

TEST REPORT



Applicant	VJIT Networks Ltd.
Address	Rm20-22, 15/F, PACIFIC TRADE, CENTRS NO.2 KAI HING ROAD, KOWLOON BAY, HongKong

Manufacturer or Supplier	VJIT Networks Ltd.
Address	Rm20-22, 15/F, PACIFIC TRADE, CENTRS NO.2 KAI HING ROAD, KOWLOON BAY, HongKong
Product	SectorStation N5
Brand Name	N/A
Model	SS-5G16
Additional Model & Model Difference	N/A
Date of tests	Mar. 20, 2016 ~ Mar. 25, 2016

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 Manager / EMC Department
	
	Date: Mar. 25, 2016

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF160129N011	Original release.	Mar. 25, 2016

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	SectorStation N5
MODEL NO.	SS-5G16
Additional Model & Model Difference	N/A
FCC ID	2AHEB-00001
POWER SUPPLY	DC 24V 500mA from adapter input AC100-240V, 50/60Hz
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 300Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz; 5745 ~ 5825MHz
NUMBER OF CHANNEL	9 for 802.11a, 802.11n (20MHz) 4 for 802.11n (40MHz)
OUTPUT POWER	28.97 dBm for 5180 ~ 5240MHz (Maximum Average Power) 28.55 dBm for 5745 ~ 5825MHz (Maximum Average Power)
ANTENNA TYPE	PCB antenna with 16.2dBi gain
DATA CABLE	N/A
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	N/A

NOTE:

1. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers.

MODULATION MODE	TX FUNCTION
802.11a	2TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX

The EUT has beamforming mode, the directional gain = 16.2dBi + 10log(2) = 19.2dBi

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.: 160129N011) for detailed product photo.

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

2.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

Where **RE \geq 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 5745-5825	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)		--	--	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 5745-5825	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 5745-5825	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 5745-5825	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)		--	--	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

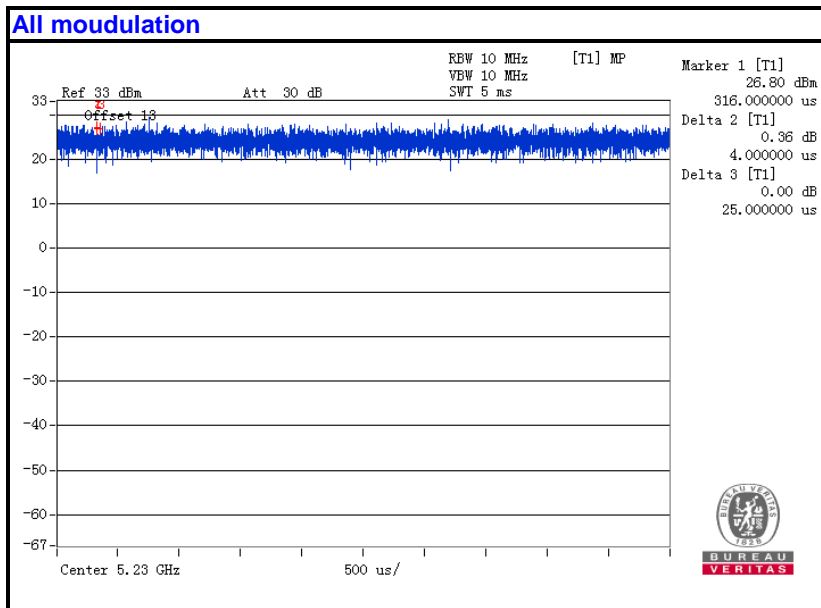


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2.3 DUTY CYCLE OF TEST SIGNAL

Duty cycle = 100%



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	N/A	N/A	N/A	N/A	N/A

NO.	DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A

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 C63.10-2013

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:

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

**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 30,16	May 29,16
Amplifier (9kHz-1GHz)	SONOMA	310D	186955	Mar. 04,15	Mar. 2, 17
Pre-Amplifier (0.5~18GHz)	SCHWARZBECK	BBV 9718	9718-266	Mar 26,16	Mar 25,17
GPS Generator+ Antenna	TOJOIN	GNSS-5000A	E1-010119	Mar 26,16	Mar 25,17
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	April. 19,16	April. 18,17
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. 21,16	Jan. 20,17
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 20,15	Nov. 19,16

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 1.5 meters above the ground at a 3 meter semi-anechoic chamber. 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:

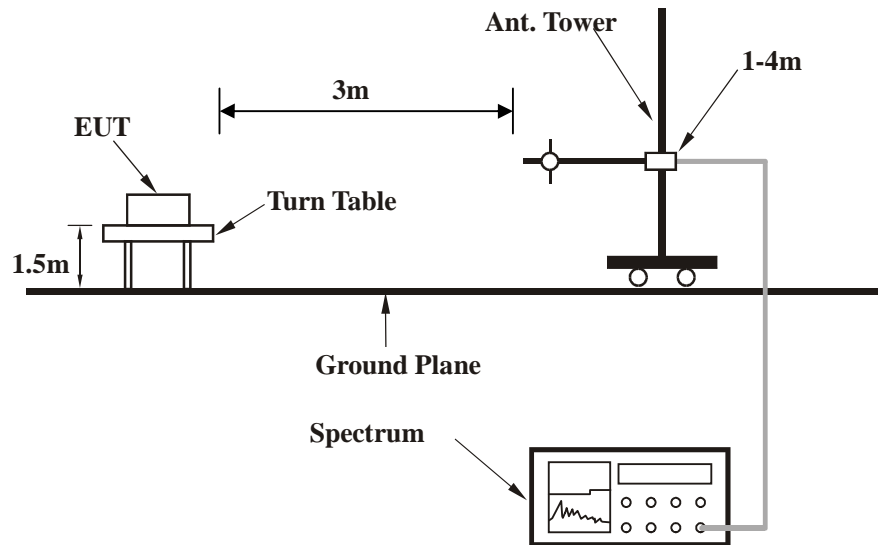
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

- Placed the EUT on the testing table.
- Prepared a notebook to act as a communication partner and placed it outside of testing area.
- 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.



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3.1.8 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

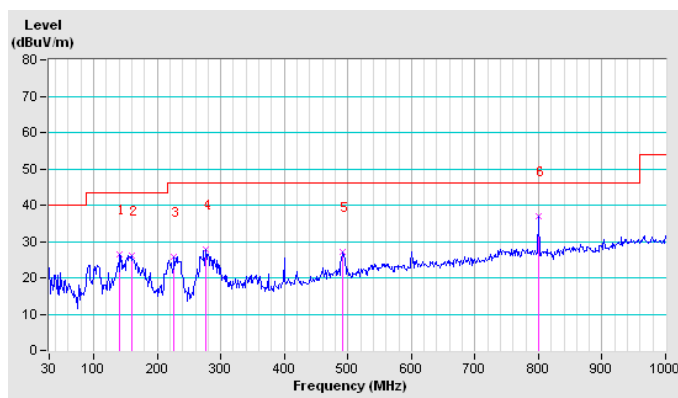
802.11a

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	141.06	26.5 QP	43.5	-17.0	1.59 H	0	44.11	-17.59
2	159.33	26.1 QP	43.5	-17.4	2.54 H	0	44.60	-18.48
3	226.81	25.7 QP	46.0	-20.3	2.37 H	0	43.99	-18.31
4	276.01	27.8 QP	46.0	-18.3	2.22 H	0	42.83	-15.08
5	492.51	27.0 QP	46.0	-19.0	2.05 H	0	34.88	-7.84
6	800.38	37.0 QP	46.0	-9.0	1.88 H	0	38.78	-1.81

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.

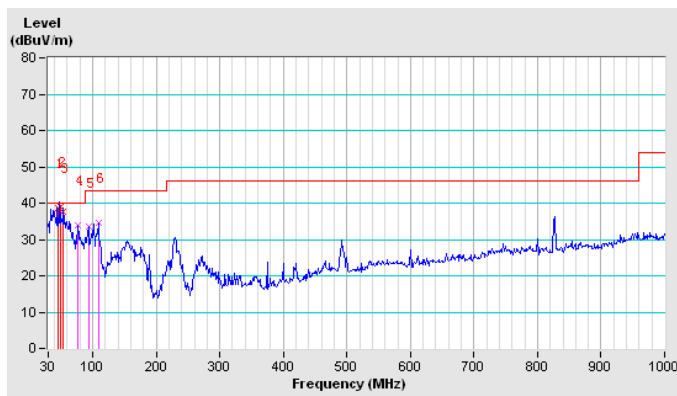


CHANNEL	TX Channel 36	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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	44.69	38.7 QP	40.0	-1.3	1.00 V	216	58.15	-19.45
2	49.38	38.9 QP	40.0	-1.1	1.00 V	156	60.86	-21.96
3	54.12	37.5 QP	40.0	-2.5	1.00 V	251	60.93	-23.43
4	76.39	34.0 QP	40.0	-6.0	2.00 V	0	57.63	-23.62
5	93.26	33.5 QP	43.5	-10.0	2.00 V	0	53.78	-20.31
6	108.72	34.6 QP	43.5	-8.9	2.00 V	0	53.31	-18.71

