FCC SAR Test Report

Applicant	:	**Stark Future SL**
Address	:	**Carrer Batan 6, Sant Boi, 08830, Spain**
Product Name	:	**Rugged Handheld**
Report Date	:	**Sept. 06, 2024**

Shenzhen Anbotek Compliance Laboratory Limited

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TEST REPORT

Applicant	:	Stark Future SL
Manufacturer	:	Emdoor Information Co.,Ltd.
Product Name	:	Rugged Handheld
Model No.	:	ARKENSTONE-EEA, ARKENSTONE-RW
Trade Mark	:	StarkFuture
Rating(s)	:	Input: 3.6-6V⎓3A, 6-9V⎓2.0A, 9-12V⎓1.5A Battery capacity: DC 3.8V, 4000mAh
Test Standard(s)	:	**IEC/IEEE 62209-1528:2020; FCC 47 CFR Part 2.1093; IEEE Std C95.1-2019; Reference FCC KDB 447498; KDB 248227; KDB 616217; KDB 941225; KDB 865664**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the IEC/IEEE 62209-1528:2020, FCC 47 CFR Part 2.1093, IEEE Std C95.1-2019 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt	Jun. 28, 2024
Date of Test	Jun. 28, 2024 ~ Jul. 23, 2024
Prepared By	Ella Liang (Ella Liang)
Approved & Authorized Signer	Edward pan (Edward Pan)

Version

Version No.	Date	Description
R00	Sept. 06, 2024	Original

1. Statement of Compliance

<Highest SAR Summary>

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR part 2.1093 and IEEE Std C95.1-2019, and had been tested in accordance with the measurement methods and procedures specified in IEC/IEEE 62209-1528:2020. The maximum results of Specific Absorption Rate (SAR) found during testing are as follows.

<Highest SAR Summary>

Frequency Band	Highest Reported 1g-SAR(W/Kg)		SAR Test Limit (W/Kg)
	Head	Body-worn (10mm)	
LTE Band 2	0.572	0.341	1.6
LTE Band 4	0.649	0.444	
LTE Band 5	**0.793**	**0.698**	
LTE Band 7	0.566	0.322	
LTE Band 17	0.750	0.576	
LTE Band 38	0.615	0.377	
LTE Band 41	0.572	0.324	
WLAN2.4G	0.278	0.256	
WLAN5.2G	0.371	0.305	
WLAN5.8G	0.374	0.308	
Simultaneous Reported SAR (W/Kg)	**1.167**	**1.006**	
Test Result	PASS		

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR part 2.1093 and IEEE Std C95.1-2019, and had been tested in accordance with the measurement methods and procedures specified in IEC/IEEE 62209-1528:2020.

2. General Information

2.1. Client Information

Applicant	:	Stark Future SL
Address	:	Carrer Batan 6, Sant Boi, 08830, Spain
Manufacturer	:	Emdoor Information Co.,Ltd.
Address	:	4th Floor, Block B, Haina Baichuan Headquarters Building, No. 6 Baoxing Road, Haibin Community, Xin'an Street, Bao'an District, Shenzhen City, Guangdong Province, China.
Factory	:	Emdoor Information Co.,Ltd.
Address	:	4th Floor, Building C, Chaojie Industrial Park, Danzi Middle Road, Kengzi Street, Pingshan District, Shenzhen, Guangdong, China

2.2. Description of Equipment Under Test (EUT)

Product Name	:	Rugged Handheld
Model No.	:	ARKENSTONE-EEA, ARKENSTONE-RW (Note: All samples are the same except the model number and sales area, so we prepare "ARKENSTONE-EEA" for test only.)
Trade Mark	:	StarkFuture
Test Power Supply	:	AC 120V, 60Hz for Adapter/ DC 3.8V Battery inside
Test Sample No.	:	1-2-1(Engineering Sample)
Tx Frequency	:	BT:2402-2480MHz 2.4G WIFI: 2412-2462MHz 5.2G WIFI: 5180-5240MHz 5.8G WIFI: 5745-5825MHz FDD Band 2: 1850.7 MHz – 1909.3 MHz FDD Band 4: 1710.7 MHz – 1754.3 MHz FDD Band 5: 824.7 MHz – 848.3 MHz FDD Band 7: 2502.5 MHz – 2567.5 MHz FDD Band 17: 706.5 MHz – 713.5 MHz TDD Band 38: 2572.5 MHz – 2617.5 MHz TDD Band 41: 2537.5 MHz~2652.5 MHz
Type of Modulation	:	LTE: QPSK, 16QAM BT: GFSK, π/4 DQPSK, 8DPSK 2.4G WIFI: CCK, DQPSK, DBPSK,BPSK, QPSK, 16QAM, 64QAM 5G WIFI: BPSK, QPSK, 16QAM, 64QAM, 256QAM
Category of device	:	Portable device
Remark: The above DUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.		

2.3. Device Category and SAR Limits

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user. Limit for General Population/Uncontrolled exposure should be applied for this device, it is 1.6 W/kg as averaged over any 1 gram of tissue.

2.4. Applied Standard

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2.1093
- IEEE Std C95.1-2019
- IEC/IEEE 62209-1528:2020
- KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- KDB 865664 D02 RF Exposure Reporting v01r02
- KDB 447498 D01 General RF Exposure Guidance v06
- KDB 248227 D01 802 11 Wi-Fi SAR v02r02
- KDB 941225 D01 3G SAR Procedures v03r01
- KDB 941225 D05 SAR for LTE Devicesv02r05

2.5. Environment of Test Site

Items	Required	Actual
Temperature (℃)	18-25	22~23
Humidity (%RH)	30-70	55~65

2.6. Test Configuration

The device was controlled by using a base station emulator. Communication between the device and the emulator was established by air link. The distance between the EUT and the antenna of the emulator is larger than 50 cm and the output power radiated from the emulator antenna is at least 30 dB smaller than the output power of EUT. The EUT was set from the emulator to radiate maximum output power during all tests. For WLAN SAR testing, WLAN engineering testing software installed on the EUT can provide continuous transmitting RF signal.

3. Specific Absorption Rate (SAR)

3.1. 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.

3.2. 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:

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

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

SAR measurement can be either related to the temperature elevation in tissue by

$$\mathbf{SAR} = \mathbf{C}\left(\frac{\boldsymbol{\delta}\mathbf{T}}{\boldsymbol{\delta}\mathbf{t}}\right)$$

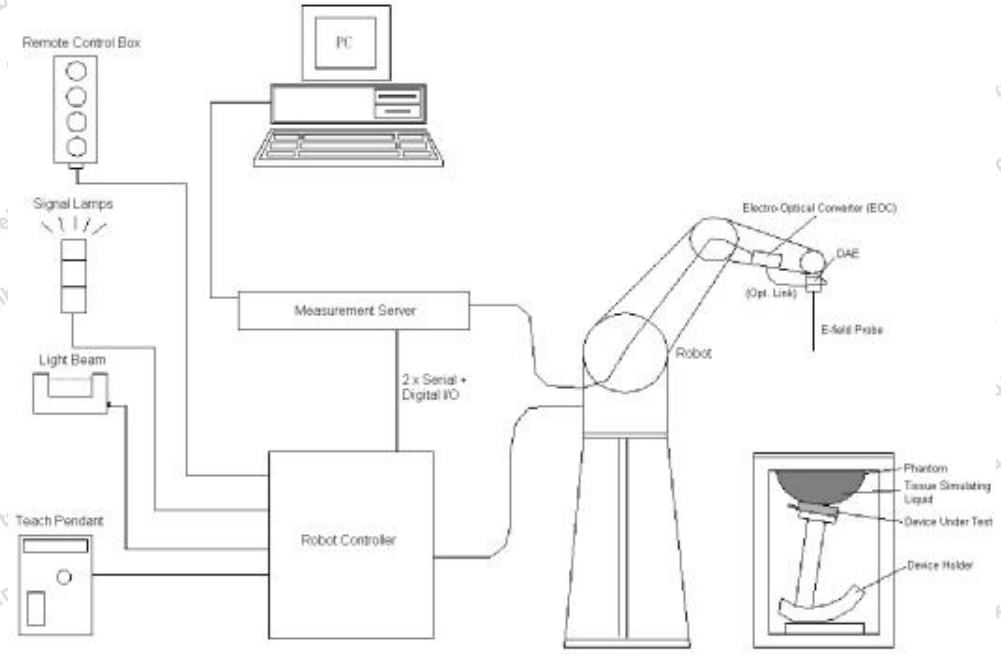
Where: C is the specific head capacity, δT is the temperature rise and δtisthe exposure duration, or related to the electrical field in the tissue by

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

Where:σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

4. SAR Measurement System



DASY System Configurations

The DASYsystem for performance compliance tests is illustrated above graphically. This system consists of the following items:

- A standard high precision 6-axis robot with controller, a teach pendant and software
- A data acquisition electronic (DAE) attached to the robot arm extension
- A dosimetric probe equipped with an optical surface detector system
- The electro-optical converter (EOC) performs the conversion between optical and electrical signals
- A measurement server performs the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the accuracy of the probe positioning
- A computer operating Windows XP
- DASY software
- Remove control with teach pendant and additional circuitry for robot safety such as warming lamps, etc.
- The SAM twin phantom
- A device holder
- Tissue simulating liquid
- Dipole for evaluating the proper functioning of the system

components are described in details in the following sub-sections.

4.1. E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

➢ **E-Field Probe Specification**

<EX3DV4 Probe>

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	 **Photo of EX3DV4**
Frequency	10 MHz to 6 GHz; Linearity: ± 0.2 dB	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 μW/g to 100 W/kg; Linearity: ± 0.2 dB (noise: typically< 1 μW/g)	
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

➢ **E-Field Probe Calibration**

Each probe needs to be calibrated according to a dosimetric assessment procedure with accuracy better than ± 10%. The spherical isotropy shall be evaluated and within ± 0.25dB. The sensitivity parameters (NormX, NormY, and NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested. The calibration data can be referred to appendix C of this report.

4.2. Data Acquisition Electronics (DAE)

The data acquisition electronics (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 measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

The input impedance of the DAE is 200MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80dB.

Photo of DAE

4.3. Robot

The SPEAG DASY system uses the high precision robots (DASY5: TX60XL) type from Stäubli SA (France). For the 6-axis controllersystem, the robot controller version (DASY5: CS8c) from Stäubli is used. The Stäublirobot series have many features that are important for our application:

- High precision (repeatability ±0.035 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)

Photo of DASY5

4.4. Measurement Server

The measurement server is based on a PC/104 CPU board with CPU (DASY5: 400 MHz, Intel Celeron), chipdisk (DASY5: 128 MB), RAM (DASY5: 128 MB). The necessary circuits for communication with the DAE electronic box, as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all the real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operations.

Photo of Server for DASY5

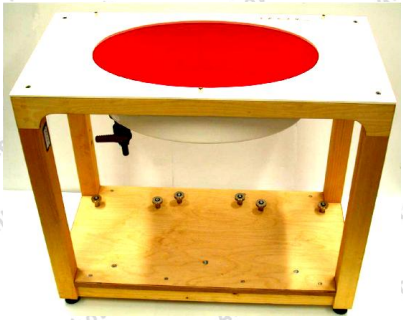
4.5. Phantom

<SAM Twin Phantom>

Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm	
Filling Volume	Approx. 25 liters	
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet	
Measurement Areas	Left Hand, Right Hand, Flat Phantom	**Photo of SAM Phantom**

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

<ELI4 Phantom>

Shell Thickness	2 ± 0.2 mm (sagging: <1%)	
Filling Volume	Approx. 30 liters	
Dimensions	Major ellipse axis: 600 mm Minor axis:400 mm	**Photo of ELI4 Phantom**

The ELI4 phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

4.6. Device Holder

The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5 mm distance, a positioning uncertainty of ±0.5mm would produce a SAR uncertainty of ± 20%. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.

The DASY device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (ERP).Thus the device needs no repositioning when changing the angles.

The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity ε = 3 and loss tangent δ = 0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

Device Holder

4.7. Data Storage and Evaluation

- Data Storage

The DASY software stores the assessed data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all the necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files. The post-processing software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of erroneous parameter settings. For example, if a measurement has been performed with an incorrect crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be reevaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type (e.g., [V/m], [A/m], [W/kg]). Some of these units are not available in certain situations or give meaningless results, e.g., a SAR-output in a non-lose media, will

always be zero. Raw data can also be exported to perform the evaluation with other software packages.

- Data Evaluation

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

Probe parameters:	- Sensitivity	$Norm_i$, a_{i0}, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	dcp_i
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	σ
	- Density	ρ

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

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power.

