



## 11 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Test Requirement:	FCC Part 2.1051, 22.917(a), 24.238(a), 27.53(h), 27.53(m)(4)
Test Method:	TIA/EIA-603-D:2010 KDB971168 D01 v02r02
Test Mode:	TX transmitting

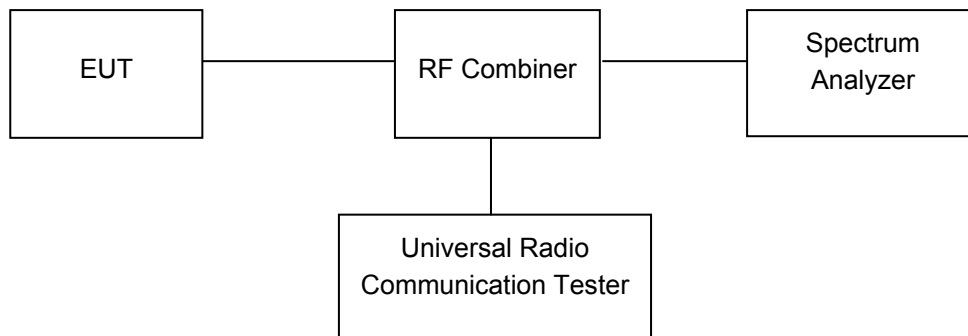
### 11.1 EUT Operation

Operating Environment :

Temperature:	23.5 °C
Humidity:	52.1 % RH
Atmospheric Pressure:	101.3kPa

### 11.2 Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonics.



### 11.3 Test Result

PASS

#### LTE Band

Please refer to the Appendix Band 2/4/5/7/17/41 LTE Transmitter Spurious Emissions.

## 12 SPURIOUS RADIATED EMISSIONS

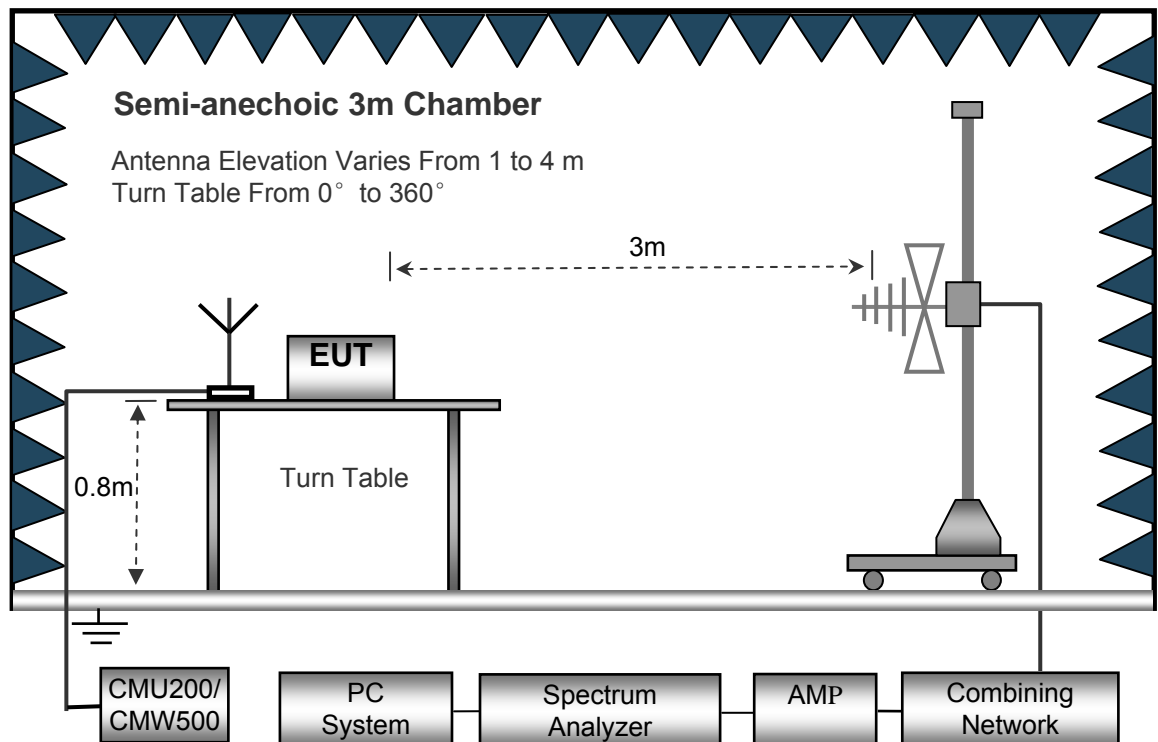
Test Requirement:	FCC Part 2.1053, 22.917, 24.238, 27.53(h), 27.53(m)(4)
Test Method:	TIA/EIA-603-D:2010 KDB971168 D01 v02r02
Test Mode:	TX transmitting

