

FCC Test Report

Report No.: RF200630E05-1

FCC ID: MQT-AT150R6

Test Model: xCL_AT-150-R6-18U

Received Date: June 30, 2020

Test Date: July 13 to Aug. 18, 2020

Issued Date: Oct. 21, 2020

Applicant: XAC AUTOMATION CORP.

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PARK,HSINCHU,TAIWAN

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**FCC Registration /
Designation Number:** 723255 / TW2022



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Release Control Record

Issue No.	Description	Date Issued
RF200630E05-1	Original release.	Oct. 21, 2020

1 Certificate of Conformity

Product: Terminal

Brand: XAC

Test Model: xCL_AT-150-R6-18U

Sample Status: ENGINEERING SAMPLE

Applicant: XAC AUTOMATION CORP.

Test Date: July 13 to Aug. 18, 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 :



Joyce Kuo / Specialist

Date:

Oct. 21, 2020

Approved by :



Clark Lin / Technical Manager

Date:

Oct. 21, 2020

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 -19.32dB at 0.39219MHz.
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 -0.3dB at 5150.00MHz.
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 i-pex(MHF) not a standard connector.

Note:

- For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB test plots were recorded in Annex A.
- For U-NII-1, U-NII-2A, U-NII-2C 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.
- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (\pm)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.9 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.5 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.1 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

Product	Terminal
Brand	XAC
Test Model	xCL_AT-150-R6-18U
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	Refer to note
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54 Mbps 802.11n: up to 150 Mbps
Operating Frequency	2.4GHz: 2.412 ~ 2.462 GHz 5GHz: 5.18 ~ 5.24 GHz, 5.26 ~ 5.32 GHz, 5.50 ~ 5.72 GHz, 5.745 ~ 5.825 GHz
Number of Channel	2.4GHz: 802.11b, 802.11g, 802.11n (HT20): 11 5GHz: 802.11a, 802.11n (HT20): 25 802.11n (HT40): 12
Output Power	2.4 GHz: 276.058 mW 5.18 ~ 5.24 GHz: 54.075 mW 5.26 ~ 5.32 GHz: 35.156 mW 5.5 ~ 5.72 GHz: 30.061 mW 5.745 ~ 5.825 GHz: 46.026 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Battery x1 (Option)
Cable Supplied	NA

Note:

1. The EUT has three radios as following table:

Radio 1	Radio 2	Radio 3
WLAN(2.4GHz + 5GHz) + Bluetooth	WWAN(LTE + WCDMA)	NFC

2. Simultaneously transmission condition.

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

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

3. The EUT must be supplied power adapter and battery as following table:

Adapter (Only test not for sale)		
Brand	Model	Specification
DEE VAN ENTERPRISE CO., LTD	DSA-18PFCA-05 050300	AC Input: 100-240Vac, 0.6A, 50-60Hz DC Output: 5Vdc, 3A
Battery (Option)		
Brand	Model	Specification
Shenzhen Rishengzhi Electronics Technology Co., Ltd.	W001	3.6V, 6700mAh, 24.12Wh

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

Antenna Set.	RF Chain NO.	Brand	Model	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type
NFC	Main	XAC	RTOS	13	13.56MHz	wire	None
Wi-Fi BT	Main	AWAN	AYF6P-100002	2.29	2400MHz~2500MHz	PIFA	i-pex(MHF)
				2.77	5150MHz~5850MHz		
LTE	Main(B2) TX	AWAN	AXF6P-100012	2.65	1850 MHz to 1910 MHz	PIFA	i-pex(MHF)
	Main(B4) TX			2.3	1710 MHz to 1755 MHz		
	Main(B12) TX			2.6	699 MHz to 715 MHz		
	Main(B2) RX			1.66	1930 MHz to 1990 MHz		
	Main(B4) RX			2.05	2110 MHz to 2155 MHz		
	Main(B12) RX			2.52	729 MHz to 745 MHz		
	Aux(B2) RX	AWAN	AXF6P-100005	-4.99	1930 MHz to 1990 MHz	PIFA	i-pex(MHF)
Aux(B4) RX	-3.34			2110 MHz to 2155 MHz			
Aux(B12) RX	-0.32			729 MHz to 746 MHz			
WCDMA	Main(B2) TX	AWAN	AXF6P-100012	2.65	1850 MHz to 1910 MHz	PIFA	i-pex(MHF)
	Main(B5) TX			2.06	824 MHz to 849 MHz		
	Main(B2) RX			1.66	1930 MHz to 1990 MHz		
	Main(B5) RX			2.8	869 MHz to 894 MHz		
	Aux(B2) RX	AWAN	AXF6P-100005	-4.99	1930 MHz to 1990 MHz	PIFA	i-pex(MHF)
	Aux(B5) RX			-3.54	869 MHz to 894 MHz		
GPS	Main	YAGEO	ANT8010JLD2B151	3.29	1575.42MHz	Chip	i-pex(MHF)

5. The EUT was pre-tested for radiated emission test under following test modes:

Pre-test Mode	Power
Mode A	Power from Adapter
Mode B	Power from Battery
From the above modes, the worst radiated test was found in Mode A .	

6. The EUT was pre-tested for conducted emission test under following test modes:

Pre-test Mode	Power
Mode A	Power from Adapter
Mode B	Power from Laptop
From the above modes, the worst conducted emission test was found in Mode A .	

7. The EUT incorporates a SISO function.

2.4GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11b	1TX	1RX
802.11g	1TX	1RX
802.11n (HT20)	1TX	1RX
5GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11a	1TX	1RX
802.11n (HT20)	1TX	1RX
802.11n (HT40)	1TX	1RX

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

9. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

FOR 5260 ~ 5320MHz

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

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

FOR 5500 ~ 5720MHz

12 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz	144	5720 MHz

6 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz	142	5710 MHz

FOR 5745 ~ 5825MHz:

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

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):

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 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.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11n (HT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11n (HT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6
802.11n (HT20)		100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11n (HT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	13.5

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.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11n (HT20)	5180-5240, 5260-5320, 5500-5720 5745-5825	36 to 48, 52 to 64, 100 to 144, 149 to 165	40	OFDM	BPSK	6.5

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.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11n (HT20)	5180-5240, 5260-5320, 5500-5720 5745-5825	36 to 48 52 to 64, 100 to 144, 149 to 165	40	OFDM	BPSK	6.5

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.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11n (HT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11n (HT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6
802.11n (HT20)		100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11n (HT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	13.5

Test Condition:

Applicable To	Environmental Conditions	Input Power (System)	Tested By
RE \geq 1G	22deg. C, 70%RH	120Vac, 60Hz	Nelson Teng
RE $<$ 1G	25deg. C, 65%RH	120Vac, 60Hz	Kevin Ko
PLC	25deg. C, 75%RH	120Vac, 60Hz	Kevin Ko
APCM	25deg. C, 60%RH	120Vac, 60Hz	Kevin Ko

3.3 Duty Cycle of Test Signal

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

802.11a: Duty cycle = 5.482 ms/5.685 ms = 0.964, Duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 0.16\text{dB}$

802.11n (HT20): Duty cycle = 5.079 ms/5.281 ms = 0.962, Duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 0.17\text{dB}$

802.11n (HT40): Duty cycle = 2.467 ms/2.684 ms = 91.9, Duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 0.37\text{dB}$



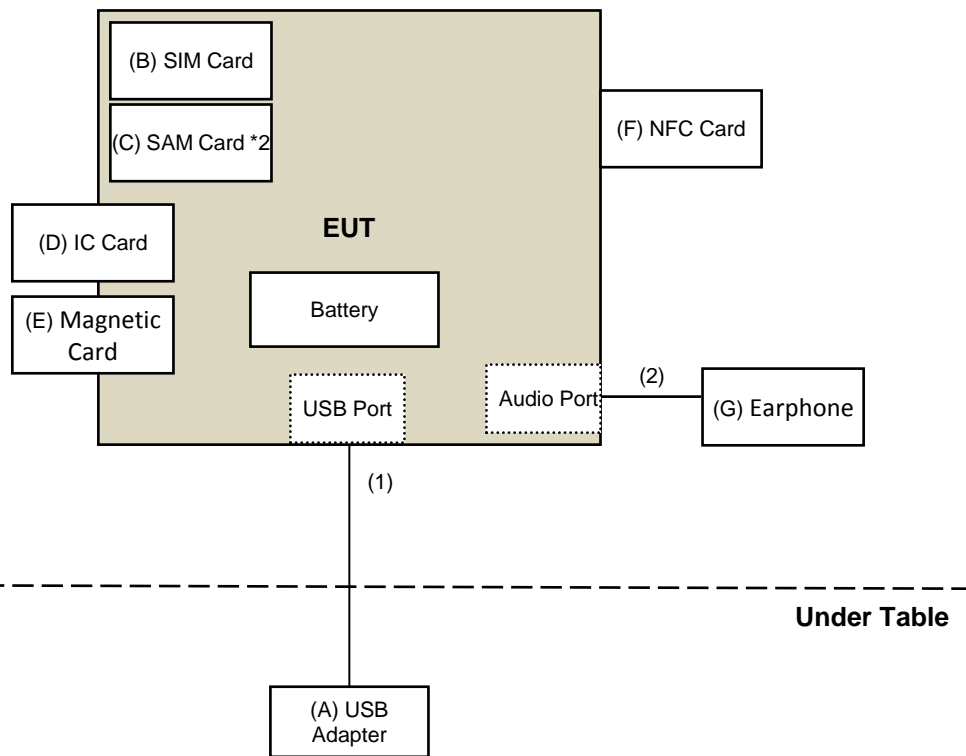
3.4 Description of Support Units

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.	USB Adapter	DEE VAN	DSA-18PFCA-05 050300	NA	NA	Supplied by client
B.	SIM Card	Keysight	NA	NA	NA	Provided by Lab
C.	SAM Card *2	XAC	NA	NA	NA	Supplied by client
D.	IC Card	XAC	NA	NA	NA	Supplied by client
E.	Magnetic Card	XAC	NA	NA	NA	Supplied by client
F.	NFC Card	XAC	NA	NA	NA	Supplied by client
G.	Earphone	Infinix	NA	NA	NA	Provided by Lab

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB Type C to USB Cable	1	1.2	Yes	0	Supplied by client
2.	earphone cable	1	1.5	No	0	Provided by Lab

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard 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

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 (dBuV/m)	AV:54 (dBuV/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(dBuV/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(dBuV/m) *1 PK:105.2 (dBuV/m) *2 PK: 110.8(dBuV/m) *3 PK:122.2 (dBuV/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:

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

4.1.2 Test Instruments

For Radiated Emission test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY51210202	Dec. 13, 2019	Dec. 12, 2020
Pre-Amplifier EMCI	EMC001340	980142	May 25, 2020	May 24, 2021
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-01	Oct. 23, 2019	Oct. 22, 2020
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 11, 2019	Nov. 10, 2020
RF Cable	8D	966-4-1	Mar. 18, 2020	Mar. 17, 2021
RF Cable	8D	966-4-2	Mar. 18, 2020	Mar. 17, 2021
RF Cable	8D	966-4-3	Mar. 18, 2020	Mar. 17, 2021
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Sep. 26, 2019	Sep. 25, 2020
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Nov. 24, 2019	Nov. 23, 2020
Pre-Amplifier EMCI	EMC 12630 SE	980638	Apr. 08, 2020	Apr. 07, 2021
RF Cable	EMC104-SM-SM-1200	160923	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-2000	180502	Apr. 29, 2020	Apr. 28, 2021
RF Cable	EMC104-SM-SM-6000	180418	Apr. 29, 2020	Apr. 28, 2021
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
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 4.
3. Tested Date: Aug. 03 to 18, 2020

For other test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 2021
Power meter Anritsu	ML2495A	1529002	July 22, 2020	July 21, 2021
Power sensor Anritsu	MA2411B	1339443	July 22, 2020	July 21, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021
AC Power Source Extech Electronics	6205	1440452	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	June 06, 2020	June 05, 2021
Voltage Meter FLUKE	179	89610322	Sep. 25, 2019	Sep. 24, 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: Aug. 17, 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:

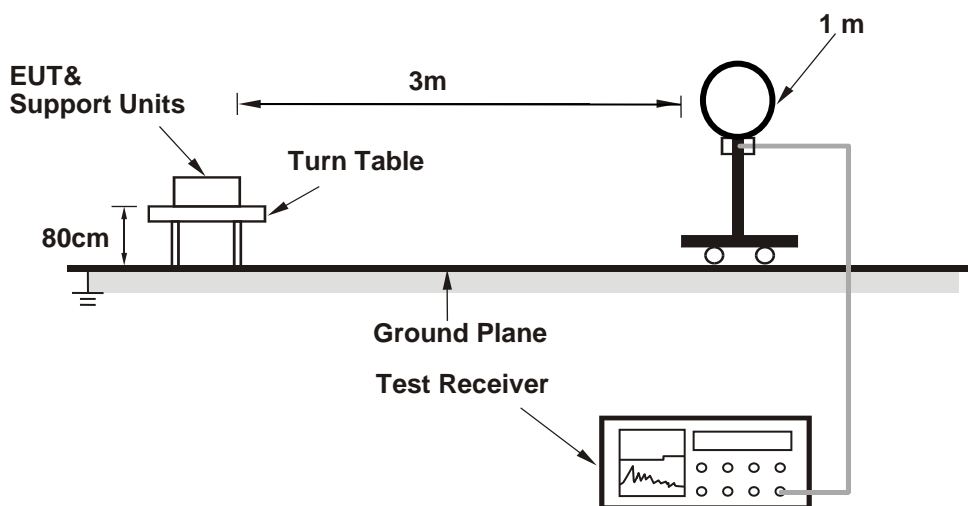
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

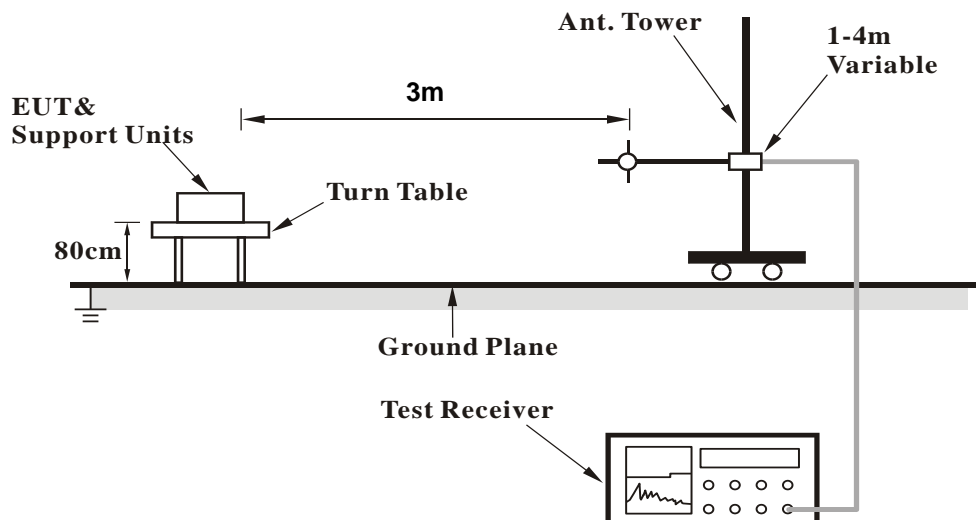
No deviation.

