FCC SAR TEST REPORT

FCC ID	:	**UZ7-ET85B**
Equipment	:	**2 in 1 Tablet PC with Windows OS**
Brand Name	:	**Zebra**
Model Name	:	**ET85B**
Applicant	:	**Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742**
Manufacturer	:	**Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742**
Standard	:	**FCC 47 CFR Part 2 (2.1093)**

The product was received on Aug 25, 2021 and testing was started from Aug 27, 2021 and completed on Sep 08, 2021. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample provide by manufacturer and the test data has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been pass the FCC requirement.

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
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History of this test report

Report No.	Version	Description	Issued Date
FA162601	01	Initial issue of report	Dec. 06, 2021

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for Zebra Technologies Corporation, 2 in 1 Tablet PC with Windows OS, ET85B, are as follows.

Equipment Class	Frequency Band		Highest SAR Summary Body 1g SAR (W/kg)	Highest Simultaneous Transmission 1g SAR (W/kg)
Licensed	WCDMA	WCDMA II	1.12	1.59
		WCDMA IV	1.02	
		WCDMA V	1.15	
	LTE	LTE Band 7	1.15	
		LTE Band 12	1.14	
		LTE Band 13	1.10	
		LTE Band 14	1.12	
		LTE Band 2/25	1.15	
		LTE Band 5/26	1.09	
		LTE Band 30	1.16	
		LTE Band 4/66	1.20	
		LTE Band 38/41	1.09	
		LTE Band 48	1.07	
DTS	WLAN	2.4GHz WLAN	0.94	0.81
NII		5GHz WLAN	0.90	1.59
DSS	2.4GHz Band	Bluetooth	0.28	1.59
Date of Testing:			2021/8/27 ~ 2021/9/8	

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 for Partial-Body 1g SAR) 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: Carlie Tsai

2. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards, the below KDB standard may not including in the TAF code without accreditation.

- 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
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02

3. Equipment Under Test (EUT) Information

3.1 General Information

Product Feature & Specification	
Equipment Name	2 in 1 Tablet PC with Windows OS
Brand Name	Zebra
Model Name	ET85B
FCC ID	UZ7-ET85B
WWAN IMEI Code	357069630001695
Integrated WWAN Module	Brand Name: Quectel Model Name: EM121R-GL
Integrated WLAN Module	Brand Name: Intel Model Name: AX210NGW
Wireless Technology and Frequency Range	WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz WLAN 2.4GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.6GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8GHz Band: 5725 MHz ~ 5825 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz NFC : 13.56 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA DC-HSDPA LTE: QPSK, 16QAM, 64QAM WLAN: 802.11a/b/g/n/ac/ax HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE NFC: ASK
HW Version	DV
SW Version	Windows 10 Pro
FW Version	TLX09
MFD	2020/Feb.
EUT Stage	Identical Prototype

Accessories Information				
Adaptor with CLA cable	Brand Name	Zebra	Model Number	ADP-45XE B
Battery	Brand Name	ZEBRA	Model Number	BT-000433
Power cord	Brand Name	Zebra	Model Number	450040

Support unit				
CAC Reader	Brand Name	Zebra	Model Number	ZBK-ET8X-SMARTCARD-01
Keyboard	Brand Name	Zebra	Model Number	KBD-ET8X

3.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05	
FCC ID	UZ7-ET85B
Equipment Name	2 in 1 Tablet PC with Windows OS
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz
Channel Bandwidth	LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 14: 5MHz, 10MHz LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 30: 5MHz, 10MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 48: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
uplink modulations used	QPSK / 16QAM / 64QAM
LTE Voice / Data requirements	Data only
LTE MPR permanently built-in by design	**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.
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 12.
LTE Carrier Aggregation Additional Information	This device supports LTE Carrier Aggregation (CA) in the uplink for LTE B41 with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance.

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)
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
H	20643	848.3	20635	847.5	20625	846.5	20600	844
LTE Band 7								
	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	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560
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)
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
H	23173	715.3	23165	714.5	23155	713.5	23130	711
LTE Band 13						
	Bandwidth 5 MHz			Bandwidth 10 MHz		
	Channel #		Freq.(MHz)	Channel #		Freq.(MHz)
L	23205		779.5	23230		782
M	23230		782			
H	23255		784.5			
LTE Band 14						
	Bandwidth 5 MHz			Bandwidth 10 MHz		
	Channel #		Channel #	Channel #		Freq.(MHz)
L	23305		790.5	23330		793
M	23330		793			
H	23355		795.5			

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)
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 30				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	27685	2307.5	27710	2310
M	27710	2310		
H	27735	2312.5		

LTE Band 38								
	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	37775	2572.5	37800	2575	37825	2577.5	37850	2580
M	38000	2595	38000	2595	38000	2595	38000	2595
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610

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)
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506
LM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593
HM	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680

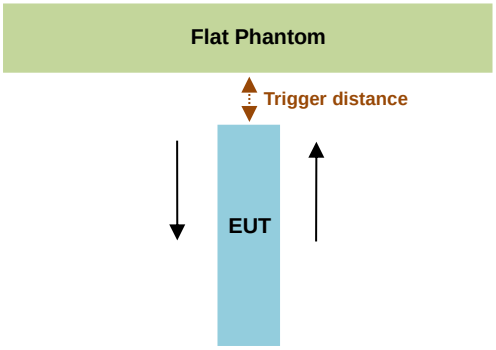
LTE Band 48								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	55265	3552.5	55290	3555	55315	3557.5	55340	3560
LM	55810	3607	55815	3607.5	55820	3608	55830	3609
MH	56170	3643	56165	3642.5	56160	3642	56150	3641
H	56715	3697.5	56690	3695	56665	3692.5	56640	3690

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

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.



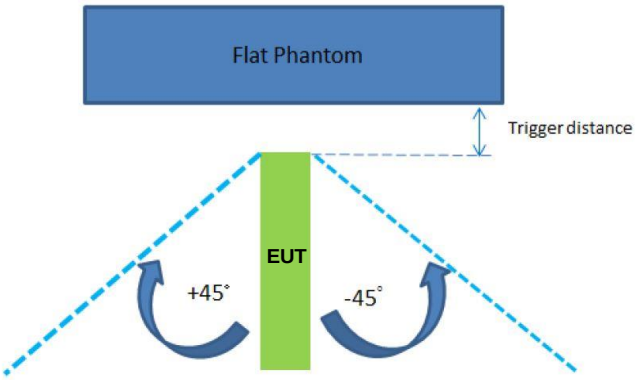
Proximity Sensor Trigger Distance (mm)				
Position	Bottom Face		Edge 1	
	moving toward	moving away	moving toward	moving away
Minimum	29	30	31	41

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

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, 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 ≤ 10° increments until the tablet is ± 45° from the vertical position at 0°, and the maximum output power remains in the reduced mode.



Proximity Sensor Trigger Distance (mm)		
Position	Edge 1	
	+45	-45
Minimum	28	31

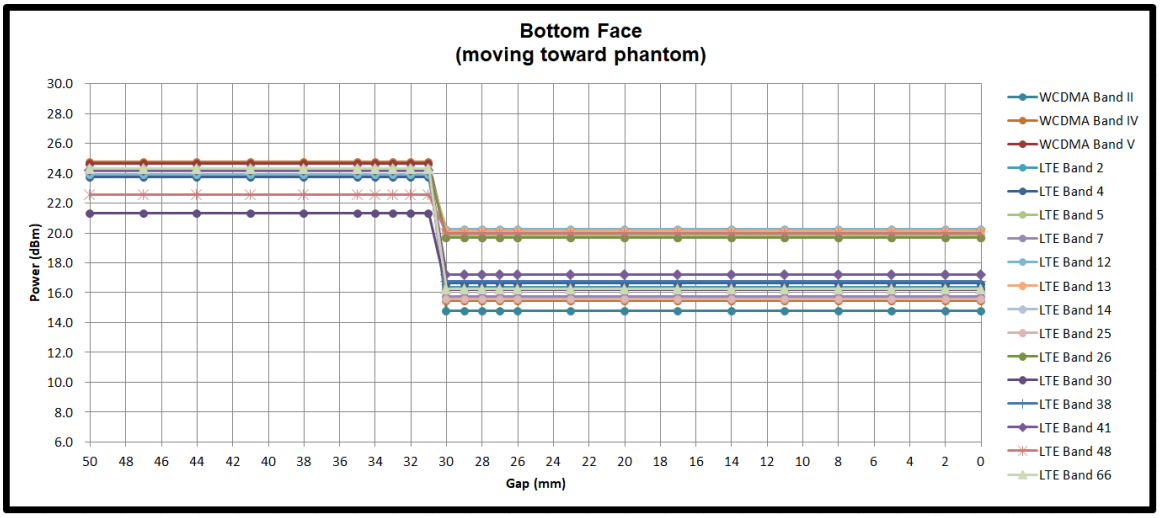
Proximity sensor power reduction

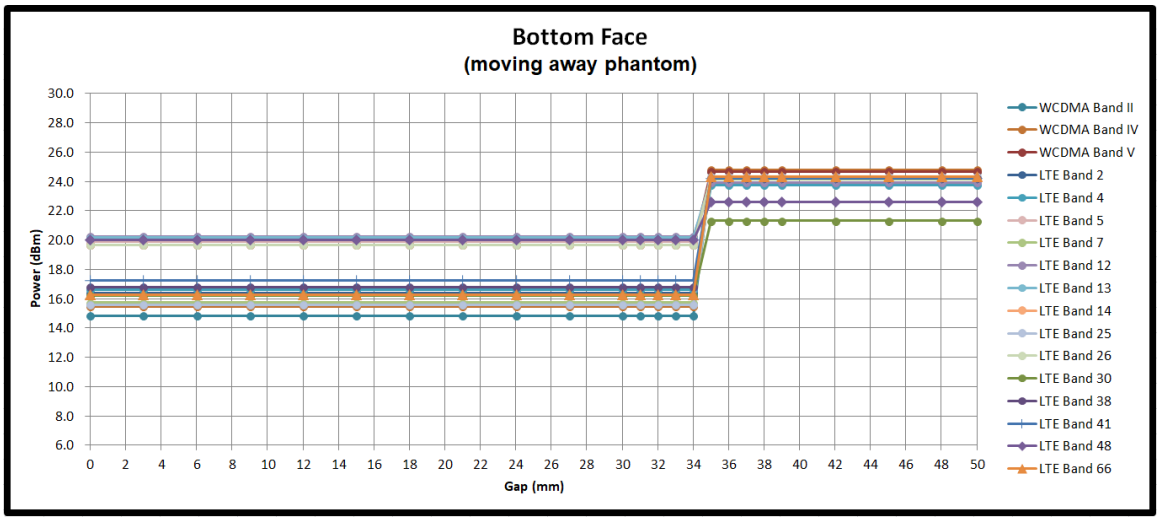
Exposure Position / wireless mode	Bottom Face/Edge1 (1)
WCDMA Band II	9.0 dB
WCDMA Band IV	8.5 dB
WCDMA Band V	4.5 dB
LTE Band 7	9.0 dB
LTE Band 12	4.0 dB
LTE Band 13	4.5 dB
LTE Band 14	4.5 dB
LTE Band 2 / 25	9.0 dB
LTE Band 5 / 26	5.0 dB
LTE Band 30	5.5 dB
LTE Band 38 / 41	7.5 dB
LTE Band 41_HPUE	7.5 dB
LTE Band 48	3.0 dB
LTE Band 4 / 66	8.0 dB

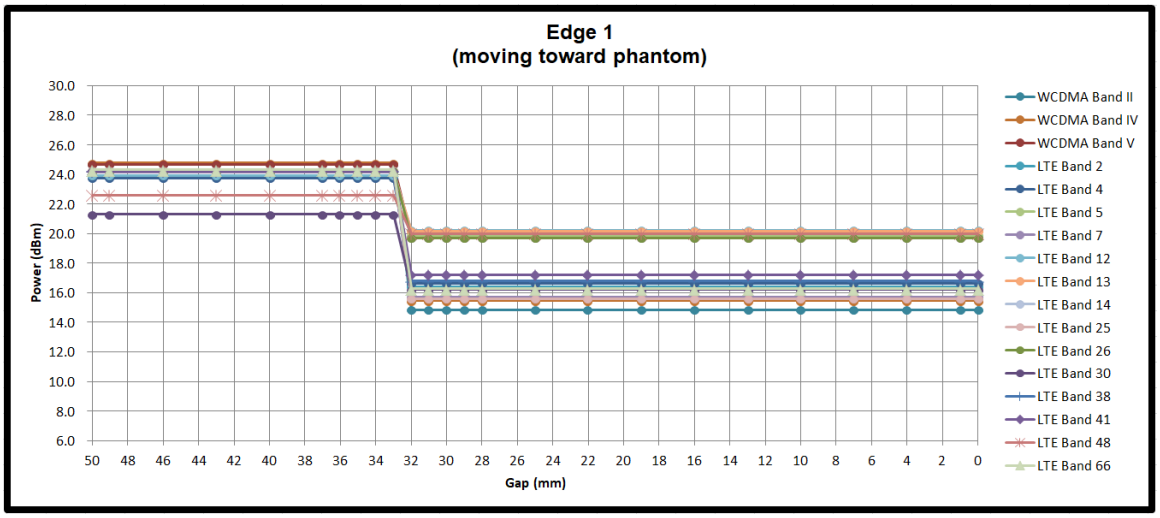
Remark:

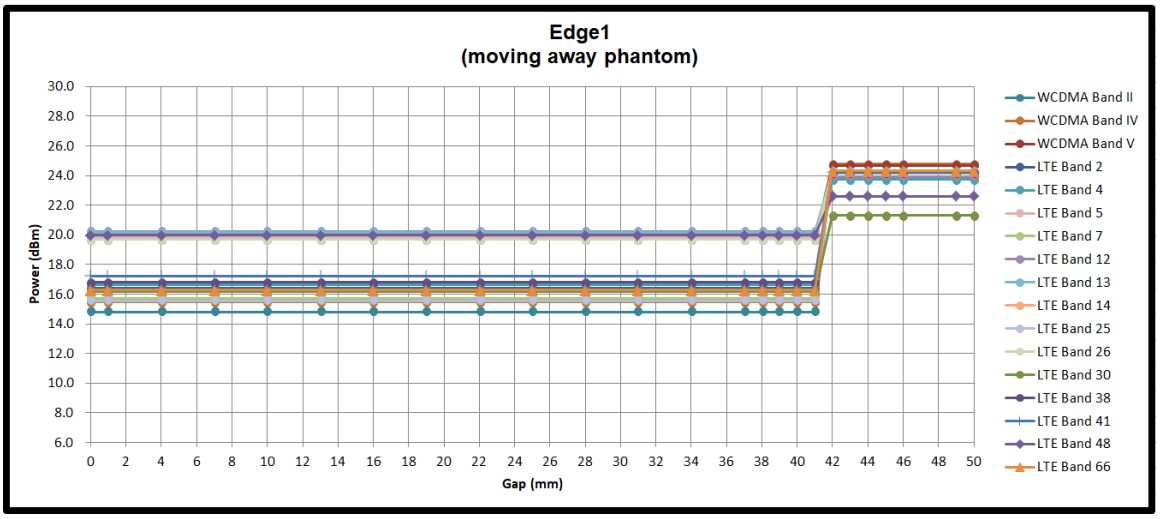
1. (1): Reduced maximum limit applied by activation of proximity sensor.
2. Tests were performed in accordance with KDB 616217 D04 section 6.1, 6.2, 6.3, 6.4 and 6.5 and compliant results are shown and described in exhibit “P-Sensor operational description
3. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance was performed:
   - Bottom Face: 29 mm
   - Edge1: 27 mm

Power Measurement during Sensor Trigger distance testing






Edge 1
(moving toward phantom)
Power (dBm)
Gap (mm)
WCDMA Band II
WCDMA Band IV
WCDMA Band V
LTE Band 2
LTE Band 4
LTE Band 5
LTE Band 7
LTE Band 12
LTE Band 13
LTE Band 14
LTE Band 25
LTE Band 26
LTE Band 30
LTE Band 38
LTE Band 41
LTE Band 48
LTE Band 66


Edge1
(moving away phantom)
Power (dBm)
Gap (mm)
WCDMA Band II
WCDMA Band IV
WCDMA Band V
LTE Band 2
LTE Band 4
LTE Band 5
LTE Band 7
LTE Band 12
LTE Band 13
LTE Band 14
LTE Band 25
LTE Band 26
LTE Band 30
LTE Band 38
LTE Band 41
LTE Band 48
LTE Band 66

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:

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

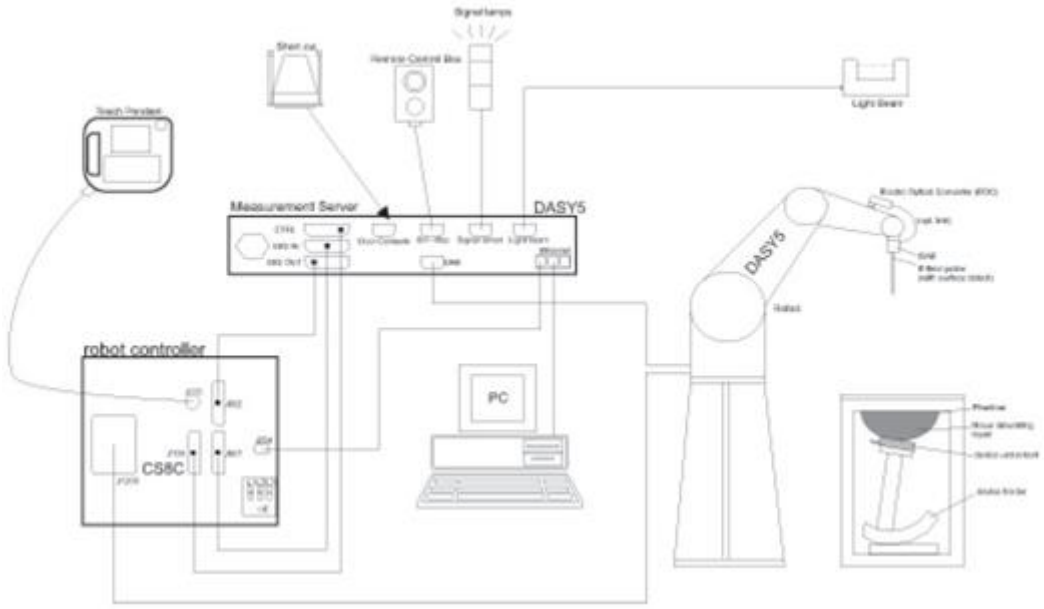
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

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 Test Site Location

The SAR measurement facilities used to collect data are within both Sporton Lab list below test site location are accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190 and 3786) and the FCC designation No. TW1190 and TW3786 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test.

Test Site	EMC & Wireless Communications Laboratory		Wensan Laboratory		
Test Site Location	TW1190 No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan		TW3786 No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan		
Test Site No.	SAR01-HY	SAR03-HY	SAR08-HY	SAR09-HY	SAR15-HY
	SAR04-HY	SAR05-HY	SAR11-HY	SAR12-HY	
	SAR06-HY	SAR10-HY	SAR13-HY	SAR14-HY	

7.2 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 µW/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 µW/g – >100 mW/g Linearity: ±0.2 dB (noise: typically <1 µW/g)	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

7.3 Data Acquisition Electronics (DAE)

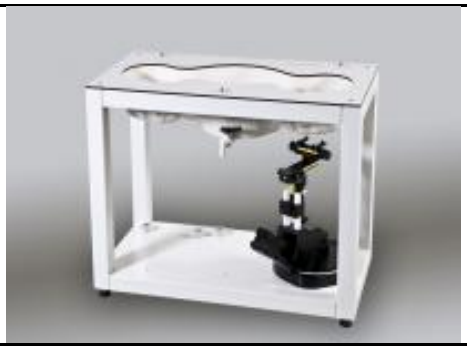
The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an 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

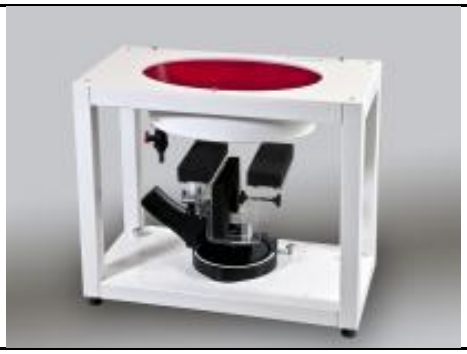
7.4 Phantom

<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.

7.5 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 form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

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

8.4 Zoom Scan

Zoom scans are used 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 shoes base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

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

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

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

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

8.5 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g 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(2)	D750V3	1107	Mar. 08, 2019	Mar. 05, 2022
SPEAG	835MHz System Validation Kit(2)	D835V2	4d167	Nov. 25, 2019	Nov. 23, 2021
SPEAG	1750MHz System Validation Kit(2)	D1750V2	1112	Mar. 07, 2019	Mar. 04, 2022
SPEAG	1900MHz System Validation Kit(2)	D1900V2	5d185	Mar. 07, 2019	Mar. 04, 2022
SPEAG	2300MHz System Validation Kit(2)	D2300V2	1006	Jan. 28, 2019	Jan. 25, 2022
SPEAG	2450MHz System Validation Kit(2)	D2450V2	929	Nov. 21, 2019	Nov. 19, 2021
SPEAG	2600MHz System Validation Kit(2)	D2600V2	1078	Mar. 06, 2019	Mar. 03, 2022
SPEAG	3500MHz System Validation Kit(2)	D3500V2	1014	Jan. 29, 2019	Jan. 26, 2022
SPEAG	3700MHz System Validation Kit(2)	D3700V2	1006	Mar. 05, 2019	Mar. 02, 2022
SPEAG	5GHz System Validation Kit(2)	D5GHzV2	1128	Dec. 16, 2019	Dec. 14, 2021
SPEAG	Data Acquisition Electronics	DAE3	495	Jul. 14, 2021	Jul. 13, 2022
SPEAG	Data Acquisition Electronics	DAE4	316	Jan. 19, 2021	Jan. 18, 2022
SPEAG	Data Acquisition Electronics	DAE4	699	Feb. 16, 2021	Feb. 15, 2022
SPEAG	Data Acquisition Electronics	DAE4	917	Dec. 22, 2020	Dec. 21, 2021
SPEAG	Dosimetric E-Field Probe	EX3DV4	3925	Apr. 23, 2021	Apr. 22, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	3976	Jan. 27, 2021	Jan. 26, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	7306	Jul. 26, 2021	Jul. 25, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	7625	Jan. 19, 2021	Jan. 18, 2022
RCPTWN	Thermometer	HTC-1	TM685-1	Nov. 10, 2020	Nov. 09, 2021
RCPTWN	Thermometer	HTC-1	TM560-2	Nov. 10, 2020	Nov. 09, 2021
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Nov. 10, 2020	Nov. 09, 2021
Keysight	Wireless Communication Test Set	E5515C	MY50266977	May. 12, 2021	May. 11, 2022
R&S	BT Base Station	CBT	100815	Feb. 19, 2021	Feb. 18, 2022
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Nov. 11, 2020	Nov. 10, 2021
Keysight	ENA Network Analyzer	E5071C	MY46316648	Jul. 22, 2021	Jul. 21, 2022
SPEAG	Dielectric Probe Kit	DAK-3.5	1146	Jul. 14, 2021	Jul. 13, 2022
LINE SEIKI	Digital Thermometer	DTM3000-spezial	2942	Nov. 06, 2020	Nov. 05, 2021
Anritsu	Power Meter	ML2495A	1419002	Aug. 18, 2021	Aug. 17, 2022
Anritsu	Power Sensor	MA2411B	1911176	Aug. 18, 2021	Aug. 17, 2022
Anritsu	Power Meter	ML2495A	1804003	Oct. 21, 2020	Oct. 20, 2021
Anritsu	Power Sensor	MA2411B	1726150	Oct. 21, 2020	Oct. 20, 2021
Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jul. 16, 2021	Jul. 15, 2022
Anritsu	Spectrum Analyzer	N9010A	MY53470118	Jan. 15, 2021	Jan. 14, 2022
Mini-Circuits	Power Amplifier	ZVE-8G+	6418	Oct. 21, 2020	Oct. 20, 2021
Mini-Circuits	Power Amplifier	ZHL-42W+	715701915	May. 11, 2021	May. 10, 2022
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. The dipole calibration interval can be extended to 3 years with justification according to KDB 865664 D01. The dipoles are also not physically damaged, or repaired during the interval. The justification data in appendix C can be found which the return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration for each dipole.

10. System Verification

10.1 Tissue Verification

The tissue dielectric parameters of tissue-equivalent media used for SAR measurements must be characterized within a temperature range of 18℃ to 25℃, measured with calibrated instruments and apparatuses, such as network analyzers and temperature probes. The temperature of the tissue-equivalent medium during SAR measurement must also be within 18℃ to 25℃ and within ± 2℃ of the temperature when the tissue parameters are characterized. The tissue dielectric measurement system must be calibrated before use. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements.
The liquid tissue depth was at least 15cm in the phantom for all SAR testing

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	22.5	0.897	42.666	0.89	41.90	0.79	1.83	±5	2021/8/30
835	22.5	0.932	42.370	0.90	41.50	3.56	2.10	±5	2021/8/31
835	22.4	0.918	42.671	0.90	41.50	2.00	2.82	±5	2021/9/1
1750	22.4	1.376	40.984	1.37	40.10	0.44	2.20	±5	2021/8/31
1750	22.5	1.352	40.202	1.37	40.10	-1.31	0.25	±5	2021/8/31
1750	22.5	1.375	39.657	1.37	40.10	0.36	-1.10	±5	2021/9/2
1900	22.4	1.405	40.193	1.40	40.00	0.36	0.48	±5	2021/8/30
1900	22.5	1.427	38.654	1.40	40.00	1.93	-3.36	±5	2021/8/31
2300	22.8	1.675	39.736	1.67	39.50	0.30	0.60	±5	2021/8/31
2300	22.5	1.609	39.073	1.67	39.50	-3.65	-1.08	±5	2021/9/1
2450	22.4	1.857	40.822	1.80	39.20	3.17	4.14	±5	2021/8/27
2600	22.8	2.024	38.461	1.96	39.00	3.27	-1.38	±5	2021/8/31
2600	22.5	1.954	37.838	1.96	39.00	-0.31	-2.98	±5	2021/9/1
3500	22.5	2.938	37.868	2.91	37.90	0.96	-0.08	±5	2021/9/8
3700	22.5	3.169	37.558	3.12	37.70	1.57	-0.38	±5	2021/9/8
5250	22.7	4.582	36.289	4.71	35.95	-2.72	0.94	±5	2021/8/28
5600	22.7	4.939	35.807	5.07	35.50	-2.58	0.86	±5	2021/8/28
5750	22.7	5.089	35.531	5.22	35.35	-2.51	0.51	±5	2021/8/28

10.2 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.

Test Site	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 (%)
SAR01	2021/8/30	750	250	D750V3-1107	EX3DV4 - SN7306	DAE3 Sn495	2.19	8.32	8.76	5.29
SAR01	2021/8/31	835	250	D835V2-4d167	EX3DV4 - SN7306	DAE3 Sn495	2.50	9.55	10	4.71
SAR05	2021/9/1	835	50	D835V2-4d167	EX3DV4 - SN3925	DAE4 Sn699	0.47	9.55	9.4	-1.57
SAR05	2021/8/31	1750	50	D1750V2-1112	EX3DV4 - SN3925	DAE4 Sn699	1.75	36.70	35	-4.63
SAR01	2021/8/31	1750	250	D1750V2-1112	EX3DV4 - SN7306	DAE3 Sn495	9.03	36.70	36.12	-1.58
SAR01	2021/9/2	1750	50	D1750V2-1112	EX3DV4 - SN7306	DAE3 Sn495	1.82	36.70	36.4	-0.82
SAR05	2021/8/30	1900	50	D1900V2-5d185	EX3DV4 - SN3925	DAE4 Sn699	1.89	39.40	37.8	-4.06
SAR01	2021/8/31	1900	250	D1900V2-5d185	EX3DV4 - SN7306	DAE3 Sn495	10.50	39.40	42	6.60
SAR05	2021/8/31	2300	250	D2300V2-1006	EX3DV4 - SN7625	DAE4 Sn917	12.20	48.70	48.8	0.21
SAR01	2021/9/1	2300	250	D2300V2-1006	EX3DV4 - SN7306	DAE3 Sn495	11.30	48.70	45.2	-7.19
SAR05	2021/8/27	2450	50	D2450V2-929	EX3DV4 - SN3925	DAE4 Sn699	2.54	53.10	50.8	-4.33
SAR10	2021/8/31	2600	50	D2600V2-1078	EX3DV4 - SN7625	DAE4 Sn917	2.71	57.60	54.2	-5.90
SAR01	2021/9/1	2600	250	D2600V2-1078	EX3DV4 - SN7306	DAE3 Sn495	13.60	57.60	54.4	-5.56
SAR05	2021/9/8	3500	50	D3500V2-1014	EX3DV4 - SN3925	DAE3 Sn495	3.46	67.90	69.2	1.91
SAR05	2021/9/8	3700	100	D3700V2-1006	EX3DV4 - SN3925	DAE3 Sn495	6.75	67.30	67.5	0.30
SAR04	2021/8/28	5250	50	D5GHzV2-1128-5250	EX3DV4 - SN3976	DAE4 Sn316	3.71	80.00	74.2	-7.25
SAR04	2021/8/28	5600	50	D5GHzV2-1128-5600	EX3DV4 - SN3976	DAE4 Sn316	3.81	82.40	76.2	-7.52
SAR04	2021/8/28	5750	50	D5GHzV2-1128-5750	EX3DV4 - SN3976	DAE4 Sn316	3.73	79.10	74.6	-5.69

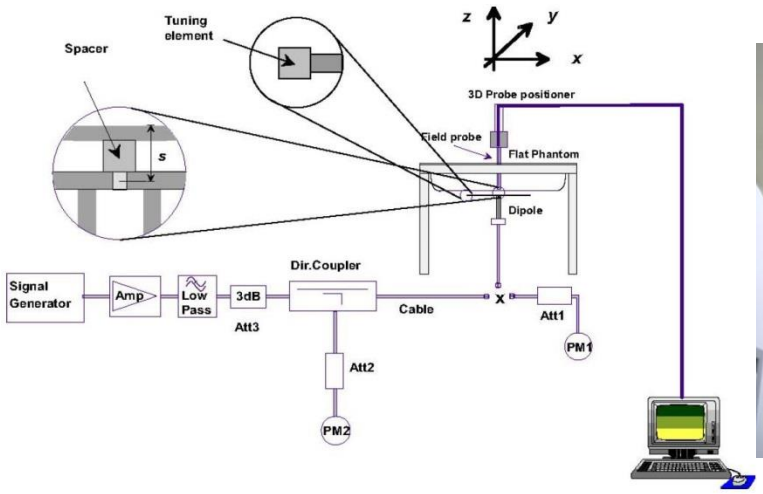


Fig 8.3.1 System Performance Check Setup

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} (Note1, 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 Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_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 Δ_{NACK} = 30/15 with β_{hs} = 30/15 * β_c, and Δ_{CQI} = 24/15 with β_{hs} = 24/15 * β_c.

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

Note 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 β_c = 11/15 and β_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} (Note1)	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	209/225	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	$\beta_{ed}1$: 47/15 $\beta_{ed}2$: 47/15	4 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 Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c. For sub-test 5, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 5/15 with β_{hs} = 5/15 * β_c.

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

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_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: β_c/β_d=2/15
      b). Subtest 2: β_c/β_d=12/15
      c). Subtest 3: β_c/β_d=15/8
      d). Subtest 4: β_c/β_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 Factor 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	Proces ses	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.		

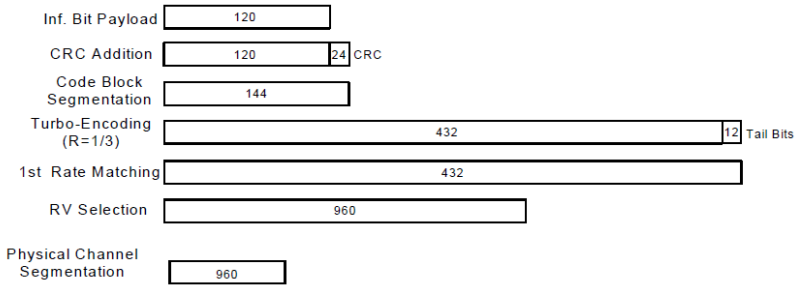


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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 ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA, DC-HSDPA) are less than ¼ 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	24.64	24.65	24.60	25.00	24.67	24.68	24.77	25.00	24.67	24.68	24.63	25.00
3GPP Rel 6	HSDPA Subtest-1	23.01	23.09	23.18	24.00	23.15	23.16	23.25	24.00	23.30	23.27	23.24	24.00
3GPP Rel 6	HSDPA Subtest-2	23.00	23.03	23.17	24.00	23.09	23.08	23.22	24.00	23.27	23.23	23.19	24.00
3GPP Rel 6	HSDPA Subtest-3	22.56	22.66	22.76	23.50	22.64	22.71	22.85	23.50	22.71	22.66	22.64	23.50
3GPP Rel 6	HSDPA Subtest-4	22.55	22.66	22.77	23.50	22.71	22.75	22.83	23.50	22.69	22.67	22.61	23.50
3GPP Rel 8	DC-HSDPA Subtest-1	23.11	23.16	23.31	24.00	23.18	23.21	23.30	24.00	23.23	23.18	23.16	24.00
3GPP Rel 8	DC-HSDPA Subtest-2	23.08	23.15	23.20	24.00	23.16	23.19	23.26	24.00	23.27	23.24	23.20	24.00
3GPP Rel 8	DC-HSDPA Subtest-3	23.06	23.17	23.30	23.50	23.19	23.23	23.26	23.50	23.28	23.26	23.43	23.50
3GPP Rel 8	DC-HSDPA Subtest-4	23.05	23.10	23.26	23.50	22.73	23.20	23.27	23.50	23.26	23.23	23.22	23.50
3GPP Rel 6	HSUPA Subtest-1	23.09	23.16	23.22	24.00	23.20	23.17	23.25	24.00	23.25	23.22	23.18	24.00
3GPP Rel 6	HSUPA Subtest-2	21.00	21.02	21.13	22.00	21.14	21.16	21.22	22.00	21.18	21.03	21.02	22.00
3GPP Rel 6	HSUPA Subtest-3	22.03	22.11	22.18	23.00	22.06	22.09	22.14	23.00	22.20	22.17	22.16	23.00
3GPP Rel 6	HSUPA Subtest-4	21.10	21.04	21.22	22.00	21.01	21.18	21.19	22.00	21.01	21.14	21.03	22.00
3GPP Rel 6	HSUPA Subtest-5	23.01	23.11	23.17	24.00	23.17	23.27	23.27	24.00	23.26	23.24	23.23	24.00

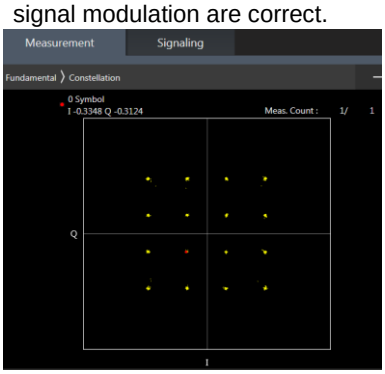
Reduced Power Mode

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	14.77	14.81	14.80	16.00	15.36	15.40	15.46	16.50	19.64	19.68	19.60	20.50
3GPP Rel 6	HSDPA Subtest-1	13.83	13.86	13.78	15.00	14.41	14.46	14.50	15.50	18.62	18.73	18.64	19.50
3GPP Rel 6	HSDPA Subtest-2	13.88	13.84	13.79	15.00	14.42	14.50	14.53	15.50	18.63	18.66	18.68	19.50
3GPP Rel 6	HSDPA Subtest-3	13.35	13.31	13.25	14.50	13.92	13.94	14.10	15.00	18.10	18.14	18.13	19.00
3GPP Rel 6	HSDPA Subtest-4	13.35	13.38	13.23	14.50	13.88	13.92	14.04	15.00	18.12	18.17	18.17	19.00
3GPP Rel 8	DC-HSDPA Subtest-1	13.78	13.85	13.74	15.00	14.39	14.42	14.50	15.50	18.62	18.68	18.47	19.50
3GPP Rel 8	DC-HSDPA Subtest-2	13.71	13.74	13.64	15.00	14.41	14.48	14.44	15.50	18.57	18.55	18.55	19.50
3GPP Rel 8	DC-HSDPA Subtest-3	13.19	13.30	13.06	14.50	13.83	13.75	13.94	15.00	17.90	18.10	18.07	19.00
3GPP Rel 8	DC-HSDPA Subtest-4	13.21	13.26	13.20	14.50	13.74	13.85	14.01	15.00	18.02	18.06	17.97	19.00
3GPP Rel 6	HSUPA Subtest-1	13.21	13.21	13.16	15.00	13.56	14.21	13.72	15.50	18.52	18.50	18.53	19.50
3GPP Rel 6	HSUPA Subtest-2	12.21	12.22	12.16	13.00	12.11	12.28	12.03	13.50	16.48	16.47	16.45	17.50
3GPP Rel 6	HSUPA Subtest-3	13.93	13.91	13.92	14.00	14.21	14.31	14.15	14.50	17.42	17.47	17.47	18.50
3GPP Rel 6	HSUPA Subtest-4	12.26	12.21	12.11	13.00	12.04	12.17	11.95	13.50	16.45	16.44	16.49	17.50
3GPP Rel 6	HSUPA Subtest-5	14.30	14.20	14.18	15.00	14.00	14.03	13.91	15.50	18.40	18.60	18.60	19.50

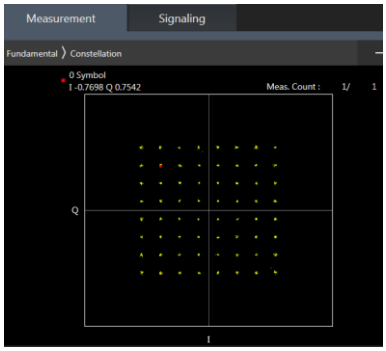
<LTE Conducted Power>

General Note:

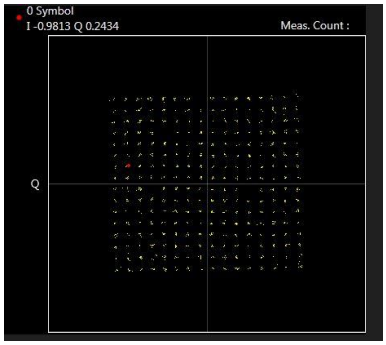
1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested 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 ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4/B5/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 2/4/5/38 SAR test was covered by Band 25/66/26/41; 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 ≤ 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 16QAM, 64QAM, 256QAM 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.



