



# RF TEST REPORT

**Applicant** Micronet  
**FCC ID** U80-A9  
**Product** SmarTab-8  
**Brand** TREQ  
**Model** SmarTab-8  
**Report No.** R1912A0704-R3  
**Issue Date** March 5, 2020

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2019)/ FCC CFR47 Part 27C (2019)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

*Performed by: Peng Tao*

*Approved by: Kai Xu*

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## Summary of Measurement Results

Number	Test Case	Clause in FCC rules	Verdict
1	RF Power Output	2.1046 27.50(d)(4) /27.50(b)(10) /27.50(c)(10) /27.50(h)(2)	PASS
2	Radiates Spurious Emission	2.1053 /27.53(h) /27.53(g) /27.53(m) /27.53(f) /27.53(c)	PASS

Date of Testing: December 14, 2019~ January 17, 2020

Note: PASS: The EUT complies with the essential requirements in the standard.

FAIL: The EUT does not comply with the essential requirements in the standard.

All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.

**Conducted test items except for RF Power Output refer to module A9 test report(Report No.: I19D00117-SRD04/ I19D00117-SRD06).**



# 1 Test Laboratory

## 1.1 Notes of the Test Report

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

## 1.2. Test facility

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

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

### **A2LA (Certificate Number: 3857.01)**

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

## 1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.  
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## 2 General Description of Equipment under Test

### 2.1 Applicant and Manufacturer Information

<b>Applicant</b>	Micronet
<b>Applicant address</b>	1865 West 2100 South, Suite 2 Salt Lake City, Utah 84119 United States
<b>Manufacturer</b>	Micronet
<b>Manufacturer address</b>	1865 West 2100 South, Suite 2 Salt Lake City, Utah 84119 United States

### 2.2 General information

EUT Description			
Model	SmarTab-8		
IMEI	353436100010544		
Hardware Version	A9: C801_V1.00_PCB		
Software Version	MSTAB8_9.00.2.7.0		
Power Supply	Battery/AC adapter		
Antenna Type	Internal Antenna		
Antenna Gain	WCDMA Band IV : -0.29dBi LTE Band 4: -0.29dBi LTE Band 7: 1.41dBi LTE Band 12: -1.18dBi LTE Band 13: 1.11dBi LTE Band 17: -1.18dBi		
Test Mode(s)	WCDMA Band IV; LTE Band 4; LTE Band 7; LTE Band 12; LTE Band 13; LTE Band 17;		
Test Modulation	(WCDMA) BPSK, QPSK, 16QAM; (LTE) QPSK 16QAM;		
HSDPA UE Category	24		
HSUPA UE Category	7		
LTE Category	4		
Rated Power Supply Voltage:	3.8V		
Extreme Voltage	Minimum: 3.7V Maximum: 4.2V		
Extreme Temperature	Lowest: -20°C Highest: +70°C		
Operating Frequency Range(s)	Mode	Tx (MHz)	Rx (MHz)
	WCDMA Band IV	1710 ~ 1755	2110 ~ 2155
	LTE Band 4	1710 ~ 1755	2110 ~ 2155
	LTE Band 7	2500 ~ 2570	2620 ~ 2690
	LTE Band 12	699 ~ 716	729 ~ 746



	LTE Band 13	777 ~ 787	746 ~ 756
	LTE Band 17	704 ~ 716	734 ~ 746
<b>EUT Accessory</b>			
Battery	Manufacturer: Howell Model: HWE30100100 6600mAH (ENH.)		
Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.			



### 3 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**Test standards:**

**FCC CFR47 Part 27C (2019)**

**ANSI C63.26 (2015)**

**Reference standard:**

**FCC CFR47 Part 2 (2019)**

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



## 4 Test Configuration

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes. EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization (horizontal and vertical), the worst emission was found in position (Z axis, horizontal polarization) and the worst case was recorded.

All mode and data rates and positions and RB size and modulations were investigated. Subsequently, only the worst case emissions are reported.

The following testing in WCDMA/LTE is set based on the maximum RF Output Power.

The following testing in different Bandwidth is set to detail in the following table:

Test modes are chosen to be reported as the worst case configuration below for WCDMA Band IV:

Test items	Modes/Modulation
	WCDMA Band IV
RF Power Output	RMC HSDPA/HSUPA
Radiates Spurious Emission	RMC





Test modes are chosen to be reported as the worst case configuration below for LTE Band 4/7/12/13/17:

Test items	Modes	Bandwidth (MHz)						Modulation		RB			Test Channel			
		1.4	3	5	10	15	20	QPSK	16QAM	1	50%	100%	L	M	H	
RF Power Output	LTE 4	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	O	O	O	O	O	O	O
	LTE 13	-	-	O	O	-	-	O	O	O	O	O	O	O	O	O
	LTE 17	-	-	O	O	-	-	O	O	O	O	O	O	O	O	O
Radiates Spurious Emission	LTE 4	O	-	O	-	-	O	O	-	O	-	-	-	O	-	
	LTE 7	-	-	O	-	O	O	O	-	O	-	-	-	O	-	
	LTE 12	O	-	O	O	-	-	O	-	O	-	-	-	O	-	
	LTE 13	-	-	O	O	-	-	O	-	O	-	-	-	O	-	
	LTE 17	-	-	O	O	-	-	O	-	O	-	-	-	O	-	
Note	1. The mark "O" means that this configuration is chosen for testing. 2. The mark "-" means that this configuration is not testing.															

## 5 Test Case Results

### 5.1 RF Power Output

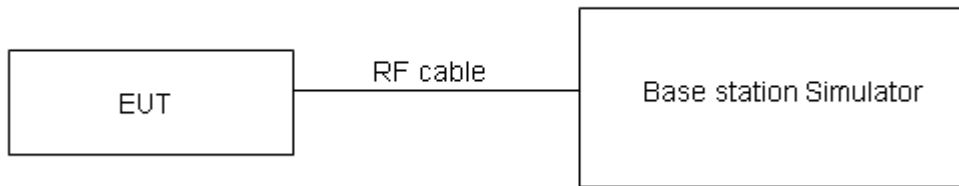
#### Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

#### Methods of Measurement

During the process of the testing, The EUT is controlled by the Base Station Simulator to ensure max power transmission and proper modulation.

#### Test Setup



The loss between RF output port of the EUT and the input port of the tester has been taken into consideration.

#### Limits

No specific RF power output requirements in part 2.1046.

#### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 2$ ,  $U=0.4$  dB for RF power output.



**Test Results**

WCDMA Band IV		Conducted Power (dBm)		
		Channel 1312	Channel 1413	Channel 1513
		1712.4 (MHz)	1732.6 (MHz)	1752.6 (MHz)
<b>RMC</b>		23.11	22.91	23.05
<b>HSDPA</b>	Sub - Test 1	22.57	22.33	22.49
	Sub - Test 2	22.56	22.35	22.46
	Sub - Test 3	22.03	21.85	21.98
	Sub - Test 4	22.04	21.86	21.96
<b>HSUPA</b>	Sub - Test 1	22.53	22.32	22.44
	Sub - Test 2	21.52	21.30	21.43
	Sub - Test 3	21.99	21.78	21.92
	Sub - Test 4	21.45	21.27	21.40
	Sub - Test 5	22.46	22.25	22.38

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	high Limit (dBm)	Verdict
LTE Band4	1.4	19957	1	#0	QPSK	21.23	37.00	PASS
LTE Band4	1.4	19957	1	#Mid	QPSK	21.18	37.00	PASS
LTE Band4	1.4	19957	1	#Max	QPSK	21.27	37.00	PASS
LTE Band4	1.4	19957	3	#0	QPSK	20.99	37.00	PASS
LTE Band4	1.4	19957	3	#Mid	QPSK	21.06	37.00	PASS
LTE Band4	1.4	19957	3	#Max	QPSK	21.14	37.00	PASS
LTE Band4	1.4	19957	6	#0	QPSK	19.96	37.00	PASS
LTE Band4	1.4	19957	1	#0	QAM16	20.28	37.00	PASS
LTE Band4	1.4	19957	1	#Mid	QAM16	20.37	37.00	PASS
LTE Band4	1.4	19957	1	#Max	QAM16	20.06	37.00	PASS
LTE Band4	1.4	19957	3	#0	QAM16	20.05	37.00	PASS
LTE Band4	1.4	19957	3	#Mid	QAM16	19.96	37.00	PASS
LTE Band4	1.4	19957	3	#Max	QAM16	19.98	37.00	PASS
LTE Band4	1.4	19957	6	#0	QAM16	19.03	37.00	PASS
LTE Band4	1.4	20175	1	#0	QPSK	21.21	37.00	PASS
LTE Band4	1.4	20175	1	#Mid	QPSK	21.26	37.00	PASS
LTE Band4	1.4	20175	1	#Max	QPSK	21.10	37.00	PASS
LTE Band4	1.4	20175	3	#0	QPSK	21.15	37.00	PASS
LTE Band4	1.4	20175	3	#Mid	QPSK	21.15	37.00	PASS
LTE Band4	1.4	20175	3	#Max	QPSK	21.05	37.00	PASS



LTE Band4	1.4	20175	6	#0	QPSK	20.14	37.00	PASS
LTE Band4	1.4	20175	1	#0	QAM16	20.40	37.00	PASS
LTE Band4	1.4	20175	1	#Mid	QAM16	20.54	37.00	PASS
LTE Band4	1.4	20175	1	#Max	QAM16	20.42	37.00	PASS
LTE Band4	1.4	20175	3	#0	QAM16	20.41	37.00	PASS
LTE Band4	1.4	20175	3	#Mid	QAM16	20.20	37.00	PASS
LTE Band4	1.4	20175	3	#Max	QAM16	20.23	37.00	PASS
LTE Band4	1.4	20175	6	#0	QAM16	19.10	37.00	PASS
LTE Band4	1.4	20393	1	#0	QPSK	21.11	37.00	PASS
LTE Band4	1.4	20393	1	#Mid	QPSK	21.04	37.00	PASS
LTE Band4	1.4	20393	1	#Max	QPSK	20.97	37.00	PASS
LTE Band4	1.4	20393	3	#0	QPSK	20.97	37.00	PASS
LTE Band4	1.4	20393	3	#Mid	QPSK	20.97	37.00	PASS
LTE Band4	1.4	20393	3	#Max	QPSK	21.04	37.00	PASS
LTE Band4	1.4	20393	6	#0	QPSK	20.12	37.00	PASS
LTE Band4	1.4	20393	1	#0	QAM16	19.67	37.00	PASS
LTE Band4	1.4	20393	1	#Mid	QAM16	19.80	37.00	PASS
LTE Band4	1.4	20393	1	#Max	QAM16	19.60	37.00	PASS
LTE Band4	1.4	20393	3	#0	QAM16	19.89	37.00	PASS
LTE Band4	1.4	20393	3	#Mid	QAM16	19.89	37.00	PASS
LTE Band4	1.4	20393	3	#Max	QAM16	19.90	37.00	PASS
LTE Band4	1.4	20393	6	#0	QAM16	19.16	37.00	PASS
LTE Band4	3	19965	1	#0	QPSK	20.90	37.00	PASS
LTE Band4	3	19965	1	#Mid	QPSK	20.98	37.00	PASS
LTE Band4	3	19965	1	#Max	QPSK	21.03	37.00	PASS
LTE Band4	3	19965	8	#0	QPSK	19.99	37.00	PASS
LTE Band4	3	19965	8	#Mid	QPSK	19.99	37.00	PASS
LTE Band4	3	19965	8	#Max	QPSK	19.98	37.00	PASS
LTE Band4	3	19965	15	#0	QPSK	20.07	37.00	PASS
LTE Band4	3	19965	1	#0	QAM16	19.91	37.00	PASS
LTE Band4	3	19965	1	#Mid	QAM16	19.90	37.00	PASS
LTE Band4	3	19965	1	#Max	QAM16	19.83	37.00	PASS
LTE Band4	3	19965	8	#0	QAM16	19.05	37.00	PASS
LTE Band4	3	19965	8	#Mid	QAM16	19.01	37.00	PASS
LTE Band4	3	19965	8	#Max	QAM16	19.05	37.00	PASS
LTE Band4	3	19965	15	#0	QAM16	18.88	37.00	PASS
LTE Band4	3	20175	1	#0	QPSK	21.12	37.00	PASS
LTE Band4	3	20175	1	#Mid	QPSK	21.17	37.00	PASS
LTE Band4	3	20175	1	#Max	QPSK	20.91	37.00	PASS
LTE Band4	3	20175	8	#0	QPSK	20.08	37.00	PASS
LTE Band4	3	20175	8	#Mid	QPSK	20.18	37.00	PASS
LTE Band4	3	20175	8	#Max	QPSK	20.15	37.00	PASS
LTE Band4	3	20175	15	#0	QPSK	20.12	37.00	PASS



