

Test Report No.:
FCC2021-0032-RF

RF Test Report

EUT : **Promethean WIFI Module (Titanium)**
MODEL : **AP-WIFI-BC**
BRAND NAME : **Promethean**
APPLICANT : **Promethean Limited**
Classification Of Test : **N/A**

CVC Testing Technology Co., Ltd.



Client	Name : Promethean Limited Address : Promethean House, Lower Philips Rd, whitebirk Industrial Estate, Blackburn, Bb1 5th United Kingdom		
Manufacturer	Name : Guangzhou Lango Electronics Technology Co., Ltd. Address : 4/f. NO.136. Gaopu Road. Tianhe District. Guangzhou. 510663. P.R. China		
Equipment Under Test	Name : Promethean WIFI Module (Titanium) Model/Type: AP-WIFI-BC Trade mark : Promethean SerialNO.: N/A Sampe NO.: 3-1		
Date of Receipt	2021.11.08	Date of Testing	2021.11.08 ~ 2021.12.10
Test Specification		Test Result	
FCC Part 15, Subpart E (15.407)		PASS	
Evaluation of Test Result	The equipment under test was found to comply with the requirements of the standards applied. Issue Date: 2021.12.15		
Tested by: <u>Xu ZhenFei</u> Name Signature	Reviewed by: <u>Liu YongHai</u> Name Signature	Approved by: <u>Chen HuaWen</u> Name Signature	
Other Aspects: NONE.			
Abbreviations: OK, Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested			

This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.



TABLE OF CONTENTS

RELEASE CONTROL RECORD.....	5
1 SUMMARY OF TEST RESULTS.....	6
1.1 LIST OF TEST AND MEASUREMENT INSTRUMENTS.....	7
1.2 MEASUREMENT UNCERTAINTY.....	8
1.3 TEST LOCATION.....	8
2 GENERAL INFORMATION.....	9
2.1 GENERAL PRODUCT INFORMATION.....	9
2.2 CARRIER FREQUENCY AND CHANNEL.....	10
2.3 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL.....	11
2.4 DESCRIPTION OF SUPPORT UNITS.....	12
2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS.....	12
3 TEST TYPES AND RESULTS.....	13
3.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT.....	13
3.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT.....	13
3.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS.....	14
3.1.3 TEST PROCEDURES.....	15
3.1.4 TEST SETUP.....	16
3.1.5 TEST RESULTS.....	17
3.2 CONDUCTED EMISSION MEASUREMENT.....	53
3.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT.....	53
3.2.2 TEST PROCEDURES.....	53
3.2.3 TEST SETUP.....	53
3.2.4 TEST RESULTS.....	54
3.3 26DB EMISSION BANDWIDTH.....	56
3.3.1 LIMITS OF 26DB EMISSION BANDWIDTH.....	56
3.3.2 TEST PROCEDURES.....	56
3.3.3 TEST SETUP.....	56
3.3.4 TEST RESULTS.....	56
3.4 6DB EMISSION BANDWIDTH.....	57
3.4.1 LIMITS OF 6DB EMISSION BANDWIDTH.....	57
3.4.2 TEST PROCEDURES.....	57
3.4.3 TEST SETUP.....	57
3.4.4 TEST RESULTS.....	57
3.5 TRANSMIT POWER MEASUREMENT.....	58
3.5.1 LIMITS OF TRANSMIT POWER MEASUREMENT.....	58
3.5.2 TEST PROCEDURES.....	58
3.5.3 TEST SETUP.....	59
3.5.4 EST RESULTS.....	59
3.6 POWER SPECTRAL DENSITY MEASUREMENT.....	60
3.6.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT.....	60
3.6.2 TEST PROCEDURE.....	61
3.6.3 TEST SETUP.....	61
3.6.4 TEST RESULT.....	61
3.7 FREQUENCY STABILITY.....	62
3.7.1 LIMITS OF FREQUENCY STABILITY.....	62
3.7.2 TEST PROCEDURES.....	62
3.7.3 TEST SETUP.....	62
3.7.4 TEST RESULTS.....	63



4 PHOTOGRAPHS OF TEST SETUP.....	64
5 APPENDIX.....	65
5.1 APPENDIX A: 26DB EMISSION BANDWIDTH.....	65
5.1.1 TEST RESULT.....	65
5.1.2 TEST GRAPHS.....	67
5.2 APPENDIX B: 6DB EMISSION BANDWIDTH.....	91
5.2.1 TEST RESULT.....	91
5.2.2 TEST GRAPHS.....	92
5.3 APPENDIX C: TRANSMIT POWER MEASUREMENT.....	96
5.3.1 TEST RESULT.....	96
5.4 APPENDIX D: POWER SPECTRAL DENSITY MEASUREMENT.....	98
5.4.1 TEST RESULT.....	98
5.4.2 TEST GRAPHS.....	100
5.5 APPENDIX E: FREQUENCY STABILITY.....	128
5.5.1 TEST RESULT.....	128



RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCC2021-0032-RF	Original release	2021.12.15



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)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.207	Conducted Emissions	PASS	Meet the requirement of limit.
15.403(i)	6dB&26dB Emission Bandwidth	PASS	Meet the requirement of limit.
15.407(b)	Radiated Emission and Bandedge	PASS	Meet the requirement of limit.
15.407(a)	Transmit Power	PASS	Meet the requirement of limit.
15.407(a)	Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203 15.407(a)	Antenna Requirement	PASS	No antenna connector is used

Note: refer to DFS report (Report No. FCC2021-0032-DFS)



1.1 LIST OF TEST AND MEASUREMENT INSTRUMENTS

Antenna Port Conducted Test				
Equipment	Type/Mode	SERIAL NO.	Manufacturer	Cal. Due
Communication Shielded Room 3	4m*3m*3m	CRTDSWKSR44301	CRT	2024/04/24
Spectrum Analyzer	N9030A	MY53310374	Agilent	2022/09/28
Comprehensive Test Instrument	CMW500	137779	R&S	2022/06/30
Analog Signal Generator	N5173B	MY53270588	KEYSIGHT	2022/01/04
Vector Signal Generator	SGT100A	111661	R&S	2022/06/30
Four-channel Power Probe	U2021XA	MY55400014	Tonscend	2022/01/04
Programmable DC Power Supply	E3646A	MY58036222	KEYSIGHT	2022/06/07

Radiated Emission Test - 3M Chamber				
Equipment	Manufacturer	Model No.	Serial Number	Cal. Due
3m Semi-Anechoic Chamber	FACT-4	ST08035	ETS	2024/12/12
Spectrum Analyzer	N9010B	MY57470323	KEYSIGHT	2022/03/04
EMI Test Receiver	N9038A-508	MY532290079	Agilent	2022/03/05
Broadband Antenna	VULB 9163	9163-530	SCHWARZBECK	2022/06/26
Waveguide Horn Antenna	HF906	360306/008	R&S	2022/03/05
Waveguide Horn Antenna	BBHA9170	00949	SCHWARZBECK	2022/08/27
Preamplifier	BBV 9721	9721-050	SCHWARZBECK	2022/06/30
5G Bandstop Filters	WRCJV12-4900-5 100-5900-6100-50 EE	1	WI	2021/12/16
Comprehensive tester	CMW500	159000	R&S	2022/01/04



1.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

No.	Item	Measurement Uncertainty
1	Conducted emission test	2.66 dB
2	Radiated emission 30MHz-1GHz	4.10 dB
3	Radiated emission 1GHz-18GHz	4.84 dB
Remark: 95% Confidence Levels, k=2.		

1.3 TEST LOCATION

The tests and measurements refer to this report were performed by EMC testing Lab. of CVC Testing Technology Co., Ltd.

Address: No.3, Tiantaiyi Road, Kaitai Avenue, Science City, Guangzhou, China

Post Code: 510663

Tel: 020-32293888

FAX: 020-32293889

E-mail: office@cvc.org.cn



2 GENERAL INFORMATION

2.1 GENERAL PRODUCT INFORMATION

PRODUCT NAME	Promethean WIFI Module (Titanium)
MODEL NO.	AP-WIFI-BC
FCC ID	QAM-AP-WIFI-BC
POWER SUPPLY	DC 12V From Host Unit
MODULATION TYPE	256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM
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 MCS15 802.11ac : up to MCS9
OPERATING FREQUENCY	5260 ~ 5320MHz, 5500 ~ 5720MHz:
NUMBER OF CHANNEL	5260 ~ 5320MHz: 4 channels for 802.11a, 802.11n (20MHz),802.11ac (20MHz) 2 channels for 802.11n, 11ac (40MHz),802.11ac (40MHz) 1 channel for 802.11ac (80MHz) 5500 ~ 5720MHz: 9 channels for 802.11a, 802.11n (20MHz),802.11ac (20MHz) 4 channels for 802.11n (40MHz),802.11ac (40MHz) 2 channel for 802.11ac (80MHz)
CONDUCTED OUTPUT POWER	16.46 dBm for 5260 ~ 5320MHz (Maximum AVG Power) 15.92 dBm for 5500 ~ 5720MHz (Maximum AVG Power)
ANTENNA TYPE	5260 ~ 5320MHz: External antenna with 4.95dBi gain 5500 ~ 5720MHz: External antenna with 4.95dBi gain
I/O PORTS	Refer to user's manual
SOFTWARE VERSION:	V5.2.21.1_27105.20180315_COEX20180112-5959
HARDWARE VERSION	XF.WIFI.E-4-V0
CABLE SUPPLIED	N/A

NOTE:

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. EUT photo refer to the attached file (External Photos report and Internal Photos report)
4. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitter and 2 receiver.

MODULATION MODE	TX FUNCTION
802.11a	2TX/2RX
802.11ac 80MHz	2TX/2RX
802. 11n 20MHz	2TX/2RX
802. 11n 40MHz	2TX/2RX



2.2 Carrier Frequency and Channel

WLAN 5.26 ~ 5.32GHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260MHz	56	5280MHz
60	5300MHz	64	5320MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270MHz	62	5310MHz

1 channels are provided for 802.11ac (VHT80):

CHANNEL	FREQUENCY
58	5290MHz

WLAN 5.50 ~ 5.72GHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500MHz	132	5660MHz
104	5520MHz	136	5680MHz
108	5540MHz	140	5700MHz
112	5560MHz	144	5720MHz
116	5580MHz		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510MHz	134	5670MHz
110	5550MHz	142	5710MHz

2 channel is provided for 802.11ac (VHT80):

CHANNEL	FREQUENCY
106	5530MHz
138	5690MHz



2.3 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	Powered by host unit with wifi(5G) link

Where **RE≥1G**: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

NOTE: "-" means no effect.

MODULATION	DATA RATE
802.11a	6Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20(Covered by HT20)	MCS0
802.11ac VHT40(Covered by HT20)	MCS0
802.11ac VHT80	MCS0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE<1G	25deg. C, 54%RH	DC 12V From Host Unit	Li Jialing
RE≥1G	25deg. C, 54%RH	DC 12V From Host Unit	Li Jialing
PLC	20deg. C, 56%RH	DC 12V From Host Unit	Li Jialing
APCM	20deg. C, 55%RH	DC 12V From Host Unit	Li Jialing



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.

Support Equipment							
NO	Description	Brand	Model No.	Serial Number	Supplied by		
1	Displayer	PHILIPS	245E1	UK01936025181	Lab		
2	Adapter	Delippo	D08120050	N/A	Lab		
Support Cable							
NO	Description	Quantity (Number)	Length (m)	Detachable (Yes/ No)	Shielded (Yes/ No)	Cores (Number)	Supplied by
-	-	-	-	-	-	-	-

2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. 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 C63.10-2020

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



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	
KDB 789033 D02 General UNII Test Procedures New Rules v02r01	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:

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



3.1.3 TEST PROCEDURES

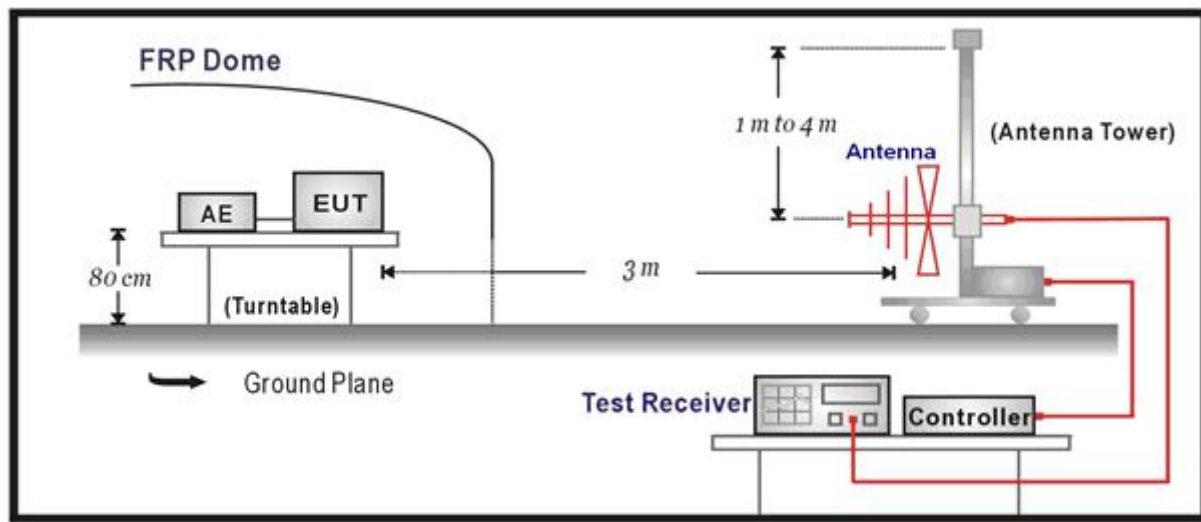
- a. The EUT was placed on the top of a rotating table 1.5 meters(above 1GHz) and 0.8 meters(below 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. 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:

