

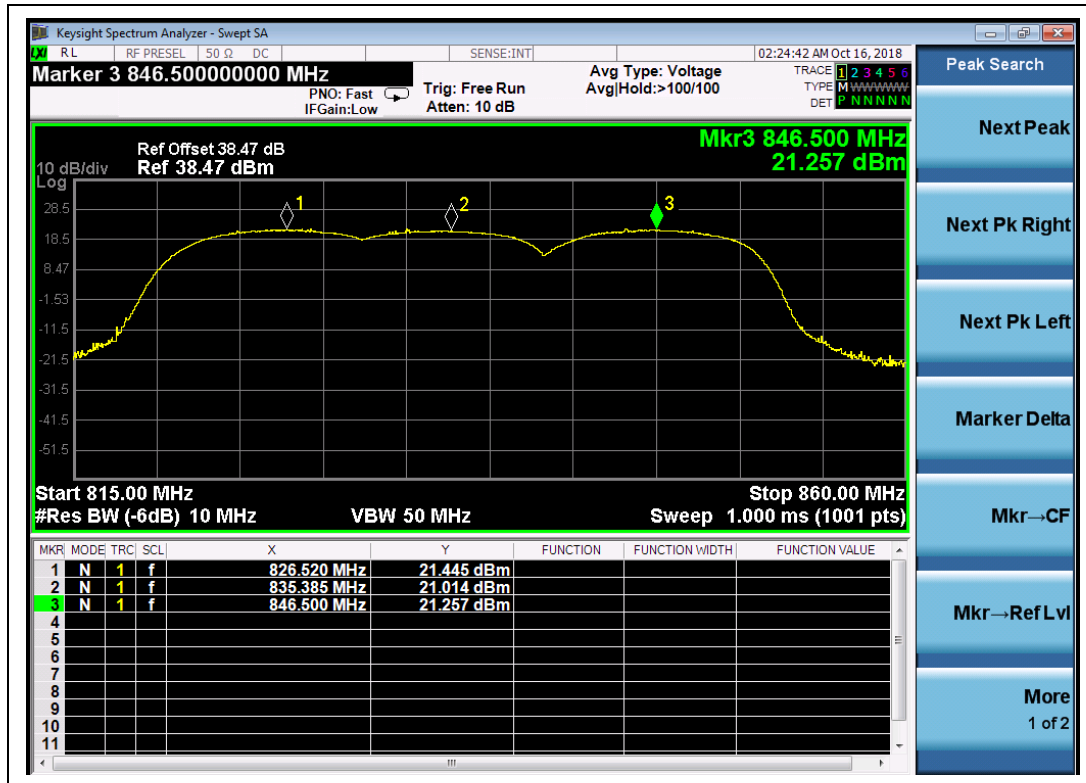
**WCDMA Test verdict:**

Band	Channel	Frequency (MHz)	Measured ERP			Limit		Verdict
			dBm	W	Refer to Plot	dBm	W	
WCDMA 850MHz	4132	826.4	21.45	0.140	Plot G	38.5	7	PASS
	4182	836.4	21.01	0.126				PASS
	4233	846.6	21.26	0.134				PASS
HSDPA 850MHz	4132	826.4	19.64	0.092	Plot H	38.5	7	PASS
	4182	836.4	19.47	0.089				PASS
	4233	846.6	19.04	0.080				PASS
HSUPA 850MHz	4132	826.4	21.94	0.156	Plot I	38.5	7	PASS
	4182	836.4	20.98	0.125				PASS
	4233	846.6	21.37	0.137				PASS
HSPA+ 850MHz	4132	826.4	19.81	0.096	Plot J	38.5	7	PASS
	4182	836.4	20.01	0.100				PASS
	4233	846.6	21.36	0.137				PASS
WCDMA 1900MHz	9262	1852.4	24.08	0.256	Plot K	33	2	PASS
	9400	1880.0	22.99	0.199				PASS
	9538	1907.6	21.83	0.152				PASS
HSDPA 1900MHz	9262	1852.4	24.34	0.272	Plot L	33	2	PASS
	9400	1880.0	23.76	0.238				PASS
	9538	1907.6	21.57	0.144				PASS
HSUPA 1900MHz	9262	1852.4	24.41	0.276	Plot M	33	2	PASS
	9400	1880.0	24.16	0.261				PASS
	9538	1907.6	25.48	0.353				PASS
HSPA+ 1900MHz	9262	1852.4	23.34	0.216	Plot N	33	2	PASS
	9400	1880.0	24.40	0.275				PASS
	9538	1907.6	21.65	0.146				PASS

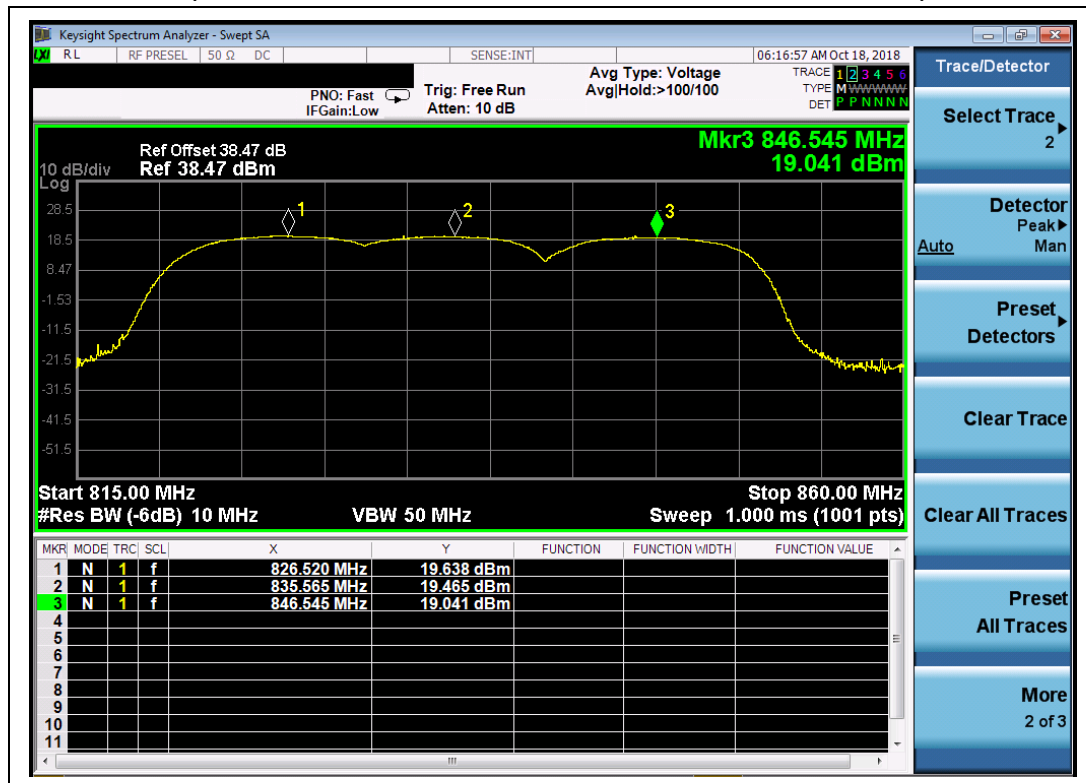
Note 1: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.