LTE Band4	3	20175	1	#0	QAM16	20.82	37.00	PASS
LTE Band4	3	20175	1	#Mid	QAM16	21.06	37.00	PASS
LTE Band4	3	20175	1	#Max	QAM16	21.22	37.00	PASS
LTE Band4	3	20175	8	#0	QAM16	19.40	37.00	PASS
LTE Band4	3	20175	8	#Mid	QAM16	19.36	37.00	PASS
LTE Band4	3	20175	8	#Max	QAM16	19.38	37.00	PASS
LTE Band4	3	20175	15	#0	QAM16	19.33	37.00	PASS
LTE Band4	3	20385	1	#0	QPSK	21.21	37.00	PASS
LTE Band4	3	20385	1	#Mid	QPSK	21.38	37.00	PASS
LTE Band4	3	20385	1	#Max	QPSK	21.33	37.00	PASS
LTE Band4	3	20385	8	#0	QPSK	20.27	37.00	PASS
LTE Band4	3	20385	8	#Mid	QPSK	20.28	37.00	PASS
LTE Band4	3	20385	8	#Max	QPSK	20.14	37.00	PASS
LTE Band4	3	20385	15	#0	QPSK	20.14	37.00	PASS
LTE Band4	3	20385	1	#0	QAM16	20.13	37.00	PASS
LTE Band4	3	20385	1	#Mid	QAM16	20.07	37.00	PASS
LTE Band4	3	20385	1	#Max	QAM16	20.05	37.00	PASS
LTE Band4	3	20385	8	#0	QAM16	18.92	37.00	PASS
LTE Band4	3	20385	8	#Mid	QAM16	18.94	37.00	PASS
LTE Band4	3	20385	8	#Max	QAM16	18.81	37.00	PASS
LTE Band4	3	20385	15	#0	QAM16	19.10	37.00	PASS
LTE Band4	5	19975	1	#0	QPSK	20.89	37.00	PASS
LTE Band4	5	19975	1	#Mid	QPSK	20.95	37.00	PASS
LTE Band4	5	19975	1	#Max	QPSK	20.98	37.00	PASS
LTE Band4	5	19975	12	#0	QPSK	19.95	37.00	PASS
LTE Band4	5	19975	12	#Mid	QPSK	19.96	37.00	PASS
LTE Band4	5	19975	12	#Max	QPSK	19.90	37.00	PASS
LTE Band4	5	19975	25	#0	QPSK	19.93	37.00	PASS
LTE Band4	5	19975	1	#0	QAM16	19.88	37.00	PASS
LTE Band4	5	19975	1	#Mid	QAM16	19.92	37.00	PASS
LTE Band4	5	19975	1	#Max	QAM16	19.69	37.00	PASS
LTE Band4	5	19975	12	#0	QAM16	18.94	37.00	PASS
LTE Band4	5	19975	12	#Mid	QAM16	18.89	37.00	PASS
LTE Band4	5	19975	12	#Max	QAM16	18.91	37.00	PASS
LTE Band4	5	19975	25	#0	QAM16	18.99	37.00	PASS
LTE Band4	5	20175	1	#0	QPSK	20.99	37.00	PASS
LTE Band4	5	20175	1	#Mid	QPSK	21.06	37.00	PASS
LTE Band4	5	20175	1	#Max	QPSK	20.92	37.00	PASS
LTE Band4	5	20175	12	#0	QPSK	20.16	37.00	PASS
LTE Band4	5	20175	12	#Mid	QPSK	20.05	37.00	PASS
LTE Band4	5	20175	12	#Max	QPSK	20.11	37.00	PASS
LTE Band4	5	20175	25	#0	QPSK	20.11	37.00	PASS
LTE Band4	5	20175	1	#0	QAM16	20.20	37.00	PASS



LTE Band4	5	20175	1	#Mid	QAM16	20.41	37.00	PASS
LTE Band4	5	20175	1	#Max	QAM16	20.24	37.00	PASS
LTE Band4	5	20175	12	#0	QAM16	18.93	37.00	PASS
LTE Band4	5	20175	12	#Mid	QAM16	18.92	37.00	PASS
LTE Band4	5	20175	12	#Max	QAM16	18.89	37.00	PASS
LTE Band4	5	20175	25	#0	QAM16	18.99	37.00	PASS
LTE Band4	5	20375	1	#0	QPSK	20.82	37.00	PASS
LTE Band4	5	20375	1	#Mid	QPSK	21.00	37.00	PASS
LTE Band4	5	20375	1	#Max	QPSK	20.89	37.00	PASS
LTE Band4	5	20375	12	#0	QPSK	20.24	37.00	PASS
LTE Band4	5	20375	12	#Mid	QPSK	20.14	37.00	PASS
LTE Band4	5	20375	12	#Max	QPSK	20.19	37.00	PASS
LTE Band4	5	20375	25	#0	QPSK	20.23	37.00	PASS
LTE Band4	5	20375	1	#0	QAM16	19.98	37.00	PASS
LTE Band4	5	20375	1	#Mid	QAM16	20.35	37.00	PASS
LTE Band4	5	20375	1	#Max	QAM16	20.08	37.00	PASS
LTE Band4	5	20375	12	#0	QAM16	19.20	37.00	PASS
LTE Band4	5	20375	12	#Mid	QAM16	19.16	37.00	PASS
LTE Band4	5	20375	12	#Max	QAM16	19.12	37.00	PASS
LTE Band4	5	20375	25	#0	QAM16	19.07	37.00	PASS
LTE Band4	10	20000	1	#0	QPSK	20.96	37.00	PASS
LTE Band4	10	20000	1	#Mid	QPSK	21.38	37.00	PASS
LTE Band4	10	20000	1	#Max	QPSK	21.32	37.00	PASS
LTE Band4	10	20000	25	#0	QPSK	20.04	37.00	PASS
LTE Band4	10	20000	25	#Mid	QPSK	20.06	37.00	PASS
LTE Band4	10	20000	25	#Max	QPSK	20.20	37.00	PASS
LTE Band4	10	20000	50	#0	QPSK	20.20	37.00	PASS
LTE Band4	10	20000	1	#0	QAM16	20.15	37.00	PASS
LTE Band4	10	20000	1	#Mid	QAM16	20.44	37.00	PASS
LTE Band4	10	20000	1	#Max	QAM16	20.14	37.00	PASS
LTE Band4	10	20000	25	#0	QAM16	19.05	37.00	PASS
LTE Band4	10	20000	25	#Mid	QAM16	19.06	37.00	PASS
LTE Band4	10	20000	25	#Max	QAM16	19.24	37.00	PASS
LTE Band4	10	20000	50	#0	QAM16	19.03	37.00	PASS
LTE Band4	10	20175	1	#0	QPSK	21.18	37.00	PASS
LTE Band4	10	20175	1	#Mid	QPSK	21.22	37.00	PASS
LTE Band4	10	20175	1	#Max	QPSK	20.91	37.00	PASS
LTE Band4	10	20175	25	#0	QPSK	20.12	37.00	PASS
LTE Band4	10	20175	25	#Mid	QPSK	20.11	37.00	PASS
LTE Band4	10	20175	25	#Max	QPSK	20.07	37.00	PASS
LTE Band4	10	20175	50	#0	QPSK	20.07	37.00	PASS
LTE Band4	10	20175	1	#0	QAM16	20.91	37.00	PASS
LTE Band4	10	20175	1	#Mid	QAM16	20.91	37.00	PASS



LTE Band4	10	20175	1	#Max	QAM16	20.77	37.00	PASS
LTE Band4	10	20175	25	#0	QAM16	19.27	37.00	PASS
LTE Band4	10	20175	25	#Mid	QAM16	19.27	37.00	PASS
LTE Band4	10	20175	25	#Max	QAM16	19.00	37.00	PASS
LTE Band4	10	20175	50	#0	QAM16	19.00	37.00	PASS
LTE Band4	10	20350	1	#0	QPSK	21.02	37.00	PASS
LTE Band4	10	20350	1	#Mid	QPSK	21.20	37.00	PASS
LTE Band4	10	20350	1	#Max	QPSK	21.09	37.00	PASS
LTE Band4	10	20350	25	#0	QPSK	19.88	37.00	PASS
LTE Band4	10	20350	25	#Mid	QPSK	19.89	37.00	PASS
LTE Band4	10	20350	25	#Max	QPSK	20.17	37.00	PASS
LTE Band4	10	20350	50	#0	QPSK	20.00	37.00	PASS
LTE Band4	10	20350	1	#0	QAM16	19.89	37.00	PASS
LTE Band4	10	20350	1	#Mid	QAM16	20.23	37.00	PASS
LTE Band4	10	20350	1	#Max	QAM16	20.18	37.00	PASS
LTE Band4	10	20350	25	#0	QAM16	18.91	37.00	PASS
LTE Band4	10	20350	25	#Mid	QAM16	18.93	37.00	PASS
LTE Band4	10	20350	25	#Max	QAM16	19.13	37.00	PASS
LTE Band4	10	20350	50	#0	QAM16	18.99	37.00	PASS
LTE Band4	15	20025	1	#0	QPSK	21.07	37.00	PASS
LTE Band4	15	20025	1	#Mid	QPSK	21.18	37.00	PASS
LTE Band4	15	20025	1	#Max	QPSK	21.24	37.00	PASS
LTE Band4	15	20025	36	#0	QPSK	20.08	37.00	PASS
LTE Band4	15	20025	36	#Mid	QPSK	19.99	37.00	PASS
LTE Band4	15	20025	36	#Max	QPSK	20.18	37.00	PASS
LTE Band4	15	20025	75	#0	QPSK	20.13	37.00	PASS
LTE Band4	15	20025	1	#0	QAM16	20.12	37.00	PASS
LTE Band4	15	20025	1	#Mid	QAM16	20.26	37.00	PASS
LTE Band4	15	20025	1	#Max	QAM16	20.20	37.00	PASS
LTE Band4	15	20025	36	#0	QAM16	19.03	37.00	PASS
LTE Band4	15	20025	36	#Mid	QAM16	18.93	37.00	PASS
LTE Band4	15	20025	36	#Max	QAM16	19.11	37.00	PASS
LTE Band4	15	20025	75	#0	QAM16	19.15	37.00	PASS
LTE Band4	15	20175	1	#0	QPSK	21.26	37.00	PASS
LTE Band4	15	20175	1	#Mid	QPSK	21.18	37.00	PASS
LTE Band4	15	20175	1	#Max	QPSK	21.02	37.00	PASS
LTE Band4	15	20175	36	#0	QPSK	20.06	37.00	PASS
LTE Band4	15	20175	36	#Mid	QPSK	20.06	37.00	PASS
LTE Band4	15	20175	36	#Max	QPSK	19.99	37.00	PASS
LTE Band4	15	20175	75	#0	QPSK	20.04	37.00	PASS
LTE Band4	15	20175	1	#0	QAM16	20.73	37.00	PASS
LTE Band4	15	20175	1	#Mid	QAM16	20.66	37.00	PASS
LTE Band4	15	20175	1	#Max	QAM16	20.49	37.00	PASS



