

FCC SAR Test Report

Applicant: Shenzhen Jumper Medical Equipment Co., Ltd.

EUT Description: Electronic Blood Pressure Monitor

Model: JPD-HA100

FCC ID: 2ADYL-JPDHA100

Standards: FCC 47CFR §2.1093

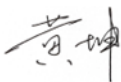
Date of Receipt: 2024/07/09

Date of Test: 2024/08/27 to 2024/10/15

Date of Issue: 2024/10/21

TOWE. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

the results documented in this report apply only the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility assure that additional production units of the model are manufactured with identical electrical and mechanical components. All sample tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise. without written approval of TOWE, the test report shall not be reproduced except in full.



Huang Kun
Approved By:



Li Wei
Reviewed By:

Revision History

Rev.	Issue Date	Description	Revised by
01	2024/10/21	Original	Li Wei

Table of Contents

1	Summary of Test Results	5
2	Guidance Applied	6
3	Lab Information.....	6
3.1	Testing Location.....	6
3.2	Test Facility / Accreditations	6
3.3	Ambient Condition	6
4	Client Information	6
4.1	Applicant	6
4.2	Manufacturer	6
5	Product Information	7
5.1	Antenna Locations.....	8
6	RF Exposure Limits.....	9
7	Introduction	10
7.1	SAR Definition.....	10
8	SAR Measurements System.....	11
8.1	The SAR Measurement Set-up	11
8.2	Measurement procedure	12
8.2.1	Power reference measurement.....	12
8.2.2	Area scan.....	12
8.2.3	Zoom Scan.....	13
8.2.4	Power Drift Measurement	13
9	Test Equipment list.....	14
10	SAR measurement variability	15
11	Description of Test Position	16
11.1	Body exposure conditions.....	16
12	System Verification	17
12.1	Tissue Verification	17
12.2	SAR System Check.....	18
12.2.1	System Check Result.....	19
12.2.2	Detailed System Check Result	19
13	SAR General Measurement Procedures.....	20
13.1	3G SAR Test Reduction Procedure	20
13.2	SAR Measurement Conditions for GSM.....	20
13.3	SAR Measurement Conditions for LTE Cat M1 and NB-IOT.....	20
13.3.1	Spectrum Plots for RB Configurations.....	20
13.3.2	Largest channel bandwidth standalone SAR test requirements	20
13.3.3	Other channel bandwidth standalone SAR test requirements	21
14	Conducted Power	22
14.1	Conducted Power of GSM.....	22
14.2	Conducted Power of LTE Cat M1	23
14.3	Conducted Power of NB-IOT	37
15	SAR Data Summary.....	42
15.1	SAR Measurement Result of GSM850.....	43
15.2	SAR Measurement Result of GSM1900	43
15.3	SAR Measurement Result of LTE Cat M1 Band 13	44
15.4	SAR Measurement Result of LTE Cat M1 Band 25	44
15.5	SAR Measurement Result of LTE Cat M1 Band 26	45
15.6	SAR Measurement Result of LTE Cat M1 Band 66	45
15.7	SAR Measurement Result of LTE Cat M1 Band 85	46

15.8	SAR Measurement Result of NB-IOT Band 5	46
15.9	SAR Measurement Result of NB-IOT Band 13	47
15.10	SAR Measurement Result of NB-IOT Band 25	47
15.11	SAR Measurement Result of NB-IOT Band 66	48
15.12	SAR Measurement Result of NB-IOT Band 71	48
15.13	SAR Measurement Result of NB-IOT Band 85	49
16	Measurement Uncertainty	50
17	Calibration Certificate	50
18	Test Setup Photos	50
Appendix A: System Check Plots		50
Appendix B: SAR Test Plots		50
Appendix C: Calibration certificate		50
Appendix D: Test Setup Photos		50

1 Summary of Test Results

Band	Highest SAR _{1g} (W/kg)
	Body 0mm
GSM850	0.62
GSM1900	1.44
LTE Cat M1 Band 13	0.18
LTE Cat M1 Band 25/2	0.77
LTE Cat M1 Band 26/5	0.18
LTE Cat M1 Band 66/4	0.50
LTE Cat M1 Band 85/12	0.21
NB-IOT Band 5	0.13
NB-IOT Band 13	0.13
NB-IOT Band 25/2	0.38
NB-IOT Band 66/4	0.24
NB-IOT Band 71	0.11
NB-IOT Band 85/12	0.11
SAR Limited(W/kg)	1.6

Remark:

Band 2/4/5/12 SAR test was covered by Band 25/66/26/85; according to April 2015 TCB workshop, SAR test for overlapping bands can be reduced if:

- the maximum output power, including tolerance, for the smaller band is $\leq$ the larger band to qualify for the SAR test exclusion.
- the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

2 Guidance Applied

FCC 47CFR §2.1093

ANSI/IEEE C95.1-1992

IEEE 1528-2013

FCC KDB 941225 D01 3G SAR Measurement Procedures v03r01

FCC KDB 941225 D05 SAR for LTE Devices v02r05

FCC KDB 447498 D01 General RF Exposure Guidance v06

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04

FCC KDB 865664 D02 RF Exposure Reporting v01r02

3 Lab Information

3.1 Testing Location

These measurements tests were conducted at the Sushi TOWE Wireless Testing (Shenzhen) Co., Ltd. facility located at F401 and F101, Building E, Hongwei Industrial Zone, Liuxian 3rd Road, Bao'an District, Shenzhen, China. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014

Tel.: +86-755-27212361

Contact Email: info@towewireless.com

3.2 Test Facility / Accreditations

A2LA (Certificate Number: 7088.01)

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

FCC Designation No.: CN1353

Sushi TOWE Wireless Testing (Shenzhen) Co., Ltd. has been recognized as an accredited testing laboratory.

Designation Number: CN1353.

ISED CAB identifier: CN0152

Sushi TOWE Wireless Testing (Shenzhen) Co., Ltd. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0152

Company Number: 31000

3.3 Ambient Condition

Temperature: 18°C~25°C

Relative Humidity: 30%~75%

4 Client Information

4.1 Applicant

Applicant:	Shenzhen Jumper Medical Equipment Co., Ltd.
Address:	D Building, No. 71, Xintian Road, Fuyong Street, Baoan, Shenzhen, Guangdong 518103, China

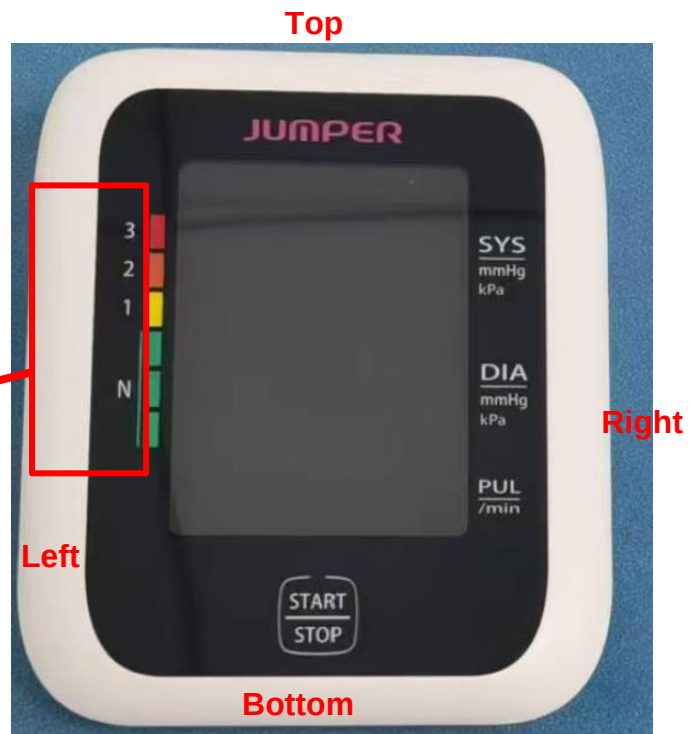
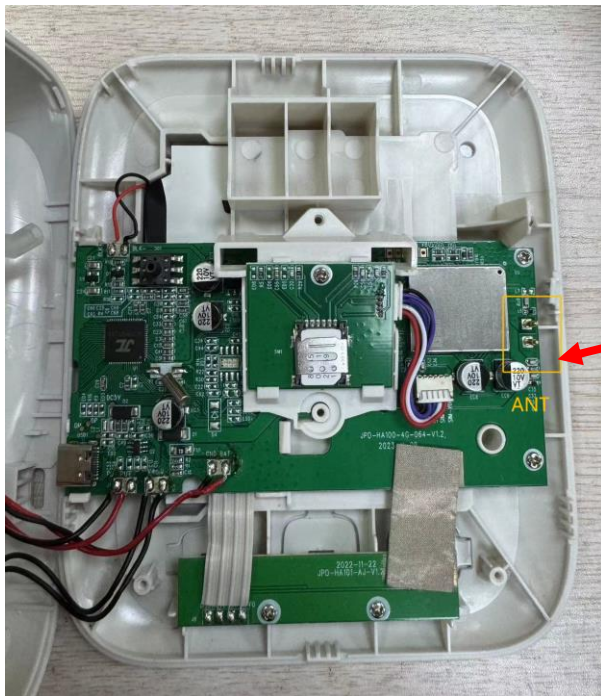
4.2 Manufacturer

Applicant:	Shenzhen Jumper Medical Equipment Co., Ltd.
Address:	D Building, No. 71, Xintian Road, Fuyong Street, Baoan, Shenzhen, Guangdong 518103, China

5 Product Information

EUT Description	Electronic Blood Pressure Monitor	
Model	JPD-HA100	
Hardware Version	V1.2	
Software Version	V1.5	
IMEI	863251072192854, 863251072235562, 863251071939800	
Device Capabilities:		
Band	Frequency Range (MHz)	Modulation Type
GSM850	824~849	Multi-Slot Class: ☐ 10, ☒ 12 ☐ GSM, ☒ GPRS, ☒ EGPRS
GSM1900	1850~1910	
LTE Cat M1 Band 2	1850 ~1910	☒ QPSK ☒ 16QAM ☐ 64QAM ☐ 256QAM
LTE Cat M1 Band 4	1710~1755	
LTE Cat M1 Band 5	824~849	
LTE Cat M1 Band 12	699~716	
LTE Cat M1 Band 13	777~787	
LTE Cat M1 Band 25	1850~1915	
LTE Cat M1 Band 26	814~849	
LTE Cat M1 Band 66	1710~1780	
LTE Cat M1 Band 85	698~716	
NB-IOT Band 2	1850 ~ 1910	
NB-IOT Band 4	1710 ~ 1755	
NB-IOT Band 5	824 ~ 849	
NB-IOT Band 12	699 ~ 716	
NB-IOT Band 13	777 ~ 787	
NB-IOT Band 25	1850 ~ 1915	
NB-IOT Band 66	1710 ~ 1780	
NB-IOT Band 71	663 ~ 698	
NB-IOT Band 85	698 ~ 716	
Antenna Type	☐ External, ☒ Integrated	
Remark: The above EUT's information was declared by applicant, please refer to the specifications or user manual for more detailed description.		

5.1 Antenna Locations



6 RF Exposure Limits

Human Exposure	Uncontrolled Environment General Population (W/kg) or (mW/g)	Controlled Environment Occupational (W/kg) or (mW/g)
Spatial Peak SAR¹ (Brain/Trunk)	1.6	8.0
Spatial Average SAR² (Whole Body)	0.08	0.4
Spatial Peak SAR³ (Hands/Feet/Ankle/Wrist)	4.0	20.0

Note:

1, 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.

2, The Spatial Average value of the SAR averaged over the whole body.

