FCC Test Report (WLAN)

Report No.:	RF200330E01-1
FCC ID:	H8NEAI2304P
Test Model:	EAI2304P
Received Date:	Mar. 30, 2020
Test Date:	Feb. 07 to May 01, 2020
Issued Date:	May 18, 2020
Applicant:	ASKEY COMPUTER CORP.
Address:	10F, NO.119, JIANKANG RD., ZHONGHE DIST., NEW TAIPEI CITY 23585, TAIWAN, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
RF200330E01-1	Original release.	May 18, 2020

1 Certificate of Conformity

Product:	Indoor AP
Brand:	ASKEY, T-Mobile
Test Model:	EAI2304P
Sample Status:	ENGINEERING SAMPLE
Applicant:	ASKEY COMPUTER CORP.
Test Date:	Feb. 07 to May 01, 2020
Standard:	47 CFR FCC Part 15, Subpart E (Section 15.407) 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 EMC characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** May 18, 2020

Joyce Kuo / Specialist

Approved by : _____ , **Date:** May 18, 2020

Clark Lin / Technical Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -6.85 dB at 11.85547 MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -1.0 dB at 5647.90 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is R-SMA not a standard connector.

1. For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOBE test plots were recorded in Annex A.
2. For U-NII-1 band compliance with rule 15.407(b) of the band-edge items, the test plots were recorded in Annex B. Test Procedures refer to report 4.1.3.
3. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.9 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.4 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.0 dB
	18GHz ~ 40GHz	5.3 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (WLAN)

Product	Indoor AP
Brand	ASKEY, T-Mobile
Test Model	EAI2304P
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	Refer to Note
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode and VHT (20/40) mode in 2.4GHz 1024QAM for OFDMA in 11ax HE mode
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b: up to 11 Mbps 802.11a/g: up to 54 Mbps 802.11n: up to 600 Mbps 802.11ac: up to 1733.3 Mbps 802.11ax: up to 2401.9 Mbps
Operating Frequency	**2.4GHz:** 2.412 ~ 2.462 GHz **5GHz:** 5.18 ~ 5.24 GHz, 5.745 ~ 5.825 GHz
Number of Channel	**2.4GHz:** 802.11b, 802.11g, 802.11n (HT20), VHT20, 802.11ax (HE20): 11 802.11n (HT40), VHT40, 802.11ax (HE40): 7 **5GHz:** 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 9 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 4 802.11ac (VHT80), 802.11ax (HE80): 2
Output Power	**CDD Mode:** **2.412 ~ 2.462 GHz:** 978.061 mW **5.18 ~ 5.24 GHz:** 714.126 mW **5.745 ~ 5.825 GHz:** 991.459 mW **Beamforming Mode:** **2.412 ~ 2.462 GHz:** 321.784 mW **5.18 ~ 5.24 GHz:** 345.166 mW **5.745 ~ 5.825 GHz:** 333.511 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x1,
Data Cable Supplied	RJ-45 Cable x 1(Unshielded, 2m)

Note:

1. The EUT must be supplied with a power adapter, POE adapter (only for test) or battery, please refer to the following table:

Adapter		
Brand	Model	Spec.
SUNNY	SYS1546-3612-T3	Input: 100-240V, 1.5A, 50/60Hz Output: 12V, 3.0A DC output cable: Unshielded, 1.4m
Only for test, not for sale		
POE adapter		
Brand	Model	Spec.
DELTA	ADH-45AR B	Input: 100-240V, 1.5A, 50/60Hz Output: 56V, 0.805A AC cable: Unshielded, 2.3m
Microsemi	PD-9001GR/AT/AC	Input: 100-240V, 0.67A, 50/60Hz Output: 55V, 0.6A AC cable: Unshielded, 2.3m
Battery		
Brand	Model	Spec.
ETICA	BP19-002820	Voltage Range: 6.0-8.4V Capacity: 2,900 mAh

2. The EUT has below radios as following table:

Radio 1	Radio 2	Radio 3
WLAN(2.4GHz)	WLAN(5GHz)	WWAN(LTE)

3. Simultaneously transmission condition.

Condition	Technology
1	WWAN + WLAN(2.4GHz) + WLAN(5GHz) MIMO
2	WWAN + WLAN(5GHz) MIMO
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.	

4. EUT contains a certified LTE module as following table:

Brand	Model	FCC ID:
Telit	LM960	RI7LM960

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

Antenna NO.	RF Chain NO.	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type
WIFI_0	chain0 chain3	4.5 4.54	2.4~2.4835GHz 5.15~5.85GHz	Dipole	R-SMA
WIFI_1	chain1 chain2	4.5 4.54	2.4~2.4835GHz 5.15~5.85GHz	Dipole	R-SMA
WIFI_2	chain2 chain1	4.5 4.54	2.4~2.4835GHz 5.15~5.85GHz	Dipole	R-SMA
WIFI_3	chain3 chain0	4.5 4.54	2.4~2.4835GHz 5.15~5.85GHz	Dipole	R-SMA

6. For conducted emissions, the EUT was pre-tested under the following modes:

Pre-test Mode	Description	Model
Mode A	Power from adapter	SYS1546-3612-T3
Mode B	Power from PoE adapter	ADH-45AR B
Mode C	**Power from PoE adapter**	**PD-9001GR/AT/AC**

From the above modes, the worst case was found in **Mode C**. Therefore only the test data of the mode was recorded in this report.

7. For radiated emissions, the EUT was pre-tested under the following modes:

Pre-test Mode	Item	Description		Model
Mode A	Below 1GHz	laying-flat type	Power from Adapter	SYS1546-3612-T3
Mode B	Below 1GHz	wall mount type	Power from Adapter	SYS1546-3612-T3
Mode C	Below 1GHz	laying-flat type	Power from Battery	BP19-002820
Mode D	Below 1GHz	laying-flat type	Power from PoE adapter	ADH-45AR B
Mode E	**Below 1GHz**	laying-flat type	**Power from PoE adapter**	**PD-9001GR/AT/AC**
Mode F	Above 1GHz	laying-flat type	Power from PoE adapter	PD-9001GR/AT/AC
Mode G	**Above 1GHz**	wall mount type	**Power from PoE adapter**	**PD-9001GR/AT/AC**

From the above modes, the worst spurious emission was found in **Mode E and Mode G**. Therefore only the test data of the modes were recorded in this report.

8. The EUT incorporates a MIMO function:

2.4GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
802.11b	1TX (Fixed Chain 0)	4RX
802.11g	4TX	4RX
802.11n (HT20)	4TX	4RX
802.11n (HT40)	4TX	4RX
VHT20	4TX	4RX
VHT40	4TX	4RX
802.11ax (HE20)	4TX	4RX
802.11ax (HE40)	4TX	4RX
5GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
802.11a	4TX	4RX
802.11n (HT20)	4TX	4RX
802.11n (HT40)	4TX	4RX
802.11ac (VHT20)	4TX	4RX
802.11ac (VHT40)	4TX	4RX
802.11ac (VHT80)	4TX	4RX
802.11ax (HE20)	4TX	4RX
802.11ax (HE40)	4TX	4RX
802.11ax (HE80)	4TX	4RX

Note:
1. All of modulation mode support beamforming function except 802.11a/b/g modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz), 802.11ac mode for 20MHz (40MHz, 80MHz) and 802.11ax mode for 20MHz (40MHz, 80MHz), therefore the manufacturer will control the power for 802.11n/ac mode is the same as the 802.11ax or more lower than it and investigated worst case to representative mode in test report. (Final test mode refer to section 3.2.1)

9. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

FOR 5180 ~ 5250MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

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), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency
42	5210 MHz

FOR 5745 ~ 5825MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

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

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

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency
155	5775 MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥1G:** Radiated Emission above 1GHz **RE<1G:** Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

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.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6Mb/s
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6Mb/s
Beamforming Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ax (HE20)	5180-5240	36 to 48	36, 40, 48	OFDMA	BPSK	MCS0
802.11ax (HE40)		38 to 46	38, 46	OFDMA	BPSK	MCS0
802.11ax (HE80)		42	42	OFDMA	BPSK	MCS0
802.11ax (HE20)	5745-5825	149 to 165	149, 157, 165	OFDMA	BPSK	MCS0
802.11ax (HE40)		151 to 159	151, 159	OFDMA	BPSK	MCS0
802.11ax (HE80)		155	155	OFDMA	BPSK	MCS0

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.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ax (HE20)	5180-5240 5745-5825	36 to 48 149 to 165	165	OFDMA	BPSK	MCS0

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.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ax (HE20)	5180-5240 5745-5825	36 to 48 149 to 165	165	OFDMA	BPSK	MCS0

Antenna Port Conducted 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.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6Mb/s
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6Mb/s
Beamforming Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ac (VHT20) (output power only)	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	MCS0
802.11ac (VHT40) (output power only)		38 to 46	38, 46	OFDM	BPSK	MCS0
802.11ac (VHT80) (output power only)		42	42	OFDM	BPSK	MCS0
802.11ax (HE20)		36 to 48	36, 40, 48	OFDMA	BPSK	MCS0
802.11ax (HE40)		38 to 46	38, 46	OFDMA	BPSK	MCS0
802.11ax (HE80)		42	42	OFDMA	BPSK	MCS0
802.11ac (VHT20) (output power only)	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	MCS0
802.11ac (VHT40) (output power only)		151 to 159	151, 159	OFDM	BPSK	MCS0
802.11ac (VHT80) (output power only)		155	155	OFDM	BPSK	MCS0
802.11ax (HE20)		149 to 165	149, 157, 165	OFDMA	BPSK	MCS0
802.11ax (HE40)		151 to 159	151, 159	OFDMA	BPSK	MCS0
802.11ax (HE80)		155	155	OFDMA	BPSK	MCS0

Test Condition:

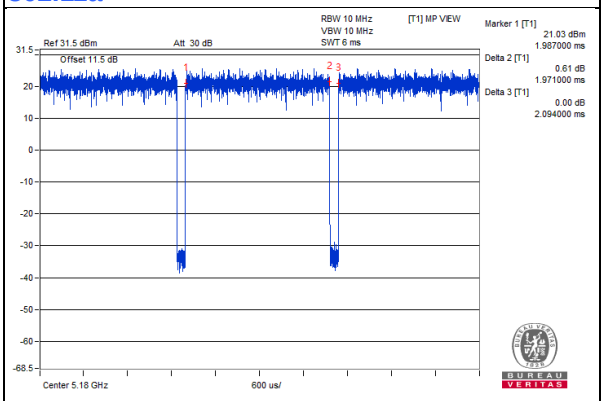
Applicable To	Environmental Conditions	Input Power (System)	Tested By
RE≥1G	25deg. C, 75%RH,	120Vac, 60Hz	Nelson Teng
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Nelson Teng
PLC	20deg. C, 60%RH	120Vac, 60Hz	Nick Lo
APCM	25deg. C, 60%RH	120Vac, 60Hz	Andy Ho

3.3 Duty Cycle of Test Signal

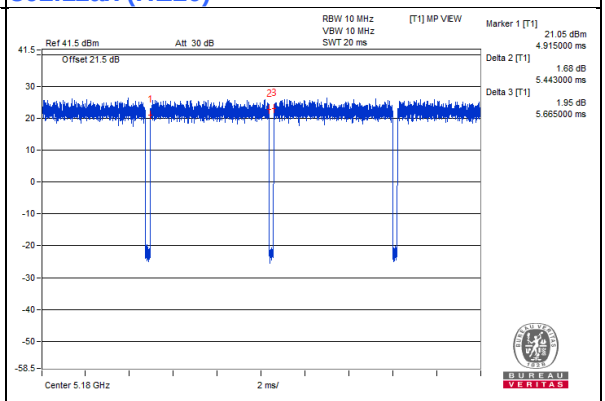
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 1.971 ms/2.094 ms = 0.941, Duty factor = 10 * log (1/Duty cycle) = 0.26 dB
802.11ax (HE20): Duty cycle = 5.443 ms/5.665 ms = 0.961, Duty factor = 10 * log (1/Duty cycle) = 0.17 dB
802.11ax (HE40): Duty cycle = 5.451 ms/5.676 ms = 0.96, Duty factor = 10 * log (1/Duty cycle) = 0.18 dB
802.11ax (HE80): Duty cycle = 5.447 ms/5.79 ms = 0.941, Duty factor = 10 * log (1/Duty cycle) = 0.27 dB

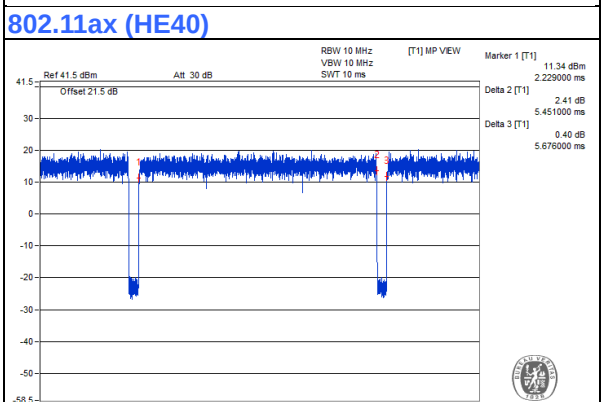
802.11a



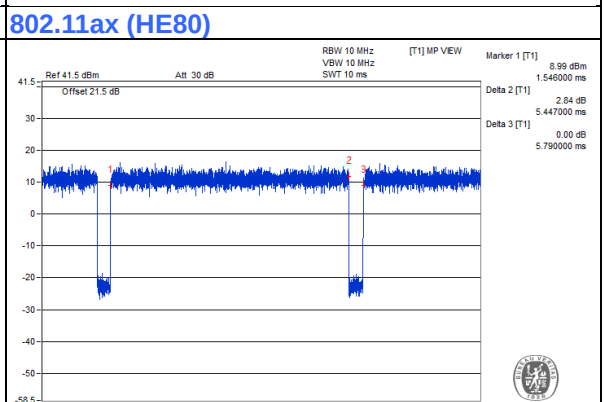
802.11ax (HE20)



802.11ax (HE40)



802.11ax (HE80)



3.4 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.

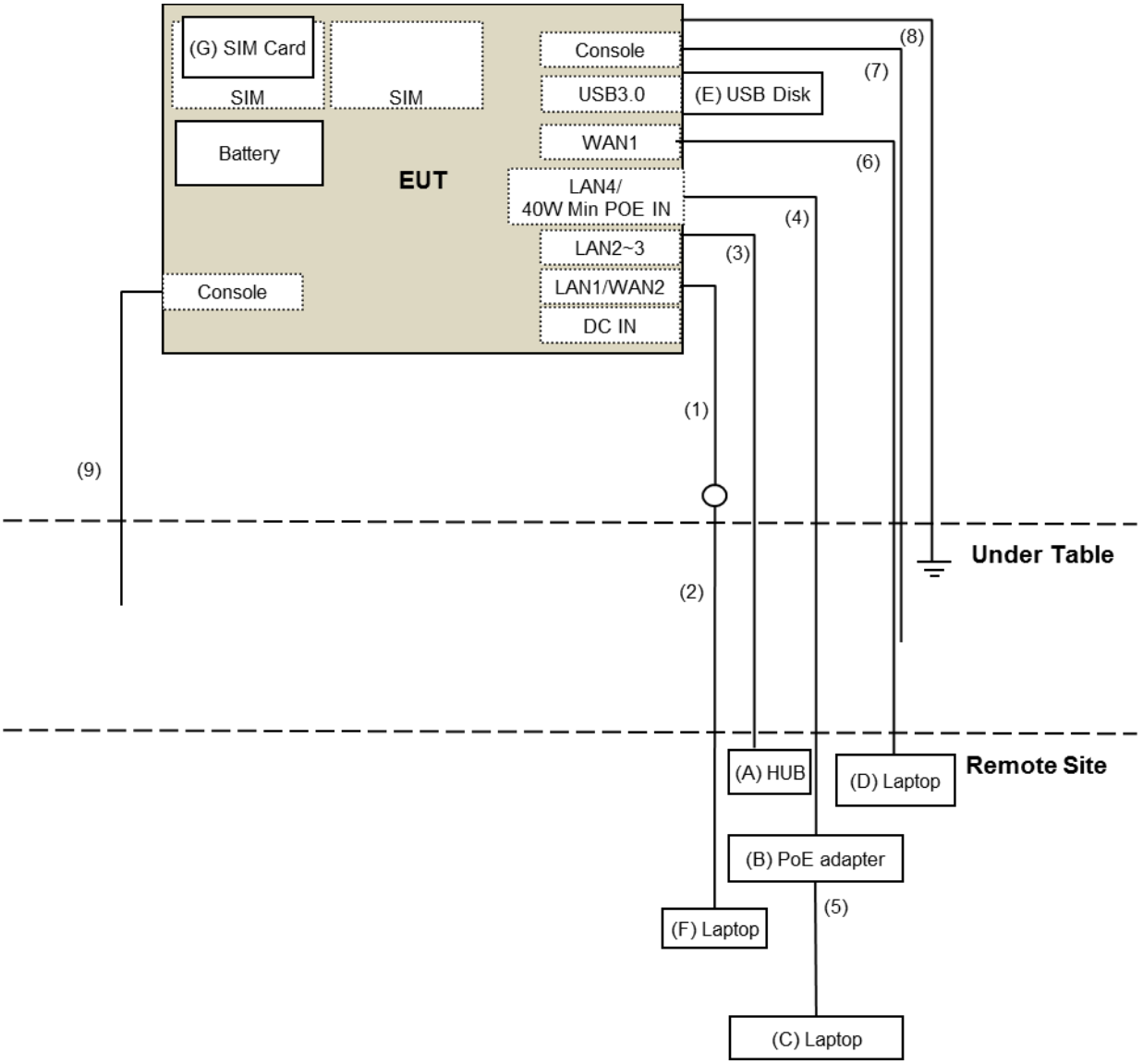
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	HUB	ZyXEL	GS1100-16	S150H44000046	FCC DoC	Provided by Lab
B.	PoE Adapter	Microsemi	PD-9001GR/AT/AC	NA	NA	Supplied by client
C.	Laptop	DELL	E5430	GM1SKV1	FCC DoC	Provided by Lab
D.	Laptop	DELL	E6420	482T3R1	FCC DoC	Provided by Lab
E.	USB Disk	SanDisk	NA	NA	NA	Provided by Lab
F.	Laptop	DELL	E6420	B92T3R1	FCC DoC	Provided by Lab
G.	SIM Card	KeysSight	E7515-10910	NA	NA	Provided by Lab

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 Cable	1	2	No	0	Supplied by client
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	RJ-45 Cable	2	10	No	0	Provided by Lab
4.	RJ-45 Cable	1	10	No	0	Provided by Lab
5.	RJ-45 Cable	1	1.8	No	0	Provided by Lab
6.	RJ-45 Cable	1	10	No	0	Provided by Lab
7.	RJ-45 to RS-232 Console Cable	1	1.8	No	0	Provided by Lab
8.	GND cable	1	3	No	0	Provided by Lab
9.	Micro USB Cable	1	1.8	No	0	Provided by Lab

3.4.1 Configuration of System under Test



3.5 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 E (15.407)
ANSI C63.10-2013

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

References Test Guidance:
KDB 789033 D02 General UNII Test Procedure New Rules v02r01
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.