The formula for each channel can be given as：

$$\mathbf{V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}}$$

with V_i= compensated signal of channel i, (i = x, y, z)
U_i = input signal of channel i, (i = x, y, z)
cf = crest factor of exciting field (DASY parameter)
dcp_i = diode compression point (DASY parameter)

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

E-field Probes： $\mathbf{E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}}$

H-field Probes： $\mathbf{H_i = \sqrt{V_i} \cdot \frac{a_{i0}+a_{i1}f+a_{i2}f^2}{f}}$

with V_i = compensated signal of channel i,(i= x, y, z)
$Norm_i$= sensor sensitivity of channel i, (i= x, y, z), μV/(V/m)^2 for E-field Probes
ConvF= sensitivity enhancement in solution
a_{ij}= sensor sensitivity factors for H-field probes
f = carrier frequency [GHz]
E_i= electric field strength of channel iin V/m
H_i= magnetic field strength of channel iin A/m

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

$$\mathbf{E_{tot}} = \sqrt{\mathbf{E_x^2 + E_y^2 + E_z^2}}$$

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

$$\mathbf{SAR} = \mathbf{E_{tot}^2} \cdot \frac{\boldsymbol{\sigma}}{\boldsymbol{\rho} \cdot \mathbf{1000}}$$

with SAR = local specific absorption rate in W/kg
E_{tot}= total field strength in V/m
σ = conductivity in [mho/m] or [Siemens/m]
ρ = equivalent tissue density in g/cm^3

Note that the density is set to 1, to account for actual head tissue density rather than the density of the tissue simulating liquid.

5. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1163	Jun. 04,2024	Jun. 03,2027
SPEAG	835MHz System Validation Kit	D835V2	4d154	Jun. 11,2024	Jun. 10,2027
SPEAG	1750MHz System Validation Kit	D1750V2	1021	Jun. 11,2024	Jun. 10,2027
SPEAG	1900MHz System Validation Kit	D1900V2	5d175	Jun. 15,2022	Jun. 14,2025
SPEAG	2450MHz System Validation Kit	D2450V2	910	Jun. 11,2024	Jun. 10,2027
SPEAG	2600MHz System Validation Kit	D2600V2	1058	Jun. 12,2024	Jun. 11,2027
SPEAG	5GHz System Validation Kit	D5GHzV2	1160	Oct. 02, 2021	Oct. 01, 2024
Rohde & Schwarz	UNIVERSAL RADIO COMMUNICATION TESTER	CMW500	1201.0002K50-104209-JC	Nov.10, 2023	Nov.09, 2024
SPEAG	Data Acquisition Electronics	DAE4	387	Sept.06,2023	Sept.05,2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	7396	May 06,2024	May 05,2025
Agilent	ENA Series Network Analyzer	E5071C	MY46317418	Oct.26, 2023	Oct.25, 2024
SPEAG	DAK	DAK-3.5	1226	NCR	NCR
SPEAG	SAM Twin Phantom	QD000P40CD	1802	NCR	NCR
SPEAG	ELI Phantom	QDOVA004AA	2058	NCR	NCR
AR	Amplifier	ZHL-42W	QA1118004	NCR	NCR
Agilent	Spectrum Analyzer	N9020A	MY51170037	Oct.26, 2023	Oct.25, 2024
Agilent	Signal Generation	N5182A	MY48180656	Oct.26, 2023	Oct.25, 2024
Worken	Directional Coupler	0110A05601O-10	COM5BNW1A2	Oct.26, 2023	Oct.25, 2024

Note:

1. The calibration certificate of DASY can be referred to appendix C of this report.
2. The dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The Insertion Loss calibration of Dual Directional Coupler and Attenuator were characterized via the network analyzer and compensated during system check.
4. The dielectric probe kit was calibrated via the network analyzer, with the specified procedure (calibrated in pure water) and calibration kit (standard) short circuit, before the dielectric measurement. The specific procedure and calibration kit are provided by Agilent.
5. In system check we need to monitor the level on the power meter, and adjust the power amplifier level to have precise power level to the dipole; the measured SAR will be normalized to 1W input power according to the ratio of 1W to the input power to the dipole. For system check, the calibration of the power amplifier is deemed not critically required for correct measurement; the power meter is critical and we do have calibration for it.

6. Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 6.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown as followed:

Photo of Liquid Height for Head SAR

The following table gives the recipes for tissue simulating liquid.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Head								
750	40.9	57.1	0.2	1.5	0.3	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
1750	55.2	0	0	0.3	0	44.5	1.37	40.1
1800,1900,2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0
5200	65.5	0	17.2	0	17.3	0	4.66	36.0
5800	65.4	0	17.3	0	17.3	0	5.27	35.3

The following table shows the measuring results for simulating liquid.

Measured Frequency (MHz)	Target Tissue		Measured Tissue				Liquid Temp.	Test Data
	ε_r	σ	ε_r	Dev. (%)	σ	Dev. (%)		
750	41.9	0.89	41.73	-0.41	0.91	2.25	22.8	07/15/2024
835	41.5	0.90	41.62	0.29	0.92	2.22	22.7	07/15/2024
1750	40.1	1.37	40.25	0.37	1.41	2.92	22.6	07/16/2024
1900	40.0	1.40	40.12	0.30	1.46	4.29	22.8	07/17/2024
2450	39.2	1.80	39.08	-0.31	1.85	2.78	22.7	07/18/2024
2600	39.0	1.96	39.35	0.90	2.03	3.57	22.8	07/19/2024
5200	49.00	5.27	48.23	-1.60	5.20	-1.35	22.6	07/22/2024
5800	48.20	6.00	48.45	0.52	5.85	-2.56	22.4	07/23/2024

7. System Verification Procedures

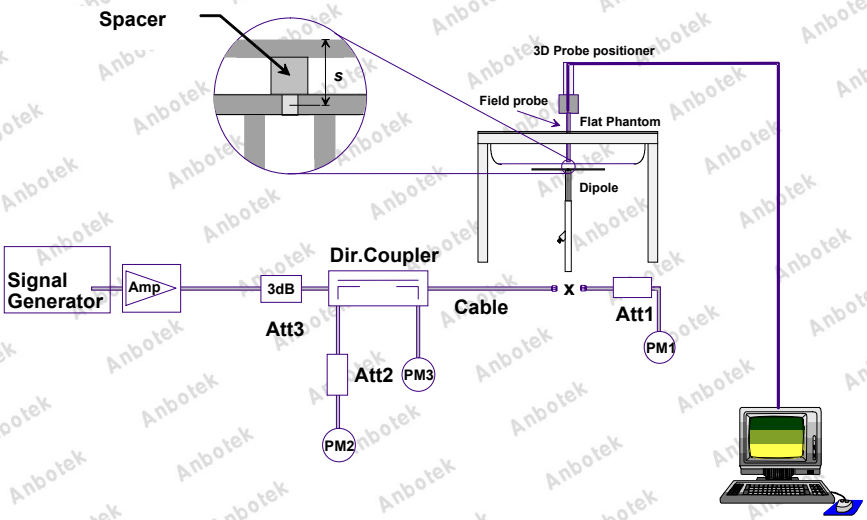
Each DASY system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the DASY software, enable the user to conduct the system performance check and system validation. System validation kit includes a dipole, tripod holder to fix it underneath the flat phantom and a corresponding distance holder.

- **Purpose of System Performance check**

  The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal SAR measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

- **System Setup**

  In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave that comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:



System Setup for System Evaluation

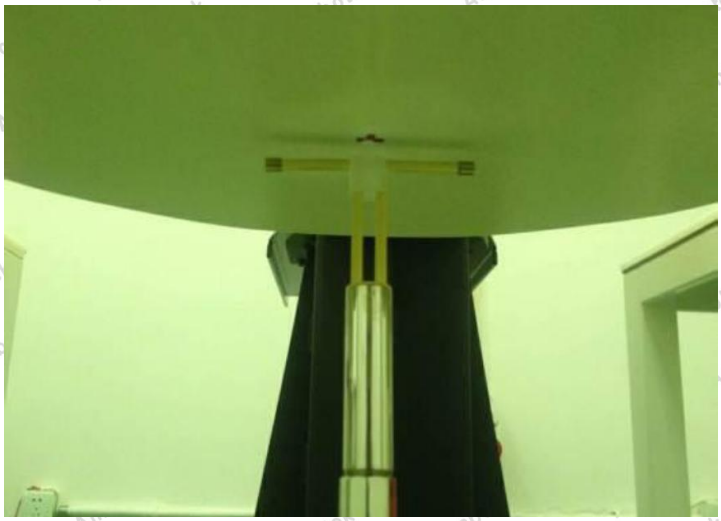


Photo of Dipole Setup

- **Validation Results**

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10%. The table below shows the target SAR and measured SAR after normalized to 1W input power. It indicates that the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

Date	Frequency (MHz)	Power fed onto reference dipole (mW)	Targeted SAR (W/kg)	Measured SAR (W/kg)	Normalized SAR (W/kg)	Deviation (%)
07/15/2024	750	250	8.31	2.13	8.52	2.53
07/15/2024	835	250	9.24	2.33	9.32	0.87
07/16/2024	1750	250	36.9	9.57	38.28	3.74
07/17/2024	1900	250	40.4	10.18	40.72	0.79
07/18/2024	2450	250	52.4	12.95	51.8	-1.15
07/19/2024	2600	250	57.2	13.91	55.64	-2.73
07/22/2024	5200	100	77.8	7.63	76.30	-1.93
07/23/2024	5800	100	78.3	7.95	79.50	1.53

Target and Measurement SAR after Normalized

8. EUT Testing Position

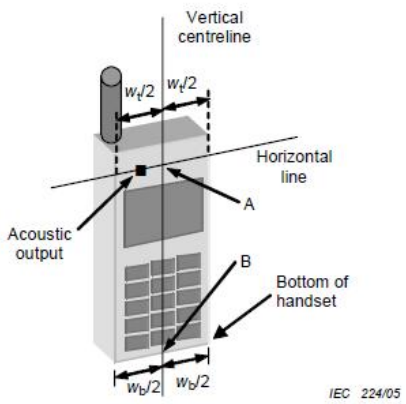
8.1. Head Position

The wireless device define two imaginary lines on the handset, the vertical centreline and the horizontal line, for the handset in vertical orientation as shown in Figures 5a and 5b.

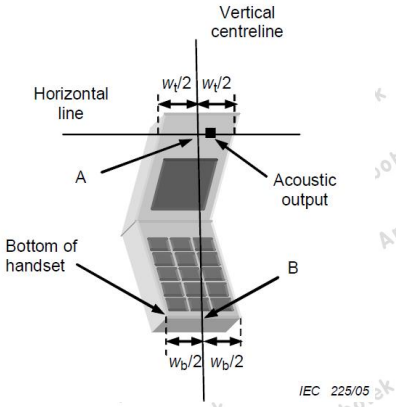
The vertical centreline passes through two points on the front side of the handset: the midpoint of the width W_t of the handset at the level of the acoustic output (point A in Figures 5a and 5b), and the midpoint of the width W_b of the bottom of the handset (point B).

The horizontal line is perpendicular to the vertical centreline and passes through the centre of the acoustic output (see Figures 5a and 5b). The two lines intersect at point A.

Note that for many handsets, point A coincides with the centre of the acoustic output. However, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centreline is not necessarily parallel to the front face of the handset (see Figure 5b), especially for clam-shell handsets, handsets with flip cover pieces, and other irregularly shaped handsets.



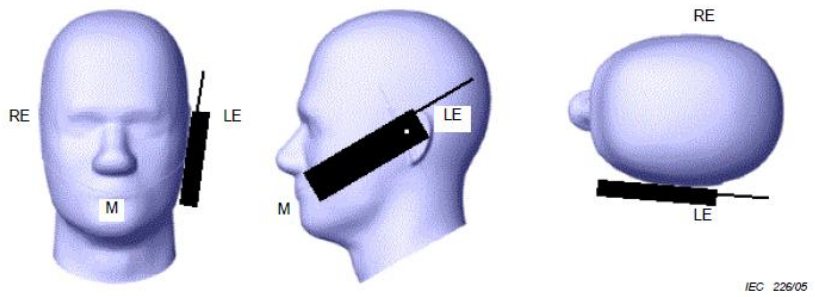
Figures 5a



Figures 5b

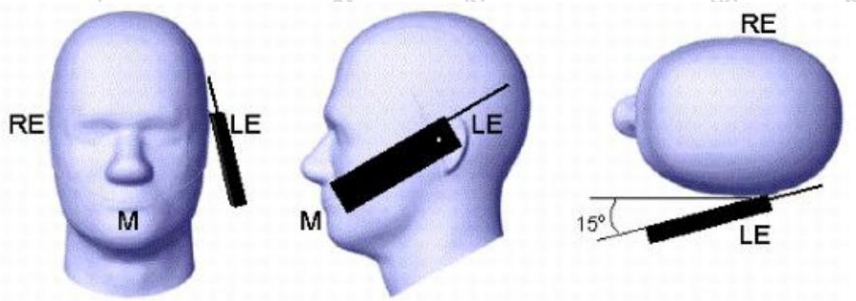
W_t	Width of the handset at the level of the acoustic
W_b	Width of the bottom of the handset
A	Midpoint of the widthwt of the handset at the level of the acoustic output
B	Midpoint of the width wb of the bottom of the handset

Cheek position



Picture 2 Cheek position of the wireless device on the left side of SAM

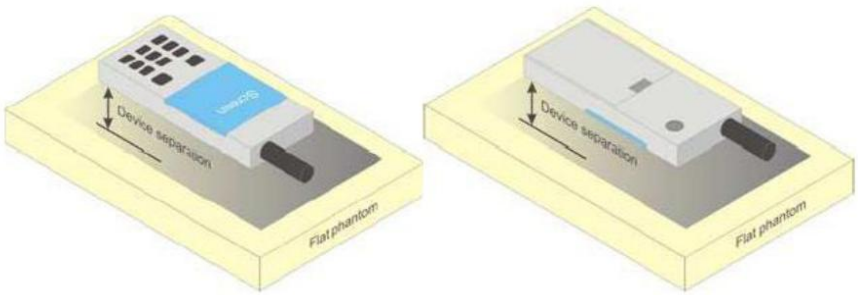
Tilt position



Picture 3 Tilt position of the wireless device on the left side of SAM

8.2. Body Position

Devices that support transmission while used with body-worn accessories must be tested for body-worn accessory SAR compliance, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics. Devices that are designed to operate on the body of users using lanyards and straps or without requiring additional body-worn accessories must be tested for SAR compliance using a conservative minimum test separation distance ≤ 5mm to support compliance.



