846.5
QPSK	1	Low	21.00	20.73	20.87	20.80
		Middle		20.85	20.82	20.83

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		High		20.81	20.82	20.85
	50%	Low	21.00	20.51	20.58	20.54
		Middle		20.57	20.56	20.51
		High		20.52	20.51	20.51
	100%	/	21.00	20.50	20.60	20.50
16QAM	1	Low	21.00	20.42	20.47	20.44
		Middle		20.41	20.52	20.41
		High		20.47	20.45	20.30
	50%	Low	21.00	20.45	20.40	20.45
		Middle		20.53	20.48	20.42
		High		20.47	20.47	20.39
	100%	/	21.00	20.50	20.43	20.34
Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				26740/819	26865/831.5	26990/844
QPSK	1	Low	21.00	20.72	20.83	20.78
		Middle		20.83	20.81	20.80
		High		20.78	20.77	20.81
	50%	Low	21.00	20.49	20.54	20.51
		Middle		20.54	20.51	20.47
		High		20.49	20.58	20.47
	100%	/	21.00	20.48	20.56	20.45
16QAM	1	Low	21.00	20.37	20.45	20.42
		Middle		20.39	20.49	20.39
		High		20.44	20.41	20.27
	50%	Low	21.00	20.42	20.38	20.42
		Middle		20.50	20.43	20.38
		High		20.45	20.43	20.36
	100%	/	21.00	20.47	20.38	20.30
Modulation	RB	RB Offset	Tune up	15MHz		
				Channel/Frequency(MHz)		
				26765/821.5	26865/831.5	26965/841.5
QPSK	1	Low	21.00	20.69	20.79	20.85
		Middle		20.82	**20.87**	20.78
		High		20.76	20.86	20.78
	50%	Low	21.00	20.46	**20.59**	20.47
		Middle		20.52	20.57	20.44
		High		20.46	20.53	20.43
	100%	/	21.00	20.45	20.51	20.41
16QAM	1	Low	21.00	20.37	20.41	20.37
		Middle		20.35	20.47	20.35
		High		20.42	20.38	20.25

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	50%	Low	21.00	20.39	20.34	20.39
		Middle		20.47	20.41	20.35
		High		20.42	20.38	20.32
	100%	/	21.00	20.45	20.34	20.27

LTE Band 38

Full power						
LTE B38			**Maximum Output Power (dBm)**			
Modulation	RB	RB Offset	Tune up	5MHz		
				Channel/Frequency(MHz)		
				37775/2572.5	38000/2595	38225/2617.5
QPSK	1	Low	24.00	22.56	22.34	22.17
		Middle		22.51	22.55	22.59
		High		22.38	22.34	22.33
	50%	Low	23.00	21.38	21.43	21.39
		Middle		21.44	21.42	21.44
		High		21.40	21.41	21.45
	100%	/	23.00	21.43	21.42	21.48
16QAM	1	Low	23.00	21.51	21.31	21.27
		Middle		21.49	21.44	21.46
		High		21.34	21.43	21.28
	50%	Low	22.00	20.47	20.50	20.43
		Middle		20.50	20.55	20.50
		High		20.45	20.55	20.38
	100%	/	22.00	20.43	20.56	20.40
Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				37800/2575	38000/2595	38200/2615
QPSK	1	Low	24.00	22.58	22.35	22.20
		Middle		22.54	22.60	22.53
		High		22.40	22.38	22.36
	50%	Low	23.00	21.41	21.48	21.43
		Middle		21.47	21.47	21.48
		High		21.42	21.45	21.40
	100%	/	23.00	21.47	21.44	21.42
16QAM	1	Low	23.00	21.43	21.34	21.29
		Middle		21.42	21.48	21.49
		High		21.37	21.45	21.31
	50%	Low	22.00	20.50	20.55	20.47
		Middle		20.52	20.59	20.53
		High		20.48	20.60	20.42

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	100%	/	22.00	20.46	20.61	20.44
Modulation	RB	RB Offset	Tune up	15MHz		
				Channel/Frequency(MHz)		
				37825/2577.5	38000/2595	38175/2612.5
QPSK	1	Low	24.00	22.57	22.31	22.18
		Middle		22.52	22.59	22.50
		High		22.37	22.33	22.32
	50%	Low	23.00	21.39	21.44	21.40
		Middle		21.44	21.42	21.44
		High		21.39	21.42	21.46
	100%	/	23.00	21.45	21.40	21.47
16QAM	1	Low	23.00	21.48	21.32	21.27
		Middle		21.40	21.45	21.47
		High		21.34	21.41	21.28
	50%	Low	22.00	20.47	20.53	20.44
		Middle		20.49	20.54	20.49
		High		20.46	20.56	20.39
	100%	/	22.00	20.43	20.56	20.40
Modulation	RB	RB Offset	Tune up	20MHz		
				Channel/Frequency(MHz)		
				37850/2580	38000/2595	38150/2610
QPSK	1	Low	24.00	22.64	22.27	22.15
		Middle		22.51	**22.65**	22.58
		High		22.35	22.32	22.29
	50%	Low	23.00	21.36	**21.49**	21.36
		Middle		21.42	21.48	21.41
		High		21.36	21.47	21.42
	100%	/	23.00	21.42	21.45	21.43
16QAM	1	Low	23.00	21.21	21.28	21.22
		Middle		21.46	21.43	21.43
		High		21.32	21.38	21.26
	50%	Low	22.00	20.44	20.49	20.41
		Middle		20.46	20.52	20.46
		High		20.43	20.51	20.35
	100%	/	22.00	20.41	20.52	20.37
Sensor on						
LTE B38			**Maximum Output Power (dBm)**			
Modulation	RB	RB Offset	Tune up	5MHz		
				Channel/Frequency(MHz)		
				37775/2572.5	38000/2595	38225/2617.5
QPSK	1	Low	18.00	16.69	16.79	16.69
		Middle		17.01	17.04	17.06

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		High		16.85	16.91	16.98
	50%	Low	18.00	16.74	16.83	16.88
		Middle		16.91	17.11	17.14
		High		17.02	17.06	17.16
	100%	/	18.00	16.93	17.11	17.13
16QAM	1	Low	18.00	17.15	16.92	17.00
		Middle		17.15	17.16	17.11
		High		16.94	17.03	17.14
	50%	Low	18.00	16.89	17.04	17.16
		Middle		17.16	17.16	17.08
		High		17.10	17.08	16.95
	100%	/	18.00	16.89	16.97	17.11
Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				37800/2575	38000/2595	38200/2615
QPSK	1	Low	18.00	16.71	16.80	16.72
		Middle		17.04	17.02	17.03
		High		16.87	16.95	17.01
	50%	Low	18.00	16.77	16.88	16.92
		Middle		16.94	17.16	17.08
		High		17.04	17.10	17.11
	100%	/	18.00	16.97	17.13	17.17
16QAM	1	Low	18.00	17.12	16.95	17.02
		Middle		17.14	17.15	17.14
		High		16.97	17.05	17.07
	50%	Low	18.00	16.92	17.09	17.13
		Middle		17.11	17.14	17.11
		High		17.13	17.13	16.99
	100%	/	18.00	16.92	17.02	17.15
Modulation	RB	RB Offset	Tune up	15MHz		
				Channel/Frequency(MHz)		
				37825/2577.5	38000/2595	38175/2612.5
QPSK	1	Low	18.00	16.70	16.76	16.70
		Middle		17.02	17.01	17.04
		High		16.84	16.90	16.97
	50%	Low	18.00	16.75	16.84	16.89
		Middle		16.91	17.11	17.14
		High		17.01	17.07	17.13
	100%	/	18.00	16.95	17.09	17.12
16QAM	1	Low	18.00	17.14	16.93	17.00
		Middle		17.16	17.14	17.12
		High		16.94	17.01	17.14

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	50%	Low	18.00	16.89	17.07	17.15
		Middle		17.15	17.15	17.07
		High		17.11	17.09	16.96
	100%	/	18.00	16.89	16.97	17.11
Modulation	RB	RB Offset	Tune up	20MHz		
				Channel/Frequency(MHz)		
				37850/2580	38000/2595	38150/2610
QPSK	1	Low	18.00	16.67	16.72	16.67
		Middle		17.01	17.07	17.05
		High		16.82	16.89	16.94
	50%	Low	18.00	16.72	16.79	16.85
		Middle		16.89	17.17	17.11
		High		16.98	17.02	17.13
	100%	/	18.00	16.92	17.04	17.08
16QAM	1	Low	18.00	16.85	16.89	16.95
		Middle		17.12	17.15	17.08
		High		16.92	16.98	17.12
	50%	Low	18.00	16.86	17.03	17.14
		Middle		17.12	17.13	17.04
		High		17.08	17.04	16.92
	100%	/	18.00	16.87	16.93	17.08

LTE Band 40

Full power						
LTE B40(2305MHz-2315MHz)			**Maximum Output Power (dBm)**			
Modulation	RB	RB Offset	Tune up	5MHz		
				Channel/Frequency(MHz)		
				38725/2307.5	38750/2310	38775/2312.5
QPSK	1	Low	23.50	22.68	22.80	22.71
		Middle		22.77	22.82	22.77
		High		22.58	22.63	22.61
	50%	Low	22.50	21.81	21.82	21.80
		Middle		21.78	21.78	21.82
		High		21.79	21.87	21.81
	100%	/	22.50	21.75	21.90	21.60
16QAM	1	Low	22.50	21.14	21.82	21.70
		Middle		21.16	21.05	21.12
		High		21.56	21.71	21.45
	50%	Low	21.50	20.85	20.92	20.69
		Middle		20.81	20.91	20.75
		High		20.86	20.93	20.80