### 12.1 EUT Operation

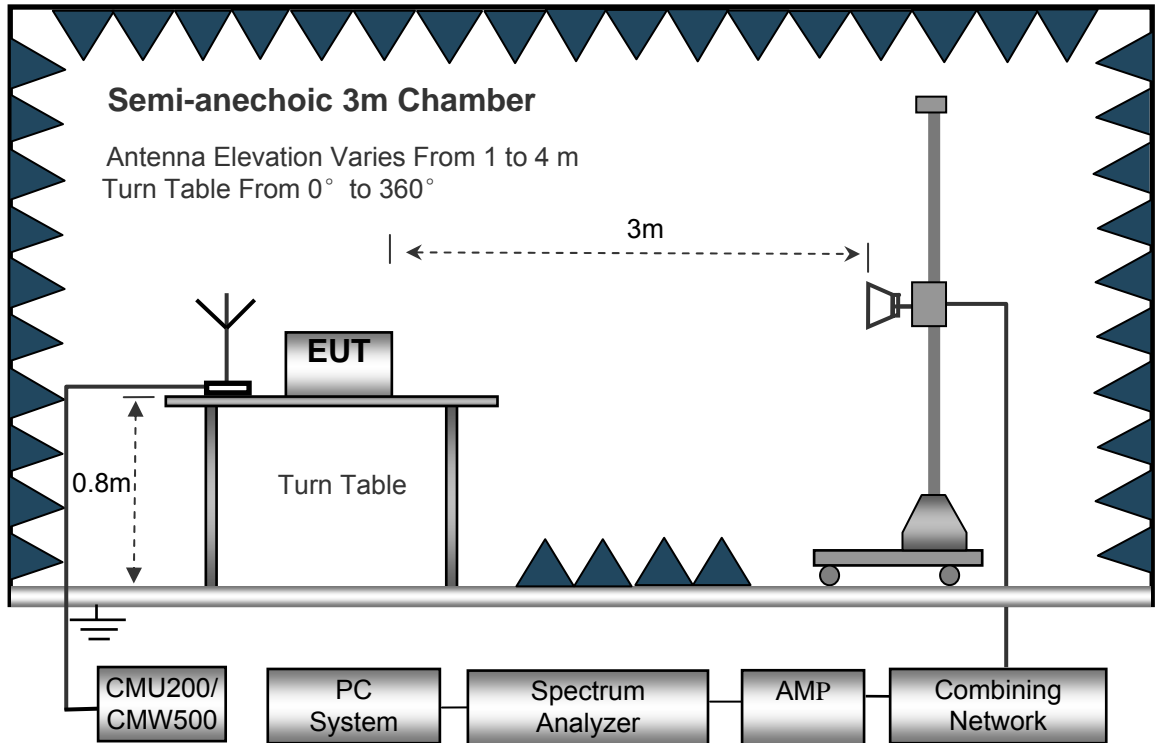
Operating Environment :	
Temperature:	23.5 °C
Humidity:	52.1 % RH
Atmospheric Pressure:	101.2kPa

### 12.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site. The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



### 12.3 Spectrum Analyzer Setup

30MHz ~ 1GHz

Sweep Speed ..... Auto  
 Detector ..... PK  
 Resolution Bandwidth..... 100kHz  
 Video Bandwidth..... 300kHz

Above 1GHz

Sweep Speed ..... Auto  
 Detector ..... PK  
 Resolution Bandwidth..... 1MHz  
 Video Bandwidth..... 3MHz  
 Detector ..... Ave.  
 Resolution Bandwidth..... 1MHz  
 Video Bandwidth..... 10Hz

## 12.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from 30MHz up to the tenth harmonic of the highest fundamental frequency.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the Z position. So the data shown was the Z position only.
7. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB =  $10 \lg (\text{TXpwr in Watts}/0.001)$  – the absolute level

Spurious attenuation limit in dB =  $43 + 10 \text{Log}_{10} (\text{power out in Watts})$

8. Repeat above procedures until the measurements for all frequencies are completed.

## 12.5 Summary of Test Results

Remark: Test performed from 30MHz to 10<sup>th</sup> harmonics with low/middle/high channels, only the worst data were recorded.

### LTE Band 2

Frequency	Receiver Reading	Turn table Angle	RX Antenna		Substituted			Absolute Level	Result	
			Height	Polar	SG Level	Cable	Antenna Gain		Limit	Margin
(MHz)	(dBμV)	Degree	(m)	(H/V)	(dBm)	(dB)	(dB)	(dBm)	(dBm)	(dB)
LTE BAND 2 Channel 18607										
199.38	46.13	25	1.6	H	-64.38	0.15	0.00	-64.53	-13.00	-51.53
199.38	38.39	217	1.0	V	-69.20	0.15	0.00	-69.35	-13.00	-56.35
3701.40	65.95	66	1.8	H	-45.59	2.37	12.50	-35.46	-13.00	-22.46
3701.40	59.98	3	1.8	V	-49.83	2.37	12.50	-39.70	-13.00	-26.70
5552.10	53.58	358	1.2	H	-56.03	2.86	12.90	-45.99	-13.00	-32.99
5552.10	44.73	88	2.0	V	-64.15	2.86	12.90	-54.11	-13.00	-41.11
LTE BAND 2 Channel 18900										
199.38	45.32	274	1.5	H	-65.19	0.15	0.00	-65.34	-13.00	-52.34
199.38	38.01	127	1.8	V	-69.58	0.15	0.00	-69.73	-13.00	-56.73
3760.00	58.76	262	1.7	H	-52.78	2.37	12.50	-42.65	-13.00	-29.65
3760.00	53.38	130	2.0	V	-56.43	2.37	12.50	-46.30	-13.00	-33.30
5640.00	46.77	269	1.8	H	-62.84	2.86	12.90	-52.80	-13.00	-39.80
5640.00	37.34	330	1.7	V	-71.54	2.86	12.90	-61.50	-13.00	-48.50
LTE BAND 2 Channel 19193										
199.38	44.59	293	1.9	H	-65.92	0.15	0.00	-66.07	-13.00	-53.07
199.38	37.82	267	1.3	V	-69.77	0.15	0.00	-69.92	-13.00	-56.92
3818.60	52.76	108	1.1	H	-58.09	2.37	12.60	-47.86	-13.00	-34.86
3818.60	46.79	276	1.3	V	-62.52	2.37	12.60	-52.29	-13.00	-39.29
5727.90	40.32	41	1.5	H	-69.03	2.86	12.90	-58.99	-13.00	-45.99
5727.90	30.31	105	2.2	V	-78.19	2.86	12.90	-68.15	-13.00	-55.15