4.1.5 Test Setup

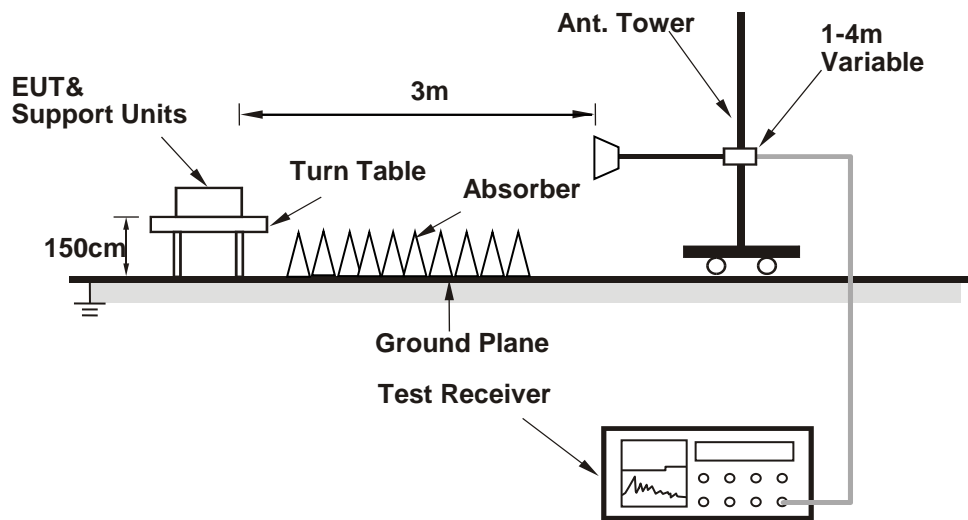
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Condition

- a. Placed the EUT on the testing table.
- b. Controlling software (QDART 4.8.29) 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)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	56.3 PK	74.0	-17.7	1.18 H	233	55.6	0.7
2	5150.00	46.4 AV	54.0	-7.6	1.18 H	233	45.7	0.7
3	*5180.00	101.0 PK			1.18 H	233	100.3	0.7
4	*5180.00	91.4 AV			1.18 H	233	90.7	0.7
5	#10360.00	48.9 PK	68.2	-19.3	1.81 H	149	38.4	10.5
6	15540.00	49.7 PK	74.0	-24.3	1.86 H	172	37.7	12.0
7	15540.00	37.6 AV	54.0	-16.4	1.86 H	172	25.6	12.0

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (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	67.0 PK	74.0	-7.0	2.67 V	160	66.3	0.7
2	5150.00	53.7 AV	54.0	-0.3	2.67 V	160	53.0	0.7
3	*5180.00	107.8 PK			2.67 V	160	107.1	0.7
4	*5180.00	98.2 AV			2.67 V	160	97.5	0.7
5	#10360.00	48.0 PK	68.2	-20.2	2.96 V	235	37.5	10.5
6	15540.00	50.9 PK	74.0	-23.1	1.94 V	155	38.9	12.0
7	15540.00	38.5 AV	54.0	-15.5	1.94 V	155	26.5	12.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (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	100.3 PK			1.14 H	239	99.7	0.6
2	*5200.00	91.4 AV			1.14 H	239	90.8	0.6
3	#10400.00	47.7 PK	68.2	-20.5	1.78 H	162	37.1	10.6
4	15600.00	49.7 PK	74.0	-24.3	1.84 H	162	37.4	12.3
5	15600.00	37.6 AV	54.0	-16.4	1.84 H	162	25.3	12.3

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (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	107.1 PK			2.61 V	153	106.5	0.6
2	*5200.00	97.9 AV			2.61 V	153	97.3	0.6
3	#10400.00	48.1 PK	68.2	-20.1	2.96 V	247	37.5	10.6
4	15600.00	51.2 PK	74.0	-22.8	1.92 V	174	38.9	12.3
5	15600.00	38.6 AV	54.0	-15.4	1.92 V	174	26.3	12.3

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)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (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	98.3 PK			1.27 H	235	97.7	0.6
2	*5240.00	88.7 AV			1.27 H	235	88.1	0.6
3	5350.00	49.7 PK	74.0	-24.3	1.27 H	235	49.1	0.6
4	5350.00	38.2 AV	54.0	-15.8	1.27 H	235	37.6	0.6
5	#10480.00	48.4 PK	68.2	-19.8	1.76 H	169	37.9	10.5
6	15720.00	50.5 PK	74.0	-23.5	1.84 H	153	39.2	11.3
7	15720.00	38.2 AV	54.0	-15.8	1.84 H	153	26.9	11.3

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (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	105.4 PK			2.59 V	161	104.8	0.6
2	*5240.00	96.6 AV			2.59 V	161	96.0	0.6
3	5350.00	49.9 PK	74.0	-24.1	2.59 V	161	49.3	0.6
4	5350.00	38.1 AV	54.0	-15.9	2.59 V	161	37.5	0.6
5	#10480.00	48.1 PK	68.2	-20.1	2.94 V	252	37.6	10.5
6	15720.00	51.0 PK	74.0	-23.0	1.96 V	167	39.7	11.3
7	15720.00	38.4 AV	54.0	-15.6	1.96 V	167	27.1	11.3

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 52	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (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	49.8 PK	74.0	-24.2	1.22 H	232	49.1	0.7
2	5150.00	38.1 AV	54.0	-15.9	1.22 H	232	37.4	0.7
3	*5260.00	98.4 PK			1.22 H	232	97.9	0.5
4	*5260.00	88.6 AV			1.22 H	232	88.1	0.5
5	#10520.00	48.0 PK	68.2	-20.2	1.74 H	149	37.4	10.6
6	15780.00	50.6 PK	74.0	-23.4	1.88 H	155	39.4	11.2
7	15780.00	38.0 AV	54.0	-16.0	1.88 H	155	26.8	11.2

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (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	49.0 PK	74.0	-25.0	1.46 V	156	48.3	0.7
2	5150.00	38.2 AV	54.0	-15.8	1.46 V	156	37.5	0.7
3	*5260.00	105.7 PK			1.46 V	156	105.2	0.5
4	*5260.00	96.2 AV			1.46 V	156	95.7	0.5
5	#10520.00	48.0 PK	68.2	-20.2	3.01 V	234	37.4	10.6
6	15780.00	50.8 PK	74.0	-23.2	1.99 V	155	39.6	11.2
7	15780.00	38.2 AV	54.0	-15.8	1.99 V	155	27.0	11.2

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 60	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	101.5 PK			1.20 H	226	101.0	0.5
2	*5300.00	92.2 AV			1.20 H	226	91.7	0.5
3	5352.22	53.2 PK	74.0	-20.8	1.20 H	226	52.6	0.6
4	5352.22	42.4 AV	54.0	-11.6	1.20 H	226	41.8	0.6
5	10600.00	47.6 PK	74.0	-26.4	1.75 H	165	37.3	10.3
6	10600.00	35.3 AV	54.0	-18.7	1.75 H	165	25.0	10.3
7	15900.00	51.2 PK	74.0	-22.8	1.89 H	163	39.6	11.6
8	15900.00	38.5 AV	54.0	-15.5	1.89 H	163	26.9	11.6

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	105.7 PK			1.65 V	158	105.2	0.5
2	*5300.00	96.4 AV			1.65 V	158	95.9	0.5
3	5352.22	55.8 PK	74.0	-18.2	1.65 V	158	55.2	0.6
4	5352.22	45.2 AV	54.0	-8.8	1.65 V	158	44.6	0.6
5	10600.00	47.9 PK	74.0	-26.1	3.03 V	256	37.6	10.3
6	10600.00	35.6 AV	54.0	-18.4	3.03 V	256	25.3	10.3
7	15900.00	51.1 PK	74.0	-22.9	1.91 V	160	39.5	11.6
8	15900.00	38.8 AV	54.0	-15.2	1.91 V	160	27.2	11.6

Remarks:

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

Channel	TX Channel 64	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	99.0 PK			1.04 H	245	98.5	0.5
2	*5320.00	91.1 AV			1.04 H	245	90.6	0.5
3	5350.00	59.1 PK	74.0	-14.9	1.04 H	245	58.5	0.6
4	5350.00	45.3 AV	54.0	-8.7	1.04 H	245	44.7	0.6
5	10640.00	49.0 PK	74.0	-25.0	1.75 H	153	38.7	10.3
6	10640.00	36.1 AV	54.0	-17.9	1.75 H	153	25.8	10.3
7	15960.00	50.3 PK	74.0	-23.7	1.90 H	167	38.3	12.0
8	15960.00	38.0 AV	54.0	-16.0	1.90 H	167	26.0	12.0

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	106.3 PK			1.66 V	165	105.8	0.5
2	*5320.00	97.1 AV			1.66 V	165	96.6	0.5
3	5350.00	62.9 PK	74.0	-11.1	1.66 V	165	62.3	0.6
4	5350.00	48.7 AV	54.0	-5.3	1.66 V	165	48.1	0.6
5	10640.00	48.0 PK	74.0	-26.0	2.94 V	248	37.7	10.3
6	10640.00	35.5 AV	54.0	-18.5	2.94 V	248	25.2	10.3
7	15960.00	50.5 PK	74.0	-23.5	1.99 V	156	38.5	12.0
8	15960.00	37.9 AV	54.0	-16.1	1.99 V	156	25.9	12.0

Remarks:

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

Channel	TX Channel 100	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5447.76	56.3 PK	74.0	-17.7	1.06 H	247	55.4	0.9
2	5447.76	43.2 AV	54.0	-10.8	1.06 H	247	42.3	0.9
3	#5470.00	65.1 PK	68.2	-3.1	1.06 H	247	64.2	0.9
4	*5500.00	106.4 PK			1.06 H	247	105.5	0.9
5	*5500.00	96.4 AV			1.06 H	247	95.5	0.9
6	11000.00	48.4 PK	74.0	-25.6	1.82 H	166	37.1	11.3
7	11000.00	35.7 AV	54.0	-18.3	1.82 H	166	24.4	11.3
8	#16500.00	50.1 PK	68.2	-18.1	1.81 H	156	36.1	14.0

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5447.76	57.9 PK	74.0	-16.1	1.50 V	162	57.0	0.9
2	5447.76	45.5 AV	54.0	-8.5	1.50 V	162	44.6	0.9
3	#5470.00	67.3 PK	68.2	-0.9	1.50 V	162	66.4	0.9
4	*5500.00	105.8 PK			1.50 V	162	104.9	0.9
5	*5500.00	97.9 AV			1.50 V	162	97.0	0.9
6	11000.00	48.3 PK	74.0	-25.7	2.98 V	239	37.0	11.3
7	11000.00	35.6 AV	54.0	-18.4	2.98 V	239	24.3	11.3
8	#16500.00	51.3 PK	68.2	-16.9	1.99 V	153	37.3	14.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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 116	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	106.2 PK			1.02 H	257	105.2	1.0
2	*5580.00	96.4 AV			1.02 H	257	95.4	1.0
3	11160.00	47.8 PK	74.0	-26.2	1.75 H	152	36.9	10.9
4	11160.00	35.4 AV	54.0	-18.6	1.75 H	152	24.5	10.9
5	#16740.00	50.3 PK	68.2	-17.9	1.83 H	169	35.2	15.1

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	105.2 PK			1.49 V	160	104.2	1.0
2	*5580.00	96.7 AV			1.49 V	160	95.7	1.0
3	11160.00	47.7 PK	74.0	-26.3	2.94 V	251	36.8	10.9
4	11160.00	35.2 AV	54.0	-18.8	2.94 V	251	24.3	10.9
5	#16740.00	50.6 PK	68.2	-17.6	1.93 V	164	35.5	15.1

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 140	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	107.0 PK			1.02 H	234	105.6	1.4
2	*5700.00	96.8 AV			1.02 H	234	95.4	1.4
3	#5725.00	65.0 PK	68.2	-3.2	1.02 H	234	63.6	1.4
4	11400.00	47.9 PK	74.0	-26.1	1.81 H	170	36.3	11.6
5	11400.00	35.3 AV	54.0	-18.7	1.81 H	170	23.7	11.6
6	#17100.00	50.2 PK	68.2	-18.0	1.88 H	163	33.3	16.9

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	102.3 PK			1.61 V	164	100.9	1.4
2	*5700.00	94.9 AV			1.61 V	164	93.5	1.4
3	#5725.00	65.2 PK	68.2	-3.0	1.61 V	164	63.8	1.4
4	11400.00	48.4 PK	74.0	-25.6	3.02 V	239	36.8	11.6
5	11400.00	35.8 AV	54.0	-18.2	3.02 V	239	24.2	11.6
6	#17100.00	51.0 PK	68.2	-17.2	1.90 V	156	34.1	16.9

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 144	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	50.8 PK	74.0	-23.2	1.08 H	247	49.9	0.9
2	5460.00	38.1 AV	54.0	-15.9	1.08 H	247	37.2	0.9
3	#5470.00	49.8 PK	68.2	-18.4	1.08 H	247	48.9	0.9
4	*5720.00	103.1 PK			1.08 H	247	101.7	1.4
5	*5720.00	94.5 AV			1.08 H	247	93.1	1.4
6	#5850.00	51.1 PK	68.2	-17.1	1.08 H	247	49.3	1.8
7	11440.00	48.0 PK	74.0	-26.0	1.82 H	160	36.3	11.7
8	11440.00	35.5 AV	54.0	-18.5	1.82 H	160	23.8	11.7
9	#17160.00	50.9 PK	68.2	-17.3	1.83 H	160	34.8	16.1

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	50.9 PK	74.0	-23.1	1.45 V	135	50.0	0.9
2	5460.00	39.6 AV	54.0	-14.4	1.45 V	135	38.7	0.9
3	#5470.00	50.2 PK	68.2	-18.0	1.45 V	135	49.3	0.9
4	*5720.00	101.8 PK			1.45 V	135	100.4	1.4
5	*5720.00	94.4 AV			1.45 V	135	93.0	1.4
6	#5850.00	50.4 PK	68.2	-17.8	1.45 V	135	48.6	1.8
7	11440.00	47.6 PK	74.0	-26.4	2.99 V	227	35.9	11.7
8	11440.00	35.2 AV	54.0	-18.8	2.99 V	227	23.5	11.7
9	#17160.00	50.6 PK	68.2	-17.6	1.91 V	153	34.5	16.1

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)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5618.64	56.4 PK	68.2	-11.8	1.00 H	250	53.0	3.4
2	*5745.00	108.3 PK			1.00 H	250	106.9	1.4
3	*5745.00	98.7 AV			1.00 H	250	97.3	1.4
4	#5965.62	57.3 PK	68.2	-10.9	1.00 H	250	53.2	4.1
5	11490.00	48.4 PK	74.0	-25.6	1.77 H	163	36.6	11.8
6	11490.00	35.8 AV	54.0	-18.2	1.77 H	163	24.0	11.8
7	#17235.00	50.4 PK	68.2	-17.8	1.85 H	166	35.0	15.4

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5612.04	57.7 PK	68.2	-10.5	2.86 V	139	54.3	3.4
2	*5745.00	109.2 PK			2.86 V	139	107.8	1.4
3	*5745.00	99.9 AV			2.86 V	139	98.5	1.4
4	#5936.22	58.3 PK	68.2	-9.9	2.86 V	139	54.3	4.0
5	11490.00	47.9 PK	74.0	-26.1	2.97 V	242	36.1	11.8
6	11490.00	35.5 AV	54.0	-18.5	2.97 V	242	23.7	11.8
7	#17235.00	50.7 PK	68.2	-17.5	1.96 V	167	35.3	15.4

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 157	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5553.60	57.5 PK	68.2	-10.7	1.07 H	240	54.2	3.3
2	*5785.00	107.7 PK			1.07 H	240	106.2	1.5
3	*5785.00	98.3 AV			1.07 H	240	96.8	1.5
4	#6009.19	57.2 PK	68.2	-11.0	1.07 H	240	53.1	4.1
5	11570.00	48.5 PK	74.0	-25.5	1.75 H	158	37.0	11.5
6	11570.00	36.0 AV	54.0	-18.0	1.75 H	158	24.5	11.5
7	#17355.00	50.7 PK	68.2	-17.5	1.80 H	181	34.4	16.3

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5596.47	57.0 PK	68.2	-11.2	2.67 V	137	53.6	3.4
2	*5785.00	108.6 PK			2.67 V	137	107.1	1.5
3	*5785.00	99.9 AV			2.67 V	137	98.4	1.5
4	#5933.67	57.4 PK	68.2	-10.8	2.67 V	137	53.4	4.0
5	11570.00	48.4 PK	74.0	-25.6	2.92 V	256	36.9	11.5
6	11570.00	35.7 AV	54.0	-18.3	2.92 V	256	24.2	11.5
7	#17355.00	50.7 PK	68.2	-17.5	1.92 V	169	34.4	16.3

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)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5601.25	56.6 PK	68.2	-11.6	1.00 H	233	53.2	3.4
2	*5825.00	106.8 PK			1.00 H	233	105.1	1.7
3	*5825.00	97.5 AV			1.00 H	233	95.8	1.7
4	#6008.33	57.5 PK	68.2	-10.7	1.00 H	233	53.4	4.1
5	11650.00	49.0 PK	74.0	-25.0	1.74 H	172	37.7	11.3
6	11650.00	36.2 AV	54.0	-17.8	1.74 H	172	24.9	11.3
7	#17475.00	50.3 PK	68.2	-17.9	1.81 H	171	31.8	18.5

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5568.32	56.7 PK	68.2	-11.5	2.65 V	160	53.4	3.3
2	*5825.00	108.2 PK			2.65 V	160	106.5	1.7
3	*5825.00	98.0 AV			2.65 V	160	96.3	1.7
4	#5983.92	57.6 PK	68.2	-10.6	2.65 V	160	53.5	4.1
5	11650.00	47.7 PK	74.0	-26.3	2.97 V	248	36.4	11.3
6	11650.00	35.1 AV	54.0	-18.9	2.97 V	248	23.8	11.3
7	#17475.00	50.8 PK	68.2	-17.4	1.96 V	171	32.3	18.5

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.