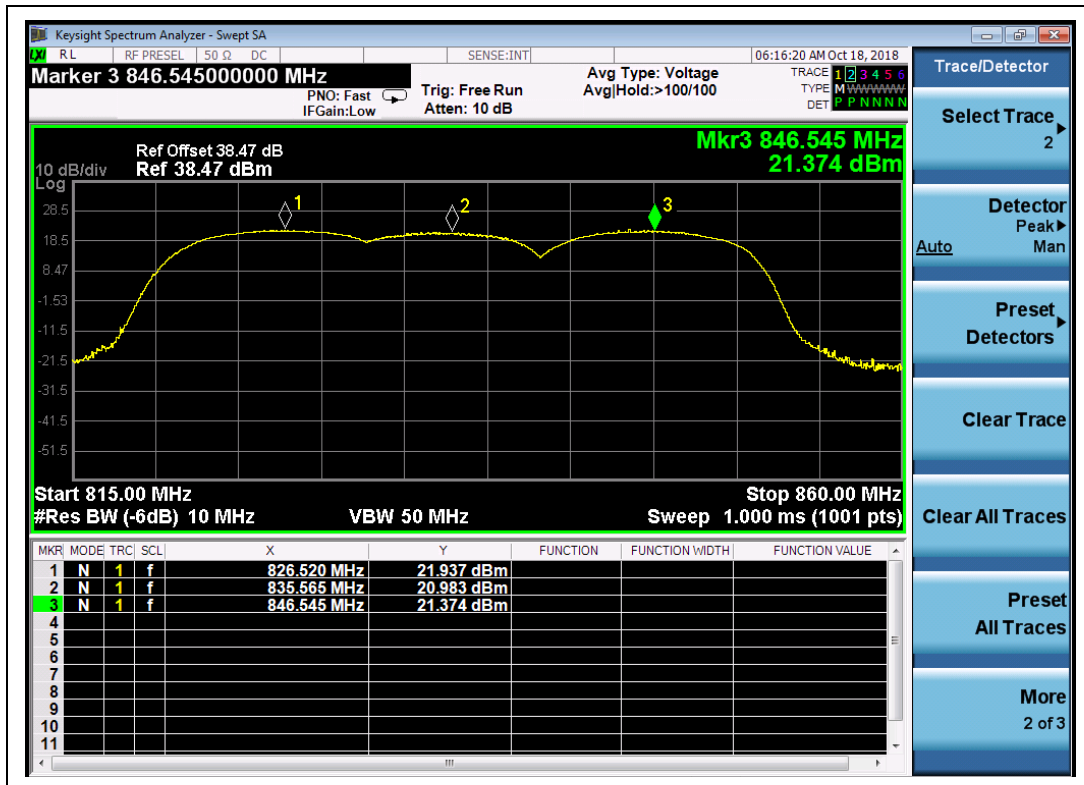
Test Plot



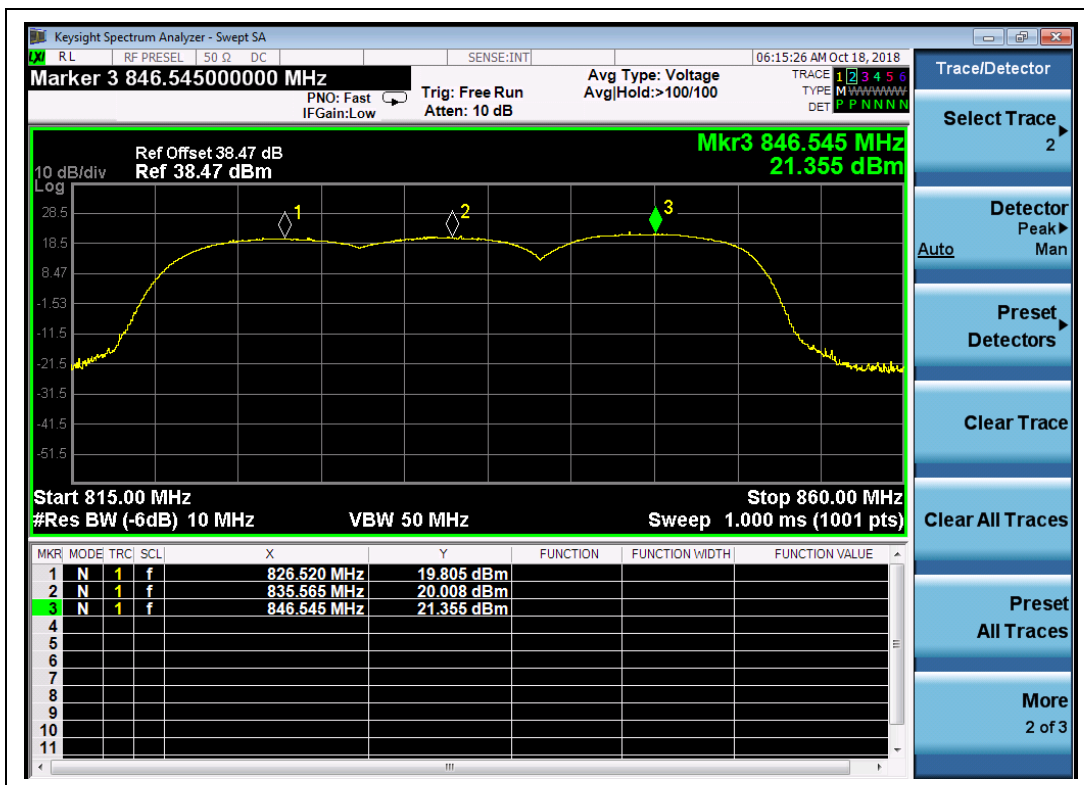
(Plot G, WCDMA 850 MHz, Channel = 4132, 4182, 4233)



