

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	RB #
-	Peak to Average Ratio	20775 to 21425	20775 (2502.5MHz), 21100 (2535.0MHz), 21425 (2567.5MHz)	5MHz	QPSK / 16QAM / 64QAM	1
		20800 to 21400	20800 (2505.0MHz), 21100 (2535.0MHz), 21400 (2565.0MHz)	10MHz	QPSK / 16QAM / 64QAM	1
		20825 to 21375	20825 (2507.5MHz), 21100 (2535.0MHz), 21375 (2562.5MHz)	15MHz	QPSK / 16QAM / 64QAM	1
		20850 to 21350	20850 (2510.0MHz), 21100 (2535.0MHz), 21350 (2560.0MHz)	20MHz	QPSK / 16QAM / 64QAM	1
-	Conducted Emission	20775 to 21425	20775 (2502.5MHz), 21100 (2535.0MHz), 21425 (2567.5MHz)	5MHz	QPSK	1
		20800 to 21400	20800 (2505.0MHz), 21100 (2535.0MHz), 21400 (2565.0MHz)	10MHz	QPSK	1
		20825 to 21375	20825 (2507.5MHz), 21100 (2535.0MHz), 21375 (2562.5MHz)	15MHz	QPSK	1
		20850 to 21350	20850 (2510.0MHz), 21100 (2535.0MHz), 21350 (2560.0MHz)	20MHz	QPSK	1
-	Radiated Emission	20775 to 21425	20775 (2502.5MHz), 21100 (2535.0MHz), 21425 (2567.5MHz)	5MHz	QPSK	1
		20850 to 21350	20850 (2510.0MHz), 21100 (2535.0MHz), 21350 (2560.0MHz)	20MHz	QPSK	1

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521-1 Section 6.6.3.1.4.1, choose the 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM and 64QAM, measured value of QPSK is higher than 16QAM, and 64QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM and 64QAM modes, the other test items were performed under worse mode according to the maximum output power.

LTE Band 12

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	RB #
-	ERP	23017 to 23173	23017 (699.7MHz), 23095 (707.5MHz), 23173 (715.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM	1 Half Full
		23025 to 23165	23025 (700.5MHz), 23095 (707.5MHz), 23165 (714.5MHz)	3MHz	QPSK / 16QAM / 64QAM	1 Half Full
		23035 to 23155	23035 (701.5MHz), 23095 (707.5MHz), 23155 (713.5MHz)	5MHz	QPSK / 16QAM / 64QAM	1 Half Full
		23060 to 23130	23060 (704.0MHz), 23095 (707.5MHz), 23130 (711.0 MHz)	10MHz	QPSK / 16QAM / 64QAM	1 Half Full
-	Modulation Characteristics	23060 to 23130	23095 (707.5MHz)	10MHz	QPSK / 16QAM / 64QAM	Full
-	Frequency Stability	23017 to 23173	23017 (699.7MHz), 23173 (715.3MHz)	1.4MHz	QPSK	Full
		23025 to 23165	23025 (700.5MHz), 23165 (714.5MHz)	3MHz	QPSK	Full
		23035 to 23155	23035 (701.5MHz), 23155 (713.5MHz)	5MHz	QPSK	Full
		23060 to 23130	23060 (704.0MHz), 23130 (711.0MHz)	10MHz	QPSK	Full
-	Emission Bandwidth	23017 to 23173	23017 (699.7MHz), 23095 (707.5MHz), 23173 (715.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM	Full
		23025 to 23165	23025 (700.5MHz), 23095 (707.5MHz), 23165 (714.5MHz)	3MHz	QPSK / 16QAM / 64QAM	Full
		23035 to 23155	23035 (701.5MHz), 23095 (707.5MHz), 23155 (713.5MHz)	5MHz	QPSK / 16QAM / 64QAM	Full
		23060 to 23130	23060 (704.0MHz), 23095 (707.5MHz), 23130 (711.0MHz)	10MHz	QPSK / 16QAM / 64QAM	Full
-	Band Edge	23017 to 23173	23017 (699.7MHz), 23173 (715.3MHz)	1.4MHz	QPSK	1 Half Full
		23025 to 23165	23025 (700.5MHz), 23165 (714.5MHz)	3MHz	QPSK	1 Half Full
		23035 to 23155	23035 (701.5MHz), 23155 (713.5MHz)	5MHz	QPSK	1 Half Full
		23060 to 23130	23060 (704.0MHz), 23130 (711.0MHz)	10MHz	QPSK	1 Half Full