802.11n (HT20)

Channel	TX Channel 36	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	61.5 PK	74.0	-12.5	1.08 H	232	60.8	0.7
2	5150.00	47.2 AV	54.0	-6.8	1.08 H	232	46.5	0.7
3	*5180.00	99.5 PK			1.08 H	232	98.8	0.7
4	*5180.00	90.4 AV			1.08 H	232	89.7	0.7
5	#10360.00	48.3 PK	68.2	-19.9	1.76 H	170	37.8	10.5
6	15540.00	51.1 PK	74.0	-22.9	1.90 H	161	39.1	12.0
7	15540.00	38.6 AV	54.0	-15.4	1.90 H	161	26.6	12.0

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	64.8 PK	74.0	-9.2	2.42 V	156	64.1	0.7
2	5150.00	53.6 AV	54.0	-0.4	2.42 V	156	52.9	0.7
3	*5180.00	106.5 PK			2.42 V	156	105.8	0.7
4	*5180.00	97.2 AV			2.42 V	156	96.5	0.7
5	#10360.00	48.2 PK	68.2	-20.0	2.93 V	228	37.7	10.5
6	15540.00	50.5 PK	74.0	-23.5	1.92 V	160	38.5	12.0
7	15540.00	38.2 AV	54.0	-15.8	1.92 V	160	26.2	12.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (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	99.7 PK			1.04 H	245	99.1	0.6
2	*5200.00	90.8 AV			1.04 H	245	90.2	0.6
3	#10400.00	49.1 PK	68.2	-19.1	1.81 H	162	38.5	10.6
4	15600.00	50.3 PK	74.0	-23.7	1.84 H	161	38.0	12.3
5	15600.00	37.9 AV	54.0	-16.1	1.84 H	161	25.6	12.3

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (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	107.4 PK			2.63 V	161	106.8	0.6
2	*5200.00	98.3 AV			2.63 V	161	97.7	0.6
3	#10400.00	48.4 PK	68.2	-19.8	2.94 V	252	37.8	10.6
4	15600.00	50.3 PK	74.0	-23.7	1.98 V	182	38.0	12.3
5	15600.00	38.1 AV	54.0	-15.9	1.98 V	182	25.8	12.3

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)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (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	98.8 PK			1.23 H	239	98.2	0.6
2	*5240.00	89.1 AV			1.23 H	239	88.5	0.6
3	5350.00	49.6 PK	74.0	-24.4	1.23 H	239	49.0	0.6
4	5350.00	38.0 AV	54.0	-16.0	1.23 H	239	37.4	0.6
5	#10480.00	47.9 PK	68.2	-20.3	1.79 H	152	37.4	10.5
6	15720.00	50.2 PK	74.0	-23.8	1.81 H	174	38.9	11.3
7	15720.00	37.9 AV	54.0	-16.1	1.81 H	174	26.6	11.3

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (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	106.0 PK			2.68 V	165	105.4	0.6
2	*5240.00	96.2 AV			2.68 V	165	95.6	0.6
3	5350.00	50.2 PK	74.0	-23.8	2.68 V	165	49.6	0.6
4	5350.00	38.1 AV	54.0	-15.9	2.68 V	165	37.5	0.6
5	#10480.00	47.7 PK	68.2	-20.5	2.93 V	249	37.2	10.5
6	15720.00	50.8 PK	74.0	-23.2	1.98 V	161	39.5	11.3
7	15720.00	38.5 AV	54.0	-15.5	1.98 V	161	27.2	11.3

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 52	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (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	49.8 PK	74.0	-24.2	1.16 H	247	49.1	0.7
2	5150.00	38.0 AV	54.0	-16.0	1.16 H	247	37.3	0.7
3	*5260.00	98.1 PK			1.16 H	247	97.6	0.5
4	*5260.00	88.5 AV			1.16 H	247	88.0	0.5
5	#10520.00	48.4 PK	68.2	-19.8	1.80 H	153	37.8	10.6
6	15780.00	50.5 PK	74.0	-23.5	1.83 H	163	39.3	11.2
7	15780.00	38.3 AV	54.0	-15.7	1.83 H	163	27.1	11.2

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (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	50.3 PK	74.0	-23.7	2.70 V	159	49.6	0.7
2	5150.00	38.5 AV	54.0	-15.5	2.70 V	159	37.8	0.7
3	*5260.00	106.1 PK			2.70 V	159	105.6	0.5
4	*5260.00	96.3 AV			2.70 V	159	95.8	0.5
5	#10520.00	48.5 PK	68.2	-19.7	3.02 V	230	37.9	10.6
6	15780.00	50.9 PK	74.0	-23.1	2.01 V	179	39.7	11.2
7	15780.00	38.4 AV	54.0	-15.6	2.01 V	179	27.2	11.2

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 60	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	101.6 PK			1.23 H	225	101.1	0.5
2	*5300.00	92.4 AV			1.23 H	225	91.9	0.5
3	10600.00	48.4 PK	74.0	-25.6	1.77 H	174	38.1	10.3
4	10600.00	35.7 AV	54.0	-18.3	1.77 H	174	25.4	10.3
5	15900.00	50.9 PK	74.0	-23.1	1.90 H	171	39.3	11.6
6	15900.00	38.3 AV	54.0	-15.7	1.90 H	171	26.7	11.6

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	106.7 PK			2.61 V	162	106.2	0.5
2	*5300.00	97.2 AV			2.61 V	162	96.7	0.5
3	10600.00	47.6 PK	74.0	-26.4	2.95 V	230	37.3	10.3
4	10600.00	35.1 AV	54.0	-18.9	2.95 V	230	24.8	10.3
5	15900.00	50.7 PK	74.0	-23.3	1.96 V	177	39.1	11.6
6	15900.00	38.1 AV	54.0	-15.9	1.96 V	177	26.5	11.6

Remarks:

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

Channel	TX Channel 64	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	101.9 PK			1.01 H	244	101.4	0.5
2	*5320.00	92.5 AV			1.01 H	244	92.0	0.5
3	5350.00	58.9 PK	74.0	-15.1	1.01 H	244	58.3	0.6
4	5350.00	46.0 AV	54.0	-8.0	1.01 H	244	45.4	0.6
5	10640.00	48.2 PK	74.0	-25.8	1.77 H	169	37.9	10.3
6	10640.00	35.6 AV	54.0	-18.4	1.77 H	169	25.3	10.3
7	15960.00	49.9 PK	74.0	-24.1	1.89 H	169	37.9	12.0
8	15960.00	37.8 AV	54.0	-16.2	1.89 H	169	25.8	12.0

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	106.2 PK			2.77 V	160	105.7	0.5
2	*5320.00	97.2 AV			2.77 V	160	96.7	0.5
3	5350.00	63.9 PK	74.0	-10.1	2.77 V	160	63.3	0.6
4	5350.00	50.0 AV	54.0	-4.0	2.77 V	160	49.4	0.6
5	10640.00	48.0 PK	74.0	-26.0	2.93 V	251	37.7	10.3
6	10640.00	35.3 AV	54.0	-18.7	2.93 V	251	25.0	10.3
7	15960.00	50.5 PK	74.0	-23.5	1.92 V	178	38.5	12.0
8	15960.00	38.1 AV	54.0	-15.9	1.92 V	178	26.1	12.0

Remarks:

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

Channel	TX Channel 100	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5448.43	57.2 PK	74.0	-16.8	1.01 H	251	56.3	0.9
2	5448.43	43.3 AV	54.0	-10.7	1.01 H	251	42.4	0.9
3	#5470.00	64.1 PK	68.2	-4.1	1.01 H	251	63.2	0.9
4	*5500.00	105.0 PK			1.01 H	251	104.1	0.9
5	*5500.00	94.8 AV			1.01 H	251	93.9	0.9
6	11000.00	48.4 PK	74.0	-25.6	1.74 H	166	37.1	11.3
7	11000.00	35.8 AV	54.0	-18.2	1.74 H	166	24.5	11.3
8	#16500.00	50.6 PK	68.2	-17.6	1.96 H	162	36.6	14.0

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5448.43	57.3 PK	74.0	-16.7	2.79 V	157	56.4	0.9
2	5448.43	44.8 AV	54.0	-9.2	2.79 V	157	43.9	0.9
3	#5470.00	67.6 PK	68.2	-0.6	2.79 V	157	66.7	0.9
4	*5500.00	106.2 PK			2.79 V	157	105.3	0.9
5	*5500.00	96.5 AV			2.79 V	157	95.6	0.9
6	11000.00	47.8 PK	74.0	-26.2	3.00 V	251	36.5	11.3
7	11000.00	35.4 AV	54.0	-18.6	3.00 V	251	24.1	11.3
8	#16500.00	50.5 PK	68.2	-17.7	2.00 V	154	36.5	14.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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 116	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	106.9 PK			1.05 H	249	105.9	1.0
2	*5580.00	96.9 AV			1.05 H	249	95.9	1.0
3	11160.00	48.5 PK	74.0	-25.5	1.78 H	174	37.6	10.9
4	11160.00	35.8 AV	54.0	-18.2	1.78 H	174	24.9	10.9
5	#16740.00	50.4 PK	68.2	-17.8	1.90 H	172	35.3	15.1

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	105.5 PK			2.59 V	165	104.5	1.0
2	*5580.00	95.8 AV			2.59 V	165	94.8	1.0
3	11160.00	47.6 PK	74.0	-26.4	2.92 V	233	36.7	10.9
4	11160.00	35.1 AV	54.0	-18.9	2.92 V	233	24.2	10.9
5	#16740.00	51.1 PK	68.2	-17.1	1.91 V	155	36.0	15.1

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 140	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	106.4 PK			1.07 H	238	105.0	1.4
2	*5700.00	96.4 AV			1.07 H	238	95.0	1.4
3	#5725.00	65.2 PK	68.2	-3.0	1.05 H	242	63.8	1.4
4	11400.00	49.0 PK	74.0	-25.0	1.74 H	163	37.4	11.6
5	11400.00	36.3 AV	54.0	-17.7	1.74 H	163	24.7	11.6
6	#17100.00	50.8 PK	68.2	-17.4	1.86 H	159	33.9	16.9

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	104.7 PK			2.59 V	153	103.3	1.4
2	*5700.00	95.4 AV			2.59 V	153	94.0	1.4
3	#5725.00	66.5 PK	68.2	-1.7	2.59 V	153	65.1	1.4
4	11400.00	47.9 PK	74.0	-26.1	2.97 V	254	36.3	11.6
5	11400.00	35.5 AV	54.0	-18.5	2.97 V	254	23.9	11.6
6	#17100.00	51.3 PK	68.2	-16.9	1.92 V	176	34.4	16.9

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 144	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	50.5 PK	74.0	-23.5	1.03 H	256	49.6	0.9
2	5460.00	37.9 AV	54.0	-16.1	1.03 H	256	37.0	0.9
3	#5470.00	49.6 PK	68.2	-18.6	1.03 H	256	48.7	0.9
4	*5720.00	103.1 PK			1.03 H	256	101.7	1.4
5	*5720.00	94.7 AV			1.03 H	256	93.3	1.4
6	#5850.00	51.2 PK	68.2	-17.0	1.03 H	256	49.4	1.8
7	11440.00	49.1 PK	74.0	-24.9	1.76 H	178	37.4	11.7
8	11440.00	36.2 AV	54.0	-17.8	1.76 H	178	24.5	11.7
9	#17160.00	50.9 PK	68.2	-17.3	1.84 H	162	34.8	16.1

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	50.9 PK	74.0	-23.1	2.56 V	136	50.0	0.9
2	5460.00	39.5 AV	54.0	-14.5	2.56 V	136	38.6	0.9
3	#5470.00	50.2 PK	68.2	-18.0	2.56 V	136	49.3	0.9
4	*5720.00	104.0 PK			2.56 V	136	102.6	1.4
5	*5720.00	94.6 AV			2.56 V	136	93.2	1.4
6	#5850.00	50.6 PK	68.2	-17.6	2.56 V	136	48.8	1.8
7	11440.00	48.4 PK	74.0	-25.6	3.01 V	245	36.7	11.7
8	11440.00	35.7 AV	54.0	-18.3	3.01 V	245	24.0	11.7
9	#17160.00	50.1 PK	68.2	-18.1	2.00 V	171	34.0	16.1

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)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5630.85	56.9 PK	68.2	-11.3	1.01 H	251	53.5	3.4
2	*5745.00	108.0 PK			1.01 H	251	106.6	1.4
3	*5745.00	98.3 AV			1.01 H	251	96.9	1.4
4	#6004.52	58.0 PK	68.2	-10.2	1.01 H	251	53.9	4.1
5	11490.00	49.1 PK	74.0	-24.9	1.75 H	162	37.3	11.8
6	11490.00	36.3 AV	54.0	-17.7	1.75 H	162	24.5	11.8
7	#17235.00	50.2 PK	68.2	-18.0	1.81 H	164	34.8	15.4

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5632.34	56.6 PK	68.2	-11.6	2.56 V	137	53.2	3.4
2	*5745.00	108.7 PK			2.56 V	137	107.3	1.4
3	*5745.00	99.1 AV			2.56 V	137	97.7	1.4
4	#6001.88	57.5 PK	68.2	-10.7	2.56 V	137	53.4	4.1
5	11490.00	48.4 PK	74.0	-25.6	3.00 V	250	36.6	11.8
6	11490.00	36.0 AV	54.0	-18.0	3.00 V	250	24.2	11.8
7	#17235.00	50.7 PK	68.2	-17.5	1.92 V	160	35.3	15.4

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 157	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5626.52	57.3 PK	68.2	-10.9	1.00 H	242	53.9	3.4
2	*5785.00	108.3 PK			1.00 H	242	106.8	1.5
3	*5785.00	98.4 AV			1.00 H	242	96.9	1.5
4	#5998.47	58.0 PK	68.2	-10.2	1.00 H	242	53.9	4.1
5	11570.00	48.1 PK	74.0	-25.9	1.80 H	158	36.6	11.5
6	11570.00	35.7 AV	54.0	-18.3	1.80 H	158	24.2	11.5
7	#17355.00	50.2 PK	68.2	-18.0	1.88 H	167	33.9	16.3

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5598.74	57.2 PK	68.2	-11.0	2.54 V	158	53.8	3.4
2	*5785.00	106.8 PK			2.54 V	158	105.3	1.5
3	*5785.00	97.8 AV			2.54 V	158	96.3	1.5
4	#5959.99	57.6 PK	68.2	-10.6	2.54 V	158	53.5	4.1
5	11570.00	48.4 PK	74.0	-25.6	2.96 V	232	36.9	11.5
6	11570.00	35.9 AV	54.0	-18.1	2.96 V	232	24.4	11.5
7	#17355.00	50.9 PK	68.2	-17.3	1.91 V	177	34.6	16.3

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)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5617.81	57.1 PK	68.2	-11.1	1.00 H	244	53.7	3.4
2	*5825.00	107.5 PK			1.00 H	244	105.8	1.7
3	*5825.00	97.7 AV			1.00 H	244	96.0	1.7
4	#5950.72	57.8 PK	68.2	-10.4	1.00 H	244	53.7	4.1
5	11650.00	48.8 PK	74.0	-25.2	1.71 H	154	37.5	11.3
6	11650.00	36.0 AV	54.0	-18.0	1.71 H	154	24.7	11.3
7	#17475.00	49.9 PK	68.2	-18.3	1.87 H	181	31.4	18.5

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5596.40	56.8 PK	68.2	-11.4	2.53 V	146	53.4	3.4
2	*5825.00	106.6 PK			2.53 V	146	104.9	1.7
3	*5825.00	97.8 AV			2.53 V	146	96.1	1.7
4	#6020.05	57.9 PK	68.2	-10.3	2.53 V	146	53.8	4.1
5	11650.00	48.1 PK	74.0	-25.9	2.93 V	238	36.8	11.3
6	11650.00	35.5 AV	54.0	-18.5	2.93 V	238	24.2	11.3
7	#17475.00	50.8 PK	68.2	-17.4	1.91 V	169	32.3	18.5

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.

