

FCC Test Report (Co-Located)

Report No.: RFBDAS-WTW-P20090564A R1

FCC ID: 2ACTO-7922DMC

Test Model: XGS 116w (with MC7411)

Received Date: Mar. 12, 2022

Test Date: Jul. 28, 2022 (Test Mode A)

Sep. 20, 2022 (Test Mode B)

Issued Date: Sep. 29, 2022

Applicant: Sophos Ltd.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

Lin Kou Laboratories

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Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan

FCC Registration /

Designation Number: 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
RFBDAS-WTW-P20090564A	Original release	Aug. 12, 2022
RFBDAS-WTW-P20090564A R1	Added Test Mode B	Sep. 29, 2022

1 Certificate of Conformity

Product: Network appliance

Brand: SOPHOS

Test Model: XGS 116w (with MC7411)

Sample Status: Production Unit

Applicant: Sophos Ltd.

Test Date: Jul. 28, 2022 (Test Mode A)
Sep. 20, 2022 (Test Mode B)

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
47 CFR FCC Part 15, Subpart E (Section 15.407)
FCC Part 22, Subpart H
FCC Part 24, Subpart E
FCC Part 27, Subpart F, L, M
FCC Part 90, Subpart R, S
47 CFR FCC Part 96
ANSI 63.26-2015
ANSI C63.10-2013

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 RF characteristics under the conditions specified in this report.

Prepared by :

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Date:

Sep. 29, 2022

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Approved by :

Jeremy Lin

Date:

Sep. 29, 2022

Jeremy Lin / Project Engineer

2 Summary of Test Results

Applied Standard	47 CFR FCC Part 15, Subpart C (Section 15.247) 47 CFR FCC Part 15, Subpart E (Section 15.407) FCC Part 22, Subpart H FCC Part 24, Subpart E FCC Part 27, Subpart F, L, M FCC Part 90, Subpart R, S 47 CFR FCC Part 96 ANSI 63.26-2015 ANSI C63.10-2013		
FCC Clause	Test Item	Result	Remarks
15.205 / 15.209 / 15.247(d) / 15.407(b) / (1/2/3/4(i/ii)/9)	Radiated Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -1.4dB at 2390.00MHz.
2.1053 / 22.917 / 24.238 / 27.53(h) / 27.53 (g) / 27.53 (m)(4)(6) / 90.543 (e) & (f) / 90.691 / 96.41(e)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -22.66dB at 2122.50MHz.

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	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~ 1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Network appliance	
Brand	SOPHOS	
Test Model	XGS 116w (with MC7411)	
Status of EUT	Production Unit	
Power Supply Rating	12 Vdc (Adapter)	
Operating Frequency	WLAN	2.4GHz: 2412~2462MHz 5.0GHz: 5180~5240MHz, 5745~5825MHz
	WCDMA/LTE Band 2	1850~1910MHz
	WCDMA/LTE Band 4	1710~1755MHz
	WCDMA/LTE Band 5	824~849MHz
	LTE Band 7	2500~2570MHz
	LTE Band 12	699~716MHz
	LTE Band 13	777~787MHz
	LTE Band 14	788~798MHz
	LTE Band 25	1850~1915MHz
	LTE Band 26	814~849MHz
	LTE Band 41	2496~2690MHz
	LTE Band 42	3400~3600MHz
	LTE Band 43	3600~3800MHz
	LTE Band 48	3550~3700MHz
	LTE Band 66	1710~1780MHz
	LTE Band 71	663~698MHz
Antenna Type	Refer to Note	
Accessory Device	Refer to Note	
Cable Supplied	NA	

Note:

1. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter 1	FSP	FSP150-AHAN3	Power cord: 1.45 shielded cable with 1 core
Adapter 2	EDAC	EA11701E-1200	Power cord: 1.15 shielded cable with 1 core
WLAN Module on Mainboard	SOPHOS	7922DMC	FCC ID: 2ACTO-7922DMC
Expansion WLAN Module (Optional)	SOPHOS	7922DMC	FCC ID: 2ACTO-7922DMC
Expansion WWAN Module (Optional)	SOPHOS	N/A	With WWAN module Sierra/MC7411 (FCC ID: N7NMC74B)
WLAN Dipole Antenna	WHA YU	C059-510394-A(White)	For 7922DMC
WLAN Dipole Antenna	WHA YU	C059-510406-A(Black)	For 7922DMC
WWAN Dipole Antenna (Optional)	WIESON	GY115L049S-003	For MC7411

*Adapter 2 was the worst for the final tests.

2. The EUT with follow antennas gain is listed as table below.

Type	Dipole			Connector	SMA Jack reverse		
Gain (dBi)	Frequency (MHz)						
	2400	2450	2500	5150	5350	5750	5825
	3.1	3.5	3.9	2.7	3.7	4.2	4.4

Ant. Type		Fixed External antenna													
Ant. Connector		SMA													
Gain (dBi)															
Freq. (MHz)	WCDMA B2/ LTE B2	WCDMA B4/ LTE B4	WCDMA B5/ LTE B5	LTE B7	LTE B12	LTE B13	LTE B14	LTE B25	LTE B26	LTE B41	LTE B42	LTE B43	LTE B48	LTE B66	LTE B71
Gain (dBi)	1.56	1.62	3.2	0.86	1.49	1.66	2.98	1.92	814-824: 2.98 824-849: 3.2	0.86	0.45	0.45	0.45	1.6	1.37

* Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

3. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers.