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	100%	/	21.50	20.88	20.98	20.86
Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				/	38750/2310	/
QPSK	1	Low	23.50	/	22.76	/
		Middle		/	**22.83**	/
		High		/	22.62	/
	50%	Low	22.50	/	**21.87**	/
		Middle		/	21.84	/
		High		/	21.82	/
	100%	/	22.50	/	21.85	/
16QAM	1	Low	22.50	/	21.78	/
		Middle		/	21.03	/
		High		/	21.68	/
	50%	Low	21.50	/	20.88	/
		Middle		/	20.89	/
		High		/	20.88	/
	100%	/	21.50	/	20.94	/
Sensor on						
LTE B40(2305MHz-2315MHz)			**Maximum Output Power (dBm)**			
Modulation	RB	RB Offset	Tune up	5MHz		
				Channel/Frequency(MHz)		
				38725/2307.5	38750/2310	38775/2312.5
QPSK	1	Low	17.50	16.97	17.05	16.96
		Middle		17.02	17.07	16.96
		High		16.98	16.86	16.84
	50%	Low	17.50	17.00	17.04	16.90
		Middle		17.04	17.04	17.00
		High		16.90	17.02	16.95
	100%	/	17.50	16.95	17.01	16.91
16QAM	1	Low	17.50	16.80	16.97	16.86
		Middle		16.82	16.91	16.86
		High		16.70	16.89	16.81
	50%	Low	17.50	16.78	16.97	16.85
		Middle		16.85	16.93	16.86
		High		16.89	16.94	16.83
	100%	/	17.50	16.73	16.80	16.72
Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				/	38750/2310	/
QPSK	1	Low	17.50	/	17.01	/
		Middle		/	**17.10**	/

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		High		/	16.85	/
	50%	Low	17.50	/	17.09	/
		Middle		/	17.07	/
		High		/	16.97	/
	100%	/	17.50	/	16.96	/
16QAM	1	Low	17.50	/	16.93	/
		Middle		/	16.89	/
		High		/	16.86	/
	50%	Low	17.50	/	16.93	/
		Middle		/	16.91	/
		High		/	16.89	/
	100%	/	17.50	/	16.76	/

Full power						
LTE B40(2350MHz-2360MHz)			Maximum Output Power (dBm)			
Modulation	RB	RB Offset	Tune up	5MHz		
				Channel/Frequency(MHz)		
				39175/2352.5	39200/2355	39225/2357.5
QPSK	1	Low	23.50	22.88	22.94	22.89
		Middle		22.84	22.91	22.80
		High		22.84	22.98	22.87
	50%	Low	22.50	22.14	22.13	22.07
		Middle		22.10	22.12	22.10
		High		22.12	22.17	22.06
	100%	/	22.50	21.91	22.12	22.05
16QAM	1	Low	22.50	22.08	22.16	22.16
		Middle		22.10	22.04	21.99
		High		22.14	22.11	22.04
	50%	Low	21.50	21.08	21.26	21.07
		Middle		21.17	21.10	21.04
		High		21.14	21.22	21.10
	100%	/	21.50	21.21	21.15	21.09
Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				/	39200/2355	/
QPSK	1	Low	23.50	/	22.96	/
		Middle		/	22.99	/
		High		/	22.97	/
	50%	Low	22.50	/	22.18	/
		Middle		/	22.16	/
		High		/	22.12	/
	100%	/	22.50	/	22.07	/

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16QAM	1	Low	22.50	/	22.12	/
		Middle		/	22.02	/
		High		/	22.08	/
	50%	Low	21.50	/	21.22	/
		Middle		/	21.08	/
		High		/	21.17	/
	100%	/	21.50	/	21.11	/
Sensor on						
LTE B40(2350MHz-2360MHz)			**Maximum Output Power (dBm)**			
Modulation	RB	RB Offset	Tune up	5MHz		
				Channel/Frequency(MHz)		
				39175/2352.5	39200/2355	39225/2357.5
QPSK	1	Low	17.50	16.90	17.06	17.07
		Middle		17.02	17.04	17.03
		High		16.88	16.98	16.90
	50%	Low	17.50	17.00	17.01	16.97
		Middle		16.89	17.04	16.97
		High		16.87	17.00	16.95
	100%	/	17.50	16.90	16.99	16.92
16QAM	1	Low	17.50	16.86	16.93	16.88
		Middle		16.88	16.93	16.80
		High		16.84	16.92	16.84
	50%	Low	17.50	16.74	16.83	16.78
		Middle		16.80	16.86	16.82
		High		16.85	16.98	17.03
	100%	/	17.50	16.74	16.82	16.76
Modulation	RB	RB Offset	Tune up	10MHz		
				Channel/Frequency(MHz)		
				/	39200/2355	/
QPSK	1	Low	17.50	/	17.02	/
		Middle		/	**17.08**	/
		High		/	16.97	/
	50%	Low	17.50	/	**17.07**	/
		Middle		/	17.04	/
		High		/	16.95	/
	100%	/	17.50	/	16.94	/
16QAM	1	Low	17.50	/	16.89	/
		Middle		/	16.91	/
		High		/	16.89	/
	50%	Low	17.50	/	16.79	/
		Middle		/	16.84	/
		High		/	16.93	/

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	100%	/	17.50	/	16.78	/

LTE Band 41

Full power								
LTE B41			Maximum Output Power (dBm)					
Modulation	RB	RB Offset	Tune up	5MHz				
				Channel/Frequency(MHz)				
				39675/2498.5	40148/2545.8	40620/2593	41093/2640.3	41565/2687.5
QPSK	1	Low	24.00	22.68	22.58	22.74	22.55	22.79
		Middle		23.08	22.98	23.11	23.04	23.05
		High		22.81	22.75	22.80	22.74	22.81
	50%	Low	23.00	21.84	21.79	21.92	21.77	21.97
		Middle		21.87	21.76	22.09	21.94	22.03
		High		21.92	21.72	21.96	21.91	21.82
	100%	/	23.00	22.03	21.96	22.18	22.07	22.15
16QAM	1	Low	23.00	22.17	21.90	21.86	21.83	21.82
		Middle		22.15	21.88	22.12	22.16	22.13
		High		21.99	21.80	21.98	21.89	21.90
	50%	Low	22.00	21.12	21.19	21.04	21.11	21.16
		Middle		21.08	21.26	21.17	21.13	21.22
		High		21.20	21.15	21.15	21.21	21.21
	100%	/	22.00	21.23	21.19	21.09	21.15	21.29
Modulation	RB	RB Offset	Tune up	10MHz				
				Channel/Frequency(MHz)				
				39700/2501	40160/2547	40620/2593	41080/2639	41540/2685
QPSK	1	Low	24.00	22.70	22.60	22.75	22.58	22.80
		Middle		23.11	23.01	23.16	23.08	23.10
		High		22.83	22.77	22.84	22.77	22.85
	50%	Low	23.00	21.87	21.82	21.97	21.81	22.02
		Middle		21.90	21.79	22.14	21.98	22.08
		High		21.94	21.74	22.00	21.96	21.86
	100%	/	23.00	22.07	22.00	22.20	22.11	22.17
16QAM	1	Low	23.00	22.19	21.92	21.89	21.85	21.85
		Middle		22.18	21.91	22.16	22.19	22.17
		High		22.02	21.83	22.00	21.92	21.92
	50%	Low	22.00	21.15	21.22	21.09	21.15	21.21
		Middle		21.10	21.28	21.21	21.16	21.26
		High		21.23	21.18	21.20	21.25	21.26
	100%	/	22.00	21.26	21.22	21.14	21.19	21.34
Modulation	RB	RB Offset	Tune up	15MHz				
				Channel/Frequency(MHz)				

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				39725/2503.5	40173/2548.3	40620/2593	41068/2637.8	41515/2682.5
QPSK	1	Low	24.00	22.66	22.59	22.71	22.56	22.72
		Middle		23.08	22.99	23.15	23.05	23.05
		High		22.78	22.74	22.79	22.73	22.79
	50%	Low	23.00	21.82	21.80	21.93	21.78	21.93
		Middle		21.85	21.76	22.09	21.94	21.99
		High		21.88	21.71	21.97	21.92	21.78
	100%	/	23.00	22.02	21.98	22.16	22.06	22.08
16QAM	1	Low	23.00	21.97	21.87	21.87	21.83	21.79
		Middle		22.12	21.89	22.13	22.17	22.12
		High		21.97	21.80	21.96	21.89	21.85
	50%	Low	22.00	21.09	21.19	21.07	21.12	21.15
		Middle		21.04	21.25	21.16	21.12	21.19
		High		21.18	21.16	21.16	21.22	21.17
	100%	/	22.00	21.21	21.19	21.09	21.15	21.25
Modulation	RB	RB Offset	Tune up	20MHz				
				Channel/Frequency(MHz)				
				39750/2506	40185/2549.5	40620/2593	41055/2636.5	41490/2680
QPSK	1	Low	24.00	22.72	22.62	22.73	22.59	22.78
		Middle		23.14	23.04	23.17	23.09	23.11
		High		22.84	22.78	22.84	22.76	22.85
	50%	Low	23.00	21.92	21.87	21.98	21.84	22.03
		Middle		21.95	21.84	22.15	22.01	22.09
		High		21.98	21.78	22.02	21.98	21.88
	100%	/	23.00	22.02	21.95	22.11	22.02	22.08
16QAM	1	Low	23.00	21.97	21.92	21.83	21.78	21.79
		Middle		22.12	21.85	22.11	22.13	22.12
		High		21.97	21.78	21.93	21.87	21.85
	50%	Low	22.00	21.09	21.16	21.03	21.09	21.15
		Middle		21.04	21.22	21.14	21.09	21.19
		High		21.18	21.13	21.11	21.18	21.17
	100%	/	22.00	21.21	21.17	21.05	21.12	21.25

Sensor on								
LTE B41			**Maximum Output Power (dBm)**					
Modulation	RB	RB Offset	Tune up	5MHz				
				Channel/Frequency(MHz)				
				39675/2498.5	40148/2545.8	40620/2593	41093/2640.3	41565/2687.5
QPSK	1	Low	18.00	16.60	16.54	16.75	16.56	16.80
		Middle		17.07	17.01	17.10	17.04	16.98
		High		16.58	16.52	16.77	16.58	16.96
	50%	Low	18.00	17.06	17.00	16.98	17.03	17.02
		Middle		17.04	17.01	17.09	17.04	16.98

