



TEST REPORT

Report No.: SHATBL2410021W03

Applicant : Rapsodo Pte. Ltd.

Product Name : MLM2PRO™

Brand Name : Rapsodo

Model Name : MLM2.0P

FCC ID : 2AH3O-MLM2PRO

Test Standard : FCC CFR Title 47 Part 15 Subpart C Section 15.247

Date of Test : 2024.10.10~2024.10.31

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Authorized Signatory :

Terry Yang

(Terry Yang)



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REVISION HISTORY

Rev.	Issue Date	Revisions	Revised by
A0	2024.11.01	Initial Release	Terry Yang

DECLARATION OF REPORT

1. The device has been tested by ATBL, and the test results show that the equipment under test (EUT) is in compliance with the requirements of 47 CFR 15.247. And it is applicable only to the tested sample identified in the report.
2. This report shall not be reproduced except in full, without the written approval of ATBL, this document only be altered or revised by ATBL, personal only, and shall be noted in the revision of the document.
3. The general information of EUT in this report is provided by the customer or manufacture, ATBL is only responsible for the test data but not for the information provided by the customer or manufacture.
4. The results in this report is only apply to the sample as tested under conditions. The customer or manufacturer is responsible for ensuring that the additional production units of this model have the same electrical and mechanical components.
5. In this report, '☐' indicates that EUT does not support content after '☐', and '☑' indicates that it supports content after '☑'

SUMMARY OF TEST RESULT

Report Section	Standard Section	Test Item	Judgment	Remark
3.1	47 CFR 15.247(b)(3)	Maximum Peak Conducted Output Power	PASS	--
3.2	--	Duty Cycle	Report only	--
3.3	47 CFR 15.247(a)(2)	6dB Bandwidth	PASS	--
	--	99% Bandwidth	Report only	--
3.4	47 CFR 15.247(e)	Power Spectral Density	PASS	--
3.5	47 CFR 15.247(d)	Conducted Band Edge	PASS	--
3.6	47 CFR 15.247(d)	Conducted Spurious Emission	PASS	--
3.7	47 CFR 15.247(d)/15.209(a)/15.205(a)	Radiated Spurious Emission and Restricted Band	PASS	--
3.8	47 CFR 15.207(a)	AC Power-Line Conducted Emission	PASS	--
3.9	47 CFR 15.203	Antenna Requirements	PASS	--

1. GENERAL DESCRIPTION

1.1. Applicant

Name : Rapsodo Pte. Ltd.
Address : 20 Ayer Rajah Crescent #08-05 Singapore 139964

1.2. Manufacturer

Name : Rapsodo Pte. Ltd.
Address : 20 Ayer Rajah Crescent #08-05 Singapore 139964

1.3. Factory

Name : Rapsodo Pte. Ltd.
Address : 20 Ayer Rajah Crescent #08-05 Singapore 139964

1.4. General Information of EUT

General Information	
Equipment Name	MLM2PRO™
Brand Name	Rapsodo
Model Name	MLM2.0P
Series Model	N/A
Model Difference	N/A
Test sample(s) ID:	202409090006001
Sample(s) Status:	Engineer sample
Battery	Rated Voltage: 7.4V Charge Limit Voltage: 8.4V Capacity: 24.42Wh
Hardware Version	G 1.11
Software Version	3.0.0
Connecting I/O Port(s)	Refer to the remark below.

Remark:

The above information of EUT was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.5. Equipment Specification

Equipment Specification			
Frequency Range	2412MHz - 2462MHz		
Maximum AVG Output Power To Antenna	<input checked="" type="checkbox"/> 802.11b:	16.696dBm (0.08624W)	
	<input checked="" type="checkbox"/> 802.11g:	16.654dBm (0.04628W)	
	<input checked="" type="checkbox"/> 802.11n(HT)20:	18.47dBm (0.07031W)	
	<input checked="" type="checkbox"/> 802.11n(HT)40:	17.76dBm (0.05970W)	
Type of Modulation	<input checked="" type="checkbox"/> 802.11b: DSSS (DBPSK/DQPSK/CCK)		
	<input checked="" type="checkbox"/> 802.11g/n(HT): OFDM (BPSK/QPSK/16QAM/64QAM)		
Antenna Information	<input checked="" type="checkbox"/> SISO	Antenna Type:	FPC
		Antenna 0 Gain:	5dBi
		Antenna 1 Gain:	5dBi
	<input checked="" type="checkbox"/> MIMO	Antenna Type:	FPC
		Antenna 0 Gain:	5dBi
		Antenna 1 Gain:	5dBi
		Directional Gain:	8.01

Note:

1. The 802.11b&802.11g mode cannot transmit with dual antennas simultaneously.
2. Antenna Gain=5dBi.

This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional Gain= $G_{Ant.} + 10\log(N)$ dBi, that is Directional Gain= $5 + 10\log(2)$ dBi=8.01dBi. So, output power limit of 802.11n(HT)20 and 802.11n(HT)40 is $30 - 1 = 29$ dBm. The power spectral density limit of 802.11n(HT)20 and 802.11n(HT)40 is $8 - 1 = 7$ dBm/MHz.

1.6. Modification of EUT

No modifications are made to the EUT during all test items.

1.7. Laboratory Information

Company Name	:	Shanghai ATBL Technology Co., Ltd.
Address	:	Building 8, No.160 Basheng Road, Waigaoqiao Free Trade Zone, Pudong New Area, Shanghai
Telephone	:	+86(0)21-51298625

1.8. Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

47 CFR Part 15 Subpart C §15.247

FCC KDB 558074 D01 15.247 Meas Guidance v05r02

ANSI C63.10-2013

Remark:

All test items were verified and recorded according to the standards and without any deviation during the test.

2. TEST CONFIGURATION OF EUT

2.1. Carrier Frequency Channel

Frequency Band	Channel	Frequency MHz	Channel	Frequency MHz
2400 - 2483.5 MHz	01	2412	07	2442
	02	2417	08	2447
	03	2422	09	2452
	04	2427	10	2457
	05	2432	11	2462
	06	2437		

Remark:

1. For 20 MHz Bandwidth: Low Channel: **CH 01_2412 MHz**; Middle Channel: **CH 06_2437 MHz**; High Channel: **CH 11_2462 MHz**. For 40 MHz Bandwidth: Low Channel: **CH 03_2422 MHz**; Middle Channel: **CH 06_2437 MHz**; High Channel: **CH 09_2452 MHz**.

2.2. Test Modes

Final test modes are considering the modulation and worse data rates as below table.

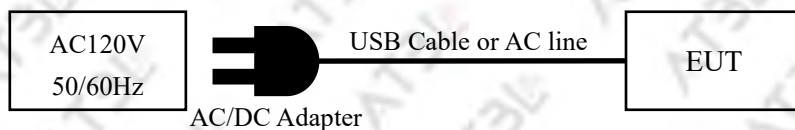
Summary Table of Test Modes			
Test Item	Mode	Data Rate	Channel
For Conducted and Radiated Test	<input checked="" type="checkbox"/> 802.11b:	1 Mbps	Low, Middle, High
	<input checked="" type="checkbox"/> 802.11g:	6 Mbps	Low, Middle, High
	<input checked="" type="checkbox"/> 802.11n(HT)20:	MCS 0	Low, Middle, High
	<input checked="" type="checkbox"/> 802.11n(HT)40:	MCS 0	Low, Middle, High
	<input type="checkbox"/> 802.11ac(VHT)20:	MCS 0	Low, Middle, High
	<input type="checkbox"/> 802.11ac(VHT)40:	MCS 0	Low, Middle, High
	<input type="checkbox"/> 802.11ax(HE)20:	MCS 0	Low, Middle, High
	<input type="checkbox"/> 802.11ax(HE)40:	MCS 0	Low, Middle, High
For AC Power-line Conducted Emission	802.11b: High Channel		

Remark:

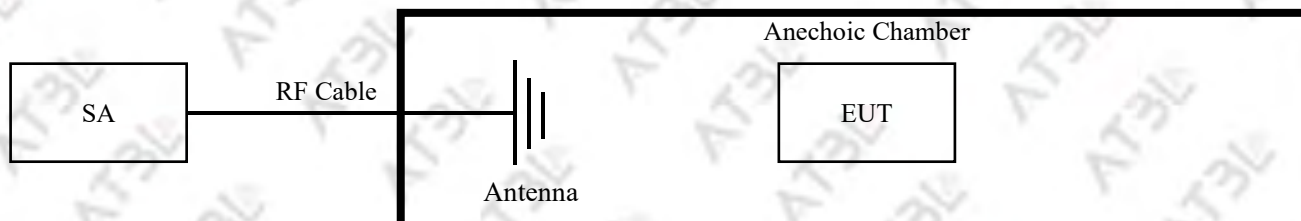
1.All the test modes of Radiated Spurious Emission (RSE) were tested at the worst data rate; only the worse data shown in report.

2.3. Block Diagram of Test System

2.3.1. For AC Power-Line Conducted Emission



2.3.2. For Radiated Spurious Emission



2.3.3. For Conducted Test



2.4. Description of Support Units

NO.	Unit	Brand	Model	Description
1	ROUTER	NETGEAR	R7000	N/A
2	PC	Redmi G	2021 Ryzen	N/A

2.5. Test Software and Power Level

During the test, the channel and power control software provided by the customer is used to control the operation channel and output power level.

2.6. EUT Operating Conditions

For AC power-line conducted emission, the EUT was connected under the large package sizes transmission.

For radiated spurious emission and conducted test, the engineering test program was provided and make the EUT to continuous transmit/receive.

2.7. Equipment List

2.7.1. For AC Power-Line Conducted Emission

Equipment Name	Manufacturer	Model	Serial No.	Equipment No.	Calibration Until
Test Receiver	R&S	ESPI	101679	SHATBL-E012	2025.05.21
LISN	R&S	ENV216	100300	SHATBL-E013	2025.05.21
LISN	R&S	ENV216	100333	SHATBL-E041	2025.05.21
Thermometer	DeLi	N/A	N/A	SHATBL-E016	2025.09.21
Test Software	FALA	EZ-EMC	N/A	SHATBL-E046	N/A

2.7.2. For Radiated Spurious Emission

Equipment Name	Manufacturer	Model	Serial No.	Equipment No.	Calibration Until
Signal analyzer	Agilent	N9020A	MY50200811	SHATBL-E017	2025.05.21
Amplifier	JPT	JPA0118-55-303A	1910001800055000	SHATBL-E006	2025.05.21
Amplifier	JPT	JPA-10M1G32	21010100035001	SHATBL-E005	2025.05.21
Antenna/Turn table Controller	Brilliant	N/A	N/A	SHATBL-E007	N/A
Loop Antenna	Daze	ZN30900C	20077	SHATBL-E042	2025.05.21
Bilog Antenna	SCHWARZBECK	VULB 9168	01174	SHATBL-E008	2025.05.21
Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120D	02334	SHATBL-E009	2025.05.21
Horn Antenna	COM-POWER	AH-1840	10100008	SHATBL-E043	2025.05.21
Thermometer	DeLi	N/A	N/A	SHATBL-E015	2025.09.21
Test Software	FALA	EMC-RI	N/A	SHATBL-E046	N/A