Picture 4 Test positions for body-worn devices

9. Measurement Procedures

The measurement procedures are as follows:

(a) Use base station simulator (if applicable) or engineering software to transmit RF power continuously (continuous Tx) in the middle channel.
(b) Keep EUT to radiate maximum output power or 100% duty factor (if applicable)
(c) Measure output power through RF cable and power meter.
(d) Place the EUT in the positions as setup photos demonstrates.
(e) Set scan area, grid size and other setting on the DASY software.
(f) Measure SAR transmitting at the middle channel for all applicable exposure positions.
(g) Identify the exposure position and device configuration resulting the highest SAR
(h) Measure SAR at the lowest and highest channels attheworst exposure position and device configuration if applicable.

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

9.1. Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

9.2. Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are 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.

9.3. Area Scan Procedures

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0 is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

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	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

9.4. Zoom Scan Procedures

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes 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 gram and 10 gram and displays these values next to the job's label.

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

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

9.5. Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregateSAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

9.6. Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drift more than 5%, the SAR will be retested.

10. Conducted Power

<LTE Conducted Power>

Condition	Band	Channel Bandwidth	Channel	RB Configure	Result (dBm)		Tune-Up	
					QPSK	16QAM	QPSK	16QAM
NTNV	Band2	1.4MHz	18607	1RB#0	20.58	19.83	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	18607	1RB#2	20.60	19.80	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	18607	1RB#5	20.56	19.74	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	18607	3RB#0	20.74	19.70	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	18607	3RB#1	20.76	19.65	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	18607	3RB#3	20.72	19.61	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	18607	6RB#0	19.69	18.80	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	18900	1RB#0	20.74	19.91	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	18900	1RB#2	20.73	19.92	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	18900	1RB#5	20.77	19.94	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	18900	3RB#0	20.81	19.79	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	18900	3RB#1	20.85	19.79	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	18900	3RB#3	20.84	19.76	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	18900	6RB#0	19.84	18.83	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	19193	1RB#0	20.31	19.39	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	19193	1RB#2	20.24	19.45	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	19193	1RB#5	20.25	19.46	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	19193	3RB#0	20.35	19.32	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	19193	3RB#1	20.35	19.34	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	19193	3RB#3	20.34	19.26	20.0±1.0	19.5±1.0
NTNV	Band2	1.4MHz	19193	6RB#0	19.39	18.36	20.0±1.0	19.0±1.0
NTNV	Band2	3MHz	18615	1RB#0	20.62	19.38	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	18615	1RB#8	20.70	19.56	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	18615	1RB#14	20.58	19.44	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	18615	8RB#0	19.66	18.69	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	18615	8RB#4	19.73	18.67	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	18615	8RB#7	19.75	18.75	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	18615	15RB#0	19.68	18.66	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	18900	1RB#0	20.59	19.82	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	18900	1RB#8	20.70	19.88	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	18900	1RB#14	20.70	19.78	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	18900	8RB#0	19.75	18.84	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	18900	8RB#4	19.78	18.84	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	18900	8RB#7	19.88	18.92	20.0±1.0	19.5±1.0

NTNV	Band2	3MHz	18900	15RB#0	19.87	18.86	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	19185	1RB#0	20.19	19.45	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	19185	1RB#8	20.36	19.46	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	19185	1RB#14	20.16	19.34	20.0±1.0	19.5±1.0
NTNV	Band2	3MHz	19185	8RB#0	19.34	18.38	20.0±1.0	19.0±1.0
NTNV	Band2	3MHz	19185	8RB#4	19.33	18.39	20.0±1.0	19.0±1.0
NTNV	Band2	3MHz	19185	8RB#7	19.40	18.42	20.0±1.0	19.0±1.0
NTNV	Band2	3MHz	19185	15RB#0	19.40	18.37	20.0±1.0	19.0±1.0
NTNV	Band2	5MHz	18625	1RB#0	20.88	19.89	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	18625	1RB#12	21.04	19.96	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	18625	1RB#24	20.89	19.83	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	18625	12RB#0	19.67	18.72	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	18625	12RB#6	19.69	18.79	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	18625	12RB#13	19.78	18.83	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	18625	25RB#0	19.77	18.82	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	18900	1RB#0	21.03	19.97	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	18900	1RB#12	21.05	20.11	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	18900	1RB#24	20.91	20.01	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	18900	12RB#0	19.91	18.94	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	18900	12RB#6	19.92	18.89	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	18900	12RB#13	19.91	18.93	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	18900	25RB#0	19.97	19.01	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	19175	1RB#0	20.60	19.78	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	19175	1RB#12	20.58	19.79	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	19175	1RB#24	20.08	19.21	20.0±1.0	19.5±1.0
NTNV	Band2	5MHz	19175	12RB#0	19.08	18.19	20.0±1.0	19.0±1.0
NTNV	Band2	5MHz	19175	12RB#6	19.04	18.23	20.0±1.0	19.0±1.0
NTNV	Band2	5MHz	19175	12RB#13	19.02	18.04	20.0±1.0	19.0±1.0
NTNV	Band2	5MHz	19175	25RB#0	19.00	18.05	20.0±1.0	19.0±1.0
NTNV	Band2	10MHz	18650	1RB#0	20.92	19.84	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	18650	1RB#24	20.97	19.75	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	18650	1RB#49	20.90	19.77	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	18650	25RB#0	19.69	18.70	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	18650	25RB#12	19.69	18.71	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	18650	25RB#25	19.83	18.90	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	18650	50RB#0	19.79	18.81	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	18900	1RB#0	20.95	20.13	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	18900	1RB#24	21.01	20.27	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	18900	1RB#49	21.09	20.29	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	18900	25RB#0	19.88	18.92	20.0±1.0	19.5±1.0

NTNV	Band2	10MHz	18900	25RB#12	19.86	18.88	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	18900	25RB#25	20.06	19.05	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	18900	50RB#0	19.96	18.94	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	19150	1RB#0	20.76	19.90	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	19150	1RB#24	20.66	19.87	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	19150	1RB#49	20.56	19.70	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	19150	25RB#0	19.70	18.87	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	19150	25RB#12	19.75	18.82	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	19150	25RB#25	19.48	18.58	20.0±1.0	19.5±1.0
NTNV	Band2	10MHz	19150	50RB#0	19.67	18.64	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	18675	1RB#0	20.93	19.81	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	18675	1RB#38	21.00	19.87	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	18675	1RB#74	20.89	19.77	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	18675	38RB#0	19.77	19.78	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	18675	38RB#18	19.89	19.90	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	18675	38RB#37	19.78	19.74	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	18675	75RB#0	19.81	18.79	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	18900	1RB#0	20.88	20.08	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	18900	1RB#38	21.19	20.33	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	18900	1RB#74	21.07	20.21	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	18900	38RB#0	21.07	20.09	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	18900	38RB#18	20.34	20.38	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	18900	38RB#37	20.19	20.25	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	18900	75RB#0	19.99	18.96	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	19125	1RB#0	20.90	20.14	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	19125	1RB#38	20.79	20.05	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	19125	1RB#74	20.56	19.84	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	19125	38RB#0	20.15	20.18	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	19125	38RB#18	20.07	20.09	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	19125	38RB#37	19.82	19.85	20.0±1.0	19.5±1.0
NTNV	Band2	15MHz	19125	75RB#0	19.84	18.78	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	18700	1RB#0	20.80	19.84	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	18700	1RB#49	20.91	20.02	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	18700	1RB#99	20.81	19.87	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	18700	50RB#0	19.80	18.80	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	18700	50RB#25	19.73	18.76	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	18700	50RB#50	19.86	18.87	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	18700	100RB#0	19.80	18.79	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	18900	1RB#0	20.87	19.91	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	18900	1RB#49	**21.24**	20.30	20.0±1.0	19.5±1.0

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NTNV	Band2	20MHz	18900	1RB#99	21.08	20.10	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	18900	50RB#0	20.02	19.08	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	18900	50RB#25	19.99	19.05	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	18900	50RB#50	20.21	19.20	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	18900	100RB#0	20.07	19.11	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	19100	1RB#0	20.96	20.12	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	19100	1RB#49	21.06	20.22	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	19100	1RB#99	20.61	19.88	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	19100	50RB#0	19.89	18.95	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	19100	50RB#25	19.94	18.90	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	19100	50RB#50	19.62	18.59	20.0±1.0	19.5±1.0
NTNV	Band2	20MHz	19100	100RB#0	19.76	18.74	20.0±1.0	19.5±1.0

Condition	Band	Channel Bandwidth	Channel	RB Configure	Result (dBm)		Tune-Up	
					QPSK	16QAM	QPSK	16QAM
NTNV	Band4	1.4MHz	19957	1RB#0	22.31	21.48	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	19957	1RB#2	22.31	21.52	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	19957	1RB#5	22.31	21.50	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	19957	3RB#0	22.48	21.37	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	19957	3RB#1	22.48	21.37	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	19957	3RB#3	22.45	21.30	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	19957	6RB#0	21.50	20.57	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	20175	1RB#0	22.15	21.06	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	20175	1RB#2	22.16	21.02	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	20175	1RB#5	22.12	21.06	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	20175	3RB#0	22.23	21.08	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	20175	3RB#1	22.17	21.13	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	20175	3RB#3	22.27	21.06	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	20175	6RB#0	21.19	20.23	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	20393	1RB#0	22.15	21.31	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	20393	1RB#2	22.14	21.36	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	20393	1RB#5	22.18	21.34	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	20393	3RB#0	22.28	21.19	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	20393	3RB#1	22.29	21.18	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	20393	3RB#3	22.26	21.14	21.5±1.0	21.0±1.0
NTNV	Band4	1.4MHz	20393	6RB#0	21.31	20.35	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	19965	1RB#0	22.27	21.13	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	19965	1RB#8	22.39	21.21	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	19965	1RB#14	22.22	21.09	21.5±1.0	21.0±1.0

NTNV	Band4	3MHz	19965	8RB#0	21.41	20.47	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	19965	8RB#4	21.40	20.49	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	19965	8RB#7	21.49	20.39	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	19965	15RB#0	21.43	20.35	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	20175	1RB#0	21.93	21.18	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	20175	1RB#8	22.07	21.25	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	20175	1RB#14	21.99	21.14	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	20175	8RB#0	21.09	20.19	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	20175	8RB#4	21.11	20.19	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	20175	8RB#7	21.15	20.23	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	20175	15RB#0	21.14	20.22	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	20385	1RB#0	21.99	21.19	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	20385	1RB#8	22.10	21.21	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	20385	1RB#14	22.03	21.22	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	20385	8RB#0	21.22	20.24	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	20385	8RB#4	21.18	20.24	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	20385	8RB#7	21.19	20.25	21.5±1.0	21.0±1.0
NTNV	Band4	3MHz	20385	15RB#0	21.21	20.12	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	19975	1RB#0	22.50	21.70	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	19975	1RB#12	22.61	21.84	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	19975	1RB#24	22.44	21.65	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	19975	12RB#0	21.45	20.53	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	19975	12RB#6	21.46	20.49	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	19975	12RB#13	21.44	20.47	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	19975	25RB#0	21.44	20.48	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	20175	1RB#0	22.26	21.28	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	20175	1RB#12	22.34	21.40	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	20175	1RB#24	22.22	21.35	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	20175	12RB#0	21.19	20.20	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	20175	12RB#6	21.16	20.20	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	20175	12RB#13	21.25	20.26	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	20175	25RB#0	21.20	20.27	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	20375	1RB#0	22.29	21.47	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	20375	1RB#12	22.40	21.64	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	20375	1RB#24	22.34	21.54	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	20375	12RB#0	21.26	20.30	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	20375	12RB#6	21.24	20.30	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	20375	12RB#13	21.34	20.42	21.5±1.0	21.0±1.0
NTNV	Band4	5MHz	20375	25RB#0	21.28	20.36	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20000	1RB#0	22.49	21.70	21.5±1.0	21.0±1.0