3, 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. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

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

7 Introduction

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

7.1 SAR Definition

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

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

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

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

Where:

σ is the conductivity of the tissue material (S/m)

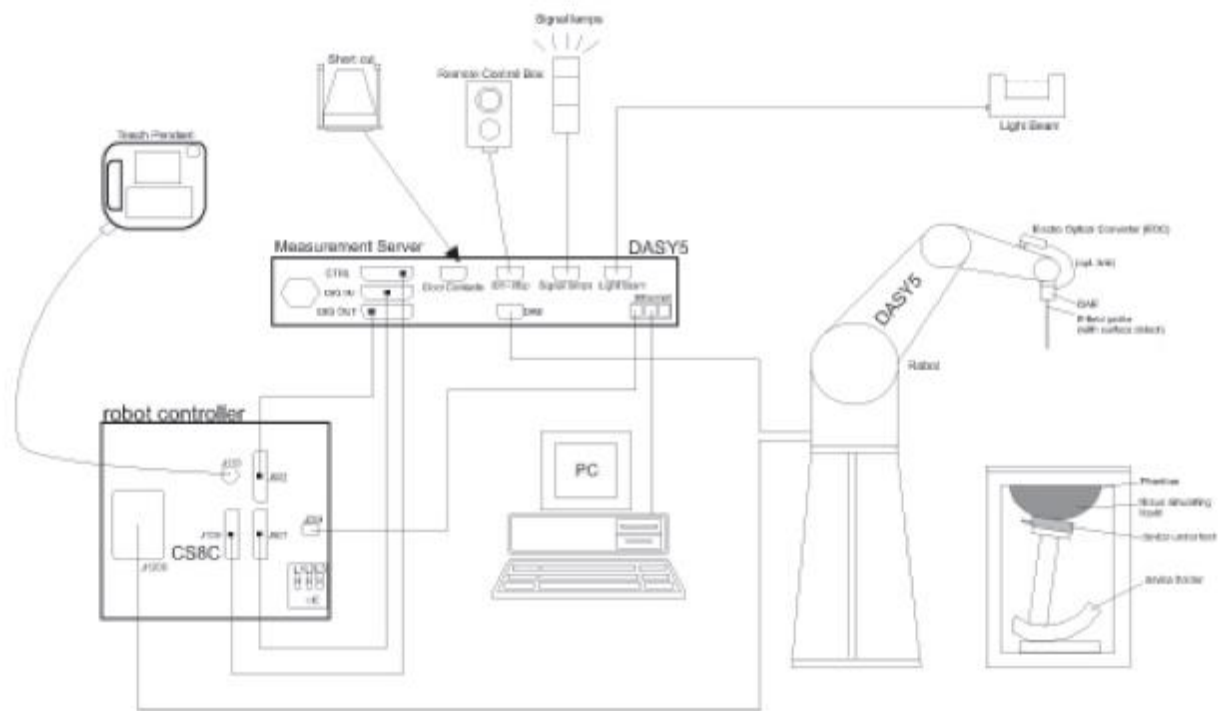
ρ is the mass density of the tissue material (kg/m³)

E is the RMS electrical field strength (V/m)

8 SAR Measurements System

8.1 The SAR Measurement Set-up

The DASY5 system used for performing compliance tests consists of the following items:



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

8.2 Measurement procedure

8.2.1 Power reference measurement

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

8.2.2 Area scan

Measurement procedures for evaluating SAR from wireless handsets typically start with a coarse measurement grid to determine the approximate location of the local peak SAR values. This is known as the area-scan procedure. In addition, identify the positions of any local maxima with SAR values within 2 dB of the maximum value, and that will not be within the zoom scan of other peaks. Additional zoom scans shall be measured for such peaks only when the primary peak is within 2 dB of the SAR compliance limit.

Area scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
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 $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

8.2.3 Zoom Scan

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

Zoom Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz.

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

8.2.4 Power Drift Measurement

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 Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. Several drift measurements are possible for one reference measurement. This allows a user to monitor the power drift of the device under test that must remain within a maximum variation of $\pm 5\%$. Detail power drift measurement refer to appendix B.

9 Test Equipment list

Manufacturer	Equipment Name	Model	Serial Number	Calibration Date	Due Date of calibration
SPEAG	Twin Phantom	SAM	2168	NCR	NCR
SPEAG	E-Field Probe	EX3DV4	7812	2024/06/25	2025/06/24
SPEAG	E-Field Probe	EX3DV4	7858	2024/01/09	2025/01/08
SPEAG	Data Acquisition Electronics	DAE4	1846	2023/11/29	2024/11/28
SPEAG	System Validation Kits	D750V3	1231	2023/05/04	2026/05/03
SPEAG	System Validation Kits	D835V2	4d302	2023/02/06	2026/02/05
SPEAG	System Validation Kits	D1750V2	1115	2023/03/23	2026/03/22
SPEAG	System Validation Kits	D1900V2	512	2023/03/24	2026/03/23
SPEAG	System Validation Kits	D1950V3	1266	2023/01/27	2026/01/26
SPEAG	Dielectric parameter probes	DAK3.5	1341	2024/07/15	2025/07/14
R&S	Vector network analyzer	ZNB8	101413	2024/07/17	2025/07/16
Anritsu	Radio Communication Analyzer	MT8821C	6262170463	2024/03/25	2025/03/24
R&S	Wideband Radio Communication Tester	CMW500	153024	2024/03/25	2025/03/24
R&S	Signal Generator	SMR20	100621	2024/03/25	2025/03/24
R&S	AVG Power Sensor	NRP-Z21	101651	2024/03/25	2025/03/24
R&S	AVG Power Sensor	NRP-Z21	104189	2024/03/25	2025/03/24
HAISIDIKE	Thermometer	TP300	TOWE-EQ-SR-023	2024/03/27	2025/03/26
BingYu	Temperature and Humidity Indicator	HTC-1	TOWE-EQ-SR-024	2024/03/26	2025/03/25
Talent Microwave	Directional Coupler	TC-05180-10S	220420003	NCR	NCR
QiJi	Amplifier	YX28982301	TOWE-EQ-SR-020	NCR	NCR
QiJi	Amplifier	YX28982302	TOWE-EQ-SR-021	NCR	NCR

Note:

1. Referring to KDB 865664 D01v01r04, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged or repaired during the interval.
2. The justification data of dipole can be found in Appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

10 SAR measurement variability

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. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue equivalent medium.

The following procedures are applied to determine if repeated measurements are required.

- 1) Repeated measurement is not required when the original highest measured SAR is < 0.80 or 2 W/kg (1-g or 10-g respectively); steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is ≥ 0.80 or 2 W/kg (1-g or 10-g respectively), 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 or 3.6 W/kg ($\sim 10\%$ from the 1-g or 10-g respective SAR limit).
- 4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 or 3.75 W/kg (1-g or 10-g respectively) and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .

11 Description of Test Position

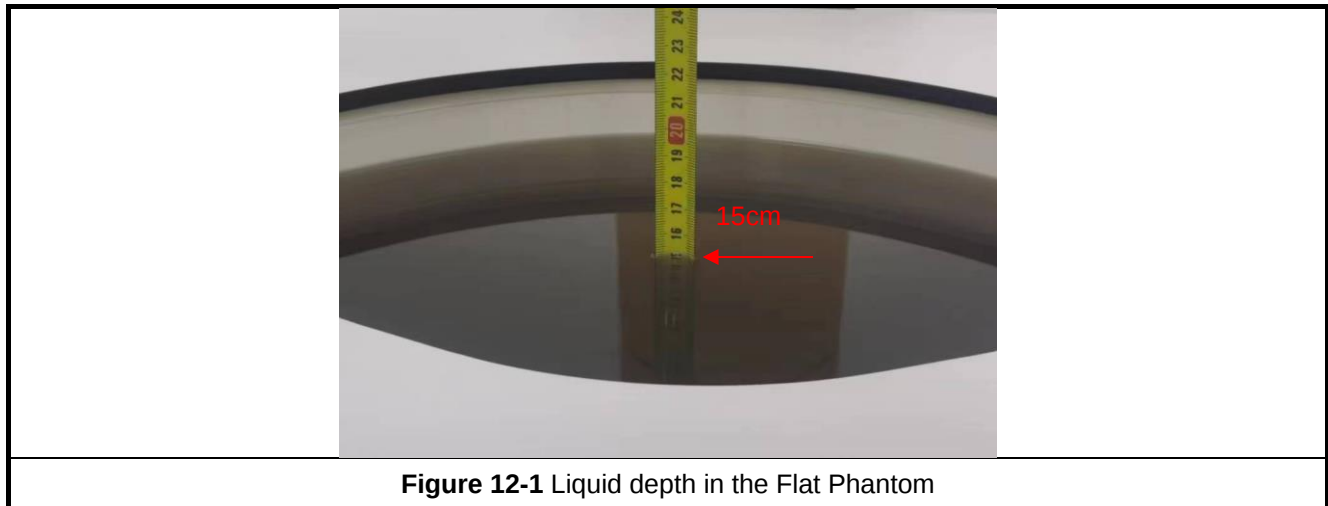
11.1 Body exposure conditions

SAR can test the sides near the antenna, the surface of the device should be tested for SAR compliance with the device touching the phantom. 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 device surface is used to determine if SAR testing is required for the adjacent surfaces, with the adjacent surface positioned against the phantom and the surface containing the antenna positioned perpendicular to the phantom.

12 System Verification

12.1 Tissue Verification

The Conductivity (σ) and Permittivity (ρ) are listed in bellow table. The temperature variation of the Tissue Simulate Liquids was $22\pm 2^{\circ}\text{C}$, the liquid depth of the ear reference point or the flat phantom was at least 15 cm (which is shown in Figure 12-1).



Frequency (MHz)	Tissue Type	Liquid Temp. (°C)	Target Tissue		Measured Tissue		Deviation (Limit $\pm 5\%$)		Date
			Permittivity ϵ_r	Conductivity $\sigma(\text{S/m})$	Permittivity ϵ_r	Conductivity $\sigma(\text{S/m})$	$\Delta\epsilon_r$	$\Delta\sigma$	
750	Head	22.4	41.90	0.89	42.300	0.906	0.95%	1.80%	2024/08/28
835	Head	22.9	41.50	0.90	42.200	0.918	1.69%	2.00%	2024/08/28
835	Head	22.9	41.50	0.90	42.300	0.920	1.93%	2.22%	2024/10/15
1750	Head	22.5	40.10	1.37	40.400	1.390	0.75%	1.46%	2024/08/27
1900	Head	22.8	40.00	1.40	40.500	1.410	1.25%	0.71%	2024/08/27
1950	Head	22.5	40.00	1.40	40.600	1.410	1.50%	0.71%	2024/10/15

Table 1: Measurement Tissue Parameters

12.2 SAR System Check

Prior to SAR assessment, a SAR system Check measurement was performed to see if the measured SAR was within $\pm 10\%$ from the target SAR values. The System Performance Check Setup in Figure 12-3.

