

FCC Test Report (WLAN)

Report No.: RF190516E08-1

FCC ID: MQT-AT170R18U

Test Model: xCL_AT-170-R-18U

Received Date: May 16, 2019

Test Date: June 07 to 25, 2019

Issued Date: July 11, 2019

Applicant: XAC AUTOMATION CORP.

Address: 4F, No. 30, INDUSTRY E. RD. IX, SCIENCE-BASED INDUSTRIAL
PARK,HSINCHU,TAIWAN

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

Lab Address: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan R.O.C.

Test Location: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan R.O.C.

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



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Release Control Record

Issue No.	Description	Date Issued
RF190516E08-1	Original release.	July 11, 2019

1 Certificate of Conformity

Product: Terminal

Brand: XAC

Test Model: xCL_AT-170-R-18U

Sample Status: ENGINEERING SAMPLE

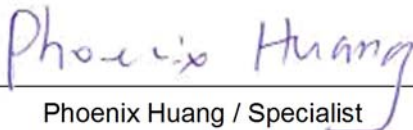
Applicant: XAC AUTOMATION CORP.

Test Date: June 07 to 25, 2019

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 :


Phoenix Huang / Specialist

Date:

July 11, 2019

Approved by :


May Chen / Manager

Date:

July 11, 2019

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 -13.68 dB at 17.67188 MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.1 dB at 5150.00 MHz, 5350.00 MHz, 5470.00 MHz and 5725.00 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is i-pex(MHF) not a standard connector.

*For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB test plots were recorded in Annex A.

Note:

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (\pm)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.8 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.0 dB
	30MHz ~ 1GHz	4.9 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.1 dB
	6GHz ~ 18GHz	4.9 dB
	18GHz ~ 40GHz	5.2 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (WLAN)

Product	Terminal
Brand	XAC
Test Model	xCL_AT-170-R-18U
Status of EUT	ENGINEERING SAMPLE
Test Software Version	QDART 4.8.29
Power Supply Rating	5Vdc from power adapter or 3.8Vdc from battery
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 54Mbps 802.11n: up to 150Mbps
Operating Frequency	2.4GHz: 2.412 ~ 2.462GHz 5GHz: 5.18~ 5.24GHz, 5.26GHz ~ 5.32GHz, 5.50GHz ~ 5.70GHz, 5.745 ~ 5.825GHz
Number of Channel	2.4GHz: 802.11b, 802.11g, 802.11n (HT20): 11 5GHz: 802.11a, 802.11n (HT20): 24 802.11n (HT40): 11
Output Power	2.4GHz: 261.818 mW 5GHz: 5.18 ~ 5.24GHz: 59.704 mW 5.26 ~ 5.32GHz: 58.749 mW 5.5 ~ 5.7GHz: 59.979 mW 5.745 ~ 5.825GHz: 60.954mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Battery x1 (option), Adapter x 1 (option)
Data Cable Supplied	NA

Note:

1. The EUT has below radios as following table:

Radio 1	Radio 2	Radio 3
WLAN+Bluetooth	WWAN	NFC

2. Simultaneously transmission condition.

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

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

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

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

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

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

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

5. The 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

6. The power setting are list as below:

802.11a		802.11n (HT20)		802.11n (HT40)	
Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting
5180	18.5	5180	17	5190	12.5
5200	21	5200	18	5230	17.5
5240	17.5	5240	17.5	5270	18.5
5260	21	5260	18.5	5310	12.5
5300	21	5300	18.5	5510	12
5320	17.5	5320	17	5550	17
5500	17	5500	16	5670	16.5
5580	18	5580	16.5	5755	16.5
5700	14	5700	14	5795	15.5
5745	18	5745	17		
5785	17.5	5785	16		
5825	21	5825	19.5		

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

3.2 Description of Test Modes

FOR 5180 ~ 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 ~ 5700MHz

11 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		

5 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		

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 \geq 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE \geq 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	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6
802.11n (HT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
802.11n (HT40)		102 to 134	102, 110, 134	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)
802.11a	5180-5320, 5500-5700, 5745-5825	36 to 64, 100 to 140, 149 to 165	40	OFDM	BPSK	6

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)
802.11a	5180-5320, 5500-5700, 5745-5825	36 to 64, 100 to 140, 149 to 165	40	OFDM	BPSK	6

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	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6
802.11n (HT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
802.11n (HT40)		102 to 134	102, 110, 134	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	Tested By
RE \geq 1G	21deg. C, 64%RH, 23deg. C, 70%RH	120Vac, 60Hz	Robert Cheng
RE<1G	22deg. C, 66%RH	120Vac, 60Hz	Robert Cheng
PLC	24deg. C, 76%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Jyunchun Lin

3.3 Duty Cycle of Test Signal

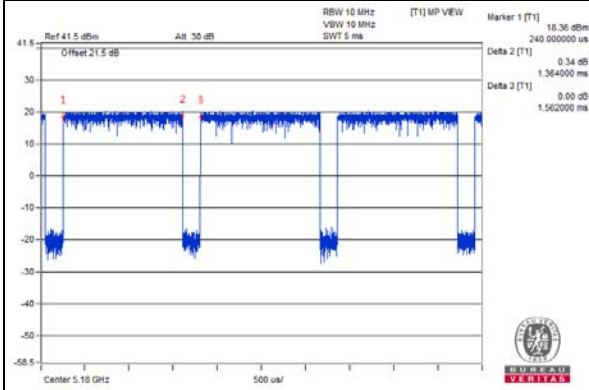
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 1.364 ms/1.562 ms = 0.873, Duty factor = $10 * \log (1/\text{Duty cycle}) = 0.59$

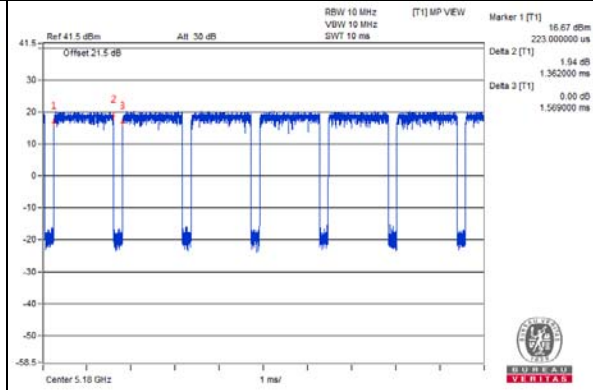
802.11n (HT20): Duty cycle = 1.362 ms/1.569 ms = 0.868, Duty factor = $10 * \log (1/\text{Duty cycle}) = 0.61$

802.11n (HT40): Duty cycle = 0.634 ms/0.843 ms = 0.752, Duty factor = $10 * \log (1/\text{Duty cycle}) = 1.24$

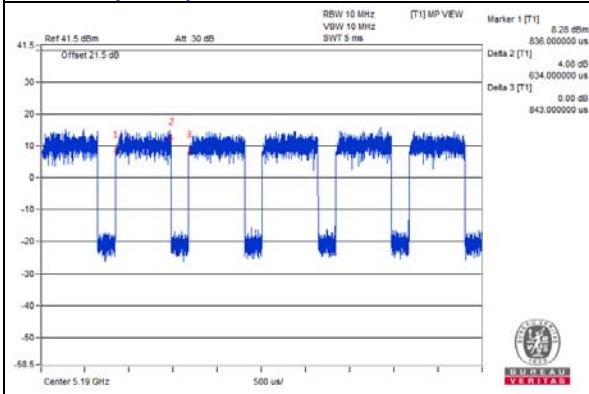
802.11a



802.11n (HT20)



802.11n (HT40)



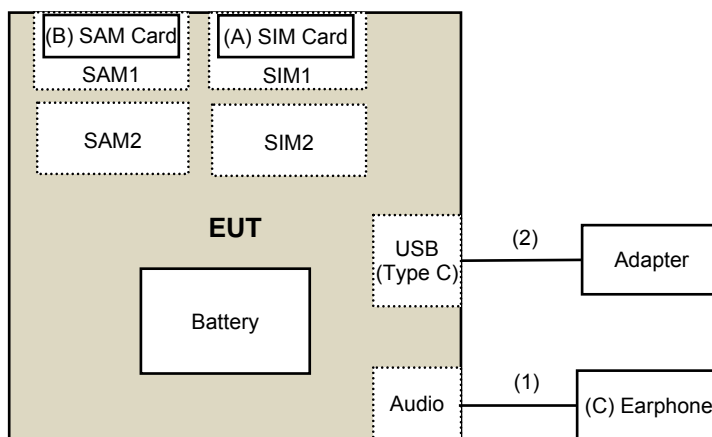
3.4 Description of Support Units

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.	SIM Card	NA	NA	NA	NA	Provided by Lab
B.	SAM Card	NA	NA	NA	NA	Supplied by client
C.	Earphone	Sony	NA	NA	NA	Provided by Lab

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

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard

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

FCC Part 15, Subpart E (15.407)

KDB 789033 D02 General UNII Test Procedure New Rules v02r01

ANSI C63.10-2013

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

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	<input checked="" type="checkbox"/> 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}
	<input type="checkbox"/> 15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
^{*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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 05, 2018	July 04, 2019
Pre-Amplifier EMC1	EMC001340	980142	Jan. 25, 2019	Jan. 24, 2020
Loop Antenna Electro-Metrics	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
RF Cable	NA	LOOPCAB-001	Jan. 14, 2019	Jan. 13, 2020
RF Cable	NA	LOOPCAB-002	Jan. 14, 2019	Jan. 13, 2020
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Oct. 30, 2018	Oct. 29, 2019
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 22, 2018	Nov. 21, 2019
RF Cable	8D	966-4-1	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-2	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-3	Mar. 19, 2019	Mar. 18, 2020
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Sep. 27, 2018	Sep. 26, 2019
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier EMC1	EMC12630SE	980385	Aug. 16, 2018	Aug. 15, 2019
RF Cable	EMC104-SM-SM-1200	160923	Jan. 28, 2019	Jan. 27, 2020
RF Cable	104 RF cable	131215	Jan. 10, 2019	Jan. 09, 2020
RF Cable	EMC104-SM-SM-6000	180418	May 03, 2019	May 02, 2020
Pre-Amplifier EMC1	EMC184045SE	980387	Jan. 28, 2019	Jan. 27, 2020
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 25, 2018	Nov. 24, 2019
RF Cable	EMC102-KM-KM-1200	160924	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC102-KM-KM-1200	160925	Jan. 28, 2019	Jan. 27, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA
Spectrum Analyzer R&S	FSV40	100964	June 04, 2019	June 03, 2020
Power meter Anritsu	ML2495A	1014008	May 13, 2019	May 12, 2020
Power sensor Anritsu	MA2411B	0917122	May 13, 2019	May 12, 2020
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 15, 2019	Apr. 14, 2020
DC Power Supply Topward	6603D	795558	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 09, 2019	Jan. 08, 2020
True RMS Clamp Meter FLUKE	325	31130711WS	May 21, 2019	May 20, 2020

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 4.
3. Loop antenna was used for all emissions below 30 MHz.
4. Tested Date: June 07 to 24, 2019

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:

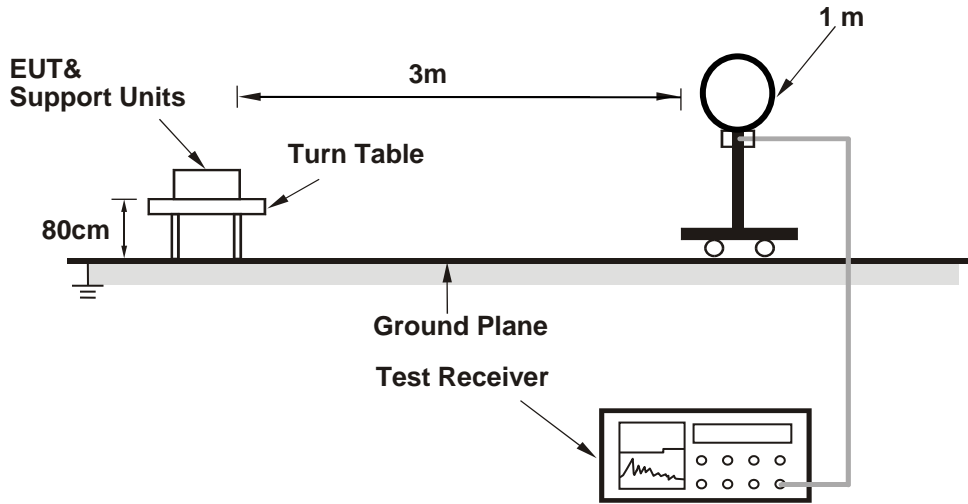
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

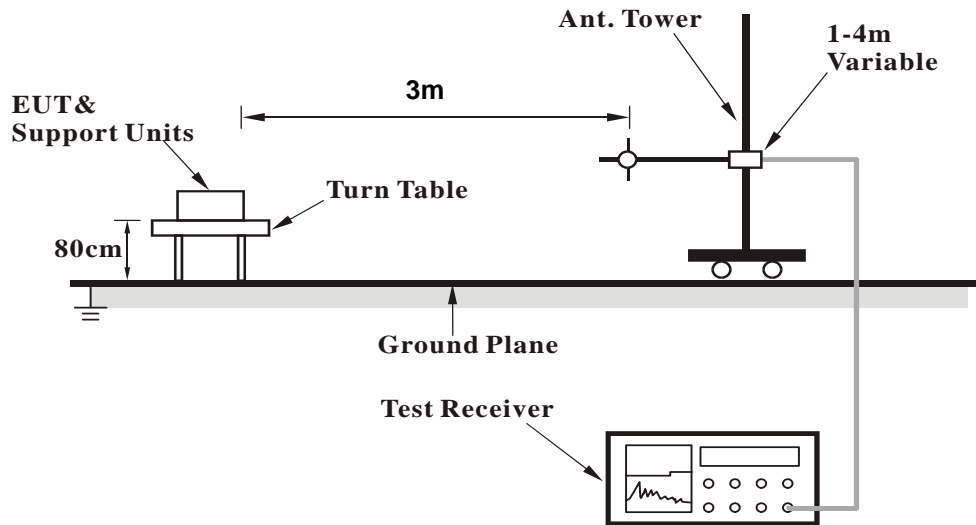
No deviation.