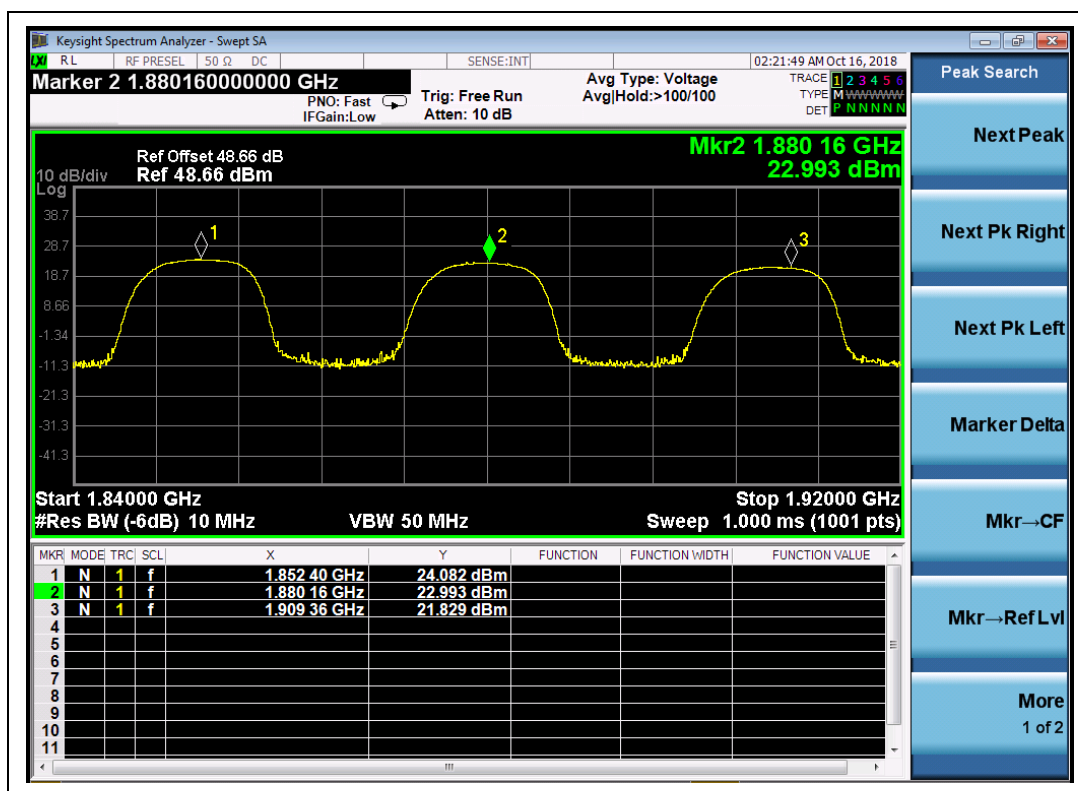
(Plot H, HSDPA 850 MHz, Channel = 4132, 4182, 4233)



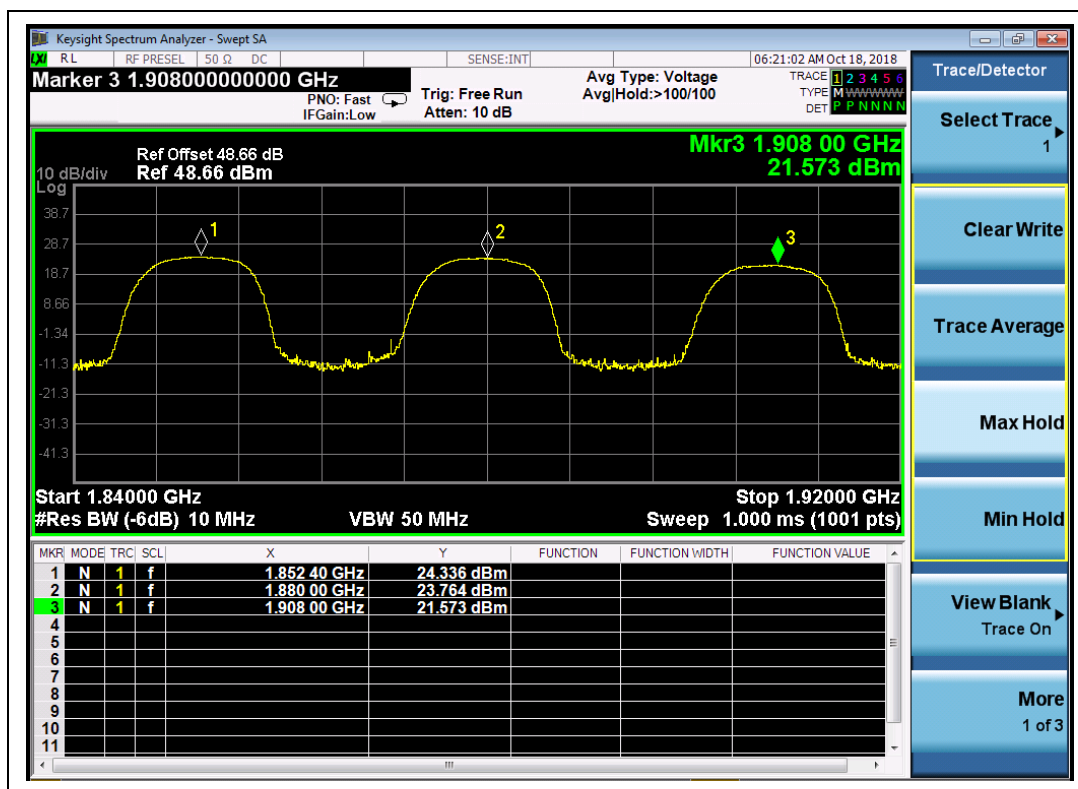
(Plot I, HSUPA 850 MHz, Channel = 4132, 4182, 4233)



