

Partial FCC Test Report

Report No.: RF200109C11

FCC ID: J9C-QCNFA524

Model: QCNFA524

Received Date: Oct. 21, 2019

Test Date: Dec. 26, 2019 ~ Feb. 26, 2020

Issued Date: Feb. 27, 2020

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FCC Registration / 788550 / TW0003
Designation Number:



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Table of Contents

Release Control Record	3
1 Certificate of Conformity.....	4
2 Summary of Test Results	5
2.1 Measurement Uncertainty	5
2.2 Modification Record	5
3 General Information.....	6
3.1 General Description of EUT	6
3.2 Description of Test Modes	7
3.2.1 Test Mode Applicability and Tested Channel Detail.....	8
3.3 Description of Support Units	9
3.3.1 Configuration of System under Test	9
3.4 General Description of Applied Standards and References	10
4 Test Types and Results	11
4.1 Radiated Emission and Bandedge Measurement.....	11
4.1.1 Limits of Radiated Emission and Bandedge Measurement	11
4.1.2 Test Instruments	12
4.1.3 Test Procedures.....	13
4.1.4 Deviation from Test Standard	14
4.1.5 Test Set Up	14
4.1.6 EUT Operating Conditions.....	15
4.1.7 Test Results	16
4.2 Conducted Emission Measurement	38
4.2.1 Limits of Conducted Emission Measurement	38
4.2.2 Test Instruments	38
4.2.3 Test Procedures.....	39
4.2.4 Deviation from Test Standard	39
4.2.5 Test Setup.....	39
4.2.6 EUT Operating Conditions.....	39
4.2.7 Test Results	40
4.3 Conducted Output Power Measurement.....	42
4.3.1 Limits of Conducted Output Power Measurement	42
4.3.2 Test Setup.....	42
4.3.3 Test Instruments	42
4.3.4 Test Procedures.....	42
4.3.5 Deviation from Test Standard	42
4.3.6 EUT Operating Conditions.....	42
4.3.7 Test Results	43
5 Pictures of Test Arrangements.....	51
Appendix – Information of the Testing Laboratories	52

Release Control Record

Issue No.	Description	Date Issued
RF200109C11	Original release	Feb. 27, 2020

1 Certificate of Conformity

Product: Wi-Fi 6 + BT 5.1 M.2 1216 Module

Brand: Qualcomm

Model: QCNFA524

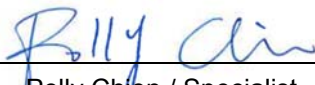
Sample Status: Engineering Sample

Applicant: Qualcomm Technologies, Inc.

Test Date: Dec. 26, 2019 ~ Feb. 26, 2020

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10:2013

This report is issued as a supplementary report of RF190716E01-6. This report shall be used combined together with its original report.

Prepared by : , **Date:** Feb. 27, 2020
Polly Chien / Specialist

Approved by : , **Date:** Feb. 27, 2020
Bruce Chen / Senior Project Engineer

Note: Radiated emission, conducted emission and Maximum Peak Output Power are performed for the addendum. Refer to original report for the other test data.

2 Summary of Test Results

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

FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -10.06dB at 0.15000MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -4.4dB at 139.61MHz.
15.247(d)	Antenna Port Emission	N/A	Refer to Note
15.247(a)(2)	6dB bandwidth	N/A	Refer to Note
15.247(b)	Conducted power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	N/A	Refer to Note
15.203	Antenna Requirement	Pass	Antenna connector is I-PEX NGFF not a standard connector.

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

Note: Radiated emission, conducted emission and Maximum Conducted power are performed for the addendum. Refer to original report for the other test data.

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) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.79 dB
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	Wi-Fi 6 + BT 5.1 M.2 1216 Module
Brand	Qualcomm
Model	QCNFA524
Sample Status	Engineering Sample
Power Supply Rating	3.3Vdc (from host equipment)
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11n mode and VHT20/ VHT40 in 2.4GHz mode 1024QAM for OFDMA in 11ax HE mode
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b: up to 11Mbps 802.11g: up to 54Mbps 802.11n: up to 400Mbps 802.11ax: up to 573.5Mbps
Operating Frequency	2412 ~ 2472MHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20), 802.11n (VHT20), 802.11ax (HE20): 13 802.11n (HT40), 802.11n (VHT40), 802.11ax (HE40): 9
Output Power	663.100mW
Antenna Type	Refer to note
Antenna Connector	I-PEX NGFF
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. This report is prepared for FCC class II permissive change. This is a supplementary report of RF190716E01-6. The difference compared with original report is adding End-product (Portable Computer, Brand: DELL, Model: P92F). Therefore, test item of Radiated emission, conducted emission and Conducted power were performed for this addendum. Refer to original report for the other test data.
2. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers.

Modulation Mode	TX Function
2.4GHz Band	
802.11b	2TX
802.11g	2TX
802.11n (HT20)	2TX
802.11n (HT40)	2TX
802.11n (VHT20)	2TX
802.11n (VHT40)	2TX
802.11ax (HE20)	2TX
802.11ax (HE40)	2TX

* For all test items except conducted output power, the modulation and bandwidth are similar for 802.11n mode for HT20 / HT40, 802.11n mode for VHT20 / VHT40 and 802.11ax mode for HE20 / HE40, therefore the investigated were worst case to representative mode in test report. (Final test mode refer section 3.2.1)

3. The following antennas were provided to the EUT.

Main Antenna Model	Aux. Antenna Model	Type	Antenna Manufacturer	Maximum Gain (dBi)			
				2.400-2.500 GHz	5.150-5.350 GHz	5.470-5.725 GHz	5.725-5.850 GHz
025.901LS.0021 (F.0G.FS-6086-001-00)	025.901LT.0021 (F.0G.FS-6086-002-00)	Slot	Speed	1.36	0.31	1.57	1.56
025.901LS.0001 (81ELAS15.G41)	025.901LT.0001 (81ELAS15.G42)	Slot	Wistron Neweb Corporation	1.38	0.35	1.62	1.69

4. The EUT is authorized for use in specific End-product. Please refer to below table for more details.

Product Name	Brand Name	Model No.	Description
Portable Computer	DELL	P92F	-

The following accessories were for the End-product.