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	RB #
-	Peak to Average Ratio	23017 to 23173	23017 (699.7MHz), 23095 (707.5MHz), 23173 (715.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM	1
		23025 to 23165	23025 (700.5MHz), 23095 (707.5MHz), 23165 (714.5MHz)	3MHz	QPSK / 16QAM / 64QAM	1
		23035 to 23155	23035 (701.5MHz), 23095 (707.5MHz), 23155 (713.5MHz)	5MHz	QPSK / 16QAM / 64QAM	1
		23060 to 23130	23060 (704.0MHz), 23095 (707.5MHz), 23130 (711.0MHz)	10MHz	QPSK / 16QAM / 64QAM	1
-	Conducted Emission	23017 to 23173	23017 (699.7MHz), 23095 (707.5MHz), 23173 (715.3MHz)	1.4MHz	QPSK	1
		23025 to 23165	23025 (700.5MHz), 23095 (707.5MHz), 23165 (714.5MHz)	3MHz	QPSK	1
		23035 to 23155	23035 (701.5MHz), 23095 (707.5MHz), 23155 (713.5MHz)	5MHz	QPSK	1
		23060 to 23130	23060 (704.0MHz), 23095 (707.5MHz), 23130 (711.0MHz)	10MHz	QPSK	1
-	Radiated Emission	23017 to 23173	23017 (699.7MHz), 23095 (707.5MHz), 23173 (715.3MHz)	1.4MHz	QPSK	1
		23035 to 23155	23035 (701.5MHz), 23095 (707.5MHz), 23155 (713.5MHz)	5MHz	QPSK	1
		23060 to 23130	23060 (704.0MHz), 23095 (707.5MHz), 23130 (711.0MHz)	10MHz	QPSK	1

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521-1 Section 6.6.3.1.4.1, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM and 64QAM, measured value of QPSK is higher than 16QAM, and 64QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM and 64QAM modes, the other test items were performed under worse mode according to the maximum output power.

### LTE Band 17

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	RB #
-	ERP	23755 to 23825	23755 (706.5MHz), 23790 (710.0MHz), 23825 (713.5MHz)	5MHz	QPSK / 16QAM / 64QAM	1 Half Full
		23780 to 23800	23780 (709.0MHz), 23790 (710.0MHz), 23800 (711.0MHz)	10MHz	QPSK / 16QAM / 64QAM	1 Half Full
-	Modulation Characteristics	23780 to 23800	23790 (710.0MHz)	10MHz	QPSK / 16QAM / 64QAM	Full
-	Frequency Stability	23755 to 23825	23755 (706.5MHz), 23825 (713.5MHz)	5MHz	QPSK	Full
		23780 to 23800	23780 (709.0MHz), 23800 (711.0MHz)	10MHz	QPSK	Full
-	Emission Bandwidth	23755 to 23825	23755 (706.5MHz), 23790 (710.0MHz), 23825 (713.5MHz)	5MHz	QPSK / 16QAM / 64QAM	Full
		23780 to 23800	23780 (709.0MHz), 23790 (710.0MHz), 23800 (711.0MHz)	10MHz	QPSK / 16QAM / 64QAM	Full
-	Band Edge	23755 to 23825	23755 (706.5MHz), 23825 (713.5MHz)	5MHz	QPSK	1 Half Full
		23780 to 23800	23780 (709.0MHz), 23800 (711.0MHz)	10MHz	QPSK	1 Half Full
-	Peak to Average Ratio	23755 to 23825	23755 (706.5MHz), 23790 (710.0MHz), 23825 (713.5MHz)	5MHz	QPSK / 16QAM / 64QAM	1
		23780 to 23800	23780 (709.0MHz), 23790 (710.0MHz), 23800 (711.0MHz)	10MHz	QPSK / 16QAM / 64QAM	1
-	Conducted Emission	23755 to 23825	23755 (706.5MHz), 23790 (710.0MHz), 23825 (713.5MHz)	5MHz	QPSK	1
		23780 to 23800	23780 (709.0MHz), 23790 (710.0MHz), 23800 (711.0MHz)	10MHz	QPSK	1
-	Radiated Emission	23755 to 23825	23755 (706.5MHz), 23790 (710.0MHz), 23825 (713.5MHz)	5MHz	QPSK	1
		23780 to 23800	23780 (709.0MHz), 23790 (710.0MHz), 23800 (711.0MHz)	10MHz	QPSK	1

**Note:**

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521-1 Section 6.6.3.1.4.1, choose the 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM and 64QAM, measured value of QPSK is higher than 16QAM, and 64QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM and 64QAM modes, the other test items were performed under worse mode according to the maximum output power.