4.1.5 Test Setup

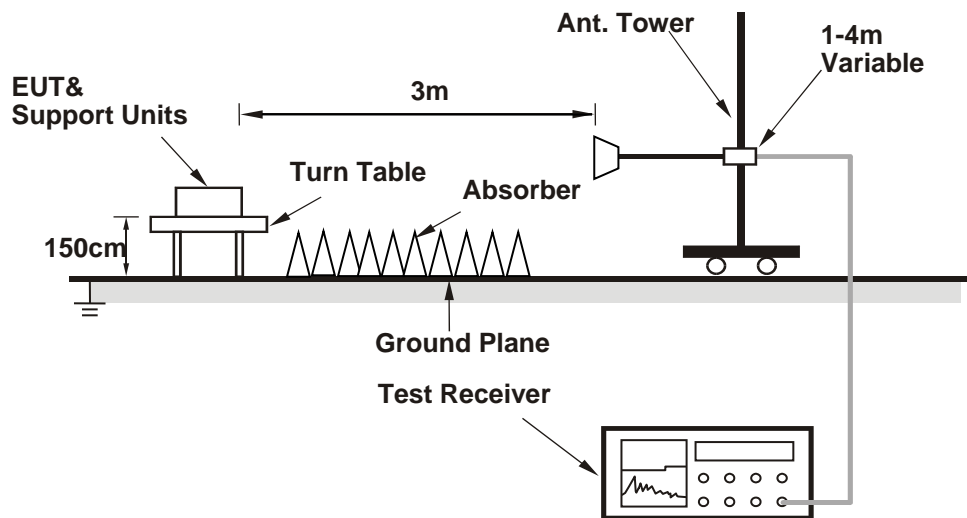
For Radiated emission below 30MHz



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.

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.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	72.2 PK	74.0	-1.8	1.12 H	237	68.7	3.5
2	5150.00	53.9 AV	54.0	-0.1	1.12 H	237	50.4	3.5
3	*5180.00	110.1 PK			1.12 H	237	106.7	3.4
4	*5180.00	100.3 AV			1.12 H	237	96.9	3.4
5	#10360.00	45.8 PK	68.2	-22.4	1.15 H	178	32.7	13.1
6	15540.00	46.6 PK	74.0	-27.4	1.74 H	199	33.0	13.6
7	15540.00	35.4 AV	54.0	-18.6	1.74 H	199	21.8	13.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.3 PK	74.0	-4.7	1.42 V	360	65.8	3.5
2	5150.00	51.4 AV	54.0	-2.6	1.42 V	360	47.9	3.5
3	*5180.00	108.5 PK			1.42 V	360	105.1	3.4
4	*5180.00	98.3 AV			1.42 V	360	94.9	3.4
5	#10360.00	46.0 PK	68.2	-22.2	1.87 V	303	32.9	13.1
6	15540.00	45.6 PK	74.0	-28.4	1.22 V	315	32.0	13.6
7	15540.00	34.4 AV	54.0	-19.6	1.22 V	315	20.8	13.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	111.8 PK			1.11 H	249	108.4	3.4
2	*5200.00	102.0 AV			1.11 H	249	98.6	3.4
3	#10400.00	46.1 PK	68.2	-22.1	1.13 H	164	32.7	13.4
4	15600.00	46.4 PK	74.0	-27.6	1.77 H	201	33.0	13.4
5	15600.00	34.9 AV	54.0	-19.1	1.77 H	201	21.5	13.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	110.2 PK			1.42 V	360	106.8	3.4
2	*5200.00	100.1 AV			1.42 V	360	96.7	3.4
3	#10400.00	45.9 PK	68.2	-22.3	1.84 V	316	32.5	13.4
4	15600.00	46.3 PK	74.0	-27.7	1.21 V	302	32.9	13.4
5	15600.00	34.8 AV	54.0	-19.2	1.21 V	302	21.4	13.4

REMARKS:

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

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	109.2 PK			1.14 H	242	106.2	3.0
2	*5240.00	100.1 AV			1.14 H	242	97.1	3.0
3	5350.00	50.7 PK	74.0	-23.3	1.14 H	242	47.4	3.3
4	5350.00	38.2 AV	54.0	-15.8	1.14 H	242	34.9	3.3
5	#10480.00	46.5 PK	68.2	-21.7	1.15 H	176	33.0	13.5
6	15720.00	46.4 PK	74.0	-27.6	1.71 H	204	33.6	12.8
7	15720.00	34.7 AV	54.0	-19.3	1.71 H	204	21.9	12.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	108.1 PK			1.46 V	360	105.1	3.0
2	*5240.00	97.8 AV			1.46 V	360	94.8	3.0
3	5350.00	48.2 PK	74.0	-25.8	1.46 V	360	44.9	3.3
4	5350.00	36.2 AV	54.0	-17.8	1.46 V	360	32.9	3.3
5	#10480.00	46.2 PK	68.2	-22.0	1.83 V	311	32.7	13.5
6	15720.00	46.1 PK	74.0	-27.9	1.17 V	295	33.3	12.8
7	15720.00	34.6 AV	54.0	-19.4	1.17 V	295	21.8	12.8

REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- Margin value = Emission Level – Limit value
- The other emission levels were very low against the limit.
- " * ": Fundamental frequency.
- " # ": 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.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	50.5 PK	74.0	-23.5	1.10 H	243	47.0	3.5
2	5150.00	37.8 AV	54.0	-16.2	1.10 H	243	34.3	3.5
3	*5260.00	111.0 PK			1.10 H	243	108.0	3.0
4	*5260.00	101.4 AV			1.10 H	243	98.4	3.0
5	#10520.00	46.2 PK	68.2	-22.0	1.19 H	167	32.5	13.7
6	15780.00	46.1 PK	74.0	-27.9	1.76 H	204	33.2	12.9
7	15780.00	34.6 AV	54.0	-19.4	1.76 H	204	21.7	12.9

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.3 PK	74.0	-25.7	1.48 V	360	44.8	3.5
2	5150.00	36.5 AV	54.0	-17.5	1.48 V	360	33.0	3.5
3	*5260.00	109.4 PK			1.48 V	360	106.4	3.0
4	*5260.00	99.6 AV			1.48 V	360	96.6	3.0
5	#10520.00	45.6 PK	68.2	-22.6	1.84 V	318	31.9	13.7
6	15780.00	45.7 PK	74.0	-28.3	1.17 V	298	32.8	12.9
7	15780.00	34.3 AV	54.0	-19.7	1.17 V	298	21.4	12.9

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	110.9 PK			1.17 H	240	107.8	3.1
2	*5300.00	101.5 AV			1.17 H	240	98.4	3.1
3	5352.20	59.3 PK	74.0	-14.7	1.17 H	240	56.0	3.3
4	5352.20	49.6 AV	54.0	-4.4	1.17 H	240	46.3	3.3
5	10600.00	44.8 PK	74.0	-29.2	1.09 H	172	31.2	13.6
6	10600.00	33.3 AV	54.0	-20.7	1.09 H	172	19.7	13.6
7	15900.00	46.1 PK	74.0	-27.9	1.82 H	199	32.8	13.3
8	15900.00	34.5 AV	54.0	-19.5	1.82 H	199	21.2	13.3

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	108.9 PK			1.47 V	353	105.8	3.1
2	*5300.00	99.2 AV			1.47 V	353	96.1	3.1
3	5350.00	56.9 PK	74.0	-17.1	1.47 V	353	53.6	3.3
4	5350.00	46.8 AV	54.0	-7.2	1.47 V	353	43.5	3.3
5	10600.00	44.9 PK	74.0	-29.1	1.85 V	327	31.3	13.6
6	10600.00	32.8 AV	54.0	-21.2	1.85 V	327	19.2	13.6
7	15900.00	45.7 PK	74.0	-28.3	1.21 V	301	32.4	13.3
8	15900.00	34.4 AV	54.0	-19.6	1.21 V	301	21.1	13.3

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.

CHANNEL	TX Channel 64	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	109.0 PK			1.16 H	239	105.8	3.2
2	*5320.00	99.9 AV			1.16 H	239	96.7	3.2
3	5350.00	69.1 PK	74.0	-4.9	1.16 H	239	65.8	3.3
4	5350.00	53.6 AV	54.0	-0.4	1.16 H	239	50.3	3.3
5	10640.00	44.4 PK	74.0	-29.6	1.13 H	181	30.7	13.7
6	10640.00	33.0 AV	54.0	-21.0	1.13 H	181	19.3	13.7
7	15960.00	46.0 PK	74.0	-28.0	1.83 H	215	32.5	13.5
8	15960.00	34.4 AV	54.0	-19.6	1.83 H	215	20.9	13.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	106.8 PK			1.44 V	360	103.6	3.2
2	*5320.00	97.9 AV			1.44 V	360	94.7	3.2
3	5350.00	69.7 PK	74.0	-4.3	1.44 V	360	66.4	3.3
4	5350.00	51.5 AV	54.0	-2.5	1.44 V	360	48.2	3.3
5	10640.00	45.4 PK	74.0	-28.6	1.85 V	324	31.7	13.7
6	10640.00	33.2 AV	54.0	-20.8	1.85 V	324	19.5	13.7
7	15960.00	45.9 PK	74.0	-28.1	1.23 V	294	32.4	13.5
8	15960.00	34.8 AV	54.0	-19.2	1.23 V	294	21.3	13.5

REMARKS:

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

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.2 PK	74.0	-13.8	1.04 H	240	56.5	3.7
2	5460.00	47.5 AV	54.0	-6.5	1.04 H	240	43.8	3.7
3	#5470.00	68.1 PK	68.2	-0.1	1.04 H	240	64.4	3.7
4	*5500.00	108.6 PK			1.04 H	240	105.0	3.6
5	*5500.00	99.0 AV			1.04 H	240	95.4	3.6
6	11000.00	44.8 PK	74.0	-29.2	1.14 H	164	30.4	14.4
7	11000.00	33.1 AV	54.0	-20.9	1.14 H	164	18.7	14.4
8	#16500.00	46.6 PK	68.2	-21.6	1.85 H	189	31.0	15.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.6 PK	74.0	-16.4	1.44 V	356	53.9	3.7
2	5460.00	44.8 AV	54.0	-9.2	1.44 V	356	41.1	3.7
3	#5470.00	65.3 PK	68.2	-2.9	1.44 V	356	61.6	3.7
4	*5500.00	106.2 PK			1.44 V	356	102.6	3.6
5	*5500.00	96.8 AV			1.44 V	356	93.2	3.6
6	11000.00	44.4 PK	74.0	-29.6	1.84 V	313	30.0	14.4
7	11000.00	32.5 AV	54.0	-21.5	1.84 V	313	18.1	14.4
8	#16500.00	45.4 PK	68.2	-22.8	1.22 V	316	29.8	15.6

REMARKS:

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

CHANNEL	TX Channel 116	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	108.2 PK			1.13 H	241	104.5	3.7
2	*5580.00	98.6 AV			1.13 H	241	94.9	3.7
3	11160.00	45.0 PK	74.0	-29.0	1.14 H	165	31.0	14.0
4	11160.00	33.6 AV	54.0	-20.4	1.14 H	165	19.6	14.0
5	#16740.00	46.0 PK	68.2	-22.2	1.78 H	209	28.9	17.1

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	106.4 PK			1.39 V	356	102.7	3.7
2	*5580.00	96.9 AV			1.39 V	356	93.2	3.7
3	11160.00	45.4 PK	74.0	-28.6	1.89 V	331	31.4	14.0
4	11160.00	33.1 AV	54.0	-20.9	1.89 V	331	19.1	14.0
5	#16740.00	45.2 PK	68.2	-23.0	1.20 V	316	28.1	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 140	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	106.2 PK			1.12 H	239	102.3	3.9
2	*5700.00	96.4 AV			1.12 H	239	92.5	3.9
3	#5725.00	68.0 PK	68.2	-0.2	1.12 H	239	64.2	3.8
4	11400.00	44.1 PK	74.0	-29.9	1.05 H	179	29.9	14.2
5	11400.00	32.8 AV	54.0	-21.2	1.05 H	179	18.6	14.2
6	#17100.00	45.9 PK	68.2	-22.3	1.78 H	193	29.0	16.9

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	104.1 PK			1.37 V	360	100.2	3.9
2	*5700.00	94.5 AV			1.37 V	360	90.6	3.9
3	#5725.00	64.2 PK	68.2	-4.0	1.37 V	360	60.4	3.8
4	11400.00	45.5 PK	74.0	-28.5	1.85 V	311	31.3	14.2
5	11400.00	33.1 AV	54.0	-20.9	1.85 V	311	18.9	14.2
6	#17100.00	46.2 PK	68.2	-22.0	1.20 V	286	29.3	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 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5596.53	51.6 PK	68.2	-16.6	1.12 H	239	47.9	3.7
2	*5745.00	107.2 PK			1.13 H	234	103.3	3.9
3	*5745.00	98.6 AV			1.13 H	234	94.7	3.9
4	#5953.29	52.0 PK	68.2	-16.2	1.12 H	239	47.6	4.4
5	11490.00	44.6 PK	74.0	-29.4	1.13 H	180	30.4	14.2
6	11490.00	33.3 AV	54.0	-20.7	1.13 H	180	19.1	14.2
7	#17235.00	45.7 PK	68.2	-22.5	1.81 H	207	28.4	17.3