802.11n (HT40)

Channel	TX Channel 38	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	59.8 PK	74.0	-14.2	1.13 H	242	59.1	0.7
2	5150.00	47.5 AV	54.0	-6.5	1.13 H	242	46.8	0.7
3	*5190.00	92.6 PK			1.13 H	242	91.9	0.7
4	*5190.00	84.2 AV			1.13 H	242	83.5	0.7
5	#10380.00	48.3 PK	68.2	-19.9	1.79 H	175	37.8	10.5
6	15570.00	49.6 PK	74.0	-24.4	1.87 H	158	37.3	12.3
7	15570.00	37.6 AV	54.0	-16.4	1.87 H	158	25.3	12.3

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	64.8 PK	74.0	-9.2	2.65 V	164	64.1	0.7
2	5150.00	53.1 AV	54.0	-0.9	2.65 V	164	52.4	0.7
3	*5190.00	99.6 PK			2.65 V	164	98.9	0.7
4	*5190.00	90.1 AV			2.65 V	164	89.4	0.7
5	#10380.00	48.3 PK	68.2	-19.9	2.98 V	234	37.8	10.5
6	15570.00	50.3 PK	74.0	-23.7	1.92 V	182	38.0	12.3
7	15570.00	37.8 AV	54.0	-16.2	1.92 V	182	25.5	12.3

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)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5230.00	95.5 PK			1.17 H	237	94.9	0.6
2	*5230.00	87.4 AV			1.17 H	237	86.8	0.6
3	5350.00	50.3 PK	74.0	-23.7	1.17 H	237	49.7	0.6
4	5350.00	38.4 AV	54.0	-15.6	1.17 H	237	37.8	0.6
5	#10460.00	48.2 PK	68.2	-20.0	1.74 H	160	37.5	10.7
6	15690.00	50.3 PK	74.0	-23.7	1.85 H	158	38.9	11.4
7	15690.00	38.0 AV	54.0	-16.0	1.85 H	158	26.6	11.4

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5230.00	103.2 PK			2.60 V	161	102.6	0.6
2	*5230.00	93.6 AV			2.60 V	161	93.0	0.6
3	5350.00	50.4 PK	74.0	-23.6	2.60 V	161	49.8	0.6
4	5350.00	38.7 AV	54.0	-15.3	2.60 V	161	38.1	0.6
5	#10460.00	47.9 PK	68.2	-20.3	2.98 V	247	37.2	10.7
6	15690.00	50.4 PK	74.0	-23.6	1.97 V	171	39.0	11.4
7	15690.00	37.9 AV	54.0	-16.1	1.97 V	171	26.5	11.4

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 54	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (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	49.7 PK	74.0	-24.3	1.20 H	236	49.0	0.7
2	5150.00	38.1 AV	54.0	-15.9	1.20 H	236	37.4	0.7
3	*5270.00	95.9 PK			1.20 H	236	95.4	0.5
4	*5270.00	87.7 AV			1.20 H	236	87.2	0.5
5	#10540.00	49.0 PK	68.2	-19.2	1.78 H	158	38.6	10.4
6	15810.00	50.6 PK	74.0	-23.4	1.86 H	168	39.4	11.2
7	15810.00	38.3 AV	54.0	-15.7	1.86 H	168	27.1	11.2

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (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	49.9 PK	74.0	-24.1	2.61 V	161	49.2	0.7
2	5150.00	39.3 AV	54.0	-14.7	2.61 V	161	38.6	0.7
3	*5270.00	103.1 PK			2.61 V	161	102.6	0.5
4	*5270.00	93.9 AV			2.61 V	161	93.4	0.5
5	#10540.00	48.1 PK	68.2	-20.1	2.94 V	251	37.7	10.4
6	15810.00	50.5 PK	74.0	-23.5	2.01 V	153	39.3	11.2
7	15810.00	38.2 AV	54.0	-15.8	2.01 V	153	27.0	11.2

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 62	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	95.8 PK			1.02 H	241	95.3	0.5
2	*5310.00	85.9 AV			1.02 H	241	85.4	0.5
3	5350.00	61.5 PK	74.0	-12.5	1.02 H	241	60.9	0.6
4	5350.00	47.3 AV	54.0	-6.7	1.02 H	241	46.7	0.6
5	10620.00	48.8 PK	74.0	-25.2	1.78 H	168	38.5	10.3
6	10620.00	36.0 AV	54.0	-18.0	1.78 H	168	25.7	10.3
7	15930.00	50.9 PK	74.0	-23.1	1.80 H	165	39.0	11.9
8	15930.00	38.5 AV	54.0	-15.5	1.80 H	165	26.6	11.9

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	100.3 PK			2.62 V	165	99.8	0.5
2	*5310.00	91.5 AV			2.62 V	165	91.0	0.5
3	5350.00	68.1 PK	74.0	-5.9	2.62 V	165	67.5	0.6
4	5350.00	53.0 AV	54.0	-1.0	2.62 V	165	52.4	0.6
5	10620.00	47.7 PK	74.0	-26.3	2.94 V	233	37.4	10.3
6	10620.00	35.3 AV	54.0	-18.7	2.94 V	233	25.0	10.3
7	15930.00	51.1 PK	74.0	-22.9	2.02 V	164	39.2	11.9
8	15930.00	38.7 AV	54.0	-15.3	2.02 V	164	26.8	11.9

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.

Channel	TX Channel 102	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	52.6 PK	74.0	-21.4	1.02 H	251	51.7	0.9
2	5460.00	42.4 AV	54.0	-11.6	1.02 H	251	41.5	0.9
3	#5470.00	63.0 PK	68.2	-5.2	1.02 H	251	62.1	0.9
4	*5510.00	98.0 PK			1.02 H	251	97.1	0.9
5	*5510.00	88.7 AV			1.02 H	251	87.8	0.9
6	11020.00	48.6 PK	74.0	-25.4	1.72 H	160	37.4	11.2
7	11020.00	35.9 AV	54.0	-18.1	1.72 H	160	24.7	11.2
8	#16530.00	50.3 PK	68.2	-17.9	1.85 H	165	35.9	14.4

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	56.8 PK	74.0	-17.2	2.62 V	157	55.9	0.9
2	5460.00	43.6 AV	54.0	-10.4	2.62 V	157	42.7	0.9
3	#5470.00	66.3 PK	68.2	-1.9	2.62 V	157	65.4	0.9
4	*5510.00	100.8 PK			2.62 V	157	99.9	0.9
5	*5510.00	91.4 AV			2.62 V	157	90.5	0.9
6	11020.00	48.2 PK	74.0	-25.8	2.91 V	250	37.0	11.2
7	11020.00	35.9 AV	54.0	-18.1	2.91 V	250	24.7	11.2
8	#16530.00	50.9 PK	68.2	-17.3	1.94 V	152	36.5	14.4

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 110	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5550.00	100.7 PK			1.04 H	258	99.7	1.0
2	*5550.00	92.8 AV			1.04 H	258	91.8	1.0
3	11100.00	48.9 PK	74.0	-25.1	1.81 H	159	38.1	10.8
4	11100.00	36.0 AV	54.0	-18.0	1.81 H	159	25.2	10.8
5	#16650.00	50.1 PK	68.2	-18.1	1.88 H	179	34.7	15.4

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5550.00	103.2 PK			2.61 V	162	102.2	1.0
2	*5550.00	93.9 AV			2.61 V	162	92.9	1.0
3	11100.00	48.4 PK	74.0	-25.6	3.01 V	245	37.6	10.8
4	11100.00	36.0 AV	54.0	-18.0	3.01 V	245	25.2	10.8
5	#16650.00	50.5 PK	68.2	-17.7	2.01 V	176	35.1	15.4

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 134	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	101.1 PK			1.03 H	247	99.9	1.2
2	*5670.00	93.0 AV			1.03 H	247	91.8	1.2
3	#5725.00	61.0 PK	68.2	-7.2	1.03 H	247	59.6	1.4
4	11340.00	48.2 PK	74.0	-25.8	1.77 H	177	36.9	11.3
5	11340.00	35.7 AV	54.0	-18.3	1.77 H	177	24.4	11.3
6	#17010.00	50.3 PK	68.2	-17.9	1.79 H	150	33.2	17.1

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	103.1 PK			2.60 V	169	101.9	1.2
2	*5670.00	93.9 AV			2.60 V	169	92.7	1.2
3	#5725.00	64.0 PK	68.2	-4.2	2.60 V	169	62.6	1.4
4	11340.00	48.5 PK	74.0	-25.5	3.03 V	260	37.2	11.3
5	11340.00	36.3 AV	54.0	-17.7	3.03 V	260	25.0	11.3
6	#17010.00	50.7 PK	68.2	-17.5	1.98 V	178	33.6	17.1

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 142	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	50.2 PK	74.0	-23.8	1.07 H	249	49.3	0.9
2	5460.00	38.9 AV	54.0	-15.1	1.07 H	249	38.0	0.9
3	#5470.00	50.5 PK	68.2	-17.7	1.07 H	249	49.6	0.9
4	*5710.00	101.6 PK			1.07 H	249	100.2	1.4
5	*5710.00	93.2 AV			1.07 H	249	91.8	1.4
6	#5850.00	50.5 PK	68.2	-17.7	1.07 H	249	48.7	1.8
7	11420.00	47.9 PK	74.0	-26.1	1.82 H	174	36.3	11.6
8	11420.00	35.4 AV	54.0	-18.6	1.82 H	174	23.8	11.6
9	#17130.00	50.4 PK	68.2	-17.8	1.82 H	160	33.9	16.5

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	49.8 PK	74.0	-24.2	2.64 V	141	48.9	0.9
2	5460.00	38.6 AV	54.0	-15.4	2.64 V	141	37.7	0.9
3	#5470.00	50.2 PK	68.2	-18.0	2.64 V	141	49.3	0.9
4	*5710.00	102.1 PK			2.64 V	141	100.7	1.4
5	*5710.00	93.5 AV			2.64 V	141	92.1	1.4
6	#5850.00	50.5 PK	68.2	-17.7	2.64 V	141	48.7	1.8
7	11420.00	48.2 PK	74.0	-25.8	3.05 V	241	36.6	11.6
8	11420.00	36.0 AV	54.0	-18.0	3.05 V	241	24.4	11.6
9	#17130.00	50.5 PK	68.2	-17.7	2.06 V	178	34.0	16.5

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 151	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5644.10	56.7 PK	68.2	-11.5	1.00 H	237	53.2	3.5
2	*5755.00	104.7 PK			1.00 H	237	103.3	1.4
3	*5755.00	95.0 AV			1.00 H	237	93.6	1.4
4	#5968.61	58.1 PK	68.2	-10.1	1.00 H	237	54.0	4.1
5	11510.00	48.1 PK	74.0	-25.9	1.78 H	178	36.5	11.6
6	11510.00	35.4 AV	54.0	-18.6	1.78 H	178	23.8	11.6
7	#17265.00	50.6 PK	68.2	-17.6	1.81 H	174	35.1	15.5

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5602.60	57.2 PK	68.2	-11.0	2.88 V	155	53.8	3.4
2	*5755.00	105.5 PK			2.88 V	144	104.1	1.4
3	*5755.00	96.0 AV			2.88 V	144	94.6	1.4
4	#6024.63	57.4 PK	68.2	-10.8	2.88 V	155	53.3	4.1
5	11510.00	47.9 PK	74.0	-26.1	2.99 V	244	36.3	11.6
6	11510.00	35.6 AV	54.0	-18.4	2.99 V	244	24.0	11.6
7	#17265.00	50.6 PK	68.2	-17.6	1.96 V	170	35.1	15.5

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)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5646.56	57.2 PK	68.2	-11.0	1.05 H	238	53.7	3.5
2	*5795.00	105.1 PK			1.05 H	238	103.6	1.5
3	*5795.00	95.4 AV			1.05 H	238	93.9	1.5
4	#5950.76	57.3 PK	68.2	-10.9	1.05 H	238	53.2	4.1
5	11590.00	48.0 PK	74.0	-26.0	1.78 H	158	36.5	11.5
6	11590.00	35.7 AV	54.0	-18.3	1.78 H	158	24.2	11.5
7	#17385.00	49.9 PK	68.2	-18.3	1.88 H	171	32.9	17.0

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5565.72	56.6 PK	68.2	-11.6	2.87 V	166	53.3	3.3
2	*5795.00	104.3 PK			2.87 V	166	102.8	1.5
3	*5795.00	95.0 AV			2.87 V	166	93.5	1.5
4	#5956.44	56.8 PK	68.2	-11.4	2.87 V	166	52.7	4.1
5	11590.00	48.3 PK	74.0	-25.7	3.02 V	249	36.8	11.5
6	11590.00	36.0 AV	54.0	-18.0	3.02 V	249	24.5	11.5
7	#17385.00	51.0 PK	68.2	-17.2	2.04 V	163	34.0	17.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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:

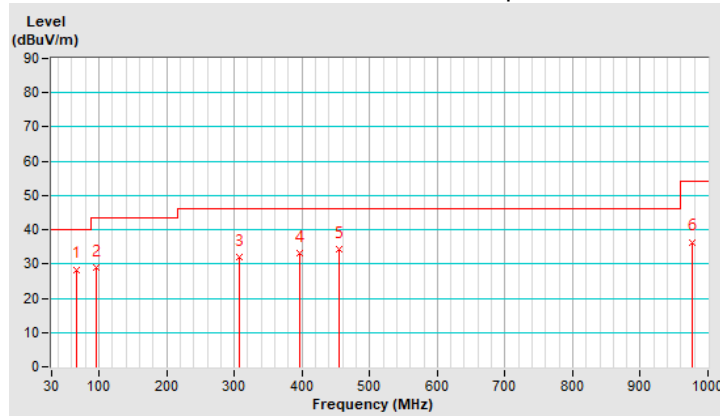
802.11n (HT20)

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	66.17	28.4 QP	40.0	-11.6	2.00 H	360	37.8	-9.4
2	96.11	28.9 QP	43.5	-14.6	2.50 H	42	41.5	-12.6
3	306.86	32.0 QP	46.0	-14.0	2.00 H	360	38.2	-6.2
4	397.30	33.1 QP	46.0	-12.9	1.00 H	94	37.0	-3.9
5	454.39	34.2 QP	46.0	-11.8	2.50 H	236	36.3	-2.1
6	975.88	36.4 QP	54.0	-17.6	1.50 H	175	28.2	8.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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.



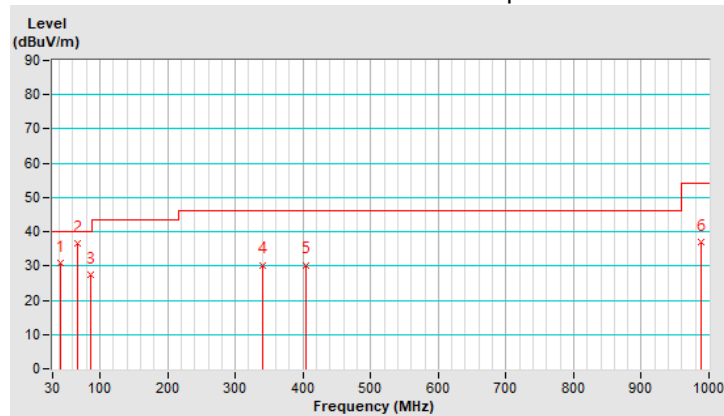
CHANNEL	TX Channel 40	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

Antenna Polarity & Test Distance : Vertical at 3m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	42.31	31.0 QP	40.0	-9.0	1.00 V	76	39.1	-8.1
2	67.01	36.7 QP	40.0	-3.3	1.00 V	212	45.9	-9.2
3	85.77	27.3 QP	40.0	-12.7	1.50 V	93	40.9	-13.6
4	339.69	30.3 QP	46.0	-15.7	2.00 V	216	35.8	-5.5
5	404.43	30.3 QP	46.0	-15.7	1.00 V	360	34.1	-3.8
6	987.84	37.0 QP	54.0	-17.0	2.50 V	343	28.7	8.3

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: July 13, 2020

4.2.3 Test Procedure

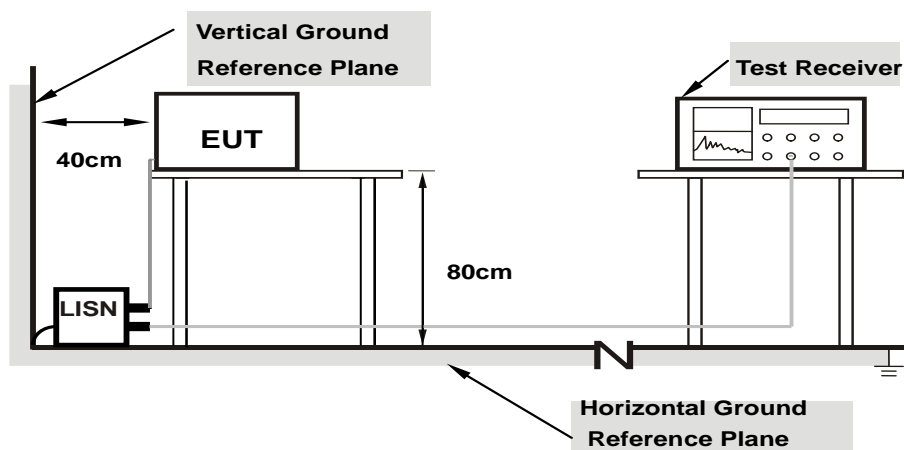
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

NOTE: 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.

