

FCC Test Report

Report No.: RF180717C29-5

FCC ID: LY5-PCITP1

Test Model: PCI-TP1

Received Date: Jul. 17, 2018

Test Date: Mar. 04, 2019 ~ Mar. 11, 2019

Issued Date: Mar. 27, 2019

Applicant: PCI Private Limited

Address: 35 Pioneer Rd North, Singapore 628475

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

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
(R.O.C)

Test Location: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan
Hsien 333, Taiwan, R.O.C.

**FCC Registration /
Designation Number:** 788550 / TW0003



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

Table of Contents

Release Control Record	4
1 Certificate of Conformity	5
2 Summary of Test Results	6
2.1 Measurement Uncertainty	6
2.2 Modification Record	6
3 General Information	7
3.1 General Description of EUT	7
3.2 Description of Test Modes	8
3.2.1 Test Mode Applicability and Tested Channel Detail	10
3.3 Duty Cycle of Test Signal	12
3.4 Description of Support Units	13
3.4.1 Configuration of System under Test	13
3.5 General Description of Applied Standards	13
4 Test Types and Results	14
4.1 Radiated Emission and Bandedge Measurement	14
4.1.1 Limits of Radiated Emission and Bandedge Measurement	14
4.1.2 Limits of Unwanted Emission Out of the Restricted Bands	15
4.1.3 Test Instruments	16
4.1.4 Test Procedures	18
4.1.5 Deviation from Test Standard	19
4.1.6 Test Setup	19
4.1.7 EUT Operating Conditions	20
4.1.8 Test Results	21
4.2 Conducted Emission Measurement	56
4.2.1 Limits of Conducted Emission Measurement	56
4.2.2 Test Instruments	56
4.2.3 Test Procedures	57
4.2.4 Deviation from Test Standard	57
4.2.5 Test Setup	57
4.2.6 EUT Operating Conditions	57
4.2.7 Test Results	58
4.3 Transmit Power Measurement	60
4.3.1 Limits of Transmit Power Measurement	60
4.3.2 Test Setup	60
4.3.3 Test Instruments	61
4.3.4 Test Procedure	61
4.3.5 Deviation from Test Standard	61
4.3.6 EUT Operating Conditions	61
4.3.7 Test Results	62
4.4 Occupied Bandwidth Measurement	67
4.4.1 Test Setup	67
4.4.2 Test Instruments	67
4.4.3 Test Procedure	67
4.4.4 Test Results	68
4.5 Peak Power Spectral Density Measurement	70
4.5.1 Limits of Peak Power Spectral Density Measurement	70
4.5.2 Test Setup	70
4.5.3 Test Instruments	70
4.5.4 Test Procedures	70
4.5.5 Deviation from Test Standard	71
4.5.6 EUT Operating Conditions	71
4.5.7 Test Results	72
4.6 Frequency Stability	76

4.6.1	Limit of Frequency Stability Measurement	76
4.6.2	Test Setup	76
4.6.3	Test Instruments	76
4.6.4	Test Procedure	76
4.6.5	Deviation from Test Standard	76
4.6.6	EUT Operating Condition	76
4.6.7	Test Results	77
4.7	6 dB Bandwidth Measurement.....	78
4.7.1	Limits of 6 dB Bandwidth Measurement.....	78
4.7.2	Test Setup.....	78
4.7.3	Test Instruments	78
4.7.4	Test Procedure	78
4.7.5	Deviation from Test Standard	78
4.7.6	EUT Operating Condition	78
4.7.7	Test Results	79
5	Pictures of Test Arrangements.....	81
	Appendix – Information of the Testing Laboratories	82

Release Control Record


Issue No.	Description	Date Issued
RF180717C29-5	Original Release	Mar. 27, 2019

1 Certificate of Conformity

Product: Telematics Platform 1
Brand: PCI
Test Model: PCI-TP1
Sample Status: Production Unit
Applicant: PCI Private Limited
Test Date: Mar. 04, 2019 ~ Mar. 11, 2019
Standards: 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 RF characteristics under the conditions specified in this report.

Prepared by :  , Date: Mar. 27, 2019
Lena Wang / Specialist

Approved by :  , Date: Mar. 27, 2019
Dylan Chiou / Project Engineer

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 -23.32 dB at 0.16562 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 -0.4 dB at 11570.00, 11650.00, 11490.00 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)	6 dB 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 MCX not a standard connector.

Note:

- For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB test plots were recorded in Annex A.
- 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	150 kHz ~ 30 MHz	2.44 dB
Radiated Emissions up to 1 GHz	9 kHz ~ 30 MHz	3.04 dB
	30 MHz ~ 200 MHz	2.93 dB
	200 MHz ~ 1000 MHz	2.95 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Telematics Platform 1
Brand	PCI
Test Model	PCI-TP1
Status of EUT	Production Unit
Power Supply Rating	12 or 24 Vdc (DC Power Supply)
Modulation Type	64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0 Mbps 802.11n: up to 150.0 Mbps
Operating Frequency	5180 ~ 5240 MHz, 5260 ~ 5320 MHz, 5500 ~ 5700 MHz, 5745 ~ 5825 MHz
Number of Channel	5180 ~ 5240 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 5260 ~ 5320 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 5500 ~ 5700 MHz: 11 for 802.11a, 802.11n (HT20) 5 for 802.11n (HT40) 5745 ~ 5825 MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)
Output Power	44.157 mW for 5180 ~ 5240 MHz 45.394 mW for 5260 ~ 5320 MHz 33.42 mW for 5500 ~ 5700 MHz 25.882 mW for 5745 ~ 5825 MHz
Antenna Type	Flex antenna with 4.3 dBi gain (5180 ~ 5240 MHz) Flex antenna with 4.14 dBi gain (5260 ~ 5320 MHz) Flex antenna with 3.62 dBi gain (5500 ~ 5700 MHz) Flex antenna with 4.16 dBi gain (5745 ~ 5825 MHz)
Antenna Connector	N/A
Accessory Device	N/A
Data Cable Supplied	N/A

Note:

- The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

Modulation Mode	Tx Function
802.11a	1TX
802.11n (HT20)	1TX
802.11n (HT40)	1TX

- 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 ~ 5240 MHz

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230

For 5260 ~ 5320 MHz

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
54	5270	62	5310

For 5500 ~ 5700 MHz

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

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

5 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
102	5510	126	5630
110	5550	134	5670
118	5590		

For 5745 ~ 5825 MHz:

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795

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

Note:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane**.
2. "-" means no effect.

Radiated Emission Test (Above 1 GHz):

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-		802.11n (HT20)	36 to 48	36, 40, 48	OFDM	BPSK	6.5
-		802.11n (HT40)	38 to 46	38, 46	38, 46	OFDM	BPSK
-	5260-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-		802.11n (HT20)	52 to 64	52, 60, 64	OFDM	BPSK	6.5
-		802.11n (HT40)	54 to 62	54, 62	54, 62	OFDM	BPSK
-	5500-5700	802.11a	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-		802.11n (HT20)	100 to 140	100, 116, 140	OFDM	BPSK	6.5
-		802.11n (HT40)	102 to 134	102, 110, 134	102, 110, 134	OFDM	BPSK
-	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-		802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
-		802.11n (HT40)	151 to 159	151, 159	151, 159	OFDM	BPSK

Radiated Emission Test (Below 1 GHz):

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5745-5825	802.11n (HT20)	149 to 165	149	OFDM	BPSK	6.5

Power Line Conducted Emission Test:

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5745-5825	802.11n (HT20)	149 to 165	149	OFDM	BPSK	6.5

Antenna Port Conducted Measurement:

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-		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
-	5260-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-		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
-	5500-5700	802.11a	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-		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
-	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-		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	25 deg. C, 65 % RH	12 Vdc	Adair Peng
RE $<$ 1G	25 deg. C, 65 % RH	12 Vdc	Adair Peng
PLC	25 deg. C, 65 % RH	12 Vdc	Adair Peng
APCM	25 deg. C, 65 % RH	12 Vdc	Gavin Wu

3.3 Duty Cycle of Test Signal

MODULATION TYPE: BPSK

Duty cycle of test signal is $\geq 98\%$, duty factor is not required.

Duty cycle of test signal is $< 98\%$, duty factor is required.

802.11a: Duty cycle = $1.392/1.407 = 0.989$

802.11n (HT20): Duty cycle = $1.297/1.337 = 0.97$, Duty factor = $10 * \log(1/0.97) = 0.13$

802.11n (HT40): Duty cycle = $0.642/0.675 = 0.951$, Duty factor = $10 * \log(1/0.951) = 0.22$



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.

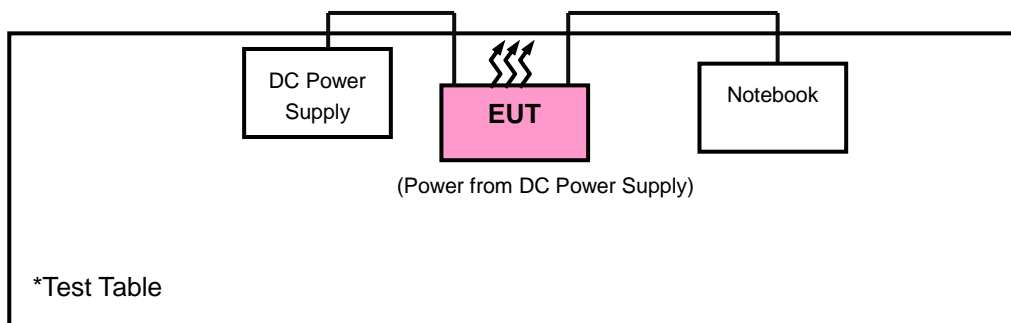
No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	Notebook	Lenovo	81A4	YD02TWF5	PPD-QCNFA435
2.	DC Power Supply	Topward	33010D	807748	N/A

No.	Signal Cable Description Of The Above Support Units
1.	LAN Cable: 1.2m
2.	DC Power Cable: 1.5m

Note:

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

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards

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 Procedures 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 1000 MHz, 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 20 dB under any condition of modulation.

