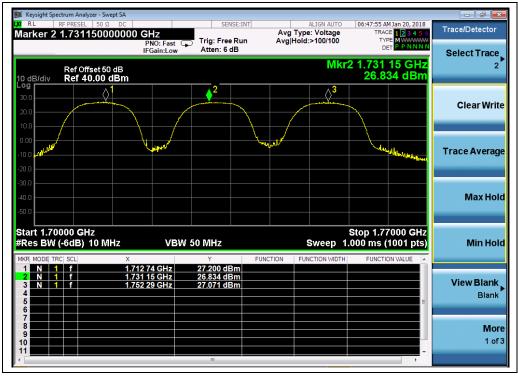


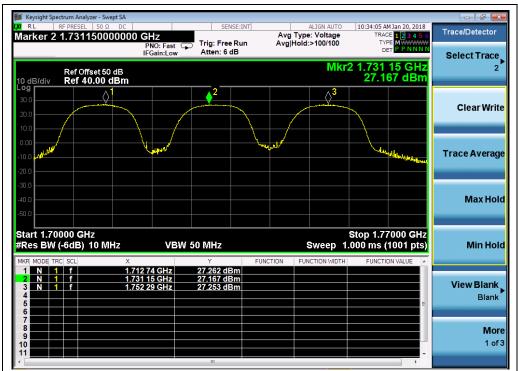
(Plot P, HSDPA1700 MHz, Channel = 1312, 1412, 1513)



(Plot Q, HSUPA1700 MHz, Channel = 1312, 1412, 1513)







(Plot R, HSPA+1700 MHz, Channel = 1312, 1412, 1513)



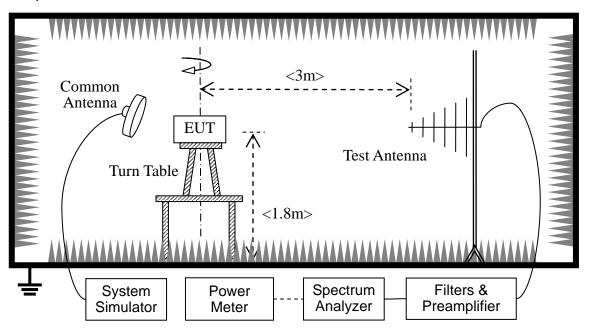
## 2.8. Radiated Out of Band Emissions

## 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\*log(P)dB. This calculated to be -13dBm.

### 2.8.2. Test Description

## Test Setup:



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.

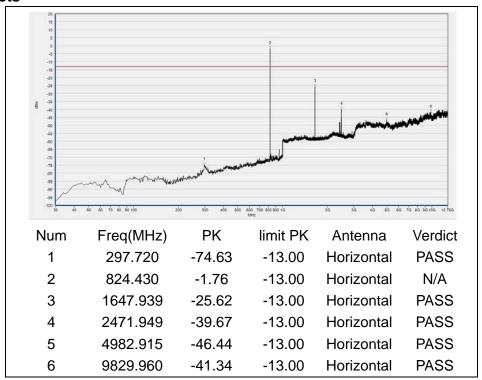
#### A. Test Verdict:

	Channel	Frequency (MHz)	Measured Max. Spurious			Limit	\/ovdia
Band			Emission (dBm)				
			Test	Test	Refer to Plot	Limit (dBm)	Verdic t
			Antenna	Antenna			
			Horizontal	Vertical			
GSM	128	824.2	< -25	< -25	Plot A1/A2		PASS
850MHz	190	836.6	< -25	< -25	Plot A3/A4	-13	PASS
OSUMINZ	251	848.8	< -25	< -25	Plot A5/A6		PASS
GSM	512	1850.2	< -25	< -25	Plot B1/B2		PASS
	661	1880.0	< -25	< -25	Plot B3/B4	-13	PASS
1900MHz	810	1909.8	< -25	< -25	Plot B5/B6		PASS
FODDO	128	824.2	< -25	< -25	Plot C1/C2		PASS
EGPRS	190	836.6	< -25	< -25	Plot C3/C4	-13	PASS
850MHz	251	848.8	< -25	< -25	Plot C5/C6		PASS
ECDDC.	512	1850.2	< -25	< -25	Plot D1/D2	-13	PASS
EGPRS	661	1880.0	< -25	< -25	Plot D3/D4		PASS
1900MHz	810	1909.8	< -25	< -25	Plot D5/D6		PASS
MCDMA	4132	826.4	< -25	< -25	Plot E1/E2		PASS
WCDMA 850MHz	4175	835.0	< -25	< -25	Plot E3/E4	-13	PASS
OSUIVINZ	4233	846.6	< -25	< -25	Plot E5/E6		PASS
MODMA	1312	1712.4	< -25	< -25	Plot F1/F2		PASS
WCDMA	1412	1732.4	< -25	< -25	Plot F3/F4	-13	PASS
1700MHz	1513	1752.6	< -25	< -25	Plot F5/F6		PASS
MCDMA	9262	1852.4	< -25	< -25	Plot G1/G2		PASS
WCDMA	9400	1880.0	< -25	< -25	Plot G3/G4	-13	PASS
1900MHz	9538	1907.6	< -25	< -25	Plot G5/G6		PASS

