

TEST REPORT



Applicant	BenQ Corporation
Address	16 Jihu Road, Neihu, Taipei 114, Taiwan

Manufacturer or Supplier	BenQ Corporation
Address	16 Jihu Road, Neihu, Taipei 114, Taiwan
Product	Integrated Video Conference Terminal
Brand Name	BenQ
Model	VC01A
Additional Model & Model Difference	VC01A*(* means 0~9, A~Z); See items 3.1
Date of tests	Oct. 14, 2021 ~ Dec. 31, 2021

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 Andy Zhu Supervisor / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
	

Date: Jan. 29, 2022

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**BUREAU
VERITAS**

Test Report No.: RF2201WDG0200-6

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF2201WDG0200-6	Original release	Jan. 29, 2022



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)(1/4/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit.
15.407(a)(1/3)	Max Average Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(1/3)	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	No antenna connector is used

2 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	3.05dB
Radiated emissions	9KHz ~ 30MHz	2.16dB
	30MHz ~ 1GMHz	3.63dB
	1GHz ~ 18GHz	4.96dB
	18GHz ~ 40GHz	4.37dB

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



3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT NAME	Integrated Video Conference Terminal
MODEL NO.	VC01A
ADDITIONAL MODEL	VC01A*(* means 0~9, A~Z)
FCC ID	JVP-VC01A
POWER SUPPLY	DC 12V From Adapter Input AC 100-240V 50/60Hz
MODULATION TECHNOLOGY	DSSS, OFDM
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS, 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM
TRANSFER RATE	Refer to user's manual
OPERATING FREQUENCY	5150 ~ 5250MHz, 5725 ~ 5850MHz
NUMBER OF CHANNEL	See section 3.2
CONDUCTED OUTPUT POWER	8.133 mW for 5150 ~ 5250MHz (Maximum AVG Power) 10.624 mW for 5725 ~ 5850MHz (Maximum AVG Power)
ANTENNA TYPE	5180 ~ 5240MHz: PCB antenna with 4.19dBi gain 5745 ~ 5825MHz: PCB antenna with 4.50dBi gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	Refer to user's manual

NOTES:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitter and 2 receiver.

MODULATION MODE	TX FUNCTION
802.11a	2TX
802.11n (HT20), 802.11ac (VHT20)	2TX
802.11n (HT40), 802.11ac (VHT40)	2TX
802.11ac (VHT80)	2TX

* The modulation and bandwidth are similar for 802.11n mode for HT20 / HT40 and 802.11ac mode for VHT20 / VHT40, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.2)



4. ANTENNA LIST

Ant. No.	Antenna Type	Connector Type	Peak Gain(dBi)	
			U-NII-1	U-NII-3
Chain 0	PCB	Internal	4.19	4.50
Chain 1	PCB	Internal	4.19	4.50
Directional Gain for PSD			7.20	7.51
Directional Gain for power			4.19	4.50

All antennas have the same gain, Directional gain = GANT + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices, Array Gain = 10 log(NANT/NSS=1) dB.

For power measurements on IEEE 802.11 devices, Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4

- 5. Please refer to the EUT photo document (Reference No.: 2201WDG0200) for detailed product photo.
- 6. Additional model VC01A>(* means 0~9, A~Z) is identical with the test model VC01A except the model no. for trading purpose
- 7. List of Accessories

Remote control 1	Brand:	BenQ
	Model:	NA
	Power Supply:	DC3V(AAA/1.5V*2) from battery
Remote control 2	Brand:	NA
	Model:	NA
	Power Supply:	DC3V(AAA/1.5V*2) from battery

Note: The EUT remote control is one of the above table.

- 8. The EUT was powered by the following adapter:

ADAPTER	
BRAND:	N/A
MODEL:	GQ36-120300-AX
INPUT:	AC 100-240V, 50/60HZ 1.0A MAX
OUTPUT:	DC 12V 3A 36W
DC LINE:	Unshielded, UnDetachable, 2.0m

- 9. EUT integrates two wireless modules, AIC8800 and RTL8822CU-CG respectively. For details about supported RF functions, see the following list:

Module	Supported RF functions	Remark
AIC8800	BT2.1+EDR	2.4GHz Wi-Fi & 5GHz Wi-Fi can't transmit at same time.
	BT-LE	
	2.4GHz Wi-Fi	
	5GHz Wi-Fi (U-NII-1/ U-NII-2A/ U-NII-2C)	
	5GHz Wi-Fi (U-NII-3)	
RTL8822CU-CG	5GHz Wi-Fi (U-NII-1)	
	5GHz Wi-Fi (U-NII-3)	



3.2 DESCRIPTION OF TEST MODES

FOR 5150 ~ 5250MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
42	5210MHz	--	--

FOR 5725 ~ 5850MHz

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745MHz	153	5765MHz
157	5785MHz	161	5805MHz
165	5825MHz	--	--

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
155	5775MHz	--	--

3.2.1. TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	Powered by Adapter with Wi-Fi(5G) Function

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

NOTE:

- The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-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)
A	802.11a	5150-5250	36 to 48	36, 40, 48	OFDM	BPSK	6.0
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	MCS0
	802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	MCS0
	802.11ac (VHT80)		42	42	OFDM	BPSK	MCS0
	802.11a	5725-5850	149 to 165	149, 157, 165	OFDM	BPSK	6.0
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
	802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	MCS0
	802.11ac (VHT80)		155	155	OFDM	BPSK	MCS0

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)
A	802.11a	5150-5250 5725-5850	36 to 48 149 to 165	36	OFDM	BPSK	6.0

For the test results, only the worst case was shown in test report.



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)
A	802.11a	5150-5250 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)
A	802.11a	5150-5250	36 to 48	36, 40, 48	OFDM	BPSK	6.0
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	MCS0
	802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	MCS0
	802.11ac (VHT80)		42	42	OFDM	BPSK	MCS0
	802.11a	5725-5850	149 to 165	149, 157, 165	OFDM	BPSK	6.0
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
	802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	MCS0
	802.11ac (VHT80)		155	155	OFDM	BPSK	MCS0

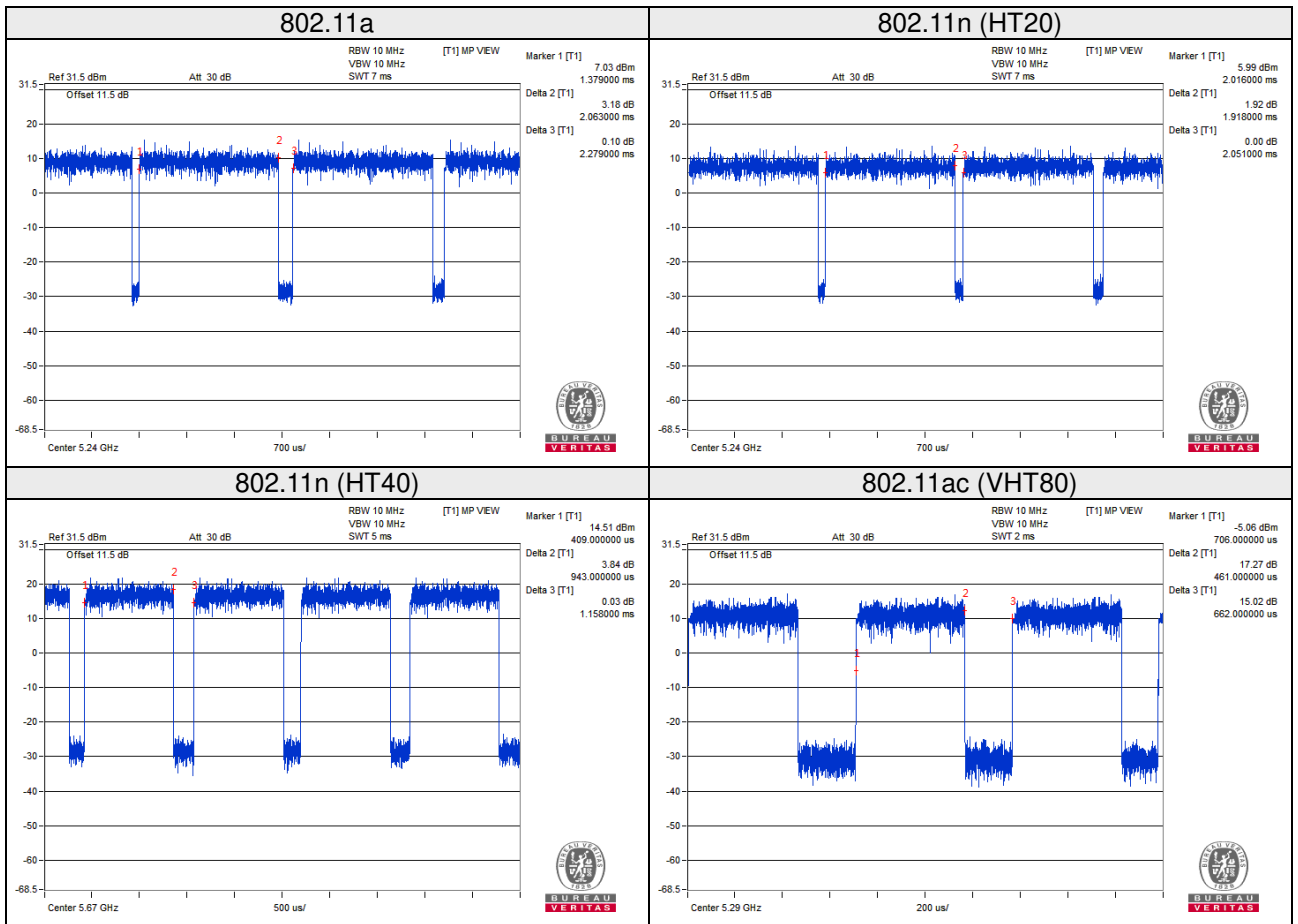
TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE(ADAPTER)	TESTED BY
RE<1G	24deg. C, 55%RH	AC 120V/60Hz	Jelly
RE≥1G	24deg. C, 55%RH	AC 120V/60Hz	Jelly
PLC	20deg. C, 56%RH	AC 120V/60Hz	Alex
APCM	20deg. C, 55%RH	AC 120V/60Hz	Vincent



3.3 DUTY CYCLE OF TEST SIGNAL

MODE	ON Time (ms)	ON+OFF Time (ms)	Duty cycle	Duty factor
802.11a	2.063	2.279	0.905	0.432
802.11n (HT20)	1.918	2.051	0.935	0.291
802.11n (HT40)	0.943	1.158	0.814	0.892
802.11ac (VHT80)	0.461	0.662	0.696	1.572





3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Dummy Load	N/A	N/A	N/A	N/A
2	USB Driver	Kingston	DataTraveler	3RJD8-68DC4U-3VFUW	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	RJ45 Cable: Unshielded, detachable, 3m; HDMI Cable: Shielded, Detachable, 1.5m with two cores; AUX Cable: Unshielded, detachable, 0.8m;
2	N/A

3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2013

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



4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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

NOTES:

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

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
789033 D02 General UNII Test Procedures New Rules v01r03	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: 68.2 (dBμV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	Note	Note

NOTE: For transmitters operating in the 5.725-5.85 GHz band:

Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). An alternative to the band emissions mask is specified in Section 15.407(b)(4)(ii). The alternative limits are based on the highest antenna gain specified in the filing. There are also marketing and importation restrictions for the alternative limit.

15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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

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



4.1.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 07, 22
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV7	102331	May 09, 22
Active Loop Antenna (9KHz -30MHz)	SCHWARZBECK	FMZB 1519B	1519B-045	May 20, 22
Amplifier (9KHz -1GHz)	Burgeon	BPA-530	100210	Mar. 13, 22
Bi-log Antenna (20MHz -2GHz)	Teseq	CBL 6111D	30643	May 21, 22
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	May 21, 22
Horn Antenna (18GHz -40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170147	May 14, 22
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	May 22, 22
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A
Broadband Preamplifier (1GHz~18GHz)	SCHWARZBECK	BBV9718	305	May 12, 22
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Jan. 10, 22
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A

NOTES:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
3. The FCC Site Registration No. is 749762.

4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 1.5 meters(above 1GHz) and 0.8 meters(below 1GHz) above the ground at a 3 meters 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. For below 1GHz was used bilog antenna, and above 1GHz was used horn 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. For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.
- g. 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.

NOTES:

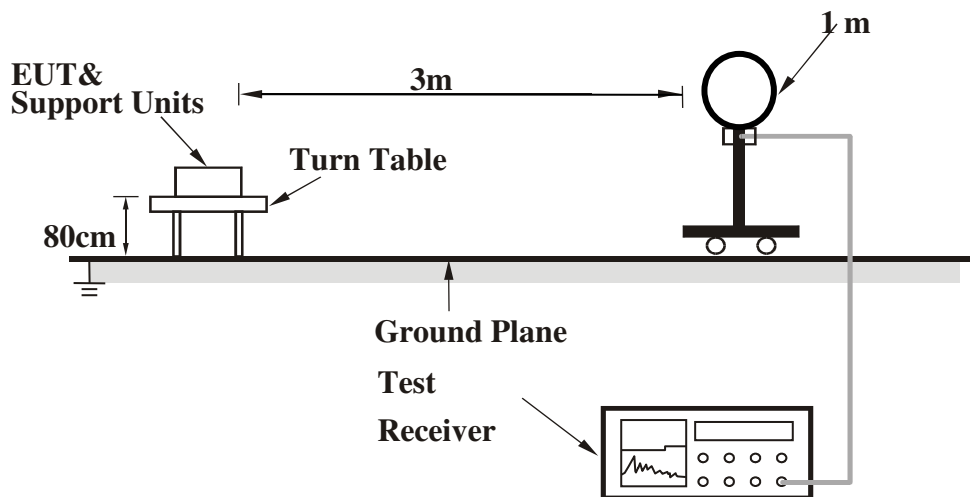
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

4.1.5 DEVIATION FROM TEST STANDARD

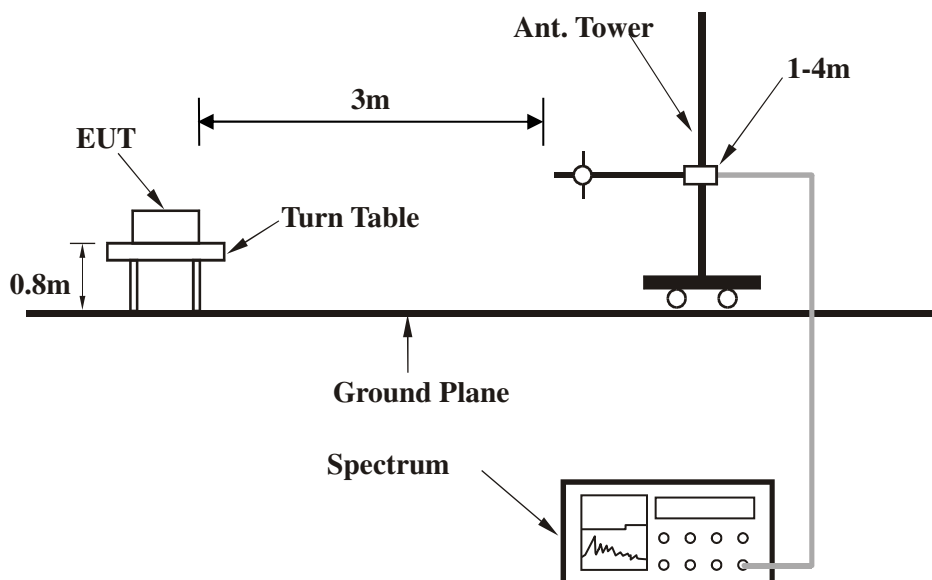
No deviation.

4.1.6 TEST SETUP

Below 30MHz test setup

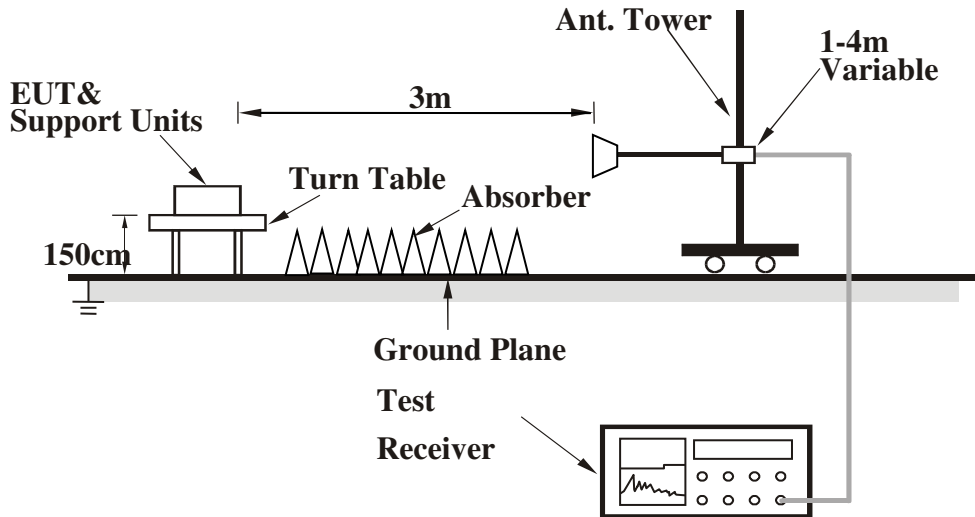


Below 1GHz test setup



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

Above 1GHz test setup



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

4.1.7 EUT OPERATING CONDITION

- a. Set the EUT under full load condition and placed them on a testing table.
- b. Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.
- c. The necessary accessories enable the EUT in full functions.



4.1.8 TEST RESULTS

BELOW 1GHz WORST-CASE DATA:

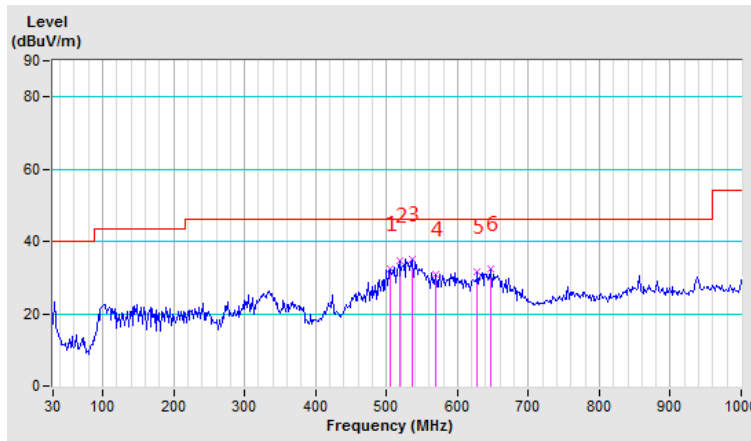
802.11a

CHANNEL	Channel 36	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	505.67	32.55 QP	46.00	-13.45	2.33 H	311	43.16	-10.61
2	518.11	34.81 QP	46.00	-11.19	2.74 H	267	45.32	-10.51
3	536.76	35.02 QP	46.00	-10.98	1.75 H	277	44.97	-9.95
4	569.41	30.98 QP	46.00	-15.02	3.14 H	322	39.35	-8.37
5	628.48	31.63 QP	46.00	-14.37	3.47 H	288	39.17	-7.54
6	647.13	32.30 QP	46.00	-13.70	2.60 H	299	39.77	-7.47

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 emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.



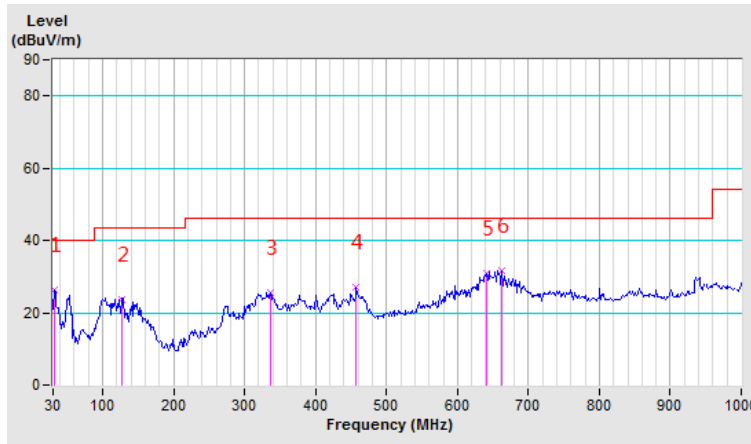


CHANNEL	TX Channel 36	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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	31.55	26.39 QP	40.00	-13.61	1.84 V	219	39.77	-13.38
2	127.93	23.72 QP	43.50	-19.78	1.60 V	35	42.98	-19.26
3	336.23	25.41 QP	46.00	-20.59	2.12 V	149	40.60	-15.19
4	457.48	27.12 QP	46.00	-18.88	1.84 V	205	38.89	-11.77
5	640.91	30.91 QP	46.00	-15.09	2.13 V	211	38.32	-7.41
6	662.68	31.49 QP	46.00	-14.51	1.70 V	10	39.46	-7.97

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 emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.





