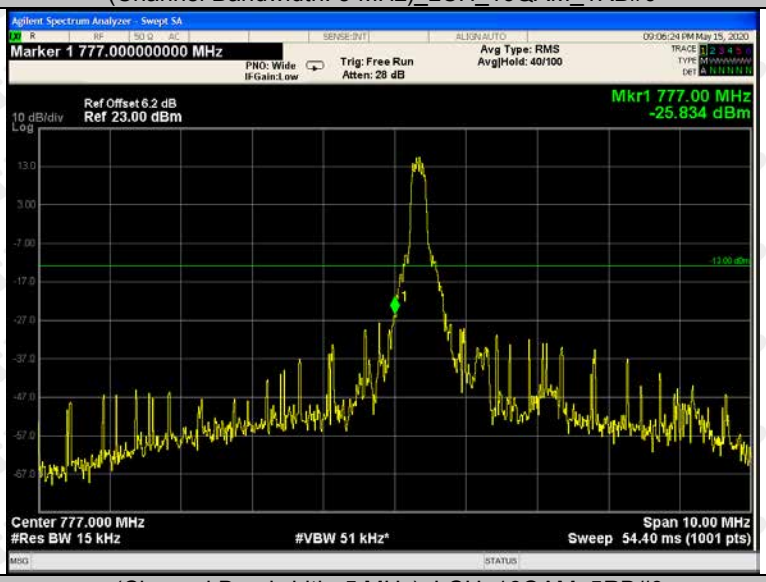
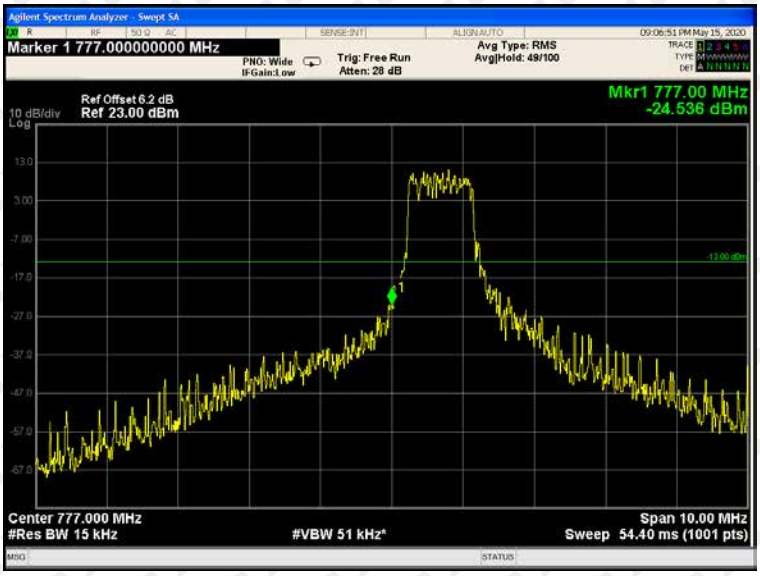
(Channel Bandwidth: 5 MHz)_HCH_QPSK_6RB#0

(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0

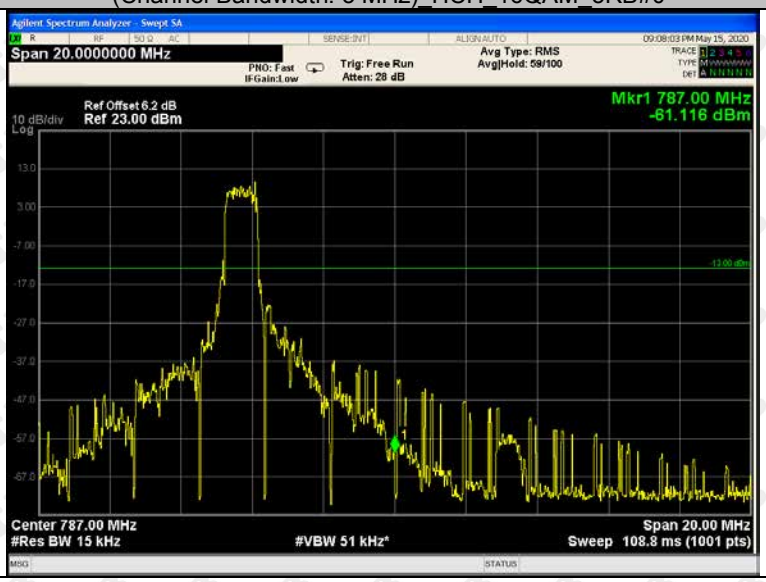


(Channel Bandwidth: 5 MHz)_LCH_16QAM_5RB#0



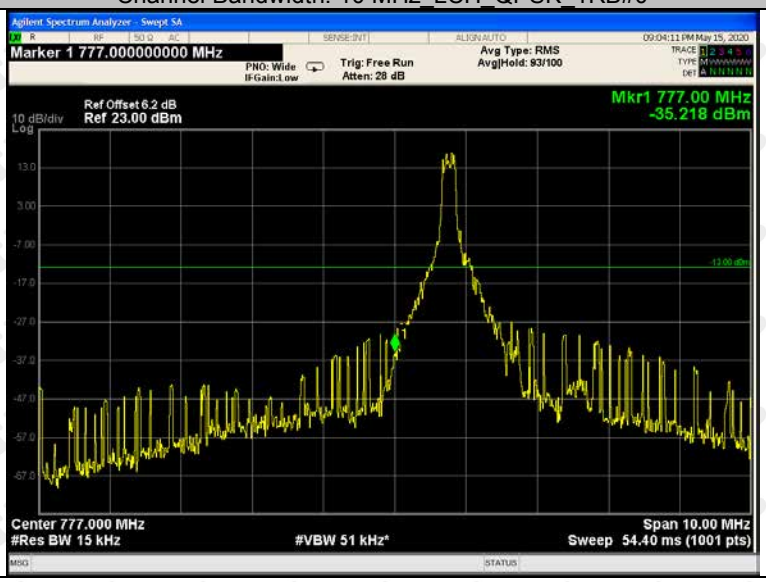
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#0

(Channel Bandwidth: 5 MHz)_HCH_16QAM_5RB#0

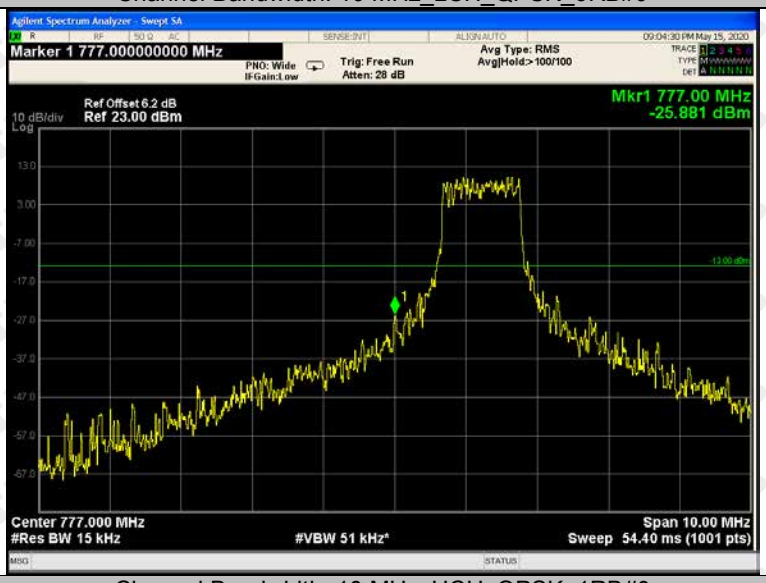


Channel Bandwidth: 10 MHz

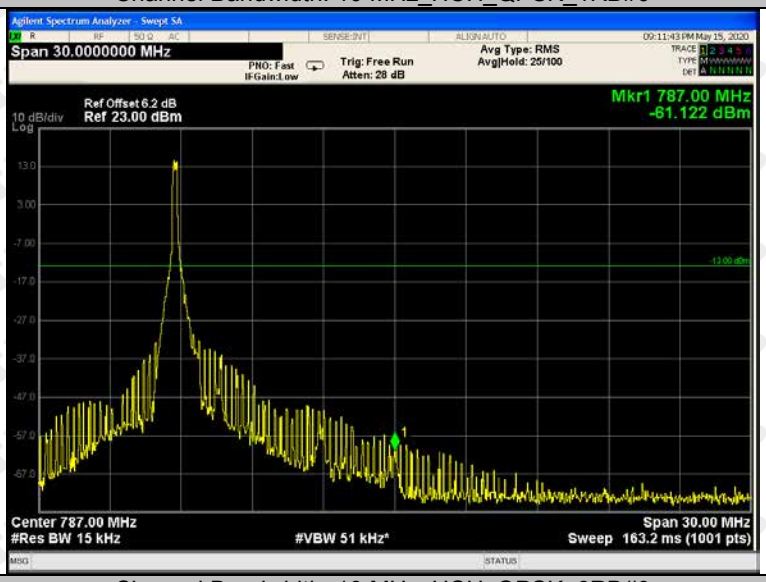
Channel Bandwidth: 10 MHz_LCH_QPSK_1RB#0



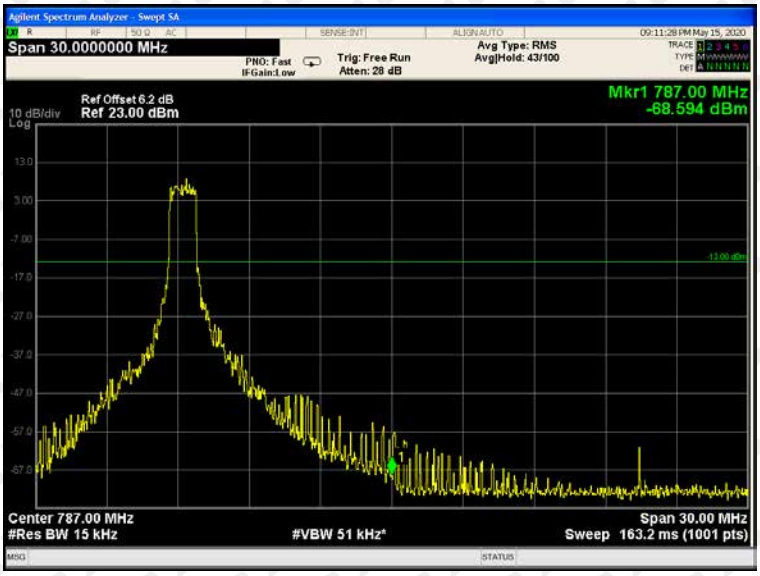
Channel Bandwidth: 10 MHz_LCH_QPSK_6RB#0



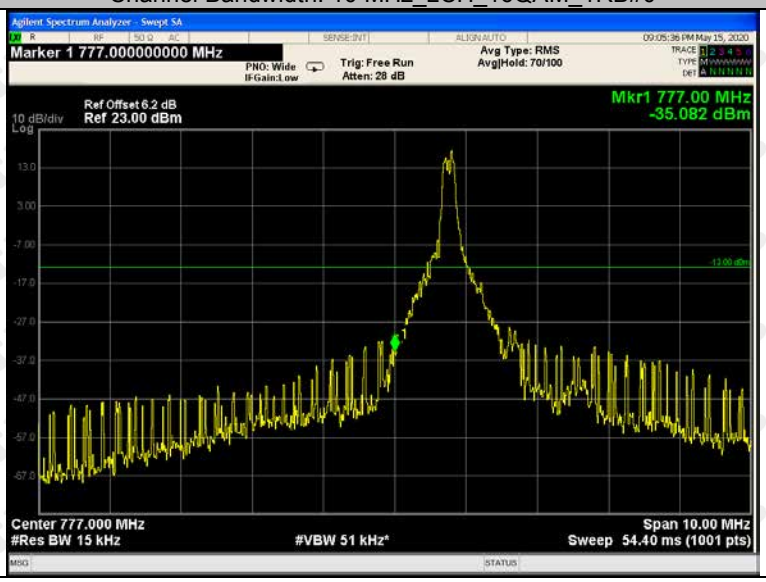
Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#0



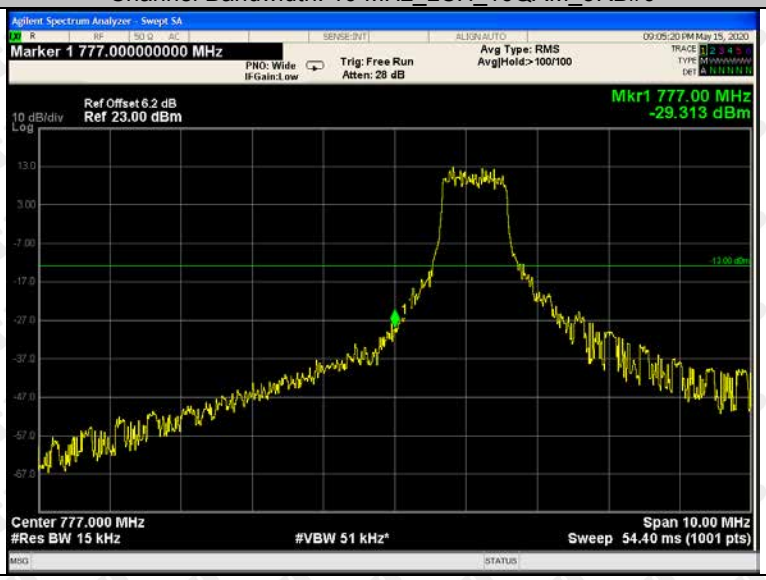
Channel Bandwidth: 10 MHz_HCH_QPSK_6RB#0



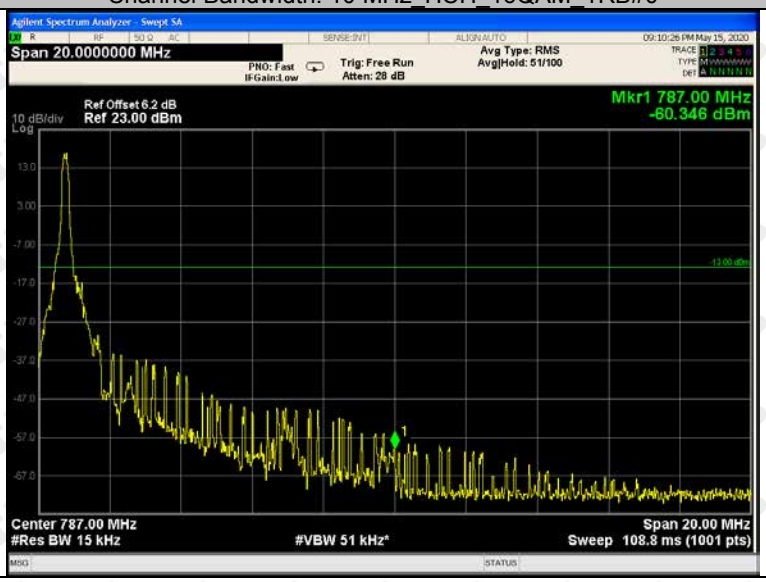
Channel Bandwidth: 10 MHz_LCH_16QAM_1RB#0



Channel Bandwidth: 10 MHz_LCH_16QAM_5RB#0



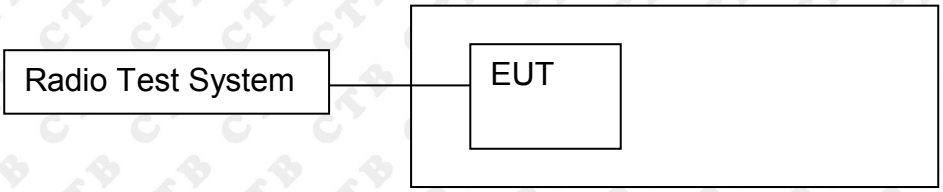
Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#0



Channel Bandwidth: 10 MHz_HCH_16QAM_5RB#0

11. SPURIOUS EMISSIONS AT ANTENNA TERMINALS

11.1 Block Diagram Of Test Setup



11.2 Limit

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 log10 (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 B4/12 Limit

Limit	-13 dBm

LTE B13 Limit

Limit out of the band 1559-1610 MHz	-13 dBm
Limit in the band 1559-1610 MHz	-40 dBm

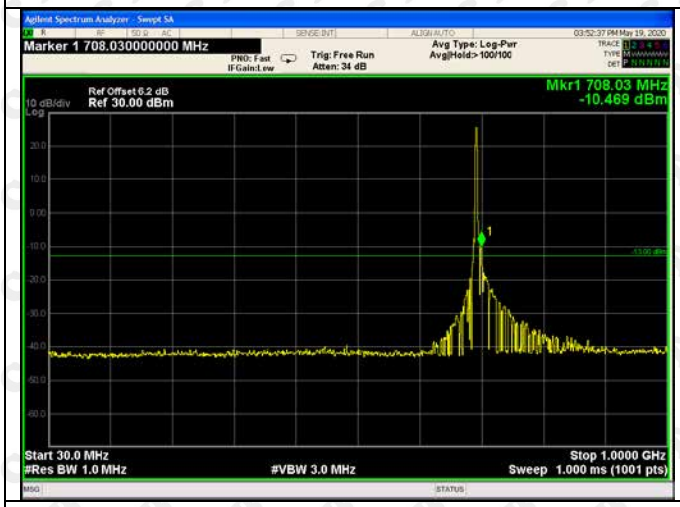
11.3 Test procedure

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. Set RBW 1MHz and VBW3MHz， Sweep is set to ATUO.
Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

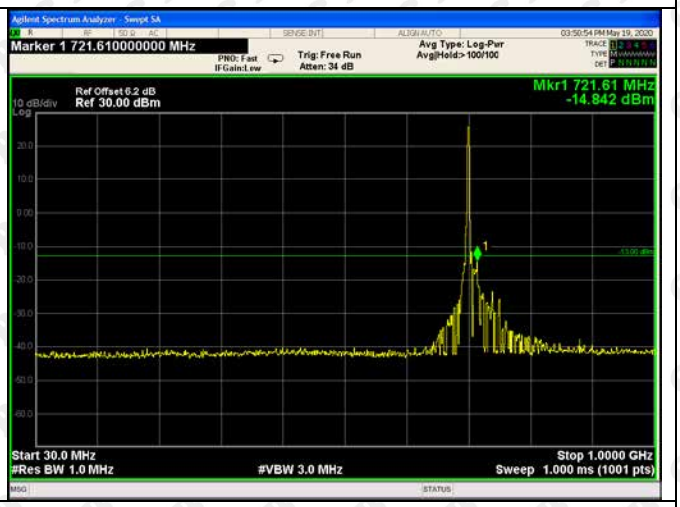
11.4 Test Result

Sweep from 9 kHz to 30MHz, and the emissions more than 20 dB below the permissible value are not reported.
If disturbances were found more than 20dB below limit line, the mark is not required for the EUT. The signal beyond the limit is carrier.