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5617.16	51.6 PK	68.2	-16.6	1.13 V	4	47.9	3.7
2	*5745.00	106.8 PK			1.13 V	4	102.9	3.9
3	*5745.00	98.0 AV			1.13 V	4	94.1	3.9
4	#5981.49	53.1 PK	68.2	-15.1	1.13 V	4	48.7	4.4
5	11490.00	45.1 PK	74.0	-28.9	1.86 V	331	30.9	14.2
6	11490.00	33.2 AV	54.0	-20.8	1.86 V	331	19.0	14.2
7	#17235.00	45.3 PK	68.2	-22.9	1.20 V	288	28.0	17.3

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5571.83	52.4 PK	68.2	-15.8	1.12 H	231	48.7	3.7
2	*5785.00	107.3 PK			1.12 H	231	103.3	4.0
3	*5785.00	98.7 AV			1.12 H	231	94.7	4.0
4	#5935.23	52.8 PK	68.2	-15.4	1.12 H	231	48.5	4.3
5	11570.00	45.4 PK	74.0	-28.6	1.10 H	182	31.2	14.2
6	11570.00	33.8 AV	54.0	-20.2	1.10 H	182	19.6	14.2
7	#17355.00	45.6 PK	68.2	-22.6	1.86 H	191	27.9	17.7

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5627.33	51.8 PK	68.2	-16.4	1.14 V	6	48.2	3.6
2	*5785.00	107.4 PK			1.14 V	6	103.4	4.0
3	*5785.00	98.2 AV			1.14 V	6	94.2	4.0
4	#5982.52	53.3 PK	68.2	-14.9	1.14 V	6	48.9	4.4
5	11570.00	45.3 PK	74.0	-28.7	1.81 V	319	31.1	14.2
6	11570.00	33.0 AV	54.0	-21.0	1.81 V	319	18.8	14.2
7	#17355.00	45.2 PK	68.2	-23.0	1.18 V	310	27.5	17.7

REMARKS:

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

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5650.51	51.8 PK	68.6	-16.8	1.11 H	235	48.2	3.6
2	*5825.00	107.7 PK			1.11 H	235	103.5	4.2
3	*5825.00	99.3 AV			1.11 H	235	95.1	4.2
4	#5941.38	52.4 PK	68.2	-15.8	1.11 H	235	48.1	4.3
5	11650.00	46.5 PK	74.0	-27.5	2.84 H	85	32.6	13.9
6	11650.00	34.1 AV	54.0	-19.9	2.84 H	85	20.2	13.9
7	#17475.00	50.9 PK	68.2	-17.3	1.65 H	44	32.1	18.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5613.53	52.2 PK	68.2	-16.0	1.22 V	4	48.5	3.7
2	*5825.00	107.6 PK			1.22 V	4	103.4	4.2
3	*5825.00	98.6 AV			1.22 V	4	94.4	4.2
4	#5920.71	52.8 PK	71.4	-18.6	1.22 V	4	48.6	4.2
5	11650.00	46.3 PK	74.0	-27.7	1.88 V	310	32.4	13.9
6	11650.00	33.8 AV	54.0	-20.2	1.88 V	310	19.9	13.9
7	#17475.00	50.6 PK	68.2	-17.6	2.11 V	75	31.8	18.8

REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- Margin value = Emission Level – Limit value
- The other emission levels were very low against the limit.
- " * ": Fundamental frequency.
- " # ": 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.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	71.1 PK	74.0	-2.9	1.12 H	239	67.6	3.5
2	5150.00	53.5 AV	54.0	-0.5	1.12 H	239	50.0	3.5
3	*5180.00	108.9 PK			1.12 H	239	105.5	3.4
4	*5180.00	99.4 AV			1.12 H	239	96.0	3.4
5	#10360.00	44.7 PK	68.2	-23.5	1.13 H	176	31.6	13.1
6	15540.00	46.2 PK	74.0	-27.8	1.78 H	183	32.6	13.6
7	15540.00	34.8 AV	54.0	-19.2	1.78 H	183	21.2	13.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.1 PK	74.0	-4.9	1.42 V	360	65.6	3.5
2	5150.00	51.0 AV	54.0	-3.0	1.42 V	360	47.5	3.5
3	*5180.00	108.0 PK			1.42 V	360	104.6	3.4
4	*5180.00	98.9 AV			1.42 V	360	95.5	3.4
5	#10360.00	44.9 PK	68.2	-23.3	1.86 V	318	31.8	13.1
6	15540.00	45.6 PK	74.0	-28.4	1.16 V	288	32.0	13.6
7	15540.00	34.2 AV	54.0	-19.8	1.16 V	288	20.6	13.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	110.1 PK			1.14 H	244	106.7	3.4
2	*5200.00	99.4 AV			1.14 H	244	96.0	3.4
3	#10400.00	45.0 PK	68.2	-23.2	1.12 H	185	31.6	13.4
4	15600.00	45.7 PK	74.0	-28.3	1.77 H	210	32.3	13.4
5	15600.00	34.3 AV	54.0	-19.7	1.77 H	210	20.9	13.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	107.8 PK			1.46 V	360	104.4	3.4
2	*5200.00	98.7 AV			1.46 V	360	95.3	3.4
3	#10400.00	45.1 PK	68.2	-23.1	1.86 V	325	31.7	13.4
4	15600.00	45.0 PK	74.0	-29.0	1.19 V	307	31.6	13.4
5	15600.00	33.9 AV	54.0	-20.1	1.19 V	307	20.5	13.4

REMARKS:

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

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	110.2 PK			1.12 H	241	107.2	3.0
2	*5240.00	99.7 AV			1.12 H	241	96.7	3.0
3	5350.00	50.9 PK	74.0	-23.1	1.12 H	241	47.6	3.3
4	5350.00	38.3 AV	54.0	-15.7	1.12 H	241	35.0	3.3
5	#10480.00	44.6 PK	68.2	-23.6	1.07 H	168	31.1	13.5
6	15720.00	45.9 PK	74.0	-28.1	1.85 H	210	33.1	12.8
7	15720.00	34.5 AV	54.0	-19.5	1.85 H	210	21.7	12.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	107.3 PK			1.40 V	356	104.3	3.0
2	*5240.00	97.7 AV			1.40 V	356	94.7	3.0
3	5350.00	45.1 PK	74.0	-28.9	1.40 V	356	41.8	3.3
4	5350.00	34.3 AV	54.0	-19.7	1.40 V	356	31.0	3.3
5	#10480.00	45.3 PK	68.2	-22.9	1.89 V	341	31.8	13.5
6	15720.00	46.0 PK	74.0	-28.0	1.16 V	296	33.2	12.8
7	15720.00	34.5 AV	54.0	-19.5	1.16 V	296	21.7	12.8

REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- Margin value = Emission Level – Limit value
- The other emission levels were very low against the limit.
- " * ": Fundamental frequency.
- " # ": 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.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	44.1 PK	74.0	-29.9	1.11 H	249	40.6	3.5
2	5150.00	33.8 AV	54.0	-20.2	1.11 H	249	30.3	3.5
3	*5260.00	109.5 PK			1.11 H	249	106.5	3.0
4	*5260.00	100.1 AV			1.11 H	249	97.1	3.0
5	#10520.00	44.5 PK	68.2	-23.7	1.13 H	163	30.8	13.7
6	15780.00	45.8 PK	74.0	-28.2	1.83 H	183	32.9	12.9
7	15780.00	34.3 AV	54.0	-19.7	1.83 H	183	21.4	12.9

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	44.5 PK	74.0	-29.5	1.40 V	360	41.0	3.5
2	5150.00	34.0 AV	54.0	-20.0	1.40 V	360	30.5	3.5
3	*5260.00	107.2 PK			1.40 V	360	104.2	3.0
4	*5260.00	97.8 AV			1.40 V	360	94.8	3.0
5	#10520.00	45.0 PK	68.2	-23.2	1.87 V	315	31.3	13.7
6	15780.00	46.2 PK	74.0	-27.8	1.22 V	312	33.3	12.9
7	15780.00	34.6 AV	54.0	-19.4	1.22 V	312	21.7	12.9

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	109.6 PK			1.12 H	241	106.5	3.1
2	*5300.00	100.4 AV			1.12 H	241	97.3	3.1
3	10600.00	45.1 PK	74.0	-28.9	1.15 H	182	31.5	13.6
4	10600.00	33.5 AV	54.0	-20.5	1.15 H	182	19.9	13.6
5	15900.00	45.6 PK	74.0	-28.4	1.81 H	191	32.3	13.3
6	15900.00	34.0 AV	54.0	-20.0	1.81 H	191	20.7	13.3

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	106.6 PK			1.41 V	360	103.5	3.1
2	*5300.00	97.4 AV			1.41 V	360	94.3	3.1
3	10600.00	44.4 PK	74.0	-29.6	1.91 V	340	30.8	13.6
4	10600.00	32.5 AV	54.0	-21.5	1.91 V	340	18.9	13.6
5	15900.00	45.3 PK	74.0	-28.7	1.17 V	311	32.0	13.3
6	15900.00	34.0 AV	54.0	-20.0	1.17 V	311	20.7	13.3

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.

CHANNEL	TX Channel 64	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	109.2 PK			1.13 H	239	106.0	3.2
2	*5320.00	99.2 AV			1.13 H	239	96.0	3.2
3	5350.00	67.1 PK	74.0	-6.9	1.13 H	239	63.8	3.3
4	5350.00	53.6 AV	54.0	-0.4	1.13 H	239	50.3	3.3
5	10640.00	44.8 PK	74.0	-29.2	1.15 H	180	31.1	13.7
6	10640.00	33.4 AV	54.0	-20.6	1.15 H	180	19.7	13.7
7	15960.00	46.2 PK	74.0	-27.8	1.80 H	205	32.7	13.5
8	15960.00	34.8 AV	54.0	-19.2	1.80 H	205	21.3	13.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	104.8 PK			1.45 V	360	101.6	3.2
2	*5320.00	97.2 AV			1.45 V	360	94.0	3.2
3	5350.00	69.1 PK	74.0	-4.9	1.45 V	360	65.8	3.3
4	5350.00	50.9 AV	54.0	-3.1	1.45 V	360	47.6	3.3
5	10640.00	45.5 PK	74.0	-28.5	1.84 V	327	31.8	13.7
6	10640.00	33.1 AV	54.0	-20.9	1.84 V	327	19.4	13.7
7	15960.00	46.2 PK	74.0	-27.8	1.16 V	307	32.7	13.5
8	15960.00	34.7 AV	54.0	-19.3	1.16 V	307	21.2	13.5

REMARKS:

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

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.4 PK	74.0	-12.6	1.14 H	241	57.7	3.7
2	5460.00	45.6 AV	54.0	-8.4	1.14 H	241	41.9	3.7
3	#5470.00	68.1 PK	68.2	-0.1	1.14 H	241	64.4	3.7
4	*5500.00	107.4 PK			1.14 H	241	103.8	3.6
5	*5500.00	97.6 AV			1.14 H	241	94.0	3.6
6	11000.00	45.0 PK	74.0	-29.0	1.11 H	179	30.6	14.4
7	11000.00	33.5 AV	54.0	-20.5	1.11 H	179	19.1	14.4
8	#16500.00	45.9 PK	68.2	-22.3	1.82 H	196	30.3	15.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.2 PK	74.0	-14.8	1.37 V	349	55.5	3.7
2	5460.00	43.2 AV	54.0	-10.8	1.37 V	349	39.5	3.7
3	#5470.00	65.7 PK	68.2	-2.5	1.37 V	349	62.0	3.7
4	*5500.00	105.1 PK			1.37 V	349	101.5	3.6
5	*5500.00	95.7 AV			1.37 V	349	92.1	3.6
6	11000.00	45.0 PK	74.0	-29.0	1.80 V	315	30.6	14.4
7	11000.00	33.1 AV	54.0	-20.9	1.80 V	315	18.7	14.4
8	#16500.00	46.4 PK	68.2	-21.8	1.21 V	292	30.8	15.6

REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- Margin value = Emission Level – Limit value
- The other emission levels were very low against the limit.
- " * ": Fundamental frequency.
- " # ": 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.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	106.9 PK			1.12 H	250	103.2	3.7
2	*5580.00	97.2 AV			1.12 H	250	93.5	3.7
3	11160.00	45.2 PK	74.0	-28.8	1.10 H	186	31.2	14.0
4	11160.00	33.5 AV	54.0	-20.5	1.10 H	186	19.5	14.0
5	#16740.00	45.7 PK	68.2	-22.5	1.83 H	204	28.6	17.1

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	105.0 PK			1.39 V	350	101.3	3.7
2	*5580.00	95.1 AV			1.39 V	350	91.4	3.7
3	11160.00	44.4 PK	74.0	-29.6	1.81 V	339	30.4	14.0
4	11160.00	32.6 AV	54.0	-21.4	1.81 V	339	18.6	14.0
5	#16740.00	45.9 PK	68.2	-22.3	1.27 V	311	28.8	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 140	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	105.7 PK			1.13 H	239	101.8	3.9
2	*5700.00	96.0 AV			1.13 H	239	92.1	3.9
3	#5725.00	68.1 PK	68.2	-0.1	1.13 H	239	64.3	3.8
4	11400.00	44.6 PK	74.0	-29.4	1.07 H	173	30.4	14.2
5	11400.00	32.9 AV	54.0	-21.1	1.07 H	173	18.7	14.2
6	#17100.00	46.3 PK	68.2	-21.9	1.82 H	188	29.4	16.9