Band	Modulation Mode	TX Function
2.4GHz	802.11b	1TX (Fixed Chain 0)
	802.11g	1TX (Fixed Chain 0)
	802.11n (HT20)	2TX
	802.11n (HT40)	2TX
5GHz	802.11a	1TX (Fixed Chain 0)
	802.11n (HT20)	2TX
	802.11n (HT40)	2TX
	802.11ac (VHT20)	2TX
	802.11ac (VHT40)	2TX
	802.11ac (VHT80)	2TX

3.2 Description of Test Modes

For WLAN:

For 2.4GHz

11 channels are provided for 802.11b, 802.11g and 802.11n (HT20):

Channel	Frequency	Channel	Frequency
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

7 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

For 5180 ~ 5240MHz:

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210MHz

For 5745 ~ 5825MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to		Description
	RE $\geq$ 1G	RE<1G	Module Model
A	√	√	7922DMC (on Mainboard) + MC7411 (Expansion)
B	√	√	7922DMC (on Mainboard) + 7922DMC (Expansion)

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz & Bandedge Measurement **RE<1G**: Radiated Emission below 1GHz

Radiated Emission Test (Above 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology
A	2.4GHz Band: 802.11n (HT20) + LTE Band 12 (BW: 10MHz)	2412-2462	1 to 11	6 (2437.0MHz) + 23095 (707.5MHz)	OFDM
		704.0-711.0	23060 to 23130		QPSK
A	5GHz Band: 802.11n (HT20) + LTE Band 12 (BW: 10MHz)	5180-5240 5745-5825	36 to 48 149 to 165	40 (5200.0MHz) + 23095 (707.5MHz)	OFDM
		704.0-711.0	23060 to 23130		QPSK
B	2.4GHz Band: 802.11n (HT20) + 2.4GHz Band: 802.11n (HT20)	2412-2462	1 to 13	1 (2412.0MHz) + 1 (2412.0MHz)	OFDM
		2412-2462	1 to 13		OFDM
B	5GHz Band: 802.11n (HT40) + 5GHz Band: 802.11n (HT40)	5180-5240 5745-5825	38 to 46 151 to 159	46 (5230.0MHz) + 46 (5230.0MHz)	OFDM
		5180-5240 5745-5825	38 to 46 151 to 159		OFDM

Radiated Emission Test (Below 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology
A	2.4GHz Band: 802.11n (HT20) + LTE Band 12 (BW: 10MHz)	2412-2462	1 to 11	6 (2437.0MHz) + 23095 (707.5MHz)	OFDM
		704.0-711.0	23060 to 23130		QPSK
A	5GHz Band: 802.11n (HT20) + LTE Band 12 (BW: 10MHz)	5180-5240 5745-5825	36 to 48 149 to 165	40 (5200.0MHz) + 23095 (707.5MHz)	OFDM
		704.0-711.0	23060 to 23130		QPSK
B	2.4GHz Band: 802.11n (HT20) + 2.4GHz Band: 802.11n (HT20)	2412-2462	1 to 13	1 (2412.0MHz) + 1 (2412.0MHz)	OFDM
		2412-2462	1 to 13		OFDM
B	5GHz Band: 802.11n (HT40) + 5GHz Band: 802.11n (HT40)	5180-5240 5745-5825	38 to 46 151 to 159	46 (5230.0MHz) + 46 (5230.0MHz)	OFDM
		5180-5240 5745-5825	38 to 46 151 to 159		OFDM

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE $\geq$ 1G	23deg. C, 68%RH	120Vac, 60Hz	Rex Wang
RE<1G	23deg. C, 68%RH	120Vac, 60Hz	Rex Wang

3.3 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.

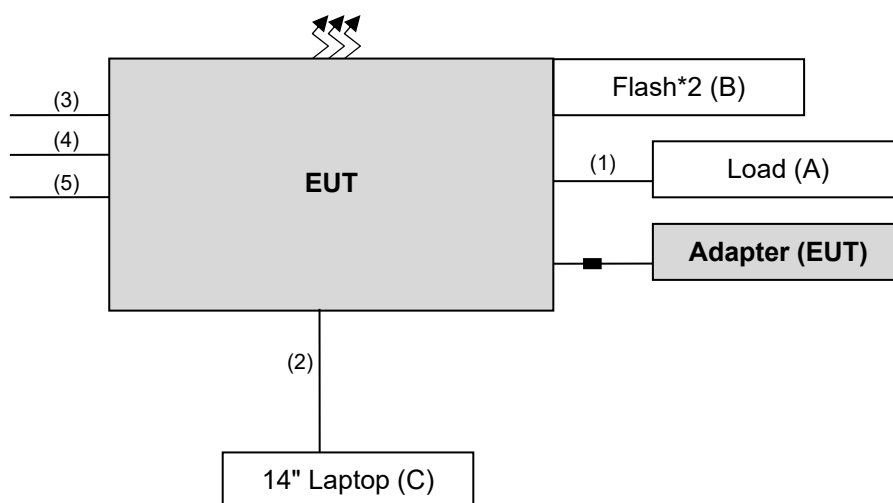
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Load	NA	NA	NA	NA	-
B.	Flash*2	Transcend	JetFlash 890 32GB	NA	NA	Supplied by applicant
C.	14" Laptop	Lenovo	L440	R9-0GFJJK	NA	-

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items C acted as communication a partner to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 Cable	6	1.5	N	0	RJ45 Cat.5e
2.	RJ-45 Cable	1	10	N	0	RJ45 Cat.5e
3.	RJ-45 To RS232 Cable	2	1	N	0	Supplied by applicant
4.	Fiber Cable	1	1.5	N	0	Supplied by applicant
5.	Micro USB Cable	1	1	N	0	Supplied by applicant