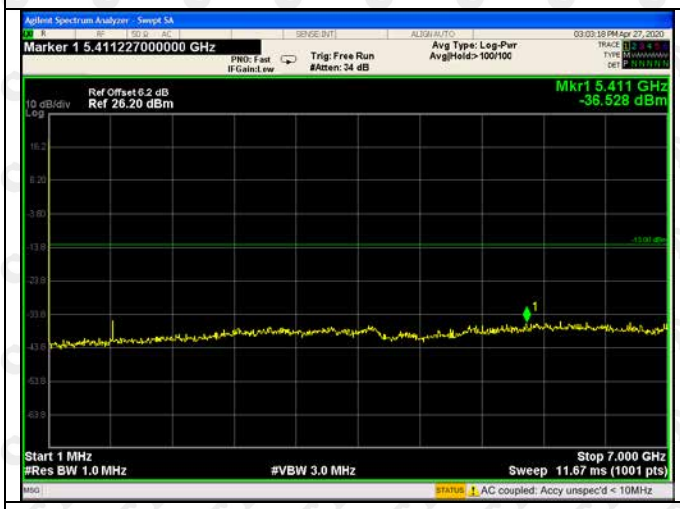
LTE Band 12 1.4MHz LCH 30MHz~1GHz



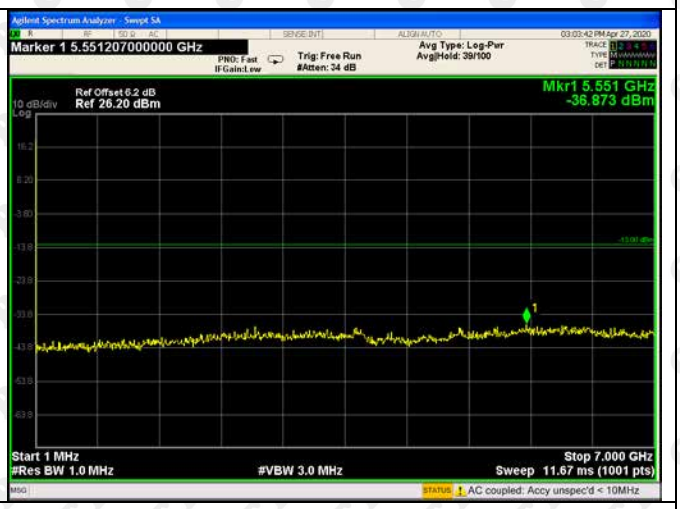
LTE Band 12 1.4MHz MCH 30MHz~1GHz



LTE Band 12 1.4MHz LCH 1GHz~7GHz

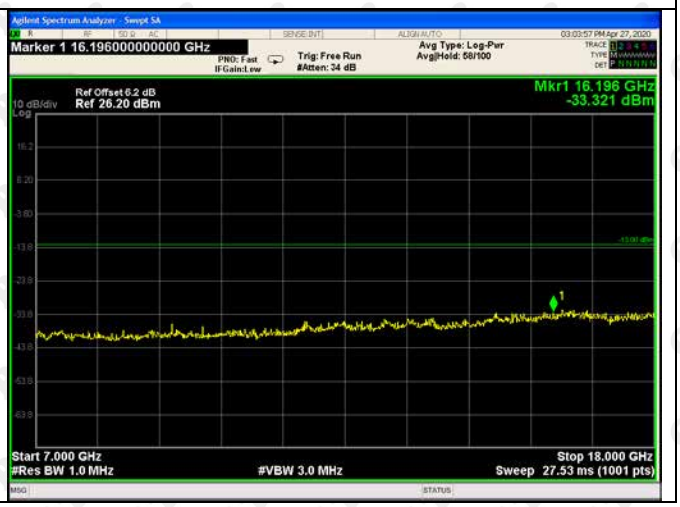


LTE Band 12 1.4MHz MCH 1GHz~7GHz

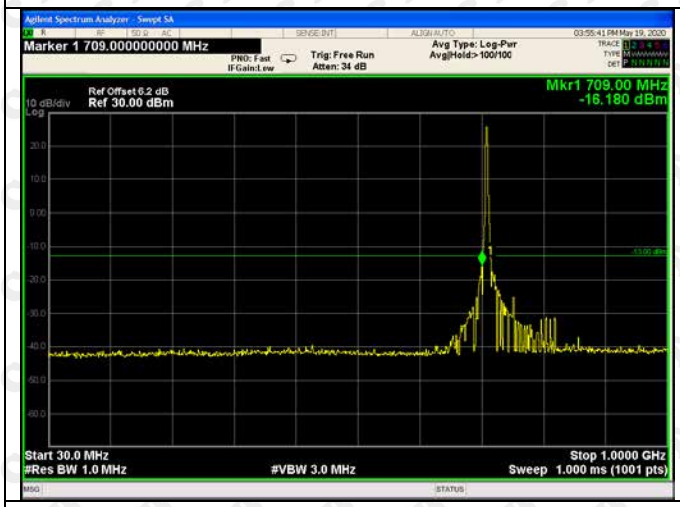


LTE Band 12 1.4MHz LCH 7GHz~18GHz

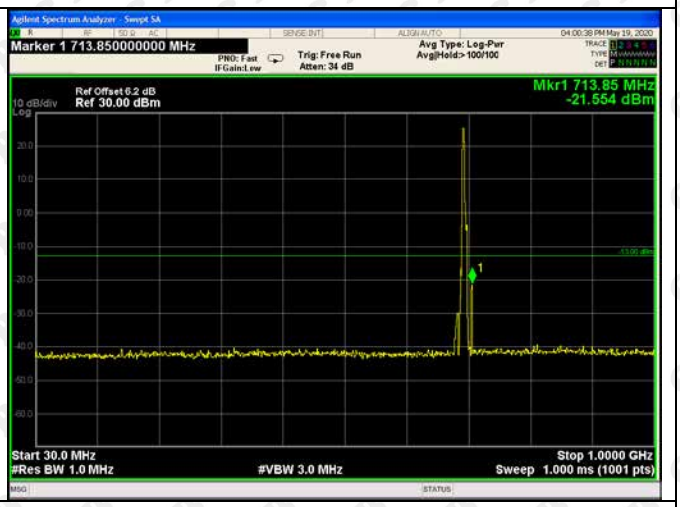
LTE Band 12 1.4MHz MCH 7GHz~18GHz



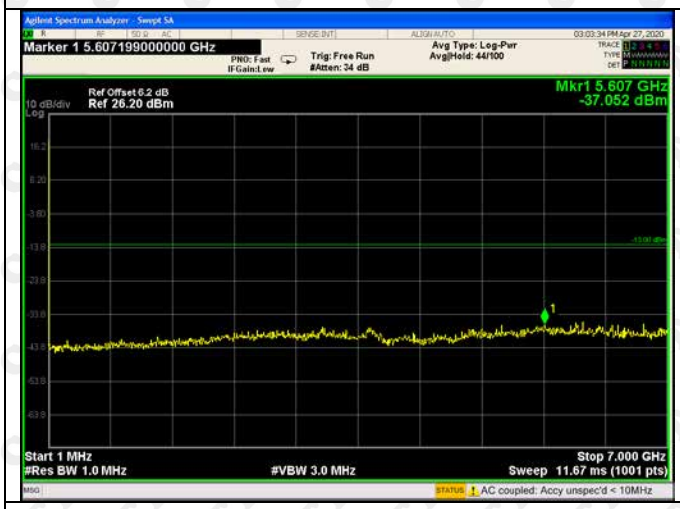
LTE Band 12 1.4MHz HCH 30MHz~1GHz



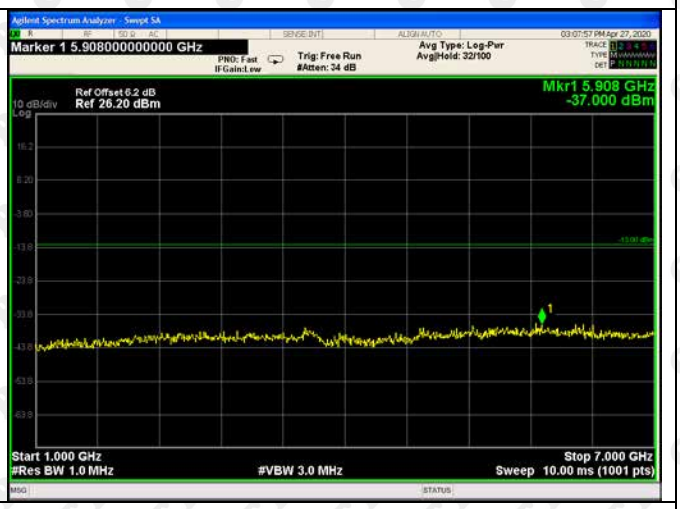
LTE Band 12 3MHz LCH 30MHz~1GHz



LTE Band 12 1.4MHz HCH 1GHz~7GHz



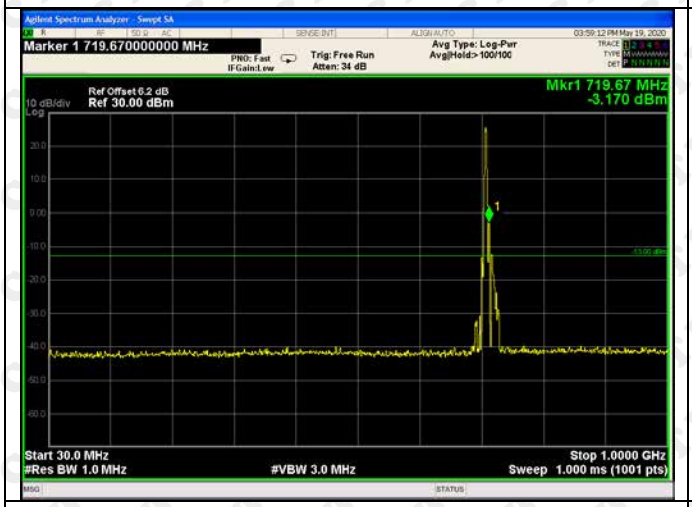
LTE Band 12 3MHz LCH 1GHz~7GHz



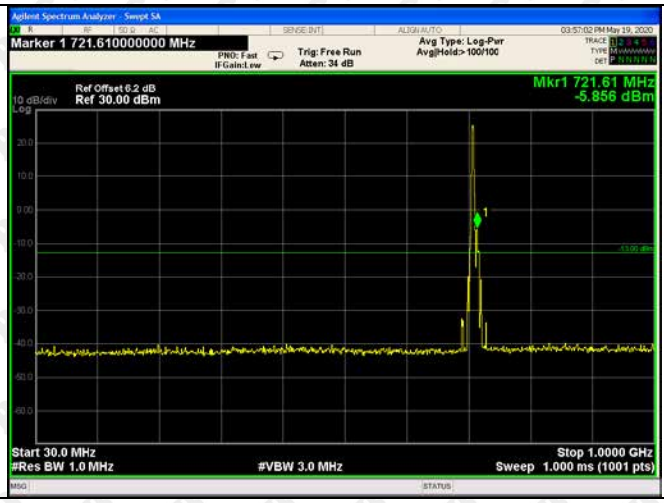
LTE Band 12 1.4MHz HCH 7GHz~18GHz

LTE Band 12 3MHz LCH 7GHz~18GHz

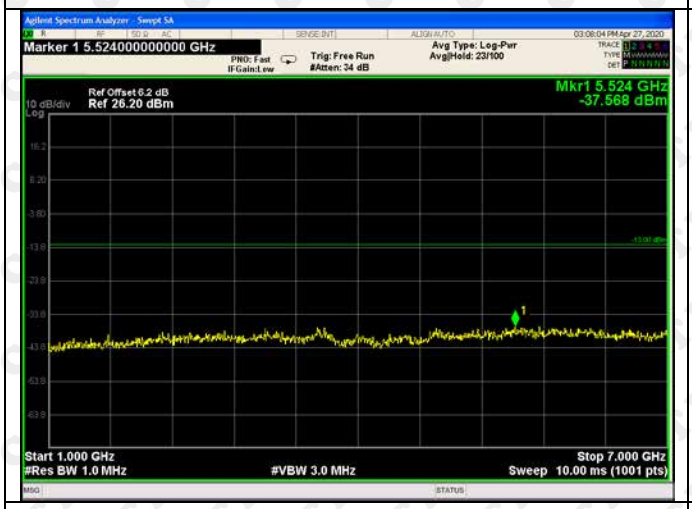
LTE Band 12 3MHz MCH 30MHz~1GHz



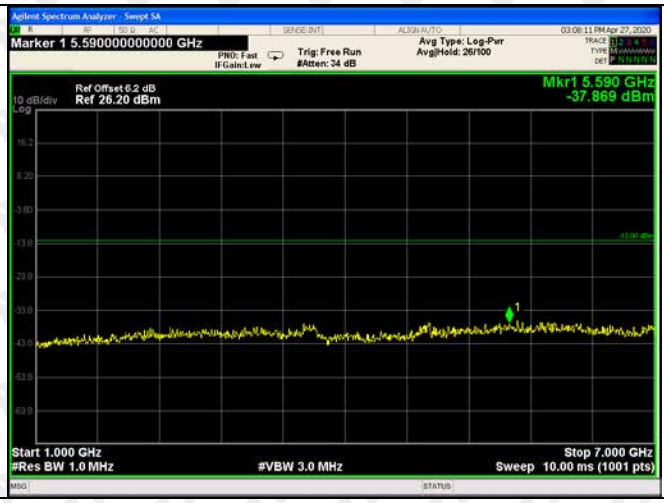
LTE Band 12 3MHz HCH 30MHz~1GHz



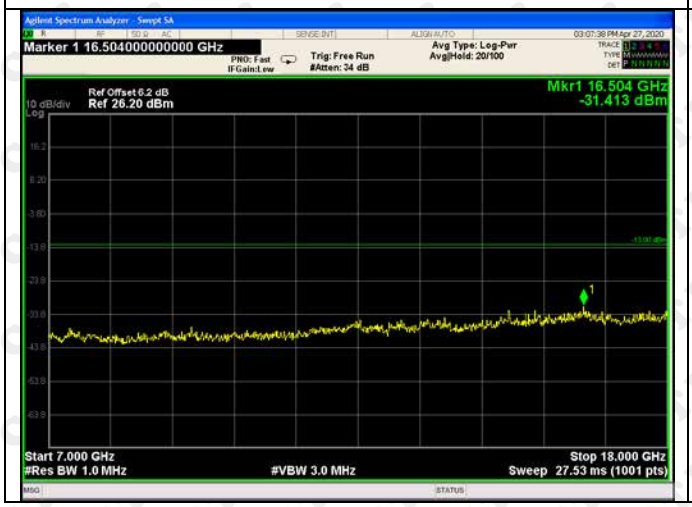
LTE Band 12 3MHz MCH 1GHz~7GHz



LTE Band 12 3MHz HCH 1GHz~7GHz

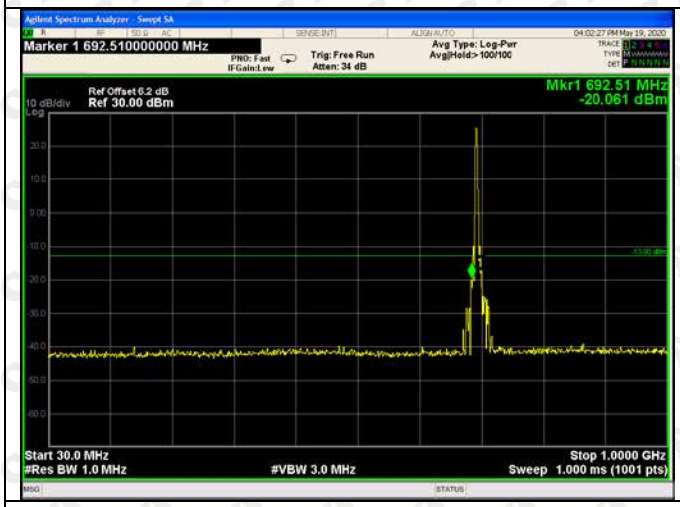


LTE Band 12 3MHz MCH 7GHz~18GHz

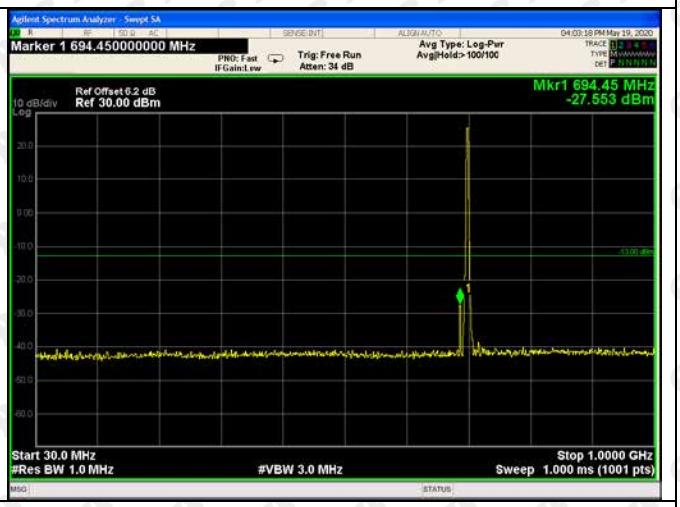


LTE Band 12 3MHz HCH 7GHz~18GHz

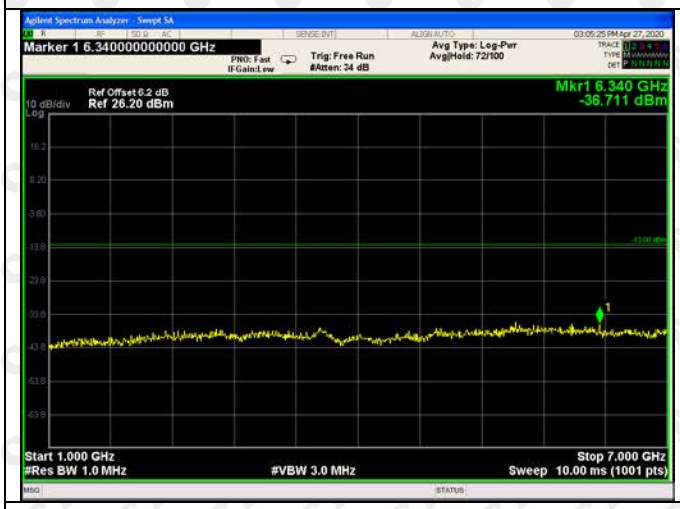
LTE Band 12 5MHz LCH 30MHz~1GHz



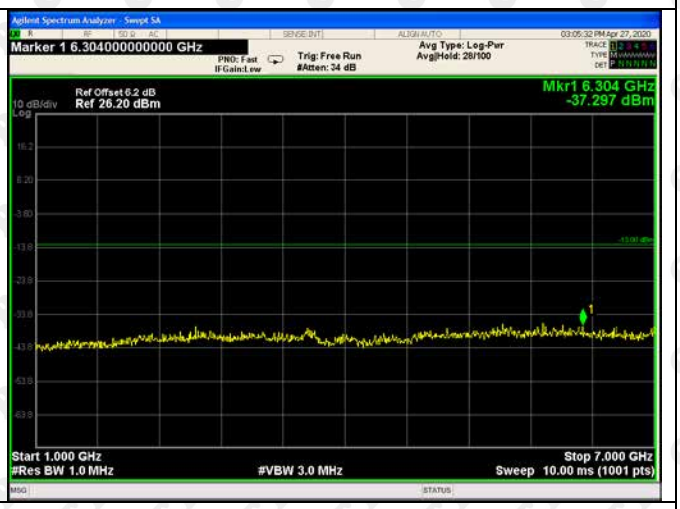
LTE Band 12 5MHz MCH 30MHz~1GHz



LTE Band 12 5MHz LCH 1GHz~7GHz



