



Test Report No.:
FCC2023-0049-RF3

RF Test Report

EUT : Micro Music System
MODEL : TAM8905/37
ADDITIONAL MODEL : See section 2.1
BRAND NAME : PHILIPS
APPLICANT : MMD Hong Kong Holding Limited
Classification Of Test : N/A

CVC Testing Technology Co., Ltd.



CVC Testing Technology Co., Ltd.

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Applicant	Name : MMD Hong Kong Holding Limited Address : Units 1208-11, 12th Floor, C-Bons International Center, 108 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong		
Manufacturer	Name : MMD Hong Kong Holding Limited Address : Units 1208-11, 12th Floor, C-Bons International Center, 108 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong		
Equipment Under Test	Name : Micro Music System Model/Type: TAM8905/37 Additional Model: See section 2.1 Brand : PHILIPS Serial NO.: N/A Sample NO.: HS2306280027		
Date of Receipt.	2023-06-28	Date of Testing	2023-07-01 ~ 2023-07-20
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. Seal of CVC Issue Date: 2023-07-21		
Tested by:  Lu Wei Ji Name Signature	Reviewed by:  Xu Zhen Fei Name Signature	Approved by:  Chen Hua Wen 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.



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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCC2023-0049-RF3	Original release	2023-07-21



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
FCC Part 15.207	Conducted Emissions	PASS	Meet the requirement of limit.
FCC Part 15.403(i)	6dB&26dB Emission Bandwidth	PASS	Meet the requirement of limit.
---	Occupied Channel Bandwidth	N/A	---
FCC Part 15.407(b)	Radiated Emission and Bandedge	PASS	Meet the requirement of limit.
FCC Part 15.407(a)	Conducted Output Power	PASS	Meet the requirement of limit.
FCC Part 15.407(a)	Power Spectral Density	PASS	Meet the requirement of limit.
FCC Part 15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
FCC Part 15.203 FCC Part 15.407(a)	Antenna Requirement	PASS	No antenna connector is used

Note: Refer to DFS report (Report No. FCC2023-0049-RF4)



1.1 LIST OF TEST AND MEASUREMENT INSTRUMENTS

Test Equipment	Type/Mode	SERIAL NO.	Equipment No.	Manufacturer	Cal. interval	Cal. Due
WIFI & Bluetooth Test System 1						/
Communication Shielded Room 3	4m*3m*3m	CRTDSWKS R 44301	VGDS-0702	CRT	3 year	2024/04/24
Bluetooth BQB test system	/	/	DZ-000338	CTTL	1 year	/
Bluetooth system integration	/	/	-	Tonscend	1 year	/
Wifi radiation system upgrade	/	/	-	Tonscend	1 year	/
Spectrum Analyzer	N9030A	MY53310374	EM-000395	Agilent	1 year	2024/04/22
Comprehensive Test Instrument	CMW270	100659	EM-000491	R&S	1 year	2023/12/06
Analog Signal Generator	N5173B	MY53270588	EM-000487-2	KEYSIGHT	1 year	2023/12/06
Vector Signal Generator	N5172B	MY53051933	EM-000487-1	KEYSIGHT	1 year	2023/12/06
Radiation Spurious Test System						/
3m Semi-Anechoic Chamber	FACT-4	ST08035	WKNA-0024	ETS	3 year	2024/12/12
Spectrum Analyzer	N9010B	MY57470323	DZ-000174	KEYSIGHT	1 year	2024/02/22
EMI Test Receiver	N9038A-508	MY532290079	EM-000397	Agilent	1 year	2024/02/22
Broadband Antenna	VULB 9163	9163-530	EM-000342	SCHWARZBECK	1 year	2024/06/10
Waveguide Horn Antenna	HF906	360306/008	EM-000093	R&S	1 year	2024/02/24
Waveguide Horn Antenna	BBHA9170	00949	DZ-000209-2	SCHWARZBECK	1 year	2023/07/31
Preamplifier	BBV 9721	9721-050	DZ-000209-1	SCHWARZBECK	1 year	2024/06/04
5G Bandstop Filters	WRCJV12-4900-5100-5900-6100-50EE	851770	DZ-000186	WI	1 year	2023/12/06
Comprehensive tester	CMW500	159000	DZ-000240-2	R&S	1 year	2023/12/06
Conducted emission						/
EMI Test Receiver	ESW44	103123	EM-000698	R&S	1 year	2024-02-22
EMI Test Receiver	ESR3	102394	VG DY-0705	R&S	1 year	2024-02-22
LISN	NSLK 8127	8127644	VG DY-0150	SCHWARZBECK	1 year	2023-09-03
LISN	NSLK 8128	8128-316	VG DY-0149	SCHWARZBECK	1 year	2023-09-03
DC LISN	PVDC8301-017	PVDC8301#17	VG DY-0692	SCHWARZBECK	1 year	2023-10-07
LISN	NSLK 8129	8129-268	EM-000388	SCHWARZBECK	1 year	2024-02-22
Plus Limiter (#1)	VTSD 9561 F-N	00515	VG DY-0808	SCHWARZBECK	1 year	2024-03-03
Plus Limiter (#2)	VTSD 9561	9561-F017	VG DY-0152	SCHWARZBECK	1 year	2024-09-03
Impedance Stabilization Network	ISN T800	27095	WKNE-0195	TESEQ	1 year	2023-09-03
Impedance Stabilization Network	NTFM8158	8158-0092	VG DY-0356	SCHWARZBECK	1 year	2024-05-29
Impedance Stabilization Network	NTFM8131	#184	EM-000498	SCHWARZBECK	1 year	2024-05-29
Voltage Probe	TK9420	9420-499	VG DY-0128	SCHWARZBECK	1 year	2024-02-22
Power Divider	4901.17.B	22643830	DB-0016	HUBER+SUHNER	1 year	2023-08-31
Video Signal Generator	GV-798+	151064920001	VGDS-0215	PROMAX	1 year	2024-05-23
Audio Signal Generator	GAG-810	EK871591	EM-000309	GW	1 year	2023-12-06
Shielding Room(#1)	GP1A	001	WKNF-0001	LEINING	3 year	2024-08-07
Shielding Room(#2)	GP1A	002	WKNF-0006	LEINING	3 year	2024-08-07
Current probe	EZ-17	0816.2063.02	EM-000567	R&S	1 year	2024-01-07
LISN	NNHV8123-200	8123200-020	EM-000385	SCHWARZBECK	1 year	2024-02-22
LISN	NNHV8123-200	8123200-021	EM-000386	SCHWARZBECK	1 year	2024-02-22



1.2 MEASUREMENT UNCERTAINTY

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

No.	ITEM	FREQUENCY	UNCERTAINTY
1	Conducted emissions	9kHz~30MHz	±2.66dB
2	Radiated emissions	9KHz ~ 30MHz	±0.769dB
		30MHz ~ 1GMHz	±0.877dB
		1GHz ~ 18GHz	±0.777dB
		18GHz ~ 40GHz	±1.315dB

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,TiantaiyiRoad,KaitaiAvenue,ScienceCity,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	Micro Music System
MODEL NO.	TAM8905/37
ADDITIONAL MODEL	TAM8905,M8905,TAM8905/10,TAM8905/12,TAM8905/98,TAM8905/67,M8905/37,TAM8905x/yy, M8905x/yy (x = A-Z or blank, for different color or package; yy = 00 - 99, for country code)
FCC ID	2AR2STAM8905
STATUS OF EUT	Engineering Prototype
POWER SUPPLY	AC 120V,60Hz
MODULATION TECHNOLOGY	OFDM
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK for OFDM
TRANSFER RATE	802.11a: Up to 54Mbps 802.11n: Up to MCS7
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5580MHz & 5660 ~ 5700 MHz, 5745 ~ 5825MHz
NUMBER OF CHANNEL	See Section 2.2
CONDUCTED OUTPUT POWER	9.48 dBm for 5180 ~ 5240MHz (Maximum AVG Power) 9.99 dBm for 5260 ~ 5320MHz (Maximum AVG Power) 10.99 dBm for 5500 ~ 5580MHz & 5660 ~ 5700 MHz (Maximum AVG Power) 5.97 dBm for 5745 ~ 5825MHz (Maximum AVG Power)
ANTENNA TYPE AND GAIN (Remark 4)	PIFA Antenna with 3.50dBi gain
HW	VER 0.0
SW	FS2340-0000-0501
I/O PORTS	Refer to user's manual
ACCESSORY DEVICE	Remote Control*1 · subwoofer*2

Remark:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
- EUT photo refer to report (Report NO.: FCC2023-0049-EUT).
- Please refer to the antenna report.
- Model difference: All models are identical except model name and country destination for marketing purpose.
- The EUT incorporates a SISO function. Physically, the EUT provides 1 completed transmitter and 1 receiver.

MODULATION MODE	TX FUNCTION
802.11a	1TX/1RX
802.11n 20MHz	1TX/1RX
802.11n 40MHz	1TX/1RX



2.2 CARRIER FREQUENCY AND CHANNEL

FOR 5180 ~ 5240MHz

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

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

2 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

FOR 5260 ~ 5320MHz

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

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

2 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270MHz	62	5310MHz



FOR 5500 ~ 5580MHz & 5660 ~ 5700 MHz

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

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

3 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510MHz	134	5670MHz
110	5550MHz	--	--

FOR 5745 ~ 5825MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745MHz	157	5785MHz
153	5765MHz	161	5805MHz

2 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755MHz	159	5795MHz

The channels which were indicated in bold type of the above channel list were selected as representative test channel. Therefore, only the data of the test channels were recorded in this report.



2.3 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE:

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

MODULATION	DATA RATE
802.11a	6Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE<1G	25.3deg. C, 59%RH	AC 120V,60Hz	Li YueAo
RE $\geq$ 1G	25.3deg. C, 59%RH	AC 120V,60Hz	Li YueAo
PLC	25.7deg. C, 54%RH	AC 120V,60Hz	Li YueAo
APCM	25.7deg. C, 54%RH	AC 120V,60Hz	Li YueAo



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	N/A	N/A	N/A	N/A	N/A		
Support Cable							
NO	Description	Quantity (Number)	Length (m)	Detachable (Yes/ No)	Shielded (Yes/ No)	Cores (Number)	Supplied by
1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

ANSI C63.10-2013

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: 68.3 (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:

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



3.1.3 TEST PROCEDURES

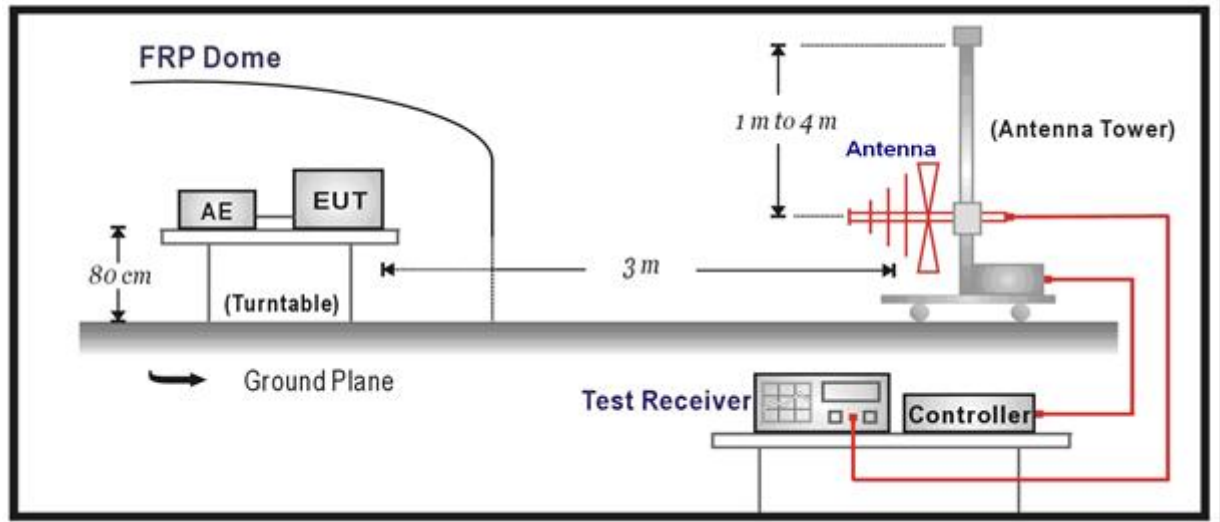
- a. The EUT was placed on the top of a rotating table 1.5 meters(above 1GHz) and 0.8 meters(below 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving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

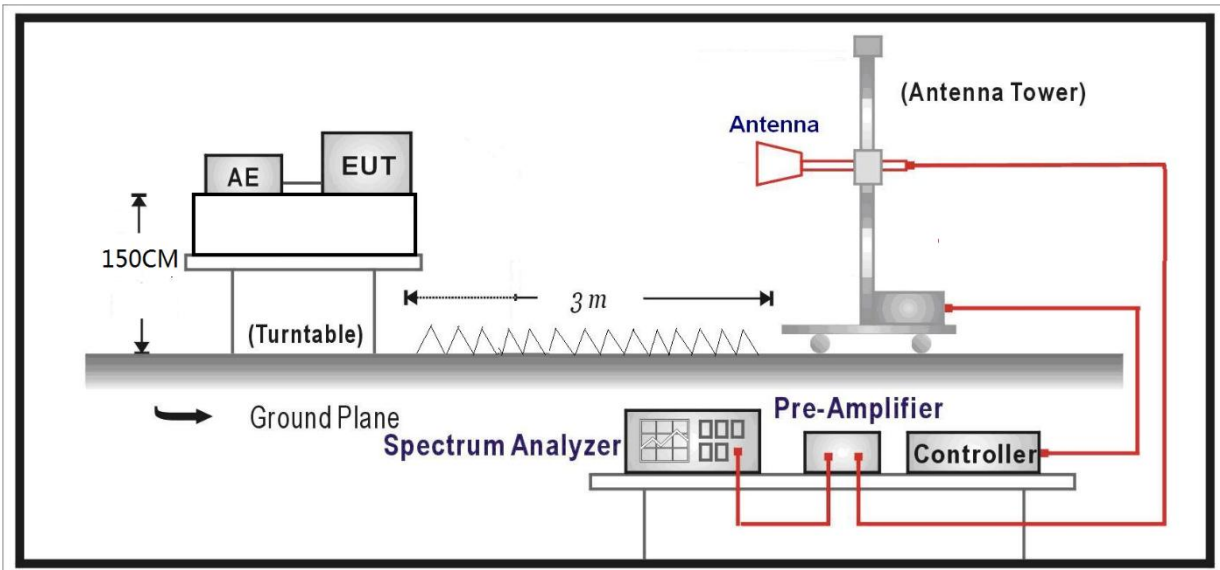
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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



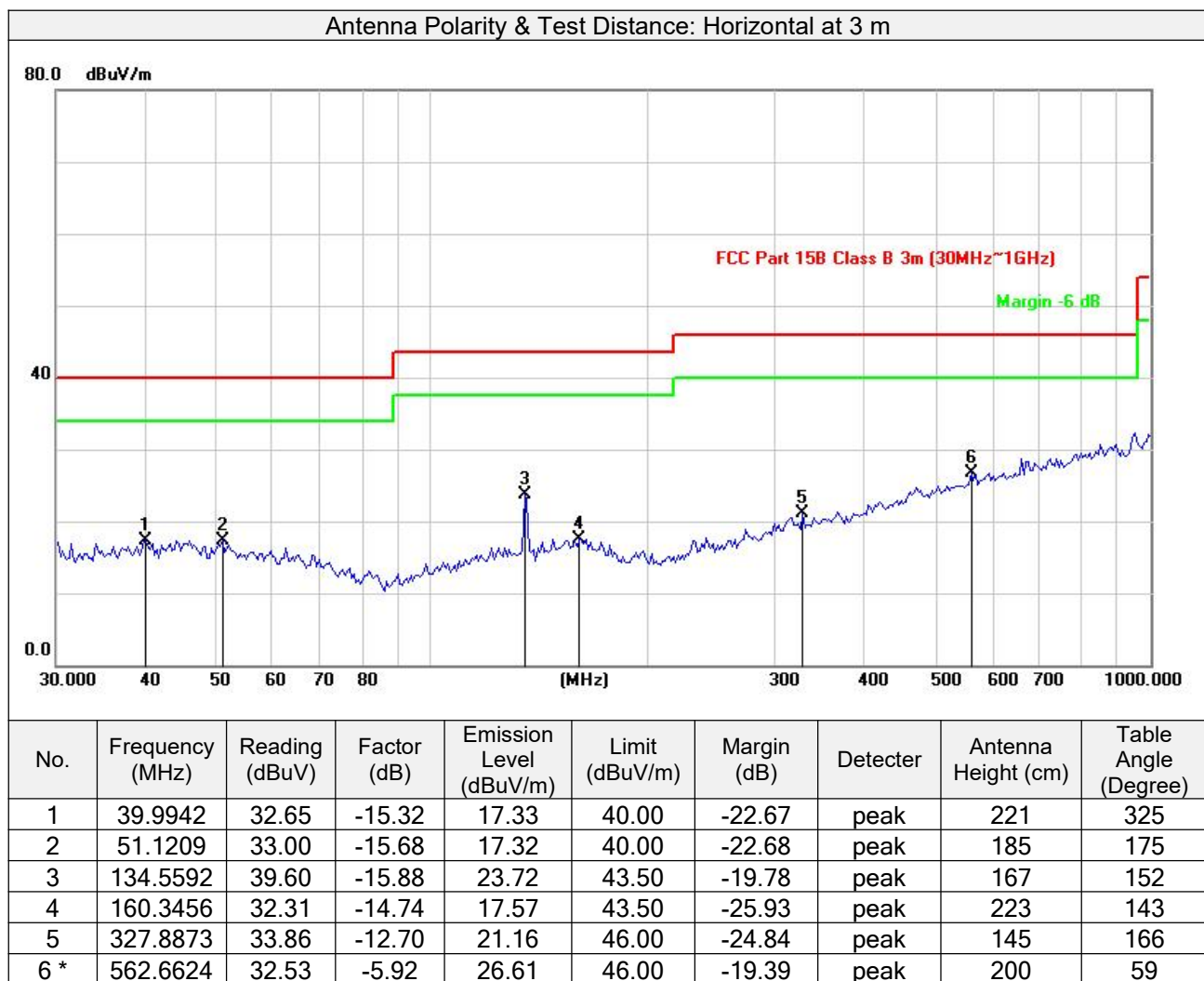
3.1.5 TEST RESULTS - BELOW 1GHz

9 kHz ~ 30 MHz Data:

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

30 MHz ~ 1GHz Worst-Case Data:

Frequency Range	30MHz ~ 1GHz	Detector Function	Peak (PK) Quasi-peak (QP)
Test Channel	Channel 36		



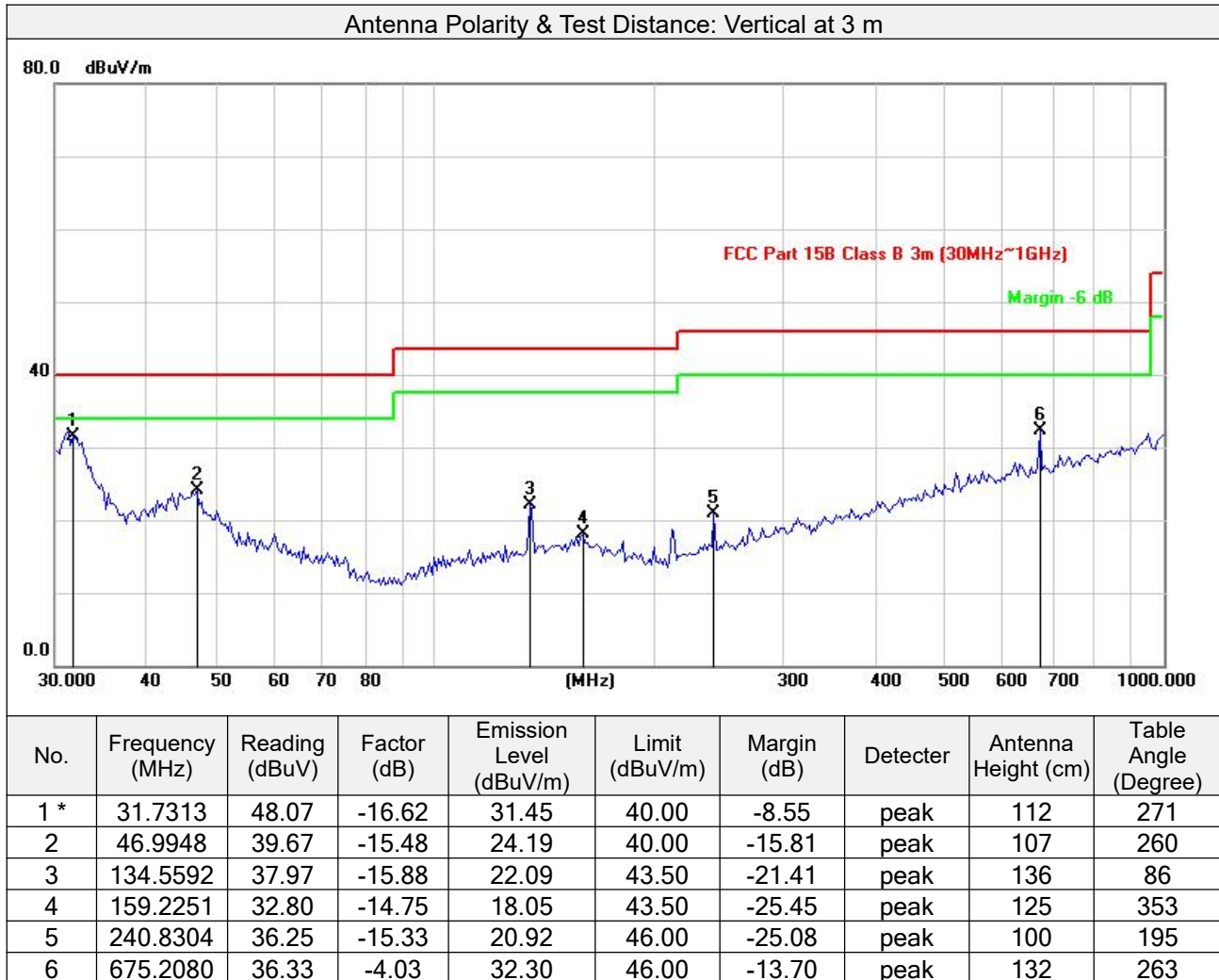
Remarks:

1.Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)

2.Margin value = Emission level – Limit value



Frequency Range	30MHz ~ 1GHz	Detector Function	Peak (PK) Quasi-peak (QP)
Test Channel	Channel 36		

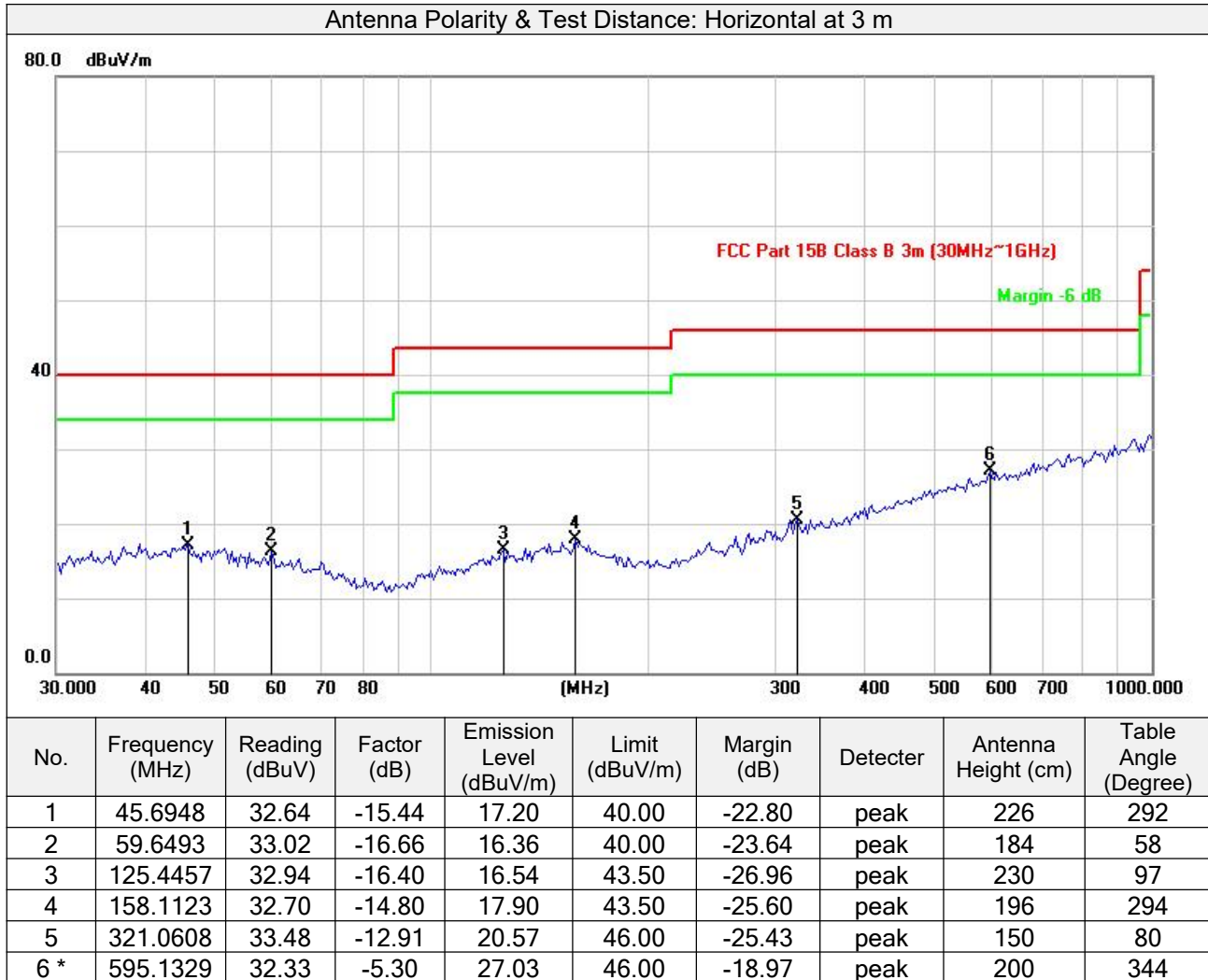


Remarks:

- 1.Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value



Frequency Range	30MHz ~ 1GHz	Detector Function	Peak (PK) Quasi-peak (QP)
Test Channel	Channel 46		



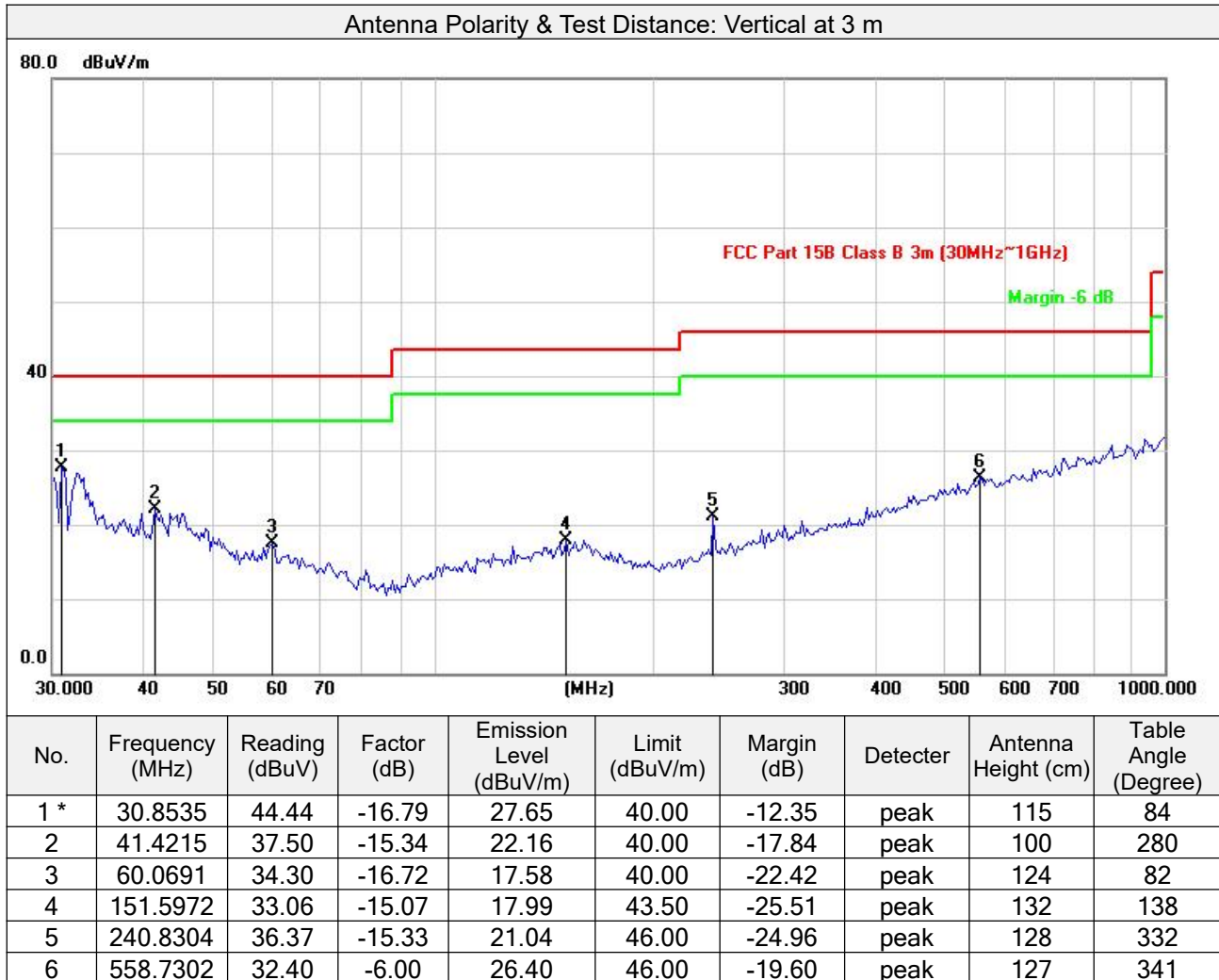
Remarks:

1.Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)

2.Margin value = Emission level – Limit value



Frequency Range	30MHz ~ 1GHz	Detector Function	Peak (PK) Quasi-peak (QP)
Test Channel	Channel 46		

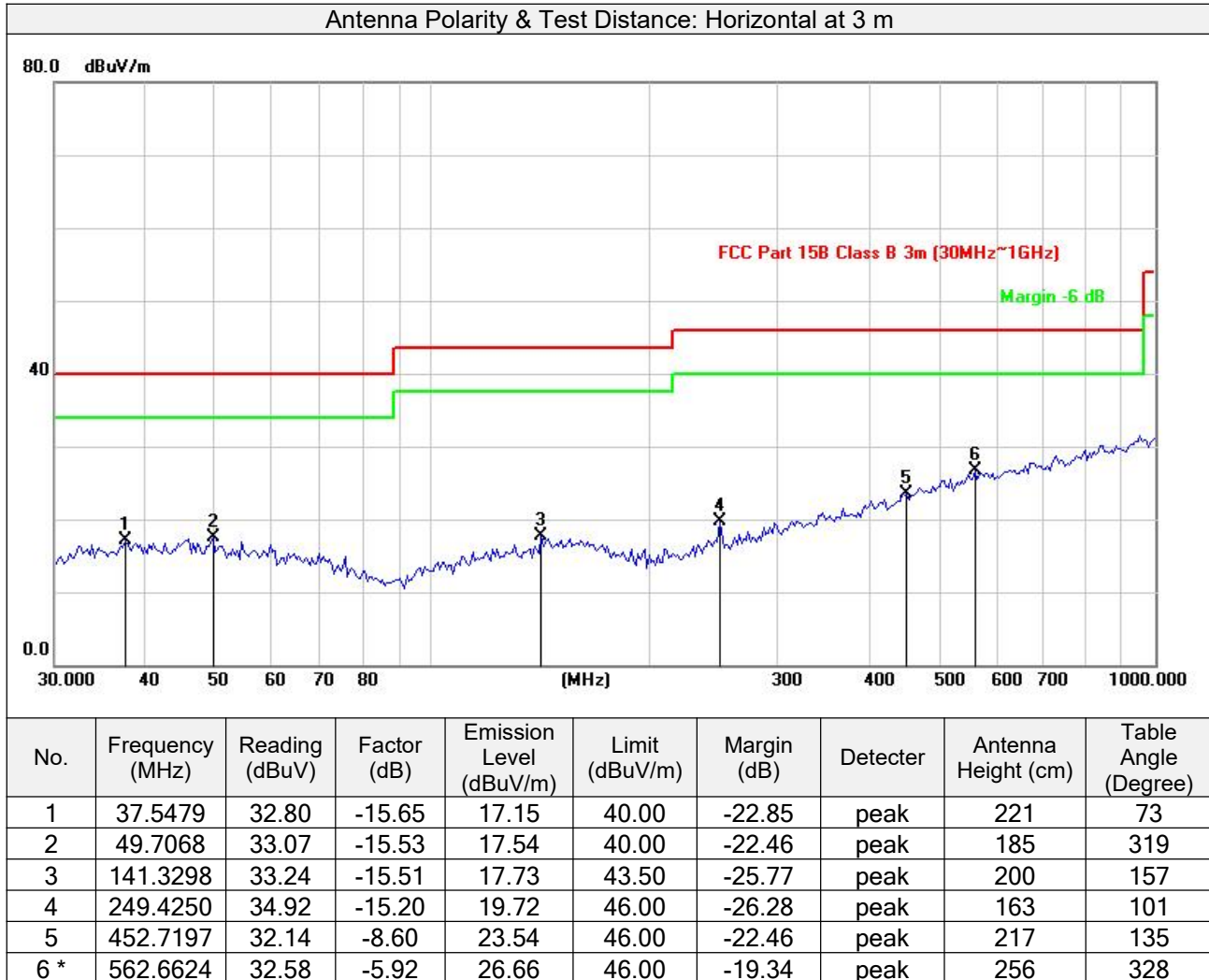


Remarks:

- 1.Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value



Frequency Range	30MHz ~ 1GHz	Detector Function	Peak (PK) Quasi-peak (QP)
Test Channel	Channel 149		



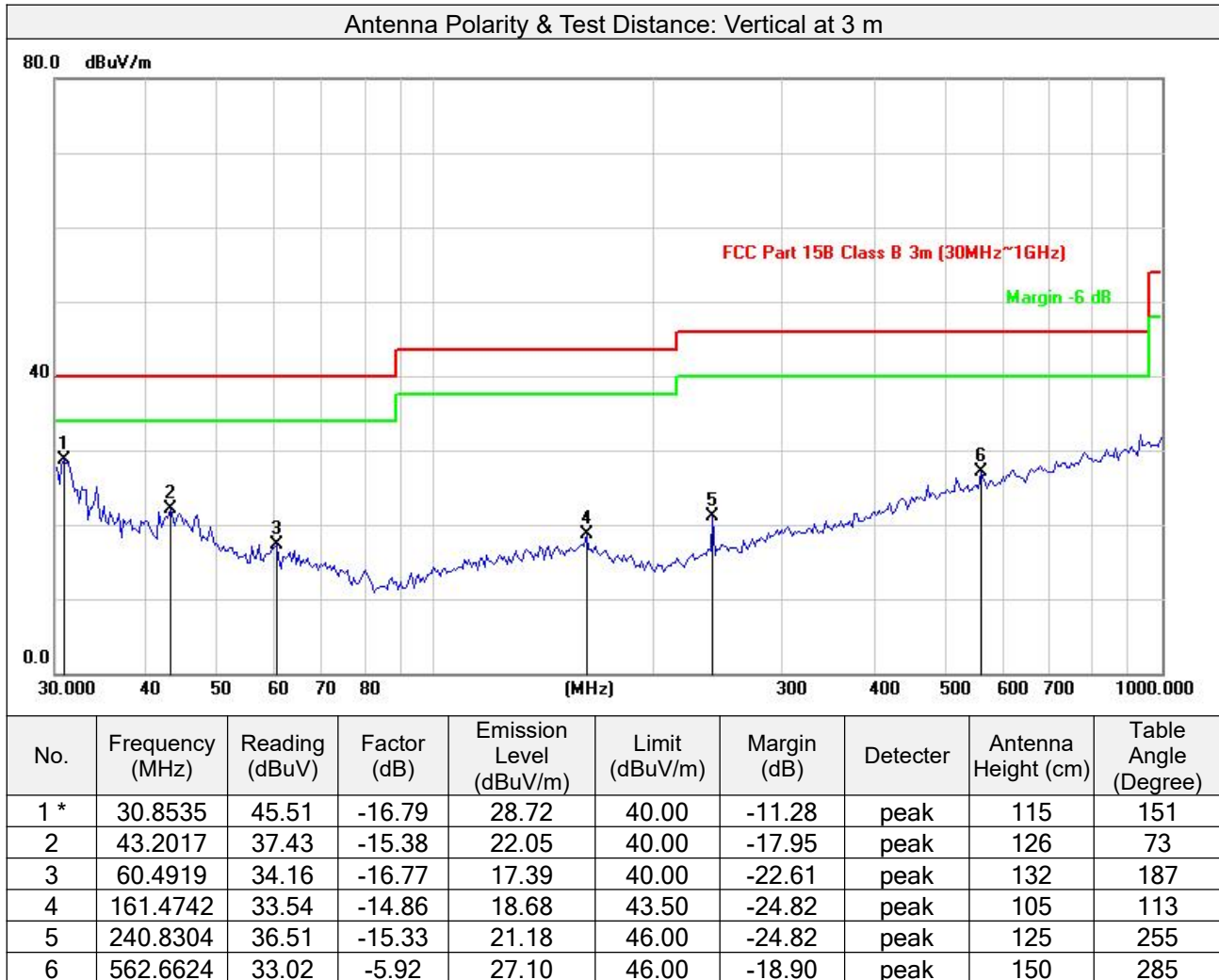
Remarks:

