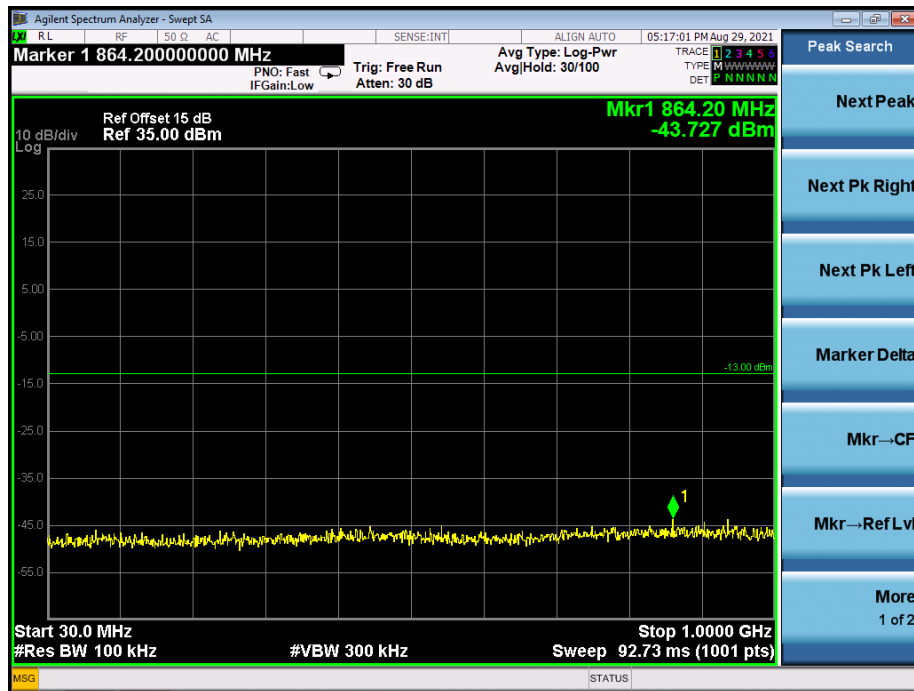


HSUPA High Channel



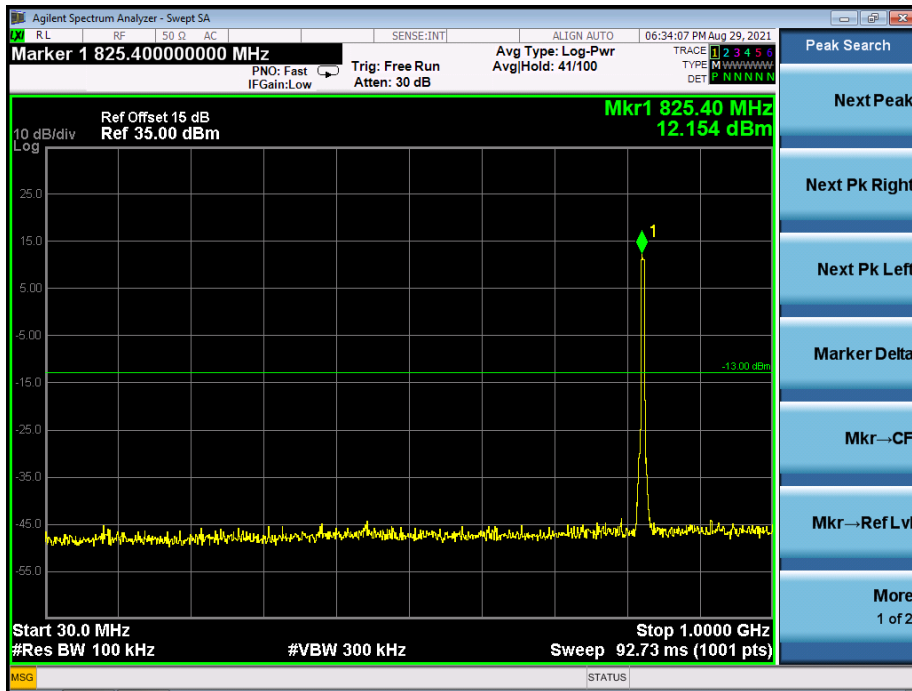
HSUPA Low Band Spurious Emission



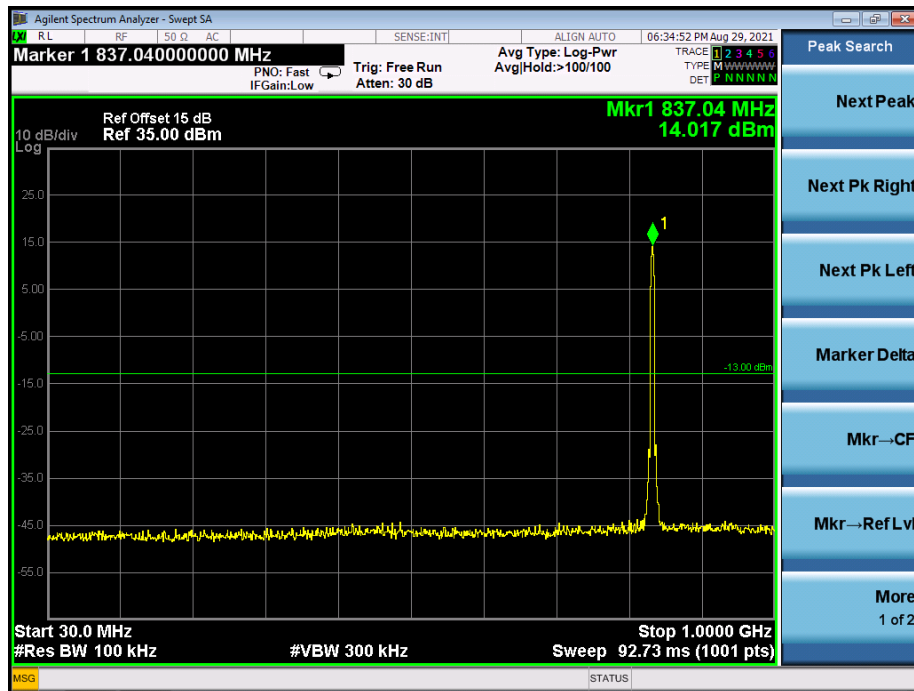
HSUPA High Band Spurious Emission



