SAR EVALUATION REPORT

FCC 47 CFR § 2.1093
IEEE Std 1528-2013
(Class II Permissive Change)

For

Radio Module
(Tested inside of Panasonic Tablet PC FZ-G1)

Model: WW16D
FCC ID: ACJ9TGWW16D

Report Number: 12108961H-A-R1
Issue Date: June 4, 2018

Prepared for

PANASONIC CORPORATION OF NORTH AMERICA
Two Riverfront Plaza, 9th Floor Newark, NEW JERSEY, 07102-5940, USA

Prepared by

UL Japan, Inc.
Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
TEL: +81 596 24 8999
FAX: +81 596 24 8124

NVLAP TESTING

NVLAP LAB CODE: 200572-0

This laboratory is accredited by the NVLAP LAB CODE 200572-0, U.S.A. The tests reported herein have been performed in accordance with its terms of accreditation.
*As for the range of Accreditation in NVLAP, you may refer to the WEB address, http://japan.ul.com/resources/emc_accredited/

Revision History

Rev.	Issue Date	Revisions	Revised By
--	05/22/2018	Initial Issue	T. Shimada
1	06/04/2018	Correction of Highest Reported SAR value for Simultaneous transmission condition	T. Shimada

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Table of Contents

1. Attestation of Test Results 6

1.1. Summary of Highest 1-g SAR Results 7

2. Test Methodology 8

3. Facilities and Accreditation 8

4. Calibration and Uncertainty 9

4.1. Measuring Instrument Calibration 9

4.2. Measurement Uncertainty 11

5. Measurement System Description and Setup 12

6. SAR Measurement Procedure 13

6.1. Normal SAR Measurement Procedure 13

6.2. Volume Scan Procedures 15

7. Device Under Test 16

7.1. Wireless Technologies 16

7.2. Hotspot (Wireless Router) Exposure Condition 16

7.3. Simultaneous Transmission 17

7.4. LTE Parameters 22

7.5. LTE (TDD) Considerations 25

7.6. Proximity Sensor 26

7.7. Proximity Sensor Triggering distance (KDB 616217 §6.2) 27

7.8. Proximity Sensor Coverage (KDB 616217 §6.3) 28

7.9. Proximity Sensor Tilt Angle (KDB 616217 §6.4) 28

8. Exposure Conditions 29

8.1. Test Configurations for the WWAN Main Antenna, WWAN Modes 29

8.2. Test Configurations for WLAN 30

9. RF Output Power Measurement 31

9.1. W-CDMA Band 2 32

9.2. W-CDMA Band 4 36

9.3. W-CDMA Band 5 40

9.4. LTE Band 2 44

9.5. LTE Band 4 57

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

9.6. LTE Band 5 ... 70

9.7. LTE Band 7 ... 79

9.8. LTE Band 12 ... 88

9.9. LTE Band 13 ... 97

9.10. LTE Band 25 ... 102

9.11. LTE Band 26 ... 115

9.12. LTE Band 41 ... 126

10. Uplink maximum output power measurement for the supported combinations with downlink carrier aggregation ... 143

10.1. Inter-band CA(Downlink CA only) ... 143

10.2. Intra-band Contiguous CA(Downlink CA only) ... 152

10.3. Intra-band Non-Contiguous CA(Downlink CA only) ... 154

11. E-UTRA CA configurations and bandwidth combination sets ... 158

11.1. Inter-band CA ... 158

11.2. Intra-band contiguous CA ... 159

11.3. Intra-band noncontiguous CA ... 159

12. Dielectric Property Measurements ... 160

12.1. Tissue Dielectric Parameter Check Results ... 161

13. System Performance Check ... 164

13.1. System Performance Check Measurement Conditions ... 164

13.2. Reference SAR Values for System Performance Check ... 165

13.3. System Performance Check Results ... 166

14. RF Exposure Conditions (Test Configurations) ... 167

14.1. Standalone SAR Test Exclusion Considerations ... 167

14.1.1. SAR Test Exclusion Calculations for antennas <50mm to adjacent edges ... 168

14.1.2. SAR Test Exclusion Calculations for antennas >50mm to adjacent edges ... 169

15. Measured and Reported (Scaled) SAR Results ... 170

15.1. W-CDMA Band 2 ... 171

15.2. W-CDMA Band 4 ... 172

15.3. W-CDMA Band 5 ... 173

15.4. LTE Band 2 ... 174

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15.5. LTE Band 4 176

15.6. LTE Band 5 178

15.7. LTE Band 7 180

15.8. LTE Band 12 182

15.9. LTE Band 13 184

15.10. LTE Band 25 185

15.11. LTE Band 26 187

15.12. LTE Band 41 189

15.13. Summary of Highest SAR Values 191

15.14. SAR Measurement Variability and Uncertainty 192

16. Simultaneous Transmission SAR Analysis 193

16.1. Sum of 1g SAR value 194

17. Appendixes 218

17.1. System Performance Check Plots 218

17.2. SAR Test plots 218

17.3. SAR Test Plots for Repeat Measurement 218

17.4. Calibration Certificate for D750V3 – SN1058, D835V2 - SN 4d149, D1750V2 - SN 1089 218

17.5. Calibration Certificate for D1900V2 – SN 5d169, D2600V2 – SN 1030 218

17.6. Calibration Certificate for E-Field Probe EX3DV4 – SN 3825- SN 3917 218

17.7. SAR Tissue Ingredients 218

17.8. Triggering distances and power levels 218

18. External Photos 219

19. Antenna Dimensions & Separation Distances 221

20. Setup Photos 225

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

1. Attestation of Test Results

Applicant	PANASONIC CORPORATION OF NORTH AMERICA
DUT description	Radio Module (Tested inside of Panasonic Tablet PC FZ-G1)
Model	WW16D
Test device is	An identical prototype
Device category	Portable
Exposure category	General Population/Uncontrolled Exposure
Date tested	April 10 to April 27, 2018

Applicable Standards	Test Results
FCC 47 CFR § 2.1093 Published RF exposure KDB procedures IEEE Std 1528-2013	Pass

1. This test report shall not be reproduced in full or partial, without the written approval of UL Japan, Inc.
2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the limits of the above regulation.
4. The test results in this report are traceable to the national or international standards.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.
6. This report is a revised version of 12108961H-A. 12108961H-A is replaced with this report.

Approved & Released For UL Japan, Inc. By:

Takayuki Shimada
Leader
Consumer Technology Division

Tested By:

Tomohisa Nakagawa
Engineer
Consumer Technology Division

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

1.1. Summary of Highest 1-g SAR Results

Worst Case SAR data for each Frequency Band

RF Exposure Rule	Freq. Range	Highest Reported SAR	Limit
22 (LTE Band 5)	824 - 849 MHz	Body & Tablet: 1.184 W/kg (Edge 1)	1.6 W/kg
24 (WCDMA Band 2)	1860 - 1900 MHz	Body & Tablet: 1.192 W/kg (Edge 1)	
27 (LTE Band 12)	699 - 716 MHz	Body & Tablet: 1.161 W/kg (Edge 1)	
27 (LTE Band 13)	777 - 787 MHz	Body & Tablet: 1.189 W/kg (Edge 1)	
27 (LTE Band 4)	1710 - 1755 MHz	Body & Tablet: 1.053 W/kg (Bottom)	
27 (LTE Band 7)	2510 - 2560 MHz	Body & Tablet: 1.001 W/kg (Edge 1)	
27 (LTE Band 41)	2496 - 2690 MHz	Body & Tablet: 0.957 W/kg (Edge 1)	
Simultaneous transmission condition		1.428 W/kg (refer to Section 14 of this report.)	

LEGEND:

- Bottom side = Rear of display (Tablet mode)
- Edge 1 = Top Edge (Tablet mode)
- Edge 2 = Left Edge (Tablet mode)
- Edge 3 = Bottom Edge (Tablet mode)
- Edge 4 = Right Edge (Tablet mode)

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

2. Test Methodology

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

- 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- 865664 D02 SAR Reporting v01r02
- 447498 D01 General RF Exposure Guidance v06
- 941225 D01 SAR test for 3G devices v03r01
- 941225 D05 SAR for LTE Devices v02r05
- 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02
- 616217 D04 SAR for laptop and tablets v01r02

Additional Guidance: TCB workshop

- TCB workshop

3. Facilities and Accreditation

*Shielded room for SAR testings

The test sites and measurement facilities used to collect data are located at 4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN.

UL Japan, Inc. is accredited by NVLAP, Laboratory Code 200572-0

FCC Test Firm Registration Number: 199967 / ISED SAR Lab Company Number: 2973C

The full scope of accreditation can be viewed at

http://www.ul.com/japan/jpn/pages/services/emc/about/mark1/index.jsp#nvlap

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

4. Calibration and Uncertainty

4.1. Measuring Instrument Calibration

The measuring equipment used to perform the tests documented in this report has been calibrated in accordance with the manufacturers' recommendations, and is traceable to recognized national standards.

Dielectric Property Measurements

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MRENT-S01	Vector Reflectometer	Copper Mountain Technologies	PLANAR R140	0030913	SAR	2018/02/19 * 12
MRENT-S01	Dielectric assessment kit	Schmid&Partner Engineering AG	DAK-3.5	0008	SAR	2017/05/10 * 12
MOS-37	Digital thermometer	LKM electronic	DTM3000	-	SAR	2017/07/26 * 12
COTS-MSAR-04	Dielectric assessment software	Schmid&Partner Engineering AG	DAK		SAR	-

System check

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MPM-11	Dual Power Meter	Agilent	E4419B	MY45102060	SAR	2017/08/25 * 12
MPSE-15	Power sensor	Agilent	E9301A	MY41498311	SAR	2017/08/25 * 12
MPSE-16	Power sensor	Agilent	E9301A	MY41498313	SAR	2017/08/25 * 12
MRFA-24	Pre Amplifier	R&K	R&K CGA020M602-2633R	B30550	SAR	2017/06/12 * 12
MSG-10	Signal Generator	Agilent	N5181A	MY47421098	SAR	2017/11/29 * 12
MOS-37	Digital thermometer	LKM electronic	DTM3000	-	SAR	2017/07/26 * 12
MAT-78	Attenuator	Telegrartner	J01156A0011	0042294119	SAR	Pre Check
MPM-15	Power Meter	Agilent	N1914A	MY53060017	SAR	2017/06/21 * 12
MPSE-21	Power sensor	Agilent	N8482H	MY52460010	SAR	2017/06/21 * 12
MHDC-21	Dual Directional Coupler	Agilent	778D	MY52180243	SAR(0.1-2GHz)	Pre Check
MHDC-12	Dual Directional Coupler	Hewlett Packard	772D	2839A0016	SAR(2-18GHz)	Pre Check
MDA-20	Dipole Antenna	Schmid&Partner Engineering AG	D750V3	1058	SAR(D750)	2015/05/28 * 36

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
COTS-MSAR-03	Dasy5	Schmid&Partner Engineering AG	DASY5	-	SAR	-
MDAE-02	Data Acquisition Electronics	Schmid&Partner Engineering AG	DAE4	1369	SAR	2017/05/17 * 12
MPB-08	Dosimetric E-Field Probe	Schmid&Partner Engineering AG	EX3DV4	3917	SAR	2017/05/16 * 12
MPF-03	2mm Oval Flat Phantom	Schmid&Partner Engineering AG	QDOVA001BB	1203	SAR	2017/05/29 * 12
MDH-04	Device holder	Schmid&Partner Engineering AG	Mounting device for transmitter	-	SAR	Pre Check
MOS-35	Digital thermometer	HANNA	Checktemp 4	-	SAR	2017/07/26 * 12
MRBT-03	SAR robot	Schmid&Partner Engineering AG	TX60 Lspeag	F13/5PPLD1/A/01	SAR	2017/06/30 * 12
MDAE-01	Data Acquisition Electronics	Schmid&Partner Engineering AG	DAE4	509	SAR	2017/07/11 * 12
MPB-07	Dosimetric E-Field Probe	Schmid&Partner Engineering AG	EX3DV4	3825	SAR	2017/12/11 * 12
MPF-02	2mm Oval Flat Phantom	Schmid&Partner Engineering AG	QDOVA001BB	1045	SAR	2017/05/17 * 12
MDH-01	Device holder	Schmid&Partner Engineering AG	Mounting device for transmitter	-	SAR	Pre Check
MOS-33	Thermo-Hygrometer	CUSTOM	CTH-201	-	SAR	2017/07/26 * 12
MRBT-02	SAR robot	Schmid&Partner Engineering AG	TX60 Lspeag	F10/5E3LA1/A/01	SAR	2017/09/19 * 12
MMSL0750	Tissue simulation liquid (Body)	Schmid&Partner Engineering AG	MSL750V2	SL AAM 075 AA	SAR*Daily Check Target Value ±5%	Pre Check
SSDA-04	Dipole Antenna	Schmid&Partner Engineering AG	D835V2	4d149	SAR(D835)	2016/03/08 * 36
MMSL0900	Tissue simulation liquid (Body)	Schmid&Partner Engineering AG	MSL900V2	SL AAM 090 CA	SAR*Daily Check Target Value ±5%	Pre Check
SSDA-06	Dipole Antenna	Schmid&Partner Engineering AG	D1750V2	1089	SAR(D1750)	2016/03/11 * 36
SSLM175-01	Tissue simulation liqud (1750MHz,body)	Schmid&Partner Engineering AG	SL AAM 175 AA	-	SAR*Daily Check Target Value ±5%	Pre Check
SSDA-08	Dipole Antenna	Schmid&Partner Engineering AG	D1900V2	5d169	SAR(D1900)	2016/03/09 * 36
MMSL1950	Tissue simulation liquid (Body)	Schmid&Partner Engineering AG	MSL1950V2	SL AAM 195 BA	SAR*Daily Check Target Value ±5%	Pre Check
MMSL2450	Tissue simulation liquid (Body)	Schmid&Partner Engineering AG	MSL2450V2	SL AA 245 BA	SAR*Daily Check Target Value ±5%	Pre Check
MDA-19	Dipole Antenna	Schmid&Partner Engineering AG	D2600V2	1030	SAR	2016/03/09 * 36

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Other

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MURC-05	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	127576	SAR	2017/11/30 * 12
MOS-26	Thermo-Hygrometer	CUSTOM	CTH-201	A08Q29	SAR	2017/04/21 * 12

The expiration date of the calibration is the end of the expired month.
All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.
As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

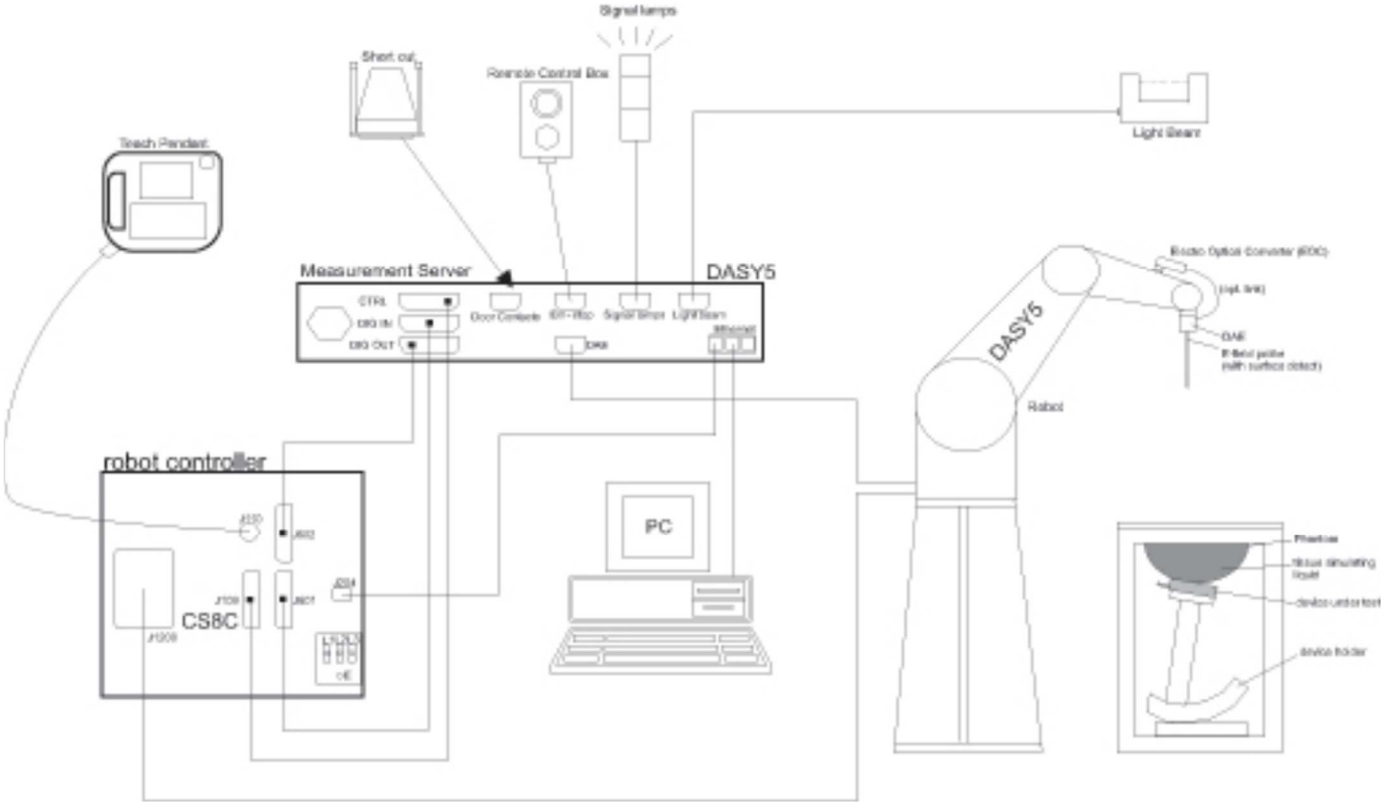
4.2. Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

5. Measurement System Description and Setup

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



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

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

6. SAR Measurement Procedure

6.1. Normal SAR Measurement Procedure

Step 1: 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. The minimum distance of probe sensors to surface is 2.1 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: 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 locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal 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 KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Step 3: Zoom Scan

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

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

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

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

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

Step 4: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

6.2. Volume Scan Procedures

Step 1: Repeat Step 1-4 in Section 6.1

Step 2: Volume Scan

Volume Scans are used to assess peak SAR and averaged SAR measurements in largely extended 3-dimensional volumes within any phantom. This measurement does not need any previous area scan. The grid can be anchored to a user specific point or to the current probe location.

Step 3: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

7. Device Under Test

Radio Module (Tested inside of Panasonic Tablet PC FZ-G1) Model: WW16D	
Operating Configuration(s)	• Tablet mode
Exposure Condition(s)	• The device is used in close proximity to the body. Specific details of the required test positions are provided in Section 8 “Exposure Conditions”
Accessory	• None

7.1. Wireless Technologies

Wireless Mode and Frequency Bands	• W-CDMA Band V: 824 - 849 MHz • W-CDMA Band IV: 1710 - 1755 MHz • W-CDMA Band II: 1850 - 1910 MHz • LTE Band 2: 1850 - 1910 MHz • LTE Band 4: 1710 - 1755 MHz • LTE Band 5: 824 - 849 MHz • LTE Band 7: 2500 – 2570 MHz • LTE Band 12: 699 – 716 MHz • LTE Band 13: 777 - 787 MHz • LTE Band 25: 1850 - 1915 MHz • LTE Band 26: 814 – 849 MHz • LTE Band 41: 2496 – 2690 MHz Simultaneous transmission with WW16D Wireless Module(Tested inside of Panasonic Tablet PC FZ-G1) Model: WL16A • 802.11a/b/g/n/ac: 2412 - 2472 MHz, b / g / HT20 / HT40 5180 - 5240 MHz, a/HT20/HT40/VHT20/VHT40/VHT80 5260 - 5320 MHz, a/HT20/HT40/VHT20/VHT40/VHT80 5500 - 5720 MHz, a/HT20/HT40/VHT20/VHT40/VHT80 5745 - 5825 MHz, a/HT20/HT40/VHT20/VHT40/VHT80 • Bluetooth: 2402 - 2480 MHz
Duty Cycle	• W-CDMA: 100% • LTE(FDD): 100% • LTE(TDD): 63.3%

7.2. Hotspot (Wireless Router) Exposure Condition

N/A

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

7.3. Simultaneous Transmission

WWAN + WLAN 2.4 GHz SISO (1 Tx)

Usage Scenario	Modes	Mode of Operation	BAND	WCDMA	HSDPA	HSUPA	HSPA+	DC-HSPA	LTE	WLAN 2.4GHz Main	WLAN 2.4GHz Aux	WLAN 5 GHz Bands Main	WLAN 5 GHz Bands Aux	BT 2.4 GHz
Body SAR	WWAN + 2.4 GHz Bands WLAN	W-CDMA	2	YES	No	No	No	No	No	YES	No	No	No	No
		W-CDMA	4	YES	No	No	No	No	No	YES	No	No	No	No
		W-CDMA	5	YES	No	No	No	No	No	YES	No	No	No	No
		HSDPA	2	No	YES	No	No	No	No	YES	No	No	No	No
		HSDPA	4	No	YES	No	No	No	No	YES	No	No	No	No
		HSDPA	5	No	YES	No	No	No	No	YES	No	No	No	No
		HSUPA	2	No	No	YES	No	No	No	YES	No	No	No	No
		HSUPA	4	No	No	YES	No	No	No	YES	No	No	No	No
		HSUPA	5	No	No	YES	No	No	No	YES	No	No	No	No
		HSPA+	2	No	No	No	YES	No	No	YES	No	No	No	No
		HSPA+	4	No	No	No	YES	No	No	YES	No	No	No	No
		HSPA+	5	No	No	No	YES	No	No	YES	No	No	No	No
		DC-HSDPA	2	No	No	No	No	YES	No	YES	No	No	No	No
		DC-HSDPA	4	No	No	No	No	YES	No	YES	No	No	No	No
		DC-HSDPA	5	No	No	No	No	YES	No	YES	No	No	No	No
		LTE	2	No	No	No	No	No	YES	YES	No	No	No	No
		LTE	4	No	No	No	No	No	YES	YES	No	No	No	No
		LTE	5	No	No	No	No	No	YES	YES	No	No	No	No
		LTE	7	No	No	No	No	No	YES	YES	No	No	No	No
		LTE	12	No	No	No	No	No	YES	YES	No	No	No	No
		LTE	13	No	No	No	No	No	YES	YES	No	No	No	No
		LTE	25	No	No	No	No	No	YES	YES	No	No	No	No
		LTE	26	No	No	No	No	No	YES	YES	No	No	No	No
		LTE	41	No	No	No	No	No	YES	YES	No	No	No	No
		W-CDMA	2	YES	No	No	No	No	No	No	YES	No	No	No
		W-CDMA	4	YES	No	No	No	No	No	No	YES	No	No	No
		W-CDMA	5	YES	No	No	No	No	No	No	YES	No	No	No
		HSDPA	2	No	YES	No	No	No	No	No	YES	No	No	No
		HSDPA	4	No	YES	No	No	No	No	No	YES	No	No	No
		HSDPA	5	No	YES	No	No	No	No	No	YES	No	No	No
		HSUPA	2	No	No	YES	No	No	No	No	YES	No	No	No
		HSUPA	4	No	No	YES	No	No	No	No	YES	No	No	No
		HSUPA	5	No	No	YES	No	No	No	No	YES	No	No	No
		HSPA+	2	No	No	No	YES	No	No	No	YES	No	No	No
		HSPA+	4	No	No	No	YES	No	No	No	YES	No	No	No
		HSPA+	5	No	No	No	YES	No	No	No	YES	No	No	No
		DC-HSDPA	2	No	No	No	No	YES	No	No	YES	No	No	No
		DC-HSDPA	4	No	No	No	No	YES	No	No	YES	No	No	No
		DC-HSDPA	5	No	No	No	No	YES	No	No	YES	No	No	No
		LTE	2	No	No	No	No	No	YES	No	YES	No	No	No
		LTE	4	No	No	No	No	No	YES	No	YES	No	No	No
		LTE	5	No	No	No	No	No	YES	No	YES	No	No	No
		LTE	7	No	No	No	No	No	YES	No	YES	No	No	No
		LTE	12	No	No	No	No	No	YES	No	YES	No	No	No
		LTE	13	No	No	No	No	No	YES	No	YES	No	No	No
		LTE	25	No	No	No	No	No	YES	No	YES	No	No	No
		LTE	26	No	No	No	No	No	YES	No	YES	No	No	No
		LTE	41	No	No	No	No	No	YES	No	YES	No	No	No

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

WWAN + WLAN 5 GHz Bands SISO (1 Tx)

Usage Scenario	Modes	Mode of Operation	BAND	WCDMA	HSDPA	HSUPA	HSPA+	DC-HSPA	LTE	WLAN 2.4GHz Main	WLAN 2.4GHz Aux	WLAN 5 GHz Bands Main	WLAN 5 GHz Bands Aux	BT 2.4 GHz
Body SAR	WWAN + 5 GHz Bands WLAN	W-CDMA	2	YES	No	No	No	No	No	No	No	YES	No	No
		W-CDMA	4	YES	No	No	No	No	No	No	No	YES	No	No
		W-CDMA	5	YES	No	No	No	No	No	No	No	YES	No	No
		HSDPA	2	No	YES	No	No	No	No	No	No	YES	No	No
		HSDPA	4	No	YES	No	No	No	No	No	No	YES	No	No
		HSDPA	5	No	YES	No	No	No	No	No	No	YES	No	No
		HSUPA	2	No	No	YES	No	No	No	No	No	YES	No	No
		HSUPA	4	No	No	YES	No	No	No	No	No	YES	No	No
		HSUPA	5	No	No	YES	No	No	No	No	No	YES	No	No
		HSPA+	2	No	No	No	YES	No	No	No	No	YES	No	No
		HSPA+	4	No	No	No	YES	No	No	No	No	YES	No	No
		HSPA+	5	No	No	No	YES	No	No	No	No	YES	No	No
		DC-HSDPA	2	No	No	No	No	YES	No	No	No	YES	No	No
		DC-HSDPA	4	No	No	No	No	YES	No	No	No	YES	No	No
		DC-HSDPA	5	No	No	No	No	YES	No	No	No	YES	No	No
		LTE	2	No	No	No	No	No	YES	No	No	YES	No	No
		LTE	4	No	No	No	No	No	YES	No	No	YES	No	No
		LTE	5	No	No	No	No	No	YES	No	No	YES	No	No
		LTE	7	No	No	No	No	No	YES	No	No	YES	No	No
		LTE	12	No	No	No	No	No	YES	No	No	YES	No	No
		LTE	13	No	No	No	No	No	YES	No	No	YES	No	No
		LTE	25	No	No	No	No	No	YES	No	No	YES	No	No
		LTE	26	No	No	No	No	No	YES	No	No	YES	No	No
		LTE	41	No	No	No	No	No	YES	No	No	YES	No	No
		W-CDMA	2	YES	No	No	No	No	No	No	No	No	YES	No
		W-CDMA	4	YES	No	No	No	No	No	No	No	No	YES	No
		W-CDMA	5	YES	No	No	No	No	No	No	No	No	YES	No
		HSDPA	2	No	YES	No	No	No	No	No	No	No	YES	No
		HSDPA	4	No	YES	No	No	No	No	No	No	No	YES	No
		HSDPA	5	No	YES	No	No	No	No	No	No	No	YES	No
		HSUPA	2	No	No	YES	No	No	No	No	No	No	YES	No
		HSUPA	4	No	No	YES	No	No	No	No	No	No	YES	No
		HSUPA	5	No	No	YES	No	No	No	No	No	No	YES	No
		HSPA+	2	No	No	No	YES	No	No	No	No	No	YES	No
		HSPA+	4	No	No	No	YES	No	No	No	No	No	YES	No
		HSPA+	5	No	No	No	YES	No	No	No	No	No	YES	No
		DC-HSDPA	2	No	No	No	No	YES	No	No	No	No	YES	No
		DC-HSDPA	4	No	No	No	No	YES	No	No	No	No	YES	No
		DC-HSDPA	5	No	No	No	No	YES	No	No	No	No	YES	No
		LTE	2	No	No	No	No	No	YES	No	No	No	YES	No
		LTE	4	No	No	No	No	No	YES	No	No	No	YES	No
		LTE	5	No	No	No	No	No	YES	No	No	No	YES	No
		LTE	7	No	No	No	No	No	YES	No	No	No	YES	No
		LTE	12	No	No	No	No	No	YES	No	No	No	YES	No
		LTE	13	No	No	No	No	No	YES	No	No	No	YES	No
		LTE	25	No	No	No	No	No	YES	No	No	No	YES	No
		LTE	26	No	No	No	No	No	YES	No	No	No	YES	No
		LTE	41	No	No	No	No	No	YES	No	No	No	YES	No

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

WWAN + Bluetooth

Usage Scenario	Modes	Mode of Operation	BAND	WCDMA	HSDPA	HSUPA	HSPA+	DC-HSPA	LTE	WLAN 2.4GHz Main	WLAN 2.4GHz Aux	WLAN 5 GHz Bands Main	WLAN 5 GHz Bands Aux	BT 2.4 GHz
Body SAR	WWAN + Bluetooth	W-CDMA	2	YES	No	No	No	No	No	No	No	No	No	YES
		W-CDMA	4	YES	No	No	No	No	No	No	No	No	No	YES
		W-CDMA	5	YES	No	No	No	No	No	No	No	No	No	YES
		HSDPA	2	No	YES	No	No	No	No	No	No	No	No	YES
		HSDPA	4	No	YES	No	No	No	No	No	No	No	No	YES
		HSDPA	5	No	YES	No	No	No	No	No	No	No	No	YES
		HSUPA	2	No	No	YES	No	No	No	No	No	No	No	YES
		HSUPA	4	No	No	YES	No	No	No	No	No	No	No	YES
		HSUPA	5	No	No	YES	No	No	No	No	No	No	No	YES
		HSPA+	2	No	No	No	YES	No	No	No	No	No	No	YES
		HSPA+	4	No	No	No	YES	No	No	No	No	No	No	YES
		HSPA+	5	No	No	No	YES	No	No	No	No	No	No	YES
		DC-HSDPA	2	No	No	No	No	YES	No	No	No	No	No	YES
		DC-HSDPA	4	No	No	No	No	YES	No	No	No	No	No	YES
		DC-HSDPA	5	No	No	No	No	YES	No	No	No	No	No	YES
		LTE	2	No	No	No	No	No	YES	No	No	No	No	YES
		LTE	4	No	No	No	No	No	YES	No	No	No	No	YES
		LTE	5	No	No	No	No	No	YES	No	No	No	No	YES
		LTE	7	No	No	No	No	No	YES	No	No	No	No	YES
		LTE	12	No	No	No	No	No	YES	No	No	No	No	YES
		LTE	13	No	No	No	No	No	YES	No	No	No	No	YES
		LTE	25	No	No	No	No	No	YES	No	No	No	No	YES
		LTE	26	No	No	No	No	No	YES	No	No	No	No	YES
		LTE	41	No	No	No	No	No	YES	No	No	No	No	YES

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

WWAN + WLAN SISO (1 Tx) + Bluetooth

Usage Scenario	Modes	Mode of Operation	BAND	WCDMA	HSDPA	HSUPA	HSPA+	DC-HSPA	LTE	WLAN 2.4GHz Main	WLAN 2.4GHz Aux	WLAN 5 GHz Bands Main	WLAN 5 GHz Bands Aux	BT 2.4 GHz
Body SAR	WWAN + 2.4 GHz Bands WLAN + Bluetooth	W-CDMA	2	YES	No	No	No	No	No	YES	No	No	No	YES
		W-CDMA	4	YES	No	No	No	No	No	YES	No	No	No	YES
		W-CDMA	5	YES	No	No	No	No	No	YES	No	No	No	YES
		HSDPA	2	No	YES	No	No	No	No	YES	No	No	No	YES
		HSDPA	4	No	YES	No	No	No	No	YES	No	No	No	YES
		HSDPA	5	No	YES	No	No	No	No	YES	No	No	No	YES
		HSUPA	2	No	No	YES	No	No	No	YES	No	No	No	YES
		HSUPA	4	No	No	YES	No	No	No	YES	No	No	No	YES
		HSUPA	5	No	No	YES	No	No	No	YES	No	No	No	YES
		HSPA+	2	No	No	No	YES	No	No	YES	No	No	No	YES
		HSPA+	4	No	No	No	YES	No	No	YES	No	No	No	YES
		HSPA+	5	No	No	No	YES	No	No	YES	No	No	No	YES
		DC-HSDPA	2	No	No	No	No	YES	No	YES	No	No	No	YES
		DC-HSDPA	4	No	No	No	No	YES	No	YES	No	No	No	YES
		DC-HSDPA	5	No	No	No	No	YES	No	YES	No	No	No	YES
		LTE	2	No	No	No	No	No	YES	YES	No	No	No	YES
		LTE	4	No	No	No	No	No	YES	YES	No	No	No	YES
		LTE	5	No	No	No	No	No	YES	YES	No	No	No	YES
		LTE	7	No	No	No	No	No	YES	YES	No	No	No	YES
		LTE	12	No	No	No	No	No	YES	YES	No	No	No	YES
		LTE	13	No	No	No	No	No	YES	YES	No	No	No	YES
		LTE	25	No	No	No	No	No	YES	YES	No	No	No	YES
		LTE	26	No	No	No	No	No	YES	YES	No	No	No	YES
		LTE	41	No	No	No	No	No	YES	YES	No	No	No	YES
	WWAN + 5 GHz Bands WLAN + Bluetooth	W-CDMA	2	YES	No	No	No	No	No	No	No	YES	No	YES
		W-CDMA	4	YES	No	No	No	No	No	No	No	YES	No	YES
		W-CDMA	5	YES	No	No	No	No	No	No	No	YES	No	YES
		HSDPA	2	No	YES	No	No	No	No	No	No	YES	No	YES
		HSDPA	4	No	YES	No	No	No	No	No	No	YES	No	YES
		HSDPA	5	No	YES	No	No	No	No	No	No	YES	No	YES
		HSUPA	2	No	No	YES	No	No	No	No	No	YES	No	YES
		HSUPA	4	No	No	YES	No	No	No	No	No	YES	No	YES
		HSUPA	5	No	No	YES	No	No	No	No	No	YES	No	YES
		HSPA+	2	No	No	No	YES	No	No	No	No	YES	No	YES
		HSPA+	4	No	No	No	YES	No	No	No	No	YES	No	YES
		HSPA+	5	No	No	No	YES	No	No	No	No	YES	No	YES
		DC-HSDPA	2	No	No	No	No	YES	No	No	No	YES	No	YES
		DC-HSDPA	4	No	No	No	No	YES	No	No	No	YES	No	YES
		DC-HSDPA	5	No	No	No	No	YES	No	No	No	YES	No	YES
		LTE	2	No	No	No	No	No	YES	No	No	YES	No	YES
		LTE	4	No	No	No	No	No	YES	No	No	YES	No	YES
		LTE	5	No	No	No	No	No	YES	No	No	YES	No	YES
		LTE	7	No	No	No	No	No	YES	No	No	YES	No	YES
		LTE	12	No	No	No	No	No	YES	No	No	YES	No	YES
		LTE	13	No	No	No	No	No	YES	No	No	YES	No	YES
		LTE	25	No	No	No	No	No	YES	No	No	YES	No	YES
		LTE	26	No	No	No	No	No	YES	No	No	YES	No	YES
		LTE	41	No	No	No	No	No	YES	No	No	YES	No	YES

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

WWAN + WLAN MIMO (2 Tx)

Usage Scenario	Modes	Mode of Operation	BAND	WCDMA	HSDPA	HSUPA	HSPA+	DC-HSPA	LTE	WLAN 2.4GHz Main	WLAN 2.4GHz Aux	WLAN 5 GHz Bands Main	WLAN 5 GHz Bands Aux	BT 2.4 GHz
Body SAR	WWAN + 2.4GHz Bands WLAN MIMO (2 Tx on WLAN)	W-CDMA	2	YES	No	No	No	No	No	YES	YES	No	No	No
		W-CDMA	4	YES	No	No	No	No	No	YES	YES	No	No	No
		W-CDMA	5	YES	No	No	No	No	No	YES	YES	No	No	No
		HSDPA	2	No	YES	No	No	No	No	YES	YES	No	No	No
		HSDPA	4	No	YES	No	No	No	No	YES	YES	No	No	No
		HSDPA	5	No	YES	No	No	No	No	YES	YES	No	No	No
		HSUPA	2	No	No	YES	No	No	No	YES	YES	No	No	No
		HSUPA	4	No	No	YES	No	No	No	YES	YES	No	No	No
		HSUPA	5	No	No	YES	No	No	No	YES	YES	No	No	No
		HSPA+	2	No	No	No	YES	No	No	YES	YES	No	No	No
		HSPA+	4	No	No	No	YES	No	No	YES	YES	No	No	No
		HSPA+	5	No	No	No	YES	No	No	YES	YES	No	No	No
		DC-HSDPA	2	No	No	No	No	YES	No	YES	YES	No	No	No
		DC-HSDPA	4	No	No	No	No	YES	No	YES	YES	No	No	No
		DC-HSDPA	5	No	No	No	No	YES	No	YES	YES	No	No	No
		LTE	2	No	No	No	No	No	YES	YES	YES	No	No	No
		LTE	4	No	No	No	No	No	YES	YES	YES	No	No	No
		LTE	5	No	No	No	No	No	YES	YES	YES	No	No	No
		LTE	7	No	No	No	No	No	YES	YES	YES	No	No	No
		LTE	12	No	No	No	No	No	YES	YES	YES	No	No	No
		LTE	13	No	No	No	No	No	YES	YES	YES	No	No	No
		LTE	25	No	No	No	No	No	YES	YES	YES	No	No	No
		LTE	26	No	No	No	No	No	YES	YES	YES	No	No	No
		LTE	41	No	No	No	No	No	YES	YES	YES	No	No	No
	WWAN + 5 GHz Bands WLAN MIMO (2 Tx on WLAN)	W-CDMA	2	YES	No	No	No	No	No	No	No	YES	YES	No
		W-CDMA	4	YES	No	No	No	No	No	No	No	YES	YES	No
		W-CDMA	5	YES	No	No	No	No	No	No	No	YES	YES	No
		HSDPA	2	No	YES	No	No	No	No	No	No	YES	YES	No
		HSDPA	4	No	YES	No	No	No	No	No	No	YES	YES	No
		HSDPA	5	No	YES	No	No	No	No	No	No	YES	YES	No
		HSUPA	2	No	No	YES	No	No	No	No	No	YES	YES	No
		HSUPA	4	No	No	YES	No	No	No	No	No	YES	YES	No
		HSUPA	5	No	No	YES	No	No	No	No	No	YES	YES	No
		HSPA+	2	No	No	No	YES	No	No	No	No	YES	YES	No
		HSPA+	4	No	No	No	YES	No	No	No	No	YES	YES	No
		HSPA+	5	No	No	No	YES	No	No	No	No	YES	YES	No
		DC-HSDPA	2	No	No	No	No	YES	No	No	No	YES	YES	No
		DC-HSDPA	4	No	No	No	No	YES	No	No	No	YES	YES	No
		DC-HSDPA	5	No	No	No	No	YES	No	No	No	YES	YES	No
		LTE	2	No	No	No	No	No	YES	No	No	YES	YES	No
		LTE	4	No	No	No	No	No	YES	No	No	YES	YES	No
		LTE	5	No	No	No	No	No	YES	No	No	YES	YES	No
		LTE	7	No	No	No	No	No	YES	No	No	YES	YES	No
		LTE	12	No	No	No	No	No	YES	No	No	YES	YES	No
		LTE	13	No	No	No	No	No	YES	No	No	YES	YES	No
		LTE	25	No	No	No	No	No	YES	No	No	YES	YES	No
		LTE	26	No	No	No	No	No	YES	No	No	YES	YES	No
		LTE	41	No	No	No	No	No	YES	No	No	YES	YES	No

Notes:

1. Bluetooth transmits using the WLAN Aux Antenna
2. Bluetooth can transmit simultaneously with the WLAN Main Antenna, in either of the WLAN bands.
3. Bluetooth cannot transmit simultaneously with the WLAN Aux Antenna, in either of the WLAN bands.

   This also precludes the transmission of Bluetooth when WLAN is in MIMO mode.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

7.4. LTE Parameters

#	Description	Information						
A	Identify the high, middle and low (H, M, L) channel numbers and channel frequencies for each LTE bandwidth and frequency band	Band 2	Channel Bandwidth					
			20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low	18700 /1860	18675/ 1857.5	18650/ 1855	18625/ 1852.5	18615/ 1851.5	18607/ 1850.7
		Mid	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880
		High	19100/ 1900	19125/ 1902.5	19150/ 1905	19175/ 1907.5	19184/ 1908.4	19192/ 1909.2
		Band 4	Channel Bandwidth					
			20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low	20050/ 1720	20025/ 1717.5	20000/ 1715	19975/ 1712.5	19965/ 1711.5	19957/ 1710.7
		Mid	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5
		High	20300/ 1745	20325/ 1747.5	20350/ 1750	20375/ 1752.5	20384/ 1753.4	20392/ 1754.2
		Band 5	Channel Bandwidth					
			20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low			20450/ 829	20425/ 826.5	20415/ 825.5	20407/ 824.7
		Mid			20525/ 836.5	20525/ 836.5	20525/ 836.5	20525/ 836.5
		High			20600/ 844	20625/ 846.5	20634/ 847.4	20642/ 848.2
		Band 7	Channel Bandwidth					
			20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low	20850/ 2510	20825/ 2507.5	20800/ 2505	20775/ 2502.5		
		Mid	21100/ 2535	21100/ 2535	21100/ 2535	21100/ 2535		
		High	21350/ 2560	21375/ 2562.5	21400/ 2565	21425 2567.5		
		Band 12	Channel Bandwidth					
			20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low			23060/ 704	23035/ 701.5	23025/ 700.5	23017/ 699.7
		Mid			23095/ 707.5	23095/ 707.5	23095/ 707.5	23095/ 707.5
		High			23130/ 711	23155/ 713.5	23165/ 714.5	23173/ 715.3
		Band 13	Channel Bandwidth					
			20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low				23205/ 779.5		
		Mid			23230/ 782	23230/ 782		
		High				23255/ 784.5		

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

#	Description	Information						
		Band 25	Channel Bandwidth					
			20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low	26140/ 1860	26115/ 1857.5	26090/ 1855	26065/ 1852.5	26055/ 1851.5	26047/ 1850.7
		Mid	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5
		High	26590/ 1905	26615/ 1907.5	26640/ 1910	26665/ 1912.5	26675/ 1913.5	26683/ 1914.3
		Band 26	Channel Bandwidth					
			20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low		26765/ 821.5	26740/ 819	26715/ 816.5	26705/ 815.5	26697/ 814.7
		Mid		26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5
		High		26965/ 841.5	26990/ 844	27015/ 846.5	27025/ 847.5	27033/ 848.3
		Band 41	Channel Bandwidth					
			20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low	39750/ 2506	39750/ 2506	39750/ 2506	39750/ 2506		
		Low-Mid	40185/ 2549.5	40185/ 2549.5	40185/ 2549.5	40185/ 2549.5		
		Mid	40620/ 2593	40620/ 2593	40620/ 2593	40620/ 2593		
		Mid-High	41055/ 2636.5	41055/ 2636.5	41055/ 2636.5	41055/ 2636.5		
		High	41490/ 2680	41490/ 2680	41490/ 2680	41490/ 2680		
B	Descriptions of the LTE transmitter and antenna implementation, and identify if the transmitter operates independently of the other wireless transmitters in the device; i.e., whether the LTE hardware, components and/or antenna(s) are shared with other transmitters.	A single antenna (Main) is used for LTE and other wireless modes (WCDMA) for both transmit and receive.						
C	Identify the voice and data transmission requirements for all LTE operating modes and exposure conditions, for standalone and simultaneous transmission, with respect to the required head and body test configurations, antenna locations, handset flip or slide cover positions, antenna diversity requirements, etc.	Data Only Device Exposure Conditions: ▪ Proximity Sensor disabled (Full Power) distance between EUT and phantom are : - Edge1 of the host device at 22 mm - Edge2, Edge3 and Edge4 of the host device at 0 mm - Bottom of the host device at 11 mm • Proximity Sensor enabled (Reduced Power) Edge1 and Bottom of the DUT at 0 mm from the phantom.						

