TEST REPORT FOR SAR TESTING

Report No.:	SRTC2022-9004(F)-22082501(H)
Product Name:	Smartphone
Model Name:	F-51C
Applicant:	FCNT LIMITED
FCC ID:	2AYY9FMP192

Reference Specification
Part 2.1093
IEEE Std 1528
KDB Procedures

The State Radio_monitoring_center Testing Center (SRTC)

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1 GENERAL INFORMATION

1.1 Notes of the test report

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1.2 Information about the testing laboratory

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1.3 Applicant’s details

Company:	FCNT LIMITED
Address:	Chuorinkan 7-10-1 Yamato, Kanagawa 2420007, Japan

1.4 Manufacturer’s details

Company:	FCNT LIMITED
Address:	Chuorinkan 7-10-1 Yamato, Kanagawa 2420007, Japan

2 DESCRIPTION OF THE EQUIPMENT UNDER TEST

2.1 DUT information

Band Information	Frequency range
GSM850	824~849MHz
GSM1900	1850~1910MHz
WCDMA Band V	826.4~846.6MHz
LTE Band5	824~849 MHz
LTE Band12	699~716MHz
Bluetooth	2400~2483.5MHz
Bluetooth Low Energy	2400~2483.5MHz
WIFI2.4GHz	2412MHz~2462MHz
WIFI5GHz UNII-1	5150MHz-5250MHz
WIFI5GHz UNII-2A	5250~5350MHz
WIFI5GHz UNII-2C	5470~5725MHz
WIFI5GHz UNII-3	5725MHz-5850MHz

Mode supported	Note
GSM_GMSK	NA
WCDMA_RMC Rel.99	NA
WCDMA_HSDPA Rel.5	NA
WCDMA_HSUPA Rel.6	NA
LTE_QPSK	NA
LTE_16QAM	NA
LTE_64QAM	NA
BR/EDR	NA
BLE	NA
802.11b(2.4GHz)	NA
802.11g(2.4GHz)	NA
802.11n HT20(2.4GHz)	NA
802.11a(5GHz)	NA
802.11n HT20(5GHz)	NA
802.11ac VHT20(5GHz)	NA
802.11n HT40(5GHz)	NA
802.11ac VHT40(5GHz)	NA
802.11ac VHT80(5GHz)	NA

Capability Class:	GPRS Multi-slots :	EGPRS Multi-slots :	NFC
Class B	Class 33(Four Up)	Class 33(Four Up)	Support

RF exposure environment	Device type
General Public	Production unit

2.2 Exposure conditions

General description

Head Configuration: Measurements were made in “cheek” and “tilt” positions on both the left hand and right-hand sides of the phantom. The positions used in the measurements were according to IEEE 1528 "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques".

Body Worn Configuration: The device was placed in the SPEAG holder below the flat section of the phantom. The distance between the device and the phantom was kept at the separation distance using a separate flat spacer that was removed before the start of the measurements. And the distance is normally determined according to the actual scene which might be the worst use condition for general exposure. The device’s front and rear were oriented facing the phantom since these orientations give higher results for most regular portable devices.

Hotspot Configuration: Hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge; for the data modes, wireless technologies and frequency bands supporting hotspot mode.

Body Configuration: Body SAR is measured for all edges and surfaces of the device or refer to hotspot configuration. (For the device such as tablet and mobile phone etc.)

Limb Configuration: Extremity limb SAR is measured for all edges and surfaces of the device or refer to hotspot configuration.

Body-support Configuration: Body-support device such as laptop is not commonly require SAR test.

DUT Exposure Condition	Distance(mm)
Head	0
Body-worn	10
Hotspot	10

2.3 Other information

Testing Start Date:	2022/8/25
Testing End Date:	2022/9/7
DUT IMEI:	354676360010218 354676360010176
DUT H/W Version:	V1.2.0
DUT S/W Version:	V00R028A-UD
Ambient Temperature within 18-25℃	22℃
Liquid Temperature change within ±2℃	22℃
Humidity:	35%
Note	N/A

3 SPECIFICATION

Specification	Version	Title
Part 2.1093	Latest	Radio frequency radiation exposure evaluation: portable devices.
IEEE Std 1528	2013	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
IEC/IEEE 62209-1528	2020	Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1528: Human models, instrumentation, and (Frequency range of 4 MHz to 10 GHz)
KDB 248227 D01	v02r02	SAR GUIDANCE FOR IEEE 802.11 (Wi-Fi) TRANSMITTERS
KDB 447498 D01	v06	General RF Exposure Guidance
KDB 447498 D02	v02r01	SAR MEASUREMENT PROCEDURES FOR USB DONGLE TRANSMITTERS
KDB 643646 D01	v01r03	SAR TEST REDUCTION CONSIDERATIONS FOR OCCUPATIONAL PTT RADIOS
KDB 616217 D04	v01r02	SAR for laptop and tablets
KDB 648474 D04	v01r03	Handset SAR
KDB 865664 D01	v01r04	SAR Measurement from 100 MHz to 6 GHz
KDB 865664 D02	v01r02	RF Exposure Reporting
KDB 941225 D01	v03r01	3G SAR MEAUREMENT PROCEDURES
KDB 941225 D05	v02r05	SAR for LTE Devices
KDB 941225 D06	v02r01	SAR EVALUATION PROCEDURES FOR PORTABLE DEVICES WITH WIRELESS ROUTER CAPABILITIES
KDB 941225 D07	v01r02	SAR EVALUATION PROCEDURES FOR UMPC MINI-TABLET DEVICES

4 TEST CONDITIONS

4.1 Test signal, frequencies and output power

The device was put into operation by using a call tester. Communication between the device and the call tester was established by air link. Non-signaling mode also applied.The device output power was set to maximum power level for all tests; a fully charged battery was used for every test sequence.In all operating bands the measurements were performed on lowest, middle and highest channels.

4.2 SAR measurement set-up

The system is based on a high precision robot (working range greater than 0.9m), which positions the probes with a positional repeatability of better than ± 0.02mm. Special E- probe have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines (length =300mm) to the data acquisition unit. A cell controller system contains the power supply, robot controller, teaches pendant (Joystick), and remote control, is used to drive the robot motors. The PC consists of the Micron Pentium IV computer with Win7 system and SAR Measurement Software DASY5 Professional, A/D interface card, monitor, mouse, and keyboard. The Stäubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card. The DAE consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical Downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection .The robot uses its own controller with a built in VME-bus computer.

4.3 Phantoms

The phantom used for all tests i.e. for both system checks and device testing, was the twin headed "SAM Phantom", manufactured by SPEAG. The phantom conforms to the requirements. System checking was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. Body SAR testing also used the flat section between the head profiles. The SPEAG device holder (see Section 4.6.1) was used to position the device in all tests whilst a tripod was used to position the validation dipoles against the flat section of phantom.

Shell thickness: 2 ± 0.2 mm on flat section (6 ± 0.2 mm at ear point)

4.4 Tissue stimulants

Recommended values for the dielectric parameters of the tissue simulants are given in reference standards. The depth of the tissue simulant was 15.0 ± 0.5 cm measured from the ear reference point during system checking and device measurements. The following tissue stimulants were used for test:

Name	Broadband tissue-equivalent liquid
Type	HBBL600-10000V6 Simulating Liquid
Supplier	SPEAG
Component	Material used refer to 62209-1528 Annex F, the details are confidential.

Liquid depth for SAR Measurement

4.5 Device holder

The device was placed in the device holder (illustrated below) that is supplied by SPEAG as an integral part of the Dasy52 system.

4.6 Scan procedure

First, area scans were used for determination of the field distribution and the approximate location of the local peak SAR values. The SAR distribution is scanned along the inside surface, at least for an area larger than the projection of the handset and antenna. The angle between the probe axis and the surface normal line is recommended but not required to be less than 30°. The SAR distribution is first measured on a 2-D coarse grid. The scan region should cover all areas that are exposed and encompassed by the projection of the handset. There are 15 mm × 15 mm (equal or less than 2GHz), 12 mm × 12 mm (from 2GHz~4GHz) and 10mm x 10mm (from 4GHz~6GHz) measurement grid used when two staggered one-dimensional cubic splines are used to estimate the maximum SAR location.

When the reported 1g-SAR estimated by area scan is less than 1.40 w/kg.

Zoom scan was performed by using the configuration mentioned below or more conservative scan area and step to determine the averaged SAR value. Drift was determined by measuring the same point at the start of the area scan and again at the end of the zoom scan.

Below 3GHz：32mmX32mmX30mm scan area with 8 mm X8 mm X5 mm steps

2GHz-3GHz：32mmX32mmX30mm scan area with 8 mm X8 mm X5 mm steps

3GHz-4GHz：28mmX28mmX28mm scan area with 7 mm X7 mm X4 mm steps

4GHz-5GHz： 25mmX25mmX24mm scan area with 5 mm X5 mm X3 mm steps

5GHz-6GHz： 25mmX25mmX22mm scan area with 5 mm X5 mm X2 mm steps

4.7 SAR averaging methods

The maximum SAR value was averaged over a cube of tissue using interpolation and extrapolation.

The interpolation, extrapolation and maximum search routines within Dasy5 are all based on the modified Quadratic Shepard’s method (Robert J. Renka, “Multivariate Interpolation Of Large Sets Of Scattered Data”, University of North Texas ACM Transactions on Mathematical Software, vol. 14, no. 2, June 1988, pp. 139-148).

The interpolation scheme combines a least-square fitted function method with a weighted average method. A trivariate 3-D / bivariate 2-D quadratic function is computed for each measurement point and fitted to neighboring points by a least-square method. For the zoom scan, inverse distance weighting is incorporated to fit distant points more accurately. The interpolating function is finally calculated as a weighted average of the quadratics.

In the zoom scan, the interpolation function is used to extrapolate the Peak SAR from the deepest measurement points to the inner surface of the phantom.

5 RESULT SUMMARY

The maximum reported SAR values for all exposure conditions supported are given as following. The device meet the compliance.

Licensed Band Standalone Transmission Summary(1g)				
Exposure Position	Frequency Band	SAR Result(W/kg)	Limit(W/kg)	Verdict
Head	GSM850	0.20	1.60	Pass
	GSM1900	0.12		
	WCDMA Band V	0.08		
	LTE Band5	0.16		
	LTE Band12	0.03		
Body-Worn	GSM850	0.43		
	GSM1900	0.99		
	WCDMA Band V	0.15		
	LTE Band5	0.28		
	LTE Band12	0.13		
Hotspot	GSM850	0.43		
	GSM1900	1.16		
	WCDMA Band V	0.15		
	LTE Band5	0.28		
	LTE Band12	0.13		

Unlicensed Band Standalone Transmission Summary(1g)				
Exposure Position	Frequency Band	SAR Result(W/kg)	Limit(W/kg)	Verdict
Head	BT/BLE	0.43	1.60	Pass
	WLAN2.4GHz	0.22		
	WLAN5GHz UNII-1	0.22		
	WLAN5GHz UNII-2A	0.23		
	WLAN5GHz UNII-2C	0.36		
	WLAN5GHz UNII-3	0.44		
Body-Worn	BT/BLE	0.00		
	WLAN2.4GHz	0.04		
	WLAN5GHz UNII-1	0.27		
	WLAN5GHz UNII-2A	0.33		
	WLAN5GHz UNII-2C	0.24		
	WLAN5GHz UNII-3	0.18		
Hotspot	BT/BLE	0.06		
	WLAN2.4GHz	0.04		
	WLAN5GHz UNII-1	Not support		
	WLAN5GHz UNII-2A	Not support		
	WLAN5GHz UNII-2C	Not support		
	WLAN5GHz UNII-3	Not support		

Simultaneous Transmission Summary				
Exposure Position	Mode	Highest SAR Result(W/kg)	Limit(W/kg)	Verdict
Head	GSM850+BT+WLAN5GHz	1.03	1.60	Pass
Body-Worn	GSM1900+BT+WLAN5GHz	1.33	1.60	Pass
Hotspot	GSM1900	1.16	1.60	Pass

This Test Report Is Approved by: Mr. Peng Zhen	Review by: Mr. Chang Tian yu
Tested and issued by: Ms. Li Jin	Approved date: 2022/9/16