4.1.2 Limits of Unwanted Emission Out of the Restricted Bands

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

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

4.1.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY51210203	Mar. 16, 2018	Mar. 15, 2019
Spectrum Analyzer Agilent	N9010A	MY52220314	Dec. 13, 2018	Dec. 12, 2019
Spectrum Analyzer ROHDE & SCHWARZ	FSW26	102023	Oct. 11, 2018	Oct. 10, 2019
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Nov. 25, 2018	Nov. 24, 2019
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Nov. 23, 2018	Nov. 22, 2019
HORN Antenna SCHWARZBECK	BBHA 9170	148	Nov. 25, 2018	Nov. 24, 2019
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 16, 2018	Apr. 15, 2019
MXG Vector signal generator Agilent	N5182B	MY53050430	Nov. 19, 2018	Nov. 18, 2019
Preamplifier EMCI	EMC 012645	980115	Oct. 12, 2018	Oct. 11, 2019
Preamplifier EMCI	EMC001340	980201	Oct. 12, 2018	Oct. 11, 2019
Preamplifier EMCI	EMC 330H	980112	Oct. 12, 2018	Oct. 11, 2019
Preamplifier EMCI	EMC 184045	980116	Oct. 12, 2018	Oct. 11, 2019
RF Coaxial Cable HUBER+SUHNNER	EMC104-SM-SM- 8000&3000	140811+170717	Oct. 12, 2018	Oct. 11, 2019
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM- 1000(140807)	Oct. 12, 2018	Oct. 11, 2019
RF Coaxial Cable WOKEN	8D-FB	Cable-Ch10-01	Oct. 12, 2018	Oct. 11, 2019
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
Communications Tester- Wireless Agilent	8960 Series 10	MY53201073	Jun. 28, 2017	Jun. 27, 2019
Temperature & Humidity Chamber	GTH-120-40-CP-AR	MAA1306-019	Sep. 05, 2018	Sep. 04, 2019
DC Power Supply Topward	33010D	807748	NA	NA
Digital Multimeter Fluke	87-III	70360742	Jun. 29, 2017	Jun. 28, 2019

- Note:
1. The calibration interval of the above test instruments is 12 / 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 10.
 3. The horn antenna and preamplifier (model: EMC 184045) are used only for the measurement of emission frequency above 1 GHz if tested.
 4. The IC Site Registration No. is 7450F-10.

4.1.4 Test Procedures

For Radiated Emission below 30 MHz

- 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. Both 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 9 kHz at frequency below 30 MHz.

For Radiated Emission above 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30 MHz ~ 1 GHz) / 1.5 meters (for above 1 GHz) 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 detected 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:

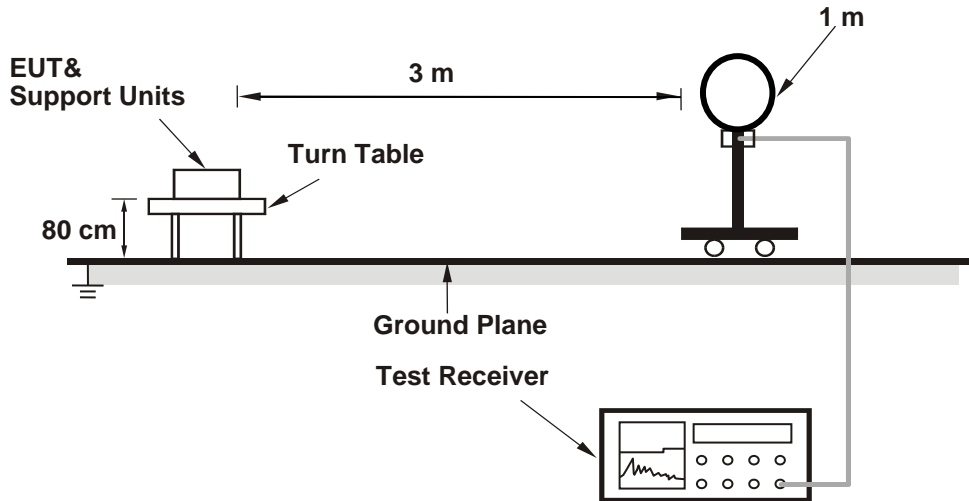
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98 %) or 10 Hz (Duty cycle \geq 98 %) for Average detection (AV) at frequency above 1 GHz.
(11a: RBW = 1 MHz, VBW = 100 Hz ; 11n (HT20): RBW = 1 MHz, VBW = 1 kHz ;
11n (HT40): RBW = 1 MHz, VBW = 3 kHz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 Deviation from Test Standard

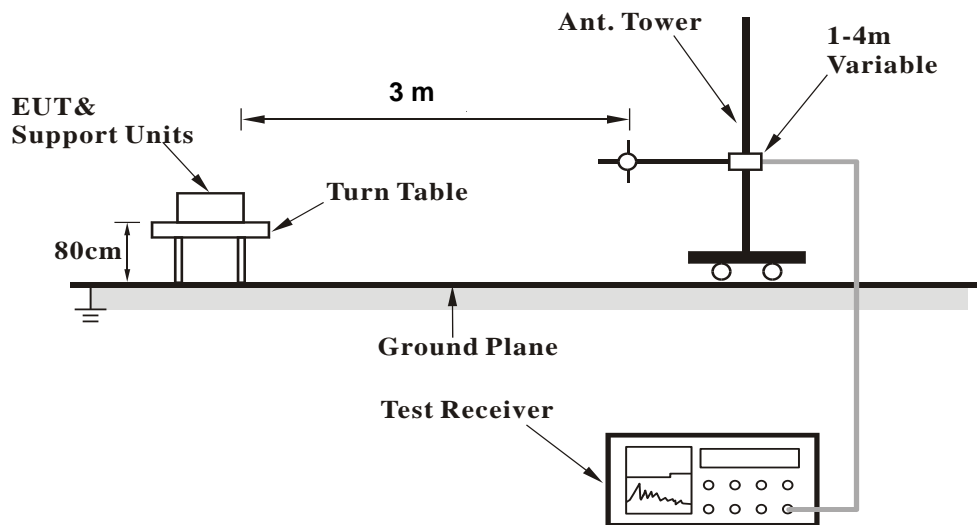
No deviation.

4.1.6 Test Setup

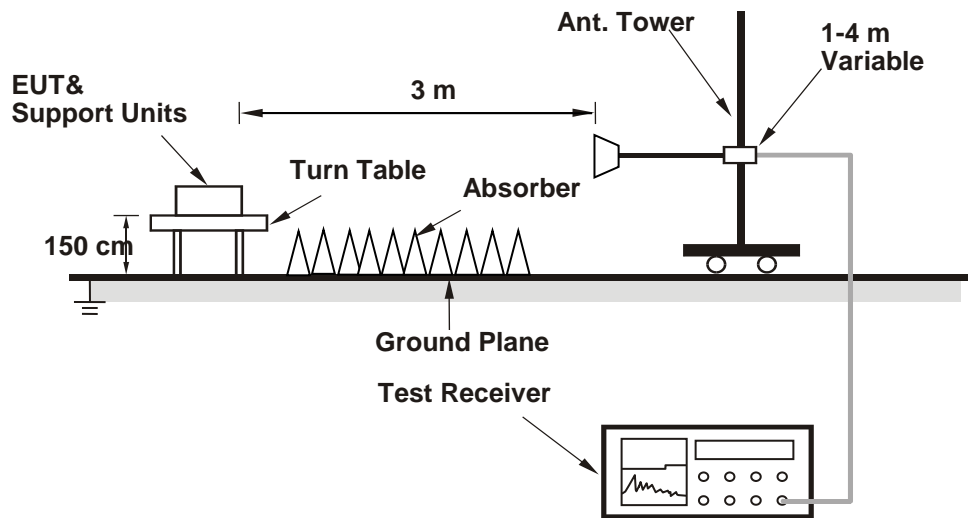
<Radiated Emission below 30 MHz>



<Radiated Emission 30 MHz to 1 GHz>



<Radiated Emission above 1 GHz>



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

4.1.7 EUT Operating Conditions

- Placed the EUT on a testing table.
- Use the software to control the EUT under transmission condition continuously at specific channel frequency.

4.1.8 Test Results

Above 1 GHz 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	69.9 PK	74.0	-4.1	2.17 H	338	66.0	3.9
2	5150.00	48.0 AV	54.0	-6.0	2.17 H	338	44.1	3.9
3	*5180.00	107.4 PK			2.28 H	347	67.9	39.5
4	*5180.00	96.2 AV			2.28 H	347	56.7	39.5
5	#10360.00	61.7 PK	68.2	-6.5	2.34 H	119	45.9	15.8

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	5150.00	70.9 PK	74.0	-3.1	1.09 V	50	67.0	3.9
2	5150.00	48.9 AV	54.0	-5.1	1.09 V	50	45.0	3.9
3	*5180.00	109.1 PK			1.00 V	57	69.6	39.5
4	*5180.00	98.1 AV			1.00 V	57	58.6	39.5
5	#10360.00	63.6 PK	68.2	-4.6	1.52 V	96	47.8	15.8

REMARKS:

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

CHANNEL	TX Channel 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	107.1 PK			2.11 H	337	67.6	39.5
2	*5200.00	96.5 AV			2.11 H	337	57.0	39.5
3	#10400.00	58.5 PK	68.2	-9.7	1.32 H	291	42.6	15.9

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	*5200.00	109.0 PK			1.05 V	59	69.5	39.5
2	*5200.00	99.0 AV			1.05 V	59	59.5	39.5
3	#10400.00	63.7 PK	68.2	-4.5	1.51 V	92	47.8	15.9

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 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	106.3 PK			2.02 H	345	67.0	39.3
2	*5240.00	95.9 AV			2.02 H	345	56.6	39.3
3	5350.00	57.4 PK	74.0	-16.6	1.28 H	295	53.5	3.9
4	5350.00	44.2 AV	54.0	-9.8	1.28 H	295	40.3	3.9
5	#10480.00	59.1 PK	68.2	-9.1	1.36 H	258	42.3	16.8

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	108.7 PK			1.00 V	56	69.4	39.3
2	*5240.00	98.7 AV			1.00 V	56	59.4	39.3
3	5350.00	57.9 PK	74.0	-16.1	1.22 V	103	54.0	3.9
4	5350.00	44.9 AV	54.0	-9.1	1.22 V	103	41.0	3.9
5	#10480.00	66.0 PK	68.2	-2.2	1.50 V	88	49.2	16.8

REMARKS:

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

CHANNEL	TX Channel 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	59.2 PK	74.0	-14.8	1.85 H	319	55.3	3.9
2	5150.00	46.1 AV	54.0	-7.9	1.85 H	319	42.2	3.9
3	*5260.00	107.1 PK			2.08 H	342	67.8	39.3
4	*5260.00	95.9 AV			2.08 H	342	56.6	39.3
5	#10520.00	59.3 PK	68.2	-8.9	1.08 H	302	42.4	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	5150.00	61.2 PK	74.0	-12.8	1.23 V	32	57.3	3.9
2	5150.00	46.1 AV	54.0	-7.9	1.23 V	32	42.2	3.9
3	*5260.00	109.7 PK			1.03 V	60	70.4	39.3
4	*5260.00	98.5 AV			1.03 V	60	59.2	39.3
5	#10520.00	66.8 PK	68.2	-1.4	1.66 V	79	49.9	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 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	108.0 PK			2.09 H	344	68.7	39.3
2	*5300.00	97.1 AV			2.09 H	344	57.8	39.3
3	10600.00	61.5 PK	74.0	-12.5	1.21 H	261	44.5	17.0
4	10600.00	47.6 AV	54.0	-6.4	1.21 H	261	30.6	17.0