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

<table>
<tr><th>#</th><th>Description</th><th>Information</th></tr>
<tr><td>D</td><td>Identify if Maximum Power Reduction (MPR) is implemented as an optional or permanent feature, i.e., built-in by design:
15.11 MPR may be considered during SAR testing only when the maximum output power is permanently limited by the MPR implemented within the device, according to the RB (resource block) configurations specified in 3GPP/LTE standards.
15.12 Regardless of network requirements, only those RB configurations allowed (see 3GPP standards) for the channel bandwidth and modulation combinations may be tested with MPR active. Configurations with RB allocations less than the RB thresholds required by 3GPP must be tested without MPR.
15.13 A-MPR (additional MPR) must be disabled during SAR testing.</td><td>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (RB)</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>>5</td><td>>4</td><td>>8</td><td>>12</td><td>>16</td><td>>18</td><td>≤1</td></tr>
<tr><td>16 QAM</td><td>≤5</td><td>≤4</td><td>≤8</td><td>≤12</td><td>≤16</td><td>≤18</td><td>≤1</td></tr>
<tr><td>16 QAM</td><td>>5</td><td>>4</td><td>>8</td><td>>12</td><td>>16</td><td>>18</td><td>≤2</td></tr>
</table>
MPR is supported by design and is mandatory.
A-MPR is supported by design, but is disabled for SAR testing.
A-MPR is disabled, by using Network Setting value of NS_01.</td></tr>
<tr><td>E</td><td>When power reduction is required for one or more LTE modes to satisfy SAR compliance for simultaneous transmission or other equipment certification and operating requirements, maximum average conducted output power measurement results for each power reduction mode applicable to the simultaneous voice/data transmission configurations for such wireless configurations and frequency bands are required.</td><td>Yes. A proximity sensor for WWAN power reduction is implemented in the device to address RF exposure compliance when the cellular antenna is positioned close to the user's body or other objects.</td></tr>
<tr><td>F</td><td>Carrier Aggregation</td><td>This module has only downlink carrier aggregation function.
(CA configurations and bandwidth combination sets are described in Section9)

According with KDB941225D05A, KDB inquiry and any other SAR measurement is not needed in below conditions.

Uplink maximum output power is measured with downlink carrier aggregation active, only for the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.</td></tr>
</table>

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

7.5. LTE (TDD) Considerations

According to KDB 941225 D05 SAR for LTE Devices, 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 3GPP LTE TDD configurations.

SAR was tested with the highest transmission duty factor (63.33%) using Uplink-Downlink configuration 0 and Special subframe configuration 7.

LTE TDD Bands support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for Uplink-Downlink configurations and Table 4.2-1 for Special subframe configurations.

Table 4.2-1: Configuration of special subframe (length 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	$13168 \cdot T_s$			-	-	-

Calculated Duty Cycle

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle (%)
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	63.33
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.33
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.33
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.67
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.67
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.67
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33

Calculated Duty Cycle = Extended cyclic prefix in uplink x (Ts) x # of S + # of U

Example for Calculated Duty Cycle for Uplink-Downlink configuration 0:
Calculated Duty Cycle = 5120 x [1/(15000 x 2048)] x 2 + 6ms = 63.33%
where
Ts = 1/(15000 x 2048) seconds

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

7.6. **Proximity Sensor**

The proximity sensor is intended to reduce the WWAN output power when Edge1 and Bottom side are brought close to the user.

The default power level for sensor failure and malfunctioning, FZ-G1 comes up in low power mode and remains in low power mode until the proximity sensor has toggled from a proximity detected to proximity not-detected state.

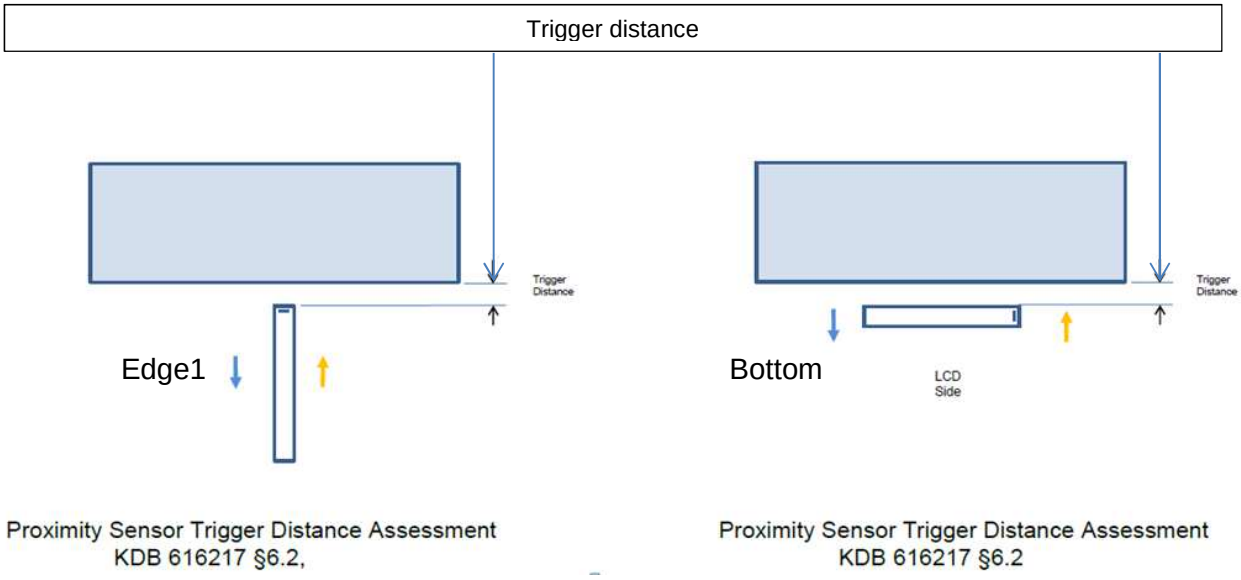
Proximity sensor triggering distances were verified for Edge1 and Bottom side.
SAR testing of others was performed at full power.
Please refer to 18. Antenna Dimensions & Separation Distances about proximity sensor and WWAN Main antenna locations and dimensions.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

7.7. Proximity Sensor Triggering distance (KDB 616217 §6.2)

Edge 1 and Bottom of the DUT was placed directly below the flat phantom. The DUT was moved toward the phantom in accordance with the steps outlined in KDB 616217 §6.2 to determine the trigger distance for enabling power reduction. The DUT was moved away from the phantom to determine the trigger distance for resuming full power.

The measurement was then repeated for the Edge 1 and Bottom surface.



Tissue simulating liquid	Trigger distance - Edge 1		Trigger distance - Rear	
	Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom
750/900 1750/1900/2400 muscle	19.2 mm	19.2 mm	6.3 mm	6.3 mm

Above triggering distance is measured from EUT corner edge.

For SAR test exclusion calculation and SAR test, protruding distance was summed.

Edge1: 22 mm (19.2 mm + 2.8 mm)

Bottom: 11 mm (6.3 mm + 4.7 mm)

Please refer to 18. Antenna Dimensions & Separation Distances about proximity sensor and WWAN Main antenna locations and dimensions.

【Test distance (protruding distance was summed)】

Edge 1	:	750/900 /1750/1900/2400 muscle	21 mm
Bottom	:	750/900/1750/1900/2400 muscle	10 mm

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

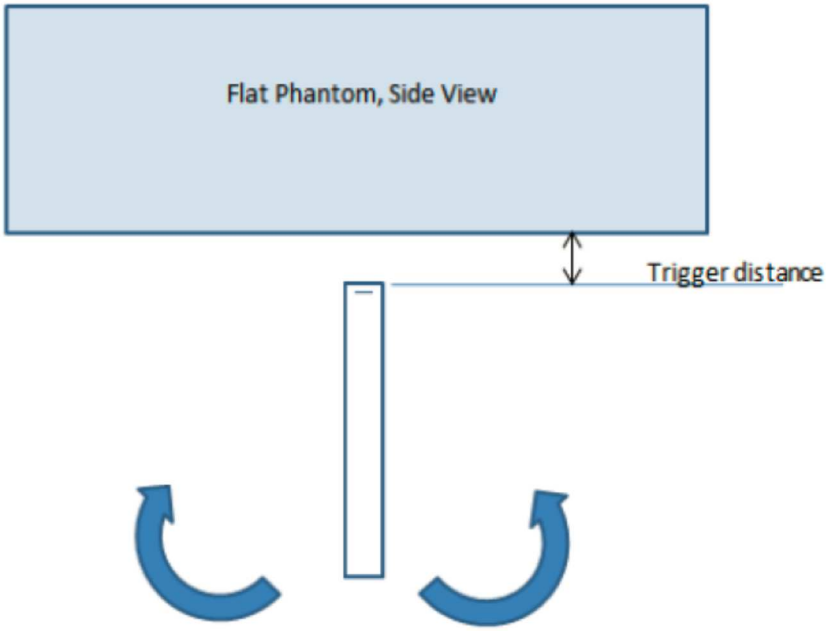
7.8. Proximity Sensor Coverage (KDB 616217 §6.3)

As there is no spatial offset between the antenna and the proximity element, except on the display side of the antenna, proximity sensor coverage did not need to be assessed.

7.9. Proximity Sensor Tilt Angle (KDB 616217 §6.4)

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with edge 2 parallel to the base of the flat phantom. The DUT was rotated in both directions about edge 1.

The proximity sensor remained triggered with the DUT positioned at the minimum measured trigger distance from the phantom for all angles up to 45°.



UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

8. Exposure Conditions

Refer to Section 16 “Antenna Dimensions and Separation Distances” for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.

8.1. Test Configurations for the WWAN Main Antenna, WWAN Modes

Tablet Mode

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Bottom side	8.1 mm	Yes	A proximity sensor is incorporated at this side that, when triggered, will reduce the transmit power of the WWAN transmitter. As such, two separate sets of evaluations are required for this test position: The test device operating at reduced power level and contact with the phantom. The test device operating at full power level and away 10 mm from the phantom. 10 mm is 1 mm less than the closest distance to which the test device can transmit at reduced power.
Front	-	No	SAR is not required as this is not a typical use scenario and also the front side SAR test is not required because of overall diagonal dimension >20cm based on KDB 616217D04.
Edge 1	4.6 mm	Yes	A proximity sensor is incorporated at this side that, when triggered, will reduce the transmit power of the WWAN transmitter. As such, two separate sets of evaluations are required for this test position: The test device operating at reduced power level and contact with the phantom. The test device operating at full power level and away 21 mm from the phantom. 21 mm is 1 mm less than the closest distance to which the test device can transmit at reduced power.
Edge 2	143.7 mm	Yes	Refer to section 12 for SAR exclusion justification. Though SAR was not required at this side, test was conducted to show the compliance with the regulation
Edge 3	184.5 mm	Yes	Refer to section 12 for SAR exclusion justification. Though SAR was not required at this side, test was conducted due to simultaneous transmission configuration.
Edge 4	24.5 mm	Yes	Refer to section 12 for SAR exclusion justification. Though SAR was not required at this side, test was conducted due to simultaneous transmission configuration.

LEGEND:

- Bottom side = Rear of display(Tablet mode)
- Edge 1 = Top Edge(Tablet mode)
- Edge 2 = Left Edge(Tablet mode)
- Edge 3 = Bottom Edge(Tablet mode)
- Edge 4 = Right Edge(Tablet mode)

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

8.2. Test Configurations for WLAN

For FCC
All Wi-Fi 1-g SAR values were taken from results recorded in SAR report 12108956H-A, submitted under FCC ID ACJ9TGWL16A.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

9. RF Output Power Measurement

As this device implements proximity sensor-triggered power reduction for SAR compliance, conducted output power was measured for the two different operating power levels. The following serves to clarify and establish the relation between power level and proximity sensor status:

- Full Power = Proximity Sensor Off
- Reduced Power= Proximity Sensor On

Each operating power level has its own set of target power and tune-up limit, and the scaling of SAR values is applied according to the corresponding target for the given operating power level

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

9.1. W-CDMA Band 2

Tech	BAND	CH.	Freq. [MHz]	Target Power		Tolerance [dB]
				w/o Power Reduction	w/ Power Reduction	
WCDMA	BAND2	9262	1852.4	23.00	17.30	+/-1
		9400	1880			
		9538	1907.6			
UTMS 3GPP HSDPA Rel 5	BAND2	9262	1852.4	22.00	16.30	
		9400	1880			
		9538	1907.6			
UTMS 3GPP HSUPA Rel 6	BAND2	9262	1852.4	22.00	15.70	
		9400	1880			
		9538	1907.6			

Release 99

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	βc/βd	8/15

Release 99 RMC Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)	
				Full Power	Reduced Power
W-CDMA (UMTS) Band II	Rel99 (RMC, 12.2 kbps)	9262	1852.4	23.16	17.05
		9400	1880.0	23.15	17.43
		9538	1907.6	22.85	17.34

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

HSDPA

The following 4 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	βc/βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	CM (dB)	0	0	0.5	0.5
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs =βhs/βc	30/15			

HSDPA Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr	
				Full Power	Reduced Power
W-CDMA (UMTS) Band II	Subtest 1	9262	1852.4	21.93	16.51
		9400	1880.0	21.93	16.43
		9538	1907.6	21.80	16.36
	Subtest 2	9262	1852.4	21.93	16.13
		9400	1880.0	21.67	15.96
		9538	1907.6	21.80	16.09
	Subtest 3	9262	1852.4	21.42	16.01
		9400	1880.0	21.43	15.89
		9538	1907.6	21.31	15.79
	Subtest 4	9262	1852.4	21.43	16.03
		9400	1880.0	21.42	15.92
		9538	1907.6	21.30	15.73

Notes:

According with KDB941225D01, SAR is not required for HSDPA because maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

HSPA (HSDPA & HSUPA)

The following 5 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSPA	HSPA	HSPA	HSPA	HSPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	15/15
	βec	209/225	12/15	30/15	2/15	24/15
	βc/βd	11/15	6/15	15/9	2/15	15/15
	βhs	22/15	12/15	30/15	4/15	30/15
	βed	1309/225	94/75	47/15 47/15	56/75	134/15
	CM (dB)	1.0	3.0	2.0	3.0	1.0
	MPR (dB)	0	2	1	2	0
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = βhs/βc	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_TFCIs	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

HSUPA Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr	
				Full Power	Reduced Power
WCDMA (UMTS) Band II	Subtest 1	9262	1852.4	21.63	15.61
		9400	1880.0	21.71	15.78
		9538	1907.6	21.83	15.66
	Subtest 2	9262	1852.4	20.84	15.08
		9400	1880.0	20.75	15.46
		9538	1907.6	20.62	14.96
	Subtest 3	9262	1852.4	20.53	15.42
		9400	1880.0	20.56	15.39
		9538	1907.6	20.36	15.32
	Subtest 4	9262	1852.4	20.94	15.60
		9400	1880.0	20.96	15.28
		9538	1907.6	20.91	15.20
	Subtest 5	9262	1852.4	21.52	16.55
		9400	1880.0	21.54	16.49
		9538	1907.6	21.34	16.40

Notes:

According with KDB941225D01, SAR is not required for HSPA because maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

9.2. W-CDMA Band 4

Tech	BAND	CH.	Freq. [MHz]	Target Power		Tolerance [dB]
				w/o Power Reduction	w/ Power Reduction	
WCDMA	BAND4	1312	1712.4	23.00	17.00	+/-1
		1413	1732.6			
		1513	1752.6			
UTMS 3GPP HSDPA Rel 5	BAND4	1312	1712.4	22.00	16.00	
		1413	1732.6			
		1513	1752.6			
UTMS 3GPP HSUPA Rel 6	BAND4	1312	1712.4	22.00	15.40	+/-1
		1413	1732.6			
		1513	1752.6			

Release 99

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	βc/βd	8/15

Release 99 RMC Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)	
				Full Power	Reduced Power
W-CDMA (UMTS) Band IV	Rel99 (RMC, 12.2 kbps)	1312	1712.4	23.03	17.91
		1413	1732.6	23.04	17.82
		1513	1752.6	22.83	17.76

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

HSDPA

The following 4 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	βc/βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	CM (dB)	0	0	0.5	0.5
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs =βhs/βc	30/15			

HSDPA Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr	
				Full Power	Reduced Power
W-CDMA (UMTS) Band IV	Subtest 1	1312	1712.4	21.93	16.13
		1413	1732.6	21.93	16.01
		1513	1752.6	21.80	15.92
	Subtest 2	1312	1712.4	21.93	15.77
		1413	1732.6	21.67	15.74
		1513	1752.6	21.80	15.76
	Subtest 3	1312	1712.4	21.42	15.65
		1413	1732.6	21.43	15.52
		1513	1752.6	21.31	15.46
	Subtest 4	1312	1712.4	21.43	15.63
		1413	1732.6	21.42	15.52
		1513	1752.6	21.30	15.46

Notes:

According with KDB941225D01, SAR is not required for HSDPA because maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

HSPA (HSDPA & HSUPA)

The following 5 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSPA	HSPA	HSPA	HSPA	HSPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	15/15
	βec	209/225	12/15	30/15	2/15	24/15
	βc/βd	11/15	6/15	15/9	2/15	15/15
	βhs	22/15	12/15	30/15	4/15	30/15
	βed	1309/225	94/75	47/15 47/15	56/75	134/15
	CM (dB)	1.0	3.0	2.0	3.0	1.0
	MPR (dB)	0	2	1	2	0
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = βhs/βc	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_TFCIs	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

HSUPA Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr	
				Full Power	Reduced Power
WCDMA (UMTS) Band Ⅳ	Subtest1	1312	1712.4	21.63	15.47
		1413	1732.6	21.62	15.39
		1513	1752.6	21.62	15.37
	Subtest2	1312	1712.4	20.84	14.74
		1413	1732.6	20.75	14.66
		1513	1752.6	20.62	14.59
	Subtest3	1312	1712.4	20.53	15.04
		1413	1732.6	20.56	14.96
		1513	1752.6	20.36	14.95
	Subtest4	1312	1712.4	20.94	14.98
		1413	1732.6	20.96	15.03
		1513	1752.6	20.91	14.99
	Subtest5	1312	1712.4	21.52	16.12
		1413	1732.6	21.54	16.03
		1513	1752.6	21.34	15.99

Notes:

According with KDB941225D01, SAR is not required for HSPA because maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

9.3. W-CDMA Band 5

Tech	BAND	CH.	Freq. [MHz]	Target Power		Tolerance [dB]
				w/o Power Reduction	w/ Power Reduction	
WCDMA	BAND5	4132	826.4	23.00	18.40	+/-1
		4182	836.4			
		4233	846.6			
UTMS 3GPP HSDPA Rel 5	BAND5	4132	826.4	22.00	17.10	
		4182	836.4			
		4233	846.6			
UTMS 3GPP HSUPA Rel 6	BAND5	4132	826.4	22.00	16.60	
		4182	836.4			
		4233	846.6			

Release 99

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	βc/βd	8/15

Release 99 RMC Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)	
				Full Power	Reduced Power
W-CDMA (UMTS) Band V	Rel99 (RMC, 12.2 kbps)	4132	826.4	23.04	18.52
		4183	836.6	23.03	18.47
		4233	846.6	22.83	18.55

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

HSDPA

The following 4 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	βc/βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	CM (dB)	0	0	0.5	0.5
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs =βhs/βc	30/15			

HSDPA Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr	
				Full Power	Reduced Power
W-CDMA (UMTS) Band V	Subtest 1	4132	826.4	21.93	17.18
		4183	836.6	21.93	17.55
		4233	846.6	21.80	17.44
	Subtest 2	4132	826.4	21.93	16.92
		4183	836.6	21.67	16.89
		4233	846.6	21.80	17.00
	Subtest 3	4132	826.4	21.42	17.02
		4183	836.6	21.43	16.94
		4233	846.6	21.31	16.85
	Subtest 4	4132	826.4	21.43	16.98
		4183	836.6	21.42	16.95
		4233	846.6	21.30	17.00

Notes:

According with KDB941225D01, SAR is not required for HSDPA because maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

HSPA (HSDPA & HSUPA)

The following 5 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSPA	HSPA	HSPA	HSPA	HSPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	15/15
	βec	209/225	12/15	30/15	2/15	24/15
	βc/βd	11/15	6/15	15/9	2/15	15/15
	βhs	22/15	12/15	30/15	4/15	30/15
	βed	1309/225	94/75	47/15 47/15	56/75	134/15
	CM (dB)	1.0	3.0	2.0	3.0	1.0
	MPR (dB)	0	2	1	2	0
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = βhs/βc	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_TFCIs	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

HSUPA Output Power Measurement Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr	
				Full Power	Reduced Power
WCDMA (UMTS) Band V	Subtest 1	4132	826.4	21.65	16.89
		4183	836.6	21.65	16.82
		4233	846.6	21.65	16.88
	Subtest 2	4132	826.4	20.84	16.10
		4183	836.6	20.75	16.44
		4233	846.6	20.62	16.10
	Subtest 3	4132	826.4	20.84	16.41
		4183	836.6	20.98	16.32
		4233	846.6	20.36	16.35
	Subtest 4	4132	826.4	20.94	16.58
		4183	836.6	20.96	16.22
		4233	846.6	20.91	16.27
	Subtest 5	4132	826.4	21.52	17.54
		4183	836.6	21.54	17.48
		4233	846.6	21.34	17.46

Notes:

According with KDB941225D01, SAR is not required for HSPA because maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

9.4. LTE Band 2

Target Power for LTE Band 2, QPSK and 16QAM modulations in all bandwidth

Tech	BAND	CH.	Freq. [MHz]	Target Power w/o Power Reduction	Target Power w/ Power Reduction	Tolerance [dB]
LTE	BAND2	18700	1860	23.00	17.20	+/-1
		18900	1880			
		19100	1900			

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

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 (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

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-
Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.					

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 2, 20 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
20	18700	1860	QPSK	1	0	0	0	24.0	22.44
				1	49	0	0	24.0	22.50
				1	99	0	0	24.0	22.27
				50	0	1	1	23.0	21.50
				50	24	1	1	23.0	21.41
				50	49	1	1	23.0	21.34
				100	0	1	1	23.0	21.38
			16QAM	1	0	1	1	23.0	21.76
				1	49	1	1	23.0	21.83
				1	99	1	1	23.0	21.61
				50	0	2	2	22.0	20.51
				50	24	2	2	22.0	20.52
				50	49	2	2	22.0	20.40
				100	0	2	2	22.0	20.44
	18900	1880	QPSK	1	0	0	0	24.0	22.39
				1	49	0	0	24.0	22.53
				1	99	0	0	24.0	22.34
				50	0	1	1	23.0	21.37
				50	24	1	1	23.0	21.52
				50	49	1	1	23.0	21.49
				100	0	1	1	23.0	21.46
			16QAM	1	0	1	1	23.0	21.88
				1	49	1	1	23.0	21.82
				1	99	1	1	23.0	21.81
				50	0	2	2	22.0	20.40
				50	24	2	2	22.0	20.58
				50	49	2	2	22.0	20.52
				100	0	2	2	22.0	20.46
	19100	1900	QPSK	1	0	0	0	24.0	22.44
				1	49	0	0	24.0	22.57
				1	99	0	0	24.0	22.22
				50	0	1	1	23.0	21.49
				50	24	1	1	23.0	21.53
				50	49	1	1	23.0	21.43
				100	0	1	1	23.0	21.51
			16QAM	1	0	1	1	23.0	21.93
				1	49	1	1	23.0	21.89
				1	99	1	1	23.0	21.88
				50	0	2	2	22.0	20.49
				50	24	2	2	22.0	20.53
				50	49	2	2	22.0	20.44
				100	0	2	2	22.0	20.53

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
20	18700	1860	QPSK	1	0	MPR is disabled when power reduction is enabled		18.2	16.69
				1	49			18.2	16.71
				1	99			18.2	16.51
				50	0			18.2	16.71
				50	24			18.2	16.70
				50	49			18.2	16.67
				100	0			18.2	16.70
			16QAM	1	0			18.2	17.08
				1	49			18.2	17.17
				1	99			18.2	16.95
				50	0			18.2	16.78
				50	24			18.2	16.79
				50	49			18.2	16.74
				100	0			18.2	16.79
	18900	1880	QPSK	1	0			18.2	16.68
				1	49			18.2	16.77
				1	99			18.2	16.65
				50	0			18.2	16.70
				50	24			18.2	16.78
				50	49			18.2	16.76
				100	0			18.2	16.72
			16QAM	1	0			18.2	16.89
				1	49			18.2	17.14
				1	99			18.2	16.94
				50	0			18.2	16.72
				50	24			18.2	16.84
				50	49			18.2	16.77
				100	0			18.2	16.74
	19100	1900	QPSK	1	0			18.2	16.79
				1	49			18.2	16.95
				1	99			18.2	16.52
				50	0			18.2	16.80
				50	24			18.2	16.81
				50	49			18.2	16.69
				100	0			18.2	16.80
			16QAM	1	0			18.2	16.95
				1	49			18.2	16.86
				1	99			18.2	16.88
				50	0			18.2	16.81
				50	24			18.2	16.83
				50	49			18.2	16.70
				100	0			18.2	16.79

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 2, 15 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
15	18675	1857.5	QPSK	1	0	0	0	24.0	22.38
				1	37	0	0	24.0	22.39
				1	74	0	0	24.0	22.28
				36	0	1	1	23.0	21.37
				36	19	1	1	23.0	21.46
				36	39	1	1	23.0	21.44
				75	0	1	1	23.0	21.40
			16QAM	1	0	1	1	23.0	21.38
				1	37	1	1	23.0	21.41
				1	74	1	1	23.0	21.31
				36	0	2	2	22.0	20.34
				36	19	2	2	22.0	20.44
				36	39	2	2	22.0	20.32
				75	0	2	2	22.0	20.36
	18900	1880	QPSK	1	0	0	0	24.0	22.63
				1	37	0	0	24.0	22.76
				1	74	0	0	24.0	22.48
				36	0	1	1	23.0	21.42
				36	19	1	1	23.0	21.53
				36	39	1	1	23.0	21.48
				75	0	1	1	23.0	21.51
			16QAM	1	0	1	1	23.0	21.85
				1	37	1	1	23.0	21.87
				1	74	1	1	23.0	21.72
				36	0	2	2	22.0	20.48
				36	19	2	2	22.0	20.62
				36	39	2	2	22.0	20.56
				75	0	2	2	22.0	20.49
	19125	1902.5	QPSK	1	0	0	0	24.0	22.70
				1	37	0	0	24.0	22.58
				1	74	0	0	24.0	22.44
				36	0	1	1	23.0	21.58
				36	19	1	1	23.0	21.66
				36	39	1	1	23.0	21.56
				75	0	1	1	23.0	21.59
			16QAM	1	0	1	1	23.0	21.90
				1	37	1	1	23.0	21.84
				1	74	1	1	23.0	21.58
				36	0	2	2	22.0	20.54
				36	19	2	2	22.0	20.63
				36	39	2	2	22.0	20.57
				75	0	2	2	22.0	20.50

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
15	18675	1857.5	QPSK	1	0	MPR is disabled when power reduction is enabled		18.2	16.77
				1	37			18.2	16.84
				1	74			18.2	16.71
				36	0			18.2	16.52
				36	19			18.2	16.63
				36	39			18.2	16.64
				75	0			18.2	16.56
			16QAM	1	0			18.2	16.59
				1	37			18.2	16.74
				1	74			18.2	16.46
				36	0			18.2	16.58
				36	19			18.2	16.68
				36	39			18.2	16.68
				75	0			18.2	16.63
	18900	1880	QPSK	1	0			18.2	16.83
				1	37			18.2	16.87
				1	74			18.2	16.66
				36	0			18.2	16.54
				36	19			18.2	16.66
				36	39			18.2	16.60
				75	0			18.2	16.58
			16QAM	1	0			18.2	16.99
				1	37			18.2	17.13
				1	74			18.2	16.93
				36	0			18.2	16.63
				36	19			18.2	16.74
				36	39			18.2	16.69
				75	0			18.2	16.62
	19125	1902.5	QPSK	1	0			18.2	16.92
				1	37			18.2	16.72
				1	74			18.2	16.63
				36	0			18.2	16.72
				36	19			18.2	16.79
				36	39			18.2	16.71
				75	0			18.2	16.69
			16QAM	1	0			18.2	16.84
				1	37			18.2	16.72
				1	74			18.2	16.53
				36	0			18.2	16.62
				36	19			18.2	16.77
				36	39			18.2	16.69
				75	0			18.2	16.73

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 2, 10 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	18650	1855	QPSK	1	0	0	0	24.0	22.63
				1	24	0	0	24.0	22.62
				1	49	0	0	24.0	22.69
				25	0	1	1	23.0	21.69
				25	12	1	1	23.0	21.65
				25	24	1	1	23.0	21.60
				50	0	1	1	23.0	21.70
			16QAM	1	0	1	1	23.0	21.81
				1	24	1	1	23.0	21.51
				1	49	1	1	23.0	21.79
				25	0	2	2	22.0	20.63
				25	12	2	2	22.0	20.59
				25	24	2	2	22.0	20.55
				50	0	2	2	22.0	20.61
	18900	1880	QPSK	1	0	0	0	24.0	22.75
				1	24	0	0	24.0	22.74
				1	49	0	0	24.0	22.82
				25	0	1	1	23.0	21.67
				25	12	1	1	23.0	21.71
				25	24	1	1	23.0	21.72
				50	0	1	1	23.0	21.68
			16QAM	1	0	1	1	23.0	21.88
				1	24	1	1	23.0	22.04
				1	49	1	1	23.0	22.00
				25	0	2	2	22.0	20.70
				25	12	2	2	22.0	20.82
				25	24	2	2	22.0	20.74
				50	0	2	2	22.0	20.70
	19150	1905	QPSK	1	0	0	0	24.0	22.80
				1	24	0	0	24.0	22.78
				1	49	0	0	24.0	22.77
				25	0	1	1	23.0	21.63
				25	12	1	1	23.0	21.67
				25	24	1	1	23.0	21.60
				50	0	1	1	23.0	21.73
			16QAM	1	0	1	1	23.0	21.98
				1	24	1	1	23.0	21.98
				1	49	1	1	23.0	21.96
				25	0	2	2	22.0	20.66
				25	12	2	2	22.0	20.77
				25	24	2	2	22.0	20.64
				50	0	2	2	22.0	20.72

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	18650	1855	QPSK	1	0	MPR is disabled when power reduction is enabled		18.2	16.89
				1	24			18.2	16.88
				1	49			18.2	16.95
				25	0			18.2	16.79
				25	12			18.2	16.77
				25	24			18.2	16.69
				50	0			18.2	16.80
			16QAM	1	0			18.2	17.03
				1	24			18.2	16.84
				1	49			18.2	16.91
				25	0			18.2	16.84
				25	12			18.2	16.81
				25	24			18.2	16.75
				50	0			18.2	16.74
	18900	1880	QPSK	1	0			18.2	16.89
				1	24			18.2	17.00
				1	49			18.2	16.92
				25	0			18.2	16.78
				25	12			18.2	16.85
				25	24			18.2	16.81
				50	0			18.2	16.78
			16QAM	1	0			18.2	17.09
				1	24			18.2	16.93
				1	49			18.2	16.94
				25	0			18.2	16.83
				25	12			18.2	16.91
				25	24			18.2	16.85
				50	0			18.2	16.78
	19150	1905	QPSK	1	0			18.2	17.14
				1	24			18.2	16.93
				1	49			18.2	17.04
				25	0			18.2	16.81
				25	12			18.2	16.79
				25	24			18.2	16.71
				50	0			18.2	16.77
			16QAM	1	0			18.2	17.20
				1	24			18.2	17.22
				1	49			18.2	17.11
				25	0			18.2	16.82
				25	12			18.2	16.88
				25	24			18.2	16.75
				50	0			18.2	16.80

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 2, 5 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	18625	1852.5	QPSK	1	0	0	0	24.0	22.84
				1	12	0	0	24.0	22.82
				1	24	0	0	24.0	22.88
				12	0	1	1	23.0	21.65
				12	6	1	1	23.0	21.74
				12	11	1	1	23.0	21.66
				25	0	1	1	23.0	21.73
			16QAM	1	0	1	1	23.0	21.88
				1	12	1	1	23.0	21.75
				1	24	1	1	23.0	21.92
				12	0	2	2	22.0	20.72
				12	6	2	2	22.0	20.76
				12	11	2	2	22.0	20.68
				25	0	2	2	22.0	20.64
	18900	1880	QPSK	1	0	0	0	24.0	22.72
				1	12	0	0	24.0	22.67
				1	24	0	0	24.0	22.69
				12	0	1	1	23.0	21.69
				12	6	1	1	23.0	21.73
				12	11	1	1	23.0	21.71
				25	0	1	1	23.0	21.72
			16QAM	1	0	1	1	23.0	21.27
				1	12	1	1	23.0	21.50
				1	24	1	1	23.0	21.23
				12	0	2	2	22.0	20.83
				12	6	2	2	22.0	20.87
				12	11	2	2	22.0	20.84
				25	0	2	2	22.0	20.80
	19175	1907.5	QPSK	1	0	0	0	24.0	22.71
				1	12	0	0	24.0	22.57
				1	24	0	0	24.0	22.69
				12	0	1	1	23.0	21.58
				12	6	1	1	23.0	21.61
				12	11	1	1	23.0	21.68
				25	0	1	1	23.0	21.57
			16QAM	1	0	1	1	23.0	21.22
				1	12	1	1	23.0	21.37
				1	24	1	1	23.0	21.22
				12	0	2	2	22.0	20.77
				12	6	2	2	22.0	20.80
				12	11	2	2	22.0	20.80
				25	0	2	2	22.0	20.66

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	18625	1852.5	QPSK	1	0	MPR is disabled when power reduction is enabled		18.2	17.05
				1	12			18.2	16.97
				1	24			18.2	17.07
				12	0			18.2	16.83
				12	6			18.2	16.90
				12	11			18.2	16.84
				25	0			18.2	16.87
			16QAM	1	0			18.2	17.07
				1	12			18.2	16.99
				1	24			18.2	17.07
				12	0			18.2	16.93
				12	6			18.2	16.98
				12	11			18.2	16.90
				25	0			18.2	16.87
	18900	1880	QPSK	1	0			18.2	17.12
				1	12			18.2	16.91
				1	24			18.2	17.02
				12	0			18.2	16.87
				12	6			18.2	16.93
				12	11			18.2	16.91
				25	0			18.2	16.91
			16QAM	1	0			18.2	17.07
				1	12			18.2	16.92
				1	24			18.2	17.05
				12	0			18.2	16.92
				12	6			18.2	16.98
				12	11			18.2	16.95
				25	0			18.2	16.84
	19175	1907.5	QPSK	1	0			18.2	17.03
				1	12			18.2	16.92
				1	24			18.2	17.05
				12	0			18.2	16.79
				12	6			18.2	16.84
				12	11			18.2	16.87
				25	0			18.2	16.76
			16QAM	1	0			18.2	17.02
				1	12			18.2	16.78
				1	24			18.2	17.03
				12	0			18.2	16.86
				12	6			18.2	16.91
				12	11			18.2	16.91
				25	0			18.2	16.75

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 2, 3 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
3	18615	1851.5	QPSK	1	0	0	0	24.0	22.73
				1	7	0	0	24.0	22.85
				1	14	0	0	24.0	22.92
				8	0	1	1	23.0	21.63
				8	4	1	1	23.0	21.70
				8	7	1	1	23.0	21.67
				15	0	1	1	23.0	21.80
			16QAM	1	0	1	1	23.0	21.65
				1	7	1	1	23.0	21.75
				1	14	1	1	23.0	21.77
				8	0	2	2	22.0	20.76
				8	4	2	2	22.0	20.80
				8	7	2	2	22.0	20.72
				15	0	2	2	22.0	20.61
	18900	1880	QPSK	1	0	0	0	24.0	22.88
				1	7	0	0	24.0	22.81
				1	14	0	0	24.0	22.80
				8	0	1	1	23.0	21.60
				8	4	1	1	23.0	21.72
				8	7	1	1	23.0	21.67
				15	0	1	1	23.0	21.70
			16QAM	1	0	1	1	23.0	22.22
				1	7	1	1	23.0	22.19
				1	14	1	1	23.0	22.04
				8	0	2	2	22.0	20.68
				8	4	2	2	22.0	20.80
				8	7	2	2	22.0	20.73
				15	0	2	2	22.0	20.72
	19185	1908.5	QPSK	1	0	0	0	24.0	22.77
				1	7	0	0	24.0	22.76
				1	14	0	0	24.0	22.84
				8	0	1	1	23.0	21.55
				8	4	1	1	23.0	21.61
				8	7	1	1	23.0	21.60
				15	0	1	1	23.0	21.57
			16QAM	1	0	1	1	23.0	22.08
				1	7	1	1	23.0	22.06
				1	14	1	1	23.0	22.13
				8	0	2	2	22.0	20.63
				8	4	2	2	22.0	20.68
				8	7	2	2	22.0	20.64
				15	0	2	2	22.0	20.59

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
3	18615	1851.5	QPSK	1	0	MPR is disabled when power reduction is enabled		18.2	16.96
				1	7			18.2	16.99
				1	14			18.2	17.04
				8	0			18.2	16.83
				8	4			18.2	16.89
				8	7			18.2	16.86
				15	0			18.2	16.88
			16QAM	1	0			18.2	17.21
				1	7			18.2	17.40
				1	14			18.2	17.28
				8	0			18.2	16.93
				8	4			18.2	17.00
				8	7			18.2	16.93
				15	0			18.2	16.90
	18900	1880	QPSK	1	0			18.2	16.94
				1	7			18.2	16.93
				1	14			18.2	16.90
				8	0			18.2	16.83
				8	4			18.2	16.93
				8	7			18.2	16.78
				15	0			18.2	16.80
			16QAM	1	0			18.2	17.30
				1	7			18.2	17.28
				1	14			18.2	17.14
				8	0			18.2	16.87
				8	4			18.2	16.93
				8	7			18.2	16.91
				15	0			18.2	16.88
	19185	1908.5	QPSK	1	0			18.2	16.75
				1	7			18.2	16.90
				1	14			18.2	17.01
				8	0			18.2	16.71
				8	4			18.2	16.75
				8	7			18.2	16.74
				15	0			18.2	16.76
			16QAM	1	0			18.2	16.65
				1	7			18.2	16.76
				1	14			18.2	16.68
				8	0			18.2	16.83
				8	4			18.2	16.82
				8	7			18.2	16.88
				15	0			18.2	16.79

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 2, 1.4 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
1.4	18607	1850.7	QPSK	1	0	0	0	24.0	22.68
				1	2	0	0	24.0	22.82
				1	5	0	0	24.0	22.70
				3	0	0	0	24.0	22.66
				3	1	0	0	24.0	22.73
				3	3	0	0	24.0	22.64
				6	0	1	1	23.0	21.57
			16QAM	1	0	1	1	23.0	21.78
				1	2	1	1	23.0	21.76
				1	5	1	1	23.0	21.89
				3	0	1	1	23.0	21.62
				3	1	1	1	23.0	21.67
				3	3	1	1	23.0	21.68
				6	0	2	2	22.0	20.74
	18900	1880	QPSK	1	0	0	0	24.0	22.85
				1	2	0	0	24.0	22.88
				1	5	0	0	24.0	22.83
				3	0	0	0	24.0	22.66
				3	1	0	0	24.0	22.73
				3	3	0	0	24.0	22.75
				6	0	1	1	23.0	21.69
			16QAM	1	0	1	1	23.0	22.12
				1	2	1	1	23.0	22.32
				1	5	1	1	23.0	22.09
				3	0	1	1	23.0	21.85
				3	1	1	1	23.0	21.90
				3	3	1	1	23.0	21.92
				6	0	2	2	22.0	20.61
	19193	1909.3	QPSK	1	0	0	0	24.0	22.71
				1	2	0	0	24.0	22.64
				1	5	0	0	24.0	22.80
				3	0	0	0	24.0	22.56
				3	1	0	0	24.0	22.57
				3	3	0	0	24.0	22.55
				6	0	1	1	23.0	21.51
			16QAM	1	0	1	1	23.0	22.12
				1	2	1	1	23.0	22.11
				1	5	1	1	23.0	22.04
				3	0	1	1	23.0	21.70
				3	1	1	1	23.0	21.71
				3	3	1	1	23.0	21.70
				6	0	2	2	22.0	20.46

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
1.4	18607	1850.7	QPSK	1	0	MPR is disabled when power reduction is enabled		18.2	16.93
				1	2			18.2	17.00
				1	5			18.2	16.94
				3	0			18.2	16.81
				3	1			18.2	16.87
				3	3			18.2	16.82
				6	0			18.2	16.79
			16QAM	1	0			18.2	17.17
				1	2			18.2	17.17
				1	5			18.2	17.14
				3	0			18.2	16.96
				3	1			18.2	17.00
				3	3			18.2	16.96
				6	0			18.2	16.87
	18900	1880	QPSK	1	0			18.2	16.78
				1	2			18.2	16.97
				1	5			18.2	16.81
				3	0			18.2	16.85
				3	1			18.2	16.93
				3	3			18.2	16.86
				6	0			18.2	16.83
			16QAM	1	0			18.2	17.07
				1	2			18.2	17.10
				1	5			18.2	16.95
				3	0			18.2	16.80
				3	1			18.2	16.89
				3	3			18.2	16.87
				6	0			18.2	16.92
	19193	1909.3	QPSK	1	0			18.2	16.91
				1	2			18.2	16.89
				1	5			18.2	16.96
				3	0			18.2	16.74
				3	1			18.2	16.73
				3	3			18.2	16.72
				6	0			18.2	16.68
			16QAM	1	0			18.2	17.17
				1	2			18.2	17.27
				1	5			18.2	17.15
				3	0			18.2	16.92
				3	1			18.2	16.97
				3	3			18.2	16.91
				6	0			18.2	16.60

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

9.5. LTE Band 4

Target Power for LTE Band 4, QPSK and 16QAM modulations in all bandwidth

Tech	BAND	CH.	Freq. [MHz]	Target Power w/o Power Reduction	Target Power w/ Power Reduction	Tolerance [dB]
LTE	BAND4	20050	1720	23.00	16.80	+/-1
		20175	1732.5			
		20300	1745			

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

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 (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

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”.