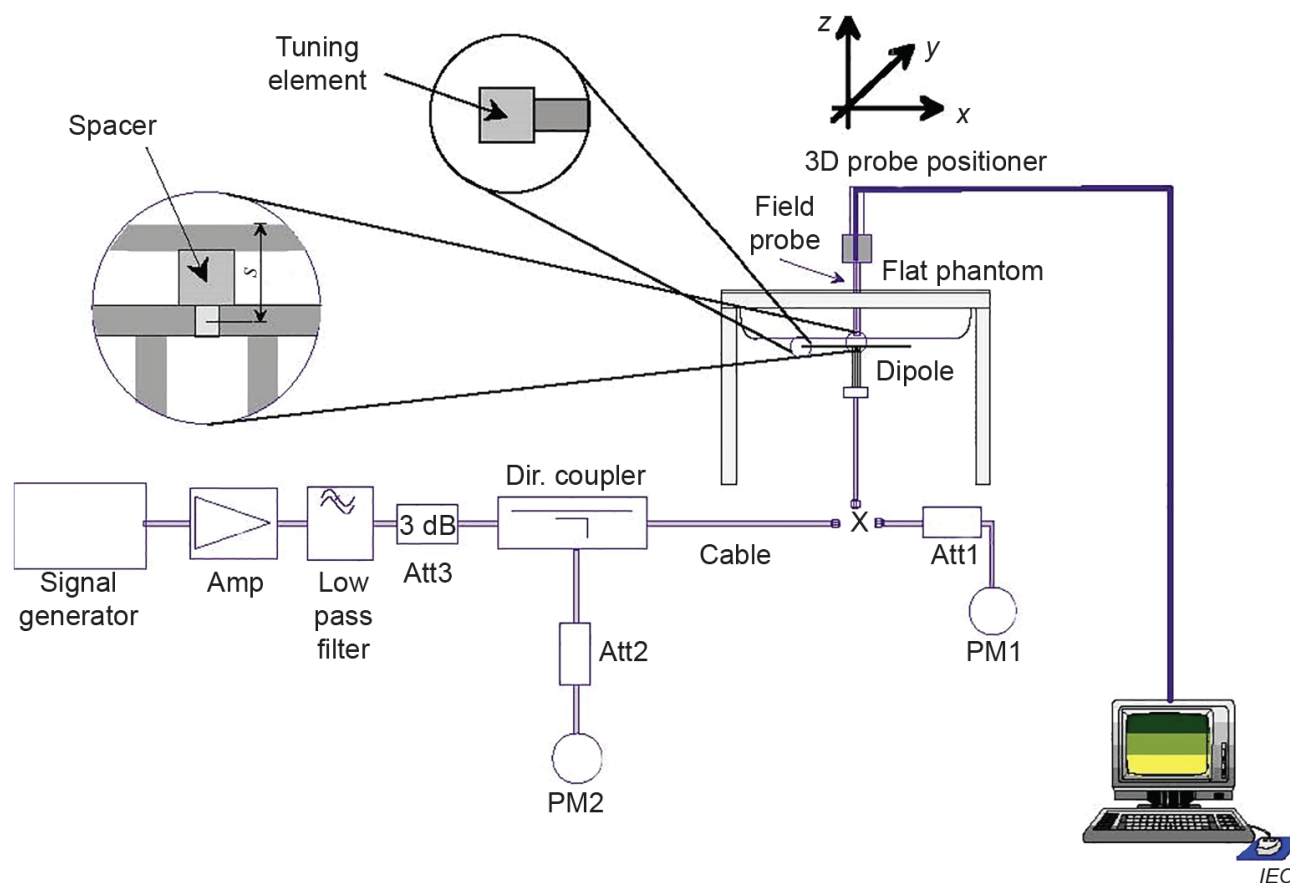


Figure 12-3 System Performance Check Setup

12.2.1 System Check Result

Frequency (MHz)	Tissue Type	Dipole	S/N	Target SAR (1W)		Measured SAR (250mW)		Measured SAR (normalized to 1W)		Deviation (Limit ±10%)		Date
				1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	Δ1g	Δ10g	
750	Head	D750V3	1231	8.67	5.67	2.07	1.35	8.28	5.40	-4.50%	-4.76%	2024/08/28
835	Head	D835V2	4d302	9.78	6.37	2.33	1.51	9.32	6.04	-4.70%	-5.18%	2024/08/28
835	Head	D835V2	4d302	9.78	6.37	2.48	1.64	9.92	6.56	1.43%	2.98%	2024/10/15
1750	Head	D1750V2	1115	36.90	19.50	8.95	4.81	35.80	19.24	-2.98%	-1.33%	2024/08/27
1900	Head	D1900V2	512	39.40	20.50	10.60	5.52	42.40	22.08	7.61%	7.71%	2024/08/27
1950	Head	D1950V3	1266	40.60	20.80	10.30	5.36	41.20	21.44	1.48%	3.08%	2024/10/15

Table 2: SAR System Check Result

12.2.2 Detailed System Check Result

Please see the Appendix A

13 SAR General Measurement Procedures

13.1 3G SAR Test Reduction Procedure

In FCC KDB Publication 941225 D01, certain transmission modes within a frequency band and wireless mode evaluated for SAR are defined as primary modes. The equivalent modes considered for SAR test reduction are denoted as secondary modes. When the maximum output power including tune-up tolerance specified for production units in a secondary mode is ≤ 0.25 dB higher than the primary mode or when the highest reported SAR of the primary mode, scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode, is ≤ 3.0 W/kg, SAR measurements are not required for the secondary mode. These criteria are referred to as the 3G SAR test reduction procedure. When the 3G SAR test reduction procedure is not satisfied, SAR measurements are additionally required for the secondary mode.

13.2 SAR Measurement Conditions for GSM

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.

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

13.3 SAR Measurement Conditions for LTE Cat M1 and NB-IOT

LTE modes are tested according to FCC KDB 941225 D05 publication. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The R&S CMW500 or Anritsu MT8820C/MT8821C simulators are used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

13.3.1 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.

13.3.2 Largest channel bandwidth standalone SAR test requirements

A. 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 ≤ 2.0 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 > 3.625 W/kg, SAR is required for all three RB offset configurations for that required test channel.

B. QPSK with 50% RB allocation

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

C. 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 A and B are ≤ 2.0 W/kg. Otherwise, SAR is measured for the highest output power channel and if the reported SAR is > 3.625 W/kg, the remaining required test channels must also be tested.

D. Higher order modulations

For each modulation besides QPSK, e.g., 16-QAM, BPSK, apply the QPSK procedures in A, B, and C 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 $> \frac{1}{2}$ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 3.625 W/kg.

13.3.3 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 13.4.4 to determine the channels and RB configurations that need SAR testing, then only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is $> \frac{1}{2}$ 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 > 3.625 W/kg.

14 Conducted Power

14.1 Conducted Power of GSM

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/EGPRS (GMSK)	1 TX Slot	33.03	33.13	33.20	35.00	-9.03	24.00	24.10	24.17	25.97
	2 TX Slots	32.01	32.02	32.48	34.00	-6.02	25.99	26.00	26.46	27.98
	3 TX Slots	31.04	31.10	31.05	33.00	-4.26	26.78	26.84	26.79	28.74
	4 TX Slots	30.08	30.05	30.01	32.00	-3.01	27.07	27.04	27.00	28.99
EGPRS (8PSK)	1 TX Slot	26.05	25.98	26.09	27.00	-9.03	17.02	16.95	17.06	17.97
	2 TX Slots	24.98	25.03	25.13	26.00	-6.02	18.96	19.01	19.11	19.98
	3 TX Slots	23.35	23.33	23.50	25.00	-4.26	19.09	19.07	19.24	20.74
	4 TX Slots	22.13	22.27	22.20	24.00	-3.01	19.12	19.26	19.19	20.99

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/EGPRS (GMSK)	1 TX Slot	30.05	30.03	30.10	32.00	-9.03	21.02	21.00	21.07	22.97
	2 TX Slots	29.01	29.05	29.08	30.50	-6.02	22.99	23.03	23.06	24.48
	3 TX Slots	27.46	27.44	27.47	28.50	-4.26	23.20	23.18	23.21	24.24
	4 TX Slots	26.15	26.08	26.09	27.50	-3.01	23.14	23.07	23.08	24.49
EGPRS (8PSK)	1 TX Slot	25.10	25.40	25.42	27.00	-9.03	16.07	16.37	16.39	17.97
	2 TX Slots	24.20	24.72	24.96	26.00	-6.02	18.18	18.70	18.94	19.98
	3 TX Slots	22.30	22.60	23.10	24.00	-4.26	18.04	18.34	18.84	19.74
	4 TX Slots	21.40	21.50	21.90	23.00	-3.01	18.39	18.49	18.89	19.99

Note:

The frame-averaged power is linearly reported the maximum burst averaged power over 8 time slots. The calculated method are shown as below:

The duty cycle "X" of different time slots as below:

- 1 TX slot is 1/8
- 2 TX slots is 2/8
- 3 TX slots is 3/8
- 4 TX slots is 4/8

Based on the calculation formula: Frame-averaged power = Burst averaged power + 10*log(X)

So Time slot average factor is as follows:

- Frame-averaged power (1 TX slot) = Burst averaged power (1 TX slot) – 9.03
- Frame-averaged power (2 TX slots) = Burst averaged power (2 TX slots) – 6.02
- Frame-averaged power (3 TX slots) = Burst averaged power (3 TX slots) – 4.26
- Frame-averaged power (4 TX slots) = Burst averaged power (4 TX slots) – 3.01

14.2 Conducted Power of LTE Cat M1

LTE Cat M1 LTE Band 2				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18607	18900	19193	
1.4MHz	QPSK	1	0	20.50	20.15	20.44	21.00
		1	2	20.35	20.06	20.31	21.00
		1	5	20.31	19.85	20.25	21.00
		3	0	19.42	19.92	19.89	21.00
		3	2	19.85	19.85	19.67	21.00
		3	3	19.88	19.91	19.92	21.00
		6	0	19.53	19.72	19.70	21.00
	16QAM	1	0	19.61	19.74	19.39	21.00
		1	2	19.75	19.69	19.41	21.00
		1	5	19.44	19.47	19.30	21.00
		3	0	19.41	19.47	19.35	21.00
		3	2	19.52	19.62	19.43	21.00
		3	3	19.35	19.51	19.40	21.00
		5	0	19.24	19.40	19.27	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18615	18900	19185	
3MHz	QPSK	1	0	20.40	19.90	20.31	21.00
		1	2	20.35	20.01	20.25	21.00
		1	5	20.10	19.76	20.10	21.00
		3	0	19.35	19.24	19.47	21.00
		3	2	19.41	19.25	19.27	21.00
		3	3	19.34	19.31	19.35	21.00
		6	0	19.24	19.16	19.19	21.00
	16QAM	1	0	19.07	19.26	19.62	21.00
		1	2	19.15	19.22	19.53	21.00
		1	5	19.26	19.27	19.25	21.00
		3	0	20.02	19.96	20.08	21.00
		3	2	20.03	19.86	20.09	21.00
		3	3	20.16	19.94	20.17	21.00
		5	0	19.10	19.29	19.27	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18625	18900	19175	
5MHz	QPSK	1	0	20.44	20.26	20.54	21.00
		1	2	20.25	20.16	20.31	21.00
		1	5	20.50	20.10	20.40	21.00
		3	0	20.04	20.03	20.09	21.00
		3	2	19.97	19.86	20.07	21.00
		3	3	20.20	19.94	20.20	21.00
		6	0	19.46	19.06	19.37	21.00
	16QAM	1	0	20.30	19.96	20.29	21.00
		1	2	20.16	19.58	20.10	21.00
		1	5	20.11	19.68	20.05	21.00
		3	0	19.98	20.00	20.02	21.00
		3	2	19.94	19.91	20.14	21.00
		3	3	20.19	19.94	20.26	21.00
		5	0	19.08	19.19	19.06	21.00

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18650	18900	19150	
10MHz	QPSK	1	0	20.52	20.30	20.46	21.00
		1	2	20.38	20.25	20.36	21.00
		1	5	20.47	20.04	20.30	21.00
		3	0	20.08	20.01	20.09	21.00
		3	2	20.10	20.01	20.22	21.00
		3	3	20.28	20.02	20.30	21.00
		6	0	19.40	19.10	19.44	21.00
	16QAM	1	0	20.19	19.95	20.24	21.00
		1	2	20.05	19.81	20.03	21.00
		1	5	20.02	19.65	20.11	21.00
		3	0	19.97	20.00	20.05	21.00
		3	2	20.00	19.91	20.10	21.00
		3	3	20.15	19.99	20.21	21.00
		5	0	20.15	19.88	20.29	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18675	18900	19125	
15MHz	QPSK	1	0	20.35	20.31	20.60	21.00
		1	2	20.16	20.21	20.42	21.00
		1	5	20.39	20.08	20.39	21.00
		3	0	20.16	19.97	20.13	21.00
		3	2	20.08	20.10	20.30	21.00
		3	3	20.24	19.99	20.36	21.00
		6	0	20.56	20.25	20.51	21.00
	16QAM	1	0	20.13	20.00	20.24	21.00
		1	2	19.96	19.85	20.11	21.00
		1	5	19.99	19.82	20.03	21.00
		3	0	19.97	19.96	20.04	21.00
		3	2	19.94	19.90	20.06	21.00
		3	3	20.19	19.97	20.19	21.00
		5	0	20.32	19.97	20.27	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18700	18900	19100	
20MHz	QPSK	1	0	20.43	20.16	20.62	21.00
		1	2	20.33	20.05	20.43	21.00
		1	5	20.21	19.98	20.24	21.00
		3	0	20.11	20.02	20.13	21.00
		3	2	20.09	20.06	20.26	21.00
		3	3	20.25	20.01	20.34	21.00
		6	0	20.39	20.14	20.43	21.00
	16QAM	1	0	20.25	20.06	20.35	21.00
		1	2	20.17	19.97	20.28	21.00
		1	5	19.91	19.85	20.12	21.00
		3	0	20.01	19.99	20.05	21.00
		3	2	19.98	19.89	20.11	21.00
		3	3	20.15	19.96	20.21	21.00
		5	0	20.08	19.92	20.24	21.00

LTE Cat M1 LTE Band 4				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				19957	20175	20393	
1.4MHz	QPSK	1	0	20.08	20.31	20.22	21.00
		1	2	20.00	20.25	20.14	21.00
		1	5	19.80	20.23	20.12	21.00
		3	0	19.76	19.63	19.57	21.00
		3	2	19.82	19.80	19.82	21.00
		3	3	19.73	19.72	19.62	21.00
		6	0	19.32	19.57	19.52	21.00
	16QAM	1	0	19.30	19.15	19.27	21.00
		1	2	19.26	19.21	19.30	21.00
		1	5	19.29	19.35	19.18	21.00
		3	0	19.55	19.56	19.36	21.00
		3	2	19.58	19.66	19.45	21.00
		3	3	19.82	19.64	19.54	21.00
		5	0	19.14	19.12	19.06	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				19965	20175	20385	
3MHz	QPSK	1	0	20.03	19.79	20.56	21.00
		1	2	19.76	19.70	19.96	21.00
		1	5	19.61	19.61	19.81	21.00
		3	0	19.74	19.61	19.59	21.00
		3	2	19.87	19.79	19.78	21.00
		3	3	19.63	19.80	19.62	21.00
		6	0	19.53	19.43	19.54	21.00
	16QAM	1	0	19.63	19.17	19.34	21.00
		1	2	19.58	19.25	19.37	21.00
		1	5	19.45	19.13	19.20	21.00
		3	0	19.54	19.61	19.38	21.00
		3	2	19.63	19.69	19.44	21.00
		3	3	19.83	19.55	19.62	21.00
		5	0	19.08	19.06	19.10	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				19975	20175	20375	
5MHz	QPSK	1	0	20.04	19.63	19.80	21.00
		1	2	19.88	19.51	19.83	21.00
		1	5	19.82	19.44	19.91	21.00
		3	0	19.75	19.61	19.59	21.00
		3	2	19.80	19.83	19.75	21.00
		3	3	19.64	19.73	19.64	21.00
		6	0	19.05	19.19	19.10	21.00
	16QAM	1	0	19.99	19.37	19.72	21.00
		1	2	19.67	19.30	19.59	21.00
		1	5	19.72	19.40	19.45	21.00
		3	0	19.57	19.51	19.32	21.00
		3	2	19.62	19.67	19.42	21.00
		3	3	19.77	19.58	19.56	21.00
		5	0	19.11	19.15	19.05	21.00