1.Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)

2.Margin value = Emission level – Limit value



Frequency Range	30MHz ~ 1GHz	Detector Function	Peak (PK) Quasi-peak (QP)
Test Channel	Channel 149		

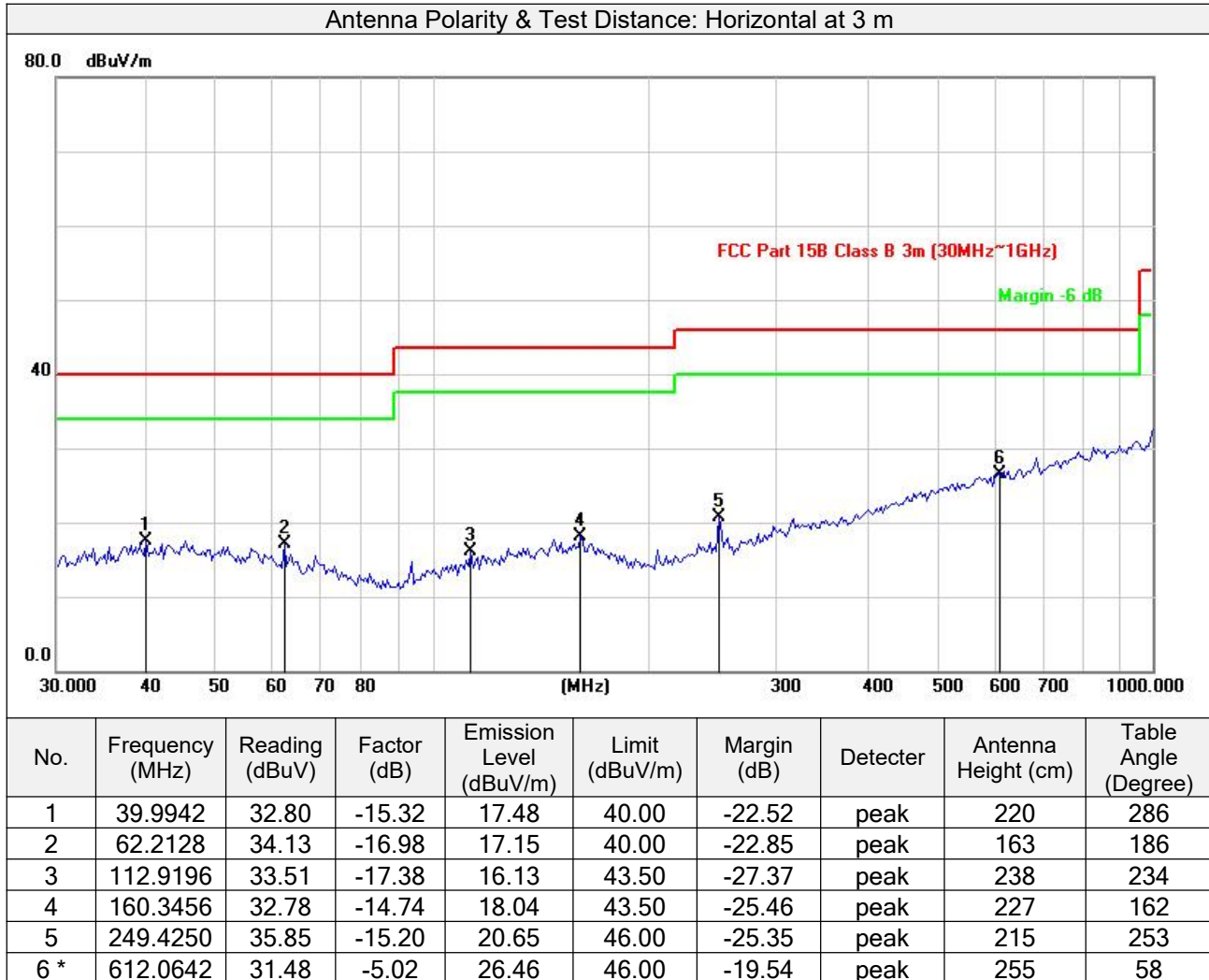


Remarks:

- 1.Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value



Frequency Range	30MHz ~ 1GHz	Detector Function	Peak (PK) Quasi-peak (QP)
Test Channel	Channel 165		



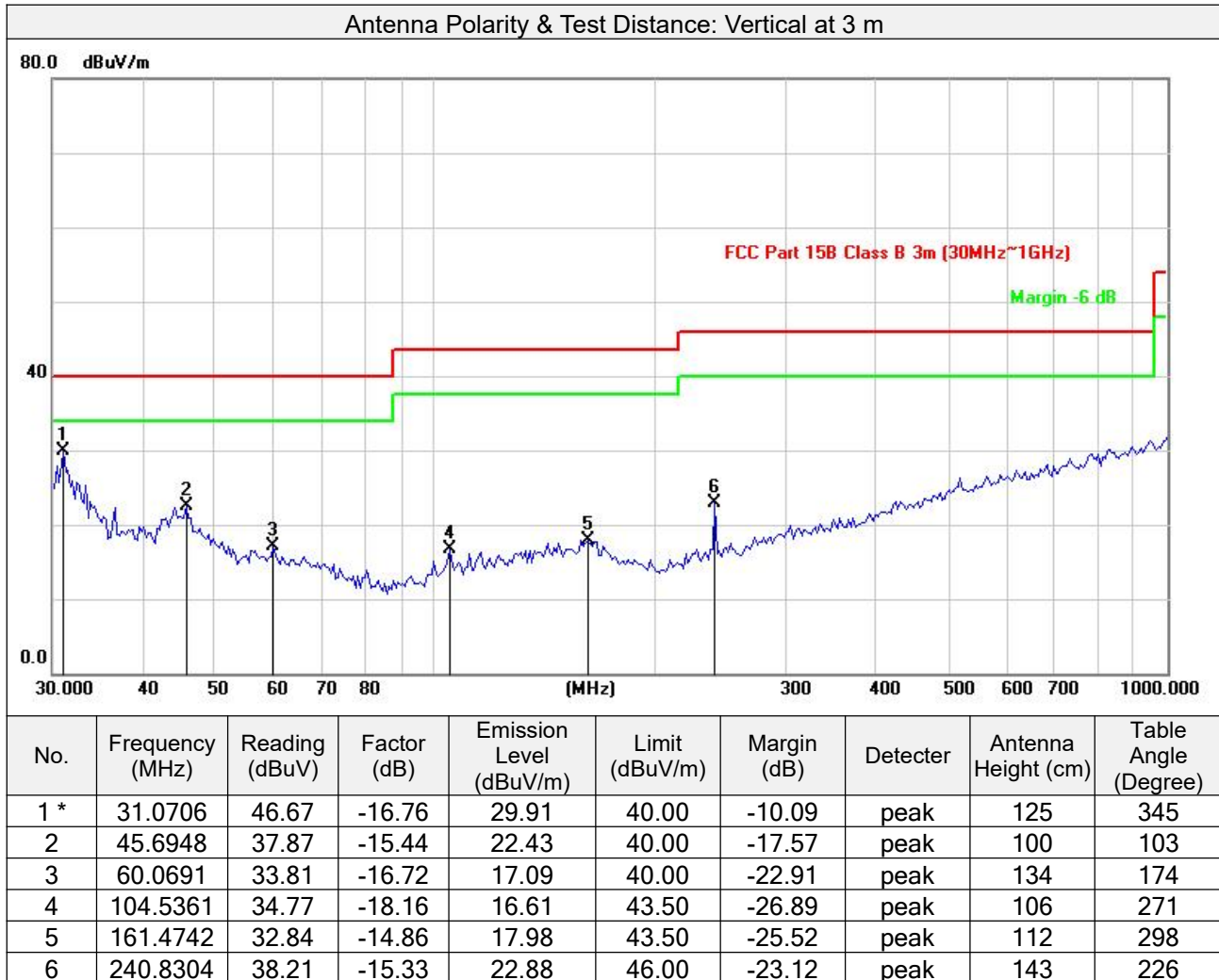
Remarks:

1.Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)

2.Margin value = Emission level – Limit value



Frequency Range	30MHz ~ 1GHz	Detector Function	Peak (PK) Quasi-peak (QP)
Test Channel	Channel 165		



Remarks:

- 1.Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value

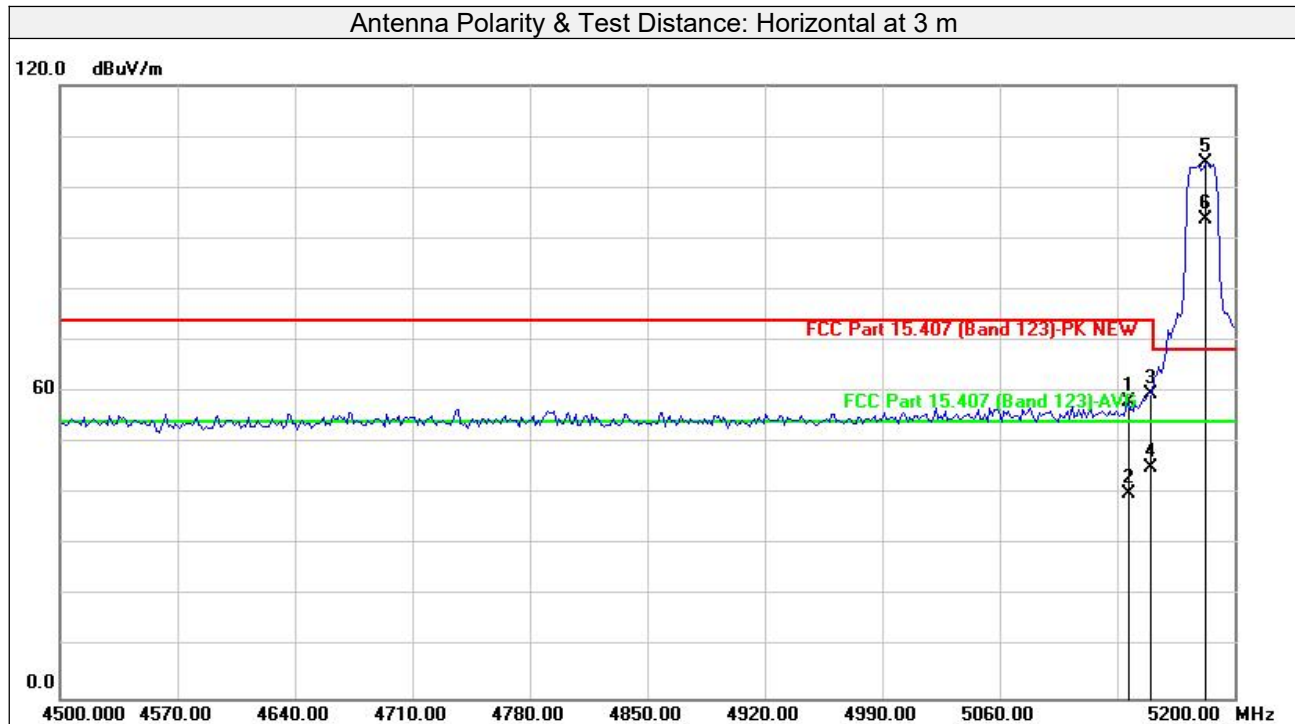


3.1.6 TEST RESULTS - Band 1 (5180-5240MHz):

Above 1GHz Data:

802.11a

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 36		



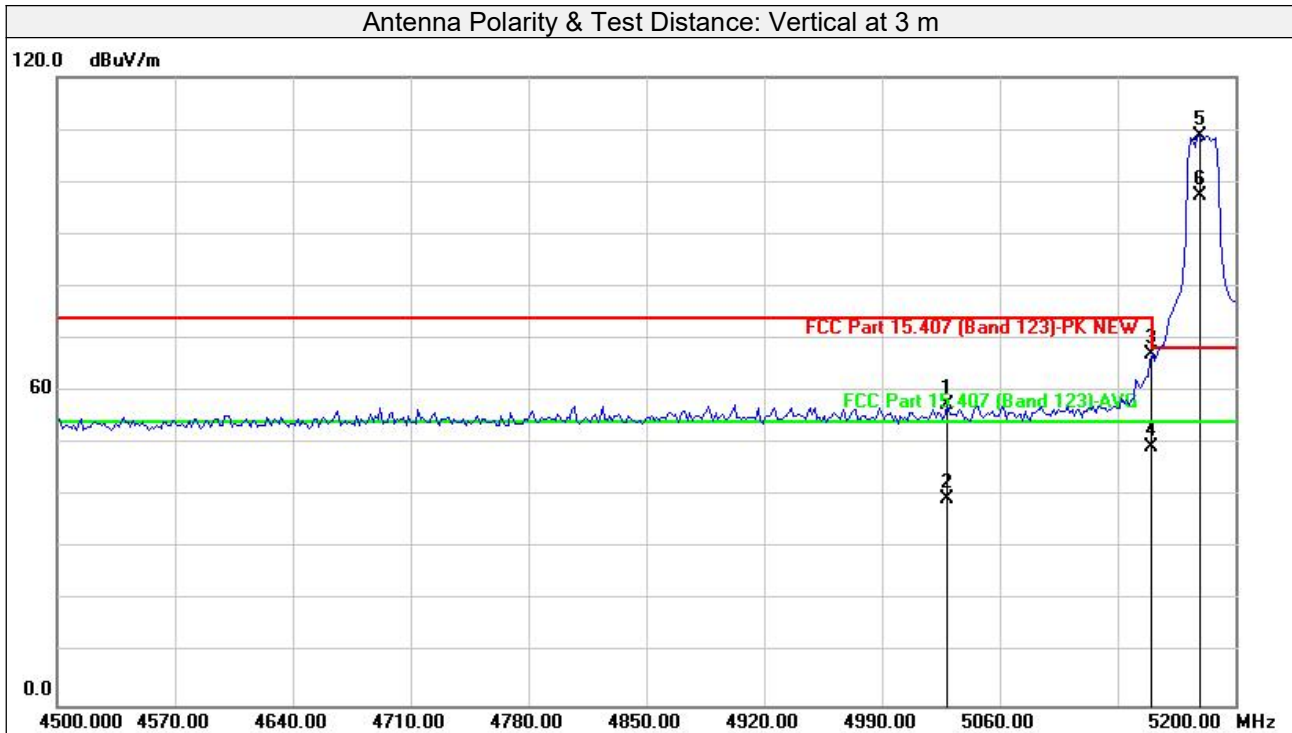
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5136.874	50.54	7.43	57.97	74.00	-16.03	peak	235	161
2	5136.874	32.76	7.43	40.19	54.00	-13.81	AVG	235	161
3	5150.000	52.02	7.46	59.48	74.00	-14.52	peak	235	161
4	5150.000	37.80	7.46	45.26	54.00	-8.74	AVG	235	161
5 #	5183.166	97.36	7.56	104.92			peak	235	161
6 #	5183.166	86.24	7.56	93.80			AVG	235	161
7	10360.000	40.01	16.60	56.61	68.30	-11.69	peak	174	305
8	10360.000	28.31	16.60	44.91	54.00	-9.09	AVG	174	305
9	15540.000	43.30	22.98	66.28	74.00	-7.72	peak	217	220
10	15540.000	27.39	22.98	50.37	54.00	-3.63	AVG	217	220

Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 36		



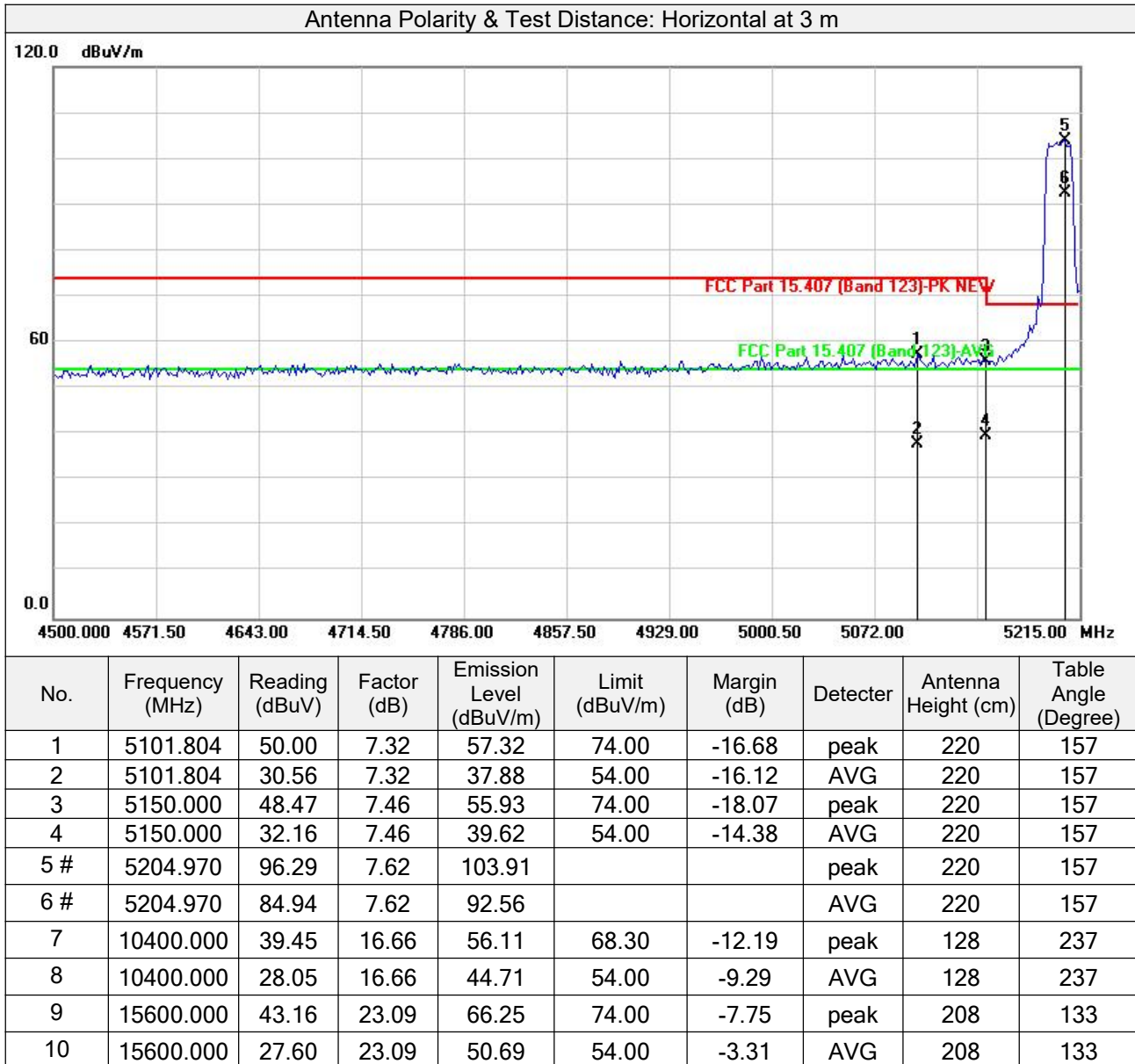
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5028.858	50.28	7.11	57.39	74.00	-16.61	peak	107	208
2	5028.858	32.46	7.11	39.57	54.00	-14.43	AVG	107	208
3	5150.000	59.47	7.46	66.93	74.00	-7.07	peak	107	208
4	5150.000	41.90	7.46	49.36	54.00	-4.64	AVG	107	208
5 #	5178.958	101.20	7.55	108.75			peak	107	208
6 #	5178.958	89.84	7.55	97.39			AVG	107	208
7	10360.000	40.47	16.60	57.07	68.30	-11.23	peak	112	238
8	10360.000	28.19	16.60	44.79	54.00	-9.21	AVG	112	238
9	15540.000	44.06	22.98	67.04	74.00	-6.96	peak	107	239
10	15540.000	27.31	22.98	50.29	54.00	-3.71	AVG	107	239

Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 40		

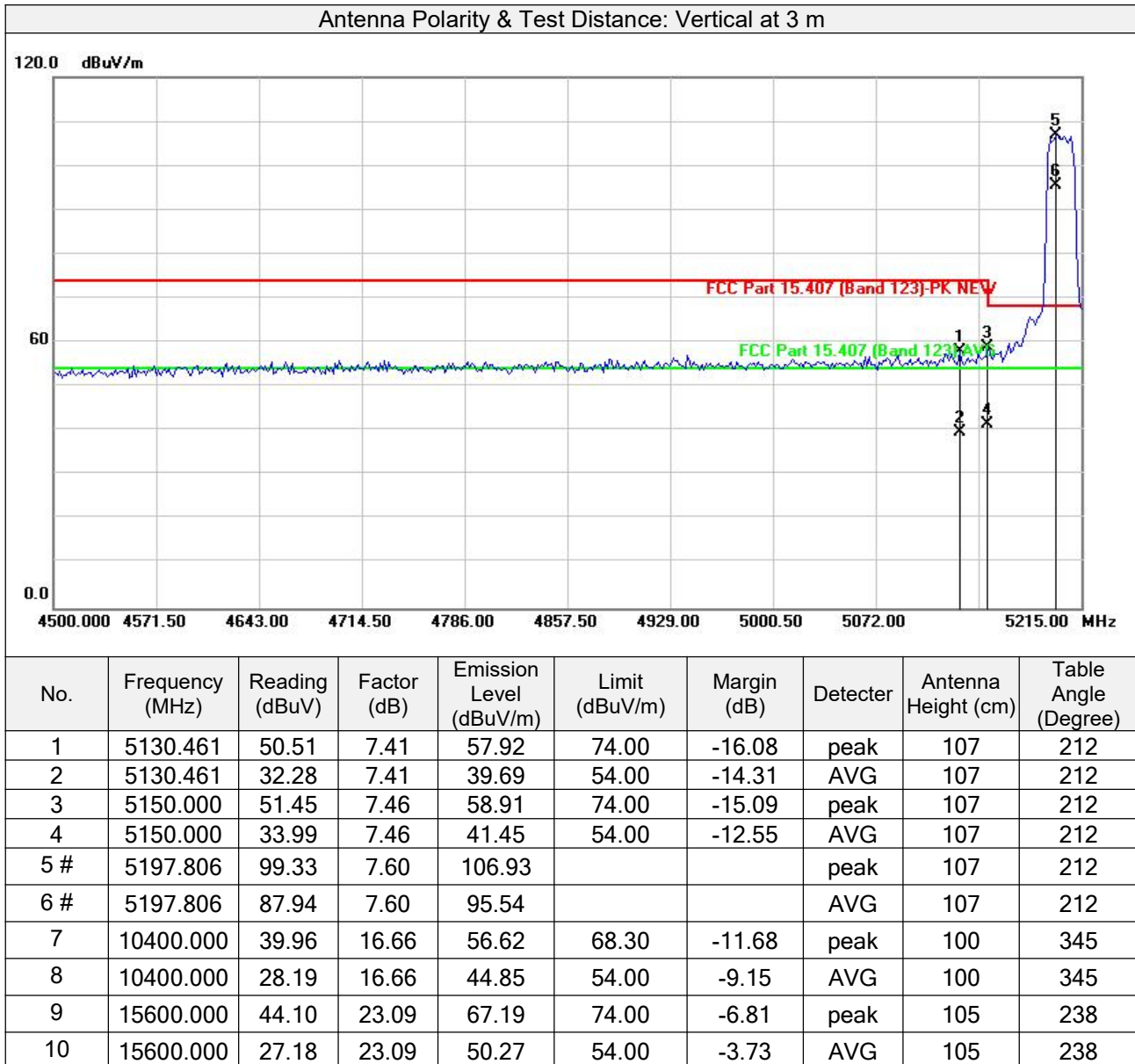


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 40		

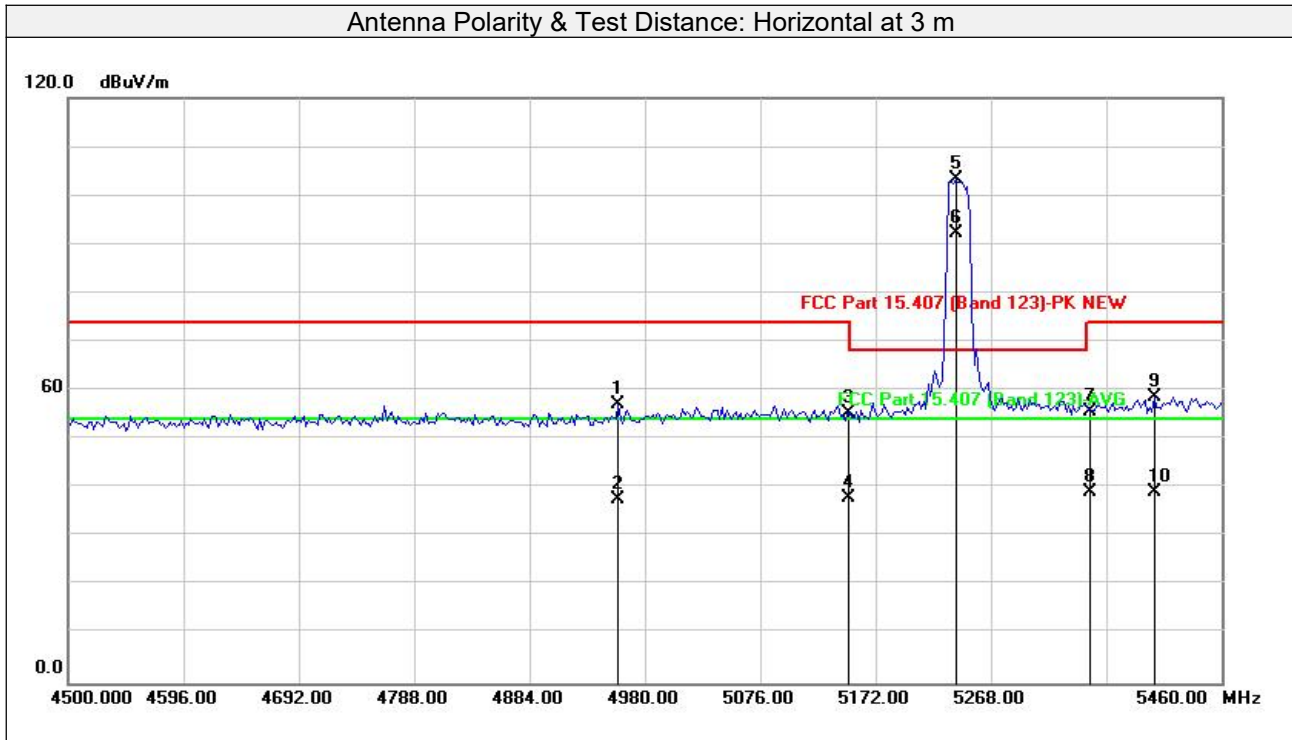


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 48		



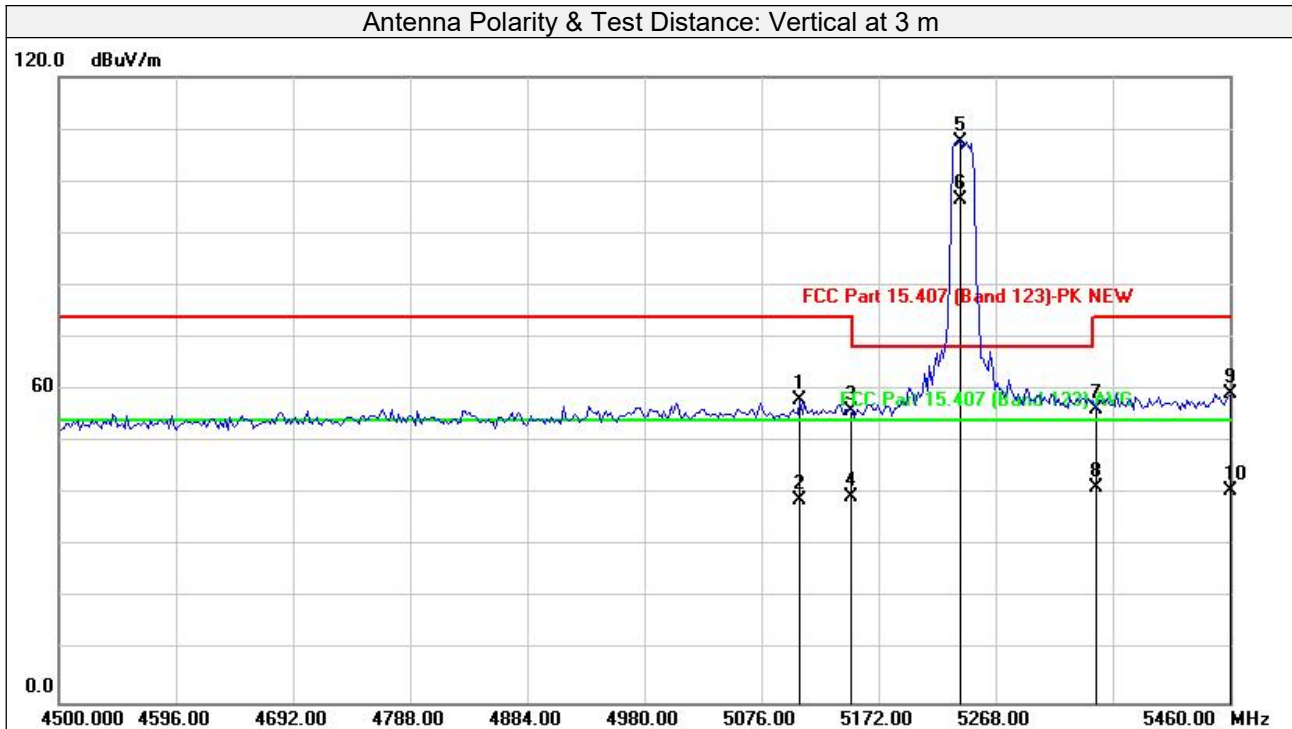
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	4957.876	50.09	6.93	57.02	74.00	-16.98	peak	218	146
2	4957.876	30.78	6.93	37.71	54.00	-16.29	AVG	218	146
3	5150.000	47.87	7.46	55.33	74.00	-18.67	peak	218	146
4	5150.000	30.55	7.46	38.01	54.00	-15.99	AVG	218	146
5 #	5238.757	95.65	7.71	103.36			peak	218	146
6 #	5238.757	84.40	7.71	92.11			AVG	218	146
7	5350.000	47.71	8.05	55.76	74.00	-18.24	peak	218	146
8	5350.000	31.19	8.05	39.24	54.00	-14.76	AVG	218	146
9	5404.208	50.39	8.20	58.59	74.00	-15.41	peak	218	146
10	5404.208	30.89	8.20	39.09	54.00	-14.91	AVG	218	146
11	10480.000	40.84	16.80	57.64	68.30	-10.66	peak	169	238
12	10480.000	28.59	16.80	45.39	54.00	-8.61	AVG	169	238
13	15720.000	42.67	23.33	66.00	74.00	-8.00	peak	235	187
14 *	15720.000	26.96	23.33	50.29	54.00	-3.71	AVG	235	187

Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 48		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5107.936	50.57	7.34	57.91	74.00	-16.09	peak	100	220
2	5107.936	31.66	7.34	39.00	54.00	-15.00	AVG	100	220
3	5150.000	48.62	7.46	56.08	74.00	-17.92	peak	100	220
4	5150.000	32.12	7.46	39.58	54.00	-14.42	AVG	100	220
5 #	5238.757	99.99	7.71	107.70			peak	100	220
6 #	5238.757	88.77	7.71	96.48			AVG	100	220
7	5350.000	48.13	8.05	56.18	74.00	-17.82	peak	100	220
8	5350.000	33.35	8.05	41.40	54.00	-12.60	AVG	100	220
9	5460.000	50.93	8.36	59.29	74.00	-14.71	peak	100	220
10	5460.000	32.24	8.36	40.60	54.00	-13.40	AVG	100	220
11	10480.000	41.34	16.80	58.14	68.30	-10.16	peak	100	27
12	10480.000	28.72	16.80	45.52	54.00	-8.48	AVG	100	27
13	15720.000	43.66	23.33	66.99	74.00	-7.01	peak	100	267
14 *	15720.000	26.93	23.33	50.26	54.00	-3.74	AVG	100	267

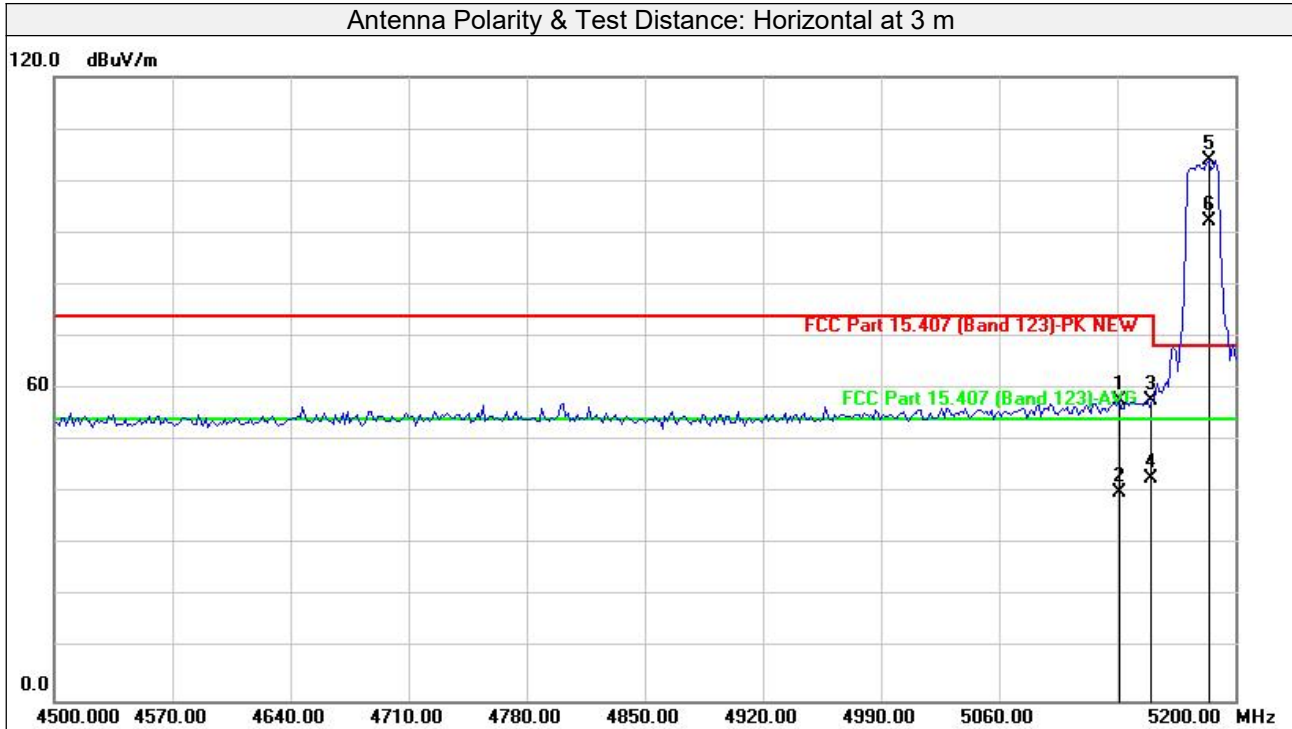
Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



802.11n20

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 36		



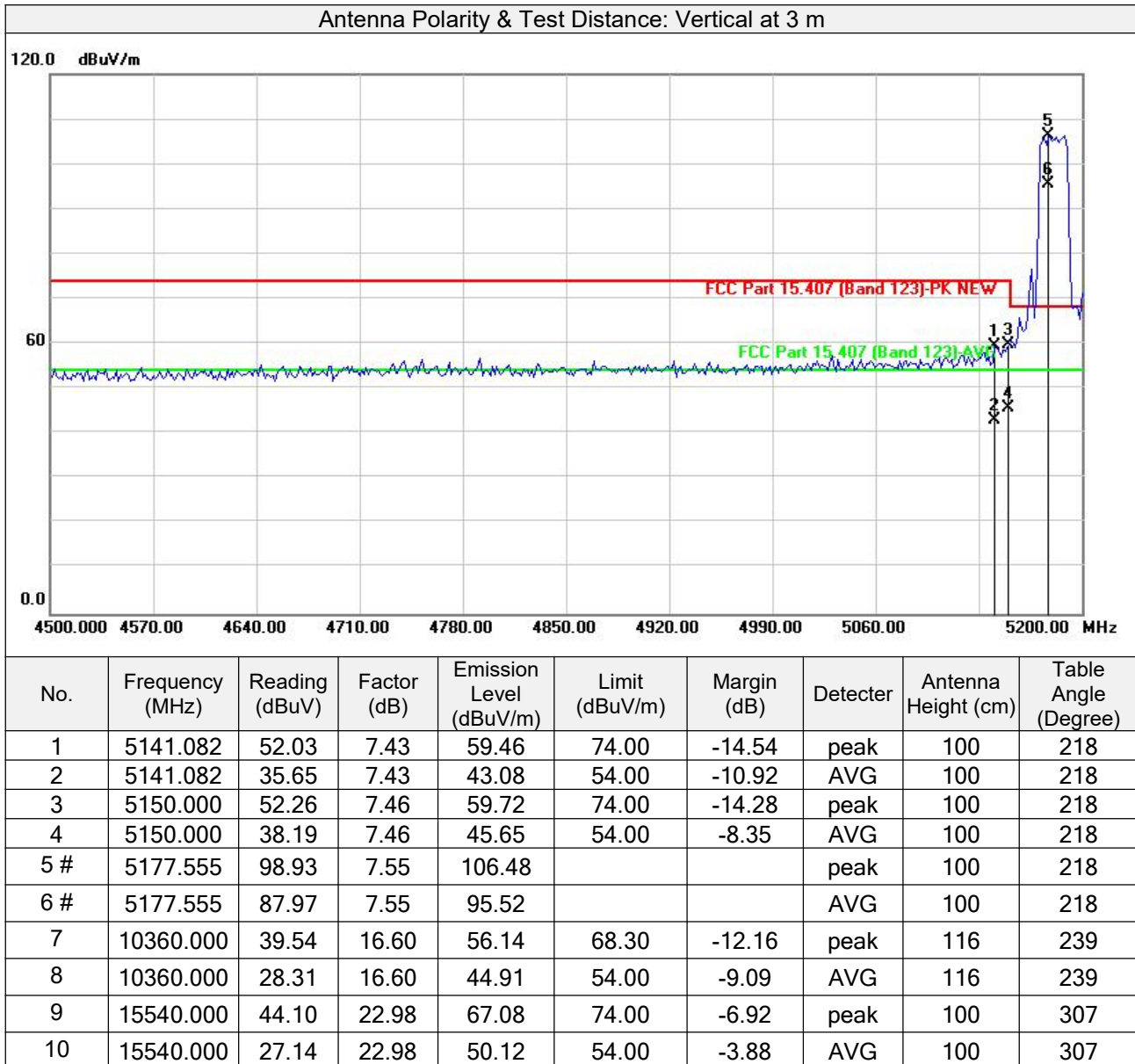
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5131.262	50.22	7.41	57.63	74.00	-16.37	peak	235	158
2	5131.262	32.76	7.41	40.17	54.00	-13.83	AVG	235	158
3	5150.000	50.22	7.46	57.68	74.00	-16.32	peak	235	158
4	5150.000	35.15	7.46	42.61	54.00	-11.39	AVG	235	158
5 #	5184.569	96.31	7.57	103.88			peak	235	158
6 #	5184.569	84.63	7.57	92.20			AVG	235	158
7	10360.000	40.52	16.60	57.12	68.30	-11.18	peak	236	185
8	10360.000	28.26	16.60	44.86	54.00	-9.14	AVG	236	185
9	15540.000	45.82	22.98	68.80	74.00	-5.20	peak	127	194
10	15540.000	27.39	22.98	50.37	54.00	-3.63	AVG	127	194

Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 36		

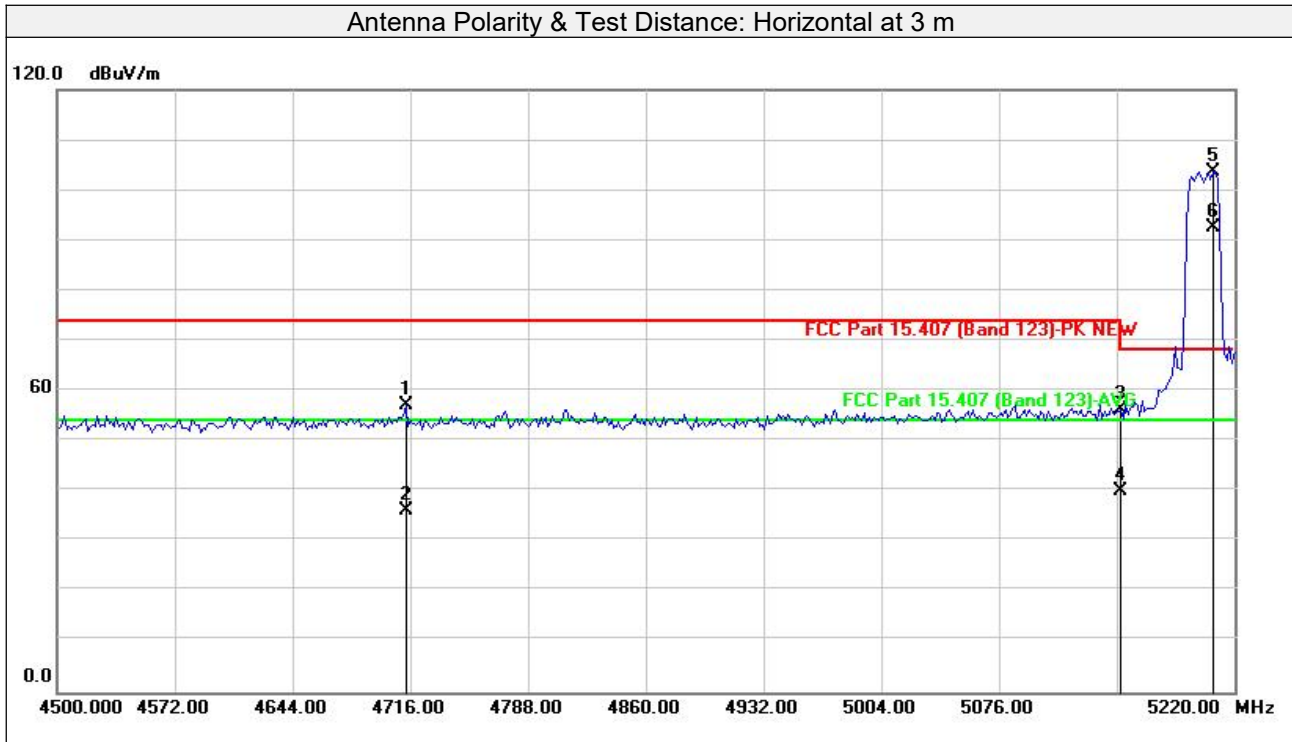


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 40		



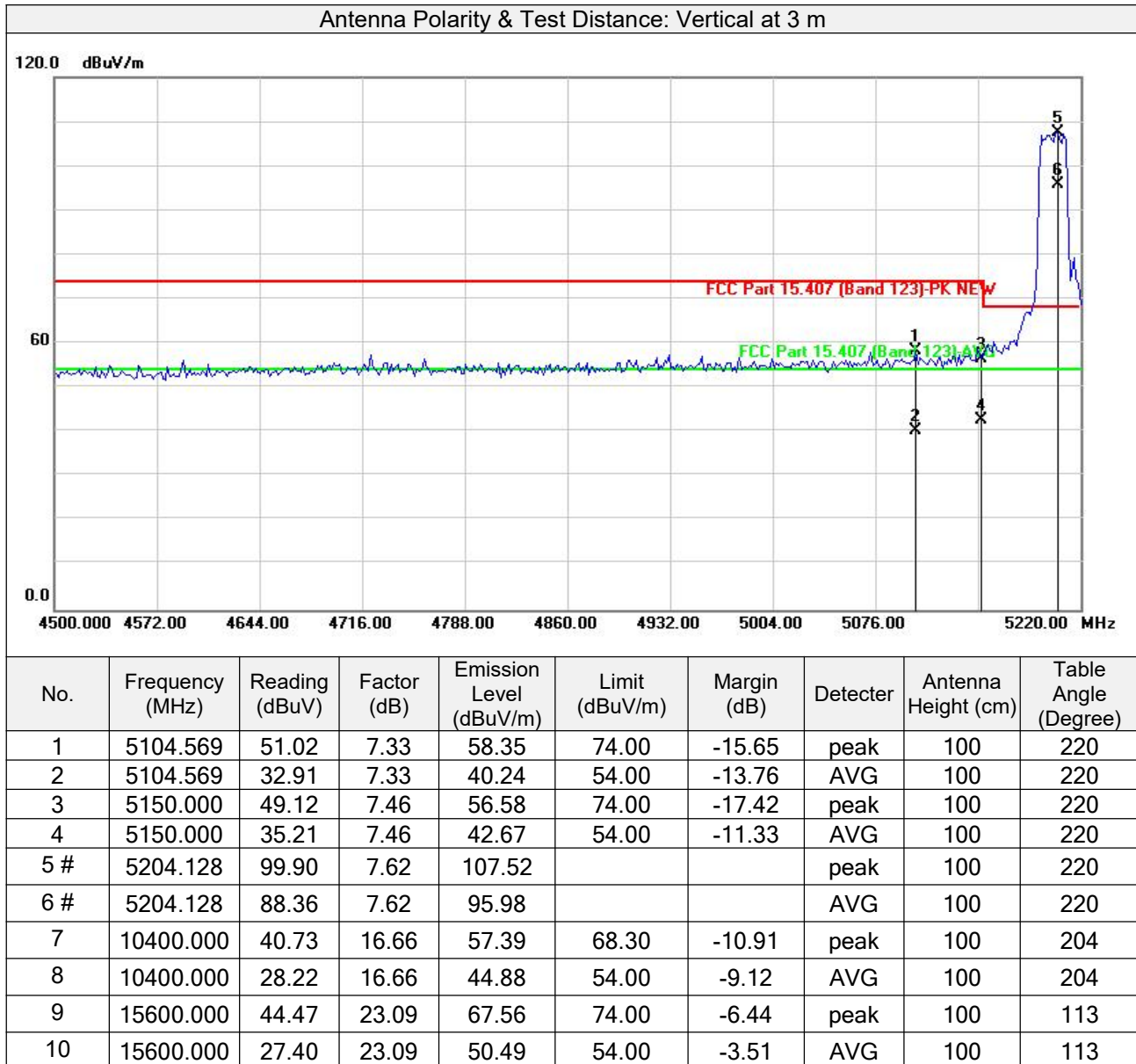
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	4713.547	50.76	6.41	57.17	74.00	-16.83	peak	234	159
2	4713.547	29.62	6.41	36.03	54.00	-17.97	AVG	234	159
3	5150.000	48.89	7.46	56.35	74.00	-17.65	peak	234	159
4	5150.000	32.45	7.46	39.91	54.00	-14.09	AVG	234	159
5 #	5207.014	96.04	7.63	103.67			peak	234	159
6 #	5207.014	85.06	7.63	92.69			AVG	234	159
7	10400.000	39.65	16.66	56.31	68.30	-11.99	peak	172	65
8	10400.000	28.22	16.66	44.88	54.00	-9.12	AVG	172	65
9	15600.000	44.41	23.09	67.50	74.00	-6.50	peak	210	87
10	15600.000	27.24	23.09	50.33	54.00	-3.67	AVG	210	87

Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 40		

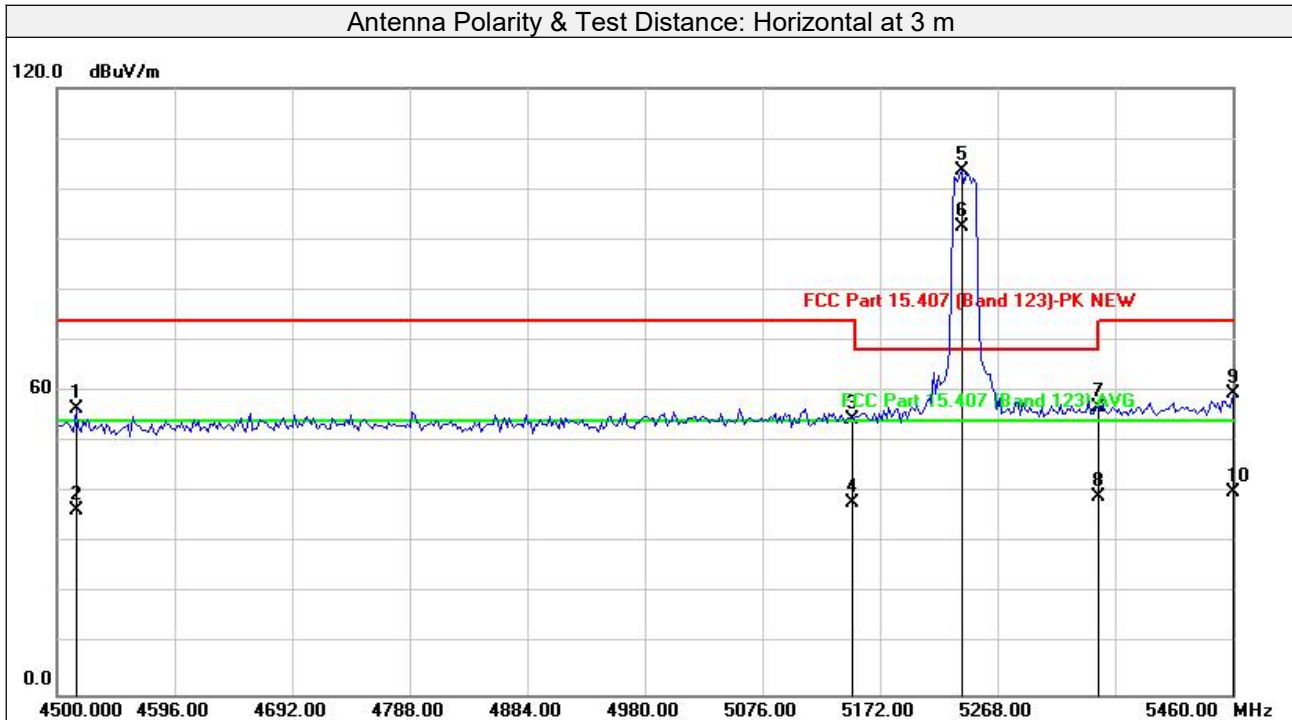


Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 48		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	4515.391	50.67	5.98	56.65	74.00	-17.35	peak	242	160
2	4515.391	30.35	5.98	36.33	54.00	-17.67	AVG	242	160
3	5150.000	46.98	7.46	54.44	74.00	-19.56	peak	242	160
4	5150.000	30.35	7.46	37.81	54.00	-16.19	AVG	242	160
5 #	5238.757	95.92	7.71	103.63			peak	242	160
6 #	5238.757	84.71	7.71	92.42			AVG	242	160
7	5350.000	48.70	8.05	56.75	74.00	-17.25	peak	242	160
8	5350.000	31.03	8.05	39.08	54.00	-14.92	AVG	242	160
9	5460.000	51.27	8.36	59.63	74.00	-14.37	peak	242	160
10	5460.000	31.82	8.36	40.18	54.00	-13.82	AVG	242	160
11	10480.000	40.68	16.80	57.48	68.30	-10.82	peak	167	265
12	10480.000	28.69	16.80	45.49	54.00	-8.51	AVG	167	265
13	15720.000	44.06	23.33	67.39	74.00	-6.61	peak	220	306
14 *	15720.000	26.94	23.33	50.27	54.00	-3.73	AVG	220	306

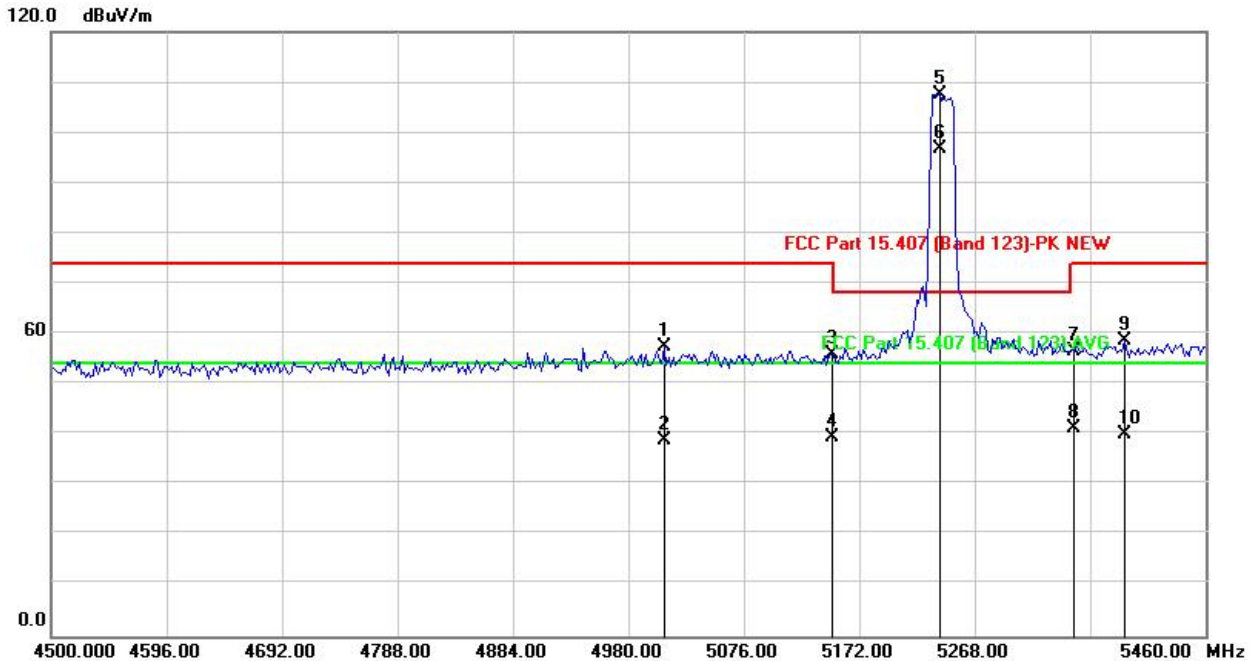
Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 48		

Antenna Polarity & Test Distance: Vertical at 3 m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5009.820	50.34	7.06	57.40	74.00	-16.60	peak	126	219
2	5009.820	31.74	7.06	38.80	54.00	-15.20	AVG	126	219
3	5150.000	48.56	7.46	56.02	74.00	-17.98	peak	126	219
4	5150.000	31.94	7.46	39.40	54.00	-14.60	AVG	126	219
5 #	5238.757	99.99	7.71	107.70			peak	126	219
6 #	5238.757	88.97	7.71	96.68			AVG	126	219
7	5350.000	48.63	8.05	56.68	74.00	-17.32	peak	126	219
8	5350.000	33.33	8.05	41.38	54.00	-12.62	AVG	126	219
9	5392.665	50.60	8.16	58.76	74.00	-15.24	peak	126	219
10	5392.665	31.77	8.16	39.93	54.00	-14.07	AVG	126	219
11	10480.000	41.49	16.80	58.29	68.30	-10.01	peak	100	116
12	10480.000	28.68	16.80	45.48	54.00	-8.52	AVG	103	208
13	15720.000	44.22	23.33	67.55	74.00	-6.45	peak	125	91
14 *	15720.000	26.94	23.33	50.27	54.00	-3.73	AVG	125	91

Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



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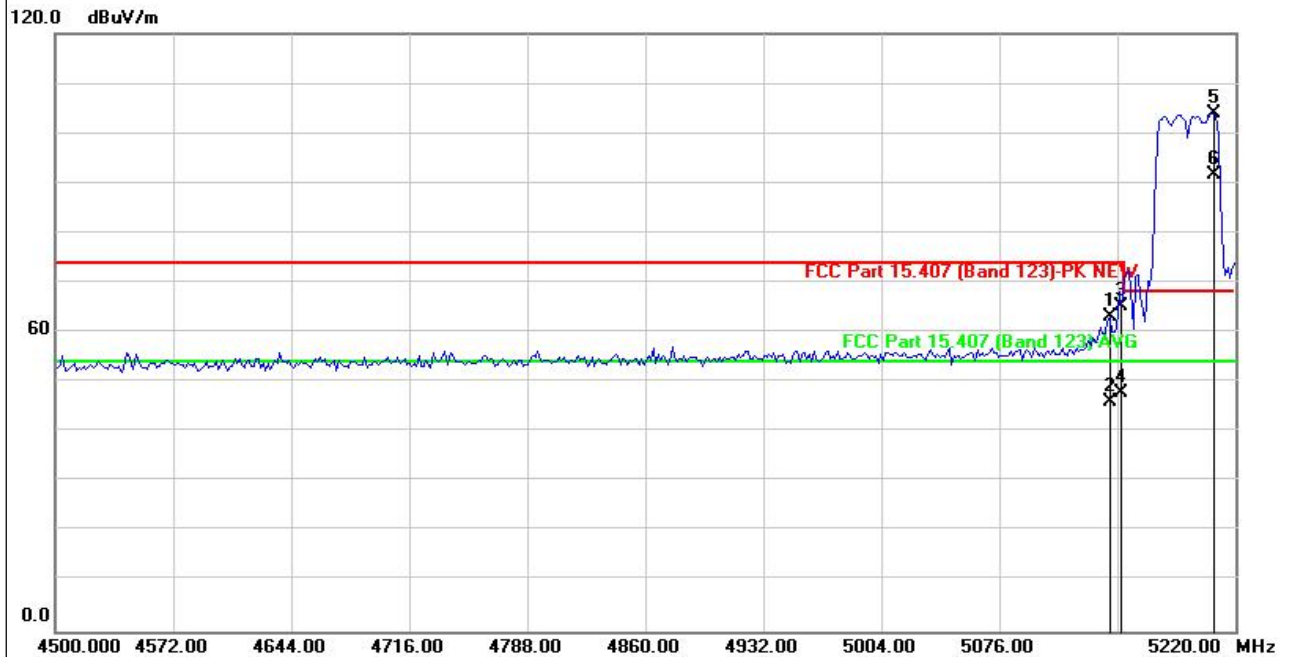
Test Report No.: FCC2023-0049-RF3

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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 38		

Antenna Polarity & Test Distance: Horizontal at 3 m



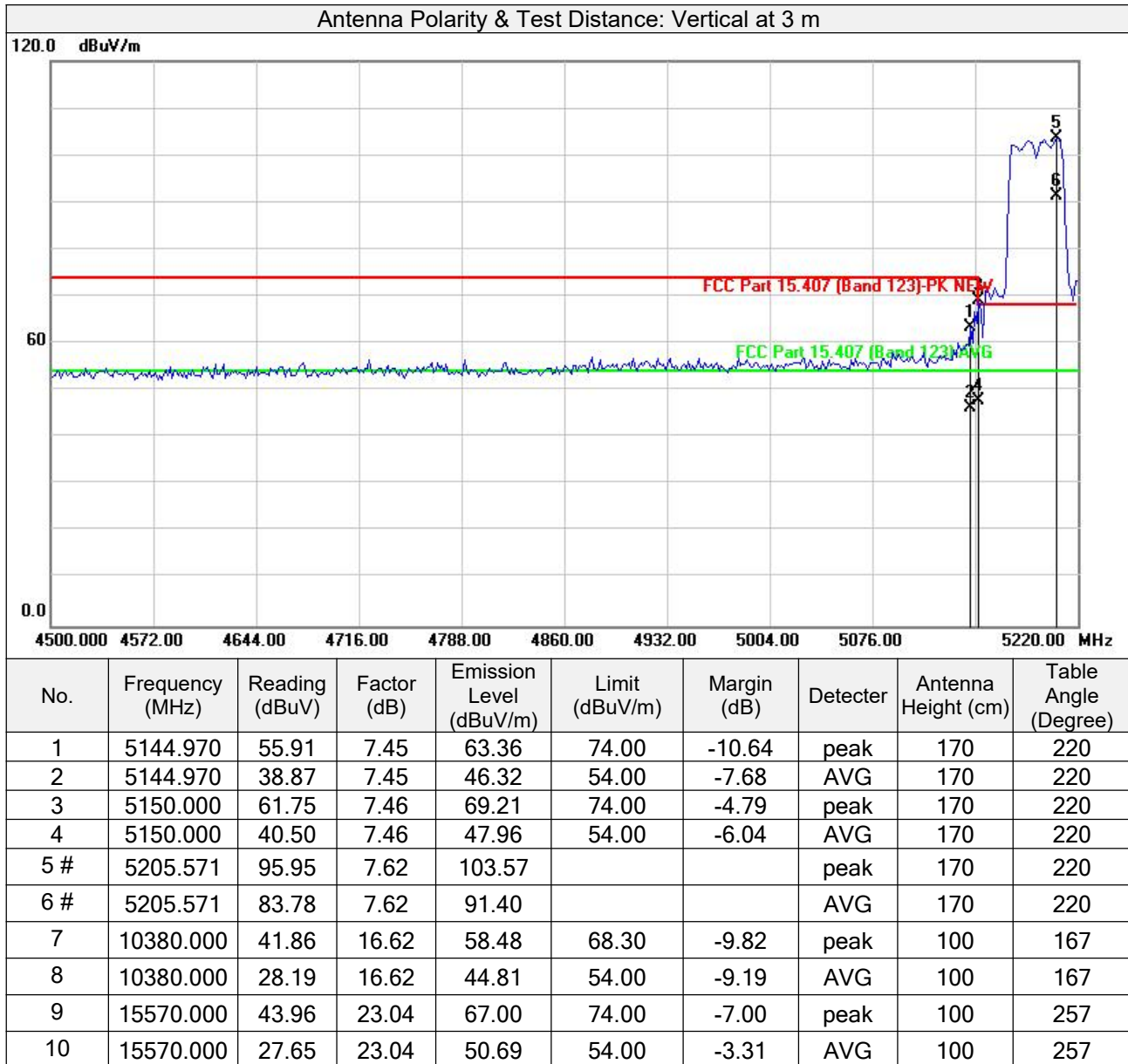
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5143.527	55.70	7.44	63.14	74.00	-10.86	peak	152	205
2	5143.527	38.60	7.44	46.04	54.00	-7.96	AVG	152	205
3	5150.000	57.86	7.46	65.32	74.00	-8.68	peak	152	205
4	5150.000	40.41	7.46	47.87	54.00	-6.13	AVG	152	205
5 #	5207.014	96.43	7.63	104.06			peak	152	205
6 #	5207.014	84.07	7.63	91.70			AVG	152	205
7	10380.000	40.39	16.62	57.01	68.30	-11.29	peak	106	208
8	10380.000	28.27	16.62	44.89	54.00	-9.11	AVG	106	208
9	15570.000	44.41	23.04	67.45	74.00	-6.55	peak	209	108
10	15570.000	27.23	23.04	50.27	54.00	-3.73	AVG	209	108

Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 38		

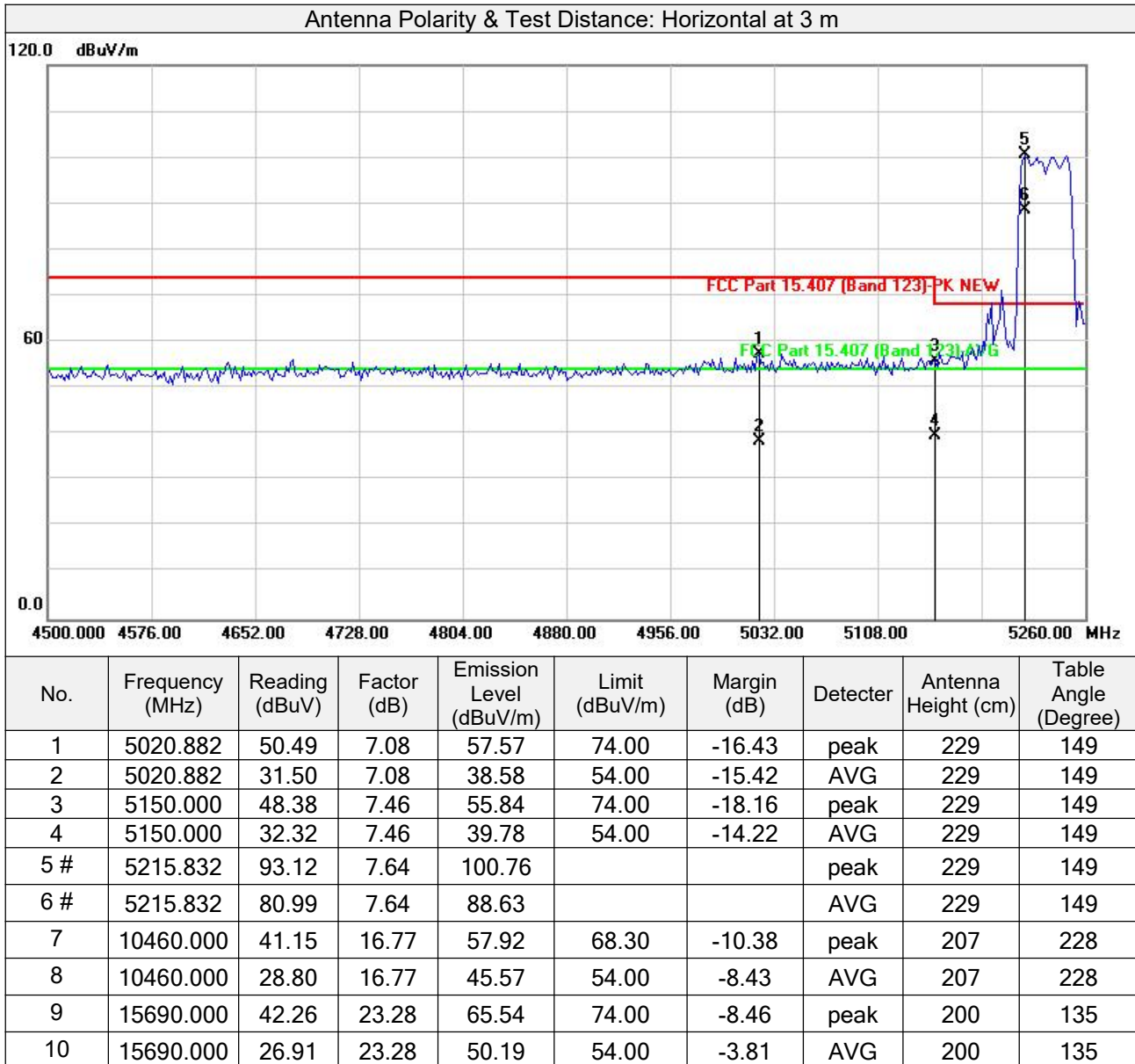


Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 46		

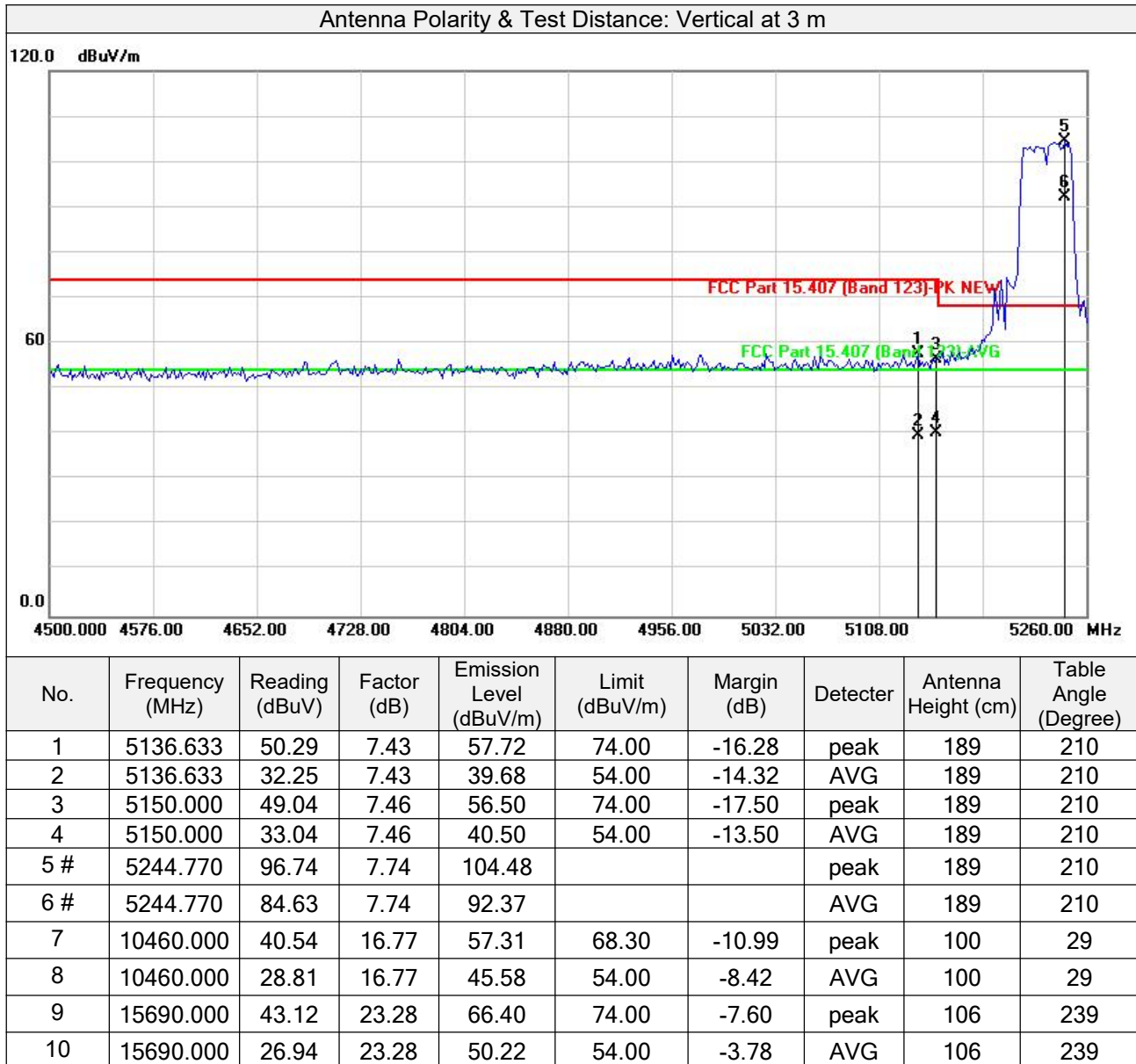


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 46		



Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



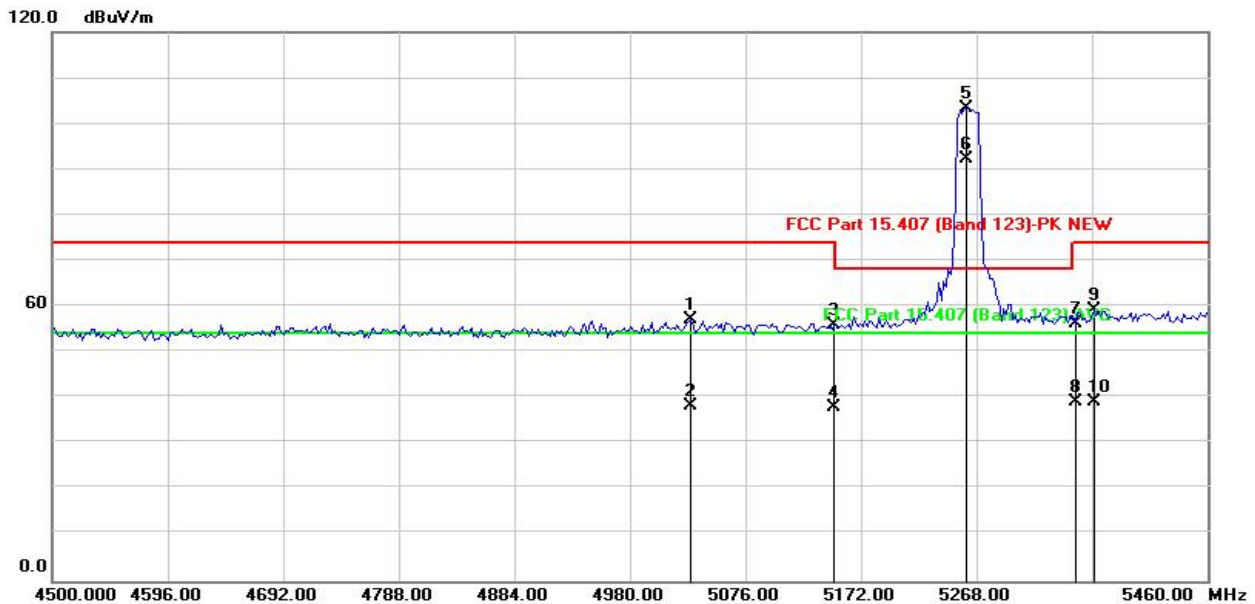
3.1.7 TEST RESULTS - Band 2 (5260-5320MHz):

ABOVE 1GHz DATA

802.11a

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 52		

Antenna Polarity & Test Distance: Horizontal at 3 m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5030.982	49.94	7.12	57.06	74.00	-16.94	peak	232	158
2	5030.982	31.18	7.12	38.30	54.00	-15.70	AVG	232	158
3	5150.000	48.64	7.46	56.10	74.00	-17.90	peak	232	158
4	5150.000	30.52	7.46	37.98	54.00	-16.02	AVG	232	158
5 #	5259.920	95.54	7.79	103.33			peak	232	158
6 #	5259.920	84.52	7.79	92.31			AVG	232	158
7	5350.000	48.10	8.05	56.15	74.00	-17.85	peak	232	158
8	5350.000	31.12	8.05	39.17	54.00	-14.83	AVG	232	158
9	5365.731	51.05	8.09	59.14	74.00	-14.86	peak	232	158
10	5365.731	31.16	8.09	39.25	54.00	-14.75	AVG	232	158
11	10520.000	41.28	16.89	58.17	68.30	-10.13	peak	185	230
12	10520.000	29.26	16.89	46.15	54.00	-7.85	AVG	185	230
13	15780.000	45.31	23.45	68.76	74.00	-5.24	peak	200	29
14 *	15780.000	27.24	23.45	50.69	54.00	-3.31	AVG	200	29