2.7.3. For Conducted Test

Equipment Name	Manufacturer	Model	Serial No.	Equipment No.	Calibration Until
Power meter	Anritsu	ML2496A	1935001	SHATBL-W030	2025.09.28
Power sensor	Anritsu	MA2411B	1911006	SHATBL-W031	2025.09.28
Power sensor	DARE	RPR3006W	16I00054SN016	SHATBL-W008	2025.09.28
Power sensor	DARE	RPR3006W	RPR6W-2001005	SHATBL-W032	2025.09.28
Power sensor	Rediteq	RPR3006W	RPR6W-2201002	SHATBL-W033	2024.11.15
Power sensor	Rediteq	RPR3006W	RPR6W-2201003	SHATBL-W034	2024.11.15
Power sensor	Keysight	U2021XA	MY59120004	SHATBL-W035	2025.08.13
Adjustable Attenuator	Agilent	8494B	MY42144015	SHATBL-W009	2025.09.28
Adjustable Attenuator	Agilent	8496B	MY42143776	SHATBL-W010	2025.09.28
Environmental Test Chamber	KSON	THS-B6C-150	9159K	SHATBL-W019	2025.01.17
Signal analyzer	Keysight	N9020A	MY50510136	SHATBL-W003	2025.09.28
Vector signal generator	Keysight	N5182B	MY57300196	SHATBL-W005	2025.09.28
Vector signal generator	Agilent	N5182A	MY50143555	SHATBL-W037	2025.07.17
Analog signal generator	Keysight	N5173B	MY60403026	SHATBL-W038	2025.07.17
Wideband radio communication tester	R&S	CMW500	101331	SHATBL-W007	2025.09.28
Spectrum analyzer	R&S	FSV40-N	101761	SHATBL-W036	2025.08.22
Switch Box	N/A	RFSW3003328	RFSW201019	SHATBL-W029	N/A
Thermometer	DeLi	N/A	N/A	SHATBL-W012	2025.09.21
Test Software	FALA	LZ-RF	N/A	SHATBL-W020	N/A

2.8. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	RF output power, conducted	$\pm 0.958\text{dB}$
2	Conducted spurious emissions	$\pm 2.988\text{dB}$
3	All emissions, radiated 9KHz-30MHz	$\pm 0.96\text{dB}$
4	All emissions, radiated 30MHz-1GHz	$\pm 2.50\text{dB}$
5	All emissions, radiated 1GHz-18GHz	$\pm 3.51\text{dB}$
6	Occupied bandwidth	$\pm 23.20\text{Hz}$
7	Power spectral density	$\pm 0.886\text{dB}$

3. TEST RESULT

3.1. Maximum conducted output power

3.1.1. Limit

47 CFR 15.247(b)(3): For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.

47 CFR 15.247(b)(4): If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

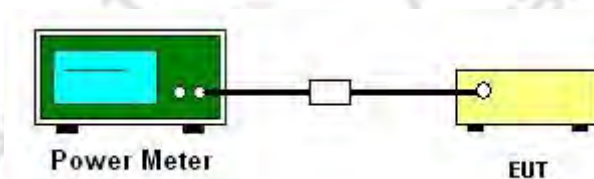
47 CFR 15.247(c)(1)(i): Systems operating in the 2400–2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

3.1.2. Test Procedure

ANSI C63.10-2013 clause 11.9.2.3.2 Method AVGPM: Method AVGPM is a measurement using an RF average power meter, as follows:

measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Because the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

3.1.3. Test Setup



3.1.4. Test Result of Maximum Conducted Output Power

Please refer to the Appendix A1.

3.2. Duty Cycle

3.2.1. Limit

There is no limit requirement for Duty Cycle.

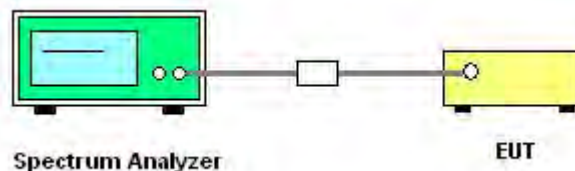
3.2.2. Test Procedure

ANSI C63.10-2013 clause 11.6: Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:

1. A diode detector and an oscilloscope that together have a sufficiently short response time to permit accurate measurements of the ON and OFF times of the transmitted signal.
2. The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:

- ① Set the center frequency of the instrument to the center frequency of the transmission.
- ② Set $RBW \geq OBW$ if possible; otherwise, set RBW to the largest available value.
- ③ Set $VBW \geq RBW$. Set detector = peak or average.
- ④ The zero-span measurement method shall not be used unless both RBW and VBW are $> 50/T$ and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring the duty cycle shall not be used if $T \leq 16.7 \mu s$.)

3.2.3. Test Setup



3.2.4. Test Result of Duty Cycle

Please refer to the Appendix A2.

3.3. 6dB Bandwidth and 99% Bandwidth

3.3.1. Limit

47 CFR 15.247(a)(2): Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

There is no limit requirement for 99% Bandwidth.

3.3.2. Test Procedure

1. The testing of 6dB Bandwidth follows ANSI C63.10-2013 clause 11.8.1: The steps for the first option are as follows:

- ① Set RBW = 100 kHz.
- ② Set the VBW $\geq [3 \times \text{RBW}]$.
- 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.

2. The testing of 99% Bandwidth follows ANSI C63.10-2013 clause 6.9.3: The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

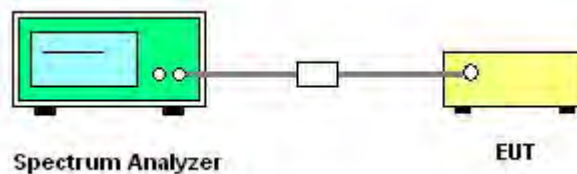
- ① The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- ② The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.
- ③ Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (\text{OBW}/\text{RBW})]$ below the reference level. Specific guidance is given in ANSI C63.10-2013 clause 4.1.5.2.
- ④ Step a) through step c) might require iteration to adjust within the specified range.
- ⑤ Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- ⑥ Use the 99% power bandwidth function of the instrument (if available) and report the

measured bandwidth.

⑦ If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.

⑧ The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

3.3.3. Test Setup



3.3.4. Test Result of 6dB Bandwidth and 99% Bandwidth

Please refer to the Appendix A3.

3.4. Power Spectral Density

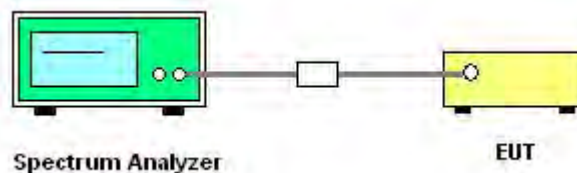
3.4.1. Limit

47 CFR 15.247(e): For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

3.4.2. Test Procedure

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to 3 kHz.
4. Set the VBW $\geq [3 \times \text{RBW}]$.
5. Detector =RMS.
6. Sweep time = auto couple.
7. Trace mode = averaging.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.

3.4.3. Test Setup



3.4.4. Test Result of Power Spectral Density

Please refer to the Appendix A4.

3.5. Conducted Band Edge

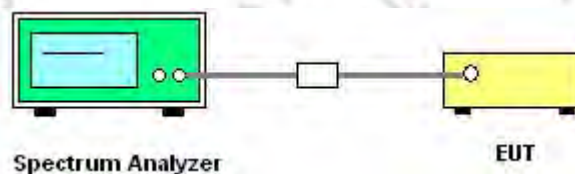
3.5.1. Limit

47 CFR 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

3.5.2. Test Procedure

1. The testing follows ANSI C63.10-2013 clause 11.13.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Set RBW = 100 kHz, VBW=300 kHz, RMS Detector. Conducted Band Edge measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the 100 kHz bandwidth within the band that contains the highest level of the desired power when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
4. Measure and record the results in the test report.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.5.3. Test Setup



3.5.4. Test Result of Conducted Band Edge

Please refer to the Appendix A5.

3.6. Conducted Spurious Emission

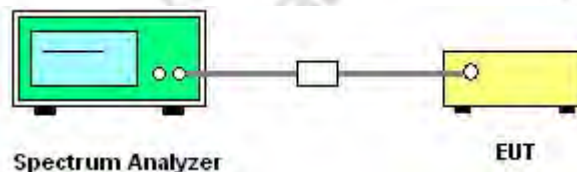
3.6.1. Limit

47 CFR 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

3.6.2. Test Procedure

1. The testing follows ANSI C63.10-2013 clause 7.8.8.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW = 300kHz, scan up through 10th harmonic. All harmonics / spurs must be at least 30 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.6.3. Test Setup



3.6.4. Test Result of Conducted Spurious Emission

Please refer to the Appendix A5.

3.7. Radiated Spurious Emission and Restricted Band

3.7.1. Limit

47 CFR 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

47 CFR 15.205(a): Only spurious emissions are permitted in any of the frequency bands listed below:

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)
0.090-0.110	12.29-12.293	149.9-150.05	1660-1710	8.025-8.5
0.495-0.505	12.51975-12.52025	156.52475-156.52525	1718.8-1722.2	9.0-9.2
2.1735-2.1905	12.57675-12.57725	156.7-156.9	2200-2300	9.3-9.5
4.125-4.128	13.36-13.41	162.0125-167.17	2310-2390	10.6-12.7
4.17725-4.17775	16.42-16.423	167.72-173.2	2483.5-2500	13.25-13.4
4.20725-4.20775	16.69475-16.69525	240-285	2690-2900	14.47-14.5
6.215-6.218	16.80425-16.80475	322-335.4	3260-3267	15.35-16.2
6.26775-6.26825	25.5-25.67	399.9-410	3332-3339	17.7-21.4
6.31175-6.31225	37.5-38.25	608-614	3345.8-3358	22.01-23.12
8.291-8.294	73-74.6	960-1240	3600-4400	23.6-24.0
8.362-8.366	74.8-75.2	1300-1427	4500-5150	31.2-31.8
8.37625-8.38675	108-121.94	1435-1626.5	5350-5460	36.43-36.5
8.41425-8.41475	123-138	1645.5-1646.5	7250-7750	Above 38.6

47 CFR 15.209(a): The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

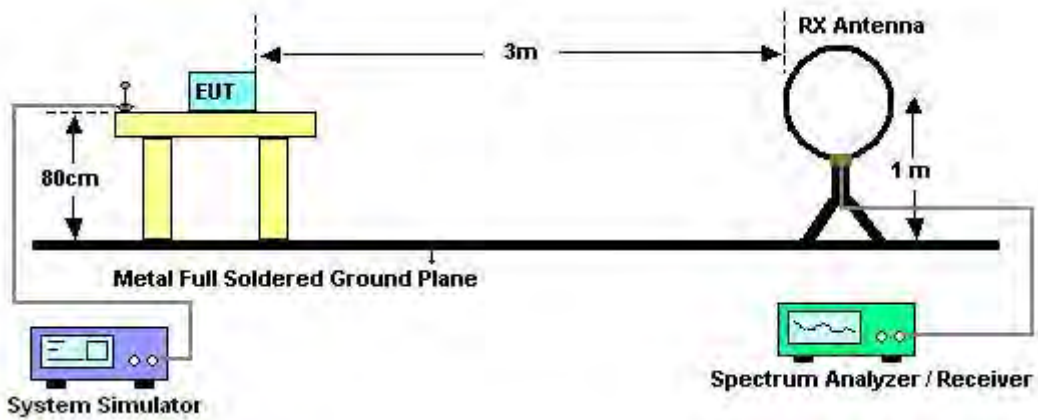
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

3.7.2. Test Procedure

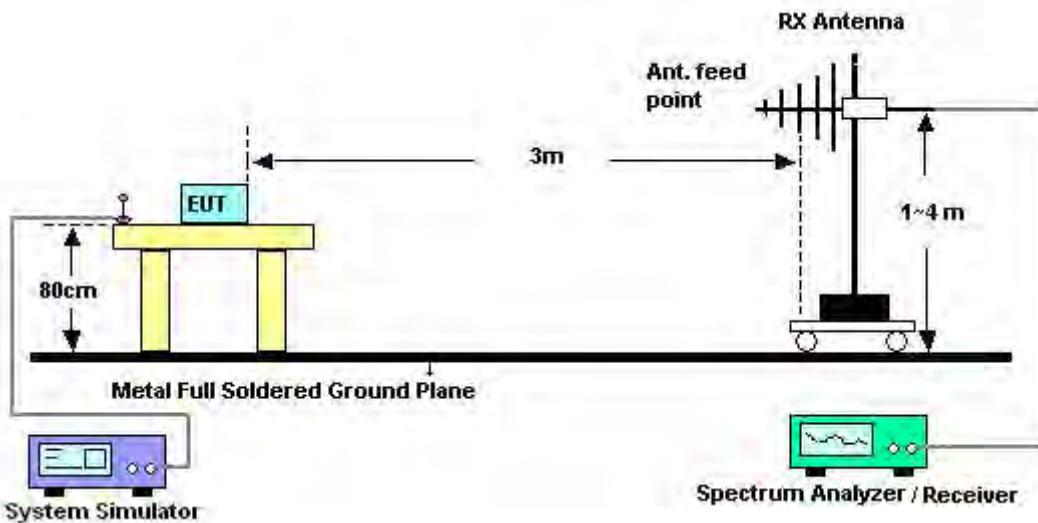
1. The testing follows ANSI C63.10-2013 clause 11.11 & 11.12.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Pre-amp Factor = Level.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than peak limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. Use the following spectrum analyzer settings:
 - ① Span shall wide enough to fully capture the emission being measured;
 - ② When frequency < 1 GHz:
 - Set RBW=100 kHz; VBW \geq RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - ③ When frequency \geq 1 GHz:
 - Set RBW = 1 MHz; VBW = 3 MHz for peak measurement;
 - Set RBW = 1 MHz; VBW = 10 Hz, when duty cycle is no less than 98 percent or VBW \geq 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.7.3. Test Setup

