



# TEST REPORT

## No. I23Z60212-WMD03

for

**HMD Global Oy**

**Smart Phone**

**Model Name: TA-1573**

**FCC ID: 2AJOTTA-1573**

with

**Hardware Version: V1.0**

**Software Version: 04US\_0\_170**

**Issued Date: 2023-04-18**

**Note:**

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

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## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
I23Z60212-WMD03	Rev.0	1 <sup>st</sup> edition	2023-04-18

Note: the latest revision of the test report supersedes all previous version.

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## **1. Test Laboratory**

### **1.1. Introduction & Accreditation**

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0 and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (CN0066). The detail accreditation scope can be found on NVLAP website.

### **1.2. Testing Location**

Location 1: CTTL (huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing,  
P. R. China 100191

Location : CTTL(BDA)

Address: No.18A, Kangding Street, Beijing Economic-Technology  
Development Area, Beijing, P. R. China 100176

### 1.3. Testing Environment

Normal Temperature: 15-35°C  
Relative Humidity: 20-75%

### 1.4. Project Data

Testing Start Date: 2023-03-04  
Testing End Date: 2023-04-17

### 1.5. Signature



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**Dong Yuan**  
**(Prepared this test report)**



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**Zhou Yu**  
**(Reviewed this test report)**



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**Zhao Hui Lin**  
**Deputy Director of the laboratory**  
**(Approved this test report)**



## **2. Client Information**

### **2.1. Applicant Information**

Company Name: HMD Global Oy  
Address /Post: Bertel Jungin aukio 9, 02600 Espoo, Finland  
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### **2.2. Manufacturer Information**

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Address /Post: Bertel Jungin aukio 9, 02600 Espoo, Finland  
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### **3. Equipment Under Test (EUT) and Ancillary Equipment (AE)**

#### **3.1. About EUT**

Description	Smart Phone
Model Name	TA-1573
FCC ID	2AJOTTA-1573
Antenna	Embedded
Output power	22.83 dBm maximum EIRP measured for LTE B41
Extreme vol. Limits	3.6VDC to 4.45VDC (nominal: 3.87VDC)
Extreme temp. Tolerance	-10°C to +55°C

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of CTTL.

#### **3.2. Internal Identification of EUT used during the test**

<b>EUT ID*</b>	<b>IMEI</b>	<b>HW Version</b>	<b>SW Version</b>	<b>Date of receipt</b>
UT16a	350547140006301	V1.0	04US_0_170	2023-03-03
UT85a	350547140010974	V1.0	04US_0_170	2023-03-22

\*EUT ID: is used to identify the test sample in the lab internally.

#### **3.3. Internal Identification of AE used during the test**

<b>AE ID*</b>	<b>Description</b>
AE1	Battery
AE1	
Model	HQ610
Manufacturer	Fenghua Lithium Battery Co., Ltd
Capacitance	5000mAh

\*AE ID: is used to identify the test sample in the lab internally.



## **4. Reference Documents**

### **4.1. Documents supplied by applicant**

EUT parameters are supplied by the customer, which are the bases of testing. CAICT is not responsible for the accuracy of customer supplied technical information that may affect the test results (for example, antenna gain and loss of customer supplied cable).

### **4.2. Reference Documents for testing**

The following documents listed in this section are referred for testing.

<b>Reference</b>	<b>Title</b>	<b>Version</b>
FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	10-1-21 Edition
FCC Part 22	PUBLIC MOBILE SERVICES	10-1-21 Edition
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	10-1-21 Edition
FCC Part 90	PRIVATE LAND MOBILE RADIO SERVICES	10-1-21 Edition
ANSI/TIA-603-E	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2016
ANSI C63.26	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services	2015
KDB 971168 D01	MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS	v03r01



## 5. Summary Of Test Result

### LTE Band 7

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

### LTE Band 12 (17)

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

### LTE Band 13

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

**LTE Band 25 (2)**

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	24.232	P
2	Emission Limit	24.238	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	24.238	P
6	Band Edge Compliance	24.238	P
7	Conducted Spurious Emission	24.238	P
8	Peak-to-Average Power Ratio	24.232	P

**LTE Band 26(814MHz~824MHz)**

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	90.635	P
2	Emission Limit	90.691	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	2.1049	P
6	Band Edge Compliance	90.691	P
7	Conducted Spurious Emission	90.691	P

**LTE Band 26(824MHz~849MHz) (5)**

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	22.913	P
2	Emission Limit	22.917	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	22.917	P
6	Band Edge Compliance	22.917	P
7	Conducted Spurious Emission	22.917	P

**LTE Band 41 (38)**

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

**LTE Band 66 (4)**

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

**LTE Band 71**

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

## Terms used in Verdict column

P	Pass. The EUT complies with the essential requirements in the standard.
NP	Not Performed. The test was not performed by CTTL.
NA	Not Applicable. The test was not applicable.
BR	Re-use test data from basic model report.
F	Fail. The EUT does not comply with the essential requirements in the standard.