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-
Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.					

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 4, 20 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
20	20050	1720	QPSK	1	0	0	0	24.0	22.56
				1	49	0	0	24.0	22.82
				1	99	0	0	24.0	22.40
				50	0	1	1	23.0	21.65
				50	24	1	1	23.0	21.74
				50	49	1	1	23.0	21.69
				100	0	1	1	23.0	21.70
			16QAM	1	0	1	1	23.0	22.04
				1	49	1	1	23.0	22.09
				1	99	1	1	23.0	21.80
				50	0	2	2	22.0	20.70
				50	24	2	2	22.0	20.76
				50	49	2	2	22.0	20.71
				100	0	2	2	22.0	20.74
	20175	1732.5	QPSK	1	0	0	0	24.0	22.44
				1	49	0	0	24.0	22.59
				1	99	0	0	24.0	22.23
				50	0	1	1	23.0	21.53
				50	24	1	1	23.0	21.51
				50	49	1	1	23.0	21.48
				100	0	1	1	23.0	21.45
			16QAM	1	0	1	1	23.0	21.84
				1	49	1	1	23.0	21.91
				1	99	1	1	23.0	21.57
				50	0	2	2	22.0	20.55
				50	24	2	2	22.0	20.54
				50	49	2	2	22.0	20.47
				100	0	2	2	22.0	20.45
	20300	1745	QPSK	1	0	0	0	24.0	22.42
				1	49	0	0	24.0	22.56
				1	99	0	0	24.0	22.33
				50	0	1	1	23.0	21.41
				50	24	1	1	23.0	21.52
				50	49	1	1	23.0	21.50
				100	0	1	1	23.0	21.51
			16QAM	1	0	1	1	23.0	21.73
				1	49	1	1	23.0	21.89
				1	99	1	1	23.0	21.58
				50	0	2	2	22.0	20.42
				50	24	2	2	22.0	20.54
				50	49	2	2	22.0	20.53
				100	0	2	2	22.0	20.56

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
20	20050	1720	QPSK	1	0	MPR is disabled when power reduction is enabled		17.8	16.62
				1	49			17.8	16.73
				1	99			17.8	16.46
				50	0			17.8	16.56
				50	24			17.8	16.63
				50	49			17.8	16.61
				100	0			17.8	16.61
			16QAM	1	0			17.8	16.98
				1	49			17.8	17.09
				1	99			17.8	16.84
				50	0			17.8	16.65
				50	24			17.8	16.71
				50	49			17.8	16.63
				100	0			17.8	16.72
	20175	1732.5	QPSK	1	0			17.8	16.50
				1	49			17.8	16.75
				1	99			17.8	16.52
				50	0			17.8	16.53
				50	24			17.8	16.55
				50	49			17.8	16.52
				100	0			17.8	16.45
			16QAM	1	0			17.8	16.82
				1	49			17.8	16.99
				1	99			17.8	16.69
				50	0			17.8	16.51
				50	24			17.8	16.50
				50	49			17.8	16.48
				100	0			17.8	16.55
	20300	1745	QPSK	1	0			17.8	16.36
				1	49			17.8	16.62
				1	99			17.8	16.37
				50	0			17.8	16.35
				50	24			17.8	16.48
				50	49			17.8	16.50
				100	0			17.8	16.48
			16QAM	1	0			17.8	16.76
				1	49			17.8	16.83
				1	99			17.8	16.52
				50	0			17.8	16.42
				50	24			17.8	16.55
				50	49			17.8	16.51
				100	0			17.8	16.55

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 4, 15 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
15	20025	1717.5	QPSK	1	0	0	0	24.0	22.71
				1	37	0	0	24.0	22.83
				1	74	0	0	24.0	22.57
				36	0	1	1	23.0	21.64
				36	19	1	1	23.0	21.62
				36	39	1	1	23.0	21.60
				75	0	1	1	23.0	21.56
			16QAM	1	0	1	1	23.0	21.56
				1	37	1	1	23.0	21.68
				1	74	1	1	23.0	21.64
				36	0	2	2	22.0	20.64
				36	19	2	2	22.0	20.66
				36	39	2	2	22.0	20.58
				75	0	2	2	22.0	20.61
	20175	1732.5	QPSK	1	0	0	0	24.0	22.81
				1	37	0	0	24.0	22.68
				1	74	0	0	24.0	22.51
				36	0	1	1	23.0	21.56
				36	19	1	1	23.0	21.64
				36	39	1	1	23.0	21.45
				75	0	1	1	23.0	21.46
			16QAM	1	0	1	1	23.0	21.96
				1	37	1	1	23.0	21.90
				1	74	1	1	23.0	21.74
				36	0	2	2	22.0	20.57
				36	19	2	2	22.0	20.67
				36	39	2	2	22.0	20.54
				75	0	2	2	22.0	20.49
	20325	1747.5	QPSK	1	0	0	0	24.0	22.64
				1	37	0	0	24.0	22.74
				1	74	0	0	24.0	22.61
				36	0	1	1	23.0	21.53
				36	19	1	1	23.0	21.68
				36	39	1	1	23.0	21.58
				75	0	1	1	23.0	21.60
			16QAM	1	0	1	1	23.0	21.88
				1	37	1	1	23.0	21.97
				1	74	1	1	23.0	21.88
				36	0	2	2	22.0	20.53
				36	19	2	2	22.0	20.63
				36	39	2	2	22.0	20.59
				75	0	2	2	22.0	20.58

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
15	20025	1717.5	QPSK	1	0	MPR is disabled when power reduction is enabled		17.8	16.69
				1	37			17.8	16.77
				1	74			17.8	16.63
				36	0			17.8	16.63
				36	19			17.8	16.59
				36	39			17.8	16.56
				75	0			17.8	16.56
			16QAM	1	0			17.8	16.95
				1	37			17.8	17.01
				1	74			17.8	16.71
				36	0			17.8	16.64
				36	19			17.8	16.62
				36	39			17.8	16.55
				75	0			17.8	16.55
	20175	1732.5	QPSK	1	0			17.8	16.69
				1	37			17.8	16.51
				1	74			17.8	16.32
				36	0			17.8	16.45
				36	19			17.8	16.56
				36	39			17.8	16.45
				75	0			17.8	16.41
			16QAM	1	0			17.8	16.66
				1	37			17.8	16.56
				1	74			17.8	16.28
				36	0			17.8	16.44
				36	19			17.8	16.58
				36	39			17.8	16.45
				75	0			17.8	16.47
	20325	1747.5	QPSK	1	0			17.8	16.52
				1	37			17.8	16.36
				1	74			17.8	16.51
				36	0			17.8	16.42
				36	19			17.8	16.56
				36	39			17.8	16.44
				75	0			17.8	16.49
			16QAM	1	0			17.8	16.40
				1	37			17.8	16.48
				1	74			17.8	16.38
				36	0			17.8	16.42
				36	19			17.8	16.54
				36	39			17.8	16.49
				75	0			17.8	16.55

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 4, 10 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	20000	1715	QPSK	1	0	0	0	24.0	22.76
				1	24	0	0	24.0	22.82
				1	49	0	0	24.0	22.77
				25	0	1	1	23.0	21.69
				25	12	1	1	23.0	21.67
				25	24	1	1	23.0	21.68
				50	0	1	1	23.0	21.67
			16QAM	1	0	1	1	23.0	21.80
				1	24	1	1	23.0	21.86
				1	49	1	1	23.0	21.78
				25	0	2	2	22.0	20.65
				25	12	2	2	22.0	20.67
				25	24	2	2	22.0	20.67
				50	0	2	2	22.0	20.61
	20175	1732.5	QPSK	1	0	0	0	24.0	22.74
				1	24	0	0	24.0	22.61
				1	49	0	0	24.0	22.55
				25	0	1	1	23.0	21.48
				25	12	1	1	23.0	21.46
				25	24	1	1	23.0	21.41
				50	0	1	1	23.0	21.43
			16QAM	1	0	1	1	23.0	21.86
				1	24	1	1	23.0	21.85
				1	49	1	1	23.0	21.70
				25	0	2	2	22.0	20.48
				25	12	2	2	22.0	20.52
				25	24	2	2	22.0	20.42
				50	0	2	2	22.0	20.44
	20350	1750	QPSK	1	0	0	0	24.0	22.76
				1	24	0	0	24.0	22.67
				1	49	0	0	24.0	22.75
				25	0	1	1	23.0	21.45
				25	12	1	1	23.0	21.55
				25	24	1	1	23.0	21.54
				50	0	1	1	23.0	21.46
			16QAM	1	0	1	1	23.0	21.90
				1	24	1	1	23.0	21.95
				1	49	1	1	23.0	21.88
				25	0	2	2	22.0	20.42
				25	12	2	2	22.0	20.58
				25	24	2	2	22.0	20.51
				50	0	2	2	22.0	20.46

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	20000	1715	QPSK	1	0	MPR is disabled when power reduction is enabled		17.8	16.71
				1	24			17.8	16.85
				1	49			17.8	16.72
				25	0			17.8	16.67
				25	12			17.8	16.62
				25	24			17.8	16.61
				50	0			17.8	16.68
			16QAM	1	0			17.8	16.88
				1	24			17.8	16.89
				1	49			17.8	16.80
				25	0			17.8	16.67
				25	12			17.8	16.67
				25	24			17.8	16.67
				50	0			17.8	16.62
	20175	1732.5	QPSK	1	0			17.8	16.67
				1	24			17.8	16.72
				1	49			17.8	16.54
				25	0			17.8	16.46
				25	12			17.8	16.48
				25	24			17.8	16.41
				50	0			17.8	16.46
			16QAM	1	0			17.8	16.78
				1	24			17.8	16.71
				1	49			17.8	16.57
				25	0			17.8	16.49
				25	12			17.8	16.57
				25	24			17.8	16.51
				50	0			17.8	16.47
	20350	1750	QPSK	1	0			17.8	16.55
				1	24			17.8	16.56
				1	49			17.8	16.64
				25	0			17.8	16.41
				25	12			17.8	16.55
				25	24			17.8	16.56
				50	0			17.8	16.47
			16QAM	1	0			17.8	16.76
				1	24			17.8	16.70
				1	49			17.8	16.79
				25	0			17.8	16.47
				25	12			17.8	16.59
				25	24			17.8	16.48
				50	0			17.8	16.36

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 4, 5 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	19975	1712.5	QPSK	1	0	0	0	24.0	22.81
				1	12	0	0	24.0	22.65
				1	24	0	0	24.0	22.82
				12	0	1	1	23.0	21.70
				12	6	1	1	23.0	21.72
				12	11	1	1	23.0	21.71
				25	0	1	1	23.0	21.72
			16QAM	1	0	1	1	23.0	21.90
				1	12	1	1	23.0	21.71
				1	24	1	1	23.0	21.98
				12	0	2	2	22.0	20.74
				12	6	2	2	22.0	20.74
				12	11	2	2	22.0	20.70
				25	0	2	2	22.0	20.52
	20175	1732.5	QPSK	1	0	0	0	24.0	22.59
				1	12	0	0	24.0	22.39
				1	24	0	0	24.0	22.61
				12	0	1	1	23.0	21.51
				12	6	1	1	23.0	21.46
				12	11	1	1	23.0	21.41
				25	0	1	1	23.0	21.46
			16QAM	1	0	1	1	23.0	22.03
				1	12	1	1	23.0	22.03
				1	24	1	1	23.0	22.05
				12	0	2	2	22.0	20.64
				12	6	2	2	22.0	20.63
				12	11	2	2	22.0	20.56
				25	0	2	2	22.0	20.49
	20375	1752.5	QPSK	1	0	0	0	24.0	22.66
				1	12	0	0	24.0	22.48
				1	24	0	0	24.0	22.67
				12	0	1	1	23.0	21.63
				12	6	1	1	23.0	21.60
				12	11	1	1	23.0	21.61
				25	0	1	1	23.0	21.60
			16QAM	1	0	1	1	23.0	22.11
				1	12	1	1	23.0	22.08
				1	24	1	1	23.0	22.10
				12	0	2	2	22.0	20.72
				12	6	2	2	22.0	20.71
				12	11	2	2	22.0	20.68
				25	0	2	2	22.0	20.61

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	19975	1712.5	QPSK	1	0	MPR is disabled when power reduction is enabled		17.8	16.87
				1	12			17.8	16.61
				1	24			17.8	16.90
				12	0			17.8	16.60
				12	6			17.8	16.66
				12	11			17.8	16.61
				25	0			17.8	16.57
			16QAM	1	0			17.8	16.81
				1	12			17.8	16.65
				1	24			17.8	16.97
				12	0			17.8	16.70
				12	6			17.8	16.69
				12	11			17.8	16.65
				25	0			17.8	16.56
	20175	1732.5	QPSK	1	0			17.8	16.70
				1	12			17.8	16.58
				1	24			17.8	16.69
				12	0			17.8	16.53
				12	6			17.8	16.48
				12	11			17.8	16.46
				25	0			17.8	16.47
			16QAM	1	0			17.8	17.11
				1	12			17.8	17.08
				1	24			17.8	17.05
				12	0			17.8	16.69
				12	6			17.8	16.65
				12	11			17.8	16.61
				25	0			17.8	16.54
	20375	1752.5	QPSK	1	0			17.8	16.77
				1	12			17.8	16.80
				1	24			17.8	16.81
				12	0			17.8	16.57
				12	6			17.8	16.61
				12	11			17.8	16.54
				25	0			17.8	16.58
			16QAM	1	0			17.8	17.12
				1	12			17.8	17.21
				1	24			17.8	17.12
				12	0			17.8	16.74
				12	6			17.8	16.72
				12	11			17.8	16.69
				25	0			17.8	16.60

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 4, 3 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
3	19965	1711.5	QPSK	1	0	0	0	24.0	22.90
				1	7	0	0	24.0	22.89
				1	14	0	0	24.0	23.07
				8	0	1	1	23.0	21.61
				8	4	1	1	23.0	21.81
				8	7	1	1	23.0	21.69
				15	0	1	1	23.0	21.69
			16QAM	1	0	1	1	23.0	21.64
				1	7	1	1	23.0	21.69
				1	14	1	1	23.0	21.71
				8	0	2	2	22.0	20.68
				8	4	2	2	22.0	20.85
				8	7	2	2	22.0	20.78
				15	0	2	2	22.0	20.71
	20175	1732.5	QPSK	1	0	0	0	24.0	22.76
				1	7	0	0	24.0	22.58
				1	14	0	0	24.0	22.74
				8	0	1	1	23.0	21.52
				8	4	1	1	23.0	21.49
				8	7	1	1	23.0	21.48
				15	0	1	1	23.0	21.40
			16QAM	1	0	1	1	23.0	22.00
				1	7	1	1	23.0	21.97
				1	14	1	1	23.0	21.88
				8	0	2	2	22.0	20.56
				8	4	2	2	22.0	20.56
				8	7	2	2	22.0	20.49
				15	0	2	2	22.0	20.50
	20385	1753.5	QPSK	1	0	0	0	24.0	22.83
				1	7	0	0	24.0	22.77
				1	14	0	0	24.0	22.79
				8	0	1	1	23.0	21.63
				8	4	1	1	23.0	21.61
				8	7	1	1	23.0	21.59
				15	0	1	1	23.0	21.60
			16QAM	1	0	1	1	23.0	22.21
				1	7	1	1	23.0	22.12
				1	14	1	1	23.0	22.21
				8	0	2	2	22.0	20.62
				8	4	2	2	22.0	20.63
				8	7	2	2	22.0	20.61
				15	0	2	2	22.0	20.55

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
3	19965	1711.5	QPSK	1	0	MPR is disabled when power reduction is enabled		17.8	16.78
				1	7			17.8	16.79
				1	14			17.8	16.86
				8	0			17.8	16.60
				8	4			17.8	16.76
				8	7			17.8	16.70
				15	0			17.8	16.67
			16QAM	1	0			17.8	16.59
				1	7			17.8	16.64
				1	14			17.8	16.69
				8	0			17.8	16.71
				8	4			17.8	16.86
				8	7			17.8	16.80
				15	0			17.8	16.70
	20175	1732.5	QPSK	1	0			17.8	16.63
				1	7			17.8	16.53
				1	14			17.8	16.69
				8	0			17.8	16.53
				8	4			17.8	16.49
				8	7			17.8	16.47
				15	0			17.8	16.49
			16QAM	1	0			17.8	16.48
				1	7			17.8	16.48
				1	14			17.8	16.52
				8	0			17.8	16.59
				8	4			17.8	16.56
				8	7			17.8	16.58
				15	0			17.8	16.52
	20385	1753.5	QPSK	1	0			17.8	16.78
				1	7			17.8	16.74
				1	14			17.8	16.89
				8	0			17.8	16.52
				8	4			17.8	16.53
				8	7			17.8	16.50
				15	0			17.8	16.56
			16QAM	1	0			17.8	16.50
				1	7			17.8	16.60
				1	14			17.8	16.49
				8	0			17.8	16.62
				8	4			17.8	16.65
				8	7			17.8	16.63
				15	0			17.8	16.60

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 4, 1.4 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
1.4	19957	1710.7	QPSK	1	0	0	0	24.0	22.73
				1	2	0	0	24.0	22.91
				1	5	0	0	24.0	22.82
				3	0	0	0	24.0	22.67
				3	1	0	0	24.0	22.71
				3	3	0	0	24.0	22.60
				6	0	1	1	23.0	21.62
			16QAM	1	0	1	1	23.0	21.80
				1	2	1	1	23.0	22.12
				1	5	1	1	23.0	22.04
				3	0	1	1	23.0	21.77
				3	1	1	1	23.0	21.75
				3	3	1	1	23.0	21.70
				6	0	2	2	22.0	20.74
	20175	1732.5	QPSK	1	0	0	0	24.0	22.74
				1	2	0	0	24.0	22.66
				1	5	0	0	24.0	22.65
				3	0	0	0	24.0	22.50
				3	1	0	0	24.0	22.59
				3	3	0	0	24.0	22.49
				6	0	1	1	23.0	21.37
			16QAM	1	0	1	1	23.0	22.06
				1	2	1	1	23.0	22.07
				1	5	1	1	23.0	21.84
				3	0	1	1	23.0	21.65
				3	1	1	1	23.0	21.73
				3	3	1	1	23.0	21.63
				6	0	2	2	22.0	20.34
	20393	1754.3	QPSK	1	0	0	0	24.0	22.77
				1	2	0	0	24.0	22.70
				1	5	0	0	24.0	22.82
				3	0	0	0	24.0	22.64
				3	1	0	0	24.0	22.62
				3	3	0	0	24.0	22.63
				6	0	1	1	23.0	21.55
			16QAM	1	0	1	1	23.0	22.22
				1	2	1	1	23.0	22.20
				1	5	1	1	23.0	22.00
				3	0	1	1	23.0	21.74
				3	1	1	1	23.0	21.79
				3	3	1	1	23.0	21.74
				6	0	2	2	22.0	20.46

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
1.4	19957	1710.7	QPSK	1	0	MPR is disabled when power reduction is enabled		17.8	16.64
				1	2			17.8	16.78
				1	5			17.8	16.74
				3	0			17.8	16.65
				3	1			17.8	16.70
				3	3			17.8	16.55
				6	0			17.8	16.60
			16QAM	1	0			17.8	16.81
				1	2			17.8	16.99
				1	5			17.8	16.96
				3	0			17.8	16.74
				3	1			17.8	16.73
				3	3			17.8	16.66
				6	0			17.8	16.78
	20175	1732.5	QPSK	1	0			17.8	16.49
				1	2			17.8	16.56
				1	5			17.8	16.57
				3	0			17.8	16.50
				3	1			17.8	16.60
				3	3			17.8	16.48
				6	0			17.8	16.42
			16QAM	1	0			17.8	16.97
				1	2			17.8	17.06
				1	5			17.8	16.81
				3	0			17.8	16.64
				3	1			17.8	16.72
				3	3			17.8	16.64
				6	0			17.8	16.35
	20393	1754.3	QPSK	1	0			17.8	16.57
				1	2			17.8	16.70
				1	5			17.8	16.58
				3	0			17.8	16.56
				3	1			17.8	16.61
				3	3			17.8	16.49
				6	0			17.8	16.51
			16QAM	1	0			17.8	16.71
				1	2			17.8	16.83
				1	5			17.8	16.79
				3	0			17.8	16.59
				3	1			17.8	16.57
				3	3			17.8	16.57
				6	0			17.8	16.67

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

9.6. LTE Band 5

Target Power for LTE Band 5, QPSK and 16QAM modulations in all bandwidth

Tech	BAND	CH.	Freq. [MHz]	Target Power w/o Power Reduction	Target Power w/ Power Reduction	Tolerance [dB]
LTE	BAND5	20450	829	23.00	18.20	+/-1
		20525	836.5			
		20600	844			

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

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 (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

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”.

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-
Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.					

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 5, 10 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	20450	829	QPSK	1	0	0	0	24.0	22.41
				1	24	0	0	24.0	22.50
				1	49	0	0	24.0	22.23
				25	0	1	1	23.0	21.45
				25	12	1	1	23.0	21.46
				25	24	1	1	23.0	21.35
				50	0	1	1	23.0	21.46
			16QAM	1	0	1	1	23.0	21.86
				1	24	1	1	23.0	21.60
				1	49	1	1	23.0	21.52
				25	0	2	2	22.0	20.37
				25	12	2	2	22.0	20.38
				25	24	2	2	22.0	20.24
				50	0	2	2	22.0	20.30
	20525	836.5	QPSK	1	0	0	0	24.0	22.43
				1	24	0	0	24.0	22.47
				1	49	0	0	24.0	22.69
				25	0	1	1	23.0	21.41
				25	12	1	1	23.0	21.42
				25	24	1	1	23.0	21.33
				50	0	1	1	23.0	21.33
			16QAM	1	0	1	1	23.0	21.65
				1	24	1	1	23.0	21.60
				1	49	1	1	23.0	21.72
				25	0	2	2	22.0	20.31
				25	12	2	2	22.0	20.43
				25	24	2	2	22.0	20.33
				50	0	2	2	22.0	20.35
	20600	844	QPSK	1	0	0	0	24.0	22.71
				1	24	0	0	24.0	22.55
				1	49	0	0	24.0	22.26
				25	0	1	1	23.0	21.37
				25	12	1	1	23.0	21.32
				25	24	1	1	23.0	21.33
				50	0	1	1	23.0	21.39
			16QAM	1	0	1	1	23.0	21.73
				1	24	1	1	23.0	21.68
				1	49	1	1	23.0	21.59
				25	0	2	2	22.0	20.38
				25	12	2	2	22.0	20.37
				25	24	2	2	22.0	20.34
				50	0	2	2	22.0	20.44

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	20450	829	QPSK	1	0	MPR is disabled when power reduction is enabled		19.2	18.91
				1	24			19.2	18.62
				1	49			19.2	18.50
				25	0			19.2	18.44
				25	12			19.2	18.36
				25	24			19.2	18.30
				50	0			19.2	18.41
			16QAM	1	0			19.2	18.98
				1	24			19.2	18.84
				1	49			19.2	18.63
				25	0			19.2	18.44
				25	12			19.2	18.46
				25	24			19.2	18.30
				50	0			19.2	18.45
	20525	836.5	QPSK	1	0			19.2	18.31
				1	24			19.2	18.49
				1	49			19.2	18.36
				25	0			19.2	18.30
				25	12			19.2	18.35
				25	24			19.2	18.31
				50	0			19.2	18.36
			16QAM	1	0			19.2	18.49
				1	24			19.2	18.52
				1	49			19.2	18.48
				25	0			19.2	18.34
				25	12			19.2	18.40
				25	24			19.2	18.40
				50	0			19.2	18.41
	20600	844	QPSK	1	0			19.2	18.90
				1	24			19.2	18.60
				1	49			19.2	18.80
				25	0			19.2	18.38
				25	12			19.2	18.33
				25	24			19.2	18.34
				50	0			19.2	18.39
			16QAM	1	0			19.2	18.93
				1	24			19.2	18.80
				1	49			19.2	18.97
				25	0			19.2	18.39
				25	12			19.2	18.42
				25	24			19.2	18.37
				50	0			19.2	18.46

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 5, 5 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	20425	826.5	QPSK	1	0	0	0	24.0	22.62
				1	12	0	0	24.0	22.54
				1	24	0	0	24.0	22.49
				12	0	1	1	23.0	21.51
				12	6	1	1	23.0	21.46
				12	11	1	1	23.0	21.43
				25	0	1	1	23.0	21.45
			16QAM	1	0	1	1	23.0	21.99
				1	12	1	1	23.0	22.11
				1	24	1	1	23.0	21.72
				12	0	2	2	22.0	20.65
				12	6	2	2	22.0	20.58
				12	11	2	2	22.0	20.53
				25	0	2	2	22.0	20.41
	20525	836.5	QPSK	1	0	0	0	24.0	22.50
				1	12	0	0	24.0	22.32
				1	24	0	0	24.0	22.51
				12	0	1	1	23.0	21.30
				12	6	1	1	23.0	21.34
				12	11	1	1	23.0	21.31
				25	0	1	1	23.0	21.30
			16QAM	1	0	1	1	23.0	21.99
				1	12	1	1	23.0	21.98
				1	24	1	1	23.0	21.86
				12	0	2	2	22.0	20.43
				12	6	2	2	22.0	20.51
				12	11	2	2	22.0	20.46
				25	0	2	2	22.0	20.41
	20625	846.5	QPSK	1	0	0	0	24.0	22.36
				1	12	0	0	24.0	22.33
				1	24	0	0	24.0	22.08
				12	0	1	1	23.0	21.27
				12	6	1	1	23.0	21.37
				12	11	1	1	23.0	21.46
				25	0	1	1	23.0	21.27
			16QAM	1	0	1	1	23.0	21.80
				1	12	1	1	23.0	21.86
				1	24	1	1	23.0	21.65
				12	0	2	2	22.0	20.41
				12	6	2	2	22.0	20.52
				12	11	2	2	22.0	20.60
				25	0	2	2	22.0	20.37

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	20425	826.5	QPSK	1	0	MPR is disabled when power reduction is enabled		19.2	18.90
				1	12			19.2	18.48
				1	24			19.2	18.61
				12	0			19.2	18.52
				12	6			19.2	18.53
				12	11			19.2	18.44
				25	0			19.2	18.43
			16QAM	1	0			19.2	18.81
				1	12			19.2	18.64
				1	24			19.2	18.66
				12	0			19.2	18.60
				12	6			19.2	18.54
				12	11			19.2	18.52
				25	0			19.2	18.46
	20525	836.5	QPSK	1	0			19.2	18.33
				1	12			19.2	18.34
				1	24			19.2	18.37
				12	0			19.2	18.25
				12	6			19.2	18.32
				12	11			19.2	18.28
				25	0			19.2	18.28
			16QAM	1	0			19.2	18.44
				1	12			19.2	18.42
				1	24			19.2	18.50
				12	0			19.2	18.43
				12	6			19.2	18.49
				12	11			19.2	18.45
				25	0			19.2	18.35
	20625	846.5	QPSK	1	0			19.2	18.37
				1	12			19.2	18.55
				1	24			19.2	18.63
				12	0			19.2	18.25
				12	6			19.2	18.41
				12	11			19.2	18.50
				25	0			19.2	18.35
			16QAM	1	0			19.2	18.64
				1	12			19.2	18.40
				1	24			19.2	18.81
				12	0			19.2	18.42
				12	6			19.2	18.46
				12	11			19.2	18.57
				25	0			19.2	18.37

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 5, 3 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
3	20415	825.5	QPSK	1	0	0	0	24.0	22.33
				1	7	0	0	24.0	22.58
				1	14	0	0	24.0	22.40
				8	0	1	1	23.0	21.57
				8	4	1	1	23.0	21.63
				8	7	1	1	23.0	21.53
				15	0	1	1	23.0	21.63
			16QAM	1	0	1	1	23.0	21.67
				1	7	1	1	23.0	21.70
				1	14	1	1	23.0	21.56
				8	0	2	2	22.0	20.57
				8	4	2	2	22.0	20.70
				8	7	2	2	22.0	20.60
				15	0	2	2	22.0	20.58
	20525	836.5	QPSK	1	0	0	0	24.0	22.50
				1	7	0	0	24.0	22.57
				1	14	0	0	24.0	22.66
				8	0	1	1	23.0	21.37
				8	4	1	1	23.0	21.39
				8	7	1	1	23.0	21.34
				15	0	1	1	23.0	21.33
			16QAM	1	0	1	1	23.0	21.99
				1	7	1	1	23.0	21.86
				1	14	1	1	23.0	22.02
				8	0	2	2	22.0	20.45
				8	4	2	2	22.0	20.44
				8	7	2	2	22.0	20.41
				15	0	2	2	22.0	20.38
	20635	847.5	QPSK	1	0	0	0	24.0	22.40
				1	7	0	0	24.0	22.70
				1	14	0	0	24.0	22.21
				8	0	1	1	23.0	21.35
				8	4	1	1	23.0	21.46
				8	7	1	1	23.0	21.40
				15	0	1	1	23.0	21.42
			16QAM	1	0	1	1	23.0	21.95
				1	7	1	1	23.0	21.93
				1	14	1	1	23.0	21.47
				8	0	2	2	22.0	20.44
				8	4	2	2	22.0	20.55
				8	7	2	2	22.0	20.56
				15	0	2	2	22.0	20.51

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
3	20415	825.5	QPSK	1	0	MPR is disabled when power reduction is enabled		19.2	18.50
				1	7			19.2	18.61
				1	14			19.2	18.42
				8	0			19.2	18.61
				8	4			19.2	18.56
				8	7			19.2	18.52
				15	0			19.2	18.55
			16QAM	1	0			19.2	18.41
				1	7			19.2	18.48
				1	14			19.2	18.36
				8	0			19.2	18.60
				8	4			19.2	18.63
				8	7			19.2	18.44
				15	0			19.2	18.44
	20525	836.5	QPSK	1	0			19.2	18.36
				1	7			19.2	18.44
				1	14			19.2	18.28
				8	0			19.2	18.38
				8	4			19.2	18.37
				8	7			19.2	18.34
				15	0			19.2	18.32
			16QAM	1	0			19.2	18.35
				1	7			19.2	18.44
				1	14			19.2	18.54
				8	0			19.2	18.47
				8	4			19.2	18.48
				8	7			19.2	18.45
				15	0			19.2	18.37
	20635	847.5	QPSK	1	0			19.2	18.42
				1	7			19.2	18.50
				1	14			19.2	18.26
				8	0			19.2	18.42
				8	4			19.2	18.52
				8	7			19.2	18.49
				15	0			19.2	18.56
			16QAM	1	0			19.2	18.42
				1	7			19.2	18.54
				1	14			19.2	18.54
				8	0			19.2	18.46
				8	4			19.2	18.61
				8	7			19.2	18.61
				15	0			19.2	18.56

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 5, 1.4 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
1.4	20407	824.7	QPSK	1	0	0	0	24.0	22.64
				1	2	0	0	24.0	22.81
				1	5	0	0	24.0	22.63
				3	0	0	0	24.0	22.47
				3	1	0	0	24.0	22.51
				3	3	0	0	24.0	22.46
				6	0	1	1	23.0	21.48
			16QAM	1	0	1	1	23.0	21.74
				1	2	1	1	23.0	21.88
				1	5	1	1	23.0	21.86
				3	0	1	1	23.0	21.71
				3	1	1	1	23.0	21.78
				3	3	1	1	23.0	21.76
				6	0	2	2	22.0	20.70
	20525	836.5	QPSK	1	0	0	0	24.0	22.48
				1	2	0	0	24.0	22.36
				1	5	0	0	24.0	22.54
				3	0	0	0	24.0	22.27
				3	1	0	0	24.0	22.31
				3	3	0	0	24.0	22.29
				6	0	1	1	23.0	21.26
			16QAM	1	0	1	1	23.0	21.67
				1	2	1	1	23.0	21.84
				1	5	1	1	23.0	21.75
				3	0	1	1	23.0	21.49
				3	1	1	1	23.0	21.55
				3	3	1	1	23.0	21.49
				6	0	2	2	22.0	20.20
	20643	848.3	QPSK	1	0	0	0	24.0	22.44
				1	2	0	0	24.0	22.29
				1	5	0	0	24.0	22.06
				3	0	0	0	24.0	22.32
				3	1	0	0	24.0	22.30
				3	3	0	0	24.0	22.05
				6	0	1	1	23.0	21.30
			16QAM	1	0	1	1	23.0	21.74
				1	2	1	1	23.0	21.70
				1	5	1	1	23.0	21.38
				3	0	1	1	23.0	21.57
				3	1	1	1	23.0	21.51
				3	3	1	1	23.0	21.27
				6	0	2	2	22.0	20.29

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
1.4	20407	824.7	QPSK	1	0	MPR is disabled when power reduction is enabled		19.2	18.65
				1	2			19.2	18.72
				1	5			19.2	18.61
				3	0			19.2	18.48
				3	1			19.2	18.49
				3	3			19.2	18.47
				6	0			19.2	18.48
			16QAM	1	0			19.2	18.72
				1	2			19.2	18.86
				1	5			19.2	18.70
				3	0			19.2	18.65
				3	1			19.2	18.69
				3	3			19.2	18.64
				6	0			19.2	18.67
	20525	836.5	QPSK	1	0			19.2	18.49
				1	2			19.2	18.38
				1	5			19.2	18.40
				3	0			19.2	18.30
				3	1			19.2	18.37
				3	3			19.2	18.30
				6	0			19.2	18.29
			16QAM	1	0			19.2	18.66
				1	2			19.2	18.77
				1	5			19.2	18.73
				3	0			19.2	18.44
				3	1			19.2	18.54
				3	3			19.2	18.55
				6	0			19.2	18.48
	20643	848.3	QPSK	1	0			19.2	18.65
				1	2			19.2	18.54
				1	5			19.2	18.71
				3	0			19.2	18.52
				3	1			19.2	18.56
				3	3			19.2	18.41
				6	0			19.2	18.43
			16QAM	1	0			19.2	18.84
				1	2			19.2	18.96
				1	5			19.2	18.83
				3	0			19.2	18.66
				3	1			19.2	18.66
				3	3			19.2	18.65
				6	0			19.2	18.44

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

9.7. LTE Band 7

Target Power for LTE Band 7, QPSK and 16QAM modulations in all bandwidth

Tech	BAND	CH.	Freq. [MHz]	Target Power w/o Power Reduction	Target Power w/ Power Reduction	Tolerance [dB]
LTE	BAND7	20850	2510	21.00	14.60	+/-1
		21100	2535			
		21350	2560			

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

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 (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

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”.

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-
Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.					

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 7, 20 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
20	20850	2510	QPSK	1	0	0	0	22.0	20.96
				1	49	0	0	22.0	21.09
				1	99	0	0	22.0	20.75
				50	0	1	1	21.0	19.97
				50	24	1	1	21.0	20.08
				50	49	1	1	21.0	19.92
				100	0	1	1	21.0	20.02
			16QAM	1	0	1	1	21.0	20.49
				1	49	1	1	21.0	20.37
				1	99	1	1	21.0	20.20
				50	0	2	2	20.0	18.96
				50	24	2	2	20.0	19.11
				50	49	2	2	20.0	18.92
				100	0	2	2	20.0	19.02
	21100	2535	QPSK	1	0	0	0	22.0	21.00
				1	49	0	0	22.0	21.16
				1	99	0	0	22.0	20.99
				50	0	1	1	21.0	20.11
				50	24	1	1	21.0	20.22
				50	49	1	1	21.0	20.25
				100	0	1	1	21.0	20.14
			16QAM	1	0	1	1	21.0	20.58
				1	49	1	1	21.0	20.53
				1	99	1	1	21.0	20.51
				50	0	2	2	20.0	19.13
				50	24	2	2	20.0	19.30
				50	49	2	2	20.0	19.34
				100	0	2	2	20.0	19.23
	21350	2560	QPSK	1	0	0	0	22.0	20.80
				1	49	0	0	22.0	20.96
				1	99	0	0	22.0	20.71
				50	0	1	1	21.0	19.86
				50	24	1	1	21.0	19.96
				50	49	1	1	21.0	19.90
				100	0	1	1	21.0	19.95
			16QAM	1	0	1	1	21.0	20.33
				1	49	1	1	21.0	20.39
				1	99	1	1	21.0	20.38
				50	0	2	2	20.0	18.88
				50	24	2	2	20.0	19.06
				50	49	2	2	20.0	18.96
				100	0	2	2	20.0	18.99

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
20	20850	2510	QPSK	1	0	MPR is disabled when power reduction is enabled		15.6	14.13
				1	49			15.6	14.10
				1	99			15.6	13.85
				50	0			15.6	13.82
				50	24			15.6	14.04
				50	49			15.6	13.81
				100	0			15.6	14.03
			16QAM	1	0			15.6	14.58
				1	49			15.6	14.50
				1	99			15.6	14.28
				50	0			15.6	13.93
				50	24			15.6	14.12
				50	49			15.6	13.90
				100	0			15.6	14.06
	21100	2535	QPSK	1	0			15.6	14.09
				1	49			15.6	14.29
				1	99			15.6	14.11
				50	0			15.6	13.92
				50	24			15.6	14.05
				50	49			15.6	14.08
				100	0			15.6	14.06
			16QAM	1	0			15.6	14.52
				1	49			15.6	14.63
				1	99			15.6	14.61
				50	0			15.6	13.99
				50	24			15.6	14.12
				50	49			15.6	14.15
				100	0			15.6	14.14
	21350	2560	QPSK	1	0			15.6	14.01
				1	49			15.6	14.23
				1	99			15.6	13.95
				50	0			15.6	13.78
				50	24			15.6	13.94
				50	49			15.6	13.85
				100	0			15.6	13.91
			16QAM	1	0			15.6	14.48
				1	49			15.6	14.59
				1	99			15.6	14.34
				50	0			15.6	13.87
				50	24			15.6	13.97
				50	49			15.6	13.86
				100	0			15.6	14.01

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 7, 15 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
15	20825	2507.5	QPSK	1	0	0	0	22.0	21.08
				1	37	0	0	22.0	21.26
				1	74	0	0	22.0	21.01
				36	0	1	1	21.0	19.93
				36	19	1	1	21.0	20.05
				36	39	1	1	21.0	19.98
				75	0	1	1	21.0	19.91
			16QAM	1	0	1	1	21.0	19.87
				1	37	1	1	21.0	19.88
				1	74	1	1	21.0	19.83
				36	0	2	2	20.0	18.97
				36	19	2	2	20.0	19.13
				36	39	2	2	20.0	19.06
				75	0	2	2	20.0	19.05
	21100	2535	QPSK	1	0	0	0	22.0	21.12
				1	37	0	0	22.0	21.31
				1	74	0	0	22.0	21.22
				36	0	1	1	21.0	20.15
				36	19	1	1	21.0	20.24
				36	39	1	1	21.0	20.25
				75	0	1	1	21.0	20.15
			16QAM	1	0	1	1	21.0	20.50
				1	37	1	1	21.0	20.54
				1	74	1	1	21.0	20.52
				36	0	2	2	20.0	19.23
				36	19	2	2	20.0	19.31
				36	39	2	2	20.0	19.31
				75	0	2	2	20.0	19.17
	21375	2562.5	QPSK	1	0	0	0	22.0	20.95
				1	37	0	0	22.0	20.93
				1	74	0	0	22.0	20.98
				36	0	1	1	21.0	19.85
				36	19	1	1	21.0	20.02
				36	39	1	1	21.0	19.94
				75	0	1	1	21.0	19.94
			16QAM	1	0	1	1	21.0	20.19
				1	37	1	1	21.0	20.29
				1	74	1	1	21.0	20.19
				36	0	2	2	20.0	18.91
				36	19	2	2	20.0	19.07
				36	39	2	2	20.0	19.04
				75	0	2	2	20.0	18.98

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
15	20825	2507.5	QPSK	1	0	MPR is disabled when power reduction is enabled		15.6	13.99
				1	37			15.6	14.00
				1	74			15.6	13.90
				36	0			15.6	13.92
				36	19			15.6	14.04
				36	39			15.6	13.91
				75	0			15.6	14.02
			16QAM	1	0			15.6	13.97
				1	37			15.6	13.91
				1	74			15.6	13.77
				36	0			15.6	13.84
				36	19			15.6	14.04
				36	39			15.6	13.86
				75	0			15.6	13.94
	21100	2535	QPSK	1	0			15.6	14.05
				1	37			15.6	14.30
				1	74			15.6	14.13
				36	0			15.6	13.95
				36	19			15.6	14.08
				36	39			15.6	14.09
				75	0			15.6	14.04
			16QAM	1	0			15.6	14.24
				1	37			15.6	14.38
				1	74			15.6	14.25
				36	0			15.6	14.05
				36	19			15.6	14.15
				36	39			15.6	14.18
				75	0			15.6	14.13
	21375	2652.5	QPSK	1	0			15.6	13.87
				1	37			15.6	13.88
				1	74			15.6	13.79
				36	0			15.6	13.80
				36	19			15.6	13.93
				36	39			15.6	13.88
				75	0			15.6	13.91
			16QAM	1	0			15.6	13.85
				1	37			15.6	13.68
				1	74			15.6	13.63
				36	0			15.6	13.80
				36	19			15.6	13.99
				36	39			15.6	13.89
				75	0			15.6	13.92

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 7, 10 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	20800	2505	QPSK	1	0	0	0	22.0	21.18
				1	24	0	0	22.0	21.21
				1	49	0	0	22.0	21.13
				25	0	1	1	21.0	20.04
				25	12	1	1	21.0	20.07
				25	24	1	1	21.0	19.93
				50	0	1	1	21.0	20.01
			16QAM	1	0	1	1	21.0	20.31
				1	24	1	1	21.0	20.04
				1	49	1	1	21.0	20.10
				25	0	2	2	20.0	19.10
				25	12	2	2	20.0	19.08
				25	24	2	2	20.0	19.05
				50	0	2	2	20.0	19.02
	21100	2535	QPSK	1	0	0	0	22.0	21.49
				1	24	0	0	22.0	21.30
				1	49	0	0	22.0	21.25
				25	0	1	1	21.0	20.16
				25	12	1	1	21.0	20.15
				25	24	1	1	21.0	20.21
				50	0	1	1	21.0	20.15
			16QAM	1	0	1	1	21.0	20.45
				1	24	1	1	21.0	20.59
				1	49	1	1	21.0	20.46
				25	0	2	2	20.0	19.18
				25	12	2	2	20.0	19.29
				25	24	2	2	20.0	19.25
				50	0	2	2	20.0	19.22
	21400	2565	QPSK	1	0	0	0	22.0	21.19
				1	24	0	0	22.0	21.26
				1	49	0	0	22.0	21.13
				25	0	1	1	21.0	20.00
				25	12	1	1	21.0	20.01
				25	24	1	1	21.0	19.99
				50	0	1	1	21.0	19.98
			16QAM	1	0	1	1	21.0	20.40
				1	24	1	1	21.0	20.39
				1	49	1	1	21.0	20.37
				25	0	2	2	20.0	19.06
				25	12	2	2	20.0	19.10
				25	24	2	2	20.0	19.06
				50	0	2	2	20.0	19.05

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	20800	2505	QPSK	1	0	MPR is disabled when power reduction is enabled		15.6	14.08
				1	24			15.6	14.17
				1	49			15.6	14.13
				25	0			15.6	13.99
				25	12			15.6	13.96
				25	24			15.6	13.92
				50	0			15.6	14.04
			16QAM	1	0			15.6	14.26
				1	24			15.6	14.19
				1	49			15.6	14.20
				25	0			15.6	14.04
				25	12			15.6	14.07
				25	24			15.6	13.99
				50	0			15.6	14.07
	21100	2535	QPSK	1	0			15.6	14.04
				1	24			15.6	14.12
				1	49			15.6	14.06
				25	0			15.6	13.97
				25	12			15.6	14.03
				25	24			15.6	14.06
				50	0			15.6	14.10
			16QAM	1	0			15.6	14.22
				1	24			15.6	14.21
				1	49			15.6	14.02
				25	0			15.6	14.01
				25	12			15.6	14.07
				25	24			15.6	14.10
				50	0			15.6	14.07
	21400	2565	QPSK	1	0			15.6	13.95
				1	24			15.6	13.83
				1	49			15.6	13.88
				25	0			15.6	13.80
				25	12			15.6	13.74
				25	24			15.6	13.82
				50	0			15.6	13.89
			16QAM	1	0			15.6	13.95
				1	24			15.6	13.89
				1	49			15.6	14.11
				25	0			15.6	13.84
				25	12			15.6	13.88
				25	24			15.6	13.89
				50	0			15.6	13.93

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 7, 5 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	20775	2502.5	QPSK	1	0	0	0	22.0	21.30
				1	12	0	0	22.0	21.09
				1	24	0	0	22.0	21.17
				12	0	1	1	21.0	20.23
				12	6	1	1	21.0	20.16
				12	11	1	1	21.0	20.12
				25	0	1	1	21.0	20.11
			16QAM	1	0	1	1	21.0	20.48
				1	12	1	1	21.0	20.14
				1	24	1	1	21.0	20.18
				12	0	2	2	20.0	19.16
				12	6	2	2	20.0	19.11
				12	11	2	2	20.0	19.04
				25	0	2	2	20.0	19.00
	21100	2535	QPSK	1	0	0	0	22.0	21.32
				1	12	0	0	22.0	21.30
				1	24	0	0	22.0	21.35
				12	0	1	1	21.0	20.16
				12	6	1	1	21.0	20.18
				12	11	1	1	21.0	20.16
				25	0	1	1	21.0	20.16
			16QAM	1	0	1	1	21.0	20.85
				1	12	1	1	21.0	20.80
				1	24	1	1	21.0	20.78
				12	0	2	2	20.0	19.37
				12	6	2	2	20.0	19.43
				12	11	2	2	20.0	19.39
				25	0	2	2	20.0	19.27
	21425	2567.5	QPSK	1	0	0	0	22.0	21.22
				1	12	0	0	22.0	21.13
				1	24	0	0	22.0	21.18
				12	0	1	1	21.0	19.94
				12	6	1	1	21.0	20.02
				12	11	1	1	21.0	20.01
				25	0	1	1	21.0	19.97
			16QAM	1	0	1	1	21.0	20.63
				1	12	1	1	21.0	20.69
				1	24	1	1	21.0	20.69
				12	0	2	2	20.0	19.16
				12	6	2	2	20.0	19.21
				12	11	2	2	20.0	19.16
				25	0	2	2	20.0	19.06

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	20775	2502.5	QPSK	1	0	MPR is disabled when power reduction is enabled		15.6	14.11
				1	12			15.6	14.00
				1	24			15.6	14.03
				12	0			15.6	13.98
				12	6			15.6	13.93
				12	11			15.6	13.91
				25	0			15.6	13.92
			16QAM	1	0			15.6	14.14
				1	12			15.6	13.95
				1	24			15.6	14.09
				12	0			15.6	14.19
				12	6			15.6	14.10
				12	11			15.6	14.07
				25	0			15.6	14.04
	21100	2535	QPSK	1	0			15.6	14.21
				1	12			15.6	14.22
				1	24			15.6	14.27
				12	0			15.6	14.06
				12	6			15.6	14.06
				12	11			15.6	14.07
				25	0			15.6	14.09
			16QAM	1	0			15.6	14.70
				1	12			15.6	14.22
				1	24			15.6	14.77
				12	0			15.6	14.21
				12	6			15.6	14.25
				12	11			15.6	14.25
				25	0			15.6	14.16
	21425	2567.5	QPSK	1	0			15.6	14.08
				1	12			15.6	13.79
				1	24			15.6	14.07
				12	0			15.6	13.83
				12	6			15.6	13.87
				12	11			15.6	13.84
				25	0			15.6	13.88
			16QAM	1	0			15.6	14.01
				1	12			15.6	13.87
				1	24			15.6	14.03
				12	0			15.6	13.92
				12	6			15.6	13.95
				12	11			15.6	13.91
				25	0			15.6	13.90

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

9.8. LTE Band 12

Target Power for LTE Band 12, QPSK and 16QAM modulations in all bandwidth

Tech	BAND	CH.	Freq. [MHz]	Target Power		Tolerance [dB]
				w/o Power Reduction	w/ Power Reduction	
LTE	BAND12	23060	704	23.00	21.40	+/-1
		23095	707.5			
		23130	711			

Target power indicated above is the nominal value. The measured value shall fall within +/- 1dB of this value.

