FCC SAR TEST REPORT

Application No.:	SUCR2501000021IT
Applicant:	Shanghai Sunmi Technology Co.,Ltd.
Manufacturer:	Shanghai Sunmi Technology Co.,Ltd.
Product Name:	Wireless Data Terminal
Model No.(EUT):	TF31B
Trade Mark:	SUNMI
FCC ID:	2AH25M3L
Standards:	FCC 47CFR §2.1093
Date of Receipt:	2025-01-08
Date of Test:	2025-01-20 to 2025-05-03
Date of Issue:	2025-05-21, Amendment 02: 2025-06-09
Test conclusion:	**PASS ***

* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Revision Record			
Version	**Description**	**Date**	**Remark**
01	Original	2025/05/21	/
02	Updated	2025/06/09	PAG Comment
This report supersedes our previous report SUCR250100002109, issued on 2025/05/21, which is hereby deemed null and void.			

Authorized for issue by:		
Prepared By		 **Leon Liu/ Project Manager**
Approved By		 **Nick Hu/ Technical Manager**

TEST SUMMARY

Frequency Band	Maximum Reported SAR(W/kg)
	Body
GSM850	0.95
GSM1900	1.02
WCDMA Band II	0.96
WCDMA Band IV	0.87
WCDMA Band V	0.84
LTE Band 7	0.96
LTE Band 12(17)	0.63
LTE Band 13	0.61
LTE Band 25(2)	0.82
LTE Band 26(5)	0.70
LTE Band 30	0.74
LTE Band 41(38)	**1.18**
LTE Band 66(4)	0.82
LTE Band 71	0.72
WI-FI (2.4GHz)	0.92
WI-FI (5GHz)	1.00
WI-FI (6GHz)	1.01
BT	0.73
SAR Limited(W/kg)	1.6
Maximum Simultaneous Transmission SAR (W/kg)	
Scenario	**Body**
Sum SAR	1.59
SPLSR	/
SPLSR Limited	0.04

Note: The Simultaneous transmission SAR is the same test position of the WWAN Antenna + WiFi/BT Antenna.
According to TCB workshop October,2014 RF Exposure Procedures Update (Overlapping Bands): SAR for LTE Band 2 (Frequency range:1850 - 1910 MHz)/LTE Band 4 (Frequency range:1710 - 1755 MHz)/LTE Band 5 (Frequency range:824 - 849 MHz)/ LTE band 17 (frequency range: 704-716 MHz)/LTE Band 38 (Frequency range:2570 - 2620 MHz) is respectively covered by LTE Band 25 (Frequency range:1850 - 1915 MHz)/LTE Band66 (Frequency range:1710 - 1780 MHz)/LTE Band26 (Frequency range:814 - 849 MHz)/LTE band 12 (frequency range: 699-716 MHz)/LTE Band41 (Frequency range:2496 - 2690 MHz) due to similar frequency range, same maximum tune up limit and same channel bandwidth. Because the frequency range is similar, the maximum tuning limit is the same, and the channel bandwidth and other operating parameters for the smaller band is fully supported by the larger band.

CONTENTS

1 General Information

1.1 Details of Client

Applicant:	Shanghai Sunmi Technology Co.,Ltd.
Address:	Room 505,No.388,Song Hu Road,Yang Pu District,Shanghai,China
Manufacturer:	Shanghai Sunmi Technology Co.,Ltd.
Address:	Room 505,No.388,Song Hu Road,Yang Pu District,Shanghai,China

1.2 Test Location

Company:	SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.
Address:	South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone
Post code:	215000
Test Engineer:	Zhang Alan; Liu Leon-l

1.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **A2LA (Certificate No. 6336.01)**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6336.01.

• **Innovation, Science and Economic Development Canada**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0120.

IC#: 27594.

• **FCC –Designation Number: CN1312**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized as an accredited testing laboratory.

Designation Number: CN1312.

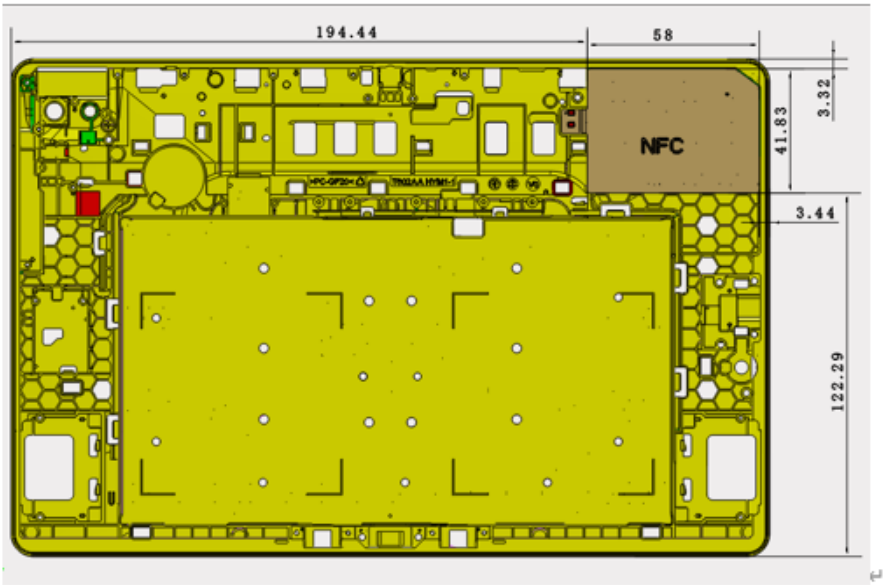
Test Firm Registration Number: 0031225543

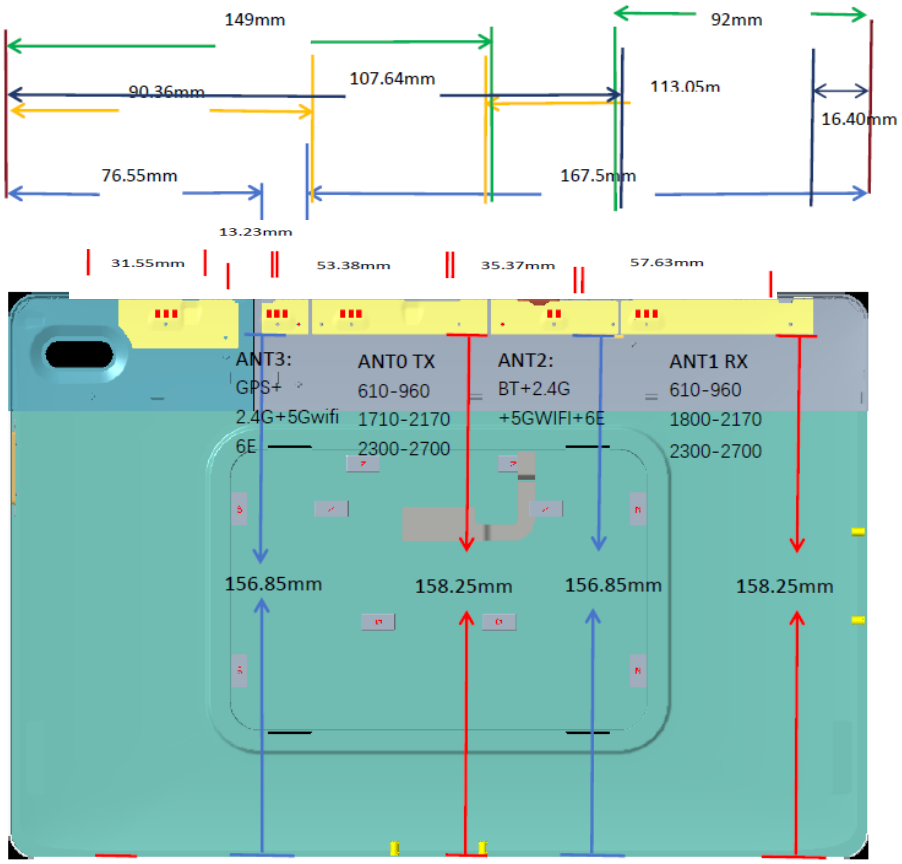
1.4 General Description of EUT

Device Type :	portable device		
Exposure Category:	uncontrolled environment / general population		
Product Name:	Wireless Data Terminal		
Model No.(EUT):	TF31B		
Trade Mark:	SUNMI		
Product Phase:	Production Unit		
Hardware Version:	V1.2		
Software Version:	T602AA_EVT_14.0_SUNMI_202503131820.00-00		
IMEI:	867939070006177		
Device Operating Configurations :			
Modulation Mode:	**GSM:** GMSK, 8PSK; **WCDMA:** QPSK; **LTE:** QPSK,16QAM; **WIFI:** DSSS, OFDM, OFDMA; **BT:** GFSK, π/4DQPSK,8DPSK NFC: ASK		
Device Class:	B		
GPRS Multi-slots Class:	33	EGPRS Multi-slots Class:	33
HSDPA UE Category:	24	HSUPA UE Category	6
DC-HSDPA UE Category:	24		
Power Class	4,tested with power level 5(GSM850)		
	1,tested with power level 0(GSM1900)		
	3, tested with power control “all 1”(WCDMA Band)		
	3, tested with power control Max Power(LTE Band)		
Frequency Bands:	Band	Tx (MHz)	Rx (MHz)
	GSM850	824 - 849	869 - 894
	GSM1900	1850 - 1910	1930 - 1990
	WCDMA Band II	1850 - 1910	1930 - 1990
	WCDMA Band IV	1710 - 1755	2110 - 2155
	WCDMA Band V	824 - 849	869 - 894
	LTE Band 2	1850 - 1910	1930 - 1990
	LTE Band 4	1710 - 1755	2110 - 2155
	LTE Band 5	824 - 849	869 - 894
	LTE Band 7	2500 - 2570	2620 - 2690
	LTE Band 12	699 - 716	729 - 746
	LTE Band 13	777 - 787	746 - 756
	LTE Band 17	704 - 716	734 - 746
	LTE Band 25	1850 - 1915	1930 - 1995
	LTE Band 26	814 - 849	859 - 894
	LTE Band 30	2305 - 2315	2350 - 2360
	LTE Band 66	1710 -1780	2110 - 2200
	LTE Band 71	663-698	617- 652
	LTE Band 38	2570 - 2620	2570 - 2620
	LTE Band 41	2496 - 2690	2496 - 2690
	Bluetooth	2400 - 2483.5	2400 - 2483.5
	Wi-Fi 2.4G	2412 - 2462	2412 - 2462
	Wi-Fi 5G	5150 - 5250	5150 - 5250
		5250 - 5350	5250 - 5350
		5470 - 5725	5470 - 5725
		5725 - 5850	5725 - 5850

	Wi-Fi 6E	5925 - 6425	5925 - 6425
		6425 - 6525	6425 - 6525
		6525 - 6875	6525 - 6875
		6875 - 7125	6875 - 7125
	NFC	13.56MHz	13.56MHz
RF Cable:	☒ Provided by the applicant ☐ Provided by the laboratory		
Battery Information:	Model:	1ICP3/93/99-2	
	Normal Voltage:	3.87V	
	Rated capacity:	8000mAh	
	Manufacturer:	Guangdong Fenghua New Energy Co.,Ltd.	
Note: 1.Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information, SGS is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion. 2.As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information. 3.The device does not support 802.11ax OFDMA Partial RU tones (26T, 52T, 106T, etc.)			

1.4.1 DUT Antenna Locations (Back View)





Ant	Band:
Ant0	GSM850/1900 WCDMA: B2/4/5 LTE: B2/4/5/7/12/13/17/25/26/30/66/71/38/41
Ant2	WIFI2.4G,WIFI5G,WIFI6G Bluetooth
Ant3	WIFI2.4G WIFI5G WIFI6G
Ant5	NFC

Note:

1) The test device is a android tablet. The overall diagonal dimension of this device is 300.37 mm. Per KDB 648474 D04, because the diagonal distance of this device is ≥160mm, so it is a phablet.

1.4.2 EUT side for SAR Testing

- **Stand-alone SAR test evaluation**

1) Per FCC KDB 447498D01, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where:
• f(GHz) is the RF channel transmit frequency in GHz
• Power and distance are rounded to the nearest mW and mm before calculation
• The result is rounded to one decimal place for comparison
When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.
2) At 100 MHz to 6 GHz and for test separation distances > 50 mm, the SAR test exclusion threshold is determined according to the following:
a) [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz to 1500 MHz
b) [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz

Bnad	Exposure Condition	f (GHz)	Pmax (dBm)	Pmax (mw)	separation distance**(cm)**					Calculated Value					SAR Test (Yes or No)				
			Conducted	Conducted	Back side	Left side	Right side	Top side	Bottom side	Back side	Left side	Right side	Top side	Bottom side	Back side	Left side	Right side	Top side	Bottom side
GSM850 ANT0	Body 0mm	0.84	31.00	1258.93	0.50	9.0	11.13	0.50	15.65	9.25	547.81	743.71	9.25	1203.67	Yes	Yes	Yes	Yes	Yes
GSM1900 ANT0	Body 0mm	1.90	28.00	630.96	0.50	9.0	11.13	0.50	15.65	3.36	695.32	1036.59	3.36	1944.18	Yes	No	No	Yes	No
WCDMA B2 ANT0	Body 0mm	1.90	24.00	251.19	0.50	9.0	11.13	0.50	15.65	3.36	695.32	1036.59	3.36	1944.18	Yes	No	No	Yes	No
WCDMA B4 ANT0	Body 0mm	1.75	24.00	251.19	0.50	9.0	11.13	0.50	15.65	3.59	705.36	1047.50	3.59	1952.72	Yes	No	No	Yes	No
WCDMA B5 ANT0	Body 0mm	0.84	24.00	251.19	0.50	9.0	11.13	0.50	15.65	9.25	547.81	743.71	9.25	1203.67	Yes	No	No	Yes	No
LTE B2 ANT0	Body 0mm	1.90	24.00	251.19	0.50	9.0	11.13	0.50	15.65	3.36	695.32	1036.59	3.36	1944.18	Yes	No	No	Yes	No
LTE B4 ANT0	Body 0mm	1.75	24.00	251.19	0.50	9.0	11.13	0.50	15.65	3.59	705.36	1047.50	3.59	1952.72	Yes	No	No	Yes	No
LTE B5 ANT0	Body 0mm	0.84	24.00	251.19	0.50	9.0	11.13	0.50	15.65	9.25	547.81	743.71	9.25	1203.67	Yes	No	No	Yes	No
LTE B7 ANT0	Body 0mm	2.60	24.00	251.19	0.50	9.0	11.13	0.50	15.65	2.62	658.35	996.03	2.62	1911.93	Yes	No	No	Yes	No
LTE B12 ANT0	Body 0mm	0.75	24.00	251.19	0.50	9.0	11.13	0.50	15.65	10.75	520.45	695.95	10.75	1099.87	Yes	No	No	Yes	No
LTE B13 ANT0	Body 0mm	0.75	24.00	251.19	0.50	9.0	11.13	0.50	15.65	10.75	520.45	695.95	10.75	1099.87	Yes	No	No	Yes	No
LTE B17 ANT0	Body 0mm	0.75	24.00	251.19	0.50	9.0	11.13	0.50	15.65	10.75	520.45	695.95	10.75	1099.87	Yes	No	No	Yes	No
LTE B25 ANT0	Body 0mm	1.90	24.00	251.19	0.50	9.0	11.13	0.50	15.65	3.36	695.32	1036.59	3.36	1944.18	Yes	No	No	Yes	No
LTE B26 ANT0	Body 0mm	0.84	24.00	251.19	0.50	9.0	11.13	0.50	15.65	9.25	547.81	743.71	9.25	1203.67	Yes	No	No	Yes	No
LTE B30 ANT0	Body 0mm	2.30	24.00	251.19	0.50	9.0	11.13	0.50	15.65	2.89	672.56	1011.69	2.89	1924.47	Yes	No	No	Yes	No
LTE B66 ANT0	Body 0mm	1.75	24.00	251.19	0.50	9.0	11.13	0.50	15.65	3.59	705.36	1047.50	3.59	1952.72	Yes	No	No	Yes	No
LTE B71 ANT0	Body 0mm	0.75	24.00	251.19	0.50	9.0	11.13	0.50	15.65	10.75	520.45	695.95	10.75	1099.87	Yes	No	No	Yes	No
LTE B38 ANT0	Body 0mm	2.60	24.00	251.19	0.50	9.0	11.13	0.50	15.65	2.62	658.35	996.03	2.62	1911.93	Yes	No	No	Yes	No
LTE B41 ANT0	Body 0mm	2.60	24.00	251.19	0.50	9.0	11.13	0.50	15.65	2.62	658.35	996.03	2.62	1911.93	Yes	No	No	Yes	No
WIFI 2.4G ANT2	Body 0mm	2.45	13.00	19.95	0.50	9.0	11.13	0.50	15.65	2.74	665.20	1003.59	2.74	1918.00	Yes	No	No	Yes	No
WIFI 5.2G ANT2	Body 0mm	5.20	17.00	50.12	0.50	9.0	11.13	0.50	15.65	1.50	583.46	911.93	1.50	1842.55	Yes	No	No	Yes	No
WIFI 5.3G ANT2	Body 0mm	5.30	17.00	50.12	0.50	9.0	11.13	0.50	15.65	1.48	581.53	909.72	1.48	1840.68	Yes	No	No	Yes	No
WIFI 5.5G ANT2	Body 0mm	5.50	14.00	25.12	0.50	9.0	11.13	0.50	15.65	1.44	577.79	905.44	1.44	1837.05	Yes	No	No	Yes	No
WIFI 5.8G ANT2	Body 0mm	5.80	19.00	79.43	0.50	9.0	11.13	0.50	15.65	1.38	572.47	899.34	1.38	1831.85	Yes	No	No	Yes	No
WIFI 6G ANT2	Body 0mm	5.80	19.00	79.43	0.50	9.0	11.13	0.50	15.65	1.38	572.47	899.34	1.38	1831.85	Yes	No	No	Yes	No
BT ANT2	Body 0mm	2.45	11.00	12.59	0.50	9.0	11.13	0.50	15.65	2.74	665.20	1003.59	2.74	1918.00	Yes	No	No	Yes	No
WIFI 2.4G ANT3	Body 0mm	2.45	13.00	19.95	0.50	7.7	16.75	0.50	15.69	2.74	492.45	2183.87	2.74	1927.34	Yes	No	No	Yes	No
WIFI 5.2G ANT3	Body 0mm	5.20	16.00	39.81	0.50	7.7	16.75	0.50	15.69	1.50	420.92	2121.49	1.50	1852.29	Yes	No	No	Yes	No
WIFI 5.3G ANT3	Body 0mm	5.30	16.00	39.81	0.50	7.7	16.75	0.50	15.69	1.48	419.25	2119.93	1.48	1850.43	Yes	No	No	Yes	No
WIFI 5.5G ANT3	Body 0mm	5.50	13.00	19.95	0.50	7.7	16.75	0.50	15.69	1.44	416.03	2116.91	1.44	1846.82	Yes	No	No	Yes	No
WIFI 5.8G ANT3	Body 0mm	5.80	17.00	50.12	0.50	7.7	16.75	0.50	15.69	1.38	411.45	2112.59	1.38	1841.65	Yes	No	No	Yes	No
WIFI 6G ANT3	Body 0mm	5.80	17.00	50.12	0.50	7.7	16.75	0.50	15.69	1.38	411.45	2112.59	1.38	1841.65	Yes	No	No	Yes	No

Table 1： Estimated SAR calculation for WiFi and BT
Note:
1) * - maximum possible output power declared by manufacturer

1.5 Test Specification

Identity	Document Title
FCC 47CFR §2.1093	Radiofrequency Radiation Exposure Evaluation: Portable Devices
ANSI/IEEE C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.
IEEE 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
KDB 941225 D01	3G SAR Measurement Procedures v03r01
KDB 941225 D05	SAR for LTE Devices v02r05
KDB 941225 D05A	LTE Rel.10 KDB Inquiry Sheet v01r02
KDB 248227 D01	SAR Guidance for IEEE 802 11 Wi-Fi SAR v02r02
KDB 447498 D04	General RF Exposure Guidance v01
KDB 865664 D01	SAR Measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02	RF Exposure Reporting v01r02
KDB 690783 D01	SAR Listings on Grants v01r03
KDB 616217 D04	SAR for laptop and tablets v01r02

1.6 RF exposure limits

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Spatial Peak SAR* (Brain*Trunk)	**1.60 mW/g**	8.00 mW/g
Spatial Average SAR** (Whole Body)	0.08 mW/g	0.40 mW/g
Spatial Peak SAR*** (Hands/Feet/Ankle/Wrist)	4.00 mW/g	20.00 mW/g

Notes:

* The Spatial Peak value of the SAR averaged over any 1 gram 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 grams 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.

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.)

1.6.1 Power reduction specification

This device uses a single fixed level of power reduction through static table look-up for SAR compliance and it is triggered by a single event or operation

1) A fixed level power reduction is applied for some frequency bands when simultaneously transmitting with the other antennas in certain simultaneous transmission conditions. The standalone SAR compliance still uses the standalone SAR results tested at the maximum output power level without any power reduction

2) The proximity sensor is used to indicate when the device is held close to a user's body exposure condition. It utilizes the proximity sensor to reduce the output power in specific wireless and operating modes of main antenna to ensure SAR compliance (Refer to section 5.4 for detailed proximity Sensor information and validation data per KDB 616217).

The detailed power reduction information can be referred to Appendix E.