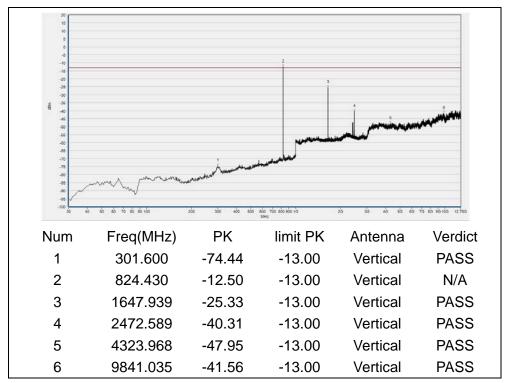




### **B.** Test Plots



(Plot A1, GSM 850MHz, Channel = 128, Horizontal)

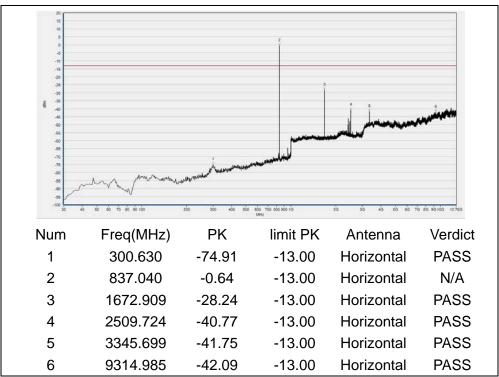


(Plot A2, GSM 850MHz, Channel = 128, Vertical)

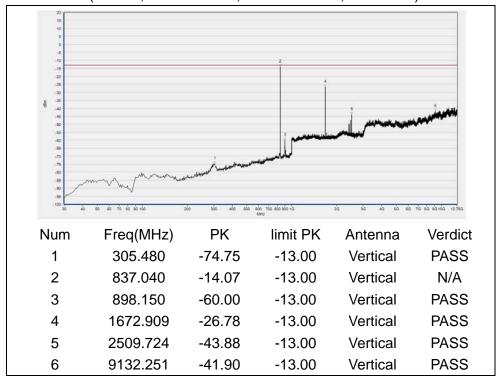








(Plot A3, GSM850MHz, Channel = 190, Horizontal)

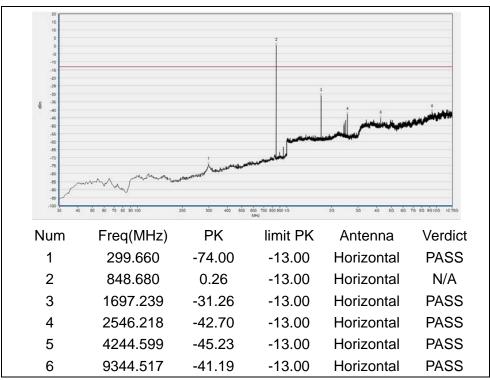


(Plot A4, GSM 850MHz, Channel = 190, Vertical)