16QAM



64QAM



256QAM

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	24.19	24.17	23.89	25	0
20	QPSK	1	49	23.48	23.42	23.58		
20	QPSK	1	99	23.35	23.43	23.52		
20	QPSK	50	0	22.53	22.47	22.32	24	1
20	QPSK	50	24	22.67	22.57	22.59		
20	QPSK	50	50	22.30	22.27	22.42		
20	QPSK	100	0	22.43	22.39	22.49		
20	16QAM	1	0	22.89	23.10	22.81	24	1
20	16QAM	1	49	22.69	23.01	22.98		
20	16QAM	1	99	22.86	22.89	22.96		
20	16QAM	50	0	21.56	21.49	21.30	23	2
20	16QAM	50	24	21.69	21.54	21.60		
20	16QAM	50	50	21.37	21.29	21.38		
20	16QAM	100	0	21.46	21.32	21.52		
20	64QAM	1	0	21.49	21.87	21.26	23	2
20	64QAM	1	49	21.35	21.74	20.81		
20	64QAM	1	99	21.75	21.05	21.40		
20	64QAM	50	0	20.11	20.48	20.40	22	3
20	64QAM	50	24	20.16	20.58	20.04		
20	64QAM	50	50	20.33	20.14	20.24		
20	64QAM	100	0	20.13	20.28	20.21		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	24.17	24.11	23.85	25	0
15	QPSK	1	37	23.48	23.34	23.53		
15	QPSK	1	74	23.25	23.38	23.52		
15	QPSK	36	0	22.51	22.44	22.30	24	1
15	QPSK	36	20	22.61	22.56	22.52		
15	QPSK	36	39	22.25	22.17	22.34		
15	QPSK	75	0	22.43	22.30	22.48		
15	16QAM	1	0	22.89	23.05	22.73	24	1
15	16QAM	1	37	22.68	22.94	22.97		
15	16QAM	1	74	22.77	22.79	22.89		
15	16QAM	36	0	21.47	21.49	21.24	23	2
15	16QAM	36	20	21.60	21.46	21.52		
15	16QAM	36	39	21.29	21.26	21.37		
15	16QAM	75	0	21.43	21.22	21.42		
15	64QAM	1	0	21.47	21.80	21.25	23	2
15	64QAM	1	37	21.30	21.74	21.43		
15	64QAM	1	74	21.65	21.05	21.40		
15	64QAM	36	0	20.02	20.44	20.36	22	3
15	64QAM	36	20	20.16	20.48	20.03		
15	64QAM	36	39	20.30	20.06	20.21		
15	64QAM	75	0	20.07	20.21	20.14		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	24.13	24.07	23.80	25	0
10	QPSK	1	25	23.43	23.36	23.49		
10	QPSK	1	49	23.29	23.36	23.50		
10	QPSK	25	0	22.48	22.44	22.25	24	1

10	QPSK	25	12	22.57	22.57	22.59		
10	QPSK	25	25	22.24	22.17	22.41		
10	QPSK	50	0	22.42	22.33	22.44		
10	16QAM	1	0	22.82	23.05	22.81		
10	16QAM	1	25	22.63	22.95	22.97	24	1
10	16QAM	1	49	22.79	22.86	22.94		
10	16QAM	25	0	21.46	21.44	21.30		
10	16QAM	25	12	21.68	21.44	21.53	23	2
10	16QAM	25	25	21.28	21.19	21.33		
10	16QAM	50	0	21.43	21.29	21.51		
10	64QAM	1	0	21.41	21.77	21.16		
10	64QAM	1	25	21.35	21.73	21.33	23	2
10	64QAM	1	49	21.65	21.40	21.30		
10	64QAM	25	0	20.04	20.44	20.25		
10	64QAM	25	12	20.06	20.58	20.26	22	3
10	64QAM	25	25	20.33	20.12	20.21		
10	64QAM	50	0	20.05	20.28	20.23		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	24.14	24.13	23.86		
5	QPSK	1	12	23.40	23.40	23.51	25	0
5	QPSK	1	24	23.26	23.33	23.45		
5	QPSK	12	0	22.52	22.42	22.26		
5	QPSK	12	7	22.60	22.48	22.58	24	1
5	QPSK	12	13	22.29	22.24	22.38		
5	QPSK	25	0	22.40	22.32	22.49		
5	16QAM	1	0	22.88	23.01	22.78		
5	16QAM	1	12	22.69	22.91	22.96	24	1
5	16QAM	1	24	22.76	22.83	22.89		
5	16QAM	12	0	21.54	21.48	21.29		
5	16QAM	12	7	21.69	21.54	21.59	23	2
5	16QAM	12	13	21.34	21.19	21.32		
5	16QAM	25	0	21.41	21.24	21.46		
5	64QAM	1	0	21.40	21.81	21.23		
5	64QAM	1	12	21.31	21.64	21.20	23	2
5	64QAM	1	24	21.66	21.01	21.30		
5	64QAM	12	0	20.10	20.47	20.31		
5	64QAM	12	7	20.13	20.57	20.39	22	3
5	64QAM	12	13	20.32	20.04	20.23		
5	64QAM	25	0	20.11	20.26	20.10		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	24.14	24.17	23.82		
3	QPSK	1	8	23.45	23.33	23.53	25	0
3	QPSK	1	14	23.33	23.39	23.46		
3	QPSK	8	0	22.48	22.44	22.31		
3	QPSK	8	4	22.57	22.57	22.52	24	1
3	QPSK	8	7	22.27	22.25	22.37		
3	QPSK	15	0	22.40	22.34	22.47		
3	16QAM	1	0	22.89	23.04	22.72		
3	16QAM	1	8	22.61	22.96	22.93	24	1
3	16QAM	1	14	22.80	22.84	22.87		
3	16QAM	8	0	21.56	21.46	21.30		
3	16QAM	8	4	21.60	21.51	21.54	23	2
3	16QAM	8	7	21.30	21.19	21.29		
3	16QAM	15	0	21.42	21.24	21.49		

3	64QAM	1	0	21.48	21.77	21.20	23	2
3	64QAM	1	8	21.33	21.74	21.32		
3	64QAM	1	14	21.67	21.01	21.34		
3	64QAM	8	0	20.07	20.48	20.30	22	3
3	64QAM	8	4	20.15	20.51	20.04		
3	64QAM	8	7	20.23	20.07	20.14		
3	64QAM	15	0	20.07	20.26	20.10		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	24.10	24.07	23.82	25	0
1.4	QPSK	1	3	23.39	23.37	23.53		
1.4	QPSK	1	5	23.32	23.41	23.48		
1.4	QPSK	3	0	24.16	24.12	23.79		
1.4	QPSK	3	1	23.48	23.32	23.48		
1.4	QPSK	3	3	23.32	23.33	23.44		
1.4	QPSK	6	0	22.49	22.46	22.27	24	1
1.4	16QAM	1	0	22.83	23.03	22.73	24	1
1.4	16QAM	1	3	22.62	22.99	22.95		
1.4	16QAM	1	5	22.81	22.86	22.90		
1.4	16QAM	3	0	22.84	23.07	22.80		
1.4	16QAM	3	1	22.67	23.00	22.89		
1.4	16QAM	3	3	22.79	22.87	22.86		
1.4	16QAM	6	0	21.47	21.47	21.25	23	2
1.4	64QAM	1	0	21.49	21.85	21.18	23	2
1.4	64QAM	1	3	21.35	21.74	21.22		
1.4	64QAM	1	5	21.73	21.04	21.39		
1.4	64QAM	3	0	21.42	21.77	21.24		
1.4	64QAM	3	1	21.34	21.74	21.26		
1.4	64QAM	3	3	21.72	21.03	21.32		
1.4	64QAM	6	0	20.05	20.45	20.30	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	23.58	23.61	23.74	25	0
20	QPSK	1	49	23.73	23.64	23.73		
20	QPSK	1	99	23.05	23.06	23.09		
20	QPSK	50	0	22.73	22.78	22.75	24	1
20	QPSK	50	24	22.99	22.91	22.96		
20	QPSK	50	50	22.66	22.61	22.64		
20	QPSK	100	0	22.65	22.71	22.68		
20	16QAM	1	0	22.71	22.51	22.31	24	1
20	16QAM	1	49	23.31	23.20	22.98		
20	16QAM	1	99	22.39	22.46	22.23		
20	16QAM	50	0	21.81	21.81	21.80	23	2
20	16QAM	50	24	22.05	21.91	21.98		
20	16QAM	50	50	21.67	21.70	21.59		
20	16QAM	100	0	21.70	21.65	21.76		
20	64QAM	1	0	21.18	21.22	21.27	23	2
20	64QAM	1	49	21.67	21.71	21.86		
20	64QAM	1	99	21.20	21.26	21.44		
20	64QAM	50	0	20.90	20.86	20.78	22	3

20	64QAM	50	24	20.98	20.95	20.86		
20	64QAM	50	50	20.69	20.70	20.70		
20	64QAM	100	0	20.76	20.75	20.71		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	23.58	23.57	23.70	25	0
15	QPSK	1	37	23.70	23.64	23.70		
15	QPSK	1	74	23.05	23.21	23.28		
15	QPSK	36	0	22.70	22.69	22.73	24	1
15	QPSK	36	20	22.93	22.81	22.90		
15	QPSK	36	39	22.66	22.56	22.57		
15	QPSK	75	0	22.59	22.65	22.62		
15	16QAM	1	0	22.67	22.49	22.27	24	1
15	16QAM	1	37	23.30	23.20	22.89		
15	16QAM	1	74	22.34	22.38	22.17		
15	16QAM	36	0	21.76	21.73	21.80	23	2
15	16QAM	36	20	21.96	21.82	21.95		
15	16QAM	36	39	21.64	21.70	21.51		
15	16QAM	75	0	21.70	21.61	21.68		
15	64QAM	1	0	21.09	21.11	21.17	23	2
15	64QAM	1	37	21.61	21.67	21.77		
15	64QAM	1	74	21.08	21.24	21.32		
15	64QAM	36	0	20.80	20.81	20.72	22	3
15	64QAM	36	20	20.95	20.85	20.85		
15	64QAM	36	39	20.65	20.69	20.63		
15	64QAM	75	0	20.66	20.67	20.71		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	23.52	23.56	23.71	25	0
10	QPSK	1	25	23.64	23.54	23.65		
10	QPSK	1	49	23.07	23.10	23.21		
10	QPSK	25	0	22.67	22.77	22.70	24	1
10	QPSK	25	12	22.89	22.85	22.90		
10	QPSK	25	25	22.60	22.55	22.54		
10	QPSK	50	0	22.61	22.69	22.64		
10	16QAM	1	0	22.61	22.42	22.29	24	1
10	16QAM	1	25	23.30	23.12	22.98		
10	16QAM	1	49	22.29	22.41	22.14		
10	16QAM	25	0	21.75	21.74	21.70	23	2
10	16QAM	25	12	21.95	21.84	21.91		
10	16QAM	25	25	21.66	21.64	21.50		
10	16QAM	50	0	21.67	21.57	21.73		
10	64QAM	1	0	21.15	21.20	21.26	23	2
10	64QAM	1	25	21.67	21.66	21.79		
10	64QAM	1	49	21.05	21.11	21.18		
10	64QAM	25	0	20.82	20.85	20.73	22	3
10	64QAM	25	12	20.98	20.94	20.76		
10	64QAM	25	25	20.64	20.68	20.63		
10	64QAM	50	0	20.67	20.68	20.63		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	23.54	23.53	23.73	25	0
5	QPSK	1	12	23.70	23.61	23.65		
5	QPSK	1	24	23.11	23.16	23.24		
5	QPSK	12	0	22.69	22.76	22.65	24	1
5	QPSK	12	7	22.91	22.82	22.94		

5	QPSK	12	13	22.56	22.51	22.62		
5	QPSK	25	0	22.61	22.71	22.68		
5	16QAM	1	0	22.62	22.43	22.23	24	1
5	16QAM	1	12	23.31	23.14	22.91		
5	16QAM	1	24	22.35	22.44	22.14		
5	16QAM	12	0	21.71	21.71	21.71	23	2
5	16QAM	12	7	22.00	21.87	21.97		
5	16QAM	12	13	21.61	21.63	21.59		
5	16QAM	25	0	21.65	21.61	21.70		
5	64QAM	1	0	21.05	21.10	21.23	23	2
5	64QAM	1	12	21.59	21.65	21.85		
5	64QAM	1	24	21.03	21.11	21.22		
5	64QAM	12	0	20.82	20.80	20.78	22	3
5	64QAM	12	7	20.97	20.91	20.86		
5	64QAM	12	13	20.65	20.67	20.67		
5	64QAM	25	0	20.66	20.70	20.61		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	23.55	23.59	23.66	25	0
3	QPSK	1	8	23.67	23.64	23.65		
3	QPSK	1	14	23.04	23.08	23.11		
3	QPSK	8	0	22.72	22.72	22.66	24	1
3	QPSK	8	4	22.94	22.85	22.93		
3	QPSK	8	7	22.65	22.59	22.64		
3	QPSK	15	0	22.59	22.70	22.60		
3	16QAM	1	0	22.62	22.44	22.22	24	1
3	16QAM	1	8	23.22	23.10	22.91		
3	16QAM	1	14	22.38	22.46	22.15		
3	16QAM	8	0	21.76	21.71	21.78	23	2
3	16QAM	8	4	22.01	21.83	21.97		
3	16QAM	8	7	21.66	21.67	21.54		
3	16QAM	15	0	21.70	21.58	21.67		
3	64QAM	1	0	21.05	21.11	21.24	23	2
3	64QAM	1	8	21.67	21.68	21.86		
3	64QAM	1	14	21.04	21.11	21.20		
3	64QAM	8	0	20.89	20.76	20.71	22	3
3	64QAM	8	4	20.95	20.95	20.83		
3	64QAM	8	7	20.62	20.61	20.67		
3	64QAM	15	0	20.70	20.75	20.71		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	23.49	23.53	23.71	25	0
1.4	QPSK	1	3	23.69	23.55	23.71		
1.4	QPSK	1	5	23.03	23.10	23.15		
1.4	QPSK	3	0	23.57	23.59	23.71		
1.4	QPSK	3	1	23.73	23.56	23.69		
1.4	QPSK	3	3	23.00	23.11	23.15		
1.4	QPSK	6	0	22.66	22.76	22.74	24	1
1.4	16QAM	1	0	22.61	22.50	22.30	24	1
1.4	16QAM	1	3	23.27	23.13	22.95		
1.4	16QAM	1	5	22.32	22.36	22.14		
1.4	16QAM	3	0	22.66	22.49	22.25		
1.4	16QAM	3	1	23.26	23.16	22.97		
1.4	16QAM	3	3	22.33	22.44	22.16		
1.4	16QAM	6	0	21.72	21.76	21.76	23	2
1.4	64QAM	1	0	21.22	21.30	21.48	23	2

1.4	64QAM	1	3	21.96	21.97	22.13		
1.4	64QAM	1	5	21.06	21.11	21.21		
1.4	64QAM	3	0	21.16	21.30	21.48		
1.4	64QAM	3	1	21.89	21.96	22.13		
1.4	64QAM	3	3	21.06	21.09	21.11		
1.4	64QAM	6	0	20.80	20.78	20.74	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	24.08	24.22	24.04	25	0
10	QPSK	1	25	24.11	23.94	23.92		
10	QPSK	1	49	23.94	23.78	23.76		
10	QPSK	25	0	22.83	22.80	22.74	24	1
10	QPSK	25	12	23.06	23.00	22.93		
10	QPSK	25	25	22.78	22.69	22.74		
10	QPSK	50	0	22.85	22.75	22.76		
10	16QAM	1	0	23.02	23.06	22.88	24	1
10	16QAM	1	25	22.92	22.85	23.03		
10	16QAM	1	49	23.03	22.74	22.72		
10	16QAM	25	0	21.80	21.84	21.88	23	2
10	16QAM	25	12	22.08	22.01	22.06		
10	16QAM	25	25	21.85	21.76	21.74		
10	16QAM	50	0	21.91	21.78	21.77		
10	64QAM	1	0	22.45	22.04	22.22	23	2
10	64QAM	1	25	22.01	22.21	21.43		
10	64QAM	1	49	21.87	22.04	21.27		
10	64QAM	25	0	20.92	20.81	20.75	22	3
10	64QAM	25	12	20.81	20.97	20.40		
10	64QAM	25	25	20.76	20.63	20.26		
10	64QAM	50	0	20.88	20.86	20.62		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	23.99	24.14	23.94	25	0
5	QPSK	1	12	24.06	23.93	23.88		
5	QPSK	1	24	23.86	23.77	23.66		
5	QPSK	12	0	22.80	22.74	22.64	24	1
5	QPSK	12	7	23.04	22.98	22.89		
5	QPSK	12	13	22.71	22.63	22.68		
5	QPSK	25	0	22.83	22.72	22.66		
5	16QAM	1	0	22.95	23.04	22.88	24	1
5	16QAM	1	12	22.92	22.78	23.02		
5	16QAM	1	24	23.03	22.73	22.68		
5	16QAM	12	0	21.70	21.74	21.85	23	2
5	16QAM	12	7	21.98	21.96	22.04		
5	16QAM	12	13	21.85	21.73	21.66		
5	16QAM	25	0	21.87	21.76	21.75		
5	64QAM	1	0	22.37	22.00	22.18	23	2
5	64QAM	1	12	21.93	22.13	21.38		
5	64QAM	1	24	21.79	22.02	21.23		
5	64QAM	12	0	20.92	20.80	20.65	22	3
5	64QAM	12	7	20.75	20.90	20.36		

5	64QAM	12	13	20.74	20.59	20.20		
5	64QAM	25	0	20.82	20.86	20.59		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	24.00	24.14	24.02	25	0
3	QPSK	1	8	24.09	23.88	23.86		
3	QPSK	1	14	23.88	23.69	23.74		
3	QPSK	8	0	22.75	22.73	22.67	24	1
3	QPSK	8	4	23.02	22.97	22.91		
3	QPSK	8	7	22.72	22.61	22.70		
3	QPSK	15	0	22.84	22.67	22.75		
3	16QAM	1	0	22.98	22.98	22.82	24	1
3	16QAM	1	8	22.85	22.82	23.01		
3	16QAM	1	14	23.00	22.64	22.68		
3	16QAM	8	0	21.76	21.82	21.83	23	2
3	16QAM	8	4	22.00	21.96	21.97		
3	16QAM	8	7	21.78	21.75	21.65		
3	16QAM	15	0	21.87	21.73	21.70		
3	64QAM	1	0	22.35	22.04	22.18	23	2
3	64QAM	1	8	21.95	22.18	21.40		
3	64QAM	1	14	21.81	21.94	21.23		
3	64QAM	8	0	20.88	20.74	20.67	22	3
3	64QAM	8	4	20.72	20.97	20.31		
3	64QAM	8	7	20.66	20.53	20.19		
3	64QAM	15	0	20.84	20.83	20.52		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	24.05	24.20	23.99	25	0
1.4	QPSK	1	3	24.08	23.85	23.82		
1.4	QPSK	1	5	23.90	23.78	23.70		
1.4	QPSK	3	0	24.08	24.15	24.00		
1.4	QPSK	3	1	24.11	23.85	23.90		
1.4	QPSK	3	3	23.84	23.75	23.67		
1.4	QPSK	6	0	22.76	22.73	22.71	24	1
1.4	16QAM	1	0	23.00	23.01	22.88	24	1
1.4	16QAM	1	3	22.83	22.83	23.01		
1.4	16QAM	1	5	22.94	22.72	22.62		
1.4	16QAM	3	0	22.92	23.04	22.88		
1.4	16QAM	3	1	22.86	22.85	22.94		
1.4	16QAM	3	3	23.01	22.70	22.69		
1.4	16QAM	6	0	21.75	21.75	21.87	23	2
1.4	64QAM	1	0	22.45	22.02	22.16	23	2
1.4	64QAM	1	3	21.99	22.17	21.41		
1.4	64QAM	1	5	21.78	21.95	21.22		
1.4	64QAM	3	0	22.36	21.97	22.14		
1.4	64QAM	3	1	22.01	22.18	21.40		
1.4	64QAM	3	3	21.86	21.95	21.25		
1.4	64QAM	6	0	20.86	20.79	20.71	22	3

<LTE Band 7>

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				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	24.11	24.00	24.15	25	0
20	QPSK	1	49	23.52	23.20	23.84		
20	QPSK	1	99	23.75	23.44	23.76		
20	QPSK	50	0	22.48	22.41	22.86	24	1
20	QPSK	50	24	22.73	22.28	22.84		
20	QPSK	50	50	22.57	22.49	22.56		
20	QPSK	100	0	22.58	22.40	22.46		
20	16QAM	1	0	22.73	22.97	22.96	24	1
20	16QAM	1	49	22.78	22.39	22.80		
20	16QAM	1	99	22.76	22.29	23.04		
20	16QAM	50	0	21.52	21.57	21.78	23	2
20	16QAM	50	24	21.83	21.53	22.07		
20	16QAM	50	50	21.54	21.78	21.90		
20	16QAM	100	0	21.56	21.59	21.71		
20	64QAM	1	0	21.14	21.10	21.25	23	2
20	64QAM	1	49	21.72	21.15	21.64		
20	64QAM	1	99	21.87	21.25	22.11		
20	64QAM	50	0	20.58	20.39	20.60	22	3
20	64QAM	50	24	20.81	20.20	20.42		
20	64QAM	50	50	20.60	20.37	20.06		
20	64QAM	100	0	20.57	20.40	20.24		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	24.02	23.91	24.04	25	0
15	QPSK	1	37	23.45	23.11	23.80		
15	QPSK	1	74	23.70	23.02	23.73		
15	QPSK	36	0	22.41	22.35	22.84	24	1
15	QPSK	36	20	22.64	22.18	22.77		
15	QPSK	36	39	22.50	22.46	22.55		
15	QPSK	75	0	22.51	22.37	22.37		
15	16QAM	1	0	22.65	22.93	22.91	24	1
15	16QAM	1	37	22.71	22.31	22.74		
15	16QAM	1	74	22.66	22.20	23.04		
15	16QAM	36	0	21.47	21.57	21.72	23	2
15	16QAM	36	20	21.83	21.49	21.97		
15	16QAM	36	39	21.54	21.70	21.86		
15	16QAM	75	0	21.49	21.50	21.66		
15	64QAM	1	0	21.13	21.05	21.23	23	2
15	64QAM	1	37	21.65	21.09	21.60		
15	64QAM	1	74	21.82	21.10	22.11		
15	64QAM	36	0	20.52	20.28	20.54	22	3
15	64QAM	36	20	20.75	20.07	20.34		
15	64QAM	36	39	20.50	20.24	20.03		
15	64QAM	75	0	20.48	20.30	20.20		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	24.02	23.92	24.07	25	0
10	QPSK	1	25	23.50	23.15	23.83		
10	QPSK	1	49	23.74	23.02	23.76		
10	QPSK	25	0	22.40	22.35	22.79	24	1
10	QPSK	25	12	22.64	22.23	22.79		

10	QPSK	25	25	22.47	22.49	22.51		
10	QPSK	50	0	22.50	22.39	22.43		
10	16QAM	1	0	22.70	22.95	22.93	24	1
10	16QAM	1	25	22.70	22.34	22.78		
10	16QAM	1	49	22.72	22.20	23.00		
10	16QAM	25	0	21.45	21.50	21.74	23	2
10	16QAM	25	12	21.82	21.48	22.01		
10	16QAM	25	25	21.50	21.68	21.84		
10	16QAM	50	0	21.49	21.58	21.68		
10	64QAM	1	0	21.14	21.07	21.17	23	2
10	64QAM	1	25	21.72	21.00	21.54		
10	64QAM	1	49	21.77	21.08	22.05		
10	64QAM	25	0	20.57	20.18	20.60	22	3
10	64QAM	25	12	20.73	20.05	20.38		
10	64QAM	25	25	20.56	20.10	20.00		
10	64QAM	50	0	20.56	20.11	20.19		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	24.10	23.91	24.03	25	0
5	QPSK	1	12	23.51	23.11	23.76		
5	QPSK	1	24	23.74	23.08	23.74		
5	QPSK	12	0	22.41	22.38	22.81	24	1
5	QPSK	12	7	22.68	22.21	22.79		
5	QPSK	12	13	22.48	22.45	22.52		
5	QPSK	25	0	22.57	22.30	22.42		
5	16QAM	1	0	22.63	22.93	22.94	24	1
5	16QAM	1	12	22.76	22.34	22.79		
5	16QAM	1	24	22.75	22.22	22.97		
5	16QAM	12	0	21.47	21.49	21.77	23	2
5	16QAM	12	7	21.79	21.49	21.98		
5	16QAM	12	13	21.45	21.72	21.89		
5	16QAM	25	0	21.54	21.52	21.66		
5	64QAM	1	0	21.07	21.02	21.24	23	2
5	64QAM	1	12	21.69	21.07	21.62		
5	64QAM	1	24	21.77	21.10	22.05		
5	64QAM	12	0	20.54	20.22	20.54	22	3
5	64QAM	12	7	20.78	20.08	20.33		
5	64QAM	12	13	20.52	20.20	20.33		
5	64QAM	25	0	20.51	20.22	20.17		

<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	23.42	23.78	23.91	25	0
10	QPSK	1	25	23.71	23.66	23.90		
10	QPSK	1	49	23.70	23.77	23.82		
10	QPSK	25	0	22.62	22.63	22.59	24	1
10	QPSK	25	12	22.70	22.85	22.72		
10	QPSK	25	25	22.49	22.49	22.51		
10	QPSK	50	0	22.55	22.60	22.66		
10	16QAM	1	0	22.80	23.18	23.17	24	1
10	16QAM	1	25	23.22	23.15	22.94		

10	16QAM	1	49	23.41	23.00	23.39		
10	16QAM	25	0	21.44	21.69	21.63	23	2
10	16QAM	25	12	21.86	21.82	21.80		
10	16QAM	25	25	21.43	21.51	21.44		
10	16QAM	50	0	21.54	21.61	21.63		
10	64QAM	1	0	21.44	21.42	22.13	23	2
10	64QAM	1	25	21.27	22.04	21.62		
10	64QAM	1	49	21.94	21.19	22.10		
10	64QAM	25	0	20.11	20.58	20.68	22	3
10	64QAM	25	12	20.28	20.84	20.58		
10	64QAM	25	25	20.53	20.61	20.32		
10	64QAM	50	0	20.51	20.62	20.52		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	23.42	23.77	23.84	25	0
5	QPSK	1	12	23.61	23.59	23.87		
5	QPSK	1	24	23.69	23.70	23.81		
5	QPSK	12	0	22.53	22.57	22.56	24	1
5	QPSK	12	7	22.70	22.80	22.68		
5	QPSK	12	13	22.40	22.45	22.47		
5	QPSK	25	0	22.48	22.60	22.56		
5	16QAM	1	0	22.79	23.12	23.14	24	1
5	16QAM	1	12	23.12	23.12	22.94		
5	16QAM	1	24	23.34	22.93	23.34		
5	16QAM	12	0	21.43	21.65	21.62	23	2
5	16QAM	12	7	21.81	21.80	21.77		
5	16QAM	12	13	21.41	21.48	21.37		
5	16QAM	25	0	21.46	21.52	21.60		
5	64QAM	1	0	21.30	21.38	22.09	23	2
5	64QAM	1	12	21.25	21.96	21.53		
5	64QAM	1	24	21.88	21.15	22.10		
5	64QAM	12	0	20.42	20.52	20.60	22	3
5	64QAM	12	7	20.23	20.84	20.56		
5	64QAM	12	13	20.48	20.60	20.24		
5	64QAM	25	0	20.42	20.62	20.48		
Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	23.34	23.70	23.79	25	0
3	QPSK	1	8	23.61	23.57	23.81		
3	QPSK	1	14	23.59	23.65	23.81		
3	QPSK	8	0	22.51	22.48	22.46	24	1
3	QPSK	8	4	22.69	22.71	22.65		
3	QPSK	8	7	22.37	22.39	22.45		
3	QPSK	15	0	22.43	22.55	22.52		
3	16QAM	1	0	22.70	23.06	23.10	24	1
3	16QAM	1	8	23.02	23.10	22.93		
3	16QAM	1	14	23.28	22.92	23.25		
3	16QAM	8	0	21.42	21.61	21.54	23	2
3	16QAM	8	4	21.76	21.79	21.70		
3	16QAM	8	7	21.37	21.42	21.35		
3	16QAM	15	0	21.41	21.52	21.50		
3	64QAM	1	0	21.06	21.35	22.08	23	2
3	64QAM	1	8	21.20	21.90	21.49		
3	64QAM	1	14	21.84	21.15	22.02		
3	64QAM	8	0	20.17	20.52	20.57	22	3
3	64QAM	8	4	20.18	20.83	20.46		

3	64QAM	8	7	20.47	20.51	20.19		
3	64QAM	15	0	20.41	20.61	20.40		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	23.33	23.68	23.78	25	0
1.4	QPSK	1	3	23.53	23.54	23.82		
1.4	QPSK	1	5	23.67	23.61	23.81		
1.4	QPSK	3	0	23.40	23.76	23.82		
1.4	QPSK	3	1	23.58	23.53	23.78		
1.4	QPSK	3	3	23.68	23.67	23.81		
1.4	QPSK	6	0	22.52	22.49	22.48	24	1
1.4	16QAM	1	0	22.72	23.08	23.06	24	1
1.4	16QAM	1	3	23.04	23.12	22.86		
1.4	16QAM	1	5	23.27	22.93	23.25		
1.4	16QAM	3	0	22.69	23.08	23.14		
1.4	16QAM	3	1	23.03	23.06	22.84		
1.4	16QAM	3	3	23.30	22.88	23.27		
1.4	16QAM	6	0	21.39	21.55	21.54	23	2
1.4	64QAM	1	0	21.10	21.33	22.02	23	2
1.4	64QAM	1	3	21.18	21.87	21.50		
1.4	64QAM	1	5	21.78	21.06	22.04		
1.4	64QAM	3	0	21.08	21.36	22.07		
1.4	64QAM	3	1	21.21	21.89	21.48		
1.4	64QAM	3	3	21.86	21.09	22.05		
1.4	64QAM	6	0	20.44	20.46	20.56	22	3

<LTE Band 13>

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					23230			
Frequency (MHz)					782			
10	QPSK	1	0		24.19		25	0
10	QPSK	1	25		24.14			
10	QPSK	1	49		24.18			
10	QPSK	25	0		22.94		24	1
10	QPSK	25	12		23.11			
10	QPSK	25	25		22.86			
10	QPSK	50	0		23.00			
10	16QAM	1	0		23.51		24	1
10	16QAM	1	25		23.53			
10	16QAM	1	49		23.47			
10	16QAM	25	0		21.91		23	2
10	16QAM	25	12		22.10			
10	16QAM	25	25		21.80			
10	16QAM	50	0		21.95			
10	64QAM	1	0		22.44		23	2
10	64QAM	1	25		22.51			
10	64QAM	1	49		22.24			
10	64QAM	25	0		21.05		22	3
10	64QAM	25	12		21.19			
10	64QAM	25	25		20.90			
10	64QAM	50	0		20.94			
Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		

5	QPSK	1	0	24.04	24.06	24.08	25	0
5	QPSK	1	12	24.11	24.11	24.01		
5	QPSK	1	24	24.08	24.00	23.96		
5	QPSK	12	0	23.09	23.14	23.13	24	1
5	QPSK	12	7	23.20	23.25	23.22		
5	QPSK	12	13	23.19	23.15	23.11		
5	QPSK	25	0	23.26	23.19	23.16		
5	16QAM	1	0	23.53	23.52	23.44	24	1
5	16QAM	1	12	23.46	23.52	23.52		
5	16QAM	1	24	23.53	23.48	23.40		
5	16QAM	12	0	22.19	22.17	22.20	23	2
5	16QAM	12	7	22.29	22.32	22.29		
5	16QAM	12	13	22.21	22.08	22.09		
5	16QAM	25	0	22.18	22.16	22.08		
5	64QAM	1	0	22.25	21.71	22.27	23	2
5	64QAM	1	12	21.94	22.17	22.26		
5	64QAM	1	24	22.30	22.33	22.18		
5	64QAM	12	0	21.17	20.68	21.22	22	3
5	64QAM	12	7	20.74	21.42	21.31		
5	64QAM	12	13	20.75	21.23	21.26		
5	64QAM	25	0	21.07	21.21	21.19		

<LTE Band 14>

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					23330			
Frequency (MHz)					793			
10	QPSK	1	0		24.25		25	0
10	QPSK	1	25		24.14			
10	QPSK	1	49		24.07			
10	QPSK	25	0		23.06		24	1
10	QPSK	25	12		23.03			
10	QPSK	25	25		22.92			
10	QPSK	50	0		23.00			
10	16QAM	1	0		23.29		24	1
10	16QAM	1	25		23.23			
10	16QAM	1	49		23.15			
10	16QAM	25	0		21.95		23	2
10	16QAM	25	12		22.22			
10	16QAM	25	25		21.86			
10	16QAM	50	0		22.06			
10	64QAM	1	0		22.51		23	2
10	64QAM	1	25		22.21			
10	64QAM	1	49		22.36			
10	64QAM	25	0		20.98		22	3
10	64QAM	25	12		21.26			
10	64QAM	25	25		20.94			
10	64QAM	50	0		20.99			
Channel				23305	23330	23355	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				790.5	793	795.5		
5	QPSK	1	0	24.10	24.08	24.02	25	0
5	QPSK	1	12	24.22	24.18	24.09		
5	QPSK	1	24	24.24	23.96	24.02		
5	QPSK	12	0	23.24	23.21	23.13	24	1

5	QPSK	12	7	23.27	23.24	23.26		
5	QPSK	12	13	23.14	23.16	23.12		
5	QPSK	25	0	23.26	23.14	23.10		
5	16QAM	1	0	23.25	23.27	23.23	24	1
5	16QAM	1	12	23.22	23.27	23.21		
5	16QAM	1	24	23.25	23.26	23.18		
5	16QAM	12	0	22.29	22.20	22.11	23	2
5	16QAM	12	7	22.35	22.33	22.30		
5	16QAM	12	13	22.22	22.19	22.19		
5	16QAM	25	0	22.25	22.19	22.08		
5	64QAM	1	0	22.35	22.37	22.36	23	2
5	64QAM	1	12	22.45	22.34	22.33		
5	64QAM	1	24	22.52	22.38	22.34		
5	64QAM	12	0	21.36	21.20	21.23	22	3
5	64QAM	12	7	21.42	21.32	21.32		
5	64QAM	12	13	21.34	21.27	21.15		
5	64QAM	25	0	21.17	21.07	21.09		