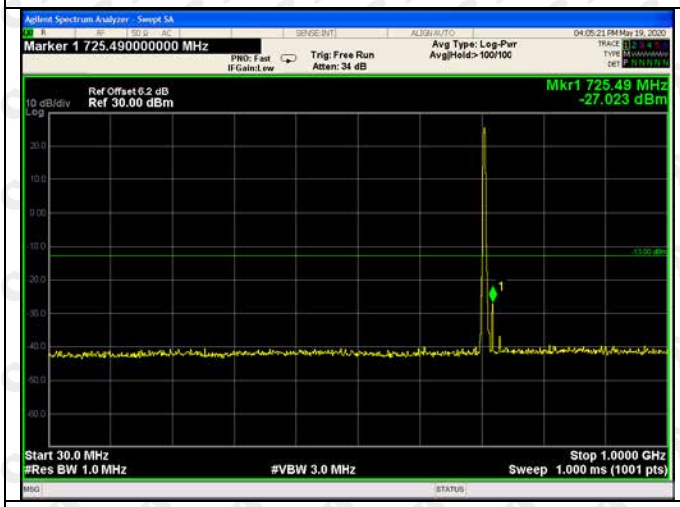
LTE Band 12 5MHz MCH 1GHz~7GHz



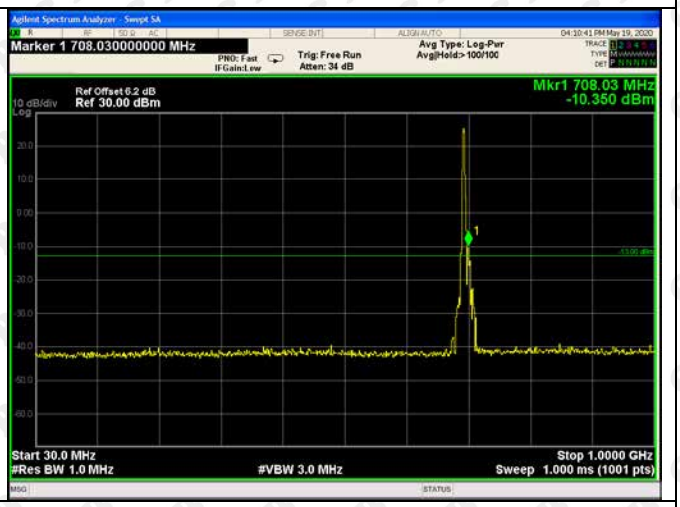
LTE Band 12 5MHz LCH 7GHz~18GHz

LTE Band 12 5MHz MCH 7GHz~18GHz

LTE Band 12 5MHz HCH 30MHz~1GHz



LTE Band 12 10MHz LCH 30MHz~1GHz



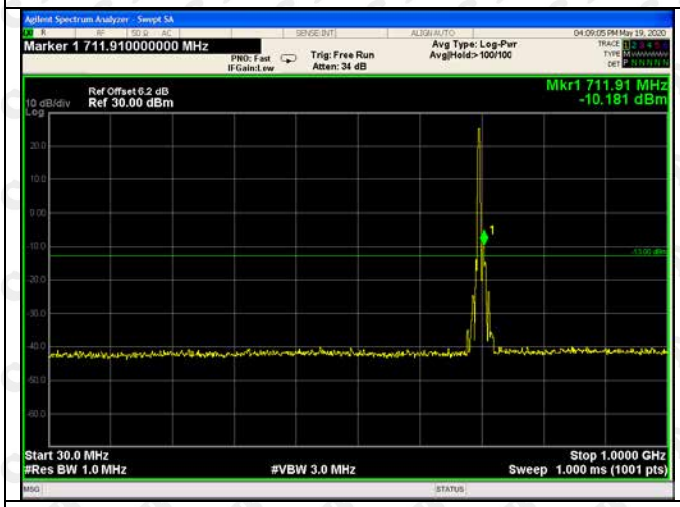
LTE Band 12 5MHz HCH 1GHz~7GHz

LTE Band 12 10MHz LCH 1GHz~7GHz

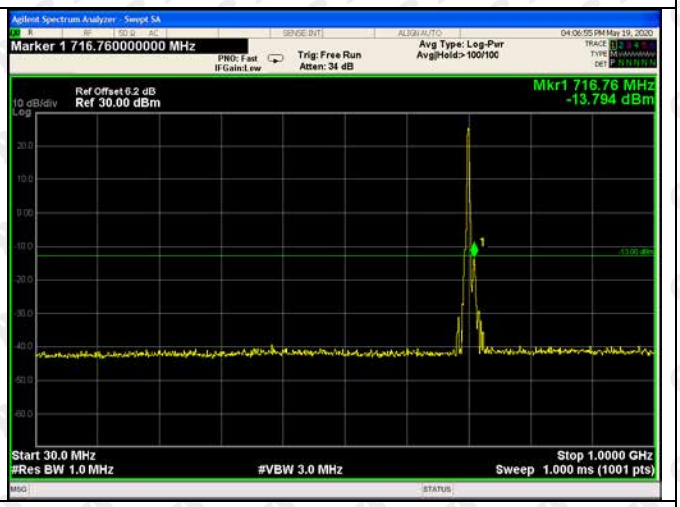
LTE Band 12 5MHz HCH 7GHz~18GHz

LTE Band 12 10MHz LCH 7GHz~18GHz

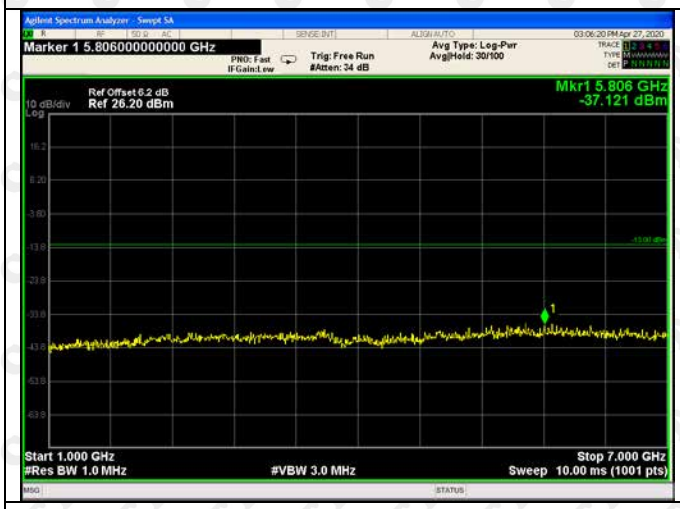
LTE Band 12 10MHz MCH 30MHz~1GHz



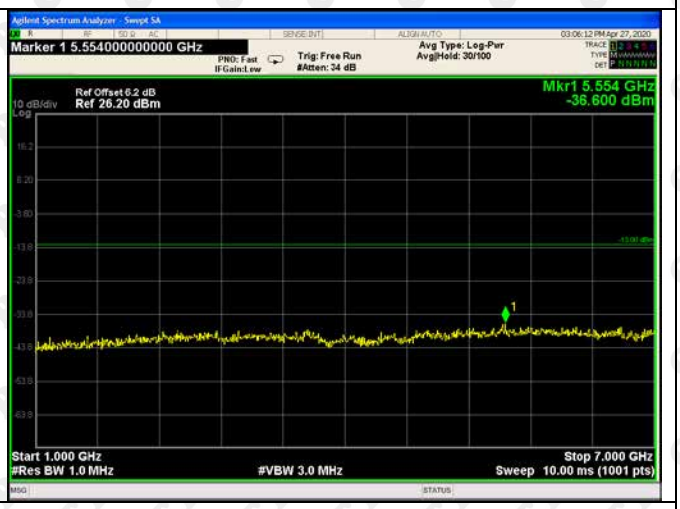
LTE Band 12 10MHz HCH 30MHz~1GHz



LTE Band 12 10MHz MCH 1GHz~7GHz



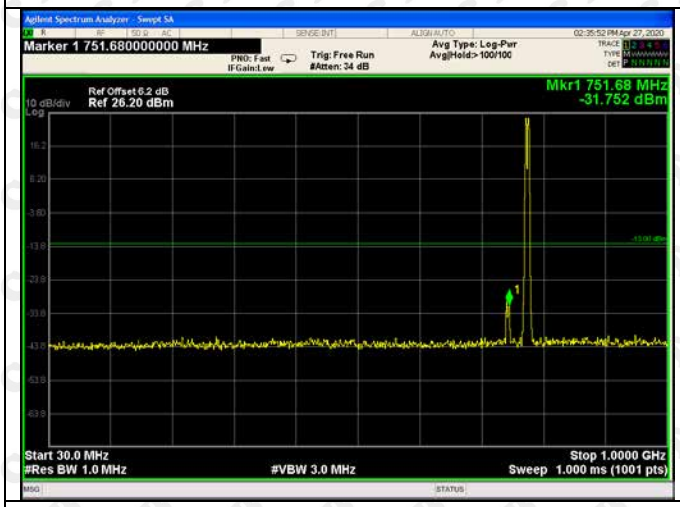
LTE Band 12 10MHz HCH 1GHz~7GHz



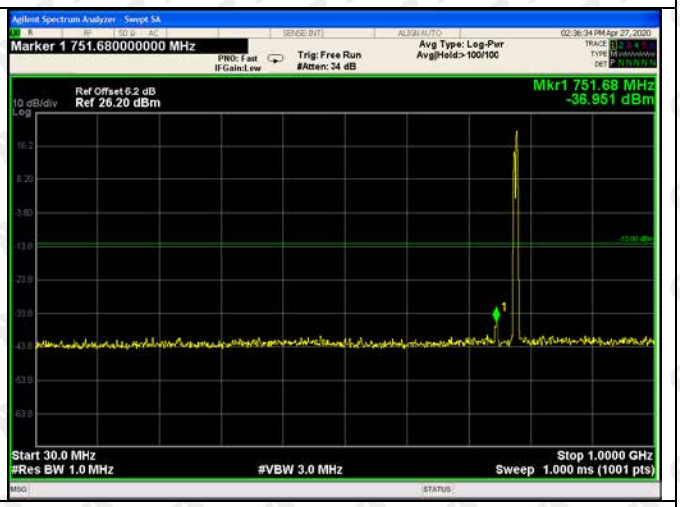
LTE Band 12 10MHz MCH 7GHz~18GHz

LTE Band 12 10MHz HCH 7GHz~18GHz

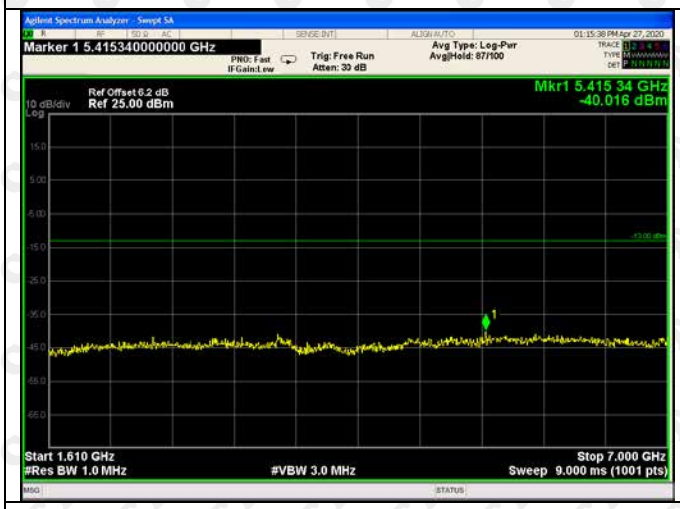
LTE Band 13 5MHz LCH 30MHz~1GHz



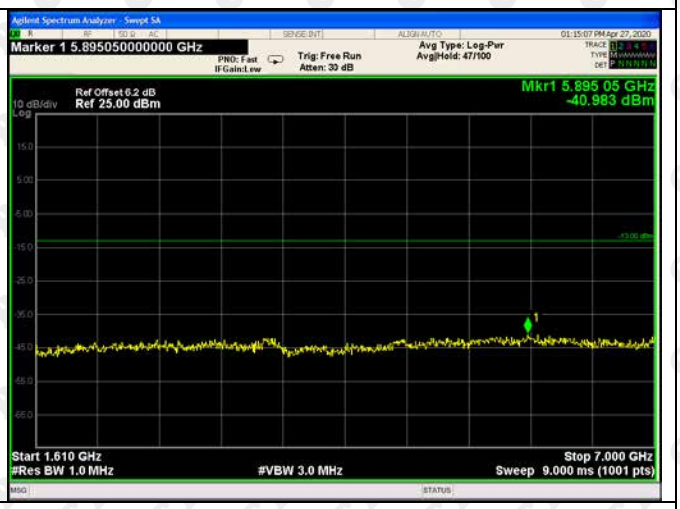
LTE Band 13 5MHz MCH 30MHz~1GHz



LTE Band 13 5MHz LCH 1.61GHz~7GHz



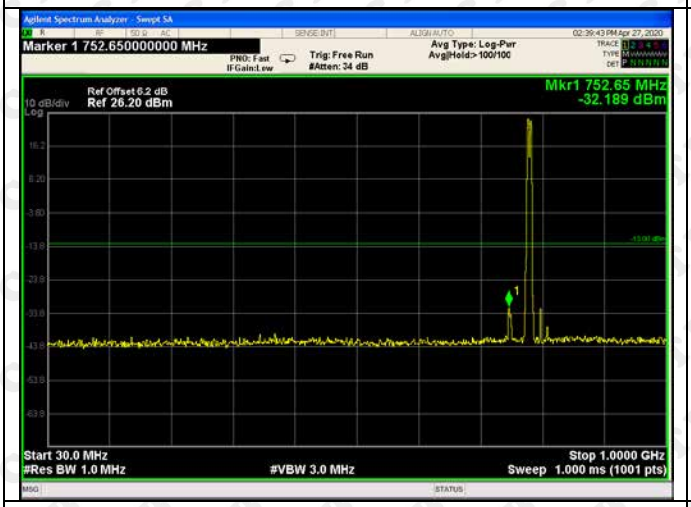
LTE Band 13 5MHz MCH 1.61GHz~7GHz



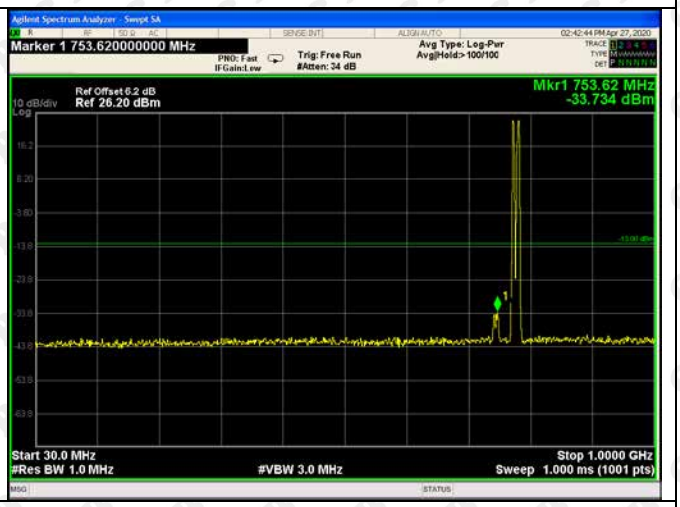
LTE Band 13 5MHz LCH 7GHz~18GHz

LTE Band 13 5MHz MCH 7GHz~18GHz

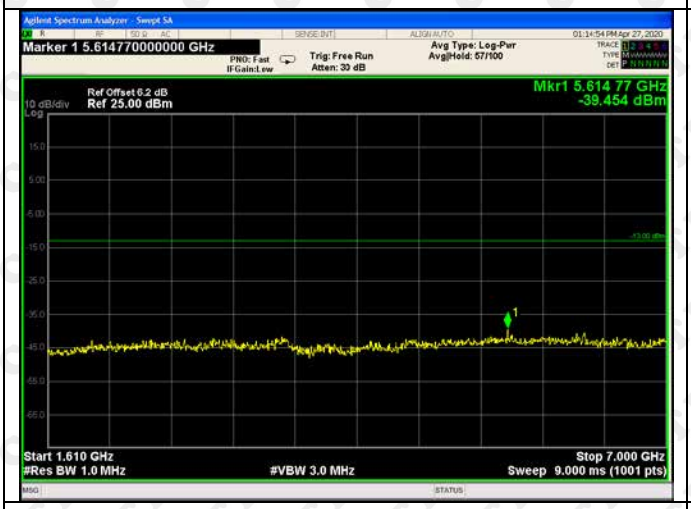
LTE Band 13 5MHz HCH 30MHz~1GHz



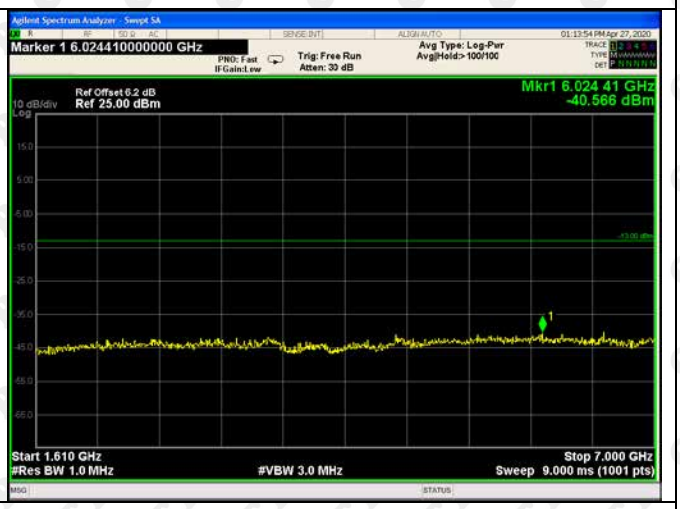
LTE Band 13 10MHz LCH 30MHz~1GHz



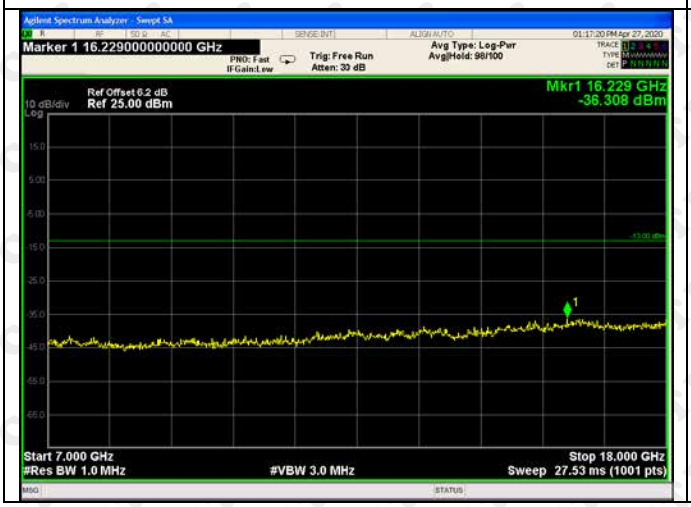