NTNV	Band4	10MHz	20000	1RB#24	22.49	21.75	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20000	1RB#49	22.48	21.70	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20000	25RB#0	21.47	20.46	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20000	25RB#12	21.44	20.43	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20000	25RB#25	21.37	20.39	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20000	50RB#0	21.47	20.40	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20175	1RB#0	22.32	21.52	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20175	1RB#24	22.36	21.55	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20175	1RB#49	22.12	21.33	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20175	25RB#0	20.92	20.12	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20175	25RB#12	20.74	19.87	21.5±1.0	20.0±1.0
NTNV	Band4	10MHz	20175	25RB#25	20.81	19.83	21.5±1.0	20.0±1.0
NTNV	Band4	10MHz	20175	50RB#0	21.08	19.88	21.5±1.0	20.0±1.0
NTNV	Band4	10MHz	20350	1RB#0	21.91	21.12	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20350	1RB#24	22.01	21.22	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20350	1RB#49	22.40	21.45	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20350	25RB#0	20.97	20.17	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20350	25RB#12	21.21	20.29	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20350	25RB#25	21.33	20.36	21.5±1.0	21.0±1.0
NTNV	Band4	10MHz	20350	50RB#0	21.28	20.32	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20025	1RB#0	22.38	21.62	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20025	1RB#38	22.49	21.69	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20025	1RB#74	22.36	21.59	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20025	38RB#0	21.63	21.66	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20025	38RB#18	21.68	21.73	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20025	38RB#37	21.59	21.56	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20025	75RB#0	21.09	20.31	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20175	1RB#0	22.18	21.00	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20175	1RB#38	21.82	21.07	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20175	1RB#74	21.76	20.96	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20175	38RB#0	20.95	20.98	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20175	38RB#18	21.08	21.06	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20175	38RB#37	20.98	21.00	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20175	75RB#0	20.67	19.73	21.5±1.0	20.0±1.0
NTNV	Band4	15MHz	20325	1RB#0	21.66	20.93	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20325	1RB#38	21.85	21.13	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20325	1RB#74	21.86	21.09	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20325	38RB#0	21.12	20.94	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20325	38RB#18	21.13	21.23	21.5±1.0	21.0±1.0
NTNV	Band4	15MHz	20325	38RB#37	21.22	21.07	21.5±1.0	21.0±1.0

NTNV	Band4	15MHz	20325	75RB#0	20.76	20.02	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20050	1RB#0	22.28	21.43	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20050	1RB#49	22.41	21.55	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20050	1RB#99	22.15	21.33	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20050	50RB#0	21.51	20.55	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20050	50RB#25	21.48	20.59	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20050	50RB#50	21.38	20.40	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20050	100RB#0	21.48	20.48	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20175	1RB#0	22.30	21.28	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20175	1RB#49	**22.42**	21.47	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20175	1RB#99	22.34	21.36	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20175	50RB#0	21.28	20.27	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20175	50RB#25	21.23	20.27	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20175	50RB#50	21.37	20.44	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20175	100RB#0	21.32	20.34	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20300	1RB#0	22.15	21.42	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20300	1RB#49	22.38	21.55	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20300	1RB#99	22.41	21.55	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20300	50RB#0	21.09	20.15	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20300	50RB#25	21.11	20.19	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20300	50RB#50	21.43	20.42	21.5±1.0	21.0±1.0
NTNV	Band4	20MHz	20300	100RB#0	21.24	20.29	21.5±1.0	21.0±1.0

Condition	Band	Channel Bandwidth	Channel	RB Configure	Result (dBm)		Tune-Up	
					QPSK	16QAM	QPSK	16QAM
NTNV	Band5	1.4MHz	20407	1RB#0	23.92	23.03	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20407	1RB#2	23.90	23.06	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20407	1RB#5	23.91	23.00	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20407	3RB#0	24.04	22.87	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20407	3RB#1	24.03	22.90	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20407	3RB#3	24.02	22.87	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20407	6RB#0	23.06	22.10	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20525	1RB#0	23.82	22.70	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20525	1RB#2	23.80	22.76	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20525	1RB#5	23.76	22.71	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20525	3RB#0	23.88	22.76	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20525	3RB#1	23.91	22.75	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20525	3RB#3	23.90	22.70	23.5±1.0	23.0±1.0

NTNV	Band5	1.4MHz	20525	6RB#0	22.94	21.98	23.5±1.0	22.0±1.0
NTNV	Band5	1.4MHz	20643	1RB#0	23.73	22.84	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20643	1RB#2	23.74	22.93	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20643	1RB#5	23.74	22.89	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20643	3RB#0	23.84	22.70	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20643	3RB#1	23.84	22.74	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20643	3RB#3	23.83	22.70	23.5±1.0	23.0±1.0
NTNV	Band5	1.4MHz	20643	6RB#0	22.87	21.95	23.5±1.0	22.0±1.0
NTNV	Band5	3MHz	20415	1RB#0	23.86	22.70	23.5±1.0	23.0±1.0
NTNV	Band5	3MHz	20415	1RB#8	23.89	22.80	23.5±1.0	23.0±1.0
NTNV	Band5	3MHz	20415	1RB#14	23.81	22.64	23.5±1.0	23.0±1.0
NTNV	Band5	3MHz	20415	8RB#0	23.04	22.02	23.5±1.0	23.0±1.0
NTNV	Band5	3MHz	20415	8RB#4	23.01	22.03	23.5±1.0	23.0±1.0
NTNV	Band5	3MHz	20415	8RB#7	22.96	21.95	23.5±1.0	22.0±1.0
NTNV	Band5	3MHz	20415	15RB#0	23.00	21.91	23.5±1.0	22.0±1.0
NTNV	Band5	3MHz	20525	1RB#0	23.56	22.78	23.5±1.0	23.0±1.0
NTNV	Band5	3MHz	20525	1RB#8	23.73	22.93	23.5±1.0	23.0±1.0
NTNV	Band5	3MHz	20525	1RB#14	23.67	22.82	23.5±1.0	23.0±1.0
NTNV	Band5	3MHz	20525	8RB#0	22.76	21.87	23.5±1.0	22.0±1.0
NTNV	Band5	3MHz	20525	8RB#4	22.76	21.88	23.5±1.0	22.0±1.0
NTNV	Band5	3MHz	20525	8RB#7	22.93	21.99	23.5±1.0	22.0±1.0
NTNV	Band5	3MHz	20525	15RB#0	22.88	21.86	23.5±1.0	22.0±1.0
NTNV	Band5	3MHz	20635	1RB#0	23.55	22.76	23.5±1.0	23.0±1.0
NTNV	Band5	3MHz	20635	1RB#8	23.70	22.85	23.5±1.0	23.0±1.0
NTNV	Band5	3MHz	20635	1RB#14	23.64	22.75	23.5±1.0	23.0±1.0
NTNV	Band5	3MHz	20635	8RB#0	22.77	21.80	23.5±1.0	22.0±1.0
NTNV	Band5	3MHz	20635	8RB#4	22.78	21.79	23.5±1.0	22.0±1.0
NTNV	Band5	3MHz	20635	8RB#7	22.82	21.85	23.5±1.0	22.0±1.0
NTNV	Band5	3MHz	20635	15RB#0	22.88	21.78	23.5±1.0	22.0±1.0
NTNV	Band5	5MHz	20425	1RB#0	24.06	23.04	23.5±1.0	23.0±1.0
NTNV	Band5	5MHz	20425	1RB#12	24.14	23.16	23.5±1.0	23.0±1.0
NTNV	Band5	5MHz	20425	1RB#24	23.95	22.98	23.5±1.0	23.0±1.0
NTNV	Band5	5MHz	20425	12RB#0	23.00	22.00	23.5±1.0	23.0±1.0
NTNV	Band5	5MHz	20425	12RB#6	23.03	21.97	23.5±1.0	22.0±1.0
NTNV	Band5	5MHz	20425	12RB#13	23.00	21.95	23.5±1.0	22.0±1.0
NTNV	Band5	5MHz	20425	25RB#0	22.99	22.03	23.5±1.0	23.0±1.0
NTNV	Band5	5MHz	20525	1RB#0	23.92	22.93	23.5±1.0	23.0±1.0
NTNV	Band5	5MHz	20525	1RB#12	23.95	22.78	23.5±1.0	23.0±1.0
NTNV	Band5	5MHz	20525	1RB#24	23.88	22.71	23.5±1.0	23.0±1.0
NTNV	Band5	5MHz	20525	12RB#0	22.69	21.48	23.5±1.0	22.0±1.0

NTNV	Band5	5MHz	20525	12RB#6	22.61	21.57	23.5±1.0	22.0±1.0
NTNV	Band5	5MHz	20525	12RB#13	22.86	21.58	23.5±1.0	22.0±1.0
NTNV	Band5	5MHz	20525	25RB#0	22.79	21.71	23.5±1.0	22.0±1.0
NTNV	Band5	5MHz	20625	1RB#0	23.74	22.76	23.5±1.0	23.0±1.0
NTNV	Band5	5MHz	20625	1RB#12	23.66	22.77	23.5±1.0	23.0±1.0
NTNV	Band5	5MHz	20625	1RB#24	23.51	22.63	23.5±1.0	23.0±1.0
NTNV	Band5	5MHz	20625	12RB#0	22.41	21.51	23.5±1.0	22.0±1.0
NTNV	Band5	5MHz	20625	12RB#6	22.40	21.59	23.5±1.0	22.0±1.0
NTNV	Band5	5MHz	20625	12RB#13	22.45	21.41	23.5±1.0	22.0±1.0
NTNV	Band5	5MHz	20625	25RB#0	22.51	21.52	23.5±1.0	22.0±1.0
NTNV	Band5	10MHz	20450	1RB#0	**24.05**	23.26	23.5±1.0	23.0±1.0
NTNV	Band5	10MHz	20450	1RB#24	23.99	23.18	23.5±1.0	23.0±1.0
NTNV	Band5	10MHz	20450	1RB#49	23.97	23.20	23.5±1.0	23.0±1.0
NTNV	Band5	10MHz	20450	25RB#0	22.93	22.01	23.5±1.0	23.0±1.0
NTNV	Band5	10MHz	20450	25RB#12	22.97	21.98	23.5±1.0	22.0±1.0
NTNV	Band5	10MHz	20450	25RB#25	22.87	21.98	23.5±1.0	22.0±1.0
NTNV	Band5	10MHz	20450	50RB#0	22.88	21.99	23.5±1.0	22.0±1.0
NTNV	Band5	10MHz	20525	1RB#0	23.86	22.96	23.5±1.0	23.0±1.0
NTNV	Band5	10MHz	20525	1RB#24	23.89	22.92	23.5±1.0	23.0±1.0
NTNV	Band5	10MHz	20525	1RB#49	23.46	22.75	23.5±1.0	23.0±1.0
NTNV	Band5	10MHz	20525	25RB#0	22.69	21.72	23.5±1.0	22.0±1.0
NTNV	Band5	10MHz	20525	25RB#12	22.43	21.65	23.5±1.0	22.0±1.0
NTNV	Band5	10MHz	20525	25RB#25	22.83	21.53	23.5±1.0	22.0±1.0
NTNV	Band5	10MHz	20525	50RB#0	22.72	21.63	23.5±1.0	22.0±1.0
NTNV	Band5	10MHz	20600	1RB#0	23.67	22.77	23.5±1.0	23.0±1.0
NTNV	Band5	10MHz	20600	1RB#24	23.51	22.59	23.5±1.0	23.0±1.0
NTNV	Band5	10MHz	20600	1RB#49	23.49	22.65	23.5±1.0	23.0±1.0
NTNV	Band5	10MHz	20600	25RB#0	22.42	21.42	23.5±1.0	22.0±1.0
NTNV	Band5	10MHz	20600	25RB#12	22.41	21.53	23.5±1.0	22.0±1.0
NTNV	Band5	10MHz	20600	25RB#25	22.39	21.37	23.5±1.0	22.0±1.0
NTNV	Band5	10MHz	20600	50RB#0	22.39	21.58	23.5±1.0	22.0±1.0

Condition	Band	Channel Bandwidth	Channel	RB Configure	Result (dBm)		Tune-Up	
					QPSK	16QAM	QPSK	16QAM
NTNV	Band7	5MHz	20775	1RB#0	21.63	20.62	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	20775	1RB#12	21.30	20.31	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	20775	1RB#24	21.19	20.17	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	20775	12RB#0	20.14	19.13	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	20775	12RB#6	20.13	19.10	21.0±1.0	20.0±1.0