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		High		17.05	16.93	17.06	16.92	17.00
	100%	/	18.00	16.92	16.80	17.05	16.84	16.93
16QAM	1	Low	18.00	17.13	17.04	16.90	16.74	16.84
		Middle		17.11	17.02	16.99	16.99	16.96
		High		17.00	16.88	17.09	16.88	17.10
	50%	Low	18.00	16.84	16.75	16.89	16.74	16.79
		Middle		17.11	16.99	17.03	16.99	17.10
		High		17.10	17.02	17.09	17.03	17.06
	100%	/	18.00	17.09	17.00	17.09	17.07	16.98
Modulation	RB	RB Offset	Tune up	10MHz				
				Channel/Frequency(MHz)				
				39700/2501	40160/2547	40620/2593	41080/2639	41540/2685
QPSK	1	Low	18.00	16.62	16.56	16.76	16.59	16.83
		Middle		17.10	17.04	17.15	17.08	17.02
		High		16.60	16.54	16.81	16.61	16.99
	50%	Low	18.00	17.09	17.03	17.03	17.07	17.06
		Middle		17.07	17.04	17.14	17.08	17.02
		High		17.07	16.95	17.10	16.97	17.05
	100%	/	18.00	16.96	16.84	17.07	16.88	16.97
16QAM	1	Low	18.00	17.15	17.06	16.93	16.76	16.86
		Middle		17.14	17.05	17.03	17.02	16.99
		High		17.03	16.91	17.11	16.91	17.13
	50%	Low	18.00	16.87	16.78	16.94	16.78	16.83
		Middle		17.13	17.01	17.07	17.02	17.13
		High		17.13	17.05	17.14	17.07	17.10
	100%	/	18.00	17.12	17.03	17.14	17.11	17.02
Modulation	RB	RB Offset	Tune up	15MHz				
				Channel/Frequency(MHz)				
				39725/2503.5	40173/2548.3	40620/2593	41068/2637.8	41515/2682.5
QPSK	1	Low	18.00	16.61	16.55	16.72	16.57	16.81
		Middle		17.08	17.02	17.14	17.05	16.99
		High		16.57	16.51	16.76	16.57	16.95
	50%	Low	18.00	17.07	17.01	16.99	17.04	17.03
		Middle		17.04	17.01	17.09	17.04	16.98
		High		17.04	16.92	17.07	16.93	17.01
	100%	/	18.00	16.94	16.82	17.03	16.83	16.92
16QAM	1	Low	18.00	17.10	17.01	16.91	16.74	16.84
		Middle		17.12	17.03	17.00	17.00	16.97
		High		17.00	16.88	17.07	16.88	17.10
	50%	Low	18.00	16.84	16.75	16.92	16.75	16.80
		Middle		17.10	16.98	17.02	16.98	17.09
		High		17.11	17.03	17.10	17.04	17.07

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	100%	/	18.00	17.09	17.00	17.09	17.07	16.98
Modulation	RB	RB Offset	Tune up	20MHz				
				Channel/Frequency(MHz)				
				39750/2506	40185/2549.5	40620/2593	41055/2636.5	41490/2680
QPSK	1	Low	18.00	16.64	16.58	16.74	16.60	16.84
		Middle		17.13	17.07	**17.16**	17.09	17.03
		High		16.61	16.55	16.81	16.60	16.98
	50%	Low	18.00	17.14	17.08	17.04	17.10	17.09
		Middle		17.12	17.09	**17.15**	17.11	17.05
		High		17.11	16.99	17.12	16.99	17.07
	100%	/	18.00	16.91	16.79	16.98	16.79	16.88
16QAM	1	Low	18.00	16.78	16.66	16.87	16.69	16.79
		Middle		17.08	16.99	16.98	16.96	16.93
		High		16.98	16.86	17.04	16.86	17.08
	50%	Low	18.00	16.83	16.74	16.90	16.74	16.79
		Middle		17.09	16.97	17.02	16.97	17.08
		High		17.10	17.02	17.07	17.02	17.05
	100%	/	18.00	17.07	16.98	17.05	17.04	16.95

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10.4 Wi-Fi and BT Measurement result

The maximum output power for Wi-Fi 2.4G

Full power				
Wi-Fi 2.4G			**Maximum Output Power (dBm)**	
Mode	BW	Channel/Frequency(MHz)	Tune up(dBm)	Output Power(dBm)
802.11b	20M	1/2412	17.00	16.54
		6/2437	17.00	16.88
		11/2462	17.00	16.35
802.11g	20M	1/2412	15.00	14.58
		6/2437	16.00	15.10
		11/2462	15.00	14.39
802.11n	20M	1/2412	15.00	13.93
		6/2437	14.00	13.11
		11/2462	14.00	12.69
	40M	3/2422	12.00	10.62
		6/2437	14.00	13.15
		9/2452	14.00	12.96
802.11ac	20M	1/2412	10.00	9.31
		6/2437	10.50	9.80
		11/2462	10.50	9.43
	40M	3/2422	12.00	10.91
		6/2437	10.50	9.63
		9/2452	10.50	9.39

The maximum output power for Wi-Fi 5G

Wi-Fi 5G			Maximum Output Power (dBm)	
Mode	BW	Channel/Frequency(MHz)	Tune up	Output Power
802.11a	20M	36/5180	11.00	10.62
		40/5200	8.00	6.79
		48/5240	10.00	9.00
		52/5260	10.00	9.13
		56/5280	10.00	8.98

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		60/5300	9.00	7.54
		64/5320	10.00	9.26
		100/5500	5.00	4.09
		116/5580	10.00	8.91
		140/5700	10.50	10.00
		149/5745	10.00	9.48
		157/5785	10.00	8.96
		165/5825	10.00	8.95
802.11n	20M	36/5180	10.00	9.20
		40/5200	7.00	5.68
		48/5240	7.00	6.13
		52/5260	9.00	8.34
		56/5280	9.00	8.35
		64/5320	7.00	5.66
		100/5500	6.00	4.42
		116/5580	10.00	8.67
		140/5700	10.00	9.27
		149/5745	10.00	8.92
		157/5785	10.00	8.30
		165/5825	10.00	8.16
	40M	38/5190	9.00	7.77
		46/5230	9.00	8.13
		54/5270	8.00	7.42
		62/5310	9.00	7.69
		102/5510	6.00	5.24
		110/5550	8.00	6.82
		134/5670	9.00	7.81
		151/5755	9.00	7.48
		159/5795	8.00	6.96
802.11ac	20M	36/5180	7.00	6.16
		40/5200	7.00	5.72
		48/5240	6.00	4.98
		52/5260	6.00	5.25

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		64/5320	6.00	5.62
		100/5500	6.00	4.28
		116/5580	6.00	4.77
		140/5700	7.00	5.69
		149/5745	7.00	5.74
		157/5785	6.00	5.18
		165/5825	6.00	5.11
	40M	38/5190	7.00	5.67
		46/5230	6.00	5.03
		54/5270	6.00	5.15
		62/5310	7.00	5.57
		102/5510	5.00	4.31
		110/5550	6.00	4.40
		134/5670	7.00	5.75
		151/5755	7.00	5.61
		159/5795	6.00	4.87
	80M	42/5210	6.00	5.23
		58/5290	6.00	5.26
		106/5530	5.00	4.21
		122/5610	6.00	5.00
		155/5775	7.00	6.04

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The maximum output power for BT

Full power						
BlueTooth	**Maximum Output Power (dBm)**					
Channel/Frequency(MHz)	0/2402		39/2441		78/2480	
Mode	Tune up	Output Power	Tune up	Output Power	Tune up	Output Power
DH5	10.00	9.43	10.00	9.25	10.00	9.56
2DH5	9.00	8.67	9.00	8.80	9.00	8.83
3DH5	9.00	8.73	9.00	8.76	9.00	8.86

Mode	Channel/Frequency(MHz)	Tune up	Output Power
BLE_1M	0/2402	-1.50	-2.50
	19/2440	-1.00	-1.94
	39/2480	-2.00	-2.74
BLE_2M	0/2402	-1.50	-2.56
	19/2440	-1.00	-1.93
	39/2480	-2.00	-2.89
BLE_125K	0/2402	-2.00	-2.83
	19/2440	-1.00	-1.89
	39/2480	-2.00	-2.64
BLE_500K	0/2402	-2.00	-2.78
	19/2440	-1.00	-1.89
	39/2480	-2.00	-2.63

10.5 NFC Measurement result

Frequency(MHz)	dBµV/m @3m	EIRP(dBm)	Tune up(dBm)
13.56	72.926	-22.302	-21.00
Note: EIRP(dBm)=Radiated field strength(dBµV/m)+20Log(3)-104.77.			

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11 SAR Test Result

Note:

KDB 447498 D01 General RF Exposure Guidance:

For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor

For BT/WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor

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

⩽ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ⩽ 100 MHz

⩽ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz

⩽ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ⩾ 200 MHz

KDB 648474 D04 Handset SAR:

With headset attached, when the reported SAR for body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

KDB 941225 D01 SAR test for 3G devices:

When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ⩽ 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.

KDB 941225 D05 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel.

When the reported SAR is > 0.8 W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.

Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low,Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are > 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.

Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.

Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is <1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

For LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the

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group of overlapping channels should be selected for testing; therefore, the requirement for H, M and L channels may not fully apply.

KDB 248227 D01 SAR meas for 802.11:

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

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

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

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

> 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the reported SAR is ⩽ 0.8 W/kg or all required test positions are tested.

- For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
- When it is unclear, all equivalent conditions must be tested.

For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ⩽ 1.2 W/kg or all required test channels are considered.

- The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.

When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is ⩽ 1.2 W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.

When the specified maximum output power is different between UNII 1 and UNII 2A, begin SAR with

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the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is ≤ 1.2 W/kg, testing for the band with the lower specified output power is not required; otherwise test the remaining bands independently for SAR.