2 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

Table 2： The Ambient Conditions

3 SAR Measurements System Configuration

3.1 The SAR Measurement System

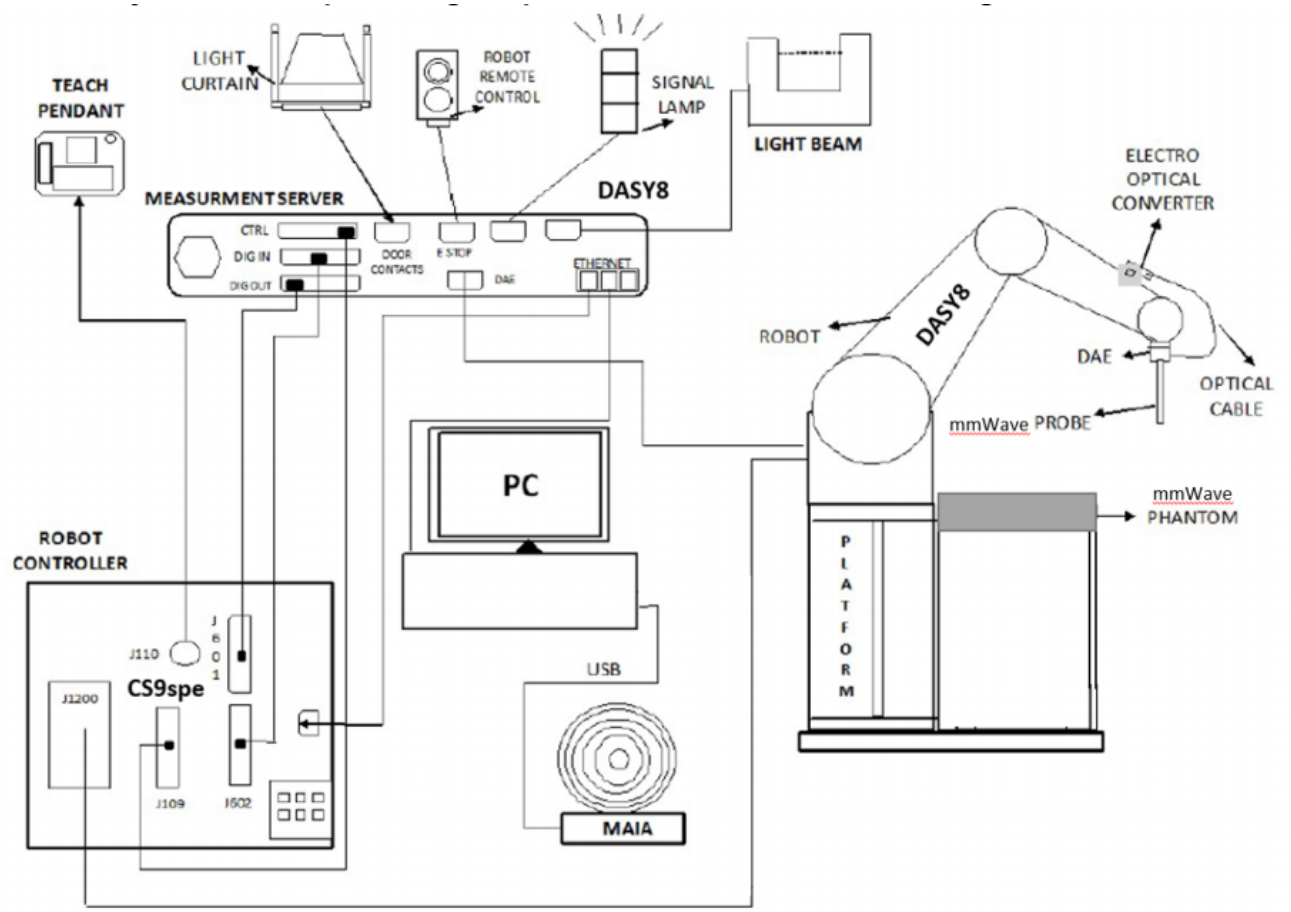
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the tissue-Simulate.

The DASY system for performing compliance tests consists of the following items:
A standard high precision 6-axis robot (Stabile RX family) with controller, teach pendant and software. An arm extension for accommodation the data acquisition electronics (DAE).

A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.

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 between optical and electrical of the signals for the digital communication to DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.



F-1. SAR Measurement System Configuration

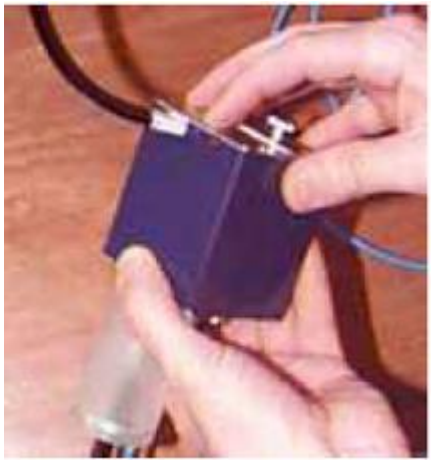
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 7.
- DASY software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand, right-hand and Body Worn usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing to validating the proper functioning of the system.

3.2 Isotropic E-field Probe EX3DV4

	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available.
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)
Dynamic Range	10 µW/g to > 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
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better 30%.
Compatibility	DASY52 SAR and higher, EASY4/MRI

3.3 Data Acquisition Electronics (DAE)

Model	DAE
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY4/5 embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.
Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV,400mV)
Input Offset Voltage	< 5µV (with auto zero)
Input Bias Current	< 50 f A
Dimensions	60 x 60 x 68 mm



3.4 SAM Twin Phantom

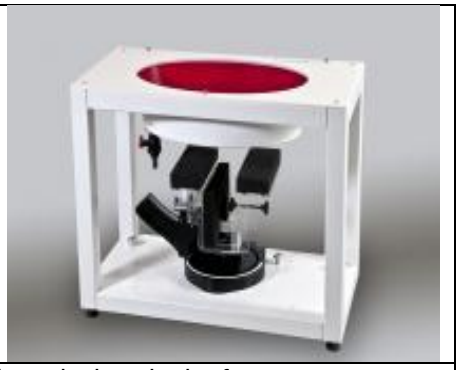
Material	Vinylester, glass fiber reinforced (VE-GF)
Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)
Dimensions (incl. Wooden Support)	Length: 1000 mm Width: 500 mm Height: adjustable feet
Filling Volume	approx. 25 liters
Wooden Support	SPEAG standard phantom table

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.

Twin SAM V5.0 has the same shell geometry and is manufactured from the same material as Twin SAM V4.0, but has reinforced top structure.

3.5 ELI Phantom

Material	Vinylester, glass fiber reinforced (VE-GF)
Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
Shell Thickness	2.0 ± 0.2 mm (bottom plate)
Dimensions	Major axis: 600 mm Minor axis: 400 mm
Filling Volume	approx. 30 liters
Wooden Support	SPEAG standard phantom table



Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.
ELI V5.0 has the same shell geometry and is manufactured from the same material as ELI4, but has reinforced top structure.

3.6 Device Holder for Transmitters

F-2. **Device Holder for Transmitters**

- The DASY device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation centres for both scales are the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.
- The DASY device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity ε=3 and loss tangent δ=0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

3.7 Measurement procedure

3.7.1 Scanning procedure

Step 1: Power reference measurement

The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure.

Step 2: Area scan

The SAR distribution at the exposed side of the head was measured at a distance of 4mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 15mm*15mm or 12mm*12mm or 10mm*10mm.Based on the area scan data, the area of the maximum absorption was determined by spline interpolation.

Step 3: Zoom scan

Around this point, a volume of 32mm*32mm*30mm (f≤2GHz), 30mm*30mm*30mm (f for 2-3GHz) and 24mm*24mm*22mm (f for 5-6GHz) was assessed by measuring 5x5x7 points (f≤2GHz), 7x7x7 points (f for 2-3GHz) and 7x7x12 points (f for 5-6GHz). On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

The data at the surface was extrapolated, since the centre of the dipoles is 2.0mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2mm. (This can be variable. Refer to the probe specification).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. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the 3D-Spline interpolation algorithm. The volume was integrated with the trapezoidal algorithm. One thousand points were interpolated to calculate the average. All neighbouring volumes were evaluated until no neighboring volume with a higher average value was found.

The area and zoom scan resolutions specified in the table below must be applied to the SAR measurements Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1-g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std. 1528-2013.

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

Step 4: Power reference measurement (drift)

The Power Drift Measurement job measures the field at the same location as the most recent power reference measurement job within the same procedure, and with the same settings. The indicated drift is mainly the variation of the DUT's output power and should vary max. ± 5 %

3.7.2 Data Storage

The DASY software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DAE4". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated. The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [m W/g], [m W/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

3.7.3 Data Evaluation by SEMCAD

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

Probe parameters:	- Sensitivity	Normi, ai0, ai1, ai2
	- Conversion factor	ConvFi
	- Diode compression point	Dcpi
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	ε
	- Density	ρ

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

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

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

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

With Vi = compensated signal of channel i (i = x, y, z)
Ui = input signal of channel i (i = x, y, z)
cf = crest factor of exciting field (DASY parameter)
dcp i = diode compression point (DASY parameter)

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

E-field probes:

$$E_i = (V_i / Norm_i \cdot ConvF)^{1/2}$$

H-field probes:

$$H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1} f + a_{i2} f^2) / f$$

With Vi = compensated signal of channel i (i = x, y, z)
Normi = sensor sensitivity of channel I (i = x, y, z)

[mV/(V/m)2] for E-field Probes
ConvF = sensitivity enhancement in solution
aij = sensor sensitivity factors for H-field probes
f = carrier frequency [GHz]
Ei = electric field strength of channel i in V/m
Hi = magnetic field strength of channel i in A/m

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

$$E_{tot} = (E_x^2 + E_Y^2 + E_z^2)^{1/2}$$

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

$$SAR = (Etot^2 \cdot \sigma) / (\varepsilon \cdot 1000)$$

with SAR = local specific absorption rate in mW/g
Etot = total field strength in V/m
σ= conductivity in [mho/m] or [Siemens/m]
ε= equivalent tissue density in g/cm3

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

$$P_{pwe} = {E_{tot}}^2{}_2 / 3770 \text{ or } P_{pwe} = H_{tot}^2 \cdot 37.7$$

with Ppwe = equivalent power density of a plane wave in mW/cm2
Etot = total electric field strength in V/m
Htot = total magnetic field strength in A/m

4 SAR measurement variability and uncertainty

4.1 SAR measurement variability

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

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2) When the original highest measured SAR is ⩾ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ⩾ 1.45 W/kg (~ 10% from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ⩾1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

4.2 SAR measurement uncertainty

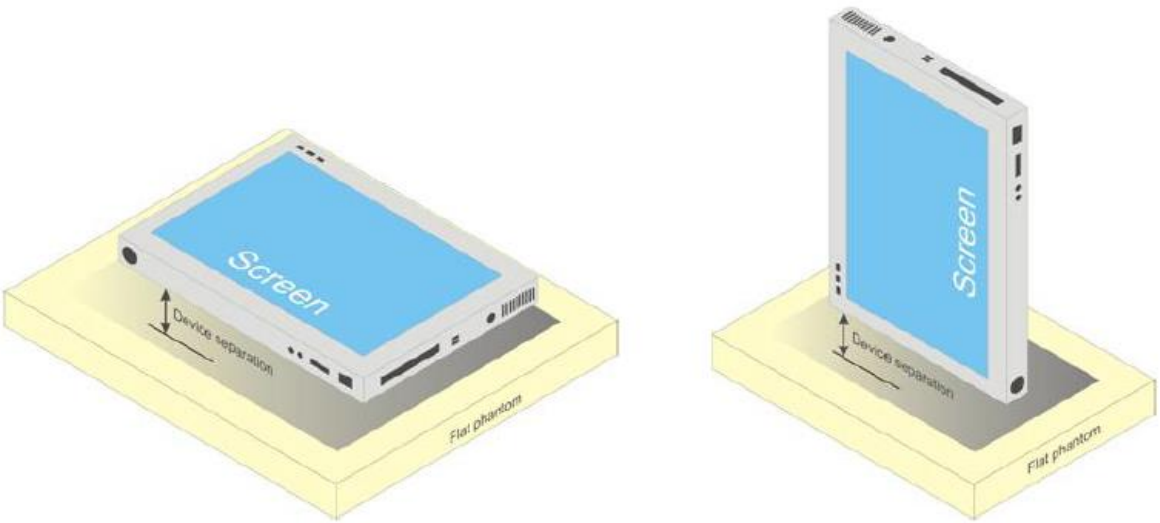
Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6)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

5 Description of Test Position

5.1 Exposure Condition

5.1.1 The Body Test Position

The overall diagonal dimension of the display section of a tablet is > 20 cm, Per FCC KDB 616217, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. SAR evaluation for the front surface of tablet display screens is generally not necessary. The SAR Exclusion Threshold in KDB 447498 D01 can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

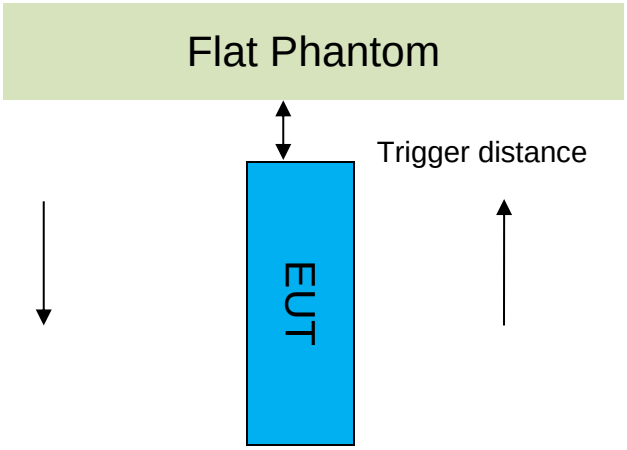


F-3. **Tablet form factor portable computer.**

5.2 Proximity Sensor Triggering Test

Proximity sensor triggering distances:

The Proximity sensor triggering was applied to WWAN antenna. Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed.



Proximity Sensor Triggering Distance(mm)		
Ant.0		
Position	Back side	Top side
Minimum	33	40
Required SAR Test	21	23
An.2		
Position	Back side	Top side
Minimum	19	21
Required SAR Test	18	20
Ant.3		
Position	Back side	Top side
Minimum	25	26
Required SAR Test	24	25

Note:

SAR tests with proximity sensor power reduction are only required for the sides of frequency bands in the table above. For the other sides or other frequency bands of the device, SAR is still tested at the maximum power level with sensor off.

Proximity sensor coverage

If a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For p-sensor coverage testing, the device is moved and “along the direction of maximum antenna and sensor offset”.

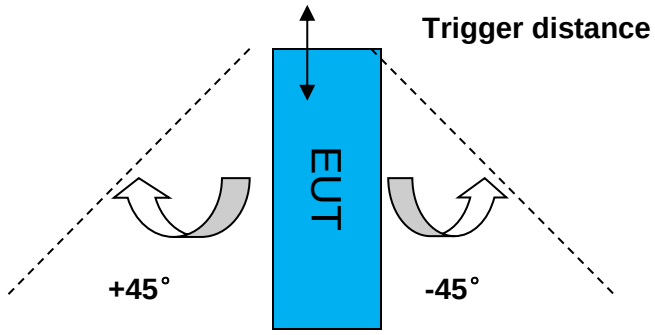
The proximity sensor and main antenna use same metallic electrode, so there is no spatial offset.

Device tilt angle influences to proximity sensor triggering

The influence of device tilt angles to proximity sensor triggering was determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom.

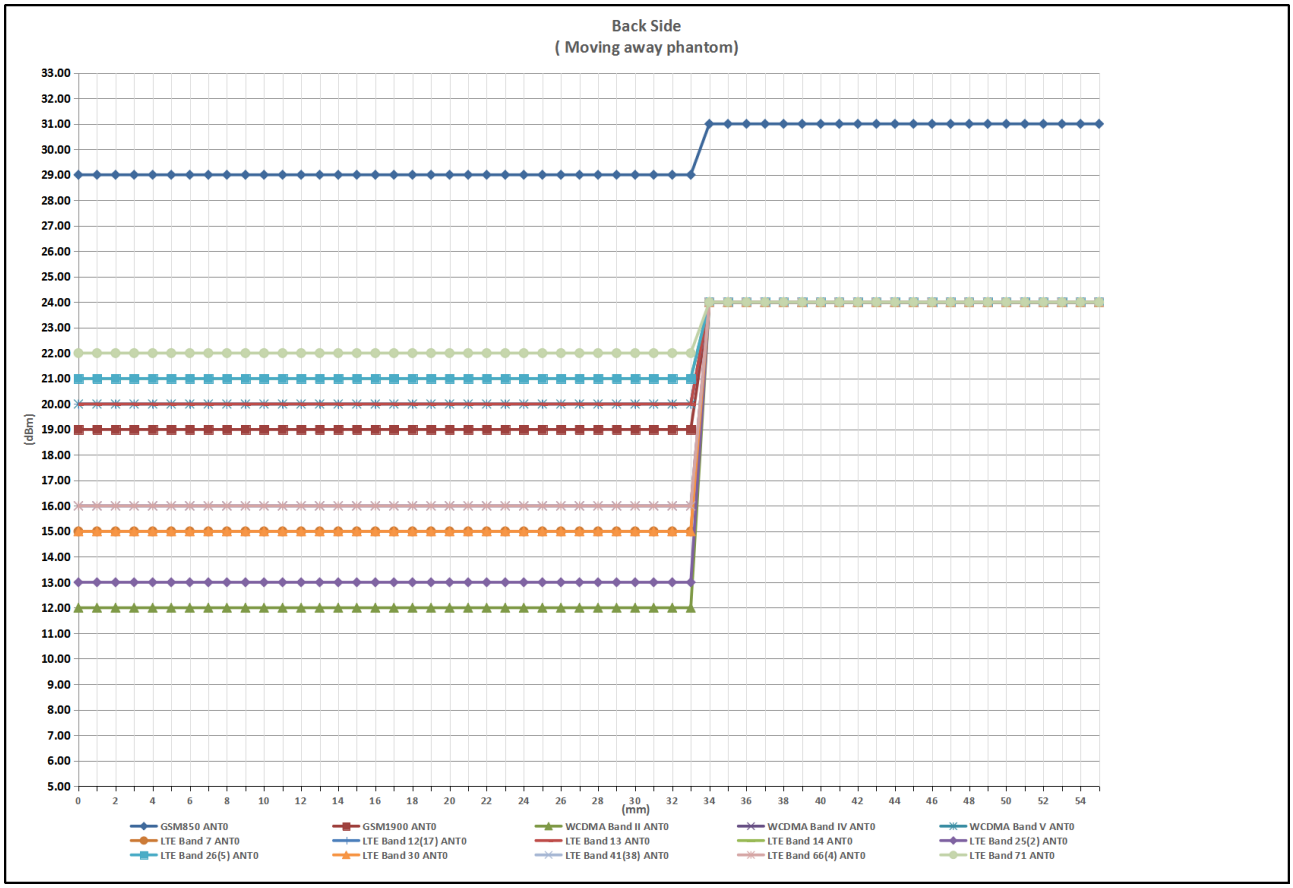
Rotating the tablet around the edge next to the phantom in ≤ 10° increments until the tablet is ± 45° from the vertical position at 0°, and the maximum output power remains in the reduced mode.