LTE Band 66

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	RB #
-	EIRP	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM	1 Half Full
		131987 to 132657	131987 (1711.5MHz), 132322 (1745.0MHz), 132657 (1778.5MHz)	3MHz	QPSK / 16QAM / 64QAM	1 Half Full
		131997 to 132647	131997 (1712.5MHz), 132322 (1745.0MHz), 132647 (1777.5MHz)	5MHz	QPSK / 16QAM / 64QAM	1 Half Full
		132022 to 132622	132022 (1715.0MHz), 132322 (1745.0MHz), 132622 (1775.0MHz)	10MHz	QPSK / 16QAM / 64QAM	1 Half Full
		132047 to 132597	132047 (1717.5MHz), 132322 (1745.0MHz), 132597 (1772.5MHz)	15MHz	QPSK / 16QAM / 64QAM	1 Half Full
		132072 to 132572	132072 (1720.0MHz), 132322 (1745.0MHz), 132572 (1770.0MHz)	20MHz	QPSK / 16QAM / 64QAM	1 Half Full
-	Modulation Characteristics	132072 to 132572	132322 (1745.0MHz)	20MHz	QPSK / 16QAM / 64QAM	Full
-	Frequency Stability	131979 to 132665	131979 (1710.7MHz), 132665 (1779.3MHz)	1.4MHz	QPSK	Full
		131987 to 132657	131987 (1711.5MHz), 132657 (1778.5MHz)	3MHz	QPSK	Full
		131997 to 132647	131997 (1712.5MHz), 132647 (1777.5MHz)	5MHz	QPSK	Full
		132022 to 132622	132022 (1715.0MHz), 132622 (1775.0MHz)	10MHz	QPSK	Full
		132047 to 132597	132047 (1717.5MHz), 132597 (1772.5MHz)	15MHz	QPSK	Full
		132072 to 132572	132072 (1720.0MHz), 132572 (1770.0MHz)	20MHz	QPSK	Full
-	Emission Bandwidth	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM	Full
		131987 to 132657	131987 (1711.5MHz), 132322 (1745.0MHz), 132657 (1778.5MHz)	3MHz	QPSK / 16QAM / 64QAM	Full
		131997 to 132647	131997 (1712.5MHz), 132322 (1745.0MHz), 132647 (1777.5MHz)	5MHz	QPSK / 16QAM / 64QAM	Full
		132022 to 132622	132022 (1715.0MHz), 132322 (1745.0MHz), 132622 (1775.0MHz)	10MHz	QPSK / 16QAM / 64QAM	Full
		132047 to 132597	132047 (1717.5MHz), 132322 (1745.0MHz), 132597 (1772.5MHz)	15MHz	QPSK / 16QAM / 64QAM	Full
		132072 to 132572	132072 (1720.0MHz), 132322 (1745.0MHz), 132572 (1770.0MHz)	20MHz	QPSK / 16QAM / 64QAM	Full