Band 1 (5150-5250MHz):

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	5127.56	48.19 PK	74.00	-25.81	1.86 H	201	42.50	5.69
2	5127.56	34.69 AV	54.00	-19.31	1.86 H	201	29.00	5.69
3	5150.00	47.51 PK	74.00	-26.49	2.04 H	201	41.81	5.70
4	5150.00	33.68 AV	54.00	-20.32	2.04 H	201	27.98	5.70
5	*5180.00	98.04 PK			2.26 H	201	92.33	5.71
6	*5180.00	88.12 AV			2.26 H	201	82.41	5.71
7	#10360.00	56.18 PK	68.20	-12.02	3.06 H	0	42.61	13.57
8	15540.00	60.36 PK	74.00	-13.64	2.72 H	0	41.38	18.98
9	15540.00	47.13 AV	54.00	-6.87	2.72 H	0	28.15	18.98

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	5130.00	49.06 PK	74.00	-24.94	1.54 V	20	43.36	5.70
2	5130.00	35.25 AV	54.00	-18.75	1.54 V	20	29.55	5.70
3	5150.00	48.33 PK	74.00	-25.67	1.77 V	20	42.63	5.70
4	5150.00	34.02 AV	54.00	-19.98	1.77 V	20	28.32	5.70
5	*5180.00	96.75 PK			1.41 V	20	91.04	5.71
6	*5180.00	86.37 AV			1.41 V	20	80.66	5.71
7	#10360.00	55.47 PK	68.20	-12.73	1.67 V	0	41.90	13.57
8	15540.00	59.84 PK	74.00	-14.16	1.91 V	0	40.86	18.98
9	15540.00	46.71 AV	54.00	-7.29	1.91 V	0	27.73	18.98

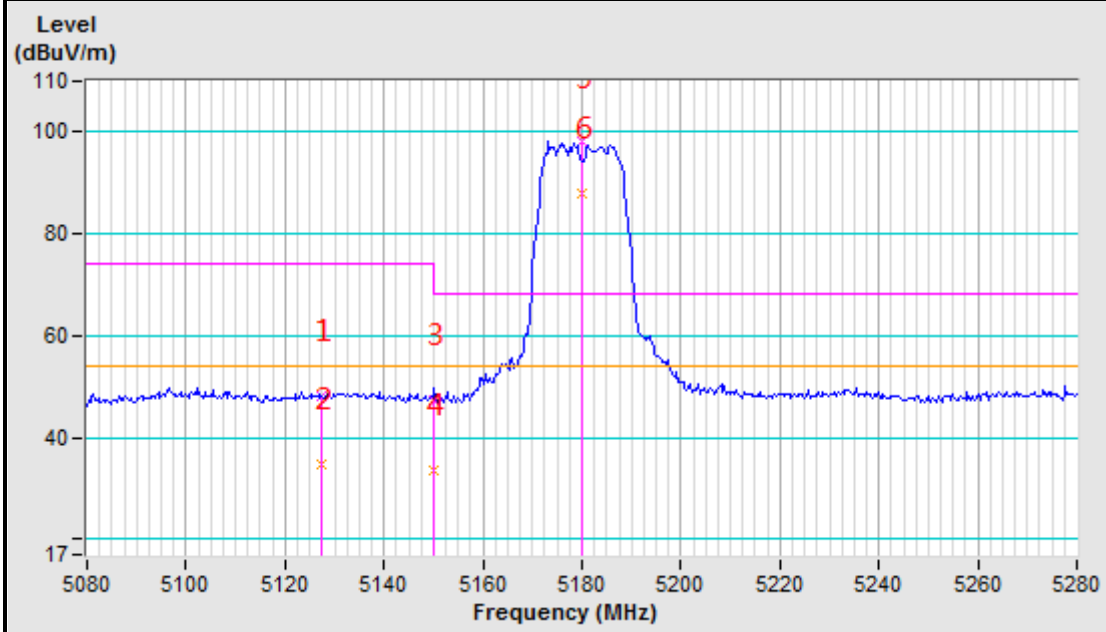
REMARKS:

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 emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

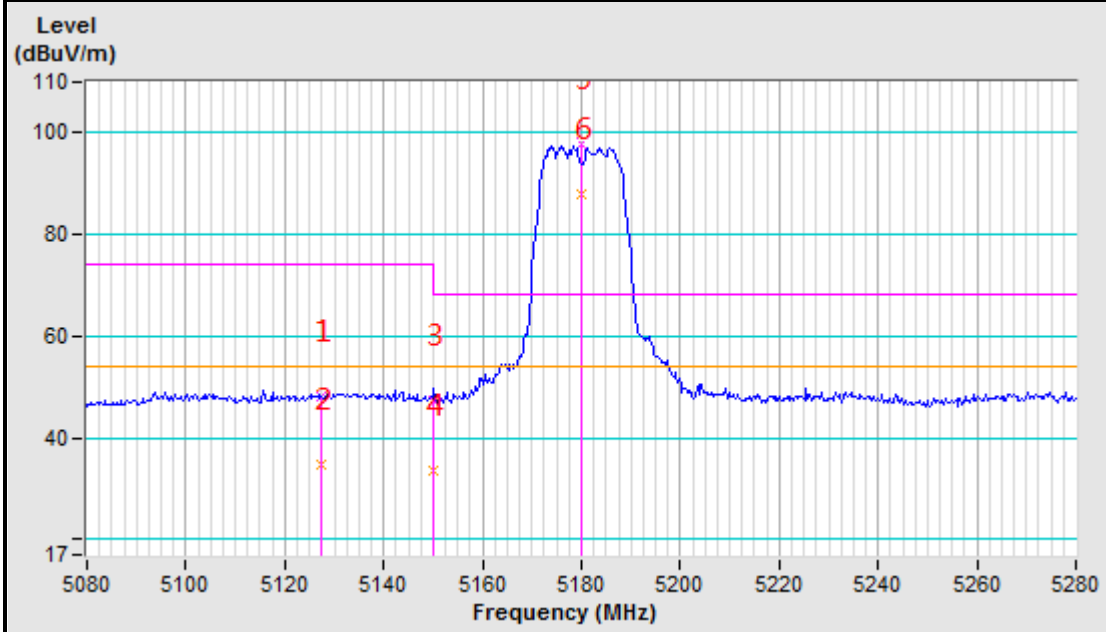


Band edge Plot

5180MHz Horizontal



5180MHz Vertical





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	5148.36	45.68 PK	74.00	-28.32	2.26 H	50	39.98	5.70
2	5148.36	32.14 AV	54.00	-21.86	2.26 H	50	26.44	5.70
3	5150.00	46.85 PK	74.00	-27.15	3.46 H	50	41.15	5.70
4	5150.00	33.24 AV	54.00	-20.76	3.46 H	50	27.54	5.70
5	*5200.00	98.24 PK			2.25 H	50	92.52	5.72
6	*5200.00	88.72 AV			2.25 H	50	83.00	5.72
7	#10400.00	54.36 PK	68.20	-13.84	1.97 H	0	40.74	13.62
8	15600.00	58.74 PK	74.00	-15.26	3.26 H	0	39.67	19.07
9	15600.00	46.25 AV	54.00	-7.75	3.26 H	0	27.18	19.07
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	5148.36	45.68 PK	74.00	-28.32	1.67 V	50	39.98	5.70
2	5148.36	32.14 AV	54.00	-21.86	1.67 V	50	26.44	5.70
3	5150.00	46.85 PK	74.00	-27.15	1.93 V	50	41.15	5.70
4	5150.00	33.24 AV	54.00	-20.76	1.93 V	50	27.54	5.70
5	*5200.00	98.24 PK			1.74 V	50	92.52	5.72
6	*5200.00	88.72 AV			1.74 V	50	83.00	5.72
7	#10400.00	55.36 PK	68.20	-12.84	1.85 V	0	41.74	13.62
8	15600.00	57.42 PK	74.00	-16.58	1.97 V	0	38.35	19.07
9	15600.00	45.21 AV	54.00	-8.79	1.97 V	0	26.14	19.07

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 emission levels of other frequencies were less than 20dB margin 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	5148.36	47.52 PK	74.00	-26.48	2.12 H	127	41.82	5.70
2	5148.36	33.96 AV	54.00	-20.04	2.12 H	127	28.26	5.70
3	5150.00	47.36 PK	74.00	-26.64	3.03 H	127	41.66	5.70
4	5150.00	33.69 AV	54.00	-20.31	3.03 H	127	27.99	5.70
5	*5240.00	99.36 PK			1.69 H	127	93.62	5.74
6	*5240.00	89.57 AV			1.69 H	127	83.83	5.74
7	5350.00	49.36 PK	74.00	-24.64	1.78 H	127	43.58	5.78
8	5350.00	35.57 AV	54.00	-18.43	1.78 H	127	29.79	5.78
9	5352.36	48.58 PK	74.00	-25.42	1.92 H	127	42.80	5.78
10	5352.36	35.42 AV	54.00	-18.58	1.92 H	127	29.64	5.78
11	#10480.00	57.41 PK	68.20	-10.79	3.34 H	0	43.67	13.74
12	15720.00	58.69 PK	74.00	-15.31	1.99 H	0	39.45	19.24
13	15720.00	48.20 AV	54.00	-5.80	1.99 H	0	28.96	19.24

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	5147.30	47.96 PK	74.00	-26.04	2.05 V	60	42.26	5.70
2	5147.30	34.02 AV	54.00	-19.98	2.05 V	60	28.32	5.70
3	5150.00	48.20 PK	74.00	-25.80	1.81 V	60	42.50	5.70
4	5150.00	34.25 AV	54.00	-19.75	1.81 V	60	28.55	5.70
5	*5240.00	99.52 PK			1.61 V	60	93.78	5.74
6	*5240.00	89.75 AV			1.61 V	60	84.01	5.74
7	5350.00	50.20 PK	74.00	-23.80	1.62 V	60	44.42	5.78
8	5350.00	36.65 AV	54.00	-17.35	1.62 V	60	30.87	5.78
9	5354.20	48.69 PK	74.00	-25.31	1.96 V	60	42.91	5.78
10	5354.20	36.20 AV	54.00	-17.80	1.96 V	60	30.42	5.78
11	#10480.00	57.68 PK	68.20	-10.52	1.74 V	0	43.94	13.74
12	15720.00	58.90 PK	74.00	-15.10	2.22 V	0	39.66	19.24
13	15720.00	48.72 AV	54.00	-5.28	2.22 V	0	29.48	19.24

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 emission levels of other frequencies were less than 20dB margin 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)
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	5124.03	47.13 PK	74.00	-26.87	3.11 H	129	41.44	5.69
2	5124.03	34.20 AV	54.00	-19.80	3.11 H	129	28.51	5.69
3	5150.00	47.18 PK	74.00	-26.82	3.20 H	129	41.48	5.70
4	5150.00	33.50 AV	54.00	-20.50	3.20 H	129	27.80	5.70
5	*5180.00	97.43 PK			2.80 H	129	91.72	5.71
6	*5180.00	88.75 AV			2.80 H	129	83.04	5.71
7	#10360.00	54.23 PK	68.20	-13.97	2.74 H	0	40.66	13.57
8	15540.00	57.20 PK	74.00	-16.80	2.66 H	0	38.22	18.98
9	15540.00	43.37 AV	54.00	-10.63	2.66 H	0	24.39	18.98

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	5134.29	48.96 PK	74.00	-25.04	1.62 V	20	43.26	5.70
2	5134.29	34.75 AV	54.00	-19.25	1.62 V	20	29.05	5.70
3	5150.00	47.94 PK	74.00	-26.06	1.93 V	20	42.24	5.70
4	5150.00	33.15 AV	54.00	-20.85	1.93 V	20	27.45	5.70
5	*5180.00	96.88 PK			2.00 V	20	91.17	5.71
6	*5180.00	86.74 AV			2.00 V	20	81.03	5.71
7	#10360.00	55.59 PK	68.20	-12.61	1.85 V	0	42.02	13.57
8	15540.00	58.23 PK	74.00	-15.77	2.20 V	0	39.25	18.98
9	15540.00	44.17 AV	54.00	-9.83	2.20 V	0	25.19	18.98

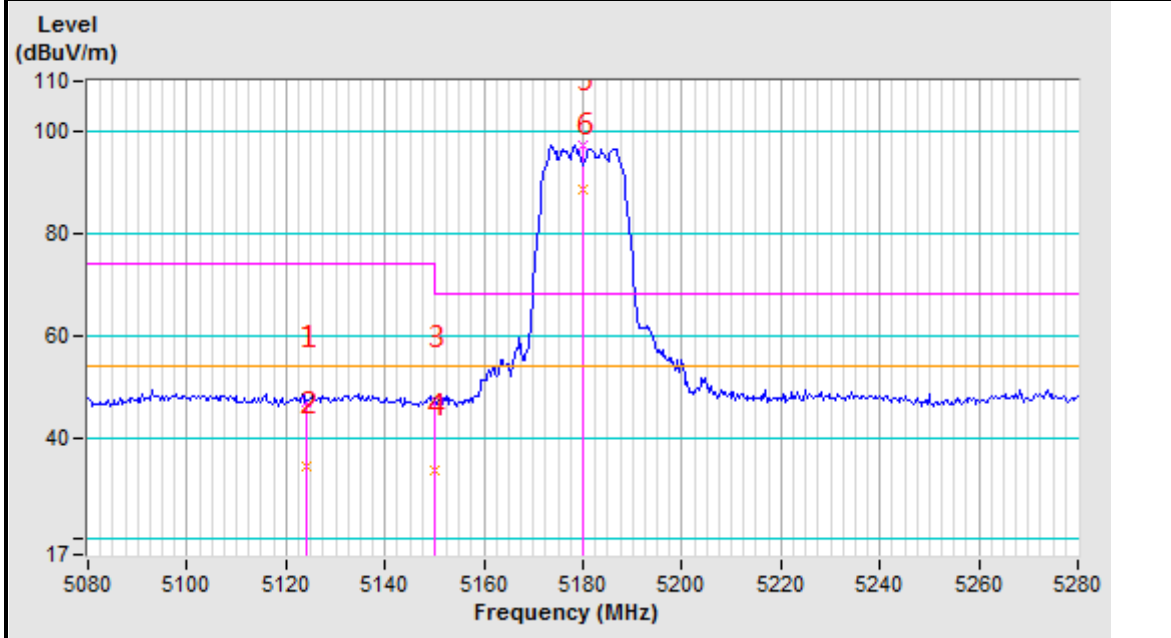
REMARKS:

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 emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

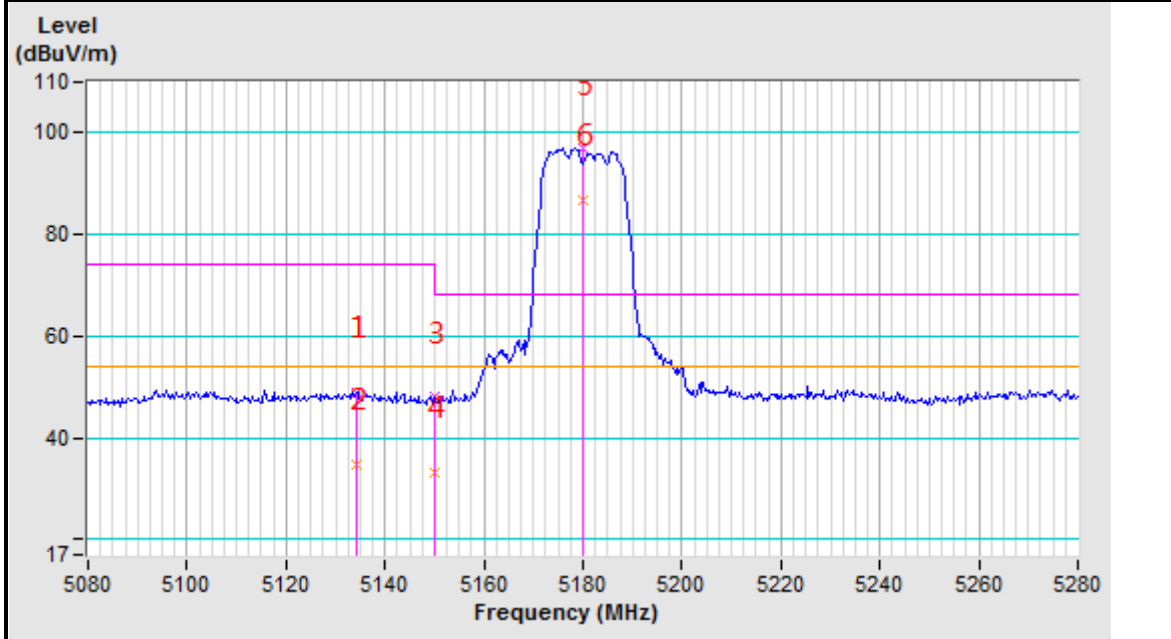


Band edge Plot

5180MHz Horizontal



5180MHz Vertical





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	5147.20	46.25 PK	74.00	-27.75	2.95 H	105	40.55	5.70
2	5147.20	32.62 AV	54.00	-21.38	2.95 H	105	26.92	5.70
3	5150.00	48.72 PK	74.00	-25.28	3.46 H	105	43.02	5.70
4	5150.00	34.10 AV	54.00	-19.90	3.46 H	105	28.40	5.70
5	*5200.00	96.58 PK			2.58 H	105	90.86	5.72
6	*5200.00	86.77 AV			2.58 H	105	81.05	5.72
7	#10400.00	56.71 PK	68.20	-11.49	3.41 H	0	43.09	13.62
8	15600.00	57.86 PK	74.00	-16.14	1.56 H	0	38.79	19.07
9	15600.00	45.81 AV	54.00	-8.19	1.56 H	0	26.74	19.07

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	5145.36	47.20 PK	74.00	-26.80	1.77 V	43	41.50	5.70
2	5145.36	33.18 AV	54.00	-20.82	1.77 V	43	27.48	5.70
3	5150.00	49.62 PK	74.00	-24.38	2.19 V	43	43.92	5.70
4	5150.00	35.20 AV	54.00	-18.80	2.19 V	43	29.50	5.70
5	*5200.00	98.92 PK			1.53 V	43	93.20	5.72
6	*5200.00	89.73 AV			1.53 V	43	84.01	5.72
7	#10400.00	58.62 PK	68.20	-9.58	2.25 V	0	45.00	13.62
8	15600.00	58.20 PK	74.00	-15.80	1.93 V	0	39.13	19.07
9	15600.00	46.35 AV	54.00	-7.65	1.93 V	0	27.28	19.07

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 emission levels of other frequencies were less than 20dB margin 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	5148.36	50.20 PK	74.00	-23.80	2.43 H	257	44.50	5.70
2	5148.36	36.41 AV	54.00	-17.59	2.43 H	257	30.71	5.70
3	5150.00	47.36 PK	74.00	-26.64	1.61 H	257	41.66	5.70
4	5150.00	33.10 AV	54.00	-20.90	1.61 H	257	27.40	5.70
5	*5240.00	97.69 PK			2.80 H	257	91.95	5.74
6	*5240.00	88.72 AV			2.80 H	257	82.98	5.74
7	5350.00	49.62 PK	74.00	-24.38	1.73 H	257	43.84	5.78
8	5350.00	35.46 AV	54.00	-18.54	1.73 H	257	29.68	5.78
9	5354.60	51.36 PK	74.00	-22.64	1.74 H	257	45.58	5.78
10	5354.60	37.18 AV	54.00	-16.82	1.74 H	257	31.40	5.78
11	#10480.00	57.40 PK	68.20	-10.80	2.93 H	0	43.66	13.74
12	15720.00	60.36 PK	74.00	-13.64	2.69 H	0	41.12	19.24
13	15720.00	46.85 AV	54.00	-7.15	2.69 H	0	27.61	19.24

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	5146.36	50.85 PK	74.00	-23.15	2.10 V	90	45.15	5.70
2	5146.36	36.81 AV	54.00	-17.19	2.10 V	90	31.11	5.70
3	5150.00	48.70 PK	74.00	-25.30	1.84 V	90	43.00	5.70
4	5150.00	33.50 AV	54.00	-20.50	1.84 V	90	27.80	5.70
5	*5240.00	98.73 PK			1.92 V	90	92.99	5.74
6	*5240.00	89.72 AV			1.92 V	90	83.98	5.74
7	5350.00	50.20 PK	74.00	-23.80	1.52 V	90	44.42	5.78
8	5350.00	36.67 AV	54.00	-17.33	1.52 V	90	30.89	5.78
9	5356.90	51.79 PK	74.00	-22.21	1.94 V	90	46.01	5.78
10	5356.90	37.69 AV	54.00	-16.31	1.94 V	90	31.91	5.78
11	#10480.00	58.02 PK	68.20	-10.18	1.61 V	0	44.28	13.74
12	15720.00	60.56 PK	74.00	-13.44	1.48 V	0	41.32	19.24
13	15720.00	47.31 AV	54.00	-6.69	1.48 V	0	28.07	19.24

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 emission levels of other frequencies were less than 20dB margin 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 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	5141.98	49.75 PK	74.00	-24.25	3.34 H	30	44.05	5.70
2	5141.98	35.48 AV	54.00	-18.52	3.34 H	30	29.78	5.70
3	5150.00	47.62 PK	74.00	-26.38	1.56 H	30	41.92	5.70
4	5150.00	33.47 AV	54.00	-20.53	1.56 H	30	27.77	5.70
5	*5190.00	92.52 PK			1.99 H	30	86.80	5.72
6	*5190.00	82.04 AV			1.99 H	30	76.32	5.72
7	#10380.00	56.36 PK	68.20	-11.84	2.54 H	0	42.77	13.59
8	15570.00	59.62 PK	74.00	-14.38	3.04 H	0	40.60	19.02
9	15570.00	46.57 AV	54.00	-7.43	3.04 H	0	27.55	19.02

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	5142.30	49.51 PK	74.00	-24.49	2.00 V	258	43.81	5.70
2	5142.30	35.62 AV	54.00	-18.38	2.00 V	258	29.92	5.70
3	5150.00	46.71 PK	74.00	-27.29	2.01 V	258	41.01	5.70
4	5150.00	32.69 AV	54.00	-21.31	2.01 V	258	26.99	5.70
5	*5190.00	92.76 PK			1.83 V	258	87.04	5.72
6	*5190.00	82.23 AV			1.83 V	258	76.51	5.72
7	#10380.00	58.37 PK	68.20	-9.83	2.07 V	0	44.78	13.59
8	15570.00	60.58 PK	74.00	-13.42	2.24 V	0	41.56	19.02
9	15570.00	47.69 AV	54.00	-6.31	2.24 V	0	28.67	19.02

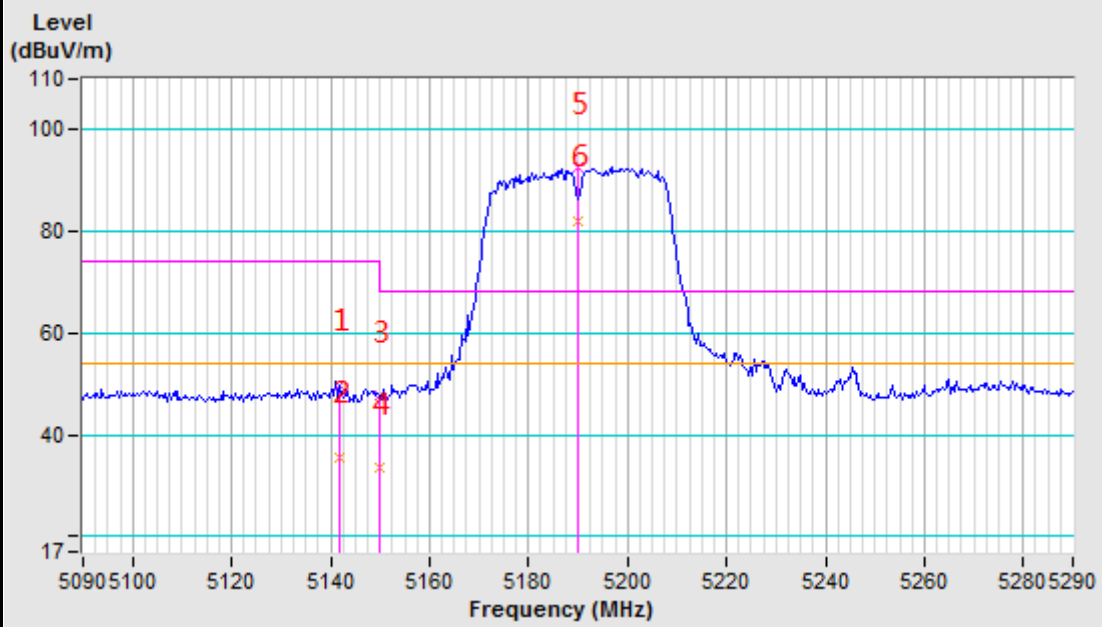
REMARKS:

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 emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

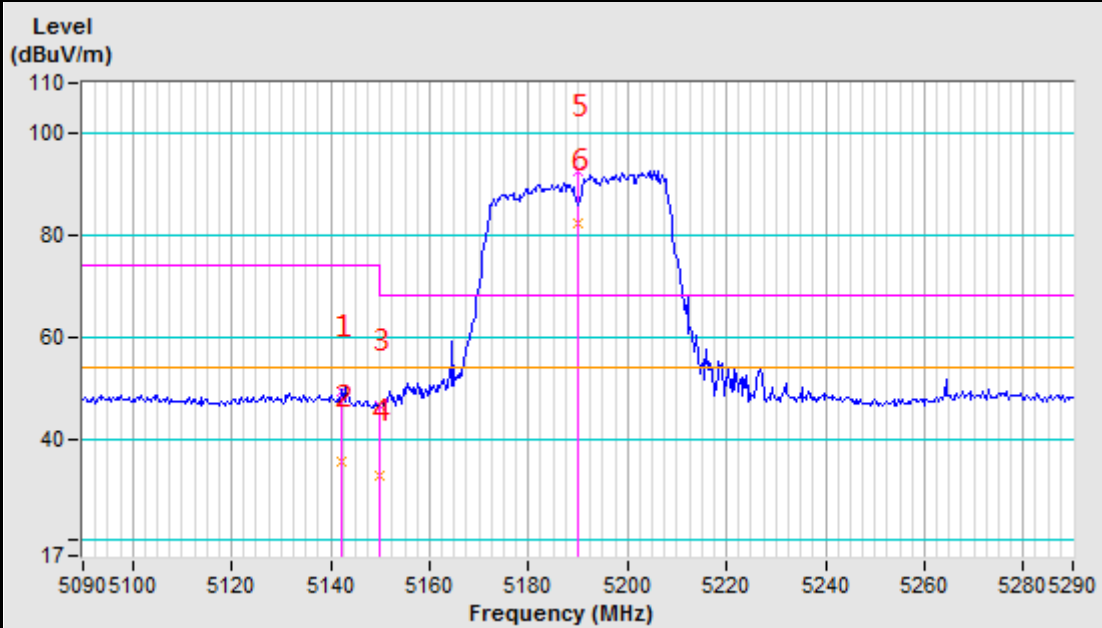


Band edge Plot

5190MHz Horizontal



5190MHz Vertical





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	5144.28	49.21 PK	74.00	-24.79	2.01 H	53	43.52	5.69
2	5144.28	36.30 AV	54.00	-17.70	2.01 H	53	30.61	5.69
3	5150.00	52.26 PK	74.00	-21.74	1.81 H	53	46.56	5.70
4	5150.00	37.05 AV	54.00	-16.95	1.81 H	53	31.35	5.70
5	*5230.00	98.90 PK			3.18 H	53	93.17	5.73
6	*5230.00	88.69 AV			3.18 H	53	82.96	5.73
7	#10460.00	56.14 PK	68.20	-12.06	2.83 H	0	42.43	13.71
8	15690.00	60.38 PK	74.00	-13.62	2.28 H	0	41.19	19.19
9	15690.00	48.50 AV	54.00	-5.50	2.28 H	0	29.31	19.19