<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	24.30	24.20	24.16	25	0
20	QPSK	1	49	23.60	23.57	23.83		
20	QPSK	1	99	23.60	23.66	23.85		
20	QPSK	50	0	22.67	22.63	22.75	24	1
20	QPSK	50	24	22.87	22.70	22.82		
20	QPSK	50	50	22.54	22.56	22.57		
20	QPSK	100	0	22.60	22.58	22.64		
20	16QAM	1	0	22.77	23.18	23.15	24	1
20	16QAM	1	49	22.63	22.53	23.08		
20	16QAM	1	99	22.57	22.81	23.17		
20	16QAM	50	0	21.62	21.65	21.70	23	2
20	16QAM	50	24	21.85	21.82	21.88		
20	16QAM	50	50	21.57	21.50	21.66		
20	16QAM	100	0	21.57	21.62	21.68		
20	64QAM	1	0	21.91	22.05	22.11	23	2
20	64QAM	1	49	21.73	21.79	22.31		
20	64QAM	1	99	21.73	21.76	21.80		
20	64QAM	50	0	20.73	20.71	20.73	22	3
20	64QAM	50	24	20.78	20.71	20.86		
20	64QAM	50	50	20.55	20.51	20.63		
20	64QAM	100	0	20.71	20.59	20.74		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	24.24	24.14	24.09	25	0
15	QPSK	1	37	23.51	23.55	23.74		
15	QPSK	1	74	23.60	23.57	23.77		
15	QPSK	36	0	22.57	22.61	22.65	24	1
15	QPSK	36	20	22.68	22.63	22.79		
15	QPSK	36	39	22.49	22.56	22.47		
15	QPSK	75	0	22.52	22.48	22.61		
15	16QAM	1	0	22.67	23.12	23.06	24	1

15	16QAM	1	37	22.60	22.49	23.07		
15	16QAM	1	74	22.55	22.76	23.07		
15	16QAM	36	0	21.55	21.59	21.70	23	2
15	16QAM	36	20	21.83	21.82	21.80		
15	16QAM	36	39	21.54	21.48	21.59		
15	16QAM	75	0	21.54	21.60	21.59		
15	64QAM	1	0	21.84	22.03	22.11	23	2
15	64QAM	1	37	21.67	21.79	22.22		
15	64QAM	1	74	21.69	21.73	21.73		
15	64QAM	36	0	20.73	20.67	20.65	22	3
15	64QAM	36	20	20.74	20.70	20.83		
15	64QAM	36	39	20.48	20.49	20.53		
15	64QAM	75	0	20.64	20.57	20.65		
Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	24.23	24.12	24.15	25	0
10	QPSK	1	25	23.56	23.57	23.80		
10	QPSK	1	49	23.52	23.57	23.80		
10	QPSK	25	0	22.65	22.54	22.70	24	1
10	QPSK	25	12	22.76	22.62	22.74		
10	QPSK	25	25	22.52	22.54	22.54		
10	QPSK	50	0	22.50	22.57	22.54		
10	16QAM	1	0	22.69	23.08	23.09	24	1
10	16QAM	1	25	22.58	22.53	23.00		
10	16QAM	1	49	22.55	22.74	23.07		
10	16QAM	25	0	21.54	21.64	21.70	23	2
10	16QAM	25	12	21.84	21.72	21.87		
10	16QAM	25	25	21.54	21.44	21.64		
10	16QAM	50	0	21.49	21.57	21.58		
10	64QAM	1	0	21.91	22.01	22.03	23	2
10	64QAM	1	25	21.68	21.76	22.22		
10	64QAM	1	49	21.72	21.67	21.78		
10	64QAM	25	0	20.66	20.63	20.64	22	3
10	64QAM	25	12	20.77	20.68	20.76		
10	64QAM	25	25	20.55	20.49	20.54		
10	64QAM	50	0	20.61	20.51	20.72		
Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	24.23	24.14	24.14	25	0
5	QPSK	1	12	23.51	23.56	23.82		
5	QPSK	1	24	23.50	23.60	23.82		
5	QPSK	12	0	22.63	22.53	22.70	24	1
5	QPSK	12	7	22.72	22.60	22.76		
5	QPSK	12	13	22.50	22.47	22.56		
5	QPSK	25	0	22.54	22.55	22.58		
5	16QAM	1	0	22.72	23.18	23.06	24	1
5	16QAM	1	12	22.59	22.43	23.00		
5	16QAM	1	24	22.49	22.81	23.07		
5	16QAM	12	0	21.55	21.55	21.70	23	2
5	16QAM	12	7	21.76	21.77	21.84		
5	16QAM	12	13	21.52	21.42	21.65		
5	16QAM	25	0	21.48	21.59	21.59		
5	64QAM	1	0	21.86	22.05	22.09	23	2
5	64QAM	1	12	21.70	21.72	22.27		
5	64QAM	1	24	21.72	21.69	21.79		
5	64QAM	12	0	20.68	20.67	20.64	22	3

5	64QAM	12	7	20.75	20.71	20.82		
5	64QAM	12	13	20.45	20.47	20.63		
5	64QAM	25	0	20.61	20.56	20.73		
Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	24.21	24.17	24.15	25	0
3	QPSK	1	8	23.54	23.51	23.80		
3	QPSK	1	14	23.50	23.60	23.80		
3	QPSK	8	0	22.61	22.57	22.65	24	1
3	QPSK	8	4	22.69	22.64	22.76		
3	QPSK	8	7	22.45	22.46	22.53		
3	QPSK	15	0	22.53	22.49	22.59		
3	16QAM	1	0	22.72	23.08	23.13	24	1
3	16QAM	1	8	22.61	22.50	23.00		
3	16QAM	1	14	22.51	22.78	23.16		
3	16QAM	8	0	21.54	21.62	21.64	23	2
3	16QAM	8	4	21.78	21.80	21.88		
3	16QAM	8	7	21.48	21.48	21.62		
3	16QAM	15	0	21.53	21.55	21.58		
3	64QAM	1	0	21.88	22.02	22.09	23	2
3	64QAM	1	8	21.68	21.79	22.28		
3	64QAM	1	14	21.63	21.67	21.70		
3	64QAM	8	0	20.66	20.67	20.72	22	3
3	64QAM	8	4	20.69	20.61	20.76		
3	64QAM	8	7	20.51	20.50	20.60		
3	64QAM	15	0	20.64	20.49	20.70		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	24.22	24.13	24.10	25	0
1.4	QPSK	1	3	23.60	23.47	23.73		
1.4	QPSK	1	5	23.53	23.64	23.80		
1.4	QPSK	3	0	24.22	24.14	24.08		
1.4	QPSK	3	1	23.57	23.54	23.83		
1.4	QPSK	3	3	23.53	23.59	23.78		
1.4	QPSK	6	0	22.65	22.61	22.71	24	1
1.4	16QAM	1	0	22.71	23.08	23.13	24	1
1.4	16QAM	1	3	22.58	22.45	23.00		
1.4	16QAM	1	5	22.49	22.80	23.09		
1.4	16QAM	3	0	22.74	23.11	23.09		
1.4	16QAM	3	1	22.60	22.50	23.05		
1.4	16QAM	3	3	22.55	22.76	23.07		
1.4	16QAM	6	0	21.54	21.65	21.60	23	2
1.4	64QAM	1	0	21.82	21.98	22.09	23	2
1.4	64QAM	1	3	21.65	21.71	22.28		
1.4	64QAM	1	5	21.73	21.68	21.74		
1.4	64QAM	3	0	21.88	21.99	22.10		
1.4	64QAM	3	1	21.72	21.74	22.26		
1.4	64QAM	3	3	21.67	21.72	21.79		
1.4	64QAM	6	0	20.72	20.63	20.63	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	24.20	24.21	24.23	25	0
15	QPSK	1	37	24.20	24.20	24.21		
15	QPSK	1	74	24.17	24.17	23.95		
15	QPSK	36	0	23.22	23.20	23.07	24	1
15	QPSK	36	20	23.31	23.22	23.15		
15	QPSK	36	39	23.08	22.94	22.92		
15	QPSK	75	0	23.22	23.15	23.10		
15	16QAM	1	0	23.39	23.42	23.36	24	1
15	16QAM	1	37	23.51	23.50	23.48		
15	16QAM	1	74	23.36	23.41	23.42		
15	16QAM	36	0	22.15	22.17	22.19	23	2
15	16QAM	36	20	22.27	22.20	22.21		
15	16QAM	36	39	22.05	22.00	21.93		
15	16QAM	75	0	22.11	22.09	22.07		
15	64QAM	1	0	21.62	22.02	22.24	23	2
15	64QAM	1	37	22.15	21.39	21.76		
15	64QAM	1	74	21.45	21.77	21.33		
15	64QAM	36	0	20.94	20.76	21.23	22	3
15	64QAM	36	20	21.51	20.42	20.83		
15	64QAM	36	39	21.16	20.75	20.38		
15	64QAM	75	0	21.22	20.84	20.73		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	24.11	24.14	24.20	25	0
10	QPSK	1	25	24.22	24.12	24.17		
10	QPSK	1	49	24.16	24.17	23.93		
10	QPSK	25	0	23.22	23.17	23.07	24	1
10	QPSK	25	12	23.31	23.13	23.08		
10	QPSK	25	25	22.99	22.85	22.87		
10	QPSK	50	0	23.12	23.09	23.10		
10	16QAM	1	0	23.34	23.32	23.36	24	1
10	16QAM	1	25	23.46	23.43	23.48		
10	16QAM	1	49	23.26	23.33	23.34		
10	16QAM	25	0	22.13	22.17	22.14	23	2
10	16QAM	25	12	22.25	22.19	22.14		
10	16QAM	25	25	21.97	21.95	21.92		
10	16QAM	50	0	22.06	22.09	21.99		
10	64QAM	1	0	21.55	21.95	22.19	23	2
10	64QAM	1	25	22.05	21.34	21.67		
10	64QAM	1	49	21.38	21.73	21.28		
10	64QAM	25	0	20.84	20.71	21.20	22	3
10	64QAM	25	12	21.43	20.38	20.78		
10	64QAM	25	25	21.08	20.65	20.32		
10	64QAM	50	0	21.13	20.83	20.71		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	24.14	24.21	24.18	25	0
5	QPSK	1	12	24.15	24.22	24.13		
5	QPSK	1	24	24.17	24.11	23.88		
5	QPSK	12	0	23.14	23.14	23.07	24	1
5	QPSK	12	7	23.24	23.21	23.06		

5	QPSK	12	13	23.03	22.93	22.87		
5	QPSK	25	0	23.17	23.06	23.09		
5	16QAM	1	0	23.37	23.40	23.32	24	1
5	16QAM	1	12	23.49	23.45	23.47		
5	16QAM	1	24	23.32	23.41	23.39		
5	16QAM	12	0	22.11	22.12	22.10	23	2
5	16QAM	12	7	22.18	22.11	22.21		
5	16QAM	12	13	21.95	21.95	21.90		
5	16QAM	25	0	22.06	22.00	21.98		
5	64QAM	1	0	21.62	21.98	22.22	23	2
5	64QAM	1	12	22.12	21.39	21.67		
5	64QAM	1	24	21.43	21.76	21.30		
5	64QAM	12	0	20.94	20.75	21.17	22	3
5	64QAM	12	7	21.43	20.34	20.79		
5	64QAM	12	13	21.15	20.75	20.34		
5	64QAM	25	0	21.20	20.74	20.68		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	24.20	24.21	24.23	25	0
3	QPSK	1	8	24.20	24.21	24.20		
3	QPSK	1	14	24.12	24.17	23.95		
3	QPSK	8	0	23.16	23.16	23.01	24	1
3	QPSK	8	4	23.21	23.15	23.09		
3	QPSK	8	7	23.08	22.93	22.85		
3	QPSK	15	0	23.18	23.06	23.02		
3	16QAM	1	0	23.29	23.32	23.30	24	1
3	16QAM	1	8	23.48	23.46	23.43		
3	16QAM	1	14	23.29	23.38	23.37		
3	16QAM	8	0	22.08	22.15	22.16	23	2
3	16QAM	8	4	22.26	22.14	22.18		
3	16QAM	8	7	22.00	21.92	21.84		
3	16QAM	15	0	22.05	22.01	22.02		
3	64QAM	1	0	21.58	21.93	22.21	23	2
3	64QAM	1	8	22.11	21.36	21.76		
3	64QAM	1	14	21.43	21.69	21.23		
3	64QAM	8	0	20.89	20.74	21.14	22	3
3	64QAM	8	4	21.51	20.42	20.75		
3	64QAM	8	7	21.10	20.70	20.32		
3	64QAM	15	0	21.16	20.76	20.72		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	24.12	24.19	24.20	25	0
1.4	QPSK	1	3	24.19	24.15	24.21		
1.4	QPSK	1	5	24.11	24.11	23.85		
1.4	QPSK	3	0	24.18	24.18	24.15		
1.4	QPSK	3	1	24.20	24.18	24.17		
1.4	QPSK	3	3	24.09	24.16	23.86		
1.4	QPSK	6	0	23.19	23.16	23.06	24	1
1.4	16QAM	1	0	23.29	23.40	23.31	24	1
1.4	16QAM	1	3	23.44	23.46	23.40		
1.4	16QAM	1	5	23.27	23.37	23.41		
1.4	16QAM	3	0	23.30	23.32	23.30		
1.4	16QAM	3	1	23.49	23.49	23.43		
1.4	16QAM	3	3	23.36	23.31	23.37		
1.4	16QAM	6	0	22.14	22.15	22.14	23	2
1.4	64QAM	1	0	21.54	22.01	22.19	23	2

1.4	64QAM	1	3	22.14	21.30	21.70		
1.4	64QAM	1	5	21.38	21.73	21.28		
1.4	64QAM	3	0	21.60	21.96	22.14		
1.4	64QAM	3	1	22.12	21.37	21.68		
1.4	64QAM	3	3	21.35	21.76	21.29		
1.4	64QAM	6	0	20.87	20.76	21.18	22	3

<LTE Band 30>

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					27710			
Frequency (MHz)					2310			
10	QPSK	1	0		21.30		22	0
10	QPSK	1	25		21.25			
10	QPSK	1	49		21.25			
10	QPSK	25	0		20.30		21	1
10	QPSK	25	12		20.32			
10	QPSK	25	25		20.31			
10	QPSK	50	0		20.34			
10	16QAM	1	0		20.46		21	1
10	16QAM	1	25		20.52			
10	16QAM	1	49		20.50			
10	16QAM	25	0		19.32		20	2
10	16QAM	25	12		19.34			
10	16QAM	25	25		19.33			
10	16QAM	50	0		19.35			
10	64QAM	1	0		19.25		20	2
10	64QAM	1	25		19.49			
10	64QAM	1	49		19.48			
10	64QAM	25	0		18.33		19	3
10	64QAM	25	12		18.37			
10	64QAM	25	25		18.36			
10	64QAM	50	0		18.36			
Channel				27685	27710	27735	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2307.5	2310	2312.5		
5	QPSK	1	0	21.17	21.29	21.16	22	0
5	QPSK	1	12	21.23	21.27	21.28		
5	QPSK	1	24	21.18	21.23	21.22		
5	QPSK	12	0	20.32	20.32	20.34	21	1
5	QPSK	12	7	20.31	20.34	20.40		
5	QPSK	12	13	20.32	20.33	20.37		
5	QPSK	25	0	20.29	20.39	20.37		
5	16QAM	1	0	20.41	20.45	20.40	21	1
5	16QAM	1	12	20.50	20.51	20.56		
5	16QAM	1	24	20.40	20.47	20.49		
5	16QAM	12	0	19.28	19.34	19.40	20	2
5	16QAM	12	7	19.34	19.39	19.37		
5	16QAM	12	13	19.33	19.38	19.37		
5	16QAM	25	0	19.33	19.40	19.37		
5	64QAM	1	0	19.19	19.45	19.48	20	2
5	64QAM	1	12	19.48	19.50	19.50		
5	64QAM	1	24	19.41	19.43	19.45		
5	64QAM	12	0	18.32	18.42	18.38	19	3
5	64QAM	12	7	18.37	18.48	18.46		

5	64QAM	12	13	18.34	18.42	18.45		
5	64QAM	25	0	18.34	18.38	18.39		

<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	23.59	23.57	24.31	25	0
20	QPSK	1	49	23.94	23.84	23.72		
20	QPSK	1	99	23.19	23.00	23.76		
20	QPSK	50	0	22.81	22.78	22.82	24	1
20	QPSK	50	24	22.92	22.93	22.94		
20	QPSK	50	50	22.64	22.62	22.68		
20	QPSK	100	0	22.76	22.71	22.76		
20	16QAM	1	0	22.57	22.70	23.28	24	1
20	16QAM	1	49	23.02	23.06	23.02		
20	16QAM	1	99	22.53	22.24	22.92		
20	16QAM	50	0	21.79	21.79	21.84	23	2
20	16QAM	50	24	21.92	21.93	22.05		
20	16QAM	50	50	21.60	21.63	21.72		
20	16QAM	100	0	21.77	21.74	21.78		
20	64QAM	1	0	21.63	21.56	22.04	23	2
20	64QAM	1	49	22.17	21.95	21.93		
20	64QAM	1	99	21.29	21.08	21.12		
20	64QAM	50	0	20.75	20.78	20.95	22	3
20	64QAM	50	24	20.90	20.90	21.04		
20	64QAM	50	50	20.64	20.60	20.68		
20	64QAM	100	0	20.68	20.68	20.79		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	23.52	23.48	24.27	25	0
15	QPSK	1	37	23.84	23.77	23.70		
15	QPSK	1	74	23.09	23.06	23.75		
15	QPSK	36	0	22.72	22.74	22.74	24	1
15	QPSK	36	20	22.85	22.85	22.89		
15	QPSK	36	39	22.60	22.55	22.62		
15	QPSK	75	0	22.68	22.70	22.75		
15	16QAM	1	0	22.53	22.67	23.23	24	1
15	16QAM	1	37	22.93	23.00	22.97		
15	16QAM	1	74	22.51	22.17	22.87		
15	16QAM	36	0	21.71	21.71	21.77	23	2
15	16QAM	36	20	21.84	21.92	21.95		
15	16QAM	36	39	21.52	21.57	21.70		
15	16QAM	75	0	21.73	21.72	21.78		
15	64QAM	1	0	21.58	21.53	21.95	23	2
15	64QAM	1	37	22.17	21.86	21.91		
15	64QAM	1	74	21.25	21.19	21.08		
15	64QAM	36	0	20.66	20.69	20.87	22	3
15	64QAM	36	20	20.90	20.85	20.95		
15	64QAM	36	39	20.63	20.53	20.59		
15	64QAM	75	0	20.68	20.60	20.77		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		

10	QPSK	1	0	23.52	23.55	24.24	25	0
10	QPSK	1	25	23.85	23.80	23.66		
10	QPSK	1	49	23.18	23.11	23.67		
10	QPSK	25	0	22.80	22.71	22.81	24	1
10	QPSK	25	12	22.83	22.91	22.92		
10	QPSK	25	25	22.63	22.54	22.64		
10	QPSK	50	0	22.70	22.71	22.67		
10	16QAM	1	0	22.50	22.63	23.22	24	1
10	16QAM	1	25	23.00	22.96	22.99		
10	16QAM	1	49	22.43	22.23	22.82		
10	16QAM	25	0	21.77	21.78	21.79	23	2
10	16QAM	25	12	21.85	21.87	21.97		
10	16QAM	25	25	21.51	21.63	21.71		
10	16QAM	50	0	21.76	21.66	21.75		
10	64QAM	1	0	21.55	21.48	21.94	23	2
10	64QAM	1	25	22.10	21.86	21.86		
10	64QAM	1	49	21.24	21.10	21.08		
10	64QAM	25	0	20.68	20.74	20.88	22	3
10	64QAM	25	12	20.82	20.81	20.99		
10	64QAM	25	25	20.62	20.53	20.65		
10	64QAM	50	0	20.63	20.59	20.79		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	23.56	23.57	24.28	25	0
5	QPSK	1	12	23.85	23.82	23.68		
5	QPSK	1	24	23.17	23.10	23.71		
5	QPSK	12	0	22.77	22.75	22.82	24	1
5	QPSK	12	7	22.88	22.86	22.88		
5	QPSK	12	13	22.62	22.58	22.65		
5	QPSK	25	0	22.66	22.69	22.70		
5	16QAM	1	0	22.52	22.69	23.21	24	1
5	16QAM	1	12	22.97	22.99	22.94		
5	16QAM	1	24	22.53	22.14	22.85		
5	16QAM	12	0	21.69	21.75	21.84	23	2
5	16QAM	12	7	21.83	21.84	22.04		
5	16QAM	12	13	21.54	21.53	21.70		
5	16QAM	25	0	21.69	21.64	21.75		
5	64QAM	1	0	21.56	21.51	22.01	23	2
5	64QAM	1	12	22.08	21.90	21.92		
5	64QAM	1	24	21.23	21.13	21.07		
5	64QAM	12	0	20.72	20.76	20.93	22	3
5	64QAM	12	7	20.80	20.85	21.02		
5	64QAM	12	13	20.60	20.53	20.64		
5	64QAM	25	0	20.66	20.66	20.71		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	23.57	23.57	24.30	25	0
3	QPSK	1	8	23.92	23.82	23.71		
3	QPSK	1	14	23.14	23.19	23.74		
3	QPSK	8	0	22.71	22.74	22.74	24	1
3	QPSK	8	4	22.89	22.93	22.92		
3	QPSK	8	7	22.58	22.56	22.66		
3	QPSK	15	0	22.72	22.65	22.67		
3	16QAM	1	0	22.55	22.67	23.27	24	1
3	16QAM	1	8	22.92	22.99	22.99		
3	16QAM	1	14	22.49	22.18	22.84		

3	16QAM	8	0	21.74	21.75	21.80	23	2
3	16QAM	8	4	21.87	21.93	21.95		
3	16QAM	8	7	21.54	21.63	21.67		
3	16QAM	15	0	21.72	21.72	21.73		
3	64QAM	1	0	21.57	21.56	22.00	23	2
3	64QAM	1	8	22.09	21.90	21.90		
3	64QAM	1	14	21.25	21.11	21.06		
3	64QAM	8	0	20.73	20.73	20.86	22	3
3	64QAM	8	4	20.85	20.82	20.94		
3	64QAM	8	7	20.59	20.56	20.64		
3	64QAM	15	0	20.58	20.68	20.72		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	23.54	23.50	24.30	25	0
1.4	QPSK	1	3	23.84	23.81	23.62		
1.4	QPSK	1	5	23.12	23.04	23.69		
1.4	QPSK	3	0	23.56	23.52	24.23		
1.4	QPSK	3	1	23.93	23.84	23.64		
1.4	QPSK	3	3	23.09	23.03	23.71		
1.4	QPSK	6	0	22.78	22.74	22.73	24	1
1.4	16QAM	1	0	22.57	22.60	23.23	24	1
1.4	16QAM	1	3	23.01	23.05	22.94		
1.4	16QAM	1	5	22.46	22.19	22.83		
1.4	16QAM	3	0	22.51	22.68	23.19		
1.4	16QAM	3	1	22.93	23.03	22.92		
1.4	16QAM	3	3	22.53	22.20	22.86		
1.4	16QAM	6	0	21.76	21.72	21.75	23	2
1.4	64QAM	1	0	21.62	21.47	21.99	23	2
1.4	64QAM	1	3	22.09	21.87	21.92		
1.4	64QAM	1	5	21.20	21.10	21.07		
1.4	64QAM	3	0	21.57	21.47	22.04		
1.4	64QAM	3	1	22.13	21.87	21.83		
1.4	64QAM	3	3	21.25	21.02	21.12		
1.4	64QAM	6	0	20.65	20.70	20.95	22	3

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	15.87	15.89	15.87	16	0
20	QPSK	1	49	15.78	15.65	15.65		
20	QPSK	1	99	15.72	15.64	15.61		
20	QPSK	50	0	15.72	15.62	15.62	16	0
20	QPSK	50	24	15.77	15.77	15.76		
20	QPSK	50	50	15.63	15.48	15.48		
20	QPSK	100	0	15.65	15.53	15.57		
20	16QAM	1	0	15.76	15.69	15.77	16	0
20	16QAM	1	49	15.79	15.86	15.64		
20	16QAM	1	99	15.77	15.79	15.76		
20	16QAM	50	0	15.69	15.56	15.67	16	0
20	16QAM	50	24	15.84	15.76	15.81		
20	16QAM	50	50	15.59	15.46	15.56		
20	16QAM	100	0	15.66	15.53	15.59		
20	64QAM	1	0	15.70	15.58	15.85	16	0
20	64QAM	1	49	15.76	15.80	15.57		
20	64QAM	1	99	15.70	15.53	15.69		
20	64QAM	50	0	15.71	15.58	15.62	16	0
20	64QAM	50	24	15.68	15.78	15.76		
20	64QAM	50	50	15.61	15.49	15.54		
20	64QAM	100	0	15.67	15.54	15.58		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	15.83	15.73	15.79	16	0
15	QPSK	1	37	15.58	15.49	15.65		
15	QPSK	1	74	15.68	15.60	15.51		
15	QPSK	36	0	15.70	15.54	15.61	16	0
15	QPSK	36	20	15.61	15.57	15.60		
15	QPSK	36	39	15.61	15.44	15.38		
15	QPSK	75	0	15.51	15.45	15.42		
15	16QAM	1	0	15.66	15.49	15.69	16	0
15	16QAM	1	37	15.78	15.75	15.50		
15	16QAM	1	74	15.60	15.78	15.69		
15	16QAM	36	0	15.62	15.48	15.53	16	0
15	16QAM	36	20	15.78	15.59	15.74		
15	16QAM	36	39	15.44	15.37	15.56		
15	16QAM	75	0	15.62	15.53	15.48		
15	64QAM	1	0	15.58	15.40	15.80	16	0
15	64QAM	1	37	15.65	15.68	15.45		
15	64QAM	1	74	15.57	15.44	15.63		
15	64QAM	36	0	15.66	15.38	15.57	16	0
15	64QAM	36	20	15.57	15.62	15.68		
15	64QAM	36	39	15.53	15.48	15.41		
15	64QAM	75	0	15.53	15.34	15.47		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	15.83	15.74	15.74	16	0
10	QPSK	1	25	15.63	15.63	15.51		
10	QPSK	1	49	15.56	15.61	15.51		
10	QPSK	25	0	15.71	15.52	15.55	16	0

10	QPSK	25	12	15.59	15.76	15.63		
10	QPSK	25	25	15.59	15.39	15.30		
10	QPSK	50	0	15.61	15.42	15.38		
10	16QAM	1	0	15.67	15.53	15.59		
10	16QAM	1	25	15.59	15.81	15.64	16	0
10	16QAM	1	49	15.64	15.61	15.72		
10	16QAM	25	0	15.58	15.44	15.53		
10	16QAM	25	12	15.84	15.57	15.78	16	0
10	16QAM	25	25	15.58	15.43	15.48		
10	16QAM	50	0	15.57	15.40	15.58		
10	64QAM	1	0	15.52	15.42	15.82		
10	64QAM	1	25	15.57	15.72	15.51	16	0
10	64QAM	1	49	15.69	15.45	15.53		
10	64QAM	25	0	15.63	15.45	15.57		
10	64QAM	25	12	15.57	15.64	15.60	16	0
10	64QAM	25	25	15.57	15.30	15.45		
10	64QAM	50	0	15.67	15.39	15.52		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	15.85	15.74	15.79		
5	QPSK	1	12	15.75	15.50	15.59	16	0
5	QPSK	1	24	15.55	15.46	15.58		
5	QPSK	12	0	15.55	15.61	15.58		
5	QPSK	12	7	15.62	15.68	15.64	16	0
5	QPSK	12	13	15.48	15.39	15.34		
5	QPSK	25	0	15.63	15.46	15.44		
5	16QAM	1	0	15.76	15.49	15.77		
5	16QAM	1	12	15.71	15.78	15.53	16	0
5	16QAM	1	24	15.73	15.64	15.64		
5	16QAM	12	0	15.54	15.41	15.58		
5	16QAM	12	7	15.84	15.66	15.70	16	0
5	16QAM	12	13	15.55	15.34	15.44		
5	16QAM	25	0	15.53	15.45	15.42		
5	64QAM	1	0	15.67	15.41	15.72		
5	64QAM	1	12	15.68	15.64	15.54	16	0
5	64QAM	1	24	15.55	15.36	15.62		
5	64QAM	12	0	15.70	15.45	15.58		
5	64QAM	12	7	15.50	15.66	15.56	16	0
5	64QAM	12	13	15.59	15.39	15.37		
5	64QAM	25	0	15.62	15.41	15.51		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	15.75	15.69	15.85		
3	QPSK	1	8	15.71	15.58	15.51	16	0
3	QPSK	1	14	15.65	15.63	15.59		
3	QPSK	8	0	15.68	15.60	15.52		
3	QPSK	8	4	15.61	15.74	15.63	16	0
3	QPSK	8	7	15.53	15.34	15.29		
3	QPSK	15	0	15.48	15.46	15.48		
3	16QAM	1	0	15.70	15.49	15.73		
3	16QAM	1	8	15.70	15.71	15.60	16	0
3	16QAM	1	14	15.70	15.71	15.63		
3	16QAM	8	0	15.61	15.43	15.60		
3	16QAM	8	4	15.84	15.58	15.70	16	0
3	16QAM	8	7	15.45	15.35	15.56		
3	16QAM	15	0	15.60	15.37	15.49		

3	64QAM	1	0	15.66	15.46	15.65	16	0
3	64QAM	1	8	15.56	15.63	15.51		
3	64QAM	1	14	15.60	15.35	15.62		
3	64QAM	8	0	15.65	15.49	15.49	16	0
3	64QAM	8	4	15.51	15.60	15.76		
3	64QAM	8	7	15.48	15.49	15.36		
3	64QAM	15	0	15.59	15.39	15.49		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	15.85	15.76	15.67	16	0
1.4	QPSK	1	3	15.73	15.64	15.61		
1.4	QPSK	1	5	15.57	15.58	15.53		
1.4	QPSK	3	0	15.54	15.42	15.42		
1.4	QPSK	3	1	15.74	15.69	15.68		
1.4	QPSK	3	3	15.55	15.40	15.30		
1.4	QPSK	6	0	15.55	15.50	15.47	16	0
1.4	16QAM	1	0	15.58	15.58	15.70	16	0
1.4	16QAM	1	3	15.76	15.75	15.61		
1.4	16QAM	1	5	15.62	15.61	15.76		
1.4	16QAM	3	0	15.49	15.48	15.56		
1.4	16QAM	3	1	15.77	15.56	15.75		
1.4	16QAM	3	3	15.54	15.32	15.47		
1.4	16QAM	6	0	15.62	15.35	15.53	16	0
1.4	64QAM	1	0	15.50	15.45	15.71	16	0
1.4	64QAM	1	3	15.65	15.80	15.54		
1.4	64QAM	1	5	15.57	15.47	15.57		
1.4	64QAM	3	0	15.67	15.39	15.57		
1.4	64QAM	3	1	15.62	15.59	15.73		
1.4	64QAM	3	3	15.42	15.42	15.36		
1.4	64QAM	6	0	15.60	15.52	15.49	16	0

<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	16.46	16.62	16.47	17	0
20	QPSK	1	49	16.42	16.43	16.41		
20	QPSK	1	99	16.07	16.05	16.00		
20	QPSK	50	0	16.49	16.55	16.48	17	0
20	QPSK	50	24	16.43	16.39	16.42		
20	QPSK	50	50	16.44	16.49	16.39		
20	QPSK	100	0	16.27	16.52	16.42		
20	16QAM	1	0	16.36	16.39	16.51	17	0
20	16QAM	1	49	16.19	16.18	16.27		
20	16QAM	1	99	16.41	16.30	16.25		
20	16QAM	50	0	16.59	16.57	16.55	17	0
20	16QAM	50	24	16.54	16.32	16.31		
20	16QAM	50	50	16.51	16.57	16.48		
20	16QAM	100	0	16.55	16.59	16.42		
20	64QAM	1	0	16.30	16.27	16.43	17	0
20	64QAM	1	49	16.22	16.15	16.39		
20	64QAM	1	99	16.48	16.27	16.09		
20	64QAM	50	0	16.56	16.55	16.56	17	0

20	64QAM	50	24	16.52	16.52	16.39		
20	64QAM	50	50	16.42	16.47	16.41		
20	64QAM	100	0	16.59	16.42	16.41		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	16.37	16.60	16.37	17	0
15	QPSK	1	37	16.40	16.31	16.38		
15	QPSK	1	74	16.06	15.88	15.91		
15	QPSK	36	0	16.39	16.43	16.35	17	0
15	QPSK	36	20	16.31	16.19	16.37		
15	QPSK	36	39	16.42	16.48	16.39		
15	QPSK	75	0	16.11	16.49	16.37		
15	16QAM	1	0	16.17	16.36	16.42	17	0
15	16QAM	1	37	16.04	16.15	16.12		
15	16QAM	1	74	16.38	16.19	16.13		
15	16QAM	36	0	16.50	16.50	16.37	17	0
15	16QAM	36	20	16.43	16.22	16.17		
15	16QAM	36	39	16.45	16.54	16.44		
15	16QAM	75	0	16.54	16.57	16.25		
15	64QAM	1	0	16.22	16.13	16.30	17	0
15	64QAM	1	37	16.14	16.13	16.38		
15	64QAM	1	74	16.47	16.24	15.98		
15	64QAM	36	0	16.45	16.54	16.47	17	0
15	64QAM	36	20	16.36	16.51	16.35		
15	64QAM	36	39	16.35	16.32	16.40		
15	64QAM	75	0	16.58	16.41	16.27		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	16.27	16.54	16.34	17	0
10	QPSK	1	25	16.35	16.41	16.30		
10	QPSK	1	49	16.04	16.01	16.00		
10	QPSK	25	0	16.39	16.35	16.30	17	0
10	QPSK	25	12	16.30	16.31	16.39		
10	QPSK	25	25	16.31	16.29	16.23		
10	QPSK	50	0	16.08	16.43	16.22		
10	16QAM	1	0	16.26	16.20	16.32	17	0
10	16QAM	1	25	16.18	16.04	16.07		
10	16QAM	1	49	16.29	16.13	16.20		
10	16QAM	25	0	16.42	16.48	16.51	17	0
10	16QAM	25	12	16.48	16.17	16.13		
10	16QAM	25	25	16.31	16.57	16.37		
10	16QAM	50	0	16.43	16.49	16.41		
10	64QAM	1	0	16.15	16.21	16.40	17	0
10	64QAM	1	25	16.20	16.09	16.28		
10	64QAM	1	49	16.38	16.14	16.01		
10	64QAM	25	0	16.49	16.54	16.45	17	0
10	64QAM	25	12	16.35	16.50	16.29		
10	64QAM	25	25	16.34	16.31	16.21		
10	64QAM	50	0	16.42	16.23	16.38		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	16.45	16.51	16.45	17	0
5	QPSK	1	12	16.30	16.32	16.25		
5	QPSK	1	24	15.89	16.00	15.88		
5	QPSK	12	0	16.36	16.51	16.42	17	0
5	QPSK	12	7	16.24	16.26	16.27		

5	QPSK	12	13	16.36	16.38	16.39		
5	QPSK	25	0	16.21	16.37	16.32		
5	16QAM	1	0	16.16	16.21	16.43	17	0
5	16QAM	1	12	16.14	16.14	16.07		
5	16QAM	1	24	16.29	16.26	16.20		
5	16QAM	12	0	16.58	16.57	16.37	17	0
5	16QAM	12	7	16.42	16.27	16.24		
5	16QAM	12	13	16.45	16.50	16.41		
5	16QAM	25	0	16.39	16.45	16.25		
5	64QAM	1	0	16.25	16.24	16.35	17	0
5	64QAM	1	12	16.13	16.09	16.26		
5	64QAM	1	24	16.35	16.11	16.00		
5	64QAM	12	0	16.50	16.53	16.43	17	0
5	64QAM	12	7	16.36	16.41	16.32		
5	64QAM	12	13	16.27	16.38	16.31		
5	64QAM	25	0	16.57	16.34	16.41		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	16.46	16.61	16.46	17	0
3	QPSK	1	8	16.42	16.42	16.41		
3	QPSK	1	14	15.96	15.86	15.92		
3	QPSK	8	0	16.35	16.40	16.44	17	0
3	QPSK	8	4	16.32	16.37	16.41		
3	QPSK	8	7	16.30	16.33	16.24		
3	QPSK	15	0	16.26	16.50	16.34		
3	16QAM	1	0	16.26	16.32	16.43	17	0
3	16QAM	1	8	16.12	16.02	16.11		
3	16QAM	1	14	16.25	16.13	16.17		
3	16QAM	8	0	16.59	16.37	16.43	17	0
3	16QAM	8	4	16.39	16.23	16.18		
3	16QAM	8	7	16.46	16.50	16.28		
3	16QAM	15	0	16.46	16.53	16.32		
3	64QAM	1	0	16.12	16.14	16.38	17	0
3	64QAM	1	8	16.09	16.02	16.20		
3	64QAM	1	14	16.29	16.24	16.06		
3	64QAM	8	0	16.43	16.47	16.50	17	0
3	64QAM	8	4	16.51	16.48	16.34		
3	64QAM	8	7	16.34	16.39	16.22		
3	64QAM	15	0	16.39	16.34	16.27		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	16.44	16.48	16.44	17	0
1.4	QPSK	1	3	16.39	16.43	16.23		
1.4	QPSK	1	5	16.06	15.94	15.85		
1.4	QPSK	3	0	16.41	16.54	16.34		
1.4	QPSK	3	1	16.33	16.20	16.40		
1.4	QPSK	3	3	16.38	16.35	16.35		
1.4	QPSK	6	0	16.13	16.49	16.36	17	0
1.4	16QAM	1	0	16.18	16.32	16.49	17	0
1.4	16QAM	1	3	16.15	16.10	16.24		
1.4	16QAM	1	5	16.32	16.29	16.19		
1.4	16QAM	3	0	16.46	16.46	16.46		
1.4	16QAM	3	1	16.53	16.17	16.13		
1.4	16QAM	3	3	16.50	16.41	16.29		
1.4	16QAM	6	0	16.35	16.42	16.35	17	0
1.4	64QAM	1	0	16.24	16.10	16.29	17	0

