SAR TEST REPORT

Applicant	Huawei Technologies Co., Ltd.
FCC ID	QISAGRK-L09
Product	Tablet
Model	AGRK-L09
Report No.	R2201A0045-S1
Issue Date	January 13, 2022

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **IEEE 1528- 2013, ANSI C95.1: 1992, IEEE C95.1: 1991.** The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Fangying Wei Guangchang Fan

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1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2 Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3 Testing Location

Company:	TA Technology (Shanghai) Co., Ltd.
Address:	No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China
City:	Shanghai
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1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

2 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for the EUT are as follows:

Table 1: Highest Reported SAR

Mode	Highest Reported SAR (W/kg)
	1g Body SAR (Separation 0mm)
GSM 850	0.46
GSM 1900	0.29
WCDMA Band II	0.47
WCDMA Band IV	0.51
WCDMA Band V	0.48
LTE FDD 2	0.40
LTE FDD 5	0.36
LTE FDD 7	0.78
LTE FDD 12 (LTE FDD 17)	0.49
LTE FDD 66 (LTE FDD 4)	**0.60**
Wi-Fi (2.4G)	0.48
Wi-Fi (5G)	0.38
Date of Testing:	December 4, 2021~ December 7, 2021
Note: 1. The device is in compliance with SAR for Uncontrolled Environment /General Population exposure limits (1.6 W/kg) specified in ANSI C95.1: 1992/IEEE C95.1: 1991, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013. 2. All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.	

Note: 1) The highest Reported SAR for Body SAR and simultaneous transmission exposure conditions are 0.60 W/kg and 1.04 W/kg.

2) According to TCB workshop October, 2014 RF Exposure Prcedures Update (Overlappong LTE Bands):

a) Main Antenna SAR for LTE Band 17 (Frequency range: 704-716 MHz) is covered by LTE Band 12 (Frequency range 699-716 MHz); LTE Band 4 (Frequency range 1710-1755 MHz) is covered by LTE Band 66 (Frequency range: 1710-1780 MHz) due to similar frequency range, same maximum tune up limit and same channel bandwidth.

The device is in compliance with Specific Absorption Rate (SAR) for general population/uncontraolled exposure limits according to the FCC rule §2.1093, the ANSI C95.1: 1992/IEEE C95.1: 1991, and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013.

3 Description of Equipment under Test

Client Information

Applicant	Huawei Technologies Co., Ltd.
Applicant address	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C
Manufacturer	Huawei Technologies Co., Ltd.
Manufacturer address	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

General Technologies

Application Purpose	Original Grant
EUT Stage	Identical Prototype
Model	AGRK-L09
SN	9JVYD21A13200045
Hardware Version	SH1AGS3LM
Software Version	10.1.0.115(SP5C605E2R1P1)
Antenna Type	Internal Antenna
Device Class	B
Wi-Fi Hotspot	Wi-Fi 2.4G Wi-Fi 5G U-NII-1&U-NII-3
Power Class	GSM 850: 4 GSM 1900: 1 UMTS Band II/IV/V: 3 LTE FDD 2/4/5/7/12/17/66: 3
Power Level	GSM 850: level 5 GSM 1900: level 0 UMTS Band II/IV/V: all up bits LTE FDD 2/4/5/7/12/17/66: max power

EUT Accessory			
Accessory	**Model**	**Manufacture**	**No.**
Battery	HB2899C0ECW-C	SCUD (Fujian) Electronics Co.,Ltd	1
Note: The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.			

Wireless Technology and Frequency Range

Wireless Technology		Modulation	Operating mode	Tx (MHz)
GSM	850	Voice(GMSK) GPRS(GMSK) EGPRS(GMSK,8PSK)	☐Multi-slot Class:8-1UP ☐Multi-slot Class:10-2UP ☒Multi-slot Class:12-4UP ☐Multi-slot Class:33-4UP	824 ~ 849
	1900			1850 ~ 1910
	Does this device support DTM (Dual Transfer Mode)? ☐Yes ☒No			
UMTS	Band II	QPSK, 16QAM	HSDPA UE Rel.9 HSUPA UE Rel.9 DC-HSDPA UE Rel.9 HSPA+ Rel.9	1850 ~ 1910
	Band IV			1710 ~ 1755
	Band V			824 ~ 849
LTE	FDD 2	QPSK, 16QAM, 64QAM	Category 5	1850 ~ 1910
	FDD 4			1710 ~ 1755
	FDD 5			824 ~ 849
	FDD 7			2500 ~ 2570
	FDD 12			699 ~ 716
	FDD 17			704 ~ 716
	FDD 66			1710 ~ 1780
	Does this device support Carrier Aggregation (CA) ☐Yes ☒No			
	Does this device support SV-LTE (1xRTT-LTE)? ☐Yes ☒No			
BT	2.4G	Version 5.1 LE		2402 ~2480
Wi-Fi	2.4G	DSSS, OFDM	802.11b/g/n HT20	2412 ~ 2462
		OFDM	802.11n HT40	2422 ~ 2452
	5G	OFDM	802.11a/n HT20/ HT40/ ac VHT20/ VHT40/ VHT80	5150 ~ 5250 5250 ~ 5350 5470 ~ 5725 5725 ~ 5850
	Does this device support MIMO ☐Yes ☒No			

4 Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE 1528- 2013, ANSI C95.1: 1992, IEEE C95.1: 1991, the following FCC Published RF exposure KDB procedures:

Reference Standards

KDB 248227 D01 802.11 Wi-Fi SAR v02r02
KDB 447498 D01 General RF Exposure Guidance v06
KDB 648474 D04 Handset SAR v01r03
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02 RF Exposure Reporting v01r02
KDB 941225 D01 3G SAR Procedures v03r01
KDB 941225 D05 SAR for LTE Devices v02r05
KDB 941225 D06 Hotspot Mode v02r01
KDB 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02
KDB 616217 D04 SAR for laptop and tablets v01r02

5 Operational Conditions during Test

5.1 Test Positions

According to KDB 616217 D04, SAR evaluation is required for back surface and edges of the devices. The back surface and edges of the tablet are tested with the tablet touching the phantom. Exposures from antennas through the front surface of the display section of a tablet are generally limited to the user's hands. Exposures to hands for typical consumer transmitters used in tablets are not expected to exceed the extremity SAR limit; therefore, SAR evaluation for the front surface of tablet display screens are generally not necessary. When voice mode is supported on a tablet and it is limited to speaker mode or headset operations only, additional SAR testing for this type of voice use is not required.

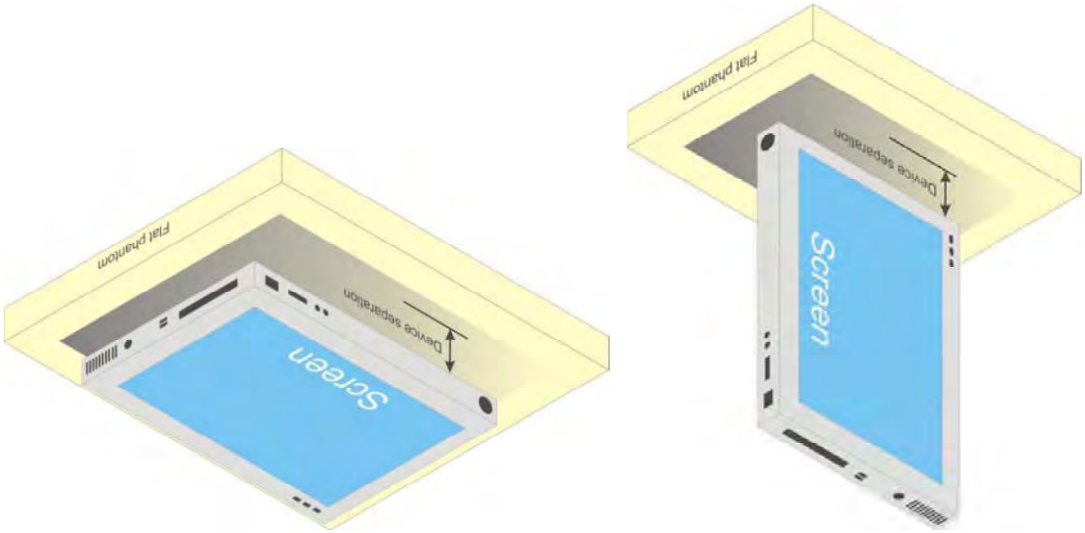


Fig-4.1 Illustration for Tablet Setup

According to KDB 447498 D01, the SAR test exclusion condition is based on source-based time-averaged maximum conducted output power, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The SAR exclusion threshold is determined by the following formula.

(1) The SAR exclusion threshold for distances ≤50mm is defined by the following equation:

$$\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} * \sqrt{\text{Frequency (GHz)}} \leq 3.0$$

(2) The SAR exclusion threshold for distances ＞50mm is defined by the following equation, as illustrated in KDB 447498 D01 Appendix B:

a) at 100 MHz to 1500 MHz

[Power allowed at numeric Threshold at 50 mm in step 1) + (test separation distance - 50 mm) · ($f_{(MHz)}$/150)] mW

b) at > 1500 MHz and ≤ 6 GHz

[Power allowed at numeric Threshold at 50 mm in step 1) + (test separation distance - 50 mm) ·10] mW

The Detailed Antenna Locations refer to *Antenna Locations.*

Sensor off

Band	Frequency (MHz)	Max. Tune-up Power (dBm)	Back Side			Left Edge			Right Edge			Top Edge			Bottom Edge		
			Ant. To Surgace (mm)	Evaluation	Conclusion	Ant. To Surgace (mm)	Evaluation	Conclusion	Ant. To Surgace (mm)	Evaluation	Conclusion	Ant. To Surgace (mm)	Evaluation	Conclusion	Ant. To Surgace (mm)	Evaluation	Conclusion
GSM 850	849	31.50	5	260.31	Yes	155.2	621.46	Yes	40.5	32.14	Yes	5	260.31	Yes	152	603.35	Yes
GSM 1900	1910	17.00	5	13.85	Yes	199.8	1499.39	No	11.0	6.30	Yes	5	13.85	Yes	152	1021.39	No
WCDMA II	1910	14.00	5	6.94	Yes	199.8	1498.69	No	11.0	3.16	Yes	5	6.94	Yes	152	1020.69	No
WCDMA IV	1755	15.00	5	8.38	Yes	199.8	1498.84	No	11.0	3.81	Yes	5	8.38	Yes	152	1020.84	No
WCDMA V	849	25.00	5	58.28	Yes	155.2	601.26	No	40.5	7.19	Yes	5	58.28	Yes	152	583.15	No
LTE 2	1910	14.50	5	7.79	Yes	199.8	1498.78	No	11.0	3.54	Yes	5	7.79	Yes	152	1020.78	No
LTE 4	1755	15.50	5	9.40	Yes	199.8	1498.94	No	11.0	4.27	Yes	5	9.40	Yes	152	1020.94	No
LTE 5	849	25.00	5	58.28	Yes	155.2	601.26	No	40.5	7.19	Yes	5	58.28	Yes	152	583.15	No
LTE 7	2570	15.50	5	11.38	Yes	199.8	1499.14	No	11.0	5.17	Yes	5	11.38	Yes	152	1021.14	No
LTE 12	716	25.00	5	53.52	Yes	155.2	507.51	No	40.5	6.61	Yes	5	53.52	Yes	152	492.23	No
LTE 17	716	25.00	5	53.52	Yes	155.2	507.51	No	40.5	6.61	Yes	5	53.52	Yes	152	492.23	No
LTE 66	1780	15.50	5	9.47	Yes	199.8	1498.95	No	11.0	4.30	Yes	5	9.47	Yes	152	1020.95	No
Wi-Fi 2.4G	2462	17.50	5	17.65	Yes	9.2	9.59	Yes	193.8	1439.76	No	5	17.65	Yes	152	1021.76	No
Wi-Fi 5G	5850	16.50	5	21.61	Yes	46.5	2.32	No	160.1	1103.16	No	5	21.61	Yes	152	1022.16	No

Sensor on

Band	Frequency (MHz)	Max. Tune-up Power (dBm)	Back Side			Left Edge			Right Edge			Top Edge			Bottom Edge		
			Ant. To Surgace (mm)	Evaluation	Conclusion	Ant. To Surgace (mm)	Evaluation	Conclusion	Ant. To Surgace (mm)	Evaluation	Conclusion	Ant. To Surgace (mm)	Evaluation	Conclusion	Ant. To Surgace (mm)	Evaluation	Conclusion
GSM 850	849	20.50	5	20.68	Yes	155.2	597.50	No	40.5	-51.70	Yes	5	20.68	Yes	152	579.39	No
GSM 1900	1910	14.50	5	7.79	Yes	199.8	1498.78	No	11.0	-389.22	No	5	7.79	Yes	152	1020.78	No
WCDMA II	1910	9.50	5	2.46	No	199.8	1498.25	No	11.0	-389.75	No	5	2.46	No	152	1020.25	No
WCDMA IV	1755	9.50	5	2.36	No	199.8	1498.24	No	11.0	-389.76	No	5	2.36	No	152	1020.24	No
WCDMA V	849	14.50	5	5.19	Yes	155.2	595.95	No	40.5	-53.25	No	5	5.19	Yes	152	577.84	No
LTE 2	1910	10.00	5	2.76	No	199.8	1498.28	No	11.0	-389.72	No	5	2.76	No	152	1020.28	No
LTE 4	1755	10.00	5	2.65	No	199.8	1498.26	No	11.0	-389.74	No	5	2.65	No	152	1020.26	No
LTE 5	849	14.50	5	5.19	Yes	155.2	595.95	No	40.5	-53.25	No	5	5.19	Yes	152	577.84	No
LTE 7	2570	8.50	5	2.27	No	199.8	1498.23	No	11.0	-389.77	No	5	2.27	No	152	1020.23	No
LTE 12	716	15.00	5	5.35	Yes	155.2	502.69	No	40.5	-44.81	No	5	5.35	Yes	152	487.42	No
LTE 17	716	15.00	5	5.35	Yes	155.2	502.69	No	40.5	-44.81	No	5	5.35	Yes	152	487.42	No
LTE 66	1780	10.00	5	2.67	No	199.8	1498.27	No	11.0	-389.73	No	5	2.67	No	152	1020.27	No
Wi-Fi 2.4G	2462	8.00	5	1.98	No	9.2	-407.80	No	193.8	1438.20	No	5	1.98	No	152	1020.20	No
Wi-Fi 5G	5850	7.00	5	2.42	No	46.5	-34.76	No	160.1	1101.24	No	5	2.42	No	152	1020.24	No

5.2 Measurement Variability

Per FCC KDB Publication 865664 D01, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:
1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

5.3 Test Configuration

5.3.1 GSM Test Configuration

According to specification 3GPP TS 51.010, the maximum power of the GSM can do the power reduction for the multi-slot. The allowed power reduction in the multi-slot configuration is as following:

Output power of reductions:

Table 2: The allowed power reduction in the multi-slot configuration

Number of timeslots in uplink assignment	Permissible nominal reduction of maximum output power (dB)
1	0
2	0 to 3,0
3	1,8 to 4,8
4	3,0 to 6,0

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. GSM voice and GPRS data use GMSK, which is a constant amplitude modulation with minimal peak to average power difference within the time-slot burst. For EDGE, GMSK is used for MCS 1 – MCS 4 and 8-PSK is used for MCS 5 – MCS 9; where 8-PSK has an inherently higher peak-to-average power ratio. The GMSK and 8-PSK EDGE configurations are considered separately for SAR compliance. The GMSK EDGE configurations are grouped with GPRS and considered with respect to time-averaged maximum output power to determine compliance. The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.

5.3.2 UMTS Test Configuration

5.3.2.1 3G SAR Test Reduction Procedure

The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement channel) configured in Test Loop Mode 1. SAR is selectively confirmed for other physical channel configurations modes according to output power, exposure conditions and device operating capabilities. Maximum output power is verified by applying the applicable versions of 3GPP TS 34.121.

5.3.2.2 Body-worn accessory SAR

SAR for body-worn accessory configurations is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the EUT with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding

spreading code or DPDCHn, for the highest reported body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When more than 2 DPDCHn are supported by the EUT, it may be necessary to configure additional DPDCHn using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC

5.3.2.3 Release 5 HSDPA Test Configuration

The 3G SAR test reduction procedure is applied to HSDPA body-worn accessory configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the HSDPA body SAR procedures in the "Release 5 HSDPA Data Devices" section of this document, for the highest SAR body-worn accessory exposure configuration in 12.2 kbps RMC. EUT with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

HSDPA should be configured according to the UE category of a test device. The number of HSDSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors (βc, βd), and HS-DPCCH power offset parameters (ΔACK, ΔNACK, ΔCQI) should be set according to values indicated in the Table below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Table 3: Subtests for UMTS Release 5 HSDPA

Sub-set	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (note 1, note 2)	CM(dB) (note 3)	MPR(dB)
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}= 8$\Leftrightarrow$$A_{hs}$ = β_{hs}/β_c=30/15$\Leftrightarrow$$\beta_{hs}$=30/15*$\beta_c$

Note 2: CM=1 for β_c/β_d =12/15, β_{hs}/β_c=24/15.

Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TFC1, TF1) to β_c=11/15 and β_d=15/15.

5.3.2.4 Release 6 HSUPA Test Configuration

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body-worn accessory configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures in the "Release 6 HSPA Data Devices" section of this document, for the highest body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When VOIP is applicable for next to the ear head exposure in HSPA, the 3G SAR test reduction

procedure is applied to HSPA with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body-worn accessory measurements is tested for next to the ear head exposure.

Due to inner loop power control requirements in HSPA, a communication test set is required for output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA are configured according to the β values indicated in Table 2 and other applicable procedures described in the 'WCDMA EUT' and 'Release 5 HSDPA Data Devices' sections of this document

Table 4: Sub-Test 5 Setup for Release 6 HSUPA

Sub-set	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	CM (2) (dB)	MPR (dB)	AG (4) Index	E-TFCI
1	11/15 (3)	15/15 (3)	64	11/15 (3)	22/15	209/225	1039/225	4	1	1.0	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	β_{ed1}:47/15 β_{ed2}:47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 (4)	15/15 (4)	64	15/15 (4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, ΔNACK and Δ_{CQI} = 8 ⇔ $A_{hs} = \beta_{hs}/\beta_c$ = 30/15 ⇔β_{hs}= 30/15 *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 signaled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.
Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 14/15 and β_d = 15/15.
Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Figure 5.1g.
Note 6: β_{ed} cannot be set directly; it is set by Absolute Grant Value.

Table 5: HSUPA UE category

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCHTTI (ms)	Minimum Spreading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	2.00
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	2	2 SF2 & 2 SF4	11484	5.76
	4	4	10		20000	2.00
7	4	8	2	2 SF2 & 2	22996	?

(No DPDCH)				SF4		
	4	4	10		20000	?
NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4. UE Categories 1 to 6 supports QPSK only. UE Category 7 supports QPSK and 16QAM. (TS25.306-7.3.0)						

5.3.2.5 HSPA, HSPA+ and DC-HSDPA Test Configuration

SAR test exclusion may apply to 3GPP Rel. 6 HSPA and Rel. 8 DC-HSDPA. When SAR measurement is required for HSPA or DC-HSDPA, a KDB inquiry is required to confirm that the wireless mode configurations in the test setup have remained stable throughout the SAR measurements. Without prior KDB confirmation to determine the SAR results are acceptable, a PAG is required for equipment approval.

SAR test exclusion for HSPA, HSPA+ and DC-HSDPA is determined according to the following:

1) The HSPA procedures are applied to configure 3GPP Rel. 6 HSPA devices in the required sub-test mode(s) to determine SAR test exclusion.

2) SAR is required for Rel. 7 HSPA+ when SAR is required for Rel. 6 HSPA; otherwise, the 3G SAR test reduction procedure is applied to (uplink) HSPA+ with 12.2 kbps RMC as the primary mode. Power is measured for HSPA+ that supports uplink 16 QAM according to configurations in Table C.11.1.4 of 3GPP TS 34.121-1 to determine SAR test reduction.

3) SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.

4) Regardless of whether a PBA is required, the following information must be verified and included in the SAR report for devices supporting HSPA, HSPA+ or DC-HSDPA:

a) The output power measurement results and applicable release version(s) of 3GPP TS 34.121. Power measurement difficulties due to test equipment setup or availability must be resolved between the grantee and its test lab.

b) The power measurement results are in agreement with the individual device implementation and specifications. When Enhanced MPR (E-MPR) applies, the normal MPR targets may be modified according to the Cubic Metric (CM) measured by the device, which must be taken into consideration.

c) The UE category, operating parameters, such as the β and Δ values used to configure the device for testing, power setback procedures described in 3GPP TS 34.121 for the power measurements, and HSPA/HSPA+ channel conditions (active and stable) for the entire duration of the measurement according to the required E-TFCI and AG index values.

5) When SAR measurement is required, the test configurations, procedures and power measurement results must be clearly described to confirm that the required test parameters are used, including E-TFCI and AG index stability and output power conditions.

Table 6: HS-DSCH UE category

HS-DSCH category	Maximum number of HS-DSCH codes received	Minimum inter-TTI interval	Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI NOTE 1	Total number of soft channel bits	Supported modulations without MIMO operation or dual cell operation	Supported modulations with MIMO operation and without dual cell operation	Supported modulations with dual cell operation
Category 1	5	3	7298	19200	QPSK, 16QAM	Not applicable (MIMO not supported)	Not applicable (dual cell operation not supported)
Category 2	5	3	7298	28800			
Category 3	5	2	7298	28800			
Category 4	5	2	7298	38400			
Category 5	5	1	7298	57600			
Category 6	5	1	7298	67200			
Category 7	10	1	14411	115200			
Category 8	10	1	14411	134400			
Category 9	15	1	20251	172800			
Category 10	15	1	27952	172800			
Category 11	5	2	3630	14400	QPSK		
Category 12	5	1	3630	28800			
Category 13	15	1	35280	259200	QPSK, 16QAM, 64QAM		
Category 14	15	1	42192	259200			
Category 15	15	1	23370	345600	QPSK, 16QAM		
Category 16	15	1	27952	345600			
Category 17 NOTE 2	15	1	35280	259200	QPSK, 16QAM, 64QAM	–	
			23370	345600	–	QPSK, 16QAM	
Category 18 NOTE 3	15	1	42192	259200	QPSK, 16QAM, 64QAM	–	
			27952	345600	–	QPSK, 16QAM	
Category 19	15	1	35280	518400	QPSK, 16QAM, 64QAM		
Category 20	15	1	42192	518400			
Category 21	15	1	23370	345600	-	-	QPSK, 16QAM
Category 22	15	1	27952	345600			
Category 23	15	1	35280	518400			QPSK, 16QAM, 64QAM
Category 24	15	1	42192	518400			

5.3.3 LTE Test Configuration

LTE modes were tested according to FCC KDB 941225 D05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR. The R&S CMW500 was used for LTE output power measurements and SAR testing. Max power control was used so the UE transmits with maximum output power during SAR testing. SAR must be measured with the maximum TTI (transmit time interval) supported by the device in each LTE configuration.

A) Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

B) MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to

3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

C) A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

D) Largest channel bandwidth standalone SAR test requirements

1) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

2) QPSK with 50% RB allocation

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

3) QPSK with 100% RB allocation

For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100% RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in 1) and 2) 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) Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

E) Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

5.3.4 Additional requirements for TDD LTE specification

For Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

TDD LTE Band supports 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table: Uplink-downlink configurations for uplink-downlink configurations and Table: Configuration of special subframe (lengths of DwPTS/GP/UpPTS) for Special subframe configurations.

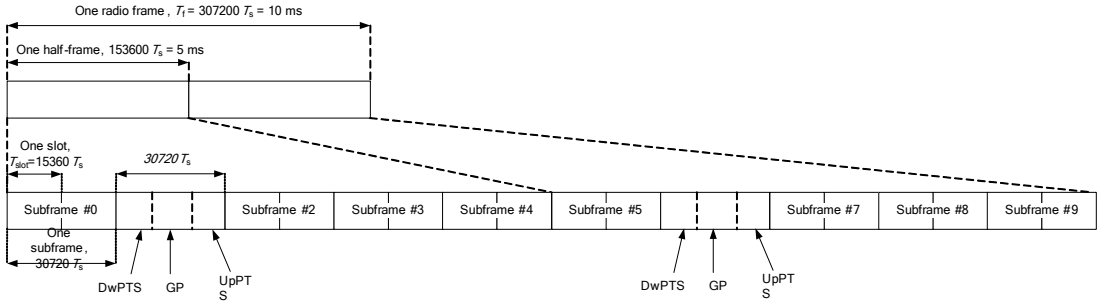


Figure 1: Frame structure type 2

Table 7: 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	$13168 \cdot T_s$			-	-	-

Table 8: 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

According to Figure 1, one radio frame is configured by 10 subframes, which consist of Uplink-subframe, Downlink-subframe and Special subframe. For TDD-LTE, the Duty Cycle should be calculated on Uplink-subframes and Special subframes, due to Special subframe containing both Uplink transmissions. So for one radio frame, Duty Cycle can be calculated with formula as below. The count of Uplink subframes are according to Table: Uplink-downlink configurations:

Duty cycle = (30720Ts*Ups + Uplink Component*Specials)/(307200Ts)

About the uplink component of Special subframes, we can figure out by Table: Configuration of special subframe (lengths of DwPTS/GP/UpPTS):

Uplink Component = UpPTS

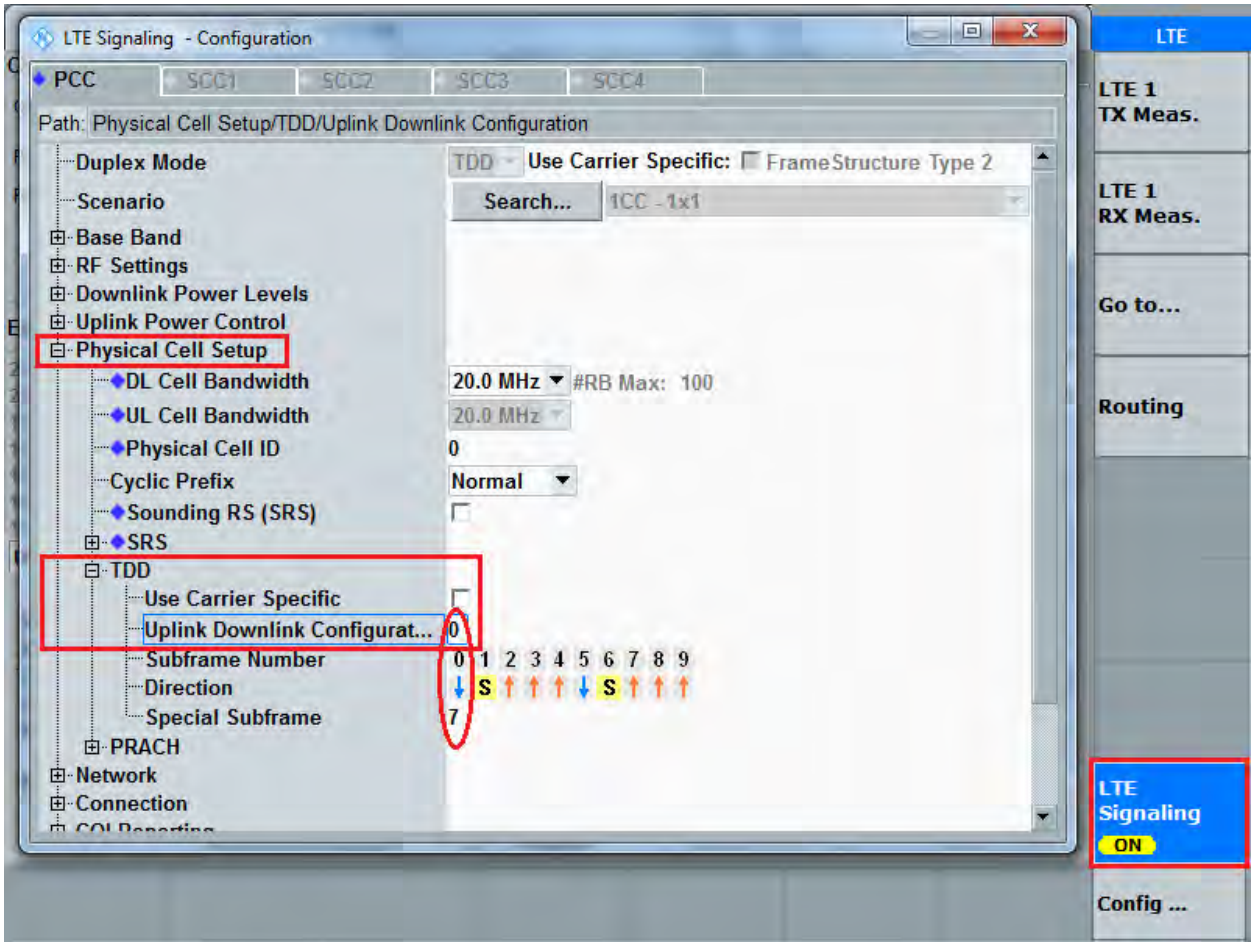
In conclusion, for the TDD LTE Band, Duty Cycle can be calculated with formula as below. All these sets are ok when we test, or we can set as below.