All the test results are based on normal power.



LTE Band 25, Band 66, Band 26 and Band 12 overlaps the entire frequency range of LTE Band 2, Band 4, Band 5 and Band 17. Therefore, test data provided in this report covers Band 2, Band 4, Band 5 as well as Band 25, Band 66, Band 26.

LTE Band 41 is tested by power class 2.

#### Explanation of worst-case configuration

The worst-case scenario for all measurements is based on the conducted output power measurement investigation results. Output power was measured on QPSK, 16QAM, 64QAM and 256QAM modulations. It was found that QPSK was the worst case. All testing was performed using QPSK modulations to represent the worst case unless otherwise stated. The test results shown in the following sections represent the worst case emission.

## 6. Test Equipment Utilized

Description	Type	Series Number	Manufacture	Cal Due Date	Calibration Interval
Wideband Radio Communication Tester	CMW500	159082	R&S	2024-01-09	1 year
Spectrum Analyzer	FSU	200030	R&S	2023-05-25	1 year
Radio Communication Analyzer	MT8821C	6201763159	Anritsu	2023-08-02	1 year
Climate Chamber	SH-242	93008556	ESPEC	2023-12-23	3 years
Test Receiver	FSV40	101047	R&S	2023-06-09	1 Year
EMI Antenna	VULB9163	9163-235	Schwarzbeck	2023-04-19	1 Year
EMI Antenna	LB-7180-NF	J2030013000041	A-INFO	2023-04-26	1 Year
Substitution Antenna	3117	00119024	ETS-Lindgren	2023-06-07	1 Year
Substitution Antenna	3116	2663	ETS-Lindgren	2023-11-22	1 Year
Signal Generator	N5183A	MY49060052	Agilent	2023-07-19	1 Year
Universal Radio Communication Tester	CMW500	143008	R&S	2024-01-03	1 Year
Universal Radio Communication Tester	MT8821C	6262257899	Anritsu	2023-05-15	1 Year

## Annex A: Measurement Results

### A.1 Output Power

#### A.1.1 Summary

During the process of testing, the EUT was controlled via communication tester to ensure max power transmission and proper modulation.

In all cases, output power is within the specified limits.

#### A.1.2 Conducted

##### A.1.2.1 Method of Measurements

The EUT was set up for the max output power with pseudo random data modulation.

These measurements were done at 3 frequencies (bottom, middle and top of operational frequency range) for each bandwidth.

The results below include a correction factor for cable loss that is provided by the customer.

##### A.1.2.2 Measurement Result

#### LTE band 7

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
5MHz	1 RB high	2567.5	22.79	22.26	21.39	18.32
		2535.0	22.89	22.23	20.89	18.10
		2502.5	22.85	22.28	21.38	18.00
	1 RB low	2567.5	22.89	22.17	21.02	18.19
		2535.0	22.76	22.53	21.27	18.21
		2502.5	23.06	22.20	21.26	18.26
	50% RB mid	2567.5	21.98	21.04	20.07	18.36
		2535.0	22.09	20.82	19.95	18.21
		2502.5	22.22	21.18	20.15	18.05
	100% RB	2567.5	21.86	21.08	20.08	18.04
		2535.0	21.91	20.86	19.98	18.20
		2502.5	22.00	21.28	19.96	18.09
10MHz	1 RB high	2565.0	22.99	22.18	21.50	18.29
		2535.0	22.70	22.08	21.00	18.21
		2505.0	22.94	22.24	21.16	17.94
	1 RB low	2565.0	22.69	22.09	21.26	18.40
		2535.0	22.82	22.33	21.37	18.06
		2505.0	22.88	22.33	21.22	18.11
	50% RB mid	2565.0	22.09	21.14	20.02	18.33
		2535.0	22.17	21.07	20.05	18.30
		2505.0	22.10	21.10	20.11	18.12
	100% RB	2565.0	21.99	20.97	19.95	18.06
		2535.0	21.97	21.13	20.05	18.07

