FCC SAR TEST REPORT

FCC ID	:	**AZ489FT7104**
Equipment	:	**LEX L11 Mission Critical LTE Device**
Brand Name	:	**Motorola Solutions**
Model Name	:	**LEX L11n**
Applicant	:	**Motorola Solutions Inc. 8000 West Sunrise Boulevard, Fort Lauderdale, Florida 33322**
Manufacturer	:	**Motorola Solutions Penang Motorola Solutions Malaysia Sd. Bhd., Plot 2A, Medan Bayan Lepas, Mukim 12 SWD, 11900, Bayan Lepas, Penang, Malaysia**
Standard	:	**FCC 47 CFR Part 2 (2.1093) ANSI/IEEE C95.1-1992 IEEE 1528-2013**

The product was received on Aug. 14, 2018 and testing was started from Aug. 17, 2018 and completed on Aug. 20, 2018. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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

Cona Huang

Approved by: Cona Huang / Deputy Manager

SPORTON INTERTIONAL INC. EMC & Wireless Communications Laboratory
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History of this test report

Report No.	Version	Description	Issued Date
FA851419-01	01	Initial issue of report	Sep. 14, 2018

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for Motorola Solutions Inc., LEX L11 Mission Critical LTE Device, are as follows.

Equipment Class	Frequency Band	Highest SAR Summary			Highest Simultaneous Transmission 1g SAR (W/kg)
		Head (Separation 0mm)	Body-worn (Separation 10mm)	Hotspot (Separation 10mm)	
		1g SAR (W/kg)			
Licensed	LTE Band 13	0.49	0.60	0.60	1.59
	LTE Band 25	0.82	0.67	1.09	
	LTE Band 26	0.34	0.48	0.48	
	LTE Band 41	0.65	0.52	0.49	
Date of Testing:		2018/8/17 ~ 2018/8/20			

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

Reviewed by: Jason Wang
Report Producer: Wan Liu

2. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01

3. Equipment Under Test (EUT) Information

3.1 General Information

Product Feature & Specification	
Equipment Name	LEX L11 Mission Critical LTE Device
Brand Name	Motorola Solutions
Model Name	LEX L11n
FCC ID	AZ489FT7104
IMEI Code	353980090003662
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 14: 790.5 MHz ~ 795.5 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 29: 717 MHz ~ 728 MHz (Rx only) LTE Band 30: 2307.5 MHz ~ 2312.5 MHz LTE Band 66: 1710.7 MHz ~ 1779.3 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC: 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA LTE: QPSK, 16QAM WLAN 2.4GHz : 802.11b/g/n HT20/HT40 WLAN 5GHz : 802.11a/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE NFC:ASK
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Production Unit
Remark: 1. This is a variant report to add LTE B13/B17/B25/B26/B41, other SAR tests operation and conduced power please refer to BV SAR report, FCC ID: AZ489FT7104, Report No.: SA171127C13, and the WLAN/BT testing results are used for simultaneous transmission analysis for this report.	

Accessories Information				
AC Adapter	Brand Name	Motorola Solutions	Model Name	MU08-L050150-A1
Battery 1	Brand Name	Motorola Solutions	Model Name	PMNN4546A
Battery 2	Brand Name	Motorola Solutions	Model Name	PMNN4545A
USB Cable	Brand Name	Motorola Solutions	Model Name	CB000756A01

3.2 General LTE SAR Test and Reporting Considerations

<table>
<tr><th colspan="2">Summarized necessary items addressed in KDB 941225 D05 v02r05</th></tr>
<tr><td>FCC ID</td><td>AZ489FT7104</td></tr>
<tr><td>Equipment Name</td><td>LEX L11 Mission Critical LTE Device</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>LTE Band 2: 1850.7 MHz ~ 1909.3 MHz
LTE Band 4: 1710.7 MHz ~ 1754.3 MHz
LTE Band 5: 824.7 MHz ~ 848.3 MHz
LTE Band 7: 2502.5 MHz ~ 2567.5 MHz
LTE Band 12: 699.7 MHz ~ 715.3 MHz
LTE Band 13: 779.5 MHz ~ 784.5 MHz
LTE Band 14: 790.5 MHz ~ 795.5 MHz
LTE Band 17: 706.5 MHz ~ 713.5 MHz
LTE Band 25: 1850.7 MHz ~ 1914.3 MHz
LTE Band 26: 814.7 MHz ~ 848.3 MHz
LTE Band 29: 717 MHz ~ 728 MHz (Rx only)
LTE Band 30: 2307.5 MHz ~ 2312.5 MHz
LTE Band 41: 2498.5 MHz ~ 2687.5 MHz
LTE Band 66: 1710.7 MHz ~ 1779.3 MHz</td></tr>
<tr><td>Channel Bandwidth</td><td>LTE Band 02:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 04:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 05:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 07: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 13: 5MHz, 10MHz
LTE Band 14: 5MHz, 10MHz
LTE Band 17: 5MHz, 10MHz
LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz.
LTE Band 30: 5MHz, 10MHz
LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>uplink modulations used</td><td>QPSK / 16QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Data only</td></tr>
<tr><td>LTE MPR permanently built-in by design</td><td>
Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table>
</td></tr>
<tr><td>LTE A-MPR</td><td>In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.</td></tr>
</table>

Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844
LTE Band 7								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560
LTE Band 12								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711
LTE Band 13						
	Bandwidth 5 MHz			Bandwidth 10 MHz		
	Channel #		Freq.(MHz)	Channel #		Freq.(MHz)
L	23205		779.5	23230		782
M	23230		782			
H	23255		784.5			
LTE Band 14						
	Bandwidth 5 MHz			Bandwidth 10 MHz		
	Channel #		Freq.(MHz)	Channel #		Freq.(MHz)
L	23305		790.5	23330		793
M	23330		793			
H	23355		795.5			
LTE Band 17						
	Bandwidth 5 MHz			Bandwidth 10 MHz		
	Channel #		Freq.(MHz)	Channel #		Freq. (MHz)
L	23755		706.5	23780		709
M	23790		710	23790		710
H	23825		713.5	23800		711

LTE Band 25												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905

LTE Band 26										
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5

LTE Band 30				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	27685	2307.5	27710	2310
M	27710	2310		
H	27735	2312.5		

LTE Band 41								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506
L M	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593
H M	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680

LTE Band 66												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770

4. RF Exposure Limits

4.1 Uncontrolled Environment

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

4.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

5. Specific Absorption Rate (SAR)

5.1 Introduction

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

5.2 SAR Definition

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

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

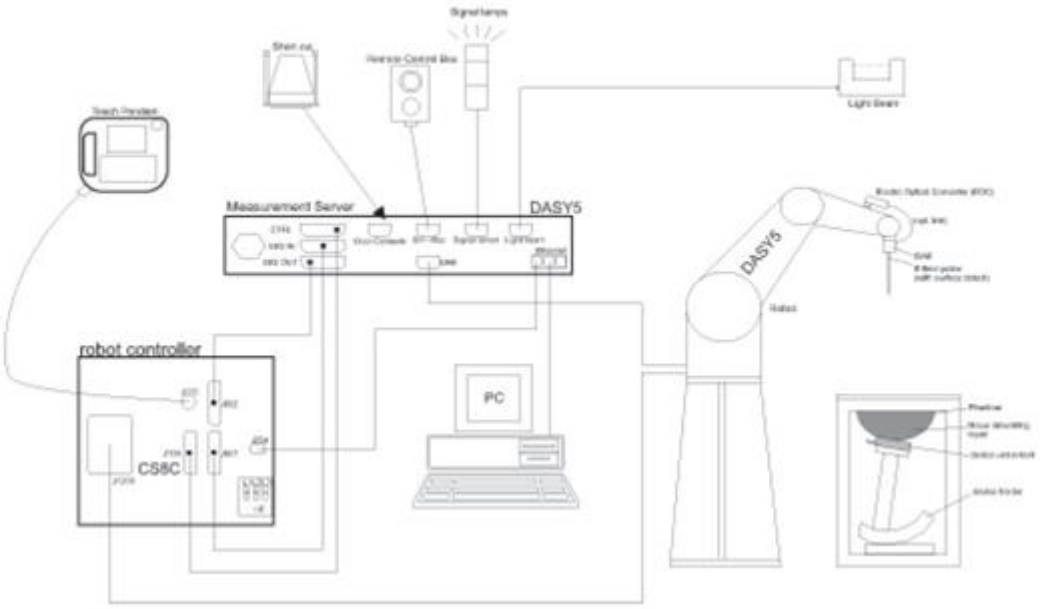
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

6. System Description and Setup

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



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

6.1 E-Field Probe

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

<ES3DV3 Probe>

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

<EX3DV4 Probe>

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

6.2 Data Acquisition Electronics (DAE)

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

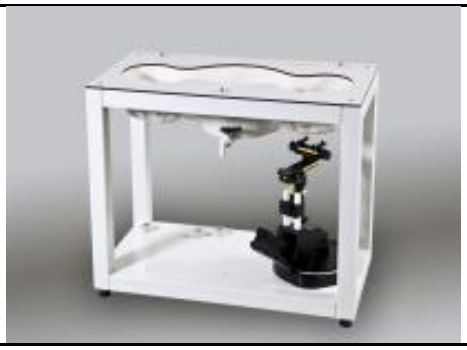
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Fig 5.1 Photo of DAE

6.3 Phantom

<SAM Twin Phantom>

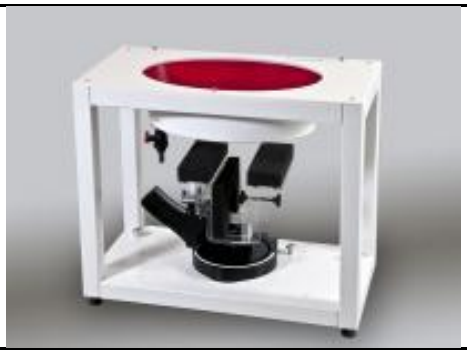
Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom



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

<ELI Phantom>

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



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

6.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

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

Mounting Device for Hand-Held Transmitters

Mounting Device Adaptor for Wide-Phones

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

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

Mounting Device for Laptops

7. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

7.1 Spatial Peak SAR Evaluation

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

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

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

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

7.2 Power Reference Measurement

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

7.3 Area Scan

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

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

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

7.4 Zoom Scan

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

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

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

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

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

7.5 Volume Scan Procedures

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

7.6 Power Drift Monitoring

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

8. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1107	Feb. 27, 2018	Feb. 26, 2019
SPEAG	835MHz System Validation Kit	D835V2	4d167	Feb. 27, 2018	Feb. 26, 2019
SPEAG	1900MHz System Validation Kit	D1900V2	5d018	Jun. 21, 2018	Jun. 20, 2019
SPEAG	2600MHz System Validation Kit	D2600V2	1078	Mar. 01, 2018	Feb. 28, 2019
SPEAG	Data Acquisition Electronics	DAE3	495	May. 24, 2018	May. 23, 2019
SPEAG	Data Acquisition Electronics	DAE4	853	Jul. 24, 2018	Jul. 23, 2019
SPEAG	Data Acquisition Electronics	DAE4	917	Dec. 14, 2017	Dec. 13, 2018
SPEAG	Dosimetric E-Field Probe	EX3DV4	3925	May. 31, 2018	May. 30, 2019
SPEAG	Dosimetric E-Field Probe	ES3DV3	3270	Sep. 25, 2017	Sep. 24, 2018
SPEAG	Dosimetric E-Field Probe	EX3DV4	7306	Jul. 26, 2018	Jul. 25, 2019
RCPTWN	Thermometer	HTC-1	TM685-1	Mar. 16, 2018	Mar. 15, 2019
RCPTWN	Thermometer	HTC-1	TM281-1	Mar. 16, 2018	Mar. 15, 2019
RCPTWN	Thermometer	HTC-1	TM560-1	Mar. 16, 2018	Mar. 15, 2019
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Apr. 17, 2018	Apr. 16, 2019
Anritsu	Radio Communication Analyzer	MT8820C	6201381760	May. 21, 2018	May. 20, 2019
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Dec. 07, 2017	Dec. 06, 2018
Agilent	ENA Network Analyzer	E5071C	MY46316648	Jan. 17, 2018	Jan. 16, 2019
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 26, 2017	Sep. 25, 2018
LINE SEIKI	Digital Thermometer	DTM3000-spezial	3169	Sep. 06, 2017	Sep. 05, 2018
Anritsu	Power Meter	ML2495A	1419002	May. 18, 2018	May. 17, 2019
Anritsu	Power Sensor	MA2411B	1339124	May. 18, 2018	May. 17, 2019
Anritsu	Power Meter	ML2495A	1218006	Oct. 06, 2017	Oct. 05, 2018
Anritsu	Power Sensor	MA2411B	1207363	Oct. 06, 2017	Oct. 05, 2018
Agilent	Spectrum Analyzer	E4408B	MY44211028	Aug. 23, 2017	Aug. 22, 2018
Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jun. 23, 2018	Jun. 22, 2019
Mini-Circuits	Power Amplifier	ZVE-8G+	D120604	Mar. 12, 2018	Mar. 11, 2019
Mini-Circuits	Power Amplifier	ZHL-42W+	QA1344002	Mar. 12, 2018	Mar. 11, 2019
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005- 3	N/A	Note 1	

General Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.

9. System Verification

9.1 Tissue Simulating Liquids

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

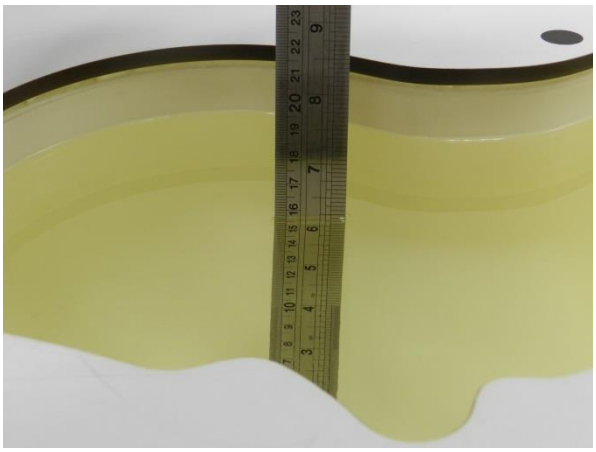


Fig 10.1Photo of Liquid Height for Head SAR

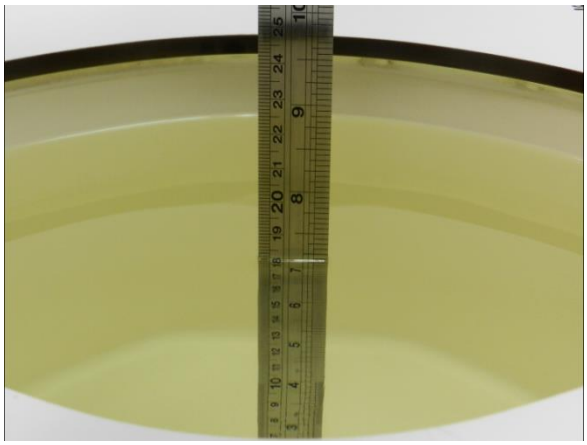


Fig 10.2 Photo of Liquid Height for Body SAR

9.2 Tissue Verification

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

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0
For Body								
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
900	50.8	48.2	0	0.9	0.1	0	1.05	55.0
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7
2600	68.1	0	0	0.1	0	31.8	2.16	52.5

Simulating Liquid for 5GHz, Manufactured by SPEAG

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

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	HSL	22.2	0.894	40.536	0.89	41.90	0.45	-3.26	±5	2018/8/19
750	MSL	22.6	0.993	54.233	0.96	55.50	3.44	-2.28	±5	2018/8/18
835	HSL	22.2	0.873	42.447	0.90	41.50	-3.00	2.28	±5	2018/8/19
835	MSL	22.6	0.940	56.324	0.97	55.20	-3.09	2.04	±5	2018/8/18
1900	HSL	22.4	1.453	39.427	1.40	40.00	3.79	-1.43	±5	2018/8/20
1900	MSL	22.3	1.574	54.442	1.52	53.30	3.55	2.14	±5	2018/8/17
2600	HSL	22.2	1.987	38.518	1.96	39.00	1.38	-1.24	±5	2018/8/20
2600	MSL	22.4	2.204	52.654	2.16	52.50	2.04	0.29	±5	2018/8/17

9.3 System Performance Check Results

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

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2018/8/19	750	HSL	250	D750V3-1107	EX3DV4 - SN7306	DAE4 Sn853	2.16	8.18	8.64	5.62
2018/8/18	750	MSL	250	D750V3-1107	EX3DV4 - SN3925	DAE3 Sn495	2.24	8.52	8.96	5.16
2018/8/19	835	HSL	250	D835V2-4d167	EX3DV4 - SN7306	DAE4 Sn853	2.35	9.26	9.4	1.51
2018/8/18	835	MSL	250	D835V2-4d167	EX3DV4 - SN3925	DAE3 Sn495	2.45	9.62	9.8	1.87
2018/8/20	1900	HSL	250	D1900V2-5d018	EX3DV4 - SN7306	DAE4 Sn853	10.60	40.10	42.4	5.74
2018/8/17	1900	MSL	250	D1900V2-5d018	EX3DV4 - SN3925	DAE3 Sn495	9.98	40.20	39.92	-0.70
2018/8/20	2600	HSL	250	D2600V2-1078	ES3DV3 - SN3270	DAE4 Sn917	14.40	56.50	57.6	1.95
2018/8/17	2600	MSL	250	D2600V2-1078	EX3DV4 - SN3925	DAE3 Sn495	14.20	54.10	56.8	4.99

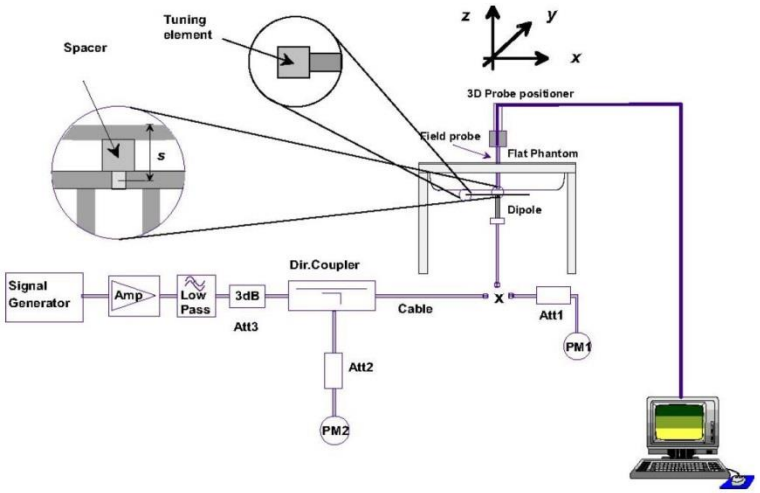


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

10. RF Exposure Positions

10.1 Ear and handset reference point

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

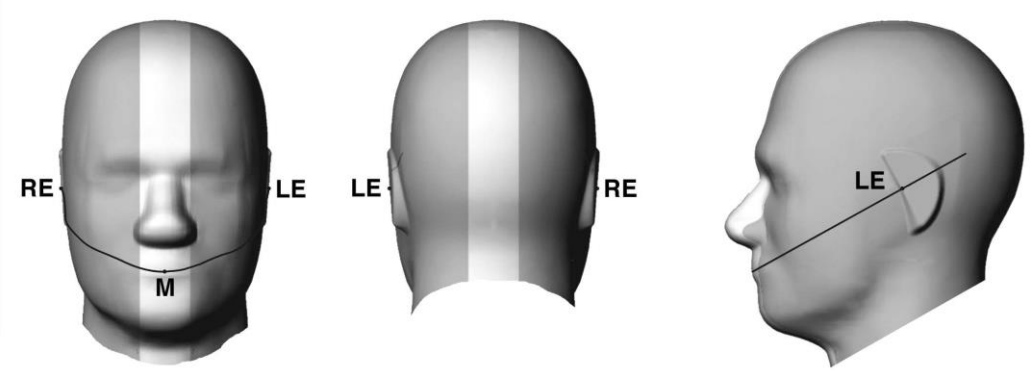


Fig 9.1.1 Front, back, and side views of SAM twin phantom

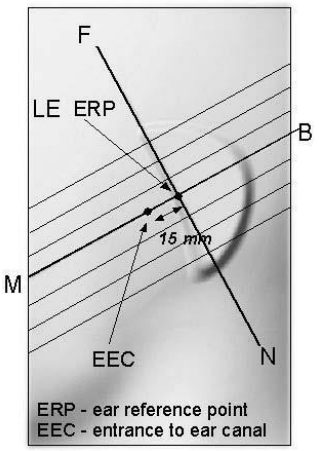


Fig 9.1.2 Close-up side view of phantom showing the ear region.