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	103.9 PK			1.43 V	355	100.0	3.9
2	*5700.00	93.8 AV			1.43 V	355	89.9	3.9
3	#5725.00	65.5 PK	68.2	-2.7	1.43 V	355	61.7	3.8
4	11400.00	45.2 PK	74.0	-28.8	1.87 V	317	31.0	14.2
5	11400.00	33.1 AV	54.0	-20.9	1.87 V	317	18.9	14.2
6	#17100.00	45.4 PK	68.2	-22.8	1.17 V	307	28.5	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 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5567.85	52.2 PK	68.2	-16.0	1.15 H	234	48.5	3.7
2	*5745.00	106.9 PK			1.15 H	234	103.0	3.9
3	*5745.00	97.7 AV			1.15 H	234	93.8	3.9
4	#5953.60	52.3 PK	68.2	-15.9	1.15 H	234	47.9	4.4
5	11490.00	45.1 PK	74.0	-28.9	1.03 H	171	30.9	14.2
6	11490.00	33.4 AV	54.0	-20.6	1.03 H	171	19.2	14.2
7	#17235.00	46.3 PK	68.2	-21.9	1.80 H	190	29.0	17.3

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5618.25	52.3 PK	68.2	-15.9	1.22 V	3	48.6	3.7
2	*5745.00	105.3 PK			1.22 V	3	101.4	3.9
3	*5745.00	96.8 AV			1.22 V	3	92.9	3.9
4	#6008.20	52.6 PK	68.2	-15.6	1.22 V	3	48.2	4.4
5	11490.00	44.6 PK	74.0	-29.4	1.86 V	338	30.4	14.2
6	11490.00	32.8 AV	54.0	-21.2	1.86 V	338	18.6	14.2
7	#17235.00	45.6 PK	68.2	-22.6	1.20 V	296	28.3	17.3

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5610.22	51.9 PK	68.2	-16.3	1.00 H	235	48.2	3.7
2	*5785.00	106.4 PK			1.00 H	235	102.4	4.0
3	*5785.00	97.6 AV			1.00 H	235	93.6	4.0
4	#5979.59	51.7 PK	68.2	-16.5	1.00 H	235	47.3	4.4
5	11570.00	44.7 PK	74.0	-29.3	1.04 H	162	30.5	14.2
6	11570.00	33.4 AV	54.0	-20.6	1.04 H	162	19.2	14.2
7	#17355.00	45.6 PK	68.2	-22.6	1.78 H	210	27.9	17.7

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5611.00	51.8 PK	68.2	-16.4	1.23 V	33	48.1	3.7
2	*5785.00	105.1 PK			1.23 V	33	101.1	4.0
3	*5785.00	96.4 AV			1.23 V	33	92.4	4.0
4	#5972.20	52.7 PK	68.2	-15.5	1.23 V	33	48.3	4.4
5	11570.00	44.7 PK	74.0	-29.3	1.91 V	342	30.5	14.2
6	11570.00	32.7 AV	54.0	-21.3	1.91 V	342	18.5	14.2
7	#17355.00	46.1 PK	68.2	-22.1	1.26 V	293	28.4	17.7

REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- Margin value = Emission Level – Limit value
- The other emission levels were very low against the limit.
- " * ": Fundamental frequency.
- " # ": 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.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5644.98	52.0 PK	68.2	-16.2	1.04 H	233	48.4	3.6
2	*5825.00	107.4 PK			1.04 H	233	103.2	4.2
3	*5825.00	98.1 AV			1.04 H	233	93.9	4.2
4	#6018.84	53.0 PK	68.2	-15.2	1.04 H	233	48.6	4.4
5	11650.00	44.2 PK	74.0	-29.8	1.06 H	179	30.3	13.9
6	11650.00	32.9 AV	54.0	-21.1	1.06 H	179	19.0	13.9
7	#17475.00	45.7 PK	68.2	-22.5	1.82 H	211	26.9	18.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5597.62	52.4 PK	68.2	-15.8	1.21 V	8	48.7	3.7
2	*5825.00	106.1 PK			1.21 V	8	101.9	4.2
3	*5825.00	97.0 AV			1.21 V	8	92.8	4.2
4	#5930.83	53.3 PK	68.2	-14.9	1.21 V	8	49.0	4.3
5	11650.00	45.1 PK	74.0	-28.9	1.89 V	337	31.2	13.9
6	11650.00	33.2 AV	54.0	-20.8	1.89 V	337	19.3	13.9
7	#17475.00	45.7 PK	68.2	-22.5	1.17 V	287	26.9	18.8

REMARKS:

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

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.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.5 PK	74.0	-3.5	1.13 H	239	67.0	3.5
2	5150.00	53.8 AV	54.0	-0.2	1.13 H	239	50.3	3.5
3	*5190.00	101.5 PK			1.13 H	239	98.1	3.4
4	*5190.00	91.6 AV			1.13 H	239	88.2	3.4
5	#10380.00	44.9 PK	68.2	-23.3	1.15 H	182	31.6	13.3
6	15570.00	45.4 PK	74.0	-28.6	1.77 H	214	32.0	13.4
7	15570.00	34.0 AV	54.0	-20.0	1.77 H	214	20.6	13.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.8 PK	74.0	-7.2	1.42 V	355	63.3	3.5
2	5150.00	49.8 AV	54.0	-4.2	1.42 V	355	46.3	3.5
3	*5190.00	99.7 PK			1.42 V	355	96.3	3.4
4	*5190.00	89.8 AV			1.42 V	355	86.4	3.4
5	#10380.00	44.3 PK	68.2	-23.9	1.87 V	332	31.0	13.3
6	15570.00	46.0 PK	74.0	-28.0	1.22 V	306	32.6	13.4
7	15570.00	34.8 AV	54.0	-19.2	1.22 V	306	21.4	13.4

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.1 PK	74.0	-18.9	1.15 H	233	51.6	3.5
2	5150.00	45.1 AV	54.0	-8.9	1.15 H	233	41.6	3.5
3	*5230.00	106.1 PK			1.15 H	233	103.0	3.1
4	*5230.00	97.4 AV			1.15 H	233	94.3	3.1
5	5350.00	50.1 PK	74.0	-23.9	1.15 H	233	46.8	3.3
6	5350.00	39.4 AV	54.0	-14.6	1.15 H	233	36.1	3.3
7	#10460.00	44.4 PK	68.2	-23.8	1.06 H	169	30.9	13.5
8	15690.00	46.1 PK	74.0	-27.9	1.79 H	200	33.2	12.9
9	15690.00	34.3 AV	54.0	-19.7	1.79 H	200	21.4	12.9

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	52.2 PK	74.0	-21.8	1.48 V	360	48.7	3.5
2	5150.00	41.2 AV	54.0	-12.8	1.48 V	360	37.7	3.5
3	*5230.00	103.9 PK			1.48 V	360	100.8	3.1
4	*5230.00	95.1 AV			1.48 V	360	92.0	3.1
5	5350.00	45.7 PK	74.0	-28.3	1.48 V	360	42.4	3.3
6	5350.00	34.7 AV	54.0	-19.3	1.48 V	360	31.4	3.3
7	#10460.00	44.9 PK	68.2	-23.3	1.90 V	332	31.4	13.5
8	15690.00	45.5 PK	74.0	-28.5	1.16 V	288	32.6	12.9
9	15690.00	34.4 AV	54.0	-19.6	1.16 V	288	21.5	12.9

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	51.6 PK	74.0	-22.4	1.16 H	233	48.1	3.5
2	5150.00	40.4 AV	54.0	-13.6	1.16 H	233	36.9	3.5
3	*5270.00	106.7 PK			1.16 H	233	103.7	3.0
4	*5270.00	97.3 AV			1.16 H	233	94.3	3.0
5	5350.00	58.3 PK	74.0	-15.7	1.16 H	233	55.0	3.3
6	5350.00	46.3 AV	54.0	-7.7	1.16 H	233	43.0	3.3
7	#10540.00	44.6 PK	68.2	-23.6	1.08 H	183	30.9	13.7
8	15810.00	45.7 PK	74.0	-28.3	1.81 H	208	32.6	13.1
9	15810.00	34.3 AV	54.0	-19.7	1.81 H	208	21.2	13.1

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	45.8 PK	74.0	-28.2	1.42 V	360	42.3	3.5
2	5150.00	34.7 AV	54.0	-19.3	1.42 V	360	31.2	3.5
3	*5270.00	103.8 PK			1.42 V	360	100.8	3.0
4	*5270.00	95.1 AV			1.42 V	360	92.1	3.0
5	5350.00	52.5 PK	74.0	-21.5	1.42 V	360	49.2	3.3
6	5350.00	41.6 AV	54.0	-12.4	1.42 V	360	38.3	3.3
7	#10540.00	45.6 PK	68.2	-22.6	1.86 V	313	31.9	13.7
8	15810.00	45.7 PK	74.0	-28.3	1.20 V	317	32.6	13.1
9	15810.00	34.5 AV	54.0	-19.5	1.20 V	317	21.4	13.1

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	101.4 PK			1.16 H	238	98.2	3.2
2	*5310.00	92.4 AV			1.16 H	238	89.2	3.2
3	5350.00	73.2 PK	74.0	-0.8	1.16 H	238	69.9	3.3
4	5350.00	53.9 AV	54.0	-0.1	1.16 H	238	50.6	3.3
5	10620.00	44.7 PK	74.0	-29.3	1.08 H	163	31.1	13.6
6	10620.00	33.4 AV	54.0	-20.6	1.08 H	163	19.8	13.6
7	15930.00	46.6 PK	74.0	-27.4	1.82 H	208	33.3	13.3
8	15930.00	34.8 AV	54.0	-19.2	1.82 H	208	21.5	13.3

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	99.8 PK			1.39 V	355	96.6	3.2
2	*5310.00	90.1 AV			1.39 V	355	86.9	3.2
3	5350.00	66.5 PK	74.0	-7.5	1.39 V	355	63.2	3.3
4	5350.00	49.8 AV	54.0	-4.2	1.39 V	355	46.5	3.3
5	10620.00	44.6 PK	74.0	-29.4	1.84 V	311	31.0	13.6
6	10620.00	32.6 AV	54.0	-21.4	1.84 V	311	19.0	13.6
7	15930.00	45.6 PK	74.0	-28.4	1.25 V	302	32.3	13.3
8	15930.00	34.6 AV	54.0	-19.4	1.25 V	302	21.3	13.3

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.

CHANNEL	TX Channel 102	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.8 PK	74.0	-16.2	1.14 H	236	54.1	3.7
2	5460.00	45.5 AV	54.0	-8.5	1.14 H	236	41.8	3.7
3	#5470.00	68.1 PK	68.2	-0.1	1.14 H	236	64.4	3.7
4	*5510.00	99.4 PK			1.14 H	236	95.8	3.6
5	*5510.00	90.1 AV			1.14 H	236	86.5	3.6
6	11020.00	44.9 PK	74.0	-29.1	1.08 H	163	30.6	14.3
7	11020.00	33.7 AV	54.0	-20.3	1.08 H	163	19.4	14.3
8	#16530.00	45.9 PK	68.2	-22.3	1.82 H	187	30.2	15.7

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	53.9 PK	74.0	-20.1	1.43 V	360	50.2	3.7
2	5460.00	41.1 AV	54.0	-12.9	1.43 V	360	37.4	3.7
3	#5470.00	65.8 PK	68.2	-2.4	1.43 V	360	62.1	3.7
4	*5510.00	97.2 PK			1.43 V	360	93.6	3.6
5	*5510.00	87.9 AV			1.43 V	360	84.3	3.6
6	11020.00	45.4 PK	74.0	-28.6	1.80 V	315	31.1	14.3
7	11020.00	33.1 AV	54.0	-20.9	1.80 V	315	18.8	14.3
8	#16530.00	45.3 PK	68.2	-22.9	1.26 V	287	29.6	15.7

REMARKS:

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

CHANNEL	TX Channel 110	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	104.7 PK			1.14 H	229	101.0	3.7
2	*5550.00	95.0 AV			1.14 H	229	91.3	3.7
3	11100.00	45.5 PK	74.0	-28.5	1.14 H	157	31.3	14.2
4	11100.00	33.7 AV	54.0	-20.3	1.14 H	157	19.5	14.2
5	#16650.00	46.1 PK	68.2	-22.1	1.84 H	200	29.6	16.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	103.6 PK			1.45 V	360	99.9	3.7
2	*5550.00	94.9 AV			1.45 V	360	91.2	3.7
3	11100.00	45.1 PK	74.0	-28.9	1.79 V	325	30.9	14.2
4	11100.00	32.8 AV	54.0	-21.2	1.79 V	325	18.6	14.2
5	#16650.00	46.1 PK	68.2	-22.1	1.17 V	317	29.6	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 134	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	102.7 PK			1.13 H	232	99.0	3.7
2	*5670.00	93.5 AV			1.13 H	232	89.8	3.7
3	#5725.00	66.1 PK	68.2	-2.1	1.13 H	232	62.3	3.8
4	11340.00	45.1 PK	74.0	-28.9	1.12 H	165	31.0	14.1
5	11340.00	33.3 AV	54.0	-20.7	1.12 H	165	19.2	14.1
6	#17010.00	46.1 PK	68.2	-22.1	1.87 H	208	29.0	17.1

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	101.3 PK			1.36 V	360	97.6	3.7
2	*5670.00	92.6 AV			1.36 V	360	88.9	3.7
3	#5725.00	64.0 PK	68.2	-4.2	1.36 V	360	60.2	3.8
4	11340.00	44.5 PK	74.0	-29.5	1.88 V	340	30.4	14.1
5	11340.00	32.5 AV	54.0	-21.5	1.88 V	340	18.4	14.1
6	#17010.00	45.9 PK	68.2	-22.3	1.15 V	298	28.8	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 151	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5642.97	53.6 PK	68.2	-14.6	1.05 H	235	50.0	3.6
2	*5755.00	104.0 PK			1.05 H	235	100.1	3.9
3	*5755.00	95.8 AV			1.05 H	235	91.9	3.9
4	#5967.95	51.5 PK	68.2	-16.7	1.05 H	235	47.1	4.4
5	11510.00	45.1 PK	74.0	-28.9	1.14 H	176	30.9	14.2
6	11510.00	33.8 AV	54.0	-20.2	1.14 H	176	19.6	14.2
7	#17265.00	45.8 PK	68.2	-22.4	1.82 H	192	28.6	17.2

