Test Lab
Cert 2951.01

TEST REPORT

Applicant	Netgear Incorporated.
Address	350 East Plumeria Drive ,San Jose, California 95134,United States

Manufacturer or Supplier	Netgear Incorporated.
Address	350 East Plumeria Drive ,San Jose, California 95134,United States
Product	Add-on DST Adapter
Brand Name	NETGEAR
Model	DST6501
Additional Model & Model Difference	PLW1000, PLW1010
Date of tests	Aug. 01, 2015 ~ Aug. 12, 2015

The tests have been carried out according to the requirements of the following standard:

☒ **FCC Part 15, Subpart E, Section 15.407**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Blue zheng Project Engineer / EMC Department	Approved by Chris Chen Supervisor / EMC Department
	 Date: Aug. 14, 2015

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF150720N035-1	Original release.	Aug. 14, 2015

1. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407 UNDER NEW RULE)			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
15.407(b)(6)	AC Power Conducted Emissions	PASS	Meet the requirement of limit.
15.407(b) (1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit.
15.407(a)(1/2/3)	Max Average Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is RSMA not a standard connector.

1.1 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	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.66dB
Radiated emissions	9KHz ~ 30MHz	2.74dB
	30MHz ~ 1GMHz	3.55dB
	1GHz ~ 18GHz	4.84dB
	18GHz ~ 40GHz	4.84dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

EUT	Add-on DST Adapter
MODEL NO.	DST6501
Additional Model & Model Difference	PLW1000, PLW1010
FCC ID	PY315200311
POWER SUPPLY	AC 120V/60Hz
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/ 6.0Mbps 802.11n: up to 150Mbps 802.11ac: up to 433Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz; 5745 ~ 5825MHz
NUMBER OF CHANNEL	9 for 802.11a, 802.11n (20MHz) 4 for 802.11n (40MHz) 2 for 802.11ac (80MHz)
OUTPUT POWER	20.18 dBm for 5180 ~ 5240MHz (Maximum Average Power) 21.25 dBm for 5745 ~ 5825MHz (Maximum Average Power)
ANTENNA TYPE	Dipole antenna with 2.0dBi gain
DATA CABLE	N/A
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	N/A

NOTE:

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

MODULATION MODE	TX FUNCTION
802.11a	1TX/1RX
802.11n (20MHz)	1TX/1RX
802.11n (40MHz)	1TX/1RX
802.11ac (80MHz)	1TX/1RX

2. The above EUT information is declared by manufacturer and for more detailed feature description, please refer to the manufacturer's specifications or user's manual.
3. Please refer to the EUT photo document (Reference No.: 150720N035) for detailed product photo.
4. Additional models PLW1010,PLW1000 are identical with the test model DST6501 except the appearance、push button(WPS)、screen printing and model number for marketing purpose

2.2 DESCRIPTION OF TEST MODES

9 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz
149	5745 MHz	157	5785 MHz
153	5765 MHz	161	5805 MHz
165	5825 MHz	--	--

4 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz
151	5755 MHz	159	5795 MHz

2 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
42	5210MHz	155	5775MHz

2.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	Power by AC 120V/60Hz

Where **RE≥1G:** Radiated Emission above 1GHz **RE<1G:** Radiated Emission below 1GHz
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 **Z-plane**.
NOTE: "-"means no effect.

RADIATED EMISSION TEST (ABOVE 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240 5725-5850	36 to 48 149 to 165	36, 40, 48 149,157,165	OFDM	BPSK	6.0
-	802.11n (20MHz)		36 to 48 149 to 165	36, 40, 48 149,157,165	OFDM	BPSK	6.5
-	802.11n (40MHz)		38 to 46 151 to 159	38, 46 151,159	OFDM	BPSK	13.5
-	802.11ac (80MHz)		42 155	42 155	OFDM	BPSK	29.3

RADIATED EMISSION TEST (BELOW 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240 5725-5850	36 to 48 149 to 165	36	OFDM	BPSK	6.0

POWER LINE CONDUCTED EMISSION TEST:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240 5725-5850	36 to 48 149 to 165	36	OFDM	BPSK	6.0

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	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240 5725-5850	36 to 48 149 to 165	36, 40, 48 149,157,165	OFDM	BPSK	6.0
-	802.11n (20MHz)		36 to 48 149 to 165	36, 40, 48 149,157,165	OFDM	BPSK	6.5
-	802.11n (40MHz)		38 to 46 151 to 159	38, 46 151,159	OFDM	BPSK	13.5
-	802.11ac (80MHz)		42 155	42 155	OFDM	BPSK	29.3

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	24deg. C, 51%RH	AC 120V by Adapter	Sen He
RE<1G	24deg. C, 51%RH	AC 120V by Adapter	Sen He
PLC	24deg. C, 51%RH	AC 120V by Adapter	Blue zheng
APCM	25deg. C, 60%RH	AC 120V by Adapter	Blue zheng

2.3 DUTY CYCLE OF TEST SIGNAL

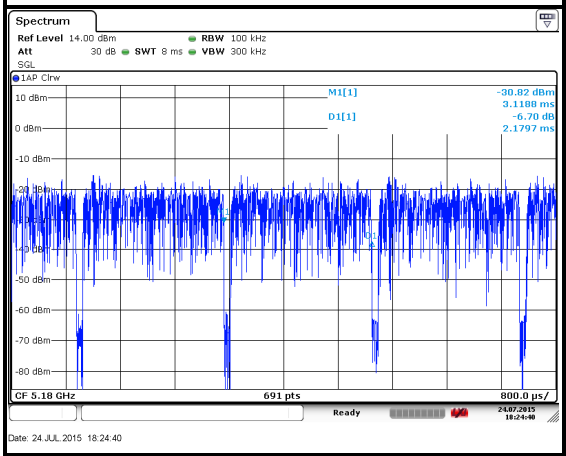
802.11a: Duty cycle = 2.0754/2.1797 = 0.95 , Duty factor = 10 * log(1/0.95) = 0.22

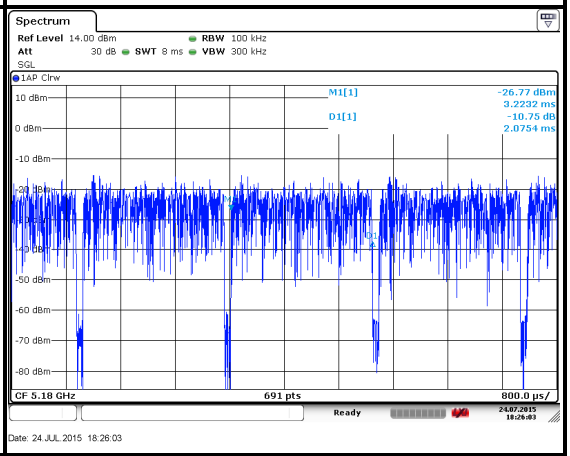
802.11n (20MHz): Duty cycle =1.9362/2.2261= 0.87 , Duty factor = 10 * log(1/0.87) =0.61

802.11n (40MHz): Duty cycle =0.95652/1.04348= 0.92, Duty factor = 10 * log(1/0.92) = 0.36

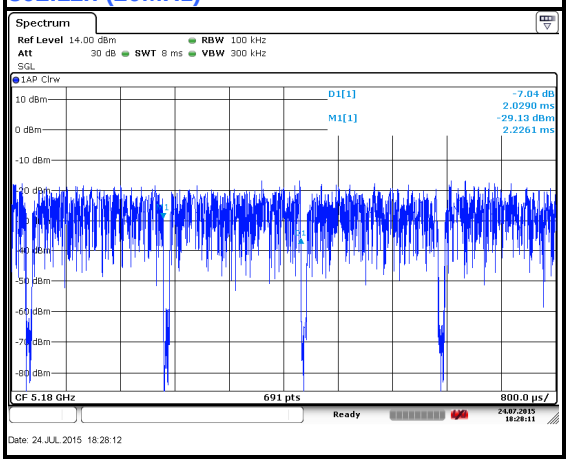
802.11ac (80MHz): Duty cycle = 0.48406/0.48986 = 0.99

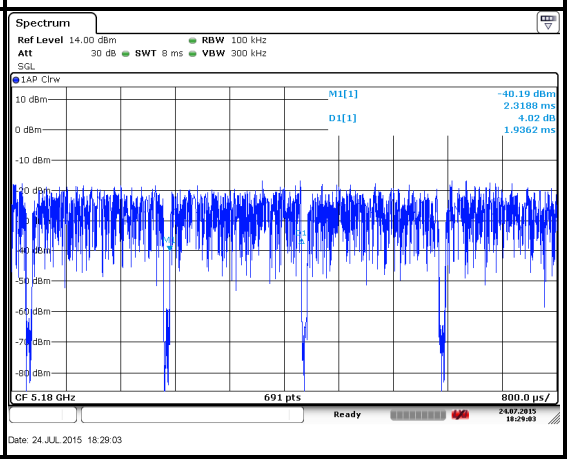
802.11a



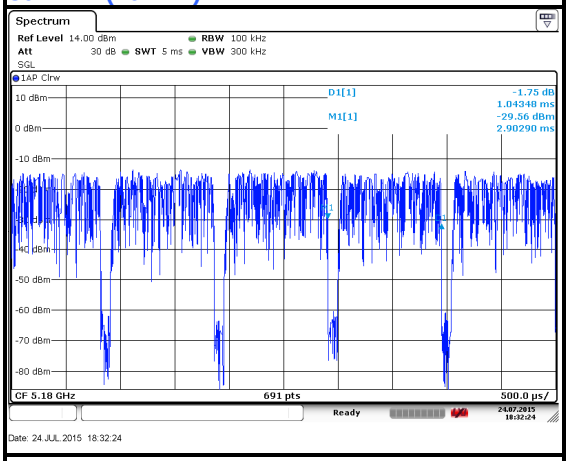


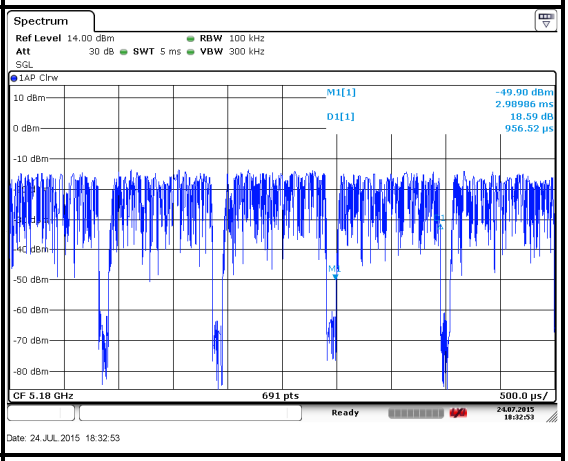
802.11n (20MHz)



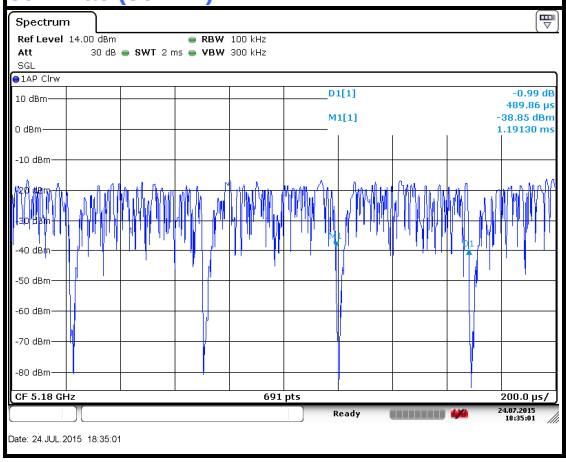


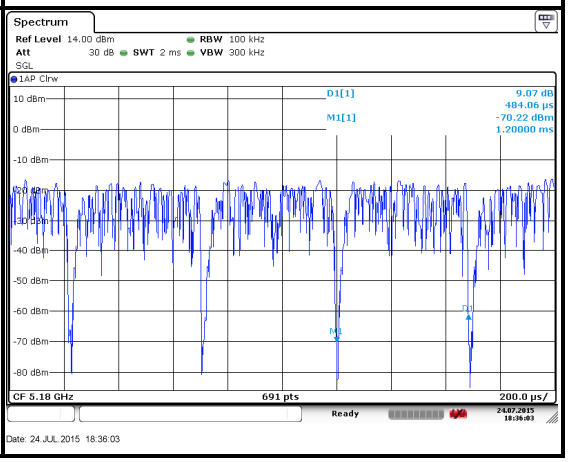
802.11n (40MHz)





802.11ac (80MHz)





2.4 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	HP	4431s	CNU238944Z	N/A

NO.	DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	AC Line;unshielded, detachable 1.8m.

2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)
789033 D02 General UNII Test Procedures New Rules v01
662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2009

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

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3. TEST TYPES AND RESULTS

3.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

3.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:
1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 30dB under any condition of modulation.