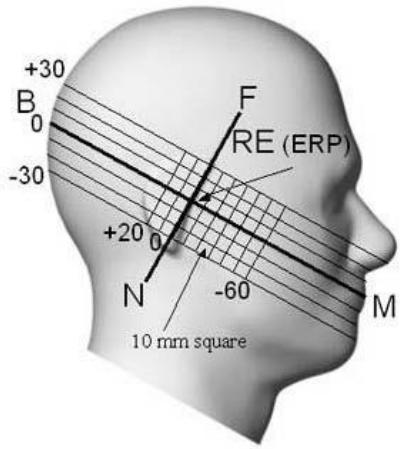


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

10.2 Definition of the cheek position

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

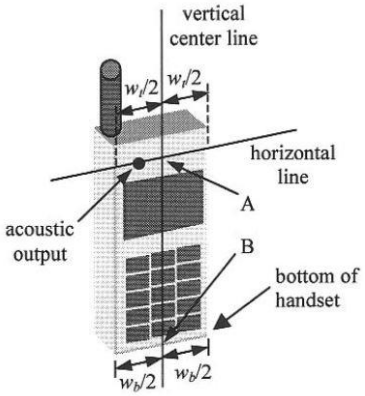


Fig 9.2.1 Handset vertical and horizontal reference lines—"fixed case

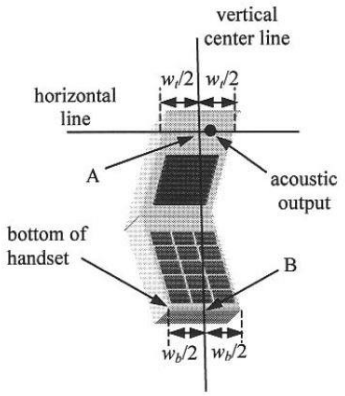


Fig 9.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

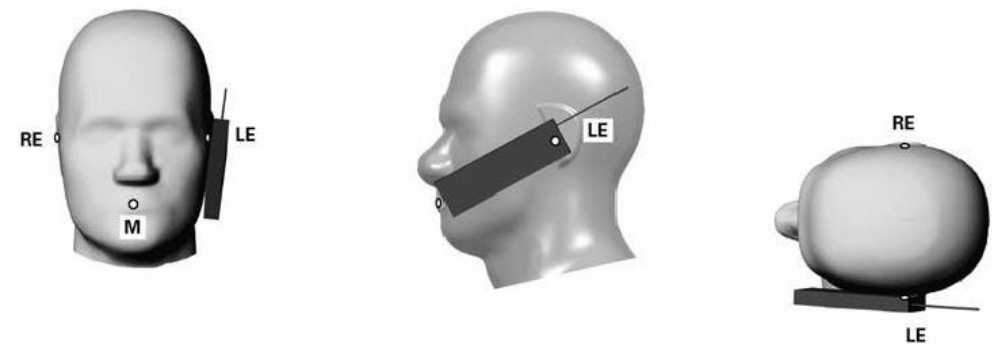


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

10.3 Definition of the tilt position

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

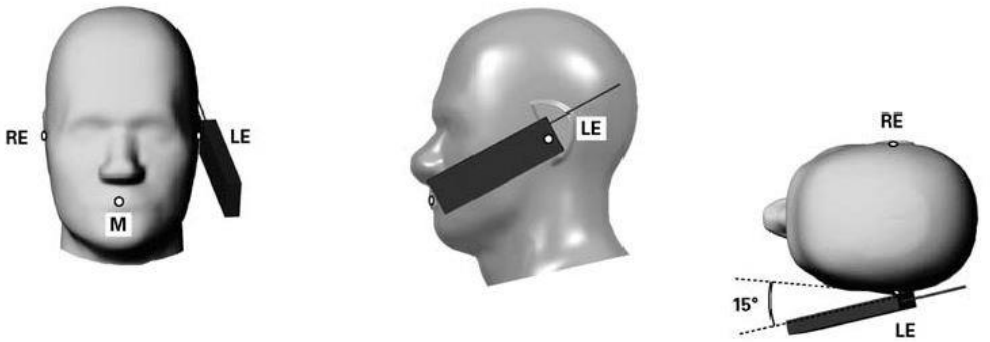


Fig 9.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

10.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 9.4). Per KDB648474 D04v01r03, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.

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

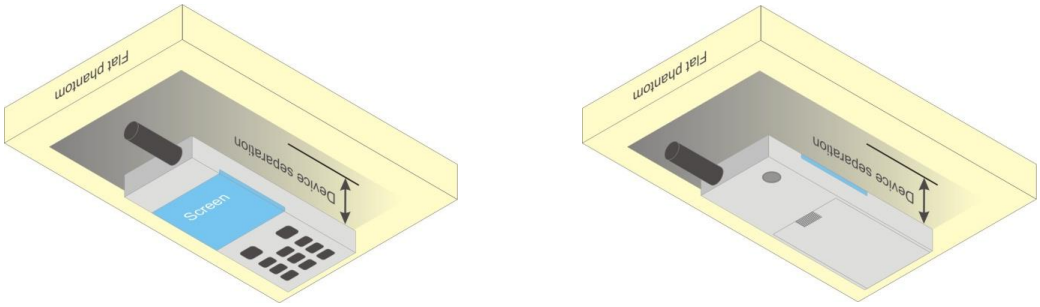


Fig 9.4 Body Worn Position

10.5 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined form general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v06 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

11. Conducted RF Output Power (Unit: dBm)

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B26 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. For LTE B17 SAR was cover by LTE B12 in original report, FCC ID: AZ489FT7104, Report No.: SA171127C13, due the have the same maximum output power and overlapping frequency.

<LTE Band 13>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				23230			
Frequency (MHz)				782			
10	QPSK	1	0	22.84			24
10	QPSK	1	25	22.69			
10	QPSK	1	49	22.60			
10	QPSK	25	0	21.76			23
10	QPSK	25	12	21.75			
10	QPSK	25	25	21.70			
10	QPSK	50	0	21.74			
10	16QAM	1	0	21.83			23
10	16QAM	1	25	21.94			
10	16QAM	1	49	21.87			
10	16QAM	25	0	20.75			22
10	16QAM	25	12	20.77			
10	16QAM	25	25	20.69			
10	16QAM	50	0	20.76			
Channel				23205	23230	23255	Tune-up limit (dBm)
Frequency (MHz)				779.5	782	784.5	
5	QPSK	1	0	22.59	22.81	22.81	24
5	QPSK	1	12	22.79	22.75	22.83	
5	QPSK	1	24	22.70	22.74	22.79	
5	QPSK	12	0	21.95	21.81	21.87	23
5	QPSK	12	7	21.95	21.80	21.90	
5	QPSK	12	13	21.93	21.76	21.87	
5	QPSK	25	0	21.91	21.81	21.86	
5	16QAM	1	0	21.88	22.05	22.11	23
5	16QAM	1	12	22.13	22.01	22.10	
5	16QAM	1	24	22.13	21.99	22.05	
5	16QAM	12	0	20.97	20.86	20.88	22
5	16QAM	12	7	21.00	20.85	20.92	
5	16QAM	12	13	20.95	20.79	20.85	
5	16QAM	25	0	20.92	20.81	20.88	

<LTE Band 17>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				23780	23790	23800	
Frequency (MHz)				709	710	711	
10	QPSK	1	0	23.52	23.48	23.46	24
10	QPSK	1	25	23.46	23.43	23.43	
10	QPSK	1	49	23.50	23.47	23.45	
10	QPSK	25	0	22.56	22.54	22.55	23
10	QPSK	25	12	22.54	22.52	22.52	
10	QPSK	25	25	22.55	22.53	22.54	
10	QPSK	50	0	22.55	22.53	22.51	
10	16QAM	1	0	22.73	22.72	22.70	23
10	16QAM	1	25	22.76	22.74	22.73	
10	16QAM	1	49	22.72	22.68	22.64	
10	16QAM	25	0	21.55	21.52	21.52	22
10	16QAM	25	12	21.56	21.54	21.53	
10	16QAM	25	25	21.52	21.51	21.49	
10	16QAM	50	0	21.55	21.56	21.55	
Channel				23755	23790	23825	Tune-up limit (dBm)
Frequency (MHz)				706.5	710	713.5	
5	QPSK	1	0	23.51	23.47	23.40	24
5	QPSK	1	12	23.49	23.44	23.38	
5	QPSK	1	24	23.50	23.45	23.36	
5	QPSK	12	0	22.52	22.49	22.45	23
5	QPSK	12	7	22.57	22.52	22.45	
5	QPSK	12	13	22.55	22.49	22.43	
5	QPSK	25	0	22.54	22.48	22.49	
5	16QAM	1	0	22.74	22.71	22.69	23
5	16QAM	1	12	22.72	22.72	22.65	
5	16QAM	1	24	22.76	22.71	22.59	
5	16QAM	12	0	21.54	21.53	21.45	22
5	16QAM	12	7	21.58	21.55	21.45	
5	16QAM	12	13	21.59	21.49	21.44	
5	16QAM	25	0	21.55	21.52	21.45	

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				26140	26340	26590	
Frequency (MHz)				1860	1880	1905	
20	QPSK	1	0	23.50	23.00	23.02	24
20	QPSK	1	49	23.48	23.68	23.32	
20	QPSK	1	99	22.75	23.58	22.08	
20	QPSK	50	0	22.58	22.70	22.47	23
20	QPSK	50	24	22.57	22.64	22.45	
20	QPSK	50	50	22.10	22.69	22.21	
20	QPSK	100	0	22.55	22.65	22.47	
20	16QAM	1	0	22.86	21.94	22.08	23
20	16QAM	1	49	22.66	22.81	22.57	
20	16QAM	1	99	21.91	22.81	21.01	
20	16QAM	50	0	21.58	21.69	21.49	22
20	16QAM	50	24	21.55	21.67	21.47	
20	16QAM	50	50	21.16	21.69	21.26	
20	16QAM	100	0	21.56	21.61	21.41	
Channel				26115	26340	26615	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1907.5	
15	QPSK	1	0	23.55	23.04	23.25	24
15	QPSK	1	37	23.40	23.49	23.26	
15	QPSK	1	74	22.96	23.60	22.06	
15	QPSK	36	0	22.52	22.65	22.43	23
15	QPSK	36	20	22.53	22.60	22.44	
15	QPSK	36	39	22.52	22.65	21.88	
15	QPSK	75	0	22.51	22.63	22.43	
15	16QAM	1	0	22.82	22.29	22.49	23
15	16QAM	1	37	22.67	22.77	22.53	
15	16QAM	1	74	22.14	22.88	21.01	
15	16QAM	36	0	21.54	21.68	21.46	22
15	16QAM	36	20	21.49	21.64	21.41	
15	16QAM	36	39	21.49	21.68	20.62	
15	16QAM	75	0	21.51	21.61	21.46	
Channel				26090	26340	26640	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1910	
10	QPSK	1	0	23.52	23.42	23.41	24
10	QPSK	1	25	23.40	23.54	22.20	
10	QPSK	1	49	23.47	23.62	22.10	
10	QPSK	25	0	22.49	22.62	22.47	23
10	QPSK	25	12	22.50	22.60	21.65	
10	QPSK	25	25	22.49	22.67	21.55	
10	QPSK	50	0	22.47	22.59	21.97	
10	16QAM	1	0	22.73	22.66	22.65	23
10	16QAM	1	25	22.68	22.80	21.49	
10	16QAM	1	49	22.67	22.89	21.38	
10	16QAM	25	0	21.49	21.62	21.40	22
10	16QAM	25	12	21.47	21.61	20.75	
10	16QAM	25	25	21.46	21.66	20.05	
10	16QAM	50	0	21.50	21.62	21.04	

