Testing and Certification

TEST REPORT

FCC SAR Test for TFJLEENN5E3
Certification

APPLICANT
LG Electronics Inc.

REPORT NO.
HCT-SR-2503-FC003-R3

DATE OF ISSUE
April 10, 2025

Tested by Jin Nyeong Choi	
Technical Manager Yun Jeang Heo	

Accredited by KOLAS, Republic of KOREA

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TEST REPORT

FCC SAR Test for certification

REPORT NO.
HCT-SR-2503-FC003-R3

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Apr. 10, 2025

FCC ID
BEJTFJEENN5E3

Applicant	**LG Electronics Inc.** 128, Yeoui-daero, Yeongdeungpo-gu, Seoul, Republic of Korea
Product Name **Model Name**	Telematics TFJLEENN5E3
Location of Test	■ Permanent Testing Lab ☐ On Site Testing Lab (Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA)
FCC Rule Part(s)	CFR § 2.1093
Test Results	PASS (SAR Limit : 1.6 W/kg) Refer to the clause 3.2 Attestation of test result

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	Mar. 25, 2025	Initial Release
1	Mar. 27, 2025	Revised page. 8, 13, 14, 20, 21, 22 Added page. 10
2	Apr. 01, 2025	Revised page. Sec 3, 4, 7, 12
3	Apr. 10, 2025	Revised Product Name

Notice

Content
The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated. The test results have only been applied with the test methods required by the standard(s). The laboratory is not accredited for the test results marked *. Information provided by the applicant is marked **. Test results provided by external providers are marked ***. When confirmation of authenticity of this test report is required, please contact www.hct.co.kr The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

CONTENTS

1. Test Regulations

The tests documented in this report were performed in accordance with FCC CFR § 2.1093, IEEE 1528-2013, ANSI C63.26-2015 the following FCC Published RF exposure KDB procedures:

- FCC KDB Publication 941225 D01 3G SAR Procedures v03r01
- FCC KDB Publication 941225 D05 SAR for LTE Devices v02r05
- FCC KDB Publication 941225 D05A LTE Rel.10 KDB Inquiry sheet v01r02
- FCC KDB Publication 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB Publication 447498 D01 General RF Exposure Guidance v06
- FCC KDB Publication 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- FCC KDB Publication 865664 D02 SAR Reporting v01r02
- FCC KDB Publication 690783 D01 SAR Listings on Grants v01r03
- FCC KDB Publication 971168 D01 Power Meas License Digital Systems v03r01

2. Test Location

2.1 Test Laboratory

Company Name	HCT Co., Ltd.
Address	74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si,Gyeonggi-do, 17383 KOREA
Telephone	031-645-6300
Fax.	031-645-6401

2.2 Test Facilities

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

Korea	National Radio Research Agency (Designation No. KR0032)
	KOLAS (Testing No. KT197)

3. Information of the EUT

3.1 General Information of the EUT

Model Name	TFJLEENN5E3
Equipment Type	Telematics
FCC ID	BEJTFJEENN5E3
Application Type	Certification
Applicant	LG Electronics Inc.

3.2 Attestation of test result of device under test

The Highest Reported SAR			
Band	Tx. Frequency	Equipment Class	Reported SAR (W/kg) 1 g Body
2.4 GHz WLAN	2 412 MHz~ 2 462 MHz	DTS	0.134
U-NII-1	5 180 MHz~ 5 240 MHz	NII	0.069
U-NII-3	5 745 MHz~ 5 825 MHz	NII	0.073
Simultaneous SAR per KDB 690783 D01v01r03			0.216