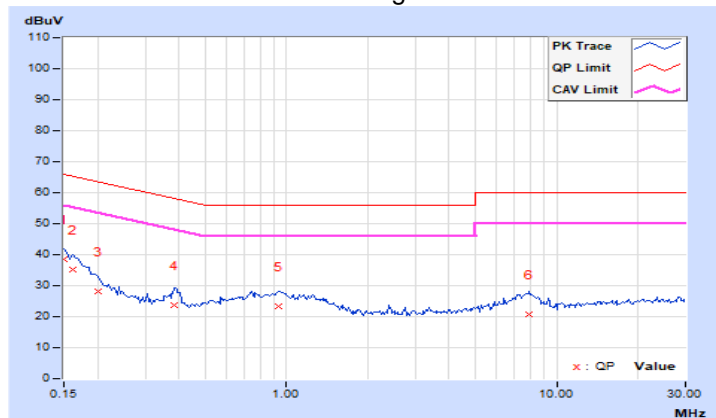
4.2.7 Test Results

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

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor (dB)	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.02	28.37	13.39	38.39	23.41	66.00	56.00	-27.61	-32.59
2	0.16172	10.02	25.03	11.55	35.05	21.57	65.38	55.38	-30.33	-33.81
3	0.20078	10.04	18.23	6.17	28.27	16.21	63.58	53.58	-35.31	-37.37
4	0.38438	10.06	13.58	7.44	23.64	17.50	58.18	48.18	-34.54	-30.68
5	0.93906	10.10	13.21	9.77	23.31	19.87	56.00	46.00	-32.69	-26.13
6	7.92969	10.63	10.20	5.29	20.83	15.92	60.00	50.00	-39.17	-34.08

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

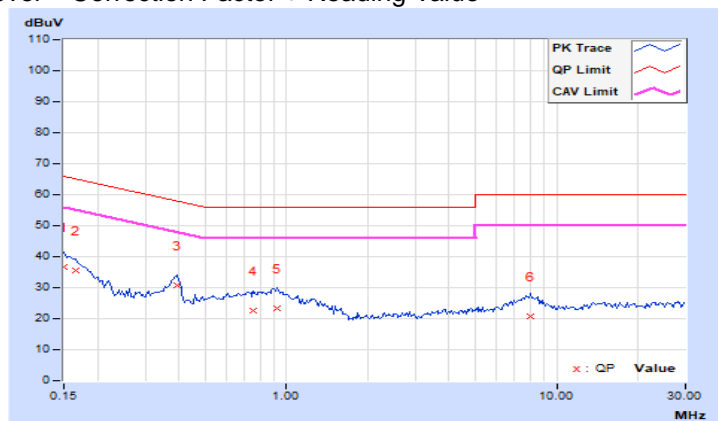


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
	1	0.15000	10.02	26.61	13.53	36.63	23.55	66.00	56.00	-29.37
2	0.16562	10.03	25.35	13.94	35.38	23.97	65.18	55.18	-29.80	-31.21
3	0.39219	10.06	20.84	18.64	30.90	28.70	58.02	48.02	-27.12	-19.32
4	0.75547	10.10	12.53	9.43	22.63	19.53	56.00	46.00	-33.37	-26.47
5	0.92344	10.12	13.04	9.66	23.16	19.78	56.00	46.00	-32.84	-26.22
6	7.99219	10.57	10.30	6.23	20.87	16.80	60.00	50.00	-39.13	-33.20

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

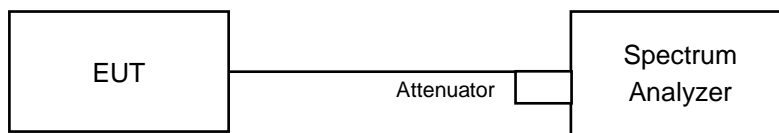
Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p \leq 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Client device	250mW (24 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

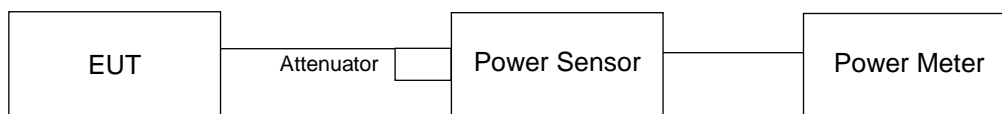
4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT

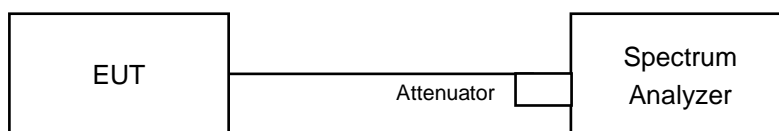
For channel straddling 5725MHz:



For other channels:



FOR 26dB OCCUPIED BANDWIDTH



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

FOR POWER OUTPUT MEASUREMENT

For channel straddling 5725MHz:

Follow FCC KDB 789033 UNII test procedure:

Method SA-2

1. Set span to encompass the emission bandwidth (EBW) of the signal.
2. Set RBW =1MHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Number of points in sweep ≥ 2 Span / RBW.
5. Sweep time = auto.
6. Detector = RMS.
7. Trace average at least 100 traces in power averaging mode
8. Compute power by integrating the spectrum across the 26 dB EBW of the signal.
9. Duty factor need added to measured value (duty cycle < 98 percent).

For other channels:

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.

FOR 26dB OCCUPIED BANDWIDTH

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW $>$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

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

POWER OUTPUT

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
36	5180	49.317	16.93	24.00	Pass
40	5200	53.333	17.27	24.00	Pass
48	5240	29.04	14.63	24.00	Pass
52	5260	32.885	15.17	24.00	Pass
60	5300	34.356	15.36	24.00	Pass
64	5320	34.995	15.44	24.00	Pass
100	5500	30.061	14.78	24.00	Pass
116	5580	28.445	14.54	24.00	Pass
140	5700	22.961	13.61	24.00	Pass
*144 (U-NII-2C Band)	5720	6.931	8.41	24.00	Pass
*144 (U-NII-3 Band)	5720	1.853	2.68	30.00	Pass
149	5745	46.026	16.63	30.00	Pass
157	5785	44.055	16.44	30.00	Pass
165	5825	38.637	15.87	30.00	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (mW)	Average Power (dBm)
144	5720	8.784	9.44	19.999	13.01

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	41.96	27.22 > 24
60	5300	41.75	27.2 > 24
64	5320	42.53	27.28 > 24
100	5500	39.98	27.01 > 24
116	5580	38.79	26.88 > 24
140	5700	41.93	27.22 > 24
144 (U-NII-2C Band)	5720	20.11	24.03 > 24

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
36	5180	42.56	16.29	24.00	Pass
40	5200	54.075	17.33	24.00	Pass
48	5240	32.137	15.07	24.00	Pass
52	5260	33.343	15.23	24.00	Pass
60	5300	34.754	15.41	24.00	Pass
64	5320	35.156	15.46	24.00	Pass
100	5500	27.29	14.36	24.00	Pass
116	5580	26.002	14.15	24.00	Pass
140	5700	21.232	13.27	24.00	Pass
*144 (U-NII-2C Band)	5720	7.16	8.55	24.00	Pass
*144 (U-NII-3 Band)	5720	1.968	2.94	30.00	Pass
149	5745	45.814	16.61	30.00	Pass
157	5785	43.251	16.36	30.00	Pass
165	5825	39.174	15.93	30.00	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (mW)	Average Power (dBm)
144	5720	9.128	9.60	20.184	13.05

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	45.16	27.54 > 24
60	5300	45.58	27.58 > 24
64	5320	44.41	27.47 > 24
100	5500	45.85	27.61 > 24
116	5580	37.21	26.7 > 24
140	5700	43.72	27.4 > 24
144 (U-NII-2C Band)	5720	25.46	25.05 > 24

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
38	5190	17.14	12.34	24.00	Pass
46	5230	30.549	14.85	24.00	Pass
54	5270	32.734	15.15	24.00	Pass
62	5310	16.711	12.23	24.00	Pass
102	5510	12.503	10.97	24.00	Pass
110	5550	28.314	14.52	24.00	Pass
134	5670	25.823	14.12	24.00	Pass
*142 (U-NII-2C Band)	5710	7.882	8.97	24.00	Pass
*142 (U-NII-3 Band)	5710	0.5465	-2.62	30.00	Pass
151	5755	38.194	15.82	30.00	Pass
159	5795	44.875	16.52	30.00	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (mW)	Average Power (dBm)
142	5710	8.4285	9.26	22.542	13.53

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	80.6	30.06 > 24
62	5310	49.24	27.92 > 24
102	5510	46.28	27.65 > 24
110	5550	78.88	29.96 > 24
134	5670	97.51	30.89 > 24
142 (U-NII-2C Band)	5710	52.85	28.23 > 24

26dB OCCUPIED BANDWIDTH

802.11a

Channel	Frequency (MHz)	26dB Bandwidth (MHz)
52	5260	41.96
60	5300	41.75
64	5320	42.53
100	5500	39.98
116	5580	38.79
140	5700	41.93
144 (U-NII-2C Band)	5720	20.11

802.11n (HT20)

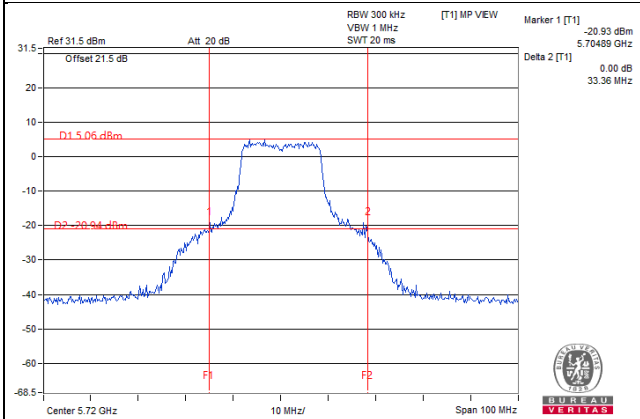
Channel	Frequency (MHz)	26dB Bandwidth (MHz)
52	5260	45.16
60	5300	45.58
64	5320	44.41
100	5500	45.85
116	5580	37.21
140	5700	43.72
144 (U-NII-2C Band)	5720	25.46

802.11n (HT40)

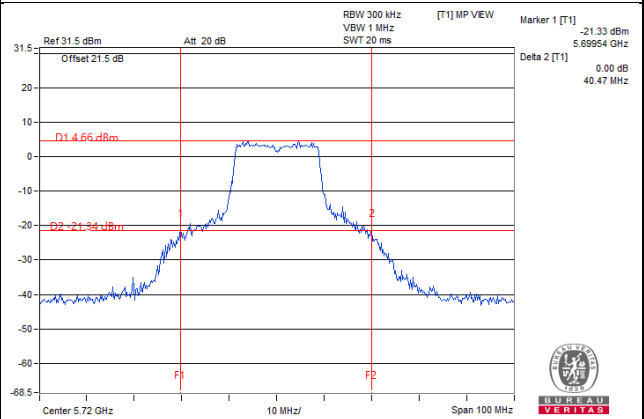
Channel	Frequency (MHz)	26dB Bandwidth (MHz)
54	5270	80.6
62	5310	49.24
102	5510	46.28
110	5550	78.88
134	5670	97.51
142 (U-NII-2C Band)	5710	52.85

Spectrum Plot of Worst Value

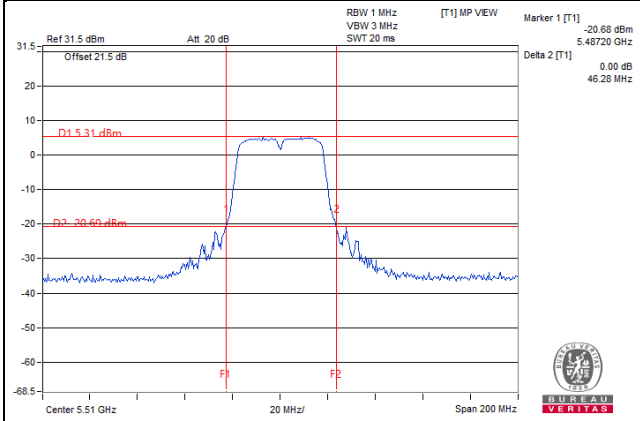
802.11a / CH144 (U-NII-2C Band)



802.11n (HT20) / CH144 (U-NII-2C Band)



802.11n (HT40) / CH102

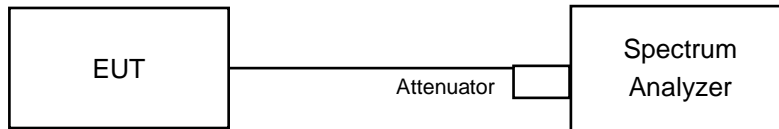


Note:

For CH144 (U-NII-2C) = 5725MHz - Marker 1

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

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	21.24
40	5200	22.32
48	5240	17.28
52	5260	17.52
60	5300	17.16
64	5320	17.28
100	5500	17.16
116	5580	17.28
140	5700	17.52
144 (U-NII-2C Band)	5720	13.76
144 (U-NII-3 Band)	5720	3.76
149	5745	29.4
157	5785	30.72
165	5825	29.28

802.11n (HT20)

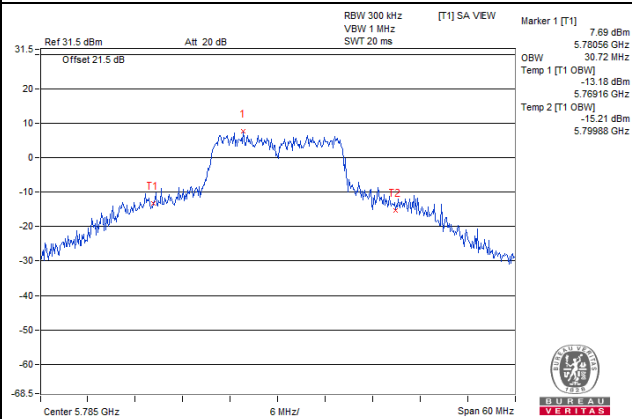
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	20.16
40	5200	22.44
48	5240	18.48
52	5260	18.48
60	5300	18.36
64	5320	18.36
100	5500	18.6
116	5580	18.24
140	5700	18.36
144 (U-NII-2C Band)	5720	14.36
144 (U-NII-3 Band)	5720	4.24
149	5745	31.92
157	5785	31.44
165	5825	31.44

802.11n (HT40)

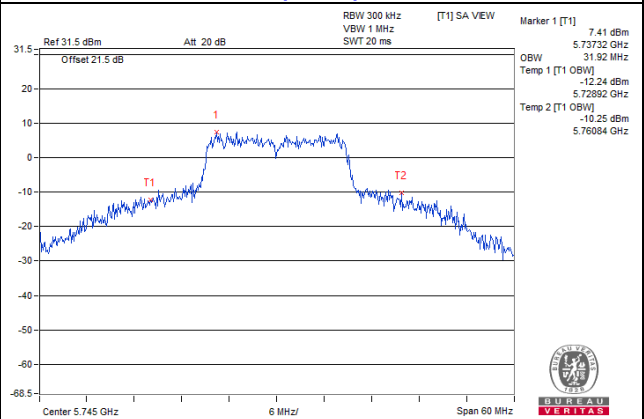
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	36.72
46	5230	36.72
54	5270	36.96
62	5310	36.48
102	5510	36.72
110	5550	36.72
134	5670	37.44
142 (U-NII-2C Band)	5710	33.48
142 (U-NII-3 Band)	5710	3.72
151	5755	52.56
159	5795	60.24