Product Name	Brand Name	Model No.	Description
Battery	DELL	XG4K6	Rating: 11.4Vdc, 8071mAh
Adapter	DELL	HA130PM170	I/P: 100-240Vac, 1.8A, 50-60 Hz, O/P: 5Vdc / 20Vdc / 1A / 6.5A 1.8m cable without core attached on adapter

3.2 Description of Test Modes

13 channels are provided for 802.11b, 802.11g and 802.11n (HT20), 802.11n (VHT20), 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
1	2412MHz	8	2447MHz
2	2417MHz	9	2452MHz
3	2422MHz	10	2457MHz
4	2427MHz	11	2462MHz
5	2432MHz	12	2467MHz
6	2437MHz	13	2472MHz
7	2442MHz		

9 channels are provided for 802.11n (HT40) , 802.11n (VHT40), 802.11ax (HE40):

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

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	Power	
-	√	√	√	√	-

Where **RE≥1G**: Radiated Emission above 1GHz & Bandedge Measurement
RE<1G: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission
Power: Maximum Output Power Measurement

Note: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

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	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11b	1 to 13	1, 6, 11, 12, 13	DSSS	DBPSK	1.0
-	802.11g	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	36.0
-	802.11ax (HE20)	1 to 13	1, 6, 11, 12, 13	OFDMA	BPSK	MCS4
-	802.11ax (HE40)	3 to 11	3, 6, 9, 10, 11	OFDMA	BPSK	MCS4

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	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11g	1 to 13	6	OFDM	BPSK	36.0

Power Line Conducted Emission Test:

- ☒ 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	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11g	1 to 13	6	OFDM	BPSK	36.0

Maximum Output Power Measurement:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ 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	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11b	1 to 13	1, 6, 11, 12, 13	DSSS	DBPSK	1.0
-	802.11g	1 to 13	1, 2, 6, 10, 11, 12, 13	OFDM	BPSK	36.0
-	802.11n (VHT20)	1 to 13	1, 2, 6, 10, 11, 12, 13	OFDM	BPSK	MCS4
-	802.11n (VHT40)	3 to 11	3, 4, 6, 8, 9, 10, 11	OFDM	BPSK	MCS4
-	802.11ax (HE20)	1 to 13	1, 2, 6, 10, 11, 12, 13	OFDMA	BPSK	MCS4
-	802.11ax (HE40)	3 to 11	3, 4, 6, 8, 9, 10, 11	OFDMA	BPSK	MCS4

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE $\geq$ 1G	22deg. C, 66%RH	120Vac, 60Hz	Greg Lin
RE<1G	22deg. C, 66%RH	120Vac, 60Hz	Han Wu
PLC	25deg. C, 75%RH	120Vac, 60Hz	Greg Lin
Power	25deg. C, 60%RH	120Vac, 60Hz	Jisyong Wang

3.3 Description of Support Units

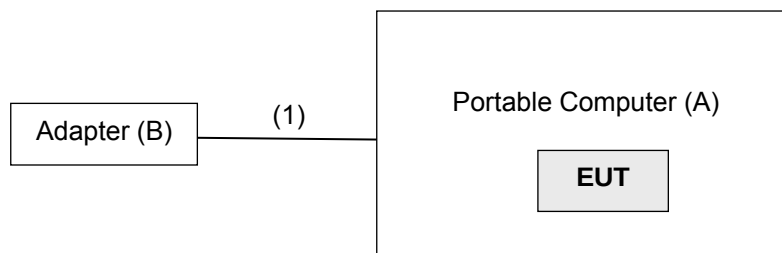
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Portable Computer	DELL	P92F	NA	FCC DoC Approved	-
B.	Adapter	DELL	HA130PM170	NA	NA	-

Note: 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.	Power cable	1	1.8	-	0	Provided by manufacturer

3.3.1 Configuration of System under Test



3.4 General Description of Applied Standards and References

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

Test Standard:

FCC Part 15, Subpart C (15.247)

ANSI C63.10-2013

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

References Test Guidance:

KDB 558074 D01 DTS Meas Guidance v05r02

KDB 662911 D01 Multiple Transmitter Output v02r01

All test items have been performed as a reference to the above KDB test guidance.

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 30dB 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 30dB under any condition of modulation.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 15, 2019	Apr. 14, 2020
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jun. 04, 2019	Jun. 03, 2020
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Nov. 07, 2019	Nov. 06, 2020
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 24, 2019	Nov. 23, 2020
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 24, 2019	Nov. 23, 2020
Loop Antenna TESEQ	HLA 6121	45745	Jul. 01, 2019	Jun. 30, 2020
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Jul. 11, 2019	Jul. 10, 2020
Preamplifier Agilent (Above 1GHz)	8449B	3008A02367	Feb. 19, 2019	Feb. 18, 2020
			Feb. 18, 2020	Feb. 17, 2021
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM80 00	CABLE-CH9-02 (248780+171006)	Jan. 19, 2019	Jan. 18, 2020
			Jan. 18, 2020	Jan. 17, 2021
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(25079 5/4)	Jul. 11, 2019	Jul. 10, 2020
RF signal cable Woken	8D-FB	Cable-CH9-01	Jul. 30, 2019	Jul. 29, 2020
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	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
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY55 190004/MY5519000 7/MY55210005	Jul. 15, 2019	Jul. 14, 2020

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 9.

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 detects 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:

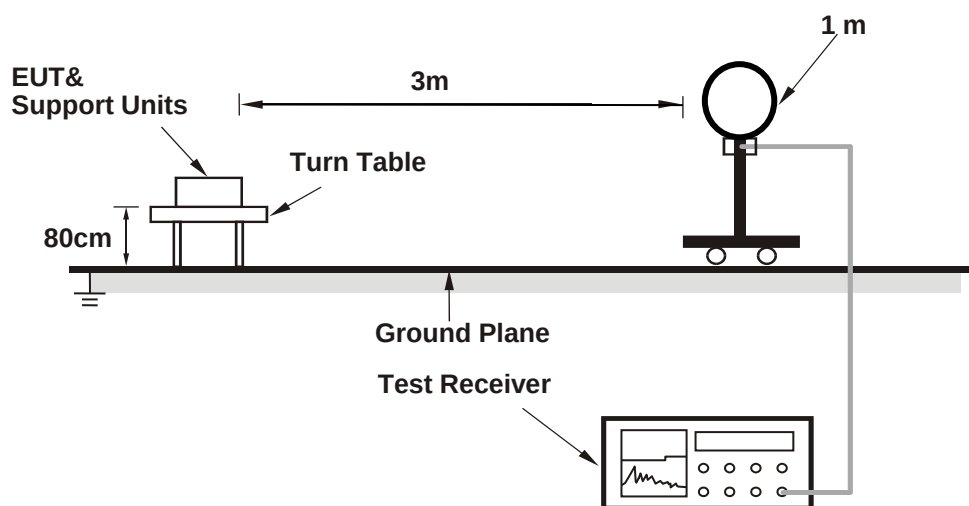
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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

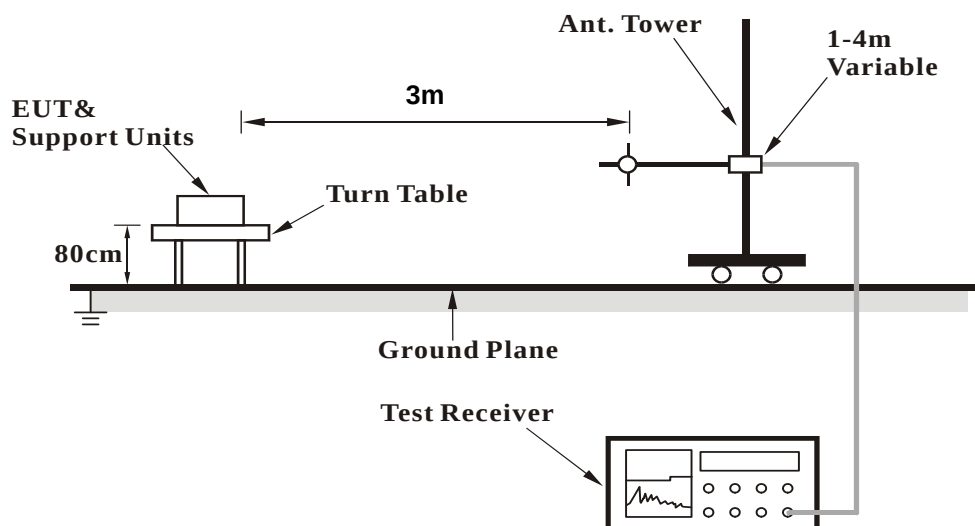
No deviation.

