

5.7 Frequency Stability

5.7.1 Limits

- **LTE B2/B25 (§ 24.235):**
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.
- **LTE B4/B7/B12/B17/B66 (§ 27.54):**
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.
- **LTE B5 (§ 22.255):**
Except as otherwise provided in this part, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C-1 of this section.

Table C-A: Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency Range (MHz)	Base, Fixed (ppm)	Mobile > 3 watts (ppm)	Mobile ≤ 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929	5.0	n/a	n/a
929 to 960	1.5	n/a	n/a
2110 to 2220	10.0	n/a	n/a

- **LTE B14 (§ 90.539):**
 - l) The frequency stability of base transmitters operating in the narrowband segment must be 100 parts per billion or better.
 - (d) The frequency stability of base transmitters operating in the wideband segment must be 1 part per million or better.

5.7.2 Test Procedure

- **Frequency Stability vs. Temperature:**
 - a) The EUT is placed in a temperature chamber, and the temperature is set to -30 °C. The test is performed after the chamber temperature has stabilized.
 - b) The DC power supply output voltage is set to the rated voltage of the EUT.
 - c) The EUT antenna port is connected to the RF port of the test system control unit via an RF cable.
 - d) The EUT is configured to operate in TM 1 and TM 2 modes as described in Section 4.2. The EUT test channels and modulation types are set as specified in Section 4.3.
 - e) Open the test software, load the LTE test script, and select the test items, test frequency bands, and other relevant test parameters.
 - f) The test script was executed, the measurement was performed. Save the test data.
 - g) Increase the temperature by 10 °C, allow it to stabilize and soak for a period of time, and then repeat the measurements. Repeat this process until +50 °C is reached.

- **Frequency Stability vs Voltage:**

- a) The EUT is placed in a temperature chamber, and the temperature is set to 25 °C. The test is performed after the chamber temperature has stabilized.
- b) The DC power supply output voltage is set to the rated voltage of the EUT.
- c) The EUT antenna port is connected to the RF port of the test system control unit via an RF cable.
- d) The EUT is configured to operate in TM 1 and TM 2 modes as described in Section 4.2. The EUT test channels and modulation types are set as specified in Section 4.3.
- e) Open the test software, load the LTE test script, and select the test items, test frequency bands, and other relevant test parameters.
- f) The test script was executed, the measurement was performed. Save the test data.
- g) Reduce the DC power supply output voltage to the minimum and maximum limit voltages of the EUT respectively, and then repeat the measurements.

5.7.3 Test Setup

See setup 2 in section 4.4.

5.7.4 Test Instruments

Refer to section 3.7.

5.7.5 Test Results

Pass.

5.7.6 Test Data

Frequency Band: LTE B2, Middle Channel, Uplink (for NU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	34.13	0.0182	Within the authorized frequency block	Pass
	-20	33.43	0.0178		
	-10	35.34	0.0188		
	0	31.06	0.0165		
	10	34.40	0.0183		
	20	32.60	0.0173		
	30	33.48	0.0178		
	40	34.14	0.0182		
	50	32.30	0.0172		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	36.85	0.0196	Within the authorized frequency block	Pass
	43.2	33.36	0.0177		
	52.8	33.74	0.0179		
Frequency Band: LTE B2, Middle Channel, Downlink (for CU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	462.62	0.2360	Within the authorized frequency block	Pass
	-20	451.92	0.2306		
	-10	483.95	0.2469		
	0	460.01	0.2347		
	10	455.51	0.2324		
	20	463.74	0.2366		
	30	442.38	0.2257		
	40	472.12	0.2409		
	50	453.24	0.2312		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	456.44	0.2329	Within the authorized frequency block	Pass
	43.2	452.68	0.2310		
	52.8	452.82	0.2310		

Frequency Band: LTE B4, Middle Channel, Uplink (for NU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	33.82	0.0195	Within the authorized frequency block	Pass
	-20	33.43	0.0193		
	-10	35.21	0.0203		
	0	30.92	0.0178		
	10	34.71	0.0200		
	20	32.48	0.0187		
	30	32.87	0.0190		
	40	33.96	0.0196		
	50	32.69	0.0189		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	36.58	0.0211	Within the authorized frequency block	Pass
	43.2	33.49	0.0193		
	52.8	33.29	0.0192		
Frequency Band: LTE B4, Middle Channel, Downlink (for CU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	503.19	0.2360	Within the authorized frequency block	Pass
	-20	501.67	0.2352		
	-10	533.80	0.2503		
	0	510.79	0.2395		
	10	505.59	0.2371		
	20	513.47	0.2408		
	30	492.58	0.2310		
	40	522.30	0.2449		
	50	503.42	0.2361		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	506.59	0.2376	Within the authorized frequency block	Pass
	43.2	502.36	0.2356		
	52.8	502.97	0.2359		

Frequency Band: LTE B5, Middle Channel, Uplink (for NU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	194.28	0.2323	± 2.5	Pass
	-20	193.42	0.2312		
	-10	195.59	0.2338		
	0	195.44	0.2336		
	10	191.76	0.2292		
	20	194.52	0.2325		
	30	192.82	0.2305		
	40	192.92	0.2306		
	50	193.83	0.2317		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	196.98	0.2355	± 2.5	Pass
	43.2	197.75	0.2364		
	52.8	193.83	0.2317		
Frequency Band: LTE B5, Middle Channel, Downlink (for CU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	210.16	0.2306	± 2.5	Pass
	-20	201.93	0.2306		
	-10	233.40	0.2306		
	0	211.51	0.2306		
	10	205.64	0.2306		
	20	213.53	0.2306		
	30	192.43	0.2306		
	40	221.88	0.2306		
	50	203.31	0.2306		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	206.57	0.2343	± 2.5	Pass
	43.2	202.10	0.2293		
	52.8	202.52	0.2297		

Frequency Band: LTE B7, Middle Channel, Uplink (for NU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	594.88	0.2347	Within the authorized frequency block	Pass
	-20	595.77	0.2350		
	-10	595.76	0.2350		
	0	592.39	0.2337		
	10	594.42	0.2345		
	20	593.25	0.2340		
	30	593.37	0.2341		
	40	594.04	0.2343		
	50	597.78	0.2358		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	595.05	0.2347	Within the authorized frequency block	Pass
	43.2	594.19	0.2344		
	52.8	594.31	0.2344		
Frequency Band: LTE B7, Middle Channel, Downlink (for CU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	610.47	0.2299	Within the authorized frequency block	Pass
	-20	601.50	0.2266		
	-10	613.76	0.2312		
	0	592.95	0.2233		
	10	621.86	0.2342		
	20	603.47	0.2273		
	30	607.14	0.2287		
	40	610.34	0.2299		
	50	601.76	0.2267		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	614.13	0.2313	Within the authorized frequency block	Pass
	43.2	593.27	0.2235		
	52.8	621.40	0.2340		