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20000	20175	20350	
10MHz	QPSK	1	0	20.01	19.70	19.69	21.00
		1	2	19.84	19.59	19.47	21.00
		1	5	19.77	19.43	19.61	21.00
		3	0	19.79	19.60	19.59	21.00
		3	2	19.82	19.83	19.74	21.00
		3	3	19.65	19.74	19.54	21.00
		6	0	19.17	19.18	19.20	21.00
	16QAM	1	0	19.99	19.62	19.62	21.00
		1	2	19.73	19.46	19.51	21.00
		1	5	19.77	19.28	19.49	21.00
		3	0	19.57	19.57	19.29	21.00
		3	2	19.67	19.67	19.48	21.00
		3	3	19.76	19.63	19.54	21.00
		5	0	19.93	19.53	19.64	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20025	20175	20325	
15MHz	QPSK	1	0	20.07	19.69	19.90	21.00
		1	2	19.86	19.57	19.82	21.00
		1	5	19.82	19.50	19.52	21.00
		3	0	19.75	19.66	19.63	21.00
		3	2	19.78	19.82	19.76	21.00
		3	3	19.71	19.78	19.55	21.00
		6	0	19.87	19.70	19.66	21.00
	16QAM	1	0	19.77	19.49	19.58	21.00
		1	2	19.59	19.37	19.42	21.00
		1	5	19.65	19.28	19.45	21.00
		3	0	19.62	19.59	19.34	21.00
		3	2	19.66	19.75	19.47	21.00
		3	3	19.82	19.56	19.60	21.00
		5	0	19.91	19.63	19.43	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20050	20175	20300	
20MHz	QPSK	1	0	19.92	19.84	19.76	21.00
		1	2	19.89	19.86	19.73	21.00
		1	5	19.79	19.66	19.60	21.00
		3	0	19.77	19.64	19.61	21.00
		3	2	19.82	19.81	19.78	21.00
		3	3	19.68	19.75	19.59	21.00
		6	0	19.88	19.79	19.71	21.00
	16QAM	1	0	19.80	19.81	19.56	21.00
		1	2	19.79	19.85	19.56	21.00
		1	5	19.60	19.58	19.36	21.00
		3	0	19.57	19.56	19.34	21.00
		3	2	19.62	19.70	19.44	21.00
		3	3	19.78	19.60	19.58	21.00
		5	0	19.83	19.66	19.50	21.00

LTE Cat M1 LTE Band 5				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20407	20525	20643	
1.4MHz	QPSK	1	0	19.97	19.79	19.43	21.00
		1	2	19.85	19.71	19.34	21.00
		1	5	19.80	19.61	19.30	21.00
		3	0	19.64	19.77	19.46	21.00
		3	2	19.58	19.61	19.40	21.00
		3	3	19.43	19.49	19.41	21.00
		6	0	19.26	19.87	19.47	21.00
	16QAM	1	0	19.90	19.79	19.42	21.00
		1	2	19.80	19.67	19.38	21.00
		1	5	19.85	19.58	19.32	21.00
		3	0	19.88	19.84	19.84	21.00
		3	2	19.71	19.77	19.74	21.00
		3	3	19.66	19.86	19.82	21.00
		5	0	19.21	19.19	19.28	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20415	20525	20635	
3MHz	QPSK	1	0	20.08	19.80	19.59	21.00
		1	2	19.86	19.77	19.46	21.00
		1	5	19.89	19.60	19.40	21.00
		3	0	19.63	19.72	19.45	21.00
		3	2	19.64	19.67	19.40	21.00
		3	3	19.45	19.53	19.42	21.00
		6	0	19.09	19.11	19.05	21.00
	16QAM	1	0	19.80	19.80	19.85	21.00
		1	2	19.79	19.83	19.74	21.00
		1	5	19.89	19.77	19.66	21.00
		3	0	19.87	19.87	19.76	21.00
		3	2	19.71	19.68	19.68	21.00
		3	3	19.68	19.92	19.76	21.00
		5	0	19.07	19.34	19.11	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20425	20525	20625	
5MHz	QPSK	1	0	20.15	20.01	19.82	21.00
		1	2	20.03	19.88	19.73	21.00
		1	5	19.94	19.80	19.55	21.00
		3	0	19.66	19.80	19.45	21.00
		3	2	19.63	19.69	19.38	21.00
		3	3	19.51	19.53	19.32	21.00
		6	0	19.18	19.16	19.15	21.00
	16QAM	1	0	20.13	20.00	19.87	21.00
		1	2	20.07	19.89	19.80	21.00
		1	5	20.10	19.91	19.60	21.00
		3	0	19.86	19.89	19.80	21.00
		3	2	19.75	19.78	19.68	21.00
		3	3	19.64	19.91	19.86	21.00
		5	0	19.03	19.14	19.09	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20450	20525	20600	
10MHz	QPSK	1	0	20.13	19.90	19.72	21.00
		1	2	19.97	19.85	19.66	21.00
		1	5	19.80	19.71	19.54	21.00
		3	0	19.66	19.75	19.50	21.00
		3	2	19.60	19.66	19.43	21.00
		3	3	19.48	19.54	19.37	21.00
		6	0	19.07	19.03	19.02	21.00
	16QAM	1	0	20.35	20.31	20.25	21.00
		1	2	20.13	20.20	20.04	21.00
		1	5	20.08	20.00	19.92	21.00
		3	0	19.85	19.86	19.80	21.00
		3	2	19.76	19.73	19.73	21.00
		3	3	19.65	19.88	19.81	21.00
		5	0	20.18	20.12	19.90	21.00

LTE Cat M1 LTE Band 12				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23017	23095	23173	
1.4MHz	QPSK	1	0	19.85	19.88	20.26	21.00
		1	2	19.80	19.79	20.08	21.00
		1	5	19.66	19.78	20.21	21.00
		3	0	19.58	19.60	19.82	20.00
		3	2	19.66	19.56	19.59	20.00
		3	3	19.39	19.27	19.51	20.00
		6	0	18.88	18.92	19.42	20.00
	16QAM	1	0	18.66	18.74	19.32	20.00
		1	2	19.76	18.70	19.22	20.00
		1	5	18.60	18.74	19.14	20.00
		3	0	19.70	19.68	19.84	20.00
		3	2	19.51	19.75	19.79	20.00
		3	3	19.70	19.81	19.71	20.00
		5	0	18.20	18.25	18.44	20.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23025	23095	23165	
3MHz	QPSK	1	0	19.85	19.87	20.29	21.00
		1	2	19.76	19.80	20.14	21.00
		1	5	19.64	19.72	20.18	21.00
		3	0	19.55	19.61	19.77	20.00
		3	2	19.78	19.61	19.58	20.00
		3	3	19.41	19.33	19.45	20.00
		6	0	18.91	18.95	18.36	20.00
	16QAM	1	0	19.28	18.77	19.22	20.00
		1	2	19.20	18.91	19.16	20.00
		1	5	19.10	18.70	19.11	20.00
		3	0	19.60	19.69	19.77	20.00
		3	2	19.50	19.72	19.77	20.00
		3	3	19.73	19.88	19.69	20.00
		5	0	18.43	18.23	18.43	20.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23035	23095	23155	
5MHz	QPSK	1	0	19.94	20.02	20.39	21.00
		1	2	19.99	19.92	20.19	21.00
		1	5	19.80	19.94	20.24	21.00
		3	0	19.54	19.55	19.78	20.00
		3	2	19.71	19.66	19.44	20.00
		3	3	19.37	19.34	19.41	20.00
		6	0	18.92	19.05	19.48	20.00
	16QAM	1	0	19.98	19.94	19.93	20.00
		1	2	19.91	19.89	19.90	20.00
		1	5	19.74	19.82	19.98	20.00
		3	0	19.70	19.65	19.79	20.00
		3	2	19.52	19.78	19.75	20.00
		3	3	19.76	19.82	19.69	20.00
		5	0	18.91	18.84	19.33	20.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23060	23095	23130	
10MHz	QPSK	1	0	20.01	19.95	20.25	21.00
		1	2	19.96	19.90	20.16	21.00
		1	5	19.78	19.86	20.23	21.00
		3	0	19.70	19.70	19.89	20.00
		3	2	19.83	19.73	19.66	20.00
		3	3	19.53	19.46	19.58	20.00
		6	0	18.92	19.02	19.45	20.00
	16QAM	1	0	19.87	19.80	19.97	20.00
		1	2	19.85	19.76	19.90	20.00
		1	5	19.71	19.74	19.92	20.00
		3	0	19.65	19.64	19.82	20.00
		3	2	19.53	19.76	19.77	20.00
		3	3	19.71	19.85	19.68	20.00
		5	0	19.89	19.91	19.97	20.00

LTE Cat M1 LTE Band 13				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23205	23230	23255	
5MHz	QPSK	1	0	20.63	20.64	20.61	21.00
		1	2	20.58	20.61	20.55	21.00
		1	5	20.21	20.46	20.23	21.00
		3	0	20.13	20.37	20.18	21.00
		3	2	20.15	20.42	20.20	21.00
		3	3	20.12	20.43	20.16	21.00
		6	0	19.24	19.34	19.26	21.00
	16QAM	1	0	20.20	20.34	20.23	21.00
		1	2	20.16	20.26	20.20	21.00
		1	5	20.14	20.25	20.15	21.00
		3	0	20.07	20.17	20.12	21.00
		3	2	20.11	20.17	20.08	21.00
		3	3	20.07	20.19	20.08	21.00
		5	0	19.34	19.42	19.35	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				/	23230	/	
10MHz	QPSK	1	0	/	20.65	/	21.00
		1	2	/	20.57	/	21.00
		1	5	/	20.45	/	21.00
		3	0	/	20.50	/	21.00
		3	2	/	20.46	/	21.00
		3	3	/	20.41	/	21.00
		6	0	/	20.57	/	21.00
	16QAM	1	0	/	20.40	/	21.00
		1	2	/	20.36	/	21.00
		1	5	/	20.24	/	21.00
		3	0	/	20.19	/	21.00
		3	2	/	20.15	/	21.00
		3	3	/	20.03	/	21.00
		5	0	/	19.38	/	21.00

LTE Cat M1 LTE Band 25				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26047	26365	26683	
1.4MHz	QPSK	1	0	20.14	20.29	20.25	21.00
		1	2	20.12	20.20	20.20	21.00
		1	5	19.77	20.12	19.94	21.00
		3	0	19.76	20.05	19.88	21.00
		3	2	19.73	20.05	19.88	21.00
		3	3	19.75	20.06	19.88	21.00
		6	0	19.86	19.93	19.87	21.00
	16QAM	1	0	19.94	20.22	20.10	21.00
		1	2	19.85	20.16	19.99	21.00
		1	5	19.67	19.85	19.84	21.00
		3	0	19.57	19.82	19.79	21.00
		3	2	19.57	19.83	19.75	21.00
		3	3	19.63	19.78	19.81	21.00
		5	0	19.58	19.71	19.68	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26055	26365	26675	
3MHz	QPSK	1	0	20.19	20.24	20.21	21.00
		1	2	20.15	20.17	20.19	21.00
		1	5	19.77	20.09	19.94	21.00
		3	0	19.77	20.03	19.87	21.00
		3	2	19.69	20.02	19.88	21.00
		3	3	19.76	20.06	19.86	21.00
		6	0	19.91	19.92	19.86	21.00
	16QAM	1	0	19.96	20.24	20.08	21.00
		1	2	19.83	20.12	20.04	21.00
		1	5	19.65	19.86	19.81	21.00
		3	0	19.57	19.81	19.76	21.00
		3	2	19.60	19.83	19.75	21.00
		3	3	19.64	19.81	19.83	21.00
		5	0	19.59	19.72	19.70	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26065	26365	26665	
5MHz	QPSK	1	0	20.15	20.29	20.25	21.00
		1	2	20.15	20.19	20.22	21.00
		1	5	19.79	20.09	19.95	21.00
		3	0	19.75	20.05	19.88	21.00
		3	2	19.72	20.03	19.92	21.00
		3	3	19.73	20.09	19.85	21.00
		6	0	19.89	19.89	19.86	21.00
	16QAM	1	0	19.95	20.21	20.05	21.00
		1	2	19.88	20.13	20.04	21.00
		1	5	19.63	19.85	19.85	21.00
		3	0	19.55	19.79	19.78	21.00
		3	2	19.59	19.83	19.73	21.00
		3	3	19.63	19.77	19.78	21.00
		5	0	19.57	19.74	19.71	21.00