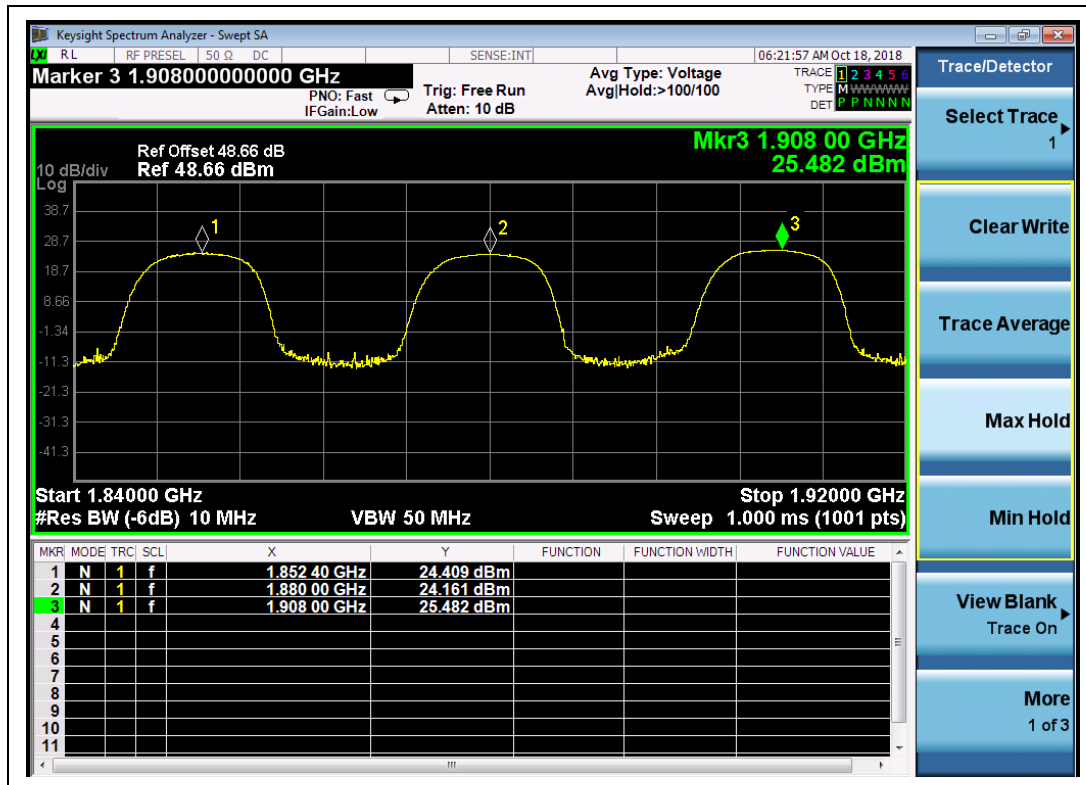
(Plot J, HSPA+ 850 MHz, Channel = 4132, 4182, 4233)



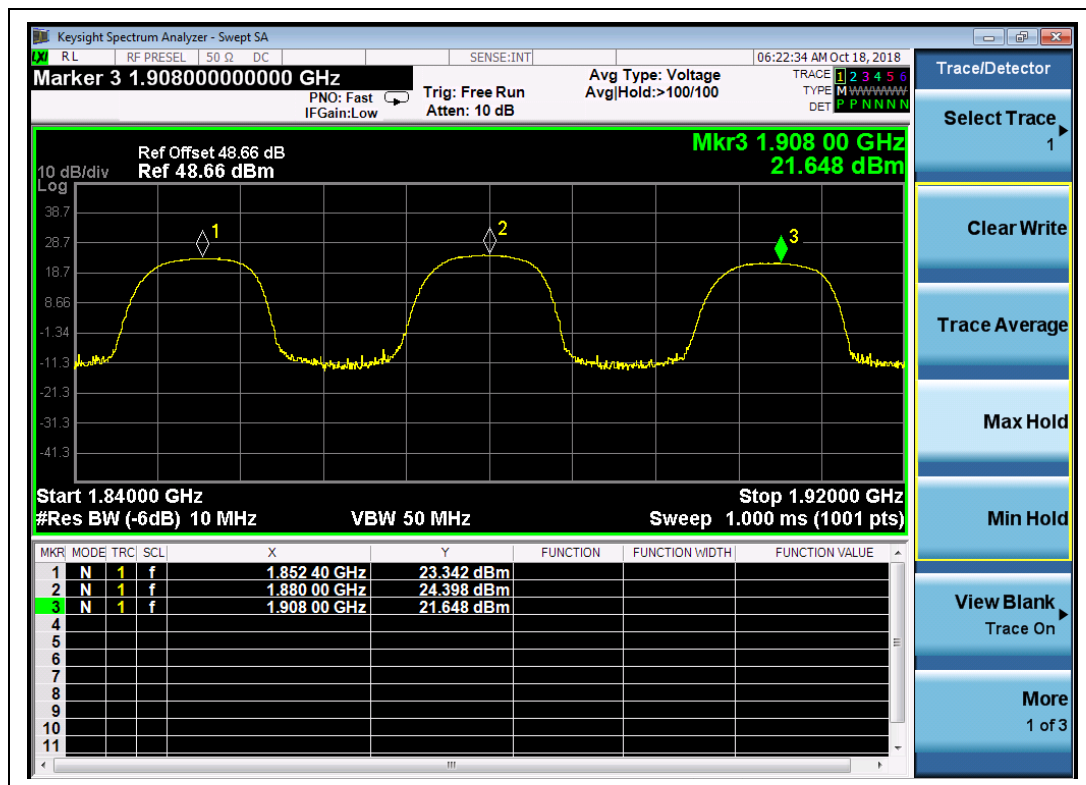
(Plot K, WCDMA 1900 MHz, Channel = 9262, 9400, 9538)



(Plot L, HSDPA 1900 MHz, Channel = 9262, 9400, 9538)



(Plot M, HSUPA1900 MHz, Channel = 9262, 9400, 9538)



(Plot N, HSPA+ 1900 MHz, Channel = 9262, 9400, 9538)

2.8. Radiated Out of Band Emissions

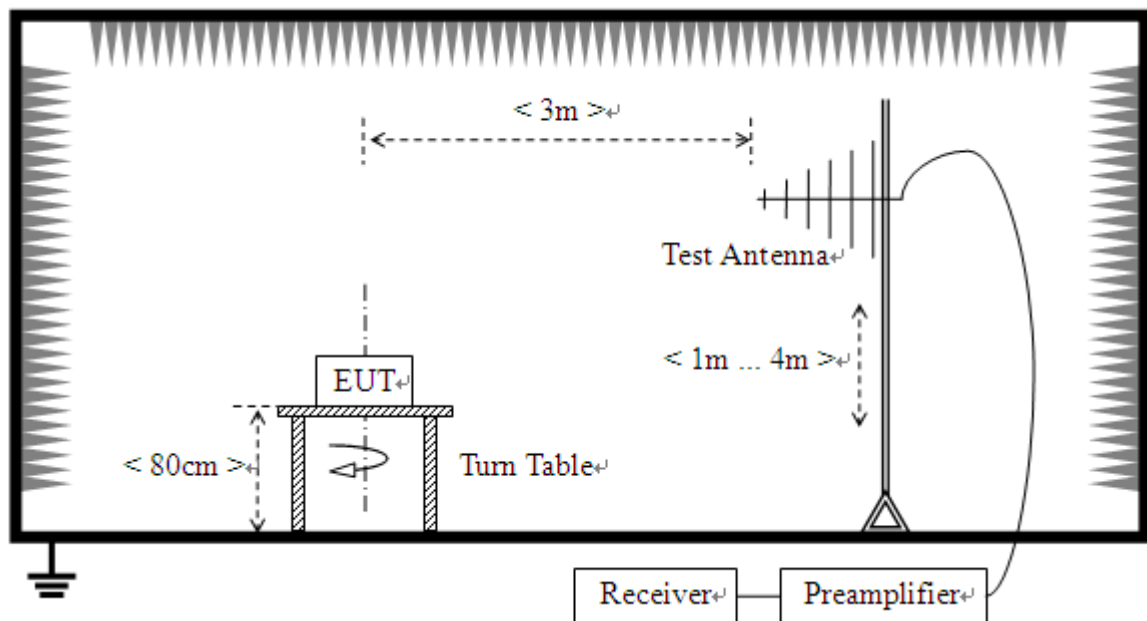
2.8.1. Requirement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \cdot \log(P)$ dB. This calculated to be -13dBm.