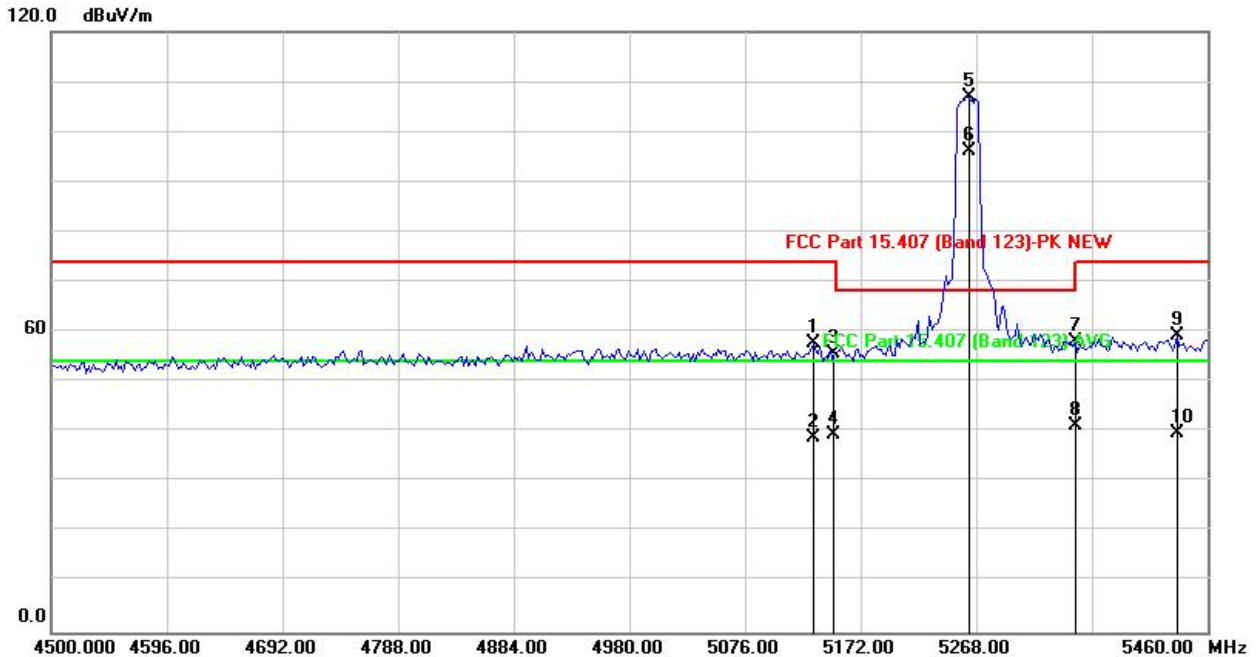
Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 52		

Antenna Polarity & Test Distance: Vertical at 3 m



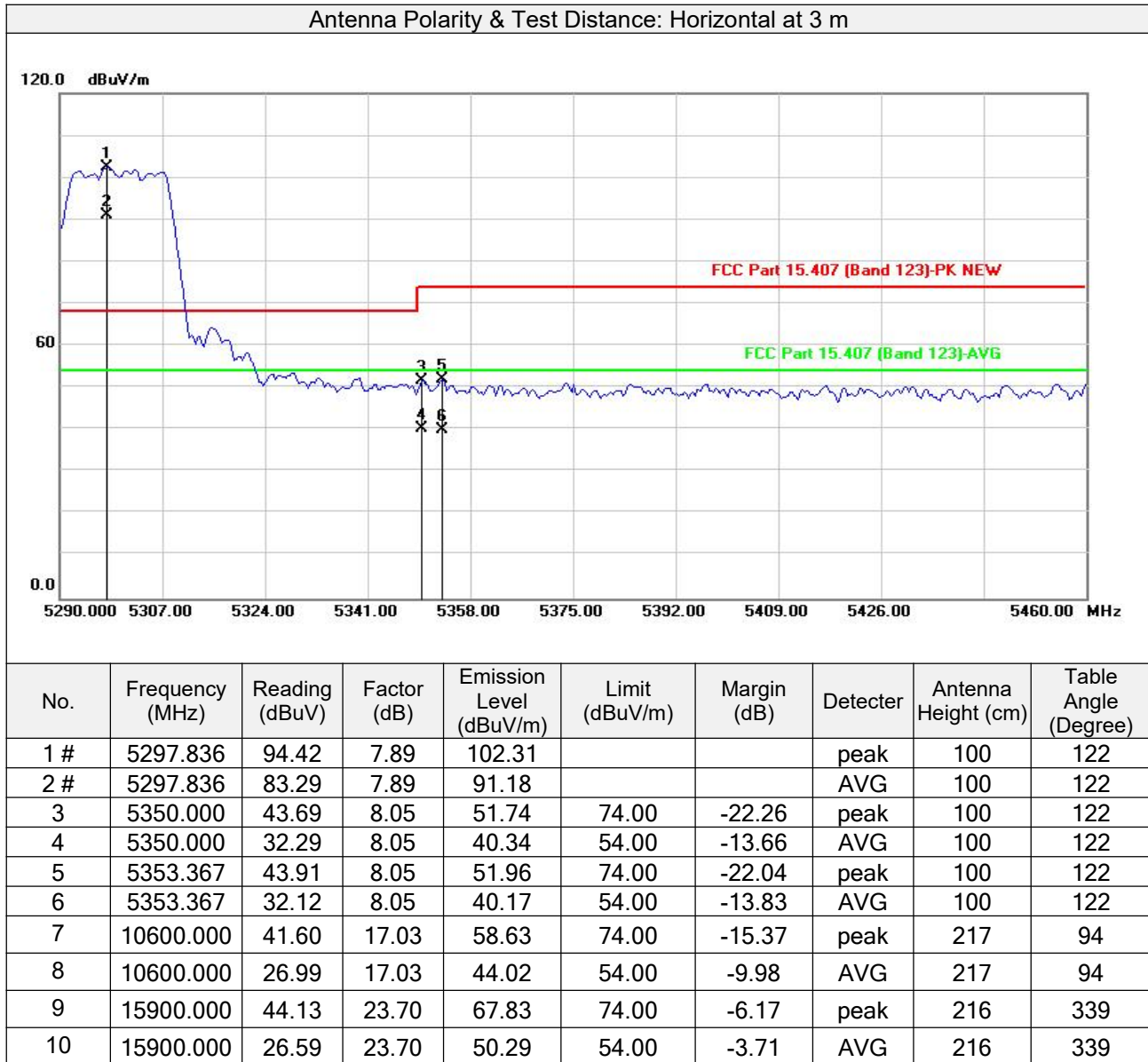
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5132.946	50.36	7.41	57.77	74.00	-16.23	peak	100	211
2	5132.946	31.48	7.41	38.89	54.00	-15.11	AVG	100	211
3	5150.000	48.06	7.46	55.52	74.00	-18.48	peak	100	211
4	5150.000	32.12	7.46	39.58	54.00	-14.42	AVG	100	211
5 #	5261.844	99.32	7.78	107.10			peak	100	211
6 #	5261.844	88.39	7.78	96.17			AVG	100	211
7	5350.000	50.09	8.05	58.14	74.00	-15.86	peak	100	211
8	5350.000	33.15	8.05	41.20	54.00	-12.80	AVG	100	211
9	5434.990	50.97	8.29	59.26	74.00	-14.74	peak	100	211
10	5434.990	31.44	8.29	39.73	54.00	-14.27	AVG	100	211
11	10520.000	41.18	16.89	58.07	68.30	-10.23	peak	134	267
12	10520.000	29.28	16.89	46.17	54.00	-7.83	AVG	134	267
13	15780.000	43.93	23.45	67.38	74.00	-6.62	peak	114	206
14 *	15780.000	26.93	23.45	50.38	54.00	-3.62	AVG	114	206

Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 60		



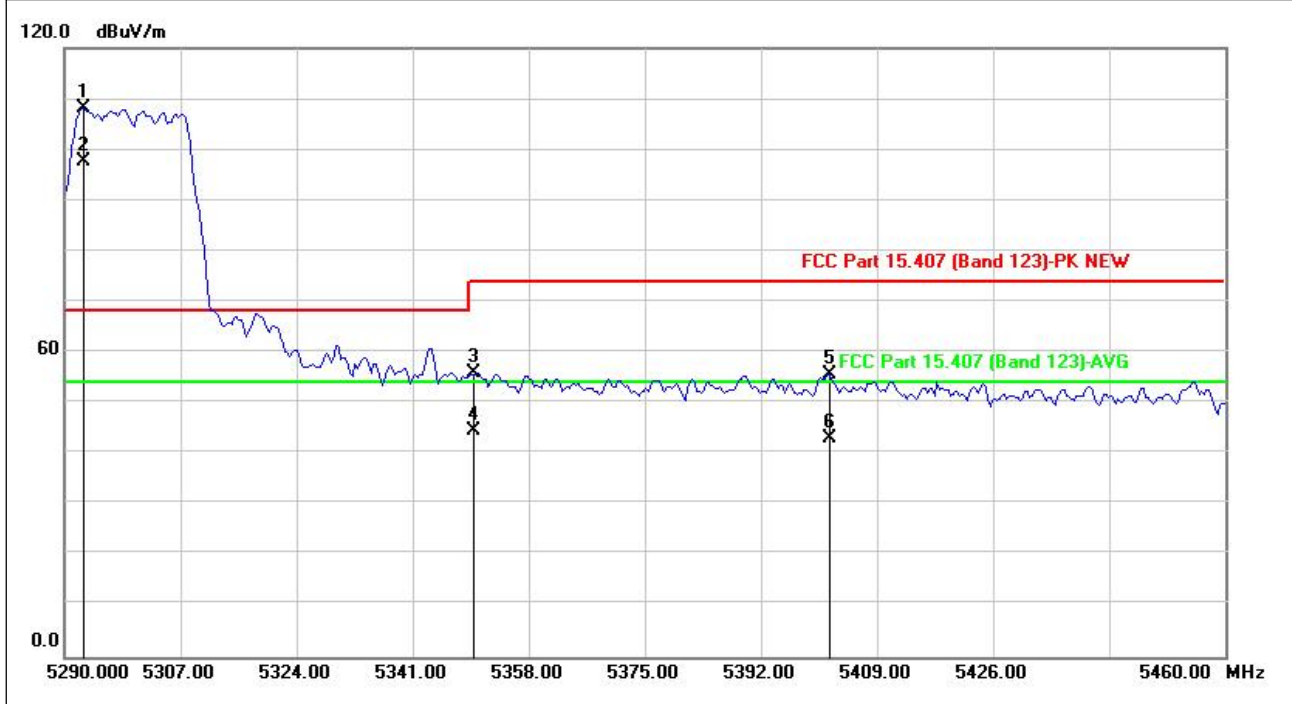
Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 60		

Antenna Polarity & Test Distance: Vertical at 3 m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1 #	5292.725	100.19	7.87	108.06			peak	218	220
2 #	5292.725	89.89	7.87	97.76			AVG	218	220
3	5350.000	47.78	8.05	55.83	74.00	-18.17	peak	218	220
4	5350.000	36.37	8.05	44.42	54.00	-9.58	AVG	218	220
5	5402.084	47.44	8.19	55.63	74.00	-18.37	peak	218	220
6	5402.084	34.75	8.19	42.94	54.00	-11.06	AVG	218	220
7	10600.000	41.69	17.03	58.72	74.00	-15.28	peak	116	237
8	10600.000	29.37	17.03	46.40	54.00	-7.60	AVG	116	237
9	15900.000	43.91	23.70	67.61	74.00	-6.39	peak	137	204
10	15900.000	26.99	23.70	50.69	54.00	-3.31	AVG	137	204

Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

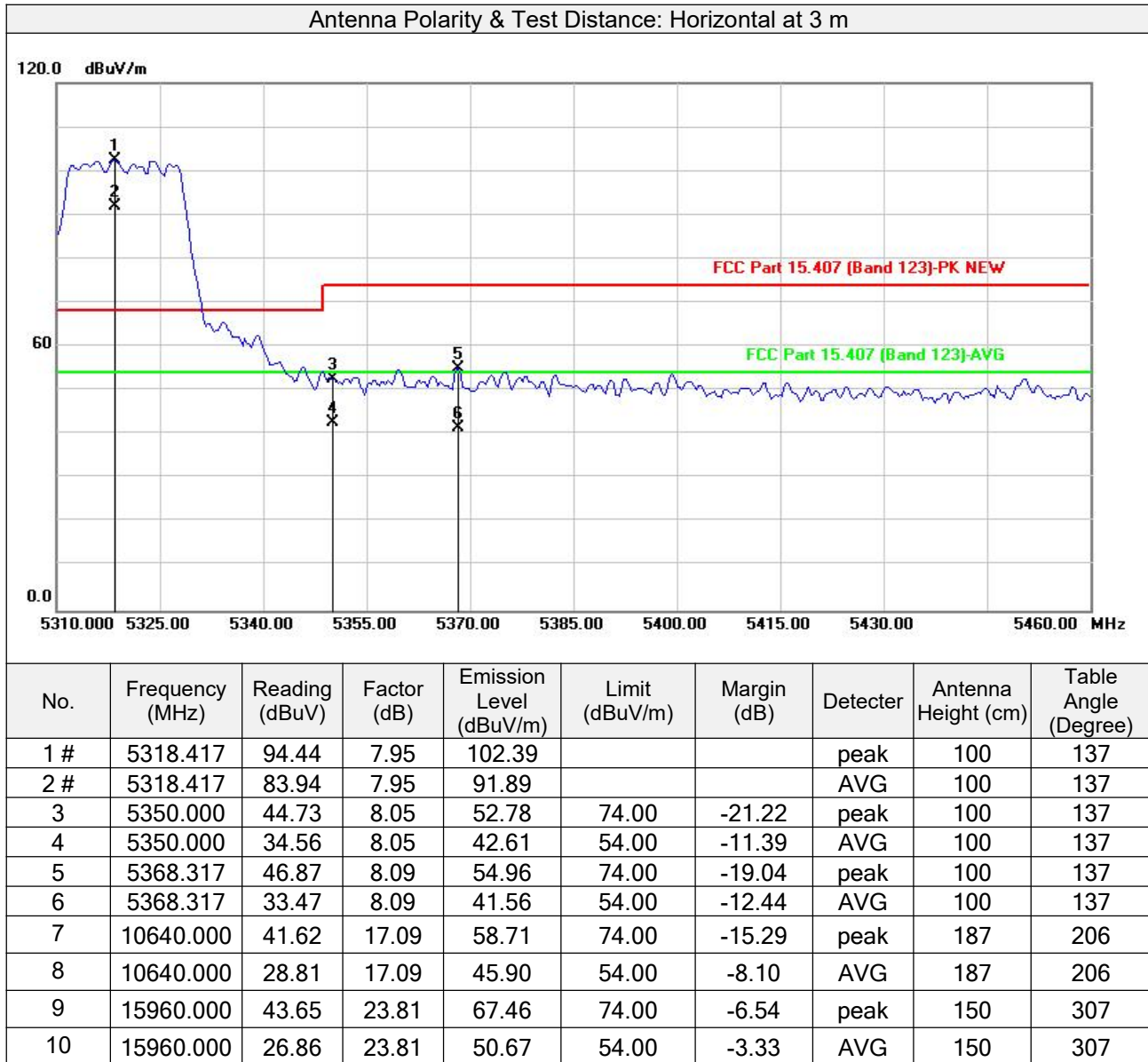


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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 64		



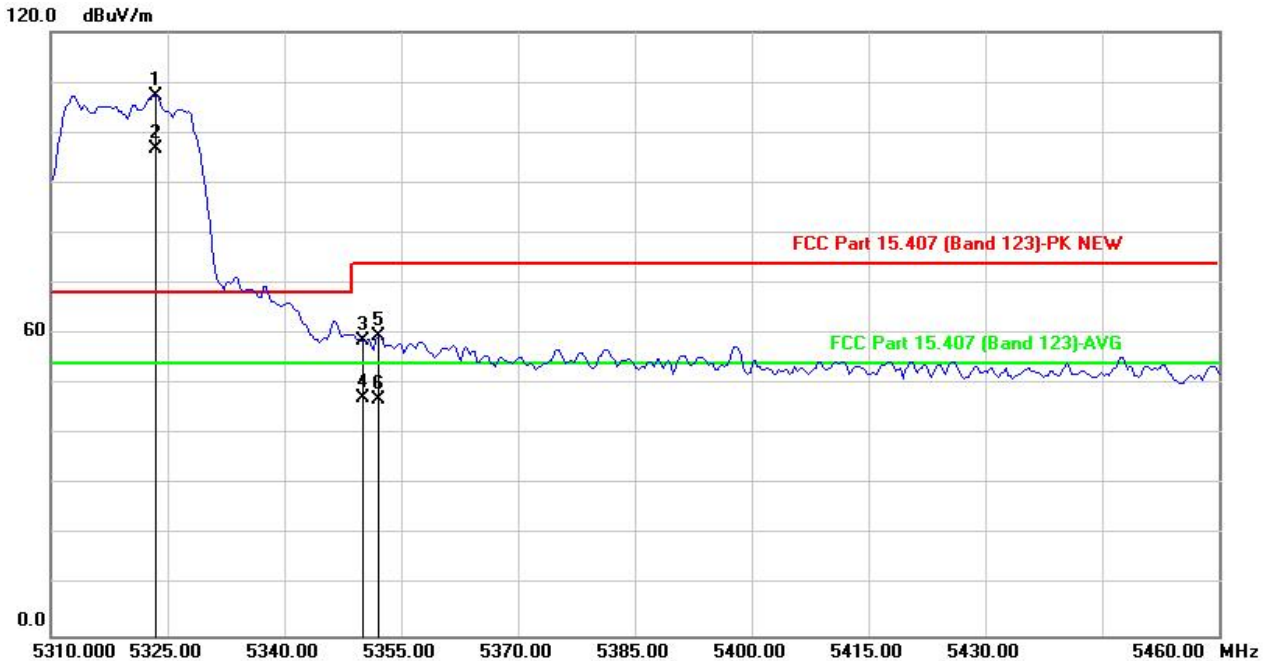
Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 64		

Antenna Polarity & Test Distance: Vertical at 3 m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1 #	5323.527	99.40	7.96	107.36			peak	215	226
2 #	5323.527	88.87	7.96	96.83			AVG	215	226
3	5350.000	50.59	8.05	58.64	74.00	-15.36	peak	215	226
4	5350.000	39.08	8.05	47.13	54.00	-6.87	AVG	215	226
5	5352.084	51.63	8.06	59.69	74.00	-14.31	peak	215	226
6	5352.084	38.90	8.06	46.96	54.00	-7.04	AVG	215	226
7	10640.000	41.24	17.09	58.33	74.00	-15.67	peak	100	67
8	10640.000	28.98	17.09	46.07	54.00	-7.93	AVG	100	67
9	15960.000	43.03	23.81	66.84	74.00	-7.16	peak	100	287
10	15960.000	26.35	23.81	50.16	54.00	-3.84	AVG	100	287

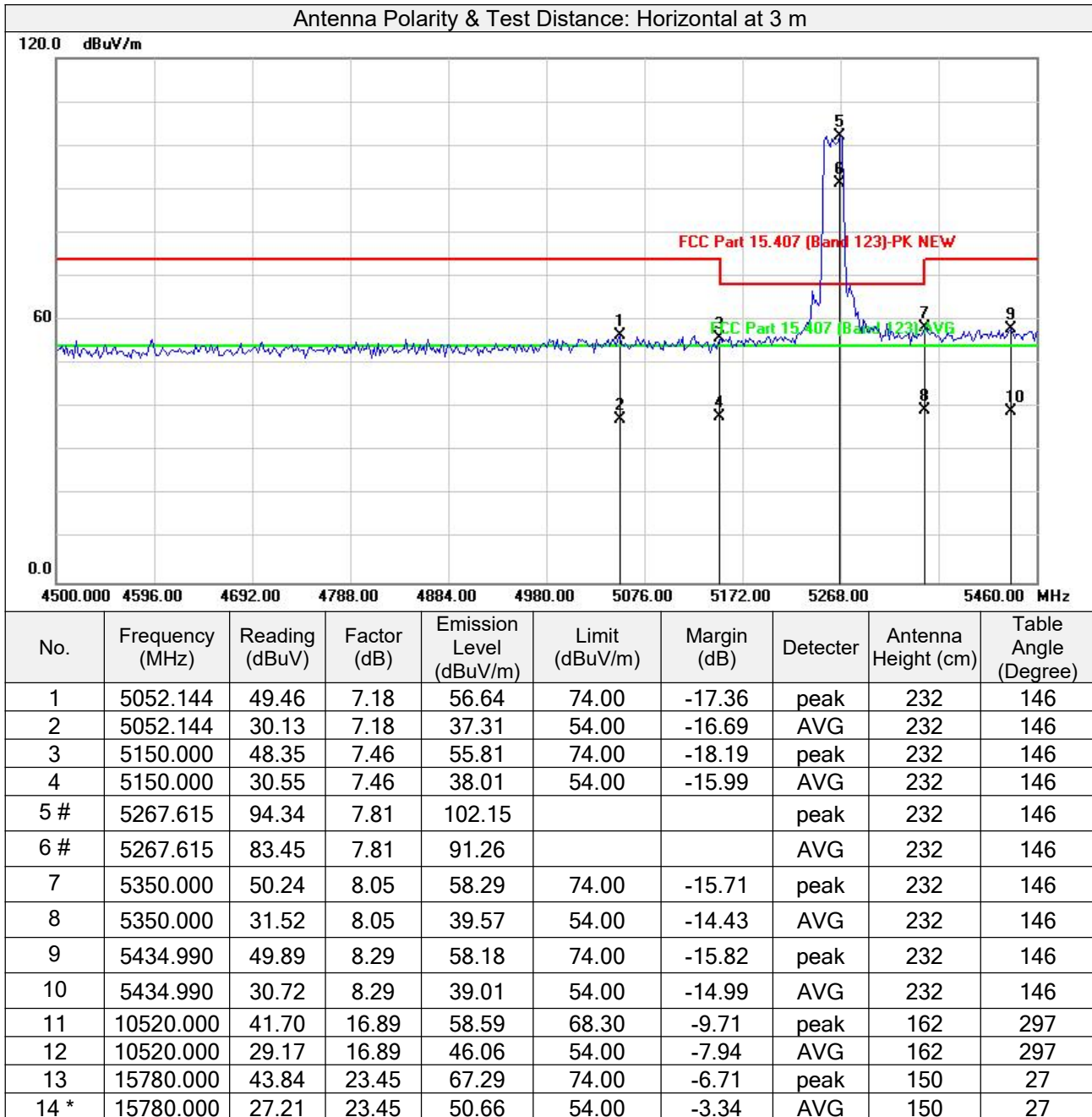
Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



802.11n20

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 52		

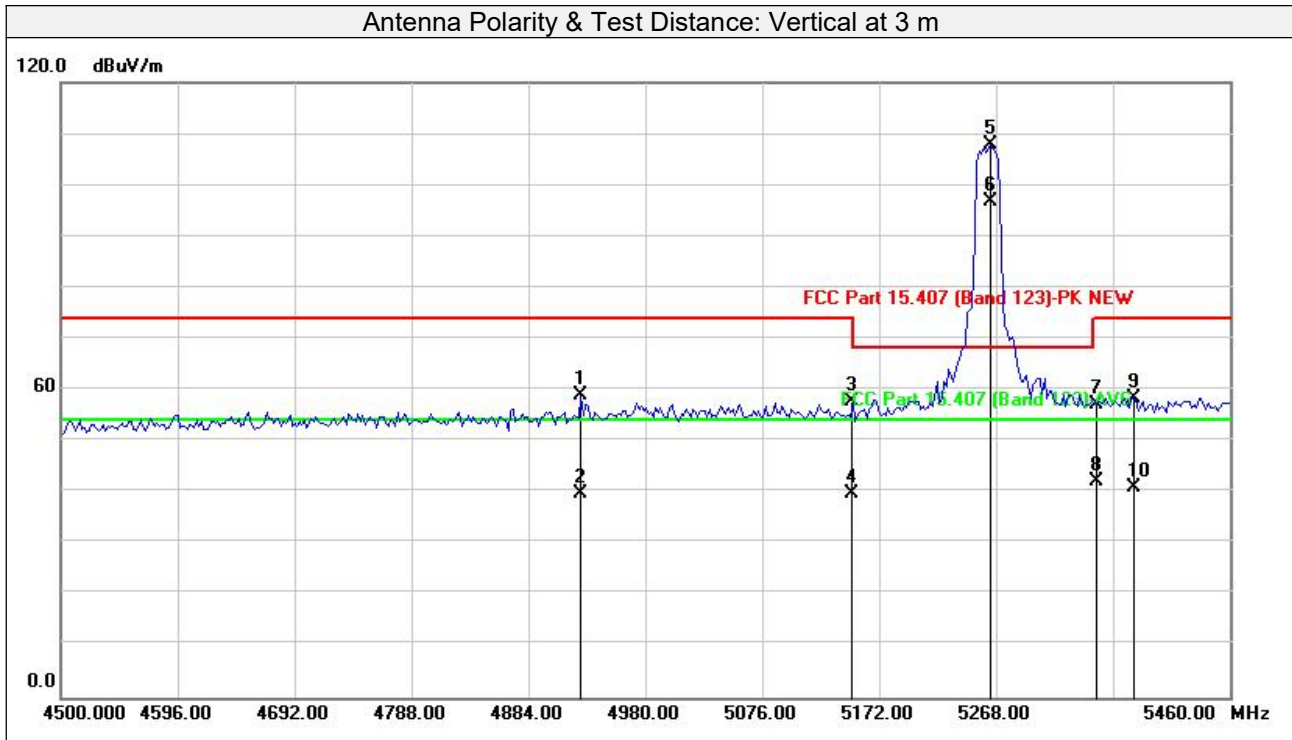


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 52		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	4927.094	51.98	6.87	58.85	74.00	-15.15	peak	100	218
2	4927.094	32.96	6.87	39.83	54.00	-14.17	AVG	100	218
3	5150.000	50.40	7.46	57.86	74.00	-16.14	peak	100	218
4	5150.000	32.32	7.46	39.78	54.00	-14.22	AVG	100	218
5 #	5263.767	100.08	7.80	107.88			peak	100	218
6 #	5263.767	88.84	7.80	96.64			AVG	100	218
7	5350.000	49.08	8.05	57.13	74.00	-16.87	peak	100	218
8	5350.000	34.20	8.05	42.25	54.00	-11.75	AVG	100	218
9	5381.122	50.26	8.13	58.39	74.00	-15.61	peak	100	218
10	5381.122	32.87	8.13	41.00	54.00	-13.00	AVG	100	218
11	10520.000	41.93	16.89	58.82	68.30	-9.48	peak	131	218
12	10520.000	29.12	16.89	46.01	54.00	-7.99	AVG	131	218
13	15780.000	44.80	23.45	68.25	74.00	-5.75	peak	100	207
14 *	15780.000	26.82	23.45	50.27	54.00	-3.73	AVG	100	207

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

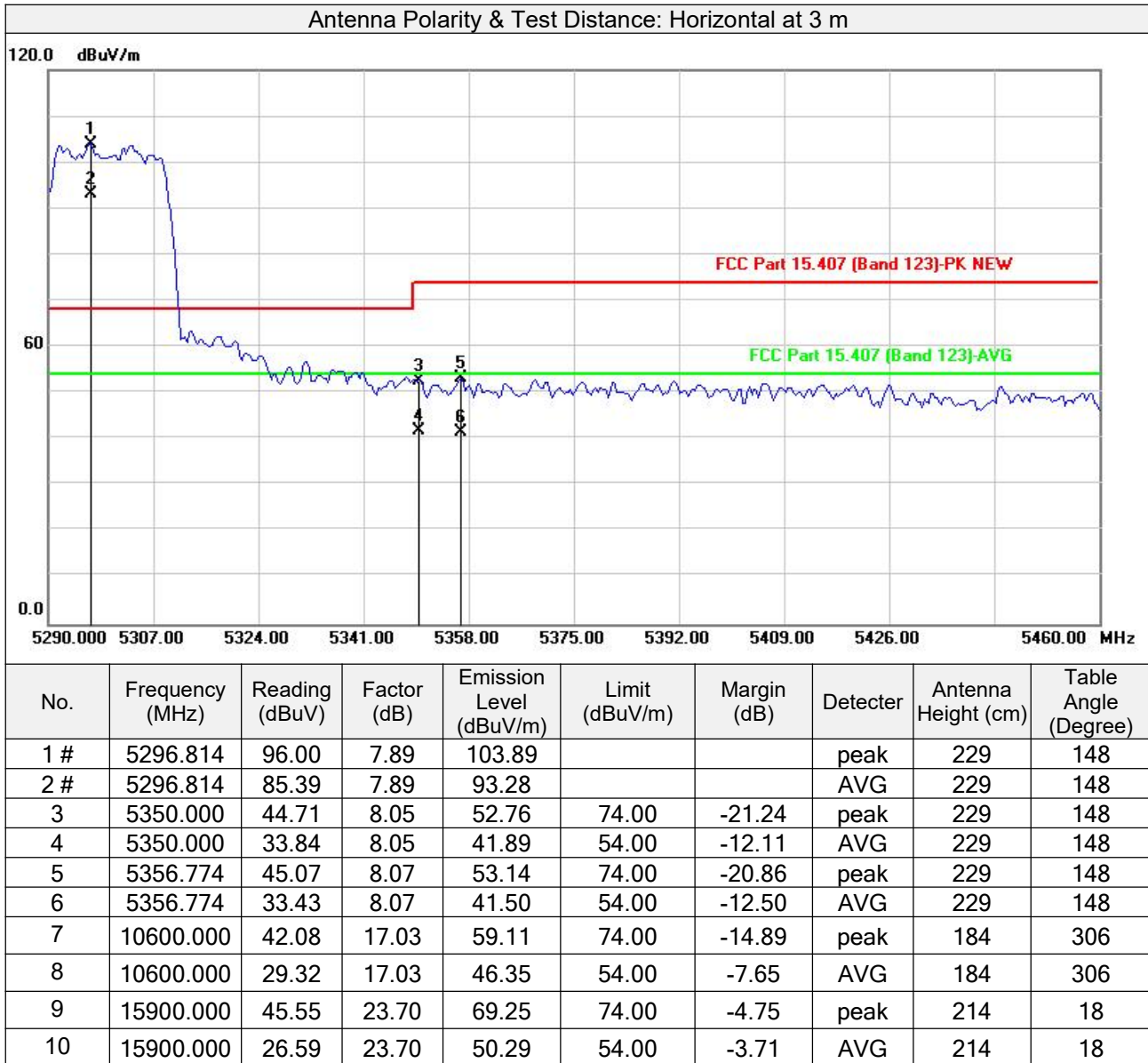


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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 60		