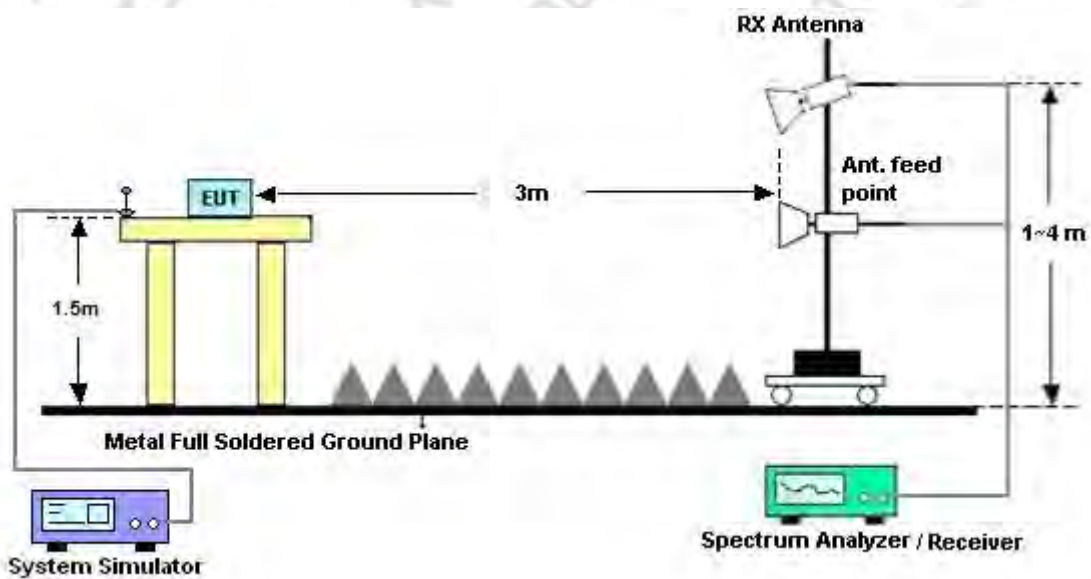
3.7.3.1. For radiated emissions below 30MHz



3.7.3.2. For radiated emissions from 30MHz to 1GHz



3.7.3.3. For radiated emissions above 1GHz



3.7.4. Test Result of Radiated Spurious Emission

For 9 kHz ~ 30 MHz

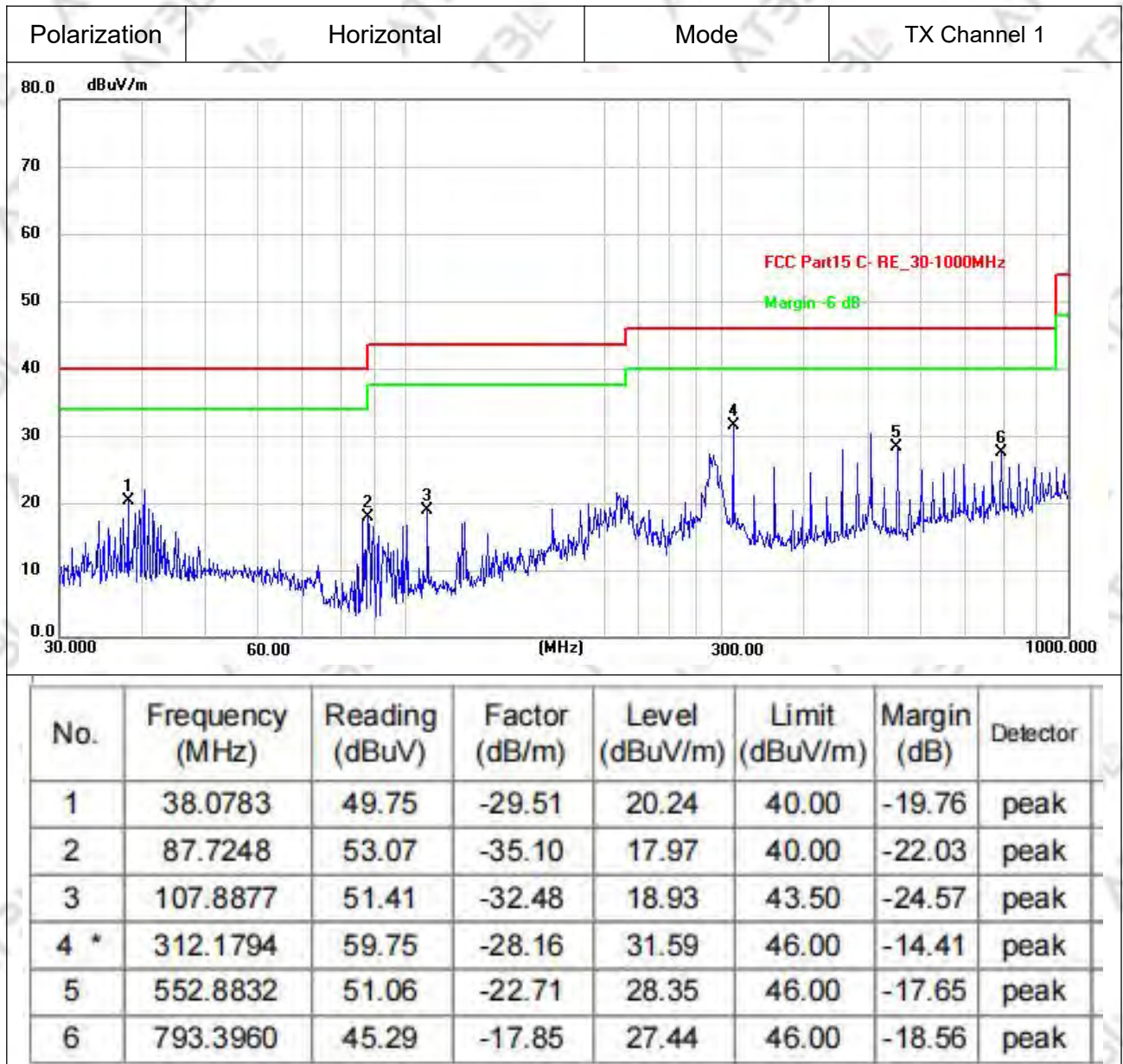
Note:

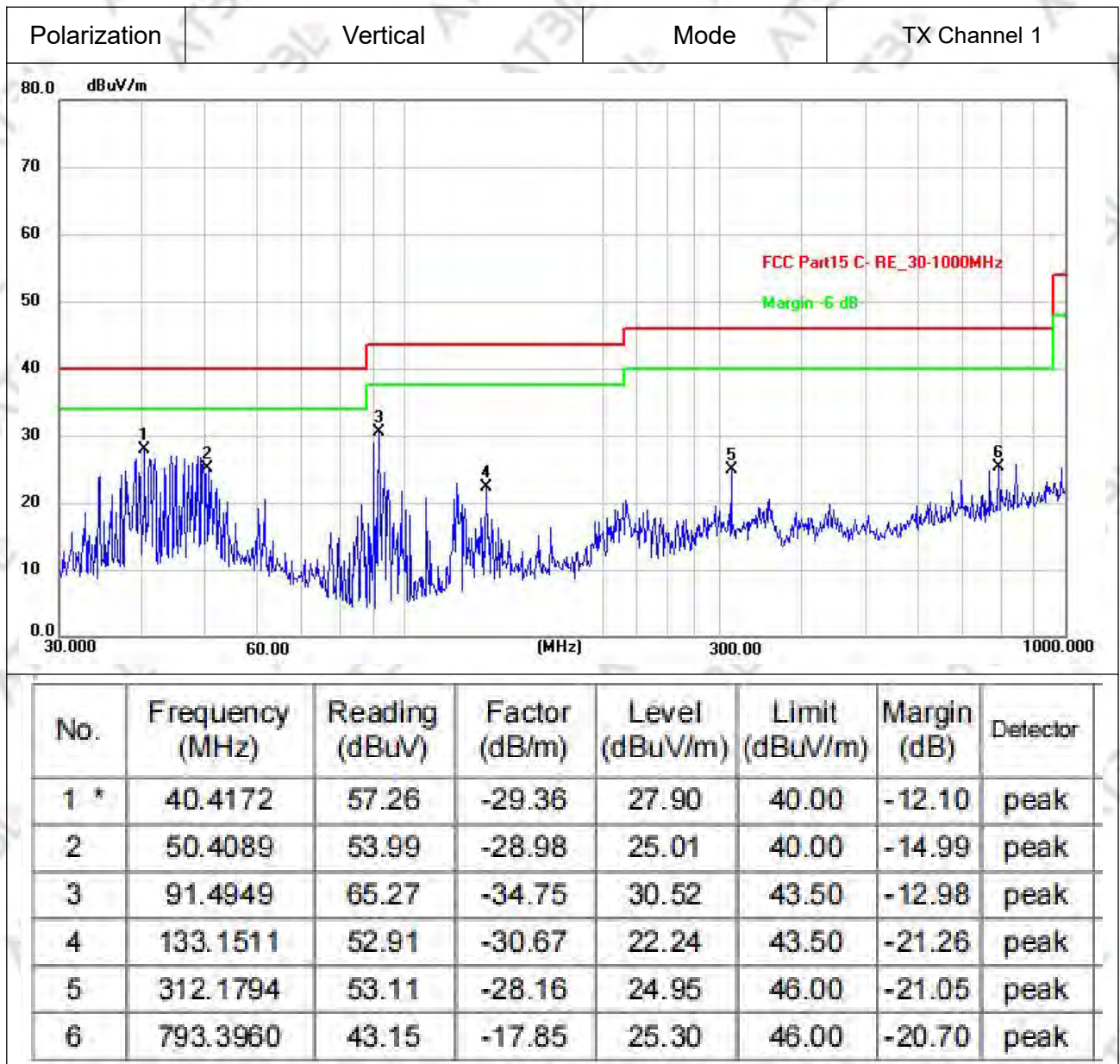
- 1.The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.
- 2.The all data rate modes had been test, but only worse test data was recorded in the test report.

Below 1GHz:

Note:

All modes have been tested, only worst case(802.11b-TX Channel 1)mode was recorded in the test report if no any others.