Frequency Band: LTE B12, Middle Channel, Uplink (for NU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	165.70	0.2342	Within the authorized frequency block	Pass
	-20	166.15	0.2348		
	-10	164.83	0.2330		
	0	162.98	0.2304		
	10	164.50	0.2325		
	20	162.62	0.2299		
	30	163.42	0.2310		
	40	163.66	0.2313		
	50	167.33	0.2365		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	166.34	0.2351	Within the authorized frequency block	Pass
	43.2	163.71	0.2314		
	52.8	163.88	0.2316		
Frequency Band: LTE B12, Middle Channel, Downlink (for CU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	175.66	0.2382	Within the authorized frequency block	Pass
	-20	155.95	0.2115		
	-10	165.23	0.2240		
	0	159.92	0.2168		
	10	166.92	0.2263		
	20	146.25	0.1983		
	30	176.40	0.2392		
	40	158.03	0.2143		
	50	161.52	0.2190		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	156.91	0.2128	Within the authorized frequency block	Pass
	43.2	157.32	0.2133		
	52.8	156.85	0.2127		

Frequency Band: LTE B14, Middle Channel, Uplink (for NU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	185.39	0.2338	± 1.0	Pass
	-20	186.03	0.2346		
	-10	185.07	0.2334		
	0	182.56	0.2302		
	10	184.62	0.2328		
	20	182.10	0.2296		
	30	184.15	0.2322		
	40	182.89	0.2306		
	50	187.03	0.2359		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	187.06	0.2359	± 1.0	Pass
	43.2	183.32	0.2312		
	52.8	184.21	0.2323		
Frequency Band: LTE B14, Middle Channel, Downlink (for CU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	181.80	0.2383	± 1.0	Pass
	-20	176.14	0.2309		
	-10	175.63	0.2302		
	0	175.75	0.2303		
	10	187.13	0.2453		
	20	175.72	0.2303		
	30	176.07	0.2308		
	40	175.38	0.2299		
	50	161.81	0.2121		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	184.48	0.2418	± 1.0	Pass
	43.2	158.12	0.2072		
	52.8	187.72	0.2460		

Frequency Band: LTE B17, Middle Channel, Uplink (for NU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	13.39	0.0189	Within the authorized frequency block	Pass
	-20	14.41	0.0203		
	-10	13.45	0.0189		
	0	10.28	0.0145		
	10	13.12	0.0185		
	20	10.28	0.0145		
	30	12.35	0.0174		
	40	10.37	0.0146		
	50	14.45	0.0204		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	14.95	0.0211	Within the authorized frequency block	Pass
	43.2	13.91	0.0196		
	52.8	12.13	0.0171		
Frequency Band: LTE B17, Middle Channel, Downlink (for CU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	175.39	0.2370	Within the authorized frequency block	Pass
	-20	176.50	0.2385		
	-10	176.06	0.2379		
	0	175.31	0.2369		
	10	175.68	0.2374		
	20	175.91	0.2377		
	30	175.75	0.2375		
	40	176.02	0.2379		
	50	176.04	0.2379		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	175.86	0.2376	Within the authorized frequency block	Pass
	43.2	175.25	0.2368		
	52.8	175.98	0.2378		

Frequency Band: LTE B25, Middle Channel, Uplink (for NU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	412.50	0.5810	Within the authorized frequency block	Pass
	-20	414.80	0.5842		
	-10	413.56	0.5825		
	0	412.04	0.5803		
	10	415.26	0.5849		
	20	413.12	0.5819		
	30	415.38	0.5850		
	40	413.26	0.5821		
	50	409.43	0.5767		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	412.79	0.5814	Within the authorized frequency block	Pass
	43.2	411.08	0.5790		
	52.8	413.19	0.5820		
Frequency Band: LTE B12/17, Middle Channel, Downlink (for CU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	467.86	0.2384	Within the authorized frequency block	Pass
	-20	468.97	0.2390		
	-10	468.53	0.2387		
	0	467.78	0.2384		
	10	468.15	0.2385		
	20	468.38	0.2387		
	30	468.22	0.2386		
	40	468.49	0.2387		
	50	468.51	0.2387		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	468.33	0.2386	Within the authorized frequency block	Pass
	43.2	467.72	0.2383		
	52.8	468.45	0.2387		

Frequency Band: LTE B66, Middle Channel, Uplink (for NU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	514.13	0.2386	Within the authorized frequency block	Pass
	-20	513.58	0.2383		
	-10	514.71	0.2388		
	0	510.91	0.2371		
	10	514.10	0.2386		
	20	513.22	0.2382		
	30	510.38	0.2368		
	40	514.61	0.2388		
	50	512.54	0.2378		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	508.89	0.2361	Within the authorized frequency block	Pass
	43.2	513.77	0.2384		
	52.8	511.79	0.2375		
Frequency Band: LTE B66, Middle Channel, Downlink (for CU)					
Frequency stability V.S. Temperature measurement					
Voltage (Vdc)	Temperature (°C)	Frequency Tolerance		Limit (ppm)	Results
		Hz	ppm		
48.0	-30	514.13	0.2386	Within the authorized frequency block	Pass
	-20	513.58	0.2383		
	-10	514.71	0.2388		
	0	510.91	0.2371		
	10	514.10	0.2386		
	20	513.22	0.2382		
	30	510.38	0.2368		
	40	514.61	0.2388		
	50	512.54	0.2378		
Frequency stability V.S. Voltage measurement					
Temperature (°C)	Voltage (Vdc)	Frequency Tolerance		Limit	Results
		Hz	ppm		
25.0	48.0	508.89	0.2361	Within the authorized frequency block	Pass
	43.2	513.77	0.2384		
	52.8	511.79	0.2375		

5.8 Radiated Spurious Emissions

5.8.1 Limits

- **LTE B2/B25 (§ 24.238 (a)):**
Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.
- **LTE B4/B66 (§ 27.53 (h)):**
(3) General protection levels. 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.
- **LTE B5 (§ 22.917 (a)):**
Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.
- **LTE B7 (§ 27.53 (m)):**
(4) For digital base stations, the attenuation shall be not less than $43 + 10 \log(P)$ dB, unless a documented interference complaint is received from an adjacent channel licensee with an overlapping Geographic Service Area.
- **LTE B12/B17 (§ 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 B14 (§ 27.53 (e)):**
(2) On all frequencies between 769-775 MHz and 799-805 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 any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least $43 + 10 \log(P)$ dB.