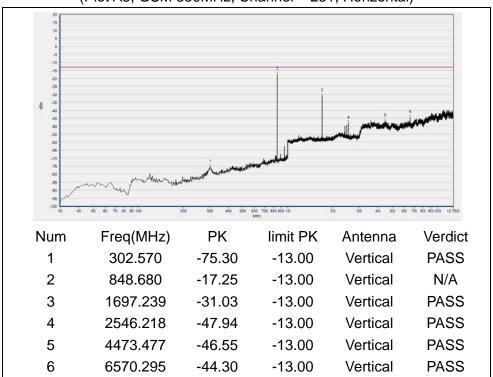








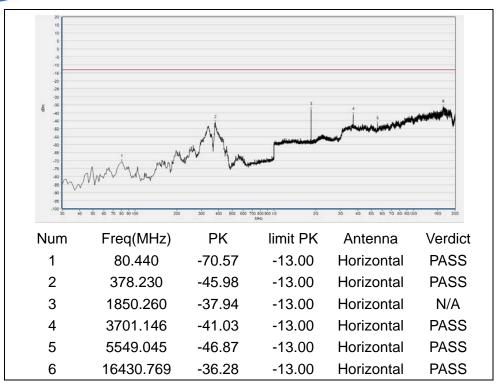
(Plot A5, GSM 850MHz, Channel = 251, Horizontal)



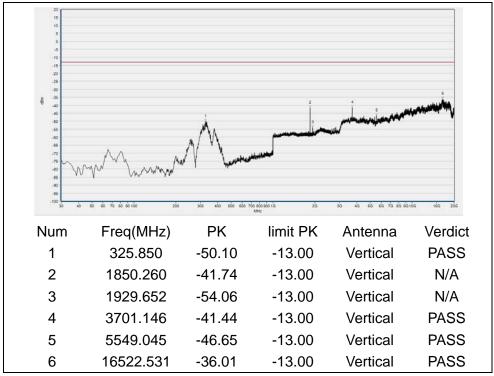
(Plot A6, GSM 850MHz, Channel = 251, Vertical)







(Plot B1, GSM 1900MHz, Channel = 512, Horizontal)

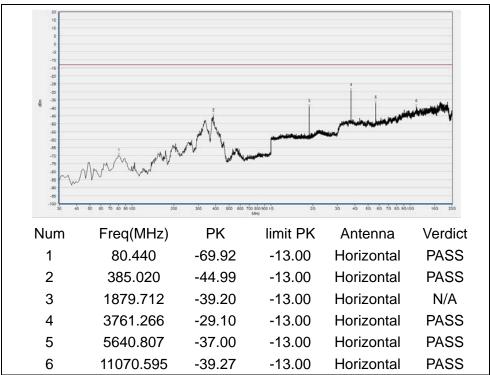


(Plot B2, GSM 1900MHz, Channel = 512, Vertical)

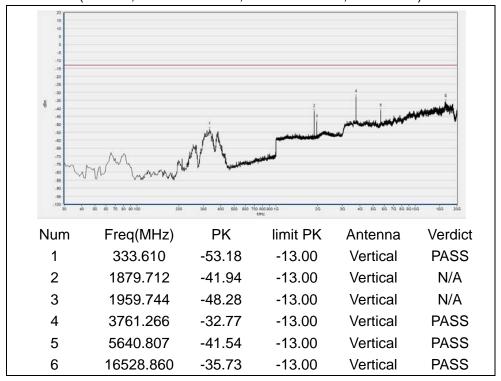








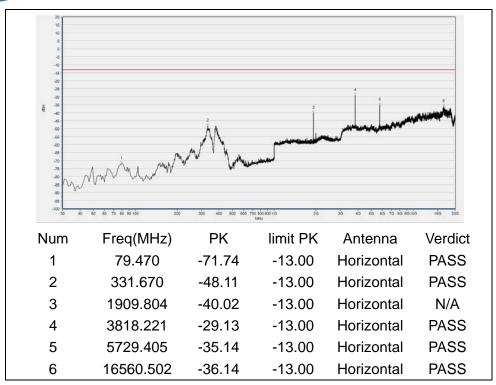
(Plot B3, GSM 1900MHz, Channel = 661, Horizontal)



