FCC TEST REPORT PART 1

Application No.:	SEWM2312000491RG
Applicant:	Cloud Mobile Holdings, LLC
Manufacturer:	Shenzhen Along Electronic Co., Ltd
Product Name:	Tablet
Model No.(EUT):	Sunshine T2 Elite
Trade Mark:	Cloud Mobile
FCC ID:	2AY6A-T2ELITE
Standards:	FCC 47CFR §2.1093
Date of Receipt:	2023-11-08
Date of Test:	2023-12-11 to 2023-12-20
Date of Issue:	2023-12-20
Test conclusion:	**PASS ***

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

Authorized Signature:

Well Wei

Well Wei
Wireless Laboratory Manager

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REVISION HISTORY

Report Number	Revision	Description	Issue Date
SEWM2312000491RG05	01	Original	2023-12-20

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TEST SUMMARY

Frequency Band	Maximum Reported SAR(W/kg)
	Body (Separate 0mm)
GSM850	0.18
GSM1900	1.39
WCDMA Band II	1.21
WCDMA Band IV	1.09
WCDMA Band V	0.11
LTE Band 2	1.42
LTE Band 4	1.44
LTE Band 5	0.11
LTE Band 7	1.42
LTE Band 12	0.47
LTE Band 13	0.54
LTE Band 17	0.47
LTE Band 41	0.54
LTE Band 66	**1.44**
LTE Band 71	0.24
WI-FI (2.4GHz)	0.93
WI-FI (5GHz)	0.66
BT	0.10
SAR Limited(W/kg)	1.60
Maximum Simultaneous Transmission SAR (W/kg)	
Scenario	Body (Separate 0mm)
Sum SAR	1.58
SPLSR	0.04
SPLSR Limited	0.04

Note:
1) According to TCB workshop October,2014 RF Exposure Procedures Update (Overlapping Bands): SAR for LTE Band 4 (Frequency range:1710 - 1755 MHz)/ LTE Band 17 (Frequency range:704-716 MHz) is respectively covered by LTE Band 66 (Frequency range:1710 - 1780 MHz) / LTE Band 12 (Frequency range:699-716 MHz) due to similar frequency range, same maximum tune up limit and same channel bandwidth.
2) For LTE band 5/12/71that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

Reviewed by

Nick Hu

Nick Hu

Prepared by

Leon Xu

Leon Xu

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1 General Information

1.1 Details of Client

Applicant:	Cloud Mobile Holdings, LLC
Address:	1149 S Hill St, H-400 Los Angeles,CA 90015
Manufacturer:	Shenzhen Along Electronic Co., Ltd.
Address:	No.35, Xinyuan Industrial Zone, Gushu Community, Xixiang Street, Bao 'an District, Shenzhen

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:	Alan-Zhang, Leon-Xu

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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: 717327

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1.4 General Description of EUT

Device Type :	portable device		
Exposure Category:	uncontrolled environment / general population		
Product Name:	Tablet		
Model No.(EUT):	Sunshine T2 Elite		
FCC ID:	2AY6A-T2ELITE		
Trade Mark:	Cloud Mobile		
Product Phase:	Identical Prototype		
IMEI:	1# 354009820000654 2# 354009820000522		
Hardware Version:	AL_P02_MB_V11_B		
Software Version:	Sunshine_T2_Elite_V101		
Device Operating Configurations :			
Modulation Mode:	**GSM:** GMSK; **WCDMA:** QPSK		
	LTE: QPSK,16QAM,64QAM		
	WIFI: DSSS, OFDM; **BT:** GFSK, π/4DQPSK,8DPSK		
Device Class:	B		
GPRS Multi-slots Class:	12	EGPRS Multi-slots Class:	NA
HSDPA UE Category:	8	HSUPA UE Category	6
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 12	699-716	729-746
	LTE Band 13	777-787	746-756
	LTE Band 17	704-716	734-746
	LTE Band 41	3550-3700	3550-3700
	LTE Band 66	1710-1780	2110-2200
	LTE Band 71	663-698	617-652
	Bluetooth	2400~2483.5	2400~2483.5
	Wi-Fi 2.4G	2402~2462	2402~2462
	Wi-Fi 5G	5150~5250	5150~5250
		5250~5350	5250~5350
		5470~5725	5470~5725
		5725~5850	5725~5850
		5725~5850	5725~5850
RF Cable:	Provided by the aplicant		
1# Battery Information:	Model:	Sunshine T2 Elite	

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	Normal Voltage:	+3.8V
	Typical capacity:	6000mAh
	Manufacturer:	SHENZHEN KEHUAXIN ELECTRONICS CO., LTD.

Note:
*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.

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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 D01	General RF Exposure Guidance v06
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

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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.)

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SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. Wireless Laboratory

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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 1：The Ambient Conditions

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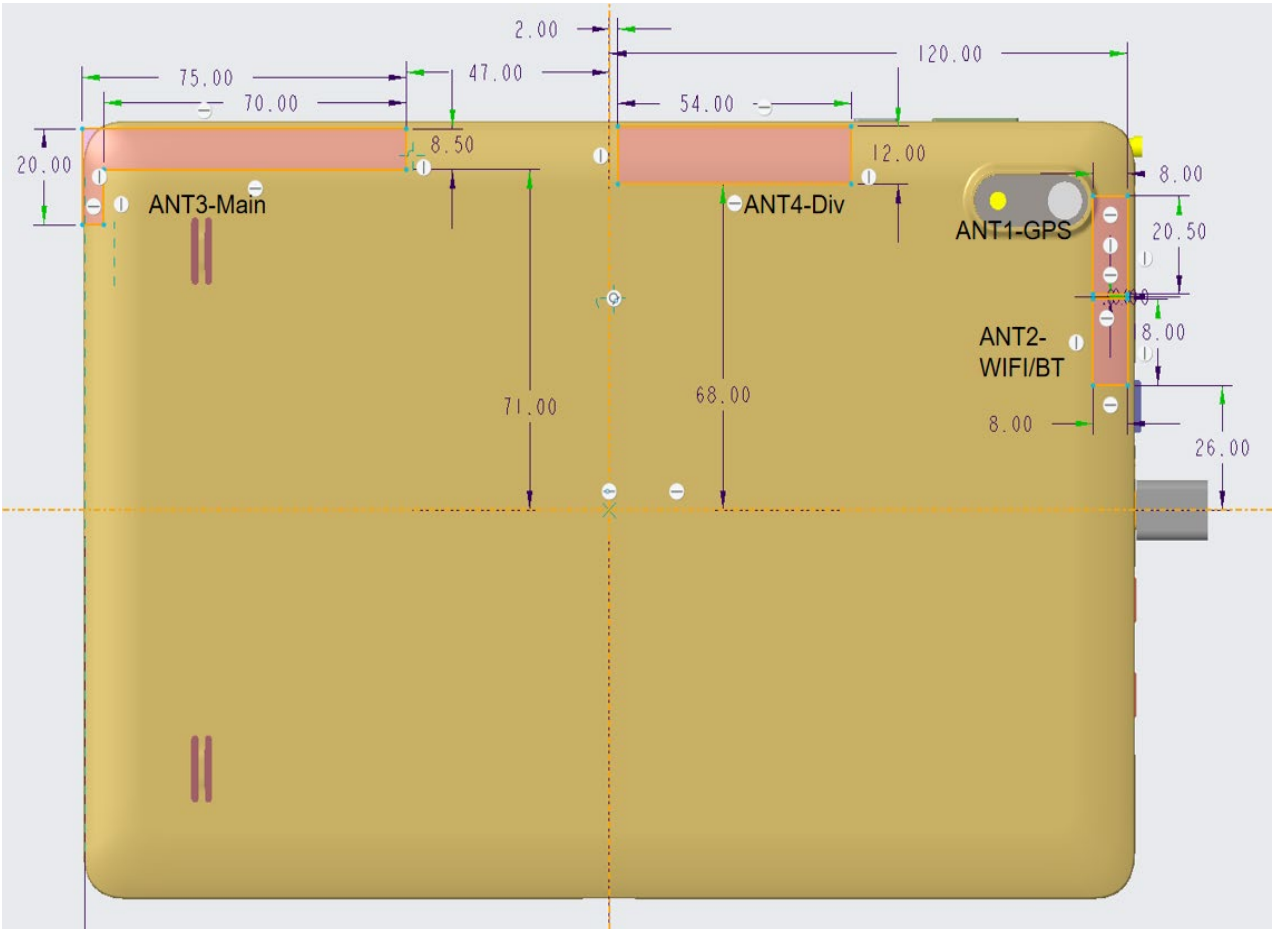
2.1.1 DUT Antenna Locations (Back View)



Note:
Per KDB 616217, the diagonal length is > 200mm, the device is considered a “tablet” device and needed to test 0mm 1-g body SAR.

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2.1.2 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

Standalone SAR exclusion calculation

Bnad	Exposure Condition	f (GHz)	Pmax	Pmax	separation distance(cm)					Calculated Value					SAR Test（Yes or No）				
			(dBm)	(mw)	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	Body 0mm	0.835	33	1995.26	0.05	16.7	0.05	0.05	15.10	0.36	1320.02	0.36	0.36	1144.81	Yes	Yes	Yes	Yes	Yes
GSM1900	Body 0mm	1.9	30.5	1122.02	0.05	16.7	0.05	0.05	15.10	0.05	2193.21	0.05	0.05	1820.94	Yes	No	Yes	Yes	No
WCDMA B2	Body 0mm	1.9	24	251.19	0.05	16.7	0.05	0.05	15.10	0.05	2193.21	0.05	0.05	1820.94	Yes	No	Yes	Yes	No
WCDMA B4	Body 0mm	1.75	25.5	354.81	0.05	16.7	0.05	0.05	15.10	0.05	2200.29	0.05	0.05	1830.10	Yes	No	Yes	Yes	No
WCDMA B5	Body 0mm	0.835	25.5	354.81	0.05	16.7	0.05	0.05	15.10	0.36	1320.02	0.36	0.36	1144.81	Yes	No	Yes	Yes	No
LTE B2	Body 0mm	1.9	24	251.19	0.05	16.7	0.05	0.05	15.10	0.05	2193.21	0.05	0.05	1820.94	Yes	No	Yes	Yes	No
LTE B4	Body 0mm	1.75	24	251.19	0.05	16.7	0.05	0.05	15.10	0.05	2200.29	0.05	0.05	1830.10	Yes	No	Yes	Yes	No
LTE B5	Body 0mm	0.835	24.5	281.84	0.05	16.7	0.05	0.05	15.10	0.36	1320.02	0.36	0.36	1144.81	Yes	No	Yes	Yes	No
LTE B7	Body 0mm	2.6	24	251.19	0.05	16.7	0.05	0.05	15.10	0.03	2166.44	0.03	0.03	1786.42	Yes	No	Yes	Yes	No
LTE B12	Body 0mm	0.75	24.5	281.84	0.05	16.7	0.05	0.05	15.10	0.49	1200.69	0.49	0.49	1048.68	Yes	No	Yes	Yes	No
LTE B13	Body 0mm	0.75	24.5	281.84	0.05	16.7	0.05	0.05	15.10	0.49	1200.69	0.49	0.49	1048.68	Yes	No	Yes	Yes	No
LTE B17	Body 0mm	0.75	24	251.19	0.05	16.7	0.05	0.05	15.10	0.49	1200.69	0.49	0.49	1048.68	Yes	No	Yes	Yes	No
LTE B66	Body 0mm	1.75	24	251.19	0.05	16.7	0.05	0.05	15.10	0.05	2200.29	0.05	0.05	1830.10	Yes	No	Yes	Yes	No
LTE B71	Body 0mm	0.75	24	251.19	0.05	16.7	0.05	0.05	15.10	0.49	1200.69	0.49	0.49	1048.68	Yes	No	Yes	Yes	No
LTE B41	Body 0mm	2.6	23.5	223.87	0.05	16.7	0.05	0.05	15.10	0.03	2166.44	0.03	0.03	1786.42	Yes	No	Yes	Yes	No
WIFI 2.4G	Body 0mm	2.450	22.00	158.49	0.05	0.50	23.20	4.60	10.60	0.03	2.74	3060.00	186.91	914.64	Yes	Yes	No	No	No
WIFI 5.2G	Body 0mm	5.200	22.00	158.49	0.05	0.50	23.20	4.60	106.00	0.01	1.50	3060.00	147.00	3060.00	Yes	Yes	No	Yes	No
WIFI 5.3G	Body 0mm	5.300	22.00	158.49	0.05	0.50	23.20	4.60	106.00	0.01	1.48	3060.00	146.11	3060.00	Yes	Yes	No	Yes	No
WIFI 5.5G	Body 0mm	5.500	22.00	158.49	0.05	0.50	23.20	4.60	106.00	0.01	1.44	3060.00	144.39	3060.00	Yes	Yes	No	Yes	No
WIFI 5.8G	Body 0mm	5.800	22.00	158.49	0.05	0.50	23.20	4.60	106.00	0.01	1.38	3060.00	141.97	3060.00	Yes	Yes	No	Yes	No
BT	Body 0mm	2.450	22.00	158.49	0.05	0.50	23.20	4.60	106.00	0.03	2.74	3060.00	186.91	3060.00	Yes	Yes	No	No	No

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When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

1) (max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]· [√f(GHz)/x] W/kg for test separation distances ≤ 50 mm, where x = 7.5 for 1-g SAR and x = 18.75 for 10-g SAR.
When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

2) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distance is > 50 mm.

