



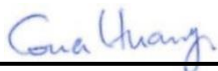
FCC SAR TEST REPORT

FCC ID : PJO6901
Equipment : MT-T800
Brand Name : Arima
Model Name : MT-T800
Marketing Name : Arima tablet
Applicant : Arima Communication Corporation
No. 16, Lane 658, Ying Tao Road, Yingge
Dist., New Taipei City 23943, Taiwan (ROC)
Manufacturer : Arima Communication Corporation
No. 16, Lane 658, Ying Tao Road, Yingge
Dist., New Taipei City 23943, Taiwan (ROC)
Standard : FCC 47 CFR Part 2 (2.1093)
ANSI/IEEE C95.1-1992
IEEE 1528-2013

The product was received on Mar 12, 2020 and testing was started from Mar 25, 2020 and completed on Apr. 06, 2020. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.



Approved by: Cona Huang / Deputy Manager

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



Table of Contents

1. Statement of Compliance	4
2. Guidance Applied.....	4
3. Equipment Under Test (EUT) Information	5
3.1 General Information	5
3.2 General LTE SAR Test and Reporting Considerations	6
4. Proximity Sensor Triggering Test.....	9
5. RF Exposure Limits.....	14
5.1 Uncontrolled Environment.....	14
5.2 Controlled Environment.....	14
6. Specific Absorption Rate (SAR).....	15
6.1 Introduction	15
6.2 SAR Definition.....	15
7. System Description and Setup	16
7.1 E-Field Probe	17
7.2 Data Acquisition Electronics (DAE)	17
7.3 Phantom.....	18
7.4 Device Holder.....	19
8. Measurement Procedures	20
8.1 Spatial Peak SAR Evaluation.....	20
8.2 Power Reference Measurement.....	21
8.3 Area Scan	21
8.4 Zoom Scan.....	22
8.5 Volume Scan Procedures.....	22
8.6 Power Drift Monitoring.....	22
9. Test Equipment List.....	23
10. System Verification	24
10.1 Tissue Simulating Liquids.....	24
10.2 Tissue Verification	25
10.3 System Performance Check Results.....	26
11. RF Exposure Positions	27
11.1 SAR Testing for Tablet	27
12. UMTS/LTE Output Power (Unit: dBm)	28
13. WiFi/Bluetooth Output Power (Unit: dBm)	80
14. Antenna Location	86
15. SAR Test Results	88
15.1 Body SAR	90
15.2 Repeated SAR Measurement	95
15.3 LTE Band 41 Power Class 2 and Power Class 3 Linearity	95
16. Simultaneous Transmission Analysis	96
16.1 Body Exposure Conditions.....	97
16.2 SPLSR Evaluation and Analysis.....	98
17. Uncertainty Assessment	100
18. References	100
Appendix A. Plots of System Performance Check	
Appendix B. Plots of High SAR Measurement	
Appendix C. DASY Calibration Certificate	
Appendix D. Test Setup Photos	

History of this test report

Report No.	Version	Description	Issued Date
FA012248	01	Initial issue of report	Jun. 11, 2020

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for Arima Communication Corporation, MT-T800, MT-T800, are as follows.

Equipment Class	Frequency Band		Highest SAR Summary	Highest Simultaneous Transmission 1g SAR (W/kg)
			Body	
			1g SAR (W/kg)	
Licensed	WCDMA	WCDMA II	1.20	1.55
		WCDMA IV	0.90	
		WCDMA V	0.70	
	LTE	LTE Band 12	0.82	
		LTE Band 2 / 25	1.20	
		LTE Band 5 / 26	0.69	
		LTE Band 41	1.15	
		LTE Band 4 / 66	0.99	
		LTE Band 71	0.81	
DTS	WLAN	2.4GHz WLAN	0.82	1.32
NII		5GHz WLAN	0.98	1.55
DSS	2.4GHz Band	Bluetooth	0.19	1.55
Date of Testing:			2020/3/25 ~ 2020/4/6	

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test. 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 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

Reviewed by: Jason Wang
Report Producer: Daisy Peng

2. Guidance Applied

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 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05



3. Equipment Under Test (EUT) Information

3.1 General Information

Product Feature & Specification	
Equipment Name	MT-T800
Brand Name	Arima
Model Name	MT-T800
Marketing Name	Arima tablet
FCC ID	PJO6901
IMEI Code	353973110002624
Wireless Technology and Frequency Range	WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz LTE Band 66: 1710.7 MHz ~ 1779.3 MHz LTE Band 71: 665.5 MHz ~ 695.5 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA DC-HSDPA LTE: QPSK, 16QAM, 64QAM WLAN: 802.11a/b/g/n HT20 / HT40 Bluetooth BR/EDR/LE
EUT Stage	Identical Prototype

3.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05																																																																													
FCC ID	PJO6901																																																																												
Equipment Name	MT-T800																																																																												
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz LTE Band 66: 1710.7 MHz ~ 1779.3 MHz LTE Band 71: 665.5 MHz ~ 695.5 MHz																																																																												
Channel Bandwidth	LTE Band 02:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 04:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 05:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 71: 5MHz, 10MHz, 15MHz, 20MHz																																																																												
uplink modulations used	QPSK / 16QAM / 64QAM																																																																												
LTE Voice / Data requirements	Data only																																																																												
LTE MPR permanently built-in by design	<table><tr><th colspan="8">Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</th></tr><tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr><tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr><tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr><tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr><tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr><tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr><tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr><tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr></table>							Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3								Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1	16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1	16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2	64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2	64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3	256 QAM	≥ 1						≤ 5
Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3																																																																													
Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)																																																																						
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz																																																																							
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1																																																																						
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1																																																																						
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2																																																																						
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2																																																																						
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3																																																																						
256 QAM	≥ 1						≤ 5																																																																						
LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)																																																																												
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.																																																																												
Power reduction applied to satisfy SAR compliance	Yes, Proximity Sensor.																																																																												

Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829				
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5	20525	836.5		
H	20643	848.3	20635	847.5	20625	846.5	20600	844				
LTE Band 12												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704				
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5	23095	707.5		
H	23173	715.3	23165	714.5	23155	713.5	23130	711				
LTE Band 25												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905
LTE Band 26												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz			
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5		
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5		
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5		
LTE Band 41												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506				
L	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5				
M	40620	2593	40620	2593	40620	2593	40620	2593				
H	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5				
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680				
LTE Band 66												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770



LTE Band 71								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	133147	665.5	133172	668	133197	670.5	133222	673
M	133297	680.5	133297	680.5	133297	680.5	133297	680.5
H	133447	695.5	133422	693	133397	690.5	133372	688

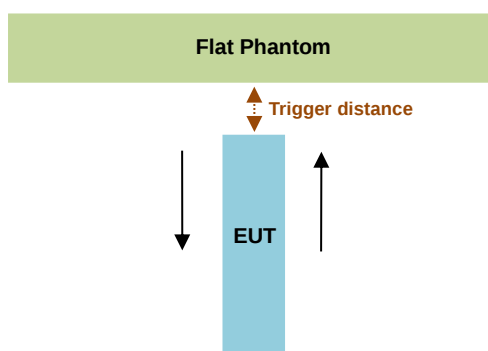
4. Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance (KDB 616217 D04 section 6.2)>:

For the device is fully integrated, touch sensing capacitive sensor. It uses a charge transfer capacitive acquisition method that is capable of near range proximity detection. In this device offers a state of the art capacitive sensing engine with an embedded sampling capacitor and voltage regulator allowing the overall solution cost to be reduced and improving system immunity in noisy environments.

Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed. The details are illustrated as following, and the shortest triggering distances were reported and used for SAR assessment.

In the preliminary triggering distance testing, the tissue-equivalent medium for different frequency bands were used for verification; no other frequency bands tissue-equivalent medium was found to result in shortest triggering distance than that for 1900MHz, and the tissue-equivalent medium for 1900MHz was used for formal proximity sensor triggering testing.



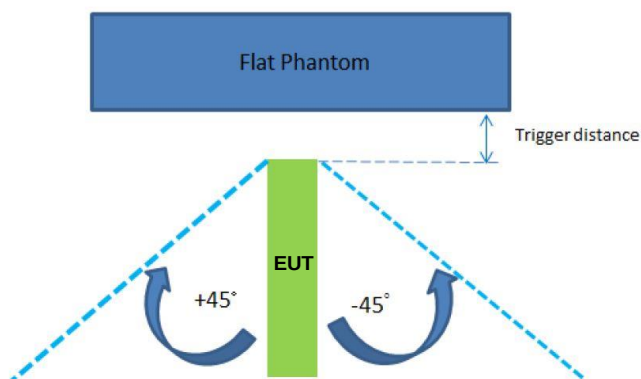
Proximity Sensor Trigger Distance (mm)				
Position	Bottom Face		Edge 3	
Position	Moving towards	Moving away	Moving towards	Moving away
Minimum	41	45	28	30

<Proximity Sensor Triggering Coverage (KDB 616217 D04 section 6.3)>:

Illustrated the sensor pad in the section11, Since the antenna and sensor are collocated and all of the peak SAR location is overlapping with the sensor pad for this device, therefore, According to KDB 616217 section6.3, these procedures do not apply and are not required for Bottom face and Edge 3 due to the antenna and sensor are collocated and the peak SAR location is overlapping with the sensor on this device.

<Tablet Tilt angle influences to proximity sensor triggering (KDB 616217 D04 section 6.4)>:

The influence of table tilt angles to proximity sensor triggering was determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom, at above separation distance. Rotating the tablet around the edge next to the phantom in $\leq 10^\circ$ increments until the tablet is $\pm 45^\circ$ from the vertical position at 0° , and the maximum output power remains in the reduced mode.



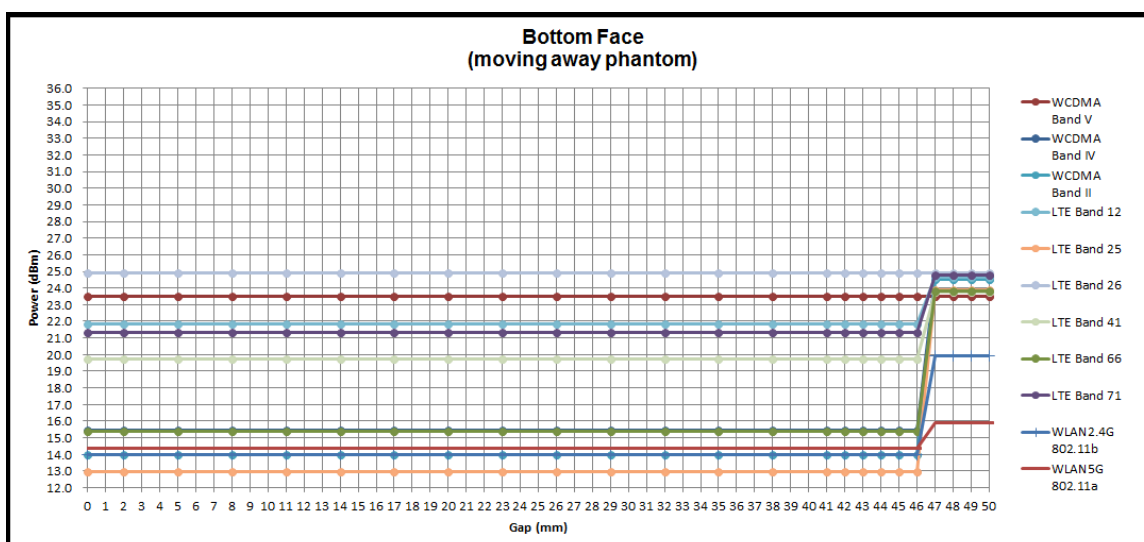
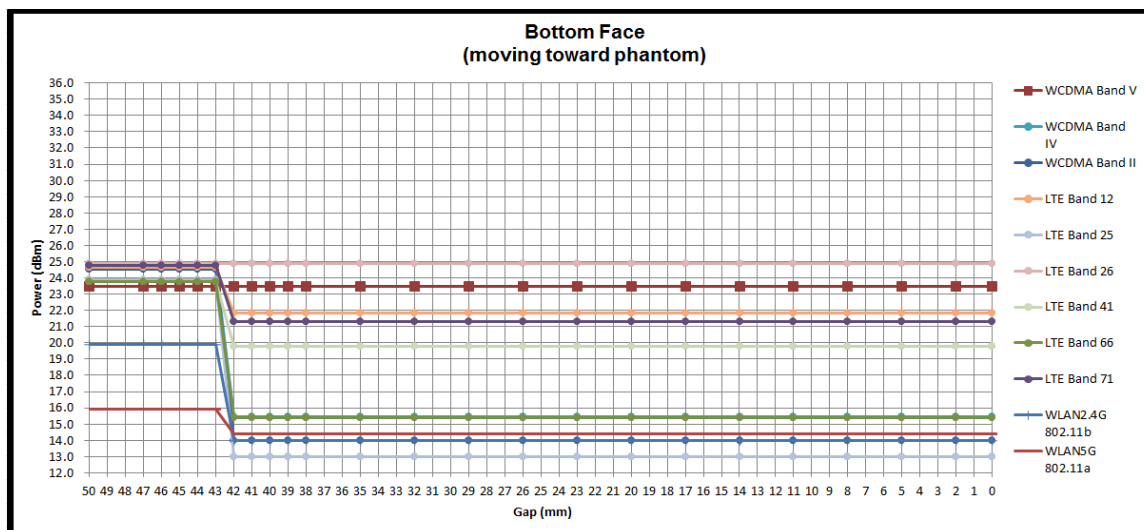
The Sensor Trigger Distance (mm)	
Position	Edge 3
Minimum	22

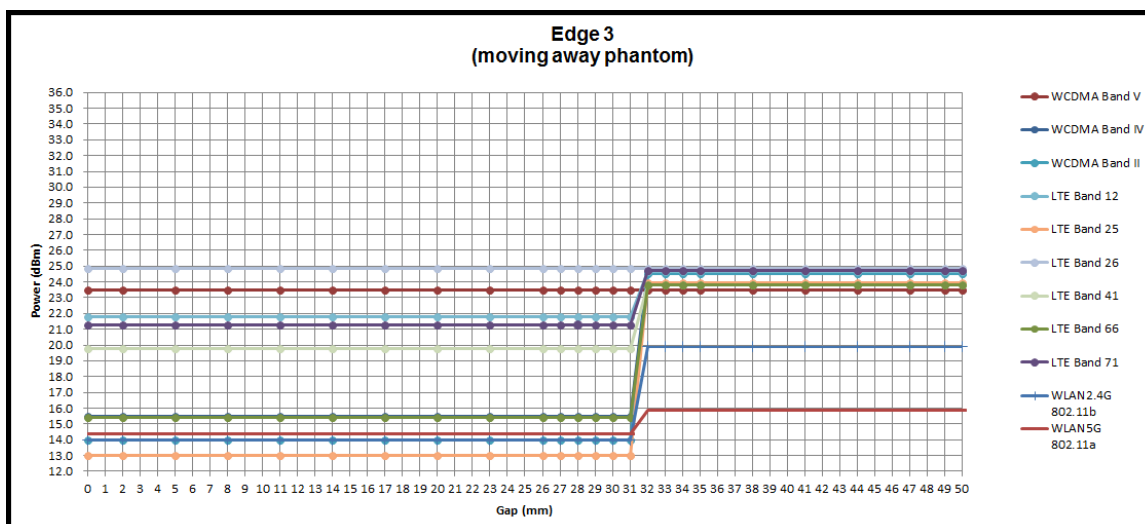
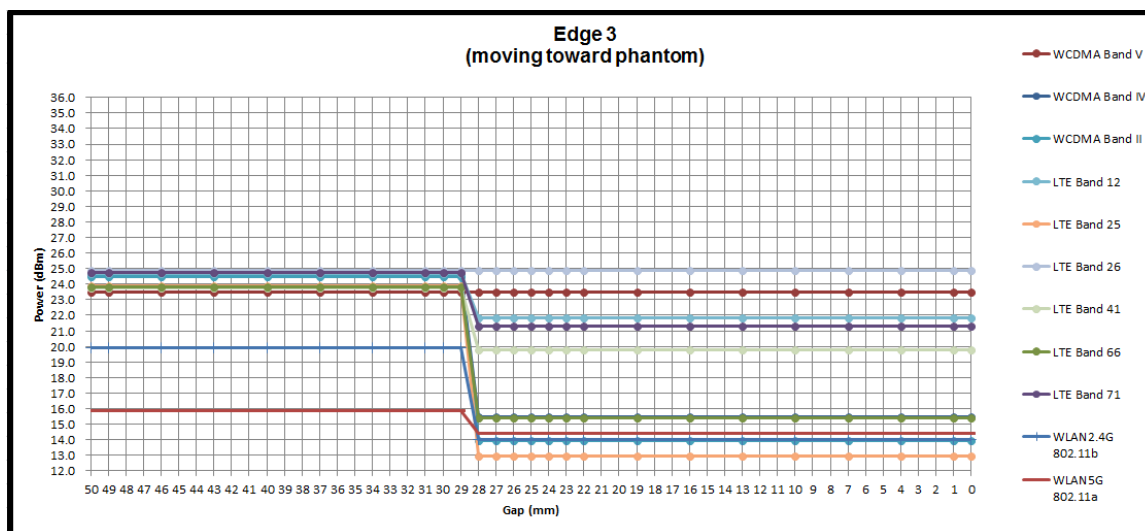
Proximity sensor power reduction

Exposure Position / wireless mode	Bottom Face/ Edge3 ⁽¹⁾
WCDMA Band II	11.0 dB
WCDMA Band IV	9.0 dB
WCDMA Band V	0 dB
LTE Band 2/25	12.0 dB
LTE Band 4/66	9.5 dB
LTE Band 5/26	0 dB
LTE Band 12	3.0 dB
LTE Band 41 power class3	4.0 dB
LTE Band 41 power class2	2.0 dB
LTE Band 71	3.5 dB
WLAN 2.4GHz	6 dB
WLAN 5.2GHz	1.5 dB
WLAN 5.3GHz	1.5 dB
WLAN 5.5GHz	3 dB
WLAN 5.8GHz	2.5 dB

Remark:

- (1): Reduced maximum limit applied by activation of proximity sensor.
- Power reduction is not applicable for Bluetooth.
- Tests were performed in accordance with KDB 616217 D04 section 6.1, 6.2, 6.3, 6.4 and 6.5 and compliant results are shown.
- For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance was performed:
 - Bottom Face: [40 mm](#)
 - Edge 3: [20 mm](#)

Power Measurement during Sensor Trigger distance testing




5. RF Exposure Limits

5.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

5.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

1. Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

6. Specific Absorption Rate (SAR)

6.1 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.

6.2 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:

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

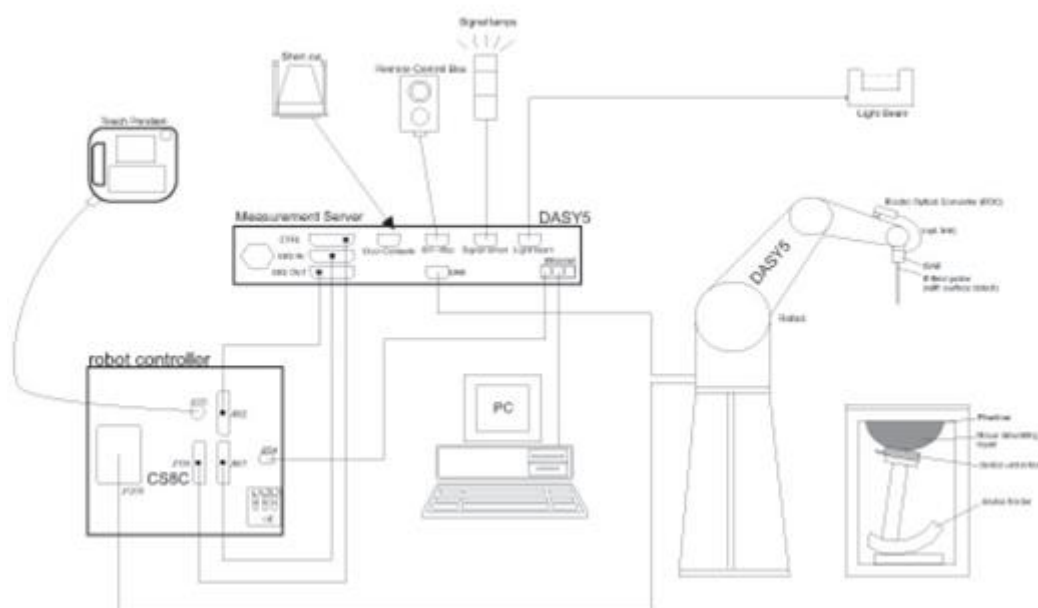
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

7. System Description and Setup

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



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

7.1 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.

<ES3DV3 Probe>

Construction	Symmetric design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz – 4 GHz; Linearity: ± 0.2 dB (30 MHz – 4 GHz)	
Directivity	± 0.2 dB in TSL (rotation around probe axis) ± 0.3 dB in TSL (rotation normal to probe axis)	
Dynamic Range	5 μ W/g – >100 mW/g; Linearity: ± 0.2 dB	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 3.9 mm (body: 12 mm) Distance from probe tip to dipole centers: 3.0 mm	

<EX3DV4 Probe>

Construction	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz – >6 GHz Linearity: ± 0.2 dB (30 MHz – 6 GHz)	
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)	
Dynamic Range	10 μ W/g – >100 mW/g Linearity: ± 0.2 dB (noise: typically <1 μ W/g)	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

7.2 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 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.



Fig 5.1 Photo of DAE

7.3 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	

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.

<ELI Phantom>

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

The ELI 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.

7.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). And upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.



Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

<Mounting Device for Laptops and other Body-Worn Transmitters>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.



Mounting Device for Laptops

8. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

- (a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
- (b) Read the WWAN RF power level from the base station simulator.
- (c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band
- (d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power

<SAR measurement>

- (a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
- (b) Place the EUT in the positions as Appendix D demonstrates.
- (c) Set scan area, grid size and other setting on the DASY software.
- (d) Measure SAR results for the highest power channel on each testing position.
- (e) Find out the largest SAR result on these testing positions of each band
- (f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

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

8.1 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 from 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

8.2 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.

8.3 Area Scan

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 D01v01r04 SAR measurement 100 MHz to 6 GHz.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: Δx_{Area} , Δy_{Area}	≤ 2 GHz: ≤ 15 mm $2 - 3$ GHz: ≤ 12 mm	$3 - 4$ GHz: ≤ 12 mm $4 - 6$ GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

8.4 Zoom Scan

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

Zoom scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
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 <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> 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.				

8.5 Volume Scan Procedures

The volume scan is used to 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 aggregate SAR, 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.

8.6 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 drifts more than 5%, the SAR will be retested.

9. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1107	Mar. 08, 2019	Mar. 06, 2021
SPEAG	835MHz System Validation Kit	D835V2	4d167	Nov. 25, 2019	Nov. 24, 2020
SPEAG	1750MHz System Validation Kit	D1750V2	1112	Mar. 07, 2019	Mar. 05, 2021
SPEAG	1900MHz System Validation Kit	D1900V2	5d041	Sep. 11, 2018	Sep. 09, 2020
SPEAG	2450MHz System Validation Kit	D2450V2	736	Aug. 31, 2018	Aug. 29, 2020
SPEAG	2600MHz System Validation Kit	D2600V2	1008	Aug. 31, 2018	Aug. 29, 2020
SPEAG	5GHz System Validation Kit	D5GHzV2	1006	Sep. 27, 2018	Sep. 25, 2020
SPEAG	Data Acquisition Electronics	DAE3	495	May. 21, 2019	May. 20, 2020
SPEAG	Data Acquisition Electronics	DAE4	778	May. 21, 2019	May. 20, 2020
SPEAG	Data Acquisition Electronics	DAE4	854	May. 21, 2019	May. 20, 2020
SPEAG	Dosimetric E-Field Probe	EX3DV4	3728	Feb. 04, 2020	Feb. 03, 2021
SPEAG	Dosimetric E-Field Probe	EX3DV4	3925	Sep. 20, 2019	Sep. 19, 2020
SPEAG	Dosimetric E-Field Probe	EX3DV4	3931	Sep. 26, 2019	Sep. 25, 2020
RCPTWN	Thermometer	HTC-1	TM685-1	Nov. 12, 2019	Nov. 11, 2020
RCPTWN	Thermometer	HTC-1	TM560-2	Nov. 12, 2019	Nov. 11, 2020
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Oct. 31, 2019	Oct. 30, 2020
Agilent	Wireless Communication Test Set	E5515C	MY50266977	May. 27, 2019	May. 26, 2020
R&S	BT Base Station	CBT32	100519	Jun. 04, 2019	Jun. 03, 2020
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Nov. 20, 2019	Nov. 19, 2020
Agilent	ENA Network Analyzer	E5071C	MY46104758	Sep. 06, 2019	Sep. 05, 2020
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 18, 2019	Sep. 17, 2020
LINE SEIKI	Digital Thermometer	DTM3000-spezial	3169	Sep. 10, 2019	Sep. 09, 2020
Anritsu	Power Meter	ML2495A	1036004	Aug. 08, 2019	Aug. 07, 2020
Anritsu	Power Sensor	MA2411B	1027253	Aug. 08, 2019	Aug. 07, 2020
Anritsu	Power Meter	ML2495A	1419002	May. 29, 2019	May. 28, 2020
Anritsu	Power Sensor	MA2411B	1339124	May. 29, 2019	May. 28, 2020
Agilent	Spectrum Analyzer	E4408B	MY44211028	Aug. 27, 2019	Aug. 26, 2020
Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jun. 27, 2019	Jun. 26, 2020
Mini-Circuits	Power Amplifier	ZVE-8G+	6418	Oct. 16, 2019	Oct. 15, 2020
Mini-Circuits	Power Amplifier	ZVE-8G+	6382	Aug. 12, 2019	Aug. 11, 2020
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005- 3	N/A	Note 1	

General Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.
2. Referring to KDB 865664 D01v01r04, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The justification data of dipole D750V3, SN: 1107, D1750V2, SN: 1112, D1900V2, SN: 5d041, D2450V2, SN: 736, D2600V2 SN: 1008 and D5GHzV2, SN: 1006 can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

10. System Verification

10.1 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. 10.1. 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 in Fig. 10.2.