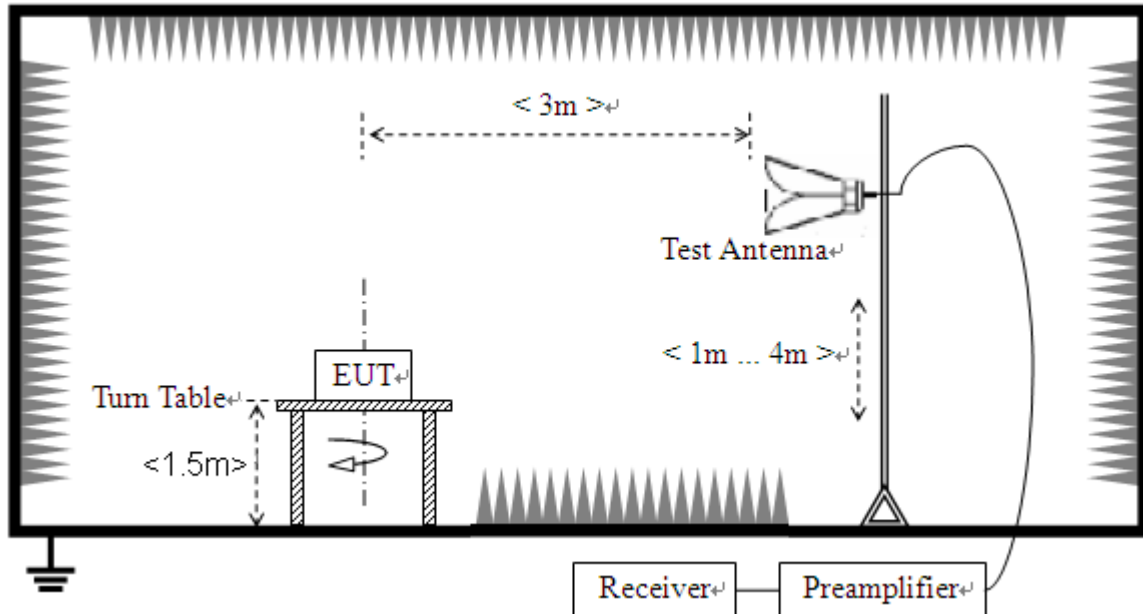
2.8.2. Test Description

Test Setup:

- 1) Below 1GHz



2) Above 1GHz



The EUT is located in a 3m Full-Anechoic Chamber, the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading. A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power (i.e. GSM850MHz band Power Control Level (PCL) = 5/19 and Power Class = 4, GSM1900MHz band Power Control Level (PCL) = 0/15 and Power Class = 1), and only the test result of the maximum output power was recorded. Please refer to section 2.1.3 of this report.

- Step size (dB): 3dB

The Test Antenna is a Bi-Log one (used for 30MHz to 1GHz) and a Horn one (used for above 3 GHz), it's located at the same height as the EUT. The Filters consists of Notch Filters and High Pass Filter.

Note: when doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.



2.8.3. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested to verify the out of band emissions. The power of the EUT transmitting frequency should be ignored.

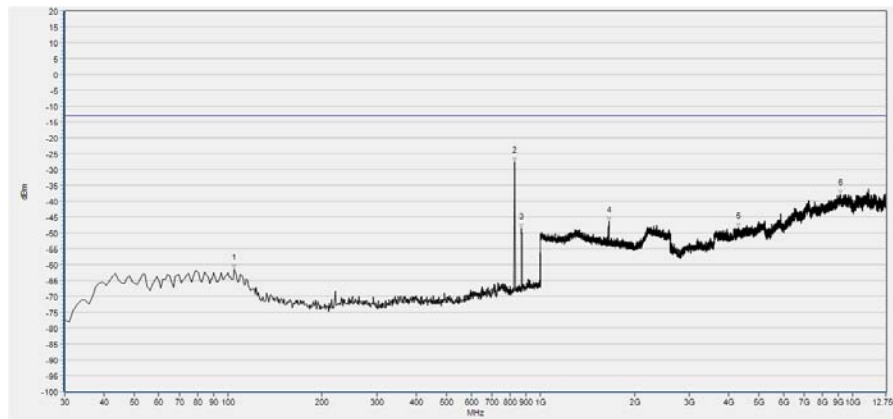
Note 1: All test mode and condition mentioned were considered and evaluated respectively by performing full test, only the worst data were recorded and reported.

Note 2: All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

A. Test Verdict:

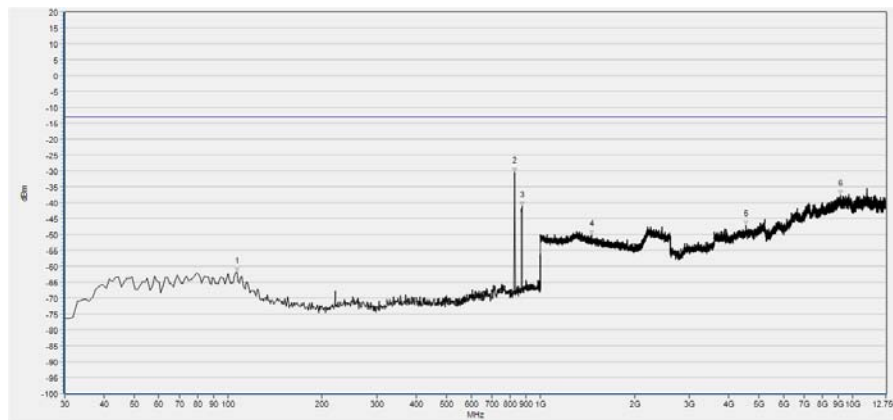
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
WCDMA 850MHz	4132	826.4	< -25	< -25	Plot E1/E2	-13	PASS
	4175	835.0	< -25	< -25	Plot E3/E4		PASS
	4233	846.6	< -25	< -25	Plot E5/E6		PASS
WCDMA 1900MHz	9262	1852.4	< -25	< -25	Plot F1/F2	-13	PASS
	9400	1880.0	< -25	< -25	Plot F3/F4		PASS
	9538	1907.6	< -25	< -25	Plot F5/F6		PASS