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

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 (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

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”.

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-
Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.					

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 12, 10 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	23060	704	QPSK	1	0	0	0	24.0	22.87
				1	24	0	0	24.0	22.95
				1	49	0	0	24.0	22.97
				25	0	1	1	23.0	21.77
				25	12	1	1	23.0	21.76
				25	24	1	1	23.0	21.66
				50	0	1	1	23.0	21.76
			16QAM	1	0	1	1	23.0	22.10
				1	24	1	1	23.0	22.00
				1	49	1	1	23.0	21.90
				25	0	2	2	22.0	20.84
				25	12	2	2	22.0	20.88
				25	24	2	2	22.0	20.74
				50	0	2	2	22.0	20.76
	23095	707.5	QPSK	1	0	0	0	24.0	23.00
				1	24	0	0	24.0	22.94
				1	49	0	0	24.0	22.95
				25	0	1	1	23.0	21.75
				25	12	1	1	23.0	21.69
				25	24	1	1	23.0	21.63
				50	0	1	1	23.0	21.74
			16QAM	1	0	1	1	23.0	22.15
				1	24	1	1	23.0	22.10
				1	49	1	1	23.0	22.11
				25	0	2	2	22.0	20.85
				25	12	2	2	22.0	20.84
				25	24	2	2	22.0	20.72
				50	0	2	2	22.0	20.79
	23130	711	QPSK	1	0	0	0	24.0	22.94
				1	24	0	0	24.0	22.88
				1	49	0	0	24.0	22.86
				25	0	1	1	23.0	21.63
				25	12	1	1	23.0	21.69
				25	24	1	1	23.0	21.67
				50	0	1	1	23.0	21.75
			16QAM	1	0	1	1	23.0	22.10
				1	24	1	1	23.0	22.11
				1	49	1	1	23.0	21.97
				25	0	2	2	22.0	20.76
				25	12	2	2	22.0	20.80
				25	24	2	2	22.0	20.76
				50	0	2	2	22.0	20.78

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	23060	704	QPSK	1	0	MPR is disabled when power reduction is enabled		22.4	21.49
				1	24			22.4	21.62
				1	49			22.4	21.59
				25	0			22.4	21.39
				25	12			22.4	21.38
				25	24			22.4	21.33
				50	0			22.4	21.47
			16QAM	1	0			22.4	21.70
				1	24			22.4	21.66
				1	49			22.4	21.66
				25	0			22.4	20.69
				25	12			22.4	20.76
				25	24			22.4	20.65
				50	0			22.4	20.64
	23095	707.5	QPSK	1	0			22.4	21.48
				1	24			22.4	21.57
				1	49			22.4	21.47
				25	0			22.4	21.40
				25	12			22.4	21.31
				25	24			22.4	21.25
				50	0			22.4	21.43
			16QAM	1	0			22.4	21.61
				1	24			22.4	21.57
				1	49			22.4	21.61
				25	0			22.4	20.65
				25	12			22.4	20.65
				25	24			22.4	20.51
				50	0			22.4	20.58
	23130	711	QPSK	1	0			22.4	21.37
				1	24			22.4	21.54
				1	49			22.4	21.33
				25	0			22.4	21.29
				25	12			22.4	21.26
				25	24			22.4	21.24
				50	0			22.4	21.41
			16QAM	1	0			22.4	21.59
				1	24			22.4	21.48
				1	49			22.4	21.56
				25	0			22.4	20.59
				25	12			22.4	20.61
				25	24			22.4	20.56
				50	0			22.4	20.61

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 12, 5 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	23035	701.5	QPSK	1	0	0	0	24.0	23.01
				1	12	0	0	24.0	22.94
				1	24	0	0	24.0	22.96
				12	0	1	1	23.0	21.83
				12	6	1	1	23.0	21.90
				12	11	1	1	23.0	21.82
				25	0	1	1	23.0	21.93
			16QAM	1	0	1	1	23.0	22.08
				1	12	1	1	23.0	21.82
				1	24	1	1	23.0	21.99
				12	0	2	2	22.0	20.87
				12	6	2	2	22.0	20.92
				12	11	2	2	22.0	20.91
				25	0	2	2	22.0	20.88
	23095	707.5	QPSK	1	0	0	0	24.0	22.94
				1	12	0	0	24.0	22.66
				1	24	0	0	24.0	22.73
				12	0	1	1	23.0	21.70
				12	6	1	1	23.0	21.72
				12	11	1	1	23.0	21.70
				25	0	1	1	23.0	21.67
			16QAM	1	0	1	1	23.0	22.43
				1	12	1	1	23.0	22.30
				1	24	1	1	23.0	22.29
				12	0	2	2	22.0	20.84
				12	6	2	2	22.0	20.89
				12	11	2	2	22.0	20.81
				25	0	2	2	22.0	20.76
	23155	713.5	QPSK	1	0	0	0	24.0	22.82
				1	12	0	0	24.0	22.57
				1	24	0	0	24.0	22.77
				12	0	1	1	23.0	21.68
				12	6	1	1	23.0	21.58
				12	11	1	1	23.0	21.59
				25	0	1	1	23.0	21.76
			16QAM	1	0	1	1	23.0	22.25
				1	12	1	1	23.0	22.27
				1	24	1	1	23.0	22.30
				12	0	2	2	22.0	20.79
				12	6	2	2	22.0	20.79
				12	11	2	2	22.0	20.79
				25	0	2	2	22.0	20.80

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	23035	701.5	QPSK	1	0	MPR is disabled when power reduction is enabled		22.4	21.73
				1	12			22.4	21.71
				1	24			22.4	21.59
				12	0			22.4	21.49
				12	6			22.4	21.44
				12	11			22.4	21.43
				25	0			22.4	21.42
			16QAM	1	0			22.4	21.64
				1	12			22.4	21.53
				1	24			22.4	21.65
				12	0			22.4	20.76
				12	6			22.4	20.79
				12	11			22.4	20.74
				25	0			22.4	20.73
	23095	707.5	QPSK	1	0			22.4	21.52
				1	12			22.4	21.53
				1	24			22.4	21.50
				12	0			22.4	21.34
				12	6			22.4	21.36
				12	11			22.4	21.32
				25	0			22.4	21.29
			16QAM	1	0			22.4	21.60
				1	12			22.4	21.42
				1	24			22.4	21.50
				12	0			22.4	20.66
				12	6			22.4	20.69
				12	11			22.4	20.67
				25	0			22.4	20.54
	23155	713.5	QPSK	1	0			22.4	21.53
				1	12			22.4	21.49
				1	24			22.4	21.45
				12	0			22.4	21.24
				12	6			22.4	21.25
				12	11			22.4	21.26
				25	0			22.4	21.26
			16QAM	1	0			22.4	21.52
				1	12			22.4	21.35
				1	24			22.4	21.45
				12	0			22.4	20.61
				12	6			22.4	20.58
				12	11			22.4	20.56
				25	0			22.4	20.56

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 12, 3 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
3	23025	700.5	QPSK	1	0	0	0	24.0	23.00
				1	7	0	0	24.0	23.10
				1	14	0	0	24.0	23.01
				8	0	1	1	23.0	21.86
				8	4	1	1	23.0	21.83
				8	7	1	1	23.0	21.72
				15	0	1	1	23.0	21.94
			16QAM	1	0	1	1	23.0	21.90
				1	7	1	1	23.0	22.08
				1	14	1	1	23.0	21.90
				8	0	2	2	22.0	20.99
				8	4	2	2	22.0	20.94
				8	7	2	2	22.0	20.82
				15	0	2	2	22.0	20.93
	23095	707.5	QPSK	1	0	0	0	24.0	22.91
				1	7	0	0	24.0	22.99
				1	14	0	0	24.0	22.86
				8	0	1	1	23.0	21.71
				8	4	1	1	23.0	21.71
				8	7	1	1	23.0	21.63
				15	0	1	1	23.0	21.71
			16QAM	1	0	1	1	23.0	22.38
				1	7	1	1	23.0	22.25
				1	14	1	1	23.0	22.22
				8	0	2	2	22.0	20.87
				8	4	2	2	22.0	20.84
				8	7	2	2	22.0	20.80
				15	0	2	2	22.0	20.78
	23165	714.5	QPSK	1	0	0	0	24.0	22.80
				1	7	0	0	24.0	22.88
				1	14	0	0	24.0	22.87
				8	0	1	1	23.0	21.65
				8	4	1	1	23.0	21.66
				8	7	1	1	23.0	21.67
				15	0	1	1	23.0	21.65
			16QAM	1	0	1	1	23.0	22.38
				1	7	1	1	23.0	22.17
				1	14	1	1	23.0	22.28
				8	0	2	2	22.0	20.84
				8	4	2	2	22.0	20.80
				8	7	2	2	22.0	20.81
				15	0	2	2	22.0	20.73

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
3	23025	700.5	QPSK	1	0	MPR is disabled when power reduction is enabled		22.4	21.63
				1	7			22.4	21.72
				1	14			22.4	21.69
				8	0			22.4	21.56
				8	4			22.4	21.53
				8	7			22.4	21.40
				15	0			22.4	21.66
			16QAM	1	0			22.4	21.59
				1	7			22.4	21.70
				1	14			22.4	21.58
				8	0			22.4	20.87
				8	4			22.4	20.85
				8	7			22.4	20.77
				15	0			22.4	20.82
	23095	707.5	QPSK	1	0			22.4	21.45
				1	7			22.4	21.44
				1	14			22.4	21.43
				8	0			22.4	21.36
				8	4			22.4	21.37
				8	7			22.4	21.32
				15	0			22.4	21.40
			16QAM	1	0			22.4	21.49
				1	7			22.4	21.47
				1	14			22.4	21.37
				8	0			22.4	20.72
				8	4			22.4	20.71
				8	7			22.4	20.68
				15	0			22.4	20.63
	23165	714.5	QPSK	1	0			22.4	21.44
				1	7			22.4	21.31
				1	14			22.4	21.45
				8	0			22.4	21.31
				8	4			22.4	21.29
				8	7			22.4	21.32
				15	0			22.4	21.36
			16QAM	1	0			22.4	21.39
				1	7			22.4	21.44
				1	14			22.4	21.29
				8	0			22.4	20.62
				8	4			22.4	20.64
				8	7			22.4	20.68
				15	0			22.4	20.57

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 12, 1.4 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
1.4	23017	699.7	QPSK	1	0	0	0	24.0	22.98
				1	2	0	0	24.0	23.07
				1	5	0	0	24.0	23.10
				3	0	0	0	24.0	22.86
				3	1	0	0	24.0	22.87
				3	3	0	0	24.0	22.83
				6	0	1	1	23.0	21.80
			16QAM	1	0	1	1	23.0	22.11
				1	2	1	1	23.0	22.12
				1	5	1	1	23.0	22.34
				3	0	1	1	23.0	21.90
				3	1	1	1	23.0	21.86
				3	3	1	1	23.0	21.93
				6	0	2	2	22.0	20.92
	23095	707.5	QPSK	1	0	0	0	24.0	22.98
				1	2	0	0	24.0	22.88
				1	5	0	0	24.0	23.06
				3	0	0	0	24.0	22.78
				3	1	0	0	24.0	22.76
				3	3	0	0	24.0	22.76
				6	0	1	1	23.0	21.69
			16QAM	1	0	1	1	23.0	22.18
				1	2	1	1	23.0	22.28
				1	5	1	1	23.0	22.17
				3	0	1	1	23.0	21.87
				3	1	1	1	23.0	21.89
				3	3	1	1	23.0	21.88
				6	0	2	2	22.0	20.67
	23173	715.3	QPSK	1	0	0	0	24.0	22.98
				1	2	0	0	24.0	22.85
				1	5	0	0	24.0	22.92
				3	0	0	0	24.0	22.72
				3	1	0	0	24.0	22.75
				3	3	0	0	24.0	22.61
				6	0	1	1	23.0	21.55
			16QAM	1	0	1	1	23.0	22.16
				1	2	1	1	23.0	22.19
				1	5	1	1	23.0	22.08
				3	0	1	1	23.0	21.86
				3	1	1	1	23.0	21.91
				3	3	1	1	23.0	21.80
				6	0	2	2	22.0	20.60

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
1.4	23017	699.7	QPSK	1	0	MPR is disabled when power reduction is enabled		22.4	21.72
				1	2			22.4	21.74
				1	5			22.4	21.79
				3	0			22.4	21.47
				3	1			22.4	21.48
				3	3			22.4	21.44
				6	0			22.4	21.45
			16QAM	1	0			22.4	21.79
				1	2			22.4	21.86
				1	5			22.4	21.99
				3	0			22.4	21.53
				3	1			22.4	21.54
				3	3			22.4	21.56
				6	0			22.4	20.77
	23095	707.5	QPSK	1	0			22.4	21.50
				1	2			22.4	21.58
				1	5			22.4	21.52
				3	0			22.4	21.36
				3	1			22.4	21.38
				3	3			22.4	21.29
				6	0			22.4	21.30
			16QAM	1	0			22.4	21.64
				1	2			22.4	21.65
				1	5			22.4	21.75
				3	0			22.4	21.38
				3	1			22.4	21.46
				3	3			22.4	21.41
				6	0			22.4	20.68
	23173	715.3	QPSK	1	0			22.4	21.49
				1	2			22.4	21.58
				1	5			22.4	21.34
				3	0			22.4	21.20
				3	1			22.4	21.32
				3	3			22.4	21.18
				6	0			22.4	21.21
			16QAM	1	0			22.4	21.57
				1	2			22.4	21.79
				1	5			22.4	21.59
				3	0			22.4	21.33
				3	1			22.4	21.35
				3	3			22.4	21.27
				6	0			22.4	20.59

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

9.9. LTE Band 13

Target Power for LTE Band 13, QPSK and 16QAM modulations in all bandwidth

Tech	BAND	CH.	Freq. [MHz]	Target Power w/o Power Reduction	Target Power w/ Power Reduction	Tolerance [dB]
LTE	BAND13	23205	779.5	23.00	19.80	+/-1
		23230	782			
		23225	784.5			

Target power indicated above is the nominal value. The measured value shall fall within +/- 1dB of this value.

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

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 (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

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”.

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-
Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.					

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 13, 10 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	23230	782	QPSK	1	0	0	0	24.0	22.70
				1	24	0	0	24.0	22.56
				1	49	0	0	24.0	22.52
				25	0	1	1	23.0	21.44
				25	12	1	1	23.0	21.48
				25	24	1	1	23.0	21.41
				50	0	1	1	23.0	21.46
			16QAM	1	0	1	1	23.0	21.83
				1	24	1	1	23.0	21.62
				1	49	1	1	23.0	21.50
				25	0	2	2	22.0	20.46
				25	12	2	2	22.0	20.59
				25	24	2	2	22.0	20.46
				50	0	2	2	22.0	20.41

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	23230	782	QPSK	1	0	MPR is disabled when power reduction is enabled		20.8	20.14
				1	24			20.8	19.99
				1	49			20.8	19.91
				25	0			20.8	20.05
				25	12			20.8	20.03
				25	24			20.8	19.97
				50	0			20.8	19.99
			16QAM	1	0			20.8	20.23
				1	24			20.8	20.20
				1	49			20.8	20.32
				25	0			20.8	20.06
				25	12			20.8	20.14
				25	24			20.8	20.03
				50	0			20.8	20.03

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 13, 5 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	23205	779.5	QPSK	1	0	0	0	24.0	22.77
				1	12	0	0	24.0	22.42
				1	24	0	0	24.0	22.58
				12	0	1	1	23.0	21.40
				12	6	1	1	23.0	21.44
				12	11	1	1	23.0	21.39
				25	0	1	1	23.0	21.51
			16QAM	1	0	1	1	23.0	21.77
				1	12	1	1	23.0	21.35
				1	24	1	1	23.0	21.53
				12	0	2	2	22.0	20.46
				12	6	2	2	22.0	20.55
				12	11	2	2	22.0	20.44
				25	0	2	2	22.0	20.40
	23230	782	QPSK	1	0	0	0	24.0	22.52
				1	12	0	0	24.0	22.38
				1	24	0	0	24.0	22.39
				12	0	1	1	23.0	21.41
				12	6	1	1	23.0	21.39
				12	11	1	1	23.0	21.40
				25	0	1	1	23.0	21.45
			16QAM	1	0	1	1	23.0	21.98
				1	12	1	1	23.0	21.94
				1	24	1	1	23.0	22.02
				12	0	2	2	22.0	20.51
				12	6	2	2	22.0	20.55
				12	11	2	2	22.0	20.63
				25	0	2	2	22.0	20.54
	23255	784.5	QPSK	1	0	0	0	24.0	22.55
				1	12	0	0	24.0	22.49
				1	24	0	0	24.0	22.54
				12	0	1	1	23.0	21.42
				12	6	1	1	23.0	21.54
				12	11	1	1	23.0	21.44
				25	0	1	1	23.0	21.50
			16QAM	1	0	1	1	23.0	21.99
				1	12	1	1	23.0	21.94
				1	24	1	1	23.0	21.92
				12	0	2	2	22.0	20.65
				12	6	2	2	22.0	20.67
				12	11	2	2	22.0	20.61
				25	0	2	2	22.0	20.54

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	23205	779.5	QPSK	1	0	MPR is disabled when power reduction is enabled		20.8	20.20
				1	12			20.8	19.94
				1	24			20.8	19.97
				12	0			20.8	19.89
				12	6			20.8	19.95
				12	11			20.8	19.86
				25	0			20.8	19.95
			16QAM	1	0			20.8	20.26
				1	12			20.8	19.98
				1	24			20.8	20.12
				12	0			20.8	20.08
				12	6			20.8	20.07
				12	11			20.8	20.00
				25	0			20.8	20.01
	23230	782	QPSK	1	0			20.8	20.02
				1	12			20.8	19.91
				1	24			20.8	19.97
				12	0			20.8	19.88
				12	6			20.8	19.92
				12	11			20.8	19.94
				25	0			20.8	19.92
			16QAM	1	0			20.8	20.07
				1	12			20.8	19.86
				1	24			20.8	20.01
				12	0			20.8	19.95
				12	6			20.8	20.01
				12	11			20.8	20.02
				25	0			20.8	19.96
	23255	784.5	QPSK	1	0			20.8	20.04
				1	12			20.8	20.10
				1	24			20.8	20.07
				12	0			20.8	19.97
				12	6			20.8	19.98
				12	11			20.8	19.91
				25	0			20.8	19.97
			16QAM	1	0			20.8	20.19
				1	12			20.8	19.99
				1	24			20.8	20.21
				12	0			20.8	20.08
				12	6			20.8	20.08
				12	11			20.8	20.03
				25	0			20.8	20.01

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

9.10. LTE Band 25

Target Power for LTE Band 25, QPSK and 16QAM modulations in all bandwidth

Tech	BAND	CH.	Freq. [MHz]	Target Power		Tolerance [dB]
				w/o Power Reduction	w/ Power Reduction	
LTE	BAND25	26140	1860	23.00	16.90	+/-1
		26365	1882.5			
		26590	1905			

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

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 (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

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”.

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-
Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.					

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 25, 20 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
20	26140	1860	QPSK	1	0	0	0	24.0	22.37
				1	49	0	0	24.0	22.61
				1	99	0	0	24.0	22.22
				50	0	1	1	23.0	21.36
				50	24	1	1	23.0	21.49
				50	49	1	1	23.0	21.42
				100	0	1	1	23.0	21.43
			16QAM	1	0	1	1	23.0	21.93
				1	49	1	1	23.0	22.00
				1	99	1	1	23.0	21.88
				50	0	2	2	22.0	20.52
				50	24	2	2	22.0	20.61
				50	49	2	2	22.0	20.48
				100	0	2	2	22.0	20.39
	26365	1882.5	QPSK	1	0	0	0	24.0	22.48
				1	49	0	0	24.0	22.47
				1	99	0	0	24.0	22.29
				50	0	1	1	23.0	21.55
				50	24	1	1	23.0	21.58
				50	49	1	1	23.0	21.56
				100	0	1	1	23.0	21.49
			16QAM	1	0	1	1	23.0	21.95
				1	49	1	1	23.0	21.94
				1	99	1	1	23.0	21.75
				50	0	2	2	22.0	20.59
				50	24	2	2	22.0	20.64
				50	49	2	2	22.0	20.64
				100	0	2	2	22.0	20.52
	26590	1905	QPSK	1	0	0	0	24.0	22.59
				1	49	0	0	24.0	22.73
				1	99	0	0	24.0	22.29
				50	0	1	1	23.0	21.60
				50	24	1	1	23.0	21.69
				50	49	1	1	23.0	21.53
				100	0	1	1	23.0	21.54
			16QAM	1	0	1	1	23.0	22.02
				1	49	1	1	23.0	22.13
				1	99	1	1	23.0	21.68
				50	0	2	2	22.0	20.54
				50	24	2	2	22.0	20.61
				50	49	2	2	22.0	20.45
				100	0	2	2	22.0	20.59

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
20	26140	1860	QPSK	1	0	MPR is disabled when power reduction is enabled		17.9	16.61
				1	49			17.9	16.67
				1	99			17.9	16.60
				50	0			17.9	16.52
				50	24			17.9	16.59
				50	49			17.9	16.61
				100	0			17.9	16.51
			16QAM	1	0			17.9	16.79
				1	49			17.9	17.14
				1	99			17.9	16.74
				50	0			17.9	16.54
				50	24			17.9	16.64
				50	49			17.9	16.58
				100	0			17.9	16.48
	26365	1882.5	QPSK	1	0			17.9	16.92
				1	49			17.9	16.66
				1	99			17.9	16.73
				50	0			17.9	16.55
				50	24			17.9	16.57
				50	49			17.9	16.61
				100	0			17.9	16.52
			16QAM	1	0			17.9	16.87
				1	49			17.9	17.02
				1	99			17.9	16.84
				50	0			17.9	16.62
				50	24			17.9	16.60
				50	49			17.9	16.64
				100	0			17.9	16.52
	26590	1905	QPSK	1	0			17.9	16.56
				1	49			17.9	16.80
				1	99			17.9	16.31
				50	0			17.9	16.91
				50	24			17.9	16.73
				50	49			17.9	16.38
				100	0			17.9	16.64
			16QAM	1	0			17.9	16.96
				1	49			17.9	17.09
				1	99			17.9	16.65
				50	0			17.9	16.73
				50	24			17.9	16.79
				50	49			17.9	16.61
				100	0			17.9	16.67

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 25, 15 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
15	26115	1857.5	QPSK	1	0	0	0	24.0	22.56
				1	37	0	0	24.0	22.39
				1	74	0	0	24.0	22.50
				36	0	1	1	23.0	21.37
				36	19	1	1	23.0	21.52
				36	39	1	1	23.0	21.39
				75	0	1	1	23.0	21.43
			16QAM	1	0	1	1	23.0	21.50
				1	37	1	1	23.0	21.56
				1	74	1	1	23.0	21.31
				36	0	2	2	22.0	20.43
				36	19	2	2	22.0	20.47
				36	39	2	2	22.0	20.38
				75	0	2	2	22.0	20.38
	26365	1882.5	QPSK	1	0	0	0	24.0	22.50
				1	37	0	0	24.0	22.58
				1	74	0	0	24.0	22.32
				36	0	1	1	23.0	21.35
				36	19	1	1	23.0	21.48
				36	39	1	1	23.0	21.41
				75	0	1	1	23.0	21.39
			16QAM	1	0	1	1	23.0	21.79
				1	37	1	1	23.0	21.72
				1	74	1	1	23.0	21.62
				36	0	2	2	22.0	20.45
				36	19	2	2	22.0	20.57
				36	39	2	2	22.0	20.51
				75	0	2	2	22.0	20.49
	26615	1907.5	QPSK	1	0	0	0	24.0	22.56
				1	37	0	0	24.0	22.53
				1	74	0	0	24.0	22.43
				36	0	1	1	23.0	21.56
				36	19	1	1	23.0	21.53
				36	39	1	1	23.0	21.41
				75	0	1	1	23.0	21.55
			16QAM	1	0	1	1	23.0	21.85
				1	37	1	1	23.0	21.81
				1	74	1	1	23.0	21.60
				36	0	2	2	22.0	20.55
				36	19	2	2	22.0	20.54
				36	39	2	2	22.0	20.44
				75	0	2	2	22.0	20.53

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
15	26115	1857.5	QPSK	1	0	MPR is disabled when power reduction is enabled		17.9	16.61
				1	37			17.9	16.70
				1	74			17.9	16.40
				36	0			17.9	16.52
				36	19			17.9	16.66
				36	39			17.9	16.47
				75	0			17.9	16.57
			16QAM	1	0			17.9	17.03
				1	37			17.9	17.05
				1	74			17.9	16.81
				36	0			17.9	16.54
				36	19			17.9	16.62
				36	39			17.9	16.52
				75	0			17.9	16.53
	26365	1882.5	QPSK	1	0			17.9	16.33
				1	37			17.9	16.76
				1	74			17.9	16.14
				36	0			17.9	16.35
				36	19			17.9	16.57
				36	39			17.9	16.53
				75	0			17.9	16.45
			16QAM	1	0			17.9	16.14
				1	37			17.9	16.27
				1	74			17.9	16.17
				36	0			17.9	16.48
				36	19			17.9	16.59
				36	39			17.9	16.57
				75	0			17.9	16.55
	26615	1907.5	QPSK	1	0			17.9	16.49
				1	37			17.9	16.57
				1	74			17.9	16.40
				36	0			17.9	16.63
				36	19			17.9	16.57
				36	39			17.9	16.49
				75	0			17.9	16.60
			16QAM	1	0			17.9	16.29
				1	37			17.9	16.16
				1	74			17.9	16.27
				36	0			17.9	16.70
				36	19			17.9	16.65
				36	39			17.9	16.51
				75	0			17.9	16.63

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 25, 10 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	26090	1855	QPSK	1	0	0	0	24.0	22.39
				1	24	0	0	24.0	22.43
				1	49	0	0	24.0	22.24
				25	0	1	1	23.0	21.39
				25	12	1	1	23.0	21.42
				25	24	1	1	23.0	21.46
				50	0	1	1	23.0	21.45
			16QAM	1	0	1	1	23.0	21.67
				1	24	1	1	23.0	21.67
				1	49	1	1	23.0	21.23
				25	0	2	2	22.0	20.37
				25	12	2	2	22.0	20.43
				25	24	2	2	22.0	20.46
				50	0	2	2	22.0	20.35
	26365	1882.5	QPSK	1	0	0	0	24.0	22.46
				1	24	0	0	24.0	22.55
				1	49	0	0	24.0	22.54
				25	0	1	1	23.0	21.33
				25	12	1	1	23.0	21.35
				25	24	1	1	23.0	21.39
				50	0	1	1	23.0	21.36
			16QAM	1	0	1	1	23.0	21.74
				1	24	1	1	23.0	21.76
				1	49	1	1	23.0	21.84
				25	0	2	2	22.0	20.40
				25	12	2	2	22.0	20.47
				25	24	2	2	22.0	20.43
				50	0	2	2	22.0	20.42
	26640	1910	QPSK	1	0	0	0	24.0	22.65
				1	24	0	0	24.0	22.50
				1	49	0	0	24.0	22.44
				25	0	1	1	23.0	21.38
				25	12	1	1	23.0	21.35
				25	24	1	1	23.0	21.37
				50	0	1	1	23.0	21.29
			16QAM	1	0	1	1	23.0	21.79
				1	24	1	1	23.0	21.64
				1	49	1	1	23.0	21.68
				25	0	2	2	22.0	20.37
				25	12	2	2	22.0	20.45
				25	24	2	2	22.0	20.35
				50	0	2	2	22.0	20.40

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	26090	1855	QPSK	1	0	MPR is disabled when power reduction is enabled		17.9	16.85
				1	24			17.9	16.40
				1	49			17.9	16.36
				25	0			17.9	16.48
				25	12			17.9	16.46
				25	24			17.9	16.45
				50	0			17.9	16.34
			16QAM	1	0			17.9	16.66
				1	24			17.9	16.63
				1	49			17.9	16.36
				25	0			17.9	16.45
				25	12			17.9	16.48
				25	24			17.9	16.53
				50	0			17.9	16.45
	26365	1882.5	QPSK	1	0			17.9	16.34
				1	24			17.9	16.51
				1	49			17.9	16.44
				25	0			17.9	16.47
				25	12			17.9	16.46
				25	24			17.9	16.46
				50	0			17.9	16.42
			16QAM	1	0			17.9	16.58
				1	24			17.9	16.63
				1	49			17.9	16.42
				25	0			17.9	16.42
				25	12			17.9	16.51
				25	24			17.9	16.55
				50	0			17.9	16.44
	26640	1910	QPSK	1	0			17.9	16.62
				1	24			17.9	16.67
				1	49			17.9	16.55
				25	0			17.9	16.41
				25	12			17.9	16.43
				25	24			17.9	16.42
				50	0			17.9	16.39
			16QAM	1	0			17.9	16.80
				1	24			17.9	16.78
				1	49			17.9	16.73
				25	0			17.9	16.47
				25	12			17.9	16.50
				25	24			17.9	16.45
				50	0			17.9	16.43

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 25, 5 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	26065	1852.5	QPSK	1	0	0	0	24.0	22.70
				1	12	0	0	24.0	22.46
				1	24	0	0	24.0	22.56
				12	0	1	1	23.0	21.45
				12	6	1	1	23.0	21.47
				12	11	1	1	23.0	21.46
				25	0	1	1	23.0	21.43
			16QAM	1	0	1	1	23.0	21.67
				1	12	1	1	23.0	21.68
				1	24	1	1	23.0	21.68
				12	0	2	2	22.0	20.55
				12	6	2	2	22.0	20.54
				12	11	2	2	22.0	20.57
				25	0	2	2	22.0	20.42
	26365	1882.5	QPSK	1	0	0	0	24.0	22.46
				1	12	0	0	24.0	22.53
				1	24	0	0	24.0	22.52
				12	0	1	1	23.0	21.35
				12	6	1	1	23.0	21.42
				12	11	1	1	23.0	21.42
				25	0	1	1	23.0	21.40
			16QAM	1	0	1	1	23.0	21.95
				1	12	1	1	23.0	21.98
				1	24	1	1	23.0	21.96
				12	0	2	2	22.0	20.61
				12	6	2	2	22.0	20.66
				12	11	2	2	22.0	20.61
				25	0	2	2	22.0	20.51
	26665	1912.5	QPSK	1	0	0	0	24.0	22.52
				1	12	0	0	24.0	22.47
				1	24	0	0	24.0	22.44
				12	0	1	1	23.0	21.32
				12	6	1	1	23.0	21.29
				12	11	1	1	23.0	21.36
				25	0	1	1	23.0	21.31
			16QAM	1	0	1	1	23.0	21.97
				1	12	1	1	23.0	21.97
				1	24	1	1	23.0	21.97
				12	0	2	2	22.0	20.48
				12	6	2	2	22.0	20.44
				12	11	2	2	22.0	20.49
				25	0	2	2	22.0	20.35

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	26065	1852.5	QPSK	1	0	MPR is disabled when power reduction is enabled		17.9	16.61
				1	12			17.9	16.46
				1	24			17.9	16.53
				12	0			17.9	16.46
				12	6			17.9	16.44
				12	11			17.9	16.45
				25	0			17.9	16.50
			16QAM	1	0			17.9	16.77
				1	12			17.9	16.63
				1	24			17.9	16.62
				12	0			17.9	16.57
				12	6			17.9	16.52
				12	11			17.9	16.56
				25	0			17.9	16.43
	26365	1882.5	QPSK	1	0			17.9	16.77
				1	12			17.9	16.53
				1	24			17.9	16.67
				12	0			17.9	16.45
				12	6			17.9	16.49
				12	11			17.9	16.49
				25	0			17.9	16.44
			16QAM	1	0			17.9	16.69
				1	12			17.9	16.56
				1	24			17.9	16.75
				12	0			17.9	16.55
				12	6			17.9	16.59
				12	11			17.9	16.59
				25	0			17.9	16.45
	26665	1912.5	QPSK	1	0			17.9	16.49
				1	12			17.9	16.38
				1	24			17.9	16.48
				12	0			17.9	16.39
				12	6			17.9	16.38
				12	11			17.9	16.37
				25	0			17.9	16.36
			16QAM	1	0			17.9	16.64
				1	12			17.9	16.35
				1	24			17.9	16.54
				12	0			17.9	16.47
				12	6			17.9	16.45
				12	11			17.9	16.47
				25	0			17.9	16.33

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 25, 3 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
3	26055	1851.5	QPSK	1	0	0	0	24.0	22.48
				1	7	0	0	24.0	22.54
				1	14	0	0	24.0	22.53
				8	0	1	1	23.0	21.53
				8	4	1	1	23.0	21.60
				8	7	1	1	23.0	21.35
				15	0	1	1	23.0	21.31
			16QAM	1	0	1	1	23.0	21.56
				1	7	1	1	23.0	21.58
				1	14	1	1	23.0	21.48
				8	0	2	2	22.0	20.60
				8	4	2	2	22.0	20.63
				8	7	2	2	22.0	20.51
				15	0	2	2	22.0	20.42
	26365	1882.5	QPSK	1	0	0	0	24.0	22.70
				1	7	0	0	24.0	22.69
				1	14	0	0	24.0	22.64
				8	0	1	1	23.0	21.34
				8	4	1	1	23.0	21.38
				8	7	1	1	23.0	21.37
				15	0	1	1	23.0	21.38
			16QAM	1	0	1	1	23.0	21.85
				1	7	1	1	23.0	21.85
				1	14	1	1	23.0	21.89
				8	0	2	2	22.0	20.45
				8	4	2	2	22.0	20.49
				8	7	2	2	22.0	20.50
				15	0	2	2	22.0	20.48
	26675	1913.5	QPSK	1	0	0	0	24.0	22.57
				1	7	0	0	24.0	22.53
				1	14	0	0	24.0	22.47
				8	0	1	1	23.0	21.37
				8	4	1	1	23.0	21.34
				8	7	1	1	23.0	21.21
				15	0	1	1	23.0	21.25
			16QAM	1	0	1	1	23.0	21.79
				1	7	1	1	23.0	21.74
				1	14	1	1	23.0	21.77
				8	0	2	2	22.0	20.35
				8	4	2	2	22.0	20.29
				8	7	2	2	22.0	20.26
				15	0	2	2	22.0	20.28

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
3	26055	1851.5	QPSK	1	0	MPR is disabled when power reduction is enabled		17.9	16.38
				1	7			17.9	16.61
				1	14			17.9	16.25
				8	0			17.9	16.65
				8	4			17.9	16.61
				8	7			17.9	16.48
				15	0			17.9	16.40
			16QAM	1	0			17.9	16.51
				1	7			17.9	16.44
				1	14			17.9	16.48
				8	0			17.9	16.70
				8	4			17.9	16.75
				8	7			17.9	16.62
				15	0			17.9	16.45
	26365	1882.5	QPSK	1	0			17.9	16.38
				1	7			17.9	16.48
				1	14			17.9	16.50
				8	0			17.9	16.44
				8	4			17.9	16.52
				8	7			17.9	16.55
				15	0			17.9	16.46
			16QAM	1	0			17.9	16.59
				1	7			17.9	16.53
				1	14			17.9	16.50
				8	0			17.9	16.61
				8	4			17.9	16.65
				8	7			17.9	16.71
				15	0			17.9	16.55
	26675	1913.5	QPSK	1	0			17.9	16.39
				1	7			17.9	16.59
				1	14			17.9	16.40
				8	0			17.9	16.31
				8	4			17.9	16.29
				8	7			17.9	16.24
				15	0			17.9	16.27
			16QAM	1	0			17.9	16.75
				1	7			17.9	16.83
				1	14			17.9	16.79
				8	0			17.9	16.40
				8	4			17.9	16.36
				8	7			17.9	16.30
				15	0			17.9	16.33

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 25, 1.4 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
1.4	26047	1850.7	QPSK	1	0	0	0	24.0	22.62
				1	2	0	0	24.0	22.71
				1	5	0	0	24.0	22.54
				3	0	0	0	24.0	22.38
				3	1	0	0	24.0	22.46
				3	3	0	0	24.0	22.28
				6	0	1	1	23.0	21.32
			16QAM	1	0	1	1	23.0	21.61
				1	2	1	1	23.0	21.74
				1	5	1	1	23.0	21.62
				3	0	1	1	23.0	21.47
				3	1	1	1	23.0	21.58
				3	3	1	1	23.0	21.46
				6	0	2	2	22.0	20.52
	26365	1882.5	QPSK	1	0	0	0	24.0	22.48
				1	2	0	0	24.0	22.44
				1	5	0	0	24.0	22.49
				3	0	0	0	24.0	22.35
				3	1	0	0	24.0	22.39
				3	3	0	0	24.0	22.35
				6	0	1	1	23.0	21.30
			16QAM	1	0	1	1	23.0	21.76
				1	2	1	1	23.0	21.95
				1	5	1	1	23.0	21.72
				3	0	1	1	23.0	21.61
				3	1	1	1	23.0	21.68
				3	3	1	1	23.0	21.58
				6	0	2	2	22.0	20.25
	26683	1914.3	QPSK	1	0	0	0	24.0	22.32
				1	2	0	0	24.0	22.23
				1	5	0	0	24.0	22.45
				3	0	0	0	24.0	22.22
				3	1	0	0	24.0	22.21
				3	3	0	0	24.0	22.29
				6	0	1	1	23.0	21.17
			16QAM	1	0	1	1	23.0	21.54
				1	2	1	1	23.0	21.70
				1	5	1	1	23.0	21.58
				3	0	1	1	23.0	21.50
				3	1	1	1	23.0	21.50
				3	3	1	1	23.0	21.55
				6	0	2	2	22.0	20.14

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
1.4	26047	1850.7	QPSK	1	0	MPR is disabled when power reduction is enabled		17.9	16.70
				1	2			17.9	16.61
				1	5			17.9	16.71
				3	0			17.9	16.28
				3	1			17.9	16.33
				3	3			17.9	16.27
				6	0			17.9	16.37
			16QAM	1	0			17.9	16.71
				1	2			17.9	16.61
				1	5			17.9	16.82
				3	0			17.9	16.56
				3	1			17.9	16.62
				3	3			17.9	16.54
				6	0			17.9	16.61
	26365	1882.5	QPSK	1	0			17.9	16.62
				1	2			17.9	16.61
				1	5			17.9	16.65
				3	0			17.9	16.59
				3	1			17.9	16.58
				3	3			17.9	16.40
				6	0			17.9	16.32
			16QAM	1	0			17.9	16.74
				1	2			17.9	17.05
				1	5			17.9	16.74
				3	0			17.9	16.64
				3	1			17.9	16.66
				3	3			17.9	16.64
				6	0			17.9	16.27
	26683	1914.3	QPSK	1	0			17.9	16.40
				1	2			17.9	16.42
				1	5			17.9	16.36
				3	0			17.9	16.31
				3	1			17.9	16.30
				3	3			17.9	16.26
				6	0			17.9	16.29
			16QAM	1	0			17.9	16.50
				1	2			17.9	16.53
				1	5			17.9	16.56
				3	0			17.9	16.40
				3	1			17.9	16.39
				3	3			17.9	16.38
				6	0			17.9	16.44

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

9.11. LTE Band 26

Target Power for LTE Band 26, QPSK and 16QAM modulations in all bandwidth

Tech	BAND	CH.	Freq. [MHz]	Target Power w/o Power Reduction	Target Power w/ Power Reduction	Tolerance [dB]
LTE	BAND26	26765	821.5	23.00	18.00	+/-1
		26865	831.5			
		26965	841.5			

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

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 (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

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”.