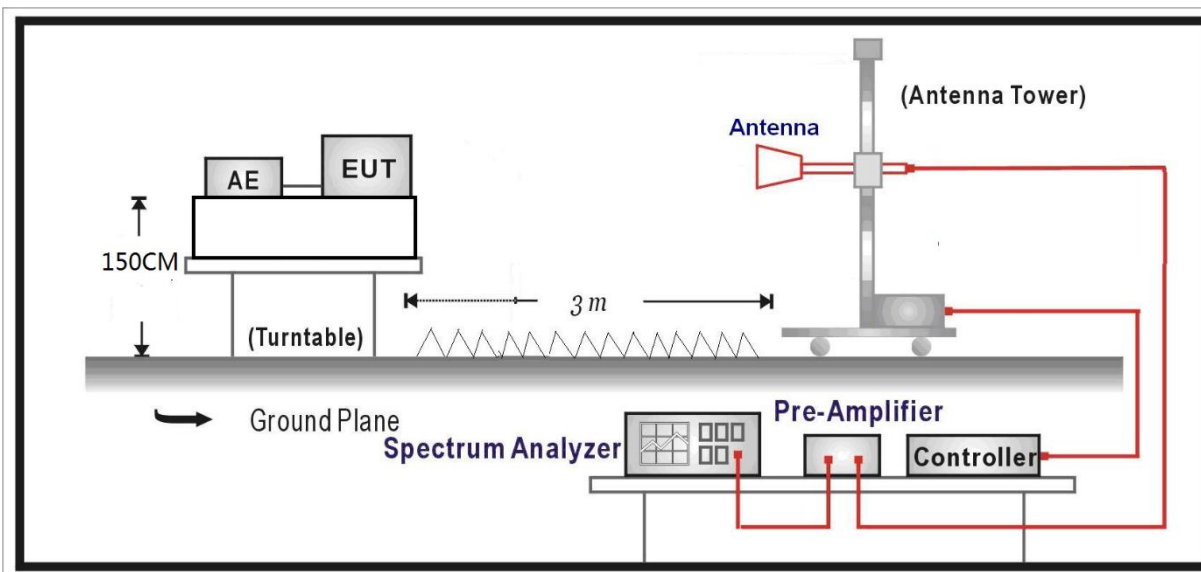
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

3.1.4 TEST SETUP

Below 1GHz Test Setup:



Above 1GHz Test Setup:



Note: For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Setup)

3.1.5 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

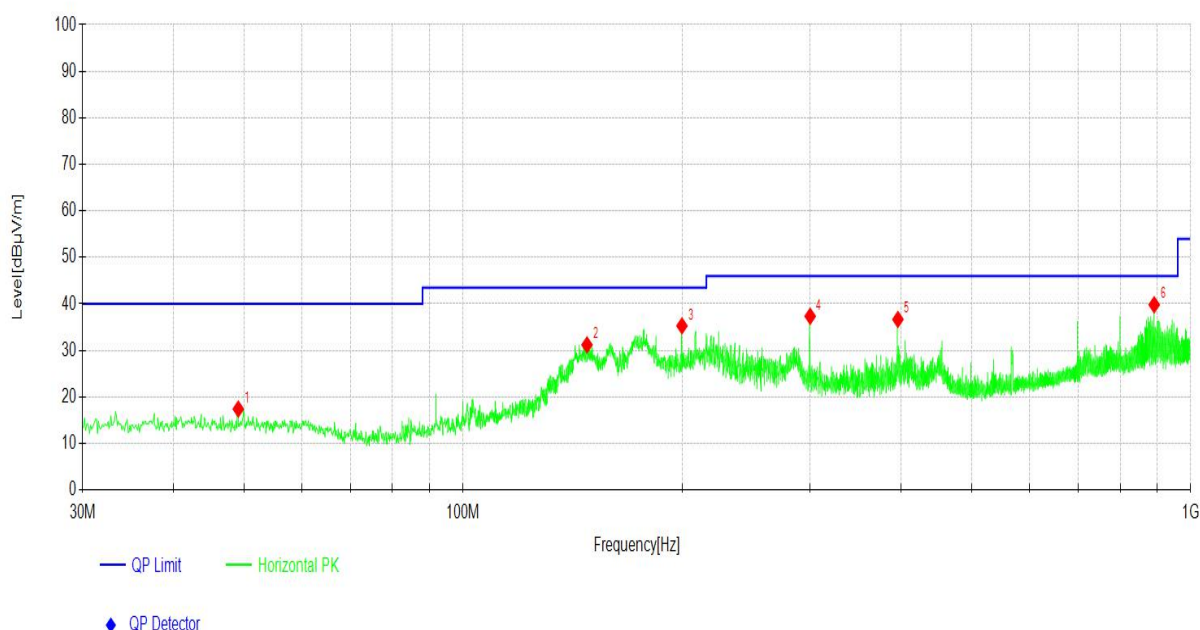
802.11a

CHANNEL	TX Channel 52	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	49.1109	17.41	14.30	40.00	22.59	200	44	Horizontal
2	148.0608	31.20	15.32	43.50	12.30	200	92	Horizontal
3	199.9610	35.29	11.89	43.50	8.21	200	158	Horizontal
4	299.9780	37.34	14.85	46.00	8.66	100	316	Horizontal
5	396.0176	36.67	16.97	46.00	9.33	100	298	Horizontal
6	891.1551	39.82	25.07	46.00	6.18	100	298	Horizontal

REMARKS:

- Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- The emission levels of other frequencies were less than 20dB margin against the limit.
- Margin = Limit – Level.



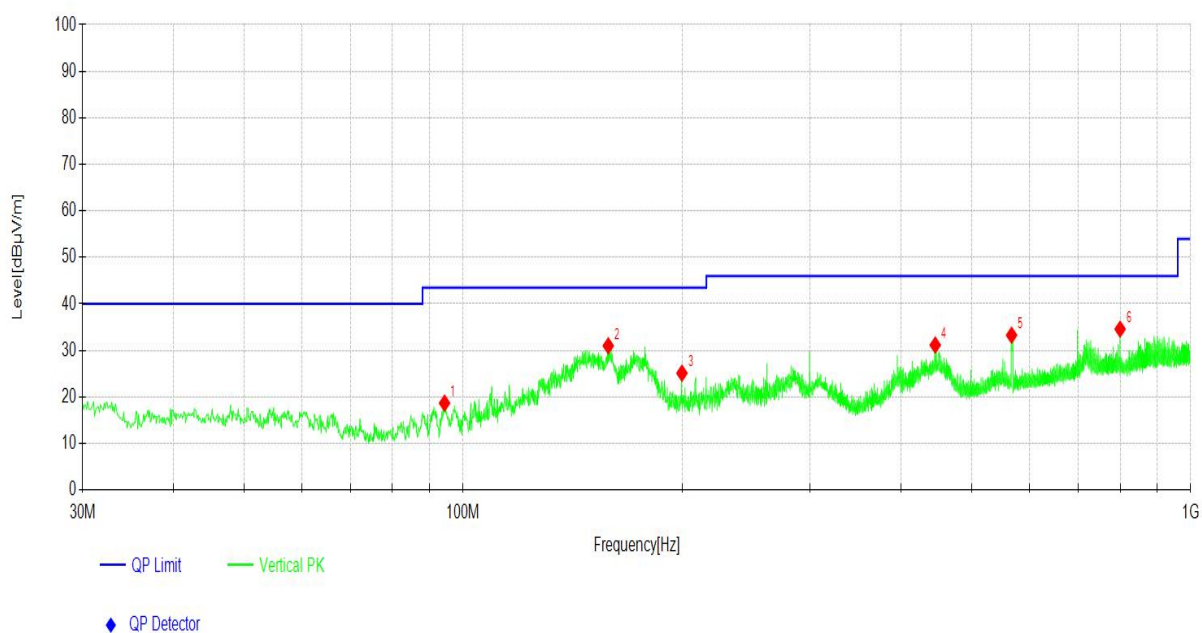


CHANNEL	TX Channel 52	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	94.3174	18.68	10.86	43.50	24.82	100	140	Vertical
2	158.3438	31.00	15.84	43.50	12.50	100	176	Vertical
3	199.9610	25.12	11.89	43.50	18.38	100	296	Vertical
4	445.6866	31.15	18.21	46.00	14.85	100	1	Vertical
5	567.4337	33.28	20.23	46.00	12.72	100	158	Vertical
6	799.9660	34.59	24.39	46.00	11.41	200	345	Vertical

REMARKS:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
2. The emission levels of other frequencies were less than 20dB margin against the limit.
3. Margin = Limit – Level.





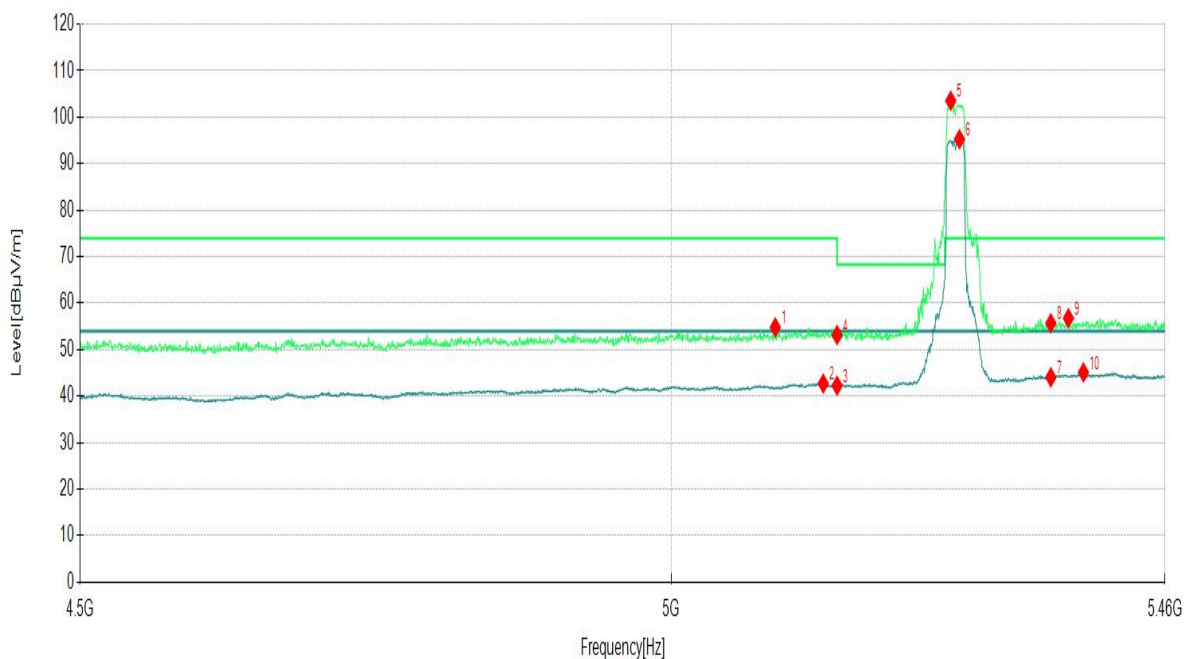
Band 2 (5260-5320MHz):

ABOVE 1GHz DATA

802.11a

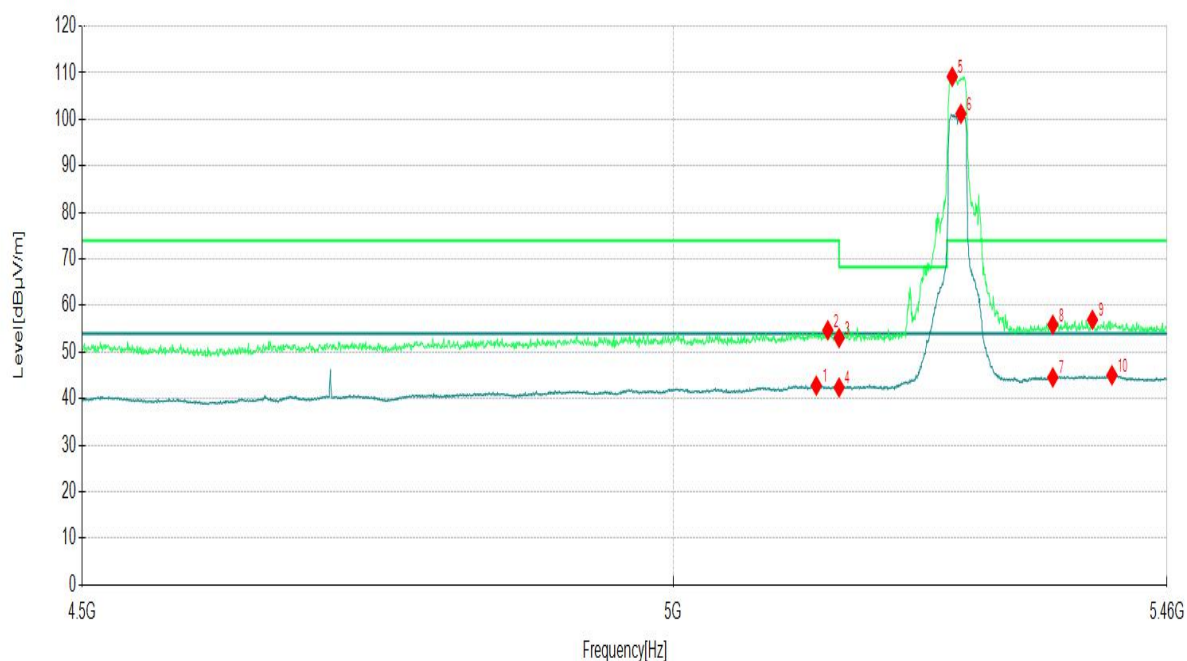
CHANNEL	TX Channel 52	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5093.577	47.22	7.58	54.80	74.00	19.20	175	356	PK	Horizontal
2	5137.272	34.71	8.02	42.73	54.00	11.27	142	1	AV	Horizontal
3	5150.000	34.24	8.03	42.27	54.00	11.73	150	240	AV	Horizontal
4	5150.000	45.12	8.03	53.15	74.00	20.85	150	22	PK	Horizontal
5	*5255.415	94.69	8.85	103.54			191	215	PK	Horizontal
6	*5263.594	86.17	9.10	95.27			127	215	AV	Horizontal
7	5350.000	34.10	9.96	44.06	54.00	9.94	150	337	AV	Horizontal
8	5350.000	45.75	9.96	55.71	74.00	18.29	150	119	PK	Horizontal
9	5366.833	46.80	9.97	56.77	74.00	17.23	133	131	PK	Horizontal
10	5381.24	35.00	10.11	45.11	54.00	8.89	143	350	AV	Horizontal
11	#10520.0	30.75	14.32	45.07	68.20	23.13	162	307	PK	Horizontal
12	15782.00	13.97	20.63	34.60	54.00	19.40	150	3	AV	Horizontal
13	15782.00	24.35	20.63	44.98	74.00	29.02	150	224	PK	Horizontal





NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5129.114	34.61	8.21	42.82	54.00	11.18	190	245	AV	Vertical
2	5139.679	46.77	7.94	54.71	74.00	19.29	190	57	PK	Vertical
3	5150.000	45.01	8.03	53.04	74.00	20.96	163	1	PK	Vertical
4	5150.000	34.37	8.03	42.40	54.00	11.60	138	249	AV	Vertical
5	*5254.937	100.39	8.79	109.18			123	274	PK	Vertical
6	*5263.101	92.06	9.14	101.20			129	270	AV	Vertical
7	5350.000	34.60	9.96	44.56	54.00	9.44	150	178	AV	Vertical
8	5350.000	45.93	9.96	55.89	74.00	18.11	150	333	PK	Vertical
9	5387.964	46.88	10.07	56.95	74.00	17.05	123	186	PK	Vertical
10	5406.693	34.84	10.20	45.04	54.00	8.96	118	236	AV	Vertical
11	#10522.9	35.64	14.29	49.93	68.20	18.27	151	273	PK	Vertical
12	15782.62	13.83	20.63	34.46	54.00	19.54	138	192	AV	Vertical
13	15782.62	24.05	20.63	44.68	74.00	29.32	183	238	PK	Vertical