Spectrum Plot of Max. Value

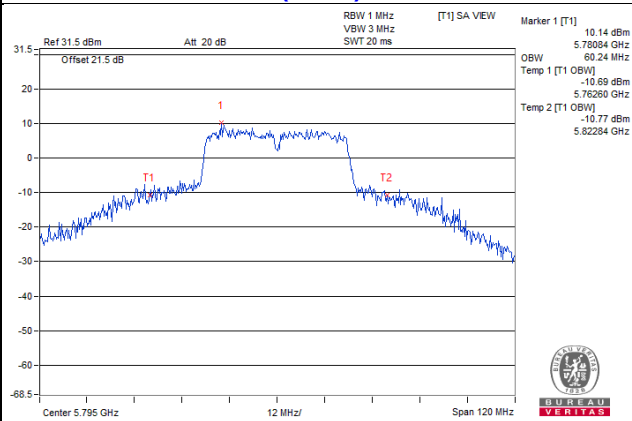
802.11a / CH157



802.11n (HT20) / CH149

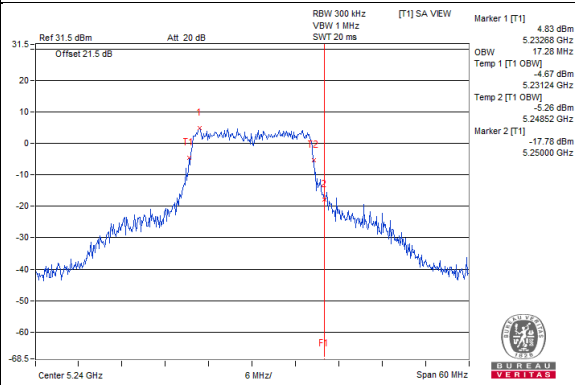


802.11n (HT40) / CH159

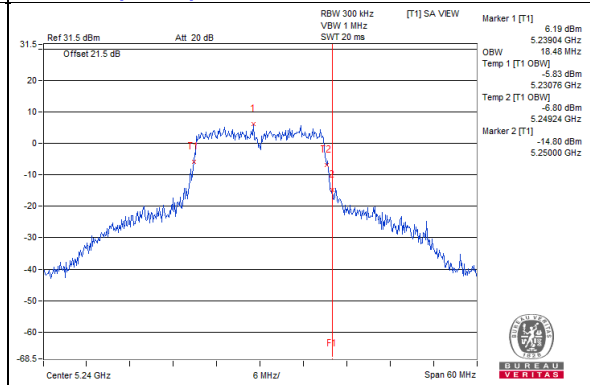


**Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)**

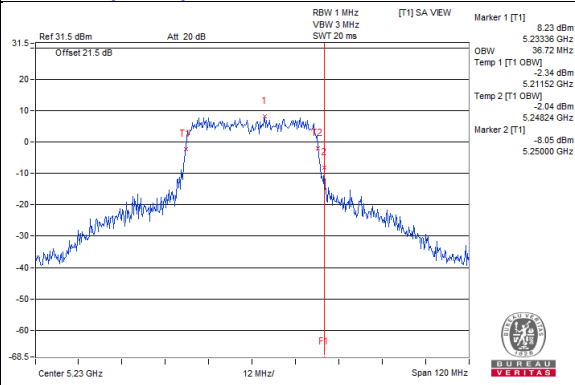
802.11a / CH48



802.11n (HT20) / CH48

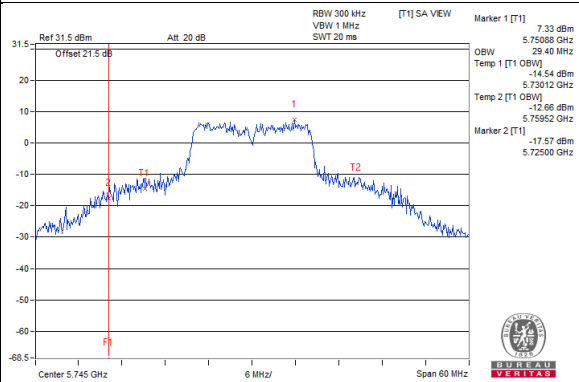


802.11n (HT40) / CH46

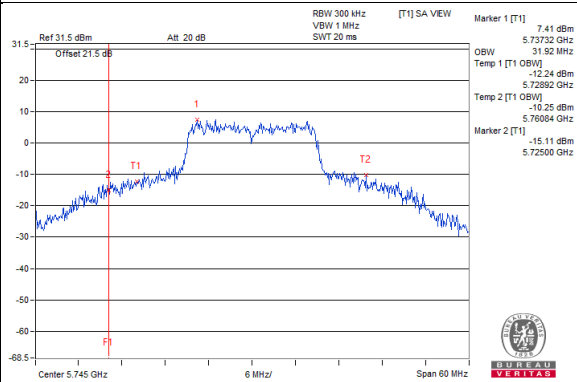


**Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)**

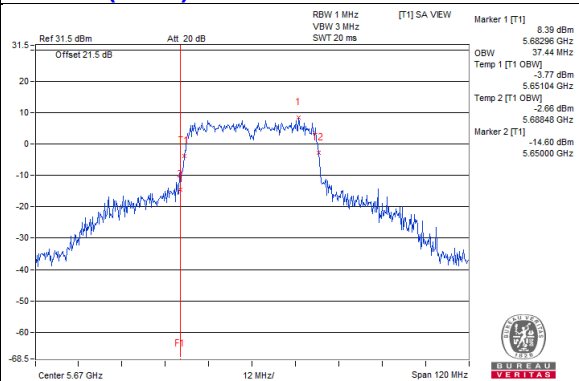
802.11a / CH149



802.11n (HT20) / CH149



802.11n (HT40) / CH151

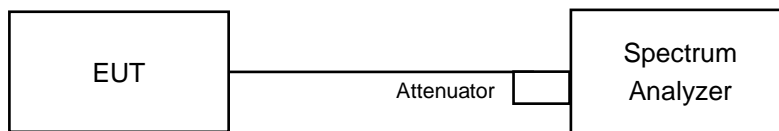


4.5 Peak Power Spectral Density Measurement

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, U-NII-2A, U-NII-2C 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 $BWCF = 10\log(500\text{ kHz}/300\text{kHz})$
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, U-NII-2A, U-NII-2C:

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
36	5180	3.00	0.16	3.16	11.00	PASS
40	5200	3.60	0.16	3.76	11.00	PASS
48	5240	0.86	0.16	1.02	11.00	PASS
52	5260	1.80	0.16	1.96	11.00	PASS
60	5300	1.60	0.16	1.76	11.00	PASS
64	5320	1.66	0.16	1.82	11.00	PASS
100	5500	1.17	0.16	1.33	11.00	PASS
116	5580	0.98	0.16	1.14	11.00	PASS
140	5700	-0.10	0.16	0.06	11.00	PASS
144 (U-NII-2C Band)	5720	-0.79	0.16	-0.63	11.00	PASS

802.11n (HT20)

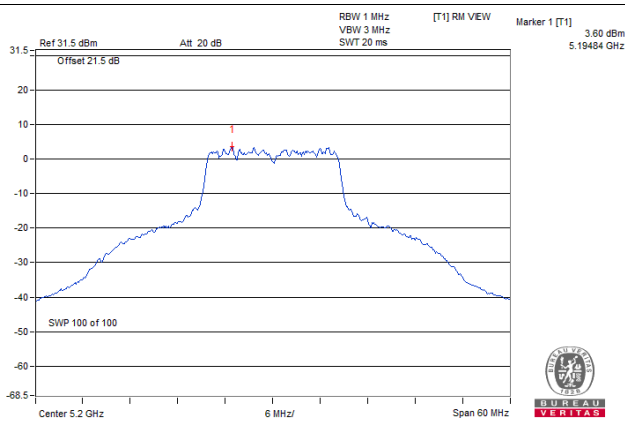
Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
36	5180	2.15	0.17	2.32	11.00	PASS
40	5200	2.94	0.17	3.11	11.00	PASS
48	5240	1.11	0.17	1.28	11.00	PASS
52	5260	1.20	0.17	1.37	11.00	PASS
60	5300	1.24	0.17	1.41	11.00	PASS
64	5320	1.60	0.17	1.77	11.00	PASS
100	5500	2.08	0.17	2.25	11.00	PASS
116	5580	0.03	0.17	0.20	11.00	PASS
140	5700	-0.52	0.17	-0.35	11.00	PASS
144 (U-NII-2C Band)	5720	-0.85	0.17	-0.68	11.00	PASS

802.11n (HT40)

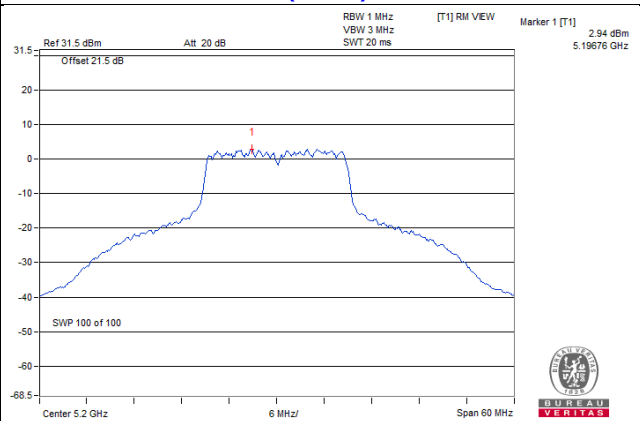
Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
38	5190	-4.68	0.37	-4.31	11.00	PASS
46	5230	-2.46	0.37	-2.09	11.00	PASS
54	5270	-1.70	0.37	-1.33	11.00	PASS
62	5310	-5.08	0.37	-4.71	11.00	PASS
102	5510	-5.72	0.37	-5.35	11.00	PASS
110	5550	-2.93	0.37	-2.56	11.00	PASS
134	5670	-2.80	0.37	-2.43	11.00	PASS
142 (U-NII-2C Band)	5710	-3.23	0.37	-2.86	11.00	PASS

Spectrum Plot of Worst Value

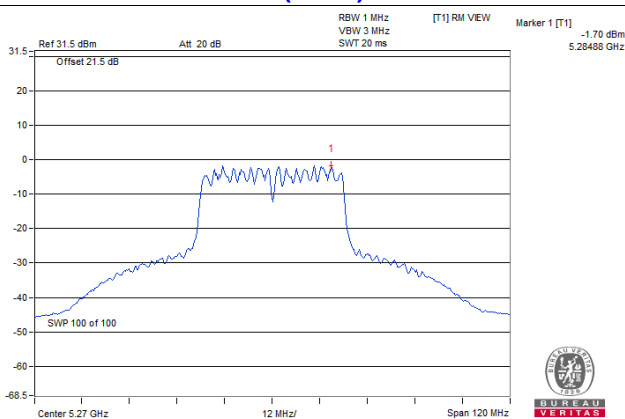
802.11a / CH40



802.11n (HT20) / CH40



802.11n (HT40) / CH54



Note:

For CH142 (U-NII-2C) = 5725MHz - Marker 1

For U-NII-3:
802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (mW/300kHz)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
144 (U-NII-3 Band)	5720	-10.00	0.16	0.1038	-9.84	-7.62	30.00	PASS
149	5745	-5.42	0.16	0.2979	-5.26	-3.04	30.00	PASS
157	5785	-5.71	0.16	0.2786	-5.55	-3.33	30.00	PASS
165	5825	-6.84	0.16	0.2148	-6.68	-4.46	30.00	PASS

802.11n (HT20)

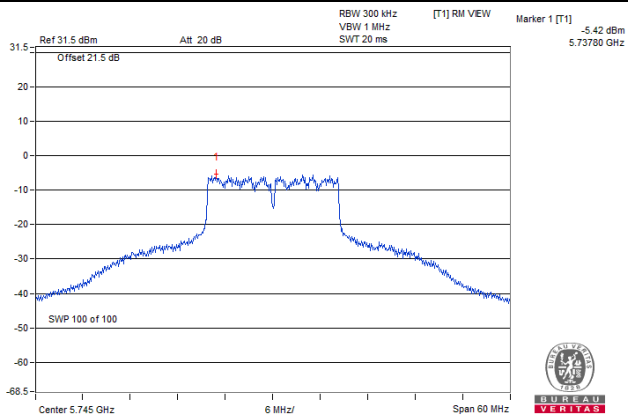
Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (mW/300kHz)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
144 (U-NII-3 Band)	5720	-9.39	0.17	0.1197	-9.22	-7.00	30.00	PASS
149	5745	-5.63	0.17	0.2844	-5.46	-3.24	30.00	PASS
157	5785	-6.71	0.17	0.2218	-6.54	-4.32	30.00	PASS
165	5825	-6.94	0.17	0.2104	-6.77	-4.55	30.00	PASS

802.11n (HT40)

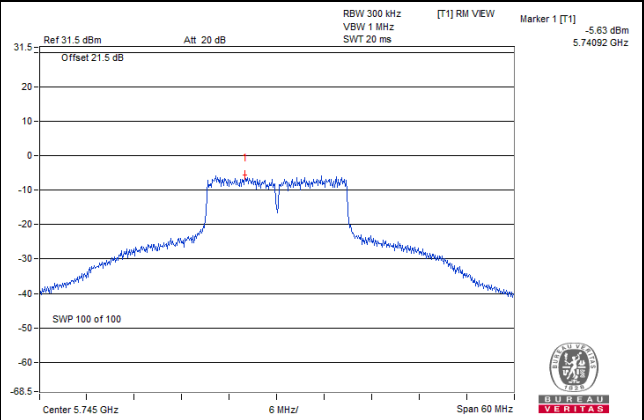
Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (mW/300kHz)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
142 (U-NII-3 Band)	5710	-12.72	0.37	0.05821	-12.35	-10.13	30.00	PASS
151	5755	-10.79	0.37	0.09078	-10.42	-8.20	30.00	PASS
159	5795	-9.33	0.37	0.1271	-8.96	-6.74	30.00	PASS

Spectrum Plot of Worst Value

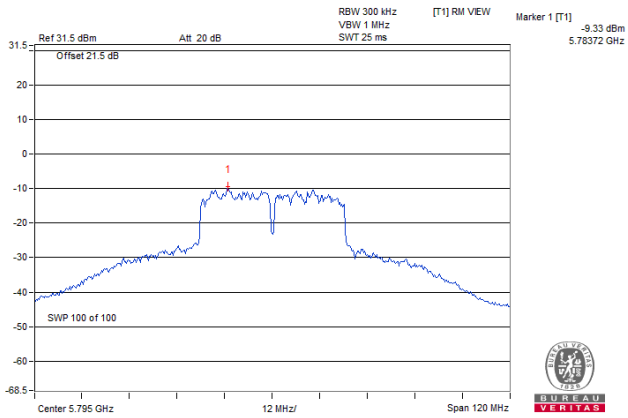
802.11a / CH149



802.11n (HT20) / CH149



802.11n (HT40) / CH159

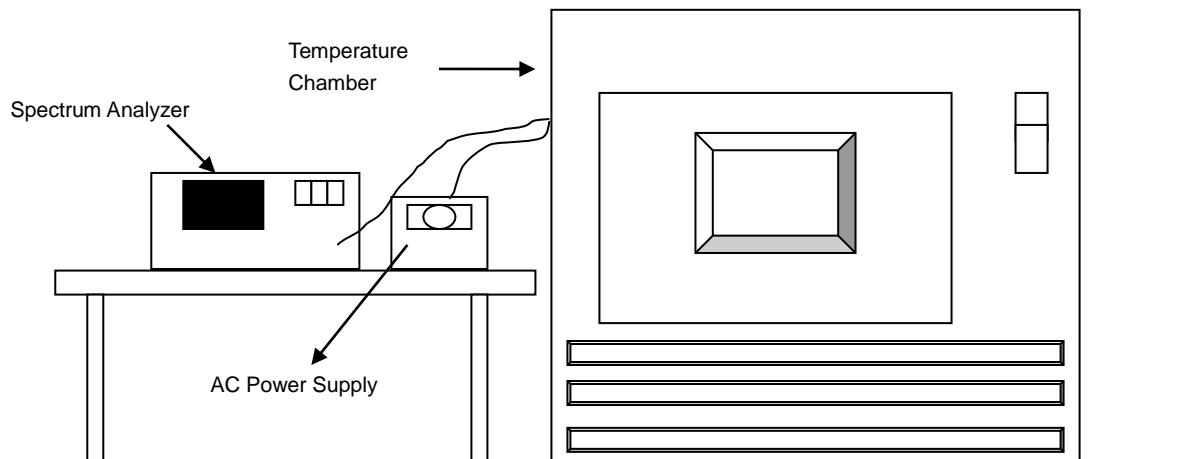


4.6 Frequency Stability Measurement

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

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- 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.
- Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
- 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. (°C)	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
40	120	5180.0275	PASS	5180.0258	PASS	5180.0249	PASS	5180.0231	PASS
30	120	5180.0075	PASS	5180.0083	PASS	5180.0073	PASS	5180.0053	PASS
20	120	5179.9987	PASS	5179.999	PASS	5179.9994	PASS	5180.0002	PASS
10	120	5179.9988	PASS	5179.9962	PASS	5179.996	PASS	5179.9972	PASS
0	120	5179.9756	PASS	5179.9735	PASS	5179.9768	PASS	5179.9746	PASS

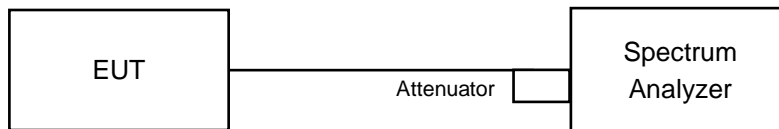
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5179.9977	PASS	5179.9997	PASS	5179.9991	PASS	5180.0009	PASS
	120	5179.9987	PASS	5179.999	PASS	5179.9994	PASS	5180.0002	PASS
	102	5179.999	PASS	5180	PASS	5180.0002	PASS	5180.0008	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

- Set resolution bandwidth (RBW) = 100kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- 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

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Pass / Fail
144 (U-NII-3 Band)	5720	3.18	Pass
149	5745	16.4	Pass
157	5785	16.42	Pass
165	5825	16.43	Pass

802.11n (HT20)

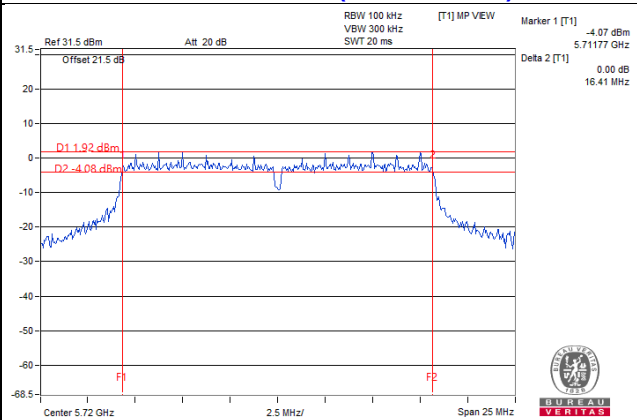
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Pass / Fail
144 (U-NII-3 Band)	5720	3.8	Pass
149	5745	17.64	Pass
157	5785	17.65	Pass
165	5825	17.62	Pass

802.11n (HT40)

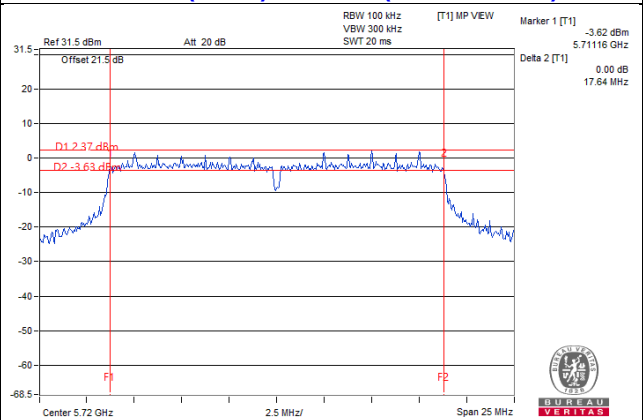
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Pass / Fail
142 (U-NII-3 Band)	5710	2.66	Pass
151	5755	35.25	Pass
159	5795	35.87	Pass

Spectrum Plot of Worst Value

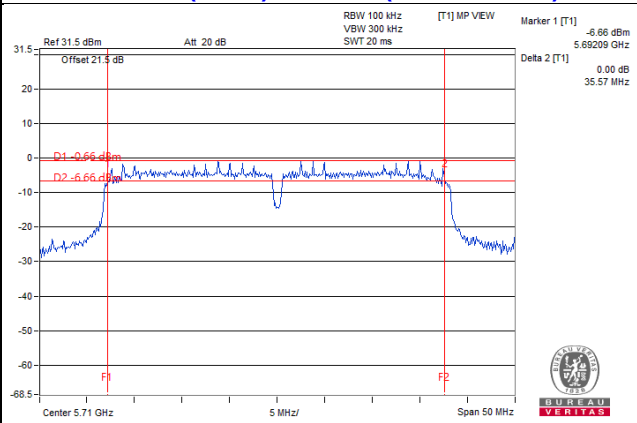
802.11a / CH144 (U-NII-3 Band)



802.11n (HT20) / CH144 (U-NII-3 Band)



802.11n (HT40) / CH142 (U-NII-3 Band)



Note:

- For CH144 (U-NII-3) = 5725MHz - Marker 1
- For CH142 (U-NII-3) = 5725MHz - Marker 1

5 Pictures of Test Arrangements

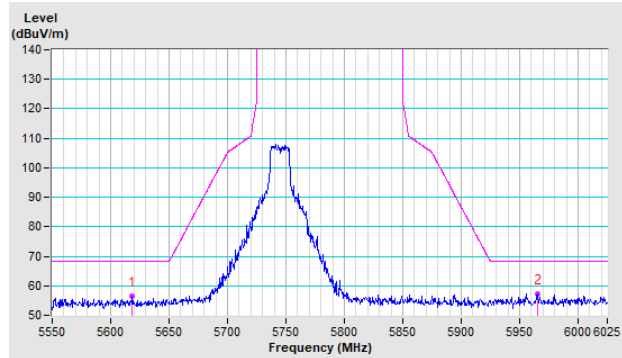
Please refer to the attached file (Test Setup Photo).