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.

Limits of unwanted emission out of the restricted bands

Applicable To		Limit	
789033 D02 General UNII Test Procedure New Rules v02r01		Field Strength at 3m	
		PK:74 (dBµV/m)	AV:54 (dBµV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBµV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	15.407(b)(4)(i)	PK:-27 (dBm/MHz) *1 PK:10 (dBm/MHz) *2 PK:15.6 (dBm/MHz) *3 PK:27 (dBm/MHz) *4	PK: 68.2(dBµV/m) *1 PK:105.2 (dBµV/m) *2 PK: 110.8(dBµV/m) *3 PK:122.2 (dBµV/m) *4

*1 beyond 75 MHz or more above of the band edge.

*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note:

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ µV/m, where P is the eirp (Watts).

4.1.2 Test Instruments

For OOBE test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 03, 2019	July 02, 2020
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Nov. 24, 2019	Nov. 23, 2020
Pre-Amplifier EMCI	EMC12630SE	980384	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-1200	160922	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-2000	180601	June 10, 2019	June 09, 2020
RF Cable	EMC104-SM-SM-6000	180602	June 10, 2019	June 09, 2020
Spectrum Analyzer Keysight	N9030A	MY54490679	July 17, 2019	July 16, 2020
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 15, 2020	Jan. 14, 2021
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 24, 2019	Nov. 23, 2020
RF Cable	EMC102-KM-KM-1200	160924	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC102-KM-KM-4500	181205	Aug. 26, 2019	Aug. 25, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 3.
3. Tested Date: Feb. 07, 2020

For Radiated Emission test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 03, 2019	July 02, 2020
Pre-Amplifier EMCI	EMC001340	980142	May 30, 2019	May 29, 2020
Loop Antenna Electro-Metrics	EM-6879	264	Feb. 18, 2020	Feb. 17, 2021
RF Cable	NA	LOOPCAB-001	Jan. 08, 2020	Jan. 07, 2021
RF Cable	NA	LOOPCAB-002	Jan. 08, 2020	Jan. 07, 2021
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-05	Apr. 30, 2019	Apr. 29, 2020
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Nov. 11, 2019	Nov. 10, 2020
RF Cable	8D	966-3-1	Mar. 17, 2020	Mar. 16, 2021
RF Cable	8D	966-3-2	Mar. 17, 2020	Mar. 16, 2021
RF Cable	8D	966-3-3	Mar. 17, 2020	Mar. 16, 2021
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Sep. 26, 2019	Sep. 25, 2020
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Nov. 24, 2019	Nov. 23, 2020
Pre-Amplifier EMCI	EMC12630SE	980384	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-1200	160922	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-2000	180601	June 10, 2019	June 09, 2020
RF Cable	EMC104-SM-SM-6000	180602	June 10, 2019	June 09, 2020
Spectrum Analyzer Keysight	N9030A	MY54490679	July 17, 2019	July 16, 2020
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 15, 2020	Jan. 14, 2021
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 24, 2019	Nov. 23, 2020
RF Cable	EMC102-KM-KM-1200	160924	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC-KM-KM-4000	200214	Mar. 11, 2020	Mar. 10, 2021
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 3.
3. Loop antenna was used for all emissions below 30 MHz.
4. Tested Date: Apr. 27 to 29, 2020

For other test items:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	June 04, 2019	June 03, 2020
Power meter Anritsu	ML2495A	1014008	May 13, 2019	May 12, 2020
Power sensor Anritsu	MA2411B	0917122	May 13, 2019	May 12, 2020
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021
DC Power Supply Topward	6603D	795558	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 16, 2020	Jan. 15, 2021
True RMS Clamp Meter FLUKE	325	31130711WS	May 21, 2019	May 20, 2020
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA

Note:
1. The test was performed in Oven room 2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: May 01, 2020

4.1.3 Test Procedure

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:

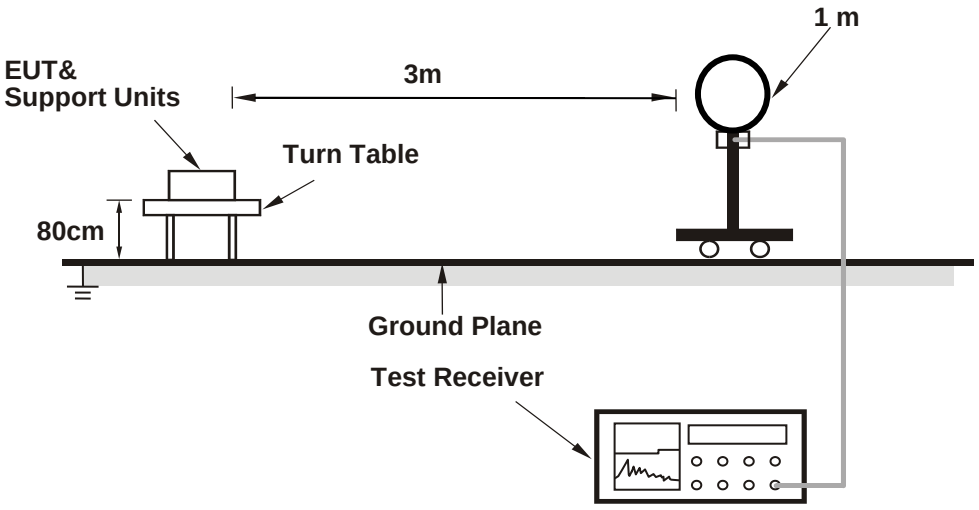
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 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

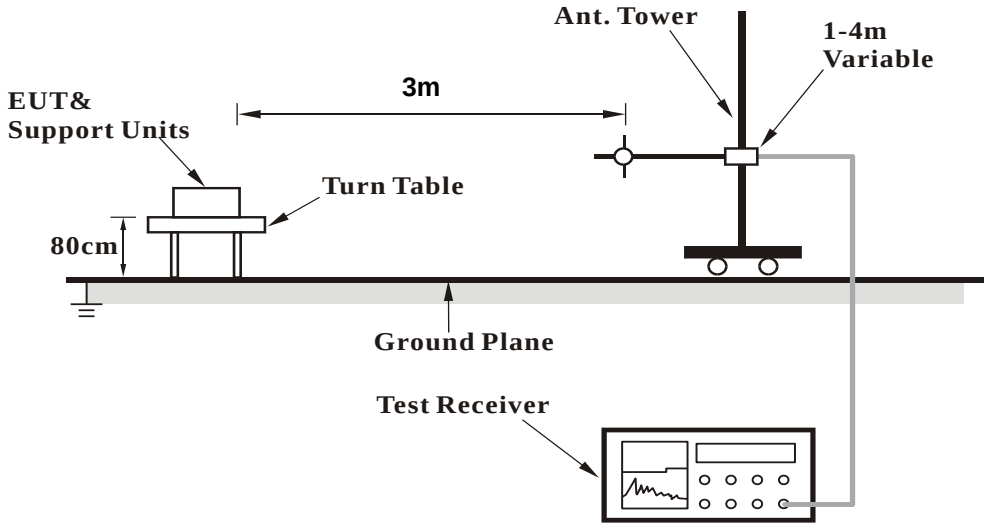
No deviation.

4.1.5 Test Setup

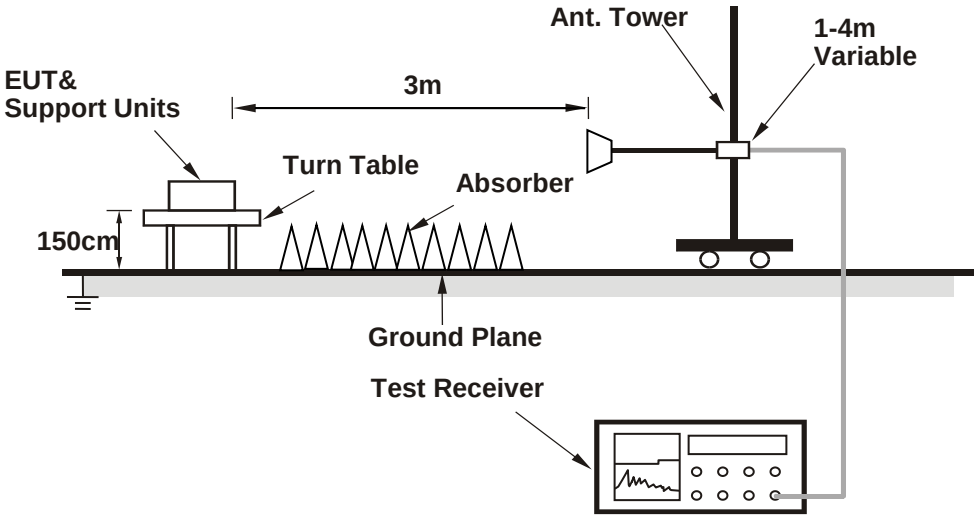
For Radiated emission below 30MHz



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 Condition

a. Connected the EUT with the Laptop which is placed on remote site.
b. Controlling software (QDART-Connectivity1.0-00070) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data:

802.11a

CHANNEL	TX Channel 36	**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	51.1 PK	74.0	-22.9	1.63 H	48	47.4	3.7
2	5150.00	41.5 AV	54.0	-12.5	1.63 H	48	37.8	3.7
3	*5180.00	110.5 PK			1.63 H	48	106.9	3.6
4	*5180.00	103.3 AV			1.63 H	48	99.7	3.6
5	#10360.00	44.3 PK	68.2	-23.9	1.56 H	264	31.6	12.7
6	15540.00	46.9 PK	74.0	-27.1	1.96 H	67	33.7	13.2
7	15540.00	35.8 AV	54.0	-18.2	1.96 H	67	22.6	13.2
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	59.2 PK	74.0	-14.8	1.52 V	6	55.5	3.7
2	5150.00	49.1 AV	54.0	-4.9	1.52 V	6	45.4	3.7
3	*5180.00	121.7 PK			1.52 V	6	118.1	3.6
4	*5180.00	112.8 AV			1.52 V	6	109.2	3.6
5	#10360.00	42.6 PK	68.2	-25.6	2.53 V	129	29.9	12.7
6	15540.00	46.2 PK	74.0	-27.8	2.85 V	360	33.0	13.2
7	15540.00	33.7 AV	54.0	-20.3	2.85 V	360	20.5	13.2

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. 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	TX Channel 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	110.2 PK			1.58 H	43	106.7	3.5
2	*5200.00	103.1 AV			1.58 H	43	99.6	3.5
3	#10400.00	44.1 PK	68.2	-24.1	1.56 H	251	31.3	12.8
4	15600.00	46.5 PK	74.0	-27.5	1.91 H	61	33.0	13.5
5	15600.00	35.4 AV	54.0	-18.6	1.91 H	61	21.9	13.5
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	121.6 PK			1.50 V	9	118.1	3.5
2	*5200.00	113.0 AV			1.50 V	9	109.5	3.5
3	#10400.00	42.3 PK	68.2	-25.9	2.51 V	132	29.5	12.8
4	15600.00	46.2 PK	74.0	-27.8	2.86 V	360	32.7	13.5
5	15600.00	33.7 AV	54.0	-20.3	2.86 V	360	20.2	13.5

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	TX Channel 48	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	*5240.00	108.6 PK			1.57 H	15	105.1	3.5
2	*5240.00	101.1 AV			1.57 H	15	97.6	3.5
3	5432.66	50.6 PK	74.0	-23.4	1.57 H	15	46.9	3.7
4	5432.66	40.1 AV	54.0	-13.9	1.57 H	15	36.4	3.7
5	#10480.00	44.6 PK	68.2	-23.6	1.60 H	254	31.5	13.1
6	15720.00	47.2 PK	74.0	-26.8	1.98 H	74	33.4	13.8
7	15720.00	35.9 AV	54.0	-18.1	1.98 H	74	22.1	13.8
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	*5240.00	122.2 PK			2.12 V	235	118.7	3.5
2	*5240.00	113.6 AV			2.12 V	235	110.1	3.5
3	5432.66	56.5 PK	74.0	-17.5	2.12 V	235	52.8	3.7
4	5432.66	46.4 AV	54.0	-7.6	2.12 V	235	42.7	3.7
5	#10480.00	42.3 PK	68.2	-25.9	2.53 V	127	29.2	13.1
6	15720.00	46.2 PK	74.0	-27.8	2.83 V	360	32.4	13.8
7	15720.00	33.8 AV	54.0	-20.2	2.83 V	360	20.0	13.8

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) – 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	TX Channel 149	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	#5605.57	52.4 PK	68.2	-15.8	1.74 H	325	48.7	3.7
2	*5745.00	111.5 PK			1.74 H	325	107.5	4.0
3	*5745.00	101.5 AV			1.74 H	325	97.5	4.0
4	#5939.65	53.1 PK	68.2	-15.1	1.74 H	325	48.4	4.7
5	11490.00	44.7 PK	74.0	-29.3	1.55 H	252	31.4	13.3
6	11490.00	33.4 AV	54.0	-20.6	1.55 H	252	20.1	13.3
7	#17235.00	47.2 PK	68.2	-21.0	2.00 H	77	29.6	17.6
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	#5626.51	61.5 PK	68.2	-6.7	1.89 V	324	57.7	3.8
2	*5745.00	124.9 PK			1.89 V	324	120.9	4.0
3	*5745.00	116.2 AV			1.89 V	324	112.2	4.0
4	#5930.99	58.9 PK	68.2	-9.3	1.89 V	324	54.4	4.5
5	11490.00	42.2 PK	74.0	-31.8	2.57 V	143	28.9	13.3
6	11490.00	30.8 AV	54.0	-23.2	2.57 V	143	17.5	13.3
7	#17235.00	46.5 PK	68.2	-21.7	2.87 V	360	28.9	17.6

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 157	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	#5592.49	51.9 PK	68.2	-16.3	1.85 H	301	48.1	3.8
2	*5785.00	111.7 PK			1.85 H	301	107.6	4.1
3	*5785.00	101.9 AV			1.85 H	301	97.8	4.1
4	#5976.56	52.9 PK	68.2	-15.3	1.85 H	301	48.2	4.7
5	11570.00	44.0 PK	74.0	-30.0	1.62 H	272	30.8	13.2
6	11570.00	32.7 AV	54.0	-21.3	1.62 H	272	19.5	13.2
7	#17355.00	46.8 PK	68.2	-21.4	1.90 H	67	29.2	17.6
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	#5596.65	58.0 PK	68.2	-10.2	1.82 V	326	54.2	3.8
2	*5785.00	123.9 PK			1.82 V	326	119.8	4.1
3	*5785.00	115.2 AV			1.82 V	326	111.1	4.1
4	#5937.14	54.5 PK	68.2	-13.7	1.82 V	326	49.8	4.7
5	11570.00	42.4 PK	74.0	-31.6	2.57 V	121	29.2	13.2
6	11570.00	30.9 AV	54.0	-23.1	2.57 V	121	17.7	13.2
7	#17355.00	46.2 PK	68.2	-22.0	2.81 V	360	28.6	17.6

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 165	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	#5607.17	51.6 PK	68.2	-16.6	1.94 H	318	47.9	3.7
2	*5825.00	112.6 PK			1.94 H	318	108.3	4.3
3	*5825.00	102.5 AV			1.94 H	318	98.2	4.3
4	#6011.74	52.3 PK	68.2	-15.9	1.94 H	318	47.5	4.8
5	11650.00	44.3 PK	74.0	-29.7	1.53 H	258	31.0	13.3
6	11650.00	33.3 AV	54.0	-20.7	1.53 H	258	20.0	13.3
7	#17475.00	46.1 PK	68.2	-22.1	1.96 H	79	28.2	17.9
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	#5626.11	60.2 PK	68.2	-8.0	2.04 V	312	56.4	3.8
2	*5825.00	124.7 PK			2.04 V	312	120.4	4.3
3	*5825.00	116.1 AV			2.04 V	312	111.8	4.3
4	#5928.12	58.0 PK	68.2	-10.2	2.04 V	312	53.5	4.5
5	11650.00	42.2 PK	74.0	-31.8	2.55 V	141	28.9	13.3
6	11650.00	30.8 AV	54.0	-23.2	2.55 V	141	17.5	13.3
7	#17475.00	46.5 PK	68.2	-21.7	2.92 V	360	28.6	17.9

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) – 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.