1.4	64QAM	1	3	16.19	16.15	16.24		
1.4	64QAM	1	5	16.33	16.09	15.89		
1.4	64QAM	3	0	16.40	16.44	16.42		
1.4	64QAM	3	1	16.48	16.44	16.27		
1.4	64QAM	3	3	16.40	16.43	16.33		
1.4	64QAM	6	0	16.58	16.30	16.41	17	0

<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	19.84	19.86	19.76	20	0
10	QPSK	1	25	19.54	19.48	19.52		
10	QPSK	1	49	19.50	19.36	19.49		
10	QPSK	25	0	19.57	19.59	19.55	20	0
10	QPSK	25	12	19.55	19.54	19.54		
10	QPSK	25	25	19.26	19.29	19.32		
10	QPSK	50	0	19.37	19.41	19.33		
10	16QAM	1	0	19.80	19.82	19.78	20	0
10	16QAM	1	25	19.72	19.68	19.75		
10	16QAM	1	49	19.73	19.68	19.72		
10	16QAM	25	0	19.36	19.38	19.35	20	0
10	16QAM	25	12	19.56	19.57	19.53		
10	16QAM	25	25	19.27	19.33	19.28		
10	16QAM	50	0	19.35	19.30	19.32		
10	64QAM	1	0	19.82	19.78	19.83	20	0
10	64QAM	1	25	19.73	19.71	19.76		
10	64QAM	1	49	19.58	19.72	19.81		
10	64QAM	25	0	19.36	19.34	19.39	20	0
10	64QAM	25	12	19.53	19.50	19.57		
10	64QAM	25	25	19.27	19.22	19.33		
10	64QAM	50	0	19.30	19.30	19.37		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	19.72	19.67	19.59	20	0
5	QPSK	1	12	19.54	19.45	19.34		
5	QPSK	1	24	19.42	19.18	19.39		
5	QPSK	12	0	19.57	19.50	19.45	20	0
5	QPSK	12	7	19.46	19.35	19.49		
5	QPSK	12	13	19.24	19.11	19.28		
5	QPSK	25	0	19.25	19.22	19.21		
5	16QAM	1	0	19.76	19.79	19.61	20	0
5	16QAM	1	12	19.70	19.54	19.71		
5	16QAM	1	24	19.66	19.51	19.57		
5	16QAM	12	0	19.21	19.22	19.35	20	0
5	16QAM	12	7	19.38	19.45	19.43		
5	16QAM	12	13	19.20	19.16	19.20		
5	16QAM	25	0	19.35	19.15	19.12		
5	64QAM	1	0	19.79	19.60	19.72	20	0
5	64QAM	1	12	19.55	19.67	19.65		
5	64QAM	1	24	19.47	19.71	19.74		
5	64QAM	12	0	19.30	19.30	19.36	20	0
5	64QAM	12	7	19.33	19.41	19.43		

5	64QAM	12	13	19.18	19.19	19.15		
5	64QAM	25	0	19.11	19.15	19.24		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	19.78	19.85	19.64	20	0
3	QPSK	1	8	19.52	19.33	19.35		
3	QPSK	1	14	19.36	19.36	19.34		
3	QPSK	8	0	19.49	19.51	19.49	20	0
3	QPSK	8	4	19.44	19.41	19.41		
3	QPSK	8	7	19.18	19.21	19.28		
3	QPSK	15	0	19.25	19.39	19.28		
3	16QAM	1	0	19.78	19.74	19.75	20	0
3	16QAM	1	8	19.53	19.58	19.74		
3	16QAM	1	14	19.70	19.51	19.66		
3	16QAM	8	0	19.18	19.30	19.15	20	0
3	16QAM	8	4	19.42	19.48	19.39		
3	16QAM	8	7	19.25	19.19	19.24		
3	16QAM	15	0	19.28	19.21	19.21		
3	64QAM	1	0	19.65	19.71	19.68	20	0
3	64QAM	1	8	19.68	19.65	19.65		
3	64QAM	1	14	19.55	19.56	19.66		
3	64QAM	8	0	19.32	19.34	19.22	20	0
3	64QAM	8	4	19.45	19.34	19.54		
3	64QAM	8	7	19.13	19.12	19.20		
3	64QAM	15	0	19.13	19.16	19.36		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	19.73	19.68	19.75	20	0
1.4	QPSK	1	3	19.52	19.40	19.41		
1.4	QPSK	1	5	19.49	19.27	19.49		
1.4	QPSK	3	0	19.54	19.48	19.41		
1.4	QPSK	3	1	19.54	19.54	19.34		
1.4	QPSK	3	3	19.23	19.26	19.20		
1.4	QPSK	6	0	19.34	19.34	19.19	20	0
1.4	16QAM	1	0	19.76	19.81	19.69	20	0
1.4	16QAM	1	3	19.65	19.67	19.73		
1.4	16QAM	1	5	19.53	19.68	19.54		
1.4	16QAM	3	0	19.33	19.20	19.33		
1.4	16QAM	3	1	19.55	19.38	19.51		
1.4	16QAM	3	3	19.12	19.17	19.12		
1.4	16QAM	6	0	19.22	19.16	19.15	20	0
1.4	64QAM	1	0	19.79	19.67	19.64	20	0
1.4	64QAM	1	3	19.61	19.52	19.72		
1.4	64QAM	1	5	19.39	19.57	19.64		
1.4	64QAM	3	0	19.29	19.19	19.36		
1.4	64QAM	3	1	19.36	19.32	19.48		
1.4	64QAM	3	3	19.23	19.06	19.24		
1.4	64QAM	6	0	19.27	19.24	19.29	20	0

<LTE Band 7>

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				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	15.47	15.58	15.72	16	0
20	QPSK	1	49	15.34	15.45	15.53		
20	QPSK	1	99	15.32	15.48	15.61		
20	QPSK	50	0	15.44	15.55	15.68	16	0
20	QPSK	50	24	15.41	15.49	15.62		
20	QPSK	50	50	15.23	15.38	15.51		
20	QPSK	100	0	15.38	15.40	15.47		
20	16QAM	1	0	15.69	15.42	15.44	16	0
20	16QAM	1	49	15.69	15.43	15.64		
20	16QAM	1	99	15.64	15.44	15.65		
20	16QAM	50	0	15.36	15.50	15.46	16	0
20	16QAM	50	24	15.53	15.62	15.67		
20	16QAM	50	50	15.24	15.36	15.47		
20	16QAM	100	0	15.29	15.41	15.43		
20	64QAM	1	0	15.63	15.66	15.40	16	0
20	64QAM	1	49	15.66	15.70	15.64		
20	64QAM	1	99	15.57	15.43	15.60		
20	64QAM	50	0	15.38	15.53	15.49	16	0
20	64QAM	50	24	15.50	15.63	15.69		
20	64QAM	50	50	15.24	15.35	15.49		
20	64QAM	100	0	15.29	15.42	15.45		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	15.43	15.46	15.68	17	0
15	QPSK	1	37	15.25	15.36	15.40		
15	QPSK	1	74	15.23	15.38	15.52		
15	QPSK	36	0	15.27	15.55	15.66	17	0
15	QPSK	36	20	15.24	15.33	15.52		
15	QPSK	36	39	15.07	15.20	15.45		
15	QPSK	75	0	15.21	15.31	15.34		
15	16QAM	1	0	15.58	15.29	15.43	17	0
15	16QAM	1	37	15.54	15.23	15.60		
15	16QAM	1	74	15.46	15.26	15.62		
15	16QAM	36	0	15.36	15.36	15.37	17	0
15	16QAM	36	20	15.53	15.55	15.64		
15	16QAM	36	39	15.20	15.34	15.36		
15	16QAM	75	0	15.26	15.29	15.35		
15	64QAM	1	0	15.60	15.54	15.20	17	0
15	64QAM	1	37	15.63	15.66	15.60		
15	64QAM	1	74	15.46	15.34	15.56		
15	64QAM	36	0	15.34	15.49	15.41	17	0
15	64QAM	36	20	15.44	15.49	15.49		
15	64QAM	36	39	15.07	15.16	15.35		
15	64QAM	75	0	15.12	15.27	15.25		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	15.29	15.44	15.61	17	0
10	QPSK	1	25	15.28	15.28	15.49		
10	QPSK	1	49	15.19	15.30	15.46		
10	QPSK	25	0	15.44	15.46	15.56	17	0
10	QPSK	25	12	15.23	15.48	15.42		

10	QPSK	25	25	15.13	15.18	15.48		
10	QPSK	50	0	15.22	15.30	15.36		
10	16QAM	1	0	15.69	15.40	15.36	17	0
10	16QAM	1	25	15.59	15.28	15.60		
10	16QAM	1	49	15.63	15.35	15.59		
10	16QAM	25	0	15.32	15.40	15.32	17	0
10	16QAM	25	12	15.44	15.61	15.58		
10	16QAM	25	25	15.10	15.27	15.46		
10	16QAM	50	0	15.29	15.41	15.35		
10	64QAM	1	0	15.51	15.54	15.37	17	0
10	64QAM	1	25	15.51	15.52	15.64		
10	64QAM	1	49	15.38	15.40	15.41		
10	64QAM	25	0	15.30	15.37	15.33	17	0
10	64QAM	25	12	15.35	15.46	15.69		
10	64QAM	25	25	15.20	15.28	15.42		
10	64QAM	50	0	15.27	15.26	15.45		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	15.41	15.48	15.65	17	0
5	QPSK	1	12	15.22	15.26	15.34		
5	QPSK	1	24	15.31	15.48	15.49		
5	QPSK	12	0	15.42	15.35	15.49	17	0
5	QPSK	12	7	15.36	15.31	15.44		
5	QPSK	12	13	15.21	15.25	15.39		
5	QPSK	25	0	15.30	15.24	15.34		
5	16QAM	1	0	15.57	15.35	15.37	17	0
5	16QAM	1	12	15.60	15.25	15.45		
5	16QAM	1	24	15.54	15.28	15.64		
5	16QAM	12	0	15.26	15.31	15.30	17	0
5	16QAM	12	7	15.45	15.46	15.59		
5	16QAM	12	13	15.19	15.28	15.38		
5	16QAM	25	0	15.16	15.30	15.36		
5	64QAM	1	0	15.47	15.59	15.21	17	0
5	64QAM	1	12	15.62	15.55	15.55		
5	64QAM	1	24	15.40	15.24	15.47		
5	64QAM	12	0	15.26	15.42	15.31	17	0
5	64QAM	12	7	15.47	15.53	15.53		
5	64QAM	12	13	15.04	15.26	15.48		
5	64QAM	25	0	15.27	15.26	15.29		

<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	20.16	20.24	20.23	21	0
10	QPSK	1	25	20.14	20.13	20.10		
10	QPSK	1	49	20.14	20.22	20.20		
10	QPSK	25	0	20.12	20.23	20.20	21	0
10	QPSK	25	12	20.09	20.15	20.11		
10	QPSK	25	25	20.05	20.16	20.14		
10	QPSK	50	0	20.17	20.22	20.14		
10	16QAM	1	0	20.19	20.03	20.14	21	0
10	16QAM	1	25	20.17	20.20	20.07		

10	16QAM	1	49	20.07	20.02	20.03		
10	16QAM	25	0	20.23	20.01	20.15	21	0
10	16QAM	25	12	20.08	20.09	20.04		
10	16QAM	25	25	20.08	20.19	20.12		
10	16QAM	50	0	20.16	20.23	20.23		
10	64QAM	1	0	20.04	20.18	20.23	21	0
10	64QAM	1	25	20.14	20.18	20.13		
10	64QAM	1	49	20.20	20.07	20.02		
10	64QAM	25	0	19.62	20.03	20.15	21	0
10	64QAM	25	12	20.03	20.05	20.05		
10	64QAM	25	25	20.16	20.23	20.12		
10	64QAM	50	0	20.20	20.08	20.20		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	19.98	20.14	20.21	21.5	0
5	QPSK	1	12	19.94	19.94	19.99		
5	QPSK	1	24	20.04	20.03	20.12		
5	QPSK	12	0	20.11	20.16	20.02	21.5	0
5	QPSK	12	7	19.99	20.11	20.04		
5	QPSK	12	13	20.01	20.03	19.94		
5	QPSK	25	0	20.01	20.09	19.96		
5	16QAM	1	0	20.08	20.00	20.13	21.5	0
5	16QAM	1	12	20.07	20.05	19.94		
5	16QAM	1	24	19.97	19.97	19.83		
5	16QAM	12	0	20.03	19.82	20.04	21.5	0
5	16QAM	12	7	20.07	20.02	19.96		
5	16QAM	12	13	20.02	20.13	20.04		
5	16QAM	25	0	20.07	20.22	20.08		
5	64QAM	1	0	20.03	19.98	20.23	21.5	0
5	64QAM	1	12	20.03	20.16	20.05		
5	64QAM	1	24	20.02	19.92	19.94		
5	64QAM	12	0	19.60	19.95	20.12	21.5	0
5	64QAM	12	7	20.00	20.04	19.85		
5	64QAM	12	13	20.07	20.22	20.04		
5	64QAM	25	0	20.04	19.93	20.01		
Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	20.11	20.20	20.05	21.5	0
3	QPSK	1	8	20.02	19.94	19.95		
3	QPSK	1	14	20.00	20.22	20.00		
3	QPSK	8	0	20.11	20.14	20.10	21.5	0
3	QPSK	8	4	20.09	20.11	19.99		
3	QPSK	8	7	19.93	20.14	19.96		
3	QPSK	15	0	20.17	20.17	19.96		
3	16QAM	1	0	20.06	19.90	20.03	21.5	0
3	16QAM	1	8	20.08	20.14	20.05		
3	16QAM	1	14	19.98	19.91	19.87		
3	16QAM	8	0	20.04	19.97	20.01	21.5	0
3	16QAM	8	4	19.88	20.07	19.95		
3	16QAM	8	7	20.08	20.17	20.06		
3	16QAM	15	0	19.96	20.08	20.09		
3	64QAM	1	0	20.02	20.00	20.21	21.5	0
3	64QAM	1	8	20.13	20.17	19.94		
3	64QAM	1	14	20.13	19.93	19.85		
3	64QAM	8	0	19.52	19.91	20.08	21.5	0
3	64QAM	8	4	19.93	19.85	19.96		

3	64QAM	8	7	20.12	20.05	20.07		
3	64QAM	15	0	20.20	19.88	20.03		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	20.13	20.20	20.12	21.5	0
1.4	QPSK	1	3	20.14	20.06	20.07		
1.4	QPSK	1	5	19.95	20.02	20.01		
1.4	QPSK	3	0	19.97	20.21	20.04		
1.4	QPSK	3	1	20.04	20.06	19.93		
1.4	QPSK	3	3	20.03	20.11	20.02		
1.4	QPSK	6	0	20.11	20.14	19.94	21.5	0
1.4	16QAM	1	0	20.00	19.88	20.01	21.5	0
1.4	16QAM	1	3	20.00	20.20	19.89		
1.4	16QAM	1	5	19.92	19.87	19.84		
1.4	16QAM	3	0	20.21	19.97	20.00		
1.4	16QAM	3	1	20.04	20.06	19.98		
1.4	16QAM	3	3	20.02	20.08	19.98		
1.4	16QAM	6	0	19.98	20.23	20.22	21.5	0
1.4	64QAM	1	0	19.94	20.03	20.09	21.5	0
1.4	64QAM	1	3	19.98	20.01	20.01		
1.4	64QAM	1	5	20.09	19.95	19.94		
1.4	64QAM	3	0	19.46	19.88	20.01		
1.4	64QAM	3	1	20.03	20.03	19.88		
1.4	64QAM	3	3	20.05	20.18	20.10		
1.4	64QAM	6	0	20.03	20.04	20.19	21.5	0

<LTE Band 13>

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					23230			
Frequency (MHz)					782			
10	QPSK	1	0		20.15		20.5	0
10	QPSK	1	25		20.11			
10	QPSK	1	49		19.99			
10	QPSK	25	0		20.10		20.5	0
10	QPSK	25	12		20.08			
10	QPSK	25	25		19.80			
10	QPSK	50	0		19.89			
10	16QAM	1	0		20.14		20.5	0
10	16QAM	1	25		20.04			
10	16QAM	1	49		20.12			
10	16QAM	25	0		19.97		20.5	0
10	16QAM	25	12		20.13			
10	16QAM	25	25		19.81			
10	16QAM	50	0		19.87			
10	64QAM	1	0		20.01		20.5	0
10	64QAM	1	25		20.07			
10	64QAM	1	49		20.13			
10	64QAM	25	0		19.96		20.5	0
10	64QAM	25	12		20.12			
10	64QAM	25	25		19.79			
10	64QAM	50	0		19.89			
Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		

5	QPSK	1	0	20.15	20.06	20.02	21	0
5	QPSK	1	12	19.95	19.98	20.09		
5	QPSK	1	24	19.86	19.90	19.94		
5	QPSK	12	0	19.94	19.93	19.96	21	0
5	QPSK	12	7	20.01	19.97	19.89		
5	QPSK	12	13	19.66	19.65	19.64		
5	QPSK	25	0	19.83	19.82	19.87		
5	16QAM	1	0	20.09	19.99	20.06	21	0
5	16QAM	1	12	19.85	19.92	19.91		
5	16QAM	1	24	20.00	20.07	19.98		
5	16QAM	12	0	19.90	19.77	19.94	21	0
5	16QAM	12	7	19.94	20.07	20.12		
5	16QAM	12	13	19.78	19.71	19.80		
5	16QAM	25	0	19.81	19.76	19.72		
5	64QAM	1	0	19.90	19.97	20.00	21	0
5	64QAM	1	12	20.06	19.94	20.06		
5	64QAM	1	24	20.12	20.13	19.99		
5	64QAM	12	0	19.93	19.87	19.84	21	0
5	64QAM	12	7	20.07	20.05	20.10		
5	64QAM	12	13	19.69	19.79	19.72		
5	64QAM	25	0	19.69	19.86	19.71		

<LTE Band 14>

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					23330			
Frequency (MHz)					793			
10	QPSK	1	0		19.68		20.5	0
10	QPSK	1	25		19.56			
10	QPSK	1	49		19.40			
10	QPSK	25	0		19.63		20.5	0
10	QPSK	25	12		19.56			
10	QPSK	25	25		19.33			
10	QPSK	50	0		19.40			
10	16QAM	1	0		19.63		20.5	0
10	16QAM	1	25		19.62			
10	16QAM	1	49		19.65			
10	16QAM	25	0		19.42		20.5	0
10	16QAM	25	12		19.60			
10	16QAM	25	25		19.32			
10	16QAM	50	0		19.36			
10	64QAM	1	0		19.64		20.5	0
10	64QAM	1	25		19.66			
10	64QAM	1	49		19.61			
10	64QAM	25	0		19.44		20.5	0
10	64QAM	25	12		19.56			
10	64QAM	25	25		19.33			
10	64QAM	50	0		19.39			
Channel				23305	23330	23355	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				790.5	793	795.5		
5	QPSK	1	0	19.55	19.65	19.64	20.5	0
5	QPSK	1	12	19.53	19.43	19.52		
5	QPSK	1	24	19.29	19.36	19.32		
5	QPSK	12	0	19.57	19.56	19.59	20.5	0
5	QPSK	12	7	19.48	19.36	19.52		
5	QPSK	12	13	19.14	19.21	19.33		

5	QPSK	25	0	19.34	19.28	19.30		
5	16QAM	1	0	19.47	19.45	19.61	20.5	0
5	16QAM	1	12	19.59	19.44	19.52		
5	16QAM	1	24	19.47	19.56	19.52		
5	16QAM	12	0	19.36	19.34	19.31	20.5	0
5	16QAM	12	7	19.40	19.42	19.43		
5	16QAM	12	13	19.15	19.31	19.30		
5	16QAM	25	0	19.26	19.16	19.25		
5	64QAM	1	0	19.61	19.45	19.59	20.5	0
5	64QAM	1	12	19.54	19.63	19.51		
5	64QAM	1	24	19.57	19.42	19.59		
5	64QAM	12	0	19.31	19.35	19.32	20.5	0
5	64QAM	12	7	19.48	19.46	19.54		
5	64QAM	12	13	19.21	19.28	19.26		
5	64QAM	25	0	19.24	19.25	19.35		

<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	15.56	15.53	15.45	16	0
20	QPSK	1	49	15.46	15.53	15.45		
20	QPSK	1	99	15.48	15.54	15.54		
20	QPSK	50	0	15.55	15.53	15.54	16	0
20	QPSK	50	24	15.54	15.50	15.49		
20	QPSK	50	50	15.36	15.33	15.39		
20	QPSK	100	0	15.41	15.36	15.32		
20	16QAM	1	0	15.49	15.40	15.41	16	0
20	16QAM	1	49	15.49	15.48	15.45		
20	16QAM	1	99	15.43	15.42	15.54		
20	16QAM	50	0	15.48	15.40	15.51	16	0
20	16QAM	50	24	15.48	15.46	15.49		
20	16QAM	50	50	15.36	15.46	15.32		
20	16QAM	100	0	15.41	15.32	15.40		
20	64QAM	1	0	15.44	15.39	15.43	16	0
20	64QAM	1	49	15.48	15.34	15.45		
20	64QAM	1	99	15.31	15.39	15.40		
20	64QAM	50	0	15.38	15.31	15.46	16	0
20	64QAM	50	24	15.54	15.47	15.48		
20	64QAM	50	50	15.38	15.31	15.33		
20	64QAM	100	0	15.43	15.38	15.38		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	15.52	15.33	15.31	16.5	0
15	QPSK	1	37	15.33	15.51	15.41		
15	QPSK	1	74	15.45	15.54	15.46		
15	QPSK	36	0	15.40	15.35	15.54	16.5	0
15	QPSK	36	20	15.38	15.38	15.30		
15	QPSK	36	39	15.26	15.28	15.31		
15	QPSK	75	0	15.38	15.22	15.15		
15	16QAM	1	0	15.43	15.33	15.38	16.5	0
15	16QAM	1	37	15.36	15.32	15.30		
15	16QAM	1	74	15.29	15.30	15.35		

15	16QAM	36	0	15.31	15.34	15.41	16.5	0
15	16QAM	36	20	15.42	15.29	15.43		
15	16QAM	36	39	15.22	15.36	15.19		
15	16QAM	75	0	15.34	15.13	15.22		
15	64QAM	1	0	15.35	15.35	15.27	16.5	0
15	64QAM	1	37	15.35	15.34	15.34		
15	64QAM	1	74	15.24	15.31	15.24		
15	64QAM	36	0	15.33	15.14	15.36	16.5	0
15	64QAM	36	20	15.53	15.39	15.39		
15	64QAM	36	39	15.19	15.25	15.29		
15	64QAM	75	0	15.26	15.24	15.26		
Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	15.54	15.44	15.33	16.5	0
10	QPSK	1	25	15.45	15.39	15.32		
10	QPSK	1	49	15.32	15.46	15.43		
10	QPSK	25	0	15.42	15.34	15.48	16.5	0
10	QPSK	25	12	15.37	15.48	15.39		
10	QPSK	25	25	15.22	15.14	15.39		
10	QPSK	50	0	15.30	15.20	15.32		
10	16QAM	1	0	15.40	15.27	15.41	16.5	0
10	16QAM	1	25	15.45	15.41	15.30		
10	16QAM	1	49	15.39	15.26	15.34		
10	16QAM	25	0	15.32	15.24	15.31	16.5	0
10	16QAM	25	12	15.41	15.38	15.41		
10	16QAM	25	25	15.33	15.32	15.32		
10	16QAM	50	0	15.38	15.18	15.32		
10	64QAM	1	0	15.38	15.39	15.38	16.5	0
10	64QAM	1	25	15.31	15.34	15.39		
10	64QAM	1	49	15.29	15.33	15.40		
10	64QAM	25	0	15.20	15.20	15.39	16.5	0
10	64QAM	25	12	15.52	15.41	15.39		
10	64QAM	25	25	15.23	15.19	15.16		
10	64QAM	50	0	15.24	15.37	15.35		
Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	15.43	15.44	15.40	16.5	0
5	QPSK	1	12	15.40	15.41	15.41		
5	QPSK	1	24	15.29	15.53	15.49		
5	QPSK	12	0	15.49	15.48	15.49	16.5	0
5	QPSK	12	7	15.52	15.31	15.40		
5	QPSK	12	13	15.18	15.30	15.32		
5	QPSK	25	0	15.32	15.24	15.17		
5	16QAM	1	0	15.38	15.34	15.31	16.5	0
5	16QAM	1	12	15.45	15.43	15.38		
5	16QAM	1	24	15.35	15.33	15.38		
5	16QAM	12	0	15.39	15.31	15.34	16.5	0
5	16QAM	12	7	15.38	15.40	15.48		
5	16QAM	12	13	15.30	15.40	15.22		
5	16QAM	25	0	15.26	15.29	15.27		
5	64QAM	1	0	15.26	15.25	15.29	16.5	0
5	64QAM	1	12	15.38	15.17	15.43		
5	64QAM	1	24	15.23	15.39	15.24		
5	64QAM	12	0	15.21	15.13	15.26	16.5	0
5	64QAM	12	7	15.50	15.37	15.42		
5	64QAM	12	13	15.28	15.11	15.24		

5	64QAM	25	0	15.28	15.36	15.23		
Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	15.33	15.47	15.43	16.5	0
3	QPSK	1	8	15.39	15.29	15.43		
3	QPSK	1	14	15.35	15.49	15.51		
3	QPSK	8	0	15.39	15.32	15.40	16.5	0
3	QPSK	8	4	15.50	15.45	15.42		
3	QPSK	8	7	15.28	15.19	15.17		
3	QPSK	15	0	15.33	15.09	15.27		
3	16QAM	1	0	15.43	15.25	15.36	16.5	0
3	16QAM	1	8	15.39	15.34	15.18		
3	16QAM	1	14	15.38	15.25	15.34		
3	16QAM	8	0	15.35	15.20	15.43	16.5	0
3	16QAM	8	4	15.34	15.24	15.34		
3	16QAM	8	7	15.10	15.27	15.16		
3	16QAM	15	0	15.34	15.14	15.31		
3	64QAM	1	0	15.41	15.29	15.30	16.5	0
3	64QAM	1	8	15.33	15.10	15.34		
3	64QAM	1	14	15.09	15.25	15.16		
3	64QAM	8	0	15.29	15.14	15.24	16.5	0
3	64QAM	8	4	15.30	15.39	15.25		
3	64QAM	8	7	15.15	15.10	15.21		
3	64QAM	15	0	15.26	15.32	15.22		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	15.38	15.52	15.43	16.5	0
1.4	QPSK	1	3	15.40	15.38	15.44		
1.4	QPSK	1	5	15.44	15.49	15.53		
1.4	QPSK	3	0	15.47	15.40	15.49		
1.4	QPSK	3	1	15.54	15.45	15.43		
1.4	QPSK	3	3	15.35	15.19	15.23		
1.4	QPSK	6	0	15.33	15.16	15.28	16.5	0
1.4	16QAM	1	0	15.44	15.32	15.36	16.5	0
1.4	16QAM	1	3	15.42	15.40	15.27		
1.4	16QAM	1	5	15.39	15.27	15.43		
1.4	16QAM	3	0	15.40	15.23	15.44		
1.4	16QAM	3	1	15.43	15.27	15.36		
1.4	16QAM	3	3	15.18	15.28	15.22		
1.4	16QAM	6	0	15.37	15.14	15.39	16.5	0
1.4	64QAM	1	0	15.44	15.33	15.32	16.5	0
1.4	64QAM	1	3	15.34	15.15	15.38		
1.4	64QAM	1	5	15.17	15.25	15.25		
1.4	64QAM	3	0	15.29	15.22	15.32		
1.4	64QAM	3	1	15.37	15.41	15.29		
1.4	64QAM	3	3	15.18	15.11	15.27		
1.4	64QAM	6	0	15.26	15.37	15.29	16.5	0

<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	19.67	19.68	19.64	20	0
15	QPSK	1	37	19.41	19.52	19.57		
15	QPSK	1	74	19.36	19.37	19.39		
15	QPSK	36	0	19.43	19.53	19.50	20	0
15	QPSK	36	20	19.41	19.51	19.42		
15	QPSK	36	39	19.18	19.23	19.30		
15	QPSK	75	0	19.27	19.36	19.35		
15	16QAM	1	0	19.62	19.54	19.54	20	0
15	16QAM	1	37	19.64	19.57	19.63		
15	16QAM	1	74	19.56	19.62	19.67		
15	16QAM	36	0	19.33	19.34	19.35	20	0
15	16QAM	36	20	19.52	19.51	19.54		
15	16QAM	36	39	19.21	19.25	19.32		
15	16QAM	75	0	19.27	19.33	19.38		
15	64QAM	1	0	19.54	19.58	19.67	20	0
15	64QAM	1	37	19.55	19.59	19.64		
15	64QAM	1	74	19.64	19.57	19.62		
15	64QAM	36	0	19.35	19.33	19.40	20	0
15	64QAM	36	20	19.54	19.50	19.60		
15	64QAM	36	39	19.26	19.24	19.32		
15	64QAM	75	0	19.32	19.28	19.37		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	19.61	19.67	19.48	20	0
10	QPSK	1	25	19.41	19.39	19.46		
10	QPSK	1	49	19.20	19.20	19.34		
10	QPSK	25	0	19.43	19.43	19.37	20	0
10	QPSK	25	12	19.32	19.48	19.32		
10	QPSK	25	25	19.09	19.08	19.28		
10	QPSK	50	0	19.18	19.22	19.33		
10	16QAM	1	0	19.55	19.47	19.44	20	0
10	16QAM	1	25	19.47	19.47	19.56		
10	16QAM	1	49	19.44	19.61	19.67		
10	16QAM	25	0	19.27	19.22	19.29	20	0
10	16QAM	25	12	19.48	19.41	19.36		
10	16QAM	25	25	19.20	19.11	19.32		
10	16QAM	50	0	19.24	19.20	19.19		
10	64QAM	1	0	19.42	19.48	19.63	20	0
10	64QAM	1	25	19.45	19.54	19.50		
10	64QAM	1	49	19.56	19.44	19.50		
10	64QAM	25	0	19.19	19.20	19.40	20	0
10	64QAM	25	12	19.36	19.42	19.55		
10	64QAM	25	25	19.13	19.05	19.21		
10	64QAM	50	0	19.31	19.10	19.21		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	19.66	19.48	19.54	20	0
5	QPSK	1	12	19.35	19.42	19.43		
5	QPSK	1	24	19.34	19.25	19.26		
5	QPSK	12	0	19.27	19.49	19.42	20	0
5	QPSK	12	7	19.34	19.34	19.22		

5	QPSK	12	13	19.15	19.05	19.16		
5	QPSK	25	0	19.21	19.31	19.23		
5	16QAM	1	0	19.47	19.34	19.47	20	0
5	16QAM	1	12	19.64	19.57	19.58		
5	16QAM	1	24	19.46	19.45	19.49		
5	16QAM	12	0	19.32	19.27	19.20	20	0
5	16QAM	12	7	19.34	19.37	19.45		
5	16QAM	12	13	19.16	19.17	19.17		
5	16QAM	25	0	19.08	19.31	19.28		
5	64QAM	1	0	19.41	19.39	19.47	20	0
5	64QAM	1	12	19.43	19.48	19.61		
5	64QAM	1	24	19.62	19.42	19.48		
5	64QAM	12	0	19.23	19.18	19.25	20	0
5	64QAM	12	7	19.53	19.39	19.44		
5	64QAM	12	13	19.23	19.10	19.29		
5	64QAM	25	0	19.30	19.16	19.35		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	19.63	19.67	19.62	20	0
3	QPSK	1	8	19.37	19.41	19.51		
3	QPSK	1	14	19.25	19.34	19.25		
3	QPSK	8	0	19.24	19.44	19.47	20	0
3	QPSK	8	4	19.21	19.43	19.26		
3	QPSK	8	7	19.06	19.19	19.16		
3	QPSK	15	0	19.07	19.33	19.22		
3	16QAM	1	0	19.55	19.51	19.39	20	0
3	16QAM	1	8	19.57	19.47	19.61		
3	16QAM	1	14	19.56	19.42	19.57		
3	16QAM	8	0	19.23	19.21	19.25	20	0
3	16QAM	8	4	19.32	19.31	19.51		
3	16QAM	8	7	19.04	19.08	19.13		
3	16QAM	15	0	19.27	19.19	19.35		
3	64QAM	1	0	19.42	19.55	19.64	20	0
3	64QAM	1	8	19.47	19.52	19.55		
3	64QAM	1	14	19.55	19.47	19.45		
3	64QAM	8	0	19.28	19.15	19.39	20	0
3	64QAM	8	4	19.36	19.38	19.60		
3	64QAM	8	7	19.21	19.07	19.25		
3	64QAM	15	0	19.14	19.22	19.36		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	19.62	19.51	19.62	20	0
1.4	QPSK	1	3	19.33	19.52	19.47		
1.4	QPSK	1	5	19.23	19.22	19.26		
1.4	QPSK	3	0	19.24	19.53	19.37		
1.4	QPSK	3	1	19.25	19.48	19.31		
1.4	QPSK	3	3	19.02	19.08	19.24		
1.4	QPSK	6	0	19.24	19.33	19.15	20	0
1.4	16QAM	1	0	19.48	19.53	19.48	20	0
1.4	16QAM	1	3	19.54	19.41	19.44		
1.4	16QAM	1	5	19.55	19.48	19.53		
1.4	16QAM	3	0	19.31	19.28	19.35		
1.4	16QAM	3	1	19.40	19.37	19.47		
1.4	16QAM	3	3	19.04	19.07	19.20		
1.4	16QAM	6	0	19.22	19.23	19.21	20	0
1.4	64QAM	1	0	19.49	19.57	19.62	20	0

1.4	64QAM	1	3	19.52	19.54	19.51		
1.4	64QAM	1	5	19.54	19.53	19.57		
1.4	64QAM	3	0	19.15	19.28	19.20		
1.4	64QAM	3	1	19.35	19.42	19.59		
1.4	64QAM	3	3	19.22	19.05	19.26		
1.4	64QAM	6	0	19.22	19.22	19.28	20	0

<LTE Band 30>

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					27710			
Frequency (MHz)					2310			
10	QPSK	1	0		16.20		16.5	0
10	QPSK	1	25		16.04			
10	QPSK	1	49		15.94			
10	QPSK	25	0		16.11		16.5	0
10	QPSK	25	12		16.03			
10	QPSK	25	25		16.02			
10	QPSK	50	0		16.10			
10	16QAM	1	0		16.19		16.5	0
10	16QAM	1	25		16.05			
10	16QAM	1	49		16.14			
10	16QAM	25	0		16.11		16.5	0
10	16QAM	25	12		16.15			
10	16QAM	25	25		16.08			
10	16QAM	50	0		16.17			
10	64QAM	1	0		16.15		16.5	0
10	64QAM	1	25		16.03			
10	64QAM	1	49		16.12			
10	64QAM	25	0		16.16		16.5	0
10	64QAM	25	12		16.11			
10	64QAM	25	25		16.16			
10	64QAM	50	0		16.18			
Channel				27685	27710	27735	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2307.5	2310	2312.5		
5	QPSK	1	0	16.14	16.03	16.20	17	0
5	QPSK	1	12	16.01	16.04	15.93		
5	QPSK	1	24	15.87	15.83	15.87		
5	QPSK	12	0	15.93	16.02	16.07	17	0
5	QPSK	12	7	16.02	15.98	15.92		
5	QPSK	12	13	15.93	15.89	15.82		
5	QPSK	25	0	16.10	16.09	16.02		
5	16QAM	1	0	16.18	16.03	16.00	17	0
5	16QAM	1	12	15.90	15.94	15.87		
5	16QAM	1	24	16.13	16.12	15.97		
5	16QAM	12	0	15.93	16.00	16.03	17	0
5	16QAM	12	7	16.07	16.08	16.05		
5	16QAM	12	13	15.93	15.99	16.08		
5	16QAM	25	0	16.14	16.17	16.00		
5	64QAM	1	0	15.98	15.99	16.04	17	0
5	64QAM	1	12	15.96	15.87	15.99		
5	64QAM	1	24	15.97	16.02	15.93		
5	64QAM	12	0	16.04	16.16	15.98	17	0
5	64QAM	12	7	15.99	16.00	15.92		