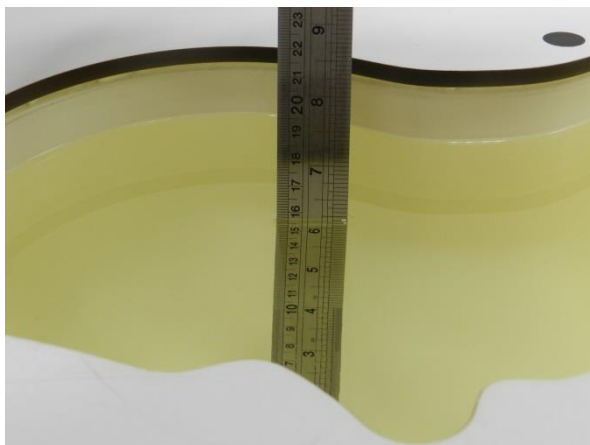


Fig 10.1Photo of Liquid Height for Head SAR



Fig 10.2 Photo of Liquid Height for Body SAR

10.2 Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (ϵ_r)
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
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

Simulating Liquid for 5GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	64~78%
Mineral oil	11~18%
Emulsifiers	9~15%
Additives and Salt	2~3%

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ϵ_r)	Conductivity Target (σ)	Permittivity Target (ϵ_r)	Delta (σ) (%)	Delta (ϵ_r) (%)	Limit (%)	Date
750	22.6	0.895	43.476	0.89	41.90	0.56	3.76	±5	2020/3/26
750	22.6	0.895	43.476	0.89	41.90	0.56	3.76	±5	2020/3/26
750	22.2	0.899	43.706	0.89	41.90	1.01	4.31	±5	2020/4/2
750	22.6	0.900	41.950	0.89	41.90	1.12	0.12	±5	2020/4/2
835	22.3	0.908	43.289	0.90	41.50	0.89	4.31	±5	2020/3/26
1750	22.6	1.358	41.604	1.37	40.10	-0.88	3.75	±5	2020/3/25
1750	22.6	1.358	41.604	1.37	40.10	-0.88	3.75	±5	2020/3/25
1750	22.2	1.369	40.600	1.37	40.10	-0.07	1.25	±5	2020/4/2
1750	22.6	1.365	40.523	1.37	40.10	-0.36	1.05	±5	2020/4/2
1900	22.6	1.429	38.473	1.40	40.00	2.07	-3.82	±5	2020/3/25
1900	22.6	1.429	38.473	1.40	40.00	2.07	-3.82	±5	2020/3/25
1900	22.2	1.415	39.184	1.40	40.00	1.07	-2.04	±5	2020/4/2
1900	22.6	1.380	40.270	1.40	40.00	-1.43	0.68	±5	2020/4/2
1900	22.6	1.439	40.160	1.40	40.00	2.79	0.40	±5	2020/4/6
2450	22.5	1.784	40.649	1.80	39.20	-0.89	3.70	±5	2020/3/28
2450	22.6	1.759	38.246	1.80	39.20	-2.28	-2.43	±5	2020/4/5
2600	22.6	1.967	38.171	1.96	39.00	0.36	-2.13	±5	2020/3/26
2600	22.6	1.934	37.771	1.96	39.00	-1.33	-3.15	±5	2020/4/2
5250	22.4	4.700	36.549	4.71	35.95	-0.21	1.67	±5	2020/3/29
5600	22.4	5.026	36.398	5.07	35.50	-0.87	2.53	±5	2020/3/29
5750	22.4	5.186	36.137	5.22	35.35	-0.65	2.23	±5	2020/3/29

10.3 System Performance Check Results

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

Date	Frequency (MHz)	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2020/3/26	750	250	D750V3-1107	EX3DV4 - SN3728	DAE3 Sn495	2.11	8.32	8.44	1.44
2020/3/26	750	250	D750V3-1107	EX3DV4 - SN3931	DAE3 Sn495	2.27	8.32	9.08	9.13
2020/4/2	750	250	D750V3-1107	EX3DV4 - SN3925	DAE4 Sn778	2.13	8.32	8.52	2.40
2020/4/2	750	250	D750V3-1107	EX3DV4 - SN3728	DAE4 Sn854	2.12	8.32	8.48	1.92
2020/3/26	835	250	D835V2-4d167	EX3DV4 - SN3728	DAE3 Sn495	2.39	9.55	9.56	0.10
2020/3/25	1750	250	D1750V2-1112	EX3DV4 - SN3728	DAE3 Sn495	8.56	36.70	34.24	-6.70
2020/3/25	1750	250	D1750V2-1112	EX3DV4 - SN3931	DAE3 Sn495	9.47	36.70	37.88	3.22
2020/4/2	1750	250	D1750V2-1112	EX3DV4 - SN3925	DAE4 Sn778	9.28	36.70	37.12	1.14
2020/4/2	1750	250	D1750V2-1112	EX3DV4 - SN3728	DAE4 Sn854	8.60	36.70	34.4	-6.27
2020/3/25	1900	250	D1900V2-5d041	EX3DV4 - SN3728	DAE3 Sn495	10.10	40.20	40.4	0.50
2020/3/25	1900	250	D1900V2-5d041	EX3DV4 - SN3931	DAE3 Sn495	10.50	40.20	42	4.48
2020/4/2	1900	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn778	9.48	40.20	37.92	-5.67
2020/4/2	1900	250	D1900V2-5d041	EX3DV4 - SN3728	DAE4 Sn854	9.72	40.20	38.88	-3.28
2020/4/6	1900	250	D1900V2-5d041	EX3DV4 - SN3728	DAE4 Sn854	9.96	40.20	39.84	-0.90
2020/3/28	2450	250	D2450V2-736	EX3DV4 - SN3931	DAE3 Sn495	13.80	52.70	55.2	4.74
2020/4/5	2450	250	D2450V2-736	EX3DV4 - SN3728	DAE4 Sn854	13.50	52.70	54	2.47
2020/3/26	2600	250	D2600V2-1008	EX3DV4 - SN3931	DAE3 Sn495	14.40	56.40	57.6	2.13
2020/4/2	2600	250	D2600V2-1008	EX3DV4 - SN3728	DAE4 Sn854	14.40	56.40	57.6	2.13
2020/3/29	5250	100	D5GHzV2-1006-5250	EX3DV4 - SN3728	DAE4 Sn854	7.91	80.70	79.1	-1.98
2020/3/29	5600	100	D5GHzV2-1006-5600	EX3DV4 - SN3728	DAE4 Sn854	8.53	83.30	85.3	2.40
2020/3/29	5750	100	D5GHzV2-1006-5750	EX3DV4 - SN3728	DAE4 Sn854	7.84	80.40	78.4	-2.49

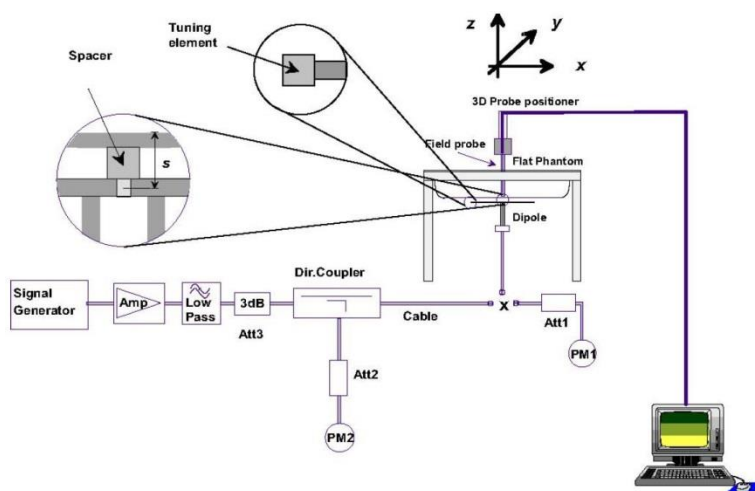


Fig 8.3.1 System Performance Check Setup



Fig 8.3.2 Setup Photo



11. RF Exposure Positions

11.1 SAR Testing for Tablet

This device can be used also in full sized tablet exposure conditions, due to its size. Per FCC KDB 616217, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR exclusion threshold in KDB 447498 D01v06 can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

12. UMTS/LTE Output Power (Unit: dBm)

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01v03r01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
3. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

- a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
- b. The RF path losses were compensated into the measurements.
- c. A call was established between EUT and Base Station with following setting:
 - i. Set Gain Factors (β_c and β_d) and parameters were set according to each
 - ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
 - iii. Set RMC 12.2Kbps + HSDPA mode.
 - iv. Set Cell Power = -86 dBm
 - v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
 - vi. Select HSDPA Uplink Parameters
 - vii. Set Delta ACK, Delta NACK and Delta CQI = 8
 - viii. Set Ack-Nack Repetition Factor to 3
 - ix. Set CQI Feedback Cycle (k) to 4 ms
 - x. Set CQI Repetition Factor to 2
 - xi. Power Ctrl Mode = All Up bits
- d. The transmitted maximum output power was recorded.

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

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

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and $\Delta_{NACK} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$, and $\Delta_{CQI} = 24/15$ with $\beta_{hs} = 24/15 * \beta_c$.

Note 3: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$.

Setup Configuration

HSUPA Setup Configuration:

- a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
- b. The RF path losses were compensated into the measurements.
- c. A call was established between EUT and Base Station with following setting * :
 - i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
 - ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
 - iii. Set Cell Power = -86 dBm
 - iv. Set Channel Type = 12.2k + HSPA
 - v. Set UE Target Power
 - vi. Power Ctrl Mode= Alternating bits
 - vii. Set and observe the E-TFCI
 - viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
- d. The transmitted maximum output power was recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note 1)	β_{ec}	β_{ed} (Note 4) (Note 5)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/25	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed1}: 47/15$ $\beta_{ed2}: 47/15$	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$. For sub-test 5, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 5/15$ with $\beta_{hs} = 5/15 * \beta_c$.

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

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

Note 4: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.

Note 5: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 6: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

- a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration below
- b. The RF path losses were compensated into the measurements.
- c. A call was established between EUT and Base Station with following setting:
 - i. Set RMC 12.2Kbps + HSDPA mode.
 - ii. Set Cell Power = -25 dBm
 - iii. Set HS-DSCH Configuration Type to FRC (H-set 12, QPSK)
 - iv. Select HSDPA Uplink Parameters
 - v. Set Gain Factors (β_c and β_d) and parameters were set according to each Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
 - a). Subtest 1: $\beta_c/\beta_d=2/15$
 - b). Subtest 2: $\beta_c/\beta_d=12/15$
 - c). Subtest 3: $\beta_c/\beta_d=15/8$
 - d). Subtest 4: $\beta_c/\beta_d=15/4$
 - vi. Set Delta ACK, Delta NACK and Delta CQI = 8
 - vii. Set Ack-Nack Repetition Factor to 3
 - viii. Set CQI Feedback Cycle (k) to 4 ms
 - ix. Set CQI Repetition Cycle to 2
 - x. Power Ctrl Mode = All Up bits
- d. The transmitted maximum output power was recorded.

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification. A summary of these settings are illustrated below:

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

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


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

<WCDMA Conducted Power>
General Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is $\leq \frac{1}{4}$ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA, DC-HSDPA) are less than $\frac{1}{4}$ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

Default Power Mode

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	24.51	24.48	24.46	25.00	24.60	24.51	24.46	25.00	23.48	23.50	23.43	25.00
3GPP Rel 6	HSDPA Subtest-1	23.45	23.45	23.51	24.00	23.76	23.75	23.75	24.00	22.63	22.58	22.52	24.00
3GPP Rel 6	HSDPA Subtest-2	23.57	23.61	23.64	24.00	23.93	23.84	23.89	24.00	22.62	22.55	22.53	24.00
3GPP Rel 6	HSDPA Subtest-3	23.10	23.14	23.17	23.50	23.46	23.37	23.46	23.50	22.16	22.07	22.06	23.50
3GPP Rel 6	HSDPA Subtest-4	23.10	23.14	23.18	23.50	23.47	23.38	23.47	23.50	22.16	22.07	22.06	23.50
3GPP Rel 8	DC-HSDPA Subtest-1	23.44	23.39	23.42	24.00	23.76	23.71	23.71	24.00	22.62	22.50	22.47	24.00
3GPP Rel 8	DC-HSDPA Subtest-2	23.52	23.55	23.59	24.00	23.92	23.74	23.82	24.00	22.54	22.54	22.49	24.00
3GPP Rel 8	DC-HSDPA Subtest-3	23.09	23.12	23.16	23.50	23.36	23.28	23.38	23.50	22.14	22.00	21.99	23.50
3GPP Rel 8	DC-HSDPA Subtest-4	23.07	23.11	23.15	23.50	23.41	23.28	23.42	23.50	22.06	22.02	21.98	23.50
3GPP Rel 6	HSUPA Subtest-1	22.81	22.79	22.83	24.00	23.58	23.45	23.08	24.00	21.95	21.99	21.92	23.00
3GPP Rel 6	HSUPA Subtest-2	22.38	22.44	22.28	23.00	22.30	22.82	22.78	23.00	21.49	21.51	21.50	22.00
3GPP Rel 6	HSUPA Subtest-3	22.08	22.15	22.19	23.00	22.61	22.43	22.39	23.00	21.22	21.14	21.07	22.00
3GPP Rel 6	HSUPA Subtest-4	22.36	22.72	22.75	23.00	22.99	22.83	22.92	23.00	21.78	21.70	21.52	22.00
3GPP Rel 6	HSUPA Subtest-5	23.40	23.40	23.40	24.00	23.60	23.70	23.70	24.00	22.50	22.40	22.40	23.00

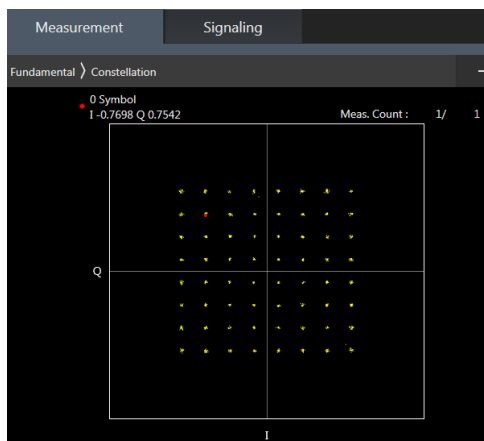
Reduced Power Mode

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513	
Rx Channel		9662	9800	9938		1537	1638	1738	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6	
3GPP Rel 99	RMC 12.2Kbps	13.96	13.94	13.95	14.00	15.46	15.50	15.24	16.00
3GPP Rel 6	HSDPA Subtest-1	12.64	12.56	12.70	14.00	14.45	14.41	14.50	16.00
3GPP Rel 6	HSDPA Subtest-2	12.75	12.79	12.83	14.00	14.65	14.68	14.71	16.00
3GPP Rel 6	HSDPA Subtest-3	12.21	12.28	12.37	13.50	14.01	14.08	14.25	15.50
3GPP Rel 6	HSDPA Subtest-4	12.27	12.27	12.30	13.50	14.14	14.09	14.14	15.50
3GPP Rel 8	DC-HSDPA Subtest-1	12.56	12.51	12.55	14.00	14.39	14.31	14.35	16.00
3GPP Rel 8	DC-HSDPA Subtest-2	12.66	12.71	12.72	14.00	14.54	14.55	14.62	16.00
3GPP Rel 8	DC-HSDPA Subtest-3	12.20	12.24	12.35	13.50	14.00	14.10	14.25	15.50
3GPP Rel 8	DC-HSDPA Subtest-4	12.23	12.31	12.26	13.50	14.13	14.19	14.14	15.50
3GPP Rel 6	HSUPA Subtest-1	11.94	11.99	12.01	13.50	13.79	13.87	13.85	15.50
3GPP Rel 6	HSUPA Subtest-2	11.55	11.61	11.43	12.50	13.39	13.42	13.29	14.50
3GPP Rel 6	HSUPA Subtest-3	11.20	11.31	11.34	12.50	13.09	13.13	13.20	14.50
3GPP Rel 6	HSUPA Subtest-4	11.48	11.92	11.89	12.50	13.35	13.82	13.71	14.50
3GPP Rel 6	HSUPA Subtest-5	12.55	12.55	12.59	13.50	14.36	14.44	14.39	15.50

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, 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 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, 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 D05v02r05, 16QAM output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ 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 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B12 / B26 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE band 2 / 4 / 5 SAR test was covered by Band 25 / 66 / 26; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
 - a. the maximum output power, including tolerance, for the smaller band is $\leq$ the larger band to qualify for the SAR test exclusion
 - b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
10. According to 2017 TCB workshop, for 64 QAM and 16 QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 64QAM and 16QAM signal modulation are correct.


64QAM

16QAM

Default Power Mode
<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	23.32	23.42	23.19	25	0
20	QPSK	1	49	23.42	23.78	23.66		
20	QPSK	1	99	23.32	23.30	23.45		
20	QPSK	50	0	22.57	22.60	22.58	24	1
20	QPSK	50	24	22.57	22.63	22.61		
20	QPSK	50	50	22.44	22.42	22.61		
20	QPSK	100	0	22.52	22.57	22.56	24	1
20	16QAM	1	0	22.06	22.32	22.06		
20	16QAM	1	49	22.64	22.77	22.19		
20	16QAM	1	99	22.35	22.06	22.15	23	2
20	16QAM	50	0	21.59	21.55	21.70		
20	16QAM	50	24	21.59	21.68	21.46		
20	16QAM	50	50	21.57	21.63	21.44	23	2
20	16QAM	100	0	21.52	21.46	21.67		
20	64QAM	1	0	21.30	21.35	21.57		
20	64QAM	1	49	21.71	21.58	21.84	23	2
20	64QAM	1	99	21.23	21.54	21.69		
20	64QAM	50	0	20.54	20.53	20.57		
20	64QAM	50	24	20.55	20.66	20.52	22	3
20	64QAM	50	50	20.62	20.62	20.61		
20	64QAM	100	0	20.57	20.62	20.64		
Channel				18675	18900	19125		
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	23.33	23.57	23.44	25	0
15	QPSK	1	37	23.50	23.67	23.61		
15	QPSK	1	74	23.47	23.42	23.48		
15	QPSK	36	0	22.61	22.57	22.63	24	1
15	QPSK	36	20	22.51	22.61	22.65		
15	QPSK	36	39	22.47	22.52	22.70		
15	QPSK	75	0	22.56	22.63	22.66	24	1
15	16QAM	1	0	22.32	22.31	22.10		
15	16QAM	1	37	22.61	22.42	22.91		
15	16QAM	1	74	22.15	22.07	22.24	23	2
15	16QAM	36	0	21.53	21.68	21.56		
15	16QAM	36	20	21.44	21.72	21.69		
15	16QAM	36	39	21.39	21.51	21.62	23	2
15	16QAM	75	0	21.56	21.61	21.68		
15	64QAM	1	0	21.35	21.07	21.29		
15	64QAM	1	37	21.87	21.78	21.90	23	2
15	64QAM	1	74	21.52	21.34	21.63		
15	64QAM	36	0	20.50	20.67	20.62		
15	64QAM	36	20	20.71	20.57	20.77	22	3
15	64QAM	36	39	20.52	20.63	20.73		
15	64QAM	75	0	20.40	20.58	20.64		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	23.15	23.19	23.36	25	0
10	QPSK	1	25	23.32	23.59	23.71		
10	QPSK	1	49	23.12	23.15	23.63		
10	QPSK	25	0	22.42	22.57	22.66	24	1
10	QPSK	25	12	22.45	22.60	22.64		
10	QPSK	25	25	22.44	22.53	22.55		
10	QPSK	50	0	22.43	22.59	22.62		
10	16QAM	1	0	22.33	22.02	22.20	24	1
10	16QAM	1	25	22.73	22.24	22.56		
10	16QAM	1	49	22.19	22.08	22.16		
10	16QAM	25	0	21.44	21.78	21.69	23	2
10	16QAM	25	12	21.50	21.61	21.67		
10	16QAM	25	25	21.35	21.56	21.51		
10	16QAM	50	0	21.54	21.62	21.55	23	2
10	64QAM	1	0	21.48	21.55	21.28		
10	64QAM	1	25	21.29	21.46	21.79		
10	64QAM	1	49	21.13	21.33	21.68		
10	64QAM	25	0	20.29	20.84	20.75	22	3
10	64QAM	25	12	20.42	20.77	20.75		
10	64QAM	25	25	20.21	20.61	20.39		
10	64QAM	50	0	20.50	20.60	20.62		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	23.26	23.42	23.52	25	0
5	QPSK	1	12	23.54	23.40	23.76		
5	QPSK	1	24	23.38	23.25	23.23		
5	QPSK	12	0	22.35	22.59	22.67	24	1
5	QPSK	12	7	22.35	22.59	22.52		
5	QPSK	12	13	22.44	22.52	22.46		
5	QPSK	25	0	22.43	22.55	22.66		
5	16QAM	1	0	22.03	22.58	22.84	24	1
5	16QAM	1	12	22.56	22.90	22.49		
5	16QAM	1	24	22.43	22.57	22.07		
5	16QAM	12	0	21.38	21.62	21.53	23	2
5	16QAM	12	7	21.31	21.71	21.46		
5	16QAM	12	13	21.26	21.64	21.31		
5	16QAM	25	0	21.46	21.67	21.42		
5	64QAM	1	0	21.25	21.20	21.32	23	2
5	64QAM	1	12	21.45	21.63	21.71		
5	64QAM	1	24	21.30	21.47	21.07		
5	64QAM	12	0	20.48	20.53	20.82	22	3
5	64QAM	12	7	20.41	20.63	20.59		
5	64QAM	12	13	20.28	20.46	20.42		
5	64QAM	25	0	20.51	20.63	20.50		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	23.38	23.43	23.42	25	0
3	QPSK	1	8	23.22	23.44	23.18		



FCC SAR TEST REPORT

Report No. : FA012248

3	QPSK	1	14	23.30	23.35	23.22		
3	QPSK	8	0	22.46	22.59	22.80	24	1
3	QPSK	8	4	22.43	22.59	22.61		
3	QPSK	8	7	22.44	22.65	22.60		
3	QPSK	15	0	22.38	22.55	22.59		
3	16QAM	1	0	22.06	22.63	22.72	24	1
3	16QAM	1	8	22.63	22.13	22.41		
3	16QAM	1	14	22.00	22.07	22.07		
3	16QAM	8	0	21.39	21.45	21.56	23	2
3	16QAM	8	4	21.50	21.54	21.48		
3	16QAM	8	7	21.46	21.60	21.56		
3	16QAM	15	0	21.44	21.48	21.53		
3	64QAM	1	0	21.09	21.17	21.44	23	2
3	64QAM	1	8	21.57	21.36	21.28		
3	64QAM	1	14	21.58	21.35	21.21		
3	64QAM	8	0	20.52	20.46	20.62	22	3
3	64QAM	8	4	20.50	20.51	20.36		
3	64QAM	8	7	20.42	20.46	20.33		
3	64QAM	15	0	20.45	20.46	20.42		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	23.18	23.46	23.52	25	0
1.4	QPSK	1	3	23.19	23.49	23.38		
1.4	QPSK	1	5	23.10	23.42	23.33		
1.4	QPSK	3	0	23.36	23.53	23.61		
1.4	QPSK	3	1	23.48	23.67	23.71		
1.4	QPSK	3	3	23.42	23.62	23.60		
1.4	QPSK	6	0	22.36	22.58	22.73	24	1
1.4	16QAM	1	0	22.03	22.07	22.36	24	1
1.4	16QAM	1	3	22.12	22.21	22.34		
1.4	16QAM	1	5	22.00	22.01	22.31		
1.4	16QAM	3	0	22.17	22.19	22.48		
1.4	16QAM	3	1	22.10	22.13	22.46		
1.4	16QAM	3	3	22.11	22.74	22.45		
1.4	16QAM	6	0	21.26	21.39	21.45	23	2
1.4	64QAM	1	0	21.26	21.24	21.29	23	2
1.4	64QAM	1	3	21.36	21.55	21.45		
1.4	64QAM	1	5	21.69	21.73	21.24		
1.4	64QAM	3	0	21.52	21.53	21.69		
1.4	64QAM	3	1	21.55	21.56	21.61		
1.4	64QAM	3	3	21.39	21.42	21.55		
1.4	64QAM	6	0	20.43	20.47	20.45	22	3



<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	23.31	23.40	23.86	25	0
20	QPSK	1	49	23.75	23.38	23.97		
20	QPSK	1	99	23.60	23.42	23.52		
20	QPSK	50	0	22.60	22.80	22.84	24	1
20	QPSK	50	24	22.70	22.64	22.85		
20	QPSK	50	50	22.80	22.53	22.66		
20	QPSK	100	0	22.78	22.61	22.85	24	1
20	16QAM	1	0	22.24	22.27	23.10		
20	16QAM	1	49	22.34	22.29	22.47		
20	16QAM	1	99	22.23	22.16	22.28	23	2
20	16QAM	50	0	21.59	21.67	21.89		
20	16QAM	50	24	21.73	21.60	21.91		
20	16QAM	50	50	21.84	21.47	21.70	23	2
20	16QAM	100	0	21.68	21.57	21.70		
20	64QAM	1	0	21.33	21.79	21.83		
20	64QAM	1	49	21.59	21.96	21.71	23	2
20	64QAM	1	99	21.44	21.64	21.40		
20	64QAM	50	0	20.75	20.84	20.87		
20	64QAM	50	24	20.80	20.78	20.90	22	3
20	64QAM	50	50	20.93	20.47	20.69		
20	64QAM	100	0	20.86	20.63	20.97		
Channel				20025	20175	20325		
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	23.34	23.83	23.80	25	0
15	QPSK	1	37	23.75	23.69	23.84		
15	QPSK	1	74	23.61	23.40	23.58		
15	QPSK	36	0	22.61	22.75	22.86	24	1
15	QPSK	36	20	22.73	22.60	22.81		
15	QPSK	36	39	22.70	22.47	22.76		
15	QPSK	75	0	22.65	22.66	22.83	24	1
15	16QAM	1	0	22.08	22.60	22.63		
15	16QAM	1	37	22.38	22.36	22.59		
15	16QAM	1	74	22.23	22.18	22.37	23	2
15	16QAM	36	0	21.70	21.80	21.84		
15	16QAM	36	20	21.65	21.65	21.92		
15	16QAM	36	39	21.73	21.44	21.69	23	2
15	16QAM	75	0	21.75	21.70	21.88		
15	64QAM	1	0	21.59	21.47	21.69		
15	64QAM	1	37	22.04	21.97	22.02	23	2
15	64QAM	1	74	21.62	21.21	21.76		
15	64QAM	36	0	20.75	20.83	20.69		
15	64QAM	36	20	20.82	20.74	20.87	22	3
15	64QAM	36	39	20.82	20.43	20.90		
15	64QAM	75	0	20.82	20.68	20.81		



FCC SAR TEST REPORT

Report No. : FA012248

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	23.22	23.51	23.69	25	0
10	QPSK	1	25	23.73	23.69	23.92		
10	QPSK	1	49	23.58	23.18	23.66		
10	QPSK	25	0	22.48	22.68	22.79	24	1
10	QPSK	25	12	22.63	22.59	22.83		
10	QPSK	25	25	22.61	22.48	22.76		
10	QPSK	50	0	22.62	22.64	22.82		
10	16QAM	1	0	22.10	22.33	22.32	24	1
10	16QAM	1	25	22.37	22.63	22.45		
10	16QAM	1	49	22.72	22.11	22.29		
10	16QAM	25	0	21.68	21.92	21.96	23	2
10	16QAM	25	12	21.68	21.83	22.00		
10	16QAM	25	25	21.78	21.52	21.77		
10	16QAM	50	0	21.62	21.59	21.78	22	3
10	64QAM	1	0	21.57	21.96	21.54		
10	64QAM	1	25	21.72	21.94	21.86		
10	64QAM	1	49	21.63	21.23	21.76		
10	64QAM	25	0	20.70	20.69	20.96	22	3
10	64QAM	25	12	20.76	20.91	20.74		
10	64QAM	25	25	20.83	20.43	20.98		
10	64QAM	50	0	20.68	20.58	20.91		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	23.39	23.49	23.67	25	0
5	QPSK	1	12	23.81	23.60	23.88		
5	QPSK	1	24	23.48	23.28	23.77		
5	QPSK	12	0	22.45	22.71	22.82	24	1
5	QPSK	12	7	22.60	22.64	22.85		
5	QPSK	12	13	22.60	22.65	22.81		
5	QPSK	25	0	22.55	22.73	22.81		
5	16QAM	1	0	22.31	22.45	22.22	24	1
5	16QAM	1	12	22.25	22.47	22.51		
5	16QAM	1	24	22.03	22.17	22.25		
5	16QAM	12	0	21.44	21.85	21.81	23	2
5	16QAM	12	7	21.56	21.80	21.84		
5	16QAM	12	13	21.50	21.72	21.86		
5	16QAM	25	0	21.59	21.77	21.89		
5	64QAM	1	0	21.37	21.69	21.42	23	2
5	64QAM	1	12	21.66	21.73	21.88		
5	64QAM	1	24	21.55	21.57	21.60		
5	64QAM	12	0	20.44	20.77	20.89	22	3
5	64QAM	12	7	20.42	20.55	21.04		
5	64QAM	12	13	20.57	20.52	21.10		
5	64QAM	25	0	20.71	20.57	20.96		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	23.48	23.63	23.43	25	0
3	QPSK	1	8	23.60	23.59	23.38		

3	QPSK	1	14	23.38	23.49	23.49		
3	QPSK	8	0	22.60	22.82	22.74	24	1
3	QPSK	8	4	22.62	22.73	22.76		
3	QPSK	8	7	22.55	22.72	22.74		
3	QPSK	15	0	22.55	22.70	22.62		
3	16QAM	1	0	22.09	22.24	22.21	24	1
3	16QAM	1	8	22.01	22.20	22.11		
3	16QAM	1	14	22.00	22.02	22.59		
3	16QAM	8	0	21.35	21.72	21.73	23	2
3	16QAM	8	4	21.66	21.87	21.65		
3	16QAM	8	7	21.67	21.79	21.62		
3	16QAM	15	0	21.63	21.76	21.63		
3	64QAM	1	0	21.11	21.73	21.29	23	2
3	64QAM	1	8	21.44	21.39	21.78		
3	64QAM	1	14	21.19	21.52	21.26		
3	64QAM	8	0	20.55	20.69	20.57	22	3
3	64QAM	8	4	20.51	20.69	20.64		
3	64QAM	8	7	20.54	20.59	20.61		
3	64QAM	15	0	20.79	20.64	20.67		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	23.44	23.58	23.58	25	0
1.4	QPSK	1	3	23.63	23.54	23.67		
1.4	QPSK	1	5	23.56	23.52	23.37		
1.4	QPSK	3	0	23.48	23.75	23.55		
1.4	QPSK	3	1	23.57	23.77	23.58		
1.4	QPSK	3	3	23.62	23.67	23.63		
1.4	QPSK	6	0	22.58	22.73	22.74	24	1
1.4	16QAM	1	0	22.74	22.37	22.74	24	1
1.4	16QAM	1	3	22.26	22.41	22.28		
1.4	16QAM	1	5	22.58	22.77	22.72		
1.4	16QAM	3	0	22.20	22.92	22.65		
1.4	16QAM	3	1	22.38	22.93	22.67		
1.4	16QAM	3	3	22.54	22.83	22.53		
1.4	16QAM	6	0	21.30	21.46	21.69	23	2
1.4	64QAM	1	0	21.33	21.63	21.31	23	2
1.4	64QAM	1	3	21.62	21.92	21.49		
1.4	64QAM	1	5	21.58	21.91	21.31		
1.4	64QAM	3	0	21.50	21.47	21.35		
1.4	64QAM	3	1	21.52	21.71	21.76		
1.4	64QAM	3	3	21.45	21.52	21.53		
1.4	64QAM	6	0	20.52	20.57	20.77	22	3