NTNV	Band7	5MHz	20775	12RB#13	20.17	19.15	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	20775	25RB#0	20.16	19.21	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	21100	1RB#0	21.17	20.15	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	21100	1RB#12	21.25	20.24	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	21100	1RB#24	21.08	20.10	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	21100	12RB#0	20.18	19.16	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	21100	12RB#6	20.15	19.19	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	21100	12RB#13	20.09	19.08	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	21100	25RB#0	20.18	19.17	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	21425	1RB#0	20.90	20.14	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	21425	1RB#12	21.07	20.31	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	21425	1RB#24	21.00	20.24	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	21425	12RB#0	19.92	18.97	20.0±1.0	19.0±1.0
NTNV	Band7	5MHz	21425	12RB#6	19.95	18.98	20.0±1.0	19.0±1.0
NTNV	Band7	5MHz	21425	12RB#13	20.02	19.07	21.0±1.0	20.0±1.0
NTNV	Band7	5MHz	21425	25RB#0	20.00	19.05	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	20800	1RB#0	21.43	20.08	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	20800	1RB#24	21.25	20.11	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	20800	1RB#49	21.28	20.19	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	20800	25RB#0	20.14	19.19	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	20800	25RB#12	20.12	19.22	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	20800	25RB#25	20.22	19.29	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	20800	50RB#0	20.20	19.21	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	21100	1RB#0	21.10	20.24	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	21100	1RB#24	21.04	20.24	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	21100	1RB#49	21.02	20.19	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	21100	25RB#0	20.12	19.12	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	21100	25RB#12	20.13	19.10	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	21100	25RB#25	19.98	18.99	20.0±1.0	19.0±1.0
NTNV	Band7	10MHz	21100	50RB#0	20.10	19.11	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	21400	1RB#0	20.92	20.16	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	21400	1RB#24	21.00	20.22	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	21400	1RB#49	21.05	20.26	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	21400	25RB#0	19.97	19.06	20.0±1.0	20.0±1.0
NTNV	Band7	10MHz	21400	25RB#12	19.94	18.99	20.0±1.0	19.0±1.0
NTNV	Band7	10MHz	21400	25RB#25	20.08	19.07	21.0±1.0	20.0±1.0
NTNV	Band7	10MHz	21400	50RB#0	20.01	19.09	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	20825	1RB#0	21.62	20.54	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	20825	1RB#38	21.67	20.21	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	20825	1RB#74	21.24	20.13	21.0±1.0	20.0±1.0

NTNV	Band7	15MHz	20825	38RB#0	20.06	20.03	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	20825	38RB#18	20.23	20.23	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	20825	38RB#37	20.06	20.11	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	20825	75RB#0	20.23	19.19	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	21100	1RB#0	21.18	20.31	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	21100	1RB#38	21.21	20.37	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	21100	1RB#74	21.05	20.24	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	21100	38RB#0	20.33	20.31	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	21100	38RB#18	20.39	20.38	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	21100	38RB#37	20.25	20.24	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	21100	75RB#0	20.27	19.13	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	21375	1RB#0	20.84	20.23	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	21375	1RB#38	21.00	20.38	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	21375	1RB#74	21.01	20.36	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	21375	38RB#0	20.21	20.20	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	21375	38RB#18	20.38	20.34	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	21375	38RB#37	20.34	20.34	21.0±1.0	20.0±1.0
NTNV	Band7	15MHz	21375	75RB#0	19.99	18.96	20.0±1.0	19.0±1.0
NTNV	Band7	20MHz	20850	1RB#0	20.94	20.00	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	20850	1RB#49	21.16	20.27	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	20850	1RB#99	21.04	20.13	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	20850	50RB#0	20.07	19.16	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	20850	50RB#25	20.09	19.16	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	20850	50RB#50	20.19	19.24	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	20850	100RB#0	20.15	19.18	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	21100	1RB#0	21.15	20.20	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	21100	1RB#49	**21.34**	20.35	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	21100	1RB#99	21.13	20.14	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	21100	50RB#0	20.27	19.26	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	21100	50RB#25	20.24	19.21	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	21100	50RB#50	20.07	19.06	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	21100	100RB#0	20.15	19.16	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	21350	1RB#0	20.88	20.10	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	21350	1RB#49	21.12	20.30	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	21350	1RB#99	21.05	20.19	21.0±1.0	20.0±1.0
NTNV	Band7	20MHz	21350	50RB#0	19.90	18.92	21.0±1.0	19.0±1.0
NTNV	Band7	20MHz	21350	50RB#25	19.92	18.90	21.0±1.0	19.0±1.0
NTNV	Band7	20MHz	21350	50RB#50	20.06	19.07	21.0±1.0	19.0±1.0
NTNV	Band7	20MHz	21350	100RB#0	20.00	18.96	21.0±1.0	19.0±1.0

Condition	Band	Channel Bandwidth	Channel	RB Configure	Result (dBm)		Tune-Up	
					QPSK	16QAM	QPSK	16QAM
NTNV	Band17	5MHz	23755	1RB#0	23.28	21.97	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23755	1RB#12	22.90	21.92	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23755	1RB#24	22.83	21.81	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23755	12RB#0	21.67	20.73	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23755	12RB#6	21.66	20.80	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23755	12RB#13	21.71	20.73	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23755	25RB#0	21.75	20.90	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23790	1RB#0	22.74	21.75	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23790	1RB#12	22.84	21.91	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23790	1RB#24	22.77	21.74	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23790	12RB#0	21.62	20.58	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23790	12RB#6	21.53	20.57	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23790	12RB#13	21.73	20.70	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23790	25RB#0	21.67	20.76	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23825	1RB#0	22.74	21.92	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23825	1RB#12	22.90	22.06	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23825	1RB#24	22.80	22.00	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23825	12RB#0	21.67	20.76	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23825	12RB#6	21.70	20.72	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23825	12RB#13	21.63	20.62	22.5±1.0	21.5±1.0
NTNV	Band17	5MHz	23825	25RB#0	21.67	20.67	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23780	1RB#0	23.30	22.19	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23780	1RB#24	**23.40**	22.28	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23780	1RB#49	23.36	22.25	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23780	25RB#0	22.20	21.22	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23780	25RB#12	22.16	21.22	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23780	25RB#25	22.32	21.20	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23780	50RB#0	22.22	21.05	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23790	1RB#0	23.08	21.91	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23790	1RB#24	22.84	22.03	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23790	1RB#49	22.87	22.04	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23790	25RB#0	21.64	20.62	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23790	25RB#12	21.64	20.64	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23790	25RB#25	21.76	20.77	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23790	50RB#0	21.75	20.70	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23800	1RB#0	22.78	21.90	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23800	1RB#24	22.80	21.97	22.5±1.0	21.5±1.0

NTNV	Band17	10MHz	23800	1RB#49	22.82	22.03	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23800	25RB#0	21.58	20.65	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23800	25RB#12	21.59	20.63	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23800	25RB#25	21.61	20.67	22.5±1.0	21.5±1.0
NTNV	Band17	10MHz	23800	50RB#0	21.64	20.71	22.5±1.0	21.5±1.0

Condition	Band	Channel Bandwidth	Channel	RB Configure	Result (dBm)		Tune-Up	
					QPSK	16QAM	QPSK	16QAM
NTNV	Band38	5MHz	37775	1RB#0	21.48	20.77	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	37775	1RB#12	21.54	20.93	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	37775	1RB#24	21.22	20.83	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	37775	12RB#0	20.53	19.58	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	37775	12RB#6	20.37	19.61	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	37775	12RB#13	20.58	19.64	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	37775	25RB#0	20.56	19.58	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	38000	1RB#0	21.55	20.86	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	38000	1RB#12	21.59	20.98	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	38000	1RB#24	21.51	20.86	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	38000	12RB#0	20.52	19.46	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	38000	12RB#6	20.53	19.49	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	38000	12RB#13	20.53	19.52	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	38000	25RB#0	20.50	19.58	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	38225	1RB#0	21.07	20.39	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	38225	1RB#12	21.15	20.48	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	38225	1RB#24	21.03	20.35	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	38225	12RB#0	20.13	19.25	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	38225	12RB#6	20.14	19.24	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	38225	12RB#13	20.13	19.19	21.0±1.0	20.0±1.0
NTNV	Band38	5MHz	38225	25RB#0	20.13	19.20	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	37800	1RB#0	21.48	20.91	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	37800	1RB#24	21.60	20.95	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	37800	1RB#49	21.67	21.04	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	37800	25RB#0	20.51	19.61	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	37800	25RB#12	20.53	19.64	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	37800	25RB#25	20.63	19.72	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	37800	50RB#0	20.64	19.61	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	38000	1RB#0	21.60	20.51	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	38000	1RB#24	21.68	20.55	21.0±1.0	20.0±1.0

NTNV	Band38	10MHz	38000	1RB#49	21.59	20.49	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	38000	25RB#0	20.60	19.63	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	38000	25RB#12	20.58	19.62	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	38000	25RB#25	20.54	19.59	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	38000	50RB#0	20.59	19.64	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	38200	1RB#0	21.28	20.29	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	38200	1RB#24	21.27	20.29	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	38200	1RB#49	21.21	20.27	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	38200	25RB#0	20.26	19.36	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	38200	25RB#12	20.24	19.33	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	38200	25RB#25	20.19	19.29	21.0±1.0	20.0±1.0
NTNV	Band38	10MHz	38200	50RB#0	20.24	19.23	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	37825	1RB#0	21.52	20.93	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	37825	1RB#38	21.76	21.09	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	37825	1RB#74	21.68	20.98	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	37825	38RB#0	20.69	20.71	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	37825	38RB#18	20.68	20.67	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	37825	38RB#37	20.70	20.70	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	37825	75RB#0	20.70	19.70	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	38000	1RB#0	21.55	20.51	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	38000	1RB#38	21.69	20.65	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	38000	1RB#74	21.48	20.42	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	38000	38RB#0	20.54	20.56	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	38000	38RB#18	20.57	20.57	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	38000	38RB#37	20.57	20.57	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	38000	75RB#0	20.58	19.54	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	38175	1RB#0	21.25	20.32	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	38175	1RB#38	21.27	20.34	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	38175	1RB#74	21.14	20.21	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	38175	38RB#0	20.16	20.18	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	38175	38RB#18	20.18	20.20	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	38175	38RB#37	20.18	20.20	21.0±1.0	20.0±1.0
NTNV	Band38	15MHz	38175	75RB#0	20.17	19.19	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	37850	1RB#0	21.29	20.53	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	37850	1RB#49	21.61	20.83	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	37850	1RB#99	21.44	20.63	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	37850	50RB#0	20.42	19.44	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	37850	50RB#25	20.43	19.46	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	37850	50RB#50	20.53	19.54	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	37850	100RB#0	20.43	19.46	21.0±1.0	20.0±1.0

NTNV	Band38	20MHz	38000	1RB#0	21.43	20.06	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	38000	1RB#49	**21.64**	20.23	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	38000	1RB#99	21.33	19.95	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	38000	50RB#0	20.50	19.50	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	38000	50RB#25	20.50	19.54	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	38000	50RB#50	20.47	19.52	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	38000	100RB#0	20.47	19.49	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	38150	1RB#0	21.31	20.23	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	38150	1RB#49	21.30	20.25	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	38150	1RB#99	21.09	20.03	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	38150	50RB#0	20.23	19.25	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	38150	50RB#25	20.26	19.22	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	38150	50RB#50	20.04	19.07	21.0±1.0	20.0±1.0
NTNV	Band38	20MHz	38150	100RB#0	20.15	19.22	21.0±1.0	20.0±1.0

Condition	Band	Channel Bandwidth	Channel	RB Configure	Result (dBm)		Tune-Up	
					QPSK	16QAM	QPSK	16QAM
NTNV	Band41	5MHz	40065	1RB#0	21.51	20.93	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	40065	1RB#12	21.65	21.03	21.0±1.0	20.5±1.0
NTNV	Band41	5MHz	40065	1RB#24	21.53	20.90	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	40065	12RB#0	20.54	19.55	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	40065	12RB#6	20.56	19.56	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	40065	12RB#13	20.54	19.56	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	40065	25RB#0	20.53	19.60	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	40590	1RB#0	21.40	20.78	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	40590	1RB#12	21.52	20.90	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	40590	1RB#24	21.40	20.76	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	40590	12RB#0	20.40	19.42	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	40590	12RB#6	20.45	19.43	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	40590	12RB#13	20.44	19.43	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	40590	25RB#0	20.47	19.47	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	41215	1RB#0	21.54	20.81	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	41215	1RB#12	21.77	20.98	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	41215	1RB#24	21.69	20.88	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	41215	12RB#0	20.64	19.71	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	41215	12RB#6	20.62	19.67	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	41215	12RB#13	20.66	19.72	21.0±1.0	20.0±1.0
NTNV	Band41	5MHz	41215	25RB#0	20.69	19.72	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	40090	1RB#0	21.56	20.95	21.0±1.0	20.0±1.0