5.8.2 Test Procedure

- a) The EUT is placed on a non-conducting table of the 3m SAC turntable, 80 cm above the ground plane for measurement below 1GHz, 1.5 m above the ground plane for measurement above 1GHz. The measurement receiving antenna to EUT distance is 3 meters. The EUT was arranged in accordance with ANSI C63.26.
- b) Open the test software, load the radiated spurious emissions test script, or create a new radiated spurious emissions test script, and configure the test parameters, including the test frequency range, RBW = 100kHz (for below 1GHz) or 1MHz (for above 1GHz), VBW = 300kHz (for below 1GHz) or 3MHz (for above 1GHz), test standard, test antenna, spectrum analyzer, and other related settings.
- c) The test script was executed, the measurement was performed.
- d) The turntable rotates 360 degrees, and the test antenna is raised and lowered within a range of 1 to 4 meters.
- e) Use the spectrum analyzer's Max Hold function to record the maximum test trace. For frequencies below 1 GHz, mark the maximum Quasi-peak value. For frequencies above 1 GHz, mark the maximum Peak and Average values. Save the test data.
- f) Both vertical and horizontal polarizations of the test antenna need to be tested.
- g) Radiated power measurements were calculated according to Section 5.2.7 of the ANSI C63.26-2015 standard:
 - $EIRP\ (dBm) = E\ (dB\mu V/m) + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.
 - Therefore, when the measurement distance is 3 meters:
 $EIRP\ (dBm) = E\ (dB\mu V/m) - 95.2$

5.8.3 Test Setup

See setup 3 in section 4.4.

5.8.4 Test Instruments

Refer to section 3.7.

5.8.5 Test Results

Pass.

5.8.6 Test Data

Frequency Band: LTE B2 (NU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3705.00	-61.62	-0.46	-62.08	-13.00	49.08	Vertical
5557.50	-64.78	3.72	-61.06	-13.00	48.06	Vertical
7410.00	-64.77	5.46	-59.31	-13.00	46.31	Vertical
3705.00	-63.15	-0.26	-63.41	-13.00	50.41	Horizontal
5557.50	-65.42	3.64	-61.78	-13.00	48.78	Horizontal
7410.00	-65.72	5.02	-60.70	-13.00	47.70	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.00	-63.51	-0.68	-64.19	-13.00	51.19	Vertical
5640.00	-64.95	3.57	-61.38	-13.00	48.38	Vertical
7520.00	-65.42	5.76	-59.66	-13.00	46.66	Vertical
3760.00	-63.97	-0.23	-64.20	-13.00	51.20	Horizontal
5640.00	-64.86	3.75	-61.11	-13.00	48.11	Horizontal
7520.00	-65.89	5.77	-60.12	-13.00	47.12	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3815.00	-63.19	-0.12	-63.31	-13.00	50.31	Vertical
5722.50	-65.00	3.47	-61.53	-13.00	48.53	Vertical
7630.00	-65.55	6.43	-59.12	-13.00	46.12	Vertical
3815.00	-63.83	0.39	-63.44	-13.00	50.44	Horizontal
5722.50	-64.62	3.86	-60.76	-13.00	47.76	Horizontal
7630.00	-66.48	6.27	-60.21	-13.00	47.21	Horizontal
Remark: 1. The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. 2. Test Frequency up to 20GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

Frequency Band: LTE B2 (CU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3865.00	-63.51	0.80	-62.71	-13.00	49.71	Vertical
5797.50	-65.00	4.37	-60.63	-13.00	47.63	Vertical
7730.00	-62.63	6.71	-55.92	-13.00	42.92	Vertical
3865.00	-63.91	0.98	-62.93	-13.00	49.93	Horizontal
5797.50	-64.58	4.59	-59.99	-13.00	46.99	Horizontal
7730.00	-66.10	6.46	-59.64	-13.00	46.64	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3920.00	-63.99	1.45	-62.54	-13.00	49.54	Vertical
5880.00	-65.21	4.34	-60.87	-13.00	47.87	Vertical
7840.00	-66.48	8.61	-57.87	-13.00	44.87	Vertical
3920.00	-64.35	1.62	-62.73	-13.00	49.73	Horizontal
5880.00	-65.11	4.61	-60.50	-13.00	47.50	Horizontal
7840.00	-66.17	8.39	-57.78	-13.00	44.78	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3975.00	-63.67	1.63	-62.04	-13.00	49.04	Vertical
5962.50	-65.45	5.45	-60.00	-13.00	47.00	Vertical
7950.00	-66.86	8.86	-58.00	-13.00	45.00	Vertical
3975.00	-63.97	1.93	-62.04	-13.00	49.04	Horizontal
5962.50	-64.76	5.35	-59.41	-13.00	46.41	Horizontal
7950.00	-66.49	8.53	-57.96	-13.00	44.96	Horizontal
Remark: - The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. - Test Frequency up to 20GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

Frequency Band: LTE B4 (NU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3425.00	-63.37	-2.16	-65.53	-13.00	52.53	Vertical
5137.50	-64.52	4.25	-60.27	-13.00	47.27	Vertical
6850.00	-65.75	5.64	-60.11	-13.00	47.11	Vertical
3425.00	-63.22	-2.23	-65.45	-13.00	52.45	Horizontal
5137.50	-63.99	4.30	-59.69	-13.00	46.69	Horizontal
6850.00	-65.92	5.84	-60.08	-13.00	47.08	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.00	-59.81	-2.65	-62.46	-13.00	49.46	Vertical
5197.50	-64.82	3.82	-61.00	-13.00	48.00	Vertical
6930.00	-63.02	5.04	-57.98	-13.00	44.98	Vertical
3465.00	-62.35	-2.65	-65.00	-13.00	52.00	Horizontal
5197.50	-64.41	3.74	-60.67	-13.00	47.67	Horizontal
6930.00	-65.25	5.01	-60.24	-13.00	47.24	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3505.00	-62.16	-3.36	-65.52	-13.00	52.52	Vertical
5257.50	-65.03	3.78	-61.25	-13.00	48.25	Vertical
7010.00	-64.62	5.24	-59.38	-13.00	46.38	Vertical
3505.00	-62.05	-3.21	-65.26	-13.00	52.26	Horizontal
5257.50	-64.68	4.10	-60.58	-13.00	47.58	Horizontal
7010.00	-66.05	5.29	-60.76	-13.00	47.76	Horizontal
Remark: 1. The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. 2. Test Frequency up to 25GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