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	5148.25	48.62 PK	74.00	-25.38	1.46 V	10	42.92	5.70
2	5148.25	35.62 AV	54.00	-18.38	1.46 V	10	29.92	5.70
3	5150.00	51.36 PK	74.00	-22.64	1.61 V	10	45.66	5.70
4	5150.00	36.95 AV	54.00	-17.05	1.61 V	10	31.25	5.70
5	*5230.00	97.60 PK			1.51 V	10	91.87	5.73
6	*5230.00	87.42 AV			1.51 V	10	81.69	5.73
7	#10460.00	55.42 PK	68.20	-12.78	1.81 V	0	41.71	13.71
8	15690.00	59.62 PK	74.00	-14.38	1.96 V	0	40.43	19.19
9	15690.00	47.58 AV	54.00	-6.42	1.96 V	0	28.39	19.19

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 emission levels of other frequencies were less than 20dB margin 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 (80MHz)

CHANNEL	TX Channel 42	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	5138.46	48.76 PK	74.00	-25.24	3.40 H	20	43.07	5.69
2	5138.46	34.68 AV	54.00	-19.32	3.40 H	20	28.99	5.69
3	5150.00	47.91 PK	74.00	-26.09	2.95 H	20	42.21	5.70
4	5150.00	33.68 AV	54.00	-20.32	2.95 H	20	27.98	5.70
5	*5210.00	89.36 PK			1.78 H	20	83.64	5.72
6	*5210.00	79.51 AV			1.78 H	20	73.79	5.72
7	#10420.00	57.41 PK	68.20	-10.79	3.27 H	0	43.75	13.66
8	15630.00	61.24 PK	74.00	-12.76	3.31 H	0	42.13	19.11
9	15630.00	48.20 AV	54.00	-5.80	3.31 H	0	29.09	19.11

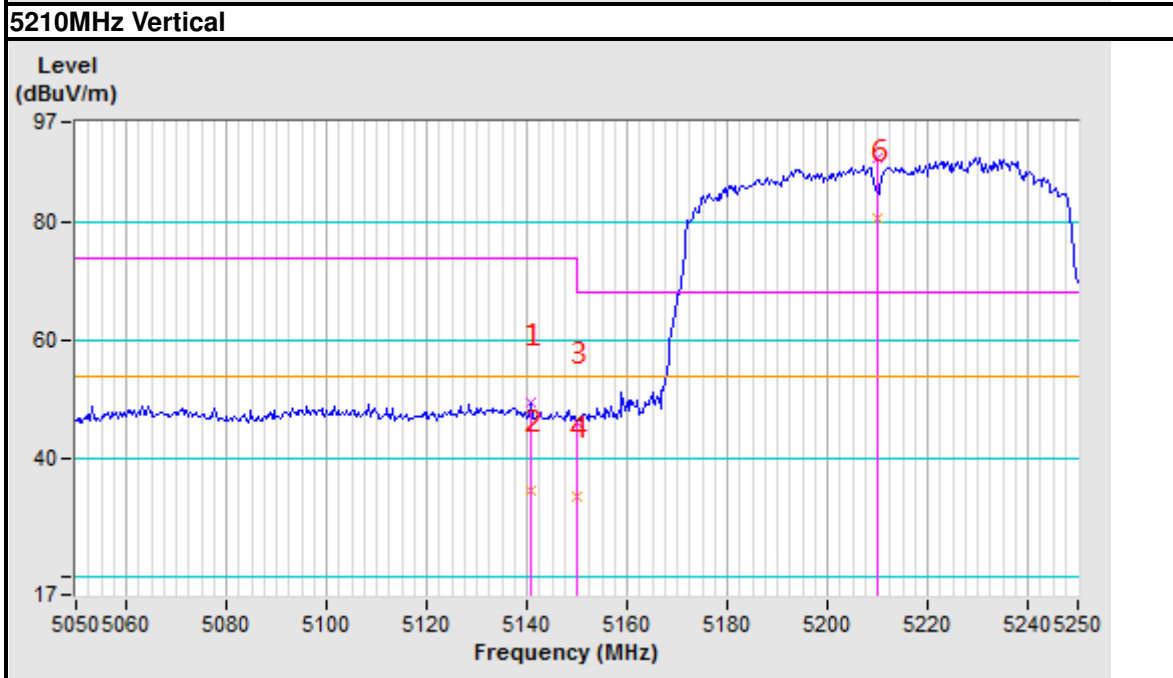
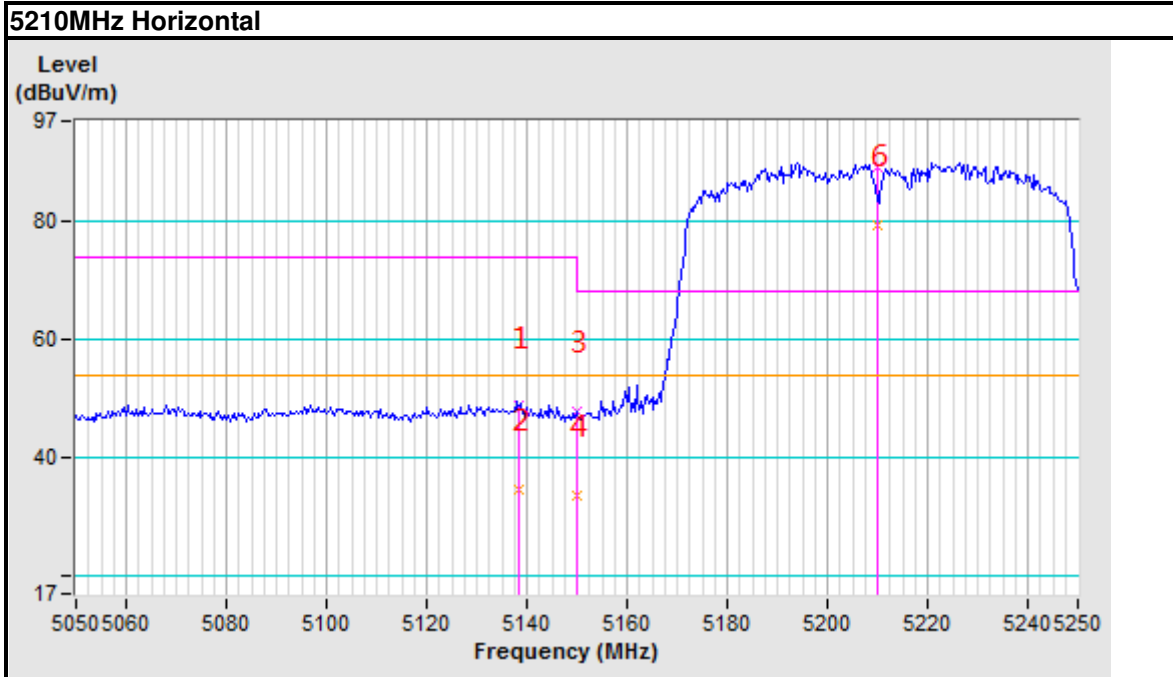
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5140.70	49.40 PK	74.00	-24.60	2.08 V	102	43.70	5.70
2	5140.70	34.65 AV	54.00	-19.35	2.08 V	102	28.95	5.70
3	5150.00	46.27 PK	74.00	-27.73	2.13 V	102	40.57	5.70
4	5150.00	33.62 AV	54.00	-20.38	2.13 V	102	27.92	5.70
5	*5210.00	90.99 PK			2.28 V	102	85.27	5.72
6	*5210.00	80.62 AV			2.28 V	102	74.90	5.72
7	#10420.00	58.32 PK	68.20	-9.88	1.49 V	0	44.66	13.66
8	15630.00	51.72 PK	74.00	-22.28	2.00 V	0	32.61	19.11
9	15630.00	48.71 AV	54.00	-5.29	2.00 V	0	29.60	19.11

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 emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



Band edge Plot





Band 4 (5725-5850MHz):

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	#5723.32	67.71 PK	118.36	-50.65	3.00 H	0	60.95	6.76
2	#5725.00	70.22 PK	122.20	-51.98	3.05 H	0	63.45	6.77
3	*5745.00	100.47 PK			3.40 H	0	93.62	6.85
4	*5745.00	91.28 AV			3.40 H	0	84.43	6.85
5	#5901.68	50.32 PK	85.42	-35.10	3.41 H	0	42.82	7.50
6	11490.00	54.24 PK	74.00	-19.76	2.19 H	0	38.27	15.97
7	11490.00	44.39 AV	54.00	-9.61	2.19 H	0	28.42	15.97
8	#17235.00	60.72 PK	68.20	-7.48	2.75 H	0	38.77	21.95

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	#5719.59	69.91 PK	110.69	-40.78	2.24 V	0	63.17	6.74
2	#5724.16	73.35 PK	120.28	-46.93	1.76 V	0	66.58	6.77
3	*5745.00	104.55 PK			2.09 V	0	97.70	6.85
4	*5745.00	93.51 AV			2.09 V	0	86.66	6.85
5	#5909.74	50.02 PK	79.46	-29.44	1.72 V	0	42.49	7.53
6	11490.00	56.41 PK	74.00	-17.59	1.45 V	0	40.44	15.97
7	11490.00	45.28 AV	54.00	-8.72	1.45 V	0	29.31	15.97
8	#17235.00	61.36 PK	68.20	-6.84	2.07 V	0	39.41	21.95

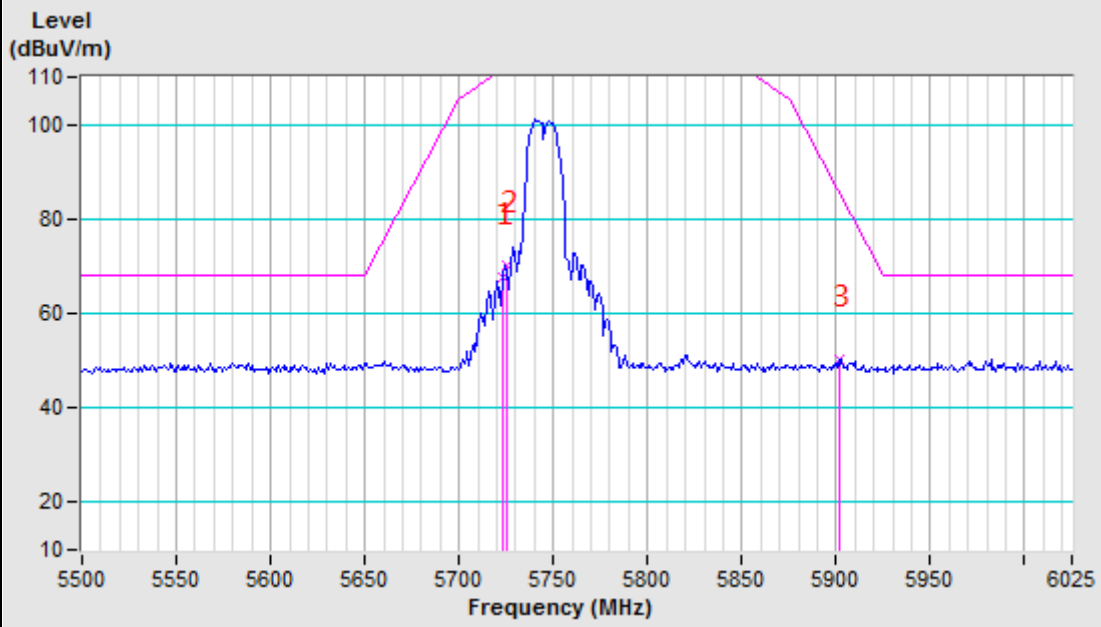
REMARKS:

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 emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

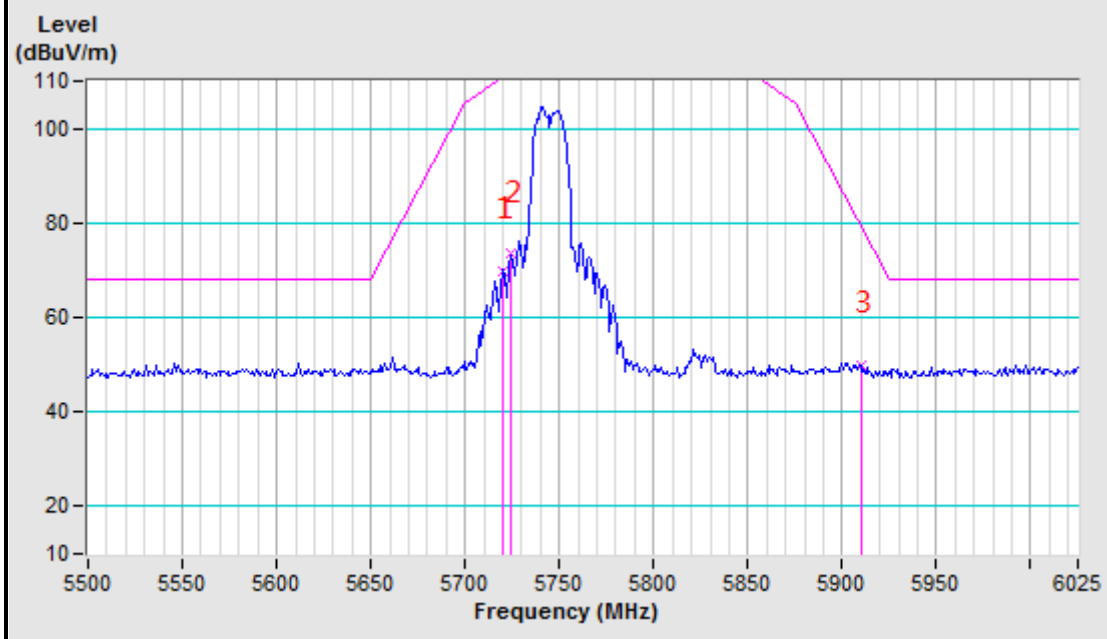


Band edge Plot

5745MHz Horizontal



5745MHz Vertical





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	#5710.70	50.18 PK	108.20	-58.02	3.42 H	0	43.47	6.71
2	*5785.00	104.08 PK			2.18 H	0	97.06	7.02
3	*5785.00	94.36 AV			2.18 H	0	87.34	7.02
4	#5861.78	53.07 PK	108.90	-55.83	3.34 H	0	45.74	7.33
5	#5869.35	53.54 PK	106.78	-53.24	2.75 H	0	46.17	7.37
6	11570.00	57.42 PK	74.00	-16.58	3.49 H	0	41.37	16.05
7	11570.00	45.73 AV	54.00	-8.27	3.49 H	0	29.68	16.05
8	#17355.00	60.50 PK	68.20	-7.70	2.34 H	0	38.45	22.05

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	#5711.54	50.31 PK	108.43	-58.12	1.91 V	13	43.60	6.71
2	*5785.00	105.15 PK			1.91 V	0	98.13	7.02
3	*5785.00	95.41 AV			1.91 V	0	88.39	7.02
4	#5860.94	51.76 PK	109.14	-57.38	1.49 V	92	44.43	7.33
5	#5869.35	53.62 PK	106.78	-53.16	2.22 V	157	46.25	7.37
6	11570.00	58.62 PK	74.00	-15.38	1.70 V	0	42.57	16.05
7	11570.00	46.58 AV	54.00	-7.42	1.70 V	0	30.53	16.05
8	#17355.00	62.25 PK	68.20	-5.95	1.78 V	0	40.20	22.05

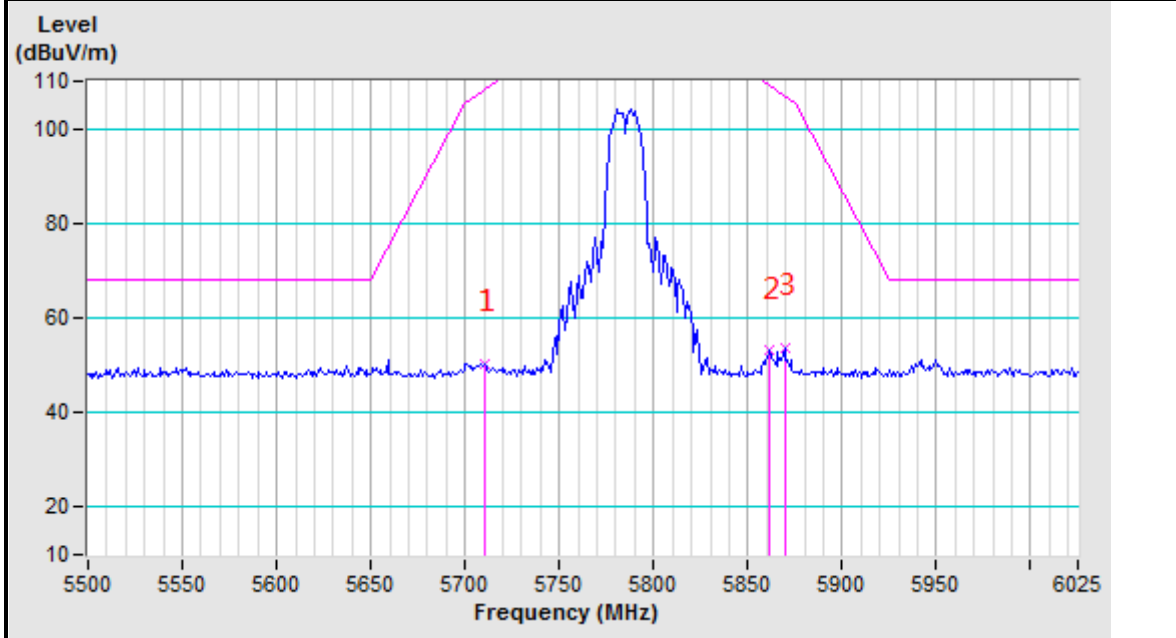
REMARKS:

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 emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

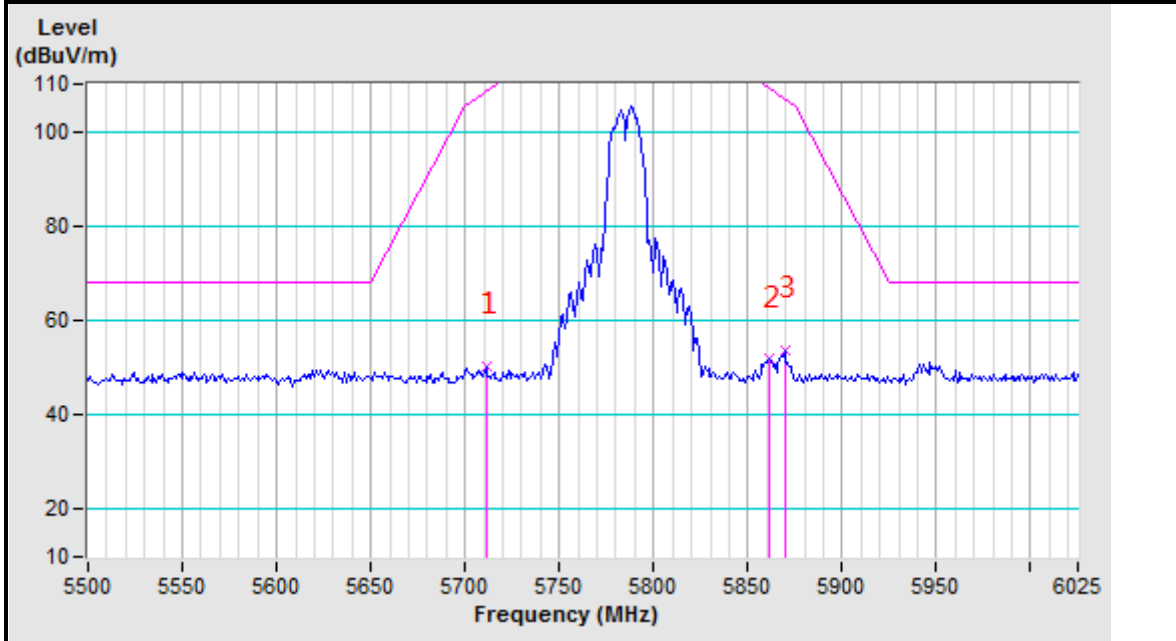


Band edge Plot

5785MHz Horizontal



5785MHz Vertical





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	100.69 PK			3.18 H	0	93.51	7.18
2	*5825.00	90.42 AV			3.18 H	0	83.24	7.18
3	#5850.00	65.72 PK	122.20	-56.48	1.72 H	292	58.44	7.28
4	#5854.21	62.36 PK	112.61	-50.25	1.64 H	292	55.06	7.30
5	#5904.69	49.07 PK	83.19	-34.12	1.72 H	292	41.57	7.50
6	11650.00	57.42 PK	74.00	-16.58	3.47 H	0	41.31	16.11
7	11650.00	45.41 AV	54.00	-8.59	3.47 H	0	29.30	16.11
8	#17475.00	61.48 PK	68.20	-6.72	2.51 H	0	39.33	22.15

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	105.79 PK			1.97 V	0	98.61	7.18
2	*5825.00	94.27 AV			1.97 V	0	87.09	7.18
3	#5850.00	69.09 PK	122.20	-53.11	1.58 V	0	61.81	7.28
4	#5900.84	51.21 PK	86.04	-34.83	1.41 V	0	43.72	7.49
5	#5908.05	52.39 PK	80.71	-28.32	1.79 V	0	44.87	7.52
6	11650.00	58.81 PK	74.00	-15.19	1.82 V	0	42.70	16.11
7	11650.00	47.02 AV	54.00	-6.98	1.82 V	0	30.91	16.11
8	#17475.00	62.41 PK	68.20	-5.79	1.87 V	0	40.26	22.15