NTNV	Band41	10MHz	40090	1RB#24	21.61	20.98	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	40090	1RB#49	21.48	20.89	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	40090	25RB#0	20.56	19.64	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	40090	25RB#12	20.56	19.66	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	40090	25RB#25	20.56	19.69	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	40090	50RB#0	20.58	19.57	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	40590	1RB#0	21.42	20.83	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	40590	1RB#24	21.42	20.81	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	40590	1RB#49	21.44	20.80	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	40590	25RB#0	20.42	19.57	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	40590	25RB#12	20.49	19.54	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	40590	25RB#25	20.46	19.57	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	40590	50RB#0	20.47	19.49	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	41190	1RB#0	21.53	20.36	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	41190	1RB#24	21.72	20.59	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	41190	1RB#49	21.87	20.68	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	41190	25RB#0	20.56	19.60	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	41190	25RB#12	20.56	19.61	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	41190	25RB#25	20.70	19.75	21.0±1.0	20.0±1.0
NTNV	Band41	10MHz	41190	50RB#0	20.66	19.68	21.0±1.0	20.0±1.0
NTNV	Band41	15MHz	40115	1RB#0	20.79	20.18	21.0±1.0	20.0±1.0
NTNV	Band41	15MHz	40115	1RB#38	20.90	20.28	21.0±1.0	20.0±1.0
NTNV	Band41	15MHz	40115	1RB#74	20.72	20.10	21.0±1.0	20.0±1.0
NTNV	Band41	15MHz	40115	38RB#0	19.83	19.84	20.0±1.0	20.0±1.0
NTNV	Band41	15MHz	40115	38RB#18	19.80	19.81	20.0±1.0	20.0±1.0
NTNV	Band41	15MHz	40115	38RB#37	19.82	19.82	20.0±1.0	20.0±1.0
NTNV	Band41	15MHz	40115	75RB#0	19.82	18.84	20.0±1.0	19.0±1.0
NTNV	Band41	15MHz	40590	1RB#0	20.71	20.11	21.0±1.0	20.0±1.0
NTNV	Band41	15MHz	40590	1RB#38	20.84	20.23	21.0±1.0	20.0±1.0
NTNV	Band41	15MHz	40590	1RB#74	20.68	20.06	21.0±1.0	20.0±1.0
NTNV	Band41	15MHz	40590	38RB#0	19.77	19.78	20.0±1.0	20.0±1.0
NTNV	Band41	15MHz	40590	38RB#18	19.75	19.74	20.0±1.0	20.0±1.0
NTNV	Band41	15MHz	40590	38RB#37	19.74	19.76	20.0±1.0	20.0±1.0
NTNV	Band41	15MHz	40590	75RB#0	19.74	18.76	20.0±1.0	19.0±1.0
NTNV	Band41	15MHz	41165	1RB#0	20.73	19.74	21.0±1.0	20.0±1.0
NTNV	Band41	15MHz	41165	1RB#38	21.16	20.13	21.0±1.0	20.0±1.0
NTNV	Band41	15MHz	41165	1RB#74	21.29	20.16	21.0±1.0	20.0±1.0
NTNV	Band41	15MHz	41165	38RB#0	19.98	20.00	20.0±1.0	20.0±1.0
NTNV	Band41	15MHz	41165	38RB#18	19.96	19.98	20.0±1.0	20.0±1.0
NTNV	Band41	15MHz	41165	38RB#37	19.97	19.96	20.0±1.0	20.0±1.0

NTNV	Band41	15MHz	41165	75RB#0	20.00	18.98	21.0±1.0	19.0±1.0
NTNV	Band41	20MHz	40140	1RB#0	20.67	19.92	21.0±1.0	20.0±1.0
NTNV	Band41	20MHz	40140	1RB#49	20.78	20.06	21.0±1.0	20.0±1.0
NTNV	Band41	20MHz	40140	1RB#99	20.60	19.89	21.0±1.0	20.0±1.0
NTNV	Band41	20MHz	40140	50RB#0	19.76	18.86	20.0±1.0	19.0±1.0
NTNV	Band41	20MHz	40140	50RB#25	19.78	18.83	20.0±1.0	19.0±1.0
NTNV	Band41	20MHz	40140	50RB#50	19.77	18.81	20.0±1.0	19.0±1.0
NTNV	Band41	20MHz	40140	100RB#0	19.74	18.79	20.0±1.0	19.0±1.0
NTNV	Band41	20MHz	40590	1RB#0	20.68	19.33	21.0±1.0	20.0±1.0
NTNV	Band41	20MHz	40590	1RB#49	20.85	19.48	21.0±1.0	20.0±1.0
NTNV	Band41	20MHz	40590	1RB#99	20.57	19.29	21.0±1.0	20.0±1.0
NTNV	Band41	20MHz	40590	50RB#0	19.75	18.82	20.0±1.0	19.0±1.0
NTNV	Band41	20MHz	40590	50RB#25	19.74	18.80	20.0±1.0	19.0±1.0
NTNV	Band41	20MHz	40590	50RB#50	19.70	18.73	20.0±1.0	19.0±1.0
NTNV	Band41	20MHz	40590	100RB#0	19.68	18.74	20.0±1.0	19.0±1.0
NTNV	Band41	20MHz	41140	1RB#0	20.36	19.33	21.0±1.0	20.0±1.0
NTNV	Band41	20MHz	41140	1RB#49	20.86	19.80	21.0±1.0	20.0±1.0
NTNV	Band41	20MHz	41140	1RB#99	**21.11**	19.91	21.0±1.0	20.0±1.0
NTNV	Band41	20MHz	41140	50RB#0	19.62	18.60	20.0±1.0	19.0±1.0
NTNV	Band41	20MHz	41140	50RB#25	19.60	18.63	20.0±1.0	19.0±1.0
NTNV	Band41	20MHz	41140	50RB#50	19.87	18.90	20.0±1.0	19.0±1.0
NTNV	Band41	20MHz	41140	100RB#0	19.70	18.74	20.0±1.0	19.0±1.0

<WLAN 2.4GHz Conducted Power>

Mode	Channel	Frequency (MHz)	Conducted Average Output Power(dBm)	Tune-up power(dBm)
802.11b	1	2412	13.53	14.00
	6	2437	13.90	14.00
	11	2462	13.38	14.00
802.11g	1	2412	14.61	15.00
	6	2437	**14.95**	15.00
	11	2462	14.45	15.00
802.11n(HT20)	1	2412	14.45	15.50
	6	2437	14.80	15.50
	11	2462	14.27	15.50
802.11n(HT40)	3	2422	14.03	14.50
	6	2437	14.05	14.50
	9	2452	13.76	14.50

Note:

1. Per KDB 447498 D01, the 1-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:

[(*max. power of channel, including tune-up tolerance, mW*) / (*min. test separation distance, mm*)] · [√f(GHz)] ≤ 3.0 for 1-g SAR, where

f(GHz) is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation

The result is rounded to one decimal place for comparison

2. Base on the result of note1, RF exposure evaluation of 2.4G WIFI mode is required.
3. Per KDB 248227 D01, choose the highest output power channel to test SAR and determine further SAR exclusion.
4. Per KDB 248227 D01, In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. SAR is not required for the following 2.4 GHz OFDM conditions:

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

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

<WLAN 5GHz Conducted Power>

Band 1:

Mode	Channel Frequency (MHz)	Average Power output (dBm)	**Tune-up power(dBm)**
802.11a	5180	14.32	14.50
	5200	14.27	14.50
	5240	14.06	14.50
802.11n (HT20)	5180	14.68	15.00
	5200	14.46	15.00
	5240	14.11	15.00
802.11n (HT40)	5190	14.65	15.00
	5230	14.31	15.00
802.11ac (VHT20)	5180	14.67	15.00
	5200	14.44	15.00
	5240	14.26	15.00
802.11ac (VHT40)	5190	14.60	15.00
	5230	14.40	15.00
802.11ac (VHT80)	5210	**17.70**	18.00

Band 4:

Mode	Channel Frequency (MHz)	Average Power output (dBm)	**Tune-up power(dBm)**
802.11a	5745	14.50	15.00
	5785	14.49	15.00
	5825	14.36	15.00
802.11n (HT20)	5745	14.48	14.50
	5785	14.44	14.50
	5825	14.32	14.50
802.11n (HT40)	5755	14.67	15.00
	5795	14.66	15.00
802.11ac (VHT20)	5745	14.46	15.00
	5785	14.52	15.00
	5825	14.36	15.00
802.11ac (VHT40)	5755	14.76	15.00
	5795	14.67	15.00
802.11ac (VHT80)	5775	**17.90**	18.00

Note:

1. Per KDB 447498 D01, the 1-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR, where

f(GHz) is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation

The result is rounded to one decimal place for comparison

2. Base on the result of note1, RF exposure evaluation of 2.4G/5.2G/5.8G WIFI mode is required.

3. Per KDB 248227 D01, choose the highest output power channel to test SAR and determine further SAR exclusion.

4. Per KDB 248227 D01, In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. SAR is not required for the following 2.4 GHz OFDM conditions:

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

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

<Bluetooth Conducted Power>

Mode	Channel	Frequency (MHz)	Conducted Peak Power (dBm)	Conducted Average Power (dBm)	Tune-up power(dBm)
BT BDR (GFSK)	00	2402	1.56	-0.95	0.00
	39	2441	2.10	-0.42	0.00
	78	2480	1.64	-0.85	0.00
BT EDR (Π/4DQPSK)	00	2402	0.91	-1.57	0.00
	39	2441	1.50	-1.03	0.00
	78	2480	1.00	-1.55	0.00
BT EDR (8DPSK)	00	2402	0.84	-1.66	0.00
	39	2441	1.37	-1.12	0.00
	78	2480	0.90	-1.61	0.00
BT BLE_1M (GFSK)	00	2402	0.96	-0.56	0.00
	19	2440	1.17	-0.32	0.00
	39	2480	1.25	-0.26	0.00
BT BLE_2M (GFSK)	00	2402	1.00	-0.50	0.00
	19	2440	1.21	**-0.28**	0.00
	39	2480	1.34	-0.15	0.00

NFC: Field strength=46.01dBuv/m=46.01-95.2dBm=-46.19dBm

Note:

Per KDB 447498 D01v05r02, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR

f(GHz) is the RF channel transmit frequency in GHz

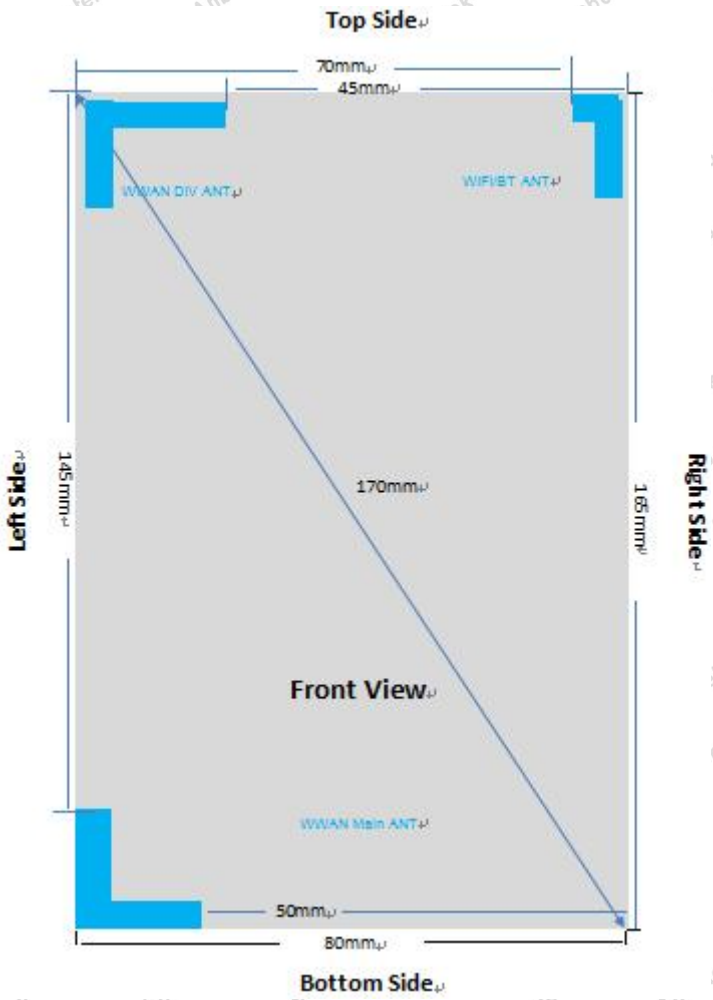
Power and distance are rounded to the nearest mW and mm before calculation

The result is rounded to one decimal place for comparison

Bluetooth Max. Power (dBm)	Separation Distance (mm)	Frequency (GHz)	exclusion thresholds
0.00	5	2.440	0.312

Per KDB 447498 D01, when the minimum test separation distance is <10 mm, a distance of 10 mm is applied to determine SAR test exclusion. The test exclusion threshold is 0.312 which is<= 3, SAR testing is not required.