4.1.5 Test Set Up

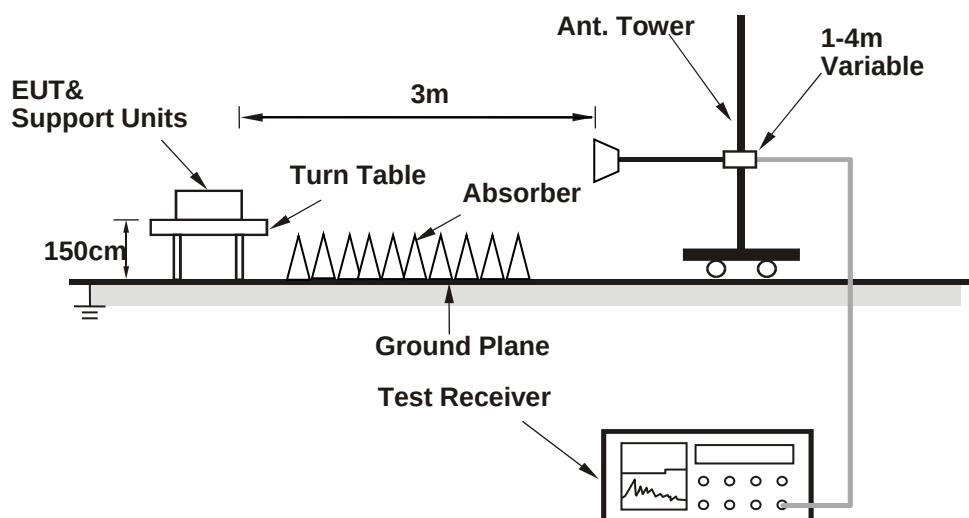
For Radiated emission below 30MHz



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

- Installed the EUT into the Portable Computer which is placed on the testing table.
- Controlling software (provided by manufacturer) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz worst-Case data:

802.11b

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	57.2 PK	74.0	-16.8	3.23 H	2	25.3	31.9
2	2390.00	47.2 AV	54.0	-6.8	3.23 H	2	15.3	31.9
3	*2412.00	106.4 PK			3.32 H	352	74.5	31.9
4	*2412.00	102.6 AV			3.32 H	352	70.7	31.9
5	4824.00	45.5 PK	74.0	-28.5	3.34 H	297	41.7	3.8
6	4824.00	31.2 AV	54.0	-22.8	3.34 H	297	27.4	3.8
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	56.7 PK	74.0	-17.3	1.76 V	277	24.8	31.9
2	2390.00	46.6 AV	54.0	-7.4	1.76 V	277	14.7	31.9
3	*2412.00	105.2 PK			1.82 V	287	73.3	31.9
4	*2412.00	101.4 AV			1.82 V	287	69.5	31.9
5	4824.00	45.0 PK	74.0	-29.0	1.29 V	247	41.2	3.8
6	4824.00	30.9 AV	54.0	-23.1	1.29 V	247	27.1	3.8

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2437.00	104.3 PK			3.24 H	352	72.4	31.9
2	*2437.00	100.5 AV			3.24 H	352	68.6	31.9
3	4874.00	45.5 PK	74.0	-28.5	3.41 H	318	41.7	3.8
4	4874.00	31.3 AV	54.0	-22.7	3.41 H	318	27.5	3.8
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	*2437.00	103.4 PK			1.84 V	306	71.5	31.9
2	*2437.00	99.6 AV			1.84 V	306	67.7	31.9
3	4874.00	45.1 PK	74.0	-28.9	1.38 V	257	41.3	3.8
4	4874.00	31.0 AV	54.0	-23.0	1.38 V	257	27.2	3.8

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2462.00	104.0 PK			3.22 H	353	72.1	31.9
2	*2462.00	100.2 AV			3.22 H	353	68.3	31.9
3	2483.50	59.3 PK	74.0	-14.7	3.50 H	11	27.3	32.0
4	2483.50	47.8 AV	54.0	-6.2	3.50 H	11	15.8	32.0
5	4924.00	45.1 PK	74.0	-28.9	3.46 H	303	41.3	3.8
6	4924.00	30.9 AV	54.0	-23.1	3.46 H	303	27.1	3.8
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	*2462.00	103.0 PK			1.73 V	294	71.1	31.9
2	*2462.00	99.2 AV			1.73 V	294	67.3	31.9
3	2483.50	58.4 PK	74.0	-15.6	1.64 V	287	26.4	32.0
4	2483.50	47.2 AV	54.0	-6.8	1.64 V	287	15.2	32.0
5	4924.00	44.8 PK	74.0	-29.2	1.29 V	273	41.0	3.8
6	4924.00	30.7 AV	54.0	-23.3	1.29 V	273	26.9	3.8

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * " : Fundamental frequency.

CHANNEL	TX Channel 12	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2467.00	104.3 PK			3.92 H	353	72.4	31.9
2	*2467.00	100.5 AV			3.92 H	353	68.6	31.9
3	2483.50	65.4 PK	74.0	-8.6	3.56 H	13	33.4	32.0
4	2483.50	48.3 AV	54.0	-5.7	3.56 H	13	16.3	32.0
5	4934.00	45.0 PK	74.0	-29.0	3.32 H	327	41.2	3.8
6	4934.00	31.2 AV	54.0	-22.8	3.32 H	327	27.4	3.8
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	*2467.00	103.3 PK			1.93 V	312	71.4	31.9
2	*2467.00	99.5 AV			1.93 V	312	67.6	31.9
3	2483.50	65.2 PK	74.0	-8.8	1.86 V	301	33.2	32.0
4	2483.50	47.6 AV	54.0	-6.4	1.86 V	301	15.6	32.0
5	4934.00	44.5 PK	74.0	-29.5	1.37 V	248	40.7	3.8
6	4934.00	30.6 AV	54.0	-23.4	1.37 V	248	26.8	3.8

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 13	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2472.00	96.5 PK			3.17 H	22	64.6	31.9
2	*2472.00	93.1 AV			3.17 H	22	61.2	31.9
3	2483.50	63.5 PK	74.0	-10.5	3.18 H	20	31.5	32.0
4	2483.50	44.9 AV	54.0	-9.1	3.18 H	20	12.9	32.0
5	4944.00	44.7 PK	74.0	-29.3	3.41 H	352	40.8	3.9
6	4944.00	31.2 AV	54.0	-22.8	3.41 H	352	27.3	3.9
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	*2472.00	95.9 PK			1.73 V	285	64.0	31.9
2	*2472.00	92.4 AV			1.73 V	285	60.5	31.9
3	2483.50	57.5 PK	74.0	-16.5	1.80 V	286	25.5	32.0
4	2483.50	43.9 AV	54.0	-10.1	1.80 V	286	11.9	32.0
5	4944.00	44.7 PK	74.0	-29.3	1.24 V	262	40.8	3.9
6	4944.00	31.1 AV	54.0	-22.9	1.24 V	262	27.2	3.9

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * " : Fundamental frequency.