5	64QAM	12	13	16.00	16.06	15.99		
5	64QAM	25	0	16.11	16.00	16.03		

<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	15.94	15.89	16.26	17	0
20	QPSK	1	49	15.79	15.61	16.05		
20	QPSK	1	99	15.32	15.27	15.99		
20	QPSK	50	0	15.95	15.98	16.03	17	0
20	QPSK	50	24	15.80	15.95	16.01		
20	QPSK	50	50	15.80	15.82	15.82		
20	QPSK	100	0	15.88	15.85	15.89		
20	16QAM	1	0	15.51	15.60	16.04	17	0
20	16QAM	1	49	16.08	16.09	16.07		
20	16QAM	1	99	15.44	15.21	16.00		
20	16QAM	50	0	15.90	15.84	15.94	17	0
20	16QAM	50	24	16.08	15.99	16.07		
20	16QAM	50	50	15.81	15.81	15.85		
20	16QAM	100	0	15.86	15.77	15.90		
20	64QAM	1	0	15.53	15.62	15.82	17	0
20	64QAM	1	49	16.11	15.52	15.83		
20	64QAM	1	99	15.52	15.29	16.14		
20	64QAM	50	0	15.98	15.86	15.94	17	0
20	64QAM	50	24	16.07	15.82	16.03		
20	64QAM	50	50	15.87	15.75	15.86		
20	64QAM	100	0	15.84	15.79	15.88		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	15.69	15.63	16.13	17	0
15	QPSK	1	37	15.64	15.58	16.05		
15	QPSK	1	74	15.20	15.26	15.84		
15	QPSK	36	0	15.76	15.86	15.93	17	0
15	QPSK	36	20	15.61	15.91	15.98		
15	QPSK	36	39	15.60	15.65	15.82		
15	QPSK	75	0	15.76	15.77	15.85		
15	16QAM	1	0	15.31	15.59	15.85	17	0
15	16QAM	1	37	15.96	15.95	15.92		
15	16QAM	1	74	15.29	15.21	15.89		
15	16QAM	36	0	15.73	15.78	15.89	17	0
15	16QAM	36	20	15.98	15.86	16.03		
15	16QAM	36	39	15.64	15.78	15.70		
15	16QAM	75	0	15.73	15.65	15.82		
15	64QAM	1	0	15.49	15.44	15.68	17	0
15	64QAM	1	37	15.97	15.41	15.76		
15	64QAM	1	74	15.45	15.12	16.09		
15	64QAM	36	0	15.79	15.82	15.80	17	0
15	64QAM	36	20	15.89	15.68	15.98		
15	64QAM	36	39	15.79	15.66	15.66		
15	64QAM	75	0	15.77	15.62	15.87		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		

10	QPSK	1	0	15.82	15.62	16.09	17	0
10	QPSK	1	25	15.64	15.56	15.92		
10	QPSK	1	49	15.20	15.25	15.82		
10	QPSK	25	0	15.94	15.79	15.94	17	0
10	QPSK	25	12	15.69	15.76	15.98		
10	QPSK	25	25	15.64	15.64	15.62		
10	QPSK	50	0	15.88	15.74	15.71		
10	16QAM	1	0	15.46	15.59	15.87	17	0
10	16QAM	1	25	15.90	15.92	15.89		
10	16QAM	1	49	15.43	15.09	15.99		
10	16QAM	25	0	15.76	15.82	15.74	17	0
10	16QAM	25	12	16.04	15.97	15.94		
10	16QAM	25	25	15.71	15.69	15.79		
10	16QAM	50	0	15.74	15.60	15.72		
10	64QAM	1	0	15.44	15.47	15.77	17	0
10	64QAM	1	25	15.93	15.41	15.67		
10	64QAM	1	49	15.43	15.23	16.00		
10	64QAM	25	0	15.82	15.67	15.81	17	0
10	64QAM	25	12	16.04	15.73	15.90		
10	64QAM	25	25	15.68	15.58	15.72		
10	64QAM	50	0	15.82	15.72	15.74		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	19.62	20.00	5.00	17	0
5	QPSK	1	12	19.51	0.00	5.00		
5	QPSK	1	24	19.25	0.00	5.00		
5	QPSK	12	0	19.47	20.00	5.00	17	0
5	QPSK	12	7	19.26	0.00	5.00		
5	QPSK	12	13	19.16	0.00	5.00		
5	QPSK	25	0	19.22	0.00	5.00		
5	16QAM	1	0	19.39	20.00	5.00	17	0
5	16QAM	1	12	19.61	0.00	5.00		
5	16QAM	1	24	19.57	0.00	5.00		
5	16QAM	12	0	19.25	20.00	5.00	17	0
5	16QAM	12	7	19.51	0.00	5.00		
5	16QAM	12	13	19.13	0.00	5.00		
5	16QAM	25	0	19.35	0.00	5.00		
5	64QAM	1	0	19.64	20.00	5.00	17	0
5	64QAM	1	12	19.55	0.00	5.00		
5	64QAM	1	24	19.45	0.00	5.00		
5	64QAM	12	0	19.39	20.00	5.00	17	0
5	64QAM	12	7	19.60	0.00	5.00		
5	64QAM	12	13	19.25	0.00	5.00		
5	64QAM	25	0	19.36	0.00	5.00		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	15.67	15.70	16.15	17	0
3	QPSK	1	8	15.68	15.52	15.93		
3	QPSK	1	14	15.13	15.24	15.86		
3	QPSK	8	0	15.80	15.90	15.83	17	0
3	QPSK	8	4	15.75	15.82	15.89		
3	QPSK	8	7	15.68	15.74	15.80		
3	QPSK	15	0	15.78	15.66	15.85		
3	16QAM	1	0	15.44	15.56	15.90	17	0
3	16QAM	1	8	15.96	16.03	16.03		
3	16QAM	1	14	15.43	15.17	15.86		

3	16QAM	8	0	15.80	15.72	15.74	17	0
3	16QAM	8	4	16.08	15.84	15.95		
3	16QAM	8	7	15.71	15.78	15.80		
3	16QAM	15	0	15.84	15.74	15.77		
3	64QAM	1	0	15.36	15.58	15.68	17	0
3	64QAM	1	8	16.05	15.38	15.83		
3	64QAM	1	14	15.43	15.25	16.01		
3	64QAM	8	0	15.88	15.73	15.93	17	0
3	64QAM	8	4	15.99	15.65	15.95		
3	64QAM	8	7	15.87	15.63	15.72		
3	64QAM	15	0	15.69	15.71	15.70		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	15.81	15.67	16.04	17	0
1.4	QPSK	1	3	15.65	15.56	16.00		
1.4	QPSK	1	5	15.32	15.37	15.95		
1.4	QPSK	3	0	15.79	15.89	15.84		
1.4	QPSK	3	1	15.65	15.94	15.96		
1.4	QPSK	3	3	15.64	15.69	15.80		
1.4	QPSK	6	0	15.75	15.67	15.81	17	0
1.4	16QAM	1	0	15.38	15.55	16.04	17	0
1.4	16QAM	1	3	15.91	15.91	16.04		
1.4	16QAM	1	5	15.29	15.05	15.85		
1.4	16QAM	3	0	15.77	15.67	15.76		
1.4	16QAM	3	1	16.01	15.85	15.95		
1.4	16QAM	3	3	15.70	15.63	15.74		
1.4	16QAM	6	0	15.80	15.59	15.73	17	0
1.4	64QAM	1	0	15.37	15.43	15.73	17	0
1.4	64QAM	1	3	15.91	15.50	15.68		
1.4	64QAM	1	5	15.41	15.28	16.14		
1.4	64QAM	3	0	15.87	15.81	15.88		
1.4	64QAM	3	1	15.95	15.81	15.91		
1.4	64QAM	3	3	15.69	15.56	15.66		
1.4	64QAM	6	0	15.76	15.73	15.76	17	0

<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.

a. 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations

b. "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

c. 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.

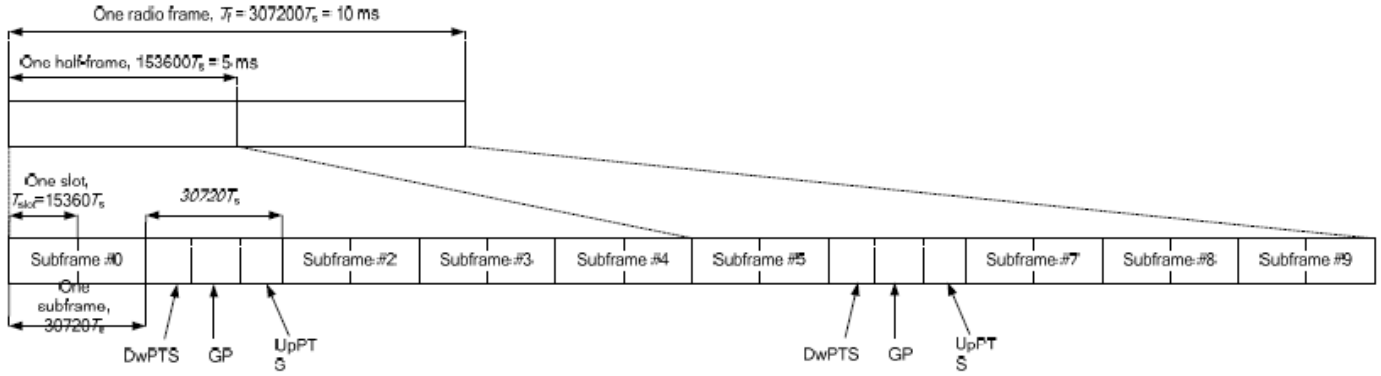


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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	$26336 \cdot T_s$			$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
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:

i. Uplink-downlink configuration: 0. In a half-frame consisted of 5 subfames, uplink operation is in 3 uplink subframes and 1 special subframe.

ii. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink

iii. 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%

iv. 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%

v. 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.

vi. The device supports Power Class 3 uplink-downlink configurations 0 and 6, and Power Class 2 uplink-downlink configurations 1 to 5 operations for LTE Band 41.

vii. The highest available duty cycle for Power Class 2 operation is 43.3% using UL-DL configuration 1, for Power Class 3 operation is 63.3% using UL-DL configuration 0. Per FCC Guidance, all SAR tests were performed using Power Class 3. SAR with Power Class 2 at the available duty factor was additionally performed for the Power Class 3 configuration with the highest SAR among all exposure condition.

Default Power Mode

<LTE Band 38>

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				37850	38000	38150		
Frequency (MHz)				2580	2595	2610		
20	QPSK	1	0	23.98	24.05	24.19	25	0
20	QPSK	1	49	23.61	23.80	23.61		
20	QPSK	1	99	23.34	23.70	23.25		
20	QPSK	50	0	22.79	22.78	22.88	24	1
20	QPSK	50	24	22.90	22.99	22.85		
20	QPSK	50	50	22.72	22.78	22.64		
20	QPSK	100	0	22.69	22.79	22.71		
20	16QAM	1	0	22.77	22.91	22.94	24	1
20	16QAM	1	49	22.76	22.88	22.79		
20	16QAM	1	99	22.53	22.93	22.47		
20	16QAM	50	0	21.78	21.79	21.86	23	2
20	16QAM	50	24	21.95	21.99	21.98		
20	16QAM	50	50	21.72	21.80	21.78		
20	16QAM	100	0	21.73	21.80	21.87		
20	64QAM	1	0	22.53	21.49	21.43	23	2
20	64QAM	1	49	22.56	21.19	21.10		
20	64QAM	1	99	22.37	22.30	22.26		
20	64QAM	50	0	21.63	20.64	20.42	22	3
20	64QAM	50	24	21.64	20.56	20.27		
20	64QAM	50	50	21.62	20.34	20.00		
20	64QAM	100	0	20.55	20.45	20.12		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	23.89	24.02	24.10	25	0
15	QPSK	1	37	23.59	23.78	23.52		
15	QPSK	1	74	23.28	23.67	23.18		
15	QPSK	36	0	22.79	22.73	22.88	24	1
15	QPSK	36	20	22.81	22.96	22.80		
15	QPSK	36	39	22.71	22.70	22.64		
15	QPSK	75	0	22.64	22.74	22.69		
15	16QAM	1	0	22.77	22.89	22.88	24	1
15	16QAM	1	37	22.76	22.83	22.69		
15	16QAM	1	74	22.52	22.85	22.45		
15	16QAM	36	0	21.70	21.74	21.79	23	2
15	16QAM	36	20	21.90	21.92	21.90		
15	16QAM	36	39	21.67	21.73	21.76		
15	16QAM	75	0	21.64	21.77	21.81		
15	64QAM	1	0	22.50	21.49	21.35	23	2
15	64QAM	1	37	22.54	21.11	21.10		
15	64QAM	1	74	22.31	22.15	22.11		
15	64QAM	36	0	21.62	20.58	20.36	22	3
15	64QAM	36	20	21.59	20.51	20.24		
15	64QAM	36	39	21.59	20.27	20.20		
15	64QAM	75	0	20.53	20.39	20.10		
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	23.95	23.97	24.17	25	0
10	QPSK	1	25	23.60	23.71	23.56		
10	QPSK	1	49	23.29	23.65	23.25		
10	QPSK	25	0	22.72	22.69	22.86	24	1

10	QPSK	25	12	22.81	22.98	22.75		
10	QPSK	25	25	22.65	22.75	22.63		
10	QPSK	50	0	22.69	22.76	22.62		
10	16QAM	1	0	22.68	22.89	22.93	24	1
10	16QAM	1	25	22.66	22.84	22.74		
10	16QAM	1	49	22.49	22.86	22.42		
10	16QAM	25	0	21.73	21.69	21.85	23	2
10	16QAM	25	12	21.86	21.93	21.94		
10	16QAM	25	25	21.70	21.80	21.76		
10	16QAM	50	0	21.72	21.73	21.80		
10	64QAM	1	0	22.52	21.42	21.42	23	2
10	64QAM	1	25	22.53	21.13	21.10		
10	64QAM	1	49	22.29	22.15	22.11		
10	64QAM	25	0	21.53	20.55	20.34	22	3
10	64QAM	25	12	21.61	20.51	20.22		
10	64QAM	25	25	21.52	20.30	20.20		
10	64QAM	50	0	20.54	20.36	20.03		
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	23.96	24.04	24.15	25	0
5	QPSK	1	12	23.61	23.70	23.51		
5	QPSK	1	24	23.24	23.61	23.18		
5	QPSK	12	0	22.69	22.68	22.78	24	1
5	QPSK	12	7	22.87	22.95	22.76		
5	QPSK	12	13	22.70	22.74	22.61		
5	QPSK	25	0	22.59	22.77	22.69		
5	16QAM	1	0	22.77	22.81	22.88	24	1
5	16QAM	1	12	22.74	22.81	22.79		
5	16QAM	1	24	22.51	22.93	22.39		
5	16QAM	12	0	21.71	21.72	21.81	23	2
5	16QAM	12	7	21.94	21.90	21.90		
5	16QAM	12	13	21.66	21.77	21.78		
5	16QAM	25	0	21.64	21.77	21.81		
5	64QAM	1	0	22.45	21.47	21.43	23	2
5	64QAM	1	12	22.47	21.12	21.10		
5	64QAM	1	24	22.27	22.15	22.10		
5	64QAM	12	0	21.56	20.54	20.40	22	3
5	64QAM	12	7	21.63	20.56	20.21		
5	64QAM	12	13	21.52	20.25	20.20		
5	64QAM	25	0	20.55	20.38	20.11		

<LTE Band 41>

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	24.03	24.20	23.38	24.15	23.73	25	0
20	QPSK	1	49	23.45	24.11	23.11	23.73	23.78		
20	QPSK	1	99	23.50	23.56	23.23	23.78	23.34		
20	QPSK	50	0	22.38	23.35	22.34	22.68	22.86	24	1
20	QPSK	50	24	22.58	23.30	22.51	22.87	22.90		
20	QPSK	50	50	22.36	23.29	22.81	22.68	22.54		
20	QPSK	100	0	22.39	23.19	22.81	22.69	22.71		
20	16QAM	1	0	22.45	22.75	22.51	22.76	22.43	24	1
20	16QAM	1	49	22.51	23.24	22.94	22.85	22.89		
20	16QAM	1	99	22.58	22.64	22.52	22.87	22.11		
20	16QAM	50	0	21.42	22.37	22.04	21.69	21.91	23	2
20	16QAM	50	24	21.60	22.48	22.23	21.90	21.95		
20	16QAM	50	50	21.37	22.28	21.07	21.69	21.58		
20	16QAM	100	0	21.40	22.31	21.02	21.69	21.73		
20	64QAM	1	0	21.21	21.52	21.05	21.51	21.19	23	2
20	64QAM	1	49	21.31	21.19	21.72	21.60	21.64		
20	64QAM	1	99	21.35	21.05	21.16	21.66	21.09		
20	64QAM	50	0	20.41	20.76	20.61	20.68	20.91	22	3
20	64QAM	50	24	20.58	20.73	20.54	20.91	20.95		
20	64QAM	50	50	20.40	20.68	21.08	20.71	20.57		
20	64QAM	100	0	20.41	20.67	20.60	20.73	20.76		
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	24.09	24.05	23.38	23.66	23.72	25.00	0
15	QPSK	1	37	23.44	23.69	23.10	24.05	23.72		
15	QPSK	1	74	23.44	23.77	23.17	23.55	23.25		
15	QPSK	36	0	22.37	22.65	22.27	23.31	22.77	24	1
15	QPSK	36	20	22.52	22.81	22.48	23.27	22.86		
15	QPSK	36	39	22.30	22.67	22.78	23.28	22.53		
15	QPSK	75	0	22.30	22.66	22.78	23.15	22.68		
15	16QAM	1	0	22.41	22.66	22.49	22.75	22.38	24	1
15	16QAM	1	37	22.49	22.80	22.90	23.15	22.83		
15	16QAM	1	74	22.52	22.84	22.42	22.59	22.36		
15	16QAM	36	0	21.38	21.60	21.94	22.36	21.90	23	2
15	16QAM	36	20	21.55	21.88	22.15	22.45	21.93		
15	16QAM	36	39	21.32	21.61	21.05	22.18	21.56		
15	16QAM	75	0	21.39	21.66	21.02	22.31	21.66		
15	64QAM	1	0	21.12	21.42	21.05	21.42	21.17	23	2
15	64QAM	1	37	21.28	21.58	21.63	21.18	21.57		
15	64QAM	1	74	21.29	21.59	21.12	21.03	21.02		
15	64QAM	36	0	20.34	20.64	20.57	20.76	20.84	22	3
15	64QAM	36	20	20.52	20.90	20.32	20.63	20.94		
15	64QAM	36	39	20.33	20.67	21.03	20.67	20.50		
15	64QAM	75	0	20.34	20.69	20.55	20.64	20.74		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	24.02	24.04	23.36	23.74	23.65	25.00	0
10	QPSK	1	25	23.44	23.64	23.11	24.08	23.68		
10	QPSK	1	49	23.46	23.77	23.22	23.54	23.31		
10	QPSK	25	0	22.37	22.60	22.26	23.25	22.79	24	1
10	QPSK	25	12	22.52	22.86	22.45	23.23	22.90		

10	QPSK	25	25	22.27	22.62	22.73	23.21	22.54		
10	QPSK	50	0	22.29	22.62	22.71	23.14	22.61		
10	16QAM	1	0	22.39	22.68	22.49	22.70	22.43	24	1
10	16QAM	1	25	22.41	22.76	22.93	23.21	22.81		
10	16QAM	1	49	22.52	22.80	22.49	22.63	22.46		
10	16QAM	25	0	21.32	21.59	21.95	22.27	21.89	23	2
10	16QAM	25	12	21.56	21.90	22.23	22.42	21.92		
10	16QAM	25	25	21.36	21.65	21.05	22.28	21.52		
10	16QAM	50	0	21.40	21.64	21.03	22.26	21.65		
10	64QAM	1	0	21.15	21.51	21.10	21.49	21.15	23	2
10	64QAM	1	25	21.21	21.55	21.63	21.17	21.57		
10	64QAM	1	49	21.28	21.56	21.08	21.06	21.01		
10	64QAM	25	0	20.33	20.58	20.54	20.73	20.84	22	3
10	64QAM	25	12	20.56	20.84	20.08	20.72	20.92		
10	64QAM	25	25	20.32	20.66	21.02	20.58	20.56		
10	64QAM	50	0	20.36	20.66	20.55	20.66	20.73		
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	24.06	24.01	23.31	23.72	23.67	25.00	0
5	QPSK	1	12	23.45	23.69	23.15	24.07	23.78		
5	QPSK	1	24	23.43	23.69	23.13	23.55	23.26		
5	QPSK	12	0	22.32	22.59	22.34	23.34	22.81	24	1
5	QPSK	12	7	22.54	22.82	22.44	23.23	22.80		
5	QPSK	12	13	22.28	22.61	22.76	23.22	22.44		
5	QPSK	25	0	22.36	22.62	22.77	23.19	22.66		
5	16QAM	1	0	22.40	22.71	22.50	22.70	22.42	24	1
5	16QAM	1	12	22.43	22.78	22.85	23.18	22.83		
5	16QAM	1	24	22.54	22.85	22.48	22.64	22.41		
5	16QAM	12	0	21.39	21.69	22.04	22.32	21.87	23	2
5	16QAM	12	7	21.56	21.85	22.18	22.40	21.88		
5	16QAM	12	13	21.37	21.65	22.10	22.28	21.58		
5	16QAM	25	0	21.33	21.68	21.05	22.24	21.71		
5	64QAM	1	0	21.16	21.50	21.04	21.50	21.18	23	2
5	64QAM	1	12	21.31	21.59	21.67	21.18	21.61		
5	64QAM	1	24	21.31	21.60	21.07	21.10	21.00		
5	64QAM	12	0	20.39	20.66	20.53	20.68	20.85	22	3
5	64QAM	12	7	20.57	20.91	20.21	20.70	20.89		
5	64QAM	12	13	20.38	20.66	21.01	20.62	20.50		
5	64QAM	25	0	20.35	20.64	20.56	20.66	20.76		

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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	26.37	26.13	26.10	24.68	26.11	26.5	0
20	QPSK	1	49	26.36	25.96	26.30	24.58	25.50		
20	QPSK	1	99	26.20	26.13	26.10	24.58	24.54		
20	QPSK	50	0	25.31	25.24	25.29	23.81	25.35	25.5	1
20	QPSK	50	24	25.39	25.14	25.37	23.68	24.72		
20	QPSK	50	50	25.27	25.24	25.24	23.77	23.91		
20	QPSK	100	0	25.28	25.05	25.13	23.62	24.42		
20	16QAM	1	0	25.31	25.38	25.39	24.15	25.11	25.5	1
20	16QAM	1	49	25.31	25.34	25.20	23.73	24.85		
20	16QAM	1	99	25.36	25.23	25.40	23.56	23.67		
20	16QAM	50	0	24.32	24.12	24.39	22.93	24.17	24.5	2
20	16QAM	50	24	24.40	24.17	24.28	22.88	23.89		
20	16QAM	50	50	24.20	24.12	24.05	22.91	23.07		
20	16QAM	100	0	24.18	24.37	24.06	22.85	23.72		
20	64QAM	1	0	23.87	23.63	23.75	22.58	23.86	24.5	2
20	64QAM	1	49	24.22	23.56	23.80	22.61	23.20		
20	64QAM	1	99	24.39	23.70	23.67	22.59	22.51		
20	64QAM	50	0	23.33	22.65	22.97	21.57	22.73	23.5	3
20	64QAM	50	24	23.28	22.68	22.87	21.70	22.23		
20	64QAM	50	50	23.29	22.72	22.69	21.64	21.53		
20	64QAM	100	0	23.37	22.63	22.73	21.61	21.96		
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	26.32	26.08	26.04	24.65	26.02	26.50	0
15	QPSK	1	37	26.29	25.89	26.20	24.57	25.50		
15	QPSK	1	74	26.10	26.03	26.08	24.58	24.52		
15	QPSK	36	0	25.23	25.18	25.21	23.71	25.30	25.5	1
15	QPSK	36	20	25.31	25.12	25.33	23.63	24.71		
15	QPSK	36	39	25.18	25.15	25.15	23.70	23.91		
15	QPSK	75	0	25.24	25.05	25.09	23.72	24.41		
15	16QAM	1	0	25.24	25.29	25.33	24.15	25.09	25.5	1
15	16QAM	1	37	25.21	25.34	25.10	23.72	24.75		
15	16QAM	1	74	25.31	25.21	25.33	23.70	23.59		
15	16QAM	36	0	24.32	24.06	24.32	22.85	24.08	24.5	2
15	16QAM	36	20	24.30	24.15	24.28	22.80	23.83		
15	16QAM	36	39	24.11	24.07	24.04	22.81	22.97		
15	16QAM	75	0	24.16	24.32	23.97	22.75	23.64		
15	64QAM	1	0	23.87	23.63	23.69	22.69	23.80	24.5	2
15	64QAM	1	37	24.14	23.52	23.72	22.74	23.19		
15	64QAM	1	74	24.32	23.62	23.62	22.59	22.52		
15	64QAM	36	0	23.28	22.58	22.94	21.57	22.66	23.5	3
15	64QAM	36	20	23.19	22.61	22.84	21.65	22.13		
15	64QAM	36	39	23.26	22.69	22.69	21.58	22.05		
15	64QAM	75	0	23.32	22.54	22.69	21.58	21.96		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	26.22	26.02	25.99	24.57	25.97	26.50	0
10	QPSK	1	25	26.19	25.88	26.20	24.51	25.45		
10	QPSK	1	49	26.04	25.98	26.07	24.54	24.66		
10	QPSK	25	0	25.16	25.17	25.15	23.71	25.25	25.5	1
10	QPSK	25	12	25.30	25.04	25.27	23.59	24.62		

10	QPSK	25	25	25.08	25.12	25.12	23.66	23.87		
10	QPSK	50	0	25.17	25.02	25.03	23.65	24.38		
10	16QAM	1	0	25.24	25.20	25.26	24.07	25.05	25.5	1
10	16QAM	1	25	25.20	25.33	25.08	23.71	24.70		
10	16QAM	1	49	25.27	25.19	25.30	23.69	23.60		
10	16QAM	25	0	24.22	24.01	24.30	22.78	23.98	24.5	2
10	16QAM	25	12	24.24	24.12	24.27	22.79	23.82		
10	16QAM	25	25	24.04	23.97	23.98	22.76	22.95		
10	16QAM	50	0	24.10	24.22	23.92	22.69	23.60		
10	64QAM	1	0	23.87	23.62	23.65	22.69	23.78	24.5	2
10	64QAM	1	25	24.06	23.44	23.71	22.73	23.09		
10	64QAM	1	49	24.30	23.61	23.55	22.56	23.01		
10	64QAM	25	0	23.25	22.50	22.93	21.62	22.59	23.5	3
10	64QAM	25	12	23.15	22.52	22.77	21.60	22.12		
10	64QAM	25	25	23.18	22.67	22.59	21.58	22.05		
10	64QAM	50	0	23.31	22.49	22.61	21.55	21.91		
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	26.27	25.98	25.95	24.61	26.01	26.50	0
5	QPSK	1	12	26.20	25.89	26.17	24.51	25.50		
5	QPSK	1	24	26.05	26.00	26.08	24.58	24.51		
5	QPSK	12	0	25.21	25.12	25.20	23.70	25.21	25.5	1
5	QPSK	12	7	25.23	25.08	25.32	23.64	24.67		
5	QPSK	12	13	25.15	25.11	25.05	23.70	23.89		
5	QPSK	25	0	25.17	24.96	25.06	23.64	24.31		
5	16QAM	1	0	25.17	25.28	25.30	24.06	25.07	25.5	1
5	16QAM	1	12	25.16	25.29	25.05	23.70	24.72		
5	16QAM	1	24	25.28	25.20	25.24	23.62	23.54		
5	16QAM	12	0	24.31	23.97	24.27	22.75	24.06	24.5	2
5	16QAM	12	7	24.20	24.13	24.25	22.70	23.73		
5	16QAM	12	13	24.10	24.05	23.98	22.80	22.97		
5	16QAM	25	0	24.15	24.32	23.94	22.73	23.63		
5	64QAM	1	0	23.86	23.54	23.66	22.62	23.70	24.5	2
5	64QAM	1	12	24.12	23.48	23.67	22.71	23.16		
5	64QAM	1	24	24.23	23.61	23.54	22.69	23.10		
5	64QAM	12	0	23.20	22.50	22.91	21.69	22.62	23.5	3
5	64QAM	12	7	23.11	22.53	22.75	21.58	22.12		
5	64QAM	12	13	23.19	22.61	22.59	21.71	21.59		
5	64QAM	25	0	23.26	22.44	22.64	21.56	21.89		

<LTE Band 48>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				55340	55830	56150	56640		
Frequency (MHz)				3560	3609	3641	3690		
20	QPSK	1	0	22.03	22.41	22.57	22.46	23	0
20	QPSK	1	49	22.03	22.40	22.46	22.41		
20	QPSK	1	99	21.96	22.38	22.35	22.28		
20	QPSK	50	0	20.98	21.37	21.50	21.39	22	1
20	QPSK	50	24	21.13	21.53	21.60	21.52		
20	QPSK	50	50	20.91	21.28	21.36	21.24		
20	QPSK	100	0	20.95	21.31	21.44	21.33		
20	16QAM	1	0	21.16	21.50	21.69	21.61	22	1
20	16QAM	1	49	21.12	21.52	21.56	21.50		
20	16QAM	1	99	21.07	21.40	21.46	21.33		
20	16QAM	50	0	19.99	20.37	20.53	20.41	21	2
20	16QAM	50	24	20.16	20.52	20.64	20.54		
20	16QAM	50	50	19.92	20.25	20.39	20.27		
20	16QAM	100	0	19.95	20.33	20.44	20.34		
20	64QAM	1	0	19.94	20.32	20.44	20.03	21	2
20	64QAM	1	49	19.84	20.27	20.17	19.71		
20	64QAM	1	99	19.84	20.24	19.98	19.45		
20	64QAM	50	0	18.99	19.40	19.54	19.07	20	3
20	64QAM	50	24	19.16	19.55	19.58	18.93		
20	64QAM	50	50	18.90	19.26	19.39	18.73		
20	64QAM	100	0	18.95	19.35	19.46	18.86		
Channel				55315	55820	56160	56665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3557.5	3608	3642	3692.5		
15	QPSK	1	0	22.01	22.35	22.52	22.36	23	0
15	QPSK	1	37	21.97	22.32	22.41	22.38		
15	QPSK	1	74	21.87	22.35	22.33	22.28		
15	QPSK	36	0	20.98	21.36	21.48	21.39	22	1
15	QPSK	36	20	21.08	21.47	21.50	21.46		
15	QPSK	36	39	20.90	21.21	21.27	21.18		
15	QPSK	75	0	20.95	21.25	21.37	21.26		
15	16QAM	1	0	21.16	21.46	21.63	21.57	22	1
15	16QAM	1	37	21.03	21.46	21.48	21.41		
15	16QAM	1	74	21.00	21.37	21.41	21.30		
15	16QAM	36	0	19.89	20.34	20.48	20.34	21	2
15	16QAM	36	20	20.12	20.50	20.54	20.45		
15	16QAM	36	39	19.92	20.20	20.34	20.25		
15	16QAM	75	0	19.91	20.27	20.41	20.33		
15	64QAM	1	0	19.89	20.24	20.41	20.03	21	2
15	64QAM	1	37	19.82	20.27	20.08	19.66		
15	64QAM	1	74	19.79	20.16	19.97	19.44		
15	64QAM	36	0	18.96	19.32	19.49	19.04	20	3
15	64QAM	36	20	19.07	19.50	19.56	18.84		
15	64QAM	36	39	18.86	19.20	19.36	18.68		
15	64QAM	75	0	18.95	19.29	19.45	18.80		
Channel				55290	55815	56165	56690	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3555	3607.5	3642.5	3695		
10	QPSK	1	0	22.03	22.31	22.51	22.46	23	0
10	QPSK	1	25	22.00	22.34	22.43	22.41		
10	QPSK	1	49	21.91	22.30	22.34	22.28		
10	QPSK	25	0	20.93	21.29	21.47	21.36	22	1
10	QPSK	25	12	21.04	21.44	21.60	21.50		

10	QPSK	25	25	20.86	21.24	21.30	21.22		
10	QPSK	50	0	20.91	21.25	21.34	21.32		
10	16QAM	1	0	21.07	21.45	21.59	21.53	22	1
10	16QAM	1	25	21.05	21.44	21.55	21.45		
10	16QAM	1	49	20.97	21.32	21.42	21.26		
10	16QAM	25	0	19.92	20.27	20.44	20.33	21	2
10	16QAM	25	12	20.16	20.44	20.55	20.52		
10	16QAM	25	25	19.86	20.16	20.38	20.26		
10	16QAM	50	0	19.93	20.27	20.35	20.30		
10	64QAM	1	0	19.89	20.32	20.39	20.03	21	2
10	64QAM	1	25	19.76	20.18	20.11	19.66		
10	64QAM	1	49	19.81	20.23	19.89	19.43		
10	64QAM	25	0	18.99	19.37	19.53	18.98	20	3
10	64QAM	25	12	19.16	19.54	19.50	18.83		
10	64QAM	25	25	18.86	19.17	19.33	18.68		
10	64QAM	50	0	18.86	19.30	19.36	18.77		
Channel				55265	55810	56170	56715	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3552.5	3607	3643	3697.5		
5	QPSK	1	0	21.99	22.37	22.49	22.39	23	0
5	QPSK	1	12	22.03	22.37	22.44	22.37		
5	QPSK	1	24	21.91	22.35	22.26	22.28		
5	QPSK	12	0	20.98	21.37	21.50	21.30	22	1
5	QPSK	12	7	21.13	21.52	21.54	21.42		
5	QPSK	12	13	20.81	21.20	21.32	21.19		
5	QPSK	25	0	20.92	21.26	21.38	21.27		
5	16QAM	1	0	21.16	21.49	21.69	21.51	22	1
5	16QAM	1	12	21.05	21.50	21.50	21.43		
5	16QAM	1	24	21.05	21.37	21.37	21.30		
5	16QAM	12	0	19.91	20.30	20.43	20.31	21	2
5	16QAM	12	7	20.07	20.42	20.62	20.51		
5	16QAM	12	13	19.85	20.20	20.34	20.24		
5	16QAM	25	0	19.86	20.24	20.38	20.29		
5	64QAM	1	0	19.85	20.25	20.36	20.03	21	2
5	64QAM	1	12	19.75	20.19	20.11	19.64		
5	64QAM	1	24	19.84	20.20	19.92	19.42		
5	64QAM	12	0	18.96	19.35	19.47	19.00	20	3
5	64QAM	12	7	19.16	19.51	19.49	18.89		
5	64QAM	12	13	18.90	19.24	19.29	18.73		
5	64QAM	25	0	18.95	19.29	19.43	18.86		