		2505.0	22.25	21.30	19.97	18.32
15MHz	1 RB high	2562.5	23.04	22.10	21.57	18.36
		2535.0	22.77	22.13	21.03	18.19
		2507.5	22.91	22.25	21.12	17.99
	1 RB low	2562.5	22.97	22.00	21.29	18.32
		2535.0	22.87	22.30	21.20	18.00
		2507.5	22.96	22.21	21.40	18.13
	50% RB mid	2562.5	22.03	20.91	19.97	18.33
		2535.0	22.27	20.93	20.11	18.07
		2507.5	22.04	21.09	20.20	18.15
	100% RB	2562.5	21.99	21.02	19.89	18.11
		2535.0	21.97	21.03	19.88	18.25
		2507.5	22.26	21.34	20.09	18.29
20MHz	1 RB high	2560.0	22.93	22.19	21.47	18.26
		2535.0	22.79	22.08	21.04	18.13
		2510.0	22.88	22.38	21.24	18.08
	1 RB low	2560.0	22.82	22.13	21.15	18.28
		2535.0	22.76	22.41	21.26	18.11
		2510.0	22.97	22.27	21.31	18.16
	50% RB mid	2560.0	22.06	21.06	20.01	18.26
		2535.0	22.21	20.97	20.00	18.17
		2510.0	22.10	21.17	20.11	18.20
	100% RB	2560.0	22.00	21.03	20.02	18.02
		2535.0	21.95	21.00	20.03	18.21
		2510.0	22.14	21.19	20.08	18.18

**LTE band 12**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	715.3	24.18	23.69	22.29	19.51
		707.5	24.17	23.77	22.54	19.59
		699.7	24.43	23.31	22.49	19.39
	1 RB low	715.3	24.38	23.84	22.75	19.54
		707.5	24.10	23.63	22.47	19.41
		699.7	24.29	23.95	22.59	19.45
	50% RB mid	715.3	23.49	22.34	21.55	19.47
		707.5	23.61	22.53	21.42	19.28
		699.7	23.31	22.56	21.42	19.53
	100% RB	715.3	23.41	22.42	21.49	19.47
		707.5	23.41	22.55	21.45	19.43
		699.7	23.21	22.47	21.37	19.26
3MHz	1 RB high	714.5	24.26	23.74	22.21	19.30
		707.5	24.20	23.74	22.63	19.51
		700.5	24.38	23.33	22.44	19.58
	1 RB low	714.5	24.29	23.74	22.79	19.39
		707.5	24.11	23.62	22.37	19.54
		700.5	24.38	23.81	22.60	19.37
	50% RB mid	714.5	23.39	22.36	21.36	19.29
		707.5	23.47	22.49	21.58	19.31
		700.5	23.26	22.31	21.40	19.41
	100% RB	714.5	23.48	22.50	21.59	19.51
		707.5	23.53	22.40	21.34	19.33
		700.5	23.31	22.37	21.60	19.46
5MHz	1 RB high	713.5	24.17	23.73	22.14	19.32
		707.5	24.22	23.77	22.56	19.54
		701.5	24.25	23.58	22.38	19.60
	1 RB low	713.5	24.31	23.77	22.65	19.55
		707.5	24.23	23.85	22.51	19.47
		701.5	24.20	23.98	22.79	19.32
	50% RB mid	713.5	23.36	22.37	21.33	19.55
		707.5	23.46	22.58	21.34	19.42
		701.5	23.41	22.48	21.38	19.67
	100% RB	713.5	23.59	22.36	21.63	19.49
		707.5	23.36	22.56	21.53	19.32
		701.5	23.45	22.33	21.53	19.24
10MHz	1 RB high	711.0	24.20	23.69	22.25	19.43
		707.5	24.26	23.73	22.58	19.52
		704.0	24.28	23.43	22.40	19.50
	1 RB low	711.0	24.41	23.80	22.64	19.43



		707.5	24.25	23.76	22.52	19.48
		704.0	24.32	23.89	22.66	19.41
	50% RB mid	711.0	23.46	22.46	21.46	19.44
		707.5	23.47	22.44	21.43	19.34
	100% RB	704.0	23.40	22.42	21.52	19.52
		711.0	23.45	22.44	21.53	19.42
		707.5	23.44	22.45	21.47	19.37
		704.0	23.36	22.36	21.49	19.39

**LTE band 13**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
5MHz	1 RB high	784.5	24.47	23.54	22.62	19.48
		782.0	24.47	23.33	22.59	19.19
		779.5	24.23	23.91	22.36	19.50
	1 RB low	784.5	24.24	23.67	22.60	19.27
		782.0	24.28	23.35	22.69	19.27
		779.5	24.26	23.85	22.38	19.37
	50% RB mid	784.5	23.33	22.59	21.50	19.47
		782.0	23.62	22.43	21.30	19.52
		779.5	23.56	22.59	21.51	19.43
	100% RB	784.5	23.34	22.46	21.35	19.48
		782.0	23.32	22.39	21.50	19.43
		779.5	23.50	22.22	21.63	19.42
10MHz	1 RB high	782.0	24.34	23.61	22.57	19.41
	1 RB low	782.0	24.29	23.88	22.47	19.46
	50% RB mid	782.0	23.49	22.40	21.44	19.44
	100% RB	782.0	23.43	22.35	21.49	19.45