**REMARKS:**

1. Level (dBμV/m) = Reading (dBμV) + Factor (dB/m).
2. 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 = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



CHANNEL	TX Channel 56	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
7	10560.00	30.56	14.32	44.88	68.20	23.32	176	325	PK	Horizontal
8	10560.00	21.79	14.32	36.11	54.00	17.89	175	282	AV	Horizontal
9	15840.00	24.02	20.59	44.61	74.00	29.39	167	160	PK	Horizontal
10	15840.00	14.22	20.59	34.81	54.00	19.19	161	26	AV	Horizontal

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
7	10560.00	35.22	14.32	49.54	68.20	18.66	134	272	PK	Vertical
8	10560.00	28.39	14.32	42.71	54.00	11.29	194	272	AV	Vertical
9	15840.00	23.43	20.59	44.02	74.00	29.98	135	302	PK	Vertical
10	15840.00	14.35	20.59	34.94	54.00	19.06	119	302	AV	Vertical

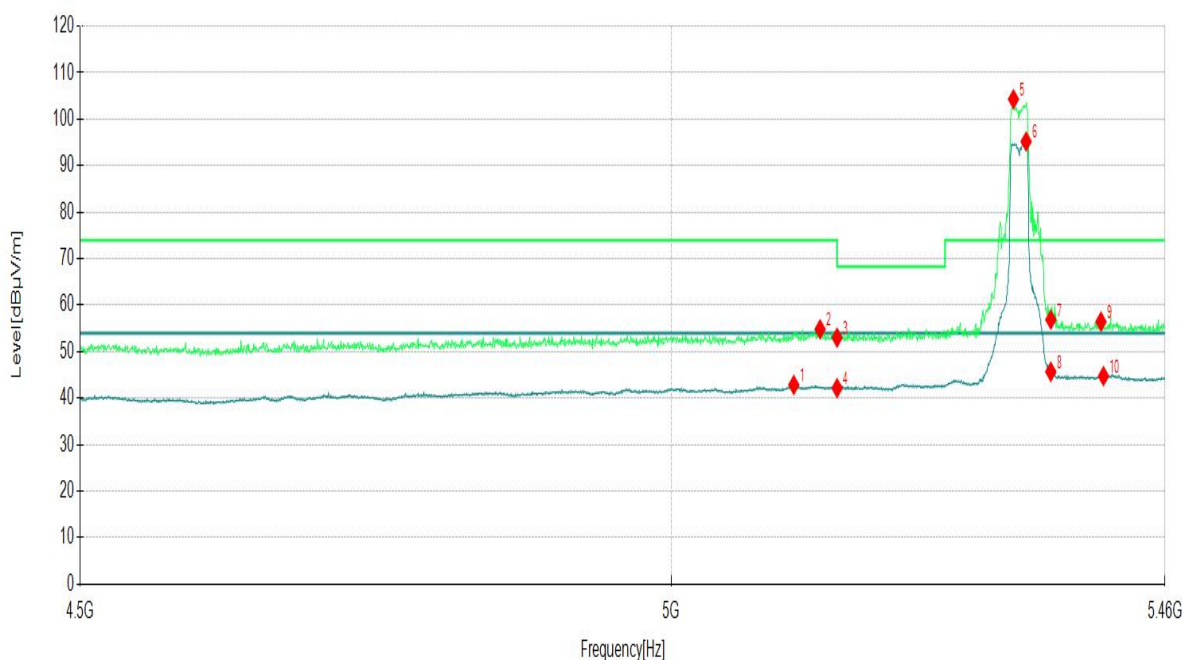
REMARKS:

1. Level (dBuV/m) = Reading (dBuV) + Factor (dB/m).
2. 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 = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



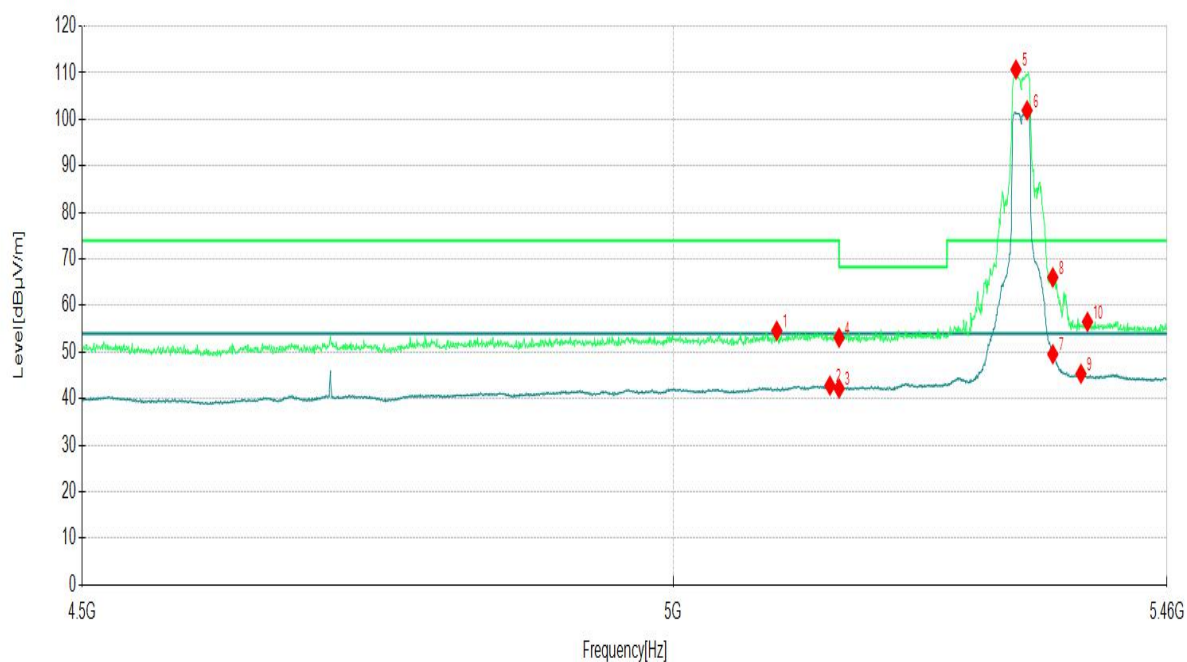
CHANNEL	TX Channel 64	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5110.385	34.77	8.07	42.84	54.00	11.16	126	128	AV	Horizontal
2	5134.397	46.71	8.11	54.82	74.00	19.18	159	136	PK	Horizontal
3	5150.000	44.98	8.03	53.01	74.00	20.99	184	111	PK	Horizontal
4	5150.000	34.14	8.03	42.17	54.00	11.83	187	318	AV	Horizontal
5	*5314.48	95.20	9.11	104.31			137	216	PK	Horizontal
6	*5326.49	85.89	9.32	95.21			102	191	AV	Horizontal
7	5350.000	46.93	9.96	56.89	74.00	17.11	150	220	PK	Horizontal
8	5350.000	35.73	9.96	45.69	54.00	8.31	150	191	AV	Horizontal
9	5398.049	46.43	10.03	56.46	74.00	17.54	179	162	PK	Horizontal
10	5400.450	34.72	10.03	44.75	54.00	9.25	118	1	AV	Horizontal
11	10640.00	28.78	14.17	42.95	74.00	31.05	165	199	PK	Horizontal
12	10640.00	20.22	14.17	34.39	54.00	19.61	105	268	AV	Horizontal
13	15960.00	13.67	21.31	34.98	54.00	19.02	153	360	AV	Horizontal
14	15960.00	22.81	21.31	44.12	74.00	29.88	159	298	PK	Horizontal





NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5093.096	47.02	7.59	54.61	74.00	19.39	160	35	PK	Vertical
2	5141.600	34.87	7.95	42.82	54.00	11.18	150	157	AV	Vertical
3	5150.000	34.16	8.03	42.19	54.00	11.81	157	178	AV	Vertical
4	5150.000	45.09	8.03	53.12	74.00	20.88	151	191	PK	Vertical
5	*5314.96	101.62	9.09	110.71			200	245	PK	Vertical
6	*5325.53	92.67	9.27	101.94			166	258	AV	Vertical
7	5350.000	39.61	9.96	49.57	54.00	4.43	150	274	AV	Vertical
8	5350.000	56.11	9.96	66.07	74.00	7.93	150	229	PK	Vertical
9	5376.918	35.29	10.06	45.35	54.00	8.65	111	237	AV	Vertical
10	5383.161	46.41	10.10	56.51	74.00	17.49	118	174	PK	Vertical
11	10634.11	36.33	14.18	50.51	74.00	23.49	187	271	PK	Vertical
12	10638.79	27.48	14.17	41.65	54.00	12.35	146	271	AV	Vertical
13	15951.00	22.97	21.32	44.29	74.00	29.71	138	23	PK	Vertical
14	15951.00	13.43	21.32	34.75	54.00	19.25	129	119	AV	Vertical



REMARKS:

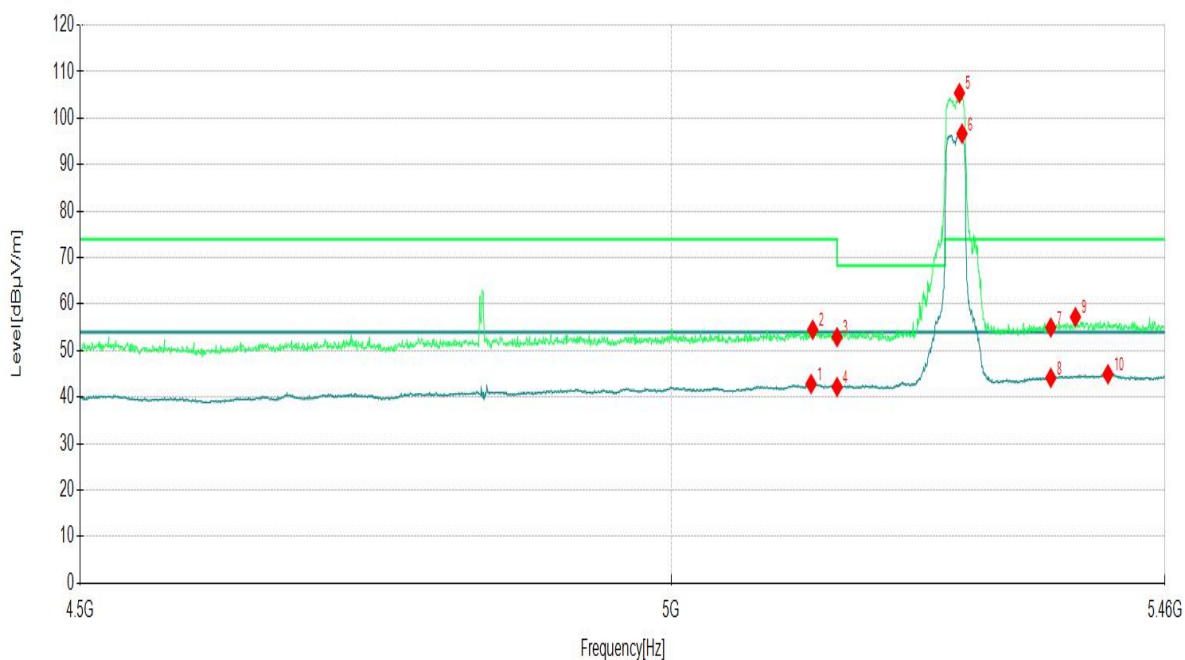
1. Level (dBuV/m) = Reading (dBuV) + Factor (dB/m).
2. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



802.11n (20MHz)

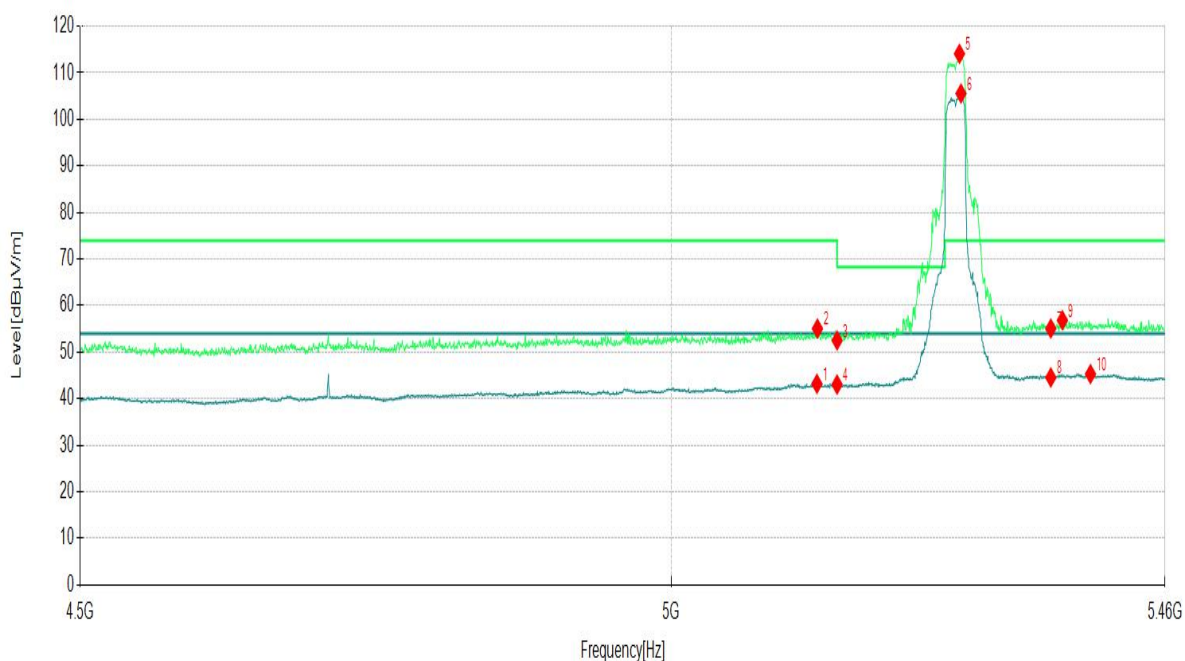
CHANNEL	TX Channel 52	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5126.233	34.77	8.07	42.84	54.00	11.16	130	226	AV	Horizontal
2	5127.673	46.37	8.14	54.51	74.00	19.49	169	192	PK	Horizontal
3	5150.000	44.88	8.03	52.91	74.00	21.09	135	338	PK	Horizontal
4	5150.000	34.19	8.03	42.22	54.00	11.78	135	124	AV	Horizontal
5	*5263.581	96.31	9.10	105.41			184	214	PK	Horizontal
6	*5265.983	87.76	8.93	96.69			171	214	AV	Horizontal
7	5350.000	45.05	9.96	55.01	74.00	18.99	150	351	PK	Horizontal
8	5350.000	34.19	9.96	44.15	54.00	9.85	150	222	AV	Horizontal
9	5373.556	47.24	10.00	57.24	74.00	16.76	115	239	PK	Horizontal
10	5404.772	34.79	10.15	44.94	54.00	9.06	107	261	AV	Horizontal
11	#10520.0	34.56	14.32	48.88	68.20	19.32	185	155	PK	Horizontal
12	15780.00	22.53	20.63	43.16	74.00	30.84	166	228	PK	Horizontal
13	15780.00	14.13	20.63	34.76	54.00	19.24	155	241	AV	Horizontal





NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5131.515	34.99	8.21	43.20	54.00	10.80	123	240	AV	Vertical
2	5131.996	46.87	8.19	55.06	74.00	18.94	100	240	PK	Vertical
3	5150.000	44.48	8.03	52.51	74.00	21.49	135	206	PK	Vertical
4	5150.000	35.01	8.03	43.04	54.00	10.96	134	261	AV	Vertical
5	*5263.581	105.01	9.10	114.11			150	248	PK	Vertical
6	*5265.022	96.56	9.00	105.56			162	248	AV	Vertical
7	5350.000	45.13	9.96	55.09	74.00	18.91	150	66	PK	Vertical
8	5350.000	34.61	9.96	44.57	54.00	9.43	150	270	AV	Vertical
9	5361.070	46.81	10.04	56.85	74.00	17.15	128	299	PK	Vertical
10	5387.964	35.24	10.07	45.31	54.00	8.69	129	227	AV	Vertical
11	#10520.6	43.06	14.32	57.38	68.20	10.82	153	311	PK	Vertical
12	15780.00	22.38	20.63	43.01	74.00	30.99	110	30	PK	Vertical
13	15780.00	13.70	20.63	34.33	54.00	19.67	159	321	AV	Vertical



REMARKS:

1. Level (dBμV/m) = Reading (dBμV) + Factor (dB/m).
2. 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 = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



CHANNEL	TX Channel 56	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	10560.39	26.23	14.32	40.55	54.00	13.45	119	128	AV	Horizontal
2	10561.56	35.68	14.29	49.97	68.20	18.23	168	190	PK	Horizontal
3	15840.00	23.00	20.59	43.59	74.00	30.41	181	39	PK	Horizontal
4	15840.00	14.11	20.59	34.70	54.00	19.30	167	157	AV	Horizontal

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	10561.56	34.85	14.29	49.14	54.00	4.86	122	169	AV	Vertical
2	10563.90	43.12	14.22	57.34	68.20	10.86	109	278	PK	Vertical
3	15840.00	14.12	20.59	34.71	54.00	19.29	122	255	AV	Vertical
4	15840.00	24.94	20.59	45.53	74.00	28.47	123	225	PK	Vertical

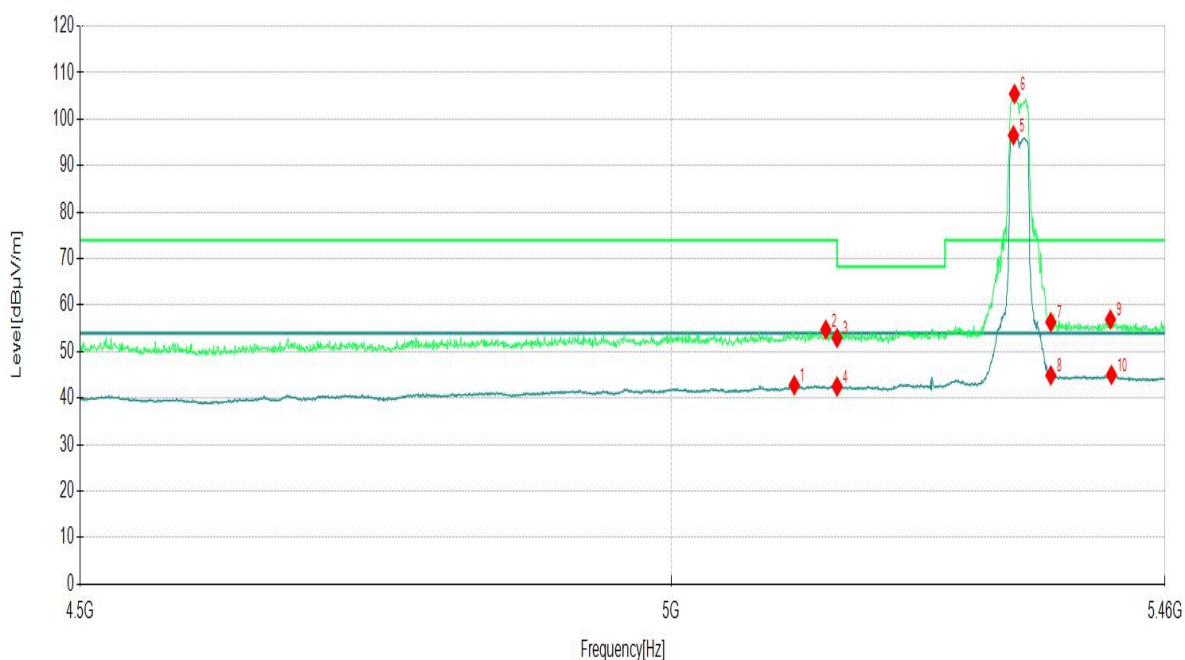
REMARKS:

1. Level (dBuV/m) = Reading (dBuV) + Factor (dB/m).
2. 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 = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



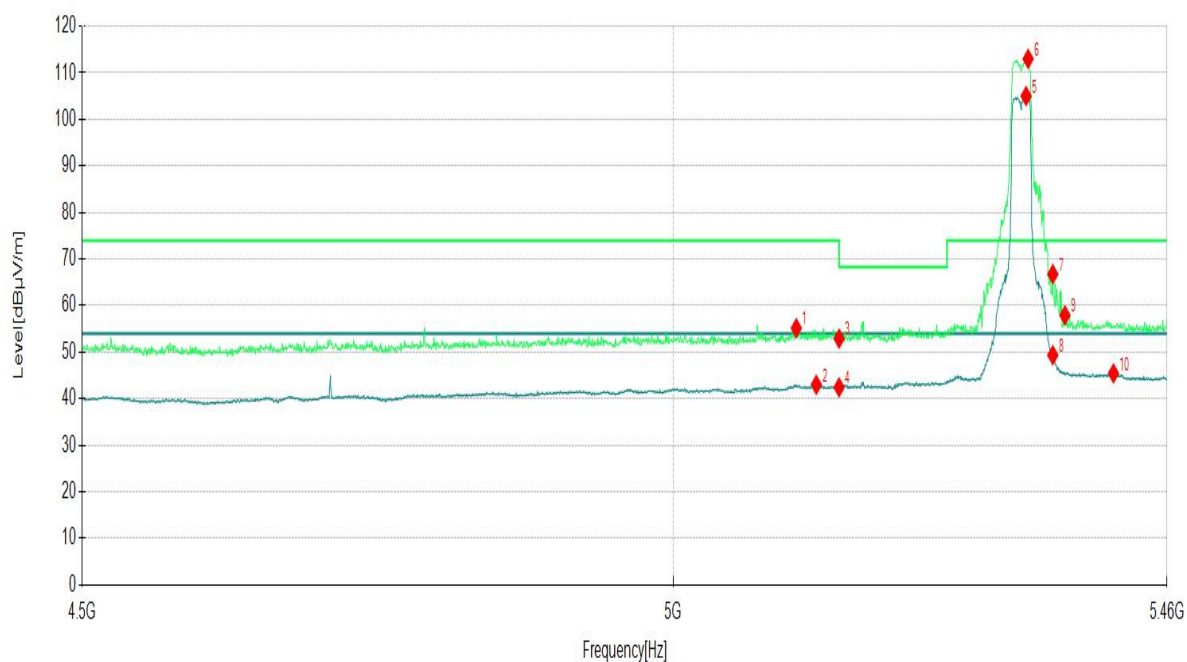
CHANNEL	TX Channel 64	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5110.865	34.74	8.05	42.79	54.00	11.21	104	22	AV	Horizontal
2	5139.679	46.78	7.94	54.72	74.00	19.28	167	281	PK	Horizontal
3	5150.000	44.92	8.03	52.95	74.00	21.05	150	221	PK	Horizontal
4	5150.000	34.48	8.03	42.51	54.00	11.49	150	111	AV	Horizontal
5	*5314.487	87.42	9.11	96.53			150	183	AV	Horizontal
6	*5315.447	96.36	9.08	105.44			145	213	PK	Horizontal
7	5350.000	46.39	9.96	56.35	74.00	17.65	129	166	PK	Horizontal
8	5350.000	34.94	9.96	44.90	54.00	9.10	124	192	AV	Horizontal
9	5407.173	46.69	10.22	56.91	74.00	17.09	143	302	PK	Horizontal
10	5408.134	34.75	10.24	44.99	54.00	9.01	138	179	AV	Horizontal
11	10640.00	34.81	14.17	48.98	74.00	25.02	178	162	PK	Horizontal
12	10640.00	27.86	14.17	42.03	54.00	11.97	187	192	AV	Horizontal
13	15960.00	23.67	21.31	44.98	74.00	29.02	152	37	PK	Horizontal
14	15960.00	13.63	21.31	34.94	54.00	19.06	135	30	AV	Horizontal





NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5110.865	47.11	8.05	55.16	74.00	18.84	130	1	PK	Vertical
2	5129.114	34.79	8.21	43.00	54.00	11.00	178	269	AV	Vertical
3	5150.000	44.88	8.03	52.91	74.00	21.09	150	222	PK	Vertical
4	5150.000	34.41	8.03	42.44	54.00	11.56	152	312	AV	Vertical
5	*5324.572	95.81	9.22	105.03			161	260	AV	Vertical
6	*5326.493	103.69	9.32	113.01			124	269	PK	Vertical
7	5350.000	56.80	9.96	66.76	74.00	7.24	141	269	PK	Vertical
8	5350.000	39.40	9.96	49.36	54.00	4.64	132	247	AV	Vertical
9	5408.134	35.20	10.24	45.44	54.00	8.56	183	243	AV	Vertical
10	5438.389	46.65	9.75	56.40	74.00	17.60	116	316	PK	Vertical
11	10640.00	41.95	14.17	56.12	74.00	17.88	103	266	PK	Vertical
12	10640.00	33.37	14.17	47.54	54.00	6.46	111	186	AV	Vertical
13	15960.00	13.69	21.31	35.00	54.00	19.00	143	127	AV	Vertical
14	15960.00	22.51	21.31	43.82	74.00	30.18	124	167	PK	Vertical

**REMARKS:**

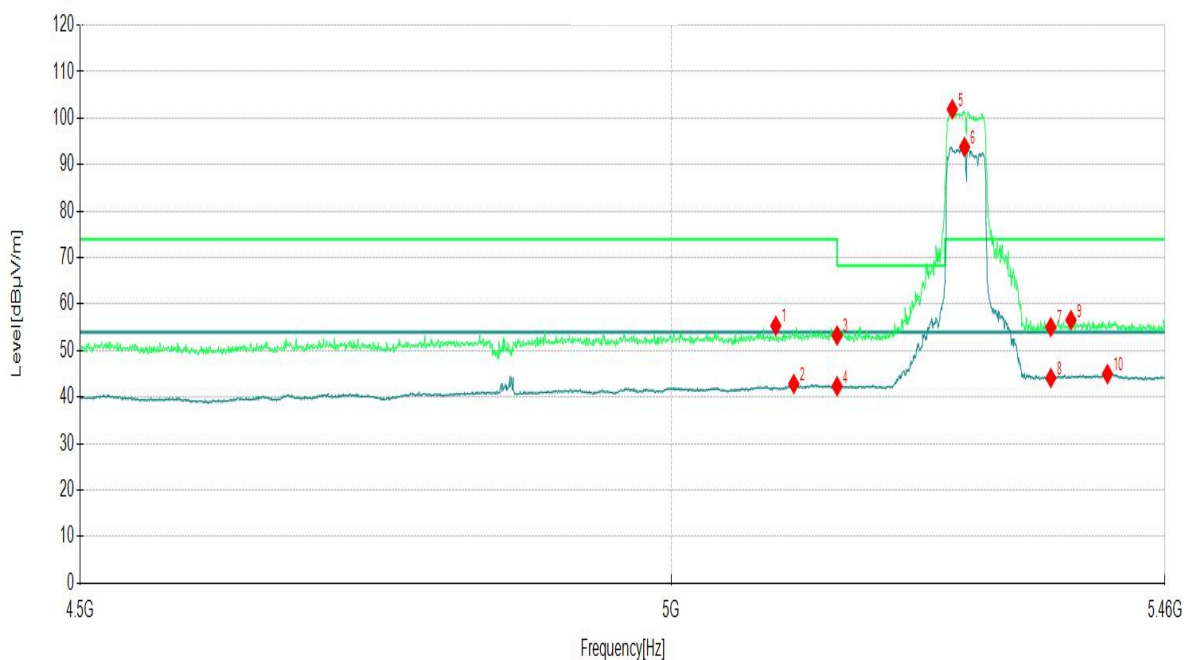
1. Level (dBuV/m) = Reading (dBuV) + Factor (dB/m).
2. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



802.11n (40MHz)