802.11ax (HE20)

CHANNEL	TX Channel 36	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	5145.61	52.5 PK	74.0	-21.5	1.52 H	46	48.8	3.7
2	5145.61	43.0 AV	54.0	-11.0	1.52 H	46	39.3	3.7
3	*5180.00	112.6 PK			1.52 H	46	109.0	3.6
4	*5180.00	101.2 AV			1.52 H	46	97.6	3.6
5	#10360.00	44.3 PK	68.2	-23.9	1.58 H	256	31.6	12.7
6	15540.00	46.3 PK	74.0	-27.7	1.95 H	62	33.1	13.2
7	15540.00	35.3 AV	54.0	-18.7	1.95 H	62	22.1	13.2
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	5146.65	65.7 PK	74.0	-8.3	1.42 V	357	62.0	3.7
2	5146.65	52.7 AV	54.0	-1.3	1.42 V	357	49.0	3.7
3	*5180.00	123.9 PK			1.42 V	357	120.3	3.6
4	*5180.00	112.7 AV			1.42 V	357	109.1	3.6
5	#10360.00	42.5 PK	68.2	-25.7	2.54 V	125	29.8	12.7
6	15540.00	46.3 PK	74.0	-27.7	2.88 V	360	33.1	13.2
7	15540.00	33.6 AV	54.0	-20.4	2.88 V	360	20.4	13.2

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. 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	TX Channel 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	112.6 PK			1.58 H	46	109.1	3.5
2	*5200.00	101.3 AV			1.58 H	46	97.8	3.5
3	#10400.00	44.1 PK	68.2	-24.1	1.60 H	270	31.3	12.8
4	15600.00	46.3 PK	74.0	-27.7	1.92 H	60	32.8	13.5
5	15600.00	35.5 AV	54.0	-18.5	1.92 H	60	22.0	13.5
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	123.8 PK			1.38 V	352	120.3	3.5
2	*5200.00	112.6 AV			1.38 V	352	109.1	3.5
3	#10400.00	42.6 PK	68.2	-25.6	2.54 V	140	29.8	12.8
4	15600.00	46.5 PK	74.0	-27.5	2.83 V	360	33.0	13.5
5	15600.00	33.9 AV	54.0	-20.1	2.83 V	360	20.4	13.5

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	TX Channel 48	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	*5240.00	112.3 PK			1.64 H	48	108.8	3.5
2	*5240.00	101.8 AV			1.64 H	48	98.3	3.5
3	5350.00	50.1 PK	74.0	-23.9	1.64 H	48	46.7	3.4
4	5350.00	39.6 AV	54.0	-14.4	1.64 H	48	36.2	3.4
5	#10480.00	44.3 PK	68.2	-23.9	1.54 H	251	31.2	13.1
6	15720.00	46.7 PK	74.0	-27.3	1.95 H	74	32.9	13.8
7	15720.00	35.6 AV	54.0	-18.4	1.95 H	74	21.8	13.8
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	*5240.00	124.3 PK			1.91 V	354	120.8	3.5
2	*5240.00	112.6 AV			1.91 V	354	109.1	3.5
3	5350.00	54.6 PK	74.0	-19.4	1.91 V	354	51.2	3.4
4	5350.00	41.9 AV	54.0	-12.1	1.91 V	354	38.5	3.4
5	#10480.00	41.9 PK	68.2	-26.3	2.49 V	129	28.8	13.1
6	15720.00	45.9 PK	74.0	-28.1	2.85 V	360	32.1	13.8
7	15720.00	33.6 AV	54.0	-20.4	2.85 V	360	19.8	13.8

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) – 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	TX Channel 149	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	#5579.78	52.6 PK	68.2	-15.6	2.19 H	293	48.8	3.8
2	*5745.00	115.2 PK			2.19 H	293	111.2	4.0
3	*5745.00	101.9 AV			2.19 H	293	97.9	4.0
4	#6002.68	52.6 PK	68.2	-15.6	2.19 H	293	47.7	4.9
5	11490.00	44.3 PK	74.0	-29.7	1.62 H	265	31.0	13.3
6	11490.00	33.2 AV	54.0	-20.8	1.62 H	265	19.9	13.3
7	#17235.00	47.2 PK	68.2	-21.0	1.97 H	81	29.6	17.6
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	#5645.27	58.7 PK	68.2	-9.5	1.79 V	324	54.8	3.9
2	*5745.00	126.7 PK			1.79 V	324	122.7	4.0
3	*5745.00	115.4 AV			1.79 V	324	111.4	4.0
4	#5944.20	57.0 PK	68.2	-11.2	1.79 V	324	52.4	4.6
5	11490.00	42.1 PK	74.0	-31.9	2.45 V	133	28.8	13.3
6	11490.00	30.9 AV	54.0	-23.1	2.45 V	133	17.6	13.3
7	#17235.00	45.9 PK	68.2	-22.3	2.83 V	360	28.3	17.6

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 157	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	#5628.34	52.9 PK	68.2	-15.3	1.95 H	328	49.1	3.8
2	*5785.00	113.7 PK			1.95 H	328	109.6	4.1
3	*5785.00	102.2 AV			1.95 H	328	98.1	4.1
4	#6002.68	52.8 PK	68.2	-15.4	1.95 H	328	47.9	4.9
5	11570.00	44.2 PK	74.0	-29.8	1.61 H	249	31.0	13.2
6	11570.00	33.2 AV	54.0	-20.8	1.61 H	249	20.0	13.2
7	#17355.00	47.3 PK	68.2	-20.9	1.98 H	52	29.7	17.6
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	#5591.47	58.8 PK	68.2	-9.4	1.78 V	323	55.0	3.8
2	*5785.00	126.8 PK			1.78 V	323	122.7	4.1
3	*5785.00	116.2 AV			1.78 V	323	112.1	4.1
4	#5937.53	56.4 PK	68.2	-11.8	1.78 V	323	51.7	4.7
5	11570.00	42.5 PK	74.0	-31.5	2.46 V	129	29.3	13.2
6	11570.00	31.5 AV	54.0	-22.5	2.46 V	129	18.3	13.2
7	#17355.00	45.6 PK	68.2	-22.6	2.84 V	360	28.0	17.6

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 165	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	#5570.02	52.2 PK	68.2	-16.0	1.86 H	320	48.4	3.8
2	*5825.00	114.3 PK			1.86 H	320	110.0	4.3
3	*5825.00	101.6 AV			1.86 H	320	97.3	4.3
4	#5934.93	52.2 PK	68.2	-16.0	1.86 H	320	47.7	4.5
5	11650.00	44.0 PK	74.0	-30.0	1.54 H	253	30.7	13.3
6	11650.00	33.1 AV	54.0	-20.9	1.54 H	253	19.8	13.3
7	#17475.00	47.2 PK	68.2	-21.0	1.94 H	60	29.3	17.9
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	#5631.80	58.4 PK	68.2	-9.8	1.86 V	323	54.6	3.8
2	*5825.00	128.2 PK			1.86 V	323	123.9	4.3
3	*5825.00	116.4 AV			1.86 V	323	112.1	4.3
4	#5929.92	57.3 PK	68.2	-10.9	1.86 V	323	52.9	4.4
5	11650.00	42.7 PK	74.0	-31.3	2.43 V	158	29.4	13.3
6	11650.00	31.3 AV	54.0	-22.7	2.43 V	158	18.0	13.3
7	#17475.00	45.3 PK	68.2	-22.9	2.79 V	360	27.4	17.9

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) – 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.

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CHANNEL	TX Channel 38	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	50.4 PK	74.0	-23.6	1.60 H	49	46.7	3.7
2	5150.00	40.8 AV	54.0	-13.2	1.60 H	49	37.1	3.7
3	*5190.00	106.1 PK			1.60 H	49	102.5	3.6
4	*5190.00	95.3 AV			1.60 H	49	91.7	3.6
5	#10380.00	44.3 PK	68.2	-23.9	1.50 H	276	31.6	12.7
6	15570.00	47.4 PK	74.0	-26.6	1.99 H	69	34.0	13.4
7	15570.00	36.0 AV	54.0	-18.0	1.99 H	69	22.6	13.4
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	63.0 PK	74.0	-11.0	2.00 V	354	59.3	3.7
2	5150.00	52.9 AV	54.0	-1.1	2.00 V	354	49.2	3.7
3	*5190.00	118.6 PK			2.00 V	354	115.0	3.6
4	*5190.00	105.4 AV			2.00 V	354	101.8	3.6
5	#10380.00	42.7 PK	68.2	-25.5	2.47 V	142	30.0	12.7
6	15570.00	46.6 PK	74.0	-27.4	2.84 V	360	33.2	13.4
7	15570.00	33.9 AV	54.0	-20.1	2.84 V	360	20.5	13.4

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. 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	TX Channel 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	5135.68	51.9 PK	74.0	-22.1	1.68 H	46	48.2	3.7
2	5135.68	41.1 AV	54.0	-12.9	1.68 H	46	37.4	3.7
3	*5230.00	111.8 PK			1.68 H	46	108.3	3.5
4	*5230.00	101.5 AV			1.68 H	46	98.0	3.5
5	5350.00	51.2 PK	74.0	-22.8	1.68 H	46	47.8	3.4
6	5350.00	39.7 AV	54.0	-14.3	1.68 H	46	36.3	3.4
7	#10460.00	44.5 PK	68.2	-23.7	1.52 H	284	31.5	13.0
8	15690.00	47.3 PK	74.0	-26.7	1.99 H	71	33.4	13.9
9	15690.00	36.1 AV	54.0	-17.9	1.99 H	71	22.2	13.9
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	5136.50	61.3 PK	74.0	-12.7	2.09 V	357	57.6	3.7
2	5136.50	49.0 AV	54.0	-5.0	2.09 V	357	45.3	3.7
3	*5230.00	123.3 PK			2.09 V	357	119.8	3.5
4	*5230.00	111.9 AV			2.09 V	357	108.4	3.5
5	5350.00	56.3 PK	74.0	-17.7	2.09 V	357	52.9	3.4
6	5350.00	44.4 AV	54.0	-9.6	2.09 V	357	41.0	3.4
7	#10460.00	42.2 PK	68.2	-26.0	2.49 V	137	29.2	13.0
8	15690.00	45.4 PK	74.0	-28.6	2.86 V	360	31.5	13.9
9	15690.00	32.7 AV	54.0	-21.3	2.86 V	360	18.8	13.9

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) – 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	TX Channel 151	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	#5644.54	54.8 PK	68.2	-13.4	2.01 H	329	50.9	3.9
2	*5755.00	111.3 PK			2.01 H	329	107.3	4.0
3	*5755.00	99.9 AV			2.01 H	329	95.9	4.0
4	#5931.13	52.5 PK	68.2	-15.7	2.01 H	329	48.0	4.5
5	11510.00	44.2 PK	74.0	-29.8	1.55 H	280	30.9	13.3
6	11510.00	33.1 AV	54.0	-20.9	1.55 H	280	19.8	13.3
7	#17265.00	46.8 PK	68.2	-21.4	1.98 H	53	29.3	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	#5643.61	67.1 PK	68.2	-1.1	1.77 V	324	63.2	3.9
2	*5755.00	124.0 PK			1.77 V	324	120.0	4.0
3	*5755.00	113.2 AV			1.77 V	324	109.2	4.0
4	#5924.40	58.4 PK	68.6	-10.2	1.77 V	324	53.9	4.5
5	11510.00	42.0 PK	74.0	-32.0	2.50 V	116	28.7	13.3
6	11510.00	30.7 AV	54.0	-23.3	2.50 V	116	17.4	13.3
7	#17265.00	45.7 PK	68.2	-22.5	2.91 V	360	28.2	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	TX Channel 159	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	#5628.14	52.6 PK	68.2	-15.6	1.69 H	306	48.8	3.8
2	*5795.00	111.5 PK			1.69 H	306	107.3	4.2
3	*5795.00	99.2 AV			1.69 H	306	95.0	4.2
4	#5925.12	53.7 PK	68.2	-14.5	1.69 H	306	49.2	4.5
5	11590.00	44.3 PK	74.0	-29.7	1.55 H	263	31.0	13.3
6	11590.00	32.9 AV	54.0	-21.1	1.55 H	263	19.6	13.3
7	#17385.00	46.9 PK	68.2	-21.3	1.92 H	78	29.2	17.7
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	#5650.64	62.6 PK	68.7	-6.1	1.83 V	324	58.7	3.9
2	*5795.00	124.8 PK			1.83 V	324	120.6	4.2
3	*5795.00	113.8 AV			1.83 V	324	109.6	4.2
4	#5930.28	65.8 PK	68.2	-2.4	1.83 V	324	61.4	4.4
5	11590.00	42.3 PK	74.0	-31.7	2.50 V	142	29.0	13.3
6	11590.00	31.2 AV	54.0	-22.8	2.50 V	142	17.9	13.3
7	#17385.00	46.1 PK	68.2	-22.1	2.86 V	360	28.4	17.7

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.
6. " # ": The radiated frequency is out of the restricted band.

802.11ax (HE80)

CHANNEL	TX Channel 42	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	5134.76	50.7 PK	74.0	-23.3	1.58 H	46	47.0	3.7
2	5134.76	41.5 AV	54.0	-12.5	1.58 H	46	37.8	3.7
3	*5210.00	99.4 PK			1.58 H	46	95.8	3.6
4	*5210.00	90.4 AV			1.58 H	46	86.8	3.6
5	5350.00	50.3 PK	74.0	-23.7	1.58 H	46	46.9	3.4
6	5350.00	39.2 AV	54.0	-14.8	1.58 H	46	35.8	3.4
7	#10420.00	44.2 PK	68.2	-24.0	1.55 H	252	31.4	12.8
8	15630.00	46.7 PK	74.0	-27.3	1.93 H	64	33.0	13.7
9	15630.00	35.3 AV	54.0	-18.7	1.93 H	64	21.6	13.7
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	5137.24	64.2 PK	74.0	-9.8	2.40 V	137	60.5	3.7
2	5137.24	52.9 AV	54.0	-1.1	2.40 V	137	49.2	3.7
3	*5210.00	113.8 PK			2.40 V	137	110.2	3.6
4	*5210.00	101.2 AV			2.40 V	137	97.6	3.6
5	5350.00	55.4 PK	74.0	-18.6	2.40 V	137	52.0	3.4
6	5350.00	42.8 AV	54.0	-11.2	2.40 V	137	39.4	3.4
7	#10420.00	42.6 PK	68.2	-25.6	2.47 V	143	29.8	12.8
8	15630.00	45.6 PK	74.0	-28.4	2.84 V	360	31.9	13.7
9	15630.00	33.2 AV	54.0	-20.8	2.84 V	360	19.5	13.7

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 155	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	#5645.30	56.5 PK	68.2	-11.7	2.35 H	335	52.6	3.9
2	*5775.00	104.8 PK			2.35 H	335	100.7	4.1
3	*5775.00	93.5 AV			2.35 H	335	89.4	4.1
4	#5941.08	53.3 PK	68.2	-14.9	2.35 H	335	48.6	4.7
5	11550.00	44.1 PK	74.0	-29.9	1.58 H	263	30.9	13.2
6	11550.00	32.8 AV	54.0	-21.2	1.58 H	263	19.6	13.2
7	#17325.00	46.6 PK	68.2	-21.6	1.92 H	57	29.0	17.6
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	**#5647.90**	**67.2 PK**	**68.2**	**-1.0**	**1.80 V**	**324**	**63.3**	**3.9**
2	*5775.00	119.0 PK			1.80 V	324	114.9	4.1
3	*5775.00	108.5 AV			1.80 V	324	104.4	4.1
4	#5940.21	62.4 PK	68.2	-5.8	1.80 V	324	58.0	4.4
5	11550.00	42.5 PK	74.0	-31.5	2.47 V	137	29.3	13.2
6	11550.00	31.1 AV	54.0	-22.9	2.47 V	137	17.9	13.2
7	#17325.00	46.7 PK	68.2	-21.5	2.82 V	360	29.1	17.6

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.
6. " # ": The radiated frequency is out of the restricted band.

Below 1GHz Data:

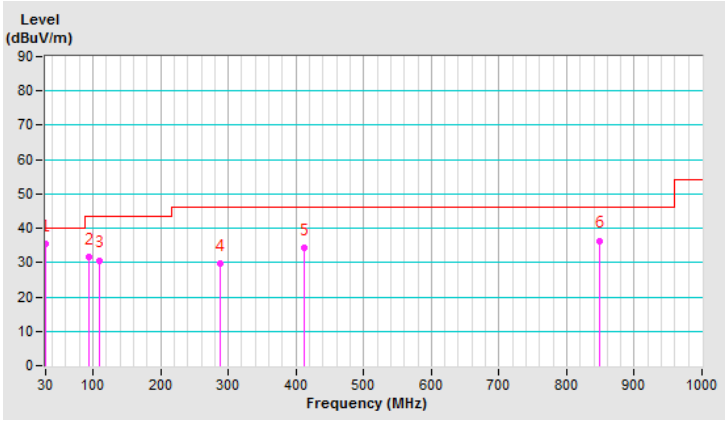
802.11ax (HE20)

CHANNEL	TX Channel 165	**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	30.44	35.5 QP	40.0	-4.5	4.00 H	286	44.3	-8.8
2	94.07	31.8 QP	43.5	-11.7	2.00 H	85	44.6	-12.8
3	110.34	30.7 QP	43.5	-12.8	2.00 H	121	40.9	-10.2
4	287.56	29.8 QP	46.0	-16.2	1.00 H	291	36.2	-6.4
5	412.40	34.2 QP	46.0	-11.8	2.00 H	304	37.1	-2.9
6	847.71	36.4 QP	46.0	-9.6	3.00 H	187	30.2	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
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.

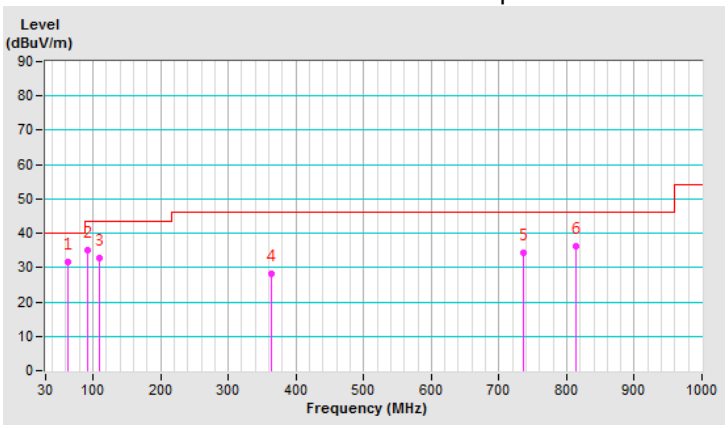


CHANNEL	TX Channel 165	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	62.96	31.6 QP	40.0	-8.4	2.00 V	0	40.3	-8.7
2	91.59	35.2 QP	43.5	-8.3	1.00 V	3	48.3	-13.1
3	110.32	32.7 QP	43.5	-10.8	1.00 V	285	42.9	-10.2
4	363.22	28.2 QP	46.0	-17.8	2.00 V	1	32.3	-4.1
5	736.50	34.1 QP	46.0	-11.9	1.00 V	104	29.4	4.7
6	813.52	36.2 QP	46.0	-9.8	1.00 V	360	30.4	5.8

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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
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.



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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 23, 2019	Oct. 22, 2020
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 23, 2019	Oct. 22, 2020
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 19, 2020	Mar. 18, 2021
50 ohms Terminator	50	3	Oct. 23, 2019	Oct. 22, 2020
RF Cable	5D-FB	COCCAB-001	Sep. 27, 2019	Sep. 26, 2020
Fixed attenuator EMCI	STI02-2200-10	005	Aug. 30, 2019	Aug. 29, 2020
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
3 Tested Date: Apr. 21, 2020

4.2.3 Test Procedure

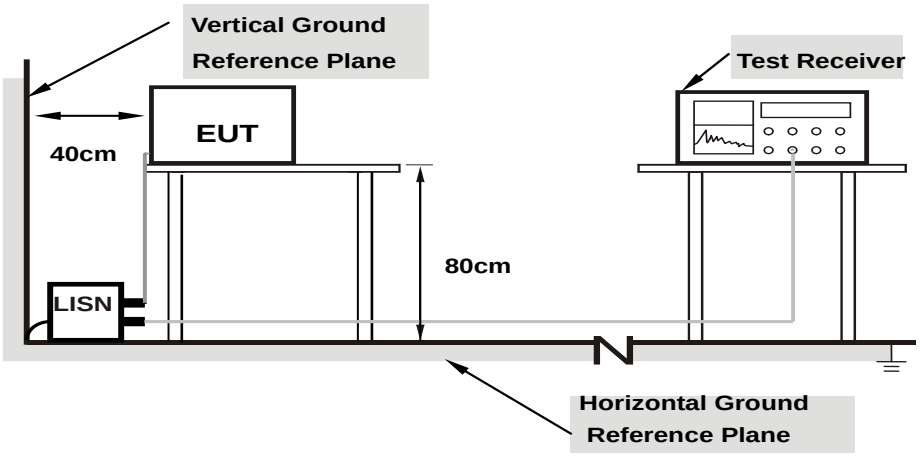
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

Note: All modes of operation were investigated and the worst-case emissions are reported.