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5644.29	54.4 PK	68.2	-13.8	1.19 V	4	50.8	3.6
2	*5755.00	103.3 PK			1.19 V	4	99.4	3.9
3	*5755.00	94.5 AV			1.19 V	4	90.6	3.9
4	#5939.52	51.7 PK	68.2	-16.5	1.19 V	4	47.4	4.3
5	11510.00	45.5 PK	74.0	-28.5	1.88 V	329	31.3	14.2
6	11510.00	33.2 AV	54.0	-20.8	1.88 V	329	19.0	14.2
7	#17265.00	45.3 PK	68.2	-22.9	1.20 V	295	28.1	17.2

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5556.25	52.4 PK	68.2	-15.8	1.05 H	232	48.7	3.7
2	*5795.00	103.6 PK			1.05 H	232	99.6	4.0
3	*5795.00	95.5 AV			1.05 H	232	91.5	4.0
4	#6013.11	52.7 PK	68.2	-15.5	1.05 H	232	48.3	4.4
5	11590.00	44.9 PK	74.0	-29.1	1.04 H	156	30.7	14.2
6	11590.00	33.4 AV	54.0	-20.6	1.04 H	156	19.2	14.2
7	#17385.00	45.9 PK	68.2	-22.3	1.83 H	191	28.1	17.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5631.65	52.4 PK	68.2	-15.8	1.00 V	5	48.8	3.6
2	*5795.00	103.1 PK			1.00 V	5	99.1	4.0
3	*5795.00	94.3 AV			1.00 V	5	90.3	4.0
4	#5927.51	52.6 PK	68.2	-15.6	1.00 V	5	48.4	4.2
5	11590.00	44.6 PK	74.0	-29.4	1.85 V	331	30.4	14.2
6	11590.00	32.6 AV	54.0	-21.4	1.85 V	331	18.4	14.2
7	#17385.00	45.7 PK	68.2	-22.5	1.17 V	312	27.9	17.8

REMARKS:

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

Below 1GHz Data:

802.11a

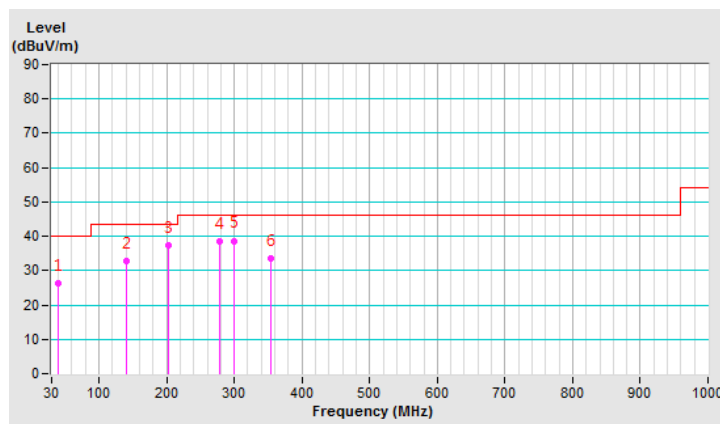
CHANNEL	TX Channel 40	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.65	26.2 QP	40.0	-13.8	1.35 H	85	34.9	-8.7
2	141.32	32.6 QP	43.5	-10.9	1.62 H	201	40.8	-8.2
3	203.62	37.5 QP	43.5	-6.0	1.78 H	120	47.8	-10.3
4	278.71	38.4 QP	46.0	-7.6	1.95 H	201	46.0	-7.6
5	299.36	38.7 QP	46.0	-7.3	1.75 H	215	45.7	-7.0
6	353.32	33.4 QP	46.0	-12.6	1.48 H	201	39.1	-5.7

REMARKS:

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

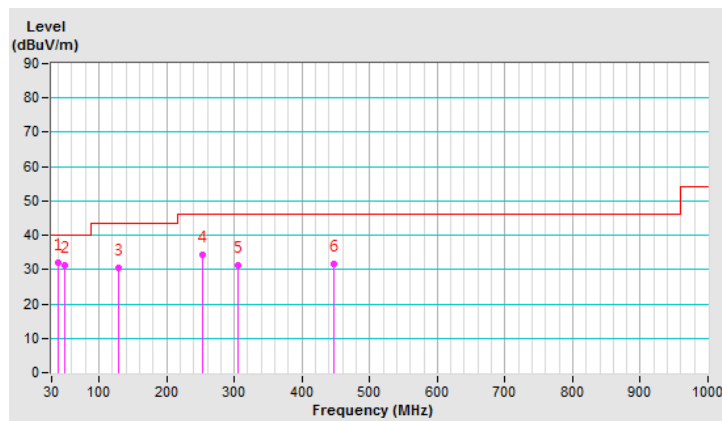


CHANNEL	TX Channel 40	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.65	32.1 QP	40.0	-7.9	1.00 V	241	40.8	-8.7
2	49.85	31.2 QP	40.0	-8.8	1.34 V	211	39.3	-8.1
3	128.65	30.6 QP	43.5	-12.9	1.35 V	77	39.8	-9.2
4	253.65	34.2 QP	46.0	-11.8	1.74 V	85	42.8	-8.6
5	305.52	31.1 QP	46.0	-14.9	1.98 V	65	37.9	-6.8
6	446.85	31.5 QP	46.0	-14.5	3.00 V	125	34.1	-2.6

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 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. 24, 2018	Oct. 23, 2019
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 22, 2018	Oct. 21, 2019
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 17, 2019	Mar. 16, 2020
50 ohms Terminator	N/A	3	Oct. 22, 2018	Oct. 21, 2019
RF Cable	5D-FB	COCCAB-001	Sep. 28, 2018	Sep. 27, 2019
Fixed attenuator EMCI	STI02-2200-10	003	Mar. 14, 2019	Mar. 13, 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: June 25, 2019

4.2.3 Test Procedure

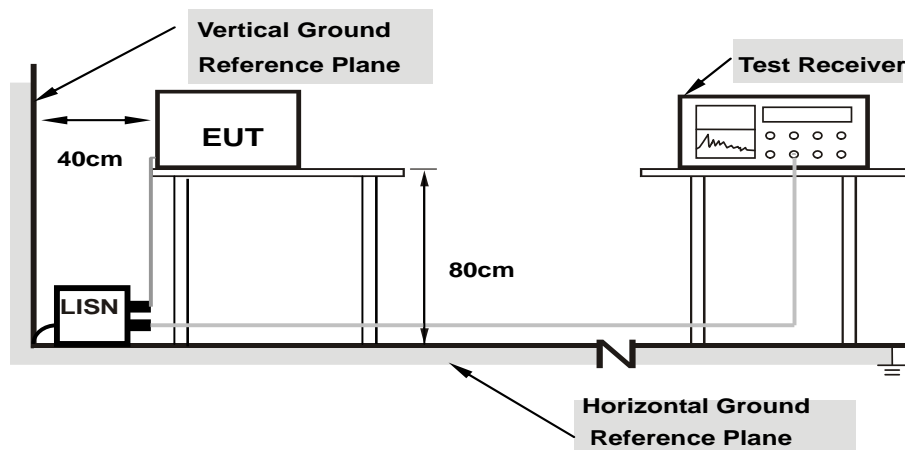
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Condition

Same as 4.1.6.

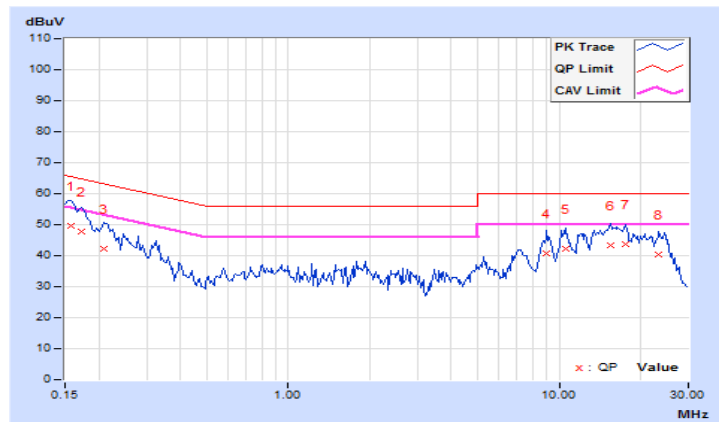
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	10.03	39.42	19.34	49.45	29.37	65.58	55.58	-16.13	-26.21
2	0.17344	10.04	37.78	19.13	47.82	29.17	64.79	54.79	-16.97	-25.62
3	0.20859	10.05	32.21	13.36	42.26	23.41	63.26	53.26	-21.00	-29.85
4	9.02344	10.64	30.12	23.43	40.76	34.07	60.00	50.00	-19.24	-15.93
5	10.53516	10.74	31.32	24.34	42.06	35.08	60.00	50.00	-17.94	-14.92
6	15.57813	11.07	32.43	24.91	43.50	35.98	60.00	50.00	-16.50	-14.02
7	17.67188	11.21	32.39	25.11	43.60	36.32	60.00	50.00	-16.40	-13.68
8	23.39063	11.44	29.11	15.54	40.55	26.98	60.00	50.00	-19.45	-23.02

Remarks:

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

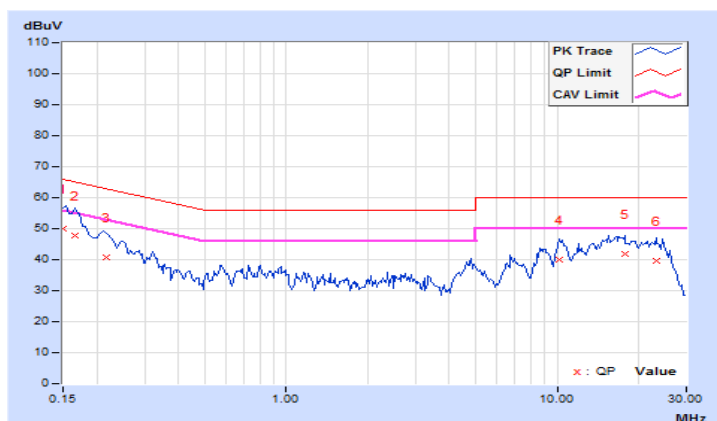


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.94	40.12	21.25	50.06	31.19	66.00	56.00	-15.94	-24.81
2	0.16562	9.94	37.81	17.59	47.75	27.53	65.18	55.18	-17.43	-27.65
3	0.21641	9.95	30.96	12.52	40.91	22.47	62.96	52.96	-22.05	-30.49
4	10.12891	10.54	29.51	22.36	40.05	32.90	60.00	50.00	-19.95	-17.10
5	17.72266	11.00	30.71	22.99	41.71	33.99	60.00	50.00	-18.29	-16.01
6	23.23047	11.19	28.51	14.30	39.70	25.49	60.00	50.00	-20.30	-24.51

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

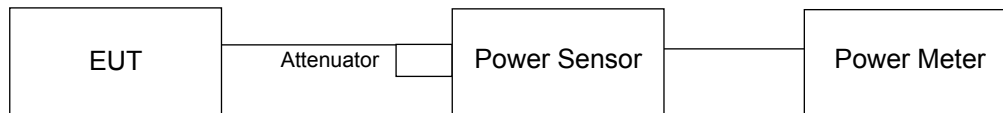
4.3.1 Limits of Transmit Power Measurement

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)

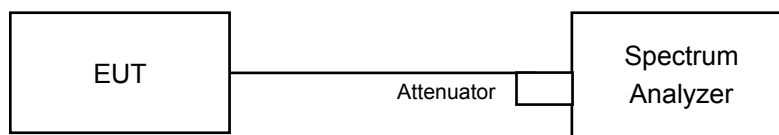
*B is the 26 dB emission bandwidth in megahertz

4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT



FOR 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

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

802.11a

POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Limit (dBm)	Pass / Fail
36	5180	40.179	16.04	24.00	Pass
40	5200	59.704	17.76	24.00	Pass
48	5240	32.961	15.18	24.00	Pass
52	5260	57.81	17.62	24.00	Pass
60	5300	58.749	17.69	24.00	Pass
64	5320	34.914	15.43	24.00	Pass
100	5500	43.351	16.37	24.00	Pass
116	5580	59.979	17.78	24.00	Pass
140	5700	27.227	14.35	24.00	Pass
149	5745	59.429	17.74	30.00	Pass
157	5785	60.395	17.81	30.00	Pass
165	5825	60.954	17.85	30.00	Pass

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
36	5180	45.54
40	5200	46.81
48	5240	44.83
52	5260	47.10
60	5300	47.72
64	5320	45.19
100	5500	45.18
116	5580	45.90
140	5700	43.14

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

Power Limit = $11\text{dBm} + 10\log B$ < U-NII-2A, U-NII-2C >

Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	47.10	27.73 > 24
60	5300	47.72	27.78 > 24
64	5320	45.19	27.55 > 24
100	5500	45.18	27.54 > 24
116	5580	45.90	27.61 > 24
140	5700	43.14	27.34 > 24

802.11n (HT20)

POWER OUTPUT POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Limit (dBm)	Pass / Fail
36	5180	33.113	15.20	24.00	Pass
40	5200	46.026	16.63	24.00	Pass
48	5240	34.435	15.37	24.00	Pass
52	5260	46.989	16.72	24.00	Pass
60	5300	47.098	16.73	24.00	Pass
64	5320	31.989	15.05	24.00	Pass
100	5500	36.728	15.65	24.00	Pass
116	5580	47.315	16.75	24.00	Pass
140	5700	27.669	14.42	24.00	Pass
149	5745	49.091	16.91	30.00	Pass
157	5785	45.499	16.58	30.00	Pass
165	5825	46.989	16.72	30.00	Pass