Mode	Position	Pmax (dBm)	Pmax (mw)	test separation distance(mm)					f(MHz)	X	Estimated SAR(W/Kg)				
				Back side	Left side	Right side	Top side	Bottom side			Back side	Left side	Right side	Top side	Bottom side
GSM850	Body 0mm	30.5	1122.02	0.50	167.0	0.50	0.50	151.00	848	7.5	measure	0.400	measure	measure	0.400
GSM1900	Body 0mm	27.5	562.34	0.50	167.0	0.50	0.50	151.00	1909	7.5	measure	0.400	measure	measure	0.400
WCDMA B2	Body 0mm	24.5	281.84	0.50	167.0	0.50	0.50	151.00	846	7.5	measure	0.400	measure	measure	0.400
WCDMA B4	Body 0mm	25.5	354.81	0.50	167.0	0.50	0.50	151.00	1750	7.5	measure	0.400	measure	measure	0.400
WCDMA B5	Body 0mm	25.5	354.81	0.50	167.0	0.50	0.50	151.00	1907	7.5	measure	0.400	measure	measure	0.400
LTE B2	Body 0mm	24	251.19	0.50	167.0	0.50	0.50	151.00	715	7.5	measure	0.400	measure	measure	0.400
LTE B4	Body 0mm	24	251.19	0.50	167.0	0.50	0.50	151.00	713	7.5	measure	0.400	measure	measure	0.400
LTE B5	Body 0mm	24.5	281.84	0.50	167.0	0.50	0.50	151.00	784	7.5	measure	0.400	measure	measure	0.400
LTE B7	Body 0mm	24	251.19	0.50	167.0	0.50	0.50	151.00	848	7.5	measure	0.400	measure	measure	0.400
LTE B12	Body 0mm	24.5	281.84	0.50	167.0	0.50	0.50	151.00	848	7.5	measure	0.400	measure	measure	0.400
LTE B13	Body 0mm	24.5	281.84	0.50	167.0	0.50	0.50	151.00	1754	7.5	measure	0.400	measure	measure	0.400
LTE B17	Body 0mm	24	251.19	0.50	167.0	0.50	0.50	151.00	1779	7.5	measure	0.400	measure	measure	0.400
LTE B66	Body 0mm	24	251.19	0.50	167.0	0.50	0.50	151.00	1909	7.5	measure	0.400	measure	measure	0.400
LTE B71	Body 0mm	24	251.19	0.50	167.0	0.50	0.50	151.00	2567	7.5	measure	0.400	measure	measure	0.400
LTE B41	Body 0mm	23.5	223.87	0.50	167.0	0.50	0.50	151.00	2617	7.5	measure	0.400	measure	measure	0.400
WIFI 2.4G	Body 0mm	18.00	63.10	0.50	0.50	232.00	46.00	106.00	2687	7.5	measure	measure	0.400	0.400	0.400
WIFI 5.2G	Body 0mm	16.00	39.81	0.50	0.50	232.00	46.00	106.00	2687	7.5	measure	measure	0.400	0.400	0.400
WIFI 5.3G	Body 0mm	16.00	39.81	0.50	0.50	232.00	46.00	106.00	2687	7.5	measure	measure	0.400	0.400	0.400
WIFI 5.5G	Body 0mm	16.00	39.81	0.50	0.50	232.00	46.00	106.00	2687	7.5	measure	measure	0.400	0.400	0.400
WIFI 5.8G	Body 0mm	16.00	39.81	0.50	0.50	232.00	46.00	106.00	2687	7.5	measure	measure	0.400	0.400	0.400
BT	Body 0mm	10.00	10.00	0.50	0.50	232.00	46.00	106.00	2687	7.5	measure	measure	0.400	0.400	0.400

Table 2: Estimated SAR calculation for WiFi and BT

Note:

1) * - maximum possible output power declared by manufacturer

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3 SAR Measurements System Configuration

3.1 The SAR Measurement System

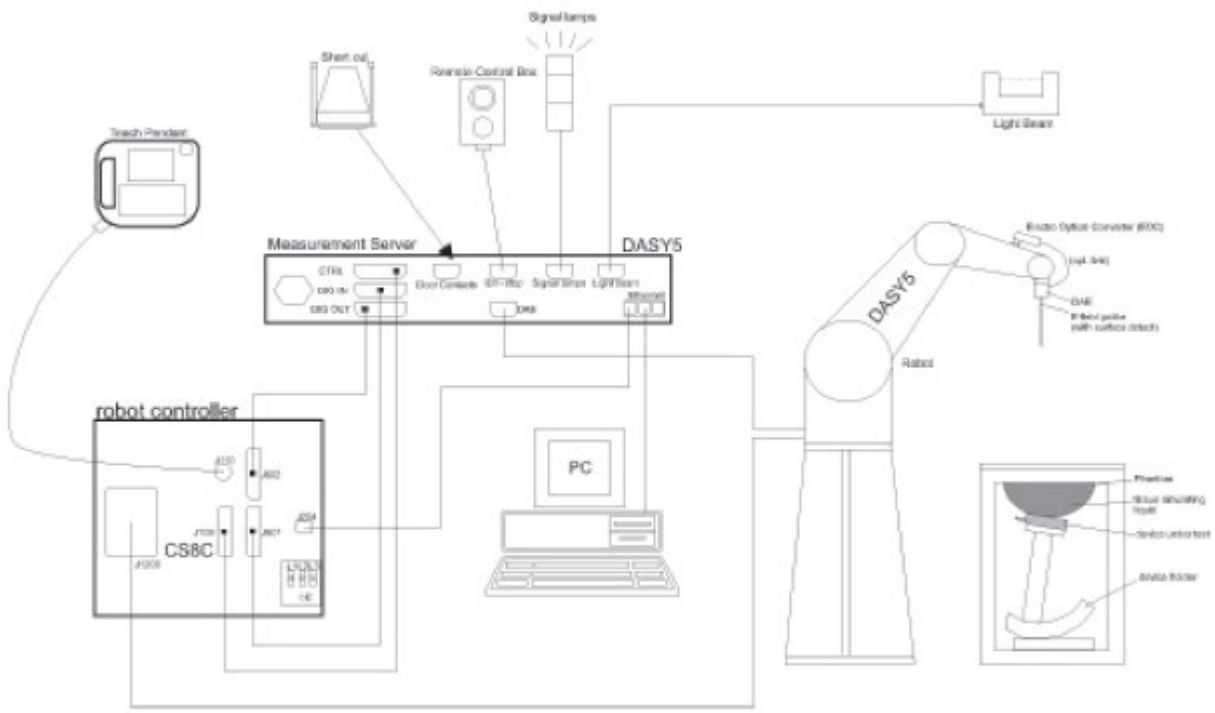
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY5 professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the tissue-Simulate.

The DASY5 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

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- 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.
- DASY5 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	DASY3, DASY4, DASY52 SAR and higher, EASY4/MRI

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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.

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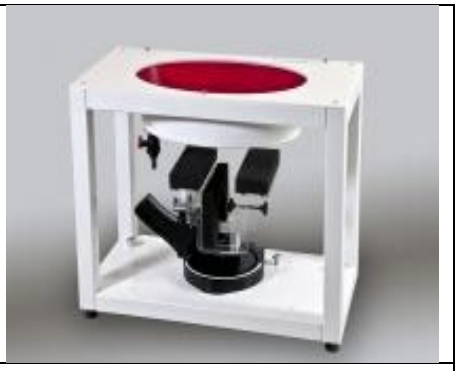
3.5 ELI Phantom

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	

The ELI phantom is used for compliance testing of handheld and body-mounted wireless devices in the frequency range of 4 MHz to 10 GHz. ELI is fully compatible with the IEC/IEEE 62209-1528 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 of SPEAG's dosimetric probes and dipoles.

ELI V5.0 and higher has the same shell geometry and is manufactured from the same material as ELI V4.0 but has a reinforced top structure.

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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.

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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.

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			≤ 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 %

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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 ".DAE3". 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:

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

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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.

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

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

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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.

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5 Description of Test Position

5.1 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 are 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.

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5.1.1 Wireless Router exposure conditions

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10 mm from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed use conditions for this type of devices. For devices with form factors smaller than 9 cm x 5 cm, a test separation distance of 5 mm is required.

5.2 Extremity exposure conditions

Per FCC KDB 648474 D04, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the device is marketed as “Phablet”.
The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for Product Specific 10-g SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, Product Specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.
Due to the SAR result, hotspot power levels, and product specific 10g SAR power levels are the same，no frequency bands need to test with 0mm for the Product Specific 10-g SAR are not required.

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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

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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.

Tissue Type	Measured Frequency (MHz)	Target Tissue (±5%)		Measured Tissue		Deviation (Within ±5%)		Liquid Temp. (℃)	Test Date
		ε_r	σ(S/m)	ε_r	σ(S/m)	ε_r	σ(S/m)		
750 Head	750	41.90	0.89	41.649	0.895	-0.60%	0.56%	22.4	2023/12/11
750 Head	750	41.90	0.89	43.402	0.870	3.58%	-2.25%	22.4	2023/12/12
835 Head	835	41.50	0.90	41.580	0.913	0.19%	1.44%	22.5	2023/12/13
1750 Head	1750	40.10	1.37	40.318	1.375	0.54%	0.36%	23.0	2023/12/14
1900 Head	1900	40.00	1.40	40.561	1.427	1.40%	1.93%	22.5	2023/12/15
2450 Head	2450	39.20	1.80	38.504	1.819	-1.78%	1.06%	22.8	2023/12/16
2600 Head	2600	39.00	1.96	37.939	1.980	-2.72%	1.02%	22.6	2023/12/17
5250 Head	5250	35.90	4.66	35.486	4.707	-1.15%	1.01%	22.6	2023/12/18
5600 Head	5600	35.50	5.07	34.813	5.180	-1.94%	2.17%	22.5	2023/12/19
5750 Head	5750	35.40	5.22	34.442	5.363	-2.71%	2.74%	22.6	2023/12/20

Table 4：Measurement result of Tissue electric parameters.

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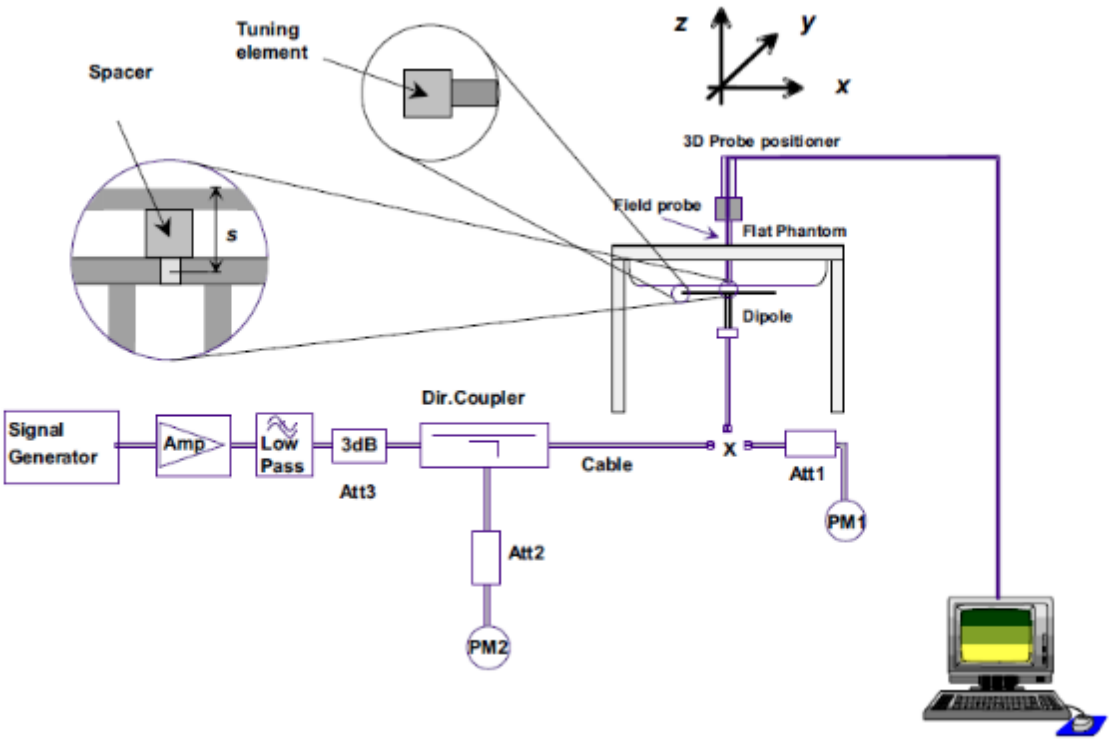
6.2 SAR System Check

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-3. the microwave circuit arrangement used for SAR system check

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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.

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6.2.2 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.

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6.2.3 Summary System Check 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)	Target SAR (normalized to 1W)	Deviation (Within ±10%)		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)	
D750V3	Head	2.12	1.39	8.48	5.56	8.48	5.56	0.00%	0.00%	2023/12/11
D750V3	Head	2.09	1.37	8.36	5.48	8.48	5.56	-1.42%	-1.44%	2023/12/12
D835V2	Head	2.46	1.62	9.84	6.48	9.52	6.17	3.36%	5.02%	2023/12/13
D1750V2	Head	8.52	4.52	34.08	18.08	35.30	18.70	-3.46%	-3.32%	2023/12/14
D1950V2	Head	9.92	5.15	39.68	20.60	39.70	20.30	-0.05%	1.48%	2023/12/15
D2450V2	Head	12.50	5.58	50.00	22.32	52.20	24.50	-4.21%	-8.90%	2023/12/16
D2600V2	Head	13.50	6.09	54.00	24.36	57.10	25.40	-5.43%	-4.09%	2023/12/17
Validation Kit		**Measured SAR 100mW**	**Measured SAR 100mW**	**Measured SAR (normalized to 1W)**	**Measured SAR (normalized to 1W)**	**Target SAR (normalized to 1W)**	**Target SAR (normalized to 1W)**	**Deviation (Within ±10%)**		**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)	7.20	2.05	72.00	20.50	78.00	21.80	-7.69%	-5.96%	2023/12/18
	Head(5.6GHz)	8.15	2.30	81.50	23.00	79.90	22.50	2.00%	2.22%	2023/12/19
	Head(5.75GHz)	8.26	2.31	82.60	23.10	76.40	21.20	8.12%	8.96%	2023/12/20

Table 5：SAR System Check Result.

6.2.4 Detailed System Check Results

Please see the Appendix A

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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 5 timeslots in downlink, the maximum total timeslot is 6. The EGPRS class is 12 for this EUT, it has at most 4 timeslots in uplink, and at most 5 timeslots in downlink, the maximum total timeslot is 6.

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

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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）. Head SAR

SAR for next to the ear head exposure 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 AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure

3）. 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.

4）. 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.

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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

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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) <u>HSUPA</u>

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.

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

Note 1: 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

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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.

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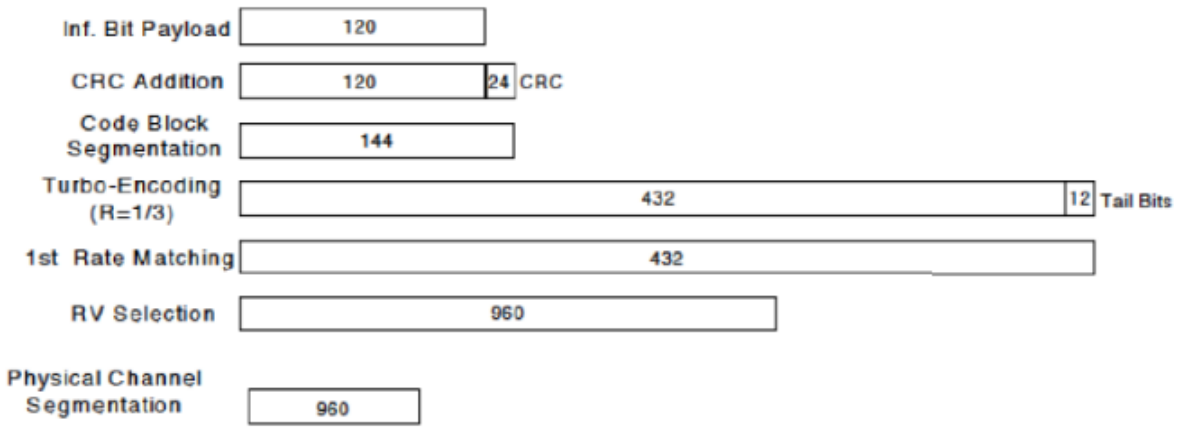

Figure C.8.10: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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.