Duty cycle = [(30720Ts*Ups) + UpPTS *Specials]/(307200Ts)

And we can get different Duty cycles under different configurations:

Uplink-downlink configuration	Subframe number			Configuration of special subframe							
				Normal cyclic prefix in downlink				Extended cyclic prefix in downlink			
				Normal cyclic prefix in uplink		Extended cyclic prefix in uplink		Normal cyclic prefix in uplink		Extended cyclic prefix in uplink	
	D	S	U	configuration 0~4	configuration 5~9	configuration 0~4	configuration 5~9	configuration 0~3	configuration 4~7	configuration 0~3	configuration 4~7
0	2	2	6	61.43%	62.85%	61.67%	63.33%	61.43%	62.85%	61.67%	63.33%
1	4	2	4	41.43%	42.85%	41.67%	43.33%	41.43%	42.85%	41.67%	43.33%
2	6	2	2	21.43%	22.85%	21.67%	23.33%	21.43%	22.85%	21.67%	23.33%
3	6	1	3	30.71%	31.43%	30.83%	31.67%	30.71%	31.43%	30.83%	31.67%
4	7	1	2	20.71%	21.43%	20.83%	21.67%	20.71%	21.43%	20.83%	21.67%
5	8	1	1	10.71%	11.43%	10.83%	11.67%	10.71%	11.43%	10.83%	11.67%
6	3	2	5	51.43%	52.85%	51.67%	53.33%	51.43%	52.85%	51.67%	53.33%

SAR test Plan: For TDD LTE, SAR should be tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7 for Frame structure type



5.3.5 Wi-Fi Test Configuration

SAR test reduction for 802.11 Wi-Fi transmission mode configurations are considered separately for DSSS and OFDM. An initial test position is determined to reduce the number of tests required for certain exposure configurations with multiple test positions. An initial test configuration is determined for each frequency band and aggregated band according to maximum output power, channel bandwidth, wireless mode configurations and other operating parameters to streamline the measurement requirements. For 2.4 GHz DSSS, either the initial test position or DSSS procedure is applied to reduce the number of SAR tests; These are mutually exclusive. For OFDM, an initial test position is only applicable to next to the ear, UMPC mini-tablet and hotspot mode configurations, which is tested using the initial test configuration to facilitate test reduction. For other exposure conditions with a fixed test position, SAR test reduction is determined using only the initial test configuration.

The multiple test positions require SAR measurements in head, hotspot mode or UMPC mini-tablet configurations may be reduced according to the highest reported SAR determined using the *initial test position(s)* by applying the DSSS or OFDM SAR measurement procedures in the required wireless mode test configuration(s). The *initial test position(s)* is measured using the highest measured maximum output power channel in the required wireless mode test configuration(s). When the *reported* SAR for 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 wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.
- 0.4 W/kg, SAR is repeated using the same wireless mode test 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 *reported* SAR is ≤ 0.8 W/kg or all required test positions are tested.
    - ✧ For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
    - ✧ When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the *initial test position* and subsequent test positions, when the *reported* SAR is > 0.8 W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the *reported* SAR is ≤ 1.2 W/kg or all required test channels are considered.
    - ✧ The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.

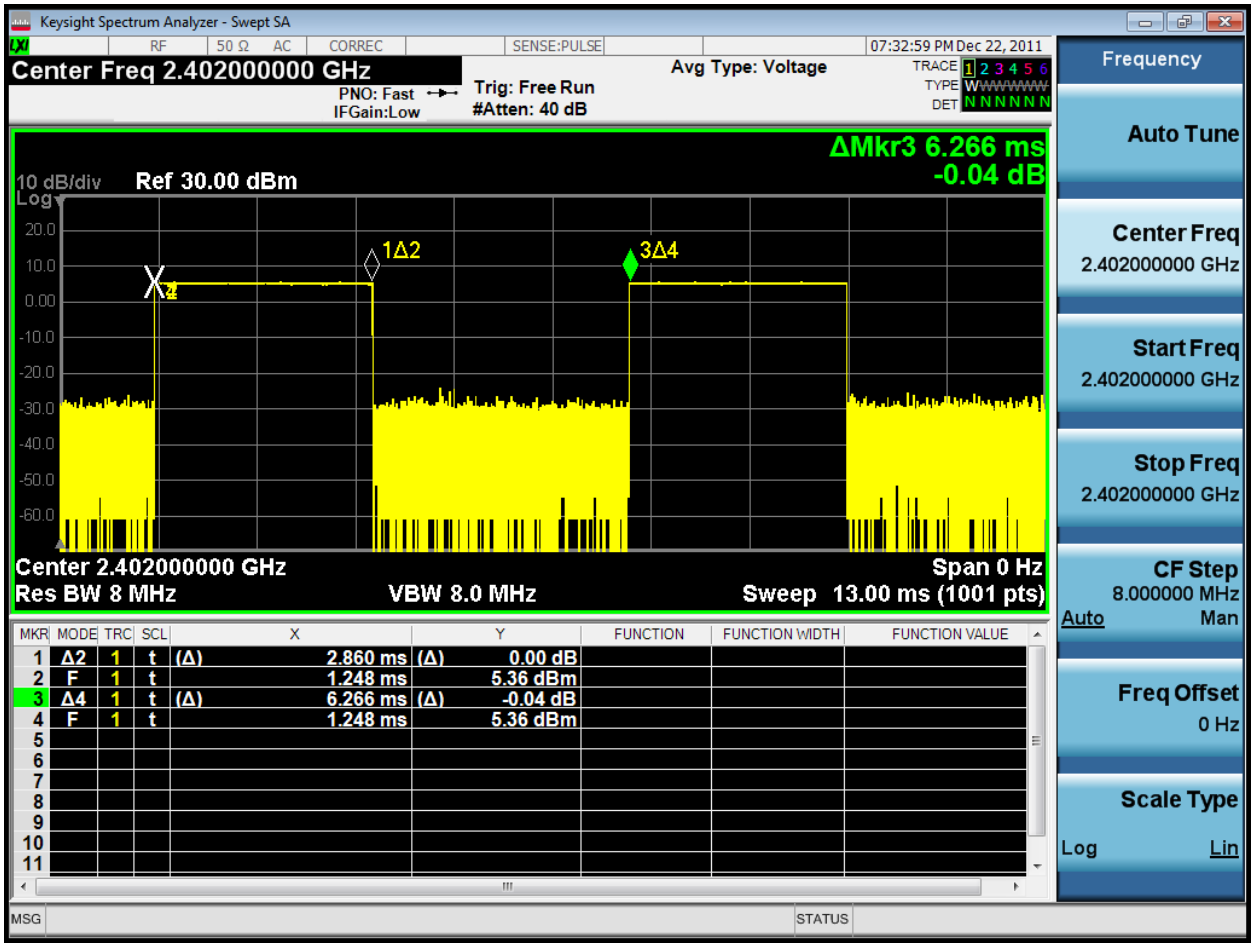
To determine the initial test position, Area Scans were performed to determine the position with the Maximum Value of SAR (measured). The position that produced the highest Maximum Value of SAR is considered the worst case position; thus used as the initial test position.

A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement.

5.3.6 BT Test Configuration

For BT SAR testing, BT engineering testing software installed on the EUT can provide continuous transmitting RF signal with maximum output power. And the CBT control the EUT operating with hoping off and data rate set for DH5.

The SAR measurement takes full account of the BT duty cycle and is reflected in the report, and the duty factor of the device is as follow:



Note: Duty factor= Ton (ms)/ T(on+off) (ms)=2.860/6.266=45.6%

5.3.7 Proximity sensor Configuration

This device uses a proximity sensor that share the same metallic electrode as the transmitting antenna to facilitate triggering in typical user interactivity with the device.

Due to the operating configurations and exposure conditions required by the device, the proximity sensor is used to indicate when the tablet is held close to a user's body exposure condition. It utilizes the proximity sensor to reduce the output power in specific wireless and operating modes to ensure SAR compliance for the following scenarios: To reduce the output power of main antennas during body operating configurations. .It is also set an output power leveled to the lowest one to make sure that in any case of SAR sensor hardware failure the SAR requirements can still be satisfied.

Note: Antenna/Sensor-to-DUT sides separation distances (front view)

Tx Antenna	Antenna/Sensor-to- DUT sides separation distances				
	Back side	Left side	Right side	Top side	Bottom side
2G&3G&4G Main ant & proximity sensor	7.0mm	155.2mm	11.0mm	2.0mm	152mm
WIFI & proximity sensor	7.0mm	9.2mm	160.1mm	2.0mm	152mm

Power Reduction operation table for the specific device

The device use Hisi platform, which have some special NVs for SAR related max power back off, These NVs are used to set a new max power limit based proximity information and call configuration. When human body is in proximity and is detected by sensor, a new max power limit is set using the values stored in the NV. If Base station requests the higher output power above the limit, the power control algorithm inside modem chip will limit the power up to the preset power limit. If base station requests a lower output power less than the limit, the out power is controlled by base station.

Band	Test position	Sensor Trigger Distance range (DUT to Phantom)	Power reduction amount (dB)	Target Power level (dBm)
WCDMA B2	Extremity SAR (Top/Front/Back)	held by hand 5mm	15.5	8.5
	Top side	0<distance≤30mm	15.5	8.5
		30mm<distance	11	13
	Front side	0<distance≤28mm	15.5	8.5
		28mm<distance	11	13
	Back side	0<distance≤32mm	15.5	8.5
		32mm<distance	11	13
	Right side	ALL	11	13
	Left side	ALL	11	13
	Bottom side	ALL	11	13

WCDMA B4	Extremity SAR (Top/Front/Back)	held by hand 5mm	15.5	8.5
	Top side	0<distance≤30mm	15.5	8.5
		30mm<distance	10	14
	Front side	0<distance≤28mm	15.5	8.5
		28mm<distance	10	14
	Back side	0<distance≤32mm	15.5	8.5
		32mm<distance	10	14
	Right side	ALL	0	14
	Left side	ALL	0	14
	Bottom side	ALL	0	14
WCDMA B5	Extremity SAR (Top/Front/Back)	held by hand 5mm	10.5	13.5
	Top side	0<distance≤30mm	10.5	13.5
		30mm<distance	0	24
	Front side	0<distance≤28mm	10.5	13.5
		28mm<distance	0	24
	Back side	0<distance≤32mm	10.5	13.5
		32mm<distance	0	24
	Right side	ALL	0	24
	Left side	ALL	0	24
	Bottom side	ALL	0	24
LTE B2	Extremity SAR (Top/Front/Back)	held by hand 5mm	14.5	9
	Top side	0<distance≤30mm	14.5	9
		30mm<distance	10	13.5
	Front side	0<distance≤28mm	14.5	9
		28mm<distance	10	13.5
	Back side	0<distance≤32mm	14.5	9
		32mm<distance	10	13.5
	Right side	ALL	10	13.5
	Left side	ALL	10	13.5
	Bottom side	ALL	10	13.5
LTE B4	Extremity SAR (Top/Front/Back)	held by hand 5mm	14.5	9
	Top side	0<distance≤30mm	14.5	9
		30mm<distance	9	9
	Front side	0<distance≤28mm	14.5	9
		28mm<distance	9	14.5
	Back side	0<distance≤32mm	14.5	9
		32mm<distance	9	14.5
	Right side	ALL	9	14.5
	Left side	ALL	9	14.5

	Bottom side	ALL	9	14.5
LTE B5	Extremity SAR (Top/Front/Back)	held by hand 5mm	10.5	13.5
	Top side	0<distance≤30mm	10.5	13.5
		30mm<distance	0	24
	Front side	0<distance≤28mm	10.5	13.5
		28mm<distance	0	24
	Back side	0<distance≤32mm	10.5	13.5
		32mm<distance	0	24
	Right side	ALL	0	24
	Left side	ALL	0	24
	Bottom side	ALL	0	24
LTE B7	Extremity SAR (Top/Front/Back)	held by hand 5mm	16	7.5
	Top side	0<distance≤30mm	16	7.5
		30mm<distance	9	14.5
	Front side	0<distance≤28mm	16	7.5
		28mm<distance	9	14.5
	Back side	0<distance≤32mm	16	7.5
		32mm<distance	9	14.5
	Right side	ALL	9	14.5
	Left side	ALL	9	14.5
	Bottom side	ALL	9	14.5
LTE B12	Extremity SAR (Top/Front/Back)	held by hand 5mm	10	14
	Top side	0<distance≤30mm	10	14
		30mm<distance	0	24
	Front side	0<distance≤28mm	10	14
		28mm<distance	0	24
	Back side	0<distance≤32mm	10	14
		32mm<distance	0	24
	Right side	ALL	0	24
	Left side	ALL	0	24
	Bottom side	ALL	0	24
LTE B17	Extremity SAR (Top/Front/Back)	held by hand 5mm	10	14
	Top side	0<distance≤30mm	10	14
		30mm<distance	0	24
	Front side	0<distance≤28mm	10	14
		28mm<distance	0	24
	Back side	0<distance≤32mm	10	14
		32mm<distance	0	24
	Right side	ALL	0	24

	Left side	ALL	0	24
	Bottom side	ALL	0	24
LTE B66	Extremity SAR (Top/Front/Back)	held by hand 5mm	14.5	9
	Top side	0<distance≤30mm	14.5	9
		30mm<distance	9	14.5
	Front side	0<distance≤28mm	14.5	9
		28mm<distance	9	14.5
	Back side	0<distance≤32mm	14.5	9
		32mm<distance	9	14.5
	Right side	ALL	9	14.5
	Left side	ALL	9	14.5
	Bottom side	ALL	9	14.5
G850	Extremity SAR (Top/Front/Back)	held by hand 5mm	11	21.5
	Top side	0<distance≤30mm	11	21.5
		30mm<distance	0	32.5
	Front side	0<distance≤28mm	11	21.5
		28mm<distance	0	32.5
	Back side	0<distance≤32mm	11	21.5
		32mm<distance	0	32.5
	Right side	ALL	0	32.5
	Left side	ALL	0	32.5
	Bottom side	ALL	0	32.5
	Bottom side	ALL	0	32.5
G1900	Extremity SAR (Top/Front/Back)	held by hand 5mm	12.5	17
	Top side	0<distance≤30mm	12.5	17
		30mm<distance	0	19.5
	Front side	0<distance≤28mm	12.5	17
		28mm<distance	10	19.5
	Back side	0<distance≤32mm	12.5	17
		32mm<distance	10	19.5
	Right side	ALL	10	19.5
	Left side	ALL	10	19.5
	Bottom side	ALL	10	19.5
WIFI 2.4G	Extremity SAR (Top/Front/Back)	held by hand 5mm	9.5	6
	Top side	0<distance≤21mm	9.5	6
		21mm<distance	0	15.5
	Front side	0<distance≤20mm	9.5	6
		20mm<distance	0	15.5
	Back side	0<distance≤20mm	9.5	6

		20mm<distance	0	15.5
	Right side	ALL	0	15.5
	Left side	ALL	0	15.5
	Bottom side	ALL	0	15.5
WIFI 5G	Extremity SAR (Top/Front/Back)	held by hand 5mm	9.5	5
	Top side	0<distance≤21mm	9.5	5
		21mm<distance	0	14.5
	Front side	0<distance≤20mm	9.5	5
		20mm<distance	0	14.5
	Back side	0<distance≤20mm	9.5	5
		20mm<distance	0	14.5
	Right side	ALL	0	14.5
	Left side	ALL	0	14.5
	Bottom side	ALL	0	14.5

Note:

To ensure all production units are compliant, the smallest separation distance determined by the sensor triggering and sensor coverage for normal and tit positions for all usage conditions and applicable sides, minus 1 mm, must be used as the test separation distance for additional SAR testing of each higher power stage.

Power Reduction operation table

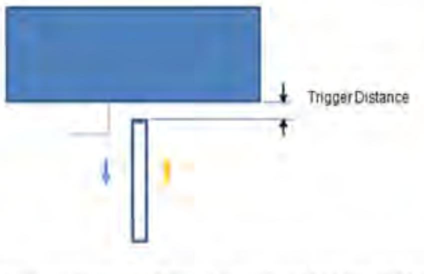
Main Antenna			Power Reduction Level Amount (dBm)											
Power Reduction Scenario		Sensor	GSM850	GSM1900	UMTS B2	UMTS B4	UMTS B5	LTE B2	LTE B4	LTE B5	LTE B7	LTE B12	LTE B17	LTE B66
Full power			33.50	30.50	25.00	25.00	25.00	24.50	24.50	25.00	24.50	25.00	25.00	24.50
Standalone		on	11.00	12.50	15.50	15.50	10.50	14.50	14.50	10.50	16.00	10.00	10.00	14.50
		off	0.00	10.00	11.00	10.00	0.00	10.00	9.00	0.00	9.00	0.00	0.00	9.00
Simultaneous	Wi-Fi on	on	11.00	12.50	15.50	15.50	10.50	14.50	14.50	10.50	16.00	10.00	10.00	14.50
		off	0.00	10.00	11.00	10.00	0.00	10.00	9.00	0.00	9.00	0.00	0.00	9.00

Wi-Fi Antenna		Power Reduction Level Amount (dB)									
Power Reduction Scenario	Sensor	WiFi 2.4G 11b	WiFi 2.4G 11g	WiFi 2.4G 11n HT20	WiFi 2.4G 11n HT40	WiFi 5G 11a	WiFi 5G 11n HT20	WiFi 5G 11n HT40	WiFi 5G 802.11 ac-	WiFi 5G 802.11 ac-	WiFi 5G 802.11a c-VHT80
Full power		17.50	16.00	16.00	9.00	16.50	16.50	16.50	16.50	16.50	11.00
Standalone	on	9.50	8.00	8.00	1.00	9.50	9.50	9.50	9.50	9.50	4.00
	off	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Simultaneous with 2G&3G&4G	on	9.50	8.00	8.00	1.00	9.50	9.50	9.50	9.50	9.50	4.00
	off	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

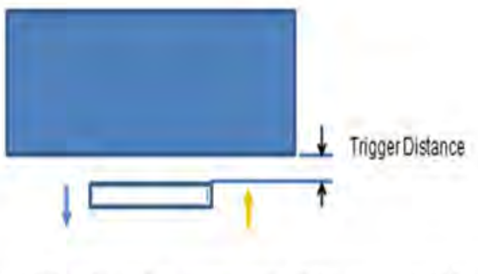
Proximity sensor coverage, distance and angle

Procedures for determining proximity sensor triggering distances

The proximity sensor triggering distance measurement method as below:



Picture:Proximity sensor triggering distance assessment Top side and Left side



Picture:Proximity sensor triggering distance assessment Front side and Back side

Table: Reduced power (Moving toward phantom)

Position	Ant	Band	Power Reduction Status(dBm)																																
			47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15
Back Side	Main Antenna	GSM850	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97
Back Side	Main Antenna	GSM1900	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54
Back Side	Main Antenna	UMTS B2	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62
Back Side	Main Antenna	UMTS B4	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69
Back Side	Main Antenna	UMTS B5	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58
Back Side	Main Antenna	LTE B2	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79
Back Side	Main Antenna	LTE B4	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84
Back Side	Main Antenna	LTE B5	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59
Back Side	Main Antenna	LTE B7	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91
Back Side	Main Antenna	LTE B12	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61
Back Side	Main Antenna	LTE B17	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	14.62	14.62	14.63	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62
Back Side	Main Antenna	LTE B66	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82

Position	Ant	Band	Power Reduction Status(dBm)																															
			35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	1
Back Side	Wi-Fi Antenna	WiFi 2.4G	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07
Back Side	Wi-Fi Antenna	WiFi 5G U-NII-1	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75
Back Side	Wi-Fi Antenna	WiFi 5G U-NII-2A	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79
Back Side	Wi-Fi Antenna	WiFi 5G U-NII-2C	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19
Back Side	Wi-Fi Antenna	WiFi 5G U-NII-3	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82

Position	Ant	Band	Power Reduction Status(dBm)																														
			45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	10	5	1
Top Edge	Main Antenna	GSM850	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97
Top Edge	Main Antenna	GSM1900	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54
Top Edge	Main Antenna	UMTS B2	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62
Top Edge	Main Antenna	UMTS B4	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69
Top Edge	Main Antenna	UMTS B5	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58
Top Edge	Main Antenna	LTE B2	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79
Top Edge	Main Antenna	LTE B4	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84
Top Edge	Main Antenna	LTE B5	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59
Top Edge	Main Antenna	LTE B7	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91
Top Edge	Main Antenna	LTE B12	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61
Top Edge	Main Antenna	LTE B17	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62
Top Edge	Main Antenna	LTE B66	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82

Position	Ant	Band	Power Reduction Status(dBm)																																
			36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	1
Top Edge	Wi-Fi Antenna	WiFi 2.4G	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07
Top Edge	Wi-Fi Antenna	WiFi 5G U-NII-1	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75
Top Edge	Wi-Fi Antenna	WiFi 5G U-NII-2A	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79
Top Edge	Wi-Fi Antenna	WiFi 5G U-NII-2C	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19
Top Edge	Wi-Fi Antenna	WiFi 5G U-NII-3	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82

Table: Full power (Moving away from phantom)

Position	Ant	Band	Power Reduction Status(dBm)																																
			1	5	10	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Back Side	Main Antenna	GSM850	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20
Back Side	Main Antenna	GSM1900	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43
Back Side	Main Antenna	UMTS B2	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91
Back Side	Main Antenna	UMTS B4	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82
Back Side	Main Antenna	UMTS B5	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63
Back Side	Main Antenna	LTE B2	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44
Back Side	Main Antenna	LTE B4	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51
Back Side	Main Antenna	LTE B5	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76
Back Side	Main Antenna	LTE B7	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23
Back Side	Main Antenna	LTE B12	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83
Back Side	Main Antenna	LTE B17	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79
Back Side	Main Antenna	LTE B66	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54

Position	Ant	Band	Power Reduction Status(dBm)																															
			1	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Back Side	Wi-Fi Antenna	WiFi 2.4G	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97
Back Side	Wi-Fi Antenna	WiFi 5G U-NII-1	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18
Back Side	Wi-Fi Antenna	WiFi 5G U-NII-2A	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77
Back Side	Wi-Fi Antenna	WiFi 5G U-NII-2C	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98
Back Side	Wi-Fi Antenna	WiFi 5G U-NII-3	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94

Position	Ant	Band	Power Reduction Status(dBm)																														
			1	5	10	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Top Edge	Main Antenna	GSM850	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20
Top Edge	Main Antenna	GSM1900	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43
Top Edge	Main Antenna	UMTS B2	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91
Top Edge	Main Antenna	UMTS B4	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	8.69	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82	13.82
Top Edge	Main Antenna	UMTS B5	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63	23.63
Top Edge	Main Antenna	LTE B2	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44	13.44
Top Edge	Main Antenna	LTE B4	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51
Top Edge	Main Antenna	LTE B5	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	13.59	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76
Top Edge	Main Antenna	LTE B7	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23	14.23
Top Edge	Main Antenna	LTE B12	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83
Top Edge	Main Antenna	LTE B17	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	14.62	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79
Top Edge	Main Antenna	LTE B66	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54

Position	Ant	Band	Power Reduction Status(dBm)																																
			1	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Top Edge	Wi-Fi Antenna	WiFi 2.4G	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97
Top Edge	Wi-Fi Antenna	WiFi 5G U-NII-1	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18	15.18
Top Edge	Wi-Fi Antenna	WiFi 5G U-NII-2A	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77	15.77
Top Edge	Wi-Fi Antenna	WiFi 5G U-NII-2C	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98
Top Edge	Wi-Fi Antenna	WiFi 5G U-NII-3	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94	14.94

Procedures for determining antenna and proximity sensor coverage

According to the antenna and sensors location figure above, the proximity sensor and main antenna use same metallic electrode, there is no spatial offset，procedures and validation data for determining proximity sensor coverage is not required.

Procedures for determining device tilt angle influences to proximity sensor triggering

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with Bottom side parallel to the base of the flat phantom for each band.

The EUT was rotated about Bottom side for angles up to +/- 45°. If the output power increased during the rotation the DUT was moved 1mm toward the phantom and the rotation repeated. This procedure was repeated until the power remained reduced for all angles up to +/- 45°.