Table 11.1: Duty Cycle

Mode	**Duty Cycle**
Speech for GSM	1:8.3
GPRS&EGPRS 1 Slot	1:8.3
GPRS&EGPRS 2 Slot	1:4
GPRS&EGPRS 3 Slot	1:2.67
GPRS&EGPRS 4 Slot	1:2
WCDMA&LTE FDD	1:1
TDD PC3	1:1.58
TDD PC2	1:2.31

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11.1 SAR results for 2G/3G/4G

GSM 850

Test Position	Power Reduction	Mode	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)			Figure No.
								Measured SAR1g	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)											
Front Side	Full power	GPRS 4TS	190	836.6	29.38	30.00	-0.03	0.617	1.15	0.712	/
Back Side	Full power	GPRS 4TS	190	836.6	29.38	30.00	-0.06	0.353	1.15	0.407	/
Left Side	Full power	GPRS 4TS	190	836.6	29.38	30.00	-0.11	0.318	1.15	0.367	/
Right Side	Sensor on	GPRS 4TS	190	836.6	23.81	24.50	-0.05	0.831	1.17	0.974	FIG A.1
Top Side	Full power	GPRS 4TS	190	836.6	29.38	30.00	-0.04	0.137	1.15	0.158	/
Right Side	Sensor on	GPRS 4TS	128	824.2	23.67	24.50	-0.02	0.707	1.21	0.856	/
Right Side	Sensor on	GPRS 4TS	251	848.8	23.80	24.50	-0.04	0.827	1.17	0.972	/
Repeat											
Right Side	Sensor on	GPRS 4TS	190	836.6	23.81	24.50	-0.02	0.818	1.17	0.959	/
Right Side	Sensor on	GPRS 4TS	251	848.8	23.80	24.50	-0.02	0.819	1.17	0.962	/
Body SAR Define (16mm)											
Right Side	Full power	GPRS 4TS	190	836.6	29.38	30.00	-0.07	0.305	1.15	0.352	/
Test Position	Power Reduction	Mode	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)			Figure No.
								Measured SAR10g	Scaling Factor	Report SAR10g	
Limb SAR (0mm)											
Front Side	Full power	GPRS 4TS	190	836.6	29.38	30.00	-0.10	0.650	1.15	0.750	FIG A.2
Back Side	Full power	GPRS 4TS	190	836.6	29.38	30.00	-0.10	0.281	1.15	0.324	/
Back Side-2	Full power	GPRS 4TS	190	836.6	29.38	30.00	-0.07	0.207	1.15	0.239	/
Back Side-3	Full power	GPRS 4TS	190	836.6	29.38	30.00	-0.02	0.596	1.15	0.687	/
Left Side	Full power	GPRS 4TS	190	836.6	29.38	30.00	0.06	0.165	1.15	0.190	/
Right Side	Sensor on	GPRS 4TS	190	836.6	23.81	24.50	-0.09	0.337	1.17	0.395	/
Top Side	Full power	GPRS 4TS	190	836.6	29.38	30.00	-0.03	0.157	1.15	0.181	/

GSM 1900

Test Position	Power Reduction	Mode	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)			Figure No.
								Measured SAR1g	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)											
Right Side	Sensor on	GPRS 4TS	810	1909.8	22.42	22.50	-0.02	0.887	1.02	0.903	FIG A.3
Repeat											
Right Side	Sensor on	GPRS 4TS	810	1909.8	22.42	22.50	-0.02	0.876	1.02	0.892	/
Test Position	Power Reduction	Mode	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)			Figure No.
								Measured SAR10g	Scaling Factor	Report SAR10g	
Limb SAR (0mm)											
Front Side	Full power	GPRS 4TS	661	1880	26.14	26.50	-0.10	0.847	1.09	0.920	FIG A.4

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WCDMA Band Ⅱ

Test Position	Power Reduction	Mode	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)			Figure No.
								Measured SAR1g	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)											
Front Side	Full power	RMC12.2k	9400	1880	23.08	23.50	-0.13	0.725	1.10	0.799	FIG A.5
Test Position	Power Reduction	Mode	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)			Figure No.
								Measured SAR10g	Scaling Factor	Report SAR10g	
Limb SAR (0mm)											
Front Side	Full power	RMC12.2k	9400	1880	23.08	23.50	-0.04	0.827	1.10	0.911	FIG A.6

WCDMA Band Ⅳ

Test Position	Power Reduction	Mode	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)			Figure No.
								Measured SAR1g	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)											
Front Side	Full power	RMC12.2k	1413	1732.6	23.13	23.50	0.02	0.814	1.09	0.886	/
Back Side	Full power	RMC12.2k	1413	1732.6	23.13	23.50	-0.10	0.072	1.09	0.078	/
Left Side	Full power	RMC12.2k	1413	1732.6	23.13	23.50	-0.03	0.240	1.09	0.261	/
Right Side	Sensor on	RMC12.2k	1413	1732.6	21.06	21.50	-0.03	0.854	1.11	0.945	/
Top Side	Full power	RMC12.2k	1413	1732.6	23.13	23.50	-0.02	0.382	1.09	0.416	/
Front Side	Full power	RMC12.2k	1312	1712.4	23.11	23.50	-0.05	0.822	1.09	0.899	/
Front Side	Full power	RMC12.2k	1513	1752.6	23.06	23.50	0.03	0.829	1.11	0.917	/
Right Side	Sensor on	RMC12.2k	1312	1712.4	21.14	21.50	-0.03	0.783	1.09	0.851	/
Right Side	Sensor on	RMC12.2k	1513	1752.6	21.09	21.50	-0.02	0.864	1.10	0.950	FIG A.7
Repeat											
Front Side	Full power	RMC12.2k	1413	1732.6	23.13	23.50	-0.06	0.810	1.09	0.882	/
Front Side	Full power	RMC12.2k	1312	1712.4	23.11	23.50	0.01	0.810	1.09	0.886	/
Front Side	Full power	RMC12.2k	1513	1752.6	23.06	23.50	0.03	0.824	1.11	0.912	/
Right Side	Sensor on	RMC12.2k	1413	1732.6	21.06	21.50	-0.02	0.858	1.11	0.949	/
Right Side	Sensor on	RMC12.2k	1513	1752.6	21.09	21.50	-0.17	0.850	1.10	0.934	/
Body SAR Define (16mm)											
Right Side	Full power	RMC12.2k	1413	1732.6	23.13	23.50	-0.07	0.326	1.09	0.355	/
Test Position	Power Reduction	Mode	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)			Figure No.
								Measured SAR10g	Scaling Factor	Report SAR10g	
Limb SAR (0mm)											
Right Side	Sensor on	RMC12.2k	1413	1732.6	21.06	21.50	0.10	1.120	1.11	1.239	FIG A.8

WCDMA Band Ⅴ

Test Position	Power Reduction	Mode	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)			Figure No.
								Measured SAR1g	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)											
Right Side	Sensor on	RMC12.2k	4183	836.6	20.66	21.50	0.08	0.567	1.21	0.688	FIG A.9
Test Position	Power Reduction	Mode	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)			Figure No.
								Measured SAR10g	Scaling Factor	Report SAR10g	
Limb SAR (0mm)											
Front Side	Full power	RMC12.2k	4183	836.6	23.78	24.50	0.14	0.381	1.18	0.450	FIG A.10

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LTE Band 2

Test Position	Power Reduction	Mode				Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)			Figure No.
		Modulation	BW(MHz)	RB Allocation	RB Offset						Measured SAR1g	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)														
Front Side	Full power	QPSK	20	1	mid	19100	1900	22.25	23.00	-0.10	0.781	1.19	0.928	FIG A.11
Test Position	Power Reduction	Mode				Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)			Figure No.
		Modulation	BW(MHz)	RB Allocation	RB Offset						Measured SAR10g	Scaling Factor	Report SAR10g	
Limb SAR (0mm)														
Front Side	Full power	QPSK	20	1	mid	18900	1880	22.36	23.00	0.02	0.807	1.16	0.935	FIG A.12

LTE Band 4

Test Position	Power Reduction	Mode				Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)			Figure No.
		Modulation	BW(MHz)	RB Allocation	RB Offset						Measured SAR1g	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)														
Front Side	Full power	QPSK	20	1	mid	20300	1745	22.15	23.00	0.15	0.750	1.22	0.912	FIG A.13
Test Position	Power Reduction	Mode				Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)			Figure No.
		Modulation	BW(MHz)	RB Allocation	RB Offset						Measured SAR10g	Scaling Factor	Report SAR10g	
Limb SAR (0mm)														
Front Side	Full power	QPSK	20	1	mid	20175	1732.5	22.16	23.00	-0.13	1.030	1.21	1.250	FIG A.14

LTE Band 7

Test Position	Power Reduction	Mode				Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)			Figure No.
		Modulation	BW(MHz)	RB Allocation	RB Offset						Measured SAR1g	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)														
Front Side	Full power	QPSK	20	1	mid	21100	2535	22.57	23.50	0.13	0.583	1.24	0.722	/
Back Side	Full power	QPSK	20	1	mid	21100	2535	22.57	23.50	-0.01	0.436	1.24	0.540	/
Left Side	Full power	QPSK	20	1	mid	21100	2535	22.57	23.50	-0.14	0.176	1.24	0.218	/
Right Side	Sensor on	QPSK	20	1	mid	21100	2535	16.05	16.50	-0.06	0.753	1.11	0.835	FIG A.15
Top Side	Full power	QPSK	20	1	mid	21100	2535	22.57	23.50	-0.03	0.159	1.24	0.197	/
Front Side	Full power	QPSK	20	50%	low	21100	2535	21.58	22.50	-0.05	0.447	1.24	0.552	/
Back Side	Full power	QPSK	20	50%	low	21100	2535	21.58	22.50	-0.14	0.333	1.24	0.412	/
Left Side	Full power	QPSK	20	50%	low	21100	2535	21.58	22.50	-0.07	0.137	1.24	0.169	/
Right Side	Sensor on	QPSK	20	50%	low	21100	2535	16.02	16.50	-0.05	0.744	1.12	0.831	/
Top Side	Full power	QPSK	20	50%	low	21100	2535	21.58	22.50	-0.03	0.119	1.24	0.147	/
Right Side	Sensor on	QPSK	20	1	mid	20850	2510	15.98	16.50	-0.02	0.739	1.13	0.833	/
Right Side	Sensor on	QPSK	20	1	mid	21350	2560	15.88	16.50	-0.06	0.733	1.15	0.845	/
Right Side	Sensor on	QPSK	20	50%	low	20850	2510	15.76	16.50	0.03	0.694	1.19	0.823	/
Right Side	Sensor on	QPSK	20	50%	low	21350	2560	15.79	16.50	-0.13	0.707	1.18	0.833	/
Body SAR Define (16mm)														
Right Side	Full power	QPSK	20	1	mid	21100	2535	22.57	23.50	-0.02	0.601	1.24	0.745	/
Right Side	Full power	QPSK	20	50%	low	21100	2535	21.58	22.50	-0.03	0.471	1.24	0.582	/
Test Position	Power Reduction	Mode				Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)			Figure No.
		Modulation	BW(MHz)	RB Allocation	RB Offset						Measured SAR10g	Scaling Factor	Report SAR10g	
Limb SAR (0mm)														
Right Side	Sensor on	QPSK	20	1	mid	21100	2535	16.05	16.50	-0.09	0.710	1.11	0.788	FIG A.16