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

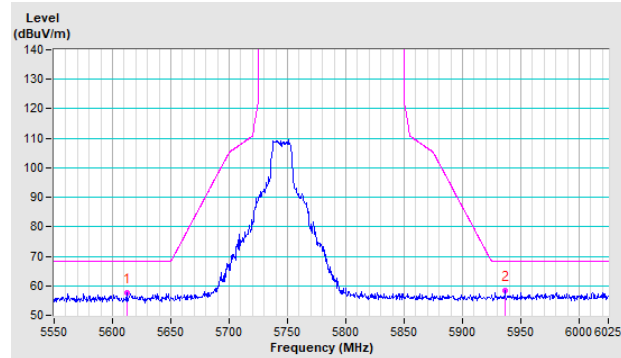
802.11a

CH 149 5745 MHz

Horizontal

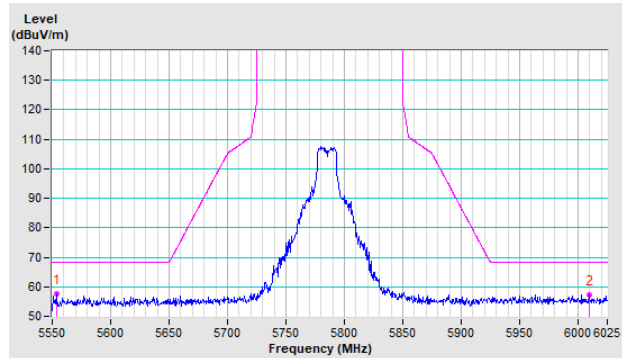


Vertical

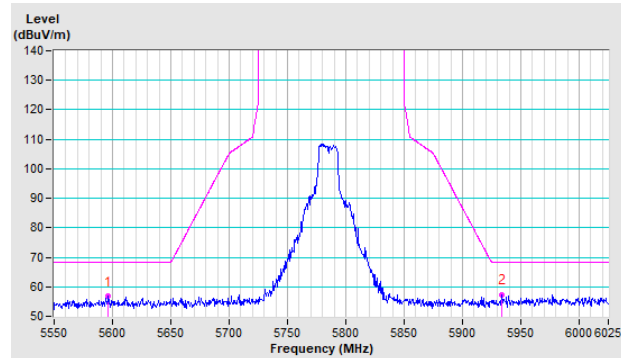


CH 157 5785 MHz

Horizontal

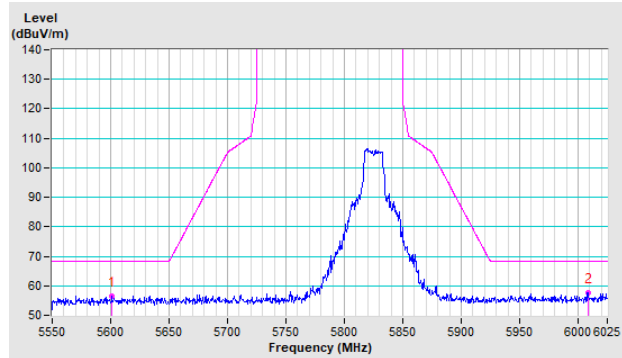


Vertical

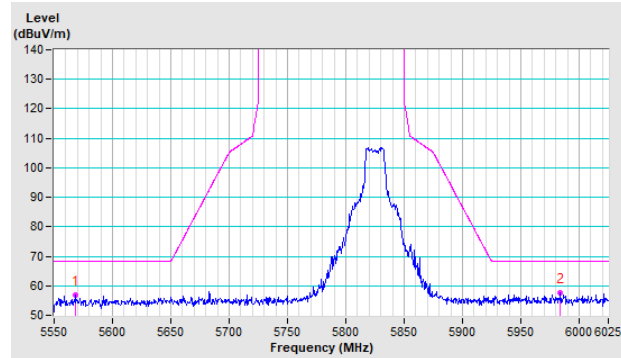


CH 165 5825 MHz

Horizontal



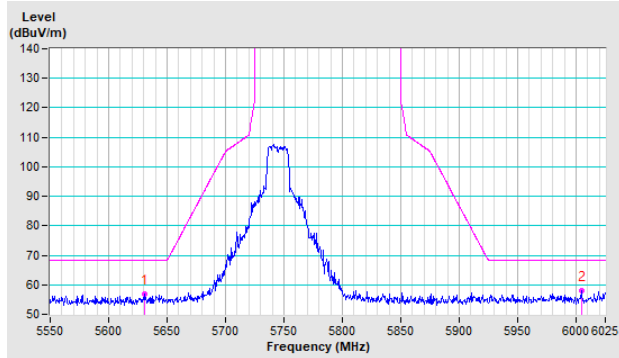
Vertical



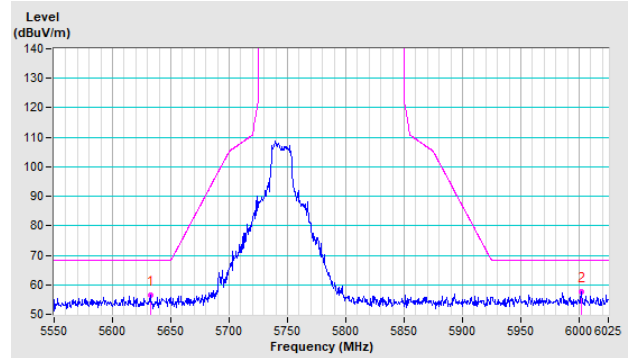
802.11n (HT20)

CH 149 5745 MHz

Horizontal

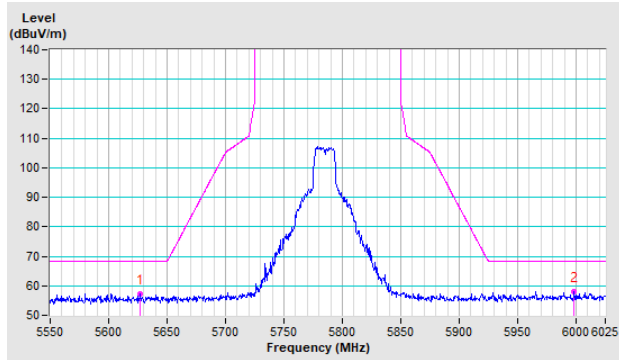


Vertical

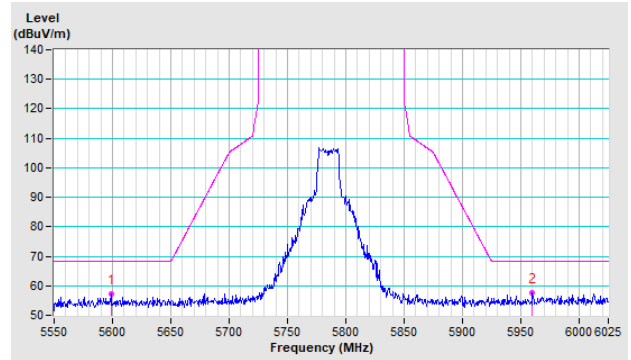


CH 157 5785 MHz

Horizontal

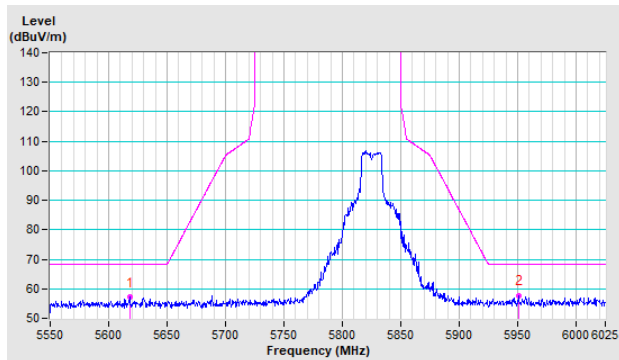


Vertical

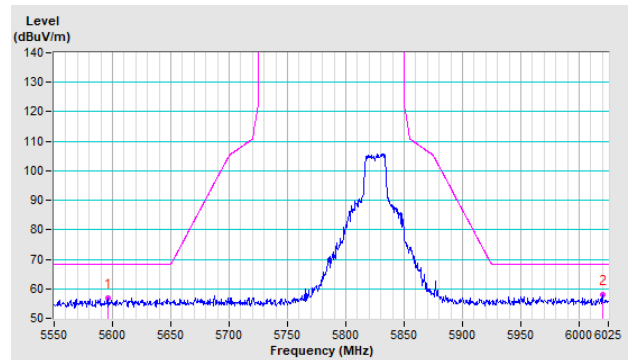


CH 165 5825 MHz

Horizontal



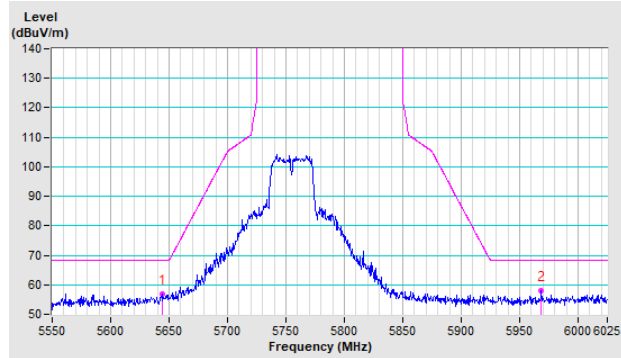
Vertical



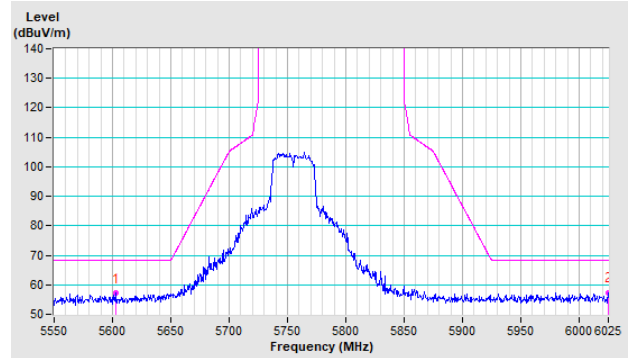
802.11n (HT40)

CH 151 5755 MHz

Horizontal

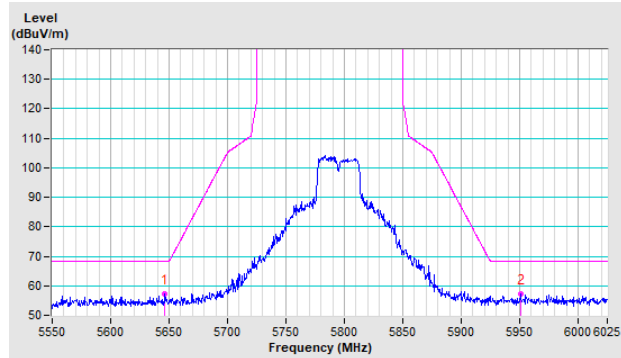


Vertical

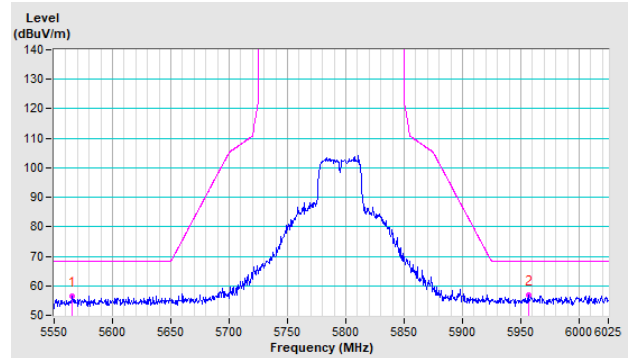


CH 159 5795 MHz

Horizontal

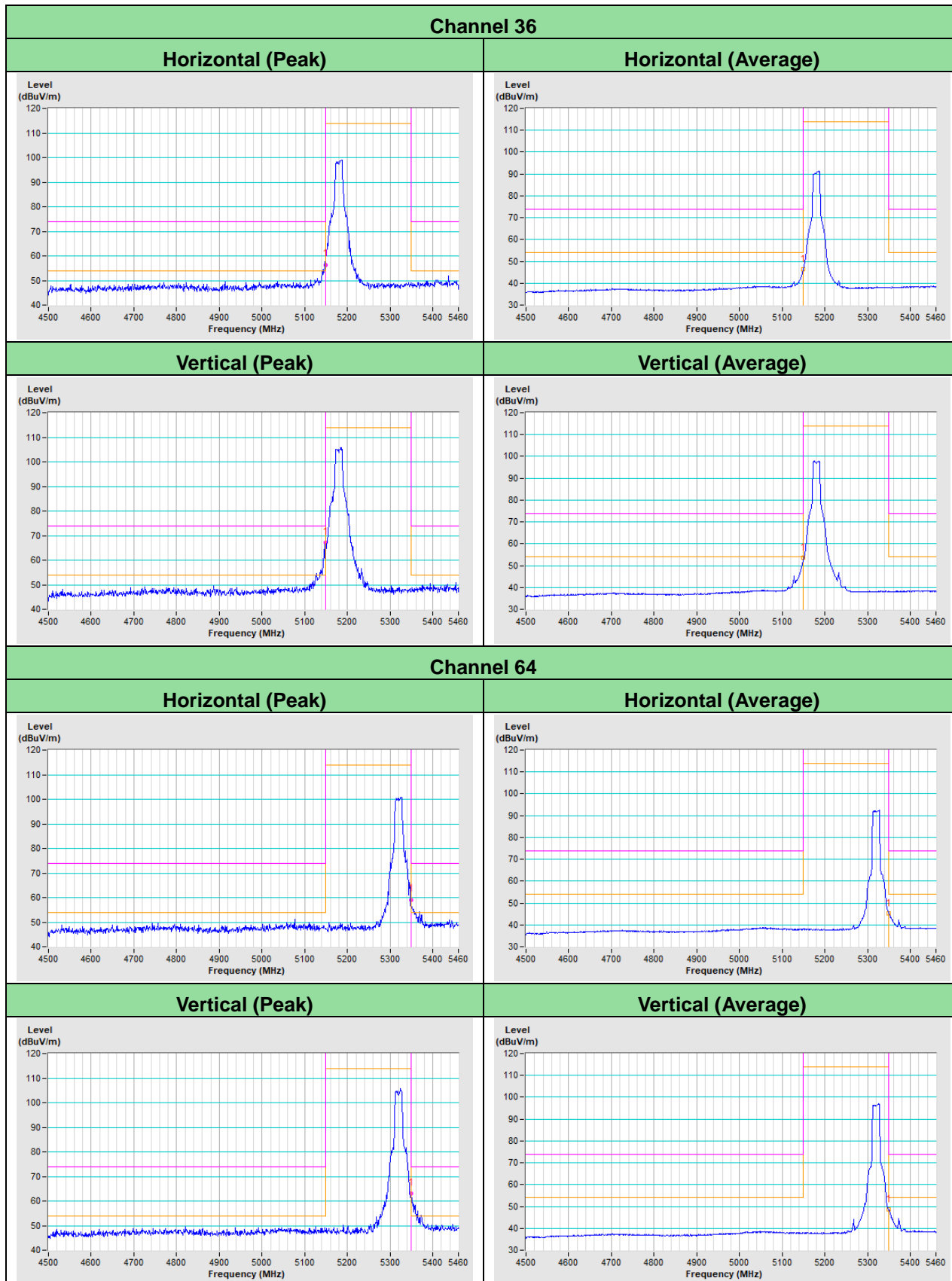


Vertical



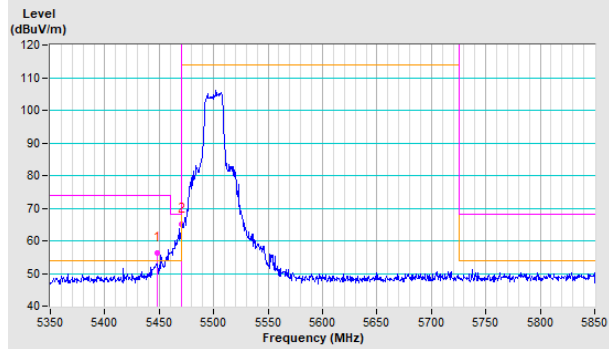
Annex B- Band-edge measurement (For U-NII-1 band)