Reduced Power Mode

<LTE Band 38>

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				37850	38000	38150		
Frequency (MHz)				2580	2595	2610		
20	QPSK	1	0	16.64	16.68	16.78	17.5	0
20	QPSK	1	49	16.55	16.52	16.10		
20	QPSK	1	99	16.42	16.53	16.08		
20	QPSK	50	0	16.58	16.60	16.70	17.5	0
20	QPSK	50	24	16.42	16.52	16.62		
20	QPSK	50	50	16.44	16.49	16.66		
20	QPSK	100	0	16.51	16.53	16.57		
20	16QAM	1	0	16.74	16.72	16.09	17.5	0
20	16QAM	1	49	16.65	16.67	16.78		
20	16QAM	1	99	16.49	16.57	16.14		
20	16QAM	50	0	16.60	16.62	16.60	17.5	0
20	16QAM	50	24	16.74	16.76	16.77		
20	16QAM	50	50	16.46	16.50	16.66		
20	16QAM	100	0	16.53	16.55	16.65		
20	64QAM	1	0	16.36	16.36	15.72	17.5	0
20	64QAM	1	49	16.30	16.35	16.41		
20	64QAM	1	99	16.17	16.25	15.79		
20	64QAM	50	0	16.61	16.61	16.64	17.5	0
20	64QAM	50	24	16.71	16.76	16.63		
20	64QAM	50	50	16.47	16.51	16.68		
20	64QAM	100	0	16.53	16.58	16.69		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	16.47	16.51	16.69	17.5	0
15	QPSK	1	37	16.48	16.50	15.90		
15	QPSK	1	74	16.38	16.43	16.04		
15	QPSK	36	0	16.58	16.46	16.66	17.5	0
15	QPSK	36	20	16.23	16.43	16.53		
15	QPSK	36	39	16.40	16.49	16.52		
15	QPSK	75	0	16.36	16.50	16.41		
15	16QAM	1	0	16.73	16.57	15.89	17.5	0
15	16QAM	1	37	16.61	16.63	16.66		
15	16QAM	1	74	16.35	16.50	16.13		
15	16QAM	36	0	16.51	16.53	16.56	17.5	0
15	16QAM	36	20	16.73	16.59	16.57		
15	16QAM	36	39	16.35	16.35	16.51		
15	16QAM	75	0	16.45	16.48	16.45		
15	64QAM	1	0	16.21	16.22	15.62	17.5	0
15	64QAM	1	37	16.12	16.21	16.32		
15	64QAM	1	74	16.11	16.23	15.77		
15	64QAM	36	0	16.50	16.58	16.56	17.5	0
15	64QAM	36	20	16.71	16.65	16.47		
15	64QAM	36	39	16.46	16.40	16.59		
15	64QAM	75	0	16.46	16.45	16.53		
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	16.61	16.58	16.72	17.5	0
10	QPSK	1	25	16.35	16.36	16.00		
10	QPSK	1	49	16.24	16.52	15.98		
10	QPSK	25	0	16.45	16.41	16.63	17.5	0

10	QPSK	25	12	16.39	16.39	16.60		
10	QPSK	25	25	16.38	16.43	16.66		
10	QPSK	50	0	16.38	16.41	16.40		
10	16QAM	1	0	16.56	16.57	16.02		
10	16QAM	1	25	16.57	16.52	16.70	17.5	0
10	16QAM	1	49	16.30	16.51	16.14		
10	16QAM	25	0	16.50	16.57	16.44		
10	16QAM	25	12	16.56	16.67	16.69	17.5	0
10	16QAM	25	25	16.26	16.30	16.48		
10	16QAM	50	0	16.53	16.35	16.50		
10	64QAM	1	0	16.35	16.23	15.53		
10	64QAM	1	25	16.18	16.18	16.25	17.5	0
10	64QAM	1	49	15.99	16.24	15.79		
10	64QAM	25	0	16.47	16.54	16.52		
10	64QAM	25	12	16.64	16.62	16.51	17.5	0
10	64QAM	25	25	16.29	16.31	16.56		
10	64QAM	50	0	16.49	16.46	16.68		
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	16.49	16.61	16.68		
5	QPSK	1	12	16.41	16.43	16.03	17.5	0
5	QPSK	1	24	16.41	16.38	15.97		
5	QPSK	12	0	16.45	16.59	16.60		
5	QPSK	12	7	16.25	16.32	16.42	17.5	0
5	QPSK	12	13	16.36	16.34	16.60		
5	QPSK	25	0	16.32	16.42	16.44		
5	16QAM	1	0	16.69	16.69	16.03		
5	16QAM	1	12	16.62	16.52	16.67	17.5	0
5	16QAM	1	24	16.42	16.43	16.08		
5	16QAM	12	0	16.49	16.53	16.53		
5	16QAM	12	7	16.62	16.75	16.71	17.5	0
5	16QAM	12	13	16.44	16.35	16.60		
5	16QAM	25	0	16.42	16.37	16.51		
5	64QAM	1	0	16.27	16.25	15.53		
5	64QAM	1	12	16.21	16.17	16.28	17.5	0
5	64QAM	1	24	16.16	16.09	15.77		
5	64QAM	12	0	16.51	16.46	16.50		
5	64QAM	12	7	16.64	16.69	16.62	17.5	0
5	64QAM	12	13	16.35	16.42	16.62		
5	64QAM	25	0	16.43	16.55	16.66		

<LTE Band 41>

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	16.97	17.23	16.59	16.87	16.60	17.5	0
20	QPSK	1	49	16.92	16.71	16.50	16.81	16.54		
20	QPSK	1	99	16.93	16.74	16.48	16.54	15.97		
20	QPSK	50	0	17.00	17.13	17.10	17.11	17.09	17.5	0
20	QPSK	50	24	16.92	16.85	17.02	17.10	17.07		
20	QPSK	50	50	16.89	16.64	17.06	17.07	16.74		
20	QPSK	100	0	16.93	16.99	16.97	16.94	16.89		
20	16QAM	1	0	17.12	16.83	16.49	16.89	16.54	17.5	0
20	16QAM	1	49	17.07	16.81	17.18	17.14	16.99		
20	16QAM	1	99	16.97	16.83	16.54	16.67	16.03		
20	16QAM	50	0	17.02	16.73	17.00	17.15	17.04	17.5	0
20	16QAM	50	24	17.16	16.86	17.19	17.18	17.09		
20	16QAM	50	50	16.90	16.65	17.06	17.09	16.77		
20	16QAM	100	0	16.95	16.71	17.05	17.03	16.91		
20	64QAM	1	0	16.76	16.46	16.12	16.53	16.11	17.5	0
20	64QAM	1	49	16.75	16.48	16.81	17.19	16.66		
20	64QAM	1	99	16.65	16.46	16.19	16.30	15.68		
20	64QAM	50	0	17.01	16.73	17.04	17.18	17.04	17.5	0
20	64QAM	50	24	17.16	16.86	17.03	17.18	17.10		
20	64QAM	50	50	16.91	16.68	17.08	17.09	16.78		
20	64QAM	100	0	16.98	16.73	17.09	17.16	16.91		
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	16.94	17.10	16.55	16.67	16.55	17.50	0
15	QPSK	1	37	16.88	16.71	16.32	16.66	16.54		
15	QPSK	1	74	16.80	16.68	16.41	16.45	15.92		
15	QPSK	36	0	16.92	16.96	16.97	16.93	17.01	17.5	0
15	QPSK	36	20	16.84	16.70	16.96	16.93	16.99		
15	QPSK	36	39	16.80	16.53	16.99	16.91	16.57		
15	QPSK	75	0	16.78	16.80	16.91	16.83	16.88		
15	16QAM	1	0	16.94	16.66	16.45	16.78	16.47	17.5	0
15	16QAM	1	37	16.87	16.77	17.12	17.14	16.79		
15	16QAM	1	74	16.79	16.69	16.39	16.60	15.83		
15	16QAM	36	0	17.02	16.71	16.82	17.13	17.01	17.5	0
15	16QAM	36	20	17.10	16.74	17.11	17.06	16.95		
15	16QAM	36	39	16.81	16.45	16.89	17.01	16.66		
15	16QAM	75	0	16.92	16.67	17.01	17.01	16.75		
15	64QAM	1	0	16.76	16.43	15.92	16.40	15.93	17.5	0
15	64QAM	1	37	16.74	16.36	16.76	17.07	16.63		
15	64QAM	1	74	16.63	16.45	16.03	16.12	15.57		
15	64QAM	36	0	16.98	16.65	17.04	17.08	16.95	17.5	0
15	64QAM	36	20	16.97	16.84	16.99	16.98	16.90		
15	64QAM	36	39	16.73	16.55	17.08	17.03	16.75		
15	64QAM	75	0	16.96	16.71	17.04	16.99	16.78		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	16.81	17.11	16.55	16.77	16.45	17.50	0
10	QPSK	1	25	16.82	16.61	16.37	16.66	16.42		
10	QPSK	1	49	16.85	16.57	16.30	16.44	15.93		
10	QPSK	25	0	16.87	16.99	17.03	16.95	17.03	17.5	0
10	QPSK	25	12	16.85	16.72	16.90	16.95	16.96		

10	QPSK	25	25	16.83	16.52	16.92	16.92	16.68		
10	QPSK	50	0	16.78	16.81	16.81	16.76	16.78		
10	16QAM	1	0	17.03	16.76	16.47	16.75	16.51	17.5	0
10	16QAM	1	25	17.01	16.67	17.14	17.02	16.92		
10	16QAM	1	49	16.90	16.81	16.50	16.65	15.84		
10	16QAM	25	0	16.90	16.56	16.85	17.04	16.90	17.5	0
10	16QAM	25	12	17.12	16.73	16.99	17.18	17.01		
10	16QAM	25	25	16.81	16.64	16.97	17.07	16.59		
10	16QAM	50	0	16.84	16.61	17.04	16.88	16.85		
10	64QAM	1	0	16.64	16.46	16.11	16.44	16.01	17.5	0
10	64QAM	1	25	16.73	16.40	16.76	17.03	16.53		
10	64QAM	1	49	16.49	16.46	15.99	16.29	15.64		
10	64QAM	25	0	16.93	16.58	16.93	17.02	16.89	17.5	0
10	64QAM	25	12	17.15	16.82	16.86	17.13	17.09		
10	64QAM	25	25	16.77	16.66	16.88	17.03	16.64		
10	64QAM	50	0	16.82	16.66	16.97	17.15	16.83		
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	16.95	17.10	16.46	16.87	16.44	17.50	0
5	QPSK	1	12	16.76	16.66	16.49	16.75	16.48		
5	QPSK	1	24	16.90	16.60	16.42	16.34	15.79		
5	QPSK	12	0	16.97	17.05	16.96	17.06	17.01	17.5	0
5	QPSK	12	7	16.72	16.85	16.93	17.07	16.87		
5	QPSK	12	13	16.78	16.60	17.05	16.95	16.59		
5	QPSK	25	0	16.88	16.87	16.79	16.93	16.86		
5	16QAM	1	0	17.08	16.78	16.42	16.73	16.37	17.5	0
5	16QAM	1	12	16.92	16.78	17.17	16.95	16.97		
5	16QAM	1	24	16.81	16.69	16.51	16.61	15.92		
5	16QAM	12	0	17.02	16.59	16.90	17.10	17.04	17.5	0
5	16QAM	12	7	16.99	16.75	17.13	17.02	17.04		
5	16QAM	12	13	16.85	16.61	16.90	16.99	16.70		
5	16QAM	25	0	16.78	16.56	16.89	16.86	16.84		
5	64QAM	1	0	16.59	16.40	16.11	16.42	16.11	17.5	0
5	64QAM	1	12	16.57	16.34	16.75	16.99	16.51		
5	64QAM	1	24	16.46	16.41	16.07	16.21	16.10		
5	64QAM	12	0	16.91	16.68	17.02	17.16	16.87	17.5	0
5	64QAM	12	7	17.04	16.75	16.98	17.07	17.08		
5	64QAM	12	13	16.86	16.49	16.93	17.04	16.69		
5	64QAM	25	0	16.94	16.59	17.02	16.96	16.81		

<LTE Band 41 HPUE>

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	17.64	17.36	17.04	17.99	17.09	19	0
20	QPSK	1	49	17.61	17.33	17.68	17.94	17.52		
20	QPSK	1	99	17.56	17.39	17.11	17.17	17.71		
20	QPSK	50	0	17.71	17.39	17.70	17.53	17.72	19	0
20	QPSK	50	24	17.84	17.53	17.89	17.95	17.80		
20	QPSK	50	50	17.59	17.33	17.74	17.96	17.44		
20	QPSK	100	0	17.66	17.36	17.73	17.73	17.58		
20	16QAM	1	0	17.92	17.64	17.34	17.70	17.38	19	0
20	16QAM	1	49	17.92	17.65	17.77	17.82	17.82		
20	16QAM	1	99	17.82	17.63	17.40	17.49	17.35		
20	16QAM	50	0	17.75	17.44	17.72	17.87	17.76	19	0
20	16QAM	50	24	17.89	17.60	17.95	17.31	17.83		
20	16QAM	50	50	17.63	17.39	17.79	17.58	17.49		
20	16QAM	100	0	17.68	17.38	17.77	17.89	17.62		
20	64QAM	1	0	17.77	17.50	17.17	17.54	17.19	19	0
20	64QAM	1	49	17.76	17.49	17.81	17.84	17.66		
20	64QAM	1	99	17.67	17.48	17.25	17.38	17.71		
20	64QAM	50	0	17.74	17.45	17.74	17.87	17.77	19	0
20	64QAM	50	24	17.87	17.62	17.94	17.96	17.81		
20	64QAM	50	50	17.62	17.40	17.79	17.80	17.48		
20	64QAM	100	0	17.67	17.41	17.78	17.96	17.61		
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	17.62	17.25	16.96	17.80	16.94	19.00	0
15	QPSK	1	37	17.45	17.25	17.65	17.90	17.47		
15	QPSK	1	74	17.49	17.23	16.92	16.98	17.64		
15	QPSK	36	0	17.65	17.28	17.59	17.42	17.54	19	0
15	QPSK	36	20	17.78	17.34	17.82	17.77	17.79		
15	QPSK	36	39	17.53	17.14	17.66	17.87	17.35		
15	QPSK	75	0	17.53	17.18	17.72	17.53	17.54		
15	16QAM	1	0	17.79	17.58	17.32	17.69	17.37	19	0
15	16QAM	1	37	17.72	17.56	17.67	17.62	17.81		
15	16QAM	1	74	17.70	17.51	17.29	17.44	17.22		
15	16QAM	36	0	17.72	17.26	17.56	17.81	17.74	19	0
15	16QAM	36	20	17.81	17.59	17.85	17.16	17.66		
15	16QAM	36	39	17.48	17.20	17.69	17.38	17.33		
15	16QAM	75	0	17.58	17.24	17.67	17.85	17.62		
15	64QAM	1	0	17.63	17.43	17.50	17.48	17.03	19	0
15	64QAM	1	37	17.58	17.49	17.75	17.80	17.60		
15	64QAM	1	74	17.54	17.48	17.06	17.24	17.64		
15	64QAM	36	0	17.56	17.35	17.61	17.75	17.64	19	0
15	64QAM	36	20	17.68	17.61	17.82	17.95	17.66		
15	64QAM	36	39	17.62	17.24	17.78	17.74	17.34		
15	64QAM	75	0	17.48	17.30	17.62	17.76	17.60		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	17.47	17.18	17.25	17.83	17.08	19.00	0
10	QPSK	1	25	17.44	17.15	17.66	17.82	17.36		
10	QPSK	1	49	17.37	17.28	17.18	17.10	17.56		
10	QPSK	25	0	17.56	17.25	17.53	17.37	17.58	19	0
10	QPSK	25	12	17.72	17.33	17.85	17.85	17.61		

10	QPSK	25	25	17.49	17.15	17.74	17.80	17.32		
10	QPSK	50	0	17.61	17.18	17.59	17.55	17.57		
10	16QAM	1	0	17.84	17.51	17.21	17.63	17.23	19	0
10	16QAM	1	25	17.75	17.58	17.69	17.70	17.72		
10	16QAM	1	49	17.76	17.48	17.25	17.35	17.18		
10	16QAM	25	0	17.61	17.43	17.72	17.69	17.76	19	0
10	16QAM	25	12	17.82	17.45	17.77	17.16	17.72		
10	16QAM	25	25	17.59	17.37	17.65	17.58	17.36		
10	16QAM	50	0	17.50	17.20	17.63	17.76	17.61		
10	64QAM	1	0	17.60	17.41	17.25	17.37	17.12	19	0
10	64QAM	1	25	17.65	17.43	17.65	17.77	17.47		
10	64QAM	1	49	17.65	17.29	17.25	17.23	17.57		
10	64QAM	25	0	17.54	17.33	17.64	17.81	17.61	19	0
10	64QAM	25	12	17.74	17.50	17.87	17.94	17.81		
10	64QAM	25	25	17.61	17.37	17.75	17.70	17.40		
10	64QAM	50	0	17.55	17.38	17.62	17.84	17.51		
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	17.52	17.17	16.89	17.92	16.94	19.00	0
5	QPSK	1	12	17.57	17.25	17.52	17.86	17.46		
5	QPSK	1	24	17.37	17.34	16.91	17.06	17.54		
5	QPSK	12	0	17.55	17.31	17.60	17.48	17.67	19	0
5	QPSK	12	7	17.79	17.43	17.78	17.77	17.60		
5	QPSK	12	13	17.40	17.27	17.70	17.88	17.35		
5	QPSK	25	0	17.59	17.30	17.70	17.65	17.57		
5	16QAM	1	0	17.79	17.46	17.31	17.56	17.34	19	0
5	16QAM	1	12	17.80	17.55	17.69	17.63	17.62		
5	16QAM	1	24	17.81	17.61	17.35	17.35	17.21		
5	16QAM	12	0	17.61	17.32	17.67	17.72	17.72	19	0
5	16QAM	12	7	17.76	17.51	17.94	17.27	17.69		
5	16QAM	12	13	17.62	17.19	17.66	17.46	17.30		
5	16QAM	25	0	17.60	17.35	17.75	17.78	17.55		
5	64QAM	1	0	17.77	17.44	17.15	17.54	17.18	19	0
5	64QAM	1	12	17.65	17.45	17.77	17.68	17.47		
5	64QAM	1	24	17.62	17.48	17.10	17.23	17.64		
5	64QAM	12	0	17.64	17.36	17.54	17.86	17.58	19	0
5	64QAM	12	7	17.77	17.44	17.74	17.94	17.78		
5	64QAM	12	13	17.43	17.39	17.74	17.61	17.34		
5	64QAM	25	0	17.47	17.41	17.62	17.84	17.50		

<LTE Band 48>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				55340	55830	56150	56640	
Frequency (MHz)				3560	3609	3641	3690	
20	QPSK	1	0	19.47	19.85	19.98	19.93	20
20	QPSK	1	49	19.38	19.55	19.90	19.86	
20	QPSK	1	99	19.40	19.67	19.95	19.88	
20	QPSK	50	0	19.62	19.77	19.87	19.78	20
20	QPSK	50	24	19.51	19.69	19.85	19.75	
20	QPSK	50	50	19.31	19.55	19.84	19.77	
20	QPSK	100	0	19.32	19.49	19.86	19.75	
20	16QAM	1	0	19.45	19.51	19.95	19.86	20
20	16QAM	1	49	19.48	19.65	19.80	19.90	
20	16QAM	1	99	19.44	19.74	19.85	19.81	
20	16QAM	50	0	19.35	19.52	19.84	19.82	20
20	16QAM	50	24	19.53	19.73	19.73	19.82	
20	16QAM	50	50	19.30	19.59	19.88	19.78	
20	16QAM	100	0	19.34	19.53	19.84	19.80	
20	64QAM	1	0	19.08	19.21	19.59	19.31	20
20	64QAM	1	49	19.20	19.38	19.41	19.16	
20	64QAM	1	99	19.18	19.45	19.40	19.21	
20	64QAM	50	0	18.87	18.97	18.97	18.62	20
20	64QAM	50	24	19.04	19.21	18.99	18.59	
20	64QAM	50	50	18.81	19.06	18.92	18.51	
20	64QAM	100	0	18.83	19.02	18.90	18.58	
Channel				55315	55820	56160	56665	Tune-up limit (dBm)
Frequency (MHz)				3557.5	3608	3642	3692.5	
15	QPSK	1	0	19.37	19.74	19.97	19.87	20
15	QPSK	1	37	19.33	19.37	19.83	19.71	
15	QPSK	1	74	19.35	19.67	19.82	19.84	
15	QPSK	36	0	19.62	19.61	19.73	19.69	20
15	QPSK	36	20	19.42	19.64	19.70	19.55	
15	QPSK	36	39	19.25	19.47	19.78	19.59	
15	QPSK	75	0	19.28	19.34	19.81	19.65	
15	16QAM	1	0	19.33	19.37	19.80	19.66	20
15	16QAM	1	37	19.30	19.55	19.60	19.82	
15	16QAM	1	74	19.38	19.73	19.66	19.82	
15	16QAM	36	0	19.17	19.52	19.78	19.73	20
15	16QAM	36	20	19.50	19.61	19.55	19.88	
15	16QAM	36	39	19.21	19.51	19.77	19.70	
15	16QAM	75	0	19.23	19.41	19.73	19.71	
15	64QAM	1	0	19.06	19.02	19.58	19.19	20
15	64QAM	1	37	19.14	19.29	19.25	19.13	
15	64QAM	1	74	19.17	19.28	19.31	19.07	
15	64QAM	36	0	18.86	18.84	18.83	18.52	20
15	64QAM	36	20	18.88	19.09	18.81	18.51	
15	64QAM	36	39	18.65	18.99	18.91	18.44	
15	64QAM	75	0	18.66	18.87	18.84	18.52	
Channel				55290	55815	56165	56690	Tune-up limit (dBm)
Frequency (MHz)				3555	3607.5	3642.5	3695	
10	QPSK	1	0	19.30	19.74	19.84	19.93	20
10	QPSK	1	25	19.25	19.52	19.76	19.76	
10	QPSK	1	49	19.35	19.64	19.86	19.84	
10	QPSK	25	0	19.48	19.75	19.75	19.78	20
10	QPSK	25	12	19.47	19.57	19.74	19.67	

10	QPSK	25	25	19.18	19.35	19.64	19.60	
10	QPSK	50	0	19.19	19.37	19.80	19.58	
10	16QAM	1	0	19.41	19.31	19.90	19.84	20
10	16QAM	1	25	19.41	19.55	19.64	19.96	
10	16QAM	1	49	19.27	19.64	19.85	19.81	
10	16QAM	25	0	19.27	19.33	19.70	19.65	20
10	16QAM	25	12	19.48	19.54	19.59	19.96	
10	16QAM	25	25	19.23	19.39	19.69	19.75	
10	16QAM	50	0	19.14	19.35	19.69	19.77	
10	64QAM	1	0	19.21	19.18	19.59	19.27	20
10	64QAM	1	25	19.09	19.37	19.38	19.14	
10	64QAM	1	49	19.07	19.27	19.24	19.21	
10	64QAM	25	0	18.85	18.94	18.94	18.52	20
10	64QAM	25	12	19.04	19.01	18.87	18.55	
10	64QAM	25	25	18.77	18.96	18.92	18.42	
10	64QAM	50	0	18.79	18.96	18.83	18.40	
Channel				55265	55810	56170	56715	Tune-up limit (dBm)
Frequency (MHz)				3552.5	3607	3643	3697.5	
5	QPSK	1	0	19.35	19.68	19.83	19.80	20
5	QPSK	1	12	19.26	19.37	19.87	19.81	
5	QPSK	1	24	19.38	19.62	19.83	19.76	
5	QPSK	12	0	19.53	19.65	19.85	19.76	20
5	QPSK	12	7	19.50	19.60	19.67	19.72	
5	QPSK	12	13	19.20	19.51	19.67	19.73	
5	QPSK	25	0	19.19	19.48	19.67	19.63	
5	16QAM	1	0	19.32	19.46	19.76	19.75	20
5	16QAM	1	12	19.34	19.51	19.69	19.92	
5	16QAM	1	24	19.25	19.68	19.72	19.96	
5	16QAM	12	0	19.35	19.36	19.66	19.77	20
5	16QAM	12	7	19.41	19.58	19.68	19.79	
5	16QAM	12	13	19.24	19.54	19.73	19.62	
5	16QAM	25	0	19.25	19.53	19.72	19.63	
5	64QAM	1	0	19.01	19.06	19.48	19.26	20
5	64QAM	1	12	19.08	19.22	19.37	19.02	
5	64QAM	1	24	19.18	19.37	19.23	19.03	
5	64QAM	12	0	18.79	18.88	18.87	18.59	20
5	64QAM	12	7	18.84	19.18	18.92	18.59	
5	64QAM	12	13	18.71	18.98	18.81	18.40	
5	64QAM	25	0	18.66	18.91	18.75	18.38	

<LTE Uplink carrier aggregation>

2CC Uplink Carrier Aggregation	
Number	Combination
1	41C

<Intra-band>

General Note:

i. The device supports intra-band uplink carrier aggregation for LTE B66/B41/B48 with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre 3GPP requirement.

ii. The device supports uplink carrier aggregation with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre the 3GPP requirement.

iii. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.

iv. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.

v. Additional SAR measurement for LTE UL CA whit other DL CA combinations active were not required since the maximum output power for this configuration was not > 0.25dB higher than the maximum output power for UL CA active.

<Full power>

CA_41C										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
39750	39948	QPSK	1	0	1	99	1	0	24.02	25
40185	39987	QPSK	1	0	1	99	2	0	24.09	25
40620	40422	QPSK	1	0	1	99	2	0	23.98	25
41055	40857	QPSK	1	0	1	99	2	0	23.95	25
41490	41292	QPSK	1	0	1	99	2	0	24.04	25

<Reduced Power>

CA_41C										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
39750	39948	QPSK	1	0	1	99	1	0	17.08	17.5
40185	39987	QPSK	1	0	1	99	2	0	17.45	17.5
40620	40422	QPSK	1	0	1	99	2	0	17.3	17.5
41055	40857	QPSK	1	0	1	99	2	0	17.42	17.5
41490	41292	QPSK	1	0	1	99	2	0	17.41	17.5

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

General Note:

1. For each antenna, transmit power in SISO operation is larger than (or equal to) the power in MIMO operation, RF exposure compliance of MIMO mode can be deduced from the compliance simultaneous transmission of antennas operating in SISO mode.
2. Per KDB 248227 D01v02r02, the simultaneous SAR provisions in KDB publication 447498 should be applied to determine simultaneous transmission SAR test exclusion for WiFi MIMO. If the sum of 1g single transmission chain SAR measurements is < 1.6W/kg and SAR peak to location ratio ≤ 0.04, no additional SAR measurements for MIMO.
3. The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures. For “Not required”, SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) 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 in the initial test configuration, additional output power measurements were not necessary.
4. 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.
5. 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).
6. 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.
7. 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.
8. Per 201904 TCBC workshops, General principles of FCC KDB Publication 248227 D01 can be applied to determine the SAR Initial Test Configurations and test reduction for 802.11ax SAR testing. For the table below the 802.11ax maximum power is SU (non-OFDMA), and the SU maximum power also higher than RU (OFDMA)
9. In applying the test guidance, the IEEE 802.11 mode with the maximum output power (out of all modes) should be considered for testing
10. For modes with the same maximum output power, the guidance from section 5.3.2 a) of FCC KDB Publication 248227 D01 should be applied, with 802.11ax being considered as the highest 802.11 mode for the appropriate frequency bands
11. When SAR testing for 802.11ax is required
    a. If the maximum output power is highest for OFDMA scenarios, choose the tone size with the maximum number of tones and the highest maximum output power
    b. Otherwise, consider the fully allocated channel for SAR testing
    c. When SAR testing is required on RU sizes less than the fully allocated channel, use the RU number closest to the middle of the channel, choosing the higher RU number when two RUs are equidistant to the middle of the channel

<2.4GHz WLAN>

2.4GHz WLAN				Ant 1			Ant 2			Ant 1+2		
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	Average power (dBm)	Tune-Up Limit	Duty Cycle %	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	16.30	16.50	99.50	16.30	16.50	99.50			
		6	2437	16.30	16.50		16.40	16.50				
		11	2462	16.30	16.50		16.50	16.50				
	802.11g 6Mbps	1	2412	16.40	16.50	97.80	16.40	16.50	97.80			
		6	2437	16.40	16.50		16.40	16.50				
		11	2462	16.40	16.50		16.30	16.50				
	802.11n-HT20 MCS0	1	2412	16.40	16.50	98.80	16.40	16.50	98.80	16.36	16.50	98.80
		6	2437	16.30	16.50		16.40	16.50		16.36	16.50	
		11	2462	16.30	16.50		16.20	16.50		16.41	16.50	
	802.11n-HT40 MCS0	3	2422	16.40	16.50	98.80	16.40	16.50	98.80	15.26	16.50	98.80
		6	2437	16.30	16.50		16.50	16.50		15.96	16.50	
		9	2452	15.80	16.50		16.50	16.50		15.41	16.50	
	802.11ax-HE20 MCS0	1	2412	16.40	16.50	98.80	16.40	16.50	98.80	16.46	16.50	98.80
		6	2437	16.40	16.50		16.40	16.50		16.46	16.50	
		11	2462	16.40	16.50		16.30	16.50		16.41	16.50	
	802.11ax-HE40 MCS0	3	2422	16.20	16.50	98.80	16.30	16.50	98.80	15.21	16.50	98.80
		6	2437	16.20	16.50		16.40	16.50		15.76	16.50	
		9	2452	15.70	16.50		16.40	16.50		14.71	16.50	

<5GHz WLAN>

5.2GHz WLAN				Ant 1			Ant 2			Ant 1+2		
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	Average power (dBm)	Tune-Up Limit	Duty Cycle %	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	16.00	16.00	97.90	15.90	16.00	97.90			
		40	5200	15.90	16.00		15.80	16.00				
		44	5220	15.90	16.00		15.80	16.00				
		48	5240	15.80	16.00		15.90	16.00				
	802.11n-HT20 MCS0	36	5180	15.90	16.00	98.90	15.90	16.00	98.90	15.67	16.00	98.90
		40	5200	15.90	16.00		15.80	16.00		15.67	16.00	
		44	5220	15.80	16.00		15.80	16.00		15.67	16.00	
		48	5240	15.80	16.00		15.80	16.00		15.67	16.00	
	802.11n-HT40 MCS0	38	5190	15.70	16.00	98.90	16.00	16.00	98.90	15.63	16.00	98.90
		46	5230	15.90	16.00		16.00	16.00		15.63	16.00	
	802.11ac-VHT20 MCS0	36	5180	15.90	16.00	98.90	15.80	16.00	98.90	15.82	16.00	98.90
		40	5200	15.80	16.00		15.80	16.00		15.67	16.00	
		44	5220	15.80	16.00		15.80	16.00		15.67	16.00	
		48	5240	15.80	16.00		15.80	16.00		15.67	16.00	
	802.11ac-VHT40 MCS0	38	5190	15.70	16.00	98.90	16.00	16.00	98.90	15.67	16.00	98.90
		46	5230	15.90	16.00		16.00	16.00		15.68	16.00	
	802.11ac-VHT80 MCS0	42	5210	16.00	16.00	98.90	15.90	16.00	98.90	15.47	16.00	98.90
	802.11ax-HE20 MCS0	36	5180	15.90	16.00	98.90	15.90	16.00	98.90	15.77	16.00	98.90
		40	5200	15.80	16.00		15.90	16.00		15.77	16.00	
		44	5220	15.80	16.00		15.90	16.00		15.73	16.00	
		48	5240	15.80	16.00		15.90	16.00		15.63	16.00	
	802.11ax-HE40 MCS0	38	5190	15.90	16.00	98.90	15.80	16.00	98.90	15.83	16.00	98.90
		46	5230	15.70	16.00		15.70	16.00		15.78	16.00	
	802.11ax-HE80 MCS0	42	5210	15.90	16.00	98.90	15.70	16.00	98.90	15.87	16.00	98.90

5.3GHz WLAN				Ant 1			Ant 2			Ant 1+2		
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	Average power (dBm)	Tune-Up Limit	Duty Cycle %	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	16.00	16.00	97.90	15.80	16.00	97.90			
		56	5280	16.00	16.00		15.80	16.00				
		60	5300	16.00	16.00		15.90	16.00				
		64	5320	15.80	16.00		15.90	16.00				
	802.11n-HT20 MCS0	52	5260	15.90	16.00	98.90	15.60	16.00	98.90	15.97	16.00	98.90
		56	5280	15.90	16.00		15.70	16.00		15.71	16.00	
		60	5300	16.00	16.00		15.70	16.00		15.67	16.00	
		64	5320	15.70	16.00		15.80	16.00		15.71	16.00	
	802.11n-HT40 MCS0	54	5270	16.00	16.00	98.90	15.80	16.00	98.90	15.61	16.00	98.90
		62	5310	15.80	16.00		15.90	16.00		15.71	16.00	
	802.11ac-VHT20 MCS0	52	5260	15.90	16.00	98.90	15.80	16.00	98.90	15.97	16.00	98.90
		56	5280	15.90	16.00		15.80	16.00		15.71	16.00	
		60	5300	16.00	16.00		15.80	16.00		15.67	16.00	
		64	5320	15.70	16.00		15.80	16.00		15.71	16.00	
	802.11ac-VHT40 MCS0	54	5270	16.00	16.00	98.90	15.80	16.00	98.90	15.61	16.00	98.90
		62	5310	15.80	16.00		15.90	16.00		15.81	16.00	
	802.11ac-VHT80 MCS0	58	5290	16.00	16.00	98.90	16.00	16.00	98.90	15.67	16.00	98.90
	802.11ac-VHT160 MCS0	50	5250	15.30	16.00	98.90	15.70	16.00	98.90	13.44	16.00	98.90
	802.11ax-HE20 MCS0	52	5260	16.00	16.00	98.90	15.80	16.00	98.90	15.57	16.00	98.90
		56	5280	16.00	16.00		15.80	16.00		15.71	16.00	
		60	5300	16.00	16.00		15.90	16.00		15.71	16.00	
		64	5320	15.90	16.00		15.90	16.00		15.81	16.00	
	802.11ax-HE40 MCS0	54	5270	15.70	16.00	98.90	15.60	16.00	98.90	15.82	16.00	98.90
		62	5310	15.90	16.00		15.60	16.00		15.83	16.00	
	802.11ax-HE80 MCS0	58	5290	15.60	16.00	98.90	15.70	16.00	98.90	15.83	16.00	98.90

5.5GHz WLAN				Ant 1			Ant 2			Ant 1+2		
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	Average power (dBm)	Tune-Up Limit	Duty Cycle %	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	15.90	16.00	97.90	15.80	16.00	97.90			
		116	5580	15.90	16.00		15.90	16.00				
		124	5620	15.80	16.00		15.80	16.00				
		132	5660	15.80	16.00		15.80	16.00				
		144	5720	15.70	16.00		15.80	16.00				
	802.11n-HT20 MCS0	100	5500	15.80	16.00	98.90	15.80	16.00	98.90	15.92	16.00	98.90
		116	5580	15.70	16.00		15.70	16.00		15.77	16.00	
		124	5620	15.70	16.00		15.70	16.00		15.77	16.00	
		132	5660	15.70	16.00		15.70	16.00		15.77	16.00	
		144	5720	15.70	16.00		15.80	16.00		15.72	16.00	
	802.11n-HT40 MCS0	102	5510	15.90	16.00	98.90	15.70	16.00	98.90	15.87	16.00	98.90
		110	5550	15.80	16.00		15.60	16.00		15.87	16.00	
		126	5630	15.80	16.00		15.70	16.00		15.61	16.00	
		134	5670	15.80	16.00		15.70	16.00		15.61	16.00	
		142	5710	15.70	16.00		15.80	16.00		15.66	16.00	
	802.11ac-VHT20 MCS0	100	5500	15.70	16.00	98.90	15.80	16.00	98.90	15.92	16.00	98.90
		116	5580	15.80	16.00		15.90	16.00		15.71	16.00	
		124	5620	15.80	16.00		15.80	16.00		15.71	16.00	
		132	5660	15.80	16.00		15.80	16.00		15.71	16.00	
		144	5720	15.60	16.00		15.90	16.00		15.71	16.00	
	802.11ac-VHT40 MCS0	102	5510	15.90	16.00	98.90	15.70	16.00	98.90	15.92	16.00	98.90
		110	5550	15.80	16.00		15.60	16.00		15.82	16.00	
		126	5630	15.80	16.00		15.70	16.00		15.66	16.00	
		134	5670	15.80	16.00		15.70	16.00		15.66	16.00	
		142	5710	15.70	16.00		15.80	16.00		15.71	16.00	
	802.11ac-VHT80 MCS0	106	5530	15.80	16.00	98.90	15.70	16.00	98.90	15.82	16.00	98.90
		122	5610	15.90	16.00		15.80	16.00		15.76	16.00	
		138	5690	15.70	16.00		15.70	16.00		15.66	16.00	
	802.11ac-VHT160 MCS0	114	5570	15.20	16.00	98.90	15.80	16.00	98.90	15.22	16.00	98.90
	802.11ax-HE20 MCS0	100	5500	15.90	16.00	98.90	15.90	16.00	98.90	15.97	16.00	98.90
		116	5580	15.80	16.00		15.90	16.00		15.86	16.00	
		124	5620	15.80	16.00		15.90	16.00		15.86	16.00	
		132	5660	15.80	16.00		15.90	16.00		15.86	16.00	
		144	5720	15.70	16.00		15.90	16.00		15.77	16.00	
	802.11ax-HE40 MCS0	102	5510	15.70	16.00	98.90	16.00	16.00	98.90	15.67	16.00	98.90
		110	5550	15.60	16.00		15.80	16.00		15.62	16.00	
		126	5630	15.60	16.00		15.80	16.00		15.91	16.00	
		134	5670	15.60	16.00		15.90	16.00		15.91	16.00	
		142	5710	15.60	16.00		15.60	16.00		15.91	16.00	
	802.11ax-HE80 MCS0	106	5530	16.00	16.00	98.90	15.90	16.00	98.90	15.67	16.00	98.90
		122	5610	16.00	16.00		16.00	16.00		15.91	16.00	
		138	5690	16.00	16.00		15.90	16.00		15.81	16.00	
	802.11ax-HE160 MCS0	114	5570	15.10	16.00	97.90	15.70	16.00	97.90	14.96	16.00	97.90