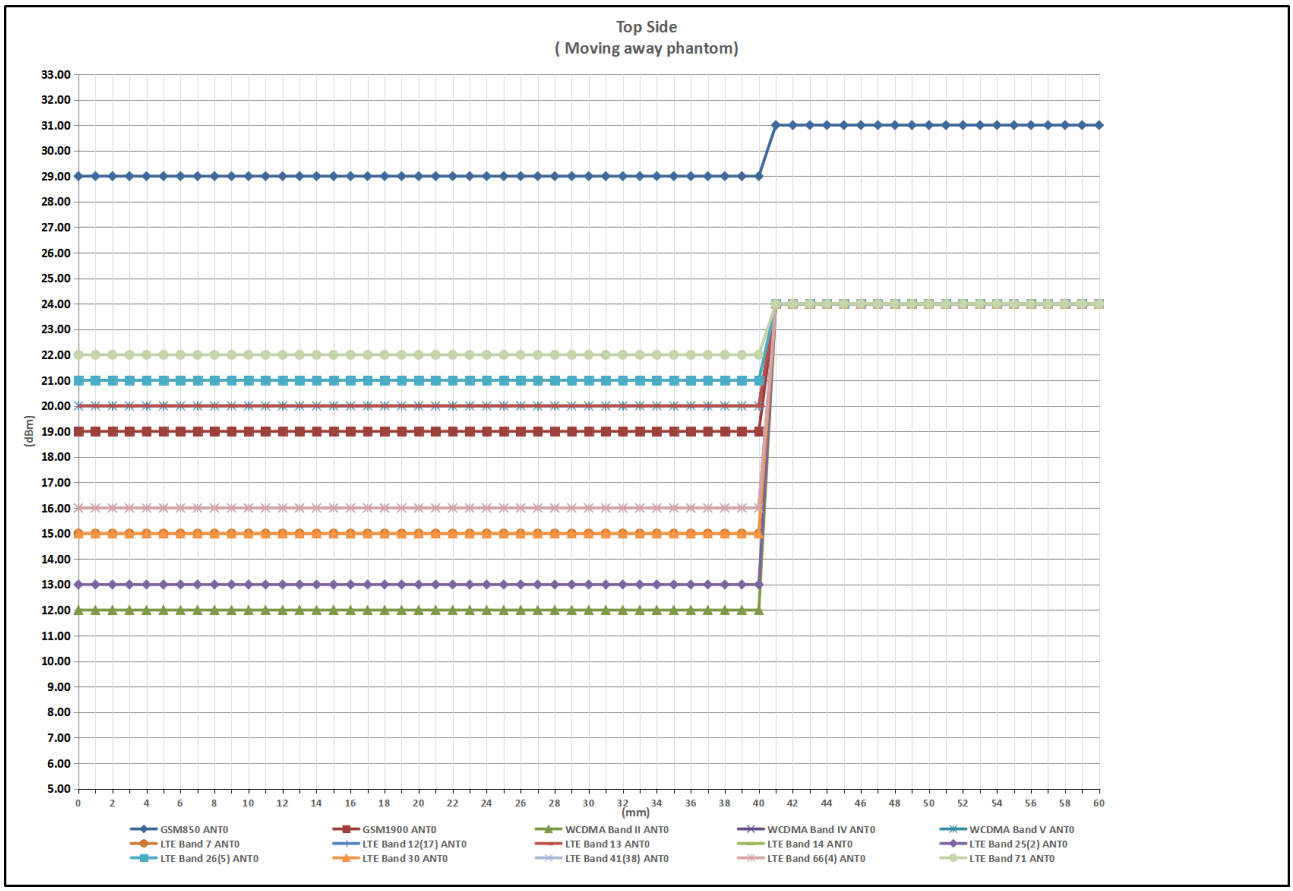
Flat Phantom



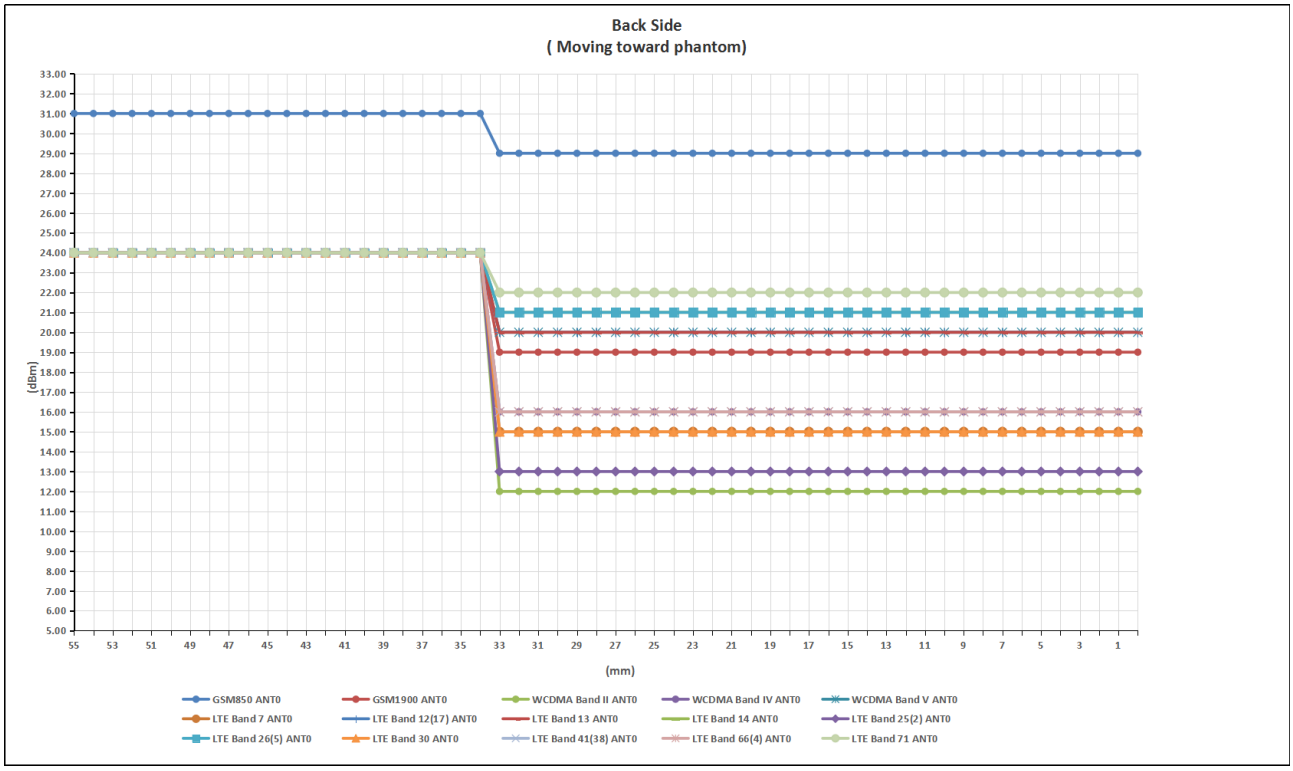
Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering for Top Side												
ANT	Minimum trigger distance Per KDB616217§6.2	Minimum trigger distance at which power reduction was maintained over ±45°	Power Reduction Status									
			-45°	-35°	-25°	-15°	-5°	0°	5°	15°	25°	35°	45°
Ant 0	Top side:40mm	Top side:40mm	on	on	on	on	on	on	on	on	on	on	on
Ant 2	Top side:21mm	Top side:21mm	on	on	on	on	on	on	on	on	on	on	on
Ant 3	Top side:26mm	Top side:26mm	on	on	on	on	on	on	on	on	on	on	on

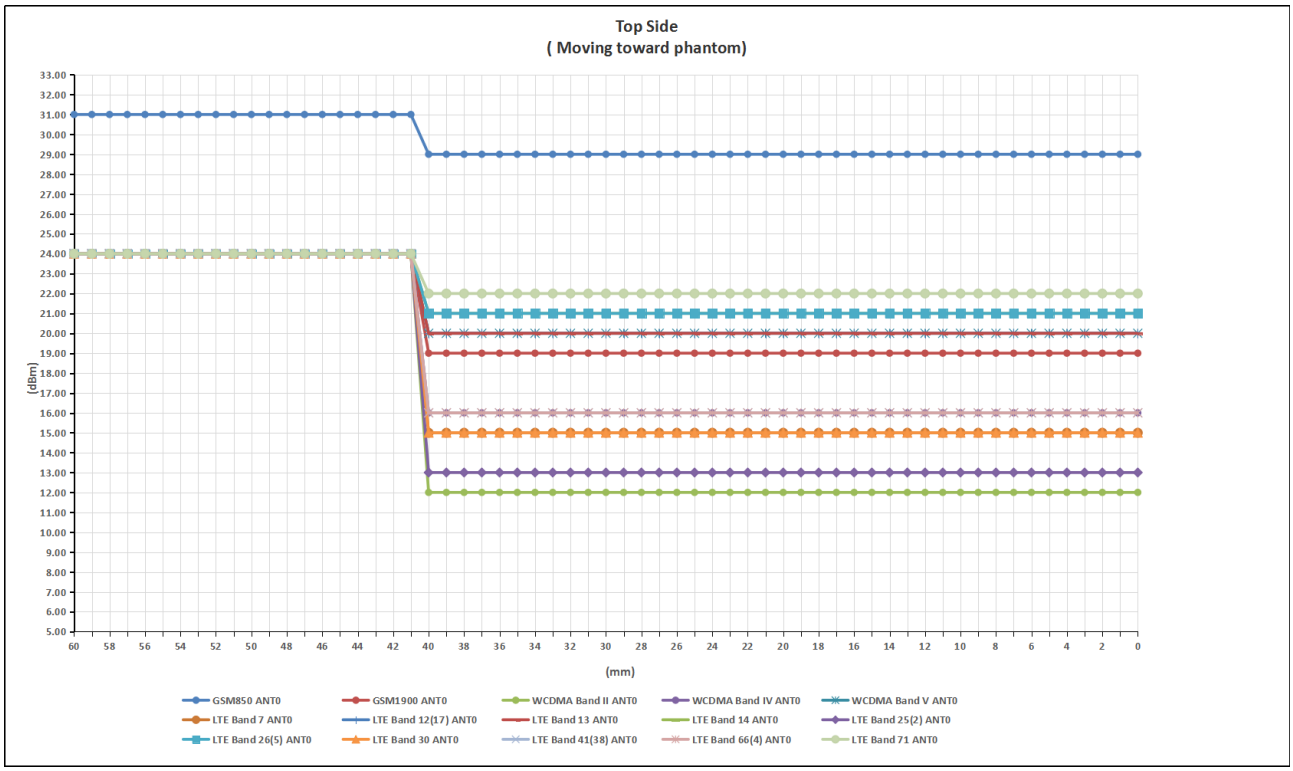
- Ant 0 DUT Moving Toward (Trigger)the Phantom



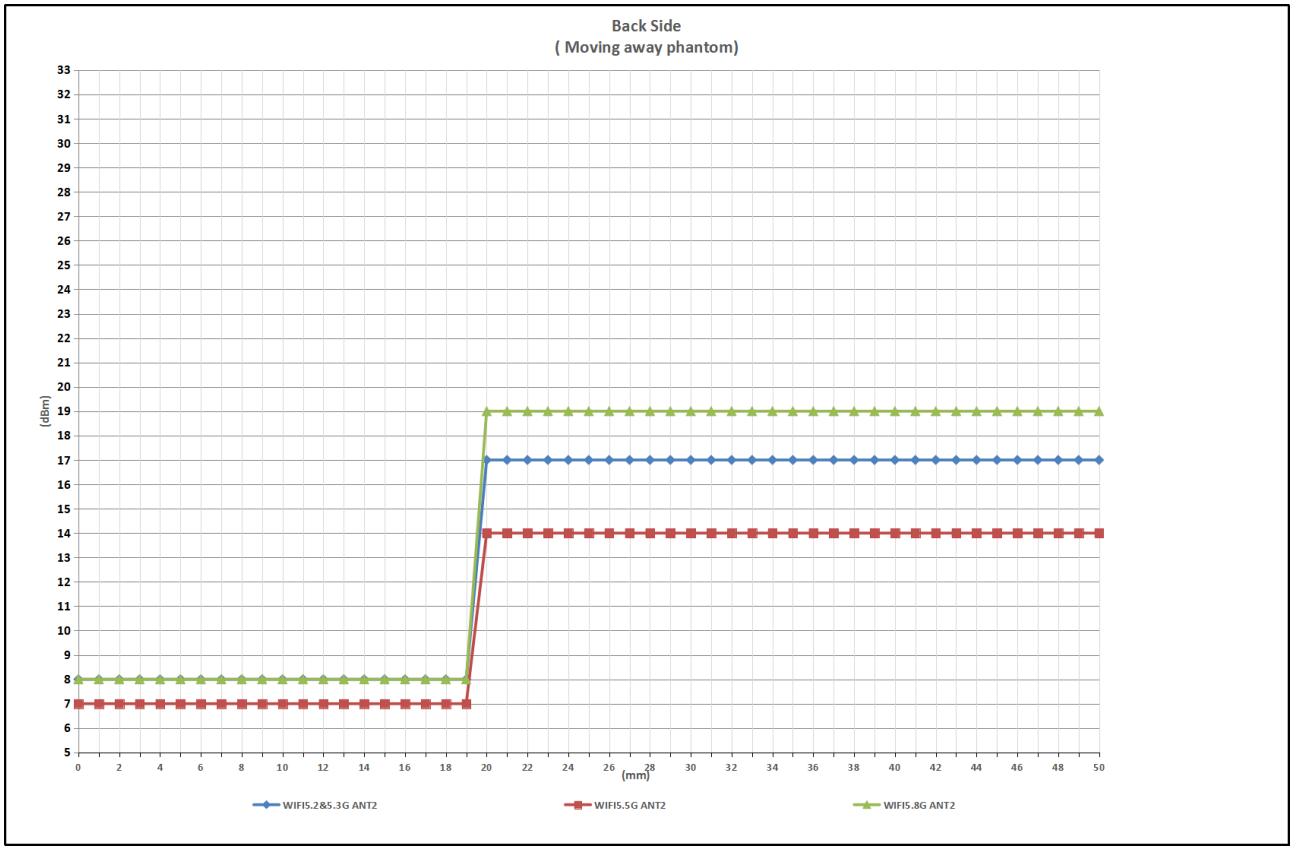

Top Side
(Moving away phantom)
(dBm)
(mm)
GSM850 ANT0
GSM1900 ANT0
WCDMA Band II ANT0
WCDMA Band IV ANT0
WCDMA Band V ANT0
LTE Band 7 ANT0
LTE Band 12(17) ANT0
LTE Band 13 ANT0
LTE Band 14 ANT0
LTE Band 25(2) ANT0
LTE Band 26(5) ANT0
LTE Band 30 ANT0
LTE Band 41(38) ANT0
LTE Band 66(4) ANT0
LTE Band 71 ANT0

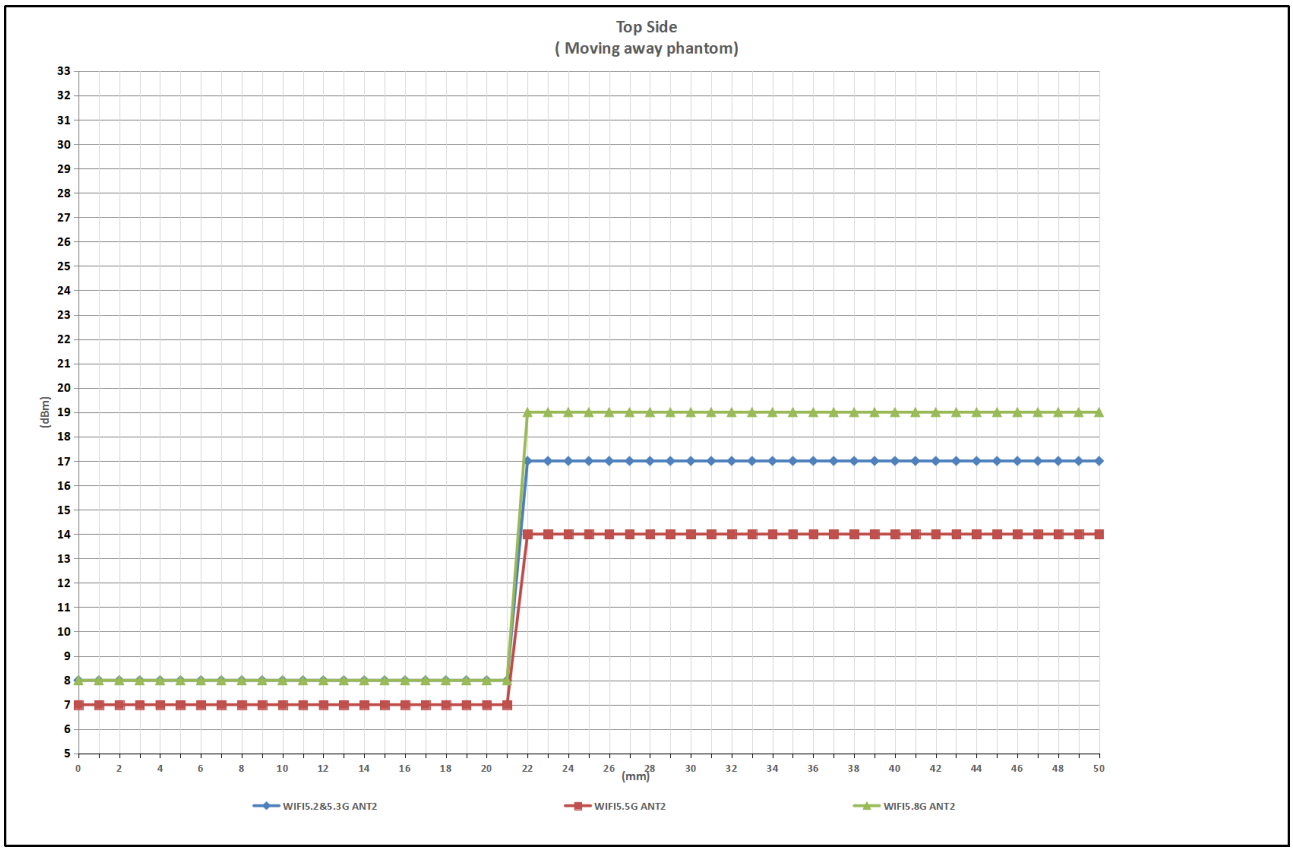
- Ant 0 DUT Moving Away (Release) from the Phantom



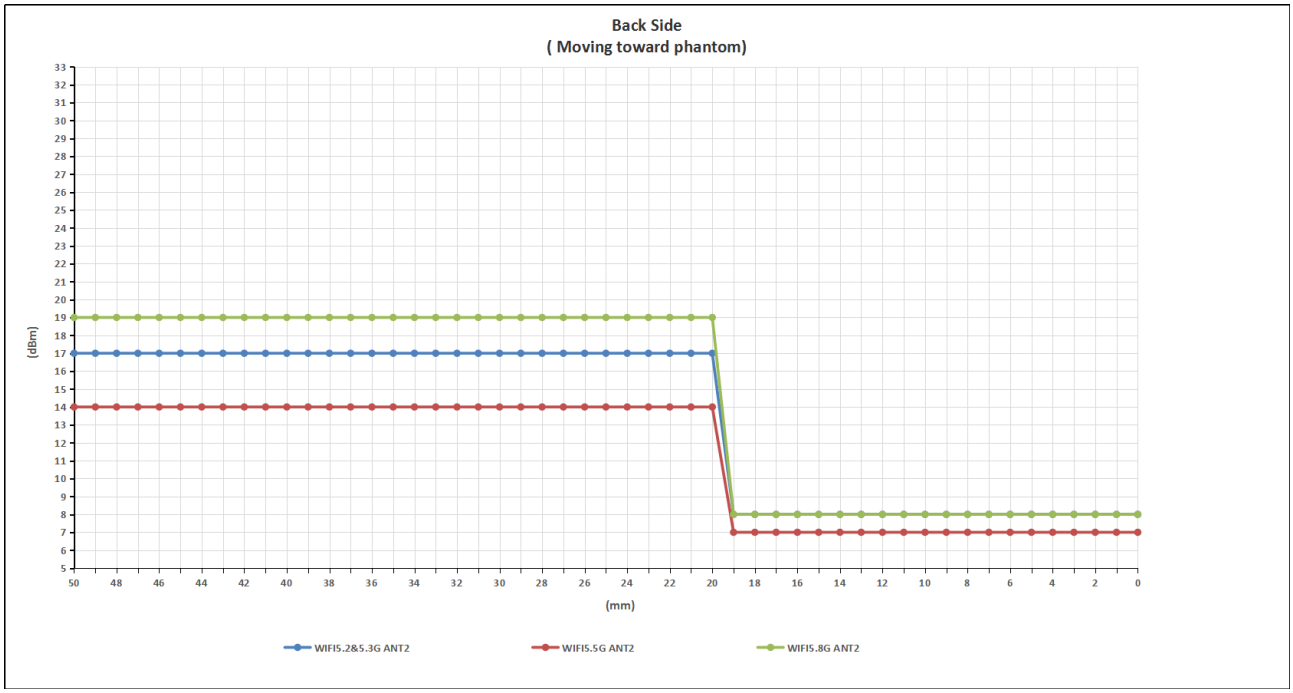

Top Side
(Moving toward phantom)
(dBm)
(mm)
GSM850 ANT0
GSM1900 ANT0
WCDMA Band II ANT0
WCDMA Band IV ANT0
WCDMA Band V ANT0
LTE Band 7 ANT0
LTE Band 12(17) ANT0
LTE Band 13 ANT0
LTE Band 14 ANT0
LTE Band 25(2) ANT0
LTE Band 26(5) ANT0
LTE Band 30 ANT0
LTE Band 41(38) ANT0
LTE Band 66(4) ANT0
LTE Band 71 ANT0

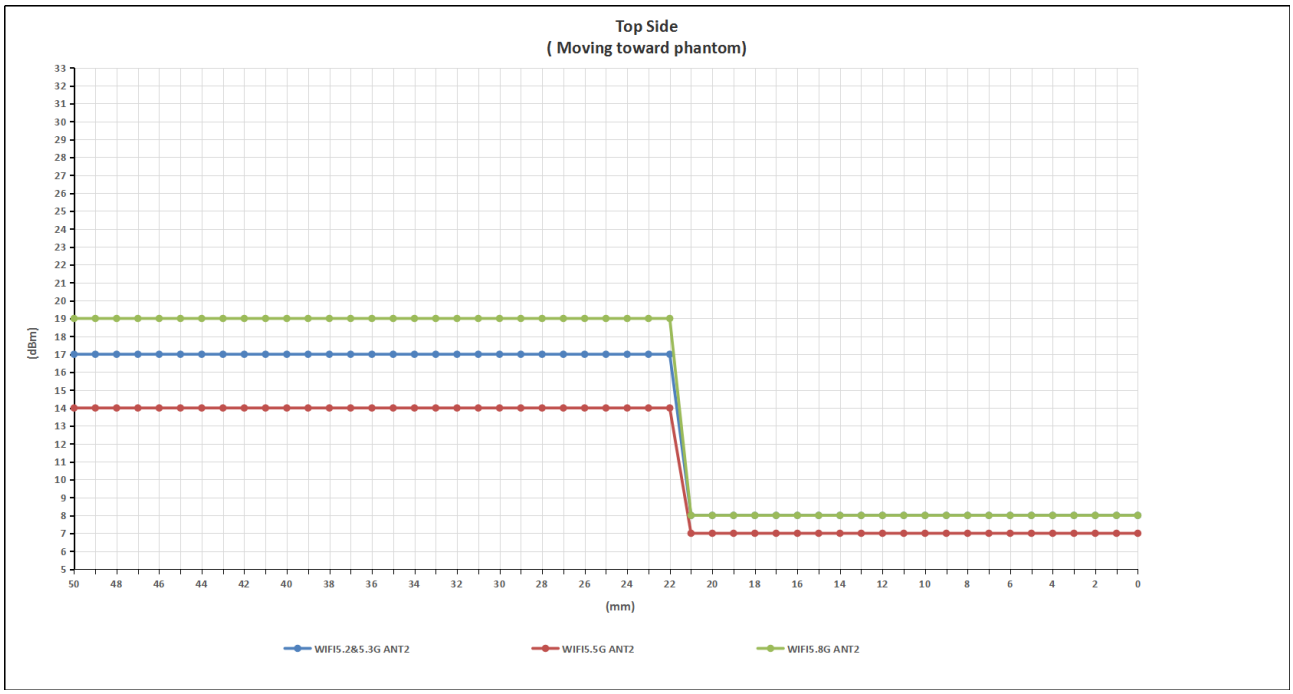
- Ant 2 DUT Moving Toward (Trigger)the Phantom