802.11a

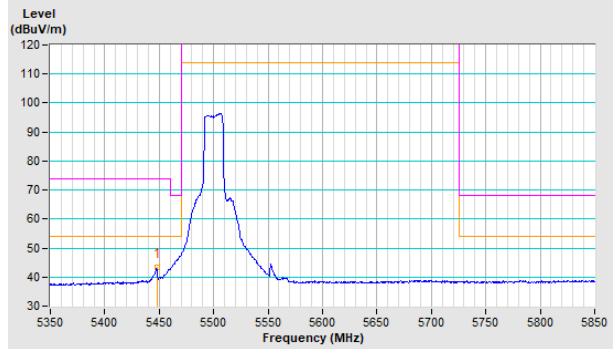


Channel 100

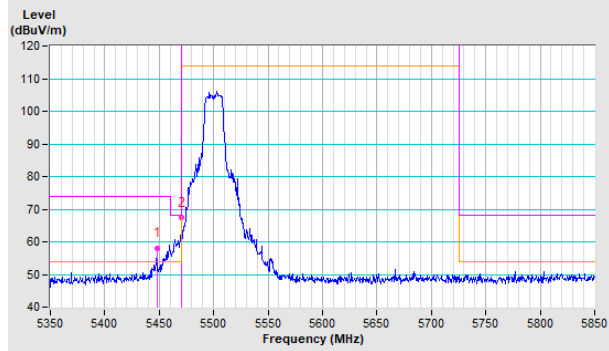
Horizontal (Peak)



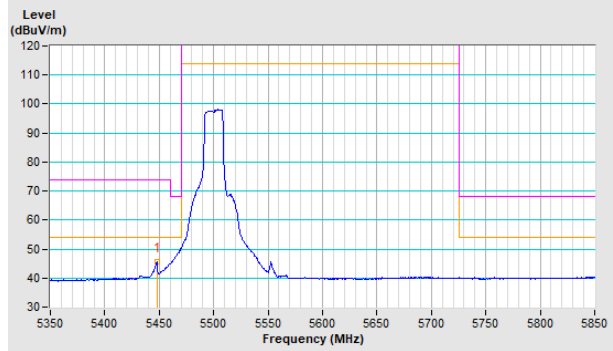
Horizontal (Average)



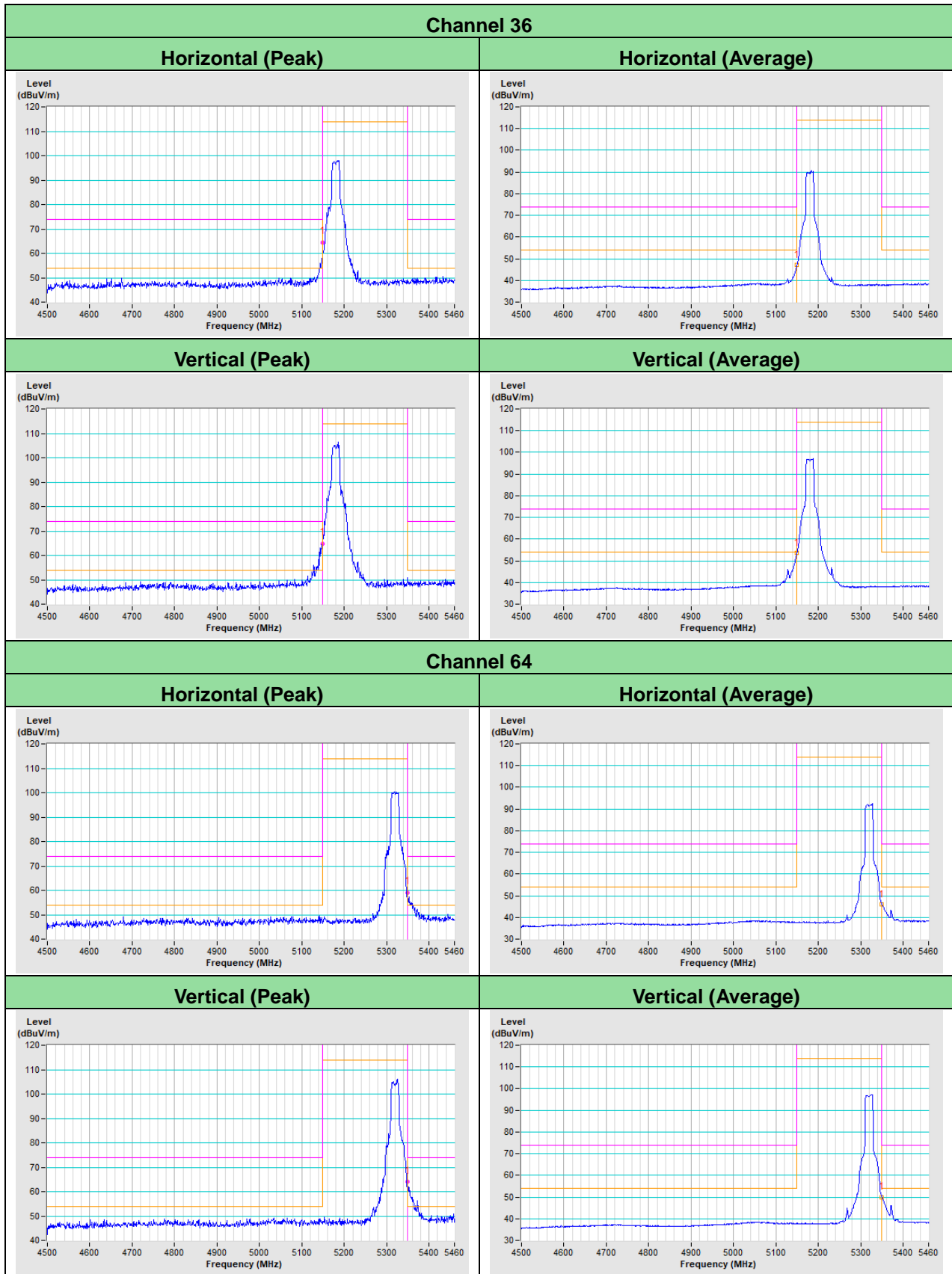
Vertical (Peak)



Vertical (Average)

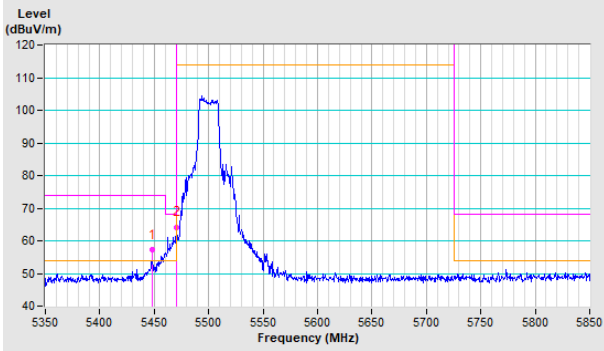


802.11n (HT20)

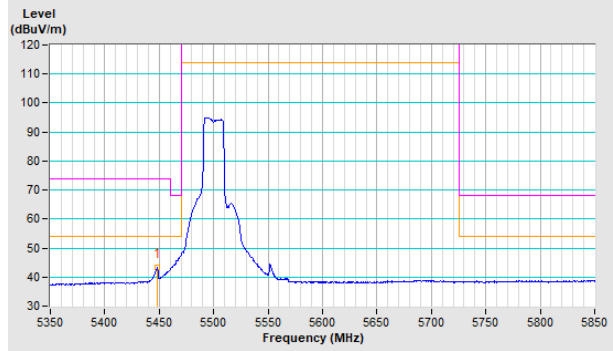


Channel 100

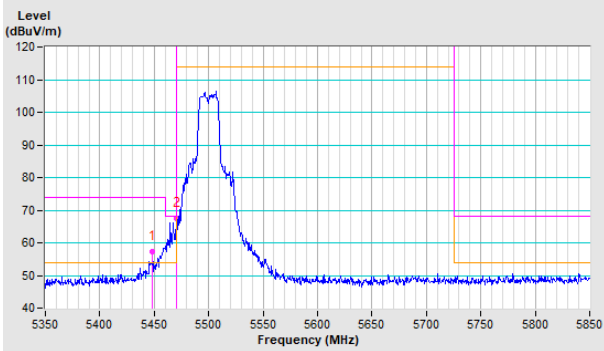
Horizontal (Peak)



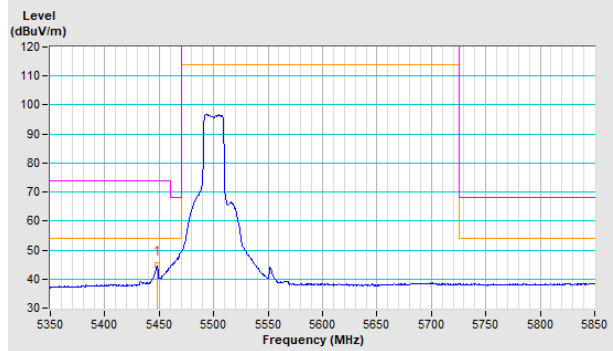
Horizontal (Average)



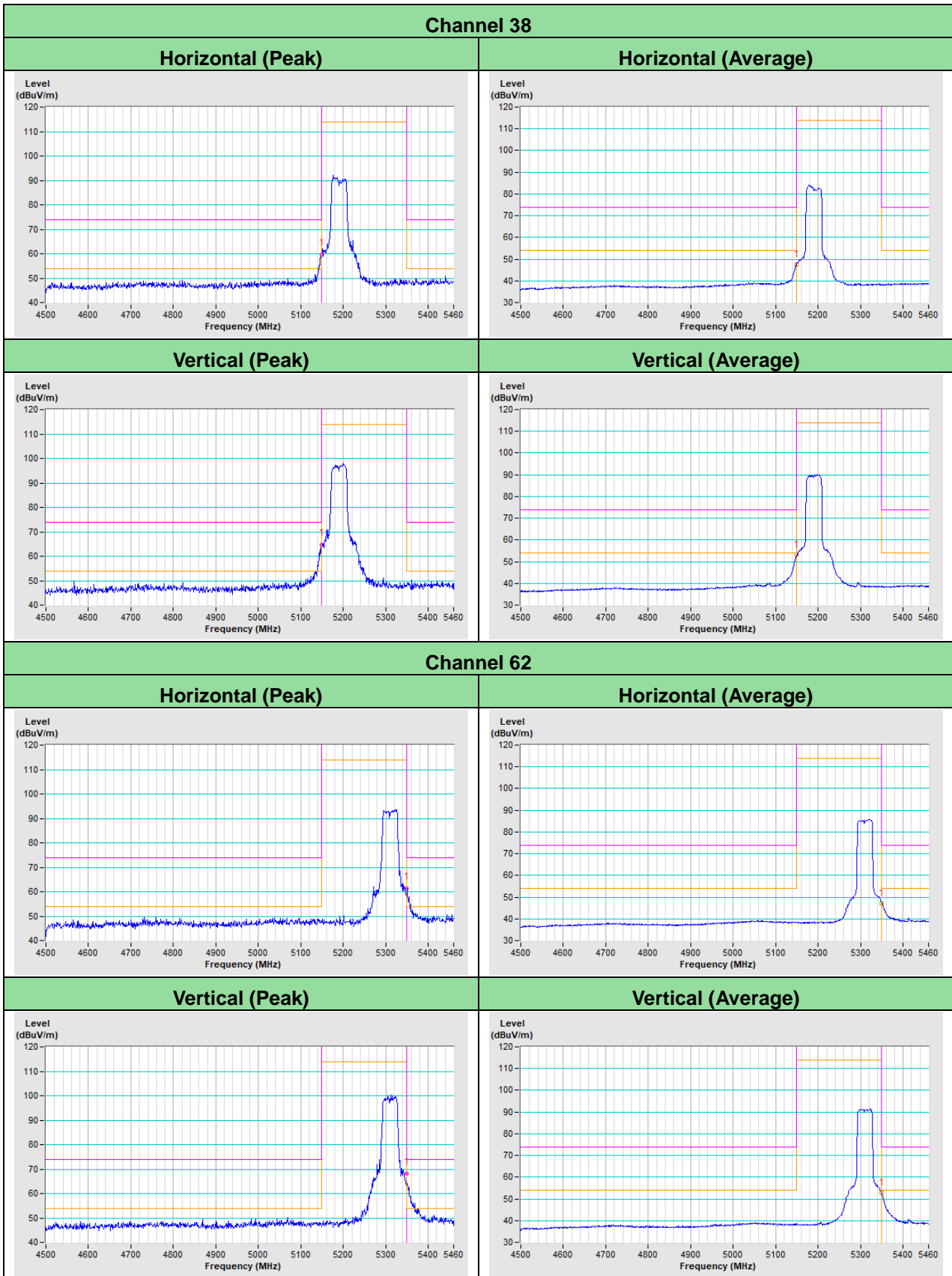
Vertical (Peak)



Vertical (Average)

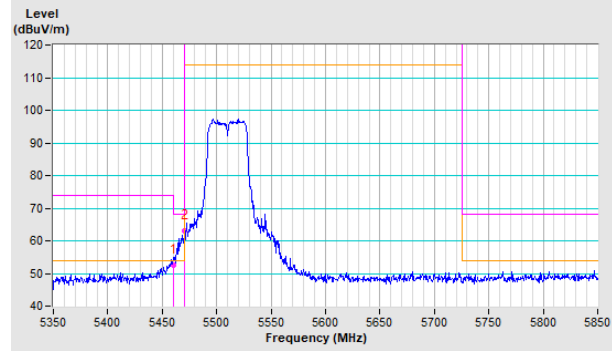


802.11n (HT40)

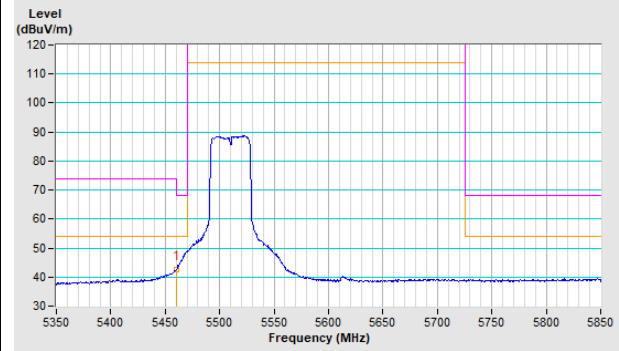


Channel 102

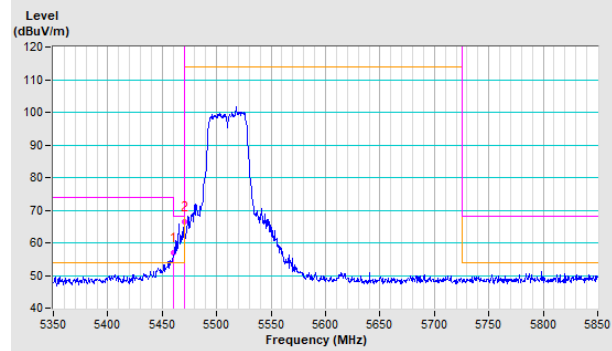
Horizontal (Peak)



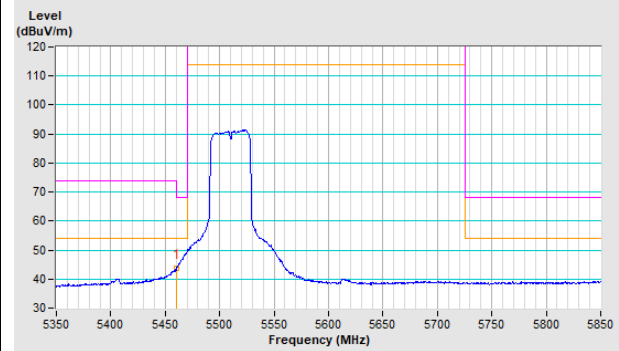
Horizontal (Average)



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.

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

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Fax: 886-2-26051924

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Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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