3.3.1 Configuration of System under Test



3.4 General Description of Applied Standards

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

47 CFR FCC Part 15, Subpart C (Section 15.247)

47 CFR FCC Part 15, Subpart E (Section 15.407)

FCC Part 22, Subpart H

FCC Part 24, Subpart E

FCC Part 27, Subpart F, L, M

FCC Part 90, Subpart R, S

47 CFR FCC Part 96

ANSI 63.26-2015

ANSI C63.10-2013

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower & Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Test Receiver Agilent	N9038A	MY51210203	Sep. 22, 2021	Sep. 21, 2022
Spectrum Analyzer R&S	FSW43	101867	Jan. 7, 2022	Jan. 6, 2023
Pre-amplifier EMCI	EMC001340	980201	Sep. 15, 2021	Sep. 14, 2022
RF Coaxial Cable EMCI	5D-NM-BM	140903+140902	Jan. 15, 2022	Jan. 14, 2023
Preamplifier Agilent	8447D	2944A10638	May 14, 2022	May 13, 2023
Bi_Log Antenna Schwarzbeck	VULB9168	9168-160	Oct. 28, 2021	Oct. 27, 2022
RF Coaxial Cable WOKEN	8D-FB	Cable-CH9-01	May 14, 2022	May 13, 2023
Horn Antenna Schwarzbeck	9120D	9120D-1169	Nov. 14, 2021	Nov. 13, 2022
Preamplifier Agilent	8449B	3008A02367	Feb. 16, 2022	Feb. 15, 2023
RF Coaxial Cable HUBER+SUHNER&EMCI	SUCOFLEX 104& EMC104-SM-SM800 0	CABLE-CH9-02 (248780+171006)	Jan. 15, 2022	Jan. 14, 2023
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Jan. 15, 2022	Jan. 14, 2023
RF FLITER MICRO-TRONICS	BRM50716	060	Jan. 10, 2022	Jan. 9, 2023
RF FLITER MICRO-TRONICS	BRM17690	004	Jan. 10, 2022	Jan. 9, 2023
Boresight antenna tower fixture BV	BAF-02	5	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 HwaYa Chamber 4.

4.1.3 Test Procedures

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

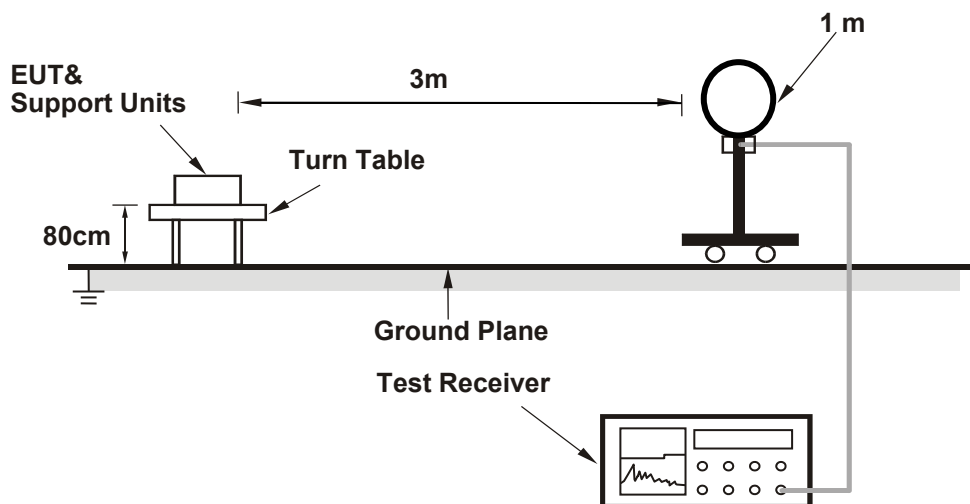
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

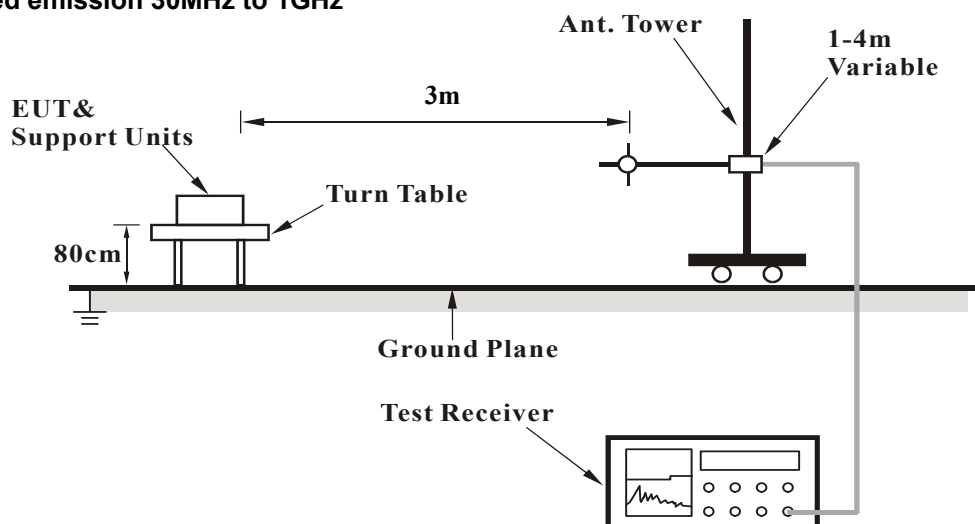
No deviation.