4. Device Under Test Description

4.1 DUT specification

Device Wireless specification overview		
Band & Mode	**Operating Mode**	**Tx Frequency**
GSM850	Data	824.2 ㎒ ~ 848.8 ㎒
GSM1900	Data	1 850.2 ㎒ ~ 1 909.8 ㎒
UMTS Band 2	Data	1 852.4 ㎒ ~ 1 907.6 ㎒
UMTS Band 4	Data	1 712.4 ㎒ ~ 1 752.6 ㎒
UMTS Band 5	Data	826.4 ㎒ ~ 846.6 ㎒
LTE FDD Band 2 (PCS)	Data	1 850.7 ㎒ ~ 1 909.3 ㎒
LTE FDD Band 4 (AWS)	Data	1 710.7 ㎒ ~ 1 754.3 ㎒
LTE FDD Band 5 (Cell)	Data	824.7 ㎒ ~ 848.3 ㎒
LTE FDD Band 7	Data	2 502.5 ㎒ ~ 2 567.5 ㎒
LTE FDD Band 12	Data	699.7 ㎒ ~ 715.3 ㎒
LTE FDD Band 13	Data	779.5 ㎒ ~ 784.5 ㎒
LTE FDD Band 14	Data	790.5 ㎒ ~ 795.5 ㎒
LTE FDD Band 17	Data	706.5 ㎒ ~ 713.5 ㎒
LTE FDD Band 25	Data	1 850.7 ㎒ ~ 1 914.3 ㎒
LTE FDD Band 26	Data	814.7 ㎒ ~ 848.3 ㎒
LTE TDD Band 38	Data	2 572.5 ㎒ ~ 2 617.5 ㎒
LTE TDD Band 41	Data	2 498.5 ㎒ ~ 2 687.5 ㎒
LTE TDD Band 42	Data	3 402.5 ㎒ ~ 3 547.5 ㎒
LTE FDD Band 66 (AWS)	Data	1 710.7 ㎒ ~ 1 779.3 ㎒
NR FDD Band n2 (PCS)	Data	1 852.5 ㎒ ~ 1 907.5 ㎒
NR FDD Band n5	Data	826.5 ㎒ ~ 846.5 ㎒
NR FDD Band n7	Data	2 502.5 ㎒ ~ 2 567.5 ㎒
NR FDD Band n12	Data	701.5 ㎒ ~ 713.5 ㎒
NR FDD Band n13	Data	779.5 ㎒ ~ 784.5 ㎒
NR FDD Band n14	Data	790.5 ㎒ ~795.5 ㎒
NR FDD Band n25 (PCS)	Data	1 852.5 ㎒ ~ 1 912.5 ㎒
NR FDD Band n26	Data	816.5 ㎒ ~ 846.5 ㎒
NR TDD Band n38	Data	2 575 ㎒ ~ 2 615 ㎒
NR TDD Band n41	Data	2 501.01 ㎒ ~ 2 685 ㎒
NR FDD Band n66	Data	1 712.5 ㎒ ~ 1 777.5 ㎒
NR FDD Band n71	Data	665.5 ㎒ ~ 695.5 ㎒
NR TDD Band n77	Data	3 710.01 ㎒ ~ 3 969.99 ㎒
NR TDD Band n77 DoD	Data	3 460.02 ㎒ ~ 3 540 ㎒
NR TDD Band n78	Data	3 710.01 ㎒ ~ 3 789.99 ㎒
NR TDD Band n78 DoD	Data	3 460.02 ㎒ ~ 3 540 ㎒
2.4 ㎓ WLAN	Data	2 412 ㎒~ 2 462 ㎒
U-NII-1	Data	5 180 ㎒~ 5 240 ㎒
U-NII-3	Data	5 745 ㎒~ 5 825 ㎒
Device Description		
The manufacturer has confirmed that the devices tested have the same physical, mechanical and thermal characteristics are within operational tolerances expected for production units.		

Note : WWAN SAR testing results were referred to SAR Test Report, Report No. HCT-SR-2503-FC001-R2 and also use perform simultaneous transmission analysis.

4.2 Nominal and Maximum Output Power Specifications

This device operates using the following maximum output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB publication 447498 D01v06.