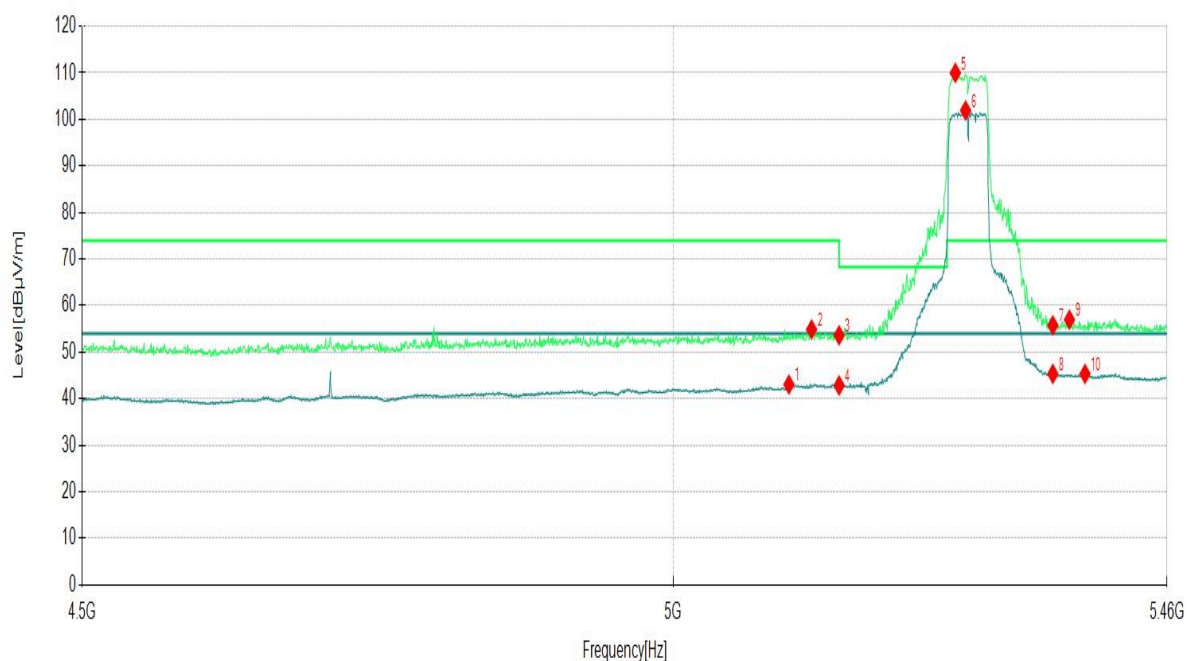
CHANNEL	TX Channel 54	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5094.057	47.80	7.58	55.38	74.00	18.62	174	70	PK	Horizontal
2	5110.385	34.77	8.07	42.84	54.00	11.16	130	275	AV	Horizontal
3	5150.000	45.23	8.03	53.26	74.00	20.74	154	62	PK	Horizontal
4	5150.000	34.31	8.03	42.34	54.00	11.66	152	177	AV	Horizontal
5	*5256.858	92.93	9.01	101.94			177	216	PK	Horizontal
6	*5268.384	85.05	8.77	93.82			159	216	AV	Horizontal
7	5350.000	45.12	9.96	55.08	74.00	18.92	150	96	PK	Horizontal
8	5350.000	34.16	9.96	44.12	54.00	9.88	150	27	AV	Horizontal
9	5369.234	46.65	9.94	56.59	74.00	17.41	182	96	PK	Horizontal
10	5404.292	34.84	10.14	44.98	54.00	9.02	166	250	AV	Horizontal
11	#10540.0	33.41	14.39	47.80	68.20	20.40	199	192	PK	Horizontal
12	15810.00	22.15	20.56	42.71	74.00	31.29	128	261	PK	Horizontal
13	15810.00	13.34	20.56	33.90	54.00	20.10	174	261	AV	Horizontal





NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5104.142	35.28	7.77	43.05	54.00	10.95	126	244	AV	Vertical
2	5124.792	46.89	7.99	54.88	74.00	19.12	146	221	PK	Vertical
3	5150.000	45.59	8.03	53.62	74.00	20.38	153	321	PK	Vertical
4	5150.000	34.82	8.03	42.85	54.00	11.15	157	234	AV	Vertical
5	*5257.818	100.87	9.11	109.98			146	249	PK	Vertical
6	*5267.423	93.08	8.83	101.91			195	249	AV	Vertical
7	5350.000	45.80	9.96	55.76	74.00	18.24	167	273	PK	Vertical
8	5350.000	35.37	9.96	45.33	54.00	8.67	135	244	AV	Vertical
9	5365.872	47.00	9.98	56.98	74.00	17.02	121	217	PK	Vertical
10	5380.760	35.21	10.12	45.33	54.00	8.67	102	269	AV	Vertical
11	#10540.0	37.21	14.39	51.60	68.20	16.60	160	171	PK	Vertical
12	15810.00	22.22	20.56	42.78	74.00	31.22	186	181	PK	Vertical
13	15810.00	14.08	20.56	34.64	54.00	19.36	172	310	AV	Vertical

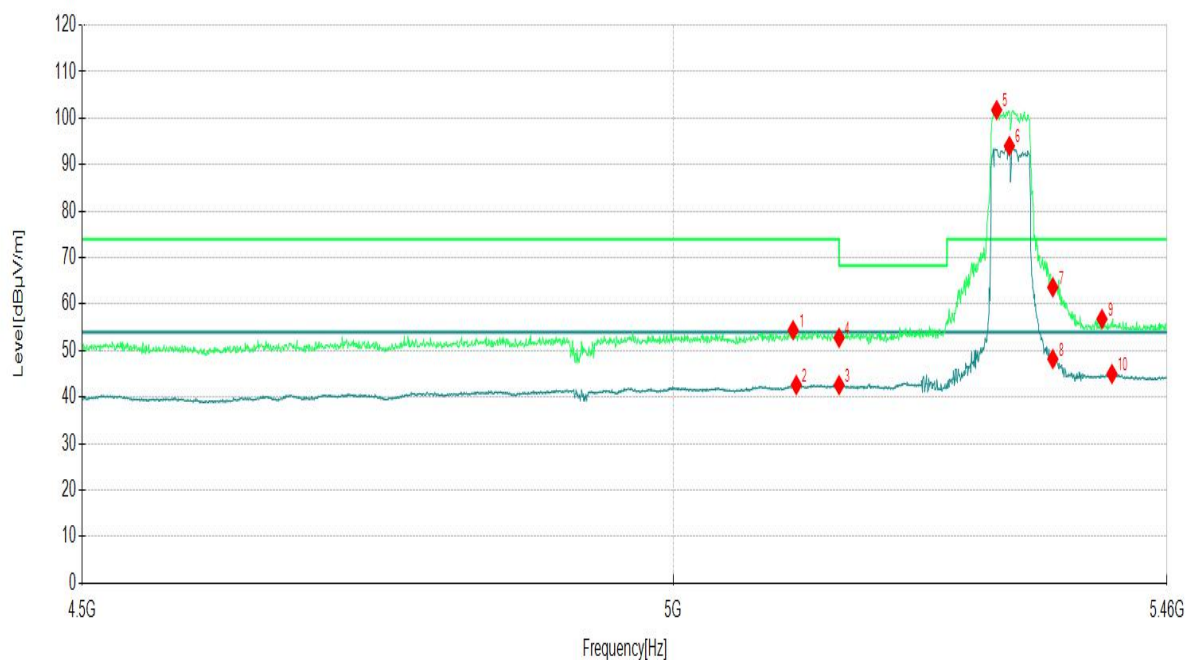
**REMARKS:**

1. Level (dBμV/m) = Reading (dBμV) + Factor (dB/m).
2. 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 = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



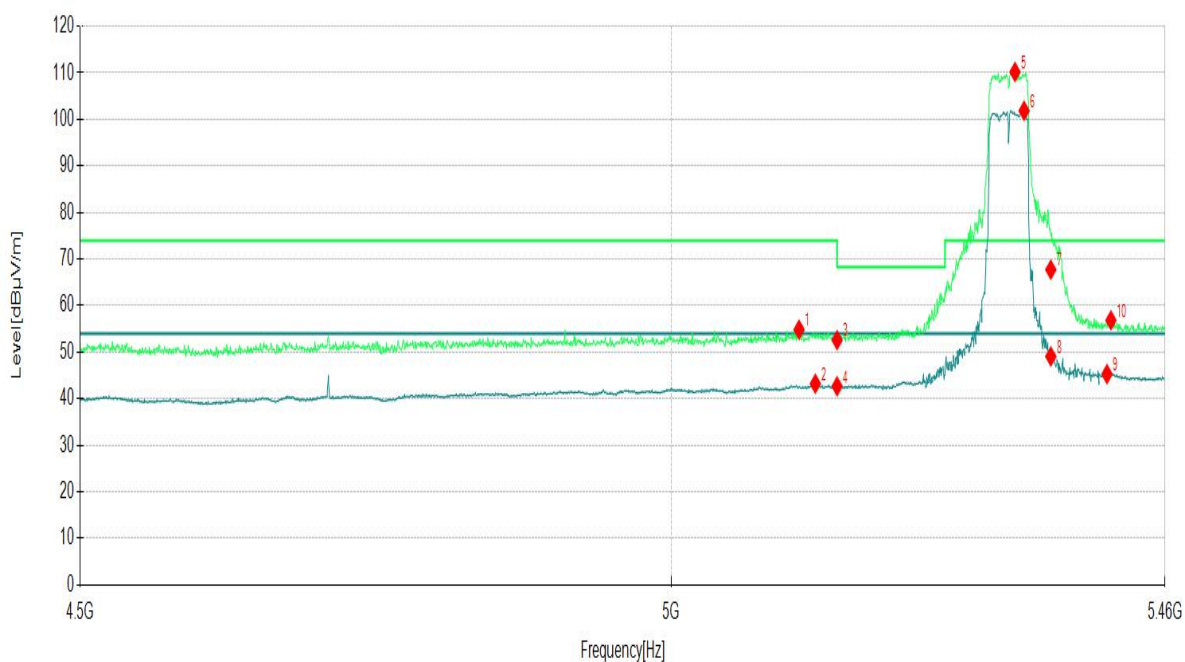
CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5107.984	46.44	7.97	54.41	74.00	19.59	100	310	PK	Horizontal
2	5110.865	34.57	8.05	42.62	54.00	11.38	123	92	AV	Horizontal
3	5150.000	34.56	8.03	42.59	54.00	11.41	156	24	AV	Horizontal
4	5150.000	44.73	8.03	52.76	74.00	21.14	162	358	PK	Horizontal
5	*5296.718	93.00	8.76	101.76			145	179	PK	Horizontal
6	*5308.724	84.87	9.16	94.03			144	210	AV	Horizontal
7	5350.000	53.67	9.96	63.63	74.00	10.37	144	183	PK	Horizontal
8	5350.000	38.25	9.96	48.21	54.00	5.79	179	183	AV	Horizontal
9	5397.088	46.78	10.03	56.81	74.00	17.19	177	262	PK	Horizontal
10	5406.693	34.79	10.20	44.99	54.00	9.01	182	258	AV	Horizontal
11	10620.00	32.19	14.27	46.46	74.00	27.54	142	255	PK	Horizontal
12	10620.00	24.96	14.27	39.23	54.00	14.77	136	129	AV	Horizontal
13	15930.00	22.23	21.20	43.43	74.00	30.57	105	341	PK	Horizontal
14	15930.00	13.68	21.20	34.88	54.00	19.12	125	245	AV	Horizontal





NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5115.187	46.93	7.91	54.84	74.00	19.16	162	105	PK	Vertical
2	5130.075	34.98	8.25	43.23	54.00	10.77	134	297	AV	Vertical
3	5150.000	44.57	8.03	52.60	74.00	21.40	152	292	PK	Vertical
4	5150.000	34.65	8.03	42.68	54.00	11.32	145	218	AV	Vertical
5	*5315.928	101.11	9.07	110.18			136	261	PK	Vertical
6	*5324.572	92.64	9.22	101.86			155	248	AV	Vertical
7	5350.000	57.76	9.96	67.72	74.00	6.28	150	232	PK	Vertical
8	5350.000	39.12	9.96	49.08	54.00	4.92	144	245	AV	Vertical
9	5403.811	35.16	10.12	45.28	54.00	8.72	179	227	AV	Vertical
10	5407.653	46.61	10.23	56.84	74.00	17.16	133	179	PK	Vertical
11	10620.00	42.23	14.27	56.50	74.00	17.50	187	281	PK	Vertical
12	10620.00	32.39	14.27	46.66	54.00	7.34	191	278	AV	Vertical
13	15930.00	22.42	21.20	43.62	74.00	30.38	107	239	PK	Vertical
14	15930.00	13.32	21.20	34.52	54.00	19.48	145	134	AV	Vertical

**REMARKS:**

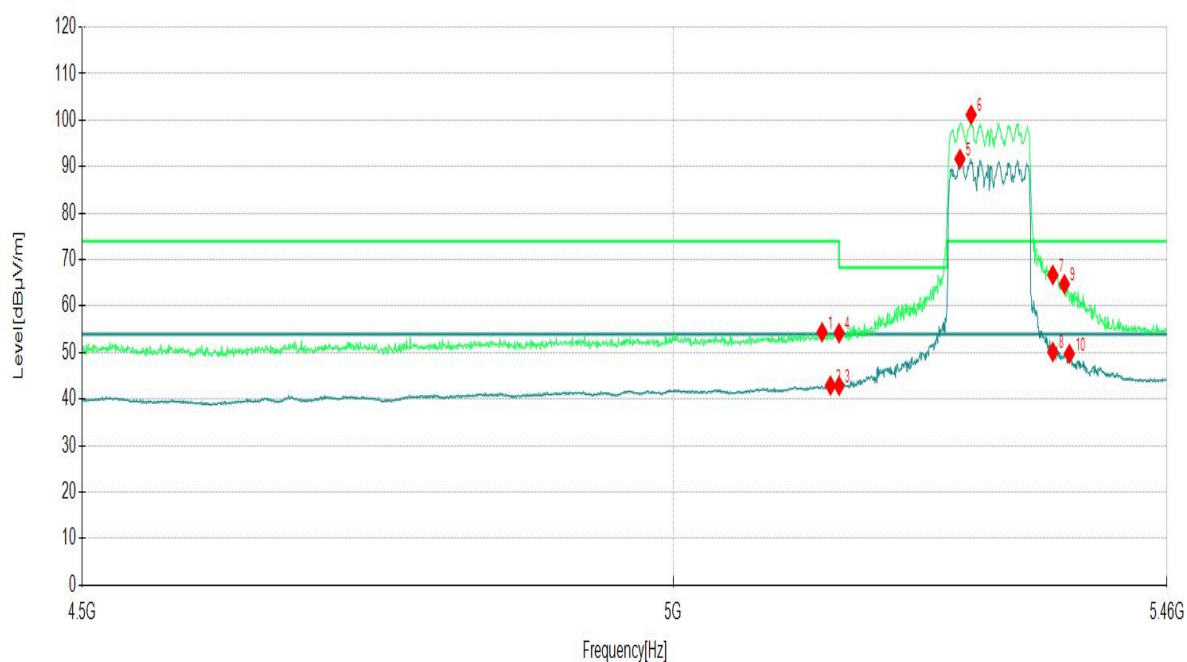
1. Level (dBμV/m) = Reading (dBμV) + Factor (dB/m).
2. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