**LTE band 25**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	1914.3	23.72	22.90	21.63	18.72
		1882.5	23.62	22.80	21.71	18.75
		1850.7	23.51	23.17	21.79	18.81
	1 RB low	1914.3	23.40	22.64	21.77	18.67
		1882.5	23.50	23.03	21.78	18.65
		1850.7	23.65	22.92	21.77	18.90
	50% RB mid	1914.3	22.64	21.64	20.82	18.60
		1882.5	22.88	21.76	20.88	18.55
		1850.7	22.75	21.71	20.67	18.97
	100% RB	1914.3	22.51	21.75	20.72	18.70
		1882.5	22.54	21.77	20.86	19.07
		1850.7	22.63	21.67	20.58	18.90
3MHz	1 RB high	1913.5	23.58	22.80	21.73	18.73
		1882.5	23.45	22.63	21.70	18.96
		1851.5	23.48	23.06	21.79	19.01
	1 RB low	1913.5	23.56	22.83	21.82	18.51
		1882.5	23.72	22.99	21.73	18.68
		1851.5	23.73	22.97	21.78	18.84
	50% RB mid	1913.5	22.55	21.60	20.62	18.54
		1882.5	22.74	21.74	20.82	18.62
		1851.5	22.60	21.63	20.70	18.95
	100% RB	1913.5	22.60	21.87	20.89	18.66
		1882.5	22.58	21.81	20.66	18.79
		1851.5	22.70	21.69	20.68	18.81
5MHz	1 RB high	1912.5	23.78	22.96	21.71	18.82
		1882.5	23.51	22.62	22.00	18.72
		1852.5	23.49	23.12	21.74	18.96
	1 RB low	1912.5	23.49	22.64	21.65	18.69
		1882.5	23.67	23.06	21.90	18.51
		1852.5	23.61	22.87	21.67	18.74
	50% RB mid	1912.5	22.63	21.74	20.63	18.66
		1882.5	22.78	21.89	20.90	18.59
		1852.5	22.81	21.68	20.65	18.93
	100% RB	1912.5	22.71	21.91	20.64	18.58
		1882.5	22.83	21.63	20.74	18.89
		1852.5	22.80	21.69	20.67	18.89
10MHz	1 RB high	1910.0	23.75	22.80	21.87	18.73
		1882.5	23.48	22.82	21.91	18.87
		1855.0	23.52	22.99	21.71	18.92
	1 RB low	1910.0	23.35	22.66	21.85	18.46

		1882.5	23.51	23.01	21.97	18.51
		1855.0	23.54	22.74	21.86	18.67
	50% RB mid	1910.0	22.55	21.49	20.73	18.53
		1882.5	22.74	21.82	20.69	18.57
		1855.0	22.62	21.55	20.62	19.00
	100% RB	1910.0	22.75	21.82	20.72	18.67
		1882.5	22.77	21.76	20.78	18.98
1855.0		22.80	21.79	20.51	18.90	
15MHz	1 RB high	1907.5	23.75	22.86	21.83	18.69
		1882.5	23.38	22.79	21.93	18.70
		1857.5	23.36	23.16	21.87	18.82
	1 RB low	1907.5	23.42	22.70	21.86	18.57
		1882.5	23.58	23.01	21.75	18.60
		1857.5	23.73	22.90	21.91	18.73
	50% RB mid	1907.5	22.59	21.63	20.60	18.55
		1882.5	22.94	21.95	20.93	18.57
		1857.5	22.82	21.58	20.85	18.87
	100% RB	1907.5	22.54	21.67	20.67	18.68
		1882.5	22.83	21.80	20.79	18.77
		1857.5	22.78	21.64	20.60	18.97
20MHz	1 RB high	1905.0	23.64	22.94	21.74	18.70
		1882.5	23.52	22.76	21.85	18.81
		1860.0	23.51	23.04	21.86	18.90
	1 RB low	1905.0	23.50	22.73	21.79	18.59
		1882.5	23.61	22.96	21.87	18.66
		1860.0	23.64	22.87	21.81	18.77
	50% RB mid	1905.0	22.63	21.63	20.74	18.59
		1882.5	22.79	21.82	20.81	18.55
		1860.0	22.70	21.62	20.75	18.95
	100% RB	1905.0	22.65	21.76	20.74	18.67
		1882.5	22.69	21.76	20.76	18.92
		1860.0	22.72	21.66	20.64	18.91

