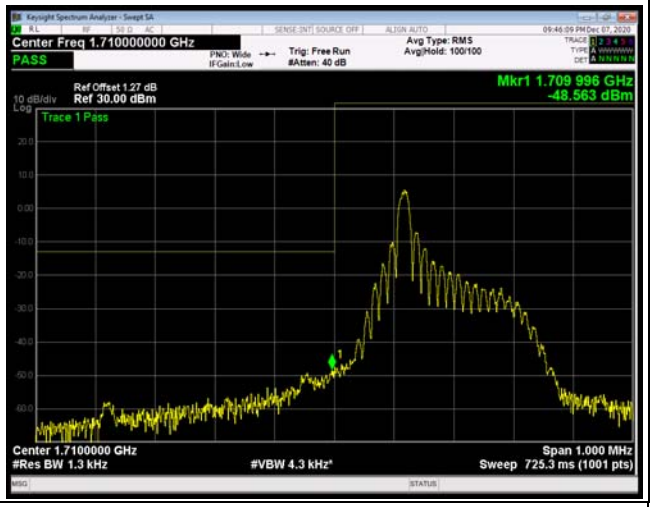
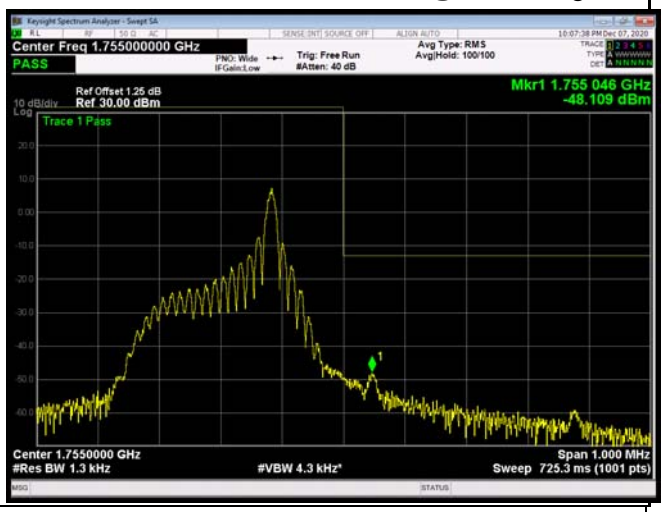
NB-IOT Band 4 QPSK 15KHz 1@0 CH-Low



NB-IOT Band 4 QPSK 15KHz 1@11 CH-High



NB-IOT Band 4 QPSK 15KHz 12@0 CH-Low

NB-IOT Band 4 QPSK 15KHz 12@0 CH-High

NB-IOT Band 12 BPSK 3.75KHz 1@0 CH-Low

NB-IOT Band 12 BPSK 3.75KHz 1@47 CH-High

NB-IOT Band 12 BPSK15KHz 1@0 CH-Low

NB-IOT Band 12 BPSK 15KHz 1@11 CH-High

NB-IOT Band 12 QPSK 3.75KHz 1@0 CH-Low

NB-IOT Band 12 QPSK 3.75KHz 1@47 CH-High

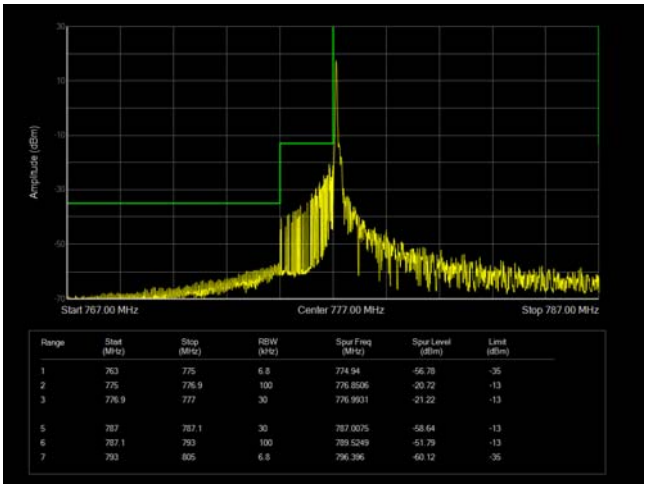
NB-IOT Band 12 QPSK 15KHz 1@0 CH-Low

NB-IOT Band 12 QPSK 15KHz 1@11 CH-High

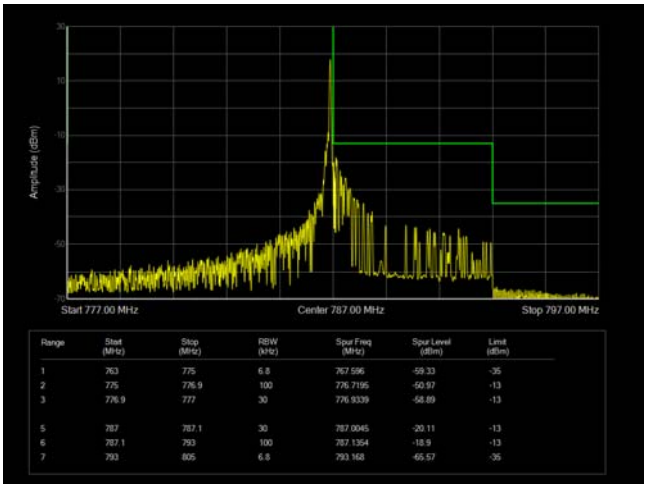
NB-IOT Band 12 QPSK 15KHz 12@0 CH-Low

NB-IOT Band 12 QPSK 15KHz 12@0 CH-High

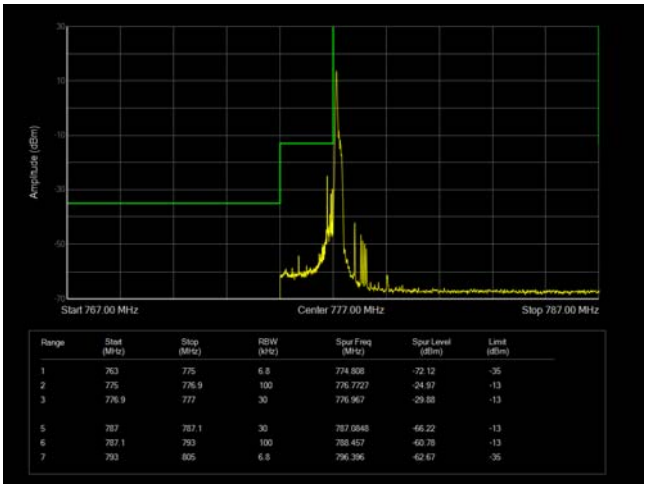
NB-IOT Band 13 BPSK 3.75KHz 1@0 CH-Low



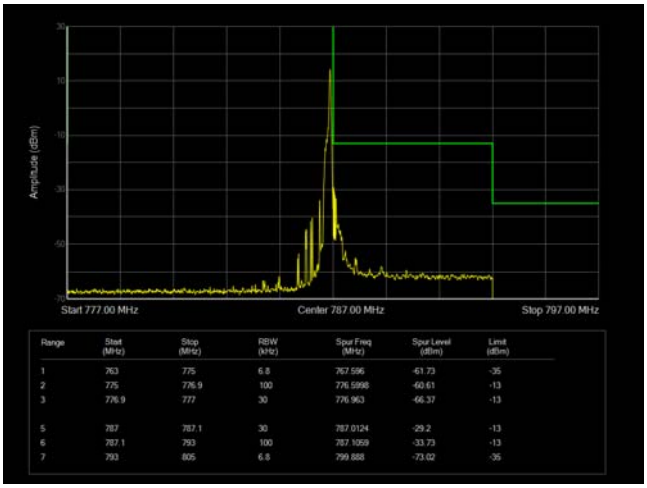
NB-IOT Band 13 BPSK 3.75KHz 1@47 CH-High



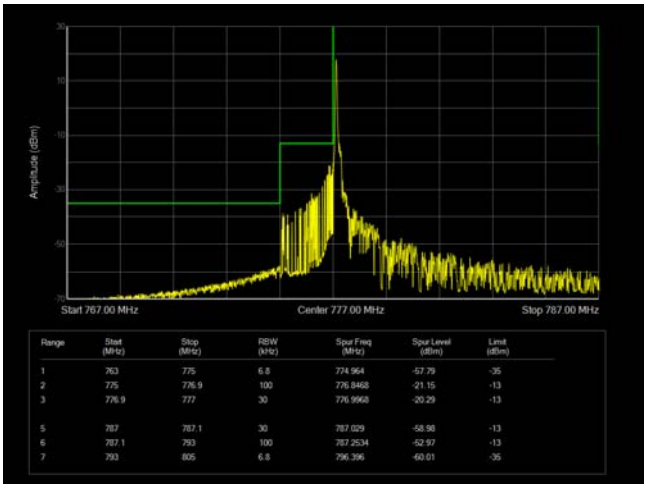
NB-IOT Band 13 BPSK15KHz 1@0 CH-Low



NB-IOT Band 13 BPSK 15KHz 1@11 CH-High

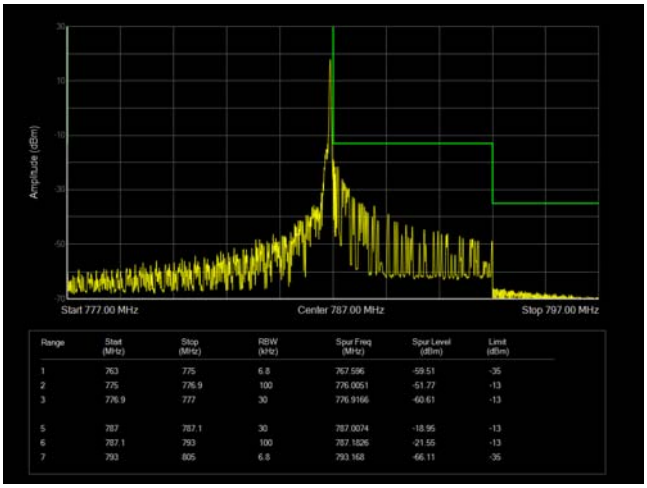


NB-IOT Band 13 QPSK 3.75KHz 1@0 CH-Low



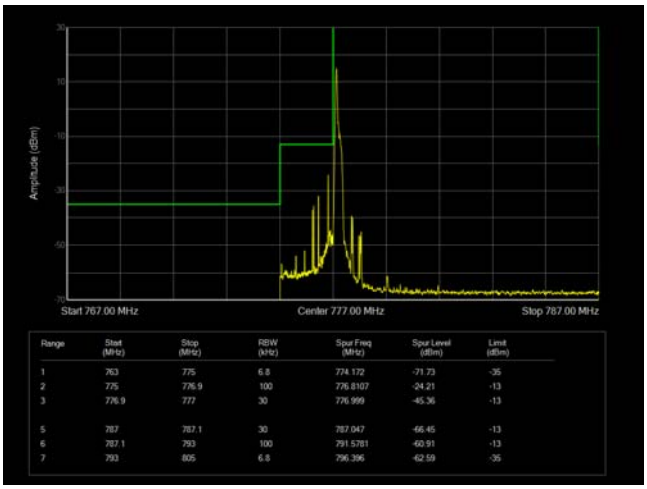
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	763	775	6.8	774.964	-57.79	-35
2	775	776.9	100	776.8468	-21.15	-13
3	776.9	777	30	776.9968	-20.29	-13
5	787	787.1	30	787.029	-58.98	-13
6	787.1	793	100	787.2534	-52.97	-13
7	793	805	6.8	796.396	-60.01	-35

NB-IOT Band 13 QPSK 3.75KHz 1@47 CH-High



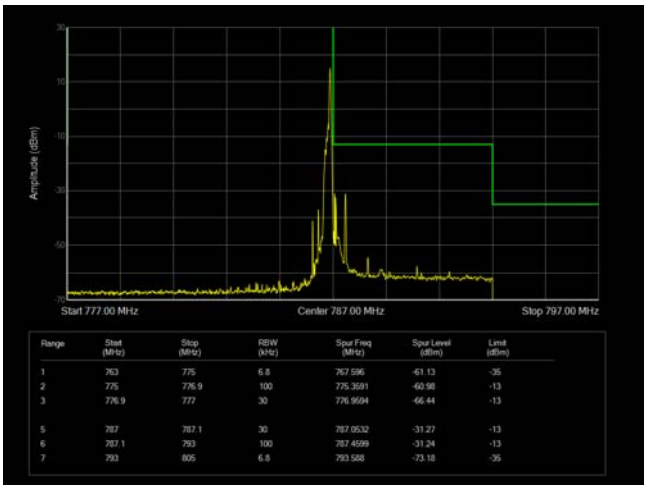
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	763	775	6.8	767.596	-59.51	-35
2	775	776.9	100	776.0051	-51.77	-13
3	776.9	777	30	776.9166	-60.61	-13
5	787	787.1	30	787.0074	-18.95	-13
6	787.1	793	100	787.1826	-21.55	-13
7	793	805	6.8	793.168	-66.11	-35

NB-IOT Band 13 QPSK 15KHz 1@0 CH-Low



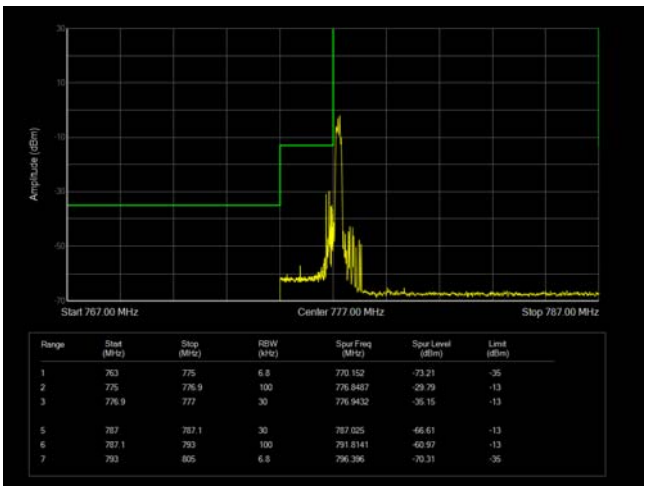
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	763	775	6.8	774.172	-71.73	-35
2	775	776.9	100	776.8107	-24.21	-13
3	776.9	777	30	776.999	-45.36	-13
5	787	787.1	30	787.047	-66.45	-13
6	787.1	793	100	791.5781	-60.91	-13
7	793	805	6.8	796.396	-62.59	-35

NB-IOT Band 13 QPSK 15KHz 1@11 CH-High



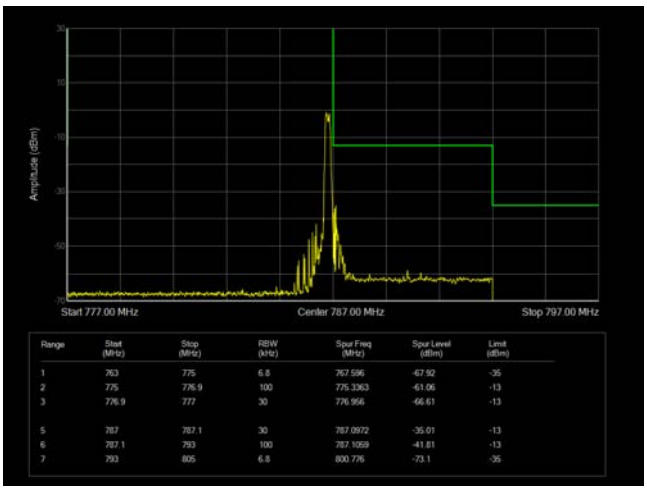
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	763	775	6.8	767.596	-61.13	-35
2	775	776.9	100	775.3591	-60.98	-13
3	776.9	777	30	776.9694	-66.44	-13
5	787	787.1	30	787.0532	-31.27	-13
6	787.1	793	100	787.4599	-31.24	-13
7	793	805	6.8	793.588	-73.18	-35

NB-IOT Band 13 QPSK 15KHz 12@0 CH-Low



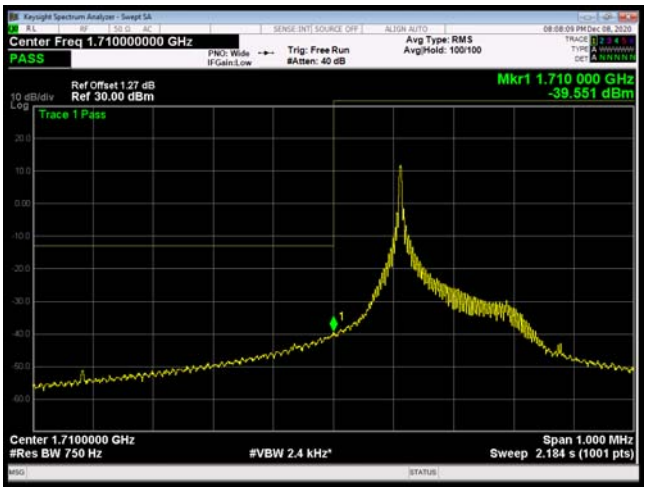
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	763	775	6.8	770.152	-73.21	-35
2	775	776.9	100	776.8487	-29.79	-13
3	776.9	777	30	776.9432	-35.15	-13
5	787	787.1	30	787.025	-66.61	-13
6	787.1	793	100	791.8141	-60.97	-13
7	793	805	6.8	796.396	-70.31	-35

NB-IOT Band 13 QPSK 15KHz 12@0 CH-High

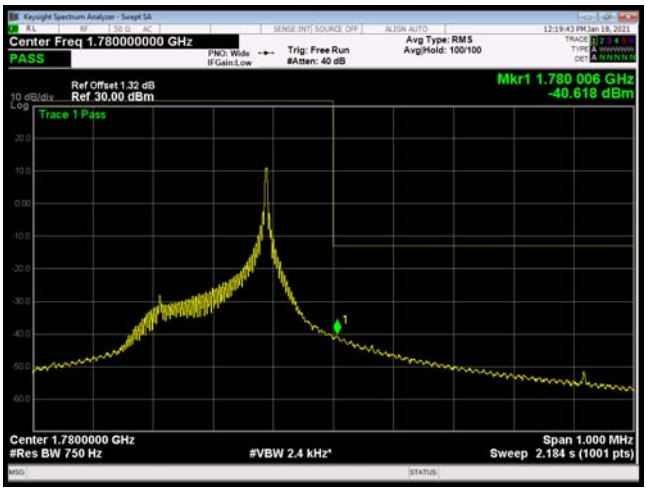


Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	763	775	6.8	767.596	-67.92	-35
2	775	776.9	100	775.3363	-61.06	-13
3	776.9	777	30	776.956	-66.61	-13
5	787	787.1	30	787.0972	-35.01	-13
6	787.1	793	100	787.1059	-41.81	-13
7	793	805	6.8	800.776	-73.1	-35

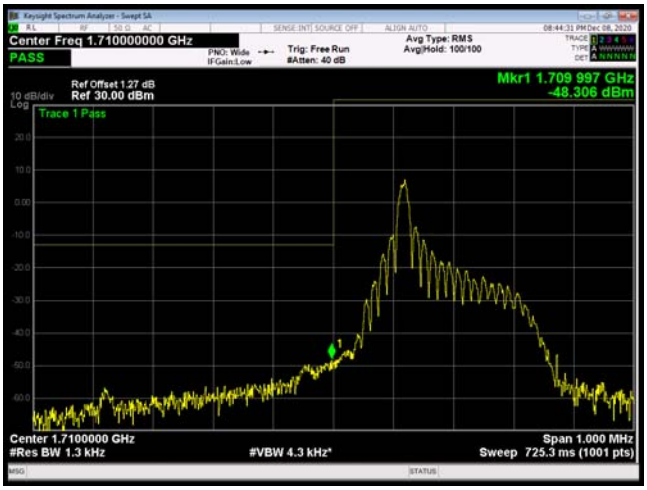
NB-IOT Band 66 BPSK 3.75KHz 1@0 CH-Low



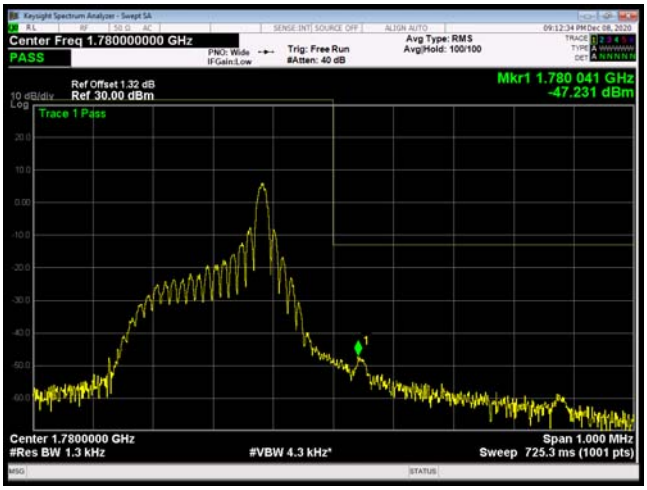
NB-IOT Band 66 BPSK 3.75KHz 1@47 CH-High