802.11ac 80MHz

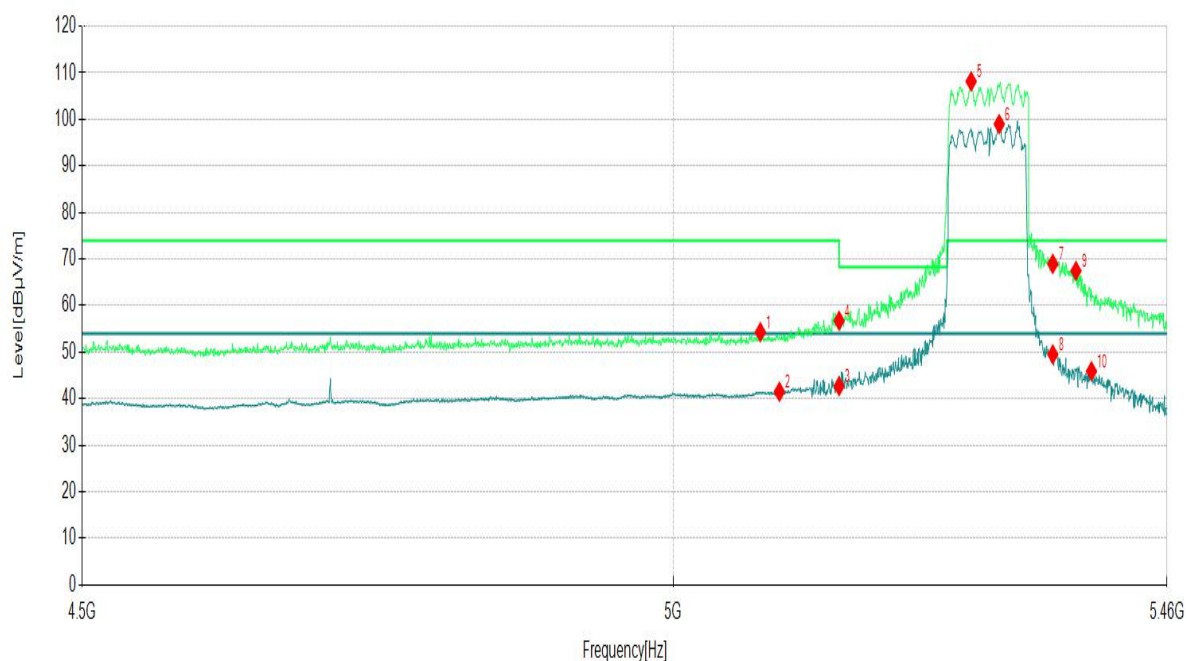
CHANNEL	TX Channel 58	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5134.397	46.29	8.11	54.40	74.00	19.60	167	122	PK	Horizontal
2	5142.081	34.98	7.95	42.93	54.00	11.07	193	187	AV	Horizontal
3	5150.000	34.83	8.03	42.86	54.00	11.14	153	214	AV	Horizontal
4	5150.000	46.16	8.03	54.19	74.00	19.81	139	214	PK	Horizontal
5	*5262.141	82.48	9.20	91.68			125	196	AV	Horizontal
6	*5272.706	92.55	8.63	101.18			178	162	PK	Horizontal
7	5350.000	56.76	9.96	66.72	74.00	7.28	114	141	PK	Horizontal
8	5350.000	40.20	9.96	50.16	54.00	3.84	186	198	AV	Horizontal
9	5361.070	54.71	10.04	64.75	74.00	9.25	137	189	PK	Horizontal
10	5365.872	39.77	9.98	49.75	54.00	4.25	141	180	AV	Horizontal
11	#10580.0	29.62	14.11	43.73	68.20	24.47	106	145	PK	Horizontal
12	15870.00	22.79	20.81	43.60	74.00	30.40	104	121	PK	Horizontal
13	15870.00	14.04	20.81	34.85	54.00	19.15	192	181	AV	Horizontal





NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5078.209	46.56	7.74	54.30	74.00	19.70	119	185	PK	Vertical
2	5095.497	33.93	7.57	41.50	54.00	12.50	196	252	AV	Vertical
3	5150.000	34.68	8.03	42.71	54.00	11.29	150	256	AV	Vertical
4	5150.000	48.73	8.03	56.76	74.00	17.24	150	260	PK	Vertical
5	*5272.706	99.54	8.63	108.17			138	260	PK	Vertical
6	*5299.119	90.20	8.80	99.00			117	260	AV	Vertical
7	5350.000	59.00	9.96	68.96	74.00	5.04	178	235	PK	Vertical
8	5350.000	39.57	9.96	49.53	54.00	4.47	115	314	AV	Vertical
9	5372.116	57.49	9.97	67.46	74.00	6.54	138	231	PK	Vertical
10	5387.003	35.83	10.08	45.91	54.00	8.09	169	222	AV	Vertical
11	#10580.0	36.59	14.11	50.70	68.20	17.50	104	265	PK	Vertical
12	15870.00	22.75	20.81	43.56	74.00	30.44	165	261	PK	Vertical
13	15870.00	14.63	20.81	35.44	54.00	18.56	175	69	AV	Vertical

**REMARKS:**

1. Level (dBμV/m) = Reading (dBμV) + Factor (dB/m).
2. 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 = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



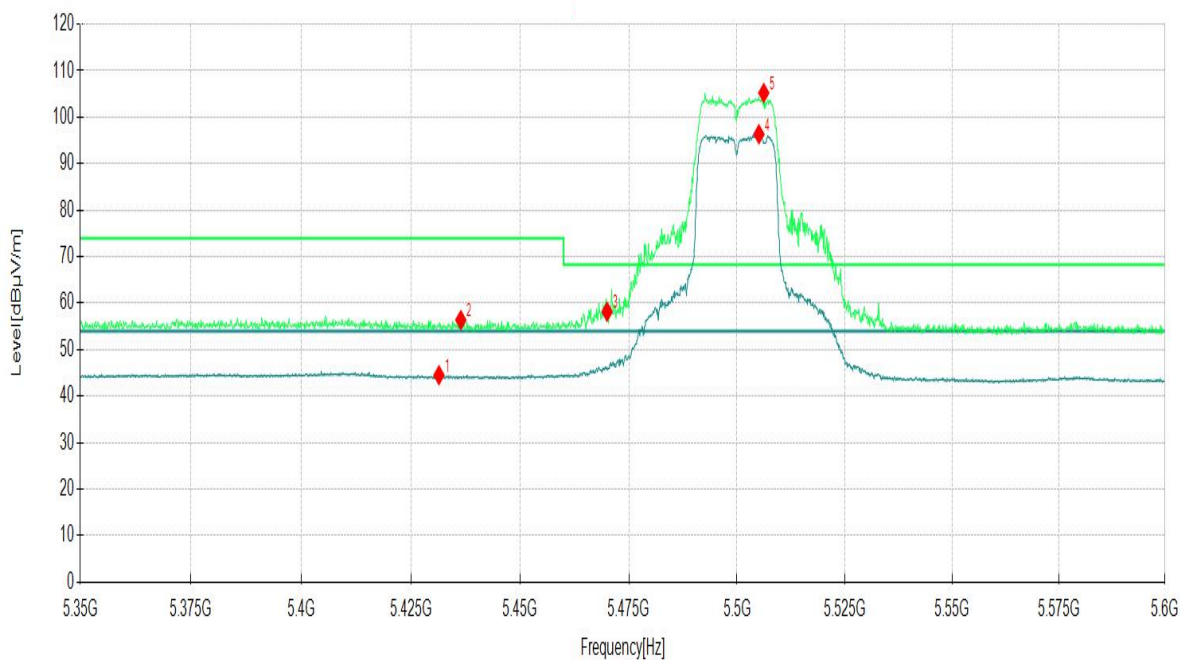
Band 3 (5500-5720MHz):

ABOVE 1GHz DATA

802.11a

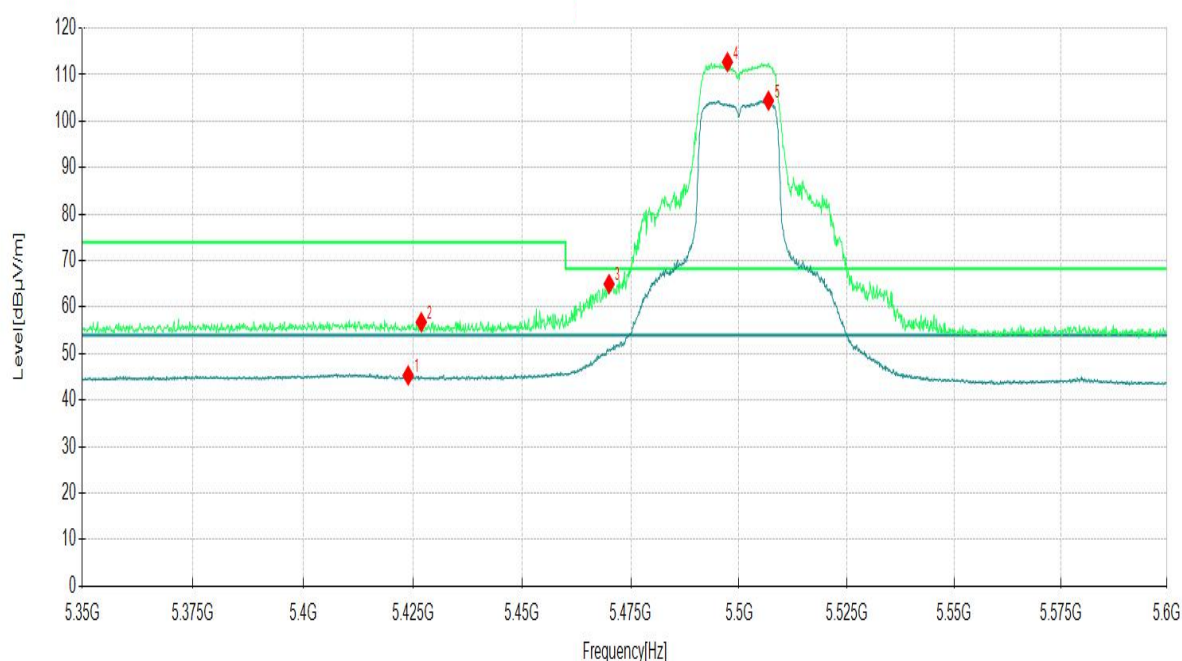
CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5431.415	34.68	9.84	44.52	54.00	9.48	122	119	AV	Horizontal
2	5436.418	46.60	9.77	56.37	74.00	17.63	159	229	PK	Horizontal
3	#5470.00	48.23	9.94	58.17	68.20	10.03	198	5	PK	Horizontal
4	*5505.077	86.87	9.48	96.35			177	191	AV	Horizontal
5	*5506.203	95.68	9.55	105.23			171	187	PK	Horizontal
6	11000.00	32.37	14.83	47.20	74.00	26.80	144	355	PK	Horizontal
7	11000.00	24.19	14.83	39.02	54.00	14.98	184	246	AV	Horizontal
8	#16500.00	35.15	23.16	58.31	68.20	9.89	126	222	PK	Horizontal





NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5423.9120	35.52	9.80	45.32	54.00	8.68	116	172	AV	Vertical
2	5426.9135	46.96	9.82	56.78	74.00	17.22	107	222	PK	Vertical
3	#5470.000	55.04	9.94	64.98	68.20	3.22	160	248	PK	Vertical
4	*5497.323	103.61	9.11	112.72			173	248	PK	Vertical
5	*5506.828	94.83	9.58	104.41			102	176	AV	Vertical
6	11000.000	25.51	14.83	40.34	54.00	13.66	199	209	AV	Vertical
7	11000.000	34.35	14.83	49.18	74.00	24.82	100	209	PK	Vertical
8	#16500.00	35.84	23.16	59.00	68.20	9.20	115	212	PK	Vertical

**REMARKS:**

1. Level (dBμV/m) = Reading (dBμV) + Factor (dB/m).
2. 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 = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



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

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	11160.00	31.75	15.23	46.98	74.00	27.02	142	1	PK	Horizontal
2	11160.00	25.15	15.23	40.38	54.00	13.62	158	231	AV	Horizontal
3	#16740.00	34.41	24.45	58.86	68.20	9.34	119	258	PK	Horizontal

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	11160.00	36.00	15.23	51.23	74.00	22.77	155	260	PK	Vertical
2	11160.00	29.23	15.23	44.46	54.00	9.54	152	260	AV	Vertical
3	#16740.00	34.83	24.45	59.28	68.20	8.92	158	89	PK	Vertical

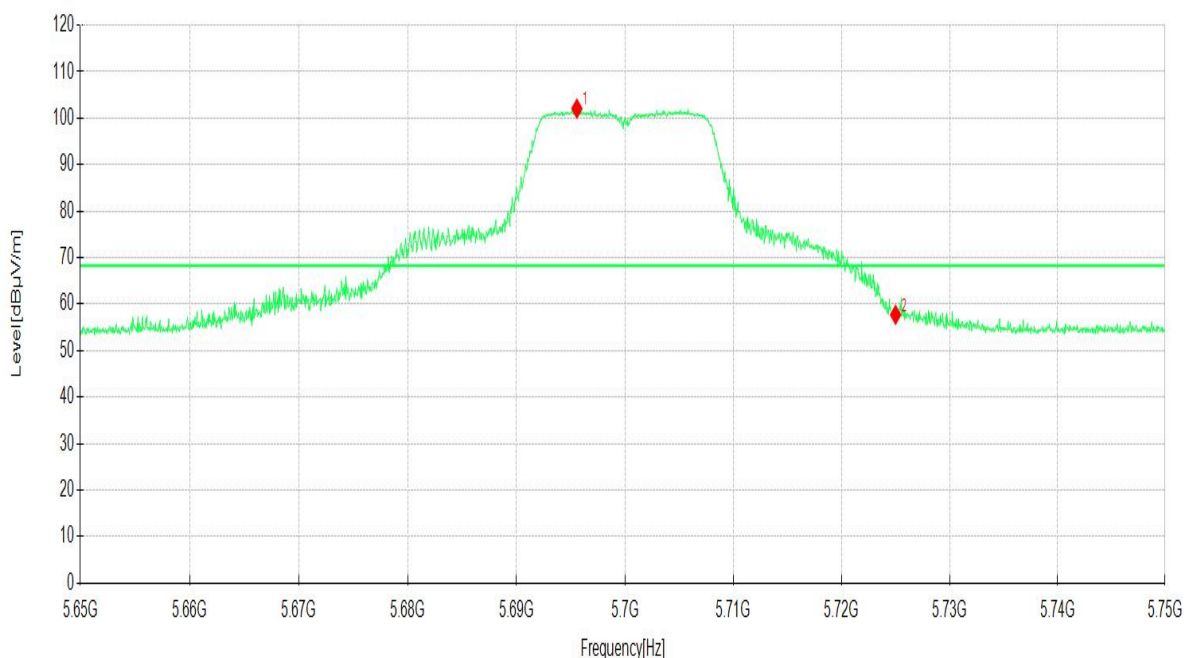
REMARKS:

1. Level (dBμV/m) = Reading (dBμV) + Factor (dB/m).
2. 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 = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



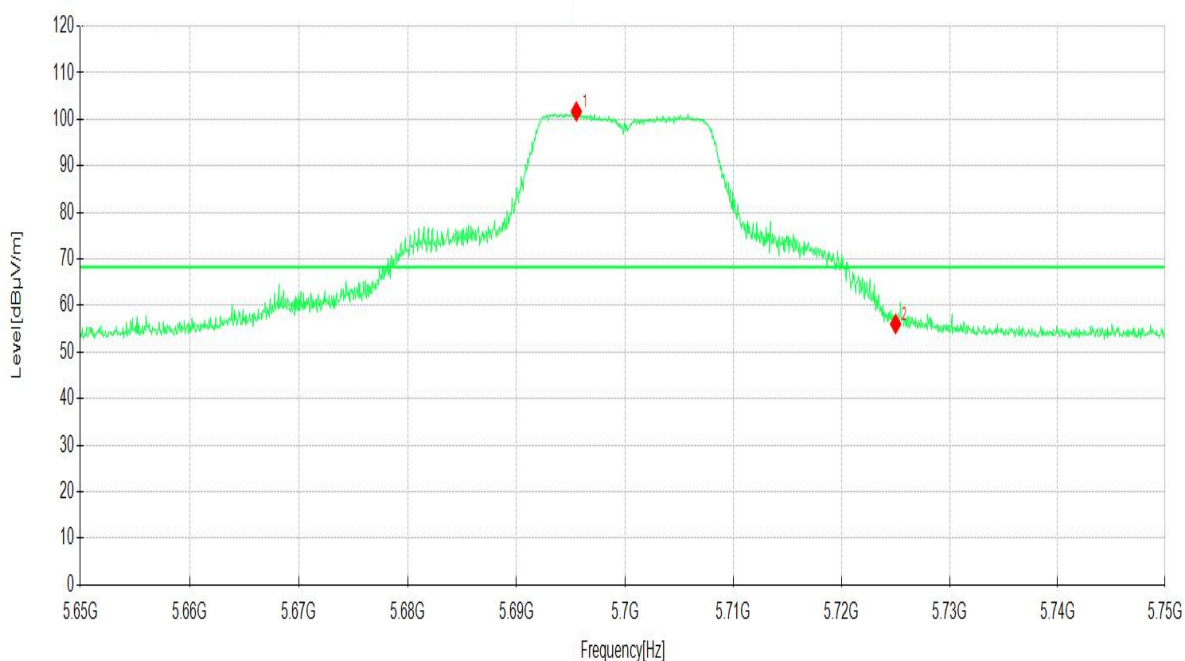
CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	*5695.572	93.51	8.56	102.07			194	189	PK	Horizontal
2	#5725.00	48.83	8.89	57.72	68.20	10.48	167	185	PK	Horizontal
3	11400.00	27.04	15.09	42.13	74.00	31.87	122	196	PK	Horizontal
4	11400.00	18.64	15.09	33.73	54.00	20.27	158	306	AV	Horizontal
5	#17100.00	19.94	25.93	45.87	68.20	22.33	144	172	PK	Horizontal





NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	*5695.522	93.15	8.56	101.71			116	100	PK	Vertical
2	5725.000	47.16	8.89	56.05	68.20	12.15	116	96	PK	Vertical
3	11400.00	26.80	15.09	41.89	74.00	32.11	172	308	PK	Vertical
4	11400.00	17.95	15.09	33.04	54.00	20.96	134	229	AV	Vertical
5	#17100.00	20.60	25.93	46.53	68.20	21.67	175	219	PK	Vertical

**REMARKS:**

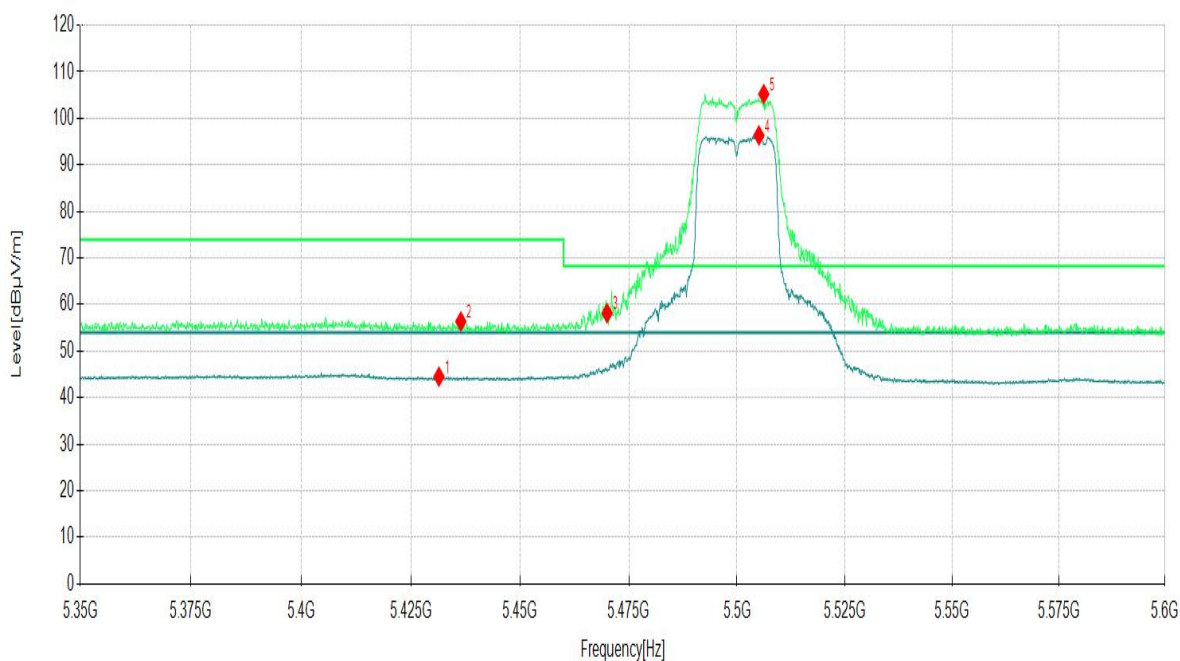
1. Level (dBμV/m) = Reading (dBμV) + Factor (dB/m).
2. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



802.11n (20MHz)

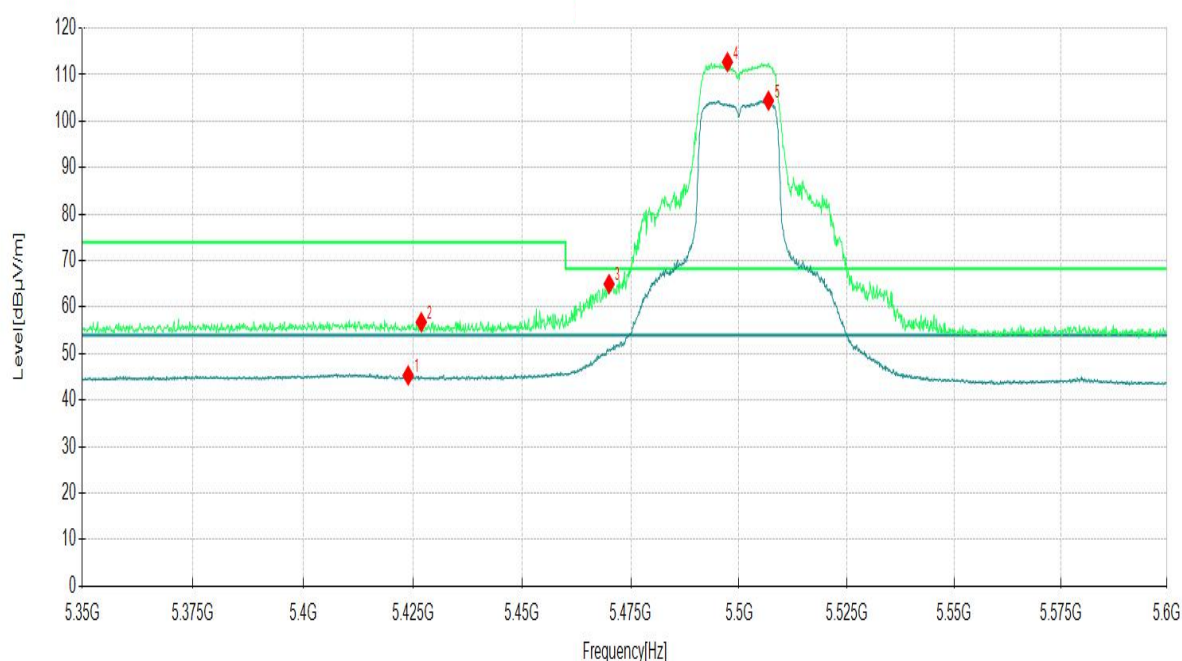
CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5431.415	34.68	9.84	44.52	54.00	9.48	145	119	AV	Horizontal
2	5436.418	46.60	9.77	56.37	74.00	17.63	139	229	PK	Horizontal
3	#5470.00	48.23	9.94	58.17	68.20	10.03	150	5	PK	Horizontal
4	*5505.077	86.87	9.48	96.35			170	191	AV	Horizontal
5	*5506.203	95.68	9.55	105.23			195	187	PK	Horizontal
6	11000.00	37.87	14.83	52.70	74.00	21.30	116	144	PK	Horizontal
7	11000.00	28.28	14.83	43.11	54.00	10.89	199	151	AV	Horizontal
8	#16500.0	21.65	23.16	44.81	68.20	23.39	142	234	PK	Horizontal





NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5423.912	35.52	9.80	45.32	54.00	8.68	126	172	AV	Vertical
2	5426.913	46.96	9.82	56.78	74.00	17.22	131	222	PK	Vertical
3	#5470.00	55.04	9.94	64.98	68.20	3.22	169	248	PK	Vertical
4	*5497.323	103.61	9.11	112.72			116	248	PK	Vertical
5	*5506.828	94.83	9.58	104.41			194	176	AV	Vertical
6	11000.00	42.09	14.83	56.92	74.00	17.08	172	123	PK	Vertical
7	11000.00	33.92	14.83	48.75	54.00	5.25	102	248	AV	Vertical
8	16500.00	22.29	23.16	45.45	68.20	22.75	179	235	PK	Vertical



REMARKS:

1. Level (dBμV/m) = Reading (dBμV) + Factor (dB/m).
2. 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 = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



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

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	11160.00	26.59	15.23	41.82	74.00	32.18	132	19	PK	Horizontal
2	11160.00	17.85	15.23	33.08	54.00	20.92	167	106	AV	Horizontal
3	#16740.00	20.63	24.45	45.08	68.20	23.12	113	320	PK	Horizontal

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	11160.00	28.17	15.11	43.28	54.00	10.72	146	252	AV	Vertical
2	11160.00	36.19	15.16	51.35	74.00	22.65	122	252	PK	Vertical
3	#16740.00	21.70	24.45	46.15	68.20	22.05	103	255	PK	Vertical

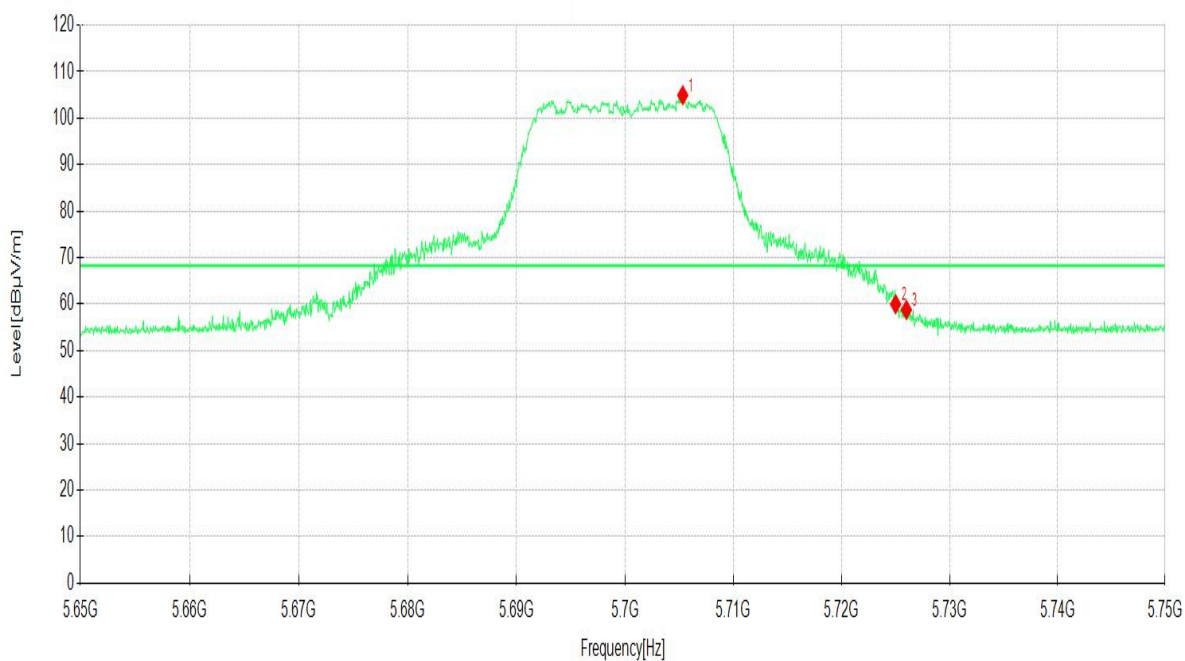
REMARKS:

1. Level (dBμV/m) = Reading (dBμV) + Factor (dB/m).
2. 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 = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