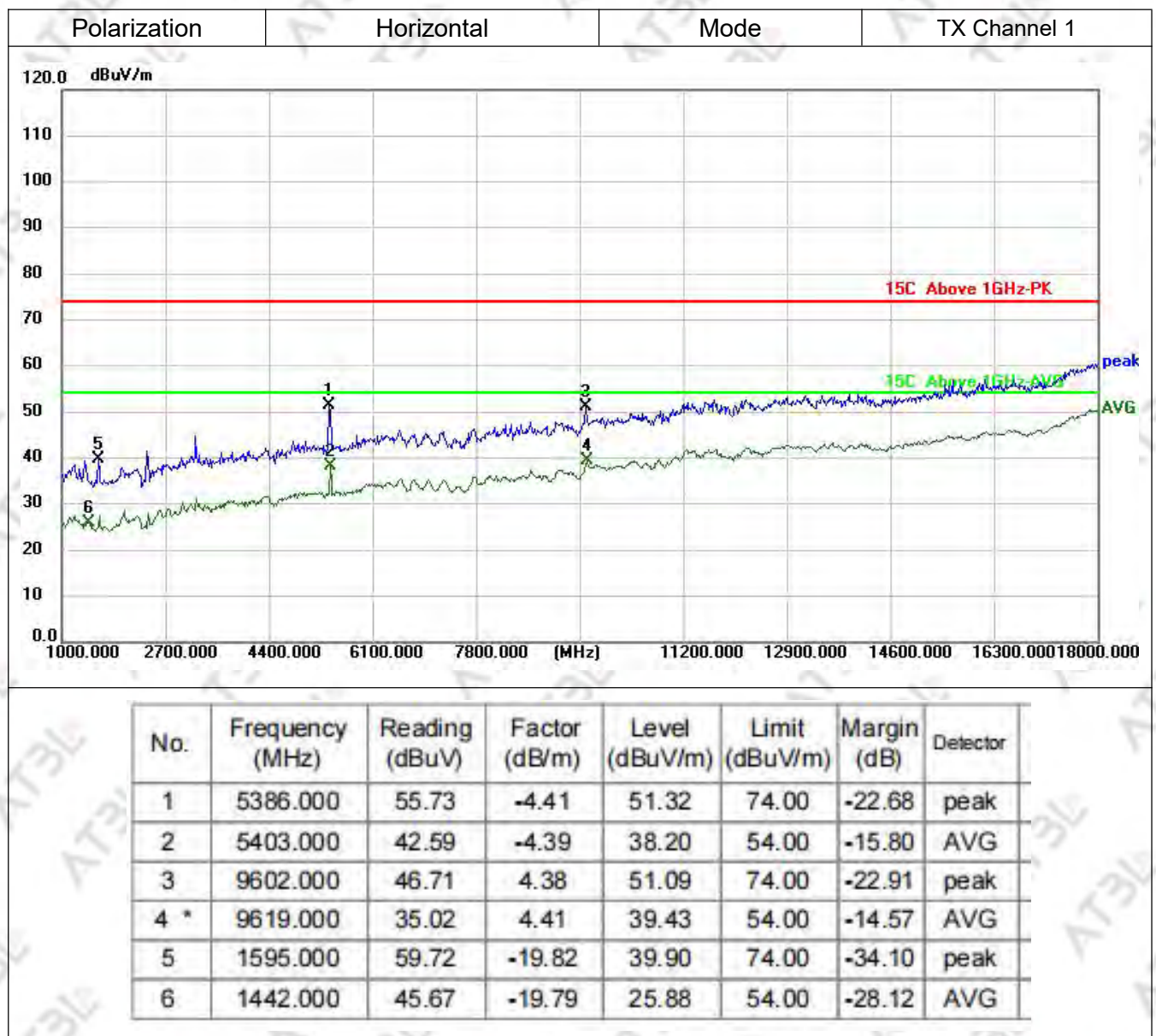


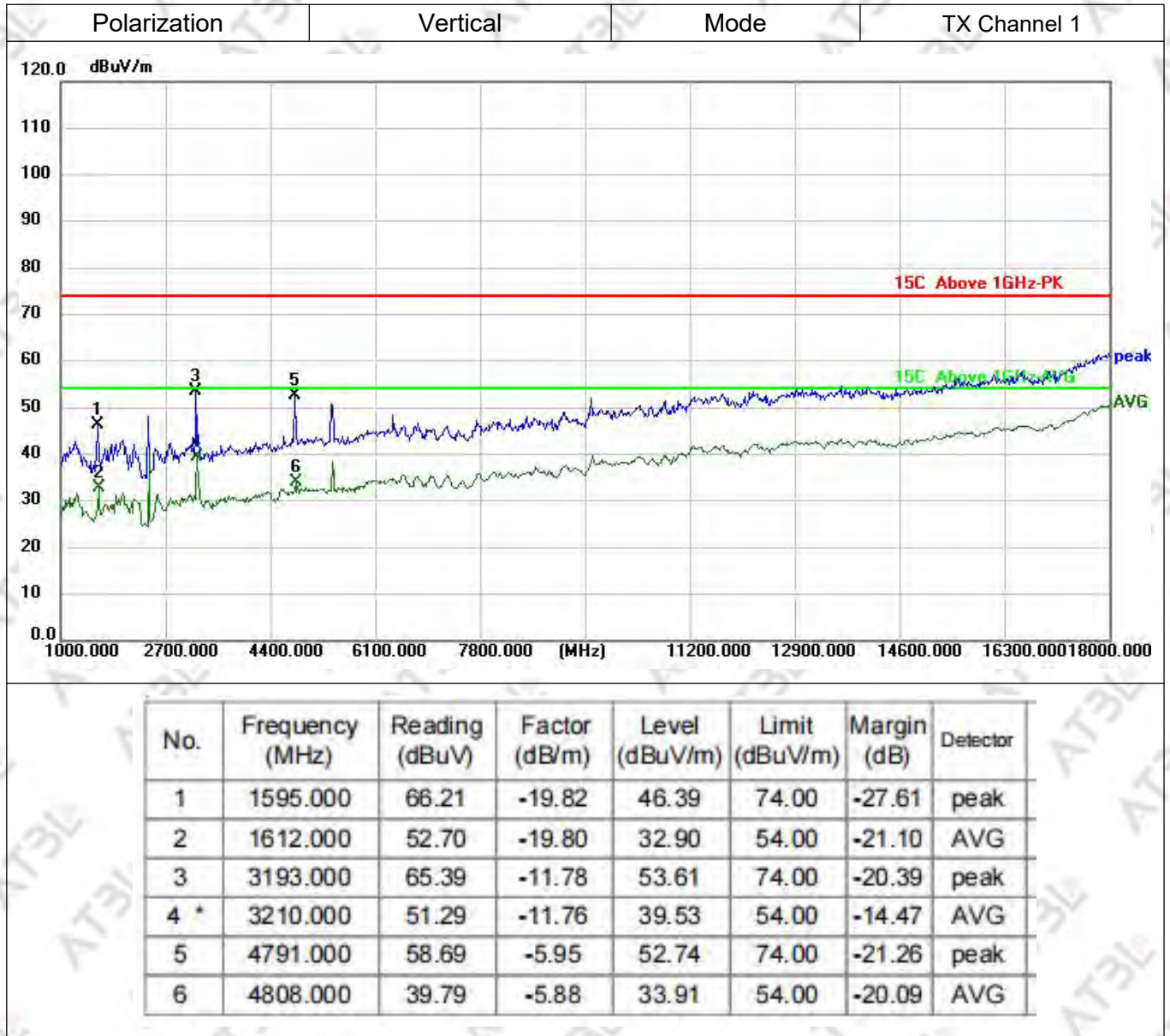
Above 1GHz:

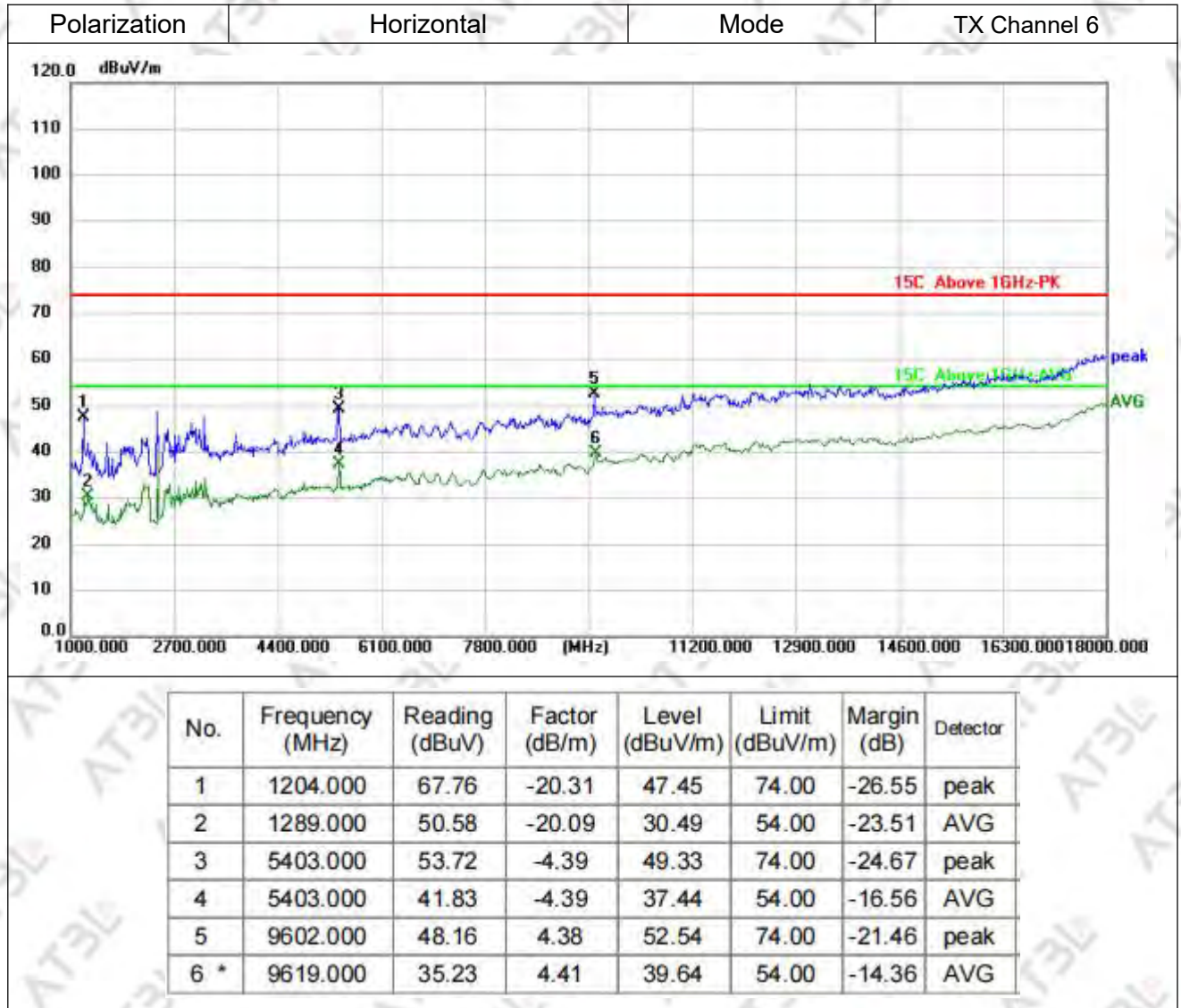
Note:

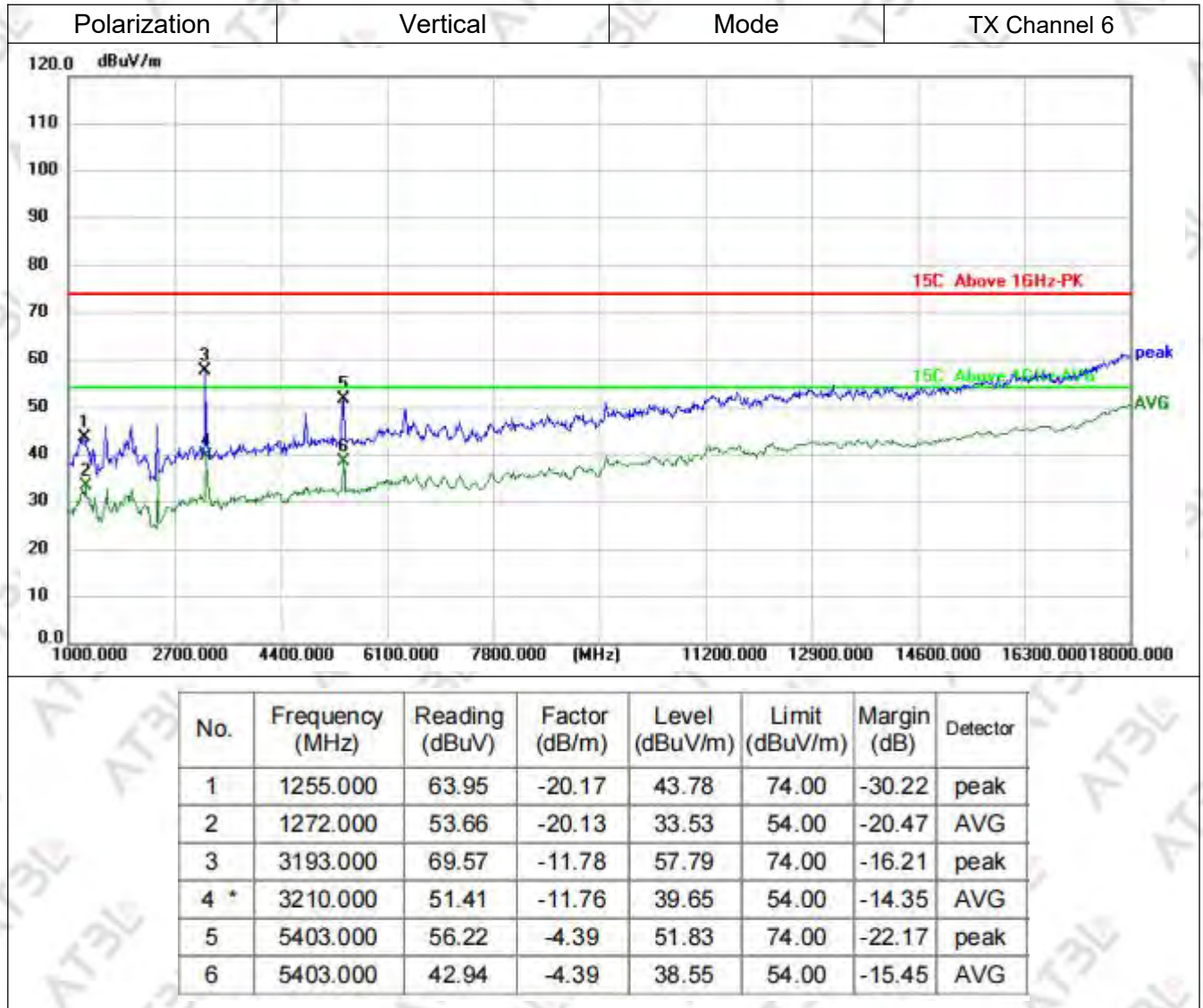
- 1.The all data rate modes had been test, but only worse test data was recorded in the test report.
- 2.In frequency ranges 18 ~25GHz no any other harmonic emissions detected which are tested to compliance with the limit. No recording in the test report. No any other emissions level which are attenuated less than 20dB below the limit. No recording in the test report.
- 3.We used the filter to test and the main frequency was filtered out.