4.1.5 Test Setup

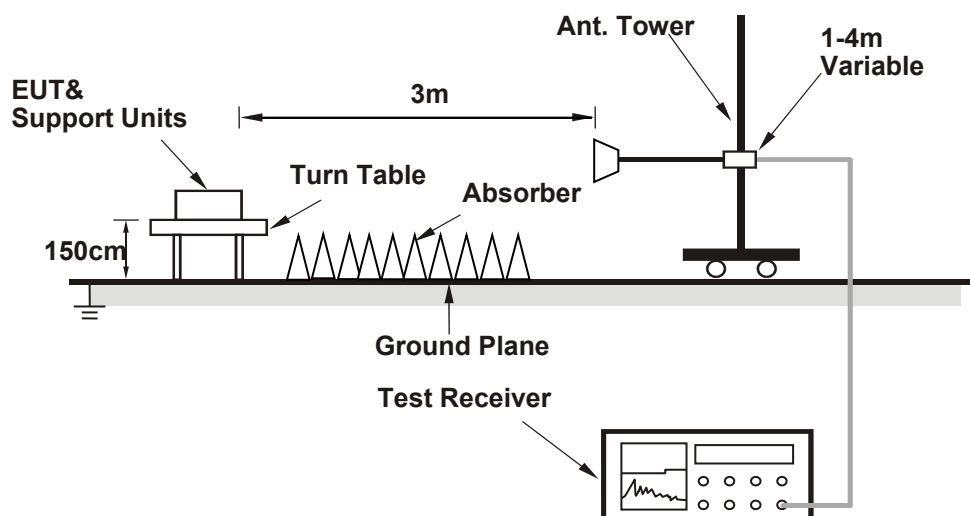
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

- Placed the EUT on the testing table.
- Prepared a notebook to act as a communication partner and placed it outside of testing area.
- The communication partner connected with EUT via a RJ45 cable and ran a test program (CMD) to enable EUT under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the system in full functions.

4.1.7 Test Results

Above 1GHz Data:

Test Mode A

2.4GHz Band: 802.11n (HT20) + LTE Band 12 (BW: 10MHz)

CHANNEL	CH 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.4 PK	74.0	-16.6	1.55 H	303	24.6	32.8
2	2390.00	46.5 AV	54.0	-7.5	1.55 H	303	13.7	32.8
3	*2437.00	104.2 PK			1.55 H	303	71.4	32.8
4	*2437.00	93.6 AV			1.55 H	303	60.8	32.8
5	4874.00	51.3 PK	74.0	-22.7	1.62 H	217	45.7	5.6
6	4874.00	37.6 AV	54.0	-16.4	1.62 H	217	32.0	5.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.1 PK	74.0	-3.9	1.52 V	339	37.3	32.8
2	2390.00	52.6 AV	54.0	-1.4	1.52 V	339	19.8	32.8
3	*2437.00	118.4 PK			1.52 V	339	85.6	32.8
4	*2437.00	107.9 AV			1.52 V	339	75.1	32.8
5	4874.00	52.8 PK	74.0	-21.2	2.68 V	44	47.2	5.6
6	4874.00	40.5 AV	54.0	-13.5	2.68 V	44	34.9	5.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. Margin value = Emission Level – Limit value.
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

CHANNEL		CH 23095						
Antenna Polarity & Test Distance: Horizontal at 3 m (For FCC Part 27)								
No.	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1415.00	-45.09	-13.00	-32.09	1.84 H	67	56.91	-102.00
2	2122.50	-41.75	-13.00	-28.75	2.86 H	193	57.51	-99.26
Antenna Polarity & Test Distance: Vertical at 3 m (For FCC Part 27)								
No.	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1415.00	-41.65	-13.00	-28.65	3.18 V	36	60.35	-102.00
2	2122.50	-35.66	-13.00	-22.66	2.36 V	36	63.60	-99.26

Remarks:

1. $ERP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8 - 2.15$
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

5.0GHz Band: 802.11n (HT20) + LTE Band 12 (BW: 10MHz)

CHANNEL	CH 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	108.7 PK			1.26 H	118	68.7	40.0
2	*5200.00	97.6 AV			1.26 H	118	57.6	40.0
3	#10400.00	62.0 PK	68.2	-6.2	3.22 H	293	44.5	17.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	118.0 PK			2.24 V	49	78.0	40.0
2	*5200.00	107.5 AV			2.24 V	49	67.5	40.0
3	#10400.00	62.3 PK	68.2	-5.9	1.80 V	175	44.8	17.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. Margin value = Emission Level – Limit value.
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL		CH 23095						
Antenna Polarity & Test Distance: Horizontal at 3 m (For FCC Part 27)								
No.	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1415.00	-45.16	-13.00	-32.16	1.85 H	66	56.84	-102.00
2	2122.50	-41.80	-13.00	-28.80	2.91 H	193	57.46	-99.26
Antenna Polarity & Test Distance: Vertical at 3 m (For FCC Part 27)								
No.	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1415.00	-41.66	-13.00	-28.66	3.22 V	35	60.34	-102.00
2	2122.50	-35.73	-13.00	-22.73	2.42 V	36	63.53	-99.26

Remarks:

1. $ERP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8 - 2.15$
3. $Margin\ value = ERP - Limit\ value$
4. The other ERP levels were very low against the limit.

Test Mode B

2.4GHz Band: 802.11n (HT20) + 2.4GHz Band: 802.11n (HT20)

CHANNEL	CH 1 + 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.4 PK	74.0	-17.6	2.93 H	157	23.6	32.8
2	2390.00	45.4 AV	54.0	-8.6	2.93 H	157	12.6	32.8
3	*2412.00	95.5 PK			2.93 H	157	62.6	32.9
4	*2412.00	85.9 AV			2.93 H	157	53.0	32.9
5	4824.00	48.8 PK	74.0	-25.2	2.84 H	153	43.1	5.7
6	4824.00	36.4 AV	54.0	-17.6	2.84 H	153	30.7	5.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.3 PK	74.0	-5.7	2.24 V	250	35.5	32.8
2	2390.00	52.5 AV	54.0	-1.5	2.24 V	250	19.7	32.8
3	*2412.00	109.5 PK			2.24 V	250	76.6	32.9
4	*2412.00	100.1 AV			2.24 V	250	67.2	32.9
5	4824.00	49.9 PK	74.0	-24.1	2.31 V	253	44.2	5.7
6	4824.00	36.8 AV	54.0	-17.2	2.31 V	253	31.1	5.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. Margin value = Emission Level – Limit value.
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