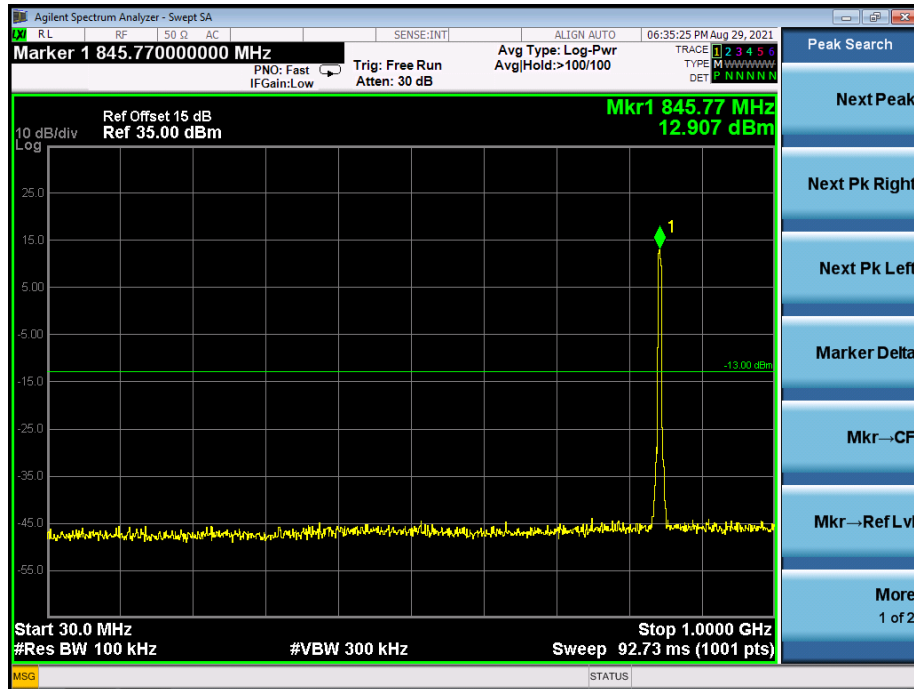
For WCDMA Band V
WCDMA Low Channel



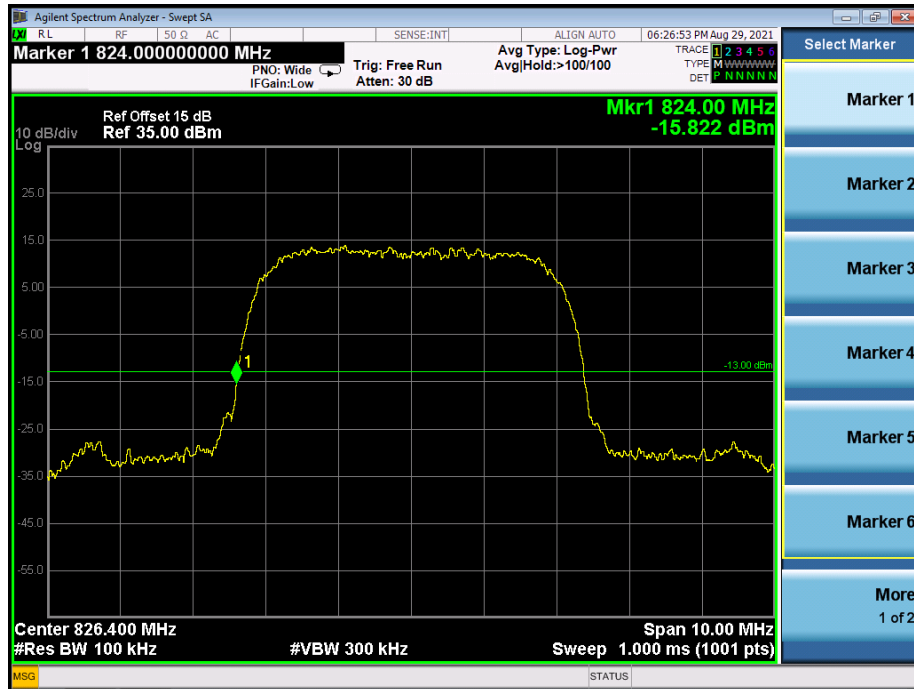
WCDMA Middle Channel



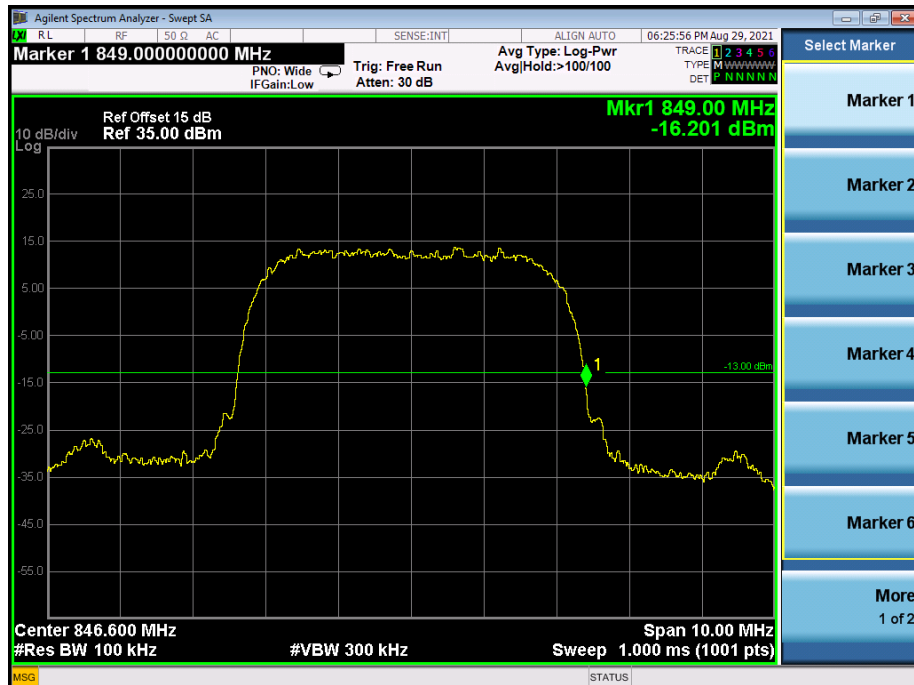
WCDMA High Channel