Frequency Band: LTE B4 (CU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
4225.00	-64.73	0.06	-64.67	-13.00	51.67	Vertical
6337.50	-65.54	3.92	-61.62	-13.00	48.62	Vertical
8450.00	-67.18	8.66	-58.52	-13.00	45.52	Vertical
4225.00	-64.51	-0.24	-64.75	-13.00	51.75	Horizontal
6337.50	-65.28	3.85	-61.43	-13.00	48.43	Horizontal
8450.00	-67.90	8.25	-59.65	-13.00	46.65	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
4265.00	-59.67	1.10	-58.57	-13.00	45.57	Vertical
6397.50	-65.50	3.83	-61.67	-13.00	48.67	Vertical
8530.00	-66.72	8.44	-58.28	-13.00	45.28	Vertical
4265.00	-57.54	0.95	-56.59	-13.00	43.59	Horizontal
6397.50	-65.50	3.68	-61.82	-13.00	48.82	Horizontal
8530.00	-67.27	8.05	-59.22	-13.00	46.22	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
4305.00	-59.55	1.73	-57.82	-13.00	44.82	Vertical
6457.50	-65.48	4.71	-60.77	-13.00	47.77	Vertical
8610.00	-66.83	8.29	-58.54	-13.00	45.54	Vertical
4305.00	-56.63	1.71	-54.92	-13.00	41.92	Horizontal
6457.50	-65.44	4.53	-60.91	-13.00	47.91	Horizontal
8610.00	-67.33	7.99	-59.34	-13.00	46.34	Horizontal
Remark: 1. The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. 2. Test Frequency up to 25GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

Frequency Band: LTE B5 (NU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1653.00	-49.21	-11.13	-60.34	-13.00	47.34	Vertical
2479.50	-57.04	-8.94	-65.98	-13.00	52.98	Vertical
3306.00	-63.33	-3.25	-66.58	-13.00	53.58	Vertical
1653	-54.37	-10.51	-64.88	-13.00	51.88	Horizontal
2479.5	-59.11	-9.33	-68.44	-13.00	55.44	Horizontal
3306	-63.65	-3.36	-67.01	-13.00	54.01	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.00	-51.89	-10.40	-62.29	-13.00	49.29	Vertical
2509.50	-60.10	-8.93	-69.03	-13.00	56.03	Vertical
3346.00	-59.66	-2.88	-62.54	-13.00	49.54	Vertical
1673.00	-58.08	-9.97	-68.05	-13.00	55.05	Horizontal
2509.50	-60.84	-8.99	-69.83	-13.00	56.83	Horizontal
3346.00	-62.71	-2.97	-65.68	-13.00	52.68	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.00	-56.58	-10.40	-66.98	-13.00	53.98	Vertical
2509.50	-60.60	-8.93	-69.53	-13.00	56.53	Vertical
3346.00	-62.56	-2.88	-65.44	-13.00	52.44	Vertical
1673.00	-58.28	-9.97	-68.25	-13.00	55.25	Horizontal
2509.50	-60.46	-8.99	-69.45	-13.00	56.45	Horizontal
3346.00	-62.70	-2.97	-65.67	-13.00	52.67	Horizontal
Remark: - The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. - Test Frequency up to 10GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

Frequency Band: LTE B5 (CU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1743.00	-49.90	-9.97	-59.87	-13.00	46.87	Vertical
2614.50	-60.49	-6.76	-67.25	-13.00	54.25	Vertical
3486.00	-62.58	-2.25	-64.83	-13.00	51.83	Vertical
1743.00	-58.49	-10.32	-68.81	-13.00	55.81	Horizontal
2614.50	-61.03	-6.80	-67.83	-13.00	54.83	Horizontal
3486.00	-63.15	-2.16	-65.31	-13.00	52.31	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1763.00	-49.06	-10.25	-59.31	-13.00	46.31	Vertical
2644.50	-60.55	-6.95	-67.50	-13.00	54.50	Vertical
3526.00	-61.93	-2.47	-64.40	-13.00	51.40	Vertical
1763	-58.65	-10.86	-69.51	-13.00	56.51	Horizontal
2644.5	-60.95	-6.92	-67.87	-13.00	54.87	Horizontal
3526	-62.09	-2.3	-64.39	-13.00	51.39	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1783.00	-51.48	-10.94	-62.42	-13.00	49.42	Vertical
2674.50	-61.00	-7.13	-68.13	-13.00	55.13	Vertical
3566.00	-61.07	-2.15	-63.22	-13.00	50.22	Vertical
1783.00	-57.77	-11.42	-69.19	-13.00	56.19	Horizontal
2674.50	-60.55	-7.03	-67.58	-13.00	54.58	Horizontal
3566.00	-63.45	-2.15	-65.60	-13.00	52.60	Horizontal
Remark: - The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. - Test Frequency up to 10GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

Frequency Band: LTE B7 (NU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
5005.00	-64.89	4.06	-60.83	-13.00	47.83	Vertical
7507.50	-66.69	5.79	-60.90	-13.00	47.90	Vertical
10010.00	-67.60	9.76	-57.84	-13.00	44.84	Vertical
5005.00	-65.02	4.38	-60.64	-13.00	47.64	Horizontal
7507.50	-66.23	5.78	-60.45	-13.00	47.45	Horizontal
10010.00	-67.23	9.12	-58.11	-13.00	45.11	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
5070.00	-64.85	4.65	-60.20	-13.00	47.20	Vertical
7605.00	-66.43	6.12	-60.31	-13.00	47.31	Vertical
10140.00	-68.19	10.00	-58.19	-13.00	45.19	Vertical
5070.00	-65.21	3.93	-61.28	-13.00	48.28	Horizontal
7605.00	-66.39	6.01	-60.38	-13.00	47.38	Horizontal
10140.00	-68.19	9.74	-58.45	-13.00	45.45	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
5135.00	-64.74	4.26	-60.48	-13.00	47.48	Vertical
7702.50	-66.41	6.23	-60.18	-13.00	47.18	Vertical
10270.00	-67.16	10.97	-56.19	-13.00	43.19	Vertical
5135.00	-64.57	4.31	-60.26	-13.00	47.26	Horizontal
7702.50	-66.48	5.98	-60.50	-13.00	47.50	Horizontal
10270.00	-67.37	10.49	-56.88	-13.00	43.88	Horizontal
Remark: 1. The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. 2. Test Frequency up to 30GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

Frequency Band: LTE B7 (CU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
5245.00	-65.16	3.79	-61.37	-13.00	48.37	Vertical
7867.50	-65.96	8.66	-57.30	-13.00	44.30	Vertical
10490.00	-66.52	11.46	-55.06	-13.00	42.06	Vertical
5245.00	-65.01	4.03	-60.98	-13.00	47.98	Horizontal
7867.50	-66.37	8.37	-58.00	-13.00	45.00	Horizontal
10490.00	-67.50	10.87	-56.63	-13.00	43.63	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
5310.00	-65.17	4.42	-60.75	-13.00	47.75	Vertical
7965.00	-66.04	8.57	-57.47	-13.00	44.47	Vertical
10620.00	-67.47	12.21	-55.26	-13.00	42.26	Vertical
5310.00	-64.97	4.57	-60.40	-13.00	47.40	Horizontal
7965.00	-66.67	8.41	-58.26	-13.00	45.26	Horizontal
10620.00	-67.49	11.75	-55.74	-13.00	42.74	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
5375	-65.13	4.6	-60.53	-13.00	47.53	Vertical
8062.5	-66.57	8.19	-58.38	-13.00	45.38	Vertical
10750	-67.1	11.5	-55.60	-13.00	42.60	Vertical
5375	-65.18	4.59	-60.59	-13.00	47.59	Horizontal
8062.5	-67.12	8.9	-58.22	-13.00	45.22	Horizontal
10750	-67.32	10.92	-56.40	-13.00	43.40	Horizontal
Remark: 1. The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. 2. Test Frequency up to 30GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