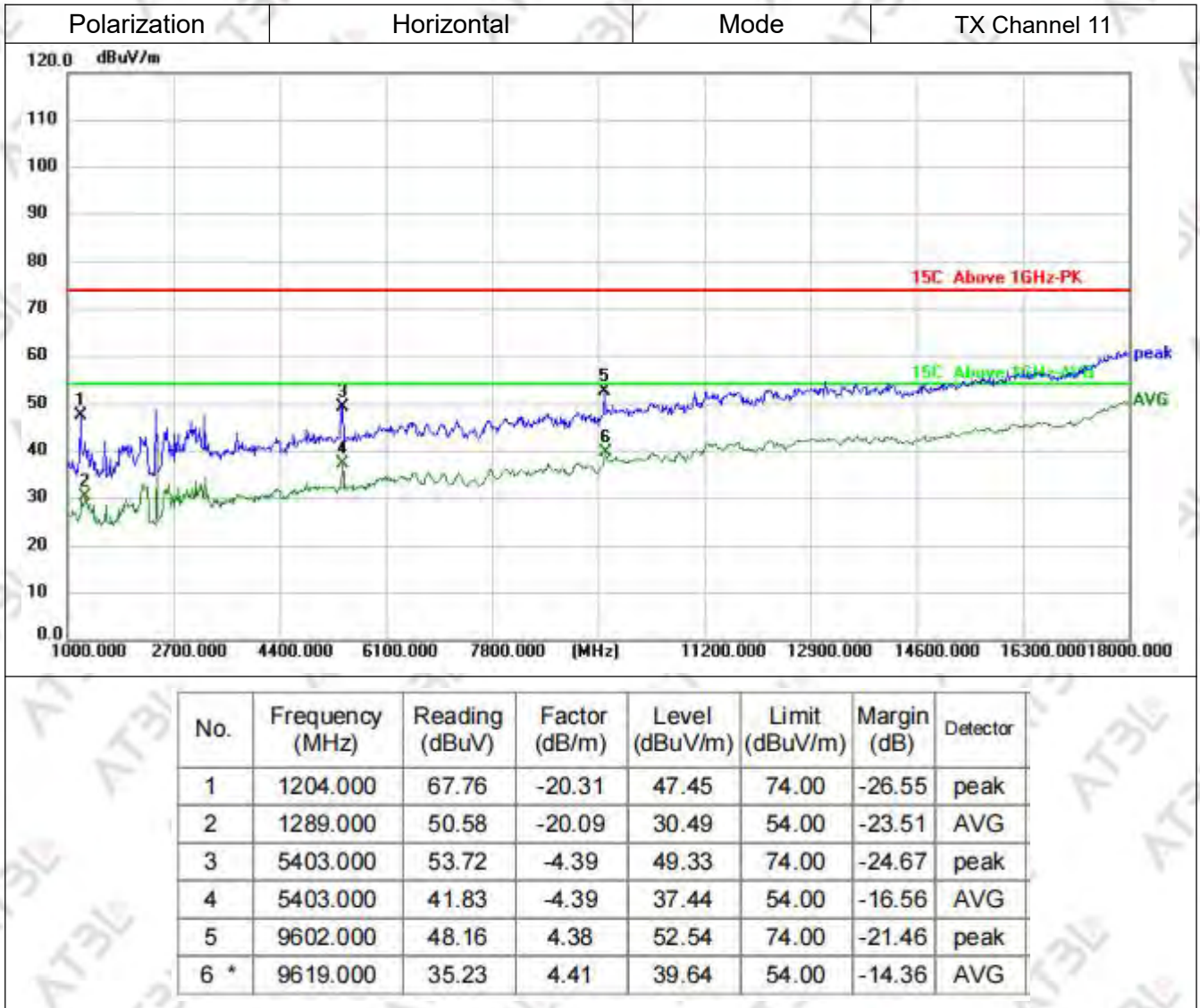
802.11b

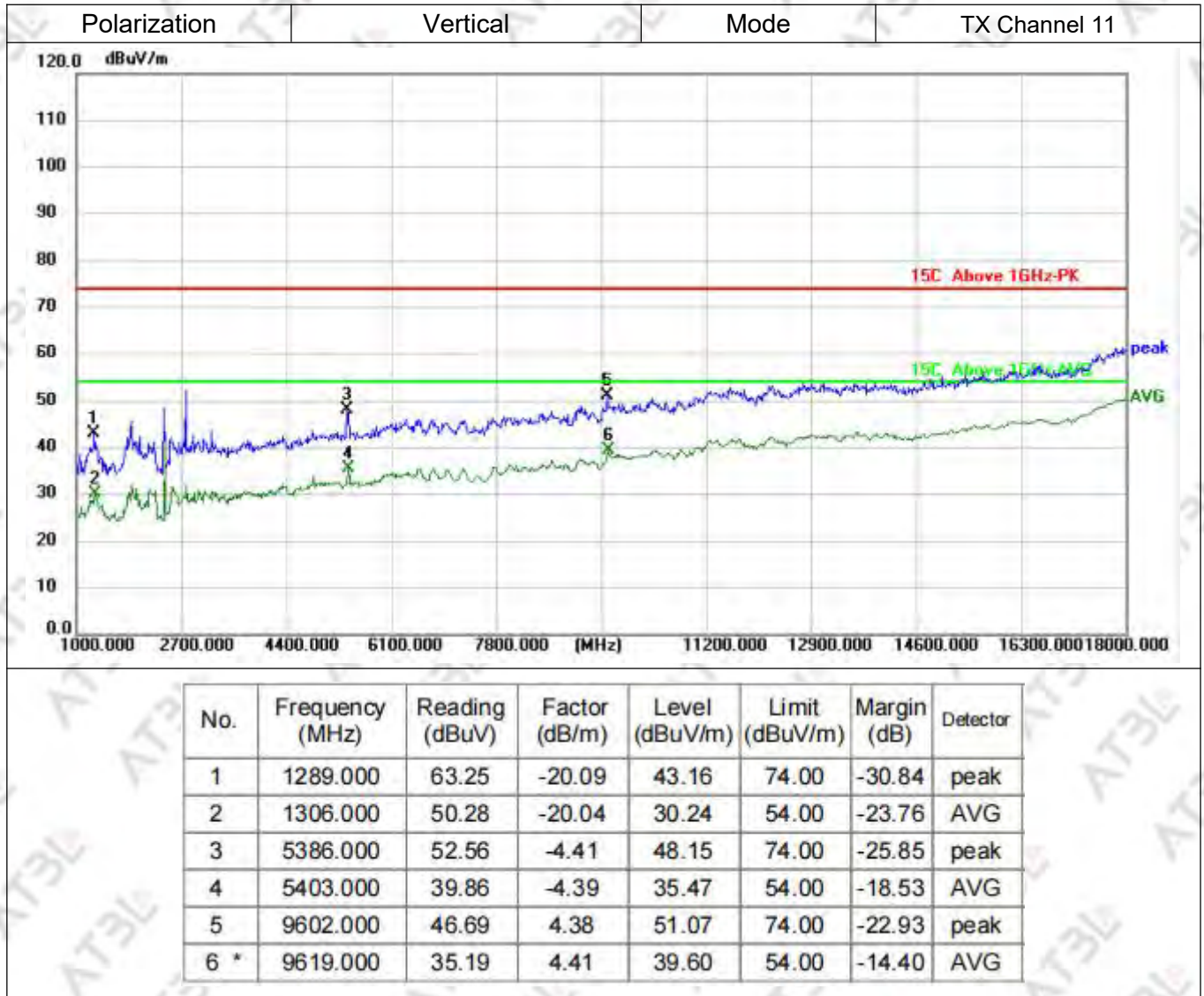




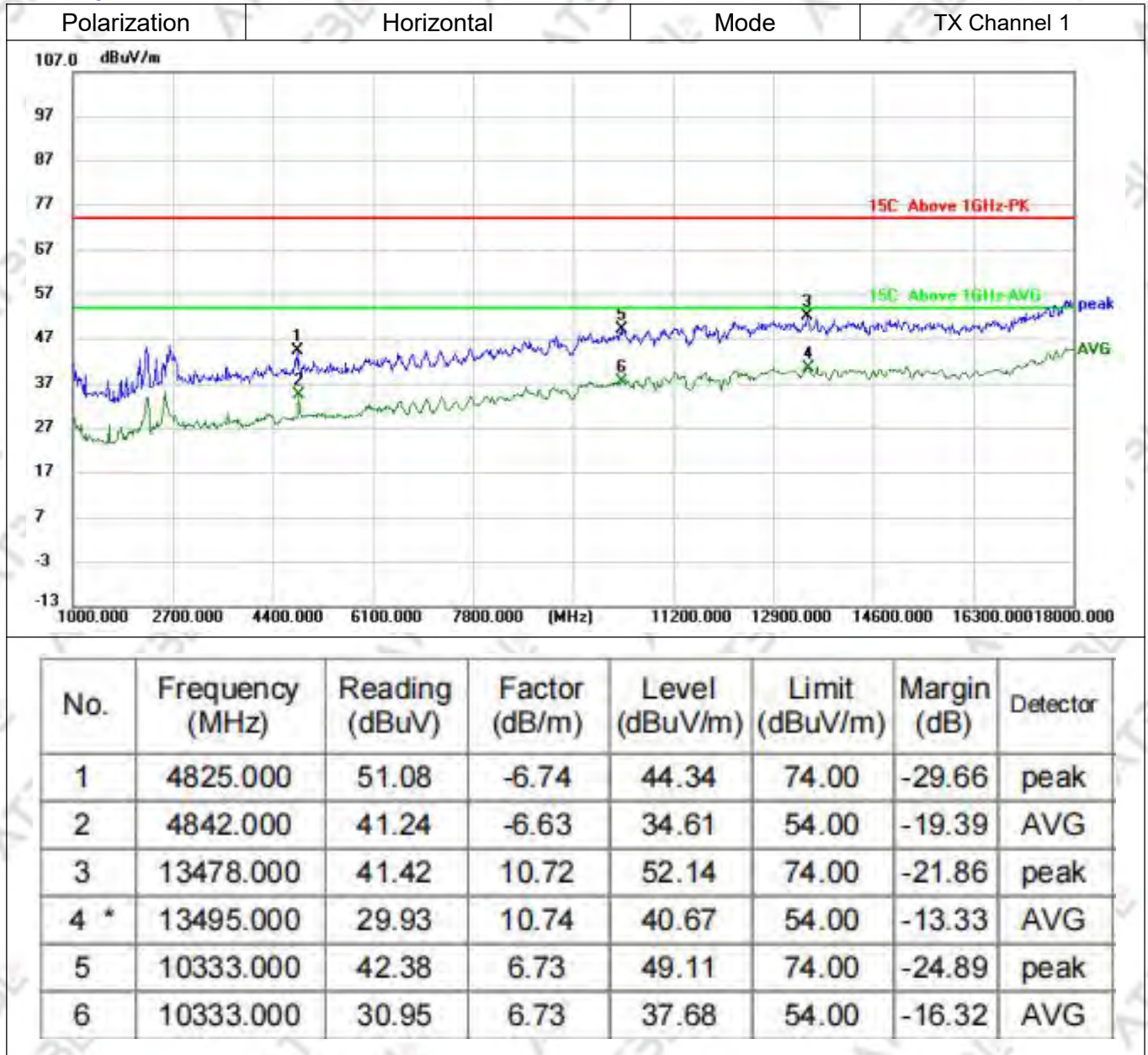


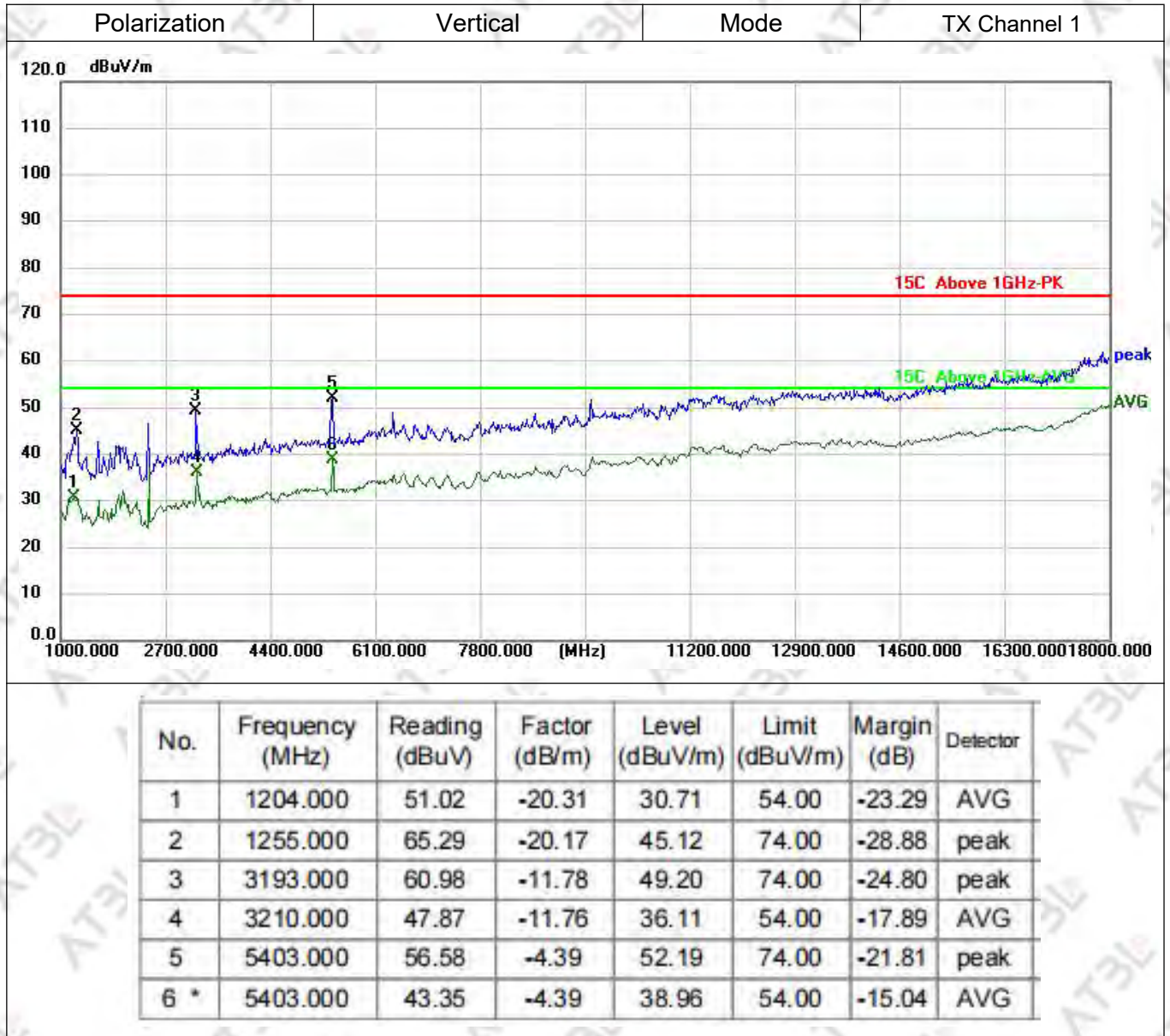