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 Condition

Same as 4.1.6.

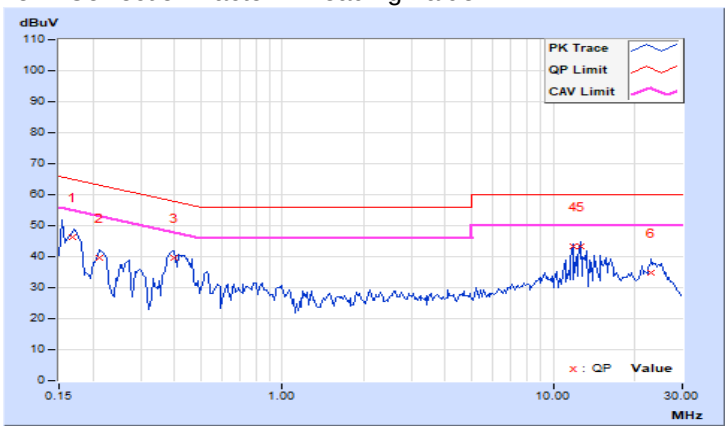
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16766	9.97	36.44	24.32	46.41	34.29	65.08	55.08	-18.67	-20.79
2	0.21250	9.97	29.62	20.34	39.59	30.31	63.11	53.11	-23.52	-22.80
3	0.40000	9.98	29.65	19.24	39.63	29.22	57.85	47.85	-18.22	-18.63
4	**11.85547**	**10.59**	**32.92**	**32.56**	**43.51**	**43.15**	**60.00**	**50.00**	**-16.49**	**-6.85**
5	12.61328	10.63	32.69	32.16	43.32	42.79	60.00	50.00	-16.68	-7.21
6	23.05859	11.14	23.81	18.25	34.95	29.39	60.00	50.00	-25.05	-20.61

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

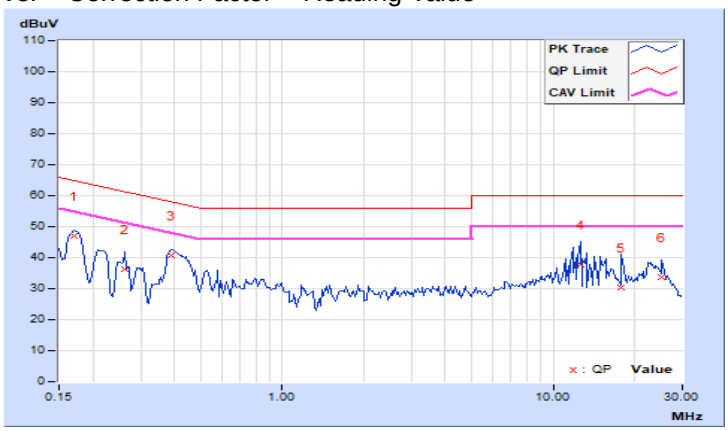


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16953	9.97	37.01	26.57	46.98	36.54	64.98	54.98	-18.00	-18.44
2	0.26328	9.97	26.35	17.65	36.32	27.62	61.33	51.33	-25.01	-23.71
3	0.38828	9.98	30.84	24.54	40.82	34.52	58.10	48.10	-17.28	-13.58
4	12.60547	10.50	27.28	25.53	37.78	36.03	60.00	50.00	-22.22	-13.97
5	17.90234	10.72	19.69	12.91	30.41	23.63	60.00	50.00	-29.59	-26.37
6	25.24219	10.89	22.91	17.16	33.80	28.05	60.00	50.00	-26.20	-21.95

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 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
	√	Indoor Access Point	1 Watt (30 dBm)
		Client device	250mW (24 dBm)
U-NII-2A			250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C			250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 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 Procedure

Method PM is 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 Condition

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

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	19.27	19.26	19.23	19.05	332.967	25.22	30.00	Pass
40	5200	19.27	19.28	19.28	19.20	337.15	25.28	30.00	Pass
48	5240	19.24	19.27	19.18	18.89	328.714	25.17	30.00	Pass
149	5745	23.44	23.69	23.45	23.57	903.503	29.56	30.00	Pass
157	5785	23.33	23.24	23.30	23.41	859.218	29.34	30.00	Pass
165	5825	23.11	23.64	23.64	24.02	919.405	29.64	30.00	Pass

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	19.19	18.92	19.15	18.96	321.897	25.08	30.00	Pass
40	5200	19.07	19.00	19.29	18.87	322.165	25.08	30.00	Pass
48	5240	19.45	19.59	19.25	18.98	342.304	25.34	30.00	Pass
149	5745	23.74	23.94	23.36	23.36	917.875	29.63	30.00	Pass
157	5785	23.47	23.26	23.82	23.42	894.944	29.52	30.00	Pass
165	5825	23.65	23.79	23.65	23.73	938.858	29.73	30.00	Pass

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	16.21	16.34	16.71	16.46	175.976	22.45	30.00	Pass
46	5230	22.06	22.64	22.07	22.27	674.068	28.29	30.00	Pass
151	5755	23.24	23.55	23.82	23.70	912.741	29.60	30.00	Pass
159	5795	22.66	23.53	23.33	23.62	855.348	29.32	30.00	Pass

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	14.84	15.47	14.84	15.42	131.029	21.17	30.00	Pass
155	5775	21.85	22.55	22.16	22.29	666.867	28.24	30.00	Pass

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	19.53	19.23	19.38	19.25	344.332	25.37	30.00	Pass
40	5200	19.56	19.35	19.59	19.31	352.766	25.47	30.00	Pass
48	5240	19.81	19.66	19.73	19.41	369.459	25.68	30.00	Pass
149	5745	23.82	24.11	23.56	23.71	960.572	29.83	30.00	Pass
157	5785	23.73	23.73	24.20	23.68	968.468	29.86	30.00	Pass
165	5825	23.87	24.07	23.75	24.07	991.459	29.96	30.00	Pass

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	16.49	16.73	16.78	16.46	183.565	22.64	30.00	Pass
46	5230	22.47	22.69	22.32	22.58	714.126	28.54	30.00	Pass
151	5755	23.45	23.86	23.82	23.97	954.98	29.80	30.00	Pass
159	5795	23.13	23.81	23.61	23.83	917.186	29.62	30.00	Pass

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	15.17	15.54	15.21	15.47	137.121	21.37	30.00	Pass
155	5775	22.23	22.64	22.60	22.59	714.285	28.54	30.00	Pass

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	19.19	18.92	19.15	18.96	321.897	25.08	25.44	Pass
40	5200	19.03	18.82	19.14	18.74	313.043	24.96	25.44	Pass
48	5240	19.31	18.89	19.19	18.62	318.519	25.03	25.44	Pass
149	5745	18.54	18.63	19.06	19.12	306.591	24.87	25.44	Pass
157	5785	18.71	18.16	18.80	18.87	292.714	24.66	25.44	Pass
165	5825	18.12	18.79	19.56	19.37	317.408	25.02	25.44	Pass

Note: 1. For U-NII-1: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.56 dBi > 6 dBi, so the power limit shall be reduced to 30-(10.56-6) = 25.44 dBm.
2. For U-NII-3: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.56 dBi > 6 dBi, so the power limit shall be reduced to 30-(10.56-6) = 25.44 dBm.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	16.21	16.34	16.71	16.46	175.976	22.45	25.44	Pass
46	5230	18.92	18.99	19.35	19.02	323.132	25.09	25.44	Pass
151	5755	18.36	18.93	19.07	19.32	312.942	24.95	25.44	Pass
159	5795	18.55	19.02	18.95	19.31	315.247	24.99	25.44	Pass

Note: 1. For U-NII-1: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.56 dBi > 6 dBi, so the power limit shall be reduced to 30-(10.56-6) = 25.44 dBm.
2. For U-NII-3: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.56 dBi > 6 dBi, so the power limit shall be reduced to 30-(10.56-6) = 25.44 dBm.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	14.84	15.47	14.84	15.42	131.029	21.17	25.44	Pass
155	5775	18.81	18.92	18.83	19.03	310.383	24.92	25.44	Pass

Note: 1. For U-NII-1: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.56 dBi > 6 dBi, so the power limit shall be reduced to 30-(10.56-6) = 25.44 dBm.
2. For U-NII-3: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.56 dBi > 6 dBi, so the power limit shall be reduced to 30-(10.56-6) = 25.44 dBm.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	19.53	19.23	19.38	19.25	344.332	25.37	25.44	Pass
40	5200	19.17	18.96	19.14	18.95	321.867	25.08	25.44	Pass
48	5240	19.48	19.26	19.36	19.03	339.33	25.31	25.44	Pass
149	5745	18.78	18.96	19.13	19.25	320.2	25.05	25.44	Pass
157	5785	18.94	18.42	19.22	18.93	309.568	24.91	25.44	Pass
165	5825	18.24	19.03	19.72	19.62	332.042	25.21	25.44	Pass

Note: 1. For U-NII-1: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.56 dBi > 6 dBi, so the power limit shall be reduced to 30-(10.56-6) = 25.44 dBm.
2. For U-NII-3: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.56 dBi > 6 dBi, so the power limit shall be reduced to 30-(10.56-6) = 25.44 dBm.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	16.49	16.73	16.78	16.46	183.565	22.64	25.44	Pass
46	5230	19.19	19.45	19.53	19.26	345.166	25.38	25.44	Pass
151	5755	18.84	19.34	19.23	19.41	333.511	25.23	25.44	Pass
159	5795	18.63	19.22	19.00	19.45	324.044	25.11	25.44	Pass

Note: 1. For U-NII-1: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.56 dBi > 6 dBi, so the power limit shall be reduced to 30-(10.56-6) = 25.44 dBm.
2. For U-NII-3: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.56 dBi > 6 dBi, so the power limit shall be reduced to 30-(10.56-6) = 25.44 dBm.

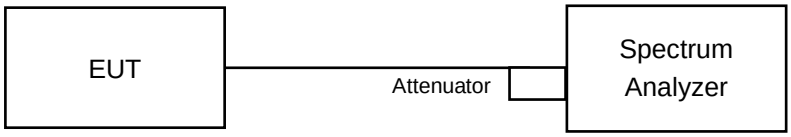
802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	15.17	15.54	15.21	15.47	137.121	21.37	25.44	Pass
155	5775	18.86	19.36	19.29	19.31	333.439	25.23	25.44	Pass

Note: 1. For U-NII-1: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.56 dBi > 6 dBi, so the power limit shall be reduced to 30-(10.56-6) = 25.44 dBm.
2. For U-NII-3: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.56 dBi > 6 dBi, so the power limit shall be reduced to 30-(10.56-6) = 25.44 dBm.

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to SAMPLE. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean power of a given emission.

4.4.4 Test Results

CDD Mode

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	16.56	16.44	16.44	16.44
40	5200	16.44	16.56	16.56	16.44
48	5240	16.44	16.56	16.44	16.56
149	5745	16.44	16.44	16.68	16.56
157	5785	16.68	16.44	16.2	16.68
165	5825	16.8	16.56	16.2	17.16

802.11ax (HE20)

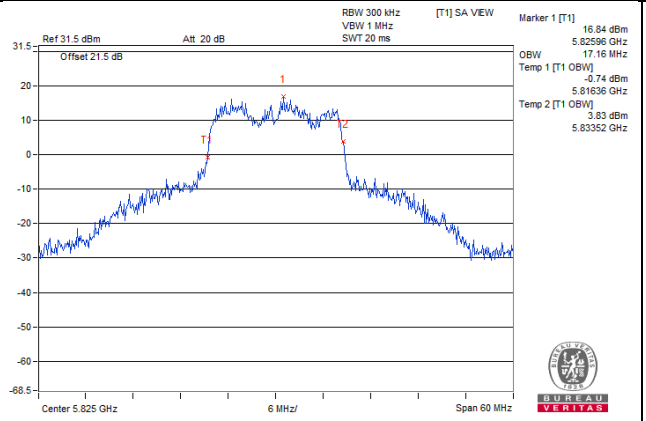
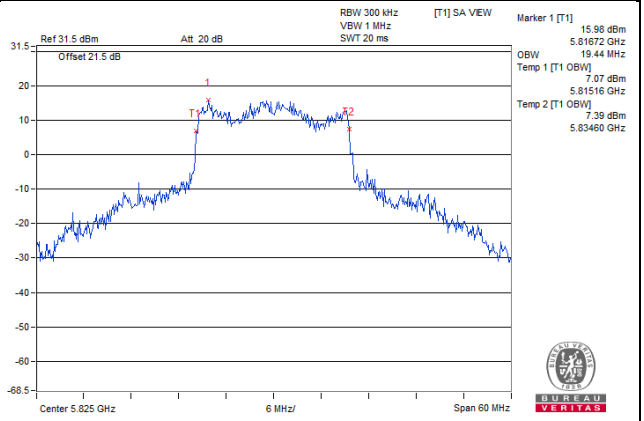
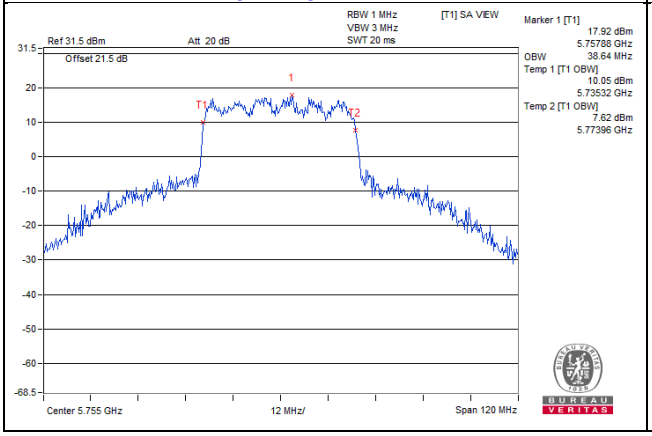
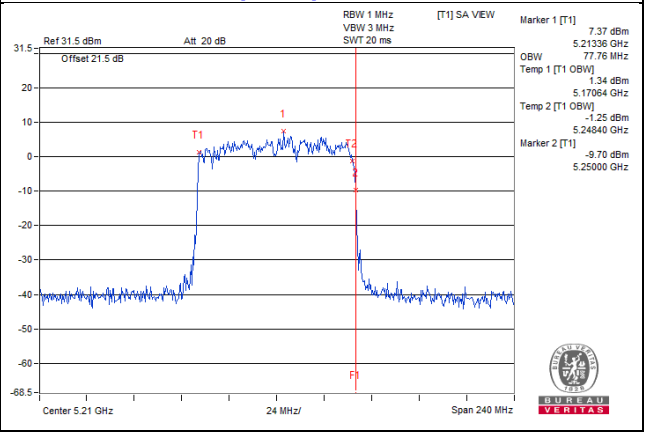
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	19.08	19.08	18.84	18.96
40	5200	19.08	18.96	19.08	18.96
48	5240	19.08	18.84	18.84	18.96
149	5745	18.72	19.08	19.08	19.2
157	5785	18.72	19.08	19.32	19.2
165	5825	18.84	19.08	19.44	19.2

802.11ax (HE40)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
38	5190	38.16	38.16	38.16	38.16
46	5230	37.92	38.16	38.16	38.16
151	5755	38.16	38.16	38.4	38.64
159	5795	37.92	38.16	38.4	38.64

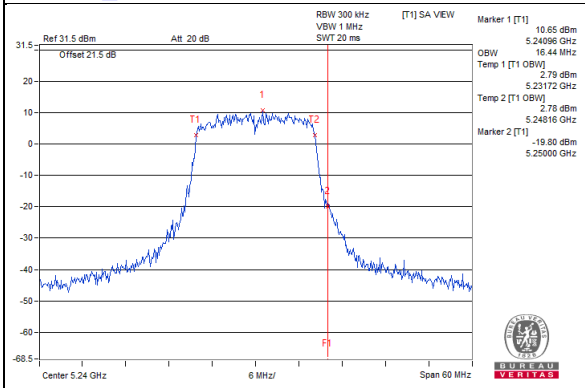
802.11ax (HE80)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
42	5210	77.28	77.28	77.76	77.28
155	5775	77.28	77.28	77.76	77.28

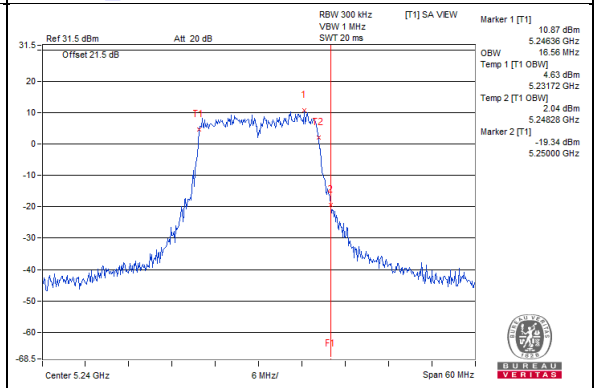
Spectrum Plot of Max. Value	
802.11a_Chain 3 / CH165	**802.11ax (HE20)_Chain 2 / CH165**
	
802.11ax (HE40)_Chain 3 / CH151	**802.11ax (HE80)_Chain 2 / CH42**
	

Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)