Frequency Band: LTE B12 (NU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1403.00	-56.19	-11.60	-67.79	-13.00	54.79	Vertical
2104.50	-59.02	-9.63	-68.65	-13.00	55.65	Vertical
2806.00	-60.14	-6.68	-66.82	-13.00	53.82	Vertical
1403.00	-58.57	-11.34	-69.91	-13.00	56.91	Horizontal
2104.50	-58.47	-9.10	-67.57	-13.00	54.57	Horizontal
2806.00	-61.09	-6.20	-67.29	-13.00	54.29	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1415.00	-54.58	-11.72	-66.30	-13.00	53.30	Vertical
2122.50	-56.17	-9.40	-65.57	-13.00	52.57	Vertical
2830.00	-59.16	-6.15	-65.31	-13.00	52.31	Vertical
1415.00	-56.89	-11.40	-68.29	-13.00	55.29	Horizontal
2122.50	-58.14	-8.70	-66.84	-13.00	53.84	Horizontal
2830.00	-61.24	-5.64	-66.88	-13.00	53.88	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1427	-54.64	-11.85	-66.49	-13.00	53.49	Vertical
2140.5	-58.15	-9.37	-67.52	-13.00	54.52	Vertical
2854	-59.24	-5.47	-64.71	-13.00	51.71	Vertical
1427	-58.48	-11.56	-70.04	-13.00	57.04	Horizontal
2140.5	-60.03	-8.92	-68.95	-13.00	55.95	Horizontal
2854	-60.9	-5.27	-66.17	-13.00	53.17	Horizontal
Remark: 1. The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. 2. Test Frequency up to 10GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

Frequency Band: LTE B12 (CU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1463.00	-52.47	-12.38	-64.85	-13.00	51.85	Vertical
2194.50	-55.30	-9.26	-64.56	-13.00	51.56	Vertical
2926.00	-61.82	-4.38	-66.20	-13.00	53.20	Vertical
1463.00	-56.33	-12.32	-68.65	-13.00	55.65	Horizontal
2194.50	-59.33	-9.58	-68.91	-13.00	55.91	Horizontal
2926.00	-62.02	-4.61	-66.63	-13.00	53.63	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1475.00	-52.15	-12.57	-64.72	-13.00	51.72	Vertical
2212.50	-58.58	-9.23	-67.81	-13.00	54.81	Vertical
2950.00	-61.05	-4.55	-65.60	-13.00	52.60	Vertical
1475.00	-53.41	-12.59	-66.00	-13.00	53.00	Horizontal
2212.50	-58.72	-9.61	-68.33	-13.00	55.33	Horizontal
2950.00	-61.43	-4.77	-66.20	-13.00	53.20	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1487.00	-53.99	-12.76	-66.75	-13.00	53.75	Vertical
2230.50	-59.49	-9.17	-68.66	-13.00	55.66	Vertical
2974.00	-61.72	-4.87	-66.59	-13.00	53.59	Vertical
1487.00	-57.03	-12.86	-69.89	-13.00	56.89	Horizontal
2230.50	-59.89	-9.63	-69.52	-13.00	56.52	Horizontal
2974.00	-61.96	-4.95	-66.91	-13.00	53.91	Horizontal
Remark: - The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. - Test Frequency up to 10GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

Frequency Band: LTE B14 (NU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1581.00	-55.45	-11.77	-67.22	-13.00	54.22	Vertical
2371.50	-56.53	-9.21	-65.74	-13.00	52.74	Vertical
3162.00	-60.97	-2.11	-63.08	-13.00	50.08	Vertical
1581.00	-58.88	-11.93	-70.81	-13.00	57.81	Horizontal
2371.50	-59.80	-9.25	-69.05	-13.00	56.05	Horizontal
3162.00	-62.49	-2.90	-65.39	-13.00	52.39	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1586.00	-54.52	-11.80	-66.32	-13.00	53.32	Vertical
2379.00	-53.57	-9.18	-62.75	-13.00	49.75	Vertical
3172.00	-61.95	-2.03	-63.98	-13.00	50.98	Vertical
1586.00	-58.49	-11.87	-70.36	-13.00	57.36	Horizontal
2379.00	-58.98	-9.24	-68.22	-13.00	55.22	Horizontal
3172.00	-61.79	-2.87	-64.66	-13.00	51.66	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1591.00	-52.82	-11.85	-64.67	-13.00	51.67	Vertical
2386.50	-57.40	-9.14	-66.54	-13.00	53.54	Vertical
3182.00	-61.87	-2.13	-64.00	-13.00	51.00	Vertical
1591.00	-57.60	-11.78	-69.38	-13.00	56.38	Horizontal
2386.50	-58.53	-9.24	-67.77	-13.00	54.77	Horizontal
3182.00	-62.32	-2.80	-65.12	-13.00	52.12	Horizontal
Remark: 1. The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. 2. Test Frequency up to 10GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

Frequency Band: LTE B14 (CU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1521.00	-53.27	-12.29	-65.56	-40.00	25.56	Vertical
2281.50	-51.05	-9.18	-60.23	-13.00	47.23	Vertical
3042.00	-61.04	-4.72	-65.76	-13.00	52.76	Vertical
1521.00	-55.16	-12.65	-67.81	-40.00	27.81	Horizontal
2281.50	-60.68	-9.52	-70.20	-13.00	57.20	Horizontal
3042.00	-61.84	-4.36	-66.20	-13.00	53.20	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1526.00	-57.18	-12.20	-69.38	-40.00	29.38	Vertical
2289.00	-58.60	-9.22	-67.82	-13.00	54.82	Vertical
3052.00	-60.06	-4.41	-64.47	-13.00	51.47	Vertical
1526.00	-57.40	-12.59	-69.99	-40.00	29.99	Horizontal
2289.00	-60.11	-9.47	-69.58	-13.00	56.58	Horizontal
3052.00	-61.98	-4.11	-66.09	-13.00	53.09	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1531.00	-49.64	-12.13	-61.77	-40.00	21.77	Vertical
2296.50	-58.25	-9.25	-67.50	-13.00	54.50	Vertical
3062.00	-61.76	-4.11	-65.87	-13.00	52.87	Vertical
1531.00	-56.63	-12.55	-69.18	-40.00	29.18	Horizontal
2296.50	-60.09	-9.41	-69.50	-13.00	56.50	Horizontal
3062.00	-61.86	-3.87	-65.73	-13.00	52.73	Horizontal
Remark: 1. The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. 2. Test Frequency up to 10GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