Top Side
(Moving away phantom)
(dBm)
(mm)
WIFI5.2&5.3G ANT2
WIFI5.5G ANT2
WIFI5.8G ANT2

- Ant 2 DUT Moving Away (Release) from the Phantom




Top Side
(Moving toward phantom)
(dBm)
(mm)
WIFI5.2&5.3G ANT2
WIFI5.5G ANT2
WIFI5.8G ANT2

6 SAR System Verification Procedure

6.1 Tissue Simulate Liquid

6.1.1 Recipes for Tissue Simulate Liquid

The bellowing tables give the recipes for tissue simulating liquids to be used in different frequency bands：

Ingredients (% by weight)	Frequency (MHz)				
	450	700-900	1750-2000	2300-2500	2500-2700
Water	38.56	40.30	55.24	55.00	54.92
Salt (NaCl)	3.95	1.38	0.31	0.2	0.23
Sucrose	56.32	57.90	0	0	0
HEC	0.98	0.24	0	0	0
Bactericide	0.19	0.18	0	0	0
Tween	0	0	44.45	44.80	44.85
Salt: 99+% Pure Sodium Chloride Sucrose: 98+% Pure Sucrose Water: De-ionized, 16 MΩ+ resistivity HEC: Hydroxyethyl Cellulose Tween: Polyoxyethylene (20) sorbitan monolaurate					
HSL13MHz is composed of the following ingredients： Water：50-90% Non-ionic detergents：5-50% Nacl：0-2% Preservative：0.03-0.1% HSL5GHz is composed of the following ingredients： Water：50-65% Mineral oil：10-30% Emulsifiers：8-25% Sodium salt：0-1.5%					

Table 3： Recipe of Tissue Simulate Liquid

6.1.2 Measurement for Tissue Simulate Liquid

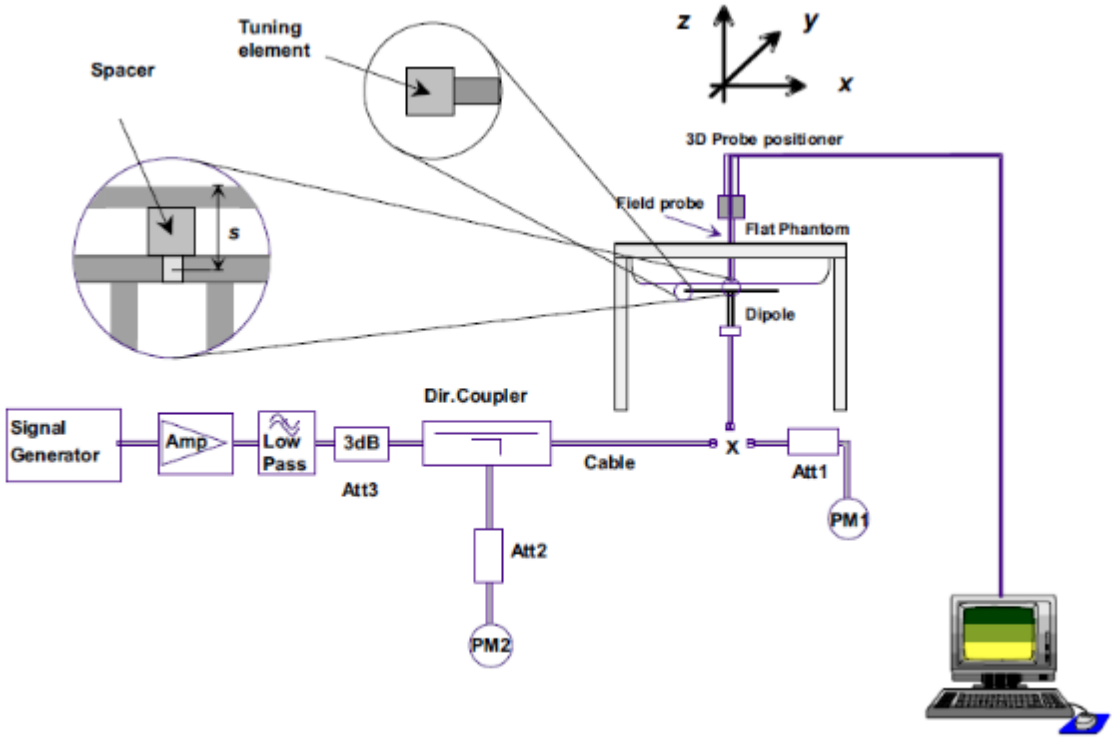
The Conductivity (σ) and Permittivity (ρ) are listed in bellow table. For the SAR measurement given in this report. The temperature variation of the Tissue Simulate Liquids was 22±2°C.

Measurement for Tissue Simulate Liquid							
Tissue Type	Measured Frequency（MHz）	Target Tissue (±5%)		Measured Tissue		Liquid Temp. (℃)	Test Date
		ε_r	σ(S/m)	ε_r	σ(S/m)		
13 Head	13	55.0	0.75	55.925	0.747	22.3	2025/3/11
750 Head	750	41.90	0.89	41.649	0.895	22.8	2025/1/20
835 Head	835	41.50	0.90	42.113	0.905	22.8	2025/1/22
1750 Head	1750	40.10	1.37	40.757	1.332	22.7	2025/1/25
1950 Head	1950	40.00	1.40	40.507	1.417	22.9	2025/2/5
2300 Head	2300	39.50	1.67	38.703	1.647	23.0	2025/2/7
2450 Head	2450	39.20	1.80	38.232	1.806	23.0	2025/3/5
2600 Head	2600	39.00	1.96	37.735	1.969	23.0	2025/2/10
5250 Head	5250	35.90	4.71	36.578	4.721	23.2	2025/3/2
5600 Head	5600	35.50	5.07	35.626	5.107	23.2	2025/3/3
5750 Head	5750	35.40	5.22	35.262	5.279	23.2	2025/3/4
6500 Head	6500	34.5	6.07	34.200	6.170	22.9	2025/5/3

Table 4： Measurement result of Tissue electric parameters.

6.2 SAR System Check

The microwave circuit arrangement for system Check is sketched in F-12. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. The tests were conducted on the same days as the measurement of the EUT. The obtained results from the system accuracy verification are displayed in the following table (A power level of 250mW (below 3GHz) or 100mW (3-6GHz) was input to the dipole antenna). During the tests, the ambient temperature of the laboratory was in the range 22±2°C, the relative humidity was in the range 60% and the liquid depth above the ear reference points was above 15±0.5 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.



F-4. the microwave circuit arrangement used for SAR system check

6.2.1 Justification for Extended SAR Dipole Calibrations

1) Referring to KDB865664 D01 requirements for dipole calibration, instead of the typical annual calibration recommended by measurement standards, longer calibration intervals of up to three years may be considered when it is demonstrated that the SAR target, impedance and return loss of a dipole have remain stable according to the following requirements. Each measured dipole is expected to evaluate with the following criteria at least on annual interval in Appendix C.
a) There is no physical damage on the dipole;
b) System check with specific dipole is within 10% of calibrated value;
c) Return-loss is within 10% of calibrated measurement;
d) Impedance is within 5Ω from the previous measurement.

2) Network analyzer probe calibration against air, distilled water and a shorting block performed before measuring liquid parameters.

6.2.2 Summary System Check Result(s)

SAR System Validation Result(s)											
Validation Kit		Measured SAR 250mW	Measured SAR 250mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W) (±10%)	Target SAR (normalized to 1W) (±10%)	Deviation (Within ±10%)		Liquid Temp. (℃)	Test Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)	1-g(W/kg)	10-g(W/kg)		
CLA-13	Head	0.108	0.068	0.43	0.27	0.421	0.266	2.61%	2.26%	22.3	2025/3/11
D750V3	Head	1.95	1.29	7.80	5.16	8.4	5.52	-7.14%	-6.52%	22.8	2025/1/20
D835V2	Head	2.32	1.53	9.28	6.12	9.6	6.16	-3.33%	-0.65%	22.8	2025/1/22
D1750V2	Head	9.49	5.04	37.96	20.16	37	19.3	2.59%	4.46%	22.7	2025/1/25
D1950V3	Head	9.44	4.89	37.76	19.56	40.4	20.8	-6.53%	-5.96%	22.9	2025/2/5
D2300V2	Head	12.70	6.03	50.80	24.12	48.70	23.30	4.31%	3.52%	23.0	2025/2/7
D2450V2	Head	13.00	6.07	52.00	24.28	52.7	24.6	-1.33%	-1.30%	23.0	2025/3/5
D2600V2	Head	14.10	6.28	56.40	25.12	57.3	25.4	-1.57%	-1.10%	23.0	2025/2/10
Validation Kit		Measured SAR 100mW	Measured SAR 100mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W) (±10%)	Target SAR (normalized to 1W) (±10%)	Deviation (Within ±10%)		Liquid Temp. (℃)	Test Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)	1-g(W/kg)	10-g(W/kg)		
D5GHzV2	Head(5.25GHz)	7.67	2.16	76.70	21.60	77.2	21.9	-0.65%	-1.37%	23.2	2025/3/2
	Head(5.6GHz)	8.07	2.23	80.70	22.30	81.1	22.8	-0.49%	-2.19%	23.2	2025/3/3
	Head(5.75GHz)	8.03	2.23	80.30	22.30	77.8	21.7	3.21%	2.76%	23.2	2025/3/4
D6500V2	Head(6.5GHz)	28.10	5.33	281.00	53.30	291	53.9	-3.44%	-1.11%	22.9	2025/5/3

Table 5： SAR System Check Result.

6.2.3 Detailed System Check Results

Please see the Appendix A

7 Test Configuration

7.1 3G SAR Test Reduction Procedure

According to KDB 941225D01, in the following procedures, the mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as “otherwise” in the applicable procedures; SAR measurement is required for the secondary mode.

7.2 Operation Configurations

7.2.1 GSM Test Configuration

SAR tests for GSM 850 and GSM 1900, a communication link is set up with a base station by air link. Using CMW500 the power lever is set to “5”and “0” in SAR of GSM 850 and GSM 1900. The tests in the band of GSM 850 and GSM 1900 are performed in the mode of GPRS/EGPRS function. Since the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslot is 5. The EGPRS class is 12 for this EUT, it has at most 4 timeslots in uplink, and at most 4 timeslots in downlink, the maximum total timeslot is 5.

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode

7.2.2 WCDMA Test Configuration

1）. Output Power Verification

Maximum output power is verified on the high, middle and low channels according to procedures described in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all "1's" for WCDMA/HSDPA or by applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HSDPA, HSPA) are required in the SAR report. All configurations that are not supported by the handset or cannot be measured due to technical or equipment limitations must be clearly identified.

2）. Body SAR

SAR for body configurations is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreaing code or DPDCHn, for the highest reported body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When more than 2 DPDCHn are supported by the handset, it may be necessary to configure additional DPDCHn using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC.

3）. HSDPA / HSUPA / DC-HSDPA

According to KDB 941225 D01v03, RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA

a) HSDPA

HSDPA is configured according to the applicable UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms and a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors(βc, βd), and HS-DPCCH power offset parameters (ΔACK, ΔNACK, ΔCQI) are set according to values indicated in the following table The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Sub-test	βc	Bd	βd(SF)	βc/βd	βhs	CM(dB)	MPR (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0	0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note1: △ACK, △NACK and △CQI= 8 Ahs = βhs/βc=30/15 βhs=30/15*βc
Note2:For the HS-DPCCH power mask requirement test in clause 5.2C,5.7A,and the Error Vector Magnitude(EVM) with HS-DPCCH test in clause 5.13.1.A,and HSDPA EVM with phase discontinuity in clause 5.13.1AA, △ACK and △NACK= 8 (Ahs=30/15) with βhs=30/15*βc,and △CQI=
7 (Ahs=24/15) with βhs=24/15*βc.
Note3: CM=1 forβc/βd =12/15, βhs/βc=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

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

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

Table 6： settings of required H-Set 1 QPSK acc. to 3GPP 34.121

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

Table 7： HSDPA UE category

b) HSUPA

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

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

Note 1: Δ ACK, Δ NACK and Δ CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

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

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

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

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

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

Table 8： Subtests for UMTS Release 6 HSUPA

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

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

Table 9： HSUPA UE category

c) DC-HSDPA

SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a Second serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.
The following tests were completed according to procedures in section 7.3.13 of 3GPP TS 34.108 v9.5.0.
A summary of these settings are illustrated below:
Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Table E.5.0: Levels for HSDPA connection setup

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

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

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

Table 10： settings of required H-Set 12 QPSK acc. to 3GPP 34.121

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

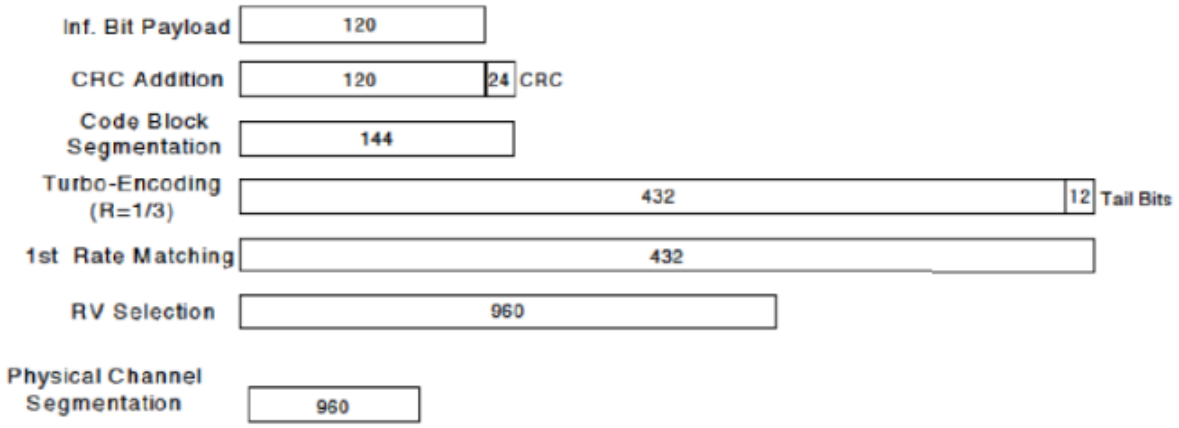


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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

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

Note 1: Δ ACK, Δ NACK and Δ CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

Note 2: CM=1 for β_c/β_d= 12/15, β_{hs}/β_c = 24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15

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

Note:

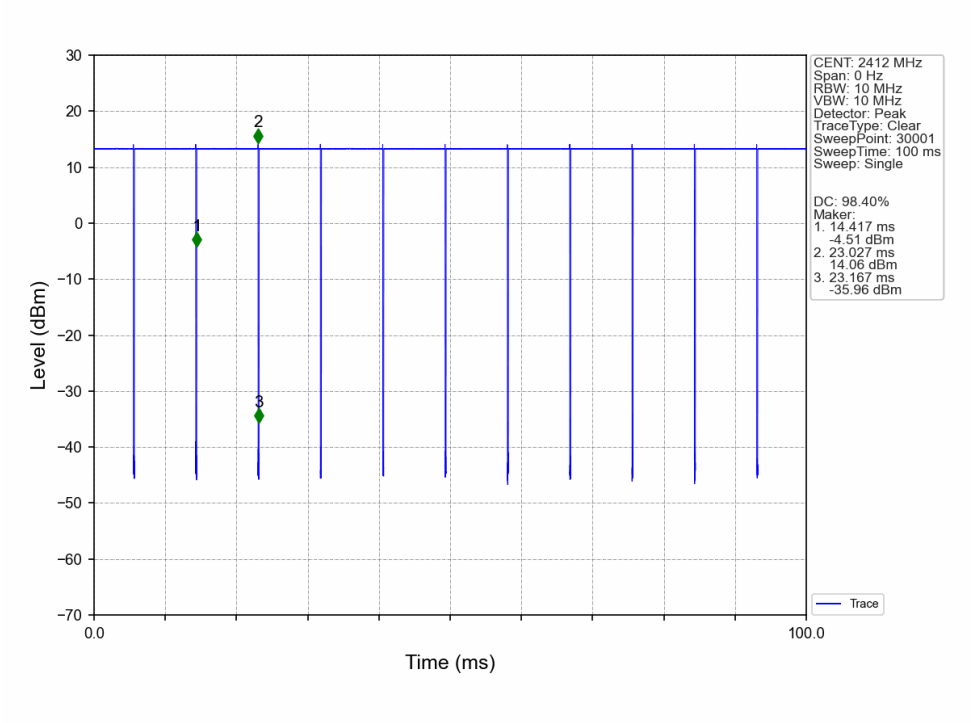
1. The Dual Carriers transmission only applies to HSDPA physical channels
2. The Dual Carriers belong to the same Node and are on adjacent carriers.
3. The Dual Carriers do not support MIMO to serve UEs configured for dual cell operation
4. The Dual Carriers operate in the same frequency band.
5. The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

7.2.3 WiFi Test Configuration

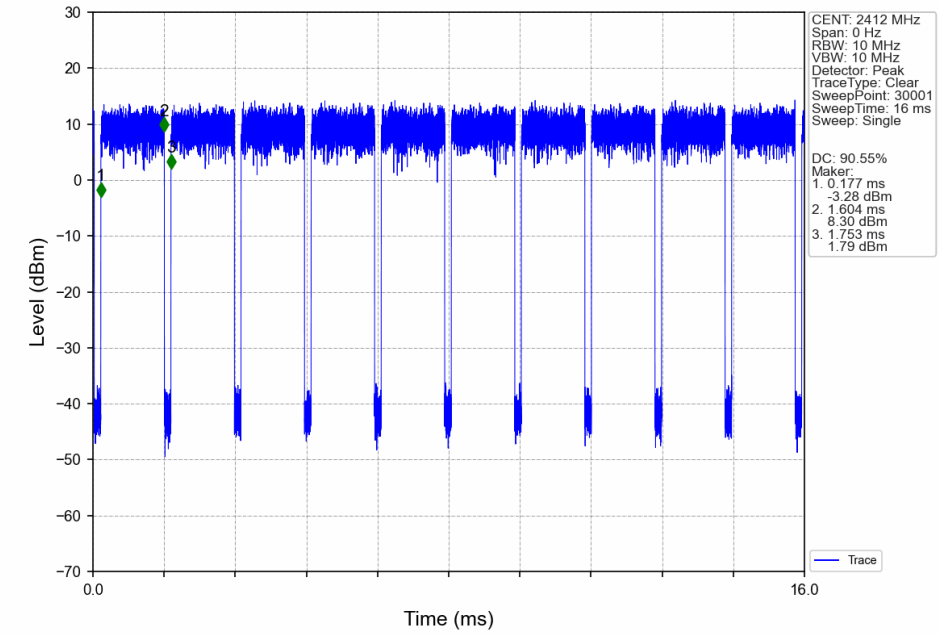
A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement.