## LTE Band 4

Frequency	Receiver Reading	Turn table Angle	RX Antenna		Substituted			Absolute Level	Result	
			Height	Polar	SG Level	Cable	Antenna Gain		Limit	Margin
(MHz)	(dBμV)	Degree	(m)	(H/V)	(dBm)	(dB)	(dB)	(dBm)	(dBm)	(dB)
LTE BAND 4 Channel 19957										
199.38	39.87	217	1.6	H	-70.64	0.15	0.00	-70.79	-13.00	-57.79
199.38	30.86	47	1.5	V	-76.73	0.15	0.00	-76.88	-13.00	-63.88
3421.40	65.95	232	2.2	H	-47.10	2.34	12.40	-37.04	-13.00	-24.04
3421.40	59.98	48	1.7	V	-51.17	2.34	12.40	-41.11	-13.00	-28.11
5132.10	53.58	29	1.5	H	-55.83	2.79	12.70	-45.92	-13.00	-32.92
5132.10	44.73	262	1.9	V	-64.04	2.79	12.70	-54.13	-13.00	-41.13
LTE BAND 4 Channel 20175										
199.38	40.60	203	1.8	H	-69.91	0.15	0.00	-70.06	-13.00	-57.06
199.38	30.15	256	1.2	V	-77.44	0.15	0.00	-77.59	-13.00	-64.59
3465.00	58.29	228	2.2	H	-54.76	2.37	12.50	-44.63	-13.00	-31.63
3465.00	53.44	109	1.4	V	-57.71	2.37	12.50	-47.58	-13.00	-34.58
5197.50	45.79	347	1.4	H	-63.62	2.79	12.70	-53.71	-13.00	-40.71
5197.50	38.69	315	1.9	V	-70.08	2.79	12.70	-60.17	-13.00	-47.17
LTE BAND 4 Channel 20393										
199.38	40.15	241	1.6	H	-70.36	0.15	0.00	-70.51	-13.00	-57.51
199.38	29.76	302	2.1	V	-77.83	0.15	0.00	-77.98	-13.00	-64.98
3508.60	51.82	184	2.2	H	-60.82	2.37	12.50	-50.69	-13.00	-37.69
3508.60	45.89	227	1.3	V	-64.84	2.37	12.50	-54.71	-13.00	-41.71
5262.90	37.84	313	2.1	H	-71.74	2.81	12.80	-61.75	-13.00	-48.75
5262.90	31.78	296	1.3	V	-77.02	2.81	12.80	-67.03	-13.00	-54.03

**LTE Band 5**

Frequency	Receiver Reading	Turn table Angle	RX Antenna		Substituted			Absolute Level	Result	
			Height	Polar	SG Level	Cable	Antenna Gain		Limit	Margin
(MHz)	(dBμV)	Degree	(m)	(H/V)	(dBm)	(dB)	(dB)	(dBm)	(dBm)	(dB)
<b>LTE BAND 5 Channel 20407</b>										
199.38	38.38	64	1.3	H	-72.13	0.15	0.00	-72.28	-13.00	-59.28
199.38	32.25	154	1.3	V	-75.34	0.15	0.00	-75.49	-13.00	-62.49
1649.40	65.95	23	1.1	H	-47.10	2.34	12.40	-37.04	-13.00	-24.04
1649.40	59.98	160	1.5	V	-51.17	2.34	12.40	-41.11	-13.00	-28.11
2474.10	53.58	274	1.6	H	-55.83	2.79	12.70	-45.92	-13.00	-32.92
2474.10	44.73	13	1.0	V	-64.04	2.79	12.70	-54.13	-13.00	-41.13
<b>LTE BAND 5 Channel 20525</b>										
199.38	38.52	4	1.3	H	-71.99	0.15	0.00	-72.14	-13.00	-59.14
199.38	32.11	59	1.4	V	-75.48	0.15	0.00	-75.63	-13.00	-62.63
1673.00	59.28	20	1.3	H	-53.77	2.37	12.50	-43.64	-13.00	-30.64
1673.00	52.54	150	1.7	V	-58.61	2.37	12.50	-48.48	-13.00	-35.48
2509.50	46.83	120	1.6	H	-62.58	2.79	12.70	-52.67	-13.00	-39.67
2509.50	37.09	143	2.1	V	-71.68	2.79	12.70	-61.77	-13.00	-48.77
<b>LTE BAND 5 Channel 20643</b>										
199.38	37.53	31	1.5	H	-72.98	0.15	0.00	-73.13	-13.00	-60.13
199.38	32.50	100	2.0	V	-75.09	0.15	0.00	-75.24	-13.00	-62.24
1696.60	51.76	39	1.2	H	-60.88	2.37	12.50	-50.75	-13.00	-37.75
1696.60	45.82	20	2.0	V	-64.91	2.37	12.50	-54.78	-13.00	-41.78
2544.90	40.35	178	1.5	H	-69.23	2.81	12.80	-59.24	-13.00	-46.24
2544.90	31.00	228	1.9	V	-77.80	2.81	12.80	-67.81	-13.00	-54.81

## LTE Band 7

Frequency	Receiver Reading	Turn table Angle	RX Antenna		Substituted			Absolute Level	Result	
			Height	Polar	SG Level	Cable	Antenna Gain		Limit	Margin
(MHz)	(dBμV)	Degree	(m)	(H/V)	(dBm)	(dB)	(dB)	(dBm)	(dBm)	(dB)
LTE BAND 7 Channel 20775										
199.38	38.06	100	1.3	H	-72.45	0.15	0.00	-72.60	-25.00	-47.60
199.38	32.46	151	1.7	V	-75.13	0.15	0.00	-75.28	-25.00	-50.28
5005.00	65.95	218	2.1	H	-43.29	2.79	12.70	-33.38	-25.00	-8.38
5005.00	59.98	252	1.1	V	-48.79	2.79	12.70	-38.88	-25.00	-13.88
7507.50	53.58	320	1.0	H	-52.96	3.12	11.50	-44.58	-25.00	-19.58
7507.50	44.73	338	1.3	V	-60.70	3.12	11.50	-52.32	-25.00	-27.32
LTE BAND 7 Channel 21100										
199.38	37.49	107	2.1	H	-73.02	0.15	0.00	-73.17	-25.00	-48.17
199.38	31.91	123	1.8	V	-75.68	0.15	0.00	-75.83	-25.00	-50.83
5070.00	59.87	15	1.1	H	-49.37	2.37	12.50	-39.24	-25.00	-14.24
5070.00	52.07	171	1.5	V	-56.70	2.37	12.50	-46.57	-25.00	-21.57
7605.00	47.45	210	1.2	H	-59.09	3.12	11.50	-50.71	-25.00	-25.71
7605.00	37.64	240	1.9	V	-67.79	3.12	11.50	-59.41	-25.00	-34.41
LTE BAND 7 Channel 21425										
199.38	36.62	330	1.2	H	-73.89	0.15	0.00	-74.04	-25.00	-49.04
199.38	31.34	204	1.7	V	-76.25	0.15	0.00	-76.40	-25.00	-51.40
5135.00	52.12	13	1.9	H	-57.29	2.37	12.50	-47.16	-25.00	-22.16
5135.00	44.86	351	1.4	V	-63.91	2.37	12.50	-53.78	-25.00	-28.78
7702.50	40.67	47	1.6	H	-64.56	3.12	11.50	-56.18	-25.00	-31.18
7702.50	31.28	134	1.1	V	-73.61	3.12	11.50	-65.23	-25.00	-40.23