Frequency Band: LTE B17(NU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1413.00	-52.24	-11.69	-63.93	-13.00	50.93	Vertical
2119.50	-55.08	-9.42	-64.50	-13.00	51.50	Vertical
2826.00	-61.28	-6.27	-67.55	-13.00	54.55	Vertical
1413.00	-58.59	-11.38	-69.97	-13.00	56.97	Horizontal
2119.50	-59.61	-8.65	-68.26	-13.00	55.26	Horizontal
2826.00	-61.52	-5.71	-67.23	-13.00	54.23	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1420.00	-54.57	-11.76	-66.33	-13.00	53.33	Vertical
2130.00	-59.43	-9.39	-68.82	-13.00	55.82	Vertical
2840.00	-62.31	-5.90	-68.21	-13.00	55.21	Vertical
1420.00	-57.70	-11.42	-69.12	-13.00	56.12	Horizontal
2130.00	-55.86	-8.78	-64.64	-13.00	51.64	Horizontal
2840.00	-62.12	-5.51	-67.63	-13.00	54.63	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1427.00	-52.16	-11.85	-64.01	-13.00	51.01	Vertical
2140.50	-56.59	-9.37	-65.96	-13.00	52.96	Vertical
2854.00	-60.65	-5.47	-66.12	-13.00	53.12	Vertical
1427.00	-56.66	-11.56	-68.22	-13.00	55.22	Horizontal
2140.50	-59.38	-8.92	-68.30	-13.00	55.30	Horizontal
2854.00	-60.93	-5.27	-66.20	-13.00	53.20	Horizontal
Remark: 1. The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. 2. Test Frequency up to 10GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

Frequency Band: LTE B17 (CU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1473.00	-44.03	-12.54	-56.57	-13.00	43.57	Vertical
2209.50	-55.79	-9.23	-65.02	-13.00	52.02	Vertical
2946.00	-60.6	-4.52	-65.12	-13.00	52.12	Vertical
1473.00	-56.89	-12.54	-69.43	-13.00	56.43	Horizontal
2209.50	-58.89	-9.60	-68.49	-13.00	55.49	Horizontal
2946.00	-61.52	-4.74	-66.26	-13.00	53.26	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1480.00	-50.61	-12.63	-63.24	-13.00	50.24	Vertical
2220.00	-58.59	-9.20	-67.79	-13.00	54.79	Vertical
2960.00	-61.62	-4.64	-66.26	-13.00	53.26	Vertical
1480.00	-57.10	-12.68	-69.78	-13.00	56.78	Horizontal
2220.00	-57.37	-9.62	-66.99	-13.00	53.99	Horizontal
2960.00	-59.59	-4.84	-64.43	-13.00	51.43	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
1487	-53.56	-12.76	-66.32	-13.00	53.32	Vertical
2230.5	-58.82	-9.17	-67.99	-13.00	54.99	Vertical
2974	-61.66	-4.87	-66.53	-13.00	53.53	Vertical
1487.00	-53.56	-12.86	-66.42	-13.00	53.42	Horizontal
2230.50	-59.54	-9.63	-69.17	-13.00	56.17	Horizontal
2974.00	-61.39	-4.95	-66.34	-13.00	53.34	Horizontal
Remark: 1. The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. 2. Test Frequency up to 10GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

Frequency Band: LTE B25 (NU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3705.00	-63.66	-0.46	-64.12	-13.00	51.12	Vertical
5557.50	-65.24	3.72	-61.52	-13.00	48.52	Vertical
7410.00	-64.31	5.46	-58.85	-13.00	45.85	Vertical
3705.00	-63.69	-0.26	-63.95	-13.00	50.95	Horizontal
5557.50	-65.20	3.64	-61.56	-13.00	48.56	Horizontal
7410.00	-66.04	5.02	-61.02	-13.00	48.02	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3765.00	-63.47	-0.66	-64.13	-13.00	51.13	Vertical
5647.50	-64.30	3.52	-60.78	-13.00	47.78	Vertical
7530.00	-65.75	5.75	-60.00	-13.00	47.00	Vertical
3765.00	-63.94	-0.19	-64.13	-13.00	51.13	Horizontal
5647.50	-65.13	3.74	-61.39	-13.00	48.39	Horizontal
7530.00	-66.07	5.75	-60.32	-13.00	47.32	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3825.00	-63.39	0.05	-63.34	-13.00	50.34	Vertical
5737.50	-65.49	3.61	-61.88	-13.00	48.88	Vertical
7650.00	-66.23	6.65	-59.58	-13.00	46.58	Vertical
3825.00	-63.38	0.50	-62.88	-13.00	49.88	Horizontal
5737.50	-65.41	3.97	-61.44	-13.00	48.44	Horizontal
7650.00	-65.85	6.45	-59.40	-13.00	46.40	Horizontal
Remark: 1. The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. 2. Test Frequency up to 20GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