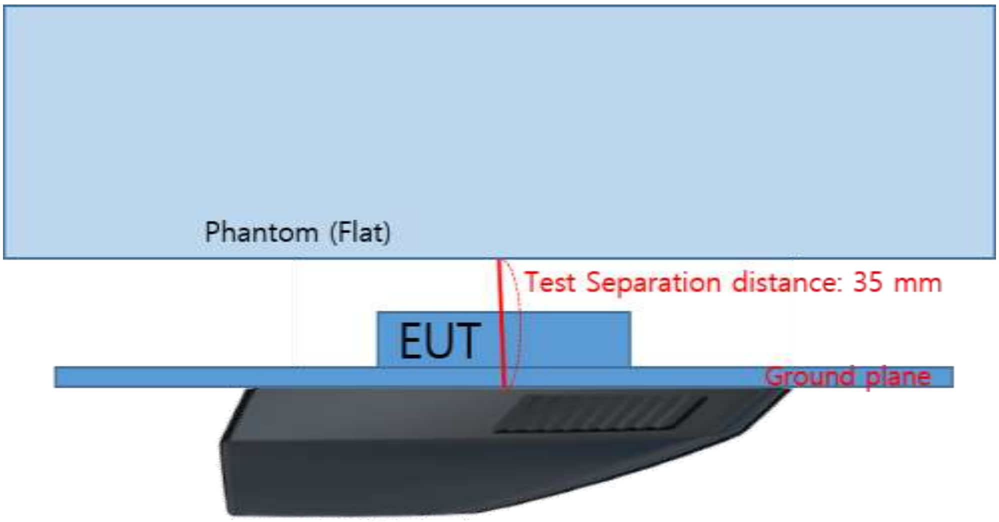
4.2.1 WLAN Nominal Output Power

A. WLAN Modes

Mode / Band		Max. Modulated Average (dBm)
2.4G WLAN	Maximum	13.5
	Nominal	11.5
5G WLAN	Maximum	9.0
	Nominal	7.0

Tolerance: -2.0 dB ~ +2.0 dB

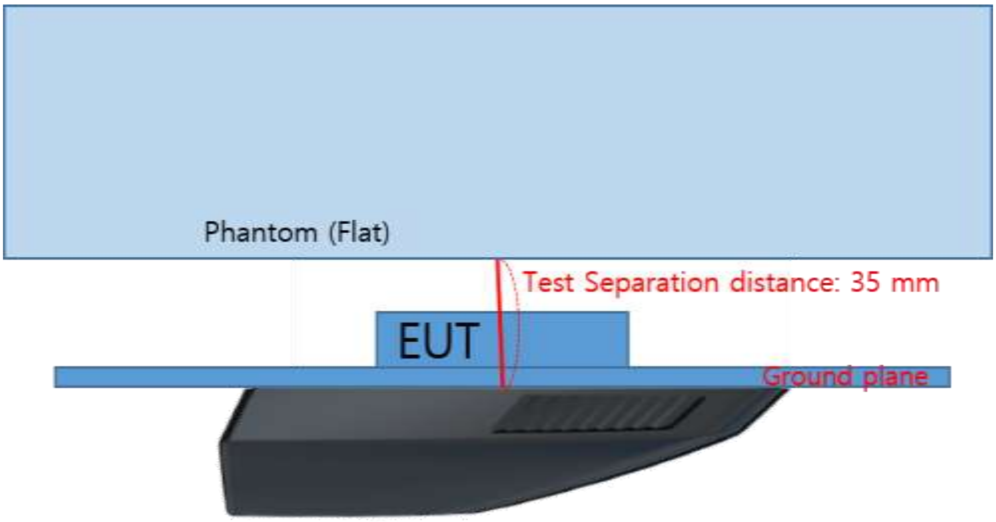
4.3 DUT Antenna Locations



5. SAR Test Considerations

5.1 Test requirements Per KDB Publication 447498 D01v06 and 616217 D04v01r02.

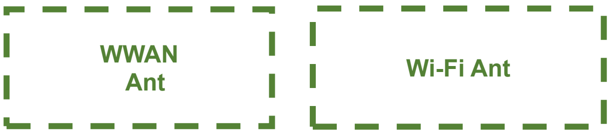
The required minimum test separation distance for incorporating transmitters and antennas is determined with user.



Test Configurations for the WWAN Main

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	35.0 mm	Yes	The test separation distance is normally determined by the closest distance between the antenna and the user.

6. SAR Summation Scenario



Simultaneous transmission paths

This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis according to FCC KDB 447498 D01v06.

Simultaneous Transmission Scenarios	
Applicable Combination	Exposure Condition
GSM+2.4 GHz Wi-Fi	Yes
UMTS+2.4 GHz Wi-Fi	Yes
LTE+2.4 GHz Wi-Fi	Yes
NR+2.4 GHz Wi-Fi	Yes
LTE+ NR+2.4 GHz Wi-Fi	Yes
GSM+5 GHz Wi-Fi	Yes
UMTS+5 GHz Wi-Fi	Yes
LTE+5 GHz Wi-Fi	Yes
NR+5 GHz Wi-Fi	Yes
LTE + NR+5 GHz Wi-Fi	Yes