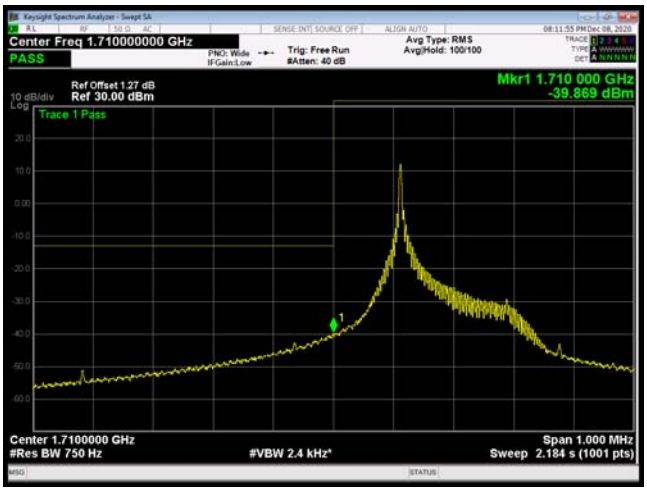
NB-IOT Band 66 BPSK 15KHz 1@0 CH-Low



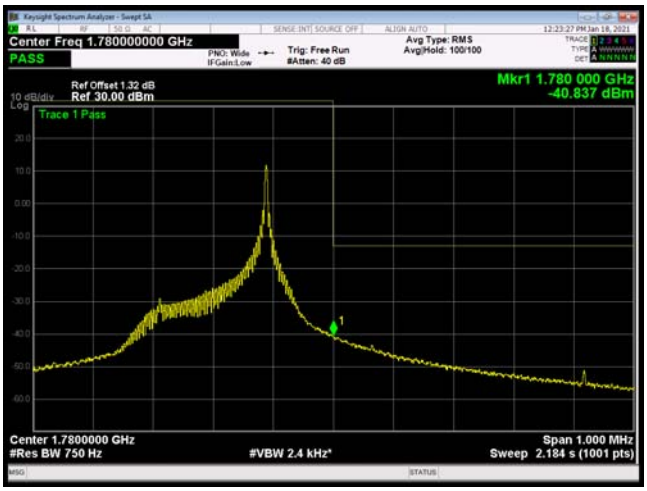
NB-IOT Band 66 BPSK 15KHz 1@11 CH-High



NB-IOT Band 66 QPSK 3.75KHz 1@0 CH-Low

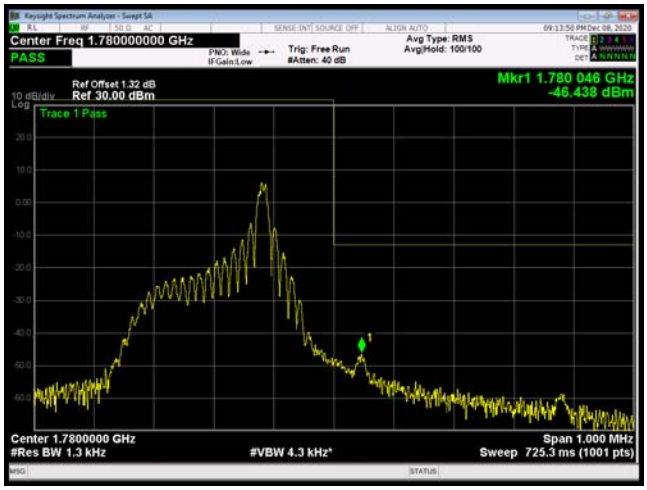


NB-IOT Band 66 QPSK 3.75KHz 1@47 CH-High

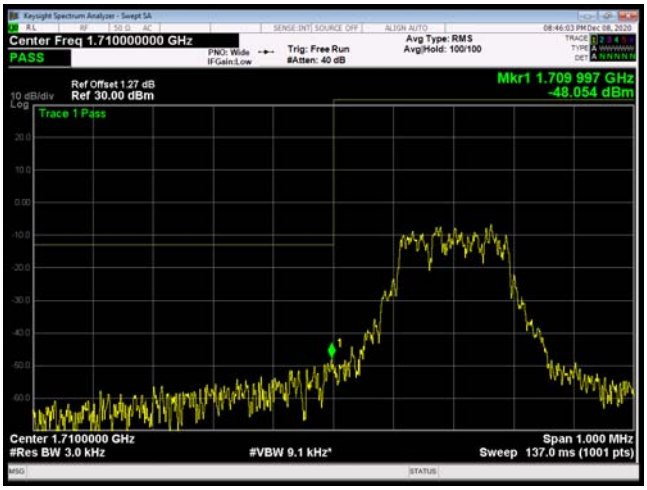


NB-IOT Band 66 QPSK 15KHz 1@0 CH-Low

NB-IOT Band 66 QPSK 15KHz 1@11 CH-High



NB-IOT Band 66 QPSK 15KHz 12@0 CH-Low



NB-IOT Band 66 QPSK 15KHz 12@0 CH-High

NB-IOT Band 71 BPSK 3.75KHz 1@0 CH-Low

NB-IOT Band 71 BPSK 3.75KHz 1@47 CH-High

LTE Band 71 BPSK 15KHz 1@0 CH-Low

LTE Band71 BPSK 15KHz 1@11 CH-High

NB-IOT Band 71 QPSK 3.75KHz 1@0 CH-Low

NB-IOT Band 71 QPSK 3.75KHz 1@47 CH-High

NB-IOT Band 71QPSK 15KHz 1@0 CH-Low

NB-IOT Band 71 QPSK 15KHz 1@11 CH-High

NB-IOT Band 71 QPSK 15KHz 12@0 CH-Low

NB-IOT Band 71 QPSK 15KHz 12@0 CH-High

NB-IOT Band 85 BPSK 3.75KHz 1@0 CH-Low

NB-IOT Band 85 BPSK 3.75KHz 1@47 CH-High

LTE Band 85 BPSK 15KHz 1@0 CH-Low

LTE Band 85 BPSK 15KHz 1@11 CH-High

NB-IOT Band 85 QPSK 3.75KHz 1@0 CH-Low

NB-IOT Band 85 QPSK 3.75KHz 1@47 CH-High

NB-IOT Band 85 QPSK 15KHz 1@0 CH-Low

NB-IOT Band 85 QPSK 15KHz 1@11 CH-High

NB-IOT Band 85 QPSK 15KHz 12@0 CH-Low

NB-IOT Band 85 QPSK 15KHz 12@0 CH-High

5.4 Peak-to-Average Power Ratio (PAPR)

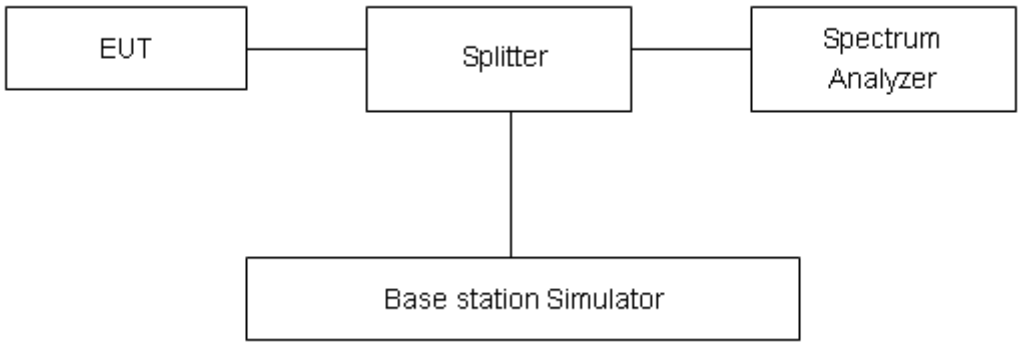
Ambient condition

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

Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (*e.g.*, dBm). Determine the PAPR from:
PAPR (dB) = PPk (dBm) - PAvg (dBm).

Test Setup



Limits

Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Measurement Uncertainty

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

Test Results

Mode	Bandwidth	Modulation	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit (dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
LTE Band4	1.4MHz	QPSK	20175/1732.5	22.88	12.87	10.01	≤13	PASS
		16QAM	20175/1732.5	23.58	12.79	10.79	≤13	PASS
	3MHz	QPSK	20175/1732.5	22.79	12.46	10.33	≤13	PASS
		16QAM	20175/1732.5	23.54	12.49	11.05	≤13	PASS
	5MHz	QPSK	20175/1732.5	23.72	14.02	9.70	≤13	PASS
		16QAM	20175/1732.5	24.46	13.79	10.67	≤13	PASS
	10MHz	QPSK	20175/1732.5	24.12	14.53	9.59	≤13	PASS
		16QAM	20175/1732.5	25.41	15.51	9.90	≤13	PASS
	15MHz	QPSK	20175/1732.5	24.78	15.83	8.95	≤13	PASS
		16QAM	20175/1732.5	25.32	15.40	9.92	≤13	PASS
	20MHz	QPSK	20175/1732.5	24.77	15.64	9.13	≤13	PASS
		16QAM	20175/1732.5	25.33	15.51	9.82	≤13	PASS
Mode	Bandwidth	Modulation	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit (dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
LTE Band12	1.4MHz	QPSK	23095/707.5	23.27	13.41	9.86	≤13	PASS
		16QAM	23095/707.5	23.96	13.32	10.64	≤13	PASS
	3MHz	QPSK	23095/707.5	23.07	13.07	10.00	≤13	PASS
		16QAM	23095/707.5	23.89	13.22	10.67	≤13	PASS
	5MHz	QPSK	23095/707.5	24.11	14.28	9.83	≤13	PASS
		16QAM	23095/707.5	24.78	14.29	10.49	≤13	PASS
	10MHz	QPSK	23095/707.5	24.03	14.38	9.65	≤13	PASS
		16QAM	23095/707.5	25.44	15.32	10.12	≤13	PASS
Mode	Bandwidth	Modulation	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit (dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
LTE Band13	5MHz	QPSK	23230/782	25.48	14.88	10.60	≤13	PASS
		16QAM	23230/782	25.46	14.85	10.61	≤13	PASS
	10MHz	QPSK	23230/782	24.62	14.84	9.78	≤13	PASS
		16QAM	23230/782	26.06	16.01	10.05	≤13	PASS
Mode	Bandwidth	Modulation	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit (dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
LTE Band66	1.4MHz	QPSK	20175/1732.5	23.01	11.38	11.63	≤13	PASS
		16QAM	20175/1732.5	23.90	11.32	12.58	≤13	PASS
	3MHz	QPSK	20175/1732.5	23.10	13.15	9.95	≤13	PASS
		16QAM	20175/1732.5	23.83	13.25	10.58	≤13	PASS
	5MHz	QPSK	20175/1732.5	23.97	14.21	9.76	≤13	PASS

		16QAM	20175/1732.5	24.54	14.01	10.53	≤13	PASS
	10MHz	QPSK	20175/1732.5	23.97	14.25	9.72	≤13	PASS
		16QAM	20175/1732.5	25.16	14.75	10.41	≤13	PASS
	15MHz	QPSK	20175/1732.5	24.80	14.90	9.90	≤13	PASS
		16QAM	20175/1732.5	25.32	15.09	10.23	≤13	PASS
	20MHz	QPSK	20175/1732.5	24.76	15.31	9.45	≤13	PASS
		16QAM	20175/1732.5	25.33	15.37	9.96	≤13	PASS
Mode	Bandwidth	Modulation	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit (dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
LTE Band85	5MHz	QPSK	134092/707	24.24	14.32	9.92	≤13	PASS
		16QAM	134092/707	24.83	14.56	10.27	≤13	PASS
	10MHz	QPSK	134092/707	24.21	14.47	9.74	≤13	PASS
		16QAM	134092/707	25.67	15.68	9.99	≤13	PASS

Mode	Modulation	Sub-carrier spacing (KHz)	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit (dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
NB-IOT Band 4	BPSK	3.75	20175/1732.5	23.02	18.16	4.86	≤13	PASS
	QPSK	3.75	20175/1732.5	22.39	18.17	4.22	≤13	PASS
	BPSK	15	20175/1732.5	22.53	15.28	7.25	≤13	PASS
	QPSK	15	20175/1732.5	22.12	15.24	6.88	≤13	PASS
Mode	Modulation	Sub-carrier spacing (KHz)	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit (dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
NB-IOT Band 12	BPSK	3.75	23095/707.5	23.08	18.29	4.79	≤13	PASS
	QPSK	3.75	23095/707.5	22.49	18.34	4.15	≤13	PASS
	BPSK	15	23095/707.5	22.67	15.48	7.19	≤13	PASS
	QPSK	15	23095/707.5	22.31	15.40	6.91	≤13	PASS
Mode	Modulation	Sub-carrier spacing (KHz)	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit (dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
NB-IOT Band 13	BPSK	3.75	23230/782	23.26	18.43	4.83	≤13	PASS
	QPSK	3.75	23230/782	22.56	18.41	4.15	≤13	PASS
	BPSK	15	23230/782	22.74	15.47	7.27	≤13	PASS
	QPSK	15	23230/782	22.34	15.46	6.88	≤13	PASS
Mode	Modulation	Sub-carrier spacing (KHz)	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit (dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
NB-IOT Band 66	BPSK	3.75	132322/1745	23.26	18.41	4.85	≤13	PASS
	QPSK	3.75	132322/1745	22.56	18.42	4.14	≤13	PASS
	BPSK	15	132322/1745	22.69	15.45	7.24	≤13	PASS
	QPSK	15	132322/1745	22.30	15.42	6.88	≤13	PASS

Mode	Modulation	Sub-carrier spacing (KHz)	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit (dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
NB-IOT Band 71	BPSK	3.75	133297/680.5	21.32	18.93	2.39	≤13	PASS
	QPSK	3.75	133297/680.5	21.48	18.97	2.51	≤13	PASS
	BPSK	15	133297/680.5	23.20	15.98	7.22	≤13	PASS
	QPSK	15	133297/680.5	22.80	16.02	6.78	≤13	PASS
Mode	Modulation	Sub-carrier spacing (KHz)	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit (dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
NB-IOT Band 85	BPSK	3.75	134081/705.9	23.07	18.27	4.80	≤13	PASS
	QPSK	3.75	134081/705.9	22.39	18.26	4.13	≤13	PASS
	BPSK	15	134081/705.9	22.63	15.46	7.17	≤13	PASS
	QPSK	15	134081/705.9	22.26	15.39	6.87	≤13	PASS

5.5 Frequency Stability

Ambient condition

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

Method of Measurement

Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +50°C in 10°C step size.

(1)With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.

(2)Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

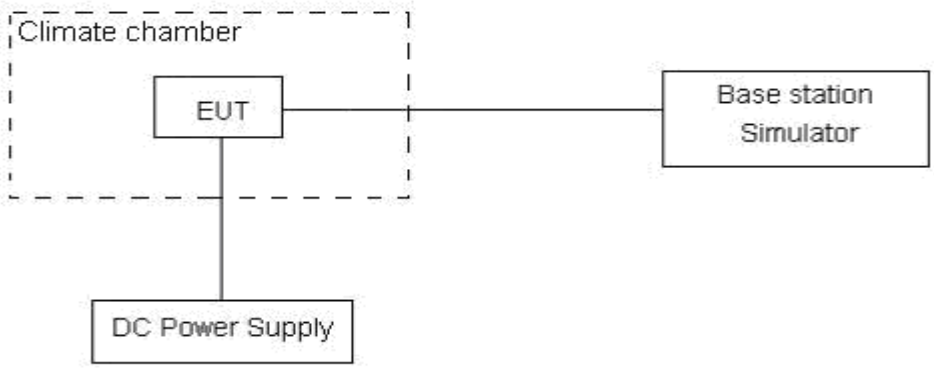
Frequency Stability (Voltage Variation)

The frequency stability shall be measured with variation of primary supply voltage as follows:

Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 3.23V and 4.37 V, with a nominal voltage of 3.8V.

Test setup



Limits

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75％ confidence level for the normal distribution is with the coverage factor k = 3,U=0.01ppm.

Test Result

LTE Band 4						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	1.4MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	4.18	11.39	0.00223	0.00606	PASS
Extreme（50℃）		9.06	10.81	0.00482	0.00575	PASS
Extreme（40℃）		10.19	11.13	0.00542	0.00592	PASS
Extreme（30℃）		9.26	15.93	0.00493	0.00847	PASS
Extreme（20℃）		14.97	17.67	0.00796	0.00940	PASS
Extreme（10℃）		1.51	1.77	0.00080	0.00094	PASS
Extreme（0℃）		8.57	4.51	0.00456	0.00240	PASS
Extreme（-10℃）		9.18	7.10	0.00488	0.00377	PASS
Extreme（-20℃）		11.70	11.65	0.00622	0.00620	PASS
Extreme（-30℃）		9.91	14.58	0.00527	0.00775	PASS
25℃	LV	15.46	14.35	0.00823	0.00763	PASS
	HV	4.63	6.21	0.00246	0.00330	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	3MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	16.68	15.31	0.00887	0.00814	PASS
Extreme（50℃）		15.70	9.28	0.00835	0.00494	PASS
Extreme（40℃）		9.49	4.82	0.00505	0.00257	PASS
Extreme（30℃）		14.79	1.28	0.00786	0.00068	PASS
Extreme（20℃）		17.78	17.18	0.00946	0.00914	PASS
Extreme（10℃）		2.21	9.50	0.00118	0.00505	PASS
Extreme（0℃）		8.17	12.19	0.00434	0.00648	PASS
Extreme（-10℃）		16.59	4.37	0.00882	0.00233	PASS
Extreme（-20℃）		15.05	6.03	0.00801	0.00321	PASS
Extreme（-30℃）		15.73	8.38	0.00836	0.00446	PASS
25℃	LV	7.73	5.27	0.00411	0.00280	PASS
	HV	7.34	10.11	0.00391	0.00538	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	4.94	15.39	0.00263	0.00819	PASS
Extreme（50℃）		15.24	8.93	0.00811	0.00475	PASS
Extreme（40℃）		2.19	17.94	0.00116	0.00954	PASS

Extreme（30℃）		6.89	1.12	0.00366	0.00059	PASS
Extreme（20℃）		2.61	8.77	0.00139	0.00467	PASS
Extreme（10℃）		4.25	5.96	0.00226	0.00317	PASS
Extreme（0℃）		14.66	11.74	0.00780	0.00625	PASS
Extreme（-10℃）		7.19	1.06	0.00382	0.00056	PASS
Extreme（-20℃）		11.35	5.18	0.00604	0.00275	PASS
Extreme（-30℃）		17.60	12.53	0.00936	0.00666	PASS
25℃	LV	6.42	15.33	0.00342	0.00815	PASS
	HV	2.43	14.33	0.00129	0.00762	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	16.80	2.00	0.00894	0.00106	PASS
Extreme（50℃）		6.69	13.90	0.00356	0.00739	PASS
Extreme（40℃）		2.34	3.01	0.00124	0.00160	PASS
Extreme（30℃）		8.67	11.40	0.00461	0.00606	PASS
Extreme（20℃）		1.41	7.92	0.00075	0.00421	PASS
Extreme（10℃）		4.82	3.39	0.00256	0.00180	PASS
Extreme（0℃）		1.73	15.41	0.00092	0.00820	PASS
Extreme（-10℃）		1.78	9.21	0.00094	0.00490	PASS
Extreme（-20℃）		13.37	11.59	0.00711	0.00616	PASS
Extreme（-30℃）		9.93	7.97	0.00528	0.00424	PASS
25℃	LV	11.41	14.62	0.00607	0.00778	PASS
	HV	9.37	5.83	0.00499	0.00310	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	8.35	4.69	0.00444	0.00250	PASS
Extreme（50℃）		8.06	10.52	0.00428	0.00560	PASS
Extreme（40℃）		12.45	9.64	0.00662	0.00513	PASS
Extreme（30℃）		15.49	10.40	0.00824	0.00553	PASS
Extreme（20℃）		6.71	10.43	0.00357	0.00555	PASS
Extreme（10℃）		3.91	6.48	0.00208	0.00344	PASS
Extreme（0℃）		1.77	9.32	0.00094	0.00496	PASS
Extreme（-10℃）		10.65	12.81	0.00567	0.00681	PASS
Extreme（-20℃）		8.29	17.03	0.00441	0.00906	PASS
Extreme（-30℃）		2.73	4.95	0.00145	0.00263	PASS
25℃	LV	7.11	16.13	0.00378	0.00858	PASS
	HV	14.73	3.63	0.00783	0.00193	PASS

Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	3.97	3.48	0.00211	0.00185	PASS
Extreme（50℃）		13.33	9.48	0.00709	0.00504	PASS
Extreme（40℃）		17.01	1.23	0.00905	0.00066	PASS
Extreme（30℃）		12.08	4.29	0.00642	0.00228	PASS
Extreme（20℃）		17.59	5.84	0.00936	0.00311	PASS
Extreme（10℃）		10.74	14.89	0.00571	0.00792	PASS
Extreme（0℃）		9.39	1.98	0.00499	0.00105	PASS
Extreme（-10℃）		12.60	1.82	0.00670	0.00097	PASS
Extreme（-20℃）		10.34	3.68	0.00550	0.00196	PASS
Extreme（-30℃）		1.42	15.99	0.00076	0.00850	PASS
25℃	LV	5.65	8.34	0.00300	0.00444	PASS
	HV	8.62	2.96	0.00459	0.00157	PASS

LTE Band 12						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	1.4MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	8.47	15.82	0.00450	0.00841	PASS
Extreme（50℃）		11.03	1.04	0.00586	0.00055	PASS
Extreme（40℃）		6.36	3.22	0.00338	0.00171	PASS
Extreme（30℃）		17.60	6.99	0.00936	0.00372	PASS
Extreme（20℃）		17.07	15.40	0.00908	0.00819	PASS
Extreme（10℃）		3.59	5.62	0.00191	0.00299	PASS
Extreme（0℃）		12.79	11.02	0.00680	0.00586	PASS
Extreme（-10℃）		10.25	9.44	0.00545	0.00502	PASS
Extreme（-20℃）		16.92	12.02	0.00900	0.00639	PASS
Extreme（-30℃）		15.43	15.86	0.00821	0.00844	PASS
25℃	LV	5.69	13.79	0.00303	0.00734	PASS
	HV	5.44	7.30	0.00289	0.00389	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	3MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	9.27	8.07	0.00493	0.00429	PASS
Extreme（50℃）		4.58	10.36	0.00244	0.00551	PASS