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)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.3 PK	74.0	-3.7	1.98 H	174	61.33	8.96
2	5150.00	51.9 AV	54.0	-2.1	1.98 H	174	42.94	8.96
3	*5180.00	119.3 PK			1.85 H	201	110.24	9.03
4	*5180.00	107.7 AV			1.85 H	201	98.65	9.03
5	#10360.00	60.7 PK	74.0	-13.3	1.36 H	275	44.68	15.97
6	#10360.00	41.8 AV	54.0	-12.2	1.36 H	275	25.81	15.97
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.7 PK	74.0	-7.3	1.37 V	174	57.70	8.96
2	5150.00	47.6 AV	54.0	-6.4	1.37 V	174	38.60	8.96
3	*5180.00	114.2 PK			1.12 V	216	105.20	9.03
4	*5180.00	104.0 AV			1.12 V	216	94.94	9.03
5	#10360.00	55.7 PK	74.0	-18.3	1.75 V	238	39.73	15.97
6	#10360.00	41.4 AV	54.0	-12.6	1.75 V	238	25.39	15.97

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)
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	119.2 PK			1.56 H	245	110.15	9.07
2	*5200.00	108.1 AV			1.56 H	245	99.04	9.07
3	#10400.00	54.1 PK	74.0	-19.9	1.39 H	241	38.04	16.02
4	#10400.00	40.1 AV	54.0	-13.9	1.39 H	241	24.12	16.02
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	114.3 PK			1.68 V	147	105.20	9.07
2	*5200.00	104.6 AV			1.68 V	147	95.48	9.07
3	#10400.00	54.8 PK	74.0	-19.2	1.29 V	234	38.76	16.02
4	#10400.00	40.5 AV	54.0	-13.5	1.29 V	234	24.48	16.02

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)
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	120.0 PK			1.29 H	216	110.80	9.16
2	*5240.00	108.9 AV			1.29 H	216	99.75	9.16
3	#10480.00	56.3 PK	74.0	-17.7	1.69 H	213	40.19	16.11
4	#10480.00	41.9 AV	54.0	-12.1	1.69 H	213	25.79	16.11
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	*5240.00	114.1 PK			1.64 V	128	104.89	9.16
2	*5240.00	104.3 AV			1.64 V	128	95.11	9.16
3	#10480.00	55.8 PK	74.0	-18.2	1.64 V	250	39.69	16.11
4	#10480.00	41.7 AV	54.0	-12.3	1.64 V	250	25.59	16.11

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.



**BUREAU
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Test Report No.: RF160129N011

802.11n (20MHz)

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	72.9 PK	74.0	-1.1	1.29 H	128	63.94	8.96
2	5150.00	53.0 AV	54.0	-1.0	1.29 H	128	44.01	8.96
3	*5180.00	118.3 PK			1.36 H	215	109.23	9.03
4	*5180.00	107.5 AV			1.36 H	215	98.47	9.03
5	#10360.00	65.8 PK	74.0	-8.2	1.25 H	50	49.81	15.97
6	#10360.00	51.8 AV	54.0	-2.2	1.25 H	50	35.79	15.97
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.1 PK	74.0	-7.9	1.39 V	306	57.15	8.96
2	5150.00	49.1 AV	54.0	-4.9	1.39 V	306	40.11	8.96
3	*5180.00	114.2 PK			1.61 V	308	105.17	9.03
4	*5180.00	103.9 AV			1.61 V	308	94.85	9.03
5	#10360.00	55.7 PK	74.0	-18.3	1.69 V	246	39.72	15.97
6	#10360.00	41.7 AV	54.0	-12.3	1.69 V	246	25.73	15.97

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)
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	119.6 PK			2.05 H	177	110.48	9.07
2	*5200.00	109.3 AV			2.05 H	177	100.19	9.07
3	#10400.00	56.9 PK	74.0	-17.1	1.82 H	331	40.88	16.02
4	#10400.00	42.9 AV	54.0	-11.1	1.82 H	331	26.88	16.02
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	114.4 PK			1.29 V	216	105.34	9.07
2	*5200.00	104.5 AV			1.29 V	216	95.38	9.07
3	#10400.00	56.0 PK	74.0	-18.0	1.52 V	207	39.95	16.02
4	#10400.00	41.4 AV	54.0	-12.6	1.52 V	207	25.33	16.02

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)
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	118.7 PK			1.16 H	275	109.54	9.16
2	*5240.00	107.1 AV			1.16 H	275	97.91	9.16
3	#10480.00	57.6 PK	74.0	-16.4	1.96 H	332	41.44	16.11
4	#10480.00	43.6 AV	54.0	-10.4	1.96 H	332	27.51	16.11
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	*5240.00	115.4 PK			2.03 V	156	106.24	9.16
2	*5240.00	105.3 AV			2.03 V	156	96.18	9.16
3	#10480.00	56.8 PK	74.0	-17.2	1.93 V	213	40.68	16.11
4	#10480.00	42.7 AV	54.0	-11.3	1.93 V	213	26.62	16.11

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.



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Test Report No.: RF160129N011

802.11n (40MHz)

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	68.8 PK	74.0	-5.2	1.56 H	215	59.83	8.96
2	5150.00	53.5 AV	54.0	-0.5	1.56 H	215	44.54	8.96
3	*5190.00	110.5 PK			2.01 H	179	101.45	9.05
4	*5190.00	99.5 AV			2.01 H	179	90.44	9.05
5	#10380.00	55.0 PK	74.0	-19.0	1.93 H	203	39.01	15.99
6	#10380.00	40.9 AV	54.0	-13.1	1.93 H	203	24.91	15.99
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	72.8 PK	74.0	-1.2	1.68 V	215	63.81	8.96
2	5150.00	53.6 AV	54.0	-0.4	1.68 V	215	44.64	8.96
3	*5190.00	106.6 PK			1.26 V	219	97.54	9.05
4	*5190.00	96.8 AV			1.26 V	219	87.79	9.05
5	#10380.00	55.0 PK	74.0	-19.0	1.06 V	217	38.96	15.99
6	#10380.00	40.8 AV	54.0	-13.2	1.06 V	217	24.85	15.99

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)
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	125.1 PK			2.13 H	120	115.96	9.14
2	*5230.00	114.3 AV			2.13 H	120	105.16	9.14
3	#10460.00	56.5 PK	74.0	-17.5	1.18 H	126	40.39	16.09
4	#10460.00	41.8 AV	54.0	-12.2	1.18 H	126	25.71	16.09
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	113.6 PK			1.36 V	175	104.50	9.14
2	*5230.00	102.9 AV			1.36 V	175	93.71	9.14
3	#10460.00	55.9 PK	74.0	-18.1	1.35 V	221	39.78	16.09
4	#10460.00	41.7 AV	54.0	-12.3	1.35 V	221	25.61	16.09

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):

TX_High

ABOVE 1GHz DATA

802.11a

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	#5714.90	65.4 PK	101.1	-35.7	1.73 H	185	55.19	10.25
2	#5719.92	70.3 PK	101.1	-30.8	1.92 H	174	59.99	10.26
3	#5725.00	76.8 PK	101.1	-24.3	1.83 H	217	66.56	10.28
4	*5745.00	121.1 PK			2.00 H	178	110.76	10.32
5	*5745.00	110.4 AV			2.00 H	178	100.12	10.32
6	11490.00	60.6 PK	74.0	-13.4	1.24 H	292	43.29	17.26
7	11490.00	46.8 AV	54.0	-7.2	1.24 H	292	29.56	17.26
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	#5714.90	49.6 PK	93.0	-43.4	1.85 V	231	39.34	10.25
2	#5723.00	57.4 PK	93.0	-35.6	1.56 V	228	47.08	10.28
3	#5725.00	61.6 PK	93.0	-31.4	1.56 V	135	51.33	10.28
4	*5745.00	113.0 PK			1.62 V	193	102.67	10.32
5	*5745.00	103.2 AV			1.62 V	193	92.85	10.32
6	11490.00	57.2 PK	74.0	-16.8	1.86 V	316	39.94	17.26
7	11490.00	43.2 AV	54.0	-10.8	1.86 V	316	25.94	17.26

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	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	117.8 PK			1.39 H	271	107.34	10.42
2	*5785.00	107.0 AV			1.39 H	271	96.61	10.42
3	11570.00	61.1 PK	74.0	-12.9	1.68 H	56	43.66	17.45
4	11570.00	45.8 AV	54.0	-8.2	1.68 H	56	28.35	17.45
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	114.5 PK			1.92 V	320	104.09	10.42
2	*5785.00	104.4 AV			1.92 V	320	94.02	10.42
3	11570.00	56.6 PK	74.0	-17.4	1.00 V	0	39.15	17.45
4	11570.00	44.2 AV	54.0	-9.8	1.00 V	0	26.75	17.45

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.