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-
Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.					

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 26, 15 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
15	26765	821.5	QPSK	1	0	0	0	24.0	23.02
				1	37	0	0	24.0	22.69
				1	74	0	0	24.0	22.57
				36	0	1	1	23.0	21.82
				36	19	1	1	23.0	21.73
				36	39	1	1	23.0	21.55
				75	0	1	1	23.0	21.63
			16QAM	1	0	1	1	23.0	22.18
				1	37	1	1	23.0	22.20
				1	74	1	1	23.0	21.64
				36	0	2	2	22.0	20.84
				36	19	2	2	22.0	20.79
				36	39	2	2	22.0	20.53
				75	0	2	2	22.0	20.68
	26865	831.5	QPSK	1	0	0	0	24.0	22.81
				1	37	0	0	24.0	22.46
				1	74	0	0	24.0	22.59
				36	0	1	1	23.0	21.56
				36	19	1	1	23.0	21.53
				36	39	1	1	23.0	21.44
				75	0	1	1	23.0	21.50
			16QAM	1	0	1	1	23.0	22.04
				1	37	1	1	23.0	21.91
				1	74	1	1	23.0	21.79
				36	0	2	2	22.0	20.58
				36	19	2	2	22.0	20.55
				36	39	2	2	22.0	20.47
				75	0	2	2	22.0	20.55
	26965	841.5	QPSK	1	0	0	0	24.0	22.57
				1	37	0	0	24.0	22.55
				1	74	0	0	24.0	22.58
				36	0	1	1	23.0	21.53
				36	19	1	1	23.0	21.56
				36	39	1	1	23.0	21.55
				75	0	1	1	23.0	21.49
			16QAM	1	0	1	1	23.0	21.75
				1	37	1	1	23.0	21.90
				1	74	1	1	23.0	21.79
				36	0	2	2	22.0	20.59
				36	19	2	2	22.0	20.60
				36	39	2	2	22.0	20.57
				75	0	2	2	22.0	20.54

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
15	26765	821.5	QPSK	1	0	MPR is disabled when power reduction is enabled		19.0	18.06
				1	37			19.0	17.83
				1	74			19.0	17.66
				36	0			19.0	18.08
				36	19			19.0	18.05
				36	39			19.0	17.84
				75	0			19.0	17.99
			16QAM	1	0			19.0	17.93
				1	37			19.0	17.90
				1	74			19.0	17.54
				36	0			19.0	18.10
				36	19			19.0	18.09
				36	39			19.0	17.85
				75	0			19.0	17.98
	26865	831.5	QPSK	1	0			19.0	18.04
				1	37			19.0	17.71
				1	74			19.0	17.84
				36	0			19.0	17.77
				36	19			19.0	17.75
				36	39			19.0	17.70
				75	0			19.0	17.74
			16QAM	1	0			19.0	18.23
				1	37			19.0	18.06
				1	74			19.0	17.98
				36	0			19.0	17.88
				36	19			19.0	17.79
				36	39			19.0	17.77
				75	0			19.0	17.78
	26965	841.5	QPSK	1	0			19.0	17.85
				1	37			19.0	17.73
				1	74			19.0	17.83
				36	0			19.0	17.82
				36	19			19.0	17.81
				36	39			19.0	17.76
				75	0			19.0	17.75
			16QAM	1	0			19.0	18.02
				1	37			19.0	18.01
				1	74			19.0	18.02
				36	0			19.0	17.83
				36	19			19.0	17.88
				36	39			19.0	17.85
				75	0			19.0	17.74

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 26, 10 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	26740	819	QPSK	1	0	0	0	24.0	22.64
				1	24	0	0	24.0	22.68
				1	49	0	0	24.0	22.46
				25	0	1	1	23.0	21.66
				25	12	1	1	23.0	21.49
				25	24	1	1	23.0	21.45
				50	0	1	1	23.0	21.46
			16QAM	1	0	1	1	23.0	22.00
				1	24	1	1	23.0	21.63
				1	49	1	1	23.0	21.46
				25	0	2	2	22.0	20.62
				25	12	2	2	22.0	20.51
				25	24	2	2	22.0	20.46
				50	0	2	2	22.0	20.44
	26865	831.5	QPSK	1	0	0	0	24.0	22.59
				1	24	0	0	24.0	22.35
				1	49	0	0	24.0	22.38
				25	0	1	1	23.0	21.37
				25	12	1	1	23.0	21.27
				25	24	1	1	23.0	21.21
				50	0	1	1	23.0	21.28
			16QAM	1	0	1	1	23.0	21.82
				1	24	1	1	23.0	21.52
				1	49	1	1	23.0	21.52
				25	0	2	2	22.0	20.30
				25	12	2	2	22.0	20.31
				25	24	2	2	22.0	20.26
				50	0	2	2	22.0	20.27
	26990	844	QPSK	1	0	0	0	24.0	22.46
				1	24	0	0	24.0	22.42
				1	49	0	0	24.0	22.45
				25	0	1	1	23.0	21.21
				25	12	1	1	23.0	21.28
				25	24	1	1	23.0	21.24
				50	0	1	1	23.0	21.24
			16QAM	1	0	1	1	23.0	21.64
				1	24	1	1	23.0	21.74
				1	49	1	1	23.0	21.65
				25	0	2	2	22.0	20.24
				25	12	2	2	22.0	20.34
				25	24	2	2	22.0	20.30
				50	0	2	2	22.0	20.20

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	26740	819	QPSK	1	0	MPR is disabled when power reduction is enabled		19.0	17.86
				1	24			19.0	17.94
				1	49			19.0	17.66
				25	0			19.0	17.87
				25	12			19.0	17.81
				25	24			19.0	17.73
				50	0			19.0	17.80
			16QAM	1	0			19.0	17.97
				1	24			19.0	18.01
				1	49			19.0	17.76
				25	0			19.0	17.92
				25	12			19.0	17.89
				25	24			19.0	17.82
				50	0			19.0	17.74
	26865	831.5	QPSK	1	0			19.0	17.93
				1	24			19.0	17.58
				1	49			19.0	17.68
				25	0			19.0	17.64
				25	12			19.0	17.55
				25	24			19.0	17.57
				50	0			19.0	17.55
			16QAM	1	0			19.0	18.07
				1	24			19.0	17.93
				1	49			19.0	17.97
				25	0			19.0	17.64
				25	12			19.0	17.65
				25	24			19.0	17.57
				50	0			19.0	17.53
	26990	844	QPSK	1	0			19.0	17.47
				1	24			19.0	17.66
				1	49			19.0	17.43
				25	0			19.0	17.38
				25	12			19.0	17.53
				25	24			19.0	17.48
				50	0			19.0	17.43
			16QAM	1	0			19.0	17.75
				1	24			19.0	17.96
				1	49			19.0	17.60
				25	0			19.0	17.51
				25	12			19.0	17.63
				25	24			19.0	17.63
				50	0			19.0	17.55

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 26, 5 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	26715	816.5	QPSK	1	0	0	0	24.0	22.73
				1	12	0	0	24.0	22.74
				1	24	0	0	24.0	22.75
				12	0	1	1	23.0	21.77
				12	6	1	1	23.0	21.75
				12	11	1	1	23.0	21.76
				25	0	1	1	23.0	21.77
			16QAM	1	0	1	1	23.0	22.02
				1	12	1	1	23.0	22.20
				1	24	1	1	23.0	21.82
				12	0	2	2	22.0	20.80
				12	6	2	2	22.0	20.81
				12	11	2	2	22.0	20.73
				25	0	2	2	22.0	20.69
	26865	831.5	QPSK	1	0	0	0	24.0	22.53
				1	12	0	0	24.0	22.27
				1	24	0	0	24.0	22.38
				12	0	1	1	23.0	21.12
				12	6	1	1	23.0	21.29
				12	11	1	1	23.0	21.17
				25	0	1	1	23.0	21.15
			16QAM	1	0	1	1	23.0	22.01
				1	12	1	1	23.0	21.92
				1	24	1	1	23.0	21.92
				12	0	2	2	22.0	20.24
				12	6	2	2	22.0	20.43
				12	11	2	2	22.0	20.28
				25	0	2	2	22.0	20.21
	27015	846.5	QPSK	1	0	0	0	24.0	22.41
				1	12	0	0	24.0	22.36
				1	24	0	0	24.0	22.45
				12	0	1	1	23.0	21.25
				12	6	1	1	23.0	21.36
				12	11	1	1	23.0	21.31
				25	0	1	1	23.0	21.29
			16QAM	1	0	1	1	23.0	21.87
				1	12	1	1	23.0	21.89
				1	24	1	1	23.0	21.90
				12	0	2	2	22.0	20.40
				12	6	2	2	22.0	20.50
				12	11	2	2	22.0	20.50
				25	0	2	2	22.0	20.34

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	26715	816.5	QPSK	1	0	MPR is disabled when power reduction is enabled		19.0	18.00
				1	12			19.0	17.78
				1	24			19.0	18.03
				12	0			19.0	17.91
				12	6			19.0	17.96
				12	11			19.0	17.93
				25	0			19.0	17.90
			16QAM	1	0			19.0	18.04
				1	12			19.0	17.87
				1	24			19.0	18.00
				12	0			19.0	17.98
				12	6			19.0	17.99
				12	11			19.0	17.94
				25	0			19.0	17.91
	26865	831.5	QPSK	1	0			19.0	17.76
				1	12			19.0	17.49
				1	24			19.0	17.72
				12	0			19.0	17.42
				12	6			19.0	17.62
				12	11			19.0	17.51
				25	0			19.0	17.49
			16QAM	1	0			19.0	17.77
				1	12			19.0	17.48
				1	24			19.0	17.84
				12	0			19.0	17.47
				12	6			19.0	17.65
				12	11			19.0	17.55
				25	0			19.0	17.44
	27015	846.5	QPSK	1	0			19.0	17.61
				1	12			19.0	17.48
				1	24			19.0	17.70
				12	0			19.0	17.54
				12	6			19.0	17.63
				12	11			19.0	17.62
				25	0			19.0	17.55
			16QAM	1	0			19.0	17.74
				1	12			19.0	17.75
				1	24			19.0	17.81
				12	0			19.0	17.54
				12	6			19.0	17.62
				12	11			19.0	17.56
				25	0			19.0	17.47

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 26, 3 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
3	26705	815.5	QPSK	1	0	0	0	24.0	22.76
				1	7	0	0	24.0	22.78
				1	14	0	0	24.0	22.86
				8	0	1	1	23.0	21.68
				8	4	1	1	23.0	21.71
				8	7	1	1	23.0	21.69
				15	0	1	1	23.0	21.65
			16QAM	1	0	1	1	23.0	21.76
				1	7	1	1	23.0	21.70
				1	14	1	1	23.0	21.69
				8	0	2	2	22.0	20.77
				8	4	2	2	22.0	20.83
				8	7	2	2	22.0	20.75
				15	0	2	2	22.0	20.67
	26865	831.5	QPSK	1	0	0	0	24.0	22.46
				1	7	0	0	24.0	22.41
				1	14	0	0	24.0	22.50
				8	0	1	1	23.0	21.26
				8	4	1	1	23.0	21.28
				8	7	1	1	23.0	21.32
				15	0	1	1	23.0	21.31
			16QAM	1	0	1	1	23.0	21.86
				1	7	1	1	23.0	21.68
				1	14	1	1	23.0	21.87
				8	0	2	2	22.0	20.34
				8	4	2	2	22.0	20.35
				8	7	2	2	22.0	20.40
				15	0	2	2	22.0	20.37
	27025	847.5	QPSK	1	0	0	0	24.0	22.50
				1	7	0	0	24.0	22.59
				1	14	0	0	24.0	22.69
				8	0	1	1	23.0	21.32
				8	4	1	1	23.0	21.35
				8	7	1	1	23.0	21.29
				15	0	1	1	23.0	21.32
			16QAM	1	0	1	1	23.0	21.96
				1	7	1	1	23.0	21.87
				1	14	1	1	23.0	22.00
				8	0	2	2	22.0	20.40
				8	4	2	2	22.0	20.43
				8	7	2	2	22.0	20.39
				15	0	2	2	22.0	20.37

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
3	26705	815.5	QPSK	1	0	MPR is disabled when power reduction is enabled		19.0	17.81
				1	7			19.0	17.91
				1	14			19.0	17.84
				8	0			19.0	17.84
				8	4			19.0	17.88
				8	7			19.0	17.85
				15	0			19.0	17.78
			16QAM	1	0			19.0	17.88
				1	7			19.0	17.80
				1	14			19.0	17.86
				8	0			19.0	17.93
				8	4			19.0	17.99
				8	7			19.0	17.99
				15	0			19.0	17.87
	26865	831.5	QPSK	1	0			19.0	17.50
				1	7			19.0	17.44
				1	14			19.0	17.60
				8	0			19.0	17.48
				8	4			19.0	17.52
				8	7			19.0	17.57
				15	0			19.0	17.61
			16QAM	1	0			19.0	17.68
				1	7			19.0	17.77
				1	14			19.0	17.64
				8	0			19.0	17.43
				8	4			19.0	17.48
				8	7			19.0	17.52
				15	0			19.0	17.48
	27025	847.5	QPSK	1	0			19.0	17.59
				1	7			19.0	17.53
				1	14			19.0	17.61
				8	0			19.0	17.61
				8	4			19.0	17.55
				8	7			19.0	17.53
				15	0			19.0	17.50
			16QAM	1	0			19.0	17.63
				1	7			19.0	17.71
				1	14			19.0	17.42
				8	0			19.0	17.55
				8	4			19.0	17.62
				8	7			19.0	17.57
				15	0			19.0	17.51

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 26, 1.4 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
1.4	26697	814.7	QPSK	1	0	0	0	24.0	22.90
				1	2	0	0	24.0	22.92
				1	5	0	0	24.0	22.82
				3	0	0	0	24.0	22.54
				3	1	0	0	24.0	22.64
				3	3	0	0	24.0	22.53
				6	0	1	1	23.0	21.58
			16QAM	1	0	1	1	23.0	21.90
				1	2	1	1	23.0	22.02
				1	5	1	1	23.0	21.96
				3	0	1	1	23.0	21.66
				3	1	1	1	23.0	21.84
				3	3	1	1	23.0	21.62
				6	0	2	2	22.0	20.74
	26865	831.5	QPSK	1	0	0	0	24.0	22.34
				1	2	0	0	24.0	22.23
				1	5	0	0	24.0	22.46
				3	0	0	0	24.0	22.24
				3	1	0	0	24.0	22.18
				3	3	0	0	24.0	22.20
				6	0	1	1	23.0	21.13
			16QAM	1	0	1	1	23.0	21.63
				1	2	1	1	23.0	21.65
				1	5	1	1	23.0	21.64
				3	0	1	1	23.0	21.44
				3	1	1	1	23.0	21.46
				3	3	1	1	23.0	21.38
				6	0	2	2	22.0	20.06
	27033	848.3	QPSK	1	0	0	0	24.0	22.49
				1	2	0	0	24.0	22.38
				1	5	0	0	24.0	22.50
				3	0	0	0	24.0	22.31
				3	1	0	0	24.0	22.33
				3	3	0	0	24.0	22.28
				6	0	1	1	23.0	21.16
			16QAM	1	0	1	1	23.0	21.69
				1	2	1	1	23.0	21.81
				1	5	1	1	23.0	21.70
				3	0	1	1	23.0	21.47
				3	1	1	1	23.0	21.50
				3	3	1	1	23.0	21.46
				6	0	2	2	22.0	20.18

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
1.4	26697	814.7	QPSK	1	0	MPR is disabled when power reduction is enabled		19.0	17.98
				1	2			19.0	17.99
				1	5			19.0	17.86
				3	0			19.0	17.77
				3	1			19.0	17.88
				3	3			19.0	17.71
				6	0			19.0	17.80
			16QAM	1	0			19.0	18.04
				1	2			19.0	18.06
				1	5			19.0	18.06
				3	0			19.0	17.89
				3	1			19.0	17.98
				3	3			19.0	17.83
				6	0			19.0	17.99
	26865	831.5	QPSK	1	0			19.0	17.66
				1	2			19.0	17.53
				1	5			19.0	17.65
				3	0			19.0	17.45
				3	1			19.0	17.52
				3	3			19.0	17.52
				6	0			19.0	17.47
			16QAM	1	0			19.0	17.55
				1	2			19.0	17.78
				1	5			19.0	17.63
				3	0			19.0	17.70
				3	1			19.0	17.69
				3	3			19.0	17.67
				6	0			19.0	17.64
	27033	848.3	QPSK	1	0			19.0	17.69
				1	2			19.0	17.52
				1	5			19.0	17.66
				3	0			19.0	17.45
				3	1			19.0	17.60
				3	3			19.0	17.54
				6	0			19.0	17.55
			16QAM	1	0			19.0	17.62
				1	2			19.0	17.78
				1	5			19.0	17.70
				3	0			19.0	17.71
				3	1			19.0	17.73
				3	3			19.0	17.74
				6	0			19.0	17.73

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

9.12. LTE Band 41

Target Power for LTE Band 41, QPSK and 16QAM modulations in all bandwidth

Tech	BAND	CH.	Freq. [MHz]	Target Power		Tolerance [dB]
				w/o Power Reduction	w/ Power Reduction	
LTE	BAND41	39750	2506	22.00	15.80	+/-1
		40620	2593			
		41490	2680			

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

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 (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

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”.

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-
Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.					

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 41, 20 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
20	39750 Low	2506	QPSK	1	0	0	0	23.0	21.05
				1	49	0	0	23.0	21.32
				1	99	0	0	23.0	21.04
				50	0	1	1	22.0	20.10
				50	24	1	1	22.0	20.20
				50	49	1	1	22.0	20.00
				100	0	1	1	22.0	20.12
			16QAM	1	0	1	1	22.0	20.04
				1	49	1	1	22.0	20.17
				1	99	1	1	22.0	20.00
				50	0	2	2	21.0	19.16
				50	24	2	2	21.0	19.29
				50	49	2	2	21.0	19.07
				100	0	2	2	21.0	19.20
	40185 Low-Mid	2549.5	QPSK	1	0	0	0	23.0	21.08
				1	49	0	0	23.0	21.13
				1	99	0	0	23.0	21.05
				50	0	1	1	22.0	20.04
				50	24	1	1	22.0	20.06
				50	49	1	1	22.0	20.08
				100	0	1	1	22.0	20.02
			16QAM	1	0	1	1	22.0	20.08
				1	49	1	1	22.0	20.25
				1	99	1	1	22.0	20.00
				50	0	2	2	21.0	19.04
				50	24	2	2	21.0	19.05
				50	49	2	2	21.0	19.08
				100	0	2	2	21.0	19.02
	40620 Mid	2593	QPSK	1	0	0	0	23.0	21.05
				1	49	0	0	23.0	21.16
				1	99	0	0	23.0	21.08
				50	0	1	1	22.0	20.03
				50	24	1	1	22.0	20.26
				50	49	1	1	22.0	20.25
				100	0	1	1	22.0	20.13
			16QAM	1	0	1	1	22.0	20.06
				1	49	1	1	22.0	20.36
				1	99	1	1	22.0	20.19
				50	0	2	2	21.0	19.02
				50	24	2	2	21.0	19.17
				50	49	2	2	21.0	19.18
				100	0	2	2	21.0	19.16

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Full Power (Proximity Sensor Off) (Continued)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
20	41055 Mid-High	2636.5	QPSK	1	0	0	0	23.0	21.04
				1	49	0	0	23.0	21.05
				1	99	0	0	23.0	21.02
				50	0	1	1	22.0	20.22
				50	24	1	1	22.0	20.18
				50	49	1	1	22.0	20.16
				100	0	1	1	22.0	20.09
			16QAM	1	0	1	1	22.0	20.53
				1	49	1	1	22.0	20.55
				1	99	1	1	22.0	20.42
				50	0	2	2	21.0	19.17
				50	24	2	2	21.0	19.14
				50	49	2	2	21.0	19.15
				100	0	2	2	21.0	19.12
	41490 High	2680	QPSK	1	0	0	0	23.0	21.23
				1	49	0	0	23.0	21.38
				1	99	0	0	23.0	21.07
				50	0	1	1	22.0	20.27
				50	24	1	1	22.0	20.24
				50	49	1	1	22.0	20.21
				100	0	1	1	22.0	20.29
			16QAM	1	0	1	1	22.0	20.19
				1	49	1	1	22.0	20.24
				1	99	1	1	22.0	20.11
				50	0	2	2	21.0	19.32
				50	24	2	2	21.0	19.28
				50	49	2	2	21.0	19.17
				100	0	2	2	21.0	19.19

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
20	39750 Low	2506	QPSK	1	0	MPR is disabled when power reduction is enabled		16.8	16.04
				1	49			16.8	16.16
				1	99			16.8	15.74
				50	0			16.8	15.96
				50	24			16.8	16.15
				50	49			16.8	15.98
				100	0			16.8	16.11
			16QAM	1	0			16.8	16.51
				1	49			16.8	16.54
				1	99			16.8	15.92
				50	0			16.8	16.15
				50	24			16.8	16.25
				50	49			16.8	16.04
				100	0			16.8	16.09
	40185 Low-Mid	2549.5	QPSK	1	0			16.8	16.01
				1	49			16.8	16.06
				1	99			16.8	15.79
				50	0			16.8	15.98
				50	24			16.8	15.96
				50	49			16.8	15.99
				100	0			16.8	15.96
			16QAM	1	0			16.8	16.15
				1	49			16.8	16.33
				1	99			16.8	16.07
				50	0			16.8	16.03
				50	24			16.8	15.97
				50	49			16.8	16.01
				100	0			16.8	15.99
	40620 Mid	2593	QPSK	1	0			16.8	16.13
				1	49			16.8	16.14
				1	99			16.8	16.00
				50	0			16.8	15.95
				50	24			16.8	16.07
				50	49			16.8	16.04
				100	0			16.8	15.92
			16QAM	1	0			16.8	16.45
				1	49			16.8	16.56
				1	99			16.8	16.48
				50	0			16.8	15.91
				50	24			16.8	16.01
				50	49			16.8	16.06
				100	0			16.8	15.98

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On) (Continued)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
20	41055 Mid-High	2636.5	QPSK	1	0	MPR is disabled when power reduction is enabled		16.8	15.87
				1	49			16.8	16.06
				1	99			16.8	15.80
				50	0			16.8	15.87
				50	24			16.8	15.90
				50	49			16.8	15.93
				100	0			16.8	15.90
			16QAM	1	0			16.8	16.00
				1	49			16.8	16.18
				1	99			16.8	15.94
				50	0			16.8	16.18
				50	24			16.8	16.07
				50	49			16.8	16.06
				100	0			16.8	15.93
	41490 High	2680	QPSK	1	0			16.8	16.14
				1	49			16.8	16.21
				1	99			16.8	16.03
				50	0			16.8	16.05
				50	24			16.8	16.09
				50	49			16.8	16.03
				100	0			16.8	16.07
			16QAM	1	0			16.8	16.25
				1	49			16.8	16.14
				1	99			16.8	16.08
				50	0			16.8	16.15
				50	24			16.8	16.15
				50	49			16.8	16.04
				100	0			16.8	16.08

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 41, 15 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
15	39725 Low	2503.5	QPSK	1	0	0	0	23.0	21.10
				1	37	0	0	23.0	21.50
				1	74	0	0	23.0	21.12
				36	0	1	1	22.0	20.28
				36	19	1	1	22.0	20.30
				36	39	1	1	22.0	20.15
				75	0	1	1	22.0	20.20
			16QAM	1	0	1	1	22.0	20.23
				1	37	1	1	22.0	20.46
				1	74	1	1	22.0	20.26
				36	0	2	2	21.0	19.28
				36	19	2	2	21.0	19.28
				36	39	2	2	21.0	19.09
				75	0	2	2	21.0	19.24
	40173 Low-Mid	2548.3	QPSK	1	0	0	0	23.0	21.08
				1	37	0	0	23.0	21.07
				1	74	0	0	23.0	21.09
				36	0	1	1	22.0	20.12
				36	19	1	1	22.0	20.11
				36	39	1	1	22.0	20.04
				75	0	1	1	22.0	20.06
			16QAM	1	0	1	1	22.0	20.45
				1	37	1	1	22.0	20.50
				1	74	1	1	22.0	20.40
				36	0	2	2	21.0	19.13
				36	19	2	2	21.0	19.13
				36	39	2	2	21.0	19.11
				75	0	2	2	21.0	19.06
	40620 Mid	2593	QPSK	1	0	0	0	23.0	21.00
				1	37	0	0	23.0	21.04
				1	74	0	0	23.0	21.05
				36	0	1	1	22.0	20.10
				36	19	1	1	22.0	20.18
				36	39	1	1	22.0	20.13
				75	0	1	1	22.0	20.14
			16QAM	1	0	1	1	22.0	20.52
				1	37	1	1	22.0	20.49
				1	74	1	1	22.0	20.55
				36	0	2	2	21.0	19.00
				36	19	2	2	21.0	19.17
				36	39	2	2	21.0	19.07
				75	0	2	2	21.0	19.17

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Full Power (Proximity Sensor Off) (Continued)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
15	41068 Mid-High	2637.8	QPSK	1	0	0	0	23.0	21.07
				1	37	0	0	23.0	21.09
				1	74	0	0	23.0	21.06
				36	0	1	1	22.0	20.07
				36	19	1	1	22.0	20.15
				36	39	1	1	22.0	20.14
				75	0	1	1	22.0	20.07
			16QAM	1	0	1	1	22.0	20.20
				1	37	1	1	22.0	20.24
				1	74	1	1	22.0	20.20
				36	0	2	2	21.0	19.08
				36	19	2	2	21.0	19.14
				36	39	2	2	21.0	19.10
				75	0	2	2	21.0	19.07
	41515 High	2682.5	QPSK	1	0	0	0	23.0	21.24
				1	37	0	0	23.0	21.11
				1	74	0	0	23.0	21.01
				36	0	1	1	22.0	20.26
				36	19	1	1	22.0	20.29
				36	39	1	1	22.0	20.25
				75	0	1	1	22.0	20.17
			16QAM	1	0	1	1	22.0	20.35
				1	37	1	1	22.0	20.39
				1	74	1	1	22.0	20.10
				36	0	2	2	21.0	19.20
				36	19	2	2	21.0	19.22
				36	39	2	2	21.0	19.10
				75	0	2	2	21.0	19.12

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
15	39725 Low	2503.5	QPSK	1	0	MPR is disabled when power reduction is enabled		16.8	16.07
				1	37			16.8	16.17
				1	74			16.8	16.06
				36	0			16.8	16.17
				36	19			16.8	16.19
				36	39			16.8	16.07
				75	0			16.8	16.06
			16QAM	1	0			16.8	16.10
				1	37			16.8	16.32
				1	74			16.8	16.22
				36	0			16.8	16.11
				36	19			16.8	16.20
				36	39			16.8	16.02
				75	0			16.8	16.14
	40173 Low-Mid	2548.3	QPSK	1	0			16.8	15.94
				1	37			16.8	15.69
				1	74			16.8	15.82
				36	0			16.8	16.17
				36	19			16.8	16.06
				36	39			16.8	16.03
				75	0			16.8	15.99
			16QAM	1	0			16.8	15.78
				1	37			16.8	16.07
				1	74			16.8	15.65
				36	0			16.8	16.04
				36	19			16.8	16.04
				36	39			16.8	16.02
				75	0			16.8	16.02
	40620 Mid	2593	QPSK	1	0			16.8	15.76
				1	37			16.8	15.95
				1	74			16.8	15.92
				36	0			16.8	15.98
				36	19			16.8	16.01
				36	39			16.8	15.94
				75	0			16.8	15.95
			16QAM	1	0			16.8	15.94
				1	37			16.8	16.05
				1	74			16.8	16.03
				36	0			16.8	16.04
				36	19			16.8	16.09
				36	39			16.8	15.97
				75	0			16.8	15.92

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On) ***(Continued)***

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
15	41068 Mid-High	2637.8	QPSK	1	0	MPR is disabled when power reduction is enabled		16.8	15.98
				1	37			16.8	16.19
				1	74			16.8	15.99
				36	0			16.8	15.93
				36	19			16.8	16.06
				36	39			16.8	15.96
				75	0			16.8	15.94
			16QAM	1	0			16.8	16.09
				1	37			16.8	16.08
				1	74			16.8	16.10
				36	0			16.8	15.99
				36	19			16.8	16.06
				36	39			16.8	15.98
				75	0			16.8	15.94
	41515 High	2682.5	QPSK	1	0			16.8	16.07
				1	37			16.8	16.12
				1	74			16.8	16.08
				36	0			16.8	16.06
				36	19			16.8	16.07
				36	39			16.8	15.98
				75	0			16.8	15.93
			16QAM	1	0			16.8	16.14
				1	37			16.8	16.21
				1	74			16.8	16.10
				36	0			16.8	16.11
				36	19			16.8	16.05
				36	39			16.8	15.97
				75	0			16.8	15.98

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 41, 10 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	39700 Low	2501	QPSK	1	0	0	0	23.0	21.07
				1	24	0	0	23.0	21.08
				1	49	0	0	23.0	21.17
				25	0	1	1	22.0	20.00
				25	12	1	1	22.0	20.07
				25	24	1	1	22.0	20.06
				50	0	1	1	22.0	20.03
			16QAM	1	0	1	1	22.0	20.37
				1	24	1	1	22.0	20.42
				1	49	1	1	22.0	20.67
				25	0	2	2	21.0	19.07
				25	12	2	2	21.0	19.17
				25	24	2	2	21.0	19.05
				50	0	2	2	21.0	19.14
	40160 Low-Mid	2547.0	QPSK	1	0	0	0	23.0	21.16
				1	24	0	0	23.0	21.03
				1	49	0	0	23.0	21.11
				25	0	1	1	22.0	20.08
				25	12	1	1	22.0	20.06
				25	24	1	1	22.0	20.09
				50	0	1	1	22.0	20.02
			16QAM	1	0	1	1	22.0	20.48
				1	24	1	1	22.0	20.44
				1	49	1	1	22.0	20.60
				25	0	2	2	21.0	19.04
				25	12	2	2	21.0	19.06
				25	24	2	2	21.0	19.06
				50	0	2	2	21.0	19.06
	40620 Mid	2593	QPSK	1	0	0	0	23.0	21.12
				1	24	0	0	23.0	21.06
				1	49	0	0	23.0	21.25
				25	0	1	1	22.0	20.06
				25	12	1	1	22.0	20.09
				25	24	1	1	22.0	20.05
				50	0	1	1	22.0	20.08
			16QAM	1	0	1	1	22.0	20.67
				1	24	1	1	22.0	20.57
				1	49	1	1	22.0	20.75
				25	0	2	2	21.0	19.04
				25	12	2	2	21.0	19.07
				25	24	2	2	21.0	19.05
				50	0	2	2	21.0	19.04

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Full Power (Proximity Sensor Off) (Continued)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	41080 Mid-High	2639.0	QPSK	1	0	0	0	23.0	21.14
				1	24	0	0	23.0	21.12
				1	49	0	0	23.0	21.18
				25	0	1	1	22.0	20.11
				25	12	1	1	22.0	20.19
				25	24	1	1	22.0	20.18
				50	0	1	1	22.0	20.10
			16QAM	1	0	1	1	22.0	20.59
				1	24	1	1	22.0	20.47
				1	49	1	1	22.0	20.64
				25	0	2	2	21.0	19.16
				25	12	2	2	21.0	19.23
				25	24	2	2	21.0	19.20
				50	0	2	2	21.0	19.24
	41540 High	2685	QPSK	1	0	0	0	23.0	21.27
				1	24	0	0	23.0	21.14
				1	49	0	0	23.0	21.13
				25	0	1	1	22.0	20.14
				25	12	1	1	22.0	20.04
				25	24	1	1	22.0	20.05
				50	0	1	1	22.0	20.04
			16QAM	1	0	1	1	22.0	20.65
				1	24	1	1	22.0	20.59
				1	49	1	1	22.0	20.47
				25	0	2	2	21.0	19.08
				25	12	2	2	21.0	19.09
				25	24	2	2	21.0	19.08
				50	0	2	2	21.0	19.05

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	39700 Low	2501	QPSK	1	0	MPR is disabled when power reduction is enabled		16.8	16.10
				1	24			16.8	16.20
				1	49			16.8	16.33
				25	0			16.8	15.84
				25	12			16.8	15.92
				25	24			16.8	15.86
				50	0			16.8	15.89
			16QAM	1	0			16.8	16.39
				1	24			16.8	16.50
				1	49			16.8	16.49
				25	0			16.8	16.01
				25	12			16.8	16.02
				25	24			16.8	15.90
				50	0			16.8	16.04
	40160 Low-Mid	2547	QPSK	1	0			16.8	16.02
				1	24			16.8	15.79
				1	49			16.8	15.86
				25	0			16.8	15.77
				25	12			16.8	15.72
				25	24			16.8	15.65
				50	0			16.8	15.65
			16QAM	1	0			16.8	16.30
				1	24			16.8	16.27
				1	49			16.8	16.34
				25	0			16.8	15.74
				25	12			16.8	15.68
				25	24			16.8	15.70
				50	0			16.8	15.68
	40620 Mid	2593	QPSK	1	0			16.8	15.79
				1	24			16.8	15.81
				1	49			16.8	16.07
				25	0			16.8	15.70
				25	12			16.8	15.68
				25	24			16.8	15.69
				50	0			16.8	15.68
			16QAM	1	0			16.8	15.98
				1	24			16.8	15.90
				1	49			16.8	16.20
				25	0			16.8	15.74
				25	12			16.8	15.77
				25	24			16.8	15.87
				50	0			16.8	15.68

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On) (Continued)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
10	41080 Mid-High	2639	QPSK	1	0	MPR is disabled when power reduction is enabled		16.8	16.14
				1	24			16.8	16.04
				1	49			16.8	16.23
				25	0			16.8	15.88
				25	12			16.8	15.83
				25	24			16.8	15.81
				50	0			16.8	15.90
			16QAM	1	0			16.8	16.27
				1	24			16.8	16.18
				1	49			16.8	16.44
				25	0			16.8	15.97
				25	12			16.8	16.00
				25	24			16.8	15.95
				50	0			16.8	15.92
	41540 High	2685	QPSK	1	0			16.8	16.25
				1	24			16.8	16.14
				1	49			16.8	16.00
				25	0			16.8	15.85
				25	12			16.8	15.83
				25	24			16.8	15.70
				50	0			16.8	15.81
			16QAM	1	0			16.8	16.49
				1	24			16.8	16.40
				1	49			16.8	16.28
				25	0			16.8	15.90
				25	12			16.8	15.84
				25	24			16.8	15.86
				50	0			16.8	15.81

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

LTE Band 41, 5 MHz Bandwidth Output Power

Full Power (Proximity Sensor Off)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	39675 Low	2498.5	QPSK	1	0	0	0	23.0	21.04
				1	12	0	0	23.0	21.38
				1	24	0	0	23.0	21.06
				12	0	1	1	22.0	20.07
				12	6	1	1	22.0	20.08
				12	11	1	1	22.0	20.11
				25	0	1	1	22.0	20.02
			16QAM	1	0	1	1	22.0	20.30
				1	12	1	1	22.0	20.43
				1	24	1	1	22.0	20.46
				12	0	2	2	21.0	19.02
				12	6	2	2	21.0	19.07
				12	11	2	2	21.0	19.08
				25	0	2	2	21.0	19.09
	40148 Low-Mid	2545.8	QPSK	1	0	0	0	23.0	21.08
				1	12	0	0	23.0	21.03
				1	24	0	0	23.0	21.01
				12	0	1	1	22.0	20.00
				12	6	1	1	22.0	20.06
				12	11	1	1	22.0	20.08
				25	0	1	1	22.0	20.04
			16QAM	1	0	1	1	22.0	20.26
				1	12	1	1	22.0	20.38
				1	24	1	1	22.0	20.25
				12	0	2	2	21.0	19.04
				12	6	2	2	21.0	19.04
				12	11	2	2	21.0	19.05
				25	0	2	2	21.0	19.01
	40620 Mid	2593	QPSK	1	0	0	0	23.0	21.12
				1	12	0	0	23.0	21.06
				1	24	0	0	23.0	21.25
				12	0	1	1	22.0	20.06
				12	6	1	1	22.0	20.09
				12	11	1	1	22.0	20.05
				25	0	1	1	22.0	20.09
			16QAM	1	0	1	1	22.0	20.67
				1	12	1	1	22.0	20.57
				1	24	1	1	22.0	20.75
				12	0	2	2	21.0	19.04
				12	6	2	2	21.0	19.07
				12	11	2	2	21.0	19.05
				25	0	2	2	21.0	19.04

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Full Power (Proximity Sensor Off) (Continued)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	41093 Mid-High	2640.3	QPSK	1	0	0	0	23.0	21.08
				1	12	0	0	23.0	21.52
				1	24	0	0	23.0	21.11
				12	0	1	1	22.0	20.14
				12	6	1	1	22.0	20.23
				12	11	1	1	22.0	20.22
				25	0	1	1	22.0	20.18
			16QAM	1	0	1	1	22.0	20.54
				1	12	1	1	22.0	20.58
				1	24	1	1	22.0	20.57
				12	0	2	2	21.0	19.11
				12	6	2	2	21.0	19.20
				12	11	2	2	21.0	19.14
				25	0	2	2	21.0	19.21
	41565 High	2687.5	QPSK	1	0	0	0	23.0	21.03
				1	12	0	0	23.0	21.09
				1	24	0	0	23.0	21.26
				12	0	1	1	22.0	20.04
				12	6	1	1	22.0	20.07
				12	11	1	1	22.0	20.08
				25	0	1	1	22.0	20.08
			16QAM	1	0	1	1	22.0	20.57
				1	12	1	1	22.0	20.71
				1	24	1	1	22.0	20.34
				12	0	2	2	21.0	19.01
				12	6	2	2	21.0	19.04
				12	11	2	2	21.0	19.05
				25	0	2	2	21.0	19.02

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	39675 Low	2498.5	QPSK	1	0	MPR is disabled when power reduction is enabled		16.8	15.81
				1	12			16.8	16.53
				1	24			16.8	15.77
				12	0			16.8	15.89
				12	6			16.8	15.92
				12	11			16.8	15.86
				25	0			16.8	15.96
			16QAM	1	0			16.8	16.19
				1	12			16.8	16.22
				1	24			16.8	16.19
				12	0			16.8	15.97
				12	6			16.8	16.01
				12	11			16.8	15.91
				25	0			16.8	16.05
	40148 Low-Mid	2545.8	QPSK	1	0			16.8	15.63
				1	12			16.8	15.70
				1	24			16.8	15.87
				12	0			16.8	15.82
				12	6			16.8	15.71
				12	11			16.8	15.69
				25	0			16.8	15.74
			16QAM	1	0			16.8	16.10
				1	12			16.8	15.72
				1	24			16.8	16.16
				12	0			16.8	15.78
				12	6			16.8	15.71
				12	11			16.8	15.78
				25	0			16.8	15.84
	40620 Mid	2593	QPSK	1	0			16.8	15.74
				1	12			16.8	15.86
				1	24			16.8	15.85
				12	0			16.8	15.67
				12	6			16.8	15.82
				12	11			16.8	15.74
				25	0			16.8	15.78
			16QAM	1	0			16.8	16.06
				1	12			16.8	16.23
				1	24			16.8	16.10
				12	0			16.8	15.66
				12	6			16.8	15.80
				12	11			16.8	15.72
				25	0			16.8	15.80

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Reduced Power (Proximity Sensor On) (Continued)

BW (MHz)	UL Ch #	Freq. (MHz)	Modu-lation	UL RB Allocation	UL RB Start	Target MPR	Meas. MPR	Tune-up Limit (dBm)	Meas. Pwr Avg (dBm)
5	41093 Mid-High	2640.3	QPSK	1	0	MPR is disabled when power reduction is enabled		16.8	15.82
				1	12			16.8	16.57
				1	24			16.8	15.76
				12	0			16.8	15.89
				12	6			16.8	15.93
				12	11			16.8	15.84
				25	0			16.8	15.97
			16QAM	1	0			16.8	16.19
				1	12			16.8	16.22
				1	24			16.8	16.19
				12	0			16.8	15.89
				12	6			16.8	15.95
				12	11			16.8	15.84
				25	0			16.8	16.05
	41565 High	2687.5	QPSK	1	0			16.8	15.73
				1	12			16.8	15.68
				1	24			16.8	15.82
				12	0			16.8	15.73
				12	6			16.8	15.75
				12	11			16.8	15.71
				25	0			16.8	15.81
			16QAM	1	0			16.8	16.22
				1	12			16.8	16.09
				1	24			16.8	16.15
				12	0			16.8	15.82
				12	6			16.8	15.79
				12	11			16.8	15.75
				25	0			16.8	15.84

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

10. Uplink maximum output power measurement for the supported combinations with downlink carrier aggregation

Uplink maximum output power is measured with Downlink CA active, only for the channel with highest measured maximum output power when Downlink CA is inactive, to confirm Uplink Power difference between Downlink CA inactive and Downlink CA active.

10.1. Inter-band CA(Downlink CA only)

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_2A_5A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	2	5	18625	1852.5	1-24		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-		-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	2	5	625	1932.5	1-24		QPSK
	SCC1 *4						
	Band	Bandwidth *8 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *5	Resource Block Position	Modulation
	5	10	2525	881.5	50-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *6	DL CA active [dBm]	Delta Power [dB] *7
22.88	22.94	0.06

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_2A_5A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	5	10	20600	844	1-0		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-		-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	5	10	2600	889	1-0		QPSK
	SCC1 *4						
	Band	Bandwidth *8 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *5	Resource Block Position	Modulation
	2	20	900	1960	100-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *6	DL CA active [dBm]	Delta Power [dB] *7
22.71	22.69	-0.02

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

*1 Highest measured maximum output power when downlink carrier aggregation is inactive.