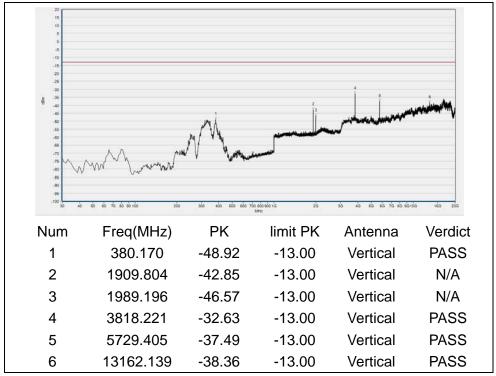
(Plot B4, GSM 1900MHz, Channel = 661, Vertical)





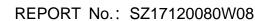


(Plot B5, GSM 1900MHz, Channel = 810, Horizontal)

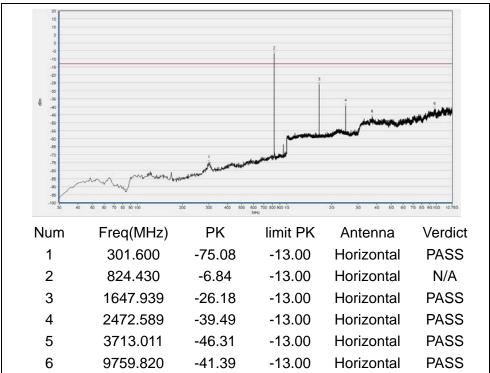


(Plot B6, GSM 1900MHz, Channel = 810, Vertical)

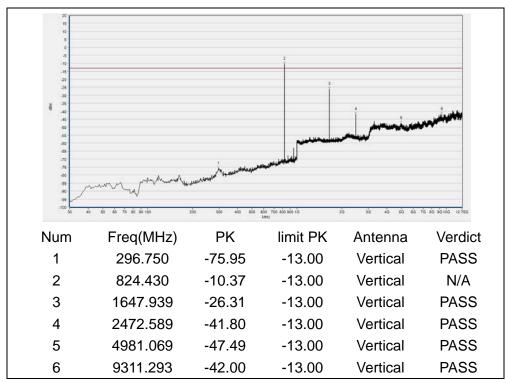








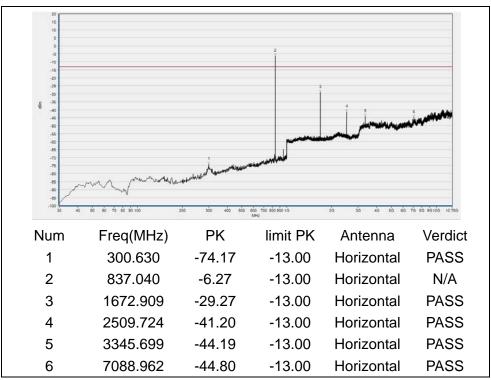
(Plot C1, EGPRS 850MHz, Channel = 128, Horizontal)



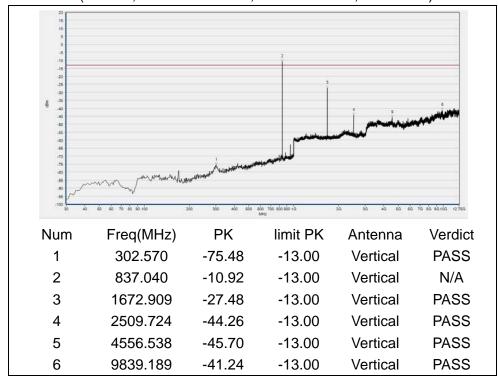
(Plot C2, EGPRS 850MHz, Channel = 128, Vertical)







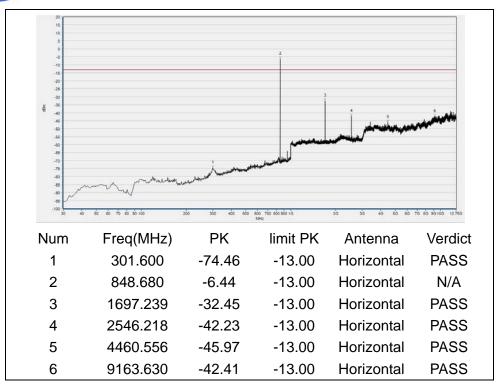
(Plot C3, EGPRS 850MHz, Channel = 190, Horizontal)



