

FCC Test Report (PART 22)

Report No.: RF190516E08-5

FCC ID: MQT-AT170R18U

Test Model: xCL_AT-170-R-18U

Received Date: May 16, 2019

Test Date: June 19 to 28, 2019

Issued Date: July 11, 2019

Applicant: XAC AUTOMATION CORP.

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PARK,HSINCHU,TAIWAN

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**FCC Registration /
Designation Number:** 723255 / TW2022



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Release Control Record

Issue No.	Description	Date Issued
RF190516E08-5	Original release.	July 11, 2019

1 Certificate of Conformity

Product: Terminal

Brand: XAC

Test Model: xCL_AT-170-R-18U

Sample Status: ENGINEERING SAMPLE

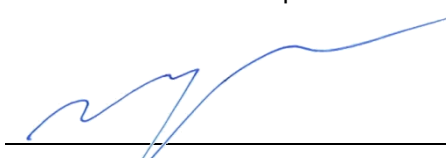
Applicant: XAC AUTOMATION CORP.

Test Date: June 19 to 28, 2019

Standards: FCC Part 22, Subpart H

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by :  , **Date:** July 11, 2019
Claire Kuan / Specialist

Approved by :  , **Date:** July 11, 2019
May Chen / Manager

2 Summary of Test Results

Applied Standard: FCC Part 22 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 22.913 (a)	Effective radiated power	PASS	Meet the requirement of limit.
---	Peak to Average Ratio	PASS	Meet the requirement of limit.
2.1047	Modulation characteristics	PASS	Meet the requirement
2.1055 22.355	Frequency Stability	PASS	Meet the requirement of limit.
2.1049	Occupied Bandwidth	PASS	Meet the requirement of limit.
22.917	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 22.917	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 22.917	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -35.38dB at 3305.6MHz.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) ($\pm$)
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	4.9 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.1 dB
	6GHz ~ 18GHz	4.9 dB
	18GHz ~ 40GHz	5.2 dB

2.2 Test Site and Instruments

For radiated spurious emissions test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 05, 2018	July 04, 2019
Pre-Amplifier EMCI	EMC001340	980142	Jan. 25, 2019	Jan. 24, 2020
Loop Antenna Electro-Metrics	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
RF Cable	NA	LOOPCAB-001	Jan. 14, 2019	Jan. 13, 2020
RF Cable	NA	LOOPCAB-002	Jan. 14, 2019	Jan. 13, 2020
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Oct. 30, 2018	Oct. 29, 2019
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 22, 2018	Nov. 21, 2019
RF Cable	8D	966-4-1	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-2	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-3	Mar. 19, 2019	Mar. 18, 2020
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Sep. 27, 2018	Sep. 26, 2019
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier EMCI	EMC12630SE	980385	Aug. 16, 2018	Aug. 15, 2019
RF Cable	EMC104-SM-SM-1	160923	Jan. 28, 2019	Jan. 27, 2020
RF Cable	104 RF cable	131215	Jan. 10, 2019	Jan. 09, 2020
RF Cable	EMC104-SM-SM-6000	180418	May 03, 2019	May 02, 2020
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 28, 2019	Jan. 27, 2020
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 25, 2018	Nov. 24, 2019
RF Cable	EMC102-KM-KM-1200	160924	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC102-KM-KM-1200	160925	Jan. 28, 2019	Jan. 27, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 4.
3. Loop antenna was used for all emissions below 30 MHz.
4. Tested Date: June 19, 2019

For other test items:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	June 04, 2019	June 03, 2020
Spectrum Analyzer Agilent	E4446A	MY48250253	Aug. 01, 2018	July 31, 2019
Power meter Anritsu	ML2495A	1014008	May 13, 2019	May 12, 2020
Power sensor Anritsu	MA2411B	0917122	May 13, 2019	May 12, 2020
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 15, 2019	Apr. 14, 2020
AC Power Source Extech Electronics	6205	1440452	NA	NA
DC Power Supply Topward	6603D	795558	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 09, 2019	Jan. 08, 2020
True RMS Clamp Meter FLUKE	325	31130711WS	May 21, 2019	May 20, 2020
ESG Vector signal generator Agilent	E4438C	MY45094468/005 506 602 UK6 UNJ	Nov. 19, 2018	Nov. 18, 2019
Mech Switch Absorptive Mini-Circuits	MSP4TA-18+	0140	Feb. 11, 2019	Feb. 10, 2020
FXD ATTEN Mini-Circuits	BW-S3W2+	MN71981	Feb. 11, 2019	Feb. 10, 2020
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA
Universal Radio Communication Tester R&S	CMU200	121040	Apr. 17, 2019	Apr. 16, 2020
LTE Wireless Communication Test Set Keysight	E7515A	MY55340229	May 29, 2019	May 30, 2020

- NOTE:**
1. The test was performed in Oven room 2.
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. Tested Date: June 28, 2019