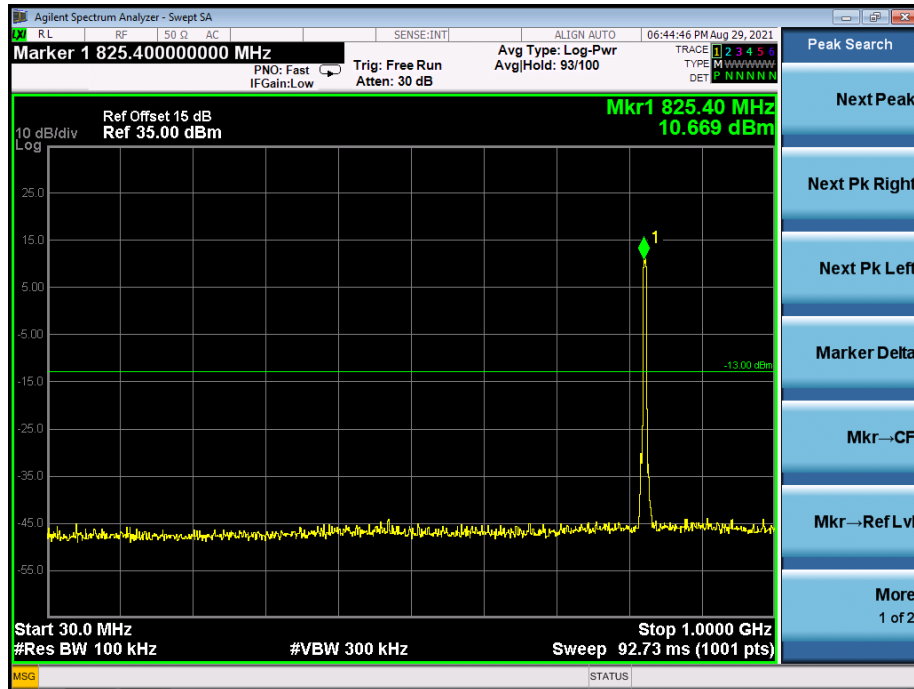
WCDMA Low Band Spurious Emission



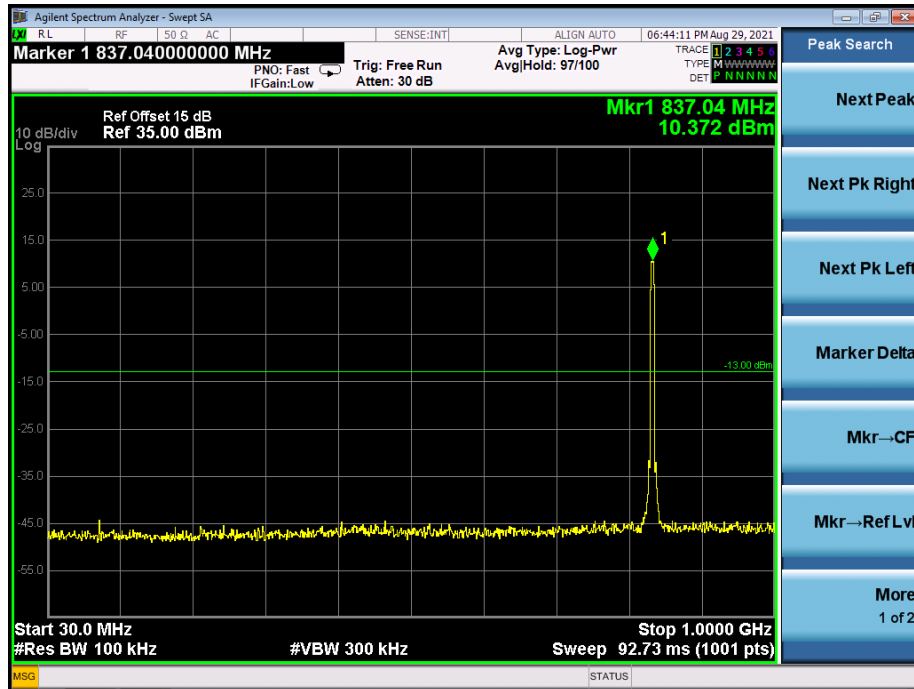
WCDMA High Band Spurious Emission



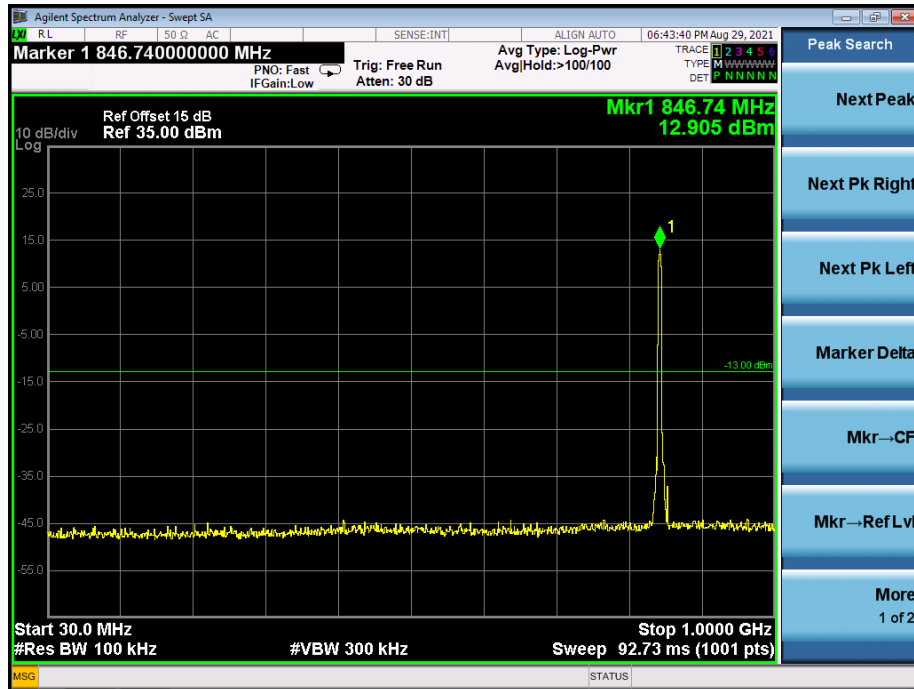
HSDPA Low Channel