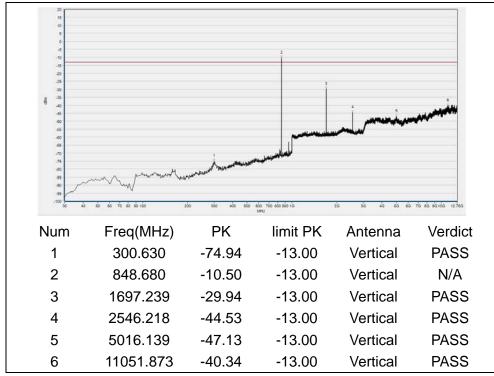
(Plot C4, EGPRS 850MHz, Channel = 190, Vertical)







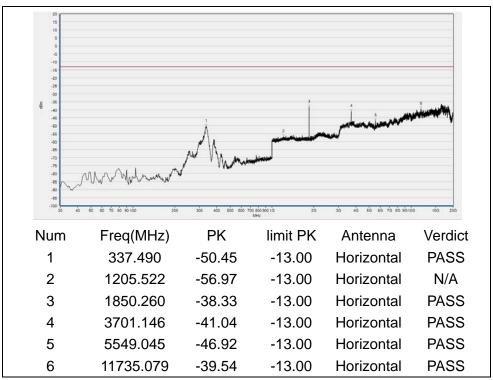
(Plot C5, EGPRS 850MHz, Channel = 251, Horizontal)



(Plot C6, EGPRS 850MHz, Channel = 251, Vertical)







(Plot D1, EGPRS 1900MHz, Channel = 512, Horizontal)

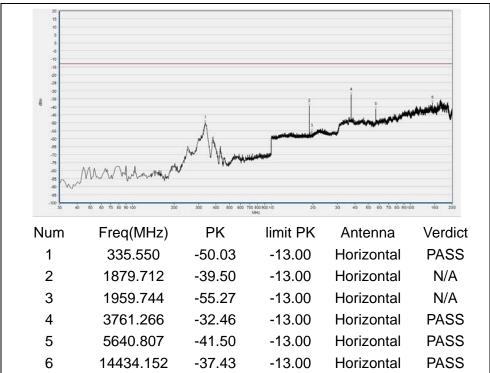


(Plot D2, EGPRS 1900MHz, Channel = 512, Vertical)









(Plot D3, EGPRS 1900MHz, Channel = 661, Horizontal)



(Plot D4, EGPRS 1900MHz, Channel = 661, Vertical)







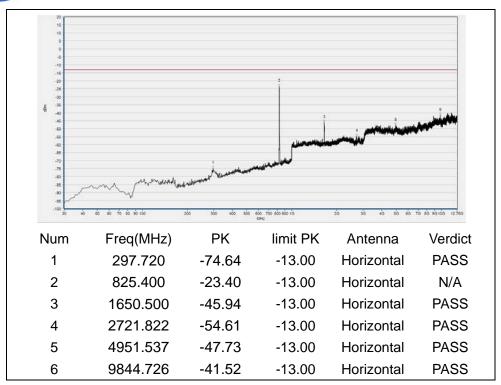
(Plot D5, EGPRS 1900MHz, Channel = 810, Horizontal)



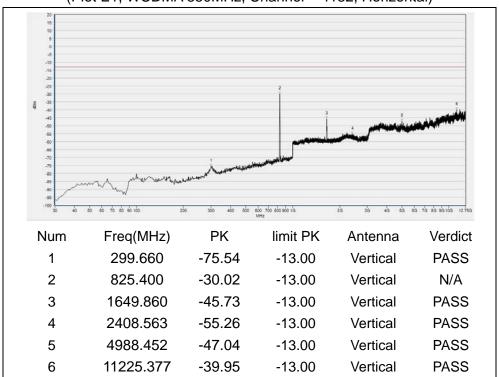
(Plot D6, EGPRS 1900MHz, Channel = 810, Vertical)







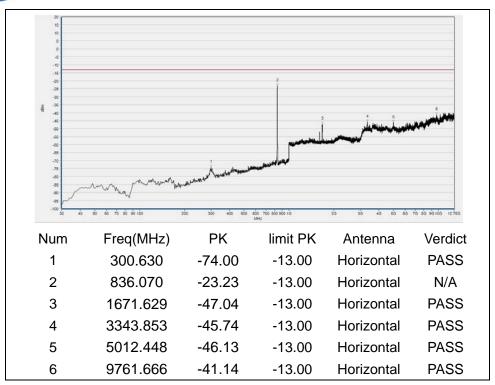
(Plot E1, WCDMA 850MHz, Channel = 4132, Horizontal)