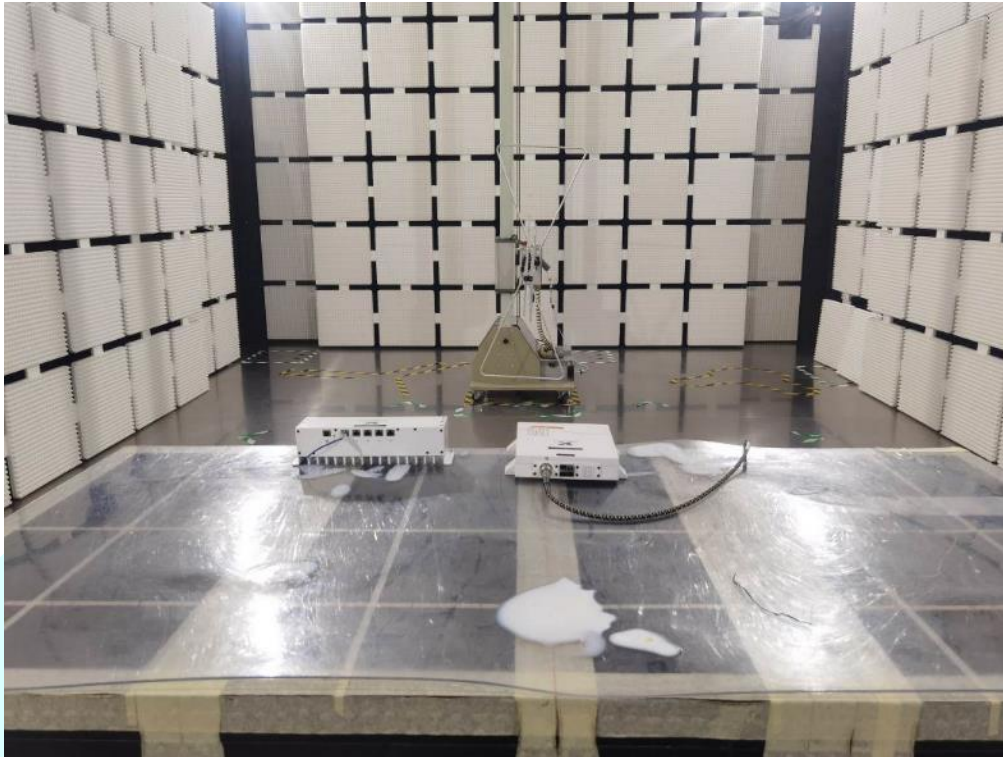
Frequency Band: LTE B25 (CU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3865.00	-63.77	0.80	-62.97	-13.00	49.97	Vertical
5797.50	-65.32	4.37	-60.95	-13.00	47.95	Vertical
7730.00	-61.98	6.71	-55.27	-13.00	42.27	Vertical
3865.00	-62.91	0.98	-61.93	-13.00	48.93	Horizontal
5797.50	-65.17	4.59	-60.58	-13.00	47.58	Horizontal
7730.00	-66.64	6.46	-60.18	-13.00	47.18	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3925.00	-63.62	1.47	-62.15	-13.00	49.15	Vertical
5887.50	-64.96	4.30	-60.66	-13.00	47.66	Vertical
7850.00	-66.17	8.60	-57.57	-13.00	44.57	Vertical
3925.00	-64.08	1.64	-62.44	-13.00	49.44	Horizontal
5887.50	-64.67	4.58	-60.09	-13.00	47.09	Horizontal
7850.00	-66.22	8.36	-57.86	-13.00	44.86	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3985.00	-64.54	1.67	-62.87	-13.00	49.87	Vertical
5977.50	-65.61	5.49	-60.12	-13.00	47.12	Vertical
7970.00	-65.90	8.47	-57.43	-13.00	44.43	Vertical
3985.00	-64.64	2.00	-62.64	-13.00	49.64	Horizontal
5977.50	-65.41	5.41	-60.00	-13.00	47.00	Horizontal
7970.00	-66.17	8.38	-57.79	-13.00	44.79	Horizontal
Remark: 1. The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. 2. Test Frequency up to 20GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

Frequency Band: LTE B66 (NU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3425.00	-63.02	-2.16	-65.18	-13.00	52.18	Vertical
5137.50	-64.60	4.25	-60.35	-13.00	47.35	Vertical
6850.00	-65.66	5.64	-60.02	-13.00	47.02	Vertical
3425.00	-63.43	-2.23	-65.66	-13.00	52.66	Horizontal
5137.50	-64.77	4.30	-60.47	-13.00	47.47	Horizontal
6850.00	-65.85	5.84	-60.01	-13.00	47.01	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3510.00	-63.05	-3.34	-66.39	-13.00	53.39	Vertical
5265.00	-65.40	3.79	-61.61	-13.00	48.61	Vertical
7020.00	-63.79	5.31	-58.48	-13.00	45.48	Vertical
3510.00	-63.21	-3.16	-66.37	-13.00	53.37	Horizontal
5265.00	-65.58	4.15	-61.43	-13.00	48.43	Horizontal
7020.00	-65.14	5.38	-59.76	-13.00	46.76	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
3555.00	-62.54	-2.43	-64.97	-13.00	51.97	Vertical
5332.50	-65.83	4.67	-61.16	-13.00	48.16	Vertical
7110.00	-64.05	5.59	-58.46	-13.00	45.46	Vertical
3555.00	-63.24	-2.38	-65.62	-13.00	52.62	Horizontal
5332.50	-65.53	4.68	-60.85	-13.00	47.85	Horizontal
7110.00	-65.23	5.41	-59.82	-13.00	46.82	Horizontal
Remark: 1. The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. 2. Test Frequency up to 25GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

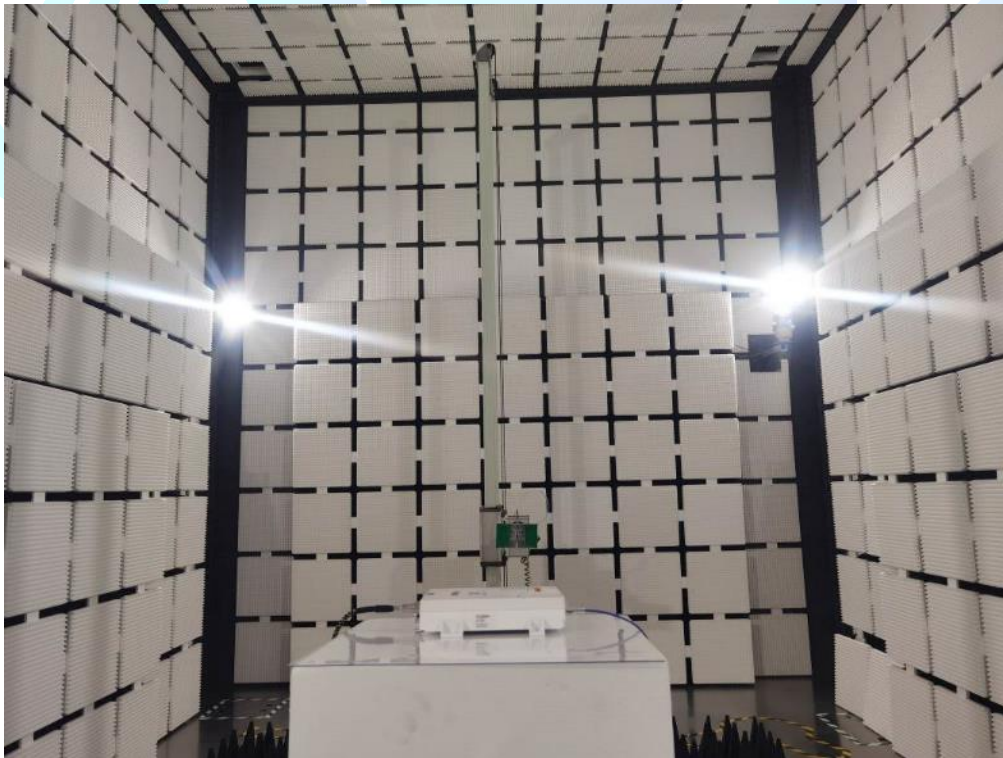
Frequency Band: LTE B66 (CU)						
Lowest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
4225.00	-62.10	0.06	-62.04	-13.00	49.04	Vertical
6337.50	-65.38	3.92	-61.46	-13.00	48.46	Vertical
8450.00	-67.74	8.66	-59.08	-13.00	46.08	Vertical
4225.00	-64.48	-0.24	-64.72	-13.00	51.72	Horizontal
6337.50	-65.53	3.85	-61.68	-13.00	48.68	Horizontal
8450.00	-67.73	8.25	-59.48	-13.00	46.48	Horizontal
Middle channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
4310.00	-64.15	1.71	-62.44	-13.00	49.44	Vertical
6465.00	-64.73	4.87	-59.86	-13.00	46.86	Vertical
8620.00	-67.20	8.42	-58.78	-13.00	45.78	Vertical
4310.00	-62.25	1.71	-60.54	-13.00	47.54	Horizontal
6465.00	-65.49	4.73	-60.76	-13.00	47.76	Horizontal
8620.00	-66.80	8.12	-58.68	-13.00	45.68	Horizontal
Highest channel						
Frequency (MHz)	Spurious Emission level (dBm)	Factor (dB)	Level at antenna terminals (dBm)	Limit (dBm)	Margin (dB)	Polarization
4355.00	-63.15	1.59	-61.56	-13.00	48.56	Vertical
6532.50	-65.53	5.81	-59.72	-13.00	46.72	Vertical
8710.00	-67.30	8.77	-58.53	-13.00	45.53	Vertical
4355.00	-61.88	1.71	-60.17	-13.00	47.17	Horizontal
6532.50	-65.10	6.22	-58.88	-13.00	45.88	Horizontal
8710.00	-67.33	8.58	-58.75	-13.00	45.75	Horizontal
Remark: 1. The emission levels of below 1 GHz are lower than the limit 20dB, so not show in test report. 2. Test Frequency up to 25GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.						