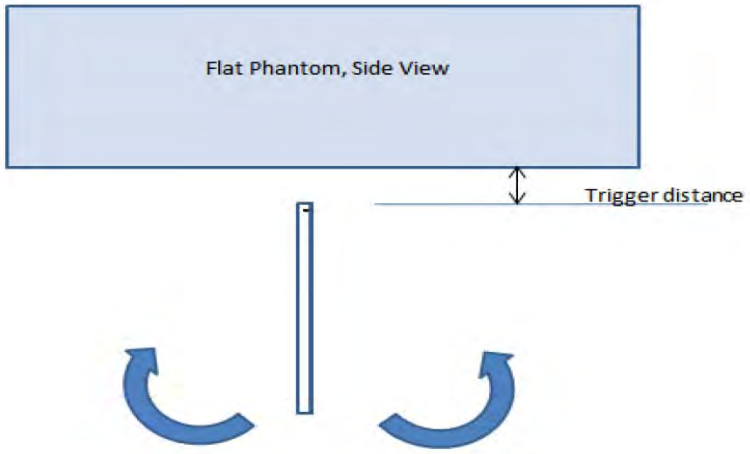


Table: Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering (Back side)

Band(MHz)	Minimum trigger distance at which power reduction was maintained over ±45°	Power Reduction Status										
		-45°	-35°	-25°	-15°	-5°	0°	5°	15°	25°	35°	45°
GSM850	32mm	on	on	on	on	on	on	on	on	on	on	on
GSM1900	32mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B2	32mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B4	32mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B5	32mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band2	32mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band4	32mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band5	32mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band7	32mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band12	32mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band17	32mm	on	on	on	on	on	on	on	on	on	on	on

LTE Band66	32mm	on	on	on	on	on	on	on	on	on	on	on
WIFI 2.4G	20mm	on	on	on	on	on	on	on	on	on	on	on
WIFI 5G	20mm	on	on	on	on	on	on	on	on	on	on	on

Table: Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering (Front side)

Band(MHz)	Minimum trigger distance at which power reduction was maintained over ±45°	Power Reduction Status										
		-45°	-35°	-25°	-15°	-5°	0°	5°	15°	25°	35°	45°
GSM 850	28mm	on	on	on	on	on	on	on	on	on	on	on
GSM 1900	28mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B2	28mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B4	28mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B5	28mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band2	28mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band4	28mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band5	28mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band7	28mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band12	28mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band17	28mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band66	28mm	on	on	on	on	on	on	on	on	on	on	on
WIFI 2.4G	20mm	on	on	on	on	on	on	on	on	on	on	on
WIFI 5G	20mm	on	on	on	on	on	on	on	on	on	on	on

Table: Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering (Top side)

Band(MHz)	Minimum trigger distance at which power reduction was maintained over ±45°	Power Reduction Status										
		-45°	-35°	-25°	-15°	-5°	0°	5°	15°	25°	35°	45°
GSM 850	30mm	on	on	on	on	on	on	on	on	on	on	on
GSM 1900	30mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B2	30mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B4	30mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B5	30mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band2	30mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band4	30mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band5	30mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band7	30mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band12	30mm	on	on	on	on	on	on	on	on	on	on	on
LTE Band17	30mm	on	on	on	on	on	on	on	on	on	on	on

LTE Band66	30mm	on	on	on	on	on	on	on	on	on	on	on
WIFI 2.4G	21mm	on	on	on	on	on	on	on	on	on	on	on
WIFI 5G	21mm	on	on	on	on	on	on	on	on	on	on	on

Conclusion: As is shown from the validation data, it can be ensured that the proximity sensor can be valid triggered for the DUT tilt coverage exposure condition (GSM 850/1900, WCDMA Band 2/4/5, LTE Band 2/4/5/7/12/17/66 with Main Antenna).

Summary SAR test Plan for Proximity sensor power reduction

To ensure all production units are compliant, the smallest separation distance determined by the sensor triggering and sensor coverage for normal and tilt positions for all usage conditions, minus 1 mm, must be used as the test separation distance for additional SAR testing with sensor off.
For this device, as proximity sensor power reduction supports multiple power stages, so we plan that the additional SAR should be considered at the conservative distance, minus 1 mm, for each power stage.

5.3.8 Country Code Detection Mechanism

The device uses the mobile country code (MCC) to indicate whether the users in CN countries or CE countries or FCC countries. The selection between CN countries and FCC countries power levels is based on the country code detection mechanism. It can determine the countries where users are and set the relevant power level for Main antennas accordingly.

Summary of country code detection mechanism

Antenna	MCC OF CN COUNTRY (CN standard)	MCC OF CE/FCC COUNTRY (CE/FCC standard)
Main Ant	Power Level A	Power Level B

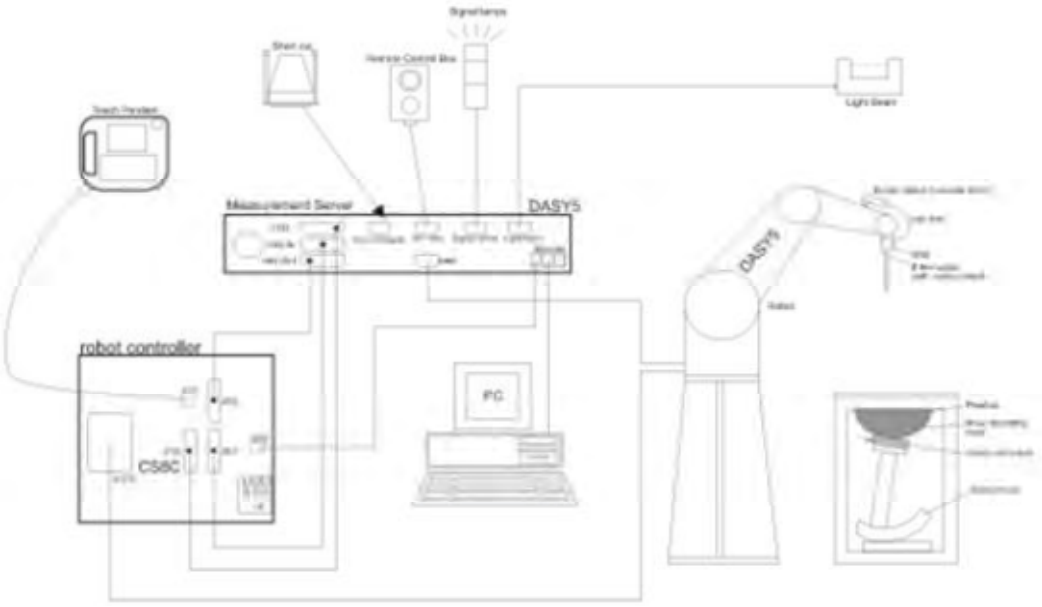
The device model and frequency Bands

Model	AGRK-L03
SIM Card	single
CE/FCC bands	LTE Band 1/2/3/4/5/7/8/12/17/28/40/66 WCDMA Band 1/2/4/5/8 GSM850/900/1800/1900
Bands supporting country code detection mechanism	LTE Band 2/4/7/40/66 WCDMA Band 2/4 GSM1900

6 SAR Measurements System Configuration

6.1 SAR Measurement Set-up

The DASY system 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 DASY 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.

6.2 DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe EX3DV4 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

EX3DV4 Probe Specification

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2dB (noise: typically < 1 µW/g)
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure Scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.

E-field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than ± 10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$SAR=C\Delta T/\Delta t$$

Where: Δt = Exposure time (30 seconds),

C = Heat capacity of tissue (brain or muscle),

ΔT = Temperature increase due to RF exposure.

Or

$$SAR=|E|^2\sigma/\rho$$

Where: σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m^3).

6.3 SAR Measurement Procedure

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.

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 dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.
Area scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

	≤3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: ΔxArea, ΔyArea	≤ 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.	

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 D01 SAR measurement 100 MHz to 6 GHz.

			≤3GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\triangle x_{zoom} \triangle y_{zoom}$			≤2GHz: ≤8mm 2 – 3GHz: ≤5mm*	3 – 4GHz: ≤5mm* 4 – 6GHz: ≤4mm*
Maximum zoom scan spatial resolution, normal to phantom surface	Uniform grid: $\triangle z_{zoom}(n)$		≤5mm	3 – 4GHz: ≤4mm 4 – 5GHz: ≤3mm 5 – 6GHz: ≤2mm
	Graded grid	$\triangle z_{zoom}(1)$: between 1st two points closest to phantom surface	≤4mm	3 – 4GHz: ≤3mm 4 – 5GHz: ≤2.5mm 5 – 6GHz: ≤2mm
		$\triangle z_{zoom}(n>1)$: between subsequent points	≤1.5•$\triangle z_{zoom}(n-1)$	
Minimum zoom scan volume	X, y, z		≥30mm	3 – 4GHz: ≥28mm 4 – 5GHz: ≥25mm 5 – 6GHz: ≥22mm
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 ≤ 1.4W/kg, ≤8mm, ≤7mm and ≤5mm zoom scan resolution may be applied, respectively, for 2GHz to 3GHz, 3GHz to 4GHz and 4GHz to 6GHz.				

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.

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.

7 Main Test Equipment

Name of Equipment	Manufacturer	Type/Model	Serial Number	Last Cal.	Cal. Due Date
Network analyzer	Agilent	E5071B	MY42404014	2021-05-15	2022-05-14
Dielectric Probe Kit	HP	85070E	US44020115	/	/
Power meter	Agilent	E4417A	GB41291714	2021-05-15	2022-05-14
Power sensor	Agilent	N8481H	MY50350004	2021-05-15	2022-05-14
Power sensor	Agilent	E9327A	US40441622	2021-05-15	2022-05-14
Dual directional coupler	Agilent	778D-012	50519	/	/
Dual directional coupler	Agilent	777D	50146	/	/
Dual directional coupler	UCL	UCL-DDC056G-S	20010600118	/	/
Amplifier	INDEXSAR	TPA-005060G01	13030502	2021-05-15	2022-05-14
Wireless communication tester	Anritsu	MT8820C	6201342015	2020-12-13	2021-12-12
Wideband radio communication tester	R&S	CMW 500	113645	2021-05-15	2022-05-14
E-field Probe	SPEAG	EX3DV4	3677	2021-08-12	2022-08-11
DAE	SPEAG	DAE4	1317	2021-02-23	2022-02-22
Validation Kit 750MHz	SPEAG	D750V3	1045	2020-08-28	2023-08-27
Validation Kit 835MHz	SPEAG	D835V2	4d020	2020-08-28	2023-08-27
Validation Kit 1750MHz	SPEAG	D1750V2	1033	2020-02-25	2023-02-24
Validation Kit 1900MHz	SPEAG	D1900V2	5d060	2020-08-27	2023-08-26
Validation Kit 2450MHz	SPEAG	D2450V2	786	2020-08-27	2023-08-26
Validation Kit 2600MHz	SPEAG	D2600V2	1025	2021-04-23	2024-04-22
Validation Kit 5GHz	SPEAG	D5GHzV2	1151	2020-02-27	2023-02-26
Temperature Probe	Tianjin jinming	JM222	381	2021-05-15	2022-05-14
Hygrothermograph	Anymetr	HTC - 1	TY2020A001	2021-05-15	2022-05-14
Twin SAM Phantom	Speag	SAM1	1534	/	/
Software for Test	Speag	DASY52	/	/	/
Softwarefor Tissue	Agilent	85070	/	/	/

8 Tissue Dielectric Parameter Measurements & System Verification

8.1 Tissue Verification

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 24 hours of use; or earlier if the dielectric parameters can become out of tolerance.

Target values

Frequency (MHz)	Water (%)	Salt (%)	Sugar (%)	Glycol (%)	Preventol (%)	Cellulose (%)	ε_r	σ(s/m)
750	41.448	1.452	56	0	0.1	1.0	41.9	0.89
835	41.45	1.45	56	0	0.1	1.0	41.5	0.90
1750	55.24	0.31	0	44.45	0	0	40.1	1.37
1900	55.242	0.306	0	44.452	0	0	40.0	1.40
2450	62.7	0.5	0	36.8	0	0	39.2	1.80
2600	55.242	0.306	0	44.452	0	0	39.0	1.96
Frequency (MHz)	**Water (%)**	**Diethylenglycol monohexylether**			**Triton X-100**		**ε_r**	**σ(s/m)**
5250	65.53	17.24			17.23		35.9	4.71
5600	65.53	17.24			17.23		35.5	5.07
5750	65.53	17.24			17.23		35.4	5.22

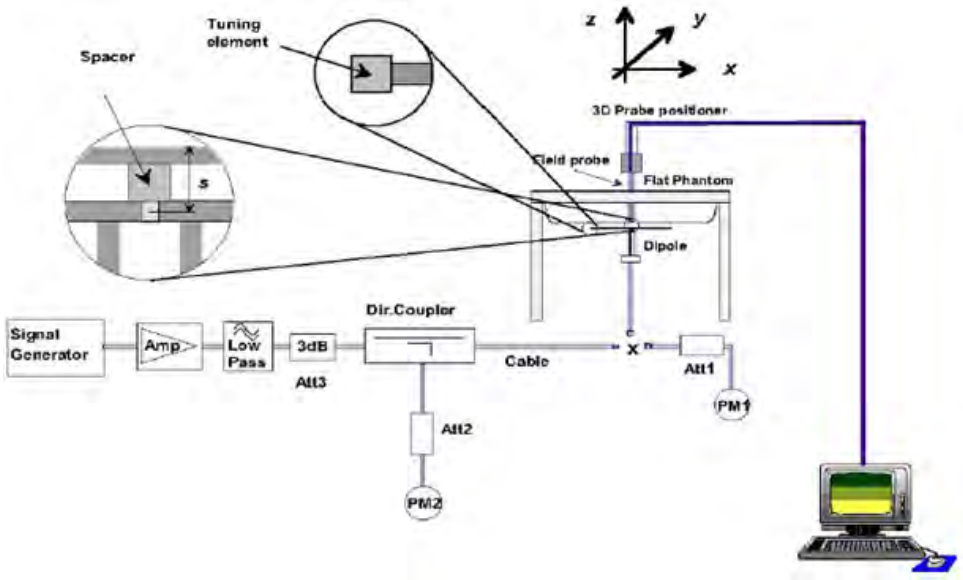
Measurements results

Frequency (MHz)	Test Date	Temp ℃	Measured Dielectric Parameters		Target Dielectric Parameters		Limit (Within ±5%)	
			ε_r	σ(s/m)	ε_r	σ(s/m)	Dev ε_r(%)	Dev σ(%)
750	2021/12/4	21.5	42.3	0.88	41.9	0.89	0.95	-1.12
835	2021/12/4	21.5	41.4	0.88	41.5	0.90	-0.24	-2.22
1750	2021/12/4	21.5	40.2	1.34	40.1	1.37	0.25	-2.19
1900	2021/12/6	21.5	40.1	1.41	40.0	1.40	0.25	0.71
2450	2021/12/6	21.5	38.6	1.81	39.2	1.80	-1.53	0.56
2600	2021/12/6	21.5	38.2	2.01	39.0	1.96	-2.05	2.55
5250	2021/12/7	21.5	35.5	4.80	35.9	4.71	-1.11	1.91
5600	2021/12/7	21.5	34.2	5.21	35.5	5.07	-3.66	2.76
5750	2021/12/7	21.5	34.9	5.22	35.4	5.22	-1.41	0.00
Note: The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements ≤ 3 GHz and ≥ 10.0 cm for measurements > 3 GHz.								

8.2 System Performance Check

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulates were measured using the dielectric probe kit and the network analyzer. A system check measurement for every day was made following the determination of the dielectric parameters of the Tissue simulates, using the dipole validation kit. The dipole antenna was placed under the flat section of the twin SAM phantom.

System check is performed regularly on all frequency bands where tests are performed with the DASY system.



Picture 1System Performance Check setup

Picture 2 Setup Photo

Justification for Extended SAR Dipole Calibrations

Usage of SAR dipoles calibrated less than 3 years ago but more than 1 year ago were confirmed in maintaining return loss (< - 20 dB, within 20% of prior calibration) and impedance (within 5 ohm from prior calibration) requirements per extended calibrations in KDB 865664 D01:

Dipole		Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
Dipole D750V2 SN: 1045	Head Liquid	8/28/2020	-26.6	/	54.3	/
		8/27/2021	-26.2	1.5	53.9	0.4
Dipole D835V2 SN: 4d020	Head Liquid	8/28/2020	-26.2	/	54.8	/
		8/27/2021	-26.5	-1.1	55.2	-0.4
Dipole D1750V2 SN: 1033	Head Liquid	2/25/2020	-38.3	/	48.8	/
		2/26/2021	-40.0	-1.7	49.9	1.1
Dipole D1900V2 SN: 5d060	Head Liquid	8/27/2020	-23.3	/	52.5	/
		8/26/2021	-23.0	1.3	51.9	0.6
Dipole D2450V2 SN: 786	Head Liquid	8/27/2020	-26.9	/	54.5	/
		8/26/2021	-27.1	-0.7	53.8	0.7
Dipole D5GHzV2 SN: 1151 (5250MHz)	Head Liquid	2/27/2020	-23.4	/	52.4	/
		2/26/2021	-23.8	-0.4	50.0	-2.4
Dipole D5GHzV2 SN: 1151 (5600MHz)	Head Liquid	2/27/2020	-22.6	/	57.0	/
		2/26/2021	-21.5	1.1	55.6	-1.4
Dipole D5GHzV2 SN: 1151 (5750MHz)	Head Liquid	2/27/2020	-25.0	/	55.9	/
		2/26/2021	-26.8	-1.8	52.5	-3.4

System Check results

Frequency (MHz)	Test Date	Temp ℃	250mW /100mW Measured SAR_{1g} (W/kg)	1W Normalized SAR_{1g} (W/kg)	1W Target SAR_{1g} (W/kg)	Δ % (Limit ±10%)	Plot No.
750	2021/12/4	21.5	2.13	8.52	8.37	1.79	1
835	2021/12/4	21.5	2.44	9.76	9.65	1.14	2
1750	2021/12/4	21.5	8.95	35.80	35.90	-0.28	3
1900	2021/12/6	21.5	9.88	39.52	39.50	0.05	4
2450	2021/12/6	21.5	13.70	54.80	52.30	4.78	5
2600	2021/12/6	21.5	13.90	55.60	56.10	-0.89	6
5250	2021/12/7	21.5	7.87	78.70	78.00	0.90	7
5600	2021/12/7	21.5	7.67	76.70	80.50	-4.72	8
5750	2021/12/7	21.5	7.66	76.60	77.40	-1.03	9
Note: Target Values used derive from the calibration certificate Data Storage and Evaluation.							

8.3 SAR System Validation

Per FCC KDB 865664 D02v01, SAR system verification is required to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles are used with the required tissue-equivalent media for system validation, according to the procedures outlined in FCC KDB 865664 D01 and IEEE 1528-2013. Since SAR probe calibrations are frequency dependent, each probe calibration point must be validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

A tabulated summary of the system validation status, measurement frequencies, SAR probes, calibrated signal type(s) and tissue dielectric parameters has been included.

Frequency [MHz]	Date	Probe SN	Probe Type	Probe Cal Point		PERM (Er)	COND (Σ)	CW Validation		
								Sensitivity	Probe Linearity	Probe Isotropy
750	2021/12/8	3677	EX3DV4	750	Body	55.35	0.99	PASS	PASS	PASS
835	2021/12/8	3677	EX3DV4	835	Body	54.88	0.98	PASS	PASS	PASS
1750	2021/12/8	3677	EX3DV4	1750	Body	51.24	1.44	PASS	PASS	PASS
1900	2021/12/8	3677	EX3DV4	1900	Body	50.98	1.56	PASS	PASS	PASS
2450	2021/12/8	3677	EX3DV4	2450	Body	50.59	1.95	PASS	PASS	PASS
2600	2021/12/8	3677	EX3DV4	2600	Body	50.14	2.13	PASS	PASS	PASS
5250	2021/12/8	3677	EX3DV4	5250	Body	47.37	5.44	PASS	PASS	PASS
5600	2021/12/8	3677	EX3DV4	5600	Body	46.42	5.99	PASS	PASS	PASS
5750	2021/12/8	3677	EX3DV4	5750	Body	46.02	6.23	PASS	PASS	PASS

NOTE: While the probes have been calibrated for both CW and modulated signals, all measurements were performed using communication systems calibrated for CW signals only. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication 865664D01v01 for scenarios when CW probe calibrations are used with other signal types. SAR systems were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5dB), such as OFDM according to KDB 865664.

9 Normal and Maximum Output Power

KDB 447498 D01 at the maximum rated output power and within the tune-up tolerance range specified for the product, but not more than 2 dB lower than the maximum tune-up tolerance limit.

9.1 GSM Mode

GSM 850 Full power &Sensor off		Burst-Averaged output power(dBm)				Division Factors	Frame-Averaged output power(dBm)			
		Tune-up	Channel/Frenqucy(MHz)				Tune-up	Channel/Frenqucy(MHz)		
		MAX	128 /824.2	190 /836.6	251 /848.8		MAX	128 /824.2	190 /836.6	251 /848.8
GSM	CS	33.50	32.50	32.31	32.15	9.03	24.47	23.47	23.28	23.12
GPRS/ EGPRS (GMSK)	1 Tx Slot	33.50	32.42	32.33	32.20	9.03	24.47	23.39	23.30	23.17
	2 Tx Slots	31.50	30.17	30.20	30.26	6.02	**25.48**	24.15	24.18	24.24
	3 Tx Slots	29.50	28.00	28.11	28.18	4.26	25.24	23.74	23.85	23.92
	4 Tx Slots	27.50	26.13	26.35	26.41	3.01	24.49	23.12	23.34	23.40
EGPRS (8PSK)	1 Tx Slot	27.00	25.53	25.78	25.51	9.03	17.97	16.50	16.75	16.48
	2 Tx Slots	25.00	23.54	23.51	23.47	6.02	18.98	17.52	17.49	17.45
	3 Tx Slots	23.00	21.47	21.54	21.58	4.26	18.74	17.21	17.28	17.32
	4 Tx Slots	22.00	20.47	20.50	20.50	3.01	18.99	17.46	17.49	17.49
GSM 850 Sensor on		Burst-Averaged output power(dBm)				Division Factors	Frame-Averaged output power(dBm)			
		Tune-up	Channel/Frenqucy(MHz)				Tune-up	Channel/Frenqucy(MHz)		
		MAX	128 /824.2	190 /836.6	251 /848.8		MAX	128 /824.2	190 /836.6	251 /848.8
GSM	CS	22.50	21.89	22.03	22.20	9.03	13.47	12.86	13.00	13.17
GPRS/ EGPRS (GMSK)	1 Tx Slot	22.50	21.80	22.01	22.15	9.03	13.47	12.77	12.98	13.12
	2 Tx Slots	20.50	19.73	19.97	20.09	6.02	**14.48**	13.71	13.95	14.07
	3 Tx Slots	18.50	17.67	17.88	18.00	4.26	14.24	13.41	13.62	13.74
	4 Tx Slots	16.50	16.31	16.36	16.44	3.01	13.49	13.30	13.35	13.43
EGPRS (8PSK)	1 Tx Slot	16.00	15.89	15.34	15.47	9.03	6.97	6.86	6.31	6.44
	2 Tx Slots	14.00	13.34	13.55	13.62	6.02	7.98	7.32	7.53	7.60
	3 Tx Slots	13.00	11.47	12.24	12.52	4.26	8.74	7.21	7.98	8.26
	4 Tx Slots	12.00	11.53	11.54	11.45	3.01	8.99	8.52	8.53	8.44
GSM 1900 Sensor off（FCC country code detected）		Burst-Averaged output power(dBm)				Division Factors	Frame-Averaged output power(dBm)			
		Tune-up	Channel/Frenqucy(MHz)				Tune-up	Channel/Frenqucy(MHz)		
		MAX	512 /1850.2	661 /1880	810 /1909.8		MAX	512 /1850.2	661 /1880	810 /1909.8
GSM	CS	20.50	19.71	19.32	19.40	9.03	11.47	10.68	10.29	10.37
GPRS/ EGPRS	1 Tx Slot	20.50	19.69	19.34	19.57	9.03	11.47	10.66	10.31	10.54
	2 Tx Slots	18.00	16.75	16.47	16.62	6.02	11.98	10.73	10.45	10.60

(GMSK)	3 Tx Slots	17.00	15.67	15.43	15.54	4.26	**12.74**	11.41	11.17	11.28
	4 Tx Slots	15.00	14.02	13.83	13.85	3.01	11.99	11.01	10.82	10.84
EGPRS (8PSK)	1 Tx Slot	17.00	16.04	16.06	16.16	9.03	7.97	7.01	7.03	7.13
	2 Tx Slots	14.00	13.24	13.17	13.01	6.02	7.98	7.22	7.15	6.99
	3 Tx Slots	12.20	11.55	11.38	11.62	4.26	7.94	7.29	7.12	7.36
	4 Tx Slots	11.00	10.62	10.13	10.52	3.01	7.99	7.61	7.12	7.51
GSM 1900 Sensor on		Burst-Averaged output power(dBm)				Division Factors	Frame-Averaged output power(dBm)			
		Tune-up	Channel/Frenqucy(MHz)				Tune-up	Channel/Frenqucy(MHz)		
		MAX	512 /1850.2	661 /1880	810 /1909.8		MAX	512 /1850.2	661 /1880	810 /1909.8
GSM	CS	18.00	17.11	17.03	17.08	9.03	8.97	8.08	8.00	8.05
GPRS/ EGPRS (GMSK)	1 Tx Slot	18.00	17.25	16.94	17.10	9.03	8.97	8.22	7.91	8.07
	2 Tx Slots	15.50	14.84	14.60	14.75	6.02	9.48	8.82	8.58	8.73
	3 Tx Slots	14.50	13.81	13.54	13.74	4.26	**10.24**	9.55	9.28	9.48
	4 Tx Slots	12.50	12.32	12.09	12.15	3.01	9.49	9.31	9.08	9.14
EGPRS (8PSK)	1 Tx Slot	14.50	14.12	13.97	13.84	9.03	5.47	5.09	4.94	4.81
	2 Tx Slots	12.00	11.61	11.54	11.67	6.02	5.98	5.59	5.52	5.65
	3 Tx Slots	11.00	10.54	10.03	10.46	4.26	6.74	6.28	5.77	6.20
	4 Tx Slots	10.00	9.76	9.72	9.70	3.01	6.99	6.75	6.71	6.69
GSM 1900 Full power（without FCC country code detected）		Burst-Averaged output power(dBm)				Division Factors	Frame-Averaged output power(dBm)			
		Tune-up	Channel/Frenqucy(MHz)				Tune-up	Channel/Frenqucy(MHz)		
		MAX	512 /1850.2	661 /1880	810 /1909.8		MAX	512 /1850.2	661 /1880	810 /1909.8
GSM	CS	30.50	29.23	29.15	28.96	9.03	21.47	20.20	20.12	19.93
GPRS/ EGPRS (GMSK)	1 Tx Slot	30.50	29.24	29.12	29.04	9.03	21.47	20.21	20.09	20.01
	2 Tx Slots	28.00	26.78	26.41	26.67	6.02	21.98	20.76	20.39	20.65
	3 Tx Slots	27.00	25.96	25.72	25.53	4.26	**22.74**	21.70	21.46	21.27
	4 Tx Slots	25.00	23.94	23.78	23.66	3.01	21.99	20.93	20.77	20.65
EGPRS (8PSK)	1 Tx Slot	27.00	25.71	25.43	25.34	9.03	17.97	16.68	16.40	16.31
	2 Tx Slots	24.00	22.68	22.37	22.35	6.02	17.98	16.66	16.35	16.33
	3 Tx Slots	22.20	20.92	20.67	20.57	4.26	17.94	16.66	16.41	16.31
	4 Tx Slots	21.00	19.42	19.28	19.60	3.01	17.99	16.41	16.27	16.59

Notes: The worst-case configuration and mode for SAR testing is determined to be as follows:
1. Standalone: GSM 850 GMSK (GPRS) mode with 2 time slots for Max power, GSM 1900 GMSK (GPRS) mode with 3 time slots for Max power,based on the output power measurements above..