1. The highest reported SAR for each exposure condition is used for SAR summation purpose.

7. SAR Test Exclusion Applied

WLAN for FCC

Per FCC KDB 447498 D01v06, The SAR exclusion threshold for distance < 50mm is defined by the following equation:

$$\frac{Max\ Power\ of\ Channel(mW)}{Test\ \ Separation\ Distance\ (mm)} * \sqrt{Frequency(GHz)} \leq\ 3.0 \text{ for } 1-\text{g SAR}$$

Mode	Frequency	Maximum Allowed Power	Separation Distance	≤ 3.0 for 1g SAR
	[MHz]	[mW]	[mm]	
2.4G WLAN	2 462	22	35	1.00
5G WLAN	5 240	8	35	0.52
5G WLAN	5 825	8	35	0.55

Based on the maximum conducted power of Bluetooth and antenna to use separation distance, 2.4G WLAN SAR was not required [(25/35)*√2.462] = 1.13 < 3.0 and 5G WLAN SAR [(8/35)*√5.240] = 0.52 < 3.0, [(8/35)*√5.825] = 0.55 < 3.0

This device contains transmitters that may operate simultaneously. Therefore simultaneous transmission analysis is required. Per FCC KDB 447498 D01v06 IV.C.1iii, simultaneous transmission SAR test exclusion may be applied when the sum of the 1-g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is ≤ 1.6W/kg. When standalone SAR is not required to be measured per FCC KDB 447498 D01v06 4.3.22, the following equation must be used to estimate the standalone 1-g SAR and 10g SAR for simultaneous transmission assessment involving that transmitter.

$$Estimated\ SAR = \frac{\sqrt{f(GHZ)}}{7.5} * \frac{(Max\ Power\ of\ channel\ mW)}{Min\ Seperation\ Distance}.$$

Estimated 1-g SAR

Mode	Frequency	Maximum Allowed Power	Separation Distance	Estimated 1g SAR
	[MHz]	[mW]	[mm]	[W/kg]
2.4G WLAN	2 462	22	35	0.134

Mode	Frequency	Maximum Allowed Power	Separation Distance	Estimated 1g SAR
	[MHz]	[mW]	[mm]	[W/kg]
5G WLAN	5 240	8	35	0.069
5G WLAN	5 825	8	35	0.073

8. Introduction

The FCC has adopted the guidelines for evaluating the environmental effects of radio frequency radiation in ET Docket 93-62 on Aug. 6, 1996 to protect the public and workers from the potential hazards of RF emissions due to FCC-regulated portable devices.

The safety limits used for the environmental evaluation measurements are based on the criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (SAR) in IEEE/ANSI C95.1-1992 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 ㎓. 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York 10017. The measurement procedure described in IEEE/ANSI C95.3-1992 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields – RF and Microwave is used for guidance in measuring SAR due to the RF radiation exposure from the Equipment Under Test (EUT). These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in Biological Effects and Exposure Criteria for Radio Frequency Electromagnetic Fields," NCRP Report No. 86 NCRP, 1986, Bethesda, MD 20814. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards.

SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative of the incremental electromagnetic energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dV) of a given density (r). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body.

$$\boldsymbol{SAR} = \frac{\boldsymbol{d}}{\boldsymbol{dt}}\left(\frac{\boldsymbol{dU}}{\boldsymbol{dm}}\right)$$

Figure 1. SAR Mathematical Equation

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

Where:
= conductivity of the tissue-simulant material (S/m)
= mass density of the tissue-simulant material (kg/㎥)
= Total RMS electric field strength (V/m)

NOTE: The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relations to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane.

9. Description of test equipment

9.1 SAR MEASUREMENT SETUP

These measurements are performed using the DASY4 automated dosimetric assessment system. It is made by Schmid& Partner Engineering AG (SPEAG) in Zurich, Switzerland. It consists of high precision robotics system (Staubli), robot controller, Pentium III computer, near-field probe, probe alignment sensor, and the generic twin phantom containing the brain equivalent material. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF) (see Figure.2).

A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and remote control, is used to drive the robot motors. The PC with Windows XP or Windows 7 or Window 10 or Window 11 is working with SAR Measurement system DASY4 & DASY5 & DASY6 &DASY8 A/D interface card, monitor, mouse, and keyboard. The Staubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card.