## LTE Band 17

Frequency	Receiver Reading	Turn table Angle	RX Antenna		Substituted			Absolute Level	Result	
			Height	Polar	SG Level	Cable	Antenna Gain		Limit	Margin
(MHz)	(dBμV)	Degree	(m)	(H/V)	(dBm)	(dB)	(dB)	(dBm)	(dBm)	(dB)
LTE BAND 17 Channel 23755										
199.38	40.97	252	1.8	H	-69.54	0.15	0.00	-69.69	-13.00	-56.69
199.38	30.62	49	1.5	V	-76.97	0.15	0.00	-77.12	-13.00	-64.12
1413.00	65.95	266	1.1	H	-44.29	2.79	12.70	-34.38	-13.00	-21.38
1413.00	59.98	321	1.2	V	-51.79	2.79	12.70	-41.88	-13.00	-28.88
2119.50	53.58	299	2.2	H	-58.96	3.12	11.50	-50.58	-13.00	-37.58
2119.50	44.73	188	2.2	V	-68.70	3.12	11.50	-60.32	-13.00	-47.32
LTE BAND 17 Channel 23790										
199.38	41.18	158	1.3	H	-69.33	0.15	0.00	-69.48	-13.00	-56.48
199.38	31.39	121	1.5	V	-76.20	0.15	0.00	-76.35	-13.00	-63.35
1420.00	58.70	193	1.6	H	-51.54	2.37	12.50	-41.41	-13.00	-28.41
1420.00	52.39	110	2.1	V	-59.38	2.37	12.50	-49.25	-13.00	-36.25
2130.00	47.35	173	1.8	H	-65.19	3.12	11.50	-56.81	-13.00	-43.81
2130.00	37.08	85	1.4	V	-76.35	3.12	11.50	-67.97	-13.00	-54.97
LTE BAND 17 Channel 23825										
199.38	41.90	81	1.4	H	-68.61	0.15	0.00	-68.76	-13.00	-55.76
199.38	30.96	192	1.7	V	-76.63	0.15	0.00	-76.78	-13.00	-63.78
1427.00	51.07	190	1.0	H	-59.17	2.37	12.50	-49.04	-13.00	-36.04
1427.00	45.10	296	1.4	V	-66.67	2.37	12.50	-56.54	-13.00	-43.54
2140.50	39.54	150	1.9	H	-73.00	3.12	11.50	-64.62	-13.00	-51.62
2140.50	31.03	253	1.2	V	-82.40	3.12	11.50	-74.02	-13.00	-61.02

## LTE Band 41

Frequency	Receiver Reading	Turn table Angle	RX Antenna		Substituted			Absolute Level	Result	
			Height	Polar	SG Level	Cable	Antenna Gain		Limit	Margin
(MHz)	(dBμV)	Degree	(m)	(H/V)	(dBm)	(dB)	(dB)	(dBm)	(dBm)	(dB)
LTE BAND 41 Channel 39675										
199.38	41.16	25	2.1	H	-69.35	0.15	0.00	-69.50	-13.00	-56.50
199.38	32.01	306	1.9	V	-75.58	0.15	0.00	-75.73	-13.00	-62.73
5010.00	65.95	98	1.8	H	-43.29	2.79	12.70	-33.38	-13.00	-20.38
5010.00	59.98	105	1.1	V	-48.79	2.79	12.70	-38.88	-13.00	-25.88
7515.00	53.58	176	2.0	H	-52.96	3.12	11.50	-44.58	-13.00	-31.58
7515.00	44.73	37	1.6	V	-60.70	3.12	11.50	-52.32	-13.00	-39.32
LTE BAND 41 Channel 40620										
199.38	41.80	61	2.1	H	-68.71	0.15	0.00	-68.86	-13.00	-55.86
199.38	31.79	143	1.2	V	-75.80	0.15	0.00	-75.95	-13.00	-62.95
5070.00	58.26	42	1.2	H	-50.98	2.37	12.50	-40.85	-13.00	-27.85
5070.00	52.37	60	1.6	V	-56.40	2.37	12.50	-46.27	-13.00	-33.27
7605.00	47.49	170	1.1	H	-59.05	3.12	11.50	-50.67	-13.00	-37.67
7605.00	37.22	336	2.1	V	-68.21	3.12	11.50	-59.83	-13.00	-46.83
LTE BAND 41 Channel 41565										
199.38	41.99	66	1.4	H	-68.52	0.15	0.00	-68.67	-13.00	-55.67
199.38	31.35	339	2.1	V	-76.24	0.15	0.00	-76.39	-13.00	-63.39
5135.00	50.95	294	1.5	H	-58.46	2.37	12.50	-48.33	-13.00	-35.33
5135.00	45.87	155	1.6	V	-62.90	2.37	12.50	-52.77	-13.00	-39.77
7702.50	41.00	80	1.6	H	-64.23	3.12	11.50	-55.85	-13.00	-42.85
7702.50	31.14	131	1.6	V	-73.75	3.12	11.50	-65.37	-13.00	-52.37

Note: 1) Absolute Level = SG Level - Cable loss + Antenna Gain

2) Margin = Absolute Level - Limit

## 13 Band Edge Measurement

Test Requirement:	FCC Part 2.1051, 22.917(a), 24.238(a), 27.53(h), 27.53(m)(4)
Test Method:	TIA/EIA-603-D:2010 KDB971168 D01 v02r02
Test Mode:	TX transmitting

### 13.1 EUT Operation

Operating Environment :

Temperature:	23.5 °C
Humidity:	52.3 % RH
Atmospheric Pressure:	101.3kPa

### 13.2 Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

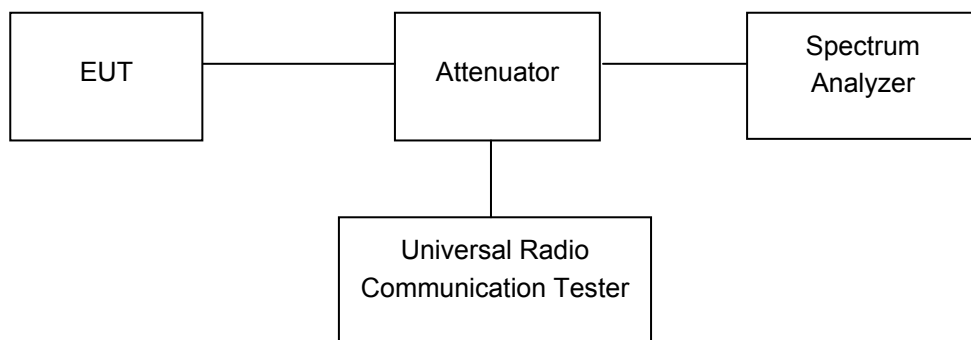
According to FCC Part 22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the TX transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

According to FCC Part 24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the TX transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

According to FCC Part 27.53(h), Except as otherwise specified below, 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.