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26090	26365	26640	
10MHz	QPSK	1	0	20.14	20.29	20.21	21.00
		1	2	20.17	20.18	20.23	21.00
		1	5	19.81	20.08	19.92	21.00
		3	0	19.77	20.02	19.88	21.00
		3	2	19.71	20.04	19.90	21.00
		3	3	19.73	20.06	19.88	21.00
		6	0	19.90	19.93	19.88	21.00
	16QAM	1	0	19.91	20.23	20.08	21.00
		1	2	19.87	20.13	20.03	21.00
		1	5	19.66	19.87	19.84	21.00
		3	0	19.55	19.81	19.79	21.00
		3	2	19.60	19.83	19.76	21.00
		3	3	19.65	19.78	19.82	21.00
		5	0	19.58	19.75	19.66	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26115	26365	26615	
15MHz	QPSK	1	0	20.16	20.25	20.21	21.00
		1	2	20.12	20.18	20.19	21.00
		1	5	19.77	20.13	19.93	21.00
		3	0	19.74	20.04	19.87	21.00
		3	2	19.74	20.05	19.91	21.00
		3	3	19.77	20.05	19.85	21.00
		6	0	19.90	19.89	19.88	21.00
	16QAM	1	0	19.94	20.20	20.05	21.00
		1	2	19.83	20.17	20.02	21.00
		1	5	19.66	19.89	19.83	21.00
		3	0	19.54	19.78	19.81	21.00
		3	2	19.60	19.83	19.73	21.00
		3	3	19.64	19.78	19.82	21.00
		5	0	19.55	19.70	19.66	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26140	26365	26590	
20MHz	QPSK	1	0	20.22	20.32	20.26	21.00
		1	2	20.18	20.21	20.24	21.00
		1	5	19.82	20.14	19.98	21.00
		3	0	19.90	20.20	20.05	21.00
		3	2	19.75	20.08	19.93	21.00
		3	3	19.78	20.11	19.91	21.00
		6	0	19.92	19.95	19.89	21.00
	16QAM	1	0	19.97	20.25	20.11	21.00
		1	2	19.89	20.18	20.05	21.00
		1	5	19.69	19.90	19.87	21.00
		3	0	19.60	19.84	19.82	21.00
		3	2	19.63	19.88	19.79	21.00
		3	3	19.66	19.82	19.84	21.00
		5	0	19.60	19.76	19.72	21.00

LTE Cat M1 LTE Band 26				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26697	26865	27033	
1.4MHz	QPSK	1	0	20.38	20.18	20.28	21.00
		1	2	20.19	20.08	20.11	21.00
		1	5	20.23	20.19	20.18	21.00
		3	0	20.41	20.44	20.29	21.00
		3	2	20.38	20.52	20.23	21.00
		3	3	20.38	20.52	20.29	21.00
		6	0	19.48	19.46	19.42	21.00
	16QAM	1	0	19.69	19.52	19.45	21.00
		1	2	19.42	19.37	19.29	21.00
		1	5	19.41	19.41	19.38	21.00
		3	0	20.25	19.96	19.84	21.00
		3	2	20.26	19.96	19.84	21.00
		3	3	20.25	20.00	19.93	21.00
		5	0	19.05	19.08	19.16	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26705	26865	27025	
3MHz	QPSK	1	0	20.43	20.38	20.35	21.00
		1	2	20.26	20.21	20.19	21.00
		1	5	20.25	20.29	20.20	21.00
		3	0	20.39	20.48	20.21	21.00
		3	2	20.38	20.42	20.21	21.00
		3	3	20.43	20.48	20.23	21.00
		6	0	19.48	19.53	19.47	21.00
	16QAM	1	0	19.42	19.59	19.46	21.00
		1	2	19.29	19.35	19.28	21.00
		1	5	19.43	19.48	19.35	21.00
		3	0	20.23	20.01	19.87	21.00
		3	2	20.22	20.04	19.83	21.00
		3	3	20.20	20.03	19.86	21.00
		5	0	19.19	19.12	19.17	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26715	26865	27015	
5MHz	QPSK	1	0	20.45	20.51	20.34	21.00
		1	2	20.35	20.34	20.29	21.00
		1	5	20.41	20.47	20.26	21.00
		3	0	20.44	20.47	20.24	21.00
		3	2	20.41	20.49	20.27	21.00
		3	3	20.43	20.42	20.30	21.00
		6	0	19.49	19.48	19.32	21.00
	16QAM	1	0	20.44	20.42	20.36	21.00
		1	2	20.25	20.16	20.11	21.00
		1	5	20.23	19.99	19.88	21.00
		3	0	20.23	19.94	19.85	21.00
		3	2	20.26	20.02	19.89	21.00
		3	3	20.24	19.96	19.84	21.00
		5	0	19.11	19.13	19.21	21.00

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26740	26865	26990	
10MHz	QPSK	1	0	20.57	20.39	20.36	21.00
		1	2	20.45	20.48	20.37	21.00
		1	5	20.40	20.49	20.42	21.00
		3	0	20.44	20.34	20.31	21.00
		3	2	20.41	20.42	20.30	21.00
		3	3	20.41	20.47	20.24	21.00
		6	0	19.54	19.45	19.32	21.00
	16QAM	1	0	20.43	20.53	20.40	21.00
		1	2	20.47	20.52	20.35	21.00
		1	5	20.42	20.48	20.38	21.00
		3	0	20.22	19.94	19.87	21.00
		3	2	20.20	19.96	19.91	21.00
		3	3	20.20	20.04	19.89	21.00
		5	0	19.26	19.26	19.25	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26765	26865	26965	
15MHz	QPSK	1	0	20.52	20.55	20.34	21.00
		1	2	20.46	20.50	20.32	21.00
		1	5	20.42	20.46	20.40	21.00
		3	0	20.41	20.49	20.26	21.00
		3	2	20.41	20.47	20.26	21.00
		3	3	20.41	20.47	20.26	21.00
		6	0	19.49	19.48	19.32	21.00
	16QAM	1	0	20.46	20.48	20.36	21.00
		1	2	20.46	20.48	20.36	21.00
		1	5	20.46	20.48	20.36	21.00
		3	0	20.23	19.99	19.88	21.00
		3	2	20.23	19.99	19.88	21.00
		3	3	20.23	19.99	19.88	21.00
		5	0	19.30	19.23	19.21	21.00

LTE Cat M1 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	19.86	19.39	19.82	21.00
		1	2	19.56	19.31	19.65	21.00
		1	5	19.66	19.23	19.70	21.00
		3	0	19.92	20.02	20.03	21.00
		3	2	19.90	19.92	19.89	21.00
		3	3	19.94	19.92	20.02	21.00
		6	0	19.14	19.19	19.21	21.00
	16QAM	1	0	19.79	19.26	19.22	21.00
		1	2	19.35	19.31	19.16	21.00
		1	5	19.51	19.21	19.22	21.00
		3	0	19.05	19.16	19.82	21.00
		3	2	19.10	19.02	19.91	21.00
		3	3	19.16	19.04	19.85	21.00
		5	0	19.14	19.16	19.26	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				131987	132322	132657	
3MHz	QPSK	1	0	19.89	19.36	19.99	21.00
		1	2	19.74	19.33	19.76	21.00
		1	5	19.70	19.22	19.85	21.00
		3	0	19.91	19.98	20.04	21.00
		3	2	19.87	19.88	19.84	21.00
		3	3	19.95	19.93	20.01	21.00
		6	0	19.15	19.09	19.27	21.00
	16QAM	1	0	19.12	19.06	19.13	21.00
		1	2	19.06	19.10	19.04	21.00
		1	5	19.17	19.16	19.07	21.00
		3	0	19.14	19.15	19.83	21.00
		3	2	19.10	19.02	19.97	21.00
		3	3	19.18	19.03	19.82	21.00
		5	0	19.06	19.08	19.03	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				131997	132322	132647	
5MHz	QPSK	1	0	19.82	19.43	19.96	21.00
		1	2	19.77	19.28	19.73	21.00
		1	5	19.76	19.19	19.65	21.00
		3	0	19.89	20.06	19.94	21.00
		3	2	19.88	19.89	19.89	21.00
		3	3	19.90	19.85	20.01	21.00
		6	0	19.15	19.02	19.11	21.00
	16QAM	1	0	19.52	19.21	20.07	21.00
		1	2	19.31	19.16	19.74	21.00
		1	5	19.21	19.01	19.81	21.00
		3	0	19.05	19.19	19.80	21.00
		3	2	19.10	19.07	19.96	21.00
		3	3	19.18	19.08	19.89	21.00
		5	0	19.08	19.06	19.04	21.00

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				132022	132322	132622	
10MHz	QPSK	1	0	19.89	19.34	19.24	21.00
		1	2	19.80	19.30	19.35	21.00
		1	5	19.69	19.47	19.84	21.00
		3	0	19.07	19.17	19.81	21.00
		3	2	19.05	19.10	19.95	21.00
		3	3	19.17	19.09	19.89	21.00
		6	0	19.12	19.24	19.27	21.00
	16QAM	1	0	19.46	19.13	20.05	21.00
		1	2	19.31	19.26	19.81	21.00
		1	5	19.22	19.11	19.89	21.00
		3	0	19.09	19.16	19.83	21.00
		3	2	19.11	19.08	19.92	21.00
		3	3	19.17	19.09	19.85	21.00
		5	0	19.47	19.12	19.91	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				132047	132322	132597	
15MHz	QPSK	1	0	19.72	19.22	20.08	21.00
		1	2	19.65	19.30	19.79	21.00
		1	5	19.56	19.14	19.88	21.00
		3	0	19.98	19.98	19.97	21.00
		3	2	19.86	19.96	19.91	21.00
		3	3	19.86	19.93	19.99	21.00
		6	0	19.77	19.25	20.05	21.00
	16QAM	1	0	19.56	19.16	20.00	21.00
		1	2	19.45	19.20	19.83	21.00
		1	5	19.23	19.25	19.83	21.00
		3	0	19.15	19.15	19.82	21.00
		3	2	19.12	19.09	19.90	21.00
		3	3	19.16	19.03	19.91	21.00
		5	0	19.47	19.03	19.86	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				132072	132322	132572	
20MHz	QPSK	1	0	19.84	20.03	19.94	21.00
		1	2	19.80	20.00	19.90	21.00
		1	5	19.81	19.78	19.88	21.00
		3	0	19.93	20.01	19.99	21.00
		3	2	19.86	19.92	19.86	21.00
		3	3	19.91	19.90	19.97	21.00
		6	0	19.97	19.81	20.06	21.00
	16QAM	1	0	19.10	19.13	20.11	21.00
		1	2	19.09	19.17	20.08	21.00
		1	5	19.17	19.23	19.96	21.00
		3	0	19.10	19.14	19.85	21.00
		3	2	19.07	19.05	19.92	21.00
		3	3	19.15	19.07	19.86	21.00
		5	0	19.02	19.02	19.93	21.00

LTE Cat M1 LTE Band 85				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				134027	134092	134157	
5MHz	QPSK	1	0	19.76	19.77	19.89	21.00
		1	2	19.81	19.71	19.82	21.00
		1	5	19.69	19.69	19.87	21.00
		3	0	18.81	19.01	18.83	20.00
		3	2	18.61	18.77	18.63	20.00
		3	3	18.63	18.63	18.78	20.00
		6	0	18.71	18.68	19.01	20.00
	16QAM	1	0	19.26	19.59	19.89	20.00
		1	2	19.35	19.47	18.79	20.00
		1	5	19.47	19.24	19.73	20.00
		3	0	19.31	19.43	19.64	20.00
		3	2	19.30	19.30	19.65	20.00
		3	3	19.40	19.28	19.42	20.00
		5	0	19.04	19.03	18.80	20.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				134052	134092	134132	
10MHz	QPSK	1	0	19.71	19.88	19.85	21.00
		1	2	19.66	19.82	19.81	21.00
		1	5	19.49	19.68	19.80	21.00
		3	0	18.80	19.01	18.80	20.00
		3	2	18.71	18.80	18.73	20.00
		3	3	18.73	18.76	18.71	20.00
		6	0	18.69	18.70	19.00	20.00
	16QAM	1	0	19.56	19.46	19.79	20.00
		1	2	19.47	19.37	19.81	20.00
		1	5	19.32	19.39	19.72	20.00
		3	0	19.37	19.43	19.68	20.00
		3	2	19.40	19.38	19.75	20.00
		3	3	19.46	19.33	19.80	20.00
		5	0	19.53	19.54	19.84	20.00