11. Antenna Location



Distance of The Antenna to the EUT surface and edge						
Antennas	**Front**	**Back**	**Top Side**	**Bottom Side**	**Left Side**	**Right Side**
WIFI/BT ANT	<25mm	<25mm	<25mm	>25mm	>25mm	<25mm
WWAN Main ANT	<25mm	<25mm	>25mm	<25mm	<25mm	>25mm

Positions for SAR tests; Body mode						
Antennas	**Front**	**Back**	**Top Side**	**Bottom Side**	**Left Side**	**Right Side**
WIFI/BT ANT	Yes	Yes	Yes	No	No	Yes
WWAN Main ANT	Yes	Yes	No	Yes	Yes	No

General Note: According with FCC KDB 447498 D01, appendix A, <SAR test exclusion thresholds for 100MHz~6GHz and≤50mm＞table, this device SAR test configurations considerations are shown in the table above.

Per KDB 447498 D01, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.

12. SAR Test Results Summary

General Note:

1.Per KDB 447498 D01v05r01, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.

Scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.

Reported SAR(W/kg)= Measured SAR(W/kg) Scaling Factor*

2.Per KDB 447498 D01v05r01, for each exposure position, if the highest output channel reported SAR≤0.8W/kg, other channels SAR testing are not necessary

3.Per KDB 941225 D05, 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.

4.Per KDB 941225 D05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.

5.Per KDB 941225 D05, 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 are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

6.Per KDB 941225 D05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05, 16QAM SAR testing is not required.

7.Per KDB 941225 D05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05, smaller bandwidth SAR testing is not required.

8.Per KDB865664 D01, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/Kg; if the deviation among the repeated measurement is ≤20%,and the measured SAR <1.45W/Kg, only one repeated measurement is required.

9.When the user enables the personal Wireless router functions for the handsets, actual operationsinclude simultaneous transmission of both the Wi-Fi transmitting frequency and thus cannot beevaluated for SAR under actual use conditions. The “Portable Hotspot” feature on the handset was NOT activated, to ensure the SAR measurements were evaluated for a single transmissionfrequency RF signal.

12.1. Head SAR Results

<LTE>

Plot No.	Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	LTE Band 2	20MHz/1RB	Right Cheek	18900	1880	21.24	21.50	1.062	0.17	0.521	0.553
	LTE Band 2	20MHz/100RB	Right Cheek	18900	1880	20.07	20.50	1.104	-0.08	0.412	0.455
	LTE Band 2	20MHz/1RB	Right Tilt	18900	1880	21.24	21.50	1.062	-0.11	0.213	0.226
	LTE Band 2	20MHz/100RB	Right Tilt	18900	1880	20.07	20.50	1.104	-0.04	0.198	0.219
#1	LTE Band 2	20MHz/1RB	Left Cheek	18900	1880	21.24	21.50	1.062	0.09	0.539	**0.572**
	LTE Band 2	20MHz/100RB	Left Cheek	18900	1880	20.07	20.50	1.104	-0.14	0.431	0.476
	LTE Band 2	20MHz/1RB	Left Tilt	18900	1880	21.24	21.50	1.062	-0.12	0.222	0.236
	LTE Band 2	20MHz/100RB	Left Tilt	18900	1880	20.07	20.50	1.104	0.13	0.201	0.222
	LTE Band 4	20MHz/1RB	Right Cheek	20175	1732.5	22.42	22.50	1.019	-0.12	0.617	0.628
	LTE Band 4	20MHz/100RB	Right Cheek	20175	1732.5	21.32	21.50	1.042	-0.07	0.528	0.550
	LTE Band 4	20MHz/1RB	Right Tilt	20175	1732.5	22.42	22.50	1.019	-0.13	0.284	0.289
	LTE Band 4	20MHz/100RB	Right Tilt	20175	1732.5	21.32	21.50	1.042	-0.03	0.246	0.256
#2	LTE Band 4	20MHz/1RB	Left Cheek	20175	1732.5	22.42	22.50	1.019	0.08	0.637	**0.649**
	LTE Band 4	20MHz/100RB	Left Cheek	20175	1732.5	21.32	21.50	1.042	0.18	0.533	0.556
	LTE Band 4	20MHz/1RB	Left Tilt	20175	1732.5	22.42	22.50	1.019	0.12	0.297	0.303
	LTE Band 4	20MHz/100RB	Left Tilt	20175	1732.5	21.32	21.50	1.042	0.17	0.251	0.262
	LTE Band 5	10MHz/1RB	Right Cheek	20450	829	24.05	24.50	1.109	0.11	0.817	0.906
	LTE Band 5	10MHz/50RB	Right Cheek	20450	829	22.88	23.00	1.028	0.09	0.625	0.643
	LTE Band 5	10MHz/1RB	Right Tilt	20450	829	24.05	24.50	1.109	-0.09	0.387	0.429
	LTE Band 5	10MHz/50RB	Right Tilt	20450	829	22.88	23.00	1.028	0.14	0.296	0.304
#3	LTE Band 5	10MHz/1RB	Left Cheek	20450	829	24.05	24.50	1.109	-0.08	0.715	**0.793**
	LTE Band 5	10MHz/50RB	Left Cheek	20450	829	22.88	23.00	1.028	-0.04	0.594	0.611
	LTE Band 5	10MHz/1RB	Left Tilt	20450	829	24.05	24.50	1.109	0.02	0.404	0.448
	LTE Band 5	10MHz/50RB	Left Tilt	20450	829	22.88	23.00	1.028	0.06	0.325	0.334

	LTE Band 7	20MHz/1RB	Right Cheek	21100	2535	21.34	21.50	1.038	0.10	0.525	0.545
	LTE Band 7	20MHz/100RB	Right Cheek	21100	2535	20.15	20.50	1.084	0.10	0.414	0.449
	LTE Band 7	20MHz/1RB	Right Tilt	21100	2535	21.34	21.50	1.038	-0.10	0.217	0.225
	LTE Band 7	20MHz/100RB	Right Tilt	21100	2535	20.15	20.50	1.084	0.15	0.203	0.220
#4	LTE Band 7	20MHz/1RB	Left Cheek	21100	2535	21.34	21.50	1.038	-0.09	0.546	**0.566**
	LTE Band 7	20MHz/100RB	Left Cheek	21100	2535	20.15	20.50	1.084	-0.03	0.443	0.480
	LTE Band 7	20MHz/1RB	Left Tilt	21100	2535	21.34	21.50	1.038	0.01	0.238	0.247
	LTE Band 7	20MHz/100RB	Left Tilt	21100	2535	20.15	20.50	1.084	0.07	0.211	0.229
	LTE Band 17	20MHz/1RB	Right Cheek	23780	709	23.40	23.50	1.023	0.04	0.723	0.740
	LTE Band 17	20MHz/50RB	Right Cheek	23780	709	22.22	22.50	1.067	0.16	0.605	0.645
	LTE Band 17	20MHz/1RB	Right Tilt	23780	709	23.40	23.50	1.023	0.08	0.315	0.322
	LTE Band 17	20MHz/50RB	Right Tilt	23780	709	22.22	22.50	1.067	0.13	0.306	0.326
#5	LTE Band 17	20MHz/1RB	Left Cheek	23780	709	23.40	23.50	1.023	0.12	0.733	**0.750**
	LTE Band 17	20MHz/50RB	Left Cheek	23780	709	22.22	22.50	1.067	-0.05	0.634	0.676
	LTE Band 17	20MHz/1RB	Left Tilt	23780	709	23.40	23.50	1.023	-0.06	0.356	0.364
	LTE Band 17	20MHz/50RB	Left Tilt	23780	709	22.22	22.50	1.067	-0.12	0.335	0.357
	LTE Band 38	20MHz/1RB	Right Cheek	38000	2595	21.64	22.00	1.086	0.10	0.548	0.595
	LTE Band 38	20MHz/100RB	Right Cheek	38000	2595	20.47	20.50	1.007	-0.14	0.422	0.425
	LTE Band 38	20MHz/1RB	Right Tilt	38000	2595	21.64	22.00	1.086	-0.13	0.239	0.260
	LTE Band 38	20MHz/100RB	Right Tilt	38000	2595	20.47	20.50	1.007	-0.12	0.211	0.212
#6	LTE Band 38	20MHz/1RB	Left Cheek	38000	2595	21.64	22.00	1.086	0.11	0.566	**0.615**
	LTE Band 38	20MHz/100RB	Left Cheek	38000	2595	20.47	20.50	1.007	0.06	0.454	0.457
	LTE Band 38	20MHz/1RB	Left Tilt	38000	2595	21.64	22.00	1.086	-0.09	0.256	0.278
	LTE Band 38	20MHz/100RB	Left Tilt	38000	2595	20.47	20.50	1.007	-0.06	0.223	0.225
	LTE Band 41	20MHz/1RB	Right Cheek	41140	2645	21.11	21.50	1.094	-0.13	0.514	0.562
	LTE Band 41	20MHz/100RB	Right Cheek	41140	2645	19.70	20.00	1.072	-0.15	0.407	0.436
	LTE Band 41	20MHz/1RB	Right Tilt	41140	2645	21.11	21.50	1.094	-0.09	0.202	0.221
	LTE Band 41	20MHz/100RB	Right Tilt	41140	2645	19.70	20.00	1.072	0.09	0.185	0.198

#7	LTE Band 41	20MHz/1RB	Left Cheek	41140	2645	21.11	21.50	1.094	-0.06	0.523	**0.572**
	LTE Band 41	20MHz/100RB	Left Cheek	41140	2645	19.70	20.00	1.072	-0.12	0.426	0.456
	LTE Band 41	20MHz/1RB	Left Tilt	41140	2645	21.11	21.50	1.094	-0.15	0.219	0.240
	LTE Band 41	20MHz/100RB	Left Tilt	41140	2645	19.70	20.00	1.072	-0.05	0.189	0.203

<WIFI>

Plot No.	Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	WIFI2.4GHz	802.11g	Right Cheek	6	2437	14.95	15.00	1.012	-0.12	0.266	0.269
	WIFI2.4GHz	802.11g	Right Tilt	6	2437	14.95	15.00	1.012	-0.14	0.222	0.225
#8	WIFI2.4GHz	802.11g	Left Cheek	6	2437	14.95	15.00	1.012	-0.08	0.275	**0.278**
	WIFI2.4GHz	802.11g	Left Tilt	6	2437	14.95	15.00	1.012	-0.07	0.234	0.237
	WIFI5.2GHz	802.11ac (VHT80)	Right Cheek	42	5210	17.70	18.00	1.072	-0.16	0.338	0.362
	WIFI5.2GHz	802.11ac (VHT80)	Right Tilt	42	5210	17.70	18.00	1.072	0.06	0.273	0.293
#9	WIFI5.2GHz	802.11ac (VHT80)	Left Cheek	42	5210	17.70	18.00	1.072	0.03	0.346	**0.371**
	WIFI5.2GHz	802.11ac (VHT80)	Left Tilt	42	5210	17.70	18.00	1.072	-0.13	0.285	0.305
	WIFI5.8GHz	802.11ac (VHT80)	Right Cheek	155	5775	17.90	18.00	1.023	0.12	0.347	0.355
	WIFI5.8GHz	802.11ac (VHT80)	Right Tilt	155	5775	17.90	18.00	1.023	0.07	0.288	0.295
#10	WIFI5.8GHz	802.11ac (VHT80)	Left Cheek	155	5775	17.90	18.00	1.023	-0.11	0.365	**0.374**
	WIFI5.8GHz	802.11ac (VHT80)	Left Tilt	155	5775	17.90	18.00	1.023	-0.13	0.294	0.301

Note:

1. Per KDB 865664 D01V01,for each frequency band ,repeated SAR measurement is required only when the measured SAR is≥0.8W/Kg.
2. Per KDB 865664 D01V01,if the ratio of largest to smallest SAR for the original and first repeated measurement is≤1.2and the measured SAR＜1.45W/Kg, only one repeated measurement is required.
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 ≥ 1.45W/Kg
4. The ratio is the difference in percentage between original and repeated measured SAR.