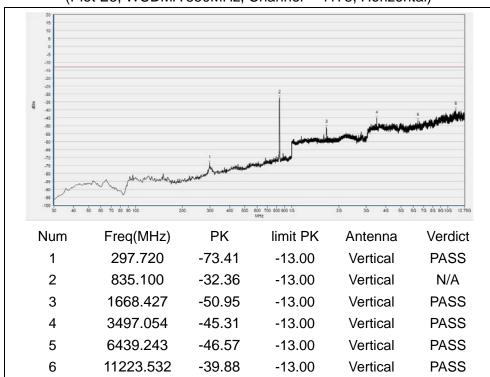
(Plot E2, WCDMA 850MHz, Channel = 4132, Vertical)







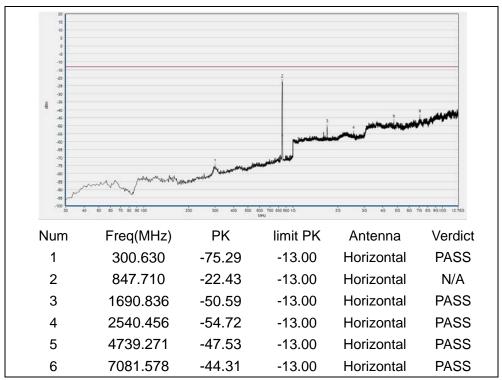
(Plot E3, WCDMA 850MHz, Channel = 4175, Horizontal)



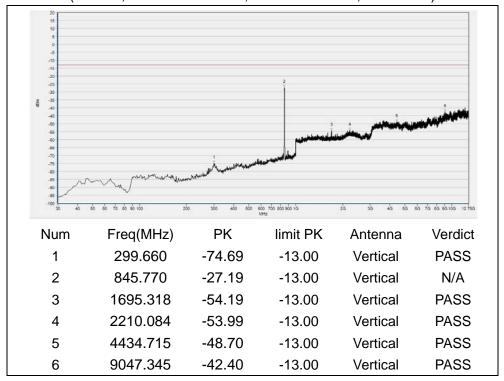
(Plot E4, WCDMA 850MHz, Channel = 4175, Vertical)







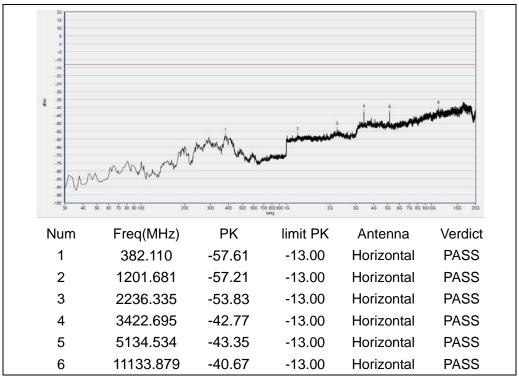
(Plot E5, WCDMA 850MHz, Channel = 4233, Horizontal)



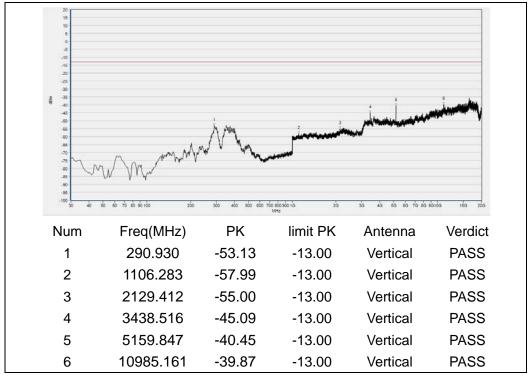
(Plot E6, WCDMA 850MHz, Channel = 4233, Vertical)