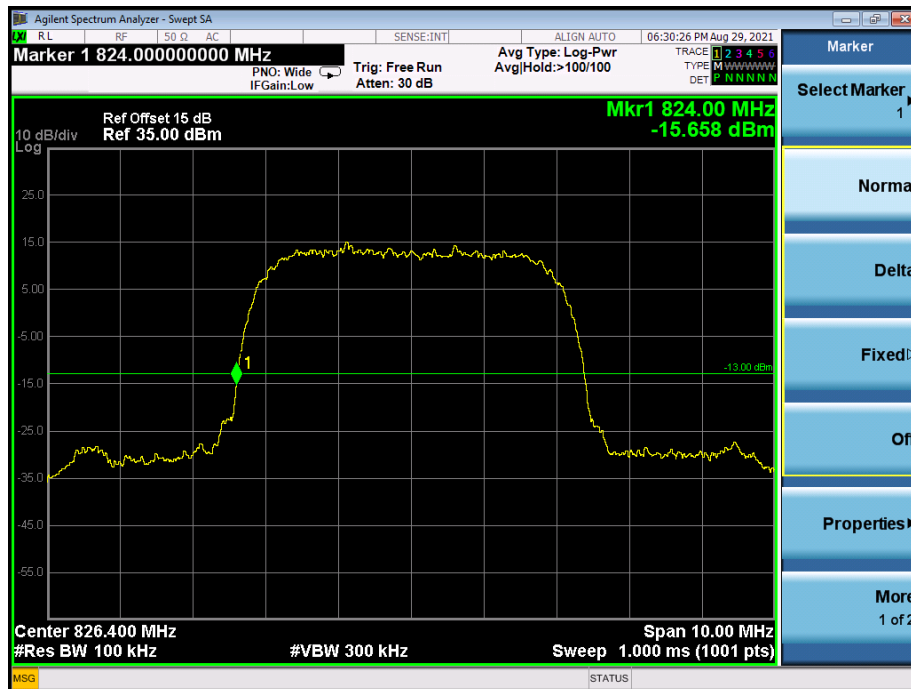
HSDPA Middle Channel



HSDPA High Channel



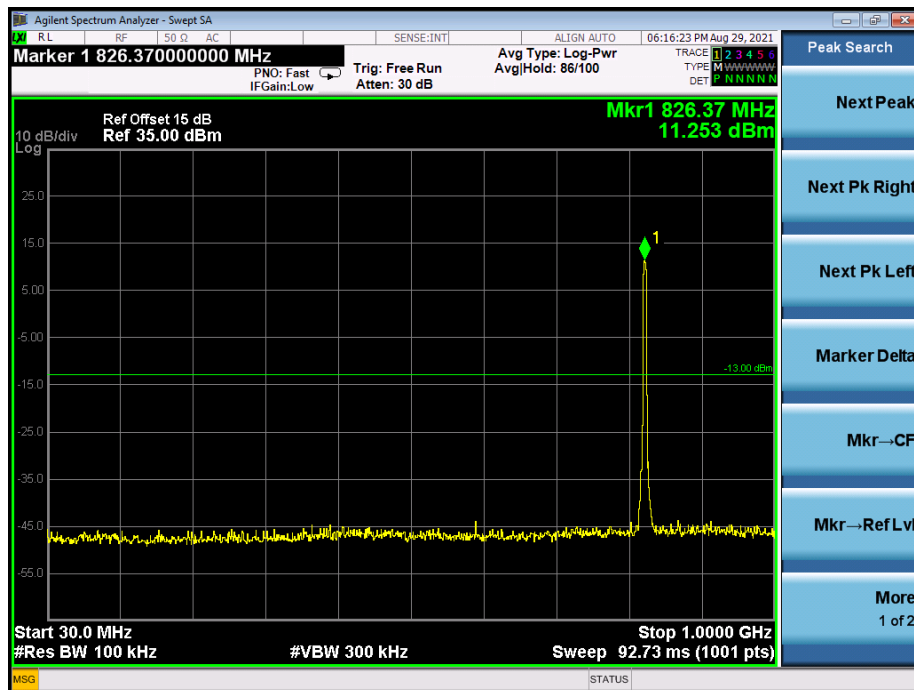
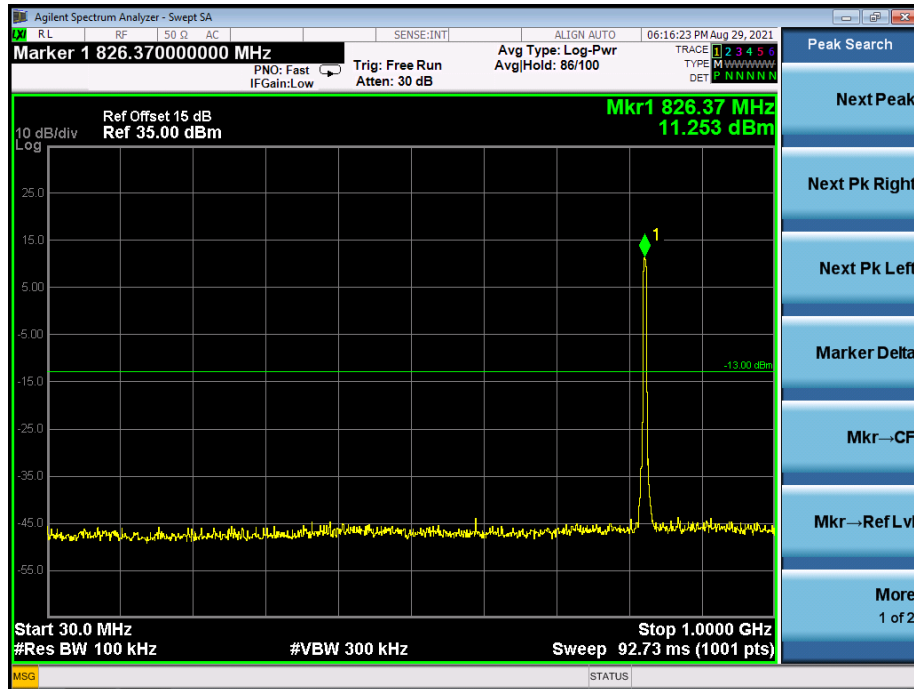
HSDPA Low Band Spurious Emission