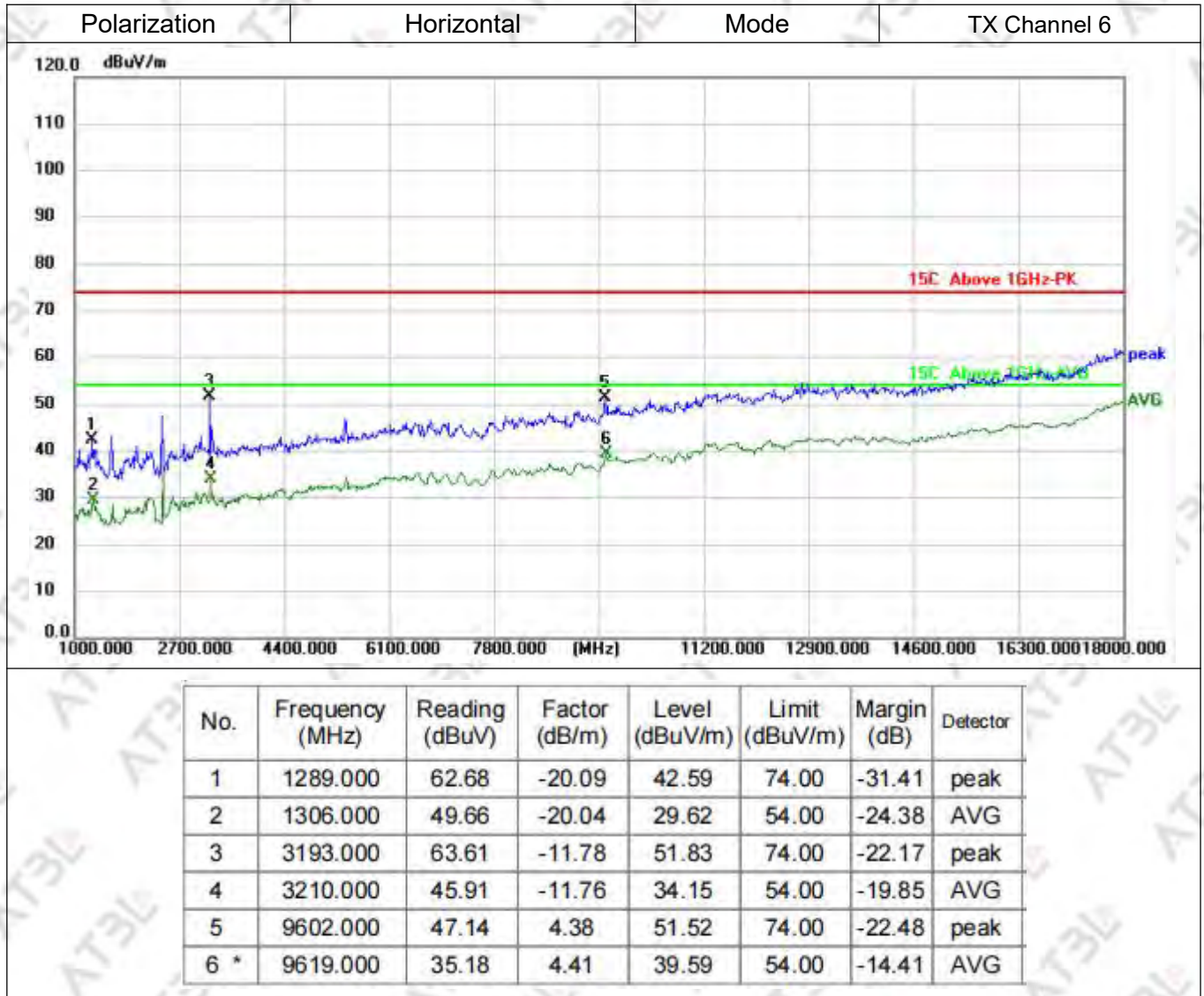


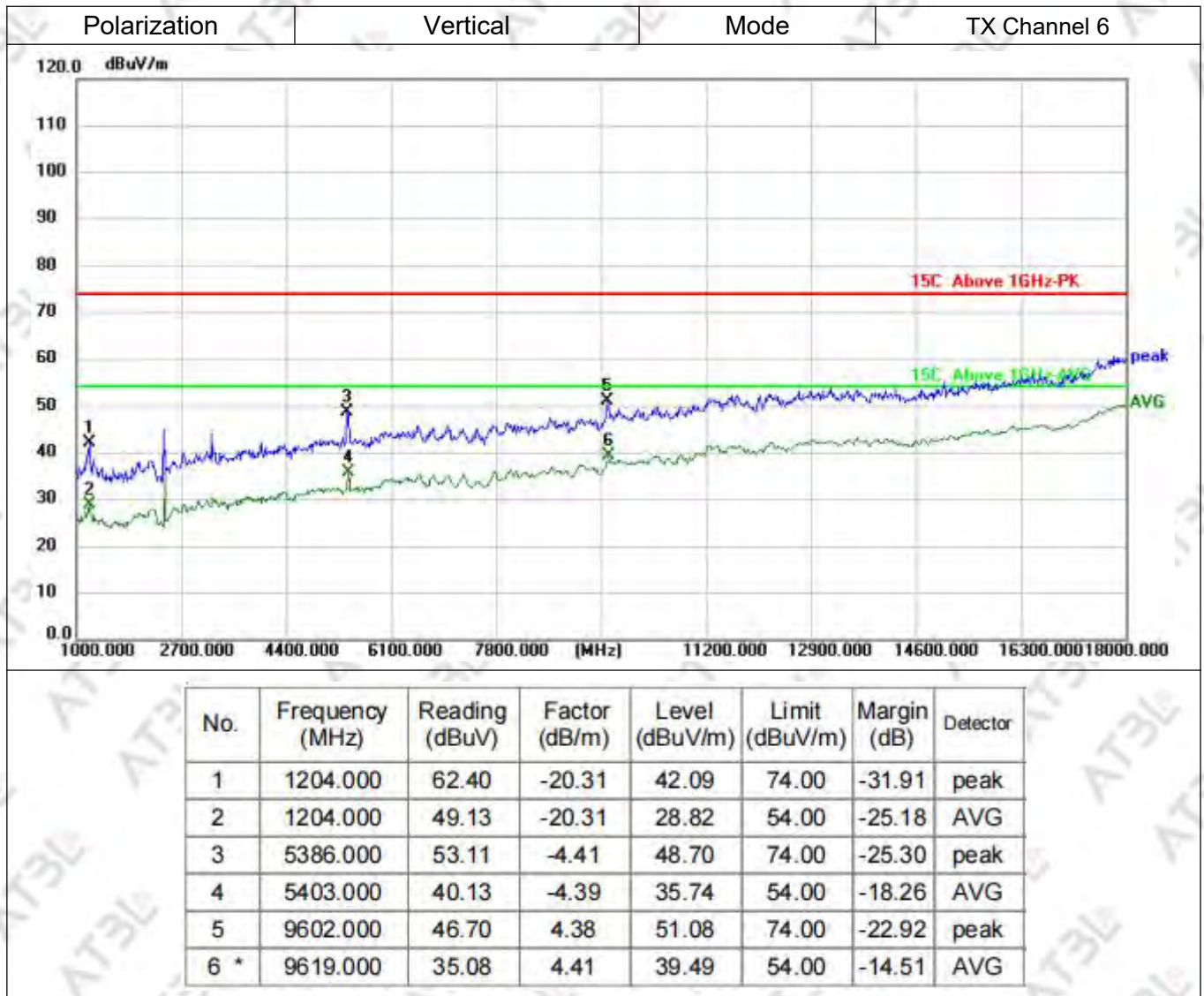


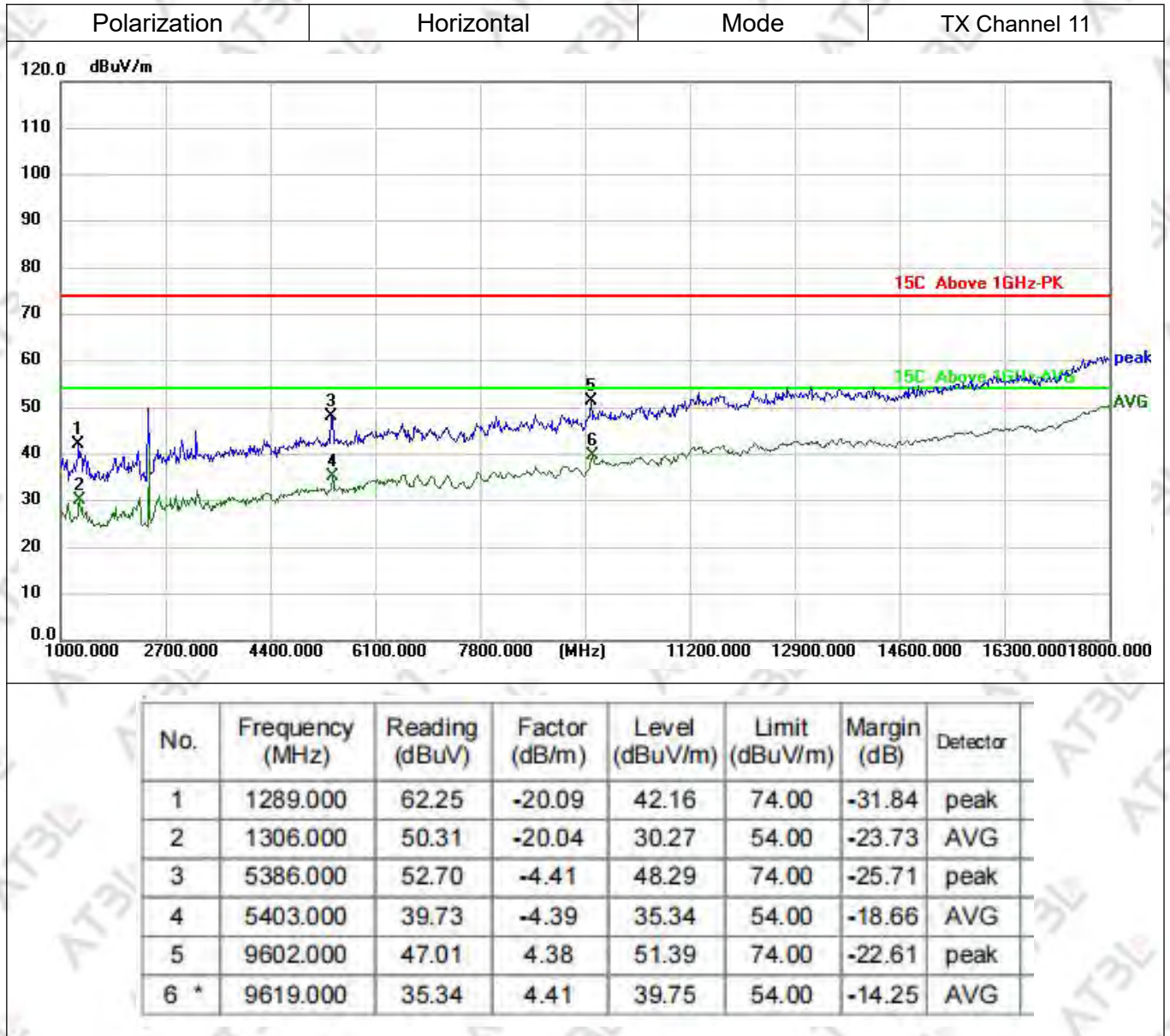
802.11g

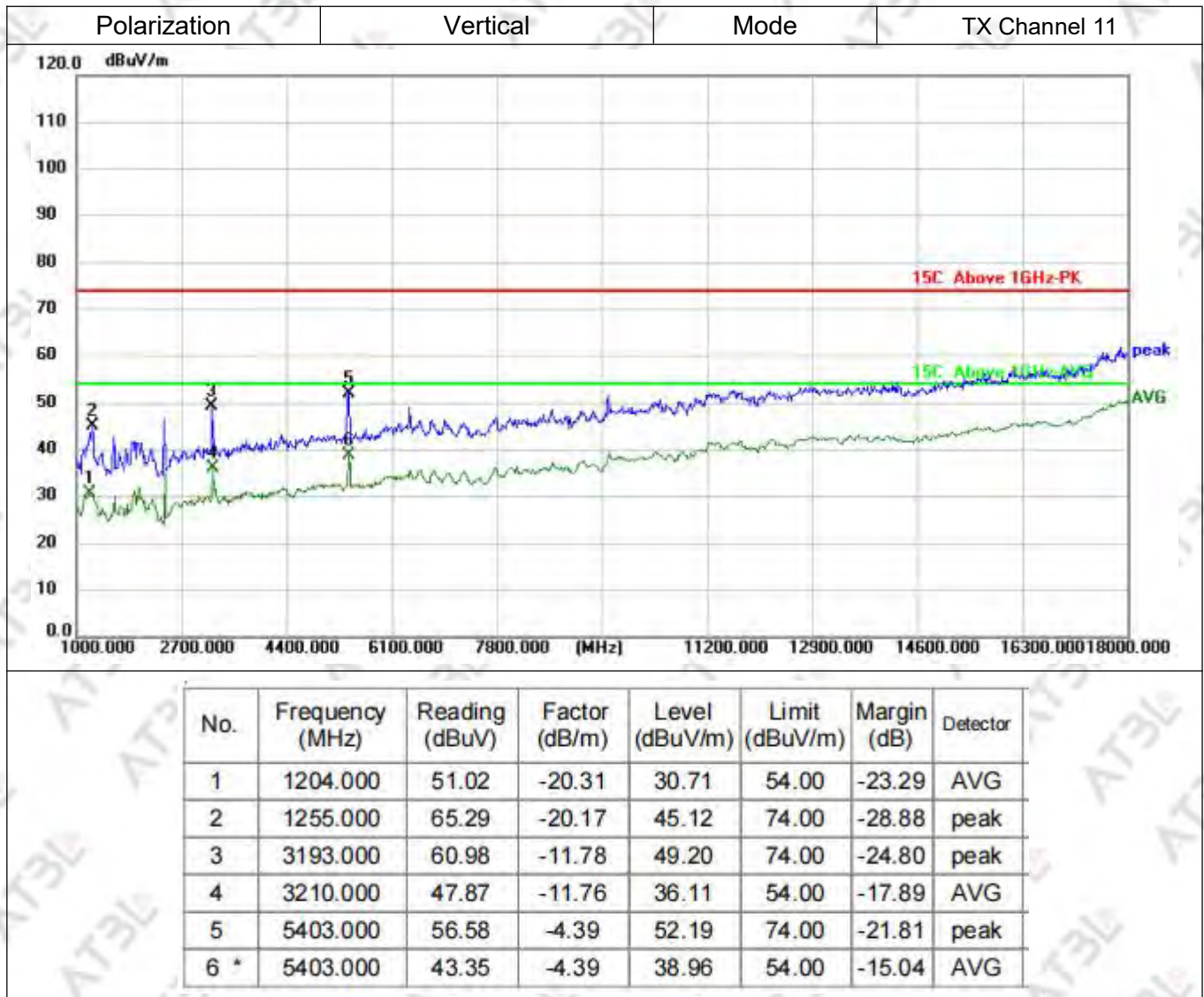