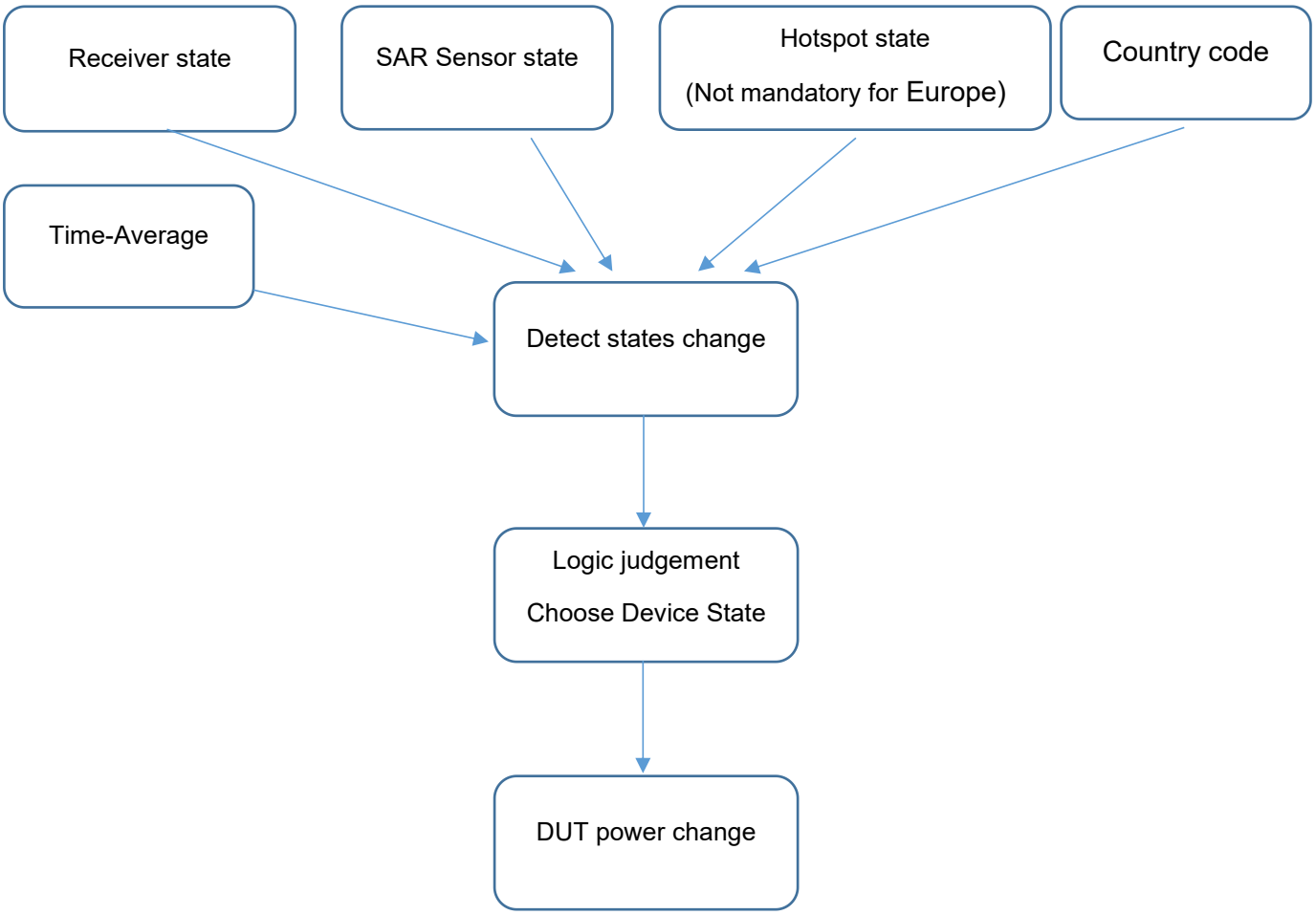
6 TEST RESULTS

6.1 Scenario

General description:

In common, there are several power change schemes based on technologies mentioned below, but different product use different method to change conducted power for relevant transmitters. These methods could be used together on both standalone and simultaneous transmission (Depends on specific scenario)

Receiver:	Triggered when receive ON/OFF
P-sensor:	Triggered when sensor ON/OFF
Hotspot:	Triggered when hotspot ON/OFF
Country code:	Triggered through MCC/A-GNSS
TA:	Time average SAR based on Qualcomm



DUT Power change scheme	Scenario	Note
Receiver	Head	Receiver ON with full power

6.2 Average conducted power with Tune up tolerance

6.2.1 GSM

General description:

GPRS Coding Scheme	Bit Rate (kbit/s/slot)	Modulation	Code Rate
CS-1	8.0	GMSK	1/2
CS-2	12.0	GMSK	≈2/3
CS-3	14.4	GMSK	≈3/4
CS-4	20.0	GMSK	1

EDGE Modulation and Coding Scheme (MCS)	Bit Rate (kbit/s/slot)	Modulation	Data Code Rate	Header Code Rate
MCS-1	8.8	GMSK	≈0.53	≈0.53
MCS-2	11.2	GMSK	≈0.66	≈0.53
MCS-3	14.8	GMSK	≈0.85	≈0.53
MCS-4	17.6	GMSK	1	≈0.53
MCS-5	22.4	8PSK	≈0.37	1/3
MCS-6	29.6	8PSK	≈0.49	1/3
MCS-7	44.8	8PSK	≈0.76	≈0.39
MCS-8	57.05	8PSK	≈0.92	≈0.39
MCS-9	61.85	8PSK	1	≈0.39

Division Factors:

To average the power, the division factor is as follows:

1TX-slot (1uplink) = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots(2uplink) = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots (3uplink) = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots (4uplink) = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

Note: GSM SAR was tested under the mode with maximum frame average power.

Licensed SISO1

Full Power

GSM850

TX Mode	TX slot	Burst Power (dBm)			Tuneup Tolerance (dBm)	Frame power(dBm)		
		Frequency/Channel				Frequency/Channel		
		824.2	836.6	848.8		824.2	836.6	848.8
		128	190	251		128	190	251
GSM	1 slot	31.49	31.59	31.97	32.50	23.23	23.32	23.28
GPRS (GMSK)	1 slot	31.45	31.41	31.79	32.50	23.26	23.29	23.16
	2 slots	30.83	31.16	31.37	32.00	23.58	23.51	23.56
	3 slots	29.27	29.17	29.34	30.50	23.41	23.52	23.50
	4 slots	28.41	28.18	28.36	29.50	23.57	23.56	23.54

GSM1900

TX Mode	TX slot	Burst Power (dBm)			Tuneup Tolerance (dBm)	Frame power(dBm)		
		Frequency/Channel				Frequency/Channel		
		1850	1880	1910		1850	1880	1910
		512	661	810		512	661	810
GSM	1 slot	29.07	29.25	29.18	30.00	20.04	20.22	20.15
GPRS (GMSK)	1 slot	29.16	29.22	29.13	30.00	20.13	20.19	20.10
	2 slots	26.29	26.46	26.33	27.50	20.27	20.44	20.31
	3 slots	24.77	24.24	24.13	25.70	20.51	19.98	19.87
	4 slots	24.48	24.21	24.10	25.50	21.47	21.20	21.09

Reduced Power

GSM1900

TX Mode	TX slot	Burst Power (dBm)			Tuneup Tolerance (dBm)	Frame power(dBm)		
		Frequency/Channel				Frequency/Channel		
		1850	1880	1910		1850	1880	1910
		512	661	810		512	661	810
GSM	1 slot	27.04	27.22	27.28	28.00	18.01	18.19	18.25
GPRS (GMSK)	1 slot	27.30	27.15	27.15	28.00	18.27	18.12	18.12
	2 slots	24.27	24.61	24.34	25.50	18.25	18.59	18.32
	3 slots	22.88	22.31	22.25	23.70	18.62	18.05	17.99
	4 slots	22.54	22.36	22.25	23.50	19.53	19.35	19.24

6.2.2 WCDMA

General description:

Release 99

The following tests were completed according to the test requirements outlined in 3GPP TS34.121-1 specification.

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 1
	RMC mode AMR mode	12.2kbps RMC 12.2kbps RMC in 3.4 kbps SRB
	Power Control Algorithm	Algorithm2
	βc/βd	8/15

Release 5

The following 4 Sub-tests were completed according to Release 5 procedures in 3GPP TS34.121.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs}(1)	CM(dB) (2)
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0
3	15/15	8/15	64	15/18	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5

Note1: $\triangle_{ACK}$, $\triangle_{NACK}$ and $\triangle_{CQI}$ =8⇔ $A_{hs}=\beta_{hs}/\beta_c=30/15 \Leftrightarrow \beta_{hs}=30/15*\beta_c$.

Note2:CM=1 for $\beta_c/\beta_d=12/15$, $\beta_{hs}/\beta_c=24/15$.

Note3: 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 signaled gain factors for the reference TFC(TF1,TF1) to β_c=11/15 and β_d=15/15.

Release 6

The following 5 Sub-tests were completed according to Release 6 procedures in 3GPP TS34.121.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs}(1)	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	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	2.0	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	2.0	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	2.0	21	81

Note1: $\triangle_{ACK}$, $\triangle_{NACK}$ and $\triangle_{CQI}$ =8⇔A_{hs}=β_{hs}/β_c=30/15⇔β_{hs}=30/15*β_c.

Note2:CM=1 for β_c/β_d =12/15,β_{hs}/β_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.

Note3: 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 signaled gain factors for the reference TFC(TF1,TF1) to β_c=10/15 and β_d=15/15.

Note4: 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 signaled gain factors for the reference TFC(TF1,TF1) to β_c=14/15 and β_d=15/15.

NOTE5: Testing UE using E-DPDCH Physical layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.

NOTE6:β_{ed} can not be set directly; it is set by Absolute Grant Value.

Release 7

The following 1 Sub-test was completed according to Release 7 procedures in section 5.2 of 3GPP TS34.121.

Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM

Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed}1: 30/15 β_{ed}2: 30/15	β_{ed}3: 24/15 β_{ed}4: 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.
Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
Note 3: DPDCH is not configured, therefore the β_c is set to 1 and β_d = 0 by default.
Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.
Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.

Release 8

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

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
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.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

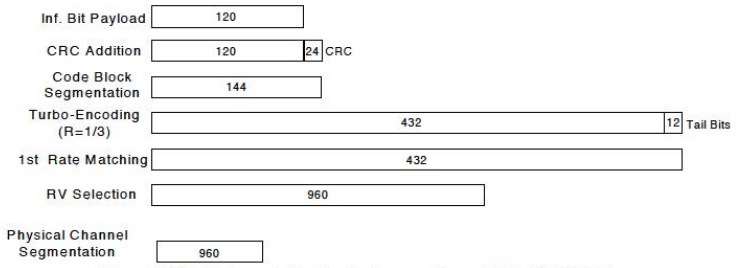


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 8 procedures in 3GPP TS34.121.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs}(1)	CM(dB) (2)
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0
3	15/15	8/15	64	15/18	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5

Note1: $\triangle_{ACK}$, $\triangle_{NACK}$ and $\triangle_{CQI}$ =8⇔ $A_{hs}=\beta_{hs}/\beta_c=30/15 \Leftrightarrow \beta_{hs}=30/15*\beta_c$.

Note2:CM=1 for $\beta_c/\beta_d=12/15$, $\beta_{hs}/\beta_c=24/15$.

Note3: 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 signaled gain factors for the reference TFC(TF1,TF1) to $\beta_c=11/15$ and $\beta_d=15/15$.

Release 9

The clause (UE Maximum Output Power for DC-HSUPA) is **incomplete** in 3GPP TS34.121 so far.

Parameter	Unit	Cell 1
Cell type		Serving cell
UTRA RF Channel Number		As defined in clause 5.2BB.4.1
Qqualmin	dB	-24
Qrxlevmin	dBm	-115
UE_TXPWR_MAX_RACH	dBm	+21
$\hat{I}_{or}$ (see notes 1 and 2)	dBm/3.84 MHz	-86
NOTE 1: The power level is specified in terms of $\hat{I}_{or}$ instead of CPICH_RSCP because RSCP is a receiver measurement, whereas the SS can only set $\hat{I}_{or}$.		
NOTE 2: The cell fulfils TS 25.304, clause 5.2.3.1.2.		

Note: UMTS SAR was tested under Rel.99 RMC 12.2kbps mode. For other higher release configuration, SAR was not required.

Licensed SISO1.