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LTE Band 26

Test Position	Power Reduction	Mode				Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)			Figure No.
		Modulation	BW(MHz)	RB Allocation	RB Offset						Measured SAR1g	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)														
Right Side	Sensor on	QPSK	15	1	low	26965	841.5	20.85	21.00	-0.15	0.775	1.04	0.802	FIG A.17
Test Position	Power Reduction	Mode				Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)			Figure No.
		Modulation	BW(MHz)	RB Allocation	RB Offset						Measured SAR10g	Scaling Factor	Report SAR10g	
Limb SAR (0mm)														
Right Side	Sensor on	QPSK	15	50%	low	26865	831.5	20.59	21.00	-0.04	1.010	1.10	1.110	FIG A.18

LTE Band 40(2305 MHz-2315 MHz)

Test Position	Power Reduction	Mode				Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)			Figure No.
		Modulation	BW(MHz)	RB Allocation	RB Offset						Measured SAR1g	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)														
Front Side	Full power	QPSK	10	1	mid	38750	2310	22.83	23.50	-0.12	0.342	1.17	0.399	FIG A.19
Test Position	Power Reduction	Mode				Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)			Figure No.
		Modulation	BW(MHz)	RB Allocation	RB Offset						Measured SAR10g	Scaling Factor	Report SAR10g	
Limb SAR (0mm)														
Front Side	Full power	QPSK	10	1	mid	38750	2310	22.83	23.50	-0.02	0.194	1.17	0.226	/
Back Side	Full power	QPSK	10	1	mid	38750	2310	22.83	23.50	-0.01	0.103	1.17	0.120	/
Back Side-2	Full power	QPSK	10	1	mid	38750	2310	22.83	23.50	-0.02	0.122	1.17	0.142	/
Back Side-3	Full power	QPSK	10	1	mid	38750	2310	22.83	23.50	-0.03	0.042	1.17	0.049	/
Left Side	Full power	QPSK	10	1	mid	38750	2310	22.83	23.50	0.06	0.019	1.17	0.022	/
Right Side	Sensor on	QPSK	10	1	mid	38750	2310	17.10	17.50	-0.11	0.348	1.10	0.382	FIG A.20
Top Side	Full power	QPSK	10	1	mid	38750	2310	22.83	23.50	0.08	0.029	1.17	0.034	/
Front Side	Full power	QPSK	10	50%	low	38750	2310	21.87	22.50	-0.04	0.146	1.16	0.169	/
Back Side	Full power	QPSK	10	50%	low	38750	2310	21.87	22.50	-0.04	0.074	1.16	0.086	/
Back Side-2	Full power	QPSK	10	50%	low	38750	2310	21.87	22.50	-0.09	0.092	1.16	0.107	/
Back Side-3	Full power	QPSK	10	50%	low	38750	2310	21.87	22.50	0.10	0.040	1.16	0.046	/
Left Side	Full power	QPSK	10	50%	low	38750	2310	21.87	22.50	-0.03	0.012	1.16	0.014	/
Right Side	Sensor on	QPSK	10	50%	low	38750	2310	17.09	17.50	-0.06	0.340	1.10	0.374	/
Top Side	Full power	QPSK	10	50%	low	38750	2310	21.87	22.50	-0.11	0.018	1.16	0.021	/

LTE Band 40(2350 MHz-2360 MHz)

Test Position	Power Reduction	Mode				Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)			Figure No.
		Modulation	BW(MHz)	RB Allocation	RB Offset						Measured SAR1g	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)														
Right Side	Sensor on	QPSK	10	1	mid	39200	2355	17.08	17.50	-0.02	0.443	1.10	0.488	FIG A.21
Test Position	Power Reduction	Mode				Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)			Figure No.
		Modulation	BW(MHz)	RB Allocation	RB Offset						Measured SAR10g	Scaling Factor	Report SAR10g	
Limb SAR (0mm)														
Front Side	Full power	QPSK	10	1	mid	39200	2355	22.99	23.50	-0.03	0.188	1.12	0.211	/
Back Side	Full power	QPSK	10	1	mid	39200	2355	22.99	23.50	-0.03	0.115	1.12	0.129	/
Back Side-2	Full power	QPSK	10	1	mid	39200	2355	22.99	23.50	-0.12	0.103	1.12	0.116	/
Back Side-3	Full power	QPSK	10	1	mid	39200	2355	22.99	23.50	-0.10	0.041	1.12	0.046	/
Left Side	Full power	QPSK	10	1	mid	39200	2355	22.99	23.50	-0.17	0.017	1.12	0.020	/
Right Side	Sensor on	QPSK	10	1	mid	39200	2355	17.08	17.50	0.08	0.377	1.10	0.415	FIG A.22
Top Side	Full power	QPSK	10	1	mid	39200	2355	22.99	23.50	0.03	0.035	1.12	0.040	/
Front Side	Full power	QPSK	10	50%	low	39200	2355	22.18	22.50	-0.04	0.145	1.08	0.156	/
Back Side	Full power	QPSK	10	50%	low	39200	2355	22.18	22.50	-0.04	0.089	1.08	0.095	/
Back Side-2	Full power	QPSK	10	50%	low	39200	2355	22.18	22.50	-0.11	0.081	1.08	0.088	/
Back Side-3	Full power	QPSK	10	50%	low	39200	2355	22.18	22.50	-0.07	0.041	1.08	0.045	/
Left Side	Full power	QPSK	10	50%	low	39200	2355	22.18	22.50	-0.12	0.008	1.08	0.008	/
Right Side	Sensor on	QPSK	10	50%	low	39200	2355	17.07	17.50	-0.05	0.369	1.10	0.407	/
Top Side	Full power	QPSK	10	50%	low	39200	2355	22.18	22.50	-0.03	0.026	1.08	0.028	/

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LTE Band 41

Test Position	Power Reduction	Mode				Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)			Figure No.
		Modulation	BW(MHz)	RB Allocation	RB Offset						Measured SAR1g	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)														
Right Side	Sensor on	QPSK	20	1	mid	39750	2506	17.13	18.00	-0.07	0.569	1.22	0.695	FIG A.23
Test Position	Power Reduction	Mode				Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)			Figure No.
		Modulation	BW(MHz)	RB Allocation	RB Offset						Measured SAR10g	Scaling Factor	Report SAR10g	
Limb SAR (0mm)														
Right Side	Sensor on	QPSK	20	1	mid	40620	2593	17.16	18.00	-0.09	0.506	1.21	0.614	FIG A.24

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11.2 SAR results for WLAN

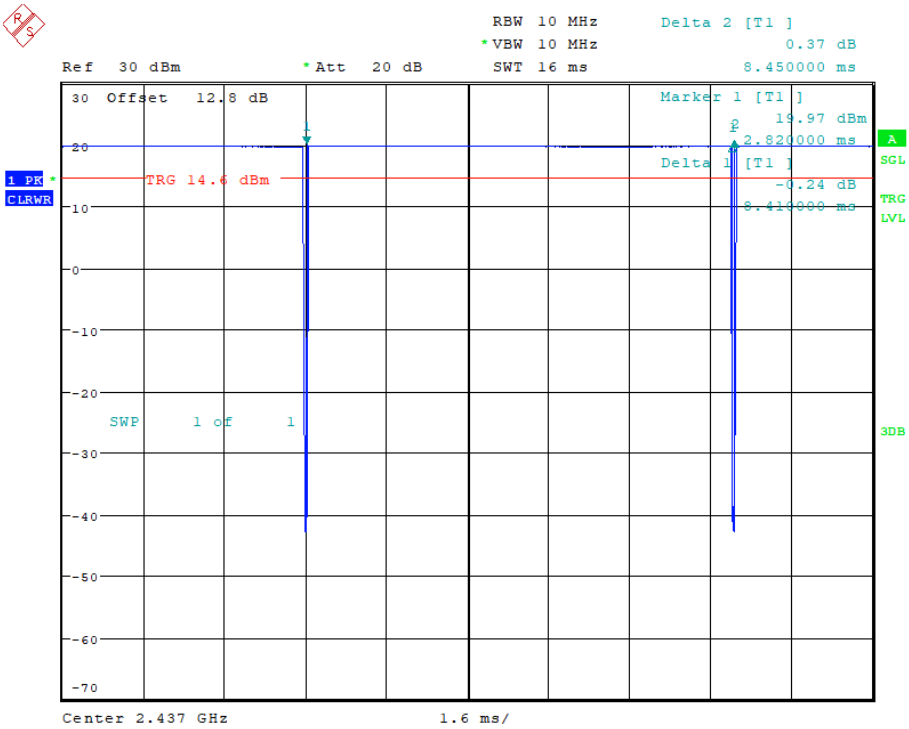
The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures.

When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac/ax modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n ac then ax) is selected.