3.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
789033 D02 General UNII Test Procedures New Rules v01	FIELD STRENGTH AT 3m	
	PK: 74 (dBµV/m)	AV: 54 (dBµV/m)
APPLICABLE TO	**EIRP LIMIT**	**EQUIVALENT FIELD STRENGTH AT 3m**
15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.3 (dBµV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	PK: -27 (dBm/MHz) *1 PK: -17 (dBm/MHz) *2	PK: 68.3 (dBµV/m) *1 PK: 78.3 (dBµV/m) *2

NOTE: *1 beyond 10MHz of the band edge *2 within 10 MHz of band edge

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

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

3.1.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101494	Apr 27,15	Apr 26,16
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Apr 23,15	Apr 22,16
Bilog Antenna	Teseq	CBL 6111D	30643	Jul. 16, 15	Jul. 15, 16
Horn Antenna	ETS-Lindgren	3117	00062558	May 30,14	May 29,16
Amplifier (9kHz-1GHz)	SONOMA	310D	186955	Mar. 04,15	Mar. 03, 16
Pre-Amplifier (0.5~18GHz)	SCHWARZBECK	BBV 9718	9718-266	Mar 26,14	Mar 25,16
GPS Generator+ Antenna	TOJOIN	GNSS-5000A	E1-010119	Mar 26,14	Mar 25,16
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	April. 19,14	April. 18,16
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170147	Jan. 21,14	Jan. 20,17
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 20,14	Nov. 19,15

NOTE:

1. The test was performed in 966 Chamber.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
3. The FCC Site Registration No. is 502831.

3.1.4 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 1.5meters above the ground at a 3 meter semi-anechoic camber. 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 antenna is a broadband antenna, and its height 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 Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

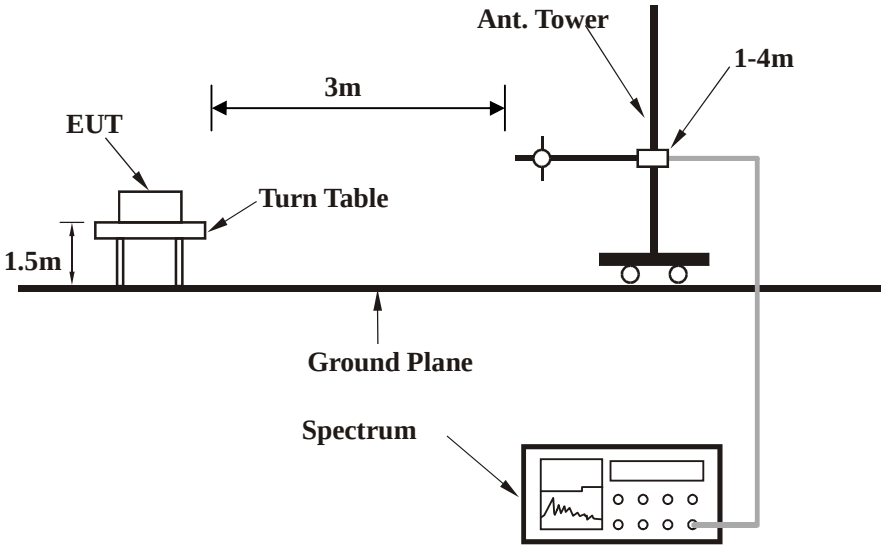
NOTE:

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

3.1.5 DEVIATION FROM TEST STANDARD

No deviation.

3.1.6 TEST SETUP



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

3.1.7 EUT OPERATING CONDITION

a. Placed the EUT on the testing table.
b. Prepared a notebook to act as a communication partner and placed it outside of testing area.
c. The communication partner was connected with the EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable the EUT under transmission condition continuously at specific channel frequency.

3.1.8 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

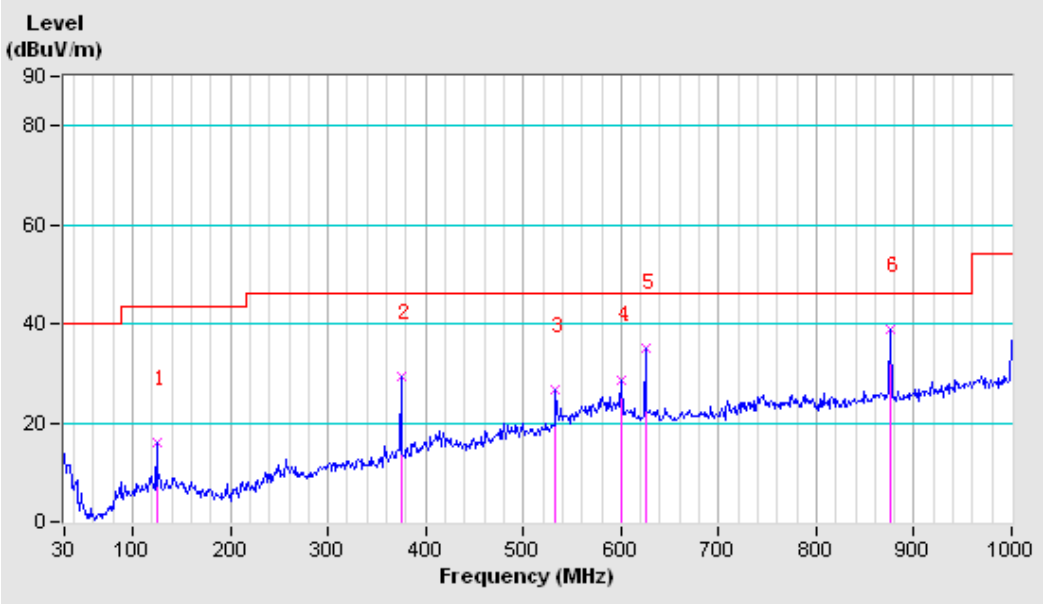
802.11a

CHANNEL	TX Channel 36	**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	124.19	15.8 QP	43.5	-27.7	1.00 H	0	34.37	-18.53
2	374.42	29.3 QP	46.0	-16.7	1.00 H	0	42.10	-12.81
3	533.28	26.6 QP	46.0	-19.4	1.00 H	0	34.18	-7.56
4	600.75	28.8 QP	46.0	-17.2	1.00 H	0	35.06	-6.30
5	624.65	35.3 QP	46.0	-10.7	1.00 H	0	40.83	-5.56
6	874.88	38.7 QP	46.0	-7.3	1.00 H	0	39.92	-1.18

REMARKS:

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

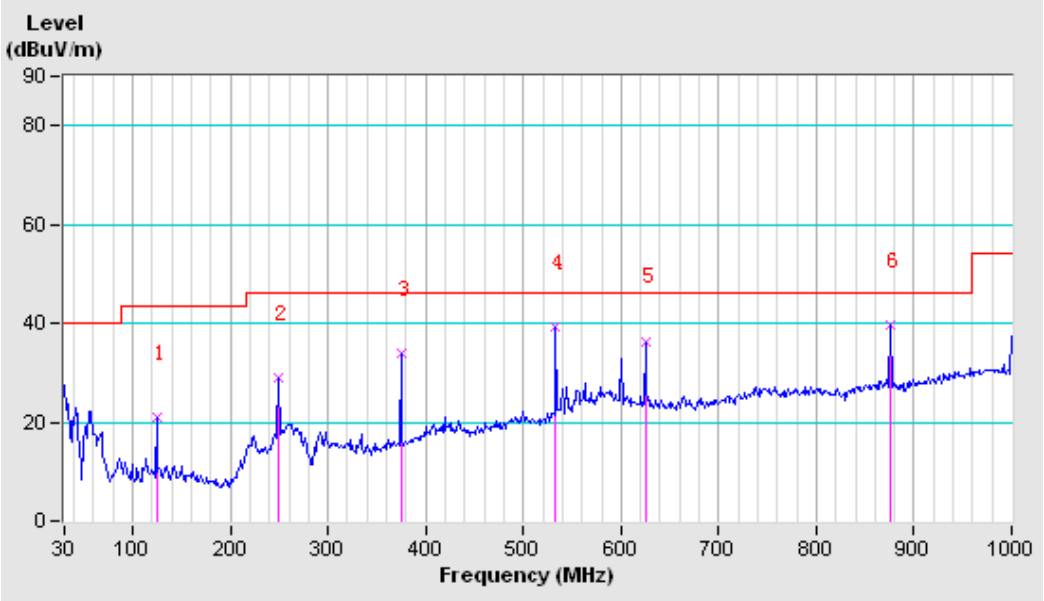


CHANNEL	TX Channel 36	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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	124.19	21.0 QP	43.5	-22.5	1.00 V	0	39.57	-18.53
2	249.30	29.0 QP	46.0	-17.1	1.00 V	0	45.89	-16.94
3	374.42	34.0 QP	46.0	-12.0	1.00 V	0	46.78	-12.81
4	533.28	39.2 QP	46.0	-6.8	1.00 V	0	46.80	-7.56
5	624.65	36.4 QP	46.0	-9.6	1.00 V	0	41.94	-5.56
6	**874.88**	**39.7 QP**	**46.0**	**-6.3**	**1.00 V**	**0**	**40.92**	**-1.18**

REMARKS:

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



Band 1 (5150-5240MHz):

ABOVE 1GHz DATA

802.11a

CHANNEL	TX Channel 36	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	59.4 PK	74.0	-14.6	1.17 H	315	51.84	7.60
2	5150.00	43.2 AV	54.0	-10.8	1.24 H	144	35.56	7.60
3	*5180.00	103.7 PK			1.00 H	53	96.00	7.70
4	*5180.00	91.3 AV			1.24 H	144	83.60	7.70
5	#10360.00	58.7 PK	73.7	-15.0	1.50 H	356	44.66	14.04
6	#10360.00	43.5 AV	61.3	-17.8	1.50 H	356	29.41	14.04
7	15540.00	64.2 PK	74.0	-9.8	1.06 H	172	47.72	16.48
8	15540.00	48.9 AV	54.0	-5.1	1.06 H	172	32.42	16.48
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	1.17 V	315	63.30	7.60
2	5150.00	53.1 AV	54.0	-0.9	1.24 V	144	45.50	7.60
3	*5180.00	113.2 PK			1.24 V	144	105.47	7.70
4	*5180.00	100.5 AV			1.24 V	144	92.76	7.70
5	#10360.00	65.8 PK	83.2	-17.4	1.50 V	356	51.74	14.04
6	#10360.00	50.9 AV	70.5	-19.6	1.50 V	356	36.86	14.04
7	15540.00	67.6 PK	74.0	-6.4	1.01 V	216	51.15	16.48
8	15540.00	49.7 AV	54.0	-4.3	1.01 V	216	33.19	16.48

REMARKS:

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

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	108.3 PK			1.10 H	132	100.56	7.76
2	*5200.00	95.8 AV			1.10 H	132	88.04	7.76
3	#10400.00	63.2 PK	78.3	-15.1	1.00 H	0	49.08	14.07
4	#10400.00	48.6 AV	65.8	-17.2	1.00 H	0	34.53	14.07
5	15600.00	65.3 PK	74.0	-8.7	1.02 H	321	48.75	16.56
6	15600.00	49.2 AV	54.0	-4.8	1.02 H	321	32.64	16.56
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	112.5 PK			1.10 V	132	104.72	7.76
2	*5200.00	100.1 AV			1.00 V	145	92.36	7.76
3	#10400.00	66.8 PK	82.5	-15.7	1.00 V	25	52.77	14.07
4	#10400.00	51.6 AV	70.1	-18.5	1.00 V	0	37.53	14.07
5	15600.00	67.6 PK	74.0	-6.4	1.00 V	173	51.04	16.56
6	15600.00	51.8 AV	54.0	-2.2	1.00 V	173	35.21	16.56

REMARKS:

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

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	106.8 PK			1.05 H	266	98.89	7.89
2	*5240.00	94.2 AV			1.05 H	266	86.32	7.89
3	#10480.00	65.4 PK	76.8	-11.4	1.01 H	207	51.26	14.14
4	#10480.00	51.0 AV	64.2	-13.2	1.01 H	207	36.86	14.14
5	15720.00	63.0 PK	74.0	-11.0	1.00 H	133	46.26	16.72
6	15720.00	48.9 AV	54.0	-5.1	1.00 H	133	32.18	16.72
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	114.0 PK			1.04 V	132	106.13	7.89
2	*5240.00	101.2 AV			1.04 V	132	93.31	7.89
3	#10480.00	67.5 PK	84.0	-16.5	1.00 V	305	53.37	14.14
4	#10480.00	52.3 AV	71.2	-18.9	1.00 V	305	38.17	14.14
5	15720.00	64.2 PK	74.0	-9.8	1.00 V	214	47.48	16.72
6	15720.00	51.2 AV	54.0	-2.8	1.00 V	214	34.48	16.72

REMARKS:

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

802.11n (20MHz)