3 General Information

3.1 General Description of EUT

Product	Terminal	
Brand	XAC	
Test Model	xCL AT-170-R-18U	
Status of EUT	ENGINEERING SAMPLE	
Power Supply Rating	DC 3.8V from battery or DC 5V from USB adapter	
Modulation Type	WCDMA, HSDPA, HSUPA	BPSK
Operating Frequency	WCDMA, HSDPA, HSUPA	826.4MHz ~846.6MHz
Max. ERP Power	WCDMA Band 5	25.35dBm
Emission Designator	WCDMA Band 5	4M15F9W
Antenna Type	Refer to Note	
Antenna Connector	Refer to Note	
Accessory Device	Battery x1 (option), Adapter x 1 (option)	
Data Cable Supplied	NA	

Note:

1. The EUT has below radios as following table:

Radio 1	Radio 2	Radio 3
WLAN+Bluetooth	WWAN	NFC

2. Simultaneously transmission condition.

Condition	Technology	
1	WWAN	NFC
2	WWAN	Bluetooth
3	WLAN 2.4GHz	NFC
4	WLAN 5GHz	NFC
5	Bluetooth	NFC

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

3. The EUT must be supplied with a power adapter or a battery as following table:

Adapter		
Brand	Model No.	Spec.
MASS POWER	NBS10B050200VUU	Input: 100-240Vac, 0.3A, 50~60Hz Output: 5Vdc, 2A DC output cable: Shielded, 1.2 m
Battery		
Brand	Model No.	Spec.
Shenzhen Rishengzhi Electronics Technology Co., Ltd.	J601	3.8Vdc, 5200mAh, 19.76Wh

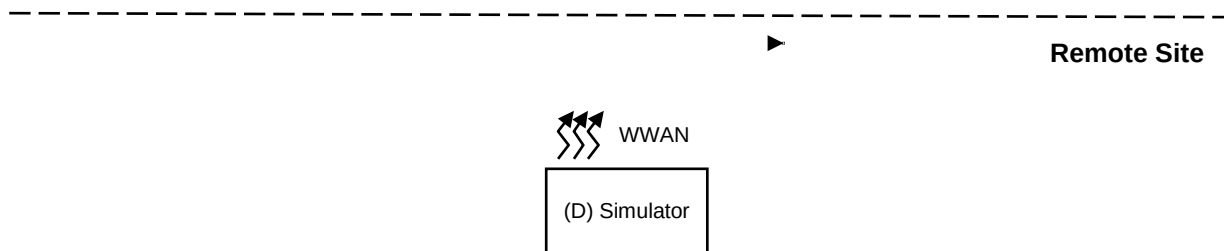
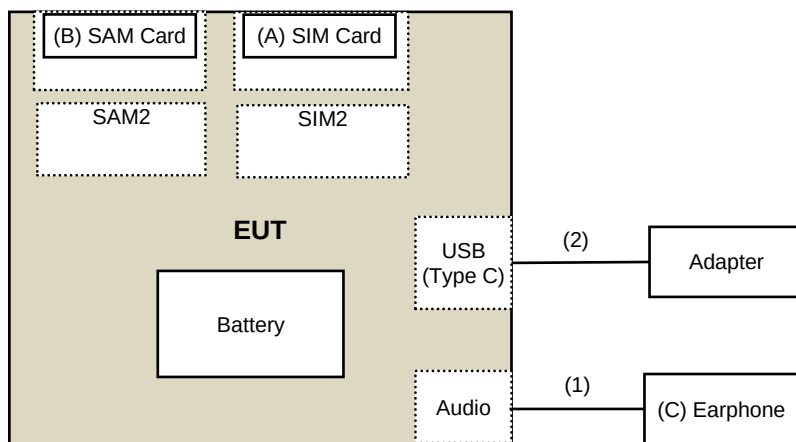
Note: From the above adapter and battery, the worst radiated emission test was found in **Adapter**. Therefore only the test data of the modes were recorded in this report.

4. The antennas provided to the EUT, please refer to the following table:

Ant. No.	RF Chain No.	Brand	Model	Ant. Net Gain (dBi)	Frequency Range	Antenna Type	Connector Type
Wi-Fi + BT	Main	awan-ant	AYF6P-100000	2.34	2.4~2.4835 GHz	FPCB	i-pex(MHF)
				4.48	5.15~5.85 GHz	FPCB	i-pex(MHF)
3G/LTE	Main	awan-ant	AXF6P-100002	3.44	699~2690 MHz	FPCB	i-pex(MHF)
3G/LTE	Aux	awan-ant	AXF6P-100003	3.75	699~2690 MHz	FPCB	i-pex(MHF)
NFC	Main	XAC	RTOS	13	13.56 MHz	Wire	None

5. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 Configuration of System under Test



3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	SIM Card	NA	NA	NA	NA	Provided by Lab
B.	SAM Card	NA	NA	NA	NA	Supplied by client
C.	Earphone	Sony	NA	NA	NA	Provided by Lab
D.	Simulator	Anritsu	MT8820C	6201127458	NA	Provided by Lab

Note:

1. All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	Audio Cable	1	0.6	No	0	Provided by Lab
2.	USB Type C Cable	1	1.2	Yes	0	Supplied by client