<LTE Band 5>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	23.60	23.41	23.37	25	0
10	QPSK	1	25	23.77	23.55	24.08		
10	QPSK	1	49	23.49	23.45	23.69		
10	QPSK	25	0	22.91	22.72	22.76	24	1
10	QPSK	25	12	22.85	22.76	22.88		
10	QPSK	25	25	22.77	22.70	22.66		
10	QPSK	50	0	22.81	22.77	22.74	24	1
10	16QAM	1	0	22.49	22.45	22.29		
10	16QAM	1	25	22.72	22.95	23.09		
10	16QAM	1	49	22.32	22.29	22.35	23	2
10	16QAM	25	0	21.80	21.71	21.75		
10	16QAM	25	12	21.79	21.82	21.83		
10	16QAM	25	25	21.72	21.74	21.70	23	2
10	16QAM	50	0	21.73	21.71	21.72		
10	64QAM	1	0	21.58	21.62	21.52		
10	64QAM	1	25	22.01	21.65	21.98	23	2
10	64QAM	1	49	21.61	21.43	21.23		
10	64QAM	25	0	20.74	20.75	20.81		
10	64QAM	25	12	20.67	20.81	20.94	22	3
10	64QAM	25	25	20.60	20.86	20.57		
10	64QAM	50	0	20.81	20.60	20.71		
Channel				20425	20525	20625		
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	23.50	23.43	23.69	25	0
5	QPSK	1	12	24.02	23.80	23.67		
5	QPSK	1	24	23.44	23.69	23.41		
5	QPSK	12	0	22.80	22.64	22.76	24	1
5	QPSK	12	7	22.90	22.82	22.71		
5	QPSK	12	13	22.95	22.79	22.68		
5	QPSK	25	0	22.87	22.77	22.71	24	1
5	16QAM	1	0	22.46	22.74	22.49		
5	16QAM	1	12	22.81	23.05	22.49		
5	16QAM	1	24	22.59	22.12	22.64	23	2
5	16QAM	12	0	21.70	21.51	21.86		
5	16QAM	12	7	21.69	21.73	21.81		
5	16QAM	12	13	21.78	21.61	21.48	23	2
5	16QAM	25	0	21.80	21.75	21.61		
5	64QAM	1	0	21.73	21.66	21.70		
5	64QAM	1	12	21.97	21.72	21.82	23	2
5	64QAM	1	24	21.49	21.39	21.62		
5	64QAM	12	0	20.89	20.77	20.79		
5	64QAM	12	7	20.90	20.84	20.73	22	3
5	64QAM	12	13	20.81	20.75	20.59		
5	64QAM	25	0	20.88	20.65	20.61		

Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	23.61	23.52	23.51	25	0
3	QPSK	1	8	23.75	23.51	23.61		
3	QPSK	1	14	23.55	23.27	23.48		
3	QPSK	8	0	22.82	22.66	22.65	24	1
3	QPSK	8	4	23.04	22.81	22.72		
3	QPSK	8	7	22.99	22.77	22.66		
3	QPSK	15	0	22.91	22.76	22.71		
3	16QAM	1	0	22.36	22.76	22.69	24	1
3	16QAM	1	8	22.64	22.73	22.57		
3	16QAM	1	14	22.73	22.38	22.55		
3	16QAM	8	0	21.57	21.43	21.43	23	2
3	16QAM	8	4	21.72	21.48	21.46		
3	16QAM	8	7	21.72	21.61	21.56		
3	16QAM	15	0	21.76	21.68	21.47		
3	64QAM	1	0	21.55	21.42	21.73	23	2
3	64QAM	1	8	21.65	21.41	21.93		
3	64QAM	1	14	21.60	21.42	21.83		
3	64QAM	8	0	20.73	20.61	20.50	22	3
3	64QAM	8	4	20.85	20.74	20.54		
3	64QAM	8	7	20.84	20.68	20.54		
3	64QAM	15	0	20.80	20.65	20.63		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	23.85	23.56	23.61	25	0
1.4	QPSK	1	3	23.75	23.72	23.70		
1.4	QPSK	1	5	23.91	23.66	23.45		
1.4	QPSK	3	0	24.07	23.67	23.72		
1.4	QPSK	3	1	24.04	23.72	23.77		
1.4	QPSK	3	3	24.02	23.79	23.75		
1.4	QPSK	6	0	22.88	22.64	22.82	24	1
1.4	16QAM	1	0	22.98	22.57	22.91	24	1
1.4	16QAM	1	3	23.09	22.37	22.92		
1.4	16QAM	1	5	22.61	22.21	22.88		
1.4	16QAM	3	0	22.78	22.61	22.56		
1.4	16QAM	3	1	22.75	22.74	22.41		
1.4	16QAM	3	3	22.74	22.70	22.55		
1.4	16QAM	6	0	21.85	21.64	21.58	23	2
1.4	64QAM	1	0	21.72	21.81	21.51	23	2
1.4	64QAM	1	3	21.81	21.64	21.60		
1.4	64QAM	1	5	21.69	21.52	21.50		
1.4	64QAM	3	0	21.58	21.57	21.70		
1.4	64QAM	3	1	21.92	21.47	21.84		
1.4	64QAM	3	3	21.89	21.28	21.83		
1.4	64QAM	6	0	20.77	20.62	20.57	22	3

<LTE Band 12>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23060	23095	23130		
Frequency (MHz)				704	707.5	711		
10	QPSK	1	0	24.26	24.55	24.37	25	0
10	QPSK	1	25	24.44	24.67	24.66		
10	QPSK	1	49	24.44	24.60	24.37		
10	QPSK	25	0	23.54	23.41	23.69	24	1
10	QPSK	25	12	23.39	23.69	23.76		
10	QPSK	25	25	23.58	23.68	23.59		
10	QPSK	50	0	23.67	23.57	23.67	24	1
10	16QAM	1	0	22.72	23.54	23.11		
10	16QAM	1	25	23.19	23.72	23.55		
10	16QAM	1	49	23.10	23.85	23.07	23	2
10	16QAM	25	0	22.54	22.42	22.77		
10	16QAM	25	12	22.35	22.71	22.96		
10	16QAM	25	25	22.60	22.62	22.71	23	2
10	16QAM	50	0	22.66	22.67	22.77		
10	64QAM	1	0	22.58	22.23	22.27		
10	64QAM	1	25	22.77	22.51	22.68	23	2
10	64QAM	1	49	22.35	22.49	22.27		
10	64QAM	25	0	21.47	21.32	21.55		
10	64QAM	25	12	21.38	21.78	21.86	22	3
10	64QAM	25	25	21.47	21.77	21.64		
10	64QAM	50	0	21.56	21.58	21.65		
Channel				23035	23095	23155		
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	24.22	24.41	24.31	25	0
5	QPSK	1	12	24.33	24.43	24.64		
5	QPSK	1	24	24.26	24.43	24.34		
5	QPSK	12	0	23.34	23.26	23.59	24	1
5	QPSK	12	7	23.27	23.46	23.60		
5	QPSK	12	13	23.41	23.48	23.44		
5	QPSK	25	0	23.67	23.37	23.65	24	1
5	16QAM	1	0	22.59	23.48	23.02		
5	16QAM	1	12	23.01	23.72	23.36		
5	16QAM	1	24	22.95	23.73	22.87	23	2
5	16QAM	12	0	22.52	22.38	22.74		
5	16QAM	12	7	22.32	22.55	22.83		
5	16QAM	12	13	22.52	22.53	22.55	23	2
5	16QAM	25	0	22.60	22.67	22.65		
5	64QAM	1	0	22.54	22.16	22.23		
5	64QAM	1	12	22.71	22.31	22.65	23	2
5	64QAM	1	24	22.33	22.46	22.16		
5	64QAM	12	0	21.28	21.13	21.44		
5	64QAM	12	7	21.30	21.70	21.67	22	3
5	64QAM	12	13	21.40	21.71	21.52		
5	64QAM	25	0	21.48	21.48	21.46		



Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	24.14	24.49	24.18	25	0
3	QPSK	1	8	24.24	24.42	24.65		
3	QPSK	1	14	24.35	24.56	24.36		
3	QPSK	8	0	23.45	23.29	23.69	24	1
3	QPSK	8	4	23.24	23.56	23.65		
3	QPSK	8	7	23.57	23.57	23.59		
3	QPSK	15	0	23.64	23.46	23.50		
3	16QAM	1	0	22.67	23.46	22.91	24	1
3	16QAM	1	8	23.19	23.64	23.35		
3	16QAM	1	14	22.95	23.75	22.95		
3	16QAM	8	0	22.53	22.27	22.62	23	2
3	16QAM	8	4	22.35	22.56	22.81		
3	16QAM	8	7	22.41	22.46	22.52		
3	16QAM	15	0	22.62	22.61	22.74		
3	64QAM	1	0	22.45	22.14	22.08	23	2
3	64QAM	1	8	22.61	22.46	22.52		
3	64QAM	1	14	22.27	22.33	22.25		
3	64QAM	8	0	21.32	21.31	21.50	22	3
3	64QAM	8	4	21.35	21.71	21.76		
3	64QAM	8	7	21.47	21.59	21.58		
3	64QAM	15	0	21.50	21.40	21.47		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	24.01	24.57	24.42	25	0
1.4	QPSK	1	3	24.06	24.38	24.38		
1.4	QPSK	1	5	24.38	24.65	24.57		
1.4	QPSK	3	0	24.14	24.46	24.43		
1.4	QPSK	3	1	24.41	24.54	24.41		
1.4	QPSK	3	3	24.62	24.53	24.60		
1.4	QPSK	6	0	23.38	23.49	23.31	24	1
1.4	16QAM	1	0	23.13	23.57	23.03	24	1
1.4	16QAM	1	3	23.23	23.86	23.19		
1.4	16QAM	1	5	22.94	23.61	23.18		
1.4	16QAM	3	0	23.24	23.36	23.29		
1.4	16QAM	3	1	23.42	23.32	23.52		
1.4	16QAM	3	3	23.51	23.60	23.48		
1.4	16QAM	6	0	22.41	22.46	22.32	23	2
1.4	64QAM	1	0	22.13	22.42	22.27	23	2
1.4	64QAM	1	3	22.20	22.76	22.58		
1.4	64QAM	1	5	22.23	22.27	22.10		
1.4	64QAM	3	0	22.23	22.25	22.18		
1.4	64QAM	3	1	22.57	22.64	22.49		
1.4	64QAM	3	3	22.00	22.52	22.30		
1.4	64QAM	6	0	21.49	21.43	21.65	22	3



<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	23.30	23.21	23.26	25	0
20	QPSK	1	49	23.43	23.91	23.46		
20	QPSK	1	99	23.10	23.13	23.39		
20	QPSK	50	0	22.53	22.52	22.78	24	1
20	QPSK	50	24	22.54	22.81	22.79		
20	QPSK	50	50	22.40	22.54	22.55		
20	QPSK	100	0	22.56	22.75	22.52		
20	16QAM	1	0	22.36	22.00	22.15	24	1
20	16QAM	1	49	22.41	22.24	22.51		
20	16QAM	1	99	22.05	22.04	22.35		
20	16QAM	50	0	21.42	21.50	21.70	23	2
20	16QAM	50	24	21.44	21.52	21.49		
20	16QAM	50	50	21.38	21.44	21.71		
20	16QAM	100	0	21.43	21.39	21.63		
20	64QAM	1	0	21.26	21.40	21.46	23	2
20	64QAM	1	49	21.62	21.72	21.94		
20	64QAM	1	99	21.20	21.39	21.56		
20	64QAM	50	0	20.50	20.54	20.71	22	3
20	64QAM	50	24	20.50	20.48	20.70		
20	64QAM	50	50	20.35	20.44	20.72		
20	64QAM	100	0	20.49	20.54	20.70		
Channel				26115	26340	26615		
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	23.33	23.20	23.64	25	0
15	QPSK	1	37	23.42	23.69	23.84		
15	QPSK	1	74	23.21	23.16	23.63		
15	QPSK	36	0	22.57	22.48	22.71	24	1
15	QPSK	36	20	22.48	22.50	22.72		
15	QPSK	36	39	22.43	22.49	22.77		
15	QPSK	75	0	22.51	22.50	22.79		
15	16QAM	1	0	22.67	22.05	22.09	24	1
15	16QAM	1	37	22.58	22.12	22.47		
15	16QAM	1	74	22.09	22.03	22.07		
15	16QAM	36	0	21.35	21.43	21.56	23	2
15	16QAM	36	20	21.45	21.48	21.61		
15	16QAM	36	39	21.31	21.27	21.69		
15	16QAM	75	0	21.48	21.37	21.76		
15	64QAM	1	0	21.29	21.25	21.78	23	2
15	64QAM	1	37	21.68	21.63	22.04		
15	64QAM	1	74	21.36	21.06	21.74		
15	64QAM	36	0	20.58	20.50	20.77	22	3
15	64QAM	36	20	20.59	20.47	20.79		
15	64QAM	36	39	20.53	20.52	20.54		
15	64QAM	75	0	20.39	20.40	20.90		



FCC SAR TEST REPORT

Report No. : FA012248

Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	23.24	23.23	23.69	25	0
10	QPSK	1	25	23.54	23.53	23.73		
10	QPSK	1	49	23.17	23.20	23.47		
10	QPSK	25	0	22.51	22.55	22.82	24	1
10	QPSK	25	12	22.51	22.49	22.69		
10	QPSK	25	25	22.39	22.43	22.70		
10	QPSK	50	0	22.49	22.49	22.81		
10	16QAM	1	0	22.07	22.05	22.58	24	1
10	16QAM	1	25	22.68	22.13	22.64		
10	16QAM	1	49	22.11	22.09	22.28		
10	16QAM	25	0	21.54	21.34	21.61	23	2
10	16QAM	25	12	21.49	21.42	21.58		
10	16QAM	25	25	21.26	21.39	21.51		
10	16QAM	50	0	21.36	21.37	21.62	22	3
10	64QAM	1	0	21.16	21.18	21.41		
10	64QAM	1	25	21.46	21.28	21.69		
10	64QAM	1	49	21.45	21.18	21.68		
10	64QAM	25	0	20.56	20.48	20.85	22	3
10	64QAM	25	12	20.45	20.61	20.52		
10	64QAM	25	25	20.19	20.54	20.55		
10	64QAM	50	0	20.39	20.51	20.67		
Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	23.35	23.38	23.55	25	0
5	QPSK	1	12	23.55	23.42	23.65		
5	QPSK	1	24	23.08	23.17	23.57		
5	QPSK	12	0	22.43	22.38	22.70	24	1
5	QPSK	12	7	22.39	22.39	22.80		
5	QPSK	12	13	22.37	22.32	22.77		
5	QPSK	25	0	22.36	22.44	22.77		
5	16QAM	1	0	22.48	22.02	22.41	24	1
5	16QAM	1	12	22.37	22.13	22.30		
5	16QAM	1	24	22.08	22.38	22.02		
5	16QAM	12	0	21.41	21.18	21.58	23	2
5	16QAM	12	7	21.42	21.27	21.80		
5	16QAM	12	13	21.12	21.10	21.65		
5	16QAM	25	0	21.30	21.32	21.65		
5	64QAM	1	0	21.03	21.05	21.27	23	2
5	64QAM	1	12	21.49	21.47	21.71		
5	64QAM	1	24	21.23	21.05	21.28		
5	64QAM	12	0	20.29	20.26	20.77	22	3
5	64QAM	12	7	20.32	20.45	20.88		
5	64QAM	12	13	20.18	20.34	20.72		
5	64QAM	25	0	20.15	20.37	20.68		
Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	23.36	23.32	23.67	25	0
3	QPSK	1	8	23.36	23.21	23.76		



FCC SAR TEST REPORT

Report No. : FA012248

3	QPSK	1	14	23.26	23.23	23.75		
3	QPSK	8	0	22.47	22.44	22.76	24	1
3	QPSK	8	4	22.44	22.44	22.76		
3	QPSK	8	7	22.37	22.40	22.79		
3	QPSK	15	0	22.42	22.42	22.73		
3	16QAM	1	0	22.41	22.66	22.04	24	1
3	16QAM	1	8	22.01	22.57	22.10		
3	16QAM	1	14	22.03	22.07	22.15		
3	16QAM	8	0	21.22	21.28	21.68	23	2
3	16QAM	8	4	21.36	21.38	21.77		
3	16QAM	8	7	21.28	21.44	21.79		
3	16QAM	15	0	21.40	21.14	21.62		
3	64QAM	1	0	21.09	21.16	21.31	23	2
3	64QAM	1	8	21.06	21.29	21.88		
3	64QAM	1	14	21.00	21.24	21.42		
3	64QAM	8	0	20.20	20.31	20.62	22	3
3	64QAM	8	4	20.38	20.32	20.72		
3	64QAM	8	7	20.30	20.27	20.67		
3	64QAM	15	0	20.32	20.35	20.74		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	23.28	23.31	23.32	25	0
1.4	QPSK	1	3	23.40	23.44	23.41		
1.4	QPSK	1	5	23.30	23.36	23.27		
1.4	QPSK	3	0	23.48	23.41	23.75		
1.4	QPSK	3	1	23.52	23.44	23.80		
1.4	QPSK	3	3	23.45	23.58	23.61		
1.4	QPSK	6	0	22.36	22.50	22.59	24	1
1.4	16QAM	1	0	22.05	22.00	22.10	24	1
1.4	16QAM	1	3	22.21	22.23	22.43		
1.4	16QAM	1	5	22.03	22.01	22.23		
1.4	16QAM	3	0	22.22	22.26	22.50		
1.4	16QAM	3	1	22.28	22.29	22.71		
1.4	16QAM	3	3	22.38	22.26	22.81		
1.4	16QAM	6	0	21.14	21.09	21.39	23	2
1.4	64QAM	1	0	21.27	21.33	21.44	23	2
1.4	64QAM	1	3	21.43	21.20	21.40		
1.4	64QAM	1	5	21.01	21.07	21.28		
1.4	64QAM	3	0	21.15	21.33	21.57		
1.4	64QAM	3	1	21.25	21.46	21.16		
1.4	64QAM	3	3	21.31	21.12	21.15		
1.4	64QAM	6	0	20.31	20.24	20.44	22	3



<LTE Band 26>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	24.81	24.68	24.70	25	0
15	QPSK	1	37	24.78	24.88	24.74		
15	QPSK	1	74	24.52	24.72	24.72		
15	QPSK	36	0	23.74	23.70	23.65	24	1
15	QPSK	36	20	23.76	23.81	23.75		
15	QPSK	36	39	23.72	23.70	23.75		
15	QPSK	75	0	23.68	23.72	23.71	24	1
15	16QAM	1	0	23.75	23.70	23.22		
15	16QAM	1	37	23.82	23.15	23.83		
15	16QAM	1	74	22.89	23.22	23.31	23	2
15	16QAM	36	0	22.72	22.52	22.64		
15	16QAM	36	20	22.76	22.63	22.65		
15	16QAM	36	39	22.63	22.67	22.69	23	2
15	16QAM	75	0	22.68	22.56	22.67		
15	64QAM	1	0	22.65	22.35	22.44		
15	64QAM	1	37	22.93	22.50	22.86	23	2
15	64QAM	1	74	22.69	22.77	22.42		
15	64QAM	36	0	21.76	21.44	21.63		
15	64QAM	36	20	21.51	21.39	21.75	22	3
15	64QAM	36	39	21.62	21.51	21.50		
15	64QAM	75	0	21.77	21.64	21.57		
Channel				26740	26865	26990		
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	24.67	24.43	24.30	25	0
10	QPSK	1	25	24.72	24.68	24.85		
10	QPSK	1	49	24.66	24.71	24.58		
10	QPSK	25	0	23.83	23.64	23.76	24	1
10	QPSK	25	12	23.88	23.70	23.78		
10	QPSK	25	25	23.73	23.58	23.66		
10	QPSK	50	0	23.77	23.63	23.65	24	1
10	16QAM	1	0	23.24	23.31	23.45		
10	16QAM	1	25	23.57	23.34	23.46		
10	16QAM	1	49	23.50	23.31	23.28	23	2
10	16QAM	25	0	22.79	22.74	22.76		
10	16QAM	25	12	22.82	22.80	22.69		
10	16QAM	25	25	22.81	22.67	22.53	23	2
10	16QAM	50	0	22.70	22.63	22.63		
10	64QAM	1	0	22.62	22.77	22.36		
10	64QAM	1	25	22.66	22.75	22.66	23	2
10	64QAM	1	49	22.39	22.73	22.55		
10	64QAM	25	0	21.66	21.47	21.45		
10	64QAM	25	12	21.86	21.54	21.59	22	3
10	64QAM	25	25	21.72	21.51	21.79		
10	64QAM	50	0	21.89	21.54	21.64		
Channel				26715	26865	27015	Tune-up limit	MPR



FCC SAR TEST REPORT

Report No. : FA012248

Frequency (MHz)				816.5	831.5	846.5	(dBm)	(dB)
5	QPSK	1	0	24.72	24.56	24.72	25	0
5	QPSK	1	12	24.87	24.74	24.73		
5	QPSK	1	24	24.82	24.53	24.36		
5	QPSK	12	0	23.77	23.56	23.61	24	1
5	QPSK	12	7	23.76	23.59	23.67		
5	QPSK	12	13	23.71	23.50	23.62		
5	QPSK	25	0	23.74	23.57	23.67		
5	16QAM	1	0	23.32	23.16	23.76	24	1
5	16QAM	1	12	23.50	23.32	23.40		
5	16QAM	1	24	23.36	23.30	22.95		
5	16QAM	12	0	22.88	22.40	22.54	23	2
5	16QAM	12	7	22.96	22.51	22.53		
5	16QAM	12	13	22.91	22.42	22.53		
5	16QAM	25	0	22.76	22.50	22.63		
5	64QAM	1	0	22.73	22.61	22.35	23	2
5	64QAM	1	12	22.43	22.81	22.80		
5	64QAM	1	24	22.81	22.71	22.27		
5	64QAM	12	0	21.73	21.62	21.68	22	3
5	64QAM	12	7	21.73	21.47	21.45		
5	64QAM	12	13	21.53	21.55	21.39		
5	64QAM	25	0	21.51	21.67	21.41		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	24.66	24.62	24.70	25	0
3	QPSK	1	8	24.61	24.66	24.66		
3	QPSK	1	14	24.60	24.39	24.66		
3	QPSK	8	0	23.77	23.64	23.69	24	1
3	QPSK	8	4	23.85	23.65	23.66		
3	QPSK	8	7	23.80	23.55	23.71		
3	QPSK	15	0	23.81	23.59	23.65		
3	16QAM	1	0	23.57	23.04	23.08	24	1
3	16QAM	1	8	23.45	23.12	23.08		
3	16QAM	1	14	23.25	23.00	23.06		
3	16QAM	8	0	22.72	22.53	22.40	23	2
3	16QAM	8	4	22.82	22.63	22.72		
3	16QAM	8	7	22.77	22.61	22.75		
3	16QAM	15	0	22.54	22.62	22.77		
3	64QAM	1	0	22.51	22.85	22.92	23	2
3	64QAM	1	8	22.76	22.82	22.63		
3	64QAM	1	14	22.47	22.73	22.71		
3	64QAM	8	0	21.72	21.52	21.49	22	3
3	64QAM	8	4	21.73	21.45	21.47		
3	64QAM	8	7	21.65	21.52	21.36		
3	64QAM	15	0	21.62	21.45	21.39		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	24.76	24.61	24.65	25	0
1.4	QPSK	1	3	24.79	24.65	24.74		
1.4	QPSK	1	5	24.75	24.51	24.68		

1.4	QPSK	3	0	24.86	24.59	24.65		
1.4	QPSK	3	1	24.82	24.71	24.72		
1.4	QPSK	3	3	24.85	24.63	24.77		
1.4	QPSK	6	0	23.81	23.57	23.56	24	1
1.4	16QAM	1	0	23.90	23.15	22.99	24	1
1.4	16QAM	1	3	23.96	23.56	23.37		
1.4	16QAM	1	5	23.60	23.72	23.17		
1.4	16QAM	3	0	23.59	23.58	23.61		
1.4	16QAM	3	1	23.66	23.47	23.89		
1.4	16QAM	3	3	23.64	23.15	23.88		
1.4	16QAM	6	0	22.63	22.40	22.43	23	2
1.4	64QAM	1	0	22.54	22.93	22.80	23	2
1.4	64QAM	1	3	22.71	22.78	22.68		
1.4	64QAM	1	5	22.61	22.78	22.32		
1.4	64QAM	3	0	22.43	22.64	22.41		
1.4	64QAM	3	1	22.51	22.36	22.63		
1.4	64QAM	3	3	22.90	22.53	22.15		
1.4	64QAM	6	0	21.53	21.43	21.57	22	3

<LTE Band 66>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	23.24	23.46	23.14	25	0
20	QPSK	1	49	23.56	23.79	23.59		
20	QPSK	1	99	23.55	23.27	23.39		
20	QPSK	50	0	22.67	22.77	22.43	24	1
20	QPSK	50	24	22.78	22.79	22.45		
20	QPSK	50	50	22.62	22.56	22.46		
20	QPSK	100	0	22.66	22.75	22.41	24	1
20	16QAM	1	0	22.16	22.18	22.09		
20	16QAM	1	49	22.93	22.16	22.70		
20	16QAM	1	99	22.71	22.07	22.68	23	2
20	16QAM	50	0	21.63	21.86	21.44		
20	16QAM	50	24	21.85	21.78	21.47		
20	16QAM	50	50	21.78	21.67	21.46	23	2
20	16QAM	100	0	21.80	21.66	21.42		
20	64QAM	1	0	21.61	21.47	21.24		
20	64QAM	1	49	21.67	21.55	21.41	23	2
20	64QAM	1	99	21.26	21.33	21.29		
20	64QAM	50	0	20.75	20.72	20.52	22	3
20	64QAM	50	24	20.90	20.73	20.53		
20	64QAM	50	50	20.75	20.51	20.49		
20	64QAM	100	0	20.85	20.71	20.59		
Channel				132047	132322	132597		
Frequency (MHz)				1717.5	1745	1772.5	Tune-up limit (dBm)	MPR (dB)
15	QPSK	1	0	23.37	23.39	23.34	25	0
15	QPSK	1	37	23.67	23.51	23.64		
15	QPSK	1	74	23.67	23.41	23.31		
15	QPSK	36	0	22.55	22.67	22.40	24	1
15	QPSK	36	20	22.78	22.63	22.55		
15	QPSK	36	39	22.77	22.59	22.56		
15	QPSK	75	0	22.72	22.72	22.46	24	1
15	16QAM	1	0	22.08	22.84	22.07		
15	16QAM	1	37	22.34	22.70	22.66		
15	16QAM	1	74	22.16	22.20	22.63	23	2
15	16QAM	36	0	21.70	21.74	21.49		
15	16QAM	36	20	21.74	21.73	21.47		
15	16QAM	36	39	21.83	21.59	21.50	23	2
15	16QAM	75	0	21.77	21.63	21.56		
15	64QAM	1	0	21.74	21.77	21.27		
15	64QAM	1	37	22.10	22.11	21.70	23	2
15	64QAM	1	74	21.80	21.70	21.26		
15	64QAM	36	0	20.54	20.79	20.49		
15	64QAM	36	20	20.89	20.61	20.58	22	3
15	64QAM	36	39	20.81	20.47	20.62		
15	64QAM	75	0	20.71	20.56	20.46		