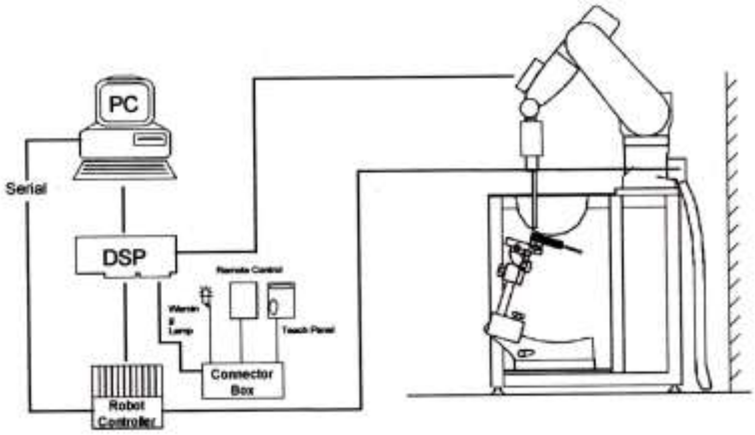


Figure 2. HCT SAR Lab. Test Measurement Set-up

The 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 PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer. The system is described in detail in.

10. SAR Measurement Procedure

The evaluation was performed using the following procedure compliant to FCC KDB Publication 865664 D01v01r04 and IEEE 1528-2013.

1. The SAR distribution at the exposed side of the head or body was measured at a distance no more than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the DUT's head and body area and the horizontal grid resolution was depending on the FCC KDB 865664 D01v01r04 table 4-1 & IEEE 1528-2013.

2. Based on step, the area of the maximum absorption was determined by sophisticated interpolations routines implemented in DASY software. When an Area Scan has measured all reachable point. DASY system computes the field maximal found in the scanned are, within a range of the maximum. SAR at this fixed point was measured and used as a reference value.

3. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB 865664 D01v01r04 table 4-1 and IEEE 1528-2013. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (reference from the DASY manual.)

   a. The data at the surface were extrapolated, since the center of the dipoles is no more than 2.7 ㎜ away from the tip of the probe (it is different from the probe type) and the distance between the surface and the lowest measuring point is 1.2 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

   b. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed using the 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the "Not a knot" condition (in x, y, and z directions. The volume was integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.

   c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

4. The SAR reference value, at the same location as step 2, was re-measured after the zoom scan. If the value changed by more than 5 %, the SAR evaluation and drift measurements were repeated.

Area scan and zoom scan resolution setting follow KDB 865664 D01v01r04 quoted below.

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5±1 mm</td><td>·δ·ln(2)±0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30°±1°</td><td>20°±1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan Spatial resolution: $\Delta x_{Area}, \Delta y_{Area}$</td><td>≤ 2 GHz: ≤15 mm
2-3 GHz: ≤12 mm</td><td>3-4 GHz: ≤12 mm
4-6 GHz: ≤10 mm</td></tr>
<tr><td colspan="2">When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.</td></tr>
<tr><td colspan="3">Maximum zoom scan Spatial resolution: $\Delta x_{zoom}, \Delta y_{zoom}$</td><td>≤ 2 GHz: ≤8mm
2-3 GHz: ≤5mm*</td><td>3-4 GHz: ≤5 mm*
4-6 GHz: ≤4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan Spatial resolution normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{zoom}(n)$</td><td>≤ 5 mm</td><td>3-4 GHz: ≤4 mm
4-5 GHz: ≤3 mm
5-6 GHz: ≤2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{zoom}(1)$: between1st two Points closest to phantom surface</td><td>≤ 4 mm</td><td>3-4 GHz: ≤3 mm
4-5 GHz: ≤2.5 mm
5-6 GHz: ≤2 mm</td></tr>
<tr><td>$\Delta z_{zoom}(n>1)$:between subsequent Points</td><td colspan="2">$\leq 1.5 \cdot \Delta z_{zoom}(n-1)$</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3-4 GHz: ≥28 mm
4-5 GHz: ≥25 mm
5-6 GHz: ≥22 mm</td></tr>
<tr><td colspan="5">Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see 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.</td></tr>
</table>