*2 Downlink PCC channel is paired with the uplink channel according to normal configurations, as if there is no carrier aggregation.

*3 Downlink SCC1 is near the middle of its transmission band

*4 Enable when downlink CA is active

*5 Set to Maximum RB

*6 See Section 9. RF Output Power Measurement result for the appropriate LTE Band (Single Carrier)

*7 Uplink Power difference between downlink CA inactive and downlink CA active

*8 Set to the supported maximum bandwidth

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_2A_12A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	2	5	18625	1852.5	1-24		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-		-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	2	5	625	1932.5	1-24		QPSK
	SCC1 *4						
	Band	Bandwidth *8 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *5	Resource Block Position	Modulation
	12	10	5095	737.5	50-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *6	DL CA active [dBm]	Delta Power [dB] *7
22.88	22.74	-0.14

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_2A_12A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	12	5	23035	701.5	1-0		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-		-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	12	5	5035	731.5	1-0		QPSK
	SCC1 *4						
	Band	Bandwidth *8 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *5	Resource Block Position	Modulation
	2	20	900	1960	100-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *6	DL CA active [dBm]	Delta Power [dB] *7
23.01	23.01	0.00

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

*1 Highest measured maximum output power when downlink carrier aggregation is inactive.

*2 Downlink PCC channel is paired with the uplink channel according to normal configurations, as if there is no carrier aggregation.

*3 Downlink SCC1 is near the middle of its transmission band

*4 Enable when downlink CA is active

*5 Set to Maximum RB

*6 See Section 9. RF Output Power Measurement result for the appropriate LTE Band (Single Carrier)

*7 Uplink Power difference between downlink CA inactive and downlink CA active

*8 Set to the supported maximum bandwidth

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_2A_13A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	2	5	18625	1852.5	1-24		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-		-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	2	5	625	1932.5	1-24		QPSK
	SCC1 *4						
	Band	Bandwidth *8 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *5	Resource Block Position	Modulation
	13	10	5230	751	50-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *6	DL CA active [dBm]	Delta Power [dB] *7
22.88	22.94	0.06

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_2A_13A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	13	10	23230	782	1-0		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-		-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	13	10	5230	751	1-0		QPSK
	SCC1 *4						
	Band	Bandwidth *8 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *5	Resource Block Position	Modulation
	2	20	900	1960	100-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *6	DL CA active [dBm]	Delta Power [dB] *7
22.70	22.79	0.09

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

*1 Highest measured maximum output power when downlink carrier aggregation is inactive.

*2 Downlink PCC channel is paired with the uplink channel according to normal configurations, as if there is no carrier aggregation.

*3 Downlink SCC1 is near the middle of its transmission band

*4 Enable when downlink CA is active

*5 Set to Maximum RB

*6 See Section 9. RF Output Power Measurement result for the appropriate LTE Band (Single Carrier)

*7 Uplink Power difference between downlink CA inactive and downlink CA active

*8 Set to the supported maximum bandwidth

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_2A_29A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	2	5	18625	1852.5	1-24		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-		-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	2	5	625	1932.5	1-24		QPSK
	SCC1 *4						
	Band	Bandwidth *8 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *5	Resource Block Position	Modulation
	29	10	9715	722.5	50-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *6	DL CA active [dBm]	Delta Power [dB] *7
22.88	22.90	0.02

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_3A_7A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	7	10	21100	2535	1-0		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-		-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	7	10	3100	2655	1-0		QPSK
	SCC1 *4						
	Band	Bandwidth *8 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *5	Resource Block Position	Modulation
	3	20	1575	1842.5	100-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *6	DL CA active [dBm]	Delta Power [dB] *7
21.49	21.34	-0.15

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

*1 Highest measured maximum output power when downlink carrier aggregation is inactive.

*2 Dowlink PCC channel is paired with the uplink channel according to normal configurations, as if there is no carrier aggregation.

*3 Downlink SCC1 is near the middle of its transmission band

*4 Enable when downlink CA is active

*5 Set to Maximum RB

*6 See Section 9. RF Output Power Measurement result for the appropriate LTE Band (Single Carrier)

*7 Uplink Power difference between downlink CA inactive and downlink CA active

*8 Set to the supported maximum bandwidth

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

E-UTRA CA Configuration	Uplink *1						
	PCC						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	4	15	20025	1717.5	1-37		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-		-
CA_4A_5A	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	4	15	2025	2117.5	1-37		QPSK
	SCC1 *4						
	Band	Bandwidth *8 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *5	Resource Block Position	Modulation
	5	10	2525	881.5	50-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *6	DL CA active [dBm]	Delta Power [dB] *7
22.83	22.78	-0.05

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

E-UTRA CA Configuration	Uplink *1						
	PCC						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	5	10	20600	844	1-0		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-		-
CA_4A_5A	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	5	10	2600	889	1-0		QPSK
	SCC1 *4						
	Band	Bandwidth *8 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *5	Resource Block Position	Modulation
	4	20	2175	2132.5	100-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *6	DL CA active [dBm]	Delta Power [dB] *7
22.71	22.67	-0.04

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

*1 Highest measured maximum output power when downlink carrier aggregation is inactive.

*2 Downlink PCC channel is paired with the uplink channel according to normal configurations, as if there is no carrier aggregation.

*3 Downlink SCC1 is near the middle of its transmission band

*4 Enable when downlink CA is active

*5 Set to Maximum RB

*6 See Section 9. RF Output Power Measurement result for the appropriate LTE Band (Single Carrier)

*7 Uplink Power difference between downlink CA inactive and downlink CA active

*8 Set to the supported maximum bandwidth

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_4A_12A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	4	3	19965	1711.5	1-14		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-		-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	4	3	1965	2111.5	1-14		QPSK
	SCC1 *4						
	Band	Bandwidth *8 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *5	Resource Block Position	Modulation
	12	10	5095	737.5	50-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *6	DL CA active [dBm]	Delta Power [dB] *7
23.07	22.94	-0.13

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_4A_12A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	12	5	23035	701.5	1-0		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-		-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	12	5	5035	731.5	1-0		QPSK
	SCC1 *4						
	Band	Bandwidth *8 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *5	Resource Block Position	Modulation
	4	20	2175	2132.5	50-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *6	DL CA active [dBm]	Delta Power [dB] *7
23.01	23.06	0.05

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

*1 Highest measured maximum output power when downlink carrier aggregation is inactive.

*2 Downlink PCC channel is paired with the uplink channel according to normal configurations, as if there is no carrier aggregation.

*3 Downlink SCC1 is near the middle of its transmission band

*4 Enable when downlink CA is active

*5 Set to Maximum RB

*6 See Section 9. RF Output Power Measurement result for the appropriate LTE Band (Single Carrier)

*7 Uplink Power difference between downlink CA inactive and downlink CA active

*8 Set to the supported maximum bandwidth

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_4A_13A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	4	15	20025	1717.5	1-37		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-		-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	4	15	2025	2117.5	1-37		QPSK
	SCC1 *4						
	Band	Bandwidth *8 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *5	Resource Block Position	Modulation
	13	10	5230	751	50-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *6	DL CA active [dBm]	Delta Power [dB] *7
22.83	22.79	-0.04

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_4A_13A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	13	10	23230	782	1-0		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-		-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	13	10	5230	751	1-0		QPSK
	SCC1 *4						
	Band	Bandwidth *8 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *5	Resource Block Position	Modulation
	4	20	2175	2132.5	100-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *6	DL CA active [dBm]	Delta Power [dB] *7
22.70	22.79	0.09

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

*1 Highest measured maximum output power when downlink carrier aggregation is inactive.

*2 Dowlink PCC channel is paired with the uplink channel according to normal configurations, as if there is no carrier aggregation.

*3 Downlink SCC1 is near the middle of its transmission band

*4 Enable when downlink CA is active

*5 Set to Maximum RB

*6 See Section 9. RF Output Power Measurement result for the appropriate LTE Band (Single Carrier)

*7 Uplink Power difference between downlink CA inactive and downlink CA active

*8 Set to the supported maximum bandwidth

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_4A_29A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	4	15	20025	1717.5	1-37		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-		-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	4	15	2025	2117.5	1-37		QPSK
	SCC1 *4						
	Band	Bandwidth *8 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *5	Resource Block Position	Modulation
	29	10	9715	722.5	50-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *6	DL CA active [dBm]	Delta Power [dB] *7
22.83	22.76	-0.07

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

*1 Highest measured maximum output power when downlink carrier aggregation is inactive.

*2 Downlink PCC channel is paired with the uplink channel according to normal configurations, as if there is no carrier aggregation.

*3 Downlink SCC1 is near the middle of its transmission band

*4 Enable when downlink CA is active

*5 Set to Maximum RB

*6 See Section 9. RF Output Power Measurement result for the appropriate LTE Band (Single Carrier)

*7 Uplink Power difference between downlink CA inactive and downlink CA active

*8 Set to the supported maximum bandwidth

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

10.2. Intra-band Contiguous CA(Downlink CA only)

E-UTRA CA Configuration	Uplink *1							PCC, SCC1 CH spacing [MHz] *3
	PCC							
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation	
	7	10	21100	2535	1-0		QPSK	
	SCC1							
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation	
	-	-	-	-	-	-	-	-
CA_7C	Downlink							
	PCC *2							PCC, SCC1 CH spacing [MHz] *3
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation	
	7	10	3100	2655	1-0		QPSK	
	SCC1 *4							14.4
	Band	Bandwidth *5 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *6	Resource Block Position	Modulation	
	7	20	2956	2640.6	100-0		QPSK	

Uplink Power Measurement Results		
DL CA inactive [dBm] *7	DL CA active [dBm]	Delta Power [dB] *8
21.49	21.47	-0.02

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

E-UTRA CA Configuration	Uplink *1							PCC, SCC1 CH spacing [MHz] *3
	PCC							
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation	
	41	5	41093	2640.3	1-24		QPSK	
	SCC1							
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation	
	-	-	-	-	-	-	-	-
CA_41C	Downlink							
	PCC *2							PCC, SCC1 CH spacing [MHz] *3
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation	
	41	5	41093	2640.3	1-24		QPSK	
	SCC1 *4							11.7
	Band	Bandwidth *5 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *6	Resource Block Position	Modulation	
	41	20	41172	2648.2	100-0		QPSK	

Uplink Power Measurement Results		
DL CA inactive [dBm] *7	DL CA active [dBm]	Delta Power [dB] *8
21.52	21.51	-0.01

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

*1 Highest measured maximum output power configuration when downlink carrier aggregation is inactive.

*2 Downlink PCC channel is paired with the uplink channel according to normal configurations, as if there is no carrier aggregation.

*3 The channel spacing for intra-band contiguous CA is adjusted to any multiple of 300 kHz less than the nominal channel spacing.

It is set to the maximum spacing less than nominal channel spacing.

The nominal channel spacing is determined by [BW1+BW2-0.1*|BW1-BW2|]/2 MHz, where BW1 and BW2 are the channel bandwidth of the CC in a 2-CC aggregation configuration.

*4 Enable when downlink CA is active

*5 Set to the supported maximum bandwidth

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

*6 Set to Maximum RB

*7 See Section 9. RF Output Power Measurement result for the appropriate LTE Band (Single Carrier)

*8 Uplink Power difference between downlink CA inactive and downlink CA active

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

10.3. Intra-band Non-Contiguous CA(Downlink CA only)

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_2A_2A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	2	5	18625	1852.5	1-24		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-	-	-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	2	5	625	1932.5	1-24		QPSK
	SCC1 *4						
	Band	Bandwidth *5 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *6	Resource Block Position	Modulation
	2	20	1100	1980	100-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *7	DL CA active [dBm]	Delta Power [dB] *8
22.88	22.87	-0.01

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_4A_4A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	4	15	20025	1717.5	1-37		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-	-	-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	4	15	2025	2117.5	1-37		QPSK
	SCC1 *4						
	Band	Bandwidth *5 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *6	Resource Block Position	Modulation
	4	20	2300	2145	100-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *7	DL CA active [dBm]	Delta Power [dB] *8
22.83	22.80	-0.03

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

*1 Highest measured maximum output power configuration when downlink carrier aggregation is inactive.

*2 Downlink PCC channel is paired with the uplink channel according to normal configurations, as if there is no carrier aggregation.

*3 The SCC1 channel is selected to provide maximum separation from the Downlink PCC channel and remain fully within the downlink transmission band. When channel spacing between downlink PCC and SCC1 is smaller than nominal channel bandwidth, configurable other channels instead of the highest power channel can be selected.

*4 Enable when downlink CA is active

*5 Set to the supported maximum bandwidth

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

*6 Set to Maximum RB

*7 See Section 9. RF Output Power Measurement result for the appropriate LTE Band (Single Carrier)

*8 Uplink Power difference between downlink CA inactive and downlink CA active

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_7A_7A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	7	10	21100	2535	1	0	QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-	-	-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	7	10	3100	2655	1	0	QPSK
	SCC1 *4						
	Band	Bandwidth *5 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *6	Resource Block Position	Modulation
	7	15	3375	2682.5	75	0	QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *7	DL CA active [dBm]	Delta Power [dB] *8
21.49	21.51	0.02

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

*1 Highest measured maximum output power configuration when downlink carrier aggregation is inactive.

*2 Downlink PCC channel is paired with the uplink channel according to normal configurations, as if there is no carrier aggregation.

*3 The SCC1 channel is selected to provide maximum separation from the Downlink PCC channel and remain fully within the downlink transmission band. When channel spacing between downlink PCC and SCC1 is smaller than nominal channel bandwidth, configurable other channels instead of the highest power channel can be selected.

*4 Enable when downlink CA is active

*5 Set to the supported maximum bandwidth

*6 Set to Maximum RB

*7 See Section 9. RF Output Power Measurement result for the appropriate LTE Band (Single Carrier)

*8 Uplink Power difference between downlink CA inactive and downlink CA active

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

E-UTRA CA Configuration	Uplink *1						
	PCC						
CA_41A_41A	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	41	5	41093	2640.3	1-0		QPSK
	SCC1						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	-	-	-	-	-	-	-
	Downlink						
	PCC *2						
	Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Resource Block Number	Resource Block Position	Modulation
	41	5	41093	2640.3	1-0		QPSK
	SCC1 *4						
	Band	Bandwidth *5 [MHz]	Channel *3	Frequency [MHz]	Resource Block Number *6	Resource Block Position	Modulation
	41	20	39750	2506	100-0		QPSK

Uplink Power Measurement Results		
DL CA inactive [dBm] *7	DL CA active [dBm]	Delta Power [dB] *8
21.52	21.48	-0.04

Based upon the measurement results, uplink power is not affected(i.e. not more than 0.25dB) by downlink CA and additional SAR measurements are not required.

*1 Highest measured maximum output power configuration when downlink carrier aggregation is inactive.

*2 Downlink PCC channel is paired with the uplink channel according to normal configurations, as if there is no carrier aggregation.

*3 The SCC1 channel is selected to provide maximum separation from the Downlink PCC channel and remain fully within the downlink transmission band. When channel spacing between downlink PCC and SCC1 is smaller than nominal channel bandwidth, configurable other channels instead of the highest power channel can be selected.

*4 Enable when downlink CA is active

*5 Set to the supported maximum bandwidth

*6 Set to Maximum RB

*7 See Section 9. RF Output Power Measurement result for the appropriate LTE Band (Single Carrier)

*8 Uplink Power difference between downlink CA inactive and downlink CA active

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

11. E-UTRA CA configurations and bandwidth combination sets

11.1. Inter-band CA

E-UTRA CA configuration	E-UTRA Band	1.4	3	5	10	15	20	Maximum aggregated bandwidth	Bandwidth combination set
		MHz	MHz	MHz	MHz	MHz	MHz	MHz	
CA_2A-5A	2			Y	Y	Y	Y	30	0
	5			Y	Y			20	
CA_2A-12A	2			Y	Y	Y	Y	30	0
	12			Y	Y				
	2			Y	Y	Y	Y	30	1
	12		Y	Y	Y				
CA_2A-13A	2			Y	Y	Y	Y	30	0
	13				Y				
	2			Y	Y			20	1
	13				Y				
CA_2A-29A	2			Y	Y			20	0
	29		Y	Y	Y				
	2			Y	Y			20	1
	29			Y	Y				
	2			Y	Y	Y	Y	30	2
	29			Y	Y				
CA_3A-7A	3			Y	Y	Y	Y	40	0
	7				Y	Y	Y		
CA_4A-5A	4			Y	Y			20	0
	5			Y	Y				
	4			Y	Y	Y	Y	30	1
	5			Y	Y				
CA_4A-12A	4	Y	Y	Y	Y			20	0
	12			Y	Y				
	4	Y	Y	Y	Y	Y	Y	30	1
	12			Y	Y				
	4			Y	Y	Y	Y	30	2
	12		Y	Y	Y				
	4			Y	Y			20	3
	12			Y	Y				
	4			Y	Y	Y	Y	30	4
	12			Y	Y				
CA_4A-13A	4			Y	Y	Y	Y	30	0
	13				Y				
	4			Y	Y			20	1
	13				Y				
CA_4A-29A	4			Y	Y			20	0
	29		Y	Y	Y				
	4			Y	Y			20	1
	29			Y	Y				
	4			Y	Y	Y	Y	30	2
	29			Y	Y				

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

11.2. Intra-band contiguous CA

E-UTRA CA configuration	Component carriers in order of increasing carrier frequency		Maximum aggregated bandwidth [MHz]	Bandwidth combination set
	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_7C	15	15	40	0
	20	20		
	10	20	40	1
	15	15, 20		
	20	10, 15, 20		
CA_41C	10	20	40	0
	15	15, 20		
	20	10, 15, 20		
	5, 10	20	40	1
	15	15, 20		
	20	5, 10, 15, 20		

11.3. Intra-band noncontiguous CA

E-UTRA CA configuration	Component carriers in order of increasing carrier frequency		Maximum aggregated bandwidth [MHz]	Bandwidth combination set
	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_2A-2A	5, 10, 15, 20	5, 10, 15, 20	40	0
CA_4A-4A	5, 10, 15, 20	5, 10, 15, 20	40	0
CA_7A-7A	5	15	40	0
	10	10, 15		
	15	15, 20		
	20	20		
CA_41A-41A	10, 15, 20	10, 15, 20	40	0
	5, 10, 15, 20	5, 10, 15, 20	40	1

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

12. Dielectric Property Measurements

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 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.

Tissue dielectric parameters were measured at the low, middle and high frequency of each operating frequency range of the test device.

Tissue Dielectric Parameters

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

Target Frequency (MHz)	Head		Body	
	ε_r	σ (S/m)	ε_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 – 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5000	36.2	4.45	49.3	5.07
5100	36.1	4.55	49.1	5.18
5200	36.0	4.66	49.0	5.30
5300	35.9	4.76	48.9	5.42
5400	35.8	4.86	48.7	5.53
5500	35.6	4.96	48.6	5.65
5600	35.5	5.07	48.5	5.77
5700	35.4	5.17	48.3	5.88
5800	35.3	5.27	48.2	6.00

IEEE Std 1528-2013

Refer to Table 3 within the IEEE Std 1528-2013

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

12.1. Tissue Dielectric Parameter Check Results

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 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.

Tissue dielectric parameters were measured at the low, middle and high frequency of each operating frequency range of the test device.

750MHz Band

Date	Freq. (MHz)	Liquid Parameters	Measured	Target	Delta (%)	Limit ±(%)
2018/4/20	Body 750	Relative Permittivity (ε_r):	55.58	55.55	0.06	5
		Conductivity (σ):	0.98	0.96	1.29	5
	Body 700	Relative Permittivity (ε_r):	56.02	55.74	0.51	5
		Conductivity (σ):	0.93	0.96	-2.81	5
	Body 720	Relative Permittivity (ε_r):	55.82	55.66	0.28	5
		Conductivity (σ):	0.95	0.96	-1.11	5
2018/4/25	Body 750	Relative Permittivity (ε_r):	55.44	55.55	-0.19	5
		Conductivity (σ):	0.94	0.96	-2.20	5
	Body 775	Relative Permittivity (ε_r):	55.18	55.45	-0.49	5
		Conductivity (σ):	0.97	0.97	0.00	5
	Body 790	Relative Permittivity (ε_r):	55.02	55.39	-0.67	5
		Conductivity (σ):	0.98	0.97	1.42	5
2018/4/26	Body 750	Relative Permittivity (ε_r):	55.51	55.55	-0.07	5
		Conductivity (σ):	0.94	0.96	-2.60	5
	Body 775	Relative Permittivity (ε_r):	55.27	55.45	-0.32	5
		Conductivity (σ):	0.96	0.97	-0.39	5
	Body 790	Relative Permittivity (ε_r):	55.11	55.39	-0.51	5
		Conductivity (σ):	0.98	0.97	1.12	5
2018/4/27	Body 750	Relative Permittivity (ε_r):	55.86	55.55	0.56	5
		Conductivity (σ):	0.93	0.96	-3.67	5
	Body 775	Relative Permittivity (ε_r):	55.59	55.45	0.25	5
		Conductivity (σ):	0.95	0.97	-1.51	5
	Body 790	Relative Permittivity (ε_r):	55.44	55.39	0.08	5
		Conductivity (σ):	0.97	0.97	-0.11	5

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

835MHz Band

Date	Freq. (MHz)	Liquid Parameters	Measured	Target	Delta (%)	Limit ±(%)
2018/4/23	Body 835	Relative Permittivity (ε_r):	55.73	55.20	0.96	5
		Conductivity (σ):	0.97	0.97	0.04	5
	Body 820	Relative Permittivity (ε_r):	55.92	55.28	1.16	5
		Conductivity (σ):	0.96	0.97	-1.38	5
	Body 850	Relative Permittivity (ε_r):	55.54	55.16	0.69	5
		Conductivity (σ):	0.99	0.99	-0.17	5
2018/4/24	Body 835	Relative Permittivity (ε_r):	55.86	55.20	1.20	5
		Conductivity (σ):	0.97	0.97	0.37	5
	Body 820	Relative Permittivity (ε_r):	56.10	55.28	1.49	5
		Conductivity (σ):	0.96	0.97	-1.03	5
	Body 850	Relative Permittivity (ε_r):	55.72	55.16	1.02	5
		Conductivity (σ):	0.99	0.99	0.12	5
2018/4/25	Body 835	Relative Permittivity (ε_r):	55.16	55.20	-0.07	5
		Conductivity (σ):	0.95	0.97	-1.64	5
	Body 820	Relative Permittivity (ε_r):	55.32	55.28	0.08	5
		Conductivity (σ):	0.94	0.97	-3.02	5
	Body 850	Relative Permittivity (ε_r):	55.02	55.16	-0.25	5
		Conductivity (σ):	0.97	0.99	-1.89	5
2018/4/26	Body 835	Relative Permittivity (ε_r):	55.67	55.20	0.85	5
		Conductivity (σ):	0.96	0.97	-0.85	5
	Body 820	Relative Permittivity (ε_r):	55.84	55.28	1.02	5
		Conductivity (σ):	0.95	0.97	-2.32	5
	Body 850	Relative Permittivity (ε_r):	55.51	55.16	0.64	5
		Conductivity (σ):	0.98	0.99	-0.94	5

1750MHz Band

Date	Freq. (MHz)	Liquid Parameters	Measured	Target	Delta (%)	Limit ±(%)
2018/4/20	Body 1710	Relative Permittivity (ε_r):	52.54	53.54	-1.87	5
		Conductivity (σ):	1.41	1.46	-3.66	5
	Body 1750	Relative Permittivity (ε_r):	52.50	53.43	-1.74	5
		Conductivity (σ):	1.46	1.49	-2.35	5
	Body 1755	Relative Permittivity (ε_r):	52.50	53.43	-1.74	5
		Conductivity (σ):	1.46	1.49	-1.90	5
2018/4/24	Body 1710	Relative Permittivity (ε_r):	52.77	53.54	-1.44	5
		Conductivity (σ):	1.42	1.46	-2.64	5
	Body 1750	Relative Permittivity (ε_r):	52.69	53.43	-1.38	5
		Conductivity (σ):	1.46	1.49	-2.03	5
	Body 1755	Relative Permittivity (ε_r):	52.67	53.43	-1.42	5
		Conductivity (σ):	1.46	1.49	-1.69	5
2018/4/25	Body 1710	Relative Permittivity (ε_r):	52.05	53.54	-2.79	5
		Conductivity (σ):	1.44	1.46	-1.75	5
	Body 1750	Relative Permittivity (ε_r):	51.93	53.43	-2.81	5
		Conductivity (σ):	1.48	1.49	-0.69	5
	Body 1755	Relative Permittivity (ε_r):	51.92	53.43	-2.82	5
		Conductivity (σ):	1.49	1.49	-0.28	5

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

1900MHz Band

Date	Freq. (MHz)	Liquid Parameters	Measured	Target	Delta (%)	Limit ±(%)
2018/4/13	Body 1850	Relative Permittivity (ε_r):	52.48	53.30	-1.54	5
		Conductivity (σ):	1.47	1.52	-3.16	5
	Body 1900	Relative Permittivity (ε_r):	52.27	53.30	-1.93	5
		Conductivity (σ):	1.53	1.52	0.53	5
	Body 1915	Relative Permittivity (ε_r):	52.21	53.30	-2.05	5
		Conductivity (σ):	1.54	1.52	1.51	5
2018/4/16	Body 1850	Relative Permittivity (ε_r):	52.50	53.30	-1.50	5
		Conductivity (σ):	1.48	1.52	-2.43	5
	Body 1900	Relative Permittivity (ε_r):	52.26	53.30	-1.95	5
		Conductivity (σ):	1.53	1.52	0.86	5
	Body 1915	Relative Permittivity (ε_r):	52.19	53.30	-2.08	5
		Conductivity (σ):	1.55	1.52	1.64	5
2018/4/18	Body 1850	Relative Permittivity (ε_r):	51.92	53.30	-2.59	5
		Conductivity (σ):	1.47	1.52	-3.55	5
	Body 1900	Relative Permittivity (ε_r):	51.72	53.30	-2.96	5
		Conductivity (σ):	1.53	1.52	0.39	5
	Body 1915	Relative Permittivity (ε_r):	51.67	53.30	-3.06	5
		Conductivity (σ):	1.54	1.52	1.45	5

2600 MHz band

Date	Freq. (MHz)	Liquid Parameters	Measured	Target	Delta (%)	Limit ±(%)
2018/4/10	Body 2500	Relative Permittivity (ε_r):	52.46	52.64	-0.34	5
		Conductivity (σ):	2.08	2.02	3.15	5
	Body 2600	Relative Permittivity (ε_r):	52.10	52.51	-0.78	5
		Conductivity (σ):	2.21	2.16	2.28	5
	Body 2700	Relative Permittivity (ε_r):	51.73	52.38	-1.25	5
		Conductivity (σ):	2.35	2.30	2.16	5
2018/4/11	Body 2500	Relative Permittivity (ε_r):	51.23	52.64	-2.67	5
		Conductivity (σ):	2.11	2.02	4.19	5
	Body 2600	Relative Permittivity (ε_r):	50.79	52.51	-3.28	5
		Conductivity (σ):	2.23	2.16	3.29	5
	Body 2700	Relative Permittivity (ε_r):	50.45	52.38	-3.69	5
		Conductivity (σ):	2.37	2.30	2.90	5
2018/4/19	Body 2500	Relative Permittivity (ε_r):	52.62	52.64	-0.03	5
		Conductivity (σ):	2.03	2.02	0.63	5
	Body 2600	Relative Permittivity (ε_r):	52.33	52.51	-0.34	5
		Conductivity (σ):	2.17	2.16	0.48	5
	Body 2700	Relative Permittivity (ε_r):	52.05	52.38	-0.64	5
		Conductivity (σ):	2.30	2.30	0.13	5

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

13. System Performance Check

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are re-measured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

13.1. System Performance Check Measurement Conditions

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ±0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm ± 0.5 cm for SAR measurements.
- The DASY system with an E-Field Probe was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1 GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 12 mm (1GHz to 3GHz) and15 mm (below 1GHz) was aligned with the dipole.
  For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 7x7x7 (below 3 GHz) and/or 8x8x7 (above 3 GHz) fine cube was chosen for the cube.
- Distance between probe sensors and phantom surface was set to 3 mm.
  For 5 GHz band - Distance between probe sensors and phantom surface was set to 2.5 mm
- The dipole input power (forward power) was 100 mW(For 5GHz band) or 250 mW(For other band).
- The results are normalized to 1 W input power.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

13.2. Reference SAR Values for System Performance Check

The target(reference) SAR values can be obtained from the calibration certificate of system validation dipoles(Refer to section 15). The target SAR values are SAR measured value in the calibration certificate scaled to 1W.

System Dipole	Serial No.	Cal. Date MM/DD/YYY	Freq. (MHz)	Target SAR Values (mW/g)		
				1g/10g	Head	Body
D750V3	1058	5/28/2015	750	1g	8.24	8.64
				10g	5.40	5.72
D835V2	4d149	3/8/2016	835	1g	9.56	9.84
				10g	6.20	6.44
D1750V2	1089	3/11/2016	1750	1g	35.88	35.80
				10g	19.04	19.08
D1900V2	5d169	3/9/2016	1900	1g	38.72	39.96
				10g	20.32	21.12
D2600V2	1030	3/9/2016	2600	1g	57.60	54.40
				10g	25.56	24.16

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

13.3. System Performance Check Results

The 1-g and 10-g SAR measured with a reference dipole, using the required tissue-equivalent medium at the test frequency, must be within 10% of the manufacturer calibrated dipole SAR target.

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %
	Type	Serial #			Zoom Scan	Normalize to 1 W		
4/10/2018	D2600V2	1030	Body	1g	13.10	52.40	54.40	-3.68
				10g	5.81	23.24	24.16	-3.81
4/11/2018	D2600V2	1030	Body	1g	13.10	52.40	54.40	-3.68
				10g	5.76	23.04	24.16	-4.64
4/13/2018	D1900V2	5d169	Body	1g	9.35	37.40	39.96	-6.41
				10g	4.97	19.88	21.12	-5.87
4/16/2018	D1900V2	5d169	Body	1g	9.75	39.00	39.96	-2.40
				10g	5.05	20.20	21.12	-4.36
4/18/2018	D1900V2	5d169	Body	1g	9.75	39.00	39.96	-2.40
				10g	5.12	20.48	21.12	-3.03
4/19/2018	D2600V2	1030	Body	1g	12.80	51.20	54.40	-5.88
				10g	5.65	22.60	24.16	-6.46
4/20/2018	D750V3	1058	Body	1g	2.24	8.96	8.64	3.70
				10g	1.48	5.92	5.72	3.50
4/20/2018	D1750V2	1089	Body	1g	8.53	34.12	35.80	-4.69
				10g	4.55	18.20	19.08	-4.61
4/23/2018	D835V2	4d149	Body	1g	2.44	9.76	9.84	-0.81
				10g	1.62	6.48	6.44	0.62
4/24/2018	D835V2	4d149	Body	1g	2.49	9.96	9.84	1.22
				10g	1.66	6.64	6.44	3.11
4/24/2018	D1750V2	1089	Body	1g	8.55	34.20	35.80	-4.47
				10g	4.61	18.44	19.08	-3.35
4/25/2018	D835V2	4d149	Body	1g	2.40	9.60	9.84	-2.44
				10g	1.60	6.40	6.44	-0.62
4/25/2018	D1750V2	1089	Body	1g	8.75	35.00	35.80	-2.23
				10g	4.70	18.80	19.08	-1.47
4/25/2018	D750V3	1058	Body	1g	2.14	8.56	8.64	-0.93
				10g	1.43	5.72	5.72	0.00
4/26/2018	D835V2	4d149	Body	1g	2.45	9.80	9.84	-0.41
				10g	1.63	6.52	6.44	1.24
4/26/2018	D750V3	1058	Body	1g	2.03	8.12	8.64	-6.02
				10g	1.36	5.44	5.72	-4.90
4/27/2018	D750V3	1058	Body	1g	2.03	8.12	8.64	-6.02
				10g	1.36	5.44	5.72	-4.90

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

14. RF Exposure Conditions (Test Configurations)

Refer to Section 17 “Antenna Dimensions and Separation Distances” for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.

14.1. Standalone SAR Test Exclusion Considerations

Standalone SAR test exclusion was based upon the following criteria:

1. According to KDB 447498D01 § 4.1 f) if the antenna is at close proximity to user then the outer surface of the DUT should be treated as the radiating surface. The test separation distance is then determined by the smallest distance between the outer surface of the device and the user. For the purposes of this report close proximity has been defined as closer than 50 mm. For antennas <50 mm from the rear or edge the separation distance used for the SAR exclusion calculations is 5 mm.
2. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.
3. If the antenna to DUT adjacent edge or bottom separation distance is >50mm the actual antenna to user separation distance is used to determine SAR exclusion and estimated SAR value
4. Reduced power does not apply for edges 3 and 4.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

14.1.1. SAR Test Exclusion Calculations for antennas <50mm to adjacent edges

Antenna	Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)						Calculated Threshold Value					
			dBm	mW	Bottom side	Edge 1	Edge 2	Edge 3	Edge 4	Front	Bottom side	Edge 1	Edge 2	Edge 3	Edge 4	Front
Full Power WWAN																
WWAN	WCDMA V	846.6	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		23.1 -MEASURE-	11 -MEASURE-	> 50 mm	> 50 mm	9.2 -MEASURE-	
WWAN	WCDMA IV	1752.6	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		33.2 -MEASURE-	15.8 -MEASURE-	> 50 mm	> 50 mm	13.3 -MEASURE-	
WWAN	WCDMA II	1907.6	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		34.7 -MEASURE-	16.5 -MEASURE-	> 50 mm	> 50 mm	13.9 -MEASURE-	
WWAN	LTE 2	1900	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		34.6 -MEASURE-	16.5 -MEASURE-	> 50 mm	> 50 mm	13.8 -MEASURE-	
WWAN	LTE 4	1745	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		33.2 -MEASURE-	15.8 -MEASURE-	> 50 mm	> 50 mm	13.3 -MEASURE-	
WWAN	LTE 5	844	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		23.1 -MEASURE-	11 -MEASURE-	> 50 mm	> 50 mm	9.2 -MEASURE-	
WWAN	LTE 7	2460	22.0	158	8.1(10)	4.6(21.00)	143.70	184.50	24.50		24.8 -MEASURE-	11.8 -MEASURE-	> 50 mm	> 50 mm	9.9 -MEASURE-	
WWAN	LTE 12	711	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		21.2 -MEASURE-	10.1 -MEASURE-	> 50 mm	> 50 mm	8.5 -MEASURE-	
WWAN	LTE 13	782	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		22.2 -MEASURE-	10.6 -MEASURE-	> 50 mm	> 50 mm	8.9 -MEASURE-	
WWAN	LTE 25	1905	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		34.6 -MEASURE-	16.5 -MEASURE-	> 50 mm	> 50 mm	13.9 -MEASURE-	
WWAN	LTE 26	841.5	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		23 -MEASURE-	11 -MEASURE-	> 50 mm	> 50 mm	9.2 -MEASURE-	
WWAN	LTE 41	2680	23.0	200	8.1(10)	4.6(21.00)	143.70	184.50	24.50		32.7 -MEASURE-	15.6 -MEASURE-	> 50 mm	> 50 mm	13.1 -MEASURE-	
Reduction Power WWAN																
WWAN	WCDMA V	846.6	19.4	87	10.00	21.00					16 -MEASURE-	16 -MEASURE-				
WWAN	WCDMA IV	1752.6	18.0	63	10.00	21.00					16.7 -MEASURE-	16.7 -MEASURE-				
WWAN	WCDMA II	1907.6	18.3	68	10.00	21.00					18.8 -MEASURE-	18.8 -MEASURE-				
WWAN	LTE 2	1900	18.2	66	10.00	21.00					18.2 -MEASURE-	18.2 -MEASURE-				
WWAN	LTE 4	1745	17.8	60	10.00	21.00					15.9 -MEASURE-	15.9 -MEASURE-				
WWAN	LTE 5	844	19.2	83	10.00	21.00					15.3 -MEASURE-	15.3 -MEASURE-				
WWAN	LTE 7	2460	15.6	36	10.00	21.00					11.3 -MEASURE-	11.3 -MEASURE-				
WWAN	LTE 12	711	22.4	174	10.00	21.00					29.3 -MEASURE-	29.3 -MEASURE-				
WWAN	LTE 13	782	20.8	120	10.00	21.00					21.2 -MEASURE-	21.2 -MEASURE-				
WWAN	LTE 25	1905	17.9	62	10.00	21.00					17.1 -MEASURE-	17.1 -MEASURE-				
WWAN	LTE 26	841.5	19.0	79	10.00	21.00					14.5 -MEASURE-	14.5 -MEASURE-				
WWAN	LTE 41	2680	16.8	48	10.00	21.00					15.7 -MEASURE-	15.7 -MEASURE-				

Note(s):

1. According to KDB 447498D01, if the calculated threshold value is >3 then SAR testing is required.
2. The separation distances from antennas to the bottom side or the edge were input. For antennas <50 mm from the bottom side or edge (shaded blue frame in above table) the separation distance used for the SAR exclusion calculations is 5 mm.
3. The separation distances from antennas to the bottom side or the edge were input (shaded pink frame in above table). A number in the parenthesis is "(proximity sensor trigger distance – 1) mm". The separation distance used for the SAR exclusion calculations is 21 mm (Bottom side), 10 mm (Edge 1).

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

14.1.2. SAR Test Exclusion Calculations for antennas >50mm to adjacent edges

Antenna	Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)						Calculated Threshold Value					
			dBm	mW	Bottom side	Edge 1	Edge 2	Edge 3	Edge 4	Front	Bottom side	Edge 1	Edge 2	Edge 3	Edge 4	Front
Full Power WWAN																
WWAN	WCDMA V	846.6	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		< 50 mm	< 50 mm	691.9 mW -EXEMPT-	922.1 mW -EXEMPT-	< 50 mm	
WWAN	WCDMA IV	1752.6	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		< 50 mm	< 50 mm	1050.3 mW -EXEMPT-	1458.3 mW -EXEMPT-	< 50 mm	
WWAN	WCDMA II	1907.6	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		< 50 mm	< 50 mm	1045.6 mW -EXEMPT-	1453.6 mW -EXEMPT-	< 50 mm	
WWAN	LTE 2	1900	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		< 50 mm	< 50 mm	1045.8 mW -EXEMPT-	1453.8 mW -EXEMPT-	< 50 mm	
WWAN	LTE 4	1745	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		< 50 mm	< 50 mm	1050.6 mW -EXEMPT-	1458.6 mW -EXEMPT-	< 50 mm	
WWAN	LTE 5	844	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		< 50 mm	< 50 mm	690.5 mW -EXEMPT-	920.1 mW -EXEMPT-	< 50 mm	
WWAN	LTE 7	2460	22.0	158	8.1(10)	4.6(21.00)	143.70	184.50	24.50		< 50 mm	< 50 mm	1032.6 mW -EXEMPT-	1440.6 mW -EXEMPT-	< 50 mm	
WWAN	LTE 12	711	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		< 50 mm	< 50 mm	622 mW -EXEMPT-	815.4 mW -EXEMPT-	< 50 mm	
WWAN	LTE 13	782	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		< 50 mm	< 50 mm	658.1 mW -EXEMPT-	870.8 mW -EXEMPT-	< 50 mm	
WWAN	LTE 25	1905	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		< 50 mm	< 50 mm	1045.7 mW -EXEMPT-	1453.7 mW -EXEMPT-	< 50 mm	
WWAN	LTE 26	841.5	24.0	251	8.1(10)	4.6(21.00)	143.70	184.50	24.50		< 50 mm	< 50 mm	689.2 mW -EXEMPT-	918.1 mW -EXEMPT-	< 50 mm	
WWAN	LTE 41	2680	23.0	200	8.1(10)	4.6(21.00)	143.70	184.50	24.50		< 50 mm	< 50 mm	1028.6 mW -EXEMPT-	1436.6 mW -EXEMPT-	< 50 mm	
Reduction Power WWAN																
WWAN	WCDMA V	846.6	19.4	87	10.00	21.00					< 50 mm	< 50 mm				
WWAN	WCDMA IV	1752.6	18.0	63	10.00	21.00					< 50 mm	< 50 mm				
WWAN	WCDMA II	1907.6	18.3	68	10.00	21.00					< 50 mm	< 50 mm				
WWAN	LTE 2	1900	18.2	66	10.00	21.00					< 50 mm	< 50 mm				
WWAN	LTE 4	1745	17.8	60	10.00	21.00					< 50 mm	< 50 mm				
WWAN	LTE 5	844	19.2	83	10.00	21.00					< 50 mm	< 50 mm				
WWAN	LTE 7	2460	15.6	36	10.00	21.00					< 50 mm	< 50 mm				
WWAN	LTE 12	711	22.4	174	10.00	21.00					< 50 mm	< 50 mm				
WWAN	LTE 13	782	20.8	120	10.00	21.00					< 50 mm	< 50 mm				
WWAN	LTE 25	1905	17.9	62	10.00	21.00					< 50 mm	< 50 mm				
WWAN	LTE 26	841.5	19.0	79	10.00	21.00					< 50 mm	< 50 mm				
WWAN	LTE 41	2680	16.8	48	10.00	21.00					< 50 mm	< 50 mm				

Note(s):

1. According to KDB 447498D01, if the calculated Power threshold is less than the output power then SAR testing is required.
2. The separation distances from antennas to the bottom side or the edge were input. For antennas <50 mm from the bottom side or edge (shaded blue frame in above table) the separation distance used for the SAR exclusion calculations is 5 mm.
3. The separation distances from antennas to the bottom side or the edge were input (shaded pink frame in above table). A number in the parenthesis is "(proximity sensor trigger distance – 1) mm". The separation distance used for the SAR exclusion calculations is 21 mm (Bottom side), 10 mm (Edge 1).

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15. Measured and Reported (Scaled) SAR Results

SAR Test Reduction criteria are as follows:

KDB 447498 D01 General RF Exposure Guidance:

Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

1. ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
2. ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
3. ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

KDB 941225 D01 SAR test for 3G device:

When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≦1/4 dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ration 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.

KDB 941225 D01 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

- Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
  - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
  - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
  - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
- The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
- Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
  - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
- Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
- Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.