LTE Band 13 5MHz HCH 1.61GHz~7GHz



LTE Band 13 10MHz LCH 1.61GHz~7GHz

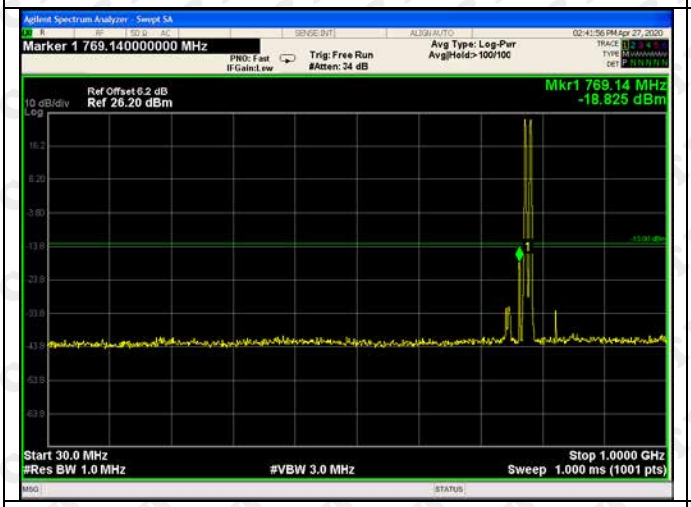


LTE Band 13 5MHz HCH 7GHz~18GHz

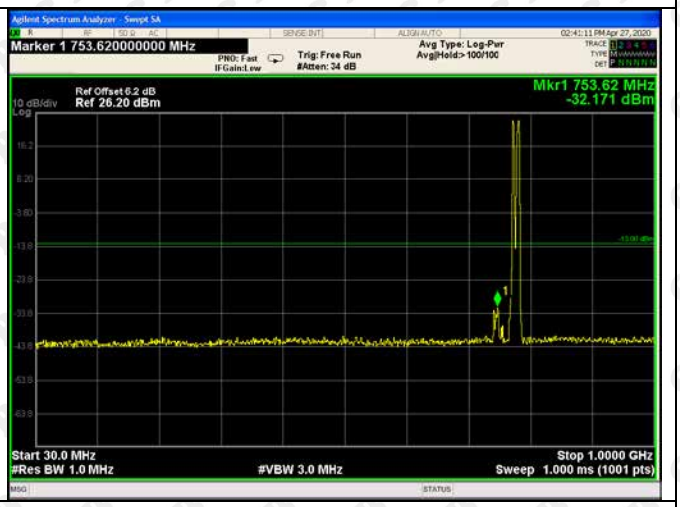


LTE Band 13 10MHz LCH 7GHz~18GHz

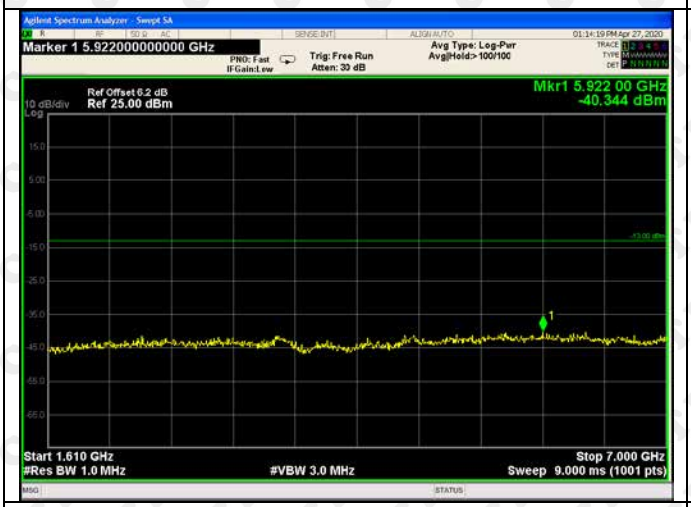
LTE Band 13 10MHz MCH 30MHz~1GHz



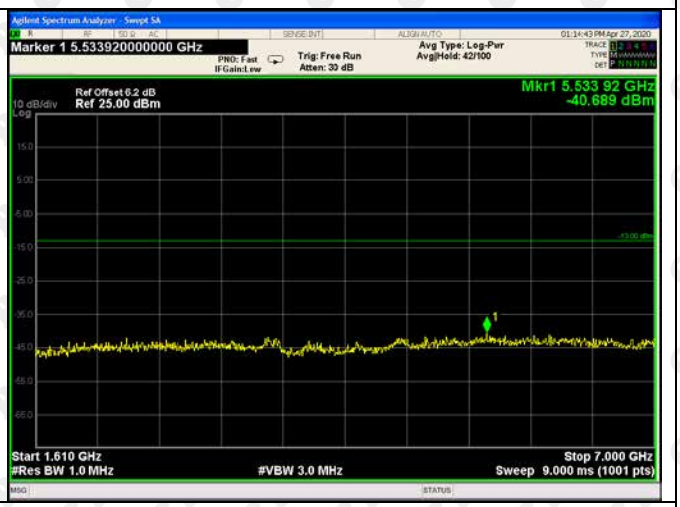
LTE Band 13 10MHz HCH 30MHz~1GHz



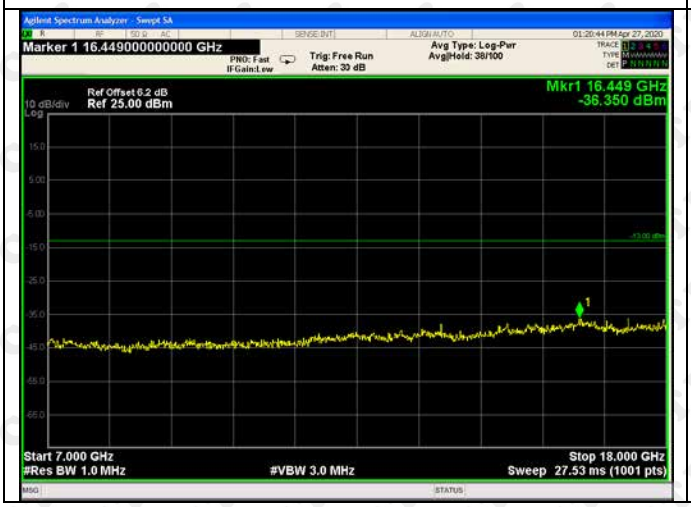
LTE Band 13 10MHz MCH 1.61GHz~7GHz



LTE Band 13 10MHz HCH 1.61GHz~7GHz



LTE Band 13 10MHz MCH 7GHz~18GHz



LTE Band 13 10MHz HCH 7GHz~18GHz

12. FIELD STRENGTH OF SPURIOUS RADIATIONR

13.1 Block Diagram Of Test Setup

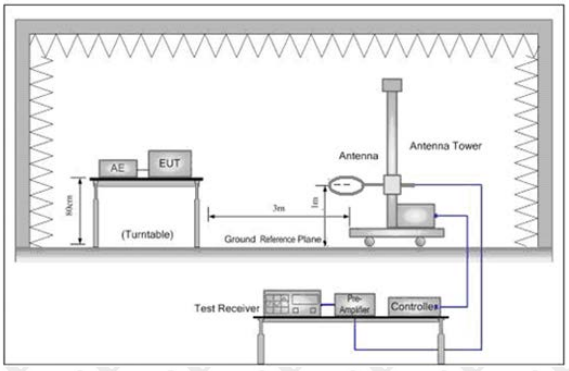


Figure 1. Below 30MHz

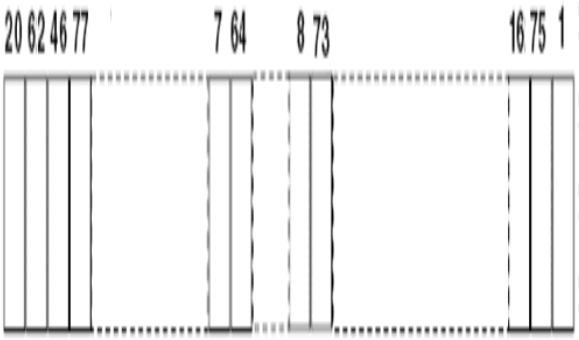


Figure 2. 30MHz to 1GHz

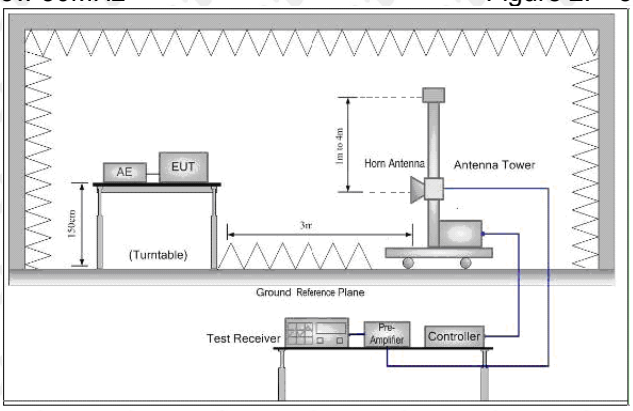


Figure 3. Above 1GHz

13.2 Limit

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 log10 (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 B4/12 Limit

Limit	-13 dBm

LTE B13 Limit

Limit out of the band 1559-1610 MHz	-13 dBm
Limit in the band 1559-1610 MHz	-40 dBm

13.3 Test procedure

3. Scan up to 10th harmonic, find the maximum radiation frequency to measure.
4. The technique used to find the Spurious Emissions of the transmitter was the antenna substitution method. Substitution method was performed to determine the actual ERP/EIRP emission levels of the EUT.