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Test Report No.: RF160129N011

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	116.7 PK			1.90 H	187	106.16	10.51
2	*5825.00	106.7 AV			1.90 H	187	96.14	10.51
3	#5850.00	61.8 PK	96.7	-34.9	1.92 H	143	51.27	10.57
4	#5851.00	63.5 PK	96.7	-33.2	1.65 H	72	52.96	10.57
5	#5860.10	56.8 PK	96.7	-39.9	1.87 H	251	46.18	10.60
6	11650.00	61.9 PK	74.0	-12.1	1.83 H	263	44.23	17.63
7	11650.00	47.3 AV	54.0	-6.7	1.83 H	263	29.70	17.63
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	114.2 PK			1.68 V	182	103.72	10.51
2	*5825.00	104.8 AV			1.68 V	182	94.31	10.51
3	#5850.00	58.2 PK	94.2	-36.0	1.95 V	142	47.64	10.57
4	#5853.00	57.8 PK	94.2	-36.4	1.89 V	176	47.21	10.57
5	#5860.10	52.3 PK	94.2	-41.9	1.86 V	257	41.69	10.60
6	11650.00	58.3 PK	74.0	-15.7	1.49 V	173	40.64	17.63
7	11650.00	44.4 AV	54.0	-9.6	1.49 V	173	26.80	17.63

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)
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	#5714.90	57.3 PK	97.7	-40.4	1.26 H	316	47.03	10.25
2	#5720.00	65.8 PK	97.7	-31.9	1.25 H	214	55.51	10.26
3	#5725.00	66.8 PK	97.7	-30.9	1.46 H	128	56.54	10.28
4	*5745.00	117.7 PK			1.25 H	210	107.38	10.32
5	*5745.00	107.8 AV			1.25 H	210	97.51	10.32
6	11490.00	58.8 PK	74.0	-15.2	1.56 H	245	41.54	17.26
7	11490.00	44.5 AV	54.0	-9.5	1.56 H	245	27.23	17.26
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	#5714.90	53.1 PK	94.7	-41.6	2.00 V	164	42.85	10.25
2	#5724.00	61.5 PK	94.7	-33.2	1.60 V	210	51.24	10.28
3	#5725.00	63.2 PK	94.7	-31.5	1.69 V	231	52.94	10.28
4	*5745.00	114.7 PK			1.26 V	256	104.42	10.32
5	*5745.00	104.2 AV			1.26 V	256	93.87	10.32
6	11490.00	55.8 PK	74.0	-18.2	1.64 V	203	38.50	17.26
7	11490.00	42.5 AV	54.0	-11.5	1.64 V	203	25.22	17.26

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)
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	119.3 PK			2.01 H	330	108.88	10.42
2	*5785.00	108.4 AV			2.01 H	330	97.99	10.42
3	11570.00	62.5 PK	74.0	-11.5	1.41 H	347	45.02	17.45
4	11570.00	46.7 AV	54.0	-7.3	1.41 H	347	29.27	17.45
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	113.4 PK			1.39 V	302	102.98	10.42
2	*5785.00	103.2 AV			1.39 V	302	92.75	10.42
3	11570.00	58.3 PK	74.0	-15.7	1.54 V	215	40.82	17.45
4	11570.00	43.6 AV	54.0	-10.4	1.54 V	215	26.15	17.45

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.



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Test Report No.: RF160129N011

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	117.6 PK			1.68 H	154	107.09	10.51
2	*5825.00	107.1 AV			1.68 H	154	96.60	10.51
3	#5850.00	57.9 PK	97.6	-39.7	1.43 H	217	47.30	10.57
4	#5853.00	57.8 PK	97.6	-39.8	1.68 H	221	47.27	10.57
5	#5860.10	52.7 PK	97.6	-44.9	1.85 H	192	42.14	10.60
6	11650.00	64.0 PK	74.0	-10.0	1.86 H	216	46.41	17.63
7	11650.00	48.4 AV	54.0	-5.6	1.86 H	216	30.73	17.63
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	114.8 PK			1.85 V	259	104.28	10.51
2	*5825.00	104.7 AV			1.85 V	259	94.20	10.51
3	#5850.00	59.0 PK	94.8	-35.8	1.67 V	213	48.43	10.57
4	#5852.00	57.6 PK	94.8	-37.2	1.63 V	261	47.01	10.57
5	#5860.10	53.1 PK	94.8	-41.7	1.84 V	283	42.45	10.60
6	11650.00	58.9 PK	74.0	-15.1	1.58 V	271	41.30	17.63
7	11650.00	44.4 AV	54.0	-9.6	1.58 V	271	26.73	17.63

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)
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	#5714.90	66.7 PK	97.1	-30.4	1.68 H	203	56.48	10.25
2	#5722.00	76.2 PK	97.1	-20.9	1.59 H	281	65.88	10.27
3	#5725.00	76.5 PK	97.1	-20.6	1.54 H	328	66.25	10.28
4	*5755.00	117.1 PK			1.69 H	243	106.77	10.35
5	*5755.00	106.2 AV			1.69 H	243	95.83	10.35
6	11510.00	56.7 PK	74.0	-17.3	1.10 H	128	39.39	17.31
7	11510.00	43.2 AV	54.0	-10.8	1.10 H	128	25.92	17.31
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	#5714.90	64.1 PK	93.6	-29.5	1.62 V	128	53.89	10.25
2	#5720.00	72.6 PK	93.6	-21.0	1.58 V	216	62.30	10.26
3	#5725.00	70.3 PK	93.6	-23.3	1.39 V	175	60.02	10.28
4	*5755.00	113.6 PK			1.95 V	179	103.26	10.35
5	*5755.00	102.3 AV			1.95 V	179	91.90	10.35
6	11510.00	58.3 PK	74.0	-15.7	1.39 V	218	41.01	17.31
7	11510.00	42.6 AV	54.0	-11.4	1.39 V	218	25.26	17.31

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.
7. The limit value is defined as per 15.247.

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	115.3 PK			1.68 H	211	104.84	10.44
2	*5795.00	104.8 AV			1.68 H	211	94.38	10.44
3	#5850.00	56.7 PK	95.3	-38.6	1.16 H	125	46.16	10.57
4	#5854.00	56.1 PK	95.3	-39.2	1.60 H	125	45.56	10.58
5	#5860.10	54.6 PK	95.3	-40.7	1.56 H	230	43.95	10.60
6	11590.00	56.9 PK	74.0	-17.1	2.16 H	310	39.44	17.49
7	11590.00	43.1 AV	54.0	-10.9	2.16 H	310	25.65	17.49
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	111.6 PK			1.26 V	215	101.15	10.44
2	*5795.00	100.8 AV			1.26 V	215	90.34	10.44
3	#5850.00	52.3 PK	91.6	-39.3	1.75 V	126	41.75	10.57
4	#5851.00	54.3 PK	91.6	-37.3	1.28 V	258	43.68	10.57
5	#5860.10	52.6 PK	91.6	-39.0	2.03 V	108	41.99	10.60
6	11590.00	55.9 PK	74.0	-18.1	1.56 V	219	38.41	17.49
7	11590.00	42.8 AV	54.0	-11.2	1.56 V	219	25.31	17.49

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.
7. The limit value is defined as per 15.247.

3.2 CONDUCTED EMISSION MEASUREMENT

3.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	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

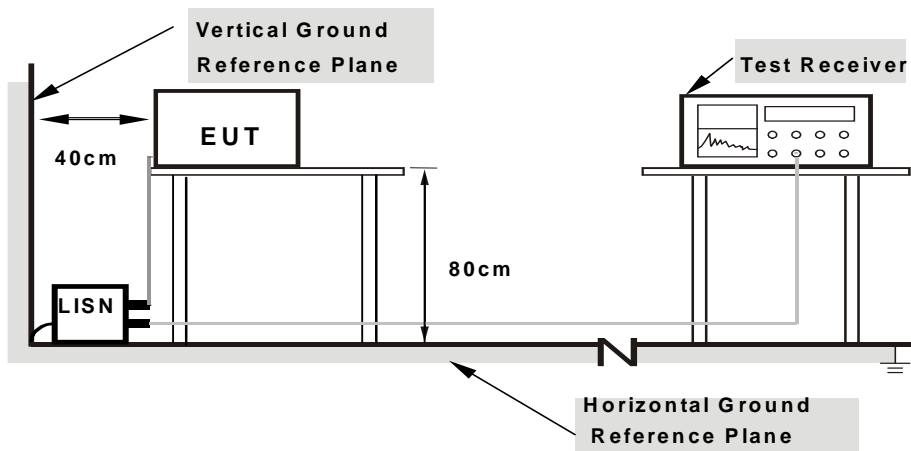
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) 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



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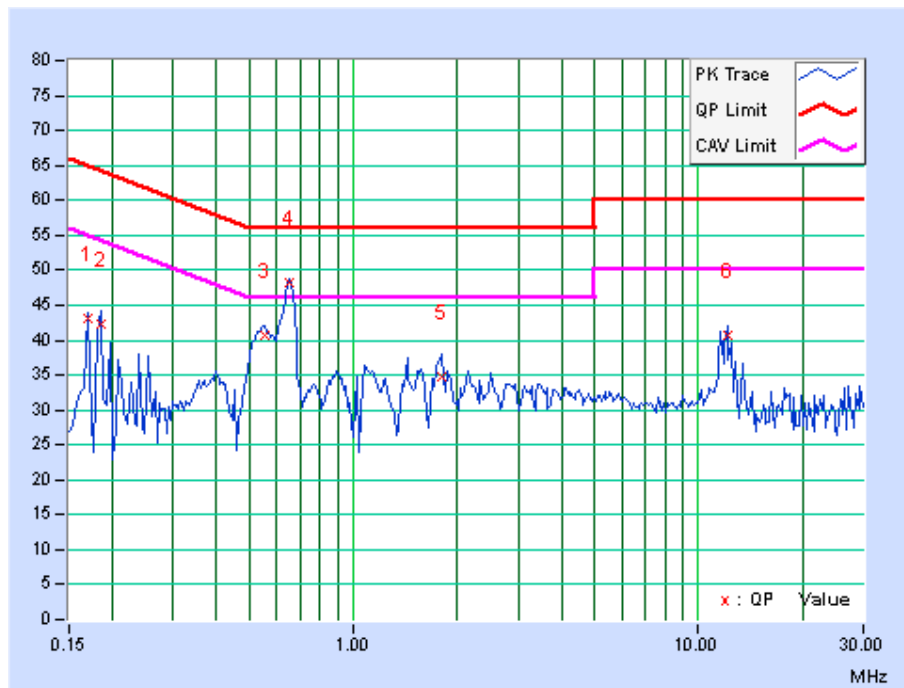
3.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11a