5.8GHz WLAN				Ant 1			Ant 2			Ant 1+2		
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	Average power (dBm)	Tune-Up Limit	Duty Cycle %	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	16.00	16.00	97.90	15.90	16.00	97.90			
		157	5785	16.00	16.00		15.90	16.00				
		165	5825	16.00	16.00		15.80	16.00				
	802.11n-HT20 MCS0	149	5745	15.90	16.00	98.90	15.80	16.00	98.90	15.97	16.00	98.90
		157	5785	15.90	16.00		15.80	16.00		15.97	16.00	
		165	5825	16.00	16.00		16.00	16.00		15.97	16.00	
	802.11n-HT40 MCS0	151	5755	15.80	16.00	98.90	15.80	16.00	98.90	15.97	16.00	98.80
		159	5795	15.80	16.00		15.80	16.00		15.97	16.00	
	802.11ac-VHT20 MCS0	149	5745	15.90	16.00	98.90	15.80	16.00	98.90	15.68	16.00	98.90
		157	5785	15.90	16.00		15.80	16.00		15.78	16.00	
		165	5825	16.00	16.00		15.80	16.00		15.83	16.00	
	802.11ac-VHT40 MCS0	151	5755	15.80	16.00	98.90	15.80	16.00	98.90	15.97	16.00	98.80
		159	5795	15.80	16.00		15.90	16.00		15.97	16.00	
	802.11ac-VHT80 MCS0	155	5775	15.80	16.00	98.90	16.00	16.00	98.90	15.97	16.00	98.80
	802.11ax-HE20 MCS0	149	5745	16.00	16.00	98.90	15.80	16.00	98.90	15.67	16.00	98.90
		157	5785	16.00	16.00		15.90	16.00		15.62	16.00	
		165	5825	16.00	16.00		15.80	16.00		15.77	16.00	
	802.11ax-HE40 MCS0	151	5755	16.00	16.00	98.90	15.80	16.00	98.90	15.77	16.00	98.90
		159	5795	16.00	16.00		15.90	16.00		15.82	16.00	
	802.11ax-HE80 MCS0	155	5775	16.00	16.00	98.90	16.00	16.00	98.90	15.77	16.00	98.90

<2.4GHz Bluetooth>

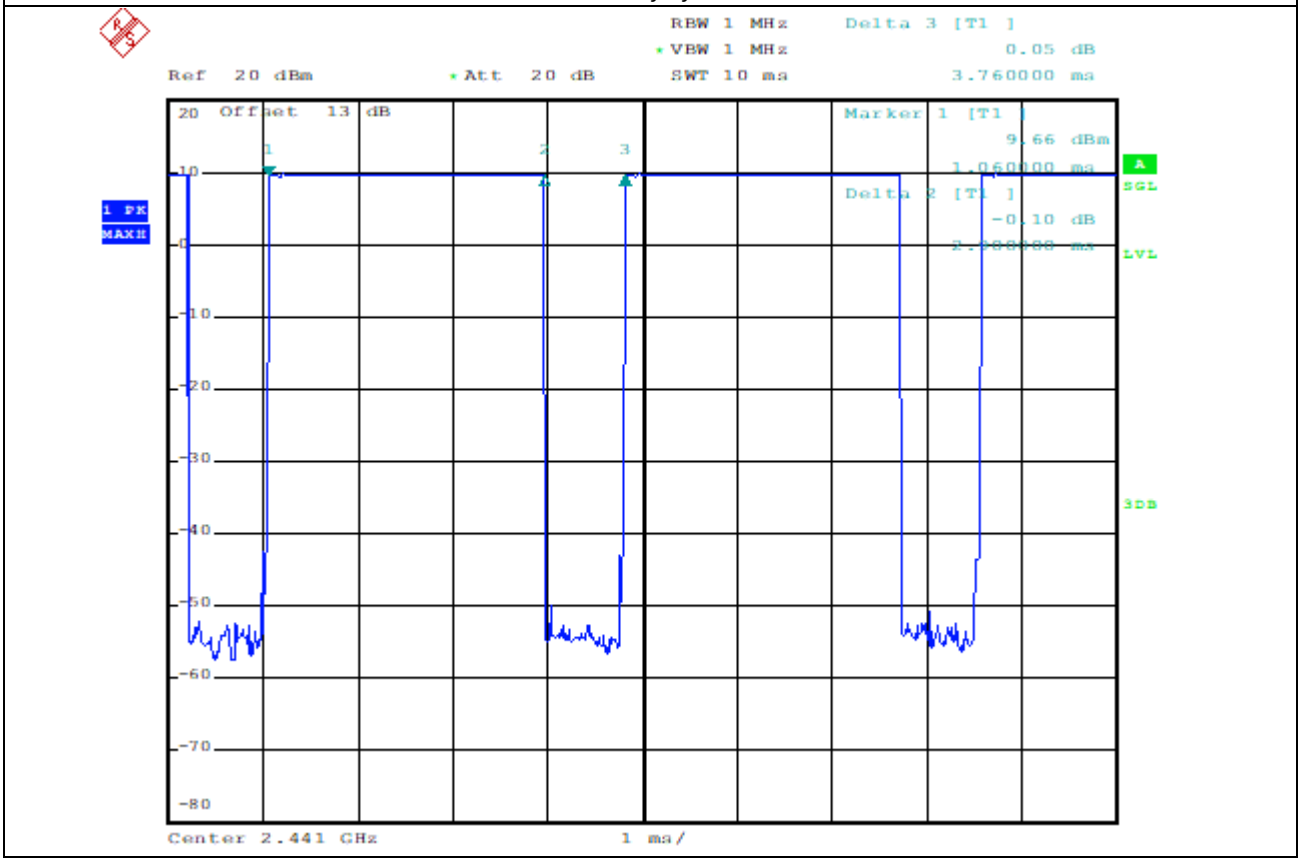
Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	10.05	9.41	9.23
	CH 39	2441	10.16	9.28	9.28
	CH 78	2480	10.36	9.44	9.56
Tune-up Limit			11.50	11.00	11.00

Mode	Channel	Frequency (MHz)	Average power (dBm)	
			1Mbps	2Mbps
LE	CH 00	2402	7.30	7.30
	CH 19	2440	7.30	7.30
	CH 39	2480	7.60	7.60
Tune-up Limit			10.00	10.00

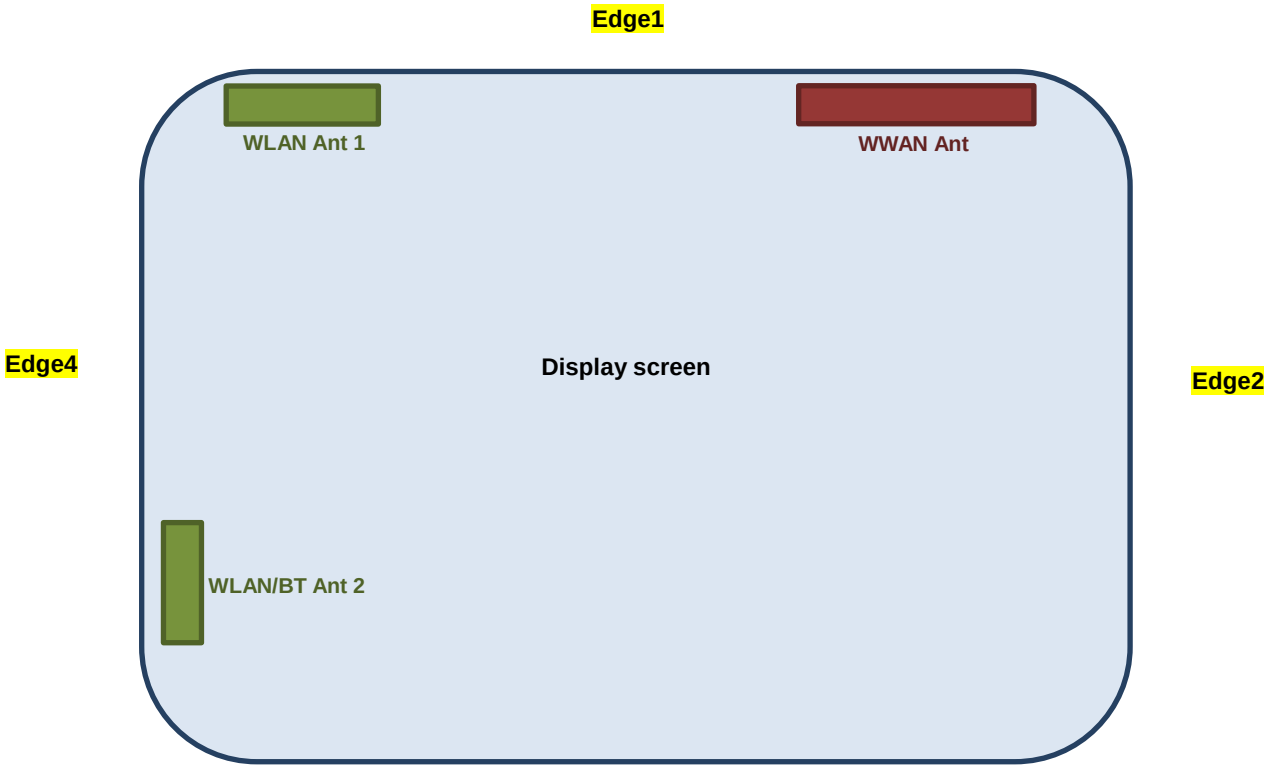
General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps due to its highest average power and duty cycle is 77.13% considered in SAR testing, and the duty cycle would be scaled to theoretical 83.3% in reported SAR calculation.

BT Duty cycle



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	7.9	31.5	203.9	195.5
WLAN Antenna 1	11.4	248.0	203.2	30.0
WLAN/BT Antenna 2	169.1	288.7	32.9	10.3

<SAR test exclusion table>

General Note:

1. The below table, when the distance is < 50 mm exclusion threshold is "Ratio", when the distance is > 50 mm exclusion threshold is "mW"
2. Maximum power is the source-based time-average power and represents the maximum RF output power among production units
3. 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.
4. 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.
5. 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:
   [(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR
   - f(GHz) is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation
   - The result is rounded to one decimal place for comparison
6. 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
   a) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz to 1500 MHz
   b) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz
7. The below table, exemption limits for routine evaluation based on frequency and separation distance was according to SAR-based Exemption – §1.307(b)(3)(i)(B).

Exposure Position	Wireless Interface	WCDMA Band V	WCDMA Band IV	WCDMA Band II	LTE Band 12	LTE Band 13	LTE Band 14	LTE Band 5	LTE Band 26	LTE Band 4	LTE Band 66	LTE Band 2	LTE Band 25	LTE Band 30	LTE Band 7	LTE Band 38	LTE Band 41	LTE Band 48	BT ANT 2	2.4GHz WLAN ANT 1	2.4GHz WLAN ANT 2	5GHz WLAN ANT 1	5GHz WLAN ANT 2
	Calculated Frequency (MHz)	846	1750	1907	715	784	795	848	848	1754	1779	1909	1914	2312	2567	2617	2687	3697	2480	2462	2462	5825	5825
	Maximum power (dBm)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	22.0	25.0	25.0	25.0	23.0	11.5	16.5	16.5	16.0	16.0
	Maximum rated power(mW)	316.23	316.23	316.23	316.23	316.23	316.23	316.23	316.23	316.23	316.23	316.23	316.23	158.49	316.23	316.23	316.23	199.53	14.13	44.67	44.67	39.81	39.81
Bottom Face	Separation distance(mm)	5.0																	5.0	5.0	5.0	5.0	5.0
	exclusion threshold	58.2	83.7	87.3	53.5	56.0	56.4	58.2	58.2	83.8	84.4	87.4	87.5	48.2	101.3	102.3	103.7	76.7	4.5	14.0	14.0	19.2	19.2
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 1	Separation distance(mm)	7.9																	169.1	11.4	169.1	11.4	169.1
	exclusion threshold	36.8	53.0	55.3	33.9	35.4	35.7	36.9	36.9	53.0	53.4	55.3	55.4	30.5	64.1	64.8	65.6	48.6	1286.0	6.2	1286.0	8.4	1253.0
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No
Edge 2	Separation distance(mm)	31.5																	288.7	248.0	288.7	248.0	288.7
	exclusion threshold	9.2	13.3	13.9	8.5	8.9	9.0	9.2	9.2	13.3	13.4	13.9	13.9	7.7	16.1	16.2	16.5	12.2	2482.0	2076.0	2483.0	2042.0	2449.0
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
Edge 3	Separation distance(mm)	203.9																	32.9	203.2	32.9	203.2	32.9
	exclusion threshold	1031.0	1652.0	1648.0	911.0	974.0	984.0	1033.0	1033.0	1652.0	1651.0	1648.0	1647.0	1638.0	1633.0	1632.0	1631.0	1617.0	0.7	1628.0	2.1	1595.0	2.9
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Edge 4	Separation distance(mm)	195.5																	10.3	30.0	10.3	30.0	10.3
	exclusion threshold	984.0	1568.0	1563.0	871.0	930.0	939.0	985.0	985.0	1568.0	1567.0	1563.0	1563.0	1553.0	1548.0	1547.0	1546.0	1533.0	2.2	2.3	6.8	3.2	9.3
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	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 ≥0.8W/kg.
4. For the exposure positions that proximity sensor power reduction is applied for SAR compliance, additional SAR testing with EUT transmitting full power in sensor trigger distance was performed according to section 4. The test results just verification the sensor trigger distance to meet KDB 616217 requirement, when in normal usage will not operate at trigger distance, therefore, these results were not using performed Sim-Tx analysis

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 ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA, DC-HSDPA) are less than ¼ 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 ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4/B5/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.
7. LTE band 2/4/5/38 SAR test was covered by Band 25/66/26/41; 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 ≤ 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, WLAN5.2GHz SAR testing is not required when the WLAN5.3GHz band highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for WLAN5.2GHz 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. For WLAN SAR testing was performed on single antenna RF power in SISO mode is larger or equal to the single antenna RF power in MIMO mode, and for RF exposure assessment of MIMO mode simultaneous transmission exclusion analysis was performed with SAR test results of each antenna in SISO mode.
6. Per KDB 248227 D01v02r02, the simultaneous SAR provisions in KDB publication 447498 should be applied to determine simultaneous transmission SAR test exclusion for WiFi MIMO. If the sum of 1g single transmission chain SAR measurements is < 1.6W/kg and SAR peak to location ratio ≤ 0.04, no additional SAR measurements for MIMO.
7. 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)
	WCDMA II	RMC 12.2Kbps	Bottom Face	29mm	OFF	9400	1880	24.65	25.00	1.084	-0.08	0.389	0.422
	WCDMA II	RMC 12.2Kbps	Edge 1	27mm	OFF	9400	1880	24.65	25.00	1.084	-0.12	0.396	0.429
	WCDMA II	RMC 12.2Kbps	Bottom Face	0mm	ON	9400	1880	14.81	16.00	1.315	-0.09	0.793	1.043
	WCDMA II	RMC 12.2Kbps	Bottom Face	0mm	ON	9262	1852.4	14.77	16.00	1.327	-0.04	0.724	0.961
01	WCDMA II	RMC 12.2Kbps	Bottom Face	0mm	ON	9538	1907.6	14.80	16.00	1.318	-0.07	0.851	1.122
	WCDMA II	RMC 12.2Kbps	Edge 1	0mm	ON	9400	1880	14.81	16.00	1.315	-0.09	0.199	0.262
	WCDMA II	RMC 12.2Kbps	Edge 2	0mm	OFF	9400	1880	24.65	25.00	1.084	0.11	0.154	0.167
	WCDMA IV	RMC 12.2Kbps	Bottom Face	29mm	OFF	1513	1752.6	24.77	25.00	1.054	-0.09	0.451	0.476
	WCDMA IV	RMC 12.2Kbps	Edge 1	27mm	OFF	1513	1752.6	24.77	25.00	1.054	-0.05	0.511	0.539
02	WCDMA IV	RMC 12.2Kbps	Bottom Face	0mm	ON	1513	1752.6	15.46	16.50	1.271	-0.06	0.803	1.020
	WCDMA IV	RMC 12.2Kbps	Bottom Face	0mm	ON	1312	1712.4	15.36	16.50	1.300	-0.06	0.706	0.918
	WCDMA IV	RMC 12.2Kbps	Bottom Face	0mm	ON	1413	1732.6	15.40	16.50	1.288	-0.04	0.765	0.986
	WCDMA IV	RMC 12.2Kbps	Edge 1	0mm	ON	1513	1752.6	15.46	16.50	1.271	-0.09	0.272	0.346
	WCDMA IV	RMC 12.2Kbps	Edge 2	0mm	OFF	1513	1752.6	24.77	25.00	1.054	-0.18	0.196	0.207
	WCDMA V	RMC 12.2Kbps	Bottom Face	29mm	OFF	4182	836.4	24.68	25.00	1.076	-0.09	0.234	0.252
	WCDMA V	RMC 12.2Kbps	Edge 1	27mm	OFF	4182	836.4	24.68	25.00	1.076	-0.08	0.230	0.248
	WCDMA V	RMC 12.2Kbps	Bottom Face	0mm	ON	4182	836.4	19.68	20.50	1.208	-0.07	0.947	1.144
	WCDMA V	RMC 12.2Kbps	Bottom Face	0mm	ON	4132	826.4	19.64	20.50	1.219	-0.05	0.930	1.134
03	WCDMA V	RMC 12.2Kbps	Bottom Face	0mm	ON	4233	846.6	19.60	20.50	1.230	-0.09	0.937	1.153
	WCDMA V	RMC 12.2Kbps	Edge 1	0mm	ON	4182	836.4	19.68	20.50	1.208	-0.09	0.591	0.714
	WCDMA V	RMC 12.2Kbps	Edge 2	0mm	OFF	4182	836.4	24.68	25.00	1.076	-0.18	0.101	0.109
	WCDMA V	RMC 12.2Kbps	Edge 4	0mm	OFF	4182	836.4	24.68	25.00	1.076	0.02	0.002	0.002

<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 7	20M	QPSK	1	0	Bottom Face	29mm	OFF	21350	2560	24.15	25.00	1.216	-0.05	0.174	0.212
	LTE Band 7	20M	QPSK	50	0	Bottom Face	29mm	OFF	21350	2560	22.86	24.00	1.300	-0.11	0.164	0.213
	LTE Band 7	20M	QPSK	1	0	Edge 1	27mm	OFF	21350	2560	24.15	25.00	1.216	-0.03	0.311	0.378
	LTE Band 7	20M	QPSK	50	0	Edge 1	27mm	OFF	21350	2560	22.86	24.00	1.300	-0.11	0.228	0.296
	LTE Band 7	20M	QPSK	1	0	Bottom Face	0mm	ON	21350	2560	15.72	16.00	1.067	-0.07	0.998	1.064
	LTE Band 7	20M	QPSK	1	0	Bottom Face	0mm	ON	20850	2510	15.47	16.00	1.130	-0.1	1.010	1.141
04	LTE Band 7	20M	QPSK	1	0	Bottom Face	0mm	ON	21100	2535	15.58	16.00	1.102	0	1.040	1.146
	LTE Band 7	20M	QPSK	50	0	Bottom Face	0mm	ON	21350	2560	15.68	16.00	1.076	-0.02	0.915	0.985
	LTE Band 7	20M	QPSK	50	0	Bottom Face	0mm	ON	20850	2510	15.44	16.00	1.138	-0.05	0.992	1.129
	LTE Band 7	20M	QPSK	50	0	Bottom Face	0mm	ON	21100	2535	15.55	16.00	1.109	-0.02	0.936	1.038
	LTE Band 7	20M	QPSK	100	0	Bottom Face	0mm	ON	21350	2560	15.47	16.00	1.130	-0.02	0.938	1.060
	LTE Band 7	20M	QPSK	1	0	Edge 1	0mm	ON	21350	2560	15.72	16.00	1.067	-0.02	0.614	0.655
	LTE Band 7	20M	QPSK	50	0	Edge 1	0mm	ON	21350	2560	15.68	16.00	1.076	0	0.593	0.638
	LTE Band 7	20M	QPSK	1	0	Edge 2	0mm	OFF	21350	2560	24.15	25.00	1.216	0.02	0.093	0.113
	LTE Band 7	20M	QPSK	50	0	Edge 2	0mm	OFF	21350	2560	22.86	24.00	1.300	0.11	0.069	0.090
	LTE Band 7	20M	QPSK	1	0	Edge 4	0mm	OFF	21350	2560	24.15	25.00	1.216	0	0.001	0.001
	LTE Band 7	20M	QPSK	50	0	Edge 4	0mm	OFF	21350	2560	22.86	24.00	1.300	0	0.001	0.001
	LTE Band 12	10M	QPSK	1	0	Bottom Face	29mm	OFF	23095	707.5	23.78	25.00	1.324	-0.02	0.082	0.109
	LTE Band 12	10M	QPSK	25	12	Bottom Face	29mm	OFF	23095	707.5	22.85	24.00	1.303	0	0.072	0.094
	LTE Band 12	10M	QPSK	1	0	Edge 1	27mm	OFF	23095	707.5	23.78	25.00	1.324	-0.12	0.063	0.083
	LTE Band 12	10M	QPSK	25	12	Edge 1	27mm	OFF	23095	707.5	22.85	24.00	1.303	-0.09	0.056	0.073
05	LTE Band 12	10M	QPSK	1	0	Bottom Face	0mm	ON	23095	707.5	20.24	21.00	1.191	0.01	0.953	1.135
	LTE Band 12	10M	QPSK	25	0	Bottom Face	0mm	ON	23095	707.5	20.23	21.00	1.194	-0.11	0.889	1.061
	LTE Band 12	10M	QPSK	50	0	Bottom Face	0mm	ON	23095	707.5	20.22	21.00	1.197	-0.12	0.887	1.062
	LTE Band 12	10M	QPSK	1	0	Edge 1	0mm	ON	23095	707.5	20.24	21.00	1.191	-0.05	0.376	0.448
	LTE Band 12	10M	QPSK	25	0	Edge 1	0mm	ON	23095	707.5	20.23	21.00	1.194	-0.09	0.473	0.565
	LTE Band 12	10M	QPSK	1	0	Edge 2	0mm	OFF	23095	707.5	23.78	25.00	1.324	-0.1	0.121	0.160
	LTE Band 12	10M	QPSK	25	12	Edge 2	0mm	OFF	23095	707.5	22.85	24.00	1.303	-0.1	0.103	0.134
	LTE Band 12	10M	QPSK	1	0	Edge 4	0mm	OFF	23095	707.5	23.78	25.00	1.324	0.05	0.002	0.003
	LTE Band 12	10M	QPSK	25	12	Edge 4	0mm	OFF	23095	707.5	22.85	24.00	1.303	0	0.001	0.001
	LTE Band 13	10M	QPSK	1	0	Bottom Face	29mm	OFF	23230	782	24.19	25.00	1.205	-0.08	0.125	0.151
	LTE Band 13	10M	QPSK	25	12	Bottom Face	29mm	OFF	23230	782	23.11	24.00	1.227	-0.1	0.102	0.125
	LTE Band 13	10M	QPSK	1	0	Edge 1	27mm	OFF	23230	782	24.19	25.00	1.205	-0.1	0.102	0.123
	LTE Band 13	10M	QPSK	25	12	Edge 1	27mm	OFF	23230	782	23.11	24.00	1.227	-0.09	0.087	0.107
06	LTE Band 13	10M	QPSK	1	0	Bottom Face	0mm	ON	23230	782	20.15	20.50	1.084	-0.04	1.010	1.095
	LTE Band 13	10M	QPSK	25	0	Bottom Face	0mm	ON	23230	782	20.10	20.50	1.096	-0.09	0.911	0.999
	LTE Band 13	10M	QPSK	50	0	Bottom Face	0mm	ON	23230	782	19.89	20.50	1.151	-0.1	0.904	1.040
	LTE Band 13	10M	QPSK	1	0	Edge 1	0mm	ON	23230	782	20.15	20.50	1.084	-0.06	0.653	0.708
	LTE Band 13	10M	QPSK	25	0	Edge 1	0mm	ON	23230	782	20.10	20.50	1.096	-0.07	0.659	0.723
	LTE Band 13	10M	QPSK	1	0	Edge 2	0mm	OFF	23230	782	24.19	25.00	1.205	-0.1	0.147	0.177
	LTE Band 13	10M	QPSK	25	12	Edge 2	0mm	OFF	23230	782	23.11	24.00	1.227	-0.13	0.114	0.140
	LTE Band 13	10M	QPSK	1	0	Edge 4	0mm	OFF	23230	782	24.19	25.00	1.205	0.01	0.003	0.004
	LTE Band 13	10M	QPSK	25	12	Edge 4	0mm	OFF	23230	782	23.11	24.00	1.227	0.02	0.002	0.002

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 14	10M	QPSK	1	0	Bottom Face	29mm	OFF	23330	793	24.25	25.00	1.189	-0.08	0.123	0.146
	LTE Band 14	10M	QPSK	25	0	Bottom Face	29mm	OFF	23330	793	23.06	24.00	1.242	-0.1	0.095	0.118
	LTE Band 14	10M	QPSK	1	0	Edge 1	27mm	OFF	23330	793	24.25	25.00	1.189	-0.05	0.115	0.137
	LTE Band 14	10M	QPSK	25	0	Edge 1	27mm	OFF	23330	793	23.06	24.00	1.242	-0.04	0.090	0.112
07	LTE Band 14	10M	QPSK	1	0	Bottom Face	0mm	ON	23330	793	19.68	20.50	1.208	-0.06	0.927	1.120
	LTE Band 14	10M	QPSK	25	0	Bottom Face	0mm	ON	23330	793	19.63	20.50	1.222	-0.1	0.823	1.006
	LTE Band 14	10M	QPSK	50	0	Bottom Face	0mm	ON	23330	793	19.40	20.50	1.288	-0.09	0.823	1.060
	LTE Band 14	10M	QPSK	1	0	Edge 1	0mm	ON	23330	793	19.68	20.50	1.208	-0.04	0.552	0.667
	LTE Band 14	10M	QPSK	25	0	Edge 1	0mm	ON	23330	793	19.63	20.50	1.222	-0.06	0.584	0.714
	LTE Band 14	10M	QPSK	1	0	Edge 2	0mm	OFF	23330	793	24.25	25.00	1.189	-0.07	0.149	0.177
	LTE Band 14	10M	QPSK	25	0	Edge 2	0mm	OFF	23330	793	23.06	24.00	1.242	-0.13	0.112	0.139
	LTE Band 14	10M	QPSK	1	0	Edge 4	0mm	OFF	23330	793	24.25	25.00	1.189	0.04	0.003	0.004
	LTE Band 14	10M	QPSK	25	0	Edge 4	0mm	OFF	23330	793	23.06	24.00	1.242	0.11	0.002	0.002
	LTE Band 25	20M	QPSK	1	0	Bottom Face	29mm	OFF	26140	1860	24.30	25.00	1.175	-0.06	0.324	0.381
	LTE Band 25	20M	QPSK	50	24	Bottom Face	29mm	OFF	26140	1860	22.87	24.00	1.297	0.03	0.259	0.336
	LTE Band 25	20M	QPSK	1	0	Edge 1	27mm	OFF	26140	1860	24.30	25.00	1.175	-0.11	0.333	0.391
	LTE Band 25	20M	QPSK	50	24	Edge 1	27mm	OFF	26140	1860	22.87	24.00	1.297	-0.07	0.267	0.346
	LTE Band 25	20M	QPSK	1	0	Bottom Face	0mm	ON	26140	1860	15.56	16.00	1.107	-0.02	0.895	0.990
	LTE Band 25	20M	QPSK	1	0	Bottom Face	0mm	ON	26340	1880	15.53	16.00	1.114	0.08	0.939	1.046
08	LTE Band 25	20M	QPSK	1	0	Bottom Face	0mm	ON	26590	1905	15.45	16.00	1.135	-0.02	1.010	1.146
	LTE Band 25	20M	QPSK	50	0	Bottom Face	0mm	ON	26140	1860	15.55	16.00	1.109	-0.1	0.857	0.951
	LTE Band 25	20M	QPSK	50	0	Bottom Face	0mm	ON	26340	1880	15.53	16.00	1.114	-0.12	0.879	0.979
	LTE Band 25	20M	QPSK	50	0	Bottom Face	0mm	ON	26590	1905	15.54	16.00	1.112	-0.12	0.953	1.059
	LTE Band 25	20M	QPSK	100	0	Bottom Face	0mm	ON	26140	1860	15.41	16.00	1.146	-0.13	0.908	1.040
	LTE Band 25	20M	QPSK	1	0	Edge 1	0mm	ON	26140	1860	15.56	16.00	1.107	-0.09	0.237	0.262
	LTE Band 25	20M	QPSK	50	0	Edge 1	0mm	ON	26140	1860	15.55	16.00	1.109	-0.1	0.221	0.245
	LTE Band 25	20M	QPSK	1	0	Edge 2	0mm	OFF	26140	1860	24.30	25.00	1.175	-0.03	0.150	0.176
	LTE Band 25	20M	QPSK	50	24	Edge 2	0mm	OFF	26140	1860	22.87	24.00	1.297	-0.06	0.116	0.150
	LTE Band 26	15M	QPSK	1	0	Bottom Face	29mm	OFF	26865	831.5	24.21	25.00	1.199	-0.05	0.158	0.190
	LTE Band 26	15M	QPSK	36	20	Bottom Face	29mm	OFF	26865	831.5	23.22	24.00	1.197	-0.04	0.137	0.164
	LTE Band 26	15M	QPSK	1	0	Edge 1	27mm	OFF	26865	831.5	24.21	25.00	1.199	-0.14	0.163	0.196
	LTE Band 26	15M	QPSK	36	20	Edge 1	27mm	OFF	26865	831.5	23.22	24.00	1.197	-0.08	0.138	0.165
09	LTE Band 26	15M	QPSK	1	0	Bottom Face	0mm	ON	26865	831.5	19.68	20.00	1.076	-0.06	1.010	1.087
	LTE Band 26	15M	QPSK	36	0	Bottom Face	0mm	ON	26865	831.5	19.53	20.00	1.114	-0.1	0.966	1.076
	LTE Band 26	15M	QPSK	75	0	Bottom Face	0mm	ON	26865	831.5	19.36	20.00	1.159	-0.13	0.929	1.077
	LTE Band 26	15M	QPSK	1	0	Edge 1	0mm	ON	26865	831.5	19.68	20.00	1.076	0.18	0.662	0.713
	LTE Band 26	15M	QPSK	36	0	Edge 1	0mm	ON	26865	831.5	19.53	20.00	1.114	0.05	0.648	0.722
	LTE Band 26	15M	QPSK	1	0	Edge 2	0mm	OFF	26865	831.5	24.21	25.00	1.199	-0.09	0.168	0.202
	LTE Band 26	15M	QPSK	36	20	Edge 2	0mm	OFF	26865	831.5	23.22	24.00	1.197	-0.09	0.140	0.168
	LTE Band 26	15M	QPSK	1	0	Edge 4	0mm	OFF	26865	831.5	24.21	25.00	1.199	0.04	0.003	0.004
	LTE Band 26	15M	QPSK	36	20	Edge 4	0mm	OFF	26865	831.5	23.22	24.00	1.197	0.01	0.001	0.001

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 30	10M	QPSK	1	0	Bottom Face	29mm	OFF	27710	2310	21.30	22.00	1.175	0.17	0.091	0.107
	LTE Band 30	10M	QPSK	25	12	Bottom Face	29mm	OFF	27710	2310	20.32	21.00	1.169	0.02	0.074	0.087
	LTE Band 30	10M	QPSK	1	0	Edge 1	27mm	OFF	27710	2310	21.30	22.00	1.175	-0.11	0.129	0.152
	LTE Band 30	10M	QPSK	25	12	Edge 1	27mm	OFF	27710	2310	20.32	21.00	1.169	-0.1	0.107	0.125
10	LTE Band 30	10M	QPSK	1	0	Bottom Face	0mm	ON	27710	2310	16.20	16.50	1.072	0.04	1.080	1.157
	LTE Band 30	10M	QPSK	25	0	Bottom Face	0mm	ON	27710	2310	16.11	16.50	1.094	-0.07	1.040	1.138
	LTE Band 30	10M	QPSK	50	0	Bottom Face	0mm	ON	27710	2310	16.10	16.50	1.096	-0.11	1.050	1.151
	LTE Band 30	10M	QPSK	1	0	Edge 1	0mm	ON	27710	2310	16.20	16.50	1.072	-0.17	0.622	0.666
	LTE Band 30	10M	QPSK	25	0	Edge 1	0mm	ON	27710	2310	16.11	16.50	1.094	0.07	0.618	0.676
	LTE Band 30	10M	QPSK	1	0	Edge 2	0mm	OFF	27710	2310	21.30	22.00	1.175	-0.07	0.051	0.060
	LTE Band 30	10M	QPSK	25	12	Edge 2	0mm	OFF	27710	2310	20.32	21.00	1.169	-0.06	0.041	0.048
	LTE Band 66	20M	QPSK	1	0	Bottom Face	29mm	OFF	132572	1770	24.31	25.00	1.172	-0.08	0.391	0.458
	LTE Band 66	20M	QPSK	50	24	Bottom Face	29mm	OFF	132572	1770	22.94	24.00	1.276	-0.03	0.310	0.396
	LTE Band 66	20M	QPSK	1	0	Edge 1	27mm	OFF	132572	1770	24.31	25.00	1.172	-0.07	0.462	0.542
	LTE Band 66	20M	QPSK	50	24	Edge 1	27mm	OFF	132572	1770	22.94	24.00	1.276	-0.06	0.363	0.463
11	LTE Band 66	20M	QPSK	1	0	Bottom Face	0mm	ON	132572	1770	16.26	17.00	1.186	0.01	1.010	1.198
	LTE Band 66	20M	QPSK	1	0	Bottom Face	0mm	ON	132072	1720	15.94	17.00	1.276	0.04	0.749	0.956
	LTE Band 66	20M	QPSK	1	0	Bottom Face	0mm	ON	132322	1745	15.89	17.00	1.291	-0.03	0.816	1.054
	LTE Band 66	20M	QPSK	50	0	Bottom Face	0mm	ON	132572	1770	16.03	17.00	1.250	-0.17	0.927	1.159
	LTE Band 66	20M	QPSK	50	0	Bottom Face	0mm	ON	132072	1720	15.95	17.00	1.274	-0.09	0.811	1.033
	LTE Band 66	20M	QPSK	50	0	Bottom Face	0mm	ON	132322	1745	15.98	17.00	1.265	-0.14	0.884	1.118
	LTE Band 66	20M	QPSK	100	0	Bottom Face	0mm	ON	132572	1770	15.89	17.00	1.291	-0.14	0.925	1.194
	LTE Band 66	20M	QPSK	1	0	Edge 1	0mm	ON	132572	1770	16.26	17.00	1.186	-0.05	0.351	0.416
	LTE Band 66	20M	QPSK	50	0	Edge 1	0mm	ON	132572	1770	16.03	17.00	1.250	-0.15	0.360	0.450
	LTE Band 66	20M	QPSK	1	0	Edge 2	0mm	OFF	132572	1770	24.31	25.00	1.172	-0.16	0.172	0.202
	LTE Band 66	20M	QPSK	50	24	Edge 2	0mm	OFF	132572	1770	22.94	24.00	1.276	-0.08	0.142	0.181