6 Test Setup Photos

Radiated Spurious Emission for NU
Below 1GHz

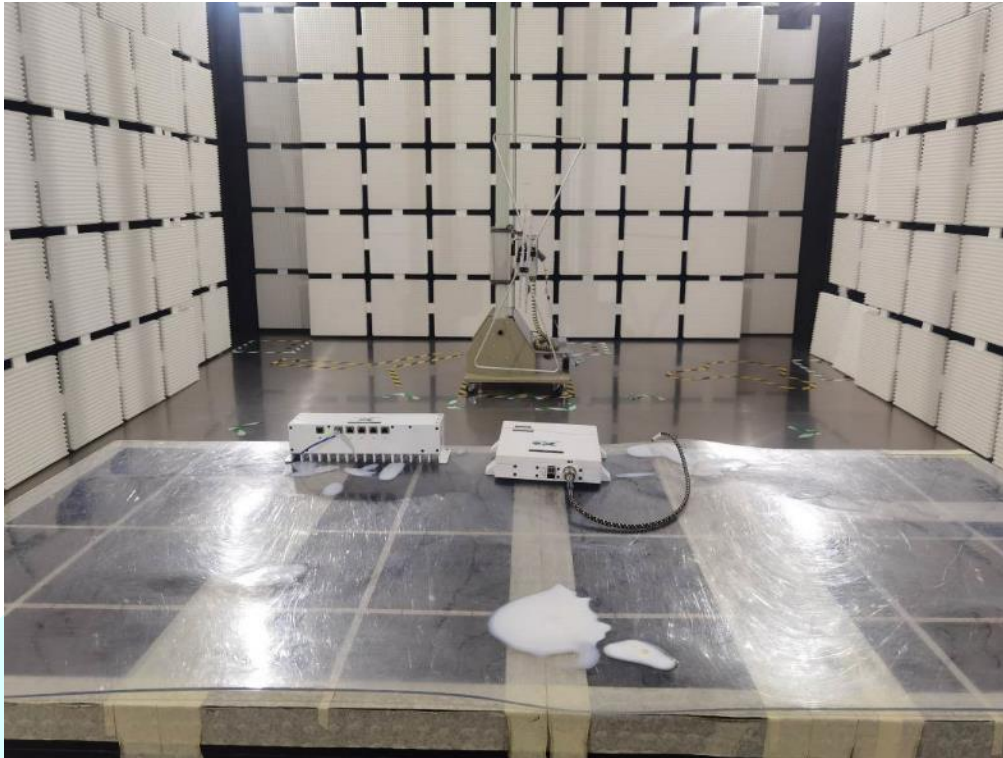


Above 1GHz

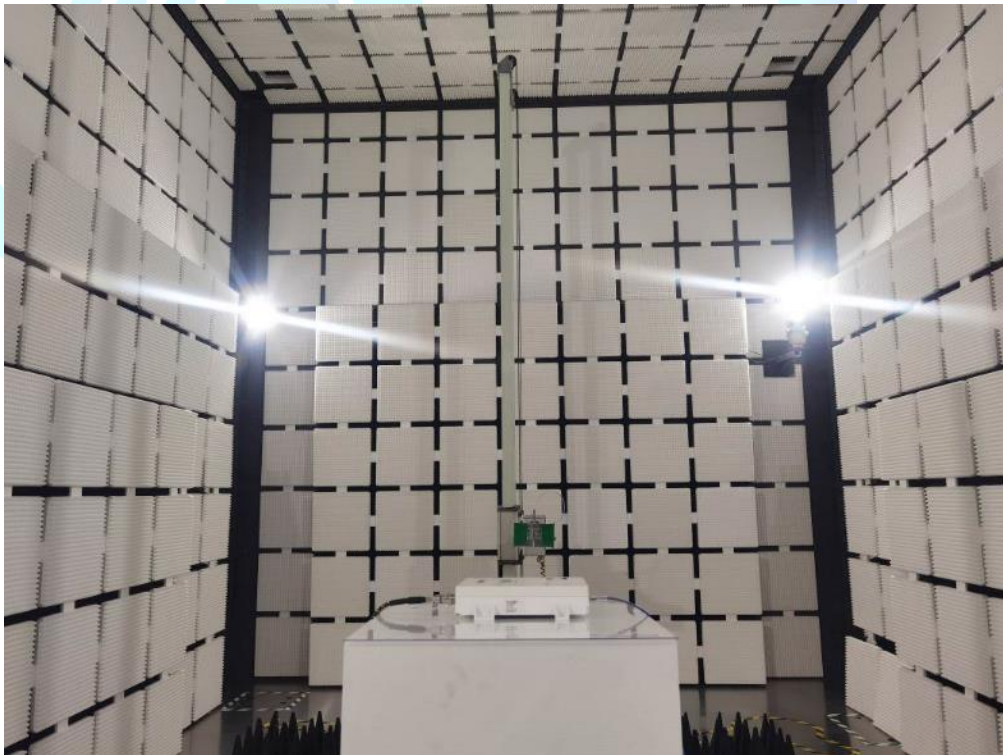


Radiated Spurious Emission for CU

Below 1GHz



Above 1GHz



7 EUT Constructional Details

Please refer to test report No. ACT-RF-260500301

----- End of Report -----