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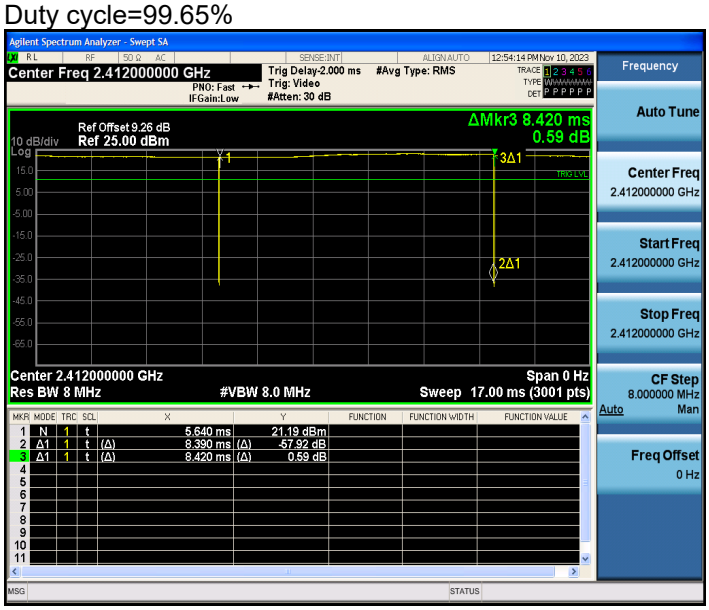
7.2.3 WiFi Test Configuration

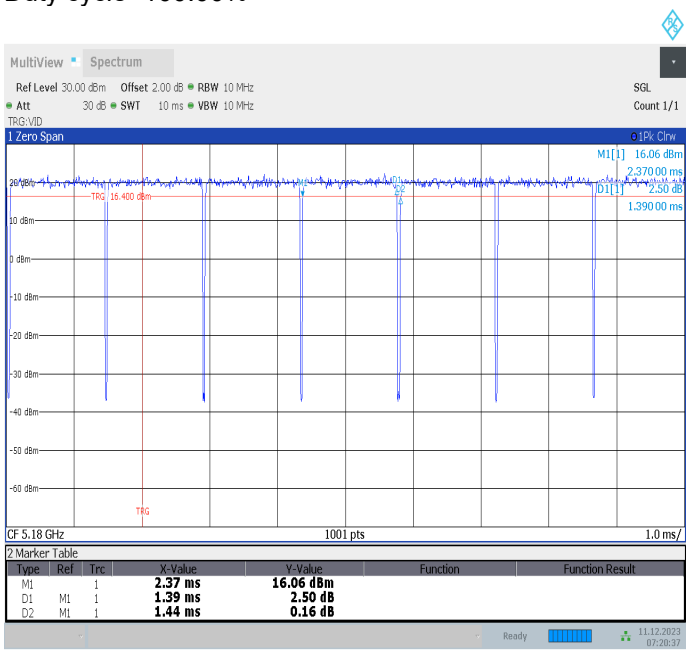
A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement.

7.2.3.1 Duty cycle

Wi-Fi 2.4GHz 802.11b:
Duty cycle=99.65%



Wi-Fi 5GHz 802.11a Ant7:
Duty cycle=100.00%



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7.2.3.2 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.

7.2.3.3 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.

7.2.3.4 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

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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”

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7.2.3.5 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.

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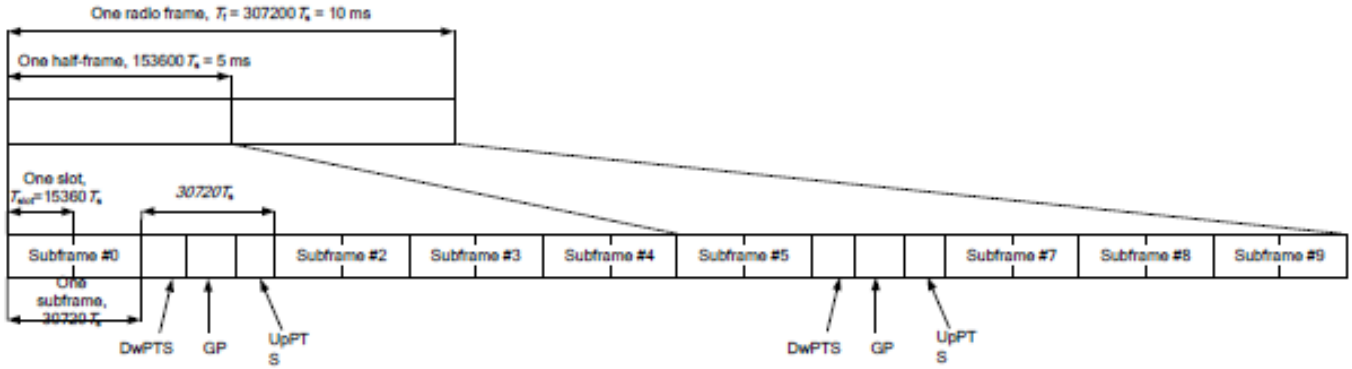
7.2.4 LTE Test Configuration

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:



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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

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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.

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8 Test Result

8.1 Measurement of RF conducted Power

GSM 850										
Burst Output Power(dBm)						Division Factors	Frame-Average Output Power(dBm)			
Channel		128	190	251	Tune up		128	190	251	Tune up
GPRS (GMSK)	1 TX Slot	31.72	31.86	31.84	32.50	-9.19	22.53	22.67	22.65	23.31
	2 TX Slots	30.99	31.14	31.12	31.50	-6.18	24.81	24.96	24.94	25.32
	3 TX Slots	29.34	29.42	29.40	30.50	-4.42	24.92	25.00	24.98	26.08
	4 TX Slots	27.99	28.15	28.15	29.50	-3.17	24.82	24.98	24.98	26.33

GSM 1900										
Burst Output Power(dBm)						Division Factors	Frame-Average Output Power(dBm)			
Channel		512	661	810	Tune up		512	661	810	Tune up
GPRS (GMSK)	1 TX Slot	29.52	29.26	29.15	30.00	-9.19	20.33	20.07	19.96	20.81
	2 TX Slots	28.64	28.38	28.65	29.00	-6.18	22.46	22.20	22.47	22.82
	3 TX Slots	26.87	26.55	26.15	28.00	-4.42	22.45	22.13	21.73	23.58
	4 TX Slots	25.62	25.31	25.30	27.00	-3.17	22.45	22.14	22.13	23.83

WCDMA Band II					
Average Conducted Power(dBm)					
Channel		9262	9400	9538	Tune up
WCDMA	12.2kbps RMC	22.37	22.25	22.31	23.00
HSDPA	Subtest 1	21.14	21.11	20.93	22.00
	Subtest 2	21.11	21.10	20.89	22.00
	Subtest 3	20.65	20.63	20.46	21.50
	Subtest 4	20.67	20.59	20.43	21.50
HSUPA	Subtest 1	19.11	19.02	18.89	20.00
	Subtest 2	18.85	18.89	18.95	19.00
	Subtest 3	19.86	19.90	19.91	20.00
	Subtest 4	18.71	18.53	18.39	20.00
	Subtest 5	19.96	19.98	19.92	21.00

WCDMA Band IV					
Average Conducted Power(dBm)					
Channel		1312	1412	1513	Tune up
WCDMA	12.2kbps RMC	22.02	22.06	22.18	23.00
HSDPA	Subtest 1	20.91	20.94	21.09	22.00
	Subtest 2	20.90	20.94	21.08	22.00
	Subtest 3	20.41	20.43	20.56	21.50
	Subtest 4	20.38	20.43	20.46	21.50

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HSUPA	Subtest 1	18.82	18.85	18.98	20.00
	Subtest 2	18.87	18.89	19.00	19.00
	Subtest 3	19.81	19.87	19.99	20.00
	Subtest 4	18.35	18.39	18.50	20.00
	Subtest 5	19.84	19.83	19.98	21.00

WCDMA Band V					
Average Conducted Power(dBm)					
Channel		4132	4182	4233	Tune up
WCDMA	12.2kbps RMC	22.70	22.71	22.55	24.00
HSDPA	Subtest 1	21.80	21.69	21.52	23.00
	Subtest 2	21.82	21.67	21.51	23.00
	Subtest 3	21.27	21.18	20.97	22.50
	Subtest 4	21.22	21.09	20.96	22.50
HSUPA	Subtest 1	19.80	19.69	19.51	21.00
	Subtest 2	19.80	19.69	19.54	20.00
	Subtest 3	20.82	20.68	20.52	21.00
	Subtest 4	19.30	19.19	19.03	21.00
	Subtest 5	20.79	20.66	20.49	22.00

LTE Band 2				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 18607	Channel 18900	Channel 19193	Tune up
1.4MHz	QPSK	1	0	22.65	22.58	22.56	24.00
		1	2	22.94	22.94	22.85	24.00
		1	5	22.54	22.45	22.40	24.00
		3	0	22.64	22.60	22.52	24.00
		3	2	22.99	22.93	22.85	24.00
		3	3	22.58	22.49	22.44	24.00
		6	0	21.83	21.83	21.74	23.00
	16QAM	1	0	21.94	21.91	21.86	23.00
		1	2	22.27	22.25	22.12	23.00
		1	5	21.91	21.83	21.68	23.00
		3	0	21.89	21.89	21.83	23.00
		3	2	21.90	21.83	21.77	23.00
		3	3	21.83	21.79	21.62	23.00
		6	0	20.85	20.84	20.75	22.00
	64QAM	1	0	21.08	21.08	20.97	22.00
		1	2	21.38	21.35	21.24	22.00
		1	5	20.99	20.97	20.79	22.00

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		3	0	21.11	21.04	20.96	22.00
		3	2	21.39	21.38	21.25	22.00
		3	3	21.02	20.97	20.78	22.00
		6	0	19.92	19.94	19.85	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 18615	Channel 18900	Channel 19185	Tune up
3MHz	QPSK	1	0	22.65	22.59	22.54	24.00
		1	7	22.96	22.96	22.85	24.00
		1	14	22.53	22.50	22.42	24.00
		8	0	21.87	21.85	21.83	23.00
		8	4	21.85	21.85	21.75	23.00
		8	7	21.83	21.79	21.63	23.00
		15	0	21.85	21.82	21.76	23.00
	16QAM	1	0	21.96	21.90	21.87	23.00
		1	7	22.25	22.28	22.15	23.00
		1	14	21.88	21.85	21.69	23.00
		8	0	20.87	20.90	20.80	22.00
		8	4	20.89	20.79	20.77	22.00
		8	7	20.78	20.86	20.60	22.00
		15	0	20.88	20.83	20.72	22.00
	64QAM	1	0	21.11	21.04	20.94	22.00
		1	7	21.39	21.37	21.22	22.00
		1	14	21.01	20.96	20.77	22.00
		8	0	20.00	20.05	19.98	21.00
		8	4	19.95	19.87	19.84	21.00
		8	7	19.85	19.98	19.73	21.00
		15	0	19.92	19.90	19.80	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 18625	Channel 18900	Channel 19175	Tune up
5MHz	QPSK	1	0	22.64	22.56	22.56	24.00
		1	13	22.97	22.96	22.86	24.00
		1	24	22.53	22.49	22.40	24.00
		12	0	21.91	21.89	21.81	23.00
		12	6	21.85	21.83	21.75	23.00
		12	13	21.81	21.78	21.61	23.00
		25	0	21.87	21.83	21.78	23.00
	16QAM	1	0	21.96	21.91	21.90	23.00
		1	13	22.26	22.28	22.15	23.00
		1	24	21.86	21.84	21.67	23.00
		12	0	20.85	20.89	20.82	22.00
		12	6	20.93	20.79	20.75	22.00

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		12	13	20.77	20.82	20.62	22.00
		25	0	20.86	20.87	20.73	22.00
	64QAM	1	0	21.08	21.03	20.96	22.00
		1	13	21.39	21.36	21.23	22.00
		1	24	21.00	20.96	20.76	22.00
		12	0	19.97	20.03	19.99	21.00
		12	6	19.93	19.87	19.85	21.00
		12	13	19.86	19.95	19.78	21.00
		25	0	19.95	19.92	19.83	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18650	18900	19150	
10MHz	QPSK	1	0	22.68	22.55	22.56	24.00
		1	25	22.97	22.97	22.86	24.00
		1	49	22.56	22.49	22.43	24.00
		25	0	21.86	21.85	21.81	23.00
		25	13	21.88	21.82	21.74	23.00
		25	25	21.81	21.80	21.63	23.00
		50	0	21.87	21.81	21.73	23.00
	16QAM	1	0	21.97	21.88	21.86	23.00
		1	25	22.25	22.29	22.15	23.00
		1	49	21.88	21.86	21.71	23.00
		25	0	20.87	20.91	20.81	22.00
		25	13	20.89	20.84	20.77	22.00
		25	25	20.79	20.85	20.62	22.00
		50	0	20.84	20.87	20.75	22.00
	64QAM	1	0	21.13	21.04	20.95	22.00
		1	25	21.41	21.36	21.22	22.00
		1	49	21.00	20.97	20.79	22.00
		25	0	19.95	20.06	19.94	21.00
		25	13	19.98	19.86	19.84	21.00
		25	25	19.83	20.00	19.74	21.00
		50	0	19.90	19.92	19.84	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18675	18900	19125	
15MHz	QPSK	1	0	22.63	22.56	22.57	24.00
		1	38	22.98	22.92	22.88	24.00
		1	74	22.55	22.49	22.40	24.00
		36	0	21.87	21.85	21.84	23.00
		36	18	21.90	21.82	21.72	23.00
		36	39	21.79	21.79	21.62	23.00
		75	0	21.84	21.82	21.74	23.00

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	16QAM	1	0	21.96	21.92	21.88	23.00
		1	38	22.23	22.30	22.14	23.00
		1	74	21.86	21.86	21.67	23.00
		36	0	20.89	20.88	20.80	22.00
		36	18	20.91	20.82	20.77	22.00
		36	39	20.78	20.86	20.62	22.00
		75	0	20.86	20.86	20.76	22.00
	64QAM	1	0	21.13	21.08	20.98	22.00
		1	38	21.41	21.37	21.22	22.00
		1	74	20.98	20.96	20.75	22.00
		36	0	19.99	20.04	19.98	21.00
		36	18	19.93	19.88	19.86	21.00
		36	39	19.81	19.96	19.74	21.00
		75	0	19.92	19.91	19.85	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18700	18900	19100	
20MHz	QPSK	1	0	22.93	22.85	22.82	24.00
		1	50	23.22	23.24	23.14	24.00
		1	99	22.83	22.75	22.70	24.00
		50	0	22.15	22.16	22.10	23.00
		50	25	22.15	22.10	22.02	23.00
		50	50	22.09	22.08	21.88	23.00
		100	0	22.11	22.13	22.03	23.00
	16QAM	1	0	22.23	22.18	22.16	23.00
		1	50	22.53	22.55	22.41	23.00
		1	99	22.16	22.12	21.97	23.00
		50	0	21.14	21.17	21.10	22.00
		50	25	21.18	21.09	21.02	22.00
		50	50	21.05	21.12	20.89	22.00
		100	0	21.14	21.13	21.02	22.00
	64QAM	1	0	21.38	21.33	21.24	22.00
		1	50	21.67	21.65	21.50	22.00
		1	99	21.27	21.22	21.05	22.00
		50	0	20.25	20.31	20.24	21.00
		50	25	20.23	20.16	20.11	21.00
		50	50	20.11	20.25	20.03	21.00
		100	0	20.20	20.19	20.10	21.00

LTE Band 4				**Conducted Power(dBm)**			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up