3.3 Test Mode Applicability and Tested Channel Detail

WCDMA 5 MODE

Test Item	Available Channel	Tested Channel	Mode
ERP	4132 to 4233	4132, 4182, 4233	WCDMA
Frequency Stability	4132 to 4233	4182	WCDMA
Occupied Bandwidth	4132 to 4233	4132, 4182, 4233	WCDMA
Peak to Average Ratio	4132 to 4233	4132, 4182, 4233	WCDMA
Band Edge	4132 to 4233	4132, 4233	WCDMA
Conducted Emission	4132 to 4233	4132, 4182, 4233	WCDMA
Radiated Emission Below 1GHz	4132 to 4233	4132, 4182, 4233	WCDMA
Radiated Emission Above 1GHz	4132 to 4233	4132, 4182, 4233	WCDMA

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
ERP	25deg. C, 63%RH	120Vac, 60Hz	Jyunchun Lin
Frequency Stability	25deg. C, 63%RH	3.8Vdc	Jyunchun Lin
Occupied Bandwidth	25deg. C, 63%RH	120Vac, 60Hz	Jyunchun Lin
Band Edge	25deg. C, 63%RH	120Vac, 60Hz	Jyunchun Lin
Peak to Average Ratio	25deg. C, 63%RH	120Vac, 60Hz	Jyunchun Lin
Condcudeted Emission	25deg. C, 63%RH	120Vac, 60Hz	Jyunchun Lin
Radiated Emission Below 1GHz	25deg. C, 75%RH	120Vac, 60Hz	Robert Cheng
Radiated Emission Above 1GHz	25deg. C, 75%RH	120Vac, 60Hz	Robert Cheng

3.4 EUT Operating Conditions

The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

3.5 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 22, Subpart H

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

NOTE: All test items have been performed and recorded as per the above standards.

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

Mobile / Portable station are limited to 7 watts e.r.p.

4.1.2 Test Procedures

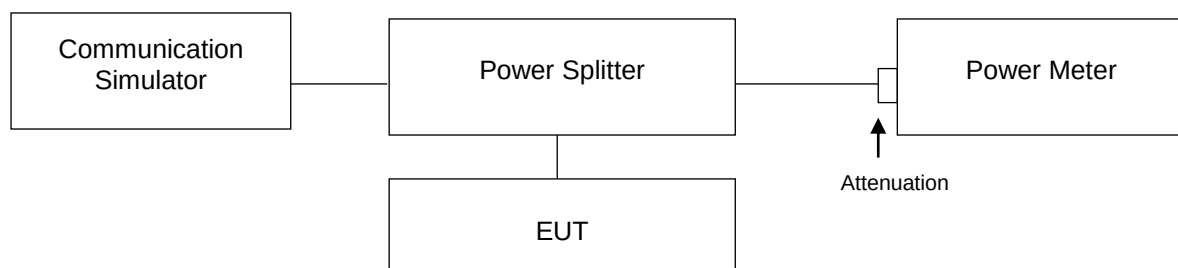
Conducted Power Measurement:

The EUT was set up for the maximum power with WCDMA link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and difference RB size/ RB offset for difference bandwidth record the power level shown on power meter.

EIRP / ERP Measurement:

- EIRP = Conducted Output power level + Antenna gain.
- ERP power can be calculated form EIRP power by subtracting the gain of dipole, ERP power = EIPR power - 2.15dBi.
- ERP = Conducted Output power level + Antenna gain (dBi) - Isotropically Factor (2.15dB).

4.1.3 Test Setup



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.4 Test Results

CONDUCTED OUTPUT POWER (dBm)

WCDMA Band 5

Band	WCDMA V		
Channel	4132	4182	4233
Frequency (MHz)	826.4	836.4	846.6
RMC	23.94	24.24	24.06
HSDPA Subtest-1	23.83	23.93	23.90
HSDPA Subtest-2	23.83	23.87	23.86
HSDPA Subtest-3	23.40	23.48	23.44
HSDPA Subtest-4	23.39	23.46	23.44
HSUPA Subtest-1	23.63	23.72	23.67
HSUPA Subtest-2	21.89	22.43	21.94
HSUPA Subtest-3	22.90	22.95	22.92
HSUPA Subtest-4	22.41	22.48	22.44
HSUPA Subtest-5	23.80	23.80	23.80

ERP POWER

WCDMA

Band	WCDMA V		
Channel	4132	4182	4233
Frequency (MHz)	826.4	836.4	846.6
RMC 12.2K	23.94	24.24	24.06
Gain (dBi)	3.44	3.44	3.44
Isotropically Factor (dB)	2.15	2.15	2.15
Max ERP Power (dBm)	25.23	25.53	25.35