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	110.7 PK			1.00 V	61	71.4	39.3
2	*5300.00	99.9 AV			1.00 V	61	60.6	39.3
3	10600.00	68.4 PK	74.0	-5.6	1.65 V	80	51.4	17.0
4	10600.00	53.5 AV	54.0	-0.5	1.65 V	80	36.5	17.0

REMARKS:

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

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	106.7 PK			2.04 H	339	67.4	39.3
2	*5320.00	95.7 AV			2.04 H	339	56.4	39.3
3	5350.00	67.9 PK	74.0	-6.1	1.84 H	337	64.0	3.9
4	5350.00	46.5 AV	54.0	-7.5	1.84 H	337	42.6	3.9
5	10640.00	60.8 PK	74.0	-13.2	1.34 H	271	43.8	17.0
6	10640.00	46.6 AV	54.0	-7.4	1.34 H	271	29.6	17.0

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	109.1 PK			1.05 V	60	69.8	39.3
2	*5320.00	98.5 AV			1.05 V	60	59.2	39.3
3	5350.00	73.2 PK	74.0	-0.8	1.03 V	58	69.3	3.9
4	5350.00	49.8 AV	54.0	-4.2	1.03 V	58	45.9	3.9
5	10640.00	67.2 PK	74.0	-6.8	1.59 V	78	50.2	17.0
6	10640.00	52.5 AV	54.0	-1.5	1.59 V	78	35.5	17.0

REMARKS:

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

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	59.6 PK	74.0	-14.4	1.81 H	350	55.5	4.1
2	5460.00	44.8 AV	54.0	-9.2	1.81 H	350	40.7	4.1
3	#5470.00	64.0 PK	68.2	-4.2	1.91 H	333	59.9	4.1
4	*5500.00	105.3 PK			1.75 H	346	65.5	39.8
5	*5500.00	94.7 AV			1.75 H	346	54.9	39.8
6	11000.00	64.6 PK	74.0	-9.4	1.88 H	351	46.2	18.4
7	11000.00	50.0 AV	54.0	-4.0	1.88 H	351	31.6	18.4

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	5460.00	59.8 PK	74.0	-14.2	1.04 V	62	55.7	4.1
2	5460.00	45.1 AV	54.0	-8.9	1.04 V	62	41.0	4.1
3	#5470.00	67.1 PK	68.2	-1.1	1.02 V	60	63.0	4.1
4	*5500.00	108.3 PK			1.04 V	60	68.5	39.8
5	*5500.00	97.7 AV			1.04 V	60	57.9	39.8
6	11000.00	67.7 PK	74.0	-6.3	1.20 V	83	49.3	18.4
7	11000.00	52.2 AV	54.0	-1.8	1.20 V	83	33.8	18.4

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 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	105.4 PK			1.89 H	346	65.6	39.8
2	*5580.00	94.6 AV			1.89 H	346	54.8	39.8
3	11160.00	67.2 PK	74.0	-6.8	1.95 H	349	49.7	17.5
4	11160.00	52.0 AV	54.0	-2.0	1.95 H	349	34.5	17.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	107.5 PK			1.05 V	57	67.7	39.8
2	*5580.00	97.0 AV			1.05 V	57	57.2	39.8
3	11160.00	68.9 PK	74.0	-5.1	2.10 V	47	51.4	17.5
4	11160.00	52.7 AV	54.0	-1.3	2.10 V	47	35.2	17.5

REMARKS:

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

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	105.5 PK			1.85 H	355	65.7	39.8
2	*5700.00	94.7 AV			1.85 H	355	54.9	39.8
3	#5725.00	65.2 PK	68.2	-3.0	1.69 H	345	60.8	4.4
4	11400.00	66.5 PK	74.0	-7.5	1.90 H	347	49.2	17.3
5	11400.00	50.5 AV	54.0	-3.5	1.90 H	347	33.2	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	*5700.00	106.4 PK			1.71 V	61	66.6	39.8
2	*5700.00	95.5 AV			1.71 V	61	55.7	39.8
3	#5725.00	67.6 PK	68.2	-0.6	1.70 V	61	63.2	4.4
4	11400.00	65.1 PK	74.0	-8.9	1.23 V	101	47.8	17.3
5	11400.00	49.8 AV	54.0	-4.2	1.23 V	101	32.5	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 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	*5745.00	108.3 PK			1.82 H	359	68.2	40.1
2	*5745.00	97.2 AV			1.82 H	359	57.1	40.1
3	11490.00	68.4 PK	74.0	-5.6	1.70 H	346	50.8	17.6
4	11490.00	53.1 AV	54.0	-0.9	1.70 H	346	35.5	17.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5745.00	108.7 PK			1.07 V	72	68.6	40.1
2	*5745.00	97.8 AV			1.07 V	72	57.7	40.1
3	11490.00	69.1 PK	74.0	-4.9	1.07 V	56	51.5	17.6
4	11490.00	53.3 AV	54.0	-0.7	1.07 V	56	35.7	17.6

REMARKS:

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

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	*5785.00	107.3 PK			1.79 H	357	67.0	40.3
2	*5785.00	96.2 AV			1.79 H	357	55.9	40.3
3	11570.00	68.7 PK	74.0	-5.3	1.91 H	350	51.2	17.5
4	11570.00	53.2 AV	54.0	-0.8	1.91 H	350	35.7	17.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	107.7 PK			1.11 V	72	67.4	40.3
2	*5785.00	96.6 AV			1.11 V	72	56.3	40.3
3	11570.00	69.2 PK	74.0	-4.8	1.05 V	76	51.7	17.5
4	11570.00	53.6 AV	54.0	-0.4	1.05 V	76	36.1	17.5

REMARKS:

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

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	*5825.00	104.9 PK			2.03 H	4	64.5	40.4
2	*5825.00	94.4 AV			2.03 H	4	54.0	40.4
3	11650.00	69.8 PK	74.0	-4.2	2.03 H	344	52.7	17.1
4	11650.00	53.1 AV	54.0	-0.9	2.03 H	344	36.0	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	*5825.00	106.7 PK			1.04 V	72	66.3	40.4
2	*5825.00	95.7 AV			1.04 V	72	55.3	40.4
3	11650.00	70.3 PK	74.0	-3.7	1.03 V	77	53.2	17.1
4	11650.00	53.6 AV	54.0	-0.4	1.03 V	77	36.5	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.

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	66.4 PK	74.0	-7.6	2.39 H	343	62.5	3.9
2	5150.00	45.8 AV	54.0	-8.2	2.39 H	343	41.9	3.9
3	*5180.00	106.9 PK			2.26 H	342	67.4	39.5
4	*5180.00	96.7 AV			2.26 H	342	57.2	39.5
5	#10360.00	60.0 PK	68.2	-8.2	1.29 H	296	44.2	15.8

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	5150.00	68.7 PK	74.0	-5.3	1.01 V	54	64.8	3.9
2	5150.00	47.5 AV	54.0	-6.5	1.01 V	54	43.6	3.9
3	*5180.00	108.9 PK			1.04 V	58	69.4	39.5
4	*5180.00	98.8 AV			1.04 V	58	59.3	39.5
5	#10360.00	62.4 PK	68.2	-5.8	1.58 V	98	46.6	15.8

REMARKS:

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

CHANNEL	TX Channel 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	105.4 PK			2.26 H	342	65.9	39.5
2	*5200.00	95.4 AV			2.26 H	342	55.9	39.5
3	#10400.00	59.0 PK	68.2	-9.2	1.05 H	304	43.1	15.9

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	*5200.00	107.8 PK			1.08 V	56	68.3	39.5
2	*5200.00	97.8 AV			1.08 V	56	58.3	39.5
3	#10400.00	61.2 PK	68.2	-7.0	1.58 V	90	45.3	15.9

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 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	104.8 PK			2.06 H	338	65.5	39.3
2	*5240.00	94.6 AV			2.06 H	338	55.3	39.3
3	5350.00	56.9 PK	74.0	-17.1	1.89 H	342	53.0	3.9
4	5350.00	43.5 AV	54.0	-10.5	1.89 H	342	39.6	3.9
5	#10480.00	61.4 PK	68.2	-6.8	1.15 H	287	44.6	16.8

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	108.0 PK			1.00 V	58	68.7	39.3
2	*5240.00	97.9 AV			1.00 V	58	58.6	39.3
3	5350.00	58.0 PK	74.0	-16.0	1.11 V	103	54.1	3.9
4	5350.00	44.1 AV	54.0	-9.9	1.11 V	103	40.2	3.9
5	#10480.00	64.1 PK	68.2	-4.1	1.53 V	100	47.3	16.8

REMARKS:

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

CHANNEL	TX Channel 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	58.9 PK	74.0	-15.1	2.13 H	331	55.0	3.9
2	5150.00	45.4 AV	54.0	-8.6	2.13 H	331	41.5	3.9
3	*5260.00	104.7 PK			2.06 H	343	65.4	39.3
4	*5260.00	94.5 AV			2.06 H	343	55.2	39.3
5	#10520.00	60.4 PK	68.2	-7.8	1.11 H	287	43.5	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	5150.00	56.9 PK	74.0	-17.1	1.18 V	25	53.0	3.9
2	5150.00	45.7 AV	54.0	-8.3	1.18 V	25	41.8	3.9
3	*5260.00	107.9 PK			1.05 V	66	68.6	39.3
4	*5260.00	97.6 AV			1.05 V	66	58.3	39.3
5	#10520.00	64.1 PK	68.2	-4.1	1.65 V	81	47.2	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 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	105.5 PK			2.08 H	342	66.2	39.3
2	*5300.00	95.4 AV			2.08 H	342	56.1	39.3
3	10600.00	60.2 PK	74.0	-13.8	1.32 H	281	43.2	17.0
4	10600.00	47.0 AV	54.0	-7.0	1.32 H	281	30.0	17.0

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	108.0 PK			1.00 V	60	68.7	39.3
2	*5300.00	98.2 AV			1.00 V	60	58.9	39.3
3	10600.00	66.3 PK	74.0	-7.7	1.62 V	81	49.3	17.0
4	10600.00	51.8 AV	54.0	-2.2	1.62 V	81	34.8	17.0

REMARKS:

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

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	105.4 PK			2.01 H	343	66.1	39.3
2	*5320.00	94.9 AV			2.01 H	343	55.6	39.3
3	5350.00	66.1 PK	74.0	-7.9	2.26 H	341	62.2	3.9
4	5350.00	46.7 AV	54.0	-7.3	2.26 H	341	42.8	3.9
5	10640.00	61.1 PK	74.0	-12.9	1.31 H	299	44.1	17.0
6	10640.00	46.8 AV	54.0	-7.2	1.31 H	299	29.8	17.0

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	107.8 PK			1.05 V	62	68.5	39.3
2	*5320.00	97.5 AV			1.05 V	62	58.2	39.3
3	5350.00	69.1 PK	74.0	-4.9	1.00 V	60	65.2	3.9
4	5350.00	49.5 AV	54.0	-4.5	1.00 V	60	45.6	3.9
5	10640.00	64.8 PK	74.0	-9.2	1.55 V	75	47.8	17.0
6	10640.00	50.6 AV	54.0	-3.4	1.55 V	75	33.6	17.0

REMARKS:

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

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	58.3 PK	74.0	-15.7	2.10 H	350	54.2	4.1
2	5460.00	44.0 AV	54.0	-10.0	2.10 H	350	39.9	4.1
3	#5470.00	60.1 PK	68.2	-8.1	1.92 H	351	56.0	4.1
4	*5500.00	105.2 PK			2.04 H	349	65.4	39.8
5	*5500.00	94.8 AV			2.04 H	349	55.0	39.8
6	11000.00	65.3 PK	74.0	-8.7	1.89 H	352	46.9	18.4
7	11000.00	50.4 AV	54.0	-3.6	1.89 H	352	32.0	18.4

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	5460.00	60.4 PK	74.0	-13.6	1.07 V	65	56.3	4.1
2	5460.00	45.7 AV	54.0	-8.3	1.07 V	65	41.6	4.1
3	#5470.00	63.6 PK	68.2	-4.6	1.00 V	70	59.5	4.1
4	*5500.00	107.7 PK			1.05 V	69	67.9	39.8
5	*5500.00	98.0 AV			1.05 V	69	58.2	39.8
6	11000.00	67.7 PK	74.0	-6.3	1.62 V	79	49.3	18.4
7	11000.00	52.4 AV	54.0	-1.6	1.62 V	79	34.0	18.4

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 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	105.3 PK			1.91 H	347	65.5	39.8
2	*5580.00	95.1 AV			1.91 H	347	55.3	39.8
3	11160.00	65.8 PK	74.0	-8.2	1.91 H	353	48.3	17.5
4	11160.00	50.7 AV	54.0	-3.3	1.91 H	353	33.2	17.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	108.4 PK			1.03 V	69	68.6	39.8
2	*5580.00	98.3 AV			1.03 V	69	58.5	39.8
3	11160.00	68.0 PK	74.0	-6.0	1.07 V	78	50.5	17.5
4	11160.00	52.8 AV	54.0	-1.2	1.07 V	78	35.3	17.5

REMARKS:

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

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	104.4 PK			1.97 H	349	64.6	39.8
2	*5700.00	93.9 AV			1.97 H	349	54.1	39.8
3	#5725.00	63.2 PK	68.2	-5.0	1.82 H	353	58.8	4.4
4	11400.00	65.4 PK	74.0	-8.6	1.91 H	339	48.1	17.3
5	11400.00	49.8 AV	54.0	-4.2	1.91 H	339	32.5	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	*5700.00	107.3 PK			1.01 V	71	67.5	39.8
2	*5700.00	97.0 AV			1.01 V	71	57.2	39.8
3	#5725.00	67.1 PK	68.2	-1.1	1.09 V	72	62.7	4.4
4	11400.00	67.8 PK	74.0	-6.2	1.10 V	57	50.5	17.3
5	11400.00	52.0 AV	54.0	-2.0	1.10 V	57	34.7	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 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	*5745.00	106.6 PK			2.02 H	7	66.5	40.1
2	*5745.00	96.6 AV			2.02 H	7	56.5	40.1
3	11490.00	69.3 PK	74.0	-4.7	1.93 H	351	51.7	17.6
4	11490.00	53.1 AV	54.0	-0.9	1.93 H	351	35.5	17.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5745.00	107.8 PK			1.04 V	71	67.7	40.1
2	*5745.00	97.9 AV			1.04 V	71	57.8	40.1
3	11490.00	69.7 PK	74.0	-4.3	1.08 V	56	52.1	17.6
4	11490.00	53.6 AV	54.0	-0.4	1.08 V	56	36.0	17.6

REMARKS:

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

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	*5785.00	104.6 PK			2.00 H	8	64.3	40.3
2	*5785.00	95.3 AV			2.00 H	8	55.0	40.3
3	11570.00	68.5 PK	74.0	-5.5	2.05 H	344	51.0	17.5
4	11570.00	52.9 AV	54.0	-1.1	2.05 H	344	35.4	17.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	106.5 PK			1.03 V	72	66.2	40.3
2	*5785.00	96.8 AV			1.03 V	72	56.5	40.3
3	11570.00	69.2 PK	74.0	-4.8	1.08 V	56	51.7	17.5
4	11570.00	53.5 AV	54.0	-0.5	1.08 V	56	36.0	17.5

REMARKS:

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

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	*5825.00	104.7 PK			2.06 H	5	64.3	40.4
2	*5825.00	94.4 AV			2.06 H	5	54.0	40.4
3	11650.00	68.9 PK	74.0	-5.1	1.99 H	347	51.8	17.1
4	11650.00	52.7 AV	54.0	-1.3	1.99 H	347	35.6	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	*5825.00	106.3 PK			1.00 V	71	65.9	40.4
2	*5825.00	96.2 AV			1.00 V	71	55.8	40.4
3	11650.00	69.4 PK	74.0	-4.6	1.04 V	77	52.3	17.1
4	11650.00	53.1 AV	54.0	-0.9	1.04 V	77	36.0	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.

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	66.4 PK	74.0	-7.6	2.15 H	338	62.5	3.9
2	5150.00	45.5 AV	54.0	-8.5	2.15 H	338	41.6	3.9
3	*5190.00	102.9 PK			2.49 H	346	63.4	39.5
4	*5190.00	92.6 AV			2.49 H	346	53.1	39.5
5	#10380.00	57.7 PK	68.2	-10.5	1.15 H	249	41.8	15.9

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	72.7 PK	74.0	-1.3	1.04 V	56	68.8	3.9
2	5150.00	48.8 AV	54.0	-5.2	1.04 V	56	44.9	3.9
3	*5190.00	105.2 PK			1.07 V	59	65.7	39.5
4	*5190.00	95.3 AV			1.07 V	59	55.8	39.5
5	#10380.00	60.5 PK	68.2	-7.7	1.58 V	93	44.6	15.9

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 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	*5230.00	102.6 PK			2.10 H	343	63.3	39.3
2	*5230.00	92.4 AV			2.10 H	343	53.1	39.3
3	5350.00	57.4 PK	74.0	-16.6	1.96 H	323	53.5	3.9
4	5350.00	43.9 AV	54.0	-10.1	1.96 H	323	40.0	3.9
5	#10460.00	59.2 PK	68.2	-9.0	1.41 H	231	42.6	16.6

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	*5230.00	105.9 PK			1.00 V	56	66.6	39.3
2	*5230.00	95.6 AV			1.00 V	56	56.3	39.3
3	5350.00	57.9 PK	74.0	-16.1	1.13 V	71	54.0	3.9
4	5350.00	44.5 AV	54.0	-9.5	1.13 V	71	40.6	3.9
5	#10460.00	61.4 PK	68.2	-6.8	1.54 V	96	44.8	16.6

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 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	59.5 PK	74.0	-14.5	2.18 H	326	55.6	3.9
2	5150.00	45.9 AV	54.0	-8.1	2.18 H	326	42.0	3.9
3	*5270.00	102.3 PK			2.07 H	341	63.0	39.3
4	*5270.00	92.3 AV			2.07 H	341	53.0	39.3
5	#10540.00	59.6 PK	68.2	-8.6	1.26 H	155	42.6	17.0

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	58.9 PK	74.0	-15.1	1.25 V	93	55.0	3.9
2	5150.00	46.9 AV	54.0	-7.1	1.25 V	93	43.0	3.9
3	*5270.00	105.3 PK			1.04 V	56	66.0	39.3
4	*5270.00	95.3 AV			1.04 V	56	56.0	39.3
5	#10540.00	62.6 PK	68.2	-5.6	1.66 V	86	45.6	17.0

REMARKS:

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

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	102.3 PK			1.99 H	343	63.0	39.3
2	*5310.00	92.2 AV			1.99 H	343	52.9	39.3
3	5350.00	66.8 PK	74.0	-7.2	2.25 H	343	62.9	3.9
4	5350.00	40.2 AV	54.0	-13.8	2.25 H	343	36.3	3.9
5	10620.00	59.8 PK	74.0	-14.2	1.39 H	144	42.8	17.0
6	10620.00	46.9 AV	54.0	-7.1	1.39 H	144	29.9	17.0

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	105.5 PK			1.02 V	60	66.2	39.3
2	*5310.00	95.4 AV			1.02 V	60	56.1	39.3
3	5350.00	69.7 PK	74.0	-4.3	1.02 V	59	65.8	3.9
4	5350.00	53.3 AV	54.0	-0.7	1.02 V	59	49.4	3.9
5	10620.00	62.6 PK	74.0	-11.4	1.42 V	95	45.6	17.0
6	10620.00	49.0 AV	54.0	-5.0	1.42 V	95	32.0	17.0

REMARKS:

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

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	60.3 PK	74.0	-13.7	1.97 H	353	56.2	4.1
2	5460.00	45.0 AV	54.0	-9.0	1.97 H	353	40.9	4.1
3	#5470.00	61.1 PK	68.2	-7.1	2.01 H	352	57.0	4.1
4	*5510.00	101.4 PK			2.13 H	0	61.5	39.9
5	*5510.00	91.6 AV			2.13 H	0	51.7	39.9
6	11020.00	63.2 PK	74.0	-10.8	1.87 H	341	45.1	18.1
7	11020.00	48.2 AV	54.0	-5.8	1.87 H	341	30.1	18.1

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	5460.00	63.6 PK	74.0	-10.4	1.09 V	69	59.5	4.1
2	5460.00	46.6 AV	54.0	-7.4	1.09 V	69	42.5	4.1
3	#5470.00	64.7 PK	68.2	-3.5	1.11 V	71	60.6	4.1
4	*5510.00	104.1 PK			1.07 V	68	64.2	39.9
5	*5510.00	94.5 AV			1.07 V	68	54.6	39.9
6	11020.00	65.3 PK	74.0	-8.7	1.33 V	77	47.2	18.1
7	11020.00	50.1 AV	54.0	-3.9	1.33 V	77	32.0	18.1