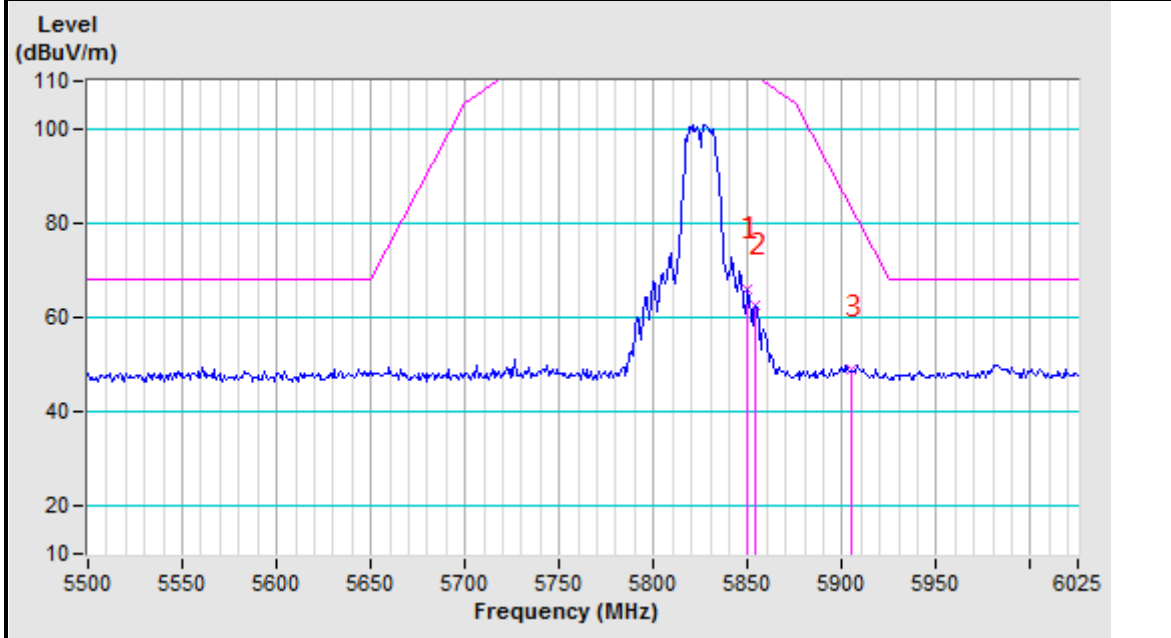
REMARKS:

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 emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

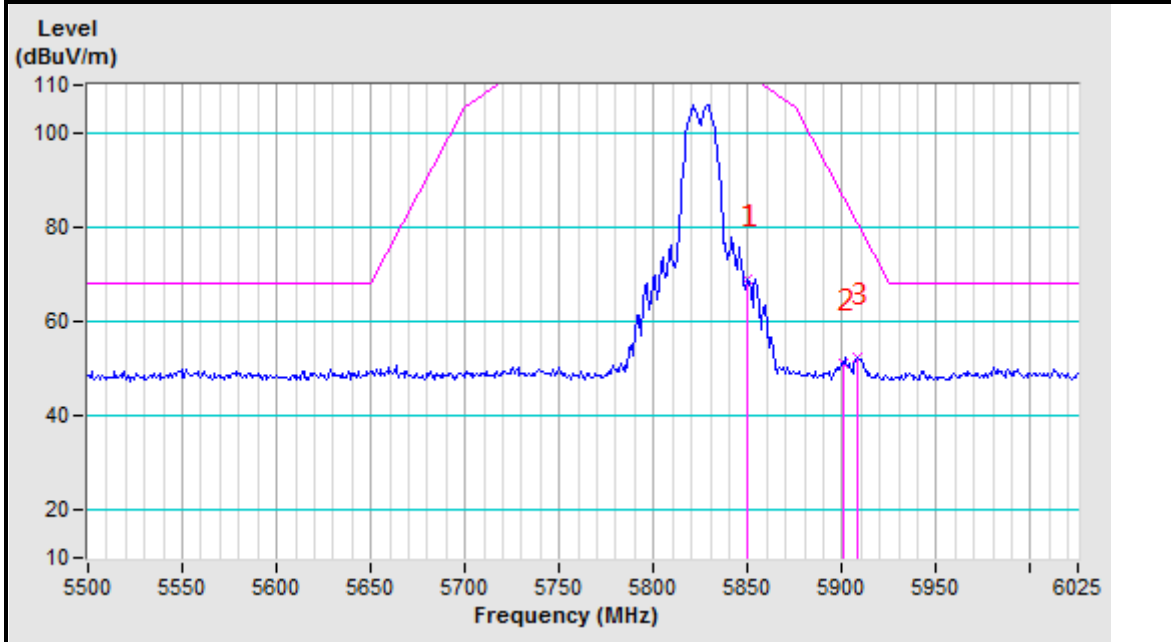


Band edge Plot

5825MHz Horizontal



5825MHz Vertical



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	#5720.79	67.49 PK	112.61	-45.12	3.16 H	81	60.74	6.75
2	#5725.00	71.25 PK	122.20	-50.95	3.40 H	81	64.48	6.77
3	*5745.00	103.80 PK			3.10 H	0	96.95	6.85
4	*5745.00	93.74 AV			3.10 H	0	86.89	6.85
5	#5874.40	49.16 PK	105.37	-56.21	1.89 H	81	41.78	7.38
6	11490.00	56.74 PK	74.00	-17.26	2.38 H	0	40.77	15.97
7	11490.00	46.72 AV	54.00	-7.28	2.38 H	0	30.75	15.97
8	#17235.00	61.18 PK	68.20	-7.02	2.03 H	0	39.23	21.95

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	#5719.95	68.23 PK	110.79	-42.56	2.12 V	0	61.48	6.75
2	#5725.00	72.18 PK	122.20	-50.02	1.40 V	0	65.41	6.77
3	*5745.00	104.32 PK			1.56 V	0	97.47	6.85
4	*5745.00	95.68 AV			1.56 V	0	88.83	6.85
5	#5903.85	51.29 PK	83.82	-32.53	2.27 V	0	43.79	7.50
6	11490.00	58.21 PK	74.00	-15.79	1.61 V	0	42.24	15.97
7	11490.00	47.41 AV	54.00	-6.59	1.61 V	0	31.44	15.97
8	#17235.00	62.27 PK	68.20	-5.93	1.98 V	0	40.32	21.95

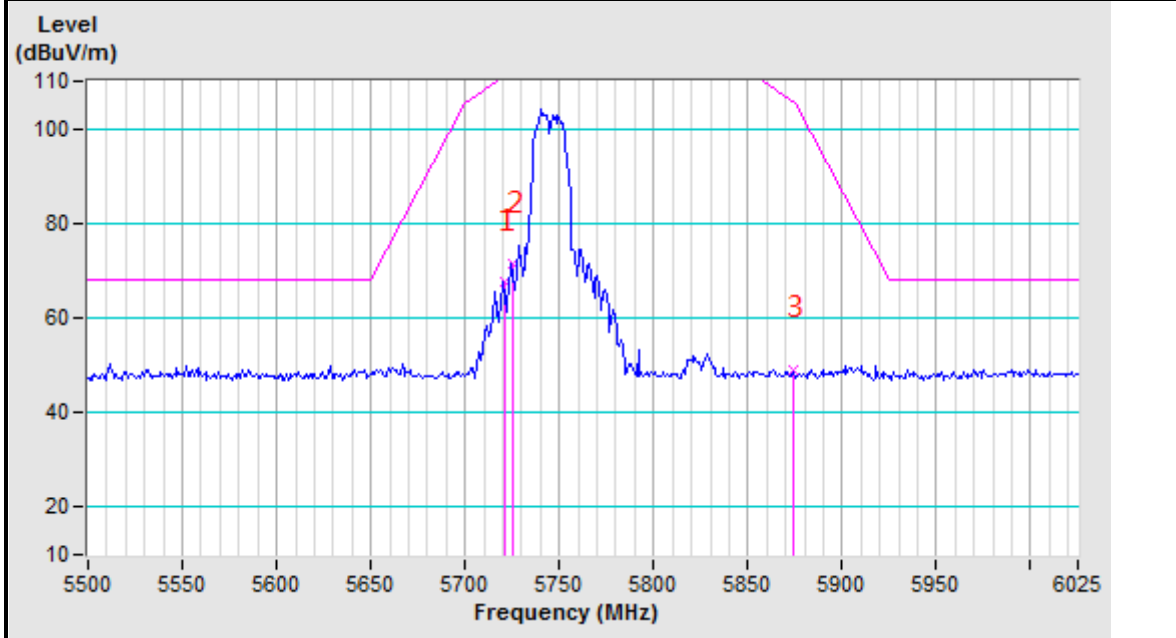
REMARKS:

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 emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

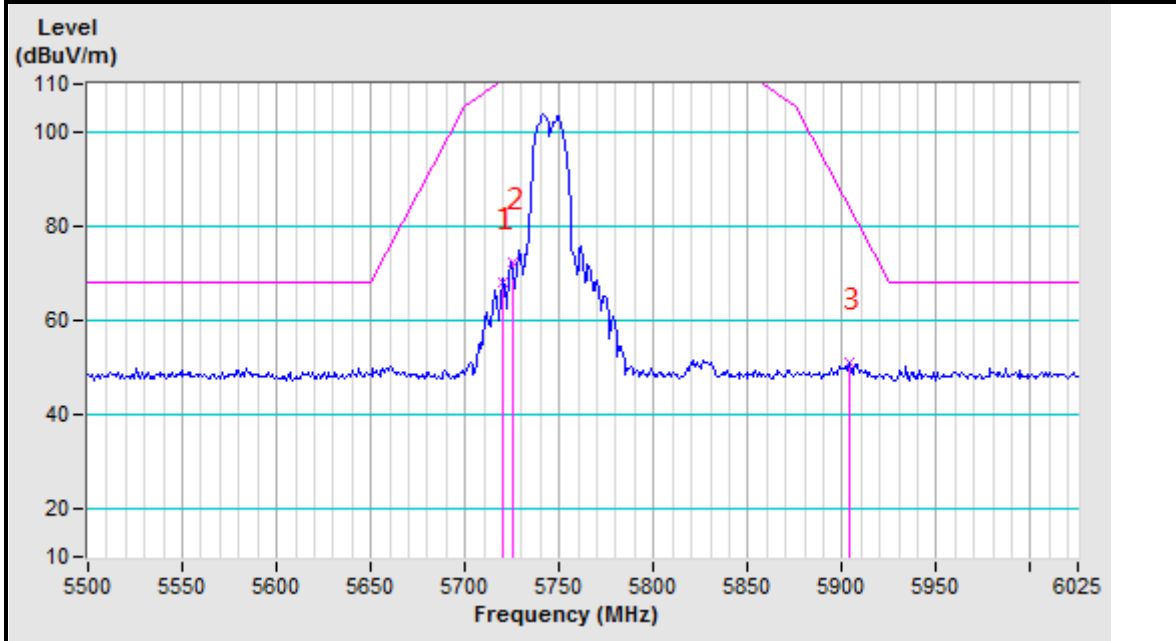


Band edge Plot

5745MHz Horizontal



5745MHz Vertical





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	#5655.17	48.47 PK	72.04	-23.57	3.13 H	308	42.00	6.47
2	#5708.17	48.82 PK	107.49	-58.67	1.88 H	308	42.12	6.70
3	*5785.00	101.09 PK			1.88 H	0	94.07	7.02
4	*5785.00	90.74 AV			1.98 H	0	83.72	7.02
5	#5939.18	48.91 PK	68.20	-19.29	2.34 H	308	41.26	7.65
6	11570.00	57.45 PK	74.00	-16.55	1.86 H	0	41.40	16.05
7	11570.00	46.51 AV	54.00	-7.49	1.86 H	0	30.46	16.05
8	#17355.00	59.84 PK	68.20	-8.36	1.87 H	0	37.79	22.05

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	#5701.44	49.49 PK	105.60	-56.11	1.94 V	0	42.82	6.67
2	*5785.00	103.91 PK			1.80 V	0	96.89	7.02
3	*5785.00	92.57 AV			1.80 V	0	85.55	7.02
4	#5863.82	53.18 PK	108.33	-55.15	2.05 V	0	45.84	7.34
5	#5869.71	50.72 PK	106.68	-55.96	1.56 V	0	43.35	7.37
6	11570.00	58.51 PK	74.00	-15.49	1.54 V	0	42.46	16.05
7	11570.00	47.03 AV	54.00	-6.97	1.54 V	0	30.98	16.05
8	#17355.00	60.69 PK	68.20	-7.51	1.59 V	0	38.64	22.05

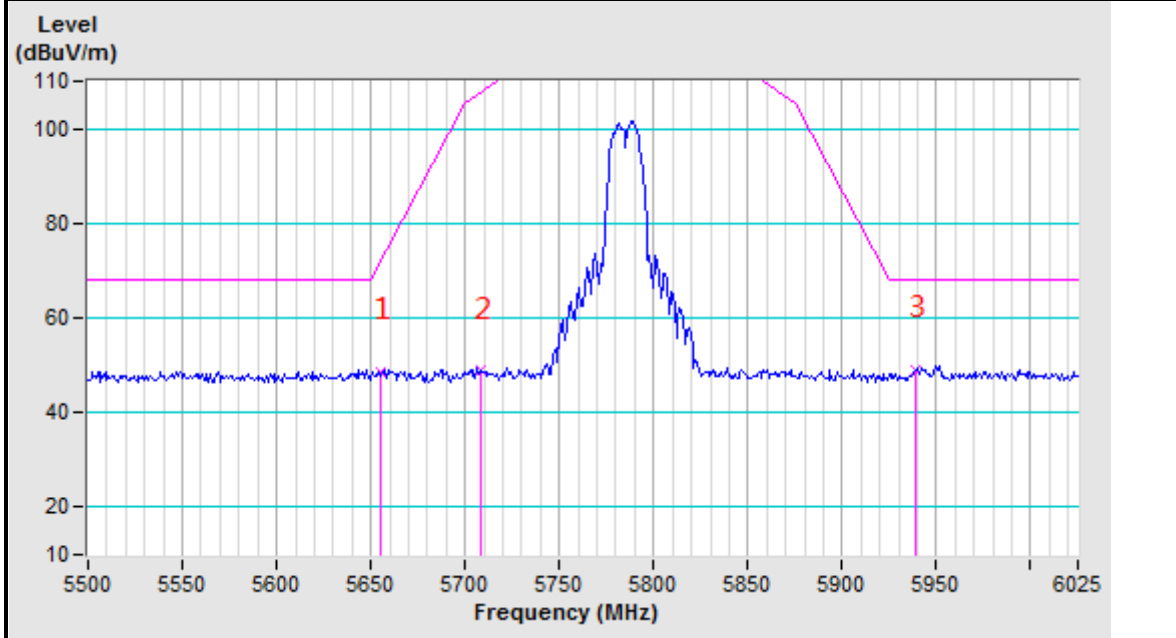
REMARKS:

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 emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

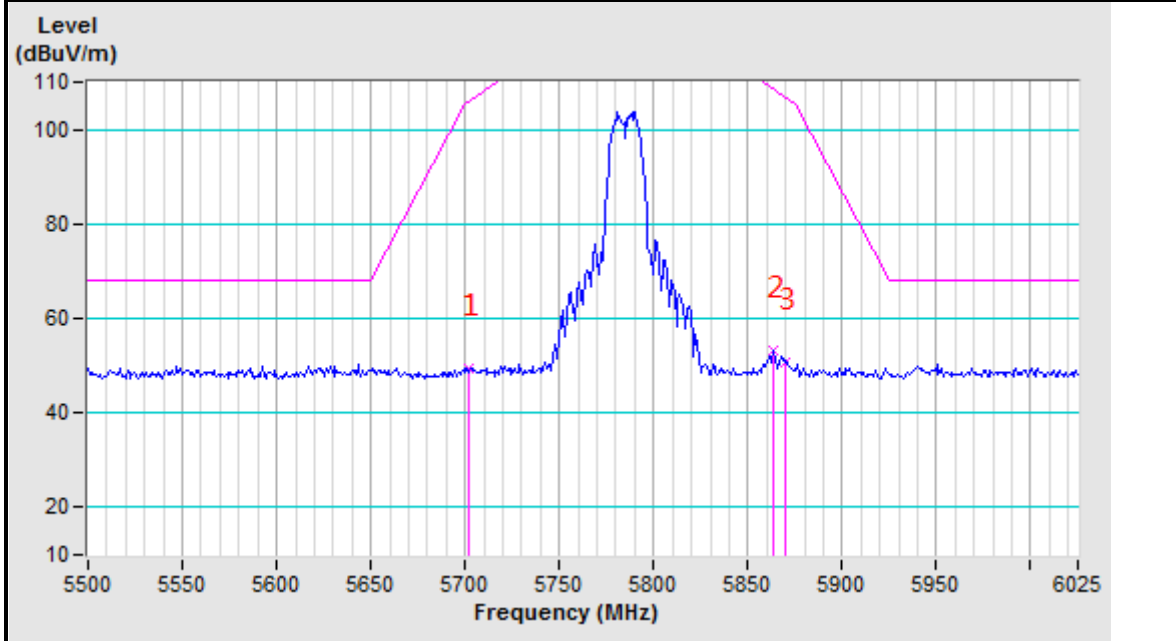


Band edge Plot

5785MHz Horizontal



5785MHz Vertical





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	#5736.42	50.29 PK	152.20	-101.91	2.26 H	52	43.47	6.82
2	*5825.00	100.89 PK			3.24 H	0	93.71	7.18
3	*5825.00	91.74 AV			3.24 H	0	84.56	7.18
4	#5850.00	63.05 PK	122.20	-59.15	3.45 H	52	55.77	7.28
5	#5854.21	62.41 PK	112.61	-50.20	1.53 H	52	55.11	7.30
6	11650.00	57.56 PK	74.00	-16.44	2.85 H	0	41.45	16.11
7	11650.00	45.17 AV	54.00	-8.83	2.85 H	0	29.06	16.11
8	#17475.00	61.42 PK	68.20	-6.78	1.92 H	0	39.27	22.15

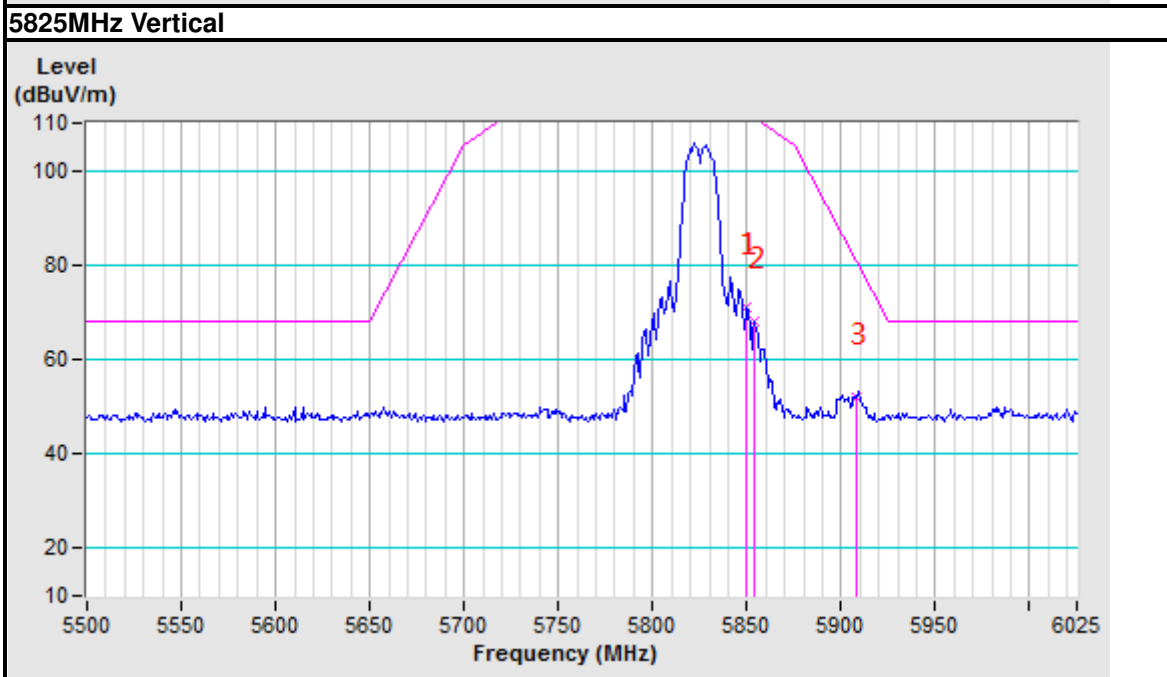
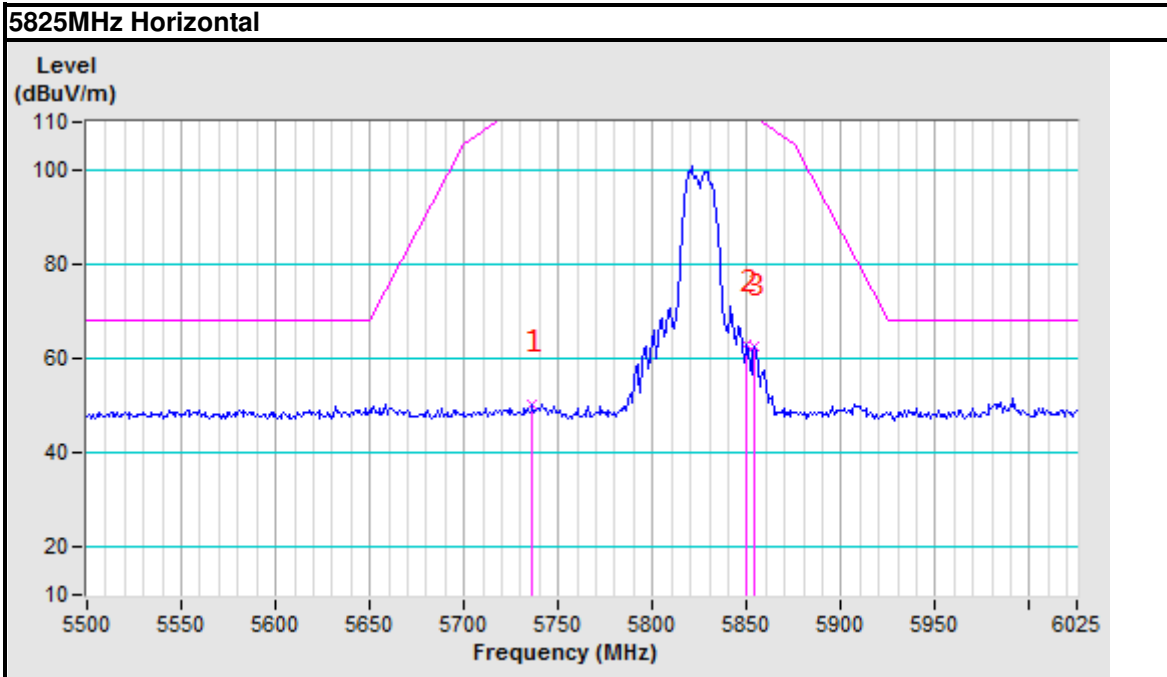
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

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	105.47 PK			1.82 V	0	98.29	7.18
2	*5825.00	96.04 AV			1.82 V	0	88.86	7.18
3	#5850.00	70.93 PK	122.20	-51.27	1.75 V	184	63.65	7.28
4	#5854.21	68.02 PK	112.61	-44.59	1.61 V	184	60.72	7.30
5	#5908.05	52.12 PK	80.71	-28.59	2.00 V	184	44.60	7.52
6	11650.00	59.62 PK	74.00	-14.38	1.99 V	0	43.51	16.11
7	11650.00	47.02 AV	54.00	-6.98	1.99 V	0	30.91	16.11
8	#17475.00	63.47 PK	68.20	-4.73	2.20 V	0	41.32	22.15

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 emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Band edge Plot





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	#5723.32	77.65 PK	118.36	-40.71	2.55 H	138	70.89	6.76
2	#5725.00	80.83 PK	122.20	-41.37	2.25 H	138	74.06	6.77
3	*5755.00	92.11 PK			2.83 H	0	85.22	6.89
4	*5755.00	82.46 AV			2.83 H	0	75.57	6.89
5	#5867.19	48.79 PK	107.39	-58.60	2.21 H	138	41.44	7.35
6	11510.00	57.62 PK	74.00	-16.38	3.16 H	0	41.63	15.99
7	11510.00	44.59 AV	54.00	-9.41	3.16 H	0	28.60	15.99
8	#17265.00	61.75 PK	68.20	-6.45	1.69 H	0	39.77	21.98