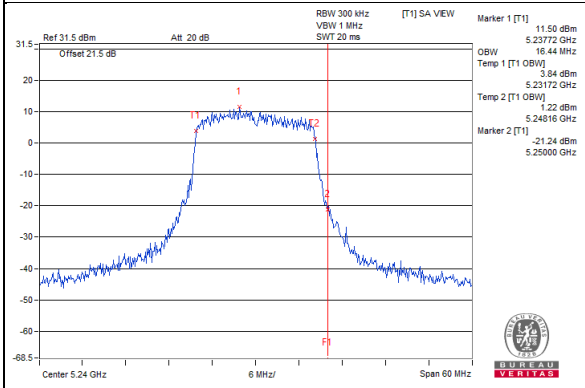
802.11a_Chain0 / CH48



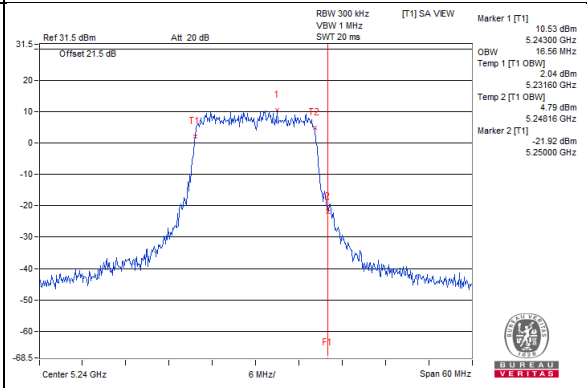
802.11a_Chain1 / CH48



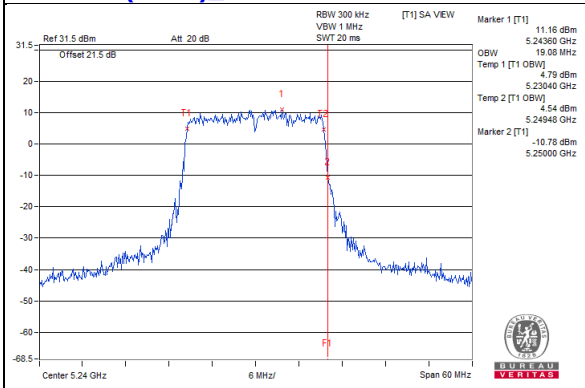
802.11a_Chain2 / CH48



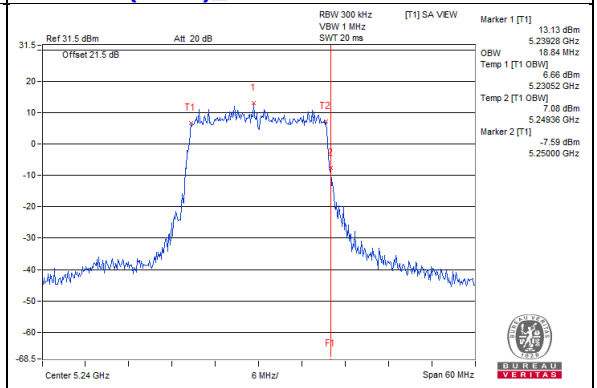
802.11a_Chain3 / CH48



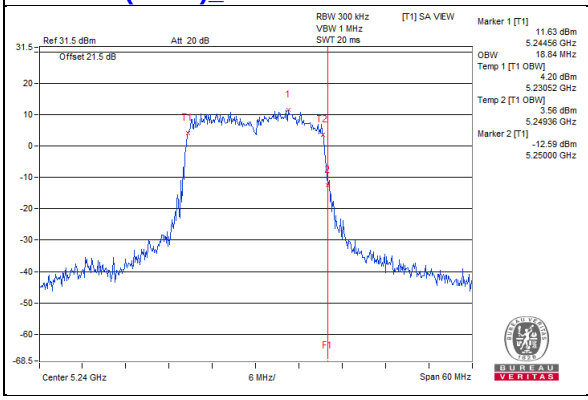
802.11ax (HE20)_Chain0 / CH48



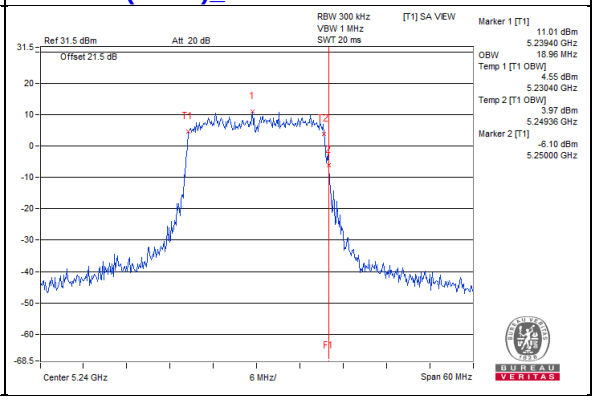
802.11ax (HE20)_Chain1 / CH48



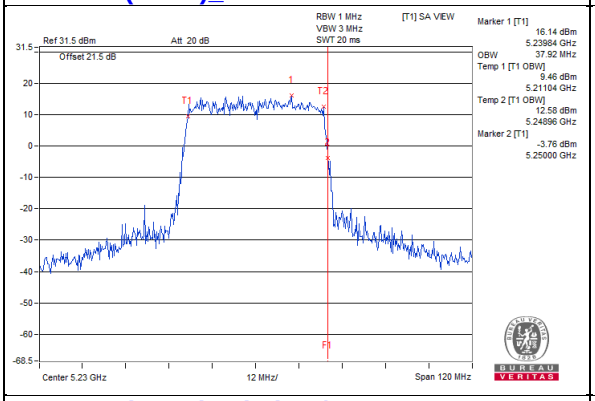
802.11ax (HE20)_Chain2 / CH48



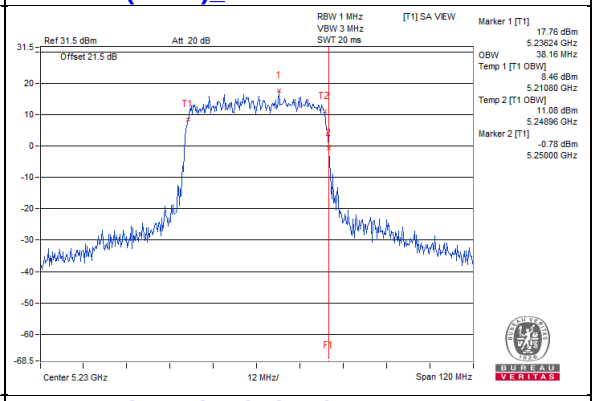
802.11ax (HE20)_Chain3 / CH48



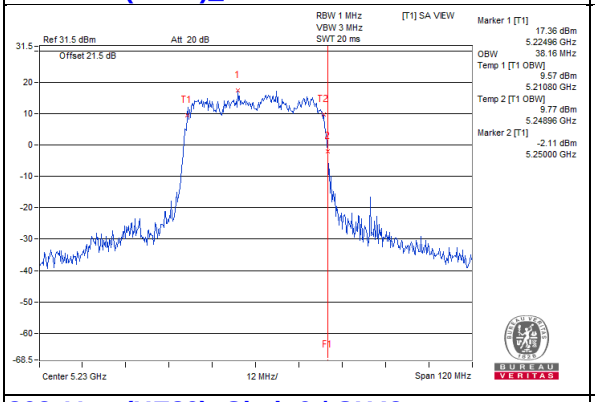
802.11ax (HE40)_Chain0 / CH46



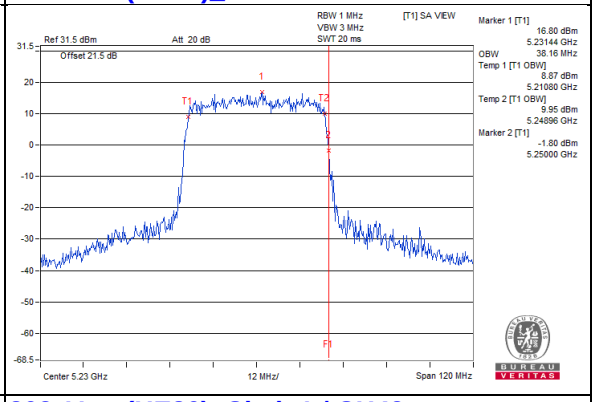
802.11ax (HE40)_Chain1 / CH46



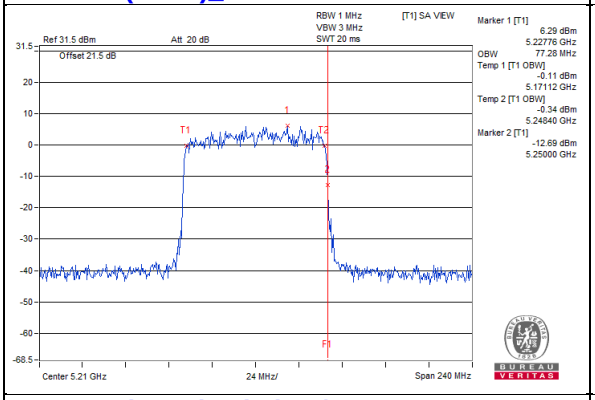
802.11ax (HE40)_Chain2 / CH46



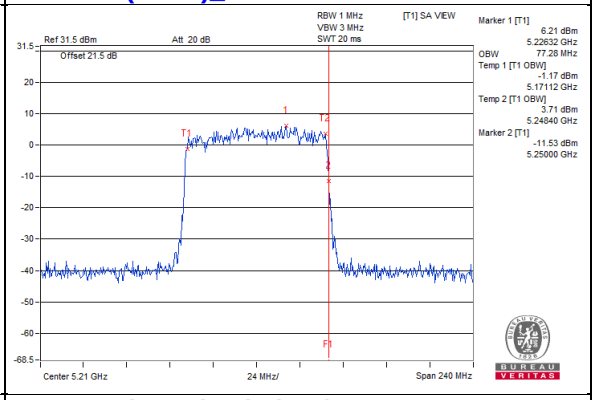
802.11ax (HE40)_Chain3 / CH46



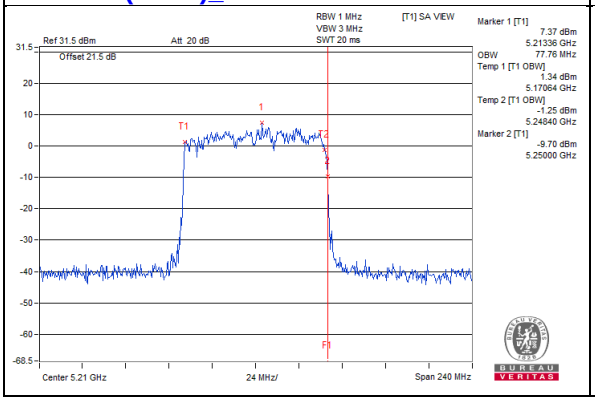
802.11ax (HE80)_Chain0 / CH42



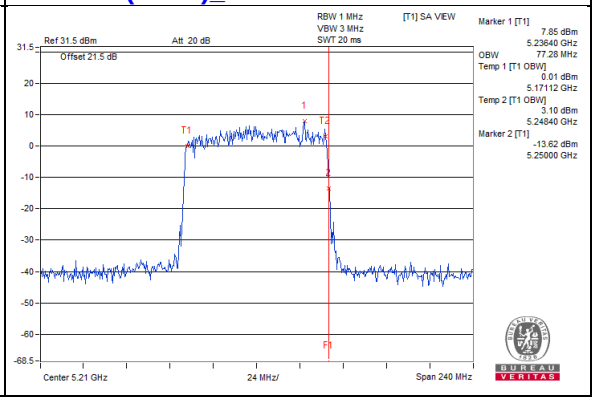
802.11ax (HE80)_Chain1 / CH42



802.11ax (HE80)_Chain2 / CH42

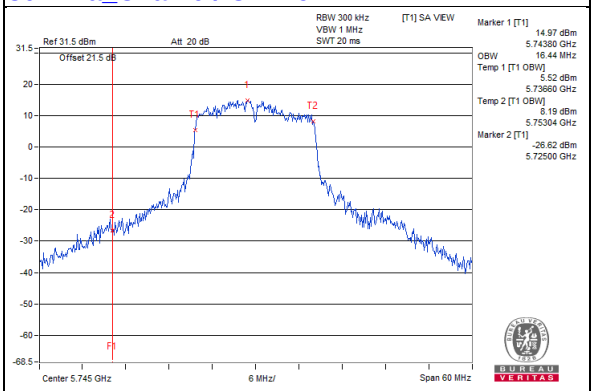


802.11ax (HE80)_Chain3 / CH42

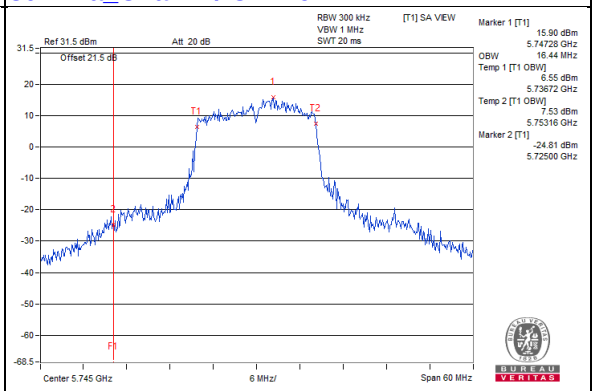


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

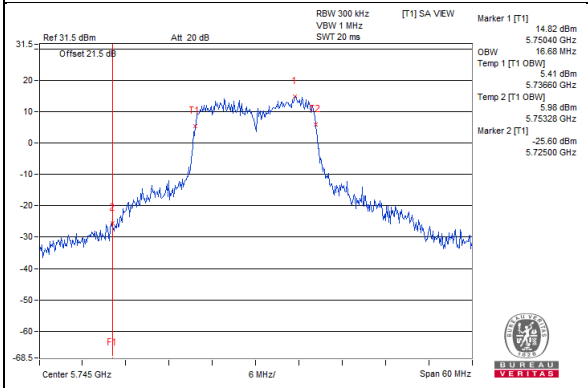
802.11a_Chain0 / CH149



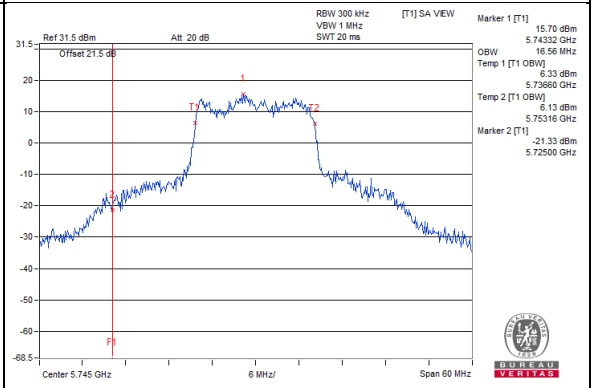
802.11a_Chain1 / CH149



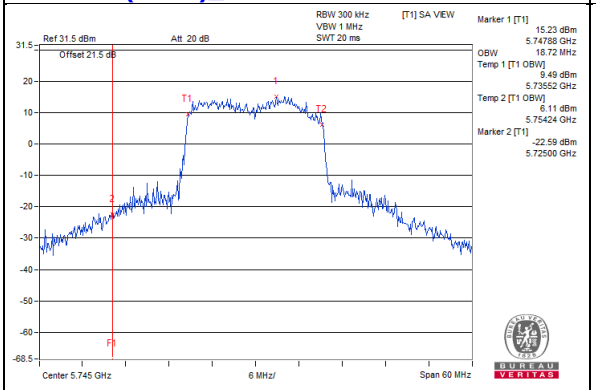
802.11a_Chain2 / CH149



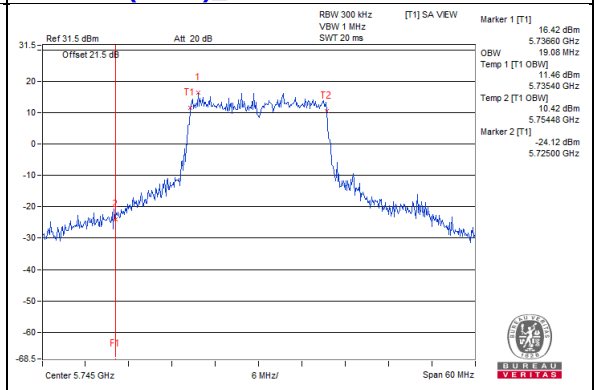
802.11a_Chain3 / CH149



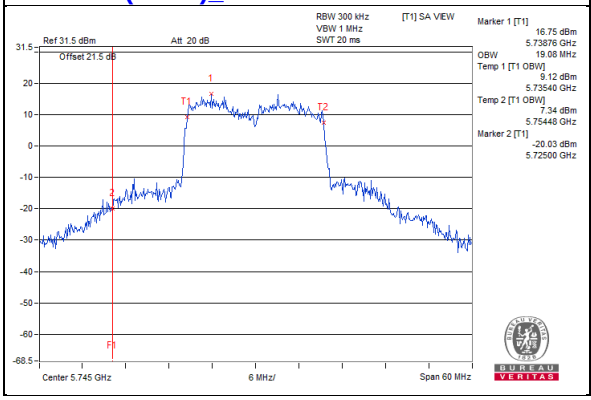
802.11ax (HE20)_Chain0 / CH149



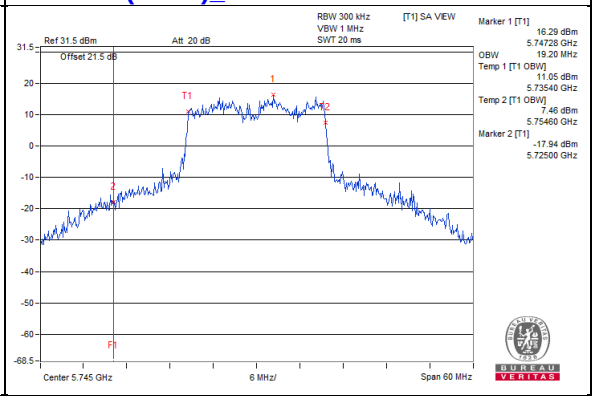
802.11ax (HE20)_Chain1 / CH149



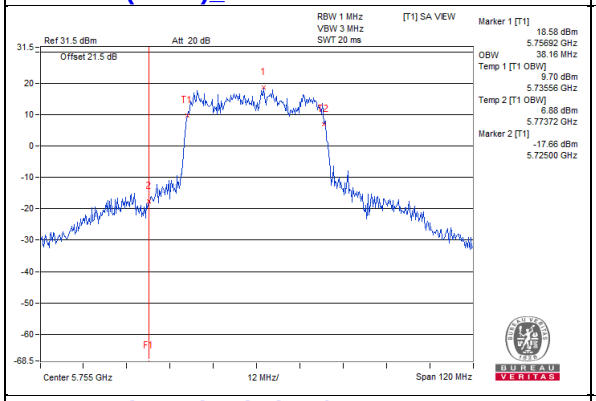
802.11ax (HE20)_Chain2 / CH149



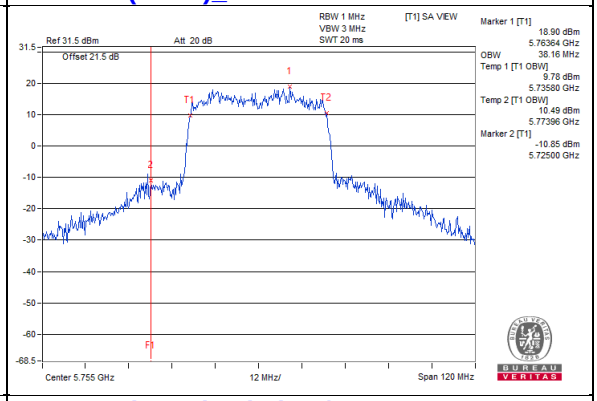
802.11ax (HE20)_Chain3 / CH149



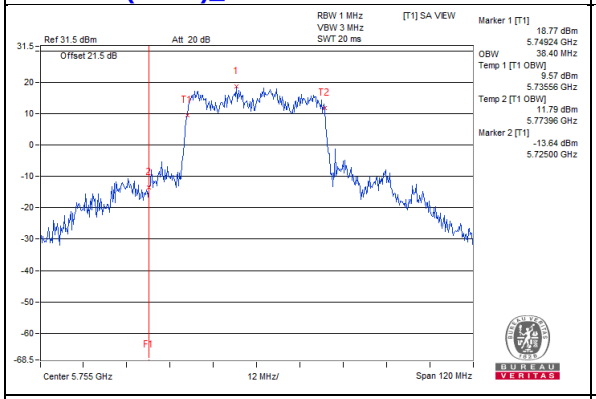
802.11ax (HE40)_Chain0 / CH151



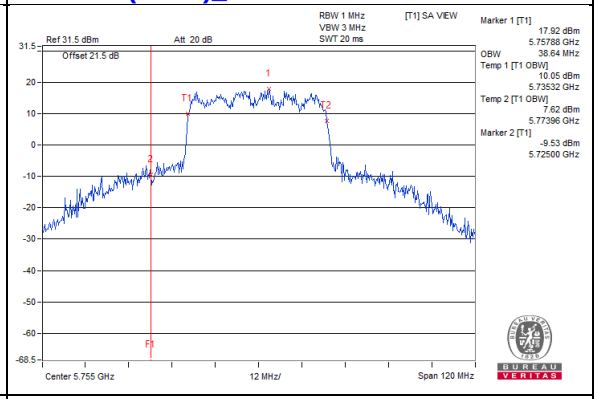
802.11ax (HE40)_Chain1 / CH151



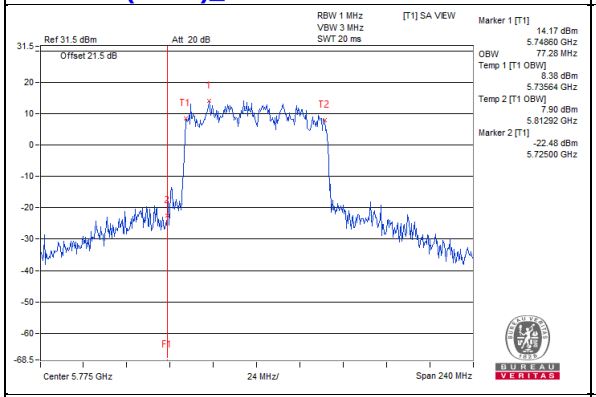
802.11ax (HE40)_Chain2 / CH151



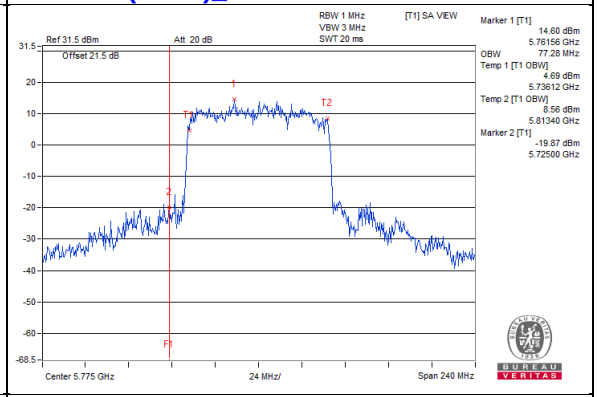
802.11ax (HE40)_Chain3 / CH151



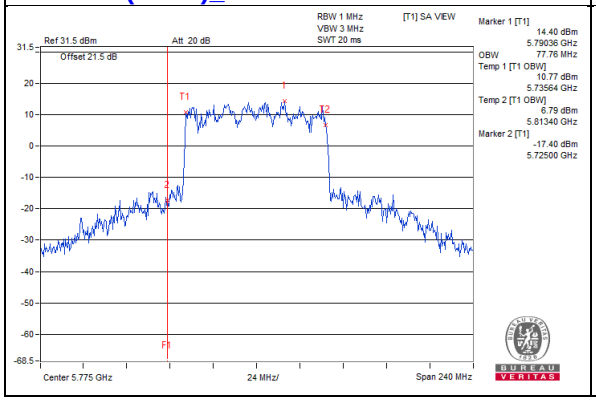
802.11ax (HE80)_Chain0 / CH155



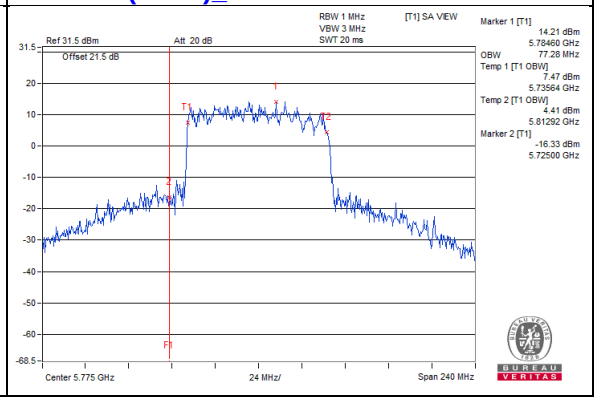
802.11ax (HE80)_Chain1 / CH155



802.11ax (HE80)_Chain2 / CH155



802.11ax (HE80)_Chain3 / CH155

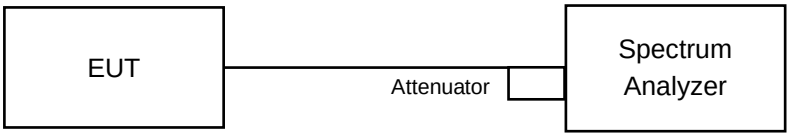


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
	√	Indoor Access Point	
		Client device	11dBm/ MHz
U-NII-2A			11dBm/ MHz
U-NII-2C			11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

For U-NII-1 band:

Using method SA-2

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3. Sweep time = auto, trigger set to “free run”.
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value and add 10 log (1/duty cycle)

For U-NII-3:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500kHz/300kHz)
5. Sweep time = auto, trigger set to “free run”.
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value and add 10 log (1/duty cycle)

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

For U-NII-1:

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	3.72	4.84	6.02	4.17	0.26	11.06	12.44	Pass
40	5200	5.64	3.51	5.60	4.96	0.26	11.29	12.44	Pass
48	5240	4.89	5.32	6.12	5.26	0.26	11.70	12.44	Pass

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 4] = 10.56 dBi > 6 dBi, so the power density limit shall be reduced to 17-(10.56-6) = 12.44dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	4.25	2.45	5.99	5.52	0.17	10.95	12.44	Pass