**LTE band 26(814MHz~824MHz)**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	823.3	23.71	22.82	21.93	18.60
		819.0	23.68	22.88	21.72	18.83
		814.7	23.65	22.82	22.21	18.82
	1 RB low	823.3	23.69	22.77	21.87	18.77
		819.0	23.68	22.80	21.64	18.84
		814.7	23.70	22.77	22.05	18.95
	50% RB mid	823.3	23.68	23.02	21.77	18.80
		819.0	23.68	22.97	21.79	18.91
		814.7	23.75	22.98	21.79	18.83
	100% RB	823.3	22.76	21.94	20.81	18.79
		819.0	22.76	21.91	20.83	18.78
		814.7	22.73	21.95	20.78	18.81
3MHz	1 RB high	822.5	23.75	22.81	21.74	18.84
		819.0	23.72	22.79	21.73	18.84
		815.5	23.79	22.80	21.78	18.89
	1 RB low	822.5	23.79	22.77	21.68	18.74
		819.0	23.76	22.84	21.67	18.87
		815.5	23.83	22.88	21.70	18.86
	50% RB mid	822.5	22.81	21.90	20.95	18.91
		819.0	22.77	21.83	20.89	18.88
		815.5	22.82	21.90	20.80	18.93
	100% RB	822.5	22.80	21.81	20.92	18.90
		819.0	22.79	21.82	20.82	18.85
		815.5	22.82	21.82	20.86	18.86
5MHz	1 RB high	821.5	23.76	22.88	21.96	18.91
		819.0	23.77	22.88	21.97	18.94
		816.5	23.82	22.97	22.04	18.95
	1 RB low	821.5	23.76	22.89	22.18	18.87
		819.0	23.80	22.91	22.15	18.95
		816.5	23.86	23.01	22.21	18.96
	50% RB mid	821.5	22.86	21.87	21.01	19.01
		819.0	22.86	21.89	21.00	18.99
		816.5	22.81	21.90	20.92	19.02
	100% RB	821.5	22.86	21.75	20.92	18.94
		819.0	22.81	21.76	20.89	18.91
		816.5	22.84	21.87	20.95	18.95
10MHz	1 RB high	819.0	23.74	22.79	21.78	18.88
	1 RB low	819.0	23.72	22.83	21.72	18.91
	50% RB mid	819.0	23.75	22.81	21.80	18.82
	100% RB	819.0	23.80	22.87	21.55	18.94

**LTE band 26(824MHz~849MHz)**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	848.3	23.67	22.92	21.85	18.73
		836.5	23.78	22.89	22.12	18.79
		824.7	23.66	22.73	22.24	18.96
	1 RB low	848.3	23.68	22.97	21.72	18.59
		836.5	23.75	22.86	21.96	18.96
		824.7	23.66	22.76	22.16	18.94
	50% RB mid	848.3	23.73	23.08	21.81	18.83
		836.5	23.79	23.07	21.85	18.91
		824.7	23.73	22.98	22.01	18.98
	100% RB	848.3	22.80	21.68	20.86	18.87
		836.5	22.72	21.63	20.83	18.77
		824.7	22.75	21.94	21.00	18.88
3MHz	1 RB high	847.5	23.80	22.85	21.80	18.94
		836.5	23.83	22.89	21.87	18.97
		825.5	23.81	22.94	21.81	18.91
	1 RB low	847.5	23.84	22.94	21.76	18.97
		836.5	23.83	22.91	21.83	18.90
		825.5	23.81	22.90	21.77	18.85
	50% RB mid	847.5	22.87	21.93	20.97	18.98
		836.5	22.89	21.90	21.03	18.89
		825.5	22.84	21.90	20.85	18.96
	100% RB	847.5	22.90	21.85	20.85	19.02
		836.5	22.84	21.82	20.79	18.90
		825.5	22.83	21.83	20.91	18.89
5MHz	1 RB high	846.5	23.82	22.93	22.09	19.03
		836.5	23.89	23.00	22.09	18.99
		826.5	23.79	22.85	22.06	19.01
	1 RB low	846.5	23.89	22.96	22.28	19.03
		836.5	23.85	22.96	22.22	18.94
		826.5	23.82	22.95	22.18	18.92
	50% RB mid	846.5	22.92	21.99	21.06	19.10
		836.5	22.93	21.91	21.11	19.01
		826.5	22.84	21.89	20.96	19.02
	100% RB	846.5	22.93	21.87	20.97	19.05
		836.5	22.85	21.81	20.96	18.90
		826.5	22.85	21.83	20.97	18.92
10MHz	1 RB high	844.0	23.80	22.89	21.87	18.93
		836.5	23.82	23.02	21.89	18.97
		829.0	23.81	22.93	21.82	18.89
	1 RB low	844.0	23.89	22.93	21.72	18.94

		836.5	23.89	23.04	21.65	18.91
		829.0	23.81	22.87	21.65	18.84
		844.0	22.94	21.97	21.10	18.98
	50% RB mid	836.5	22.93	21.96	21.07	19.02
		829.0	22.95	22.02	21.00	19.04
		844.0	22.94	21.96	20.97	18.96
	100% RB	836.5	22.86	21.93	20.92	18.92
		829.0	22.93	21.97	21.00	18.98
		844.0	22.94	21.96	20.97	18.96
15MHz	1 RB high	841.5	23.69	23.16	22.20	19.12
		836.5	23.75	23.23	22.23	19.21
		831.5	23.71	22.99	22.19	19.17
	1 RB low	841.5	23.72	23.18	22.11	19.06
		836.5	23.67	23.12	22.17	19.00
		831.5	23.60	22.88	22.17	18.93
	50% RB mid	841.5	22.86	21.76	20.89	18.83
		836.5	22.86	21.71	20.87	18.77
		831.5	22.80	21.69	20.85	18.75
	100% RB	841.5	22.82	21.81	20.86	18.84
		836.5	22.79	21.77	20.77	18.79
		831.5	22.78	21.79	20.83	18.83