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CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	54.5 PK	74.0	-19.5	3.73 H	351	22.6	31.9
2	2390.00	44.3 AV	54.0	-9.7	3.73 H	351	12.4	31.9
3	*2412.00	98.2 PK			3.73 H	356	66.3	31.9
4	*2412.00	90.9 AV			3.73 H	356	59.0	31.9
5	4824.00	45.2 PK	74.0	-28.8	3.40 H	348	41.4	3.8
6	4824.00	31.1 AV	54.0	-22.9	3.40 H	348	27.3	3.8
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	54.4 PK	74.0	-19.6	1.03 V	319	22.5	31.9
2	2390.00	44.5 AV	54.0	-9.5	1.03 V	319	12.6	31.9
3	*2412.00	97.8 PK			1.00 V	313	65.9	31.9
4	*2412.00	88.7 AV			1.00 V	313	56.8	31.9
5	4824.00	44.8 PK	74.0	-29.2	1.35 V	267	41.0	3.8
6	4824.00	30.9 AV	54.0	-23.1	1.35 V	267	27.1	3.8

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2437.00	101.5 PK			3.63 H	357	69.6	31.9
2	*2437.00	92.6 AV			3.63 H	357	60.7	31.9
3	4874.00	45.1 PK	74.0	-28.9	3.42 H	352	41.3	3.8
4	4874.00	31.0 AV	54.0	-23.0	3.42 H	352	27.2	3.8
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	*2437.00	99.7 PK			1.10 V	316	67.8	31.9
2	*2437.00	90.5 AV			1.10 V	316	58.6	31.9
3	4874.00	45.5 PK	74.0	-28.5	1.24 V	263	41.7	3.8
4	4874.00	31.3 AV	54.0	-22.7	1.24 V	263	27.5	3.8

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2462.00	99.8 PK			3.56 H	358	67.9	31.9
2	*2462.00	91.0 AV			3.56 H	358	59.1	31.9
3	2483.50	54.6 PK	74.0	-19.4	3.50 H	357	22.6	32.0
4	2483.50	44.4 AV	54.0	-9.6	3.50 H	357	12.4	32.0
5	4924.00	45.0 PK	74.0	-29.0	3.43 H	340	41.2	3.8
6	4924.00	30.7 AV	54.0	-23.3	3.43 H	340	26.9	3.8
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	*2462.00	97.9 PK			1.09 V	310	66.0	31.9
2	*2462.00	88.7 AV			1.09 V	310	56.8	31.9
3	2483.50	57.2 PK	74.0	-16.8	1.11 V	311	25.2	32.0
4	2483.50	44.7 AV	54.0	-9.3	1.11 V	311	12.7	32.0
5	4924.00	45.3 PK	74.0	-28.7	1.32 V	273	41.5	3.8
6	4924.00	30.9 AV	54.0	-23.1	1.32 V	273	27.1	3.8

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 12	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2467.00	98.0 PK			3.57 H	6	66.1	31.9
2	*2467.00	89.3 AV			3.57 H	6	57.4	31.9
3	2483.50	61.7 PK	74.0	-12.3	3.58 H	4	29.7	32.0
4	2483.50	45.0 AV	54.0	-9.0	3.58 H	4	13.0	32.0
5	4934.00	44.5 PK	74.0	-29.5	3.26 H	351	40.7	3.8
6	4934.00	30.7 AV	54.0	-23.3	3.26 H	351	26.9	3.8
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	*2467.00	96.1 PK			1.08 V	310	64.2	31.9
2	*2467.00	87.3 AV			1.08 V	310	55.4	31.9
3	2483.50	56.9 PK	74.0	-17.1	1.20 V	311	24.9	32.0
4	2483.50	44.7 AV	54.0	-9.3	1.20 V	311	12.7	32.0
5	4934.00	45.2 PK	74.0	-28.8	1.34 V	261	41.4	3.8
6	4934.00	31.0 AV	54.0	-23.0	1.34 V	261	27.2	3.8

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 13	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2472.00	91.8 PK			3.55 H	357	59.9	31.9
2	*2472.00	83.7 AV			3.55 H	357	51.8	31.9
3	2483.50	62.5 PK	74.0	-11.5	3.51 H	350	30.5	32.0
4	2483.50	44.7 AV	54.0	-9.3	3.51 H	350	12.7	32.0
5	4944.00	44.7 PK	74.0	-29.3	3.43 H	340	40.8	3.9
6	4944.00	31.0 AV	54.0	-23.0	3.43 H	340	27.1	3.9
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	*2472.00	89.7 PK			1.08 V	312	57.8	31.9
2	*2472.00	81.5 AV			1.08 V	312	49.6	31.9
3	2483.50	56.8 PK	74.0	-17.2	1.14 V	311	24.8	32.0
4	2483.50	44.4 AV	54.0	-9.6	1.14 V	311	12.4	32.0
5	4944.00	44.4 PK	74.0	-29.6	1.19 V	262	40.5	3.9
6	4944.00	31.2 AV	54.0	-22.8	1.19 V	262	27.3	3.9

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

802.11ax (HE20)

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	56.2 PK	74.0	-17.8	3.74 H	346	24.3	31.9
2	2390.00	46.5 AV	54.0	-7.5	3.74 H	346	14.6	31.9
3	*2412.00	103.4 PK			3.81 H	355	71.5	31.9
4	*2412.00	93.2 AV			3.81 H	355	61.3	31.9
5	4824.00	45.1 PK	74.0	-28.9	3.52 H	337	41.3	3.8
6	4824.00	31.2 AV	54.0	-22.8	3.52 H	337	27.4	3.8
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	55.8 PK	74.0	-18.2	1.07 V	315	23.9	31.9
2	2390.00	44.3 AV	54.0	-9.7	1.07 V	315	12.4	31.9
3	*2412.00	100.9 PK			1.04 V	308	69.0	31.9
4	*2412.00	90.8 AV			1.04 V	308	58.9	31.9
5	4824.00	44.7 PK	74.0	-29.3	1.37 V	273	40.9	3.8
6	4824.00	30.6 AV	54.0	-23.4	1.37 V	273	26.8	3.8