7.2.4 Duty cycle

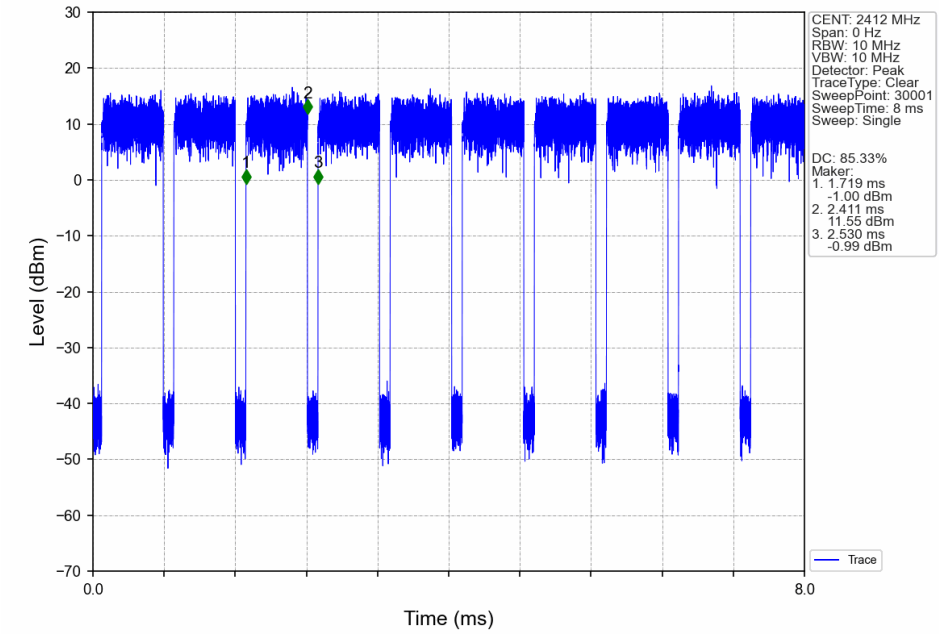
Wi-Fi 2.4GHz 802.11b (Ant2):
Duty cycle= 98.40%



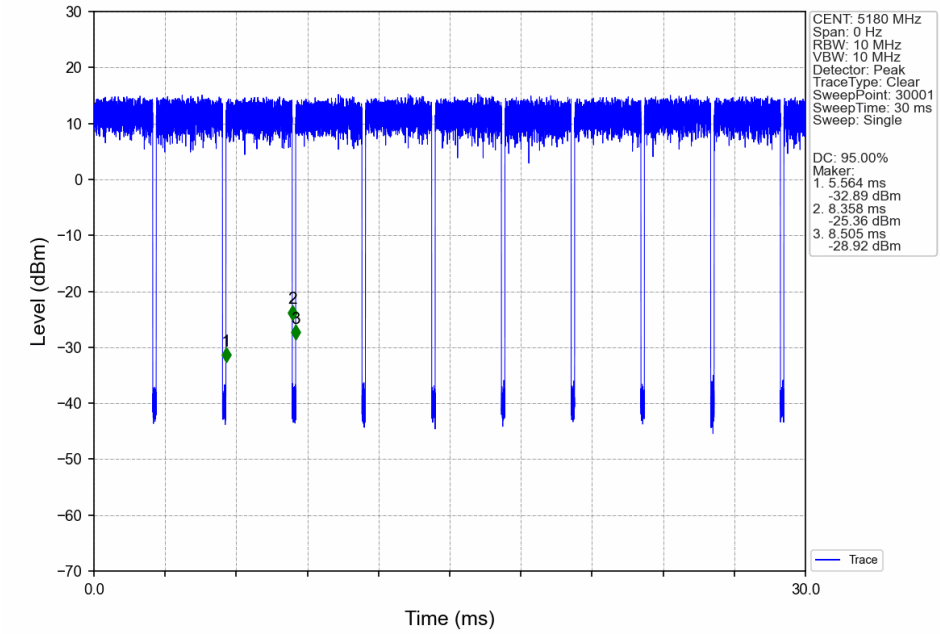
Wi-Fi 2.4GHz 802.11g (Ant3):
Duty cycle= 90.55%



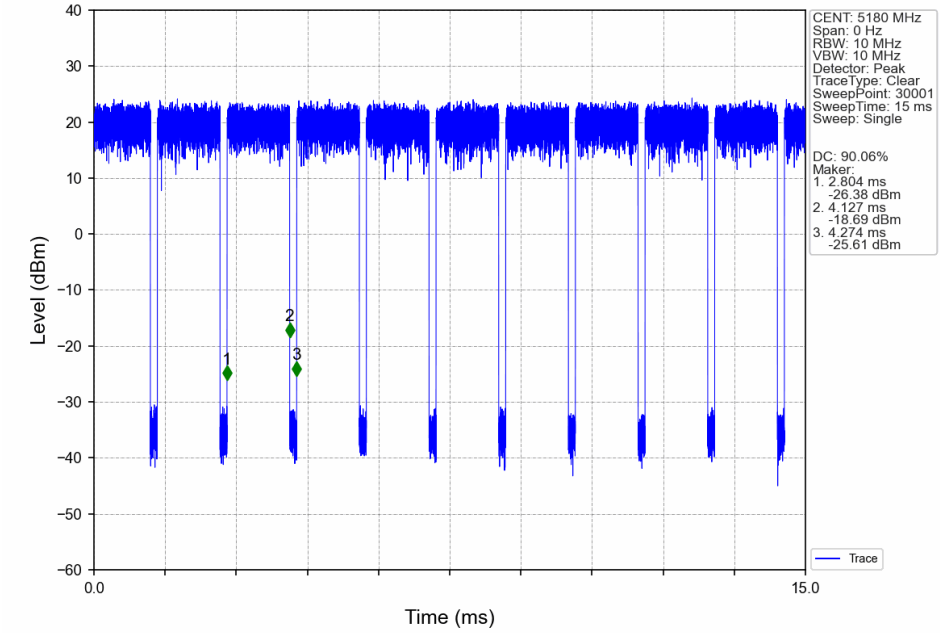
Wi-Fi 2.4GHz 802.11n (MIMO):
Duty cycle= 85.33%



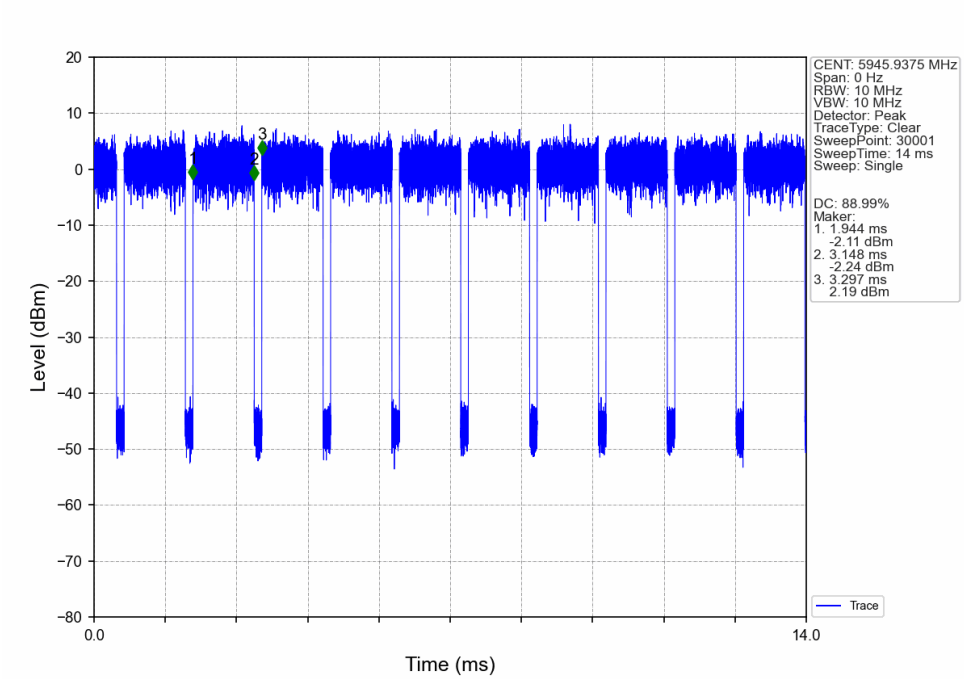
Wi-Fi 5GHz 802.11a (Ant2/3):
Duty cycle=95.00%



Wi-Fi 5GHz 802.11n 20 (MIMO):
Duty cycle=90.06%



Wi-Fi 6GHz 802.11ax 80 (Ant3):
Duty cycle=88.99%



7.2.4.1 Initial Test Position SAR Test Reduction Procedure

DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures. The initial test position procedure is described in the following:

1）. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other (remaining) test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band. SAR is also not required for that exposure configuration in the subsequent test configuration(s).
2）. When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest extrapolated or estimated 1-g SAR conditions determined by area scans or next closest/smallest test separation distance and maximum RF coupling test positions based on manufacturer justification, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions (left, right, touch, tilt or subsequent surfaces and edges) are tested.
3）. For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested. a) Additional power measurements may be required for this step, which should be limited to those necessary for identifying the subsequent highest output power channels.

7.2.4.2 Initial Test Configuration Procedures

An initial test configuration is determined for OFDM transmission modes according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. SAR is measured using the highest measured maximum output power channel. For configurations with the same specified or measured maximum output power, additional transmission mode and test channel selection procedures are required. SAR test reduction for subsequent highest output test channels is determined according to *reported* SAR of the initial test configuration.
For next to the ear, hotspot mode and UMC mini-tablet exposure configurations where multiple test positions are required, the initial test position procedure is applied to minimize the number of test positions required for SAR measurement using the initial test configuration transmission mode. For fixed exposure conditions that do not have multiple SAR test positions, SAR is measured in the transmission mode determined by the initial test configuration.
When the *reported* SAR of the initial test configuration is > 0.8 W/kg, SAR measurement is required for subsequent next highest measured output power channel(s) in the initial test configuration until *reported* SAR is ≤ 1.2 W/kg or all required channels are tested.

7.2.4.3 Subsequent Test Configuration Procedures

SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units. The initial test position procedure is applied to next to the ear, UMPC mini-tablet and hotspot mode configurations. When the same maximum output power is specified for multiple transmission modes, additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. The subsequent test configuration and SAR measurement procedures are described in the following.

1）. When SAR test exclusion provisions of KDB Publication 447498 are applicable and SAR measurement is not required for the initial test configuration, SAR is also not required for the next highest maximum output power transmission mode subsequent test configuration(s) in that frequency band or aggregated band and exposure configuration.

2）. When the highest *reported* SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

3）. The number of channels in the initial test configuration and subsequent test configuration can be different due to differences in channel bandwidth. When SAR measurement is required for a subsequent test configuration and the channel bandwidth is smaller than that in the initial test configuration, all channels in the subsequent test configuration that overlap with the larger bandwidth channel tested in the initial test configuration should be used to determine the highest maximum output power channel. This step requires additional power measurement to identify the highest maximum output power channel in the subsequent test configuration to determine SAR test reduction.

   a) SAR should first be measured for the channel with highest measured output power in the subsequent test configuration.
   b) SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the *reported* SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is > 1.2 W/kg or until all required channels are tested. i) For channels with the same measured maximum output power, SAR should be measured using the channel closest to the center frequency of the larger channel bandwidth channel in the initial test configuration.

4）. SAR measurements for the remaining highest specified maximum output power OFDM transmission mode configurations that have not been tested in the initial test configuration (highest maximum output) or subsequent test configuration(s) (subsequent next highest maximum output power) is determined by recursively applying the subsequent test configuration procedures in this section to the remaining configurations according to the following:

   a) replace “subsequent test configuration” with “next subsequent test configuration” (i.e., subsequent next highest specified maximum output power configuration)
   b) replace “initial test configuration” with “all tested higher output power configurations”

7.2.4.4 2.4 GHz WiFi SAR Procedures

Separate SAR procedures are applied to DSSS and OFDM configurations in the 2.4 GHz band to simplify DSSS test requirements. For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure test position and initial test position procedure applies to multiple exposure test positions. When SAR measurement is required for an OFDM configuration, the initial test configuration, subsequent test configuration and initial test position procedures are applied. The SAR test exclusion requirements for 802.11g/n OFDM configurations are described in following.

- **802.11b DSSS SAR Test Requirements**

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

1）. When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.

2）. When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

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

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied (section 5.3, including sub-sections). SAR is not required for the following 2.4 GHz OFDM conditions.

1）. When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.

2）. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

- **SAR Test Requirements for OFDM configurations**

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

7.2.4.5 WiFi 5G SAR Test Procedures

7.2.4.5.1 U-NII-1 and U-NII-2A Bands

For devices that operate in only one of the U-NII-1 and U-NII-2A bands, the normally required SAR procedures for OFDM configurations are applied. For devices that operate in both U-NII bands using the same transmitter and antenna(s), SAR test reduction is determined according to the following：

1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest *reported* SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, both bands are tested independently for SAR.
2) When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest *reported* SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, both bands are tested independently for SAR.
3) The two U-NII bands may be aggregated to support a 160 MHz channel on channel number 50. Without additional testing, the maximum output power for this is limited to the lower of the maximum output power certified for the two bands. When SAR measurement is required for at least one of the bands and the highest *reported* SAR adjusted by the ratio of specified maximum output power of aggregated to standalone band is > 1.2 W/kg, SAR is required for the 160 MHz channel. This procedure does not apply to an aggregated band with maximum output higher than the standalone band(s); the aggregated band must be tested independently for SAR. SAR is not required when the 160 MHz channel is operating at a reduced maximum power and also qualifies for SAR test exclusion.

7.2.4.5.2 U-NII-2C and U-NII-3 Bands

The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. when Terminal Doppler Weather Radar (TDWR) restriction applies, all channels that operate at 5.60 – 5.65 GHz must be included to apply the SAR test reduction and measurement procedures.

When the same transmitter and antenna(s) are used for U-NII-2C band and U-NII-3 band or 5.8 GHz band of §15.247, the bands may be aggregated to enable additional channels with 20, 40 or 80 MHz bandwidth to span across the band gap, as illustrated in Appendix B. The maximum output power for the additional band gap channels is limited to the lower of those certified for the bands. Unless band gap channels are permanently disabled, they must be considered for SAR testing. The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. To maintain SAR measurement accuracy and to facilitate test reduction, the channels in U-NII-2C band above 5.65 GHz may be grouped with the 5.8 GHz channels in U-NII-3 or §15.247 band to enable two SAR probe calibration frequency points to cover the bands, including the band gap channels. When band gap channels are supported and the bands are not aggregated for SAR testing, band gap channels must be considered independently in each band according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

7.2.4.5.3 OFDM Transmission Mode SAR Test Configuration and Channel Selection Requirements

The initial test configuration for 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple configurations in a frequency band have the same specified maximum output power, the initial test configuration is determined according to the following steps applied sequentially.

1) The largest channel bandwidth configuration is selected among the multiple configurations with the same specified maximum output power.
2) If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.
3) If multiple configurations have the same specified maximum output power, largest channel bandwidth and lowest order modulation, the lowest data rate configuration among these configurations is selected.

4) When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n. After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following. These channel selection procedures apply to both the initial test configuration and subsequent test configuration(s), with respect to the default power measurement procedures or additional power measurements required for further SAR test reduction. The same procedures also apply to subsequent highest output power channel(s) selection.
   - The channel closest to mid-band frequency is selected for SAR measurement.
   - For channels with equal separation from mid-band frequency; for example, high and low channels or two mid-band channels, the higher frequency (number) channel is selected for SAR measurement.

7.2.4.5.4 SAR Test Requirements for OFDM configurations

When SAR measurement is required for 802.11 a/n/ac OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. When the same transmitter and antenna(s) are used for U-NII-1 and U-NII-2A bands, additional SAR test reduction applies. When band gap channels between U-NII-2C band and 5.8 GHz U-NII-3 or §15.247 band are supported, the highest maximum output power transmission mode configuration and maximum output power channel across the bands must be used to determine SAR test reduction, according to the initial test configuration and subsequent test configuration requirements. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

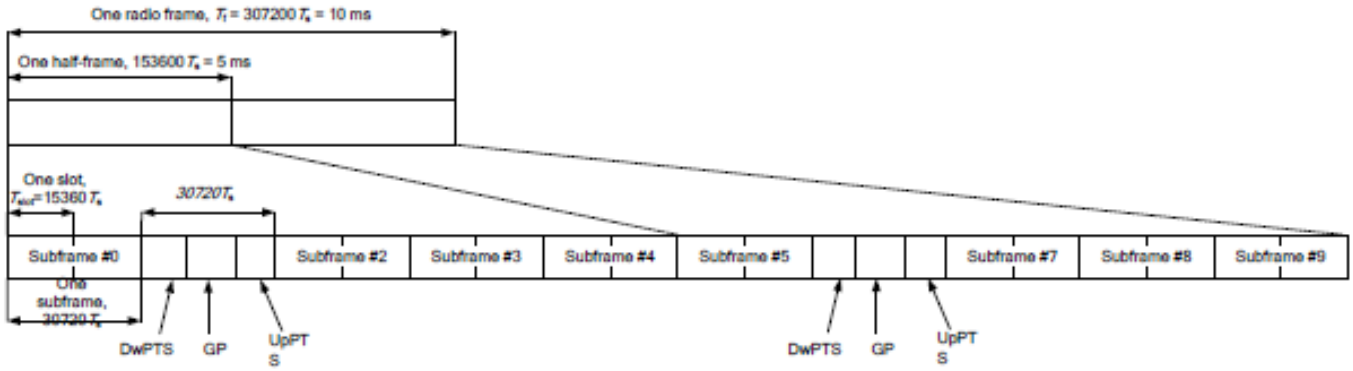
7.2.5 LTE Test Configuration

LTE modes were tested according to FCC KDB 941225 D05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The Anritsu MT8820C was used for LTE output power measurements and SAR testing. Max power control was used so the UE transmits with maximum output power during SAR testing. SAR must be measured with the maximum TTI (transmit time interval) supported by the device in each LTE configuration.

TDD LTE test consideration

For Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.
SAR was tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7.
LTE TDD Band support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Frame structure type 2:



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.Ts	2192.Ts	2560.Ts	7680.Ts	2192.Ts	2560.Ts
1	19760.Ts			20480.Ts		
2	21952.Ts			23040.Ts		
3	24144.Ts			25600.Ts		
4	26336.Ts			7680.Ts	4384.Ts	5120.Ts
5	6592.Ts	4384.Ts	5120.Ts	20480.Ts		
6	19760.Ts			23040.Ts		
7	21952.Ts			25600.Ts		
8	24144.Ts			-	-	-
9	13168.Ts			-	-	-

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

Calculated Duty Cycle=[Extended cyclic prefix in uplink x (Ts) x # of S + # of U]/10ms

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle (%)
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	63.33
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.33
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.33
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.67
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.67
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.67
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33

A) Spectrum Plots for RB Configurations

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

B) MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

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

C) A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

D) Largest channel bandwidth standalone SAR test requirements

1) QPSK with 1 RB allocation

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

2) QPSK with 50% RB allocation

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

3) QPSK with 100% RB allocation
For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in 1) and 2) are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4) Higher order modulations
For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

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

8 Test Result

8.1 Measurement of RF Conducted Power

The detailed conducted power table can refer to Appendix E.

Note:

1）. For GSM SAR the time-based average power is relevant. The difference in between depends on the duty cycle of the TDMA signal:

No. of timeslots	1	2	3	4
Duty Cycle	1:8.3	1:4.15	1:2.77	1:2.075
Time based avg. power compared to slotted avg. power	-9.19	-6.18	-4.42	-3.17

2）. The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:
Frame-averaged power = 10 x log (Burst-averaged power mW x Slot used / 8

3）. When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used

4）. Conducted power measurement results of downlink LTE carrier aggregation are provided to quantify downlink only carrier aggregation SAR test exclusion per KDB 941225 D05A.Uplink maximum output power is measured with downlink carrier aggregation active, using the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive, therefore SAR evaluation with downlink carrier aggregation can be excluded.

5）. For conducted power of WIFI must be measured at each transmit antenna port according to the DSSS and OFDM transmission configurations in each standalone and aggregated frequency band. For each transmission mode configuration, power must be measured for the highest and lowest channels; and at the mid-band channel(s) when there are at least 3 channels. For configurations with multiple mid-band channels, due to an even number of channels, both channels should be measured. Power measurement is required for the transmission mode configuration with the highest maximum output power specified for production units.

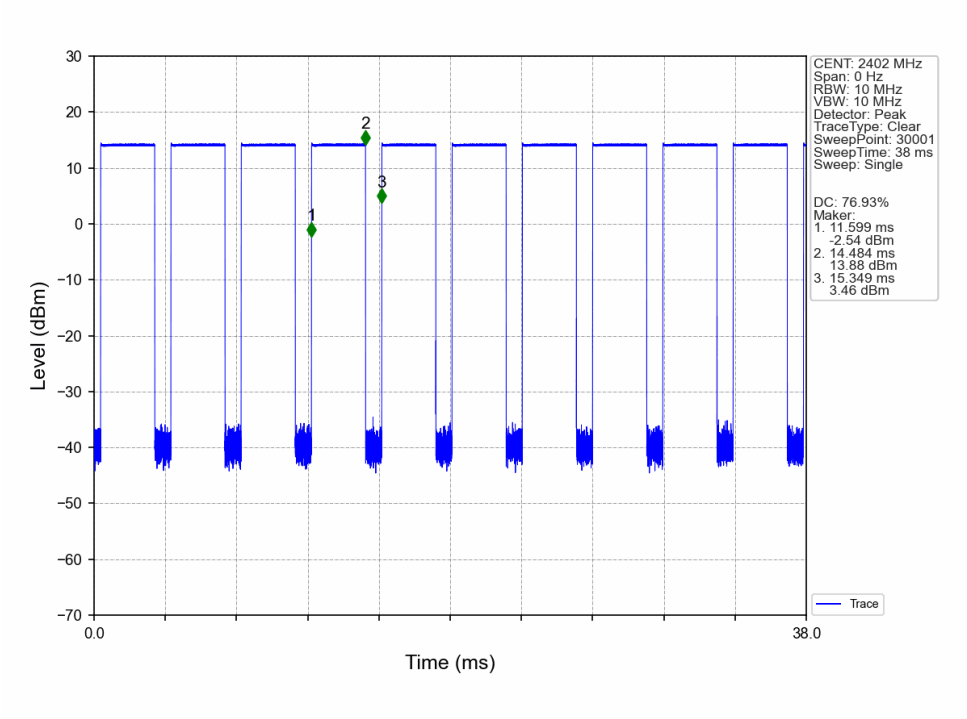
1) When the same highest maximum output power specification applies to multiple transmission modes, the largest channel bandwidth configuration with the lowest order modulation and lowest data rate is measured.

2) When the same highest maximum output power is specified for multiple largest channel bandwidth configurations with the same lowest order modulation or lowest order modulation and lowest data rate, power measurement is required for all equivalent 802.11 configurations with the same maximum output power.

6）.

7）. The conducted power of BT is measured with RMS detector.

BT DH5 Duty Cycle=76.93%



8.2 Measurement of SAR Data

Note:

1) Graph results refer to Appendix B.

2) Per KDB447498 D04, 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:

- ≤ 0.8W/kg for 1-g or 2.0W/kg for 10-g respectively, when the transmission band is ≤ 100MHz.
- ≤ 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) Maximum bandwidth does not support at least three non-overlapping channels in certain channel bandwidths. 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.

WiFi 2.4G:

1) When the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ⩽ 1.2 W/kg, SAR test for the other 802.11 modes are not required.

WiFi 5G:

1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. As the highest reported SAR for a test configuration is ⩽ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration.
2) For Wi-Fi 5G, U-NII-2A (5250-5350 MHz) and U-NII-2C (5470-5725 MHz) bands does not support hotspot function.
3) When the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ⩽ 1.2 W/kg, SAR test for the other 802.11 modes are not required.