LTE Band4	15	20175	36	#0	QAM16	19.11	37.00	PASS
LTE Band4	15	20175	36	#Mid	QAM16	19.08	37.00	PASS
LTE Band4	15	20175	36	#Max	QAM16	18.81	37.00	PASS
LTE Band4	15	20175	75	#0	QAM16	19.15	37.00	PASS
LTE Band4	15	20325	1	#0	QPSK	20.99	37.00	PASS
LTE Band4	15	20325	1	#Mid	QPSK	20.86	37.00	PASS
LTE Band4	15	20325	1	#Max	QPSK	21.02	37.00	PASS
LTE Band4	15	20325	36	#0	QPSK	20.02	37.00	PASS
LTE Band4	15	20325	36	#Mid	QPSK	20.03	37.00	PASS
LTE Band4	15	20325	36	#Max	QPSK	20.03	37.00	PASS
LTE Band4	15	20325	75	#0	QPSK	19.94	37.00	PASS
LTE Band4	15	20325	1	#0	QAM16	19.54	37.00	PASS
LTE Band4	15	20325	1	#Mid	QAM16	19.49	37.00	PASS
LTE Band4	15	20325	1	#Max	QAM16	19.22	37.00	PASS
LTE Band4	15	20325	36	#0	QAM16	18.80	37.00	PASS
LTE Band4	15	20325	36	#Mid	QAM16	18.86	37.00	PASS
LTE Band4	15	20325	36	#Max	QAM16	18.89	37.00	PASS
LTE Band4	15	20325	75	#0	QAM16	18.96	37.00	PASS
LTE Band4	20	20050	1	#0	QPSK	21.02	37.00	PASS
LTE Band4	20	20050	1	#Mid	QPSK	21.40	37.00	PASS
LTE Band4	20	20050	1	#Max	QPSK	20.94	37.00	PASS
LTE Band4	20	20050	50	#0	QPSK	20.20	37.00	PASS
LTE Band4	20	20050	50	#Mid	QPSK	20.20	37.00	PASS
LTE Band4	20	20050	50	#Max	QPSK	20.25	37.00	PASS
LTE Band4	20	20050	100	#0	QPSK	20.16	37.00	PASS
LTE Band4	20	20050	1	#0	QAM16	20.43	37.00	PASS
LTE Band4	20	20050	1	#Mid	QAM16	20.85	37.00	PASS
LTE Band4	20	20050	1	#Max	QAM16	20.51	37.00	PASS
LTE Band4	20	20050	50	#0	QAM16	19.35	37.00	PASS
LTE Band4	20	20050	50	#Mid	QAM16	19.36	37.00	PASS
LTE Band4	20	20050	50	#Max	QAM16	19.41	37.00	PASS
LTE Band4	20	20050	100	#0	QAM16	19.22	37.00	PASS
LTE Band4	20	20175	1	#0	QPSK	21.01	37.00	PASS
LTE Band4	20	20175	1	#Mid	QPSK	21.28	37.00	PASS
LTE Band4	20	20175	1	#Max	QPSK	21.04	37.00	PASS
LTE Band4	20	20175	50	#0	QPSK	20.10	37.00	PASS
LTE Band4	20	20175	50	#Mid	QPSK	20.07	37.00	PASS
LTE Band4	20	20175	50	#Max	QPSK	20.02	37.00	PASS
LTE Band4	20	20175	100	#0	QPSK	20.18	37.00	PASS
LTE Band4	20	20175	1	#0	QAM16	19.76	37.00	PASS
LTE Band4	20	20175	1	#Mid	QAM16	19.87	37.00	PASS
LTE Band4	20	20175	1	#Max	QAM16	19.56	37.00	PASS
LTE Band4	20	20175	50	#0	QAM16	19.08	37.00	PASS





LTE Band4	20	20175	50	#Mid	QAM16	19.08	37.00	PASS
LTE Band4	20	20175	50	#Max	QAM16	19.01	37.00	PASS
LTE Band4	20	20175	100	#0	QAM16	19.11	37.00	PASS
LTE Band4	20	20300	1	#0	QPSK	21.25	37.00	PASS
LTE Band4	20	20300	1	#Mid	QPSK	21.16	37.00	PASS
LTE Band4	20	20300	1	#Max	QPSK	21.16	37.00	PASS
LTE Band4	20	20300	50	#0	QPSK	20.02	37.00	PASS
LTE Band4	20	20300	50	#Mid	QPSK	20.03	37.00	PASS
LTE Band4	20	20300	50	#Max	QPSK	19.95	37.00	PASS
LTE Band4	20	20300	100	#0	QPSK	19.96	37.00	PASS
LTE Band4	20	20300	1	#0	QAM16	19.76	37.00	PASS
LTE Band4	20	20300	1	#Mid	QAM16	20.48	37.00	PASS
LTE Band4	20	20300	1	#Max	QAM16	20.18	37.00	PASS
LTE Band4	20	20300	50	#0	QAM16	18.97	37.00	PASS
LTE Band4	20	20300	50	#Mid	QAM16	19.11	37.00	PASS
LTE Band4	20	20300	50	#Max	QAM16	19.04	37.00	PASS
LTE Band4	20	20300	100	#0	QAM16	18.99	37.00	PASS

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	high Limit (dBm)	Verdict
LTE Band7	5	20775	1	#0	QPSK	20.77	37.00	PASS
LTE Band7	5	20775	1	#Mid	QPSK	20.98	37.00	PASS
LTE Band7	5	20775	1	#Max	QPSK	20.73	37.00	PASS
LTE Band7	5	20775	12	#0	QPSK	19.93	37.00	PASS
LTE Band7	5	20775	12	#Mid	QPSK	19.92	37.00	PASS
LTE Band7	5	20775	12	#Max	QPSK	19.95	37.00	PASS
LTE Band7	5	20775	25	#0	QPSK	19.85	37.00	PASS
LTE Band7	5	20775	1	#0	QAM16	19.97	37.00	PASS
LTE Band7	5	20775	1	#Mid	QAM16	20.20	37.00	PASS
LTE Band7	5	20775	1	#Max	QAM16	20.07	37.00	PASS
LTE Band7	5	20775	12	#0	QAM16	18.68	37.00	PASS
LTE Band7	5	20775	12	#Mid	QAM16	18.75	37.00	PASS
LTE Band7	5	20775	12	#Max	QAM16	18.82	37.00	PASS
LTE Band7	5	20775	25	#0	QAM16	18.99	37.00	PASS
LTE Band7	5	21100	1	#0	QPSK	20.83	37.00	PASS
LTE Band7	5	21100	1	#Mid	QPSK	20.91	37.00	PASS
LTE Band7	5	21100	1	#Max	QPSK	20.73	37.00	PASS
LTE Band7	5	21100	12	#0	QPSK	19.84	37.00	PASS
LTE Band7	5	21100	12	#Mid	QPSK	19.77	37.00	PASS
LTE Band7	5	21100	12	#Max	QPSK	19.91	37.00	PASS
LTE Band7	5	21100	25	#0	QPSK	19.90	37.00	PASS



LTE Band7	5	21100	1	#0	QAM16	19.63	37.00	PASS
LTE Band7	5	21100	1	#Mid	QAM16	19.66	37.00	PASS
LTE Band7	5	21100	1	#Max	QAM16	19.62	37.00	PASS
LTE Band7	5	21100	12	#0	QAM16	18.95	37.00	PASS
LTE Band7	5	21100	12	#Mid	QAM16	19.04	37.00	PASS
LTE Band7	5	21100	12	#Max	QAM16	18.93	37.00	PASS
LTE Band7	5	21100	25	#0	QAM16	18.87	37.00	PASS
LTE Band7	5	21425	1	#0	QPSK	20.85	37.00	PASS
LTE Band7	5	21425	1	#Mid	QPSK	20.80	37.00	PASS
LTE Band7	5	21425	1	#Max	QPSK	20.84	37.00	PASS
LTE Band7	5	21425	12	#0	QPSK	20.08	37.00	PASS
LTE Band7	5	21425	12	#Mid	QPSK	20.07	37.00	PASS
LTE Band7	5	21425	12	#Max	QPSK	20.07	37.00	PASS
LTE Band7	5	21425	25	#0	QPSK	20.06	37.00	PASS
LTE Band7	5	21425	1	#0	QAM16	19.90	37.00	PASS
LTE Band7	5	21425	1	#Mid	QAM16	20.28	37.00	PASS
LTE Band7	5	21425	1	#Max	QAM16	19.56	37.00	PASS
LTE Band7	5	21425	12	#0	QAM16	18.96	37.00	PASS
LTE Band7	5	21425	12	#Mid	QAM16	18.95	37.00	PASS
LTE Band7	5	21425	12	#Max	QAM16	18.91	37.00	PASS
LTE Band7	5	21425	25	#0	QAM16	18.94	37.00	PASS
LTE Band7	10	20800	1	#0	QPSK	20.81	37.00	PASS
LTE Band7	10	20800	1	#Mid	QPSK	20.96	37.00	PASS
LTE Band7	10	20800	1	#Max	QPSK	20.73	37.00	PASS
LTE Band7	10	20800	25	#0	QPSK	19.94	37.00	PASS
LTE Band7	10	20800	25	#Mid	QPSK	19.94	37.00	PASS
LTE Band7	10	20800	25	#Max	QPSK	19.93	37.00	PASS
LTE Band7	10	20800	50	#0	QPSK	19.95	37.00	PASS
LTE Band7	10	20800	1	#0	QAM16	19.99	37.00	PASS
LTE Band7	10	20800	1	#Mid	QAM16	20.63	37.00	PASS
LTE Band7	10	20800	1	#Max	QAM16	19.78	37.00	PASS
LTE Band7	10	20800	25	#0	QAM16	19.08	37.00	PASS
LTE Band7	10	20800	25	#Mid	QAM16	19.06	37.00	PASS
LTE Band7	10	20800	25	#Max	QAM16	19.10	37.00	PASS
LTE Band7	10	20800	50	#0	QAM16	18.99	37.00	PASS
LTE Band7	10	21100	1	#0	QPSK	21.10	37.00	PASS
LTE Band7	10	21100	1	#Mid	QPSK	21.05	37.00	PASS
LTE Band7	10	21100	1	#Max	QPSK	20.88	37.00	PASS
LTE Band7	10	21100	25	#0	QPSK	19.93	37.00	PASS
LTE Band7	10	21100	25	#Mid	QPSK	19.89	37.00	PASS
LTE Band7	10	21100	25	#Max	QPSK	19.98	37.00	PASS
LTE Band7	10	21100	50	#0	QPSK	19.90	37.00	PASS
LTE Band7	10	21100	1	#0	QAM16	20.45	37.00	PASS