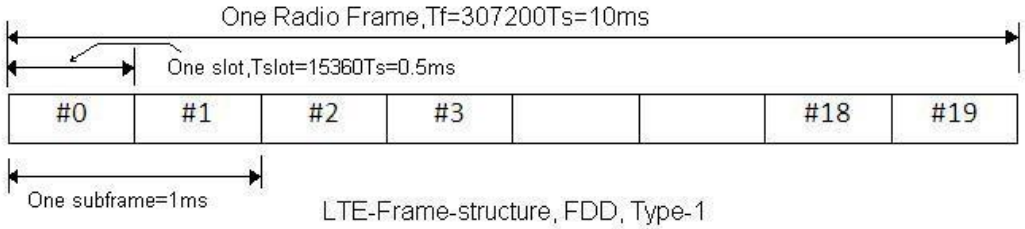
band V

Mode		RF Output Power(dBm)			Tuneup Tolerance (dBm)
		4132	4183	4233	
		826.4	836.6	846.6	
Release 99	RMC,12.2kbps	23.17	23.22	23.23	24
HSDPA	Subtest1	22.00	22.41	22.12	23
	Subtest2	22.26	22.12	22.28	23
	Subtest3	21.61	21.71	21.56	22.5
	Subtest4	21.63	21.77	21.70	22.5
HSUPA	Subtest1	22.22	22.22	22.08	23
	Subtest2	20.05	20.23	20.09	21
	Subtest3	21.05	21.40	21.23	22
	Subtest4	20.25	20.02	20.04	21
	Subtest5	22.09	22.42	22.08	23

6.2.3 LTE

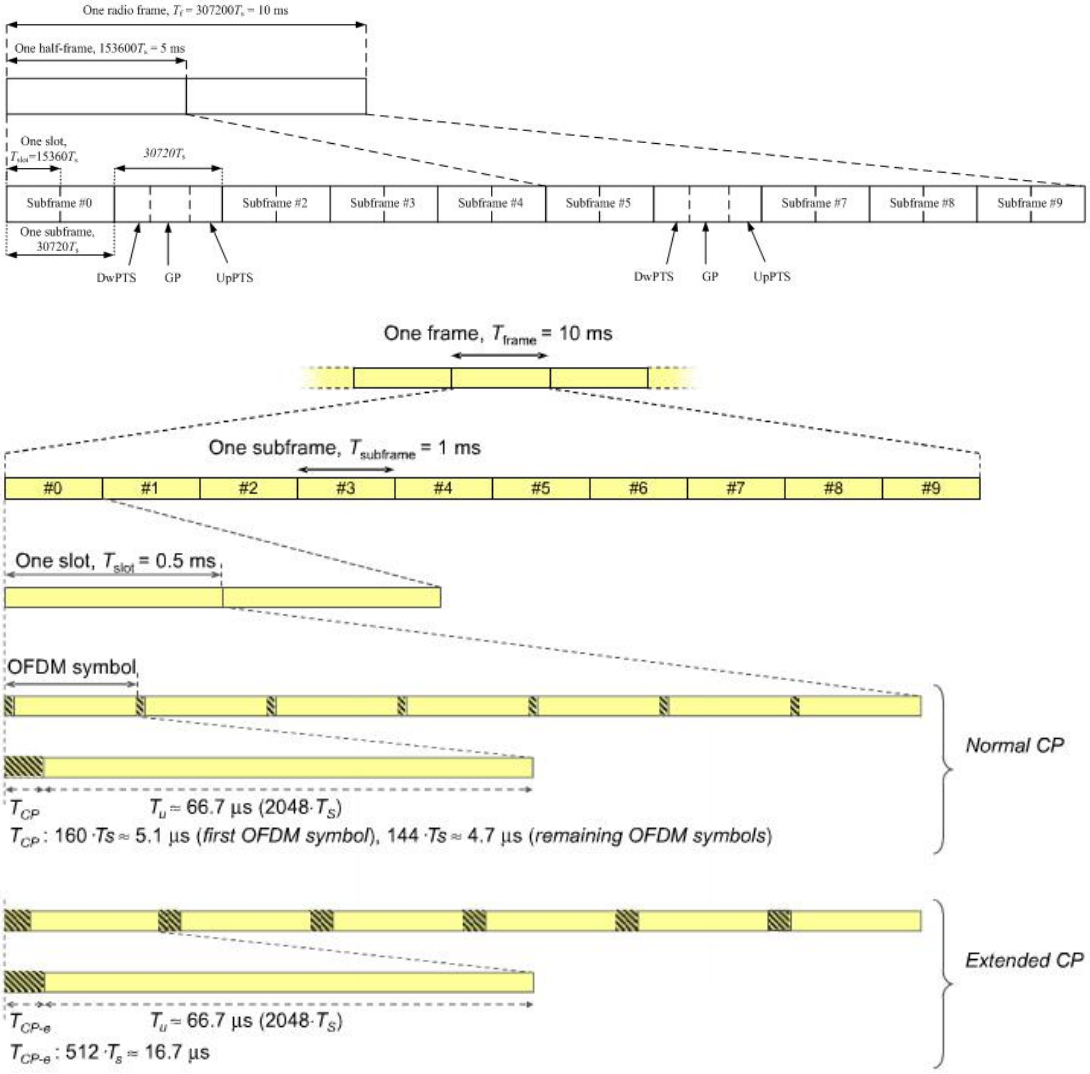
General description:

FDD-LTE frame structure



Type 1 is used as LTE FDD frame structure. As shown in the figure above, an LTE TDD frame is made of total 20 slots, each of 0.5ms. Two consecutive time slots will form one subframe. 10 such subframes form one radio frame. One subframe duration is about 1 ms. and the duty cycle is inherent as100%.

TDD-LTE frame structure



Uplink-downlink configuration

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

Special sub-frame configuration

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

Special sub-frame with cyclic prefix uplink

Special sub-frame configuration		Duty factor with normal cyclic prefix in uplink	Duty factor with extended cyclic prefix in uplink
Normal cyclic prefix in downlink	0~4	7.13%	8.33%
	5~9	14.3%	16.7%
Extended cyclic prefix in downlink	0~3	7.13%	8.33%
	4~7	14.3%	16.7%

One sub-frame is 30720Ts=1ms, when UpPTS(uplink) in special sub-frame with extended cyclic prefix, duty factor = 5120/30720=0.167.There are 5 sub-frames in half frame(3up link),so the final duty factor is (30720*3+5120)/(30720*5)=63.3% which we used to evaluate the SAR compliance (worst case)

Note: SRTC perform SAR test with maximum duty factor equal to 63.3% by using uplink-downlink configuration 0.

Licensed SISO1

LTE Band5

BW	Modulation	RB Size	RB Offset	Conducted power(dBm)			
				20407	20525	20643	Tune-up Tolerance
				824.7	836.5	848.3	
1.4	QPSK	1	0	23.09	23.09	23.37	24
		1	3	23.11	22.98	23.22	24
		1	5	23.09	22.91	23.33	24
		3	0	22.97	22.95	23.21	24
		3	1	22.95	22.99	23.18	24
		3	3	23.01	23.00	23.19	24
		6	0	22.03	22.01	22.31	23
	16QAM	1	0	22.06	21.94	22.34	23
		1	3	21.96	22.05	22.29	23
		1	5	22.00	22.09	22.26	23
		3	0	21.97	21.95	22.37	23
		3	1	22.07	22.08	22.28	23
		3	3	22.07	21.95	22.36	23
		6	0	20.96	21.01	21.29	22
	64QAM	1	0	21.12	21.05	21.35	22
		1	3	20.99	21.09	21.17	22
		1	5	21.11	21.00	21.32	22
		3	0	21.03	21.05	21.31	22
		3	1	20.97	21.00	21.27	22
		3	3	21.07	20.99	21.34	22
		6	0	20.01	19.93	20.29	21

LTE Band5

BW	Modulation	RB Size	RB Offset	Conducted power(dBm)			Tune-up Tolerance
				20415	20525	20635	
				825.5	836.5	847.5	
3	QPSK	1	0	23.01	23.00	23.39	24
		1	8	23.12	23.03	23.28	24
		1	14	23.06	23.16	23.29	24
		8	0	22.13	22.05	22.25	23
		8	4	22.07	22.11	22.32	23
		8	7	22.00	22.12	22.30	23
		15	0	22.09	22.09	22.28	23
	16QAM	1	0	22.64	22.57	22.87	23
		1	8	22.53	22.61	22.90	23
		1	14	22.49	22.61	22.73	23
		8	0	21.18	21.11	21.34	22
		8	4	21.12	20.99	21.23	22
		8	7	21.09	21.08	21.24	22
		15	0	21.02	21.11	21.33	22
	64QAM	1	0	21.00	21.14	21.33	22
		1	8	21.01	21.13	21.31	22
		1	14	21.12	21.13	21.42	22
		8	0	20.14	20.11	20.40	21
		8	4	20.14	20.06	20.35	21
		8	7	20.04	20.04	20.29	21
		15	0	20.19	20.13	20.36	21

LTE Band5

BW	Modulation	RB Size	RB Offset	Conducted power(dBm)			Tune-up Tolerance
				20425	20525	20625	
				826.5	836.5	846.5	
5	QPSK	1	0	23.12	23.03	23.44	24
		1	12	23.11	23.06	23.34	24
		1	24	23.10	23.13	23.33	24
		12	0	22.18	22.16	22.33	23
		12	7	22.22	22.11	22.38	23
		12	13	22.08	22.05	22.45	23
		25	0	22.22	22.17	22.43	23
	16QAM	1	0	22.72	22.65	22.78	23
		1	12	22.64	22.66	22.89	23
		1	24	22.71	22.68	22.78	23
		12	0	21.17	21.04	21.28	22
		12	7	21.16	21.15	21.42	22
		12	13	21.21	21.15	21.32	22
		25	0	21.15	21.14	21.29	22
	64QAM	1	0	21.10	21.18	21.34	22
		1	12	21.19	21.13	21.42	22
		1	24	21.21	21.02	21.46	22
		12	0	20.06	20.18	20.30	21
		12	7	20.05	20.21	20.41	21
		12	13	20.21	20.05	20.45	21
		25	0	20.19	20.08	20.27	21

LTE Band5

BW	Modulation	RB Size	RB Offset	Conducted power(dBm)			Tune-up Tolerance
				20450	20525	20600	
				829	836.5	844	
10	QPSK	1	0	23.24	23.21	23.47	24
		1	25	23.17	23.05	23.29	24
		1	49	23.18	23.08	23.34	24
		25	0	22.11	22.14	22.30	23
		25	12	22.16	22.09	22.32	23
		25	25	22.16	22.08	22.43	23
		50	0	22.17	22.04	22.36	23
	16QAM	1	0	22.60	22.69	22.88	23
		1	25	22.59	22.55	22.79	23
		1	49	22.55	22.62	22.96	23
		25	0	21.20	21.06	21.40	22
		25	12	21.11	21.12	21.47	22
		25	25	21.07	21.07	21.46	22
		50	0	21.10	21.15	21.45	22
	64QAM	1	0	21.21	21.18	21.40	22
		1	25	21.17	21.16	21.30	22
		1	49	21.09	21.11	21.30	22
		25	0	20.16	20.19	20.34	21
		25	12	20.16	20.07	20.46	21
		25	25	20.19	20.03	20.29	21
		50	0	20.14	20.08	20.29	21

LTE Band12

BW	Modulation	RB Size	RB Offset	Conducted power(dBm)			Tune-up Tolerance
				23017	23095	23173	
				699.7	707.5	715.3	
1.4	QPSK	1	0	23.15	23.06	23.11	24
		1	3	23.23	22.98	23.01	24
		1	5	23.15	23.00	22.99	24
		3	0	23.21	23.00	23.15	24
		3	1	23.11	23.07	22.98	24
		3	3	23.23	23.04	23.12	24
		6	0	22.08	22.06	22.12	23
	16QAM	1	0	22.19	22.15	22.02	23
		1	3	22.14	22.03	22.02	23
		1	5	22.11	22.04	22.12	23
		3	0	22.06	22.10	22.16	23
		3	1	22.20	21.96	22.10	23
		3	3	22.16	22.06	22.14	23
		6	0	21.08	21.12	21.13	22
	64QAM	1	0	21.11	21.02	20.97	22
		1	3	21.20	21.05	20.98	22
		1	5	21.21	21.15	21.11	22
		3	0	21.09	21.12	21.09	22
		3	1	21.14	21.04	20.96	22
		3	3	21.16	21.14	21.09	22
		6	0	20.13	20.04	20.06	21

LTE Band12

BW	Modulation	RB Size	RB Offset	Conducted power(dBm)			Tune-up Tolerance
				23025	23095	23165	
				700.5	707.5	714.5	
3	QPSK	1	0	23.13	23.09	23.08	24
		1	8	23.09	23.10	22.98	24
		1	14	23.15	23.16	23.13	24
		8	0	22.07	22.03	22.05	23
		8	4	22.18	22.08	22.12	23
		8	7	22.22	22.01	22.08	23
		15	0	22.19	22.15	22.03	23
	16QAM	1	0	22.73	22.63	22.51	23
		1	8	22.66	22.56	22.63	23
		1	14	22.74	22.54	22.62	23
		8	0	21.16	21.10	21.03	22
		8	4	21.18	21.16	21.07	22
		8	7	21.14	21.07	20.99	22
		15	0	21.09	21.07	21.11	22
	64QAM	1	0	21.21	21.08	20.98	22
		1	8	21.15	21.08	21.09	22
		1	14	21.17	21.00	21.12	22
		8	0	20.20	20.14	20.11	21
		8	4	20.09	20.13	20.05	21
		8	7	20.15	20.14	20.16	21
		15	0	20.14	20.07	19.97	21