40	5200	3.99	1.51	6.93	5.11	0.17	11.00	12.44	Pass
48	5240	4.28	5.85	6.06	4.24	0.17	11.38	12.44	Pass

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 4] = 10.56 dBi > 6 dBi, so the power density limit shall be reduced to 17-(10.56-6) = 12.44dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	-3.96	-2.81	-0.61	-1.82	0.18	4.08	12.44	Pass
46	5230	5.49	4.12	5.42	4.69	0.18	11.17	12.44	Pass

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 4] = 10.56 dBi > 6 dBi, so the power density limit shall be reduced to 17-(10.56-6) = 12.44dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	-4.85	-5.84	-4.34	-5.42	0.27	1.22	12.44	Pass

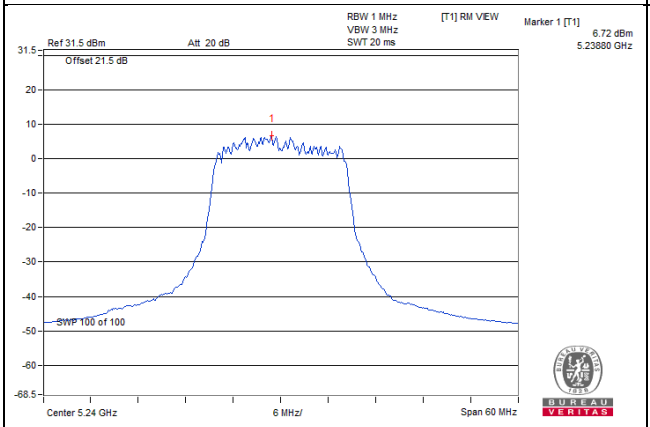
Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.56 dBi > 6 dBi, so the power density limit shall be reduced to 17-(10.56-6) = 12.44dBm.

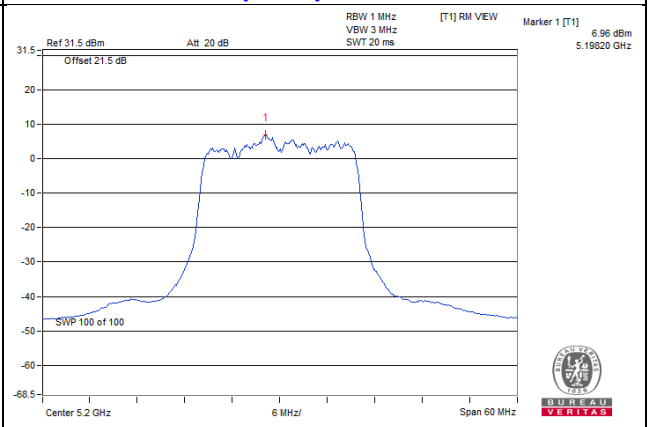
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

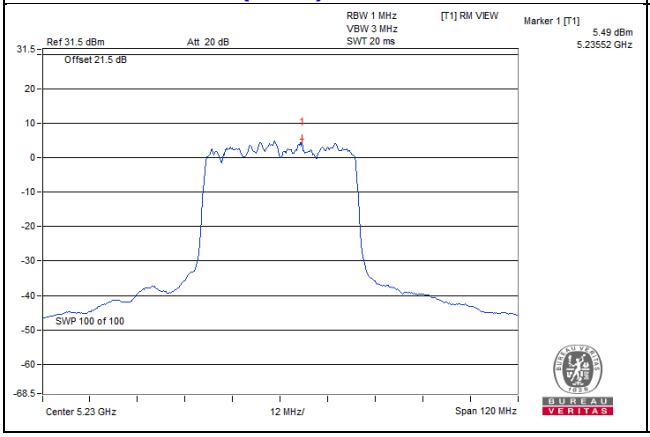
802.11a_Chain 2 / CH48



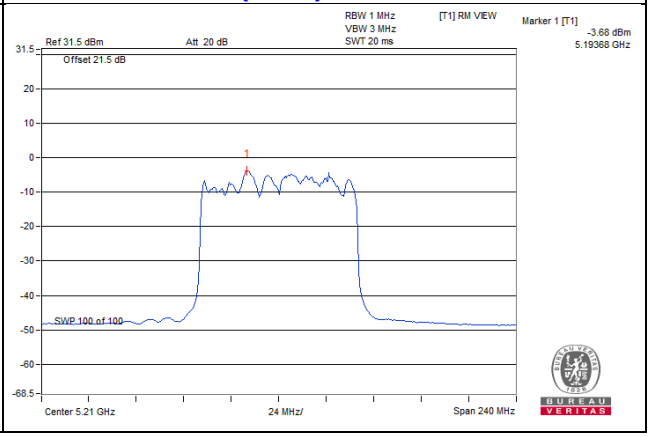
802.11ax (HE20)_Chain 2 / CH40



802.11ax (HE40)_Chain 0 / CH46



802.11ax (HE80)_Chain 2 / CH42



For U-NII-3:

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
149	5745	2.46	3.15	2.09	2.89	0.26	8.95	11.17	25.44	Pass
157	5785	2.22	2.53	2.44	2.64	0.26	8.74	10.96	25.44	Pass
165	5825	1.60	1.69	2.35	2.96	0.26	8.47	10.69	25.44	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 4] = 10.56 dBi > 6 dBi, so the power density limit shall be reduced to 30-(10.56-6) = 25.44dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
149	5745	0.84	0.78	1.71	1.77	0.17	7.49	9.71	25.44	Pass
157	5785	0.97	0.49	2.06	1.44	0.17	7.47	9.69	25.44	Pass
165	5825	1.37	1.68	1.96	1.69	0.17	7.87	10.09	25.44	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 4] = 10.56 dBi > 6 dBi, so the power density limit shall be reduced to 30-(10.56-6) = 25.44dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
151	5755	-1.48	-3.07	-0.90	-2.15	0.18	4.37	6.59	25.44	Pass
159	5795	-2.39	-2.75	-1.51	-1.48	0.18	4.20	6.42	25.44	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 4] = 10.56 dBi > 6 dBi, so the power density limit shall be reduced to 30-(10.56-6) = 25.44dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
155	5775	-5.12	-6.11	-4.24	-5.26	0.27	1.16	3.38	25.44	Pass

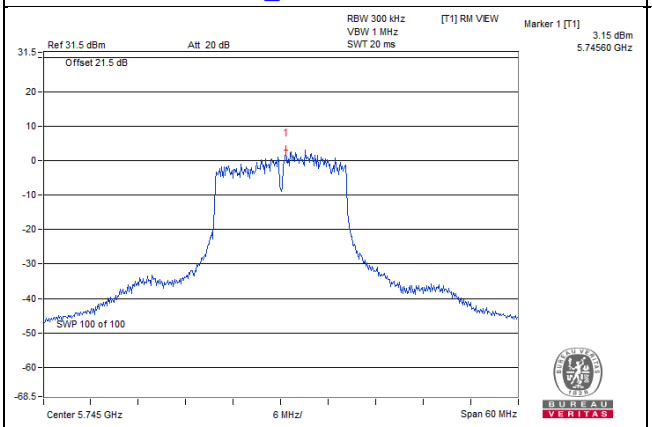
Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.

2. The directional gain = 10 log[($10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20}$)^2 / 4] = 10.56 dBi > 6 dBi, so the power density limit shall be reduced to 30-(10.56-6) = 25.44dBm.

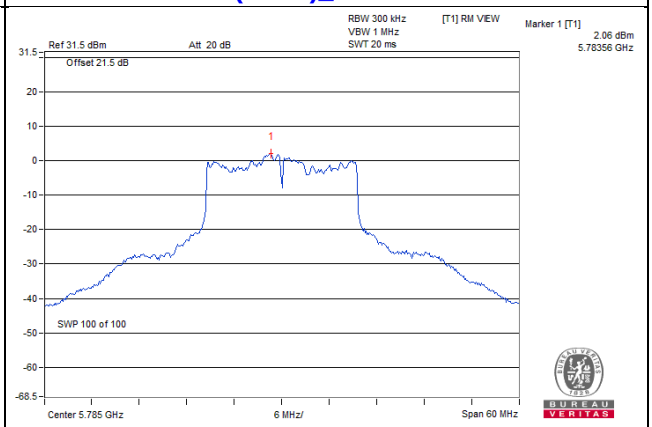
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

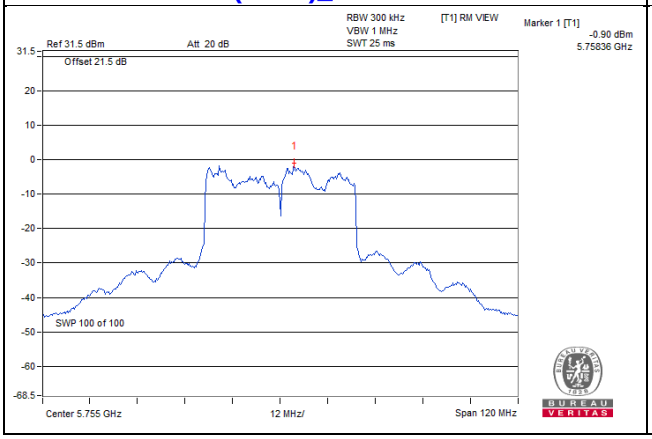
802.11a_Chain 1 / CH149



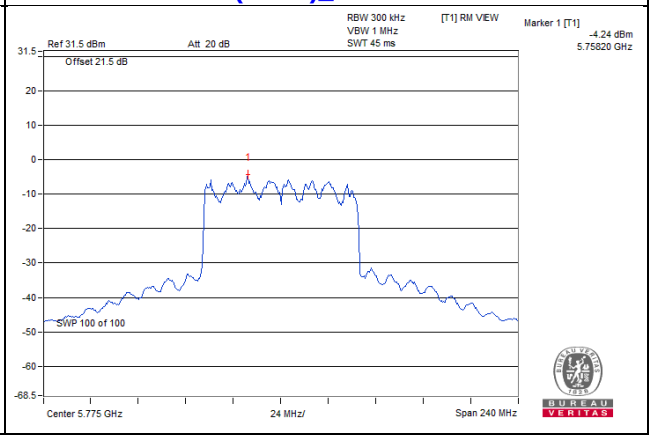
802.11ax (HE20)_Chain 2 / CH157



802.11ax (HE40)_Chain 2 / CH151



802.11ax (HE80)_Chain 2 / CH155

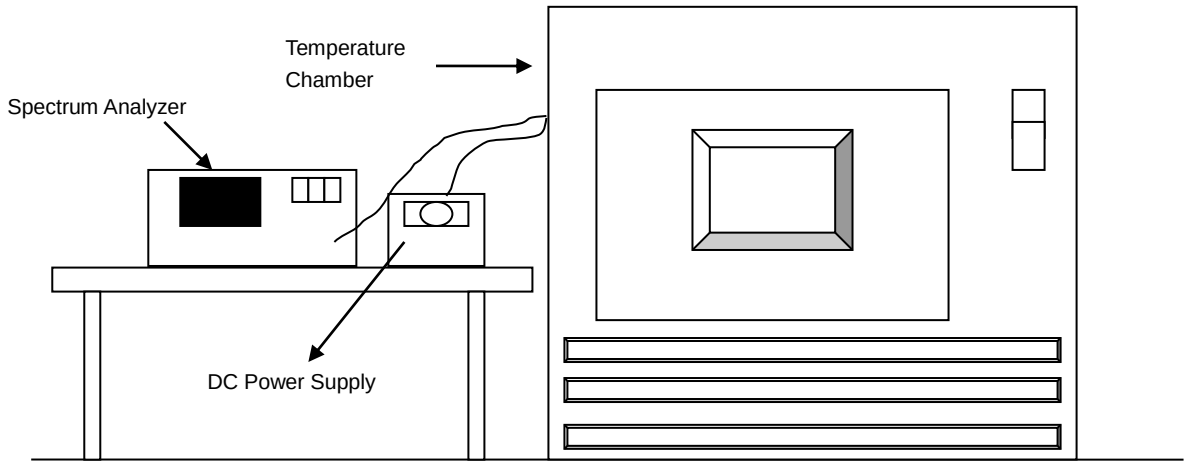


4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

The frequency of the carrier signal shall be maintained within band of operation

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.

b. Turn the EUT on and couple its output to a spectrum analyzer.

c. Turn the EUT off and set the chamber to the highest temperature specified.

d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.

e. Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.

f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Set the EUT transmit at un-modulation mode to test frequency stability.