<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	0	Bottom Face	29mm	OFF	40185	2549.5	24.20	25.00	1.202	62.9	1.006	0.03	0.132	0.160
	LTE Band 41	20M	QPSK	50	0	Bottom Face	29mm	OFF	40185	2549.5	23.35	24.00	1.161	62.9	1.006	-0.05	0.102	0.119
	LTE Band 41	20M	QPSK	1	0	Edge 1	27mm	OFF	40185	2549.5	24.20	25.00	1.202	62.9	1.006	-0.18	0.204	0.247
	LTE Band 41	20M	QPSK	50	0	Edge 1	27mm	OFF	40185	2549.5	23.35	24.00	1.161	62.9	1.006	-0.02	0.148	0.173
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0mm	ON	40185	2549.5	17.23	17.50	1.064	62.9	1.006	-0.09	0.883	0.945
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0mm	ON	39750	2506	16.97	17.50	1.130	62.9	1.006	-0.14	0.943	1.072
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0mm	ON	40620	2593	16.59	17.50	1.233	62.9	1.006	-0.07	0.713	0.884
	LTE Band 41	20M	QPSK	1	0	Bottom Face	0mm	ON	41055	2636.5	16.87	17.50	1.156	62.9	1.006	-0.06	0.758	0.882
12	LTE Band 41	20M	QPSK	1	0	Bottom Face	0mm	ON	41490	2680	16.60	17.50	1.230	62.9	1.006	0	0.884	1.094
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0mm	ON	40185	2549.5	17.13	17.50	1.089	62.9	1.006	-0.13	0.806	0.883
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0mm	ON	39750	2506	17.00	17.50	1.122	62.9	1.006	-0.16	0.848	0.957
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0mm	ON	40620	2593	17.10	17.50	1.096	62.9	1.006	-0.14	0.779	0.859
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0mm	ON	41055	2636.5	17.11	17.50	1.094	62.9	1.006	-0.06	0.915	1.007
	LTE Band 41	20M	QPSK	50	0	Bottom Face	0mm	ON	41490	2680	17.09	17.50	1.099	62.9	1.006	-0.06	0.983	1.087
	LTE Band 41	20M	QPSK	100	0	Bottom Face	0mm	ON	40185	2549.5	16.99	17.50	1.125	62.9	1.006	-0.09	0.781	0.884
	LTE Band 41	20M	QPSK	1	0	Edge 1	0mm	ON	40185	2549.5	17.23	17.50	1.064	62.9	1.006	0.05	0.543	0.581
	LTE Band 41	20M	QPSK	50	0	Edge 1	0mm	ON	40185	2549.5	17.13	17.50	1.089	62.9	1.006	0.11	0.515	0.564
	LTE Band 41	20M	QPSK	1	0	Edge 2	0mm	OFF	40185	2549.5	24.20	25.00	1.202	62.9	1.006	-0.18	0.065	0.079
	LTE Band 41	20M	QPSK	50	0	Edge 2	0mm	OFF	40185	2549.5	23.35	24.00	1.161	62.9	1.006	-0.04	0.051	0.060
	LTE Band 41	20M	QPSK	1	0	Edge 4	0mm	OFF	40185	2549.5	24.20	25.00	1.202	62.9	1.006	0.06	0.003	0.004
	LTE Band 41	20M	QPSK	50	0	Edge 4	0mm	OFF	40185	2549.5	23.35	24.00	1.161	62.9	1.006	-0.03	0.002	0.002
	LTE Band 41C	20M	QPSK	1	0	Bottom Face	0mm	ON	40185+39987	2549.5	17.45	17.50	1.012	62.9	1.006	0	0.859	0.874
	LTE Band 41_HPUE	20M	QPSK	1	0	Bottom Face	0mm	ON	41055	2636.5	17.99	19.00	1.262	42.9	1.009	-0.01	0.801	1.020
	LTE Band 48	20M	QPSK	1	0	Bottom Face	29mm	OFF	56150	3641	22.57	23.00	1.104	62.9	1.006	-0.12	0.058	0.064
	LTE Band 48	20M	QPSK	50	24	Bottom Face	29mm	OFF	56150	3641	21.60	22.00	1.096	62.9	1.006	-0.03	0.045	0.050
	LTE Band 48	20M	QPSK	1	0	Edge 1	27mm	OFF	56150	3641	22.57	23.00	1.104	62.9	1.006	0.01	0.102	0.113
	LTE Band 48	20M	QPSK	50	24	Edge 1	27mm	OFF	56150	3641	21.60	22.00	1.096	62.9	1.006	0.03	0.077	0.085
	LTE Band 48	20M	QPSK	1	0	Bottom Face	0mm	ON	56150	3641	19.98	20.00	1.005	62.9	1.006	0.18	0.789	0.797
13	LTE Band 48	20M	QPSK	1	0	Bottom Face	0mm	ON	55340	3560	19.47	20.00	1.130	62.9	1.006	0.02	0.940	1.068
	LTE Band 48	20M	QPSK	1	0	Bottom Face	0mm	ON	55830	3609	19.85	20.00	1.035	62.9	1.006	0.11	0.828	0.862
	LTE Band 48	20M	QPSK	1	0	Bottom Face	0mm	ON	56640	3690	19.93	20.00	1.016	62.9	1.006	0.06	0.782	0.799
	LTE Band 48	20M	QPSK	50	0	Bottom Face	0mm	ON	56150	3641	19.87	20.00	1.030	62.9	1.006	0.08	0.797	0.826
	LTE Band 48	20M	QPSK	50	0	Bottom Face	0mm	ON	55830	3609	19.77	20.00	1.054	62.9	1.006	0.05	0.788	0.836
	LTE Band 48	20M	QPSK	50	0	Bottom Face	0mm	ON	55340	3560	19.62	20.00	1.091	62.9	1.006	-0.06	0.811	0.890
	LTE Band 48	20M	QPSK	50	0	Bottom Face	0mm	ON	56640	3690	19.78	20.00	1.052	62.9	1.006	0.02	0.808	0.855
	LTE Band 48	20M	QPSK	100	0	Bottom Face	0mm	ON	56150	3641	19.86	20.00	1.033	62.9	1.006	-0.11	0.771	0.801
	LTE Band 48	20M	QPSK	1	0	Edge 1	0mm	ON	56150	3641	19.98	20.00	1.005	62.9	1.006	0.03	0.419	0.423
	LTE Band 48	20M	QPSK	50	0	Edge 1	0mm	ON	56150	3641	19.87	20.00	1.030	62.9	1.006	-0.06	0.415	0.430
	LTE Band 48	20M	QPSK	1	0	Edge 2	0mm	OFF	56150	3641	22.57	23.00	1.104	62.9	1.006	0.09	0.060	0.067
	LTE Band 48	20M	QPSK	50	24	Edge 2	0mm	OFF	56150	3641	21.60	22.00	1.096	62.9	1.006	-0.04	0.043	0.047

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	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	0mm	Ant 1	11	2462	16.30	16.50	1.047	99.5	1.005	-0.03	0.883	0.929
	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 1	1	2412	16.30	16.50	1.047	99.5	1.005	0.02	0.849	0.893
	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 1	6	2437	16.30	16.50	1.047	99.5	1.005	0.07	0.834	0.878
	WLAN2.4GHz	802.11b 1Mbps	Edge 1	0mm	Ant 1	11	2462	16.30	16.50	1.047	99.5	1.005	0.01	0.078	0.082
	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 2	11	2462	16.50	16.50	1.000	99.5	1.005	-0.12	0.826	0.830
14	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 2	1	2412	16.30	16.50	1.047	99.5	1.005	0.01	0.892	0.939
	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 2	6	2437	16.40	16.50	1.023	99.5	1.005	0.11	0.866	0.891
	WLAN2.4GHz	802.11b 1Mbps	Edge 4	0mm	Ant 2	11	2462	16.50	16.50	1.000	99.5	1.005	-0.08	0.049	0.049
	WLAN5GHz	802.11ac-VHT160 MCS0	Bottom Face	0mm	Ant 1	50	5250	15.30	16.00	1.175	98.9	1.011	-0.17	0.458	0.544
15	WLAN5GHz	802.11ac-VHT160 MCS0	Edge 1	0mm	Ant 1	50	5250	15.30	16.00	1.175	98.9	1.011	0.14	0.584	0.694
	WLAN5GHz	802.11ac-VHT160 MCS0	Edge 4	0mm	Ant 1	50	5250	15.30	16.00	1.175	98.9	1.011	0.03	0.084	0.100
	WLAN5GHz	802.11ac-VHT160 MCS0	Bottom Face	0mm	Ant 2	50	5250	15.70	16.00	1.072	98.9	1.011	0.12	0.518	0.561
	WLAN5GHz	802.11ac-VHT160 MCS0	Edge 4	0mm	Ant 2	50	5250	15.70	16.00	1.072	98.9	1.011	0.03	0.363	0.393
	WLAN5GHz	802.11ac-VHT160 MCS0	Bottom Face	0mm	Ant 1	114	5570	15.20	16.00	1.202	98.9	1.011	0.04	0.549	0.667
16	WLAN5GHz	802.11ac-VHT160 MCS0	Edge 1	0mm	Ant 1	114	5570	15.20	16.00	1.202	98.9	1.011	0.05	0.714	0.868
	WLAN5GHz	802.11n-HT40 MCS0	Edge 1	0mm	Ant 1	102	5510	15.90	16.00	1.023	98.9	1.011	0.01	0.718	0.743
	WLAN5GHz	802.11ac-VHT160 MCS0	Edge 4	0mm	Ant 1	114	5570	15.20	16.00	1.202	98.9	1.011	0.14	0.111	0.134
	WLAN5GHz	802.11ac-VHT160 MCS0	Bottom Face	0mm	Ant 2	114	5570	15.80	16.00	1.047	98.9	1.011	0.14	0.591	0.626
	WLAN5GHz	802.11ac-VHT160 MCS0	Edge 4	0mm	Ant 2	114	5570	15.80	16.00	1.047	98.9	1.011	-0.14	0.272	0.288
	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 1	155	5775	15.80	16.00	1.047	98.9	1.011	-0.08	0.407	0.431
	WLAN5GHz	802.11ac-VHT80 MCS0	Edge 1	0mm	Ant 1	155	5775	15.80	16.00	1.047	98.9	1.011	0.16	0.776	0.822
	WLAN5GHz	802.11n-HT40 MCS0	Edge 1	0mm	Ant 1	151	5755	15.80	16.00	1.047	98.9	1.011	0.16	0.741	0.784
	WLAN5GHz	802.11ac-VHT80 MCS0	Edge 4	0mm	Ant 1	155	5775	15.80	16.00	1.047	98.9	1.011	0.02	0.188	0.199
17	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 2	155	5775	16.00	16.00	1.000	98.9	1.011	0.12	0.887	0.897
	WLAN5GHz	802.11n-HT40 MCS0	Bottom Face	0mm	Ant 2	151	5755	15.80	16.00	1.047	98.9	1.011	0.02	0.713	0.755
	WLAN5GHz	802.11ac-VHT80 MCS0	Edge 4	0mm	Ant 2	155	5775	16.00	16.00	1.000	98.9	1.011	0.06	0.491	0.496

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	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	0mm	Ant 2	78	2480	10.36	11.50	1.300	77.13	1.080	-0.05	0.172	0.242
18	Bluetooth	1Mbps	Bottom Face	0mm	Ant 2	0	2402	10.05	11.50	1.396	77.13	1.080	-0.07	0.183	0.276
	Bluetooth	1Mbps	Bottom Face	0mm	Ant 2	39	2441	10.16	11.50	1.361	77.13	1.080	0.03	0.178	0.262
	Bluetooth	1Mbps	Edge 4	0mm	Ant 2	78	2480	10.36	11.50	1.300	77.13	1.080	0.09	0.001	0.001

15.2 Repeated SAR Measurement

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)	Ratio	Reported 1g SAR (W/kg)
1st	LTE Band 7	20M	QPSK	1	0	Bottom Face	0mm	ON	21100	2535	15.58	16.00	1.102	0	1.040	-	1.146
2nd	LTE Band 7	20M	QPSK	1	0	Bottom Face	0mm	ON	21100	2535	15.58	16.00	1.102	0.03	0.991	1.05	1.092
1st	LTE Band 13	10M	QPSK	1	0	Bottom Face	0mm	ON	23230	782	20.15	20.50	1.084	-0.04	1.010	-	1.095
2nd	LTE Band 13	10M	QPSK	1	0	Bottom Face	0mm	ON	23230	782	20.15	20.50	1.084	0.01	0.996	1.01	1.080
1st	LTE Band 25	20M	QPSK	1	0	Bottom Face	0mm	ON	26590	1905	15.45	16.00	1.135	-0.02	1.010	-	1.146
2nd	LTE Band 25	20M	QPSK	1	0	Bottom Face	0mm	ON	26590	1905	15.45	16.00	1.135	-0.08	0.981	1.03	1.113
1st	LTE Band 26	15M	QPSK	1	0	Bottom Face	0mm	ON	26865	831.5	19.68	20.00	1.076	-0.06	1.010	-	1.087
2nd	LTE Band 26	15M	QPSK	1	0	Bottom Face	0mm	ON	26865	831.5	19.68	20.00	1.076	-0.06	0.986	1.02	1.061
1st	LTE Band 30	10M	QPSK	1	0	Bottom Face	0mm	ON	27710	2310	16.20	16.50	1.072	0.04	1.080	-	1.157
2nd	LTE Band 30	10M	QPSK	1	0	Bottom Face	0mm	ON	27710	2310	16.20	16.50	1.072	0.02	1.010	1.07	1.082
1st	LTE Band 66	20M	QPSK	1	0	Bottom Face	0mm	ON	132572	1770	16.26	17.00	1.186	0.01	1.010	-	1.198
2nd	LTE Band 66	20M	QPSK	1	0	Bottom Face	0mm	ON	132572	1770	16.26	17.00	1.186	0.01	0.989	1.02	1.173
1st	LTE Band 48	20M	QPSK	1	0	Bottom Face	0mm	ON	55340	3560	19.47	20.00	1.130	0.02	0.940	-	1.068
2nd	LTE Band 48	20M	QPSK	1	0	Bottom Face	0mm	ON	55340	3560	19.47	20.00	1.130	0.08	0.931	1.01	1.058

No.	Band	Mode	Test Position	Gap (mm)	Antenna	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	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 2	1	2412	16.30	16.50	1.047	99.5	1.005	0.01	0.892	-	0.939
2nd	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0mm	Ant 2	1	2412	16.30	16.50	1.047	99.5	1.005	0.18	0.885	1.01	0.931
1st	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 2	155	5775	16.00	16.00	1.000	98.9	1.011	0.12	0.887	-	0.897
2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Face	0mm	Ant 2	155	5775	16.00	16.00	1.000	98.9	1.011	0.02	0.864	1.03	0.874

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/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
Use PC3 power level and SAR to estimated PC2 SAR linearly, and check if the deviation from the measured PC2 SAR is <10%

	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	17.5	19
Reported 1g SAR (W/kg)	1.094	1.02
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	35.60	34.39
Linearity SAR(W/kg)	1.06	
% deviation from expected linearity		-3.51%

16. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Body
1.	WWAN + 2.4GHz WLAN Ant 1 + 2.4GHz WLAN Ant 2	Yes
2.	WWAN + 5GHz WLAN Ant 1 + 5GHz WLAN Ant 2 + Bluetooth Ant 2	Yes
3.	WWAN + 2.4GHz WLAN Ant 1 + Bluetooth Ant 2	Yes

General Note:

1. The Scaled SAR summation is calculated based on the same configuration and test position.
2. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
   i) Scalar SAR summation < 1.6W/kg.
   ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. 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 ≤ 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.

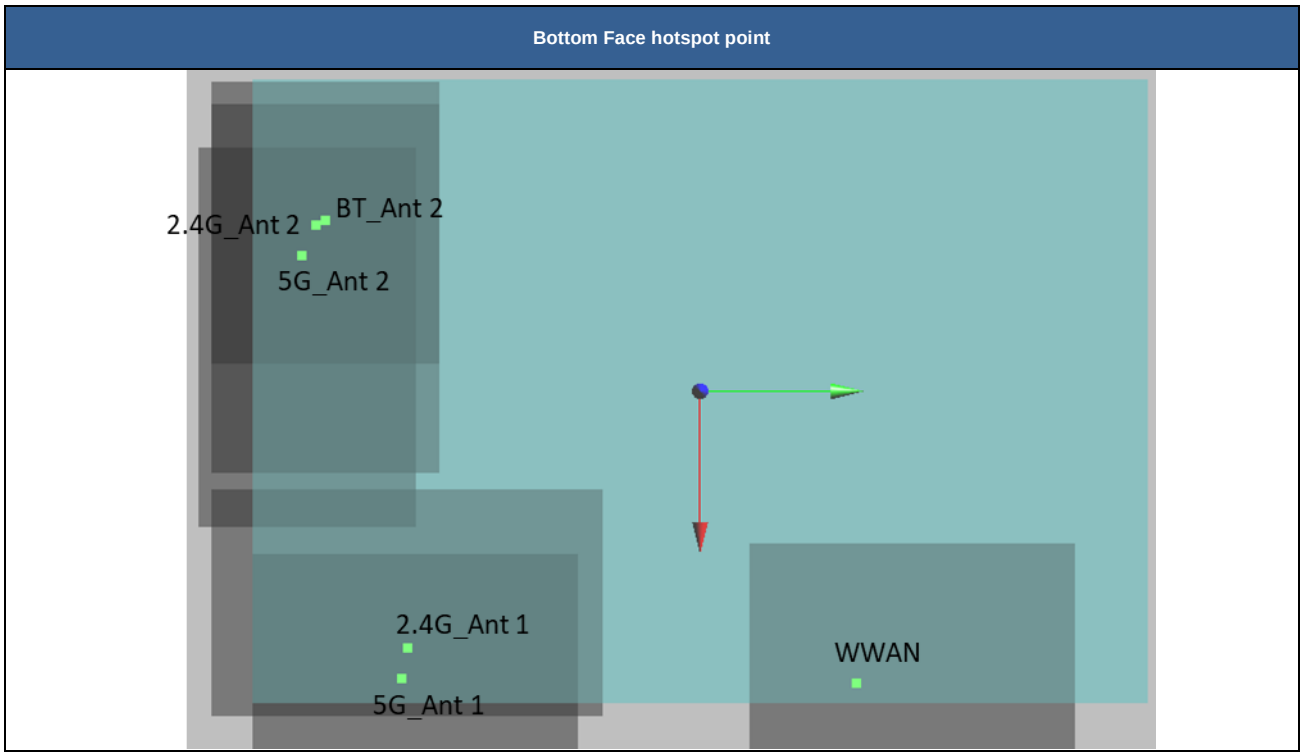
16.1 Body Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	5	6	1+2+3 Summed 1g SAR (W/kg)	1+4+5+6 Summed 1g SAR (W/kg)	1+2+6 Summed 1g SAR (W/kg)	SPLSR	Case No
		WWAN	2.4GHz WLAN Ant 1	2.4GHz WLAN Ant 2	5GHz WLAN Ant 1	5GHz WLAN Ant 2	Bluetooth Ant 2					
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)					
WCDMA II	Bottom Face at 0mm	1.122	0.929	0.939	0.667	0.897	0.276	2.990	2.962	2.327	0.02	Case 1
	Edge 1 at 0mm	0.262	0.082		0.868			0.344	1.130	0.344		
	Edge 2 at 0mm	0.167						0.167	0.167	0.167		
	Edge 4 at 0mm			0.049	0.199	0.496	0.001	0.049	0.696	0.001		
WCDMA IV	Bottom Face at 0mm	1.020	0.929	0.939	0.667	0.897	0.276	2.888	2.860	2.225	0.02	Case 2
	Edge 1 at 0mm	0.346	0.082		0.868			0.428	1.214	0.428		
	Edge 2 at 0mm	0.207						0.207	0.207	0.207		
	Edge 4 at 0mm			0.049	0.199	0.496	0.001	0.049	0.696	0.001		
WCDMA V	Bottom Face at 0mm	1.153	0.929	0.939	0.667	0.897	0.276	3.021	2.993	2.358	0.02	Case 3
	Edge 1 at 0mm	0.714	0.082		0.868			0.796	1.582	0.796		
	Edge 2 at 0mm	0.109						0.109	0.109	0.109		
	Edge 4 at 0mm	0.002		0.049	0.199	0.496	0.001	0.051	0.698	0.003		
LTE Band 7	Bottom Face at 0mm	1.146	0.929	0.939	0.667	0.897	0.276	3.014	2.986	2.351	0.02	Case 4
	Edge 1 at 0mm	0.655	0.082		0.868			0.737	1.523	0.737		
	Edge 2 at 0mm	0.113						0.113	0.113	0.113		
	Edge 4 at 0mm	0.001		0.049	0.199	0.496	0.001	0.050	0.697	0.002		
LTE Band 12	Bottom Face at 0mm	1.135	0.929	0.939	0.667	0.897	0.276	3.003	2.975	2.340	0.02	Case 5
	Edge 1 at 0mm	0.565	0.082		0.868			0.647	1.433	0.647		
	Edge 2 at 0mm	0.160						0.160	0.160	0.160		
	Edge 4 at 0mm	0.003		0.049	0.199	0.496	0.001	0.052	0.699	0.004		
LTE Band 13	Bottom Face at 0mm	1.095	0.929	0.939	0.667	0.897	0.276	2.963	2.935	2.300	0.02	Case 6
	Edge 1 at 0mm	0.723	0.082		0.868			0.805	1.591	0.805		
	Edge 2 at 0mm	0.177						0.177	0.177	0.177		
	Edge 4 at 0mm	0.004		0.049	0.199	0.496	0.001	0.053	0.700	0.005		
LTE Band 14	Bottom Face at 0mm	1.120	0.929	0.939	0.667	0.897	0.276	2.988	2.960	2.325	0.02	Case 7
	Edge 1 at 0mm	0.714	0.082		0.868			0.796	1.582	0.796		
	Edge 2 at 0mm	0.177						0.177	0.177	0.177		
	Edge 4 at 0mm	0.004		0.049	0.199	0.496	0.001	0.053	0.700	0.005		
LTE Band 25	Bottom Face at 0mm	1.146	0.929	0.939	0.667	0.897	0.276	3.014	2.986	2.351	0.02	Case 8
	Edge 1 at 0mm	0.262	0.082		0.868			0.344	1.130	0.344		
	Edge 2 at 0mm	0.176						0.176	0.176	0.176		
	Edge 4 at 0mm			0.049	0.199	0.496	0.001	0.049	0.696	0.001		
LTE Band 26	Bottom Face at 0mm	1.087	0.929	0.939	0.667	0.897	0.276	2.955	2.927	2.292	0.02	Case 9
	Edge 1 at 0mm	0.722	0.082		0.868			0.804	1.590	0.804		
	Edge 2 at 0mm	0.202						0.202	0.202	0.202		
	Edge 4 at 0mm	0.004		0.049	0.199	0.496	0.001	0.053	0.700	0.005		
LTE Band 30	Bottom Face at 0mm	1.157	0.929	0.939	0.667	0.897	0.276	3.025	2.997	2.362	0.02	Case 10
	Edge 1 at 0mm	0.676	0.082		0.868			0.758	1.544	0.758		
	Edge 2 at 0mm	0.060						0.060	0.060	0.060		
	Edge 4 at 0mm			0.049	0.199	0.496	0.001	0.049	0.696	0.001		
LTE Band 66	Bottom Face at 0mm	1.198	0.929	0.939	0.667	0.897	0.276	3.066	3.038	2.403	0.02	Case 11
	Edge 1 at 0mm	0.450	0.082		0.868			0.532	1.318	0.532		
	Edge 2 at 0mm	0.202						0.202	0.202	0.202		
	Edge 4 at 0mm			0.049	0.199	0.496	0.001	0.049	0.696	0.001		
LTE Band 41	Bottom Face at 0mm	1.094	0.929	0.939	0.667	0.897	0.276	2.962	2.934	2.299	0.02	Case 12
	Edge 1 at 0mm	0.581	0.082		0.868			0.663	1.449	0.663		
	Edge 2 at 0mm	0.079						0.079	0.079	0.079		
	Edge 4 at 0mm	0.004		0.049	0.199	0.496	0.001	0.053	0.700	0.005		
LTE Band 48	Bottom Face at 0mm	1.068	0.929	0.939	0.667	0.897	0.276	2.936	2.908	2.273	0.02	Case 13
	Edge 1 at 0mm	0.430	0.082		0.868			0.512	1.298	0.512		
	Edge 2 at 0mm	0.067						0.067	0.067	0.067		
	Edge 4 at 0mm			0.049	0.199	0.496	0.001	0.049	0.696	0.001		

16.2 SPLSR Evaluation and Analysis

General Note:

1. According to antenna location the minimum distance between each transmit antenna is using for SPLSR analysis
2. Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneously transmitting antenna. When the sum of 1-g or 10-g SAR of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration. Therefore, the adjacent transmit antennas will be summed first, and then the SPLSR calculation will be evaluated with the farther transmitted antennas.
3. SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*). If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary
4. The detail hotspot point for each transmitter in each exposure condition are showing as below figure and the minimum 3D distance for each sum combination is used for SPLSR analysis.



	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 1	WCDMA II	Bottom Face	1.122	0mm	96.7	100.6	2.27	206.6	2.05	0.01	Not required
	WLAN2.4GHz Ant1		0.929	0mm	95.8	-106	3				
	WCDMA II	Bottom Face	1.122	0mm	96.7	100.6	2.27	288.3	2.06	0.01	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	160.8	1.87	0.02	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WCDMA II	Bottom Face	1.122	0mm	96.7	100.6	2.27	210.7	1.79	0.01	Not required
	WLAN5GHz Ant1		0.667	0mm	103.63	-110.01	3.6				
	WCDMA II	Bottom Face	1.122	0mm	96.7	100.6	2.27	288.4	2.30	0.01	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN5GHz Ant1	Bottom Face	0.667	0mm	103.63	-110.01	3.6	163.6	1.84	0.02	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	156.8	1.21	0.01	Not required
	BT Ant2		0.276	0mm	-56.4	-143.8	0.15				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 2	WCDMA IV	Bottom Face	1.02	0mm	98.2	99.1	2.27	205.1	1.95	0.01	Not required
	WLAN2.4GHz Ant1		0.929	0mm	95.8	-106	3				
	WCDMA IV	Bottom Face	1.02	0mm	98.2	99.1	2.27	287.9	1.96	0.01	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	160.8	1.87	0.02	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WCDMA IV	Bottom Face	1.02	0mm	98.2	99.1	2.27	209.2	1.69	0.01	Not required
	WLAN5GHz Ant1		0.667	0mm	103.63	-110.01	3.6				
	WCDMA IV	Bottom Face	1.02	0mm	98.2	99.1	2.27	287.9	2.19	0.01	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN5GHz Ant1	Bottom Face	0.667	0mm	103.63	-110.01	3.6	163.6	1.84	0.02	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	156.8	1.21	0.01	Not required
	BT Ant2		0.276	0mm	-56.4	-143.8	0.15				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 3	WCDMA V	Bottom Face	1.153	0mm	102.5	87	2.29	193.1	2.08	0.02	Not required
	WLAN2.4GHz Ant1		0.929	0mm	95.8	-106	3				
	WCDMA V	Bottom Face	1.153	0mm	102.5	87	2.29	280.4	2.09	0.01	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	160.8	1.87	0.02	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WCDMA V	Bottom Face	1.153	0mm	102.5	87	2.29	197.0	1.82	0.01	Not required
	WLAN5GHz Ant1		0.667	0mm	103.63	-110.01	3.6				
	WCDMA V	Bottom Face	1.153	0mm	102.5	87	2.29	280.2	2.33	0.01	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN5GHz Ant1	Bottom Face	0.667	0mm	103.63	-110.01	3.6	163.6	1.84	0.02	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	156.8	1.21	0.01	Not required
	BT Ant2		0.276	0mm	-56.4	-143.8	0.15				

	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 4	LTE Band 7	Bottom Face	1.146	0mm	106.6	58.6	-0.92	165.0	2.08	0.02	Not required
	WLAN2.4GHz Ant1		0.929	0mm	95.8	-106	3				
	LTE Band 7	Bottom Face	1.146	0mm	106.6	58.6	-0.92	260.5	2.09	0.01	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	160.8	1.87	0.02	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	LTE Band 7	Bottom Face	1.146	0mm	106.6	58.6	-0.92	168.7	1.81	0.01	Not required
	WLAN5GHz Ant1		0.667	0mm	103.63	-110.01	3.6				
	LTE Band 7	Bottom Face	1.146	0mm	106.6	58.6	-0.92	259.9	2.32	0.01	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN5GHz Ant1	Bottom Face	0.667	0mm	103.63	-110.01	3.6	163.6	1.84	0.02	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	156.8	1.21	0.01	Not required
	BT Ant2		0.276	0mm	-56.4	-143.8	0.15				
Case 5	LTE Band 12	Bottom Face	1.135	0mm	103.92	87.02	-1.07	193.2	2.06	0.02	Not required
	WLAN2.4GHz Ant1		0.929	0mm	95.8	-106	3				
	LTE Band 12	Bottom Face	1.135	0mm	103.92	87.02	-1.07	281.2	2.07	0.01	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	160.8	1.87	0.02	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	LTE Band 12	Bottom Face	1.135	0mm	103.92	87.02	-1.07	197.1	1.80	0.01	Not required
	WLAN5GHz Ant1		0.667	0mm	103.63	-110.01	3.6				
	LTE Band 12	Bottom Face	1.135	0mm	103.92	87.02	-1.07	281.0	2.31	0.01	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN5GHz Ant1	Bottom Face	0.667	0mm	103.63	-110.01	3.6	163.6	1.84	0.02	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	156.8	1.21	0.01	Not required
	BT Ant2		0.276	0mm	-56.4	-143.8	0.15				
Case 6	LTE Band 13	Bottom Face	1.095	0mm	103.94	84	-1.07	190.2	2.02	0.02	Not required
	WLAN2.4GHz Ant1		0.929	0mm	95.8	-106	3				
	LTE Band 13	Bottom Face	1.095	0mm	103.94	84	-1.07	278.8	2.03	0.01	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	160.8	1.87	0.02	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	LTE Band 13	Bottom Face	1.095	0mm	103.94	84	-1.07	194.1	1.76	0.01	Not required
	WLAN5GHz Ant1		0.667	0mm	103.63	-110.01	3.6				
	LTE Band 13	Bottom Face	1.095	0mm	103.94	84	-1.07	278.6	2.27	0.01	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN5GHz Ant1	Bottom Face	0.667	0mm	103.63	-110.01	3.6	163.6	1.84	0.02	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	156.8	1.21	0.01	Not required
	BT Ant2		0.276	0mm	-56.4	-143.8	0.15				

	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 7	LTE Band 14	Bottom Face	1.12	0mm	103.99	85.51	-1.05	191.7	2.05	0.02	Not required
	WLAN2.4GHz Ant1		0.929	0mm	95.8	-106	3				
	LTE Band 14	Bottom Face	1.12	0mm	103.99	85.51	-1.05	280.1	2.06	0.01	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	160.8	1.87	0.02	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	LTE Band 14	Bottom Face	1.12	0mm	103.99	85.51	-1.05	195.6	1.79	0.01	Not required
	WLAN5GHz Ant1		0.667	0mm	103.63	-110.01	3.6				
	LTE Band 14	Bottom Face	1.12	0mm	103.99	85.51	-1.05	279.8	2.29	0.01	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN5GHz Ant1	Bottom Face	0.667	0mm	103.63	-110.01	3.6	163.6	1.84	0.02	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	156.8	1.21	0.01	Not required
	BT Ant2		0.276	0mm	-56.4	-143.8	0.15				
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 8	LTE Band 25	Bottom Face	1.146	0mm	98.12	97.5	-1.11	203.6	2.08	0.01	Not required
	WLAN2.4GHz Ant1		0.929	0mm	95.8	-106	3				
	LTE Band 25	Bottom Face	1.146	0mm	98.12	97.5	-1.11	286.5	2.09	0.01	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	160.8	1.87	0.02	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	LTE Band 25	Bottom Face	1.146	0mm	98.12	97.5	-1.11	207.6	1.81	0.01	Not required
	WLAN5GHz Ant1		0.667	0mm	103.63	-110.01	3.6				
	LTE Band 25	Bottom Face	1.146	0mm	98.12	97.5	-1.11	286.5	2.32	0.01	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN5GHz Ant1	Bottom Face	0.667	0mm	103.63	-110.01	3.6	163.6	1.84	0.02	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	156.8	1.21	0.01	Not required
	BT Ant2		0.276	0mm	-56.4	-143.8	0.15				
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 9	LTE Band 26	Bottom Face	1.087	0mm	103.95	84.03	-1.08	190.2	2.02	0.02	Not required
	WLAN2.4GHz Ant1		0.929	0mm	95.8	-106	3				
	LTE Band 26	Bottom Face	1.087	0mm	103.95	84.03	-1.08	278.8	2.03	0.01	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	160.8	1.87	0.02	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	LTE Band 26	Bottom Face	1.087	0mm	103.95	84.03	-1.08	194.1	1.75	0.01	Not required
	WLAN5GHz Ant1		0.667	0mm	103.63	-110.01	3.6				
	LTE Band 26	Bottom Face	1.087	0mm	103.95	84.03	-1.08	278.6	2.26	0.01	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN5GHz Ant1	Bottom Face	0.667	0mm	103.63	-110.01	3.6	163.6	1.84	0.02	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	156.8	1.21	0.01	Not required
	BT Ant2		0.276	0mm	-56.4	-143.8	0.15				

	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 10	LTE Band 30	Bottom Face	1.157	0mm	104.6	101.6	-0.72	207.8	2.09	0.01	Not required
	WLAN2.4GHz Ant1		0.929	0mm	95.8	-106	3				
	LTE Band 30	Bottom Face	1.157	0mm	104.6	101.6	-0.72	293.5	2.10	0.01	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	160.8	1.87	0.02	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	LTE Band 30	Bottom Face	1.157	0mm	104.6	101.6	-0.72	211.7	1.82	0.01	Not required
	WLAN5GHz Ant1		0.667	0mm	103.63	-110.01	3.6				
	LTE Band 30	Bottom Face	1.157	0mm	104.6	101.6	-0.72	293.5	2.33	0.01	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN5GHz Ant1	Bottom Face	0.667	0mm	103.63	-110.01	3.6	163.6	1.84	0.02	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	156.8	1.21	0.01	Not required
	BT Ant2		0.276	0mm	-56.4	-143.8	0.15				
Case 11	LTE Band 66	Bottom Face	1.198	0mm	99.63	97.61	-1.41	203.7	2.13	0.02	Not required
	WLAN2.4GHz Ant1		0.929	0mm	95.8	-106	3				
	LTE Band 66	Bottom Face	1.198	0mm	99.63	97.61	-1.41	287.5	2.14	0.01	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	160.8	1.87	0.02	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	LTE Band 66	Bottom Face	1.198	0mm	99.63	97.61	-1.41	207.7	1.87	0.01	Not required
	WLAN5GHz Ant1		0.667	0mm	103.63	-110.01	3.6				
	LTE Band 66	Bottom Face	1.198	0mm	99.63	97.61	-1.41	287.4	2.37	0.01	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN5GHz Ant1	Bottom Face	0.667	0mm	103.63	-110.01	3.6	163.6	1.84	0.02	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	156.8	1.21	0.01	Not required
	BT Ant2		0.276	0mm	-56.4	-143.8	0.15				
Case 12	LTE Band 41	Bottom Face	1.094	0mm	94.6	93.6	-0.82	199.6	2.02	0.01	Not required
	WLAN2.4GHz Ant1		0.929	0mm	95.8	-106	3				
	LTE Band 41	Bottom Face	1.094	0mm	94.6	93.6	-0.82	281.3	2.03	0.01	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	160.8	1.87	0.02	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	LTE Band 41	Bottom Face	1.094	0mm	94.6	93.6	-0.82	203.9	1.76	0.01	Not required
	WLAN5GHz Ant1		0.667	0mm	103.63	-110.01	3.6				
	LTE Band 41	Bottom Face	1.094	0mm	94.6	93.6	-0.82	281.4	2.27	0.01	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN5GHz Ant1	Bottom Face	0.667	0mm	103.63	-110.01	3.6	163.6	1.84	0.02	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	156.8	1.21	0.01	Not required
	BT Ant2		0.276	0mm	-56.4	-143.8	0.15				

	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 13	LTE Band 48	Bottom Face	1.068	0mm	106.22	55.4	3.3	161.7	2.00	0.02	Not required
	WLAN2.4GHz Ant1		0.929	0mm	95.8	-106	3				
	LTE Band 48	Bottom Face	1.068	0mm	106.22	55.4	3.3	257.8	2.01	0.01	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	160.8	1.87	0.02	Not required
	WLAN2.4GHz Ant2		0.939	0mm	-61.2	-140.6	3.09				
	LTE Band 48	Bottom Face	1.068	0mm	106.22	55.4	3.3	165.4	1.74	0.01	Not required
	WLAN5GHz Ant1		0.667	0mm	103.63	-110.01	3.6				
	LTE Band 48	Bottom Face	1.068	0mm	106.22	55.4	3.3	257.2	2.24	0.01	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN5GHz Ant1	Bottom Face	0.667	0mm	103.63	-110.01	3.6	163.6	1.84	0.02	Not required
	WLAN5GHz+BT Ant2		1.173	0mm	-56.4	-143.8	0.15				
	WLAN2.4GHz Ant1	Bottom Face	0.929	0mm	95.8	-106	3	156.8	1.21	0.01	Not required
	BT Ant2		0.276	0mm	-56.4	-143.8	0.15				

Test Engineer：Bevis Chang, Willie Huang, Jacky Chen, Ken Lin and Mood Huang

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 ≤ 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.

Declaration of Conformity:
The test results with all measurement uncertainty excluded is presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

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 941225 D05A v01r02, “Rel. 10 LTE SAR Test Guidance and KDB Inquiries”, Oct 2015

[10] FCC KDB 616217 D04 v01r02, “SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers”, Oct 2015

[11] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.

[12] FCC KDB 865664 D02 v01r02, “RF Exposure Compliance Reporting and Documentation Considerations” Oct 2015.