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	#5721.63	78.58 PK	114.53	-35.95	1.50 V	0	71.83	6.75
2	#5725.00	82.79 PK	122.20	-39.41	1.96 V	46	76.02	6.77
3	*5755.00	95.65 PK			1.91 V	0	88.76	6.89
4	*5755.00	86.62 AV			1.91 V	0	79.73	6.89
5	#5867.67	49.34 PK	107.25	-57.91	2.18 V	0	41.99	7.35
6	11510.00	56.41 PK	74.00	-17.59	1.41 V	0	40.42	15.99
7	11510.00	43.03 AV	54.00	-10.97	1.41 V	0	27.04	15.99
8	#17265.00	59.84 PK	68.20	-8.36	2.26 V	0	37.86	21.98

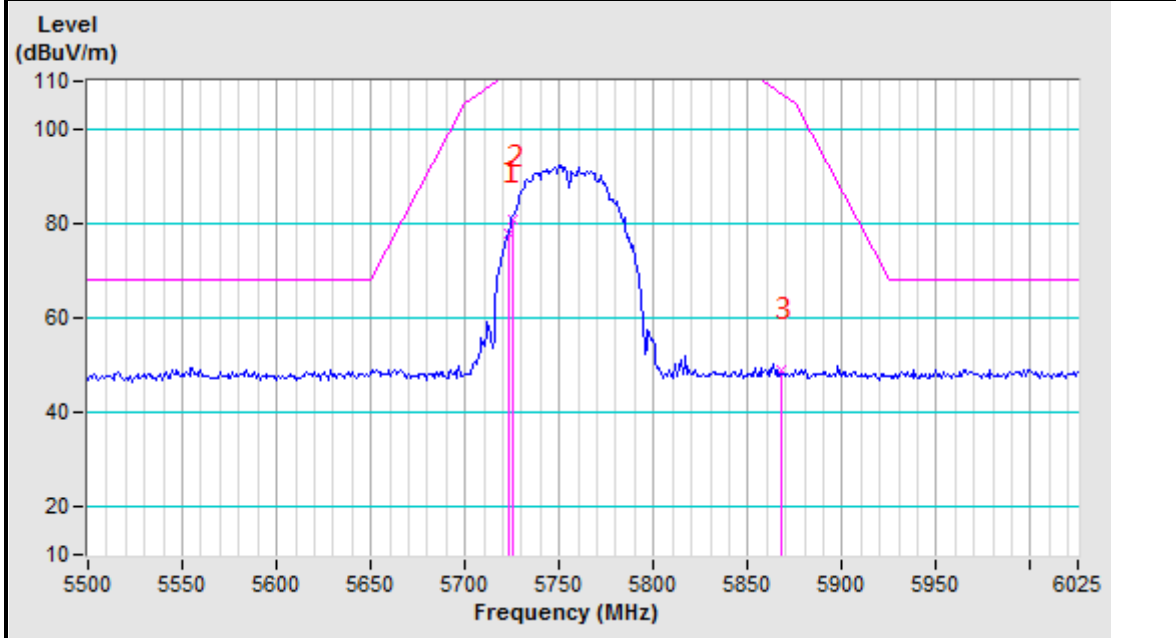
REMARKS:

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 emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

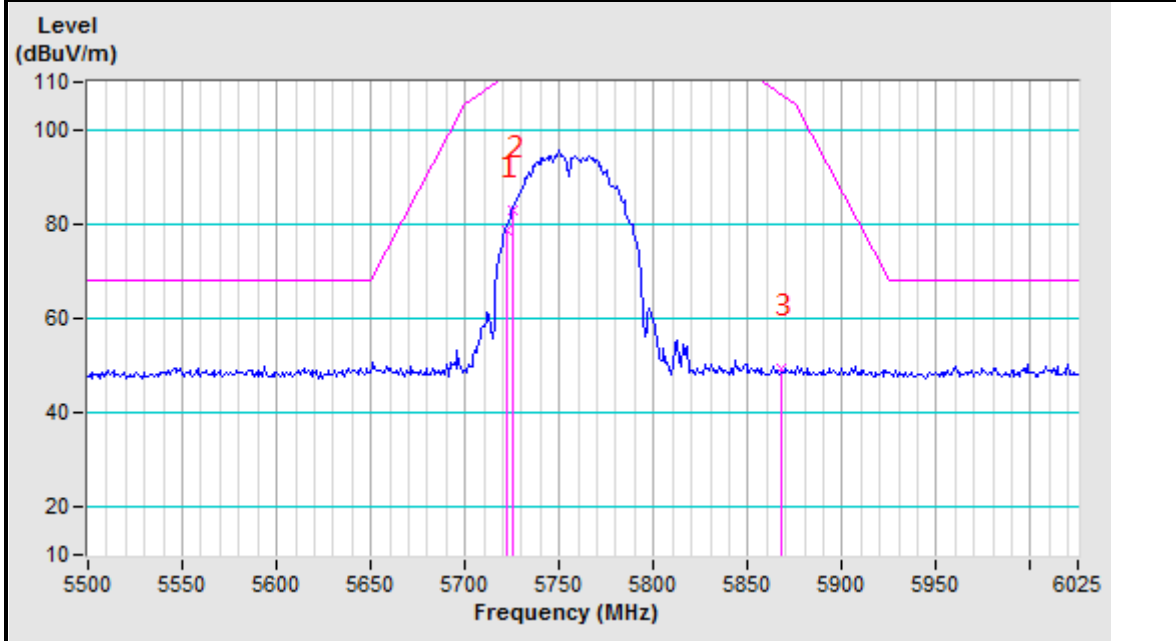


Band edge Plot

5755MHz Horizontal



5755MHz Vertical





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	#5704.81	50.11 PK	106.55	-56.44	3.21 H	0	43.42	6.69
2	*5795.00	92.78 PK			2.39 H	0	85.73	7.05
3	*5795.00	83.24 AV			2.39 H	0	76.19	7.05
4	#5850.00	49.51 PK	122.20	-72.69	1.65 H	0	42.23	7.28
5	#5876.08	50.37 PK	104.40	-54.03	3.42 H	0	42.98	7.39
6	11590.00	57.43 PK	74.00	-16.57	1.63 H	0	41.37	16.06
7	11590.00	45.18 AV	54.00	-8.82	1.63 H	0	29.12	16.06
8	#17385.00	61.18 PK	68.20	-7.02	3.29 H	0	39.11	22.07

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5700.60	48.82 PK	105.37	-56.55	1.66 V	217	42.15	6.67
2	*5795.00	93.57 PK			1.67 V	0	86.52	7.05
3	*5795.00	84.15 AV			1.67 V	0	77.10	7.05
4	#5850.00	48.60 PK	122.20	-73.60	1.44 V	217	41.32	7.28
5	#5856.73	51.52 PK	110.31	-58.79	1.79 V	217	44.21	7.31
6	11590.00	58.42 PK	74.00	-15.58	1.77 V	0	42.36	16.06
7	11590.00	46.01 AV	54.00	-7.99	1.77 V	0	29.95	16.06
8	#17385.00	62.28 PK	68.20	-5.92	1.86 V	0	40.21	22.07

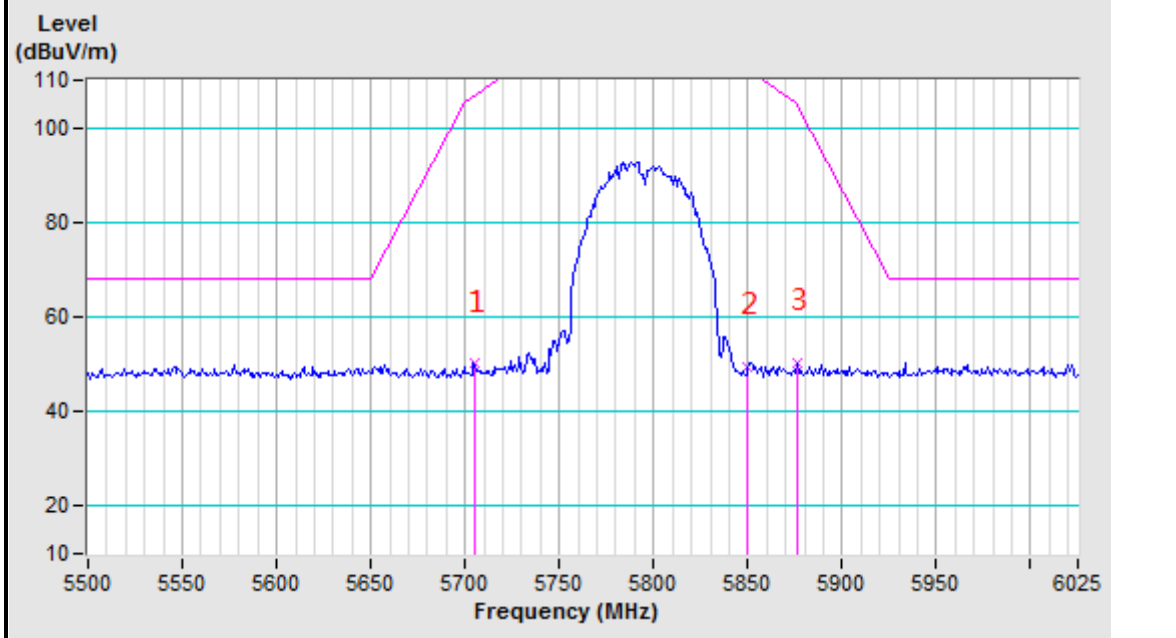
REMARKS:

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 emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

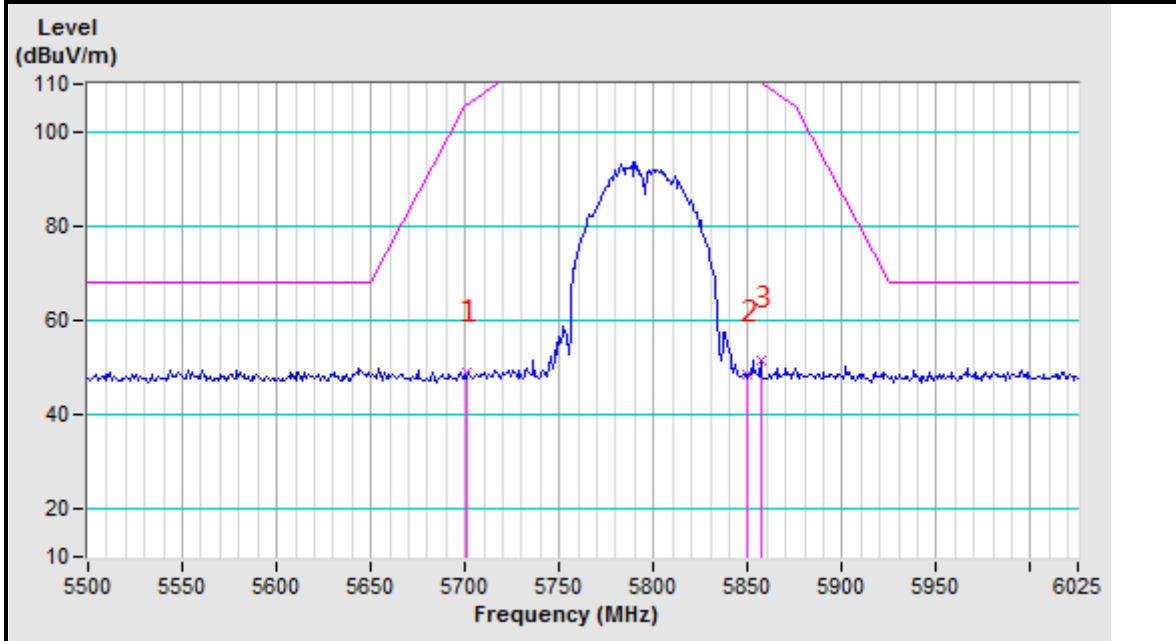


Band edge Plot

5795MHz Horizontal



5795MHz Vertical





802.11ac 80MHz

CHANNEL	TX Channel 155	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	48.75 PK	109.37	-60.62	2.70 H	249	42.03	6.72
2	#5725.00	51.01 PK	122.20	-71.19	2.74 H	249	44.24	6.77
3	*5775.00	92.75 PK			1.81 H	0	85.78	6.97
4	*5775.00	83.14 AV			1.81 H	0	76.17	6.97
5	#5850.00	48.42 PK	122.20	-73.78	3.07 H	249	41.14	7.28
6	#5871.87	48.79 PK	106.07	-57.28	1.56 H	249	41.42	7.37
7	11550.00	58.32 PK	74.00	-15.68	2.34 H	0	42.30	16.02
8	11550.00	46.27 AV	54.00	-7.73	2.34 H	0	30.25	16.02
9	#17325.00	59.85 PK	68.20	-8.35	2.32 H	0	37.82	22.03
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	#5717.43	50.43 PK	110.08	-59.65	1.48 V	211	43.69	6.74
2	#5725.00	52.04 PK	122.20	-70.16	1.94 V	211	45.27	6.77
3	*5775.00	95.40 PK			2.04 V	0	88.43	6.97
4	*5775.00	84.67 AV			2.04 V	0	77.70	6.97
5	#5850.00	50.06 PK	122.20	-72.14	1.78 V	211	42.78	7.28
6	#5865.99	51.14 PK	107.72	-56.58	1.40 V	211	43.79	7.35
7	11550.00	59.62 PK	74.00	-14.38	2.07 V	0	43.60	16.02
8	11550.00	47.02 AV	54.00	-6.98	2.07 V	0	31.00	16.02
9	#17325.00	61.49 PK	68.20	-6.71	2.16 V	0	39.46	22.03

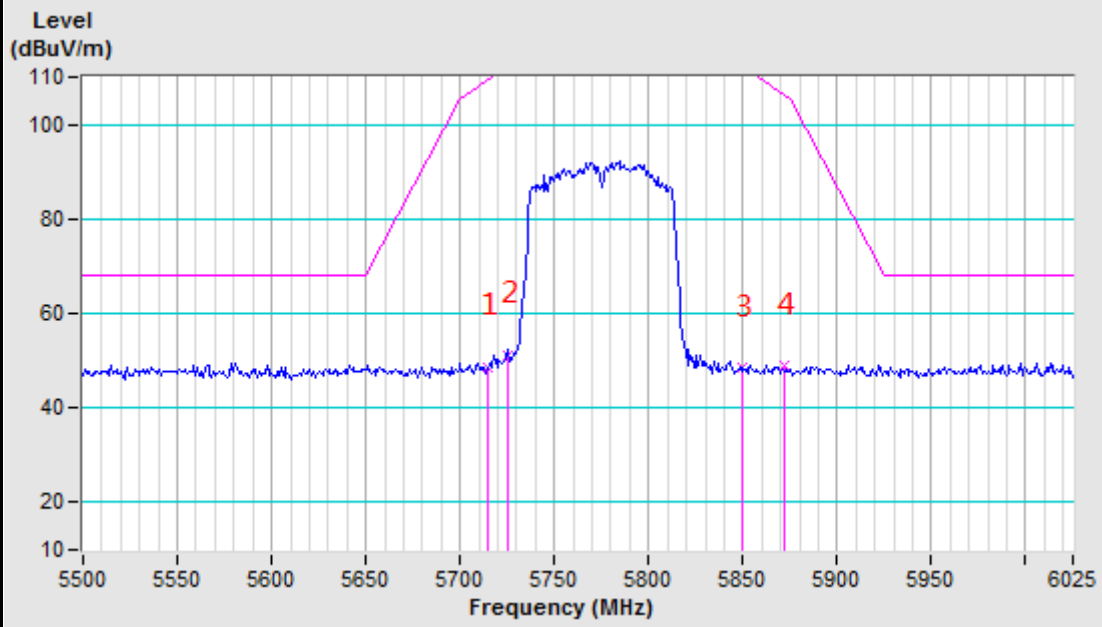
REMARKS:

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 emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

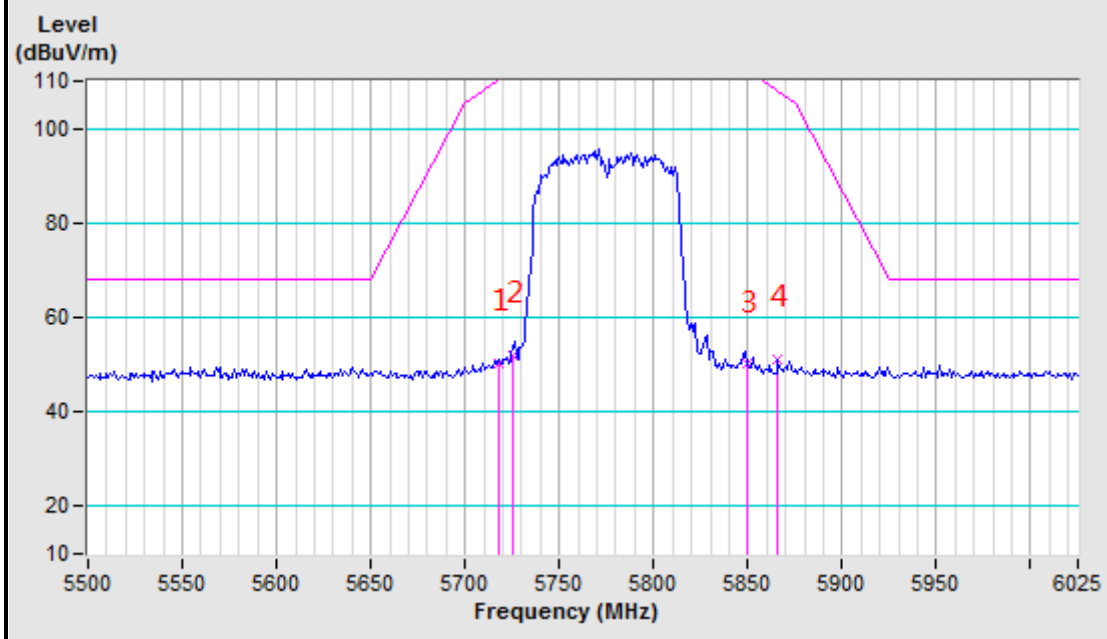


Band edge Plot

5775MHz Horizontal



5775MHz Vertical





4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 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

- NOTES:**
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.

4.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101494	Mar. 07,22
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	Mar. 07,22
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	Mar. 07,22
Voltage probe	SCHWARZBECK	TK 9421	TK 9421-176	Aug. 05,22
Coaxial RF Cable	/	CE CABLE	C2310066DG	Jul. 27,22
Test software	ADT	ADT_Cond_V7.3 .7	N/A	N/A

- NOTES:**
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.

4.2.3 TEST PROCEDURES

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

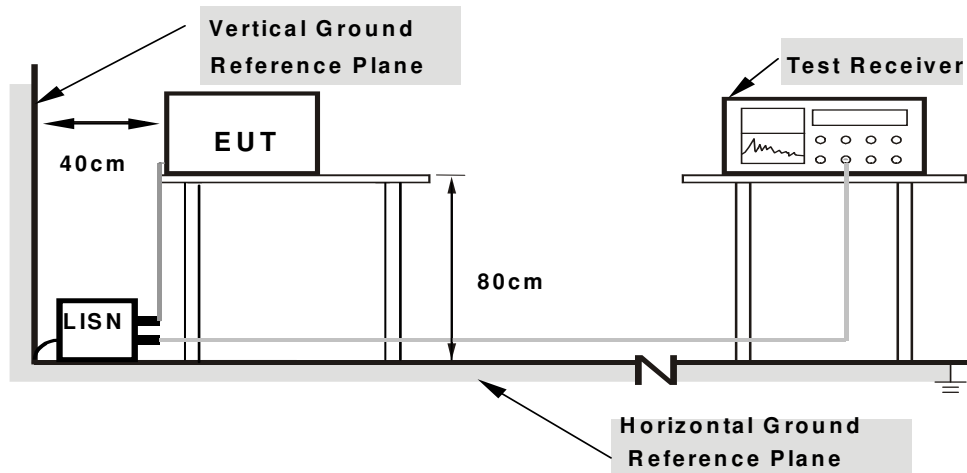
NOTE: All modes of operation were investigated and the worst-case emissions are reported.



4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



- Note:**
- 1.Support units were connected to second LISN.
 - 2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

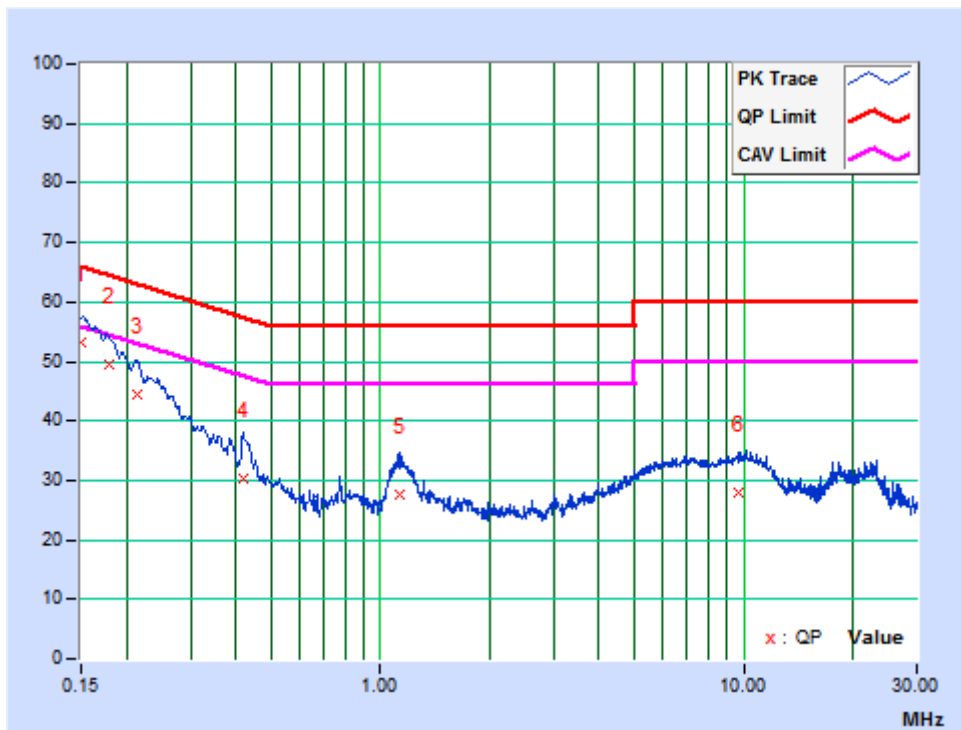
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA : 802.11a CH36

PHASE	Line	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.90	43.43	27.60	53.33	37.50	66.00	56.00	-12.67	-18.50
2	0.17925	9.92	39.66	25.00	49.58	34.92	64.52	54.52	-14.94	-19.60
3	0.21517	9.93	34.68	20.24	44.61	30.17	63.00	53.00	-18.39	-22.83
4	0.41775	9.95	20.36	9.62	30.31	19.57	57.49	47.49	-27.18	-27.92
5	1.12425	10.01	17.71	8.72	27.72	18.73	56.00	46.00	-28.28	-27.27
6	9.70350	10.12	17.71	11.45	27.83	21.57	60.00	50.00	-32.17	-28.43