5.0GHz Band: 802.11n (HT40) + 5.0GHz Band: 802.11n (HT40)

CHANNEL	CH 46 + 46	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.8 PK	74.0	-14.2	2.57 H	123	54.2	5.6
2	5150.00	46.8 AV	54.0	-7.2	2.57 H	123	41.2	5.6
3	*5230.00	103.5 PK			2.57 H	123	63.5	40.0
4	*5230.00	94.5 AV			2.57 H	123	54.5	40.0
5	5350.00	58.8 PK	74.0	-15.2	2.57 H	123	53.5	5.3
6	5350.00	45.9 AV	54.0	-8.1	2.57 H	123	40.6	5.3
7	#10460.00	61.5 PK	68.2	-6.7	2.46 H	145	44.0	17.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.7 PK	74.0	-9.3	1.89 V	65	59.1	5.6
2	5150.00	51.7 AV	54.0	-2.3	1.89 V	65	46.1	5.6
3	*5230.00	112.7 PK			1.89 V	65	72.7	40.0
4	*5230.00	103.2 AV			1.89 V	65	63.2	40.0
5	5350.00	60.8 PK	74.0	-13.2	1.89 V	65	55.5	5.3
6	5350.00	48.2 AV	54.0	-5.8	1.89 V	65	42.9	5.3
7	#10460.00	62.4 PK	68.2	-5.8	1.92 V	90	44.9	17.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. Margin value = Emission Level – Limit value.
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Below 1GHz data

Test Mode A

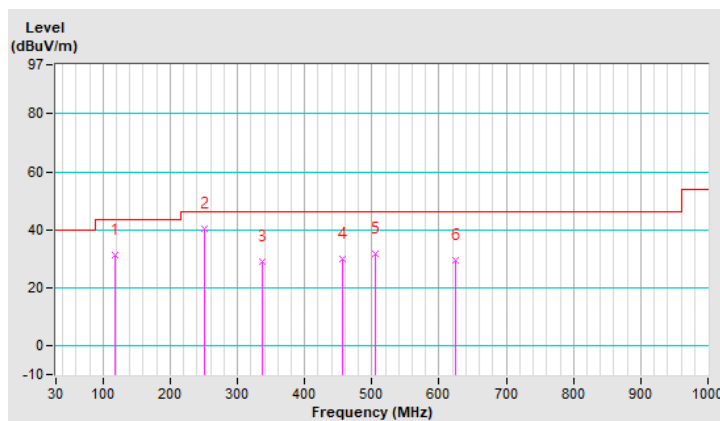
2.4GHz Band: 802.11n (HT20) + LTE Band 12 (BW: 10MHz)

CHANNEL	CH 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	117.30	31.4 QP	43.5	-12.1	2.00 H	357	42.9	-11.5
2	251.16	40.2 QP	46.0	-5.8	1.25 H	296	49.1	-8.9
3	337.49	29.0 QP	46.0	-17.0	1.00 H	117	35.1	-6.1
4	456.80	29.8 QP	46.0	-16.2	1.00 H	11	33.1	-3.3
5	505.30	31.6 QP	46.0	-14.4	1.00 H	355	34.1	-2.5
6	623.64	29.3 QP	46.0	-16.7	2.00 H	274	29.3	0.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

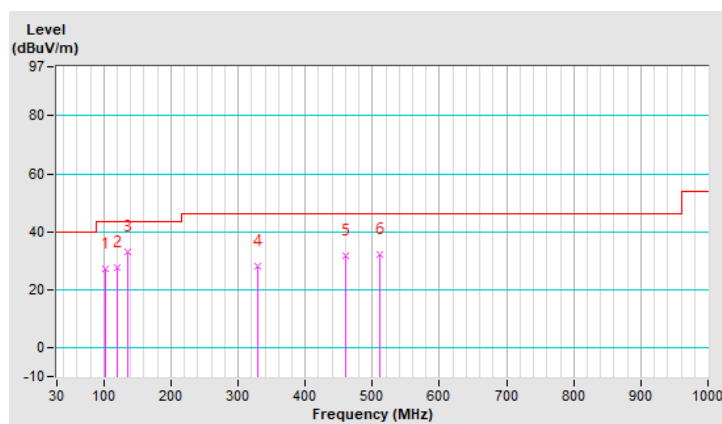


CHANNEL	CH 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	102.75	27.4 QP	43.5	-16.1	1.25 V	47	40.6	-13.2
2	119.24	27.5 QP	43.5	-16.0	1.00 V	168	38.8	-11.3
3	135.73	33.0 QP	43.5	-10.5	1.25 V	15	42.7	-9.7
4	329.73	27.9 QP	46.0	-18.1	1.50 V	111	33.9	-6.0
5	459.71	31.6 QP	46.0	-14.4	1.00 V	160	34.8	-3.2
6	511.12	32.0 QP	46.0	-14.0	1.00 V	15	34.2	-2.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