PHASE	Line	6dB BANDWIDTH	9kHz
-------	------	---------------	------

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16953	9.81	33.40	18.54	43.21	28.35	64.98	54.98	-21.78	-26.64
2	0.18516	9.80	32.44	19.24	42.24	29.04	64.25	54.25	-22.01	-25.21
3	0.55234	9.92	30.68	25.82	40.60	35.74	56.00	46.00	-15.40	-10.26
4	0.65000	9.93	38.26	32.34	48.19	42.27	56.00	46.00	-7.81	-3.73
5	1.79297	9.98	24.80	19.50	34.78	29.48	56.00	46.00	-21.22	-16.52
6	12.13672	10.17	30.38	23.96	40.55	34.13	60.00	50.00	-19.45	-15.87

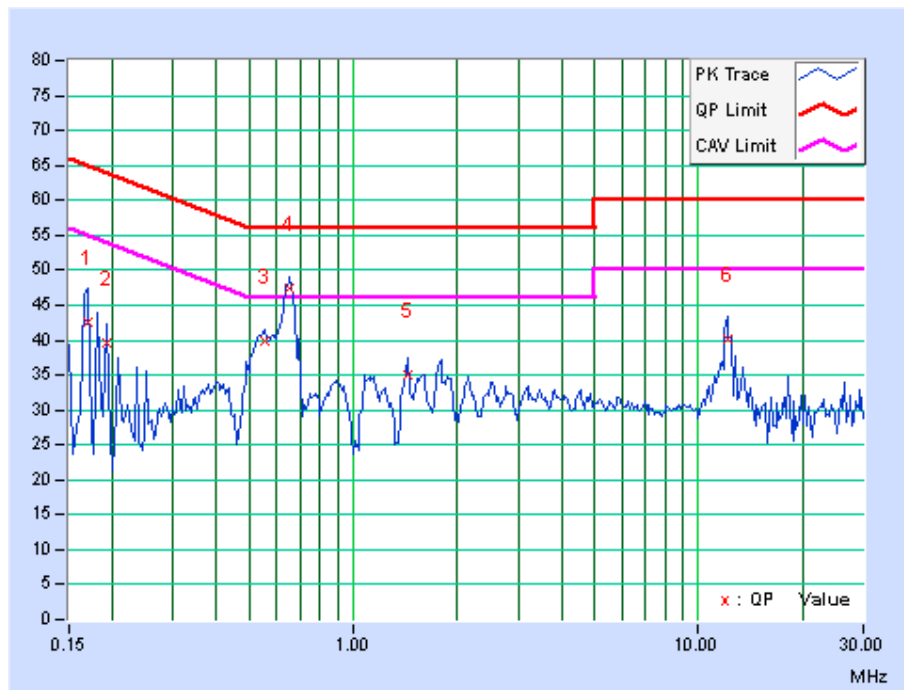
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. The emission levels of other frequencies were very low against the limit.
 3. Margin value = Emission level - Limit value
 4. Correction factor = Insertion loss + Cable loss
 5. Emission Level = Correction Factor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



PHASE	Neutral	6dB BANDWIDTH	9kHz
-------	---------	---------------	------

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16953	9.50	33.10	17.10	42.60	26.60	64.98	54.98	-22.39	-28.39
2	0.19297	9.51	30.14	14.50	39.65	24.01	63.91	53.91	-24.26	-29.90
3	0.55234	9.56	30.36	25.44	39.92	35.00	56.00	46.00	-16.08	-11.00
4	0.65391	9.59	37.70	30.94	47.29	40.53	56.00	46.00	-8.71	-5.47
5	1.43750	9.65	25.38	21.24	35.03	30.89	56.00	46.00	-20.97	-15.11
6	12.13672	9.92	30.24	23.56	40.16	33.48	60.00	50.00	-19.84	-16.52

- 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 \leq 125mW (21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
	√	Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
		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,

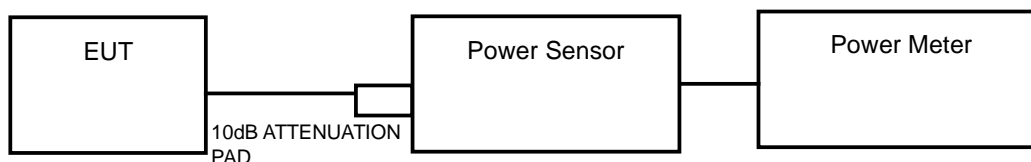
Array Gain = 0 dB (i.e., no array gain) for NANT \leq 4;

Array Gain = 0 dB (i.e., no array gain) for channel widths \geq 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 \geq 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. 18,16	Feb. 17,17
Power Sensor	Keysight	U2021XA	MY55060018	Feb. 18,16	Feb. 17,17
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 27,15	Oct. 26,16
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep.04,15	Sep. 03,16
Oscilloscope	Agilent	DSO9254A	MY51260160	Oct. 17, 15	Oct. 16, 16
Signal Analyzer	Rohde & Schwarz	FSV7	102331	Nov. 05,15	Nov. 04,16
Signal Generator	Agilent	N5183A	MY50140980	Nov. 05,15	Nov. 04,16
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 \geq 3 MHz
- 5) Number of points in sweep \geq 2 Span / RBW.
- 6) Sweep time \leq (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.



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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)		TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1			
36	5180	25.24	23.93	27.64	30.00	PASS
40	5200	26.57	24.31	28.60	30.00	PASS
48	5240	27.06	24.42	28.95	30.00	PASS
149	5745	26.52	21.28	27.66	30.00	PASS
157	5785	26.93	23.48	28.55	30.00	PASS
165	5825	25.39	23.31	27.48	30.00	PASS

NOTE: Directional gain = 16.2dBi + 10log(2) = 19.2dBi < 23dBi , so the power limit is 30dBm.

802.11n (20MHz)

CHAN.	FREQ. (MHz)	AVG. CONDUCTED POWER (dBm)		TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1			
36	5180	25.16	22.74	27.13	30.00	PASS
40	5200	26.77	24.30	28.72	30.00	PASS
48	5240	27.24	24.15	28.97	30.00	PASS
149	5745	26.35	21.32	27.54	30.00	5745
157	5785	26.97	23.11	28.47	30.00	5785
165	5825	26.57	24.02	28.49	30.00	5825

NOTE: Directional gain = 16.2dBi + 10log(2) = 19.2dBi < 23dBi , so the power limit is 30dBm.

802.11n (40MHz)

CHAN.	FREQ. (MHz)	AVG. CONDUCTED POWER (dBm)		TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1			
38	5190	21.35	18.82	23.28	30.00	PASS
46	5230	26.72	24.56	28.78	30.00	PASS
151	5755	23.89	18.70	25.04	30.00	PASS
159	5795	26.12	21.68	27.45	30.00	PASS

NOTE: Directional gain = $16.2\text{dBi} + 10\log(2) = 19.2\text{dBi} < 23\text{dBi}$, so the power limit is 30dBm.

26dB BANDWIDTH & 6dB BANDWIDTH:

802.11a

Channel Number	Freq. (MHz)	26dB DOWN BANDWIDTH (MHz)		LIMIT(MHz)	PASS /FAIL
		Chain0	Chain1	Minimum	
36	5180	22.17	22.03	0.5	PASS
40	5200	24.75	23.44	0.5	PASS
48	5240	24.23	22.34	0.5	PASS

Channel Number	Freq. (MHz)	6dB DOWN BANDWIDTH (MHz)		LIMIT(MHz)	PASS /FAIL
		Chain0	Chain1	Minimum	
149	5745	16.44	16.44	0.5	PASS
157	5785	16.40	16.58	0.5	PASS
165	5825	15.13	16.45	0.5	PASS

802.11n (20MHz)

Channel Number	Freq. (MHz)	26dB DOWN BANDWIDTH (MHz)		LIMIT(MHz)	PASS /FAIL
		Chain0	Chain1	Minimum	
36	5180	23.50	23.50	0.5	PASS
40	5200	23.56	23.31	0.5	PASS
48	5240	26.33	22.79	0.5	PASS

Channel Number	Freq. (MHz)	6dB DOWN BANDWIDTH (MHz)		LIMIT(MHz)	PASS /FAIL
		Chain0	Chain1	Minimum	
149	5745	17.64	17.70	0.5	PASS
157	5785	13.16	17.81	0.5	PASS
165	5825	12.58	17.64	0.5	PASS



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802.11n (40MHz)

Channel Number	Freq. (MHz)	26dB DOWN BANDWIDTH (MHz)		LIMIT(MHz)	PASS /FAIL
		Chain0	Chain1	Minimum	
38	5190	47.45	48.39	0.5	PASS
46	5230	70.43	49.91	0.5	PASS