LTE Band12

BW	Modulation	RB Size	RB Offset	Conducted power(dBm)			Tune-up Tolerance
				23035	23095	23155	
				701.5	707.5	713.5	
5	QPSK	1	0	23.28	23.05	23.09	24
		1	12	23.24	23.14	23.11	24
		1	24	23.31	23.15	23.10	24
		12	0	22.40	22.15	22.13	23
		12	7	22.46	22.10	22.20	23
		12	13	22.40	22.06	22.02	23
		25	0	22.30	22.08	22.04	23
	16QAM	1	0	22.91	22.58	22.65	23
		1	12	22.86	22.55	22.53	23
		1	24	22.81	22.56	22.70	23
		12	0	21.41	21.10	21.08	22
		12	7	21.27	21.20	21.15	22
		12	13	21.35	21.08	21.01	22
		25	0	21.29	21.15	21.14	22
	64QAM	1	0	21.38	21.05	21.16	22
		1	12	21.32	21.05	21.11	22
		1	24	21.28	21.20	21.07	22
		12	0	20.31	20.13	20.18	21
		12	7	20.47	20.20	20.07	21
		12	13	20.29	20.20	20.10	21
		25	0	20.38	20.17	20.14	21

LTE Band12

BW	Modulation	RB Size	RB Offset	Conducted power(dBm)			
				23060	23095	23130	Tune-up Tolerance
				704	707.5	711	
10	QPSK	1	0	23.30	23.16	23.03	24
		1	25	23.32	23.14	23.16	24
		1	49	23.34	23.27	23.11	24
		25	0	22.36	22.04	22.17	23
		25	12	22.28	22.17	22.19	23
		25	25	22.43	22.20	22.20	23
		50	0	22.37	22.09	22.17	23
	16QAM	1	0	22.83	22.61	22.63	23
		1	25	22.88	22.68	22.53	23
		1	49	22.88	22.64	22.53	23
		25	0	21.31	21.11	21.06	22
		25	12	21.43	21.05	21.09	22
		25	25	21.29	21.20	21.01	22
		50	0	21.33	21.11	21.04	22
	64QAM	1	0	21.28	21.02	21.20	22
		1	25	21.31	21.13	21.21	22
		1	49	21.43	21.15	21.02	22
		25	0	20.33	20.19	20.08	21
		25	12	20.28	20.13	20.20	21
		25	25	20.43	20.18	20.16	21
		50	0	20.32	20.09	20.02	21

6.2.4 Bluetooth

Note: Exclusion method based on EIRP is not applied for the BT, SRTC perform SAR measurement.

SISO1

BT

Modulation type	Conducted Average Power(dBm)			Tune-up
	2402MHz	2441MHz	2480MHz	
GFSK	11.11	10.95	10.83	11.5
π/4DQPSK	7.92	6.99	7.32	8
8DPSK	7.76	6.97	7.27	8

BLE

Modulation type	Conducted Average Power(dBm)			Tune-up
	2402MHz	2440MHz	2480MHz	
GFSK (LE 1Mbps)	-2.03	-2.14	-1.07	-1.0
GFSK (LE 2Mbps)	-4.86	-4.95	-3.92	-3.5
Coded 125K	-1.56	-3.62	-2.21	-1.5
Coded 500K	-3.20	-3.63	-2.20	-2.0

6.2.5 WIFI

Note: Exclusion method based on EIRP is not applied for the WIFI, SRTC perform SAR measurement.

Unlicensed SISO1

WLAN2.4GHz

Mode	Freq(MHz)	Average power (dBm)	Tune-up (dBm)
802.11b	2412	10.74	11
	2437	10.88	11
	2462	10.11	11
802.11g	2412	10.54	11
	2437	10.76	11
	2462	10.38	11
802.11n HT20	2412	10.73	11
	2437	10.72	11
	2462	10.76	11

WLAN5GHz UNII-1

Mode	Freq(MHz)	Average power (dBm)	Tune-up (dBm)
802.11a	5180	10.59	11
	5220	10.26	11
	5240	10.23	11
802.11n HT20	5180	10.40	11
	5220	9.60	11
	5240	9.68	11
802.11n HT40	5190	10.18	11
	5230	9.77	11
802.11ac VHT20	5180	10.15	11
	5220	10.58	11
	5240	9.61	11
802.11ac VHT40	5190	10.10	11
	5230	9.53	11
802.11ac VHT80	5210	9.71	11

WLAN5GHz UNII-2A

Mode	Freq(MHz)	Average power (dBm)	Tune-up (dBm)
802.11a	5260	10.27	11
	5280	10.38	11
	5320	10.71	11
802.11n HT20	5260	9.97	11
	5280	10.25	11
	5320	10.52	11
802.11n HT40	5270	9.99	11
	5310	9.98	11
802.11ac VHT20	5260	10.51	11
	5280	9.97	11
	5320	10.09	11
802.11ac VHT40	5270	9.79	11
	5310	10.36	11
802.11ac VHT80	5290	9.86	11

WLAN5GHz UNII-2C

Mode	Freq(MHz)	Average power (dBm)	Tune-up (dBm)
802.11a	5500	9.97	12
	5580	10.42	12
	5700	9.69	12
802.11n HT20	5500	9.38	12
	5580	10.40	12
	5700	9.83	12
802.11n HT40	5510	10.06	12
	5590	10.33	12
	5670	10.10	12
802.11ac VHT20	5500	9.96	12
	5580	10.34	12
	5700	9.55	12
802.11ac VHT40	5510	9.89	12
	5590	10.18	12
	5670	10.25	12
802.11ac VHT80	5530	10.01	12
	5610	9.97	12

WLAN5GHz UNII-3

Mode	Freq(MHz)	Average power (dBm)	Tune-up (dBm)
802.11a	5745	10.95	11
	5785	10.60	11
	5825	10.86	11
802.11n HT20	5745	10.84	11
	5785	10.83	11
	5825	10.69	11
802.11n HT40	5755	10.82	11
	5795	10.86	11
802.11ac VHT20	5745	10.64	11
	5785	10.55	11
	5825	10.83	11
802.11ac VHT40	5755	10.54	11
	5795	10.86	11
802.11ac VHT80	5775	10.77	11

7 SAR RESULTS

7.1 T-issue and System Check

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue stimulants were measured every day using the dielectric probe kit and the network analyser. For the measurement of the following parameters the SPEAG DAKS-3.5 dielectric parameter probe is used, representing the open-ended coaxial probe measurement procedure. All tests were carried out within 24 hours of measuring the dielectric parameters.

Freq.(MHz)	Date	Liquid parameters	Measured	Target	Delta (%)	Tolerance (%)	Verdict
750	2022/8/28	εr	43.07	41.90	2.78	±10	Pass
		σ[S/m]	0.93	0.89	4.94	±10	Pass
835	2022/9/1	εr	42.99	41.50	3.58	±10	Pass
		σ[S/m]	0.93	0.90	2.78	±10	Pass
900	2022/9/2	εr	40.05	41.50	-3.51	±10	Pass
		σ[S/m]	1.01	0.97	4.02	±10	Pass
1800	2022/9/4	εr	39.31	40.00	-1.72	±10	Pass
		σ[S/m]	1.40	1.40	-0.29	±10	Pass
2450	2022/9/7	εr	40.83	39.20	4.17	±10	Pass
		σ[S/m]	1.74	1.80	-3.61	±10	Pass
5200	2022/9/6	εr	36.68	36.00	1.88	±5	Pass
		σ[S/m]	4.67	4.66	0.15	±5	Pass
5300	2022/9/6	εr	35.55	35.90	-0.99	±5	Pass
		σ[S/m]	4.85	4.76	1.89	±5	Pass
5600	2022/9/5	εr	36.77	35.50	3.57	±5	Pass
		σ[S/m]	5.21	5.07	2.76	±5	Pass
5800	2022/9/5	εr	36.37	35.30	3.04	±5	Pass
		σ[S/m]	5.40	5.27	2.54	±5	Pass

A system check measurement was made following the determination of the dielectric parameters of the stimulant, using the dipole validation kit. Dipole was placed under the flat section of the twin SAM phantom. The system checking results (dielectric parameters and SAR values) are given in the table below. All tests were carried out within 24 hours of checking system. Plots of the system checking scans are given in Annex A. Tissue Stimulants used in the Measurements. **For the same frequency range, SAR measurement is the same day with system check, and there is no need to manually add test date in ANNEX A.**

Freq.(MHz)	Date	SAR measured (normalized to 1W)		Target (Ref. Value)	Delta(%)	Tolerance(%)	Verdict
750	2022/8/28	1g	8.56	8.40	1.90	±10	Pass
		10g	5.88	5.70	3.16	±10	Pass
835	2022/9/1	1g	9.28	9.38	-1.07	±10	Pass
		10g	6.08	6.25	-2.72	±10	Pass
900	2022/9/2	1g	10.72	10.90	-1.65	±10	Pass
		10g	7.32	7.00	4.57	±10	Pass
1800	2022/9/4	1g	40.00	38.90	2.83	±10	Pass
		10g	20.88	20.30	2.86	±10	Pass
2450	2022/9/7	1g	50.76	53.00	-4.23	±10	Pass
		10g	25.44	24.50	3.84	±10	Pass
5200	2022/9/6	1g	73.40	75.90	-3.29	±10	Pass
		10g	21.50	21.40	0.47	±10	Pass
5300	2022/9/6	1g	79.90	78.00	2.44	±10	Pass
		10g	22.80	22.00	3.64	±10	Pass
5600	2022/9/5	1g	82.70	80.00	3.38	±10	Pass
		10g	22.80	22.60	0.88	±10	Pass
5800	2022/9/5	1g	79.60	78.50	1.40	±10	Pass
		10g	21.40	21.90	-2.28	±10	Pass

7.2 SAR Test result

In order to determine the largest value of the peak spatial-average SAR of a handset, all device positions, configurations, and operational modes should be tested for each frequency band according to Steps 1 to 3 below.

Step 1: The tests should be performed at the channel that is closest to the centre of the transmit frequency band.

a) All device positions (cheek and tilt, for both left and right sides of the SAM phantom),

b) All configurations for each device position in a), e.g., antenna extended and retracted, and

c) All operational modes for each device position in item a) and configuration in item b) in each frequency band, e.g., analog and digital, If more than three frequencies need to be tested (i.e., Nc > 3), then all frequencies, configurations and modes shall be tested for all of the above test conditions.

Step 2: For the condition providing the highest peak spatial-average SAR determined in Step 1 for each frequency, perform all tests at all other test frequency channels, e.g., lowest and highest frequencies. In addition, for all other conditions (device position, configuration, and operational mode) where the peak spatial-average SAR value determined in Step 1 is within 3 dB of the applicable SAR limit, it is recommended that all other test frequencies should be tested as well.

Step 3: Examine all data to determine the largest value of the peak.

Test and antenna position describe as follow:

Note: SRTC defined these positions (Back, Front, left, right, Top, Bottom) when facing the DUT screen.

License antenna	Position	Distances to edge (mm)	Test or not	Note
Ant0	Back	0.0	YES	ANT for WWAN
	Front	0.0	YES	
	Top	144.0	NO	
	Bottom	0.0	YES	
	Left	14.0	YES	
	Right	0.0	YES	

Unlicense antenna	Position	Distances to edge (mm)	Test or not	Note
Ant1	Back	0.0	YES	BT/WIFI
	Front	0.0	YES	
	Top	0.0	YES	
	Bottom	138.0	NO	
	Left	46.0	NO	
	Right	0.0	YES	

Note: L<1GHz; 1GHz<M<2GHz; H>2GHz

The measured and reported SAR values are tabulated below:

Non-signaling mode duty cycle could be the most conservative condition which with 100% duty cycle. So duty factor=1/ duty cycle shall be taken into consideration for SAR measurement with Non-signaling mode.

SRTC ensure each reference point power drift within 0.21 dB, and the value of worst case of each frequency band mentioned in Annex_Plot.