11. RF EXPOSURE LIMITS

HUMAN EXPOSURE	UNCONTROLLED ENVIRONMENT General Population	CONTROLLED ENVIRONMENT Occupational
	W/kg	W/kg
The SAR averaged over the whole body mass.	0.08	0.4
The peak spatially-averaged SAR for the head, neck and trunk, averaged over any 1 g of tissue*	1.6	8
The peak spatially-averaged SAR in the limbs, averaged over any 10 g of tissue*	4	20

NOTES:

* The Spatial Peak value of the SAR averaged over any 1 g of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

** The Spatial Average value of the SAR averaged over the whole-body.

*** The Spatial Peak value of the SAR averaged over any 10 g of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

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 mad fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

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

12. Simultaneous SAR Analysis

This device contains transmitters that may operate simultaneously (ENDC(4G+5G) operations). Therefore, simultaneous transmission analysis is required. Per KDB Publication 447498 D01v06 Sec.4.3.2 and IEEE 1528-2013 Sec.6.3.4.1.2, simultaneous transmission SAR test exclusion may be applied when the sum of 1g SAR and 10g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is ≤1.6W/kg for 1g SAR and ≤4 W/kg for 10g SAR. The different test positions in an exposure condition may be considered collectively to determine SAR exclusion according to the sum of 1g or 10g SAR.

Simultaneous Transmission Scenario						
Band		Position	NR SAR (W/kg)	LTE SAR (W/kg)	2.4G WLAN (W/kg)	Σ 1-g SAR (W/kg)
			1	2	3	1+2+3
NR Band 25(2)	LTE Band 26(5)	Rear	0.017	0.034	0.134	0.185
	LTE Band 12			0.044		0.195
	LTE Band 13			0.029		0.180
	LTE Band 14			0.032		0.183
NR Band 26(5)	LTE Band 25(2)	Rear	0.037	0.019	0.134	0.190
	LTE Band 7			0.018		0.189
	LTE Band 66			0.020		0.191
NR Band 7	LTE Band 26(5)	Rear	0.020	0.034	0.134	0.188
	LTE Band 12			0.044		0.198
NR Band 12	LTE Band 25(2)	Rear	0.048	0.034	0.134	0.216
	LTE Band 66			0.020		0.202
NR Band 13	LTE Band 66	Rear	0.033	0.020	0.134	0.187
NR Band 66	LTE Band 26(5)	Rear	0.016	0.034	0.134	0.184
	LTE Band 12			0.044		0.194
	LTE Band 13			0.029		0.179
	LTE Band 14			0.032		0.182
NR Band 71	LTE Band 25(2)	Rear	0.053	0.019	0.134	0.206
	LTE Band 7			0.018		0.205
	LTE Band 66			0.020		0.207
NR Band 77(78)	LTE Band 25(2)	Rear	0.029	0.019	0.134	0.182
	LTE Band 26(5)			0.034		0.197
	LTE Band 12			0.044		0.207
	LTE Band 7			0.018		0.181
	LTE Band 41(38)			0.019		0.182
	LTE Band 66			0.020		0.183