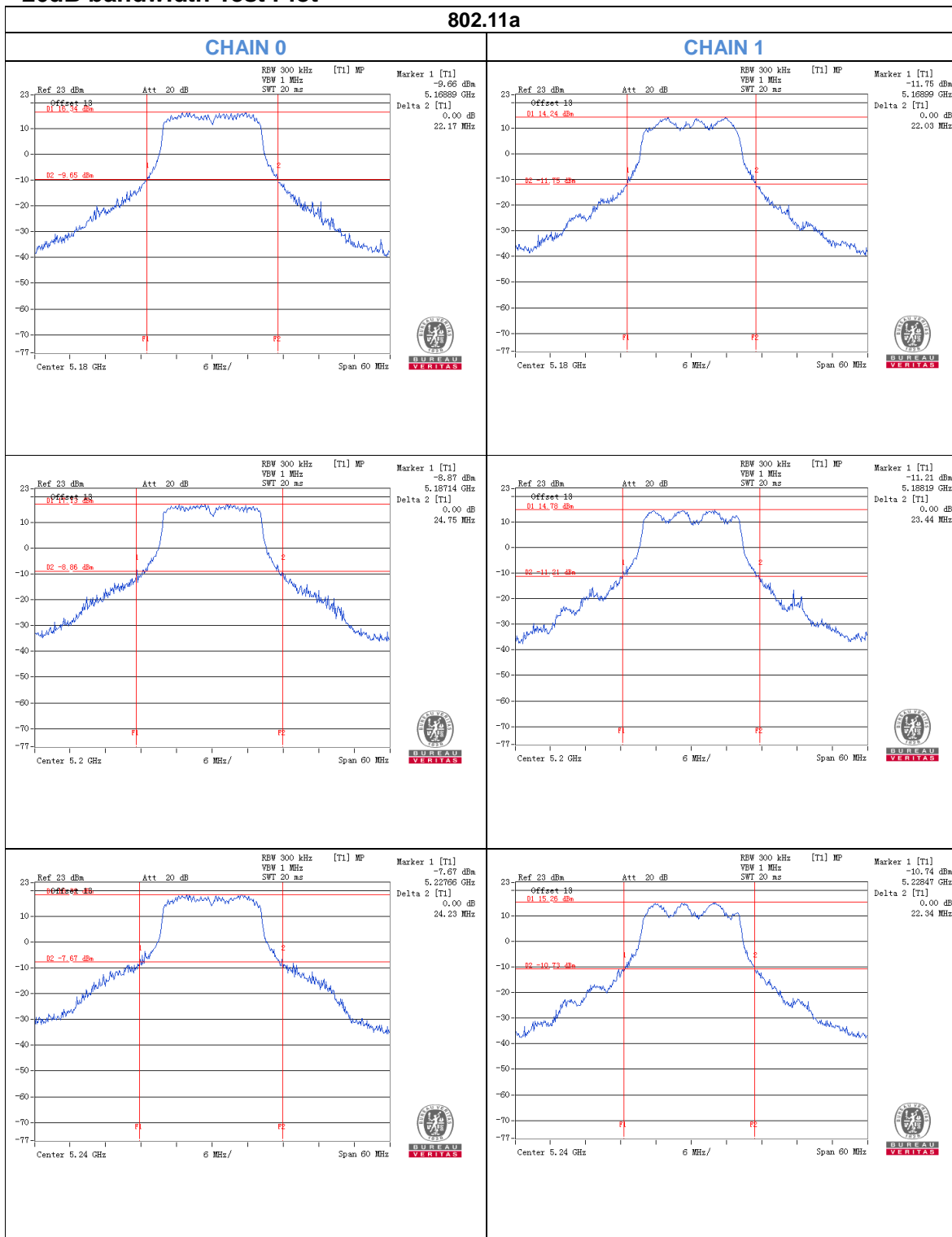
Channel Number	Freq. (MHz)	6dB DOWN BANDWIDTH (MHz)		LIMIT(MHz)	PASS /FAIL
		Chain0	Chain1	Minimum	
151	5755	36.50	36.63	0.5	PASS
159	5795	36.55	36.51	0.5	PASS



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26dB bandwidth Test Plot



Bureau Veritas Shenzhen Co., Ltd.
Dongguan Branch

No. 34, Chenwulu Section, Guantai Rd., Houjie
Town, Dongguan City,
Guangdong 523942, China

Tel: +86 769 8593 5656
Fax: +86 769 8593 1080
Email: customerservice.dg@cn.bureauveritas.com

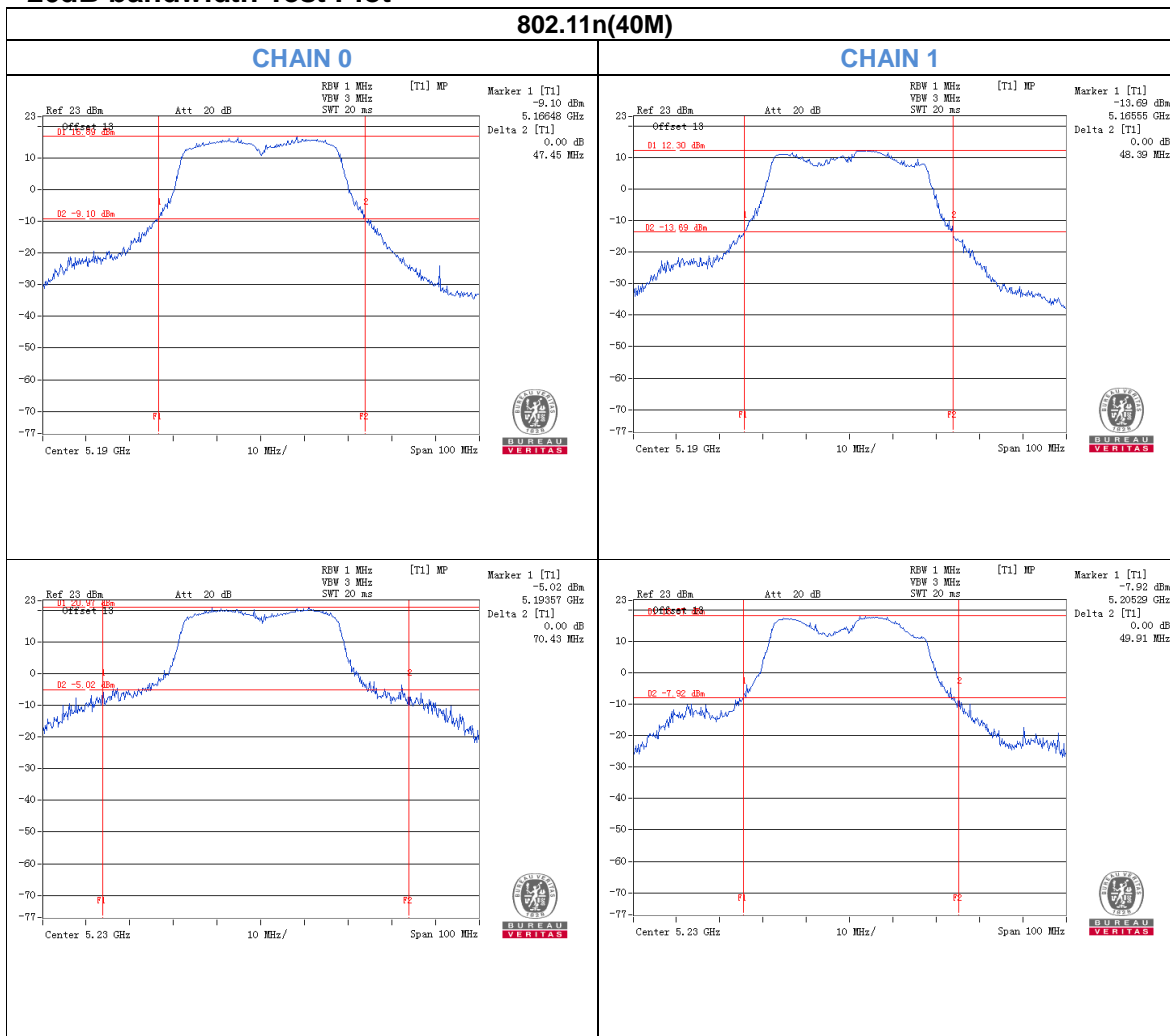




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26dB bandwidth Test Plot



Bureau Veritas Shenzhen Co., Ltd.
Dongguan Branch

No. 34, Chenwulu Section, Guantai Rd., Houjie
Town, Dongguan City,
Guangdong 523942, China

Tel: +86 769 8593 5656
Fax: +86 769 8593 1080
Email: customerservice.dg@cn.bureauveritas.com