Note: Measured value is rounded round off to three decimal places

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15.1. W-CDMA Band 2

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	0	Rel 99 RMC 12.2 kbps	9262	1852.4	18.3	17.05	0.894	1.192	1	
			9400	1880.0	18.3	17.43	0.894	1.092		
			9538	1907.6	18.3	17.34	0.918	1.145		
Bottom	0	Rel 99 RMC 12.2 kbps	9262	1852.4	18.3	17.05				
			9400	1880.0	18.3	17.43	0.477	0.583		
			9538	1907.6	18.3	17.34				

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	21	Rel 99 RMC 12.2 kbps	9262	1852.4	24.0	23.16	0.480	0.582		
			9400	1880.0	24.0	23.15				
			9538	1907.6	24.0	22.85				
Edge2	0	Rel 99 RMC 12.2 kbps	9262	1852.4	24.0	23.16	0.072	0.087		
			9400	1880.0	24.0	23.15				
			9538	1907.6	24.0	22.85				
Edge3	0	Rel 99 RMC 12.2 kbps	9262	1852.4	24.0	23.16	0.011	0.013		
			9400	1880.0	24.0	23.15				
			9538	1907.6	24.0	22.85				
Edge4	0	Rel 99 RMC 12.2 kbps	9262	1852.4	24.0	23.16	0.239	0.290		
			9400	1880.0	24.0	23.15				
			9538	1907.6	24.0	22.85				
Bottom	10	Rel 99 RMC 12.2 kbps	9262	1852.4	24.0	23.16	0.711	0.863		
			9400	1880.0	24.0	23.15	0.703	0.855		
			9538	1907.6	24.0	22.85	0.728	0.949	2	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15.2. W-CDMA Band 4

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	0	Rel 99 RMC 12.2 kbps	1312	1712.4	18.0	17.91	0.866	0.884	3	
			1413	1732.6	18.0	17.82	0.847	0.883		
			1513	1752.6	18.0	17.76	0.826	0.873		
Bottom	0	Rel 99 RMC 12.2 kbps	1312	1712.4	18.0	17.91	0.324	0.331		
			1413	1732.6	18.0	17.82				
			1513	1752.6	18.0	17.76				

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	21	Rel 99 RMC 12.2 kbps	1312	1712.4	24.0	23.03				
			1413	1732.6	24.0	23.04	0.472	0.589		
			1513	1752.6	24.0	22.83				
Edge2	0	Rel 99 RMC 12.2 kbps	1312	1712.4	24.0	23.03				
			1413	1732.6	24.0	23.04	0.055	0.069		
			1513	1752.6	24.0	22.83				
Edge3	0	Rel 99 RMC 12.2 kbps	1312	1712.4	24.0	23.03				
			1413	1732.6	24.0	23.04	0.007	0.009		
			1513	1752.6	24.0	22.83				
Edge4	0	Rel 99 RMC 12.2 kbps	1312	1712.4	24.0	23.03				
			1413	1732.6	24.0	23.04	0.233	0.291		
			1513	1752.6	24.0	22.83				
Bottom	10	Rel 99 RMC 12.2 kbps	1312	1712.4	24.0	23.03	0.627	0.784		
			1413	1732.6	24.0	23.04	0.659	0.822		
			1513	1752.6	24.0	22.83	0.710	0.930	4	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15.3. W-CDMA Band 5

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	0	Rel 99 RMC 12.2 kbps	4132	826.4	19.4	18.52	0.894	1.095		
			4183	836.6	19.4	18.47	0.935	1.158	5	
			4233	846.6	19.4	18.55	0.949	1.154		
Bottom	0	Rel 99 RMC 12.2 kbps	4132	826.4	19.4	18.52	0.655	0.802		
			4183	836.6	19.4	18.47	0.695	0.861		
			4233	846.6	19.4	18.55	0.752	0.915		

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	21	Rel 99 RMC 12.2 kbps	4132	826.4	24.0	23.04	0.313	0.390		
			4183	836.6	24.0	23.03				
			4233	846.6	24.0	22.83				
Edge2	0	Rel 99 RMC 12.2 kbps	4132	826.4	24.0	23.04	0.141	0.176		
			4183	836.6	24.0	23.03				
			4233	846.6	24.0	22.83				
Edge3	0	Rel 99 RMC 12.2 kbps	4132	826.4	24.0	23.04	0.016	0.020		
			4183	836.6	24.0	23.03				
			4233	846.6	24.0	22.83				
Edge4	0	Rel 99 RMC 12.2 kbps	4132	826.4	24.0	23.04	0.119	0.148		
			4183	836.6	24.0	23.03				
			4233	846.6	24.0	22.83				
Bottom	10	Rel 99 RMC 12.2 kbps	4132	826.4	24.0	23.04	0.627	0.782	6	
			4183	836.6	24.0	23.03				
			4233	846.6	24.0	22.83				

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15.4. **LTE Band 2**

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas. Avg	Meas.	Scaled		
Edge 1	0	QPSK	18700	1860	1	49	18.2	16.71	0.752	1.060		
			18900	1880	1	49	18.2	16.77	0.793	1.102		
			19100	1900	1	49	18.2	16.95	0.829	1.105		
			18700	1860	50	0	18.2	16.71	0.771	1.087		
			18900	1880	50	24	18.2	16.78	0.801	1.111		
			19100	1900	50	24	18.2	16.81	0.833	1.147	7	
			19100	1900	100	0	18.2	16.80	0.826	1.140		
Bottom	0	QPSK	18700	1860	1	49	18.2	16.71				
			18900	1880	1	49	18.2	16.77				
			19100	1900	1	49	18.2	16.95	0.406	0.541		
			18700	1860	50	0	18.2	16.71				
			18900	1880	50	24	18.2	16.78				
			19100	1900	50	24	18.2	16.81	0.404	0.556		
			19100	1900	100	0	18.2	16.80				

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm) Tune-up limit	Power (dBm) Meas. Avg	1-g SAR (W/kg) Meas.	1-g SAR (W/kg) Scaled	Plot No.	Note
Edge 1	21	QPSK	18700	1860	1	49	24.0	22.50				
			18900	1880	1	49	24.0	22.53				
			19100	1900	1	49	24.0	22.57	0.411	0.571		
			18700	1860	50	0	23.0	21.50				
			18900	1880	50	24	23.0	21.52				
			19100	1900	50	24	23.0	21.53	0.334	0.469		
			19100	1900	100	0	23.0	21.51				
Edge 2	0	QPSK	18700	1860	1	49	24.0	22.50				
			18900	1880	1	49	24.0	22.53				
			19100	1900	1	49	24.0	22.57	0.045	0.063		
			18700	1860	50	0	23.0	21.50				
			18900	1880	50	24	23.0	21.52				
			19100	1900	50	24	23.0	21.53	0.038	0.053		
			19100	1900	100	0	23.0	21.51				
Edge 3	0	QPSK	18700	1860	1	49	24.0	22.50				
			18900	1880	1	49	24.0	22.53				
			19100	1900	1	49	24.0	22.57	0.013	0.018		
			18700	1860	50	0	23.0	21.50				
			18900	1880	50	24	23.0	21.52				
			19100	1900	50	24	23.0	21.53	0.008	0.011		
			19100	1900	100	0	23.0	21.51				
Edge 4	0	QPSK	18700	1860	1	49	24.0	22.50				
			18900	1880	1	49	24.0	22.53				
			19100	1900	1	49	24.0	22.57	0.288	0.400		
			18700	1860	50	0	23.0	21.50				
			18900	1880	50	24	23.0	21.52				
			19100	1900	50	24	23.0	21.53	0.239	0.335		
			19100	1900	100	0	23.0	21.51				
Bottom	10	QPSK	18700	1860	1	49	24.0	22.50	0.627	0.886		
			18900	1880	1	49	24.0	22.53	0.682	0.957		
			19100	1900	1	49	24.0	22.57	0.702	0.976	8	
			18700	1860	50	0	23.0	21.50				
			18900	1880	50	24	23.0	21.52				
			19100	1900	50	24	23.0	21.53	0.553	0.776		
			19100	1900	100	0	23.0	21.51	0.562	0.792		

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15.5. **LTE Band 4**

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas. Avg	Meas.	Scaled		
Edge 1	0	QPSK	20050	1720	1	49	17.8	16.73	0.764	0.977		
			20175	1732.5	1	49	17.8	16.75	0.759	0.967		
			20300	1745	1	49	17.8	16.62	0.753	0.988		
			20050	1720	50	24	17.8	16.63	0.786	1.029	9	
			20175	1732.5	50	24	17.8	16.55	0.750	1.000		
			20300	1745	50	49	17.8	16.50	0.738	0.996		
			20050	1720	100	0	17.8	16.61	0.778	1.023		
Bottom	0	QPSK	20050	1720	1	49	17.8	16.73				
			20175	1732.5	1	49	17.8	16.75	0.318	0.405		
			20300	1745	1	49	17.8	16.62				
			20050	1720	50	24	17.8	16.63	0.311	0.407		
			20175	1732.5	50	24	17.8	16.55				
			20300	1745	50	49	17.8	16.50				
			20050	1720	100	0	17.8	16.61				

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm) Tune-up limit	Power (dBm) Meas. Avg	1-g SAR (W/kg) Meas.	1-g SAR (W/kg) Scaled	Plot No.	Note
Edge 1	21	QPSK	20050	1720	1	49	24.0	22.82	0.417	0.547		
			20175	1732.5	1	49	24.0	22.59				
			20300	1745	1	49	24.0	22.56				
			20050	1720	50	24	23.0	21.74	0.340	0.454		
			20175	1732.5	50	0	23.0	21.53				
			20300	1745	50	24	23.0	21.52				
			20050	1720	100	0	23.0	21.70				
Edge 2	0	QPSK	20050	1720	1	49	24.0	22.82	0.047	0.062		
			20175	1732.5	1	49	24.0	22.59				
			20300	1745	1	49	24.0	22.56				
			20050	1720	50	24	23.0	21.74	0.036	0.048		
			20175	1732.5	50	0	23.0	21.53				
			20300	1745	50	24	23.0	21.52				
			20050	1720	100	0	23.0	21.70				
Edge 3	0	QPSK	20050	1720	1	49	24.0	22.82	0.004	0.005		
			20175	1732.5	1	49	24.0	22.59				
			20300	1745	1	49	24.0	22.56				
			20050	1720	50	24	23.0	21.74	0.005	0.007		
			20175	1732.5	50	0	23.0	21.53				
			20300	1745	50	24	23.0	21.52				
			20050	1720	100	0	23.0	21.70				
Edge 4	0	QPSK	20050	1720	1	49	24.0	22.82	0.186	0.244		
			20175	1732.5	1	49	24.0	22.59				
			20300	1745	1	49	24.0	22.56				
			20050	1720	50	24	23.0	21.74	0.150	0.200		
			20175	1732.5	50	0	23.0	21.53				
			20300	1745	50	24	23.0	21.52				
			20050	1720	100	0	23.0	21.70				
Bottom	10	QPSK	20050	1720	1	49	24.0	22.82	0.705	0.925		
			20175	1732.5	1	49	24.0	22.59	0.747	1.034		
			20300	1745	1	49	24.0	22.56	0.756	1.053	10	
			20050	1720	50	24	23.0	21.74	0.573	0.766		
			20175	1732.5	50	0	23.0	21.53				
			20300	1745	50	24	23.0	21.52				
			20050	1720	100	0	23.0	21.70	0.571	0.770		

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15.6. **LTE Band 5**

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas. Avg	Meas.	Scaled		
Edge 1	0	QPSK	20450	829	1	0	19.2	18.91	0.911	0.974		
			20525	836.5	1	24	19.2	18.49	0.973	1.146		
			20600	844	1	0	19.2	18.90	1.060	1.136		
			20450	829	25	0	19.2	18.44	0.911	1.085		
			20525	836.5	25	12	19.2	18.35	0.953	1.159		
			20600	844	25	0	19.2	18.38	0.980	1.184	11	
			20450	829	50	0	19.2	18.41	0.891	1.069		
Bottom	0	QPSK	20450	829	1	0	19.2	18.91	0.643	0.687		
			20525	836.5	1	24	19.2	18.49				
			20600	844	1	0	19.2	18.90				
			20450	829	25	0	19.2	18.44	0.613	0.730		
			20525	836.5	25	12	19.2	18.35				
			20600	844	25	0	19.2	18.38				
			20450	829	50	0	19.2	18.41				

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm) Tune-up limit	Power (dBm) Meas. Avg	1-g SAR (W/kg) Meas.	1-g SAR (W/kg) Scaled	Plot No.	Note
Edge 1	21	QPSK	20450	829	1	24	24.0	22.50				
			20525	836.5	1	49	24.0	22.69				
			20600	844	1	0	24.0	22.71	0.265	0.357		
			20450	829	25	12	23.0	21.46	0.179	0.255		
			20525	836.5	25	12	23.0	21.42				
			20600	844	25	0	23.0	21.37				
			20450	829	50	0	23.0	21.45				
Edge 2	0	QPSK	20450	829	1	24	24.0	22.50				
			20525	836.5	1	49	24.0	22.69				
			20600	844	1	0	24.0	22.71	0.026	0.035		
			20450	829	25	12	23.0	21.46	0.044	0.063		
			20525	836.5	25	12	23.0	21.42				
			20600	844	25	0	23.0	21.37				
			20450	829	50	0	23.0	21.45				
Edge 3	0	QPSK	20450	829	1	24	24.0	22.50				
			20525	836.5	1	49	24.0	22.69				
			20600	844	1	0	24.0	22.71	0.018	0.024		
			20450	829	25	12	23.0	21.46	0.010	0.014		
			20525	836.5	25	12	23.0	21.42				
			20600	844	25	0	23.0	21.37				
			20450	829	50	0	23.0	21.45				
Edge 4	0	QPSK	20450	829	1	24	24.0	22.50				
			20525	836.5	1	49	24.0	22.69				
			20600	844	1	0	24.0	22.71	0.078	0.105		
			20450	829	25	12	23.0	21.46	0.086	0.123		
			20525	836.5	25	12	23.0	21.42				
			20600	844	25	0	23.0	21.37				
			20450	829	50	0	23.0	21.45				
Bottom	10	QPSK	20450	829	1	24	24.0	22.50				
			20525	836.5	1	49	24.0	22.69				
			20600	844	1	0	24.0	22.71	0.507	0.682	12	
			20450	829	25	12	23.0	21.46	0.347	0.495		
			20525	836.5	25	12	23.0	21.42				
			20600	844	25	0	23.0	21.37				
			20450	829	50	0	23.0	21.45				

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15.7. **LTE Band 7**

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas. Avg	Meas.	Scaled		
Edge 1	0	QPSK	20850	2510	1	0	15.6	14.13	0.646	0.906		
			21100	2535	1	49	15.6	14.29	0.656	0.887		
			21350	2560	1	49	15.6	14.23	0.684	0.938		
			20850	2510	50	24	15.6	14.04	0.649	0.929		
			21100	2535	50	49	15.6	14.08	0.669	0.949		
			21350	2560	50	24	15.6	13.94	0.683	1.001	13	
			21100	2535	100	0	15.6	14.06	0.662	0.944		
Bottom	0	QPSK	20850	2510	1	0	15.6	14.13				
			21100	2535	1	49	15.6	14.29	0.235	0.318		
			21350	2560	1	49	15.6	14.23				
			20850	2510	50	24	15.6	14.04				
			21100	2535	50	49	15.6	14.08	0.235	0.333		
			21350	2560	50	24	15.6	13.94				
			21100	2535	100	0	15.6	14.06				

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm) Tune-up limit	Power (dBm) Meas. Avg	1-g SAR (W/kg) Meas.	1-g SAR (W/kg) Scaled	Plot No.	Note
Edge 1	21	QPSK	20850	2510	1	49	22.0	21.09				
			21100	2535	1	49	22.0	21.16	0.509	0.618		
			21350	2560	1	49	22.0	20.96				
			20850	2510	50	24	21.0	20.08				
			21100	2535	50	49	21.0	20.25	0.413	0.491		
			21350	2560	50	24	21.0	19.96				
			21100	2535	100	0	21.0	20.14				
Edge 2	0	QPSK	20850	2510	1	49	22.0	21.09				
			21100	2535	1	49	22.0	21.16	0.091	0.110		
			21350	2560	1	49	22.0	20.96				
			20850	2510	50	24	21.0	20.08				
			21100	2535	50	49	21.0	20.25	0.077	0.092		
			21350	2560	50	24	21.0	19.96				
			21100	2535	100	0	21.0	20.14				
Edge 3	0	QPSK	20850	2510	1	49	22.0	21.09				
			21100	2535	1	49	22.0	21.16	0.000	0.000		
			21350	2560	1	49	22.0	20.96				
			20850	2510	50	24	21.0	20.08				
			21100	2535	50	49	21.0	20.25	0.000	0.000		
			21350	2560	50	24	21.0	19.96				
			21100	2535	100	0	21.0	20.14				
Edge 4	0	QPSK	20850	2510	1	49	22.0	21.09				
			21100	2535	1	49	22.0	21.16	0.149	0.181		
			21350	2560	1	49	22.0	20.96				
			20850	2510	50	24	21.0	20.08				
			21100	2535	50	49	21.0	20.25	0.119	0.141		
			21350	2560	50	24	21.0	19.96				
			21100	2535	100	0	21.0	20.14				
Bottom	10	QPSK	20850	2510	1	49	22.0	21.09				
			21100	2535	1	49	22.0	21.16	0.566	0.687	14	
			21350	2560	1	49	22.0	20.96				
			20850	2510	50	24	21.0	20.08				
			21100	2535	50	49	21.0	20.25	0.450	0.535		
			21350	2560	50	24	21.0	19.96				
			21100	2535	100	0	21.0	20.14				

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15.8. **LTE Band 12**

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas. Avg	Meas.	Scaled		
Edge 1	0	QPSK	23060	704	1	24	22.4	21.62	0.918	1.099		
			23095	707.5	1	24	22.4	21.57	0.938	1.136		
			23130	711	1	24	22.4	21.54	0.943	1.150		
			23060	704	25	0	22.4	21.39	0.878	1.108		
			23095	707.5	25	0	22.4	21.40	0.901	1.134		
			23130	711	25	0	22.4	21.29	0.899	1.161	15	
			23060	704	50	0	22.4	21.47	0.907	1.124		
Bottom	0	QPSK	23060	704	1	24	22.4	21.62	0.629	0.753		
			23095	707.5	1	24	22.4	21.57				
			23130	711	1	24	22.4	21.54				
			23060	704	25	0	22.4	21.39				
			23095	707.5	25	0	22.4	21.40	0.625	0.787		
			23130	711	25	0	22.4	21.29				
			23060	704	50	0	22.4	21.47	0.623	0.772		

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm) Tune-up limit	Power (dBm) Meas. Avg	1-g SAR (W/kg) Meas.	1-g SAR (W/kg) Scaled	Plot No.	Note
Edge 1	21	QPSK	23060	704	1	49	24.0	22.97				
			23095	707.5	1	0	24.0	23.00	0.155	0.195		
			23130	711	1	0	24.0	22.94				
			23060	704	25	0	23.0	21.77	0.117	0.155		
			23095	707.5	25	0	23.0	21.75				
			23130	711	25	12	23.0	21.69				
			23060	704	50	0	23.0	21.76				
Edge 2	0	QPSK	23060	704	1	49	24.0	22.97				
			23095	707.5	1	0	24.0	23.00	0.021	0.026		
			23130	711	1	0	24.0	22.94				
			23060	704	25	0	23.0	21.77	0.017	0.023		
			23095	707.5	25	0	23.0	21.75				
			23130	711	25	12	23.0	21.69				
			23060	704	50	0	23.0	21.76				
Edge 3	0	QPSK	23060	704	1	49	24.0	22.97				
			23095	707.5	1	0	24.0	23.00	0.014	0.018		
			23130	711	1	0	24.0	22.94				
			23060	704	25	0	23.0	21.77	0.011	0.015		
			23095	707.5	25	0	23.0	21.75				
			23130	711	25	12	23.0	21.69				
			23060	704	50	0	23.0	21.76				
Edge 4	0	QPSK	23060	704	1	49	24.0	22.97				
			23095	707.5	1	0	24.0	23.00	0.108	0.136		
			23130	711	1	0	24.0	22.94				
			23060	704	25	0	23.0	21.77	0.084	0.112		
			23095	707.5	25	0	23.0	21.75				
			23130	711	25	12	23.0	21.69				
			23060	704	50	0	23.0	21.76				
Bottom	10	QPSK	23060	704	1	49	24.0	22.97				
			23095	707.5	1	0	24.0	23.00	0.486	0.612	16	
			23130	711	1	0	24.0	22.94				
			23060	704	25	0	23.0	21.77	0.370	0.491		
			23095	707.5	25	0	23.0	21.75				
			23130	711	25	12	23.0	21.69				
			23060	704	50	0	23.0	21.76				

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15.9. **LTE Band 13**

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm) Tune-up limit	Power (dBm) Meas. Avg	1-g SAR (W/kg) Meas.	1-g SAR (W/kg) Scaled	Plot No.	Note
Edge 1	0	QPSK	23230	782	1	0	20.8	20.14	0.965	1.123		
			23230	782	25	0	20.8	20.05	0.958	1.139		
			23230	782	50	0	20.8	19.99	0.987	1.189	17	
Bottom	0	QPSK	23230	782	1	0	20.8	20.14	0.682	0.794		
			23230	782	25	0	20.8	20.05	0.665	0.790		
			23230	782	50	0	20.8	19.99				

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm) Tune-up limit	Power (dBm) Meas. Avg	1-g SAR (W/kg) Meas.	1-g SAR (W/kg) Scaled	Plot No.	Note
Edge 1	21	QPSK	23230	782	1	0	24.0	22.70	0.176	0.237		
			23230	782	25	12	23.0	21.48	0.141	0.200		
			23230	782	50	0	23.0	21.46				
Edge 2	0	QPSK	23230	782	1	0	24.0	22.70	0.025	0.034		
			23230	782	25	12	23.0	21.48	0.025	0.035		
			23230	782	50	0	23.0	21.46				
Edge 3	0	QPSK	23230	782	1	0	24.0	22.70	0.001	0.001		
			23230	782	25	12	23.0	21.48	0.001	0.001		
			23230	782	50	0	23.0	21.46				
Edge 4	0	QPSK	23230	782	1	0	24.0	22.70	0.041	0.055		
			23230	782	25	12	23.0	21.48	0.043	0.061		
			23230	782	50	0	23.0	21.46				
Bottom	10	QPSK	23230	782	1	0	24.0	22.70	0.309	0.417		
			23230	782	25	12	23.0	21.48	0.304	0.431	18	
			23230	782	50	0	23.0	21.46				

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15.10.LTE Band 25

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas. Avg	Meas.	Scaled		
Edge 1	0	QPSK	26140	1860	1	49	17.9	16.67	0.714	0.948		
			26365	1882.5	1	0	17.9	16.92	0.726	0.910		
			26590	1905	1	49	17.9	16.80	0.818	1.054	19	
			26140	1860	50	49	17.9	16.61	0.732	0.985		
			26365	1882.5	50	49	17.9	16.61	0.740	0.996		
			26590	1905	50	0	17.9	16.91	0.786	0.987		
			26590	1905	100	0	17.9	16.64	0.783	1.047		
Bottom	0	QPSK	26140	1860	1	49	17.9	16.67				
			26365	1882.5	1	0	17.9	16.92	0.390	0.489		
			26590	1905	1	49	17.9	16.80				
			26140	1860	50	49	17.9	16.61				
			26365	1882.5	50	49	17.9	16.61				
			26590	1905	50	0	17.9	16.91	0.415	0.521		
			26590	1905	100	0	17.9	16.64				

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm) Tune-up limit	Power (dBm) Meas. Avg	1-g SAR (W/kg) Meas.	1-g SAR (W/kg) Scaled	Plot No.	Note
Edge 1	21	QPSK	26140	1860	1	49	24.0	22.61				
			26365	1882.5	1	0	24.0	22.48				
			26590	1905	1	49	24.0	22.73	0.385	0.516		
			26140	1860	50	24	23.0	21.49				
			26365	1882.5	50	24	23.0	21.58				
			26590	1905	50	24	23.0	21.69	0.307	0.415		
			26590	1905	100	0	23.0	21.54				
Edge 2	0	QPSK	26140	1860	1	49	24.0	22.61				
			26365	1882.5	1	0	24.0	22.48				
			26590	1905	1	49	24.0	22.73	0.045	0.060		
			26140	1860	50	24	23.0	21.49				
			26365	1882.5	50	24	23.0	21.58				
			26590	1905	50	24	23.0	21.69	0.031	0.042		
			26590	1905	100	0	23.0	21.54				
Edge 3	0	QPSK	26140	1860	1	49	24.0	22.61				
			26365	1882.5	1	0	24.0	22.48				
			26590	1905	1	49	24.0	22.73	0.007	0.009		
			26140	1860	50	24	23.0	21.49				
			26365	1882.5	50	24	23.0	21.58				
			26590	1905	50	24	23.0	21.69	0.006	0.008		
			26590	1905	100	0	23.0	21.54				
Edge 4	0	QPSK	26140	1860	1	49	24.0	22.61				
			26365	1882.5	1	0	24.0	22.48				
			26590	1905	1	49	24.0	22.73	0.296	0.397		
			26140	1860	50	24	23.0	21.49				
			26365	1882.5	50	24	23.0	21.58				
			26590	1905	50	24	23.0	21.69	0.220	0.297		
			26590	1905	100	0	23.0	21.54				
Bottom	10	QPSK	26140	1860	1	49	24.0	22.61	0.679	0.935		
			26365	1882.5	1	0	24.0	22.48	0.694	0.985	20	
			26590	1905	1	49	24.0	22.73	0.718	0.962		
			26140	1860	50	24	23.0	21.49				
			26365	1882.5	50	24	23.0	21.58				
			26590	1905	50	24	23.0	21.69	0.586	0.792		
			26590	1905	100	0	23.0	21.54	0.573	0.802		

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15.11.LTE Band 26

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas. Avg	Meas.	Scaled		
Edge 1	0	QPSK	26765	821.5	1	0	19.0	18.06	0.822	1.021		
			26865	831.5	1	0	19.0	18.04	0.781	0.974		
			26965	841.5	1	0	19.0	17.85	0.802	1.045		
			26765	821.5	36	0	19.0	18.08	0.791	0.978		
			26865	831.5	36	0	19.0	17.77	0.776	1.030		
			26965	841.5	36	0	19.0	17.82	0.814	1.068	21	
			26765	821.5	75	0	19.0	17.99	0.790	0.997		
Bottom	0	QPSK	26765	821.5	1	0	19.0	18.06	0.488	0.606		
			26865	831.5	1	0	19.0	18.04				
			26965	841.5	1	0	19.0	17.85				
			26765	821.5	36	0	19.0	18.08	0.501	0.619		
			26865	831.5	36	0	19.0	17.77				
			26965	841.5	36	0	19.0	17.82				
			26765	821.5	75	0	19.0	17.99				

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm) Tune-up limit	Power (dBm) Meas. Avg	1-g SAR (W/kg) Meas.	1-g SAR (W/kg) Scaled	Plot No.	Note
Edge 1	21	QPSK	26765	821.5	1	0	24.0	23.02	0.209	0.262		
			26865	831.5	1	0	24.0	22.81				
			26965	841.5	1	74	24.0	22.58				
			26765	821.5	36	0	23.0	21.82	0.156	0.205		
			26865	831.5	36	0	23.0	21.56				
			26965	841.5	36	19	23.0	21.56				
			26765	821.5	75	0	23.0	21.63				
Edge 2	0	QPSK	26765	821.5	1	0	24.0	23.02	0.075	0.094		
			26865	831.5	1	0	24.0	22.81				
			26965	841.5	1	74	24.0	22.58				
			26765	821.5	36	0	23.0	21.82	0.063	0.083		
			26865	831.5	36	0	23.0	21.56				
			26965	841.5	36	19	23.0	21.56				
			26765	821.5	75	0	23.0	21.63				
Edge 3	0	QPSK	26765	821.5	1	0	24.0	23.02	0.010	0.012		
			26865	831.5	1	0	24.0	22.81				
			26965	841.5	1	74	24.0	22.58				
			26765	821.5	36	0	23.0	21.82	0.004	0.006		
			26865	831.5	36	0	23.0	21.56				
			26965	841.5	36	19	23.0	21.56				
			26765	821.5	75	0	23.0	21.63				
Edge 4	0	QPSK	26765	821.5	1	0	24.0	23.02	0.030	0.038		
			26865	831.5	1	0	24.0	22.81				
			26965	841.5	1	74	24.0	22.58				
			26765	821.5	36	0	23.0	21.82	0.031	0.041		
			26865	831.5	36	0	23.0	21.56				
			26965	841.5	36	19	23.0	21.56				
			26765	821.5	75	0	23.0	21.63				
Bottom	10	QPSK	26765	821.5	1	0	24.0	23.02	0.646	0.810		
			26865	831.5	1	0	24.0	22.81	0.643	0.846		
			26965	841.5	1	74	24.0	22.58	0.737	1.022	22	
			26765	821.5	36	0	23.0	21.82	0.492	0.646		
			26865	831.5	36	0	23.0	21.56				
			26965	841.5	36	19	23.0	21.56				
			26765	821.5	75	0	23.0	21.63	0.486	0.666		

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15.12.LTE Band 41

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas. Avg	Meas.	Scaled		
Edge 1	0	QPSK	39750	2506	1	49	16.8	16.16	0.524	0.607		
			40185	2549.5	1	49	16.8	16.06	0.610	0.723		
			40620	2593	1	49	16.8	16.14	0.721	0.839		
			41055	2636.5	1	49	16.8	16.06	0.796	0.944		
			41490	2680	1	49	16.8	16.21	0.835	0.957	23	
			39750	2506	50	24	16.8	16.15	0.532	0.618		
			40185	2549.5	50	49	16.8	15.99				
			40620	2593	50	24	16.8	16.07				
			41055	2636.5	50	49	16.8	15.93				
			41490	2680	50	24	16.8	16.09				
			39750	2506	100	0	16.8	16.11	0.522	0.612		
Bottom	0	QPSK	39750	2506	1	49	16.8	16.16				
			40185	2549.5	1	49	16.8	16.06				
			40620	2593	1	49	16.8	16.14				
			41055	2636.5	1	49	16.8	16.06				
			41490	2680	1	49	16.8	16.21	0.254	0.291		
			39750	2506	50	24	16.8	16.15	0.223	0.259		
			40185	2549.5	50	49	16.8	15.99				
			40620	2593	50	24	16.8	16.07				
			41055	2636.5	50	49	16.8	15.93				
			41490	2680	50	24	16.8	16.09				
			39750	2506	100	0	16.8	16.11				

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Modu-lation	UL CH #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm) Tune-up limit	Power (dBm) Meas. Avg	1-g SAR (W/kg) Meas.	1-g SAR (W/kg) Scaled	Plot No.	Note
Edge 1	21	QPSK	39750	2506	1	49	23.0	21.32				
			40185	2549.5	1	49	23.0	21.13				
			40620	2593	1	49	23.0	21.16				
			41055	2636.5	1	49	23.0	21.05				
			41490	2680	1	49	23.0	21.38	0.376	0.546		
			39750	2506	50	24	22.0	20.20				
			40185	2549.5	50	49	22.0	20.08				
			40620	2593	50	24	22.0	20.26				
			41055	2636.5	50	0	22.0	20.22				
			41490	2680	50	0	22.0	20.27	0.315	0.469		
			41490	2680	100	0	22.0	20.26				
Edge 2	0	QPSK	39750	2506	1	49	23.0	21.32				
			40185	2549.5	1	49	23.0	21.13				
			40620	2593	1	49	23.0	21.16				
			41055	2636.5	1	49	23.0	21.05				
			41490	2680	1	49	23.0	21.38	0.028	0.041		
			39750	2506	50	24	22.0	20.20				
			40185	2549.5	50	49	22.0	20.08				
			40620	2593	50	24	22.0	20.26				
			41055	2636.5	50	0	22.0	20.22				
			41490	2680	50	0	22.0	20.27	0.022	0.033		
			41490	2680	100	0	22.0	20.26				
Edge 3	0	QPSK	39750	2506	1	49	23.0	21.32				
			40185	2549.5	1	49	23.0	21.13				
			40620	2593	1	49	23.0	21.16				
			41055	2636.5	1	49	23.0	21.05				
			41490	2680	1	49	23.0	21.38	0.005	0.007		
			39750	2506	50	24	22.0	20.20				
			40185	2549.5	50	49	22.0	20.08				
			40620	2593	50	24	22.0	20.26				
			41055	2636.5	50	0	22.0	20.22				
			41490	2680	50	0	22.0	20.27	0.004	0.006		
			41490	2680	100	0	22.0	20.26				
Edge 4	0	QPSK	39750	2506	1	49	23.0	21.32				
			40185	2549.5	1	49	23.0	21.13				
			40620	2593	1	49	23.0	21.16				
			41055	2636.5	1	49	23.0	21.05				
			41490	2680	1	49	23.0	21.38	0.025	0.036		
			39750	2506	50	24	22.0	20.20				
			40185	2549.5	50	49	22.0	20.08				
			40620	2593	50	24	22.0	20.26				
			41055	2636.5	50	0	22.0	20.22				
			41490	2680	50	0	22.0	20.27	0.019	0.028		
			41490	2680	100	0	22.0	20.26				
Bottom	10	QPSK	39750	2506	1	49	23.0	21.32				
			40185	2549.5	1	49	23.0	21.13				
			40620	2593	1	49	23.0	21.16				
			41055	2636.5	1	49	23.0	21.05				
			41490	2680	1	49	23.0	21.38	0.405	0.588	24	
			39750	2506	50	24	22.0	20.20				
			40185	2549.5	50	49	22.0	20.08				
			40620	2593	50	24	22.0	20.26				
			41055	2636.5	50	0	22.0	20.22				
			41490	2680	50	0	22.0	20.27	0.336	0.500		
			41490	2680	100	0	22.0	20.26				

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15.13. Summary of Highest SAR Values

Results for the highest scaled SAR values in each frequency band and mode

Technology Band	Test Configuration		Mode	Dist. [mm]	Freq. [MHz]	Power [dBm]	1g/SAR [w/kg]
	Exposure	Position					
W-CDMA Band 2	Body	Edge 1 (Prox. on)	Rel 99 RMC 12.2kbps	0	1852.4	17.05	1.192
W-CDMA Band 4	Body	Bottom (Prox off)	Rel 99 RMC 12.2kbps	10	1752.6	22.83	0.930
W-CDMA Band 5	Body	Edge 1 (Prox on)	Rel 99 RMC 12.2kbps	0	836.6	18.47	1.158
LTE Band 2	Body	Edge 1 (Prox on)	20 MHz(QPSK) RB 50/24	0	1900.0	16.81	1.147
LTE Band 4	Body	Bottom (Prox off)	20 MHz(QPSK) RB 1/49	10	1745.0	22.56	1.053
LTE Band 5	Body	Edge 1 (Prox on)	10 MHz(QPSK) RB 25/0	0	844.0	18.38	1.184
LTE Band 7	Body	Edge 1 (Prox on)	20 MHz(QPSK) RB 50/24	0	2560.0	13.94	1.001
LTE Band 12	Body	Edge1 (Prox on)	10 MHz(QPSK) RB 25/0	0	711.0	21.29	1.161
LTE Band 13	Body	Edge1 (Prox on)	10 MHz(QPSK) RB 50/0	0	782.0	19.99	1.189
LTE Band 25	Body	Edge 1 (Prox on)	20 MHz(QPSK) RB 1/49	0	1905.0	16.80	1.054
LTE Band 26	Body	Edge 1 (Prox on)	15 MHz(QPSK) RB 36/0	0	841.5	17.82	1.068
LTE Band 41	Body	Edge 1 (Prox on)	20 MHz(QPSK) RB 1/49	0	2680.0	16.21	0.957

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

15.14. SAR Measurement Variability and Uncertainty

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz v01. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Wireless Technologies	Test Configuration		Mode	Dist. (mm)	Freq. (MHz)	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio	Plot No.
	Exposure	Position				Original	Repeated		
W-CDMA Band 2	Body	Edge 1 Prox. On	Rel 99 RMC 12.2kbps	0	1907.6	0.918	0.915	1.003	1
W-CDMA Band 4	Body	Edge 1 Prox. On	Rel 99 RMC 12.2kbps	0	1712.4	0.866	0.859	1.008	2
W-CDMA Band 5	Body	Edge 1 Prox. On	Rel 99 RMC 12.2kbps	0	846.6	0.949	0.949	1.000	3
LTE Band 2	Body	Edge 1 Prox. On	20 MHz (QPSK) 50/24	0	1900	0.833	0.830	1.004	4
LTE Band 4	Body	Edge 1 Prox. On	20 MHz (QPSK) 50/24	0	1720	0.786	N/A	N/A	
LTE Band 5	Body	Edge 1 Prox. On	10 MHz (QPSK) 1/0	0	844	1.060	0.976	1.086	5
LTE Band 7	Body	Edge 1 Prox. On	20 MHz (QPSK) 1/49	0	2560	0.684	N/A	N/A	
LTE Band 12	Body	Edge 1 Prox. On	10 MHz (QPSK) 1/24	0	711	0.943	0.938	1.005	6
LTE Band 13	Body	Edge 1 Prox. On	10 MHz (QPSK) 50/0	0	782	0.987	0.985	1.002	7
LTE Band 25	Body	Edge 1 Prox. On	20 MHz (QPSK) 1/49	0	1905	0.818	0.774	1.057	8
LTE Band 26	Body	Edge 1 Prox. On	15 MHz (QPSK) 1/0	0	821.5	0.822	0.820	1.002	9
LTE Band 41	Body	Edge 1 Prox. On	20 MHz (QPSK) 1/49	0	2680	0.835	0.827	1.010	10

Note(s):

- Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not > 1.20.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

16. Simultaneous Transmission SAR Analysis

For FCC
All Wi-Fi 1-g SAR values were taken from results recorded in SAR report 12108956H-A, submitted under FCC ID ACJ9TGWL16A.
All Simultaneous Transmission SAR analysis applies scaling in accordance with the scaled values documented in this report (for the WWAN radios) and the aforementioned SAR report (12108956H-A) with scaling applied (for the WLAN radios).