9.2 WCDMA Mode

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

WCDMA		Band II(dBm) Full power（without FCC country code detected）				Band IV(dBm) Full power（without FCC country code detected）			
Tx Channel		9262	9400	9538	Tune-up Limit	1312	1413	1513	Tune-up Limit
Frequency(MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6	
RMC	12.2kbps	23.43	**23.54**	23.48	25.00	**23.50**	23.37	23.34	25.00
AMR	12.2kbps	23.37	23.50	23.64	25.00	23.64	23.37	23.18	25.00
HSDPA	Sub 1	22.89	22.96	22.94	24.50	22.98	22.95	22.70	24.50
	Sub 2	21.99	21.88	22.04	23.50	22.06	21.77	21.78	23.50
	Sub 3	21.59	21.80	21.70	23.10	21.50	21.57	21.56	23.10
	Sub 4	21.47	21.60	21.58	23.00	21.34	21.25	21.24	23.00
HSUPA	Sub 1	20.31	20.34	20.32	21.80	20.44	20.05	20.16	21.80
	Sub 2	19.09	19.24	19.34	20.70	19.08	19.17	19.02	20.70
	Sub 3	19.87	19.86	19.72	21.40	19.88	19.87	19.84	21.40
	Sub 4	18.99	18.92	19.08	20.50	19.12	18.85	18.76	20.50
	Sub 5	21.39	21.68	21.58	23.00	21.56	21.51	21.32	23.00
DC-HSDPA	Sub 1	23.01	22.90	22.88	24.50	22.86	22.79	22.78	24.50
	Sub 2	21.91	22.08	21.98	23.50	21.92	22.01	21.94	23.50
	Sub 3	21.37	21.72	21.66	23.10	21.60	21.39	21.44	23.10
	Sub 4	21.37	21.38	21.46	23.00	21.62	21.35	21.24	23.00
HSPA+	16QAM	20.90	20.91	21.02	22.00	20.94	20.93	21.00	22.00
Note: 1.Per KDB 941225 D01, SAR for each exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.									

WCDMA		Band II(dBm) Sensor off（FCC country code detected）				Band IV(dBm) Sensor off（FCC country code detected）				Band V(dBm) Full power& Sensor off			
Tx Channel		9262	9400	9538	Tune-up Limit	1312	1413	1513	Tune-up Limit	4132	4183	4233	Tune-up Limit
Frequency(MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.6	846.6	
RMC	12.2kbps	**13.36**	12.91	13.16	14.00	13.68	13.82	**13.91**	15.00	23.71	23.63	**23.74**	25.00
AMR	12.2kbps	13.42	13.02	13.06	14.00	13.66	13.90	13.81	15.00	23.63	23.49	23.84	25.00
HSDPA	Sub 1	13.20	12.82	13.22	14.00	13.80	13.76	14.03	15.00	23.43	23.35	23.26	24.60
	Sub 2	13.34	12.82	13.24	14.00	13.54	13.86	13.75	15.00	22.51	22.61	22.48	23.90
	Sub 3	13.40	12.94	13.28	14.00	13.58	13.96	13.75	15.00	21.95	22.17	22.12	23.40
	Sub 4	13.36	12.98	13.14	14.00	13.78	13.66	14.01	15.00	22.25	21.97	22.14	23.50

HSUPA	Sub 1	13.32	13.10	13.24	14.00	13.60	13.72	13.87	15.00	21.61	21.61	21.76	23.00
	Sub 2	13.46	12.84	13.02	14.00	13.70	13.84	13.87	15.00	20.17	20.21	20.28	21.50
	Sub 3	13.26	13.02	13.20	14.00	13.82	13.70	13.91	15.00	20.95	20.61	20.86	22.10
	Sub 4	13.50	12.92	13.30	14.00	13.66	13.80	13.79	15.00	20.11	19.77	20.08	21.30
	Sub 5	13.36	12.94	13.28	14.00	13.70	13.80	13.77	15.00	21.75	21.75	21.76	23.10
DC-HSDPA	Sub 1	13.42	12.80	13.16	14.00	13.70	13.68	13.87	15.00	23.39	23.33	23.24	24.60
	Sub 2	13.40	12.80	13.02	14.00	13.66	13.72	13.75	15.00	22.61	22.47	22.66	23.90
	Sub 3	13.34	13.10	13.06	14.00	13.52	13.72	14.03	15.00	22.09	21.89	22.28	23.40
	Sub 4	13.22	12.96	13.20	14.00	13.54	13.96	13.95	15.00	22.35	21.97	22.12	23.50
HSPA+	16QAM	13.08	12.49	12.90	14.00	13.80	13.80	13.99	15.00	20.95	20.93	21.06	22.00

Note: 1.Per KDB 941225 D01, SAR for each exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.

WCDMA		Band II(dBm) Sensor on				Band IV(dBm) Sensor on				Band V(dBm) Sensor on			
Tx Channel		9262	9400	9538	Tune-up Limit	1312	1413	1513	Tune-up Limit	4132	4183	4233	Tune-up Limit
Frequency(MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.6	846.6	
RMC	12.2kbps	**8.95**	8.62	8.71	9.50	8.69	8.69	**8.79**	9.50	**13.59**	13.58	13.39	14.50
AMR	12.2kbps	8.87	8.54	8.57	9.50	8.71	8.75	8.85	9.50	13.49	13.48	13.53	14.50
HSDPA	Sub 1	8.85	8.78	8.55	9.50	8.57	8.53	8.67	9.50	13.63	13.52	13.37	14.50
	Sub 2	8.91	8.78	8.81	9.50	8.67	8.79	8.77	9.50	13.69	13.56	13.51	14.50
	Sub 3	8.79	8.60	8.55	9.50	8.83	8.53	8.85	9.50	13.57	13.64	13.31	14.50
	Sub 4	8.93	8.62	8.79	9.50	8.85	8.59	8.69	9.50	13.73	13.66	13.35	14.50
HSUPA	Sub 1	9.09	8.68	8.55	9.50	8.65	8.59	8.65	9.50	13.67	13.62	13.33	14.50
	Sub 2	9.11	8.62	8.77	9.50	8.71	8.73	8.87	9.50	13.55	13.64	13.33	14.50
	Sub 3	9.07	8.58	8.71	9.50	8.67	8.57	8.81	9.50	13.71	13.72	13.23	14.50
	Sub 4	8.85	8.74	8.71	9.50	8.69	8.75	8.65	9.50	13.55	13.54	13.31	14.50
	Sub 5	9.01	8.60	8.83	9.50	8.69	8.67	8.95	9.50	13.53	13.56	13.23	14.50
DC-HSDPA	Sub 1	8.95	8.68	8.81	9.50	8.71	8.73	8.77	9.50	13.71	13.56	13.29	14.50
	Sub 2	9.09	8.74	8.77	9.50	8.53	8.73	8.87	9.50	13.75	13.62	13.39	14.50
	Sub 3	9.11	8.58	8.83	9.50	8.65	8.81	8.73	9.50	13.69	13.74	13.43	14.50
	Sub 4	8.95	8.54	8.69	9.50	8.81	8.53	8.79	9.50	13.61	13.56	13.29	14.50
HSPA+	16QAM	8.73	8.22	8.37	9.50	8.51	8.65	8.51	9.50	13.41	13.38	13.31	14.50

Note: 1.Per KDB 941225 D01, SAR for each exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.

9.3 LTE Mode

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 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

LTE FDD Band 2 Full power（without FCC country code detected）				Output power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	23.22	23.27	23.21	24.50
		1	2	23.21	23.22	23.16	24.50
		1	5	23.12	23.18	23.15	24.50
		3	0	23.26	23.30	23.26	24.50
		3	2	23.25	23.36	23.29	24.50
		3	3	23.17	23.29	23.32	24.50
		6	0	22.23	22.35	22.34	23.50
	16QAM	1	0	22.34	22.37	22.42	23.50
		1	2	22.32	22.26	22.37	23.50
		1	5	22.34	22.28	22.43	23.50
		3	0	22.18	22.11	22.25	23.50
		3	2	22.13	22.04	22.25	23.50
		3	3	22.04	21.99	22.14	23.50
		6	0	21.14	21.09	21.28	22.50
	64QAM	1	0	22.25	22.17	22.37	22.50
		1	2	22.22	22.16	22.29	22.50
		1	5	22.01	22.00	22.14	22.50
		3	0	22.19	22.12	22.26	22.50
		3	2	22.26	22.17	21.98	22.50
		3	3	22.05	22.00	22.15	22.50
		6	0	21.22	21.17	21.36	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18615/1851.5	18900/1880	19185/1908.5	
3MHz	QPSK	1	0	23.24	23.31	23.24	24.50

		1	7	23.19	23.25	23.20	24.50
		1	14	23.15	23.23	23.19	24.50
		8	0	22.36	22.42	22.39	23.50
		8	4	22.37	22.46	22.41	23.50
		8	7	22.27	22.40	22.42	23.50
		15	0	22.23	22.39	22.37	23.50
	16QAM	1	0	22.37	22.39	22.45	23.50
		1	7	22.35	22.26	22.41	23.50
		1	14	22.36	22.32	22.46	23.50
		8	0	21.29	21.24	21.37	22.50
		8	4	21.24	21.17	21.37	22.50
		8	7	21.14	21.11	21.27	22.50
		15	0	21.17	21.13	21.31	22.50
	64QAM	1	0	22.28	22.19	22.40	22.50
		1	7	22.25	22.16	22.31	22.50
		1	14	22.03	21.99	22.17	22.50
		8	0	21.30	21.25	21.38	21.50
		8	4	21.37	21.30	21.10	21.50
		8	7	21.15	21.12	21.28	21.50
		15	0	21.25	21.21	21.39	21.50

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	23.21	23.29	23.20	24.50
		1	13	23.17	23.21	23.17	24.50
		1	24	23.12	23.18	23.15	24.50
		12	0	22.33	22.37	22.35	23.50
		12	6	22.35	22.42	22.36	23.50
		12	13	22.25	22.38	22.38	23.50
		25	0	22.23	22.38	22.35	23.50
	16QAM	1	0	22.34	22.35	22.42	23.50
		1	13	22.32	22.24	22.38	23.50
		1	24	22.33	22.30	22.42	23.50
		12	0	21.27	21.20	21.34	22.50
		12	6	21.21	21.12	21.33	22.50
		12	13	21.11	21.06	21.23	22.50
		25	0	21.15	21.09	21.26	22.50
	64QAM	1	0	22.25	22.19	22.37	22.50
		1	13	22.22	22.18	22.28	22.50
		1	24	22.04	21.97	22.13	22.50
		12	0	21.28	21.21	21.39	21.50
		12	6	21.34	21.25	21.06	21.50
		12	13	21.12	21.07	21.24	21.50
		25	0	21.23	21.17	21.34	21.50

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18650/1855	18900/1880	19150/1905	
10MHz	QPSK	1	0	23.23	23.30	23.23	24.50
		1	25	23.20	23.26	23.21	24.50
		1	49	23.14	23.22	23.18	24.50
		25	0	22.36	22.42	22.39	23.50
		25	13	22.38	22.47	22.40	23.50
		25	25	22.27	22.42	22.43	23.50
		50	0	22.27	22.40	22.39	23.50
	16QAM	1	0	22.36	22.38	22.44	23.50
		1	25	22.35	22.28	22.41	23.50
		1	49	22.36	22.32	22.45	23.50
		25	0	21.30	21.25	21.38	22.50
		25	13	21.23	21.16	21.36	22.50
		25	25	21.14	21.11	21.27	22.50
		50	0	21.18	21.14	21.30	22.50
	64QAM	1	0	22.27	22.18	22.39	22.50
		1	25	22.25	22.18	22.31	22.50
		1	49	22.03	21.99	22.16	22.50
		25	0	21.31	21.26	21.39	21.50
		25	13	21.36	21.29	21.09	21.50
		25	25	21.15	21.12	21.28	21.50
		50	0	21.26	21.22	21.38	21.50

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	23.22	23.26	23.21	24.50
		1	38	23.18	23.25	23.18	24.50
		1	74	23.11	23.17	23.14	24.50
		36	0	22.34	22.38	22.36	23.50
		36	18	22.35	22.42	22.36	23.50
		36	39	22.24	22.39	22.39	23.50
		75	0	22.25	22.36	22.34	23.50
	16QAM	1	0	22.31	22.36	22.42	23.50
		1	38	22.33	22.25	22.39	23.50
		1	74	22.33	22.28	22.42	23.50
		36	0	21.27	21.23	21.35	22.50
		36	18	21.20	21.11	21.32	22.50
		36	39	21.12	21.07	21.24	22.50
		75	0	21.15	21.09	21.26	22.50
	64QAM	1	0	22.22	22.16	22.37	22.50
		1	38	22.23	22.15	22.29	22.50
		1	74	22.04	21.98	22.17	22.50
		36	0	21.30	21.28	21.40	21.50

		36	18	21.34	21.26	21.08	21.50
		36	39	21.13	21.08	21.25	21.50
		75	0	21.23	21.17	21.34	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	**23.19**	**23.22**	**23.18**	24.50
		1	50	23.17	23.21	23.16	24.50
		1	99	23.09	23.16	23.11	24.50
		50	0	22.31	22.33	22.32	23.50
		50	25	**22.33**	**22.38**	22.33	23.50
		50	50	22.21	22.34	**22.35**	23.50
		100	0	22.22	**22.31**	22.30	23.50
	16QAM	1	0	22.40	22.32	22.37	23.50
		1	50	22.29	22.23	22.35	23.50
		1	99	22.31	22.25	22.40	23.50
		50	0	21.24	21.19	21.32	22.50
		50	25	21.17	21.09	21.29	22.50
		50	50	21.09	21.02	21.20	22.50
		100	0	21.13	21.05	21.23	22.50
	64QAM	1	0	22.20	22.12	22.32	22.50
		1	50	22.19	22.13	22.25	22.50
		1	99	21.98	21.92	22.11	22.50
		50	0	21.25	21.20	21.33	21.50
		50	25	21.30	21.22	21.02	21.50
		50	50	21.10	21.03	21.21	21.50
		100	0	21.21	21.13	21.31	21.50

LTE FDD Band 2 Sensor off（FCC country code detected）				**Output power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	13.61	13.49	13.44	14.50
		1	2	13.33	13.33	13.29	14.50
		1	5	12.97	12.82	12.73	14.50
		3	0	14.46	14.17	14.20	14.50
		3	2	14.09	14.08	14.04	14.50
		3	3	13.93	13.83	13.79	14.50
		6	0	13.14	13.14	13.15	14.50
	16QAM	1	0	13.42	13.39	13.40	14.50
		1	2	13.40	13.33	13.33	14.50
		1	5	12.91	12.76	12.68	14.50
		3	0	14.23	13.88	13.95	14.50

		3	2	13.97	13.81	13.80	14.50
		3	3	13.69	13.62	13.52	14.50
		6	0	12.96	12.91	12.92	14.50
	64QAM	1	0	13.73	13.29	13.22	14.50
		1	2	13.05	13.02	13.16	14.50
		1	5	12.54	12.67	12.56	14.50
		3	0	13.86	13.78	13.96	14.50
		3	2	13.82	13.80	13.83	14.50
		3	3	13.66	13.60	13.53	14.50
		6	0	12.83	12.91	12.94	14.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18615/1851.5	18900/1880	19185/1908.5	
3MHz	QPSK	1	0	13.63	13.53	13.47	14.50
		1	7	13.31	13.36	13.33	14.50
		1	14	13.00	12.87	12.77	14.50
		8	0	13.56	13.29	13.33	14.50
		8	4	13.21	13.18	13.16	14.50
		8	7	13.03	12.94	12.89	14.50
		15	0	13.14	13.18	13.18	14.50
	16QAM	1	0	13.45	13.41	13.43	14.50
		1	7	13.43	13.33	13.37	14.50
		1	14	12.93	12.80	12.71	14.50
		8	0	13.34	13.01	13.07	14.50
		8	4	13.08	12.94	12.92	14.50
		8	7	12.79	12.74	12.65	14.50
		15	0	12.99	12.95	12.95	14.50
	64QAM	1	0	13.76	13.31	13.25	14.50
		1	7	13.08	13.02	13.18	14.50
		1	14	12.56	12.66	12.59	14.50
		8	0	12.97	12.91	13.08	14.50
		8	4	12.93	12.93	12.95	14.50
		8	7	12.76	12.72	12.66	14.50
		15	0	12.86	12.95	12.97	14.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	13.60	13.51	13.43	14.50
		1	13	13.29	13.32	13.30	14.50
		1	24	12.97	12.82	12.73	14.50
		12	0	13.53	13.24	13.29	14.50
		12	6	13.19	13.14	13.11	14.50
		12	13	13.01	12.92	12.85	14.50
		25	0	13.14	13.17	13.16	14.50
	16QAM	1	0	13.42	13.37	13.40	14.50

		1	13	13.40	13.31	13.34	14.50
		1	24	12.90	12.78	12.67	14.50
		12	0	13.32	12.97	13.04	14.50
		12	6	13.05	12.89	12.88	14.50
		12	13	12.76	12.69	12.61	14.50
		25	0	12.97	12.91	12.90	14.50
	64QAM	1	0	13.73	13.31	13.22	14.50
		1	13	13.05	13.04	13.15	14.50
		1	24	12.57	12.64	12.55	14.50
		12	0	12.95	12.87	13.09	14.50
		12	6	12.90	12.88	12.91	14.50
		12	13	12.73	12.67	12.62	14.50
		25	0	12.84	12.91	12.92	14.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18650/1855	18900/1880	19150/1905	
10MHz	QPSK	1	0	13.62	13.52	13.46	14.50
		1	25	13.32	13.37	13.34	14.50
		1	49	12.99	12.86	12.76	14.50
		25	0	13.56	13.29	13.33	14.50
		25	13	13.22	13.19	13.15	14.50
		25	25	13.03	12.96	12.90	14.50
		50	0	13.18	13.19	13.20	14.50
	16QAM	1	0	13.44	13.40	13.42	14.50
		1	25	13.43	13.35	13.37	14.50
		1	49	12.93	12.80	12.70	14.50
		25	0	13.35	13.02	13.08	14.50
		25	13	13.07	12.93	12.91	14.50
		25	25	12.79	12.74	12.65	14.50
		50	0	13.00	12.96	12.94	14.50
	64QAM	1	0	13.75	13.30	13.24	14.50
		1	25	13.08	13.04	13.18	14.50
		1	49	12.56	12.66	12.58	14.50
		25	0	12.98	12.92	13.09	14.50
		25	13	12.92	12.92	12.94	14.50
		25	25	12.76	12.72	12.66	14.50
		50	0	12.87	12.96	12.96	14.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	13.61	13.48	13.44	14.50
		1	38	13.30	13.36	13.31	14.50
		1	74	12.96	12.81	12.72	14.50
		36	0	13.54	13.25	13.30	14.50
		36	18	13.19	13.14	13.11	14.50

		36	39	13.00	12.93	12.86	14.50
		75	0	13.16	13.15	13.15	14.50
	16QAM	1	0	13.39	13.38	13.40	14.50
		1	38	13.41	13.32	13.35	14.50
		1	74	12.90	12.76	12.67	14.50
		36	0	13.32	13.00	13.05	14.50
		36	18	13.04	12.88	12.87	14.50
		36	39	12.77	12.70	12.62	14.50
		75	0	12.97	12.91	12.90	14.50
	64QAM	1	0	13.70	13.28	13.22	14.50
		1	38	13.06	13.01	13.16	14.50
		1	74	12.57	12.65	12.59	14.50
		36	0	12.97	12.94	13.10	14.50
		36	18	12.90	12.89	12.93	14.50
		36	39	12.74	12.68	12.63	14.50
		75	0	12.84	12.91	12.92	14.50

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	**13.58**	**13.44**	**13.41**	14.50
		1	50	13.29	13.32	13.29	14.50
		1	99	12.94	12.80	12.69	14.50
		50	0	**13.51**	**13.20**	**13.26**	14.50
		50	25	13.17	13.10	13.08	14.50
		50	50	12.97	12.88	12.82	14.50
		100	0	**13.13**	13.10	13.11	14.50
	16QAM	1	0	13.79	13.34	13.35	14.50
		1	50	13.37	13.30	13.31	14.50
		1	99	12.88	12.73	12.65	14.50
		50	0	13.29	12.96	13.02	14.50
		50	25	13.01	12.86	12.84	14.50
		50	50	12.74	12.65	12.58	14.50
		100	0	12.95	12.87	12.87	14.50
	64QAM	1	0	13.68	13.24	13.17	14.50
		1	50	13.02	12.99	13.12	14.50
		1	99	12.51	12.59	12.53	14.50
		50	0	12.92	12.86	13.03	14.50
		50	25	12.86	12.85	12.87	14.50
		50	50	12.71	12.63	12.59	14.50
		100	0	12.82	12.87	12.89	14.50

LTE FDD Band 2 Sensor on				Output power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	8.81	8.84	8.86	10.00
		1	2	9.06	8.53	8.89	10.00
		1	5	8.32	8.31	8.07	10.00
		3	0	9.77	9.40	9.69	10.00
		3	2	9.70	9.20	9.61	10.00
		3	3	9.59	9.10	9.28	10.00
		6	0	8.67	8.31	8.59	10.00
	16QAM	1	0	9.24	8.78	8.84	10.00
		1	2	9.22	8.53	8.94	10.00
		1	5	8.45	8.48	8.12	10.00
		3	0	9.70	9.25	9.72	10.00
		3	2	9.70	9.11	9.53	10.00
		3	3	9.50	9.04	9.23	10.00
		6	0	8.60	8.27	8.62	10.00
	64QAM	1	0	8.90	8.83	9.02	10.00
		1	2	8.58	8.52	8.97	10.00
		1	5	8.68	8.46	8.14	10.00
		3	0	9.19	9.18	9.61	10.00
		3	2	9.32	8.99	9.53	10.00
		3	3	9.07	9.27	9.18	10.00
		6	0	8.59	8.16	8.51	10.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18615/1851.5	18900/1880	19185/1908.5	
3MHz	QPSK	1	0	8.83	8.88	8.89	10.00
		1	7	9.04	8.56	8.93	10.00
		1	14	8.35	8.36	8.11	10.00
		8	0	8.87	8.52	8.82	10.00
		8	4	8.82	8.30	8.73	10.00
		8	7	8.69	8.21	8.38	10.00
		15	0	8.67	8.35	8.62	10.00
	16QAM	1	0	9.27	8.80	8.87	10.00
		1	7	9.25	8.53	8.98	10.00
		1	14	8.47	8.52	8.15	10.00
		8	0	8.81	8.38	8.84	10.00
		8	4	8.81	8.24	8.65	10.00
		8	7	8.60	8.16	8.36	10.00
		15	0	8.63	8.31	8.65	10.00
	64QAM	1	0	8.93	8.85	9.05	10.00

		1	7	8.61	8.52	8.99	10.00
		1	14	8.70	8.45	8.17	10.00
		8	0	8.30	8.31	8.73	10.00
		8	4	8.43	8.12	8.65	10.00
		8	7	8.17	8.39	8.31	10.00
		15	0	8.62	8.20	8.54	10.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up
				18625/1852.5	18900/1880	19175/1907.5	Limit
5MHz	QPSK	1	0	8.80	8.86	8.85	10.00
		1	13	9.02	8.52	8.90	10.00
		1	24	8.32	8.31	8.07	10.00
		12	0	8.84	8.47	8.78	10.00
		12	6	8.80	8.26	8.68	10.00
		12	13	8.67	8.19	8.34	10.00
		25	0	8.67	8.34	8.60	10.00
	16QAM	1	0	9.24	8.76	8.84	10.00
		1	13	9.22	8.51	8.95	10.00
		1	24	8.44	8.50	8.11	10.00
		12	0	8.79	8.34	8.81	10.00
		12	6	8.78	8.19	8.61	10.00
		12	13	8.57	8.11	8.32	10.00
		25	0	8.61	8.27	8.60	10.00
	64QAM	1	0	8.90	8.85	9.02	10.00
		1	13	8.58	8.54	8.96	10.00
		1	24	8.71	8.43	8.13	10.00
		12	0	8.28	8.27	8.74	10.00
		12	6	8.40	8.07	8.61	10.00
		12	13	8.14	8.34	8.27	10.00
		25	0	8.60	8.16	8.49	10.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up
				18650/1855	18900/1880	19150/1905	Limit
10MHz	QPSK	1	0	8.82	8.87	8.88	10.00
		1	25	9.05	8.57	8.94	10.00
		1	49	8.34	8.35	8.10	10.00
		25	0	8.87	8.52	8.82	10.00
		25	13	8.83	8.31	8.72	10.00
		25	25	8.69	8.23	8.39	10.00
		50	0	8.71	8.36	8.64	10.00
	16QAM	1	0	9.26	8.79	8.86	10.00
		1	25	9.25	8.55	8.98	10.00
		1	49	8.47	8.52	8.14	10.00
		25	0	8.82	8.39	8.85	10.00
		25	13	8.80	8.23	8.64	10.00

		25	25	8.60	8.16	8.36	10.00
		50	0	8.64	8.32	8.64	10.00
	64QAM	1	0	8.92	8.84	9.04	10.00
		1	25	8.61	8.54	8.99	10.00
		1	49	8.70	8.45	8.16	10.00
		25	0	8.31	8.32	8.74	10.00
		25	13	8.42	8.11	8.64	10.00
		25	25	8.17	8.39	8.31	10.00
		50	0	8.63	8.21	8.53	10.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	8.81	8.83	8.86	10.00
		1	38	9.03	8.56	8.91	10.00
		1	74	8.31	8.30	8.06	10.00
		36	0	8.85	8.48	8.79	10.00
		36	18	8.80	8.26	8.68	10.00
		36	39	8.66	8.20	8.35	10.00
		75	0	8.69	8.32	8.59	10.00
	16QAM	1	0	9.21	8.77	8.84	10.00
		1	38	9.23	8.52	8.96	10.00
		1	74	8.44	8.48	8.11	10.00
		36	0	8.79	8.37	8.82	10.00
		36	18	8.77	8.18	8.60	10.00
		36	39	8.58	8.12	8.33	10.00
		75	0	8.61	8.27	8.60	10.00
	64QAM	1	0	8.87	8.82	9.02	10.00
		1	38	8.59	8.51	8.97	10.00
		1	74	8.71	8.44	8.17	10.00
		36	0	8.30	8.34	8.75	10.00
		36	18	8.40	8.08	8.63	10.00
		36	39	8.15	8.35	8.28	10.00
		75	0	8.60	8.16	8.49	10.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	8.78	**8.79**	8.83	10.00
		1	38	**9.02**	8.52	**8.89**	10.00
		1	74	8.29	8.29	8.03	10.00
		36	0	**8.82**	**8.43**	**8.75**	10.00
		36	18	8.78	8.22	8.65	10.00
		36	39	8.63	8.15	8.31	10.00
		75	0	**8.66**	8.27	8.55	10.00
	16QAM	1	0	9.17	8.73	8.79	10.00
		1	38	9.19	8.50	8.92	10.00