CHANNEL	TX Channel 36	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	68.2 PK	74.0	-5.8	1.10 H	331	60.60	7.60
2	5150.00	49.6 AV	54.0	-4.4	1.10 H	331	42.00	7.60
3	*5180.00	106.2 PK			1.10 H	331	98.50	7.70
4	*5180.00	93.4 AV			1.10 H	331	85.70	7.70
5	#10360.00	62.9 PK	76.2	-13.3	1.02 H	106	48.86	14.04
6	#10360.00	49.2 AV	63.4	-14.2	1.02 H	106	35.16	14.04
7	15540.00	62.1 PK	74.0	-11.9	1.00 H	88	45.66	16.48
8	15540.00	48.1 AV	54.0	-5.9	1.00 H	88	31.58	16.48
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	73.1 PK	74.0	-0.9	1.04 V	130	65.50	7.60
2	5150.00	53.5 AV	54.0	-0.5	1.04 V	130	45.90	7.60
3	*5180.00	113.2 PK			1.04 V	130	105.50	7.70
4	*5180.00	100.2 AV			1.04 V	130	92.51	7.70
5	#10360.00	66.2 PK	83.2	-17.0	1.00 V	326	52.16	14.04
6	#10360.00	50.8 AV	70.2	-19.4	1.00 V	326	36.76	14.04
7	15540.00	63.2 PK	74.0	-10.8	1.01 V	276	46.76	16.48
8	15540.00	48.6 AV	54.0	-5.4	1.01 V	276	32.14	16.48

REMARKS:

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

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	105.8 PK			1.88 H	153	98.02	7.76
2	#5200.00	93.5 AV			1.88 H	153	85.69	7.76
3	#10400.00	63.5 PK	75.8	-12.3	1.06 H	321	49.41	14.07
4	#10400.00	50.3 AV	63.5	-13.2	1.06 H	321	36.23	14.07
5	15600.00	62.9 PK	74.0	-11.1	1.00 H	77	46.34	16.56
6	15600.00	48.1 AV	54.0	-5.9	1.00 H	77	31.56	16.56
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	113.7 PK			1.69 V	211	105.90	7.76
2	#5200.00	100.0 AV			1.69 V	211	92.25	7.76
3	#10400.00	67.6 PK	83.7	-16.1	1.02 V	219	53.53	14.07
4	#10400.00	53.2 AV	70.0	-16.8	1.02 V	219	39.13	14.07
5	15600.00	63.1 PK	74.0	-10.9	1.00 V	54	46.54	16.56
6	15600.00	48.7 AV	54.0	-5.3	1.00 V	54	32.16	16.56

REMARKS:

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

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	105.2 PK			1.23 H	343	97.31	7.89
2	#5240.00	91.2 AV			1.23 H	343	83.35	7.89
3	#10480.00	65.2 PK	75.2	-10.0	1.21 H	203	51.06	14.14
4	#10480.00	49.6 AV	61.2	-11.6	1.21 H	203	35.46	14.14
5	15720.00	63.5 PK	74.0	-10.5	1.00 H	22	46.78	16.72
6	15720.00	48.6 AV	54.0	-5.4	1.00 H	22	31.89	16.72
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	112.9 PK			1.17 V	354	105.01	7.89
2	#5240.00	98.9 AV			1.17 V	354	91.02	7.89
3	#10480.00	68.2 PK	82.9	-14.7	1.27 V	160	54.06	14.14
4	#10480.00	53.3 AV	68.9	-15.6	1.27 V	160	39.16	14.14
5	15720.00	64.2 PK	74.0	-9.8	1.01 V	147	47.51	16.72
6	15720.00	48.9 AV	54.0	-5.1	1.01 V	147	32.14	16.72

REMARKS:

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

802.11n (40MHz)

CHANNEL	TX Channel 38	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	68.2 PK	74.0	-5.8	1.42 H	32	60.60	7.60
2	5150.00	49.6 AV	54.0	-4.4	1.42 H	32	42.00	7.60
3	*5190.00	103.2 PK			1.42 H	32	95.47	7.73
4	*5190.00	88.9 AV			1.42 H	32	81.24	7.70
5	#10360.00	63.0 PK	73.2	-10.2	1.00 H	45	48.97	14.04
6	#10360.00	47.8 AV	58.9	-11.1	1.00 H	45	33.78	14.04
7	15540.00	62.4 PK	74.0	-11.6	1.00 H	162	45.93	16.48
8	15540.00	48.3 AV	54.0	-5.7	1.00 H	162	31.78	16.48
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	73.4 PK	74.0	-0.6	1.05 V	138	65.80	7.60
2	5150.00	51.9 AV	54.0	-2.1	1.05 V	138	44.30	7.60
3	*5190.00	107.5 PK			1.05 V	138	99.80	7.70
4	*5190.00	92.6 AV			1.05 V	138	84.91	7.70
5	#10360.00	63.6 PK	77.5	-13.9	1.01 V	199	49.56	14.04
6	#10360.00	48.1 AV	62.6	-14.5	1.01 V	199	34.06	14.04
7	15540.00	62.9 PK	74.0	-11.1	1.00 V	44	46.39	16.48
8	15540.00	48.4 AV	54.0	-5.6	1.00 V	44	31.94	16.48

REMARKS:

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

CHANNEL	TX Channel 46	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	105.4 PK			1.33 H	217	97.54	7.86
2	*5230.00	91.2 AV			1.33 H	217	83.34	7.86
3	#10460.00	63.2 PK	75.4	-12.2	1.00 H	21	49.07	14.13
4	#10460.00	50.4 AV	61.2	-10.8	1.00 H	21	36.27	14.13
5	15690.00	62.4 PK	74.0	-11.6	1.01 H	63	45.72	16.68
6	15690.00	48.2 AV	54.0	-5.8	1.01 H	63	31.53	16.68
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	111.4 PK			1.67 V	155	103.50	7.86
2	*5230.00	96.2 AV			1.67 V	155	88.37	7.86
3	#10460.00	65.2 PK	81.4	-16.2	1.00 V	155	51.07	14.13
4	#10460.00	51.6 AV	66.2	-14.6	1.00 V	155	37.50	14.13
5	15690.00	63.8 PK	74.0	-10.2	1.01 V	132	47.09	16.68
6	15690.00	49.0 AV	54.0	-5.0	1.01 V	132	32.30	16.68

REMARKS:

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

802.11ac BW80

CHANNEL	TX Channel 42	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	68.4 PK	74.0	-5.6	1.25 H	94	60.80	7.60
2	5150.00	50.6 AV	54.0	-3.4	1.25 H	94	43.01	7.60
3	*5210.00	98.6 PK			1.25 H	94	90.81	7.79
4	*5210.00	86.4 AV			1.25 H	94	78.61	7.79
5	#10420.00	61.8 PK	68.6	-6.8	1.00 H	214	47.72	14.08
6	#10420.00	48.0 AV	56.4	-8.4	1.00 H	214	33.94	14.08
7	15630.00	63.7 PK	74.0	-10.3	1.00 H	106	47.08	16.60
8	15630.00	48.7 AV	54.0	-5.4	1.00 H	106	32.05	16.60
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	71.6 PK	74.0	-2.4	1.32 V	136	64.00	7.60
2	5150.00	53.2 AV	54.0	-0.8	1.32 V	136	45.60	7.60
3	*5210.00	103.3 PK			1.32 V	136	95.51	7.79
4	*5210.00	90.1 AV			1.32 V	136	82.31	7.79
5	#10420.00	62.2 PK	73.3	-11.1	1.00 V	211	48.12	14.08
6	#10420.00	48.3 AV	60.1	-11.8	1.00 V	211	34.22	14.08
7	15630.00	65.2 PK	74.0	-8.8	1.01 V	54	48.60	16.60
8	15630.00	49.2 AV	54.0	-4.8	1.01 V	54	32.63	16.60

REMARKS:

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

Band 4 (5725-5850MHz):

ABOVE 1GHz DATA

802.11a

CHANNEL	TX Channel 149	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	#5715.00	64.3 PK	78.3	-14.0	1.47 H	59	55.06	9.24
2	#5725.00	74.6 PK	78.3	-3.7	1.47 H	59	65.36	9.26
3	*5745.00	104.2 PK			1.47 H	59	94.89	9.31
4	*5745.00	91.7 AV			1.47 H	59	82.36	9.31
5	11490.00	63.1 PK	74.0	-10.9	1.00 H	42	48.64	14.46
6	11490.00	47.6 AV	54.0	-6.4	1.00 H	42	33.16	14.46
7	#17235.00	66.8 PK	74.2	-7.4	1.01 H	239	46.94	19.90
8	#17235.00	48.8 AV	61.7	-12.9	1.01 H	239	28.85	19.90
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	#5715.00	66.2 PK	78.3	-12.1	1.05 V	327	56.96	9.24
2	**#5725.00**	**77.7 PK**	**78.3**	**-0.6**	**1.05 V**	**327**	**68.44**	**9.26**
3	*5745.00	110.2 PK			1.05 V	327	100.89	9.31
4	*5745.00	98.1 AV			1.05 V	327	88.79	9.31
5	11490.00	65.2 PK	74.0	-8.8	1.02 V	254	50.74	14.46
6	11490.00	48.2 AV	54.0	-5.8	1.02 V	254	33.74	14.46
7	#17235.00	67.5 PK	80.2	-12.7	1.00 V	88	47.62	19.90
8	#17235.00	49.7 AV	68.1	-18.4	1.00 V	88	29.76	19.90

REMARKS:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	106.6 PK			1.07 H	88	97.20	9.40
2	*5785.00	94.8 AV			1.07 H	88	85.35	9.40
3	11570.00	63.2 PK	74.0	-10.8	1.01 H	214	48.57	14.63
4	11570.00	49.2 AV	54.0	-4.8	1.01 H	214	34.57	14.63
5	#17355.00	61.4 PK	76.6	-15.2	1.01 H	233	41.39	20.01
6	#17355.00	48.6 AV	64.8	-16.2	1.01 H	233	28.59	20.01
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	115.2 PK			1.16 V	288	105.80	9.40
2	*5785.00	104.0 AV			1.16 V	288	94.60	9.40
3	11570.00	66.3 PK	74.0	-7.7	1.00 V	214	51.67	14.63
4	11570.00	51.0 AV	54.0	-3.0	1.00 V	214	36.38	14.63
5	#17355.00	63.5 PK	85.2	-21.7	1.01 V	52	43.49	20.01
6	#17355.00	49.1 AV	74.0	-24.9	1.01 V	52	29.09	20.01

REMARKS:

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

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	104.2 PK			1.06 H	33	94.70	9.50
2	*5825.00	92.4 AV			1.06 H	33	82.86	9.50
3	#5850.00	68.1 PK	78.3	-10.2	1.06 H	33	58.54	9.56
4	#5860.00	63.5 PK	78.3	-14.8	1.06 H	33	53.88	9.58
5	11650.00	61.8 PK	74.0	-12.2	1.00 H	211	47.00	14.80
6	11650.00	47.8 AV	54.0	-6.2	1.00 H	211	33.00	14.80
7	#17475.00	65.6 PK	74.2	-8.6	1.01 H	254	45.47	20.11
8	#17475.00	48.7 AV	62.4	-13.7	1.01 H	254	28.56	20.11
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	110.2 PK			1.41 V	159	100.70	9.50
2	*5825.00	98.9 AV			1.41 V	159	89.36	9.50
3	#5850.00	72.3 PK	78.3	-6.0	1.41 V	159	62.74	9.56
4	#5860.00	67.4 PK	78.3	-10.9	1.41 V	159	57.82	9.58
5	11650.00	64.5 PK	74.0	-9.5	1.01 V	255	49.70	14.80
6	11650.00	49.2 AV	54.0	-4.8	1.01 V	255	34.41	14.80
7	#17475.00	67.7 PK	80.2	-12.5	1.00 V	322	47.54	20.11
8	#17475.00	50.0 AV	68.9	-18.9	1.00 V	322	29.92	20.11

REMARKS:

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

802.11n (20MHz)

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	#5715.00	63.2 PK	78.3	-15.1	1.39 H	244	53.96	9.24
2	#5725.00	73.1 PK	78.3	-5.2	1.39 H	244	63.84	9.26
3	*5745.00	106.2 PK			1.39 H	244	96.89	9.31
4	*5745.00	95.5 AV			1.39 H	244	86.16	9.31
5	11490.00	58.1 PK	74.0	-15.9	1.01 H	66	43.64	14.46
6	11490.00	47.0 AV	54.0	-7.0	1.01 H	66	32.52	14.46
7	#17235.00	66.2 PK	76.2	-10.0	N/A H	N/A	46.31	19.90
8	#17235.00	49.5 AV	65.5	-16.0	N/A H	N/A	29.57	19.90
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	#5715.00	67.1 PK	78.3	-11.2	1.04 V	155	57.86	9.24
2	**#5725.00**	**77.7 PK**	**78.3**	**-0.6**	**1.04 V**	**155**	**68.44**	**9.26**
3	*5745.00	111.2 PK			1.04 V	155	101.89	9.31
4	*5745.00	97.7 AV			1.04 V	155	88.38	9.31
5	11490.00	59.4 PK	74.0	-14.6	1.00 V	213	44.94	14.46
6	11490.00	48.6 AV	54.0	-5.4	1.00 V	213	34.14	14.46
7	#17235.00	66.5 PK	81.2	-14.7	1.00 V	121	46.58	19.90
8	#17235.00	49.9 AV	67.7	-17.8	1.00 V	121	29.96	19.90