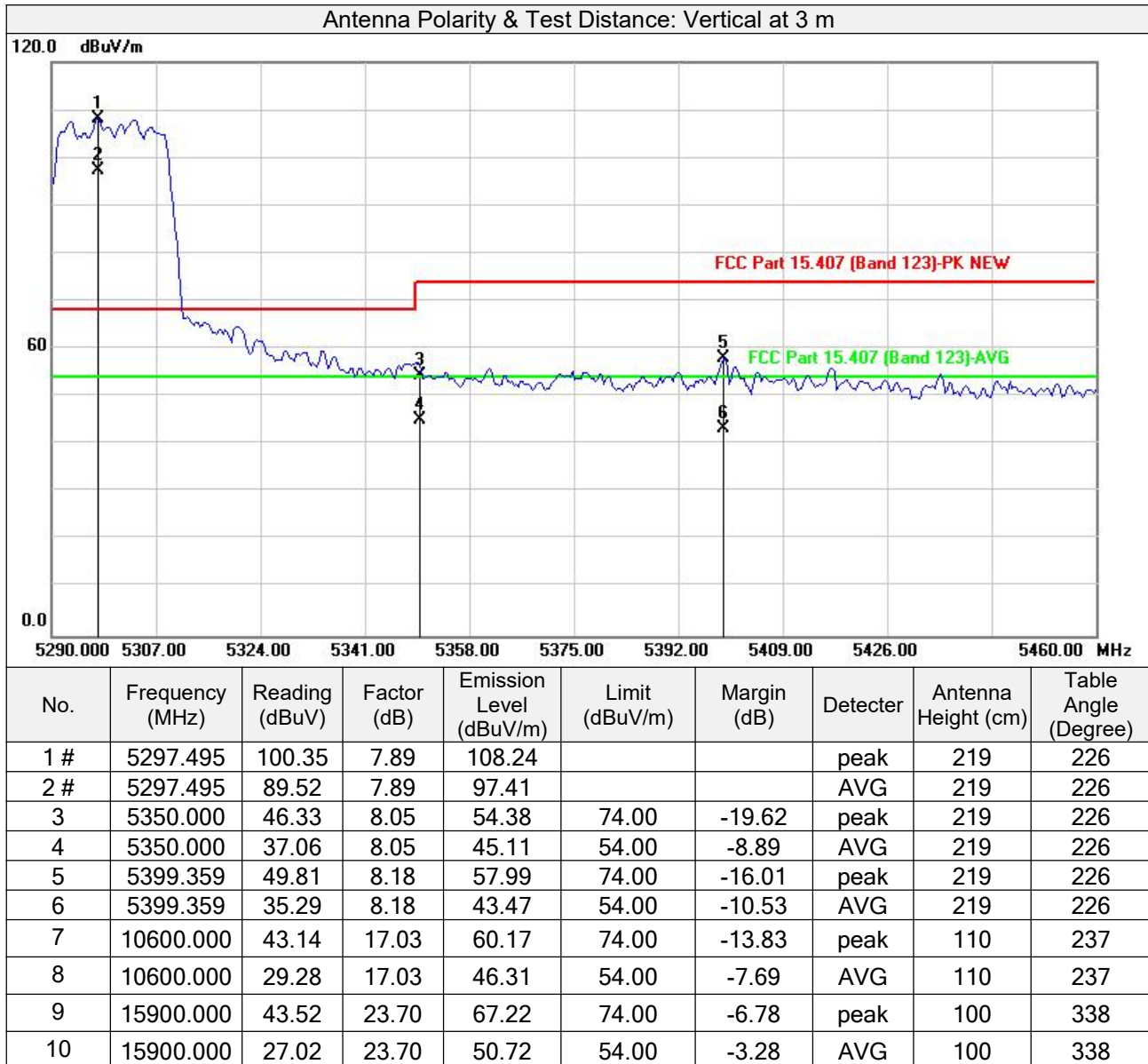


Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 60		

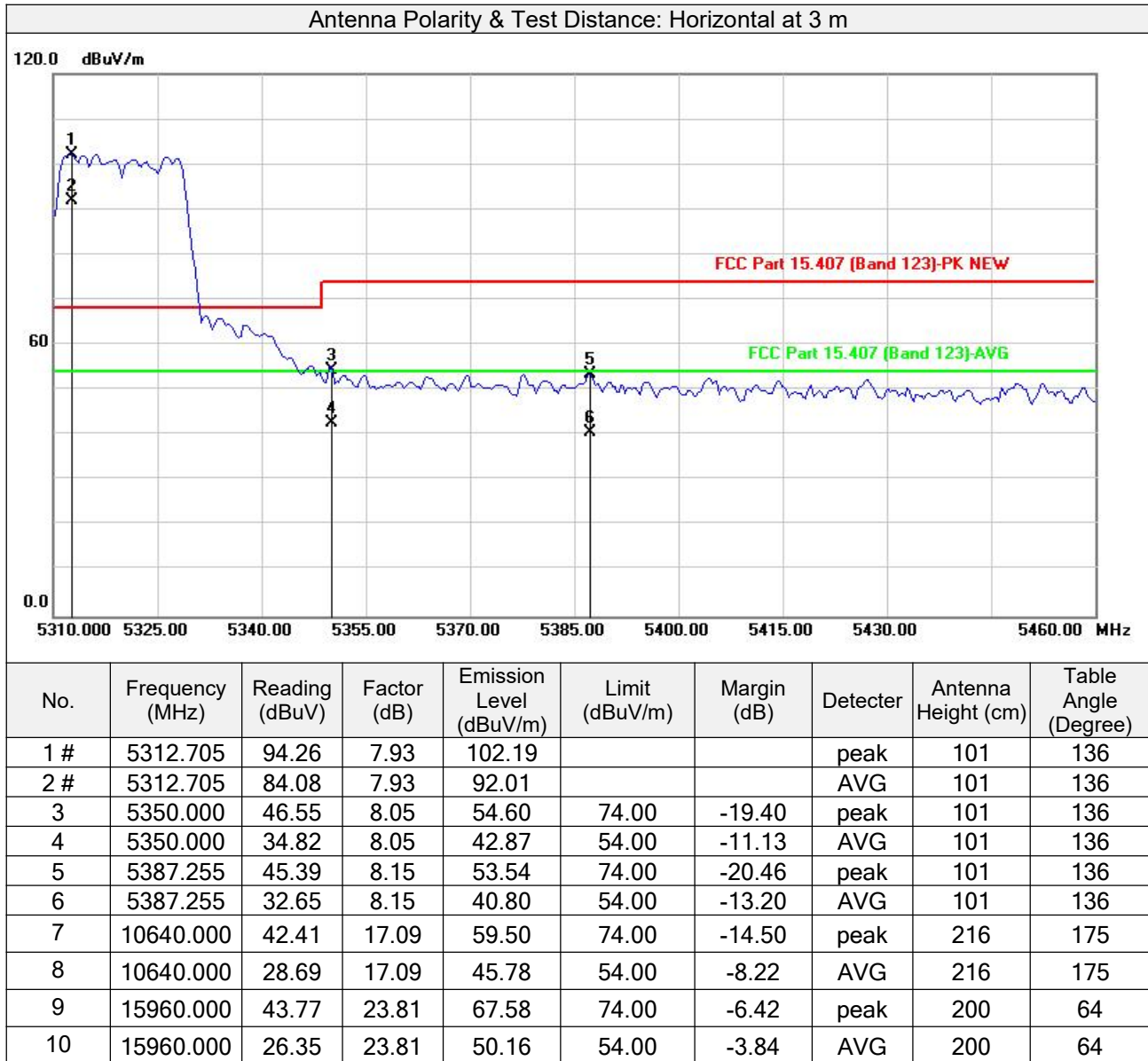


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 64		

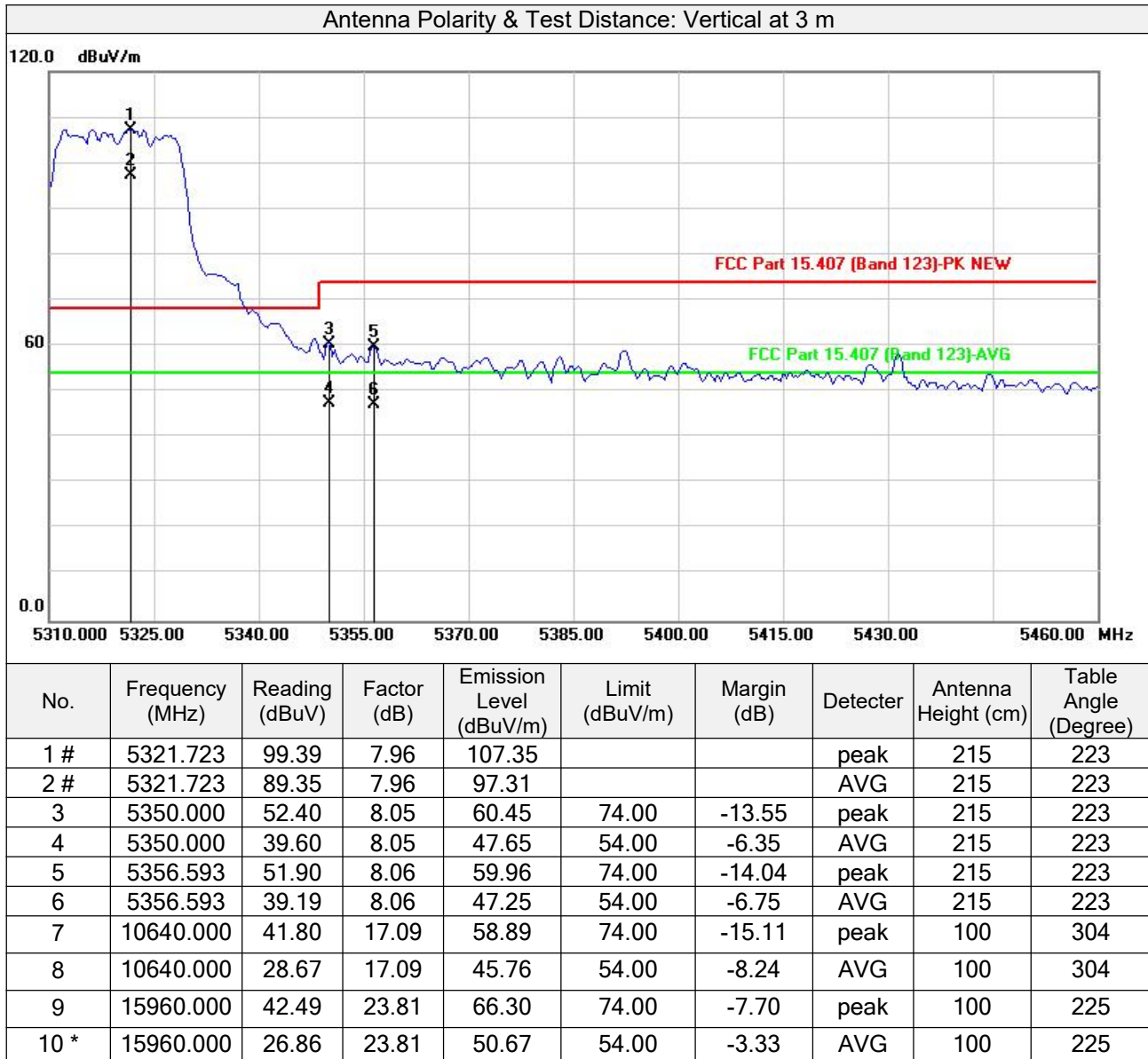


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 64		



Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



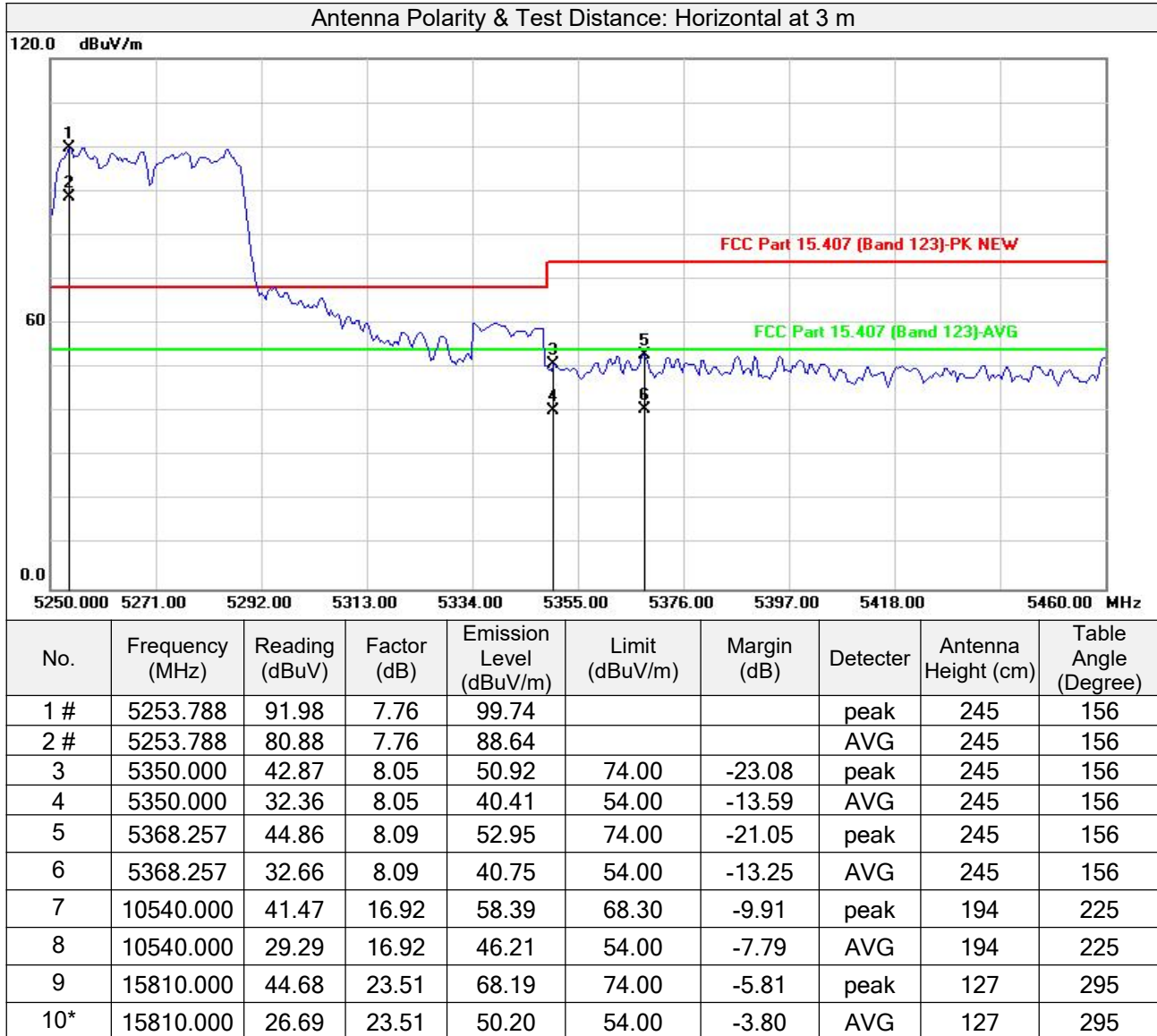
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802.11n40

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 54		



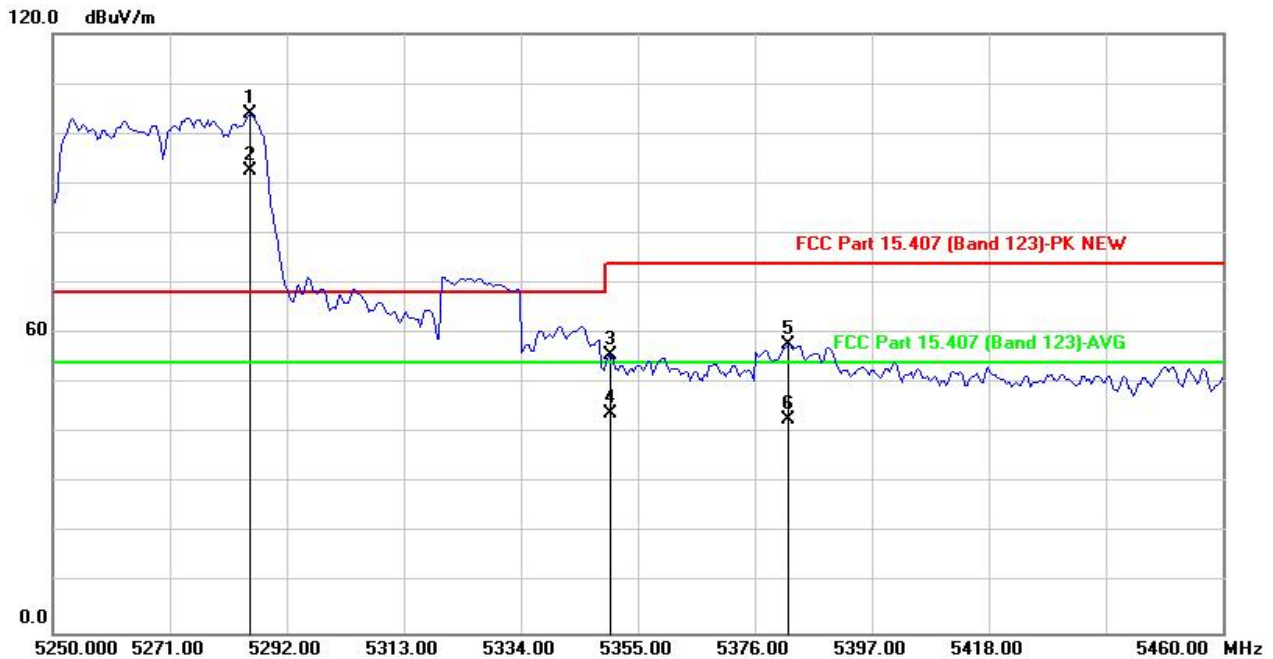
Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 54		

Antenna Polarity & Test Distance: Vertical at 3 m



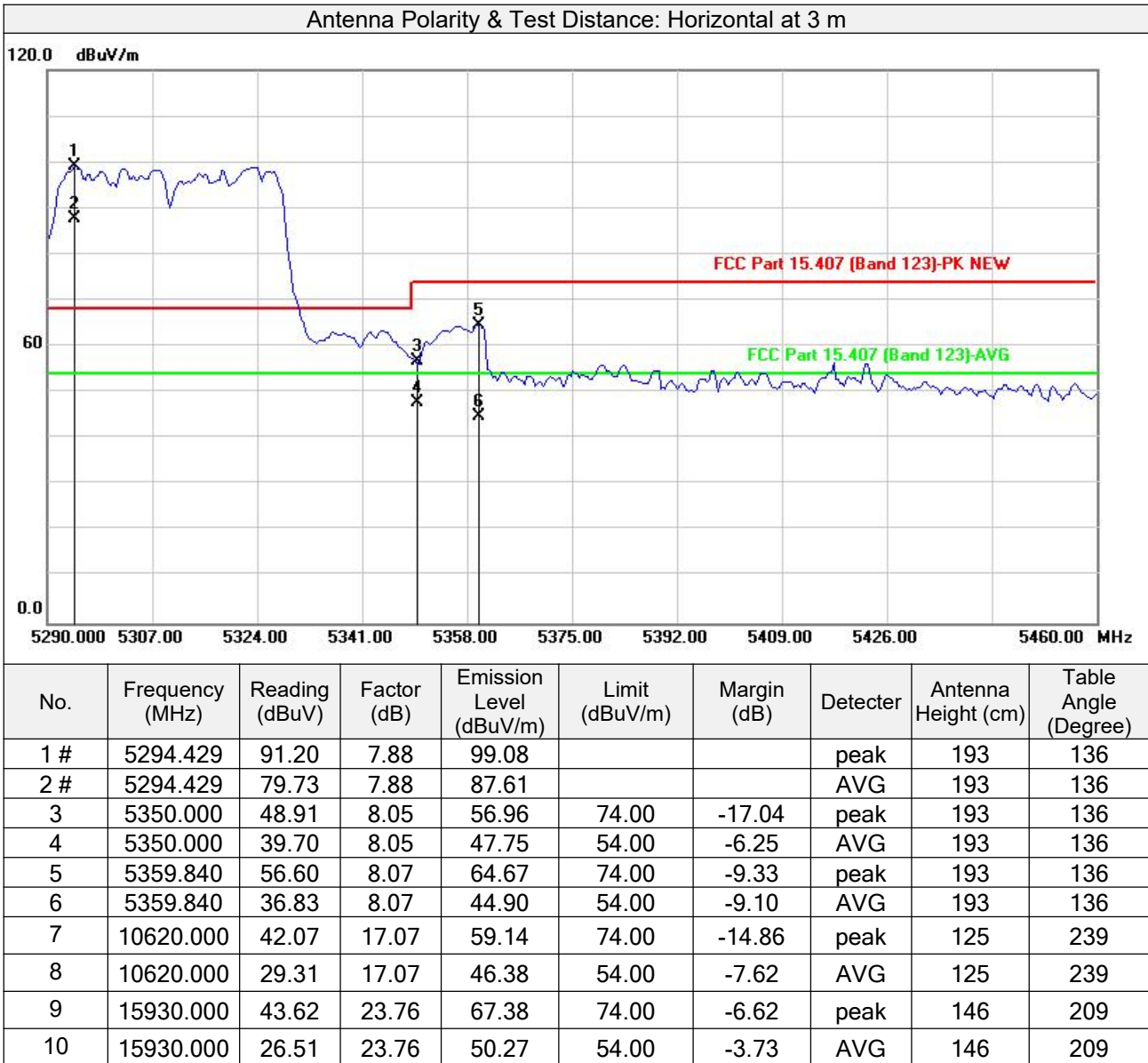
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1 #	5285.351	96.13	7.85	103.98			peak	192	225
2 #	5285.351	84.57	7.85	92.42			AVG	192	225
3	5350.000	47.49	8.05	55.54	74.00	-18.46	peak	192	225
4	5350.000	35.78	8.05	43.83	54.00	-10.17	AVG	192	225
5	5382.144	49.68	8.13	57.81	74.00	-16.19	peak	192	225
6	5382.144	34.67	8.13	42.80	54.00	-11.20	AVG	192	225
7	10540.000	41.98	16.92	58.90	68.30	-9.40	peak	100	168
8	10540.000	29.28	16.92	46.20	54.00	-7.80	AVG	100	168
9	15810.000	45.58	23.51	69.09	74.00	-4.91	peak	100	238
10*	15810.000	27.13	23.51	50.64	54.00	-3.36	AVG	100	238

Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 62		



Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 62		

Antenna Polarity & Test Distance: Vertical at 3 m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1 #	5324.749	97.34	7.96	105.30			peak	223	219
2 #	5324.749	85.58	7.96	93.54			AVG	223	219
3	5350.000	56.90	8.05	64.95	74.00	-9.05	peak	223	219
4	5350.000	44.81	8.05	52.86	54.00	-1.14	AVG	223	219
5	5351.663	59.29	8.05	67.34	74.00	-6.66	peak	223	219
6	5351.663	44.46	8.05	52.51	54.00	-1.49	AVG	223	219
7	10620.000	40.66	17.07	57.73	74.00	-16.27	peak	100	265
8	10620.000	29.52	17.07	46.59	54.00	-7.41	AVG	100	265
9	15930.000	45.41	23.76	69.17	74.00	-4.83	peak	100	136
10	15930.000	26.50	23.76	50.26	54.00	-3.74	AVG	100	136

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

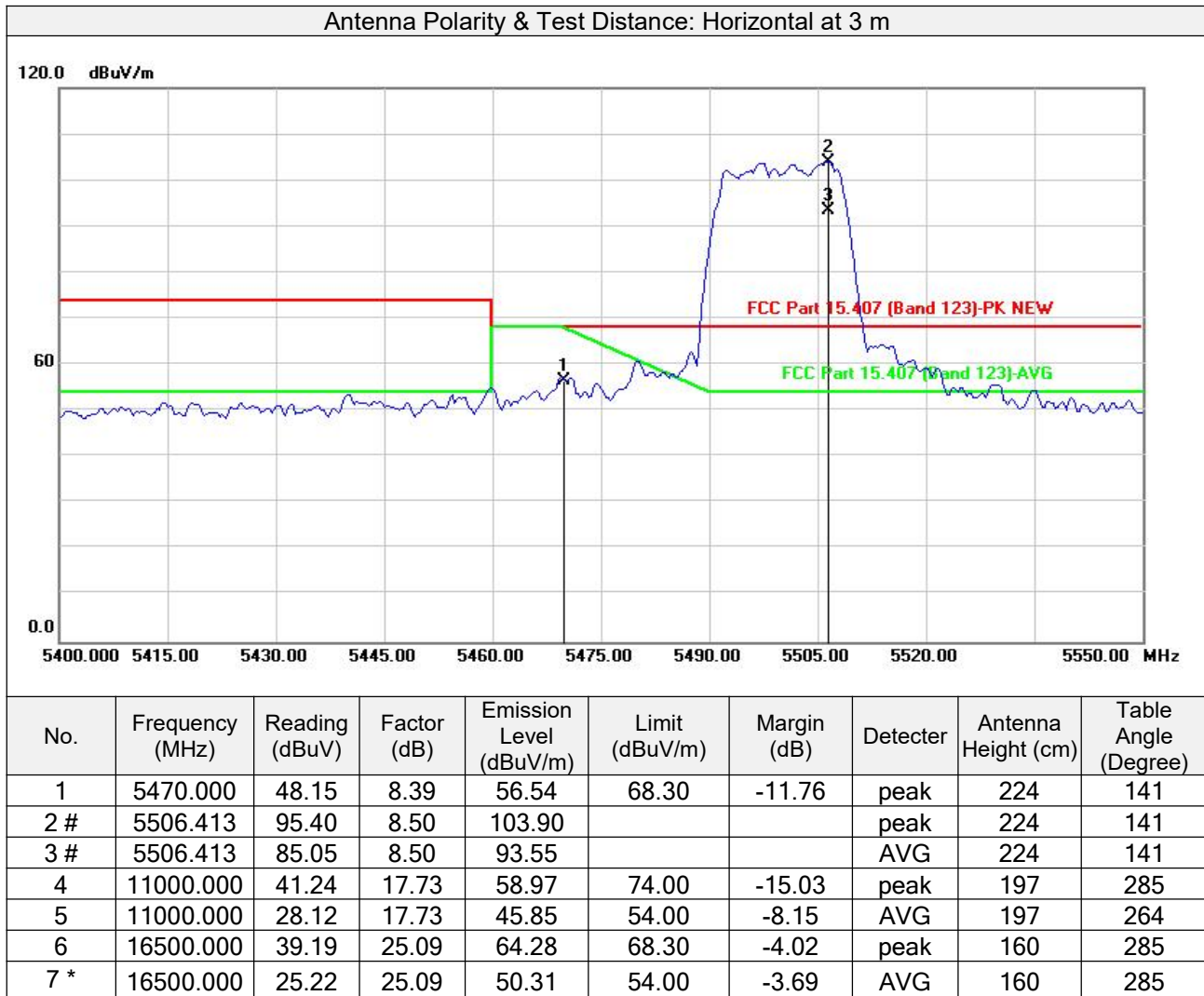


3.1.8 TEST RESULTS - Band 3 (5500-5580MHz & 5660-5700MHz):

ABOVE 1GHz DATA

802.11a

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 100		



Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

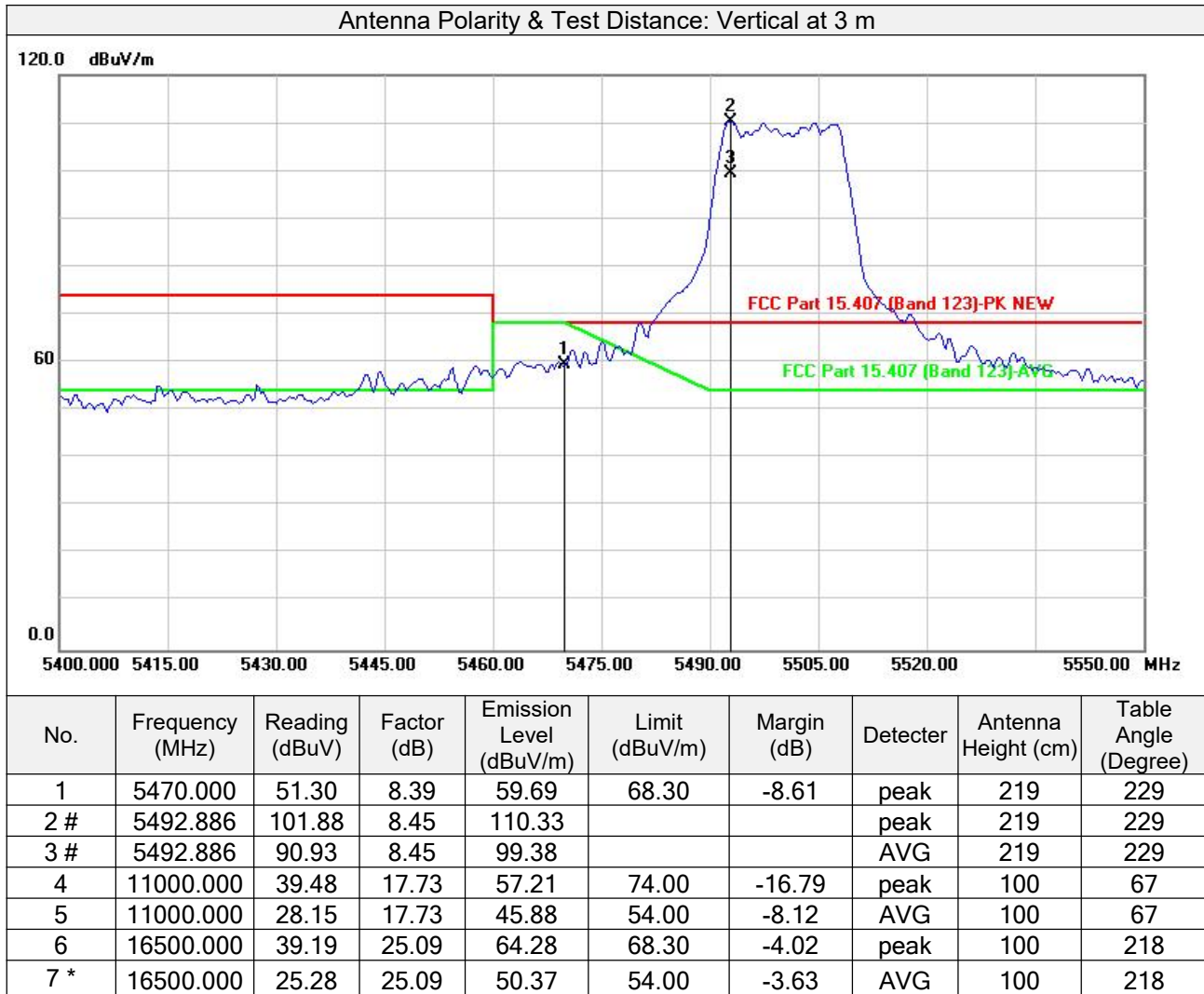


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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 100		



Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

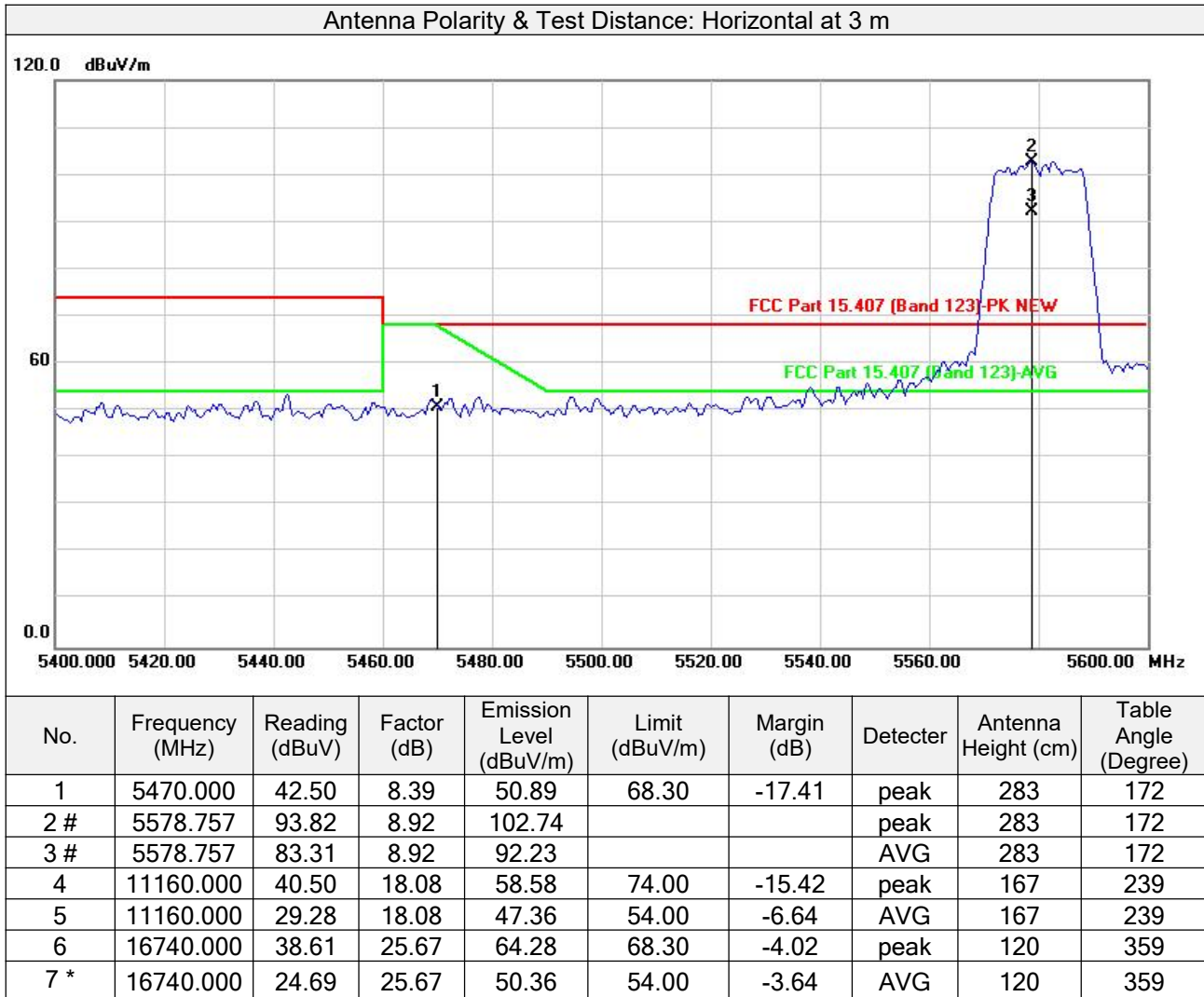


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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 116		



Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

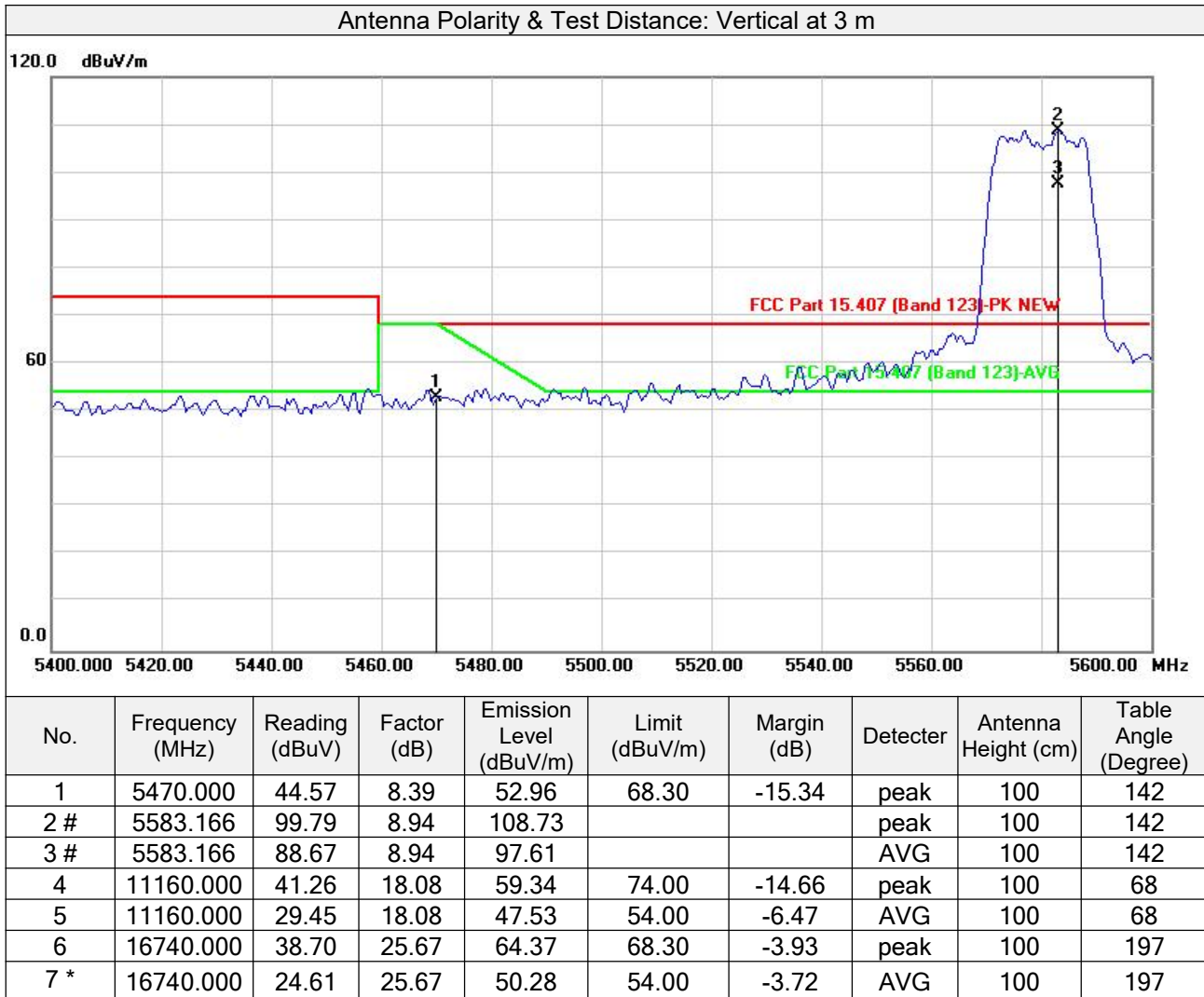


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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 116		



Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

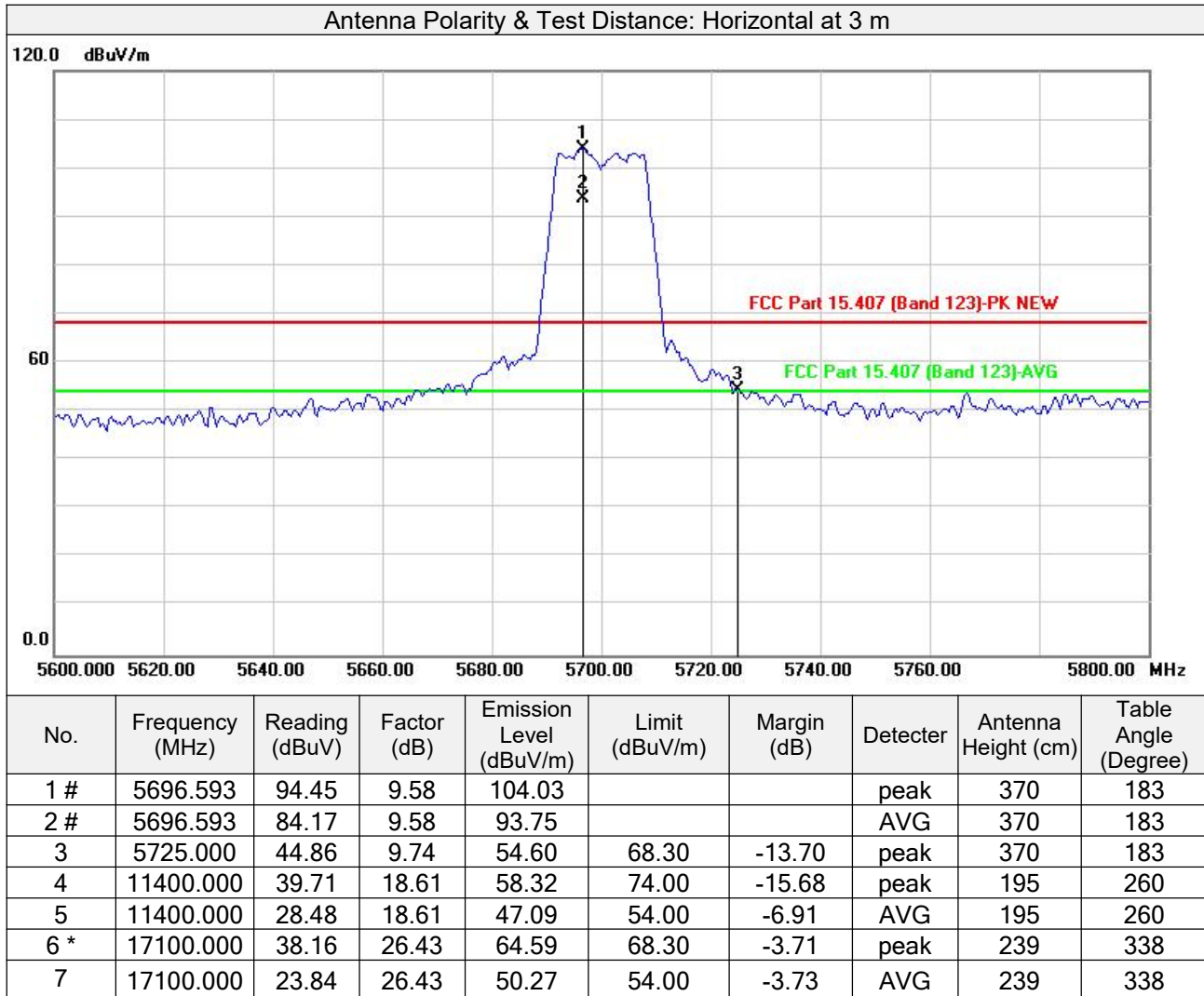


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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 140		