According to FCC Part 27.53(m)(4), For mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log(P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log(P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log(P)$  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)(6) of this section. In addition, the attenuation factor shall not be less than  $43 + 10 \log(P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log(P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

The center of the spectrum analyzer was set to block edge frequency  
Waltek Services (Shenzhen) Co.,Ltd.  
<http://www.waltek.com.cn>



### 13.3 Test Result

PASS

#### LTE Band

Please refer to the Appendix Band 2/4/5/7/17/41 LTE Band Edge.

## 14 FREQUENCY STABILITY

Test Requirement:	FCC Part 2.1055, 22.355, 24.235, 27.5(h),27.54
Test Method:	TIA/EIA-603-D:2010 KDB971168 D01 v02r02
Test Mode:	TX transmitting

### 14.1 EUT Operation

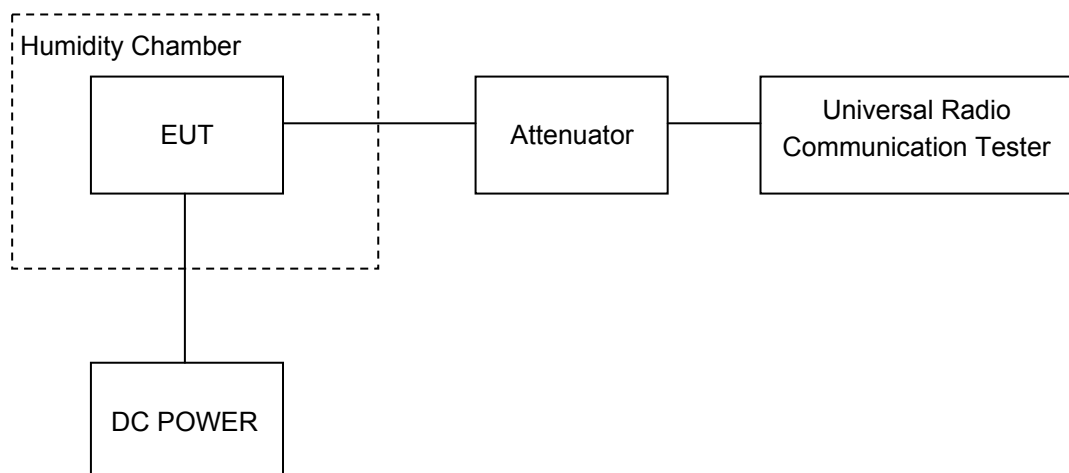
Operating Environment :	
Temperature:	22.9 °C
Humidity:	52.0 % RH
Atmospheric Pressure:	101.3kPa

### 14.2 Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to communication test set via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the communication test set.

Frequency Stability vs. Voltage: For hand carried, battery powered equipment; reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.





### 14.3 Test Result

LTE Band 2

Test Frequency:1880.0MHz QPSK 1.4MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	5	0.0027	2.5
40		6	0.0032	2.5
30		15	0.0080	2.5
20		6	0.0032	2.5
10		11	0.0059	2.5
0		-1	-0.0005	2.5
-10		15	0.0080	2.5
-20		7	0.0037	2.5
-30		13	0.0069	2.5
20		10.2	15	0.0080
20	13.8	11	0.0059	2.5

T Test Frequency:1880.0MHz 16QAM 1.4MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	3	0.0016	2.5
40		11	0.0059	2.5
30		3	0.0016	2.5
20		7	0.0037	2.5
10		5	0.0027	2.5
0		8	0.0043	2.5
-10		3	0.0016	2.5
-20		11	0.0059	2.5
-30		14	0.0074	2.5
20		10.2	0	0.0000
20	13.8	0	0.0000	2.5

## LTE Band 2

Test Frequency:1880.0MHz QPSK 3MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	1	0.0005	2.5
40		-1	-0.0005	2.5
30		0	0.0000	2.5
20		-4	-0.0021	2.5
10		-1	-0.0005	2.5
0		-10	-0.0053	2.5
-10		-11	-0.0059	2.5
-20		-13	-0.0069	2.5
-30		3	0.0016	2.5
20		10.2	1	0.0005
20	13.8	-7	-0.0037	2.5

Test Frequency:1880.0MHz 16QAM 3MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	10	0.0053	2.5
40		-4	-0.0021	2.5
30		5	0.0027	2.5
20		2	0.0011	2.5
10		4	0.0021	2.5
0		11	0.0059	2.5
-10		10	0.0053	2.5
-20		1	0.0005	2.5
-30		2	0.0011	2.5
20		10.2	9	0.0048
20	13.8	2	0.0011	2.5

## LTE Band 2

Test Frequency:1880.0MHz QPSK 5MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	5	0.0027	2.5
40		9	0.0048	2.5
30		9	0.0048	2.5
20		8	0.0037	2.5
10		10	0.0053	2.5
0		1	0.0005	2.5
-10		-2	-0.0011	2.5
-20		2	0.0011	2.5
-30		14	0.0074	2.5
20		10.2	-1	-0.0005
20	13.8	1	0.0005	2.5

Test Frequency:1880.0MHz 16QAM 5MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	3	0.0016	2.5
40		-4	-0.0021	2.5
30		-1	-0.0005	2.5
20		-3	-0.0021	2.5
10		1	0.0005	2.5
0		-4	-0.0021	2.5
-10		-6	-0.0032	2.5
-20		4	0.0021	2.5
-30		1	0.0005	2.5
20		10.2	-12	-0.0064
20	13.8	5	0.0027	2.5