Channel				26065	26340	26665	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1912.5	
5	QPSK	1	0	23.49	23.62	22.16	24
5	QPSK	1	12	23.38	23.55	22.09	
5	QPSK	1	24	23.41	23.64	22.05	
5	QPSK	12	0	22.45	22.58	21.01	23
5	QPSK	12	7	22.47	22.62	21.35	
5	QPSK	12	13	22.46	22.66	21.41	
5	QPSK	25	0	22.43	22.57	21.48	
5	16QAM	1	0	22.69	22.80	21.39	23
5	16QAM	1	12	22.68	22.80	21.37	
5	16QAM	1	24	22.67	22.90	21.07	
5	16QAM	12	0	21.48	21.60	20.10	22
5	16QAM	12	7	21.48	21.62	20.42	
5	16QAM	12	13	21.44	21.69	20.45	
5	16QAM	25	0	21.44	21.58	20.02	
Channel				26055	26340	26675	Tune-up limit (dBm)
Frequency (MHz)				1851.5	1880	1913.5	
3	QPSK	1	0	23.43	23.55	22.16	24
3	QPSK	1	8	23.41	23.53	22.18	
3	QPSK	1	14	23.37	23.62	22.30	
3	QPSK	8	0	22.43	22.57	21.25	23
3	QPSK	8	4	22.47	22.59	21.37	
3	QPSK	8	7	22.40	22.55	21.41	
3	QPSK	15	0	22.43	22.56	21.34	
3	16QAM	1	0	22.67	22.75	21.38	23
3	16QAM	1	8	22.66	22.78	21.42	
3	16QAM	1	14	22.64	22.86	21.58	
3	16QAM	8	0	21.50	21.63	20.35	22
3	16QAM	8	4	21.52	21.65	20.39	
3	16QAM	8	7	21.49	21.61	20.47	
3	16QAM	15	0	21.45	21.59	20.42	
Channel				26047	26340	26683	Tune-up limit (dBm)
Frequency (MHz)				1850.7	1880	1914.3	
1.4	QPSK	1	0	23.30	23.45	22.10	24
1.4	QPSK	1	3	23.39	23.51	22.34	
1.4	QPSK	1	5	23.30	23.43	22.18	
1.4	QPSK	3	0	23.40	23.50	22.18	
1.4	QPSK	3	1	23.42	23.55	22.24	
1.4	QPSK	3	3	23.38	23.52	22.26	
1.4	QPSK	6	0	22.38	22.51	21.28	23
1.4	16QAM	1	0	22.59	22.69	21.30	23
1.4	16QAM	1	3	22.65	22.78	21.51	
1.4	16QAM	1	5	22.56	22.71	21.43	
1.4	16QAM	3	0	22.37	22.50	21.19	
1.4	16QAM	3	1	22.42	22.54	21.24	
1.4	16QAM	3	3	22.33	22.49	21.27	
1.4	16QAM	6	0	21.43	21.57	20.36	22

<LTE Band 26>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				26765	26865	26965	
Frequency (MHz)				821.5	831.5	841.5	
15	QPSK	1	0	23.77	23.52	23.56	24
15	QPSK	1	37	23.51	23.46	23.49	
15	QPSK	1	74	23.46	23.49	23.43	
15	QPSK	36	0	22.60	22.66	22.62	23
15	QPSK	36	20	22.58	22.56	22.61	
15	QPSK	36	39	22.53	22.59	22.53	
15	QPSK	75	0	22.59	22.54	22.57	
15	16QAM	1	0	22.84	22.80	22.73	23
15	16QAM	1	37	22.78	22.73	22.81	
15	16QAM	1	74	22.71	22.77	22.70	
15	16QAM	36	0	21.60	21.54	21.46	22
15	16QAM	36	20	21.60	21.54	21.59	
15	16QAM	36	39	21.51	21.59	21.53	
15	16QAM	75	0	21.56	21.52	21.57	
Channel				26740	26865	26990	Tune-up limit (dBm)
Frequency (MHz)				819	831.5	844	
10	QPSK	1	0	23.70	23.67	23.63	24
10	QPSK	1	25	23.66	23.61	23.58	
10	QPSK	1	49	23.74	23.62	23.57	
10	QPSK	25	0	22.72	22.68	22.64	23
10	QPSK	25	12	22.74	22.67	22.65	
10	QPSK	25	25	22.70	22.65	22.61	
10	QPSK	50	0	22.70	22.66	22.65	
10	16QAM	1	0	22.92	22.96	22.91	23
10	16QAM	1	25	22.91	22.89	22.83	
10	16QAM	1	49	22.99	22.88	22.80	
10	16QAM	25	0	21.70	21.68	21.63	22
10	16QAM	25	12	21.72	21.67	21.64	
10	16QAM	25	25	21.67	21.63	21.61	
10	16QAM	50	0	21.72	21.67	21.64	
Channel				26715	26865	27015	Tune-up limit (dBm)
Frequency (MHz)				816.5	831.5	846.5	
5	QPSK	1	0	23.64	23.53	23.49	24
5	QPSK	1	12	23.58	23.51	23.46	
5	QPSK	1	24	23.58	23.52	23.46	
5	QPSK	12	0	22.61	22.53	22.48	23
5	QPSK	12	7	22.64	22.55	22.50	
5	QPSK	12	13	22.61	22.56	22.48	
5	QPSK	25	0	22.62	22.52	22.50	
5	16QAM	1	0	22.83	22.80	22.71	23
5	16QAM	1	12	22.82	22.82	22.71	
5	16QAM	1	24	22.82	22.78	22.68	
5	16QAM	12	0	21.62	21.55	21.50	22
5	16QAM	12	7	21.65	21.56	21.52	
5	16QAM	12	13	21.61	21.55	21.50	
5	16QAM	25	0	21.60	21.53	21.49	

Channel				26705	26865	27025	Tune-up limit (dBm)
Frequency (MHz)				815.5	831.5	847.5	
3	QPSK	1	0	23.70	23.63	23.57	24
3	QPSK	1	8	23.68	23.60	23.57	
3	QPSK	1	14	23.69	23.59	23.53	
3	QPSK	8	0	22.70	22.64	22.60	23
3	QPSK	8	4	22.71	22.64	22.63	
3	QPSK	8	7	22.67	22.61	22.59	
3	QPSK	15	0	22.72	22.66	22.58	
3	16QAM	1	0	22.91	22.89	22.80	23
3	16QAM	1	8	22.91	22.88	22.78	
3	16QAM	1	14	22.93	22.87	22.75	
3	16QAM	8	0	21.77	21.69	21.62	22
3	16QAM	8	4	21.78	21.72	21.66	
3	16QAM	8	7	21.74	21.67	21.64	
3	16QAM	15	0	21.73	21.66	21.61	
Channel				26697	26865	27033	Tune-up limit (dBm)
Frequency (MHz)				814.7	831.5	848.3	
1.4	QPSK	1	0	23.30	23.24	23.15	24
1.4	QPSK	1	3	23.37	23.31	23.21	
1.4	QPSK	1	5	23.30	23.24	23.11	
1.4	QPSK	3	0	23.37	23.28	23.20	
1.4	QPSK	3	1	23.43	23.32	23.24	
1.4	QPSK	3	3	23.37	23.29	23.21	
1.4	QPSK	6	0	22.35	22.28	22.22	23
1.4	16QAM	1	0	22.55	22.51	22.40	23
1.4	16QAM	1	3	22.63	22.57	22.47	
1.4	16QAM	1	5	22.57	22.50	22.40	
1.4	16QAM	3	0	22.35	22.31	22.20	
1.4	16QAM	3	1	22.39	22.33	22.23	
1.4	16QAM	3	3	22.33	22.27	22.20	
1.4	16QAM	6	0	21.42	21.34	21.28	22

<TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

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

a. 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations

b. "special subframe S" contains both uplink and downlink transmissions, it has been taken into consideration to determine the transmission duty factor according to the worst case uplink and downlink cyclic prefix requirements for UpPTS

c. Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Anritsu MT8820C (firmware: #22.52#004) was used for LTE output power measurements and SAR testing.

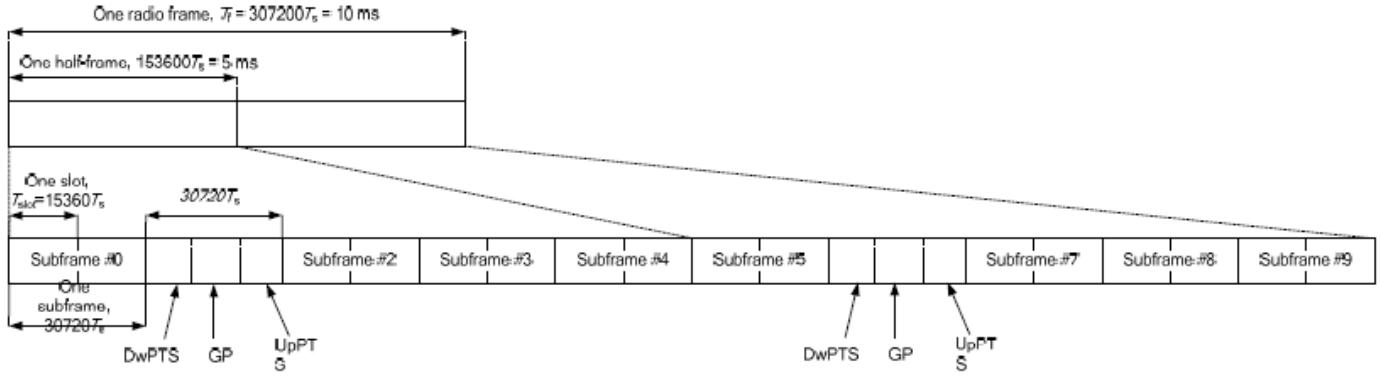


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

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

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

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

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

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

The highest duty factor is resulted from:

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

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

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

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

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

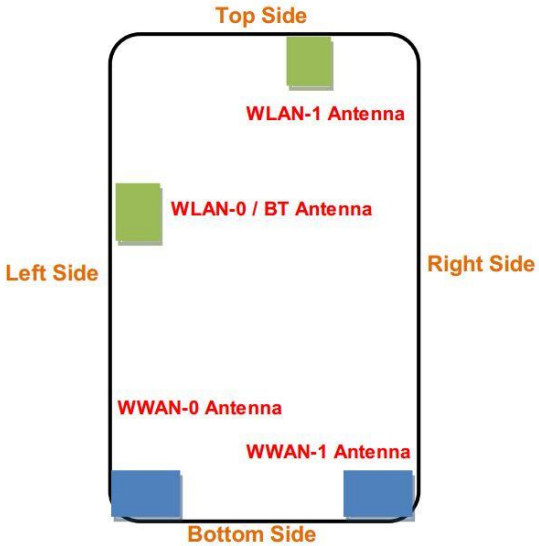
<LTE Band 41>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				39750	40185	40620	41055	41490	
Frequency (MHz)				2506	2549.5	2593	2636.5	2680	
20	QPSK	1	0	23.68	23.67	23.76	23.91	23.64	24
20	QPSK	1	49	23.67	23.65	23.75	23.82	23.53	
20	QPSK	1	99	23.45	23.67	23.76	23.78	23.45	
20	QPSK	50	0	22.58	22.80	22.75	22.75	22.54	23
20	QPSK	50	24	22.68	22.89	22.90	22.93	22.63	
20	QPSK	50	50	22.66	22.83	22.89	22.77	22.42	
20	QPSK	100	0	22.42	22.81	22.67	22.83	22.55	
20	16QAM	1	0	22.20	22.88	22.80	22.67	22.97	23
20	16QAM	1	49	22.67	22.84	22.73	22.78	22.66	
20	16QAM	1	99	22.81	22.79	22.78	22.65	22.48	
20	16QAM	50	0	21.74	21.87	21.81	21.76	21.59	22
20	16QAM	50	24	21.70	21.87	21.74	21.74	21.63	
20	16QAM	50	50	21.76	21.76	21.85	21.82	21.58	
20	16QAM	100	0	21.59	21.89	21.70	21.78	21.54	
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5	
15	QPSK	1	0	23.24	23.73	23.75	23.87	23.52	24
15	QPSK	1	37	23.58	23.85	23.77	23.75	23.55	
15	QPSK	1	74	23.50	23.86	23.83	23.65	23.39	
15	QPSK	36	0	22.64	22.90	22.86	22.87	22.81	23
15	QPSK	36	20	22.78	22.98	22.76	22.79	22.70	
15	QPSK	36	39	22.67	22.82	22.82	22.84	22.49	
15	QPSK	75	0	22.45	22.91	22.78	22.79	22.54	
15	16QAM	1	0	22.23	22.98	22.89	22.83	22.67	23
15	16QAM	1	37	22.76	22.84	23.00	22.88	22.78	
15	16QAM	1	74	22.84	22.99	22.95	22.79	22.51	
15	16QAM	36	0	21.77	21.80	21.78	21.85	21.63	22
15	16QAM	36	20	21.84	21.92	21.80	21.81	21.46	
15	16QAM	36	39	21.66	21.69	21.93	21.80	21.55	
15	16QAM	75	0	21.68	21.77	21.83	21.78	21.63	
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)
Frequency (MHz)				2501	2547	2593	2639	2685	
10	QPSK	1	0	23.27	23.84	23.69	23.89	23.59	24
10	QPSK	1	25	23.69	23.78	23.71	23.68	23.65	
10	QPSK	1	49	23.66	23.83	23.84	23.87	23.47	
10	QPSK	25	0	22.67	22.83	22.77	22.75	22.63	23
10	QPSK	25	12	22.80	22.95	22.75	22.81	22.60	
10	QPSK	25	25	22.71	22.92	22.89	22.82	22.68	
10	QPSK	50	0	22.50	22.90	22.75	22.75	22.67	
10	16QAM	1	0	22.40	22.95	22.81	22.87	22.62	23
10	16QAM	1	25	22.67	22.99	22.89	22.79	22.50	
10	16QAM	1	49	22.77	22.90	22.86	22.82	22.45	
10	16QAM	25	0	21.89	21.94	21.71	21.83	21.62	22
10	16QAM	25	12	21.81	21.85	21.82	21.84	21.75	
10	16QAM	25	25	21.77	21.84	21.69	21.87	21.64	
10	16QAM	50	0	21.68	21.83	21.75	21.91	21.61	

Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5	
5	QPSK	1	0	23.65	23.73	23.78	23.77	23.59	24
5	QPSK	1	12	23.72	23.68	23.83	23.78	23.56	
5	QPSK	1	24	23.60	23.73	23.68	23.77	23.47	
5	QPSK	12	0	22.79	22.86	22.77	22.84	22.64	23
5	QPSK	12	7	22.76	22.92	22.81	22.83	22.69	
5	QPSK	12	13	22.76	22.90	22.86	22.80	22.60	
5	QPSK	25	0	22.80	22.94	22.82	22.76	22.61	
5	16QAM	1	0	22.57	22.88	22.82	22.78	22.67	23
5	16QAM	1	12	22.87	23.00	22.87	22.82	22.68	
5	16QAM	1	24	22.73	22.96	22.81	22.86	22.48	
5	16QAM	12	0	21.75	21.93	21.79	21.86	21.55	22
5	16QAM	12	7	21.74	21.93	21.77	21.84	21.55	
5	16QAM	12	13	21.73	21.97	21.87	21.82	21.57	
5	16QAM	25	0	21.73	21.88	21.82	21.82	21.59	

12. Antenna Location

<Antenna Location>



<EUT Front View>

Distance of the Antenna to the EUT surface/edge						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	≤ 25mm	≤ 25mm

Positions for SAR tests; Hotspot mode						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN	Yes	Yes	No	Yes	Yes	Yes

General Note:

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

13. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   c. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
4. Per KDB 648474 D04v01r03, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.

LTE Note:

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B26 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. For LTE B17 SAR was cover by LTE B12 in original report, FCC ID: AZ489FT7104, Report No.: SA171127C13, due the have the same maximum output power and overlapping frequency.

13.1 Head SAR

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 13	10M	QPSK	1	0	Right Cheek	0mm	Battery 1	23230	782	22.84	24.00	1.306	0	0.345	0.451
	LTE Band 13	10M	QPSK	25	0	Right Cheek	0mm	Battery 1	23230	782	21.76	23.00	1.330	-0.03	0.300	0.399
	LTE Band 13	10M	QPSK	1	0	Right Tilted	0mm	Battery 1	23230	782	22.84	24.00	1.306	0.04	0.192	0.251
	LTE Band 13	10M	QPSK	25	0	Right Tilted	0mm	Battery 1	23230	782	21.76	23.00	1.330	0.01	0.165	0.220
01	LTE Band 13	10M	QPSK	1	0	Left Cheek	0mm	Battery 1	23230	782	22.84	24.00	1.306	0.01	0.374	0.489
	LTE Band 13	10M	QPSK	25	0	Left Cheek	0mm	Battery 1	23230	782	21.76	23.00	1.330	-0.02	0.314	0.418
	LTE Band 13	10M	QPSK	1	0	Left Tilted	0mm	Battery 1	23230	782	22.84	24.00	1.306	0.01	0.213	0.278
	LTE Band 13	10M	QPSK	25	0	Left Tilted	0mm	Battery 1	23230	782	21.76	23.00	1.330	0.05	0.180	0.239
	LTE Band 13	10M	QPSK	1	0	Left Cheek	0mm	Battery 2	23230	782	22.84	24.00	1.306	-0.02	0.337	0.440
	LTE Band 25	20M	QPSK	1	49	Right Cheek	0mm	Battery 1	26340	1880	23.68	24.00	1.076	0.18	0.752	0.810
02	LTE Band 25	20M	QPSK	1	0	Right Cheek	0mm	Battery 1	26140	1860	23.50	24.00	1.122	0.11	0.733	0.822
	LTE Band 25	20M	QPSK	1	49	Right Cheek	0mm	Battery 1	26590	1905	23.32	24.00	1.169	0.13	0.618	0.723
	LTE Band 25	20M	QPSK	50	0	Right Cheek	0mm	Battery 1	26340	1880	22.70	23.00	1.072	0.16	0.651	0.698
	LTE Band 25	20M	QPSK	100	0	Right Cheek	0mm	Battery 1	26340	1880	22.65	23.00	1.084	0.19	0.633	0.686
	LTE Band 25	20M	QPSK	1	49	Right Tilted	0mm	Battery 1	26340	1880	23.68	24.00	1.076	0.05	0.132	0.142
	LTE Band 25	20M	QPSK	50	0	Right Tilted	0mm	Battery 1	26340	1880	22.70	23.00	1.072	0.08	0.105	0.113
	LTE Band 25	20M	QPSK	1	49	Left Cheek	0mm	Battery 1	26340	1880	23.68	24.00	1.076	0	0.516	0.555
	LTE Band 25	20M	QPSK	50	0	Left Cheek	0mm	Battery 1	26340	1880	22.70	23.00	1.072	0.04	0.431	0.462
	LTE Band 25	20M	QPSK	1	49	Left Tilted	0mm	Battery 1	26340	1880	23.68	24.00	1.076	-0.19	0.164	0.177
	LTE Band 25	20M	QPSK	50	0	Left Tilted	0mm	Battery 1	26340	1880	22.70	23.00	1.072	0.06	0.135	0.145
	LTE Band 25	20M	QPSK	1	0	Right Cheek	0mm	Battery 2	26140	1860	23.50	24.00	1.122	-0.02	0.679	0.762
	LTE Band 26	15M	QPSK	1	0	Right Cheek	0mm	Battery 1	26865	831.5	23.52	24.00	1.117	-0.03	0.301	0.336
	LTE Band 26	15M	QPSK	36	0	Right Cheek	0mm	Battery 1	26865	831.5	22.66	23.00	1.081	0.02	0.235	0.254
	LTE Band 26	15M	QPSK	1	0	Right Tilted	0mm	Battery 1	26865	831.5	23.52	24.00	1.117	0	0.161	0.180
	LTE Band 26	15M	QPSK	36	0	Right Tilted	0mm	Battery 1	26865	831.5	22.66	23.00	1.081	0.02	0.123	0.133
03	LTE Band 26	15M	QPSK	1	0	Left Cheek	0mm	Battery 1	26865	831.5	23.52	24.00	1.117	-0.01	0.308	0.344
	LTE Band 26	15M	QPSK	36	0	Left Cheek	0mm	Battery 1	26865	831.5	22.66	23.00	1.081	-0.01	0.239	0.258
	LTE Band 26	15M	QPSK	1	0	Left Tilted	0mm	Battery 1	26865	831.5	23.52	24.00	1.117	0	0.171	0.191
	LTE Band 26	15M	QPSK	36	0	Left Tilted	0mm	Battery 1	26865	831.5	22.66	23.00	1.081	-0.03	0.133	0.144
	LTE Band 26	15M	QPSK	1	0	Left Cheek	0mm	Battery 2	26865	831.5	23.52	24.00	1.117	0.06	0.286	0.319