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	RB #
-	Band Edge	131979 to 132665	131979 (1710.7MHz), 132665 (1779.3MHz)	1.4MHz	QPSK	1 Half Full
		131987 to 132657	131987 (1711.5MHz), 132657 (1778.5MHz)	3MHz	QPSK	1 Half Full
		131997 to 132647	131997 (1712.5MHz), 132647 (1777.5MHz)	5MHz	QPSK	1 Half Full
		132022 to 132622	132022 (1715.0MHz), 132622 (1775.0MHz)	10MHz	QPSK	1 Half Full
		132047 to 132597	132047 (1717.5MHz), 132597 (1772.5MHz)	15MHz	QPSK	1 Half Full
		132072 to 132572	132072 (1720.0MHz), 132572 (1770.0MHz)	20MHz	QPSK	1 Half Full
-	Peak to Average Ratio	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM	1
		131987 to 132657	131987 (1711.5MHz), 132322 (1745.0MHz), 132657 (1778.5MHz)	3MHz	QPSK / 16QAM / 64QAM	1
		131997 to 132647	131997 (1712.5MHz), 132322 (1745.0MHz), 132647 (1777.5MHz)	5MHz	QPSK / 16QAM / 64QAM	1
		132022 to 132622	132022 (1715.0MHz), 132322 (1745.0MHz), 132622 (1775.0MHz)	10MHz	QPSK / 16QAM / 64QAM	1
		132047 to 132597	132047 (1717.5MHz), 132322 (1745.0MHz), 132597 (1772.5MHz)	15MHz	QPSK / 16QAM / 64QAM	1
		132072 to 132572	132072 (1720.0MHz), 132322 (1745.0MHz), 132572 (1770.0MHz)	20MHz	QPSK / 16QAM / 64QAM	1

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	RB #
-	Conducted Emission	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	QPSK	1
		131987 to 132657	131987 (1711.5MHz), 132322 (1745.0MHz), 132657 (1778.5MHz)	3MHz	QPSK	1
		131997 to 132647	131997 (1712.5MHz), 132322 (1745.0MHz), 132647 (1777.5MHz)	5MHz	QPSK	1
		132022 to 132622	132022 (1715.0MHz), 132322 (1745.0MHz), 132622 (1775.0MHz)	10MHz	QPSK	1
		132047 to 132597	132047 (1717.5MHz), 132322 (1745.0MHz), 132597 (1772.5MHz)	15MHz	QPSK	1
		132072 to 132572	132072 (1720.0MHz), 132322 (1745.0MHz), 132572 (1770.0MHz)	20MHz	QPSK	1
-	Radiated Emission	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	QPSK	1
		131997 to 132647	131997 (1712.5MHz), 132322 (1745.0MHz), 132647 (1777.5MHz)	5MHz	QPSK	1
		132072 to 132572	132072 (1720.0MHz), 132322 (1745.0MHz), 132572 (1770.0MHz)	20MHz	QPSK	1

**Note:**

- For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
- For radiated emission above 1GHz, according to 3GPP 36.521-1 Section 6.6.3.1.4.1, choose the lowest, 5MHz & highest channel bandwidth for final test.
- The output power for QPSK, 16QAM and 64QAM, measured value of QPSK is higher than 16QAM, and 64QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM and 64QAM modes, the other test items were performed under worse mode according to the maximum output power.

**Test Condition:**

Test Item	Environmental Conditions	Input Power	Tested By
EIRP / ERP	25deg. C, 60%RH	4.0Vdc	James Yang
Modulation Characteristics	25deg. C, 60%RH	4.0Vdc	James Yang
Frequency Stability	25deg. C, 60%RH	4.0Vdc	James Yang
Occupied Bandwidth	25deg. C, 60%RH	4.0Vdc	James Yang
Band Edge	25deg. C, 60%RH	4.0Vdc	James Yang
Peak To Average Ratio	25deg. C, 60%RH	4.0Vdc	James Yang
Conducted Emission	25deg. C, 60%RH	4.0Vdc	James Yang
Radiated Emission	22deg. C, 64%RH	4.0Vdc	Vincent Chen

### **3.4 EUT Operating Conditions**

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

### **3.5 General Description of Applied Standards and References**

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards and References:

#### **Test Standard:**

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 27**

**ANSI/TIA/EIA-603-E 2016**

ANSI 63.26-2015

#### **References Test Guidance:**

**KDB 971168 D01 Power Meas License Digital Systems v03r01**

All test items have been performed as a reference to the above KDB test guidance.



## 4 Test Types and Results

### 4.1 Output Power Measurement

#### 4.1.1 Limits of Output Power Measurement

For LTE Band 4, LTE Band 66:

Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

For LTE Band 7:

Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

For LTE Band 12, LTE Band 17:

Control and mobile stations in the 698-746 MHz band are limited to 30 watts ERP.

Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

#### 4.1.2 Test Procedures

##### Conducted Power Measurement:

The EUT was set up for the maximum power with LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

##### Maximum EIRP / ERP

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$$\text{EIRP} = P_{\text{Meas}} + G_T$$

$$\text{ERP} = P_{\text{Meas}} + G_T - 2.15$$

where

ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as  $P_{\text{Meas}}$ , e.g., dBm or dBW)

$P_{\text{Meas}}$  measured transmitter output power or PSD, in dBm or dBW

$G_T$  gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

#### 4.1.3 Test Setup

Conducted Power Measurement:



#### 4.1.4 Test Results

##### Conducted Output Power (dBm)

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20050	20175	20300
		Frequency (MHz)		1720	1732.5	1745
20M	QPSK	1	0	22.57	22.50	22.34
		1	50	22.88	22.63	22.37
		1	99	22.30	22.28	21.96
		50	0	21.43	21.52	21.19
		50	25	21.36	21.49	21.16
		50	50	21.33	21.54	21.30
		100	0	21.21	21.48	21.14
20M	16QAM	1	0	21.86	21.79	21.59
		1	50	21.97	21.74	21.61
		1	99	21.80	21.73	21.62
		50	0	20.42	20.42	20.29
		50	25	20.52	20.56	20.53
		50	50	20.62	20.63	20.60
		100	0	20.46	20.56	20.45
20M	64QAM	1	0	20.77	20.76	20.67
		1	50	20.84	20.83	20.78
		1	99	20.35	20.38	20.26
		50	0	19.43	19.55	19.40
		50	25	19.46	19.61	19.39
		50	50	19.41	19.53	19.33
		100	0	19.43	19.57	19.38

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20025	20175	20325
		Frequency (MHz)		1717.5	1732.5	1747.5
15M	QPSK	1	0	22.56	22.46	22.31
		1	37	22.87	22.78	22.54
		1	74	22.40	22.42	22.16
		36	0	21.43	21.54	21.23
		36	19	21.54	21.66	21.37
		36	39	21.32	21.53	21.34
		75	0	21.25	21.53	21.24
15M	16QAM	1	0	21.86	21.65	21.60
		1	37	21.96	21.78	21.72
		1	74	21.92	21.84	21.78
		36	0	20.51	20.55	20.49
		36	19	20.47	20.57	20.47
		36	39	20.21	20.43	20.33
		75	0	20.37	20.61	20.60
15M	64QAM	1	0	20.67	20.65	20.61
		1	37	20.83	20.83	20.81
		1	74	20.69	20.77	20.76
		36	0	19.32	19.48	19.54
		36	19	19.38	19.55	19.61
		36	39	19.27	19.54	19.58
		75	0	19.13	19.43	19.57

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20000	20175	20350
		Frequency (MHz)		1715	1732.5	1750
10M	QPSK	1	0	22.58	22.57	22.28
		1	24	22.62	22.50	22.12
		1	49	22.48	22.51	22.12
		25	0	21.33	21.44	20.99
		25	12	21.39	21.56	21.05
		25	25	21.46	21.63	21.10
		50	0	21.29	21.57	20.94
10M	16QAM	1	0	21.56	21.79	21.56
		1	24	21.86	21.84	21.61
		1	49	21.24	21.58	21.36
		25	0	20.14	20.46	20.32
		25	12	20.32	20.63	20.55
		25	25	20.26	20.64	20.50
		50	0	20.21	20.57	20.36
10M	64QAM	1	0	20.68	20.67	20.57
		1	24	20.77	20.59	20.54
		1	49	20.51	20.68	20.46
		25	0	19.31	19.48	19.17
		25	12	19.38	19.57	19.31
		25	25	19.44	19.66	19.32
		50	0	19.26	19.59	19.29

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19975	20175	20375
		Frequency (MHz)		1712.5	1732.5	1752.5
5M	QPSK	1	0	22.46	22.51	22.24
		1	12	22.32	22.53	22.14
		1	24	22.05	22.33	22.06
		12	0	21.17	21.43	21.16
		12	6	21.36	21.62	21.26
		12	13	21.10	21.48	21.21
		25	0	21.06	21.54	21.24
5M	16QAM	1	0	21.58	21.73	21.63
		1	12	21.70	21.84	21.77
		1	24	21.56	21.67	21.51
		12	0	20.36	20.46	20.28
		12	6	20.44	20.59	20.43
		12	13	20.28	20.49	20.37
		25	0	20.10	20.43	20.22
5M	64QAM	1	0	20.41	20.66	20.46
		1	12	20.54	20.67	20.58
		1	24	20.42	20.59	20.37
		12	0	19.14	19.68	19.19
		12	6	18.87	19.46	19.01
		12	13	18.93	19.53	19.17
		25	0	18.76	19.47	19.17



LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19965	20175	20385
		Frequency (MHz)		1711.5	1732.5	1753.5
3M	QPSK	1	0	22.53	22.46	22.28
		1	7	22.75	22.76	22.60
		1	14	22.63	22.59	22.48
		8	0	21.60	21.56	21.54
		8	3	21.40	21.43	21.46
		8	7	21.50	21.50	21.52
		15	0	21.26	21.32	21.42
3M	16QAM	1	0	21.55	21.48	21.56
		1	7	21.73	21.85	21.83
		1	14	21.78	21.71	21.78
		8	0	20.45	20.46	20.80
		8	3	20.62	20.65	21.07
		8	7	20.47	20.54	21.06
		15	0	20.40	20.48	20.91
3M	64QAM	1	0	20.33	20.75	20.37
		1	7	20.35	20.84	20.53
		1	14	20.21	20.81	20.48
		8	0	18.81	19.46	19.11
		8	3	18.96	19.65	19.37
		8	7	18.76	19.57	19.24
		15	0	18.57	19.47	19.14

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19957	20175	20393
		Frequency (MHz)		1710.7	1732.5	1754.3
1.4M	QPSK	1	0	22.54	22.38	22.28
		1	2	22.61	22.49	22.47
		1	5	22.53	22.43	22.41
		3	0	22.51	22.52	22.59
		3	1	22.46	22.57	22.58
		3	3	22.45	22.54	22.57
		6	0	21.38	21.53	21.64
1.4M	16QAM	1	0	21.55	21.57	21.35
		1	2	21.71	21.70	21.58
		1	5	21.53	21.62	21.48
		3	0	21.57	21.65	21.44
		3	1	21.50	21.62	21.35
		3	3	21.61	21.57	21.36
		6	0	20.28	20.46	20.12
1.4M	64QAM	1	0	20.31	20.56	20.29
		1	2	20.68	20.52	20.31
		1	5	20.59	20.66	20.57
		3	0	20.36	20.63	20.32
		3	1	20.35	20.67	20.38
		3	3	20.39	20.63	20.43
		6	0	19.06	19.49	19.19

LTE Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20850	21100	21350
		Frequency (MHz)		2510	2535	2560
20M	QPSK	1	0	22.79	21.92	21.68
		1	50	22.56	21.84	21.68
		1	99	22.17	21.54	21.45
		50	0	21.58	21.03	20.95
		50	25	21.31	20.85	20.87
		50	50	21.32	20.90	20.97
		100	0	21.34	20.93	21.09
20M	16QAM	1	0	21.85	21.14	20.87
		1	50	21.78	21.18	20.84
		1	99	21.56	20.93	20.57
		50	0	20.61	20.09	19.81
		50	25	20.34	19.83	19.63
		50	50	20.48	20.02	19.82
		100	0	20.37	19.94	19.81
20M	64QAM	1	0	20.85	20.25	20.18
		1	50	20.78	20.24	20.10
		1	99	20.06	19.58	19.34
		50	0	19.55	19.08	18.78
		50	25	19.20	18.83	18.48
		50	50	19.19	18.94	18.62
		100	0	19.15	18.94	18.64

LTE Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20825	21100	21375
		Frequency (MHz)		2507.5	2535	2562.5
15M	QPSK	1	0	22.56	21.83	21.68
		1	37	22.78	22.08	21.89
		1	74	22.31	21.59	21.45
		36	0	21.69	20.95	20.82
		36	19	21.66	20.98	20.95
		36	39	21.57	20.87	20.84
		75	0	21.53	20.90	20.78
15M	16QAM	1	0	21.80	20.97	20.84
		1	37	22.10	21.24	21.06
		1	74	21.61	20.74	20.58
		36	0	20.71	19.96	19.90
		36	19	20.65	19.95	19.96
		36	39	20.66	19.94	19.94
		75	0	20.63	20.02	19.96
15M	64QAM	1	0	20.72	20.21	20.15
		1	37	20.74	20.15	20.07
		1	74	20.39	20.06	19.92
		36	0	19.24	19.01	18.95
		36	19	19.14	19.02	18.95
		36	39	18.96	18.83	18.69
		75	0	18.99	18.96	18.75