7.2.1 Licensed SISO1

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Meas SAR(w/kg)		Report SAR(w/kg)	
GSM850	Exposure condition	Position	Channel				First	Second	First	Second
GPRS GMSK	Head	Left Cheek	L	30.83	32.00	1.31	---	---	---	---
			M	31.16	32.00	1.21	0.162	---	0.196	---
			H	31.37	32.00	1.16	---	---	---	---
		Left tilt	L	30.83	32.00	1.31	---	---	---	---
			M	31.16	32.00	1.21	0.053	---	0.064	---
			H	31.37	32.00	1.16	---	---	---	---
		Right Cheek	L	30.83	32.00	1.31	---	---	---	---
			M	31.16	32.00	1.21	0.127	---	0.154	---
			H	31.37	32.00	1.16	---	---	---	---
		Right tilt	L	30.83	32.00	1.31	---	---	---	---
			M	31.16	32.00	1.21	0.059	---	0.071	---
			H	31.37	32.00	1.16	---	---	---	---
	Body-worn	Back	L	30.83	32.00	1.31	---	---	---	---
			M	31.16	32.00	1.21	0.352	---	0.426	---
			H	31.37	32.00	1.16	---	---	---	---
		Front	L	30.83	32.00	1.31	---	---	---	---
			M	31.16	32.00	1.21	0.287	---	0.347	---
			H	31.37	32.00	1.16	---	---	---	---
	Hotspot	Back	L	30.83	32.00	1.31	---	---	---	---
			M	31.16	32.00	1.21	0.352	---	0.426	---
			H	31.37	32.00	1.16	---	---	---	---
		Front	L	30.83	32.00	1.31	---	---	---	---
			M	31.16	32.00	1.21	0.287	---	0.347	---
			H	31.37	32.00	1.16	---	---	---	---
		Top	L	30.83	32.00	1.31	---	---	---	---
			M	31.16	32.00	1.21	---	---	---	---
			H	31.37	32.00	1.16	---	---	---	---
		Bottom	L	30.83	32.00	1.31	---	---	---	---
			M	31.16	32.00	1.21	0.188	---	0.227	---
			H	31.37	32.00	1.16	---	---	---	---
		Left	L	30.83	32.00	1.31	---	---	---	---
			M	31.16	32.00	1.21	0.101	---	0.122	---
			H	31.37	32.00	1.16	---	---	---	---
		Right	L	30.83	32.00	1.31	---	---	---	---
			M	31.16	32.00	1.21	0.091	---	0.110	---
			H	31.37	32.00	1.16	---	---	---	---

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Meas SAR(w/kg)		Report SAR(w/kg)	
GSM1900	Exposure condition	Position	Channel				First	Second	First	Second
GPRS GMSK	Head	Left Cheek	L	24.48	25.50	1.26	---	---	---	---
			M	24.21	25.50	1.35	0.088	---	0.119	---
			H	24.10	25.50	1.38	---	---	---	---
		Left tilt	L	24.48	25.50	1.26	---	---	---	---
			M	24.21	25.50	1.35	0.050	---	0.068	---
			H	24.10	25.50	1.38	---	---	---	---
		Right Cheek	L	24.48	25.50	1.26	---	---	---	---
			M	24.21	25.50	1.35	0.062	---	0.084	---
			H	24.10	25.50	1.38	---	---	---	---
		Right tilt	L	24.48	25.50	1.26	---	---	---	---
			M	24.21	25.50	1.35	0.047	---	0.063	---
			H	24.10	25.50	1.38	---	---	---	---
	Body-worn	Back	L	22.54	23.50	1.25	---	---	---	---
			M	22.36	23.50	1.30	0.763	---	0.992	---
			H	22.25	23.50	1.33	---	---	---	---
		Front	L	22.54	23.50	1.25	---	---	---	---
			M	22.36	23.50	1.30	0.459	---	0.597	---
			H	22.25	23.50	1.33	---	---	---	---
	Hotspot	Back	L	22.54	23.50	1.25	---	---	---	---
			M	22.36	23.50	1.30	0.763	---	0.992	---
			H	22.25	23.50	1.33	---	---	---	---
		Front	L	22.54	23.50	1.25	---	---	---	---
			M	22.36	23.50	1.30	0.459	---	0.597	---
			H	22.25	23.50	1.33	---	---	---	---
		Top	L	22.54	23.50	1.25	---	---	---	---
			M	22.36	23.50	1.30	---	---	---	---
			H	22.25	23.50	1.33	---	---	---	---
		Bottom	L	22.54	23.50	1.25	0.900	0.899	1.125	1.124
			M	22.36	23.50	1.30	0.893	0.891	1.161	1.158
			H	22.25	23.50	1.33	0.870	0.871	1.157	1.158
		Left	L	22.54	23.50	1.25	---	---	---	---
			M	22.36	23.50	1.30	0.071	---	0.092	---
			H	22.25	23.50	1.33	---	---	---	---
		Right	L	22.54	23.50	1.25	---	---	---	---
			M	22.36	23.50	1.30	0.063	---	0.082	---
			H	22.25	23.50	1.33	---	---	---	---

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Meas SAR(w/kg)		Report SAR(w/kg)	
WCDMA V	Exposure condition	Position	Channel				First	Second	First	Second
RMC	Head	Left Cheek	L	23.17	24.00	1.21	---	---	---	---
			M	23.22	24.00	1.20	0.067	---	0.080	---
			H	23.23	24.00	1.19	---	---	---	---
		Left tilt	L	23.17	24.00	1.21	---	---	---	---
			M	23.22	24.00	1.20	0.022	---	0.026	---
			H	23.23	24.00	1.19	---	---	---	---
		Right Cheek	L	23.17	24.00	1.21	---	---	---	---
			M	23.22	24.00	1.20	0.055	---	0.066	---
			H	23.23	24.00	1.19	---	---	---	---
		Right tilt	L	23.17	24.00	1.21	---	---	---	---
			M	23.22	24.00	1.20	0.017	---	0.020	---
			H	23.23	24.00	1.19	---	---	---	---
	Body-worn	Back	L	23.17	24.00	1.21	---	---	---	---
			M	23.22	24.00	1.20	0.123	---	0.148	---
			H	23.23	24.00	1.19	---	---	---	---
		Front	L	23.17	24.00	1.21	---	---	---	---
			M	23.22	24.00	1.20	0.101	---	0.121	---
			H	23.23	24.00	1.19	---	---	---	---
	Hotspot	Back	L	23.17	24.00	1.21	---	---	---	---
			M	23.22	24.00	1.20	0.123	---	0.148	---
			H	23.23	24.00	1.19	---	---	---	---
		Front	L	23.17	24.00	1.21	---	---	---	---
			M	23.22	24.00	1.20	0.101	---	0.121	---
			H	23.23	24.00	1.19	---	---	---	---
		Top	L	23.17	24.00	1.21	---	---	---	---
			M	23.22	24.00	1.20	---	---	---	---
			H	23.23	24.00	1.19	---	---	---	---
		Bottom	L	23.17	24.00	1.21	---	---	---	---
			M	23.22	24.00	1.20	0.073	---	0.088	---
			H	23.23	24.00	1.19	---	---	---	---
		Left	L	23.17	24.00	1.21	---	---	---	---
			M	23.22	24.00	1.20	0.050	---	0.060	---
			H	23.23	24.00	1.19	---	---	---	---
		Right	L	23.17	24.00	1.21	---	---	---	---
			M	23.22	24.00	1.20	0.065	---	0.078	---
			H	23.23	24.00	1.19	---	---	---	---

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Meas SAR(w/kg)		Report SAR(w/kg)	
LTE5	Exposure condition	Position	Channel				First	Second	First	Second
QPSK 1RB	Head	Left Cheek	L	23.24	24.00	1.19	---	---	---	---
			M	23.21	24.00	1.20	0.137	---	0.164	---
			H	23.47	24.00	1.13	---	---	---	---
		Left tilt	L	23.24	24.00	1.19	---	---	---	---
			M	23.21	24.00	1.20	0.070	---	0.084	---
			H	23.47	24.00	1.13	---	---	---	---
		Right Cheek	L	23.24	24.00	1.19	---	---	---	---
			M	23.21	24.00	1.20	0.118	---	0.142	---
			H	23.47	24.00	1.13	---	---	---	---
		Right tilt	L	23.24	24.00	1.19	---	---	---	---
			M	23.21	24.00	1.20	0.068	---	0.082	---
			H	23.47	24.00	1.13	---	---	---	---
	Body-worn	Back	L	23.24	24.00	1.19	---	---	---	---
			M	23.21	24.00	1.20	0.223	---	0.268	---
			H	23.47	24.00	1.13	---	---	---	---
		Front	L	23.24	24.00	1.19	---	---	---	---
			M	23.21	24.00	1.20	0.236	---	0.283	---
			H	23.47	24.00	1.13	---	---	---	---
	Hotspot	Back	L	23.24	24.00	1.19	---	---	---	---
			M	23.21	24.00	1.20	0.223	---	0.268	---
			H	23.47	24.00	1.13	---	---	---	---
		Front	L	23.24	24.00	1.19	---	---	---	---
			M	23.21	24.00	1.20	0.236	---	0.283	---
			H	23.47	24.00	1.13	---	---	---	---
		Top	L	23.24	24.00	1.19	---	---	---	---
			M	23.21	24.00	1.20	---	---	---	---
			H	23.47	24.00	1.13	---	---	---	---
		Bottom	L	23.24	24.00	1.19	---	---	---	---
			M	23.21	24.00	1.20	0.170	---	0.204	---
			H	23.47	24.00	1.13	---	---	---	---
		Left	L	23.24	24.00	1.19	---	---	---	---
			M	23.21	24.00	1.20	0.081	---	0.097	---
			H	23.47	24.00	1.13	---	---	---	---
		Right	L	23.24	24.00	1.19	---	---	---	---
			M	23.21	24.00	1.20	0.158	---	0.190	---
			H	23.47	24.00	1.13	---	---	---	---
QPSK 50%RB	Head	Left Cheek	L	22.16	23.00	1.21	---	---	---	---
			M	22.08	23.00	1.24	0.130	---	0.161	---
			H	22.43	23.00	1.14	---	---	---	---
		Left tilt	L	22.16	23.00	1.21	---	---	---	---
			M	22.08	23.00	1.24	0.063	---	0.078	---
			H	22.43	23.00	1.14	---	---	---	---
		Right Cheek	L	22.16	23.00	1.21	---	---	---	---
			M	22.08	23.00	1.24	0.112	---	0.139	---

			H	22.43	23.00	1.14	---	---	---	---
		Right tilt	L	22.16	23.00	1.21	---	---	---	---
			M	22.08	23.00	1.24	0.061	---	0.076	---
			H	22.43	23.00	1.14	---	---	---	---
	Body-worn	Back	L	22.16	23.00	1.21	---	---	---	---
			M	22.08	23.00	1.24	0.215	---	0.267	---
			H	22.43	23.00	1.14	---	---	---	---
		Front	L	22.16	23.00	1.21	---	---	---	---
			M	22.08	23.00	1.24	0.225	---	0.279	---
			H	22.43	23.00	1.14	---	---	---	---
	Hotspot	Back	L	22.16	23.00	1.21	---	---	---	---
			M	22.08	23.00	1.24	0.215	---	0.267	---
			H	22.43	23.00	1.14	---	---	---	---
		Front	L	22.16	23.00	1.21	---	---	---	---
			M	22.08	23.00	1.24	0.225	---	0.279	---
			H	22.43	23.00	1.14	---	---	---	---
		Top	L	22.16	23.00	1.21	---	---	---	---
			M	22.08	23.00	1.24	---	---	---	---
			H	22.43	23.00	1.14	---	---	---	---
		Bottom	L	22.16	23.00	1.21	---	---	---	---
			M	22.08	23.00	1.24	0.162	---	0.201	---
			H	22.43	23.00	1.14	---	---	---	---
		Left	L	22.16	23.00	1.21	---	---	---	---
			M	22.08	23.00	1.24	0.073	---	0.091	---
			H	22.43	23.00	1.14	---	---	---	---
		Right	L	22.16	23.00	1.21	---	---	---	---
			M	22.08	23.00	1.24	0.151	---	0.187	---
			H	22.43	23.00	1.14	---	---	---	---

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Meas SAR(w/kg)		Report SAR(w/kg)	
LTE12	Exposure condition	Position	Channel				First	Second	First	Second
QPSK 1RB	Head	Left Cheek	L	23.34	24.00	1.16	---	---	---	---
			M	23.27	24.00	1.18	0.028	---	0.033	---
			H	23.11	24.00	1.23	---	---	---	---
		Left tilt	L	23.34	24.00	1.16	---	---	---	---
			M	23.27	24.00	1.18	0.015	---	0.018	---
			H	23.11	24.00	1.23	---	---	---	---
		Right Cheek	L	23.34	24.00	1.16	---	---	---	---
			M	23.27	24.00	1.18	0.018	---	0.021	---
			H	23.11	24.00	1.23	---	---	---	---
		Right tilt	L	23.34	24.00	1.16	---	---	---	---
			M	23.27	24.00	1.18	0.001	---	0.001	---
			H	23.11	24.00	1.23	---	---	---	---
	Body-worn	Back	L	23.34	24.00	1.16	---	---	---	---
			M	23.27	24.00	1.18	0.109	---	0.129	---
			H	23.11	24.00	1.23	---	---	---	---
		Front	L	23.34	24.00	1.16	---	---	---	---
			M	23.27	24.00	1.18	0.093	---	0.110	---
			H	23.11	24.00	1.23	---	---	---	---
	Hotspot	Back	L	23.34	24.00	1.16	---	---	---	---
			M	23.27	24.00	1.18	0.109	---	0.129	---
			H	23.11	24.00	1.23	---	---	---	---
		Front	L	23.34	24.00	1.16	---	---	---	---
			M	23.27	24.00	1.18	0.093	---	0.110	---
			H	23.11	24.00	1.23	---	---	---	---
		Top	L	23.34	24.00	1.16	---	---	---	---
			M	23.27	24.00	1.18	---	---	---	---
			H	23.11	24.00	1.23	---	---	---	---
		Bottom	L	23.34	24.00	1.16	---	---	---	---
			M	23.27	24.00	1.18	0.073	---	0.086	---
			H	23.11	24.00	1.23	---	---	---	---
		Left	L	23.34	24.00	1.16	---	---	---	---
			M	23.27	24.00	1.18	0.049	---	0.058	---
			H	23.11	24.00	1.23	---	---	---	---
		Right	L	23.34	24.00	1.16	---	---	---	---
			M	23.27	24.00	1.18	0.057	---	0.067	---
			H	23.11	24.00	1.23	---	---	---	---
QPSK 50%RB	Head	Left Cheek	L	22.43	23.00	1.14	---	---	---	---
			M	22.20	23.00	1.20	0.026	---	0.031	---
			H	22.20	23.00	1.20	---	---	---	---
		Left tilt	L	22.43	23.00	1.14	---	---	---	---
			M	22.20	23.00	1.20	0.012	---	0.014	---
			H	22.20	23.00	1.20	---	---	---	---
		Right Cheek	L	22.43	23.00	1.14	---	---	---	---
			M	22.20	23.00	1.20	0.015	---	0.018	---