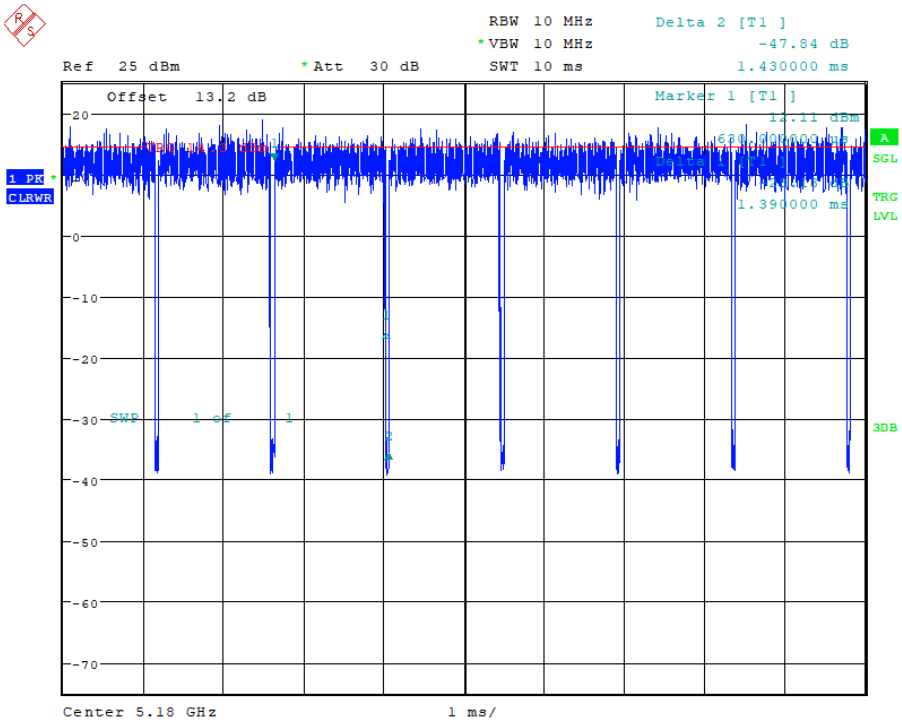
SAR Test reduction was applied from KDB 248227 guidance, when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.

Duty factor plot

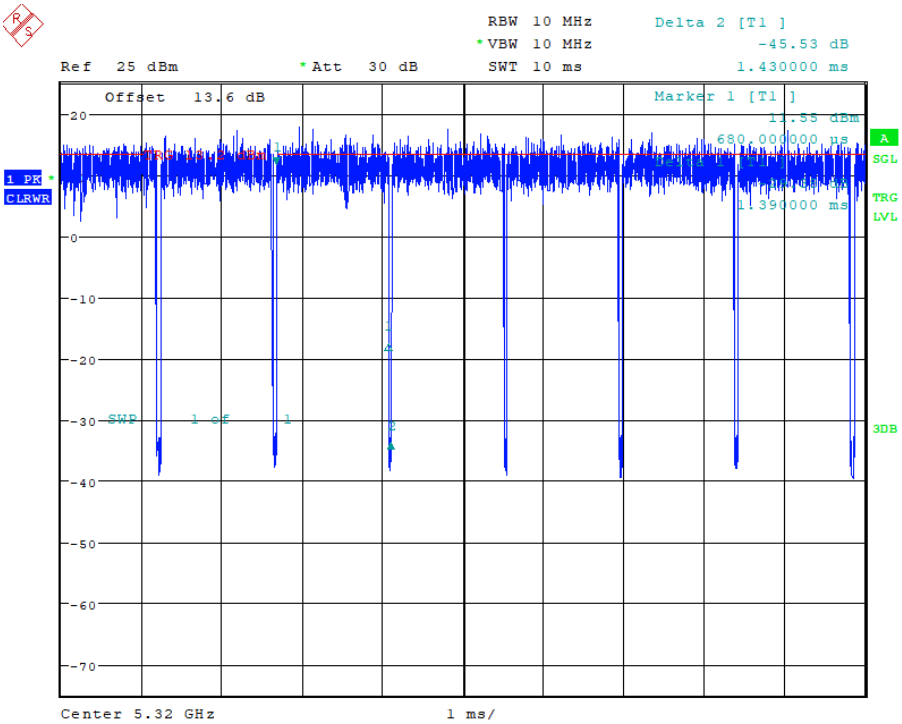
Channel 6: Duty Cycle:99.53%; Burst:8.41ms; Period:8.45ms



CH36: Duty Cycle:97.20%; Burst:1.39ms; Period:1.43ms



CH64: Duty Cycle:97.20%; Burst:1.39ms; Period:1.43ms



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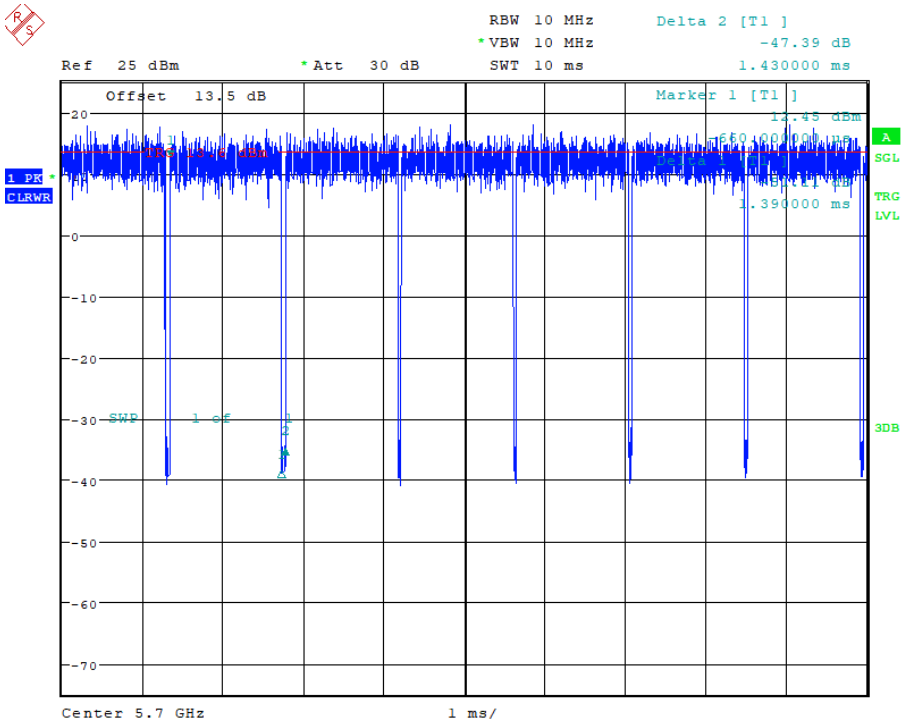
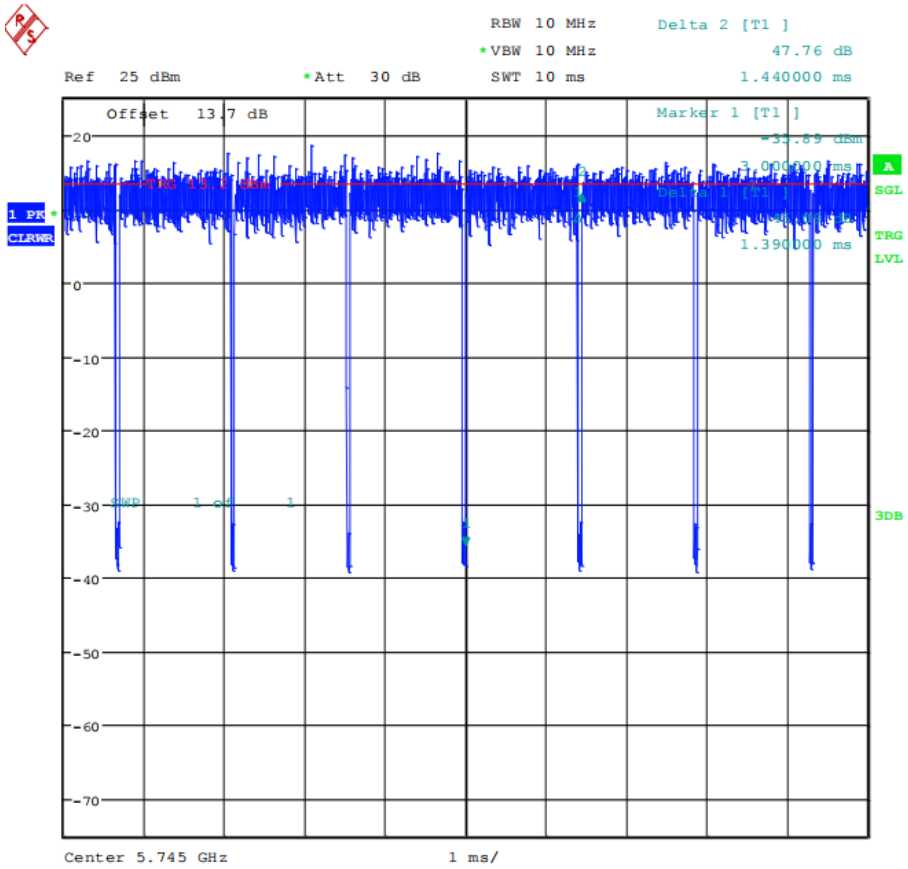
CH140: Duty Cycle:97.20%; Burst:1.39ms; Period:1.43ms



CH149: Duty Cycle:96.53%; Burst:1.39ms; Period:1.44ms



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WLAN 2.4G

Test Position	Power Reduction	Mode	BW(MHz)	Duty Cycle	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)				Figure No.
										Measured SAR1g	Duty Cycle Scaling Factor	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)														
Right Side	Full power	802.11b	20	99.53%	6	2437	16.88	17.00	-0.03	0.488	1.00	1.03	0.504	FIG A.25
Test Position	Power Reduction	Mode	BW(MHz)	Duty Cycle	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)				Figure No.
										Measured SAR10g	Duty Cycle Scaling Factor	Scaling Factor	Report SAR10g	
Limb SAR (0mm)														
Front Side	Full power	802.11b	20	99.53%	6	2437	16.88	17.00	-0.10	0.040	1.00	1.03	0.042	/
Back Side	Full power	802.11b	20	99.53%	6	2437	16.88	17.00	-0.10	0.048	1.00	1.03	0.049	/
Back Side-2	Full power	802.11b	20	99.53%	6	2437	16.88	17.00	0.04	0.046	1.00	1.03	0.047	/
Back Side-3	Full power	802.11b	20	99.53%	6	2437	16.88	17.00	0.04	0.270	1.00	1.03	0.279	/
Left Side	Full power	802.11b	20	99.53%	6	2437	16.88	17.00	-0.05	0.013	1.00	1.03	0.013	/
Right Side	Full power	802.11b	20	99.53%	6	2437	16.88	17.00	-0.06	0.324	1.00	1.03	0.335	FIG A.26
Top Side	Full power	802.11b	20	99.53%	6	2437	16.88	17.00	-0.05	0.022	1.00	1.03	0.023	/