		1	74	8.42	8.45	8.09	10.00
		36	0	8.76	8.33	8.79	10.00
		36	18	8.74	8.16	8.57	10.00
		36	39	8.55	8.07	8.29	10.00
		75	0	8.59	8.23	8.57	10.00
	64QAM	1	0	8.85	8.78	8.97	10.00
		1	38	8.55	8.49	8.93	10.00
		1	74	8.65	8.38	8.11	10.00
		36	0	8.25	8.26	8.68	10.00
		36	18	8.36	8.04	8.57	10.00
		36	39	8.12	8.30	8.24	10.00
		75	0	8.58	8.12	8.46	10.00

LTE FDD Band 4 Full power（without FCC country code detected）				**Output power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				19957/1710.7	20175/1732.5	20393/1754.3	
1.4MHz	QPSK	1	0	23.32	23.33	23.35	24.50
		1	2	23.20	23.22	23.19	24.50
		1	5	23.18	23.19	23.25	24.50
		3	0	23.41	23.33	23.39	24.50
		3	2	23.35	23.37	23.45	24.50
		3	3	23.31	23.29	23.34	24.50
		6	0	22.40	22.39	22.46	23.50
	16QAM	1	0	22.64	22.53	22.72	23.50
		1	2	22.62	22.62	22.67	23.50
		1	5	22.61	22.58	22.70	23.50
		3	0	22.24	22.16	22.31	23.50
		3	2	22.34	22.28	22.46	23.50
		3	3	22.17	22.13	22.27	23.50
		6	0	21.41	21.33	21.55	22.50
	64QAM	1	0	22.06	21.98	22.18	22.50
		1	2	21.71	21.66	21.78	22.50
		1	5	22.03	22.01	22.16	22.50
		3	0	22.03	21.97	22.10	22.50
		3	2	22.08	22.01	22.20	22.50
		3	3	22.14	22.08	22.24	22.50
		6	0	21.14	21.10	21.28	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				19965/1711.5	20175/1732.5	20385/1753.5	
3MHz	QPSK	1	0	23.34	23.37	23.38	24.50
		1	7	23.18	23.25	23.23	24.50

		1	14	23.21	23.24	23.29	24.50
		8	0	22.51	22.45	22.52	23.50
		8	4	22.47	22.47	22.57	23.50
		8	7	22.41	22.40	22.44	23.50
		15	0	22.40	22.43	22.49	23.50
	16QAM	1	0	22.67	22.55	22.75	23.50
		1	7	22.65	22.62	22.71	23.50
		1	14	22.63	22.62	22.73	23.50
		8	0	21.35	21.29	21.43	22.50
		8	4	21.45	21.41	21.58	22.50
		8	7	21.27	21.25	21.40	22.50
		15	0	21.44	21.37	21.58	22.50
	64QAM	1	0	22.09	22.00	22.21	22.50
		1	7	21.74	21.66	21.80	22.50
		1	14	22.05	22.00	22.19	22.50
		8	0	21.14	21.10	21.22	21.50
		8	4	21.19	21.14	21.32	21.50
		8	7	21.24	21.20	21.37	21.50
		15	0	21.17	21.14	21.31	21.50

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				19975/1712.5	20175/1732.5	20375/1752.5	
5MHz	QPSK	1	0	23.31	23.35	23.34	24.50
		1	13	23.16	23.21	23.20	24.50
		1	24	23.18	23.19	23.25	24.50
		12	0	22.48	22.40	22.48	23.50
		12	6	22.45	22.43	22.52	23.50
		12	13	22.39	22.38	22.40	23.50
		25	0	22.40	22.42	22.47	23.50
	16QAM	1	0	22.64	22.51	22.72	23.50
		1	13	22.62	22.60	22.68	23.50
		1	24	22.60	22.60	22.69	23.50
		12	0	21.33	21.25	21.40	22.50
		12	6	21.42	21.36	21.54	22.50
		12	13	21.24	21.20	21.36	22.50
		25	0	21.42	21.33	21.53	22.50
	64QAM	1	0	22.06	22.00	22.18	22.50
		1	13	21.71	21.68	21.77	22.50
		1	24	22.06	21.98	22.15	22.50
		12	0	21.12	21.06	21.23	21.50
		12	6	21.16	21.09	21.28	21.50
		12	13	21.21	21.15	21.33	21.50
		25	0	21.15	21.10	21.26	21.50

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20000/1715	20175/1732.5	20350/1750	
10MHz	QPSK	1	0	23.33	23.36	23.37	24.50
		1	25	23.19	23.26	23.24	24.50
		1	49	23.20	23.23	23.28	24.50
		25	0	22.51	22.45	22.52	23.50
		25	13	22.48	22.48	22.56	23.50
		25	25	22.41	22.42	22.45	23.50
		50	0	22.44	22.44	22.51	23.50
	16QAM	1	0	22.66	22.54	22.74	23.50
		1	25	22.65	22.64	22.71	23.50
		1	49	22.63	22.62	22.72	23.50
		25	0	21.36	21.30	21.44	22.50
		25	13	21.44	21.40	21.57	22.50
		25	25	21.27	21.25	21.40	22.50
		50	0	21.45	21.38	21.57	22.50
	64QAM	1	0	22.08	21.99	22.20	22.50
		1	25	21.74	21.68	21.80	22.50
		1	49	22.05	22.00	22.18	22.50
		25	0	21.15	21.11	21.23	21.50
		25	13	21.18	21.13	21.31	21.50
		25	25	21.24	21.20	21.37	21.50
		50	0	21.18	21.15	21.30	21.50

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20025/1717.5	20175/1732.5	20325/1747.5	
15MHz	QPSK	1	0	23.32	23.32	23.35	24.50
		1	38	23.17	23.25	23.21	24.50
		1	74	23.17	23.18	23.24	24.50
		36	0	22.49	22.41	22.49	23.50
		36	18	22.45	22.43	22.52	23.50
		36	39	22.38	22.39	22.41	23.50
		75	0	22.42	22.40	22.46	23.50
	16QAM	1	0	22.61	22.52	22.72	23.50
		1	38	22.63	22.61	22.69	23.50
		1	74	22.60	22.58	22.69	23.50
		36	0	21.33	21.28	21.41	22.50
		36	18	21.41	21.35	21.53	22.50
		36	39	21.25	21.21	21.37	22.50
		75	0	21.42	21.33	21.53	22.50
	64QAM	1	0	22.03	21.97	22.18	22.50
		1	38	21.72	21.65	21.78	22.50
		1	74	22.06	21.99	22.19	22.50
		36	0	21.14	21.13	21.24	21.50

		36	18	21.16	21.10	21.30	21.50
		36	39	21.22	21.16	21.34	21.50
		75	0	21.15	21.10	21.26	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20050/1720	20175/1732.5	20300/1745	
20MHz	QPSK	1	0	**23.29**	**23.28**	**23.32**	24.50
		1	50	23.16	23.21	23.19	24.50
		1	99	23.15	23.17	23.21	24.50
		50	0	**22.46**	22.36	22.45	23.50
		50	25	22.43	**22.39**	**22.49**	23.50
		50	50	22.35	22.34	22.37	23.50
		100	0	22.39	22.35	**22.42**	23.50
	16QAM	1	0	22.56	22.48	22.67	23.50
		1	50	22.59	22.59	22.65	23.50
		1	99	22.58	22.55	22.67	23.50
		50	0	21.30	21.24	21.38	22.50
		50	25	21.38	21.33	21.50	22.50
		50	50	21.22	21.16	21.33	22.50
		100	0	21.40	21.29	21.50	22.50
	64QAM	1	0	22.01	21.93	22.13	22.50
		1	50	21.68	21.63	21.74	22.50
		1	99	22.00	21.93	22.13	22.50
		50	0	21.09	21.05	21.17	21.50
		50	25	21.12	21.06	21.24	21.50
		50	50	21.19	21.11	21.30	21.50
		100	0	21.13	21.06	21.23	21.50

LTE FDD Band 4 Sensor off（FCC country code detected）				**Output power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				19957/1710.7	20175/1732.5	20393/1754.3	
1.4MHz	QPSK	1	0	14.54	14.56	14.48	15.50
		1	2	14.32	14.14	13.96	15.50
		1	5	13.96	13.56	14.01	15.50
		3	0	15.13	15.38	14.94	15.50
		3	2	14.98	14.96	14.82	15.50
		3	3	15.01	14.66	14.83	15.50
		6	0	14.00	13.91	13.95	15.50
	16QAM	1	0	14.47	14.83	14.52	15.50
		1	2	14.45	14.32	14.10	15.50
		1	5	14.36	13.67	14.06	15.50
		3	0	15.02	15.12	14.83	15.50

		3	2	14.92	14.81	14.70	15.50
		3	3	14.79	14.63	14.69	15.50
		6	0	13.89	13.80	13.91	15.50
	64QAM	1	0	14.53	14.54	14.38	15.50
		1	2	14.37	14.18	14.08	15.50
		1	5	14.12	13.72	13.97	15.50
		3	0	15.01	15.13	14.71	15.50
		3	2	14.93	14.83	14.58	15.50
		3	3	14.79	14.63	14.62	15.50
		6	0	13.90	13.81	13.83	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				19965/1711.5	20175/1732.5	20385/1753.5	
3MHz	QPSK	1	0	14.56	14.60	14.51	15.50
		1	7	14.30	14.17	14.00	15.50
		1	14	13.99	13.61	14.05	15.50
		8	0	14.23	14.50	14.07	15.50
		8	4	14.10	14.06	13.94	15.50
		8	7	14.11	13.77	13.93	15.50
		15	0	14.00	13.95	13.98	15.50
	16QAM	1	0	14.50	14.85	14.55	15.50
		1	7	14.48	14.32	14.14	15.50
		1	14	14.38	13.71	14.09	15.50
		8	0	14.13	14.25	13.95	15.50
		8	4	14.03	13.94	13.82	15.50
		8	7	13.89	13.75	13.82	15.50
		15	0	13.92	13.84	13.94	15.50
	64QAM	1	0	14.56	14.56	14.41	15.50
		1	7	14.40	14.18	14.10	15.50
		1	14	14.14	13.71	14.00	15.50
		8	0	14.12	14.26	13.83	15.50
		8	4	14.04	13.96	13.70	15.50
		8	7	13.89	13.75	13.75	15.50
		15	0	13.93	13.85	13.86	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				19975/1712.5	20175/1732.5	20375/1752.5	
5MHz	QPSK	1	0	14.53	14.58	14.47	15.50
		1	13	14.28	14.13	13.97	15.50
		1	24	13.96	13.56	14.01	15.50
		12	0	14.20	14.45	14.03	15.50
		12	6	14.08	14.02	13.89	15.50
		12	13	14.09	13.75	13.89	15.50
		25	0	14.00	13.94	13.96	15.50
	16QAM	1	0	14.47	14.81	14.52	15.50

		1	13	14.45	14.30	14.11	15.50
		1	24	14.35	13.69	14.05	15.50
		12	0	14.11	14.21	13.92	15.50
		12	6	14.00	13.89	13.78	15.50
		12	13	13.86	13.70	13.78	15.50
		25	0	13.90	13.80	13.89	15.50
	64QAM	1	0	14.53	14.56	14.38	15.50
		1	13	14.37	14.20	14.07	15.50
		1	24	14.15	13.69	13.96	15.50
		12	0	14.10	14.22	13.84	15.50
		12	6	14.01	13.91	13.66	15.50
		12	13	13.86	13.70	13.71	15.50
		25	0	13.91	13.81	13.81	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20000/1715	20175/1732.5	20350/1750	
10MHz	QPSK	1	0	14.55	14.59	14.50	15.50
		1	25	14.31	14.18	14.01	15.50
		1	49	13.98	13.60	14.04	15.50
		25	0	14.23	14.50	14.07	15.50
		25	13	14.11	14.07	13.93	15.50
		25	25	14.11	13.79	13.94	15.50
		50	0	14.04	13.96	14.00	15.50
	16QAM	1	0	14.49	14.84	14.54	15.50
		1	25	14.48	14.34	14.14	15.50
		1	49	14.38	13.71	14.08	15.50
		25	0	14.14	14.26	13.96	15.50
		25	13	14.02	13.93	13.81	15.50
		25	25	13.89	13.75	13.82	15.50
		50	0	13.93	13.85	13.93	15.50
	64QAM	1	0	14.55	14.55	14.40	15.50
		1	25	14.40	14.20	14.10	15.50
		1	49	14.14	13.71	13.99	15.50
		25	0	14.13	14.27	13.84	15.50
		25	13	14.03	13.95	13.69	15.50
		25	25	13.89	13.75	13.75	15.50
		50	0	13.94	13.86	13.85	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20025/1717.5	20175/1732.5	20325/1747.5	
15MHz	QPSK	1	0	14.54	14.55	14.48	15.50
		1	38	14.29	14.17	13.98	15.50
		1	74	13.95	13.55	14.00	15.50
		36	0	14.21	14.46	14.04	15.50
		36	18	14.08	14.02	13.89	15.50

		36	39	14.08	13.76	13.90	15.50
		75	0	14.02	13.92	13.95	15.50
	16QAM	1	0	14.44	14.82	14.52	15.50
		1	38	14.46	14.31	14.12	15.50
		1	74	14.35	13.67	14.05	15.50
		36	0	14.11	14.24	13.93	15.50
		36	18	13.99	13.88	13.77	15.50
		36	39	13.87	13.71	13.79	15.50
		75	0	13.90	13.80	13.89	15.50
	64QAM	1	0	14.50	14.53	14.38	15.50
		1	38	14.38	14.17	14.08	15.50
		1	74	14.15	13.70	14.00	15.50
		36	0	14.12	14.29	13.85	15.50
		36	18	14.01	13.92	13.68	15.50
		36	39	13.87	13.71	13.72	15.50
		75	0	13.91	13.81	13.81	15.50

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20050/1720	20175/1732.5	20300/1745	
20MHz	QPSK	1	0	**14.51**	**14.51**	**14.45**	15.50
		1	50	14.28	14.13	13.96	15.50
		1	99	13.93	13.54	13.97	15.50
		50	0	**14.18**	**14.41**	**14.00**	15.50
		50	25	14.06	13.98	13.86	15.50
		50	50	14.05	13.71	13.86	15.50
		100	0	**13.99**	13.87	13.91	15.50
	16QAM	1	0	14.75	14.78	14.47	15.50
		1	50	14.42	14.29	14.08	15.50
		1	99	14.33	13.64	14.03	15.50
		50	0	14.08	14.20	13.90	15.50
		50	25	13.96	13.86	13.74	15.50
		50	50	13.84	13.66	13.75	15.50
		100	0	13.88	13.76	13.86	15.50
	64QAM	1	0	14.48	14.49	14.33	15.50
		1	50	14.34	14.15	14.04	15.50
		1	99	14.09	13.64	13.94	15.50
		50	0	14.07	14.21	13.78	15.50
		50	25	13.97	13.88	13.62	15.50
		50	50	13.84	13.66	13.68	15.50
		100	0	13.89	13.77	13.78	15.50

LTE FDD Band 4 Sensor on				Output power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				19957/1710.7	20175/1732.5	20393/1754.3	
1.4MHz	QPSK	1	0	8.76	8.89	9.00	10.00
		1	2	8.96	9.08	8.66	10.00
		1	5	8.66	8.45	8.34	10.00
		3	0	9.75	9.98	9.56	10.00
		3	2	9.66	9.88	9.52	10.00
		3	3	9.51	9.53	9.51	10.00
		6	0	8.66	8.80	8.60	10.00
	16QAM	1	0	9.10	9.21	9.10	10.00
		1	2	9.08	9.20	8.77	10.00
		1	5	8.55	8.44	8.47	10.00
		3	0	9.41	9.62	9.38	10.00
		3	2	9.29	9.46	9.38	10.00
		3	3	9.10	9.17	9.29	10.00
		6	0	8.25	8.42	8.41	10.00
	64QAM	1	0	8.90	8.93	8.93	10.00
		1	2	8.74	8.92	8.49	10.00
		1	5	8.50	8.20	8.18	10.00
		3	0	9.42	9.60	9.26	10.00
		3	2	9.31	9.46	9.40	10.00
		3	3	9.12	9.14	9.30	10.00
		6	0	8.26	8.39	8.37	10.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				19965/1711.5	20175/1732.5	20385/1753.5	
3MHz	QPSK	1	0	8.78	8.93	9.03	10.00
		1	7	8.94	9.11	8.70	10.00
		1	14	8.69	8.50	8.38	10.00
		8	0	8.85	9.10	8.69	10.00
		8	4	8.78	8.98	8.64	10.00
		8	7	8.61	8.64	8.61	10.00
		15	0	8.66	8.84	8.63	10.00
	16QAM	1	0	9.13	9.23	9.13	10.00
		1	7	9.11	9.20	8.81	10.00
		1	14	8.57	8.48	8.50	10.00
		8	0	8.52	8.75	8.50	10.00
		8	4	8.40	8.59	8.50	10.00
		8	7	8.20	8.29	8.42	10.00
		15	0	8.28	8.46	8.44	10.00
	64QAM	1	0	8.93	8.95	8.96	10.00

		1	7	8.77	8.92	8.51	10.00
		1	14	8.52	8.19	8.21	10.00
		8	0	8.53	8.73	8.38	10.00
		8	4	8.42	8.59	8.52	10.00
		8	7	8.22	8.26	8.43	10.00
		15	0	8.29	8.43	8.40	10.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				19975/1712.5	20175/1732.5	20375/1752.5	
5MHz	QPSK	1	0	8.75	8.91	8.99	10.00
		1	13	8.92	9.07	8.67	10.00
		1	24	8.66	8.45	8.34	10.00
		12	0	8.82	9.05	8.65	10.00
		12	6	8.76	8.94	8.59	10.00
		12	13	8.59	8.62	8.57	10.00
		25	0	8.66	8.83	8.61	10.00
	16QAM	1	0	9.10	9.19	9.10	10.00
		1	13	9.08	9.18	8.78	10.00
		1	24	8.54	8.46	8.46	10.00
		12	0	8.50	8.71	8.47	10.00
		12	6	8.37	8.54	8.46	10.00
		12	13	8.17	8.24	8.38	10.00
		25	0	8.26	8.42	8.39	10.00
	64QAM	1	0	8.90	8.95	8.93	10.00
		1	13	8.74	8.94	8.48	10.00
		1	24	8.53	8.17	8.17	10.00
		12	0	8.51	8.69	8.39	10.00
		12	6	8.39	8.54	8.48	10.00
		12	13	8.19	8.21	8.39	10.00
		25	0	8.27	8.39	8.35	10.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20000/1715	20175/1732.5	20350/1750	
10MHz	QPSK	1	0	8.77	8.92	9.02	10.00
		1	25	8.95	9.12	8.71	10.00
		1	49	8.68	8.49	8.37	10.00
		25	0	8.85	9.10	8.69	10.00
		25	13	8.79	8.99	8.63	10.00
		25	25	8.61	8.66	8.62	10.00
		50	0	8.70	8.85	8.65	10.00
	16QAM	1	0	9.12	9.22	9.12	10.00
		1	25	9.11	9.22	8.81	10.00
		1	49	8.57	8.48	8.49	10.00
		25	0	8.53	8.76	8.51	10.00
		25	13	8.39	8.58	8.49	10.00

		25	25	8.20	8.29	8.42	10.00
		50	0	8.29	8.47	8.43	10.00
	64QAM	1	0	8.92	8.94	8.95	10.00
		1	25	8.77	8.94	8.51	10.00
		1	49	8.52	8.19	8.20	10.00
		25	0	8.54	8.74	8.39	10.00
		25	13	8.41	8.58	8.51	10.00
		25	25	8.22	8.26	8.43	10.00
		50	0	8.30	8.44	8.39	10.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20025/1717.5	20175/1732.5	20325/1747.5	
15MHz	QPSK	1	0	8.76	8.88	9.00	10.00
		1	38	8.93	9.11	8.68	10.00
		1	74	8.65	8.44	8.33	10.00
		36	0	8.83	9.06	8.66	10.00
		36	18	8.76	8.94	8.59	10.00
		36	39	8.58	8.63	8.58	10.00
		75	0	8.68	8.81	8.60	10.00
	16QAM	1	0	9.07	9.20	9.10	10.00
		1	38	9.09	9.19	8.79	10.00
		1	74	8.54	8.44	8.46	10.00
		36	0	8.50	8.74	8.48	10.00
		36	18	8.36	8.53	8.45	10.00
		36	39	8.18	8.25	8.39	10.00
		75	0	8.26	8.42	8.39	10.00
	64QAM	1	0	8.87	8.92	8.93	10.00
		1	38	8.75	8.91	8.49	10.00
		1	74	8.53	8.18	8.21	10.00
		36	0	8.53	8.76	8.40	10.00
		36	18	8.39	8.55	8.50	10.00
		36	39	8.20	8.22	8.40	10.00
		75	0	8.27	8.39	8.35	10.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20050/1720	20175/1732.5	20300/1745	
20MHz	QPSK	1	0	8.73	8.84	**8.97**	10.00
		1	50	**8.92**	**9.07**	8.66	10.00
		1	99	8.63	8.43	8.30	10.00
		50	0	**8.80**	**9.01**	**8.62**	10.00
		50	25	8.74	8.90	8.56	10.00
		50	50	8.55	8.58	8.54	10.00
		100	0	8.65	**8.76**	8.56	10.00
	16QAM	1	0	9.04	9.16	9.05	10.00
		1	50	9.05	9.17	8.75	10.00

		1	99	8.52	8.41	8.44	10.00
		50	0	8.47	8.70	8.45	10.00
		50	25	8.33	8.51	8.42	10.00
		50	50	8.15	8.20	8.35	10.00
		100	0	8.24	8.38	8.36	10.00
	64QAM	1	0	8.85	8.88	8.88	10.00
		1	50	8.71	8.89	8.45	10.00
		1	99	8.47	8.12	8.15	10.00
		50	0	8.48	8.68	8.33	10.00
		50	25	8.35	8.51	8.44	10.00
		50	50	8.17	8.17	8.36	10.00
		100	0	8.25	8.35	8.32	10.00

LTE FDD Band 5 Full power &Sensor off				**Output power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20407/824.7	20525/836.5	20643/848.3	
1.4MHz	QPSK	1	0	23.78	23.81	23.68	25.00
		1	2	23.67	23.64	23.52	25.00
		1	5	23.68	23.63	23.67	25.00
		3	0	23.72	23.66	23.66	25.00
		3	2	23.67	23.77	23.66	25.00
		3	3	23.74	23.66	23.66	25.00
		6	0	22.72	22.75	22.72	24.00
	16QAM	1	0	22.36	22.95	22.55	24.00
		1	2	22.34	22.95	22.25	24.00
		1	5	22.44	22.96	22.56	24.00
		3	0	22.12	22.65	22.19	24.00
		3	2	22.18	22.65	22.20	24.00
		3	3	22.15	22.70	22.19	24.00
		6	0	21.20	21.75	21.30	23.00
	64QAM	1	0	21.48	21.46	21.46	23.00
		1	2	21.32	21.34	21.42	23.00
		1	5	21.49	21.57	21.53	23.00
		3	0	21.16	21.09	21.21	23.00
		3	2	21.20	21.26	21.21	23.00
		3	3	21.23	21.22	21.27	23.00
		6	0	20.19	20.31	20.27	22.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20415/825.5	20525/836.5	20635/847.5	
3MHz	QPSK	1	0	23.80	23.85	23.71	25.00
		1	7	23.65	23.67	23.56	25.00

		1	14	23.71	23.68	23.71	25.00
		8	0	22.82	22.78	22.79	24.00
		8	4	22.79	22.87	22.78	24.00
		8	7	22.84	22.77	22.76	24.00
		15	0	22.72	22.79	22.75	24.00
	16QAM	1	0	22.39	22.97	22.58	24.00
		1	7	22.37	22.95	22.29	24.00
		1	14	22.46	23.00	22.59	24.00
		8	0	21.23	21.78	21.31	23.00
		8	4	21.29	21.78	21.32	23.00
		8	7	21.25	21.82	21.32	23.00
		15	0	21.23	21.79	21.33	23.00
	64QAM	1	0	21.51	21.48	21.49	23.00
		1	7	21.35	21.34	21.44	23.00
		1	14	21.51	21.56	21.56	23.00
		8	0	20.27	20.22	20.33	22.00
		8	4	20.31	20.39	20.33	22.00
		8	7	20.33	20.34	20.40	22.00
		15	0	20.22	20.35	20.30	22.00

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20425/826.5	20525/836.5	20625/846.5	
5MHz	QPSK	1	0	23.77	23.83	23.67	25.00
		1	13	23.63	23.63	23.53	25.00
		1	24	23.68	23.63	23.67	25.00
		12	0	22.79	22.73	22.75	24.00
		12	6	22.77	22.83	22.73	24.00
		12	13	22.82	22.75	22.72	24.00
		25	0	22.72	22.78	22.73	24.00
	16QAM	1	0	22.36	22.93	22.55	24.00
		1	13	22.34	22.93	22.26	24.00
		1	24	22.43	22.98	22.55	24.00
		12	0	21.21	21.74	21.28	23.00
		12	6	21.26	21.73	21.28	23.00
		12	13	21.22	21.77	21.28	23.00
		25	0	21.21	21.75	21.28	23.00
	64QAM	1	0	21.48	21.48	21.46	23.00
		1	13	21.32	21.36	21.41	23.00
		1	24	21.52	21.54	21.52	23.00
		12	0	20.25	20.18	20.34	22.00
		12	6	20.28	20.34	20.29	22.00
		12	13	20.30	20.29	20.36	22.00
		25	0	20.20	20.31	20.25	22.00

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20450/829	20525/836.5	20600/844	
10MHz	QPSK	1	0	**23.75**	**23.76**	**23.65**	25.00
		1	25	23.63	23.63	23.52	25.00
		1	49	23.65	23.61	23.63	25.00
		25	0	22.77	22.69	**22.72**	24.00
		25	13	22.75	**22.79**	22.70	24.00
		25	25	**22.78**	22.71	22.69	24.00
		50	0	**22.71**	**22.71**	22.68	24.00
	16QAM	1	0	22.44	22.90	22.50	24.00
		1	25	22.31	22.92	22.23	24.00
		1	49	22.41	22.93	22.53	24.00
		25	0	21.18	21.73	21.26	23.00
		25	13	21.22	21.70	21.24	23.00
		25	25	21.20	21.73	21.25	23.00
		50	0	21.19	21.71	21.25	23.00
	64QAM	1	0	21.43	21.41	21.41	23.00
		1	25	21.29	21.31	21.38	23.00
		1	49	21.46	21.49	21.50	23.00
		25	0	20.22	20.17	20.28	22.00
		25	13	20.24	20.31	20.25	22.00
		25	25	20.28	20.25	20.33	22.00
		50	0	20.18	20.27	20.22	22.00