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				19957	20175	20393	
1.4MHz	QPSK	1	0	22.09	22.08	22.15	24.00
		1	2	22.46	22.51	22.54	24.00
		1	5	22.16	22.10	22.22	24.00
		3	0	22.06	22.06	22.16	24.00
		3	2	22.45	22.51	22.52	24.00
		3	3	22.13	22.10	22.21	24.00
		6	0	21.40	21.47	21.47	23.00
	16QAM	1	0	21.41	21.40	21.38	23.00
		1	2	21.74	21.73	21.81	23.00
		1	5	21.42	21.42	21.43	23.00
		3	0	21.44	21.47	21.53	23.00
		3	2	21.40	21.44	21.50	23.00
		3	3	21.38	21.40	21.33	23.00
		6	0	20.38	20.42	20.46	22.00
	64QAM	1	0	20.45	20.54	20.45	22.00
		1	2	20.83	20.88	20.86	22.00
		1	5	20.51	20.48	20.58	22.00
		3	0	20.43	20.55	20.44	22.00
		3	2	20.80	20.88	20.85	22.00
		3	3	20.52	20.52	20.61	22.00
		6	0	19.48	19.49	19.56	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				19965	20175	20385	
3MHz	QPSK	1	0	22.07	22.06	22.12	24.00
		1	7	22.47	22.53	22.53	24.00
		1	14	22.16	22.12	22.23	24.00
		8	0	21.33	21.48	21.52	23.00
		8	4	21.42	21.45	21.50	23.00
		8	7	21.45	21.51	21.55	23.00
		15	0	21.44	21.45	21.46	23.00
	16QAM	1	0	21.39	21.39	21.34	23.00
		1	7	21.74	21.76	21.77	23.00
		1	14	21.46	21.39	21.44	23.00
		8	0	20.36	20.40	20.51	22.00
		8	4	20.41	20.40	20.45	22.00
		8	7	20.44	20.50	20.47	22.00
		15	0	20.36	20.42	20.48	22.00
	64QAM	1	0	20.47	20.54	20.42	22.00
		1	7	20.81	20.83	20.85	22.00
		1	14	20.51	20.49	20.60	22.00

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		8	0	19.43	19.48	19.66	21.00
		8	4	19.48	19.48	19.54	21.00
		8	7	19.49	19.54	19.63	21.00
		15	0	19.44	19.48	19.54	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 19975	Channel 20175	Channel 20375	Tune up
5MHz	QPSK	1	0	22.07	22.03	22.15	24.00
		1	13	22.48	22.53	22.51	24.00
		1	24	22.12	22.09	22.22	24.00
		12	0	21.35	21.48	21.53	23.00
		12	6	21.41	21.41	21.50	23.00
		12	13	21.49	21.48	21.53	23.00
		25	0	21.40	21.44	21.49	23.00
	16QAM	1	0	21.39	21.40	21.33	23.00
		1	13	21.73	21.76	21.78	23.00
		1	24	21.45	21.39	21.43	23.00
		12	0	20.36	20.43	20.54	22.00
		12	6	20.37	20.37	20.44	22.00
		12	13	20.42	20.45	20.48	22.00
		25	0	20.37	20.45	20.49	22.00
	64QAM	1	0	20.45	20.54	20.45	22.00
		1	13	20.81	20.87	20.88	22.00
		1	24	20.54	20.48	20.61	22.00
		12	0	19.44	19.51	19.67	21.00
		12	6	19.50	19.51	19.53	21.00
		12	13	19.48	19.58	19.64	21.00
		25	0	19.47	19.46	19.51	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 20000	Channel 20175	Channel 20350	Tune up
10MHz	QPSK	1	0	22.08	22.08	22.13	24.00
		1	25	22.48	22.53	22.51	24.00
		1	49	22.12	22.09	22.23	24.00
		25	0	21.37	21.46	21.51	23.00
		25	13	21.40	21.44	21.51	23.00
		25	25	21.49	21.49	21.52	23.00
		50	0	21.45	21.49	21.50	23.00
	16QAM	1	0	21.38	21.40	21.35	23.00
		1	25	21.74	21.77	21.76	23.00
		1	49	21.44	21.39	21.47	23.00
		25	0	20.34	20.45	20.50	22.00
		25	13	20.42	20.40	20.44	22.00

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		25	25	20.46	20.49	20.50	22.00
		50	0	20.37	20.46	20.49	22.00
	64QAM	1	0	20.43	20.55	20.41	22.00
		1	25	20.82	20.86	20.88	22.00
		1	49	20.54	20.49	20.62	22.00
		25	0	19.43	19.51	19.65	21.00
		25	13	19.48	19.47	19.58	21.00
		25	25	19.50	19.57	19.61	21.00
		50	0	19.43	19.50	19.53	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20025	20175	20325	
15MHz	QPSK	1	0	22.10	22.08	22.13	24.00
		1	38	22.43	22.54	22.56	24.00
		1	74	22.12	22.12	22.23	24.00
		36	0	21.35	21.48	21.55	23.00
		36	18	21.39	21.42	21.47	23.00
		36	39	21.45	21.52	21.51	23.00
		75	0	21.42	21.46	21.46	23.00
	16QAM	1	0	21.41	21.40	21.38	23.00
		1	38	21.76	21.74	21.76	23.00
		1	74	21.47	21.43	21.45	23.00
		36	0	20.34	20.41	20.54	22.00
		36	18	20.37	20.40	20.44	22.00
		36	39	20.42	20.46	20.47	22.00
		75	0	20.38	20.43	20.48	22.00
	64QAM	1	0	20.47	20.53	20.41	22.00
		1	38	20.81	20.86	20.84	22.00
		1	74	20.50	20.47	20.63	22.00
		36	0	19.44	19.51	19.67	21.00
		36	18	19.47	19.48	19.57	21.00
		36	39	19.47	19.58	19.60	21.00
		75	0	19.47	19.50	19.55	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20050	20175	20300	
20MHz	QPSK	1	0	22.16	22.13	22.21	24.00
		1	50	22.53	22.60	22.61	24.00
		1	99	22.22	22.18	22.29	24.00
		50	0	21.42	21.54	21.61	23.00
		50	25	21.49	21.50	21.57	23.00
		50	50	21.54	21.57	21.61	23.00
		100	0	21.50	21.54	21.56	23.00

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	16QAM	1	0	21.48	21.48	21.43	23.00
		1	50	21.83	21.83	21.86	23.00
		1	99	21.52	21.48	21.53	23.00
		50	0	20.44	20.50	20.60	22.00
		50	25	20.47	20.46	20.54	22.00
		50	50	20.51	20.55	20.57	22.00
		100	0	20.46	20.51	20.55	22.00
	64QAM	1	0	20.53	20.62	20.50	22.00
		1	50	20.88	20.93	20.94	22.00
		1	99	20.59	20.57	20.68	22.00
		50	0	19.53	19.56	19.72	21.00
		50	25	19.55	19.56	19.63	21.00
		50	50	19.56	19.63	19.69	21.00
		100	0	19.53	19.56	19.61	21.00

LTE Band 5				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 20407	Channel 20525	Channel 20643	Tune up
1.4MHz	QPSK	1	0	23.30	23.20	23.19	24.00
		1	2	23.40	23.33	23.29	24.00
		1	5	23.18	23.14	23.07	24.00
		3	0	23.29	23.20	23.20	24.00
		3	2	23.41	23.34	23.31	24.00
		3	3	23.20	23.10	23.05	24.00
		6	0	22.29	22.25	22.23	23.00
	16QAM	1	0	22.45	22.41	22.33	23.00
		1	2	22.57	22.48	22.44	23.00
		1	5	22.33	22.36	22.24	23.00
		3	0	22.29	22.27	22.22	23.00
		3	2	22.50	22.39	22.34	23.00
		3	3	22.59	22.47	22.47	23.00
		6	0	21.28	21.23	21.22	22.00
	64QAM	1	0	21.59	21.44	21.44	22.00
		1	2	21.73	21.50	21.62	22.00
		1	5	21.47	21.45	21.34	22.00
		3	0	21.60	21.45	21.49	22.00
		3	2	21.69	21.50	21.60	22.00
		3	3	21.44	21.44	21.39	22.00
		6	0	20.46	20.34	20.28	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up

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				20415	20525	20635	
3MHz	QPSK	1	0	23.31	23.23	23.17	24.00
		1	7	23.43	23.32	23.31	24.00
		1	14	23.21	23.15	23.02	24.00
		8	0	22.39	22.36	22.29	23.00
		8	4	22.34	22.25	22.21	23.00
		8	7	22.32	22.18	22.18	23.00
		15	0	22.34	22.26	22.24	23.00
	16QAM	1	0	22.45	22.42	22.29	23.00
		1	7	22.57	22.45	22.48	23.00
		1	14	22.36	22.35	22.26	23.00
		8	0	21.32	21.29	21.30	22.00
		8	4	21.36	21.20	21.21	22.00
		8	7	21.29	21.19	21.25	22.00
		15	0	21.33	21.27	21.23	22.00
	64QAM	1	0	21.59	21.48	21.46	22.00
		1	7	21.73	21.51	21.60	22.00
		1	14	21.48	21.43	21.39	22.00
		8	0	20.47	20.35	20.40	21.00
		8	4	20.48	20.30	20.24	21.00
		8	7	20.42	20.29	20.29	21.00
		15	0	20.44	20.38	20.33	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 20425	Channel 20525	Channel 20625	Tune up
5MHz	QPSK	1	0	23.30	23.21	23.16	24.00
		1	13	23.38	23.32	23.32	24.00
		1	24	23.20	23.14	23.06	24.00
		12	0	22.37	22.32	22.31	23.00
		12	6	22.35	22.20	22.19	23.00
		12	13	22.29	22.21	22.19	23.00
		25	0	22.30	22.28	22.21	23.00
	16QAM	1	0	22.48	22.37	22.34	23.00
		1	13	22.61	22.44	22.46	23.00
		1	24	22.33	22.35	22.22	23.00
		12	0	21.35	21.34	21.29	22.00
		12	6	21.32	21.20	21.17	22.00
		12	13	21.30	21.19	21.23	22.00
		25	0	21.28	21.24	21.22	22.00
	64QAM	1	0	21.58	21.49	21.44	22.00
		1	13	21.70	21.49	21.58	22.00
		1	24	21.47	21.41	21.36	22.00

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		12	0	20.48	20.39	20.37	21.00
		12	6	20.47	20.31	20.24	21.00
		12	13	20.37	20.27	20.29	21.00
		25	0	20.48	20.39	20.31	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20450	20525	20600	
10MHz	QPSK	1	0	23.39	23.30	23.26	24.00
		1	25	23.40	23.48	23.39	24.00
		1	49	23.26	23.20	23.12	24.00
		25	0	22.42	22.47	22.39	23.00
		25	13	22.41	22.30	22.28	23.00
		25	25	22.37	22.28	22.27	23.00
		50	0	22.39	22.34	22.30	23.00
	16QAM	1	0	22.55	22.47	22.39	23.00
		1	25	22.66	22.53	22.54	23.00
		1	49	22.42	22.42	22.32	23.00
		25	0	21.41	21.39	21.36	22.00
		25	13	21.41	21.27	21.27	22.00
		25	25	21.38	21.29	21.31	22.00
		50	0	21.38	21.32	21.31	22.00
	64QAM	1	0	21.68	21.54	21.54	22.00
		1	25	21.78	21.59	21.67	22.00
		1	49	21.54	21.50	21.44	22.00
		25	0	20.53	20.45	20.47	21.00
		25	13	20.56	20.39	20.34	21.00
		25	25	20.47	20.34	20.37	21.00
		50	0	20.53	20.44	20.38	21.00

LTE Band 7				**Conducted Power(dBm)**			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20775	21100	21425	
5MHz	QPSK	1	0	22.51	22.34	22.14	24.00
		1	13	22.72	22.65	22.31	24.00
		1	24	22.20	22.10	22.08	24.00
		12	0	21.68	21.65	21.39	23.00
		12	6	21.68	21.53	21.20	23.00
		12	13	21.54	21.45	21.44	23.00
		25	0	21.65	21.54	21.20	23.00
	16QAM	1	0	21.86	21.63	21.46	23.00
		1	13	22.05	21.94	21.64	23.00

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		1	24	21.56	21.40	21.09	23.00
		12	0	20.68	20.69	20.37	22.00
		12	6	20.72	20.59	20.25	22.00
		12	13	20.60	20.44	20.45	22.00
		25	0	20.68	20.62	20.22	22.00
	64QAM	1	0	20.94	20.75	20.55	22.00
		1	13	21.12	21.07	20.70	22.00
		1	24	20.71	20.45	20.09	22.00
		12	0	19.78	19.75	19.46	21.00
		12	6	19.84	19.73	19.35	21.00
		12	13	19.69	19.60	19.00	21.00
		25	0	19.84	19.74	19.36	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20800	21100	21400	
10MHz	QPSK	1	0	22.50	22.31	22.14	24.00
		1	25	22.70	22.64	22.31	24.00
		1	49	22.23	22.09	22.10	24.00
		25	0	21.67	21.61	21.38	23.00
		25	13	21.71	21.56	21.21	23.00
		25	25	21.54	21.45	21.46	23.00
		50	0	21.60	21.52	21.19	23.00
	16QAM	1	0	21.81	21.63	21.49	23.00
		1	25	22.02	21.91	21.66	23.00
		1	49	21.59	21.37	21.08	23.00
		25	0	20.68	20.66	20.40	22.00
		25	13	20.72	20.59	20.25	22.00
		25	25	20.57	20.46	20.55	22.00
		50	0	20.67	20.62	20.20	22.00
	64QAM	1	0	20.95	20.73	20.59	22.00
		1	25	21.11	21.03	20.71	22.00
		1	49	20.68	20.46	20.13	22.00
		25	0	19.78	19.73	19.45	21.00
		25	13	19.83	19.71	19.33	21.00
		25	25	19.71	19.58	19.55	21.00
		50	0	19.79	19.71	19.34	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20825	21100	21375	
15MHz	QPSK	1	0	22.48	22.32	22.11	24.00
		1	38	22.74	22.64	22.26	24.00
		1	74	22.22	22.05	22.05	24.00
		36	0	21.67	21.63	21.38	23.00

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		36	18	21.68	21.54	21.20	23.00
		36	39	21.52	21.45	21.35	23.00
		75	0	21.65	21.55	21.21	23.00
	16QAM	1	0	21.83	21.62	21.51	23.00
		1	38	22.02	21.92	21.68	23.00
		1	74	21.60	21.40	21.08	23.00
		36	0	20.68	20.71	20.37	22.00
		36	18	20.74	20.58	20.25	22.00
		36	39	20.56	20.47	20.64	22.00
		75	0	20.66	20.57	20.22	22.00
	64QAM	1	0	20.98	20.77	20.56	22.00
		1	38	21.11	21.07	20.74	22.00
		1	74	20.71	20.47	20.10	22.00
		36	0	19.79	19.71	19.49	21.00
		36	18	19.81	19.71	19.36	21.00
		36	39	19.68	19.61	19.03	21.00
		75	0	19.80	19.74	19.35	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20850	21100	21350	
20MHz	QPSK	1	0	22.66	22.50	22.29	24.00
		1	50	22.88	22.90	22.46	24.00
		1	99	22.40	22.25	22.25	24.00
		50	0	21.84	21.80	21.54	23.00
		50	25	21.71	21.88	21.37	23.00
		50	50	21.72	21.60	21.13	23.00
		100	0	21.72	21.80	21.36	23.00
	16QAM	1	0	22.01	21.81	21.66	23.00
		1	50	22.22	22.09	21.84	23.00
		1	99	21.75	21.57	21.24	23.00
		50	0	20.88	20.86	20.56	22.00
		50	25	20.91	20.76	20.42	22.00
		50	50	20.76	20.64	20.12	22.00
		100	0	20.84	20.77	20.40	22.00
	64QAM	1	0	21.14	20.92	20.74	22.00
		1	50	21.30	21.23	20.90	22.00
		1	99	20.88	20.63	20.29	22.00
		50	0	19.97	19.91	19.64	21.00
		50	25	19.99	19.91	19.53	21.00
		50	50	19.86	19.78	19.19	21.00
		100	0	19.99	19.90	19.53	21.00

检验检测专用章 Inspection & Testing Services
SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. Wireless Laboratory