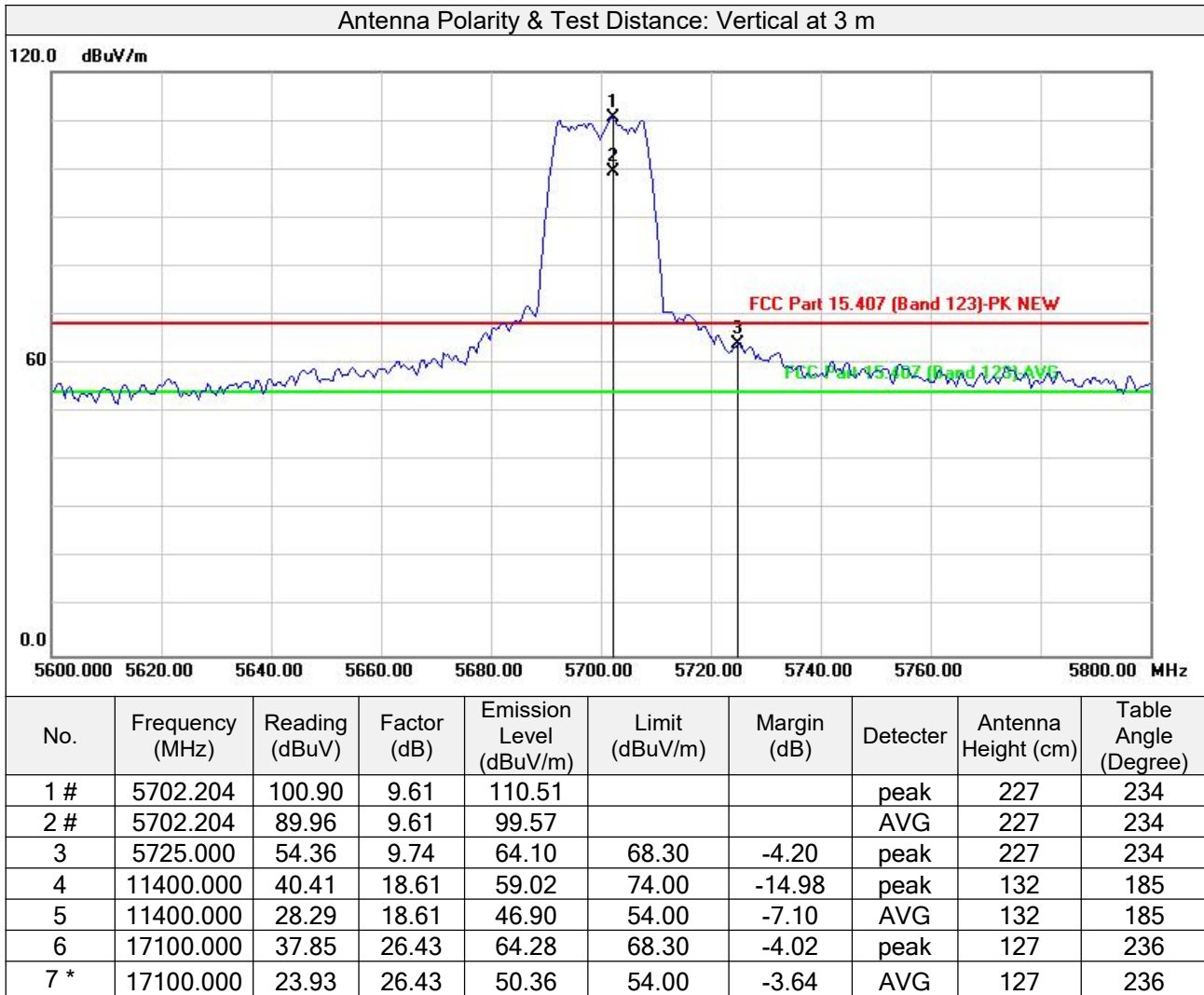


Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 140		



Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



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802.11n20

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 100		



Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

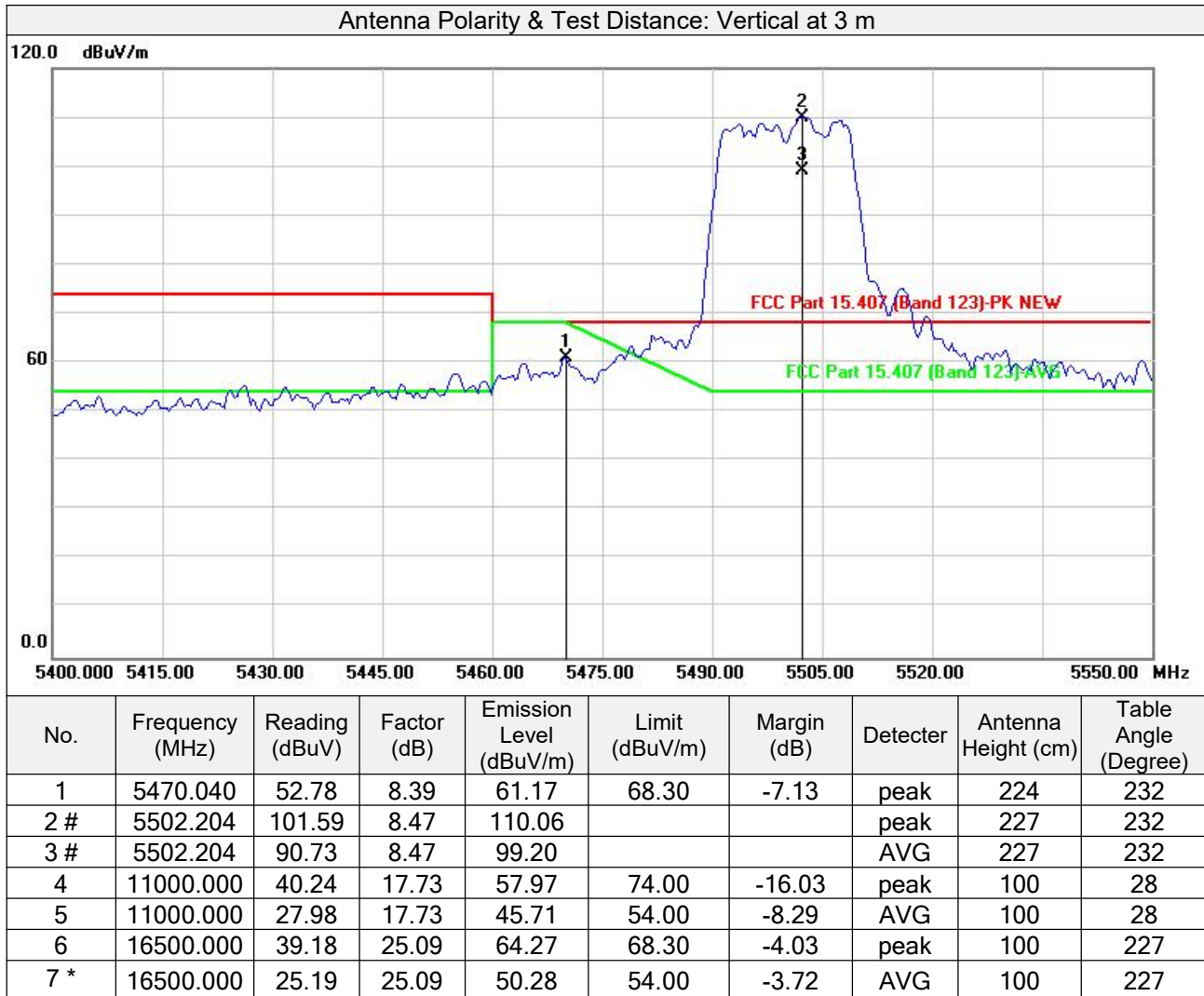


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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 100		



Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

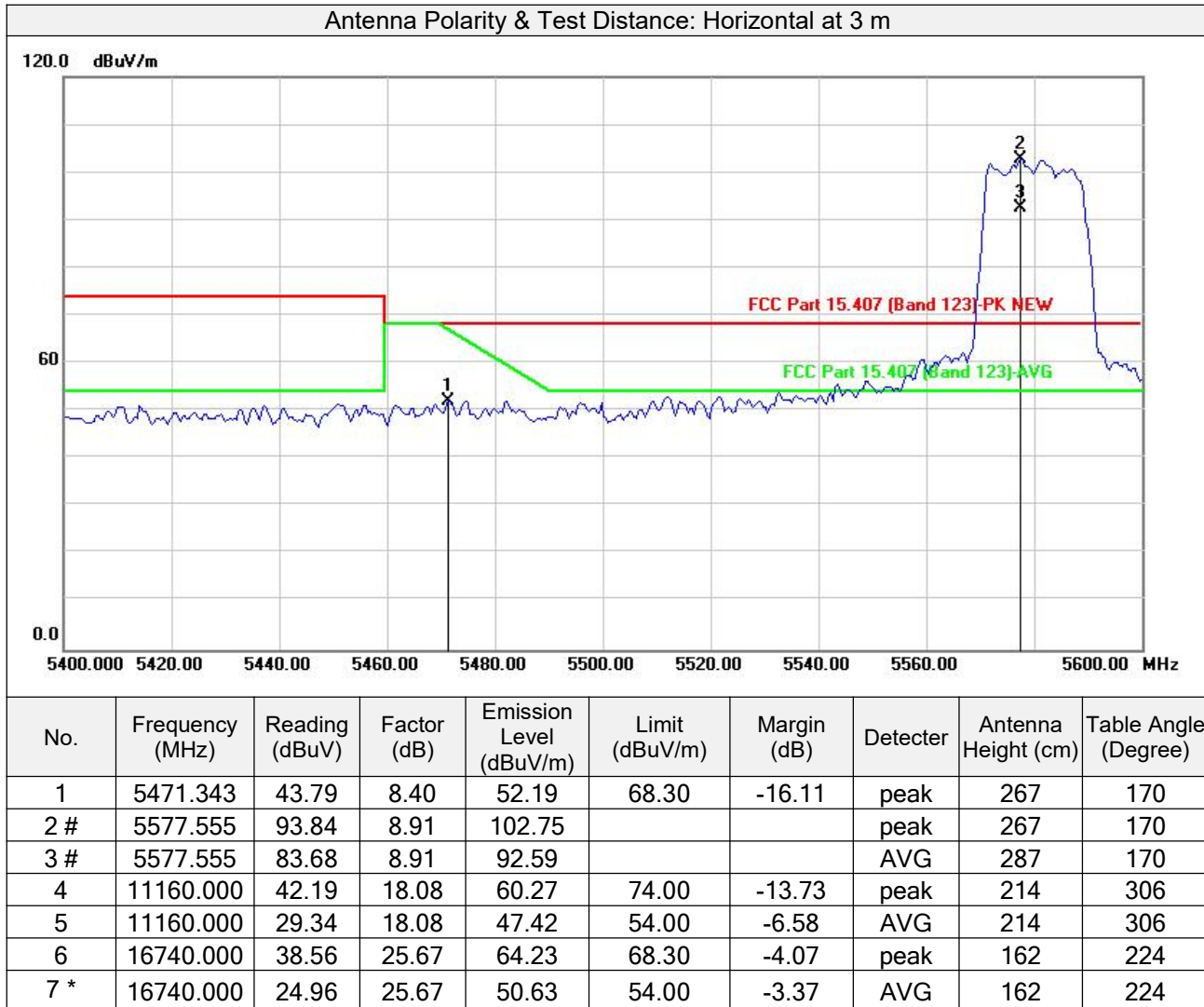


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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 116		

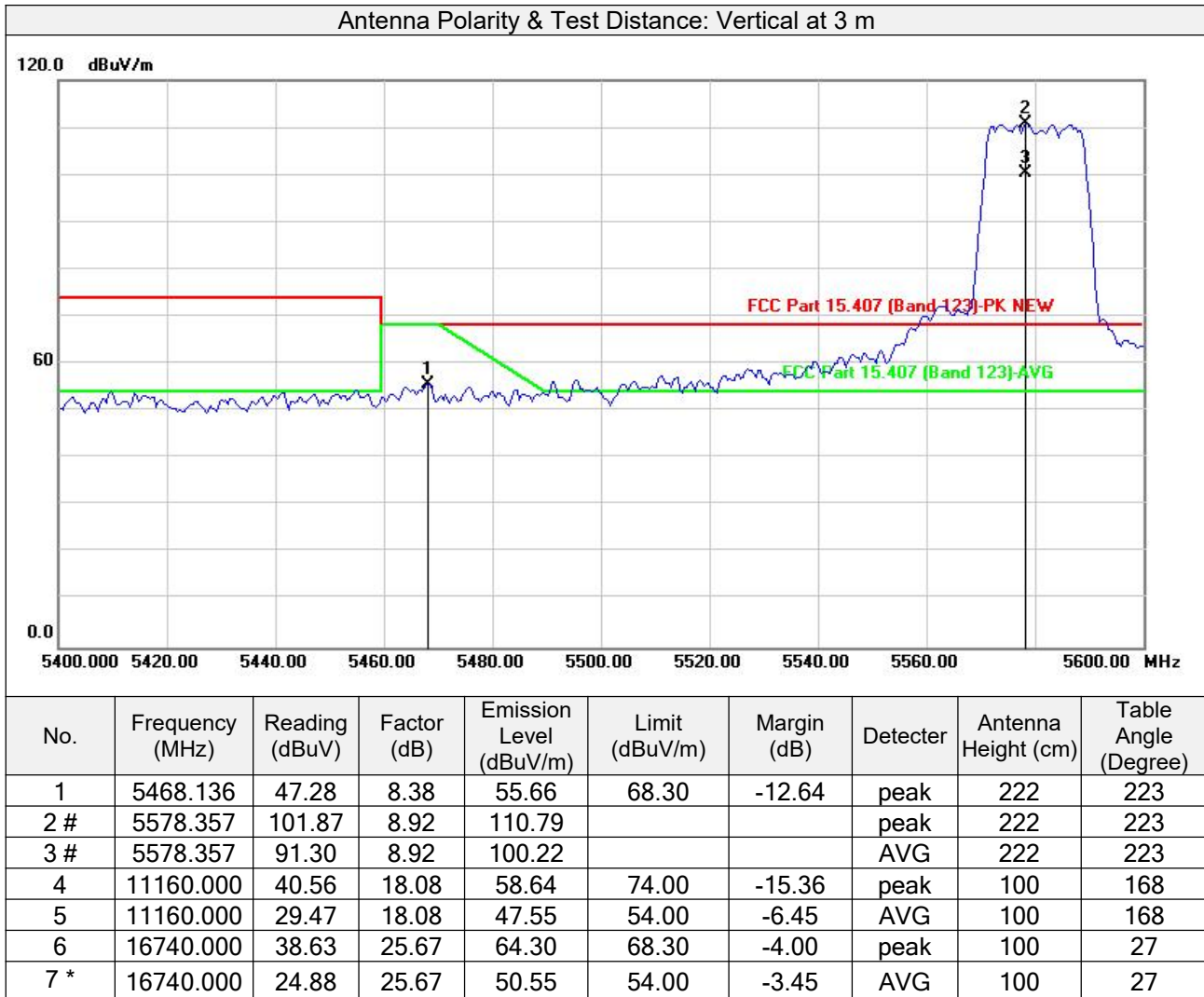


Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 116		



Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

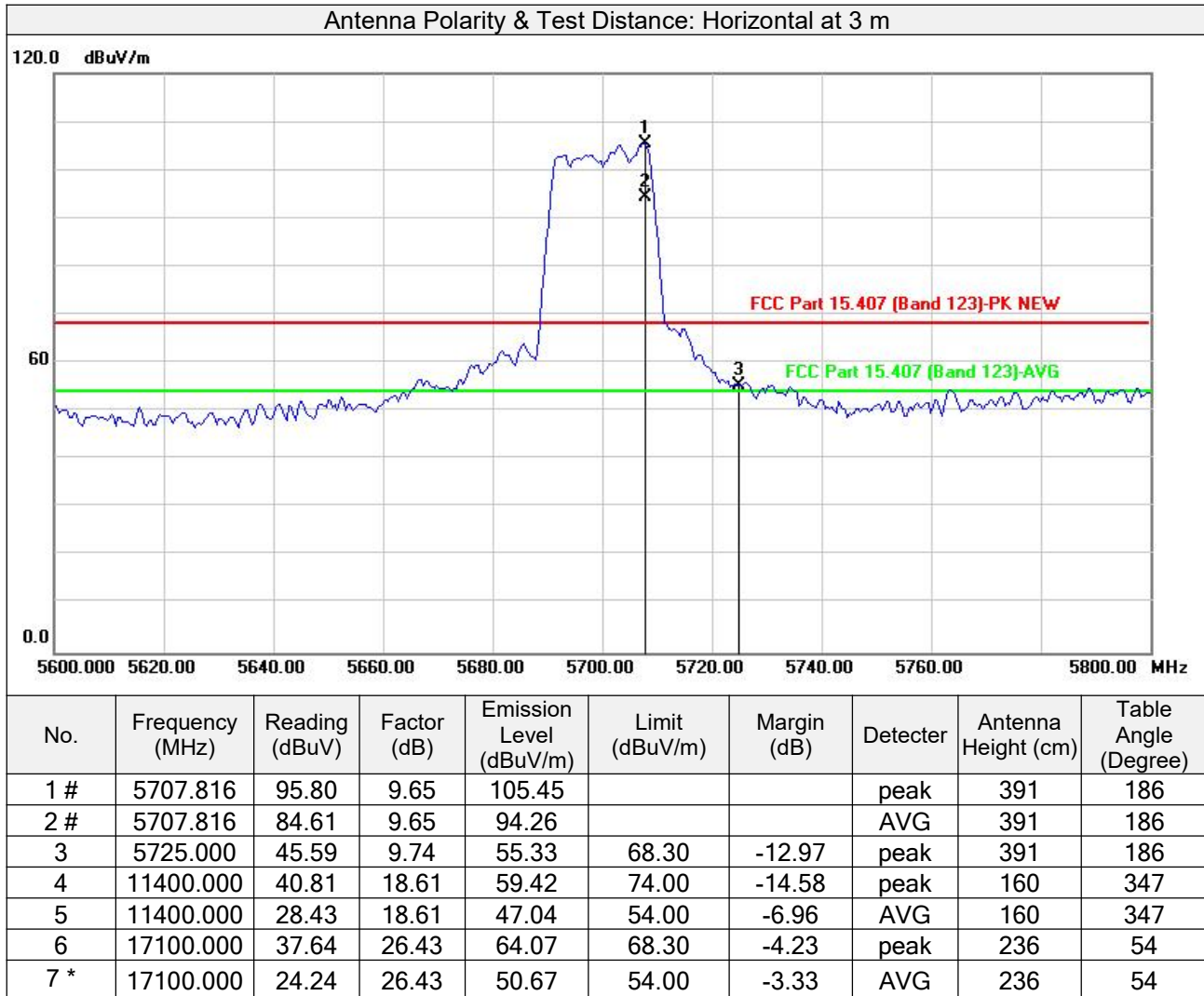


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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 140		

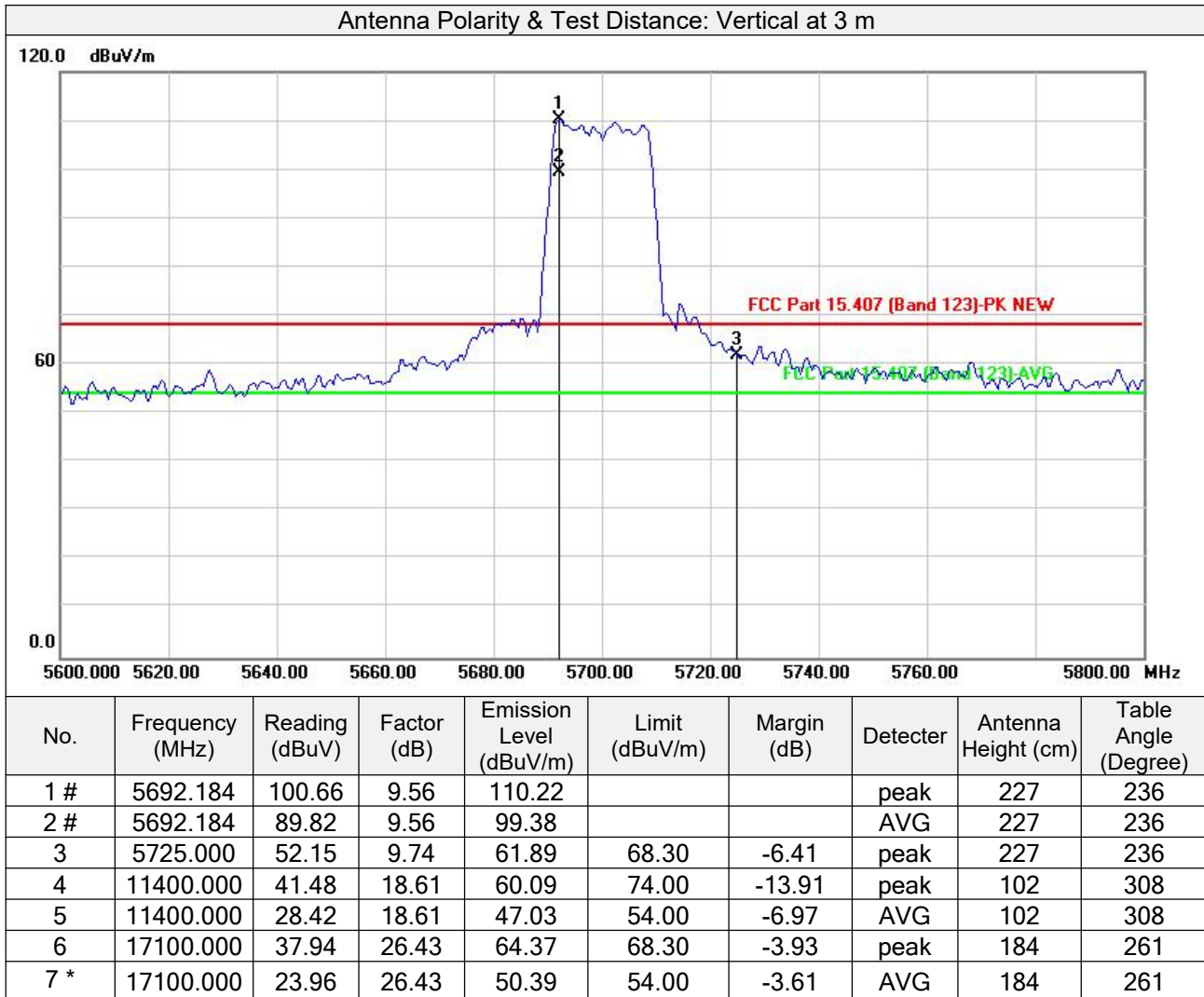


Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 140		



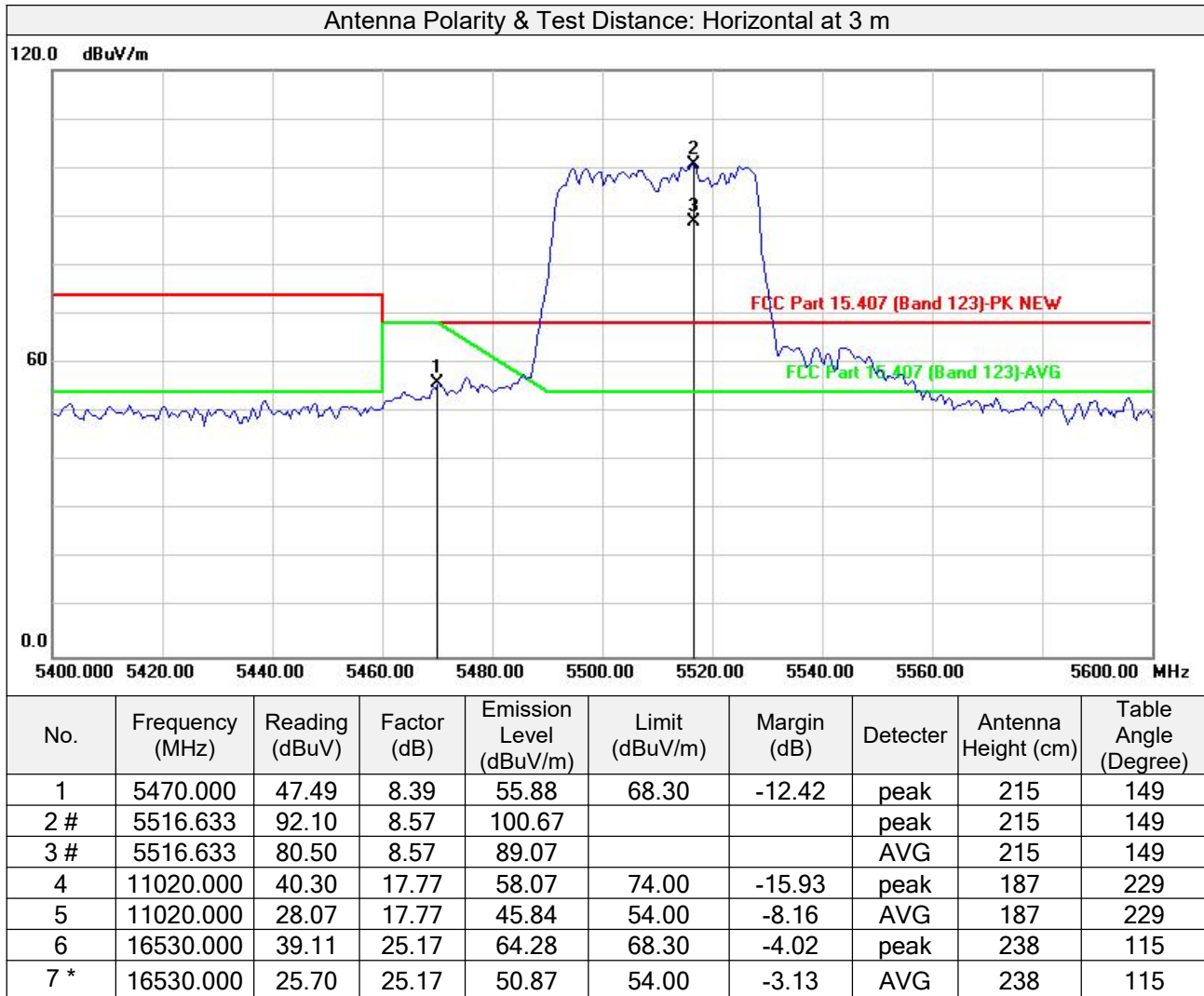
Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



802.11n40

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 102		

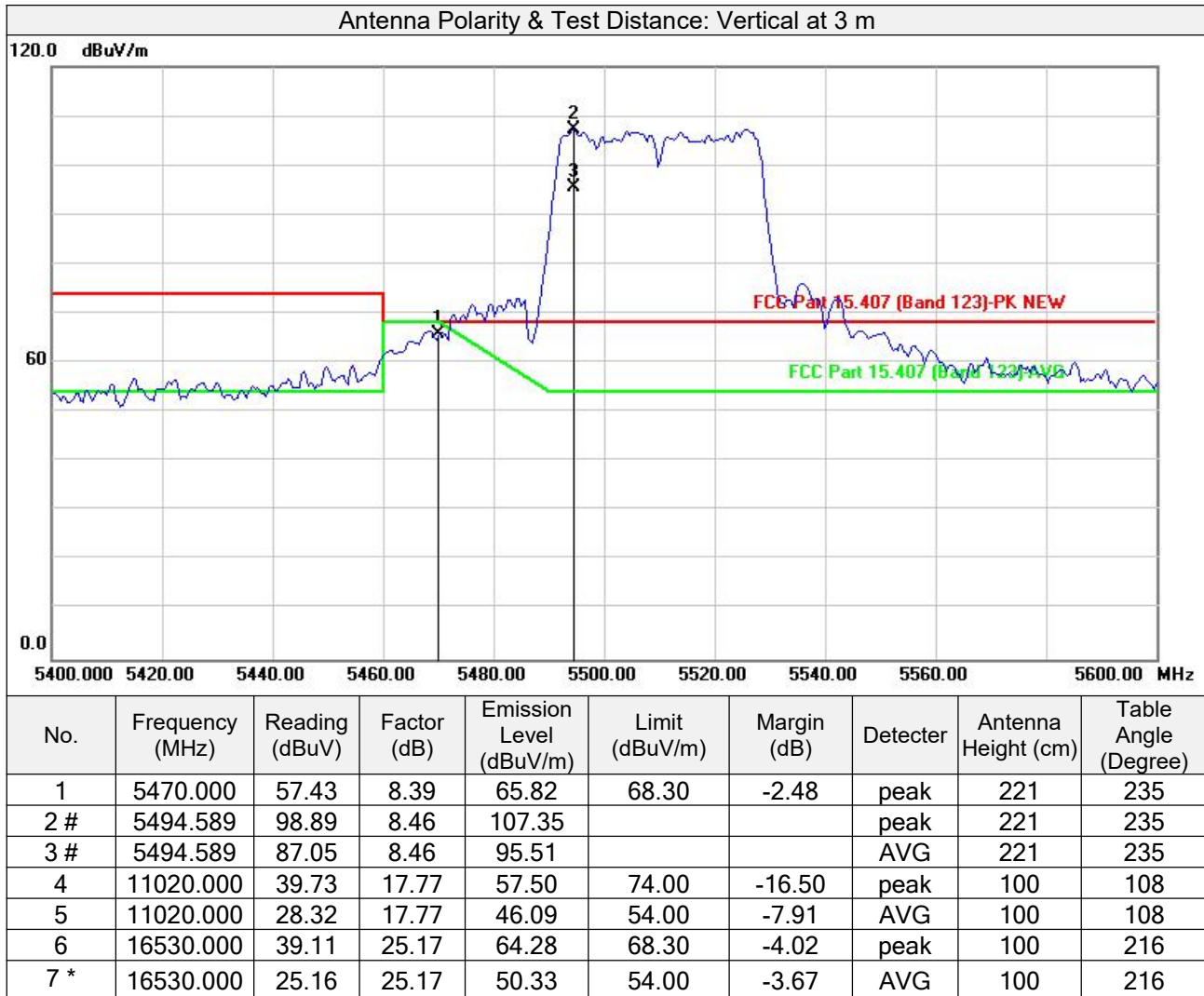


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 102		

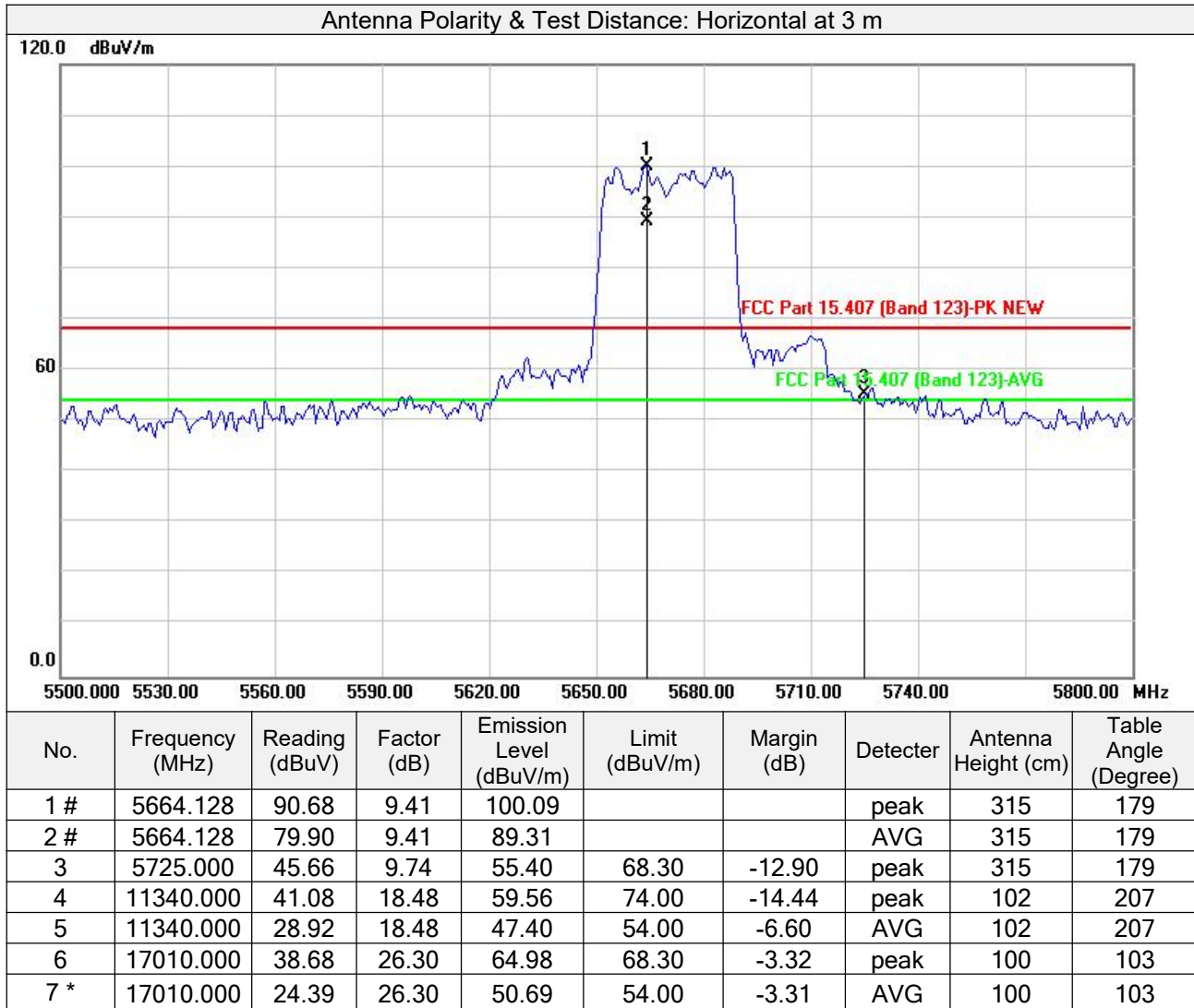


Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 134		



Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
2. # stands for Fundamental frequency
3. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

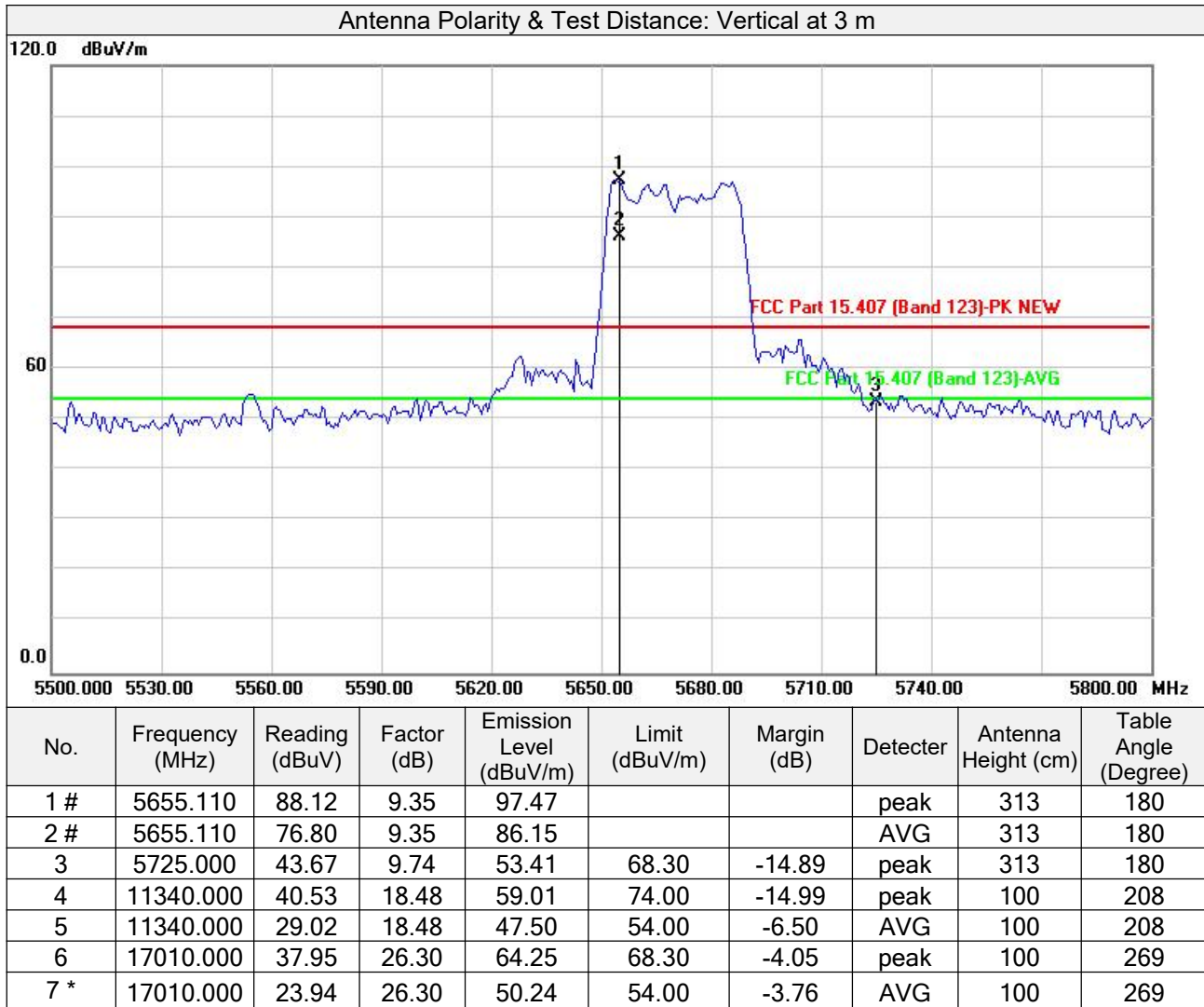


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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 134		



Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

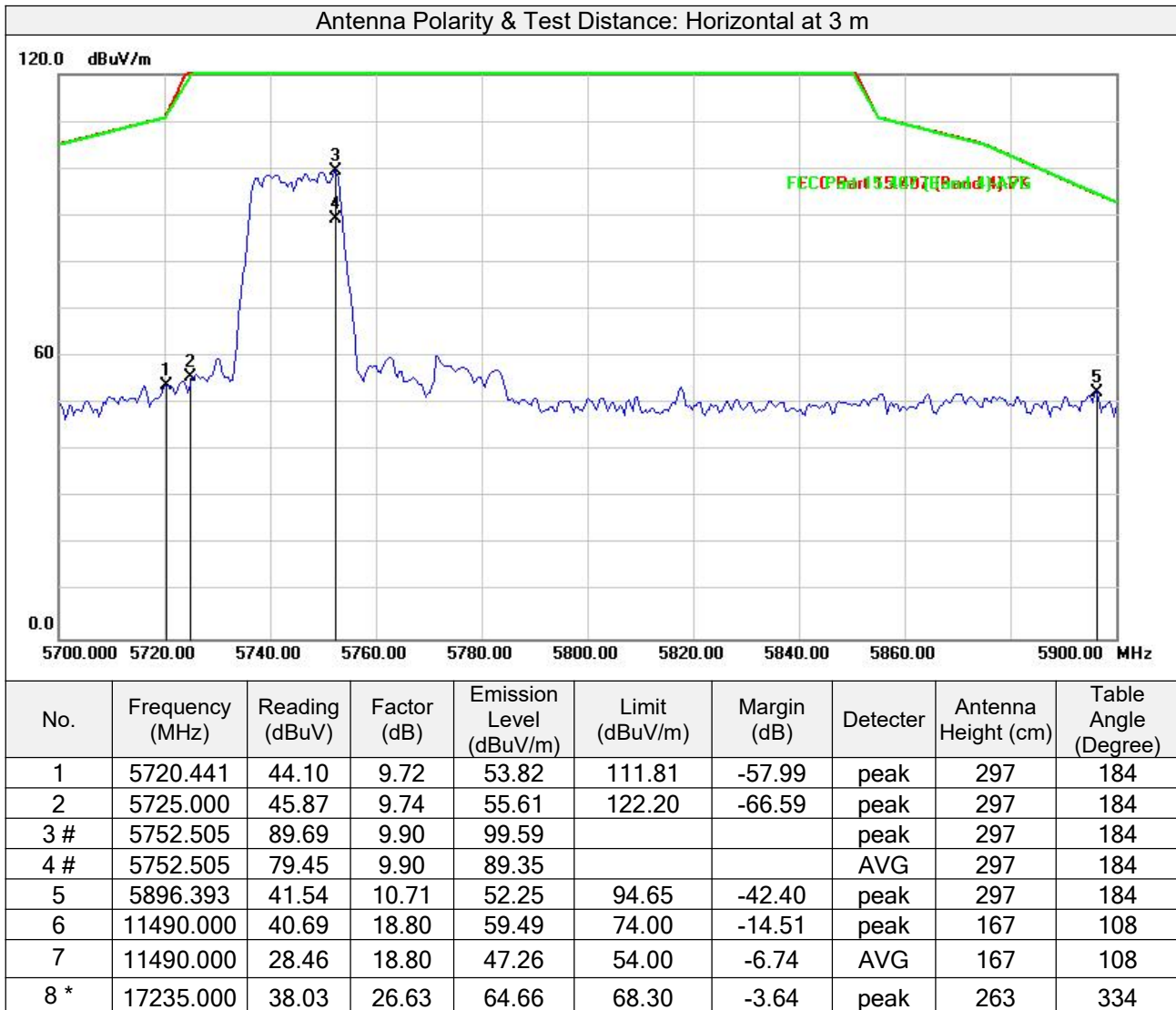


3.1.9 TEST RESULTS - Band 4 (5745-5825MHz):

ABOVE 1GHz DATA

802.11a

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 149		

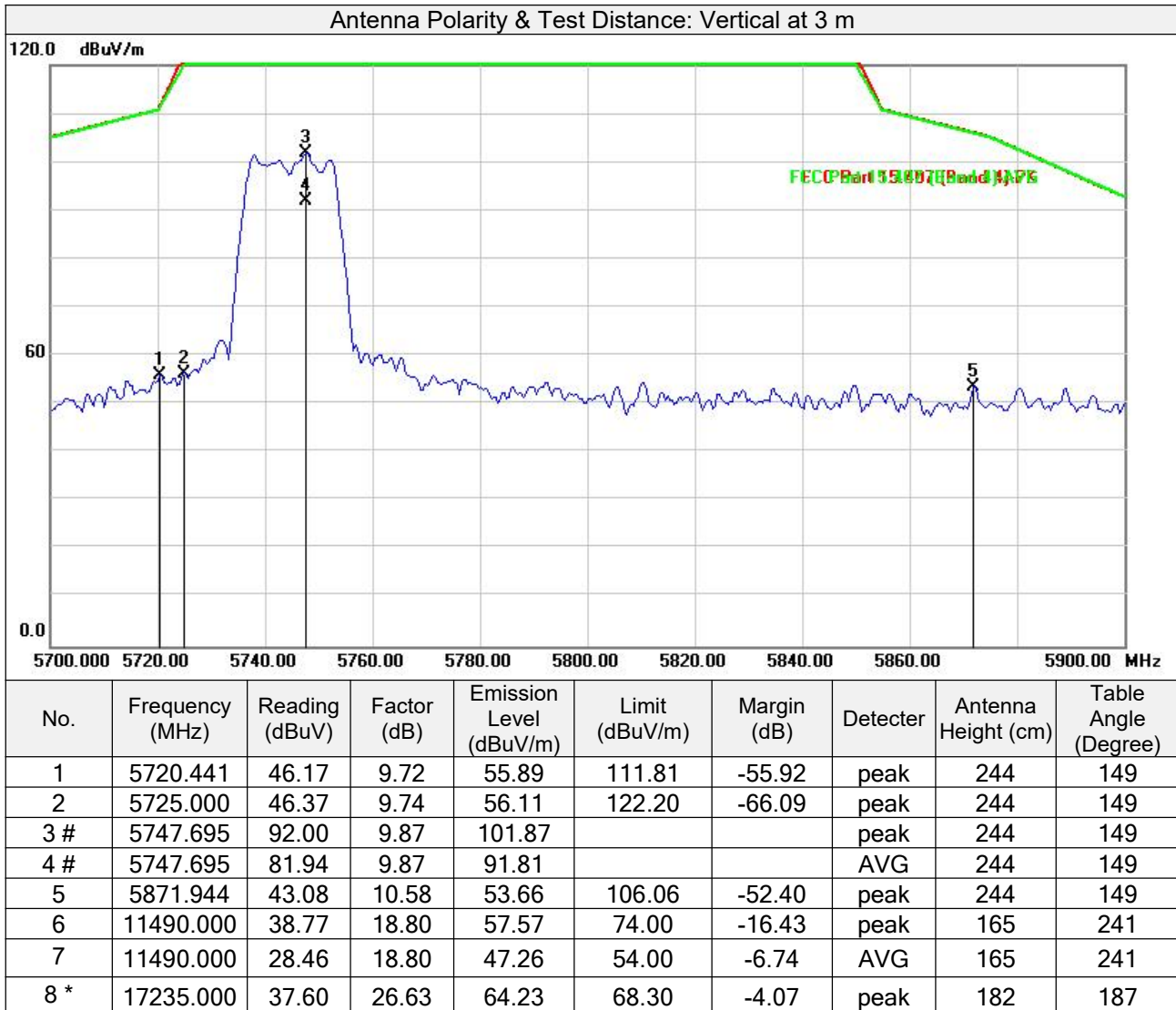


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 149		

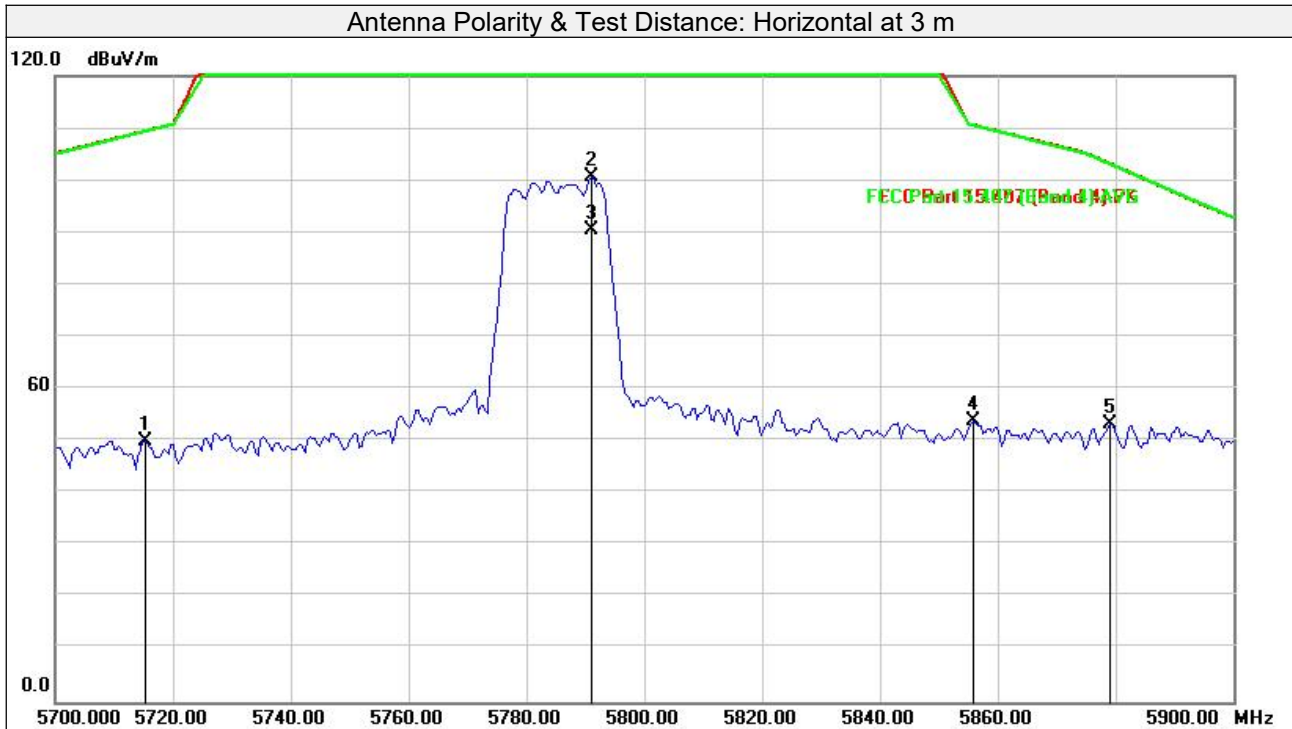


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 157		



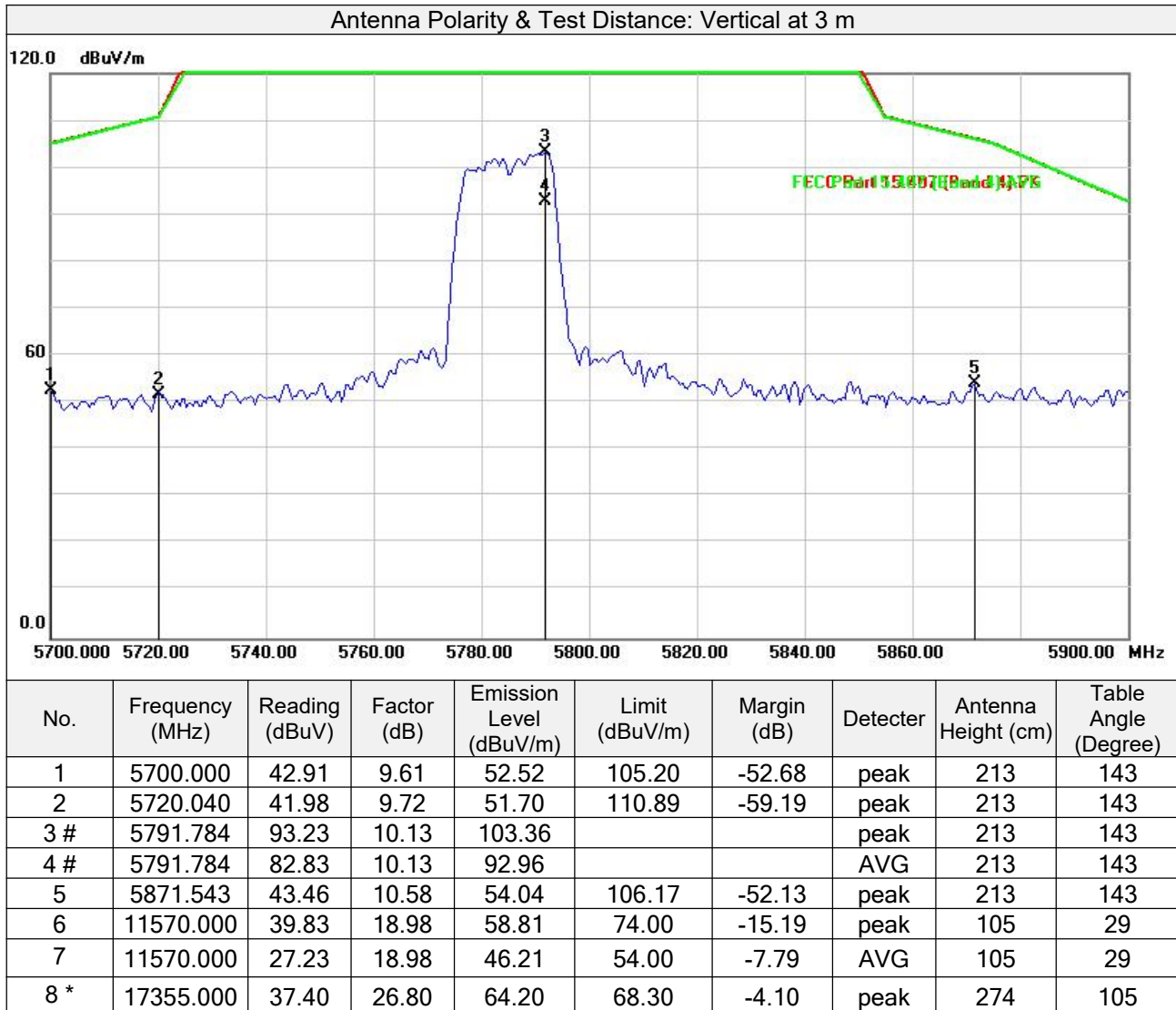
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5715.230	40.36	9.69	50.05	109.46	-59.41	peak	207	184
2 #	5790.982	90.51	10.12	100.63			peak	207	184
3 #	5790.982	80.48	10.12	90.60			AVG	207	184
4	5855.912	43.38	10.48	53.86	110.54	-56.68	peak	207	184
5	5879.158	42.75	10.62	53.37	103.15	-49.78	peak	207	184
6	11570.000	38.89	18.98	57.87	74.00	-16.13	peak	331	326
7	11570.000	28.30	18.98	47.28	54.00	-6.72	AVG	331	326
8 *	17235.000	37.65	26.63	64.28	68.30	-4.02	peak	295	207

Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 157		

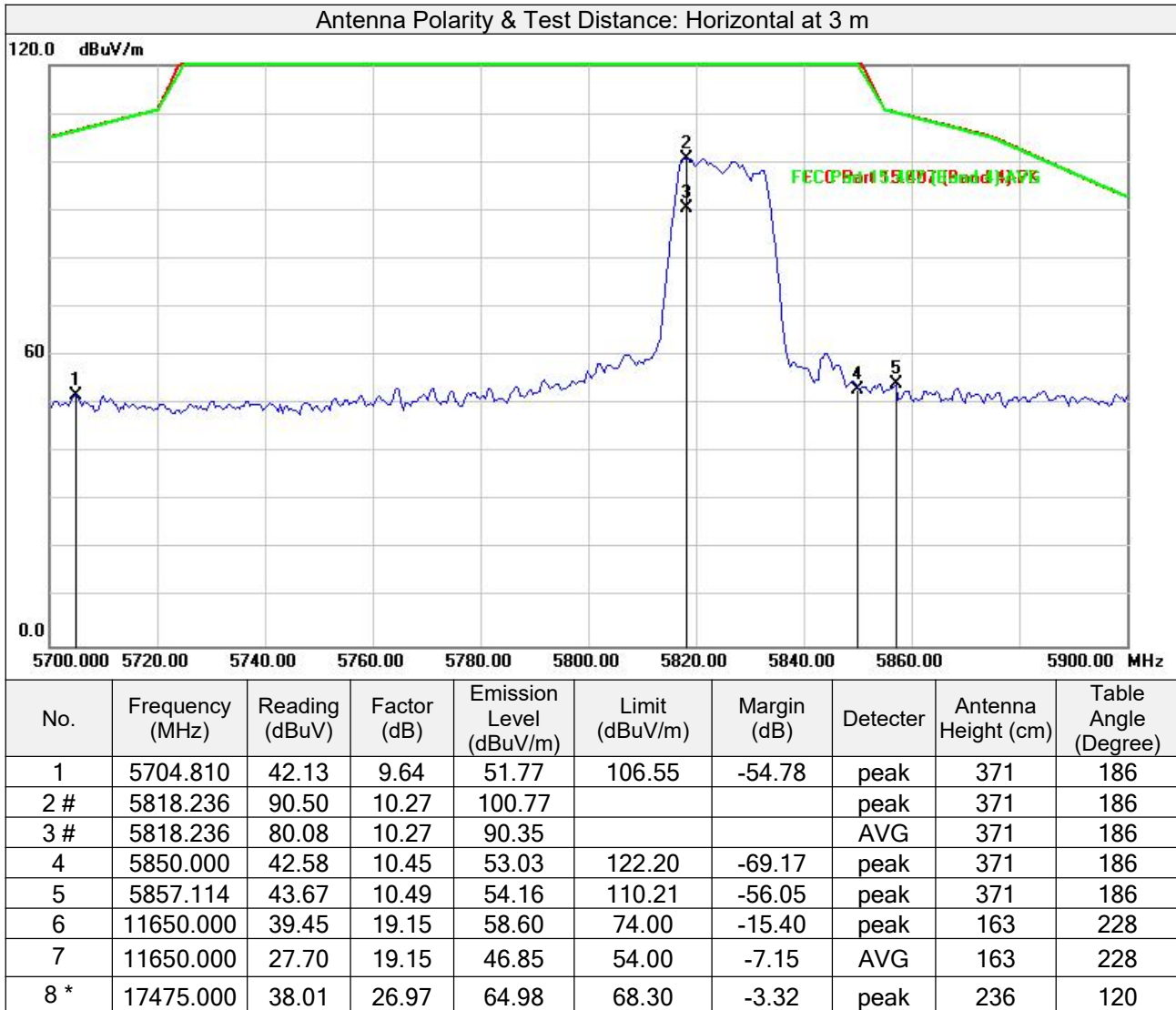


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 165		

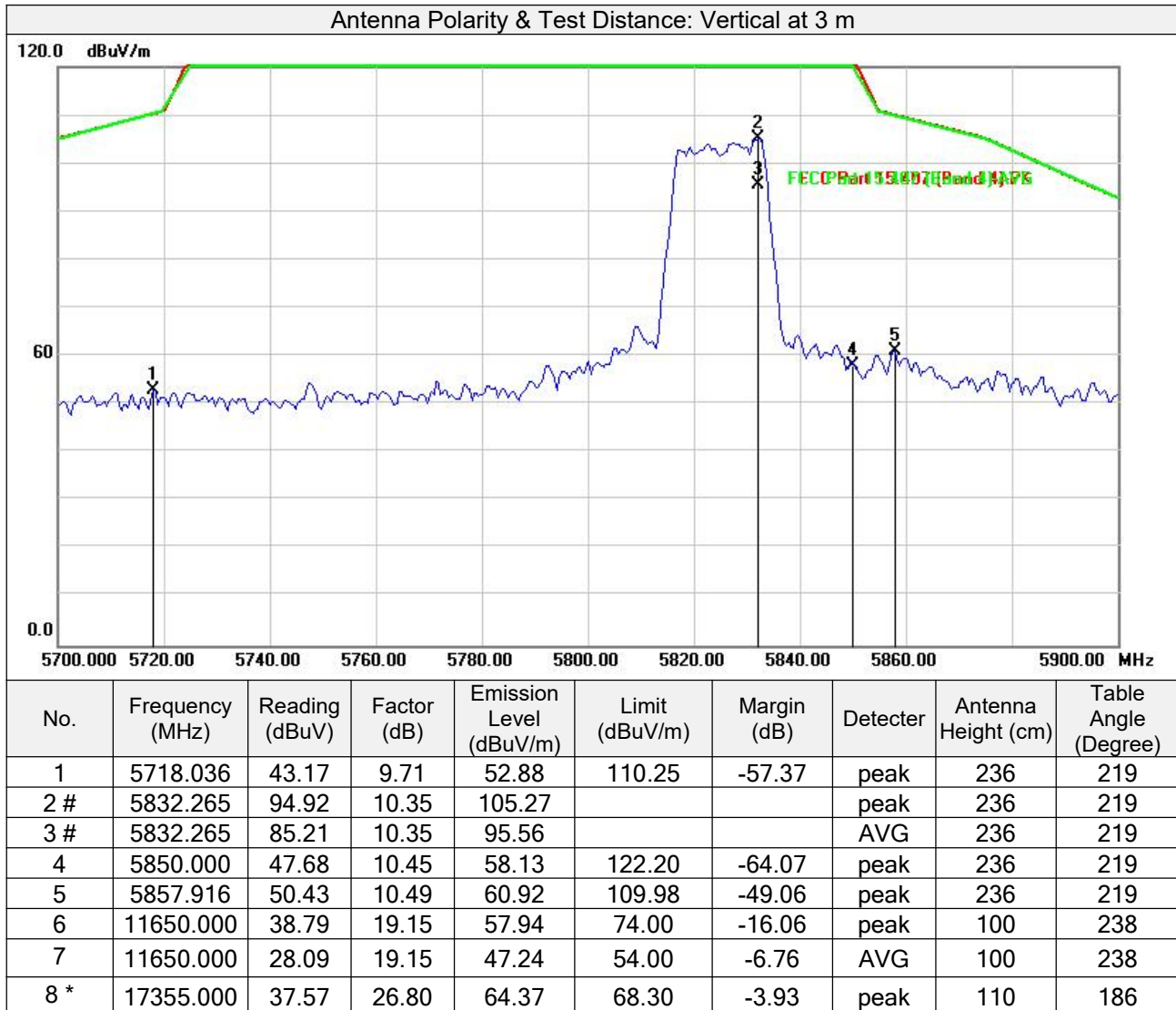


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 165		



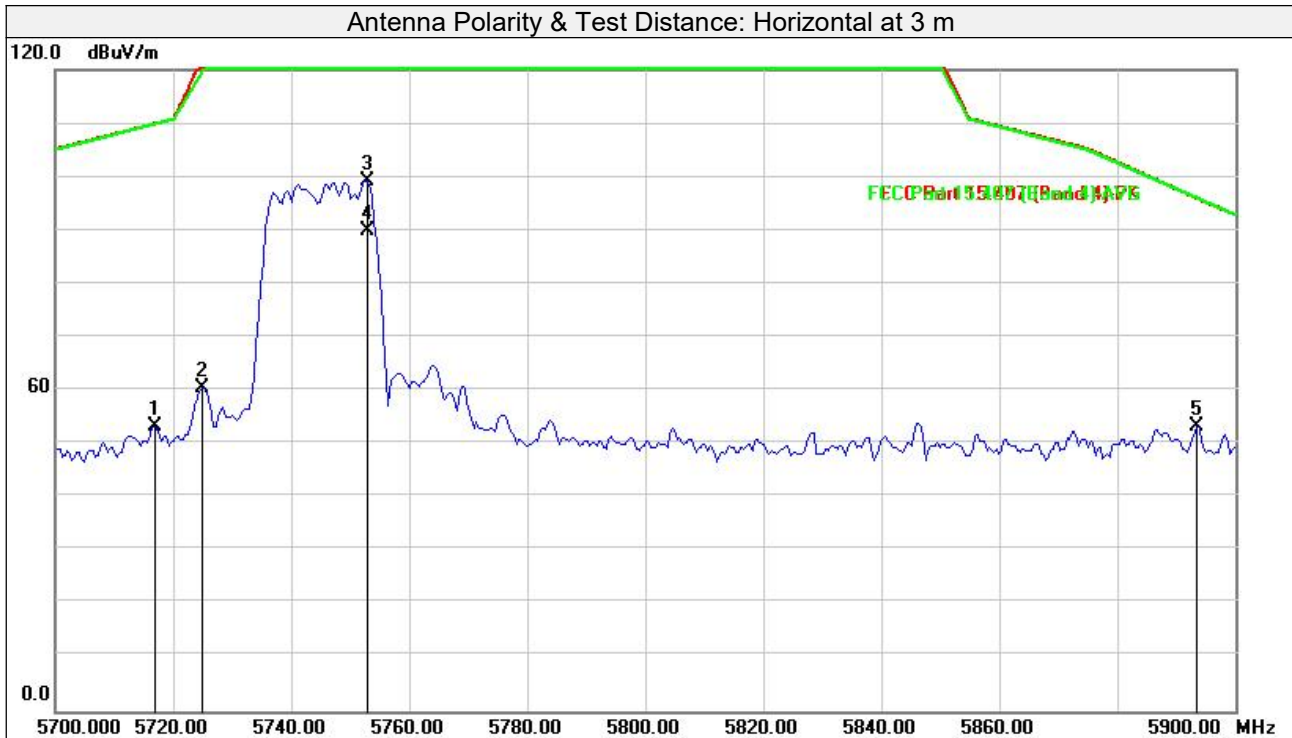
Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



802.11n20

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 149		



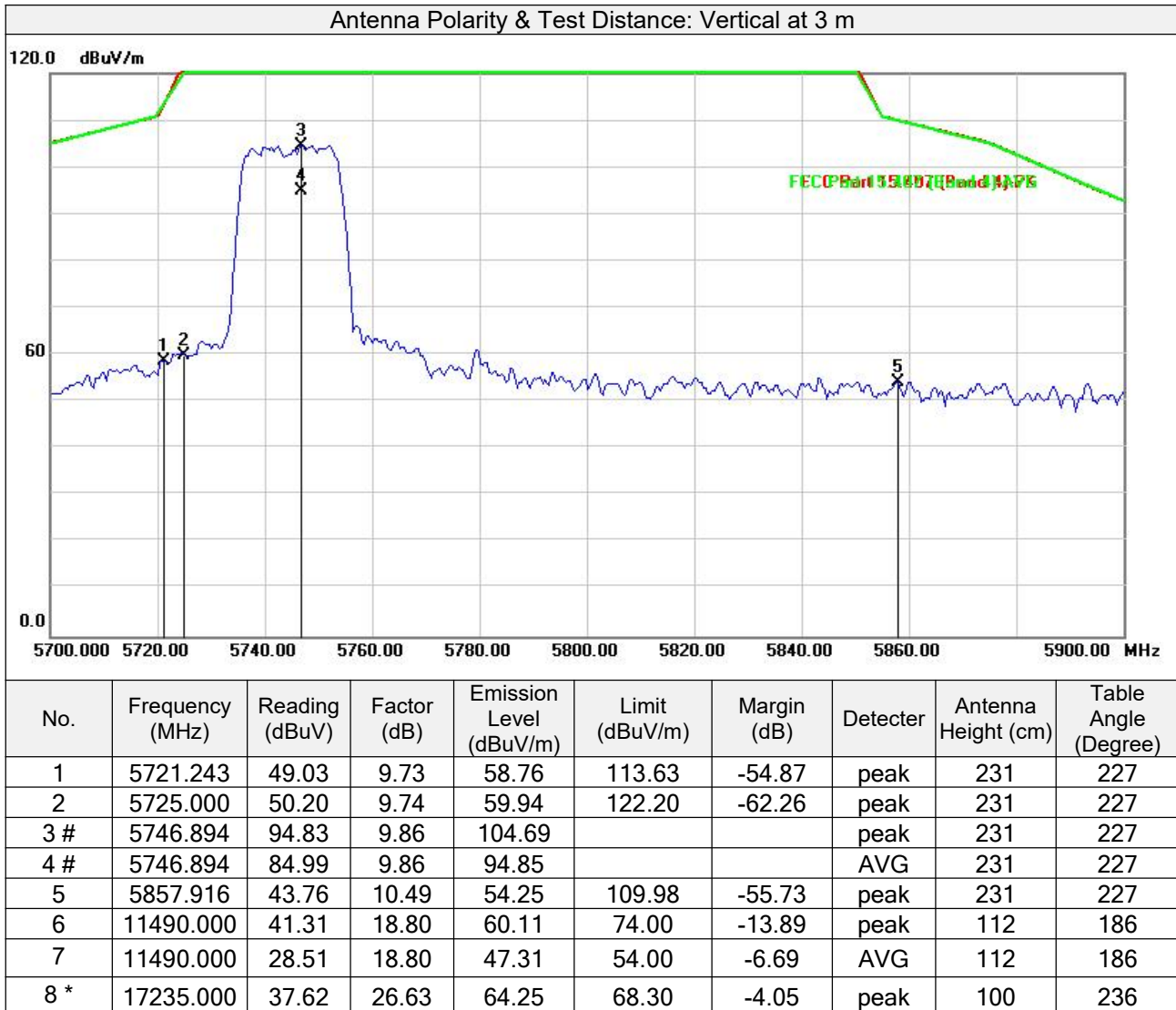
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5716.834	43.52	9.71	53.23	109.91	-56.68	peak	400	185
2	5725.000	50.65	9.74	60.39	122.20	-61.81	peak	400	185
3 #	5752.906	89.32	9.91	99.23			peak	400	185
4 #	5752.906	79.93	9.91	89.84			AVG	400	185
5	5893.587	42.55	10.70	53.25	96.03	-42.78	peak	400	185
6	11490.000	40.27	18.80	59.07	74.00	-14.93	peak	228	197
7	11490.000	27.75	18.80	46.55	54.00	-7.45	AVG	228	197
8 *	17235.000	37.65	26.63	64.28	68.30	-4.02	peak	116	249

Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 149		

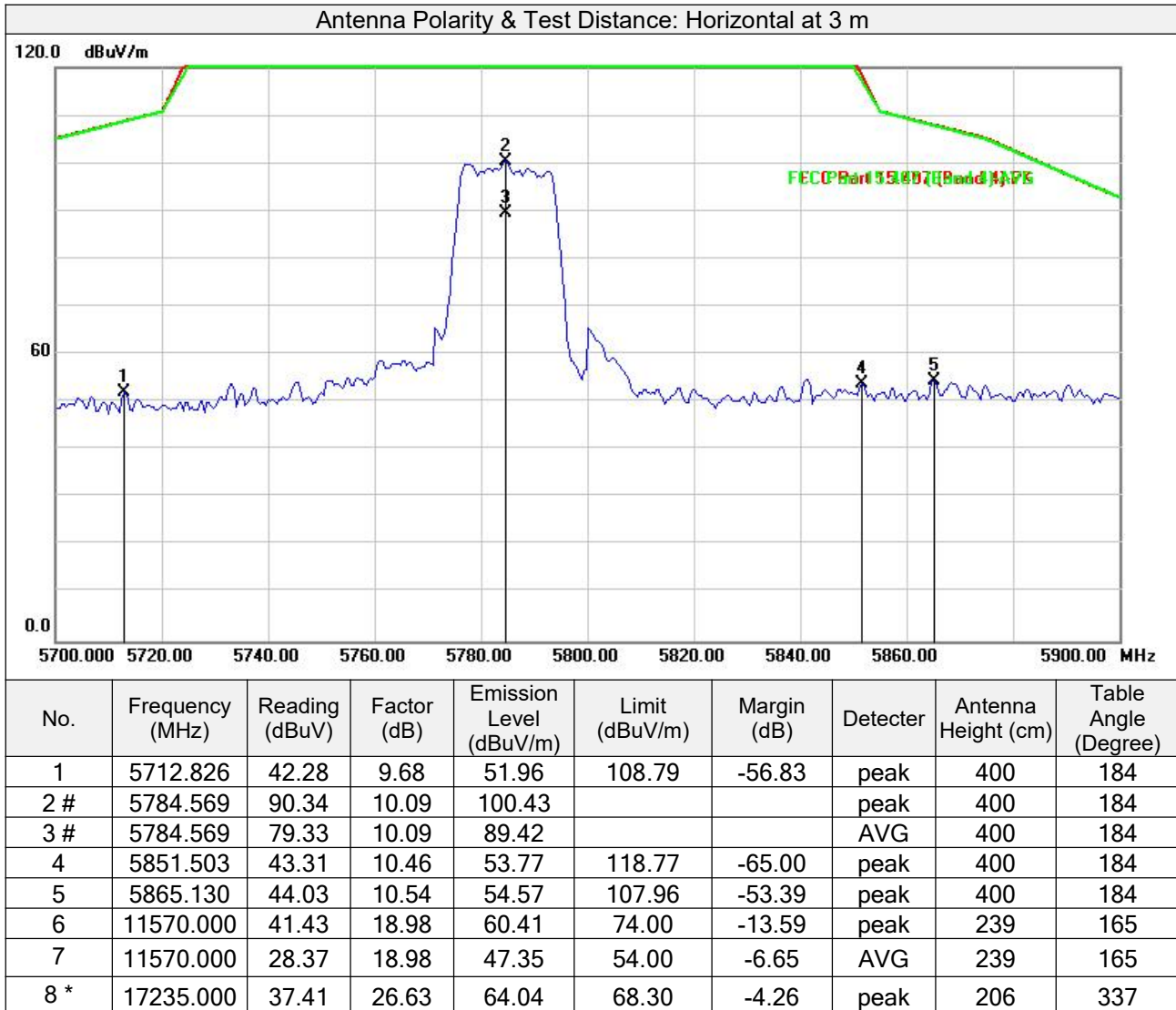


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 157		

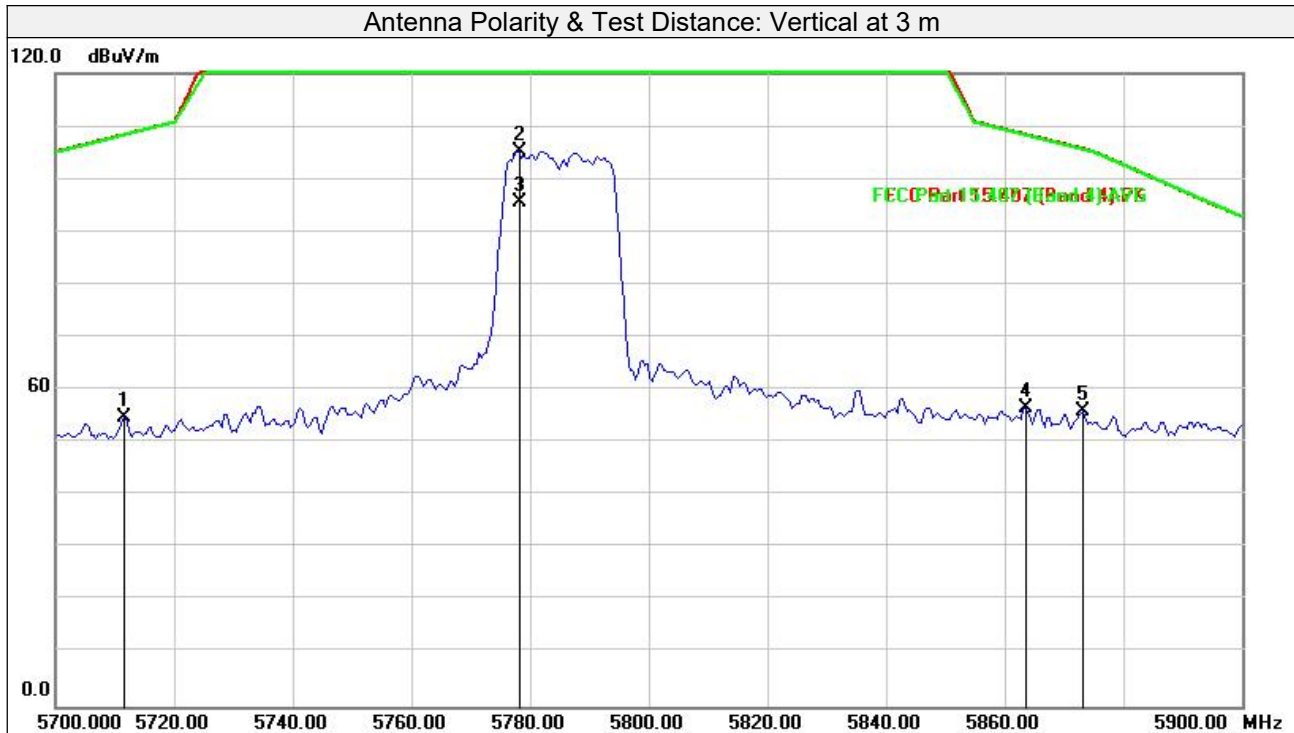


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 157		



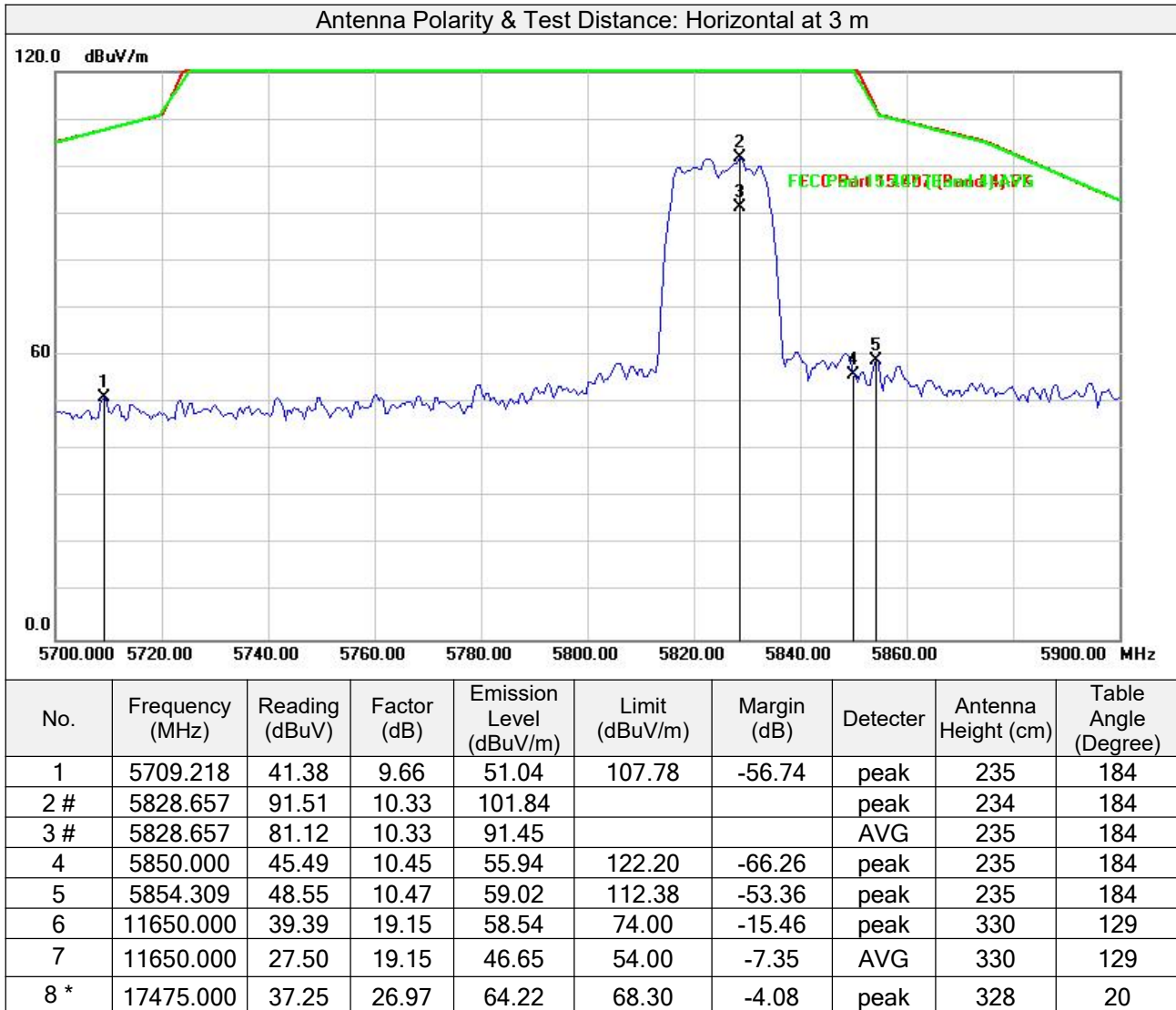
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5711.623	45.13	9.67	54.80	108.45	-53.65	peak	222	236
2 #	5778.156	95.16	10.04	105.20			peak	222	236
3 #	5778.156	85.41	10.04	95.45			AVG	222	236
4	5863.527	45.98	10.52	56.50	108.41	-51.91	peak	222	236
5	5873.146	45.22	10.59	55.81	105.72	-49.91	peak	222	236
6	11570.000	39.44	18.98	58.42	74.00	-15.58	peak	129	228
7	11570.000	27.63	18.98	46.61	54.00	-7.39	AVG	129	228
8 *	17235.000	37.99	26.63	64.62	68.30	-3.68	peak	100	337

Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 165		

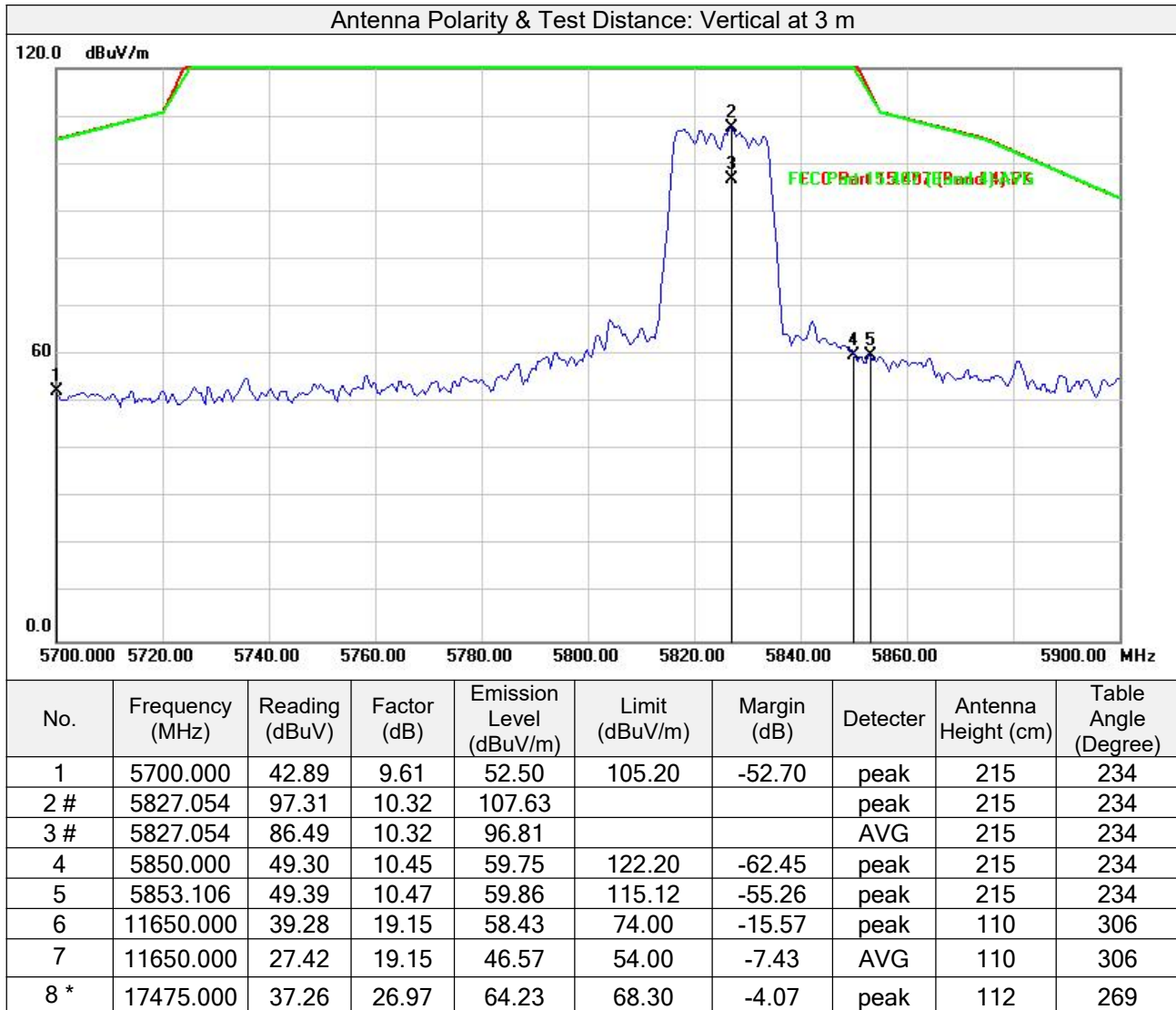


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 165		



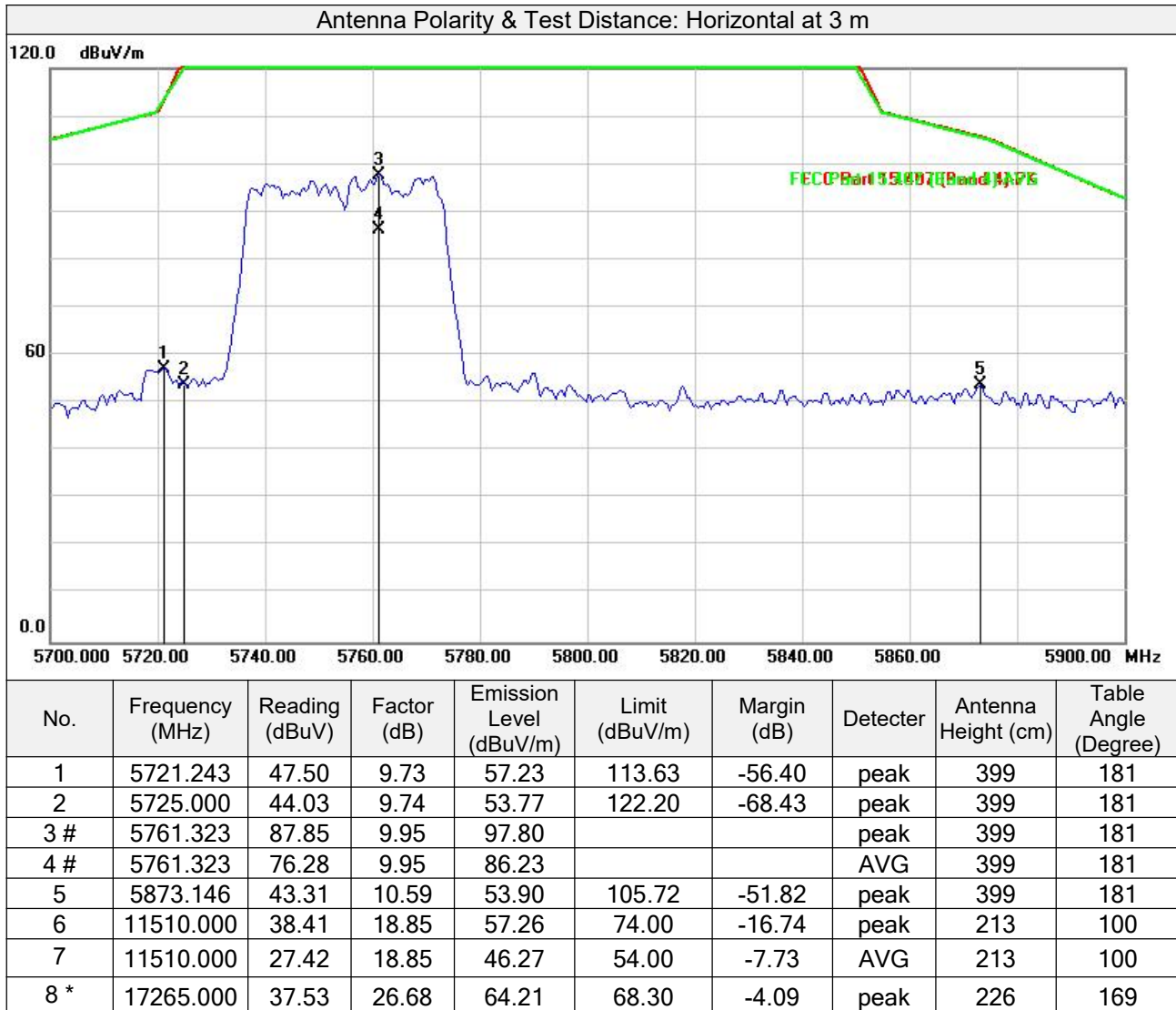
Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



802.11n40

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 151		

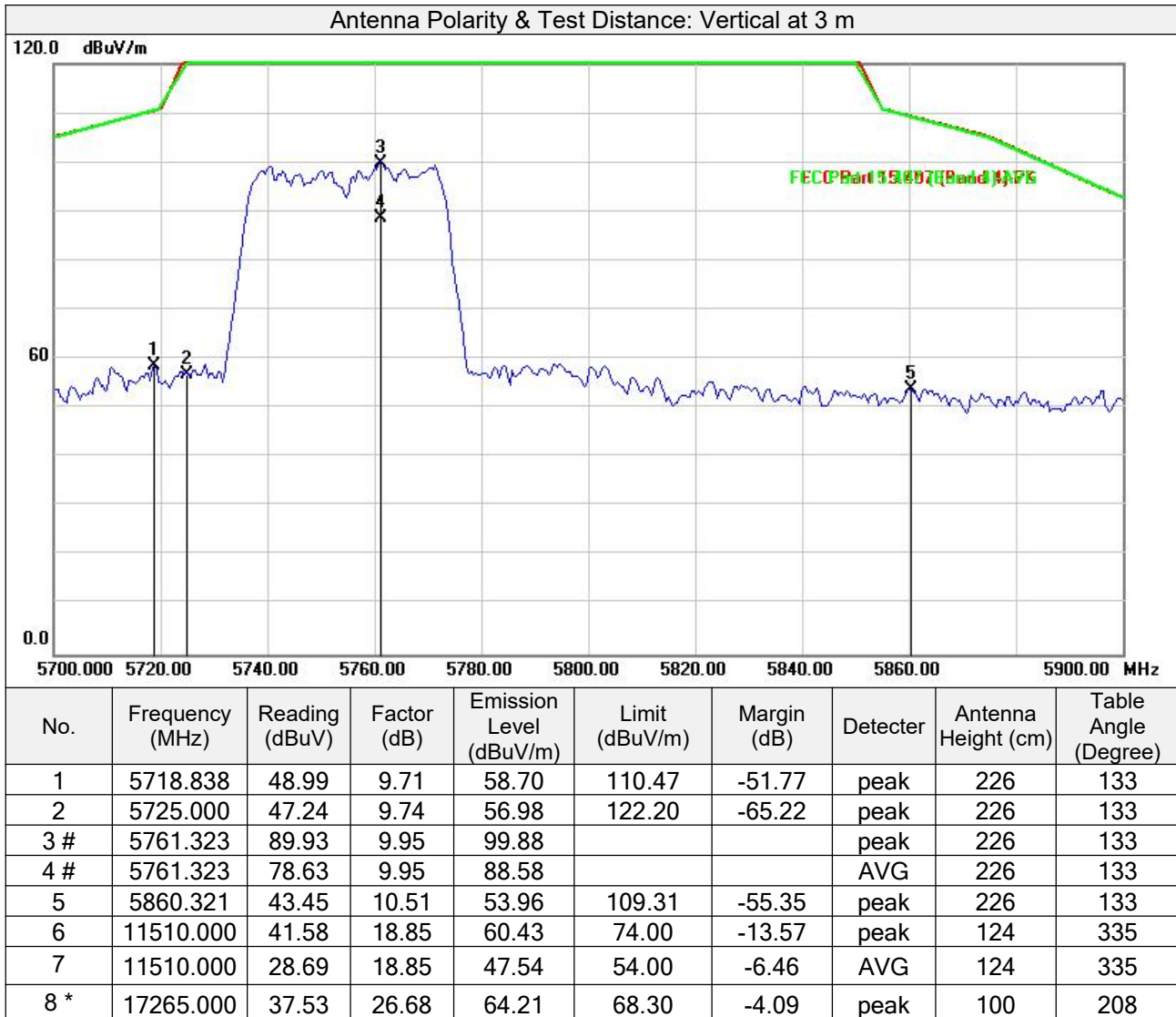


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 151		

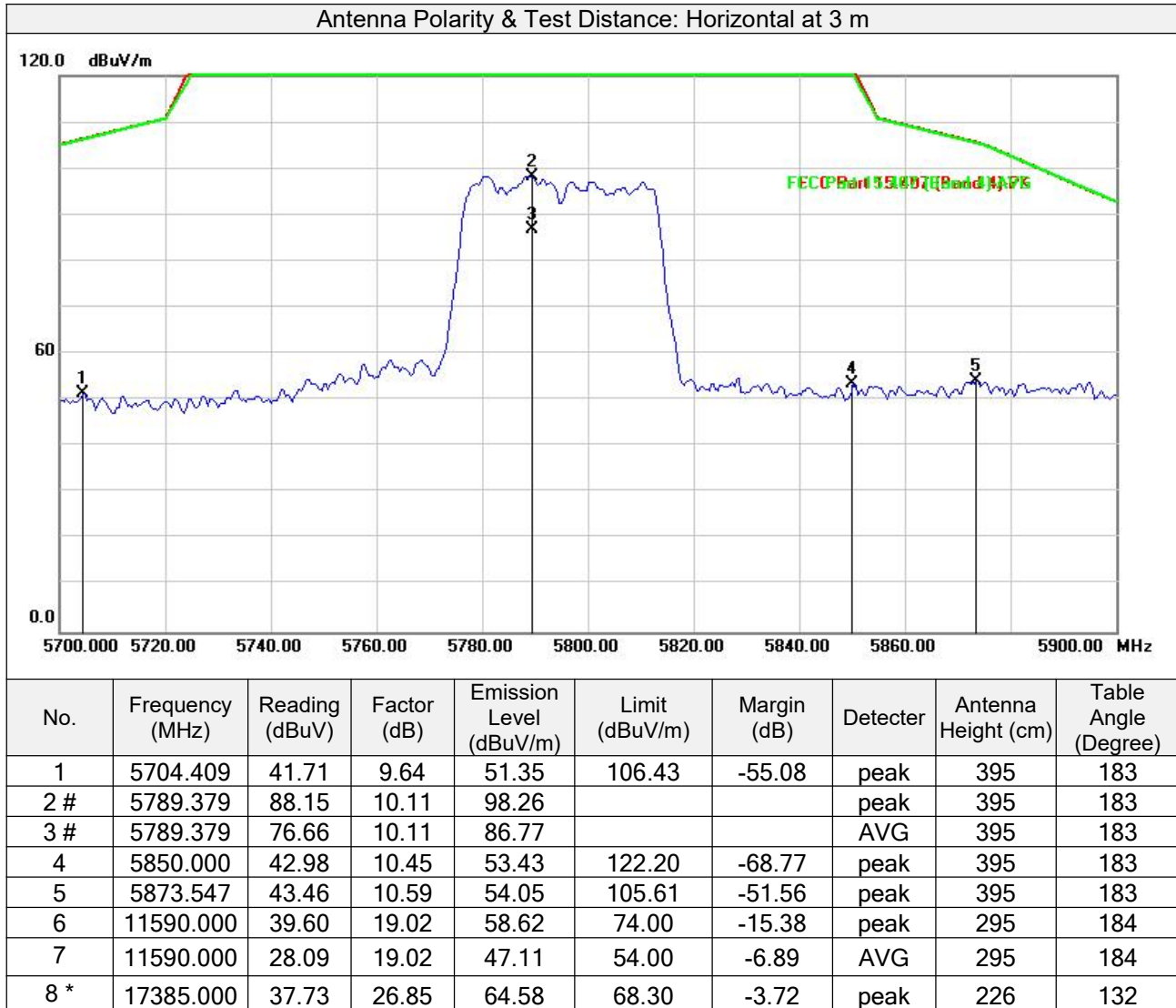


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 159		

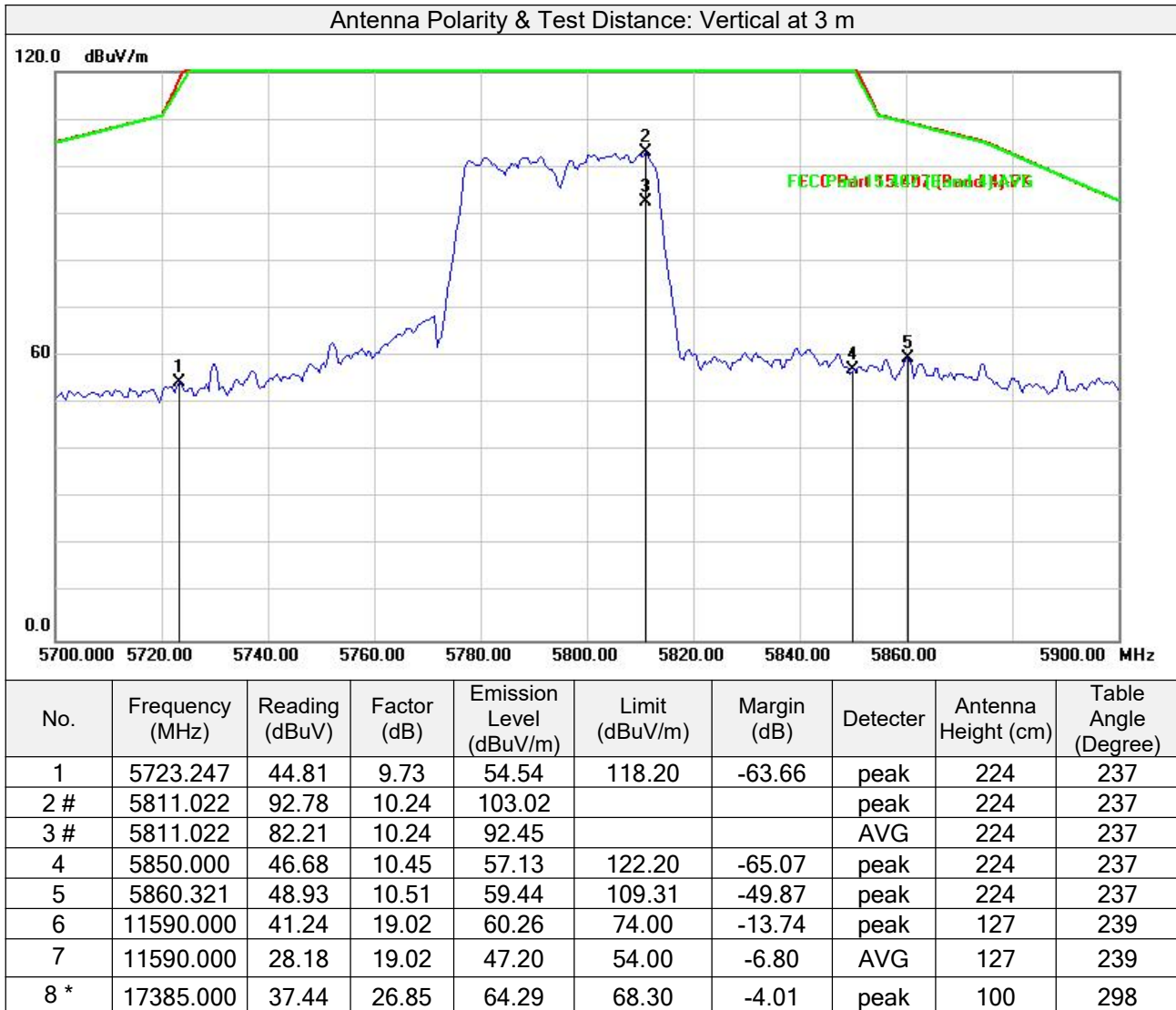


Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 159		



Remarks:

- Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor) Margin value = Emission level – Limit value
- # stands for Fundamental frequency
- The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

3.2 CONDUCTED EMISSION MEASUREMENT

3.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

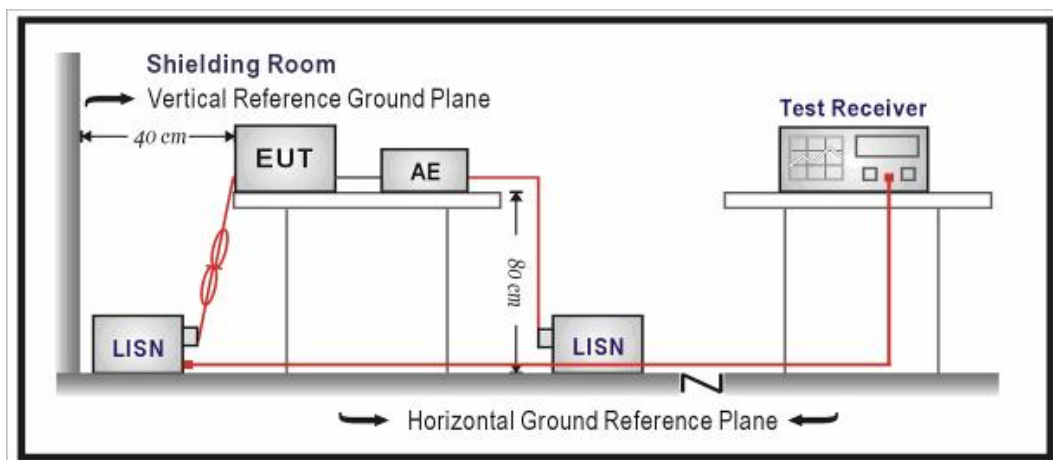
- NOTE:** 1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

3.2.2 TEST PROCEDURES

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

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

3.2.3 TEST SETUP

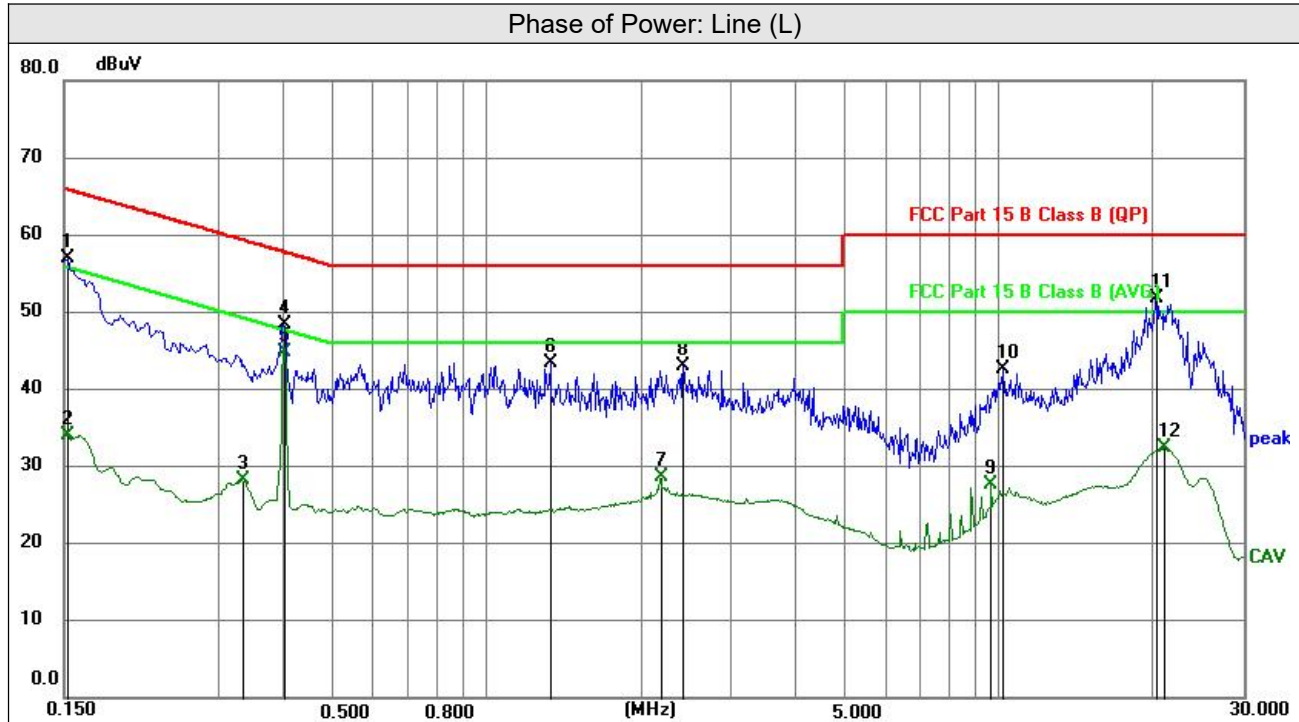


NOTE: For the actual test configuration, please refer to the attached file (Test Setup Photo).



3.2.4 TEST RESULTS

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / CISPR Average (AVG), 9kHz
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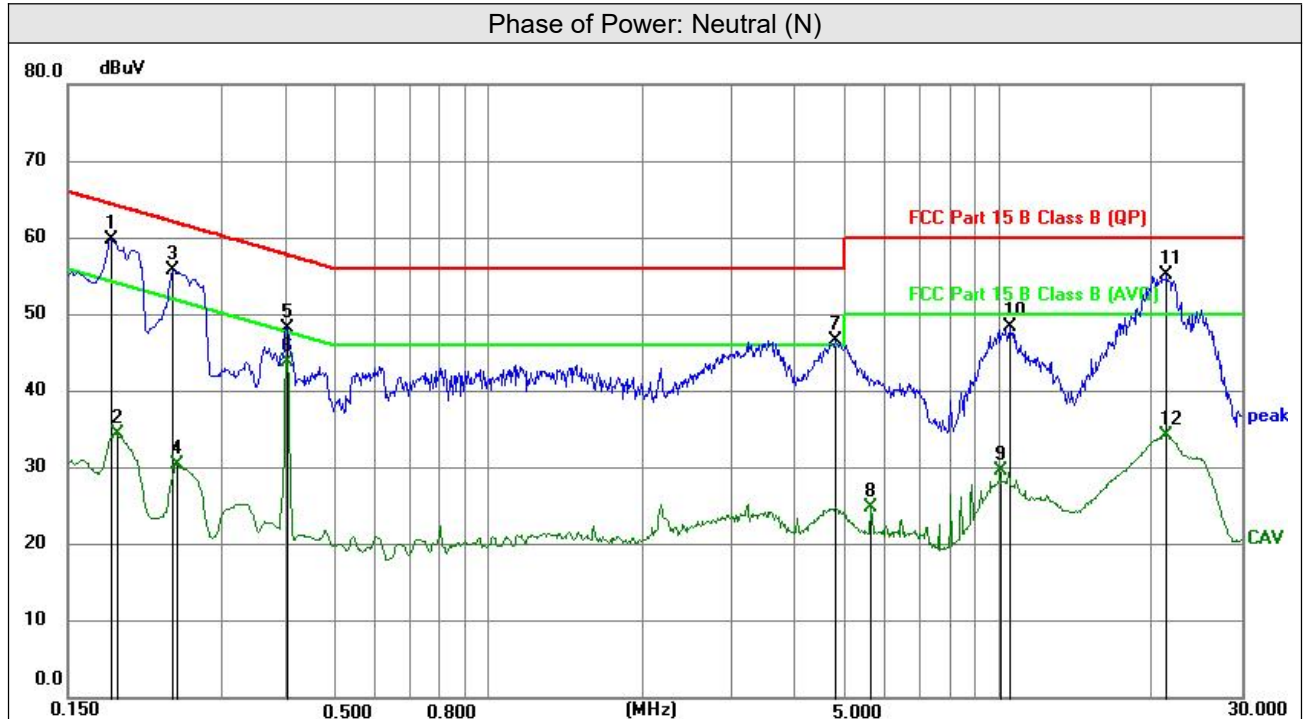
No.	Frequency	Reading	Correction Factor	Emissions Level	Limit	Margin	Remark
	(MHz)	(dBuV)	dB	(dBuV)	(dBuV)	(dB)	Detector
1	0.1522	46.73	10.18	56.91	65.88	-8.97	peak
2	0.1522	23.91	10.18	34.09	55.88	-21.79	AVG
3	0.3344	18.04	10.17	28.21	49.34	-21.13	AVG
4	0.4019	38.26	10.11	48.37	57.81	-9.44	peak
5	0.4042	34.74	10.11	44.85	47.77	-2.92	AVG
6	1.3312	33.36	10.05	43.41	56.00	-12.59	peak
7	2.1885	18.44	10.09	28.53	46.00	-17.47	AVG
8	2.4315	32.83	10.09	42.92	56.00	-13.08	peak
9	9.6720	17.44	10.10	27.54	50.00	-22.46	AVG
10	10.2299	32.39	10.11	42.50	60.00	-17.50	peak
11	20.2110	41.46	10.39	51.85	60.00	-8.15	peak
12	21.0006	22.07	10.37	32.44	50.00	-17.56	AVG

Remarks:

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



Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / CISPR Average (AVG), 9kHz
-----------------	----------------	--	---



No.	Frequency (MHz)	Reading (dBuV)	Correction Factor dB	Emissions Level (dBuV)	Limit (dBuV)	Margin (dB)	Remark Detector
1	0.1815	49.69	10.15	59.84	64.42	-4.58	peak
2	0.1860	24.31	10.15	34.46	54.21	-19.75	AVG
3	0.2400	45.70	10.16	55.86	62.10	-6.24	peak
4	0.2445	20.19	10.16	30.35	51.94	-21.59	AVG
5	0.4020	38.12	10.09	48.21	57.81	-9.60	peak
6	0.4042	33.78	10.09	43.87	47.77	-3.90	AVG
7	4.8029	36.61	10.06	46.67	56.00	-9.33	peak
8	5.6490	14.77	10.01	24.78	50.00	-25.22	AVG
9	10.0883	19.45	10.11	29.56	50.00	-20.44	AVG
10	10.5090	38.28	10.13	48.41	60.00	-11.59	peak
11	21.4755	44.71	10.39	55.10	60.00	-4.90	peak
12	21.4755	23.85	10.39	34.24	50.00	-15.76	AVG

Remarks:

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



3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 Measurement procedure

The transmitter antenna output was connected to the spectrum analyzer through an attenuator. The resolution bandwidth shall be set to the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth.
below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

3.3.2 TEST SETUP



3.3.3 TEST RESULTS

Please refer Annex C.



3.4 26DB EMISSION BANDWIDTH

3.4.1 LIMITS OF 26DB EMISSION BANDWIDTH

This section is for reporting purpose only, there is on restriction limit of bandwidth

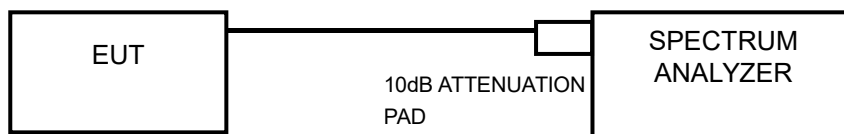
3.4.2 TEST PROCEDURES

FOR 26dB BANDWIDTH

- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak
- 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%.

3.4.3 TEST SETUP

FOR 26dB BANDWIDTH



3.4.4 TEST RESULTS

Refer to Appendix A



3.5 6DB EMISSION BANDWIDTH

3.5.1 LIMITS OF 6DB EMISSION BANDWIDTH

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

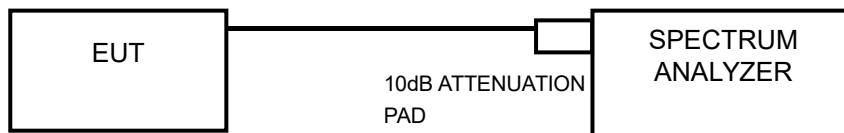
3.5.2 TEST PROCEDURES

FOR 6dB BANDWIDTH

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

3.5.3 TEST SETUP

FOR 6dB BANDWIDTH



3.5.4 TEST RESULTS

Refer to Appendix B



3.6 CONDUCTED OUTPUT POWER MEASUREMENT

3.6.1 LIMITS OF CONDUCTED OUTPUT 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)

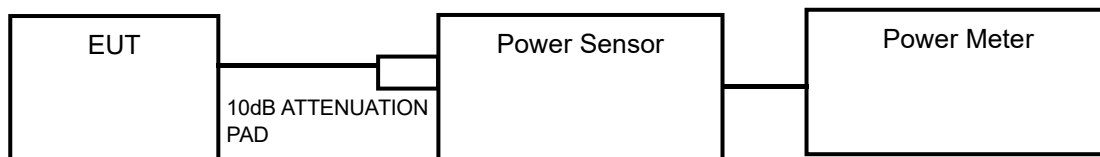
NOTE: 1. Where B is the 26dB emission bandwidth in MHz.

3.6.2 TEST PROCEDURES

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.

3.6.3 TEST SETUP



3.6.4 TEST RESULTS

Refer to Appendix D



3.7 POWER SPECTRAL DENSITY MEASUREMENT

3.7.1 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

3.7.2 TEST PROCEDURE

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

Using method SA-2

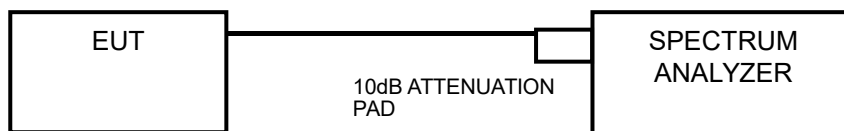
- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1MHz, Set VBW =3 MHz, Detector = AV
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to “free run”.
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max 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 = 300 kHz, Set VBW =1 MHz, Detector = AV
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to “free run”.
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value and add 10 log (1/duty cycle)

3.7.3 TEST SETUP



3.7.4 TEST RESULT

Refer to Appendix E

3.8 FREQUENCY STABILITY

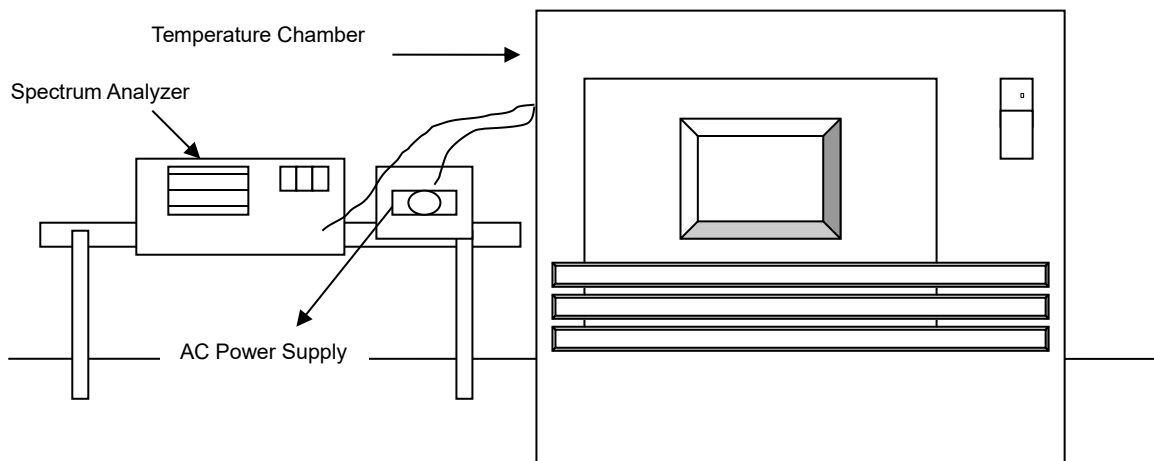
3.8.1 LIMITS OF FREQUENCY STABILITY

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

3.8.2 TEST PROCEDURES

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- 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.
- Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

3.8.3 TEST SETUP



3.8.4 TEST RESULTS

Refer to Appendix F



4 PHOTOGRAPHS OF TEST SETUP

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



5 Appendix

5.1 Appendix A: 26DB EMISSION BANDWIDTH

5.1.1 Test Result

TestMode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	19.400	5170.360	5189.760	---	---
		5200	19.440	5190.240	5209.680	---	---
		5240	19.440	5230.240	5249.680	---	---
		5260	19.640	5250.160	5269.800	---	---
		5300	19.640	5290.240	5309.880	---	---
		5320	19.520	5310.160	5329.680	---	---
		5500	19.640	5490.120	5509.760	---	---
		5580	19.400	5570.320	5589.720	---	---
		5700	19.880	5690.040	5709.920	---	---
		5745	19.400	5735.240	5754.640	---	---
		5785	19.400	5775.200	5794.600	---	---
11N20SISO	Ant1	5825	19.480	5815.200	5834.680	---	---
		5180	19.920	5170.120	5190.040	---	---
		5200	19.920	5190.120	5210.040	---	---
		5240	20.360	5229.760	5250.120	---	---
		5260	20.560	5250.000	5270.560	---	---
		5300	20.040	5289.960	5310.000	---	---
		5320	20.120	5309.960	5330.080	---	---
		5500	19.960	5490.120	5510.080	---	---
		5580	19.920	5570.000	5589.920	---	---
		5700	20.120	5690.000	5710.120	---	---
		5745	19.960	5735.040	5755.000	---	---
11N40SISO	Ant1	5785	20.000	5774.920	5794.920	---	---
		5825	20.120	5814.880	5835.000	---	---
		5190	40.400	5169.760	5210.160	---	---
		5230	40.320	5209.920	5250.240	---	---
		5270	40.480	5249.760	5290.240	---	---
		5310	40.720	5289.680	5330.400	---	---
		5510	40.720	5489.680	5530.400	---	---
		5670	40.240	5649.920	5690.160	---	---
	Ant1	5755	40.400	5734.680	5775.080	---	---
		5795	40.720	5774.680	5815.400	---	---



5.1.2 Test Graphs

11A_Ant1_5180



11A_Ant1_5200



11A_Ant1_5240



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11A Ant1 5260



11A Ant1 5300





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11A_Ant1_5320



11A_Ant1_5500



11A_Ant1_5580



11A Ant1_5700



11A Ant1_5745





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11A_Ant1_5785



11A_Ant1_5825



11N20SISO_Ant1_5180



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11N20SISO_Ant1_5240





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11N20SISO_Ant1_5260



11N20SISO_Ant1_5300



11N20SISO_Ant1_5320



11N20SISO_Ant1_5500



11N20SISO_Ant1_5580





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11N20SISO_Ant1_5700



11N20SISO_Ant1_5745



11N20SISO_Ant1_5785