14.3 Conducted Power of NB-IOT

NB-IOT Band 2				Conducted Power(dBm)			
Subcarrier Spacing kHz SC Spacing	Modulation	SCs	Start SC	Channel	Channel	Channel	Tune up
				18601	18900	19199	
3.75	QPSK	1	0	20.67	20.49	20.79	21.00
		1	23	20.55	20.41	20.68	21.00
		1	47	20.53	20.36	20.70	21.00
	BPSK	1	0	20.59	20.57	20.70	21.00
		1	23	20.50	20.48	20.66	21.00
		1	47	20.51	20.33	20.71	21.00
Subcarrier Spacing kHz SC Spacing	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18601	18900	19199	
15	QPSK	1	0	20.75	20.28	20.77	21.00
		1	5	20.71	20.26	20.85	21.00
		1	11	20.56	20.31	20.95	21.00
		3	0	20.51	20.26	20.82	21.00
		3	3	20.54	20.42	20.77	21.00
		3	6	20.66	20.35	20.81	21.00
		3	9	20.35	20.44	20.75	21.00
		6	0	20.47	20.36	20.66	21.00
		6	6	20.71	20.28	20.80	21.00
		12	0	20.69	20.39	20.76	21.00
	BPSK	1	0	20.87	20.29	20.90	21.00
		1	5	20.80	20.20	20.85	21.00
		1	11	20.52	20.18	20.70	21.00

NB-IOT Band 4				Conducted Power(dBm)			
Subcarrier Spacing kHz SC Spacing	Modulation	SCs	Start SC	Channel	Channel	Channel	Tune up
				19951	20175	20399	
3.75	QPSK	1	0	20.55	19.90	20.07	21.00
		1	23	20.49	20.11	20.00	21.00
		1	47	20.57	20.02	20.03	21.00
	BPSK	1	0	20.63	20.06	20.05	21.00
		1	23	20.56	20.16	20.13	21.00
		1	47	20.61	19.91	19.99	21.00
Subcarrier Spacing kHz SC Spacing	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				19951	20175	20399	
15	QPSK	1	0	20.60	20.00	20.09	21.00
		1	5	20.51	20.11	19.98	21.00
		1	11	20.57	20.01	20.04	21.00
		3	0	20.43	19.91	19.99	21.00
		3	3	20.59	19.98	20.04	21.00
		3	6	20.40	19.89	20.11	21.00
		3	9	20.35	19.92	20.06	21.00
		6	0	20.26	19.99	19.94	21.00
		6	6	20.37	20.03	19.88	21.00
		12	0	20.25	19.85	20.00	21.00
	BPSK	1	0	20.59	20.00	20.03	21.00
		1	5	20.51	20.04	20.00	21.00
		1	11	20.64	19.97	19.93	21.00

NB-IOT Band 5				Conducted Power(dBm)			
Subcarrier Spacing kHz SC Spacing	Modulation	SCs	Start SC	Channel	Channel	Channel	Tune up
				20401	20525	20649	
3.75	QPSK	1	0	20.39	20.04	19.52	21.00
		1	23	20.25	19.93	19.46	21.00
		1	47	20.27	19.94	19.42	21.00
	BPSK	1	0	20.33	20.03	19.52	21.00
		1	23	20.19	19.94	19.40	21.00
		1	47	20.31	19.95	19.50	21.00
Subcarrier Spacing kHz SC Spacing	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20401	20525	20649	
15	QPSK	1	0	20.41	20.43	19.88	21.00
		1	5	20.35	19.98	19.86	21.00
		1	11	20.42	19.94	19.85	21.00
		3	0	20.26	20.35	19.76	21.00
		3	3	20.33	20.23	19.28	21.00
		3	6	20.11	19.92	19.76	21.00
		3	9	20.26	19.83	19.59	21.00
		6	0	20.19	19.75	19.82	21.00
		6	6	20.25	19.80	19.80	21.00
		12	0	20.31	19.61	19.73	21.00
	BPSK	1	0	20.42	19.46	19.88	21.00
		1	5	20.30	19.40	19.82	21.00
		1	11	20.31	19.31	19.74	21.00

NB-IOT Band 12				Conducted Power(dBm)			
Subcarrier Spacing kHz SC Spacing	Modulation	SCs	Start SC	Channel	Channel	Channel	Tune up
				23011	23095	23179	
3.75	QPSK	1	0	19.94	20.25	20.47	21.00
		1	23	20.00	20.16	20.49	21.00
		1	47	19.89	20.20	20.51	21.00
	BPSK	1	0	19.93	20.29	20.40	21.00
		1	23	20.01	20.16	20.44	21.00
		1	47	19.92	20.26	20.53	21.00
Subcarrier Spacing kHz SC Spacing	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23011	23095	23179	
15	QPSK	1	0	20.12	20.34	20.49	21.00
		1	5	20.21	20.35	20.42	21.00
		1	11	20.10	20.30	20.43	21.00
		3	0	20.06	20.35	20.42	21.00
		3	3	19.87	20.22	20.49	21.00
		3	6	20.02	20.15	20.35	21.00
		3	9	19.90	20.21	20.21	21.00
		6	0	19.88	20.16	20.31	21.00
		6	6	20.11	20.17	20.16	21.00
		12	0	20.03	20.20	20.28	21.00
	BPSK	1	0	20.06	20.29	20.44	21.00
		1	5	20.10	20.18	20.38	21.00
		1	11	19.98	20.28	20.42	21.00

NB-IOT Band 13				Conducted Power(dBm)			
Subcarrier Spacing kHz SC Spacing	Modulation	SCs	Start SC	Channel	Channel	Channel	Tune up
				23181	23230	23279	
3.75	QPSK	1	0	20.75	20.68	20.81	21.00
		1	23	20.70	20.64	20.78	21.00
		1	47	20.64	20.65	20.79	21.00
	BPSK	1	0	20.75	20.69	20.81	21.00
		1	23	20.71	20.68	20.79	21.00
		1	47	20.73	20.66	20.77	21.00
Subcarrier Spacing kHz SC Spacing	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23181	23230	23279	
15	QPSK	1	0	20.67	20.83	20.78	21.00
		1	5	20.56	20.66	20.74	21.00
		1	11	20.61	20.68	20.76	21.00
		3	0	20.48	20.69	20.67	21.00
		3	3	20.50	20.61	20.66	21.00
		3	6	20.46	20.66	20.60	21.00
		3	9	20.40	20.65	20.58	21.00
		6	0	20.48	20.58	20.64	21.00
		6	6	20.50	20.49	20.55	21.00
		12	0	20.43	20.59	20.64	21.00
	BPSK	1	0	20.62	20.66	20.82	21.00
		1	5	20.49	20.61	20.69	21.00
		1	11	20.60	20.66	20.71	21.00

NB-IOT Band 25				Conducted Power(dBm)			
Subcarrier Spacing kHz SC Spacing	Modulation	SCs	Start SC	Channel	Channel	Channel	Tune up
				26041	26365	26689	
3.75	QPSK	1	0	20.62	20.02	20.61	21.00
		1	23	20.58	20.20	20.60	21.00
		1	47	20.60	19.96	20.56	21.00
	BPSK	1	0	20.67	20.02	20.63	21.00
		1	23	20.61	20.15	20.59	21.00
		1	47	20.51	19.95	20.53	21.00
Subcarrier Spacing kHz SC Spacing	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26041	26365	26689	
15	QPSK	1	0	20.72	20.90	20.89	21.00
		1	5	20.68	20.25	20.80	21.00
		1	11	20.70	20.15	20.87	21.00
		3	0	20.69	20.76	20.73	21.00
		3	3	20.63	20.11	20.70	21.00
		3	6	20.55	20.25	20.65	21.00
		3	9	20.48	20.19	20.60	21.00
		6	0	20.61	20.35	20.59	21.00
		6	6	20.59	20.24	20.68	21.00
		12	0	20.60	20.31	20.70	21.00
	BPSK	1	0	20.68	20.13	20.84	21.00
		1	5	20.60	20.20	20.69	21.00
		1	11	20.61	20.06	20.73	21.00

NB-IOT Band 66				Conducted Power(dBm)			
Subcarrier Spacing kHz SC Spacing	Modulation	SCs	Start SC	Channel	Channel	Channel	Tune up
				131973	132322	132671	
3.75	QPSK	1	0	20.45	19.74	20.27	21.00
		1	23	20.40	19.98	20.13	21.00
		1	47	20.33	19.65	20.18	21.00
	BPSK	1	0	20.41	19.71	20.22	21.00
		1	23	20.31	19.80	20.09	21.00
		1	47	20.38	19.62	20.18	21.00
Subcarrier Spacing kHz SC Spacing	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				131973	132322	132671	
15	QPSK	1	0	20.48	20.54	20.47	21.00
		1	5	20.35	19.99	20.44	21.00
		1	11	20.47	19.80	20.48	21.00
		3	0	20.40	20.41	20.40	21.00
		3	3	20.37	19.79	20.38	21.00
		3	6	20.25	20.10	20.20	21.00
		3	9	20.30	19.97	20.13	21.00
		6	0	20.19	20.15	20.06	21.00
		6	6	20.34	20.06	20.40	21.00
		12	0	20.29	19.89	20.40	21.00
	BPSK	1	0	20.39	19.78	20.52	21.00
		1	5	20.33	20.00	20.50	21.00
		1	11	20.34	19.71	20.38	21.00

NB-IOT Band 71				Conducted Power(dBm)			
Subcarrier Spacing kHz SC Spacing	Modulation	SCs	Start SC	Channel	Channel	Channel	Tune up
				133123	133297	133471	
3.75	QPSK	1	0	20.13	19.39	19.50	21.00
		1	23	20.00	19.40	19.46	21.00
		1	47	20.05	19.32	19.39	21.00
	BPSK	1	0	20.10	19.37	19.44	21.00
		1	23	20.01	19.51	19.55	21.00
		1	47	20.05	19.37	19.42	21.00
Subcarrier Spacing kHz SC Spacing	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				133123	133297	133471	
15	QPSK	1	0	20.21	20.29	19.67	21.00
		1	5	20.13	19.89	19.85	21.00
		1	11	20.18	19.94	19.62	21.00
		3	0	20.06	20.08	19.88	21.00
		3	3	20.07	19.43	19.41	21.00
		3	6	19.90	19.68	19.58	21.00
		3	9	20.00	19.85	19.85	21.00
		6	0	19.89	19.92	19.82	21.00
		6	6	19.82	20.00	19.75	21.00
		12	0	19.79	19.77	19.80	21.00
	BPSK	1	0	20.15	19.53	19.63	21.00
		1	5	20.01	19.66	19.75	21.00
		1	11	20.15	19.55	19.53	21.00

NB-IOT Band 85				Conducted Power(dBm)			
Subcarrier Spacing kHz SC Spacing	Modulation	SCs	Start SC	Channel	Channel	Channel	Tune up
				134003	134092	134181	
3.75	QPSK	1	0	20.00	20.09	20.37	21.00
		1	23	19.90	20.03	20.30	21.00
		1	47	19.94	20.05	20.34	21.00
	BPSK	1	0	19.96	20.09	20.40	21.00
		1	23	20.00	20.14	20.34	21.00
		1	47	19.97	20.10	20.36	21.00
Subcarrier Spacing kHz SC Spacing	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				134003	134092	134181	
15	QPSK	1	0	19.94	20.46	20.42	21.00
		1	5	19.90	20.24	20.19	21.00
		1	11	19.89	20.11	20.44	21.00
		3	0	20.00	20.28	20.26	21.00
		3	3	19.89	20.16	20.25	21.00
		3	6	19.92	20.01	20.11	21.00
		3	9	19.88	19.97	20.06	21.00
		6	0	19.91	20.01	20.13	21.00
		6	6	19.85	19.96	20.18	21.00
		12	0	19.81	19.88	20.24	21.00
	BPSK	1	0	19.89	20.11	20.43	21.00
		1	5	19.80	19.99	20.24	21.00
		1	11	19.88	20.10	20.40	21.00

15 SAR Data Summary

General Notes:

- 1) The Highest Reported SAR Plot refer to Appendix B.
- 2) Per KDB 447498 D01, testing of other required channels within the operating mode of a frequency band is not required when the reported 1g or 10g SAR for the mid-band or highest output power channel is:
 - $\leq 0.8\text{W/kg}$ for 1g or 2.0W/kg for 10g respectively, when the transmission band is $\leq 100\text{MHz}$.
 - $\leq 0.6\text{ W/kg}$ or 1.5 W/kg , for 1g or 10g respectively, when the transmission band is between 100 MHz and 200MHz.
 - $\leq 0.4\text{ W/kg}$ or 1.0 W/kg , for 1g or 10g respectively, when the transmission band is $\geq 200\text{MHz}$.