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LTE FDD Band 12				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 23017	Channel 23095	Channel 23173	Tune up
1.4MHz	QPSK	1	0	22.76	22.73	22.75	24.00
		1	2	22.92	22.93	22.97	24.00
		1	5	22.73	22.77	22.81	24.00
		3	0	22.75	22.75	22.74	24.00
		3	2	22.94	22.94	22.93	24.00
		3	3	22.73	22.75	22.81	24.00
		6	0	22.03	21.87	21.88	23.00
	16QAM	1	0	21.98	21.98	22.03	23.00
		1	2	22.14	22.13	22.20	23.00
		1	5	21.94	22.02	22.01	23.00
		3	0	22.01	21.85	21.92	23.00
		3	2	22.01	21.99	22.01	23.00
		3	3	22.13	22.12	22.19	23.00
		6	0	21.00	20.82	20.87	22.00
	64QAM	1	0	21.09	21.10	21.05	22.00
		1	2	21.24	21.19	21.21	22.00
		1	5	21.07	21.13	21.08	22.00
		3	0	21.07	21.11	21.09	22.00
		3	2	21.24	21.15	21.24	22.00
		3	3	21.12	21.17	21.12	22.00
		6	0	20.06	19.94	19.96	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 23025	Channel 23095	Channel 23165	Tune up
3MHz	QPSK	1	0	22.79	22.76	22.78	24.00
		1	7	22.92	22.95	22.96	24.00
		1	14	22.74	22.76	22.78	24.00
		8	0	22.01	21.87	21.92	23.00
		8	4	21.95	21.95	21.91	23.00
		8	7	22.01	21.85	21.86	23.00
		15	0	22.02	21.86	21.88	23.00
	16QAM	1	0	22.00	22.00	22.02	23.00
		1	7	22.16	22.12	22.17	23.00
		1	14	21.97	22.01	22.02	23.00
		8	0	21.02	20.84	20.93	22.00
		8	4	20.97	20.97	20.91	22.00
		8	7	21.04	20.88	20.86	22.00
		15	0	21.03	20.81	20.89	22.00

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	64QAM	1	0	21.08	21.12	21.10	22.00
		1	7	21.25	21.15	21.22	22.00
		1	14	21.10	21.12	21.11	22.00
		8	0	20.08	19.90	20.03	21.00
		8	4	20.04	20.04	19.98	21.00
		8	7	20.13	19.96	19.96	21.00
		15	0	20.10	19.97	19.99	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23035	23095	23155	
5MHz	QPSK	1	0	22.75	22.73	22.76	24.00
		1	13	22.93	22.93	22.97	24.00
		1	24	22.75	22.74	22.76	24.00
		12	0	21.99	21.84	21.95	23.00
		12	6	21.95	21.94	21.93	23.00
		12	13	22.02	21.81	21.89	23.00
		25	0	22.03	21.88	21.87	23.00
	16QAM	1	0	22.00	22.00	22.02	23.00
		1	13	22.18	22.09	22.15	23.00
		1	24	21.97	22.03	21.98	23.00
		12	0	21.01	20.85	20.92	22.00
		12	6	20.99	20.94	20.86	22.00
		12	13	21.06	20.88	20.88	22.00
		25	0	20.98	20.82	20.88	22.00
	64QAM	1	0	21.06	21.09	21.05	22.00
		1	13	21.25	21.18	21.24	22.00
		1	24	21.12	21.16	21.09	22.00
		12	0	20.11	19.91	20.00	21.00
		12	6	20.03	20.06	19.97	21.00
		12	13	20.08	19.97	19.99	21.00
		25	0	20.08	19.95	19.94	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23060	23095	23130	
10MHz	QPSK	1	0	22.84	22.82	22.83	24.00
		1	25	23.02	23.03	23.02	24.00
		1	49	22.82	22.83	22.86	24.00
		25	0	22.09	21.92	22.02	23.00
		25	13	22.04	22.02	21.98	23.00
		25	25	22.01	22.10	21.95	23.00
		50	0	22.10	21.93	21.97	23.00
	16QAM	1	0	22.07	22.06	22.09	23.00
		1	25	22.23	22.19	22.25	23.00

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		1	49	22.02	22.09	22.08	23.00
		25	0	21.08	20.92	21.01	22.00
		25	13	21.04	21.03	20.96	22.00
		25	25	21.11	20.93	20.93	22.00
		50	0	21.08	20.90	20.95	22.00
	64QAM	1	0	21.14	21.18	21.15	22.00
		1	25	21.31	21.25	21.31	22.00
		1	49	21.17	21.22	21.18	22.00
		25	0	20.16	19.97	20.09	21.00
		25	13	20.10	20.12	20.04	21.00
		25	25	20.18	20.06	20.05	21.00
		50	0	20.15	20.04	20.04	21.00

LTE FDD Band 13				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 23205	Channel 23230	Channel 23255	Tune up
5MHz	QPSK	1	0	23.16	23.20	23.19	24.00
		1	13	23.38	23.33	23.38	24.00
		1	24	23.24	23.23	23.22	24.00
		12	0	22.27	22.24	22.25	23.00
		12	6	22.21	22.26	22.22	23.00
		12	13	22.18	22.21	22.22	23.00
		25	0	22.23	22.22	22.25	23.00
	16QAM	1	0	22.36	22.35	22.32	23.00
		1	13	22.45	22.45	22.49	23.00
		1	24	22.36	22.32	22.36	23.00
		12	0	21.31	21.30	21.29	22.00
		12	6	21.26	21.28	21.26	22.00
		12	13	21.23	21.22	21.25	22.00
		25	0	21.27	21.26	21.29	22.00
	64QAM	1	0	21.46	21.46	21.45	22.00
		1	13	21.53	21.54	21.55	22.00
		1	24	21.48	21.49	21.47	22.00
		12	0	20.43	20.38	20.41	21.00
		12	6	20.36	20.36	20.37	21.00
		12	13	20.34	20.31	20.35	21.00
		25	0	20.39	20.35	20.40	21.00
Bandwidth	Modulation	RB size	RB offset	Channel /	Channel 23230	Channel /	Tune up
10MHz	QPSK	1	0	/	23.26	/	24.00

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		1	25	/	23.43	/	24.00
		1	49	/	23.29	/	24.00
		25	0	/	22.33	/	23.00
		25	13	/	22.31	/	23.00
		25	25	/	22.28	/	23.00
		50	0	/	22.31	/	23.00
	16QAM	1	0	/	22.41	/	23.00
		1	25	/	22.55	/	23.00
		1	49	/	22.42	/	23.00
		25	0	/	21.38	/	22.00
		25	13	/	21.36	/	22.00
		25	25	/	21.32	/	22.00
		50	0	/	21.34	/	22.00
	64QAM	1	0	/	21.54	/	22.00
		1	25	/	21.61	/	22.00
		1	49	/	21.57	/	22.00
		25	0	/	20.48	/	21.00
		25	13	/	20.44	/	21.00
		25	25	/	20.40	/	21.00
		50	0	/	20.45	/	21.00

LTE FDD Band 17				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 23755	Channel 23790	Channel 23825	Tune up
5MHz	QPSK	1	0	22.79	22.80	22.77	24.00
		1	13	22.97	22.99	22.94	24.00
		1	24	22.76	22.77	22.81	24.00
		12	0	21.89	21.93	21.99	23.00
		12	6	21.94	21.91	21.89	23.00
		12	13	21.84	21.82	21.83	23.00
		25	0	21.90	21.90	21.95	23.00
	16QAM	1	0	22.03	22.05	22.06	23.00
		1	13	22.15	22.18	22.18	23.00
		1	24	21.97	22.04	22.02	23.00
		12	0	20.90	20.90	20.94	22.00
		12	6	20.88	20.92	20.92	22.00
		12	13	20.85	20.80	20.87	22.00
		25	0	20.85	20.89	20.89	22.00
	64QAM	1	0	21.07	21.19	21.17	22.00
		1	13	21.31	21.22	21.24	22.00

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		1	24	21.06	21.11	21.09	22.00
		12	0	19.95	20.06	20.02	21.00
		12	6	19.95	19.99	20.05	21.00
		12	13	19.99	19.91	19.95	21.00
		25	0	20.02	19.89	20.03	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23780	23790	23800	
10MHz	QPSK	1	0	22.87	22.89	22.87	24.00
		1	25	23.04	23.07	23.01	24.00
		1	49	22.85	22.85	22.89	24.00
		25	0	21.97	21.99	22.04	23.00
		25	13	22.00	21.99	21.97	23.00
		25	25	21.91	21.89	21.92	23.00
		50	0	21.95	21.95	22.00	23.00
	16QAM	1	0	22.08	22.13	22.12	23.00
		1	25	22.23	22.24	22.27	23.00
		1	49	22.07	22.09	22.11	23.00
		25	0	20.95	20.99	21.03	22.00
		25	13	20.98	20.98	20.99	22.00
		25	25	20.92	20.86	20.94	22.00
		50	0	20.92	20.94	20.99	22.00
	64QAM	1	0	21.16	21.25	21.24	22.00
		1	25	21.37	21.32	21.32	22.00
		1	49	21.13	21.16	21.18	22.00
		25	0	20.02	20.12	20.11	21.00
		25	13	20.03	20.05	20.11	21.00
		25	25	20.06	19.97	20.02	21.00
		50	0	20.07	19.99	20.10	21.00

LTE Band 66				**Conducted Power(dBm)**			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				131979	132322	132665	
1.4MHz	QPSK	1	0	22.06	22.20	22.39	24.00
		1	2	22.45	22.51	22.78	24.00
		1	5	22.17	22.24	22.37	24.00
		3	0	22.04	22.19	22.37	24.00
		3	1	22.47	22.53	22.80	24.00
		3	3	22.14	22.23	22.37	24.00
		6	0	21.45	21.58	21.76	23.00
	16QAM	1	0	21.39	21.44	21.67	23.00

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		1	2	21.86	21.84	22.13	23.00
		1	5	21.42	21.47	21.67	23.00
		3	0	21.44	21.54	21.69	23.00
		3	1	21.51	21.60	21.67	23.00
		3	3	21.45	21.60	21.80	23.00
		6	0	20.49	20.58	20.78	22.00
	64QAM	1	0	20.50	20.63	20.72	22.00
		1	2	20.95	20.89	21.23	22.00
		1	5	20.59	20.57	20.82	22.00
		3	0	20.48	20.58	20.72	22.00
		3	1	20.95	20.93	21.25	22.00
		3	3	20.60	20.59	20.77	22.00
		6	0	19.51	19.68	19.85	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				131987	132322	132657	
3MHz	QPSK	1	0	22.02	22.16	22.38	24.00
		1	7	22.46	22.55	22.81	24.00
		1	14	22.14	22.25	22.37	24.00
		8	0	21.43	21.60	21.80	23.00
		8	4	21.43	21.53	21.72	23.00
		8	7	21.48	21.62	21.66	23.00
		15	0	21.49	21.58	21.78	23.00
	16QAM	1	0	21.38	21.47	21.66	23.00
		1	7	21.87	21.85	22.13	23.00
		1	14	21.44	21.48	21.68	23.00
		8	0	20.45	20.57	20.80	22.00
		8	4	20.39	20.52	20.70	22.00
		8	7	20.50	20.53	20.67	22.00
		15	0	20.44	20.62	20.76	22.00
	64QAM	1	0	20.50	20.60	20.70	22.00
		1	7	20.94	20.94	21.26	22.00
		1	14	20.55	20.55	20.80	22.00
		8	0	19.63	19.70	19.85	21.00
		8	4	19.45	19.57	19.77	21.00
		8	7	19.64	19.71	19.73	21.00
		15	0	19.52	19.71	19.89	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				131997	132322	132647	
5MHz	QPSK	1	0	22.07	22.19	22.39	24.00
		1	13	22.47	22.53	22.82	24.00
		1	24	22.16	22.24	22.36	24.00

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		12	0	21.45	21.57	21.81	23.00
		12	6	21.43	21.58	21.69	23.00
		12	13	21.51	21.57	21.68	23.00
		25	0	21.48	21.58	21.79	23.00
	16QAM	1	0	21.41	21.47	21.68	23.00
		1	13	21.87	21.89	22.08	23.00
		1	24	21.42	21.49	21.66	23.00
		12	0	20.48	20.57	20.76	22.00
		12	6	20.38	20.49	20.67	22.00
		12	13	20.49	20.53	20.64	22.00
		25	0	20.49	20.57	20.75	22.00
	64QAM	1	0	20.53	20.58	20.70	22.00
		1	13	20.93	20.92	21.24	22.00
		1	24	20.55	20.56	20.81	22.00
		12	0	19.61	19.72	19.85	21.00
		12	6	19.45	19.60	19.78	21.00
		12	13	19.64	19.67	19.75	21.00
		25	0	19.54	19.73	19.85	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				132022	132322	132622	
10MHz	QPSK	1	0	22.06	22.15	22.36	24.00
		1	25	22.43	22.53	22.78	24.00
		1	49	22.15	22.21	22.36	24.00
		25	0	21.47	21.55	21.81	23.00
		25	13	21.43	21.53	21.74	23.00
		25	25	21.52	21.59	21.69	23.00
		50	0	21.49	21.57	21.75	23.00
	16QAM	1	0	21.43	21.48	21.66	23.00
		1	25	21.89	21.86	22.08	23.00
		1	49	21.42	21.49	21.69	23.00
		25	0	20.45	20.55	20.80	22.00
		25	13	20.39	20.53	20.69	22.00
		25	25	20.51	20.52	20.62	22.00
		50	0	20.46	20.57	20.75	22.00
	64QAM	1	0	20.53	20.59	20.73	22.00
		1	25	20.95	20.90	21.23	22.00
		1	49	20.55	20.55	20.79	22.00
		25	0	19.64	19.68	19.85	21.00
		25	13	19.43	19.58	19.77	21.00
		25	25	19.59	19.70	19.77	21.00
		50	0	19.53	19.68	19.85	21.00

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Bandwidth	Modulation	RB size	RB offset	Channel 132047	Channel 132322	Channel 132597	Tune up
15MHz	QPSK	1	0	22.06	22.18	22.35	24.00
		1	38	22.46	22.55	22.82	24.00
		1	74	22.15	22.20	22.34	24.00
		36	0	21.42	21.58	21.78	23.00
		36	18	21.42	21.53	21.71	23.00
		36	39	21.51	21.60	21.67	23.00
		75	0	21.46	21.57	21.76	23.00
	16QAM	1	0	21.43	21.43	21.68	23.00
		1	38	21.91	21.87	22.10	23.00
		1	74	21.43	21.47	21.67	23.00
		36	0	20.48	20.54	20.78	22.00
		36	18	20.36	20.50	20.67	22.00
		36	39	20.48	20.56	20.63	22.00
		75	0	20.47	20.62	20.76	22.00
	64QAM	1	0	20.50	20.58	20.71	22.00
		1	38	20.96	20.89	21.24	22.00
		1	74	20.56	20.57	20.78	22.00
		36	0	19.64	19.69	19.83	21.00
		36	18	19.43	19.61	19.77	21.00
		36	39	19.60	19.71	19.73	21.00
		75	0	19.54	19.72	19.88	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 132072	Channel 132322	Channel 132572	Tune up
20MHz	QPSK	1	0	22.32	22.45	22.64	24.00
		1	50	22.73	23.10	23.09	24.00
		1	99	22.42	22.50	22.63	24.00
		50	0	21.72	22.07	22.05	23.00
		50	25	21.71	21.83	21.99	23.00
		50	50	21.78	21.87	21.94	23.00
		100	0	21.74	22.05	21.97	23.00
	16QAM	1	0	21.68	21.73	21.94	23.00
		1	50	22.16	22.14	22.38	23.00
		1	99	21.72	21.76	21.94	23.00
		50	0	20.75	20.83	21.06	22.00
		50	25	20.66	20.79	20.96	22.00
		50	50	20.76	20.82	20.92	22.00
		100	0	20.74	20.87	21.03	22.00
	64QAM	1	0	20.78	20.88	21.00	22.00
		1	50	21.22	21.19	21.53	22.00