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WLAN 5G

Test Position	Power Reduction	Mode	BW(MHz)	Duty Cycle	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)				Figure No.
										Measured SAR1g	Duty Cycle Scaling Factor	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)														
Right Side	Full power	802.11a	20	97.20%	36	5180	10.62	11.00	-0.06	0.205	1.03	1.09	0.230	FIG A.27
Test Position	Power Reduction	Mode	BW(MHz)	Duty Cycle	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)				Figure No.
										Measured SAR10g	Duty Cycle Scaling Factor	Scaling Factor	Report SAR10g	
Limb SAR (0mm)														
Front Side	Full power	802.11a	20	97.20%	36	5180	10.62	11.00	-0.10	0.034	1.03	1.09	0.038	/
Back Side	Full power	802.11a	20	97.20%	36	5180	10.62	11.00	-0.13	0.038	1.03	1.09	0.043	/
Back Side-2	Full power	802.11a	20	97.20%	36	5180	10.62	11.00	-0.05	0.022	1.03	1.09	0.024	/
Back Side-3	Full power	802.11a	20	97.20%	36	5180	10.62	11.00	0.10	0.124	1.03	1.09	0.139	/
Left Side	Full power	802.11a	20	97.20%	36	5180	10.62	11.00	-0.09	0.028	1.03	1.09	0.032	/
Right Side	Full power	802.11a	20	97.20%	36	5180	10.62	11.00	-0.03	0.203	1.03	1.09	0.228	FIG A.28
Top Side	Full power	802.11a	20	97.20%	36	5180	10.62	11.00	-0.10	0.008	1.03	1.09	0.009	/

Test Position	Power Reduction	Mode	BW(MHz)	Duty Cycle	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)				Figure No.
										Measured SAR1g	Duty Cycle Scaling Factor	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)														
Front Side	Full power	802.11a	20	97.20%	64	5320	9.26	10.00	-0.10	0.069	1.03	1.19	0.084	/
Back Side	Full power	802.11a	20	97.20%	64	5320	9.26	10.00	-0.07	0.062	1.03	1.19	0.076	/
Left Side	Full power	802.11a	20	97.20%	64	5320	9.26	10.00	-0.12	0.056	1.03	1.19	0.068	/
Right Side	Full power	802.11a	20	97.20%	64	5320	9.26	10.00	0.00	0.417	1.03	1.19	0.509	FIG A.29
Top Side	Full power	802.11a	20	97.20%	64	5320	9.26	10.00	-0.13	0.018	1.03	1.19	0.022	/
Test Position	Power Reduction	Mode	BW(MHz)	Duty Cycle	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)				Figure No.
										Measured SAR10g	Duty Cycle Scaling Factor	Scaling Factor	Report SAR10g	
Limb SAR (0mm)														
Front Side	Full power	802.11a	20	97.20%	64	5320	9.26	10.00	0.00	0.051	1.03	1.19	0.062	/
Back Side	Full power	802.11a	20	97.20%	64	5320	9.26	10.00	-0.04	0.028	1.03	1.19	0.034	/
Back Side-2	Full power	802.11a	20	97.20%	64	5320	9.26	10.00	-0.07	0.019	1.03	1.19	0.024	/
Back Side-3	Full power	802.11a	20	97.20%	64	5320	9.26	10.00	0.10	0.177	1.03	1.19	0.216	/
Left Side	Full power	802.11a	20	97.20%	64	5320	9.26	10.00	-0.14	0.023	1.03	1.19	0.028	/
Right Side	Full power	802.11a	20	97.20%	64	5320	9.26	10.00	-0.12	0.308	1.03	1.19	0.376	FIG A.30
Top Side	Full power	802.11a	20	97.20%	64	5320	9.26	10.00	-0.06	0.009	1.03	1.19	0.012	/

Test Position	Power Reduction	Mode	BW(MHz)	Duty Cycle	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)				Figure No.
										Measured SAR1g	Duty Cycle Scaling Factor	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)														
Right Side	Full power	802.11a	20	97.20%	140	5700	10.00	10.50	-0.10	0.293	1.03	1.12	0.338	FIG A.31
Test Position	Power Reduction	Mode	BW(MHz)	Duty Cycle	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)				Figure No.
										Measured SAR10g	Duty Cycle Scaling Factor	Scaling Factor	Report SAR10g	
Limb SAR (0mm)														
Right Side	Full power	802.11a	20	97.20%	140	5700	10.00	10.50	-0.10	0.249	1.03	1.12	0.287	FIG A.32

Test Position	Power Reduction	Mode	BW(MHz)	Duty Cycle	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)				Figure No.
										Measured SAR1g	Duty Cycle Scaling Factor	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)														
Right Side	Full power	802.11a	20	96.53%	149	5745	9.48	10.00	-0.10	0.378	1.04	1.13	0.441	FIG A.33
Test Position	Power Reduction	Mode	BW(MHz)	Duty Cycle	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)				Figure No.
										Measured SAR10g	Duty Cycle Scaling Factor	Scaling Factor	Report SAR10g	
Limb SAR (0mm)														
Right Side	Full power	802.11a	20	96.53%	149	5745	9.48	10.00	-0.02	0.281	1.04	1.13	0.328	FIG A.34

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11.3 SAR results for BT

Test Position	Power Reduction	Mode	Duty Cycle	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 1gSAR 1.6 W/kg (mW/g)				Figure No.
									Measured SAR1g	Duty Cycle Scaling Factor	Scaling Factor	Report SAR1g	
Body SAR (Worn&HotSpot 5mm)													
Right Side	Full power	DH5	76.86%	78	2480	9.56	10.00	-0.16	0.092	1.30	1.11	0.132	FIG A.35
Test Position	Power Reduction	Mode	Duty Cycle	Channel	Frequency (MHz)	Measured power (dBm)	Tune-up (dBm)	Power Drift (dB)	Limit of 10gSAR 4.0 W/kg (mW/g)				Figure No.
									Measured SAR10g	Duty Cycle Scaling Factor	Scaling Factor	Report SAR10g	
Limb SAR (0mm)													
Right Side	Full power	DH5	76.86%	78	2480	9.56	10.00	-0.09	0.058	1.30	1.11	0.083	FIG A.36

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12 SAR Measurement Variability

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. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium.

The following procedures are applied to determine if repeated measurements are required.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps2) 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 ≥ 1.45W/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

Frequency Band	Channel Number	Frequency(MHz)	Mode	Test setup	Distance	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
GSM 850	190	836.6	GPRS 4TS	Right Side	5	0.831	0.818	1.02	/
GSM 850	251	848.8	GPRS 4TS	Right Side	5	0.827	0.819	1.01	/
GSM 1900	810	1909.8	GPRS 4TS	Right Side	5	0.887	0.876	1.01	/
WCDMA BandⅣ	1413	1732.6	RMC12.2k	Front Side	5	0.814	0.810	1.00	/
WCDMA BandⅣ	1312	1712.4	RMC12.2k	Front Side	5	0.822	0.810	1.01	/
WCDMA BandⅣ	1513	1752.6	RMC12.2k	Front Side	5	0.829	0.824	1.01	/
WCDMA BandⅣ	1413	1732.6	RMC12.2k	Right Side	5	0.854	0.858	1.00	/
WCDMA BandⅣ	1513	1752.6	RMC12.2k	Right Side	5	0.864	0.850	1.02	/

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13 Simultaneous TX SAR Considerations

13.1 Transmit Antenna Separation Distances

The detail for transmit antenna separation distances is described in the additional document:
Appendix to test report No. 25T04Z100480-001
The photos of SAR test

13.2 SAR Measurement Positions

According to the KDB941225 D06 Hot Spot SAR, the edges with less than 2.5 cm distance to the antennas need to be tested for SAR.

Antenna/Sensor-to- DUT sides separation distances						
Mode	Front	Rear	Left edge	Right edge	Top edge	Bottom edge
Main ANT	<25mm	<25mm	>25mm	<25mm	<25mm	>25mm
Wi-Fi/BT ANT	<25mm	<25mm	>25mm	<25mm	>25mm	>25mm

13.3 Low Power Transmitters SAR Consideration

Standalone 1-g head or body SAR evaluation by measurement or numerical simulation for low power transmitters is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

The 1-g SAR test exclusion threshold for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$\frac{(max.power\ of\ channel, including\ tune-up\ tolerance, mW)}{(min.test\ separation\ distance, mm)} \times \sqrt{Frequency(GHz)} \leq 3.0$$

Where:

- Frequency (GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

According to the KDB447498 appendix A, the SAR test exclusion threshold for 2450MHz at 5mm test separation distances is 10mW. That means the transmitters with tune-up power below 10mW are excluded for SAR measurement.

SAR test exclusion for NFC separation＜50mm=[474*(1+log(100/$f_{(MHz)}$))]/2=443 mW, the maximum tune up of NFC is -21.00 dBm(0.008 mW), NFC can be exempted.

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13.4 Simultaneous Transmission

13.4.1 Introduction

The following procedures adopted from “FCC SAR Considerations for Cell Phones with Multiple Transmitters” are applicable to handsets with built-in unlicensed transmitters such as WLAN and Bluetooth devices which may simultaneously transmit with the licensed transmitter. KDB 447498 D01 provides two procedures for determining simultaneous transmission SAR test exclusion: Sum of SAR and SAR to Peak Location Ratio (SPLSR)

13.4.2 Sum of SAR

To qualify for simultaneous transmission SAR test exclusion based upon Sum of SAR the sum of the reported standalone SARs for all simultaneously transmitting antennas shall be below the applicable standalone SAR limit. If the sum of the SARs is above the applicable limit then simultaneous transmission SAR test exclusion may still apply if the requirements of the SAR to Peak Location Ratio (SPLSR) evaluation are met.

13.4.3 SAR to Peak Location Ratio (SPLSR)

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

$SPLSR = (SAR1 + SAR2)^{1.5} /Ri$

Where:

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

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

Ri is the separation distance between the pair of simultaneous transmitting antennas. When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of

$[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$

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

$(SAR1 + SAR2)^{1.5} /Ri \leqslant 0.04$

When an individual antenna transmits at on two bands simultaneously, the sum of the highest reported SAR for the frequency bands should be used to determine SAR1 or SAR2. When SPLSR is necessary, the smallest distance between the peak SAR locations for the antenna pair with respect to the peaks from each antenna should be used.