## LTE Band 2

Test Frequency:1880.0MHz QPSK 10MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	4	0.0021	2.5
40		-6	-0.0032	2.5
30		0	0.0000	2.5
20		4	0.0011	2.5
10		10	0.0053	2.5
0		-4	-0.0021	2.5
-10		5	0.0027	2.5
-20		2	0.0011	2.5
-30		8	0.0043	2.5
20		10.2	-4	-0.0021
20	13.8	4	0.0021	2.5

Test Frequency:1880.0MHz 16QAM 10MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	15	0.0080	2.5
40		9	0.0048	2.5
30		3	0.0016	2.5
20		7	0.0037	2.5
10		-1	-0.0005	2.5
0		-2	-0.0011	2.5
-10		4	0.0021	2.5
-20		10	0.0053	2.5
-30		0	0.0000	2.5
20		10.2	0	0.0000
20	13.8	6	0.0032	2.5

## LTE Band 2

Test Frequency:1880.0MHz QPSK 15MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	9	0.0048	2.5
40		-2	-0.0011	2.5
30		3	0.0016	2.5
20		2	0.0011	2.5
10		-3	-0.0016	2.5
0		10	0.0053	2.5
-10		2	0.0011	2.5
-20		4	0.0021	2.5
-30		5	0.0027	2.5
20		10.2	4	0.0021
20	13.8	-4	-0.0021	2.5

Test Frequency:1880.0MHz 16QAM 15MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	-7	-0.0037	2.5
40		-1	-0.0005	2.5
30		-4	-0.0021	2.5
20		1	0.0005	2.5
10		-3	-0.0016	2.5
0		3	0.0016	2.5
-10		0	0.0000	2.5
-20		-6	-0.0032	2.5
-30		-3	-0.0016	2.5
20		10.2	6	0.0032
20	13.8	-8	-0.0043	2.5

## LTE Band 2

Test Frequency:1880.0MHz QPSK 20MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	0	0.0000	2.5
40		-2	-0.0011	2.5
30		-6	-0.0032	2.5
20		1	0.0005	2.5
10		3	0.0016	2.5
0		-4	-0.0021	2.5
-10		7	0.0037	2.5
-20		-1	-0.0005	2.5
-30		1	0.0005	2.5
20		10.2	2	0.0011
20	13.8	9	0.0048	2.5

Test Frequency:1880.0MHz 16QAM 20MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	7	0.0037	2.5
40		-3	-0.0016	2.5
30		7	0.0037	2.5
20		0	0.0000	2.5
10		5	0.0027	2.5
0		-4	-0.0021	2.5
-10		-3	-0.0016	2.5
-20		8	0.0043	2.5
-30		1	0.0005	2.5
20		10.2	8	0.0043
20	13.8	5	0.0027	2.5

## LTE Band 4

Test Frequency:1732.5MHz QPSK 1.4MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	7	0.0040	2.5
40		-6	-0.0035	2.5
30		1	0.0006	2.5
20		1	0.0006	2.5
10		-2	-0.0012	2.5
0		9	0.0052	2.5
-10		0	0.0000	2.5
-20		-6	-0.0035	2.5
-30		9	0.0052	2.5
20		10.2	4	0.0023
20	13.8	-3	-0.0017	2.5

Test Frequency:1732.5MHz 16QAM 1.4MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	1	0.0006	2.5
40		14	0.0081	2.5
30		12	0.0069	2.5
20		7	0.0040	2.5
10		13	0.0075	2.5
0		11	0.0063	2.5
-10		14	0.0081	2.5
-20		2	0.0012	2.5
-30		10	0.0058	2.5
20		10.2	4	0.0023
20	13.8	6	0.0035	2.5

## LTE Band 4

Test Frequency:1732.5MHz QPSK 3MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	2	0.0012	2.5
40		-1	-0.0006	2.5
30		1	0.0006	2.5
20		4	0.0023	2.5
10		-1	-0.0006	2.5
0		-3	-0.0017	2.5
-10		-2	-0.0012	2.5
-20		7	0.0040	2.5
-30		4	0.0023	2.5
20		10.2	-4	-0.0023
20	13.8	-3	-0.0017	2.5

Test Frequency:1732.5MHz 16QAM 3MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	9	0.0052	2.5
40		9	0.0052	2.5
30		-6	-0.0035	2.5
20		2	0.0012	2.5
10		4	0.0023	2.5
0		11	0.0063	2.5
-10		0	0.0000	2.5
-20		9	0.0052	2.5
-30		-2	-0.0012	2.5
20		10.2	3	0.0017
20	13.8	2	0.0012	2.5



## LTE Band 4

Test Frequency:1732.5MHz QPSK 5MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	-3	-0.0017	2.5
40		-7	-0.0040	2.5
30		2	0.0012	2.5
20		2	0.0012	2.5
10		-6	-0.0035	2.5
0		-6	-0.0035	2.5
-10		-7	-0.0040	2.5
-20		-2	-0.0012	2.5
-30		-2	-0.0012	2.5
20		10.2	5	0.0029
20	13.8	10	0.0058	2.5

Test Frequency:1732.5MHz 16QAM 5MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	0	0.0000	2.5
40		9	0.0052	2.5
30		9	0.0052	2.5
20		5	0.0029	2.5
10		4	0.0023	2.5
0		6	0.0035	2.5
-10		6	0.0035	2.5
-20		5	0.0029	2.5
-30		9	0.0052	2.5
20		10.2	-2	-0.0012
20	13.8	12	0.0069	2.5

## LTE Band 4

Test Frequency:1732.5MHz QPSK 10MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	-6	-0.0035	2.5
40		-3	-0.0017	2.5
30		-4	-0.0023	2.5
20		3	0.0017	2.5
10		7	0.0040	2.5
0		-2	-0.0012	2.5
-10		3	0.0017	2.5
-20		-2	-0.0012	2.5
-30		5	0.0029	2.5
20		10.2	-1	-0.0006
20	13.8	0	0.0000	2.5