FCC SAR TEST REPORT

Report No. : FA012248

Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	23.22	23.32	23.16	25	0
10	QPSK	1	25	23.64	23.63	23.52		
10	QPSK	1	49	23.58	23.19	23.40		
10	QPSK	25	0	22.62	22.74	22.46	24	1
10	QPSK	25	12	22.61	22.73	22.54		
10	QPSK	25	25	22.74	22.57	22.56		
10	QPSK	50	0	22.61	22.70	22.51		
10	16QAM	1	0	22.03	22.13	22.01	24	1
10	16QAM	1	25	22.24	22.24	22.14		
10	16QAM	1	49	22.16	22.01	22.03		
10	16QAM	25	0	21.72	21.84	21.40	23	2
10	16QAM	25	12	21.76	21.74	21.57		
10	16QAM	25	25	21.89	21.68	21.52		
10	16QAM	50	0	21.66	21.71	21.61		
10	64QAM	1	0	21.38	21.43	21.30	23	2
10	64QAM	1	25	21.66	21.53	21.62		
10	64QAM	1	49	21.47	21.38	21.56		
10	64QAM	25	0	20.61	20.61	20.58	22	3
10	64QAM	25	12	20.88	20.88	20.76		
10	64QAM	25	25	20.75	20.62	20.67		
10	64QAM	50	0	20.69	20.71	20.54		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	23.14	23.38	23.30	25	0
5	QPSK	1	12	23.53	23.49	23.41		
5	QPSK	1	24	23.39	23.24	23.38		
5	QPSK	12	0	22.46	22.70	22.44	24	1
5	QPSK	12	7	22.69	22.58	22.53		
5	QPSK	12	13	22.54	22.57	22.53		
5	QPSK	25	0	22.64	22.63	22.47		
5	16QAM	1	0	22.07	22.16	22.49	24	1
5	16QAM	1	12	22.25	22.23	22.79		
5	16QAM	1	24	22.05	22.01	22.00		
5	16QAM	12	0	21.39	21.52	21.37	23	2
5	16QAM	12	7	21.67	21.59	21.65		
5	16QAM	12	13	21.61	21.51	21.70		
5	16QAM	25	0	21.61	21.45	21.57		
5	64QAM	1	0	21.46	21.54	21.19	23	2
5	64QAM	1	12	21.70	21.68	21.62		
5	64QAM	1	24	21.49	21.54	21.14		
5	64QAM	12	0	20.57	20.74	20.77	22	3
5	64QAM	12	7	20.73	20.63	20.80		
5	64QAM	12	13	20.63	20.55	20.72		
5	64QAM	25	0	20.68	20.60	20.68		



FCC SAR TEST REPORT

Report No. : FA012248

Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	23.32	23.58	23.45	25	0
3	QPSK	1	8	23.64	23.44	23.38		
3	QPSK	1	14	23.62	23.10	23.48		
3	QPSK	8	0	22.55	22.61	22.50	24	1
3	QPSK	8	4	22.59	22.54	22.53		
3	QPSK	8	7	22.57	22.48	22.51		
3	QPSK	15	0	22.52	22.59	22.56		
3	16QAM	1	0	22.03	22.44	22.33	24	1
3	16QAM	1	8	22.53	22.04	22.08		
3	16QAM	1	14	22.01	22.01	22.31		
3	16QAM	8	0	21.48	21.56	21.54	23	2
3	16QAM	8	4	21.59	21.67	21.65		
3	16QAM	8	7	21.73	21.74	21.71		
3	16QAM	15	0	21.60	21.63	21.56		
3	64QAM	1	0	21.17	21.42	21.29	23	2
3	64QAM	1	8	21.17	21.19	21.60		
3	64QAM	1	14	21.21	21.53	21.63		
3	64QAM	8	0	20.46	20.62	20.47	22	3
3	64QAM	8	4	20.50	20.61	20.58		
3	64QAM	8	7	20.52	20.33	20.59		
3	64QAM	15	0	20.68	20.41	20.52		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	23.37	23.44	23.30	25	0
1.4	QPSK	1	3	23.52	23.43	23.41		
1.4	QPSK	1	5	23.29	23.43	23.37		
1.4	QPSK	3	0	23.42	23.50	23.33		
1.4	QPSK	3	1	23.49	23.60	23.42		
1.4	QPSK	3	3	23.56	23.56	23.55		
1.4	QPSK	6	0	22.42	22.54	22.41	24	1
1.4	16QAM	1	0	22.60	22.71	22.09	24	1
1.4	16QAM	1	3	22.70	22.59	22.41		
1.4	16QAM	1	5	22.63	22.08	22.38		
1.4	16QAM	3	0	22.39	22.24	22.37		
1.4	16QAM	3	1	22.66	22.38	22.31		
1.4	16QAM	3	3	22.61	22.50	22.24		
1.4	16QAM	6	0	21.38	21.44	21.23	23	2
1.4	64QAM	1	0	21.22	21.35	21.17	23	2
1.4	64QAM	1	3	21.41	21.72	21.36		
1.4	64QAM	1	5	21.17	21.36	21.58		
1.4	64QAM	3	0	21.21	21.32	21.40		
1.4	64QAM	3	1	21.70	21.58	21.46		
1.4	64QAM	3	3	21.22	21.47	21.11		
1.4	64QAM	6	0	20.49	20.40	20.44	22	3



<LTE Band 71>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				133222	133322	133372		
Frequency (MHz)				673	683	688		
20	QPSK	1	0	24.28	24.52	24.67	25	0
20	QPSK	1	49	24.80	24.75	24.88		
20	QPSK	1	99	24.38	24.43	24.54		
20	QPSK	50	0	23.73	23.62	23.55	24	1
20	QPSK	50	24	23.66	23.56	23.56		
20	QPSK	50	50	23.65	23.58	23.50		
20	QPSK	100	0	23.63	23.59	23.54		
20	16QAM	1	0	23.38	23.08	23.39	24	1
20	16QAM	1	49	23.22	23.71	23.12		
20	16QAM	1	99	23.42	23.15	23.25		
20	16QAM	50	0	22.60	22.50	22.62	23	2
20	16QAM	50	24	22.52	22.53	22.79		
20	16QAM	50	50	22.62	22.48	22.57		
20	16QAM	100	0	22.55	22.57	22.57		
20	64QAM	1	0	22.22	22.32	22.72	23	2
20	64QAM	1	49	22.99	22.52	22.85		
20	64QAM	1	99	22.44	22.41	22.66		
20	64QAM	50	0	21.70	21.57	21.36	22	3
20	64QAM	50	24	21.76	21.61	21.35		
20	64QAM	50	50	21.70	21.55	21.37		
20	64QAM	100	0	21.65	21.65	21.38		
Channel				133197	133297	133397		
Frequency (MHz)				670.5	680.5	690.5		
15	QPSK	1	0	24.25	24.48	24.58	25	0
15	QPSK	1	37	24.79	24.67	24.84		
15	QPSK	1	74	24.29	24.38	24.54		
15	QPSK	36	0	23.63	23.54	23.52	24	1
15	QPSK	36	20	23.64	23.56	23.53		
15	QPSK	36	39	23.58	23.51	23.43		
15	QPSK	75	0	23.58	23.53	23.44		
15	16QAM	1	0	23.35	23.08	23.30	24	1
15	16QAM	1	37	23.19	23.63	23.11		
15	16QAM	1	74	23.34	23.14	23.20		
15	16QAM	36	0	22.56	22.41	22.60	23	2
15	16QAM	36	20	22.46	22.48	22.75		
15	16QAM	36	39	22.59	22.47	22.55		
15	16QAM	75	0	22.47	22.54	22.57		
15	64QAM	1	0	22.22	22.31	22.65	23	2
15	64QAM	1	37	22.96	22.46	22.84		
15	64QAM	1	74	22.38	22.41	22.66		
15	64QAM	36	0	21.67	21.53	21.34	22	3
15	64QAM	36	20	21.66	21.55	21.31		
15	64QAM	36	39	21.67	21.53	21.36		
15	64QAM	75	0	21.61	21.63	21.35		



FCC SAR TEST REPORT

Report No. : FA012248

Channel				133172	133272	133422	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				668	678	693		
10	QPSK	1	0	24.28	24.50	24.59	25	0
10	QPSK	1	25	24.78	24.71	24.87		
10	QPSK	1	49	24.36	24.40	24.49		
10	QPSK	25	0	23.68	23.61	23.53	24	1
10	QPSK	25	12	23.62	23.56	23.52		
10	QPSK	25	25	23.64	23.49	23.44		
10	QPSK	50	0	23.54	23.53	23.44		
10	16QAM	1	0	23.34	23.03	23.35	24	1
10	16QAM	1	25	23.15	23.67	23.03		
10	16QAM	1	49	23.33	23.08	23.20		
10	16QAM	25	0	22.50	22.40	22.54	23	2
10	16QAM	25	12	22.43	22.44	22.75		
10	16QAM	25	25	22.60	22.47	22.51		
10	16QAM	50	0	22.51	22.48	22.53		
10	64QAM	1	0	22.21	22.22	22.72	23	2
10	64QAM	1	25	22.94	22.46	22.78		
10	64QAM	1	49	22.39	22.39	22.56		
10	64QAM	25	0	21.65	21.47	21.26	22	3
10	64QAM	25	12	21.76	21.59	21.29		
10	64QAM	25	25	21.69	21.49	21.37		
10	64QAM	50	0	21.56	21.62	21.32		
Channel				133147	133247	133447	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				665.5	675.5	695.5		
5	QPSK	1	0	24.25	24.48	24.67	25	0
5	QPSK	1	12	24.74	24.72	24.85		
5	QPSK	1	24	24.30	24.36	24.46		
5	QPSK	12	0	23.64	23.62	23.50	24	1
5	QPSK	12	7	23.61	23.46	23.50		
5	QPSK	12	13	23.62	23.51	23.40		
5	QPSK	25	0	23.59	23.53	23.49		
5	16QAM	1	0	23.29	23.03	23.34	24	1
5	16QAM	1	12	23.18	23.62	23.10		
5	16QAM	1	24	23.35	23.14	23.25		
5	16QAM	12	0	22.52	22.42	22.60	23	2
5	16QAM	12	7	22.49	22.45	22.69		
5	16QAM	12	13	22.52	22.48	22.48		
5	16QAM	25	0	22.50	22.52	22.50		
5	64QAM	1	0	22.15	22.22	22.72	23	2
5	64QAM	1	12	22.99	22.45	22.76		
5	64QAM	1	24	22.38	22.40	22.66		
5	64QAM	12	0	21.62	21.55	21.33	22	3
5	64QAM	12	7	21.66	21.59	21.27		
5	64QAM	12	13	21.66	21.54	21.31		
5	64QAM	25	0	21.65	21.59	21.35		

Reduced Power Mode
<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	12.75	12.83	12.79	13	0
20	QPSK	1	49	12.21	12.41	12.33		
20	QPSK	1	99	12.19	12.35	12.32		
20	QPSK	50	0	11.23	11.88	11.47	12	1
20	QPSK	50	24	11.52	11.55	11.32		
20	QPSK	50	50	11.39	11.21	11.64		
20	QPSK	100	0	11.35	11.62	11.55	12	1
20	16QAM	1	0	11.10	11.50	11.06		
20	16QAM	1	49	11.89	11.21	12.22		
20	16QAM	1	99	11.21	11.07	10.62	11	2
20	16QAM	50	0	10.34	10.22	10.59		
20	16QAM	50	24	10.63	10.25	10.54		
20	16QAM	50	50	10.51	10.21	10.77	11	2
20	16QAM	100	0	10.46	10.21	10.67		
20	64QAM	1	0	10.24	10.66	10.22		
20	64QAM	1	49	10.22	10.31	10.11	11	2
20	64QAM	1	99	10.37	10.21	9.78		
20	64QAM	50	0	9.52	9.88	9.81		
20	64QAM	50	24	9.83	9.56	9.62	10	3
20	64QAM	50	50	9.71	10.32	9.98		
20	64QAM	100	0	9.65	10.47	9.89		
Channel				18675	18900	19125		
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	12.20	12.37	12.10	13	0
15	QPSK	1	37	12.10	12.36	12.26		
15	QPSK	1	74	11.79	11.70	11.26		
15	QPSK	36	0	11.17	11.77	11.33	12	1
15	QPSK	36	20	11.41	11.41	11.24		
15	QPSK	36	39	11.34	11.11	11.57		
15	QPSK	75	0	11.22	11.51	11.50	12	1
15	16QAM	1	0	11.01	11.39	11.01		
15	16QAM	1	37	11.76	11.08	12.08		
15	16QAM	1	74	11.12	10.94	10.50	11	2
15	16QAM	36	0	10.28	10.17	10.46		
15	16QAM	36	20	10.52	10.20	10.44		
15	16QAM	36	39	10.42	10.15	10.71	11	2
15	16QAM	75	0	10.36	10.10	10.53		
15	64QAM	1	0	10.13	10.53	10.11		
15	64QAM	1	37	10.07	10.17	10.01	11	2
15	64QAM	1	74	10.23	10.10	9.72		
15	64QAM	36	0	9.47	9.79	9.76		
15	64QAM	36	20	9.74	9.44	9.53	10	3
15	64QAM	36	39	9.64	10.25	9.86		
15	64QAM	75	0	9.50	10.32	9.77		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	12.07	12.28	12.00	13	0
10	QPSK	1	25	12.02	12.29	12.20		
10	QPSK	1	49	11.72	11.60	11.18		
10	QPSK	25	0	11.02	11.63	11.25	12	1
10	QPSK	25	12	11.28	11.31	11.15		
10	QPSK	25	25	11.28	11.02	11.49		
10	QPSK	50	0	11.13	11.36	11.42		
10	16QAM	1	0	10.89	11.29	10.90	12	1
10	16QAM	1	25	11.66	10.93	11.98		
10	16QAM	1	49	10.99	10.89	10.35		
10	16QAM	25	0	10.13	10.02	10.41	11	2
10	16QAM	25	12	10.41	10.12	10.36		
10	16QAM	25	25	10.33	10.07	10.60		
10	16QAM	50	0	10.28	9.99	10.41		
10	64QAM	1	0	9.98	10.42	10.05	11	2
10	64QAM	1	25	9.99	10.09	9.90		
10	64QAM	1	49	10.09	10.01	9.62		
10	64QAM	25	0	9.37	9.65	9.67	10	3
10	64QAM	25	12	9.65	9.30	9.43		
10	64QAM	25	25	9.54	10.20	9.74		
10	64QAM	50	0	9.40	10.26	9.64		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	11.98	12.15	11.93	13	0
5	QPSK	1	12	11.95	12.15	12.15		
5	QPSK	1	24	11.67	11.48	11.07		
5	QPSK	12	0	10.96	11.51	11.13	12	1
5	QPSK	12	7	11.21	11.18	11.00		
5	QPSK	12	13	11.14	10.89	11.42		
5	QPSK	25	0	11.00	11.28	11.33		
5	16QAM	1	0	10.81	11.18	10.79	12	1
5	16QAM	1	12	11.53	10.79	11.93		
5	16QAM	1	24	10.86	10.80	10.28		
5	16QAM	12	0	10.08	9.97	10.30	11	2
5	16QAM	12	7	10.34	9.99	10.30		
5	16QAM	12	13	10.27	10.02	10.50		
5	16QAM	25	0	10.18	9.91	10.26		
5	64QAM	1	0	9.90	10.27	10.00	11	2
5	64QAM	1	12	9.85	10.03	9.85		
5	64QAM	1	24	10.02	9.88	9.50		
5	64QAM	12	0	9.27	9.52	9.61	10	3
5	64QAM	12	7	9.52	9.23	9.35		
5	64QAM	12	13	9.46	10.10	9.63		
5	64QAM	25	0	9.34	10.11	9.57		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	11.90	12.05	11.78	13	0
3	QPSK	1	8	11.83	12.00	12.06		



FCC SAR TEST REPORT

Report No. : FA012248

3	QPSK	1	14	11.52	11.36	10.92		
3	QPSK	8	0	10.88	11.46	11.00	12	1
3	QPSK	8	4	11.15	11.06	10.93		
3	QPSK	8	7	11.09	10.79	11.28		
3	QPSK	15	0	10.85	11.23	11.22		
3	16QAM	1	0	10.76	11.03	10.70	12	1
3	16QAM	1	8	11.43	10.70	11.82		
3	16QAM	1	14	10.79	10.67	10.13		
3	16QAM	8	0	9.93	9.92	10.24	11	2
3	16QAM	8	4	10.29	9.89	10.17		
3	16QAM	8	7	10.16	9.97	10.42		
3	16QAM	15	0	10.09	9.82	10.14		
3	64QAM	1	0	9.75	10.16	9.90	11	2
3	64QAM	1	8	9.70	9.93	9.71		
3	64QAM	1	14	9.96	9.78	9.35		
3	64QAM	8	0	9.21	9.38	9.51	10	3
3	64QAM	8	4	9.39	9.18	9.20		
3	64QAM	8	7	9.33	10.04	9.55		
3	64QAM	15	0	9.19	10.03	9.43		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	11.02	11.33	11.32	13	0
1.4	QPSK	1	3	10.94	11.34	11.16		
1.4	QPSK	1	5	11.05	11.21	11.19		
1.4	QPSK	3	0	11.19	11.30	11.49		
1.4	QPSK	3	1	11.34	11.57	11.59		
1.4	QPSK	3	3	11.21	11.50	11.42		
1.4	QPSK	6	0	10.26	10.47	10.50	12	1
1.4	16QAM	1	0	10.06	10.09	10.08	12	1
1.4	16QAM	1	3	10.01	10.05	10.17		
1.4	16QAM	1	5	10.71	9.92	10.17		
1.4	16QAM	3	0	9.95	10.13	10.42		
1.4	16QAM	3	1	9.96	9.90	10.30		
1.4	16QAM	3	3	10.00	10.51	10.27		
1.4	16QAM	6	0	9.16	9.25	9.30	11	2
1.4	64QAM	1	0	9.16	9.04	9.09	11	2
1.4	64QAM	1	3	9.27	9.31	9.31		
1.4	64QAM	1	5	9.54	9.62	9.06		
1.4	64QAM	3	0	9.33	9.35	9.54		
1.4	64QAM	3	1	9.40	9.48	9.48		
1.4	64QAM	3	3	9.25	9.32	9.45		
1.4	64QAM	6	0	8.35	8.39	8.29	10	3

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	15.22	15.38	15.45	15.5	0
20	QPSK	1	49	15.24	14.77	15.14		
20	QPSK	1	99	14.49	14.70	14.81		
20	QPSK	50	0	13.98	13.82	14.03	14.5	1
20	QPSK	50	24	14.02	13.79	13.68		
20	QPSK	50	50	13.80	13.82	13.94		
20	QPSK	100	0	13.86	13.78	14.04	14.5	1
20	16QAM	1	0	13.67	13.67	13.81		
20	16QAM	1	49	14.28	14.05	14.02		
20	16QAM	1	99	13.41	13.52	13.62	13.5	2
20	16QAM	50	0	13.08	12.54	12.77		
20	16QAM	50	24	13.24	12.71	12.89		
20	16QAM	50	50	12.63	12.56	12.58	13.5	2
20	16QAM	100	0	12.86	12.50	12.58		
20	64QAM	1	0	12.21	12.25	12.11		
20	64QAM	1	49	13.49	12.99	13.19	13.5	2
20	64QAM	1	99	11.94	12.15	12.07		
20	64QAM	50	0	12.26	11.72	11.96		
20	64QAM	50	24	12.41	11.88	12.08	12.5	3
20	64QAM	50	50	11.80	11.74	11.77		
20	64QAM	100	0	12.03	11.68	11.77		
Channel				20025	20175	20325		
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	15.15	15.32	15.39	15.5	0
15	QPSK	1	37	15.17	14.72	14.99		
15	QPSK	1	74	14.37	14.56	14.72		
15	QPSK	36	0	13.93	13.70	13.93	14.5	1
15	QPSK	36	20	13.93	13.67	13.61		
15	QPSK	36	39	13.68	13.71	13.82		
15	QPSK	75	0	13.80	13.67	13.96	14.5	1
15	16QAM	1	0	13.58	13.53	13.69		
15	16QAM	1	37	14.21	13.91	13.94		
15	16QAM	1	74	13.28	13.43	13.49	13.5	2
15	16QAM	36	0	13.03	12.49	12.69		
15	16QAM	36	20	13.14	12.66	12.76		
15	16QAM	36	39	12.50	12.41	12.48	13.5	2
15	16QAM	75	0	12.76	12.38	12.51		
15	64QAM	1	0	12.12	12.18	11.98		
15	64QAM	1	37	13.42	12.87	13.06	12.5	3
15	64QAM	1	74	11.88	12.04	11.99		
15	64QAM	36	0	12.20	11.57	11.86		
15	64QAM	36	20	12.33	11.83	11.99	12.5	3
15	64QAM	36	39	11.67	11.64	11.70		
15	64QAM	75	0	11.93	11.62	11.71		



FCC SAR TEST REPORT

Report No. : FA012248

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	15.02	15.21	15.24	15.5	0
10	QPSK	1	25	15.12	14.63	14.93		
10	QPSK	1	49	14.29	14.51	14.66		
10	QPSK	25	0	13.85	13.64	13.88	14.5	1
10	QPSK	25	12	13.83	13.62	13.47		
10	QPSK	25	25	13.53	13.63	13.68		
10	QPSK	50	0	13.71	13.57	13.83		
10	16QAM	1	0	13.48	13.43	13.58	14.5	1
10	16QAM	1	25	14.09	13.78	13.82		
10	16QAM	1	49	13.22	13.31	13.37		
10	16QAM	25	0	12.92	12.34	12.59	13.5	2
10	16QAM	25	12	13.00	12.59	12.69		
10	16QAM	25	25	12.38	12.33	12.41		
10	16QAM	50	0	12.67	12.25	12.38		
10	64QAM	1	0	12.00	12.05	11.83	13.5	2
10	64QAM	1	25	13.27	12.75	12.92		
10	64QAM	1	49	11.83	11.89	11.92		
10	64QAM	25	0	12.15	11.47	11.74	12.5	3
10	64QAM	25	12	12.23	11.72	11.84		
10	64QAM	25	25	11.59	11.50	11.60		
10	64QAM	50	0	11.87	11.49	11.65		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	14.87	15.15	15.18	15.5	0
5	QPSK	1	12	14.99	14.54	14.81		
5	QPSK	1	24	14.23	14.36	14.61		
5	QPSK	12	0	13.74	13.54	13.83	14.5	1
5	QPSK	12	7	13.69	13.52	13.33		
5	QPSK	12	13	13.38	13.51	13.56		
5	QPSK	25	0	13.57	13.50	13.72		
5	16QAM	1	0	13.41	13.38	13.44	14.5	1
5	16QAM	1	12	14.04	13.66	13.72		
5	16QAM	1	24	13.16	13.20	13.26		
5	16QAM	12	0	12.82	12.29	12.46	13.5	2
5	16QAM	12	7	12.85	12.49	12.58		
5	16QAM	12	13	12.32	12.26	12.28		
5	16QAM	25	0	12.52	12.16	12.26		
5	64QAM	1	0	11.95	11.99	11.77	13.5	2
5	64QAM	1	12	13.21	12.70	12.84		
5	64QAM	1	24	11.78	11.79	11.84		
5	64QAM	12	0	12.01	11.38	11.67	12.5	3
5	64QAM	12	7	12.09	11.61	11.74		
5	64QAM	12	13	11.48	11.36	11.54		
5	64QAM	25	0	11.81	11.39	11.54		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	14.75	15.08	15.12	15.5	0
3	QPSK	1	8	14.86	14.39	14.67		



FCC SAR TEST REPORT

Report No. : FA012248

3	QPSK	1	14	14.18	14.28	14.47		
3	QPSK	8	0	13.64	13.46	13.75	14.5	1
3	QPSK	8	4	13.58	13.38	13.28		
3	QPSK	8	7	13.32	13.45	13.45		
3	QPSK	15	0	13.44	13.39	13.61		
3	16QAM	1	0	13.31	13.27	13.34	14.5	1
3	16QAM	1	8	13.90	13.58	13.60		
3	16QAM	1	14	13.10	13.08	13.21		
3	16QAM	8	0	12.73	12.17	12.37	13.5	2
3	16QAM	8	4	12.76	12.37	12.48		
3	16QAM	8	7	12.23	12.14	12.18		
3	16QAM	15	0	12.40	12.05	12.14		
3	64QAM	1	0	11.86	11.94	11.72	13.5	2
3	64QAM	1	8	13.11	12.62	12.75		
3	64QAM	1	14	11.65	11.65	11.78		
3	64QAM	8	0	11.93	11.28	11.54	12.5	3
3	64QAM	8	4	12.04	11.47	11.66		
3	64QAM	8	7	11.39	11.28	11.39		
3	64QAM	15	0	11.69	11.30	11.44		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	13.76	14.05	14.05	15.5	0
1.4	QPSK	1	3	13.80	14.09	13.87		
1.4	QPSK	1	5	13.72	14.02	14.01		
1.4	QPSK	3	0	13.95	14.15	14.20		
1.4	QPSK	3	1	14.10	14.26	14.38		
1.4	QPSK	3	3	14.02	14.24	14.11		
1.4	QPSK	6	0	12.94	13.22	13.38	14.5	1
1.4	16QAM	1	0	12.88	12.86	12.86	14.5	1
1.4	16QAM	1	3	12.70	12.82	12.99		
1.4	16QAM	1	5	13.48	12.70	12.91		
1.4	16QAM	3	0	12.74	12.77	13.05		
1.4	16QAM	3	1	12.67	12.63	13.09		
1.4	16QAM	3	3	12.83	13.36	12.94		
1.4	16QAM	6	0	11.80	12.05	12.06	13.5	2
1.4	64QAM	1	0	11.82	11.83	11.89	13.5	2
1.4	64QAM	1	3	11.95	12.09	12.16		
1.4	64QAM	1	5	12.29	12.40	11.77		
1.4	64QAM	3	0	12.11	12.06	12.34		
1.4	64QAM	3	1	12.16	12.24	12.27		
1.4	64QAM	3	3	12.03	12.03	12.15		
1.4	64QAM	6	0	11.07	11.08	11.01	12.5	3

<LTE Band 12>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23060	23095	23130		
Frequency (MHz)				704	707.5	711		
10	QPSK	1	0	21.53	21.82	21.81	22	0
10	QPSK	1	25	21.63	21.76	21.22		
10	QPSK	1	49	21.58	21.73	21.59		
10	QPSK	25	0	20.66	20.82	20.46	21	1
10	QPSK	25	12	20.58	20.78	20.76		
10	QPSK	25	25	20.69	20.24	20.32		
10	QPSK	50	0	20.73	20.75	20.68	21	1
10	16QAM	1	0	20.69	20.12	20.25		
10	16QAM	1	25	20.36	20.80	21.00		
10	16QAM	1	49	20.29	21.03	20.48	20	2
10	16QAM	25	0	19.66	19.69	19.85		
10	16QAM	25	12	19.48	19.86	19.96		
10	16QAM	25	25	19.75	19.88	19.89	20	2
10	16QAM	50	0	19.78	19.73	19.84		
10	64QAM	1	0	19.68	19.34	19.50		
10	64QAM	1	25	19.57	19.61	19.95	20	2
10	64QAM	1	49	19.86	19.61	19.61		
10	64QAM	25	0	18.44	18.38	18.78		
10	64QAM	25	12	18.44	18.90	18.81	19	3
10	64QAM	25	25	18.55	18.90	18.98		
10	64QAM	50	0	18.60	18.75	18.80		
Channel				23035	23095	23155		
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	20.67	20.97	20.95	22	0
5	QPSK	1	12	20.75	20.90	20.27		
5	QPSK	1	24	20.65	20.83	20.70		
5	QPSK	12	0	19.77	19.91	19.51	21	1
5	QPSK	12	7	19.71	19.91	19.90		
5	QPSK	12	13	19.83	19.33	19.47		
5	QPSK	25	0	19.85	19.89	19.78	21	1
5	16QAM	1	0	19.80	19.22	19.38		
5	16QAM	1	12	19.51	19.92	20.13		
5	16QAM	1	24	19.38	20.16	19.63	20	2
5	16QAM	12	0	18.75	18.77	18.90		
5	16QAM	12	7	18.55	18.97	19.11		
5	16QAM	12	13	18.89	18.95	19.03	20	2
5	16QAM	25	0	18.89	18.84	18.97		
5	64QAM	1	0	18.81	18.49	18.64		
5	64QAM	1	12	18.71	18.76	19.10	20	2
5	64QAM	1	24	18.95	18.68	18.72		
5	64QAM	12	0	17.54	17.49	17.87		
5	64QAM	12	7	17.52	17.95	17.89	19	3
5	64QAM	12	13	17.60	17.98	18.07		
5	64QAM	25	0	17.69	17.85	17.86		