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 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	103.8 PK			2.09 H	2	64.0	39.8
2	*5550.00	93.3 AV			2.09 H	2	53.5	39.8
3	11100.00	65.6 PK	74.0	-8.4	1.89 H	343	48.0	17.6
4	11100.00	50.4 AV	54.0	-3.6	1.89 H	343	32.8	17.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	106.8 PK			1.10 V	67	67.0	39.8
2	*5550.00	96.5 AV			1.10 V	67	56.7	39.8
3	11100.00	68.0 PK	74.0	-6.0	1.07 V	76	50.4	17.6
4	11100.00	52.6 AV	54.0	-1.4	1.07 V	76	35.0	17.6

REMARKS:

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

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	103.8 PK			2.11 H	359	64.0	39.8
2	*5670.00	93.5 AV			2.11 H	359	53.7	39.8
3	#5725.00	63.5 PK	68.2	-4.7	2.05 H	3	59.1	4.4
4	11340.00	63.1 PK	74.0	-10.9	1.85 H	346	45.7	17.4
5	11340.00	48.9 AV	54.0	-5.1	1.85 H	346	31.5	17.4

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	*5670.00	106.7 PK			1.02 V	71	66.9	39.8
2	*5670.00	95.6 AV			1.02 V	71	55.8	39.8
3	#5725.00	67.2 PK	68.2	-1.0	1.08 V	70	62.8	4.4
4	11340.00	65.4 PK	74.0	-8.6	1.17 V	51	48.0	17.4
5	11340.00	51.0 AV	54.0	-3.0	1.17 V	51	33.6	17.4

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 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	*5755.00	105.4 PK			1.83 H	354	65.3	40.1
2	*5755.00	95.5 AV			1.83 H	354	55.4	40.1
3	11510.00	67.2 PK	74.0	-6.8	2.17 H	347	49.5	17.7
4	11510.00	52.5 AV	54.0	-1.5	2.17 H	347	34.8	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	*5755.00	105.6 PK			1.03 V	72	65.5	40.1
2	*5755.00	95.9 AV			1.03 V	72	55.8	40.1
3	11510.00	67.5 PK	74.0	-6.5	1.10 V	78	49.8	17.7
4	11510.00	52.9 AV	54.0	-1.1	1.10 V	78	35.2	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.

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	*5795.00	104.0 PK			1.96 H	7	63.6	40.4
2	*5795.00	93.9 AV			1.96 H	7	53.5	40.4
3	11590.00	68.5 PK	74.0	-5.5	2.20 H	351	51.0	17.5
4	11590.00	53.1 AV	54.0	-0.9	2.20 H	351	35.6	17.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	105.1 PK			1.07 V	72	64.7	40.4
2	*5795.00	95.2 AV			1.07 V	72	54.8	40.4
3	11590.00	68.7 PK	74.0	-5.3	1.04 V	77	51.2	17.5
4	11590.00	53.5 AV	54.0	-0.5	1.04 V	77	36.0	17.5

REMARKS:

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

9 kHz ~ 30 MHz Data:

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

30 MHz ~ 1 GHz Worst-Case Data:

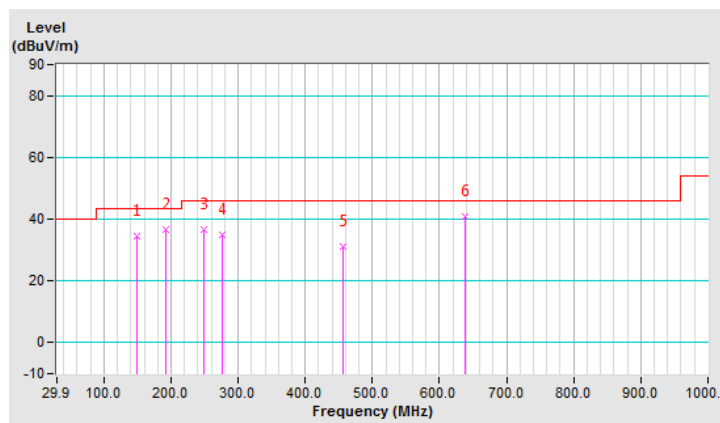
802.11n (HT20)

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	148.50	34.4 QP	43.5	-9.1	2.00 H	144	43.6	-9.2
2	191.28	36.7 QP	43.5	-6.8	1.49 H	153	47.8	-11.1
3	249.60	36.8 QP	46.0	-9.2	1.00 H	117	45.9	-9.1
4	276.82	34.9 QP	46.0	-11.1	1.00 H	166	42.9	-8.0
5	455.70	31.0 QP	46.0	-15.0	1.50 H	107	35.4	-4.4
6	638.46	41.0 QP	46.0	-5.0	1.00 H	46	41.5	-0.5

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.



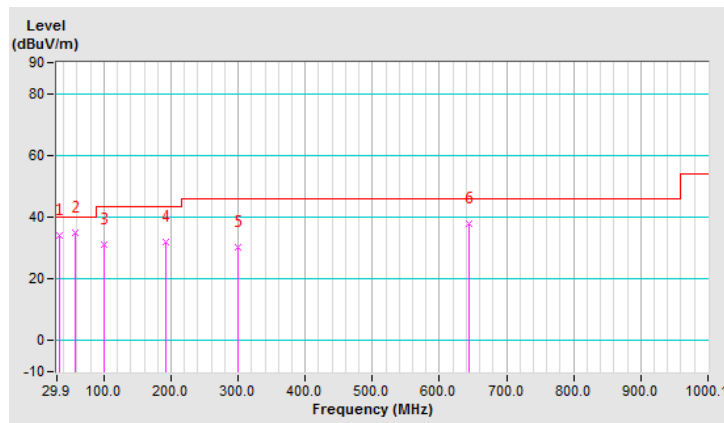
CHANNEL	TX Channel 149	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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	33.79	33.9 QP	40.0	-6.1	1.00 V	344	45.1	-11.2
2	57.12	34.8 QP	40.0	-5.2	1.00 V	336	44.9	-10.1
3	99.89	31.2 QP	43.5	-12.3	1.50 V	104	44.8	-13.6
4	191.28	31.9 QP	43.5	-11.6	2.00 V	263	43.0	-11.1
5	300.16	30.3 QP	46.0	-15.7	1.50 V	178	37.7	-7.4
6	644.30	38.0 QP	46.0	-8.0	1.00 V	82	38.6	-0.6

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.



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 0.50 MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver ROHDE & SCHWARZ	ESCS 30	100288	Jan. 03, 2019	Jan. 02, 2020
RF signal cable Woken	5D-FB	Cable-cond1-01	Sep. 05, 2018	Sep. 04, 2019
LISN/AMN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 21, 2019	Feb. 20, 2020
LISN/AMN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 19, 2018	Aug. 18, 2019
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

- Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 1.
 3. The VCCI Site Registration No. is C-12040.

4.2.3 Test Procedures

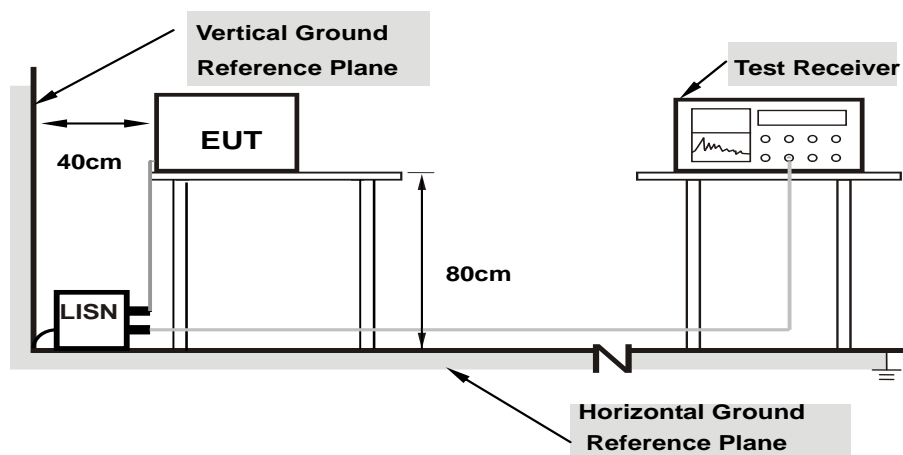
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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 150 kHz to 30 MHz was searched. Emission levels under (Limit -20 dB) 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.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

4.2.6 EUT Operating Conditions

- a. Placed the EUT on a testing table.
- b. Use the software to control the EUT under transmission condition continuously at specific channel frequency.

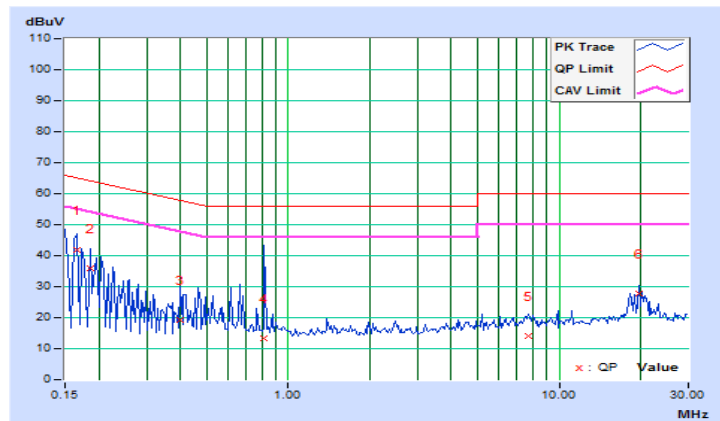
4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	22°C, 66%RH
Tested by	Adair Peng	Test Date	2019/3/6

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	0.16562	9.69	32.17	4.15	41.86	13.84	65.18	55.18	-23.32	-41.34
2	0.18516	9.68	26.17	3.77	35.85	13.45	64.25	54.25	-28.40	-40.80
3	0.40000	9.68	9.64	3.03	19.32	12.71	57.85	47.85	-38.53	-35.14
4	0.81797	9.67	3.55	2.22	13.22	11.89	56.00	46.00	-42.78	-34.11
5	7.70703	9.82	4.13	2.51	13.95	12.33	60.00	50.00	-46.05	-37.67
6	19.70703	9.93	17.92	15.62	27.85	25.55	60.00	50.00	-32.15	-24.45