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

16.1. Sum of 1g SAR value

Sum of the SAR for WCDMA 2WCDMA 4 & WLAN Main 2.4GHz WLAN Aux 2.4GHz BT

	Mode						
Test Position	WCDMA 2	WCDMA 4	WLAN Main 2.4GHz	WLAN Aux 2.4GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.582		0.000	0.115		0.697	
		0.589	0.000	0.115		0.704	
	0.582			0.115		0.697	
		0.589		0.115		0.704	
	0.582		0.000		0.041	0.623	
		0.589	0.000		0.041	0.630	
Edge1 Reduction	1.192		0.000	0.115		1.307	
		0.884	0.000	0.115		0.999	
	1.192			0.115		1.307	
		0.884		0.115		0.999	
	1.192		0.000		0.041	1.233	
		0.884	0.000		0.041	0.925	
Edge 2	0.087		0.014	0.000		0.101	
		0.069	0.014	0.000		0.083	
	0.087			0.000		0.087	
		0.069		0.000		0.069	
	0.087		0.014		0.000	0.101	
		0.069	0.014		0.000	0.083	
Edge 3	0.013		0.452	0.033		0.498	
		0.009	0.452	0.033		0.494	
	0.013			0.033		0.046	
		0.009		0.033		0.042	
	0.013		0.452		0.002	0.467	
		0.009	0.452		0.002	0.463	
Edge 4	0.290		0.107	0.668		1.065	
		0.291	0.107	0.668		1.066	
	0.290			0.668		0.958	
		0.291		0.668		0.959	
	0.290		0.107		0.208	0.605	
		0.291	0.107		0.208	0.606	
Bottom	0.949		0.221	0.154		1.324	
		0.930	0.221	0.154		1.305	
	0.949			0.154		1.103	
		0.930		0.154		1.084	
	0.949		0.221		0.056	1.226	
		0.930	0.221		0.056	1.207	
Bottom Reduction	0.583		0.221	0.154		0.958	
		0.331	0.221	0.154		0.706	
	0.583			0.154		0.737	
		0.331		0.154		0.485	
	0.583		0.221		0.056	0.860	
		0.331	0.221		0.056	0.608	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for WCDMA 5LTE 2 & WLAN Main 2.4GHz WLAN Aux 2.4GHz BT

	Mode						
Test Position	WCDMA 5	LTE 2	WLAN Main 2.4GHz	WLAN Aux 2.4GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.390		0.000	0.115		0.505	
		0.571	0.000	0.115		0.686	
	0.390			0.115		0.505	
		0.571		0.115		0.686	
	0.390		0.000		0.041	0.431	
		0.571	0.000		0.041	0.612	
Edge1 Reduction	1.158		0.000	0.115		1.273	
		1.147	0.000	0.115		1.262	
	1.158			0.115		1.273	
		1.147		0.115		1.262	
	1.158		0.000		0.041	1.199	
		1.147	0.000		0.041	1.188	
Edge 2	0.176		0.014	0.000		0.190	
		0.063	0.014	0.000		0.077	
	0.176			0.000		0.176	
		0.063		0.000		0.063	
	0.176		0.014		0.000	0.190	
		0.063	0.014		0.000	0.077	
Edge 3	0.020		0.452	0.033		0.505	
		0.018	0.452	0.033		0.503	
	0.020			0.033		0.053	
		0.018		0.033		0.051	
	0.020		0.452		0.002	0.474	
		0.018	0.452		0.002	0.472	
Edge 4	0.148		0.107	0.668		0.923	
		0.400	0.107	0.668		1.175	
	0.148			0.668		0.816	
		0.400		0.668		1.068	
	0.148		0.107		0.208	0.463	
		0.400	0.107		0.208	0.715	
Bottom	0.782		0.221	0.154		1.157	
		0.976	0.221	0.154		1.351	
	0.782			0.154		0.936	
		0.976		0.154		1.130	
	0.782		0.221		0.056	1.059	
		0.976	0.221		0.056	1.253	
Bottom Reduction	0.915		0.221	0.154		1.290	
		0.556	0.221	0.154		0.931	
	0.915			0.154		1.069	
		0.556		0.154		0.710	
	0.915		0.221		0.056	1.192	
		0.556	0.221		0.056	0.833	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 4LTE 5 & WLAN Main 2.4GHz WLAN Aux 2.4GHz BT

	Mode						
Test Position	LTE 4	LTE 5	WLAN Main 2.4GHz	WLAN Aux 2.4GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.547		0.000	0.115		0.662	
		0.357	0.000	0.115		0.472	
	0.547			0.115		0.662	
		0.357		0.115		0.472	
	0.547		0.000		0.041	0.588	
		0.357	0.000		0.041	0.398	
Edge1 Reduction	1.029		0.000	0.115		1.144	
		1.184	0.000	0.115		1.299	
	1.029			0.115		1.144	
		1.184		0.115		1.299	
	1.029		0.000		0.041	1.070	
		1.184	0.000		0.041	1.225	
Edge 2	0.062		0.014	0.000		0.076	
		0.063	0.014	0.000		0.077	
	0.062			0.000		0.062	
		0.063		0.000		0.063	
	0.062		0.014		0.000	0.076	
		0.063	0.014		0.000	0.077	
Edge 3	0.007		0.452	0.033		0.492	
		0.024	0.452	0.033		0.509	
	0.007			0.033		0.040	
		0.024		0.033		0.057	
	0.007		0.452		0.002	0.461	
		0.024	0.452		0.002	0.478	
Edge 4	0.244		0.107	0.668		1.019	
		0.123	0.107	0.668		0.898	
	0.244			0.668		0.912	
		0.123		0.668		0.791	
	0.244		0.107		0.208	0.559	
		0.123	0.107		0.208	0.438	
Bottom	1.053		0.221	0.154		1.428	
		0.682	0.221	0.154		1.057	
	1.053			0.154		1.207	
		0.682		0.154		0.836	
	1.053		0.221		0.056	1.330	
		0.682	0.221		0.056	0.959	
Bottom Reduction	0.407		0.221	0.154		0.782	
		0.730	0.221	0.154		1.105	
	0.407			0.154		0.561	
		0.730		0.154		0.884	
	0.407		0.221		0.056	0.684	
		0.730	0.221		0.056	1.007	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 7LTE 12 & WLAN Main 2.4GHz WLAN Aux 2.4GHz BT

	Mode						
Test Position	LTE 7	LTE 12	WLAN Main 2.4GHz	WLAN Aux 2.4GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.618		0.000	0.115		0.733	
		0.195	0.000	0.115		0.310	
	0.618			0.115		0.733	
		0.195		0.115		0.310	
	0.618		0.000		0.041	0.659	
		0.195	0.000		0.041	0.236	
Edge1 Reduction	1.001		0.000	0.115		1.116	
		1.161	0.000	0.115		1.276	
	1.001			0.115		1.116	
		1.161		0.115		1.276	
	1.001		0.000		0.041	1.042	
		1.161	0.000		0.041	1.202	
Edge 2	0.110		0.014	0.000		0.124	
		0.026	0.014	0.000		0.040	
	0.110			0.000		0.110	
		0.026		0.000		0.026	
	0.110		0.014		0.000	0.124	
		0.026	0.014		0.000	0.040	
Edge 3	0.000		0.452	0.033		0.485	
		0.018	0.452	0.033		0.503	
	0.000			0.033		0.033	
		0.018		0.033		0.051	
	0.000		0.452		0.002	0.454	
		0.018	0.452		0.002	0.472	
Edge 4	0.181		0.107	0.668		0.956	
		0.136	0.107	0.668		0.911	
	0.181			0.668		0.849	
		0.136		0.668		0.804	
	0.181		0.107		0.208	0.496	
		0.136	0.107		0.208	0.451	
Bottom	0.687		0.221	0.154		1.062	
		0.612	0.221	0.154		0.987	
	0.687			0.154		0.841	
		0.612		0.154		0.766	
	0.687		0.221		0.056	0.964	
		0.612	0.221		0.056	0.889	
Bottom Reduction	0.333		0.221	0.154		0.708	
		0.787	0.221	0.154		1.162	
	0.333			0.154		0.487	
		0.787		0.154		0.941	
	0.333		0.221		0.056	0.610	
		0.787	0.221		0.056	1.064	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 13LTE 25 & WLAN Main 2.4GHz WLAN Aux 2.4GHz BT

	Mode						
Test Position	LTE 13	LTE 25	WLAN Main 2.4GHz	WLAN Aux 2.4GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.237		0.000	0.115		0.352	
		0.516	0.000	0.115		0.631	
	0.237			0.115		0.352	
		0.516		0.115		0.631	
	0.237		0.000		0.041	0.278	
		0.516	0.000		0.041	0.557	
Edge1 Reduction	1.189		0.000	0.115		1.304	
		1.054	0.000	0.115		1.169	
	1.189			0.115		1.304	
		1.054		0.115		1.169	
	1.189		0.000		0.041	1.230	
		1.054	0.000		0.041	1.095	
Edge 2	0.035		0.014	0.000		0.049	
		0.060	0.014	0.000		0.074	
	0.035			0.000		0.035	
		0.060		0.000		0.060	
	0.035		0.014		0.000	0.049	
		0.060	0.014		0.000	0.074	
Edge 3	0.001		0.452	0.033		0.486	
		0.009	0.452	0.033		0.494	
	0.001			0.033		0.034	
		0.009		0.033		0.042	
	0.001		0.452		0.002	0.455	
		0.009	0.452		0.002	0.463	
Edge 4	0.061		0.107	0.668		0.836	
		0.397	0.107	0.668		1.172	
	0.061			0.668		0.729	
		0.397		0.668		1.065	
	0.061		0.107		0.208	0.376	
		0.397	0.107		0.208	0.712	
Bottom	0.431		0.221	0.154		0.806	
		0.985	0.221	0.154		1.360	
	0.431			0.154		0.585	
		0.985		0.154		1.139	
	0.431		0.221		0.056	0.708	
		0.985	0.221		0.056	1.262	
Bottom Reduction	0.794		0.221	0.154		1.169	
		0.521	0.221	0.154		0.896	
	0.794			0.154		0.948	
		0.521		0.154		0.675	
	0.794		0.221		0.056	1.071	
		0.521	0.221		0.056	0.798	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 26LTE 41 & WLAN Main 2.4GHz WLAN Aux 2.4GHz BT

	Mode						
Test Position	LTE 26	LTE 41	WLAN Main 2.4GHz	WLAN Aux 2.4GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.262		0.000	0.115		0.377	
		0.546	0.000	0.115		0.661	
	0.262			0.115		0.377	
		0.546		0.115		0.661	
	0.262		0.000		0.041	0.303	
		0.546	0.000		0.041	0.587	
Edge1 Reduction	1.068		0.000	0.115		1.183	
		0.957	0.000	0.115		1.072	
	1.068			0.115		1.183	
		0.957		0.115		1.072	
	1.068		0.000		0.041	1.109	
		0.957	0.000		0.041	0.998	
Edge 2	0.094		0.014	0.000		0.108	
		0.041	0.014	0.000		0.055	
	0.094			0.000		0.094	
		0.041		0.000		0.041	
	0.094		0.014		0.000	0.108	
		0.041	0.014		0.000	0.055	
Edge 3	0.012		0.452	0.033		0.497	
		0.007	0.452	0.033		0.492	
	0.012			0.033		0.045	
		0.007		0.033		0.040	
	0.012		0.452		0.002	0.466	
		0.007	0.452		0.002	0.461	
Edge 4	0.041		0.107	0.668		0.816	
		0.036	0.107	0.668		0.811	
	0.041			0.668		0.709	
		0.036		0.668		0.704	
	0.041		0.107		0.208	0.356	
		0.036	0.107		0.208	0.351	
Bottom	1.022		0.221	0.154		1.397	
		0.588	0.221	0.154		0.963	
	1.022			0.154		1.176	
		0.588		0.154		0.742	
	1.022		0.221		0.056	1.299	
		0.588	0.221		0.056	0.865	
Bottom Reduction	0.619		0.221	0.154		0.994	
		0.291	0.221	0.154		0.666	
	0.619			0.154		0.773	
		0.291		0.154		0.445	
	0.619		0.221		0.056	0.896	
		0.291	0.221		0.056	0.568	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for WCDMA 2WCDMA 4 & WLAN Main 5.2 5.3GHz WLAN Aux 5.2 5.3GHz BT

	Mode						
Test Position	WCDMA 2	WCDMA 4	WLAN Main 5.2 5.3GHz	WLAN Aux 5.2 5.3GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.582		0.000	0.014		0.596	
		0.589	0.000	0.014		0.603	
	0.582			0.014		0.596	
		0.589		0.014		0.603	
	0.582		0.000		0.041	0.623	
		0.589	0.000		0.041	0.630	
Edge1 Reduction	1.192		0.000	0.014		1.206	
		0.884	0.000	0.014		0.898	
	1.192			0.014		1.206	
		0.884		0.014		0.898	
	1.192		0.000		0.041	1.233	
		0.884	0.000		0.041	0.925	
Edge 2	0.087		0.000	0.000		0.087	
		0.069	0.000	0.000		0.069	
	0.087			0.000		0.087	
		0.069		0.000		0.069	
	0.087		0.000		0.000	0.087	
		0.069	0.000		0.000	0.069	
Edge 3	0.013		0.294	0.000		0.307	
		0.009	0.294	0.000		0.303	
	0.013			0.000		0.013	
		0.009		0.000		0.009	
	0.013		0.294		0.002	0.309	
		0.009	0.294		0.002	0.305	
Edge 4	0.290		0.020	0.223		0.533	
		0.291	0.020	0.223		0.534	
	0.290			0.223		0.513	
		0.291		0.223		0.514	
	0.290		0.020		0.208	0.518	
		0.291	0.020		0.208	0.519	
Bottom	0.949		0.082	0.082		1.113	
		0.930	0.082	0.082		1.094	
	0.949			0.082		1.031	
		0.930		0.082		1.012	
	0.949		0.082		0.056	1.087	
		0.930	0.082		0.056	1.068	
Bottom Reduction	0.583		0.082	0.082		0.747	
		0.331	0.082	0.082		0.495	
	0.583			0.082		0.665	
		0.331		0.082		0.413	
	0.583		0.082		0.056	0.721	
		0.331	0.082		0.056	0.469	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for WCDMA 5LTE 2 & WLAN Main 5.2 5.3GHz WLAN Aux 5.2 5.3GHz BT

	Mode						
Test Position	WCDMA 5	LTE 2	WLAN Main 5.2 5.3GHz	WLAN Aux 5.2 5.3GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.390		0.000	0.014		0.404	
		0.571	0.000	0.014		0.585	
	0.390			0.014		0.404	
		0.571		0.014		0.585	
	0.390		0.000		0.041	0.431	
		0.571	0.000		0.041	0.612	
Edge1 Reduction	1.158		0.000	0.014		1.172	
		1.147	0.000	0.014		1.161	
	1.158			0.014		1.172	
		1.147		0.014		1.161	
	1.158		0.000		0.041	1.199	
		1.147	0.000		0.041	1.188	
Edge 2	0.176		0.000	0.000		0.176	
		0.063	0.000	0.000		0.063	
	0.176			0.000		0.176	
		0.063		0.000		0.063	
	0.176		0.000		0.000	0.176	
		0.063	0.000		0.000	0.063	
Edge 3	0.020		0.294	0.000		0.314	
		0.018	0.294	0.000		0.312	
	0.020			0.000		0.020	
		0.018		0.000		0.018	
	0.020		0.294		0.002	0.316	
		0.018	0.294		0.002	0.314	
Edge 4	0.148		0.020	0.223		0.391	
		0.400	0.020	0.223		0.643	
	0.148			0.223		0.371	
		0.400		0.223		0.623	
	0.148		0.020		0.208	0.376	
		0.400	0.020		0.208	0.628	
Bottom	0.782		0.082	0.082		0.946	
		0.976	0.082	0.082		1.140	
	0.782			0.082		0.864	
		0.976		0.082		1.058	
	0.782		0.082		0.056	0.920	
		0.976	0.082		0.056	1.114	
Bottom Reduction	0.915		0.082	0.082		1.079	
		0.556	0.082	0.082		0.720	
	0.915			0.082		0.997	
		0.556		0.082		0.638	
	0.915		0.082		0.056	1.053	
		0.556	0.082		0.056	0.694	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 4LTE 5 & WLAN Main 5.2 5.3GHz WLAN Aux 5.2 5.3GHz BT

	Mode						
Test Position	LTE 4	LTE 5	WLAN Main 5.2 5.3GHz	WLAN Aux 5.2 5.3GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.547		0.000	0.014		0.561	
		0.357	0.000	0.014		0.371	
	0.547			0.014		0.561	
		0.357		0.014		0.371	
	0.547		0.000		0.041	0.588	
		0.357	0.000		0.041	0.398	
Edge1 Reduction	1.029		0.000	0.014		1.043	
		1.184	0.000	0.014		1.198	
	1.029			0.014		1.043	
		1.184		0.014		1.198	
	1.029		0.000		0.041	1.070	
		1.184	0.000		0.041	1.225	
Edge 2	0.062		0.000	0.000		0.062	
		0.063	0.000	0.000		0.063	
	0.062			0.000		0.062	
		0.063		0.000		0.063	
	0.062		0.000		0.000	0.062	
		0.063	0.000		0.000	0.063	
Edge 3	0.007		0.294	0.000		0.301	
		0.024	0.294	0.000		0.318	
	0.007			0.000		0.007	
		0.024		0.000		0.024	
	0.007		0.294		0.002	0.303	
		0.024	0.294		0.002	0.320	
Edge 4	0.244		0.020	0.223		0.487	
		0.123	0.020	0.223		0.366	
	0.244			0.223		0.467	
		0.123		0.223		0.346	
	0.244		0.020		0.208	0.472	
		0.123	0.020		0.208	0.351	
Bottom	1.053		0.082	0.082		1.217	
		0.682	0.082	0.082		0.846	
	1.053			0.082		1.135	
		0.682		0.082		0.764	
	1.053		0.082		0.056	1.191	
		0.682	0.082		0.056	0.820	
Bottom Reduction	0.407		0.082	0.082		0.571	
		0.730	0.082	0.082		0.894	
	0.407			0.082		0.489	
		0.730		0.082		0.812	
	0.407		0.082		0.056	0.545	
		0.730	0.082		0.056	0.868	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 7LTE 12 & WLAN Main 5.2 5.3GHz WLAN Aux 5.2 5.3GHz BT

	Mode						
Test Position	LTE 7	LTE 12	WLAN Main 5.2 5.3GHz	WLAN Aux 5.2 5.3GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.618		0.000	0.014		0.632	
		0.195	0.000	0.014		0.209	
	0.618			0.014		0.632	
		0.195		0.014		0.209	
	0.618		0.000		0.041	0.659	
		0.195	0.000		0.041	0.236	
Edge1 Reduction	1.001		0.000	0.014		1.015	
		1.161	0.000	0.014		1.175	
	1.001			0.014		1.015	
		1.161		0.014		1.175	
	1.001		0.000		0.041	1.042	
		1.161	0.000		0.041	1.202	
Edge 2	0.110		0.000	0.000		0.110	
		0.026	0.000	0.000		0.026	
	0.110			0.000		0.110	
		0.026		0.000		0.026	
	0.110		0.000		0.000	0.110	
		0.026	0.000		0.000	0.026	
Edge 3	0.000		0.294	0.000		0.294	
		0.018	0.294	0.000		0.312	
	0.000			0.000		0.000	
		0.018		0.000		0.018	
	0.000		0.294		0.002	0.296	
		0.018	0.294		0.002	0.314	
Edge 4	0.181		0.020	0.223		0.424	
		0.136	0.020	0.223		0.379	
	0.181			0.223		0.404	
		0.136		0.223		0.359	
	0.181		0.020		0.208	0.409	
		0.136	0.020		0.208	0.364	
Bottom	0.687		0.082	0.082		0.851	
		0.612	0.082	0.082		0.776	
	0.687			0.082		0.769	
		0.612		0.082		0.694	
	0.687		0.082		0.056	0.825	
		0.612	0.082		0.056	0.750	
Bottom Reduction	0.333		0.082	0.082		0.497	
		0.787	0.082	0.082		0.951	
	0.333			0.082		0.415	
		0.787		0.082		0.869	
	0.333		0.082		0.056	0.471	
		0.787	0.082		0.056	0.925	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 13LTE 25 & WLAN Main 5.2 5.3GHz WLAN Aux 5.2 5.3GHz BT

	Mode						
Test Position	LTE 13	LTE 25	WLAN Main 5.2 5.3GHz	WLAN Aux 5.2 5.3GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.237		0.000	0.014		0.251	
		0.516	0.000	0.014		0.530	
	0.237			0.014		0.251	
		0.516		0.014		0.530	
	0.237		0.000		0.041	0.278	
		0.516	0.000		0.041	0.557	
Edge1 Reduction	1.189		0.000	0.014		1.203	
		1.054	0.000	0.014		1.068	
	1.189			0.014		1.203	
		1.054		0.014		1.068	
	1.189		0.000		0.041	1.230	
		1.054	0.000		0.041	1.095	
Edge 2	0.035		0.000	0.000		0.035	
		0.060	0.000	0.000		0.060	
	0.035			0.000		0.035	
		0.060		0.000		0.060	
	0.035		0.000		0.000	0.035	
		0.060	0.000		0.000	0.060	
Edge 3	0.001		0.294	0.000		0.295	
		0.009	0.294	0.000		0.303	
	0.001			0.000		0.001	
		0.009		0.000		0.009	
	0.001		0.294		0.002	0.297	
		0.009	0.294		0.002	0.305	
Edge 4	0.061		0.020	0.223		0.304	
		0.397	0.020	0.223		0.640	
	0.061			0.223		0.284	
		0.397		0.223		0.620	
	0.061		0.020		0.208	0.289	
		0.397	0.020		0.208	0.625	
Bottom	0.431		0.082	0.082		0.595	
		0.985	0.082	0.082		1.149	
	0.431			0.082		0.513	
		0.985		0.082		1.067	
	0.431		0.082		0.056	0.569	
		0.985	0.082		0.056	1.123	
Bottom Reduction	0.794		0.082	0.082		0.958	
		0.521	0.082	0.082		0.685	
	0.794			0.082		0.876	
		0.521		0.082		0.603	
	0.794		0.082		0.056	0.932	
		0.521	0.082		0.056	0.659	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 26LTE 41 & WLAN Main 5.2 5.3GHz WLAN Aux 5.2 5.3GHz BT

	Mode						
Test Position	LTE 26	LTE 41	WLAN Main 5.2 5.3GHz	WLAN Aux 5.2 5.3GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.262		0.000	0.014		0.276	
		0.546	0.000	0.014		0.560	
	0.262			0.014		0.276	
		0.546		0.014		0.560	
	0.262		0.000		0.041	0.303	
		0.546	0.000		0.041	0.587	
Edge1 Reduction	1.068		0.000	0.014		1.082	
		0.957	0.000	0.014		0.971	
	1.068			0.014		1.082	
		0.957		0.014		0.971	
	1.068		0.000		0.041	1.109	
		0.957	0.000		0.041	0.998	
Edge 2	0.094		0.000	0.000		0.094	
		0.041	0.000	0.000		0.041	
	0.094			0.000		0.094	
		0.041		0.000		0.041	
	0.094		0.000		0.000	0.094	
		0.041	0.000		0.000	0.041	
Edge 3	0.012		0.294	0.000		0.306	
		0.007	0.294	0.000		0.301	
	0.012			0.000		0.012	
		0.007		0.000		0.007	
	0.012		0.294		0.002	0.308	
		0.007	0.294		0.002	0.303	
Edge 4	0.041		0.020	0.223		0.284	
		0.036	0.020	0.223		0.279	
	0.041			0.223		0.264	
		0.036		0.223		0.259	
	0.041		0.020		0.208	0.269	
		0.036	0.020		0.208	0.264	
Bottom	1.022		0.082	0.082		1.186	
		0.588	0.082	0.082		0.752	
	1.022			0.082		1.104	
		0.588		0.082		0.670	
	1.022		0.082		0.056	1.160	
		0.588	0.082		0.056	0.726	
Bottom Reduction	0.619		0.082	0.082		0.783	
		0.291	0.082	0.082		0.455	
	0.619			0.082		0.701	
		0.291		0.082		0.373	
	0.619		0.082		0.056	0.757	
		0.291	0.082		0.056	0.429	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for WCDMA 2WCDMA 4 & WLAN Main 5.5GHz WLAN Aux 5.5GHz BT

	Mode						
Test Position	WCDMA 2	WCDMA 4	WLAN Main 5.5GHz	WLAN Aux 5.5GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.582		0.000	0.012		0.594	
		0.589	0.000	0.012		0.601	
	0.582			0.012		0.594	
		0.589		0.012		0.601	
	0.582		0.000		0.041	0.623	
		0.589	0.000		0.041	0.630	
Edge1 Reduction	1.192		0.000	0.012		1.204	
		0.884	0.000	0.012		0.896	
	1.192			0.012		1.204	
		0.884		0.012		0.896	
	1.192		0.000		0.041	1.233	
		0.884	0.000		0.041	0.925	
Edge 2	0.087		0.000	0.000		0.087	
		0.069	0.000	0.000		0.069	
	0.087			0.000		0.087	
		0.069		0.000		0.069	
	0.087		0.000		0.000	0.087	
		0.069	0.000		0.000	0.069	
Edge 3	0.013		0.344	0.013		0.370	
		0.009	0.344	0.013		0.366	
	0.013			0.013		0.026	
		0.009		0.013		0.022	
	0.013		0.344		0.002	0.359	
		0.009	0.344		0.002	0.355	
Edge 4	0.290		0.000	0.539		0.829	
		0.291	0.000	0.539		0.830	
	0.290			0.539		0.829	
		0.291		0.539		0.830	
	0.290		0.000		0.208	0.498	
		0.291	0.000		0.208	0.499	
Bottom	0.949		0.123	0.137		1.209	
		0.930	0.123	0.137		1.190	
	0.949			0.137		1.086	
		0.930		0.137		1.067	
	0.949		0.123		0.056	1.128	
		0.930	0.123		0.056	1.109	
Bottom Reduction	0.583		0.123	0.137		0.843	
		0.331	0.123	0.137		0.591	
	0.583			0.137		0.720	
		0.331		0.137		0.468	
	0.583		0.123		0.056	0.762	
		0.331	0.123		0.056	0.510	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for WCDMA 5LTE 2 & WLAN Main 5.5GHz WLAN Aux 5.5GHz BT

	Mode						
Test Position	WCDMA 5	LTE 2	WLAN Main 5.5GHz	WLAN Aux 5.5GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.390		0.000	0.012		0.402	
		0.571	0.000	0.012		0.583	
	0.390			0.012		0.402	
		0.571		0.012		0.583	
	0.390		0.000		0.041	0.431	
		0.571	0.000		0.041	0.612	
Edge1 Reduction	1.158		0.000	0.012		1.170	
		1.147	0.000	0.012		1.159	
	1.158			0.012		1.170	
		1.147		0.012		1.159	
	1.158		0.000		0.041	1.199	
		1.147	0.000		0.041	1.188	
Edge 2	0.176		0.000	0.000		0.176	
		0.063	0.000	0.000		0.063	
	0.176			0.000		0.176	
		0.063		0.000		0.063	
	0.176		0.000		0.000	0.176	
		0.063	0.000		0.000	0.063	
Edge 3	0.020		0.344	0.013		0.377	
		0.018	0.344	0.013		0.375	
	0.020			0.013		0.033	
		0.018		0.013		0.031	
	0.020		0.344		0.002	0.366	
		0.018	0.344		0.002	0.364	
Edge 4	0.148		0.000	0.539		0.687	
		0.400	0.000	0.539		0.939	
	0.148			0.539		0.687	
		0.400		0.539		0.939	
	0.148		0.000		0.208	0.356	
		0.400	0.000		0.208	0.608	
Bottom	0.782		0.123	0.137		1.042	
		0.976	0.123	0.137		1.236	
	0.782			0.137		0.919	
		0.976		0.137		1.113	
	0.782		0.123		0.056	0.961	
		0.976	0.123		0.056	1.155	
Bottom Reduction	0.915		0.123	0.137		1.175	
		0.556	0.123	0.137		0.816	
	0.915			0.137		1.052	
		0.556		0.137		0.693	
	0.915		0.123		0.056	1.094	
		0.556	0.123		0.056	0.735	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 4LTE 5 & WLAN Main 5.5GHz WLAN Aux 5.5GHz BT

	Mode						
Test Position	LTE 4	LTE 5	WLAN Main 5.5GHz	WLAN Aux 5.5GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.547		0.000	0.012		0.559	
		0.357	0.000	0.012		0.369	
	0.547			0.012		0.559	
		0.357		0.012		0.369	
	0.547		0.000		0.041	0.588	
		0.357	0.000		0.041	0.398	
Edge1 Reduction	1.029		0.000	0.012		1.041	
		1.184	0.000	0.012		1.196	
	1.029			0.012		1.041	
		1.184		0.012		1.196	
	1.029		0.000		0.041	1.070	
		1.184	0.000		0.041	1.225	
Edge 2	0.062		0.000	0.000		0.062	
		0.063	0.000	0.000		0.063	
	0.062			0.000		0.062	
		0.063		0.000		0.063	
	0.062		0.000		0.000	0.062	
		0.063	0.000		0.000	0.063	
Edge 3	0.007		0.344	0.013		0.364	
		0.024	0.344	0.013		0.381	
	0.007			0.013		0.020	
		0.024		0.013		0.037	
	0.007		0.344		0.002	0.353	
		0.024	0.344		0.002	0.370	
Edge 4	0.244		0.000	0.539		0.783	
		0.123	0.000	0.539		0.662	
	0.244			0.539		0.783	
		0.123		0.539		0.662	
	0.244		0.000		0.208	0.452	
		0.123	0.000		0.208	0.331	
Bottom	1.053		0.123	0.137		1.313	
		0.682	0.123	0.137		0.942	
	1.053			0.137		1.190	
		0.682		0.137		0.819	
	1.053		0.123		0.056	1.232	
		0.682	0.123		0.056	0.861	
Bottom Reduction	0.407		0.123	0.137		0.667	
		0.730	0.123	0.137		0.990	
	0.407			0.137		0.544	
		0.730		0.137		0.867	
	0.407		0.123		0.056	0.586	
		0.730	0.123		0.056	0.909	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 7LTE 12 & WLAN Main 5.5GHz WLAN Aux 5.5GHz BT

	Mode						
Test Position	LTE 7	LTE 12	WLAN Main 5.5GHz	WLAN Aux 5.5GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.618		0.000	0.012		0.630	
		0.195	0.000	0.012		0.207	
	0.618			0.012		0.630	
		0.195		0.012		0.207	
	0.618		0.000		0.041	0.659	
		0.195	0.000		0.041	0.236	
Edge1 Reduction	1.001		0.000	0.012		1.013	
		1.161	0.000	0.012		1.173	
	1.001			0.012		1.013	
		1.161		0.012		1.173	
	1.001		0.000		0.041	1.042	
		1.161	0.000		0.041	1.202	
Edge 2	0.110		0.000	0.000		0.110	
		0.026	0.000	0.000		0.026	
	0.110			0.000		0.110	
		0.026		0.000		0.026	
	0.110		0.000		0.000	0.110	
		0.026	0.000		0.000	0.026	
Edge 3	0.000		0.344	0.013		0.357	
		0.018	0.344	0.013		0.375	
	0.000			0.013		0.013	
		0.018		0.013		0.031	
	0.000		0.344		0.002	0.346	
		0.018	0.344		0.002	0.364	
Edge 4	0.181		0.000	0.539		0.720	
		0.136	0.000	0.539		0.675	
	0.181			0.539		0.720	
		0.136		0.539		0.675	
	0.181		0.000		0.208	0.389	
		0.136	0.000		0.208	0.344	
Bottom	0.687		0.123	0.137		0.947	
		0.612	0.123	0.137		0.872	
	0.687			0.137		0.824	
		0.612		0.137		0.749	
	0.687		0.123		0.056	0.866	
		0.612	0.123		0.056	0.791	
Bottom Reduction	0.333		0.123	0.137		0.593	
		0.787	0.123	0.137		1.047	
	0.333			0.137		0.470	
		0.787		0.137		0.924	
	0.333		0.123		0.056	0.512	
		0.787	0.123		0.056	0.966	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 13LTE 25 & WLAN Main 5.5GHz WLAN Aux 5.5GHz BT

	Mode						
Test Position	LTE 13	LTE 25	WLAN Main 5.5GHz	WLAN Aux 5.5GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.237		0.000	0.012		0.249	
		0.516	0.000	0.012		0.528	
	0.237			0.012		0.249	
		0.516		0.012		0.528	
	0.237		0.000		0.041	0.278	
		0.516	0.000		0.041	0.557	
Edge1 Reduction	1.189		0.000	0.012		1.201	
		1.054	0.000	0.012		1.066	
	1.189			0.012		1.201	
		1.054		0.012		1.066	
	1.189		0.000		0.041	1.230	
		1.054	0.000		0.041	1.095	
Edge 2	0.035		0.000	0.000		0.035	
		0.060	0.000	0.000		0.060	
	0.035			0.000		0.035	
		0.060		0.000		0.060	
	0.035		0.000		0.000	0.035	
		0.060	0.000		0.000	0.060	
Edge 3	0.001		0.344	0.013		0.358	
		0.009	0.344	0.013		0.366	
	0.001			0.013		0.014	
		0.009		0.013		0.022	
	0.001		0.344		0.002	0.347	
		0.009	0.344		0.002	0.355	
Edge 4	0.061		0.000	0.539		0.600	
		0.397	0.000	0.539		0.936	
	0.061			0.539		0.600	
		0.397		0.539		0.936	
	0.061		0.000		0.208	0.269	
		0.397	0.000		0.208	0.605	
Bottom	0.431		0.123	0.137		0.691	
		0.985	0.123	0.137		1.245	
	0.431			0.137		0.568	
		0.985		0.137		1.122	
	0.431		0.123		0.056	0.610	
		0.985	0.123		0.056	1.164	
Bottom Reduction	0.794		0.123	0.137		1.054	
		0.521	0.123	0.137		0.781	
	0.794			0.137		0.931	
		0.521		0.137		0.658	
	0.794		0.123		0.056	0.973	
		0.521	0.123		0.056	0.700	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 26LTE 41 & WLAN Main 5.5GHz WLAN Aux 5.5GHz BT

	Mode						
Test Position	LTE 26	LTE 41	WLAN Main 5.5GHz	WLAN Aux 5.5GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.262		0.000	0.012		0.274	
		0.546	0.000	0.012		0.558	
	0.262			0.012		0.274	
		0.546		0.012		0.558	
	0.262		0.000		0.041	0.303	
		0.546	0.000		0.041	0.587	
Edge1 Reduction	1.068		0.000	0.012		1.080	
		0.957	0.000	0.012		0.969	
	1.068			0.012		1.080	
		0.957		0.012		0.969	
	1.068		0.000		0.041	1.109	
		0.957	0.000		0.041	0.998	
Edge 2	0.094		0.000	0.000		0.094	
		0.041	0.000	0.000		0.041	
	0.094			0.000		0.094	
		0.041		0.000		0.041	
	0.094		0.000		0.000	0.094	
		0.041	0.000		0.000	0.041	
Edge 3	0.012		0.344	0.013		0.369	
		0.007	0.344	0.013		0.364	
	0.012			0.013		0.025	
		0.007		0.013		0.020	
	0.012		0.344		0.002	0.358	
		0.007	0.344		0.002	0.353	
Edge 4	0.041		0.000	0.539		0.580	
		0.036	0.000	0.539		0.575	
	0.041			0.539		0.580	
		0.036		0.539		0.575	
	0.041		0.000		0.208	0.249	
		0.036	0.000		0.208	0.244	
Bottom	1.022		0.123	0.137		1.282	
		0.588	0.123	0.137		0.848	
	1.022			0.137		1.159	
		0.588		0.137		0.725	
	1.022		0.123		0.056	1.201	
		0.588	0.123		0.056	0.767	
Bottom Reduction	0.619		0.123	0.137		0.879	
		0.291	0.123	0.137		0.551	
	0.619			0.137		0.756	
		0.291		0.137		0.428	
	0.619		0.123		0.056	0.798	
		0.291	0.123		0.056	0.470	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for WCDMA 2WCDMA 4 & WLAN Main 5.8GHz WLAN Aux 5.8GHz BT

	Mode						
Test Position	WCDMA 2	WCDMA 4	WLAN Main 5.8GHz	WLAN Aux 5.8GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.582		0.000	0.009		0.591	
		0.589	0.000	0.009		0.598	
	0.582			0.009		0.591	
		0.589		0.009		0.598	
	0.582		0.000		0.041	0.623	
		0.589	0.000		0.041	0.630	
Edge1 Reduction	1.192		0.000	0.009		1.201	
		0.884	0.000	0.009		0.893	
	1.192			0.009		1.201	
		0.884		0.009		0.893	
	1.192		0.000		0.041	1.233	
		0.884	0.000		0.041	0.925	
Edge 2	0.087		0.000	0.000		0.087	
		0.069	0.000	0.000		0.069	
	0.087			0.000		0.087	
		0.069		0.000		0.069	
	0.087		0.000		0.000	0.087	
		0.069	0.000		0.000	0.069	
Edge 3	0.013		0.475	0.013		0.501	
		0.009	0.475	0.013		0.497	
	0.013			0.013		0.026	
		0.009		0.013		0.022	
	0.013		0.475		0.002	0.490	
		0.009	0.475		0.002	0.486	
Edge 4	0.290		0.008	0.465		0.763	
		0.291	0.008	0.465		0.764	
	0.290			0.465		0.755	
		0.291		0.465		0.756	
	0.290		0.008		0.208	0.506	
		0.291	0.008		0.208	0.507	
Bottom	0.949		0.140	0.129		1.218	
		0.930	0.140	0.129		1.199	
	0.949			0.129		1.078	
		0.930		0.129		1.059	
	0.949		0.140		0.056	1.145	
		0.930	0.140		0.056	1.126	
Bottom Reduction	0.583		0.140	0.129		0.852	
		0.331	0.140	0.129		0.600	
	0.583			0.129		0.712	
		0.331		0.129		0.460	
	0.583		0.140		0.056	0.779	
		0.331	0.140		0.056	0.527	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for WCDMA 5LTE 2 & WLAN Main 5.8GHz WLAN Aux 5.8GHz BT

	Mode						
Test Position	WCDMA 5	LTE 2	WLAN Main 5.8GHz	WLAN Aux 5.8GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.390		0.000	0.009		0.399	
		0.571	0.000	0.009		0.580	
	0.390			0.009		0.399	
		0.571		0.009		0.580	
	0.390		0.000		0.041	0.431	
		0.571	0.000		0.041	0.612	
Edge1 Reduction	1.158		0.000	0.009		1.167	
		1.147	0.000	0.009		1.156	
	1.158			0.009		1.167	
		1.147		0.009		1.156	
	1.158		0.000		0.041	1.199	
		1.147	0.000		0.041	1.188	
Edge 2	0.176		0.000	0.000		0.176	
		0.063	0.000	0.000		0.063	
	0.176			0.000		0.176	
		0.063		0.000		0.063	
	0.176		0.000		0.000	0.176	
		0.063	0.000		0.000	0.063	
Edge 3	0.020		0.475	0.013		0.508	
		0.018	0.475	0.013		0.506	
	0.020			0.013		0.033	
		0.018		0.013		0.031	
	0.020		0.475		0.002	0.497	
		0.018	0.475		0.002	0.495	
Edge 4	0.148		0.008	0.465		0.621	
		0.400	0.008	0.465		0.873	
	0.148			0.465		0.613	
		0.400		0.465		0.865	
	0.148		0.008		0.208	0.364	
		0.400	0.008		0.208	0.616	
Bottom	0.782		0.140	0.129		1.051	
		0.976	0.140	0.129		1.245	
	0.782			0.129		0.911	
		0.976		0.129		1.105	
	0.782		0.140		0.056	0.978	
		0.976	0.140		0.056	1.172	
Bottom Reduction	0.915		0.140	0.129		1.184	
		0.556	0.140	0.129		0.825	
	0.915			0.129		1.044	
		0.556		0.129		0.685	
	0.915		0.140		0.056	1.111	
		0.556	0.140		0.056	0.752	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 4LTE 5 & WLAN Main 5.8GHz WLAN Aux 5.8GHz BT

	Mode						
Test Position	LTE 4	LTE 5	WLAN Main 5.8GHz	WLAN Aux 5.8GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.547		0.000	0.009		0.556	
		0.357	0.000	0.009		0.366	
	0.547			0.009		0.556	
		0.357		0.009		0.366	
	0.547		0.000		0.041	0.588	
		0.357	0.000		0.041	0.398	
Edge1 Reduction	1.029		0.000	0.009		1.038	
		1.184	0.000	0.009		1.193	
	1.029			0.009		1.038	
		1.184		0.009		1.193	
	1.029		0.000		0.041	1.070	
		1.184	0.000		0.041	1.225	
Edge 2	0.062		0.000	0.000		0.062	
		0.063	0.000	0.000		0.063	
	0.062			0.000		0.062	
		0.063		0.000		0.063	
	0.062		0.000		0.000	0.062	
		0.063	0.000		0.000	0.063	
Edge 3	0.007		0.475	0.013		0.495	
		0.024	0.475	0.013		0.512	
	0.007			0.013		0.020	
		0.024		0.013		0.037	
	0.007		0.475		0.002	0.484	
		0.024	0.475		0.002	0.501	
Edge 4	0.244		0.008	0.465		0.717	
		0.123	0.008	0.465		0.596	
	0.244			0.465		0.709	
		0.123		0.465		0.588	
	0.244		0.008		0.208	0.460	
		0.123	0.008		0.208	0.339	
Bottom	1.053		0.140	0.129		1.322	
		0.682	0.140	0.129		0.951	
	1.053			0.129		1.182	
		0.682		0.129		0.811	
	1.053		0.140		0.056	1.249	
		0.682	0.140		0.056	0.878	
Bottom Reduction	0.407		0.140	0.129		0.676	
		0.730	0.140	0.129		0.999	
	0.407			0.129		0.536	
		0.730		0.129		0.859	
	0.407		0.140		0.056	0.603	
		0.730	0.140		0.056	0.926	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 7LTE 12 & WLAN Main 5.8GHz WLAN Aux 5.8GHz BT

	Mode						
Test Position	LTE 7	LTE 12	WLAN Main 5.8GHz	WLAN Aux 5.8GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.618		0.000	0.009		0.627	
		0.195	0.000	0.009		0.204	
	0.618			0.009		0.627	
		0.195		0.009		0.204	
	0.618		0.000		0.041	0.659	
		0.195	0.000		0.041	0.236	
Edge1 Reduction	1.001		0.000	0.009		1.010	
		1.161	0.000	0.009		1.170	
	1.001			0.009		1.010	
		1.161		0.009		1.170	
	1.001		0.000		0.041	1.042	
		1.161	0.000		0.041	1.202	
Edge 2	0.110		0.000	0.000		0.110	
		0.026	0.000	0.000		0.026	
	0.110			0.000		0.110	
		0.026		0.000		0.026	
	0.110		0.000		0.000	0.110	
		0.026	0.000		0.000	0.026	
Edge 3	0.000		0.475	0.013		0.488	
		0.018	0.475	0.013		0.506	
	0.000			0.013		0.013	
		0.018		0.013		0.031	
	0.000		0.475		0.002	0.477	
		0.018	0.475		0.002	0.495	
Edge 4	0.181		0.008	0.465		0.654	
		0.136	0.008	0.465		0.609	
	0.181			0.465		0.646	
		0.136		0.465		0.601	
	0.181		0.008		0.208	0.397	
		0.136	0.008		0.208	0.352	
Bottom	0.687		0.140	0.129		0.956	
		0.612	0.140	0.129		0.881	
	0.687			0.129		0.816	
		0.612		0.129		0.741	
	0.687		0.140		0.056	0.883	
		0.612	0.140		0.056	0.808	
Bottom Reduction	0.333		0.140	0.129		0.602	
		0.787	0.140	0.129		1.056	
	0.333			0.129		0.462	
		0.787		0.129		0.916	
	0.333		0.140		0.056	0.529	
		0.787	0.140		0.056	0.983	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 13LTE 25 & WLAN Main 5.8GHz WLAN Aux 5.8GHz BT

	Mode						
Test Position	LTE 13	LTE 25	WLAN Main 5.8GHz	WLAN Aux 5.8GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.237		0.000	0.009		0.246	
		0.516	0.000	0.009		0.525	
	0.237			0.009		0.246	
		0.516		0.009		0.525	
	0.237		0.000		0.041	0.278	
		0.516	0.000		0.041	0.557	
Edge1 Reduction	1.189		0.000	0.009		1.198	
		1.054	0.000	0.009		1.063	
	1.189			0.009		1.198	
		1.054		0.009		1.063	
	1.189		0.000		0.041	1.230	
		1.054	0.000		0.041	1.095	
Edge 2	0.035		0.000	0.000		0.035	
		0.060	0.000	0.000		0.060	
	0.035			0.000		0.035	
		0.060		0.000		0.060	
	0.035		0.000		0.000	0.035	
		0.060	0.000		0.000	0.060	
Edge 3	0.001		0.475	0.013		0.489	
		0.009	0.475	0.013		0.497	
	0.001			0.013		0.014	
		0.009		0.013		0.022	
	0.001		0.475		0.002	0.478	
		0.009	0.475		0.002	0.486	
Edge 4	0.061		0.008	0.465		0.534	
		0.397	0.008	0.465		0.870	
	0.061			0.465		0.526	
		0.397		0.465		0.862	
	0.061		0.008		0.208	0.277	
		0.397	0.008		0.208	0.613	
Bottom	0.431		0.140	0.129		0.700	
		0.985	0.140	0.129		1.254	
	0.431			0.129		0.560	
		0.985		0.129		1.114	
	0.431		0.140		0.056	0.627	
		0.985	0.140		0.056	1.181	
Bottom Reduction	0.794		0.140	0.129		1.063	
		0.521	0.140	0.129		0.790	
	0.794			0.129		0.923	
		0.521		0.129		0.650	
	0.794		0.140		0.056	0.990	
		0.521	0.140		0.056	0.717	

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

Sum of the SAR for LTE 26LTE 41 & WLAN Main 5.8GHz WLAN Aux 5.8GHz BT

	Mode						
Test Position	LTE 26	LTE 41	WLAN Main 5.8GHz	WLAN Aux 5.8GHz	BT	Sum of SAR (1g/Wkg)	Remarks
Edge1	0.262		0.000	0.009		0.271	
		0.546	0.000	0.009		0.555	
	0.262			0.009		0.271	
		0.546		0.009		0.555	
	0.262		0.000		0.041	0.303	
		0.546	0.000		0.041	0.587	
Edge1 Reduction	1.068		0.000	0.009		1.077	
		0.957	0.000	0.009		0.966	
	1.068			0.009		1.077	
		0.957		0.009		0.966	
	1.068		0.000		0.041	1.109	
		0.957	0.000		0.041	0.998	
Edge 2	0.094		0.000	0.000		0.094	
		0.041	0.000	0.000		0.041	
	0.094			0.000		0.094	
		0.041		0.000		0.041	
	0.094		0.000		0.000	0.094	
		0.041	0.000		0.000	0.041	
Edge 3	0.012		0.475	0.013		0.500	
		0.007	0.475	0.013		0.495	
	0.012			0.013		0.025	
		0.007		0.013		0.020	
	0.012		0.475		0.002	0.489	
		0.007	0.475		0.002	0.484	
Edge 4	0.041		0.008	0.465		0.514	
		0.036	0.008	0.465		0.509	
	0.041			0.465		0.506	
		0.036		0.465		0.501	
	0.041		0.008		0.208	0.257	
		0.036	0.008		0.208	0.252	
Bottom	1.022		0.140	0.129		1.291	
		0.588	0.140	0.129		0.857	
	1.022			0.129		1.151	
		0.588		0.129		0.717	
	1.022		0.140		0.056	1.218	
		0.588	0.140		0.056	0.784	
Bottom Reduction	0.619		0.140	0.129		0.888	
		0.291	0.140	0.129		0.560	
	0.619			0.129		0.748	
		0.291		0.129		0.420	
	0.619		0.140		0.056	0.815	
		0.291	0.140		0.056	0.487	

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg.

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.

17. Appendixes

Refer to separated files for the following appendixes.

17.1. System Performance Check Plots

17.2. SAR Test plots

17.3. SAR Test Plots for Repeat Measurement

17.4. Calibration Certificate for D750V3 – SN1058, D835V2 - SN 4d149, D1750V2 - SN 1089

17.5. Calibration Certificate for D1900V2 – SN 5d169, D2600V2 – SN 1030

17.6. Calibration Certificate for E-Field Probe EX3DV4 – SN 3825- SN 3917

17.7. SAR Tissue Ingredients

17.8. Triggering distances and power levels

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN TEL: +81 596 24 8999 FAX: +81 596 24 8124
This report shall not be reproduced except in full, without the written approval of UL Japan, Inc.