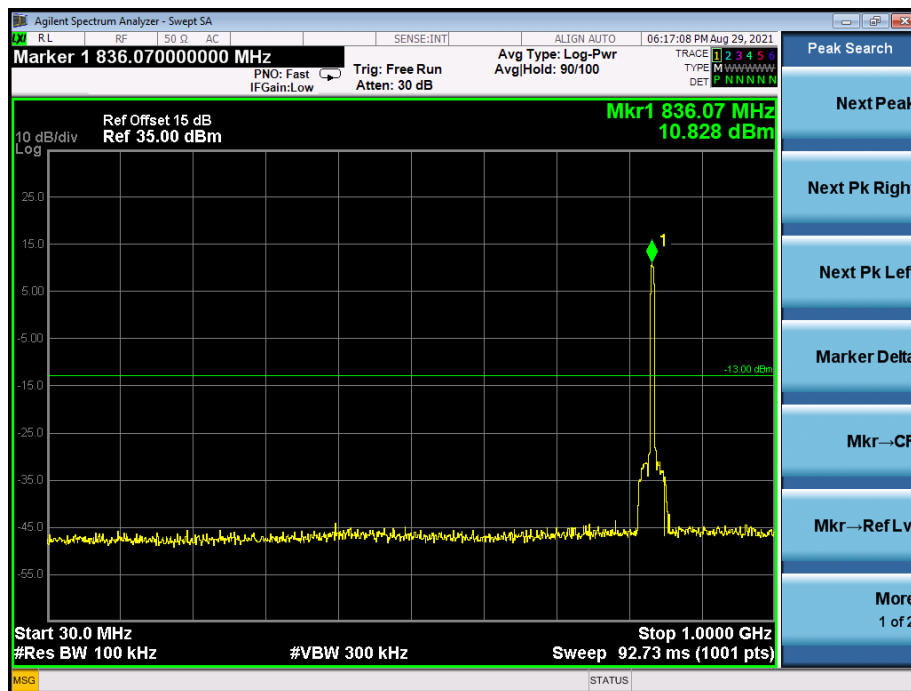
HSDPA High Band Spurious Emission



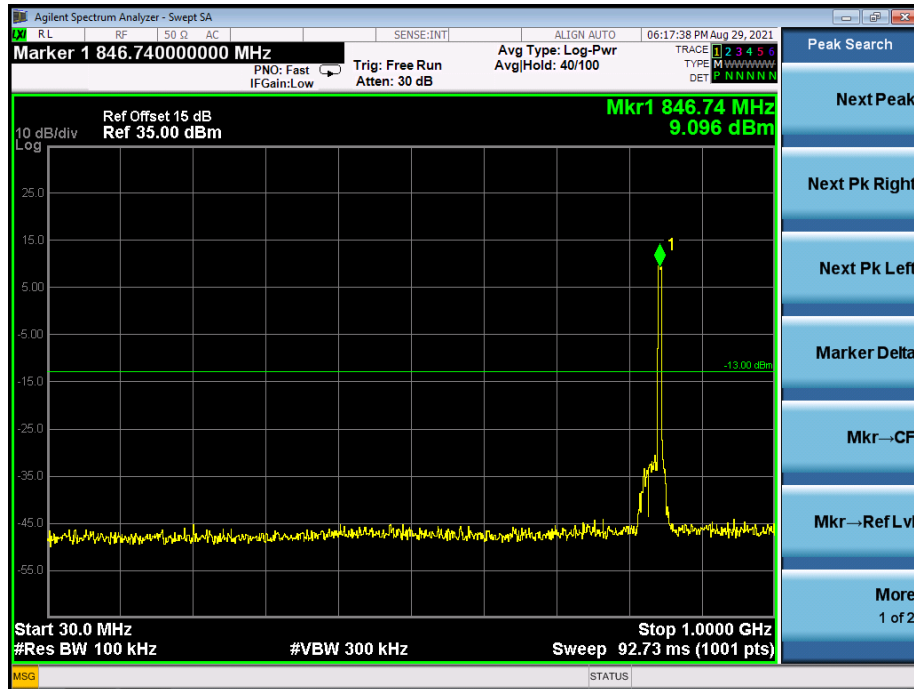
HSUPA Low Channel



HSUPA Middle Channel



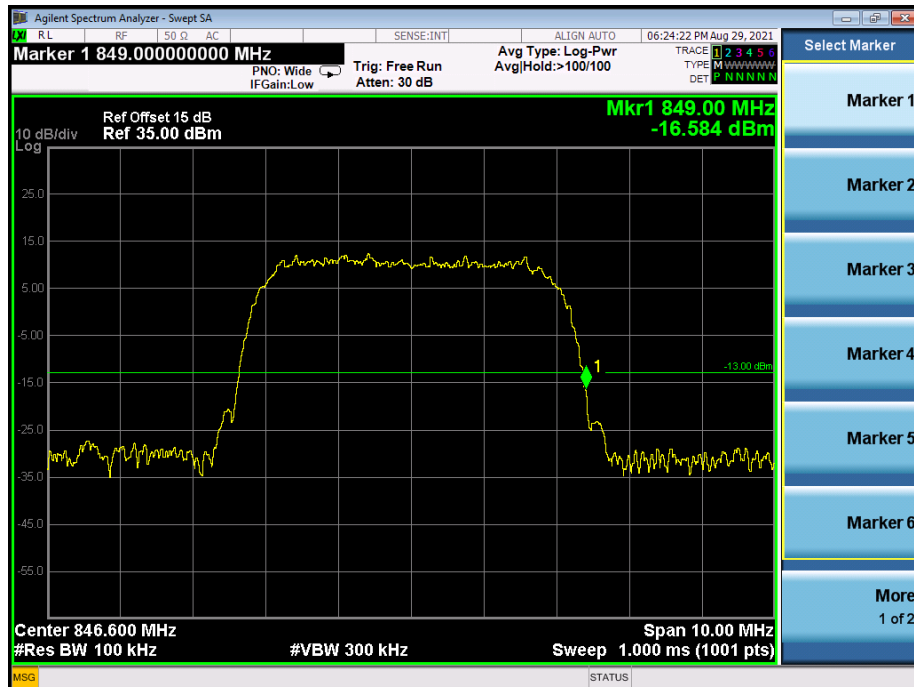
HSUPA High Channel



HSUPA Low Band Spurious Emission



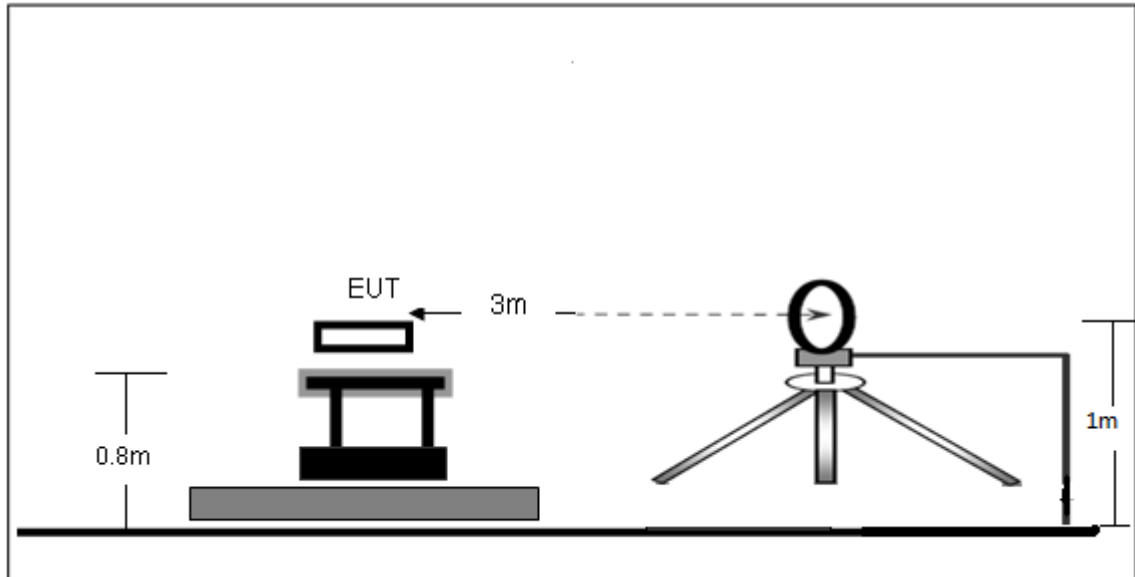
HSUPA High Band Spurious Emission



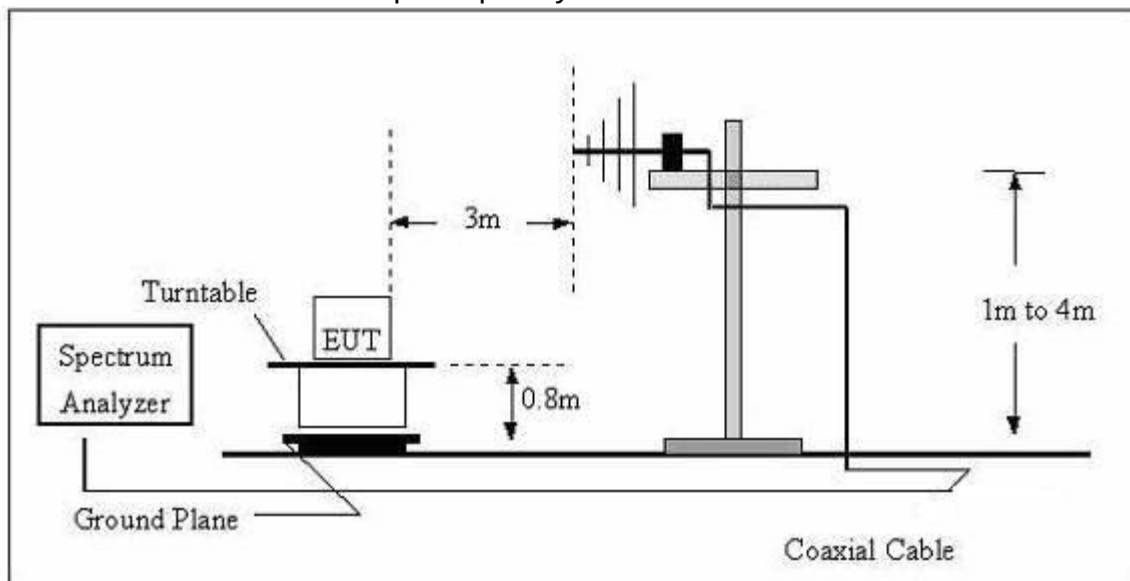
10. SPURIOUS RADIATED EMISSIONS

10.1 Block Diagram Of Test Setup

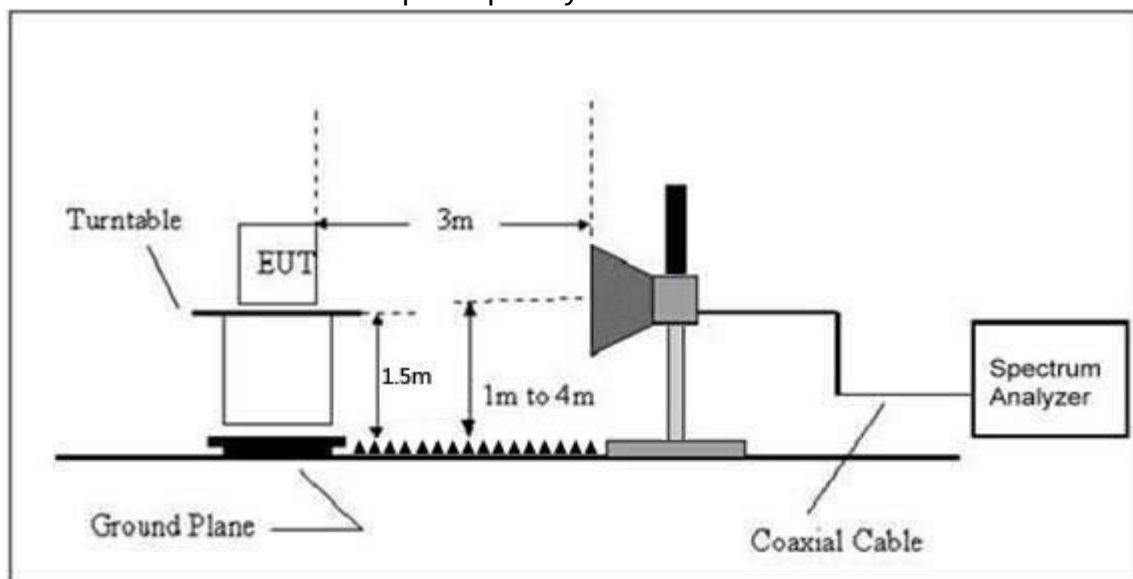
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



10.2 Limit

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

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

According to §27.53 (h), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.

10.3 Test procedure

1. The setup of EUT is according with per ANSI/TIA Standard 603D and ANSI C63.4-2014 measurement procedure.
 2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
 3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
 4. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.