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2437.00	104.9 PK			3.74 H	352	73.0	31.9
2	*2437.00	94.6 AV			3.74 H	352	62.7	31.9
3	4874.00	45.3 PK	74.0	-28.7	3.43 H	331	41.5	3.8
4	4874.00	32.5 AV	54.0	-21.5	3.43 H	331	28.7	3.8
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	*2437.00	102.5 PK			1.01 V	314	70.6	31.9
2	*2437.00	92.3 AV			1.01 V	314	60.4	31.9
3	4874.00	44.9 PK	74.0	-29.1	1.36 V	277	41.1	3.8
4	4874.00	31.5 AV	54.0	-22.5	1.36 V	277	27.7	3.8

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2462.00	102.8 PK			3.64 H	356	70.9	31.9
2	*2462.00	93.0 AV			3.64 H	356	61.1	31.9
3	2483.50	56.7 PK	74.0	-17.3	3.57 H	349	24.7	32.0
4	2483.50	46.1 AV	54.0	-7.9	3.57 H	349	14.1	32.0
5	4924.00	45.4 PK	74.0	-28.6	3.48 H	335	41.6	3.8
6	4924.00	31.6 AV	54.0	-22.4	3.48 H	335	27.8	3.8
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	*2462.00	100.6 PK			1.00 V	311	68.7	31.9
2	*2462.00	90.7 AV			1.00 V	311	58.8	31.9
3	2483.50	21.4 PK	74.0	-52.6	1.06 V	318	23.8	-2.4
4	2483.50	9.8 AV	54.0	-44.2	1.06 V	318	12.2	-2.4
5	4924.00	44.6 PK	74.0	-29.4	1.38 V	271	40.8	3.8
6	4924.00	30.8 AV	54.0	-23.2	1.38 V	271	27.0	3.8

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 12	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2467.00	100.6 PK			3.52 H	351	68.7	31.9
2	*2467.00	90.5 AV			3.52 H	351	58.6	31.9
3	2483.50	59.4 PK	74.0	-14.6	3.67 H	0	27.4	32.0
4	2483.50	45.9 AV	54.0	-8.1	3.67 H	0	13.9	32.0
5	4934.00	45.3 PK	74.0	-28.7	3.47 H	326	41.5	3.8
6	4934.00	31.4 AV	54.0	-22.6	3.47 H	326	27.6	3.8
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	*2467.00	98.6 PK			1.05 V	312	66.7	31.9
2	*2467.00	88.3 AV			1.05 V	312	56.4	31.9
3	2483.50	56.3 PK	74.0	-17.7	1.07 V	309	24.3	32.0
4	2483.50	44.3 AV	54.0	-9.7	1.07 V	309	12.3	32.0
5	4934.00	44.4 PK	74.0	-29.6	3.37 V	325	40.6	3.8
6	4934.00	30.6 AV	54.0	-23.4	3.37 V	325	26.8	3.8

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 13	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2472.00	93.2 PK			3.59 H	353	61.3	31.9
2	*2472.00	84.3 AV			3.59 H	353	52.4	31.9
3	2483.50	58.1 PK	74.0	-15.9	3.73 H	356	26.1	32.0
4	2483.50	46.1 AV	54.0	-7.9	3.73 H	356	14.1	32.0
5	4944.00	45.2 PK	74.0	-28.8	3.46 H	337	41.3	3.9
6	4944.00	31.1 AV	54.0	-22.9	3.46 H	337	27.2	3.9
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	*2472.00	92.0 PK			1.04 V	303	60.1	31.9
2	*2472.00	82.1 AV			1.04 V	303	50.2	31.9
3	2483.50	56.4 PK	74.0	-17.6	1.04 V	311	24.4	32.0
4	2483.50	44.3 AV	54.0	-9.7	1.04 V	311	12.3	32.0
5	4944.00	44.4 PK	74.0	-29.6	1.35 V	268	40.5	3.9
6	4944.00	30.6 AV	54.0	-23.4	1.35 V	268	26.7	3.9

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

802.11ax (HE40)

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	57.1 PK	74.0	-16.9	3.72 H	346	25.2	31.9
2	2390.00	46.7 AV	54.0	-7.3	3.72 H	346	14.8	31.9
3	*2422.00	94.6 PK			3.64 H	351	62.7	31.9
4	*2422.00	83.5 AV			3.64 H	351	51.6	31.9
5	4844.00	45.0 PK	74.0	-29.0	3.42 H	330	41.3	3.7
6	4844.00	30.9 AV	54.0	-23.1	3.42 H	330	27.2	3.7
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	56.3 PK	74.0	-17.7	1.09 V	312	24.4	31.9
2	2390.00	44.3 AV	54.0	-9.7	1.09 V	312	12.4	31.9
3	*2422.00	82.3 PK			1.02 V	306	50.4	31.9
4	*2422.00	81.4 AV			1.02 V	306	49.5	31.9
5	4844.00	44.4 PK	74.0	-29.6	1.28 V	264	40.7	3.7
6	4844.00	30.4 AV	54.0	-23.6	1.28 V	264	26.7	3.7

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2437.00	98.5 PK			3.63 H	351	66.6	31.9
2	*2437.00	87.1 AV			3.63 H	351	55.2	31.9
3	4874.00	45.9 PK	74.0	-28.1	3.46 H	332	42.1	3.8
4	4874.00	31.5 AV	54.0	-22.5	3.46 H	332	27.7	3.8
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	*2437.00	95.7 PK			1.06 V	301	63.8	31.9
2	*2437.00	84.9 AV			1.06 V	301	53.0	31.9
3	4874.00	45.9 PK	74.0	-28.1	1.33 V	262	42.1	3.8
4	4874.00	31.2 AV	54.0	-22.8	1.33 V	262	27.4	3.8

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2452.00	93.4 PK			3.61 H	350	61.5	31.9
2	*2452.00	82.5 AV			3.61 H	350	50.6	31.9
3	2483.50	57.4 PK	74.0	-16.6	3.64 H	343	25.4	32.0
4	2483.50	45.9 AV	54.0	-8.1	3.64 H	343	13.9	32.0
5	4904.00	45.1 PK	74.0	-28.9	3.42 H	332	41.4	3.7
6	4904.00	30.9 AV	54.0	-23.1	3.42 H	332	27.2	3.7
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	*2452.00	91.6 PK			1.03 V	314	59.7	31.9
2	*2452.00	80.5 AV			1.03 V	314	48.6	31.9
3	2483.50	56.6 PK	74.0	-17.4	1.06 V	318	24.6	32.0
4	2483.50	44.2 AV	54.0	-9.8	1.06 V	318	12.2	32.0
5	4904.00	44.5 PK	74.0	-29.5	1.35 V	276	40.8	3.7
6	4904.00	30.6 AV	54.0	-23.4	1.35 V	276	26.9	3.7