B. Test Plots



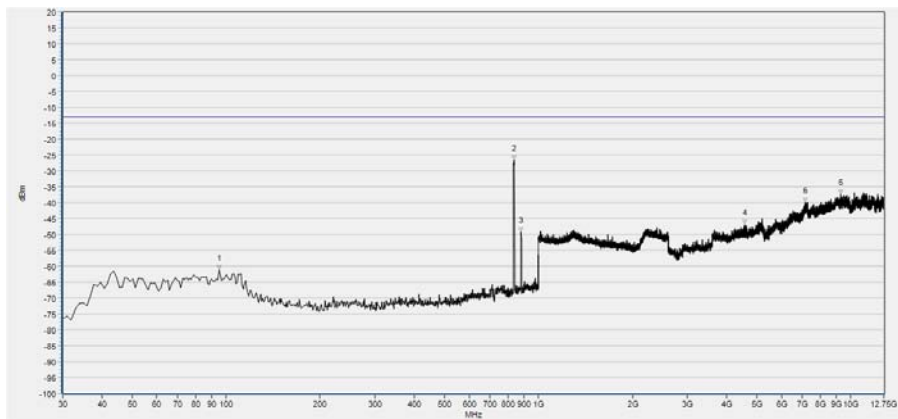
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	104.690	-61.40	-13.00	Horizontal	PASS
2	828.310	-27.70	-13.00	Horizontal	N/A
3	870.020	-48.65	-13.00	Horizontal	N/A
4	1654.982	-46.43	-13.00	Horizontal	PASS
5	4305.510	-48.30	-13.00	Horizontal	PASS
6	9135.943	-37.80	-13.00	Horizontal	PASS

(Plot E1, WCDMA 850MHz, Channel = 4132, Horizontal)



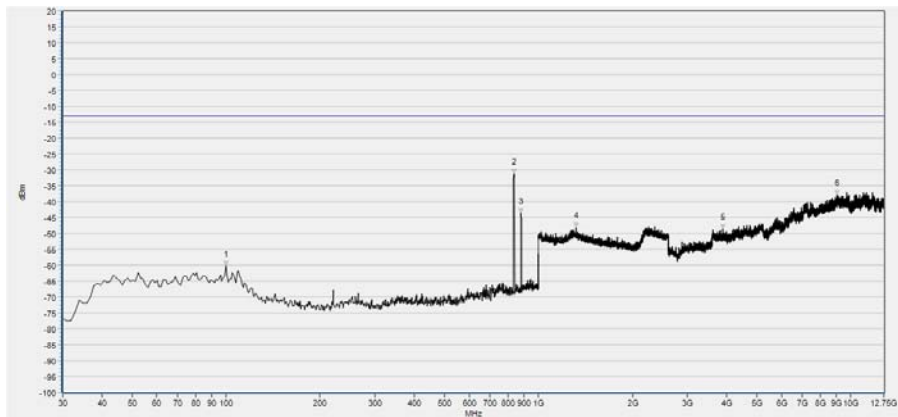
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	106.630	-61.85	-13.00	Vertical	PASS
2	826.370	-30.38	-13.00	Vertical	N/A
3	871.960	-41.13	-13.00	Vertical	N/A
4	1455.222	-50.23	-13.00	Vertical	PASS
5	4541.771	-47.26	-13.00	Vertical	PASS
6	9147.018	-37.50	-13.00	Vertical	PASS

(Plot E2, WCDMA 850MHz, Channel = 4132, Vertical)



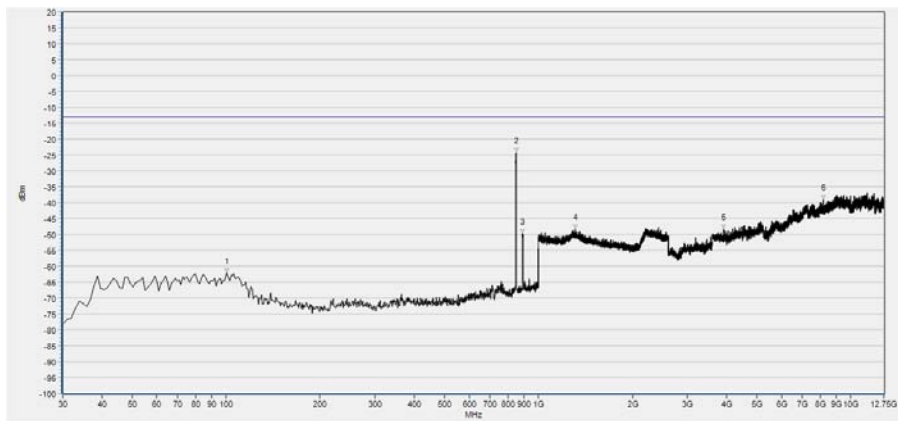
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	94.990	-61.10	-13.00	Horizontal	PASS
2	836.070	-26.60	-13.00	Horizontal	N/A
3	880.690	-49.27	-13.00	Horizontal	N/A
4	4562.075	-46.96	-13.00	Horizontal	PASS
5	7151.718	-40.00	-13.00	Horizontal	PASS
6	9303.910	-37.37	-13.00	Horizontal	PASS

(Plot E3, WCDMA 850MHz, Channel = 4182, Horizontal)



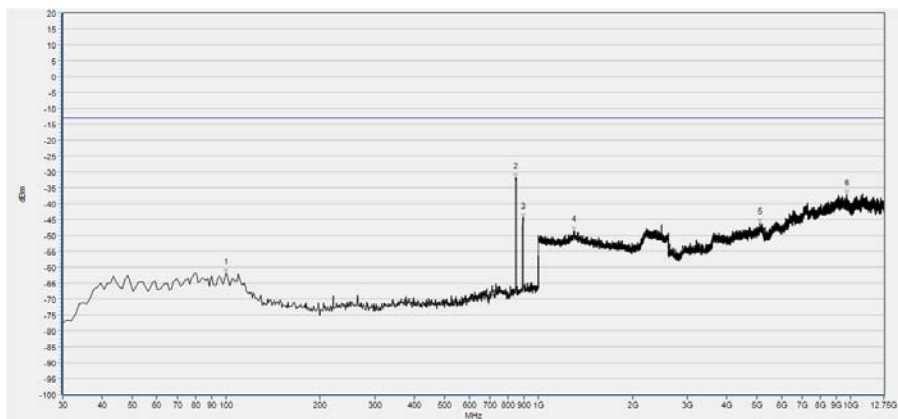
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	99.840	-60.28	-13.00	Vertical	PASS
2	835.100	-31.13	-13.00	Vertical	N/A
3	879.720	-43.59	-13.00	Vertical	N/A
4	1316.927	-47.99	-13.00	Vertical	PASS
5	3884.670	-48.52	-13.00	Vertical	PASS
6	9049.191	-37.89	-13.00	Vertical	PASS