LTE Band7	10	21100	1	#Mid	QAM16	20.80	37.00	PASS
LTE Band7	10	21100	1	#Max	QAM16	20.93	37.00	PASS
LTE Band7	10	21100	25	#0	QAM16	18.99	37.00	PASS
LTE Band7	10	21100	25	#Mid	QAM16	18.92	37.00	PASS
LTE Band7	10	21100	25	#Max	QAM16	19.19	37.00	PASS
LTE Band7	10	21100	50	#0	QAM16	18.81	37.00	PASS
LTE Band7	10	21400	1	#0	QPSK	20.90	37.00	PASS
LTE Band7	10	21400	1	#Mid	QPSK	21.25	37.00	PASS
LTE Band7	10	21400	1	#Max	QPSK	21.03	37.00	PASS
LTE Band7	10	21400	25	#0	QPSK	19.99	37.00	PASS
LTE Band7	10	21400	25	#Mid	QPSK	20.04	37.00	PASS
LTE Band7	10	21400	25	#Max	QPSK	20.07	37.00	PASS
LTE Band7	10	21400	50	#0	QPSK	20.03	37.00	PASS
LTE Band7	10	21400	1	#0	QAM16	19.58	37.00	PASS
LTE Band7	10	21400	1	#Mid	QAM16	19.70	37.00	PASS
LTE Band7	10	21400	1	#Max	QAM16	19.57	37.00	PASS
LTE Band7	10	21400	25	#0	QAM16	19.03	37.00	PASS
LTE Band7	10	21400	25	#Mid	QAM16	19.02	37.00	PASS
LTE Band7	10	21400	25	#Max	QAM16	19.25	37.00	PASS
LTE Band7	10	21400	50	#0	QAM16	19.00	37.00	PASS
LTE Band7	15	20825	1	#0	QPSK	20.91	37.00	PASS
LTE Band7	15	20825	1	#Mid	QPSK	21.12	37.00	PASS
LTE Band7	15	20825	1	#Max	QPSK	20.79	37.00	PASS
LTE Band7	15	20825	36	#0	QPSK	19.89	37.00	PASS
LTE Band7	15	20825	36	#Mid	QPSK	19.90	37.00	PASS
LTE Band7	15	20825	36	#Max	QPSK	19.86	37.00	PASS
LTE Band7	15	20825	75	#0	QPSK	19.85	37.00	PASS
LTE Band7	15	20825	1	#0	QAM16	19.85	37.00	PASS
LTE Band7	15	20825	1	#Mid	QAM16	20.70	37.00	PASS
LTE Band7	15	20825	1	#Max	QAM16	19.24	37.00	PASS
LTE Band7	15	20825	36	#0	QAM16	18.95	37.00	PASS
LTE Band7	15	20825	36	#Mid	QAM16	18.95	37.00	PASS
LTE Band7	15	20825	36	#Max	QAM16	18.95	37.00	PASS
LTE Band7	15	20825	75	#0	QAM16	19.02	37.00	PASS
LTE Band7	15	21100	1	#0	QPSK	20.90	37.00	PASS
LTE Band7	15	21100	1	#Mid	QPSK	20.91	37.00	PASS
LTE Band7	15	21100	1	#Max	QPSK	20.93	37.00	PASS
LTE Band7	15	21100	36	#0	QPSK	19.91	37.00	PASS
LTE Band7	15	21100	36	#Mid	QPSK	19.99	37.00	PASS
LTE Band7	15	21100	36	#Max	QPSK	19.91	37.00	PASS
LTE Band7	15	21100	75	#0	QPSK	19.88	37.00	PASS
LTE Band7	15	21100	1	#0	QAM16	20.55	37.00	PASS
LTE Band7	15	21100	1	#Mid	QAM16	21.04	37.00	PASS



LTE Band7	15	21100	1	#Max	QAM16	20.45	37.00	PASS
LTE Band7	15	21100	36	#0	QAM16	18.69	37.00	PASS
LTE Band7	15	21100	36	#Mid	QAM16	18.68	37.00	PASS
LTE Band7	15	21100	36	#Max	QAM16	18.94	37.00	PASS
LTE Band7	15	21100	75	#0	QAM16	18.83	37.00	PASS
LTE Band7	15	21375	1	#0	QPSK	20.77	37.00	PASS
LTE Band7	15	21375	1	#Mid	QPSK	20.75	37.00	PASS
LTE Band7	15	21375	1	#Max	QPSK	20.85	37.00	PASS
LTE Band7	15	21375	36	#0	QPSK	20.09	37.00	PASS
LTE Band7	15	21375	36	#Mid	QPSK	20.09	37.00	PASS
LTE Band7	15	21375	36	#Max	QPSK	20.00	37.00	PASS
LTE Band7	15	21375	75	#0	QPSK	20.04	37.00	PASS
LTE Band7	15	21375	1	#0	QAM16	19.69	37.00	PASS
LTE Band7	15	21375	1	#Mid	QAM16	19.41	37.00	PASS
LTE Band7	15	21375	1	#Max	QAM16	19.10	37.00	PASS
LTE Band7	15	21375	36	#0	QAM16	18.87	37.00	PASS
LTE Band7	15	21375	36	#Mid	QAM16	18.88	37.00	PASS
LTE Band7	15	21375	36	#Max	QAM16	18.81	37.00	PASS
LTE Band7	15	21375	75	#0	QAM16	18.97	37.00	PASS
LTE Band7	20	20850	1	#0	QPSK	20.82	37.00	PASS
LTE Band7	20	20850	1	#Mid	QPSK	21.11	37.00	PASS
LTE Band7	20	20850	1	#Max	QPSK	20.57	37.00	PASS
LTE Band7	20	20850	50	#0	QPSK	19.93	37.00	PASS
LTE Band7	20	20850	50	#Mid	QPSK	19.83	37.00	PASS
LTE Band7	20	20850	50	#Max	QPSK	19.87	37.00	PASS
LTE Band7	20	20850	100	#0	QPSK	19.92	37.00	PASS
LTE Band7	20	20850	1	#0	QAM16	20.25	37.00	PASS
LTE Band7	20	20850	1	#Mid	QAM16	20.59	37.00	PASS
LTE Band7	20	20850	1	#Max	QAM16	19.48	37.00	PASS
LTE Band7	20	20850	50	#0	QAM16	19.07	37.00	PASS
LTE Band7	20	20850	50	#Mid	QAM16	19.06	37.00	PASS
LTE Band7	20	20850	50	#Max	QAM16	18.95	37.00	PASS
LTE Band7	20	20850	100	#0	QAM16	19.06	37.00	PASS
LTE Band7	20	21100	1	#0	QPSK	20.70	37.00	PASS
LTE Band7	20	21100	1	#Mid	QPSK	21.13	37.00	PASS
LTE Band7	20	21100	1	#Max	QPSK	20.97	37.00	PASS
LTE Band7	20	21100	50	#0	QPSK	19.88	37.00	PASS
LTE Band7	20	21100	50	#Mid	QPSK	19.96	37.00	PASS
LTE Band7	20	21100	50	#Max	QPSK	19.89	37.00	PASS
LTE Band7	20	21100	100	#0	QPSK	19.89	37.00	PASS
LTE Band7	20	21100	1	#0	QAM16	19.44	37.00	PASS
LTE Band7	20	21100	1	#Mid	QAM16	19.57	37.00	PASS
LTE Band7	20	21100	1	#Max	QAM16	19.53	37.00	PASS



LTE Band7	20	21100	50	#0	QAM16	18.92	37.00	PASS
LTE Band7	20	21100	50	#Mid	QAM16	19.02	37.00	PASS
LTE Band7	20	21100	50	#Max	QAM16	18.90	37.00	PASS
LTE Band7	20	21100	100	#0	QAM16	18.97	37.00	PASS
LTE Band7	20	21350	1	#0	QPSK	20.95	37.00	PASS
LTE Band7	20	21350	1	#Mid	QPSK	20.99	37.00	PASS
LTE Band7	20	21350	1	#Max	QPSK	20.96	37.00	PASS
LTE Band7	20	21350	50	#0	QPSK	20.06	37.00	PASS
LTE Band7	20	21350	50	#Mid	QPSK	19.96	37.00	PASS
LTE Band7	20	21350	50	#Max	QPSK	19.95	37.00	PASS
LTE Band7	20	21350	100	#0	QPSK	19.99	37.00	PASS
LTE Band7	20	21350	1	#0	QAM16	20.05	37.00	PASS
LTE Band7	20	21350	1	#Mid	QAM16	20.14	37.00	PASS
LTE Band7	20	21350	1	#Max	QAM16	19.95	37.00	PASS
LTE Band7	20	21350	50	#0	QAM16	19.07	37.00	PASS
LTE Band7	20	21350	50	#Mid	QAM16	19.09	37.00	PASS
LTE Band7	20	21350	50	#Max	QAM16	18.82	37.00	PASS
LTE Band7	20	21350	100	#0	QAM16	19.01	37.00	PASS

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	high Limit (dBm)	Verdict
LTE Band12	1.4	23017	1	#0	QPSK	21.46	37	PASS
LTE Band12	1.4	23017	1	#Mid	QPSK	21.53	37	PASS
LTE Band12	1.4	23017	1	#Max	QPSK	21.53	37	PASS
LTE Band12	1.4	23017	3	#0	QPSK	21.23	37	PASS
LTE Band12	1.4	23017	3	#Mid	QPSK	21.23	37	PASS
LTE Band12	1.4	23017	3	#Max	QPSK	21.38	37	PASS
LTE Band12	1.4	23017	6	#0	QPSK	20.35	37	PASS
LTE Band12	1.4	23017	1	#0	QAM16	20.68	37	PASS
LTE Band12	1.4	23017	1	#Mid	QAM16	21.07	37	PASS
LTE Band12	1.4	23017	1	#Max	QAM16	20.59	37	PASS
LTE Band12	1.4	23017	3	#0	QAM16	20.45	37	PASS
LTE Band12	1.4	23017	3	#Mid	QAM16	20.45	37	PASS
LTE Band12	1.4	23017	3	#Max	QAM16	20.50	37	PASS
LTE Band12	1.4	23017	6	#0	QAM16	19.22	37	PASS
LTE Band12	1.4	23095	1	#0	QPSK	21.45	37	PASS
LTE Band12	1.4	23095	1	#Mid	QPSK	21.70	37	PASS
LTE Band12	1.4	23095	1	#Max	QPSK	21.42	37	PASS
LTE Band12	1.4	23095	3	#0	QPSK	21.49	37	PASS
LTE Band12	1.4	23095	3	#Mid	QPSK	21.49	37	PASS
LTE Band12	1.4	23095	3	#Max	QPSK	21.48	37	PASS