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 10	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2457.00	90.2 PK			3.54 H	354	58.3	31.9
2	*2457.00	79.1 AV			3.54 H	354	47.2	31.9
3	2483.50	58.1 PK	74.0	-15.9	3.62 H	349	26.1	32.0
4	2483.50	46.0 AV	54.0	-8.0	3.62 H	349	14.0	32.0
5	4914.00	45.0 PK	74.0	-29.0	3.52 H	337	41.2	3.8
6	4914.00	31.0 AV	54.0	-23.0	3.52 H	337	27.2	3.8
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	*2457.00	88.2 PK			1.01 V	315	56.3	31.9
2	*2457.00	77.1 AV			1.01 V	315	45.2	31.9
3	2483.50	56.5 PK	74.0	-17.5	1.07 V	302	24.5	32.0
4	2483.50	44.3 AV	54.0	-9.7	1.07 V	302	12.3	32.0
5	4914.00	44.5 PK	74.0	-29.5	1.28 V	268	40.7	3.8
6	4914.00	30.6 AV	54.0	-23.4	1.28 V	268	26.8	3.8

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2462.00	86.6 PK			3.70 H	355	54.7	31.9
2	*2462.00	75.5 AV			3.70 H	355	43.6	31.9
3	2483.50	57.7 PK	74.0	-16.3	3.62 H	348	25.7	32.0
4	2483.50	46.3 AV	54.0	-7.7	3.62 H	348	14.3	32.0
5	4924.00	45.0 PK	74.0	-29.0	3.44 H	327	41.2	3.8
6	4924.00	30.9 AV	54.0	-23.1	3.44 H	327	27.1	3.8
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	*2462.00	84.6 PK			1.00 V	309	52.7	31.9
2	*2462.00	73.4 AV			1.00 V	309	41.5	31.9
3	2483.50	56.6 PK	74.0	-17.4	1.05 V	317	24.6	32.0
4	2483.50	44.4 AV	54.0	-9.6	1.05 V	317	12.4	32.0
5	4924.00	44.4 PK	74.0	-29.6	1.26 V	278	40.6	3.8
6	4924.00	30.3 AV	54.0	-23.7	1.26 V	278	26.5	3.8

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

Below 1GHz worst-case data:

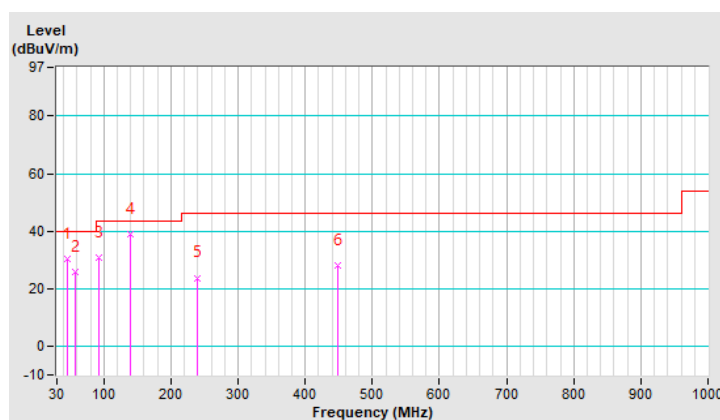
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CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	45.52	30.5 QP	40.0	-9.5	1.00 H	259	40.4	-9.9
2	58.13	25.9 QP	40.0	-14.1	1.00 H	43	36.0	-10.1
3	93.05	30.9 QP	43.5	-12.6	1.00 H	259	45.6	-14.7
4	139.61	39.1 QP	43.5	-4.4	1.00 H	103	49.0	-9.9
5	238.55	23.8 QP	46.0	-22.2	1.00 H	111	34.4	-10.6
6	448.07	27.9 QP	46.0	-18.1	1.00 H	98	32.3	-4.4

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)
3. The other emission levels were very low against the limit.
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 20dB below the permissible value to be report.

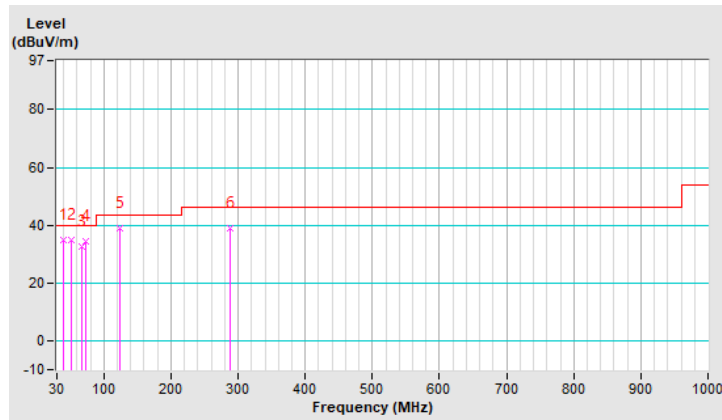


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	40.67	34.9 QP	40.0	-5.1	1.00 V	100	45.2	-10.3
2	52.31	34.9 QP	40.0	-5.1	1.00 V	88	44.7	-9.8
3	66.86	32.7 QP	40.0	-7.3	1.00 V	118	43.6	-10.9
4	72.68	34.4 QP	40.0	-5.6	1.00 V	70	46.5	-12.1
5	124.09	39.0 QP	43.5	-4.5	1.00 V	121	50.2	-11.2
6	288.99	39.1 QP	46.0	-6.9	1.00 V	104	47.3	-8.2

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)
3. The other emission levels were very low against the limit.
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 20dB below the permissible value to be report.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

Tested date: Jan. 04, 2020

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Dec. 11, 2019	Dec. 10, 2020
RF signal cable Woken	5D-FB	Cable-cond1-01	Sep. 05, 2019	Sep. 04, 2020
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 21, 2019	Feb. 20, 2020
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 22, 2019	Aug. 21, 2020
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	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 Shielded Room 1.

3. The VCCI Site Registration No. is C-12040.

4.2.3 Test Procedures

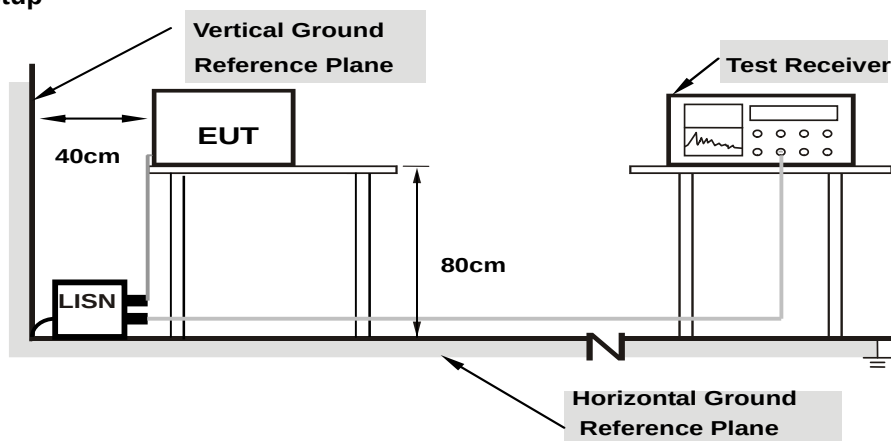
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