(Plot E4, WCDMA 850MHz, Channel = 4182, Vertical)



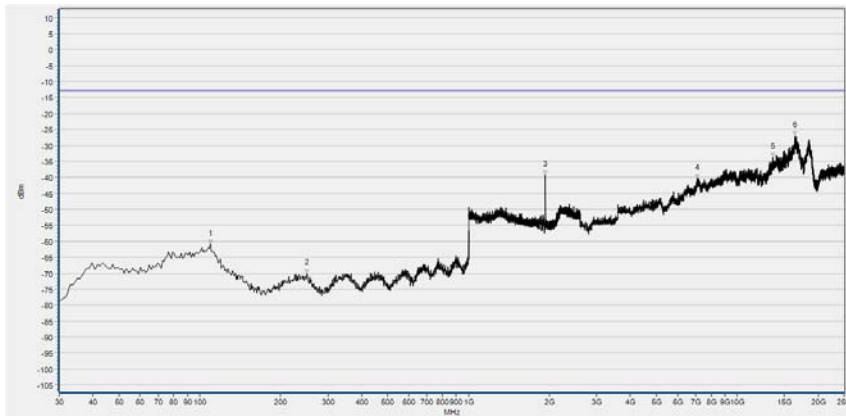
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	100.810	-62.15	-13.00	Horizontal	PASS
2	847.710	-24.29	-13.00	Horizontal	N/A
3	889.420	-49.79	-13.00	Horizontal	N/A
4	1315.006	-48.21	-13.00	Horizontal	PASS
5	3921.586	-48.33	-13.00	Horizontal	PASS
6	8177.978	-38.94	-13.00	Horizontal	PASS

(Plot E5, WCDMA 850MHz, Channel = 4233, Horizontal)



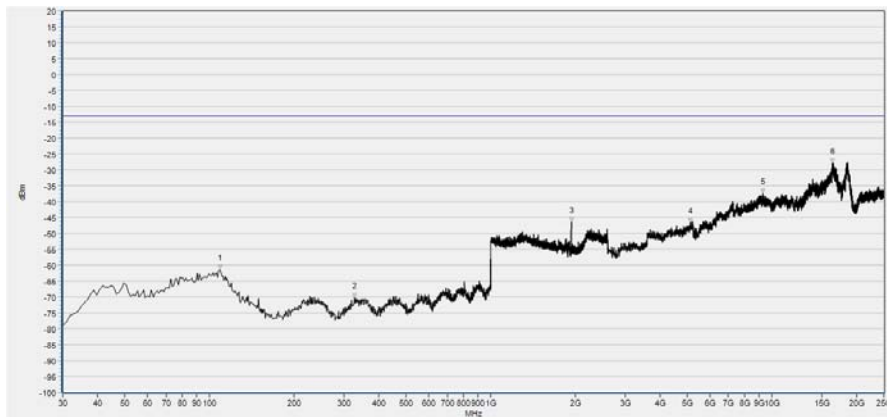
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	99.840	-61.95	-13.00	Vertical	PASS
2	844.800	-31.89	-13.00	Vertical	N/A
3	893.300	-44.64	-13.00	Vertical	N/A
4	1295.798	-48.65	-13.00	Vertical	PASS
5	5112.120	-46.22	-13.00	Vertical	PASS
6	9708.138	-37.18	-13.00	Vertical	PASS

(Plot E6, WCDMA 850MHz, Channel = 4233, Vertical)



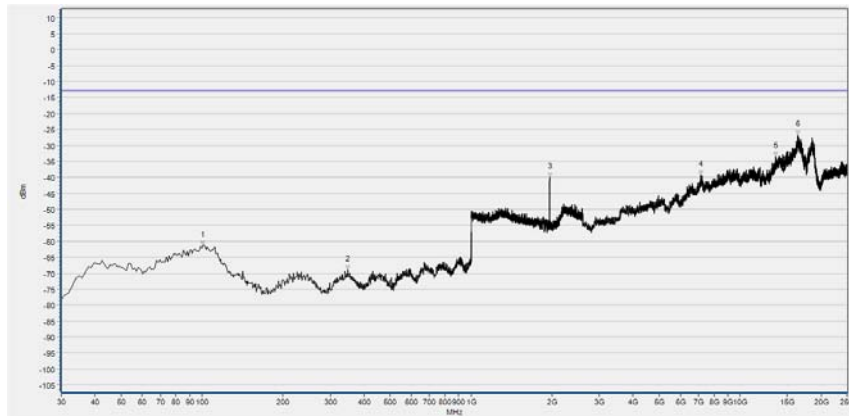
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	109.540	-60.88	-13.00	Horizontal	PASS
2	250.190	-70.11	-13.00	Horizontal	PASS
3	1933.493	-39.32	-13.00	Horizontal	N/A
4	7093.035	-40.39	-13.00	Horizontal	PASS
5	13573.923	-33.70	-13.00	Horizontal	PASS
6	16376.468	-26.94	-13.00	Horizontal	PASS

(Plot F1, WCDMA 1900MHz, Channel = 9262, Horizontal)



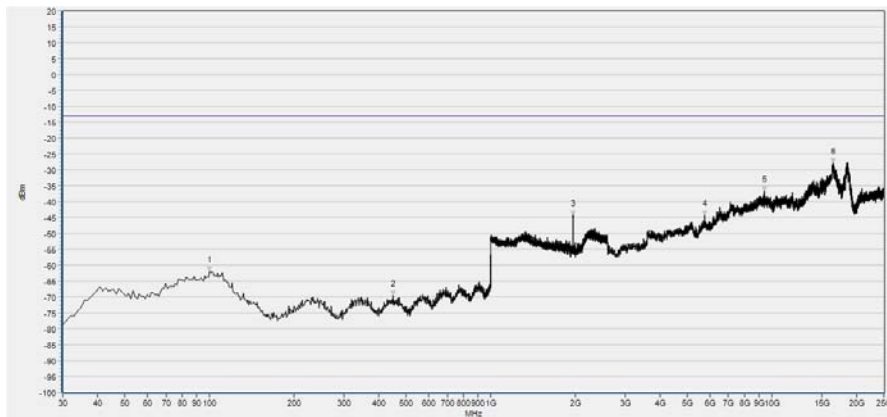
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	108.570	-61.36	-13.00	Vertical	PASS
2	326.820	-70.32	-13.00	Vertical	PASS
3	1932.853	-46.41	-13.00	Vertical	N/A
4	5129.624	-46.65	-13.00	Vertical	PASS
5	9304.928	-37.43	-13.00	Vertical	PASS
6	16384.615	-27.87	-13.00	Vertical	PASS