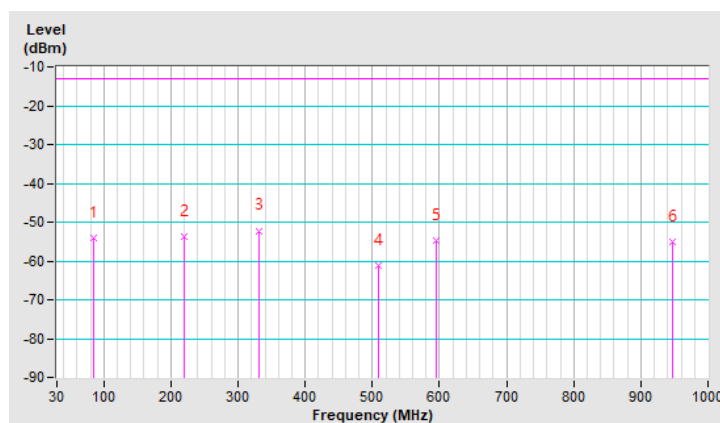


CHANNEL	CH 23095	FREQUENCY RANGE	Below 1000 MHz
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Antenna Polarity & Test Distance: Horizontal at 3 M (For FCC Part 27)								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	85.29	-53.90	-13.00	-40.90	1.50 H	117	58.10	-112.00
2	219.15	-53.70	-13.00	-40.70	1.00 H	45	54.70	-108.40
3	331.67	-52.30	-13.00	-39.20	1.00 H	117	51.20	-103.50
4	509.18	-61.20	-13.00	-48.20	1.25 H	305	38.70	-99.90
5	594.54	-54.90	-13.00	-41.90	1.00 H	283	42.90	-97.80
6	946.65	-55.00	-13.00	-42.00	1.25 H	359	36.30	-91.30

Remarks:

1. $ERP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8 - 2.15$
3. $Margin\ value = ERP - Limit\ value$
4. The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

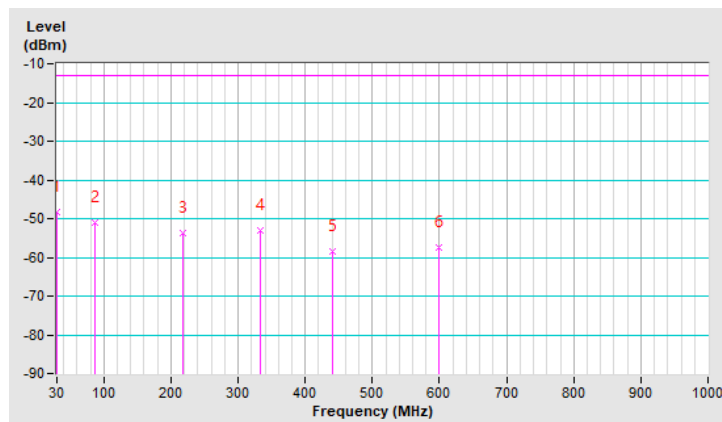


CHANNEL	CH 23095	FREQUENCY RANGE	Below 1000 MHz
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Antenna Polarity & Test Distance: Vertical at 3 M (For FCC Part 27)								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	30.97	-48.40	-13.00	-35.40	1.00 V	201	59.70	-108.10
2	87.23	-51.00	-13.00	-38.00	2.00 V	327	61.20	-112.20
3	218.18	-53.60	-13.00	-40.60	1.00 V	60	54.80	-108.40
4	332.64	-52.90	-13.00	-39.90	1.50 V	120	50.60	-103.50
5	440.31	-58.40	-13.00	-45.40	1.25 V	246	42.80	-101.20
6	598.42	-57.40	-13.00	-44.40	1.00 V	292	40.50	-97.90

Remarks:

1. $ERP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8 - 2.15$
3. $Margin\ value = ERP - Limit\ value$
4. The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



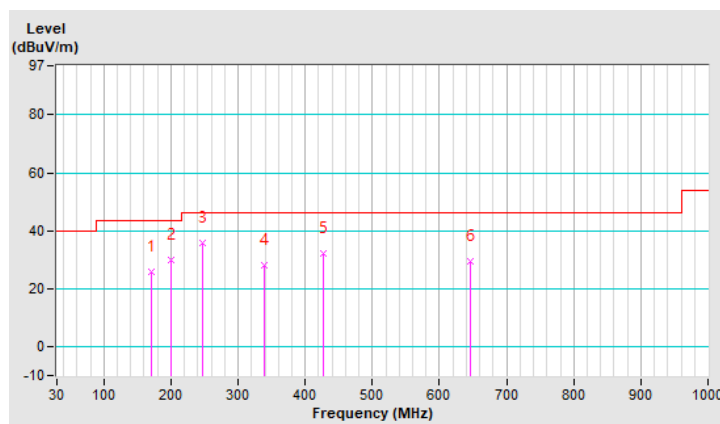
5GHz Band: 802.11n (HT20) + LTE Band 12 (BW: 10MHz)

CHANNEL	CH 40	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	171.62	26.0 QP	43.5	-17.5	1.00 H	101	35.2	-9.2
2	199.75	29.9 QP	43.5	-13.6	1.50 H	52	41.4	-11.5
3	246.31	36.0 QP	46.0	-10.0	2.00 H	28	45.2	-9.2
4	339.43	28.1 QP	46.0	-17.9	1.00 H	112	34.2	-6.1
5	427.70	32.1 QP	46.0	-13.9	2.00 H	84	36.2	-4.1
6	645.95	29.3 QP	46.0	-16.7	1.00 H	4	28.9	0.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

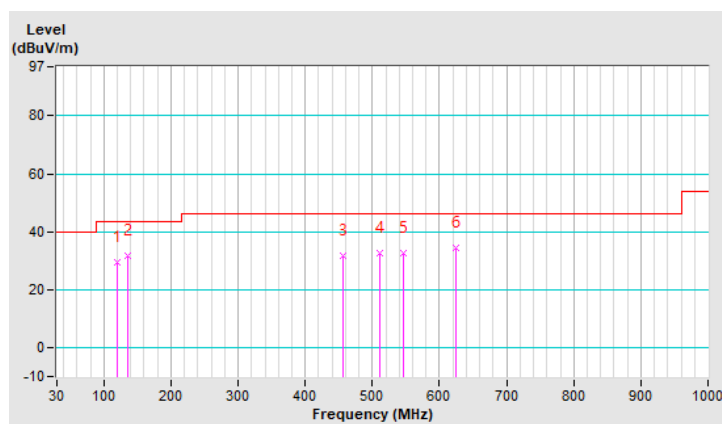


CHANNEL	CH 40	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	119.24	29.3 QP	43.5	-14.2	1.00 V	251	40.6	-11.3
2	135.73	31.6 QP	43.5	-11.9	1.50 V	19	41.3	-9.7
3	456.80	31.9 QP	46.0	-14.1	1.00 V	171	35.2	-3.3
4	510.15	32.5 QP	46.0	-13.5	1.00 V	9	34.7	-2.2
5	546.04	32.5 QP	46.0	-13.5	1.50 V	19	34.1	-1.6
6	623.64	34.3 QP	46.0	-11.7	2.00 V	14	34.3	0.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