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
36	5180	44.93
40	5200	48.48
48	5240	48.09
52	5260	47.57
60	5300	48.76
64	5320	48.13
100	5500	47.29
116	5580	48.59
140	5700	45.84

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

Power Limit = $11\text{dBm} + 10\log B$ < U-NII-2A, U-NII-2C >

Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	47.57	27.77 > 24
60	5300	48.76	27.88 > 24
64	5320	48.13	27.82 > 24
100	5500	47.29	27.74 > 24
116	5580	48.59	27.86 > 24
140	5700	45.84	27.61 > 24

802.11n (HT40)

POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Limit (dBm)	Pass / Fail
38	5190	10.715	10.30	24.00	Pass
46	5230	37.67	15.76	24.00	Pass
54	5270	47.098	16.73	24.00	Pass
62	5310	10.186	10.08	24.00	Pass
102	5510	15.996	12.04	24.00	Pass
110	5550	48.195	16.83	24.00	Pass
134	5670	45.814	16.61	24.00	Pass
151	5755	49.431	16.94	30.00	Pass
159	5795	47.973	16.81	30.00	Pass

26dB OCCUPIED BANDWIDTH

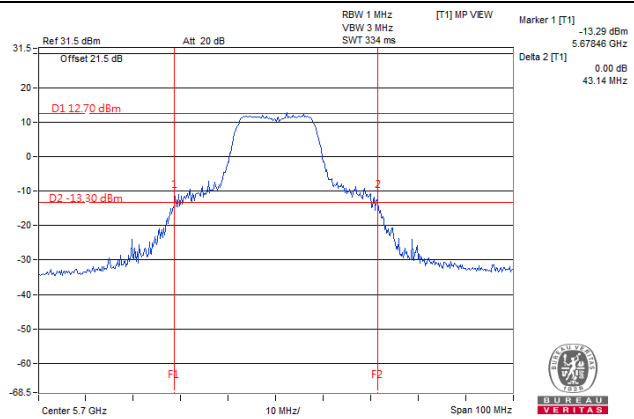
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
38	5190	59.43
46	5230	87.06
54	5270	92.88
62	5310	54.49
102	5510	48.67
110	5550	89.67
134	5670	88.57

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

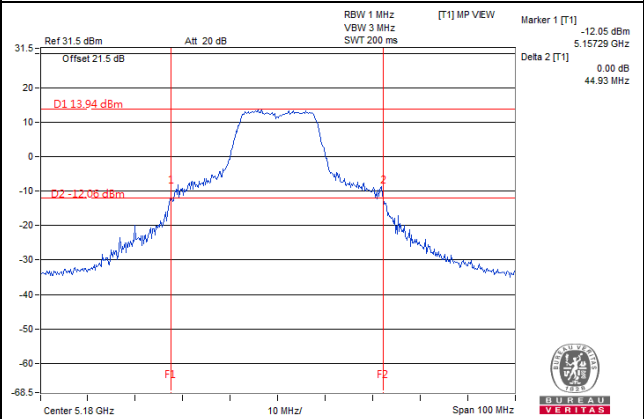
Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	92.88	30.67 > 24
62	5310	54.49	28.36 > 24
102	5510	48.67	27.87 > 24
110	5550	89.67	30.52 > 24
134	5670	88.57	30.47 > 24

Spectrum Plot of Worst Value

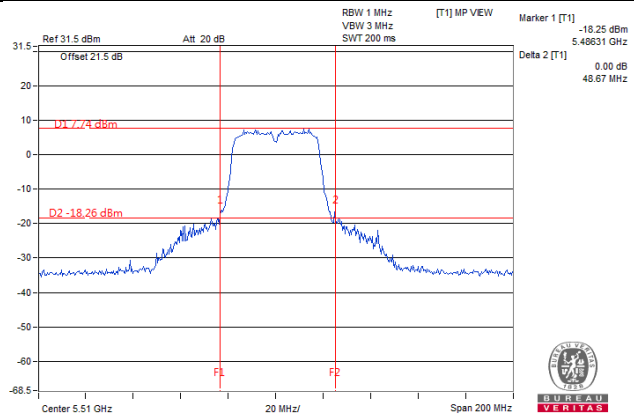
802.11a / CH140



802.11n (HT20) / CH36

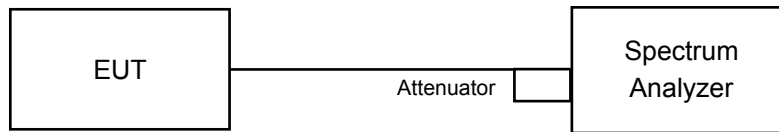


802.11n (HT40) / CH102



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	22.20
40	5200	27.84
48	5240	20.16
52	5260	27.84
60	5300	27.84
64	5320	20.40
100	5500	20.52
116	5580	24.60
140	5700	17.88
149	5745	25.68
157	5785	27.00
165	5825	27.36

802.11n (HT20)

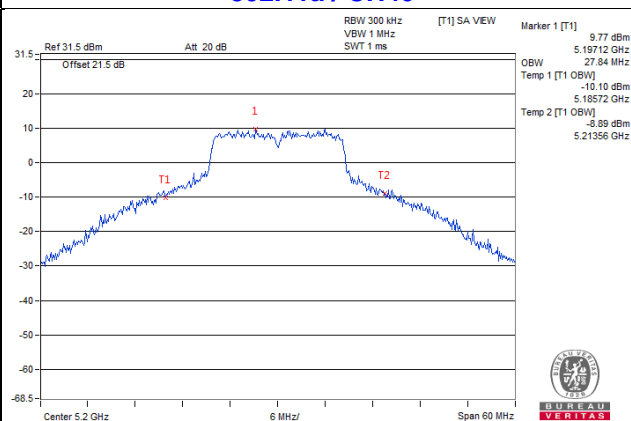
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	19.44
40	5200	22.20
48	5240	20.40
52	5260	24.24
60	5300	24.24
64	5320	20.28
100	5500	19.44
116	5580	21.96
140	5700	18.60
149	5745	22.20
157	5785	20.88
165	5825	21.72

802.11n (HT40)

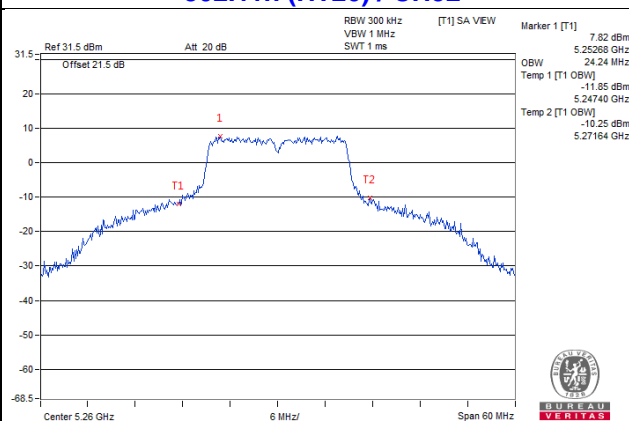
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	37.68
46	5230	42.48
54	5270	48.96
62	5310	37.92
102	5510	36.72
110	5550	40.08
134	5670	39.84
151	5755	42.00
159	5795	42.48

Spectrum Plot of Worst Value

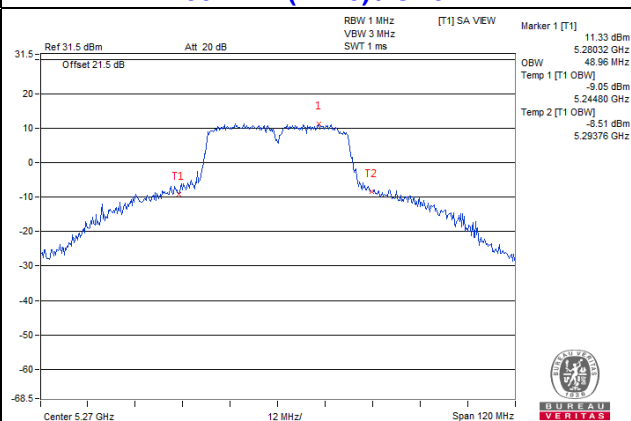
802.11a / CH40



802.11n (HT20) / CH52

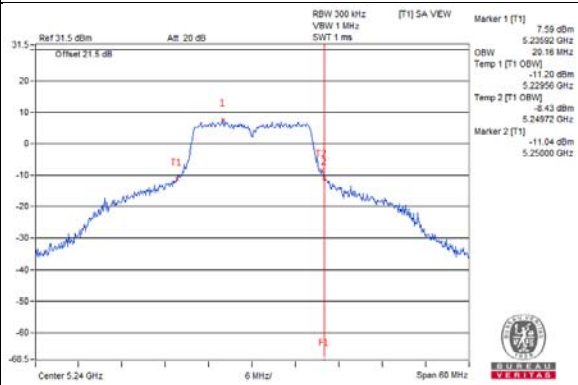


802.11n (HT40) / CH54

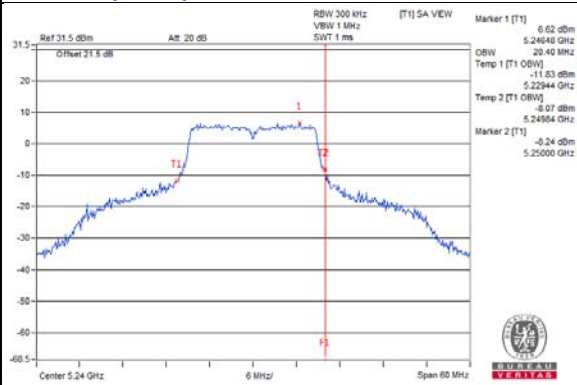


**Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)**

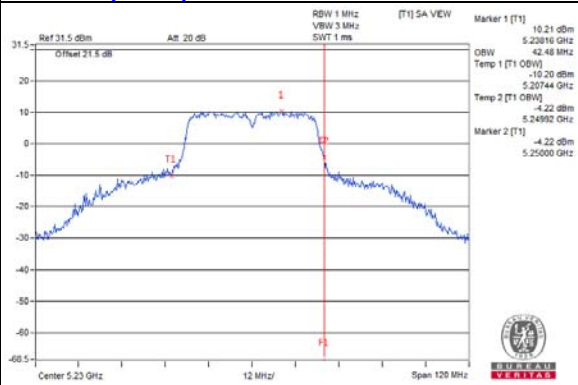
802.11a / CH48



802.11n (HT20) / CH48

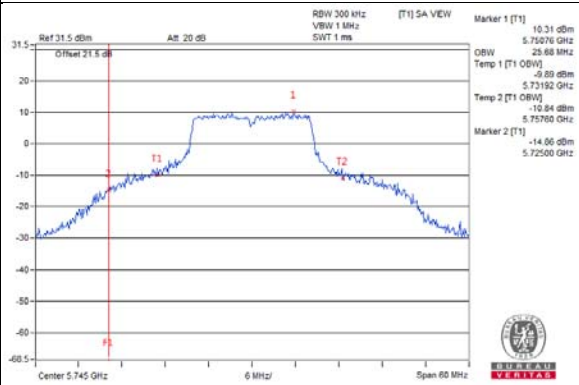


802.11n (HT40) / CH46

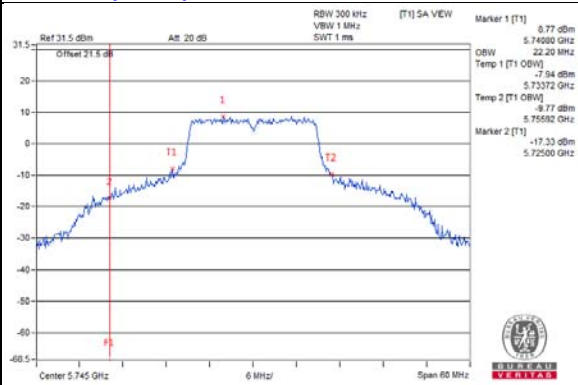


**Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)**

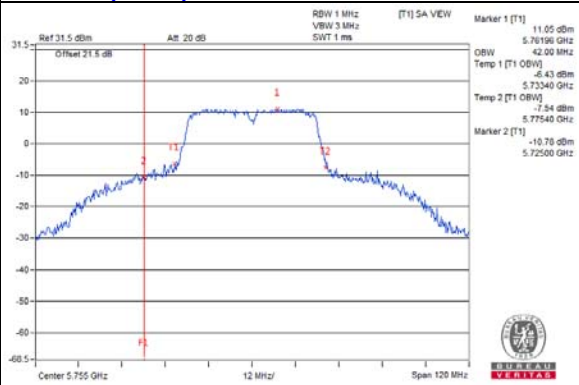
802.11a / CH149



802.11n (HT20) / CH149



802.11n (HT40) / CH151

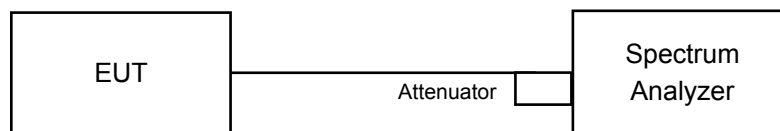


4.5 Peak Power Spectral Density Measurement

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 band:

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)	PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
36	5180	0.93	0.59	1.52	11	Pass
40	5200	2.92	0.59	3.51	11	Pass
48	5240	-0.40	0.59	0.19	11	Pass
52	5260	2.70	0.59	3.29	11	Pass
60	5300	3.15	0.59	3.74	11	Pass
64	5320	-0.01	0.59	0.58	11	Pass
100	5500	0.97	0.59	1.56	11	Pass
116	5580	1.42	0.59	2.01	11	Pass
140	5700	-0.46	0.59	0.13	11	Pass

Note: 1. The max gain is 4.48dBi < 6dBi, so the power density limit shall not be reduced.
 2. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
36	5180	-0.76	0.61	-0.15	11	Pass
40	5200	-0.05	0.61	0.56	11	Pass
48	5240	-0.67	0.61	-0.06	11	Pass
52	5260	0.10	0.61	0.71	11	Pass
60	5300	0.29	0.61	0.90	11	Pass
64	5320	-1.14	0.61	-0.53	11	Pass
100	5500	0.09	0.61	0.70	11	Pass
116	5580	1.18	0.61	1.79	11	Pass
140	5700	-1.52	0.61	-0.91	11	Pass

Note: 1. The max gain is 4.48dBi < 6dBi, so the power density limit shall not be reduced.
 2. Refer to section 3.3 for duty cycle spectrum plot.