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
50	55	5180.0172	PASS	5180.019	PASS	5180.0187	PASS	5180.0183	PASS
40	55	5179.9872	PASS	5179.9843	PASS	5179.9874	PASS	5179.9842	PASS
30	55	5180.0206	PASS	5180.0176	PASS	5180.0184	PASS	5180.0211	PASS
20	55	5180.0142	PASS	5180.0159	PASS	5180.0164	PASS	5180.0159	PASS
10	55	5180.0281	PASS	5180.0271	PASS	5180.0277	PASS	5180.0265	PASS
0	55	5180.0206	PASS	5180.021	PASS	5180.0213	PASS	5180.0203	PASS

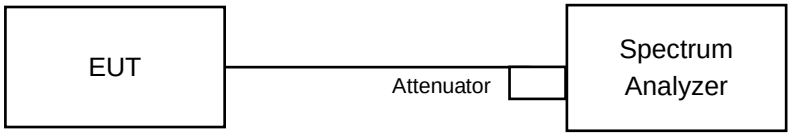
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	63.25	5180.0138	PASS	5180.0165	PASS	5180.0155	PASS	5180.0169	PASS
	55	5180.0142	PASS	5180.0159	PASS	5180.0164	PASS	5180.0159	PASS
	46.75	5180.0147	PASS	5180.0159	PASS	5180.0167	PASS	5180.0165	PASS

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

a. Set resolution bandwidth (RBW) = 100kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

CDD Mode

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	15.16	15.36	15.96	15.41	0.5	Pass
157	5785	16.4	15.83	14.11	15.74	0.5	Pass
165	5825	16.39	15.82	13.86	15.51	0.5	Pass

802.11ax (HE20)

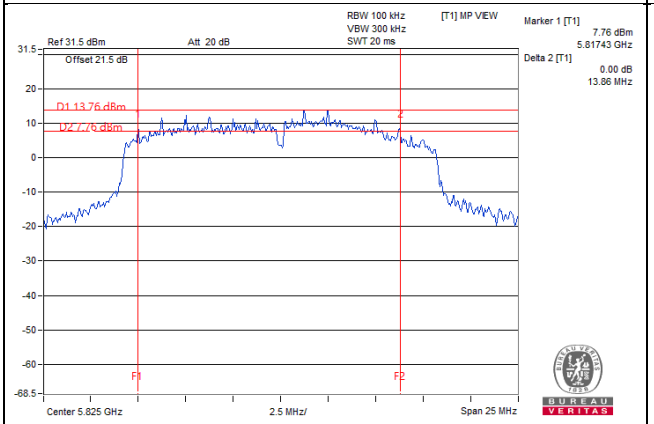
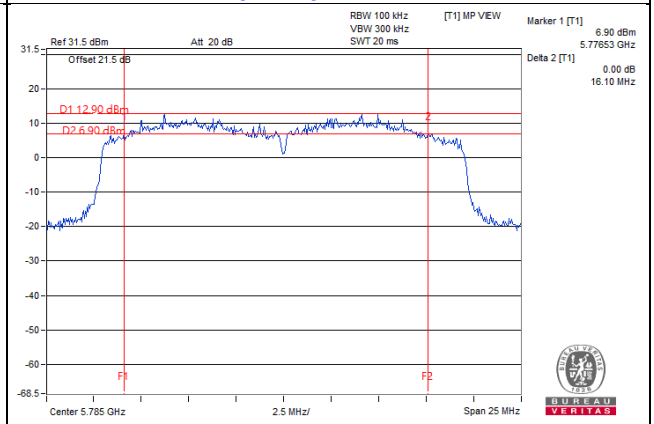
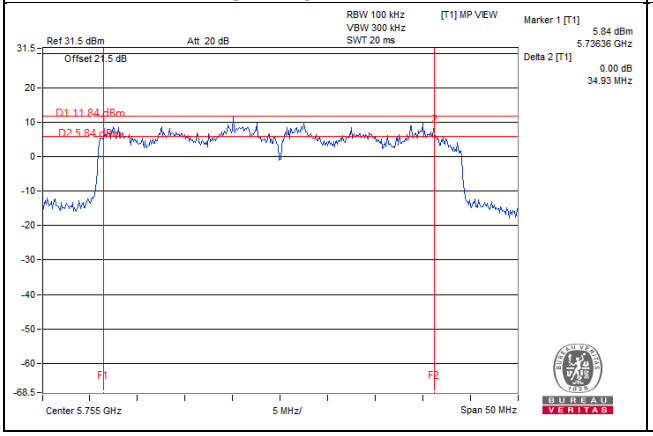
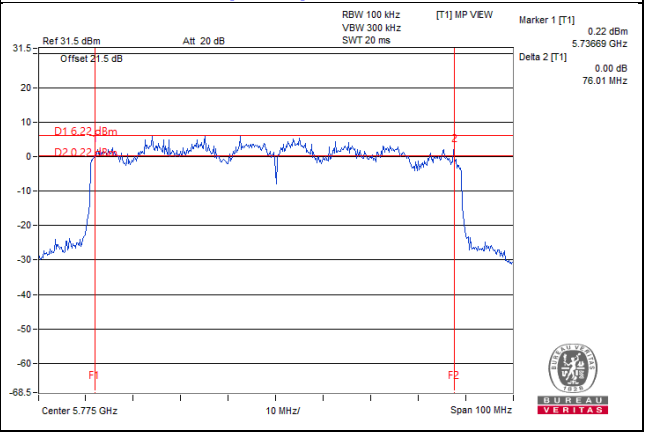
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	16.66	19.07	17.33	18.95	0.5	Pass
157	5785	16.1	19.07	19.01	16.97	0.5	Pass
165	5825	16.37	18.71	19.02	18.29	0.5	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
151	5755	37.55	37.71	36.59	34.93	0.5	Pass
159	5795	35.87	38.09	36.63	36.48	0.5	Pass

802.11ax (HE80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
155	5775	76.01	76.9	76.51	76.54	0.5	Pass

Spectrum Plot of Worst Value	
802.11a_Chain 2 / CH165	**802.11ax (HE20)_Chain 0 / CH157**
	
802.11ax (HE40) _Chain 3 / CH151	**802.11ax (HE80) _Chain 0 / CH155**
	

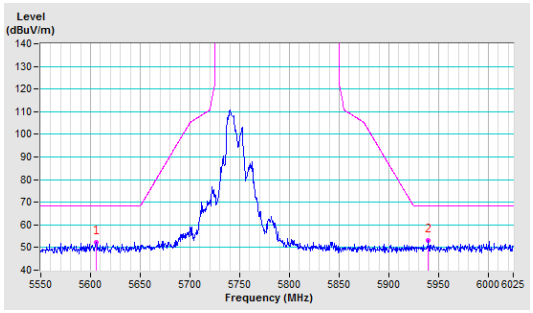
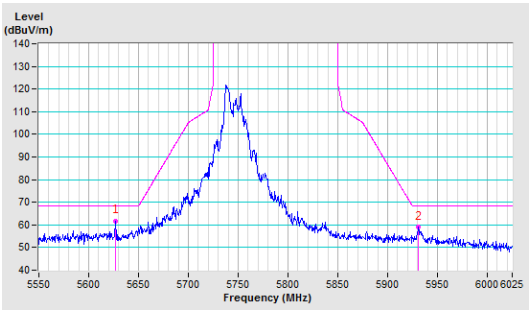
5 Pictures of Test Arrangements

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

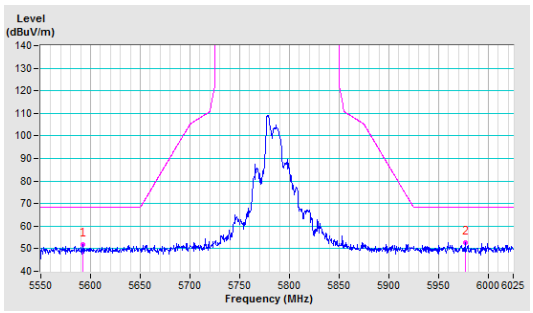
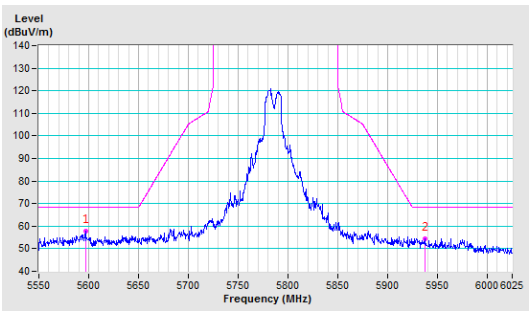
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11a

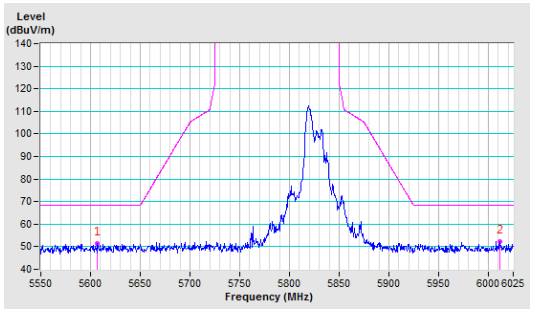
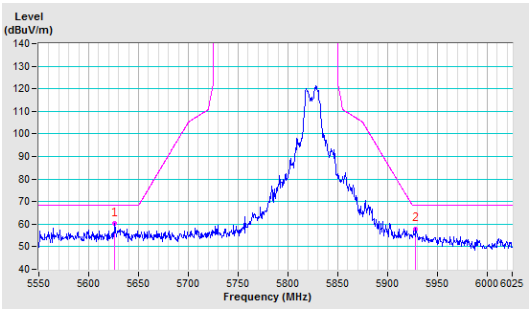
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

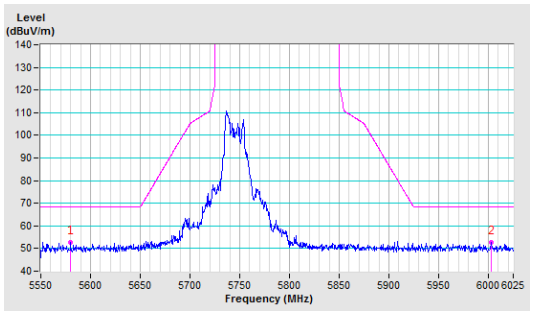
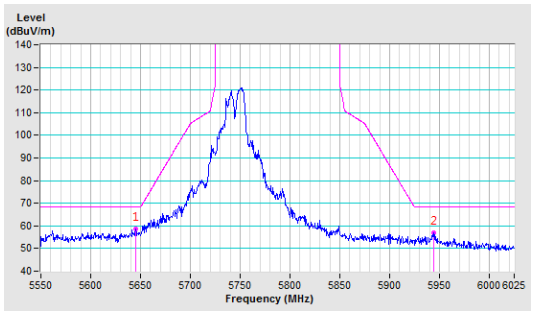
Horizontal	Vertical
	

CH 165 5825 MHz

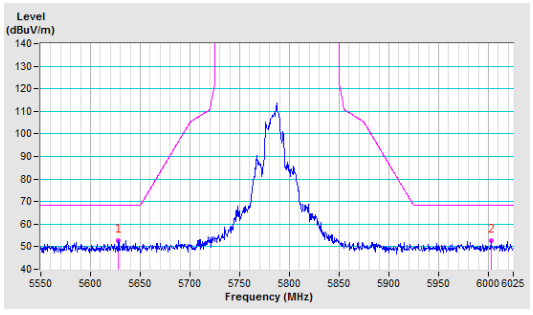
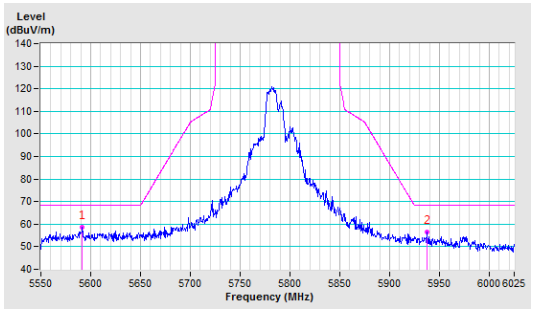
Horizontal	Vertical
	

802.11ax (HE20)

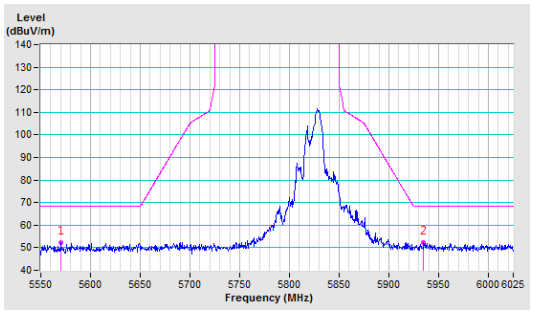
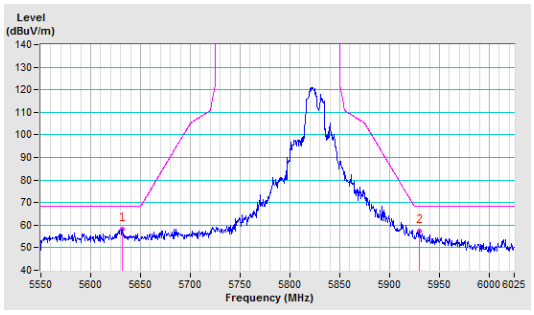
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

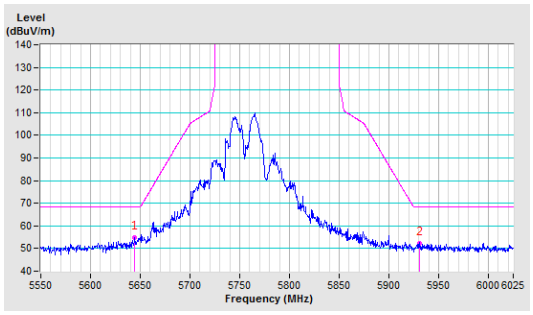
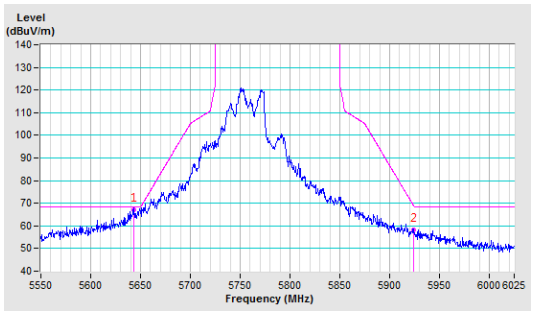
Horizontal	Vertical
	

CH 165 5825 MHz

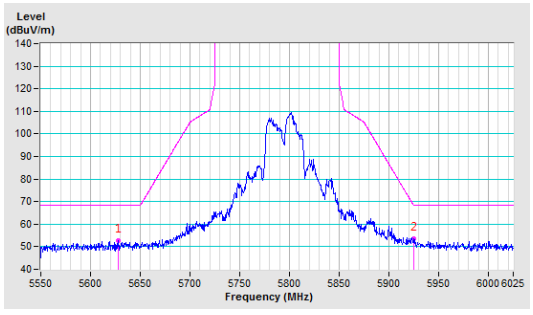
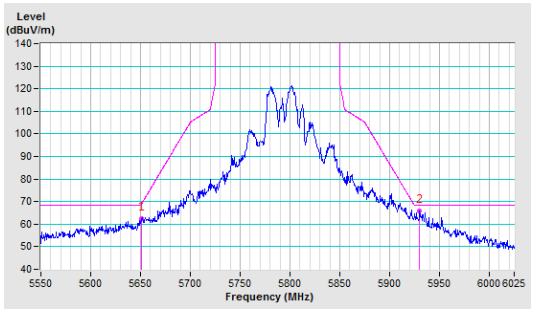
Horizontal	Vertical
	

802.11ax (HE40)

CH 151 5755 MHz

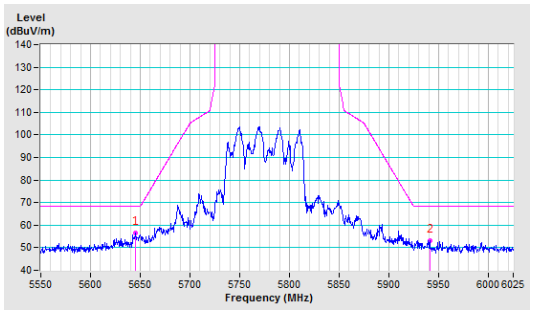
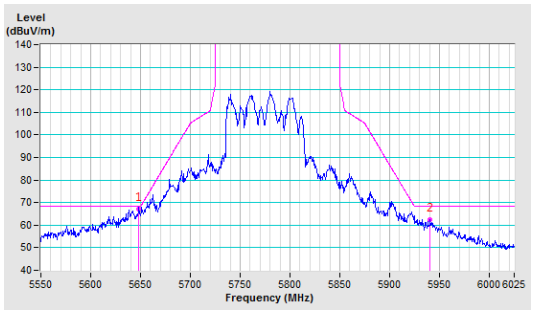
Horizontal	Vertical
	