4.2 Modulation characteristics Measurement

4.2.1 Limits of Modulation characteristics

N/A

4.2.2 Test Procedure

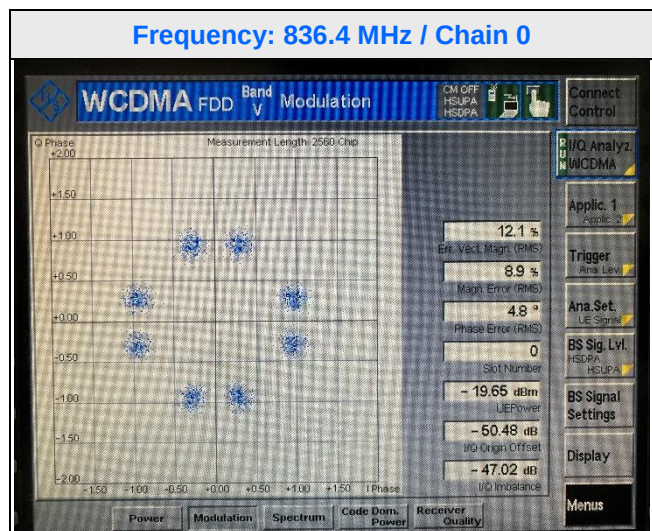
Connect the EUT to Communication Simulator via the antenna connector, The frequency band is set as EUT supported Modulation and Channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

4.2.3 Test Setup



4.2.4 Test Results

WCDMA B5



4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

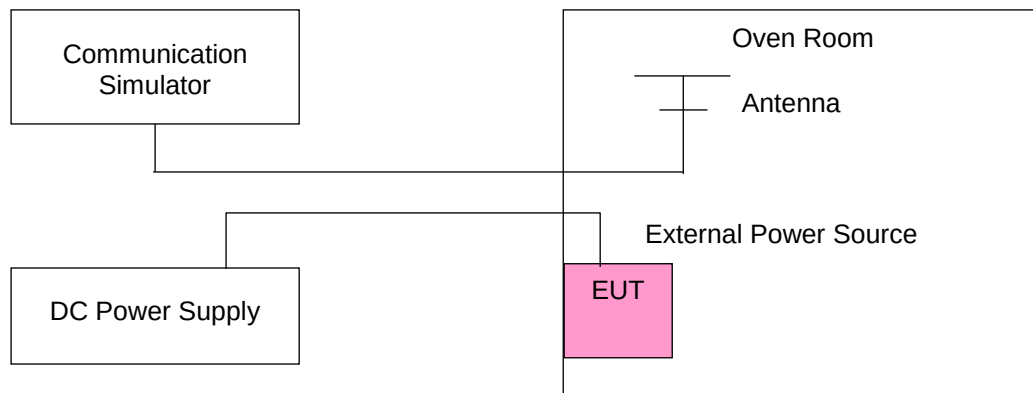
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

4.3.2 Test Procedure

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

4.3.3 Test Setup



4.3.4 Test Results

WCDMA

Frequency Error vs. Voltage

Voltage (Volts)	Frequency Error (ppm)	Limit (ppm)
	WCDMA B5	
4.37	0.038	2.5
3.23	0.049	2.5

Frequency Error vs. Temperature.

TEMP. (°C)	Frequency Error (ppm)	Limit (ppm)
	WCDMA B5	
50	0.041	2.5
40	0.044	2.5
30	0.049	2.5
20	0.029	2.5
10	0.029	2.5
0	0.054	2.5
-10	0.037	2.5
-20	0.035	2.5
-30	0.039	2.5

4.4 Occupied Bandwidth Measurement

4.4.1 Test Procedure

All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. The bandwidth of the fundamental frequency was measured by spectrum analyzer with $RBW \geq 1\% \times OBW$ and $VBW \geq 3 \times VBW$.

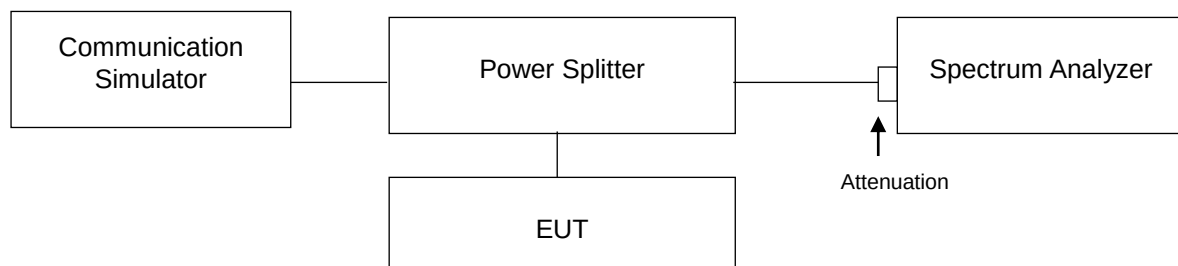
Occupied Bandwidth Measurement:

Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

26dB Bandwidth Measurement:

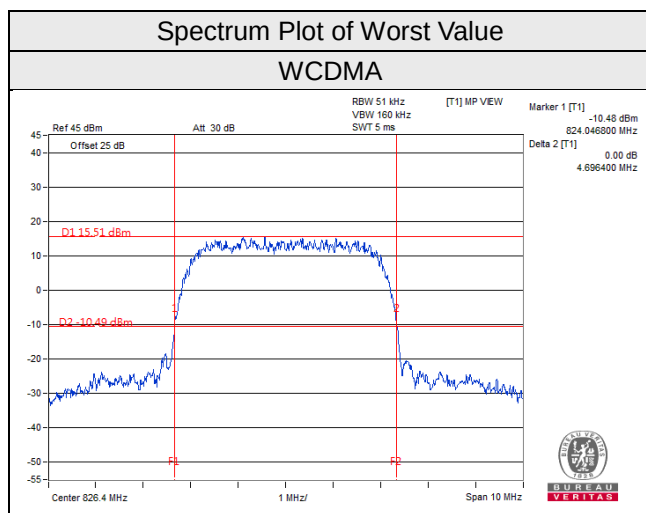
The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26dB below the transmitter power.

4.4.2 Test Setup



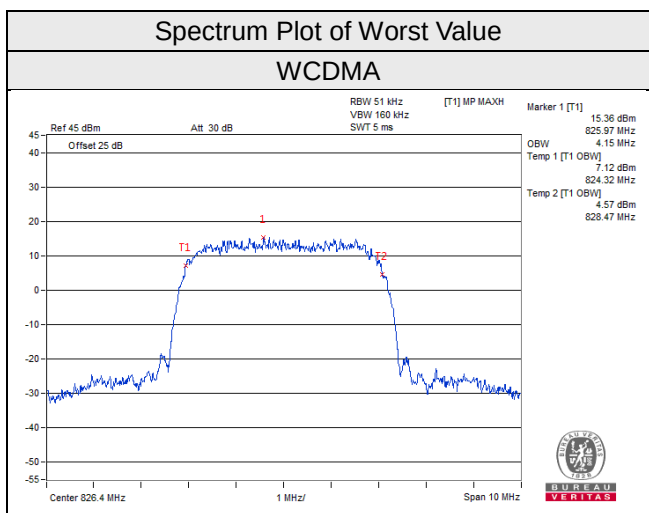
4.4.3 Test Result (-26dB Bandwidth)

Channel	Freq. (MHz)	-26dB Bandwidth (MHz)
		WCDMA B5
4132	826.4	4.69
4182	836.4	4.69
4233	846.6	4.69



4.4.4 Test Result (Occupied Bandwidth)

Channel	Freq. (MHz)	99% Occupied Bandwidth (MHz)
		WCDMA
4132	826.4	4.15
4182	836.4	4.14
4233	846.6	4.14

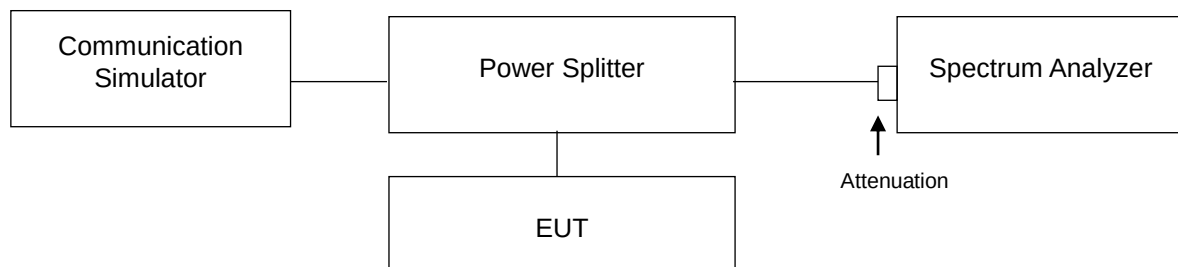


4.5 Band Edge Measurement

4.5.1 Limits of Band Edge Measurement

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. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