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
04	LTE Band 41	20M	QPSK	1	0	Right Cheek	0mm	Battery 1	41055	2636.5	23.91	24.00	1.021	62.9	1.006	0.06	0.635	0.652
	LTE Band 41	20M	QPSK	1	0	Right Cheek	0mm	Battery 1	39750	2506	23.68	24.00	1.076	62.9	1.006	0.11	0.595	0.644
	LTE Band 41	20M	QPSK	1	0	Right Cheek	0mm	Battery 1	40185	2549.5	23.67	24.00	1.079	62.9	1.006	0.06	0.580	0.630
	LTE Band 41	20M	QPSK	1	0	Right Cheek	0mm	Battery 1	40620	2593	23.76	24.00	1.057	62.9	1.006	0.09	0.586	0.623
	LTE Band 41	20M	QPSK	1	0	Right Cheek	0mm	Battery 1	41490	2680	23.64	24.00	1.086	62.9	1.006	0.1	0.516	0.564
	LTE Band 41	20M	QPSK	50	24	Right Cheek	0mm	Battery 1	41055	2636.5	22.93	23.00	1.016	62.9	1.006	-0.02	0.489	0.500
	LTE Band 41	20M	QPSK	1	0	Right Tilted	0mm	Battery 1	41055	2636.5	23.91	24.00	1.021	62.9	1.006	0.06	0.089	0.091
	LTE Band 41	20M	QPSK	50	24	Right Tilted	0mm	Battery 1	41055	2636.5	22.93	23.00	1.016	62.9	1.006	0.11	0.069	0.071
	LTE Band 41	20M	QPSK	1	0	Left Cheek	0mm	Battery 1	41055	2636.5	23.91	24.00	1.021	62.9	1.006	0.06	0.272	0.279
	LTE Band 41	20M	QPSK	50	24	Left Cheek	0mm	Battery 1	41055	2636.5	22.93	23.00	1.016	62.9	1.006	0.06	0.213	0.218
	LTE Band 41	20M	QPSK	1	0	Left Tilted	0mm	Battery 1	41055	2636.5	23.91	24.00	1.021	62.9	1.006	0.12	0.135	0.139
	LTE Band 41	20M	QPSK	50	24	Left Tilted	0mm	Battery 1	41055	2636.5	22.93	23.00	1.016	62.9	1.006	0.04	0.107	0.109
	LTE Band 41	20M	QPSK	1	0	Right Cheek	0mm	Battery 2	41055	2636.5	23.91	24.00	1.021	62.9	1.006	0.11	0.481	0.494

13.2 Hotspot SAR

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
05	LTE Band 13	10M	QPSK	1	0	Front	10mm	Battery 1	23230	782	22.84	24.00	1.306	-0.11	0.462	0.603
	LTE Band 13	10M	QPSK	25	0	Front	10mm	Battery 1	23230	782	21.76	23.00	1.330	0.01	0.404	0.538
	LTE Band 13	10M	QPSK	1	0	Back	10mm	Battery 1	23230	782	22.84	24.00	1.306	-0.01	0.423	0.553
	LTE Band 13	10M	QPSK	25	0	Back	10mm	Battery 1	23230	782	21.76	23.00	1.330	0	0.364	0.484
	LTE Band 13	10M	QPSK	1	0	Left Side	10mm	Battery 1	23230	782	22.84	24.00	1.306	0	0.262	0.342
	LTE Band 13	10M	QPSK	25	0	Left Side	10mm	Battery 1	23230	782	21.76	23.00	1.330	-0.05	0.217	0.289
	LTE Band 13	10M	QPSK	1	0	Right Side	10mm	Battery 1	23230	782	22.84	24.00	1.306	0.07	0.283	0.370
	LTE Band 13	10M	QPSK	25	0	Right Side	10mm	Battery 1	23230	782	21.76	23.00	1.330	0.02	0.238	0.317
	LTE Band 13	10M	QPSK	1	0	Bottom Side	10mm	Battery 1	23230	782	22.84	24.00	1.306	-0.05	0.144	0.188
	LTE Band 13	10M	QPSK	25	0	Bottom Side	10mm	Battery 1	23230	782	21.76	23.00	1.330	0	0.129	0.172
	LTE Band 13	10M	QPSK	1	0	Front	10mm	Battery 2	23230	782	22.84	24.00	1.306	0.02	0.428	0.559
	LTE Band 25	20M	QPSK	1	49	Front	10mm	Battery 1	26340	1880	23.68	24.00	1.076	-0.11	0.582	0.627
	LTE Band 25	20M	QPSK	50	0	Front	10mm	Battery 1	26340	1880	22.70	23.00	1.072	0.03	0.470	0.504
	LTE Band 25	20M	QPSK	1	49	Back	10mm	Battery 1	26340	1880	23.68	24.00	1.076	-0.04	0.472	0.508
	LTE Band 25	20M	QPSK	50	0	Back	10mm	Battery 1	26340	1880	22.70	23.00	1.072	0.02	0.381	0.408
	LTE Band 25	20M	QPSK	1	49	Left Side	10mm	Battery 1	26340	1880	23.68	24.00	1.076	-0.05	0.063	0.068
	LTE Band 25	20M	QPSK	50	0	Left Side	10mm	Battery 1	26340	1880	22.70	23.00	1.072	0	0.052	0.056
	LTE Band 25	20M	QPSK	1	49	Right Side	10mm	Battery 1	26340	1880	23.68	24.00	1.076	-0.05	0.909	0.979
06	LTE Band 25	20M	QPSK	1	0	Right Side	10mm	Battery 1	26140	1860	23.50	24.00	1.122	-0.09	0.971	1.089
	LTE Band 25	20M	QPSK	1	49	Right Side	10mm	Battery 1	26590	1905	23.32	24.00	1.169	-0.07	0.795	0.930
	LTE Band 25	20M	QPSK	50	0	Right Side	10mm	Battery 1	26340	1880	22.70	23.00	1.072	-0.07	0.752	0.806
	LTE Band 25	20M	QPSK	50	0	Right Side	10mm	Battery 1	26140	1860	22.58	23.00	1.102	-0.12	0.761	0.838
	LTE Band 25	20M	QPSK	50	0	Right Side	10mm	Battery 1	26590	1905	22.47	23.00	1.130	-0.09	0.668	0.755
	LTE Band 25	20M	QPSK	100	0	Right Side	10mm	Battery 1	26340	1880	22.65	23.00	1.084	0.01	0.714	0.774
	LTE Band 25	20M	QPSK	1	49	Bottom Side	10mm	Battery 1	26340	1880	23.68	24.00	1.076	0.02	0.178	0.192
	LTE Band 25	20M	QPSK	50	0	Bottom Side	10mm	Battery 1	26340	1880	22.70	23.00	1.072	-0.01	0.143	0.153
	LTE Band 25	20M	QPSK	1	0	Right Side	10mm	Battery 2	26140	1860	23.50	24.00	1.122	-0.05	0.868	0.974
07	LTE Band 26	15M	QPSK	1	0	Front	10mm	Battery 1	26865	831.5	23.52	24.00	1.117	-0.01	0.432	0.482
	LTE Band 26	15M	QPSK	36	0	Front	10mm	Battery 1	26865	831.5	22.66	23.00	1.081	-0.06	0.341	0.369
	LTE Band 26	15M	QPSK	1	0	Back	10mm	Battery 1	26865	831.5	23.52	24.00	1.117	0.01	0.405	0.452
	LTE Band 26	15M	QPSK	36	0	Back	10mm	Battery 1	26865	831.5	22.66	23.00	1.081	-0.01	0.321	0.347
	LTE Band 26	15M	QPSK	1	0	Left Side	10mm	Battery 1	26865	831.5	23.52	24.00	1.117	0	0.160	0.179
	LTE Band 26	15M	QPSK	36	0	Left Side	10mm	Battery 1	26865	831.5	22.66	23.00	1.081	0.02	0.122	0.132
	LTE Band 26	15M	QPSK	1	0	Right Side	10mm	Battery 1	26865	831.5	23.52	24.00	1.117	0.02	0.246	0.275
	LTE Band 26	15M	QPSK	36	0	Right Side	10mm	Battery 1	26865	831.5	22.66	23.00	1.081	0.02	0.193	0.209
	LTE Band 26	15M	QPSK	1	0	Bottom Side	10mm	Battery 1	26865	831.5	23.52	24.00	1.117	0.01	0.163	0.182
	LTE Band 26	15M	QPSK	36	0	Bottom Side	10mm	Battery 1	26865	831.5	22.66	23.00	1.081	-0.01	0.129	0.140
	LTE Band 26	15M	QPSK	1	0	Front	10mm	Battery 2	26865	831.5	23.52	24.00	1.117	-0.08	0.385	0.430

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 41	20M	QPSK	1	0	Front	10mm	Battery 1	41055	2636.5	23.91	24.00	1.021	62.9	1.006	0.07	0.387	0.397
	LTE Band 41	20M	QPSK	50	24	Front	10mm	Battery 1	41055	2636.5	22.93	23.00	1.016	62.9	1.006	-0.13	0.322	0.329
	LTE Band 41	20M	QPSK	1	0	Back	10mm	Battery 1	41055	2636.5	23.91	24.00	1.021	62.9	1.006	0.11	0.244	0.251
	LTE Band 41	20M	QPSK	50	24	Back	10mm	Battery 1	41055	2636.5	22.93	23.00	1.016	62.9	1.006	0.08	0.213	0.218
	LTE Band 41	20M	QPSK	1	0	Left Side	10mm	Battery 1	41055	2636.5	23.91	24.00	1.021	62.9	1.006	-0.11	0.023	0.024
	LTE Band 41	20M	QPSK	50	24	Left Side	10mm	Battery 1	41055	2636.5	22.93	23.00	1.016	62.9	1.006	0.01	0.017	0.017
	LTE Band 41	20M	QPSK	1	0	Right Side	10mm	Battery 1	41055	2636.5	23.91	24.00	1.021	62.9	1.006	-0.15	0.414	0.425
	LTE Band 41	20M	QPSK	1	0	Right Side	10mm	Battery 1	39750	2506	23.68	24.00	1.076	62.9	1.006	-0.17	0.326	0.353
	LTE Band 41	20M	QPSK	1	0	Right Side	10mm	Battery 1	40185	2549.5	23.67	24.00	1.079	62.9	1.006	-0.18	0.344	0.373
	LTE Band 41	20M	QPSK	1	0	Right Side	10mm	Battery 1	40620	2593	23.76	24.00	1.057	62.9	1.006	-0.18	0.397	0.422
08	LTE Band 41	20M	QPSK	1	0	Right Side	10mm	Battery 1	41490	2680	23.64	24.00	1.086	62.9	1.006	-0.1	0.446	0.487
	LTE Band 41	20M	QPSK	50	24	Right Side	10mm	Battery 1	41055	2636.5	22.93	23.00	1.016	62.9	1.006	-0.07	0.339	0.347
	LTE Band 41	20M	QPSK	1	0	Bottom Side	10mm	Battery 1	41055	2636.5	23.91	24.00	1.021	62.9	1.006	-0.06	0.101	0.104
	LTE Band 41	20M	QPSK	50	24	Bottom Side	10mm	Battery 1	41055	2636.5	22.93	23.00	1.016	62.9	1.006	0.05	0.080	0.082
	LTE Band 41	20M	QPSK	1	0	Right Side	10mm	Battery 2	41490	2680	23.64	24.00	1.086	62.9	1.006	-0.07	0.386	0.422