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13.4.4 Simultaneous Transmission Capabilities

The simultaneous transmission possibilities for this device are listed as below:

Capable Transmit Configurations	Body	Limb 10-g (0mm)
WWAN + BT	Yes	Yes
WWAN + Wi-Fi 2.4G	Yes	Yes
WWAN + Wi-Fi 5G	Yes	Yes

Note:

1. The reported SAR summation is calculated based on the same configuration and test position.
2. For the devices edges with antennas more than 2.5 cm from edge are not required to be evaluated for SAR, we determined the SAR of this edges were less than 0.01. For the convenience of simultaneous transmission calculation, all SAR values less than 0.01 are uniformly written as 0.00

13.4.5 Evaluation of Simultaneous

Maximum Reported SAR for GSM/WCDMA/LTE

Simultaneous Transmission Table	Report SAR_{1g}(W/kg) / Test Position	Cellular											Max.Report SAR_{1g} GSM/WCDMA/LTE
		GSM850	GSM1900	WCDMA Band Ⅱ	WCDMA Band Ⅳ	WCDMA Band Ⅴ	LTE B2	LTE B4	LTE B7	LTE B26	LTE B40	LTE B41	
Body SAR (Worn&HotSpot 5mm)	Front Side	0.712	0.889	0.883	0.917	0.419	0.998	0.969	0.722	0.400	0.526	0.485	0.998
	Back Side	0.407	0.148	0.121	0.078	0.243	0.104	0.042	0.540	0.329	0.169	0.399	0.540
	Left Side	0.367	0.163	0.152	0.261	0.179	0.131	0.210	0.218	0.196	0.107	0.154	0.367
	Right Side	0.974	0.941	0.634	0.950	0.724	0.742	0.887	0.845	0.802	0.614	0.832	0.974
	Top Side	0.158	0.236	0.234	0.416	0.238	0.159	0.347	0.197	0.209	0.112	0.094	0.416
Body SAR Define	Right Side(16mm)	0.352	0.416	0.414	0.355	0.310	0.406	0.358	0.745	0.303	0.464	0.502	0.745
Simultaneous Transmission Table	Report SAR_{10g}(W/kg) / Test Position	Cellular											Max.Report SAR_{10g} GSM/WCDMA/LTE
		GSM850	GSM1900	WCDMA Band Ⅱ	WCDMA Band Ⅳ	WCDMA Band Ⅴ	LTE B2	LTE B4	LTE B7	LTE B26	LTE B40	LTE B41	
Limb SAR(0mm)	Front Side	0.750	1.119	1.157	1.154	0.450	1.240	1.298	0.694	0.553	0.226	0.452	1.298
	Back Side	0.324	0.120	0.112	0.031	0.207	0.073	0.030	0.176	0.242	0.129	0.113	0.324
	Left Side	0.190	0.130	0.091	0.130	0.123	0.126	0.142	0.164	0.134	0.022	0.122	0.190
	Right Side	0.395	0.919	0.767	1.262	0.268	0.787	0.965	0.845	1.110	0.415	0.709	1.262
	Top Side	0.181	0.171	0.176	0.395	0.254	0.126	0.308	0.330	0.209	0.040	0.179	0.395

Maximum Reported SAR for Wi-Fi/BT

Simultaneous Transmission Table	Report SAR_{1g}(W/kg) / Test Position	Non-Cellular						
		Max.Report SAR_{1g} BT	Max.Report SAR_{1g} Wi-Fi 2.4G	Max.Report SAR_{1g} Wi-Fi 5G				Max.Report SAR_{1g}Wi-Fi 5G
				U-NII-1	U-NII-2A	U-NII-2C	U-NII-3	
Body SAR (Worn&HotSpot 5mm)	Front Side	0.008	0.035	0.016	0.084	0.027	0.049	0.084
	Back Side	0.033	0.102	0.067	0.076	0.075	0.077	0.077
	Left Side	0.007	0.029	0.060	0.068	0.051	0.072	0.072
	Right Side	0.132	0.504	0.230	0.509	0.387	0.441	0.509
	Top Side	0.003	0.007	0.000	0.022	0.000	0.002	0.022
Body SAR Define	Right Side(16mm)	0.035	0.096	0.213	0.390	0.328	0.347	0.390
Simultaneous Transmission Table	Report SAR_{10g}(W/kg) / Test Position	Non-Cellular						
		Max.Report SAR_{10g} BT	Max.Report SAR_{10g} Wi-Fi 2.4G	Max.Report SAR_{10g} Wi-Fi 5G				Max.Report SAR_{10g}Wi-Fi 5G
				U-NII-1	U-NII-2A	U-NII-2C	U-NII-3	
Limb SAR(0mm)	Front Side	0.007	0.042	0.038	0.062	0.022	0.019	0.062
	Back Side	0.020	0.049	0.043	0.034	0.037	0.037	0.043
	Left Side	0.001	0.013	0.032	0.028	0.022	0.023	0.032
	Right Side	0.083	0.335	0.228	0.376	0.287	0.328	0.376
	Top Side	0.002	0.023	0.009	0.012	0.003	0.004	0.012

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Simultaneous transmission SAR

Simultaneous Transmission Table	Test Position / Report SAR_{1g}(W/kg)	Max.Report SAR_{1g} GSM/WCDMA/LTE	Non-Cellular			WWAN+BT	WWAN+Wi-Fi 2.4G	WWAN+Wi-Fi 5G	MAX.ΣSAR_{1g}
			Max.Report SAR_{1g} BT	Max.Report SAR_{1g} Wi-Fi 2.4G	Max.Report SAR_{1g}Wi-Fi 5G				
Body SAR (Worn&HotSpot 5mm)	Front Side	0.998	0.008	0.035	0.084	1.006	1.033	1.082	1.08
	Back Side	0.540	0.033	0.102	0.077	0.573	0.642	0.617	0.64
	Left Side	0.367	0.007	0.029	0.072	0.374	0.396	0.439	0.44
	Right Side	0.974	0.132	0.504	0.509	1.106	1.478	1.483	1.48
	Top Side	0.416	0.003	0.007	0.022	0.419	0.423	0.438	0.44
Body SAR Define	Right Side(16mm)	0.745	0.035	0.096	0.390	0.780	0.841	1.135	1.14
Simultaneous Transmission Table	Test Position / Report SAR_{10g}(W/kg)	Max.Report SAR_{10g} GSM/WCDMA/LTE	Non-Cellular			WWAN+BT	WWAN+Wi-Fi 2.4G	WWAN+Wi-Fi 5G	MAX.ΣSAR_{10g}
			Max.Report SAR_{10g} BT	Max.Report SAR_{10g} Wi-Fi 2.4G	Max.Report SAR_{10g}Wi-Fi 5G				
Limb SAR(0mm)	Front Side	1.298	0.007	0.042	0.062	1.306	1.340	1.360	1.36
	Back Side	0.324	0.020	0.049	0.043	0.344	0.373	0.367	0.37
	Left Side	0.190	0.001	0.013	0.032	0.191	0.203	0.222	0.22
	Right Side	1.262	0.083	0.335	0.376	1.345	1.597	1.638	1.64
	Top Side	0.395	0.002	0.023	0.012	0.397	0.418	0.407	0.42

Conclusion:

According to the above table, the sum of reported SAR values for partial-body GSM/WCDMA/LTE and Wi-Fi/BT < 1.6W/kg; the sum of reported SAR values for Limb GSM/WCDMA/LTE and Wi-Fi/BT < 4.0W/kg.

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14 Measurement Uncertainty

14.1 Measurement Uncertainty for Normal SAR Tests (300MHz~3GHz)

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.0	N	1	1	1	6.0	6.0	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	N	1	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RFambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. restrictions	B	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	∞
12	Probe positioning with respect to phantom shell	B	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	∞
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
Test sample related										
14	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
15	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
16	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
17	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
18	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
19	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
20	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞
21	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521

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Combined standard uncertainty	$u_c^{'} = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$					9.55	9.43	257
Expanded uncertainty (confidence interval of 95 %)	$u_e = 2u_c$					19.1	18.9	

14.2 Measurement Uncertainty for Normal SAR Tests (3~6GHz)

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.55	N	1	1	1	6.55	6.55	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	2.0	R	$\sqrt{3}$	1	1	1.2	1.2	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RFambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. restrictions	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
12	Probe positioning with respect to phantom shell	B	6.7	R	$\sqrt{3}$	1	1	3.9	3.9	∞
13	Post-processing	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
Test sample related										
14	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
15	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
16	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
17	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
18	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
19	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
20	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞

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21	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521
Combined standard uncertainty		$u_c^{'} = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$						10.7	10.6	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						21.4	21.1	

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15 MAIN TEST INSTRUMENTS

Table 15.1: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	N5239A	MY55491241	May 21, 2024	One year
02	Power sensor	NRP50S	101488	June 5, 2024	One year
03	Power sensor	NRP50S	101489		
04	Signal Generator	MG3700A	6201052605	June 12 2024	One Year
05	Amplifier	60S1G4	0331848	No Calibration Requested	
06	BTS	CMW500	159889	January 21, 2025	One year
07	DAE	DAE4	1331	September 13,2024	One year
08	E-field Probe	EX3DV4	7673	July 29,2024	One year
09	Dipole Validation Kit	D835V2	4d069	July 9,2024	One year
10	Dipole Validation Kit	D1750V2	1003	July 11,2024	One year
11	Dipole Validation Kit	D1900V2	5d101	July 8,2024	One year
12	Dipole Validation Kit	D2300V2	1018	July 10,2024	One year
13	Dipole Validation Kit	D2450V2	853	July 10,2024	One year
14	Dipole Validation Kit	D2600V2	1012	July 10,2024	One year
15	Dipole Validation Kit	D5GHzV2	1060	June 12,2024	One year

END OF REPORT BODY

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Appendixes

Refer to separated files for the following appendixes

ANNEX A Graph Results

ANNEX B **System Verification Results**

ANNEX C SAR Measurement Setup

ANNEX D Position of the wireless device in relation to the phantom

ANNEX E Equivalent Media Recipes

ANNEX F DAE Calibration Certificate

ANNEX G Probe Calibration Certificate

ANNEX H Dipole Calibration Certificate

ANNEX I Sensor Triggering Data Summary

ANNEX J Accreditation Certificate

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