Test procedure as below:

1) The EUT was powered ON and placed on a 1.5m hight table at a 3 meter fully Anechoic Chamber. The antenna of the transmitter was extended to its maximum length. modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test.
2) The EUT was set 3 meters(above 18GHz the distance is 1 meter) away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3) The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made.
4) Steps 1) to 3) were performed with the EUT and the receive antenna in both vertical and horizontal polarization.
5) The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter.
6) A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 3) is obtained for this set of conditions.
7) The output power into the substitution antenna was then measured.
8) Steps 6) and 7)were repeated with both antennas polarized.
9) Calculate power in dBm by the following formula:

   ERP(dBm) = Pg(dBm) - cable loss (dB)- + antenna gain (dBd)

   EIRP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBi)

   EIRP=ERP+2.15dB

   where:

   Pg is the generator output power into the substitution antenna.
10) Test the EUT in the lowest channel, the middle channel the Highest channel
11) The radiation measurements are performed in X, Y, Z axis positioning for EUT operation mode,And found the X axis positioning which it is worse case.

Repeat above procedures until all frequencies measured was complete.

Receiver Setup

Frequency (GHz)	RBW	VBW	Sweep time (s)
0.00009~0.15	1KHz	3KHz	30
0.00015~0.03	10KHz	30KHz	10
0.03~1	100KHz	300KHz	10
1~2	1 MHz	3 MHz	2
2~5	1 MHz	3 MHz	3
5~8	1 MHz	3 MHz	3
8~11	1 MHz	3 MHz	3
11~14	1 MHz	3 MHz	3
14~18	1 MHz	3 MHz	3
18~20	1 MHz	3 MHz	2

13.4 Test Result

Test Data:
QPSK

Band 12 23017 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1274.721	152	40	-60.68	-13.00	-47.68	Pass	H
1633.892	150	54	-51.97	-13.00	-38.97	Pass	H
3859.037	152	209	-50.32	-13.00	-37.32	Pass	H
5762.527	153	100	-47.32	-13.00	-34.32	Pass	H
6501.260	152	276	-46.04	-13.00	-33.04	Pass	H
7966.120	152	100	-46.46	-13.00	-33.46	Pass	H
1218.322	148	159	-58.06	-13.00	-45.06	Pass	V
1349.515	151	66	-59.48	-13.00	-46.48	Pass	V
3491.050	151	42	-54.52	-13.00	-41.52	Pass	V
3824.302	151	145	-52.47	-13.00	-39.47	Pass	V
5831.171	149	57	-48.67	-13.00	-35.67	Pass	V
6554.944	153	304	-48.22	-13.00	-35.22	Pass	V

Band 12 23095 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1285.754	148	28	-58.44	-13.00	-45.44	Pass	H
1592.179	153	40	-52.71	-13.00	-39.71	Pass	H
3863.718	150	91	-50.18	-13.00	-37.18	Pass	H
5772.008	150	24	-47.41	-13.00	-34.41	Pass	H
6508.712	150	64	-46.74	-13.00	-33.74	Pass	H
7987.524	151	158	-48.53	-13.00	-35.53	Pass	H
1187.078	149	257	-58.30	-13.00	-45.30	Pass	V
1444.228	152	217	-58.50	-13.00	-45.50	Pass	V
3491.005	152	166	-52.75	-13.00	-39.75	Pass	V
3828.463	150	321	-50.01	-13.00	-37.01	Pass	V
5819.595	149	256	-48.91	-13.00	-35.91	Pass	V
6517.992	152	119	-49.78	-13.00	-36.78	Pass	V

Band 12 23173 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1255.758	152	82	-59.10	-13.00	-46.10	Pass	H
1592.939	152	133	-53.93	-13.00	-40.93	Pass	H
3805.815	148	238	-52.28	-13.00	-39.28	Pass	H
5771.354	151	218	-45.76	-13.00	-32.76	Pass	H
6460.374	152	212	-46.76	-13.00	-33.76	Pass	H
7969.397	152	135	-46.17	-13.00	-33.17	Pass	H
1237.367	148	313	-58.65	-13.00	-45.65	Pass	V
1425.805	149	181	-60.49	-13.00	-47.49	Pass	V
3413.608	152	199	-54.46	-13.00	-41.46	Pass	V
3838.075	153	106	-50.97	-13.00	-37.97	Pass	V
5790.637	150	252	-47.67	-13.00	-34.67	Pass	V
6463.444	150	69	-47.33	-13.00	-34.33	Pass	V

16QAM

Band 12 23017 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1274.414	150	316	-60.26	-13.00	-47.26	Pass	H
1586.496	150	311	-52.73	-13.00	-39.73	Pass	H
3785.222	150	261	-49.40	-13.00	-36.40	Pass	H
5785.566	152	349	-48.24	-13.00	-35.24	Pass	H
6508.923	149	55	-46.06	-13.00	-33.06	Pass	H
8037.229	153	230	-49.02	-13.00	-36.02	Pass	H
1204.199	150	170	-60.00	-13.00	-47.00	Pass	V
1393.910	149	104	-59.53	-13.00	-46.53	Pass	V
3453.009	153	134	-53.28	-13.00	-40.28	Pass	V
3832.912	150	325	-51.50	-13.00	-38.50	Pass	V
5766.325	148	319	-46.38	-13.00	-33.38	Pass	V
6476.194	150	13	-48.25	-13.00	-35.25	Pass	V

Band 12 23095 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1280.766	149	13	-59.67	-13.00	-46.67	Pass	H
1623.596	148	27	-51.65	-13.00	-38.65	Pass	H
3825.338	151	290	-50.94	-13.00	-37.94	Pass	H
5852.068	149	241	-47.10	-13.00	-34.10	Pass	H
6500.431	149	72	-48.31	-13.00	-35.31	Pass	H
7960.070	151	192	-48.74	-13.00	-35.74	Pass	H
1235.840	152	310	-57.98	-13.00	-44.98	Pass	V
1363.961	150	155	-59.62	-13.00	-46.62	Pass	V
3443.031	153	298	-51.90	-13.00	-38.90	Pass	V
3878.058	150	279	-50.73	-13.00	-37.73	Pass	V
5775.252	150	80	-46.61	-13.00	-33.61	Pass	V
6526.687	153	148	-50.28	-13.00	-37.28	Pass	V

Band 12 23173 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1199.624	148	173	-59.70	-13.00	-46.70	Pass	H
1595.673	150	184	-52.86	-13.00	-39.86	Pass	H
3774.401	150	26	-49.98	-13.00	-36.98	Pass	H
5776.211	151	176	-47.82	-13.00	-34.82	Pass	H
6510.263	149	8	-47.82	-13.00	-34.82	Pass	H
7955.124	149	77	-49.00	-13.00	-36.00	Pass	H
1169.030	151	170	-59.48	-13.00	-46.48	Pass	V
1446.031	153	21	-60.27	-13.00	-47.27	Pass	V
3442.499	152	317	-53.39	-13.00	-40.39	Pass	V
3908.846	151	58	-51.82	-13.00	-38.82	Pass	V
5819.102	153	111	-48.39	-13.00	-35.39	Pass	V
6548.387	150	264	-48.30	-13.00	-35.30	Pass	V

Note:

1) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 1GHz are attenuated more than 20 dB below the applicable limit and not required to be reported, the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

2) Tested with all kind of bandwidth,RB Size and RB Offset, Found the 1.4MHz with full RB were the worst case; and then Only the worst case is recorded in the report.

QPSK

Band 13 23205 channel/BW 5(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1242.825	150	142	-60.51	-13.00	-47.51	Pass	H
1664.510	148	100	-51.99	-13.00	-38.99	Pass	H
3793.489	151	335	-50.29	-13.00	-37.29	Pass	H
5829.984	151	23	-47.94	-13.00	-34.94	Pass	H
6487.837	149	42	-48.03	-13.00	-35.03	Pass	H
7987.461	152	176	-46.82	-13.00	-33.82	Pass	H
1213.162	150	308	-58.47	-13.00	-45.47	Pass	V
1372.232	152	244	-58.36	-13.00	-45.36	Pass	V
3507.781	152	8	-54.25	-13.00	-41.25	Pass	V
3837.380	152	297	-50.96	-13.00	-37.96	Pass	V
5737.007	150	275	-46.50	-13.00	-33.50	Pass	V
6540.479	151	4	-49.01	-13.00	-36.01	Pass	V

Band 13 23230 channel/BW 5(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1260.747	150	158	-60.77	-13.00	-47.77	Pass	H
1579.946	153	320	-52.95	-40.00	-12.95	Pass	H
3805.355	152	130	-49.95	-13.00	-36.95	Pass	H
5847.537	148	59	-46.78	-13.00	-33.78	Pass	H
6495.263	153	158	-47.65	-13.00	-34.65	Pass	H
8019.626	150	234	-47.15	-13.00	-34.15	Pass	H
1214.194	148	30	-57.80	-13.00	-44.80	Pass	V
1372.369	152	47	-58.56	-13.00	-45.56	Pass	V
3505.945	152	309	-52.53	-13.00	-39.53	Pass	V
3871.903	150	282	-52.30	-13.00	-39.30	Pass	V
5802.199	150	357	-46.02	-13.00	-33.02	Pass	V
6534.315	151	2	-49.45	-13.00	-36.45	Pass	V

Band 13 23255 channel/BW 5(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1270.291	148	3	-58.85	-13.00	-45.85	Pass	H
1613.202	150	329	-51.73	-13.00	-38.73	Pass	H
3814.647	153	227	-52.26	-13.00	-39.26	Pass	H
5850.214	153	64	-48.40	-13.00	-35.40	Pass	H
6496.679	150	231	-47.59	-13.00	-34.59	Pass	H
8004.855	153	227	-48.94	-13.00	-35.94	Pass	H
1173.931	150	92	-60.06	-13.00	-47.06	Pass	V
1401.093	150	312	-58.63	-13.00	-45.63	Pass	V
3470.450	151	243	-52.61	-13.00	-39.61	Pass	V
3910.916	151	334	-49.81	-13.00	-36.81	Pass	V
5784.554	151	339	-48.06	-13.00	-35.06	Pass	V
6482.066	152	335	-50.06	-13.00	-37.06	Pass	V

16QAM

Band 13 23205 channel/BW 5(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1258.391	152	170	-60.27	-13.00	-47.27	Pass	H
1641.162	150	269	-53.59	-13.00	-40.59	Pass	H
3820.733	148	272	-50.78	-13.00	-37.78	Pass	H
5805.850	150	79	-47.47	-13.00	-34.47	Pass	H
6471.015	149	103	-45.85	-13.00	-32.85	Pass	H
7997.699	150	266	-46.24	-13.00	-33.24	Pass	H
1245.089	152	321	-57.44	-13.00	-44.44	Pass	V
1363.048	150	173	-59.13	-13.00	-46.13	Pass	V
3451.971	149	154	-52.74	-13.00	-39.74	Pass	V
3818.164	152	139	-52.57	-13.00	-39.57	Pass	V
5821.301	148	328	-47.70	-13.00	-34.70	Pass	V
6514.957	151	179	-50.08	-13.00	-37.08	Pass	V

Band 13 23230 channel/BW 5(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1288.932	149	355	-58.66	-13.00	-45.66	Pass	H
1621.184	149	70	-52.48	-13.00	-39.48	Pass	H
3823.855	151	166	-51.58	-13.00	-38.58	Pass	H
5829.359	150	53	-47.52	-13.00	-34.52	Pass	H
6447.951	149	223	-47.69	-13.00	-34.69	Pass	H
7946.524	150	106	-46.88	-13.00	-33.88	Pass	H
1215.380	152	206	-57.67	-13.00	-44.67	Pass	V
1428.360	151	217	-59.76	-13.00	-46.76	Pass	V
3499.883	152	122	-52.96	-13.00	-39.96	Pass	V
3854.579	151	341	-50.64	-13.00	-37.64	Pass	V
5754.563	153	331	-48.50	-13.00	-35.50	Pass	V
6542.138	148	331	-48.82	-13.00	-35.82	Pass	V

Band 13 23255 channel/BW 5(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1262.832	148	84	-59.95	-13.00	-46.95	Pass	H
1662.832	149	262	-52.55	-13.00	-39.55	Pass	H
3807.731	152	41	-50.48	-13.00	-37.48	Pass	H
5854.959	150	220	-46.87	-13.00	-33.87	Pass	H
6459.729	150	181	-47.48	-13.00	-34.48	Pass	H
7986.051	150	191	-47.35	-13.00	-34.35	Pass	H
1170.490	152	170	-57.83	-13.00	-44.83	Pass	V
1364.541	152	264	-60.53	-13.00	-47.53	Pass	V
3509.861	149	192	-52.99	-13.00	-39.99	Pass	V
3830.152	152	2	-52.29	-13.00	-39.29	Pass	V
5760.493	149	324	-48.53	-13.00	-35.53	Pass	V
6487.761	151	134	-48.70	-13.00	-35.70	Pass	V

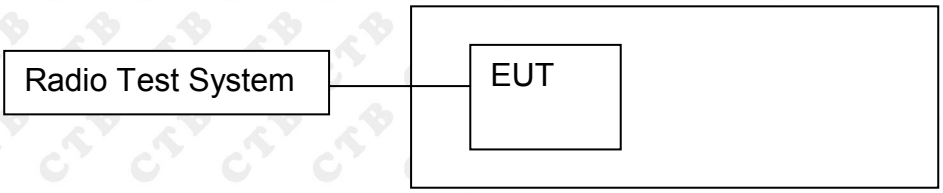
Note:

3) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 1GHz are attenuated more than 20 dB below the applicable limit and not required to be reported, the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

4) Tested with all kind of bandwidth,RB Size and RB Offset, Found the 1.4MHz with full RB were the worst case; and then Only the worst case is recorded in the report.

13. FREQUENCY STABILITY

13.1 Block Diagram Of Test Setup



13.2 Limit

N/A

13.3 Test procedure

The transmitter output was connected to a calibrated coaxial cable and a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel).The EUT was place in the temperature chamber, the DC leads and RF output cable exited the chamber though an opening made for that purpose. After operate the equipment in standby conditions for 15 minutes before proceeding. The temperature was varied from -30°C to +50°C at intervals of not more than 10°C The frequency stability was read from the base station at 25°C the input voltage was varied +/-15%, the frequency stability and input voltage was record.