LTE FDD Band 5 Sensor on				Output power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20407/824.7	20525/836.5	20643/848.3	
1.4MHz	QPSK	1	0	13.87	13.64	13.57	14.50
		1	2	13.56	13.65	13.50	14.50
		1	5	13.30	13.38	13.62	14.50
		3	0	14.44	14.43	14.28	14.50
		3	2	14.35	14.50	14.22	14.50
		3	3	14.17	14.39	14.26	14.50
		6	0	13.42	13.43	13.34	14.50
	16QAM	1	0	13.76	13.71	13.67	14.50
		1	2	13.74	13.78	13.56	14.50
		1	5	13.49	13.49	13.74	14.50
		3	0	14.36	14.17	14.05	14.50
		3	2	14.19	14.29	14.05	14.50
		3	3	13.95	14.22	14.02	14.50
		6	0	13.22	13.24	13.12	14.50

	64QAM	1	0	13.89	13.45	13.48	14.50
		1	2	13.59	13.60	13.43	14.50
		1	5	13.35	13.33	13.48	14.50
		3	0	14.35	14.13	14.07	14.50
		3	2	14.23	14.19	14.01	14.50
		3	3	13.93	14.12	14.02	14.50
		6	0	13.18	13.15	13.14	14.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20415/825.5	20525/836.5	20635/847.5	
3MHz	QPSK	1	0	13.89	13.68	13.60	14.50
		1	7	13.54	13.68	13.54	14.50
		1	14	13.33	13.43	13.66	14.50
		8	0	13.54	13.55	13.41	14.50
		8	4	13.47	13.60	13.34	14.50
		8	7	13.27	13.50	13.36	14.50
		15	0	13.42	13.47	13.37	14.50
	16QAM	1	0	13.79	13.73	13.70	14.50
		1	7	13.77	13.78	13.60	14.50
		1	14	13.51	13.53	13.77	14.50
		8	0	13.47	13.30	13.17	14.50
		8	4	13.30	13.42	13.17	14.50
		8	7	13.05	13.34	13.15	14.50
		15	0	13.25	13.28	13.15	14.50
	64QAM	1	0	13.92	13.47	13.51	14.50
		1	7	13.62	13.60	13.45	14.50
		1	14	13.37	13.32	13.51	14.50
		8	0	13.46	13.26	13.19	14.50
		8	4	13.34	13.32	13.13	14.50
		8	7	13.03	13.24	13.15	14.50
		15	0	13.21	13.19	13.17	14.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20425/826.5	20525/836.5	20625/846.5	
5MHz	QPSK	1	0	13.86	13.66	13.56	14.50
		1	13	13.52	13.64	13.51	14.50
		1	24	13.30	13.38	13.62	14.50
		12	0	13.51	13.50	13.37	14.50
		12	6	13.45	13.56	13.29	14.50
		12	13	13.25	13.48	13.32	14.50
		25	0	13.42	13.46	13.35	14.50
	16QAM	1	0	13.76	13.69	13.67	14.50
		1	13	13.74	13.76	13.57	14.50
		1	24	13.48	13.51	13.73	14.50
		12	0	13.45	13.26	13.14	14.50

		12	6	13.27	13.37	13.13	14.50
		12	13	13.02	13.29	13.11	14.50
		25	0	13.23	13.24	13.10	14.50
	64QAM	1	0	13.89	13.47	13.48	14.50
		1	13	13.59	13.62	13.42	14.50
		1	24	13.38	13.30	13.47	14.50
		12	0	13.44	13.22	13.20	14.50
		12	6	13.31	13.27	13.09	14.50
		12	13	13.00	13.19	13.11	14.50
		25	0	13.19	13.15	13.12	14.50

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20450/829	20525/836.5	20600/844	
10MHz	QPSK	1	0	**13.84**	13.59	13.54	14.50
		1	25	13.52	**13.64**	13.50	14.50
		1	49	13.27	13.36	**13.58**	14.50
		25	0	**13.49**	13.46	**13.34**	14.50
		25	13	13.43	**13.52**	13.26	14.50
		25	25	13.21	13.44	13.29	14.50
		50	0	**13.41**	13.39	13.30	14.50
	16QAM	1	0	14.00	13.66	13.62	14.50
		1	25	13.71	13.75	13.54	14.50
		1	49	13.46	13.46	13.71	14.50
		25	0	13.42	13.25	13.12	14.50
		25	13	13.23	13.34	13.09	14.50
		25	25	13.00	13.25	13.08	14.50
		50	0	13.21	13.20	13.07	14.50
	64QAM	1	0	13.84	13.40	13.43	14.50
		1	25	13.56	13.57	13.39	14.50
		1	49	13.32	13.25	13.45	14.50
		25	0	13.41	13.21	13.14	14.50
		25	13	13.27	13.24	13.05	14.50
		25	25	12.98	13.15	13.08	14.50
		50	0	13.17	13.11	13.09	14.50

LTE FDD Band 7 Full power（without FCC country code detected）				**Output power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20775/2502.5	21100/2535	21425/2567.5	
5MHz	QPSK	1	0	23.37	23.38	23.41	24.50
		1	13	23.44	23.37	23.38	24.50
		1	24	23.50	23.36	23.45	24.50
		12	0	22.56	22.48	22.53	23.50

		12	6	22.67	22.53	22.64	23.50
		12	13	22.60	22.52	22.58	23.50
		25	0	22.54	22.57	22.58	23.50
	16QAM	1	0	22.63	22.66	22.79	23.50
		1	13	22.61	22.56	22.67	23.50
		1	24	22.75	22.76	22.88	23.50
		12	0	21.44	21.39	21.57	22.50
		12	6	21.52	21.47	21.64	22.50
		12	13	21.43	21.43	21.56	22.50
		25	0	21.47	21.47	21.57	22.50
	64QAM	1	0	21.92	21.89	21.97	22.50
		1	13	21.84	21.83	21.93	22.50
		1	24	22.20	22.13	22.28	22.50
		12	0	20.87	20.82	21.00	21.50
		12	6	20.91	20.86	21.06	21.50
		12	13	20.98	20.98	21.13	21.50
		25	0	20.90	20.90	21.03	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20800/2505	21100/2535	21400/2565	
10MHz	QPSK	1	0	23.39	23.39	23.44	24.50
		1	25	23.47	23.42	23.42	24.50
		1	49	23.52	23.40	23.48	24.50
		25	0	22.59	22.53	22.57	23.50
		25	13	22.70	22.58	22.68	23.50
		25	25	22.62	22.56	22.63	23.50
		50	0	22.58	22.59	22.62	23.50
	16QAM	1	0	22.65	22.69	22.81	23.50
		1	25	22.64	22.60	22.70	23.50
		1	49	22.78	22.78	22.91	23.50
		25	0	21.47	21.44	21.61	22.50
		25	13	21.54	21.51	21.67	22.50
		25	25	21.46	21.48	21.60	22.50
		50	0	21.50	21.52	21.61	22.50
	64QAM	1	0	21.94	21.88	21.99	22.50
		1	25	21.87	21.83	21.96	22.50
		1	49	22.19	22.15	22.31	22.50
		25	0	20.90	20.87	21.00	21.50
		25	13	20.93	20.90	21.09	21.50
		25	25	21.01	21.03	21.17	21.50
		50	0	20.93	20.95	21.07	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20825/2507.5	21100/2535	21375/2562.5	
15MHz	QPSK	1	0	23.38	23.35	23.42	24.50

		1	38	23.45	23.41	23.39	24.50
		1	74	23.49	23.35	23.44	24.50
		36	0	22.57	22.49	22.54	23.50
		36	18	22.67	22.53	22.64	23.50
		36	39	22.59	22.53	22.59	23.50
		75	0	22.56	22.55	22.57	23.50
	16QAM	1	0	22.60	22.67	22.79	23.50
		1	38	22.62	22.57	22.68	23.50
		1	74	22.75	22.74	22.88	23.50
		36	0	21.44	21.42	21.58	22.50
		36	18	21.51	21.46	21.63	22.50
		36	39	21.44	21.44	21.57	22.50
		75	0	21.47	21.47	21.57	22.50
	64QAM	1	0	21.89	21.86	21.97	22.50
		1	38	21.85	21.80	21.94	22.50
		1	74	22.20	22.14	22.32	22.50
		36	0	20.89	20.89	21.01	21.50
		36	18	20.91	20.87	21.08	21.50
		36	39	20.99	20.99	21.14	21.50
		75	0	20.90	20.90	21.03	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20850/2510	21100/2535	21350/2560	
20MHz	QPSK	1	0	23.35	23.31	23.39	24.50
		1	50	23.44	**23.37**	23.37	24.50
		1	99	**23.47**	23.34	**23.41**	24.50
		50	0	22.54	22.44	22.50	23.50
		50	25	**22.65**	**22.49**	**22.61**	23.50
		50	50	22.56	22.48	22.55	23.50
		100	0	**22.53**	22.50	**22.53**	23.50
	16QAM	1	0	22.60	22.63	22.74	23.50
		1	50	22.58	22.55	22.64	23.50
		1	99	22.73	22.71	22.86	23.50
		50	0	21.41	21.38	21.55	22.50
		50	25	21.48	21.44	21.60	22.50
		50	50	21.41	21.39	21.53	22.50
		100	0	21.45	21.43	21.54	22.50
	64QAM	1	0	21.87	21.82	21.92	22.50
		1	50	21.81	21.78	21.90	22.50
		1	99	22.14	22.08	22.26	22.50
		50	0	20.84	20.81	20.94	21.50
		50	25	20.87	20.83	21.02	21.50
		50	50	20.96	20.94	21.10	21.50
		100	0	20.88	20.86	21.00	21.50

LTE FDD Band 7 Sensor off（FCC country code detected）				Output power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20775/2502.5	21100/2535	21425/2567.5	
5MHz	QPSK	1	0	14.16	14.01	14.25	15.50
		1	13	14.03	14.03	13.78	15.50
		1	24	13.73	13.77	13.76	15.50
		12	0	14.00	13.92	13.96	15.50
		12	6	13.90	13.93	13.77	15.50
		12	13	13.60	13.72	13.66	15.50
		25	0	13.69	13.95	13.95	15.50
	16QAM	1	0	14.20	14.00	14.44	15.50
		1	13	14.18	14.09	14.03	15.50
		1	24	13.65	14.06	13.99	15.50
		12	0	13.98	13.80	13.87	15.50
		12	6	14.02	13.84	13.72	15.50
		12	13	13.57	13.63	13.61	15.50
		25	0	13.66	13.83	13.87	15.50
	64QAM	1	0	14.41	13.95	14.37	15.50
		1	13	14.29	14.01	13.85	15.50
		1	24	13.75	14.10	13.85	15.50
		12	0	13.99	13.88	13.93	15.50
		12	6	14.04	13.92	13.76	15.50
		12	13	13.58	13.79	13.61	15.50
		25	0	13.67	13.90	13.87	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20800/2505	21100/2535	21400/2565	
10MHz	QPSK	1	0	14.18	14.02	14.28	15.50
		1	25	14.06	14.08	13.82	15.50
		1	49	13.75	13.81	13.79	15.50
		25	0	14.03	13.97	14.00	15.50
		25	13	13.93	13.98	13.81	15.50
		25	25	13.62	13.76	13.71	15.50
		50	0	13.73	13.97	13.99	15.50
	16QAM	1	0	14.22	14.03	14.46	15.50
		1	25	14.21	14.13	14.06	15.50
		1	49	13.68	14.08	14.02	15.50
		25	0	14.01	13.85	13.91	15.50
		25	13	14.04	13.88	13.75	15.50
		25	25	13.60	13.68	13.65	15.50
		50	0	13.69	13.88	13.91	15.50
	64QAM	1	0	14.43	13.94	14.39	15.50

		1	25	14.32	14.01	13.88	15.50
		1	49	13.74	14.12	13.88	15.50
		25	0	14.02	13.93	13.93	15.50
		25	13	14.06	13.96	13.79	15.50
		25	25	13.61	13.84	13.65	15.50
		50	0	13.70	13.95	13.91	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up
				20825/2507.5	21100/2535	21375/2562.5	Limit
15MHz	QPSK	1	0	14.17	13.98	14.26	15.50
		1	38	14.04	14.07	13.79	15.50
		1	74	13.72	13.76	13.75	15.50
		36	0	14.01	13.93	13.97	15.50
		36	18	13.90	13.93	13.77	15.50
		36	39	13.59	13.73	13.67	15.50
		75	0	13.71	13.93	13.94	15.50
	16QAM	1	0	14.17	14.01	14.44	15.50
		1	38	14.19	14.10	14.04	15.50
		1	74	13.65	14.04	13.99	15.50
		36	0	13.98	13.83	13.88	15.50
		36	18	14.01	13.83	13.71	15.50
		36	39	13.58	13.64	13.62	15.50
		75	0	13.66	13.83	13.87	15.50
	64QAM	1	0	14.38	13.92	14.37	15.50
		1	38	14.30	13.98	13.86	15.50
		1	74	13.75	14.11	13.89	15.50
		36	0	14.01	13.95	13.94	15.50
		36	18	14.04	13.93	13.78	15.50
		36	39	13.59	13.80	13.62	15.50
		75	0	13.67	13.90	13.87	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up
				20850/2510	21100/2535	21350/2560	Limit
20MHz	QPSK	1	0	**14.14**	13.94	**14.23**	15.50
		1	50	14.03	**14.03**	13.77	15.50
		1	99	13.70	13.75	13.72	15.50
		50	0	**13.98**	13.88	**13.93**	15.50
		50	25	13.88	**13.89**	13.74	15.50
		50	50	13.56	13.68	13.63	15.50
		100	0	13.68	13.88	**13.90**	15.50
	16QAM	1	0	14.35	13.97	14.39	15.50
		1	50	14.15	14.08	14.00	15.50
		1	99	13.63	14.01	13.97	15.50
		50	0	13.95	13.79	13.85	15.50
		50	25	13.98	13.81	13.68	15.50

		50	50	13.55	13.59	13.58	15.50
		100	0	13.64	13.79	13.84	15.50
	64QAM	1	0	14.36	13.88	14.32	15.50
		1	50	14.26	13.96	13.82	15.50
		1	99	13.69	14.05	13.83	15.50
		50	0	13.96	13.87	13.87	15.50
		50	25	14.00	13.89	13.72	15.50
		50	50	13.56	13.75	13.58	15.50
		100	0	13.65	13.86	13.84	15.50

LTE FDD Band 7 Sensor on				Output power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20775/2502.5	21100/2535	21425/2567.5	
5MHz	QPSK	1	0	7.72	7.38	7.93	8.50
		1	13	7.58	7.54	7.42	8.50
		1	24	7.34	7.41	7.41	8.50
		12	0	7.43	7.56	7.44	8.50
		12	6	7.46	7.57	7.25	8.50
		12	13	7.14	7.42	7.14	8.50
		25	0	7.07	7.59	7.43	8.50
	16QAM	1	0	7.77	7.65	8.10	8.50
		1	13	7.75	7.70	7.63	8.50
		1	24	7.53	7.57	7.57	8.50
		12	0	7.29	7.33	7.36	8.50
		12	6	7.39	7.37	7.19	8.50
		12	13	7.04	7.21	7.07	8.50
		25	0	7.30	7.35	7.34	8.50
	64QAM	1	0	7.74	7.38	7.99	8.50
		1	13	7.64	7.75	7.47	8.50
		1	24	7.08	7.35	7.44	8.50
		12	0	7.30	7.35	7.29	8.50
		12	6	7.28	7.39	7.06	8.50
		12	13	7.15	7.24	7.14	8.50
		25	0	7.17	7.36	7.22	8.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20800/2505	21100/2535	21400/2565	
10MHz	QPSK	1	0	7.74	7.39	7.96	8.50
		1	25	7.61	7.59	7.46	8.50
		1	49	7.36	7.45	7.44	8.50
		25	0	7.46	7.61	7.48	8.50
		25	13	7.49	7.62	7.29	8.50

		25	25	7.16	7.46	7.19	8.50
		50	0	7.11	7.61	7.47	8.50
		1	0	7.79	7.68	8.12	8.50
		1	25	7.78	7.74	7.66	8.50
		1	49	7.56	7.59	7.60	8.50
	16QAM	25	0	7.32	7.38	7.40	8.50
		25	13	7.41	7.41	7.22	8.50
		25	25	7.07	7.26	7.11	8.50
		50	0	7.33	7.40	7.38	8.50
		1	0	7.76	7.37	8.01	8.50
		1	25	7.67	7.75	7.50	8.50
		1	49	7.07	7.37	7.47	8.50
	64QAM	25	0	7.33	7.40	7.29	8.50
		25	13	7.30	7.43	7.09	8.50
		25	25	7.18	7.29	7.18	8.50
		50	0	7.20	7.41	7.26	8.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20825/2507.5	21100/2535	21375/2562.5	
15MHz	QPSK	1	0	7.73	7.35	7.94	8.50
		1	38	7.59	7.58	7.43	8.50
		1	74	7.33	7.40	7.40	8.50
		36	0	7.44	7.57	7.45	8.50
		36	18	7.46	7.57	7.25	8.50
		36	39	7.13	7.43	7.15	8.50
		75	0	7.09	7.57	7.42	8.50
	16QAM	1	0	7.74	7.66	8.10	8.50
		1	38	7.76	7.71	7.64	8.50
		1	74	7.53	7.55	7.57	8.50
		36	0	7.29	7.36	7.37	8.50
		36	18	7.38	7.36	7.18	8.50
		36	39	7.05	7.22	7.08	8.50
		75	0	7.30	7.35	7.34	8.50
	64QAM	1	0	7.71	7.35	7.99	8.50
		1	38	7.65	7.72	7.48	8.50
		1	74	7.08	7.36	7.48	8.50
		36	0	7.32	7.42	7.30	8.50
		36	18	7.28	7.40	7.08	8.50
		36	39	7.16	7.25	7.15	8.50
		75	0	7.17	7.36	7.22	8.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20850/2510	21100/2535	21350/2560	
20MHz	QPSK	1	0	**7.70**	7.31	**7.91**	8.50
		1	50	7.58	**7.54**	7.41	8.50

		1	99	7.31	7.39	7.37	8.50
		50	0	7.41	7.52	**7.41**	8.50
		50	25	**7.44**	**7.53**	7.22	8.50
		50	50	7.10	7.38	7.11	8.50
		100	0	7.06	**7.52**	7.38	8.50
	16QAM	1	0	7.79	7.62	8.05	8.50
		1	50	7.72	7.69	7.60	8.50
		1	99	7.51	7.52	7.55	8.50
		50	0	7.26	7.32	7.34	8.50
		50	25	7.35	7.34	7.15	8.50
		50	50	7.02	7.17	7.04	8.50
		100	0	7.28	7.31	7.31	8.50
	64QAM	1	0	7.69	7.31	7.94	8.50
		1	50	7.61	7.70	7.44	8.50
		1	99	7.02	7.30	7.42	8.50
		50	0	7.27	7.34	7.23	8.50
		50	25	7.24	7.36	7.02	8.50
		50	50	7.13	7.20	7.11	8.50
		100	0	7.15	7.32	7.19	8.50

LTE FDD Band 12 Full power &Sensor off				**Output power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				23017/699.7	23095/707.5	23173/715.3	
1.4MHz	QPSK	1	0	23.86	23.79	23.67	25.00
		1	2	23.66	23.65	23.61	25.00
		1	5	23.78	23.78	23.76	25.00
		3	0	23.73	23.77	23.67	25.00
		3	2	23.77	23.81	23.73	25.00
		3	3	23.80	23.75	23.77	25.00
		6	0	22.83	22.88	22.79	24.00
	16QAM	1	0	22.20	23.00	22.47	24.00
		1	2	22.18	22.78	22.22	24.00
		1	5	22.61	23.12	22.59	24.00
		3	0	22.17	22.68	22.17	24.00
		3	2	22.25	22.75	22.20	24.00
		3	3	22.24	22.76	22.17	24.00
		6	0	21.30	21.75	21.27	23.00
	64QAM	1	0	21.41	21.43	21.57	23.00
		1	2	21.33	21.11	21.16	23.00
		1	5	21.53	21.57	21.60	23.00
		3	0	21.28	21.20	21.15	23.00

		3	2	21.29	21.19	21.24	23.00
		3	3	21.32	21.25	21.26	23.00
		6	0	20.31	20.29	20.33	22.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23025/700.5	23095/707.5	23165/714.5	
3MHz	QPSK	1	0	23.88	23.83	23.70	25.00
		1	7	23.64	23.68	23.65	25.00
		1	14	23.81	23.83	23.80	25.00
		8	0	22.83	22.89	22.80	24.00
		8	4	22.89	22.91	22.85	24.00
		8	7	22.90	22.86	22.87	24.00
		15	0	22.83	22.92	22.82	24.00
	16QAM	1	0	22.23	23.02	22.50	24.00
		1	7	22.21	22.78	22.26	24.00
		1	14	22.63	23.16	22.62	24.00
		8	0	21.28	21.81	21.29	23.00
		8	4	21.36	21.88	21.32	23.00
		8	7	21.34	21.88	21.30	23.00
		15	0	21.33	21.79	21.30	23.00
	64QAM	1	0	21.44	21.45	21.60	23.00
		1	7	21.36	21.11	21.18	23.00
		1	14	21.55	21.56	21.63	23.00
		8	0	20.39	20.33	20.27	22.00
		8	4	20.40	20.32	20.36	22.00
		8	7	20.42	20.37	20.39	22.00
		15	0	20.34	20.33	20.36	22.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23035/701.5	23095/707.5	23155/713.5	
5MHz	QPSK	1	0	23.85	23.81	23.66	25.00
		1	13	23.62	23.64	23.62	25.00
		1	24	23.78	23.78	23.76	25.00
		12	0	22.80	22.84	22.76	24.00
		12	6	22.87	22.87	22.80	24.00
		12	13	22.88	22.84	22.83	24.00
		25	0	22.83	22.91	22.80	24.00
	16QAM	1	0	22.20	22.98	22.47	24.00
		1	13	22.18	22.76	22.23	24.00
		1	24	22.60	23.14	22.58	24.00
		12	0	21.26	21.77	21.26	23.00
		12	6	21.33	21.83	21.28	23.00
		12	13	21.31	21.83	21.26	23.00
		25	0	21.31	21.75	21.25	23.00
	64QAM	1	0	21.41	21.45	21.57	23.00

		1	13	21.33	21.13	21.15	23.00
		1	24	21.56	21.54	21.59	23.00
		12	0	20.37	20.29	20.28	22.00
		12	6	20.37	20.27	20.32	22.00
		12	13	20.39	20.32	20.35	22.00
		25	0	20.32	20.29	20.31	22.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23060/704	23095/707.5	23130/711	
10MHz	QPSK	1	0	**23.83**	23.74	23.64	25.00
		1	25	23.62	23.64	23.61	25.00
		1	49	23.75	**23.76**	**23.72**	25.00
		25	0	22.78	22.80	22.73	24.00
		25	13	**22.85**	**22.83**	22.77	24.00
		25	25	22.84	22.80	**22.80**	24.00
		50	0	22.82	**22.84**	22.75	24.00
	16QAM	1	0	22.48	22.95	22.42	24.00
		1	25	22.15	22.75	22.20	24.00
		1	49	22.58	23.09	22.56	24.00
		25	0	21.23	21.76	21.24	23.00
		25	13	21.29	21.80	21.24	23.00
		25	25	21.29	21.79	21.23	23.00
		50	0	21.29	21.71	21.22	23.00
	64QAM	1	0	21.36	21.38	21.52	23.00
		1	25	21.30	21.08	21.12	23.00
		1	49	21.50	21.49	21.57	23.00
		25	0	20.34	20.28	20.22	22.00
		25	13	20.33	20.24	20.28	22.00
		25	25	20.37	20.28	20.32	22.00
		50	0	20.30	20.25	20.28	22.00

LTE FDD Band 12 Sensor on				**Output power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				23017/699.7	23095/707.5	23173/715.3	
1.4MHz	QPSK	1	0	13.64	13.70	13.70	15.00
		1	2	13.83	13.64	13.84	15.00
		1	5	13.56	13.82	13.61	15.00
		3	0	14.58	14.53	14.50	15.00
		3	2	14.48	14.33	14.75	15.00
		3	3	14.39	14.38	14.55	15.00
		6	0	13.49	13.62	13.81	15.00
	16QAM	1	0	13.92	13.86	13.94	15.00

		1	2	13.90	13.85	14.11	15.00
		1	5	13.71	13.90	13.71	15.00
		3	0	14.48	14.40	14.24	15.00
		3	2	14.09	14.17	14.67	15.00
		3	3	14.12	14.56	14.47	15.00
		6	0	13.39	13.54	13.72	15.00
	64QAM	1	0	13.73	13.76	13.68	15.00
		1	2	13.77	13.52	13.79	15.00
		1	5	13.45	13.93	13.59	15.00
		3	0	14.47	14.38	14.16	15.00
		3	2	14.03	14.00	14.56	15.00
		3	3	13.98	14.24	14.46	15.00
		6	0	13.39	13.26	13.59	15.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23025/700.5	23095/707.5	23165/714.5	
3MHz	QPSK	1	0	13.66	13.74	13.73	15.00
		1	7	13.81	13.67	13.88	15.00
		1	14	13.59	13.87	13.65	15.00
		8	0	13.68	13.65	13.63	15.00
		8	4	13.60	13.43	13.87	15.00
		8	7	13.49	13.49	13.65	15.00
		15	0	13.49	13.66	13.84	15.00
	16QAM	1	0	13.95	13.88	13.97	15.00
		1	7	13.93	13.85	14.15	15.00
		1	14	13.73	13.94	13.74	15.00
		8	0	13.59	13.53	13.36	15.00
		8	4	13.20	13.30	13.79	15.00
		8	7	13.22	13.68	13.60	15.00
		15	0	13.42	13.58	13.75	15.00
	64QAM	1	0	13.76	13.78	13.71	15.00
		1	7	13.80	13.52	13.81	15.00
		1	14	13.47	13.92	13.62	15.00
		8	0	13.58	13.51	13.28	15.00
		8	4	13.14	13.13	13.68	15.00
		8	7	13.08	13.36	13.59	15.00
		15	0	13.42	13.30	13.62	15.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23035/701.5	23095/707.5	23155/713.5	
5MHz	QPSK	1	0	13.63	13.72	13.69	15.00
		1	13	13.79	13.63	13.85	15.00
		1	24	13.56	13.82	13.61	15.00
		12	0	13.65	13.60	13.59	15.00
		12	6	13.58	13.39	13.82	15.00