15.1 SAR Measurement Result of GSM850

Test position	Mode	Ch./Freq. (MHz)	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaling Factor	Reported 1g SAR (W/kg)
Body 0mm									
Front side	GPRS 4TS	190/836.6	0.352	0.249	-0.08	30.05	32.00	1.567	0.551
Back side	GPRS 4TS	190/836.6	0.128	0.096	-0.04	30.05	32.00	1.567	0.201
Left side	GPRS 4TS	190/836.6	0.394	0.227	-0.05	30.05	32.00	1.567	0.617
Left side with cuff	GPRS 4TS	190/836.6	0.109	0.072	0.11	30.05	32.00	1.567	0.171
Right side	GPRS 4TS	190/836.6	< 0.001	< 0.001	0.00	30.05	32.00	1.567	< 0.001
Top side	GPRS 4TS	190/836.6	0.056	0.031	0.00	30.05	32.00	1.567	0.088
Bottom side	GPRS 4TS	190/836.6	0.058	0.038	0.10	30.05	32.00	1.567	0.091

Table 1: SAR of GSM850.

15.2 SAR Measurement Result of GSM1900

Test position	Mode	Ch./Freq. (MHz)	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaling Factor	Reported 1g SAR (W/kg)
Body 0mm									
Front side	GPRS 4TS	661/1880	0.143	0.088	0.00	26.08	27.50	1.387	0.198
Back side	GPRS 4TS	661/1880	0.114	0.070	0.11	26.08	27.50	1.387	0.158
Left side	GPRS 4TS	661/1880	1.040	0.493	-0.05	26.08	27.50	1.387	1.442
Left side-Repeated	GPRS 4TS	661/1880	0.974	0.460	-0.01	26.08	27.50	1.387	1.351
Left side with cuff	GPRS 4TS	661/1880	0.101	0.058	0.04	26.08	27.50	1.387	0.140
Left side	GPRS 4TS	512/1850.2	0.965	0.456	-0.01	26.15	27.50	1.365	1.317
Left side	GPRS 4TS	810/1909.8	0.797	0.377	-0.05	29.09	27.50	0.693	0.553
Right side	GPRS 4TS	661/1880	< 0.001	< 0.001	0.00	26.08	27.50	1.387	< 0.001
Top side	GPRS 4TS	661/1880	0.018	0.012	0.00	26.08	27.50	1.387	0.025
Bottom side	GPRS 4TS	661/1880	0.068	0.041	0.07	26.08	27.50	1.387	0.094

Table 2: SAR of GSM1900.

Test Position	Channel/ Frequency	Measured SAR (1g)	1 st Repeated	Ratio	2 nd Repeated	3 rd Repeated
	(MHz)		SAR (1g)		SAR (1g)	SAR (1g)
Left side	661/1880	1.040	0.974	1.07	N/A	N/A

15.3 SAR Measurement Result of LTE Cat M1 Band 13

Test position	BW. (MHz)	Mode	Ch./Freq. (MHz)	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaling Factor	Reported 1g SAR (W/kg)
Body 0mm (1RB)										
Front side	10	QPSK 1_0	23230/782	0.150	0.102	0.03	20.65	21.00	1.084	0.163
Back side	10	QPSK 1_0	23230/782	0.077	0.054	0.01	20.65	21.00	1.084	0.083
Left side	10	QPSK 1_0	23230/782	0.165	0.095	0.00	20.65	21.00	1.084	0.179
Left side with cuff	10	QPSK 1_0	23230/782	0.058	0.039	-0.02	20.65	21.00	1.084	0.063
Right side	10	QPSK 1_0	23230/782	< 0.001	< 0.001	0.00	20.65	21.00	1.084	< 0.001
Top side	10	QPSK 1_0	23230/782	0.035	0.021	0.11	20.65	21.00	1.084	0.038
Bottom side	10	QPSK 1_0	23230/782	0.015	0.010	0.08	20.65	21.00	1.084	0.016
Body 0mm (50%RB)										
Front side	10	QPSK 3_0	23230/782	0.117	0.080	0.19	20.50	21.00	1.122	0.131
Back side	10	QPSK 3_0	23230/782	0.060	0.041	-0.02	20.50	21.00	1.122	0.067
Left side	10	QPSK 3_0	23230/782	0.127	0.073	-0.09	20.50	21.00	1.122	0.142
Right side	10	QPSK 3_0	23230/782	< 0.001	< 0.001	0.00	20.50	21.00	1.122	< 0.001
Top side	10	QPSK 3_0	23230/782	0.027	0.016	0.03	20.50	21.00	1.122	0.030
Bottom side	10	QPSK 3_0	23230/782	0.011	0.008	0.06	20.50	21.00	1.122	0.012

Table 3: SAR of LTE Cat M1 Band 13.

15.4 SAR Measurement Result of LTE Cat M1 Band 25

Test position	BW. (MHz)	Mode	Ch./Freq. (MHz)	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaling Factor	Reported 1g SAR (W/kg)
Body 0mm (1RB)										
Front side	20	QPSK 1_0	26365/1882.5	0.131	0.084	-0.12	20.32	21.00	1.169	0.153
Back side	20	QPSK 1_0	26365/1882.5	0.125	0.074	0.04	20.32	21.00	1.169	0.146
Left side	20	QPSK 1_0	26365/1882.5	0.658	0.311	0.01	20.32	21.00	1.169	0.770
Left side with cuff	20	QPSK 1_0	26365/1882.5	0.082	0.046	0.00	20.32	21.00	1.169	0.096
Right side	20	QPSK 1_0	26365/1882.5	< 0.001	< 0.001	0.00	20.32	21.00	1.169	< 0.001
Top side	20	QPSK 1_0	26365/1882.5	0.019	0.013	-0.14	20.32	21.00	1.169	0.022
Bottom side	20	QPSK 1_0	26365/1882.5	0.094	0.057	-0.06	20.32	21.00	1.169	0.110
Body 0mm (50%RB)										
Front side	20	QPSK 3_0	26365/1882.5	0.124	0.079	-0.02	20.20	21.00	1.202	0.149
Back side	20	QPSK 3_0	26365/1882.5	0.121	0.077	-0.09	20.20	21.00	1.202	0.145
Left side	20	QPSK 3_0	26365/1882.5	0.636	0.300	-0.01	20.20	21.00	1.202	0.765
Right side	20	QPSK 3_0	26365/1882.5	< 0.001	< 0.001	0.00	20.20	21.00	1.202	< 0.001
Top side	20	QPSK 3_0	26365/1882.5	0.018	0.013	0.01	20.20	21.00	1.202	0.022
Bottom side	20	QPSK 3_0	26365/1882.5	0.092	0.053	0.04	20.20	21.00	1.202	0.111

Table 4: SAR of LTE Cat M1 Band 25.

15.5 SAR Measurement Result of LTE Cat M1 Band 26

Test position	BW. (MHz)	Mode	Ch./Freq. (MHz)	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaling Factor	Reported 1g SAR (W/kg)
Body 0mm (1RB)										
Front side	15	QPSK 1_0	26865/831.5	0.150	0.102	0.16	20.55	21.00	1.109	0.166
Back side	15	QPSK 1_0	26865/831.5	0.065	0.046	-0.04	20.55	21.00	1.109	0.072
Left side	15	QPSK 1_0	26865/831.5	0.158	0.090	0.01	20.55	21.00	1.109	0.175
Left side with cuff	15	QPSK 1_0	26865/831.5	0.046	0.030	0.07	20.55	21.00	1.109	0.051
Right side	15	QPSK 1_0	26865/831.5	< 0.001	< 0.001	0.00	20.55	21.00	1.109	< 0.001
Top side	15	QPSK 1_0	26865/831.5	0.026	0.016	-0.09	20.55	21.00	1.109	0.029
Bottom side	15	QPSK 1_0	26865/831.5	0.017	0.010	0.03	20.55	21.00	1.109	0.019
Body 0mm (50%RB)										
Front side	15	QPSK 3_0	26865/831.5	0.132	0.089	0.12	20.49	21.00	1.125	0.148
Back side	15	QPSK 3_0	26865/831.5	0.063	0.044	0.10	20.49	21.00	1.125	0.071
Left side	15	QPSK 3_0	26865/831.5	0.151	0.084	-0.06	20.49	21.00	1.125	0.170
Right side	15	QPSK 3_0	26865/831.5	< 0.001	< 0.001	0.00	20.49	21.00	1.125	< 0.001
Top side	15	QPSK 3_0	26865/831.5	0.026	0.015	0.05	20.49	21.00	1.125	0.029
Bottom side	15	QPSK 3_0	26865/831.5	0.012	0.008	0.11	20.49	21.00	1.125	0.013

Table 5: SAR of LTE Cat M1 Band 26.

15.6 SAR Measurement Result of LTE Cat M1 Band 66

Test position	BW. (MHz)	Mode	Ch./Freq. (MHz)	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaling Factor	Reported 1g SAR (W/kg)
Body 0mm(1RB)										
Front side	20	QPSK 1_0	132322/1745	0.100	0.064	0.00	20.03	21.00	1.250	0.125
Back side	20	QPSK 1_0	132322/1745	0.144	0.087	-0.05	20.03	21.00	1.250	0.180
Left side	20	QPSK 1_0	132322/1745	0.400	0.194	-0.04	20.03	21.00	1.250	0.500
Left side with cuff	20	QPSK 1_0	132322/1745	0.075	0.045	0.05	20.03	21.00	1.250	0.094
Right side	20	QPSK 1_0	132322/1745	< 0.001	< 0.001	0.00	20.03	21.00	1.250	< 0.001
Top side	20	QPSK 1_0	132322/1745	0.014	0.010	0.00	20.03	21.00	1.250	0.018
Bottom side	20	QPSK 1_0	132322/1745	0.075	0.046	0.08	20.03	21.00	1.250	0.094
Body 0mm(50%RB)										
Front side	20	QPSK 3_0	132322/1745	0.104	0.066	0.00	20.01	21.00	1.256	0.131
Back side	20	QPSK 3_0	132322/1745	0.151	0.086	0.03	20.01	21.00	1.256	0.190
Left side	20	QPSK 3_0	132322/1745	0.390	0.193	0.08	20.01	21.00	1.256	0.490
Right side	20	QPSK 3_0	132322/1745	< 0.001	< 0.001	0.00	20.01	21.00	1.256	< 0.001
Top side	20	QPSK 3_0	132322/1745	0.013	0.009	0.03	20.01	21.00	1.256	0.016
Bottom side	20	QPSK 3_0	132322/1745	0.070	0.041	0.04	20.01	21.00	1.256	0.088

Table 6: SAR of LTE Cat M1 Band 66.

15.7 SAR Measurement Result of LTE Cat M1 Band 85

Test position	BW. (MHz)	Mode	Ch./Freq. (MHz)	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaling Factor	Reported 1g SAR (W/kg)
Body 0mm(1RB)										
Front side	10	QPSK 1_0	134092/707	0.153	0.103	0.08	19.88	21.00	1.294	0.198
Back side	10	QPSK 1_0	134092/707	0.068	0.048	-0.02	19.88	21.00	1.294	0.088
Left side	10	QPSK 1_0	134092/707	0.161	0.092	-0.01	19.88	21.00	1.294	0.208
Left side with cuff	10	QPSK 1_0	134092/707	0.057	0.037	-0.01	19.88	21.00	1.294	0.074
Right side	10	QPSK 1_0	134092/707	< 0.001	< 0.001	0.00	19.88	21.00	1.294	< 0.001
Top side	10	QPSK 1_0	134092/707	0.037	0.022	0.15	19.88	21.00	1.294	0.048
Bottom side	10	QPSK 1_0	134092/707	0.014	0.010	0.07	19.88	21.00	1.294	0.018
Body 0mm(50%RB)										
Front side	10	QPSK 3_0	134092/707	0.115	0.082	0.05	19.01	20.00	1.256	0.144
Back side	10	QPSK 3_0	134092/707	0.067	0.047	0.03	19.01	20.00	1.256	0.084
Left side	10	QPSK 3_0	134092/707	0.156	0.085	0.00	19.01	20.00	1.256	0.196
Right side	10	QPSK 3_0	134092/707	< 0.001	< 0.001	0.00	19.01	20.00	1.256	< 0.001
Top side	10	QPSK 3_0	134092/707	0.029	0.017	-0.05	19.01	20.00	1.256	0.036
Bottom side	10	QPSK 3_0	134092/707	0.012	0.008	0.01	19.01	20.00	1.256	0.015

Table 7: SAR of LTE Cat M1 Band 85.