LTE Band12	1.4	23095	6	#0	QPSK	20.61	37	PASS
LTE Band12	1.4	23095	1	#0	QAM16	20.98	37	PASS
LTE Band12	1.4	23095	1	#Mid	QAM16	21.23	37	PASS
LTE Band12	1.4	23095	1	#Max	QAM16	21.14	37	PASS
LTE Band12	1.4	23095	3	#0	QAM16	20.50	37	PASS
LTE Band12	1.4	23095	3	#Mid	QAM16	20.60	37	PASS
LTE Band12	1.4	23095	3	#Max	QAM16	20.62	37	PASS
LTE Band12	1.4	23095	6	#0	QAM16	19.59	37	PASS
LTE Band12	1.4	23173	1	#0	QPSK	21.43	37	PASS
LTE Band12	1.4	23173	1	#Mid	QPSK	21.45	37	PASS
LTE Band12	1.4	23173	1	#Max	QPSK	21.54	37	PASS
LTE Band12	1.4	23173	3	#0	QPSK	21.54	37	PASS
LTE Band12	1.4	23173	3	#Mid	QPSK	21.66	37	PASS
LTE Band12	1.4	23173	3	#Max	QPSK	21.54	37	PASS
LTE Band12	1.4	23173	6	#0	QPSK	20.65	37	PASS
LTE Band12	1.4	23173	1	#0	QAM16	20.47	37	PASS
LTE Band12	1.4	23173	1	#Mid	QAM16	20.38	37	PASS
LTE Band12	1.4	23173	1	#Max	QAM16	20.19	37	PASS
LTE Band12	1.4	23173	3	#0	QAM16	20.54	37	PASS
LTE Band12	1.4	23173	3	#Mid	QAM16	20.54	37	PASS
LTE Band12	1.4	23173	3	#Max	QAM16	20.50	37	PASS
LTE Band12	1.4	23173	6	#0	QAM16	19.74	37	PASS
LTE Band12	3	23025	1	#0	QPSK	21.30	37	PASS
LTE Band12	3	23025	1	#Mid	QPSK	21.06	37	PASS
LTE Band12	3	23025	1	#Max	QPSK	21.18	37	PASS
LTE Band12	3	23025	8	#0	QPSK	20.36	37	PASS
LTE Band12	3	23025	8	#Mid	QPSK	20.36	37	PASS
LTE Band12	3	23025	8	#Max	QPSK	20.34	37	PASS
LTE Band12	3	23025	15	#0	QPSK	20.35	37	PASS
LTE Band12	3	23025	1	#0	QAM16	20.34	37	PASS
LTE Band12	3	23025	1	#Mid	QAM16	20.20	37	PASS
LTE Band12	3	23025	1	#Max	QAM16	20.20	37	PASS
LTE Band12	3	23025	8	#0	QAM16	19.48	37	PASS
LTE Band12	3	23025	8	#Mid	QAM16	19.40	37	PASS
LTE Band12	3	23025	8	#Max	QAM16	19.37	37	PASS
LTE Band12	3	23025	15	#0	QAM16	19.19	37	PASS
LTE Band12	3	23095	1	#0	QPSK	21.42	37	PASS
LTE Band12	3	23095	1	#Mid	QPSK	21.40	37	PASS
LTE Band12	3	23095	1	#Max	QPSK	21.23	37	PASS
LTE Band12	3	23095	8	#0	QPSK	20.58	37	PASS
LTE Band12	3	23095	8	#Mid	QPSK	20.58	37	PASS
LTE Band12	3	23095	8	#Max	QPSK	20.56	37	PASS
LTE Band12	3	23095	15	#0	QPSK	20.61	37	PASS



LTE Band12	3	23095	1	#0	QAM16	20.85	37	PASS
LTE Band12	3	23095	1	#Mid	QAM16	21.12	37	PASS
LTE Band12	3	23095	1	#Max	QAM16	21.13	37	PASS
LTE Band12	3	23095	8	#0	QAM16	19.77	37	PASS
LTE Band12	3	23095	8	#Mid	QAM16	19.78	37	PASS
LTE Band12	3	23095	8	#Max	QAM16	19.76	37	PASS
LTE Band12	3	23095	15	#0	QAM16	19.80	37	PASS
LTE Band12	3	23165	1	#0	QPSK	21.57	37	PASS
LTE Band12	3	23165	1	#Mid	QPSK	21.73	37	PASS
LTE Band12	3	23165	1	#Max	QPSK	21.52	37	PASS
LTE Band12	3	23165	8	#0	QPSK	20.63	37	PASS
LTE Band12	3	23165	8	#Mid	QPSK	20.64	37	PASS
LTE Band12	3	23165	8	#Max	QPSK	20.69	37	PASS
LTE Band12	3	23165	15	#0	QPSK	20.62	37	PASS
LTE Band12	3	23165	1	#0	QAM16	20.35	37	PASS
LTE Band12	3	23165	1	#Mid	QAM16	20.47	37	PASS
LTE Band12	3	23165	1	#Max	QAM16	20.06	37	PASS
LTE Band12	3	23165	8	#0	QAM16	19.63	37	PASS
LTE Band12	3	23165	8	#Mid	QAM16	19.64	37	PASS
LTE Band12	3	23165	8	#Max	QAM16	19.62	37	PASS
LTE Band12	3	23165	15	#0	QAM16	19.62	37	PASS
LTE Band12	5	23035	1	#0	QPSK	21.31	37	PASS
LTE Band12	5	23035	1	#Mid	QPSK	21.26	37	PASS
LTE Band12	5	23035	1	#Max	QPSK	21.26	37	PASS
LTE Band12	5	23035	12	#0	QPSK	20.26	37	PASS
LTE Band12	5	23035	12	#Mid	QPSK	20.26	37	PASS
LTE Band12	5	23035	12	#Max	QPSK	20.35	37	PASS
LTE Band12	5	23035	25	#0	QPSK	20.45	37	PASS
LTE Band12	5	23035	1	#0	QAM16	20.19	37	PASS
LTE Band12	5	23035	1	#Mid	QAM16	20.09	37	PASS
LTE Band12	5	23035	1	#Max	QAM16	20.01	37	PASS
LTE Band12	5	23035	12	#0	QAM16	19.17	37	PASS
LTE Band12	5	23035	12	#Mid	QAM16	19.17	37	PASS
LTE Band12	5	23035	12	#Max	QAM16	19.39	37	PASS
LTE Band12	5	23035	25	#0	QAM16	19.55	37	PASS
LTE Band12	5	23095	1	#0	QPSK	21.20	37	PASS
LTE Band12	5	23095	1	#Mid	QPSK	21.65	37	PASS
LTE Band12	5	23095	1	#Max	QPSK	21.27	37	PASS
LTE Band12	5	23095	12	#0	QPSK	20.45	37	PASS
LTE Band12	5	23095	12	#Mid	QPSK	20.46	37	PASS
LTE Band12	5	23095	12	#Max	QPSK	20.59	37	PASS
LTE Band12	5	23095	25	#0	QPSK	20.47	37	PASS
LTE Band12	5	23095	1	#0	QAM16	20.54	37	PASS



LTE Band12	5	23095	1	#Mid	QAM16	21.02	37	PASS
LTE Band12	5	23095	1	#Max	QAM16	20.55	37	PASS
LTE Band12	5	23095	12	#0	QAM16	19.50	37	PASS
LTE Band12	5	23095	12	#Mid	QAM16	19.51	37	PASS
LTE Band12	5	23095	12	#Max	QAM16	19.45	37	PASS
LTE Band12	5	23095	25	#0	QAM16	19.44	37	PASS
LTE Band12	5	23155	1	#0	QPSK	21.44	37	PASS
LTE Band12	5	23155	1	#Mid	QPSK	21.46	37	PASS
LTE Band12	5	23155	1	#Max	QPSK	21.46	37	PASS
LTE Band12	5	23155	12	#0	QPSK	20.57	37	PASS
LTE Band12	5	23155	12	#Mid	QPSK	20.58	37	PASS
LTE Band12	5	23155	12	#Max	QPSK	20.56	37	PASS
LTE Band12	5	23155	25	#0	QPSK	20.61	37	PASS
LTE Band12	5	23155	1	#0	QAM16	20.22	37	PASS
LTE Band12	5	23155	1	#Mid	QAM16	20.29	37	PASS
LTE Band12	5	23155	1	#Max	QAM16	20.33	37	PASS
LTE Band12	5	23155	12	#0	QAM16	19.58	37	PASS
LTE Band12	5	23155	12	#Mid	QAM16	19.59	37	PASS
LTE Band12	5	23155	12	#Max	QAM16	19.70	37	PASS
LTE Band12	5	23155	25	#0	QAM16	19.58	37	PASS
LTE Band12	10	23060	1	#0	QPSK	21.24	37	PASS
LTE Band12	10	23060	1	#Mid	QPSK	21.68	37	PASS
LTE Band12	10	23060	1	#Max	QPSK	21.25	37	PASS
LTE Band12	10	23060	25	#0	QPSK	20.38	37	PASS
LTE Band12	10	23060	25	#Mid	QPSK	20.30	37	PASS
LTE Band12	10	23060	25	#Max	QPSK	20.57	37	PASS
LTE Band12	10	23060	50	#0	QPSK	20.55	37	PASS
LTE Band12	10	23060	1	#0	QAM16	20.29	37	PASS
LTE Band12	10	23060	1	#Mid	QAM16	20.99	37	PASS
LTE Band12	10	23060	1	#Max	QAM16	19.95	37	PASS
LTE Band12	10	23060	25	#0	QAM16	19.51	37	PASS
LTE Band12	10	23060	25	#Mid	QAM16	19.52	37	PASS
LTE Band12	10	23060	25	#Max	QAM16	19.36	37	PASS
LTE Band12	10	23060	50	#0	QAM16	19.52	37	PASS
LTE Band12	10	23095	1	#0	QPSK	21.28	37	PASS
LTE Band12	10	23095	1	#Mid	QPSK	21.43	37	PASS
LTE Band12	10	23095	1	#Max	QPSK	21.49	37	PASS
LTE Band12	10	23095	25	#0	QPSK	20.42	37	PASS
LTE Band12	10	23095	25	#Mid	QPSK	20.42	37	PASS
LTE Band12	10	23095	25	#Max	QPSK	20.42	37	PASS
LTE Band12	10	23095	50	#0	QPSK	20.47	37	PASS
LTE Band12	10	23095	1	#0	QAM16	21.19	37	PASS
LTE Band12	10	23095	1	#Mid	QAM16	21.27	37	PASS