- Spurious attenuation limit in dB = $43 + 10 \log_{10}(\text{power out in Watts})$

11.5 Test Result

For Cellular Band GSM850 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (824.2MHz)						
52.36	-44.06	-15.46	-59.52	-13.00	-46.52	H
1648.40	-21.18	-22.93	-44.11	-13.00	-31.11	H
2472.60	-26.97	-22.45	-49.42	-13.00	-36.42	H
52.36	-44.21	-15.46	-59.67	-13.00	-46.67	V
1648.40	-19.96	-22.93	-42.89	-13.00	-29.89	V
2472.60	-24.51	-22.45	-46.96	-13.00	-33.96	V
Middle Channel (836.6MHz)						
52.36	-42.43	-15.46	-57.90	-13.00	-44.90	H
1673.20	-20.21	-22.87	-43.08	-13.00	-30.08	H
2509.80	-25.87	-22.50	-48.37	-13.00	-35.37	H
52.36	-43.30	-15.46	-58.76	-13.00	-45.76	V
1673.20	-18.83	-22.87	-41.70	-13.00	-28.70	V
2509.80	-25.78	-22.50	-48.28	-13.00	-35.28	V
High Channel (848.8MHz)						
52.36	-44.43	-15.46	-59.89	-13.00	-46.89	H
1697.60	-21.73	-22.79	-44.52	-13.00	-31.52	H
2546.40	-25.08	-22.56	-47.64	-13.00	-34.64	H
52.36	-43.74	-15.46	-59.21	-13.00	-46.21	V
1697.60	-18.51	-22.79	-41.30	-13.00	-28.30	V
2546.40	-23.50	-22.56	-46.06	-13.00	-33.06	V