FCC SAR TEST REPORT

Report No. : FA012248

Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	20.55	20.91	20.86	22	0
3	QPSK	1	8	20.69	20.75	20.18		
3	QPSK	1	14	20.54	20.74	20.61		
3	QPSK	8	0	19.63	19.78	19.42	21	1
3	QPSK	8	4	19.63	19.78	19.75		
3	QPSK	8	7	19.78	19.19	19.42		
3	QPSK	15	0	19.70	19.78	19.67		
3	16QAM	1	0	19.67	19.14	19.29	21	1
3	16QAM	1	8	19.46	19.82	20.00		
3	16QAM	1	14	19.27	20.08	19.58		
3	16QAM	8	0	18.63	18.71	18.84	20	2
3	16QAM	8	4	18.46	18.85	18.97		
3	16QAM	8	7	18.83	18.82	18.92		
3	16QAM	15	0	18.75	18.77	18.83		
3	64QAM	1	0	18.67	18.37	18.49	20	2
3	64QAM	1	8	18.57	18.63	19.01		
3	64QAM	1	14	18.84	18.54	18.58		
3	64QAM	8	0	17.43	17.36	17.75	19	3
3	64QAM	8	4	17.45	17.84	17.82		
3	64QAM	8	7	17.49	17.91	18.01		
3	64QAM	15	0	17.60	17.75	17.76		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	20.05	20.35	20.40	22	0
1.4	QPSK	1	3	20.03	20.35	20.21		
1.4	QPSK	1	5	20.09	20.29	20.29		
1.4	QPSK	3	0	20.29	20.35	20.57		
1.4	QPSK	3	1	20.35	20.57	20.56		
1.4	QPSK	3	3	20.30	20.50	20.49		
1.4	QPSK	6	0	19.33	19.46	19.63	21	1
1.4	16QAM	1	0	19.05	19.21	19.09	21	1
1.4	16QAM	1	3	19.01	19.18	19.22		
1.4	16QAM	1	5	19.70	18.94	19.22		
1.4	16QAM	3	0	19.03	19.11	19.44		
1.4	16QAM	3	1	19.00	19.04	19.39		
1.4	16QAM	3	3	19.07	19.62	19.35		
1.4	16QAM	6	0	18.17	18.27	18.40	20	2
1.4	64QAM	1	0	18.21	18.18	18.14	20	2
1.4	64QAM	1	3	18.34	18.43	18.32		
1.4	64QAM	1	5	18.68	18.63	18.11		
1.4	64QAM	3	0	18.42	18.43	18.65		
1.4	64QAM	3	1	18.45	18.53	18.54		
1.4	64QAM	3	3	18.26	18.40	18.47		
1.4	64QAM	6	0	17.36	17.37	17.26	19	3



<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	12.86	12.98	12.99	13	0
20	QPSK	1	49	12.38	12.42	12.02		
20	QPSK	1	99	11.57	11.56	12.20		
20	QPSK	50	0	11.66	11.87	11.93	12	1
20	QPSK	50	24	11.63	11.83	11.92		
20	QPSK	50	50	11.61	11.66	11.92		
20	QPSK	100	0	11.21	11.64	11.71	12	1
20	16QAM	1	0	11.30	11.24	11.09		
20	16QAM	1	49	11.74	11.52	11.53		
20	16QAM	1	99	10.93	10.89	11.54	11	2
20	16QAM	50	0	10.34	10.95	10.57		
20	16QAM	50	24	10.45	11.15	10.58		
20	16QAM	50	50	10.33	10.73	10.59	11	2
20	16QAM	100	0	10.29	10.71	10.76		
20	64QAM	1	0	10.31	10.27	10.09		
20	64QAM	1	49	10.76	11.57	10.96	11	2
20	64QAM	1	99	9.96	9.91	10.57		
20	64QAM	50	0	9.43	9.45	9.57		
20	64QAM	50	24	9.55	10.25	9.86	10	3
20	64QAM	50	50	9.44	9.82	9.74		
20	64QAM	100	0	9.39	9.81	9.58		
Channel				26115	26340	26615		
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	11.98	12.05	12.08	13	0
15	QPSK	1	37	11.43	11.54	11.14		
15	QPSK	1	74	10.70	10.63	11.33		
15	QPSK	36	0	10.36	10.93	11.38	12	1
15	QPSK	36	20	10.42	11.17	11.08		
15	QPSK	36	39	10.35	10.73	11.33		
15	QPSK	75	0	10.28	10.69	10.76	12	1
15	16QAM	1	0	10.37	10.36	10.24		
15	16QAM	1	37	10.85	11.69	11.53		
15	16QAM	1	74	10.04	10.04	10.66	11	2
15	16QAM	36	0	9.48	10.01	10.44		
15	16QAM	36	20	9.51	10.22	10.33		
15	16QAM	36	39	9.43	9.85	10.50	11	2
15	16QAM	75	0	9.43	9.78	10.51		
15	64QAM	1	0	9.44	9.41	9.22		
15	64QAM	1	37	9.85	10.66	10.08	11	2
15	64QAM	1	74	9.05	9.00	9.63		
15	64QAM	36	0	8.53	9.19	9.66		
15	64QAM	36	20	8.66	9.34	9.49	10	3
15	64QAM	36	39	8.52	8.96	9.60		
15	64QAM	75	0	8.53	8.94	9.65		



FCC SAR TEST REPORT

Report No. : FA012248

Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	11.90	11.95	11.98	13	0
10	QPSK	1	25	11.35	11.39	11.05		
10	QPSK	1	49	10.65	10.58	11.18		
10	QPSK	25	0	10.26	10.80	11.23	12	1
10	QPSK	25	12	10.34	11.10	10.97		
10	QPSK	25	25	10.22	10.68	11.21		
10	QPSK	50	0	10.22	10.59	10.71		
10	16QAM	1	0	10.31	10.30	10.10	12	1
10	16QAM	1	25	10.72	11.64	11.40		
10	16QAM	1	49	9.99	9.90	10.51		
10	16QAM	25	0	9.39	9.94	10.33	11	2
10	16QAM	25	12	9.36	10.12	10.23		
10	16QAM	25	25	9.30	9.79	10.41		
10	16QAM	50	0	9.38	9.67	10.37	10	3
10	64QAM	1	0	9.33	9.30	9.12		
10	64QAM	1	25	9.78	10.55	9.95		
10	64QAM	1	49	8.99	8.90	9.58		
10	64QAM	25	0	8.48	9.11	9.57	10	3
10	64QAM	25	12	8.61	9.23	9.43		
10	64QAM	25	25	8.39	8.83	9.51		
10	64QAM	50	0	8.46	8.82	9.52		
Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	11.84	11.86	11.85	13	0
5	QPSK	1	12	11.30	11.34	10.93		
5	QPSK	1	24	10.54	10.44	11.03		
5	QPSK	12	0	10.13	10.67	11.14	12	1
5	QPSK	12	7	10.22	10.95	10.89		
5	QPSK	12	13	10.16	10.55	11.16		
5	QPSK	25	0	10.11	10.48	10.56		
5	16QAM	1	0	10.24	10.20	9.97	12	1
5	16QAM	1	12	10.59	11.58	11.29		
5	16QAM	1	24	9.86	9.81	10.39		
5	16QAM	12	0	9.26	9.80	10.24	11	2
5	16QAM	12	7	9.29	10.04	10.18		
5	16QAM	12	13	9.24	9.70	10.26		
5	16QAM	25	0	9.27	9.52	10.30		
5	64QAM	1	0	9.25	9.16	9.00	11	2
5	64QAM	1	12	9.64	10.48	9.90		
5	64QAM	1	24	8.93	8.83	9.49		
5	64QAM	12	0	8.33	9.02	9.49	10	3
5	64QAM	12	7	8.49	9.17	9.36		
5	64QAM	12	13	8.25	8.77	9.42		
5	64QAM	25	0	8.41	8.76	9.47		
Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	11.78	11.81	11.80	13	0
3	QPSK	1	8	11.23	11.25	10.84		



FCC SAR TEST REPORT

Report No. : FA012248

3	QPSK	1	14	10.39	10.37	10.98	12	1
3	QPSK	8	0	10.00	10.56	10.99		
3	QPSK	8	4	10.15	10.88	10.80		
3	QPSK	8	7	10.11	10.40	11.09		
3	QPSK	15	0	10.05	10.43	10.48	12	1
3	16QAM	1	0	10.15	10.13	9.89		
3	16QAM	1	8	10.47	11.46	11.16		
3	16QAM	1	14	9.75	9.72	10.27		
3	16QAM	8	0	9.14	9.71	10.12	11	2
3	16QAM	8	4	9.17	9.99	10.03		
3	16QAM	8	7	9.11	9.62	10.16		
3	16QAM	15	0	9.16	9.42	10.17		
3	64QAM	1	0	9.14	9.11	8.87	11	2
3	64QAM	1	8	9.52	10.37	9.75		
3	64QAM	1	14	8.80	8.74	9.43		
3	64QAM	8	0	8.23	8.93	9.42		
3	64QAM	8	4	8.34	9.05	9.23	10	3
3	64QAM	8	7	8.15	8.62	9.28		
3	64QAM	8	7	8.15	8.62	9.28		
3	64QAM	15	0	8.26	8.61	9.36		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	11.12	11.44	11.45	13	0
1.4	QPSK	1	3	11.09	11.45	11.31		
1.4	QPSK	1	5	11.10	11.36	11.31		
1.4	QPSK	3	0	11.30	11.45	11.60		
1.4	QPSK	3	1	11.42	11.66	11.66		
1.4	QPSK	3	3	11.33	11.59	11.51		
1.4	QPSK	6	0	10.34	10.54	10.65	12	1
1.4	16QAM	1	0	10.15	10.22	10.13	12	1
1.4	16QAM	1	3	10.11	10.20	10.29		
1.4	16QAM	1	5	10.80	10.00	10.25		
1.4	16QAM	3	0	10.07	10.18	10.48		
1.4	16QAM	3	1	10.01	10.04	10.44		
1.4	16QAM	3	3	10.09	10.65	10.35		
1.4	16QAM	6	0	9.21	9.31	9.42	11	2
1.4	64QAM	1	0	9.22	9.18	9.23	11	2
1.4	64QAM	1	3	9.34	9.45	9.42		
1.4	64QAM	1	5	9.69	9.71	9.18		
1.4	64QAM	3	0	9.46	9.48	9.67		
1.4	64QAM	3	1	9.50	9.53	9.54		
1.4	64QAM	3	3	9.36	9.41	9.52		
1.4	64QAM	6	0	8.41	8.45	8.35	10	3

<LTE Band 66>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	15.09	15.39	15.27	15.5	0
20	QPSK	1	49	15.03	15.28	15.08		
20	QPSK	1	99	14.39	14.72	14.41		
20	QPSK	50	0	13.95	14.37	14.25	14.5	1
20	QPSK	50	24	13.96	14.26	14.21		
20	QPSK	50	50	13.72	14.36	14.12		
20	QPSK	100	0	13.74	14.10	14.08	14.5	1
20	16QAM	1	0	13.30	13.63	14.46		
20	16QAM	1	49	14.23	14.26	14.31		
20	16QAM	1	99	13.22	14.12	13.63	13.5	2
20	16QAM	50	0	13.02	12.88	13.91		
20	16QAM	50	24	13.14	13.39	13.40		
20	16QAM	50	50	12.69	13.31	13.29	13.5	2
20	16QAM	100	0	12.78	13.15	13.12		
20	64QAM	1	0	12.13	12.23	13.49		
20	64QAM	1	49	13.35	13.40	13.21	13.5	2
20	64QAM	1	99	11.81	13.38	12.65		
20	64QAM	50	0	12.11	11.95	12.11		
20	64QAM	50	24	12.23	12.47	12.03	12.5	3
20	64QAM	50	50	11.76	12.12	12.39		
20	64QAM	100	0	11.86	12.24	12.11		
Channel				132047	132322	132597		
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	14.96	15.31	15.17	15.5	0
15	QPSK	1	37	14.98	15.21	15.03		
15	QPSK	1	74	14.33	14.61	14.26		
15	QPSK	36	0	13.90	14.25	14.18	14.5	1
15	QPSK	36	20	13.90	14.19	14.16		
15	QPSK	36	39	13.63	14.25	13.98		
15	QPSK	75	0	13.67	13.99	14.03	14.5	1
15	16QAM	1	0	13.20	13.57	14.36		
15	16QAM	1	37	14.11	14.12	14.16		
15	16QAM	1	74	13.11	14.00	13.53	13.5	2
15	16QAM	36	0	12.97	12.81	13.86		
15	16QAM	36	20	13.04	13.28	13.33		
15	16QAM	36	39	12.57	13.16	13.22	13.5	2
15	16QAM	75	0	12.63	13.09	13.01		
15	64QAM	1	0	12.03	12.11	13.35		
15	64QAM	1	37	13.30	13.31	13.14	12.5	3
15	64QAM	1	74	11.73	13.28	12.51		
15	64QAM	36	0	12.02	11.90	12.03		
15	64QAM	36	20	12.13	12.38	11.96	12.5	3
15	64QAM	36	39	11.67	12.00	12.26		
15	64QAM	75	0	11.72	12.13	12.04		

Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	14.88	15.18	15.02	15.5	0
10	QPSK	1	25	14.84	15.12	14.95		
10	QPSK	1	49	14.19	14.46	14.21		
10	QPSK	25	0	13.80	14.18	14.08	14.5	1
10	QPSK	25	12	13.78	14.12	14.04		
10	QPSK	25	25	13.56	14.10	13.86		
10	QPSK	50	0	13.60	13.85	13.98		
10	16QAM	1	0	13.13	13.48	14.22	14.5	1
10	16QAM	1	25	14.04	14.07	14.11		
10	16QAM	1	49	12.99	13.92	13.39		
10	16QAM	25	0	12.91	12.75	13.77	13.5	2
10	16QAM	25	12	12.91	13.22	13.25		
10	16QAM	25	25	12.47	13.05	13.13		
10	16QAM	50	0	12.55	13.01	12.93		
10	64QAM	1	0	11.90	11.98	13.20	13.5	2
10	64QAM	1	25	13.16	13.19	13.07		
10	64QAM	1	49	11.68	13.17	12.39		
10	64QAM	25	0	11.92	11.77	11.92	12.5	3
10	64QAM	25	12	12.02	12.24	11.84		
10	64QAM	25	25	11.62	11.87	12.13		
10	64QAM	50	0	11.67	12.02	11.99		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	14.75	15.03	14.95	15.5	0
5	QPSK	1	12	14.71	14.97	14.82		
5	QPSK	1	24	14.13	14.34	14.11		
5	QPSK	12	0	13.65	14.04	14.01	14.5	1
5	QPSK	12	7	13.68	14.06	13.93		
5	QPSK	12	13	13.41	14.05	13.80		
5	QPSK	25	0	13.50	13.70	13.83		
5	16QAM	1	0	13.01	13.33	14.15	14.5	1
5	16QAM	1	12	13.94	13.93	13.97		
5	16QAM	1	24	12.86	13.84	13.26		
5	16QAM	12	0	12.81	12.62	13.69	13.5	2
5	16QAM	12	7	12.82	13.09	13.16		
5	16QAM	12	13	12.37	12.90	12.98		
5	16QAM	25	0	12.44	12.95	12.84		
5	64QAM	1	0	11.82	11.91	13.07	13.5	2
5	64QAM	1	12	13.04	13.14	12.93		
5	64QAM	1	24	11.57	13.10	12.27		
5	64QAM	12	0	11.84	11.70	11.87	12.5	3
5	64QAM	12	7	11.90	12.17	11.77		
5	64QAM	12	13	11.47	11.74	11.99		
5	64QAM	25	0	11.54	11.96	11.86		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	14.60	14.96	14.87	15.5	0
3	QPSK	1	8	14.59	14.92	14.67		



FCC SAR TEST REPORT

Report No. : FA012248

3	QPSK	1	14	14.01	14.20	14.04		
3	QPSK	8	0	13.51	13.93	13.88	14.5	1
3	QPSK	8	4	13.59	13.96	13.87		
3	QPSK	8	7	13.30	13.94	13.75		
3	QPSK	15	0	13.44	13.64	13.74		
3	16QAM	1	0	12.89	13.19	14.09	14.5	1
3	16QAM	1	8	13.89	13.81	13.86		
3	16QAM	1	14	12.74	13.72	13.20		
3	16QAM	8	0	12.68	12.54	13.61	13.5	2
3	16QAM	8	4	12.67	13.00	13.09		
3	16QAM	8	7	12.26	12.84	12.84		
3	16QAM	15	0	12.38	12.81	12.77		
3	64QAM	1	0	11.67	11.84	13.00	13.5	2
3	64QAM	1	8	12.93	13.05	12.79		
3	64QAM	1	14	11.50	13.04	12.22		
3	64QAM	8	0	11.70	11.64	11.75	12.5	3
3	64QAM	8	4	11.79	12.12	11.71		
3	64QAM	8	7	11.41	11.66	11.91		
3	64QAM	15	0	11.41	11.83	11.73		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	13.90	14.14	14.18	15.5	0
1.4	QPSK	1	3	13.86	14.20	14.01		
1.4	QPSK	1	5	13.83	14.16	14.10		
1.4	QPSK	3	0	14.01	14.23	14.34		
1.4	QPSK	3	1	14.21	14.37	14.45		
1.4	QPSK	3	3	14.08	14.31	14.26		
1.4	QPSK	6	0	13.06	13.32	13.43	14.5	1
1.4	16QAM	1	0	12.95	12.97	12.92	14.5	1
1.4	16QAM	1	3	12.81	12.97	13.09		
1.4	16QAM	1	5	13.60	12.79	12.99		
1.4	16QAM	3	0	12.86	12.92	13.18		
1.4	16QAM	3	1	12.72	12.76	13.20		
1.4	16QAM	3	3	12.89	13.43	13.05		
1.4	16QAM	6	0	11.92	12.10	12.12	13.5	2
1.4	64QAM	1	0	11.92	11.88	11.98	13.5	2
1.4	64QAM	1	3	12.06	12.21	12.21		
1.4	64QAM	1	5	12.43	12.48	11.92		
1.4	64QAM	3	0	12.21	12.19	12.40		
1.4	64QAM	3	1	12.25	12.29	12.33		
1.4	64QAM	3	3	12.11	12.16	12.24		
1.4	64QAM	6	0	11.13	11.23	11.06	12.5	3



<LTE Band 71>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				133222	133322	133372		
Frequency (MHz)				673	683	688		
20	QPSK	1	0	20.93	21.30	21.14	21.5	0
20	QPSK	1	49	21.18	21.16	20.63		
20	QPSK	1	99	20.93	20.72	20.77		
20	QPSK	50	0	19.94	20.05	19.89	20.5	1
20	QPSK	50	24	19.91	19.99	20.00		
20	QPSK	50	50	20.01	19.84	19.82		
20	QPSK	100	0	19.98	20.02	19.87	20.5	1
20	16QAM	1	0	19.41	19.47	20.01		
20	16QAM	1	49	20.27	20.24	20.08		
20	16QAM	1	99	19.62	19.21	19.91	19.5	2
20	16QAM	50	0	18.83	19.00	18.88		
20	16QAM	50	24	19.16	18.91	18.95		
20	16QAM	50	50	19.12	18.83	18.87	19.5	2
20	16QAM	100	0	18.95	18.88	18.84		
20	64QAM	1	0	18.85	18.68	18.78		
20	64QAM	1	49	19.04	18.95	19.19	19.5	2
20	64QAM	1	99	18.68	18.51	18.79		
20	64QAM	50	0	17.92	17.94	17.83		
20	64QAM	50	24	18.04	18.04	17.84	18.5	3
20	64QAM	50	50	18.00	17.69	17.78		
20	64QAM	100	0	18.13	18.06	17.81		
Channel				133197	133297	133397		
Frequency (MHz)				670.5	680.5	690.5		
15	QPSK	1	0	20.78	21.18	21.02	21.5	0
15	QPSK	1	37	21.12	21.06	20.52		
15	QPSK	1	74	20.83	20.60	20.64		
15	QPSK	36	0	19.87	19.99	19.77	20.5	1
15	QPSK	36	20	19.76	19.94	19.94		
15	QPSK	36	39	19.94	19.73	19.70		
15	QPSK	75	0	19.89	19.95	19.79	20.5	1
15	16QAM	1	0	19.35	19.40	19.90		
15	16QAM	1	37	20.17	20.17	19.97		
15	16QAM	1	74	19.54	19.10	19.80	19.5	2
15	16QAM	36	0	18.71	18.86	18.78		
15	16QAM	36	20	19.03	18.84	18.86		
15	16QAM	36	39	19.00	18.68	18.81	19.5	2
15	16QAM	75	0	18.88	18.83	18.73		
15	64QAM	1	0	18.80	18.61	18.66		
15	64QAM	1	37	18.93	18.85	19.11	19.5	2
15	64QAM	1	74	18.58	18.40	18.68		
15	64QAM	36	0	17.81	17.82	17.74		
15	64QAM	36	20	17.98	17.93	17.75	18.5	3
15	64QAM	36	39	17.95	17.56	17.69		
15	64QAM	75	0	18.02	17.94	17.72		



FCC SAR TEST REPORT

Report No. : FA012248

Channel				133172	133272	133422	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				668	678	693		
10	QPSK	1	0	20.73	21.06	20.97	21.5	0
10	QPSK	1	25	21.04	20.92	20.37		
10	QPSK	1	49	20.73	20.47	20.54		
10	QPSK	25	0	19.79	19.94	19.72	20.5	1
10	QPSK	25	12	19.69	19.79	19.80		
10	QPSK	25	25	19.89	19.59	19.63		
10	QPSK	50	0	19.79	19.83	19.68		
10	16QAM	1	0	19.20	19.31	19.75	20.5	1
10	16QAM	1	25	20.05	20.07	19.83		
10	16QAM	1	49	19.39	19.03	19.65		
10	16QAM	25	0	18.66	18.73	18.71	19.5	2
10	16QAM	25	12	18.95	18.72	18.79		
10	16QAM	25	25	18.91	18.54	18.67		
10	16QAM	50	0	18.76	18.68	18.61		
10	64QAM	1	0	18.69	18.48	18.55	19.5	2
10	64QAM	1	25	18.87	18.72	18.97		
10	64QAM	1	49	18.48	18.34	18.62		
10	64QAM	25	0	17.73	17.69	17.69	18.5	3
10	64QAM	25	12	17.89	17.78	17.69		
10	64QAM	25	25	17.84	17.48	17.56		
10	64QAM	50	0	17.97	17.80	17.65		
Channel				133147	133247	133447	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				665.5	675.5	695.5		
5	QPSK	1	0	20.62	20.98	20.87	21.5	0
5	QPSK	1	12	20.91	20.82	20.31		
5	QPSK	1	24	20.68	20.35	20.49		
5	QPSK	12	0	19.70	19.82	19.66	20.5	1
5	QPSK	12	7	19.54	19.68	19.73		
5	QPSK	12	13	19.76	19.46	19.49		
5	QPSK	25	0	19.64	19.76	19.57		
5	16QAM	1	0	19.07	19.21	19.70	20.5	1
5	16QAM	1	12	19.98	19.97	19.73		
5	16QAM	1	24	19.31	18.98	19.53		
5	16QAM	12	0	18.61	18.63	18.64	19.5	2
5	16QAM	12	7	18.80	18.58	18.73		
5	16QAM	12	13	18.78	18.49	18.56		
5	16QAM	25	0	18.70	18.58	18.47		
5	64QAM	1	0	18.56	18.38	18.49	19.5	2
5	64QAM	1	12	18.79	18.65	18.86		
5	64QAM	1	24	18.40	18.26	18.57		
5	64QAM	12	0	17.63	17.60	17.63	18.5	3
5	64QAM	12	7	17.78	17.72	17.58		
5	64QAM	12	13	17.74	17.37	17.41		
5	64QAM	25	0	17.92	17.67	17.55		

<TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

SAR was tested with a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by 3GPP.

- 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations
- “special subframe S” contains both uplink and downlink transmissions, it has been taken into consideration to determine the transmission duty factor according to the worst case uplink and downlink cyclic prefix requirements for UpPTS
- Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Anritsu MT8820C (firmware: #22.52#004) was used for LTE output power measurements and SAR testing.

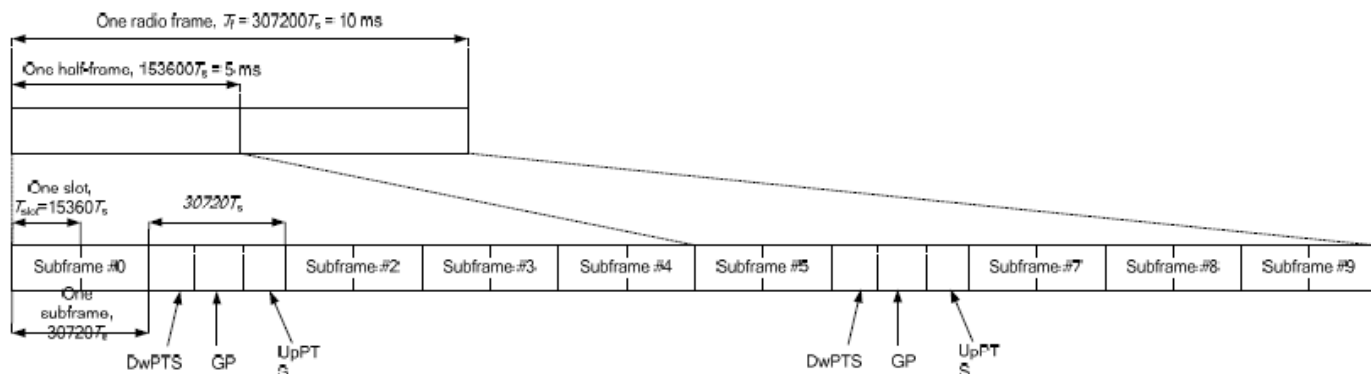


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$			$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$	-	-
8	$24144 \cdot T_s$			-		
9	$13168 \cdot T_s$			-		

Special subframe (30720·T _s): Normal cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
Uplink duty factor in one special subframe	0~4	7.13%	8.33%
	5~9	14.3%	16.7%

Special subframe(30720·T _s): Extended cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
Uplink duty factor in one special subframe	0~3	7.13%	8.33%
	4~7	14.3%	16.7%

The highest duty factor is resulted from:

- Uplink-downlink configuration: 0. In a half-frame consisted of 5 subframes, uplink operation is in 3 uplink subframes and 1 special subframe.
- special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
- for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is:
 $(3+0.167)/5 = 63.3\%$
- for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is:
 $(3+0.143)/5 = 62.9\%$
- For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix $63.3\%/62.9\% = 1.006$ is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

Default Power Mode
<LTE Band 41 power class3>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	22.90	22.80	22.68	22.82	22.92	24	0
20	QPSK	1	49	23.74	23.51	23.67	23.78	23.56		
20	QPSK	1	99	23.61	23.44	23.43	23.36	23.04		
20	QPSK	50	0	22.59	22.59	22.72	22.69	22.59	23	1
20	QPSK	50	24	22.77	22.61	22.74	22.79	22.62		
20	QPSK	50	50	22.76	22.49	22.59	22.69	22.31		
20	QPSK	100	0	22.68	22.65	22.63	22.79	22.50		
20	16QAM	1	0	21.98	22.30	22.00	22.09	22.14	23	1
20	16QAM	1	49	22.47	22.54	22.28	22.37	22.21		
20	16QAM	1	99	22.18	21.87	21.99	22.11	21.79		
20	16QAM	50	0	21.51	21.65	21.52	21.78	21.42	22	2
20	16QAM	50	24	21.55	21.67	21.56	21.69	21.29		
20	16QAM	50	50	21.70	21.47	21.66	21.70	21.22		
20	16QAM	100	0	21.62	21.62	21.69	21.70	21.29		
20	64QAM	1	0	21.00	20.94	20.98	21.01	20.95	22	2
20	64QAM	1	49	21.43	21.37	21.25	21.21	21.10		
20	64QAM	1	99	21.71	20.93	21.14	21.63	20.77		
20	64QAM	50	0	20.66	20.61	20.67	20.76	20.56	21	3
20	64QAM	50	24	20.81	20.66	20.76	20.67	20.52		
20	64QAM	50	50	20.76	20.46	20.79	20.71	20.42		
20	64QAM	100	0	20.90	20.41	20.81	20.42	20.52		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	22.82	22.65	22.63	22.76	22.77	24	0
15	QPSK	1	37	23.10	22.99	23.00	23.13	22.90		
15	QPSK	1	74	22.99	22.85	22.88	22.83	22.49		
15	QPSK	36	0	22.14	22.08	22.24	22.24	22.08	23	1
15	QPSK	36	20	22.09	22.14	22.07	22.02	22.02		
15	QPSK	36	39	22.26	22.01	21.94	22.24	21.71		
15	QPSK	75	0	22.10	22.07	22.04	22.12	22.03		
15	16QAM	1	0	21.41	21.83	21.35	21.46	21.54	23	1
15	16QAM	1	37	21.84	21.90	21.77	21.72	21.69		
15	16QAM	1	74	21.58	21.41	21.47	21.49	21.33		
15	16QAM	36	0	21.06	21.15	20.87	21.17	20.90	22	2
15	16QAM	36	20	21.10	21.12	21.10	21.19	20.70		
15	16QAM	36	39	21.18	20.91	21.01	21.25	20.71		
15	16QAM	75	0	21.10	21.10	21.23	21.11	20.69		
15	64QAM	1	0	20.43	20.40	20.46	20.52	20.38	22	2
15	64QAM	1	37	20.90	20.78	20.80	20.61	20.52		
15	64QAM	1	74	21.25	20.45	20.51	21.07	20.18		
15	64QAM	36	0	20.13	20.08	20.20	20.28	20.02	21	3
15	64QAM	36	20	20.29	20.13	20.20	20.16	20.01		
15	64QAM	36	39	20.22	19.84	20.25	20.08	19.85		