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		1	99	20.85	20.84	21.07	22.00
		50	0	19.90	19.97	20.13	21.00
		50	25	19.71	19.86	20.03	21.00
		50	50	19.89	19.97	20.03	21.00
		100	0	19.80	19.98	20.15	21.00

LTE Band 71				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 133147	Channel 133247	Channel 133447	Tune up
5MHz	QPSK	1	0	22.24	22.31	22.34	24.00
		1	13	22.70	22.73	22.74	24.00
		1	24	22.30	22.39	22.44	24.00
		12	0	21.61	21.81	21.83	23.00
		12	6	21.62	21.72	21.74	23.00
		12	13	21.64	21.79	21.73	23.00
		25	0	21.60	21.76	21.74	23.00
	16QAM	1	0	21.58	21.68	21.72	23.00
		1	13	22.00	22.02	22.11	23.00
		1	24	21.63	21.75	21.77	23.00
		12	0	20.62	20.80	20.78	22.00
		12	6	20.59	20.73	20.75	22.00
		12	13	20.61	20.70	20.73	22.00
		25	0	20.60	20.78	20.77	22.00
	64QAM	1	0	20.76	20.80	20.78	22.00
		1	13	21.10	21.19	21.23	22.00
		1	24	20.67	20.89	20.90	22.00
		12	0	19.71	19.89	19.86	21.00
		12	6	19.64	19.75	19.80	21.00
		12	13	19.67	19.84	19.89	21.00
		25	0	19.67	19.83	19.89	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 133172	Channel 133272	Channel 133422	Tune up
10MHz	QPSK	1	0	22.27	22.31	22.37	24.00
		1	25	22.70	22.68	22.72	24.00
		1	49	22.27	22.44	22.43	24.00
		25	0	21.62	21.79	21.79	23.00
		25	13	21.59	21.70	21.76	23.00
		25	25	21.63	21.78	21.77	23.00
		50	0	21.64	21.77	21.77	23.00
	16QAM	1	0	21.59	21.71	21.68	23.00

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		1	25	21.97	22.06	22.15	23.00
		1	49	21.59	21.75	21.73	23.00
		25	0	20.59	20.80	20.80	22.00
		25	13	20.55	20.72	20.76	22.00
		25	25	20.61	20.72	20.74	22.00
		50	0	20.59	20.77	20.75	22.00
	64QAM	1	0	20.75	20.83	20.80	22.00
		1	25	21.08	21.15	21.22	22.00
		1	49	20.68	20.85	20.91	22.00
		25	0	19.74	19.86	19.90	21.00
		25	13	19.68	19.75	19.82	21.00
		25	25	19.70	19.83	19.89	21.00
		50	0	19.64	19.82	19.89	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				133197	133297	133397	
15MHz	QPSK	1	0	22.25	22.35	22.34	24.00
		1	38	22.68	22.68	22.72	24.00
		1	74	22.28	22.43	22.45	24.00
		36	0	21.62	21.80	21.84	23.00
		36	18	21.62	21.72	21.75	23.00
		36	39	21.61	21.77	21.77	23.00
		75	0	21.61	21.76	21.77	23.00
	16QAM	1	0	21.59	21.71	21.69	23.00
		1	38	21.97	22.04	22.13	23.00
		1	74	21.60	21.76	21.74	23.00
		36	0	20.61	20.77	20.76	22.00
		36	18	20.55	20.69	20.75	22.00
		36	39	20.60	20.71	20.75	22.00
		75	0	20.58	20.78	20.78	22.00
	64QAM	1	0	20.75	20.83	20.78	22.00
		1	38	21.13	21.19	21.24	22.00
		1	74	20.68	20.88	20.86	22.00
		36	0	19.70	19.91	19.87	21.00
		36	18	19.68	19.75	19.82	21.00
		36	39	19.69	19.82	19.92	21.00
		75	0	19.66	19.84	19.92	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				133222	133322	133372	
20MHz	QPSK	1	0	22.32	22.41	22.42	24.00
		1	50	22.75	22.81	22.80	24.00
		1	99	22.35	22.49	22.50	24.00

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		50	0	21.71	21.89	21.87	23.00
		50	25	21.67	21.80	21.83	23.00
		50	50	21.70	21.85	21.82	23.00
		100	0	21.70	21.83	21.82	23.00
	16QAM	1	0	21.67	21.76	21.78	23.00
		1	50	22.05	22.12	22.20	23.00
		1	99	21.68	21.84	21.83	23.00
		50	0	20.69	20.85	20.86	22.00
		50	25	20.65	20.78	20.83	22.00
		50	50	20.68	20.80	20.82	22.00
		100	0	20.68	20.83	20.84	22.00
	64QAM	1	0	20.82	20.88	20.85	22.00
		1	50	21.18	21.25	21.30	22.00
		1	99	20.75	20.94	20.96	22.00
		50	0	19.79	19.96	19.95	21.00
		50	25	19.74	19.83	19.90	21.00
		50	50	19.75	19.91	19.97	21.00
		100	0	19.73	19.92	19.98	21.00

LTE Band 41 Full power				Conducted Power(dBm)					
Bandwidth	Modulation	RB size	RB offset	Channel 39675	Channel 40148	Channel 40620	Channel 41093	Channel 41565	Tune up
5MHz	QPSK	1	0	22.67	22.39	22.35	22.55	22.54	24.00
		1	13	22.96	22.59	22.97	22.91	22.89	24.00
		1	24	22.5	22.08	22.09	22.71	22.46	24.00
		12	0	21.69	21.64	22.01	21.94	21.79	23.00
		12	6	21.94	21.58	21.52	21.93	21.82	23.00
		12	13	21.74	21.47	21.3	21.97	21.77	23.00
		25	0	21.94	21.57	21.47	21.99	21.81	23.00
	16QAM	1	0	21.94	21.66	21.6	21.77	21.84	23.00
		1	13	22.18	21.87	21.9	22.22	22.18	23.00
		1	24	21.76	21.34	21.36	21.93	21.79	23.00
		12	0	21.08	20.74	20.69	21.01	20.86	22.00
		12	6	20.97	20.63	20.59	21.03	20.95	22.00
		12	13	20.83	20.49	20.38	21.06	20.88	22.00
		25	0	20.96	20.72	20.59	21.04	20.97	22.00
	64QAM	1	0	20.95	20.84	20.66	20.87	20.89	22.00
		1	13	21.32	20.97	21.03	21.34	21.32	22.00
		1	24	20.85	20.42	20.39	21.02	20.94	22.00
		12	0	20.16	19.83	19.82	20.14	19.95	21.00

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		12	6	20.05	19.77	19.71	20.06	20.07	21.00
		12	13	19.96	19.67	19.47	20.15	19.94	21.00
		25	0	20.08	19.82	19.74	20.13	19.98	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Channel	Channel	Tune up
				39700	40160	40620	41080	41540	
10MHz	QPSK	1	0	22.64	22.42	22.35	22.56	22.55	24.00
		1	25	22.92	22.64	22.6	22.99	22.89	24.00
		1	49	22.45	22.11	22.06	22.67	22.5	24.00
		25	0	22	21.64	21.59	21.94	21.82	23.00
		25	13	21.93	21.56	21.52	21.95	21.86	23.00
		25	25	21.77	21.45	21.29	21.98	21.8	23.00
		50	0	21.92	21.61	21.45	22	21.82	23.00
	16QAM	1	0	21.9	21.71	21.6	21.76	21.82	23.00
		1	25	22.21	21.88	21.89	22.19	22.19	23.00
		1	49	21.81	21.32	21.38	21.92	21.76	23.00
		25	0	21.13	20.77	20.71	20.99	20.85	22.00
		25	13	21	20.65	20.57	21	20.93	22.00
		25	25	20.86	20.53	20.42	21.07	20.88	22.00
		50	0	20.96	20.68	20.6	21.05	20.97	22.00
	64QAM	1	0	20.99	20.82	20.64	20.88	20.86	22.00
		1	25	21.32	21.02	21.01	21.35	21.36	22.00
		1	49	20.90	20.45	20.41	21.06	20.92	22.00
		25	0	20.21	19.82	19.83	20.13	19.97	21.00
		25	13	20.04	19.73	19.69	20.05	20.09	21.00
		25	25	19.93	19.65	19.50	20.18	19.92	21.00
		50	0	20.11	19.79	19.74	20.10	19.97	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Channel	Channel	Tune up
				39725	40173	40620	41068	41515	
15MHz	QPSK	1	0	22.67	22.42	22.37	22.51	22.55	24.00
		1	38	22.95	22.62	22.57	22.99	22.9	24.00
		1	74	22.48	22.06	22.07	22.69	22.49	24.00
		36	0	22.03	21.67	21.62	21.94	21.78	23.00
		36	18	21.91	21.57	21.48	21.95	21.86	23.00
		36	39	21.72	21.44	21.28	21.95	21.8	23.00
		75	0	21.91	21.59	21.49	21.96	21.84	23.00
	16QAM	1	0	21.9	21.71	21.62	21.79	21.82	23.00
		1	38	22.18	21.88	21.89	22.2	22.17	23.00
		1	74	21.8	21.36	21.39	21.94	21.76	23.00
		36	0	21.11	20.75	20.73	20.98	20.85	22.00
		36	18	21.01	20.62	20.56	21	20.98	22.00
		36	39	20.81	20.52	20.41	21.07	20.89	22.00

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		75	0	20.95	20.67	20.6	21.04	20.94	22.00
	64QAM	1	0	21.00	20.80	20.69	20.87	20.85	22.00
		1	38	21.35	20.98	21.02	21.33	21.33	22.00
		1	74	20.86	20.44	20.42	21.03	20.92	22.00
		36	0	20.21	19.79	19.86	20.14	19.94	21.00
		36	18	20.03	19.72	19.67	20.05	20.05	21.00
		36	39	19.95	19.67	19.50	20.14	19.92	21.00
		75	0	20.06	19.84	19.73	20.15	20.00	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 39750	Channel 40185	Channel 40620	Channel 41055	Channel 41490	Tune up
20MHz	QPSK	1	0	22.74	22.49	22.44	22.61	22.63	24.00
		1	50	23.02	22.69	22.65	23.05	22.98	24.00
		1	99	22.55	22.16	22.16	22.76	22.56	24.00
		50	0	22.08	21.72	21.69	22	21.88	23.00
		50	25	21.99	21.64	21.57	22.01	21.92	23.00
		50	50	21.82	21.54	21.37	22.05	21.86	23.00
		100	0	21.99	21.66	21.55	22.05	21.89	23.00
	16QAM	1	0	21.99	21.76	21.69	21.86	21.89	23.00
		1	50	22.28	21.97	21.95	22.29	22.26	23.00
		1	99	21.86	21.42	21.44	22.01	21.86	23.00
		50	0	21.18	20.82	20.78	21.06	20.94	22.00
		50	25	21.07	20.72	20.66	21.08	21.03	22.00
		50	50	20.91	20.59	20.48	21.13	20.94	22.00
		100	0	21.05	20.77	20.68	21.1	21.02	22.00
	64QAM	1	0	21.05	20.90	20.74	20.94	20.94	22.00
		1	50	21.41	21.07	21.08	21.41	21.41	22.00
		1	99	20.95	20.52	20.49	21.11	21.01	22.00
		50	0	20.26	19.89	19.91	20.20	20.02	21.00
		50	25	20.13	19.82	19.76	20.14	20.14	21.00
		50	50	20.02	19.74	19.56	20.24	20.02	21.00
		100	0	20.16	19.89	19.83	20.20	20.07	21.00

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

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middle channel, the highest output power channel must be used

4）. According to FCC guidance, the output power with uplink CA active was measured for the high / middle / low channel configuration with the highest reported SAR for each exposure condition, the power was measured with wideband signal integration over both component carriers.

5）. In applying the power measurement procedures of KDB 941225 D05A for DL CA to qualify for UL SAR test exclusion, power measurement is required only for the subset in each row with the largest combination of frequency bands and CCs.

6）. Maximum output power measurement is required for each UL CA configuration for the required test channels described in KDB 941225 D05.

7）. 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.

The possible downlink LTE CA combinations supported by this device are as below tables per 3GPP TS 36.101 V15.4.0. The detailed conducted power measurement results of downlink LTE CA are provided in the SAR report per 3GPP TS 36.521-1 V14.4.0. According to KDB 941225 D05A, the downlink only carrier aggregation conditions for this device can be excluded from SAR testing.

The conducted power measurement results of downlink LTE CA Conducted Power are as Appendix E conducted RF output power, so the downlink only carrier aggregation conditions for this device can be excluded from SAR testing

8）. 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.

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

BT DH5 Duty Cycle=77.07%

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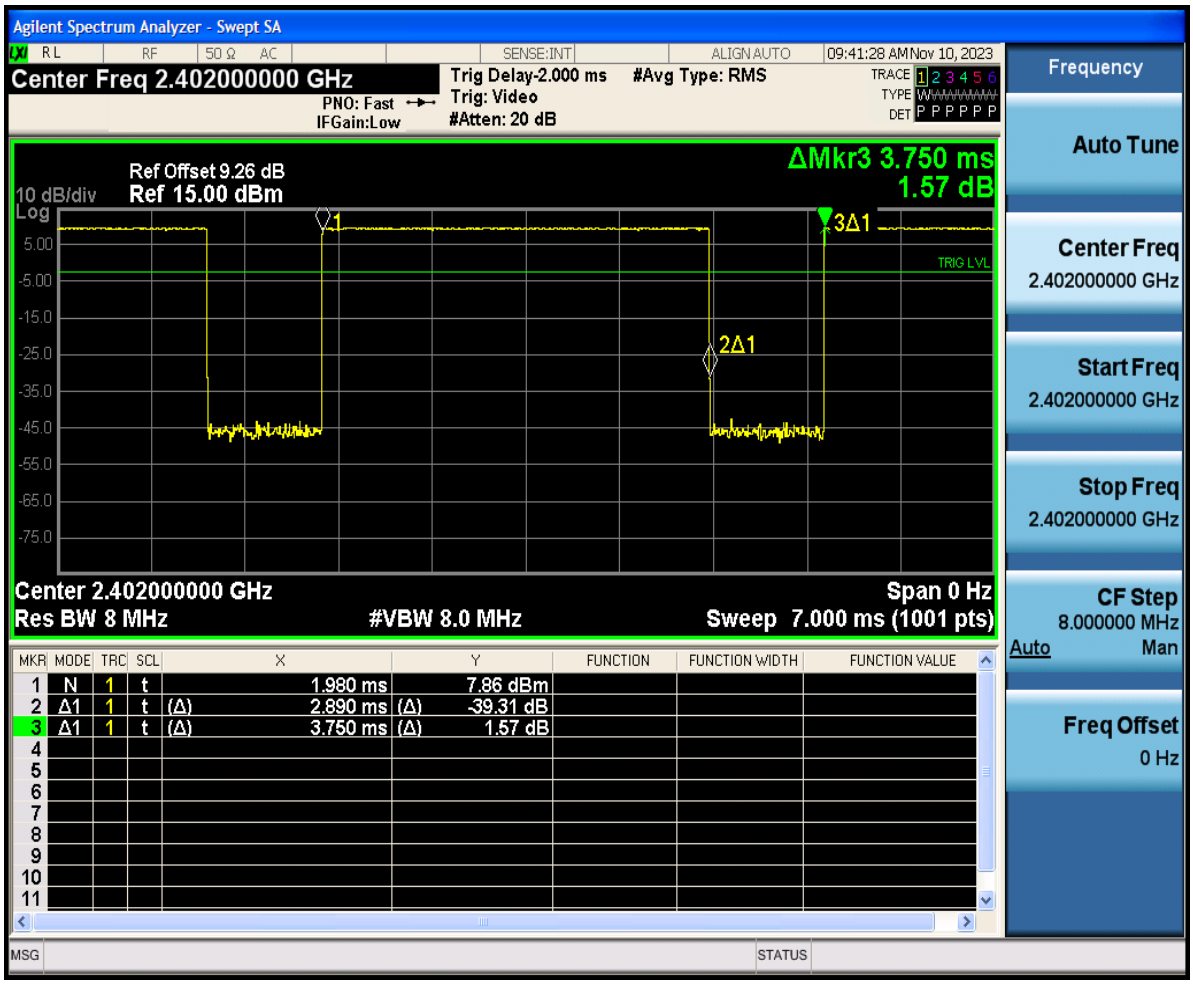

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8.2 Measurement of SAR Data

Note:

1) The maximum Scaled SAR value is select the worst presentation of the original report SEWM2304000137RG09 and this report. Graph results refer to Appendix B.