13.4 Test Result

Band 12
Channel Bandwidth: 1.4 MHz

Channel Bandwidth: 1.4 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	0.07	0.000104
		VN	TN	-1.43	-0.002042
		VH	TN	-2.05	-0.002933
	MCH	VL	TN	-3.85	-0.005435
		VN	TN	-2.18	-0.003087
		VH	TN	-4.43	-0.006266
	HCH	VL	TN	-0.72	-0.001011
		VN	TN	-0.78	-0.001093
		VH	TN	0.50	0.000697
16QAM	LCH	VL	TN	-1.99	-0.002841
		VN	TN	-1.62	-0.002322
		VH	TN	-2.32	-0.003319
	MCH	VL	TN	-2.63	-0.003723
		VN	TN	-3.78	-0.005350
		VH	TN	-2.43	-0.003431
	HCH	VL	TN	-1.66	-0.002319
		VN	TN	0.09	0.000127
		VH	TN	-0.12	-0.000163
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	0.59	0.000837
		VN	-20	-1.32	-0.001883
		VN	-10	-2.68	-0.003833
		VN	0	-3.57	-0.005102
		VN	10	-1.74	-0.002487
		VN	20	-3.86	-0.005511
		VN	30	-0.50	-0.000719
		VN	40	-0.39	-0.000552
		VN	50	1.51	0.002163
	MCH	VN	-30	-1.38	-0.001954
		VN	-20	-1.87	-0.002638
		VN	-10	-1.15	-0.001620
		VN	0	-2.26	-0.003193
		VN	10	-2.96	-0.004190
		VN	20	-2.41	-0.003407
		VN	30	-1.14	-0.001615
		VN	40	1.40	0.001977
		VN	50	1.43	0.002020
	HCH	VN	-30	0.56	0.000785
		VN	-20	-1.08	-0.001513
		VN	-10	-2.54	-0.003546

		VN	0	-1.29	-0.001810
		VN	10	0.05	0.000064
		VN	20	-0.28	-0.000389
		VN	30	-0.88	-0.001230
		VN	40	-0.04	-0.000049
		VN	50	0.52	0.000726
16QAM	LCH	VN	-30	-0.13	-0.000181
		VN	-20	-1.00	-0.001436
		VN	-10	-1.79	-0.002561
		VN	0	-3.58	-0.005110
		VN	10	-1.17	-0.001671
		VN	20	-4.29	-0.006130
		VN	30	-0.98	-0.001407
		VN	40	-0.46	-0.000655
		VN	50	1.71	0.002440
	MCH	VN	-30	-1.58	-0.002240
		VN	-20	-2.27	-0.003214
		VN	-10	-1.34	-0.001901
		VN	0	-2.79	-0.003943
		VN	10	-2.63	-0.003717
		VN	20	-2.79	-0.003938
		VN	30	-1.24	-0.001757
		VN	40	1.53	0.002156
		VN	50	0.53	0.000746
	HCH	VN	-30	0.44	0.000611
		VN	-20	-1.32	-0.001843
		VN	-10	-2.43	-0.003404
		VN	0	-1.39	-0.001938
		VN	10	0.03	0.000041
		VN	20	-0.48	-0.000665
		VN	30	-0.94	-0.001317
		VN	40	0.04	0.000050
		VN	50	0.37	0.000512

Channel Bandwidth: 3 MHz

Channel Bandwidth: 3 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.43	-0.000620
		VN	TN	-1.94	-0.002775
		VH	TN	-2.10	-0.002995
	MCH	VL	TN	-3.79	-0.005360
		VN	TN	-1.86	-0.002624
		VH	TN	-5.00	-0.007074
	HCH	VL	TN	-0.57	-0.000805
		VN	TN	-0.98	-0.001376
		VH	TN	1.20	0.001683
16QAM	LCH	VL	TN	-2.26	-0.003230
		VN	TN	-1.77	-0.002532

		VH	TN	-2.08	-0.002974
	MCH	VL	TN	-2.73	-0.003862
		VN	TN	-3.46	-0.004887
		VH	TN	-2.44	-0.003449
	HCH	VL	TN	-1.39	-0.001939
		VN	TN	0.44	0.000616
		VH	TN	-0.10	-0.000143
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	0.13	0.000184
		VN	-20	-1.70	-0.002430
		VN	-10	-2.32	-0.003314
		VN	0	-3.87	-0.005519
		VN	10	-1.99	-0.002840
		VN	20	-3.50	-0.004990
		VN	30	-1.17	-0.001668
		VN	40	0.12	0.000176
		VN	50	1.03	0.001466
	MCH	VN	-30	-1.27	-0.001795
		VN	-20	-1.89	-0.002676
		VN	-10	-1.47	-0.002072
		VN	0	-2.55	-0.003599
		VN	10	-2.94	-0.004155
		VN	20	-2.27	-0.003213
		VN	30	-1.42	-0.002011
		VN	40	0.90	0.001268
		VN	50	0.93	0.001311
	HCH	VN	-30	-0.03	-0.000048
		VN	-20	-1.35	-0.001883
		VN	-10	-2.24	-0.003139
		VN	0	-1.22	-0.001707
		VN	10	0.07	0.000096
		VN	20	-0.08	-0.000117
		VN	30	-1.64	-0.002290
		VN	40	0.63	0.000881
		VN	50	0.51	0.000709
QPSK	LCH	VN	-30	-0.26	-0.000375
		VN	-20	-1.85	-0.002637
		VN	-10	-2.28	-0.003249
		VN	0	-3.61	-0.005148
		VN	10	-1.94	-0.002776
		VN	20	-3.73	-0.005319
		VN	30	-0.39	-0.000552
		VN	40	-0.50	-0.000713
		VN	50	1.93	0.002751
	MCH	VN	-30	-1.37	-0.001942
		VN	-20	-2.19	-0.003090
		VN	-10	-0.99	-0.001403
		VN	0	-2.78	-0.003925
		VN	10	-2.83	-0.004001

		VN	20	-2.77	-0.003913
		VN	30	-1.14	-0.001615
		VN	40	1.48	0.002093
		VN	50	0.54	0.000768
	HCH	VN	-30	0.60	0.000845
		VN	-20	-1.44	-0.002018
		VN	-10	-2.28	-0.003195
		VN	0	-1.58	-0.002216
		VN	10	-0.15	-0.000205
		VN	20	-0.56	-0.000790
		VN	30	-1.67	-0.002336
		VN	40	0.50	0.000703
		VN	50	0.58	0.000814

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.84	-0.001194
		VN	TN	-1.69	-0.002412
		VH	TN	-2.52	-0.003586
	MCH	VL	TN	-4.31	-0.006089
		VN	TN	-2.18	-0.003084
		VH	TN	-4.76	-0.006727
	HCH	VL	TN	-0.38	-0.000534
		VN	TN	-1.22	-0.001704
		VH	TN	0.92	0.001294
16QAM	LCH	VL	TN	-2.28	-0.003244
		VN	TN	-2.01	-0.002863
		VH	TN	-2.09	-0.002972
	MCH	VL	TN	-2.42	-0.003418
		VN	TN	-3.67	-0.005180
		VH	TN	-2.65	-0.003752
	HCH	VL	TN	-1.47	-0.002062
		VN	TN	0.73	0.001030
		VH	TN	-0.30	-0.000419
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	-0.27	-0.000388
		VN	-20	-1.62	-0.002310
		VN	-10	-1.91	-0.002722
		VN	0	-3.99	-0.005683
		VN	10	-1.96	-0.002789
		VN	20	-4.09	-0.005832
		VN	30	-1.16	-0.001651
		VN	40	-0.62	-0.000877
		VN	50	1.83	0.002613
	MCH	VN	-30	-1.43	-0.002018

		VN	-20	-2.17	-0.003061
		VN	-10	-0.93	-0.001319
		VN	0	-2.72	-0.003846
		VN	10	-2.88	-0.004073
		VN	20	-2.26	-0.003190
		VN	30	-1.59	-0.002241
		VN	40	1.63	0.002309
		VN	50	0.59	0.000832
	HCH	VN	-30	0.45	0.000626
		VN	-20	-1.14	-0.001600
		VN	-10	-1.91	-0.002673
		VN	0	-1.13	-0.001588
		VN	10	-0.18	-0.000256
		VN	20	-0.21	-0.000292
		VN	30	-1.25	-0.001751
		VN	40	0.53	0.000742
		VN	50	0.83	0.001166
16QAM	LCH	VN	-30	-0.16	-0.000230
		VN	-20	-1.81	-0.002585
		VN	-10	-1.96	-0.002788
		VN	0	-3.88	-0.005533
		VN	10	-1.20	-0.001711
		VN	20	-4.28	-0.006104
		VN	30	-0.27	-0.000379
		VN	40	-0.33	-0.000466
		VN	50	0.99	0.001415
	MCH	VN	-30	-1.41	-0.001989
		VN	-20	-1.87	-0.002646
		VN	-10	-0.76	-0.001072
		VN	0	-2.35	-0.003318
		VN	10	-3.09	-0.004365
		VN	20	-2.54	-0.003588
		VN	30	-1.47	-0.002077
		VN	40	1.75	0.002466
		VN	50	0.95	0.001344
	HCH	VN	-30	0.01	0.000017
		VN	-20	-1.32	-0.001845
		VN	-10	-2.67	-0.003740
		VN	0	-1.73	-0.002419
		VN	10	-0.44	-0.000619
		VN	20	0.03	0.000043
		VN	30	-0.80	-0.001121
		VN	40	-0.02	-0.000029
		VN	50	0.24	0.000332

Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.77	-0.001099
		VN	TN	-2.16	-0.003065
		VH	TN	-2.28	-0.003244
	MCH	VL	TN	-4.51	-0.006373
		VN	TN	-2.67	-0.003774
		VH	TN	-4.38	-0.006186
	HCH	VL	TN	-0.59	-0.000837
		VN	TN	-1.23	-0.001737
		VH	TN	1.04	0.001461
16QAM	LCH	VL	TN	-2.37	-0.003371
		VN	TN	-2.24	-0.003180
		VH	TN	-1.94	-0.002760
	MCH	VL	TN	-2.44	-0.003444
		VN	TN	-3.34	-0.004725
		VH	TN	-2.54	-0.003586
	HCH	VL	TN	-1.85	-0.002601
		VN	TN	0.51	0.000719
		VH	TN	-0.18	-0.000255
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)
16QAM	LCH	VN	-30	-0.27	-0.000383
		VN	-20	-1.46	-0.002072
		VN	-10	-2.68	-0.003808
		VN	0	-3.67	-0.005210
		VN	10	-2.03	-0.002881
		VN	20	-3.91	-0.005551
		VN	30	-0.35	-0.000504
		VN	40	0.18	0.000255
		VN	50	1.95	0.002768
	MCH	VN	-30	-1.52	-0.002145
		VN	-20	-2.18	-0.003082
		VN	-10	-1.07	-0.001515
		VN	0	-2.01	-0.002848
		VN	10	-2.16	-0.003048
		VN	20	-2.85	-0.004033
		VN	30	-1.61	-0.002277
		VN	40	1.69	0.002395
		VN	50	0.54	0.000762
	HCH	VN	-30	-0.04	-0.000050
		VN	-20	-1.48	-0.002082
		VN	-10	-2.28	-0.003204
		VN	0	-1.28	-0.001799
		VN	10	-0.68	-0.000958
		VN	20	-0.48	-0.000669

		VN	30	-1.62	-0.002275
		VN	40	0.86	0.001203
		VN	50	0.54	0.000755
QPSK	LCH	VN	-30	-0.04	-0.000055
		VN	-20	-1.83	-0.002597
		VN	-10	-2.36	-0.003354
		VN	0	-3.48	-0.004948
		VN	10	-2.07	-0.002941
		VN	20	-3.94	-0.005593
		VN	30	-1.03	-0.001469
		VN	40	0.02	0.000021
		VN	50	1.47	0.002092
	MCH	VN	-30	-1.73	-0.002452
		VN	-20	-1.33	-0.001880
		VN	-10	-0.87	-0.001236
		VN	0	-2.96	-0.004180
		VN	10	-2.56	-0.003621
		VN	20	-2.09	-0.002954
		VN	30	-1.16	-0.001633
		VN	40	1.09	0.001543
		VN	50	0.85	0.001200
	HCH	VN	-30	0.31	0.000430
		VN	-20	-1.09	-0.001530
		VN	-10	-1.93	-0.002720
		VN	0	-1.58	-0.002217
		VN	10	-0.61	-0.000864
		VN	20	0.26	0.000359
		VN	30	-1.00	-0.001410
		VN	40	0.05	0.000065
		VN	50	0.34	0.000485

Band 13
Channel Bandwidth: 5 MHz

Channel Bandwidth: 15 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.65	-0.000831
		VN	TN	-1.89	-0.002426
		VH	TN	-1.94	-0.002486
	MCH	VL	TN	-4.25	-0.005439
		VN	TN	-1.93	-0.002471
		VH	TN	-4.34	-0.005553
	HCH	VL	TN	-1.07	-0.001359
		VN	TN	-0.93	-0.001187
		VH	TN	0.54	0.000686
16QAM	LCH	VL	TN	-1.73	-0.002214
		VN	TN	-2.37	-0.003038
		VH	TN	-1.77	-0.002271
	MCH	VL	TN	-2.89	-0.003698

		VN	TN	-3.37	-0.004306
		VH	TN	-2.38	-0.003048
	HCH	VL	TN	-1.82	-0.002323
		VN	TN	-0.11	-0.000146
		VH	TN	0.28	0.000362
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	-0.28	-0.000354
		VN	-20	-1.68	-0.002159
		VN	-10	-2.50	-0.003208
		VN	0	-4.10	-0.005258
		VN	10	-1.65	-0.002117
		VN	20	-3.58	-0.004587
		VN	30	-0.49	-0.000628
		VN	40	-0.55	-0.000701
		VN	50	1.24	0.001585
	MCH	VN	-30	-0.99	-0.001268
		VN	-20	-2.20	-0.002814
		VN	-10	-1.50	-0.001915
		VN	0	-2.46	-0.003140
		VN	10	-2.44	-0.003122
		VN	20	-2.85	-0.003642
		VN	30	-0.79	-0.001010
		VN	40	1.50	0.001918
		VN	50	1.02	0.001306
	HCH	VN	-30	0.34	0.000440
		VN	-20	-1.11	-0.001412
		VN	-10	-2.04	-0.002596
		VN	0	-0.88	-0.001124
		VN	10	-0.12	-0.000149
		VN	20	-0.45	-0.000578
		VN	30	-1.28	-0.001631
		VN	40	0.63	0.000805
		VN	50	0.41	0.000518
16QAM	LCH	VN	-30	0.34	0.000441
		VN	-20	-1.52	-0.001954
		VN	-10	-2.12	-0.002721
		VN	0	-3.84	-0.004923
		VN	10	-1.19	-0.001523
		VN	20	-3.84	-0.004931
		VN	30	-0.45	-0.000577
		VN	40	-0.18	-0.000235
		VN	50	1.27	0.001634
	MCH	VN	-30	-1.06	-0.001351
		VN	-20	-1.74	-0.002229
		VN	-10	-0.93	-0.001190
		VN	0	-2.36	-0.003013
		VN	10	-2.27	-0.002904
		VN	20	-2.74	-0.003506
		VN	30	-0.88	-0.001123

		VN	40	1.50	0.001923
		VN	50	1.10	0.001406
	HCH	VN	-30	-0.16	-0.000208
		VN	-20	-1.16	-0.001473
		VN	-10	-2.42	-0.003081
		VN	0	-0.81	-0.001038
		VN	10	-0.72	-0.000921
		VN	20	0.18	0.000234
		VN	30	-1.41	-0.001794
		VN	40	-0.03	-0.000037
		VN	50	0.94	0.001192

Channel Bandwidth: 10 MHz

Channel Bandwidth: 20 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.33	-0.000427
		VN	TN	-1.75	-0.002244
		VH	TN	-2.41	-0.003080
	MCH	VL	TN	-4.52	-0.005784
		VN	TN	-1.82	-0.002333
		VH	TN	-4.85	-0.006204
	HCH	VL	TN	-1.10	-0.001412
		VN	TN	-1.22	-0.001561
		VH	TN	0.58	0.000747
16QAM	LCH	VL	TN	-2.41	-0.003085
		VN	TN	-1.67	-0.002131
		VH	TN	-1.48	-0.001891
	MCH	VL	TN	-2.57	-0.003286
		VN	TN	-3.03	-0.003876
		VH	TN	-3.10	-0.003963
	HCH	VL	TN	-1.62	-0.002076
		VN	TN	0.69	0.000877
		VH	TN	0.29	0.000369
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	0.20	0.000254
		VN	-20	-1.46	-0.001871
		VN	-10	-2.03	-0.002591
		VN	0	-3.97	-0.005081
		VN	10	-1.95	-0.002495
		VN	20	-4.31	-0.005514
		VN	30	-1.13	-0.001448
		VN	40	-0.34	-0.000430
		VN	50	1.24	0.001586
	MCH	VN	-30	-1.76	-0.002247
		VN	-20	-2.04	-0.002612
		VN	-10	-1.38	-0.001766