15	64QAM	75	0	20.25	19.84	20.25	19.82	19.90	Tune-up limit (dBm)	MPR (dB)
Channel				39700	40160	40620	41080	41540		
Frequency (MHz)				2501	2547	2593	2639	2685	24	0
10	QPSK	1	0	22.90	22.65	22.55	22.75	22.82		
10	QPSK	1	25	23.16	22.92	22.90	22.99	22.91		
10	QPSK	1	49	23.09	22.91	22.79	22.73	22.54	23	1
10	QPSK	25	0	21.94	22.11	22.27	22.11	21.99		
10	QPSK	25	12	22.09	22.13	22.12	21.99	21.92		
10	QPSK	25	25	22.29	21.91	22.01	22.24	21.75		
10	QPSK	50	0	22.08	22.16	22.11	22.04	22.01	23	1
10	16QAM	1	0	21.33	21.84	21.37	21.57	21.63		
10	16QAM	1	25	21.93	21.93	21.81	21.85	21.71		
10	16QAM	1	49	21.73	21.31	21.35	21.66	21.32	22	2
10	16QAM	25	0	20.87	21.02	20.88	21.14	20.86		
10	16QAM	25	12	21.03	21.04	21.10	21.05	20.72		
10	16QAM	25	25	21.19	20.84	21.14	21.10	20.60		
10	16QAM	50	0	21.10	21.04	21.13	21.15	20.73	22	2
10	64QAM	1	0	20.53	20.35	20.39	20.40	20.39		
10	64QAM	1	25	20.86	20.79	20.77	20.62	20.64		
10	64QAM	1	49	21.12	20.39	20.55	21.08	20.17	21	3
10	64QAM	25	0	20.12	20.01	20.11	20.20	20.10		
10	64QAM	25	12	20.31	20.20	20.13	20.02	20.05		
10	64QAM	25	25	20.27	20.00	20.17	20.25	19.80		
10	64QAM	50	0	20.29	19.84	20.16	19.90	20.00	Tune-up limit (dBm)	MPR (dB)
Channel				39675	40148	40620	41093	41565		
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5	24	0
5	QPSK	1	0	22.88	22.69	22.65	22.75	22.89		
5	QPSK	1	12	23.23	22.99	23.00	23.08	22.82		
5	QPSK	1	24	23.01	22.79	22.92	22.80	22.54	23	1
5	QPSK	12	0	22.02	22.03	22.11	22.20	22.01		
5	QPSK	12	7	22.13	22.13	22.07	21.95	21.89		
5	QPSK	12	13	22.23	22.00	22.06	22.16	21.76		
5	QPSK	25	0	22.22	22.00	22.17	22.21	21.95	23	1
5	16QAM	1	0	21.43	21.83	21.45	21.61	21.67		
5	16QAM	1	12	21.85	21.99	21.83	21.85	21.60		
5	16QAM	1	24	21.53	21.25	21.46	21.49	21.27	22	2
5	16QAM	12	0	20.94	21.05	20.91	21.22	20.95		
5	16QAM	12	7	20.94	21.17	20.97	21.17	20.82		
5	16QAM	12	13	21.16	20.82	21.12	21.07	20.60		
5	16QAM	25	0	21.13	21.17	21.23	21.10	20.77	22	2
5	64QAM	1	0	20.51	20.39	20.35	20.40	20.38		
5	64QAM	1	12	20.80	20.88	20.67	20.73	20.52		
5	64QAM	1	24	21.21	20.28	20.67	21.06	20.32	21	3
5	64QAM	12	0	20.19	20.01	20.16	20.24	20.06		
5	64QAM	12	7	20.22	20.02	20.21	20.21	19.87		
5	64QAM	12	13	20.13	19.84	20.15	20.14	19.91		
5	64QAM	25	0	20.29	19.79	20.29	19.96	20.06		

<LTE Band 41 power class2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	25.80	25.91	25.88	25.94	25.83	26	0
20	QPSK	1	49	25.83	25.84	25.71	25.77	25.84		
20	QPSK	1	99	25.90	25.92	25.90	25.88	25.85		
20	QPSK	50	0	24.99	24.94	24.99	24.96	24.96	25	1
20	QPSK	50	24	24.93	24.92	24.81	24.94	24.88		
20	QPSK	50	50	24.85	24.96	24.95	24.96	24.86		
20	QPSK	100	0	24.89	24.96	24.99	24.91	24.64		
20	16QAM	1	0	24.46	24.62	24.46	24.45	24.54	25	1
20	16QAM	1	49	24.89	24.85	24.79	24.88	24.80		
20	16QAM	1	99	24.71	24.66	24.59	24.66	24.63		
20	16QAM	50	0	23.64	23.93	23.70	23.58	23.93	24	2
20	16QAM	50	24	23.79	23.84	23.80	23.76	23.97		
20	16QAM	50	50	23.73	23.83	23.81	23.67	23.75		
20	16QAM	100	0	23.77	23.84	23.81	23.68	23.80		
20	64QAM	1	0	23.38	23.35	23.41	23.34	23.26	24	2
20	64QAM	1	49	23.81	23.56	23.77	23.76	23.52		
20	64QAM	1	99	23.64	23.84	23.28	23.58	23.82		
20	64QAM	50	0	22.81	22.97	22.80	22.72	22.96	23	3
20	64QAM	50	24	22.86	22.74	22.95	22.84	22.71		
20	64QAM	50	50	22.92	22.89	22.89	22.85	22.83		
20	64QAM	100	0	22.82	22.94	22.82	22.80	22.93		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	25.77	25.88	25.66	25.87	25.80	26	0
15	QPSK	1	37	25.83	25.75	25.62	25.75	25.74		
15	QPSK	1	74	25.89	25.85	25.84	25.80	25.75		
15	QPSK	36	0	24.99	24.88	24.99	24.86	24.93	25	1
15	QPSK	36	20	24.93	24.90	24.78	24.90	24.80		
15	QPSK	36	39	24.80	24.87	24.94	24.86	24.85		
15	QPSK	75	0	24.87	24.95	24.92	24.84	24.57		
15	16QAM	1	0	24.45	24.62	24.40	24.35	24.53	25	1
15	16QAM	1	37	24.85	24.83	24.78	24.84	24.80		
15	16QAM	1	74	24.63	24.59	24.55	24.63	24.54		
15	16QAM	36	0	23.59	23.89	23.65	23.50	23.85	24	2
15	16QAM	36	20	23.78	23.78	23.78	23.75	23.87		
15	16QAM	36	39	23.65	23.75	23.74	23.59	23.67		
15	16QAM	75	0	23.76	23.78	23.77	23.64	23.79		
15	64QAM	1	0	23.35	23.35	23.32	23.31	23.26	24	2
15	64QAM	1	37	23.74	23.55	23.70	23.73	23.43		
15	64QAM	1	74	23.58	23.81	23.23	23.55	23.78		
15	64QAM	36	0	22.81	22.95	22.79	22.65	22.92	23	3
15	64QAM	36	20	22.84	22.74	22.93	22.76	22.63		
15	64QAM	36	39	22.92	22.83	22.88	22.76	22.78		
15	64QAM	75	0	22.73	22.85	22.73	22.77	22.89		

Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	25.74	25.81	25.54	25.84	25.70	26	0
10	QPSK	1	25	25.73	25.81	25.53	25.63	25.84		
10	QPSK	1	49	25.80	25.81	25.81	25.79	25.75		
10	QPSK	25	0	24.82	24.80	24.85	24.89	24.83	25	1
10	QPSK	25	12	24.86	24.82	24.76	24.86	24.80		
10	QPSK	25	25	24.74	24.80	24.82	24.83	24.76		
10	QPSK	50	0	24.80	24.85	24.85	24.79	24.49		
10	16QAM	1	0	24.38	24.53	24.39	24.36	24.44	25	1
10	16QAM	1	25	24.79	24.67	24.70	24.78	24.77		
10	16QAM	1	49	24.60	24.48	24.51	24.55	24.58		
10	16QAM	25	0	23.48	23.80	23.58	23.54	23.78	24	2
10	16QAM	25	12	23.69	23.76	23.79	23.65	23.88		
10	16QAM	25	25	23.61	23.76	23.74	23.52	23.67		
10	16QAM	50	0	23.61	23.76	23.75	23.58	23.69		
10	64QAM	1	0	23.34	23.32	23.31	23.30	23.19	24	2
10	64QAM	1	25	23.75	23.51	23.72	23.63	23.38		
10	64QAM	1	49	23.56	23.75	23.15	23.44	23.72		
10	64QAM	25	0	22.70	22.89	22.75	22.54	22.85	23	3
10	64QAM	25	12	22.77	22.63	22.90	22.67	22.59		
10	64QAM	25	25	22.87	22.78	22.85	22.68	22.68		
10	64QAM	50	0	22.77	22.84	22.74	22.73	22.90		
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	25.74	25.89	25.47	25.81	25.74	26	0
5	QPSK	1	12	25.58	25.66	25.63	25.58	25.66		
5	QPSK	1	24	25.80	25.74	25.82	25.73	25.79		
5	QPSK	12	0	24.83	24.79	24.80	24.76	24.85	25	1
5	QPSK	12	7	24.81	24.84	24.61	24.65	24.70		
5	QPSK	12	13	24.72	24.74	24.77	24.80	24.72		
5	QPSK	25	0	24.75	24.87	24.90	24.83	24.42		
5	16QAM	1	0	24.23	24.45	24.32	24.36	24.42	25	1
5	16QAM	1	12	24.81	24.76	24.66	24.74	24.61		
5	16QAM	1	24	24.50	24.57	24.42	24.48	24.50		
5	16QAM	12	0	23.48	23.69	23.46	23.42	23.79	24	2
5	16QAM	12	7	23.62	23.70	23.55	23.63	23.81		
5	16QAM	12	13	23.72	23.73	23.67	23.52	23.46		
5	16QAM	25	0	23.65	23.56	23.72	23.56	23.61		
5	64QAM	1	0	23.22	23.21	23.34	23.21	23.13	24	2
5	64QAM	1	12	23.63	23.40	23.62	23.54	23.32		
5	64QAM	1	24	23.53	23.71	23.15	23.47	23.65		
5	64QAM	12	0	22.56	22.84	22.51	22.57	22.77	23	3
5	64QAM	12	7	22.70	22.59	22.81	22.68	22.60		
5	64QAM	12	13	22.79	22.75	22.72	22.65	22.65		
5	64QAM	25	0	22.71	22.84	22.70	22.59	22.80		

Reduced Power Mode
<LTE Band 41 power class3>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	19.50	19.58	19.78	19.76	19.72	20	0
20	QPSK	1	49	18.73	18.67	18.75	19.81	18.75		
20	QPSK	1	99	18.71	18.51	18.64	18.45	18.33		
20	QPSK	50	0	18.30	18.35	18.24	18.11	18.10	19	1
20	QPSK	50	24	18.27	18.36	18.34	18.71	18.14		
20	QPSK	50	50	18.26	18.26	18.26	18.20	17.97		
20	QPSK	100	0	18.31	18.34	18.32	18.37	18.09		
20	16QAM	1	0	17.27	17.33	17.24	17.16	17.23	19	1
20	16QAM	1	49	17.53	17.59	17.46	17.59	17.43		
20	16QAM	1	99	17.29	17.28	17.29	17.20	17.17		
20	16QAM	50	0	16.70	16.93	16.66	16.82	16.62	18	2
20	16QAM	50	24	16.71	16.89	16.76	16.71	16.58		
20	16QAM	50	50	16.68	16.82	16.82	16.76	16.59		
20	16QAM	100	0	16.84	16.86	16.72	16.49	16.54		
20	64QAM	1	0	16.30	16.27	16.25	16.13	16.38	18	2
20	64QAM	1	49	17.40	16.59	16.28	16.29	16.50		
20	64QAM	1	99	16.34	16.22	16.28	16.22	16.23		
20	64QAM	50	0	15.74	15.84	15.60	15.70	15.59	17	3
20	64QAM	50	24	15.81	15.88	15.65	15.60	15.73		
20	64QAM	50	50	15.85	15.71	15.78	15.75	15.60		
20	64QAM	100	0	15.83	15.81	15.96	15.72	15.66		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	19.36	19.53	19.63	19.70	19.59	20	0
15	QPSK	1	37	18.65	18.55	18.62	19.75	18.66		
15	QPSK	1	74	18.61	18.36	18.58	18.32	18.25		
15	QPSK	36	0	17.65	17.79	17.63	17.53	17.55	19	1
15	QPSK	36	20	17.64	17.78	17.79	17.82	17.55		
15	QPSK	36	39	17.66	17.68	17.71	17.64	17.41		
15	QPSK	75	0	17.68	17.76	17.73	17.74	17.52		
15	16QAM	1	0	17.12	17.24	17.17	17.07	17.13	19	1
15	16QAM	1	37	17.45	17.54	17.41	17.47	17.35		
15	16QAM	1	74	17.16	17.13	17.21	17.07	17.06		
15	16QAM	36	0	16.65	16.78	16.53	16.75	16.52	18	2
15	16QAM	36	20	16.62	16.81	16.65	16.59	16.44		
15	16QAM	36	39	16.61	16.77	16.75	16.69	16.48		
15	16QAM	75	0	16.76	16.80	16.67	16.39	16.43		
15	64QAM	1	0	16.25	16.12	16.19	16.02	16.25	18	2
15	64QAM	1	37	17.34	16.50	16.16	16.24	16.42		
15	64QAM	1	74	16.21	16.11	16.23	16.14	16.14		
15	64QAM	36	0	15.68	15.76	15.54	15.60	15.45	17	3
15	64QAM	36	20	15.67	15.81	15.60	15.50	15.60		
15	64QAM	36	39	15.75	15.56	15.73	15.65	15.46		

15	64QAM	75	0	15.72	15.73	15.86	15.67	15.54	Tune-up limit (dBm)	MPR (dB)
Channel				39700	40160	40620	41080	41540		
Frequency (MHz)				2501	2547	2593	2639	2685	20	0
10	QPSK	1	0	19.21	19.39	19.50	19.58	19.49		
10	QPSK	1	25	18.54	18.50	18.54	19.61	18.59		
10	QPSK	1	49	18.51	18.21	18.43	18.23	18.13	19	1
10	QPSK	25	0	17.58	17.67	17.56	17.47	17.50		
10	QPSK	25	12	17.58	17.68	17.66	17.76	17.43		
10	QPSK	25	25	17.52	17.61	17.60	17.55	17.33		
10	QPSK	50	0	17.63	17.62	17.58	17.62	17.47	19	1
10	16QAM	1	0	17.05	17.17	17.02	17.02	17.05		
10	16QAM	1	25	17.32	17.40	17.28	17.34	17.25		
10	16QAM	1	49	17.05	17.04	17.06	17.21	17.00	18	2
10	16QAM	25	0	16.57	16.71	16.46	16.60	16.39		
10	16QAM	25	12	16.56	16.66	16.59	16.52	16.36		
10	16QAM	25	25	16.48	16.63	16.60	16.54	16.38		
10	16QAM	50	0	16.69	16.73	16.58	16.33	16.29	18	2
10	64QAM	1	0	16.18	16.33	16.12	16.25	16.14		
10	64QAM	1	25	17.25	16.39	16.02	16.14	16.36		
10	64QAM	1	49	16.13	16.12	16.10	16.06	16.11	17	3
10	64QAM	25	0	15.61	15.63	15.43	15.53	15.40		
10	64QAM	25	12	15.61	15.68	15.46	15.44	15.51		
10	64QAM	25	25	15.67	15.43	15.65	15.55	15.34		
10	64QAM	50	0	15.58	15.59	15.79	15.55	15.46	Tune-up limit (dBm)	MPR (dB)
Channel				39675	40148	40620	41093	41565		
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5	20	0
5	QPSK	1	0	19.16	19.26	19.43	19.45	19.40		
5	QPSK	1	12	18.43	18.43	18.44	19.47	18.45		
5	QPSK	1	24	18.38	18.11	18.32	18.08	18.01	19	1
5	QPSK	12	0	17.46	17.56	17.49	17.36	17.36		
5	QPSK	12	7	17.53	17.62	17.53	17.61	17.33		
5	QPSK	12	13	17.40	17.55	17.45	17.43	17.26		
5	QPSK	25	0	17.56	17.52	17.45	17.50	17.34	19	1
5	16QAM	1	0	17.42	17.03	17.26	17.22	17.41		
5	16QAM	1	12	17.27	17.28	17.22	17.23	17.20		
5	16QAM	1	24	17.00	17.11	17.01	17.08	17.01	18	2
5	16QAM	12	0	16.45	16.66	16.35	16.47	16.30		
5	16QAM	12	7	16.41	16.52	16.49	16.44	16.29		
5	16QAM	12	13	16.42	16.56	16.47	16.45	16.28		
5	16QAM	25	0	16.59	16.68	16.46	16.19	16.20	18	2
5	64QAM	1	0	16.12	16.23	16.07	16.19	16.05		
5	64QAM	1	12	17.18	16.29	16.11	16.04	16.26		
5	64QAM	1	24	16.01	16.01	16.02	16.01	16.13	17	3
5	64QAM	12	0	15.53	15.56	15.32	15.47	15.33		
5	64QAM	12	7	15.46	15.56	15.40	15.30	15.43		
5	64QAM	12	13	15.56	15.30	15.51	15.44	15.24		
5	64QAM	25	0	15.49	15.44	15.68	15.40	15.40		

<LTE Band 41 power class2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	22.87	22.73	22.67	22.62	22.98	24	0
20	QPSK	1	49	22.61	22.49	22.65	22.56	22.57		
20	QPSK	1	99	22.52	22.41	22.52	22.28	22.18		
20	QPSK	50	0	21.63	21.67	21.56	21.46	21.46	23	1
20	QPSK	50	24	21.67	21.71	21.65	21.53	21.52		
20	QPSK	50	50	21.65	21.56	21.63	21.52	21.34		
20	QPSK	100	0	21.67	21.65	21.69	21.44	21.43		
20	16QAM	1	0	21.12	21.14	21.05	21.03	21.13	23	1
20	16QAM	1	49	21.40	21.41	21.27	21.40	21.32		
20	16QAM	1	99	21.19	21.09	21.16	21.04	21.01		
20	16QAM	50	0	20.50	20.82	20.51	20.71	20.42	22	2
20	16QAM	50	24	20.51	20.76	20.56	20.52	20.47		
20	16QAM	50	50	20.54	20.62	20.64	20.56	20.41		
20	16QAM	100	0	20.69	20.70	20.62	20.39	20.40		
20	64QAM	1	0	20.16	20.11	20.09	20.03	20.18	22	2
20	64QAM	1	49	21.22	20.40	20.15	20.19	20.32		
20	64QAM	1	99	20.19	20.08	20.15	20.05	20.03		
20	64QAM	50	0	19.56	19.68	19.47	19.57	19.44	21	3
20	64QAM	50	24	19.65	19.72	19.54	19.50	19.61		
20	64QAM	50	50	19.72	19.54	19.61	19.56	19.41		
20	64QAM	100	0	19.72	19.68	19.78	19.57	19.53		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	22.22	22.03	22.13	22.16	22.35	24	0
15	QPSK	1	37	22.64	22.48	22.52	22.54	22.56		
15	QPSK	1	74	22.48	22.28	22.34	22.18	22.00		
15	QPSK	36	0	21.61	21.66	21.39	21.41	21.41	23	1
15	QPSK	36	20	21.60	21.57	21.40	21.40	21.52		
15	QPSK	36	39	21.63	21.55	21.54	21.42	21.29		
15	QPSK	75	0	21.61	21.59	21.58	21.31	21.25		
15	16QAM	1	0	21.06	21.08	21.05	21.00	21.11	23	1
15	16QAM	1	37	21.34	21.26	21.24	21.34	21.23		
15	16QAM	1	74	21.13	21.20	21.09	21.01	21.04		
15	16QAM	36	0	20.48	20.78	20.34	20.64	20.26	22	2
15	16QAM	36	20	20.37	20.75	20.44	20.47	20.35		
15	16QAM	36	39	20.39	20.54	20.44	20.38	20.29		
15	16QAM	75	0	20.56	20.66	20.51	20.31	20.40		
15	64QAM	1	0	20.02	20.10	20.05	20.11	20.10	22	2
15	64QAM	1	37	21.07	20.34	20.08	20.15	20.32		
15	64QAM	1	74	20.10	20.06	20.09	20.08	20.01		
15	64QAM	36	0	19.44	19.54	19.29	19.38	19.25	21	3
15	64QAM	36	20	19.53	19.57	19.50	19.45	19.51		
15	64QAM	36	39	19.69	19.54	19.59	19.47	19.22		
15	64QAM	75	0	19.59	19.66	19.73	19.54	19.38		



FCC SAR TEST REPORT

Report No. : FA012248

Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	22.35	22.03	22.20	22.00	22.35	24	0
10	QPSK	1	25	22.62	22.49	22.43	22.47	22.47		
10	QPSK	1	49	22.50	22.39	22.32	22.24	22.08		
10	QPSK	25	0	21.48	21.71	21.53	21.26	21.44	23	1
10	QPSK	25	12	21.61	21.52	21.44	21.39	21.42		
10	QPSK	25	25	21.72	21.49	21.44	21.35	21.20		
10	QPSK	50	0	21.72	21.56	21.58	21.24	21.41		
10	16QAM	1	0	21.07	21.13	21.00	21.03	21.08	23	1
10	16QAM	1	25	21.20	21.34	21.15	21.23	21.23		
10	16QAM	1	49	21.19	21.07	21.03	21.07	21.13		
10	16QAM	25	0	20.40	20.77	20.51	20.71	20.30	22	2
10	16QAM	25	12	20.48	20.67	20.55	20.32	20.31		
10	16QAM	25	25	20.51	20.57	20.50	20.56	20.24		
10	16QAM	50	0	20.69	20.69	20.62	20.34	20.22		
10	64QAM	1	0	20.11	20.20	20.07	20.10	20.13	22	2
10	64QAM	1	25	21.17	20.35	20.07	20.10	20.23		
10	64QAM	1	49	20.02	20.08	20.06	20.12	20.03		
10	64QAM	25	0	19.54	19.67	19.43	19.51	19.43	21	3
10	64QAM	25	12	19.58	19.67	19.40	19.44	19.52		
10	64QAM	25	25	19.52	19.40	19.56	19.38	19.29		
10	64QAM	50	0	19.62	19.56	19.69	19.46	19.51		
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	22.23	22.03	22.17	22.00	22.34	24	0
5	QPSK	1	12	22.53	22.39	22.42	22.40	22.39		
5	QPSK	1	24	22.39	22.31	22.43	22.21	22.03		
5	QPSK	12	0	21.52	21.71	21.52	21.45	21.28	23	1
5	QPSK	12	7	21.41	21.60	21.50	21.30	21.48		
5	QPSK	12	13	21.72	21.52	21.53	21.52	21.22		
5	QPSK	25	0	21.72	21.61	21.63	21.25	21.38		
5	16QAM	1	0	21.21	21.01	21.18	21.14	21.10	23	1
5	16QAM	1	12	21.35	21.26	21.21	21.26	21.28		
5	16QAM	1	24	21.16	21.04	21.02	21.07	21.03		
5	16QAM	12	0	20.36	20.74	20.49	20.67	20.28	22	2
5	16QAM	12	7	20.45	20.57	20.50	20.39	20.30		
5	16QAM	12	13	20.48	20.55	20.53	20.52	20.34		
5	16QAM	25	0	20.49	20.51	20.46	20.35	20.40		
5	64QAM	1	0	20.04	20.13	20.08	20.04	20.00	22	2
5	64QAM	1	12	21.11	20.23	20.12	20.14	20.23		
5	64QAM	1	24	20.01	20.08	20.05	20.10	20.05		
5	64QAM	12	0	19.51	19.48	19.39	19.51	19.32	21	3
5	64QAM	12	7	19.65	19.68	19.34	19.42	19.53		
5	64QAM	12	13	19.52	19.50	19.47	19.39	19.27		
5	64QAM	25	0	19.64	19.62	19.76	19.57	19.35		

13. WiFi/Bluetooth Output Power (Unit: dBm)

General Note:

1. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration must be determined for each standalone and aggregated frequency band, according to the transmission mode configuration with the highest maximum output power specified for production units to perform SAR measurements. If the same highest maximum output power applies to different combinations of channel bandwidths, modulations and data rates, additional procedures are applied to determine which test configurations require SAR measurement. When applicable, an initial test position may be applied to reduce the number of SAR measurements required for next to the ear, UMPC mini-tablet or hotspot mode configurations with multiple test positions.
2. For 2.4 GHz 802.11b DSSS, either the initial test position procedure for multiple exposure test positions or the DSSS procedure for fixed exposure position is applied; these are mutually exclusive. For 2.4 GHz and 5 GHz OFDM configurations, the initial test configuration is applied to measure SAR using either the initial test position procedure for multiple exposure test position configurations or the initial test configuration procedures for fixed exposure test conditions. Based on the reported SAR of the measured configurations and maximum output power of the transmission mode configurations that are not included in the initial test configuration, the subsequent test configuration and initial test position procedures are applied to determine if SAR measurements are required for the remaining OFDM transmission configurations. In general, the number of test channels that require SAR measurement is minimized based on maximum output power measured for the test sample(s).
3. For OFDM transmission configurations in the 2.4 GHz and 5 GHz bands, When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel for each frequency band.
4. DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures.¹⁸ The initial test position procedure is described in the following:
 - a. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band.
 - b. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
 - c. For all positions/configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

Default Power Mode
<2.4GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	19.90	20.00	98.47
		6	2437	19.80	20.00	
		11	2462	19.90	20.00	
	802.11g 6Mbps	1	2412	15.70	16.00	90.36
		6	2437	15.90	16.00	
		11	2462	15.70	16.00	
	802.11n-HT20 MCS0	1	2412	14.80	15.00	90.43
		6	2437	14.80	15.00	
		11	2462	14.90	15.00	
	802.11n-HT40 MCS0	3	2422	14.70	15.00	88.41
		6	2437	14.90	15.00	
		9	2452	14.90	15.00	

<5GHz WLAN >

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	15.70	16.00	90.67
		40	5200	15.80	16.00	
		44	5220	15.90	16.00	
		48	5240	15.90	16.00	
	802.11n-HT20 MCS0	36	5180	14.60	15.00	90.02
		40	5200	14.70	15.00	
		44	5220	14.70	15.00	
		48	5240	14.60	15.00	
	802.11n-HT40 MCS0	38	5190	14.80	15.00	88.44
		46	5230	14.90	15.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	15.70	16.00	90.67
		56	5280	15.80	16.00	
		60	5300	15.90	16.00	
		64	5320	15.70	16.00	
	802.11n-HT20 MCS0	52	5260	14.70	15.00	90.02
		56	5280	14.70	15.00	
		60	5300	14.70	15.00	
		64	5320	14.70	15.00	
	802.11n-HT40 MCS0	54	5270	14.70	15.00	88.44
		62	5310	14.70	15.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	15.90	16.00	90.67
		116	5580	15.90	16.00	
		124	5620	15.70	16.00	
		132	5660	15.70	16.00	
		144	5720	15.90	16.00	
	802.11n-HT20 MCS0	100	5500	14.90	15.00	90.02
		116	5580	14.80	15.00	
		124	5620	14.90	15.00	
		132	5660	14.90	15.00	
		144	5720	14.80	15.00	
	802.11n-HT40 MCS0	102	5510	14.90	15.00	88.44
		110	5550	14.80	15.00	
		126	5630	14.90	15.00	
		134	5670	14.60	15.00	
		142	5710	14.90	15.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	15.90	16.00	90.67
		157	5785	15.90	16.00	
		165	5825	15.60	16.00	
	802.11n-HT20 MCS0	149	5745	14.70	16.00	90.02
		157	5785	14.70	16.00	
		165	5825	14.70	16.00	
	802.11n-HT40 MCS0	151	5755	15.90	16.00	88.44
		159	5795	15.80	16.00	

Reduced Power Mode
<2.4GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	14.00	14.00	98.47
		6	2437	14.00	14.00	
		11	2462	14.00	14.00	
	802.11g 6Mbps	1	2412	13.90	14.00	90.36
		6	2437	13.90	14.00	
		11	2462	13.80	14.00	
	802.11n-HT20 MCS0	1	2412	13.60	14.00	90.43
		6	2437	13.70	14.00	
		11	2462	13.60	14.00	
	802.11n-HT40 MCS0	3	2422	14.00	14.00	88.41
		6	2437	14.00	14.00	
		9	2452	14.00	14.00	