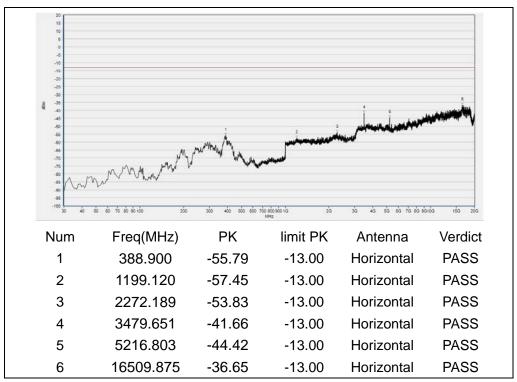
(Plot F1, WCDMA 1700MHz, Channel = 1312, Horizontal)



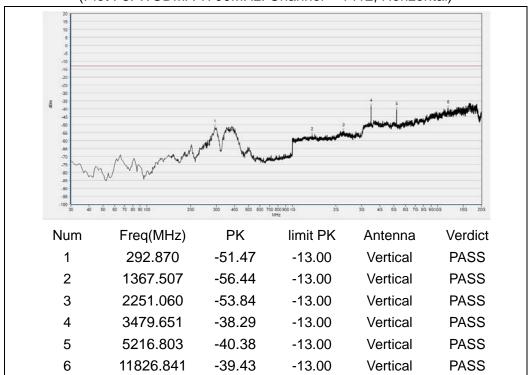
(Plot F2, WCDMA 1700MHz, Channel = 1312, Vertical)







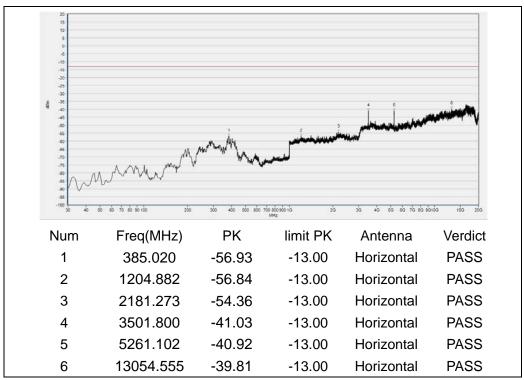
(Plot F3. WCDMA 1700MHz. Channel = 1412, Horizontal)



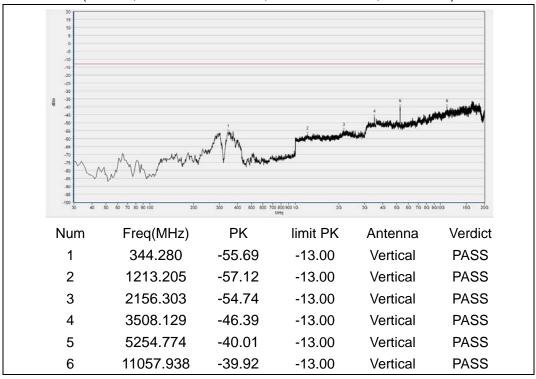
(Plot F4, WCDMA 1700MHz, Channel = 1412, Vertical)





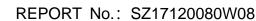


(Plot F5, WCDMA 1700MHz, Channel = 1513, Horizontal)

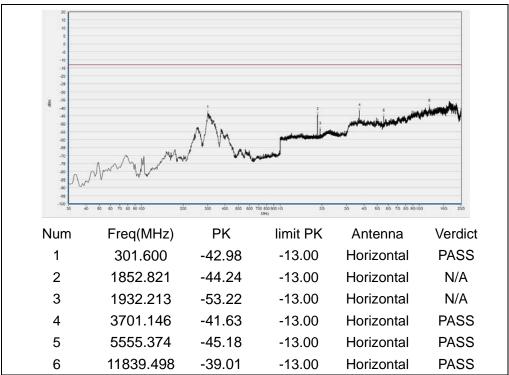


(Plot F6, WCDMA 1700MHz, Channel = 1513, Vertical)