CH 159 5795 MHz

Horizontal	Vertical
	

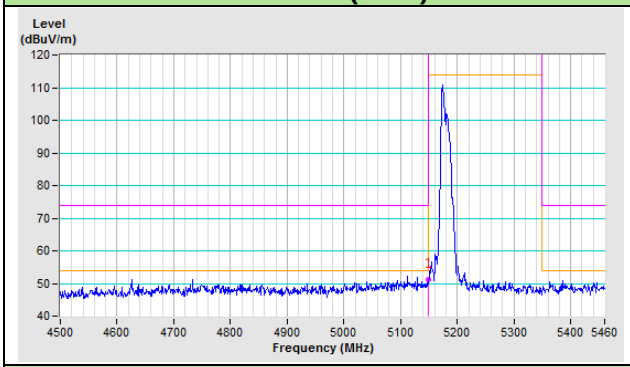
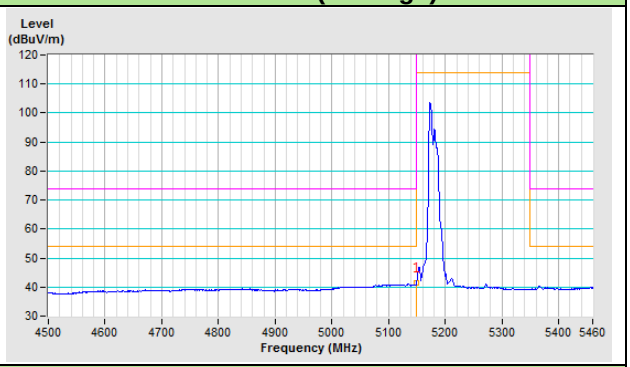
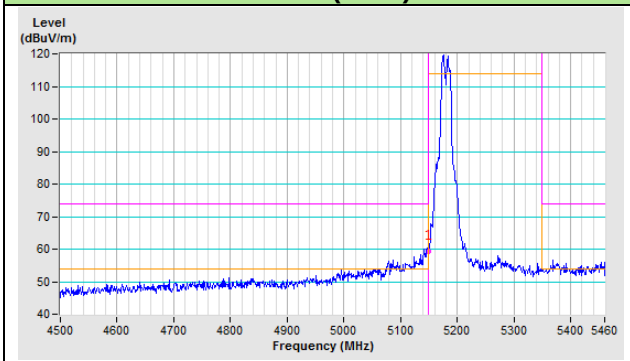
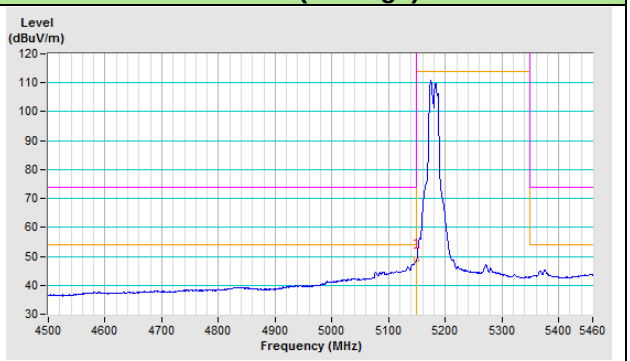
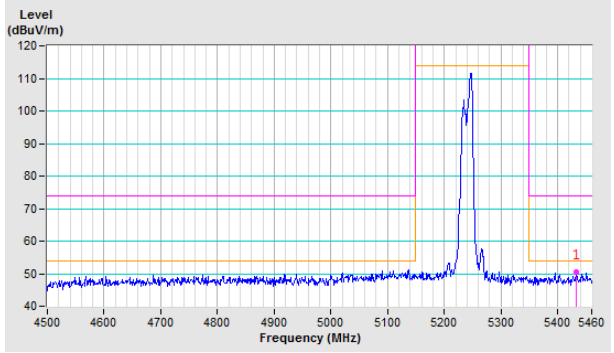
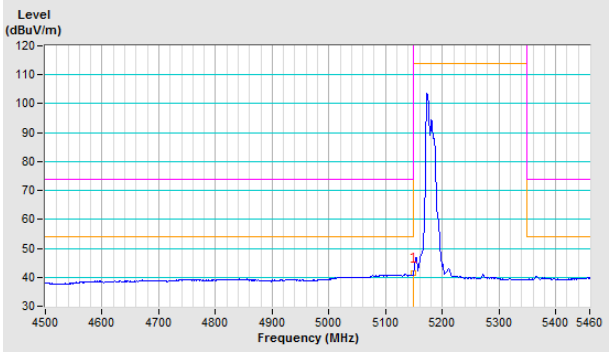
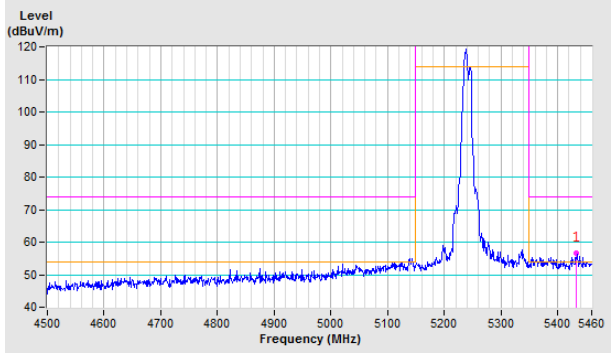
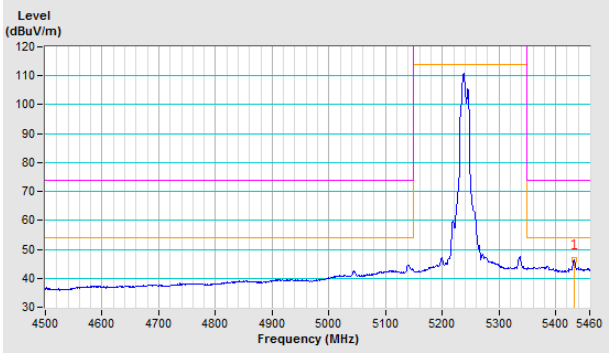
802.11ax (HE80)

CH 155 5775 MHz

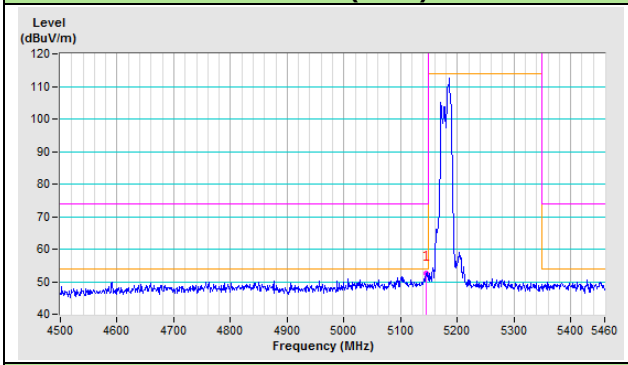
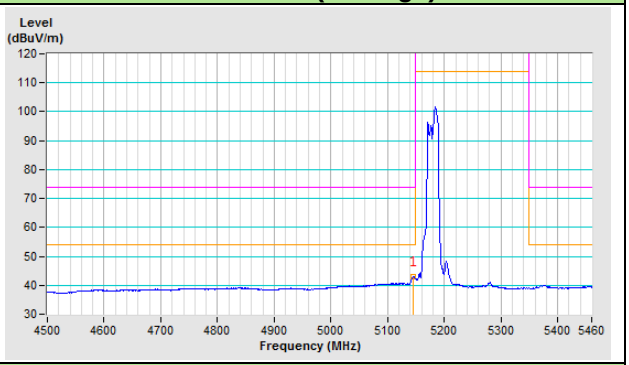
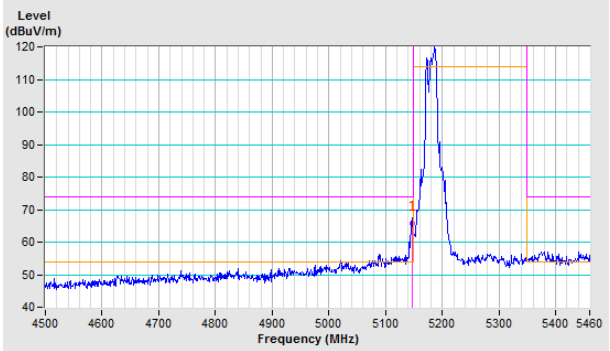
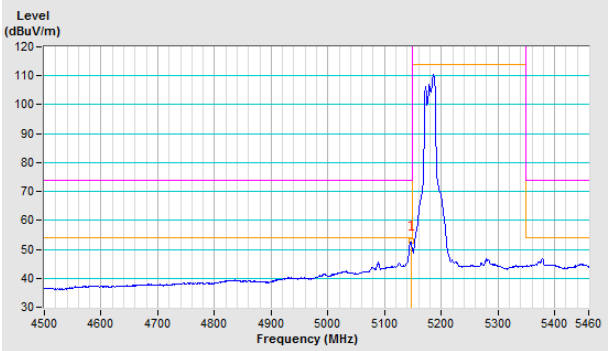
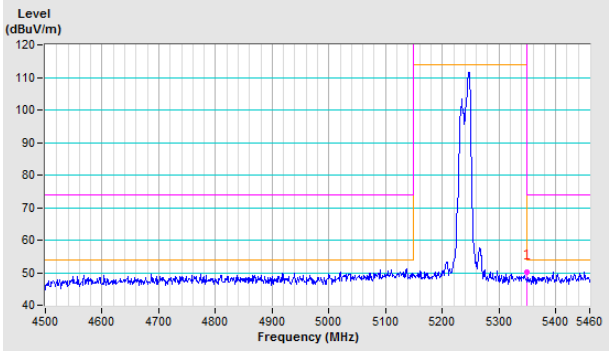
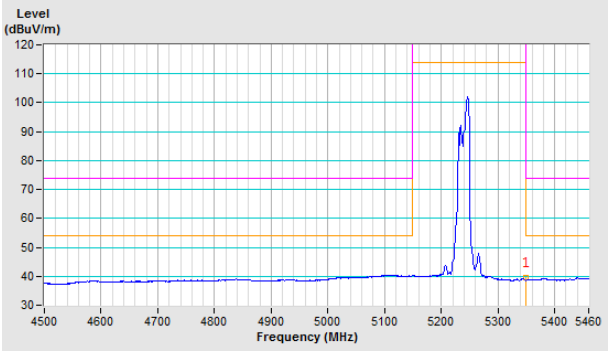
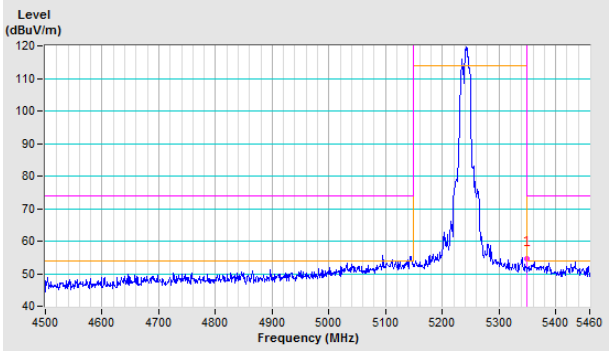
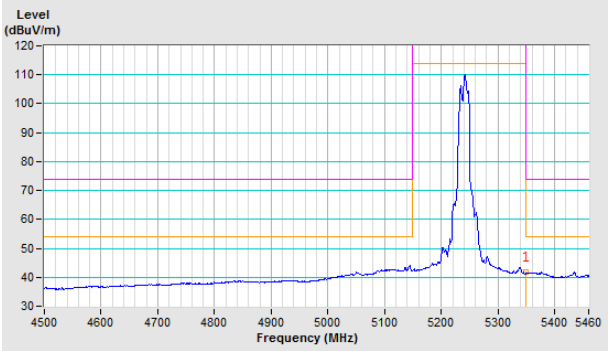
Horizontal	Vertical
	

ANNEX B- BAND-EDGE MEASUREMENT

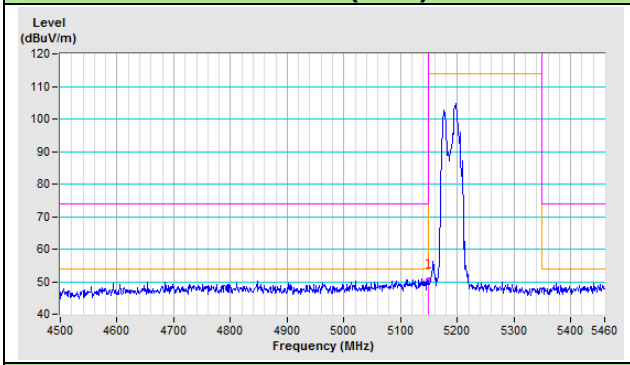
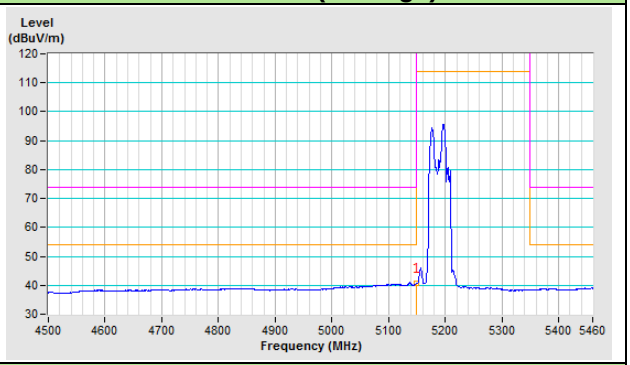
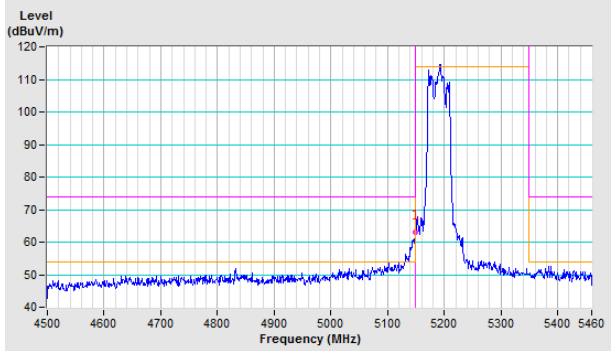
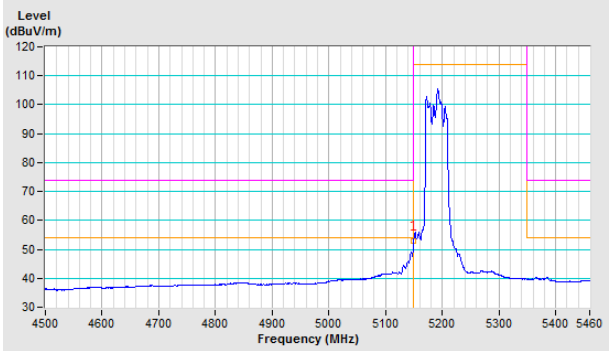
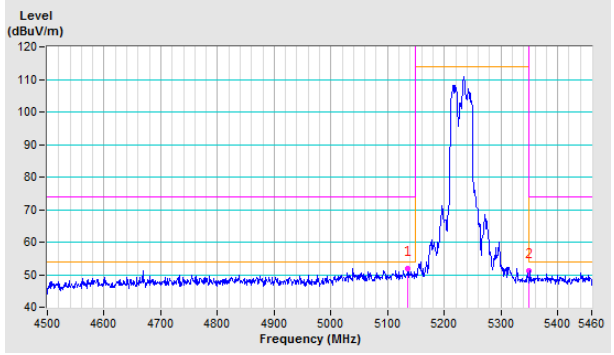
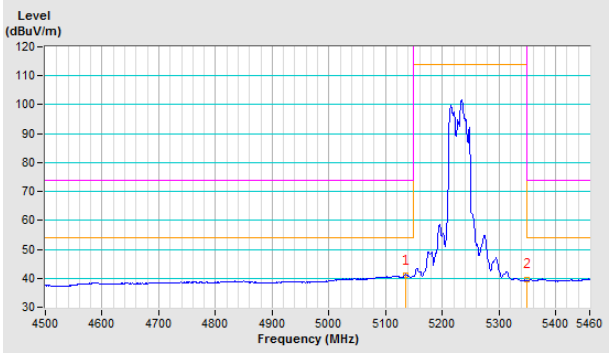
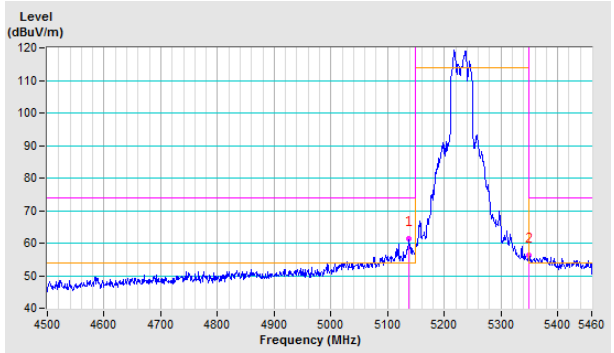
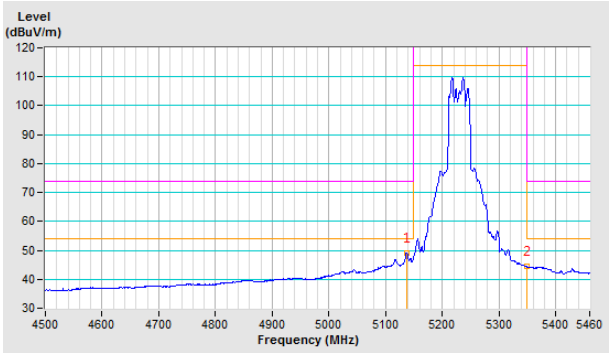
802.11a

Channel 36	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
Channel 48	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

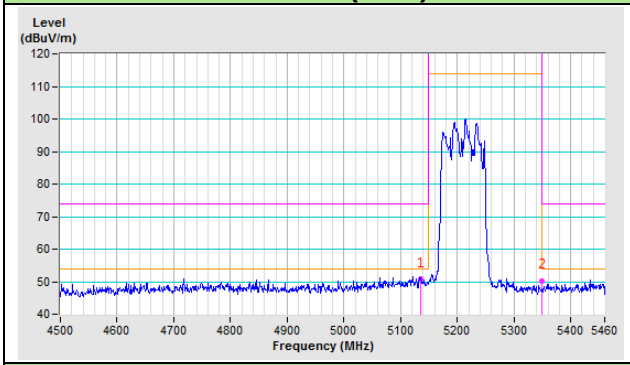
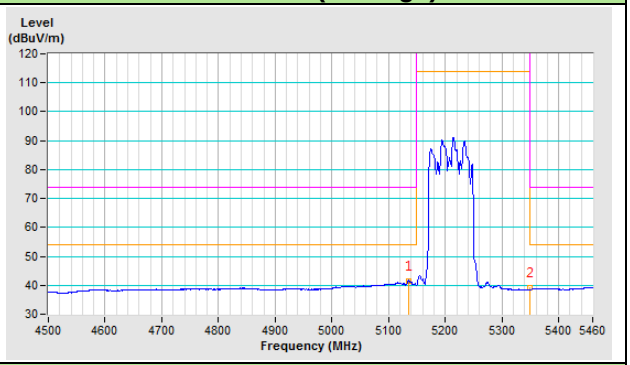
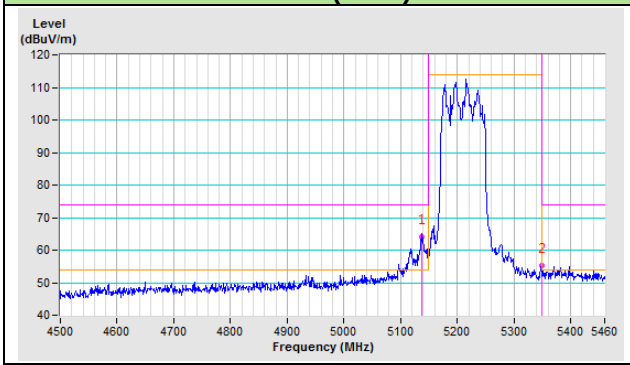
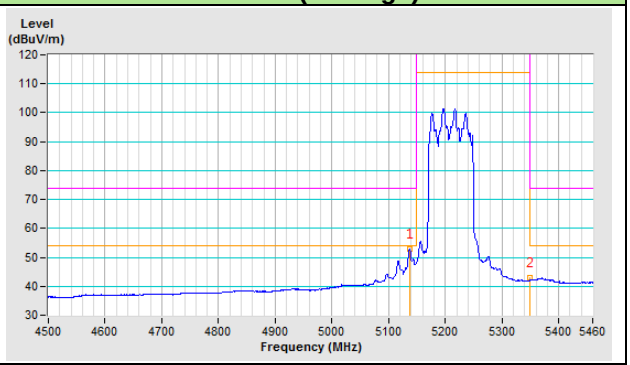
802.11ax (HE20)

Channel 36	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
Channel 48	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

802.11ax (HE40)

Channel 38	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
Channel 46	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

802.11ax (HE80)

Channel 42	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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 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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