REMARKS:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	106.2 PK			1.20 H	203	96.80	9.40
2	*5785.00	95.2 AV			1.20 H	203	85.80	9.40
3	11570.00	63.1 PK	74.0	-10.9	1.00 H	28	48.47	14.63
4	11570.00	49.2 AV	54.0	-4.8	1.00 H	28	34.57	14.63
5	#17355.00	62.1 PK	76.2	-14.1	1.01 H	166	42.09	20.01
6	#17355.00	48.7 AV	65.2	-16.5	1.01 H	166	28.69	20.01
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	113.5 PK			1.06 V	143	104.10	9.40
2	*5785.00	102.0 AV			1.06 V	143	92.64	9.40
3	11570.00	65.7 PK	74.0	-8.3	1.12 V	316	51.07	14.63
4	11570.00	50.8 AV	54.0	-3.2	1.12 V	316	36.17	14.63
5	#17355.00	64.2 PK	83.5	-19.3	1.01 V	258	44.19	20.01
6	#17355.00	49.2 AV	72.0	-22.8	1.01 V	258	29.19	20.01

REMARKS:

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

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	103.6 PK			1.37 H	52	94.10	9.50
2	*5825.00	91.2 AV			1.37 H	52	81.70	9.50
3	#5850.00	67.8 PK	78.3	-10.5	1.37 H	52	58.24	9.56
4	#5860.00	62.1 PK	78.3	-16.2	1.37 H	52	52.52	9.58
5	11650.00	58.7 PK	74.0	-15.3	1.00 H	157	43.91	14.80
6	11650.00	47.0 AV	54.0	-7.0	1.00 H	157	32.17	14.80
7	#17475.00	67.2 PK	73.6	-6.4	1.01 H	62	47.09	20.11
8	#17475.00	50.2 AV	61.2	-11.0	1.01 H	62	30.09	20.11
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	112.3 PK			1.94 V	323	102.81	9.50
2	*5825.00	100.1 AV			1.94 V	323	90.60	9.50
3	#5850.00	72.3 PK	78.3	-6.0	1.94 V	323	62.74	9.56
4	#5860.00	67.6 PK	78.3	-10.7	1.94 V	323	58.02	9.58
5	11650.00	60.2 PK	74.0	-13.8	1.01 V	269	45.41	14.80
6	11650.00	47.9 AV	54.0	-6.1	1.01 V	269	33.06	14.80
7	#17475.00	68.2 PK	82.3	-14.1	1.00 V	62	48.09	20.11
8	#17475.00	50.4 AV	70.1	-19.7	1.00 V	62	30.31	20.11

REMARKS:

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

802.11n (40MHz)

CHANNEL	TX Channel 151	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	#5715.00	62.3 PK	78.3	-16.0	1.44 H	110	53.06	9.24
2	#5725.00	71.2 PK	78.3	-7.1	1.44 H	110	61.97	9.26
3	*5755.00	97.6 PK			1.44 H	110	88.27	9.33
4	*5755.00	86.0 AV			1.44 H	110	76.71	9.33
5	11510.00	55.0 PK	74.0	-19.0	1.02 H	334	40.47	14.50
6	11510.00	45.0 AV	54.0	-9.0	1.02 H	334	30.51	14.50
7	#17265.00	65.3 PK	67.6	-2.3	1.01 H	263	45.37	19.93
8	#17265.00	48.1 AV	56.0	-7.9	1.01 H	263	28.17	19.93
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	#5715.00	67.4 PK	78.3	-10.9	1.00 V	334	58.16	9.24
2	#5725.00	75.8 PK	78.3	-2.5	1.00 V	334	66.54	9.26
3	*5755.00	103.7 PK			1.00 V	334	94.36	9.33
4	*5755.00	91.5 AV			1.00 V	334	82.17	9.33
5	11510.00	56.6 PK	74.0	-17.4	1.01 V	202	42.10	14.50
6	11510.00	45.2 AV	54.0	-8.8	1.01 V	202	30.70	14.50
7	#17265.00	66.3 PK	73.7	-7.4	1.00 V	25	46.39	19.93
8	#17265.00	49.2 AV	61.5	-12.3	1.00 V	25	29.31	19.93

REMARKS:

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

CHANNEL	TX Channel 159	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	106.2 PK			1.22 H	312	96.77	9.43
2	*5795.00	86.0 AV			1.22 H	312	76.58	9.43
3	#5850.00	66.2 PK	78.3	-12.1	1.22 H	312	56.64	9.56
4	#5860.00	62.5 PK	78.3	-15.8	1.22 H	312	52.89	9.58
5	11590.00	57.6 PK	74.0	-16.4	1.00 H	204	42.94	14.66
6	11590.00	46.2 AV	54.0	-7.8	1.00 H	204	31.54	14.66
7	#17385.00	64.8 PK	76.2	-11.4	1.01 H	94	44.72	20.03
8	#17385.00	47.9 AV	56.0	-8.1	1.01 H	94	27.85	20.03
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	110.2 PK			1.86 V	157	100.77	9.43
2	*5795.00	95.3 AV			1.86 V	157	85.87	9.43
3	#5850.00	70.7 PK	78.3	-7.6	1.86 V	157	61.13	9.56
4	#5860.00	67.5 PK	78.3	-10.8	1.86 V	157	57.92	9.58
5	11590.00	59.3 PK	74.0	-14.7	1.00 V	217	44.64	14.66
6	11590.00	47.2 AV	54.0	-6.8	1.00 V	217	32.54	14.66
7	#17385.00	65.4 PK	80.2	-14.8	1.01 V	299	45.37	20.03
8	#17385.00	49.0 AV	65.3	-16.3	1.01 V	299	28.93	20.03

REMARKS:

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

802.11ac BW80

CHANNEL	TX Channel 155	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	#5715.00	63.2 PK	78.3	-15.1	1.02 H	182	53.96	9.24
2	#5725.00	65.1 PK	78.3	-13.2	1.02 H	182	55.84	9.26
3	*5775.00	95.6 PK			1.02 H	182	86.22	9.38
4	*5775.00	80.8 AV			1.02 H	182	71.42	9.38
5	#5850.00	62.4 PK	78.3	-15.9	1.02 H	182	52.86	9.56
6	#5860.00	61.6 PK	78.3	-16.7	1.02 H	182	51.97	9.58
7	11550.00	55.2 PK	74.0	-18.8	1.00 H	32	40.62	14.59
8	11550.00	46.0 AV	54.0	-8.0	1.00 H	32	31.39	14.59
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	#5715.00	67.6 PK	78.3	-10.7	1.75 V	169	58.36	9.24
2	#5725.00	69.3 PK	78.3	-9.0	1.75 V	169	60.04	9.26
3	*5775.00	103.0 PK			1.75 V	169	93.64	9.38
4	*5775.00	90.1 AV			1.75 V	169	80.72	9.38
5	#5850.00	67.6 PK	78.3	-10.7	1.75 V	169	58.04	9.56
6	#5860.00	64.2 PK	78.3	-14.1	1.75 V	169	54.62	9.58
7	11550.00	59.2 PK	74.0	-14.8	1.01 V	201	44.62	14.59
8	11550.00	46.2 AV	54.0	-7.8	1.01 V	201	31.62	14.59

REMARKS:

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

3.2 CONDUCTED EMISSION MEASUREMENT

3.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

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

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

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

3.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	100962	Mar. 05,15	Mar. 04,16
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	April 25,15	Apr. 24,16
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	April 25,15	Apr. 24,16
Test software	ADT	ADT_Cond_ V7.3.7	N/A	N/A	N/A

NOTE:

1. The test was performed in shielded room 553.
2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

3.2.3 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.

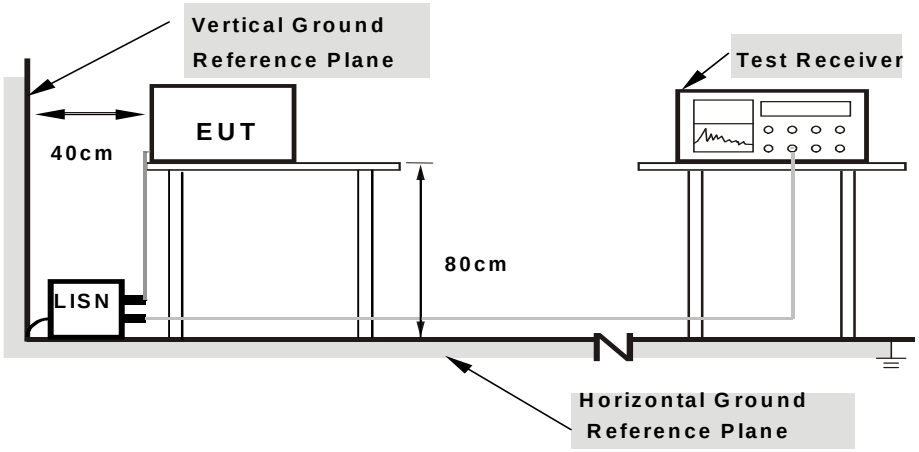
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

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

3.2.4 DEVIATION FROM TEST STANDARD

No deviation.

3.2.5 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).

3.2.6 EUT OPERATING CONDITIONS

Same as 3.1.6

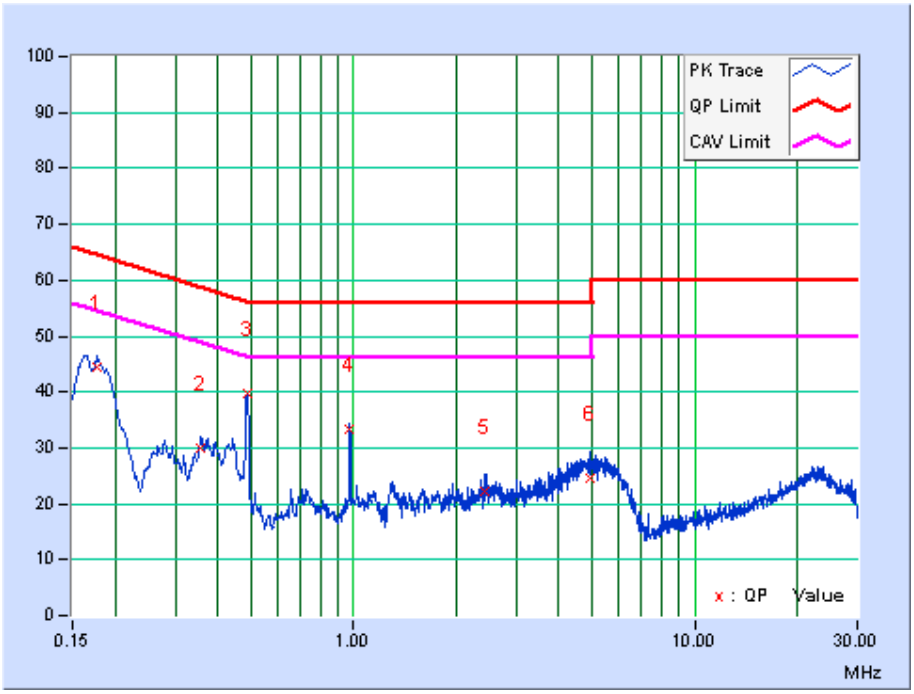
3.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11a

PHASE	Line	6dB BANDWIDTH	9kHz

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17744	9.76	34.67	26.95	44.43	36.71	64.60	54.60	-20.17	-17.89
2	0.35764	9.82	20.04	14.76	29.86	24.58	58.78	48.78	-28.92	-24.20
3	**0.48678**	**9.81**	**29.82**	**28.94**	**39.63**	**38.75**	**56.22**	**46.22**	**-16.59**	**-7.47**
4	0.97501	9.80	23.48	22.53	33.28	32.33	56.00	46.00	-22.72	-13.67
5	2.43735	9.81	12.44	9.32	22.25	19.13	56.00	46.00	-33.75	-26.87
6	4.92411	9.90	14.64	8.34	24.54	18.24	56.00	46.00	-31.46	-27.76

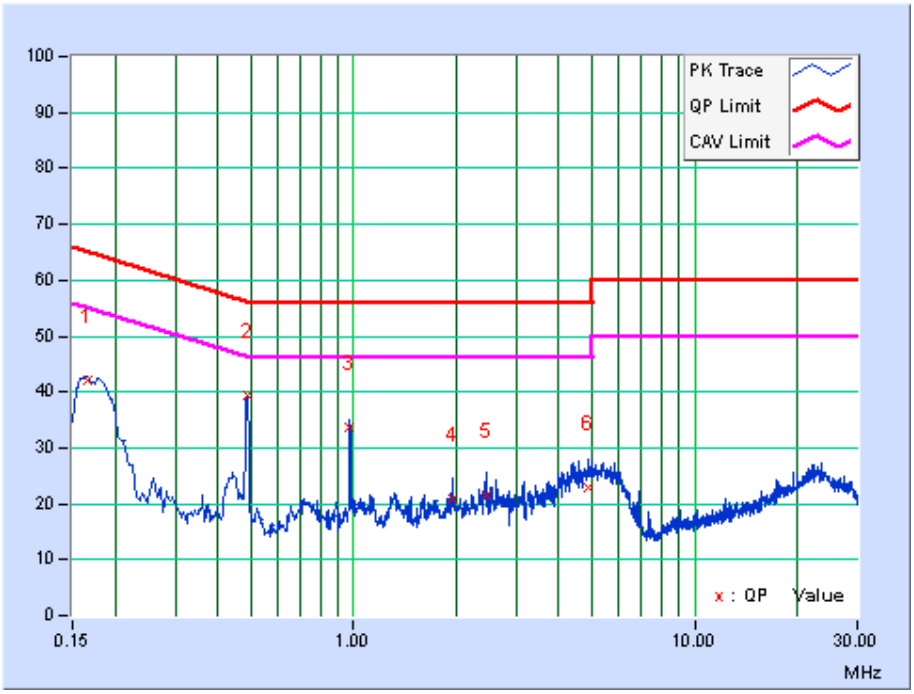
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Neutral	6dB BANDWIDTH	9kHz

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16526	9.50	32.50	28.57	42.00	38.07	65.20	55.20	-23.19	-17.12
2	0.48678	9.51	29.79	29.03	39.30	38.54	56.22	46.22	-16.92	-7.68
3	0.97501	9.52	24.20	23.37	33.72	32.89	56.00	46.00	-22.28	-13.11
4	1.95251	9.52	11.43	9.46	20.95	18.98	56.00	46.00	-35.05	-27.02
5	2.44126	9.53	12.14	8.49	21.67	18.02	56.00	46.00	-34.33	-27.98
6	4.87719	9.61	13.25	6.03	22.86	15.64	56.00	46.00	-33.14	-30.36

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.