Extreme（40℃）		4.05	14.45	0.00215	0.00769	PASS
Extreme（30℃）		16.70	6.88	0.00888	0.00366	PASS
Extreme（20℃）		11.89	13.45	0.00633	0.00716	PASS
Extreme（10℃）		14.01	12.43	0.00745	0.00661	PASS
Extreme（0℃）		3.12	4.83	0.00166	0.00257	PASS
Extreme（-10℃）		10.64	12.44	0.00566	0.00662	PASS
Extreme（-20℃）		13.15	11.76	0.00700	0.00625	PASS
Extreme（-30℃）		10.28	9.97	0.00547	0.00530	PASS
25℃	LV	3.97	1.33	0.00211	0.00071	PASS
	HV	13.32	10.76	0.00708	0.00573	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）		7.98	2.63	0.00425	0.00140	PASS
Extreme（50℃）		17.64	7.65	0.00938	0.00407	PASS
Extreme（40℃）		13.94	5.59	0.00742	0.00298	PASS
Extreme（30℃）		3.26	3.12	0.00173	0.00166	PASS
Extreme（20℃）		3.52	17.58	0.00187	0.00935	PASS
Extreme（10℃）	Normal	15.48	10.93	0.00823	0.00582	PASS
Extreme（0℃）		12.61	14.84	0.00671	0.00789	PASS
Extreme（-10℃）		5.76	6.33	0.00306	0.00337	PASS
Extreme（-20℃）		3.64	2.72	0.00193	0.00144	PASS
Extreme（-30℃）		13.08	3.24	0.00696	0.00172	PASS
25℃	LV	10.90	8.96	0.00580	0.00476	PASS
	HV	3.18	6.67	0.00169	0.00355	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）		8.16	12.58	0.00434	0.00669	PASS
Extreme（50℃）		2.06	6.09	0.00109	0.00324	PASS
Extreme（40℃）		7.47	3.43	0.00397	0.00182	PASS
Extreme（30℃）		1.74	7.97	0.00093	0.00424	PASS
Extreme（20℃）		13.61	11.91	0.00724	0.00634	PASS
Extreme（10℃）	Normal	15.40	7.83	0.00819	0.00416	PASS
Extreme（0℃）		9.11	6.23	0.00485	0.00332	PASS
Extreme（-10℃）		3.77	9.59	0.00201	0.00510	PASS
Extreme（-20℃）		12.74	4.72	0.00678	0.00251	PASS
Extreme（-30℃）		9.62	11.12	0.00512	0.00592	PASS
25℃	LV	1.74	12.89	0.00093	0.00686	PASS

	HV	16.72	8.40	0.00889	0.00447	PASS

LTE Band 13						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	17.86	2.98	0.00950	0.00158	PASS
Extreme（50℃）		15.96	16.96	0.00849	0.00902	PASS
Extreme（40℃）		3.41	6.85	0.00182	0.00364	PASS
Extreme（30℃）		11.20	5.72	0.00596	0.00304	PASS
Extreme（20℃）		6.76	12.30	0.00360	0.00654	PASS
Extreme（10℃）		9.75	10.30	0.00519	0.00548	PASS
Extreme（0℃）		3.54	14.93	0.00188	0.00794	PASS
Extreme（-10℃）		2.25	14.43	0.00120	0.00768	PASS
Extreme（-20℃）		17.59	16.99	0.00935	0.00904	PASS
Extreme（-30℃）		6.07	4.37	0.00323	0.00233	PASS
25℃	LV	6.16	14.04	0.00328	0.00747	PASS
	HV	3.46	2.12	0.00184	0.00113	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	7.73	15.53	0.00411	0.00826	PASS
Extreme（50℃）		3.60	12.41	0.00192	0.00660	PASS
Extreme（40℃）		11.16	7.48	0.00594	0.00398	PASS
Extreme（30℃）		12.93	16.71	0.00688	0.00889	PASS
Extreme（20℃）		6.10	17.96	0.00325	0.00955	PASS
Extreme（10℃）		12.85	10.10	0.00683	0.00537	PASS
Extreme（0℃）		1.73	1.89	0.00092	0.00100	PASS
Extreme（-10℃）		17.48	13.90	0.00930	0.00740	PASS
Extreme（-20℃）		11.27	2.72	0.00599	0.00145	PASS
Extreme（-30℃）		3.20	9.30	0.00170	0.00495	PASS
25℃	LV	4.12	4.95	0.00219	0.00263	PASS
	HV	1.39	9.36	0.00074	0.00498	PASS

LTE Band 66						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	1.4MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	

Normal（25℃）	Normal	5.73	11.97	0.00305	0.00637	PASS
Extreme（50℃）		11.28	2.33	0.00600	0.00124	PASS
Extreme（40℃）		15.05	1.38	0.00801	0.00073	PASS
Extreme（30℃）		9.53	1.26	0.00507	0.00067	PASS
Extreme（20℃）		4.90	4.08	0.00260	0.00217	PASS
Extreme（10℃）		8.85	16.35	0.00471	0.00870	PASS
Extreme（0℃）		11.11	15.82	0.00591	0.00842	PASS
Extreme（-10℃）		3.95	17.20	0.00210	0.00915	PASS
Extreme（-20℃）		10.46	15.01	0.00556	0.00798	PASS
Extreme（-30℃）		15.25	3.41	0.00811	0.00181	PASS
25℃	LV	17.01	8.53	0.00905	0.00454	PASS
	HV	11.03	13.56	0.00587	0.00721	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	3MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	7.73	6.40	0.00411	0.00340	PASS
Extreme（50℃）		10.04	12.51	0.00534	0.00665	PASS
Extreme（40℃）		12.44	11.31	0.00662	0.00602	PASS
Extreme（30℃）		9.74	4.26	0.00518	0.00226	PASS
Extreme（20℃）		6.38	11.31	0.00339	0.00602	PASS
Extreme（10℃）		8.21	4.44	0.00437	0.00236	PASS
Extreme（0℃）		15.11	17.45	0.00804	0.00928	PASS
Extreme（-10℃）		10.73	1.15	0.00571	0.00061	PASS
Extreme（-20℃）		8.88	11.45	0.00472	0.00609	PASS
Extreme（-30℃）		7.93	8.06	0.00422	0.00429	PASS
25℃	LV	3.12	9.07	0.00166	0.00482	PASS
	HV	13.90	5.00	0.00739	0.00266	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	14.10	7.45	0.00750	0.00396	PASS
Extreme（50℃）		9.43	8.74	0.00502	0.00465	PASS
Extreme（40℃）		10.64	15.39	0.00566	0.00819	PASS
Extreme（30℃）		12.81	6.00	0.00681	0.00319	PASS
Extreme（20℃）		15.81	2.10	0.00841	0.00111	PASS
Extreme（10℃）		4.97	10.86	0.00264	0.00578	PASS
Extreme（0℃）		8.62	14.04	0.00458	0.00747	PASS
Extreme（-10℃）		14.60	11.79	0.00777	0.00627	PASS
Extreme（-20℃）		5.77	9.23	0.00307	0.00491	PASS
Extreme（-30℃）		4.22	15.66	0.00224	0.00833	PASS

25℃	LV	2.15	8.99	0.00114	0.00478	PASS
	HV	1.22	1.97	0.00065	0.00105	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	8.76	4.58	0.00466	0.00243	PASS
Extreme（50℃）		5.84	2.96	0.00310	0.00157	PASS
Extreme（40℃）		5.89	2.86	0.00314	0.00152	PASS
Extreme（30℃）		17.24	2.35	0.00917	0.00125	PASS
Extreme（20℃）		4.32	13.58	0.00230	0.00723	PASS
Extreme（10℃）		2.27	12.79	0.00121	0.00680	PASS
Extreme（0℃）		12.50	2.98	0.00665	0.00158	PASS
Extreme（-10℃）		3.71	1.91	0.00197	0.00101	PASS
Extreme（-20℃）		15.88	11.11	0.00845	0.00591	PASS
Extreme（-30℃）		4.08	1.50	0.00217	0.00080	PASS
25℃	LV	8.39	16.90	0.00447	0.00899	PASS
	HV	16.35	6.91	0.00870	0.00368	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	4.05	5.14	0.00216	0.00273	PASS
Extreme（50℃）		8.60	14.34	0.00457	0.00763	PASS
Extreme（40℃）		14.14	10.09	0.00752	0.00537	PASS
Extreme（30℃）		8.72	8.29	0.00464	0.00441	PASS
Extreme（20℃）		6.67	13.39	0.00355	0.00712	PASS
Extreme（10℃）		5.33	5.43	0.00283	0.00289	PASS
Extreme（0℃）		8.05	17.31	0.00428	0.00921	PASS
Extreme（-10℃）		13.80	6.96	0.00734	0.00370	PASS
Extreme（-20℃）		13.54	8.23	0.00720	0.00438	PASS
Extreme（-30℃）		10.29	12.05	0.00547	0.00641	PASS
25℃	LV	8.20	9.69	0.00436	0.00515	PASS
	HV	6.42	15.24	0.00342	0.00811	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	7.12	10.14	0.00379	0.00540	PASS
Extreme（50℃）		17.48	11.26	0.00930	0.00599	PASS

Extreme（40℃）		16.37	13.44	0.00871	0.00715	PASS
Extreme（30℃）		5.57	11.70	0.00296	0.00623	PASS
Extreme（20℃）		3.73	7.05	0.00198	0.00375	PASS
Extreme（10℃）		7.90	9.16	0.00420	0.00487	PASS
Extreme（0℃）		7.95	16.24	0.00423	0.00864	PASS
Extreme（-10℃）		3.26	10.07	0.00173	0.00536	PASS
Extreme（-20℃）		8.77	8.26	0.00467	0.00439	PASS
Extreme（-30℃）		17.56	2.73	0.00934	0.00145	PASS
25℃	LV	10.20	13.03	0.00542	0.00693	PASS
	HV	14.39	4.71	0.00765	0.00250	PASS

LTE Band 85						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	14.35	9.36	0.00763	0.00498	PASS
Extreme（50℃）		10.56	13.51	0.00561	0.00718	PASS
Extreme（40℃）		1.03	2.93	0.00055	0.00156	PASS
Extreme（30℃）		11.28	17.72	0.00600	0.00942	PASS
Extreme（20℃）		4.27	9.27	0.00227	0.00493	PASS
Extreme（10℃）		8.99	5.72	0.00478	0.00304	PASS
Extreme（0℃）		17.50	4.19	0.00931	0.00223	PASS
Extreme（-10℃）		2.78	4.23	0.00148	0.00225	PASS
Extreme（-20℃）		4.61	9.96	0.00245	0.00530	PASS
Extreme（-30℃）		16.70	5.76	0.00888	0.00306	PASS
25℃	LV	14.43	3.75	0.00768	0.00200	PASS
	HV	3.45	4.17	0.00184	0.00222	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	17.18	1.51	0.00914	0.00081	PASS
Extreme（50℃）		9.73	11.53	0.00518	0.00613	PASS
Extreme（40℃）		5.95	16.08	0.00316	0.00855	PASS
Extreme（30℃）		17.57	1.09	0.00934	0.00058	PASS
Extreme（20℃）		10.34	2.23	0.00550	0.00119	PASS
Extreme（10℃）		1.04	8.07	0.00056	0.00429	PASS
Extreme（0℃）		2.20	1.85	0.00117	0.00099	PASS
Extreme（-10℃）		7.01	12.53	0.00373	0.00666	PASS
Extreme（-20℃）		7.10	17.53	0.00378	0.00933	PASS
Extreme（-30℃）		4.21	9.99	0.00224	0.00531	PASS

25℃	LV	6.75	7.76	0.00359	0.00413	PASS
	HV	14.27	4.42	0.00759	0.00235	PASS

NB-IOT Band 4						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability(ppm)	Frequency Stability(ppm)	Verdict
Sub-carrier spacing (kHz)	3.75					
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal(25℃)	Normal	3.28	1.09	0.00175	0.00058	PASS
Extreme(50℃)		5.18	12.86	0.00275	0.00684	PASS
Extreme(40℃)		10.56	12.82	0.00562	0.00682	PASS
Extreme(30℃)		12.26	2.69	0.00652	0.00143	PASS
Extreme(20℃)		12.10	3.89	0.00644	0.00207	PASS
Extreme(10℃)		16.53	15.47	0.00879	0.00823	PASS
Extreme(0℃)		15.51	12.71	0.00825	0.00676	PASS
Extreme(-10℃)		11.35	17.67	0.00604	0.00940	PASS
Extreme(-20℃)		12.80	4.06	0.00681	0.00216	PASS
Extreme(-30℃)		4.08	8.27	0.00217	0.00440	PASS
25℃	LV	13.19	15.69	0.00701	0.00835	PASS
	HV	11.54	17.76	0.00614	0.00945	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability(ppm)	Frequency Stability(ppm)	Verdict
Sub-carrier spacing (kHz)	15					
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal(25℃)	Normal	9.51	11.79	0.00506	0.00627	PASS
Extreme(50℃)		9.66	7.48	0.00514	0.00398	PASS
Extreme(40℃)		15.52	2.39	0.00826	0.00127	PASS
Extreme(30℃)		11.24	1.38	0.00598	0.00073	PASS
Extreme(20℃)		9.45	12.54	0.00502	0.00667	PASS
Extreme(10℃)		16.06	14.42	0.00854	0.00767	PASS
Extreme(0℃)		13.64	3.79	0.00725	0.00202	PASS
Extreme(-10℃)		17.09	1.88	0.00909	0.00100	PASS
Extreme(-20℃)		16.28	4.36	0.00866	0.00232	PASS
Extreme(-30℃)		15.22	13.09	0.00809	0.00696	PASS
25℃	LV	14.15	12.22	0.00753	0.00650	PASS
	HV	11.89	9.80	0.00632	0.00521	PASS

NB-IOT Band 12						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability(ppm)	Frequency Stability(ppm)	Verdict
Sub-carrier spacing (kHz)	3.75					
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal(25℃)	Normal	6.10	4.39	0.00324	0.00233	PASS
Extreme(50℃)		15.20	16.13	0.00808	0.00858	PASS
Extreme(40℃)		5.08	9.16	0.00270	0.00487	PASS
Extreme(30℃)		5.37	14.37	0.00286	0.00764	PASS
Extreme(20℃)		12.65	14.82	0.00673	0.00788	PASS
Extreme(10℃)		4.71	4.86	0.00250	0.00259	PASS
Extreme(0℃)		4.35	13.98	0.00231	0.00744	PASS
Extreme(-10℃)		14.91	9.10	0.00793	0.00484	PASS
Extreme(-20℃)		17.99	11.35	0.00957	0.00604	PASS
Extreme(-30℃)		11.49	2.00	0.00611	0.00106	PASS
25℃	LV	2.49	6.11	0.00133	0.00325	PASS
	HV	5.95	8.08	0.00316	0.00430	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability(ppm)	Frequency Stability(ppm)	Verdict
Sub-carrier spacing (kHz)	15					
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal(25℃)	Normal	10.61	6.59	0.00564	0.00350	PASS
Extreme(50℃)		7.90	5.53	0.00420	0.00294	PASS
Extreme(40℃)		13.74	14.38	0.00731	0.00765	PASS
Extreme(30℃)		6.38	7.66	0.00340	0.00407	PASS
Extreme(20℃)		4.16	17.90	0.00221	0.00952	PASS
Extreme(10℃)		11.05	3.84	0.00588	0.00204	PASS
Extreme(0℃)		3.82	13.14	0.00203	0.00699	PASS
Extreme(-10℃)		18.00	7.42	0.00957	0.00395	PASS
Extreme(-20℃)		2.39	6.71	0.00127	0.00357	PASS
Extreme(-30℃)		3.08	14.09	0.00164	0.00749	PASS
25℃	LV	13.57	14.93	0.00722	0.00794	PASS
	HV	15.56	5.97	0.00827	0.00317	PASS

NB-IOT Band 13						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability(ppm)	Frequency Stability(ppm)	Verdict
Sub-carrier spacing (kHz)	3.75					
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	

Normal(25℃)	Normal	6.17	17.99	0.00328	0.00957	PASS
Extreme(50℃)		17.42	4.59	0.00926	0.00244	PASS
Extreme(40℃)		6.60	11.05	0.00351	0.00588	PASS
Extreme(30℃)		9.03	17.91	0.00481	0.00953	PASS
Extreme(20℃)		8.84	5.01	0.00470	0.00266	PASS
Extreme(10℃)		10.72	13.79	0.00570	0.00734	PASS
Extreme(0℃)		15.02	7.37	0.00799	0.00392	PASS
Extreme(-10℃)		3.55	2.79	0.00189	0.00149	PASS
Extreme(-20℃)		1.31	7.87	0.00070	0.00419	PASS
Extreme(-30℃)		10.58	12.39	0.00563	0.00659	PASS
25℃	LV	9.93	15.03	0.00528	0.00800	PASS
	HV	4.94	10.41	0.00263	0.00554	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability(ppm)	Frequency Stability(ppm)	Verdict
Sub-carrier spacing (kHz)	15					
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal(25℃)	Normal	17.80	4.92	0.00947	0.00261	PASS
Extreme(50℃)		15.84	15.57	0.00842	0.00828	PASS
Extreme(40℃)		2.03	15.31	0.00108	0.00814	PASS
Extreme(30℃)		9.05	1.44	0.00481	0.00077	PASS
Extreme(20℃)		4.35	2.02	0.00231	0.00107	PASS
Extreme(10℃)		16.12	2.17	0.00858	0.00116	PASS
Extreme(0℃)		12.57	8.26	0.00669	0.00439	PASS
Extreme(-10℃)		11.68	14.49	0.00621	0.00771	PASS
Extreme(-20℃)		1.11	17.41	0.00059	0.00926	PASS
Extreme(-30℃)		13.09	6.41	0.00696	0.00341	PASS
25℃	LV	11.77	12.24	0.00626	0.00651	PASS
	HV	2.16	10.45	0.00115	0.00556	PASS

NB-IOT Band 66						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability(ppm)	Frequency Stability(ppm)	Verdict
Sub-carrier spacing (kHz)	3.75					
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal(25℃)	Normal	13.13	15.67	0.00698	0.00833	PASS
Extreme(50℃)		11.50	2.02	0.00612	0.00107	PASS
Extreme(40℃)		3.15	3.57	0.00168	0.00190	PASS
Extreme(30℃)		15.67	13.44	0.00833	0.00715	PASS
Extreme(20℃)		4.13	6.96	0.00220	0.00370	PASS
Extreme(10℃)		4.94	14.75	0.00263	0.00784	PASS

Extreme(0℃)		5.85	5.65	0.00311	0.00301	PASS
Extreme(-10℃)		2.96	12.89	0.00158	0.00686	PASS
Extreme(-20℃)		2.75	10.83	0.00146	0.00576	PASS
Extreme(-30℃)		14.11	8.98	0.00751	0.00478	PASS
25℃	LV	12.54	6.25	0.00667	0.00333	PASS
	HV	12.23	11.87	0.00651	0.00631	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability(ppm)	Frequency Stability(ppm)	Verdict
Sub-carrier spacing (kHz)	15					
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal(25℃)	Normal	17.98	2.08	0.00957	0.00111	PASS
Extreme(50℃)		7.85	14.09	0.00418	0.00749	PASS
Extreme(40℃)		11.65	13.20	0.00620	0.00702	PASS
Extreme(30℃)		9.04	6.83	0.00481	0.00363	PASS
Extreme(20℃)		13.22	17.13	0.00703	0.00911	PASS
Extreme(10℃)		14.20	2.51	0.00756	0.00133	PASS
Extreme(0℃)		3.67	7.63	0.00195	0.00406	PASS
Extreme(-10℃)		9.70	16.68	0.00516	0.00887	PASS
Extreme(-20℃)		14.48	17.06	0.00770	0.00907	PASS
Extreme(-30℃)		9.45	6.02	0.00503	0.00320	PASS
25℃	LV	2.64	1.70	0.00141	0.00090	PASS
	HV	10.79	3.93	0.00574	0.00209	PASS

NB-IOT Band 71						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability(ppm)	Frequency Stability(ppm)	Verdict
Sub-carrier spacing (kHz)	3.75					
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal(25℃)	Normal	6.21	7.11	0.00330	0.00378	PASS
Extreme(50℃)		2.11	3.57	0.00112	0.00190	PASS
Extreme(40℃)		3.71	15.24	0.00197	0.00811	PASS
Extreme(30℃)		8.30	10.13	0.00442	0.00539	PASS
Extreme(20℃)		7.42	1.33	0.00394	0.00071	PASS
Extreme(10℃)		9.95	10.44	0.00529	0.00556	PASS
Extreme(0℃)		3.75	17.88	0.00200	0.00951	PASS
Extreme(-10℃)		1.88	4.70	0.00100	0.00250	PASS
Extreme(-20℃)		11.32	9.13	0.00602	0.00486	PASS
Extreme(-30℃)		12.66	3.42	0.00674	0.00182	PASS
25℃	LV	13.26	14.65	0.00705	0.00779	PASS

	HV	11.97	17.31	0.00636	0.00921	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability(ppm)	Frequency Stability(ppm)	Verdict
Sub-carrier spacing (kHz)	15					
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal(25℃)	Normal	4.90	16.09	0.00261	0.00856	PASS
Extreme(50℃)		12.11	7.59	0.00644	0.00404	PASS
Extreme(40℃)		10.18	7.53	0.00542	0.00401	PASS
Extreme(30℃)		12.61	15.66	0.00671	0.00833	PASS
Extreme(20℃)		5.32	5.85	0.00283	0.00311	PASS
Extreme(10℃)		4.13	16.15	0.00220	0.00859	PASS
Extreme(0℃)		12.31	6.86	0.00655	0.00365	PASS
Extreme(-10℃)		8.50	14.61	0.00452	0.00777	PASS
Extreme(-20℃)		1.20	17.62	0.00064	0.00937	PASS
Extreme(-30℃)		11.45	17.62	0.00609	0.00937	PASS
25℃	LV	8.35	10.11	0.00444	0.00538	PASS
	HV	10.14	7.02	0.00539	0.00374	PASS