15.8 SAR Measurement Result of NB-IOT Band 5

Test position	Subcarrier Spacing kHz SC Spacing	Mode	Ch./Freq. (MHz)	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaling Factor	Reported 1g SAR (W/kg)
Body 0mm (1RB)										
Front side	15	QPSK 1_0	20525/836.5	0.100	0.070	-0.18	20.43	21.00	1.140	0.114
Back side	15	QPSK 1_0	20525/836.5	0.057	0.037	0.13	20.43	21.00	1.140	0.065
Left side	15	QPSK 1_0	20525/836.5	0.113	0.063	-0.14	20.43	21.00	1.140	0.129
Left side with cuff	15	QPSK 1_0	20525/836.5	0.027	0.018	0.11	20.43	21.00	1.140	0.031
Right side	15	QPSK 1_0	20525/836.5	< 0.001	< 0.001	0.00	20.43	21.00	1.140	< 0.001
Top side	15	QPSK 1_0	20525/836.5	0.022	0.010	0.05	20.43	21.00	1.140	0.025
Bottom side	15	QPSK 1_0	20525/836.5	0.012	0.007	0.02	20.43	21.00	1.140	0.014
Body 0mm (50%RB)										
Front side	15	QPSK 3_0	20525/836.5	0.095	0.062	-0.06	20.35	21.00	1.161	0.110
Back side	15	QPSK 3_0	20525/836.5	0.043	0.030	-0.06	20.35	21.00	1.161	0.050
Left side	15	QPSK 3_0	20525/836.5	0.090	0.055	0.15	20.35	21.00	1.161	0.105
Right side	15	QPSK 3_0	20525/836.5	< 0.001	< 0.001	0.00	20.35	21.00	1.161	< 0.001
Top side	15	QPSK 3_0	20525/836.5	0.017	0.010	0.07	20.35	21.00	1.161	0.020
Bottom side	15	QPSK 3_0	20525/836.5	0.010	0.006	0.12	20.35	21.00	1.161	0.012

Table 8: SAR of NB-IOT Band 5.

15.9 SAR Measurement Result of NB-IOT Band 13

Test position	Subcarrier Spacing kHz SC Spacing	Mode	Ch./Freq. (MHz)	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaling Factor	Reported 1g SAR (W/kg)
Body 0mm (1RB)										
Front side	15	QPSK 1_0	23230/782	0.122	0.077	0.00	20.83	21.00	1.040	0.127
Back side	15	QPSK 1_0	23230/782	0.050	0.031	0.17	20.83	21.00	1.040	0.052
Left side	15	QPSK 1_0	23230/782	0.123	0.066	-0.18	20.83	21.00	1.040	0.128
Left side with cuff	15	QPSK 1_0	23230/782	0.037	0.023	0.13	20.83	21.00	1.040	0.038
Right side	15	QPSK 1_0	23230/782	< 0.001	< 0.001	0.00	20.83	21.00	1.040	< 0.001
Top side	15	QPSK 1_0	23230/782	0.020	0.012	-0.04	20.83	21.00	1.040	0.021
Bottom side	15	QPSK 1_0	23230/782	0.016	0.009	0.09	20.83	21.00	1.040	0.017
Body 0mm (50%RB)										
Front side	15	QPSK 3_0	23230/782	0.091	0.064	-0.07	20.69	21.00	1.074	0.098
Back side	15	QPSK 3_0	23230/782	0.047	0.032	0.09	20.69	21.00	1.074	0.050
Left side	15	QPSK 3_0	23230/782	0.101	0.050	0.05	20.69	21.00	1.074	0.108
Right side	15	QPSK 3_0	23230/782	< 0.001	< 0.001	0.00	20.69	21.00	1.074	< 0.001
Top side	15	QPSK 3_0	23230/782	0.017	0.010	0.11	20.69	21.00	1.074	0.018
Bottom side	15	QPSK 3_0	23230/782	0.013	0.007	-0.04	20.69	21.00	1.074	0.014

Table 9: SAR of NB-IOT Band 13.

15.10 SAR Measurement Result of NB-IOT Band 25

Test position	Subcarrier Spacing kHz SC Spacing	Mode	Ch./Freq. (MHz)	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaling Factor	Reported 1g SAR (W/kg)
Body 0mm (1RB)										
Front side	15	QPSK 1_0	26365/1882.5	0.072	0.045	-0.01	20.90	21.00	1.023	0.074
Back side	15	QPSK 1_0	26365/1882.5	0.066	0.042	0.00	20.90	21.00	1.023	0.068
Left side	15	QPSK 1_0	26365/1882.5	0.369	0.178	-0.02	20.90	21.00	1.023	0.378
Left side with cuff	15	QPSK 1_0	26365/1882.5	0.021	0.012	0.01	20.90	21.00	1.023	0.021
Right side	15	QPSK 1_0	26365/1882.5	< 0.001	< 0.001	0.00	20.90	21.00	1.023	< 0.001
Top side	15	QPSK 1_0	26365/1882.5	0.032	0.017	0.15	20.90	21.00	1.023	0.033
Bottom side	15	QPSK 1_0	26365/1882.5	0.072	0.037	0.05	20.90	21.00	1.023	0.074
Body 0mm (50%RB)										
Front side	15	QPSK 3_0	26365/1882.5	0.067	0.040	0.01	20.76	21.00	1.057	0.071
Back side	15	QPSK 3_0	26365/1882.5	0.061	0.031	0.04	20.76	21.00	1.057	0.064
Left side	15	QPSK 3_0	26365/1882.5	0.229	0.118	-0.05	20.76	21.00	1.057	0.242
Right side	15	QPSK 3_0	26365/1882.5	< 0.001	< 0.001	0.00	20.76	21.00	1.057	< 0.001
Top side	15	QPSK 3_0	26365/1882.5	0.029	0.015	0.09	20.76	21.00	1.057	0.031
Bottom side	15	QPSK 3_0	26365/1882.5	0.078	0.034	0.16	20.76	21.00	1.057	0.082

Table 10: SAR of NB-IOT Band 25.

15.11 SAR Measurement Result of NB-IOT Band 66

Test position	Subcarrier Spacing kHz SC Spacing	Mode	Ch./Freq. (MHz)	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaling Factor	Reported 1g SAR (W/kg)
Body 0mm(1RB)										
Front side	15	QPSK 1_0	132322/1745	0.086	0.052	-0.15	20.54	21.00	1.112	0.096
Back side	15	QPSK 1_0	132322/1745	0.092	0.055	-0.08	20.54	21.00	1.112	0.102
Left side	15	QPSK 1_0	132322/1745	0.217	0.111	0.07	20.54	21.00	1.112	0.241
Left side with cuff	15	QPSK 1_0	132322/1745	0.045	0.027	-0.02	20.54	21.00	1.112	0.050
Right side	15	QPSK 1_0	132322/1745	< 0.001	< 0.001	0.00	20.54	21.00	1.112	< 0.001
Top side	15	QPSK 1_0	132322/1745	0.033	0.017	-0.07	20.54	21.00	1.112	0.037
Bottom side	15	QPSK 1_0	132322/1745	0.054	0.026	0.00	20.54	21.00	1.112	0.060
Body 0mm(50%RB)										
Front side	15	QPSK 3_0	132322/1745	0.069	0.041	-0.02	20.41	21.00	1.146	0.079
Back side	15	QPSK 3_0	132322/1745	0.079	0.049	-0.05	20.41	21.00	1.146	0.090
Left side	15	QPSK 3_0	132322/1745	0.172	0.090	-0.14	20.41	21.00	1.146	0.197
Right side	15	QPSK 3_0	132322/1745	< 0.001	< 0.001	0.00	20.41	21.00	1.146	< 0.001
Top side	15	QPSK 3_0	132322/1745	0.029	0.014	0.02	20.41	21.00	1.146	0.033
Bottom side	15	QPSK 3_0	132322/1745	0.057	0.026	0.01	20.41	21.00	1.146	0.065

Table 11: SAR of NB-IOT Band 66.

15.12 SAR Measurement Result of NB-IOT Band 71

Test position	Subcarrier Spacing kHz SC Spacing	Mode	Ch./Freq. (MHz)	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaling Factor	Reported 1g SAR (W/kg)
Body 0mm(1RB)										
Front side	15	QPSK 1_0	133297/680.5	0.083	0.056	0.16	20.29	21.00	1.178	0.098
Back side	15	QPSK 1_0	133297/680.5	0.046	0.033	-0.05	20.29	21.00	1.178	0.054
Left side	15	QPSK 1_0	133297/680.5	0.095	0.052	-0.06	20.29	21.00	1.178	0.112
Left side with cuff	15	QPSK 1_0	133297/680.5	0.034	0.021	-0.03	20.29	21.00	1.178	0.040
Right side	15	QPSK 1_0	133297/680.5	< 0.001	< 0.001	0.00	20.29	21.00	1.178	< 0.001
Top side	15	QPSK 1_0	133297/680.5	0.038	0.018	0.11	20.29	21.00	1.178	0.045
Bottom side	15	QPSK 1_0	133297/680.5	0.012	0.008	-0.02	20.29	21.00	1.178	0.014
Body 0mm(50%RB)										
Front side	15	QPSK 3_0	133297/680.5	0.078	0.055	0.00	20.08	21.00	1.236	0.096
Back side	15	QPSK 3_0	133297/680.5	0.038	0.028	0.01	20.08	21.00	1.236	0.047
Left side	15	QPSK 3_0	133297/680.5	0.076	0.040	-0.09	20.08	21.00	1.236	0.094
Right side	15	QPSK 3_0	133297/680.5	< 0.001	< 0.001	0.00	20.08	21.00	1.236	< 0.001
Top side	15	QPSK 3_0	133297/680.5	0.023	0.014	0.04	20.08	21.00	1.236	0.028
Bottom side	15	QPSK 3_0	133297/680.5	0.011	0.007	0.07	20.08	21.00	1.236	0.014

Table 12: SAR of NB-IOT Band 71.

15.13 SAR Measurement Result of NB-IOT Band 85

Test position	Subcarrier Spacing kHz SC Spacing	Mode	Ch./Freq. (MHz)	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaling Factor	Reported 1g SAR (W/kg)
Body 0mm(1RB)										
Front side	15	QPSK 1_0	134092/707	0.083	0.060	0.12	20.46	21.00	1.132	0.094
Back side	15	QPSK 1_0	134092/707	0.049	0.033	-0.04	20.46	21.00	1.132	0.055
Left side	15	QPSK 1_0	134092/707	0.098	0.057	-0.01	20.46	21.00	1.132	0.111
Left side with cuff	15	QPSK 1_0	134092/707	0.036	0.023	-0.10	20.46	21.00	1.132	0.041
Right side	15	QPSK 1_0	134092/707	< 0.001	< 0.001	0.00	20.46	21.00	1.132	0.000
Top side	15	QPSK 1_0	134092/707	0.035	0.017	0.05	20.46	21.00	1.132	0.040
Bottom side	15	QPSK 1_0	134092/707	0.012	0.007	0.02	20.46	21.00	1.132	0.014
Body 0mm(50%RB)										
Front side	15	QPSK 3_0	134092/707	0.078	0.054	-0.14	20.28	21.00	1.180	0.092
Back side	15	QPSK 3_0	134092/707	0.040	0.028	0.16	20.28	21.00	1.180	0.047
Left side	15	QPSK 3_0	134092/707	0.076	0.040	-0.09	20.28	21.00	1.180	0.090
Right side	15	QPSK 3_0	134092/707	< 0.001	< 0.001	0.00	20.28	21.00	1.180	< 0.001
Top side	15	QPSK 3_0	134092/707	0.029	0.017	0.01	20.28	21.00	1.180	0.034
Bottom side	15	QPSK 3_0	134092/707	0.011	0.006	0.03	20.28	21.00	1.180	0.013

Table 13: SAR of NB-IOT Band 85.

16 Measurement Uncertainty

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

17 Calibration Certificate

Please see the Appendix C

18 Test Setup Photos

Please see the Appendix D

Appendix A: System Check Plots

Appendix B: SAR Test Plots

Appendix C: Calibration certificate

Appendix D: Test Setup Photos

--- The End ---