For PCS Band GSM1900 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (1850.2MHz)						
52.36	-43.48	-15.46	-58.94	-13.00	-45.94	H
3700.40	-27.40	-17.47	-44.87	-13.00	-31.87	H
5550.60	-29.25	-11.76	-41.01	-13.00	-28.01	H
52.36	-44.67	-15.46	-60.14	-13.00	-47.14	V
3700.40	-26.31	-17.47	-43.78	-13.00	-30.78	V
5550.60	-28.64	-11.76	-40.40	-13.00	-27.40	V
Middle Channel (1880MHz)						
52.36	-44.18	-15.46	-59.65	-13.00	-46.65	H
3760.00	-24.95	-16.98	-41.93	-13.00	-28.93	H
5640.00	-29.60	-11.33	-40.93	-13.00	-27.93	H
52.36	-44.70	-15.46	-60.17	-13.00	-47.17	V
3760.00	-26.03	-16.98	-43.01	-13.00	-30.01	V
5640.00	-31.35	-11.33	-42.68	-13.00	-29.68	V
High Channel (1909.8MHz)						
52.36	-41.88	-15.46	-57.34	-13.00	-44.34	H
3819.60	-24.09	-16.49	-40.58	-13.00	-27.58	H
5729.40	-30.01	-10.90	-40.91	-13.00	-27.91	H
52.36	-44.72	-15.46	-60.18	-13.00	-47.18	V
3819.60	-29.68	-16.49	-46.17	-13.00	-33.17	V
5729.40	-30.36	-10.90	-41.26	-13.00	-28.26	V

For Band WCDMA Band IV Mode

Frequency	Reading	Correct	Result	Limit	Margin	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	H/V
Low Channel (1712.4MHz)						
52.36	-41.95	-15.46	-57.42	-13.00	-44.42	H
3424.80	-25.63	-19.74	-45.37	-13.00	-32.37	H
5137.20	-30.84	-13.77	-44.61	-13.00	-31.61	H
52.36	-44.97	-15.46	-60.44	-13.00	-47.44	V
3424.80	-26.03	-19.74	-45.77	-13.00	-32.77	V
5137.20	-29.66	-13.77	-43.43	-13.00	-30.43	V
Middle Channel (1732.4MHz)						
52.36	-41.55	-15.46	-57.01	-13.00	-44.01	H
3464.80	-24.46	-19.41	-43.87	-13.00	-30.87	H
5197.20	-30.86	-13.48	-44.34	-13.00	-31.34	H
52.36	-44.28	-15.46	-59.75	-13.00	-46.75	V
3464.80	-28.53	-19.41	-47.94	-13.00	-34.94	V
5197.20	-31.15	-13.48	-44.63	-13.00	-31.63	V
High Channel (1752.6MHz)						
52.36	-44.08	-15.46	-59.54	-13.00	-46.54	H
3505.20	-27.15	-19.08	-46.23	-13.00	-33.23	H
5257.80	-32.11	-13.19	-45.30	-13.00	-32.30	H
52.36	-42.38	-15.46	-57.84	-13.00	-44.84	V
3505.20	-29.11	-19.08	-48.19	-13.00	-35.19	V
5257.80	-30.71	-13.19	-43.90	-13.00	-30.90	V

Note: Result=Reading+ Correct, Margin= Result- Limit

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

For Band WCDMA Band V Mode

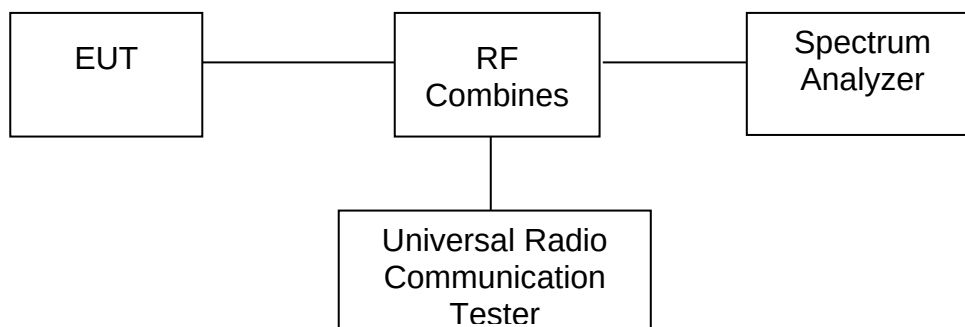
Frequency	Reading	Correct	Result	Limit	Margin	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	H/V
Low Channel (826.4MHz)						
52.36	-43.11	-15.46	-58.58	-13.00	-45.58	H
1652.80	-18.29	-22.94	-41.23	-13.00	-28.23	H
2479.20	-25.94	-22.46	-48.40	-13.00	-35.40	H
52.36	-42.09	-15.46	-57.55	-13.00	-44.55	V
1652.80	-21.16	-22.94	-44.10	-13.00	-31.10	V
2479.20	-24.42	-22.46	-46.88	-13.00	-33.88	V
Middle Channel (836.6MHz)						
52.36	-44.47	-15.46	-59.93	-13.00	-46.93	H
1673.20	-21.94	-22.87	-44.81	-13.00	-31.81	H
2509.80	-25.64	-22.50	-48.14	-13.00	-35.14	H
52.36	-42.16	-15.46	-57.62	-13.00	-44.62	V
1673.20	-18.24	-22.87	-41.11	-13.00	-28.11	V
2509.80	-26.95	-22.50	-49.45	-13.00	-36.45	V
High Channel (846.6MHz)						
52.36	-42.72	-15.46	-58.18	-13.00	-45.18	H
1693.20	-18.86	-22.80	-41.66	-13.00	-28.66	H
2539.80	-23.22	-22.55	-45.77	-13.00	-32.77	H
52.36	-42.65	-15.46	-58.12	-13.00	-45.12	V
1693.20	-18.70	-22.80	-41.50	-13.00	-28.50	V
2539.80	-26.67	-22.55	-49.22	-13.00	-36.22	V

Note: Result=Reading+ Correct, Margin= Result- Limit

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

11. FREQUENCY STABILITY

11.1 Block Diagram Of Test Setup



11.2 Limit

According to §22.917(b), The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

According to §24.238(b), The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

According to §27.53, The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

11.3 Test procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 10kHz for GSM mode and 100kHz for WCDMA mode, VBW shall be at least 3 times the RBW, and the 26dB bandwidth was recorded.