2) Per KDB447498 D01, 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.

4) The simultaneous transmission is reduced by XdB (the power reduced refer to RF Conducted Power section), therefore, those SAR is estimated based on standalone results.

5) For GSM band, when multiple slots can be used, SAR should be tested to account for the maximum source-based time-averaged output power.

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.

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8.2.1 SAR Result of GSM850

GSM850 SAR 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(Separate 0mm)										
Back side	GPRS 4TS	190/836.6	1:2.075	0.129	0.04	28.15	29.50	1.365	**0.176**	22.5
Left side	GPRS 4TS	190/836.6	1:2.075	0.001	0.02	28.15	29.50	1.365	0.001	22.5
Right side	GPRS 4TS	190/836.6	1:2.075	0.011	0.03	28.15	29.50	1.365	0.015	22.5
Top side	GPRS 4TS	190/836.6	1:2.075	0.030	0.18	28.15	29.50	1.365	0.041	22.5
Bottom side	GPRS 4TS	190/836.6	1:2.075	0.001	0.01	28.15	29.50	1.365	0.001	22.5

Table 11： SAR of GSM850 for Body.

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8.2.2 SAR Result of GSM1900

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(Separate 0mm)										
Back side	GPRS 4TS	512/1850.2	1:2.075	1.010	-0.10	25.62	27.00	1.374	**1.388**	22.5
Back side-repeat	GPRS 4TS	512/1850.2	1:2.075	1.000	0.01	25.62	27.00	1.374	1.374	22.5
Back side	GPRS 4TS	661/1880	1:2.075	0.680	0.13	25.31	27.00	1.476	1.003	22.5
Back side	GPRS 4TS	810/1909.8	1:2.075	0.492	-0.16	25.30	27.00	1.479	0.728	22.5
Left side	GPRS 4TS	512/1850.2	1:2.075	0.003	0.08	25.62	27.00	1.374	0.004	22.5
Right side	GPRS 4TS	512/1850.2	1:2.075	0.027	0.01	25.62	27.00	1.374	0.037	22.5
Top side	GPRS 4TS	512/1850.2	1:2.075	0.223	-0.06	25.62	27.00	1.374	0.306	22.5
Bottom side	GPRS 4TS	512/1850.2	1:2.075	0.001	0.06	25.62	27.00	1.374	0.002	22.5

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)
Back side	512/1850.2	1.01	1	1.01	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						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

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8.2.3 SAR Result of WCDMA Band II

WB2 SAR 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(Separate 0mm)										
Back side	RMC	9262/1852.4	1:1	1.050	-0.10	22.37	23.00	1.156	**1.214**	22.5
Back side-repeat	RMC	9262/1852.4	1:1	1.020	0.01	22.37	23.00	1.156	1.179	22.5
Back side	RMC	9538/1907.6	1:1	0.898	-0.08	22.31	23.00	1.172	1.053	22.5
Back side	RMC	9400/1880	1:1	0.966	-0.03	22.25	23.00	1.189	1.148	22.5
Right side	RMC	9262/1852.4	1:1	0.035	-0.02	22.37	23.00	1.156	0.040	22.5
Top side	RMC	9262/1852.4	1:1	0.296	-0.06	22.37	23.00	1.156	0.342	22.5

Table 13： SAR of WCDMA Band II for Body.

Test Position	Channel/ Frequency	Measured SAR (1g)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
	(MHz)		SAR (1g)		SAR (1g)	SAR (1g)
Back side	9262/1852.4	1.05	1.02	1.029411765	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						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

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8.2.4 SAR Result of WCDMA Band IV

WB4 SAR 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(Separate 0mm)										
Back side	RMC	1513/1752.6	1:1	0.902	-0.19	22.18	23.00	1.208	**1.089**	23.0
Back side-repeat	RMC	1513/1752.6	1:1	0.888	-0.03	22.18	23.00	1.208	1.073	23.0
Back side	RMC	1412/1732.4	1:1	0.805	-0.19	22.06	23.00	1.242	1.000	23.0
Back side	RMC	1312/1712.4	1:1	0.703	-0.11	22.02	23.00	1.253	0.881	23.0
Right side	RMC	1513/1752.6	1:1	0.033	0.11	22.18	23.00	1.208	0.040	23.0
Top side	RMC	1513/1752.6	1:1	0.346	-0.03	22.18	23.00	1.208	0.418	23.0

Table 14： SAR of WCDMA Band IV for Body.

Test Position	Channel/ Frequency	Measured SAR (1g)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
	(MHz)		SAR (1g)		SAR (1g)	SAR (1g)
Back side	1513/1752.6	0.902	0.888	1.015765766	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						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

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8.2.5 SAR Result of WCDMA Band V

WB5 SAR 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(Separate 0mm)										
Back side	RMC	4182/836.4	1:1	0.080	0.08	22.71	24.00	1.346	**0.107**	22.5
Right side	RMC	4182/836.4	1:1	0.005	0.00	22.71	24.00	1.346	0.007	22.5
Top side	RMC	4182/836.4	1:1	0.020	0.06	22.71	24.00	1.346	0.026	22.5

Table 15： SAR of WCDMA Band V for Body.

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8.2.6 SAR Result of LTE Band 2

LTE Band 2 SAR 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.(℃)
Bdoy Test data (Separate 0mm 1RB)											
Back side	20	QPSK 1_50	18900/1880	1:1	1.190	-0.06	23.24	24.00	1.191	1.418	22.5
Back side	20	QPSK 1_50	18700/1860	1:1	1.190	-0.10	23.22	24.00	1.197	**1.424**	22.5
Back side-repeat	20	QPSK 1_50	18700/1860	1:1	1.150	0.03	23.22	24.00	1.197	1.376	22.5
Back side	20	QPSK 1_50	19100/1900	1:1	1.120	-0.18	23.14	24.00	1.219	1.365	22.5
Right side	20	QPSK 1_50	18900/1880	1:1	0.043	-0.08	23.24	24.00	1.191	0.051	22.5
Top side	20	QPSK 1_50	18900/1880	1:1	0.450	0.17	23.24	24.00	1.191	0.536	22.5
Bdoy Test data (Separate 0mm 50%RB)											
Back side	20	QPSK 50_25	18900/1880	1:1	0.764	-0.06	22.16	23.00	1.213	0.927	22.5
Right side	20	QPSK 50_25	18900/1880	1:1	0.036	0.07	22.16	23.00	1.213	0.044	22.5
Top side	20	QPSK 50_25	18900/1880	1:1	0.356	0.01	22.16	23.00	1.213	0.432	22.5
Bdoy Test data (Separate 0mm 50%RB)											
Back side	20	QPSK 100_0	18900/1880	1:1	0.753	0.01	22.13	23.00	1.222	0.920	22.5

Table 16： SAR of LTE Band 2 for Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back side	18700/1860	1.190	1.150	1.03478261	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						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

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8.2.7 SAR Result of LTE Band 5

LTE Band 5 SAR 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.(℃)
Bdoy Test data (Separate 0mm 1RB)											
Back side	10	QPSK 1_25	20525/836.5	1:1	0.097	0.12	23.48	24.00	1.127	**0.110**	22.5
Right side	10	QPSK 1_25	20525/836.5	1:1	0.006	0.01	23.48	24.00	1.127	0.007	22.5
Top side	10	QPSK 1_25	20525/836.5	1:1	0.016	0.11	23.48	24.00	1.127	0.018	22.5
Bdoy Test data (Separate 0mm 50%RB)											
Back side	10	QPSK 25_0	20525/836.5	1:1	0.070	0.09	22.47	24.00	1.422	0.100	22.5
Right side	10	QPSK 25_0	20525/836.5	1:1	0.005	0.05	22.47	24.00	1.422	0.007	22.5
Top side	10	QPSK 25_0	20525/836.5	1:1	0.013	0.01	22.47	24.00	1.422	0.018	22.5

Table 17： SAR of LTE Band 5 for Body.

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8.2.8 SAR Result of LTE Band 7

LTE Band 7 SAR 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.(℃)
Bdoy Test data (Separate 0mm 1RB)											
Back side	20	QPSK 1_50	21100/2535	1:1	0.924	-0.13	22.90	24.00	1.288	1.190	22.6
Back side	20	QPSK 1_50	20850/2510	1:1	1.100	-0.11	22.88	24.00	1.294	**1.424**	22.6
Back side-repeat	20	QPSK 1_50	20850/2510	1:1	1.090	0.01	22.88	24.00	1.294	1.411	22.6
Back side	20	QPSK 1_50	21350/2560	1:1	0.799	0.04	22.46	24.00	1.426	1.139	22.6
Right side	20	QPSK 1_50	21100/2535	1:1	0.087	-0.04	22.90	24.00	1.288	0.112	22.6
Top side	20	QPSK 1_50	21100/2535	1:1	0.475	0.03	22.90	24.00	1.288	0.612	22.6
Bdoy Test data (Separate 0mm 50%RB)											
Back side	20	QPSK 50_25	21100/2535	1:1	0.717	-0.01	21.88	23.00	1.294	0.928	22.6
Back side	20	QPSK 50_25	20850/2510	1:1	0.820	-0.06	21.71	23.00	1.346	**1.104**	22.6
Back side	20	QPSK 50_25	21350/2560	1:1	0.592	-0.18	21.37	23.00	1.455	0.862	22.6
Right side	20	QPSK 50_25	21100/2535	1:1	0.074	-0.02	21.88	23.00	1.294	0.096	22.6
Top side	20	QPSK 50_25	21100/2535	1:1	0.362	-0.16	21.88	23.00	1.294	0.468	22.6
Bdoy Test data (Separate 0mm 50%RB)											
Back side	20	QPSK 100_0	21100/2535	1:1	0.721	0.01	21.80	23.00	1.318	**0.950**	22.6

Table 18： SAR of LTE Band 7 for Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back side	20850/2510	1.1	1.09	1.009174312	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						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

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8.2.9 SAR Result of LTE Band 12

LTE Band 12 SAR 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.(℃)
Bdoy Test data (Separate 0mm 1RB)											
Back side	10	QPSK 1_25	23095/707.5	1:1	0.374	0.06	23.03	24.00	1.250	**0.468**	22.4
Right side	10	QPSK 1_25	23095/707.5	1:1	0.145	-0.10	23.03	24.00	1.250	0.181	22.4
Top side	10	QPSK 1_25	23095/707.5	1:1	0.160	0.00	23.03	24.00	1.250	0.200	22.4
Bdoy Test data (Separate 0mm 50%RB)											
Back side	10	QPSK 25_25	23095/707.5	1:1	0.285	0.10	22.10	23.00	1.230	0.351	22.4
Right side	10	QPSK 25_25	23095/707.5	1:1	0.111	-0.10	22.10	23.00	1.230	0.137	22.4
Top side	10	QPSK 25_25	23095/707.5	1:1	0.122	0.03	22.10	23.00	1.230	0.150	22.4

Table 19： SAR of LTE Band 12 for Body.

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8.2.10SAR Result of LTE Band 13

LTE Band 13 SAR 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.(℃)
Bdoy Test data (Separate 0mm 1RB)											
Back side	10	QPSK 1_25	23230/782	1:1	0.475	0.02	23.43	24.00	1.140	**0.542**	22.4
Right side	10	QPSK 1_25	23230/782	1:1	0.174	0.00	23.43	24.00	1.140	0.198	22.4
Top side	10	QPSK 1_25	23230/782	1:1	0.329	0.02	23.43	24.00	1.140	0.375	22.4
Bdoy Test data (Separate 0mm 50%RB)											
Back side	10	QPSK 25_0	23230/782	1:1	0.370	0.17	22.33	23.00	1.167	0.432	22.4
Right side	10	QPSK 25_0	23230/782	1:1	0.136	0.03	22.33	23.00	1.167	0.159	22.4
Top side	10	QPSK 25_0	23230/782	1:1	0.254	0.00	22.33	23.00	1.167	0.296	22.4

Table 20： SAR of LTE Band 13 for Body.

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8.2.11 SAR Result of LTE Band 41

LTE Band 41 SAR 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.(℃)
Bdoy Test data (Separate 0mm 1RB)											
Back side	20	QPSK 1_50	40620/2593	1:1.58	0.424	0.04	22.97	24.00	1.268	**0.537**	22.6
Right side	20	QPSK 1_50	40620/2593	1:1.58	0.034	0.07	22.97	24.00	1.268	0.044	22.6
Top side	20	QPSK 1_50	40620/2593	1:1.58	0.245	0.10	22.97	24.00	1.268	0.311	22.6
Bdoy Test data (Separate 0mm 50%RB)											
Back side	20	QPSK 50_25	40620/2593	1:1.58	0.328	0.01	22.01	24.00	1.581	0.519	22.6
Right side	20	QPSK 50_25	40620/2593	1:1.58	0.026	0.02	22.01	24.00	1.581	0.041	22.6
Top side	20	QPSK 50_25	40620/2593	1:1.58	0.189	0.14	22.01	24.00	1.581	0.299	22.6

Table 21： SAR of LTE Band 41 for Body.

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8.2.12SAR Result of LTE Band 66

LTE Band 66 SAR 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.(℃)
Bdoy Test data (Separate 0mm 1RB)											
Back side	20	QPSK 1_50	132322/1745	1:1	1.010	-0.08	23.10	24.00	1.230	1.243	23.0
Back side	20	QPSK 1_50	132072/1720	1:1	0.863	-0.05	22.73	24.00	1.340	1.156	23.0
Back side	20	QPSK 1_50	132572/1770	1:1	1.170	-0.11	23.09	24.00	1.233	**1.443**	23.0
Back side-repeat	20	QPSK 1_50	132572/1770	1:1	1.140	-0.11	23.09	24.00	1.233	1.406	23.0
Right side	20	QPSK 1_50	132322/1745	1:1	0.044	0.01	23.10	24.00	1.230	0.054	23.0
Top side	20	QPSK 1_50	132322/1745	1:1	0.453	0.18	23.10	24.00	1.230	0.557	23.0
Bdoy Test data (Separate 0mm 50%RB)											
Back side	20	QPSK 50_25	132322/1745	1:1	0.797	0.01	22.07	23.00	1.239	0.987	23.0
Back side	20	QPSK 50_25	132072/1720	1:1	0.676	-0.10	21.72	23.00	1.343	0.908	23.0
Back side	20	QPSK 50_25	132572/1770	1:1	0.899	-0.13	22.05	23.00	1.245	**1.119**	23.0
Right side	20	QPSK 50_25	132322/1745	1:1	0.035	-0.09	22.07	23.00	1.239	0.043	23.0
Top side	20	QPSK 50_25	132322/1745	1:1	0.354	0.17	22.07	23.00	1.239	0.439	23.0
Bdoy Test data (Separate 0mm 50%RB)											
Back side	20	QPSK 100_0	132322/1745	1:1	0.797	-0.04	22.05	23.00	1.245	0.992	23.0

Table 22： SAR of LTE Band 66 for Body.