		12	13	13.47	13.47	13.61	15.00
		25	0	13.49	13.65	13.82	15.00
	16QAM	1	0	13.92	13.84	13.94	15.00
		1	13	13.90	13.83	14.12	15.00
		1	24	13.70	13.92	13.70	15.00
		12	0	13.57	13.49	13.33	15.00
		12	6	13.17	13.25	13.75	15.00
		12	13	13.19	13.63	13.56	15.00
		25	0	13.40	13.54	13.70	15.00
	64QAM	1	0	13.73	13.78	13.68	15.00
		1	13	13.77	13.54	13.78	15.00
		1	24	13.48	13.90	13.58	15.00
		12	0	13.56	13.47	13.29	15.00
		12	6	13.11	13.08	13.64	15.00
		12	13	13.05	13.31	13.55	15.00
		25	0	13.40	13.26	13.57	15.00

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23060/704	23095/707.5	23130/711	
10MHz	QPSK	1	0	13.61	13.65	13.67	15.00
		1	25	**13.79**	13.63	**13.84**	15.00
		1	49	13.53	**13.80**	13.57	15.00
		25	0	**13.63**	**13.56**	13.56	15.00
		25	13	13.56	13.35	**13.79**	15.00
		25	25	13.43	13.43	13.58	15.00
		50	0	13.48	13.58	**13.77**	15.00
	16QAM	1	0	13.84	13.81	13.89	15.00
		1	25	13.87	13.82	14.09	15.00
		1	49	13.68	13.87	13.68	15.00
		25	0	13.54	13.48	13.31	15.00
		25	13	13.13	13.22	13.71	15.00
		25	25	13.17	13.59	13.53	15.00
		50	0	13.38	13.50	13.67	15.00
	64QAM	1	0	13.68	13.71	13.63	15.00
		1	25	13.74	13.49	13.75	15.00
		1	49	13.42	13.85	13.56	15.00
		25	0	13.53	13.46	13.23	15.00
		25	13	13.07	13.05	13.60	15.00
		25	25	13.03	13.27	13.52	15.00
		50	0	13.38	13.22	13.54	15.00

LTE FDD Band 17 Full power &Sensor off				Output power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				23755/706.5	23790/710	23825/713.5	
5MHz	QPSK	1	0	23.72	23.81	23.61	25.00
		1	13	23.58	23.60	23.59	25.00
		1	24	23.82	23.78	23.76	25.00
		12	0	22.77	22.76	22.78	24.00
		12	6	22.78	22.77	22.81	24.00
		12	13	22.93	22.89	22.82	24.00
		25	0	22.82	22.79	22.82	24.00
	16QAM	1	0	22.35	22.82	22.53	24.00
		1	13	22.33	22.75	22.31	24.00
		1	24	22.58	22.87	22.50	24.00
		12	0	21.33	21.78	21.28	23.00
		12	6	21.29	21.86	21.28	23.00
		12	13	21.25	21.84	21.34	23.00
		25	0	21.21	21.81	21.20	23.00
	64QAM	1	0	21.64	21.53	21.48	23.00
		1	13	21.31	21.24	21.33	23.00
		1	24	21.68	21.54	21.56	23.00
		12	0	20.28	20.28	20.30	22.00
		12	6	20.32	20.27	20.34	22.00
		12	13	20.28	20.30	20.31	22.00
		25	0	20.30	20.25	20.31	22.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23780/709	23790/710	23800/711	
10MHz	QPSK	1	0	23.70	23.74	23.59	25.00
		1	25	23.58	23.60	23.58	25.00
		1	49	**23.79**	**23.76**	**23.72**	25.00
		25	0	22.75	22.72	22.75	24.00
		25	13	22.76	22.73	22.78	24.00
		25	25	**22.89**	**22.85**	**22.79**	24.00
		50	0	**22.81**	22.72	22.77	24.00
	16QAM	1	0	22.53	22.79	22.48	24.00
		1	25	22.30	22.74	22.28	24.00
		1	49	22.56	22.82	22.48	24.00
		25	0	21.30	21.77	21.26	23.00
		25	13	21.25	21.83	21.24	23.00
		25	25	21.23	21.80	21.31	23.00
		50	0	21.19	21.77	21.17	23.00
	64QAM	1	0	21.59	21.46	21.43	23.00

		1	25	21.28	21.19	21.30	23.00
		1	49	21.62	21.49	21.54	23.00
		25	0	20.25	20.27	20.24	22.00
		25	13	20.28	20.24	20.30	22.00
		25	25	20.26	20.26	20.28	22.00
		50	0	20.28	20.21	20.28	22.00

LTE FDD Band 17 Sensor on				Output power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				23755/706.5	23790/710	23825/713.5	
5MHz	QPSK	1	0	14.45	14.47	14.58	15.00
		1	13	14.65	14.69	14.79	15.00
		1	24	14.65	14.58	14.50	15.00
		12	0	14.45	14.54	14.61	15.00
		12	6	14.53	14.58	14.51	15.00
		12	13	14.44	14.44	14.40	15.00
		25	0	14.52	14.51	14.44	15.00
	16QAM	1	0	14.72	14.56	14.66	15.00
		1	13	14.70	14.82	14.91	15.00
		1	24	14.70	14.70	14.58	15.00
		12	0	14.26	14.27	14.38	15.00
		12	6	14.34	14.34	14.33	15.00
		12	13	14.24	14.32	14.33	15.00
		25	0	14.32	14.24	14.27	15.00
	64QAM	1	0	14.44	14.40	14.45	15.00
		1	13	14.49	14.64	14.82	15.00
		1	24	14.67	14.62	14.48	15.00
		12	0	14.26	14.31	14.44	15.00
		12	6	14.36	14.37	14.34	15.00
		12	13	14.24	14.25	14.27	15.00
		25	0	14.32	14.26	14.28	15.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23780/709	23790/710	23800/711	
10MHz	QPSK	1	0	14.43	14.40	14.56	15.00
		1	25	**14.65**	**14.69**	**14.78**	15.00
		1	49	14.62	14.56	14.46	15.00
		25	0	14.43	14.50	**14.58**	15.00
		25	13	**14.51**	**14.54**	14.48	15.00
		25	25	14.40	14.40	14.37	15.00
		50	0	**14.51**	14.44	14.39	15.00
	16QAM	1	0	14.52	14.53	14.61	15.00

		1	25	14.67	14.81	14.88	15.00
		1	49	14.68	14.65	14.56	15.00
		25	0	14.23	14.26	14.36	15.00
		25	13	14.30	14.31	14.29	15.00
		25	25	14.22	14.28	14.30	15.00
		50	0	14.30	14.20	14.24	15.00
	64QAM	1	0	14.39	14.33	14.40	15.00
		1	25	14.46	14.59	14.79	15.00
		1	49	14.61	14.57	14.46	15.00
		25	0	14.23	14.30	14.38	15.00
		25	13	14.32	14.34	14.30	15.00
		25	25	14.22	14.21	14.24	15.00
		50	0	14.30	14.22	14.25	15.00

LTE FDD Band 66 Full power（without FCC country code detected）				Output power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				131979/1710.7	132322/1745	132665/1779.3	
1.4MHz	QPSK	1	0	23.80	23.67	23.72	24.50
		1	2	23.75	23.62	23.65	24.50
		1	5	23.77	23.57	23.69	24.50
		3	0	23.85	23.68	23.74	24.50
		3	2	23.84	23.72	23.78	24.50
		3	3	23.85	23.64	23.76	24.50
		6	0	22.81	22.69	22.74	23.50
	16QAM	1	0	22.99	22.73	22.93	23.50
		1	2	22.97	22.83	22.88	23.50
		1	5	23.03	22.89	22.94	23.50
		3	0	22.74	22.58	22.64	23.50
		3	2	22.84	22.66	22.74	23.50
		3	3	22.77	22.64	22.66	23.50
		6	0	21.84	21.73	21.78	22.50
	64QAM	1	0	21.96	21.78	21.86	22.50
		1	2	21.92	21.78	21.85	22.50
		1	5	21.85	21.73	21.73	22.50
		3	0	21.81	21.61	21.67	22.50
		3	2	21.95	21.75	21.83	22.50
		3	3	21.88	21.71	21.73	22.50
		6	0	20.87	20.74	20.79	21.50

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				1319871711.5	132322/1745	132657/1778.5	
3MHz	QPSK	1	0	23.82	23.71	23.75	24.50
		1	7	23.73	23.65	23.69	24.50
		1	14	23.80	23.62	23.73	24.50
		8	0	22.95	22.80	22.87	23.50
		8	4	22.96	22.82	22.90	23.50
		8	7	22.95	22.75	22.86	23.50
		15	0	22.81	22.73	22.77	23.50
	16QAM	1	0	23.02	22.75	22.96	23.50
		1	7	23.00	22.83	22.92	23.50
		1	14	23.05	22.93	22.97	23.50
		8	0	21.85	21.71	21.76	22.50
		8	4	21.95	21.79	21.86	22.50
		8	7	21.87	21.76	21.79	22.50
		15	0	21.87	21.77	21.81	22.50
	64QAM	1	0	21.99	21.80	21.89	22.50
		1	7	21.95	21.78	21.87	22.50
		1	14	21.87	21.72	21.76	22.50
		8	0	20.92	20.74	20.79	21.50
		8	4	21.06	20.88	20.95	21.50
		8	7	20.98	20.83	20.86	21.50
		15	0	20.90	20.78	20.82	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				131997/1712.5	132322/1745	132647/1777.5	
5MHz	QPSK	1	0	23.79	23.69	23.71	24.50
		1	13	23.71	23.61	23.66	24.50
		1	24	23.77	23.57	23.69	24.50
		12	0	22.92	22.75	22.83	23.50
		12	6	22.94	22.78	22.85	23.50
		12	13	22.93	22.73	22.82	23.50
		25	0	22.81	22.72	22.75	23.50
	16QAM	1	0	22.99	22.71	22.93	23.50
		1	13	22.97	22.81	22.89	23.50
		1	24	23.02	22.91	22.93	23.50
		12	0	21.83	21.67	21.73	22.50
		12	6	21.92	21.74	21.82	22.50
		12	13	21.84	21.71	21.75	22.50
		25	0	21.85	21.73	21.76	22.50
	64QAM	1	0	21.96	21.80	21.86	22.50
		1	13	21.92	21.80	21.84	22.50
		1	24	21.88	21.70	21.72	22.50
		12	0	20.90	20.70	20.80	21.50

		12	6	21.03	20.83	20.91	21.50
		12	13	20.95	20.78	20.82	21.50
		25	0	20.88	20.74	20.77	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132022/1715	132322/1745	132622/1775	
10MHz	QPSK	1	0	23.81	23.70	23.74	24.50
		1	25	23.74	23.66	23.70	24.50
		1	49	23.79	23.61	23.72	24.50
		25	0	22.95	22.80	22.87	23.50
		25	13	22.97	22.83	22.89	23.50
		25	25	22.95	22.77	22.87	23.50
		50	0	22.85	22.74	22.79	23.50
	16QAM	1	0	23.01	22.74	22.95	23.50
		1	25	23.00	22.85	22.92	23.50
		1	49	23.05	22.93	22.96	23.50
		25	0	21.86	21.72	21.77	22.50
		25	13	21.94	21.78	21.85	22.50
		25	25	21.87	21.76	21.79	22.50
		50	0	21.88	21.78	21.80	22.50
	64QAM	1	0	21.98	21.79	21.88	22.50
		1	25	21.95	21.80	21.87	22.50
		1	49	21.87	21.72	21.75	22.50
		25	0	20.93	20.75	20.80	21.50
		25	13	21.05	20.87	20.94	21.50
		25	25	20.98	20.83	20.86	21.50
		50	0	20.91	20.79	20.81	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132047/1717.5	132322/1745	132597/1772.5	
15MHz	QPSK	1	0	23.80	23.66	23.72	24.50
		1	38	23.72	23.65	23.67	24.50
		1	74	23.76	23.56	23.68	24.50
		36	0	22.93	22.76	22.84	23.50
		36	18	22.94	22.78	22.85	23.50
		36	39	22.92	22.74	22.83	23.50
		75	0	22.83	22.70	22.74	23.50
	16QAM	1	0	22.96	22.72	22.93	23.50
		1	38	22.98	22.82	22.90	23.50
		1	74	23.02	22.89	22.93	23.50
		36	0	21.83	21.70	21.74	22.50
		36	18	21.91	21.73	21.81	22.50
		36	39	21.85	21.72	21.76	22.50
		75	0	21.85	21.73	21.76	22.50
	64QAM	1	0	21.93	21.77	21.86	22.50

		1	38	21.93	21.77	21.85	22.50
		1	74	21.88	21.71	21.76	22.50
		36	0	20.92	20.77	20.81	21.50
		36	18	21.03	20.84	20.93	21.50
		36	39	20.96	20.79	20.83	21.50
		75	0	20.88	20.74	20.77	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132072/1720	132322/1745	132572/1770	
20MHz	QPSK	1	0	**23.77**	**23.62**	**23.69**	24.50
		1	50	23.71	23.61	23.65	24.50
		1	99	23.74	23.55	23.65	24.50
		50	0	22.90	22.71	22.80	23.50
		50	25	**22.92**	**22.74**	**22.82**	23.50
		50	50	22.89	22.69	22.79	23.50
		100	0	**22.80**	22.65	22.70	23.50
	16QAM	1	0	23.00	22.68	22.88	23.50
		1	50	22.94	22.80	22.86	23.50
		1	99	23.00	22.86	22.91	23.50
		50	0	21.80	21.66	21.71	22.50
		50	25	21.88	21.71	21.78	22.50
		50	50	21.82	21.67	21.72	22.50
		100	0	21.83	21.69	21.73	22.50
	64QAM	1	0	21.91	21.73	21.81	22.50
		1	50	21.89	21.75	21.81	22.50
		1	99	21.82	21.65	21.70	22.50
		50	0	20.87	20.69	20.74	21.50
		50	25	20.99	20.80	20.87	21.50
		50	50	20.93	20.74	20.79	21.50
		100	0	20.86	20.70	20.74	21.50

LTE FDD Band 66 Sensor off（FCC country code detected）				**Output power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				131979/1710.7	132322/1745	132665/1779.3	
1.4MHz	QPSK	1	0	14.51	14.59	14.51	15.50
		1	2	14.26	13.89	14.27	15.50
		1	5	13.98	13.89	13.95	15.50
		3	0	15.22	14.87	15.18	15.50
		3	2	15.07	14.72	15.14	15.50
		3	3	14.88	14.82	14.85	15.50
		6	0	14.12	13.96	14.20	15.50
	16QAM	1	0	14.42	14.72	14.76	15.50

		1	2	14.40	14.05	14.46	15.50
		1	5	14.11	14.18	14.11	15.50
		3	0	14.92	14.82	15.10	15.50
		3	2	14.81	14.71	14.84	15.50
		3	3	14.55	14.86	14.91	15.50
		6	0	13.81	13.95	13.88	15.50
	64QAM	1	0	14.69	14.74	14.73	15.50
		1	2	14.26	14.13	14.13	15.50
		1	5	14.16	14.30	14.16	15.50
		3	0	14.97	14.79	15.35	15.50
		3	2	14.87	14.65	15.24	15.50
		3	3	14.60	14.85	14.93	15.50
		6	0	13.86	13.95	14.32	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				1319871711.5	132322/1745	132657/1778.5	
3MHz	QPSK	1	0	14.53	14.63	14.54	15.50
		1	7	14.24	13.92	14.31	15.50
		1	14	14.01	13.94	13.99	15.50
		8	0	14.32	13.99	14.31	15.50
		8	4	14.19	13.82	14.26	15.50
		8	7	13.98	13.93	13.95	15.50
		15	0	14.12	14.00	14.23	15.50
	16QAM	1	0	14.45	14.74	14.79	15.50
		1	7	14.43	14.05	14.50	15.50
		1	14	14.13	14.22	14.14	15.50
		8	0	14.03	13.95	14.22	15.50
		8	4	13.92	13.84	13.96	15.50
		8	7	13.65	13.98	14.04	15.50
		15	0	13.84	13.99	13.91	15.50
	64QAM	1	0	14.72	14.76	14.76	15.50
		1	7	14.29	14.13	14.15	15.50
		1	14	14.18	14.29	14.19	15.50
		8	0	14.08	13.92	14.47	15.50
		8	4	13.98	13.78	14.36	15.50
		8	7	13.70	13.97	14.06	15.50
		15	0	13.89	13.99	14.35	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				131997/1712.5	132322/1745	132647/1777.5	
5MHz	QPSK	1	0	14.50	14.61	14.50	15.50
		1	13	14.22	13.88	14.28	15.50
		1	24	13.98	13.89	13.95	15.50
		12	0	14.29	13.94	14.27	15.50
		12	6	14.17	13.78	14.21	15.50

		12	13	13.96	13.91	13.91	15.50
		25	0	14.12	13.99	14.21	15.50
	16QAM	1	0	14.42	14.70	14.76	15.50
		1	13	14.40	14.03	14.47	15.50
		1	24	14.10	14.20	14.10	15.50
		12	0	14.01	13.91	14.19	15.50
		12	6	13.89	13.79	13.92	15.50
		12	13	13.62	13.93	14.00	15.50
		25	0	13.82	13.95	13.86	15.50
	64QAM	1	0	14.69	14.76	14.73	15.50
		1	13	14.26	14.15	14.12	15.50
		1	24	14.19	14.27	14.15	15.50
		12	0	14.06	13.88	14.48	15.50
		12	6	13.95	13.73	14.32	15.50
		12	13	13.67	13.92	14.02	15.50
		25	0	13.87	13.95	14.30	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132022/1715	132322/1745	132622/1775	
10MHz	QPSK	1	0	14.52	14.62	14.53	15.50
		1	25	14.25	13.93	14.32	15.50
		1	49	14.00	13.93	13.98	15.50
		25	0	14.32	13.99	14.31	15.50
		25	13	14.20	13.83	14.25	15.50
		25	25	13.98	13.95	13.96	15.50
		50	0	14.16	14.01	14.25	15.50
	16QAM	1	0	14.44	14.73	14.78	15.50
		1	25	14.43	14.07	14.50	15.50
		1	49	14.13	14.22	14.13	15.50
		25	0	14.04	13.96	14.23	15.50
		25	13	13.91	13.83	13.95	15.50
		25	25	13.65	13.98	14.04	15.50
		50	0	13.85	14.00	13.90	15.50
	64QAM	1	0	14.71	14.75	14.75	15.50
		1	25	14.29	14.15	14.15	15.50
		1	49	14.18	14.29	14.18	15.50
		25	0	14.09	13.93	14.48	15.50
		25	13	13.97	13.77	14.35	15.50
		25	25	13.70	13.97	14.06	15.50
		50	0	13.90	14.00	14.34	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132047/1717.5	132322/1745	132597/1772.5	
15MHz	QPSK	1	0	14.51	14.58	14.51	15.50
		1	38	14.23	13.92	14.29	15.50

		1	74	13.97	13.88	13.94	15.50
		36	0	14.30	13.95	14.28	15.50
		36	18	14.17	13.78	14.21	15.50
		36	39	13.95	13.92	13.92	15.50
		75	0	14.14	13.97	14.20	15.50
	16QAM	1	0	14.39	14.71	14.76	15.50
		1	38	14.41	14.04	14.48	15.50
		1	74	14.10	14.18	14.10	15.50
		36	0	14.01	13.94	14.20	15.50
		36	18	13.88	13.78	13.91	15.50
		36	39	13.63	13.94	14.01	15.50
		75	0	13.82	13.95	13.86	15.50
	64QAM	1	0	14.66	14.73	14.73	15.50
		1	38	14.27	14.12	14.13	15.50
		1	74	14.19	14.28	14.19	15.50
		36	0	14.08	13.95	14.49	15.50
		36	18	13.95	13.74	14.34	15.50
		36	39	13.68	13.93	14.03	15.50
		75	0	13.87	13.95	14.30	15.50

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132072/1720	132322/1745	132572/1770	
20MHz	QPSK	1	0	**14.48**	**14.54**	**14.48**	15.50
		1	50	14.22	13.88	14.27	15.50
		1	99	13.95	13.87	13.91	15.50
		50	0	**14.27**	**13.90**	**14.24**	15.50
		50	25	14.15	13.74	14.18	15.50
		50	50	13.92	13.87	13.88	15.50
		100	0	14.11	13.92	**14.16**	15.50
	16QAM	1	0	14.58	14.67	14.71	15.50
		1	50	14.37	14.02	14.44	15.50
		1	99	14.08	14.15	14.08	15.50
		50	0	13.98	13.90	14.17	15.50
		50	25	13.85	13.76	13.88	15.50
		50	50	13.60	13.89	13.97	15.50
		100	0	13.80	13.91	13.83	15.50
	64QAM	1	0	14.64	14.69	14.68	15.50
		1	50	14.23	14.10	14.09	15.50
		1	99	14.13	14.22	14.13	15.50
		50	0	14.03	13.87	14.42	15.50
		50	25	13.91	13.70	14.28	15.50
		50	50	13.65	13.88	13.99	15.50
		100	0	13.85	13.91	14.27	15.50

LTE FDD Band 66 Sensor on				Output power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				131979/1710.7	132322/1745	132665/1779.3	
1.4MHz	QPSK	1	0	8.60	8.87	8.71	10.00
		1	2	8.47	8.63	8.36	10.00
		1	5	8.14	8.19	8.13	10.00
		3	0	9.31	9.43	9.21	10.00
		3	2	9.17	9.31	9.12	10.00
		3	3	8.98	9.15	9.00	10.00
		6	0	8.19	8.34	8.19	10.00
	16QAM	1	0	8.50	8.88	8.89	10.00
		1	2	8.48	8.49	8.52	10.00
		1	5	8.15	8.28	8.11	10.00
		3	0	9.09	9.17	9.11	10.00
		3	2	9.00	9.10	9.06	10.00
		3	3	9.00	8.99	8.97	10.00
		6	0	8.08	8.15	8.13	10.00
	64QAM	1	0	8.42	8.78	8.76	10.00
		1	2	8.41	8.45	8.42	10.00
		1	5	8.13	8.19	8.09	10.00
		3	0	9.11	9.15	9.02	10.00
		3	2	9.02	9.05	8.99	10.00
		3	3	9.01	8.98	8.96	10.00
		6	0	8.02	8.06	8.06	10.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				1319871711.5	132322/1745	132657/1778.5	
3MHz	QPSK	1	0	8.62	8.91	8.74	10.00
		1	7	8.45	8.66	8.40	10.00
		1	14	8.17	8.24	8.17	10.00
		8	0	8.41	8.55	8.34	10.00
		8	4	8.29	8.41	8.24	10.00
		8	7	8.08	8.26	8.10	10.00
		15	0	8.19	8.38	8.22	10.00
	16QAM	1	0	8.53	8.90	8.92	10.00
		1	7	8.51	8.49	8.56	10.00
		1	14	8.17	8.32	8.14	10.00
		8	0	8.20	8.30	8.23	10.00
		8	4	8.11	8.23	8.18	10.00
		8	7	8.10	8.11	8.10	10.00
		15	0	8.11	8.19	8.16	10.00
	64QAM	1	0	8.45	8.80	8.79	10.00

		1	7	8.44	8.45	8.44	10.00
		1	14	8.15	8.18	8.12	10.00
		8	0	8.22	8.28	8.14	10.00
		8	4	8.13	8.18	8.11	10.00
		8	7	8.11	8.10	8.09	10.00
		15	0	8.05	8.10	8.09	10.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				131997/1712.5	132322/1745	132647/1777.5	
5MHz	QPSK	1	0	8.59	8.89	8.70	10.00
		1	13	8.43	8.62	8.37	10.00
		1	24	8.14	8.19	8.13	10.00
		12	0	8.38	8.50	8.30	10.00
		12	6	8.27	8.37	8.19	10.00
		12	13	8.06	8.24	8.06	10.00
		25	0	8.19	8.37	8.20	10.00
	16QAM	1	0	8.50	8.86	8.89	10.00
		1	13	8.48	8.47	8.53	10.00
		1	24	8.14	8.30	8.10	10.00
		12	0	8.18	8.26	8.20	10.00
		12	6	8.08	8.18	8.14	10.00
		12	13	8.07	8.06	8.06	10.00
		25	0	8.09	8.15	8.11	10.00
	64QAM	1	0	8.42	8.80	8.76	10.00
		1	13	8.41	8.47	8.41	10.00
		1	24	8.16	8.16	8.08	10.00
		12	0	8.20	8.24	8.15	10.00
		12	6	8.10	8.13	8.07	10.00
		12	13	8.08	8.05	8.05	10.00
		25	0	8.03	8.06	8.04	10.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132022/1715	132322/1745	132622/1775	
10MHz	QPSK	1	0	8.61	8.90	8.73	10.00
		1	25	8.46	8.67	8.41	10.00
		1	49	8.16	8.23	8.16	10.00
		25	0	8.41	8.55	8.34	10.00
		25	13	8.30	8.42	8.23	10.00
		25	25	8.08	8.28	8.11	10.00
		50	0	8.23	8.39	8.24	10.00
	16QAM	1	0	8.52	8.89	8.91	10.00
		1	25	8.51	8.51	8.56	10.00
		1	49	8.17	8.32	8.13	10.00
		25	0	8.21	8.31	8.24	10.00
		25	13	8.10	8.22	8.17	10.00

		25	25	8.10	8.11	8.10	10.00
		50	0	8.12	8.20	8.15	10.00
	64QAM	1	0	8.44	8.79	8.78	10.00
		1	25	8.44	8.47	8.44	10.00
		1	49	8.15	8.18	8.11	10.00
		25	0	8.23	8.29	8.15	10.00
		25	13	8.12	8.17	8.10	10.00
		25	25	8.11	8.10	8.09	10.00
		50	0	8.06	8.11	8.08	10.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132047/1717.5	132322/1745	132597/1772.5	
15MHz	QPSK	1	0	8.60	8.86	8.71	10.00
		1	38	8.44	8.66	8.38	10.00
		1	74	8.13	8.18	8.12	10.00
		36	0	8.39	8.51	8.31	10.00
		36	18	8.27	8.37	8.19	10.00
		36	39	8.05	8.25	8.07	10.00
		75	0	8.21	8.35	8.19	10.00
	16QAM	1	0	8.47	8.87	8.89	10.00
		1	38	8.49	8.48	8.54	10.00
		1	74	8.14	8.28	8.10	10.00
		36	0	8.18	8.29	8.21	10.00
		36	18	8.07	8.17	8.13	10.00
		36	39	8.08	8.07	8.07	10.00
		75	0	8.09	8.15	8.11	10.00
	64QAM	1	0	8.39	8.77	8.76	10.00
		1	38	8.42	8.44	8.42	10.00
		1	74	8.16	8.17	8.12	10.00
		36	0	8.22	8.31	8.16	10.00
		36	18	8.10	8.14	8.09	10.00
		36	39	8.09	8.06	8.06	10.00
		75	0	8.03	8.06	8.04	10.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132072/1720	132322/1745	132572/1770	
20MHz	QPSK	1	0	**8.57**	**8.82**	**8.68**	10.00
		1	50	8.43	8.62	8.36	10.00
		1	99	8.11	8.17	8.09	10.00
		50	0	**8.36**	**8.46**	**8.27**	10.00
		50	25	8.25	8.33	8.16	10.00
		50	50	8.02	8.20	8.03	10.00
		100	0	8.18	**8.30**	8.15	10.00
	16QAM	1	0	8.57	8.83	8.84	10.00
		1	50	8.45	8.46	8.50	10.00

		1	99	8.12	8.25	8.08	10.00
		50	0	8.15	8.25	8.18	10.00
		50	25	8.04	8.15	8.10	10.00
		50	50	8.05	8.02	8.03	10.00
		100	0	8.07	8.11	8.08	10.00
	64QAM	1	0	8.37	8.73	8.71	10.00
		1	50	8.38	8.42	8.38	10.00
		1	99	8.10	8.11	8.06	10.00
		50	0	8.17	8.23	8.09	10.00
		50	25	8.06	8.10	8.03	10.00
		50	50	8.06	8.01	8.02	10.00
		100	0	8.01	8.02	8.01	10.00

9.4 WLAN Mode

Wi-Fi 2.4G Full power &Sensor off Mode	Channel /Frequency(MHz)	Maximum Output Power (dBm)	
		Tune-up	Meas.
802.11b (1M)	1/2412	17.50	15.52
	6/2437	17.50	15.78
	11/2462	17.50	**15.97**
802.11g (6M)	1/2412	12.00	10.06
	2/2417	16.00	13.97
	3/2422	16.00	15.93
	6/2437	16.00	15.47
	9/2452	16.00	15.62
	10/2457	14.00	12.33
	11/2462	10.00	8.45
802.11n-HT20 (MCS0)	1/2412	12.00	10.15
	2/2417	16.00	13.93
	3/2422	16.00	15.95
	6/2437	16.00	15.52
	9/2452	16.00	15.64
	10/2457	14.00	12.32
	11/2462	10.00	8.45
802.11n-HT40 (MCS0)	3/2422	9.00	7.09
	6/2437	9.00	7.21
	9/2452	9.00	7.22
Note: Initial test configuration is 802.11b mode.			