<5GHz WLAN >

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	14.30	14.50	90.67
		40	5200	14.10	14.50	
		44	5220	14.40	14.50	
		48	5240	14.40	14.50	
	802.11n-HT20 MCS0	36	5180	14.10	14.50	90.02
		40	5200	14.10	14.50	
		44	5220	14.10	14.50	
		48	5240	14.20	14.50	
	802.11n-HT40 MCS0	38	5190	14.50	14.50	88.44
		46	5230	14.50	14.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	14.30	14.50	90.67
		56	5280	14.20	14.50	
		60	5300	14.40	14.50	
		64	5320	14.30	14.50	
	802.11n-HT20 MCS0	52	5260	14.10	14.50	90.02
		56	5280	14.10	14.50	
		60	5300	14.20	14.50	
		64	5320	14.10	14.50	
	802.11n-HT40 MCS0	54	5270	14.50	14.50	88.44
		62	5310	14.50	14.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	12.90	13.00	90.67
		116	5580	12.90	13.00	
		124	5620	12.70	13.00	
		132	5660	12.70	13.00	
		144	5720	12.80	13.00	
	802.11n-HT20 MCS0	100	5500	12.70	13.00	90.02
		116	5580	12.80	13.00	
		124	5620	12.60	13.00	
		132	5660	12.70	13.00	
		144	5720	12.90	13.00	
	802.11n-HT40 MCS0	102	5510	13.00	13.00	88.44
		110	5550	13.00	13.00	
		126	5630	13.00	13.00	
		134	5670	13.00	13.00	
		142	5710	13.00	13.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	13.40	13.50	90.67
		157	5785	13.30	13.50	
		165	5825	13.30	13.50	
	802.11n-HT20 MCS0	149	5745	13.10	13.50	90.02
		157	5785	13.20	13.50	
		165	5825	13.10	13.50	
	802.11n-HT40 MCS0	151	5755	13.50	13.50	88.44
		159	5795	13.50	13.50	

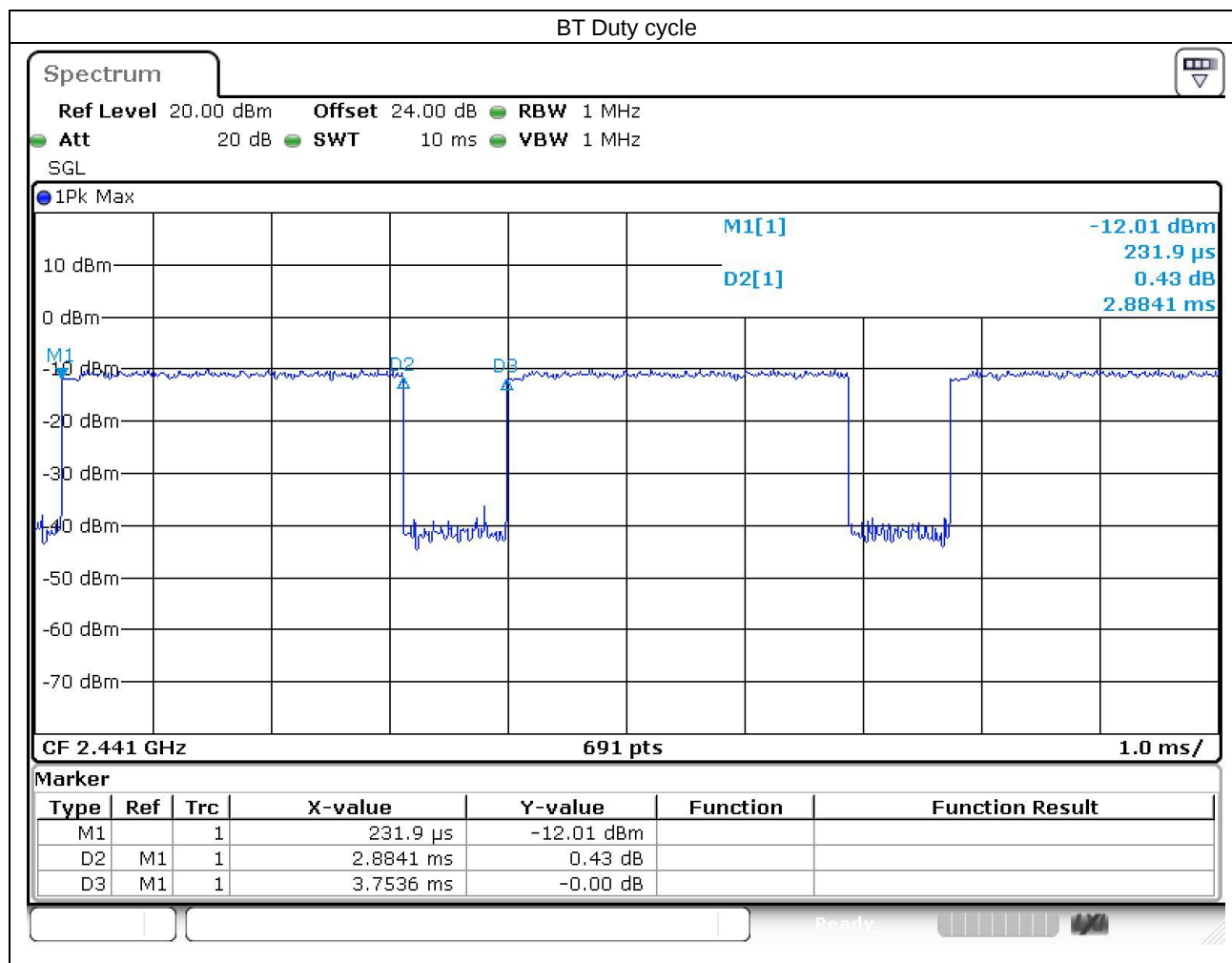
<2.4GHz Bluetooth>

Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	10.64	9.00	9.01
	CH 39	2441	11.84	10.14	10.15
	CH 78	2480	11.34	9.48	9.55
Tune-up Limit			12.00	10.50	10.50

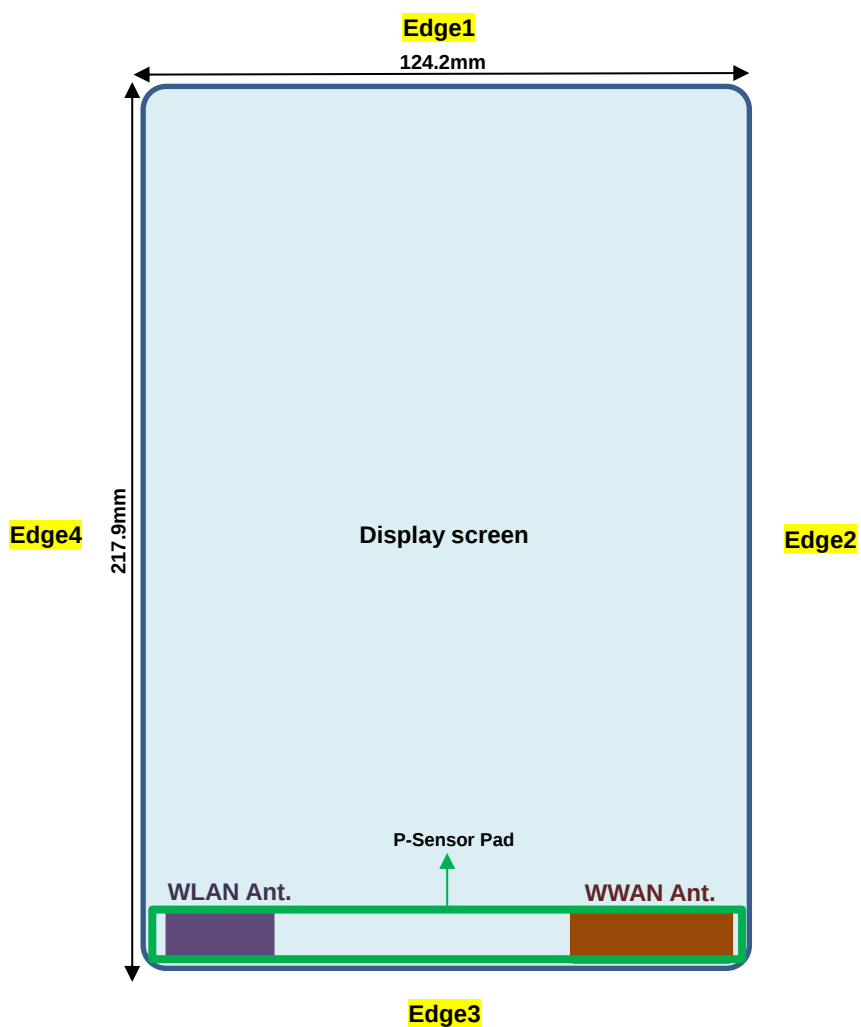
Mode	Channel	Frequency (MHz)	Average power (dBm)	
			GFSK	
LE	CH 00	2402	0.60	
	CH 19	2440	1.70	
	CH 39	2480	1.40	
Tune-up Limit			2.00	

General Note:

- For 2.4GHz Bluetooth SAR testing was selected 1Mbps due to its highest average power and duty cycle is 76.83% considered in SAR testing, and the duty cycle would be scaled to theoretical 83.3% in reported SAR calculation.



14. Antenna Location



Front View

The separation distance for antenna to edge :

Antenna	To Edge1 (mm)	To Edge2 (mm)	To Edge3 (mm)	To Edge4 (mm)
WWAN Antenna	205	7	5	61
WLAN Antenna	205	85	7	5



<SAR test exclusion table>

General Note:

- The below table, when the distance is < 50 mm exclusion threshold is "Ratio", when the distance is > 50 mm exclusion threshold is "mW"
- Maximum power is the source-based time-average power and represents the maximum RF output power among production units
- Per KDB 447498 D01v06, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
- Per KDB 447498 D01v06, standalone SAR test exclusion threshold is applied; If the test separation distance is < 5mm, 5mm is used to determine SAR exclusion threshold.
- Per KDB 447498 D01v06, 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:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR}$$
 - 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
- Per KDB 447498 D01v06, at 100 MHz to 6 GHz and for *test separation distances* > 50 mm, the SAR test exclusion threshold is determined according to the following
 - [Threshold at 50 mm in step 1) + (test separation distance - 50 mm) · (f(MHz)/150)] mW, at 100 MHz to 1500 MHz
 - [Threshold at 50 mm in step 1) + (test separation distance - 50 mm) · 10] mW at > 1500 MHz and ≤ 6 GHz

	Wireless Interface	WCDMA Band V	WCDMA Band IV	WCDMA Band II	LTE Band 71	LTE Band 12	LTE Band 5	LTE Band 26	LTE Band 4	LTE Band 66	LTE Band 2	LTE Band 25	LTE Band 41	LTE Band 41 (HPUE)	BT	2.4GHz WLAN	5GHz WLAN
Exposure Position	Calculated Frequency	846MHz	1750MHz	1907MHz	1880MHz	715MHz	848MHz	848MHz	1754MHz	1779MHz	1909MHz	1914MHz	2617MHz	2687MHz	2480MHz	2462MHz	5825MHz
	Maximum power (dBm)	25	25	25	25	25	25	25	25	25	25	25	24	26	12	20	16
	Maximum rated power(mW)	316.0	316.0	316.0	316.0	316.0	316.0	316.0	316.0	316.0	316.0	316.0	251.0	398.0	16.0	100.0	40.0
Bottom Face	Separation distance(mm)	5.0													5.0	5.0	5.0
	exclusion threshold	58.1	83.6	87.3	52.7	53.4	58.2	58.2	83.7	84.3	87.3	87.4	81.2	130.5	5.0	31.4	19.3
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 1	Separation distance(mm)	205.0													205.0	205.0	205.0
	exclusion threshold	1037.0	1663.0	1659.0	898.0	916.0	1039.0	1039.0	1663.0	1662.0	1659.0	1658.0	1643.0	1642.0	1645.0	1646.0	1612.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Edge 2	Separation distance(mm)	7.0													85.0	85.0	85.0
	exclusion threshold	41.5	59.7	62.3	37.6	38.2	41.6	41.6	59.8	60.2	62.4	62.5	58.0	93.2	445.0	446.0	412.0
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Edge 3	Separation distance(mm)	5.0													7.0	7.0	7.0
	exclusion threshold	58.1	83.6	87.3	52.7	53.4	58.2	58.2	83.7	84.3	87.3	87.4	81.2	130.5	3.6	22.4	13.8
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 4	Separation distance(mm)	61.0													5.0	5.0	5.0
	exclusion threshold	225.0	223.0	219.0	231.0	230.0	225.0	225.0	223.0	222.0	219.0	218.0	203.0	202.0	5.0	31.4	19.3
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

15. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
 - b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
 - c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
 - d. For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
 - e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix $63.3\%/62.9\% = 1.006$ is applied to scale-up the measured SAR result.
The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
 - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
 - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
 - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥ 0.8 W/kg.
4. The device implements the P-sensor to detect human body proximity and the G-sensor is used to detect EUT motion and determine whether the proximity sensor is triggered by human or fixed objects such as the table to trigger power reduction, and SAR was measured at 0cm separation with RF power reduced. To verify compliance of the human body moving away from the device and the power being restored to maximum, SAR was measured at 40mm separation for Bottom Face and 20mm separation for Edge 3 while the device transmitting at full power.

UMTS Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is $\leq \frac{1}{4}$ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA, DC-HSDPA) are less than $\frac{1}{4}$ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

LTE Note:

1. Per KDB 941225 D05v02r05, 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.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, 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.
4. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ 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 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4 / B5 / B12 / B26 / B38 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE band 2 / 4 / 5 SAR test was covered by Band 25 / 66 / 26; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
 - a. The maximum output power, including tolerance, for the smaller band is $\leq$ the larger band to qualify for the SAR test exclusion.
 - b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

WLAN Note:

1. Per KDB 248227 D01v02r02, for 2.4GHz 802.11g/n SAR testing is not required 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.
2. Per KDB 248227 D01v02r02, U-NII-1 SAR testing is not required when the U-NII-2A band highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band.
3. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
4. For all positions / configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions / configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
5. During SAR testing the WLAN transmission was verified using a spectrum analyzer.

15.1 Body SAR
<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
01	WCDMA II	RMC12.2Kbps	Bottom Face	40mm	OFF	9262	1852.4	24.51	25.00	1.119	-0.16	0.095	0.106
	WCDMA II	RMC12.2Kbps	Edge 2	0mm	OFF	9262	1852.4	24.51	25.00	1.119	-0.18	0.907	1.015
	WCDMA II	RMC12.2Kbps	Edge 2	0mm	OFF	9400	1880	24.48	25.00	1.127	-0.18	1.060	1.195
	WCDMA II	RMC12.2Kbps	Edge 2	0mm	OFF	9538	1907.6	24.46	25.00	1.132	-0.17	1.050	1.189
	WCDMA II	RMC12.2Kbps	Edge 3	20mm	OFF	9262	1852.4	24.51	25.00	1.119	0.01	0.503	0.563
	WCDMA II	RMC12.2Kbps	Edge 4	0mm	OFF	9262	1852.4	24.51	25.00	1.119	0.09	0.216	0.242
	WCDMA II	RMC12.2Kbps	Bottom Face	0mm	ON	9262	1852.4	13.96	14.00	1.009	-0.15	0.797	0.804
	WCDMA II	RMC12.2Kbps	Bottom Face	0mm	ON	9400	1880	13.94	14.00	1.014	-0.11	0.900	0.913
	WCDMA II	RMC12.2Kbps	Bottom Face	0mm	ON	9538	1907.6	13.95	14.00	1.012	-0.1	1.050	1.062
	WCDMA II	RMC12.2Kbps	Edge 3	0mm	ON	9262	1852.4	13.96	14.00	1.009	0.04	0.775	0.782
02	WCDMA IV	RMC12.2Kbps	Bottom Face	40mm	OFF	1312	1712.4	24.60	25.00	1.096	-0.08	0.083	0.091
	WCDMA IV	RMC12.2Kbps	Edge 2	0mm	OFF	1312	1712.4	24.60	25.00	1.096	-0.13	0.601	0.659
	WCDMA IV	RMC12.2Kbps	Edge 3	20mm	OFF	1312	1712.4	24.60	25.00	1.096	-0.06	0.390	0.428
	WCDMA IV	RMC12.2Kbps	Edge 4	0mm	OFF	1312	1712.4	24.60	25.00	1.096	0.03	0.412	0.452
	WCDMA IV	RMC12.2Kbps	Bottom Face	0mm	ON	1413	1732.6	15.50	16.00	1.122	-0.14	0.804	0.902
	WCDMA IV	RMC12.2Kbps	Bottom Face	0mm	ON	1312	1712.4	15.46	16.00	1.132	-0.08	0.718	0.813
	WCDMA IV	RMC12.2Kbps	Bottom Face	0mm	ON	1513	1752.6	15.24	16.00	1.191	-0.13	0.433	0.516
	WCDMA IV	RMC12.2Kbps	Edge 3	0mm	ON	1413	1732.6	15.50	16.00	1.122	0.19	0.604	0.678
	WCDMA V	RMC12.2Kbps	Bottom Face	0mm	OFF	4182	836.4	23.50	25.00	1.413	-0.07	0.493	0.696
	WCDMA V	RMC12.2Kbps	Bottom Face	0mm	OFF	4132	826.4	23.48	25.00	1.419	-0.06	0.496	0.704
03	WCDMA V	RMC12.2Kbps	Bottom Face	0mm	OFF	4233	846.6	23.43	25.00	1.435	-0.05	0.400	0.574
	WCDMA V	RMC12.2Kbps	Edge 2	0mm	OFF	4182	836.4	23.50	25.00	1.413	-0.14	0.100	0.141
	WCDMA V	RMC12.2Kbps	Edge 3	0mm	OFF	4182	836.4	23.50	25.00	1.413	-0.12	0.489	0.691
	WCDMA V	RMC12.2Kbps	Edge 4	0mm	OFF	4182	836.4	23.50	25.00	1.413	0.02	0.001	0.001



<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 12	10M	QPSK	1	25	Bottom Face	40mm	OFF	23095	707.5	24.67	25.00	1.079	-0.13	0.055	0.059
	LTE Band 12	10M	QPSK	25	12	Bottom Face	40mm	OFF	23095	707.5	23.69	24.00	1.074	-0.19	0.042	0.045
	LTE Band 12	10M	QPSK	1	25	Edge 2	0mm	OFF	23095	707.5	24.67	25.00	1.079	-0.19	0.360	0.388
	LTE Band 12	10M	QPSK	25	12	Edge 2	0mm	OFF	23095	707.5	23.69	24.00	1.074	-0.17	0.288	0.309
	LTE Band 12	10M	QPSK	1	25	Edge 3	20mm	OFF	23095	707.5	24.67	25.00	1.079	-0.14	0.094	0.101
	LTE Band 12	10M	QPSK	25	12	Edge 3	20mm	OFF	23095	707.5	23.69	24.00	1.074	-0.11	0.074	0.079
	LTE Band 12	10M	QPSK	1	25	Edge 4	0mm	OFF	23095	707.5	24.67	25.00	1.079	-0.08	0.107	0.115
	LTE Band 12	10M	QPSK	25	12	Edge 4	0mm	OFF	23095	707.5	23.69	24.00	1.074	0.06	0.088	0.095
04	LTE Band 12	10M	QPSK	1	0	Bottom Face	0mm	ON	23095	707.5	21.82	22.00	1.042	-0.12	0.791	0.824
	LTE Band 12	10M	QPSK	25	0	Bottom Face	0mm	ON	23095	707.5	20.82	21.00	1.042	-0.12	0.640	0.667
	LTE Band 12	10M	QPSK	50	0	Bottom Face	0mm	ON	23095	707.5	20.75	21.00	1.059	0	0.676	0.716
	LTE Band 12	10M	QPSK	1	0	Edge 3	0mm	ON	23095	707.5	21.82	22.00	1.042	-0.04	0.459	0.478
	LTE Band 12	10M	QPSK	25	0	Edge 3	0mm	ON	23095	707.5	20.82	21.00	1.042	0.03	0.403	0.420
	LTE Band 25	20M	QPSK	1	49	Bottom Face	40mm	OFF	26340	1880	23.91	25.00	1.285	-0.03	0.073	0.094
	LTE Band 25	20M	QPSK	50	24	Bottom Face	40mm	OFF	26340	1880	22.81	24.00	1.315	-0.09	0.076	0.100
05	LTE Band 25	20M	QPSK	1	49	Edge 2	0mm	OFF	26340	1880	23.91	25.00	1.285	-0.15	0.933	1.199
	LTE Band 25	20M	QPSK	1	49	Edge 2	0mm	OFF	26140	1860	23.43	25.00	1.435	-0.17	0.753	1.081
	LTE Band 25	20M	QPSK	1	49	Edge 2	0mm	OFF	26590	1905	23.46	25.00	1.426	-0.17	0.839	1.196
	LTE Band 25	20M	QPSK	50	24	Edge 2	0mm	OFF	26340	1880	22.81	24.00	1.315	-0.18	0.669	0.880
	LTE Band 25	20M	QPSK	50	24	Edge 2	0mm	OFF	26140	1860	22.54	24.00	1.400	0.06	0.569	0.796
	LTE Band 25	20M	QPSK	50	24	Edge 2	0mm	OFF	26590	1905	22.79	24.00	1.321	0.01	0.584	0.772
	LTE Band 25	20M	QPSK	100	0	Edge 2	0mm	OFF	26340	1880	22.75	24.00	1.334	-0.17	0.652	0.869
	LTE Band 25	20M	QPSK	1	49	Edge 3	20mm	OFF	26340	1880	23.91	25.00	1.285	-0.13	0.444	0.571
	LTE Band 25	20M	QPSK	50	24	Edge 3	20mm	OFF	26340	1880	22.81	24.00	1.315	-0.12	0.322	0.424
	LTE Band 25	20M	QPSK	1	49	Edge 4	0mm	OFF	26340	1880	23.91	25.00	1.285	0.03	0.163	0.210
	LTE Band 25	20M	QPSK	50	24	Edge 4	0mm	OFF	26340	1880	22.81	24.00	1.315	0.08	0.122	0.160
	LTE Band 25	20M	QPSK	1	0	Bottom Face	0mm	ON	26590	1905	12.99	13.00	1.002	0.19	0.818	0.820
	LTE Band 25	20M	QPSK	1	0	Bottom Face	0mm	ON	26140	1860	12.86	13.00	1.033	0.13	0.499	0.515
	LTE Band 25	20M	QPSK	1	0	Bottom Face	0mm	ON	26340	1880	12.98	13.00	1.005	0.16	0.741	0.744
	LTE Band 25	20M	QPSK	50	0	Bottom Face	0mm	ON	26590	1905	11.93	12.00	1.016	0.13	0.821	0.834
	LTE Band 25	20M	QPSK	50	0	Bottom Face	0mm	ON	26140	1860	11.66	12.00	1.081	0.19	0.494	0.534
	LTE Band 25	20M	QPSK	50	0	Bottom Face	0mm	ON	26340	1880	11.87	12.00	1.030	0.18	0.632	0.651
	LTE Band 25	20M	QPSK	100	0	Bottom Face	0mm	ON	26590	1905	11.71	12.00	1.069	0.12	0.816	0.872
	LTE Band 25	20M	QPSK	1	0	Edge 3	0mm	ON	26590	1905	12.99	13.00	1.002	-0.08	0.785	0.787
	LTE Band 25	20M	QPSK	1	0	Edge 3	0mm	ON	26140	1860	12.86	13.00	1.033	-0.09	0.451	0.466
	LTE Band 25	20M	QPSK	1	0	Edge 3	0mm	ON	26340	1880	12.98	13.00	1.005	-0.11	0.677	0.680
	LTE Band 25	20M	QPSK	50	0	Edge 3	0mm	ON	26590	1905	11.93	12.00	1.016	-0.11	0.837	0.851
	LTE Band 25	20M	QPSK	50	0	Edge 3	0mm	ON	26140	1860	11.66	12.00	1.081	-0.13	0.446	0.482
	LTE Band 25	20M	QPSK	50	0	Edge 3	0mm	ON	26340	1880	11.87	12.00	1.030	-0.11	0.608	0.626
	LTE Band 25	20M	QPSK	100	0	Edge 3	0mm	ON	26590	1905	11.71	12.00	1.069	-0.13	0.830	0.887



FCC SAR TEST REPORT

Report No. : FA012248

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
06	LTE Band 26	15M	QPSK	1	37	Bottom Face	0mm	OFF	26865	831.5	24.88	25.00	1.028	-0.12	0.667	0.686
	LTE Band 26	15M	QPSK	36	20	Bottom Face	0mm	OFF	26865	831.5	23.81	24.00	1.045	-0.13	0.489	0.511
	LTE Band 26	15M	QPSK	1	37	Edge 2	0mm	OFF	26865	831.5	24.88	25.00	1.028	-0.17	0.153	0.157
	LTE Band 26	15M	QPSK	36	20	Edge 2	0mm	OFF	26865	831.5	23.81	24.00	1.045	-0.19	0.112	0.117
	LTE Band 26	15M	QPSK	1	37	Edge 3	0mm	OFF	26865	831.5	24.88	25.00	1.028	-0.07	0.625	0.643
	LTE Band 26	15M	QPSK	36	20	Edge 3	0mm	OFF	26865	831.5	23.81	24.00	1.045	-0.04	0.449	0.469
	LTE Band 26	15M	QPSK	1	37	Edge 4	0mm	OFF	26865	831.5	24.88	25.00	1.028	0.05	0.001	0.001
	LTE Band 26	15M	QPSK	36	20	Edge 4	0mm	OFF	26865	831.5	23.81	24.00	1.045	0.13	0.001	0.001
	LTE Band 66	20M	QPSK	1	49	Bottom Face	40mm	OFF	132322	1745	23.79	25.00	1.321	-0.04	0.065	0.086
	LTE Band 66	20M	QPSK	50	24	Bottom Face	40mm	OFF	132322	1745	22.79	24.00	1.321	-0.07	0.051	0.067
	LTE Band 66	20M	QPSK	1	49	Edge 2	0mm	OFF	132322	1745	23.79	25.00	1.321	-0.11	0.331	0.437
	LTE Band 66	20M	QPSK	50	24	Edge 2	0mm	OFF	132322	1745	22.79	24.00	1.321	-0.16	0.286	0.378
	LTE Band 66	20M	QPSK	1	49	Edge 3	20mm	OFF	132322	1745	23.79	25.00	1.321	-0.14	0.257	0.340
	LTE Band 66	20M	QPSK	50	24	Edge 3	20mm	OFF	132322	1745	22.79	24.00	1.321	-0.09	0.240	0.317
	LTE Band 66	20M	QPSK	1	49	Edge 4	0mm	OFF	132322	1745	23.79	25.00	1.321	0.01	0.388	0.513
	LTE Band 66	20M	QPSK	50	24	Edge 4	0mm	OFF	132322	1745	22.79	24.00	1.321	-0.06	0.339	0.448
	LTE Band 66	20M	QPSK	1	0	Bottom Face	0mm	ON	132322	1745	15.39	15.50	1.026	0.12	0.862	0.884
	LTE Band 66	20M	QPSK	1	0	Bottom Face	0mm	ON	132072	1720	15.09	15.50	1.099	-0.16	0.693	0.762
07	LTE Band 66	20M	QPSK	1	0	Bottom Face	0mm	ON	132572	1770	15.27	15.50	1.054	-0.17	0.939	0.990
	LTE Band 66	20M	QPSK	50	0	Bottom Face	0mm	ON	132322	1745	14.37	14.50	1.030	-0.17	0.708	0.730
	LTE Band 66	20M	QPSK	100	0	Bottom Face	0mm	ON	132322	1745	14.10	14.50	1.096	-0.15	0.710	0.778
	LTE Band 66	20M	QPSK	1	0	Edge 3	0mm	ON	132322	1745	15.39	15.50	1.026	-0.11	0.611	0.627
	LTE Band 66	20M	QPSK	50	0	Edge 3	0mm	ON	132322	1745	14.37	14.50	1.030	-0.08	0.477	0.491
	LTE Band 71	20M	QPSK	1	49	Bottom Face	40mm	OFF	133322	683	24.75	25.00	1.059	0.1	0.046	0.049
	LTE Band 71	20M	QPSK	50	0	Bottom Face	40mm	OFF	133322	683	23.62	24.00	1.091	-0.03	0.041	0.045
	LTE Band 71	20M	QPSK	1	49	Edge 2	0mm	OFF	133322	683	24.75	25.00	1.059	-0.12	0.358	0.379
	LTE Band 71	20M	QPSK	50	0	Edge 2	0mm	OFF	133322	683	23.62	24.00	1.091	-0.16	0.344	0.375
	LTE Band 71	20M	QPSK	1	49	Edge 3	20mm	OFF	133322	683	24.75	25.00	1.059	0.06	0.087	0.092
	LTE Band 71	20M	QPSK	50	0	Edge 3	20mm	OFF	133322	683	23.62	24.00	1.091	-0.07	0.083	0.091
	LTE Band 71	20M	QPSK	1	49	Edge 4	0mm	OFF	133322	683	24.75	25.00	1.059	-0.09	0.092	0.097
	LTE Band 71	20M	QPSK	50	0	Edge 4	0mm	OFF	133322	683	23.62	24.00	1.091	0.05	0.076	0.083
08	LTE Band 71	20M	QPSK	1	0	Bottom Face	0mm	ON	133322	683	21.30	21.50	1.047	-0.17	0.776	0.813
	LTE Band 71	20M	QPSK	50	0	Bottom Face	0mm	ON	133322	683	20.05	20.50	1.109	-0.19	0.626	0.694
	LTE Band 71	20M	QPSK	100	0	Bottom Face	0mm	ON	133322	683	20.02	20.50	1.117	-0.1	0.630	0.704
	LTE Band 71	20M	QPSK	1	0	Edge 3	0mm	ON	133322	683	21.30	21.50	1.047	-0.12	0.556	0.582
	LTE Band 71	20M	QPSK	50	0	Edge 3	0mm	ON	133322	683	20.05	20.50	1.109	-0.06	0.383	0.425