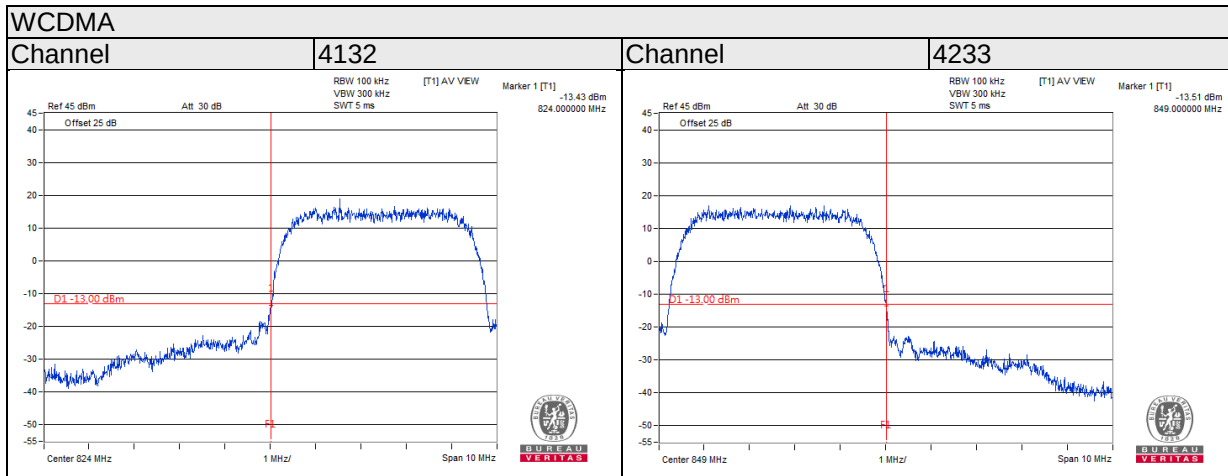
4.5.2 Test Setup



4.5.3 Test Procedures

- All measurements were done at low and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and RB of the spectrum is $>1\%$ Emission Bandwidth and VB of the spectrum is $\geq 3 \times RB$.
- Record the max trace plot into the test report.

4.5.4 Test Results

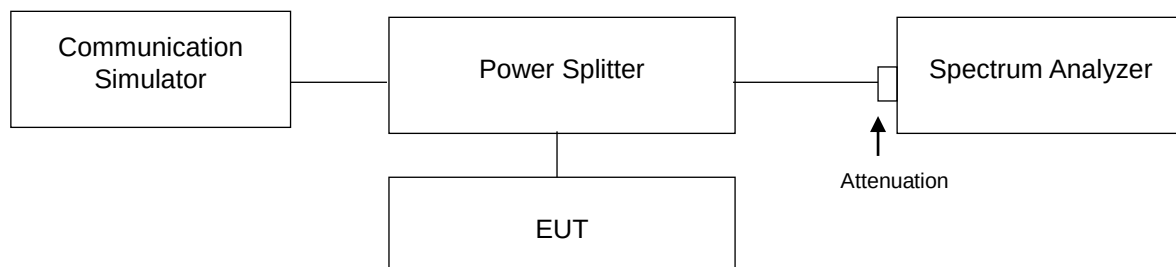


4.6 Peak to Average Ratio

4.5.1 Limits of Peak to Average Ratio Measurement

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

4.5.2 Test Setup

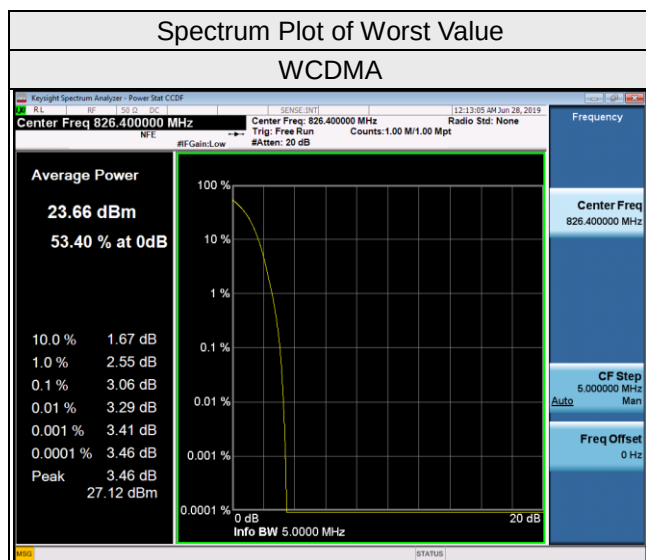


4.5.3 Test Procedures

1. Set resolution measurement bandwidth $\geq$ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

4.5.4 Test Results

Channel	Freq. (MHz)	Peak to Average Ratio (dB)
		WCDMA
4132	826.4	3.06
4183	836.4	3.01
4233	846.6	2.99

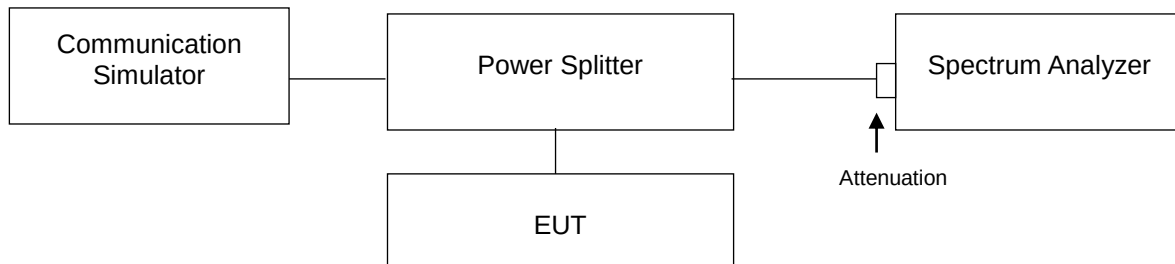


4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

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. The emission limit equal to -13dBm .

4.7.2 Test Setup



4.7.3 Test Procedure

- All measurements were done at 3 channels: low, middle and high operational frequency range.
- When the spectrum scanned from 9 kHz to the tenth harmonic of the highest fundamental frequency, it shall be connected to the 20dB pad attenuated the carried frequency.