**LTE band 41**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
5MHz	1 RB high	2687.5	25.60	24.72	23.64	19.50
		2593.0	25.37	24.87	23.68	19.78
		2498.5	25.36	24.61	23.71	19.41
	1 RB low	2687.5	25.49	24.77	24.05	19.57
		2593.0	25.52	25.00	23.84	19.55
		2498.5	25.36	24.83	23.59	19.66
	50% RB mid	2687.5	24.79	23.63	22.68	19.94
		2593.0	24.64	23.48	22.58	19.57
		2498.5	24.50	23.63	22.44	19.70
	100% RB	2687.5	24.67	23.60	22.62	19.76
		2593.0	24.72	23.58	22.86	19.54
		2498.5	24.39	23.71	22.56	19.48
10MHz	1 RB high	2685.0	25.61	24.92	23.70	19.79
		2593.0	25.49	24.83	23.69	19.68
		2501.0	25.49	24.80	23.50	19.49
	1 RB low	2685.0	25.50	25.07	23.89	19.60
		2593.0	25.52	25.14	23.98	19.55
		2501.0	25.27	24.79	23.54	19.59
	50% RB mid	2685.0	24.57	23.87	22.79	19.82
		2593.0	24.79	23.57	22.44	19.59
		2501.0	24.40	23.60	22.42	19.79
	100% RB	2685.0	24.76	23.69	22.57	19.80
		2593.0	24.60	23.71	22.69	19.76
		2501.0	24.55	23.42	22.63	19.47
15MHz	1 RB high	2682.5	25.43	24.81	23.92	19.72
		2593.0	25.52	24.90	23.63	19.62
		2503.5	25.37	24.64	23.51	19.60
	1 RB low	2682.5	25.54	24.77	24.10	19.67
		2593.0	25.57	24.84	23.95	19.61
		2503.5	25.54	24.60	23.67	19.75
	50% RB mid	2682.5	24.69	23.76	22.55	19.77
		2593.0	24.90	23.61	22.65	19.53
		2503.5	24.62	23.55	22.65	19.77
	100% RB	2682.5	24.66	23.69	22.73	19.91
		2593.0	24.70	23.70	22.79	19.57
		2503.5	24.65	23.41	22.52	19.66
20MHz	1 RB high	2680.0	25.46	24.87	23.78	19.65
		2593.0	25.47	24.79	23.68	19.65
		2506.0	25.42	24.73	23.63	19.53
	1 RB low	2680.0	25.56	24.92	23.95	19.59



		2593.0	25.57	24.99	23.88	19.56
		2506.0	25.39	24.73	23.62	19.62
	50% RB mid	2680.0	24.64	23.77	22.64	19.84
		2593.0	24.77	23.62	22.57	19.59
		2506.0	24.54	23.55	22.53	19.76
	100% RB	2680.0	24.72	23.75	22.72	19.87
		2593.0	24.66	23.70	22.75	19.68
		2506.0	24.52	23.56	22.58	19.51



**LTE band 66**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
1.4MHz	1 RB high	1779.3	23.38	23.18	22.11	18.48
		1745.0	23.60	22.73	21.83	18.46
		1710.7	23.86	22.99	22.28	18.60
	1 RB low	1779.3	23.27	22.79	22.17	18.38
		1745.0	23.58	22.94	21.92	18.74
		1710.7	23.45	23.07	21.84	18.45
	50% RB mid	1779.3	22.83	21.64	20.56	18.80
		1745.0	22.95	21.57	20.71	18.43
		1710.7	22.67	21.91	20.95	18.43
	100% RB	1779.3	22.38	21.51	20.48	18.53
		1745.0	22.53	21.47	20.75	18.45
		1710.7	22.80	21.98	20.87	18.82
3MHz	1 RB high	1778.5	23.34	23.15	22.07	18.56
		1745.0	23.47	22.70	21.83	18.28
		1711.5	23.71	23.09	22.37	18.79
	1 RB low	1778.5	23.41	22.76	22.10	18.60
		1745.0	23.78	22.91	22.07	18.61
		1711.5	23.47	23.08	22.04	18.61
	50% RB mid	1778.5	22.57	21.48	20.51	18.89
		1745.0	22.91	21.62	20.80	18.46
		1711.5	22.82	21.84	20.87	18.41
	100% RB	1778.5	22.48	21.59	20.50	18.60
		1745.0	22.66	21.52	20.80	18.48
		1711.5	22.76	21.84	20.68	18.84
5MHz	1 RB high	1777.5	23.38	23.02	22.14	18.54
		1745.0	23.67	22.70	21.95	18.24
		1712.5	23.79	23.04	22.22	18.76
	1 RB low	1777.5	23.54	22.93	21.91	18.44
		1745.0	23.66	23.08	22.01	18.48
		1712.5	23.59	22.82	21.82	18.59
	50% RB mid	1777.5	22.61	21.66	20.39	18.96
		1745.0	22.76	21.69	20.80	18.45
		1712.5	22.75	21.95	20.79	18.52
	100% RB	1777.5	22.49	21.56	20.56	18.41
		1745.0	22.71	21.71	20.58	18.33
		1712.5	22.80	21.75	20.76	18.72
10MHz	1 RB high	1775.0	23.53	23.21	22.02	18.43
		1745.0	23.58	22.63	21.79	18.45
		1715.0	23.60	23.08	22.18	18.73
	1 RB low	1775.0	23.52	22.77	21.98	18.53