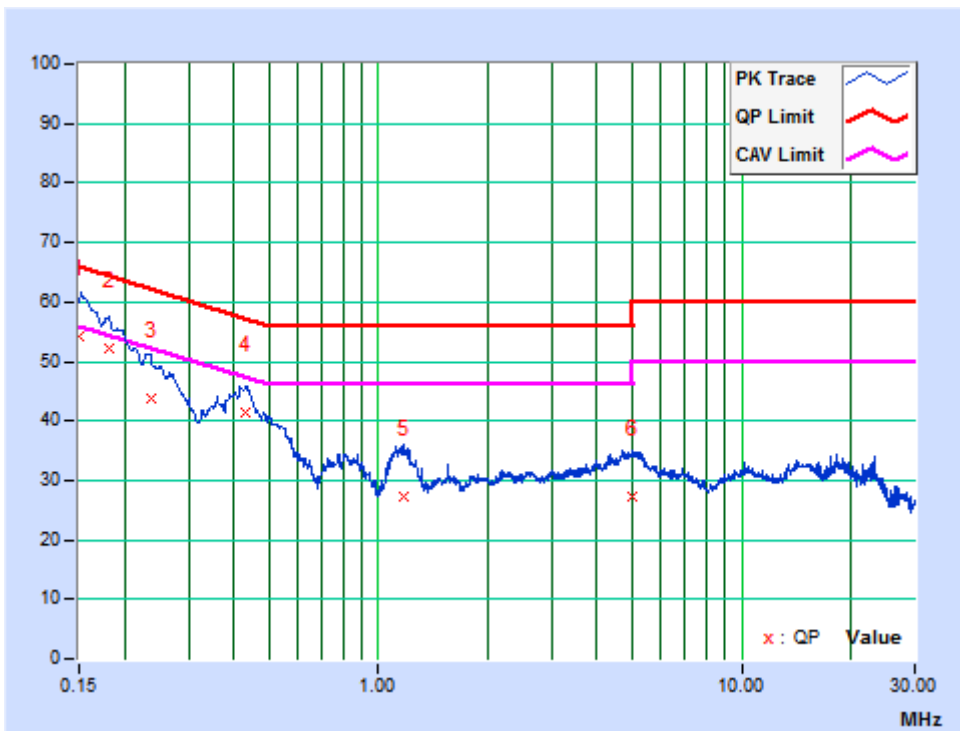
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



PHASE	Neutral	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.90	44.46	30.68	54.36	40.58	66.00	56.00	-11.64	-15.42
2	0.18123	9.92	42.30	29.70	52.22	39.62	64.43	54.43	-12.21	-14.81
3	0.23550	9.94	33.73	23.98	43.67	33.92	62.25	52.25	-18.58	-18.33
4	0.42974	9.95	31.36	25.87	41.31	35.82	57.26	47.26	-15.94	-11.43
5	1.16895	10.03	17.27	10.42	27.30	20.45	56.00	46.00	-28.70	-25.55
6	5.02575	10.09	17.23	8.96	27.32	19.05	60.00	50.00	-32.68	-30.95

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





4.3 TRANSMIT POWER MEASUREMENT

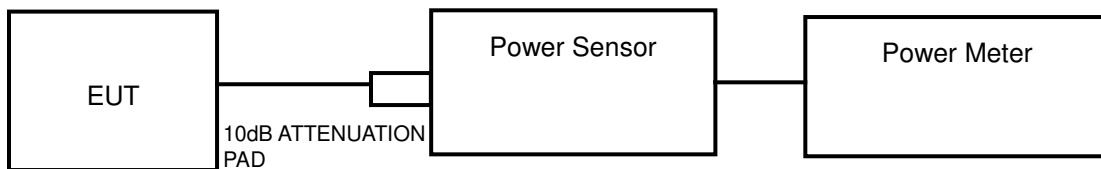
4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p \leq 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Mobile and Portable client device	250mW (24 dBm)
U-NII-2A			250mW(24dBm) or 11 dBm+10LogB*
U-NII-2C			250mW(24dBm) or 11 dBm+10LogB*
U-NII-3	√		1 Watt (30 dBm)

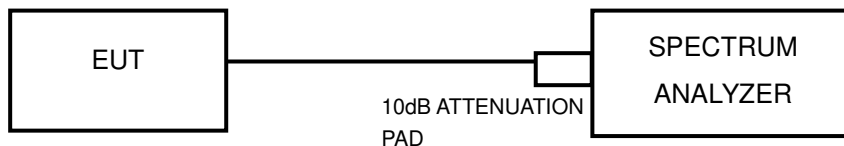
NOTE: 1. Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 6/26dB BANDWIDTH





4.3.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
Power Sensor	Keysight	U2021XA	MY55060016	May 09, 22
Power Sensor	Keysight	U2021XA	MY55060018	May 09, 22
Power Meter	Anritsu	ML2495A	1139001	Feb. 24, 22
Power Sensor	Anritsu	MA2411B	1531155	Feb. 24, 22
Digital Multimeter	FLUKE	15B	A1220010DG	N/A
Humid & Temp Programmable Tester	Haida	HD-225T	110807201	Nov. 03, 22
Oscilloscope	Agilent	DSO9254A	MY51260160	Aug. 11, 22
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Feb. 24, 22
Signal Generator	Agilent	N5183A	MY50140980	Mar 23, 22
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Sep. 14, 22
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A
DC Source	Keysight	E3642A	MY56146098	N/A
Test software	ADT	ADT_RF Test Software V6.6.5.3	N/A	N/A

NOTES:

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.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

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

FOR 26dB 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) \geq 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.

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

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



4.3.7 TEST RESULTS

OUTPUT POWER:

802.11a

Channel Number	FREQ. (MHz)	AVG. CONDUCTED POWER (dBm)		AVG. CONDUCTED POWER (mW)		Total Max. power output		LIMIT (dBm)	PASS /FAIL
		Chain 0	Chain 1	Chain 0	Chain 1	mW	dBm		
36	5180	5.11	5.59	3.243	3.622	6.865	8.37	24.00	PASS
40	5200	5.16	5.85	3.281	3.846	7.127	8.53	24.00	PASS
48	5240	5.63	6.51	3.656	4.477	8.133	9.10	24.00	PASS
149	5745	6.22	7.83	4.188	6.067	10.255	10.11	30.00	PASS
157	5785	5.53	7.01	3.573	5.023	8.596	9.34	30.00	PASS
165	5825	4.26	6.17	2.667	4.14	6.807	8.33	30.00	PASS

Note: Directional gain is less than 6dBi, so the limit is no need to be reduced.

802.11n (20MHz)

Channel Number	FREQ. (MHz)	AVG. CONDUCTED POWER (dBm)		AVG. CONDUCTED POWER (mW)		Total Max. power output		LIMIT (dBm)	PASS /FAIL
		Chain 0	Chain 1	Chain 0	Chain 1	mW	dBm		
36	5180	5.05	4.44	3.199	2.78	5.979	7.77	24.00	PASS
40	5200	5.46	4.75	3.516	2.985	6.501	8.13	24.00	PASS
48	5240	6.14	5.43	4.111	3.491	7.602	8.81	24.00	PASS
149	5745	7.85	6.56	6.095	4.529	10.624	10.26	30.00	PASS
157	5785	7.32	5.89	5.395	3.882	9.277	9.67	30.00	PASS
165	5825	6.80	5.09	4.786	3.228	8.014	9.04	30.00	PASS

Note: Directional gain is less than 6dBi, so the limit is no need to be reduced.

802.11n (40MHz)

Channel Number	FREQ. (MHz)	AVG. CONDUCTED POWER (dBm)		AVG. CONDUCTED POWER (mW)		Total Max. power output		LIMIT (dBm)	PASS /FAIL
		Chain 0	Chain 1	Chain 0	Chain 1	mW	dBm		
38	5190	5.04	4.39	3.192	2.748	5.94	7.74	24.00	PASS
46	5230	5.73	5.12	3.741	3.251	6.992	8.45	24.00	PASS
151	5755	7.57	6.53	5.715	4.498	10.213	10.09	24.00	PASS
159	5795	6.89	5.56	4.887	3.597	8.484	9.29	30.00	PASS

Note: Directional gain is less than 6dBi, so the limit is no need to be reduced.

802.11ac (80MHz)

Channel Number	FREQ. (MHz)	AVG. CONDUCTED POWER (dBm)		AVG. CONDUCTED POWER (mW)		Total Max. power output		LIMIT (dBm)	PASS /FAIL
		Chain 0	Chain 1	Chain 0	Chain 1	mW	dBm		
42	5210	5.10	4.32	3.236	2.704	5.94	7.74	24.00	PASS
155	5775	7.02	5.95	5.035	3.936	8.971	9.53	30.00	PASS

Note: Directional gain is less than 6dBi, so the limit is no need to be reduced.

26dB BANDWIDTH:

802.11a

Channel Number	Freq. (MHz)	26dB DOWN BANDWIDTH (MHz)		PASS /FAIL
		Chain 0	Chain 1	
36	5180	18.70	18.93	PASS
40	5200	18.53	18.81	PASS
48	5240	18.92	18.88	PASS

802.11n (20MHz)

Channel Number	Freq. (MHz)	26dB DOWN BANDWIDTH (MHz)		PASS /FAIL
		Chain 0	Chain 1	
36	5180	19.84	19.80	PASS
40	5200	19.86	19.87	PASS
48	5240	19.88	19.83	PASS

802.11n (40MHz)

Channel Number	Freq. (MHz)	26dB DOWN BANDWIDTH (MHz)		PASS /FAIL
		Chain 0	Chain 1	
38	5190	43.87	43.62	PASS
46	5230	43.61	43.31	PASS

802.11ac (80MHz)

Channel Number	Freq. (MHz)	26dB DOWN BANDWIDTH (MHz)		PASS /FAIL
		Chain 0	Chain 1	
42	5210	82.68	88.21	PASS

6dB BANDWIDTH For 5725-5850MHz

802.11a

Channel Number	Freq. (MHz)	6dB DOWN BANDWIDTH (MHz)		PASS /FAIL
		Chain 0	Chain 1	
149	5745	16.38	16.37	PASS
157	5785	16.39	16.37	PASS
165	5825	16.38	16.37	PASS

802.11n (20M)

Channel Number	Freq. (MHz)	6dB DOWN BANDWIDTH (MHz)		PASS /FAIL
		Chain 0	Chain 1	
149	5745	17.57	17.36	PASS
157	5785	17.57	17.57	PASS
165	5825	17.35	17.58	PASS

802.11n (40M)

Channel Number	Freq. (MHz)	6dB DOWN BANDWIDTH (MHz)		PASS /FAIL
		Chain 0	Chain 1	
151	5755	35.93	35.59	PASS
159	5795	35.91	35.37	PASS

802.11ac (80MHz)

Channel Number	Freq. (MHz)	6dB DOWN BANDWIDTH (MHz)		PASS /FAIL
		Chain 0	Chain 1	
155	5775	75.24	75.25	PASS

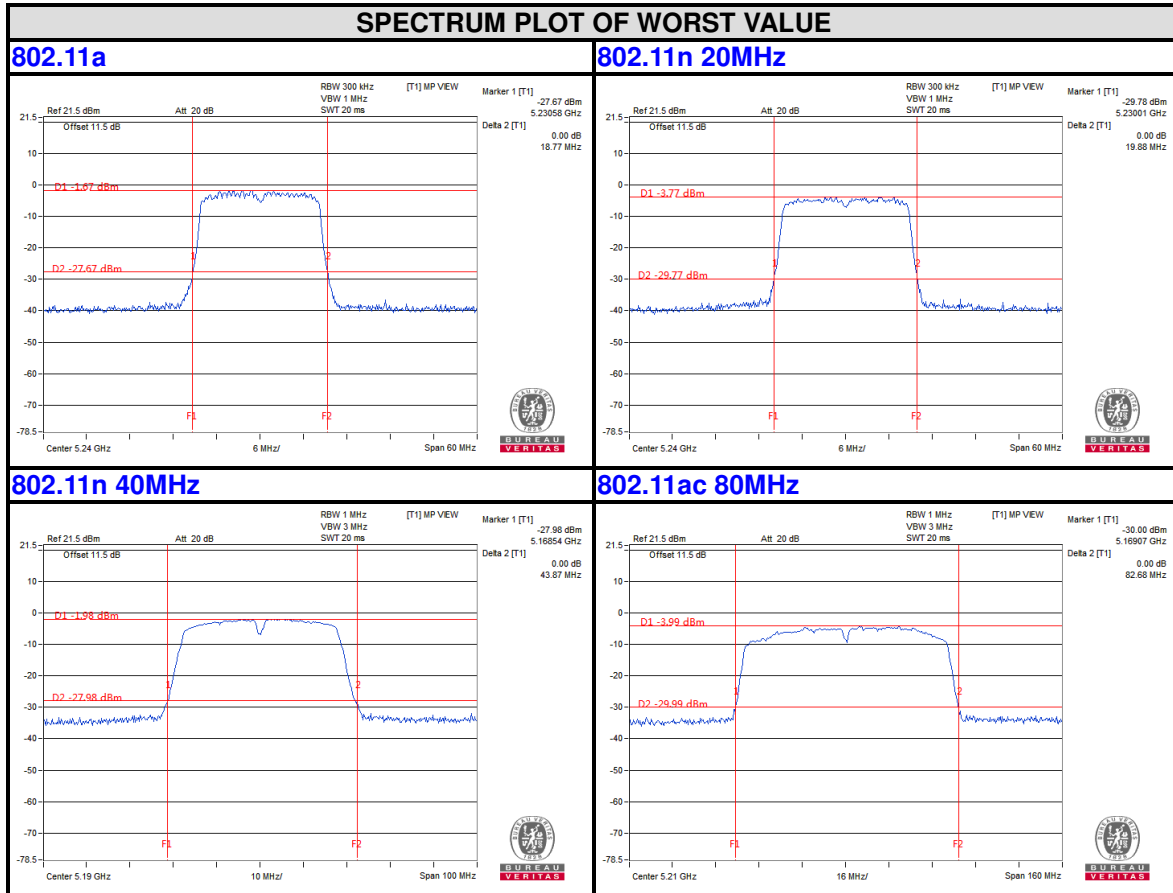


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26dB bandwidth Test Plot
For 5150-5250MHz worst plot