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

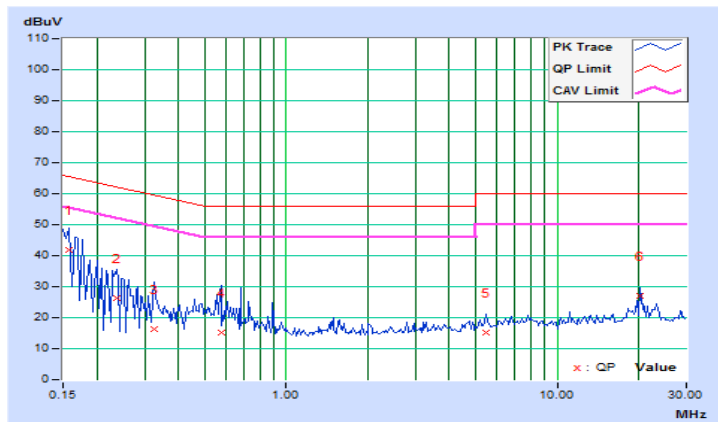


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	22°C, 66%RH
Tested by	Adair Peng	Test Date	2019/3/6

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	0.15781	9.66	32.25	2.24	41.91	11.90	65.58	55.58	-23.67	-43.68
2	0.23594	9.66	16.63	2.22	26.29	11.88	62.24	52.24	-35.95	-40.36
3	0.32578	9.65	6.65	2.33	16.30	11.98	59.56	49.56	-43.26	-37.58
4	0.57578	9.65	5.43	1.99	15.08	11.64	56.00	46.00	-40.92	-34.36
5	5.45313	9.75	5.51	2.33	15.26	12.08	60.00	50.00	-44.74	-37.92
6	20.25781	10.00	17.01	13.86	27.01	23.86	60.00	50.00	-32.99	-26.14

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

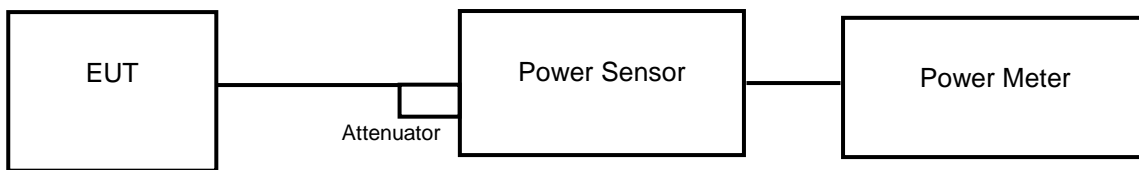
4.3.1 Limits of Transmit Power Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p \leq 125 mW (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)
	√	Mobile and Portable client device	250 mW (24 dBm)
U-NII-2A		√	250 mW (24 dBm) or 11 dBm + 10 log B*
U-NII-2C		√	250 mW (24 dBm) or 11 dBm + 10 log B*
U-NII-3		√	1 Watt (30 dBm)

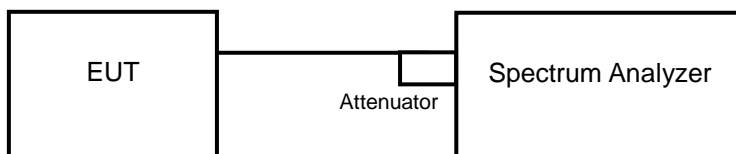
*B is the 26 dB emission bandwidth in megahertz

4.3.2 Test Setup

<Power Output Measurement>



<26 dB Bandwidth>



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

Average Power Measurement

<802.11a, 802.11n (HT20), 802.11n (HT40)>

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.

26 dB Bandwidth

- a. Set RBW = approximately 1 % of the emission bandwidth.
- b. Set the VBW > RBW.
- c. Detector = Peak.
- d. Trace mode = max hold.
- e. 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 Conditions

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

4.3.7 Test Results

Power Output:

802.11a

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	44.157	16.45	24	Pass
40	5200	43.752	16.41	24	Pass
48	5240	43.351	16.37	24	Pass
52	5260	42.855	16.32	24	Pass
60	5300	45.394	16.57	24	Pass
64	5320	43.752	16.41	24	Pass
100	5500	26.485	14.23	24	Pass
116	5580	28.973	14.62	24	Pass
140	5700	26.485	14.23	24	Pass
149	5745	20.137	13.04	30	Pass
157	5785	16.444	12.16	30	Pass
165	5825	16.634	12.21	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1. $11 \text{ dBm} + 10\log (20.33) = 24.08 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log (24.59) = 24.91 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log (20.20) = 24.05 \text{ dBm} > 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log (20.71) = 24.16 \text{ dBm} > 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log (20.39) = 24.09 \text{ dBm} > 24 \text{ dBm}$.
6. $11 \text{ dBm} + 10\log (20.28) = 24.07 \text{ dBm} > 24 \text{ dBm}$.

802.11n (HT20)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	39.355	15.95	24	Pass
40	5200	36.898	15.67	24	Pass
48	5240	37.325	15.72	24	Pass
52	5260	38.371	15.84	24	Pass
60	5300	38.726	15.88	24	Pass
64	5320	37.325	15.72	24	Pass
100	5500	27.416	14.38	24	Pass
116	5580	29.58	14.71	24	Pass
140	5700	26.853	14.29	24	Pass
149	5745	20.464	13.11	30	Pass
157	5785	16.634	12.21	30	Pass
165	5825	17.418	12.41	30	Pass

Note:
For U-NII-2A, U-NII-2C Band:

1. $11 \text{ dBm} + 10\log (21.26) = 24.28 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log (21.05) = 24.23 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log (21.20) = 24.26 \text{ dBm} > 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log (20.87) = 24.2 \text{ dBm} > 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log (21.43) = 24.31 \text{ dBm} > 24 \text{ dBm}$.
6. $11 \text{ dBm} + 10\log (21.26) = 24.28 \text{ dBm} > 24 \text{ dBm}$.

802.11n (HT40)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	35.975	15.56	24	Pass
46	5230	34.754	15.41	24	Pass
54	5270	36.475	15.62	24	Pass
62	5310	33.963	15.31	24	Pass
102	5510	21.281	13.28	24	Pass
110	5550	33.42	15.24	24	Pass
134	5670	31.769	15.02	24	Pass
151	5755	25.882	14.13	30	Pass
159	5795	21.184	13.26	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1. $11 \text{ dBm} + 10\log(70.87) = 29.5 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(70.80) = 29.5 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(43.92) = 27.43 \text{ dBm} > 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log(72.62) = 29.61 \text{ dBm} > 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log(71.85) = 29.56 \text{ dBm} > 24 \text{ dBm}$.

26 dB Bandwidth:
802.11a

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	20.66
40	5200	20.44
48	5240	20.30
52	5260	20.33
60	5300	24.59
64	5320	20.20
100	5500	20.71
116	5580	20.39
140	5700	20.28

802.11n (HT20)

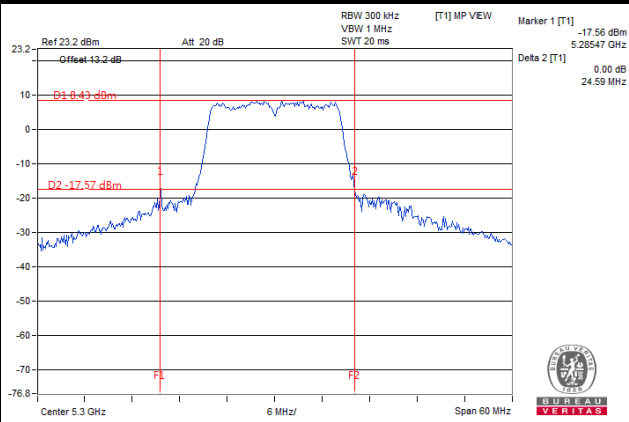
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	22.35
40	5200	21.36
48	5240	21.43
52	5260	21.26
60	5300	21.05
64	5320	21.20
100	5500	20.87
116	5580	21.43
140	5700	21.26

802.11n (HT40)

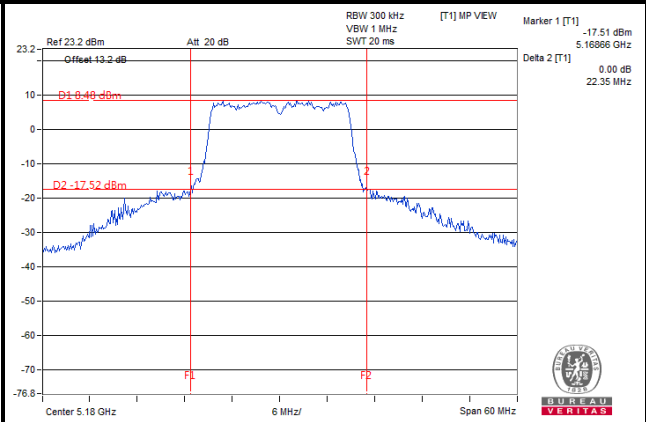
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
38	5190	71.74
46	5230	70.85
54	5270	70.87
62	5310	70.80
102	5510	43.92
110	5550	72.62
134	5670	71.85

Spectrum Plot of Worst Value

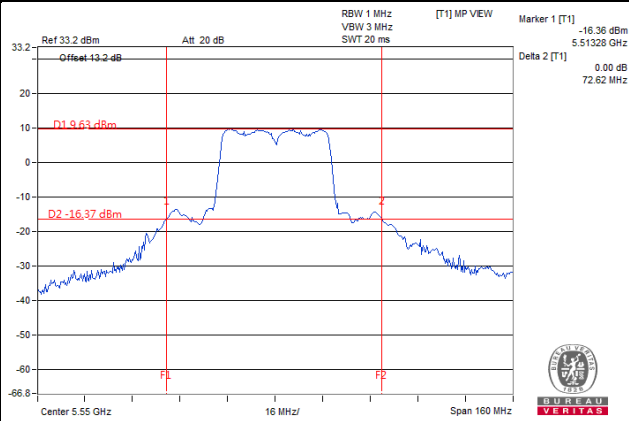
802.11a



802.11n (HT20)



802.11n (HT40)



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	16.92
40	5200	16.92
48	5240	16.92
52	5260	16.92
60	5300	16.92
64	5320	16.80
100	5500	16.92
116	5580	16.92
140	5700	16.92
149	5745	16.80
157	5785	16.80
165	5825	16.80