3.3 TRANSMIT POWER MEASUREMENT

3.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT

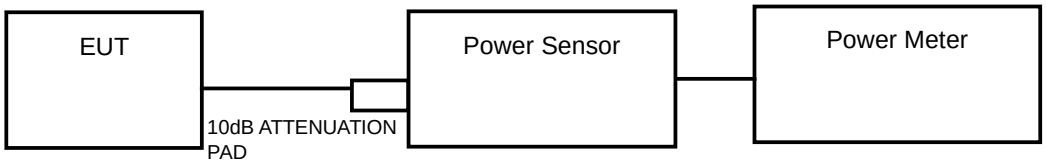
Operation Band	EUT Category		LIMIT
U-NII-1 U-NII-3		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW (21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
	√	Indoor Access Point	1 Watt (30 dBm)
		Mobile and Portable client device	250mW (24 dBm)

Per KDB 662911 D01 Multiple Transmitter Output v02r01 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;
Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20-MHz channel widths with NANT ≥ 5.

For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

3.3.2 TEST SETUP



3.3.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Sensor	Keysight	U2021XA	MY55060016	Feb. 18,15	Feb. 17,16
Power Sensor	Keysight	U2021XA	MY55060018	Feb. 18,15	Feb. 17,16
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 27,14	Oct. 26,15
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep.04,14	Sep. 03,15
Oscilloscope	Agilent	DSO9254A	MY51260160	Oct. 17, 14	Oct. 16, 15
Signal Analyzer	Rohde & Schwarz	FSV7	102331	Nov. 05,14	Nov. 04,15
Signal Generator	Agilent	N5183A	MY50140980	Nov. 05,14	Nov. 04,15
ESG Vector Signal Generator	Agilent	E4438C	MY49072505	Apr. 22, 15	Apr. 21, 16

NOTE:

1. The test was performed in RF Oven room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

3.3.4 TEST PROCEDURE

For 802.11a, 802.11n (20MHz), 802.11n (40MHz)

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

For 802.11ac (80MHz)

1) Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
2) Set sweep trigger to “free run”.
3) Set RBW = 1 MHz.
4) Set VBW ≥ 3 MHz
5) Number of points in sweep ≥ 2 Span / RBW.
6) Sweep time ≤ (number of points in sweep) * T
7) Detector = RMS.
8) Trace mode = max hold.
9) Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

FOR 26dB BANDWIDTH

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

FOR 6dB BANDWIDTH

1) Set RBW = 100 kHz.
2) Set the video bandwidth (VBW) ≥ 3 RBW.
3) Detector = Peak.
4) Trace mode = max hold.
5) Sweep = auto couple.
6) Allow the trace to stabilize.
7) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3.3.5 DEVIATION FROM TEST STANDARD

No deviation.

3.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

3.3.7 TEST RESULTS

POWER OUTPUT:

802.11a

CHAN.	FREQ. (MHz)	AVG. CONDUCTED POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0		
36	5180	17.43	30.00	PASS
40	5200	20.18	30.00	PASS
48	5240	19.82	30.00	PASS
149	5745	16.25	30.00	PASS
157	5785	20.94	30.00	PASS
165	5825	18.71	30.00	PASS

802.11n (20MHz)

CHAN.	FREQ. (MHz)	AVG. CONDUCTED POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0		
36	5180	19.03	30.00	PASS
40	5200	18.88	30.00	PASS
48	5240	18.03	30.00	PASS
149	5745	15.71	30.00	PASS
157	5785	21.25	30.00	PASS
165	5825	16.29	30.00	PASS

802.11n (40MHz)

CHAN.	FREQ. (MHz)	AVG. CONDUCTED POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0		
38	5190	16.24	30.00	PASS
46	5230	20.15	30.00	PASS
151	5755	15.43	30.00	PASS
159	5795	18.75	30.00	PASS

802.11ac (80MHz)

CHAN.	FREQ. (MHz)	AVG. CONDUCTED POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0		
42	5210	15.14	30.00	PASS
155	5775	14.11	30.00	PASS

26dB BANDWIDTH & 6dB BANDWIDTH:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	21.95	PASS
40	5200	29.35	PASS
48	5240	28.66	PASS
CHANNEL	**CHANNEL FREQUENCY (MHz)**	**6dBc BANDWIDTH (MHz)**	**PASS / FAIL**
149	5745	16.39	PASS
157	5785	16.38	PASS
165	5825	16.38	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	37.60	PASS
40	5200	38.05	PASS
48	5240	26.78	PASS
CHANNEL	**CHANNEL FREQUENCY (MHz)**	**6dBc BANDWIDTH (MHz)**	**PASS / FAIL**
149	5745	17.64	PASS
157	5785	17.61	PASS
165	5825	17.64	PASS

802.11n (40MHz)

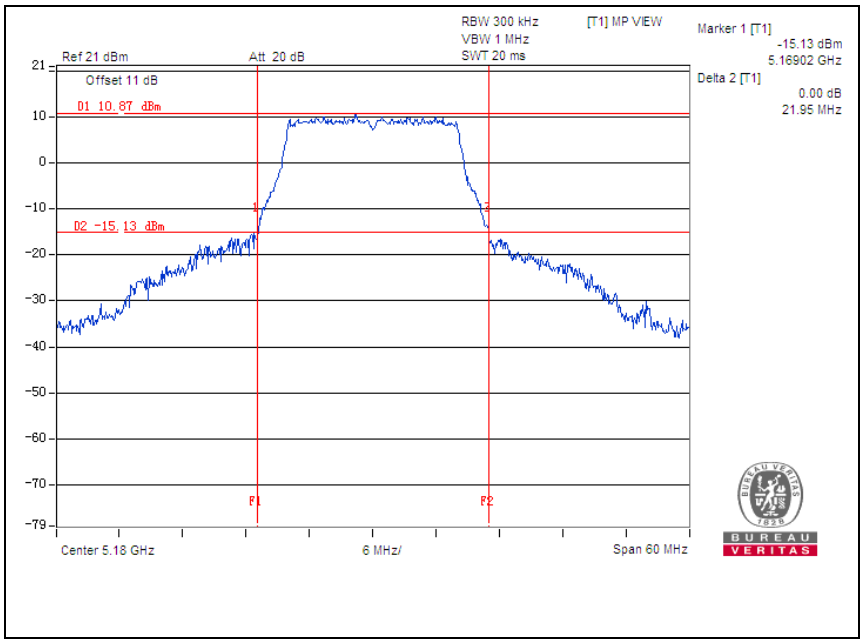
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	44.70	PASS
46	5230	82.86	PASS
CHANNEL	**CHANNEL FREQUENCY (MHz)**	**6dBc BANDWIDTH (MHz)**	**PASS / FAIL**
151	5755	36.47	PASS
159	5795	36.40	PASS

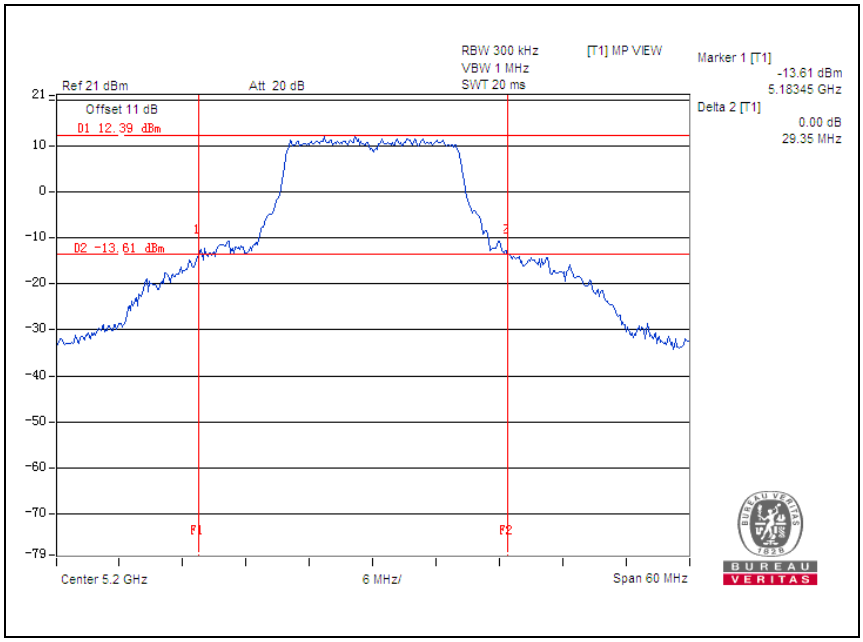
802.11ac (80MHz)

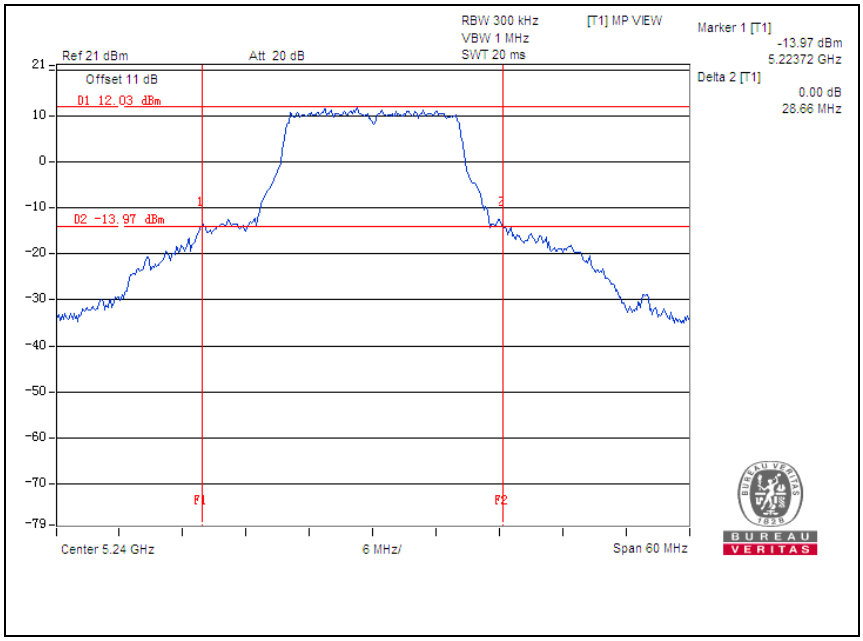
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	82.64	PASS
CHANNEL	**CHANNEL FREQUENCY (MHz)**	**6dBc BANDWIDTH (MHz)**	**PASS / FAIL**
151	5755	76.17	PASS