NFC:

1) NFC SAR is measured for all edges and surfaces of the device.
2) NFC 13.56MHz antenna por is not available on the device to support conducted power measurement, therefore the measured results are referred to as reported SAR.
3) NFC SAR test tissue-simulating liquid parameter refer to IEC/IEEE 62209-1528 2020.

8.2.1 SAR Result of GSM850

GSM850 SAR Test Record										
Ant 0 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body Test data Sensor on (Separate 0mm)										
Back side	GPRS 2TS	190/836.6	1:4.15	0.683	0.08	27.57	29.00	1.390	0.949	22.8
Back side	GPRS 2TS	128/824.2	1:4.15	0.652	0.03	27.53	29.00	1.403	0.915	22.8
Back side	GPRS 2TS	251/848.8	1:4.15	0.647	0.04	27.48	29.00	1.419	0.918	22.8
Top side	GPRS 2TS	190/836.6	1:4.15	0.422	0.03	27.57	29.00	1.390	0.587	22.8
Body Test data Sensor on For Simultaneous(Separate 0mm)										
Back side	GPRS 2TS	190/836.6	1:4.15	0.683	0.08	27.57	28.00	1.104	0.754	22.8
Back side	GPRS 2TS	128/824.2	1:4.15	0.652	0.03	27.53	28.00	1.114	0.727	22.8
Back side	GPRS 2TS	251/848.8	1:4.15	0.647	0.04	27.48	28.00	1.127	0.729	22.8
Top side	GPRS 2TS	190/836.6	1:4.15	0.422	0.03	27.57	28.00	1.104	0.466	22.8
Body Test data Sensor off										
Back side-21mm	GPRS 2TS	190/836.6	1:4.15	0.151	0.18	29.55	31.00	1.396	0.211	22.8
Left side-0mm	GPRS 2TS	190/836.6	1:4.15	0.148	0.12	29.55	31.00	1.396	0.207	22.8
Right side-0mm	GPRS 2TS	190/836.6	1:4.15	0.047	-0.08	29.55	31.00	1.396	0.066	22.8
Top side-23mm	GPRS 2TS	190/836.6	1:4.15	0.095	-0.08	29.55	31.00	1.396	0.133	22.8
Bottom side-0mm	GPRS 2TS	190/836.6	1:4.15	0.001	-0.03	29.55	31.00	1.396	0.001	22.8

Table 11： SAR of GSM850 for Body.

8.2.2 SAR Result of GSM1900

GSM1900 SAR Test Record										
Ant 0 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body Test data Sensor on (Separate 0mm)										
Back side	GPRS 4TS	661/1880	1:2.075	0.666	0.12	18.01	19.00	1.256	0.837	22.9
Back side	GPRS 4TS	512/1850.2	1:2.075	0.639	0.04	17.81	19.00	1.315	0.840	22.9
Back side	GPRS 4TS	810/1909.8	1:2.075	0.652	-0.06	17.90	19.00	1.288	0.840	22.9
Top side	GPRS 4TS	661/1880	1:2.075	0.809	0.08	18.01	19.00	1.256	1.016	22.9
Top side-Repeat SAR	GPRS 4TS	661/1880	1:2.075	0.804	0.01	18.01	19.00	1.256	1.010	22.9
Top side	GPRS 4TS	512/1850.2	1:2.075	0.766	0.13	17.81	19.00	1.315	1.007	22.9
Top side	GPRS 4TS	810/1909.8	1:2.075	0.785	-0.15	17.90	19.00	1.288	1.011	22.9
Body Test data Sensor on For Simultaneous(Separate 0mm)										
Back side	GPRS 4TS	661/1880	1:2.075	0.666	0.12	18.01	18.00	0.998	0.664	22.9
Back side	GPRS 4TS	512/1850.2	1:2.075	0.639	0.04	17.81	18.00	1.045	0.668	22.9
Back side	GPRS 4TS	810/1909.8	1:2.075	0.652	-0.06	17.90	18.00	1.023	0.667	22.9
Top side	GPRS 4TS	661/1880	1:2.075	0.809	0.08	18.01	18.00	0.998	0.807	22.9
Top side	GPRS 4TS	512/1850.2	1:2.075	0.766	0.13	17.81	18.00	1.045	0.800	22.9
Top side	GPRS 4TS	810/1909.8	1:2.075	0.785	-0.15	17.90	18.00	1.023	0.803	22.9
Body Test data Sensor off										
Back side-21mm	GPRS 2TS	661/1880	1:4.15	0.389	-0.03	27.15	28.00	1.216	0.473	22.9
Top side-23mm	GPRS 2TS	661/1880	1:4.15	0.571	0.14	27.15	28.00	1.216	0.694	22.9

Table 12： SAR of GSM1900 for Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Top side	661/1880	0.809	0.804	1.006218905	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

8.2.3 SAR Result of WCDMA Band II

WCDMA Band II SAR Test Record										
Ant 0 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body Test data Sensor on (Separate 0mm)										
Back side	RMC	9400/1880	1:1	0.613	-0.09	11.53	12.00	1.114	0.683	22.9
Top side	RMC	9400/1880	1:1	0.860	0.02	11.53	12.00	1.114	0.958	22.9
Top side-Repeat SAR	RMC	9400/1880	1:1	0.854	0.03	11.53	12.00	1.114	0.952	22.9
Top side	RMC	9262/1852.4	1:1	0.844	0.02	11.46	12.00	1.132	0.956	22.9
Top side	RMC	9538/1907.6	1:1	0.841	0.07	11.42	12.00	1.143	0.961	22.9
Body Test data Sensor on For Simultaneous(Separate 0mm)										
Back side	RMC	9400/1880	1:1	0.613	-0.09	11.53	11.00	0.885	0.543	22.9
Top side	RMC	9400/1880	1:1	0.860	0.02	11.53	11.00	0.885	0.761	22.9
Top side	RMC	9262/1852.4	1:1	0.844	0.02	11.46	11.00	0.899	0.759	22.9
Top side	RMC	9538/1907.6	1:1	0.841	0.07	11.42	11.00	0.908	0.763	22.9
Body Test data Sensor off										
Back side-21mm	RMC	9400/1880	1:1	0.456	-0.18	23.07	24.00	1.239	0.565	22.9
Top side-23mm	RMC	9400/1880	1:1	0.617	0.11	23.07	24.00	1.239	0.764	22.9

Table 13： SAR of WCDMA Band II for Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Top side	9400/1880	0.86	0.854	1.007025761	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

8.2.4 SAR Result of WCDMA Band IV

WCDMA Band IV SAR Test Record										
Ant 0 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body Test data Sensor on (Separate 0mm)										
Back side	RMC	1412/1732.4	1:1	0.526	-0.15	15.33	16.00	1.167	0.614	22.7
Top side	RMC	1412/1732.4	1:1	0.747	0.02	15.33	16.00	1.167	0.872	22.7
Top side	RMC	1312/1712.4	1:1	0.726	0.07	15.23	16.00	1.194	0.867	22.7
Top side	RMC	1513/1752.6	1:1	0.722	0.02	15.24	16.00	1.191	0.860	22.7
Body Test data Sensor on For Simultaneous(Separate 0mm)										
Back side	RMC	1412/1732.4	1:1	0.526	-0.15	15.33	15.00	0.927	0.488	22.7
Top side	RMC	1412/1732.4	1:1	0.747	0.02	15.33	15.00	0.927	0.692	22.7
Top side	RMC	1312/1712.4	1:1	0.726	0.07	15.23	15.00	0.948	0.689	22.7
Top side	RMC	1513/1752.6	1:1	0.722	0.02	15.24	15.00	0.946	0.683	22.7
Body Test data Sensor off										
Back side-21mm	RMC	1412/1732.4	1:1	0.260	-0.07	23.19	24.00	1.205	0.313	22.7
Top side-23mm	RMC	1412/1732.4	1:1	0.299	0.03	23.19	24.00	1.205	0.360	22.7

Table 14： SAR of WCDMA Band IV for Body.

8.2.5 SAR Result of WCDMA Band V

WCDMA Band V SAR Test Record										
Ant 0 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body Test data Sensor on (Separate 0mm)										
Back side	RMC	4182/836.4	1:1	0.614	0.05	18.63	20.00	1.371	0.842	22.8
Back side	RMC	4132/826.4	1:1	0.589	0.08	18.51	20.00	1.409	0.830	22.8
Back side	RMC	4233/846.6	1:1	0.602	0.07	18.56	20.00	1.393	0.839	22.8
Top side	RMC	4182/836.4	1:1	0.357	-0.08	18.63	20.00	1.371	0.489	22.8
Body Test data Sensor off										
Back side-21mm	RMC	4182/836.4	1:1	0.273	0.16	22.69	24.00	1.352	0.369	22.8
Top side-23mm	RMC	4182/836.4	1:1	0.201	-0.06	22.69	24.00	1.352	0.272	22.8

Table 15： SAR of WCDMA Band V for Body.

8.2.6 SAR Result of LTE Band 7

LTE Band 7 SAR Test Record											
Ant 0 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body Test data Sensor on (Separate 0mm 1RB)											
Back side	20	QPSK 1_0	21100/2535	1:1	0.566	0.10	14.00	15.00	1.259	0.713	23
Top side	20	QPSK 1_0	21100/2535	1:1	0.716	0.02	14.00	15.00	1.259	0.901	23
Top side	20	QPSK 1_0	20850/2510	1:1	0.705	0.19	13.86	15.00	1.300	0.917	23
Top side	20	QPSK 1_0	21350/2560	1:1	0.746	0.01	13.91	15.00	1.285	0.959	23
Body Test data Sensor on (Separate 0mm 50%RB)											
Back side	20	QPSK 50_0	21100/2535	1:1	0.539	0.01	13.96	15.00	1.271	0.685	23
Top side	20	QPSK 50_0	21100/2535	1:1	0.672	0.10	13.96	15.00	1.271	0.854	23
Top side	20	QPSK 50_0	20850/2510	1:1	0.646	-0.13	13.95	15.00	1.274	0.823	23
Top side	20	QPSK 50_0	21350/2560	1:1	0.698	0.04	13.94	15.00	1.276	0.891	23
Body Test data Sensor on (Separate 0mm 100%RB)											
Top side	20	QPSK 100_0	21100/2535	1:1	0.651	0.05	13.91	15.00	1.285	0.837	23
Body Test data Sensor on For Simultaneous(Separate 0mm 1RB)											
Back side	20	QPSK 1_0	21100/2535	1:1	0.566	0.10	14.00	14.00	1.000	0.566	23
Top side	20	QPSK 1_0	21100/2535	1:1	0.716	0.02	14.00	14.00	1.000	0.716	23
Top side	20	QPSK 1_0	20850/2510	1:1	0.705	0.19	13.86	14.00	1.033	0.728	23
Top side	20	QPSK 1_0	21350/2560	1:1	0.746	0.01	13.91	14.00	1.021	0.762	23
Body Test data Sensor on For Simultaneous(Separate 0mm 50%RB)											
Back side	20	QPSK 50_0	21100/2535	1:1	0.539	0.01	13.96	14.00	1.009	0.544	23
Top side	20	QPSK 50_0	21100/2535	1:1	0.672	0.10	13.96	14.00	1.009	0.678	23
Top side	20	QPSK 50_0	20850/2510	1:1	0.646	-0.13	13.95	14.00	1.012	0.653	23
Top side	20	QPSK 50_0	21350/2560	1:1	0.698	0.04	13.94	14.00	1.014	0.708	23
Body Test data Sensor on For Simultaneous(Separate 0mm 100%RB)											
Top side	20	QPSK 100_0	21100/2535	1:1	0.651	0.05	13.91	14.00	1.021	0.665	23
Body Test data Sensor off 1RB											
Back side-21mm	20	QPSK 1_0	21100/2535	1:1	0.502	-0.02	22.83	24.00	1.309	0.657	23
Top side-23mm	20	QPSK 1_0	21100/2535	1:1	0.659	-0.09	22.83	24.00	1.309	0.863	23
Top side-23mm	20	QPSK 1_0	20850/2510	1:1	0.637	0.14	22.55	24.00	1.396	0.889	23
Top side-23mm	20	QPSK 1_0	21350/2560	1:1	0.681	0.15	22.63	24.00	1.371	0.934	23
Body Test data Sensor off 50%RB											
Back side-21mm	20	QPSK 50_0	21100/2535	1:1	0.453	0.15	21.76	23.00	1.330	0.603	23
Top side-23mm	20	QPSK 50_0	21100/2535	1:1	0.596	-0.19	21.76	23.00	1.330	0.793	23
Body Test data Sensor off 100%RB											
Top side-23mm	20	QPSK 100_0	21100/2535	1:1	0.527	0.13	21.78	23.00	1.324	0.698	23
Body Test data Sensor off 1RB For Simultaneous											
Back side-21mm	20	QPSK 1_0	21100/2535	1:1	0.502	-0.02	22.83	23.00	1.040	0.522	23
Top side-23mm	20	QPSK 1_0	21100/2535	1:1	0.659	-0.09	22.83	23.00	1.040	0.685	23
Top side-23mm	20	QPSK 1_0	20850/2510	1:1	0.637	0.14	22.55	23.00	1.109	0.707	23
Top side-23mm	20	QPSK 1_0	21350/2560	1:1	0.681	0.15	22.63	23.00	1.089	0.742	23
Body Test data Sensor off 50%RB For Simultaneous											
Back side-21mm	20	QPSK 50_0	21100/2535	1:1	0.453	0.15	21.76	23.00	1.330	0.603	23
Top side-23mm	20	QPSK 50_0	21100/2535	1:1	0.596	-0.19	21.76	23.00	1.330	0.793	23
Body Test data Sensor off 100%RB For Simultaneous											
Top side-23mm	20	QPSK 100_0	21100/2535	1:1	0.527	0.13	21.78	23.00	1.324	0.698	23

Table 16： SAR of LTE Band 7 for Body.

8.2.7 SAR Result of LTE Band 12

LTE Band 12 SAR Test Record											
Ant 0 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body Test data Sensor on (Separate 0mm 1RB)											
Back side	10	QPSK 1_0	23095/707.5	1:1	0.509	0.02	19.05	20.00	1.245	0.633	22.8
Top side	10	QPSK 1_0	23095/707.5	1:1	0.271	0.16	19.05	20.00	1.245	0.337	22.8
Body Test data Sensor on (Separate 0mm 50%RB)											
Back side	10	QPSK 25_0	23095/707.5	1:1	0.475	-0.12	18.97	20.00	1.268	0.602	22.8
Top side	10	QPSK 25_0	23095/707.5	1:1	0.259	0.14	18.97	20.00	1.268	0.328	22.8
Body Test data Sensor off 1RB											
Back side-21mm	10	QPSK 1_0	23095/707.5	1:1	0.190	-0.02	23.12	24.00	1.225	0.233	22.8
Top side-23mm	10	QPSK 1_0	23095/707.5	1:1	0.160	-0.01	23.12	24.00	1.225	0.196	22.8
Body Test data Sensor off 50%RB											
Back side-21mm	10	QPSK 25_0	23095/707.5	1:1	0.157	0.03	21.95	23.00	1.274	0.200	22.8
Top side-23mm	10	QPSK 25_0	23095/707.5	1:1	0.129	-0.13	21.95	23.00	1.274	0.164	22.8

Table 17： SAR of LTE Band 12 for Body is covering LTE Band 17.

8.2.8 SAR Result of LTE Band 13

LTE Band 13 SAR Test Record											
Ant 0 Test Record											
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Body Test data Sensor on (Separate 0mm 1RB)											
Back side	10	QPSK 1_0	23230/782	1:1	0.484	0.05	18.97	20.00	1.268	0.614	22.8
Top side	10	QPSK 1_0	23230/782	1:1	0.333	-0.01	18.97	20.00	1.268	0.422	22.8
Body Test data Sensor on (Separate 0mm 50%RB)											
Back side	10	QPSK 25_0	23230/782	1:1	0.461	0.17	18.77	20.00	1.327	0.612	22.8
Top side	10	QPSK 25_0	23230/782	1:1	0.317	0.00	18.77	20.00	1.327	0.421	22.8
Body Test data Sensor off 1RB											
Back side-21mm	10	QPSK 1_0	23230/782	1:1	0.365	0.08	23.04	24.00	1.247	0.455	22.8
Top side-23mm	10	QPSK 1_0	23230/782	1:1	0.328	0.11	23.04	24.00	1.247	0.409	22.8
Body Test data Sensor off 50%RB											
Back side-21mm	10	QPSK 25_0	23230/782	1:1	0.309	0.10	21.95	23.00	1.274	0.394	22.8
Top side-23mm	10	QPSK 25_0	23230/782	1:1	0.275	0.19	21.95	23.00	1.274	0.350	22.8

Table 18： SAR of LTE Band 13 for Body.

8.2.9 SAR Result of LTE Band 25

LTE Band 25 SAR Test Record											
Ant 0 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body Test data Sensor on (Separate 0mm 1RB)											
Back side	20	QPSK 1_0	26365/1882.5	1:1	0.467	-0.02	12.14	13.00	1.219	0.569	22.9
Top side	20	QPSK 1_0	26365/1882.5	1:1	0.674	0.02	12.14	13.00	1.219	0.822	22.9
Top side	20	QPSK 1_0	26140/1860	1:1	0.635	-0.13	11.94	13.00	1.276	0.811	22.9
Top side	20	QPSK 1_0	26590/1905	1:1	0.652	-0.02	12.13	13.00	1.222	0.797	22.9
Body Test data Sensor on (Separate 0mm 50%RB)											
Back side	20	QPSK 50_0	26365/1882.5	1:1	0.439	-0.06	12.13	13.00	1.222	0.536	22.9
Top side	20	QPSK 50_0	26365/1882.5	1:1	0.654	0.03	12.13	13.00	1.222	0.799	22.9
Body Test data Sensor on (Separate 0mm 100%RB)											
Top side	20	QPSK 100_0	26365/1882.5	1:1	0.639	0.13	12.08	13.00	1.236	0.790	22.9
Body Test data Sensor off 1RB											
Back side-21mm	20	QPSK 1_0	26365/1882.5	1:1	0.560	-0.01	23.05	24.00	1.245	0.697	22.9
Top side-23mm	20	QPSK 1_0	26365/1882.5	1:1	0.641	-0.06	23.05	24.00	1.245	0.798	22.9
Body Test data Sensor off 50%RB											
Back side-21mm	20	QPSK 50_0	26365/1882.5	1:1	0.446	-0.06	21.85	23.00	1.303	0.581	22.9
Top side-23mm	20	QPSK 50_0	26365/1882.5	1:1	0.603	0.13	21.85	23.00	1.303	0.786	22.9

Table 19： SAR of LTE Band 25 for Body is covering LTE Band 2.

8.2.10 SAR Result of LTE Band 26

LTE Band 26 SAR Test Record											
Ant 0 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body Test data Sensor on (Separate 0mm 1RB)											
Back side	15	QPSK 1_0	26865/831.5	1:1	0.606	0.02	20.40	21.00	1.148	0.696	22.8
Top side	15	QPSK 1_0	26865/831.5	1:1	0.311	0.12	20.40	21.00	1.148	0.357	22.8
Body Test data Sensor on (Separate 0mm 50%RB)											
Back side	15	QPSK 36_0	26865/831.5	1:1	0.566	-0.11	20.33	21.00	1.167	0.660	22.8
Top side	15	QPSK 36_0	26865/831.5	1:1	0.297	0.03	20.33	21.00	1.167	0.347	22.8
Body Test data Sensor off 1RB											
Back side-21mm	15	QPSK 1_0	26865/831.5	1:1	0.367	-0.16	23.14	24.00	1.219	0.447	22.8
Top side-23mm	15	QPSK 1_0	26865/831.5	1:1	0.308	0.18	23.14	24.00	1.219	0.375	22.8
Body Test data Sensor off 50%RB											
Back side-21mm	15	QPSK 36_0	26865/831.5	1:1	0.302	0.07	22.06	23.00	1.242	0.375	22.8
Top side-23mm	15	QPSK 36_0	26865/831.5	1:1	0.255	0.01	22.06	23.00	1.242	0.317	22.8

Table 20： SAR of LTE Band 26 for Body is covering LTE Band 5.

8.2.11 SAR Result of LTE Band 30

LTE Band 30 SAR Test Record											
Ant 0 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body Test data Sensor on (Separate 0mm 1RB)											
Back side	10	QPSK 1_0	27710/2310	1:1	0.533	0.17	14.00	15.00	1.259	0.671	23
Top side	10	QPSK 1_0	27710/2310	1:1	0.585	0.08	14.00	15.00	1.259	0.736	23
Body Test data Sensor on (Separate 0mm 50%RB)											
Back side	10	QPSK 25_0	27710/2310	1:1	0.496	0.06	13.85	15.00	1.303	0.646	23
Top side	10	QPSK 25_0	27710/2310	1:1	0.557	-0.07	13.85	15.00	1.303	0.726	23
Body Test data Sensor off 1RB											
Back side-21mm	10	QPSK 1_0	27710/2310	1:1	0.340	0.11	22.72	24.00	1.343	0.457	23
Top side-23mm	10	QPSK 1_0	27710/2310	1:1	0.380	0.17	22.72	24.00	1.343	0.510	23
Body Test data Sensor off 50%RB											
Back side-21mm	10	QPSK 25_0	27710/2310	1:1	0.286	0.16	21.50	23.00	1.413	0.404	23
Top side-23mm	10	QPSK 25_0	27710/2310	1:1	0.333	0.12	21.50	23.00	1.413	0.470	23

Table 21： SAR of LTE Band 30 for Body.