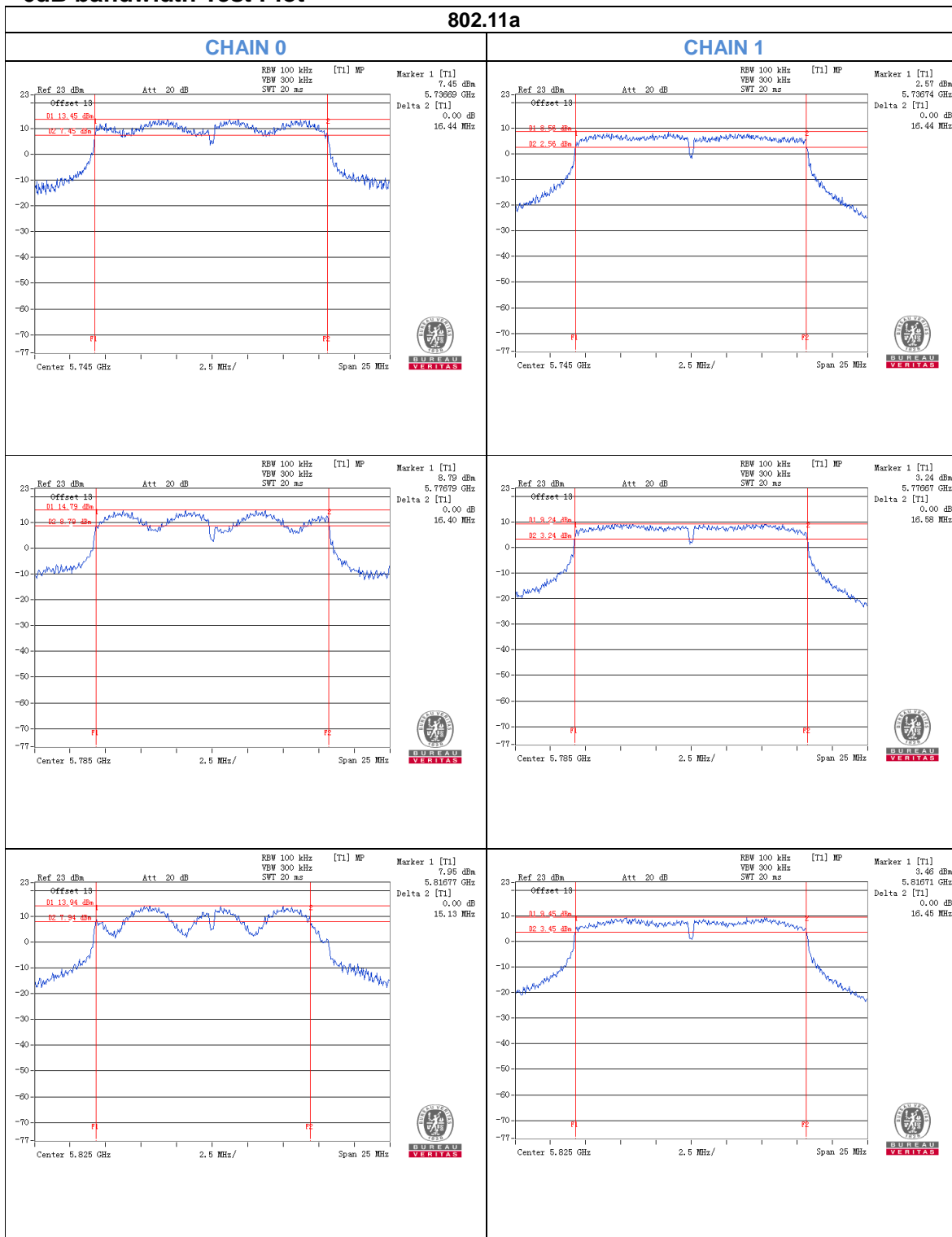


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6dB bandwidth Test Plot

802.11a

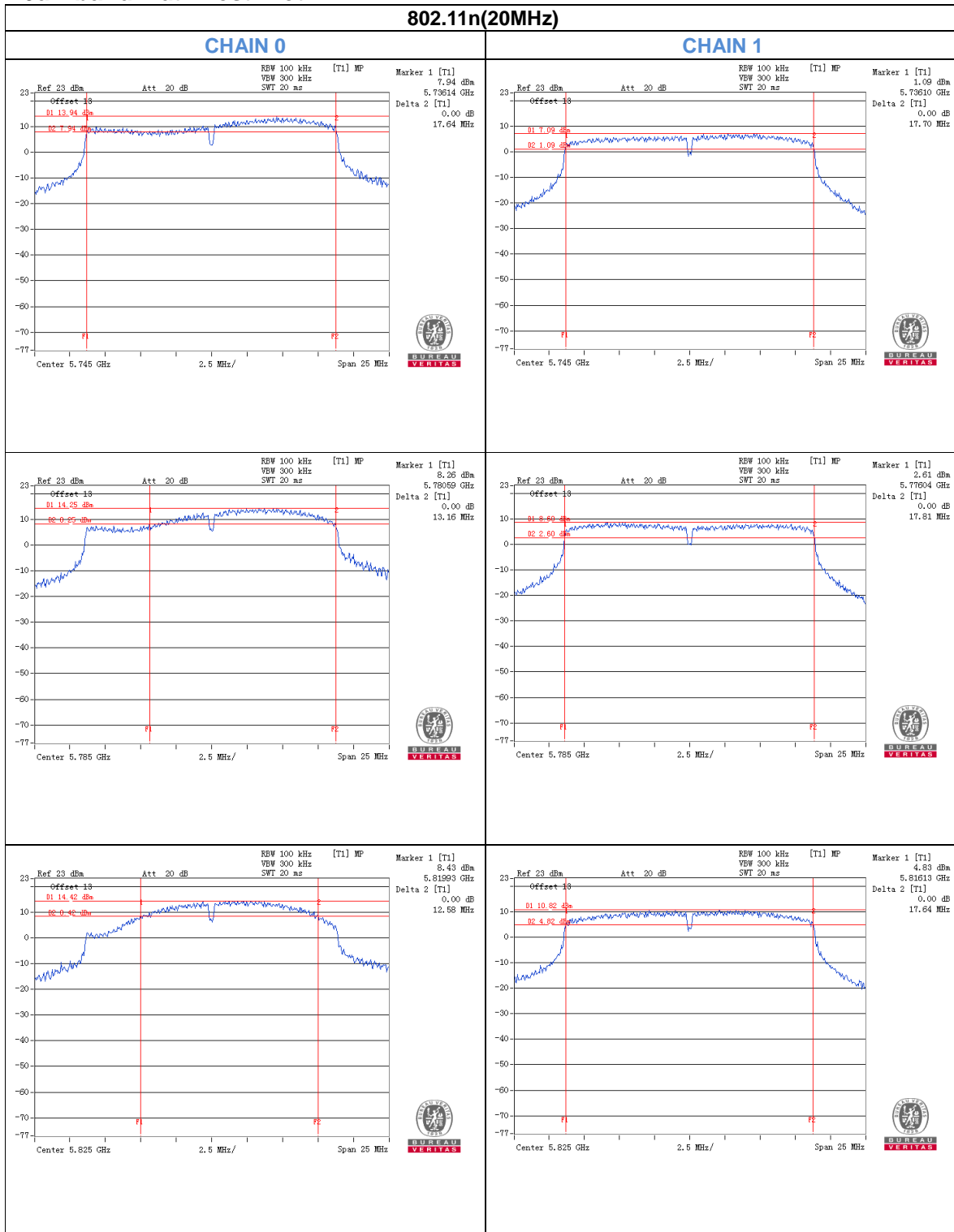




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6dB bandwidth Test Plot



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Dongguan Branch

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Guangdong 523942, China

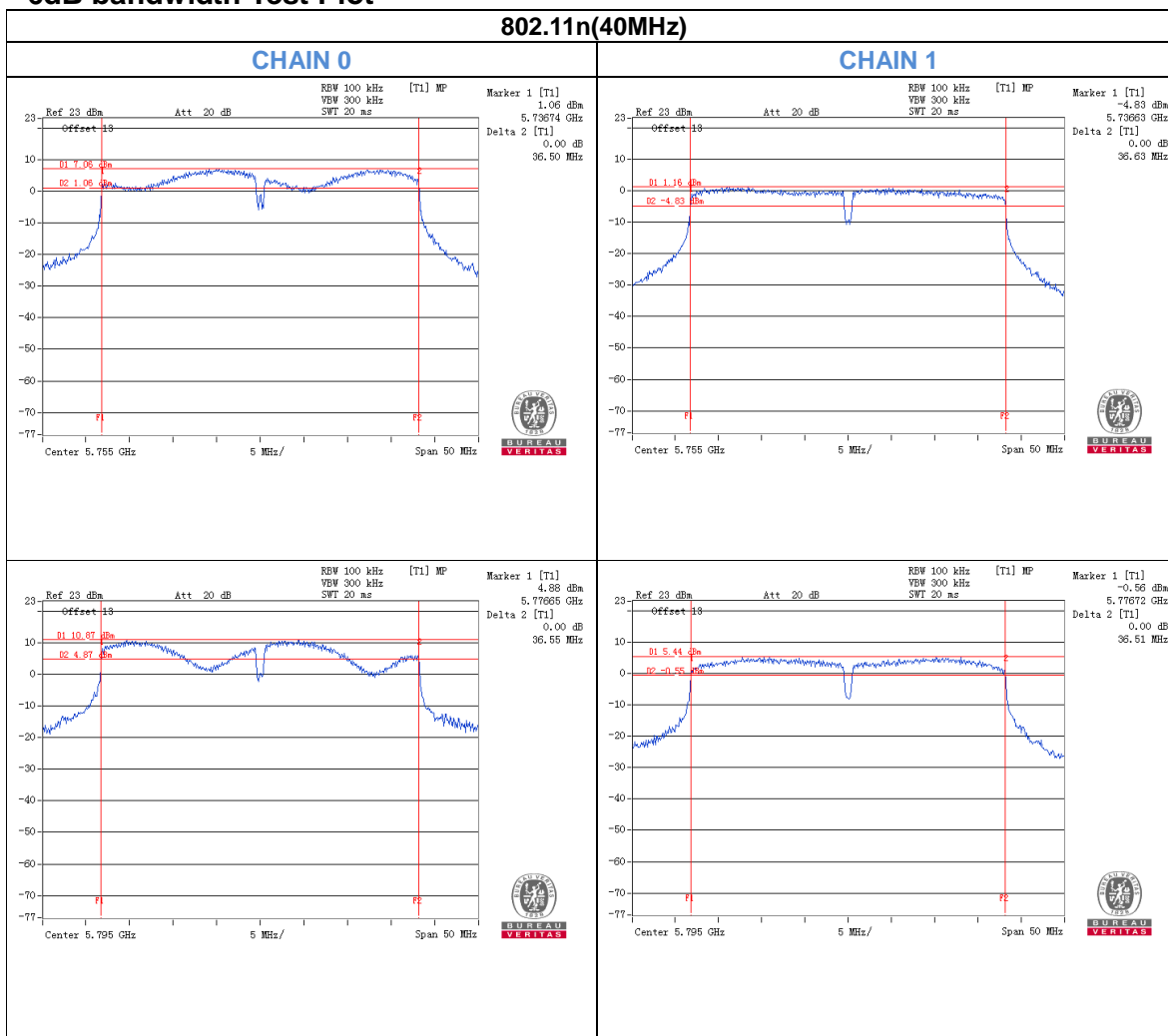
Tel: +86 769 8593 5656
Fax: +86 769 8593 1080
Email: customerservice.dg@cn.bureauveritas.com