LTE Band12	10	23095	1	#Max	QAM16	20.89	37	PASS
LTE Band12	10	23095	25	#0	QAM16	19.60	37	PASS
LTE Band12	10	23095	25	#Mid	QAM16	19.61	37	PASS
LTE Band12	10	23095	25	#Max	QAM16	19.68	37	PASS
LTE Band12	10	23095	50	#0	QAM16	19.60	37	PASS
LTE Band12	10	23130	1	#0	QPSK	21.33	37	PASS
LTE Band12	10	23130	1	#Mid	QPSK	21.84	37	PASS
LTE Band12	10	23130	1	#Max	QPSK	21.55	37	PASS
LTE Band12	10	23130	25	#0	QPSK	20.48	37	PASS
LTE Band12	10	23130	25	#Mid	QPSK	20.47	37	PASS
LTE Band12	10	23130	25	#Max	QPSK	20.64	37	PASS
LTE Band12	10	23130	50	#0	QPSK	20.66	37	PASS
LTE Band12	10	23130	1	#0	QAM16	20.14	37	PASS
LTE Band12	10	23130	1	#Mid	QAM16	20.98	37	PASS
LTE Band12	10	23130	1	#Max	QAM16	20.46	37	PASS
LTE Band12	10	23130	25	#0	QAM16	19.54	37	PASS
LTE Band12	10	23130	25	#Mid	QAM16	19.54	37	PASS
LTE Band12	10	23130	25	#Max	QAM16	19.81	37	PASS
LTE Band12	10	23130	50	#0	QAM16	19.48	37	PASS

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	high Limit (dBm)	Verdict
LTE Band13	5	23205	1	#0	QPSK	21.88	37.00	PASS
LTE Band13	5	23205	1	#Mid	QPSK	21.88	37.00	PASS
LTE Band13	5	23205	1	#Max	QPSK	21.86	37.00	PASS
LTE Band13	5	23205	12	#0	QPSK	21.05	37.00	PASS
LTE Band13	5	23205	12	#Mid	QPSK	21.05	37.00	PASS
LTE Band13	5	23205	12	#Max	QPSK	21.05	37.00	PASS
LTE Band13	5	23205	25	#0	QPSK	20.94	37.00	PASS
LTE Band13	5	23205	1	#0	QAM16	21.00	37.00	PASS
LTE Band13	5	23205	1	#Mid	QAM16	21.25	37.00	PASS
LTE Band13	5	23205	1	#Max	QAM16	21.06	37.00	PASS
LTE Band13	5	23205	12	#0	QAM16	19.73	37.00	PASS
LTE Band13	5	23205	12	#Mid	QAM16	19.73	37.00	PASS
LTE Band13	5	23205	12	#Max	QAM16	19.65	37.00	PASS
LTE Band13	5	23205	25	#0	QAM16	19.97	37.00	PASS
LTE Band13	5	23230	1	#0	QPSK	22.02	37.00	PASS
LTE Band13	5	23230	1	#Mid	QPSK	21.95	37.00	PASS
LTE Band13	5	23230	1	#Max	QPSK	21.67	37.00	PASS
LTE Band13	5	23230	12	#0	QPSK	20.88	37.00	PASS
LTE Band13	5	23230	12	#Mid	QPSK	20.98	37.00	PASS
LTE Band13	5	23230	12	#Max	QPSK	20.82	37.00	PASS
LTE Band13	5	23230	25	#0	QPSK	20.94	37.00	PASS



LTE Band13	5	23230	1	#0	QAM16	20.81	37.00	PASS
LTE Band13	5	23230	1	#Mid	QAM16	20.90	37.00	PASS
LTE Band13	5	23230	1	#Max	QAM16	20.66	37.00	PASS
LTE Band13	5	23230	12	#0	QAM16	19.91	37.00	PASS
LTE Band13	5	23230	12	#Mid	QAM16	19.91	37.00	PASS
LTE Band13	5	23230	12	#Max	QAM16	19.92	37.00	PASS
LTE Band13	5	23230	25	#0	QAM16	19.70	37.00	PASS
LTE Band13	5	23255	1	#0	QPSK	21.72	37.00	PASS
LTE Band13	5	23255	1	#Mid	QPSK	21.77	37.00	PASS
LTE Band13	5	23255	1	#Max	QPSK	22.10	37.00	PASS
LTE Band13	5	23255	12	#0	QPSK	20.90	37.00	PASS
LTE Band13	5	23255	12	#Mid	QPSK	20.91	37.00	PASS
LTE Band13	5	23255	12	#Max	QPSK	20.95	37.00	PASS
LTE Band13	5	23255	25	#0	QPSK	20.86	37.00	PASS
LTE Band13	5	23255	1	#0	QAM16	20.74	37.00	PASS
LTE Band13	5	23255	1	#Mid	QAM16	20.92	37.00	PASS
LTE Band13	5	23255	1	#Max	QAM16	20.61	37.00	PASS
LTE Band13	5	23255	12	#0	QAM16	19.54	37.00	PASS
LTE Band13	5	23255	12	#Mid	QAM16	19.74	37.00	PASS
LTE Band13	5	23255	12	#Max	QAM16	19.70	37.00	PASS
LTE Band13	5	23255	25	#0	QAM16	19.77	37.00	PASS
LTE Band13	10	23230	1	#0	QPSK	21.85	37.00	PASS
LTE Band13	10	23230	1	#Mid	QPSK	21.95	37.00	PASS
LTE Band13	10	23230	1	#Max	QPSK	21.95	37.00	PASS
LTE Band13	10	23230	25	#0	QPSK	20.88	37.00	PASS
LTE Band13	10	23230	25	#Mid	QPSK	20.88	37.00	PASS
LTE Band13	10	23230	25	#Max	QPSK	20.87	37.00	PASS
LTE Band13	10	23230	50	#0	QPSK	20.84	37.00	PASS
LTE Band13	10	23230	1	#0	QAM16	21.05	37.00	PASS
LTE Band13	10	23230	1	#Mid	QAM16	21.30	37.00	PASS
LTE Band13	10	23230	1	#Max	QAM16	20.88	37.00	PASS
LTE Band13	10	23230	25	#0	QAM16	19.96	37.00	PASS
LTE Band13	10	23230	25	#Mid	QAM16	19.83	37.00	PASS
LTE Band13	10	23230	25	#Max	QAM16	19.87	37.00	PASS
LTE Band13	10	23230	50	#0	QAM16	19.76	37.00	PASS

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	high Limit (dBm)	Verdict
LTE Band17	5	23755	1	#0	QPSK	20.32	37	PASS
LTE Band17	5	23755	1	#Mid	QPSK	20.36	37	PASS
LTE Band17	5	23755	1	#Max	QPSK	20.30	37	PASS
LTE Band17	5	23755	12	#0	QPSK	19.36	37	PASS
LTE Band17	5	23755	12	#Mid	QPSK	19.38	37	PASS



LTE Band17	5	23755	12	#Max	QPSK	19.32	37	PASS
LTE Band17	5	23755	25	#0	QPSK	19.43	37	PASS
LTE Band17	5	23755	1	#0	QAM16	19.45	37	PASS
LTE Band17	5	23755	1	#Mid	QAM16	19.46	37	PASS
LTE Band17	5	23755	1	#Max	QAM16	19.45	37	PASS
LTE Band17	5	23755	12	#0	QAM16	18.21	37	PASS
LTE Band17	5	23755	12	#Mid	QAM16	18.22	37	PASS
LTE Band17	5	23755	12	#Max	QAM16	18.16	37	PASS
LTE Band17	5	23755	25	#0	QAM16	18.29	37	PASS
LTE Band17	5	23790	1	#0	QPSK	20.39	37	PASS
LTE Band17	5	23790	1	#Mid	QPSK	20.53	37	PASS
LTE Band17	5	23790	1	#Max	QPSK	20.45	37	PASS
LTE Band17	5	23790	12	#0	QPSK	19.41	37	PASS
LTE Band17	5	23790	12	#Mid	QPSK	19.40	37	PASS
LTE Band17	5	23790	12	#Max	QPSK	19.48	37	PASS
LTE Band17	5	23790	25	#0	QPSK	19.47	37	PASS
LTE Band17	5	23790	1	#0	QAM16	19.11	37	PASS
LTE Band17	5	23790	1	#Mid	QAM16	19.37	37	PASS
LTE Band17	5	23790	1	#Max	QAM16	19.34	37	PASS
LTE Band17	5	23790	12	#0	QAM16	18.34	37	PASS
LTE Band17	5	23790	12	#Mid	QAM16	18.34	37	PASS
LTE Band17	5	23790	12	#Max	QAM16	18.60	37	PASS
LTE Band17	5	23790	25	#0	QAM16	18.47	37	PASS
LTE Band17	5	23825	1	#0	QPSK	20.36	37	PASS
LTE Band17	5	23825	1	#Mid	QPSK	20.44	37	PASS
LTE Band17	5	23825	1	#Max	QPSK	20.36	37	PASS
LTE Band17	5	23825	12	#0	QPSK	19.44	37	PASS
LTE Band17	5	23825	12	#Mid	QPSK	19.38	37	PASS
LTE Band17	5	23825	12	#Max	QPSK	19.39	37	PASS
LTE Band17	5	23825	25	#0	QPSK	19.48	37	PASS
LTE Band17	5	23825	1	#0	QAM16	19.33	37	PASS
LTE Band17	5	23825	1	#Mid	QAM16	19.41	37	PASS
LTE Band17	5	23825	1	#Max	QAM16	18.89	37	PASS
LTE Band17	5	23825	12	#0	QAM16	18.44	37	PASS
LTE Band17	5	23825	12	#Mid	QAM16	18.44	37	PASS
LTE Band17	5	23825	12	#Max	QAM16	18.34	37	PASS
LTE Band17	5	23825	25	#0	QAM16	18.52	37	PASS
LTE Band17	10	23780	1	#0	QPSK	20.37	37	PASS
LTE Band17	10	23780	1	#Mid	QPSK	20.49	37	PASS
LTE Band17	10	23780	1	#Max	QPSK	20.64	37	PASS
LTE Band17	10	23780	25	#0	QPSK	19.41	37	PASS
LTE Band17	10	23780	25	#Mid	QPSK	19.40	37	PASS
LTE Band17	10	23780	25	#Max	QPSK	19.52	37	PASS