			H	22.20	23.00	1.20	---	---	---	---
		Right tilt	L	22.43	23.00	1.14	---	---	---	---
			M	22.20	23.00	1.20	0.001	---	0.001	---
			H	22.20	23.00	1.20	---	---	---	---
	Body-worn	Back	L	22.43	23.00	1.14	---	---	---	---
			M	22.20	23.00	1.20	0.101	---	0.121	---
			H	22.20	23.00	1.20	---	---	---	---
		Front	L	22.43	23.00	1.14	---	---	---	---
			M	22.20	23.00	1.20	0.089	---	0.107	---
			H	22.20	23.00	1.20	---	---	---	---
	Hotspot	Back	L	22.43	23.00	1.14	---	---	---	---
			M	22.20	23.00	1.20	0.101	---	0.121	---
			H	22.20	23.00	1.20	---	---	---	---
		Front	L	22.43	23.00	1.14	---	---	---	---
			M	22.20	23.00	1.20	0.089	---	0.107	---
			H	22.20	23.00	1.20	---	---	---	---
		Top	L	22.43	23.00	1.14	---	---	---	---
			M	22.20	23.00	1.20	---	---	---	---
			H	22.20	23.00	1.20	---	---	---	---
		Bottom	L	22.43	23.00	1.14	---	---	---	---
			M	22.20	23.00	1.20	0.071	---	0.085	---
			H	22.20	23.00	1.20	---	---	---	---
		Left	L	22.43	23.00	1.14	---	---	---	---
			M	22.20	23.00	1.20	0.047	---	0.056	---
			H	22.20	23.00	1.20	---	---	---	---
		Right	L	22.43	23.00	1.14	---	---	---	---
			M	22.20	23.00	1.20	0.053	---	0.064	---
			H	22.20	23.00	1.20	---	---	---	---

7.2.2 Unlicensed SISO1

Test case				Meas power(dBm)	Tune-up (dBm)	Scaling factor	Duty cycle	Duty factor	Meas SAR(w/kg)		Report SAR(w/kg)	
BT	Exposure condition	Position	Channel						First	Second	First	Second
BR	Head	Left Cheek	L	11.11	11.50	1.09	80%	1.26	---	---	---	---
			M	10.95	11.50	1.14	80%	1.26	0.116	---	0.166	---
			H	10.83	11.50	1.17	80%	1.26	---	---	---	---
		Left tilt	L	11.11	11.50	1.09	80%	1.26	---	---	---	---
			M	10.95	11.50	1.14	80%	1.26	0.086	---	0.123	---
			H	10.83	11.50	1.17	80%	1.26	---	---	---	---
		Right Cheek	L	11.11	11.50	1.09	80%	1.26	---	---	---	---
			M	10.95	11.50	1.14	80%	1.26	0.302	---	0.433	---
			H	10.83	11.50	1.17	80%	1.26	---	---	---	---
		Right tilt	L	11.11	11.50	1.09	80%	1.26	---	---	---	---
			M	10.95	11.50	1.14	80%	1.26	0.244	---	0.349	---
			H	10.83	11.50	1.17	80%	1.26	---	---	---	---
BR	Body-worn	Back	L	11.11	11.50	1.09	80%	1.26	---	---	---	---
			M	10.95	11.50	1.14	80%	1.26	0.001	---	0.001	---
			H	10.83	11.50	1.17	80%	1.26	---	---	---	---
		Front	L	11.11	11.50	1.09	80%	1.26	---	---	---	---
			M	10.95	11.50	1.14	80%	1.26	0.001	---	0.001	---
			H	10.83	11.50	1.17	80%	1.26	---	---	---	---
BR	Hotspot (Support Bluetooth Thetering)	Back	L	11.11	11.50	1.09	80%	1.26	---	---	---	---
			M	10.95	11.50	1.14	80%	1.26	0.001	---	0.001	---
			H	10.83	11.50	1.17	80%	1.26	---	---	---	---
		Front	L	11.11	11.50	1.09	80%	1.26	---	---	---	---
			M	10.95	11.50	1.14	80%	1.26	0.001	---	0.001	---
			H	10.83	11.50	1.17	80%	1.26	---	---	---	---
		Top	L	11.11	11.50	1.09	80%	1.26	---	---	---	---
			M	10.95	11.50	1.14	80%	1.26	0.041	---	0.059	---
			H	10.83	11.50	1.17	80%	1.26	---	---	---	---
		Bottom	L	11.11	11.50	1.09	80%	1.26	---	---	---	---
			M	10.95	11.50	1.14	80%	1.26	---	---	---	---
			H	10.83	11.50	1.17	80%	1.26	---	---	---	---
		Left	L	11.11	11.50	1.09	80%	1.26	---	---	---	---
			M	10.95	11.50	1.14	80%	1.26	0.001	---	0.001	---
			H	10.83	11.50	1.17	80%	1.26	---	---	---	---
		Right	L	11.11	11.50	1.09	80%	1.26	---	---	---	---
			M	10.95	11.50	1.14	80%	1.26	---	---	---	---
			H	10.83	11.50	1.17	80%	1.26	---	---	---	---

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Duty cycle	Duty factor	Meas SAR(w/kg)		Report SAR(w/kg)	
WLAN2.4GHz	Exposure condition	Position	Channel						First	Second	First	Second
802.11b	Head	Left Cheek	L	10.74	11.00	1.06	99%	1.01	---	---	---	---
			M	10.88	11.00	1.03	99%	1.01	0.088	---	0.092	---
			H	10.11	11.00	1.23	99%	1.01	---	---	---	---
		Left tilt	L	10.74	11.00	1.06	99%	1.01	---	---	---	---
			M	10.88	11.00	1.03	99%	1.01	0.090	---	0.094	---
			H	10.11	11.00	1.23	99%	1.01	---	---	---	---
		Right Cheek	L	10.74	11.00	1.06	99%	1.01	---	---	---	---
			M	10.88	11.00	1.03	99%	1.01	0.208	---	0.216	---
			H	10.11	11.00	1.23	99%	1.01	---	---	---	---
		Right tilt	L	10.74	11.00	1.06	99%	1.01	---	---	---	---
			M	10.88	11.00	1.03	99%	1.01	0.201	---	0.209	---
			H	10.11	11.00	1.23	99%	1.01	---	---	---	---
802.11b	Body-worn	Back	L	10.74	11.00	1.06	99%	1.01	---	---	---	---
			M	10.88	11.00	1.03	99%	1.01	0.043	---	0.045	---
			H	10.11	11.00	1.23	99%	1.01	---	---	---	---
		Front	L	10.74	11.00	1.06	99%	1.01	---	---	---	---
			M	10.88	11.00	1.03	99%	1.01	0.042	---	0.044	---
			H	10.11	11.00	1.23	99%	1.01	---	---	---	---
802.11b	Hotspot	Back	L	10.74	11.00	1.06	99%	1.01	---	---	---	---
			M	10.88	11.00	1.03	99%	1.01	0.043	---	0.045	---
			H	10.11	11.00	1.23	99%	1.01	---	---	---	---
		Front	L	10.74	11.00	1.06	99%	1.01	---	---	---	---
			M	10.88	11.00	1.03	99%	1.01	0.042	---	0.044	---
			H	10.11	11.00	1.23	99%	1.01	---	---	---	---
		Top	L	10.74	11.00	1.06	99%	1.01	---	---	---	---
			M	10.88	11.00	1.03	99%	1.01	0.040	---	0.042	---
			H	10.11	11.00	1.23	99%	1.01	---	---	---	---
		Bottom	L	10.74	11.00	1.06	99%	1.01	---	---	---	---
			M	10.88	11.00	1.03	99%	1.01	---	---	---	---
			H	10.11	11.00	1.23	99%	1.01	---	---	---	---
		Left	L	10.74	11.00	1.06	99%	1.01	---	---	---	---
			M	10.88	11.00	1.03	99%	1.01	0.011	---	0.011	---
			H	10.11	11.00	1.23	99%	1.01	---	---	---	---
		Right	L	10.74	11.00	1.06	99%	1.01	---	---	---	---
			M	10.88	11.00	1.03	99%	1.01	---	---	---	---
			H	10.11	11.00	1.23	99%	1.01	---	---	---	---

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Duty cycle	Duty factor	Meas SAR(w/kg)		Report SAR(w/kg)	
WLAN5GHz UNII-1	Exposure condition	Position	Channel						First	Second	First	Second
802.11a	Head	Left Cheek	L	10.59	11.00	1.10	98%	1.02	---	---	---	---
			M	10.26	11.00	1.19	98%	1.02	0.133	---	0.161	---
			H	10.23	11.00	1.19	98%	1.02	---	---	---	---
		Left tilt	L	10.59	11.00	1.10	98%	1.02	---	---	---	---
			M	10.26	11.00	1.19	98%	1.02	0.112	---	0.135	---
			H	10.23	11.00	1.19	98%	1.02	---	---	---	---
		Right Cheek	L	10.59	11.00	1.10	98%	1.02	---	---	---	---
			M	10.26	11.00	1.19	98%	1.02	0.179	---	0.216	---
			H	10.23	11.00	1.19	98%	1.02	---	---	---	---
		Right tilt	L	10.59	11.00	1.10	98%	1.02	---	---	---	---
			M	10.26	11.00	1.19	98%	1.02	0.119	---	0.144	---
			H	10.23	11.00	1.19	98%	1.02	---	---	---	---
802.11a	Body-worn	Back	L	10.59	11.00	1.10	98%	1.02	---	---	---	---
			M	10.26	11.00	1.19	98%	1.02	0.223	---	0.269	---
			H	10.23	11.00	1.19	98%	1.02	---	---	---	---
		Front	L	10.59	11.00	1.10	98%	1.02	---	---	---	---
			M	10.26	11.00	1.19	98%	1.02	0.074	---	0.089	---
			H	10.23	11.00	1.19	98%	1.02	---	---	---	---

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Duty cycle	Duty factor	Meas SAR(w/kg)		Report SAR(w/kg)	
WLAN5GHz UNII-2A	Exposure condition	Position	Channel						First	Second	First	Second
802.11a	Head	Left Cheek	L	10.27	11.00	1.18	98%	1.02	---	---	---	---
			M	10.38	11.00	1.15	98%	1.02	0.097	---	0.114	---
			H	10.71	11.00	1.07	98%	1.02	---	---	---	---
		Left tilt	L	10.27	11.00	1.18	98%	1.02	---	---	---	---
			M	10.38	11.00	1.15	98%	1.02	0.083	---	0.097	---
			H	10.71	11.00	1.07	98%	1.02	---	---	---	---
		Right Cheek	L	10.27	11.00	1.18	98%	1.02	---	---	---	---
			M	10.38	11.00	1.15	98%	1.02	0.194	---	0.228	---
			H	10.71	11.00	1.07	98%	1.02	---	---	---	---
		Right tilt	L	10.27	11.00	1.18	98%	1.02	---	---	---	---
			M	10.38	11.00	1.15	98%	1.02	0.130	---	0.153	---
			H	10.71	11.00	1.07	98%	1.02	---	---	---	---
802.11a	Body-worn	Back	L	10.27	11.00	1.18	98%	1.02	---	---	---	---
			M	10.38	11.00	1.15	98%	1.02	0.284	---	0.333	---
			H	10.71	11.00	1.07	98%	1.02	---	---	---	---
		Front	L	10.27	11.00	1.18	98%	1.02	---	---	---	---
			M	10.38	11.00	1.15	98%	1.02	0.071	---	0.083	---
			H	10.71	11.00	1.07	98%	1.02	---	---	---	---