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6dB bandwidth Test Plot



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Dongguan Branch

No. 34, Chenwulu Section, Guantai Rd., Houjie
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Guangdong 523942, China

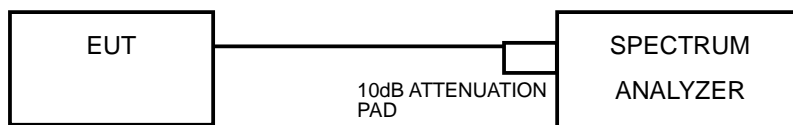
Tel: +86 769 8593 5656
Fax: +86 769 8593 1080
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3.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

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 \geq 300 kHz, Set VBW \geq 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 \geq 300 kHz, Set VBW \geq 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

U-NII-1 (5150-5250MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm/MHz)		TOTAL POWER DENSITY (dBm/MHz)	MAX. LIMIT (dBm/MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1			
36	5180	11.66	10.40	14.09	17.00	PASS
40	5200	12.54	10.73	14.74	17.00	PASS
48	5240	14.03	11.27	15.86	17.00	PASS

NOTE:

- 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.
- For U-NII-1 Band:**
Directional gain = 16.2dBi + 10log(2) = 19.2dBi < 23dBi , so the power density limit is 17dBm/MHz.

802.11a

U-NII-3(5725-5850MHz)

CHAIN 0	CHAN. FREQ. (MHz)	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 * log(N=2) (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	PASS / FAIL
0	149	5745	6.12	8.34	3.01	11.35	30.00	PASS
0	157	5785	6.74	8.96	3.01	11.97	30.00	PASS
0	165	5825	6.32	8.54	3.01	11.55	30.00	PASS
1	149	5745	0.42	2.64	3.01	5.65	30.00	PASS
1	157	5785	1.86	4.08	3.01	7.09	30.00	PASS
1	165	5825	1.67	3.89	3.01	6.90	30.00	PASS

NOTE:

- 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(20M)

U-NII-1 (5150-5250MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm/MHz)		TOTAL POWER DENSITY (dBm/MHz)	MAX. LIMIT (dBm/MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1			
36	5180	9.16	7.72	11.51	17.00	PASS
40	5200	12.49	10.50	14.62	17.00	PASS
48	5240	13.80	13.80	16.81	17.00	PASS

NOTE:

- 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.
- For U-NII-1 Band:**
Directional gain = 16.2dBi + 10log(2) = 19.2dBi < 23dBi , so the power density limit is 17dBm/MHz.

802.11n(20M)

U-NII-3(5725-5850MHz)

Tx chain	Channel Number	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 * log(N=2) (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	PASS / FAIL
0	149	5745	5.96	8.18	3.01	11.19	30.00	PASS
0	157	5785	6.78	9.00	3.01	12.01	30.00	PASS
0	165	5825	6.97	9.19	3.01	12.20	30.00	PASS
1	149	5745	-0.61	1.61	3.01	4.62	30.00	PASS
1	157	5785	1.10	3.32	3.01	6.33	30.00	PASS
1	165	5825	2.87	5.09	3.01	8.10	30.00	PASS

NOTE:

- 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)**
U-NII-3 (5150-5250MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm/MHz)		TOTAL POWER DENSITY (dBm/MHz)	MAX. LIMIT (dBm/MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1			
38	5190	6.01	-0.52	6.88	17.00	PASS
46	5230	10.84	7.97	12.65	17.00	PASS

NOTE:

- 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.
- For U-NII-1 Band:**
Directional gain = $16.2\text{dBi} + 10\log(2) = 19.2\text{dBi} < 23\text{dBi}$, so the power density limit is 17dBm/MHz.

U-NII-3 (5725-5850MHz)

TX chain	Channel Number	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	$10 * \log(N=2)$ (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	PASS / FAIL
0	151	5755	-0.70	1.52	3.01	4.53	30.00	PASS
0	159	5795	2.65	4.87	3.01	7.88	30.00	PASS
1	151	5755	-6.67	-4.45	3.01	-1.44	30.00	PASS
1	159	5795	-2.80	-0.58	3.01	2.43	30.00	PASS

- 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.



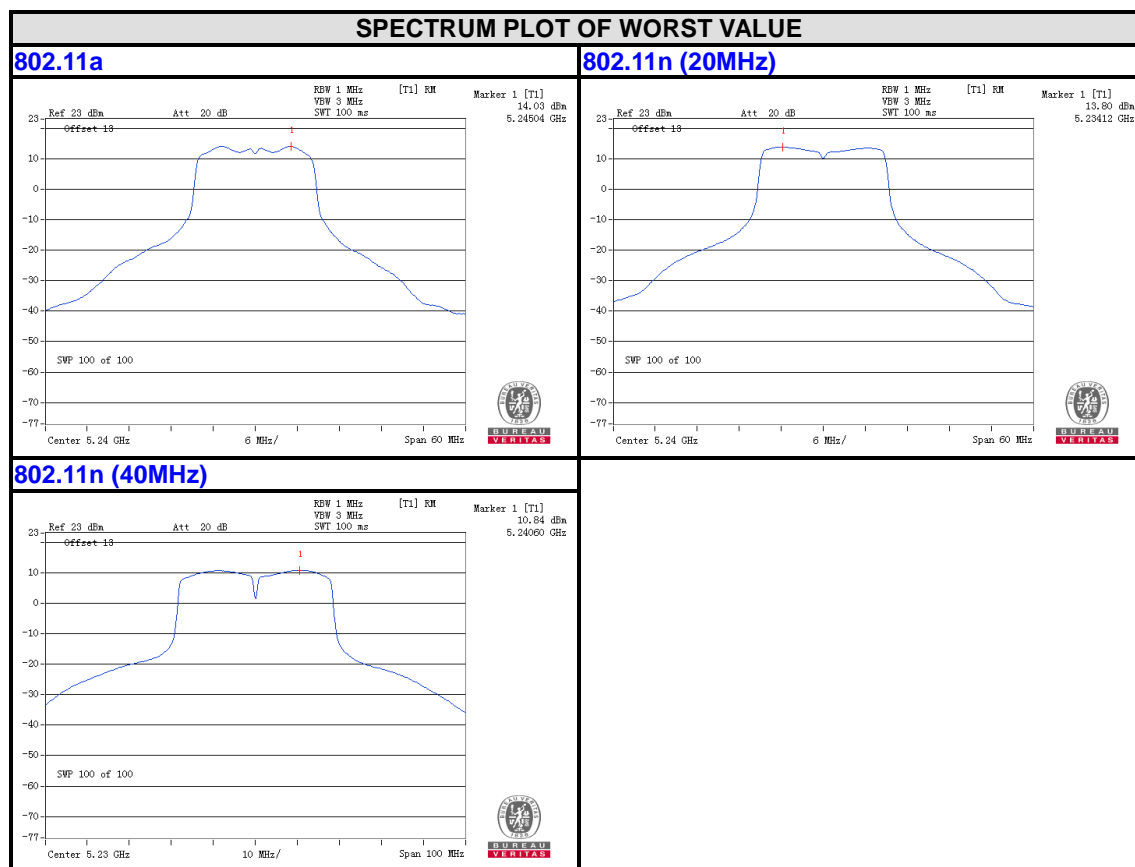
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BAND 1