<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 41	20M	QPSK	1	49	Bottom Face	40mm	OFF	41055	2636.5	23.78	24.00	1.052	62.9	1.006	-0.06	0.019	0.020
	LTE Band 41	20M	QPSK	50	24	Bottom Face	40mm	OFF	41055	2636.5	22.79	23.00	1.050	62.9	1.006	-0.12	0.016	0.017
09	LTE Band 41	20M	QPSK	1	49	Edge 2	0mm	OFF	41055	2636.5	23.78	24.00	1.052	62.9	1.006	-0.18	1.090	1.154
	LTE Band 41	20M	QPSK	1	49	Edge 2	0mm	OFF	39750	2506	23.74	24.00	1.062	62.9	1.006	-0.14	1.010	1.079
	LTE Band 41	20M	QPSK	1	49	Edge 2	0mm	OFF	40185	2549.5	23.51	24.00	1.119	62.9	1.006	-0.1	0.983	1.107
	LTE Band 41	20M	QPSK	1	49	Edge 2	0mm	OFF	40620	2593	23.67	24.00	1.079	62.9	1.006	-0.15	1.030	1.118
	LTE Band 41	20M	QPSK	1	49	Edge 2	0mm	OFF	41490	2680	23.56	24.00	1.107	62.9	1.006	-0.13	1.020	1.136
	LTE Band 41	20M	QPSK	50	24	Edge 2	0mm	OFF	41055	2636.5	22.79	23.00	1.050	62.9	1.006	-0.13	0.933	0.985
	LTE Band 41	20M	QPSK	50	24	Edge 2	0mm	OFF	39750	2506	22.77	23.00	1.054	62.9	1.006	-0.16	0.852	0.904
	LTE Band 41	20M	QPSK	50	24	Edge 2	0mm	OFF	40185	2549.5	22.61	23.00	1.094	62.9	1.006	-0.12	0.819	0.901
	LTE Band 41	20M	QPSK	50	24	Edge 2	0mm	OFF	40620	2593	22.74	23.00	1.062	62.9	1.006	-0.14	0.890	0.951
	LTE Band 41	20M	QPSK	50	24	Edge 2	0mm	OFF	41490	2680	22.62	23.00	1.091	62.9	1.006	-0.1	0.828	0.909
	LTE Band 41	20M	QPSK	100	0	Edge 2	0mm	OFF	41055	2636.5	22.79	23.00	1.050	62.9	1.006	-0.12	0.881	0.930
	LTE Band 41	20M	QPSK	1	49	Edge 3	20mm	OFF	41055	2636.5	23.78	24.00	1.052	62.9	1.006	0.05	0.049	0.052
	LTE Band 41	20M	QPSK	50	24	Edge 3	20mm	OFF	41055	2636.5	22.79	23.00	1.050	62.9	1.006	-0.07	0.037	0.039
	LTE Band 41	20M	QPSK	1	49	Edge 4	0mm	OFF	41055	2636.5	23.78	24.00	1.052	62.9	1.006	0.06	0.053	0.056
	LTE Band 41	20M	QPSK	50	24	Edge 4	0mm	OFF	41055	2636.5	22.79	23.00	1.050	62.9	1.006	0.18	0.043	0.045
	LTE Band 41	20M	QPSK	1	49	Bottom Face	0mm	ON	41055	2636.5	19.81	20.00	1.045	62.9	1.006	-0.13	0.744	0.782
	LTE Band 41	20M	QPSK	1	49	Bottom Face	0mm	ON	39750	2506	18.73	20.00	1.340	62.9	1.006	0.01	0.574	0.774
	LTE Band 41	20M	QPSK	1	49	Bottom Face	0mm	ON	40185	2549.5	18.67	20.00	1.358	62.9	1.006	-0.15	0.533	0.728
	LTE Band 41	20M	QPSK	1	49	Bottom Face	0mm	ON	40620	2593	18.75	20.00	1.334	62.9	1.006	-0.17	0.547	0.734
	LTE Band 41	20M	QPSK	1	49	Bottom Face	0mm	ON	41490	2680	18.75	20.00	1.334	62.9	1.006	0.08	0.552	0.741
	LTE Band 41	20M	QPSK	50	24	Bottom Face	0mm	ON	41055	2636.5	18.71	19.00	1.069	62.9	1.006	-0.12	0.723	0.778
	LTE Band 41	20M	QPSK	50	24	Bottom Face	0mm	ON	39750	2506	18.27	19.00	1.183	62.9	1.006	-0.05	0.632	0.752
	LTE Band 41	20M	QPSK	50	24	Bottom Face	0mm	ON	40185	2549.5	18.36	19.00	1.159	62.9	1.006	-0.13	0.605	0.705
	LTE Band 41	20M	QPSK	50	24	Bottom Face	0mm	ON	40620	2593	18.34	19.00	1.164	62.9	1.006	0.06	0.601	0.704
	LTE Band 41	20M	QPSK	50	24	Bottom Face	0mm	ON	41490	2680	18.14	19.00	1.219	62.9	1.006	0.04	0.592	0.726
	LTE Band 41	20M	QPSK	100	0	Bottom Face	0mm	ON	41055	2636.5	18.37	19.00	1.156	62.9	1.006	0.03	0.626	0.728
	LTE Band 41	20M	QPSK	1	49	Edge 3	0mm	ON	41055	2636.5	19.81	20.00	1.045	62.9	1.006	-0.12	0.245	0.257
	LTE Band 41	20M	QPSK	50	24	Edge 3	0mm	ON	41055	2636.5	18.71	19.00	1.069	62.9	1.006	0.04	0.205	0.220
	LTE Band 41_HPUE	20M	QPSK	1	0	Edge 2	0mm	OFF	41055	2636.5	25.94	26.00	1.014	42.9	1.009	0.06	1.120	1.146

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	40mm	OFF	1	2412	19.90	20.00	1.023	98.47	1.016	-0.19	0.029	0.030
	WLAN2.4GHz	802.11b 1Mbps	Edge 3	20mm	OFF	1	2412	19.90	20.00	1.023	98.47	1.016	0.02	0.128	0.133
	WLAN2.4GHz	802.11b 1Mbps	Edge 4	0mm	OFF	1	2412	19.90	20.00	1.023	98.47	1.016	-0.1	0.602	0.626
10	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	ON	1	2412	14.00	14.00	1.000	98.47	1.016	-0.16	0.804	0.817
	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	ON	6	2437	14.00	14.00	1.000	98.47	1.016	-0.19	0.611	0.621
	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	ON	11	2462	14.00	14.00	1.000	98.47	1.016	-0.13	0.574	0.583
	WLAN2.4GHz	802.11b 1Mbps	Edge 3	0mm	ON	1	2412	14.00	14.00	1.000	98.47	1.016	0.13	0.332	0.337
	WLAN5GHz	802.11a 6Mbps	Bottom Face	40mm	OFF	60	5300	15.90	16.00	1.023	90.67	1.103	-0.01	0.018	0.020
	WLAN5GHz	802.11a 6Mbps	Edge 3	20mm	OFF	60	5300	15.90	16.00	1.023	90.67	1.103	0.02	0.096	0.108
	WLAN5GHz	802.11a 6Mbps	Edge 4	0mm	OFF	60	5300	15.90	16.00	1.023	90.67	1.103	0.03	0.245	0.277
	WLAN5GHz	802.11n-HT40 MCS0	Bottom Face	0mm	ON	62	5310	14.50	14.50	1.000	88.44	1.131	0.03	0.463	0.524
11	WLAN5GHz	802.11n-HT40 MCS0	Bottom Face	0mm	ON	54	5270	14.50	14.50	1.000	88.44	1.131	-0.11	0.691	0.782
	WLAN5GHz	802.11n-HT40 MCS0	Edge 3	0mm	ON	62	5310	14.50	14.50	1.000	88.44	1.131	0.16	0.372	0.421
	WLAN5GHz	802.11a 6Mbps	Bottom Face	40mm	OFF	116	5580	15.90	16.00	1.023	90.67	1.103	0.09	0.043	0.049
	WLAN5GHz	802.11a 6Mbps	Edge 3	20mm	OFF	116	5580	15.90	16.00	1.023	90.67	1.103	0	0.256	0.289
	WLAN5GHz	802.11a 6Mbps	Edge 4	0mm	OFF	116	5580	15.90	16.00	1.023	90.67	1.103	-0.02	0.184	0.208
	WLAN5GHz	802.11n-HT40 MCS0	Bottom Face	0mm	ON	102	5510	13.00	13.00	1.000	88.44	1.131	0.03	0.437	0.494
	WLAN5GHz	802.11n-HT40 MCS0	Edge 3	0mm	ON	102	5510	13.00	13.00	1.000	88.44	1.131	-0.02	0.691	0.782
	WLAN5GHz	802.11n-HT40 MCS0	Edge 3	0mm	ON	110	5550	13.00	13.00	1.000	88.44	1.131	0.18	0.866	0.979
12	WLAN5GHz	802.11n-HT40 MCS0	Edge 3	0mm	ON	126	5630	13.00	13.00	1.000	88.44	1.131	0.04	0.867	0.981
	WLAN5GHz	802.11n-HT40 MCS0	Edge 3	0mm	ON	134	5670	13.00	13.00	1.000	88.44	1.131	-0.02	0.676	0.765
	WLAN5GHz	802.11n-HT40 MCS0	Edge 3	0mm	ON	142	5710	13.00	13.00	1.000	88.44	1.131	0.09	0.483	0.546
	WLAN5GHz	802.11n-HT40 MCS0	Bottom Face	40mm	OFF	151	5755	15.90	16.00	1.023	88.44	1.131	0.09	0.042	0.049
	WLAN5GHz	802.11n-HT40 MCS0	Edge 3	20mm	OFF	151	5755	15.90	16.00	1.023	88.44	1.131	0	0.130	0.150
	WLAN5GHz	802.11n-HT40 MCS0	Edge 4	0mm	OFF	151	5755	15.90	16.00	1.023	88.44	1.131	0.11	0.132	0.153
13	WLAN5GHz	802.11n-HT40 MCS0	Bottom Face	0mm	ON	151	5755	13.50	13.50	1.000	88.44	1.131	0.18	0.440	0.498
	WLAN5GHz	802.11n-HT40 MCS0	Bottom Face	0mm	ON	159	5795	13.50	13.50	1.000	88.44	1.131	-0.02	0.398	0.450
	WLAN5GHz	802.11n-HT40 MCS0	Edge 3	0mm	ON	151	5755	13.50	13.50	1.000	88.44	1.131	0.02	0.321	0.363

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	Bluetooth	1Mbps	Bottom Face	40mm	39	2441	11.84	12.00	1.038	76.83	1.084	0	0.001	0.001
	Bluetooth	1Mbps	Edge 3	20mm	39	2441	11.84	12.00	1.038	76.83	1.084	0	0.001	0.001
14	Bluetooth	1Mbps	Bottom Face	0mm	39	2441	11.84	12.00	1.038	76.83	1.084	-0.1	0.172	0.194
	Bluetooth	1Mbps	Bottom Face	0mm	0	2402	10.64	12.00	1.368	76.83	1.084	0.06	0.126	0.187
	Bluetooth	1Mbps	Bottom Face	0mm	78	2480	11.34	12.00	1.165	76.83	1.084	-0.07	0.137	0.173
	Bluetooth	1Mbps	Edge 3	0mm	39	2441	11.84	12.00	1.038	76.83	1.084	0	0.082	0.092
	Bluetooth	1Mbps	Edge 4	0mm	39	2441	11.84	12.00	1.038	76.83	1.084	0.01	0.001	0.001

**15.2 Repeated SAR Measurement**

No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WCDMA II	RMC12.2Kbps	Edge 2	0mm	OFF	9400	1880	24.48	25.00	1.127	-	-	-0.18	1.060	-	1.195
2nd	WCDMA II	RMC12.2Kbps	Edge 2	0mm	OFF	9400	1880	24.48	25.00	1.127	-	-	-0.08	1.040	1.02	1.172
1st	LTE Band 41_HPUE	20M_QPSK_1_0	Edge 2	0mm	OFF	41055	2636.5	25.94	26.00	1.014	42.9	1.009	0.06	1.120	-	1.146
2nd	LTE Band 41_HPUE	20M_QPSK_1_0	Edge 2	0mm	OFF	41055	2636.5	25.94	26.00	1.014	42.9	1.009	0.03	1.070	1.05	1.095
1st	LTE Band 66	20M_QPSK_1_0	Bottom Face	0mm	ON	132572	1770	15.27	15.50	1.054	-	-	-0.17	0.939	-	0.990
2nd	LTE Band 66	20M_QPSK_1_0	Bottom Face	0mm	ON	132572	1770	15.27	15.50	1.054	-	-	-0.14	0.926	1.01	0.976
1st	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	ON	1	2412	14.00	14.00	1.000	98.47	1.016	-0.16	0.804	-	0.817
2nd	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	ON	1	2412	14.00	14.00	1.000	98.47	1.016	-0.06	0.794	1.01	0.807
1st	WLAN5GHz	802.11n-HT40 MCS0	Edge 3	0mm	ON	126	5630	13.00	13.00	1.000	88.44	1.131	0.04	0.867	-	0.981
2nd	WLAN5GHz	802.11n-HT40 MCS0	Edge 3	0mm	ON	126	5630	13.00	13.00	1.000	88.44	1.131	0.05	0.832	1.04	0.941

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥ 0.8 W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR < 1.45 W/kg, only one repeated measurement is required.
3. The ratio is the difference in percentage between original and repeated *measured SAR*.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

15.3 LTE Band 41 Power Class 2 and Power Class 3 Linearity

This device support Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operation is 43.3% using UL-DL configuration 1. Per FCC Guidance based on the device behavior, all SAR tests were performed using Power Class 3. Power Class 2 is tested using the highest SAR test configuration in Power Class 3 for each LTE configuration and exposure condition combination, according to the highest time averaged power for all applicable uplink-downlink configurations in Power Class 2. When the reported SAR vs. output power is linearly scaled with $< 10\%$ discrepancy between power classes and all reported SAR are < 1.4 W/kg, Separate SAR testing for Power Class 2 is not required

	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	24	26
Reported 1g SAR (W/kg)	1.154	1.146
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	159.00	172.38
Linearity SAR(W/kg)	1.25	
% deviation from expected linearity		-8.40%

16. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Tablet
		Body
1.	WWAN + WLAN2.4GHz + Bluetooth	Yes
2.	WWAN + WLAN5GHz + Bluetooth	Yes

General Note:

1. All licensed modes share the same antenna part and cannot transmit simultaneously
2. EUT will choose either WLAN 2.4GHz or WLAN 5GHz according to the network signal condition; therefore, 2.4GHz WLAN and 5GHz WLAN will not operate simultaneously at any moment.
3. The Scaled SAR summation is calculated based on the same configuration and test position.
4. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
 - i) Scalar SAR summation < 1.6W/kg.
 - ii) $SPLSR = (SAR1 + SAR2)^{1.5} / (\min. \text{ separation distance, mm})$, and the peak separation distance is determined from the square root of $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$, where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
 - iii) If $SPLSR \leq 0.04$, simultaneously transmission SAR measurement is not necessary.
 - iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
 - v) The SPLSR calculated results please refer to section 16.2.

16.1 Body Exposure Conditions

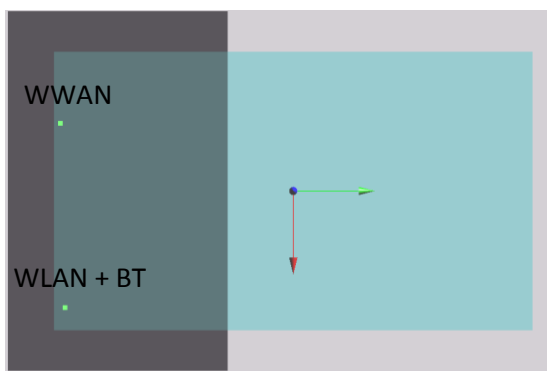
WWAN Band		Exposure Position	1	2	3	4	1+2+4 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)	SPLSR	Case No
			WWAN 1g SAR (W/kg)	2.4GHz WLAN 1g SAR (W/kg)	5GHz WLAN 1g SAR (W/kg)	Bluetooth 1g SAR (W/kg)				
WCDMA	WCDMA II	Bottom Face at 40mm	0.106	0.030	0.049	0.001	0.137	0.156		
		Edge 3 at 20mm	0.563	0.133	0.289	0.001	0.697	0.853		
		Bottom Face at 0mm	1.062	0.817	0.782	0.194	2.073	2.038	0.04	Case 2
		Edge 2 at 0mm	1.195				1.195	1.195		
		Edge 3 at 0mm	0.782	0.337	0.981	0.092	1.211	1.855	0.04	Case 1
		Edge 4 at 0mm	0.242	0.626	0.277	0.001	0.869	0.520		
	WCDMA IV	Bottom Face at 40mm	0.091	0.030	0.049	0.001	0.122	0.141		
		Edge 3 at 20mm	0.428	0.133	0.289	0.001	0.562	0.718		
		Bottom Face at 0mm	0.902	0.817	0.782	0.194	1.913	1.878	0.04	Case 2
		Edge 2 at 0mm	0.659				0.659	0.659		
		Edge 3 at 0mm	0.678	0.337	0.981	0.092	1.107	1.751	0.04	Case 1
		Edge 4 at 0mm	0.452	0.626	0.277	0.001	1.079	0.730		
	WCDMA V	Bottom Face at 0mm	0.704	0.817	0.782	0.194	1.715	1.680	0.03	Case 2
		Edge 2 at 0mm	0.141				0.141	0.141		
		Edge 3 at 0mm	0.691	0.337	0.981	0.092	1.120	1.764	0.04	Case 1
		Edge 4 at 0mm	0.001	0.626	0.277	0.001	0.628	0.279		
LTE	LTE Band 12	Bottom Face at 40mm	0.059	0.030	0.049	0.001	0.090	0.109		
		Edge 3 at 20mm	0.101	0.133	0.289	0.001	0.235	0.391		
		Bottom Face at 0mm	0.824	0.817	0.782	0.194	1.835	1.800	0.03	Case 2
		Edge 2 at 0mm	0.388				0.388	0.388		
		Edge 3 at 0mm	0.478	0.337	0.981	0.092	0.907	1.551		
		Edge 4 at 0mm	0.115	0.626	0.277	0.001	0.742	0.393		
	LTE Band 25	Bottom Face at 40mm	0.100	0.030	0.049	0.001	0.131	0.150		
		Edge 3 at 20mm	0.571	0.133	0.289	0.001	0.705	0.861		
		Bottom Face at 0mm	0.872	0.817	0.782	0.194	1.883	1.848	0.04	Case 2
		Edge 2 at 0mm	1.199				1.199	1.199		
		Edge 3 at 0mm	0.887	0.337	0.981	0.092	1.316	1.960	0.04	Case 1
		Edge 4 at 0mm	0.210	0.626	0.277	0.001	0.837	0.488		
	LTE Band 26	Bottom Face at 0mm	0.686	0.817	0.782	0.194	1.697	1.662	0.03	Case 2
		Edge 2 at 0mm	0.157				0.157	0.157		
		Edge 3 at 0mm	0.643	0.337	0.981	0.092	1.072	1.716	0.04	Case 1
		Edge 4 at 0mm	0.001	0.626	0.277	0.001	0.628	0.279		
	LTE Band 41	Bottom Face at 40mm	0.020	0.030	0.049	0.001	0.051	0.070		
		Edge 3 at 20mm	0.052	0.133	0.289	0.001	0.186	0.342		
		Bottom Face at 0mm	0.782	0.817	0.782	0.194	1.793	1.758	0.03	Case 2
		Edge 2 at 0mm	1.154				1.154	1.154		
		Edge 3 at 0mm	0.257	0.337	0.981	0.092	0.686	1.330		
		Edge 4 at 0mm	0.056	0.626	0.277	0.001	0.683	0.334		
	LTE Band 66	Bottom Face at 40mm	0.086	0.030	0.049	0.001	0.117	0.136		
		Edge 3 at 20mm	0.340	0.133	0.289	0.001	0.474	0.630		
		Bottom Face at 0mm	0.990	0.817	0.782	0.194	2.001	1.966	0.04	Case 2
		Edge 2 at 0mm	0.437				0.437	0.437		
		Edge 3 at 0mm	0.627	0.337	0.981	0.092	1.056	1.700	0.03	Case 1
		Edge 4 at 0mm	0.513	0.626	0.277	0.001	1.140	0.791		
	LTE Band 71	Bottom Face at 40mm	0.049	0.030	0.049	0.001	0.080	0.099		
		Edge 3 at 20mm	0.092	0.133	0.289	0.001	0.226	0.382		
		Bottom Face at 0mm	0.813	0.817	0.782	0.194	1.824	1.789	0.03	Case 2
		Edge 2 at 0mm	0.379				0.379	0.379		
		Edge 3 at 0mm	0.582	0.337	0.981	0.092	1.011	1.655	0.04	Case 1
		Edge 4 at 0mm	0.097	0.626	0.277	0.001	0.724	0.375		

16.2 SPLSR Evaluation and Analysis

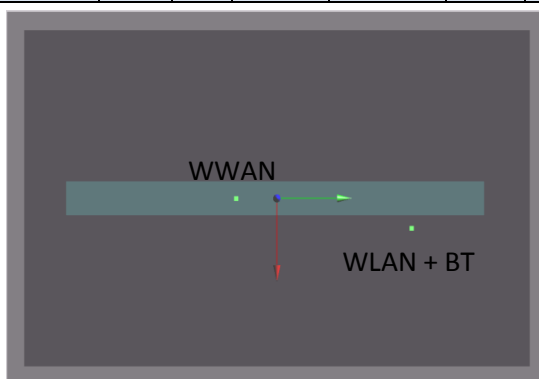
General Note:

1. $SPLSR = (SAR_1 + SAR_2)^{1.5} / (\text{min. separation distance, mm})$. If $SPLSR \leq 0.04$, simultaneously transmission SAR measurement is not necessary

	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 1	WCDMA II	Edge 3	0.782	0mm	-3.15	-29.41	-2.61	68.9	1.86	0.04	Not required
	WLAN5GHz+BT		1.073	0mm	1.63	39.19	1.87				
	WCDMA IV		0.678	0mm	-3.05	-25.1	-2.51	64.6	1.75	0.04	Not required
	WLAN5GHz+BT		1.073	0mm	1.63	39.19	1.87				
	WCDMA V		0.691	0mm	-2.97	-14.41	-2.4	54.0	1.76	0.04	Not required
	WLAN5GHz+BT		1.073	0mm	1.63	39.19	1.87				
	LTE Band 25		0.887	0mm	-0.05	-32.41	-0.69	71.7	1.96	0.04	Not required
	WLAN5GHz+BT		1.073	0mm	1.63	39.19	1.87				
	LTE Band 26		0.643	0mm	-3.07	-13.91	-2.8	53.5	1.72	0.04	Not required
	WLAN5GHz+BT		1.073	0mm	1.63	39.19	1.87				
	LTE Band 66		0.627	0mm	-0.07	-30.9	-0.69	70.2	1.70	0.03	Not required
	WLAN5GHz+BT		1.073	0mm	1.63	39.19	1.87				
	LTE Band 71		0.582	0mm	0.03	-9.5	-0.56	48.8	1.66	0.04	Not required
	WLAN5GHz+BT		1.073	0mm	1.63	39.19	1.87				



	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 2	WCDMA II	Bottom Face	1.062	0mm	-23.66	-105.22	-1.97	67.1	2.07	0.04	Not required
	WLAN2.4GHz+BT		1.011	0mm	43.23	-100.61	-1.22				
	WCDMA II		1.062	0mm	-23.66	-105.22	-1.97	69.7	2.04	0.04	Not required
	WLAN5GHz+BT		0.976	0mm	45.63	-99.8	2.94				
	WCDMA IV		0.902	0mm	-28.45	-105.31	-1.97	71.8	1.91	0.04	Not required
	WLAN2.4GHz+BT		1.011	0mm	43.23	-100.61	-1.22				
	WCDMA IV		0.902	0mm	-28.45	-105.31	-1.97	74.4	1.88	0.03	Not required
	WLAN5GHz+BT		0.976	0mm	45.63	-99.8	2.94				
	WCDMA V		0.704	0mm	-26	-111.5	-1.62	70.1	1.72	0.03	Not required
	WLAN2.4GHz+BT		1.011	0mm	43.23	-100.61	-1.22				
	WCDMA V		0.704	0mm	-29.76	-105.32	-1.29	75.7	1.68	0.03	Not required
	WLAN5GHz+BT		0.976	0mm	45.63	-99.8	2.94				
	LTE Band 12		0.824	0mm	-29.5	-104.5	0.91	72.9	1.84	0.03	Not required
	WLAN2.4GHz+BT		1.011	0mm	43.23	-100.61	-1.22				
	LTE Band 12		0.824	0mm	-29.5	-104.5	0.91	75.3	1.80	0.03	Not required
	WLAN5GHz+BT		0.976	0mm	45.63	-99.8	2.94				
	LTE Band 25		0.872	0mm	-27.3	-103.8	0.62	70.6	1.88	0.04	Not required
	WLAN2.4GHz+BT		1.011	0mm	43.23	-100.61	-1.22				
	LTE Band 25		0.872	0mm	-27.3	-103.8	0.62	73.1	1.85	0.03	Not required
	WLAN5GHz+BT		0.976	0mm	45.63	-99.8	2.94				
	LTE Band 26		0.686	0mm	-32.48	-111.52	-1.82	76.5	1.70	0.03	Not required
	WLAN2.4GHz+BT		1.011	0mm	43.23	-100.61	-1.22				
	LTE Band 26		0.686	0mm	-32.48	-111.52	-1.82	79.1	1.66	0.03	Not required
	WLAN5GHz+BT		0.976	0mm	45.63	-99.8	2.94				
	LTE Band 41		0.782	0mm	-46.78	-102.81	0.34	90.1	1.79	0.03	Not required
	WLAN2.4GHz+BT		1.011	0mm	43.23	-100.61	-1.22				
	LTE Band 41		0.782	0mm	-46.78	-102.81	0.34	92.5	1.76	0.03	Not required
	WLAN5GHz+BT		0.976	0mm	45.63	-99.8	2.94				
	LTE Band 66		0.99	0mm	-32.1	-103.9	0.61	75.4	2.00	0.04	Not required
	WLAN2.4GHz+BT		1.011	0mm	43.23	-100.61	-1.22				
	LTE Band 66		0.99	0mm	-32.1	-103.9	0.61	77.9	1.97	0.04	Not required
	WLAN5GHz+BT		0.976	0mm	45.63	-99.8	2.94				
	LTE Band 71		0.813	0mm	-29.5	-103	0.76	72.8	1.82	0.03	Not required
	WLAN2.4GHz+BT		1.011	0mm	43.23	-100.61	-1.22				
	LTE Band 71		0.813	0mm	-29.5	-103	0.76	75.2	1.79	0.03	Not required
	WLAN5GHz+BT		0.976	0mm	45.63	-99.8	2.94				



Test Engineer : Willie Huang, Jay Jian, Lemon Su and Ken Lin

17. Uncertainty Assessment

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

18. References

- [1] FCC 47 CFR Part 2 "Frequency Allocations and Radio Treaty Matters; General Rules and Regulations"
- [2] ANSI/IEEE Std. C95.1-1992, "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz", September 1992
- [3] IEEE Std. 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", Sep 2013
- [4] SPEAG DASY System Handbook
- [5] FCC KDB 248227 D01 v02r02, "SAR Guidance for IEEE 802.11 (WiFi) Transmitters", Oct 2015.
- [6] FCC KDB 447498 D01 v06, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Oct 2015
- [7] FCC KDB 941225 D01 v03r01, "3G SAR MEAUREMENT PROCEDURES", Oct 2015
- [8] FCC KDB 941225 D05 v02r05, "SAR Evaluation Considerations for LTE Devices", Dec 2015
- [9] FCC KDB 616217 D04 v01r02, "SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers", Oct 2015
- [10] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.
- [11] FCC KDB 865664 D02 v01r02, "RF Exposure Compliance Reporting and Documentation Considerations" Oct 2015.