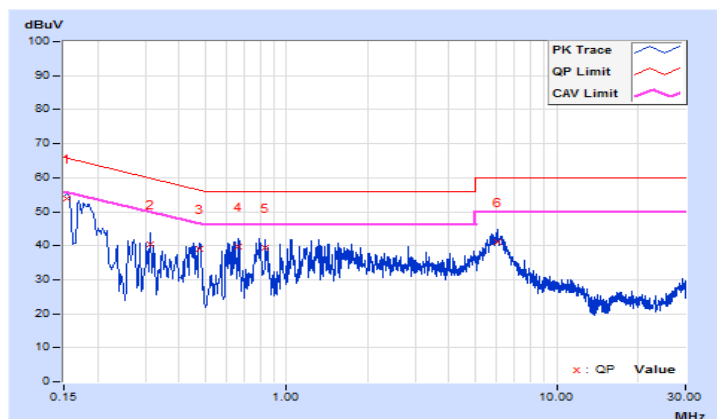
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	9.64	44.40	32.40	54.04	42.04	65.79	55.79	-11.75	-13.75
2	0.31422	9.65	30.79	15.58	40.44	25.23	59.86	49.86	-19.42	-24.63
3	0.47453	9.66	29.30	15.95	38.96	25.61	56.43	46.43	-17.47	-20.82
4	0.66612	9.68	30.18	17.32	39.86	27.00	56.00	46.00	-16.14	-19.00
5	0.83816	9.69	29.59	17.07	39.28	26.76	56.00	46.00	-16.72	-19.24
6	6.03455	9.83	31.14	25.45	40.97	35.28	60.00	50.00	-19.03	-14.72

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

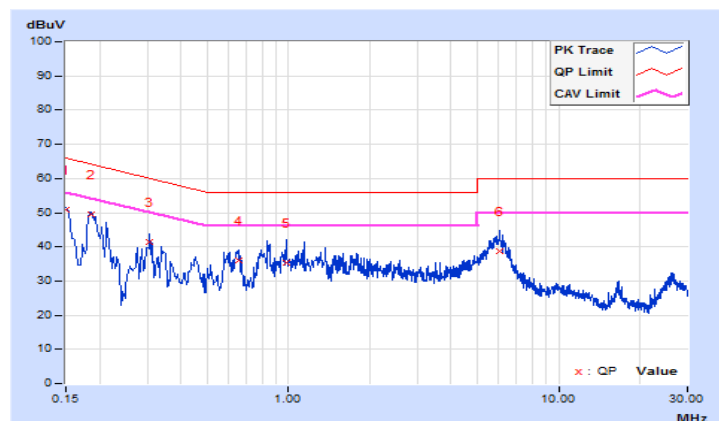


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
	[MHz]		[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.64	41.27	36.30	50.91	45.94	66.00	56.00	-15.09	-10.06
2	0.18508	9.64	39.70	33.31	49.34	42.95	64.25	54.25	-14.91	-11.30
3	0.30640	9.65	31.79	23.50	41.44	33.15	60.07	50.07	-18.63	-16.92
4	0.65734	9.67	26.21	17.52	35.88	27.19	56.00	46.00	-20.12	-18.81
5	0.97892	9.69	25.79	18.44	35.48	28.13	56.00	46.00	-20.52	-17.87
6	6.05019	9.83	29.01	23.64	38.84	33.47	60.00	50.00	-21.16	-16.53

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



4.3 Conducted Output Power Measurement

4.3.1 Limits of Conducted Output Power Measurement

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

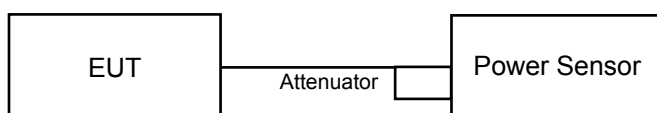
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedures

For Peak Power

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

For Average Power

Average power sensor was used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 Test Results

For Peak Power

802.11b

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	20.99	20.55	239.104	23.79	30.00	Pass
6	2437	21.00	20.77	245.292	23.90	30.00	Pass
11	2462	20.89	20.83	243.804	23.87	30.00	Pass
12	2467	21.03	20.76	245.889	23.91	30.00	Pass
13	2472	13.51	13.21	43.380	16.37	30.00	Pass

802.11g

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	23.12	23.24	415.979	26.19	30.00	Pass
2	2417	24.58	24.25	553.151	27.43	30.00	Pass
6	2437	25.27	25.14	663.100	28.22	30.00	Pass
10	2457	25.03	24.87	625.322	27.96	30.00	Pass
11	2462	23.81	23.57	467.946	26.70	30.00	Pass
12	2467	22.92	22.78	385.555	25.86	30.00	Pass
13	2472	13.62	13.74	46.673	16.69	30.00	Pass

802.11n (VHT20)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	23.13	22.86	398.786	26.01	30.00	PASS
2	2417	24.22	24.61	553.309	27.43	30.00	PASS
6	2437	24.96	24.79	614.630	27.89	30.00	PASS
10	2457	24.11	23.87	501.413	27.00	30.00	PASS
11	2462	22.53	22.24	346.555	25.40	30.00	PASS
12	2467	20.23	20.11	208.004	23.18	30.00	PASS
13	2472	10.98	10.73	24.361	13.87	30.00	PASS

802.11n (VHT40)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	20.20	20.98	230.027	23.62	30.00	PASS
4	2427	21.89	22.12	317.455	25.02	30.00	PASS
6	2437	23.72	23.81	475.941	26.78	30.00	PASS
8	2447	22.01	22.31	329.071	25.17	30.00	PASS
9	2452	21.56	20.14	246.495	23.92	30.00	PASS
10	2457	15.41	15.15	67.488	18.29	30.00	PASS
11	2462	10.85	10.01	22.185	13.46	30.00	PASS

802.11ax (HE20)_CDD

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	23.22	22.97	408.047	26.11	30.00	PASS
2	2417	24.57	24.32	556.814	27.46	30.00	PASS
6	2437	25.02	24.81	620.378	27.93	30.00	PASS
10	2457	24.26	23.88	511.029	27.08	30.00	PASS
11	2462	22.67	22.31	355.143	25.50	30.00	PASS
12	2467	20.33	20.24	213.577	23.30	30.00	PASS
13	2472	10.83	11.02	24.753	13.94	30.00	PASS

802.11ax (HE40)_CDD

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	21.19	20.24	237.204	23.75	30.00	PASS
4	2427	22.99	21.12	328.487	25.17	30.00	PASS
6	2437	23.79	23.83	480.878	26.82	30.00	PASS
8	2447	22.07	22.35	332.856	25.22	30.00	PASS
9	2452	21.59	20.13	247.251	23.93	30.00	PASS
10	2457	15.45	15.18	68.036	18.33	30.00	PASS
11	2462	10.86	10.10	22.423	13.51	30.00	PASS