13.3 Body Worn Accessory SAR

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	Accessories	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
09	LTE Band 13	10M	QPSK	1	0	Front	10mm	Battery 1	-	23230	782	22.84	24.00	1.306	-0.11	0.462	0.603
	LTE Band 13	10M	QPSK	25	0	Front	10mm	Battery 1	-	23230	782	21.76	23.00	1.330	0.01	0.404	0.538
	LTE Band 13	10M	QPSK	1	0	Back	10mm	Battery 1	-	23230	782	22.84	24.00	1.306	-0.01	0.423	0.553
	LTE Band 13	10M	QPSK	25	0	Back	10mm	Battery 1	-	23230	782	21.76	23.00	1.330	0	0.364	0.484
	LTE Band 13	10M	QPSK	1	0	Front	0mm	Battery 1	Holster+WALN4307	23230	782	22.84	24.00	1.306	0.02	0.187	0.244
	LTE Band 13	10M	QPSK	1	0	Front	0mm	Battery 1	Holster+GMDN0566AA	23230	782	22.84	24.00	1.306	-0.02	0.356	0.465
	LTE Band 13	10M	QPSK	1	0	Front	10mm	Battery 2	-	23230	782	22.84	24.00	1.306	0.02	0.428	0.559
	LTE Band 25	20M	QPSK	1	49	Front	10mm	Battery 1	-	26340	1880	23.68	24.00	1.076	-0.11	0.582	0.627
	LTE Band 25	20M	QPSK	1	0	Front	10mm	Battery 1	-	26140	1860	23.50	24.00	1.122	-0.09	0.536	0.601
10	LTE Band 25	20M	QPSK	1	49	Front	10mm	Battery 1	-	26590	1905	23.32	24.00	1.169	-0.09	0.569	0.665
	LTE Band 25	20M	QPSK	50	0	Front	10mm	Battery 1	-	26340	1880	22.70	23.00	1.072	0.03	0.470	0.504
	LTE Band 25	20M	QPSK	1	49	Back	10mm	Battery 1	-	26340	1880	23.68	24.00	1.076	-0.04	0.472	0.508
	LTE Band 25	20M	QPSK	50	0	Back	10mm	Battery 1	-	26340	1880	22.70	23.00	1.072	0.02	0.381	0.408
	LTE Band 25	20M	QPSK	1	49	Front	0mm	Battery 1	Holster+WALN4307	26340	1880	23.68	24.00	1.076	0.1	0.084	0.090
	LTE Band 25	20M	QPSK	1	49	Front	0mm	Battery 1	Holster+GMDN0566AA	26340	1880	23.68	24.00	1.076	-0.1	0.404	0.435
	LTE Band 25	20M	QPSK	1	49	Front	10mm	Battery 2	-	26590	1905	23.32	24.00	1.169	0.02	0.484	0.566
11	LTE Band 26	15M	QPSK	1	0	Front	10mm	Battery 1	-	26865	831.5	23.52	24.00	1.117	-0.01	0.432	0.482
	LTE Band 26	15M	QPSK	36	0	Front	10mm	Battery 1	-	26865	831.5	22.66	23.00	1.081	-0.06	0.341	0.369
	LTE Band 26	15M	QPSK	1	0	Back	10mm	Battery 1	-	26865	831.5	23.52	24.00	1.117	0.01	0.405	0.452
	LTE Band 26	15M	QPSK	36	0	Back	10mm	Battery 1	-	26865	831.5	22.66	23.00	1.081	-0.01	0.321	0.347
	LTE Band 26	15M	QPSK	1	0	Front	0mm	Battery 1	Holster+WALN4307	26865	831.5	23.52	24.00	1.117	-0.12	0.130	0.145
	LTE Band 26	15M	QPSK	1	0	Front	0mm	Battery 1	Holster+GMDN0566AA	26865	831.5	23.52	24.00	1.117	-0.07	0.380	0.424
	LTE Band 26	15M	QPSK	1	0	Front	10mm	Battery 2	-	26865	831.5	23.52	24.00	1.117	-0.08	0.385	0.430

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	Accessories	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 41	20M	QPSK	1	0	Front	10mm	Battery 1	-	41055	2636.5	23.91	24.00	1.021	62.9	1.006	0.07	0.387	0.397
	LTE Band 41	20M	QPSK	50	24	Front	10mm	Battery 1	-	41055	2636.5	22.93	23.00	1.016	62.9	1.006	-0.13	0.322	0.329
	LTE Band 41	20M	QPSK	1	0	Back	10mm	Battery 1	-	41055	2636.5	23.91	24.00	1.021	62.9	1.006	0.11	0.244	0.251
	LTE Band 41	20M	QPSK	50	24	Back	10mm	Battery 1	-	41055	2636.5	22.93	23.00	1.016	62.9	1.006	0.08	0.213	0.218
	LTE Band 41	20M	QPSK	1	0	Front	0mm	Battery 1	Holster+WALN4307	41055	2636.5	23.91	24.00	1.021	62.9	1.006	0.02	0.062	0.064
12	LTE Band 41	20M	QPSK	1	0	Front	0mm	Battery 1	Holster+GMDN0566AA	41055	2636.5	23.91	24.00	1.021	62.9	1.006	0	0.506	0.520
	LTE Band 41	20M	QPSK	1	0	Front	0mm	Battery 1	Holster+GMDN0566AA	39750	2506	23.68	24.00	1.076	62.9	1.006	0.05	0.417	0.452
	LTE Band 41	20M	QPSK	1	0	Front	0mm	Battery 1	Holster+GMDN0566AA	40185	2549.5	23.67	24.00	1.079	62.9	1.006	-0.08	0.416	0.452
	LTE Band 41	20M	QPSK	1	0	Front	0mm	Battery 1	Holster+GMDN0566AA	40620	2593	23.76	24.00	1.057	62.9	1.006	-0.06	0.469	0.499
	LTE Band 41	20M	QPSK	1	0	Front	0mm	Battery 1	Holster+GMDN0566AA	41490	2680	23.64	24.00	1.086	62.9	1.006	-0.11	0.463	0.506
	LTE Band 41	20M	QPSK	1	0	Front	0mm	Battery 2	Holster+GMDN0566AA	41055	2636.5	23.91	24.00	1.021	62.9	1.006	-0.08	0.443	0.455

13.4 Repeated SAR Measurement

No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	LTE Band 25	20M	QPSK	1	0	Right Side	10mm	Battery 1	26140	1860	23.50	24.00	1.122	-0.09	0.971	-	1.089
2nd	LTE Band 25	20M	QPSK	1	0	Right Side	10mm	Battery 1	26140	1860	23.50	24.00	1.122	-0.1	0.953	1.02	1.069

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. The ratio is the difference in percentage between original and repeated *measured SAR*.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

14. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Portable Handset		
		Head	Body-worn	Hotspot
1.	LTE + WLAN2.4GHz	Yes	Yes	Yes
2.	LTE + WLAN5GHz	Yes	Yes	Yes
3.	LTE + Bluetooth	Yes	Yes	Yes
4.	LTE + WLAN2.4GHz Ant 0 + WLAN 5GHz Ant 1	Yes	Yes	Yes
5.	LTE + WLAN2.4GHz Ant 1 + Bluetooth Ant 0	Yes	Yes	Yes
6.	LTE + WLAN5GHz Ant 1 + Bluetooth Ant 0	Yes	Yes	Yes

General Note:

1. This is a variant report to add LTE B13/B17/B25/B26/B41, other SAR tests operation and conduced power please refer to BV SAR report, FCC ID: AZ489FT7104, Report No.: SA171127C13, and the WLAN/BT testing results are used for simultaneous transmission analysis for this report.
2. WLAN and Bluetooth share the same antenna 0, and cannot transmit simultaneously.
3. The Scaled SAR summation is calculated based on the same configuration and test position.
4. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
   i) Scalar SAR summation < 1.6W/kg.
   ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
   iii) If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary.
   iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.

14.1 Head Exposure Conditions

WWAN Band		Exposure Position	1	2	3	4	5	6	7	8	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	1+5 Summed 1g SAR (W/kg)	1+6 Summed 1g SAR (W/kg)	1+7 Summed 1g SAR (W/kg)	1+3+8 Summed 1g SAR (W/kg)	1+6+8 Summed 1g SAR (W/kg)	1+2+6 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN Ant 0	2.4GHz WLAN Ant 1	2.4GHz WLAN Ant 0+1	5GHz WLAN Ant 0	5GHz WLAN Ant 1	5GHz WLAN Ant 0+1	Bluetooth Ant 0									
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)									
LTE	LTE Band 13	Right Cheek	0.451	0.140	0.460	0.480	0.310	0.610	0.400	0.000	**0.591**	**0.911**	**0.931**	**0.761**	**1.061**	**0.851**	**0.911**	**1.061**	**1.201**
		Right Tilted	0.251	0.060	0.310	0.310	0.080	0.450	0.450	0.000	**0.311**	**0.561**	**0.561**	**0.331**	**0.701**	**0.701**	**0.561**	**0.701**	**0.761**
		Left Cheek	0.489	0.110	0.870	1.030	0.610	0.840	0.780	0.000	**0.599**	**1.359**	**1.519**	**1.099**	**1.329**	**1.269**	**1.359**	**1.329**	**1.439**
		Left Tilted	0.278	0.050	0.730	0.730	0.440	0.690	0.670	0.000	**0.328**	**1.008**	**1.008**	**0.718**	**0.968**	**0.948**	**1.008**	**0.968**	**1.018**
	LTE Band 25	Right Cheek	0.822	0.140	0.460	0.480	0.310	0.610	0.400	0.000	**0.962**	**1.282**	**1.302**	**1.132**	**1.432**	**1.222**	**1.282**	**1.432**	**1.572**
		Right Tilted	0.142	0.060	0.310	0.310	0.080	0.450	0.450	0.000	**0.202**	**0.452**	**0.452**	**0.222**	**0.592**	**0.592**	**0.452**	**0.592**	**0.652**
		Left Cheek	0.555	0.110	0.870	1.030	0.610	0.840	0.780	0.000	**0.665**	**1.425**	**1.585**	**1.165**	**1.395**	**1.335**	**1.425**	**1.395**	**1.505**
		Left Tilted	0.177	0.050	0.730	0.730	0.440	0.690	0.670	0.000	**0.227**	**0.907**	**0.907**	**0.617**	**0.867**	**0.847**	**0.907**	**0.867**	**0.917**
	LTE Band 26	Right Cheek	0.336	0.140	0.460	0.480	0.310	0.610	0.400	0.000	**0.476**	**0.796**	**0.816**	**0.646**	**0.946**	**0.736**	**0.796**	**0.946**	**1.086**
		Right Tilted	0.180	0.060	0.310	0.310	0.080	0.450	0.450	0.000	**0.240**	**0.490**	**0.490**	**0.260**	**0.630**	**0.630**	**0.490**	**0.630**	**0.690**
		Left Cheek	0.344	0.110	0.870	1.030	0.610	0.840	0.780	0.000	**0.454**	**1.214**	**1.374**	**0.954**	**1.184**	**1.124**	**1.214**	**1.184**	**1.294**
		Left Tilted	0.191	0.050	0.730	0.730	0.440	0.690	0.670	0.000	**0.241**	**0.921**	**0.921**	**0.631**	**0.881**	**0.861**	**0.921**	**0.881**	**0.931**
	LTE Band 41	Right Cheek	0.652	0.140	0.460	0.480	0.310	0.610	0.400	0.000	**0.792**	**1.112**	**1.132**	**0.962**	**1.262**	**1.052**	**1.112**	**1.262**	**1.402**
		Right Tilted	0.091	0.060	0.310	0.310	0.080	0.450	0.450	0.000	**0.151**	**0.401**	**0.401**	**0.171**	**0.541**	**0.541**	**0.401**	**0.541**	**0.601**
		Left Cheek	0.279	0.110	0.870	1.030	0.610	0.840	0.780	0.000	**0.389**	**1.149**	**1.309**	**0.889**	**1.119**	**1.059**	**1.149**	**1.119**	**1.229**
		Left Tilted	0.139	0.050	0.730	0.730	0.440	0.690	0.670	0.000	**0.189**	**0.869**	**0.869**	**0.579**	**0.829**	**0.809**	**0.869**	**0.829**	**0.879**