LTE Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20800	21100	21400
		Frequency (MHz)		2505	2535	2565
10M	QPSK	1	0	22.67	21.80	21.63
		1	24	22.71	21.83	21.58
		1	49	22.40	21.63	21.34
		25	0	21.57	20.94	20.66
		25	12	21.63	20.94	20.70
		25	25	21.59	20.86	20.57
		50	0	21.63	20.97	20.70
10M	16QAM	1	0	21.56	21.05	20.86
		1	24	21.77	20.84	20.61
		1	49	21.40	20.96	20.75
		25	0	20.32	19.88	19.73
		25	12	20.28	19.93	19.82
		25	25	20.20	19.86	19.68
		50	0	20.28	19.97	19.71
10M	64QAM	1	0	20.70	20.22	20.08
		1	24	20.71	20.26	20.17
		1	49	20.39	20.01	19.86
		25	0	19.38	19.06	18.85
		25	12	19.32	19.11	18.83
		25	25	19.14	19.01	18.71
		50	0	19.02	18.94	18.54



LTE Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20775	21100	21425
		Frequency (MHz)		2502.5	2535	2567.5
5M	QPSK	1	0	22.51	21.78	21.43
		1	12	22.67	22.17	21.75
		1	24	22.39	21.72	21.35
		12	0	21.48	20.85	20.52
		12	6	21.37	20.84	20.48
		12	13	21.38	20.87	20.49
		25	0	21.40	20.93	20.55
5M	16QAM	1	0	21.62	21.06	20.78
		1	12	21.75	21.38	21.00
		1	24	21.26	20.79	20.40
		12	0	20.36	19.88	19.44
		12	6	20.26	19.87	19.36
		12	13	20.28	19.95	19.47
		25	0	20.18	19.86	19.34
5M	64QAM	1	0	20.61	20.10	19.94
		1	12	20.65	20.36	20.30
		1	24	20.60	20.12	20.10
		12	0	19.33	18.95	18.84
		12	6	19.37	18.97	18.79
		12	13	19.31	18.95	18.78
		25	0	19.24	18.94	18.68

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23060	23095	23130
		Frequency (MHz)		704	707.5	711
10M	QPSK	1	0	22.94	23.02	23.05
		1	24	23.19	23.14	23.31
		1	49	23.00	22.93	23.14
		25	0	22.00	21.97	22.21
		25	12	21.99	22.05	22.23
		25	25	21.84	22.02	22.21
		50	0	21.86	22.07	22.17
10M	16QAM	1	0	22.16	22.04	22.16
		1	24	22.16	22.10	22.22
		1	49	22.03	22.06	22.18
		25	0	21.14	21.26	21.43
		25	12	20.99	21.17	21.38
		25	25	21.06	21.21	21.43
		50	0	21.11	21.23	21.46
10M	64QAM	1	0	21.34	21.35	21.38
		1	24	21.34	21.42	21.50
		1	49	21.12	21.23	21.38
		25	0	20.11	20.21	20.36
		25	12	20.02	20.14	20.29
		25	25	20.08	20.26	20.36
		50	0	19.91	20.17	20.32

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23035	23095	23155
		Frequency (MHz)		701.5	707.5	713.5
5M	QPSK	1	0	22.83	23.01	22.86
		1	12	22.81	23.08	23.11
		1	24	22.33	22.66	22.43
		12	0	21.55	21.88	21.63
		12	6	21.63	22.05	21.81
		12	13	21.47	21.93	21.79
		25	0	21.59	22.05	21.86
5M	16QAM	1	0	21.98	21.94	22.04
		1	12	22.02	22.08	22.27
		1	24	21.80	21.97	22.25
		12	0	20.79	21.07	21.35
		12	6	20.76	21.13	21.45
		12	13	20.66	21.07	21.43
		25	0	20.78	21.18	21.46
5M	64QAM	1	0	21.17	21.05	20.88
		1	12	21.47	21.40	21.53
		1	24	21.29	21.24	20.99
		12	0	20.13	20.14	19.86
		12	6	20.18	20.21	19.92
		12	13	20.07	20.17	19.92
		25	0	19.96	20.06	19.78