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Duty cycle	Duty factor	Meas SAR(w/kg)		Report SAR(w/kg)	
WLAN5GHz UNII-2C	Exposure condition	Position	Channel						First	Second	First	Second
802.11a	Head	Left Cheek	L	9.97	11.00	1.27	98%	1.02	---	---	---	---
			M	10.42	11.00	1.14	98%	1.02	0.172	---	0.200	---
			H	9.69	11.00	1.35	98%	1.02	---	---	---	---
		Left tilt	L	9.97	11.00	1.27	98%	1.02	---	---	---	---
			M	10.42	11.00	1.14	98%	1.02	0.109	---	0.127	---
			H	9.69	11.00	1.35	98%	1.02	---	---	---	---
		Right Cheek	L	9.97	11.00	1.27	98%	1.02	---	---	---	---
			M	10.42	11.00	1.14	98%	1.02	0.312	---	0.363	---
			H	9.69	11.00	1.35	98%	1.02	---	---	---	---
		Right tilt	L	9.97	11.00	1.27	98%	1.02	---	---	---	---
			M	10.42	11.00	1.14	98%	1.02	0.167	---	0.194	---
			H	9.69	11.00	1.35	98%	1.02	---	---	---	---
802.11a	Body-worn	Back	L	9.97	11.00	1.27	98%	1.02	---	---	---	---
			M	10.42	11.00	1.14	98%	1.02	0.204	---	0.237	---
			H	9.69	11.00	1.35	98%	1.02	---	---	---	---
		Front	L	9.97	11.00	1.27	98%	1.02	---	---	---	---
			M	10.42	11.00	1.14	98%	1.02	0.097	---	0.113	---
			H	9.69	11.00	1.35	98%	1.02	---	---	---	---

Test case				Meas power(dBm)	Tune-up(dBm)	Scaling factor	Duty cycle	Duty factor	Meas SAR(w/kg)		Report SAR(w/kg)	
WLAN5GHz UNII-3	Exposure condition	Position	Channel						First	Second	First	Second
802.11a	Head	Left Cheek	L	10.95	11.00	1.01	98%	1.02	---	---	---	---
			M	10.60	11.00	1.10	98%	1.02	0.104	---	0.116	---
			H	10.86	11.00	1.03	98%	1.02	---	---	---	---
		Left tilt	L	10.95	11.00	1.01	98%	1.02	---	---	---	---
			M	10.60	11.00	1.10	98%	1.02	0.088	---	0.098	---
			H	10.86	11.00	1.03	98%	1.02	---	---	---	---
		Right Cheek	L	10.95	11.00	1.01	98%	1.02	---	---	---	---
			M	10.60	11.00	1.10	98%	1.02	0.395	---	0.442	---
			H	10.86	11.00	1.03	98%	1.02	---	---	---	---
		Right tilt	L	10.95	11.00	1.01	98%	1.02	---	---	---	---
			M	10.60	11.00	1.10	98%	1.02	0.168	---	0.188	---
			H	10.86	11.00	1.03	98%	1.02	---	---	---	---
802.11a	Body-worn	Back	L	10.95	11.00	1.01	98%	1.02	---	---	---	---
			M	10.60	11.00	1.10	98%	1.02	0.160	---	0.179	---
			H	10.86	11.00	1.03	98%	1.02	---	---	---	---
		Front	L	10.95	11.00	1.01	98%	1.02	---	---	---	---
			M	10.60	11.00	1.10	98%	1.02	0.080	---	0.090	---
			H	10.86	11.00	1.03	98%	1.02	---	---	---	---

7.3 Simultaneous Transmission SAR Analysis

7.3.1 Multi-TX SAR

SRTC use algebraic summation first, if the value exceed limit, then adopt field vector summation as final result as well as satisfy any pair SPLSR for 1g-SAR = (SAR1+ SAR2)1.5/Ri≤ 0.04 (rounded to two decimal digits), SPLSR for 10g-SAR = (SAR1 + SAR2)1.5/R≤ 0.10(rounded to two decimal digits)

Exposure condition	Head			
Position	Left cheek	Left tilt	Right cheek	Right tilt
WWAN_MAX	GSM850	LTE Band5	GSM850	LTE Band5
WWAN_MAX	0.196	0.084	0.154	0.082
BT	0.166	0.123	0.433	0.349
WLAN2.4GHz	0.115	0.117	0.271	0.262
WLAN5GHz	0.200	0.135	0.442	0.194
+BT	0.362	0.207	0.586	0.431
+WLAN2.4GHz	0.311	0.201	0.425	0.344
+WLAN5GHz	0.396	0.219	0.596	0.276
+BT +WLAN5GHz	0.562	0.343	1.028	0.625
Simultaneous Transmission	GSM850+BT +WLAN5GHz	LTE Band5+BT +WLAN5GHz	GSM850+BT +WLAN5GHz	LTE Band5+BT +WLAN5GHz
Simultaneous Transmission	0.562	0.343	1.028	0.625

Exposure condition	Body worn	
Position	Back	Front
WWAN_MAX	GSM1900	GSM1900
WWAN_MAX	0.992	0.597
BT	0.001	0.001
WLAN2.4GHz	0.056	0.055
WLAN5GHz	0.333	0.113
+BT	0.993	0.598
+WLAN2.4GHz	1.048	0.651
+WLAN5GHz	1.325	0.710
+BT +WLAN5GHz	1.327	0.711
Simultaneous Transmission	GSM1900+BT+WLAN5GHz	GSM1900+BT+WLAN5GHz
Simultaneous Transmission	1.327	0.711

Exposure condition	Hotspot					
Position	Back	Front	Top	Bottom	Left	Right
WWAN_MAX	GSM1900	GSM1900	---	GSM1900	GSM850	LTE Band5
WWAN_MAX	0.992	0.597	---	1.161	0.122	0.190
BT	0.001	0.001	0.059	---	0.001	---
WLAN2.4GHz	0.056	0.055	0.052	---	0.014	---
WLAN5GHz	---	---	---	---	---	---
+BT	0.993	0.598	0.059	1.161	0.124	0.190
+WLAN2.4GHz	1.048	0.651	0.052	1.161	0.137	0.190
+WLAN5GHz	---	---	---	---	---	---
+BT +WLAN5GHz	---	---	---	---	---	---
Simultaneous Transmission	GSM1900+WLAN2.4GHz	GSM1900+WLAN2.4GHz	BT	GSM1900	GSM850+WLAN2.4GHz	LTE Band5
Simultaneous Transmission	1.048	0.651	0.059	1.161	0.137	0.190

8 MEASUREMENT UNCERTAINTY

Uncertainty Budget for System Validation

(Frequency band: 300 MHz–6 GHz range)

Symbol	Error Description	Uncert. value	Prob. Dist.	Div.	(c_i) (1 g)	(c_i) (10 g)	Std. Unc. (1 g)	Std. Unc. (10 g)
Measurement System Errors								
CF	Probe Calibration	±13.1%	N	2	1	1	±6.55%	±6.55%
CF_{drift}	Probe Calibration Drift	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
LIN	Probe Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%
BBS	Broadband Signal	±0%	R	$\sqrt{3}$	1	1	±0%	±0%
ISO	Probe Isotropy (axial)	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%
DAE	Other Probe+Electronic	±1.2%	N	1	1	1	±1.2%	±1.2%
AMB	RF Ambient	±0.6%	N	1	1	1	±0.6%	±0.6%
Δ_{sys}	Probe Positioning	±0.5%	N	1	0.29	0.29	±0.1%	±0.1%
DAT	Data Processing	±0%	N	1	1	1	±0%	±0%
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.)^{DAK}	±2.5%	N	1	0.78	0.71	±2.0%	±1.8%
LIQ(T_σ)	Conductivity (temp.)^{BB}	±3.4%	R	$\sqrt{3}$	0.78	0.71	±1.5%	±1.4%
EPS	Phantom Permittivity	±14.0%	R	$\sqrt{3}$	0.25	0.25	±2.0%	±2.0%
DIS	Distance DUT – TSL	±1.3%	N	1	2	2	±2.6%	±2.6%
MOD	DUT Modulation	±0%	R	$\sqrt{3}$	1	1	±0%	±0%
TAS	Time-average SAR	±0%	R	$\sqrt{3}$	1	1	±0%	±0%
VAL	Validation antenna	±3.2%	N	1	1	1	±3.2%	±3.2%
P_{in}	Accepted power	±2.0%	N	1	1	1	±2.0%	±2.0%
Correction to the SAR results								
C(ε, σ)	Deviation to Target	±1.9%	N	1	1	0.84	±1.9%	±1.6%
u(ΔSAR)	Combined Uncertainty						±9.8%	±9.7%
U	**Expanded Uncertainty**						±19.6%	±19.5%

Uncertainty Budget for System Validation

(Frequency band: 6 GHz–10 GHz range)

Symbol	Error Description	Uncert. value	Prob. Dist.	Div.	(c_i) (1 g)	(c_i) (10 g)	Std. Unc. (1 g)	Std. Unc. (10 g)
Measurement System Errors								
CF	Probe Calibration	±18.6%	N	2	1	1	±9.30%	±9.30%
CF_{drift}	Probe Calibration Drift	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
LIN	Probe Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%
BBS	Broadband Signal	±0%	R	$\sqrt{3}$	1	1	±0%	±0%
ISO	Probe Isotropy (axial)	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%
DAE	Other Probe+Electronic	±2.4%	N	1	1	1	±2.4%	±2.4%
AMB	RF Ambient	±0.6%	N	1	1	1	±0.6%	±0.6%
Δ_{sys}	Probe Positioning	±0.5%	N	1	0.50	0.50	±0.2%	±0.2%
DAT	Data Processing	±0%	N	1	1	1	±0%	±0%
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.)^{DAK}	±2.5%	N	1	0.78	0.71	±2.0%	±1.8%
LIQ(T_σ)	Conductivity (temp.)^{BB}	±3.4%	R	$\sqrt{3}$	0.78	0.71	±1.5%	±1.4%
EPS	Phantom Permittivity	±14.0%	R	$\sqrt{3}$	0.5	0.5	±4.0%	±4.0%
DIS	Distance DUT – TSL	±2.6%	N	1	2	2	±5.3%	±5.3%
MOD	DUT Modulation	±0%	R	$\sqrt{3}$	1	1	±0%	±0%
TAS	Time-average SAR	±0%	R	$\sqrt{3}$	1	1	±0%	±0%
VAL	Validation antenna	±3.2%	N	1	1	1	±3.2%	±3.2%
P_{in}	Accepted power	±2.0%	N	1	1	1	±2.0%	±2.0%
Correction to the SAR results								
C(ε, σ)	Deviation to Target	±1.9%	N	1	1	0.84	±1.9%	±1.6%
u(ΔSAR)	Combined Uncertainty						±13.3%	±13.2%
U	**Expanded Uncertainty**						±26.6%	±26.4%

Uncertainty Budget for DUT

(Frequency band: 300 MHz–3 GHz range)

Symbol	Error Description	Uncert. value	Prob. Dist.	Div.	(c_i) (1 g)	(c_i) (10 g)	Std. Unc. (1 g)	Std. Unc. (10 g)
Measurement System Errors								
CF	Probe Calibration	±12.0%	N	2	1	1	±6.0%	±6.0%
CF_{drift}	Probe Calibration Drift	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
LIN	Probe Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%
BBS	Broadband Signal	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%
ISO	Probe Isotropy	±7.6%	R	$\sqrt{3}$	1	1	±4.4%	±4.4%
DAE	Other Probe+Electronic	±0.7%	N	1	1	1	±0.7%	±0.7%
AMB	RF Ambient	±1.8%	N	1	1	1	±1.8%	±1.8%
Δ_{sys}	Probe Positioning	±0.006 mm	N	1	0.14	0.14	±0.10%	±0.10%
DAT	Data Processing	±1.2%	N	1	1	1	±1.2%	±1.2%
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.)^{DAK}	±2.5%	N	1	0.78	0.71	±2.0%	±1.8%
LIQ(T_σ)	Conductivity (temp.)^{BB}	±3.3%	R	$\sqrt{3}$	0.78	0.71	±1.5%	±1.4%
EPS	Phantom Permittivity	±14.0%	R	$\sqrt{3}$	0	0	±0%	±0%
DIS	Distance DUT – TSL	±2.0%	N	1	2	2	±4.0%	±4.0%
D_{xyz}	Device Positioning	±1.0%	N	1	1	1	±1.0%	±1.0%
H	Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%
MOD	DUT Modulation^{m}	±2.4%	R	$\sqrt{3}$	1	1	±1.4%	±1.4%
TAS	Time-average SAR	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
RF_{drift}	DUT drift	±2.5%	N	1	1	1	±2.5%	±2.5%
VAL	Val Antenna Unc.^{val}	±0.0%	N	1	1	1	±0%	±0%
RF_{in}	Unc. Input Power^{val}	±0.0%	N	1	1	1	±0%	±0%
Correction to the SAR results								
C(ε, σ)	Deviation to Target	±1.9%	N	1	1	0.84	±1.9%	±1.6%
C(R)	SAR scaling^{p}	±0%	R	$\sqrt{3}$	1	1	±0%	±0%
u(ΔSAR)	Combined Uncertainty						±10.9%	±10.9%
U	**Expanded Uncertainty**						±21.9%	±21.8%