NB-IOT Band 85						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability(ppm)	Frequency Stability(ppm)	Verdict
Sub-carrier spacing (kHz)	3.75					
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal(25℃)	Normal	11.18	7.65	0.00595	0.00407	PASS
Extreme(50℃)		17.18	16.17	0.00914	0.00860	PASS
Extreme(40℃)		9.51	17.80	0.00506	0.00947	PASS
Extreme(30℃)		13.54	1.84	0.00720	0.00098	PASS
Extreme(20℃)		2.76	12.63	0.00147	0.00672	PASS
Extreme(10℃)		4.04	6.64	0.00215	0.00353	PASS
Extreme(0℃)		11.80	14.14	0.00628	0.00752	PASS
Extreme(-10℃)		6.59	16.11	0.00350	0.00857	PASS
Extreme(-20℃)		8.52	9.93	0.00453	0.00528	PASS
Extreme(-30℃)		14.71	6.28	0.00783	0.00334	PASS
25℃	LV	10.60	11.78	0.00564	0.00627	PASS
	HV	2.54	9.36	0.00135	0.00498	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability(ppm)	Frequency Stability(ppm)	Verdict
Sub-carrier spacing (kHz)	15					
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	

Normal(25℃)	Normal	7.05	12.11	0.00375	0.00644	PASS
Extreme(50℃)		7.10	15.81	0.00378	0.00841	PASS
Extreme(40℃)		11.73	14.83	0.00624	0.00789	PASS
Extreme(30℃)		3.28	17.13	0.00175	0.00911	PASS
Extreme(20℃)		10.60	9.46	0.00564	0.00503	PASS
Extreme(10℃)		14.43	10.47	0.00768	0.00557	PASS
Extreme(0℃)		3.48	8.85	0.00185	0.00471	PASS
Extreme(-10℃)		13.63	2.10	0.00725	0.00112	PASS
Extreme(-20℃)		3.60	10.45	0.00191	0.00556	PASS
Extreme(-30℃)		5.47	17.61	0.00291	0.00937	PASS
25℃	LV	8.35	13.11	0.00444	0.00698	PASS
	HV	16.21	13.99	0.00862	0.00744	PASS

5.6 Spurious Emissions at Antenna Terminals

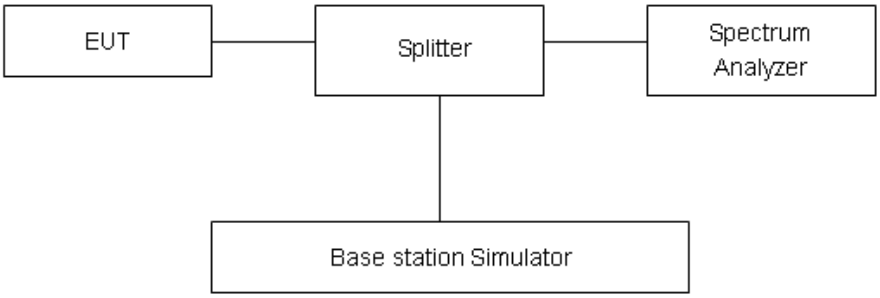
Ambient condition

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

Method of Measurement

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 9kHz to the 10th harmonic of the carrier. The peak detector is used.
RBW is set to 1 kHz (0.009MHz~ 0.15 MHz),
RBW is set to 10 kHz (0.15 MHz~ 30 MHz),
RBW is set to 100 kHz (30MHz~1000 MHz),
RBW is set to 1000 kHz (above 1000MHz) for LTE Band 4/7/12/66/85 and NB-IOT Band 4/7/12/13/66/71/85,
RBW is set to 3000 kHz (above 1000MHz) for LTE Band 13,
Sweep is set to ATUO.
Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup



Limits

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..”
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.

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.

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

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

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

Measurement Uncertainty

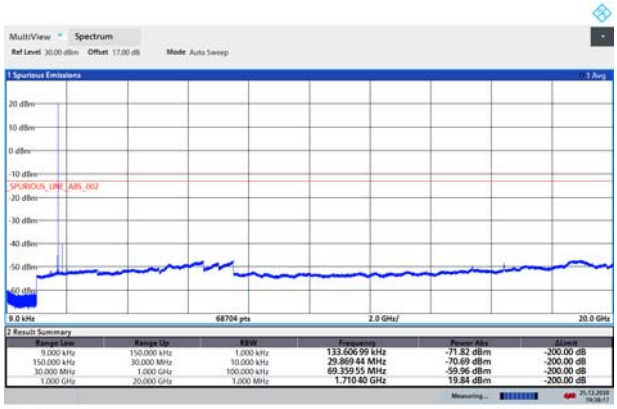
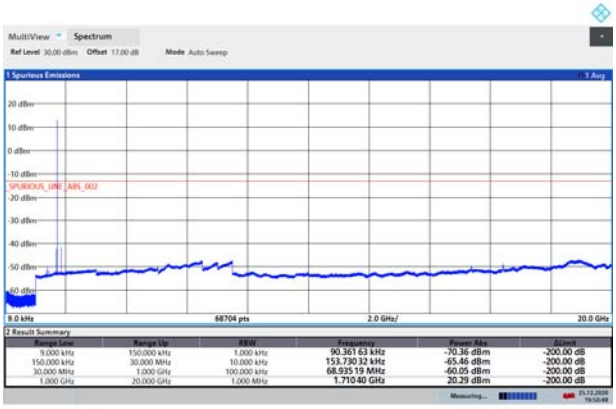
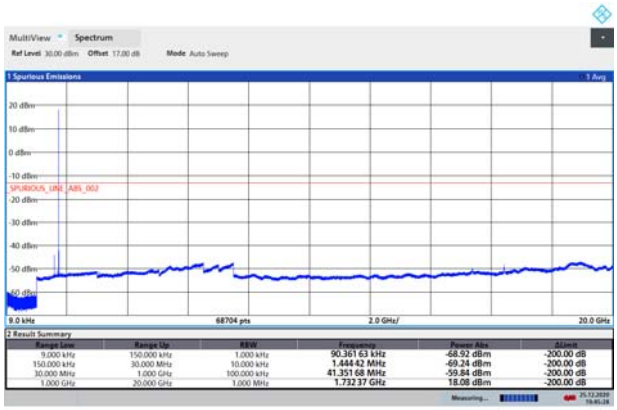
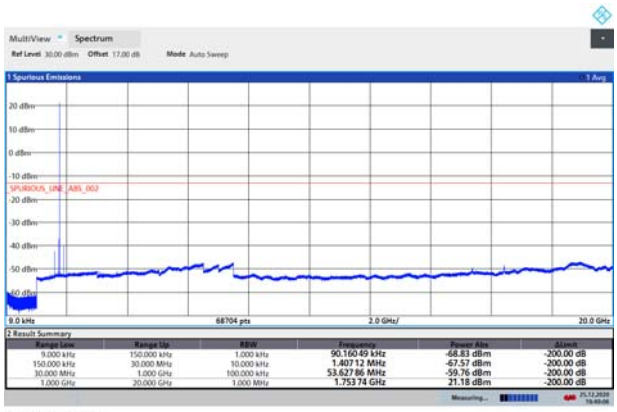
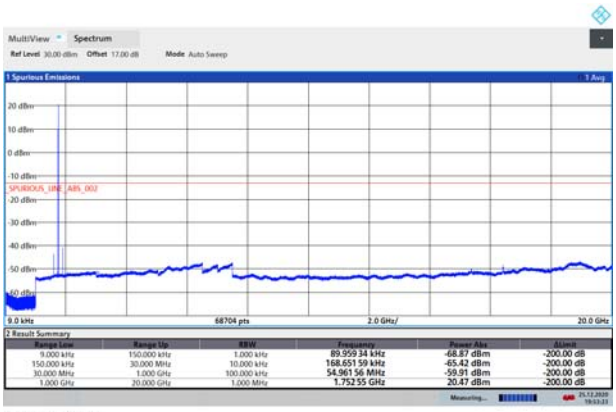
The assessed measurement uncertainty to ensure 99.75％ confidence level for the normal distribution is with the coverage factor *k* = 1.96.

Frequency	Uncertainty
9kHz-1GHz	0.684 dB
1GHz-27GHz	1.407 dB

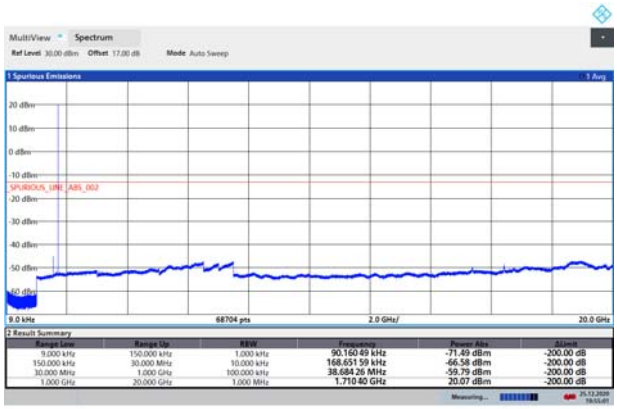
Test Result

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

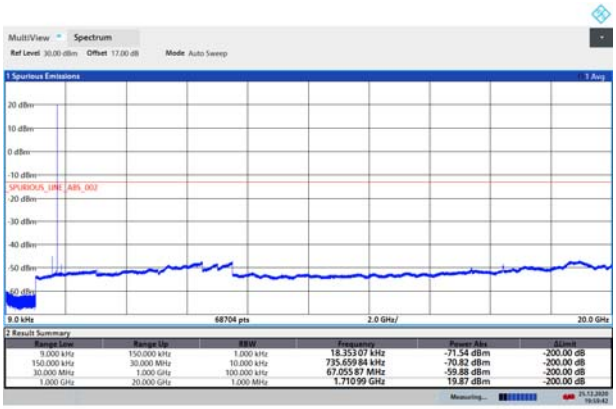
The signal beyond the limit is carrier.