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12.2. Body-worn SAR Results

<LTE>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
#11	LTE Band 2	20MHz/1RB	Back	10	18900	1880	21.24	21.50	1.062	0.11	0.321	**0.341**
	LTE Band 2	20MHz/100RB	Back	10	18900	1880	20.07	20.50	1.104	-0.09	0.213	0.235
	LTE Band 2	20MHz/1RB	Front	10	18900	1880	21.24	21.50	1.062	0.05	0.277	0.294
	LTE Band 2	20MHz/100RB	Front	10	18900	1880	20.07	20.50	1.104	0.14	0.209	0.231
	LTE Band 2	20MHz/1RB	Left Side	10	18900	1880	21.24	21.50	1.062	-0.08	0.263	0.279
	LTE Band 2	20MHz/100RB	Left Side	10	18900	1880	20.07	20.50	1.104	-0.03	0.205	0.226
	LTE Band 2	20MHz/1RB	Right Side	10	18900	1880	21.24	21.50	1.062	NA	NA	NA
	LTE Band 2	20MHz/100RB	Right Side	10	18900	1880	20.07	20.50	1.104	NA	NA	NA
	LTE Band 2	20MHz/1RB	Top Side	10	18900	1880	21.24	21.50	1.062	NA	NA	NA
	LTE Band 2	20MHz/100RB	Top Side	10	18900	1880	20.07	20.50	1.104	NA	NA	NA
	LTE Band 2	20MHz/1RB	Bottom Side	10	18900	1880	21.24	21.50	1.062	-0.14	0.308	0.327
	LTE Band 2	20MHz/100RB	Bottom Side	10	18900	1880	20.07	20.50	1.104	0.07	0.212	0.234
#12	LTE Band 4	20MHz/1RB	Back	10	20175	1732.5	22.42	22.50	1.019	0.06	0.436	**0.444**
	LTE Band 4	20MHz/100RB	Back	10	20175	1732.5	21.32	21.50	1.042	-0.13	0.325	0.339
	LTE Band 4	20MHz/1RB	Front	10	20175	1732.5	22.42	22.50	1.019	0.12	0.387	0.394
	LTE Band 4	20MHz/100RB	Front	10	20175	1732.5	21.32	21.50	1.042	0.08	0.314	0.327
	LTE Band 4	20MHz/1RB	Left Side	10	20175	1732.5	22.42	22.50	1.019	-0.07	0.371	0.378
	LTE Band 4	20MHz/100R	Left	10	20175	1732.5	21.32	21.50	1.042	-0.09	0.312	0.325

		B	Side									
	LTE Band 4	20MHz/1RB	Right Side	10	20175	1732.5	22.42	22.50	1.019	0.04	NA	NA
	LTE Band 4	20MHz/100RB	Right Side	10	20175	1732.5	21.32	21.50	1.042	0.17	NA	NA
	LTE Band 4	20MHz/1RB	Top Side	10	20175	1732.5	22.42	22.50	1.019	0.08	NA	NA
	LTE Band 4	20MHz/100RB	Top Side	10	20175	1732.5	21.32	21.50	1.042	-0.11	NA	NA
	LTE Band 4	20MHz/1RB	Bottom Side	10	20175	1732.5	22.42	22.50	1.019	-0.08	0.415	0.423
	LTE Band 4	20MHz/100RB	Bottom Side	10	20175	1732.5	21.32	21.50	1.042	-0.03	0.328	0.342
#13	LTE Band 5	10MHz/1RB	Back	10	20450	829	24.05	24.50	1.109	0.18	0.629	**0.698**
	LTE Band 5	10MHz/50RB	Back	10	20450	829	22.88	23.00	1.028	-0.14	0.446	0.458
	LTE Band 5	10MHz/1RB	Front	10	20450	829	24.05	24.50	1.109	0.13	0.565	0.627
	LTE Band 5	10MHz/50RB	Front	10	20450	829	22.88	23.00	1.028	0.05	0.415	0.427
	LTE Band 5	10MHz/1RB	Left Side	10	20450	829	24.05	24.50	1.109	-0.07	0.551	0.611
	LTE Band 5	10MHz/50RB	Left Side	10	20450	829	22.88	23.00	1.028	0.05	0.409	0.420
	LTE Band 5	10MHz/1RB	Right Side	10	20450	829	24.05	24.50	1.109	NA	NA	NA
	LTE Band 5	10MHz/50RB	Right Side	10	20450	829	22.88	23.00	1.028	NA	NA	NA
	LTE Band 5	10MHz/1RB	Top Side	10	20450	829	24.05	24.50	1.109	NA	NA	NA
	LTE Band 5	10MHz/50RB	Top Side	10	20450	829	22.88	23.00	1.028	NA	NA	NA
	LTE Band 5	10MHz/1RB	Bottom Side	10	20450	829	24.05	24.50	1.109	0.15	0.554	0.444
	LTE Band 5	10MHz/50RB	Bottom Side	10	20450	829	22.88	23.00	1.028	0.07	0.411	0.324
#14	LTE Band 7	20MHz/1RB	Back	10	21100	2535	21.34	21.50	1.038	0.17	0.310	**0.322**
	LTE Band 7	20MHz/100RB	Back	10	21100	2535	20.15	20.50	1.084	-0.13	0.202	0.219
	LTE Band 7	20MHz/1RB	Front	10	21100	2535	21.34	21.50	1.038	0.12	0.259	0.269

	LTE Band 7	20MHz/100RB	Front	10	21100	2535	20.15	20.50	1.084	0.04	0.196	0.212
	LTE Band 7	20MHz/1RB	Left Side	10	21100	2535	21.34	21.50	1.038	-0.06	0.249	0.258
	LTE Band 7	20MHz/100RB	Left Side	10	21100	2535	20.15	20.50	1.084	0.04	0.192	0.208
	LTE Band 7	20MHz/1RB	Right Side	10	21100	2535	21.34	21.50	1.038	NA	NA	NA
	LTE Band 7	20MHz/100RB	Right Side	10	21100	2535	20.15	20.50	1.084	NA	NA	NA
	LTE Band 7	20MHz/1RB	Top Side	10	21100	2535	21.34	21.50	1.038	NA	NA	NA
	LTE Band 7	20MHz/100RB	Top Side	10	21100	2535	20.15	20.50	1.084	NA	NA	NA
	LTE Band 7	20MHz/1RB	Bottom Side	10	21100	2535	21.34	21.50	1.038	0.14	0.299	0.310
	LTE Band 7	20MHz/100RB	Bottom Side	10	21100	2535	20.15	20.50	1.084	0.07	0.205	0.222
#15	LTE Band 17	20MHz/1RB	Back	10	23780	709	23.40	23.50	1.023	0.05	0.563	**0.576**
	LTE Band 17	20MHz/50RB	Back	10	23780	709	22.22	22.50	1.067	0.12	0.388	0.414
	LTE Band 17	20MHz/1RB	Front	10	23780	709	23.40	23.50	1.023	0.15	0.502	0.514
	LTE Band 17	20MHz/50RB	Front	10	23780	709	22.22	22.50	1.067	0.05	0.355	0.379
	LTE Band 17	20MHz/1RB	Left Side	10	23780	709	23.40	23.50	1.023	0.10	0.498	0.510
	LTE Band 17	20MHz/50RB	Left Side	10	23780	709	22.22	22.50	1.067	0.09	0.346	0.369
	LTE Band 17	20MHz/1RB	Right Side	10	23780	709	23.40	23.50	1.023	NA	NA	NA
	LTE Band 17	20MHz/50RB	Right Side	10	23780	709	22.22	22.50	1.067	NA	NA	NA
	LTE Band 17	20MHz/1RB	Top Side	10	23780	709	23.40	23.50	1.023	NA	NA	NA
	LTE Band 17	20MHz/50RB	Top Side	10	23780	709	22.22	22.50	1.067	NA	NA	NA
	LTE Band 17	20MHz/1RB	Bottom Side	10	23780	709	23.40	23.50	1.023	0.12	0.495	0.507
	LTE Band 17	20MHz/50RB	Bottom Side	10	23780	709	22.22	22.50	1.067	-0.16	0.358	0.382

#16	LTE Band 38	20MHz/1RB	Back	10	38000	2595	21.64	22.00	1.086	0.17	0.347	**0.377**
	LTE Band 38	20MHz/100RB	Back	10	38000	2595	20.47	20.50	1.007	-0.15	0.225	0.227
	LTE Band 38	20MHz/1RB	Front	10	38000	2595	21.64	22.00	1.086	0.10	0.287	0.312
	LTE Band 38	20MHz/100RB	Front	10	38000	2595	20.47	20.50	1.007	0.06	0.211	0.212
	LTE Band 38	20MHz/1RB	Left Side	10	38000	2595	21.64	22.00	1.086	-0.08	0.274	0.298
	LTE Band 38	20MHz/100RB	Left Side	10	38000	2595	20.47	20.50	1.007	0.04	0.208	0.209
	LTE Band 38	20MHz/1RB	Right Side	10	38000	2595	21.64	22.00	1.086	NA	NA	NA
	LTE Band 38	20MHz/100RB	Right Side	10	38000	2595	20.47	20.50	1.007	NA	NA	NA
	LTE Band 38	20MHz/1RB	Top Side	10	38000	2595	21.64	22.00	1.086	NA	NA	NA
	LTE Band 38	20MHz/100RB	Top Side	10	38000	2595	20.47	20.50	1.007	NA	NA	NA
	LTE Band 38	20MHz/1RB	Bottom Side	10	38000	2595	21.64	22.00	1.086	0.15	0.332	0.361
	LTE Band 38	20MHz/100RB	Bottom Side	10	38000	2595	20.47	20.50	1.007	0.07	0.229	0.231
#17	LTE Band 41	20MHz/1RB	Back	10	41140	2645	21.11	21.50	1.094	0.16	0.296	**0.324**
	LTE Band 41	20MHz/100RB	Back	10	41140	2645	19.70	20.00	1.072	-0.12	0.155	0.166
	LTE Band 41	20MHz/1RB	Front	10	41140	2645	21.11	21.50	1.094	0.11	0.232	0.254
	LTE Band 41	20MHz/100RB	Front	10	41140	2645	19.70	20.00	1.072	0.05	0.141	0.151
	LTE Band 41	20MHz/1RB	Left Side	10	41140	2645	21.11	21.50	1.094	-0.07	0.228	0.249
	LTE Band 41	20MHz/100RB	Left Side	10	41140	2645	19.70	20.00	1.072	0.05	0.158	0.169
	LTE Band 41	20MHz/1RB	Right Side	10	41140	2645	21.11	21.50	1.094	NA	NA	NA
	LTE Band 41	20MHz/100RB	Right Side	10	41140	2645	19.70	20.00	1.072	NA	NA	NA
	LTE Band 41	20MHz/1RB	Top Side	10	41140	2645	21.11	21.50	1.094	NA	NA	NA

	LTE Band 41	20MHz/100RB	Top Side	10	41140	2645	19.70	20.00	1.072	NA	NA	NA
	LTE Band 41	20MHz/1RB	Bottom Side	10	41140	2645	21.11	21.50	1.094	0.15	0.284	0.311
	LTE Band 41	20MHz/100RB	Bottom Side	10	41140	2645	19.70	20.00	1.072	0.08	0.159	0.170

<WIFI>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
#18	WIFI2.4GHz	802.11g	Back	10	6	2437	14.95	15.00	1.012	0.05	0.253	**0.256**
	WIFI2.4GHz	802.11g	Front	10	6	2437	14.95	15.00	1.012	-0.01	0.204	0.206
	WIFI2.4GHz	802.11g	Left Side	10	6	2437	14.95	15.00	1.012	N/A	N/A	N/A
	WIFI2.4GHz	802.11g	Right Side	10	6	2437	14.95	15.00	1.012	0.06	0.191	0.193
	WIFI2.4GHz	802.11g	Top Side	10	6	2437	14.95	15.00	1.012	0.09	0.183	0.185
	WIFI2.4GHz	802.11g	Bottom Side	10	6	2437	14.95	15.00	1.012	N/A	N/A	N/A
#19	WIFI5.2GHz	802.11ac (VHT80)	Back	10	42	5210	17.70	18.00	1.072	0.04	0.285	**0.305**
	WIFI5.2GHz	802.11ac (VHT80)	Front	10	42	5210	17.70	18.00	1.072	-0.02	0.241	0.258
	WIFI5.2GHz	802.11ac (VHT80)	Left Side	10	42	5210	17.70	18.00	1.072	N/A	N/A	N/A
	WIFI5.2GHz	802.11ac (VHT80)	Right Side	10	42	5210	17.70	18.00	1.072	0.07	0.226	0.242
	WIFI5.2GHz	802.11ac (VHT80)	Top Side	10	42	5210	17.70	18.00	1.072	0.10	0.218	0.234
	WIFI5.2GHz	802.11ac (VHT80)	Bottom Side	10	42	5210	17.70	18.00	1.072	N/A	N/A	N/A
#20	WIFI5.8GHz	802.11ac (VHT80)	Back	10	155	5775	17.90	18.00	1.023	0.06	0.301	**0.308**
	WIFI5.8GHz	802.11ac (VHT80)	Front	10	155	5775	17.90	18.00	1.023	-0.02	0.255	0.261
	WIFI5.8GHz	802.11ac (VHT80)	Left Side	10	155	5775	17.90	18.00	1.023	N/A	N/A	N/A
	WIFI5.8GHz	802.11ac (VHT80)	Right Side	10	155	5775	17.90	18.00	1.023	0.05	0.245	0.251

	WIFI5.8GHz	802.11ac (VHT80)	Top Side	10	155	5775	17.90	18.00	1.023	0.08	0.236	0.241
	WIFI5.8GHz	802.11ac (VHT80)	Bottom Side	10	155	5775	17.90	18.00	1.023	N/A	N/A	N/A

Note:

1. Per KDB 865664 D01V01,for each frequency band ,repeated SAR measurement is required only when the measured SAR is≥0.8W/Kg.
2. Per KDB 865664 D01V01,if the ratio of largest to smallest SAR for the original and first repeated measurement is≤1.2and the measured SAR＜1.45W/Kg, only one repeated measurement is required.
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 ≥ 1.45W/Kg
4. The ratio is the difference in percentage between original and repeated measured SAR.