Test Frequency:1732.5MHz 16QAM 10MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	11	0.0063	2.5
40		2	0.0012	2.5
30		11	0.0063	2.5
20		3	0.0017	2.5
10		2	0.0012	2.5
0		-1	-0.0006	2.5
-10		12	0.0069	2.5
-20		-5	-0.0029	2.5
-30		11	0.0063	2.5
20		10.2	-4	-0.0023
20	13.8	8	0.0046	2.5

## LTE Band 4

Test Frequency:1732.5MHz QPSK 15MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	1	0.0006	2.5
40		7	0.0040	2.5
30		1	0.0006	2.5
20		1	0.0006	2.5
10		-5	-0.0029	2.5
0		0	0.0000	2.5
-10		6	0.0035	2.5
-20		-2	-0.0012	2.5
-30		0	0.0000	2.5
20		10.2	4	0.0023
20	13.8	-4	-0.0023	2.5

Test Frequency:1732.5MHz 16QAM 15MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	9	0.0052	2.5
40		6	0.0035	2.5
30		2	0.0012	2.5
20		4	0.0023	2.5
10		-3	-0.0017	2.5
0		13	0.0075	2.5
-10		10	0.0058	2.5
-20		7	0.0040	2.5
-30		1	0.0006	2.5
20		10.2	11	0.0063
20	13.8	-5	-0.0029	2.5

## LTE Band 4

Test Frequency:1732.5MHz QPSK 20MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	-1	-0.0006	2.5
40		-4	-0.0023	2.5
30		-8	-0.0046	2.5
20		-5	-0.0029	2.5
10		-6	-0.0035	2.5
0		-11	-0.0063	2.5
-10		-13	-0.0075	2.5
-20		-8	-0.0046	2.5
-30		1	0.0006	2.5
20		10.2	-5	-0.0029
20	13.8	-13	-0.0075	2.5

Test Frequency:1732.5MHz 16QAM 20MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	3	0.0017	2.5
40		3	0.0017	2.5
30		-10	-0.0058	2.5
20		-4	-0.0023	2.5
10		-9	-0.0052	2.5
0		4	0.0023	2.5
-10		-4	-0.0023	2.5
-20		-3	-0.0017	2.5
-30		-13	-0.0075	2.5
20		10.2	-12	-0.0069
20	13.8	-3	-0.0017	2.5

## LTE Band 7

Test Frequency:2535MHz QPSK 5MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	4	0.0016	2.5
40		4	0.0016	2.5
30		12	0.0047	2.5
20		5	0.0020	2.5
10		7	0.0028	2.5
0		10	0.0039	2.5
-10		11	0.0043	2.5
-20		3	0.0012	2.5
-30		13	0.0051	2.5
20		10.2	1	0.0004
20	13.8	-2	-0.0008	2.5

Test Frequency:2535MHz 16QAM 5MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	6	0.0024	2.5
40		4	0.0016	2.5
30		-6	-0.0024	2.5
20		3	0.0012	2.5
10		11	0.0043	2.5
0		-3	-0.0012	2.5
-10		-5	-0.0020	2.5
-20		4	0.0016	2.5
-30		8	0.0032	2.5
20		10.2	-1	-0.0004
20	13.8	-5	-0.0020	2.5

## LTE Band 7

Test Frequency:2535MHz QPSK 10MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	1	0.0004	2.5
40		7	0.0028	2.5
30		10	0.0039	2.5
20		1	0.0004	2.5
10		7	0.0028	2.5
0		7	0.0028	2.5
-10		5	0.0020	2.5
-20		-8	-0.0032	2.5
-30		-4	-0.0016	2.5
20		10.2	7	0.0028
20	13.8	-4	-0.0016	2.5

Test Frequency:2535MHz 16QAM 10MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	4	0.0016	2.5
40		0	0.0000	2.5
30		-5	-0.0020	2.5
20		3	0.0012	2.5
10		11	0.0043	2.5
0		-5	-0.0020	2.5
-10		4	0.0016	2.5
-20		-4	-0.0016	2.5
-30		11	0.0043	2.5
20		10.2	-5	-0.0020
20	13.8	9	0.0036	2.5

## LTE Band 7

Test Frequency:2535MHz QPSK 15MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	4	0.0016	2.5
40		4	0.0016	2.5
30		0	0.0000	2.5
20		3	0.0012	2.5
10		4	0.0016	2.5
0		6	0.0024	2.5
-10		7	0.0028	2.5
-20		1	0.0004	2.5
-30		6	0.0024	2.5
20		10.2	-5	-0.0020
20	13.8	9	0.0036	2.5

Test Frequency:2535MHz 16QAM 15MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	3	0.0012	2.5
40		8	0.0032	2.5
30		5	0.0020	2.5
20		6	0.0024	2.5
10		-1	-0.0004	2.5
0		13	0.0051	2.5
-10		6	0.0024	2.5
-20		-1	-0.0004	2.5
-30		12	0.0047	2.5
20		10.2	5	0.0020
20	13.8	14	0.0055	2.5

## LTE Band 7

Test Frequency:2535MHz QPSK 20MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	10	0.0039	2.5
40		-6	-0.0024	2.5
30		11	0.0043	2.5
20		3	0.0012	2.5
10		6	0.0024	2.5
0		-2	-0.0008	2.5
-10		12	0.0047	2.5
-20		9	0.0036	2.5
-30		4	0.0016	2.5
20		10.2	-5	-0.0020
20	13.8	10	0.0039	2.5

Test Frequency:2535MHz 16QAM 20MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	6	0.0024	2.5
40		-5	-0.0020	2.5
30		-7	-0.0028	2.5
20		-2	-0.0008	2.5
10		0	0.0000	2.5
0		-1	-0.0004	2.5
-10		-3	-0.0012	2.5
-20		0	0.0000	2.5
-30		0	0.0000	2.5
20		10.2	-10	-0.0039
20	13.8	-1	-0.0004	2.5



## LTE Band 17

Test Frequency: 710.0MHz QPSK 5MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	3	0.0012	2.5
40		-6	-0.0024	2.5
30		5	0.0020	2.5
20		2	0.0008	2.5
10		7	0.0028	2.5
0		3	0.0012	2.5
-10		8	0.0032	2.5
-20		7	0.0028	2.5
-30		5	0.0020	2.5
20		10.2	3	0.0012
20	13.8	9	0.0036	2.5