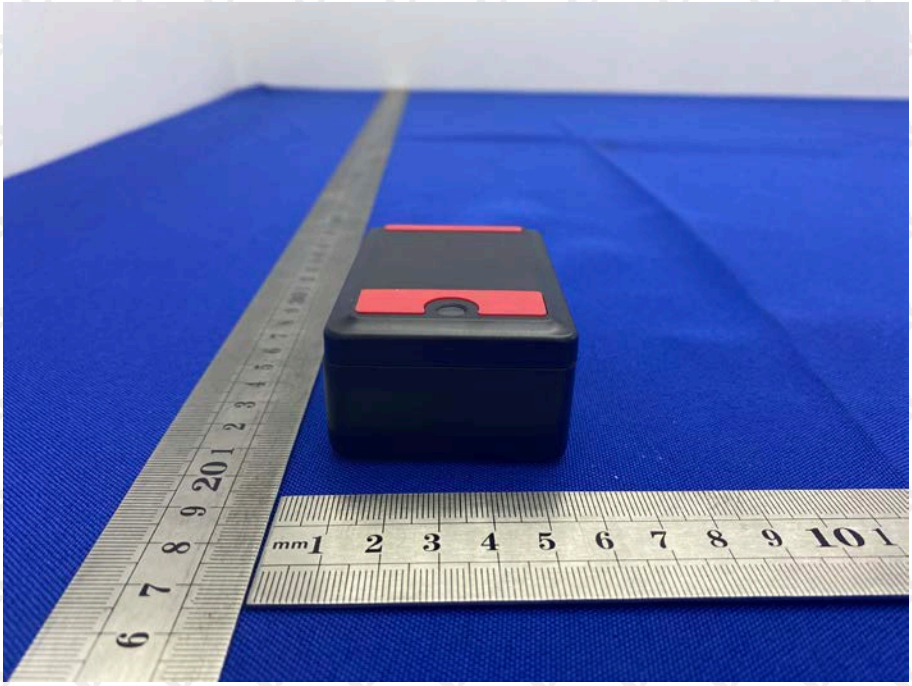
		VN	0	-2.98	-0.003811
		VN	10	-2.26	-0.002888
		VN	20	-2.14	-0.002736
		VN	30	-1.45	-0.001849
		VN	40	1.62	0.002068
		VN	50	0.87	0.001107
	HCH	VN	-30	0.07	0.000093
		VN	-20	-1.05	-0.001341
		VN	-10	-1.80	-0.002304
		VN	0	-0.83	-0.001065
		VN	10	-0.44	-0.000562
		VN	20	-0.63	-0.000804
		VN	30	-1.26	-0.001612
		VN	40	-0.05	-0.000068
		VN	50	0.60	0.000762
16QAM	LCH	VN	-30	0.27	0.000350
		VN	-20	-0.95	-0.001209
		VN	-10	-2.41	-0.003087
		VN	0	-3.85	-0.004920
		VN	10	-1.62	-0.002067
		VN	20	-4.35	-0.005565
		VN	30	-0.97	-0.001241
		VN	40	-0.32	-0.000405
		VN	50	1.70	0.002180
	MCH	VN	-30	-1.41	-0.001808
		VN	-20	-1.58	-0.002016
		VN	-10	-1.43	-0.001828
		VN	0	-2.93	-0.003752
		VN	10	-2.80	-0.003585
		VN	20	-2.88	-0.003688
		VN	30	-1.51	-0.001933
		VN	40	1.51	0.001930
		VN	50	0.91	0.001169
	HCH	VN	-30	0.12	0.000155
		VN	-20	-1.28	-0.001635
		VN	-10	-2.69	-0.003438
		VN	0	-1.10	-0.001409
		VN	10	-0.29	-0.000372
		VN	20	-0.37	-0.000476
		VN	30	-1.37	-0.001754
		VN	40	0.44	0.000566
		VN	50	0.57	0.000734