Chain 0

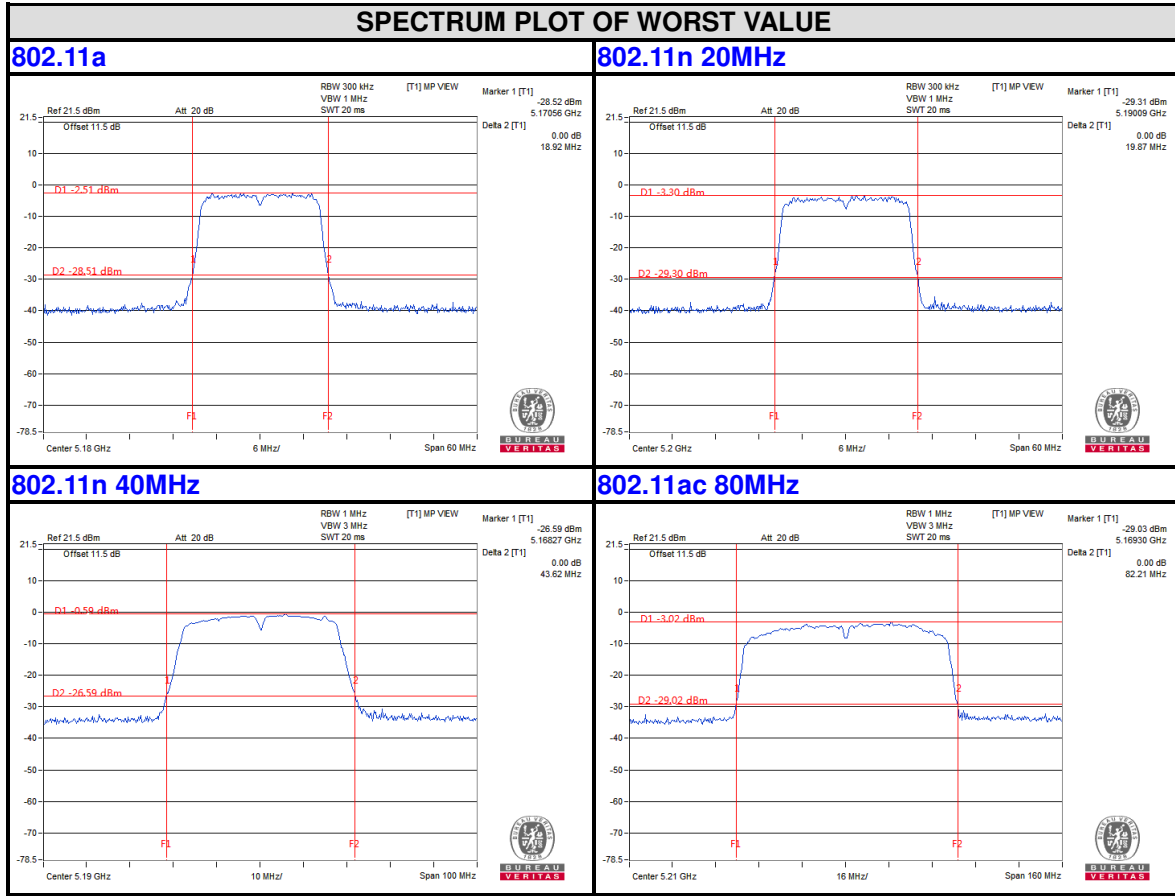




BUREAU VERITAS

Test Report No.: RF2201WDG0200-6

Chain 1



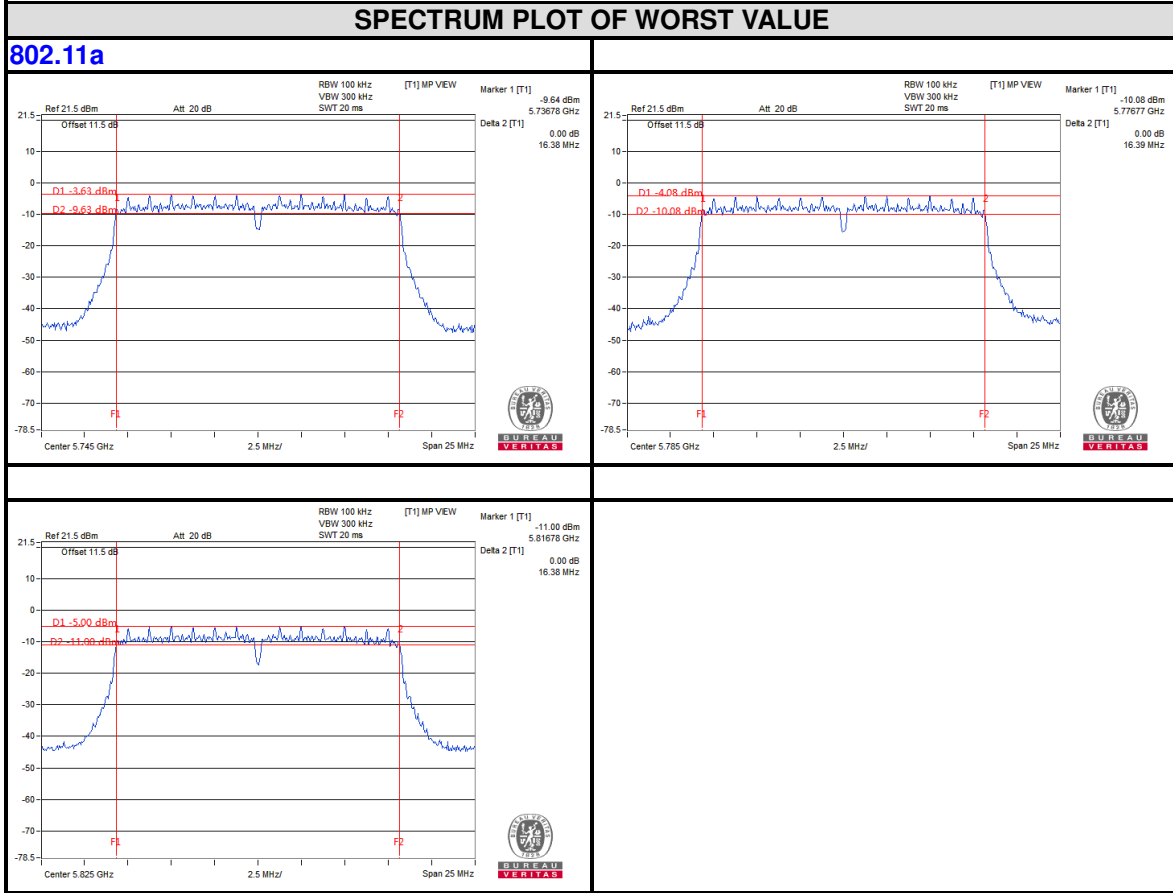


BUREAU VERITAS

Test Report No.: RF2201WDG0200-6

6dB BANDWIDTH For 5725-5850MHz

Chain 0

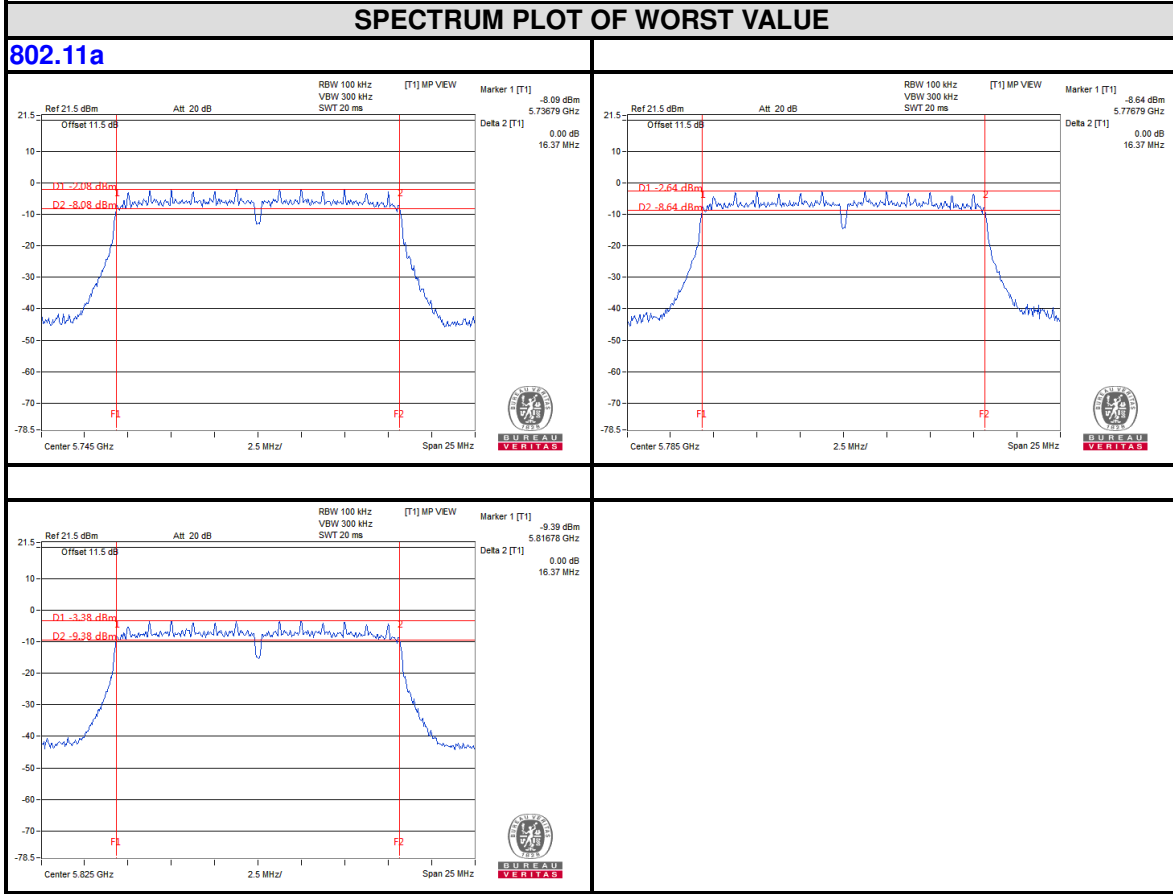




BUREAU VERITAS

Test Report No.: RF2201WDG0200-6

Chain 1

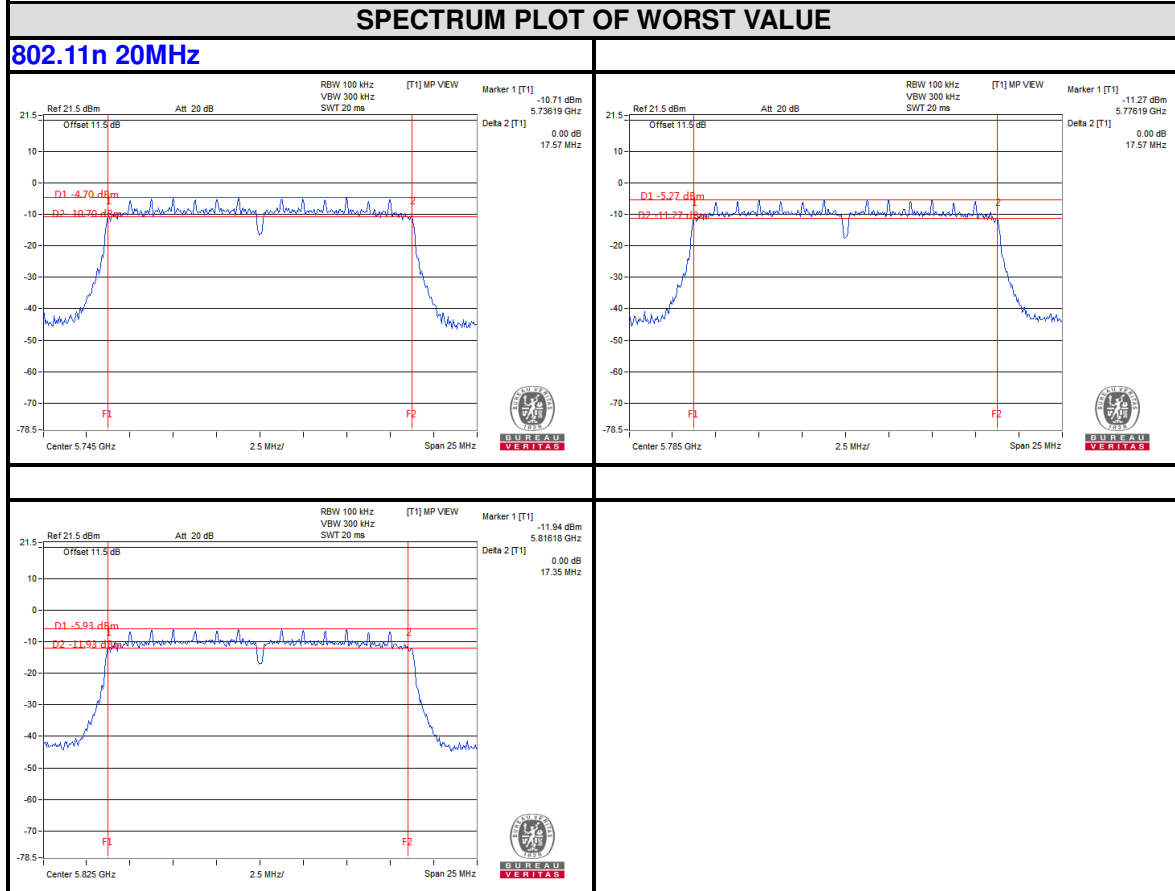




BUREAU VERITAS

Test Report No.: RF2201WDG0200-6

Chain 0

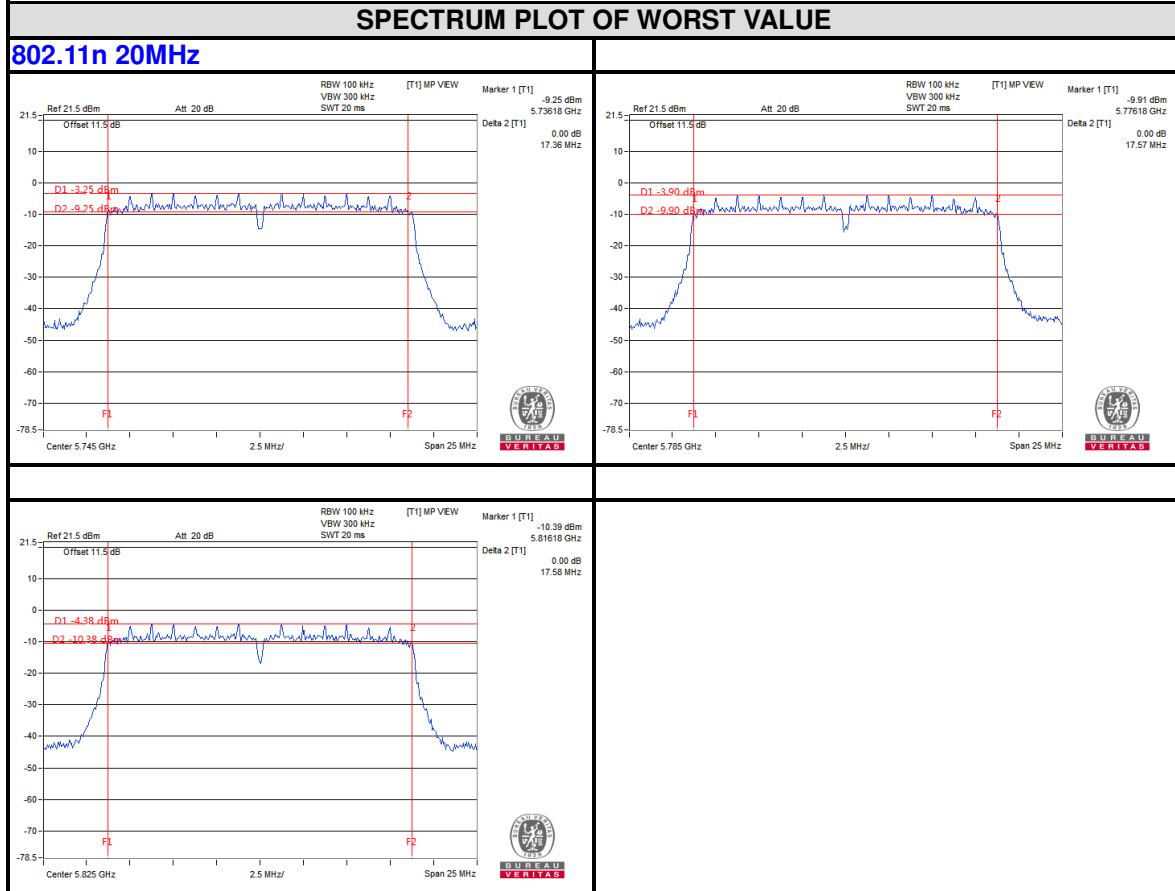




BUREAU VERITAS

Test Report No.: RF2201WDG0200-6

Chain 1

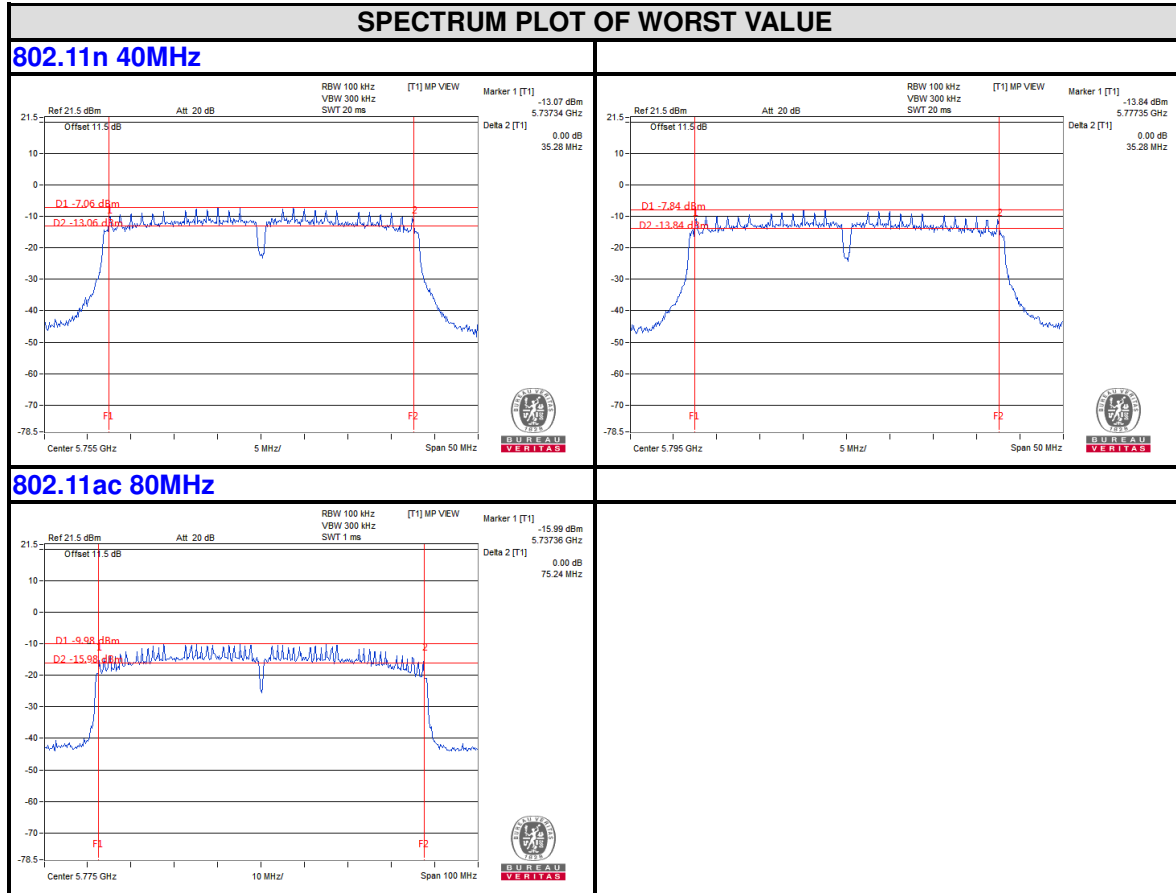




BUREAU VERITAS

Test Report No.: RF2201WDG0200-6

Chain 0

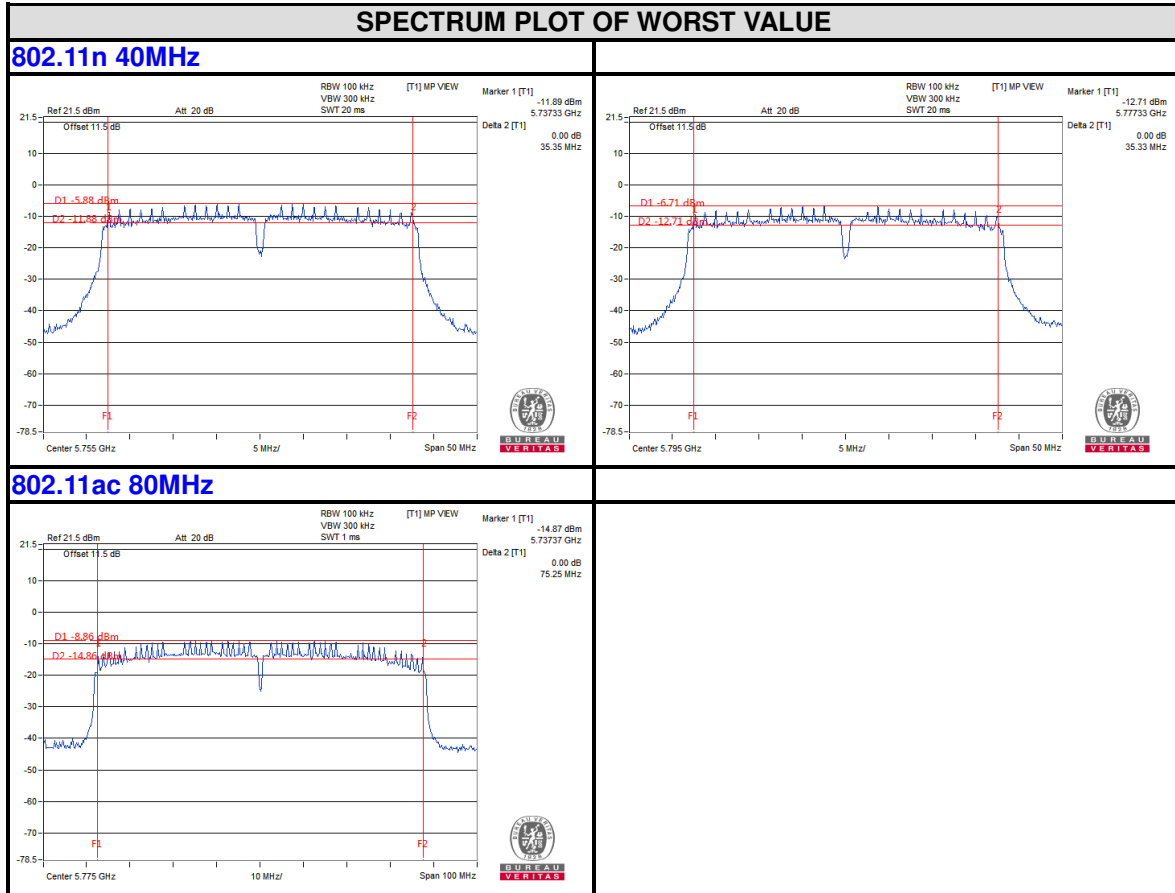




BUREAU VERITAS

Test Report No.: RF2201WDG0200-6

Chain 1



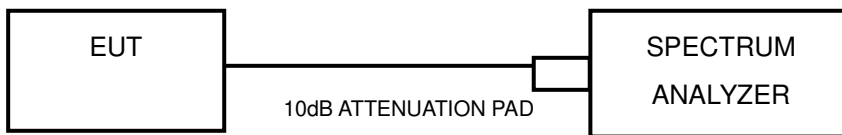


4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 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-2A			11dBm/ MHz
U-NII-2C			11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.3.3 to get information of above instrument.



4.4.4 TEST PROCEDURES

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

Using method SA-2

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

For U-NII-3 band:

Using method SA-2

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 500 kHz, Set VBW =2 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)

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6



4.4.7 TEST RESULTS

For U-NII-1 802.11a

Channel	Frequency (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	MAX. Limit (dBm)	PASS / FAIL
		Chain 0	Chain 1				
36	5180	-8.00	-7.10	0.432	-4.084	9.80	PASS
40	5200	-7.43	-6.83	0.432	-3.677	9.80	PASS
48	5240	-6.80	-6.11	0.432	-2.999	9.80	PASS

Note:1.Refer to section 3.3 for duty cycle spectrum plot.

2.Directionality gain = $4.19\text{dBi} + 10\log(2) = 7.20\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(7.2-6) = 9.80\text{dBm}$.

802.11n (20MHz)

Channel	Frequency (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	MAX. Limit (dBm)	PASS / FAIL
		Chain 0	Chain 1				
36	5180	-8.75	-9.26	0.291	-5.696	9.80	PASS
40	5200	-8.36	-8.83	0.291	-5.287	9.80	PASS
48	5240	-7.47	-8.18	0.291	-4.509	9.80	PASS

Note:1.Refer to section 3.3 for duty cycle spectrum plot.

2.Directionality gain = $4.19\text{dBi} + 10\log(2) = 7.20\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(7.2-6) = 9.80\text{dBm}$.

802.11n (40MHz)

Channel	Frequency (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	MAX. Limit (dBm)	PASS / FAIL
		Chain 0	Chain 1				
38	5190	-11.84	-12.65	0.892	-8.324	9.80	PASS
46	5230	-10.57	-11.52	0.892	-7.117	9.80	PASS

Note:1.Refer to section 3.3 for duty cycle spectrum plot.

2.Directionality gain = $4.19\text{dBi} + 10\log(2) = 7.20\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(7.2-6) = 9.80\text{dBm}$.

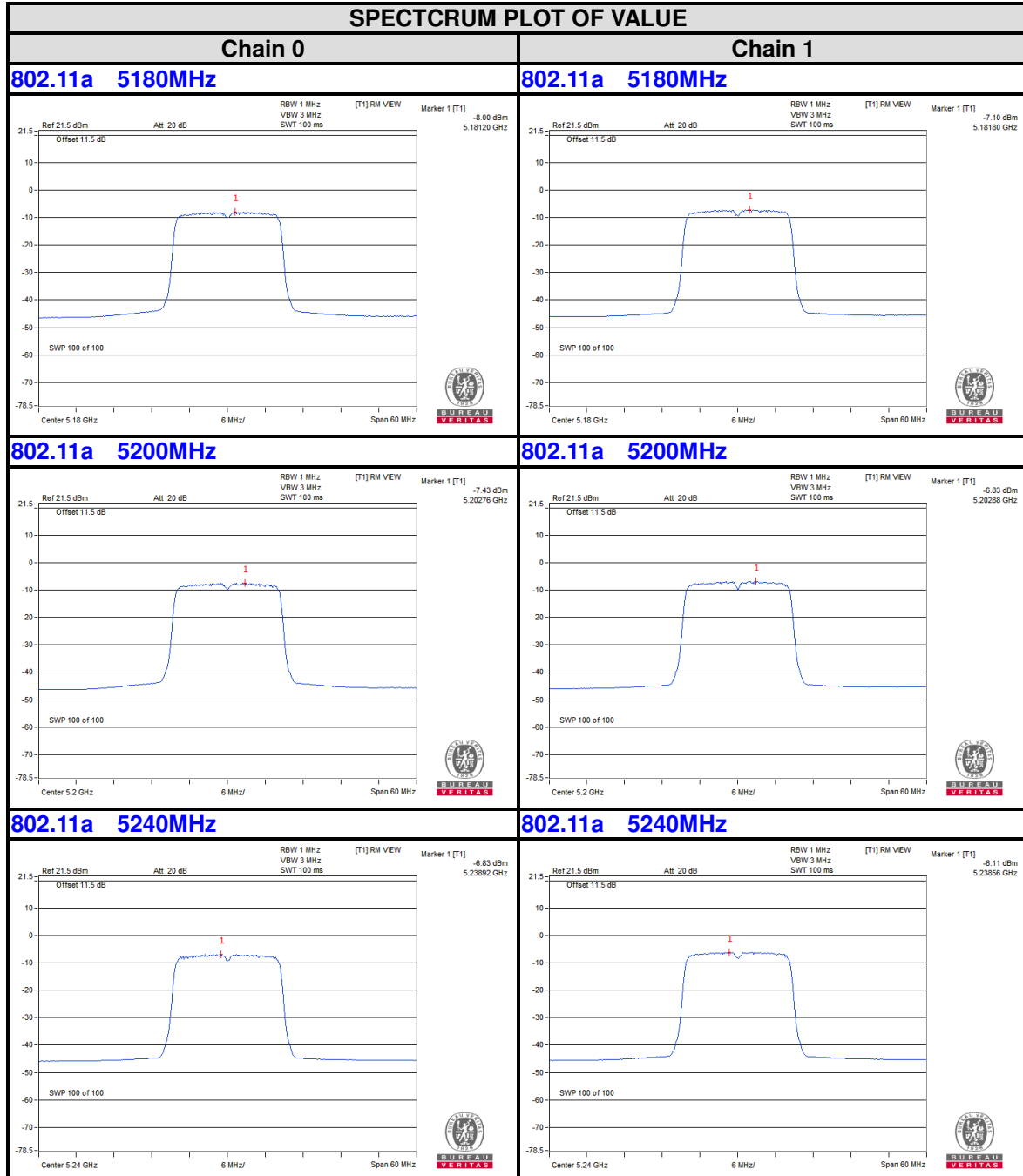
802.11ac (80MHz)

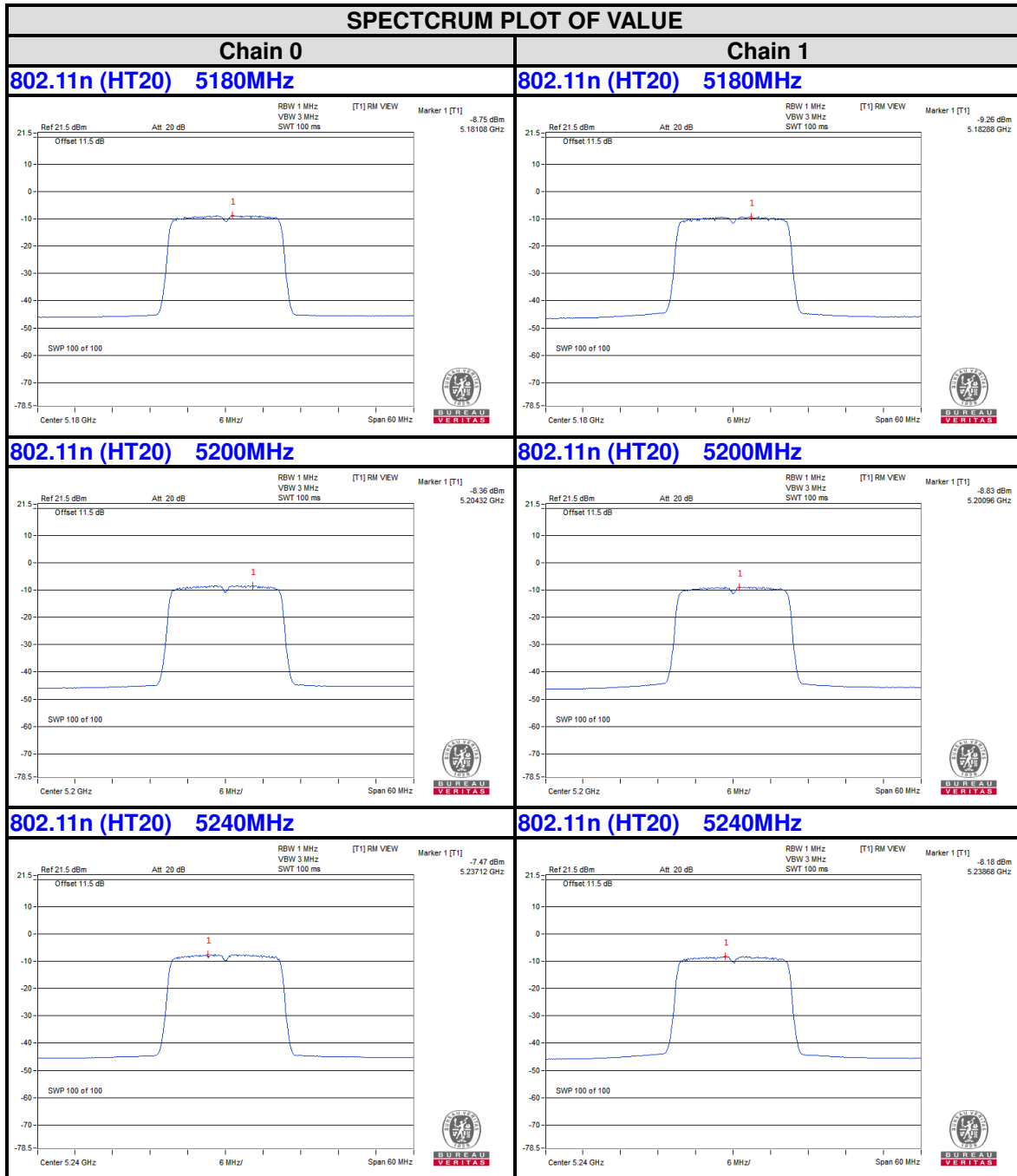
Channel	Frequency (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	MAX. Limit (dBm)	PASS / FAIL
		Chain 0	Chain 1				
42	5210	-15.26	-15.94	1.572	-11.004	9.80	PASS