14.2 Hotspot Exposure Conditions

WWAN Band		Exposure Position	1	2	3	4	5	6	7	8	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	1+5 Summed 1g SAR (W/kg)	1+6 Summed 1g SAR (W/kg)	1+7 Summed 1g SAR (W/kg)	1+3+8 Summed 1g SAR (W/kg)	1+6+8 Summed 1g SAR (W/kg)	1+2+6 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN Ant 0	2.4GHz WLAN Ant 1	2.4GHz WLAN Ant 0+1	5GHz WLAN Ant 0	5GHz WLAN Ant 1	5GHz WLAN Ant 0+1	Bluetooth Ant 0									
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)									
LTE	LTE Band 13	Front	0.603	0.060	0.090	0.140	0.180	0.020	0.150	0.000	**0.663**	**0.693**	**0.743**	**0.783**	**0.623**	**0.753**	**0.693**	**0.623**	**0.683**
		Back	0.553	0.120	0.100	0.150	0.380	0.150	0.330	0.010	**0.673**	**0.653**	**0.703**	**0.933**	**0.703**	**0.883**	**0.663**	**0.713**	**0.823**
		Left side	0.342	0.100		0.120	0.480		0.490	0.000	**0.442**	**0.342**	**0.462**	**0.822**	**0.342**	**0.832**	**0.342**	**0.342**	**0.442**
		Right side	0.370								**0.370**	**0.370**	**0.370**	**0.370**	**0.370**	**0.370**	**0.370**	**0.370**	**0.370**
		Top side			0.060	0.080		0.000	0.000		**0.000**	**0.060**	**0.080**	**0.000**	**0.000**	**0.000**	**0.060**	**0.000**	**0.000**
		Bottom side	0.188								**0.188**	**0.188**	**0.188**	**0.188**	**0.188**	**0.188**	**0.188**	**0.188**	**0.188**
	LTE Band 25	Front	0.627	0.060	0.090	0.140	0.180	0.020	0.150	0.000	**0.687**	**0.717**	**0.767**	**0.807**	**0.647**	**0.777**	**0.717**	**0.647**	**0.707**
		Back	0.508	0.120	0.100	0.150	0.380	0.150	0.330	0.010	**0.628**	**0.608**	**0.658**	**0.888**	**0.658**	**0.838**	**0.618**	**0.668**	**0.778**
		Left side	0.068	0.100		0.120	0.480		0.490	0.000	**0.168**	**0.068**	**0.188**	**0.548**	**0.068**	**0.558**	**0.068**	**0.068**	**0.168**
		Right side	1.089								**1.089**	**1.089**	**1.089**	**1.089**	**1.089**	**1.089**	**1.089**	**1.089**	**1.089**
		Top side			0.060	0.080		0.000	0.000		**0.000**	**0.060**	**0.080**	**0.000**	**0.000**	**0.000**	**0.060**	**0.000**	**0.000**
		Bottom side	0.192								**0.192**	**0.192**	**0.192**	**0.192**	**0.192**	**0.192**	**0.192**	**0.192**	**0.192**
	LTE Band 26	Front	0.482	0.060	0.090	0.140	0.180	0.020	0.150	0.000	**0.542**	**0.572**	**0.622**	**0.662**	**0.502**	**0.632**	**0.572**	**0.502**	**0.562**
		Back	0.452	0.120	0.100	0.150	0.380	0.150	0.330	0.010	**0.572**	**0.552**	**0.602**	**0.832**	**0.602**	**0.782**	**0.562**	**0.612**	**0.722**
		Left side	0.179	0.100		0.120	0.480		0.490	0.000	**0.279**	**0.179**	**0.299**	**0.659**	**0.179**	**0.669**	**0.179**	**0.179**	**0.279**
		Right side	0.275								**0.275**	**0.275**	**0.275**	**0.275**	**0.275**	**0.275**	**0.275**	**0.275**	**0.275**
		Top side			0.060	0.080		0.000	0.000		**0.000**	**0.060**	**0.080**	**0.000**	**0.000**	**0.000**	**0.060**	**0.000**	**0.000**
		Bottom side	0.182								**0.182**	**0.182**	**0.182**	**0.182**	**0.182**	**0.182**	**0.182**	**0.182**	**0.182**
	LTE Band 41	Front	0.397	0.060	0.090	0.140	0.180	0.020	0.150	0.000	**0.457**	**0.487**	**0.537**	**0.577**	**0.417**	**0.547**	**0.487**	**0.417**	**0.477**
		Back	0.251	0.120	0.100	0.150	0.380	0.150	0.330	0.010	**0.371**	**0.351**	**0.401**	**0.631**	**0.401**	**0.581**	**0.361**	**0.411**	**0.521**
		Left side	0.024	0.100		0.120	0.480		0.490	0.000	**0.124**	**0.024**	**0.144**	**0.504**	**0.024**	**0.514**	**0.024**	**0.024**	**0.124**
		Right side	0.487								**0.487**	**0.487**	**0.487**	**0.487**	**0.487**	**0.487**	**0.487**	**0.487**	**0.487**
		Top side			0.060	0.080		0.000	0.000		**0.000**	**0.060**	**0.080**	**0.000**	**0.000**	**0.000**	**0.060**	**0.000**	**0.000**
		Bottom side	0.104								**0.104**	**0.104**	**0.104**	**0.104**	**0.104**	**0.104**	**0.104**	**0.104**	**0.104**

14.3 Body-Worn Accessory Exposure Conditions

WWAN Band		Exposure Position	1	2	3	4	5	6	7	8	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	1+5 Summed 1g SAR (W/kg)	1+6 Summed 1g SAR (W/kg)	1+7 Summed 1g SAR (W/kg)	1+3+8 Summed 1g SAR (W/kg)	1+6+8 Summed 1g SAR (W/kg)	1+2+6 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN Ant 0	2.4GHz WLAN Ant 1	2.4GHz WLAN Ant 0+1	5GHz WLAN Ant 0	5GHz WLAN Ant 1	5GHz WLAN Ant 0+1	Bluetooth Ant 0									
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)									
LTE	LTE Band 13	Front	0.603	0.060	0.090	0.140	0.180	0.020	0.150	0.000	**0.663**	**0.693**	**0.743**	**0.783**	**0.623**	**0.753**	**0.693**	**0.623**	**0.683**
		Back	0.553	0.120	0.100	0.150	0.440	0.150	0.440	0.010	**0.673**	**0.653**	**0.703**	**0.993**	**0.703**	**0.993**	**0.663**	**0.713**	**0.823**
		Front with Holster+WALN4307	0.244			0.020	0.000		0.040	0.000	**0.244**	**0.244**	**0.264**	**0.244**	**0.244**	**0.284**	**0.244**	**0.244**	**0.244**
		Front with Holster+GMDN0566AASkoda	0.465			0.000	0.000		0.000	0.000	**0.465**	**0.465**	**0.465**	**0.465**	**0.465**	**0.465**	**0.465**	**0.465**	**0.465**
	LTE Band 25	Front	0.627	0.060	0.090	0.140	0.180	0.020	0.150	0.000	**0.687**	**0.717**	**0.767**	**0.807**	**0.647**	**0.777**	**0.717**	**0.647**	**0.707**
		Back	0.508	0.120	0.100	0.150	0.440	0.150	0.440	0.010	**0.628**	**0.608**	**0.658**	**0.948**	**0.658**	**0.948**	**0.618**	**0.668**	**0.778**
		Front with Holster+WALN4307	0.090			0.020	0.000		0.040	0.000	**0.090**	**0.090**	**0.110**	**0.090**	**0.090**	**0.130**	**0.090**	**0.090**	**0.090**
		Front with Holster+GMDN0566AASkoda	0.435			0.000	0.000		0.000	0.000	**0.435**	**0.435**	**0.435**	**0.435**	**0.435**	**0.435**	**0.435**	**0.435**	**0.435**
	LTE Band 26	Front	0.482	0.060	0.090	0.140	0.180	0.020	0.150	0.000	**0.542**	**0.572**	**0.622**	**0.662**	**0.502**	**0.632**	**0.572**	**0.502**	**0.562**
		Back	0.452	0.120	0.100	0.150	0.440	0.150	0.440	0.010	**0.572**	**0.552**	**0.602**	**0.892**	**0.602**	**0.892**	**0.562**	**0.612**	**0.722**
		Front with Holster+WALN4307	0.145			0.020	0.000		0.040	0.000	**0.145**	**0.145**	**0.165**	**0.145**	**0.145**	**0.185**	**0.145**	**0.145**	**0.145**
		Front with Holster+GMDN0566AASkoda	0.424			0.000	0.000		0.000	0.000	**0.424**	**0.424**	**0.424**	**0.424**	**0.424**	**0.424**	**0.424**	**0.424**	**0.424**
	LTE Band 41	Front	0.397	0.060	0.090	0.140	0.180	0.020	0.150	0.000	**0.457**	**0.487**	**0.537**	**0.577**	**0.417**	**0.547**	**0.487**	**0.417**	**0.477**
		Back	0.251	0.120	0.100	0.150	0.440	0.150	0.440	0.010	**0.371**	**0.351**	**0.401**	**0.691**	**0.401**	**0.691**	**0.361**	**0.411**	**0.521**
		Front with Holster+WALN4307	0.064			0.020	0.000		0.040	0.000	**0.064**	**0.064**	**0.084**	**0.064**	**0.064**	**0.104**	**0.064**	**0.064**	**0.064**
		Front with Holster+GMDN0566AASkoda	0.520			0.000	0.000		0.000	0.000	**0.520**	**0.520**	**0.520**	**0.520**	**0.520**	**0.520**	**0.520**	**0.520**	**0.520**

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15. Uncertainty Assessment

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

16. References

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

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

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

[4] SPEAG DASY System Handbook

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

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

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

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

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

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