14. EUT PHOTOGRAPHS

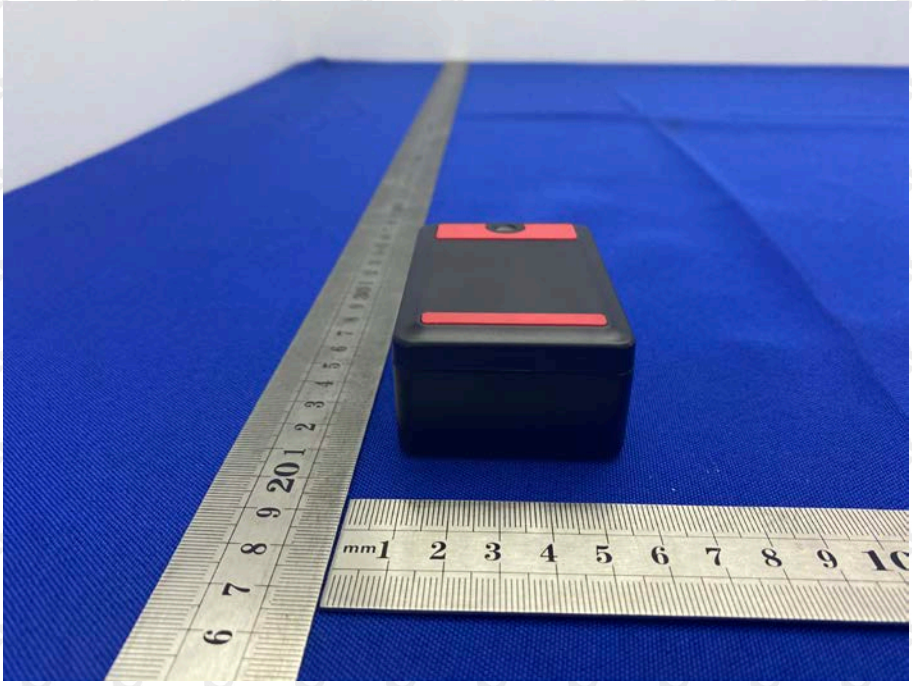
NT06E
EUT Photo 1

EUT Photo 2

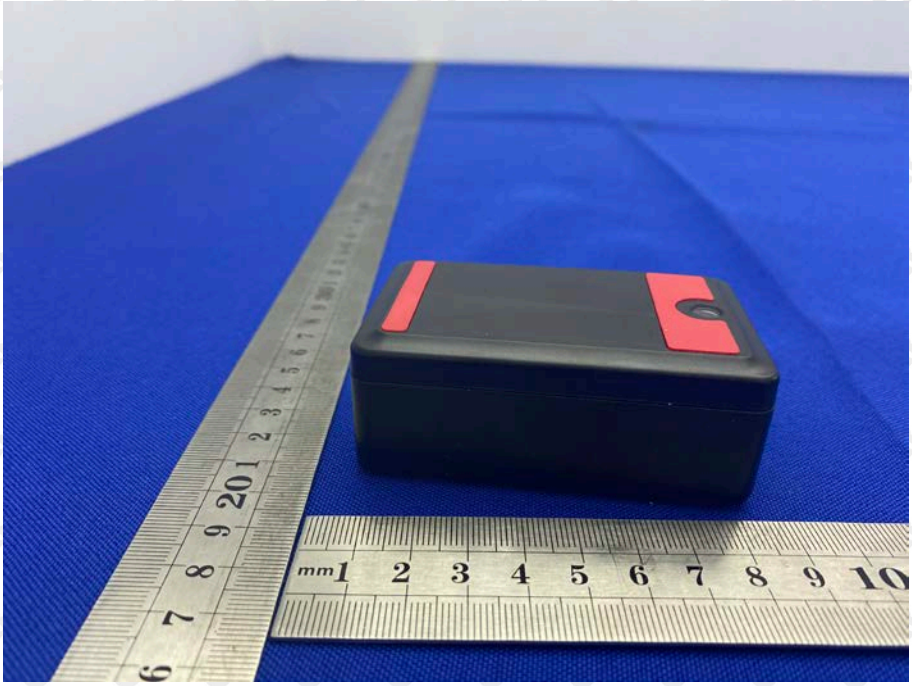
EUT Photo 3



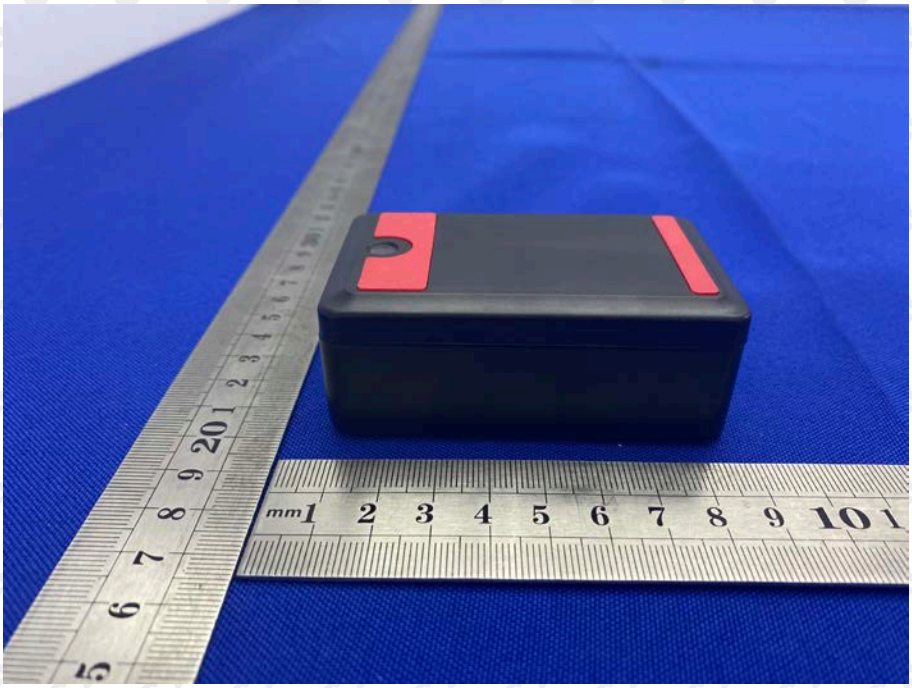
EUT Photo 4



EUT Photo 5



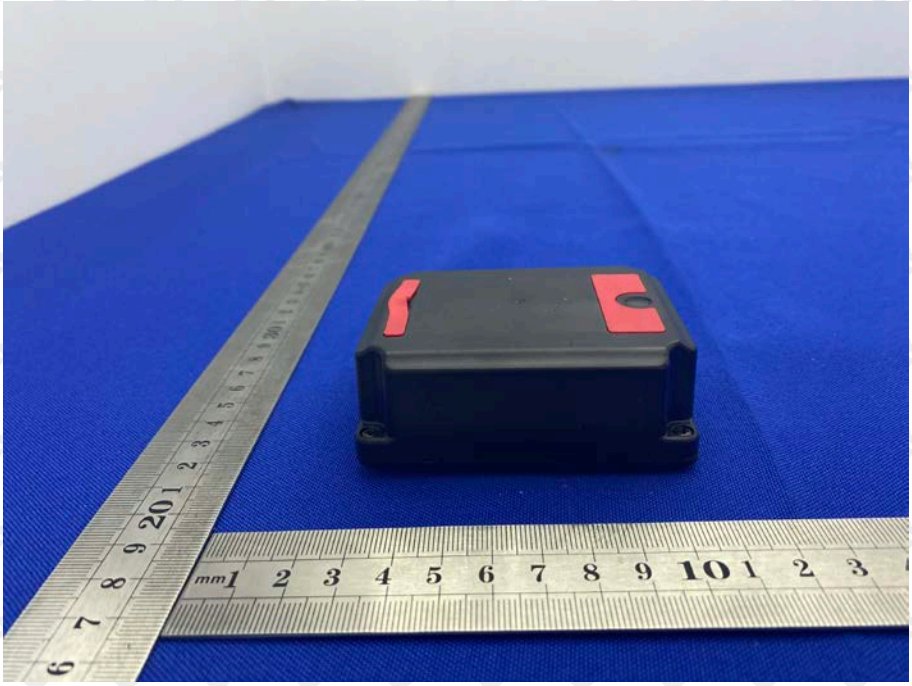
EUT Photo 6



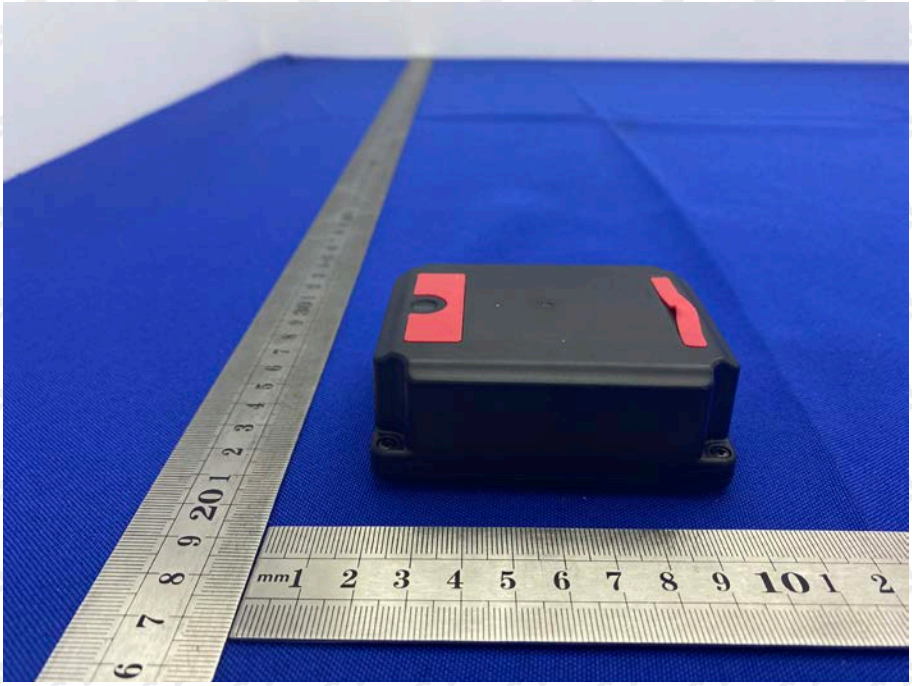
NT06EF
EUT Photo 1

EUT Photo 2

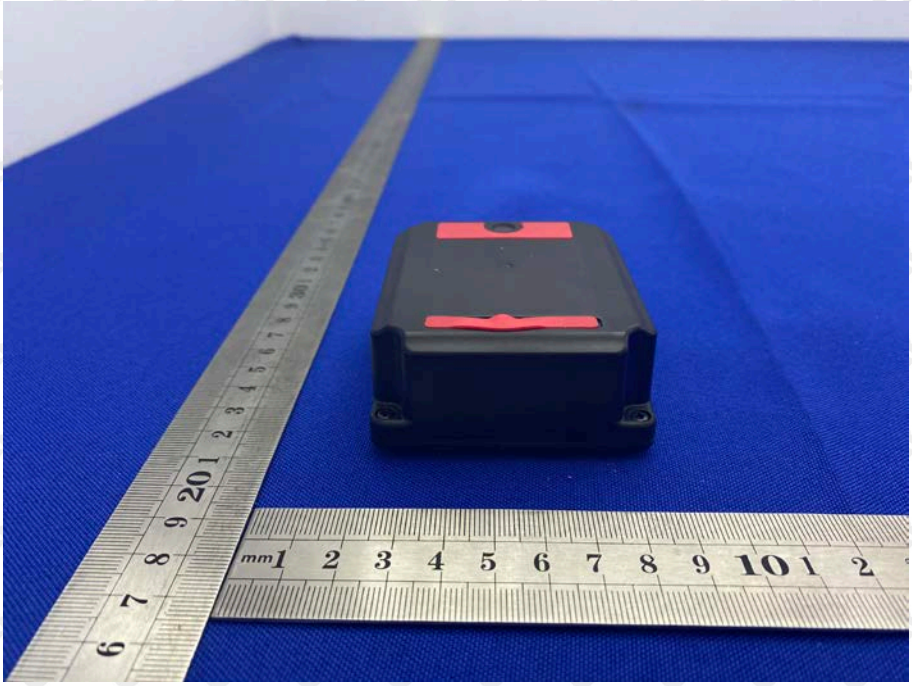
EUT Photo 3



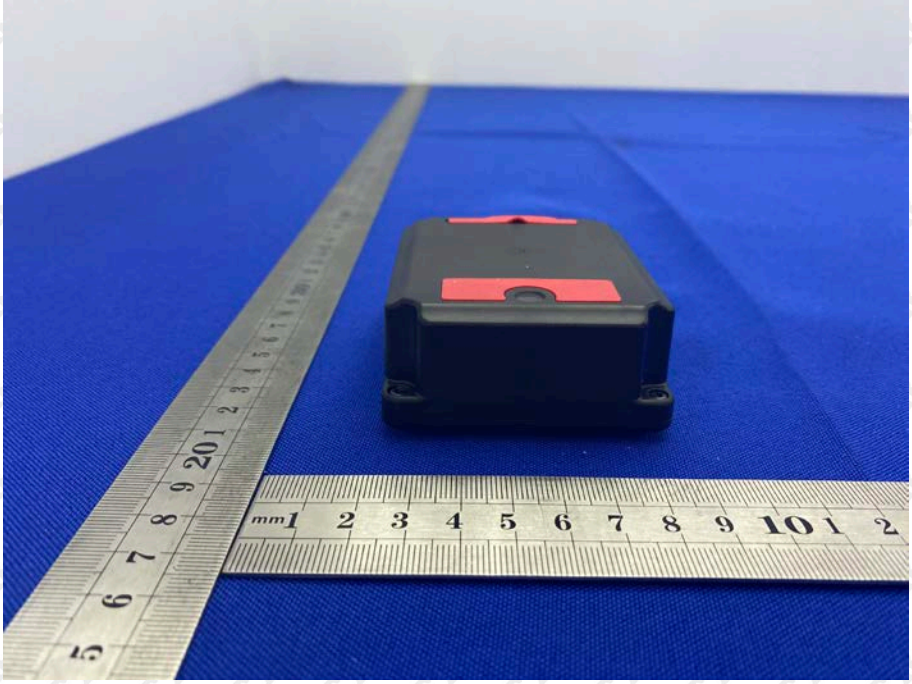
EUT Photo 4



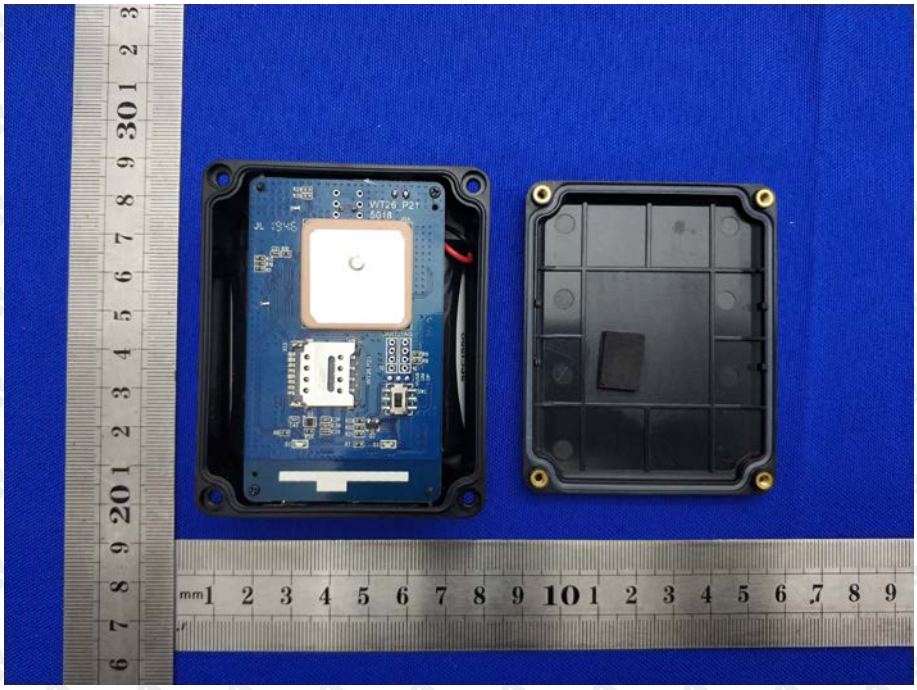
EUT Photo 5



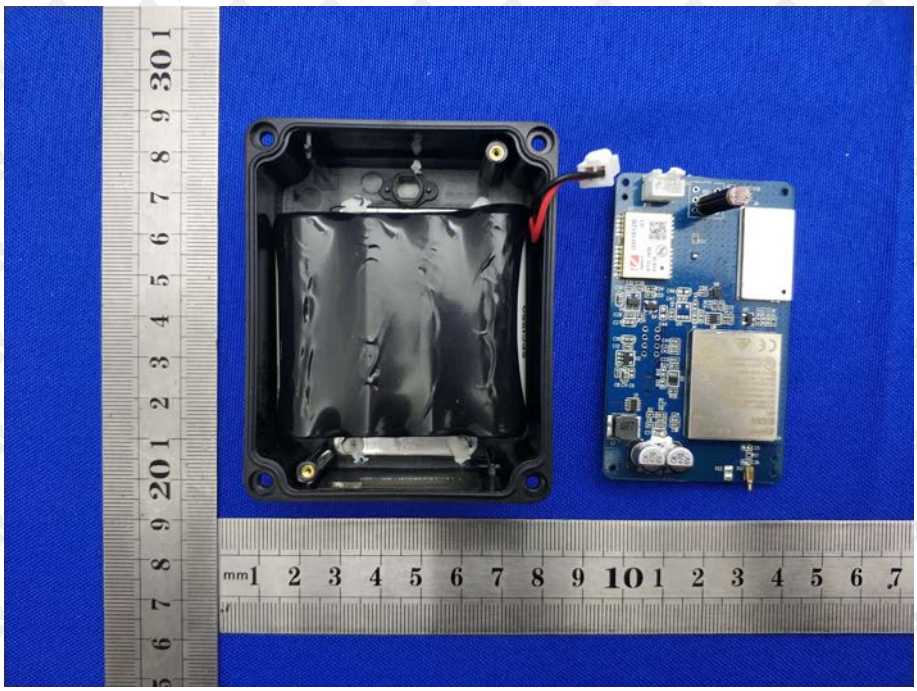
EUT Photo 6



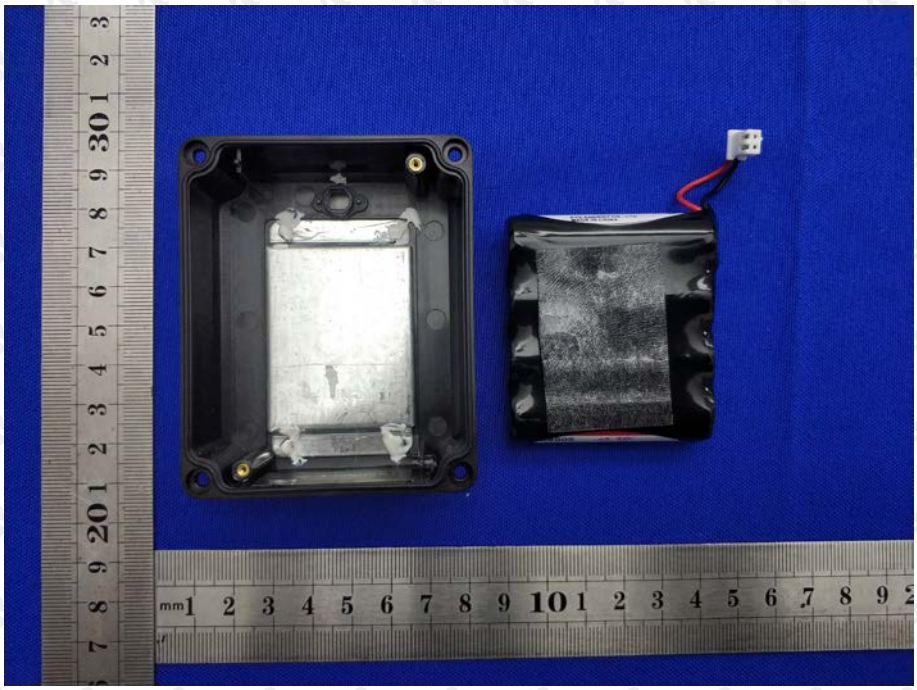
EUT Photo 7



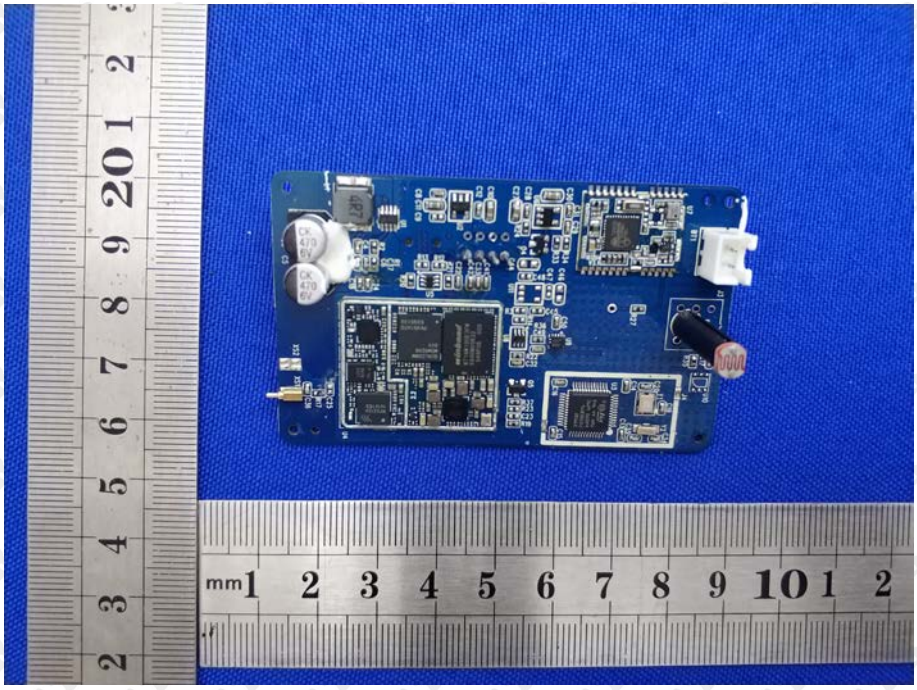
EUT Photo 8



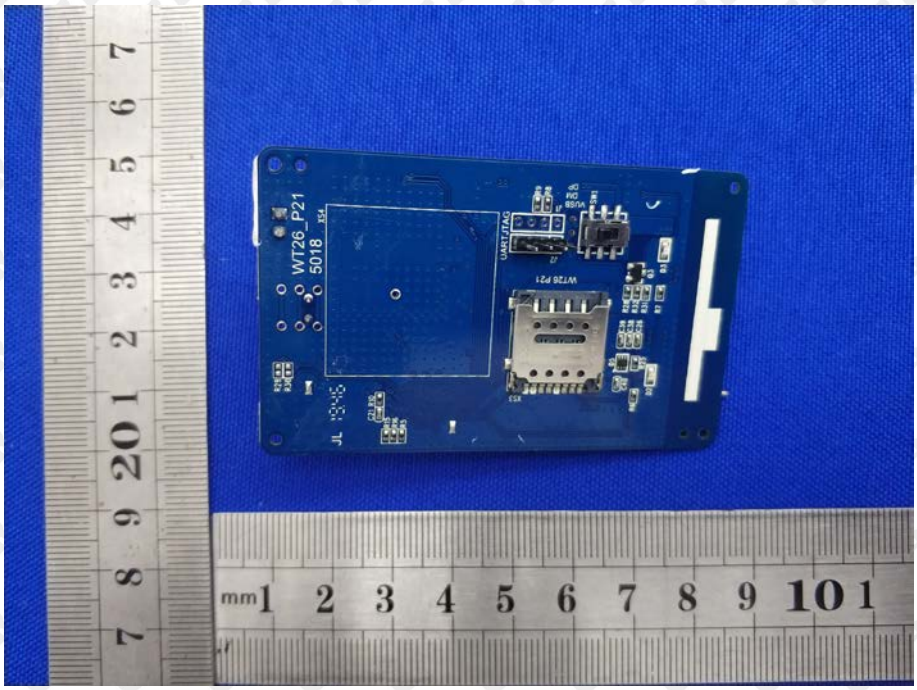
EUT Photo 9



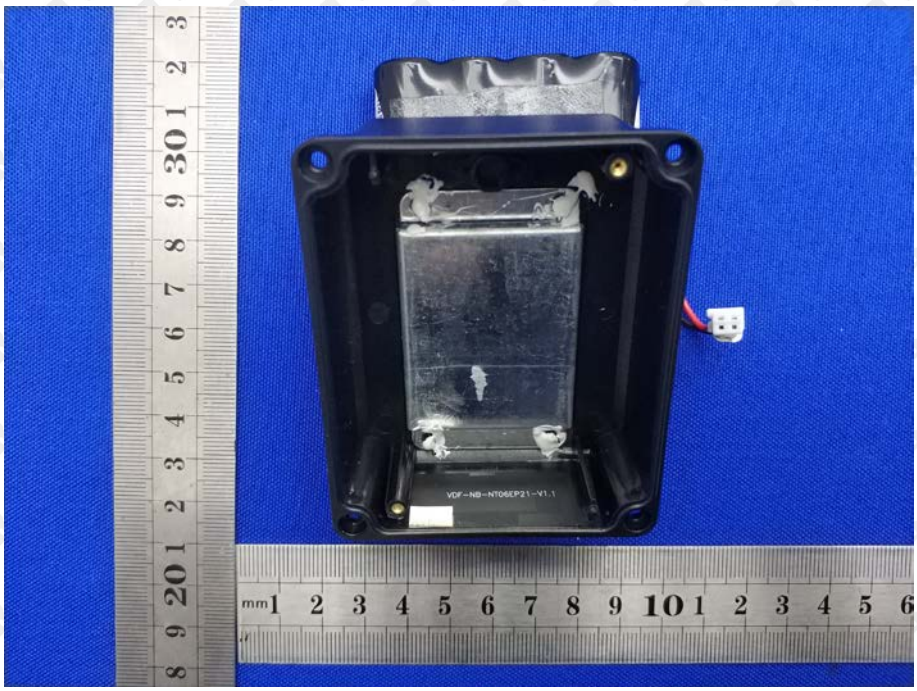
EUT Photo 10



EUT Photo 11



EUT Photo 12

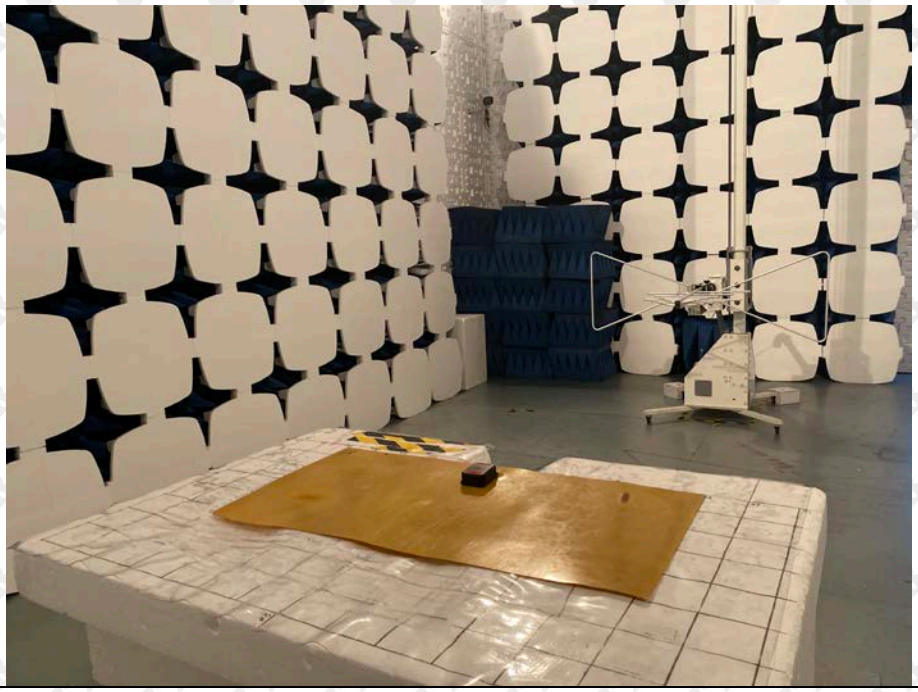


EUT Photo 13

15. EUT TEST SETUP PHOTOGRAPHS

Radiated Emission

Below 1G



Above 1G

※※※※※ END OF REPORT ※※※※※