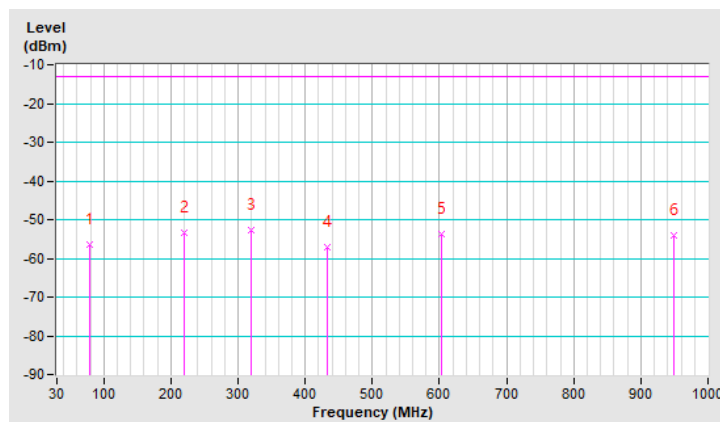


CHANNEL	CH 23095	FREQUENCY RANGE	Below 1000 MHz
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Antenna Polarity & Test Distance: Horizontal at 3 M (For FCC Part 27)								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	78.50	-56.40	-13.00	-43.40	1.25 H	19	54.30	-110.70
2	220.12	-53.40	-13.00	-40.40	1.00 H	41	55.20	-108.60
3	320.03	-52.70	-13.00	-39.70	1.00 H	113	51.10	-103.80
4	433.52	-57.10	-13.00	-44.10	1.50 H	237	44.10	-101.20
5	603.27	-53.70	-13.00	-40.70	1.00 H	76	44.10	-97.80
6	948.59	-54.10	-13.00	-41.10	1.25 H	315	37.20	-91.30

Remarks:

1. $ERP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8 - 2.15$
3. $Margin\ value = ERP - Limit\ value$
4. The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

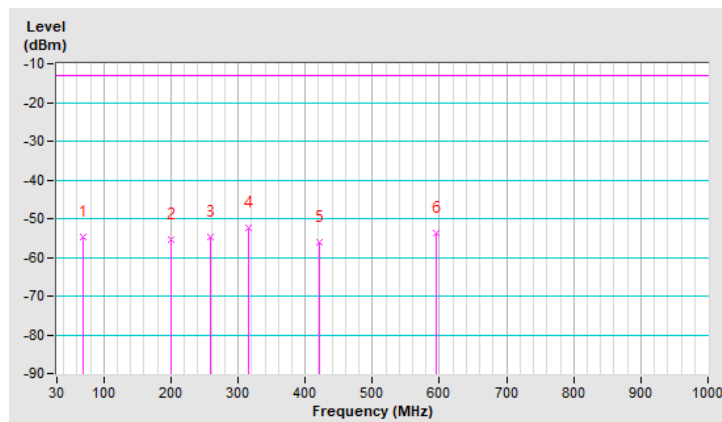


CHANNEL	CH 23095	FREQUENCY RANGE	Below 1000 MHz
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Antenna Polarity & Test Distance: Vertical at 3 M (For FCC Part 27)								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	69.77	-54.70	-13.00	-41.70	1.00 V	15	53.80	-108.50
2	199.75	-55.30	-13.00	-42.30	1.00 V	63	53.60	-108.90
3	257.95	-54.60	-13.00	-41.60	1.50 V	34	51.50	-106.10
4	316.15	-52.50	-13.00	-39.50	2.00 V	115	51.50	-104.00
5	421.88	-56.20	-13.00	-43.10	1.00 V	233	45.60	-101.80
6	594.54	-53.80	-13.00	-40.80	1.00 V	294	44.00	-97.80

Remarks:

1. $ERP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8 - 2.15$
3. $Margin\ value = ERP - Limit\ value$
4. The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



Test Mode B

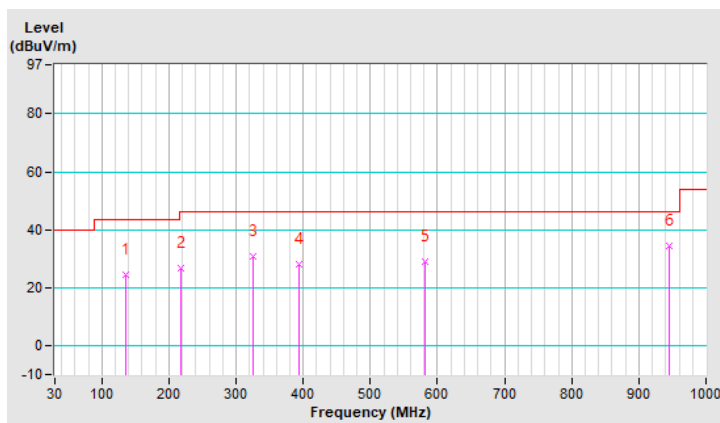
2.4GHz Band: 802.11n (HT20) + 2.4GHz Band: 802.11n (HT20)