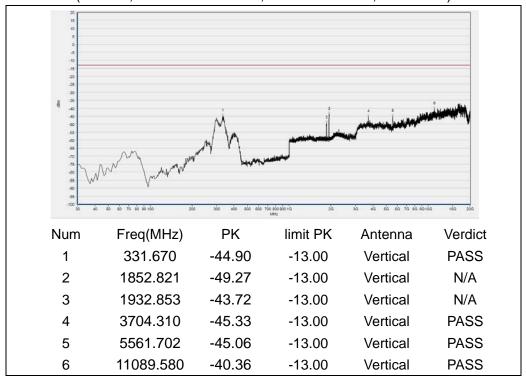








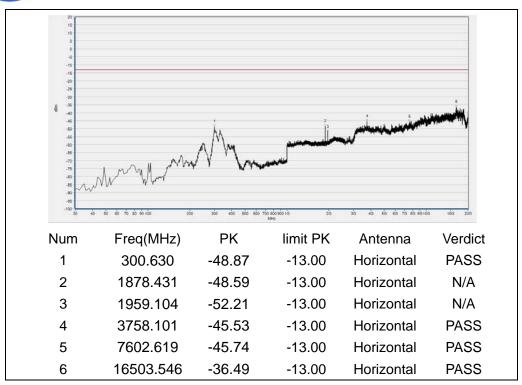
(Plot G1, WCDMA 1900MHz, Channel = 9262, Horizontal)



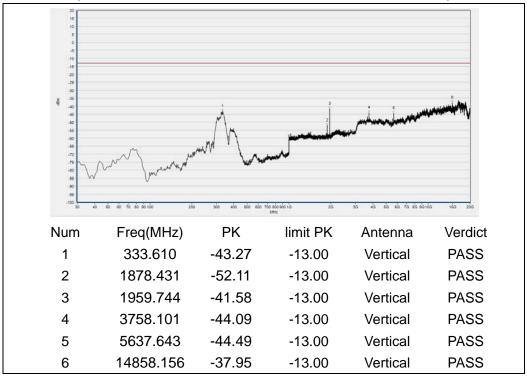
(Plot G2, WCDMA 1900MHz, Channel = 9262, Vertical)







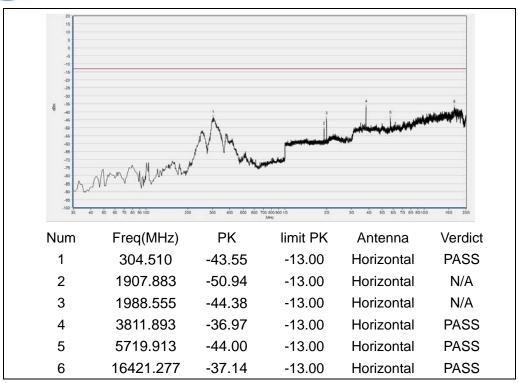
(Plot G3, WCDMA 1900MHz, Channel = 9400, Horizontal)



(Plot G4, WCDMA 1900MHz, Channel = 9400, Vertical)







(Plot G5, WCDMA 1900MHz, Channel = 9538, Horizontal)



(Plot G6, 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	±2.22dB
Bandwidth	±5%
Conducted Spurious Emission	±2.77 dB
Radiated Emission	±2.95dB

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	Mr. Su Eona		
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.
Name.	Morlab Laboratory
	FL.3, Building A, FeiYang Science Park, No.8 LongChang
Address:	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.





## 4. Test Equipments Utilized

# **4.1 Conducted Test Equipments**

<b>Equipment Name</b>	Serial No.	Туре	Manufacturer	Cal. Date	Cal. Due
Power Splitter	NW521	1506A	Weinschel	2017.05.24	2018.05.23
Attenuator 1	(N/A.)	10dB	Resnet	2017.05.24	2018.05.23
Attenuator 2	(N/A.)	3dB	Resnet	2017.05.24	2018.05.23
EXA Signal Analzyer	MY53470836	N9010A	Agilent	2017.12.03	2018.12.02
Wireless synthesizer	MY48364176	8960 -E5515C	Agilent	2017.05.24	2018.05.23
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	2017.05.24	2018.05.23

# **4.2 Auxiliary Test Equipment**

<b>Equipment Name</b>	Model No.	Model No. Brand Name		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	
Receiver	MY54130016	N9038A	Agilent	2017.05.17	2018.05.16	
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2017.05.14	2018.05.13	
Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2017.09.13	2018.09.12	
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2018.03.03	2019.03.02	
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2017.09.13	2018.09.12	
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	2017.05.17	2018.05.16	
18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde& Schwarz	2017.05.17	2018.05.16	
Anechoic Chamber	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18	

Tel: 86-755-36698555

Http://www.morlab.cn