8.2.12 SAR Result of LTE Band 41

LTE Band 41 SAR Test Record											
Ant 0 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body Test data Sensor on (Separate 0mm 1RB)											
Back side	20	QPSK 1_0	40620/2593	1:1.58	0.609	-0.15	15.21	16.00	1.199	0.730	23
Top side	20	QPSK 1_0	40620/2593	1:1.58	0.984	0.03	15.21	16.00	1.199	1.180	23
Top side-Repeat SAR	20	QPSK 1_0	40620/2593	1:1.58	0.979	0.12	15.21	16.00	1.199	1.174	23
Top side	20	QPSK 1_0	39750/2506	1:1.58	0.937	-0.09	15.15	16.00	1.216	1.140	23
Top side	20	QPSK 1_0	40185/2549.5	1:1.58	0.946	-0.14	15.08	16.00	1.236	1.169	23
Top side	20	QPSK 1_0	41055/2636.5	1:1.58	0.928	-0.13	14.98	16.00	1.265	1.174	23
Top side	20	QPSK 1_0	41490/2680	1:1.58	0.911	0.03	14.95	16.00	1.274	1.160	23
Body Test data Sensor on (Separate 0mm 50%RB)											
Back side	20	QPSK 50_0	40620/2593	1:1.58	0.557	-0.11	15.08	16.00	1.236	0.688	23
Top side	20	QPSK 50_0	40620/2593	1:1.58	0.917	-0.01	15.08	16.00	1.236	1.133	23
Top side	20	QPSK 50_0	39750/2506	1:1.58	0.889	-0.04	15.04	16.00	1.247	1.109	23
Top side	20	QPSK 50_0	40185/2549.5	1:1.58	0.894	0.08	15.02	16.00	1.253	1.120	23
Top side	20	QPSK 50_0	41055/2636.5	1:1.58	0.857	-0.07	14.99	16.00	1.262	1.081	23
Top side	20	QPSK 50_0	41490/2680	1:1.58	0.866	0.03	14.99	16.00	1.262	1.093	23
Body Test data Sensor on (Separate 0mm 100%RB)											
Top side	20	QPSK 100_0	40620/2593	1:1.58	0.902	0.10	15.01	16.00	1.256	1.133	23
Body Test data Sensor on For Simultaneous(Separate 0mm 1RB)											
Back side	20	QPSK 1_0	40620/2593	1:1.58	0.609	-0.15	15.21	14.00	0.757	0.461	23
Top side	20	QPSK 1_0	40620/2593	1:1.58	0.984	0.03	15.21	14.00	0.757	0.745	23
Top side	20	QPSK 1_0	39750/2506	1:1.58	0.937	-0.09	15.15	14.00	0.767	0.719	23
Top side	20	QPSK 1_0	40185/2549.5	1:1.58	0.946	-0.14	15.08	14.00	0.780	0.738	23
Top side	20	QPSK 1_0	41055/2636.5	1:1.58	0.928	-0.13	14.98	14.00	0.798	0.741	23
Top side	20	QPSK 1_0	41490/2680	1:1.58	0.911	0.03	14.95	14.00	0.804	0.732	23
Body Test data Sensor on For Simultaneous(Separate 0mm 50%RB)											
Back side	20	QPSK 50_0	40620/2593	1:1.58	0.557	-0.11	15.08	14.00	0.780	0.434	23
Top side	20	QPSK 50_0	40620/2593	1:1.58	0.917	-0.01	15.08	14.00	0.780	0.715	23
Top side	20	QPSK 50_0	39750/2506	1:1.58	0.889	-0.04	15.04	14.00	0.787	0.700	23
Top side	20	QPSK 50_0	40185/2549.5	1:1.58	0.894	0.08	15.02	14.00	0.791	0.707	23
Top side	20	QPSK 50_0	41055/2636.5	1:1.58	0.857	-0.07	14.99	14.00	0.796	0.682	23
Top side	20	QPSK 50_0	41490/2680	1:1.58	0.866	0.03	14.99	14.00	0.796	0.689	23
Body Test data Sensor on For Simultaneous(Separate 0mm 100%RB)											
Top side	20	QPSK 100_0	40620/2593	1:1.58	0.902	0.10	15.01	14.00	0.793	0.715	23
Body Test data Sensor off 1RB											
Back side-21mm	20	QPSK 1_0	40620/2593	1:1.58	0.305	0.18	22.83	24.00	1.309	0.399	23
Top side-23mm	20	QPSK 1_0	40620/2593	1:1.58	0.367	-0.16	22.83	24.00	1.309	0.480	23
Body Test data Sensor off 50%RB											
Back side-21mm	20	QPSK 50_0	40620/2593	1:1.58	0.246	-0.15	21.62	23.00	1.374	0.338	23
Top side-23mm	20	QPSK 50_0	40620/2593	1:1.58	0.304	0.10	21.62	23.00	1.374	0.418	23

Table 22： SAR of LTE Band 41 for Body is covering LTE Band 38.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Top side	40620/2593	0.984	0.979	1.005107252	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

8.2.13 SAR Result of LTE Band 66

LTE Band 66 SAR Test Record											
Ant 0 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body Test data Sensor on (Separate 0mm 1RB)											
Back side	20	QPSK 1_0	132322/1745	1:1	0.534	-0.08	15.39	16.00	1.151	0.615	22.7
Top side	20	QPSK 1_0	132322/1745	1:1	0.716	0.08	15.39	16.00	1.151	0.824	22.7
Top side	20	QPSK 1_0	132072/1720	1:1	0.678	-0.02	15.29	16.00	1.178	0.798	22.7
Top side	20	QPSK 1_0	132572/1770	1:1	0.702	-0.03	15.37	16.00	1.156	0.812	22.7
Body Test data Sensor on (Separate 0mm 50%RB)											
Back side	20	QPSK 50_0	132322/1745	1:1	0.436	-0.05	15.26	16.00	1.186	0.517	22.7
Top side	20	QPSK 50_0	132322/1745	1:1	0.640	-0.09	15.26	16.00	1.186	0.759	22.7
Body Test data Sensor on (Separate 0mm 100%RB)											
Top side	20	QPSK 100_0	132322/1745	1:1	0.628	0.15	15.15	16.00	1.216	0.764	22.7
Body Test data Sensor off 1RB											
Back side-21mm	20	QPSK 1_0	132322/1745	1:1	0.237	0.06	23.11	24.00	1.227	0.291	22.7
Top side-23mm	20	QPSK 1_0	132322/1745	1:1	0.299	-0.17	23.11	24.00	1.227	0.367	22.7
Body Test data Sensor off 50%RB											
Back side-21mm	20	QPSK 50_0	132322/1745	1:1	0.205	0.11	22.00	23.00	1.259	0.258	22.7
Top side-23mm	20	QPSK 50_0	132322/1745	1:1	0.239	-0.18	22.00	23.00	1.259	0.301	22.7

Table 23： SAR of LTE Band 66 for Body is covering LTE Band 4.

8.2.14 SAR Result of LTE Band 71

LTE Band 71 SAR Test Record											
Ant 0 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body Test data Sensor on (Separate 0mm 1RB)											
Back side	20	QPSK 1_0	133322/683	1:1	0.542	0.04	20.74	22.00	1.337	0.724	22.8
Top side	20	QPSK 1_0	133322/683	1:1	0.289	0.16	20.74	22.00	1.337	0.386	22.8
Body Test data Sensor on (Separate 0mm 50%RB)											
Back side	20	QPSK 50_0	133322/683	1:1	0.509	-0.13	20.50	22.00	1.413	0.719	22.8
Top side	20	QPSK 50_0	133322/683	1:1	0.250	0.14	20.50	22.00	1.413	0.353	22.8
Body Test data Sensor off 1RB											
Back side-21mm	20	QPSK 1_0	133322/683	1:1	0.258	0.09	23.04	24.00	1.247	0.322	22.8
Top side-23mm	20	QPSK 1_0	133322/683	1:1	0.216	-0.13	23.04	24.00	1.247	0.269	22.8
Body Test data Sensor off 50%RB											
Back side-21mm	20	QPSK 50_0	133322/683	1:1	0.227	-0.03	21.94	23.00	1.276	0.290	22.8
Top side-23mm	20	QPSK 50_0	133322/683	1:1	0.198	0.04	21.94	23.00	1.276	0.253	22.8

Table 24： SAR of LTE Band 71 for Body.

8.2.15 SAR Result of WIFI 2.4G

Wi-Fi 2.4G SAR Test Record											
Ant2 Test Record											
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Body Test data(Separate 0mm)											
Back side	802.11b	6/2437	98.40%	1.016	0.373	-0.03	12.69	13.00	1.074	0.407	23
Top side	802.11b	6/2437	98.40%	1.016	0.842	0.02	12.69	13.00	1.074	0.919	23
Top side-Repeat SAR	802.11b	6/2437	98.40%	1.016	0.838	0.15	12.69	13.00	1.074	0.915	23
Top side	802.11b	1/2412	98.40%	1.016	0.736	0.02	12.35	13.00	1.161	0.869	23
Top side	802.11b	11/2462	98.40%	1.016	0.773	0.07	12.50	13.00	1.122	0.881	23
Body Test data(Separate 0mm) For Simultaneous											
Back side	802.11b	6/2437	98.40%	1.016	0.373	-0.03	12.69	9.00	0.428	0.162	23
Top side	802.11b	6/2437	98.40%	1.016	0.842	0.02	12.69	9.00	0.428	0.366	23
Top side	802.11b	1/2412	98.40%	1.016	0.736	0.02	12.35	9.00	0.462	0.346	23
Top side	802.11b	11/2462	98.40%	1.016	0.773	0.07	12.50	9.00	0.447	0.351	23
Ant3 Test Record											
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Body Test data(Separate 0mm)											
Back side	802.11g	1/2412	90.55%	1.104	0.318	-0.05	12.58	13.00	1.102	0.387	23
Top side	802.11g	1/2412	90.55%	1.104	0.301	0.04	12.58	13.00	1.102	0.366	23
MIMO Test Record											
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Body Test data(Separate 0mm)											
Back side	802.11n	1/2412	85.33%	1.172	0.355	0.02	14.68	15.00	1.076	0.448	23
Top side	802.11n	1/2412	85.33%	1.172	0.550	0.07	14.68	15.00	1.076	0.694	23
Body Test data(Separate 0mm) For Simultaneous											
Back side	802.11n	1/2412	85.33%	1.172	0.355	0.02	14.68	12.00	0.540	0.224	23
Top side	802.11n	1/2412	85.33%	1.172	0.550	0.07	14.68	12.00	0.540	0.348	23

Table 25： SAR of WIFI 2.4G for Body.

Test Position	**Channel/ Frequency (MHz)**	**Measured SAR (1g)**	**1st Repeated SAR (1g)**	**Ratio**	**2nd Repeated SAR (1g)**	**3rd Repeated SAR (1g)**
Top side	6/2437	0.842	0.838	1.00477327	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

Note: When the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR test for the other 802.11 modes are not required.

8.2.16 SAR Result of WIFI 5G

Wi-Fi 5G SAR Test Record											
Ant2 Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body Test data Sensor on of U-NII-1&U-NII-2A(Separate 0mm)											
Back side	802.11a	60/5300	95.00%	1.053	0.400	0.03	7.66	8.00	1.081	0.455	23.2
Top side	802.11a	60/5300	95.00%	1.053	0.864	0.09	7.66	8.00	1.081	0.984	23.2
Top side-Repeat SAR	802.11a	60/5300	95.00%	1.053	0.862	0.12	7.66	8.00	1.081	0.981	23.2
Top side	802.11a	52/5260	95.00%	1.053	0.805	0.04	7.50	8.00	1.122	0.951	23.2
Top side	802.11a	64/5320	95.00%	1.053	0.811	-0.17	7.63	8.00	1.089	0.930	23.2
Body Test data Sensor on of U-NII-1&U-NII-2A(Separate 0mm) For Simultaneous											
Back side	802.11a	60/5300	95.00%	1.053	0.400	0.03	7.66	4.00	0.431	0.181	23.2
Top side	802.11a	60/5300	95.00%	1.053	0.864	0.09	7.66	4.00	0.431	0.392	23.2
Top side	802.11a	52/5260	95.00%	1.053	0.805	0.04	7.50	4.00	0.447	0.379	23.2
Top side	802.11a	64/5320	95.00%	1.053	0.811	-0.17	7.63	4.00	0.434	0.370	23.2
Body Test data Sensor on of U-NII-2C(Separate 0mm)											
Back side	802.11a	116/5580	95.00%	1.053	0.361	-0.15	6.63	7.00	1.089	0.414	23.2
Top side	802.11a	116/5580	95.00%	1.053	0.817	0.01	6.63	7.00	1.089	0.936	23.2
Top side-Repeat SAR	802.11a	116/5580	95.00%	1.053	0.814	-0.13	6.63	7.00	1.089	0.933	23.2
Top side	802.11a	100/5500	95.00%	1.053	0.746	0.09	6.31	7.00	1.172	0.920	23.2
Top side	802.11a	140/5700	95.00%	1.053	0.787	0.19	6.56	7.00	1.107	0.917	23.2
Body Test data Sensor on of U-NII-2C(Separate 0mm)For Simultaneous											
Back side	802.11a	116/5580	95.00%	1.053	0.361	-0.15	6.63	3.00	0.434	0.165	23.2
Top side	802.11a	116/5580	95.00%	1.053	0.817	0.01	6.63	3.00	0.434	0.373	23.2
Top side	802.11a	100/5500	95.00%	1.053	0.746	0.09	6.31	3.00	0.467	0.366	23.2
Top side	802.11a	140/5700	95.00%	1.053	0.787	0.19	6.56	3.00	0.441	0.365	23.2
Body Test data Sensor on of U-NII-3(Separate 0mm)											
Back side	802.11n-HT40	151/5755	89.53%	1.117	0.421	-0.18	7.69	8.00	1.074	0.505	23.2
Top side	802.11n-HT40	151/5755	89.53%	1.117	0.835	0.09	7.69	8.00	1.074	1.002	23.2
Top side-Repeat SAR	802.11n-HT40	151/5755	89.53%	1.117	0.833	0.02	7.69	8.00	1.074	0.999	23.2
Top side	802.11n-HT40	159/5795	89.53%	1.117	0.802	0.01	7.53	8.00	1.114	0.998	23.2
Body Test data Sensor on of U-NII-3(Separate 0mm)For Simultaneous											
Back side	802.11n-HT40	151/5755	89.53%	1.117	0.421	-0.18	7.69	4.00	0.428	0.201	23.2
Top side	802.11n-HT40	151/5755	89.53%	1.117	0.835	0.09	7.69	4.00	0.428	0.399	23.2
Top side	802.11n-HT40	159/5795	89.53%	1.117	0.802	0.01	7.53	4.00	0.444	0.397	23.2
Body Test data Sensor off of U-NII-1&U-NII-2A											
Back side-18mm	802.11a	60/5300	95.00%	1.053	0.276	0.03	16.69	17.00	1.074	0.312	23.2
Top side-20mm	802.11a	60/5300	95.00%	1.053	0.350	-0.13	16.69	17.00	1.074	0.396	23.2
Body Test data Sensor off of U-NII-2C											
Back side-18mm	802.11a	116/5580	95.00%	1.053	0.225	-0.10	13.66	14.00	1.081	0.256	23.2
Top side-20mm	802.11a	116/5580	95.00%	1.053	0.239	0.18	13.66	14.00	1.081	0.272	23.2
Body Test data Sensor off of U-NII-3											
Back side-18mm	802.11n-HT40	151/5755	89.53%	1.117	0.447	-0.06	18.28	19.00	1.180	0.589	23.2
Top side-20mm	802.11n-HT40	151/5755	89.53%	1.117	0.599	0.11	18.28	19.00	1.180	0.790	23.2
Body Test data Sensor off of U-NII-3 For Simultaneous											
Back side-18mm	802.11n-HT40	151/5755	89.53%	1.117	0.447	-0.06	18.28	16.00	0.592	0.295	23.2

Top side-20mm	802.11n-HT40	151/5755	89.53%	1.117	0.599	0.11	18.28	16.00	0.592	0.396	23.2
Ant3 Test Record											
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Body Test data of U-NII-1&U-NII-2A(Separate 0mm)											
Back side	802.11a	60/5300	95.00%	1.053	0.383	-0.02	15.67	16.00	1.079	0.435	23.2
Top side	802.11a	60/5300	95.00%	1.053	0.646	-0.05	15.67	16.00	1.079	0.734	23.2
Body Test data of U-NII-1&U-NII-2A(Separate 0mm) For Simultaneous											
Back side	802.11a	60/5300	95.00%	1.053	0.383	-0.02	15.67	13.00	0.541	0.218	23.2
Top side	802.11a	60/5300	95.00%	1.053	0.646	-0.05	15.67	13.00	0.541	0.368	23.2
Body Test data of U-NII-2C(Separate 0mm)											
Back side	802.11a	116/5580	95.00%	1.053	0.196	0.17	12.25	13.00	1.189	0.245	23.2
Top side	802.11a	116/5580	95.00%	1.053	0.479	0.02	12.25	13.00	1.189	0.599	23.2
Body Test data of U-NII-2C(Separate 0mm) For Simultaneous											
Back side	802.11a	116/5580	95.00%	1.053	0.196	0.17	12.25	11.00	0.750	0.155	23.2
Top side	802.11a	116/5580	95.00%	1.053	0.479	0.02	12.25	11.00	0.750	0.378	23.2
Body Test data of U-NII-3(Separate 0mm)											
Back side	802.11n-HT40	151/5755	89.53%	1.117	0.302	0.08	16.25	17.00	1.189	0.401	23.2
Top side	802.11n-HT40	151/5755	89.53%	1.117	0.601	-0.07	16.25	17.00	1.189	0.798	23.2
Body Test data of U-NII-3(Separate 0mm) For Simultaneous											
Back side	802.11n-HT40	151/5755	89.53%	1.117	0.302	0.08	16.25	14.00	0.596	0.201	23.2
Top side	802.11n-HT40	151/5755	89.53%	1.117	0.600	-0.07	16.25	14.00	0.596	0.399	23.2
MIMO Test Record											
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Body Test data Sensor on of U-NII-1&U-NII-2A(Separate 0mm)											
Back side	802.11n-HT20	60/5300	90.06%	1.110	0.305	0.00	10.30	11.00	1.174	0.398	23.2
Top side	802.11n-HT20	60/5300	90.06%	1.110	0.713	-0.01	10.30	11.00	1.174	0.929	23.2
Top side	802.11n-HT20	52/5260	90.06%	1.110	0.669	0.13	10.01	11.00	1.257	0.933	23.2
Top side	802.11n-HT20	64/5320	90.06%	1.110	0.658	-0.05	10.16	11.00	1.214	0.887	23.2
Body Test data Sensor on of U-NII-1&U-NII-2A(Separate 0mm) For Simultaneous											
Back side	802.11n-HT20	60/5300	90.06%	1.110	0.305	0.00	10.30	7.00	0.467	0.158	23.2
Top side	802.11n-HT20	60/5300	90.06%	1.110	0.713	-0.01	10.30	7.00	0.467	0.370	23.2
Top side	802.11n-HT20	52/5260	90.06%	1.110	0.669	0.13	10.01	7.00	0.500	0.372	23.2
Top side	802.11n-HT20	64/5320	90.06%	1.110	0.658	-0.05	10.16	7.00	0.483	0.353	23.2
Body Test data Sensor on of U-NII-2C(Separate 0mm)											
Back side	802.11n-HT20	116/5580	90.06%	1.110	0.271	-0.13	9.09	10.00	1.233	0.371	23.2
Top side	802.11n-HT20	116/5580	90.06%	1.110	0.649	0.06	9.09	10.00	1.233	0.888	23.2
Top side	802.11n-HT20	100/5500	90.06%	1.110	0.602	0.11	8.58	10.00	1.387	0.927	23.2
Top side	802.11n-HT20	140/5700	90.06%	1.110	0.632	-0.10	8.83	10.00	1.310	0.919	23.2
Body Test data Sensor on of U-NII-2C(Separate 0mm) For Simultaneous											
Back side	802.11n-HT20	116/5580	90.06%	1.110	0.271	-0.13	9.09	6.00	0.491	0.148	23.2
Top side	802.11n-HT20	116/5580	90.06%	1.110	0.649	0.06	9.09	6.00	0.491	0.354	23.2
Top side	802.11n-HT20	100/5500	90.06%	1.110	0.602	0.11	8.58	6.00	0.552	0.369	23.2
Top side	802.11n-HT20	140/5700	90.06%	1.110	0.632	-0.10	8.83	6.00	0.522	0.366	23.2
Body Test data Sensor on of U-NII-3(Separate 0mm)											
Back side	802.11n-HT40	151/5755	89.53%	1.117	0.431	0.18	9.65	10.00	1.083	0.521	23.2
Top side	802.11n-HT40	151/5755	89.53%	1.117	0.754	0.08	9.65	10.00	1.083	0.912	23.2

Top side	802.11n-HT40	159/5795	89.53%	1.117	0.708	-0.17	9.47	10.00	1.129	0.893	23.2
Body Test data Sensor on of U-NII-3(Separate 0mm) For Simultaneous											
Back side	802.11n-HT40	151/5755	89.53%	1.117	0.431	0.18	9.65	6.00	0.431	0.208	23.2
Top side	802.11n-HT40	151/5755	89.53%	1.117	0.754	0.08	9.65	6.00	0.431	0.363	23.2
Top side	802.11n-HT40	159/5795	89.53%	1.117	0.708	-0.17	9.47	6.00	0.450	0.356	23.2
Body Test data Sensor off of U-NII-1&U-NII-2A											
Back side-18mm	802.11n-HT20	60/5300	90.06%	1.110	0.208	0.09	18.26	19.00	1.185	0.274	23.2
Top side-20mm	802.11n-HT20	60/5300	90.06%	1.110	0.300	-0.03	18.26	19.00	1.185	0.395	23.2
Body Test data Sensor off of U-NII-2C											
Back side-18mm	802.11n-HT40	110/5550	89.53%	1.117	0.196	-0.16	14.53	16.00	1.403	0.307	23.2
Top side-20mm	802.11n-HT40	110/5550	89.53%	1.117	0.205	-0.07	14.53	16.00	1.403	0.321	23.2
Body Test data Sensor off of U-NII-3											
Back side-18mm	802.11n-HT40	151/5755	89.53%	1.117	0.443	-0.10	20.39	21.00	1.150	0.569	23.2
Top side-20mm	802.11n-HT40	151/5755	89.53%	1.117	0.586	-0.14	20.39	21.00	1.150	0.753	23.2
Body Test data Sensor off of U-NII-3 For Simultaneous											
Back side-18mm	802.11n-HT40	151/5755	89.53%	1.117	0.443	-0.10	20.39	18.00	0.576	0.285	23.2
Top side-20mm	802.11n-HT40	151/5755	89.53%	1.117	0.586	-0.14	20.39	18.00	0.576	0.377	23.2

Table 26：SAR of WIFI 5G for Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Top side	60/5300	0.864	0.862	1.002320186	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						
Test Position	**Channel/ Frequency (MHz)**	**Measured SAR (1g)**	**1st Repeated SAR (1g)**	**Ratio**	**2nd Repeated SAR (1g)**	**3rd Repeated SAR (1g)**
Top side	116/5580	0.817	0.814	1.003685504	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						
Test Position	**Channel/ Frequency (MHz)**	**Measured SAR (1g)**	**1st Repeated SAR (1g)**	**Ratio**	**2nd Repeated SAR (1g)**	**3rd Repeated SAR (1g)**
Top side	151/5755	0.835	0.833	1.00240096	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

Note: As the 802.11a highest reported SAR is smaller than 1.2 W/kg , and the tune-up of the other 802.11 modes are not higher than 802.11a,therefore the adjusted SAR is ⩽ 1.2 W/kg for other 802.11 modes, SAR test for the other 802.11 modes are not required. For Product specific 10gSAR the highest reported SAR is smaller than 3.0 W/kg, SAR test for the other 802.11 modes are also not required.