<table>
<tr><th colspan="8">Simultaneous Transmission Scenario</th></tr>
<tr><th colspan="2" rowspan="2">Band</th><th rowspan="2">Position</th><th>NR SAR (W/kg)</th><th>LTE SAR (W/kg)</th><th>5G WLAN (W/kg)</th><th>Σ 1-g SAR (W/kg)</th></tr>
<tr><th>1</th><th>2</th><th>3</th><th>1+2+3</th></tr>
<tr><td rowspan="4">NR Band 25(2)</td><td>LTE Band 26(5)</td><td rowspan="4">Rear</td><td rowspan="4">0.017</td><td>0.034</td><td rowspan="4">0.073</td><td>0.124</td></tr>
<tr><td>LTE Band 12</td><td>0.044</td><td>0.134</td></tr>
<tr><td>LTE Band 13</td><td>0.029</td><td>0.119</td></tr>
<tr><td>LTE Band 14</td><td>0.032</td><td>0.122</td></tr>
<tr><td rowspan="3">NR Band 26(5)</td><td>LTE Band 25(2)</td><td rowspan="3">Rear</td><td rowspan="3">0.037</td><td>0.019</td><td rowspan="3">0.073</td><td>0.129</td></tr>
<tr><td>LTE Band 7</td><td>0.018</td><td>0.128</td></tr>
<tr><td>LTE Band 66</td><td>0.020</td><td>0.130</td></tr>
<tr><td rowspan="2">NR Band 7</td><td>LTE Band 26(5)</td><td rowspan="2">Rear</td><td rowspan="2">0.020</td><td>0.034</td><td rowspan="2">0.073</td><td>0.127</td></tr>
<tr><td>LTE Band 12</td><td>0.044</td><td>0.137</td></tr>
<tr><td rowspan="2">NR Band 12</td><td>LTE Band 25(2)</td><td rowspan="2">Rear</td><td rowspan="2">0.048</td><td>0.034</td><td rowspan="2">0.073</td><td>0.155</td></tr>
<tr><td>LTE Band 66</td><td>0.020</td><td>0.141</td></tr>
<tr><td>NR Band 13</td><td>LTE Band 66</td><td>Rear</td><td>0.033</td><td>0.020</td><td>0.073</td><td>0.126</td></tr>
<tr><td rowspan="4">NR Band 66</td><td>LTE Band 26(5)</td><td rowspan="4">Rear</td><td rowspan="4">0.016</td><td>0.034</td><td rowspan="4">0.073</td><td>0.123</td></tr>
<tr><td>LTE Band 12</td><td>0.044</td><td>0.133</td></tr>
<tr><td>LTE Band 13</td><td>0.029</td><td>0.118</td></tr>
<tr><td>LTE Band 14</td><td>0.032</td><td>0.121</td></tr>
<tr><td rowspan="3">NR Band 71</td><td>LTE Band 25(2)</td><td rowspan="3">Rear</td><td rowspan="3">0.053</td><td>0.019</td><td rowspan="3">0.073</td><td>0.145</td></tr>
<tr><td>LTE Band 7</td><td>0.018</td><td>0.144</td></tr>
<tr><td>LTE Band 66</td><td>0.020</td><td>0.146</td></tr>
<tr><td rowspan="6">NR Band 77(78)</td><td>LTE Band 25(2)</td><td rowspan="6">Rear</td><td rowspan="6">0.029</td><td>0.019</td><td rowspan="6">0.073</td><td>0.121</td></tr>
<tr><td>LTE Band 26(5)</td><td>0.034</td><td>0.136</td></tr>
<tr><td>LTE Band 12</td><td>0.044</td><td>0.146</td></tr>
<tr><td>LTE Band 7</td><td>0.018</td><td>0.120</td></tr>
<tr><td>LTE Band 41(38)</td><td>0.019</td><td>0.121</td></tr>
<tr><td>LTE Band 66</td><td>0.020</td><td>0.122</td></tr>
</table>

Simultaneous Transmission Scenario				
Band	Position	Main (W/kg)	2.4G WLAN (W/kg)	Σ 1-g SAR (W/kg)
		1	2	1+2
GSM850	Rear	0.038	0.134	0.172
GSM1900		0.014		0.148
UMTS B5		0.033		0.167
UMTS B4		0.011		0.145
UMTS B2		0.016		0.150
NR FDD Band n14		0.032		0.166
NR FDD Band n25		0.017		0.151
NR FDD Band n26		0.037		0.171
NR TDD Band n41		0.020		0.154

Simultaneous Transmission Scenario				
Band	Position	Main (W/kg)	5G WLAN (W/kg)	Σ 1-g SAR (W/kg)
		1	2	1+2
GSM850	Rear	0.038	0.073	0.111
GSM1900		0.014		0.087
UMTS B5		0.033		0.106
UMTS B4		0.011		0.084
UMTS B2		0.016		0.089
NR FDD Band n14		0.032		0.105
NR FDD Band n25		0.017		0.09
NR FDD Band n26		0.037		0.110
NR TDD Band n41		0.020		0.093

Note : WWAN SAR testing results were referred to SAR Test Report, Report No. HCT-SR-2503-FC001-R2 and also use perform simultaneous transmission analysis.

13. Measurement Uncertainty

The measured SAR was <1.5 W/Kg for 1g SAR and <3.75 W/Kg, for 10g SAR for all frequency Bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis per IEEE1528-2013 was not required.

14. Conclusion

The SAR and RF Exposure measurement indicates that the EUT complies with the RF radiation exposure limits of the ANSI/ IEEE C95.1 - 2005.

These measurements were taken to simulate the RF effects exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested.

Please note that the abortion and distribution of electromagnetic energy in the body are very complex phenomena the depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables.

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