U-NII-1 5150-5250MHz

CHAIN 0



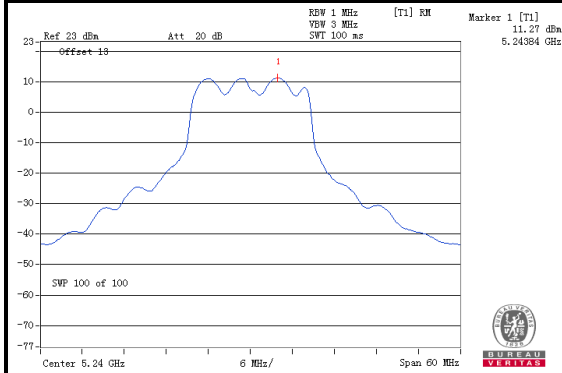


**BUREAU
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CHAIN 1

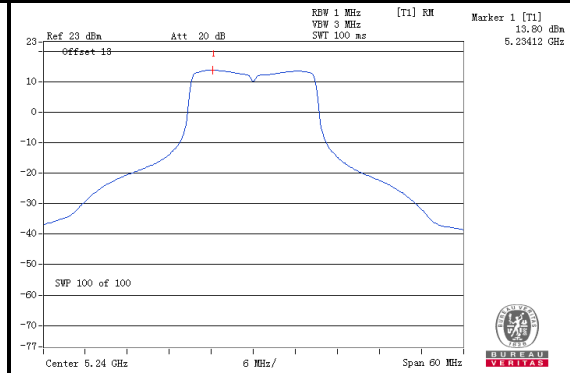
Test Report No.: RF160129N011

SPECTRUM PLOT OF WORST VALUE

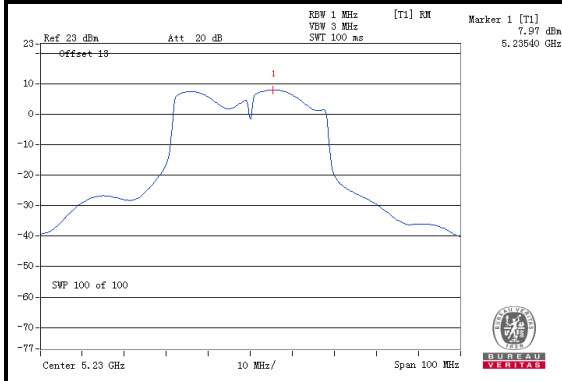
802.11a



802.11n (20MHz)



802.11n (40MHz)





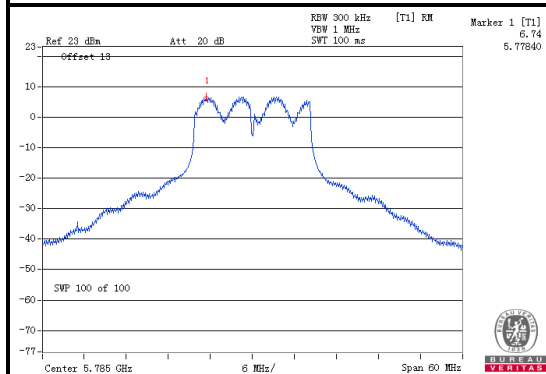
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Test Report No.: RF160129N011

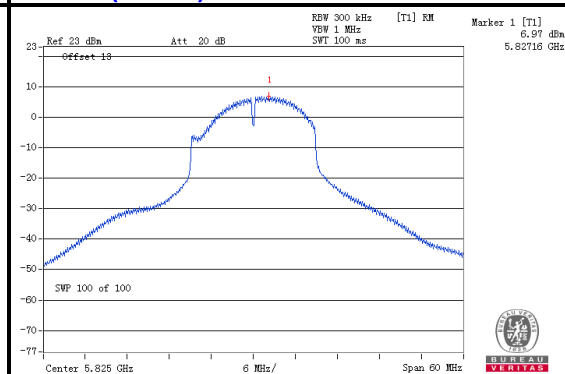
BAND4
U-NII-3 5725-5850MHz
CHAIN 0

SPECTRUM PLOT OF WORST VALUE

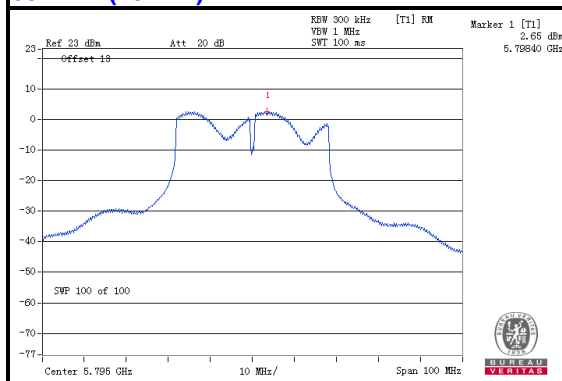
802.11a



802.11n (20MHz)



802.11n (40MHz)



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Dongguan Branch

No. 34, Chenwulu Section, Guantai Rd., Houjie
Town, Dongguan City,
Guangdong 523942, China

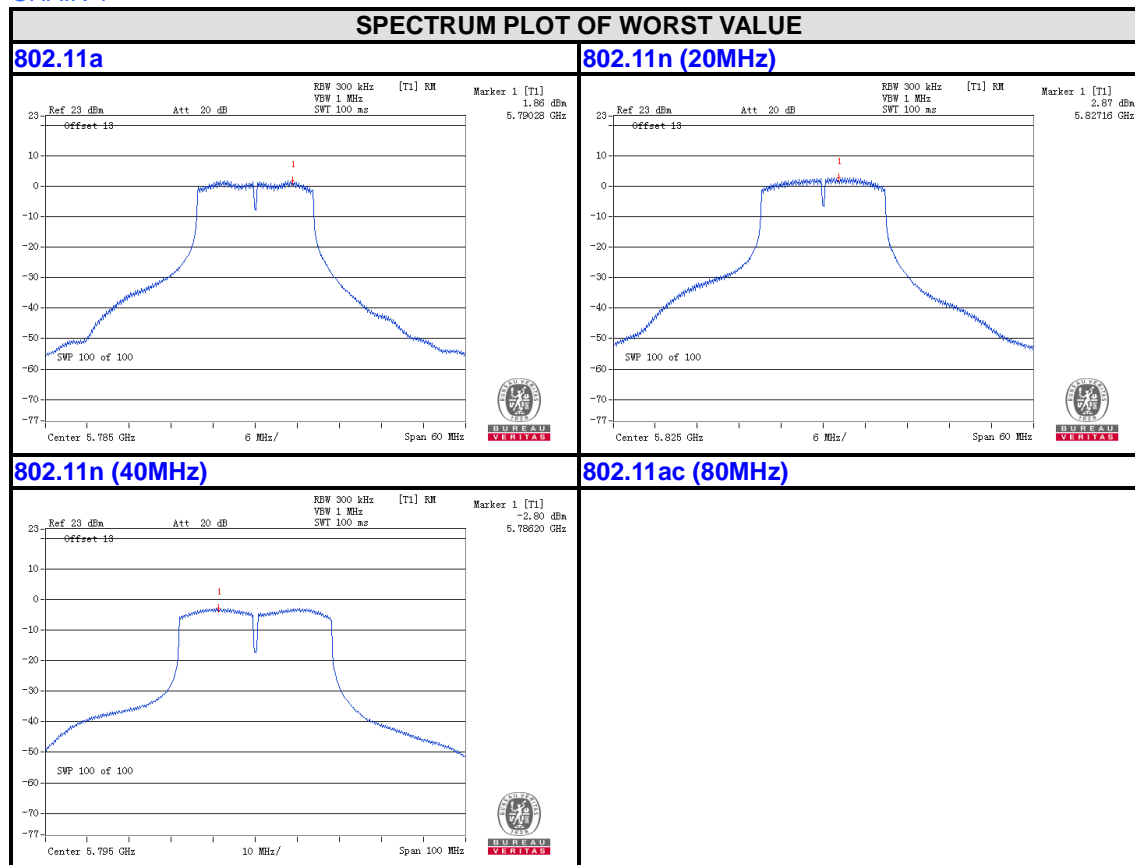
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Fax: +86 769 8593 1080
Email: customerservice.dg@cn.bureauveritas.com



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CHAIN 1

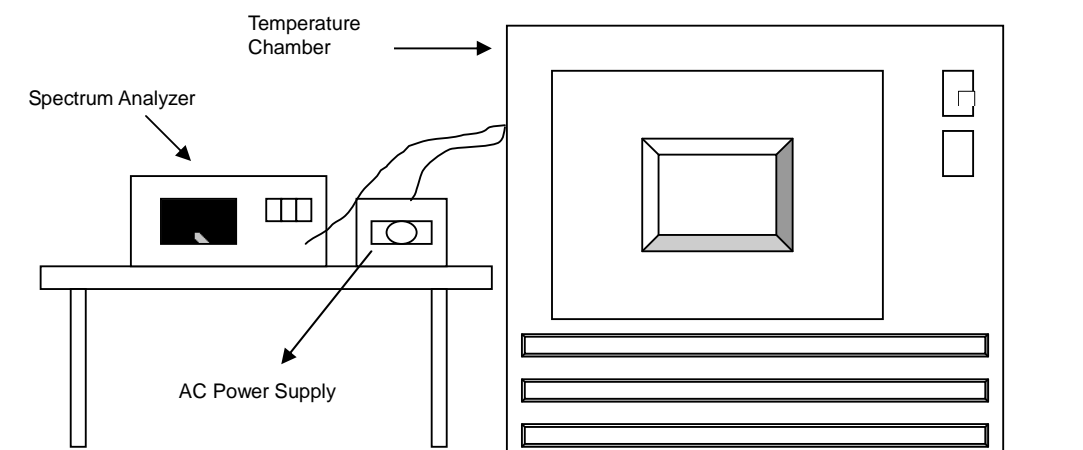


3.5 FREQUENCY STABILITY

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

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5180MHz									
TEMP. (°C)	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

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5180MHz									
TEMP. (°C)	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



Test Report No.: RF160129N011

4. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



Test Report No.: RF160129N011

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---