		1745.0	23.60	23.09	22.06	18.55
		1715.0	23.61	22.83	21.93	18.45
	50% RB mid	1775.0	22.64	21.68	20.50	18.94
		1745.0	22.92	21.61	20.59	18.55
		1715.0	22.72	21.78	20.89	18.33
	100% RB	1775.0	22.42	21.41	20.49	18.44
		1745.0	22.66	21.54	20.72	18.52
1715.0		22.86	21.81	20.71	18.84	
15MHz	1 RB high	1772.5	23.62	23.05	21.95	18.67
		1745.0	23.61	22.69	21.69	18.36
		1717.5	23.68	23.00	22.41	18.79
	1 RB low	1772.5	23.39	22.82	22.01	18.60
		1745.0	23.57	22.94	22.07	18.75
		1717.5	23.53	22.99	22.00	18.46
	50% RB mid	1772.5	22.47	21.55	20.54	18.73
		1745.0	22.74	21.68	20.81	18.66
		1717.5	22.86	21.83	20.86	18.48
	100% RB	1772.5	22.45	21.63	20.39	18.56
		1745.0	22.70	21.48	20.81	18.49
		1717.5	22.81	21.88	20.76	18.84
20MHz	1 RB high	1770.0	23.47	23.13	21.99	18.53
		1745.0	23.52	22.77	21.84	18.37
		1720.0	23.71	23.05	22.30	18.75
	1 RB low	1770.0	23.42	22.84	22.02	18.51
		1745.0	23.66	22.97	22.01	18.60
		1720.0	23.56	22.96	21.92	18.55
	50% RB mid	1770.0	22.51	21.55	20.53	18.83
		1745.0	22.87	21.71	20.69	18.58
		1720.0	22.79	21.90	20.85	18.45
	100% RB	1770.0	22.50	21.53	20.46	18.45
		1745.0	22.66	21.59	20.70	18.48
		1720.0	22.86	21.86	20.80	18.86

**LTE band 71**

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			QPSK	16QAM	64QAM	256QAM
5MHz	1 RB high	695.5	23.73	22.92	22.05	18.62
		680.5	23.59	22.96	21.83	19.00
		665.5	23.61	22.92	21.95	18.78
	1 RB low	695.5	23.76	23.07	22.00	18.83
		680.5	23.56	22.98	22.02	18.75
		665.5	23.63	23.13	22.15	18.51
	50% RB mid	695.5	22.71	21.73	20.98	18.69
		680.5	22.98	21.73	20.71	18.85
		665.5	22.75	21.74	20.98	18.88
	100% RB	695.5	22.95	21.86	20.82	18.92
		680.5	22.86	21.81	20.79	18.60
		665.5	22.81	21.95	21.04	18.74
10MHz	1 RB high	693.0	23.69	23.06	22.04	18.46
		680.5	23.74	23.13	21.97	18.90
		668.0	23.68	23.14	21.72	18.61
	1 RB low	693.0	23.82	23.15	21.75	18.87
		680.5	23.52	22.99	22.03	18.62
		668.0	23.67	23.20	22.01	18.56
	50% RB mid	693.0	22.92	22.02	20.99	18.68
		680.5	22.75	21.78	20.81	19.03
		668.0	22.75	21.79	20.76	18.91
	100% RB	693.0	22.95	21.78	20.85	18.87
		680.5	22.88	21.83	20.81	18.82
		668.0	22.73	21.79	20.94	18.87
15MHz	1 RB high	690.5	23.66	22.90	22.03	18.68
		680.5	23.57	23.16	21.90	18.84
		670.5	23.46	22.93	21.84	18.68
	1 RB low	690.5	23.73	22.96	21.78	19.00
		680.5	23.66	22.87	21.81	18.51
		670.5	23.86	23.09	22.03	18.81
	50% RB mid	690.5	22.94	21.83	20.74	18.60
		680.5	22.74	21.69	20.70	18.77
		670.5	22.90	21.85	20.82	19.05
	100% RB	690.5	22.74	21.93	20.78	18.95
		680.5	22.70	21.72	20.94	18.80
		670.5	22.98	21.91	21.01	18.74
20MHz	1 RB high	688.0	23.62	22.96	21.94	18.60
		680.5	23.65	23.10	21.91	18.88
		673.0	23.61	23.07	21.80	18.64
	1 RB low	688.0	23.74	23.05	21.88	18.93