LTE Band17	10	23780	50	#0	QPSK	19.51	37	PASS
LTE Band17	10	23780	1	#0	QAM16	19.37	37	PASS
LTE Band17	10	23780	1	#Mid	QAM16	19.62	37	PASS
LTE Band17	10	23780	1	#Max	QAM16	19.57	37	PASS
LTE Band17	10	23780	25	#0	QAM16	18.46	37	PASS
LTE Band17	10	23780	25	#Mid	QAM16	18.46	37	PASS
LTE Band17	10	23780	25	#Max	QAM16	18.74	37	PASS
LTE Band17	10	23780	50	#0	QAM16	18.67	37	PASS
LTE Band17	10	23790	1	#0	QPSK	20.24	37	PASS
LTE Band17	10	23790	1	#Mid	QPSK	20.52	37	PASS
LTE Band17	10	23790	1	#Max	QPSK	20.48	37	PASS
LTE Band17	10	23790	25	#0	QPSK	19.44	37	PASS
LTE Band17	10	23790	25	#Mid	QPSK	19.43	37	PASS
LTE Band17	10	23790	25	#Max	QPSK	19.45	37	PASS
LTE Band17	10	23790	50	#0	QPSK	19.55	37	PASS
LTE Band17	10	23790	1	#0	QAM16	19.91	37	PASS
LTE Band17	10	23790	1	#Mid	QAM16	20.32	37	PASS
LTE Band17	10	23790	1	#Max	QAM16	19.99	37	PASS
LTE Band17	10	23790	25	#0	QAM16	18.58	37	PASS
LTE Band17	10	23790	25	#Mid	QAM16	18.59	37	PASS
LTE Band17	10	23790	25	#Max	QAM16	18.64	37	PASS
LTE Band17	10	23790	50	#0	QAM16	18.54	37	PASS
LTE Band17	10	23800	1	#0	QPSK	20.23	37	PASS
LTE Band17	10	23800	1	#Mid	QPSK	20.87	37	PASS
LTE Band17	10	23800	1	#Max	QPSK	20.47	37	PASS
LTE Band17	10	23800	25	#0	QPSK	19.43	37	PASS
LTE Band17	10	23800	25	#Mid	QPSK	19.48	37	PASS
LTE Band17	10	23800	25	#Max	QPSK	19.52	37	PASS
LTE Band17	10	23800	50	#0	QPSK	19.51	37	PASS
LTE Band17	10	23800	1	#0	QAM16	18.90	37	PASS
LTE Band17	10	23800	1	#Mid	QAM16	19.39	37	PASS
LTE Band17	10	23800	1	#Max	QAM16	18.85	37	PASS
LTE Band17	10	23800	25	#0	QAM16	18.31	37	PASS
LTE Band17	10	23800	25	#Mid	QAM16	18.30	37	PASS
LTE Band17	10	23800	25	#Max	QAM16	18.80	37	PASS
LTE Band17	10	23800	50	#0	QAM16	18.49	37	PASS

## 5.2 Radiates Spurious Emission

### Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

### Method of Measurement

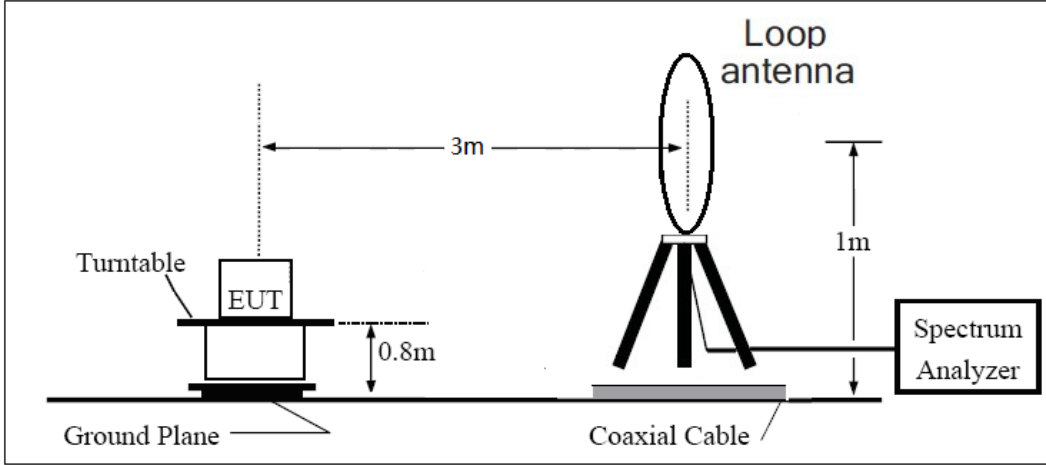
- The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26 (2015).
- Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
- A loop antenna, A log-periodic antenna or horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
- The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=200Hz,VBW=600Hz for 9kHz150kHz , RBW=10kHz, VBW=30kHz 150kHz-30MHz ,RBW=100kHz,VBW=300kHz for 30MHz to 1GHz and RBW=1MHz, VBW=3MHz for above 1GHz And the maximum value of the receiver should be recorded as (Pr).
- The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
- A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAG) should be recorded after test.
- The measurement results are obtained as described below:  
 $Power(EIRP)=PMea- PAg - Pcl + Ga$   
 The measurement results are amend as described below:  
 $Power(EIRP)=PMea- Pcl + Ga$
- This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP

= EIRP-2.15dBi.

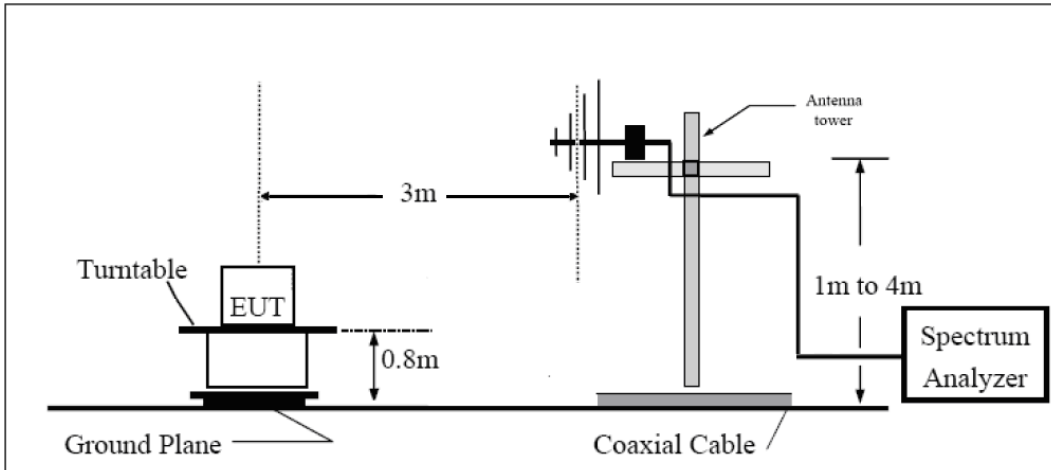
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

**Test setup**

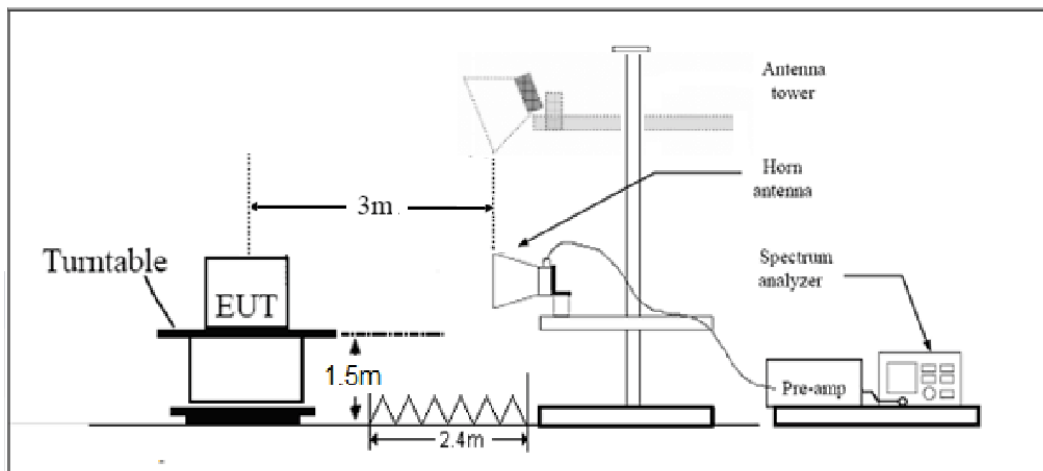
**9KHz ~ 30MHz**



**30MHz ~ 1GHz**



**Above 1GHz**



Note: Area side:2.4mX3.6m



**Limits**

LTE -4 Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10} (P)$  dB.”

LTE -12 Rule Part 27.53 (g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log (P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

LTE -13 Rule Part 27.53(f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to  $-70$  dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and  $-80$  dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

LTE -7 Rule Part 27.53(m)  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.

LTE 13- Part 27.53 (c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log (P)$  dB;
- (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log (P)$  dB;
- (3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than  $76 + 10 \log (P)$  dB in a 6.25 kHz band segment, for base and fixed stations;
- (4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than  $65 + 10 \log (P)$  dB in a 6.25 kHz band segment, for mobile and portable stations;
- (5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

Part 27.53(a)/(h)/(g) Limit	-13 dBm
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Part 27.53(f) Limit	Limit out of the band 1559-1610 MHz	-13 dBm
	Limit in the band 1559-1610 MHz	-40 dBm
Part 27.53(m) Limit		-25 dBm

### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = \pm 1.96$ ,  $U = \pm 3.55$  dB.



**Test Result**

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions below the noise floor will not be recorded in the report.

WCDMA Band IV CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.2	-62.10	2.6	10.75	Horizontal	-53.95	-13.00	40.95	180
3	5197.8	-55.45	2.4	11.05	Horizontal	-46.80	-13.00	33.80	135
4	6930.4	-58.53	4.5	11.15	Horizontal	-51.88	-13.00	38.88	90
5	8663.0	-53.65	5.1	11.35	Horizontal	-47.40	-13.00	34.40	45
6	10395.6	-50.75	5.3	11.95	Horizontal	-44.10	-13.00	31.10	45
7	12128.2	-52.15	5.5	13.55	Horizontal	-44.10	-13.00	31.10	0
8	13860.8	-49.65	6.3	13.75	Horizontal	-42.20	-13.00	29.20	90
9	15593.4	-50.25	6.7	13.85	Horizontal	-43.10	-13.00	30.10	225
10	17326.0	-46.41	6.8	14.25	Horizontal	-38.96	-13.00	25.96	135

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.  
2. The worst emission was found in the antenna is Horizontal position.

LTE Band 4 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3464.3	-61.75	2.6	10.75	Horizontal	-53.60	-13.00	40.60	135
3	5197.5	-52.25	2.4	11.05	Horizontal	-43.60	-13.00	30.60	315
4	6930.0	-55.25	4.5	11.15	Horizontal	-48.60	-13.00	35.60	90
5	8662.5	-53.75	5.1	11.35	Horizontal	-47.50	-13.00	34.50	45
6	10395.0	-50.35	5.3	11.95	Horizontal	-43.70	-13.00	30.70	90
7	12127.5	-51.35	5.5	13.55	Horizontal	-43.30	-13.00	30.30	315
8	13860.0	-49.85	6.3	13.75	Horizontal	-42.40	-13.00	29.40	270
9	15592.5	-47.35	6.7	13.85	Horizontal	-40.20	-13.00	27.20	225
10	17325.0	-45.25	6.8	14.25	Horizontal	-37.80	-13.00	24.80	135

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.  
2. The worst emission was found in the antenna is Horizontal position.