11.4 Test Result

For Cellular Band GSM Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.8	69	0.082
40	3.8	43	0.051
30	3.8	62	0.075
20	3.8	52	0.063
10	3.8	42	0.050
0	3.8	70	0.083
-10	3.8	57	0.068
-20	3.8	43	0.051
-30	3.8	74	0.089
25	4.17	74	0.089
25	3.42	74	0.088

For PCS Band GSM Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.8	63	0.034
40	3.8	47	0.025
30	3.8	62	0.033
20	3.8	69	0.037
10	3.8	47	0.025
0	3.8	49	0.026
-10	3.8	58	0.031
-20	3.8	68	0.036
-30	3.8	69	0.037
25	4.17	44	0.024
25	3.42	66	0.035

For Cellular Band GPRS Mode

Reference Frequency(Middle Channel): 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.8	44	0.052
40	3.8	66	0.079
30	3.8	71	0.085
20	3.8	52	0.062
10	3.8	63	0.075
0	3.8	58	0.069
-10	3.8	56	0.067
-20	3.8	50	0.060
-30	3.8	56	0.067
25	4.17	69	0.082
25	3.42	75	0.090

For PCS Band GPRS Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.8	55	0.029
40	3.8	67	0.036
30	3.8	58	0.031
20	3.8	70	0.037
10	3.8	48	0.025
0	3.8	61	0.033
-10	3.8	76	0.041
-20	3.8	69	0.037
-30	3.8	56	0.030
25	4.17	56	0.030
25	3.42	57	0.031

For WCDMA Band IV Mode

Reference Frequency(Middle Channel): 1732.4 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.8	65	0.038
40	3.8	53	0.031
30	3.8	52	0.030
20	3.8	68	0.039
10	3.8	40	0.023
0	3.8	52	0.030
-10	3.8	57	0.033
-20	3.8	66	0.038
-30	3.8	43	0.025
25	4.17	42	0.024
25	3.42	69	0.040

For HSDPA Band IV Mode

Reference Frequency(Middle Channel): 1732.4 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.8	79	0.045
40	3.8	57	0.033
30	3.8	51	0.030
20	3.8	80	0.046
10	3.8	42	0.024
0	3.8	54	0.031
-10	3.8	58	0.033
-20	3.8	79	0.046
-30	3.8	48	0.028
25	4.17	47	0.027
25	3.42	72	0.041

For HSUPA Band IV Mode

Reference Frequency(Middle Channel):1732.4MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.8	78	0.045
40	3.8	72	0.042
30	3.8	56	0.032
20	3.8	74	0.043
10	3.8	72	0.042
0	3.8	72	0.042
-10	3.8	51	0.029
-20	3.8	78	0.045
-30	3.8	45	0.026
25	4.17	60	0.035
25	3.42	67	0.039

For WCDMA Band V Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.8	46	0.055
40	3.8	73	0.087
30	3.8	42	0.050
20	3.8	57	0.069
10	3.8	55	0.065
0	3.8	49	0.058
-10	3.8	68	0.082
-20	3.8	69	0.082
-30	3.8	72	0.086
25	4.17	61	0.073
25	3.42	75	0.089

For HSDPA Band V Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.8	56	0.067
40	3.8	75	0.090
30	3.8	48	0.058
20	3.8	78	0.093
10	3.8	78	0.093
0	3.8	58	0.070
-10	3.8	77	0.092
-20	3.8	49	0.059
-30	3.8	76	0.091
25	4.17	43	0.051
25	3.42	41	0.049

For HSUPA Band V Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.8	50	0.060
40	3.8	46	0.055
30	3.8	56	0.066
20	3.8	69	0.083
10	3.8	73	0.087
0	3.8	51	0.060
-10	3.8	75	0.089
-20	3.8	65	0.078
-30	3.8	68	0.081
25	4.17	73	0.087
25	3.42	60	0.072

12. EUT PHOTOGRAPHS

EUT Photo 1

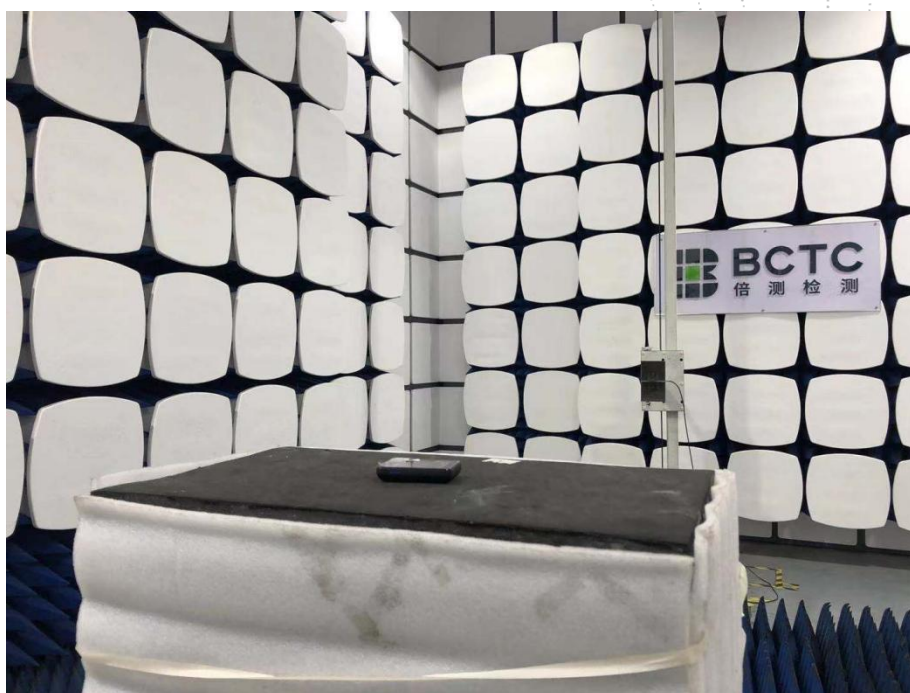


EUT Photo 2



13. EUT TEST SETUP PHOTOGRAPHS

Radiated Measurement Photos





STATEMENT

- 1.The equipment lists are traceable to the national reference standards.
- 2.The test report can not be partially copied unless prior written approval is issued from our lab.
- 3.The test report is invalid without stamp of laboratory.
- 4.The test report is invalid without signature of person(s) testing and authorizing.
- 5.The test process and test result is only related to the Unit Under Test.
- 6.The quality system of our laboratory is in accordance with ISO/IEC17025.
- 7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL : 400-788-9558

P.C.: 518103

FAX : 0755-33229357

Website : <http://www.chnbctc.com>

E-Mail : bctc@bctc-lab.com.cn

***** END *****