Uncertainty Budget for DUT

(Frequency band: 3 GHz–6 GHz range)

Symbol	Error Description	Uncert. value	Prob. Dist.	Div.	(c_i) (1 g)	(c_i) (10 g)	Std. Unc. (1 g)	Std. Unc. (10 g)
Measurement System Errors								
CF	Probe Calibration	±13.1%	N	2	1	1	±6.55%	±6.55%
CF_{drift}	Probe Calibration Drift	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
LIN	Probe Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%
BBS	Broadband Signal	±2.6%	R	$\sqrt{3}$	1	1	±1.5%	±1.5%
ISO	Probe Isotropy	±7.6%	R	$\sqrt{3}$	1	1	±4.4%	±4.4%
DAE	Other Probe+Electronic	±1.2%	N	1	1	1	±1.2%	±1.2%
AMB	RF Ambient	±1.8%	N	1	1	1	±1.8%	±1.8%
Δ_{sys}	Probe Positioning	±0.005 mm	N	1	0.29	0.29	±0.15%	±0.15%
DAT	Data Processing	±2.3%	N	1	1	1	±2.3%	±2.3%
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.)^{DAK}	±2.5%	N	1	0.78	0.71	±2.0%	±1.8%
LIQ(T_σ)	Conductivity (temp.)^{BB}	±3.4%	R	$\sqrt{3}$	0.78	0.71	±1.5%	±1.4%
EPS	Phantom Permittivity	±14.0%	R	$\sqrt{3}$	0.25	0.25	±2.0%	±2.0%
DIS	Distance DUT – TSL	±2.0%	N	1	2	2	±4.0%	±4.0%
D_{xyz}	Device Positioning	±1.0%	N	1	1	1	±1.0%	±1.0%
H	Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%
MOD	DUT Modulation^{m}	±2.4%	R	$\sqrt{3}$	1	1	±1.4%	±1.4%
TAS	Time-average SAR	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
RF_{drift}	DUT drift	±2.5%	N	1	1	1	±2.5%	±2.5%
VAL	Val Antenna Unc.^{val}	±0.0%	N	1	1	1	±0%	±0%
RF_{in}	Unc. Input Power^{val}	±0.0%	N	1	1	1	±0%	±0%
Correction to the SAR results								
C(ε, σ)	Deviation to Target	±1.9%	N	1	1	0.84	±1.9%	±1.6%
C(R)	SAR scaling^{p}	±0%	R	$\sqrt{3}$	1	1	±0%	±0%
u(ΔSAR)	Combined Uncertainty						±11.6%	±11.5%
U	**Expanded Uncertainty**						±23.3%	±23.0%

Uncertainty Budget for DUT

(Frequency band: 6 GHz–10 GHz range)

Symbol	Error Description	Uncert. value	Prob. Dist.	Div.	(c_i) (1 g)	(c_i) (10 g)	Std. Unc. (1 g)	Std. Unc. (10 g)
Measurement System Errors								
CF	Probe Calibration	±18.6%	N	2	1	1	±9.3%	±9.3%
CF_{drift}	Probe Calibration Drift	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
LIN	Probe Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%
BBS	Broadband Signal	±2.8%	R	$\sqrt{3}$	1	1	±1.6%	±1.6%
ISO	Probe Isotropy	±7.6%	R	$\sqrt{3}$	1	1	±4.4%	±4.4%
DAE	Other Probe+Electronic	±2.4%	N	1	1	1	±2.4%	±2.4%
AMB	RF Ambient	±1.8%	N	1	1	1	±1.8%	±1.8%
Δ_{sys}	Probe Positioning	±0.005 mm	N	1	0.50	0.50	±0.25%	±0.25%
DAT	Data Processing	±3.5%	N	1	1	1	±3.5%	±3.5%
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.)^{DAK}	±2.5%	N	1	0.78	0.71	±2.0%	±1.8%
LIQ(T_σ)	Conductivity (temp.)^{BB}	±2.4%	R	$\sqrt{3}$	0.78	0.71	±1.1%	±1.0%
EPS	Phantom Permittivity	±14.0%	R	$\sqrt{3}$	0.5	0.5	±4.0%	±4.0%
DIS	Distance DUT – TSL	±2.0%	N	1	2	2	±4.0%	±4.0%
D_{xyz}	Device Positioning	±1.0%	N	1	1	1	±1.0%	±1.0%
H	Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%
MOD	DUT Modulation^{m}	±2.4%	R	$\sqrt{3}$	1	1	±1.4%	±1.4%
TAS	Time-average SAR	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
RF_{drift}	DUT drift	±2.5%	N	1	1	1	±2.5%	±2.5%
VAL	Val Antenna Unc.^{val}	±0.0%	N	1	1	1	±0%	±0%
RF_{in}	Unc. Input Power^{val}	±0.0%	N	1	1	1	±0%	±0%
Correction to the SAR results								
C(ε, σ)	Deviation to Target	±1.9%	N	1	1	0.84	±1.9%	±1.6%
C(R)	SAR scaling^{p}	±0%	R	$\sqrt{3}$	1	1	±0%	±0%
u(ΔSAR)	Combined Uncertainty						±14.2%	±13.9%
U	**Expanded Uncertainty**						±28.4%	±27.9%

Note: SRTC evaluate the uncertainty of ambient noise, reflections and device Positioning periodically to make sure there is no influence on SAR result. When the measured value less than the value provided by SPEAG, SRTC adopt the worst value as final result.

9 TEST EQUIPMENTS

The measurements were performed using an automated near-field scanning system, DASY, manufactured by Schmid & Partner Engineering AG (SPEAG) in Switzerland, all the components and supplement devices listed below.

Test Equipment	Model	Serial Number	Calibration date	Calibration due data
DAE	DAE4	720	2021/10/08	2022/10/07
Dosimetric E-field Probe	EX3DV4	3708	2021/10/20	2022/10/19
Dipole Validation Kit	D450V2	1024	2020/10/26	2023/10/25
Dipole Validation Kit	D750V3	1101	2020/10/16	2023/10/15
Dipole Validation Kit	D835V2	4d023	2020/10/16	2023/10/15
Dipole Validation Kit	D900V2	171	2020/09/17	2023/09/16
Dipole Validation Kit	D1450V2	1065	2020/10/16	2023/10/15
Dipole Validation Kit	D1800V2	2d084	2020/09/18	2023/09/17
Dipole Validation Kit	D2000V2	1009	2020/10/14	2023/10/13
Dipole Validation Kit	D2450V2	738	2020/10/13	2023/10/12
Dipole Validation Kit	D2600V2	1166	2019/11/08	2022/11/07
Dipole Validation Kit	D3300V2	1014	2019/11/11	2022/11/10
Dipole Validation Kit	D3500V2	1090	2019/11/11	2022/11/10
Dipole Validation Kit	D3700V2	1058	2019/11/11	2022/11/10
Dipole Validation Kit	D3900V2	1033	2019/11/11	2022/11/10
Dipole Validation Kit	D4200V2	1013	2019/11/12	2022/11/11
Dipole Validation Kit	D4600V2	1033	2019/11/12	2022/11/11
Dipole Validation Kit	D4900V2	1025	2019/11/12	2022/11/11
Dipole Validation Kit	D5GHzV2	1079	2020/10/10	2023/10/09
Dipole Validation Kit	D6GHzV2	1055	2021/11/29	2024/11/28

Note: Longer calibration intervals of up to **3 years is acceptable** when it is demonstrated that the SAR target, impedance and return loss of a dipole have remain stable.

Test Equipment	Model	Serial Number	Calibration within 1year
Signal Generator	E8257dD	MY46522016	Comply
Power meter	E4417A	MY45101004	Comply
Power Sensor	E9300B	MY41496001	Comply
Power Sensor	E9300B	MY41496003	Comply
Vector Network Analyzer	VNA R140	0011213	Comply
Dielectric Parameter Probe	DAKS-3.5	1042	Comply
Communication Tester	E5515C	MY48367401	Comply
Communication Tester	CMW500	161702	Comply
Communication Tester	MT8820C	6201300660	Comply
Communication Tester	SP9500	20334	Comply

Software	Version
DASY5	52.10.4.1527
DASY6	16.0.0.116
SEMCAD X	14.6.14
DAK	3.0.4.1

SAR Target: Refers to system check, measured SAR (1g and 10g) deviates from the Target SAR value of calibration report within 10%.

Impedance and Return loss measured by Network analyzer: The most recent measurement of the real or imaginary parts of the impedance deviates within 5 Ω from the previous measurement. The most recent return-loss result deviates within 20% from the previous measurement. (Target from the last calibration report, Return loss<20db)

Dipole450 TSL Parameters		
(feed point 450MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	56.1Ω+6.06jΩ	55.5Ω+6.40jΩ
Return loss	-21.6 dB	-21.9 dB
Dipole750 TSL Parameters		
(feed point 750MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	53.9Ω-2.02jΩ	53.7Ω-1.63jΩ
Return loss	-27.5 dB	-28.2dB
Dipole835 TSL Parameters		
(feed point 835MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	53.4Ω-3.16jΩ	52.6Ω-2.37jΩ
Return loss	-30.1 dB	-29.3dB
Dipole900 TSL Parameters		
(feed point 900MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	50.6Ω-5.24jΩ	49.1Ω-6.69jΩ
Return loss	-23.8 dB	-23.4dB
Dipole1450 TSL Parameters		
(feed point 1450MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	53.7Ω-2.95jΩ	52.4Ω-1.35jΩ
Return loss	-32.1 dB	-31.5dB
Dipole1800 TSL Parameters		
(feed point 1800MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	47.8Ω-3.06jΩ	48.9Ω-2.71jΩ
Return loss	-31.3 dB	-30.6dB
Dipole2000 TSL Parameters		
(feed point 2000MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	51.1Ω-3.37jΩ	49.4Ω-2.46jΩ
Return loss	-30.6 dB	-31.9dB
Dipole2450 TSL Parameters		
(feed point 2450MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	54.2Ω+5.98jΩ	53.3Ω+6.38jΩ
Return loss	-22.9 dB	-23.1dB
Dipole2600 TSL Parameters		
(feed point 2600MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	48.4Ω-6.71jΩ	47.9Ω-7.80jΩ
Return loss	-22.5 dB	-21.7dB
Dipole3300 TSL Parameters		
(feed point 3300MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	54.2Ω-6.1jΩ	54.7Ω-6.3jΩ

Return loss	-23.1dB	-22.5dB
Dipole3500 TSL Parameters		
(feed point 3500MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	53.3Ω+4.48jΩ	52.6Ω+3.5jΩ
Return loss	-29.1 dB	-27.4dB
Dipole3700 TSL Parameters		
(feed point 3700MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	47.6Ω+1.99jΩ	48.3Ω+1.1jΩ
Return loss	-34.5 dB	-33.6dB
Dipole3900 TSL Parameters		
(feed point 3900MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	50.1Ω-5.48jΩ	48.3Ω-4.9jΩ
Return loss	-26.7 dB	-25.6dB
(feed point 4100MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	57.6Ω-1.70jΩ	59.0Ω-0.8jΩ
Return loss	-20.8 dB	-21.6dB
Dipole4200 TSL Parameters		
(feed point 4300MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	53.9Ω-1.52jΩ	52.1Ω-1.6jΩ
Return loss	-33.5 dB	-31.7dB
Dipole4600 TSL Parameters		
(feed point 4500MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	46.9Ω-5.14jΩ	46.4Ω-4.5jΩ
Return loss	-25.2 dB	-24.5dB
(feed point 4700MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	54.8Ω-2.91jΩ	55.9Ω-3.20jΩ
Return loss	-25.4 dB	-24.0dB
Dipole4900 TSL Parameters		
(feed point 4900MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	51.8Ω-4.40jΩ	50.6Ω-5.2jΩ
Return loss	-26.9 dB	-25.7dB
Dipole5GHz TSL Parameters		
(feed point 5200MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	51.2Ω-11.89jΩ	50.2Ω-10.0jΩ
Return loss	-21.2 dB	-20.0dB
(feed point 5300MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	49.0Ω-6.40jΩ	47.2Ω-7.33jΩ
Return loss	-22.4 dB	-21.9dB
(feed point 5500MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	51.6Ω-6.61jΩ	52.0Ω-7.96jΩ
Return loss	-22.2 dB	-21.9dB
(feed point 5600MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	53.6Ω-4.31jΩ	55.7Ω-3.78jΩ
Return loss	-23.1 dB	-23.8dB
(feed point 5800MHz)		

Parameters	Measured data	Target (Ref. Value)
Impedance	51.8Ω-6.96jΩ	53.7Ω-5.87jΩ
Return loss	-22.9 dB	-23.5dB
Dipole6500 TSL Parameters		
(feed point 6500MHz)		
Parameters	Measured data	Target (Ref. Value)
Impedance	52.3Ω-3.6jΩ	51.1Ω-2.2jΩ
Return loss	-31.1 dB	-32.3dB