		680.5	23.66	22.90	21.92	18.60
		673.0	23.75	23.07	22.00	18.66
	50% RB mid	688.0	22.84	21.88	20.84	18.75
		680.5	22.88	21.68	20.80	18.90
		673.0	22.80	21.79	20.83	18.91
	100% RB	688.0	22.87	21.84	20.86	18.87
		680.5	22.81	21.77	20.84	18.69
		673.0	22.83	21.82	20.99	18.73

**LTE CA band 41C**

Bandwidth	Frequency(MHz)	Frequency(MHz)	Modulation	PCC RB		SCC RB		Power (dBm)
				Size	Offset	Size	Offset	
5MHz/20MHz	2583.8	2595.5	QPSK	1	24	1	0	23.45
				25	0	100	0	21.87
			16QAM	1	24	1	0	22.72
				25	0	100	0	20.70
			64QAM	1	24	1	0	21.76
				25	0	100	0	20.53
256QAM	1	24	1	0	19.03			
	25	0	100	0	18.94			
10MHz/15MHz	2585.9	2597.9	QPSK	1	49	1	0	23.49
				50	0	75	0	21.56
			16QAM	1	49	1	0	22.85
				50	0	75	0	20.56
			64QAM	1	49	1	0	21.17
				50	0	75	0	21.02
256QAM	1	49	1	0	18.91			
	50	0	75	0	19.03			
10MHz/20MHz	2583.6	2598	QPSK	1	49	1	0	23.68
				50	0	100	0	21.60
			16QAM	1	49	1	0	22.82
				50	0	100	0	20.93
			64QAM	1	49	1	0	21.64
				50	0	100	0	21.04
256QAM	1	49	1	0	18.91			
	50	0	100	0	19.04			
15MHz/10MHz	2588.1	2600.1	QPSK	1	74	1	0	23.78
				75	0	50	0	21.63
			16QAM	1	74	1	0	22.52
				75	0	50	0	21.03
			64QAM	1	74	1	0	21.89
				75	0	50	0	21.07
256QAM	1	74	1	0	18.55			
	75	0	50	0	18.57			
15MHz/15MHz	2585.5	2600.5	QPSK	1	74	1	0	23.45
				75	0	75	0	21.94
			16QAM	1	74	1	0	22.28
				75	0	75	0	20.58
			64QAM	1	74	1	0	21.46
				75	0	75	0	20.58
256QAM	1	74	1	0	18.88			
	75	0	75	0	18.60			

15MHz/20MHz	2583.3	2600.4	QPSK	1	74	1	0	23.69
				75	0	100	0	21.60
			16QAM	1	74	1	0	22.58
				75	0	100	0	20.59
			64QAM	1	74	1	0	21.48
				75	0	100	0	21.05
256QAM	1	74	1	0	18.45			
	75	0	100	0	18.58			
20MHz/5MHz	2590.5	2602.2	QPSK	1	99	1	0	24.03
				100	0	25	0	21.63
			16QAM	1	99	1	0	23.01
				100	0	25	0	20.66
			64QAM	1	99	1	0	22.17
				100	0	25	0	21.09
256QAM	1	99	1	0	18.94			
	100	0	25	0	18.61			
20MHz/10MHz	2588.1	2602.5	QPSK	1	99	1	0	23.99
				100	0	50	0	21.62
			16QAM	1	99	1	0	23.00
				100	0	50	0	20.64
			64QAM	1	99	1	0	22.10
				100	0	50	0	20.68
256QAM	1	99	1	0	18.88			
	100	0	50	0	18.61			
20MHz/15MHz	2585.6	2602.7	QPSK	1	99	1	0	23.59
				100	0	75	0	22.01
			16QAM	1	99	1	0	22.37
				100	0	75	0	20.59
			64QAM	1	99	1	0	21.61
				100	0	75	0	20.87
256QAM	1	99	1	0	18.54			
	100	0	75	0	19.03			
20MHz/20MHz	2583.1	2602.9	QPSK	1	99	1	0	23.57
				100	0	100	0	22.00
			16QAM	1	99	1	0	22.30
				100	0	100	0	20.61
			64QAM	1	99	1	0	21.57
				100	0	100	0	21.03
256QAM	1	99	1	0	18.99			
	100	0	100	0	18.83			