802.11ax (HE20 RU26)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	21.85	22.78	342.780	25.35	30.00	PASS
2	2417	22.04	21.94	316.271	25.00	30.00	PASS
6	2437	24.34	24.07	526.914	27.22	30.00	PASS
10	2457	22.41	22.23	341.290	25.33	30.00	PASS
11	2462	18.84	17.20	129.041	21.11	30.00	PASS
12	2467	11.97	11.92	31.300	14.96	30.00	PASS
13	2472	9.68	9.48	18.162	12.59	30.00	PASS

802.11ax (HE20 RU52)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	21.88	22.79	344.278	25.37	30.00	290.897
2	2417	22.06	21.94	317.009	25.01	30.00	385.196
6	2437	24.36	24.05	526.995	27.22	30.00	404.605
10	2457	22.40	22.29	343.214	25.36	30.00	322.160
11	2462	18.84	17.18	128.800	21.10	30.00	158.879
12	2467	11.98	11.94	31.407	14.97	30.00	29.924
13	2472	9.71	9.48	18.226	12.61	30.00	17.575

802.11ax (HE20 RU106)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	21.88	22.82	345.596	25.39	30.00	PASS
2	2417	22.09	21.97	319.206	25.04	30.00	PASS
6	2437	24.87	24.71	602.703	27.80	30.00	PASS
10	2457	22.42	22.25	342.462	25.35	30.00	PASS
11	2462	18.86	17.18	129.153	21.11	30.00	PASS
12	2467	11.99	11.98	31.588	15.00	30.00	PASS
13	2472	9.66	9.46	18.078	12.57	30.00	PASS

802.11ax (HE20 RU242)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	17.13	18.18	117.408	20.70	30.00	PASS
2	2417	22.09	21.98	319.569	25.05	30.00	PASS
6	2437	24.24	24.12	523.687	27.19	30.00	PASS
10	2457	22.40	22.28	342.824	25.35	30.00	PASS
11	2462	18.83	17.18	128.624	21.09	30.00	PASS
12	2467	13.98	13.95	49.834	16.98	30.00	PASS
13	2472	10.69	10.84	23.856	13.78	30.00	PASS

802.11ax (HE40 RU484)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	17.65	16.88	106.963	20.29	30.00	PASS
4	2427	19.96	18.21	165.305	22.18	30.00	PASS
6	2437	24.75	23.93	545.71	27.37	30.00	PASS
8	2447	18.36	18.42	138.051	21.40	30.00	PASS
9	2452	18.32	17.04	118.502	20.74	30.00	PASS
10	2457	14.76	14.57	58.565	17.68	30.00	PASS
11	2462	10.80	10.03	22.092	13.44	30.00	PASS

For Average Power

802.11b

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	18.47	18.16	135.771	21.33
6	2437	18.44	18.26	136.811	21.36
11	2462	18.42	18.31	137.266	21.38
12	2467	18.49	18.27	137.775	21.39
13	2472	10.84	10.59	23.589	13.73

802.11g

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	14.32	14.47	55.030	17.41
2	2417	16.44	16.17	85.455	19.32
6	2437	16.91	16.82	97.175	19.88
10	2457	16.87	16.73	95.739	19.81
11	2462	15.62	15.51	72.038	18.58
12	2467	14.06	13.98	50.471	17.03
13	2472	4.86	4.74	6.041	7.81

802.11n (VHT20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	14.41	14.22	54.030	17.33
2	2417	16.53	16.12	85.904	19.34
6	2437	17.27	17.16	105.333	20.23
10	2457	16.42	16.32	86.708	19.38
11	2462	14.43	14.05	53.143	17.25
12	2467	11.81	11.74	30.099	14.79
13	2472	2.72	2.64	3.708	5.69

802.11n (VHT40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	12.95	12.64	38.089	15.81
4	2427	13.49	13.25	43.471	16.38
6	2437	16.89	16.28	91.327	19.61
8	2447	14.07	14.31	52.504	17.20
9	2452	12.14	12.06	32.437	15.11
10	2457	6.59	6.52	9.047	9.57
11	2462	2.64	2.58	3.648	5.62

802.11ax (HE20)_CDD

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	14.52	14.23	54.799	17.39
2	2417	16.46	16.28	86.721	19.38
6	2437	17.51	17.37	110.940	20.45
10	2457	16.61	16.38	89.265	19.51
11	2462	14.37	14.23	53.838	17.31
12	2467	11.97	11.72	30.599	14.86
13	2472	2.57	2.84	3.730	5.72

802.11ax (HE40)_CDD

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	12.98	12.81	38.960	15.91
4	2427	13.49	13.35	43.963	16.43
6	2437	16.91	16.31	91.847	19.63
8	2447	14.15	14.39	53.481	17.28
9	2452	12.19	12.04	32.554	15.13
10	2457	6.61	6.55	9.100	9.59
11	2462	2.89	2.58	3.756	5.75

802.11ax (HE20 RU26)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	14.21	14.10	52.067	17.17
2	2417	14.48	14.49	56.173	17.50
6	2437	16.89	16.76	96.289	19.84
10	2457	14.98	14.98	62.954	17.99
11	2462	10.99	10.97	25.063	13.99
12	2467	3.98	3.99	5.006	6.99
13	2472	1.47	1.48	2.809	4.49

802.11ax (HE20 RU52)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	14.22	14.09	52.069	17.17
2	2417	14.49	14.48	56.173	17.50
6	2437	16.87	16.85	97.058	19.87
10	2457	14.97	14.99	62.955	17.99
11	2462	10.99	10.98	25.091	14.00
12	2467	3.98	3.98	5.000	6.99
13	2472	1.48	1.48	2.812	4.49

802.11ax (HE20 RU106)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	14.21	14.10	52.067	17.17
2	2417	14.48	14.49	56.173	17.50
6	2437	16.89	16.76	96.289	19.84
10	2457	14.98	14.98	62.954	17.99
11	2462	10.99	10.97	25.063	13.99
12	2467	3.98	3.99	5.006	6.99
13	2472	1.47	1.48	2.809	4.49

802.11ax (HE20 RU242)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	9.47	9.48	17.723	12.49
2	2417	14.47	14.49	56.109	17.49
6	2437	16.82	16.79	95.837	19.82
10	2457	14.98	14.99	63.027	18.00
11	2462	10.97	10.97	25.006	13.98
12	2467	5.98	5.97	7.917	8.99
13	2472	2.49	2.82	3.688	5.67

802.11ax (HE40 RU484)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	9.47	9.49	17.743	12.49
4	2427	10.47	10.48	22.312	13.49
6	2437	16.25	16.16	83.475	19.22
8	2447	10.48	10.47	22.312	13.49
9	2452	8.97	8.97	15.778	11.98
10	2457	5.97	5.97	7.908	8.98
11	2462	2.86	2.56	3.735	5.72

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.

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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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