26dB bandwidth Test Plot

802.11a

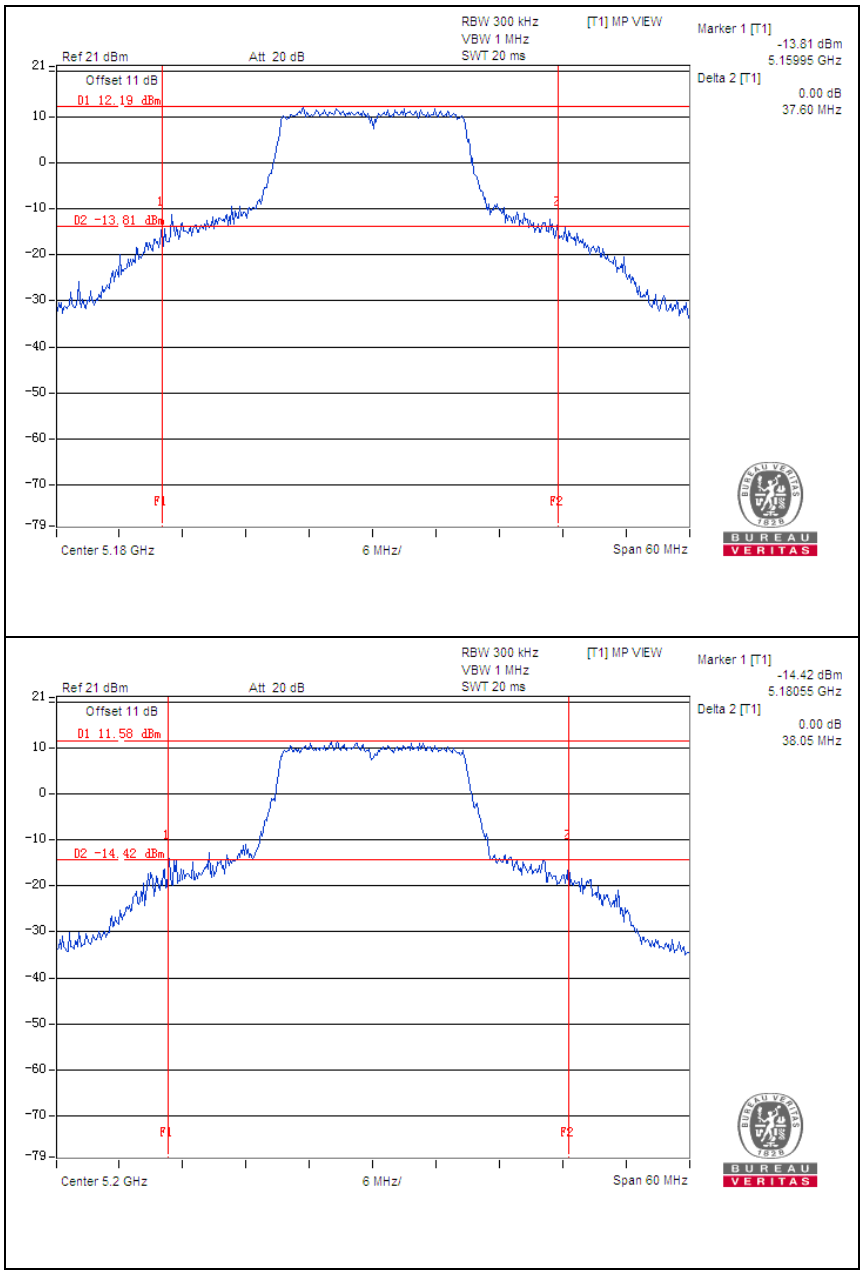


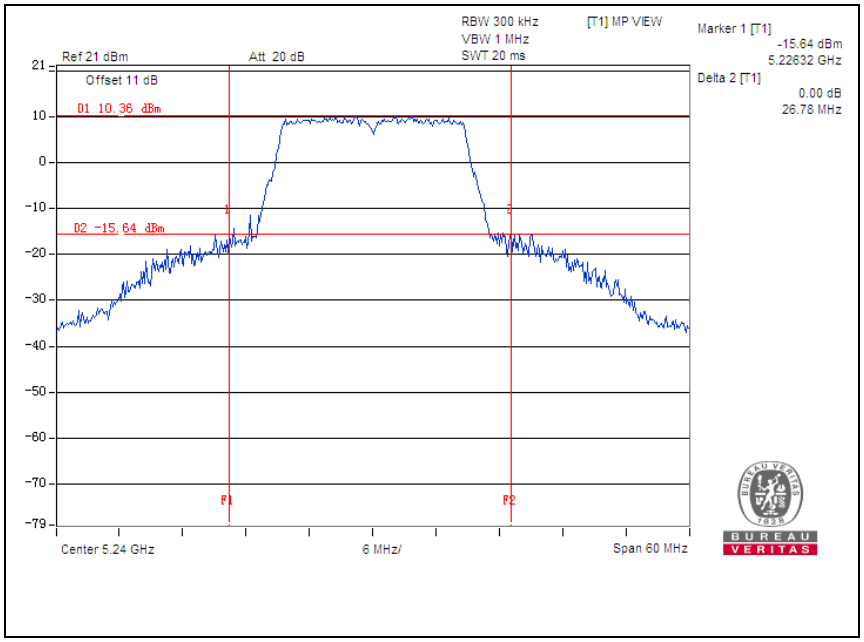

RBW 300 kHz
VBW 1 MHz
SWT 20 ms
[T1] MP VIEW
Marker 1 [T1]
-13.61 dBm
5.18345 GHz
Delta 2 [T1]
0.00 dB
29.35 MHz
Ref 21 dBm
Att 20 dB
Offset 11 dB
D1 12.39 dBm
D2 -13.61 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 5.2 GHz
6 MHz/
Span 60 MHz


RBW 300 kHz
VBW 1 MHz
SWT 20 ms
[T1] MP VIEW
Marker 1 [T1]
-13.97 dBm
5.22372 GHz
Delta 2 [T1]
0.00 dB
28.66 MHz
Ref 21 dBm
Att 20 dB
Offset 11 dB
D1 12.03 dBm
D2 -13.97 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 5.24 GHz
6 MHz/
Span 60 MHz

26dB bandwidth Test Plot

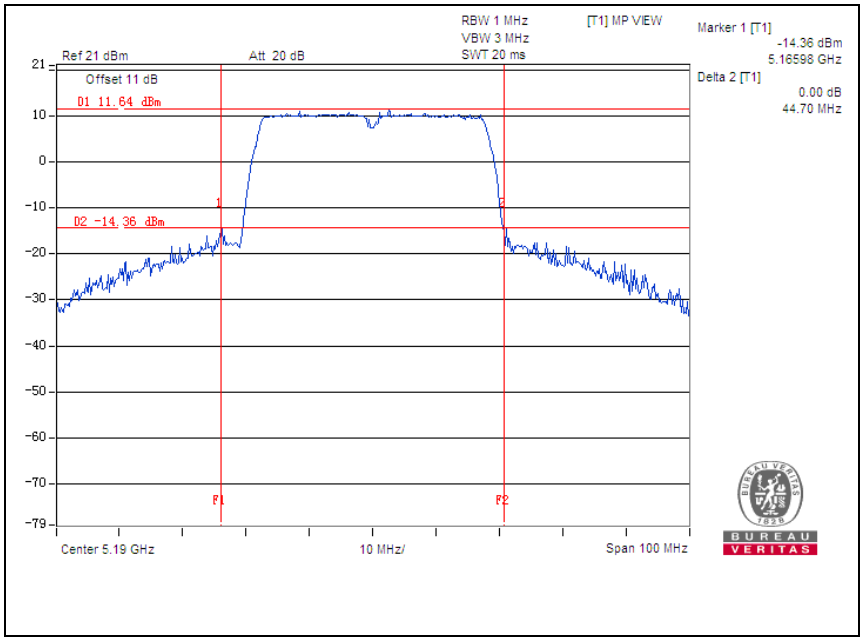
802.11n(20MHz)

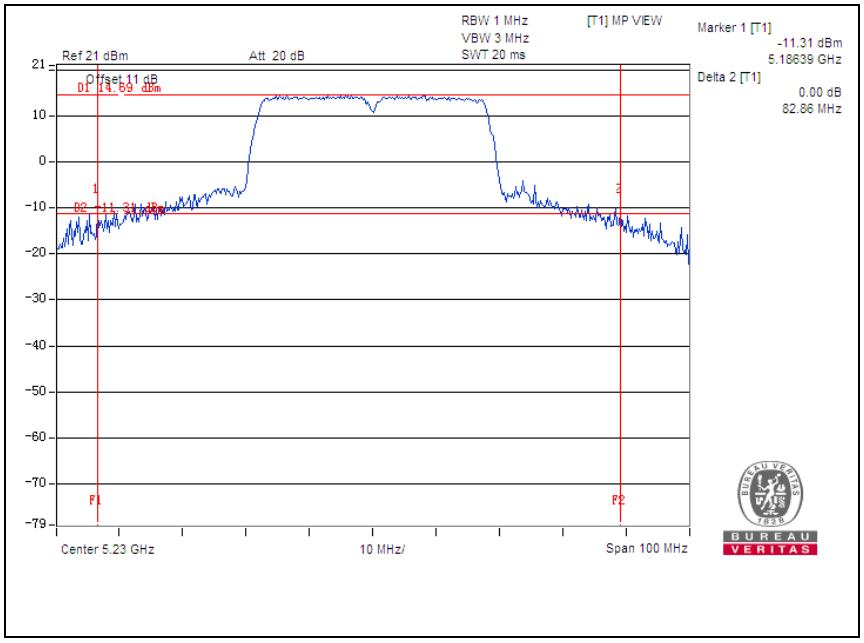




26dB bandwidth Test Plot

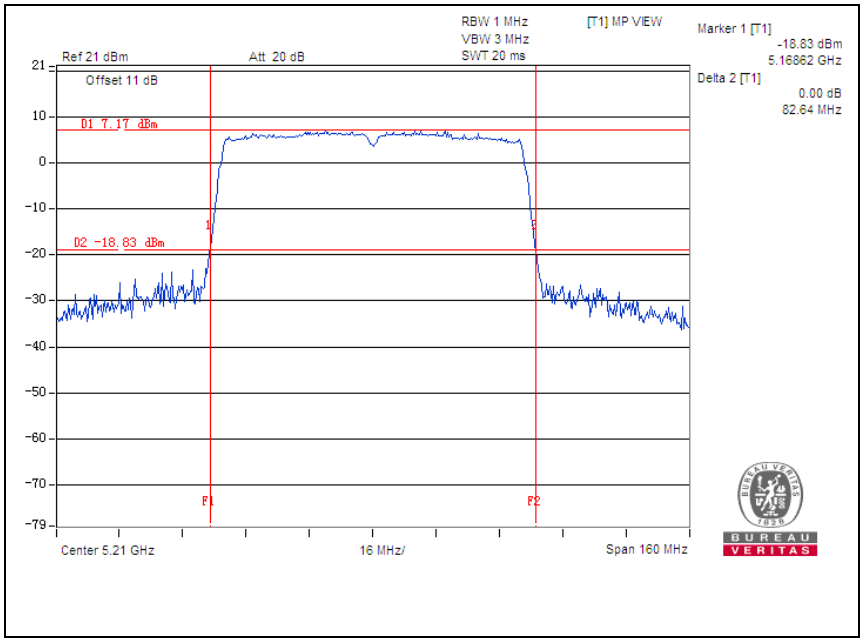
802.11n(40MHz)