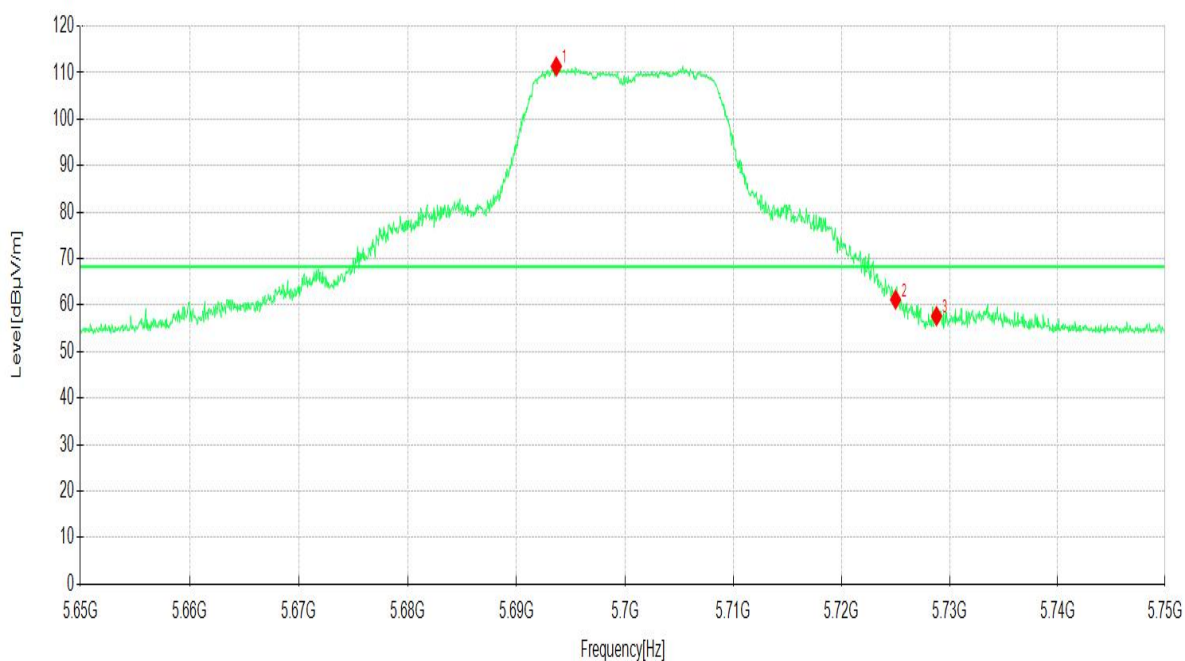
CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	*5705.327	96.17	8.77	104.94			113	190	PK	Horizontal
2	#5725.00	51.11	8.89	60.00	68.20	8.20	156	226	PK	Horizontal
3	5726.000	49.93	8.85	58.78	68.20	9.42	153	186	PK	Horizontal
4	11400.000	35.72	14.88	50.60	74.00	23.40	145	150	PK	Horizontal
5	11400.000	27.48	14.88	42.36	54.00	11.64	144	150	AV	Horizontal
6	#17100.00	20.14	25.93	46.07	68.20	22.13	157	176	PK	Horizontal





NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	*5693.671	102.99	8.39	111.38			104	177	PK	Vertical
2	#5725.00	52.31	8.89	61.20	68.20	7.00	142	177	PK	Vertical
3	5728.789	48.92	8.73	57.65	68.20	10.55	134	177	PK	Vertical
4	11400.000	26.87	15.09	41.96	74.00	32.04	172	92	PK	Vertical
5	11400.000	17.48	15.09	32.57	54.00	21.43	115	161	AV	Vertical
6	#17100.00	20.33	25.93	46.26	68.20	21.94	200	337	PK	Vertical



REMARKS:

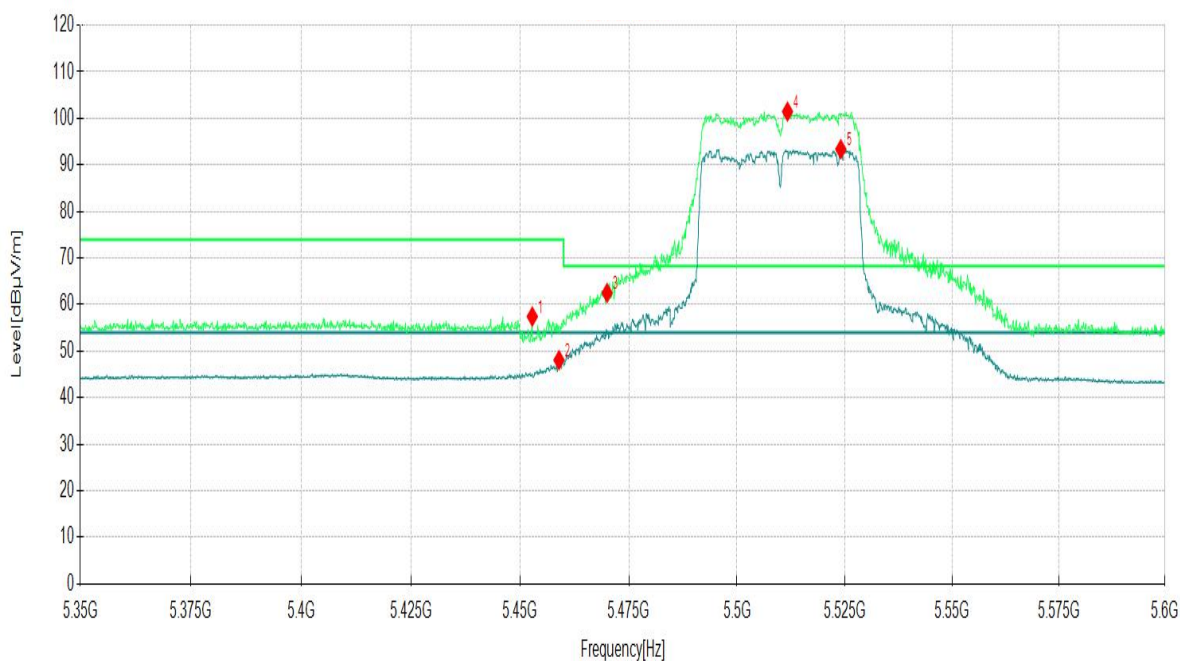
1. Level (dBμV/m) = Reading (dBμV) + Factor (dB/m).
2. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



802.11n (40MHz)

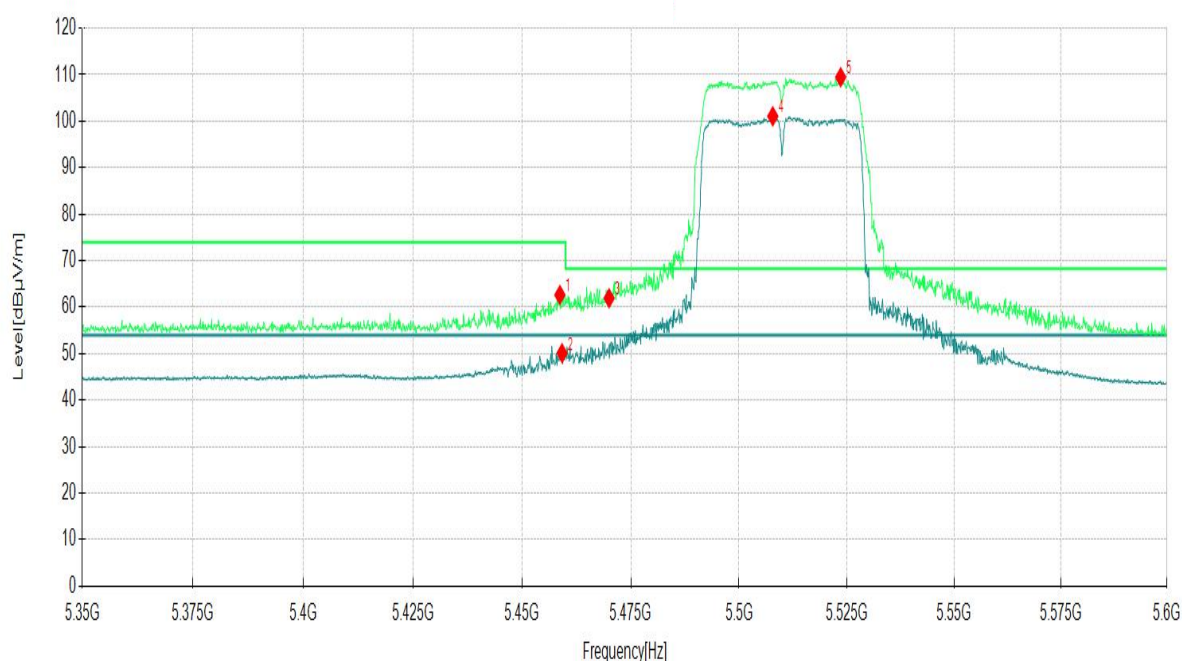
CHANNEL	TX Channel 102	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5452.801	47.65	9.79	57.44	74.00	16.56	104	214	PK	Horizontal
2	5458.929	38.13	9.96	48.09	54.00	5.91	140	185	AV	Horizontal
3	#5470.00	52.58	9.94	62.52	68.20	5.68	127	185	PK	Horizontal
4	*5511.705	91.75	9.72	101.47			188	190	PK	Horizontal
5	*5524.087	84.09	9.29	93.38			114	185	AV	Horizontal
6	11020.00	36.38	15.26	51.64	74.00	22.36	199	144	PK	Horizontal
7	11020.00	25.40	15.21	40.61	54.00	13.39	156	152	AV	Horizontal
8	#16530.00	21.74	23.21	44.95	68.20	23.25	118	52	PK	Horizontal





NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5458.679	52.69	9.95	62.64	74.00	11.36	108	265	PK	Vertical
2	5459.179	40.14	9.97	50.11	54.00	3.89	185	257	AV	Vertical
3	#5470.00	52.00	9.94	61.94	68.20	6.26	116	189	PK	Vertical
4	*5507.828	91.42	9.64	101.06			101	214	AV	Vertical
5	*5523.586	100.15	9.32	109.47			114	176	PK	Vertical
6	11020.00	38.33	15.26	53.59	74.00	20.41	196	231	PK	Vertical
7	11020.00	29.96	15.23	45.19	54.00	8.81	136	251	AV	Vertical
8	#16530.00	13.04	23.21	36.25	54.00	17.75	108	23	AV	Vertical

**REMARKS:**

1. Level (dBμV/m) = Reading (dBμV) + Factor (dB/m).
2. 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 = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



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

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	11100.00	33.88	15.25	49.13	74.00	24.87	144	159	PK	Horizontal
2	11100.00	23.38	15.25	38.63	54.00	15.37	146	146	AV	Horizontal
3	#16650.0	20.14	25.93	46.07	68.20	22.13	145	176	PK	Horizontal

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	11100.00	39.67	15.25	54.92	74.00	19.08	135	250	PK	Vertical
2	11100.00	29.20	15.25	44.45	54.00	9.55	129	122	AV	Vertical
3	#16650.0	21.20	24.11	45.31	68.20	22.89	177	142	PK	Vertical

REMARKS:

1. Level (dBuV/m) = Reading (dBuV) + Factor (dB/m).
2. 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 = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



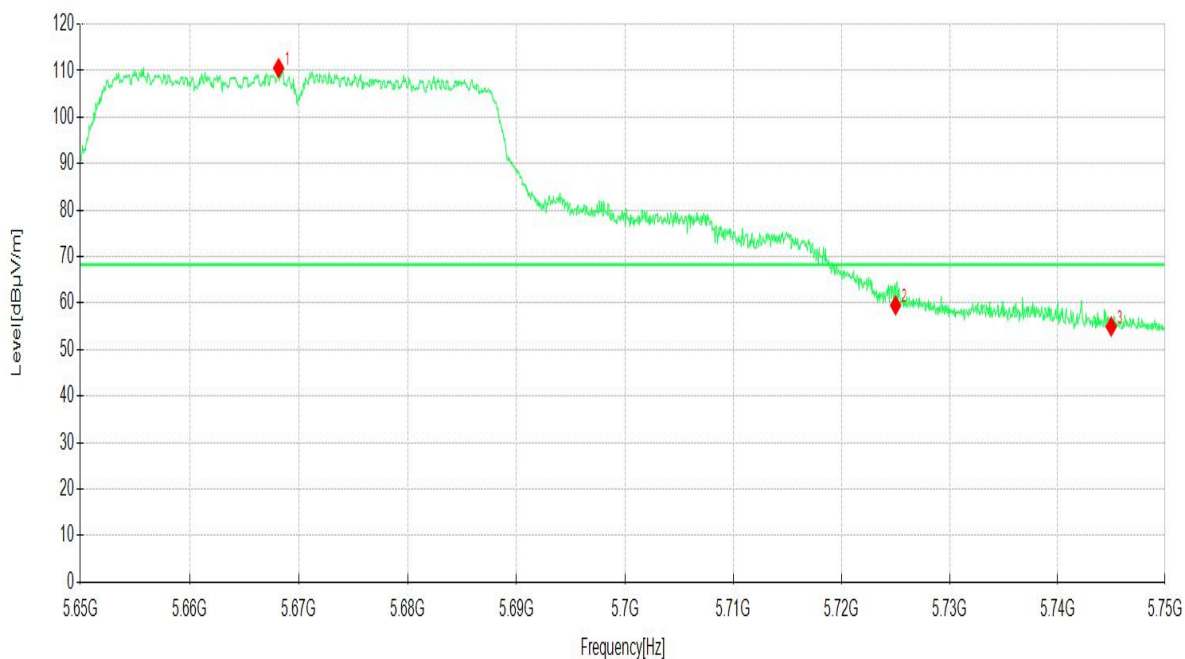
CHANNEL	TX Channel 134	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	*5668.209	93.29	9.21	102.50			144	191	PK	Horizontal
2	5725.000	47.84	8.89	56.73	68.20	11.47	135	210	PK	Horizontal
3	5745.000	45.49	8.94	54.43	68.20	13.77	102	349	PK	Horizontal
4	11340.00	28.63	14.88	43.51	74.00	30.49	180	281	PK	Horizontal
5	11340.00	19.67	14.88	34.55	54.00	19.45	120	152	AV	Horizontal
6	#17010.0	20.29	26.15	46.44	68.20	21.76	168	165	PK	Horizontal





NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	*5668.159	101.36	9.21	110.57			159	179	PK	Vertical
2	#5725.00	50.66	8.89	59.55	68.20	8.65	156	199	PK	Vertical
3	#5745.00	46.04	8.94	54.98	68.20	13.22	133	207	PK	Vertical
4	11340.00	34.87	14.88	49.75	74.00	24.25	187	251	PK	Vertical
5	11340.00	27.41	14.88	42.29	54.00	11.71	114	251	AV	Vertical
6	#17010.00	20.71	26.15	46.86	68.20	21.34	159	241	PK	Vertical

**REMARKS:**

1. Level (dBμV/m) = Reading (dBμV) + Factor (dB/m).
2. 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 = Limit – Level
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



802.11ac 80MHz

CHANNEL	TX Channel 106	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	5456.303	35.48	9.89	45.37	54.00	8.63	189	183	AV	Horizontal
2	5458.325	45.25	9.99	55.24	74.00	18.76	187	331	PK	Horizontal
3	#5470.00	45.56	9.94	55.50	68.20	12.70	182	188	PK	Horizontal
4	*5511.830	76.64	9.72	86.36			106	179	AV	Horizontal
5	*5513.706	85.13	9.68	94.81			165	183	PK	Horizontal
6	11060.00	22.59	15.05	37.64	54.00	16.36	130	145	AV	Horizontal
7	11060.00	32.35	15.05	47.40	74.00	26.60	194	162	PK	Horizontal
8	#16590.0	20.72	23.82	44.54	68.20	23.66	198	26	PK	Horizontal