LTE Band 4 1.4MHz CH-Low 9kHz~20GHz	LTE Band 4 3MHz CH-Low 9kHz~20GHz
	
LTE Band 4 1.4MHz CH-Middle 9kHz~20GHz	LTE Band 4 3MHz CH-Middle 9kHz~20GHz
	
LTE Band 4 1.4MHz CH-High 9kHz~20GHz	LTE Band 4 3MHz CH-High 9kHz~20GHz
	

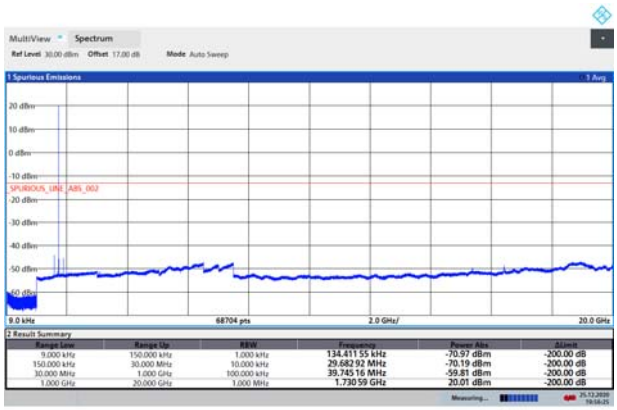
LTE Band 4 5MHz CH-Low 9kHz~20GHz



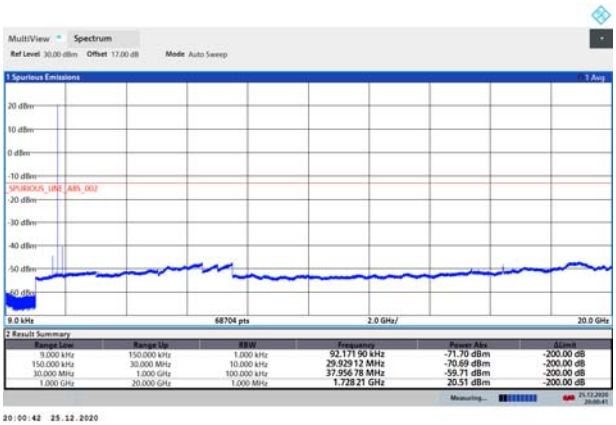
LTE Band 4 10MHz CH-Low 9kHz~20GHz



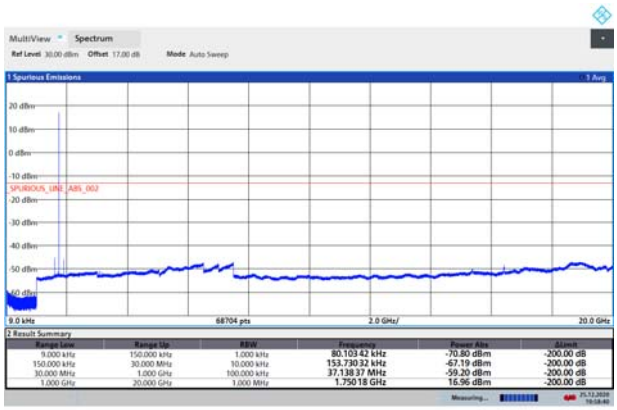
LTE Band 4 5MHz CH-Middle 9kHz~20GHz



LTE Band 4 10MHz CH-Middle 9kHz~20GHz

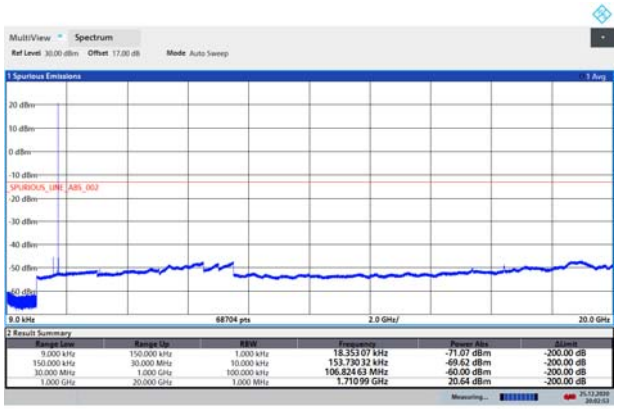


LTE Band 4 5MHz CH-High 9kHz~20GHz

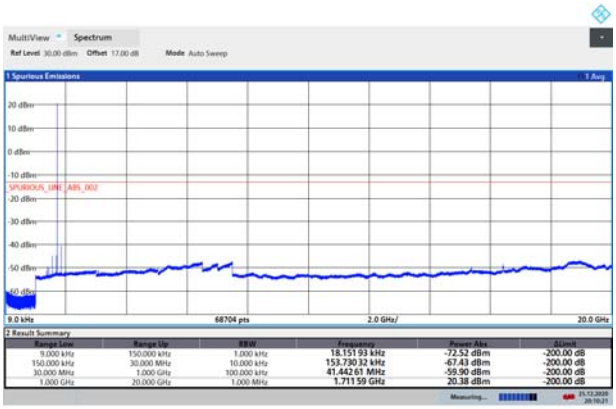


LTE Band 4 10MHz CH-High 9kHz~20GHz

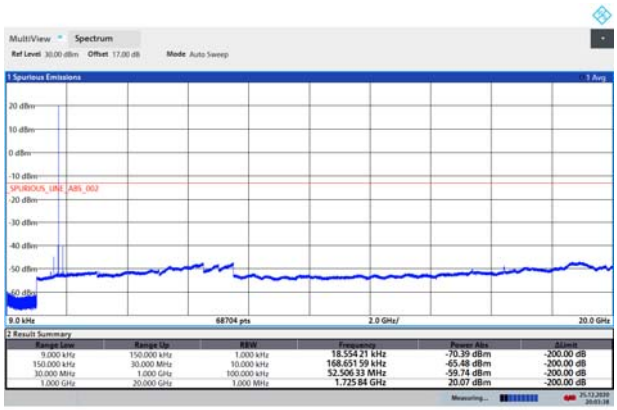
LTE Band 4 15MHz CH-Low 9kHz~20GHz



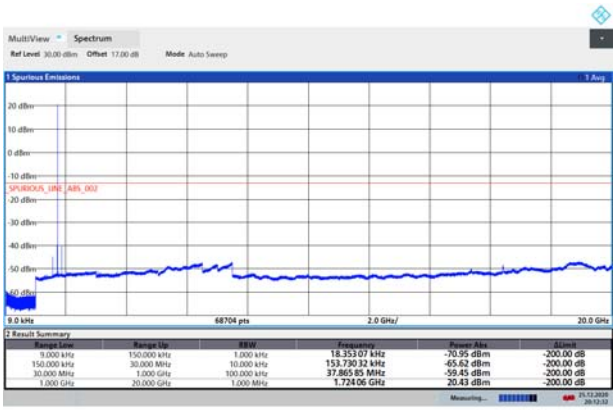
LTE Band 4 20MHz CH-Low 9kHz~20GHz



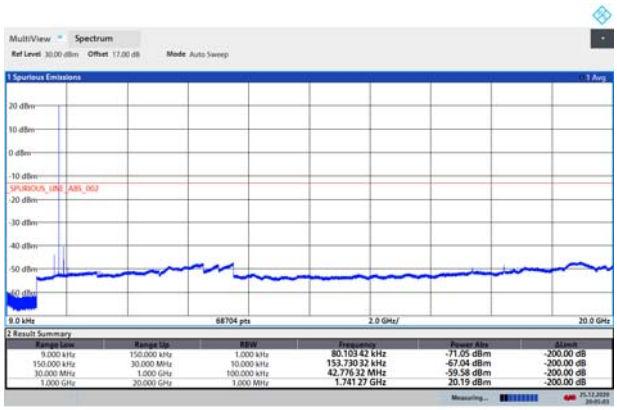
LTE Band 4 15MHz CH-Middle 9kHz~20GHz



LTE Band 4 20MHz CH-Middle 9kHz~20GHz

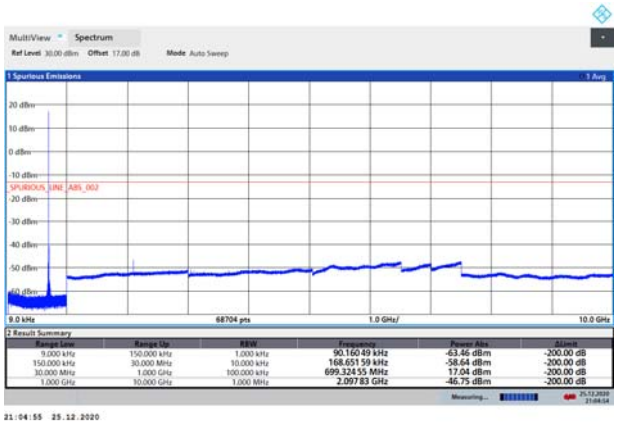


LTE Band 4 15MHz CH-High 9kHz~20GHz

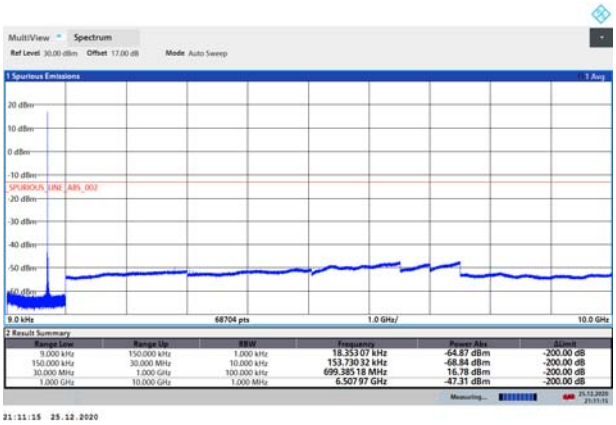


LTE Band 4 20MHz CH-High 9kHz~20GHz

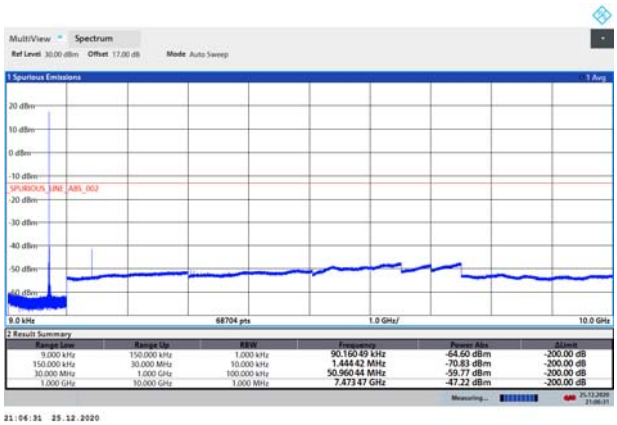
LTE Band 12 1.4MHz CH-Low 9kHz~10GHz



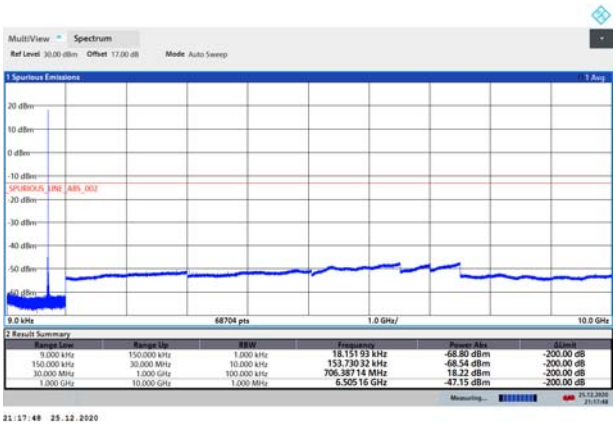
LTE Band 12 3MHz CH-Low 9kHz~10GHz



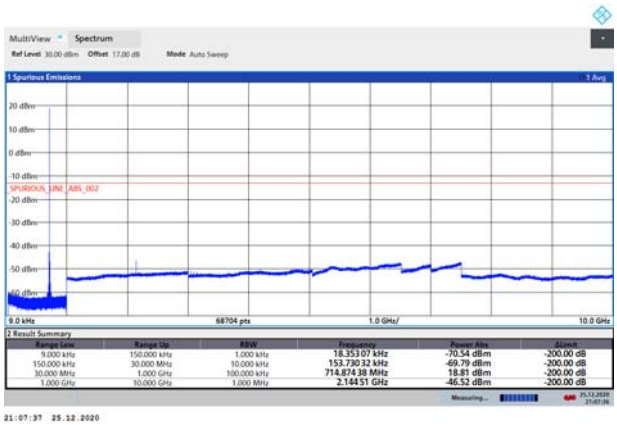
LTE Band 12 1.4MHz CH-Middle 9kHz~10GHz



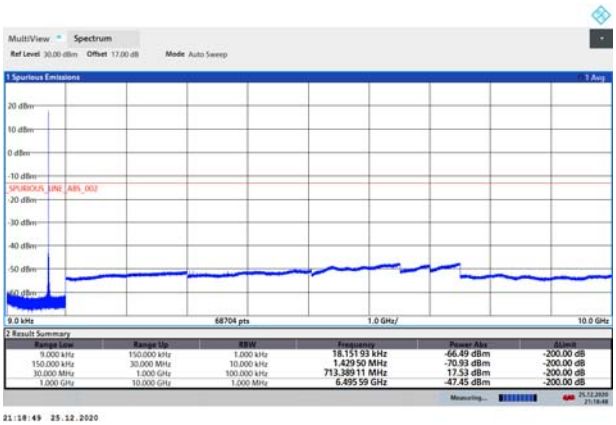
LTE Band 12 3MHz CH-Middle 9kHz~10GHz



LTE Band 12 1.4MHz CH-High 9kHz~10GHz

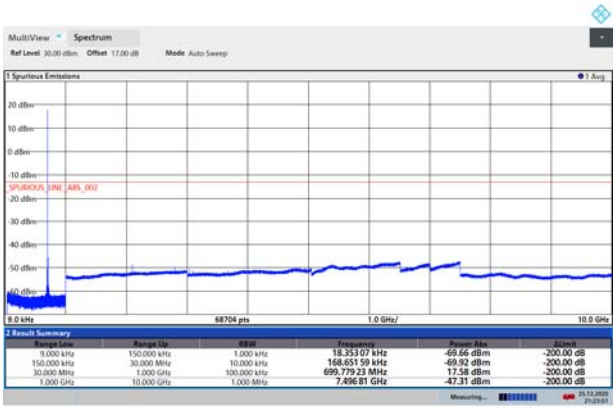


LTE Band 12 3MHz CH-High 9kHz~10GHz



LTE Band 12 5MHz CH-Low 9kHz~10GHz

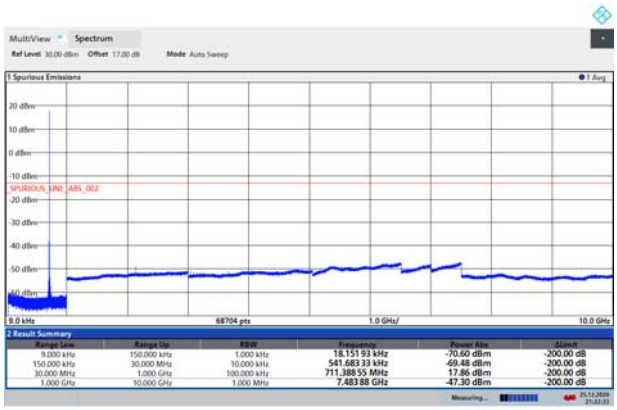
LTE Band 12 10MHz CH-Low 9kHz~10GHz



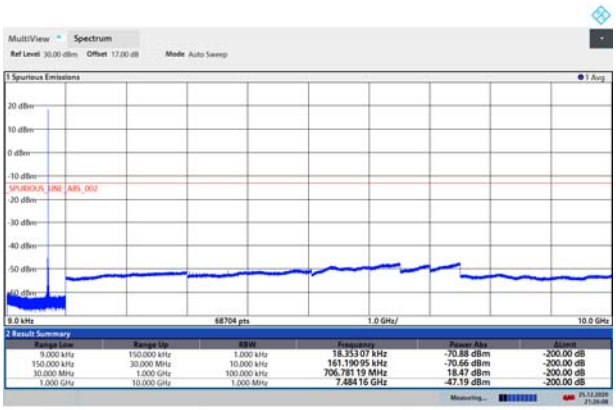
LTE Band 12 5MHz CH-Middle 9kHz~10GHz

LTE Band 12 10MHz CH-Middle 9kHz~10GHz

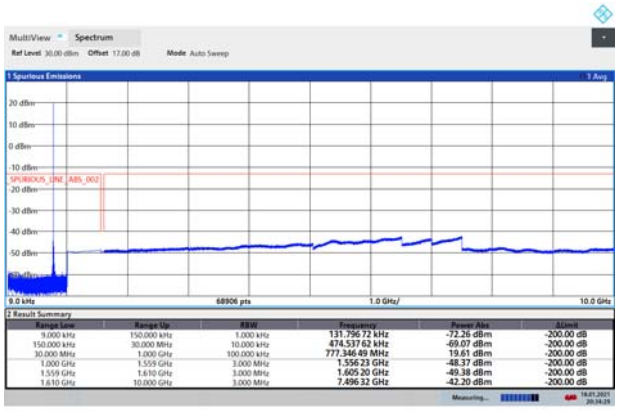
LTE Band 12 5MHz CH-High 9kHz~10GHz



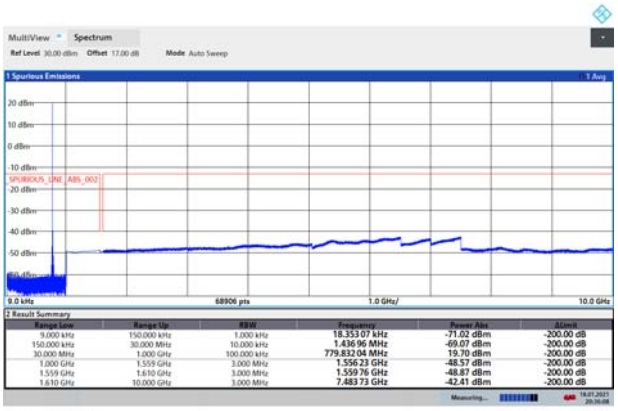
LTE Band 12 10MHz CH-High 9kHz~10GHz



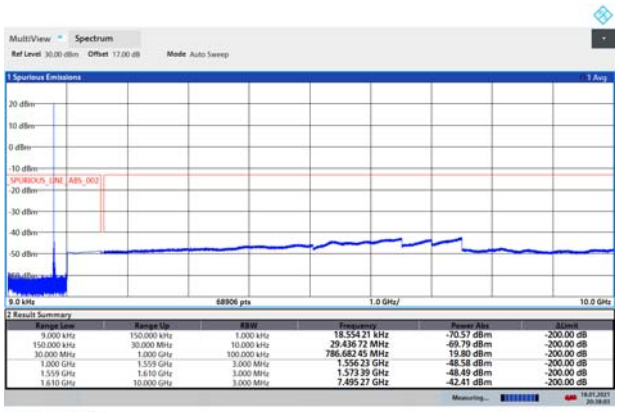
LTE Band 13 5MHz CH-Low 9kHz~10GHz



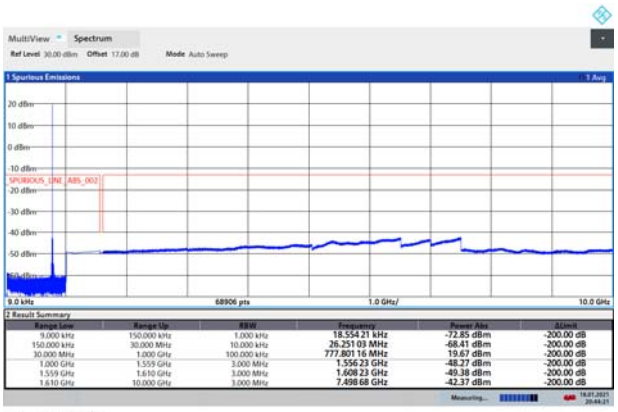
LTE Band 13 5MHz CH-Middle 9kHz~10GHz



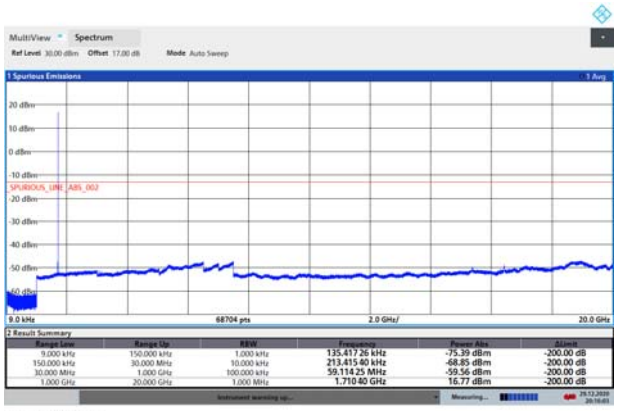
LTE Band 13 5MHz CH-High 9kHz~10GHz



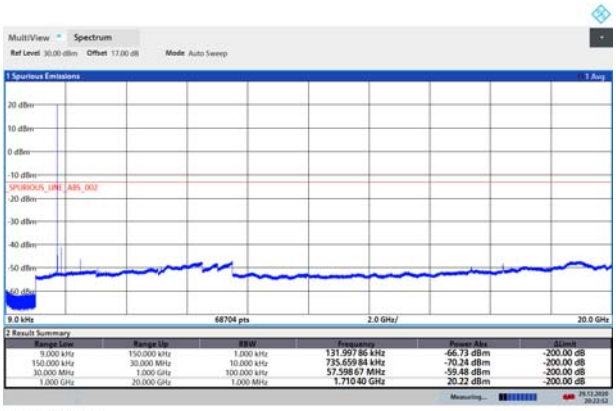
LTE Band 13 10MHz CH-Middle 9kHz~10GHz



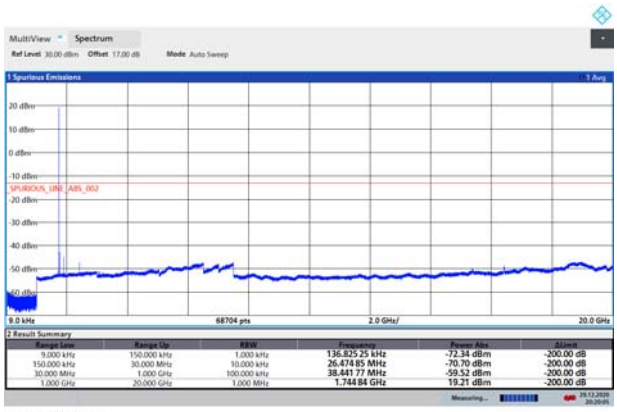
LTE Band 66 1.4MHz CH-Low 9kHz~20GHz



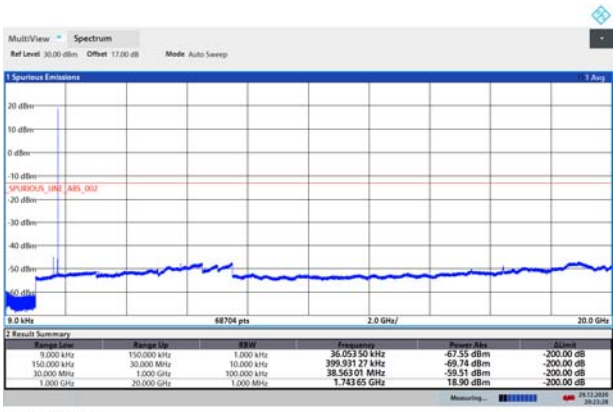
LTE Band 66 3MHz CH-Low 9kHz~20GHz



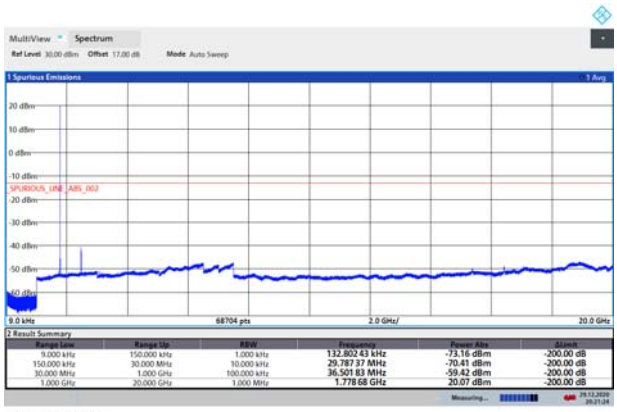
LTE Band 66 1.4MHz CH-Middle 9kHz~20GHz



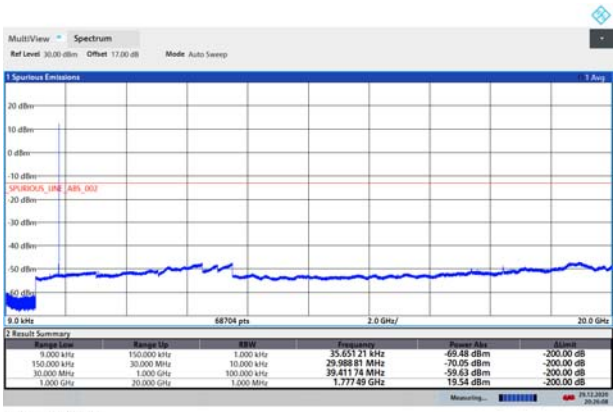
LTE Band 66 3MHz CH-Middle 9kHz~20GHz



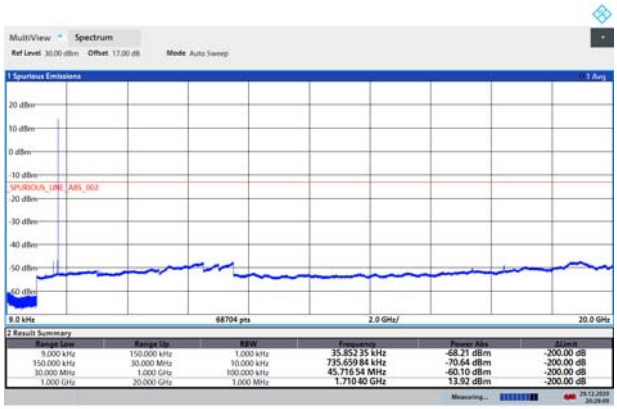
LTE Band 66 1.4MHz CH-High 9kHz~20GHz



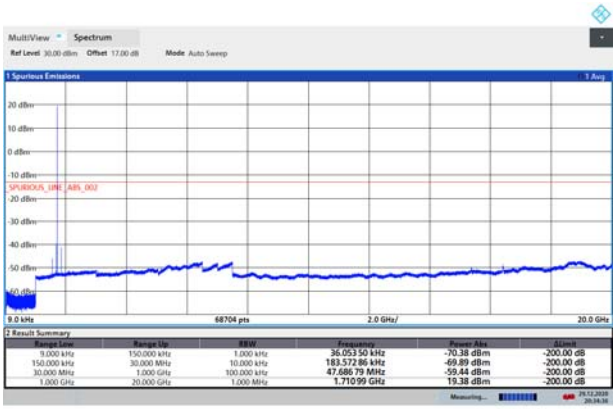
LTE Band 66 3MHz CH-High 9kHz~20GHz



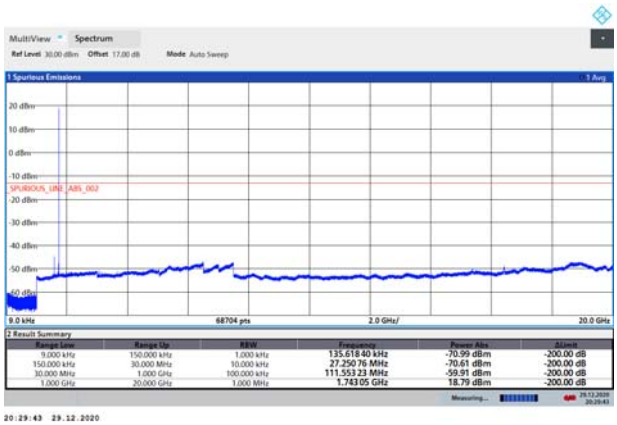
LTE Band 66 5MHz CH-Low 9kHz~20GHz



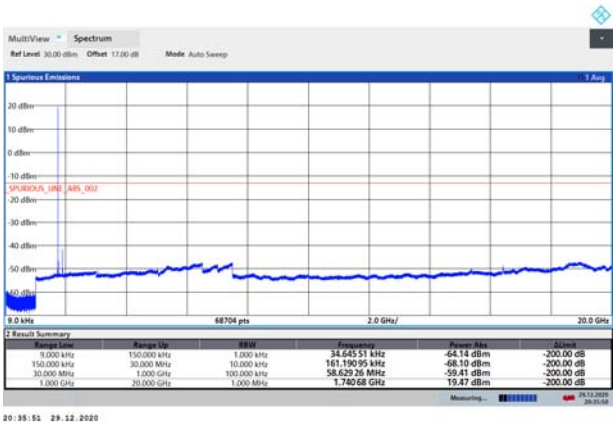
LTE Band 66 10MHz CH-Low 9kHz~20GHz



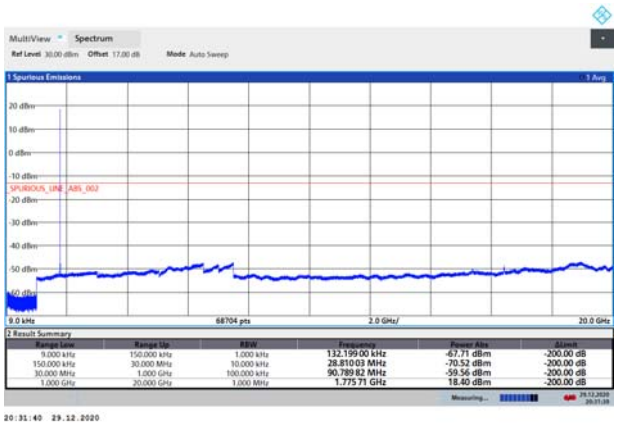
LTE Band 66 5MHz CH-Middle 9kHz~20GHz



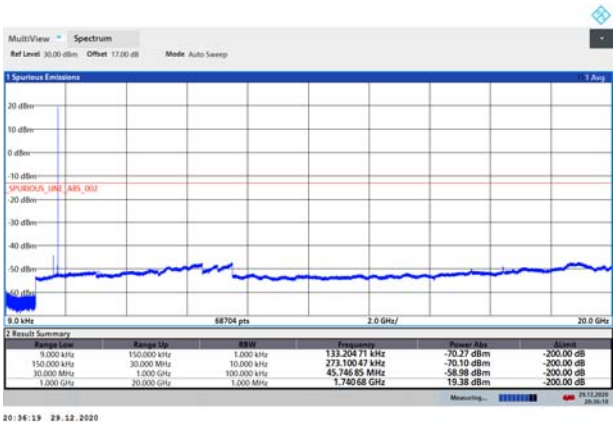
LTE Band 66 10MHz CH-Middle 9kHz~20GHz



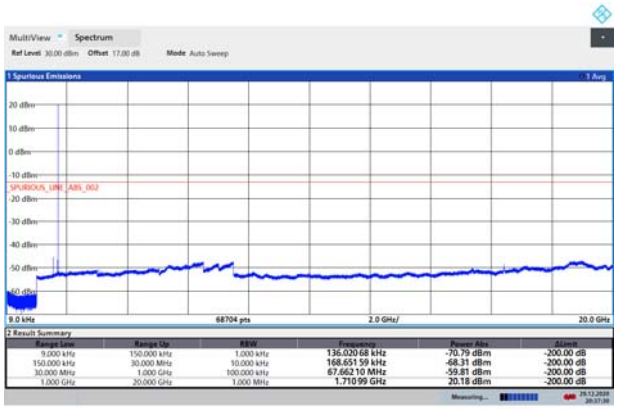
LTE Band 66 5MHz CH-High 9kHz~20GHz



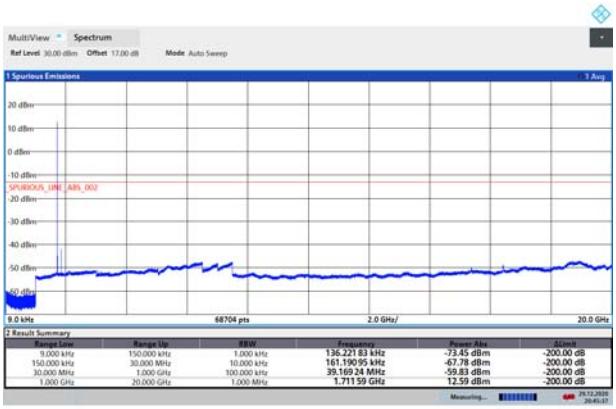
LTE Band 66 10MHz CH-High 9kHz~20GHz



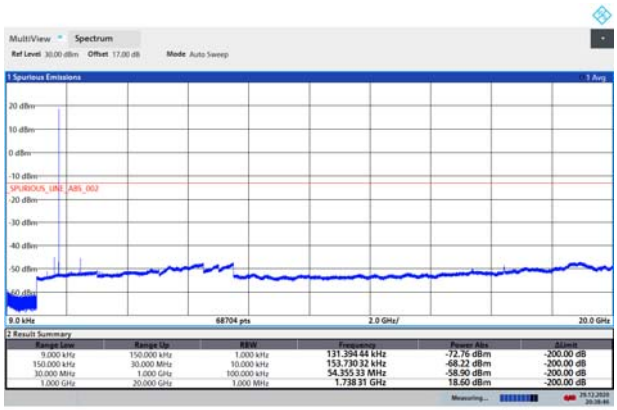
LTE Band 66 15MHz CH-Low 9kHz~20GHz



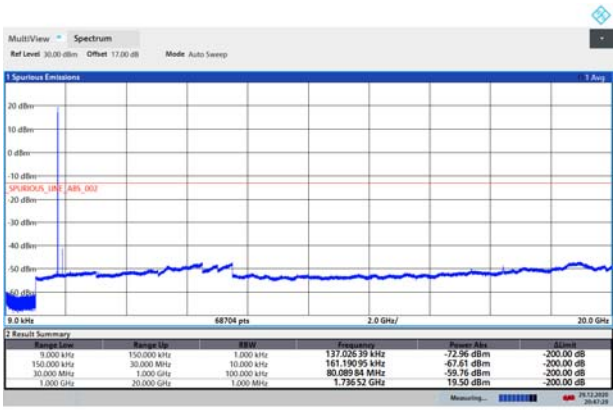
LTE Band 66 20MHz CH-Low 9kHz~20GHz