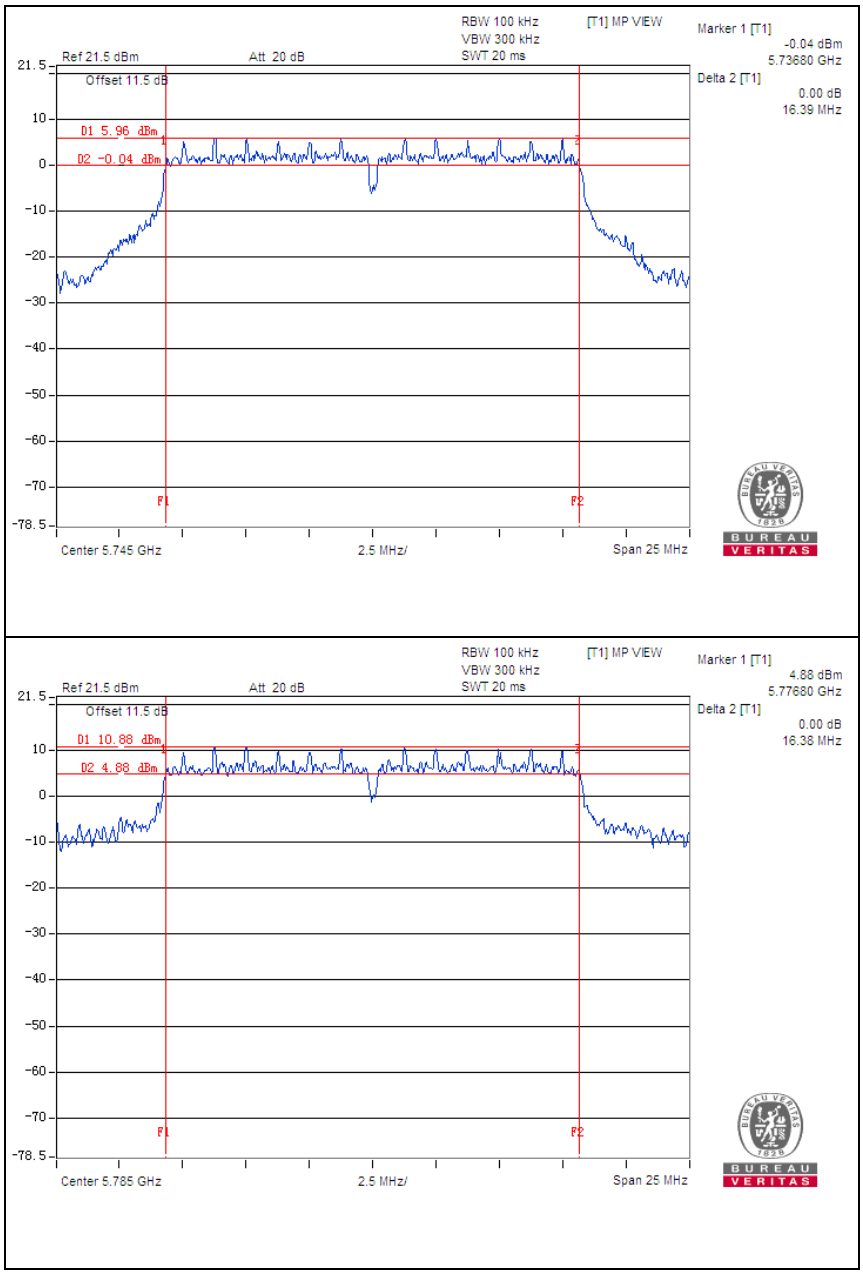
26dB bandwidth Test Plot

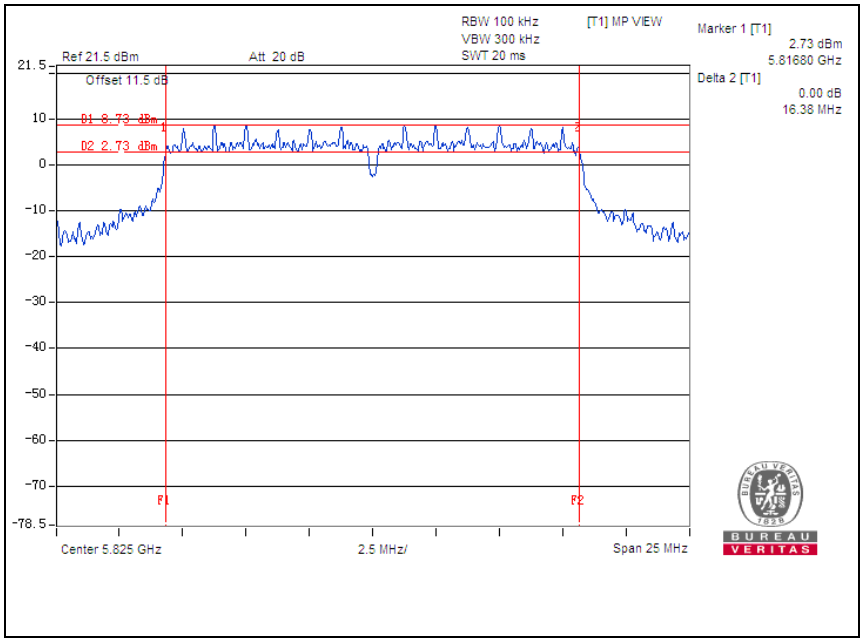
802.11ac(80MHz)



6dB bandwidth Test Plot

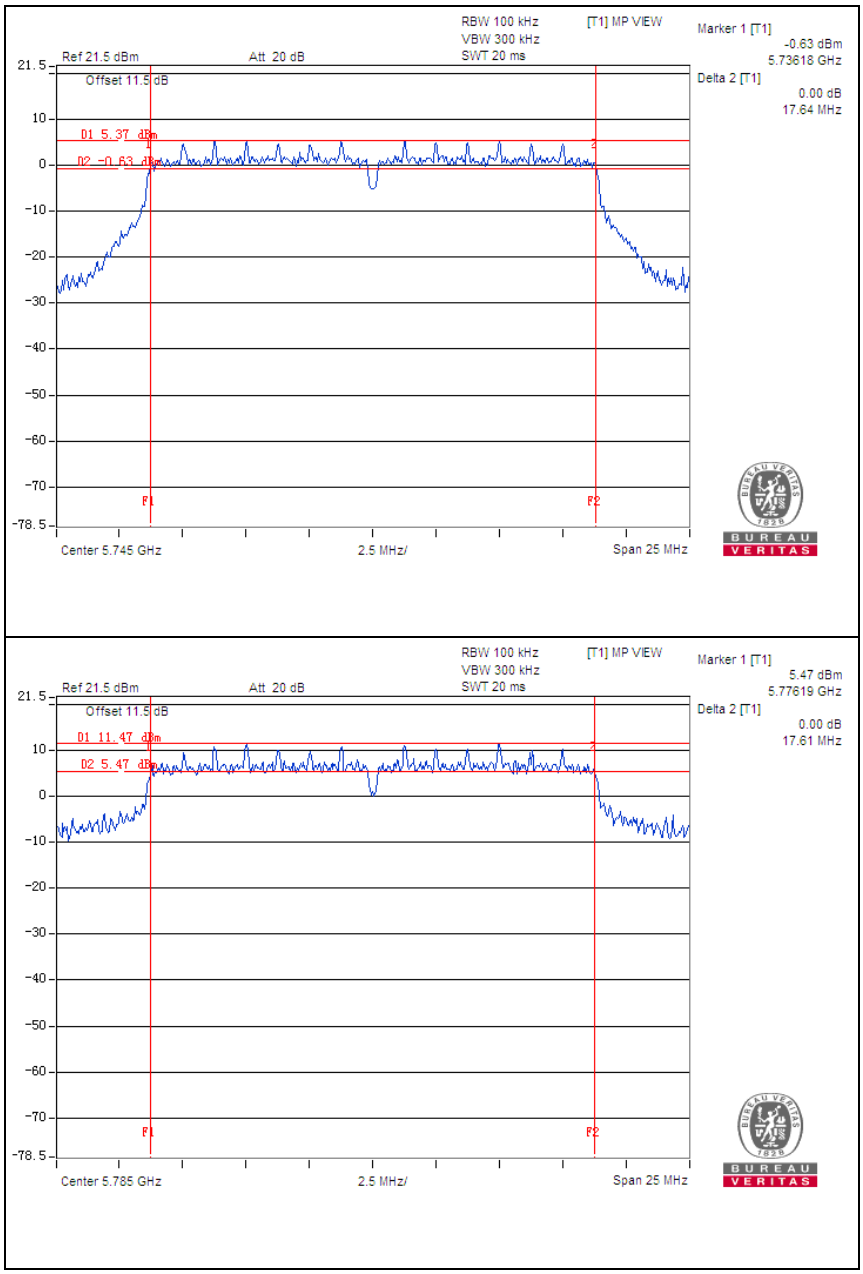
802.11a

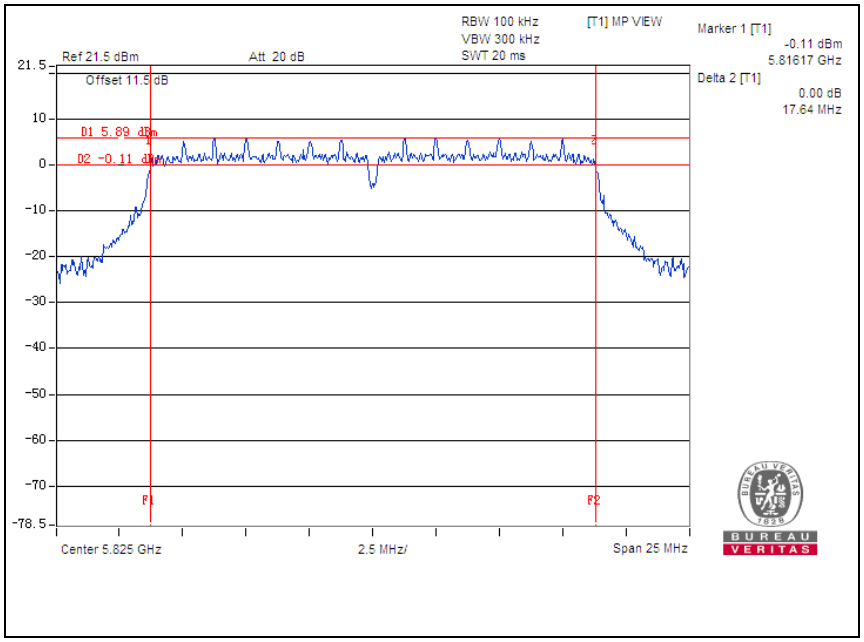



RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MP VIEW
Marker 1 [T1]
2.73 dBm
5.81680 GHz
Delta 2 [T1]
0.00 dB
16.38 MHz
Ref 21.5 dBm
Att 20 dB
Offset 11.5 dB
D1 8.73 dBm
D2 2.73 dBm
21.5
10
0
-10
-20
-30
-40
-50
-60
-70
-78.5
F1
F2
Center 5.825 GHz
2.5 MHz/
Span 25 MHz

6dB bandwidth Test Plot

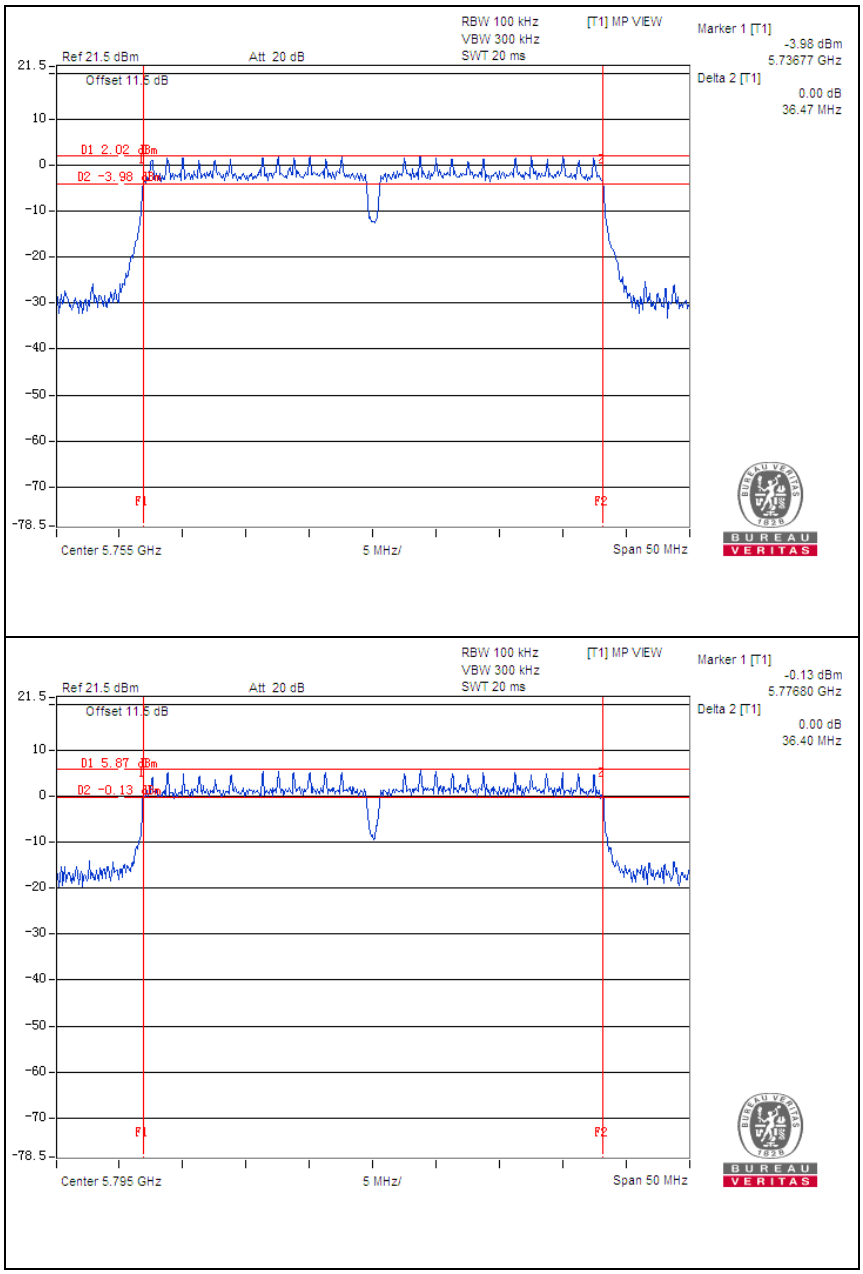
802.11n(20MHz)




RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MP VIEW
Marker 1 [T1]
-0.11 dBm
5.81617 GHz
Delta 2 [T1]
0.00 dB
17.64 MHz
Ref 21.5 dBm
Att 20 dB
Offset 11.5 dB
D1 5.89 dBm
D2 -0.11 dB
21.5
10
0
-10
-20
-30
-40
-50
-60
-70
-78.5
F1
F2
Center 5.825 GHz
2.5 MHz/
Span 25 MHz

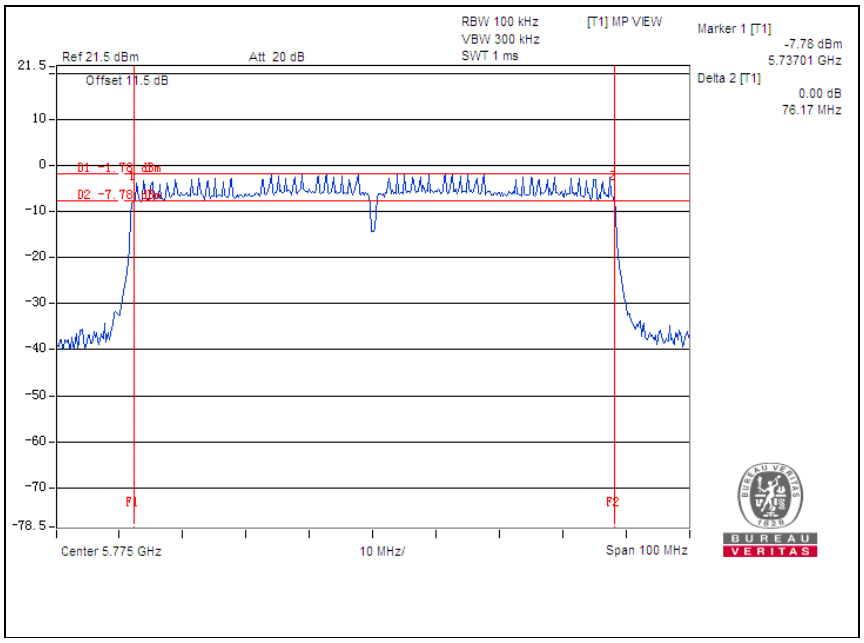
6dB bandwidth Test Plot

802.11n(40MHz)