## LTE Band 4 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3460.5	-61.65	2.6	10.75	Horizontal	-53.50	-13.00	40.50	315
3	5191.5	-52.25	2.4	11.05	Horizontal	-43.60	-13.00	30.60	270
4	6930.0	-55.25	4.5	11.15	Horizontal	-48.60	-13.00	35.60	180
5	8662.5	-53.65	5.1	11.35	Horizontal	-47.40	-13.00	34.40	90
6	10395.0	-50.75	5.3	11.95	Horizontal	-44.10	-13.00	31.10	45
7	12127.5	-51.55	5.5	13.55	Horizontal	-43.50	-13.00	30.50	90
8	13860.0	-49.85	6.3	13.75	Horizontal	-42.40	-13.00	29.40	315
9	15592.5	-51.85	6.7	13.85	Horizontal	-44.70	-13.00	31.70	225
10	17325.0	-44.95	6.8	14.25	Horizontal	-37.50	-13.00	24.50	90

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

## LTE Band 4 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.0	-60.85	2.6	10.75	Horizontal	-52.70	-13.00	39.70	135
3	5170.9	-52.85	2.4	11.05	Horizontal	-44.20	-13.00	31.20	270
4	6930.0	-53.85	4.5	11.15	Horizontal	-47.20	-13.00	34.20	225
5	8662.5	-53.65	5.1	11.35	Horizontal	-47.40	-13.00	34.40	180
6	10395.0	-50.25	5.3	11.95	Horizontal	-43.60	-13.00	30.60	45
7	12127.5	-51.75	5.5	13.55	Horizontal	-43.70	-13.00	30.70	90
8	13860.0	-50.44	6.3	13.75	Horizontal	-42.99	-13.00	29.99	315
9	15592.5	-51.21	6.7	13.85	Horizontal	-44.06	-13.00	31.06	225
10	17325.0	-45.55	6.8	14.25	Horizontal	-38.10	-13.00	25.10	90

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



## LTE Band 7 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5065.8	-53.35	2.00	9.15	Horizontal	-46.20	-25.00	21.20	135
3	7598.6	-57.25	2.50	11.35	Horizontal	-48.40	-25.00	23.40	45
4	10130.6	-55.15	4.20	12.05	Horizontal	-47.30	-25.00	22.30	180
5	12675.0	-50.65	5.20	12.85	Horizontal	-43.00	-25.00	18.00	270
6	15210.0	-52.03	5.50	14.23	Horizontal	-43.30	-25.00	18.30	225
7	17745.0	-47.25	5.70	14.15	Horizontal	-38.80	-25.00	13.80	90
8	20280.0	--	--	--	--	--	--	--	--
9	22815.0	--	--	--	--	--	--	--	--
10	25350.0	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.  
2. The worst emission was found in the antenna is Horizontal position.

## LTE Band 7 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5052.4	-54.14	2.00	10.15	Horizontal	-45.99	-25.00	20.99	45
3	7605.0	-58.16	2.50	11.35	Horizontal	-49.31	-25.00	24.31	90
4	10140.0	-53.95	4.20	12.05	Horizontal	-46.10	-25.00	21.10	315
5	12675.0	-53.85	5.20	14.85	Horizontal	-44.20	-25.00	19.20	0
6	15210.0	-50.53	5.50	13.23	Horizontal	-42.80	-25.00	17.80	90
7	17745.0	-45.15	5.70	12.15	Horizontal	-38.70	-25.00	13.70	135
8	20280.0	--	--	--	--	--	--	--	--
9	22815.0	--	--	--	--	--	--	--	--
10	25350.0	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.  
2. The worst emission was found in the antenna is Horizontal position.



## LTE Band 12 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1415.0	-72.30	2.00	10.75	Horizontal	-65.70	-13.00	52.70	315
3	2122.5	-57.41	2.51	11.05	Horizontal	-51.02	-13.00	38.02	135
4	2830.0	-37.97	4.20	11.15	Horizontal	-33.17	-13.00	20.17	90
5	3537.5	-32.20	5.20	11.15	Horizontal	-28.40	-13.00	15.40	45
6	4245.0	-49.81	5.50	11.95	Horizontal	-45.51	-13.00	32.51	135
7	4952.5	-42.07	5.70	13.55	Horizontal	-36.37	-13.00	23.37	315
8	5660.0	-52.84	6.30	13.75	Horizontal	-47.54	-13.00	34.54	0
9	6367.5	-56.34	6.80	13.85	Horizontal	-51.44	-13.00	38.44	180
10	7075.0	-57.24	6.90	14.25	Horizontal	-52.04	-13.00	39.04	90

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.  
2. The worst emission was found in the antenna is Horizontal position.

## LTE Band 12 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1415.0	-70.35	2.00	10.75	Horizontal	-63.75	-13.00	50.75	45
3	2122.5	-58.95	2.51	11.05	Horizontal	-52.56	-13.00	39.56	45
4	2830.0	-39.57	4.20	11.15	Horizontal	-34.77	-13.00	21.77	0
5	3537.5	-32.45	5.20	11.15	Horizontal	-28.65	-13.00	15.65	45
6	4245.0	-49.23	5.50	11.95	Horizontal	-44.93	-13.00	31.93	315
7	4952.5	-41.40	5.70	13.55	Horizontal	-35.70	-13.00	22.70	90
8	5660.0	-55.86	6.30	13.75	Horizontal	-50.56	-13.00	37.56	135
9	6367.5	-55.71	6.80	13.85	Horizontal	-50.81	-13.00	37.81	45
10	7075.0	-57.50	6.90	14.25	Horizontal	-52.30	-13.00	39.30	0

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.  
2. The worst emission was found in the antenna is Horizontal position.



## LTE Band 12 QPSK 10MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1415.0	-74.50	2.00	10.75	Horizontal	-67.90	-13.00	54.90	315
3	2122.5	-58.94	2.51	11.05	Horizontal	-52.55	-13.00	39.55	135
4	2830.0	-41.30	4.20	11.15	Horizontal	-36.50	-13.00	23.50	90
5	3537.5	-34.89	5.20	11.15	Horizontal	-31.09	-13.00	18.09	90
6	4245.0	-50.91	5.50	11.95	Horizontal	-46.61	-13.00	33.61	315
7	4952.5	-43.80	5.70	13.55	Horizontal	-38.10	-13.00	25.10	270
8	5660.0	-54.50	6.30	13.75	Horizontal	-49.20	-13.00	36.20	225
9	6367.5	-56.65	6.80	13.85	Horizontal	-51.75	-13.00	38.75	135
10	7075.0	-57.12	6.90	14.25	Horizontal	-51.92	-13.00	38.92	90

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

## LTE Band 13 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1564.0	-58.24	2.00	10.75	Horizontal	-56.89	-40.00	16.89	45
Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
3	2346.0	-57.34	2.51	11.05	Horizontal	-53.62	-13.00	40.62	135
4	3128.0	-51.65	4.20	11.15	Horizontal	-53.97	-13.00	40.97	90
5	3910.0	-54.02	5.20	11.15	Horizontal	-52.28	-13.00	39.28	315
6	4692.0	-50.98	5.50	11.95	Horizontal	-50.33	-13.00	37.33	315
7	5474.0	-53.02	5.70	13.55	Horizontal	-49.03	-13.00	36.03	45
8	6256.0	-53.25	6.30	13.75	Horizontal	-50.79	-13.00	37.79	0
9	7038.0	-51.55	6.80	13.85	Horizontal	-51.74	-13.00	38.74	135
10	7820.0	-51.88	6.90	14.25	Horizontal	-48.81	-13.00	35.81	90

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



## LTE Band 13 QPSK 10MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1555.3	-63.53	2.00	10.75	Horizontal	-56.93	-13.00	43.93	180
3	2346.0	-58.52	2.51	11.05	Horizontal	-52.13	-13.00	39.13	0
4	3128.0	-59.37	4.20	11.15	Horizontal	-54.57	-13.00	41.57	90
5	3910.0	-55.83	5.20	11.15	Horizontal	-52.03	-13.00	39.03	0
6	4692.0	-54.16	5.50	11.95	Horizontal	-49.86	-13.00	36.86	45
7	5474.0	-55.49	5.70	13.55	Horizontal	-49.79	-13.00	36.79	315
8	6256.0	-56.56	6.30	13.75	Horizontal	-51.26	-13.00	38.26	135
9	7038.0	-56.71	6.80	13.85	Horizontal	-51.81	-13.00	38.81	90
10	7820.0	-54.44	6.90	14.25	Horizontal	-49.24	-13.00	36.24	45

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.  
2. The worst emission was found in the antenna is Horizontal position.

## LTE Band 17 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1420.0	-68.20	2.00	10.75	Horizontal	-61.60	-13.00	48.60	90
3	2130.0	-56.55	2.51	11.05	Horizontal	-50.16	-13.00	37.16	45
4	2840.0	-38.48	4.20	11.15	Horizontal	-33.68	-13.00	20.68	315
5	3550.0	-32.60	5.20	11.15	Horizontal	-28.80	-13.00	15.80	270
6	4260.0	-50.07	5.50	11.95	Horizontal	-45.77	-13.00	32.77	135
7	4970.0	-42.83	5.70	13.55	Horizontal	-37.13	-13.00	24.13	45
8	5680.0	-55.11	6.30	13.75	Horizontal	-49.81	-13.00	36.81	135
9	6390.0	-56.41	6.80	13.85	Horizontal	-51.51	-13.00	38.51	90
10	7100.0	-57.28	6.90	14.25	Horizontal	-52.08	-13.00	39.08	135

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.  
2. The worst emission was found in the antenna is Horizontal position.



LTE Band 17 QPSK 10MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1420.0	-70.54	2.00	10.75	Horizontal	-63.94	-13.00	50.94	0
3	2130.0	-60.59	2.51	11.05	Horizontal	-54.20	-13.00	41.20	180
4	2840.0	-39.21	4.20	11.15	Horizontal	-34.41	-13.00	21.41	45
5	3550.0	-32.75	5.20	11.15	Horizontal	-28.95	-13.00	15.95	315
6	4260.0	-50.78	5.50	11.95	Horizontal	-46.48	-13.00	33.48	45
7	4970.0	-41.51	5.70	13.55	Horizontal	-35.81	-13.00	22.81	180
8	5680.0	-55.52	6.30	13.75	Horizontal	-50.22	-13.00	37.22	0
9	6390.0	-56.54	6.80	13.85	Horizontal	-51.64	-13.00	38.64	135
10	7100.0	-57.58	6.90	14.25	Horizontal	-52.38	-13.00	39.38	90

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



## 6 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMW500	113824	2019-05-19	2020-05-18
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	/	/
Spectrum Analyzer	Key sight	N9010A	MY50210259	2019-05-19	2020-05-18
Signal Analyzer	R&S	FSV30	100815	2018-12-16	2019-12-15
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2017-09-26	2020-09-25
Trilog Antenna	SCHWARZBECK	VUBL 9163	9163-201	2017-11-18	2020-11-17
Horn Antenna	R&S	HF907	100126	2018-07-07	2020-07-06
Horn Antenna	ETS-Lindgren	3160-09	00102643	2018-06-20	2020-06-19
Horn Antenna	STEATITE	QSH-SL-26-40-K-15	16779	2017-07-20	2020-07-19
Signal generator	R&S	SMB 100A	102594	2019-05-19	2020-05-18
Climatic Chamber	ESPEC	SU-242	93000506	2017-12-17	2020-12-16
Preamplifier	R&S	SCU18	102327	2019-05-19	2020-05-18
MOB COMMS DC SUPPLY	Keysight	66319D	MY43004105	2019-05-19	2020-05-18
RF Cable	Agilent	SMA 15cm	0001	2019-12-13	2020-6-12
Software	R&S	EMC32	9.26.0	/	/

\*\*\*\*\*END OF REPORT \*\*\*\*\*