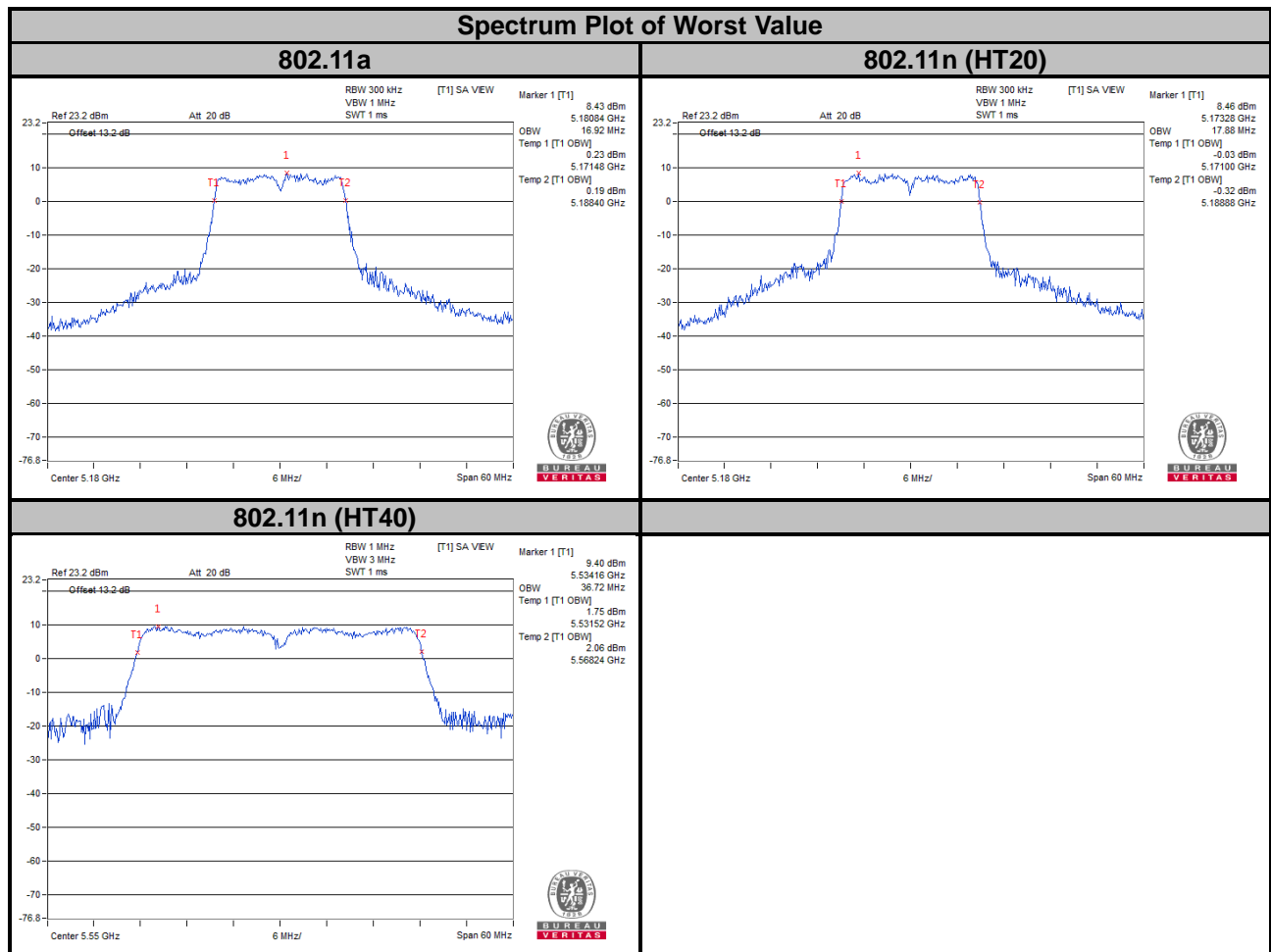
802.11n (HT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	17.88
40	5200	17.88
48	5240	17.88
52	5260	17.88
60	5300	17.88
64	5320	17.64
100	5500	17.88
116	5580	17.76
140	5700	17.76
149	5745	17.82
157	5785	17.70
165	5825	17.70

802.11n (HT40)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	36.60
46	5230	36.60
54	5270	36.60
62	5310	36.60
102	5510	36.60
110	5550	36.72
134	5670	36.60
151	5755	36.66
159	5795	36.60

Spectrum Plot of Worst Value

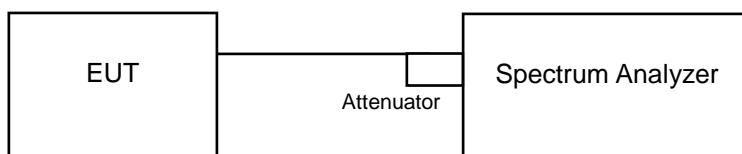


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.5.4 Test Procedures

For U-NII-1, U-NII-2A, U-NII-2C band:

Using method SA-1

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW \geq 3 RBW, 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

Using method SA-2

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW \geq 3 RBW, 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 $10 \log (1/\text{duty cycle})$

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

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

4.5.7 Test Results

802.11a

Channel	Frequency (MHz)	PSD (dBm/MHz)	Maximum Limit (dBm/MHz)	Pass / Fail
36	5180	5.67	11	Pass
40	5200	5.63	11	Pass
48	5240	5.54	11	Pass
52	5260	5.69	11	Pass
60	5300	5.51	11	Pass
64	5320	4.70	11	Pass
100	5500	3.61	11	Pass
116	5580	3.95	11	Pass
140	5700	2.76	11	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

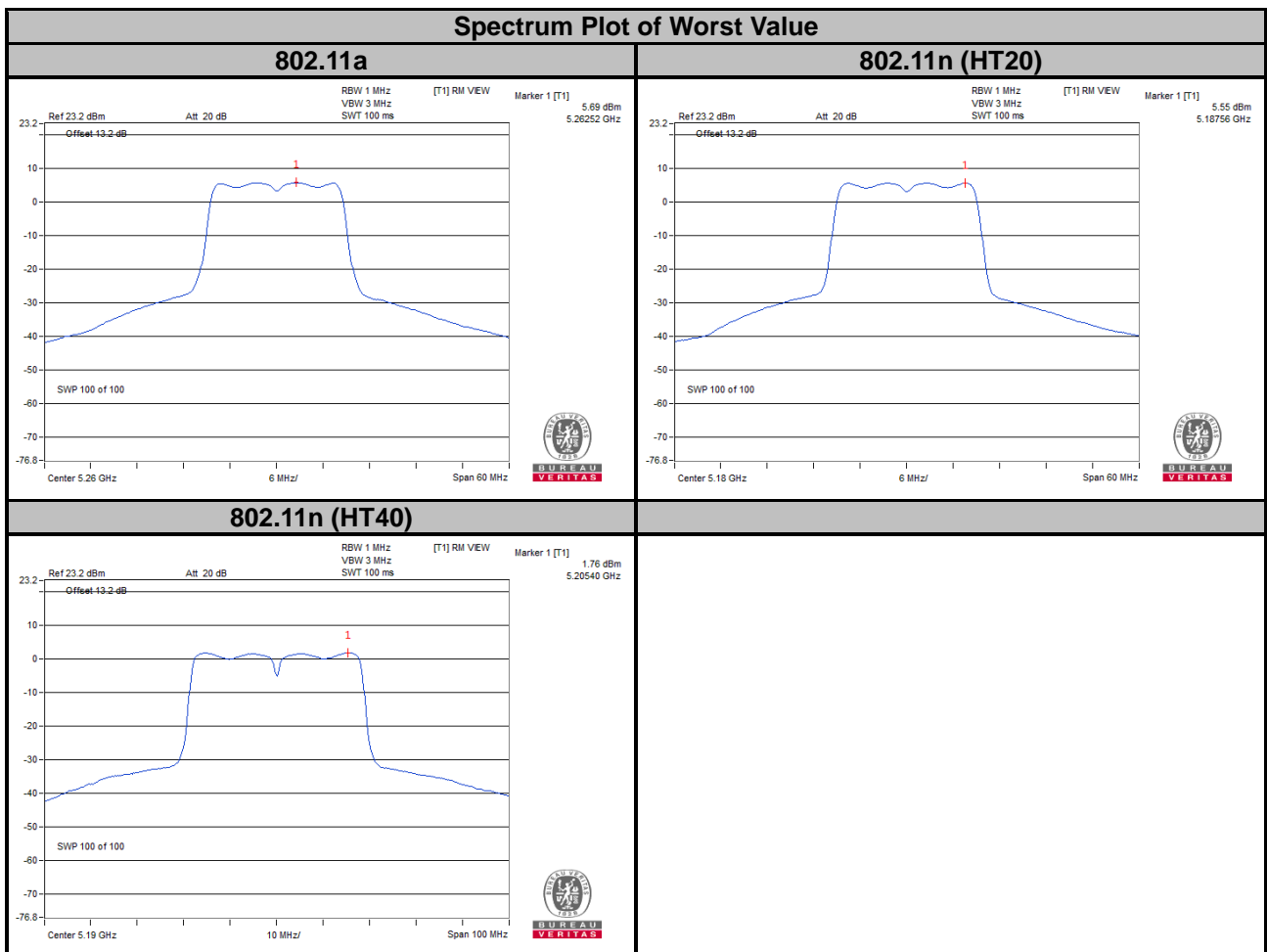
Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/MHz)	Maximum Limit (dBm/MHz)	Pass / Fail
36	5180	5.55	0.13	5.68	11	Pass
40	5200	4.58	0.13	4.71	11	Pass
48	5240	4.56	0.13	4.69	11	Pass
52	5260	4.68	0.13	4.81	11	Pass
60	5300	3.55	0.13	3.68	11	Pass
64	5320	3.79	0.13	3.92	11	Pass
100	5500	3.51	0.13	3.64	11	Pass
116	5580	3.89	0.13	4.02	11	Pass
140	5700	2.66	0.13	2.79	11	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/MHz)	Maximum Limit (dBm/MHz)	Pass / Fail
38	5190	1.76	0.22	1.98	11	Pass
46	5230	1.74	0.22	1.96	11	Pass
54	5270	1.67	0.22	1.89	11	Pass
62	5310	0.88	0.22	1.10	11	Pass
102	5510	-0.44	0.22	-0.22	11	Pass
110	5550	1.24	0.22	1.46	11	Pass
134	5670	0.69	0.22	0.91	11	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.