CHANNEL	CH 1 + 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	135.73	24.6 QP	43.5	-18.9	1.50 H	91	34.3	-9.7
2	217.21	26.6 QP	46.0	-19.4	1.00 H	48	37.7	-11.1
3	325.85	30.8 QP	46.0	-15.2	1.25 H	112	36.9	-6.1
4	393.75	28.0 QP	46.0	-18.0	1.50 H	343	33.0	-5.0
5	580.96	29.1 QP	46.0	-16.9	1.00 H	91	29.9	-0.8
6	944.71	34.6 QP	46.0	-11.4	1.00 H	176	28.4	6.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

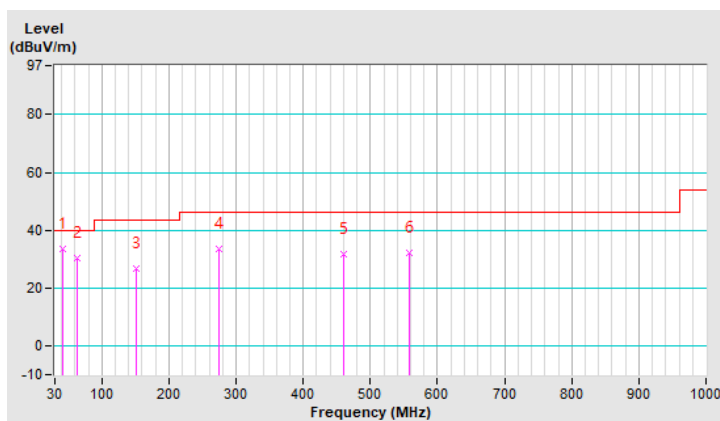


CHANNEL	CH 1 + 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	41.64	33.6 QP	40.0	-6.4	2.00 V	248	43.1	-9.5
2	63.95	30.3 QP	40.0	-9.7	1.00 V	7	40.3	-10.0
3	151.25	26.6 QP	43.5	-16.9	1.50 V	7	35.5	-8.9
4	275.41	33.4 QP	46.0	-12.6	2.00 V	112	41.0	-7.6
5	459.71	31.9 QP	46.0	-14.1	1.00 V	67	35.1	-3.2
6	557.68	32.2 QP	46.0	-13.8	1.00 V	358	33.7	-1.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



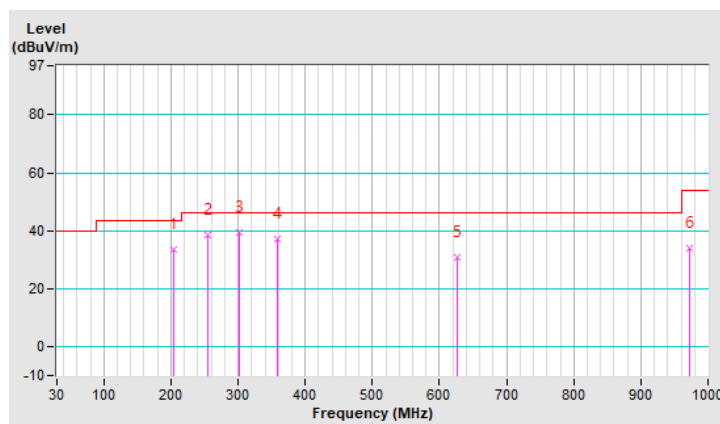
5.0GHz Band: 802.11n (HT40) + 5.0GHz Band: 802.11n (HT40)

CHANNEL	CH 46 + 46	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	204.60	33.5 QP	43.5	-10.0	1.25 H	346	45.0	-11.5
2	255.04	38.3 QP	46.0	-7.7	1.00 H	297	47.1	-8.8
3	301.60	39.2 QP	46.0	-6.8	1.25 H	306	46.1	-6.9
4	358.83	37.0 QP	46.0	-9.0	1.00 H	325	42.9	-5.9
5	626.55	30.6 QP	46.0	-15.4	1.50 H	255	30.6	0.0
6	971.87	34.1 QP	54.0	-19.9	1.00 H	228	27.9	6.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

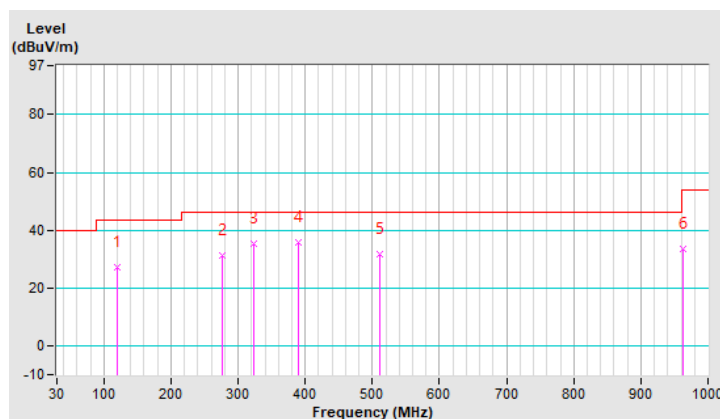


CHANNEL	CH 46 + 46	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	119.24	27.3 QP	43.5	-16.2	1.00 V	14	38.6	-11.3
2	277.35	31.2 QP	46.0	-14.8	1.50 V	34	38.7	-7.5
3	322.94	35.3 QP	46.0	-10.7	1.50 V	39	41.6	-6.3
4	389.87	35.7 QP	46.0	-10.3	1.00 V	37	40.9	-5.2
5	510.15	31.6 QP	46.0	-14.4	2.00 V	14	33.8	-2.2
6	962.17	33.7 QP	54.0	-20.3	1.00 V	77	27.3	6.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



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 FCC recognized accredited test firms and accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Web Site: www.bureauveritas-adt.com

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

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