4.7.4 Test Results



4.8 Radiated Emission Measurement

4.8.1 Limits of Radiated Emission Measurement

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. The emission limit equal to -13dBm .

4.8.2 Test Procedure

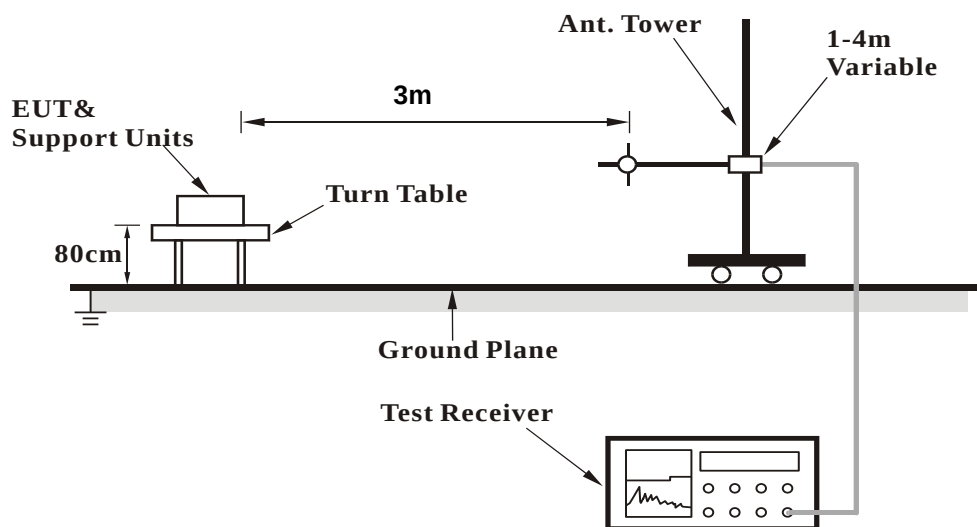
- a. The power was measured with Spectrum Analyzer.
- b. Substitution method is used for EIRP measurement. In the semi-anechoic chamber, EUT placed on the 0.8m/1.5m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- c. Follow ANSI 63.26 section 5.2.7 d), $\text{EIRP Value (dBm)} = \text{Read Value (dB}\mu\text{V/m)} - \text{Correction Factor @ 3m}$
- d. $\text{Correction Factor (dB) @ 3M} = 20\log(D) - 104.8$; where D is the measurement distance @3m $= -95.26\text{dB}$
- e. ERP power can be calculated form EIRP power by subtracting the gain of dipole, $\text{ERP power} = \text{EIRP power} - 2.15\text{dBi}$.

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

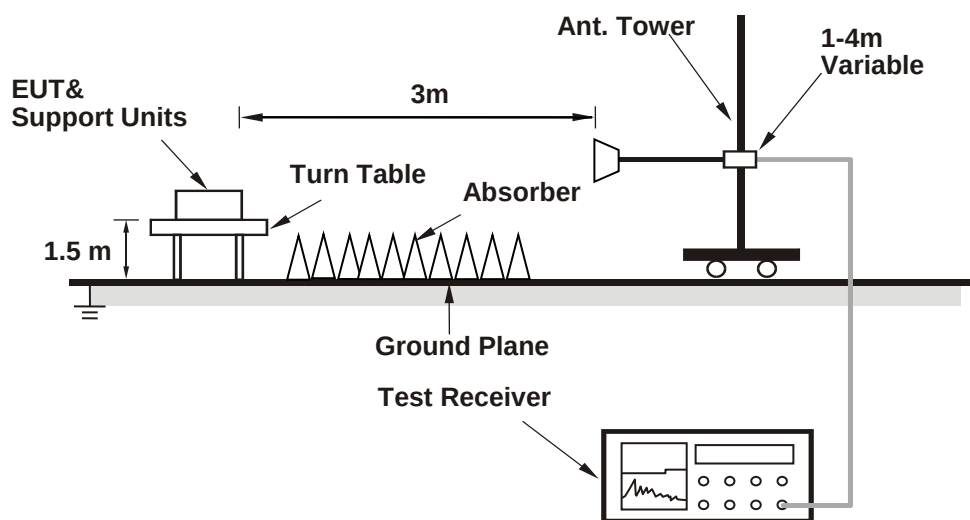
4.8.3 Deviation from Test Standard

No deviation.

4.8.4 Test Setup For Below 1GHz



For Above 1GHz:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.8.5 Test Results

BELOW 1GHz

WCDMA:

Mode	TX channel 4132	Frequency Range	Below 1000 MHz
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Antenna Polarity & Test Distance: Horizontal at 3 M						
No.	Freq. (MHz)	Reading (dB μ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	42.3	34.78	-95.26	-60.48	-13	-47.48
2	102.57	36.02	-95.26	-59.24	-13	-46.24
3	158.23	28.18	-95.26	-67.08	-13	-54.08
4	184.22	34.24	-95.26	-61.02	-13	-48.02
5	316.01	31.55	-95.26	-63.71	-13	-50.71
6	439.41	30.72	-95.26	-64.54	-13	-51.54
Antenna Polarity & Test Distance: Vertical at 3 M						
No.	Freq. (MHz)	Reading (dB μ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	45.07	35.02	-95.26	-60.24	-13	-47.24
2	95.68	35.96	-95.26	-59.30	-13	-46.30
3	136.73	31.23	-95.26	-64.03	-13	-51.03
4	175.79	25.76	-95.26	-69.50	-13	-56.50
5	321.47	33.53	-95.26	-61.73	-13	-48.73
6	553.52	32.25	-95.26	-63.01	-13	-50.01

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB μ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) – 104.8; where D is the measurement distance @3m.