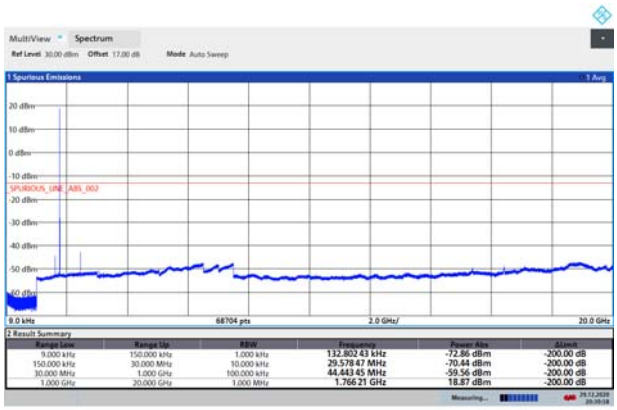
LTE Band 66 15MHz CH-Middle 9kHz~20GHz



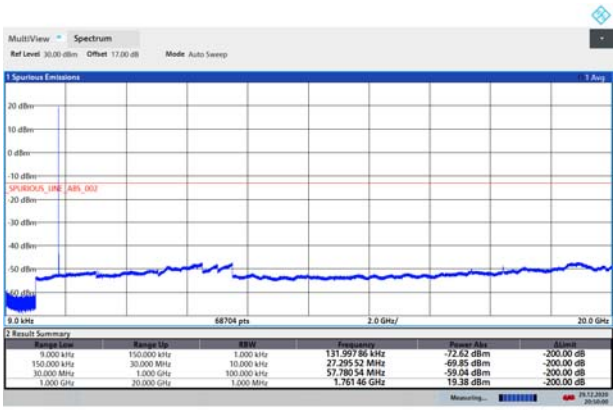
LTE Band 66 20MHz CH-Middle 9kHz~20GHz



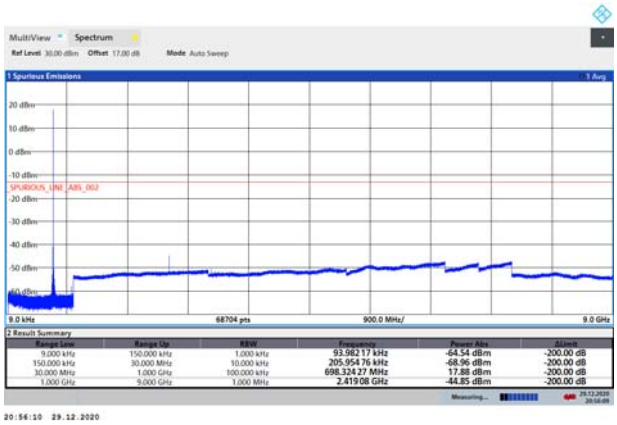
LTE Band 66 15MHz CH-High 9kHz~20GHz



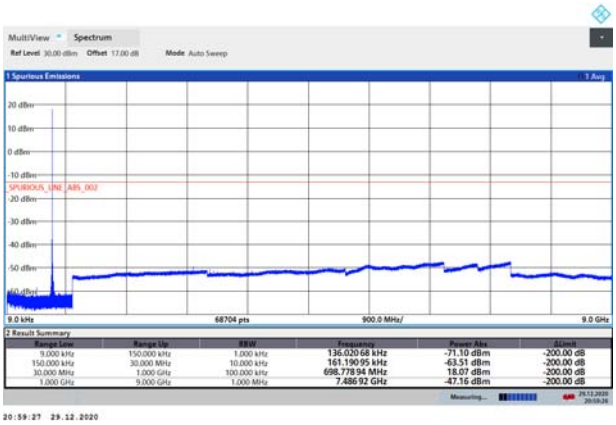
LTE Band 66 20MHz CH-High 9kHz~20GHz



LTE Band 85 5MHz CH-Low 9kHz~9GHz



LTE Band 85 10MHz CH-Low 9kHz~9GHz

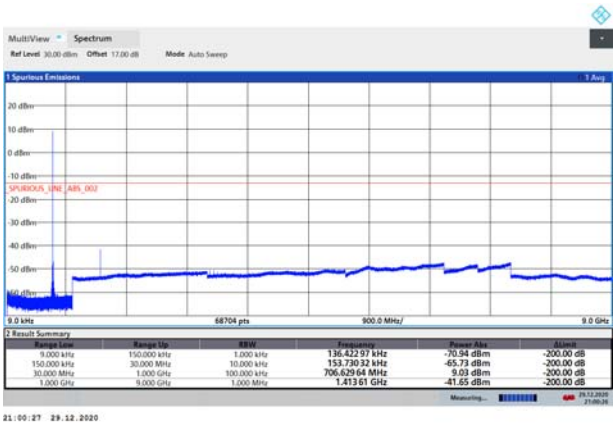


LTE Band 85 5MHz CH-Middle 9kHz~9GHz

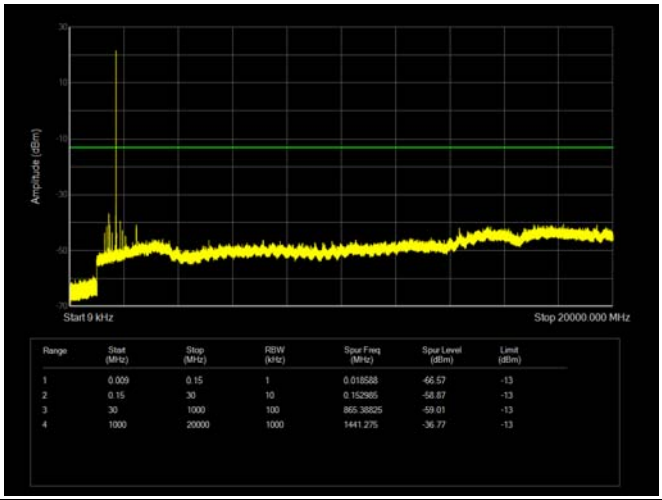
LTE Band 85 10MHz CH-Middle 9kHz~9GHz

LTE Band 85 5MHz CH-High 9kHz~9GHz

LTE Band 85 10MHz CH-High 9kHz~9GHz

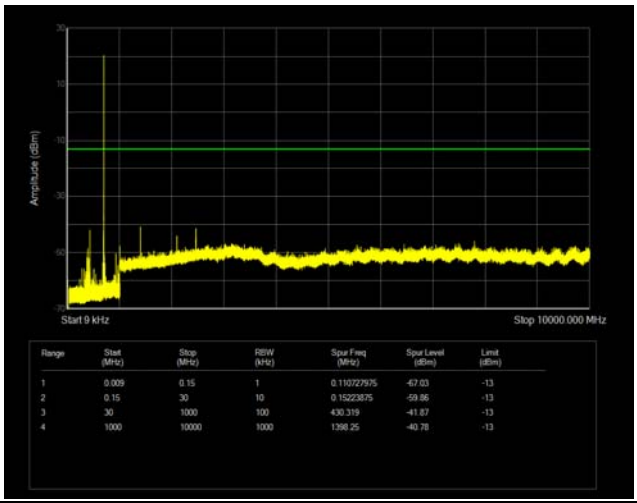


NB-IOT Band 4 CH-Low 9kHz~20GHz



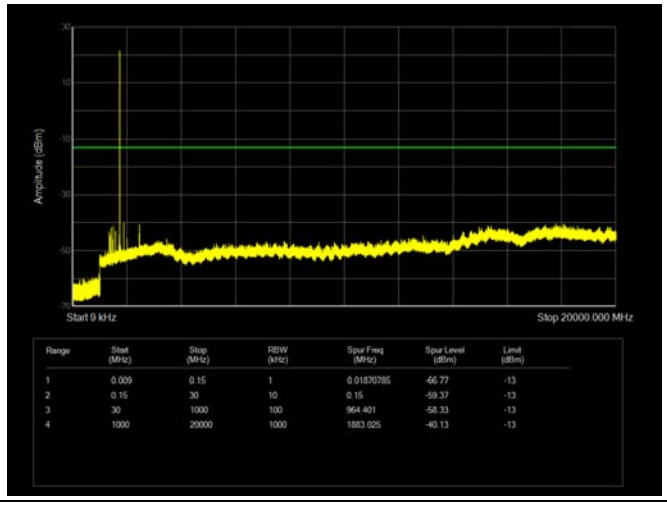
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.018588	-66.57	-13
2	0.15	30	10	0.152985	-58.87	-13
3	30	1000	100	865.38825	-59.01	-13
4	1000	20000	1000	1441.275	-36.77	-13

NB-IOT Band 12 CH-Low 9kHz~10GHz



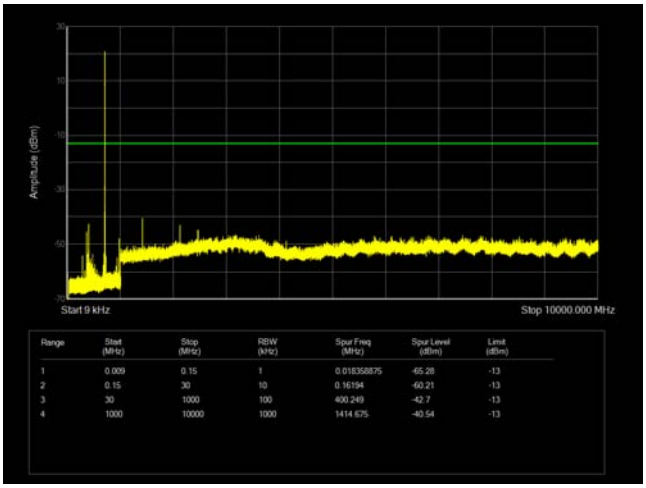
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.110727975	-67.03	-13
2	0.15	30	10	0.15223875	-59.86	-13
3	30	1000	100	430.319	-41.87	-13
4	1000	10000	1000	1398.25	-40.78	-13

NB-IOT Band 4 CH-Middle 9kHz~20GHz



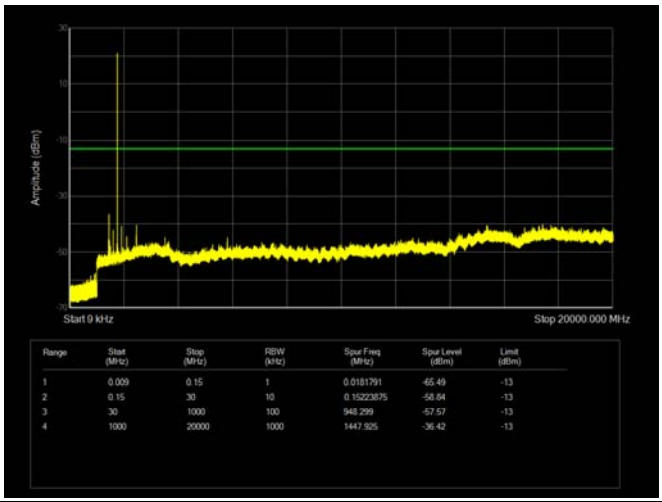
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.01870785	-66.77	-13
2	0.15	30	10	0.15	-59.37	-13
3	30	1000	100	964.401	-58.33	-13
4	1000	20000	1000	1883.025	-40.13	-13

NB-IOT Band 12 CH-Middle 9kHz~10GHz



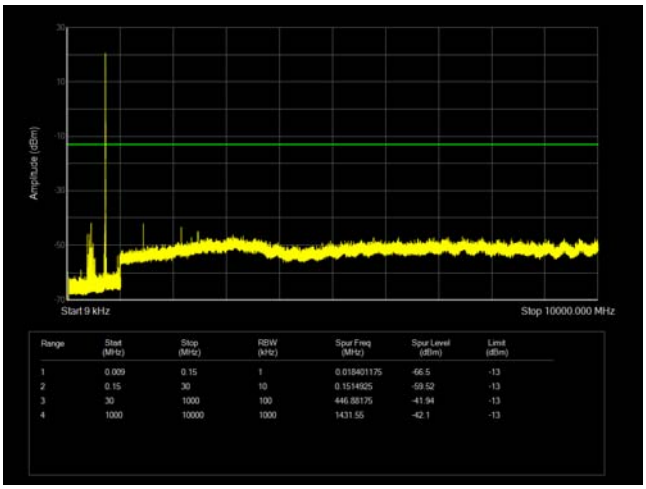
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.018358875	-65.28	-13
2	0.15	30	10	0.16194	-60.21	-13
3	30	1000	100	400.249	-42.7	-13
4	1000	10000	1000	1414.675	-40.54	-13

NB-IOT Band 4 CH-High 9kHz~20GHz



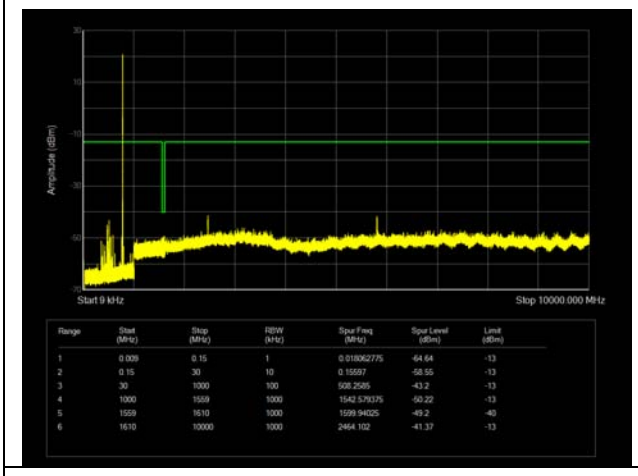
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.0181791	-65.49	-13
2	0.15	30	10	0.15223875	-58.84	-13
3	30	1000	100	948.299	-57.57	-13
4	1000	20000	1000	1447.925	-36.42	-13

NB-IOT Band 12 CH-High 9kHz~10GHz



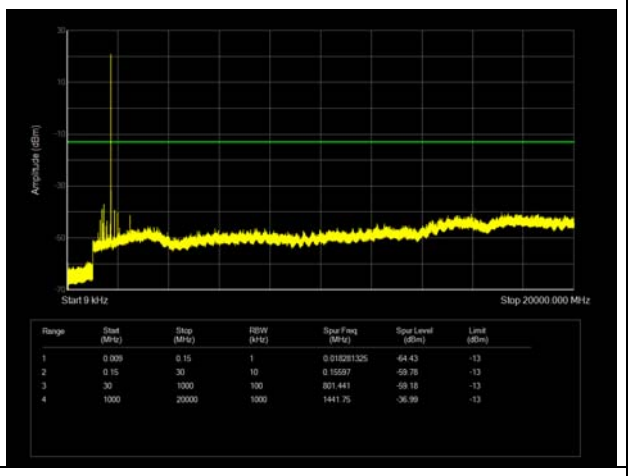
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.018401175	-66.5	-13
2	0.15	30	10	0.1514925	-59.52	-13
3	30	1000	100	446.88175	-41.94	-13
4	1000	10000	1000	1431.55	-42.1	-13

NB-IOT Band 13 CH-Low 9kHz~10GHz



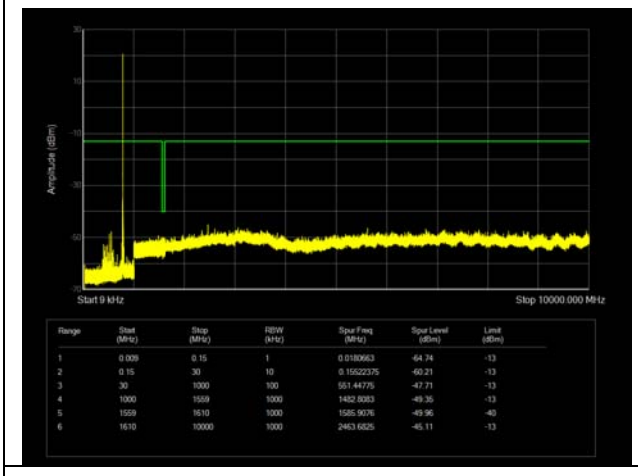
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.01806775	-64.64	-13
2	0.15	30	10	0.15597	-58.55	-13
3	30	1000	100	926.2585	-43.2	-13
4	1000	1559	1000	1542.579375	-50.22	-13
5	1559	1610	1000	1599.94025	-49.2	-40
6	1610	10000	1000	2464.102	-41.37	-13

NB-IOT Band 66 CH-Low 9kHz~20GHz



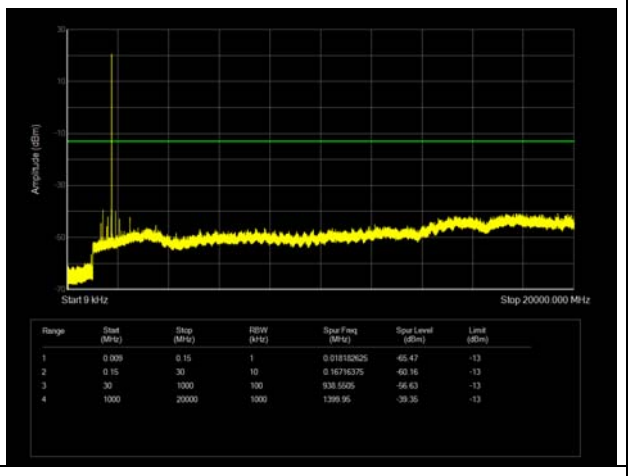
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.018281325	-64.43	-13
2	0.15	30	10	0.15597	-59.78	-13
3	30	1000	100	801.441	-59.18	-13
4	1000	20000	1000	1441.75	-36.99	-13

NB-IOT Band 13 CH-Middle 9kHz~10GHz



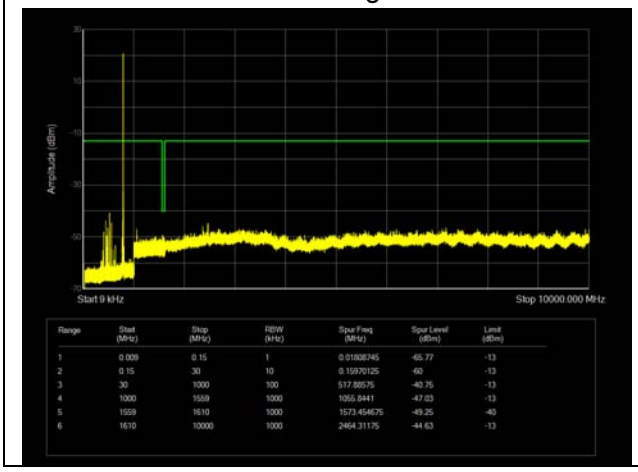
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.0180963	-64.74	-13
2	0.15	30	10	0.15522375	-60.21	-13
3	30	1000	100	551.44775	-47.71	-13
4	1000	1559	1000	1482.8083	-49.35	-13
5	1559	1610	1000	1585.9076	-49.96	-40
6	1610	10000	1000	2463.6825	-45.11	-13

NB-IOT Band 66 CH-Middle 9kHz~20GHz



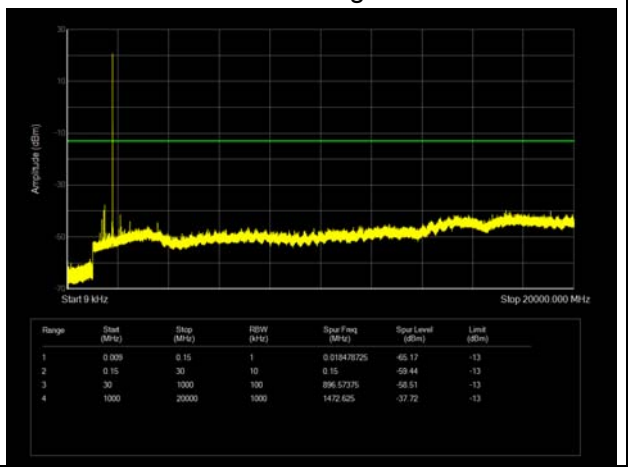
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.018182625	-65.47	-13
2	0.15	30	10	0.16716375	-60.16	-13
3	30	1000	100	938.5505	-56.63	-13
4	1000	20000	1000	1399.95	-39.35	-13