8.2.17 SAR Result of WIFI 6G

Wi-Fi 6G SAR Test Record													
Ant2 Test Record													
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	APD (W/m^2)	Scaled APD (W/m^2)	Liquid Temp.(℃)
Body Test data(Separate 0mm)													
Back side	802.11ax 80M	103/6465	88.99%	1.124	0.256	-0.07	10.05	11.00	1.245	0.358	1.15	1.61	22.9
Top side	802.11ax 80M	103/6465	88.99%	1.124	0.628	0.05	10.05	11.00	1.245	0.878	3.02	4.22	22.9
Top side	802.11ax 80M	7/5985	88.99%	1.124	0.407	-0.19	9.53	11.00	1.403	0.641	1.92	3.03	22.9
Top side	802.11ax 80M	151/6705	88.99%	1.124	0.552	0.17	9.68	11.00	1.356	0.841	2.66	4.05	22.9
Top side	802.11ax 80M	199/6945	88.99%	1.124	0.537	0.12	9.30	10.50	1.318	0.796	2.52	3.73	22.9
Top side	802.11ax 80M	215/7025	88.99%	1.124	0.606	0.15	9.90	11.00	1.289	0.878	2.79	4.04	22.9
Body Test data(Separate 0mm) For Simultaneous													
Back side	802.11ax 80M	103/6465	88.99%	1.124	0.256	0.01	10.05	7.00	0.495	0.143	1.15	0.64	22.9
Top side	802.11ax 80M	103/6465	88.99%	1.124	0.628	0.17	10.05	7.00	0.495	0.350	3.02	1.68	22.9
Top side	802.11ax 80M	7/5985	88.99%	1.124	0.407	-0.13	9.53	7.00	0.558	0.255	1.92	1.21	22.9
Top side	802.11ax 80M	151/6705	88.99%	1.124	0.552	0.04	9.68	7.00	0.540	0.335	2.66	1.61	22.9
Top side	802.11ax 80M	199/6945	88.99%	1.124	0.537	0.14	9.30	6.50	0.525	0.317	2.52	1.49	22.9
Top side	802.11ax 80M	215/7025	88.99%	1.124	0.606	0.16	9.90	7.00	0.513	0.350	2.79	1.61	22.9
Ant3 Test Record													
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	APD (W/m^2)	Scaled APD (W/m^2)	Liquid Temp.(℃)
Body Test data(Separate 0mm)													
Back side	802.11ax 80M	103/6465	88.99%	1.124	0.103	0.13	9.91	11.00	1.285	0.149	0.53	0.77	22.9
Top side	802.11ax 80M	103/6465	88.99%	1.124	0.222	0.16	9.91	11.00	1.285	0.321	1.02	1.47	22.9
Top side	802.11ax 80M	7/5985	88.99%	1.124	0.135	-0.09	9.29	10.50	1.322	0.201	0.64	0.95	22.9
Top side	802.11ax 80M	151/6705	88.99%	1.124	0.186	-0.01	9.47	10.50	1.268	0.265	0.91	1.30	22.9
Top side	802.11ax 80M	199/6945	88.99%	1.124	0.157	0.05	9.03	10.50	1.403	0.248	0.76	1.20	22.9
Top side	802.11ax 80M	215/7025	88.99%	1.124	0.198	-0.13	9.61	11.00	1.379	0.307	0.97	1.50	22.9
MIMO Test Record													
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	APD (W/m^2)	Scaled APD (W/m^2)	Liquid Temp.(℃)
Body Test data(Separate 0mm)													
Back side	802.11ax 80M	103/6465	88.99%	1.124	0.291	0.05	12.99	14.00	1.262	0.413	1.32	1.87	22.9
Top side	802.11ax 80M	103/6465	88.99%	1.124	0.711	0.15	12.99	14.00	1.262	1.008	3.38	4.79	22.9
Top side	802.11ax 80M	7/5985	88.99%	1.124	0.454	0.14	12.42	13.50	1.282	0.654	2.15	3.10	22.9
Top side	802.11ax 80M	151/6705	88.99%	1.124	0.629	-0.03	12.58	14.00	1.385	0.979	3.01	4.69	22.9
Top side	802.11ax 80M	199/6945	88.99%	1.124	0.608	0.15	12.18	13.50	1.356	0.927	2.86	4.36	22.9
Top side	802.11ax 80M	215/7025	88.99%	1.124	0.655	0.07	12.76	14.00	1.329	0.978	3.16	4.72	22.9
Body Test data(Separate 0mm) For Simultaneous													
Back side	802.11ax 80M	103/6465	88.99%	1.124	0.291	0.13	12.99	10.00	0.502	0.164	1.32	0.75	22.9
Top side	802.11ax 80M	103/6465	88.99%	1.124	0.711	-0.10	12.99	10.00	0.502	0.401	3.38	1.91	22.9
Top side	802.11ax 80M	7/5985	88.99%	1.124	0.454	0.01	12.42	9.50	0.510	0.260	2.15	1.23	22.9
Top side	802.11ax 80M	151/6705	88.99%	1.124	0.629	-0.01	12.58	10.00	0.551	0.390	3.01	1.87	22.9
Top side	802.11ax 80M	199/6945	88.99%	1.124	0.608	-0.14	12.18	9.50	0.540	0.369	2.86	1.74	22.9
Top side	802.11ax 80M	215/7025	88.99%	1.124	0.655	0.05	12.76	10.00	0.529	0.389	3.16	1.88	22.9

Table 27：SAR of WIFI 6G for Body.

8.2.18 SAR Result of BT

Bluetooth SAR Test Record											
Ant2 Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body Test data (Separate 0mm)											
Back side	DH5	39/2441	76.93%	1.300	0.372	0.05	10.95	11.00	1.012	0.489	23
Top side	DH5	39/2441	76.93%	1.300	0.555	0.09	10.95	11.00	1.012	0.730	23
Body Test data (Separate 0mm) For Simultaneous											
Back side	DH5	39/2441	76.93%	1.300	0.372	0.05	10.95	8.00	0.507	0.245	23
Top side	DH5	39/2441	76.93%	1.300	0.555	0.09	10.95	8.00	0.507	0.366	23

Table 28： SAR of BT for Body.

8.2.19 SAR Result of NFC

NFC SAR Test Record									
Ant5 Test Record									
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
NFC Test data (Separate 0mm)									
Front side	NFC	13.56MHz	100.00%	1.000	0.000	0.00	1.000	0.000	22.3
Back side	NFC	13.56MHz	100.00%	1.000	0.008	0.02	1.000	0.008	22.3
Left side	NFC	13.56MHz	100.00%	1.000	0.000	0.00	1.000	0.000	22.3
Right side	NFC	13.56MHz	100.00%	1.000	0.000	0.00	1.000	0.000	22.3
Top side	NFC	13.56MHz	100.00%	1.000	0.000	0.00	1.000	0.000	22.3
Bottom side	NFC	13.56MHz	100.00%	1.000	0.000	0.00	1.000	0.000	22.3

Table 29：SAR of NFC for Body.

8.3 Multiple Transmitter Evaluation

8.3.1 Simultaneous SAR test evaluation

•Simultaneous Transmission Possibilities

No.	Simultaneous Tx Combination	Body
1	WWAN + WLAN 2.4GHz Ant2	Yes
2	WWAN + WLAN 2.4GHz Ant3	Yes
3	WWAN + WLAN 2.4GHz MIMO	Yes
4	WLAN 2.4GHz Ant2 + WLAN 2.4GHz Ant3	Yes
5	WLAN 5GHz Ant2 + WLAN 5GHz Ant3 + BT	Yes
6	WWAN + WLAN 5GHz Ant2 + BT	Yes
7	WWAN + WLAN 5GHz Ant3 + BT	Yes
8	WWAN + WLAN 5GHz MIMO + BT	Yes
9	BT+ WLAN 6G Ant2 + WLAN 6G Ant3	Yes
10	WWAN + BT+ WLAN 6G Ant2	Yes
11	WWAN + BT+ WLAN 6G Ant3	Yes
12	WWAN + BT+ WLAN 6G MIMO	Yes

Note:

1) NFC is different from the working scenario of WWAN/WIFI and does not participate in the simultaneous transmission.

8.3.2 Simultaneous Transmission SAR Summation Scenario

Body:

Test position		SARmax (W/kg)											Summed SAR											
		Main Ant0	WiFi 2.4G Ant2	WiFi 2.4G Ant3	WiFi 2.4G MIMO	WiFi 5G Ant2	WiFi 5G Ant3	WiFi 5G MIMO	BT Ant2	WiFi 6E Ant2	WiFi 6E Ant3	WiFi 6E MIMO												
		1	2	3	4	5	6	7	8	9	10	11	2+3	1+2	1+3	1+4	5+6+8	1+5+8	1+6+8	1+7+8	8+9+10	1+8+9	1+8+10	1+8+11
GSM850	Back side	0.754	0.162	0.387	0.224	0.312	0.218	0.307	0.245	0.143	0.149	0.164	0.549	0.916	1.141	0.978	0.775	1.311	1.217	1.306	0.537	1.142	1.148	1.163
	Left side	0.207	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.207	0.207	0.207	0.000	0.207	0.207	0.207	0.000	0.207	0.207	0.207
	Right side	0.066	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.066	0.066	0.066	0.000	0.066	0.066	0.066	0.000	0.066	0.066	0.066
	Top side	0.466	0.366	0.366	0.348	0.399	0.399	0.395	0.366	0.350	0.321	0.401	0.732	0.832	0.832	0.814	1.164	1.231	1.231	1.227	1.037	1.182	1.153	1.233
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GSM1900	Back side	0.668	0.162	0.387	0.224	0.312	0.218	0.307	0.245	0.143	0.149	0.164	0.549	0.830	1.055	0.892	0.775	1.225	1.131	1.220	0.537	1.056	1.062	1.077
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Top side	0.807	0.366	0.366	0.348	0.399	0.399	0.395	0.366	0.350	0.321	0.401	0.732	1.173	1.173	1.155	1.164	1.572	1.572	1.568	1.037	1.523	1.494	1.574
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WCDMA Band II	Back side	0.565	0.162	0.387	0.224	0.312	0.218	0.307	0.245	0.143	0.149	0.164	0.549	0.727	0.952	0.789	0.775	1.122	1.028	1.117	0.537	0.953	0.959	0.974
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Top side	0.764	0.366	0.366	0.348	0.399	0.399	0.395	0.366	0.350	0.321	0.401	0.732	1.130	1.130	1.112	1.164	1.529	1.529	1.525	1.037	1.480	1.451	1.531
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WCDMA Band IV	Back side	0.488	0.162	0.387	0.224	0.312	0.218	0.307	0.245	0.143	0.149	0.164	0.549	0.650	0.875	0.712	0.775	1.045	0.951	1.040	0.537	0.876	0.882	0.897
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Top side	0.692	0.366	0.366	0.348	0.399	0.399	0.395	0.366	0.350	0.321	0.401	0.732	1.058	1.058	1.040	1.164	1.457	1.457	1.453	1.037	1.408	1.379	1.459
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WCDMA Band V	Back side	0.842	0.162	0.387	0.224	0.312	0.218	0.307	0.245	0.143	0.149	0.164	0.549	1.004	1.229	1.066	0.775	1.399	1.305	1.394	0.537	1.230	1.236	1.251
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Top side	0.489	0.366	0.366	0.348	0.399	0.399	0.395	0.366	0.350	0.321	0.401	0.732	0.855	0.855	0.837	1.164	1.254	1.254	1.250	1.037	1.205	1.176	1.256
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 7	Back side	0.603	0.162	0.387	0.224	0.312	0.218	0.307	0.245	0.143	0.149	0.164	0.549	0.765	0.990	0.827	0.775	1.160	1.066	1.155	0.537	0.991	0.997	1.012
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Top side	0.793	0.366	0.366	0.348	0.399	0.399	0.395	0.366	0.350	0.321	0.401	0.732	1.159	1.159	1.141	1.164	1.558	1.558	1.554	1.037	1.509	1.480	1.560
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 12(17)	Back side	0.633	0.162	0.387	0.224	0.312	0.218	0.307	0.245	0.143	0.149	0.164	0.549	0.795	1.020	0.857	0.775	1.190	1.096	1.185	0.537	1.021	1.027	1.042
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Top side	0.337	0.366	0.366	0.348	0.399	0.399	0.395	0.366	0.350	0.321	0.401	0.732	0.703	0.703	0.685	1.164	1.102	1.102	1.098	1.037	1.053	1.024	1.104
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 13	Back side	0.614	0.162	0.387	0.224	0.312	0.218	0.307	0.245	0.143	0.149	0.164	0.549	0.776	1.001	0.838	0.775	1.171	1.077	1.166	0.537	1.002	1.008	1.023
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Top side	0.422	0.366	0.366	0.348	0.399	0.399	0.395	0.366	0.350	0.321	0.401	0.732	0.788	0.788	0.770	1.164	1.187	1.187	1.183	1.037	1.138	1.109	1.189
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 25(2)	Back side	0.697	0.162	0.387	0.224	0.312	0.218	0.307	0.245	0.143	0.149	0.164	0.549	0.859	1.084	0.921	0.775	1.254	1.160	1.249	0.537	1.085	1.091	1.106
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Top side	0.822	0.366	0.366	0.348	0.399	0.399	0.395	0.366	0.350	0.321	0.401	0.732	1.188	1.188	1.170	1.164	1.587	1.587	1.583	1.037	1.538	1.509	1.589

	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 26(5)	Back side	0.696	0.162	0.387	0.224	0.312	0.218	0.307	0.245	0.143	0.149	0.164	0.549	0.858	1.083	0.920	0.775	1.253	1.159	1.248	0.537	1.084	1.090	1.105
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Top side	0.375	0.366	0.366	0.348	0.399	0.399	0.395	0.366	0.350	0.321	0.401	0.732	0.741	0.741	0.723	1.164	1.140	1.140	1.136	1.037	1.091	1.062	1.142
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 30	Back side	0.671	0.162	0.387	0.224	0.312	0.218	0.307	0.245	0.143	0.149	0.164	0.549	0.833	1.058	0.895	0.775	1.228	1.134	1.223	0.537	1.059	1.065	1.080
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Top side	0.736	0.366	0.366	0.348	0.399	0.399	0.395	0.366	0.350	0.321	0.401	0.732	1.102	1.102	1.084	1.164	1.501	1.501	1.497	1.037	1.452	1.423	1.503
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 41(38)	Back side	0.461	0.162	0.387	0.224	0.312	0.218	0.307	0.245	0.143	0.149	0.164	0.549	0.623	0.848	0.685	0.775	1.018	0.924	1.013	0.537	0.849	0.855	0.870
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Top side	0.745	0.366	0.366	0.348	0.399	0.399	0.395	0.366	0.350	0.321	0.401	0.732	1.111	1.111	1.093	1.164	1.510	1.510	1.506	1.037	1.461	1.432	1.512
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 66(4)	Back side	0.615	0.162	0.387	0.224	0.312	0.218	0.307	0.245	0.143	0.149	0.164	0.549	0.777	1.002	0.839	0.775	1.172	1.078	1.167	0.537	1.003	1.009	1.024
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Top side	0.824	0.366	0.366	0.348	0.399	0.399	0.395	0.366	0.350	0.321	0.401	0.732	1.190	1.190	1.172	1.164	1.589	1.589	1.585	1.037	1.540	1.511	1.591
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 71	Back side	0.724	0.162	0.387	0.224	0.312	0.218	0.307	0.245	0.143	0.149	0.164	0.549	0.886	1.111	0.948	0.775	1.281	1.187	1.276	0.537	1.112	1.118	1.133
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Top side	0.386	0.366	0.366	0.348	0.399	0.399	0.395	0.366	0.350	0.321	0.401	0.732	0.752	0.752	0.734	1.164	1.151	1.151	1.147	1.037	1.102	1.073	1.153
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

9 Equipment list

Test Platform	SPEAG DASY5 Professional
	SPEAG DASY8 Professional
Description	SAR Test System (Frequency range 10MHz-10GHz)
Software Reference	DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)
	Measurement Software: cDASY8 V16.2.0.1425

Hardware Reference

	Equipment	Manufacturer	Model	Serial Number	Calibration Date	Due date of calibration
☒	Twin Phantom	SPEAG	ELI5	1143	NCR	NCR
☒	Twin Phantom	SPEAG	SAM7	1702	NCR	NCR
☒	Twin Phantom	SPEAG	Twin-SAM V8.0	2155	NCR	NCR
☒	DAE	SPEAG	DAE4	1245	2024-06-05	2025-06-04
☒	DAE	SPEAG	DAE4ip	1826	2025-02-17	2026-02-16
☒	E-Field Probe	SPEAG	EX3DV4	7767	2024-12-31	2025-12-30
☒	E-Field Probe	SPEAG	EX3DV4	3801	2024-06-20	2025-06-19
☒	E-Field Probe	SPEAG	EX3DV4	7735	2025-01-29	2026-01-28
☒	Validation Kits	SPEAG	CLA13	1032	2023-02-09	2026-02-08
☒	Validation Kits	SPEAG	D750V3	1188	2022-03-29	2025-03-28
☒	Validation Kits	SPEAG	D835V2	4d161	2023-08-25	2026-08-24
☒	Validation Kits	SPEAG	D1750V2	1105	2023-11-03	2026-11-02
☒	Validation Kits	SPEAG	D1950V3	1218	2023-05-04	2026-05-03
☒	Validation Kits	SPEAG	D2300V2	1096	2022-03-31	2025-03-30
☒	Validation Kits	SPEAG	D2450V2	922	2023-08-28	2026-08-27
☒	Validation Kits	SPEAG	D2600V2	1158	2022-03-31	2025-03-30
☒	Validation Kits	SPEAG	D5GHzV2	1174	2023-08-23	2026-08-22
☒	Validation Kits	SPEAG	D6.5GHzV2	1102	2023-09-11	2026-09-10
☒	Dielectric parameter probes	SPEAG	DAKS-3.5	1102	N/A	N/A
☒	Universal Radio Communication Tester	R&S	CMW500	111637	2024-09-12	2025-09-11
☒	RF Bi-Directional Coupler	Agilent	86205-60001	MY31400031	NCR	NCR
☒	Signal Generator	R&S	SMB100A	182393	2025-02-05	2026-02-04
☒	Preamplifier	Qiji	YX28980933	202104001	NCR	NCR
☒	Power Sensor	Keysight	U2002H	121251	2024-09-13	2025-09-12
☒	Attenuator	SHX	TS2-3dB	30704	NCR	NCR
☒	Coaxial low pass filter	Mini-Circuits	VLF-2500(+)	NA	NCR	NCR
☒	Coaxial low pass filter	Microlab Fxr	LA-F13	NA	NCR	NCR
☒	DC POWER SUPPLY	SAKO	SK1730SL5A	NA	NCR	NCR
☒	Speed reading thermometer	LKM	DTM3000	NA	2024-09-14	2025-09-13
☒	Humidity and Temperature Indicator	MingGao	MingGao	NA	2024-09-16	2025-09-15

Note: All the equipments are within the valid period when the tests are performed.

10 Calibration certificate

Please see the Appendix C

11 Photographs

Please see the Appendix D

Appendix A: Detailed System Check Results

Appendix B: Detailed Test Results

Appendix C: Calibration certificate

Appendix D: Photographs

Appendix E: Conducted RF Output Power

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