Mode	TX channel 4182	Frequency Range	Below 1000 MHz
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Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dB μ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	42.65	34.62	-95.26	-60.64	-13	-47.64
2	98.63	36.33	-95.26	-58.93	-13	-45.93
3	156.14	28.38	-95.26	-66.88	-13	-53.88
4	184.31	33.68	-95.26	-61.58	-13	-48.58
5	319.89	30.81	-95.26	-64.45	-13	-51.45
6	440.82	30.17	-95.26	-65.09	-13	-52.09

Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dB μ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	42.19	34.65	-95.26	-60.61	-13	-47.61
2	89.05	35.69	-95.26	-59.57	-13	-46.57
3	132.41	30.53	-95.26	-64.73	-13	-51.73
4	177.92	26.06	-95.26	-69.20	-13	-56.20
5	324.97	33.38	-95.26	-61.88	-13	-48.88
6	557.58	31.91	-95.26	-63.35	-13	-50.35

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB μ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 4233	Frequency Range	Below 1000 MHz
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Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dB μ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	41.77	34.06	-95.26	-61.20	-13	-48.20
2	103.16	33.9	-95.26	-61.36	-13	-48.36
3	150.99	30.14	-95.26	-65.12	-13	-52.12
4	182.68	30.23	-95.26	-65.03	-13	-52.03
5	315.01	32.71	-95.26	-62.55	-13	-49.55
6	446.72	30.03	-95.26	-65.23	-13	-52.23

Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dB μ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	45.66	26.23	-95.26	-69.03	-13	-56.03
2	91.2	35.71	-95.26	-59.55	-13	-46.55
3	130.74	31.15	-95.26	-64.11	-13	-51.11
4	182.57	26.13	-95.26	-69.13	-13	-56.13
5	323.99	33.26	-95.26	-62.00	-13	-49.00
6	556.1	32.16	-95.26	-63.10	-13	-50.10

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB μ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

ABOVE 1GHz

WCDMA:

Mode	TX channel 4132	Frequency Range	Above 1000 MHz
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Antenna Polarity & Test Distance: Horizontal at 3 M						
No.	Freq. (MHz)	Reading (dB μ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1652.8	31.96	-95.26	-63.30	-13	-50.30
2	2479.2	44.75	-95.26	-50.51	-13	-37.51
3	3305.6	46.88	-95.26	-48.38	-13	-35.38
Antenna Polarity & Test Distance: Vertical at 3 M						
No.	Freq. (MHz)	Reading (dB μ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1652.8	32.58	-95.26	-62.68	-13	-49.68
2	2479.2	43.82	-95.26	-51.44	-13	-38.44
3	3305.6	46.19	-95.26	-49.07	-13	-36.07

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB μ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) – 104.8; where D is the measurement distance @3m.

Mode	TX channel 4182	Frequency Range	Above 1000 MHz
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Antenna Polarity & Test Distance: Horizontal at 3 M						
No.	Freq. (MHz)	Reading (dB μ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1672.8	32.08	-95.26	-63.18	-13	-50.18
2	2509.2	44.9	-95.26	-50.36	-13	-37.36
3	3345.6	46.37	-95.26	-48.89	-13	-35.89
Antenna Polarity & Test Distance: Vertical at 3 M						
No.	Freq. (MHz)	Reading (dB μ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1672.8	32.7	-95.26	-62.56	-13	-49.56
2	2509.2	43.66	-95.26	-51.60	-13	-38.60
3	3345.6	45.64	-95.26	-49.62	-13	-36.62

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB μ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) – 104.8; where D is the measurement distance @3m.

Mode	TX channel 4233	Frequency Range	Above 1000 MHz
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Antenna Polarity & Test Distance: Horizontal at 3 M						
No.	Freq. (MHz)	Reading (dB μ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1693.2	31.38	-95.26	-63.88	-13	-50.88
2	2539.8	45.12	-95.26	-50.14	-13	-37.14
3	3386.4	46.02	-95.26	-49.24	-13	-36.24
Antenna Polarity & Test Distance: Vertical at 3 M						
No.	Freq. (MHz)	Reading (dB μ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1693.2	32.11	-95.26	-63.15	-13	-50.15
2	2539.8	43.38	-95.26	-51.88	-13	-38.88
3	3386.4	46.21	-95.26	-49.05	-13	-36.05

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB μ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) – 104.8; where D is the measurement distance @3m.

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

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The address and road map of all our labs can be found in our web site also.

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