(Plot F2, WCDMA 1900MHz, Channel = 9262, Vertical)



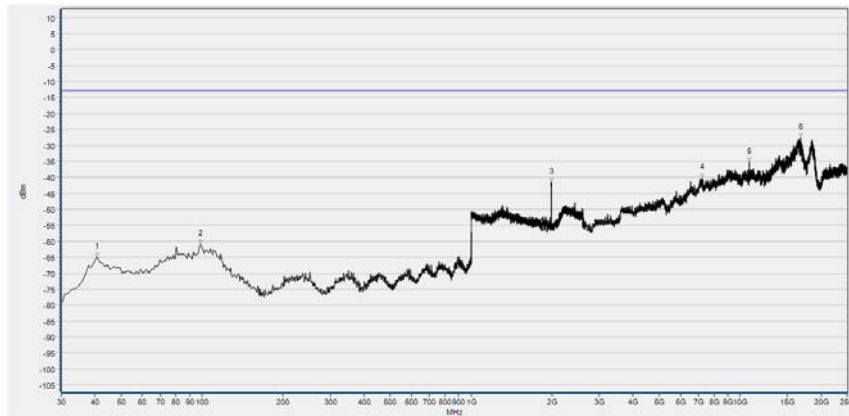
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	100.810	-61.47	-13.00	Horizontal	PASS
2	349.130	-68.91	-13.00	Horizontal	PASS
3	1959.744	-39.92	-13.00	Horizontal	N/A
4	7141.917	-39.33	-13.00	Horizontal	PASS
5	13590.216	-33.49	-13.00	Horizontal	PASS
6	16425.350	-26.74	-13.00	Horizontal	PASS

(Plot F3, WCDMA 1900MHz, Channel = 9400, Horizontal)



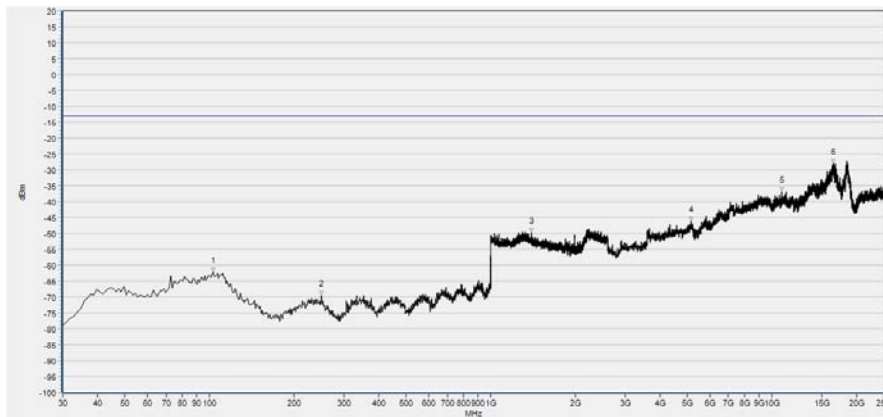
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	99.840	-61.85	-13.00	Vertical	PASS
2	449.040	-69.45	-13.00	Vertical	PASS
3	1958.463	-44.30	-13.00	Vertical	N/A
4	5756.938	-44.27	-13.00	Vertical	PASS
5	9382.324	-36.75	-13.00	Vertical	PASS
6	16543.481	-27.97	-13.00	Vertical	PASS

(Plot F4, WCDMA 1900MHz, Channel = 9400, Vertical)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	40.670	-64.90	-13.00	Horizontal	PASS
2	98.870	-60.89	-13.00	Horizontal	PASS
3	1988.555	-41.48	-13.00	Horizontal	N/A
4	7247.827	-40.21	-13.00	Horizontal	PASS
5	10848.773	-35.23	-13.00	Horizontal	PASS
6	16804.183	-27.72	-13.00	Horizontal	PASS

(Plot F5, WCDMA 1900MHz, Channel = 9538, Horizontal)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	102.750	-62.10	-13.00	Vertical	PASS
2	250.190	-69.43	-13.00	Vertical	PASS
3	1395.678	-49.71	-13.00	Vertical	PASS
4	5141.844	-46.19	-13.00	Vertical	PASS
5	10836.552	-36.79	-13.00	Vertical	PASS
6	16490.526	-28.15	-13.00	Vertical	PASS

(Plot F6, WCDMA 1900MHz, Channel = 9538, Vertical)



Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test items	Uncertainty
Output Power	$\pm 2.22\text{dB}$
Bandwidth	$\pm 5\%$
Conducted Spurious Emission	$\pm 2.77\text{ dB}$
Radiated Emission	$\pm 2.95\text{dB}$

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$



Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, Guangdong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, Guangdong Province, P. R. China

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013 and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.



4. Test Equipments Utilized

4.1 Conducted Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Power Splitter	NW521	1506A	Weinschel	2018.04.17	2019.04.16
Attenuator 1	(N/A.)	10dB	Resnet	2018.04.17	2019.04.16
Attenuator 2	(N/A.)	3dB	Resnet	2018.04.17	2019.04.16
EXA Signal Analyzer	MY53470836	N9010A	Agilent	2017.12.03	2018.12.02
Wireless synthesizer	MY48364176	8960 -E5515C	Agilent	2018.04.17	2019.04.16
RF cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
Coaxial cable	CB02	RF02	Morlab	N/A	N/A
SMA connector	CN01	RF03	HUBER-SUHNER	N/A	N/A
Temperature Chamber	(N/A)	HUT705P	CHONGQING HANBA EXPERIMENTAL EQUIPMENT CO.,LTD	2018.04.17	2019.04.16

4.2 Auxiliary Test Equipment

Equipment Name	Model No.	Brand Name	Manufacturer	Cal.Date	Cal. Due
Computer	T430i	Think Pad	Lenovo	N/A	N/A

**4.3 Radiated Test Equipments**

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
System Simulator	152038	CMW500	R&S	2018.08.04	2019.08.03
Receiver	MY54130016	N9038A	Agilent	2018.05.18	2019.05.17
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2018.03.03	2019.03.02
Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2018.08.06	2019.08.05
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2018.08.02	2019.08.01
Coaxial cable (N male) (9KHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
1-18GHz pre-Amplifier	MA02	TS-PR18	Rohde& Schwarz	2018.05.08	2019.05.07
18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde& Schwarz	2018.05.08	2019.05.07
Anechoic Chamber	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18

_____ END OF REPORT _____