Test Frequency: 710.0MHz 16QAM 5MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	5	0.0020	2.5
40		1	0.0004	2.5
30		0	0.0000	2.5
20		5	0.0020	2.5
10		5	0.0020	2.5
0		0	0.0000	2.5
-10		1	0.0004	2.5
-20		0	0.0000	2.5
-30		1	0.0004	2.5
20		10.2	13	0.0051
20	13.8	-1	-0.0004	2.5

## LTE Band 17

Test Frequency: 710.0MHz QPSK 10MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	3	0.0012	2.5
40		10	0.0039	2.5
30		17	0.0067	2.5
20		8	0.0032	2.5
10		1	0.0004	2.5
0		1	0.0004	2.5
-10		15	0.0059	2.5
-20		14	0.0055	2.5
-30		7	0.0028	2.5
20		10.2	3	0.0012
20	13.8	1	0.0004	2.5

Test Frequency: 710.0MHz 16QAM 10MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	7	0.0028	2.5
40		10	0.0039	2.5
30		3	0.0012	2.5
20		2	0.0008	2.5
10		1	0.0004	2.5
0		1	0.0004	2.5
-10		7	0.0028	2.5
-20		7	0.0028	2.5
-30		10	0.0039	2.5
20		10.2	5	0.0020
20	13.8	-5	-0.0020	2.5

## LTE Band 41

Test Frequency:2593MHz QPSK 5MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	-6	-0.0023	2.5
40		-10	-0.0039	2.5
30		-12	-0.0046	2.5
20		-4	-0.0015	2.5
10		-12	-0.0046	2.5
0		-11	-0.0042	2.5
-10		0	0.0000	2.5
-20		-8	-0.0031	2.5
-30		-6	-0.0023	2.5
20		10.2	-6	-0.0023
20	13.8	4	0.0015	2.5

Test Frequency:2593MHz 16QAM 5MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	6	0.0024	2.5
40		4	0.0016	2.5
30		-6	-0.0024	2.5
20		3	0.0012	2.5
10		11	0.0043	2.5
0		-3	-0.0012	2.5
-10		-5	-0.0020	2.5
-20		4	0.0016	2.5
-30		8	0.0032	2.5
20		10.2	-1	-0.0004
20	13.8	-5	-0.0020	2.5

## LTE Band 41

Test Frequency:2593MHz QPSK 10MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	1	0.0004	2.5
40		7	0.0028	2.5
30		10	0.0039	2.5
20		1	0.0004	2.5
10		7	0.0028	2.5
0		7	0.0028	2.5
-10		5	0.0020	2.5
-20		-8	-0.0032	2.5
-30		-4	-0.0016	2.5
20		10.2	7	0.0028
20	13.8	-4	-0.0016	2.5

Test Frequency:2593MHz 16QAM 10MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	4	0.0016	2.5
40		0	0.0000	2.5
30		-5	-0.0020	2.5
20		3	0.0012	2.5
10		11	0.0043	2.5
0		-5	-0.0020	2.5
-10		4	0.0016	2.5
-20		-4	-0.0016	2.5
-30		11	0.0043	2.5
20		10.2	-5	-0.0020
20	13.8	9	0.0036	2.5

## LTE Band 41

Test Frequency:2593MHz QPSK 15MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	4	0.0016	2.5
40		4	0.0016	2.5
30		0	0.0000	2.5
20		3	0.0012	2.5
10		4	0.0016	2.5
0		6	0.0024	2.5
-10		7	0.0028	2.5
-20		1	0.0004	2.5
-30		6	0.0024	2.5
20		10.2	-5	-0.0020
20	13.8	9	0.0036	2.5

Test Frequency:2593MHz 16QAM 15MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	3	0.0012	2.5
40		8	0.0032	2.5
30		5	0.0020	2.5
20		6	0.0024	2.5
10		-1	-0.0004	2.5
0		13	0.0051	2.5
-10		6	0.0024	2.5
-20		-1	-0.0004	2.5
-30		12	0.0047	2.5
20		10.2	5	0.0020
20	13.8	14	0.0055	2.5

## LTE Band 41

Test Frequency:2593MHz QPSK 20MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	10	0.0039	2.5
40		-6	-0.0024	2.5
30		11	0.0043	2.5
20		3	0.0012	2.5
10		6	0.0024	2.5
0		-2	-0.0008	2.5
-10		12	0.0047	2.5
-20		9	0.0036	2.5
-30		4	0.0016	2.5
20		10.2	-5	-0.0020
20	13.8	10	0.0039	2.5

Test Frequency:2593MHz 16QAM 20MHz				
Temperature (°C)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	12	6	0.0024	2.5
40		-5	-0.0020	2.5
30		-7	-0.0028	2.5
20		-2	-0.0008	2.5
10		0	0.0000	2.5
0		-1	-0.0004	2.5
-10		-3	-0.0012	2.5
-20		0	0.0000	2.5
-30		0	0.0000	2.5
20		10.2	-10	-0.0039
20	13.8	-1	-0.0004	2.5

## 15 RF Exposure

Test Requirement: FCC Part 1.1307

Test Mode: The EUT work in test mode(Tx).

### 15.1 Requirements

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

### 15.2 The procedures / limit

FCC Part 1.1307:

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ;

\*Plane-wave equivalent power density

### 15.3 MPE Calculation Method

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm<sup>2</sup>)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

From the peak EUT RF output power, the minimum mobile separation distance, d=20cm, as well as the gain of the used antenna, the RF power density can be obtained

FCC Part 1.1307:

Mode	Antenna Gain (dBi)	Antenna Gain (numeric)	Max.Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (mW/cm <sup>2</sup> )	Limit of Power Density (mW/cm <sup>2</sup> )
LTE band 2	4.79	3.013	23.09	203.704	0.1221	1.0
LTE band 4	3.93	2.472	22.92	195.884	0.0963	1.0
LTE band 5	1.10	1.288	22.63	183.231	0.0470	1.0
LTE band 7	3.39	2.183	22.04	159.956	0.0695	1.0
LTE band 17	1.12	1.294	22.85	192.752	0.0496	1.0
LTE band 41	3.99	2.506	21.74	149.279	0.0744	1.0



## **16 Photographs of test setup and EUT.**

Note: Please refer to appendix: WTS17S1093648E\_Photo.

===== End of Report =====