For U-NII-3 Band

802.11a

Channel	Frequency (MHz)	PSD		Limit (dBm/500 kHz)	Pass / Fail
		(dBm/300 kHz)	(dBm/500 kHz)		
149	5745	-2.92	-0.70	30	Pass
157	5785	-3.67	-1.45	30	Pass
165	5825	-4.44	-2.22	30	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

Channel	Frequency (MHz)	PSD w/o Duty Factor		Duty Factor (dB)	PSD with Duty Factor (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
		(dBm/300 kHz)	(dBm/500 kHz)				
149	5745	-2.98	-0.76	0.13	-0.63	30	Pass
157	5785	-3.71	-1.49	0.13	-1.36	30	Pass
165	5825	-4.57	-2.35	0.13	-2.22	30	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

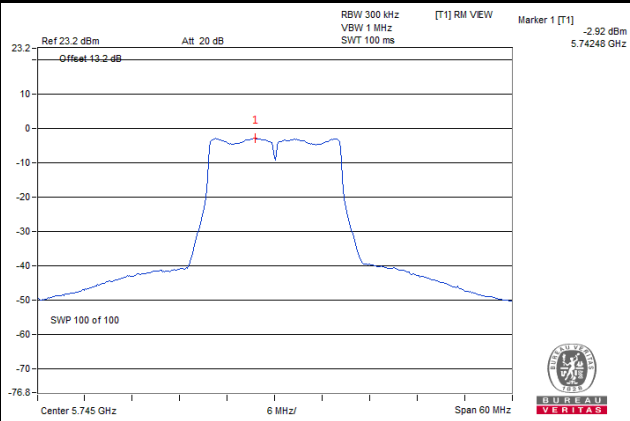
802.11n (HT40)

Channel	Frequency (MHz)	PSD w/o Duty Factor		Duty Factor (dB)	PSD with Duty Factor (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
		(dBm/300 kHz)	(dBm/500 kHz)				
151	5755	-4.74	-2.52	0.22	-2.30	30	Pass
159	5795	-5.16	-2.94	0.22	-2.72	30	Pass

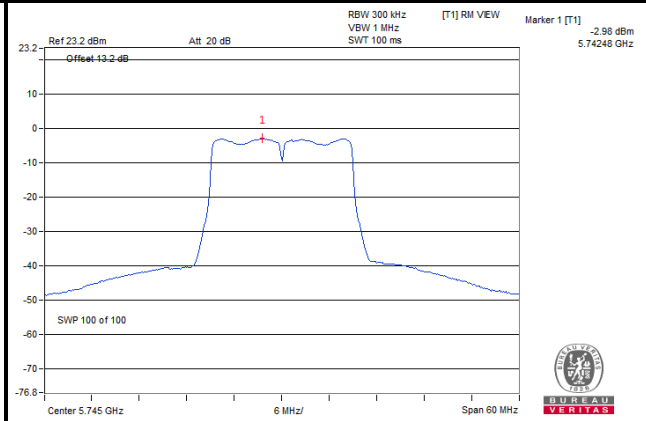
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

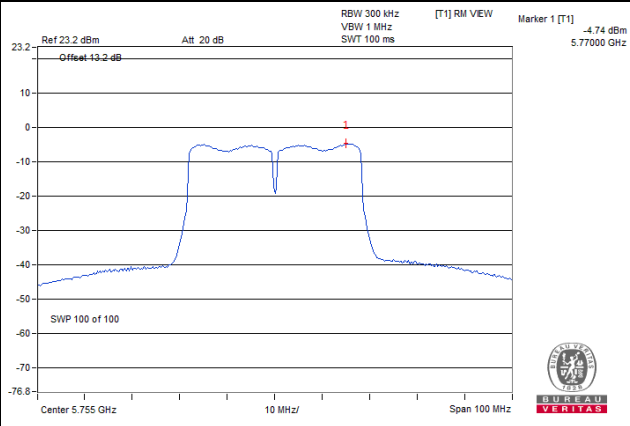
802.11a



802.11n (HT20)



802.11n (HT40)

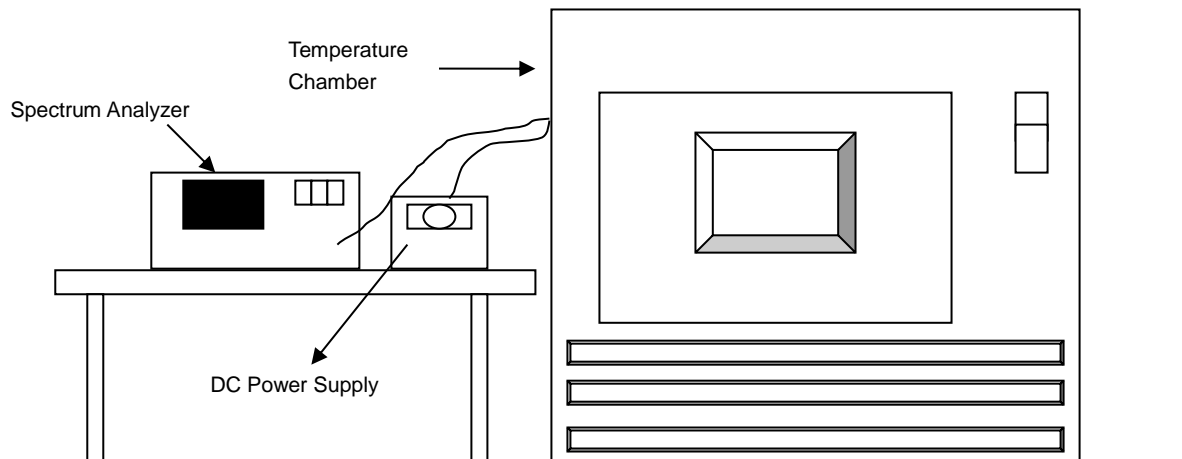


4.6 Frequency Stability

4.6.1 Limit 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 4.1.3 to get information of above instrument.

4.6.4 Test Procedure

- To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
- The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10 dB lower than the measured peak value.
- The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

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 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
85	12	5189.9952	PASS	5189.9932	PASS	5189.9933	PASS	5189.9939	PASS
80	12	5189.9895	PASS	5189.9901	PASS	5189.9899	PASS	5189.9907	PASS
70	12	5189.9864	PASS	5189.9821	PASS	5189.9861	PASS	5189.9813	PASS
60	12	5189.9782	PASS	5189.976	PASS	5189.9797	PASS	5189.9795	PASS
50	12	5189.9888	PASS	5189.991	PASS	5189.9866	PASS	5189.9868	PASS
40	12	5189.9953	PASS	5189.9989	PASS	5189.9968	PASS	5189.9973	PASS
30	12	5190.0212	PASS	5190.0188	PASS	5190.019	PASS	5190.019	PASS
20	12	5189.9904	PASS	5189.993	PASS	5189.9911	PASS	5189.9919	PASS
10	12	5190.0076	PASS	5190.0095	PASS	5190.0109	PASS	5190.0098	PASS
0	12	5190.0056	PASS	5190.004	PASS	5190.0067	PASS	5190.0049	PASS
-10	12	5189.9741	PASS	5189.9781	PASS	5189.9734	PASS	5189.9768	PASS
-20	12	5189.9877	PASS	5189.9872	PASS	5189.9869	PASS	5189.9852	PASS
-30	12	5189.9987	PASS	5190.0016	PASS	5190.0008	PASS	5189.9987	PASS
-40	12	5190.0157	PASS	5190.0141	PASS	5190.0172	PASS	5190.0176	PASS

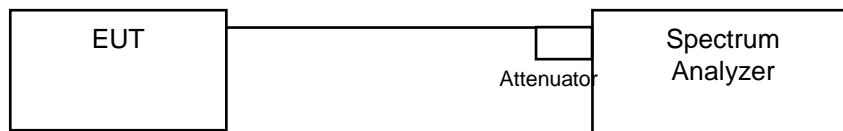
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	13.8	5189.9895	PASS	5189.9924	PASS	5189.9904	PASS	5189.9923	PASS
	12	5189.9904	PASS	5189.993	PASS	5189.9911	PASS	5189.9919	PASS
	10.2	5189.991	PASS	5189.9921	PASS	5189.9906	PASS	5189.9919	PASS

4.7 6 dB Bandwidth Measurement

4.7.1 Limits of 6 dB Bandwidth Measurement

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

- Set resolution bandwidth (RBW) = 100 kHz
- 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)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.38	0.5	Pass
157	5785	16.36	0.5	Pass
165	5825	16.38	0.5	Pass

802.11n (HT20)

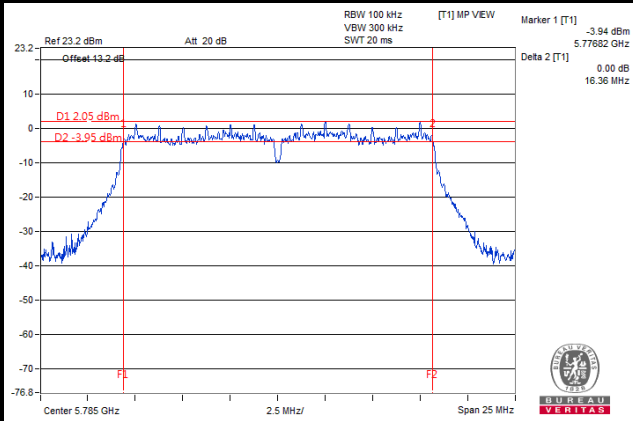
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	17.60	0.5	Pass
157	5785	17.58	0.5	Pass
165	5825	17.58	0.5	Pass

802.11n (HT40)

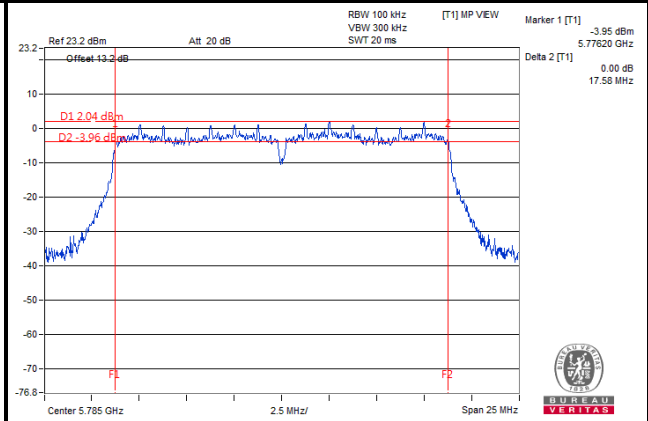
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	35.93	0.5	Pass
159	5795	35.87	0.5	Pass

Spectrum Plot of Worst Value

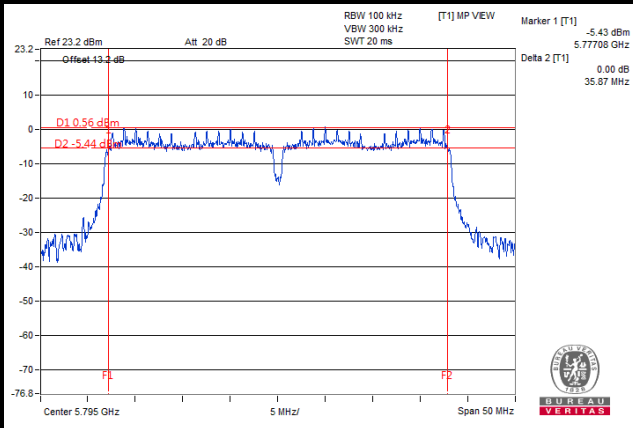
802.11a



802.11n (HT20)



802.11n (HT40)



5 Pictures of Test Arrangements

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

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited 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

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.

--- END ---