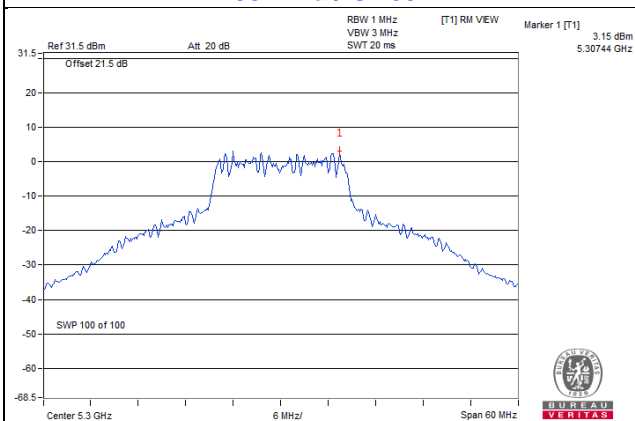
802.11n (HT40)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
38	5190	-11.87	1.24	-10.63	11	Pass
46	5230	-6.90	1.24	-5.66	11	Pass
54	5270	-6.62	1.24	-5.38	11	Pass
62	5310	-11.90	1.24	-10.66	11	Pass
102	5510	-7.44	1.24	-6.20	11	Pass
110	5550	-4.55	1.24	-3.31	11	Pass
134	5670	-7.45	1.24	-6.21	11	Pass

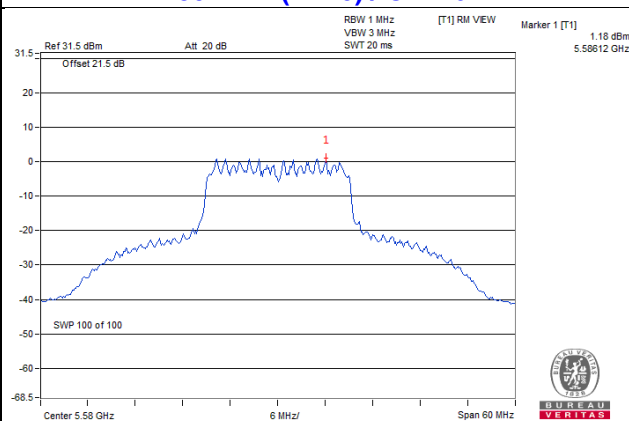
Note: 1. The max gain is 4.48dBi < 6dBi, so the power density limit shall not be reduced.
 2. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

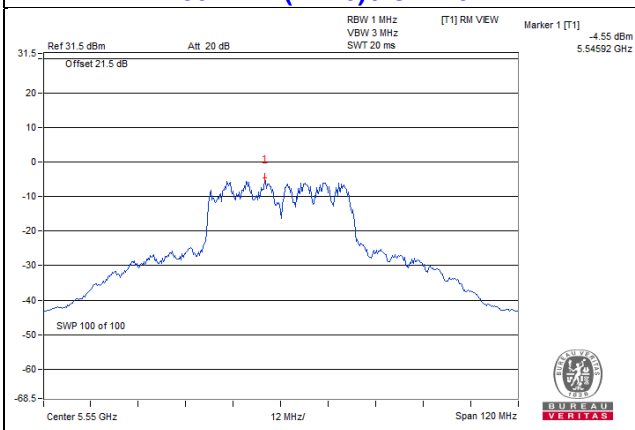
802.11a / CH60



802.11n (HT20) / CH116



802.11n (HT40) / CH110



For U-NII-3:

802.11a

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
149	5745	-5.86	0.59	-5.27	-3.05	30	Pass
157	5785	-5.69	0.59	-5.10	-2.88	30	Pass
165	5825	-6.50	0.59	-5.91	-3.69	30	Pass

Note: 1. The antenna gain is 4.48dBi < 6dBi, so the power density limit shall not be reduced.
 2. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
149	5745	-8.14	0.61	-7.53	-5.31	30	Pass
157	5785	-8.91	0.61	-8.29	-6.07	30	Pass
165	5825	-8.12	0.61	-7.51	-5.29	30	Pass

Note: 1. The antenna gain is 4.48dBi < 6dBi, so the power density limit shall not be reduced.
 2. Refer to section 3.3 for duty cycle spectrum plot.

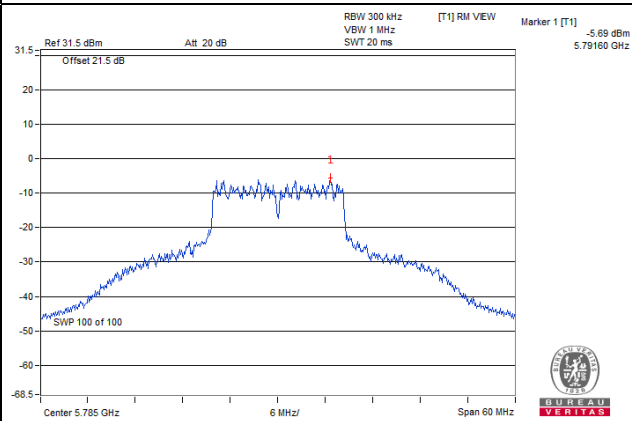
802.11n (HT40)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
151	5755	-11.61	1.24	-10.37	-8.15	30	Pass
159	5795	-14.51	1.24	-13.27	-11.05	30	Pass

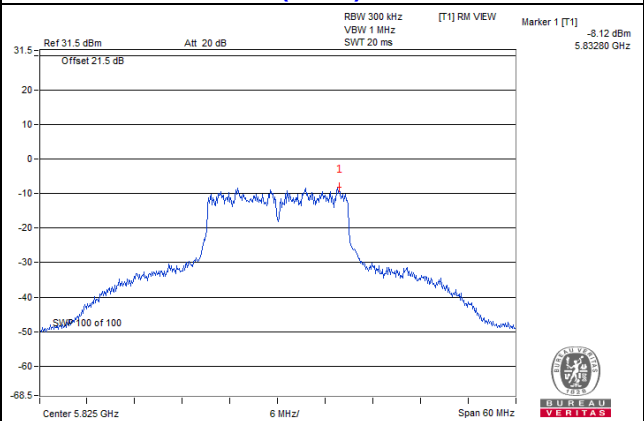
Note: 1. The antenna gain is 4.48dBi < 6dBi, so the power density limit shall not be reduced.
 2. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

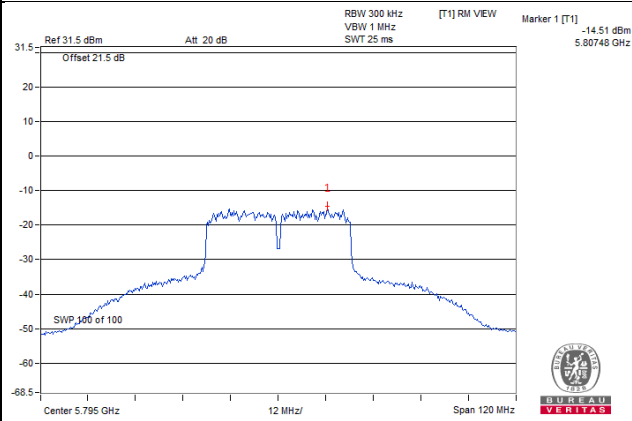
802.11a / CH157



802.11n (HT20) / CH165



802.11n (HT40) / CH151

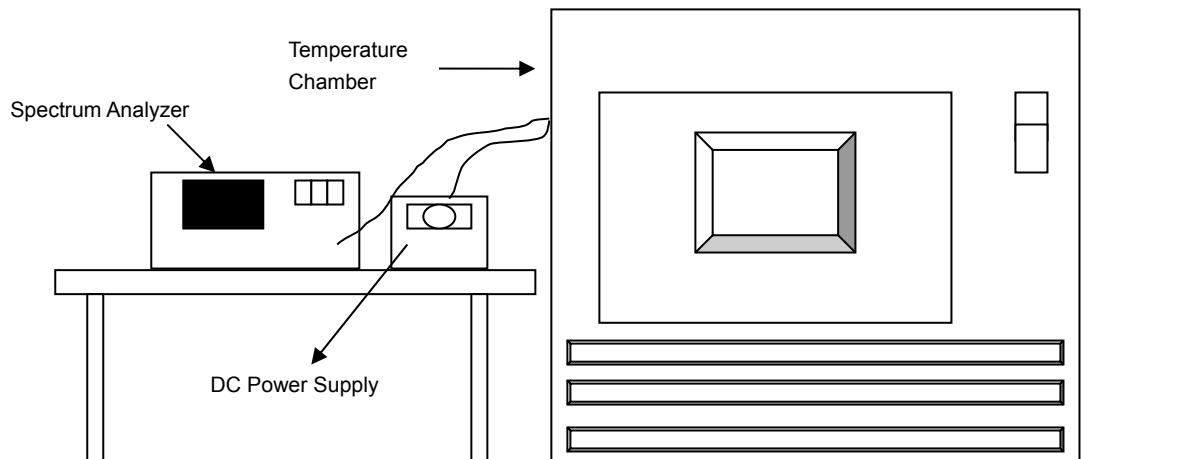


4.6 Frequency Stability Measurement

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 DC 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 (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
50	3.8	5179.9737	Pass	5179.9739	Pass	5179.9727	Pass	5179.976	Pass
40	3.8	5180.0206	Pass	5180.0221	Pass	5180.0234	Pass	5180.0226	Pass
30	3.8	5180.0018	Pass	5179.9993	Pass	5180.0009	Pass	5179.9997	Pass
20	3.8	5179.9807	Pass	5179.9829	Pass	5179.9801	Pass	5179.9792	Pass
10	3.8	5180.0192	Pass	5180.0196	Pass	5180.0208	Pass	5180.024	Pass
0	3.8	5179.9813	Pass	5179.9792	Pass	5179.9831	Pass	5179.9786	Pass
-10	3.8	5180.0065	Pass	5180.0057	Pass	5180.0043	Pass	5180.0057	Pass
-20	3.8	5180.0244	Pass	5180.027	Pass	5180.0266	Pass	5180.0234	Pass
-30	3.8	5179.9788	Pass	5179.9828	Pass	5179.9834	Pass	5179.9784	Pass

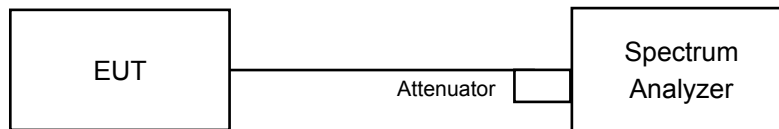
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	4.37	5179.9811	Pass	5179.9831	Pass	5179.98	Pass	5179.9782	Pass
	3.8	5179.9807	Pass	5179.9829	Pass	5179.9801	Pass	5179.9792	Pass
	3.23	5179.9809	Pass	5179.982	Pass	5179.9793	Pass	5179.9786	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)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.40	0.5	Pass
157	5785	16.41	0.5	Pass
165	5825	16.41	0.5	Pass

802.11n (HT20)

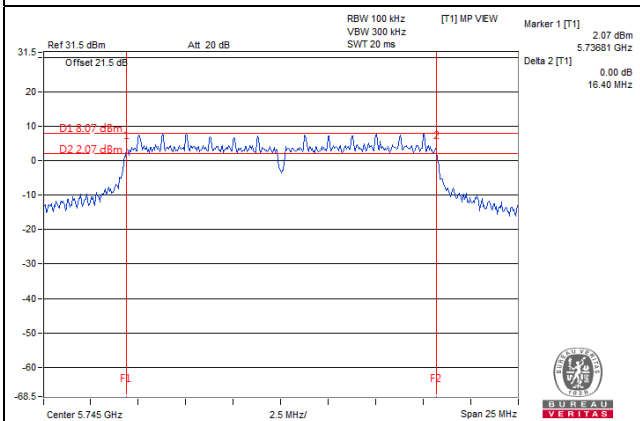
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	17.65	0.5	Pass
157	5785	17.64	0.5	Pass
165	5825	17.63	0.5	Pass

802.11n (HT40)

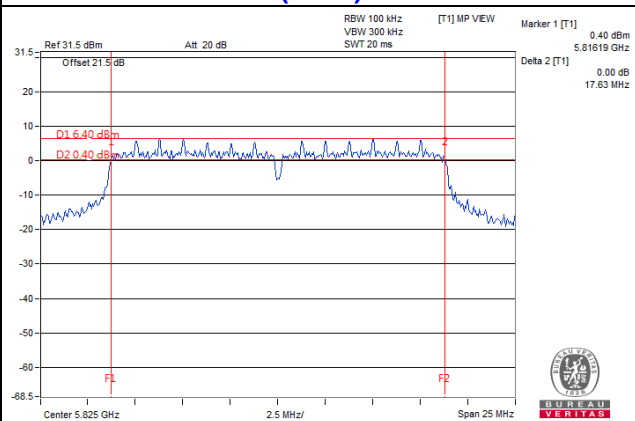
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	35.35	0.5	Pass
159	5795	35.35	0.5	Pass