NB-IOT Band 13 CH-High 9kHz~10GHz



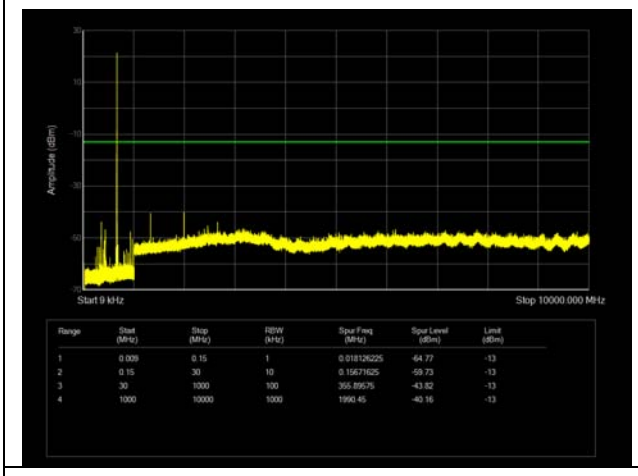
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.01808745	-65.77	-13
2	0.15	30	10	0.15970125	-60	-13
3	30	1000	100	517.88575	-40.75	-13
4	1000	1559	1000	1055.8441	-47.03	-13
5	1559	1610	1000	1573.454675	-49.25	-40
6	1610	10000	1000	2464.31175	-44.63	-13

NB-IOT Band 66 CH-High 9kHz~20GHz



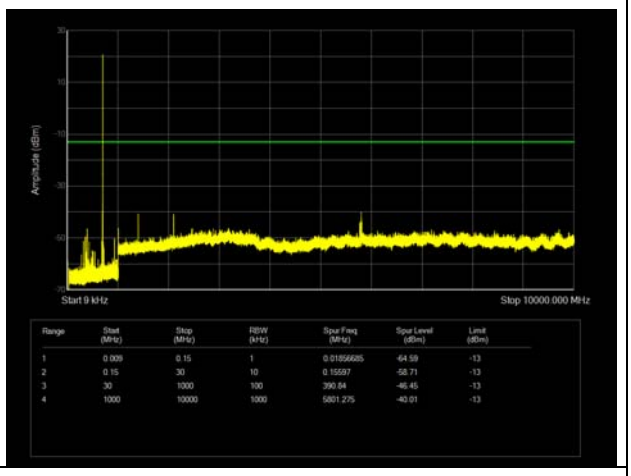
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.018478725	-65.17	-13
2	0.15	30	10	0.15	-59.44	-13
3	30	1000	100	896.57375	-58.51	-13
4	1000	20000	1000	1472.625	-37.72	-13

NB-IOT Band 71 CH-Low 9kHz~10GHz



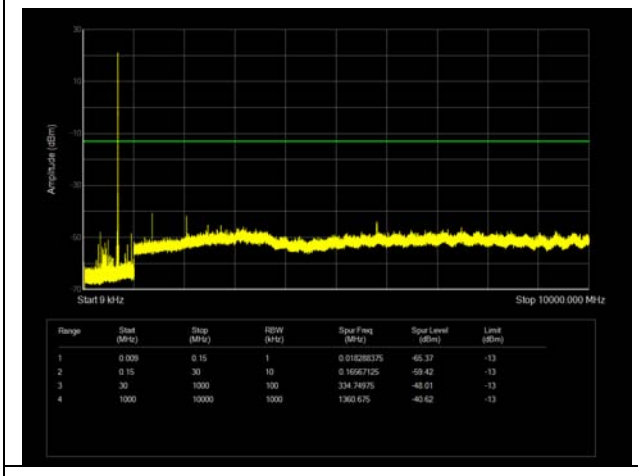
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.018126225	-64.77	-13
2	0.15	30	10	0.15671625	-59.73	-13
3	30	1000	100	355.89575	-43.82	-13
4	1000	10000	1000	1990.45	-40.16	-13

NB-IOT Band 85 CH-Low 9kHz~10GHz



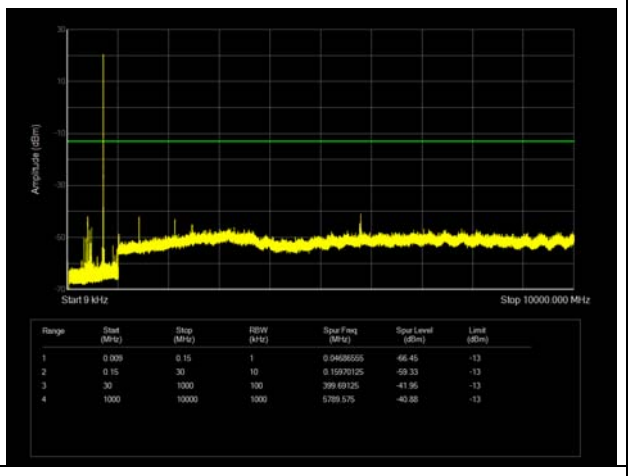
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.01856685	-64.59	-13
2	0.15	30	10	0.15597	-58.71	-13
3	30	1000	100	390.84	-46.45	-13
4	1000	10000	1000	5801.275	-40.01	-13

NB-IOT Band 71 CH-Middle 9kHz~10GHz



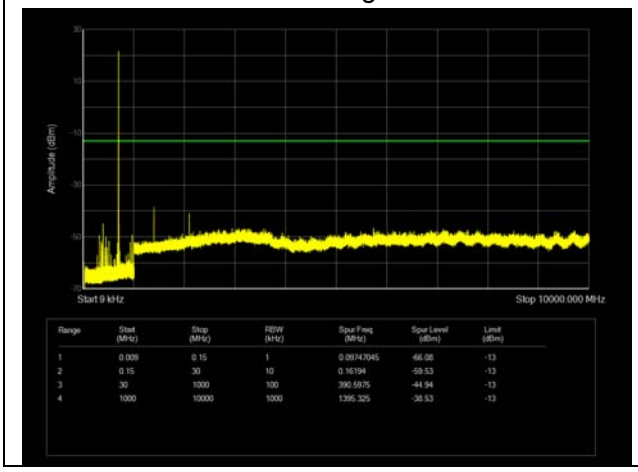
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.018288375	-65.37	-13
2	0.15	30	10	0.16567125	-59.42	-13
3	30	1000	100	334.74975	-48.01	-13
4	1000	10000	1000	1360.675	-40.62	-13

NB-IOT Band 85 CH-Middle 9kHz~10GHz



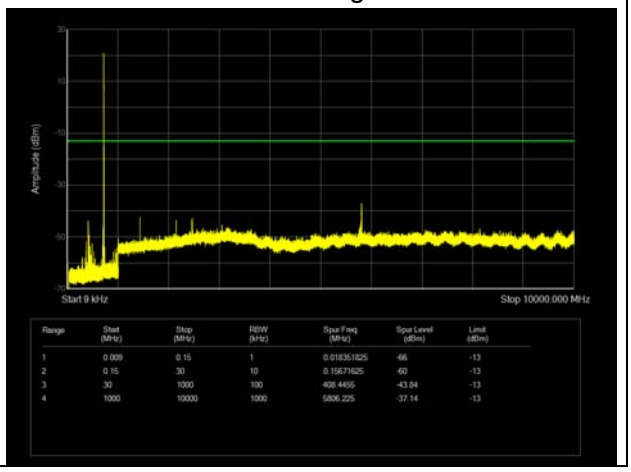
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.04686555	-66.45	-13
2	0.15	30	10	0.15970125	-59.33	-13
3	30	1000	100	399.69125	-41.96	-13
4	1000	10000	1000	5789.575	-40.88	-13

NB-IOT Band71 CH-High 9kHz~10GHz



Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.09747045	-66.08	-13
2	0.15	30	10	0.16194	-59.53	-13
3	30	1000	100	390.5975	-44.94	-13
4	1000	10000	1000	1395.325	-38.53	-13

NB-IOT Band 85 CH-High 9kHz~10GHz



Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.018351825	-66	-13
2	0.15	30	10	0.15671625	-60	-13
3	30	1000	100	408.4455	-43.84	-13
4	1000	10000	1000	5806.225	-37.14	-13

5.7 Radiates Spurious Emission

Ambient condition

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

Method of Measurement

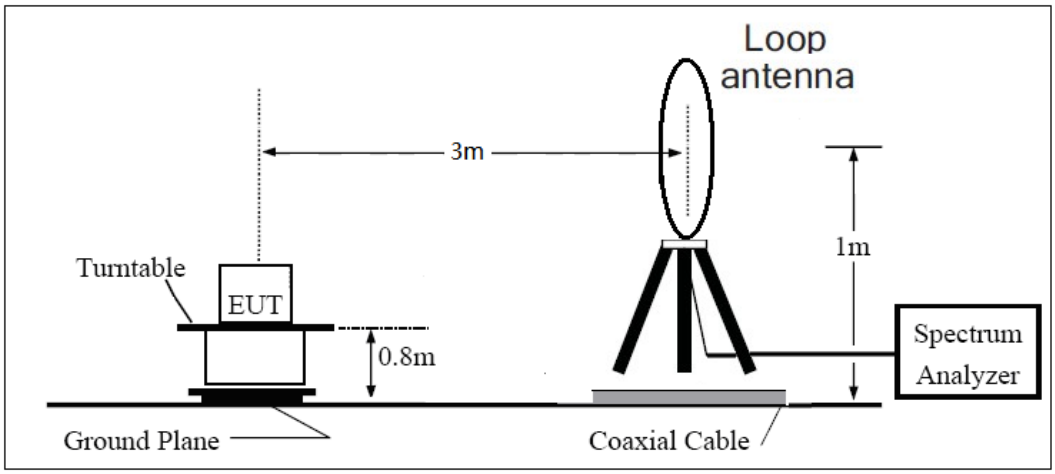
1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26 (2015).
2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable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

= EIRP-2.15dBi.

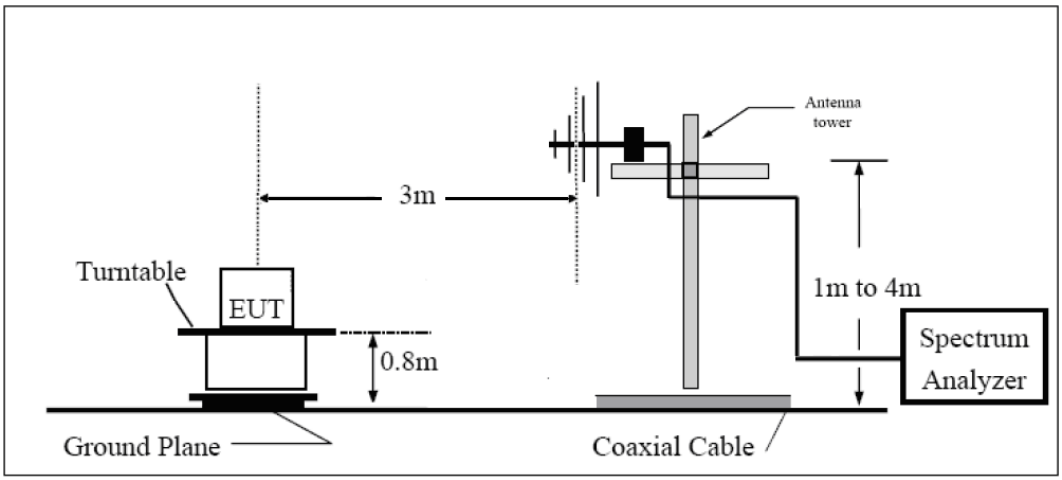
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

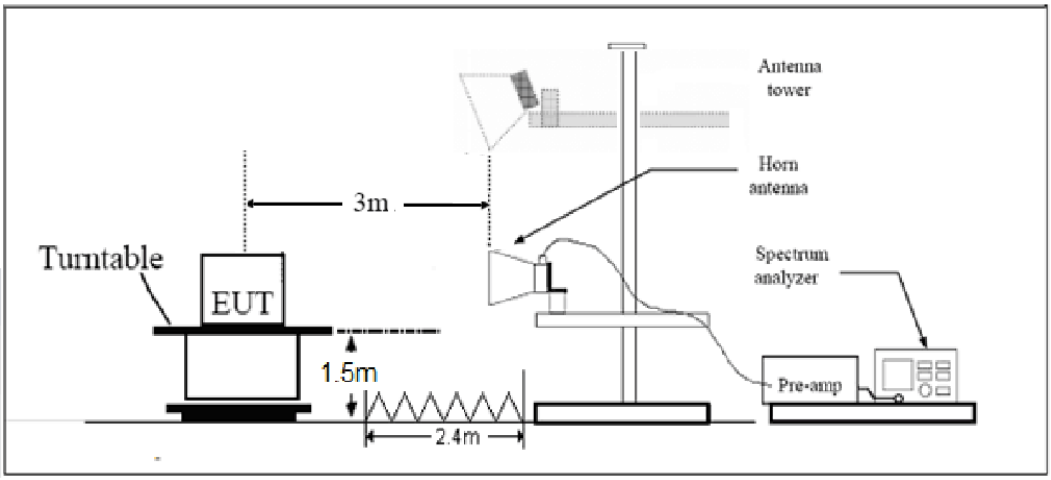
9KHz ~ 30MHz



30MHz ~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

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.”
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.
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.
Part 27.53 (c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:
(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;
(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;
(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