Wi-Fi 2.4G Sensor on Mode	Channel /Frequency(MHz)	Maximum Output Power (dBm)	
		Tune-up	Meas.
802.11b (1M)	1/2412	8.00	5.66
	6/2437	8.00	6.68
	11/2462	8.00	6.07
802.11g (6M)	1/2412	8.00	6.50
	6/2437	8.00	6.79
	11/2462	8.00	**7.34**
802.11n-HT20 (MCS0)	1/2412	8.00	6.52
	6/2437	8.00	6.80
	11/2462	8.00	7.33
802.11n-HT40 (MCS0)	3/2422	8.00	6.54
	6/2437	8.00	6.51
	9/2452	8.00	6.23
Note: Initial test configuration is 802.11g mode.			

Wi-Fi 5G (U-NII-1) Full power &Sensor off Mode	Channel /Frequency(MHz)	Maximum Output Power (dBm)	
		Tune-up	Meas.
802.11a (6M)	36/5180	15.00	13.03
	40/5200	16.50	15.09
	44/5220	16.50	15.12
	48/5240	16.50	**15.18**
802.11n-HT20 (MCS0)	36/5180	15.00	13.04
	40/5200	16.50	15.11
	44/5220	16.50	15.08
	48/5240	16.50	15.18
802.11n-HT40 (MCS0)	38/5190	12.00	10.87
	46/5230	16.50	15.01
802.11ac-VHT20 (MCS0)	36/5180	15.00	12.90
	40/5200	16.50	14.98
	44/5220	16.50	15.04
	48/5240	16.50	15.17
802.11ac-VHT40 (MCS0)	38/5190	12.00	10.89
	46/5230	16.50	15.02
802.11ac-VHT80 (MCS0)	42/5210	10.00	8.05
Note. Initial test configuration is 802.11a mode, since the highest maximum output powe.			

Wi-Fi 5G (U-NII-2A) Full power &Sensor off Mode	Channel /Frequency(MHz)	Maximum Output Power (dBm)	
		Tune-up	Meas.
802.11a (6M)	52/5260	16.50	15.38
	56/5280	16.50	15.52
	60/5300	16.50	15.72
	64/5320	15.00	13.71
802.11n-HT20 (MCS0)	52/5260	16.50	15.41
	56/5280	16.50	15.53
	60/5300	16.50	**15.77**
	64/5320	15.00	13.65
802.11n-HT40 (MCS0)	54/5270	16.50	15.27
	62/5310	12.00	10.92
802.11ac-HT20 (MCS0)	52/5260	16.50	15.42
	56/5280	16.50	15.56
	60/5300	16.50	15.76
	64/5320	15.00	13.68
802.11ac-HT40 (MCS0)	54/5270	16.50	15.25
	62/5310	12.00	10.91
802.11ac-HT80 (MCS0)	58/5290	11.00	8.83
Note. Initial test configuration is 802.11n HT20 mode, since the highest maximum output power.			

Wi-Fi 5G (U-NII-2C) Full power &Sensor off Mode	Channel /Frequency(MHz)	Maximum Output Power (dBm)	
		Tune-up	Meas.
802.11a (6M)	100/5500	14.00	12.54
	116/5580	16.50	14.92
	120/5600	16.50	**14.98**
	140/5700	13.00	11.24
802.11n-HT20 (MCS0)	100/5500	14.00	12.57
	116/5580	16.50	14.84
	120/5600	16.50	14.92
	140/5700	13.00	11.16
802.11n-HT40 (MCS0)	102/5510	12.00	10.55
	110/5550	16.50	14.60
	118/5590	16.50	14.88
	134/5670	12.00	9.97
802.11ac-HT20 (MCS0)	100/5500	14.00	12.56
	120/5600	16.50	14.77
	140/5700	13.00	11.15
802.11ac-HT40 (MCS0)	102/5510	12.00	10.60
	110/5550	16.50	14.69
	134/5670	12.00	9.96
802.11ac-HT80 (MCS0)	106/5530	11.00	9.59
	122/5610	11.00	9.25
Note. Initial test configuration is 802.11a mode, since the highest maximum output power.			

Wi-Fi 5G (U-NII-3) Full power &Sensor off Mode	Channel /Frequency(MHz)	Maximum Output Power (dBm)	
		Tune-up	Meas.
802.11a (6M)	149/5745	16.50	14.92
	157/5785	16.50	14.72
	165/5825	16.50	14.54
802.11n-HT20 (MCS0)	149/5745	16.50	14.94
	157/5785	16.50	14.86
	165/5825	16.50	14.51
802.11n-HT40 (MCS0)	151/5755	16.50	14.64
	159/5795	16.50	14.56
802.11ac-HT20 (MCS0)	149/5745	16.50	**14.94**
	157/5785	16.50	14.78
	165/5825	16.50	14.53
802.11ac-HT40 (MCS0)	151/5755	16.50	14.67
	159/5795	16.50	14.46
802.11ac-HT80 (MCS0)	155/5775	11.00	8.97
Note. Initial test configuration is 802.11ac HT20 mode, since the highest maximum output power.			

Wi-Fi 5G (U-NII-1) Sensor on Mode	Channel /Frequency(MHz)	Maximum Output Power (dBm)	
		Tune-up	Meas.
802.11a (6M)	36/5180	7.00	5.50
	40/5200	7.00	5.51
	44/5220	7.00	5.58
	48/5240	7.00	5.75
802.11n-HT20 (MCS0)	36/5180	7.00	5.66
	40/5200	7.00	5.45
	44/5220	7.00	5.30
	48/5240	7.00	5.78
802.11n-HT40 (MCS0)	38/5190	7.00	4.87
	46/5230	7.00	5.02
802.11ac-VHT20 (MCS0)	36/5180	7.00	5.63
	40/5200	7.00	**5.85**
	44/5220	7.00	5.64
	48/5240	7.00	5.79
802.11ac-VHT40 (MCS0)	38/5190	7.00	5.80
	46/5230	7.00	5.62
802.11ac-VHT80 (MCS0)	42/5210	7.00	4.54
Note. Initial test configuration is 802.11ac VHT20 mode, since the highest maximum output power.			

Wi-Fi 5G (U-NII-2A) Sensor on Mode	Channel /Frequency(MHz)	Maximum Output Power (dBm)	
		Tune-up	Meas.
802.11a (6M)	52/5260	7.00	5.80
	56/5280	7.00	5.62
	60/5300	7.00	5.88
	64/5320	7.00	6.23
802.11n-HT20 (MCS0)	52/5260	7.00	5.82
	56/5280	7.00	5.68
	60/5300	7.00	5.79
	64/5320	7.00	6.23
802.11n-HT40 (MCS0)	54/5270	7.00	5.34
	62/5310	7.00	5.11
802.11ac-HT20 (MCS0)	52/5260	7.00	5.83
	56/5280	7.00	5.70
	60/5300	7.00	5.77
	64/5320	7.00	**6.27**
802.11ac-HT40 (MCS0)	54/5270	7.00	5.34
	62/5310	7.00	5.26
802.11ac-HT80 (MCS0)	58/5290	7.00	4.93
Note. Initial test configuration is 802.11ac HT20 mode, since the highest maximum output power.			

Wi-Fi 5G (U-NII-2C) Sensor on Mode	Channel /Frequency(MHz)	Maximum Output Power (dBm)	
		Tune-up	Meas.
802.11a (6M)	100/5500	7.00	4.89
	116/5580	7.00	5.06
	120/5600	7.00	5.19
	140/5700	7.00	5.32
802.11n-HT20 (MCS0)	100/5500	7.00	5.09
	116/5580	7.00	5.18
	120/5600	7.00	5.16
	140/5700	7.00	5.02
802.11n-HT40 (MCS0)	102/5510	7.00	4.42
	110/5550	7.00	5.00
	118/5590	7.00	4.59
	134/5670	7.00	5.48
802.11ac-HT20 (MCS0)	100/5500	7.00	4.84
	120/5600	7.00	5.52
	140/5700	7.00	5.18
802.11ac-HT40 (MCS0)	102/5510	7.00	4.73
	110/5550	7.00	5.00
	118/5590	7.00	5.11
802.11ac-HT80 (MCS0)	106/5530	7.00	5.48
	122/5610	7.00	**5.80**
Note. Initial test configuration is 802.11ac HT80 mode, since the highest maximum output power.			

Wi-Fi 5G (U-NII-3) Sensor on Mode	Channel /Frequency(MHz)	Maximum Output Power (dBm)	
		Tune-up	Meas.
802.11a (6M)	149/5745	7.00	5.79
	157/5785	7.00	5.69
	165/5825	7.00	5.48
802.11n-HT20 (MCS0)	149/5745	7.00	5.82
	157/5785	7.00	5.70
	165/5825	7.00	5.50
802.11n-HT40 (MCS0)	151/5755	7.00	5.09
	159/5795	7.00	5.00
802.11ac-HT20 (MCS0)	149/5745	7.00	5.84
	157/5785	7.00	**5.85**
	165/5825	7.00	5.45
802.11ac-HT40 (MCS0)	151/5755	7.00	5.11
	159/5795	7.00	5.10
802.11ac-HT80 (MCS0)	155/5775	7.00	5.73
Note. Initial test configuration is 802.11ac HT20 mode, since the highest maximum output power.			

9.5 Bluetooth Mode

BT	Output power(dBm)			Tune-up Limit (dBm)
	Channel/Frequency(MHz)			
	Ch 0/2402 MHz	Ch 39/2441 MHz	Ch 78/2480 MHz	
GFSK	6.47	6.52	6.86	8.00
π/4DQPSK	6.35	7.12	7.51	8.00
8DPSK	5.52	6.43	6.68	8.00
BLE	Ch 0/2402 MHz	Ch 19/2440 MHz	Ch 39/2480 MHz	Tune-up Limit (dBm)
GFSK(1M)	5.08	6.43	5.57	8.00
GFSK(2M)	3.03	4.07	3.12	8.00

10 Measured and Reported (Scaled) SAR Results

10.1 Standalone SAR test exclusion considerations

Per KDB 447498 D01, 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 product specific 10-g SAR

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

Per KDB 447498 D01, when the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Bluetooth	Distance (mm)	MAXPower (dBm)	Frequency (MHz)	Ratio	Evaluation
Body	5	8.00	2480	1.99	No

10.2 Measured SAR Results

Note: 1.The value with blue color is the maximum SAR Value of each test band.

2. For GSM, when multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.

3. For WCDMA, When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

4. For LTE, QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are≥ 50% limit(1g).

Body SAR

Band	Test Position	Dist. (mm)	Mode	Power Reduction	RB	offset	Ch./Freq. (MHz)	Tune-up (dBm)	Measured power (dBm)	Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	Plot No.
GSM850	Back Side	0	GPRS 2TX Slots	sensor on	-	-	190/836.6	20.50	19.97	0.263	0.028	1.13	0.297	/
	Left Edge	0	GPRS 2TX Slots	sensor off	-	-	190/836.6	31.50	30.20	0.084	0.012	1.35	0.113	/
	Right Edge	0	GPRS 2TX Slots	sensor off	-	-	190/836.6	31.50	30.20	0.194	0.010	1.35	0.262	/
	Top Edge	0	GPRS 2TX Slots	sensor on	-	-	190/836.6	20.50	19.97	0.406	-0.050	1.13	0.459	10
	Bottom Edge	0	GPRS 2TX Slots	sensor off	-	-	190/836.6	31.50	30.20	0.000	0.000	1.35	0.000	/
GSM1900	Back Side	0	GPRS 3TX Slots	sensor on	-	-	661/1880	14.50	13.54	0.197	0.042	1.25	0.246	/
	Right Edge	0	GPRS 3TX Slots	sensor off	-	-	661/1880	17.00	15.43	0.200	0.034	1.44	0.287	11
	Top Edge	0	GPRS 3TX Slots	sensor on	-	-	661/1880	14.50	13.54	0.067	0.010	1.25	0.084	/
WCDMA II	Back Side	0	RMC	sensor on	-	-	9400/1880	9.50	8.62	0.259	0.120	1.22	0.317	/
	Right Edge	0	RMC	sensor off	-	-	9400/1880	14.00	12.91	0.363	-0.035	1.29	0.467	12
	Top Edge	0	RMC	sensor on	-	-	9400/1880	9.50	8.62	0.168	0.049	1.22	0.206	/
WCDMA IV	Back Side	0	RMC	sensor on	-	-	1413/1732.6	9.50	8.69	0.236	0.094	1.21	0.284	/
	Right Edge	0	RMC	sensor off	-	-	1413/1732.6	15.00	13.82	0.391	-0.048	1.31	0.513	13
	Top Edge	0	RMC	sensor on	-	-	1413/1732.6	9.50	8.69	0.097	0.000	1.21	0.117	/
WCDMA V	Back Side	0	RMC	sensor on	-	-	4183/836.6	14.50	13.58	0.303	0.060	1.24	0.374	/
	Right Edge	0	RMC	sensor off	-	-	4183/836.6	25.00	23.63	0.256	0.024	1.37	0.351	/
	Top Edge	0	RMC	sensor on	-	-	4183/836.6	14.50	13.58	0.389	-0.057	1.24	0.481	14
LTE 2	Back Side	0	QPSK	sensor on	1	50	18700/1860	10.00	9.02	0.196	0.120	1.25	0.246	/
		0	QPSK	sensor on	50%	0	18700/1860	10.00	8.82	0.221	0.080	1.31	0.290	/
	Right Edge	0	QPSK	sensor off	1	0	18700/1860	14.50	13.58	0.324	0.031	1.24	0.400	15
		0	QPSK	sensor off	50%	0	18700/1860	14.50	13.51	0.298	0.062	1.26	0.374	/
	Top Edge	0	QPSK	sensor on	1	50	18700/1860	10.00	9.02	0.063	0.038	1.25	0.079	/
		0	QPSK	sensor on	50%	0	18700/1860	10.00	8.82	0.077	-0.015	1.31	0.101	/
LTE 5	Back Side	0	QPSK	sensor on	1	0	20450/829	14.50	13.84	0.306	-0.100	1.16	0.356	/
		0	QPSK	sensor on	50%	13	20525/836.5	14.50	13.52	0.285	0.025	1.25	0.357	16
	Right Edge	0	QPSK	sensor off	1	0	20525/836.5	25.00	23.76	0.222	0.011	1.33	0.295	/
		0	QPSK	sensor off	50%	24	20525/836.5	24.00	22.79	0.143	0.030	1.32	0.189	/
	Top Edge	0	QPSK	sensor on	1	0	20450/829	14.50	13.84	0.284	-0.068	1.16	0.331	/

		0	QPSK	sensor on	50%	13	20525/836.5	14.50	13.52	0.251	0.072	1.25	0.315	/
LTE 7	Back Side	0	QPSK	sensor on	1	0	21350/2560	8.50	7.91	0.272	0.028	1.15	0.312	/
		0	QPSK	sensor on	50%	25	21100/2535	8.50	7.53	0.169	0.100	1.25	0.211	/
	Right Edge	0	QPSK	sensor off	1	0	21350/2560	15.50	14.23	0.512	0.030	1.34	0.686	/
		0	QPSK	sensor off	50%	0	20850/2510	15.50	13.98	0.548	0.012	1.42	0.778	17
	Top Edge	0	QPSK	sensor on	1	0	21350/2560	8.50	7.91	0.086	0.011	1.15	0.099	/
		0	QPSK	sensor on	50%	25	21100/2535	8.50	7.53	0.085	0.024	1.25	0.106	/
LTE 12	Back Side	0	QPSK	sensor on	1	25	23130/711	15.00	13.84	0.375	-0.022	1.31	0.490	18
		0	QPSK	sensor on	50%	13	23130/711	15.00	13.79	0.300	0.099	1.32	0.396	/
	Right Edge	0	QPSK	sensor off	1	0	23060/704	25.00	23.83	0.263	0.030	1.31	0.344	/
		0	QPSK	sensor off	50%	13	23060/704	24.00	22.85	0.222	-0.016	1.30	0.289	/
	Top Edge	0	QPSK	sensor on	1	25	23130/711	15.00	13.84	0.290	0.021	1.31	0.379	/
		0	QPSK	sensor on	50%	13	23130/711	15.00	13.79	0.280	0.049	1.32	0.370	/
LTE 66	Back Side	0	QPSK	sensor on	1	0	132322/1745	10.00	8.82	0.278	0.000	1.31	0.365	/
		0	QPSK	sensor on	50%	0	132322/1745	10.00	8.46	0.254	0.017	1.43	0.362	/
	Right Edge	0	QPSK	sensor off	1	0	132322/1745	15.50	14.54	0.478	-0.020	1.25	0.596	19
		0	QPSK	sensor off	50%	0	132072/1720	15.50	14.27	0.306	0.038	1.33	0.406	/
	Top Edge	0	QPSK	sensor on	1	0	132322/1745	10.00	8.82	0.140	0.017	1.31	0.184	/
		0	QPSK	sensor on	50%	0	132322/1745	10.00	8.46	0.134	0.090	1.43	0.191	/

Band	Test Position	Dist. (mm)	Mode	Duty Cycle	Power Reduction	Ch./Freq. (MHz)	Tune-up (dBm)	Measured power (dBm)	Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	Plot No.
Wi-Fi 2.4G	Back Side	0	802.11g	98.0%	sensor on	11/2462	8.00	7.34	0.202	0.100	1.19	0.240	/
	Left Edge	0	802.11g	98.0%	sensor off	3/2422	16.00	15.93	0.273	0.037	1.04	0.283	/
	Top Edge	0	802.11g	98.0%	sensor on	11/2462	8.00	7.34	0.395	0.024	1.19	0.469	20
Wi-F2.4G	Back Side	0	802.11b	98.0%	sensor on	6/2437	8.00	6.68	0.140	0.019	1.38	0.194	/
	Left Edge	0	802.11b	98.0%	sensor off	11/2462	17.50	15.97	0.328	0.091	1.45	0.476	/
	Top Edge	0	802.11b	98.0%	sensor on	6/2437	8.00	6.68	0.199	-0.064	1.38	0.275	/
U-NII-1	Back Side	0	802.11ac-VHT20	98.0%	sensor on	40/5200	7.00	5.85	0.210	0.013	1.33	0.279	/
	Left Edge	0	802.11a	98.0%	sensor off	48/5240	16.50	15.18	0.102	0.017	1.38	0.141	/
	Top Edge	0	802.11ac-VHT20	98.0%	sensor on	40/5200	7.00	5.85	0.054	0.050	1.33	0.072	/
U-NII-2A	Back Side	0	802.11ac-VHT20	98.0%	sensor on	64/5320	7.00	6.27	0.312	0.055	1.21	0.377	21
	Left Edge	0	802.11nHT20	98.0%	sensor off	60/5300	16.50	15.77	0.051	0.069	1.21	0.062	/
	Top Edge	0	802.11ac-VHT20	98.0%	sensor on	64/5320	7.00	6.27	0.074	0.024	1.21	0.089	/
U-NII-2C	Back Side	0	802.11ac-VHT80	96.0%	sensor on	122/5610	7.00	5.80	0.233	0.015	1.37	0.320	/
	Left Edge	0	802.11a	96.0%	sensor off	120/5600	16.50	14.98	0.086	0.028	1.48	0.127	/
	Top Edge	0	802.11ac-VHT80	96.0%	sensor on	122/5610	7.00	5.80	0.099	0.000	1.37	0.136	/
U-NII-3	Back Side	0	802.11ac-VHT20	96.0%	sensor on	157/5785	7.00	5.85	0.178	0.099	1.36	0.242	/
	Left Edge	0	802.11ac-VHT20	96.0%	sensor off	149/5745	16.50	14.94	0.112	0.164	1.49	0.167	/
	Top Edge	0	802.11ac-VHT20	96.0%	sensor on	157/5785	7.00	5.85	0.128	0.029	1.36	0.174	/

Additional SAR test at a conserative distance (triggering distance minus 1mm)

Band	Dist. (mm)	Test Position	Mode	Power Reduction	RB	offset	Ch./Freq. (MHz)	Tune-up (dBm)	Measured power (dBm)	Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g
GSM850	31	Back Side	GPRS 2TX Slots	sensor off	-	-	190/836.6	31.50	30.20	0.076	0.032	1.35	0.103
	29	Top Edge	GPRS 2TX Slots	sensor off	-	-	190/836.6	31.50	30.20	0.062	0.080	1.35	0.084
GSM1900	31	Back Side	GPRS 3TX Slots	sensor off	-	-	661/1880	17.00	15.43	0.000	0.000	1.44	0.000
	29	Top Edge	GPRS 3TX Slots	sensor off	-	-	661/1880	17.00	15.43	0.000	0.000	1.44	0.000
WCDMA II	31	Back Side	RMC	sensor off	-	-	9400/1880	14.00	12.91	0.000	0.000	1.29	0.000
	29	Top Edge	RMC	sensor off	-	-	9400/1880	14.00	12.91	0.000	0.000	1.29	0.000
WCDMA IV	31	Back Side	RMC	sensor off	-	-	1413/1732.6	15.00	13.82	0.000	0.000	1.31	0.000
	29	Top Edge	RMC	sensor off	-	-	1413/1732.6	15.00	13.82	0.000	0.000	1.31	0.000
WCDMA V	31	Back Side	RMC	sensor off	-	-	4183/836.6	25.00	23.63	0.090	-0.039	1.37	0.123
	29	Top Edge	RMC	sensor off	-	-	4183/836.6	25.00	23.63	0.137	0.140	1.37	0.188
LTE 2	31	Back Side	QPSK	sensor off	1	0	18700/1860	14.50	13.58	0.000	0.000	1.24	0.000
	29	Top Edge	QPSK	sensor off	1	0	18700/1860	14.50	13.58	0.000	0.099	1.24	0.000
LTE 5	31	Back Side	QPSK	sensor off	1	0	20525/836.5	25.00	23.76	0.075	0.013	1.33	0.100
	29	Top Edge	QPSK	sensor off	1	0	20525/836.5	25.00	23.76	0.104	0.060	1.33	0.138
LTE 7	31	Back Side	QPSK	sensor off	1	0	21350/2560	15.50	14.23	0.000	0.000	1.34	0.000
	29	Top Edge	QPSK	sensor off	1	0	21350/2560	15.50	14.23	0.067	-0.042	1.34	0.090
LTE 12	31	Back Side	QPSK	sensor off	1	0	23060/704	25.00	23.83	0.087	0.100	1.31	0.114
	29	Top Edge	QPSK	sensor off	1	0	23060/704	25.00	23.83	0.154	0.022	1.31	0.202
LTE 66	31	Back Side	QPSK	sensor off	1	0	132322/1745	15.50	14.54	0.000	0.000	1.25	0.000
	29	Top Edge	QPSK	sensor off	1	0	132322/1745	15.50	14.54	0.000	0.000	1.25	0.000

Band	Dist. (mm)	Test Position	Mode	Duty Cycle	Power Reduction	Ch./Freq. (MHz)	Tune-up (dBm)	Measured power (dBm)	Measured SAR10g	Power Drift (dB)	Scaling Factor	Report SAR10g
Wi-Fi 2.4G	19	Back Side	802.11g	98.0%	sensor off	3/2422	16.00	15.93	0.033	0.025	1.04	0.034
	20	Top Edge	802.11g	98.0%	sensor off	3/2422	16.00	15.93	0.078	0.010	1.04	0.081
Wi-Fi 2.4G	19	Back Side	802.11b	98.0%	sensor off	11/2462	17.50	15.97	0.046	0.033	1.45	0.067
	20	Top Edge	802.11b	98.0%	sensor off	11/2462	17.50	15.97	0.077	-0.090	1.45	0.112
U-NII-1	19	Back Side	802.11a	98.0%	sensor off	48/5240	16.50	15.18	0.026	0.012	1.38	0.036
	20	Top Edge	802.11a	98.0%	sensor off	48/5240	16.50	15.18	0.016	0.100	1.38	0.022
U-NII-2A	19	Back Side	802.11nHT20	98.0%	sensor off	60/5300	16.50	15.77	0.038	0.033	1.21	0.046
	20	Top Edge	802.11nHT20	98.0%	sensor off	60/5300	16.50	15.77	0.025	0.000	1.21	0.030
U-NII-2C	19	Back Side	802.11a	96.0%	sensor off	120/5600	16.50	14.98	0.026	0.015	1.48	0.038
	20	Top Edge	802.11a	96.0%	sensor off	120/5600	16.50	14.98	0.021	-0.060	1.48	0.031
U-NII-3	19	Back Side	802.11ac-VHT20	96.0%	sensor off	149/5745	16.50	14.94	0.032	0.024	1.49	0.048
	20	Top Edge	802.11ac-VHT20	96.0%	sensor off	149/5745	16.50	14.94	0.022	0.180	1.49	0.033

Table 9: BT

Band	Configuration	Frequency (MHz)	Maximum Power (dBm)	Separation Distance (mm)	Estimated SAR (W/kg)
Bluetooth	Body	2480	8	5	0.265
For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01 based on the formula below. (max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm; where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.					