Spectrum Plot of Worst Value

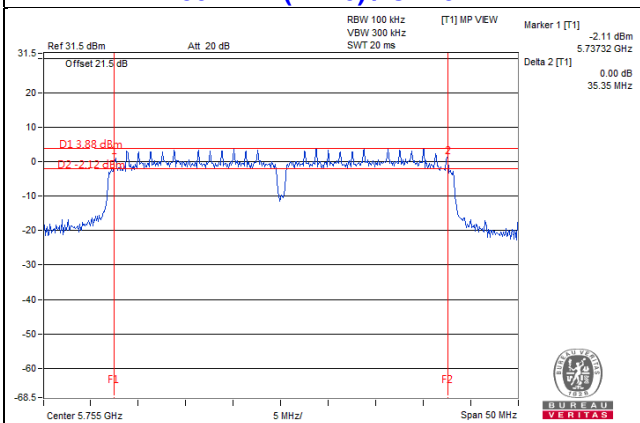
802.11a / CH149



802.11n (HT20) / CH165



802.11n (HT40) / CH151



5 Pictures of Test Arrangements

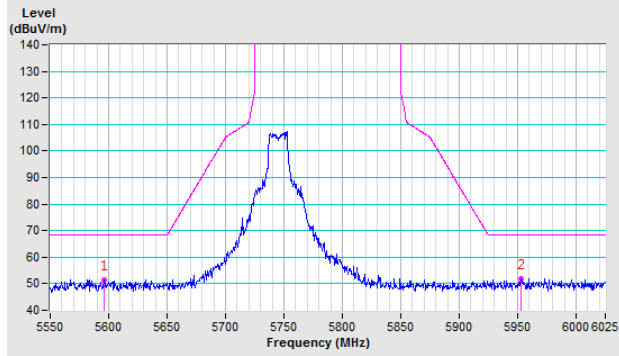
Please refer to the attached file (Test Setup Photo).

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

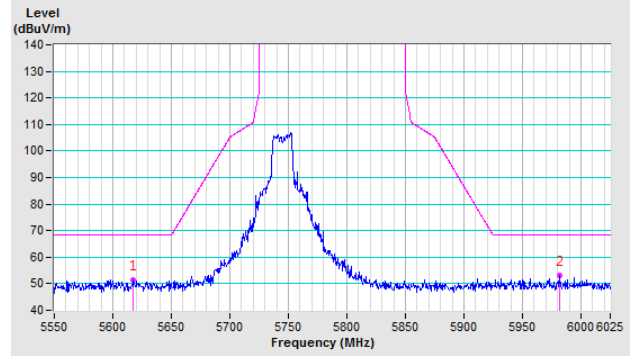
802.11a

CH 149 5745 MHz

Horizontal

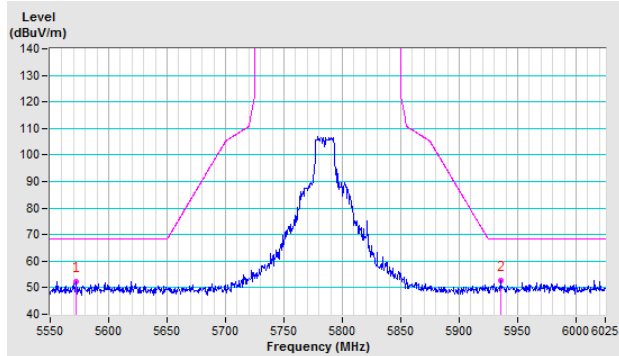


Vertical

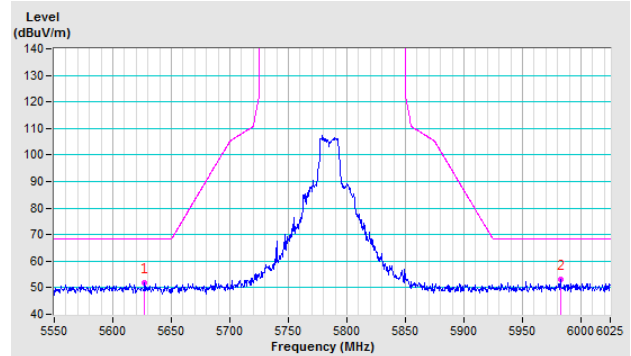


CH 157 5785 MHz

Horizontal

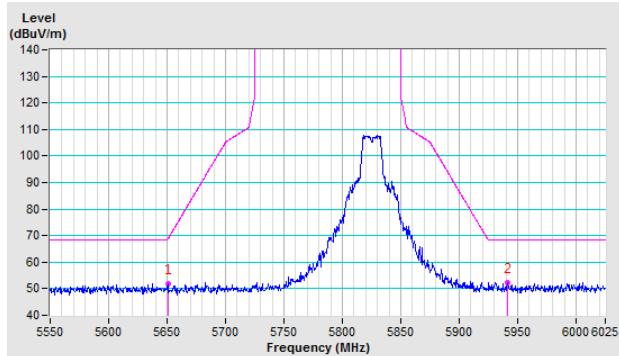


Vertical

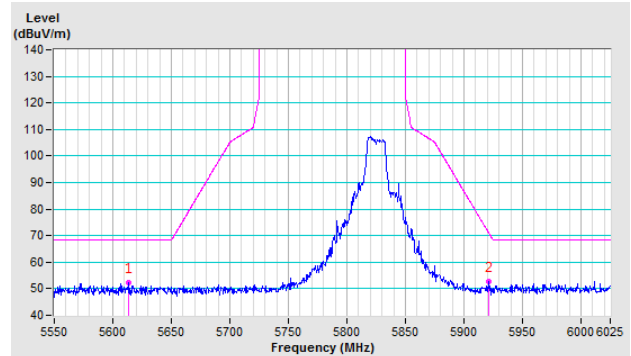


CH 165 5825 MHz

Horizontal



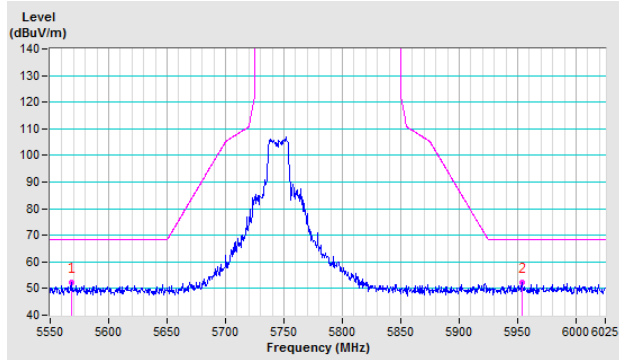
Vertical



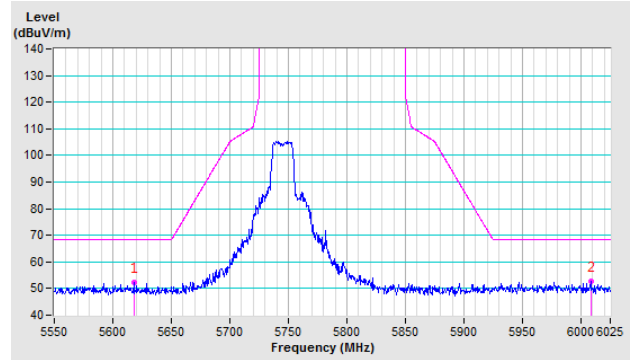
802.11n (HT20)

CH 149 5745 MHz

Horizontal

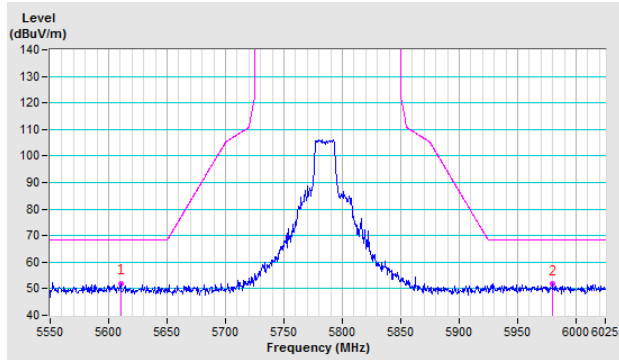


Vertical

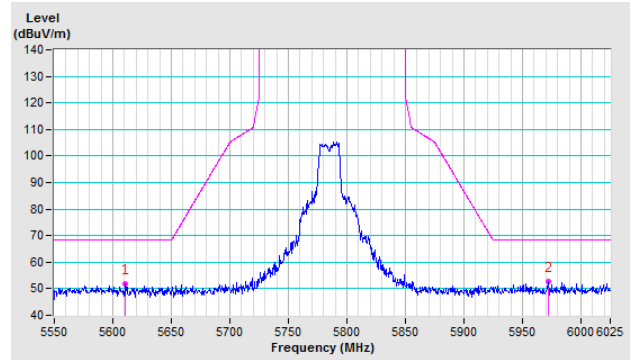


CH 157 5785 MHz

Horizontal

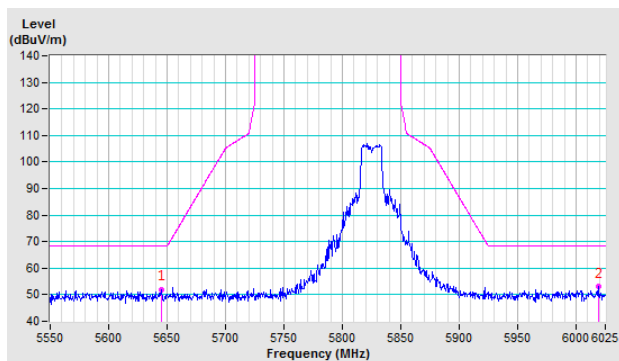


Vertical

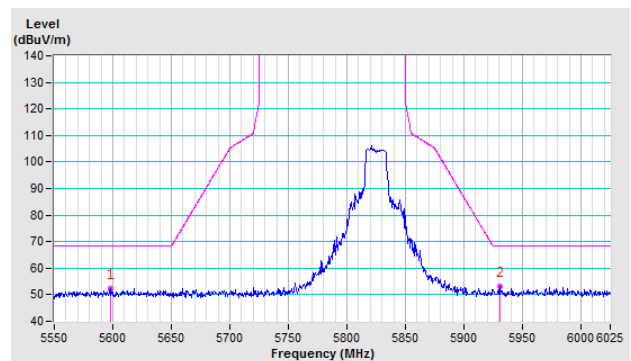


CH 165 5825 MHz

Horizontal



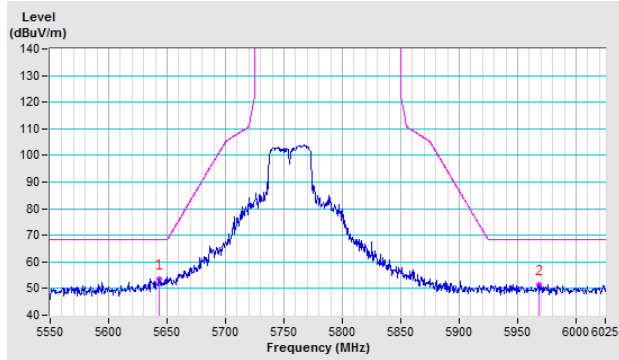
Vertical



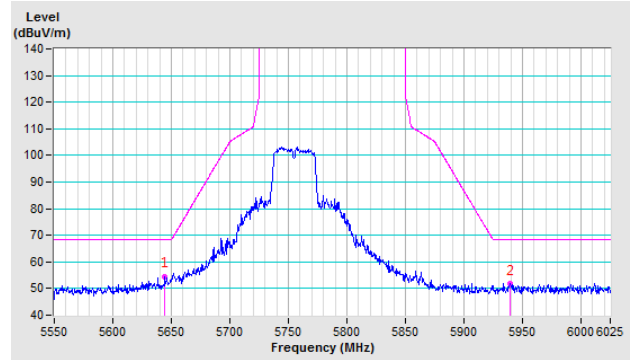
802.11n (HT40)

CH 151 5755 MHz

Horizontal

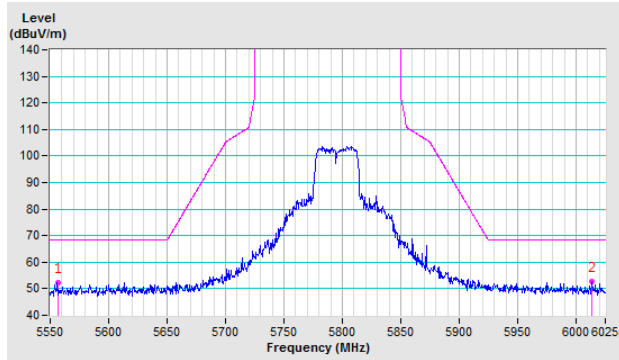


Vertical

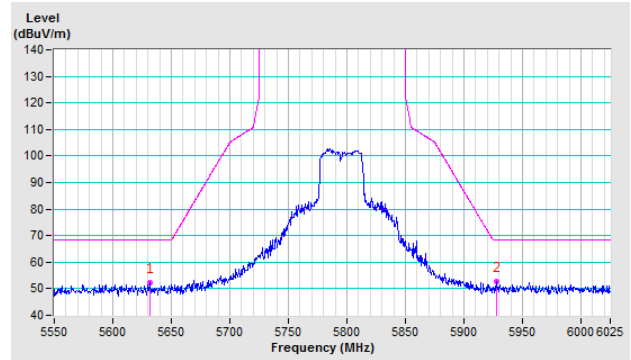


CH 159 5795 MHz

Horizontal



Vertical



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:

Lin Kou EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

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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