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

Measurement Uncertainty

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

Test Result

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

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3464.25	-64.60	2.6	10.75	Horizontal	-56.45	-13.00	43.45	135
3	5197.50	-50.44	2.4	11.05	Horizontal	-41.79	-13.00	28.79	315
4	6930.00	-57.66	4.5	11.15	Horizontal	-51.01	-13.00	38.01	180
5	8662.50	-55.16	5.1	11.35	Horizontal	-48.91	-13.00	35.91	90
6	10395.00	-54.86	5.3	11.95	Horizontal	-48.21	-13.00	35.21	135
7	12127.50	-54.91	5.5	13.55	Horizontal	-46.86	-13.00	33.86	180
8	13860.00	-51.71	6.3	13.75	Horizontal	-44.26	-13.00	31.26	225
9	15592.50	-51.78	6.7	13.85	Horizontal	-44.63	-13.00	31.63	90
10	17325.00	-49.43	6.8	14.25	Horizontal	-41.98	-13.00	28.98	315
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3460.50	-64.03	2.6	10.75	Horizontal	-55.88	-13.00	42.88	180
3	5191.50	-51.45	2.4	11.05	Horizontal	-42.80	-13.00	29.80	45
4	6930.00	-58.85	4.5	11.15	Horizontal	-52.20	-13.00	39.20	45
5	8662.50	-55.99	5.1	11.35	Horizontal	-49.74	-13.00	36.74	270
6	10395.00	-54.68	5.3	11.95	Horizontal	-48.03	-13.00	35.03	225
7	12127.50	-55.09	5.5	13.55	Horizontal	-47.04	-13.00	34.04	315
8	13860.00	-50.78	6.3	13.75	Horizontal	-43.33	-13.00	30.33	180
9	15592.50	-51.16	6.7	13.85	Horizontal	-44.01	-13.00	31.01	90
10	17325.00	-50.53	6.8	14.25	Horizontal	-43.08	-13.00	30.08	315
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3447.75	-64.87	2.6	10.75	Horizontal	-56.72	-13.00	43.72	45
3	5170.88	-48.95	2.4	11.05	Horizontal	-40.30	-13.00	27.30	90
4	6930.00	-58.69	4.5	11.15	Horizontal	-52.04	-13.00	39.04	225
5	8662.50	-54.28	5.1	11.35	Horizontal	-48.03	-13.00	35.03	315
6	10395.00	-54.82	5.3	11.95	Horizontal	-48.17	-13.00	35.17	180
7	12127.50	-55.49	5.5	13.55	Horizontal	-47.44	-13.00	34.44	135
8	13860.00	-52.02	6.3	13.75	Horizontal	-44.57	-13.00	31.57	90
9	15592.50	-51.74	6.7	13.85	Horizontal	-44.59	-13.00	31.59	225
10	17325.00	-49.01	6.8	14.25	Horizontal	-41.56	-13.00	28.56	315
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1415.00	-47.73	2.00	10.75	Horizontal	-41.13	-13.00	28.13	45
3	2122.50	-47.88	2.51	11.05	Horizontal	-41.49	-13.00	28.49	90
4	2830.00	-51.91	4.20	11.15	Horizontal	-47.11	-13.00	34.11	27
5	3537.50	-59.75	5.20	11.15	Horizontal	-55.95	-13.00	42.95	45
6	4245.00	-54.73	5.50	11.95	Horizontal	-50.43	-13.00	37.43	135
7	4952.50	-58.61	5.70	13.55	Horizontal	-52.91	-13.00	39.91	315
8	5660.00	-58.15	6.30	13.75	Horizontal	-52.85	-13.00	39.85	180
9	6367.50	-58.26	6.80	13.85	Horizontal	-53.36	-13.00	40.36	90
10	7075.00	-56.69	6.90	14.25	Horizontal	-51.49	-13.00	38.49	0
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1415.00	-48.25	2.00	10.75	Horizontal	-41.65	-13.00	28.65	315
3	2122.50	-48.89	2.51	11.05	Horizontal	-42.50	-13.00	29.50	0
4	2830.00	-51.90	4.20	11.15	Horizontal	-47.10	-13.00	34.10	225
5	3526.50	-60.85	5.20	11.15	Horizontal	-57.05	-13.00	44.05	90
6	4408.13	-58.72	5.50	11.95	Horizontal	-54.42	-13.00	41.42	45
7	5289.75	-59.07	5.70	13.55	Horizontal	-53.37	-13.00	40.37	135
8	6171.38	-58.68	6.30	13.75	Horizontal	-53.38	-13.00	40.38	270
9	7053.00	-56.24	6.80	13.85	Horizontal	-51.34	-13.00	38.34	315
10	7934.63	-52.85	6.90	14.25	Horizontal	-47.65	-13.00	34.65	45
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1415.00	-48.05	2.00	10.75	Horizontal	-41.45	-13.00	28.45	135
3	2122.50	-49.23	2.51	11.05	Horizontal	-42.84	-13.00	29.84	45
4	2830.00	-52.22	4.20	11.15	Horizontal	-47.42	-13.00	34.42	90
5	3516.38	-61.20	5.20	11.15	Horizontal	-57.40	-13.00	44.40	90
6	4395.00	-58.90	5.50	11.95	Horizontal	-54.60	-13.00	41.60	225
7	5274.00	-58.45	5.70	13.55	Horizontal	-52.75	-13.00	39.75	315
8	6153.00	-59.54	6.30	13.75	Horizontal	-54.24	-13.00	41.24	45
9	7032.00	-56.71	6.80	13.85	Horizontal	-51.81	-13.00	38.81	0
10	7911.00	-53.38	6.90	14.25	Horizontal	-48.18	-13.00	35.18	270
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1564.00	-58.09	2.00	10.75	Horizontal	-49.34	-40.00	9.34	45
Harmonic	**Frequency (MHz)**	**SG (dBm)**	**Cable Loss (dB)**	**Gain (dBi)**	**Antenna Polarization**	**ERP Level (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Azimuth (deg)**
3	2346.00	-55.51	2.51	11.05	Horizontal	-49.12	-13.00	36.12	90
4	3120.00	-61.30	4.20	11.15	Horizontal	-56.50	-13.00	43.50	45
5	3901.00	-56.76	5.20	11.15	Horizontal	-52.96	-13.00	39.96	135
6	4692.00	-57.60	5.50	11.95	Horizontal	-53.30	-13.00	40.30	90
7	5474.00	-58.12	5.70	13.55	Horizontal	-52.42	-13.00	39.42	180
8	6256.00	-59.06	6.30	13.75	Horizontal	-53.76	-13.00	40.76	225
9	7038.00	-56.91	6.80	13.85	Horizontal	-52.01	-13.00	39.01	0
10	7820.00	-55.19	6.90	14.25	Horizontal	-49.99	-13.00	36.99	270
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1555.25	-58.74	2.00	10.75	Horizontal	-52.14	-13.00	39.14	315
3	2346.00	-55.97	2.51	11.05	Horizontal	-49.58	-13.00	36.58	180
4	3111.00	-60.81	4.20	11.15	Horizontal	-56.01	-13.00	43.01	90
5	3888.75	-58.65	5.20	11.15	Horizontal	-54.85	-13.00	41.85	315
6	4666.50	-57.17	5.50	11.95	Horizontal	-52.87	-13.00	39.87	270
7	5444.25	-57.31	5.70	13.55	Horizontal	-51.61	-13.00	38.61	45
8	6222.00	-59.14	6.30	13.75	Horizontal	-53.84	-13.00	40.84	225
9	6999.75	-58.77	6.80	13.85	Horizontal	-53.87	-13.00	40.87	0
10	7777.50	-54.26	6.90	14.25	Horizontal	-49.06	-13.00	36.06	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 66 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3489.00	-62.71	2.6	10.75	Horizontal	-54.56	-13.00	41.56	270
3	5235.00	-61.04	2.4	11.05	Horizontal	-52.39	-13.00	39.39	90
4	6980.00	-59.38	4.5	11.15	Horizontal	-52.73	-13.00	39.73	180
5	8725.00	-55.05	5.1	11.35	Horizontal	-48.80	-13.00	35.80	45
6	10470.00	-49.47	5.3	11.95	Horizontal	-42.82	-13.00	29.82	315
7	12215.00	-51.85	5.5	13.55	Horizontal	-43.80	-13.00	30.80	180
8	13960.00	-50.86	6.3	13.75	Horizontal	-43.41	-13.00	30.41	225
9	15705.00	-52.04	6.7	13.85	Horizontal	-44.89	-13.00	31.89	270
10	17450.00	-48.19	6.8	14.25	Horizontal	-40.74	-13.00	27.74	0
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 66 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3486.00	-65.11	2.6	10.75	Horizontal	-56.96	-13.00	43.96	180
3	5229.00	-60.72	2.4	11.05	Horizontal	-52.07	-13.00	39.07	45
4	6972.00	-60.99	4.5	11.15	Horizontal	-54.34	-13.00	41.34	315
5	8715.00	-54.50	5.1	11.35	Horizontal	-48.25	-13.00	35.25	90
6	10458.00	-50.66	5.3	11.95	Horizontal	-44.01	-13.00	31.01	225
7	12201.00	-51.62	5.5	13.55	Horizontal	-43.57	-13.00	30.57	180
8	13944.00	-50.40	6.3	13.75	Horizontal	-42.95	-13.00	29.95	270
9	15687.00	-51.88	6.7	13.85	Horizontal	-44.73	-13.00	31.73	0
10	17430.00	-47.55	6.8	14.25	Horizontal	-40.10	-13.00	27.10	135
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 66 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3472.50	-65.81	2.6	10.75	Horizontal	-57.66	-13.00	44.66	90
3	5209.00	-57.85	2.4	11.05	Horizontal	-49.20	-13.00	36.20	135
4	6945.75	-60.58	4.5	11.15	Horizontal	-53.93	-13.00	40.93	270
5	8682.00	-54.77	5.1	11.35	Horizontal	-48.52	-13.00	35.52	45
6	10418.63	-51.09	5.3	11.95	Horizontal	-44.44	-13.00	31.44	0
7	12455.00	-53.36	5.5	13.55	Horizontal	-45.31	-13.00	32.31	180
8	13891.50	-51.70	6.3	13.75	Horizontal	-44.25	-13.00	31.25	90
9	15627.00	-52.95	6.7	13.85	Horizontal	-45.80	-13.00	32.80	315
10	17364.38	-46.86	6.8	14.25	Horizontal	-39.41	-13.00	26.41	225
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 85 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1414.00	-49.79	2.00	10.75	Horizontal	-43.19	-13.00	30.19	90
3	2121.00	-49.09	2.51	11.05	Horizontal	-42.70	-13.00	29.70	270
4	2828.00	-53.62	4.20	11.15	Horizontal	-48.82	-13.00	35.82	315
5	3535.00	-59.62	5.20	11.15	Horizontal	-55.82	-13.00	42.82	225
6	4242.00	-55.80	5.50	11.95	Horizontal	-51.50	-13.00	38.50	315
7	4949.00	-58.45	5.70	13.55	Horizontal	-52.75	-13.00	39.75	90
8	5656.00	-57.93	6.30	13.75	Horizontal	-52.63	-13.00	39.63	315
9	6363.00	-57.90	6.80	13.85	Horizontal	-53.00	-13.00	40.00	45
10	7070.00	-56.72	6.90	14.25	Horizontal	-51.52	-13.00	38.52	270
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 85 QPSK 10MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1405.25	-47.72	2.00	10.75	Horizontal	-41.12	-13.00	28.12	45
3	2108.00	-49.47	2.51	11.05	Horizontal	-43.08	-13.00	30.08	180
4	2810.75	-52.52	4.20	11.15	Horizontal	-47.72	-13.00	34.72	135
5	3535.00	-61.02	5.20	11.15	Horizontal	-57.22	-13.00	44.22	315
6	4242.00	-55.49	5.50	11.95	Horizontal	-51.19	-13.00	38.19	225
7	4949.00	-59.49	5.70	13.55	Horizontal	-53.79	-13.00	40.79	90
8	5656.00	-58.36	6.30	13.75	Horizontal	-53.06	-13.00	40.06	315
9	6363.00	-58.51	6.80	13.85	Horizontal	-53.61	-13.00	40.61	45
10	7070.00	-56.07	6.90	14.25	Horizontal	-50.87	-13.00	37.87	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 4 3.75kHz QPSK CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3420.00	-56.95	2.6	10.15	Horizontal	-49.40	-13.00	36.40	270
3	5130.00	-54.13	2.4	11.35	Horizontal	-45.18	-13.00	32.18	270
4	6840.00	-60.11	4.5	10.85	Horizontal	-53.76	-13.00	40.76	45
5	8550.00	-54.76	5.1	11.35	Horizontal	-48.51	-13.00	35.51	90
6	10260.00	-49.60	5.3	11.95	Horizontal	-42.95	-13.00	29.95	315
7	11970.00	-52.04	5.5	13.55	Horizontal	-43.99	-13.00	30.99	135
8	13680.00	-50.48	6.3	13.75	Horizontal	-43.03	-13.00	30.03	270
9	15390.00	-51.04	6.7	13.85	Horizontal	-43.89	-13.00	30.89	0
10	17100.00	-45.88	6.8	14.25	Horizontal	-38.43	-13.00	25.43	0
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 4 3.75kHz QPSK CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.00	-57.37	2.6	10.75	Horizontal	-49.22	-13.00	36.22	90
3	5197.50	-56.22	2.4	11.05	Horizontal	-47.57	-13.00	34.57	315
4	6930.00	-61.09	4.5	11.15	Horizontal	-54.44	-13.00	41.44	135
5	8662.50	-53.56	5.1	11.35	Horizontal	-47.31	-13.00	34.31	0
6	10395.00	-49.03	5.3	11.95	Horizontal	-42.38	-13.00	29.38	45
7	12127.50	-52.22	5.5	13.55	Horizontal	-44.17	-13.00	31.17	45
8	13860.00	-50.50	6.3	13.75	Horizontal	-43.05	-13.00	30.05	270
9	15592.50	-51.25	6.7	13.85	Horizontal	-44.10	-13.00	31.10	90
10	17325.00	-45.59	6.8	14.25	Horizontal	-38.14	-13.00	25.14	315
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 4 3.75kHz QPSK CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3509.80	-56.80	2.6	10.15	Horizontal	-49.25	-13.00	36.25	180
3	5264.70	-59.32	2.4	11.05	Horizontal	-50.67	-13.00	37.67	135
4	7019.60	-57.09	4.5	11.15	Horizontal	-50.44	-13.00	37.44	0
5	8774.50	-55.11	5.1	11.35	Horizontal	-48.86	-13.00	35.86	270
6	10529.40	-49.06	5.3	11.95	Horizontal	-42.41	-13.00	29.41	45
7	12284.30	-52.14	5.5	13.55	Horizontal	-44.09	-13.00	31.09	315
8	14039.20	-51.26	6.3	13.75	Horizontal	-43.81	-13.00	30.81	45
9	15794.10	-51.37	6.7	13.85	Horizontal	-44.22	-13.00	31.22	90
10	17549.00	-47.50	6.8	14.25	Horizontal	-40.05	-13.00	27.05	0
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 12 3.75kHz QPSK CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1398.20	-49.42	2.00	10.15	Horizontal	-43.42	-13.00	30.42	45
3	2097.30	-39.45	2.50	11.35	Horizontal	-32.75	-13.00	19.75	45
4	2796.40	-56.32	4.20	10.85	Horizontal	-51.82	-13.00	38.82	180
5	3495.50	-26.81	5.20	11.35	Horizontal	-22.81	-13.00	9.81	270
6	4194.60	-36.36	5.50	11.95	Horizontal	-32.06	-13.00	19.06	45
7	4893.70	-39.19	5.70	13.55	Horizontal	-33.49	-13.00	20.49	0
8	5592.80	-41.23	6.30	13.75	Horizontal	-35.93	-13.00	22.93	180
9	6291.90	-43.92	6.80	13.85	Horizontal	-39.02	-13.00	26.02	135
10	6991.00	-59.36	6.90	14.25	Horizontal	-54.16	-13.00	41.16	45
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 12 3.75kHz QPSK CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1415.00	-44.12	2.00	10.75	Horizontal	-37.52	-13.00	24.52	0
3	2122.50	-29.94	2.51	11.05	Horizontal	-23.55	-13.00	10.55	270
4	2830.00	-52.99	4.20	11.15	Horizontal	-48.19	-13.00	35.19	90
5	3525.50	-26.02	5.20	11.15	Horizontal	-22.22	-13.00	9.22	0
6	4230.60	-36.21	5.50	11.95	Horizontal	-31.91	-13.00	18.91	270
7	4935.70	-38.08	5.70	13.55	Horizontal	-32.38	-13.00	19.38	225
8	5640.80	-41.93	6.30	13.75	Horizontal	-36.63	-13.00	23.63	45
9	6345.90	-44.76	6.80	13.85	Horizontal	-39.86	-13.00	26.86	90
10	7051.00	-56.98	6.90	14.25	Horizontal	-51.78	-13.00	38.78	0
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 12 3.75kHz QPSK CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1431.80	-41.48	2.00	10.15	Horizontal	-35.48	-13.00	22.48	315
3	2147.70	-39.35	2.51	11.05	Horizontal	-32.96	-13.00	19.96	0
4	2863.60	-51.16	4.20	11.15	Horizontal	-46.36	-13.00	33.36	180
5	3579.50	-27.33	5.20	11.15	Horizontal	-23.53	-13.00	10.53	180
6	4295.40	-35.51	5.50	11.95	Horizontal	-31.21	-13.00	18.21	315
7	5011.30	-36.65	5.70	13.55	Horizontal	-30.95	-13.00	17.95	90
8	5727.20	-41.86	6.30	13.75	Horizontal	-36.56	-13.00	23.56	135
9	6443.10	-47.82	6.80	13.85	Horizontal	-42.92	-13.00	29.92	225
10	7159.00	-55.01	6.90	14.25	Horizontal	-49.81	-13.00	36.81	270
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 13 3.75kHz QPSK CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1554.20	-59.49	2.00	10.15	Horizontal	-53.49	-13.00	40.49	90
3	2331.30	-64.02	2.50	11.35	Horizontal	-57.32	-13.00	44.32	225
4	3108.40	-47.64	4.20	10.85	Horizontal	-43.14	-13.00	30.14	135
5	3885.50	-44.17	5.20	11.35	Horizontal	-40.17	-13.00	27.17	225
6	4662.60	-44.80	5.50	11.95	Horizontal	-40.50	-13.00	27.50	90
7	5439.70	-45.55	5.70	13.55	Horizontal	-39.85	-13.00	26.85	315
8	6216.80	-57.06	6.30	13.75	Horizontal	-51.76	-13.00	38.76	180
9	6993.90	-58.94	6.80	13.85	Horizontal	-54.04	-13.00	41.04	45
10	7771.00	-54.47	6.90	14.25	Horizontal	-49.27	-13.00	36.27	270
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 13 3.75kHz QPSK CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1564.00	-61.61	2.00	10.75	Horizontal	-52.86	-40.00	12.86	270
Harmonic	**Frequency (MHz)**	**SG (dBm)**	**Cable Loss (dB)**	**Gain (dBi)**	**Antenna Polarization**	**ERP Level (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Azimuth (deg)**
3	2346.00	-62.09	2.51	11.05	Horizontal	-55.70	-13.00	42.70	315
4	3128.00	-48.41	4.20	11.15	Horizontal	-43.61	-13.00	30.61	45
5	3910.00	-43.94	5.20	11.15	Horizontal	-40.14	-13.00	27.14	90
6	4692.00	-44.34	5.50	11.95	Horizontal	-40.04	-13.00	27.04	315
7	5474.00	-47.40	5.70	13.55	Horizontal	-41.70	-13.00	28.70	180
8	6256.00	-56.81	6.30	13.75	Horizontal	-51.51	-13.00	38.51	225
9	7038.00	-56.19	6.80	13.85	Horizontal	-51.29	-13.00	38.29	135
10	7820.00	-54.48	6.90	14.25	Horizontal	-49.28	-13.00	36.28	270
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 13 3.75kHz QPSK CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1573.80	-64.58	2.00	10.15	Horizontal	-56.43	-40.00	16.43	180
Harmonic	**Frequency (MHz)**	**SG (dBm)**	**Cable Loss (dB)**	**Gain (dBi)**	**Antenna Polarization**	**ERP Level (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Azimuth (deg)**
3	2360.70	-64.78	2.51	11.05	Horizontal	-58.39	-13.00	45.39	45
4	3147.60	-48.32	4.20	11.15	Horizontal	-43.52	-13.00	30.52	315
5	3934.50	-44.62	5.20	11.15	Horizontal	-40.82	-13.00	27.82	45
6	4721.40	-44.85	5.50	11.95	Horizontal	-40.55	-13.00	27.55	180
7	5508.30	-46.05	5.70	13.55	Horizontal	-40.35	-13.00	27.35	255
8	6295.20	-55.46	6.30	13.75	Horizontal	-50.16	-13.00	37.16	90
9	7082.10	-56.33	6.80	13.85	Horizontal	-51.43	-13.00	38.43	135
10	7869.00	-53.51	6.90	14.25	Horizontal	-48.31	-13.00	35.31	270
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 66 3.75kHz QPSK CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3420.20	-61.68	2.6	10.15	Horizontal	-54.13	-13.00	41.13	0
3	5130.30	-58.55	2.4	11.35	Horizontal	-49.60	-13.00	36.60	270
4	6840.40	-58.24	4.5	10.85	Horizontal	-51.89	-13.00	38.89	225
5	8550.50	-54.90	5.1	11.35	Horizontal	-48.65	-13.00	35.65	90
6	10260.60	-49.54	5.3	11.95	Horizontal	-42.89	-13.00	29.89	270
7	11970.70	-53.07	5.5	13.55	Horizontal	-45.02	-13.00	32.02	315
8	13680.80	-50.97	6.3	13.75	Horizontal	-43.52	-13.00	30.52	45
9	15390.90	-51.60	6.7	13.85	Horizontal	-44.45	-13.00	31.45	135
10	17101.00	-46.00	6.8	14.25	Horizontal	-38.55	-13.00	25.55	270
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 66 3.75kHz QPSK CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3490.00	-57.88	2.6	10.75	Horizontal	-49.73	-13.00	36.73	0
3	5235.00	-56.18	2.4	11.05	Horizontal	-47.53	-13.00	34.53	180
4	6980.00	-60.60	4.5	11.15	Horizontal	-53.95	-13.00	40.95	0
5	8725.00	-54.31	5.1	11.35	Horizontal	-48.06	-13.00	35.06	225
6	10470.00	-49.47	5.3	11.95	Horizontal	-42.82	-13.00	29.82	180
7	12215.00	-50.58	5.5	13.55	Horizontal	-42.53	-13.00	29.53	90
8	13960.00	-50.97	6.3	13.75	Horizontal	-43.52	-13.00	30.52	315
9	15705.00	-51.61	6.7	13.85	Horizontal	-44.46	-13.00	31.46	45
10	17450.00	-47.02	6.8	14.25	Horizontal	-39.57	-13.00	26.57	135
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 66 3.75kHz QPSK CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3559.80	-45.74	2.6	10.15	Horizontal	-38.19	-13.00	25.19	270
3	5339.70	-36.16	2.4	11.05	Horizontal	-27.51	-13.00	14.51	225
4	7119.60	-57.64	4.5	11.15	Horizontal	-50.99	-13.00	37.99	45
5	8899.50	-52.81	5.1	11.35	Horizontal	-46.56	-13.00	33.56	180
6	10679.40	-50.68	5.3	11.95	Horizontal	-44.03	-13.00	31.03	90
7	12459.30	-53.09	5.5	13.55	Horizontal	-45.04	-13.00	32.04	315
8	14239.20	-49.93	6.3	13.75	Horizontal	-42.48	-13.00	29.48	180
9	16019.10	-51.26	6.7	13.85	Horizontal	-44.11	-13.00	31.11	0
10	17799.00	-49.30	6.8	14.25	Horizontal	-41.85	-13.00	28.85	135
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 71 3.75kHz QPSK CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1326.20	-58.93	2.6	10.15	Horizontal	-53.53	-13.00	40.53	225
3	1989.30	-64.95	2.4	11.35	Horizontal	-58.15	-13.00	45.15	180
4	2652.40	-62.84	4.5	10.85	Horizontal	-58.64	-13.00	45.64	315
5	3315.50	-62.39	5.1	11.35	Horizontal	-58.29	-13.00	45.29	90
6	3978.60	-60.04	5.3	11.95	Horizontal	-55.54	-13.00	42.54	180
7	4641.70	-59.35	5.5	13.55	Horizontal	-53.45	-13.00	40.45	225
8	5304.80	-58.32	6.3	13.75	Horizontal	-53.02	-13.00	40.02	0
9	5967.90	-58.14	6.7	13.85	Horizontal	-53.14	-13.00	40.14	315
10	6631.00	-58.35	6.8	14.25	Horizontal	-53.05	-13.00	40.05	45
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 71 3.75kHz QPSK CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1361.00	-57.34	2.6	10.75	Horizontal	-51.34	-13.00	38.34	90
3	2041.50	-59.39	2.4	11.05	Horizontal	-52.89	-13.00	39.89	135
4	2722.00	-61.50	4.5	11.15	Horizontal	-57.00	-13.00	44.00	0
5	3402.50	-62.65	5.1	11.35	Horizontal	-58.55	-13.00	45.55	315
6	4083.00	-60.16	5.3	11.95	Horizontal	-55.66	-13.00	42.66	90
7	4763.50	-60.24	5.5	13.55	Horizontal	-54.34	-13.00	41.34	0
8	5444.00	-56.74	6.3	13.75	Horizontal	-51.44	-13.00	38.44	225
9	6124.50	-58.24	6.7	13.85	Horizontal	-53.24	-13.00	40.24	180
10	6805.00	-58.80	6.8	14.25	Horizontal	-53.50	-13.00	40.50	45
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 71 3.75kHz QPSK CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1395.80	-51.67	2.6	10.15	Horizontal	-46.27	-13.00	33.27	315
3	2093.70	-58.45	2.4	11.05	Horizontal	-51.95	-13.00	38.95	225
4	2791.60	-60.54	4.5	11.15	Horizontal	-56.04	-13.00	43.04	135
5	3489.00	-40.09	5.1	11.35	Horizontal	-35.99	-13.00	22.99	315
6	4187.40	-41.88	5.3	11.95	Horizontal	-37.38	-13.00	24.38	0
7	4885.30	-44.04	5.5	13.55	Horizontal	-38.14	-13.00	25.14	225
8	5583.20	-48.64	6.3	13.75	Horizontal	-43.34	-13.00	30.34	90
9	6281.10	-54.99	6.7	13.85	Horizontal	-49.99	-13.00	36.99	315
10	6979.00	-58.66	6.8	14.25	Horizontal	-53.36	-13.00	40.36	225
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 85 3.75kHz QPSK CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1396.20	-50.79	2.6	10.15	Horizontal	-45.39	-13.00	32.39	180
3	2094.30	-61.73	2.4	11.35	Horizontal	-54.93	-13.00	41.93	225
4	2792.40	-59.89	4.5	10.85	Horizontal	-55.69	-13.00	42.69	45
5	3490.50	-25.94	5.1	11.35	Horizontal	-21.84	-13.00	8.84	180
6	4188.60	-36.34	5.3	11.95	Horizontal	-31.84	-13.00	18.84	45
7	4886.70	-39.81	5.5	13.55	Horizontal	-33.91	-13.00	20.91	315
8	5584.80	-38.33	6.3	13.75	Horizontal	-33.03	-13.00	20.03	90
9	6282.90	-46.07	6.7	13.85	Horizontal	-41.07	-13.00	28.07	225
10	6981.00	-58.69	6.8	14.25	Horizontal	-53.39	-13.00	40.39	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 85 3.75kHz QPSK CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1411.80	-48.07	2.6	10.75	Horizontal	-42.07	-13.00	29.07	315
3	2117.70	-44.92	2.4	11.05	Horizontal	-38.42	-13.00	25.42	90
4	2823.60	-56.46	4.5	11.15	Horizontal	-51.96	-13.00	38.96	270
5	3529.50	-27.40	5.1	11.35	Horizontal	-23.30	-13.00	10.30	315
6	4235.40	-37.14	5.3	11.95	Horizontal	-32.64	-13.00	19.64	225
7	4941.30	-39.63	5.5	13.55	Horizontal	-33.73	-13.00	20.73	0
8	5647.20	-41.17	6.3	13.75	Horizontal	-35.87	-13.00	22.87	180
9	6353.10	-45.03	6.7	13.85	Horizontal	-40.03	-13.00	27.03	135
10	7059.00	-57.05	6.8	14.25	Horizontal	-51.75	-13.00	38.75	270
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

NB-IOT Band 85 3.75kHz QPSK CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1431.80	-29.94	2.6	10.15	Horizontal	-24.54	-13.00	11.54	180
3	2147.70	-29.57	2.4	11.05	Horizontal	-23.07	-13.00	10.07	45
4	2863.60	-45.15	4.5	11.15	Horizontal	-40.65	-13.00	27.65	315
5	3579.50	-29.29	5.1	11.35	Horizontal	-25.19	-13.00	12.19	90
6	4295.40	-36.55	5.3	11.95	Horizontal	-32.05	-13.00	19.05	315
7	5011.30	-39.66	5.5	13.55	Horizontal	-33.76	-13.00	20.76	270
8	5727.20	-43.13	6.3	13.75	Horizontal	-37.83	-13.00	24.83	45
9	6443.10	-49.13	6.7	13.85	Horizontal	-44.13	-13.00	31.13	180
10	7159.00	-55.90	6.8	14.25	Horizontal	-50.60	-13.00	37.60	270
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

6 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMW500	113824	2020-05-18	2021-05-17
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	/	/
Spectrum Analyzer	Key sight	N9010A	MY50210259	2020-05-18	2021-05-17
Signal Analyzer	R&S	FSV30	100815	2019-12-15	2020-12-14
				2020-12-13	2021-12-12
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2020-04-02	2023-04-01
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	391	2019-12-16	2021-12-15
Horn Antenna	R&S	HF907	102723	2018-08-11	2021-08-10
Horn Antenna	ETS-Lindgren	3160-09	00102643	2018-06-20	2021-06-19
Signal generator	R&S	SMB 100A	102594	2020-05-18	2021-05-17
Climatic Chamber	ESPEC	SU-242	93000506	2017-12-17	2020-12-16
				2020-12-13	2021-12-12
Preampflier	R&S	SCU18	102327	2020-05-18	2021-05-17
MOB COMMS DC SUPPLY	Keysight	66319D	MY43004105	2020-05-18	2021-05-17
RF Cable	Agilent	SMA 15cm	0001	2020-06-12	2020-12-11
				2020-12-10	2021-06-09
Software	R&S	EMC32	9.26.0	/	/

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

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.