Test Position	Channel/ Frequency	Measured SAR (1g)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
	(MHz)		SAR (1g)		SAR (1g)	SAR (1g)
Back side	132572/1770	1.17	1.14	1.026315789	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						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

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8.2.1 SAR Result of LTE Band 71

LTE Band 71 SAR 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.(℃)
Bdoy Test data (Separate 0mm 1RB)											
Back side	20	QPSK 1_50	133322/683	1:1	0.162	-0.05	22.81	24.00	1.315	0.213	22.4
Right side	20	QPSK 1_50	133322/683	1:1	0.046	-0.07	22.81	24.00	1.315	0.061	22.4
Top side	20	QPSK 1_50	133322/683	1:1	0.091	0.11	22.81	24.00	1.315	0.119	22.4
Bdoy Test data (Separate 0mm 50%RB)											
Back side	20	QPSK 50_25	133322/683	1:1	0.185	0.04	21.89	23.00	1.291	**0.239**	22.4
Right side	20	QPSK 50_25	133322/683	1:1	0.052	-0.03	21.89	23.00	1.291	0.066	22.4
Top side	20	QPSK 50_25	133322/683	1:1	0.076	0.09	21.89	23.00	1.291	0.099	22.4

Table 23： SAR of LTE Band 71 for Body.

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8.2.2 SAR Result of WIFI 2.4G

Wi-Fi 2.4G SAR 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	99.64%	1.004	0.940	0.01	18.65	19.00	1.084	1.023	22.8
Back side	802.11b	1/2412	99.64%	1.004	0.805	0.03	18.41	19.00	1.146	0.925	22.8
Back side	802.11b	11/2462	99.64%	1.004	0.807	0.02	18.45	19.00	1.135	0.919	22.8
Back side -repeat	802.11b	11/2462	99.64%	1.004	0.801	0.09	18.45	19.00	1.135	0.912	22.8
Left side	802.11b	6/2437	99.64%	1.004	0.991	0.02	18.65	19.00	1.084	**1.078**	22.8
Top side	802.11b	6/2437	99.64%	1.004	0.089	0.19	18.65	19.00	1.084	0.097	22.8

Table 24： SAR of WIFI 2.4G for Head for Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back side	11/2462	0.807	0.801	1.007490637	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						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

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.

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8.2.1 SAR Result of WIFI 5G

Wi-Fi 5G SAR 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 10-g (W/kg)	Liquid Temp.(℃)
Body Test data U-NII-2A (Separate 0mm)											
Back side	802.11a	52/5260	96.53%	1.036	0.039	0.03	17.40	18.00	1.148	0.046	22.6
Left side	802.11a	52/5260	96.53%	1.036	0.558	0.01	17.40	18.00	1.148	**0.664**	22.6
Top side	802.11a	52/5260	96.53%	1.036	0.000	0.01	17.40	18.00	1.148	0.001	22.6
Body Test data U-NII-2C (Separate 0mm)											
Back side	802.11a	116/5580	96.53%	1.036	0.018	0.03	17.30	18.00	1.175	0.021	22.5
Left side	802.11a	116/5580	96.53%	1.036	0.113	0.01	17.30	18.00	1.175	**0.138**	22.5
Top side	802.11a	116/5580	96.53%	1.036	0.000	-0.01	17.30	18.00	1.175	0.000	22.5
Body Test data U-NII-3 (Separate 0mm)											
Back side	802.11a	157/5785	96.53%	1.036	0.018	0.06	17.25	18.00	1.189	0.023	22.6
Left side	802.11a	157/5785	96.53%	1.036	0.055	0.03	17.25	18.00	1.189	0.068	22.6
Top side	802.11a	157/5785	96.53%	1.036	0.000	0.01	17.25	18.00	1.189	0.000	22.6

Table 25： SAR of WIFI 5G for for Body.

Note:

1) 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.

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8.2.2 SAR Result of BT

Bluetooth SAR 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	77.07%	1.298	0.064	0.12	10.42	11.00	1.144	**0.095**	22.8
Left side	DH5	39/2441	77.07%	1.298	0.053	0.04	10.42	11.00	1.144	0.079	22.8
Top side	DH5	39/2441	77.07%	1.298	0.002	0.00	10.42	11.00	1.144	0.003	22.8

Table 26： SAR of BT for Body.

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8.3 Multiple Transmitter Evaluation

8.3.1 Simultaneous SAR SAR test evaluation

Simultaneous Transmission Possibilities

NO	Simultaneous Tx Combination	Body
1	WWAN + WIFI2.4G	Y
2	WWAN + WIFI5G	Y
3	WWAN + WIFI5G + BT	Y

Note:

1) The device support DTM function.
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) Per FCC KDB Publication 648474 D04 Handset SAR, Phablet SAR tests were not required it wireless router 1g SAR(Scaled to the maximum output power ,including tolerance) ＜ 1.2 W/Kg. Therefore, no further analysis beyond tables included in this section was required to determine that possible Simultaneous transmission scenarios would not exceed the SAR limit.

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8.3.2 Simultaneous Transmission SAR Summation Scenario

Simultaneous Transmission SAR Summation Scenario for WLAN Body:

Test position		SARmax (W/kg)				Summed SAR			
		Main Ant0	WiFi 2.4G Ant6(chain0)	WiFi 5G Ant6(chain0)	BT				
		1	2	3	4	1+2	Case No.	SPLSR Results	1+3+4
GSM850	Back side	0.176	1.023	0.046	0.095	1.199	-	-	0.317
	Left side	0.001	1.078	0.664	0.079	1.079	-	-	0.744
	Right side	0.015	0.400	0.400	0.400	0.415	-	-	0.815
	Top side	0.041	0.097	0.001	0.003	0.138	-	-	0.045
	Bottom side	0.001	0.400	0.400	0.400	0.401	-	-	0.801
GSM1900	Back side	1.388	1.023	0.046	0.095	2.411	Case No.1	0.040	1.529
	Left side	0.004	1.078	0.664	0.079	1.082	-	-	0.747
	Right side	0.037	0.400	0.400	0.400	0.437	-	-	0.837
	Top side	0.306	0.097	0.001	0.003	0.403	-	-	0.310
	Bottom side	0.002	0.400	0.400	0.400	0.402	-	-	0.802
WCDMA B2	Back side	1.214	1.023	0.046	0.095	2.237	Case No.2	0.030	1.355
	Left side	0.400	1.078	0.664	0.079	1.478	-	-	1.143
	Right side	0.040	0.400	0.400	0.400	0.440	-	-	0.840
	Top side	0.342	0.097	0.001	0.003	0.439	-	-	0.346
	Bottom side	0.400	0.400	0.400	0.400	0.800	-	-	1.200
WCDMA B4	Back side	1.089	1.023	0.046	0.095	2.112	Case No.3	0.030	1.230
	Left side	0.400	1.078	0.664	0.079	1.478	-	-	1.143
	Right side	0.040	0.400	0.400	0.400	0.440	-	-	0.840
	Top side	0.418	0.097	0.001	0.003	0.515	-	-	0.422
	Bottom side	0.400	0.400	0.400	0.400	0.800	-	-	1.200
WCDMA B5	Back side	0.107	1.023	0.046	0.095	1.130	-	-	0.248
	Left side	0.400	1.078	0.664	0.079	1.478	-	-	1.143
	Right side	0.007	0.400	0.400	0.400	0.407	-	-	0.807
	Top side	0.026	0.097	0.001	0.003	0.123	-	-	0.030
	Bottom side	0.400	0.400	0.400	0.400	0.800	-	-	1.200
LTE B2	Back side	1.424	1.023	0.046	0.095	2.447	Case No.4	0.040	1.565
	Left side	0.400	1.078	0.664	0.079	1.478	-	-	1.143
	Right side	0.051	0.400	0.400	0.400	0.451	-	-	0.851
	Top side	0.536	0.097	0.001	0.003	0.633	-	-	0.540
	Bottom side	0.400	0.400	0.400	0.400	0.800	-	-	1.200
LTE B5	Back side	0.110	1.023	0.046	0.095	1.133	-	-	0.251
	Left side	0.400	1.078	0.664	0.079	1.478	-	-	1.143
	Right side	0.007	0.400	0.400	0.400	0.407	-	-	0.807
	Top side	0.018	0.097	0.001	0.003	0.115	-	-	0.022
	Bottom side	0.400	0.400	0.400	0.400	0.800	-	-	1.200
LTE B7	Back side	1.424	1.023	0.046	0.095	2.447	Case No.5	0.040	1.565
	Left side	0.400	1.078	0.664	0.079	1.478	-	-	1.143
	Right side	0.112	0.400	0.400	0.400	0.512	-	-	0.912
	Top side	0.612	0.097	0.001	0.003	0.709	-	-	0.616
	Bottom side	0.400	0.400	0.400	0.400	0.800	-	-	1.200
LTE B12	Back side	0.468	1.023	0.046	0.095	1.491	-	-	0.609
	Left side	0.400	1.078	0.664	0.079	1.478	-	-	1.143
	Right side	0.181	0.400	0.400	0.400	0.581	-	-	0.981
	Top side	0.200	0.097	0.001	0.003	0.297	-	-	0.204
	Bottom side	0.400	0.400	0.400	0.400	0.800	-	-	1.200
LTE B13	Back side	0.542	1.023	0.046	0.095	1.565	-	-	0.683
	Left side	0.400	1.078	0.664	0.079	1.478	-	-	1.143

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	Right side	0.198	0.400	0.400	0.400	0.598	-	-	0.998
	Top side	0.375	0.097	0.001	0.003	0.472	-	-	0.379
	Bottom side	0.400	0.400	0.400	0.400	0.800	-	-	1.200
LTE B41	Back side	0.537	1.023	0.046	0.095	1.560	-	-	0.678
	Left side	0.400	1.078	0.664	0.079	1.478	-	-	1.143
	Right side	0.044	0.400	0.400	0.400	0.444	-	-	0.844
	Top side	0.311	0.097	0.001	0.003	0.408	-	-	0.315
	Bottom side	0.400	0.400	0.400	0.400	0.800	-	-	1.200
LTE B66	Back side	1.443	1.023	0.046	0.095	2.466	Case No.6	0.040	1.584
	Left side	0.400	1.078	0.664	0.079	1.478	-	-	1.143
	Right side	0.054	0.400	0.400	0.400	0.454	-	-	0.854
	Top side	0.557	0.097	0.001	0.003	0.654	-	-	0.561
	Bottom side	0.400	0.400	0.400	0.400	0.800	-	-	1.200
LTE B71	Back side	0.239	1.023	0.046	0.095	1.262	-	-	0.380
	Left side	0.400	1.078	0.664	0.079	1.478	-	-	1.143
	Right side	0.066	0.400	0.400	0.400	0.466	-	-	0.866
	Top side	0.119	0.097	0.001	0.003	0.216	-	-	0.123
	Bottom side	0.400	0.400	0.400	0.400	0.800	-	-	1.200

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8.3.3SPLSR Evaluation Analysis

According to KDB447498 D01v06, When the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio(SPLSR).When the SAR to peak location ratio for each pair of antennas is ≤1-g 0.04 and 10-g 0.10，simultaneous SAR evaluation is not required.
When SAR is measured for both antennas in the pair, the peak location separation distance is computed by the following fomula:

$$\text{Distance}_{Tx1\text{-}Tx2} = R_i = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2}$$

$$\text{SPLS Ratio} = (SAR_1 + SAR_2)^{1.5}/R_i$$

Case No.	Position	Band	SAR (W/kg)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
1#	Back Side	GSM 1900	1.388	32.5	64	-4.59	99.1	**2.411**	0.04	Not Required
		WLAN2.4GHz	1.023	-35.8	-7.8	-2.5				
Case No.	Position	Band	SAR (W/kg)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
2#	Back Side	WCDMA B2	1.214	31	64.1	-4.56	98.2	**2.237**	0.03	Not Required
		WLAN2.4GHz	1.023	-35.8	-7.8	-2.5				
Case No.	Position	Band	SAR (W/kg)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
3#	Back Side	WCDMA B4	1.089	31	68	-4.5	101.1	**2.112**	0.03	Not Required
		WLAN2.4GHz	1.023	-35.8	-7.8	-2.5				
Case No.	Position	Band	SAR (W/kg)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
4#	Back Side	LTE B2	1.424	29.4	64	-4.45	97.0	**2.447**	0.04	Not Required
		WLAN2.4GHz	1.023	-35.8	-7.8	-2.5				
Case No.	Position	Band	SAR (W/kg)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
5#	Back Side	LTE B7	1.424	34.8	73.2	-4.4	107.5	**2.447**	0.04	Not Required
		WLAN2.4GHz	1.023	-35.8	-7.8	-2.5				
Case No.	Position	Band	SAR (W/kg)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
6#	Back Side	LTE B66	1.443	31	64.1	-5.45	98.2	**2.466**	0.04	Not Required
		WLAN2.4GHz	1.023	-35.8	-7.8	-2.5				

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9 Equipment list

Test Platform	SPEAG DASY5 Professional;
Description	SAR Test System (Frequency range 10MHz-10GHz)
Software Reference	DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483);

Hardware Reference

	Equipment	Manufacturer	Model	Serial Number	Calibration Date	Due date of calibration
☒	Twin Phantom	SPEAG	SAM 7	1702	NCR	NCR
☒	DAE	SPEAG	DAE3	414	2023-01-30	2023-01-29
☒	E-Field Probe	SPEAG	EX3DV4	3923	2023-02-28	2024-02-27
☒	Validation Kits	SPEAG	D750V3	1210	2021-09-08	2024-09-07
☒	Validation Kits	SPEAG	D835V2	4d161	2023-08-25	2024-08-24
☒	Validation Kits	SPEAG	D1950V3	1218	2023-05-04	2026-05-03
☒	Validation Kits	SPEAG	D1750V2	1038	2021-12-16	2024-12-15
☒	Validation Kits	SPEAG	D2450V2	922	2023-08-28	2024-08-27
☒	Validation Kits	SPEAG	D2600V2	1180	2021-05-12	2024-05-11
☒	Validation Kits	SPEAG	D5GHzV2	1313	2022-01-25	2025-01-24
☒	Dielectric parameter probes	SPEAG	DAKS-3.5	1120	2023-06-06	2024-06-05
☒	Vector Network Analyzer and Vector Reflectometer	SPEAG	DAKS_VNA R140	0050920	2023-06-06	2024-06-05
☒	Universal Radio Communication Tester	R&S	CMW500	111637	2023-09-13	2024-09-12
☒	RF Bi-Directional Coupler	Agilent	86205-60001	MY31400031	NCR	NCR
☒	Signal Generator	R&S	SMB100A	182393	2023-02-06	2024-02-05
☒	Preamplifier	Qiji	YX28980933	202104001	NCR	NCR
☒	Power Sensor	Keysight	U2002H	MY48200110	2022-12-23	2023-12-22
☒	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	SUW201-19-02	2023-09-15	2024-09-14
☒	Humidity and Temperature Indicator	MingGao	MingGao	NA	2023-09-15	2024-09-14

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

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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

---END---

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