6dB bandwidth Test Plot

802.11ac(80MHz)

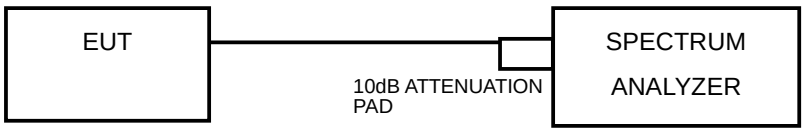


3.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

3.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

3.4.2 TEST SETUP



3.4.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.4.4 TEST PROCEDURES

For U-NII-1, U-NII-2A, U-NII-2C, U-NII-3 band:

Using method SA-1

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 30 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3) Set Channel power measure = 1MHz
4) Sweep time = auto, trigger set to “free run”.
5) Trace average at least 100 traces in power averaging mode.
6) Record the max value

Using method SA-2

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 30 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3) Set Channel power measure = 1MHz
4) Sweep time = auto, trigger set to “free run”.
5) Trace average at least 100 traces in power averaging mode.
6) Record the max value and add 10 log (1/duty cycle)

3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

3.4.6 EUT OPERATING CONDITIONS

Same as 3.3.6

3.4.7 TEST RESULTS

802.11a

(5150-5250MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm/MHz)	MAX. LIMIT (dBm/MHz)	PASS / FAIL
		CHAIN 0		
36	5180	3.76	17.00	PASS
40	5200	5.82	17.00	PASS
48	5240	5.68	17.00	PASS

(5725-5850MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm/500kHz)	MAX. LIMIT (dBm500/kHz)	PASS / FAIL
		CHAIN 0		
149	5745	-1.48	30.00	PASS
157	5785	2.82	30.00	PASS
165	5825	1.25	30.00	PASS

NOTE:

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

802.11n (20MHz)

(5150-5250MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm/MHz)	MAX. LIMIT (dBm/MHz)	PASS / FAIL
		CHAIN 0		
36	5180	5.25	17.00	PASS
40	5200	4.55	17.00	PASS
48	5240	3.47	17.00	PASS

(5725-5850MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm/500kHz)	MAX. LIMIT (dBm500/kHz)	PASS / FAIL
		CHAIN 0		
149	5745	-1.77	30.00	PASS
157	5785	2.89	30.00	PASS
165	5825	-0.97	30.00	PASS

NOTE:

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

802.11n (40MHz)

(5150-5250MHz)

CHAN.	FREQ. (MHz)	PSD (dBm/MHz)	MAX. LIMIT (dBm/MHz)	PASS / FAIL
		CHAIN 0		
38	5190	-1.75	17.00	PASS
46	5230	1.39	17.00	PASS

(5725-5850MHz)

CHAN.	FREQ. (MHz)	PSD (dBm/500kHz)	MAX. LIMIT (dBm/500kHz)	PASS / FAIL
		CHAIN 0		
151	5755	-5.65	30.00	PASS
159	5795	-1.88	30.00	PASS

NOTE:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Refer to section 2.3 for duty cycle spectrum plot.

802.11ac (80MHz)

(5150-5250)

CHAN.	FREQ. (MHz)	PSD (dBm/MHz)	MAX. LIMIT (dBm/MHz)	PASS / FAIL
		CHAIN 0		
42	5210	-5.61	17.00	PASS

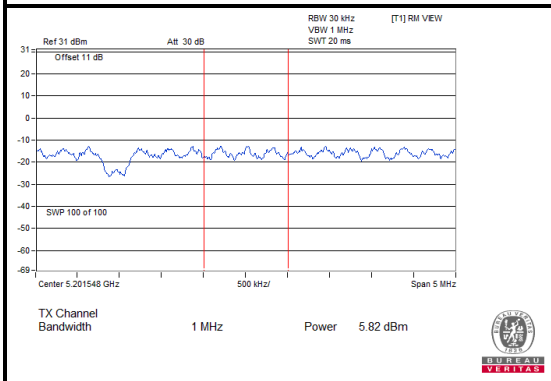
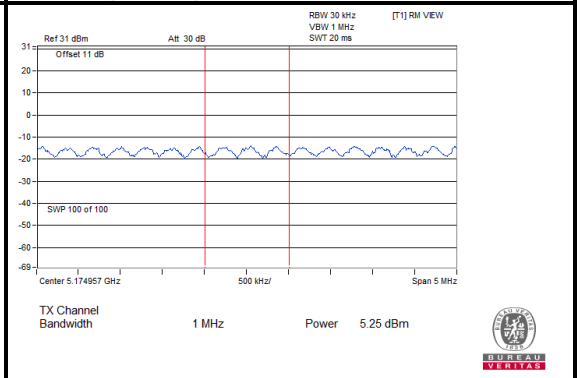
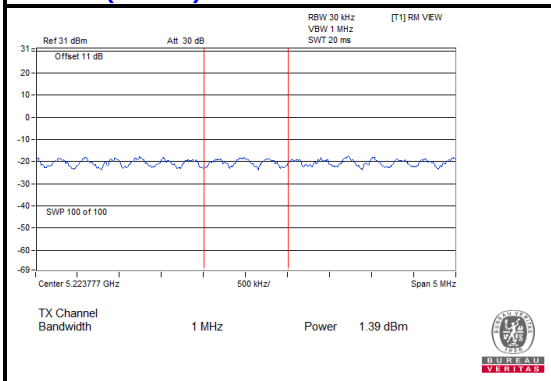
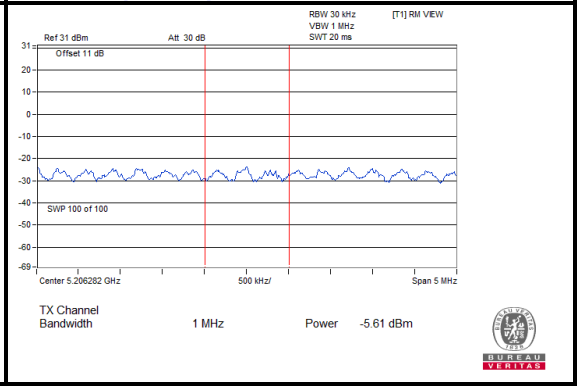
(5725-5850MHz)

CHAN.	FREQ. (MHz)	PSD (dBm/500kHz)	MAX. LIMIT (dBm/500kHz)	PASS / FAIL
		CHAIN 0		
155	5775	-5.65	30.00	PASS

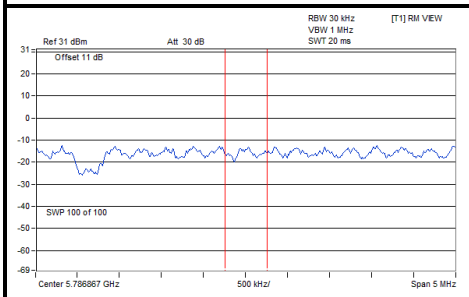
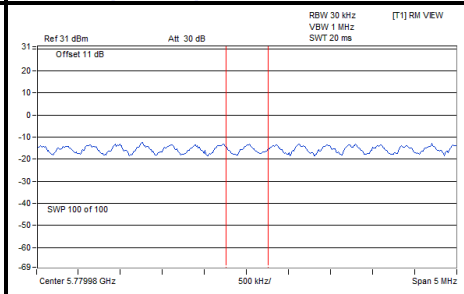
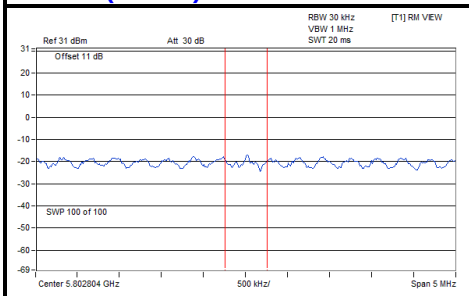
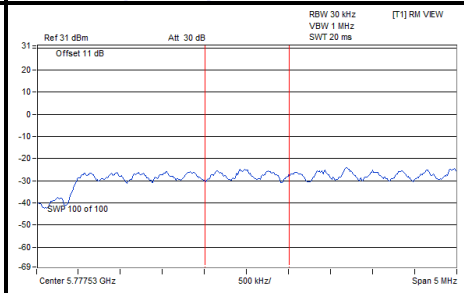
NOTE:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Refer to section 2.3 for duty cycle spectrum plot.

BAND 1
5150-5250MHz

SPECTRUM PLOT OF WORST VALUE	
802.11a	**802.11n (20MHz)**
	
802.11n (40MHz)	**802.11ac (80MHz)**
	

BAND4
5725-5850MHz

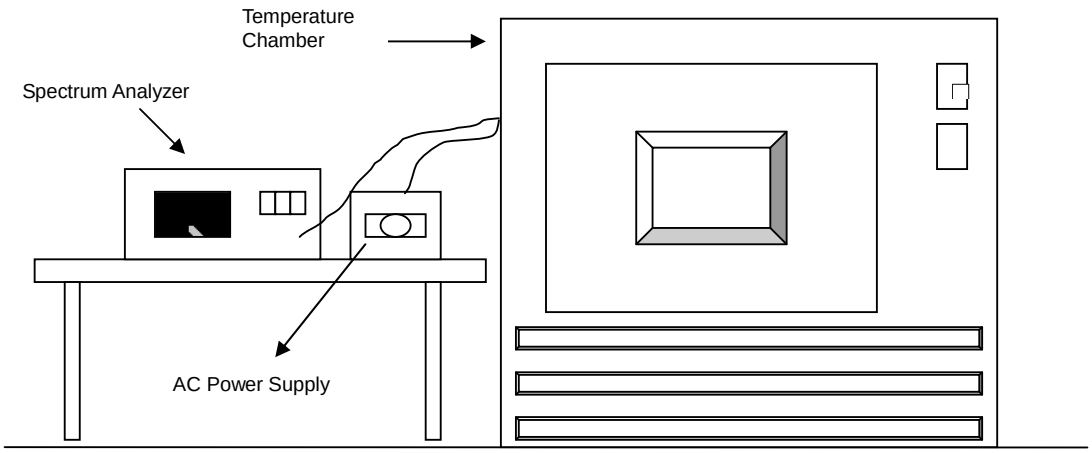
SPECTRUM PLOT OF WORST VALUE	
802.11a	**802.11n (20MHz)**
 TX Channel Bandwidth 500 kHz Power 2.82 dBm	 TX Channel Bandwidth 500 kHz Power 2.89 dBm
802.11n (40MHz)	**802.11ac (80MHz)**
 TX Channel Bandwidth 500 kHz Power -1.88 dBm	 TX Channel Bandwidth 1 MHz Power -5.65 dBm

3.5 FREQUENCY STABILITY

3.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

3.5.2 TEST SETUP



3.5.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.5.4 TEST PROCEDURE

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

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

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

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

e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.

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

3.5.5 DEVIATION FROM TEST STANDARD

No deviation.

3.5.6 EUT OPERATING CONDITION

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

3.5.7 TEST RESULTS

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5180MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
50	138	5179.9906	-1.8147	5179.998	-0.3861	5179.9949	-0.9846	5179.9901	-1.9112
40	120	5179.9891	-2.1042	5179.9978	-0.4247	5179.9948	-1.0039	5179.9887	-2.1815
30	102	5179.9894	-2.0463	5179.997	-0.5792	5179.9948	-1.0039	5179.9892	-2.0849
20	138	5179.9729	-5.2317	5179.9794	-3.9768	5179.9758	-4.6718	5179.972	-5.4054
10	120	5179.9732	-5.1737	5179.9794	-3.9768	5179.9767	-4.4981	5179.9715	-5.5019
0	102	5179.9725	-5.3089	5179.9785	-4.1506	5179.9771	-4.4208	5179.9722	-5.3668
-10	138	5180.0192	3.7066	5180.0117	2.2587	5180.0185	3.5714	5180.0199	3.8417
-20	120	5180.0195	3.7645	5180.0135	2.6062	5180.0187	3.6100	5180.02	3.8610
-30	102	5180.0205	3.9575	5180.0127	2.4517	5180.0183	3.5328	5180.0201	3.8803

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5180MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	138	5180.0262	5.0579	5180.0235	4.5367	5180.0217	4.1892	5180.0251	4.8456
	120	5180.027	5.2124	5180.022	4.2471	5180.0209	4.0347	5180.0251	4.8456
	102	5180.0257	4.9614	5180.0221	4.2664	5180.0208	4.0154	5180.0243	4.6911

4. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

5. APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---