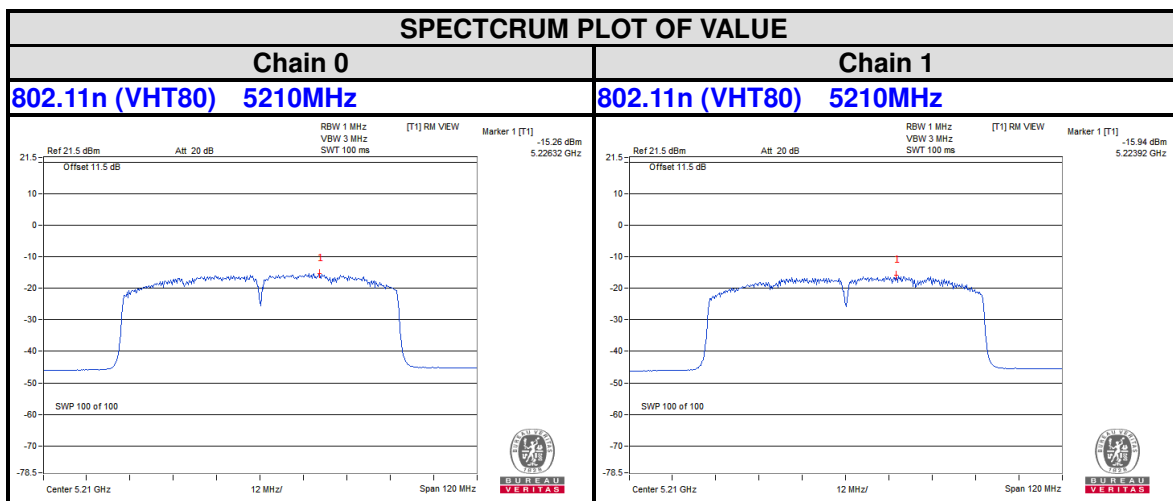
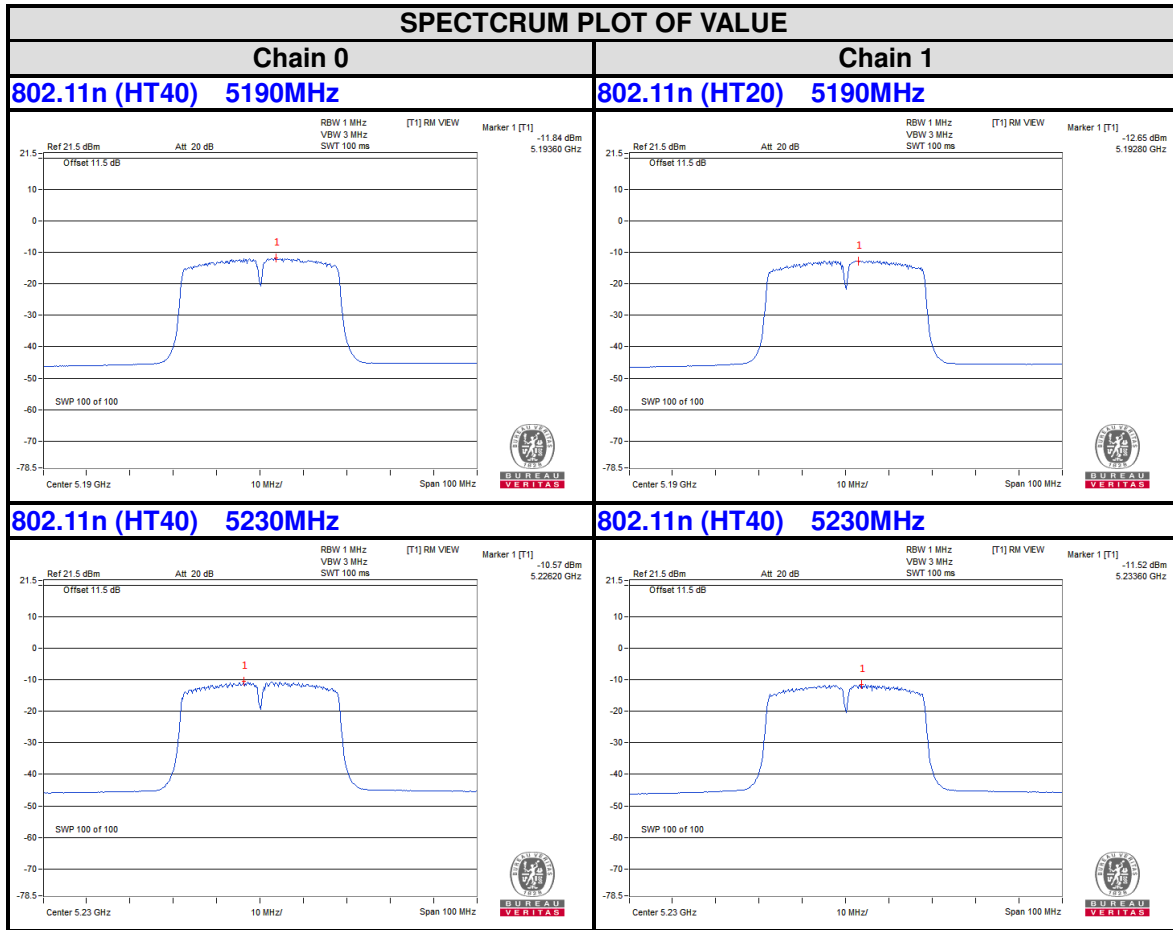
Note:1.Refer to section 3.3 for duty cycle spectrum plot.

2.Directionality gain = $4.19\text{dBi} + 10\log(2) = 7.20\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(7.2-6) = 9.80\text{dBm}$.

**PSD Test Plot
BAND 1
5150-5250MHz**









For U-NII-3:

802.11a

Channel	Frequency (MHz)	PSD W/O Duty Factor (dBm/500kHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	PASS / FAIL
		Chain 0	Chain 1				
149	5745	-6.44	-5.27	0.432	-2.373	28.49	PASS
157	5785	-7.01	-6.18	0.432	-3.133	28.49	PASS
165	5825	-7.60	-6.82	0.432	-3.750	28.49	PASS

Note:1.Refer to section 3.3 for duty cycle spectrum plot.

2.Directionality gain = 4.50dBi + 10log(2) = 7.51dBi > 6dBi , so the power density limit shall be reduced to 30-(7.51-6) = 28.49dBm.

802.11n (20MHz)

Channel	Frequency (MHz)	PSD W/O Duty Factor (dBm/500kHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	PASS / FAIL
		Chain 0	Chain 1				
149	5745	-7.72	-6.93	0.291	-4.006	28.49	PASS
157	5785	-8.55	-7.43	0.291	-4.653	28.49	PASS
165	5825	-9.50	-8.15	0.291	-5.471	28.49	PASS

Note:1.Refer to section 3.3 for duty cycle spectrum plot.

2.Directionality gain = 4.50dBi + 10log(2) = 7.51dBi > 6dBi , so the power density limit shall be reduced to 30-(7.51-6) = 28.49dBm.

802.11n (40MHz)

Channel	Frequency (MHz)	PSD W/O Duty Factor (dBm/500kHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	PASS / FAIL
		Chain 0	Chain 1				
151	5755	-11.30	-10.21	0.892	-6.819	28.49	PASS
159	5795	-12.20	-11.04	0.892	-7.679	28.49	PASS

Note:1.Refer to section 3.3 for duty cycle spectrum plot.

2.Directionality gain = 4.50dBi + 10log(2) = 7.51dBi > 6dBi , so the power density limit shall be reduced to 30-(7.51-6) = 28.49dBm.

802.11ac (80MHz)

Channel	Frequency (MHz)	PSD W/O Duty Factor (dBm/500kHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	PASS / FAIL
		Chain 0	Chain 1				
155	5775	-15.55	-14.58	1.572	-10.456	28.49	PASS

Note:1.Refer to section 3.3 for duty cycle spectrum plot.

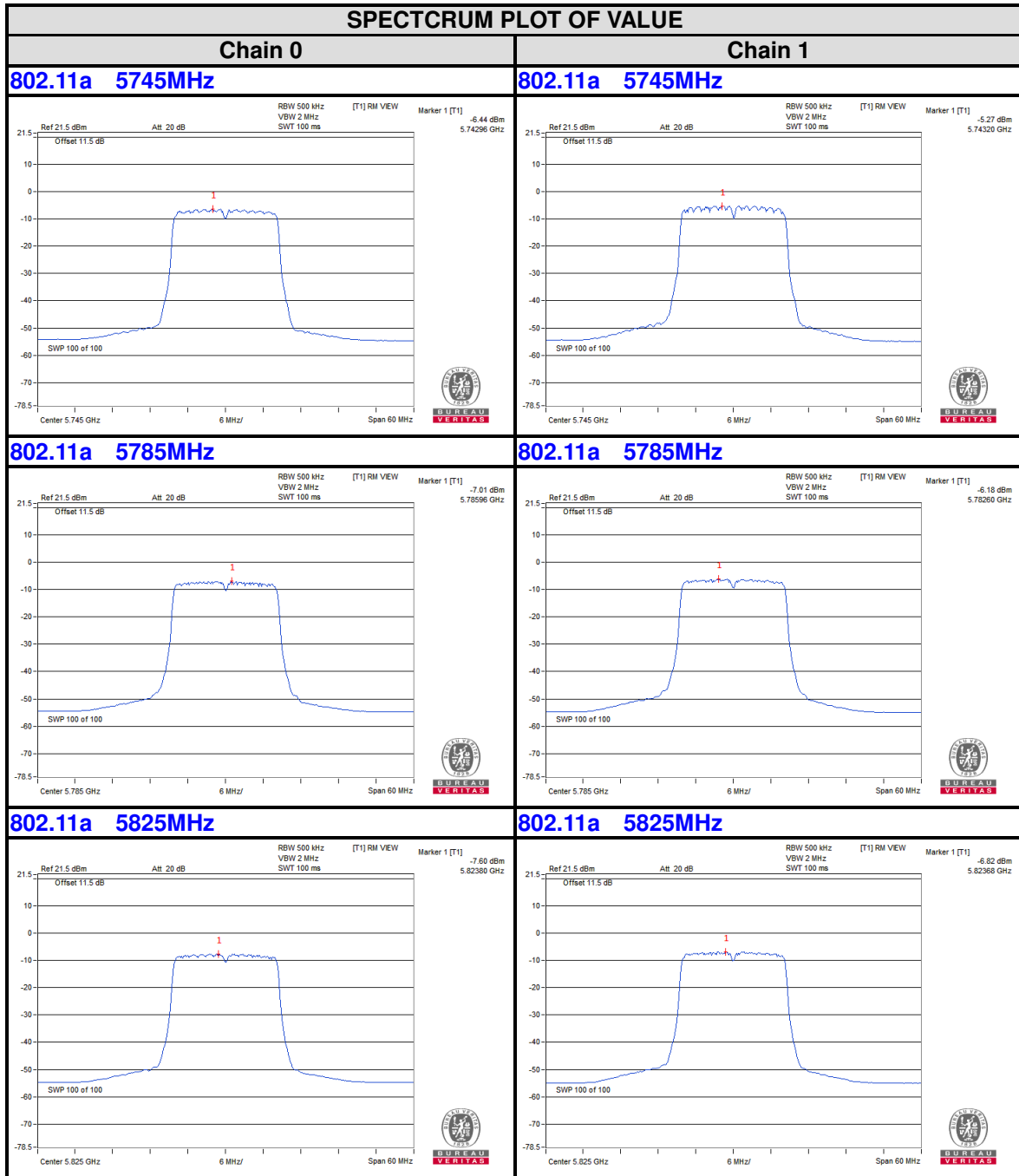
2.Directionality gain = 4.50dBi + 10log(2) = 7.51dBi > 6dBi , so the power density limit shall be reduced to 30-(7.51-6) = 28.49dBm.



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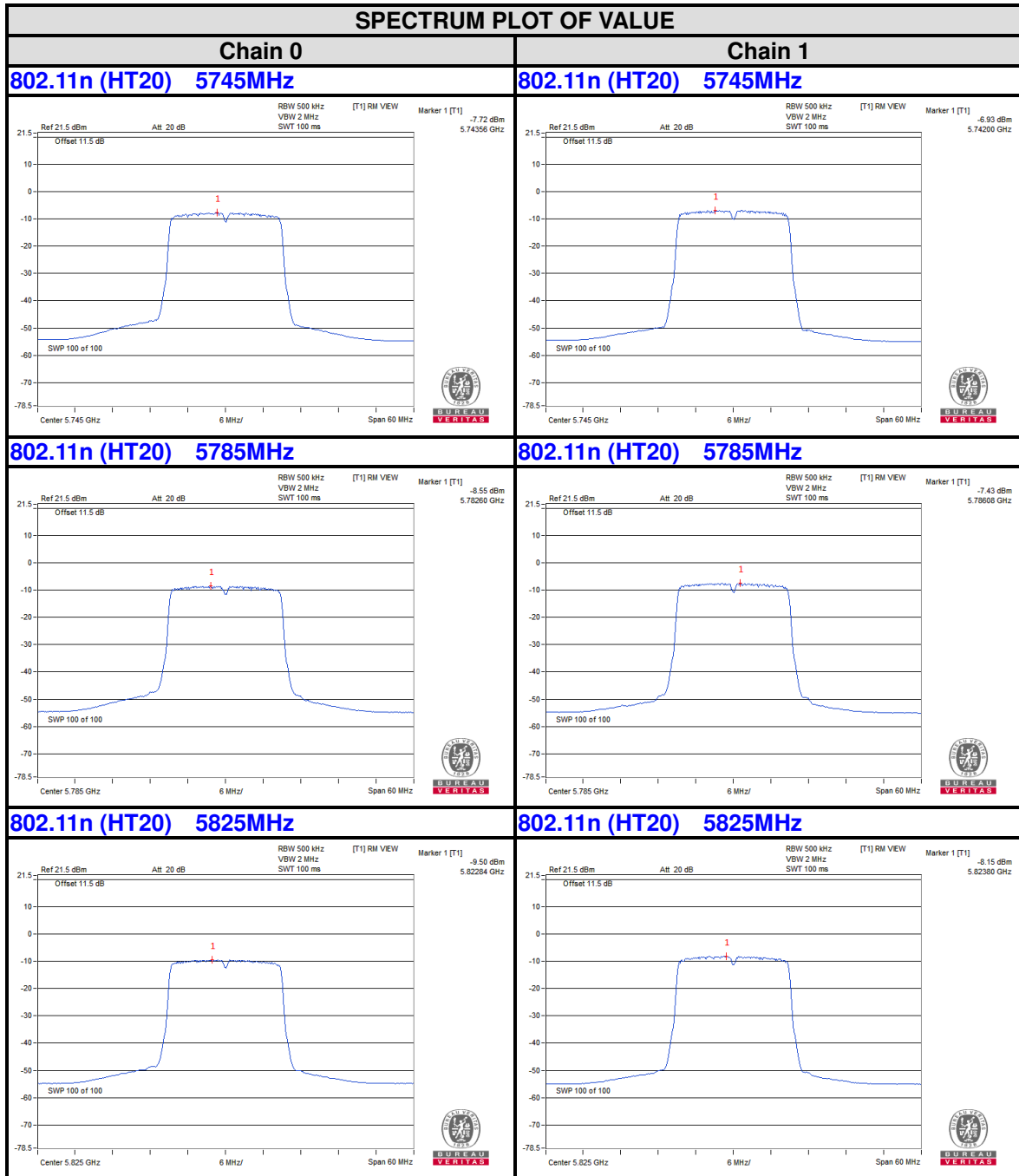
BAND4
5725-5850MHz

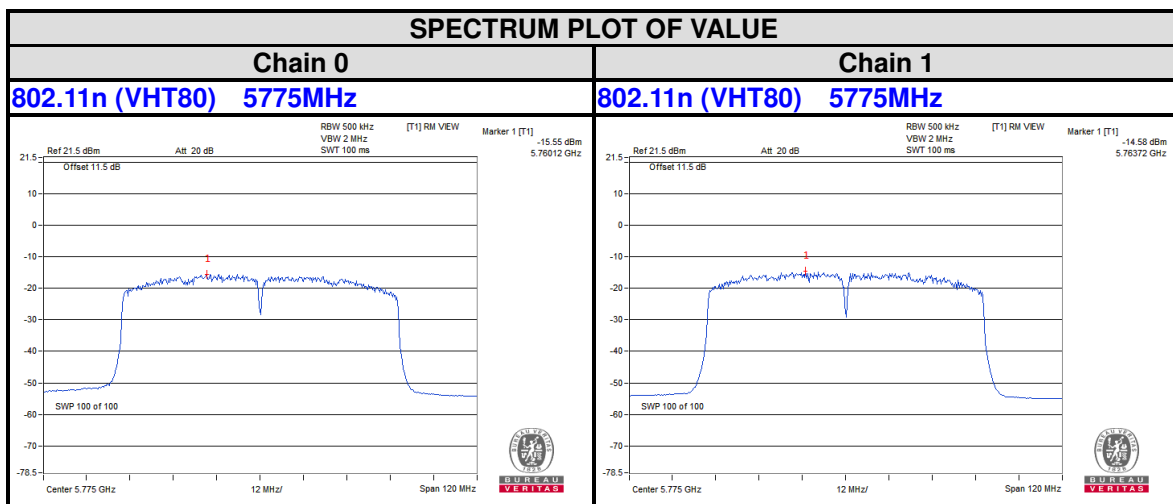
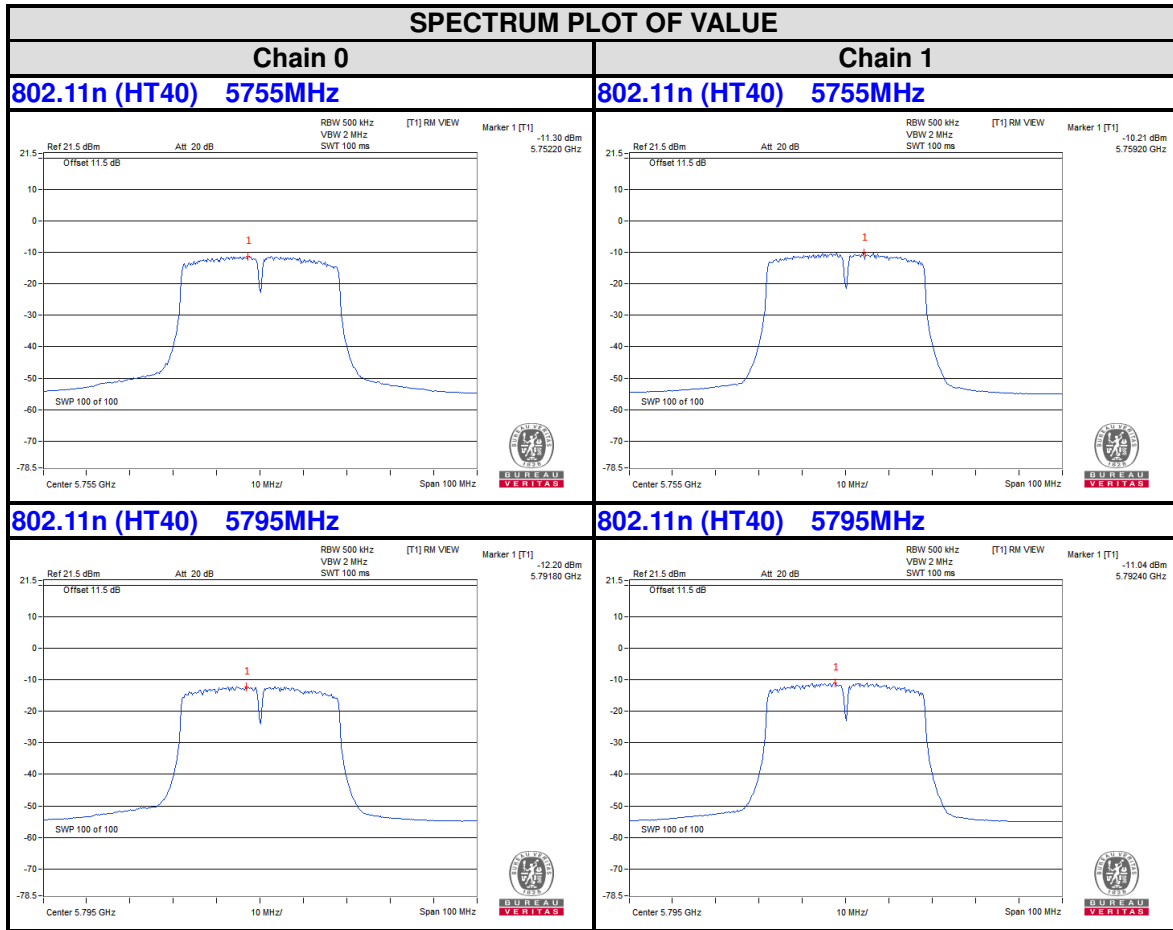




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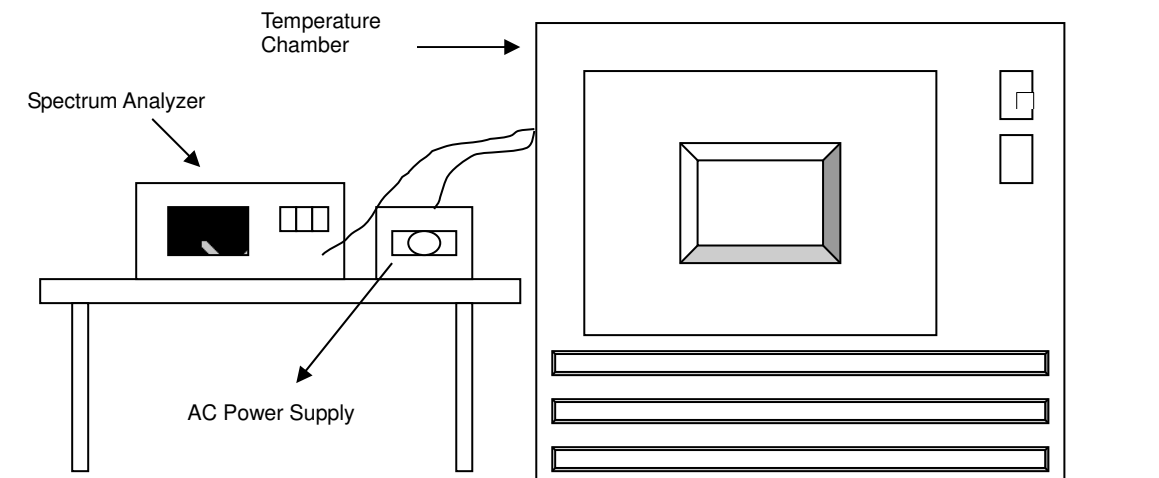


4.5 FREQUENCY STABILITY

4.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.5.2 Test Setup



4.5.3 TEST INSTRUMENTS

Refer to section 4.3.3 to get information of above instrument.

4.5.4 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.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

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



4.5.7 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	Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift
50	120	5180.0068	0.00013	5180.007	0.00014	5180.0061	0.00012	5180.0078	0.00015
40	120	5180.0009	0.00002	5179.998	-0.00004	5180.001	0.00002	5179.998	-0.00004
30	120	5180.0082	0.00016	5180.0094	0.00018	5180.0131	0.00025	5180.0123	0.00024
20	120	5180.0116	0.00022	5180.015	0.00029	5180.0157	0.00030	5180.0148	0.00029
10	120	5179.9929	-0.00014	5179.9918	-0.00016	5179.9927	-0.00014	5179.9905	-0.00018
0	120	5179.9777	-0.00043	5179.9754	-0.00047	5179.9737	-0.00051	5179.9734	-0.00051
-10	120	5179.9957	-0.00008	5179.9995	-0.00001	5179.9975	-0.00005	5179.9969	-0.00006
-20	120	5180.0142	0.00027	5180.0179	0.00035	5180.0159	0.00031	5180.0178	0.00034
-30	120	5180.0171	0.00033	5180.0181	0.00035	5180.0177	0.00034	5180.0147	0.00028

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	Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift
20	138	5180.0113	0.00022	5180.0145	0.00028	5180.0165	0.00032	5180.0157	0.00030
	120	5180.0116	0.00022	5180.015	0.00029	5180.0157	0.00030	5180.0148	0.00029
	102	5180.0112	0.00022	5180.0153	0.00030	5180.0153	0.00030	5180.0154	0.00030



**BUREAU
VERITAS**

Test Report No.: RF2201WDG0200-6

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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6 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---