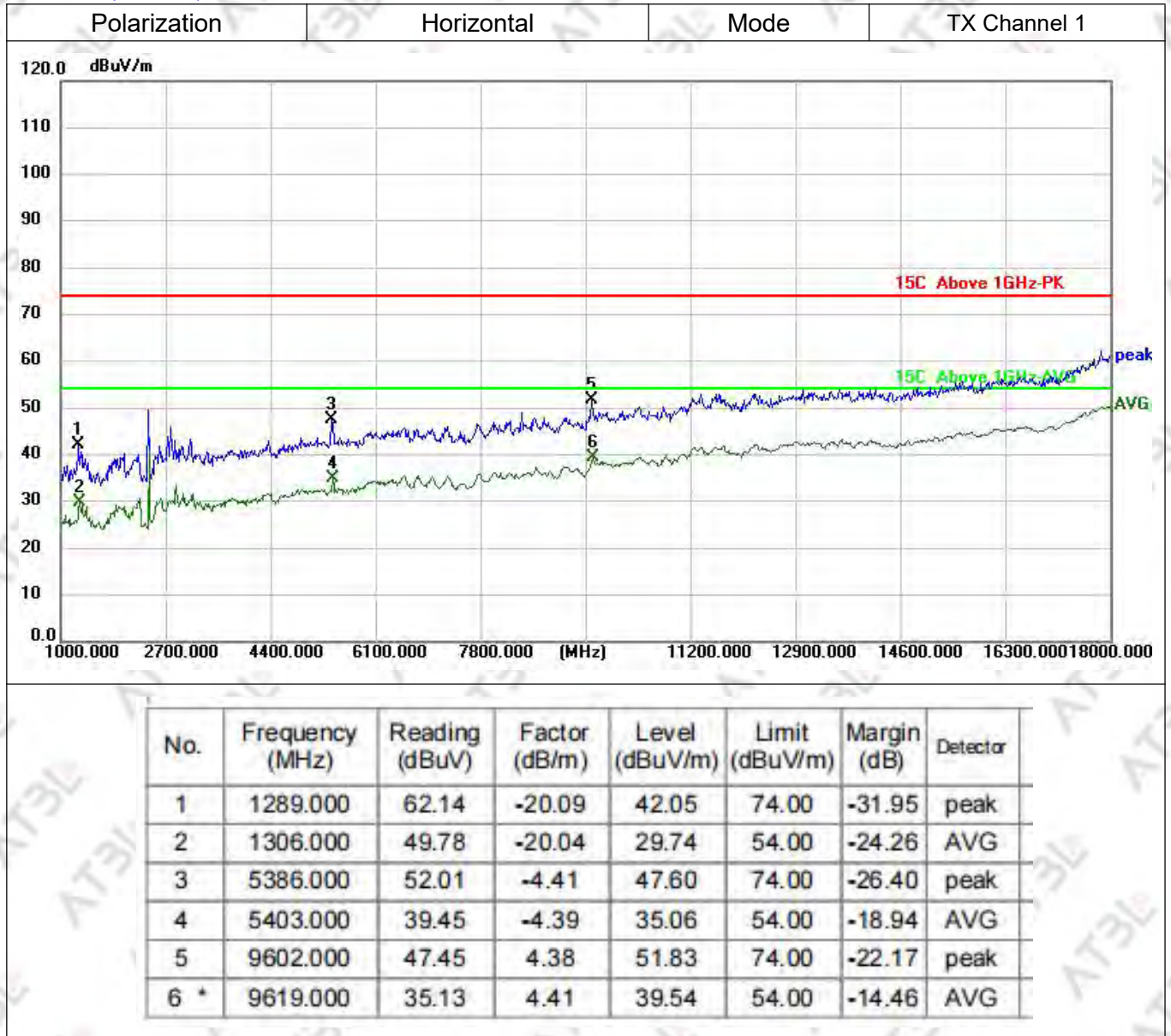


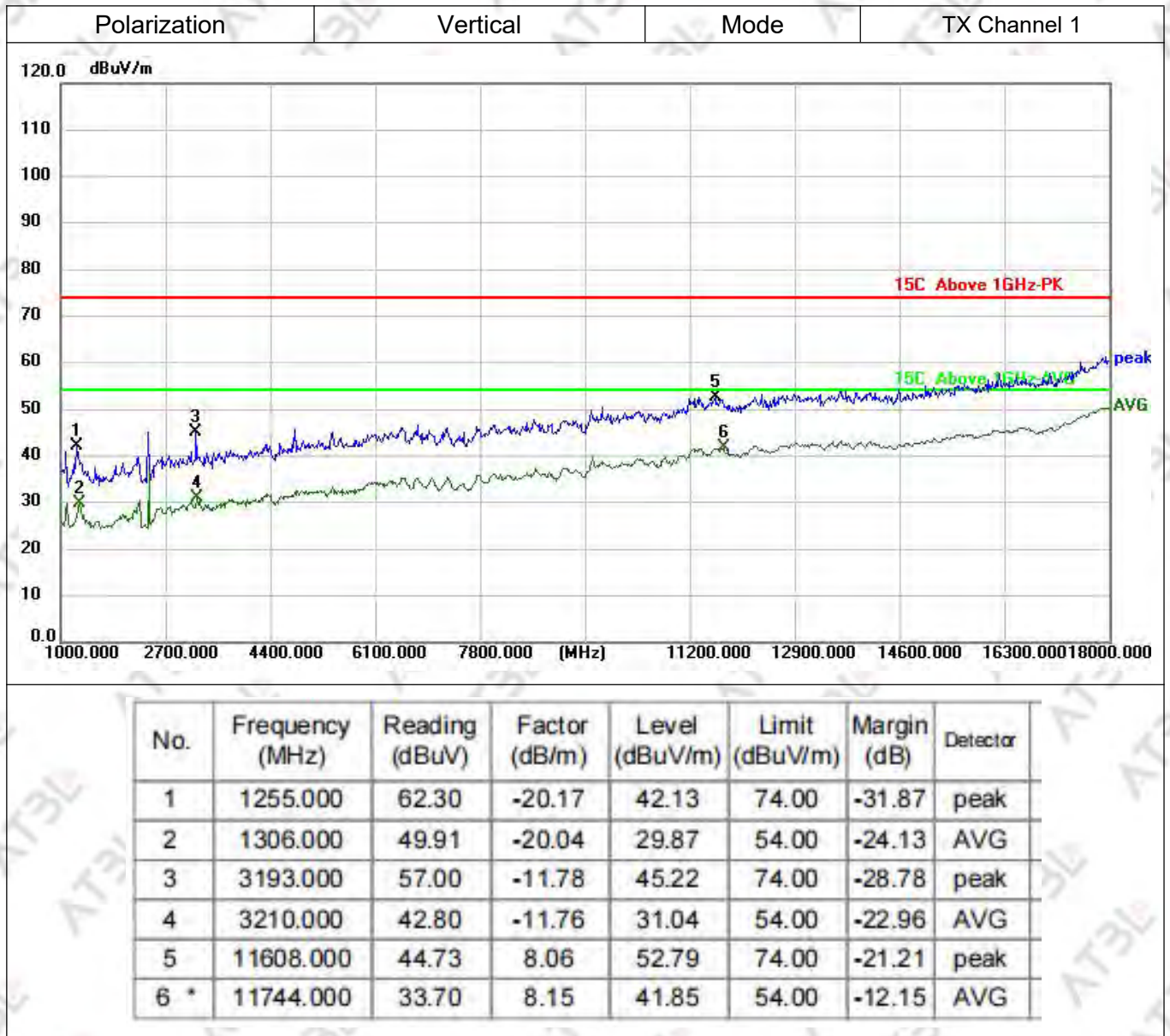


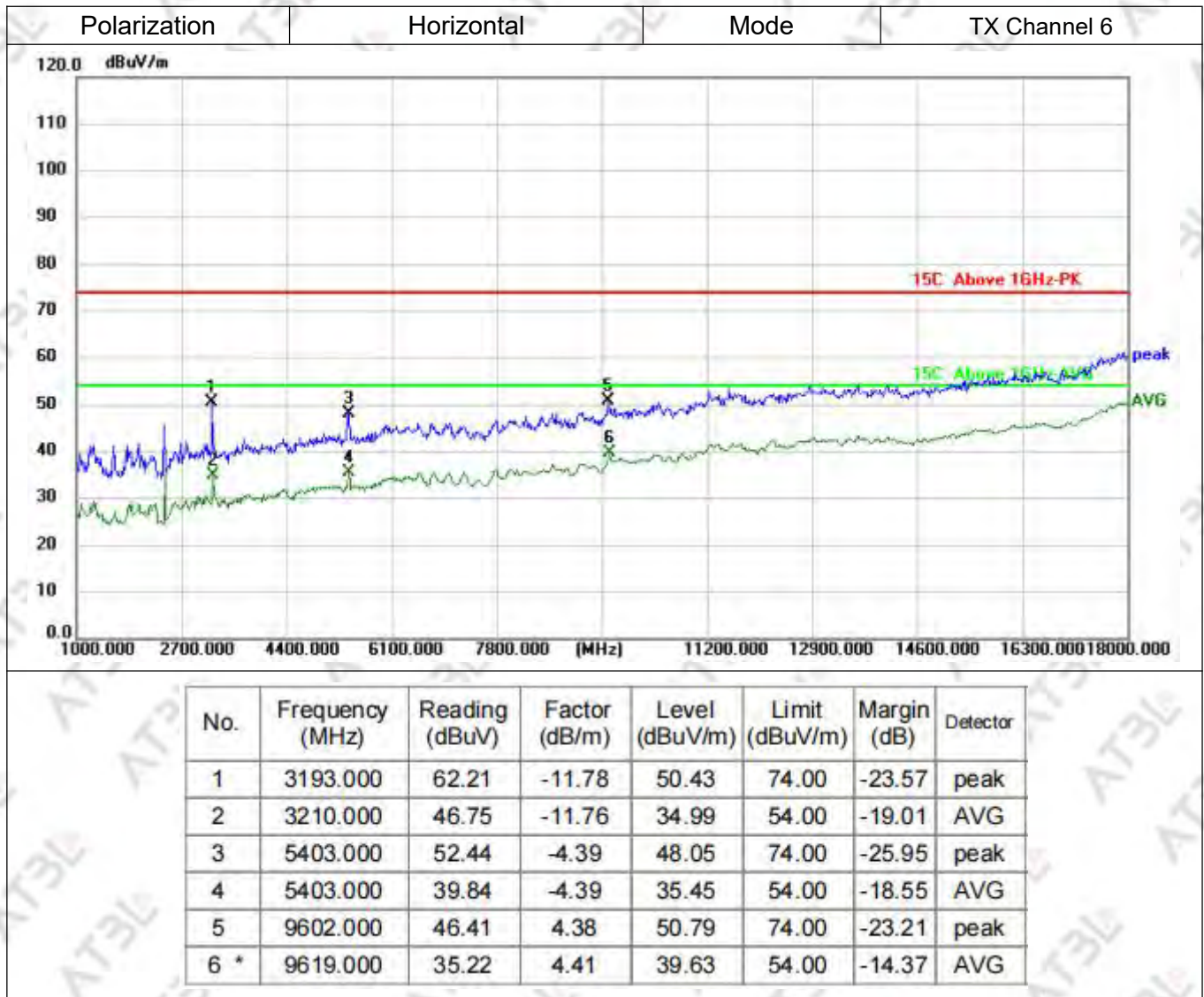


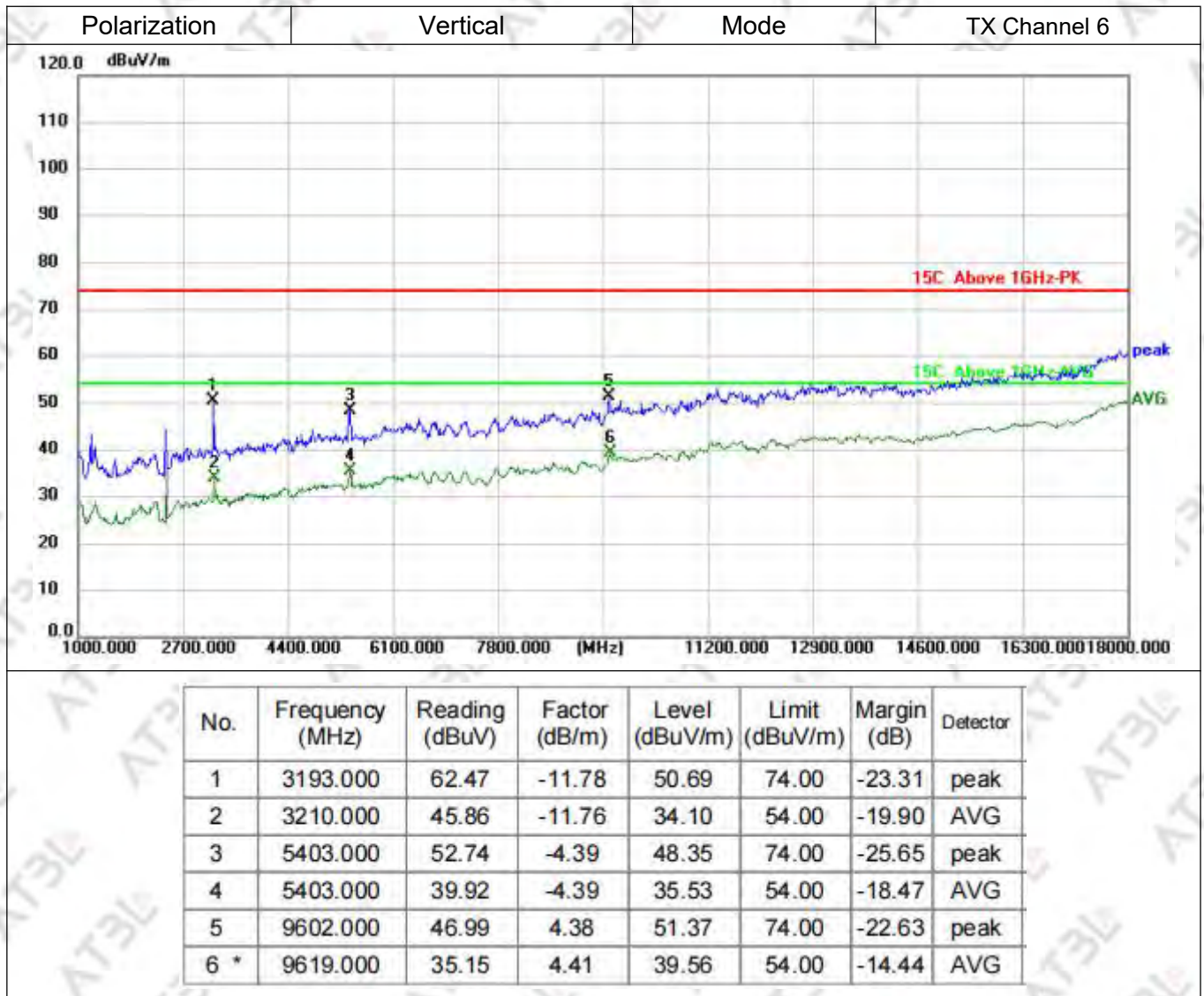


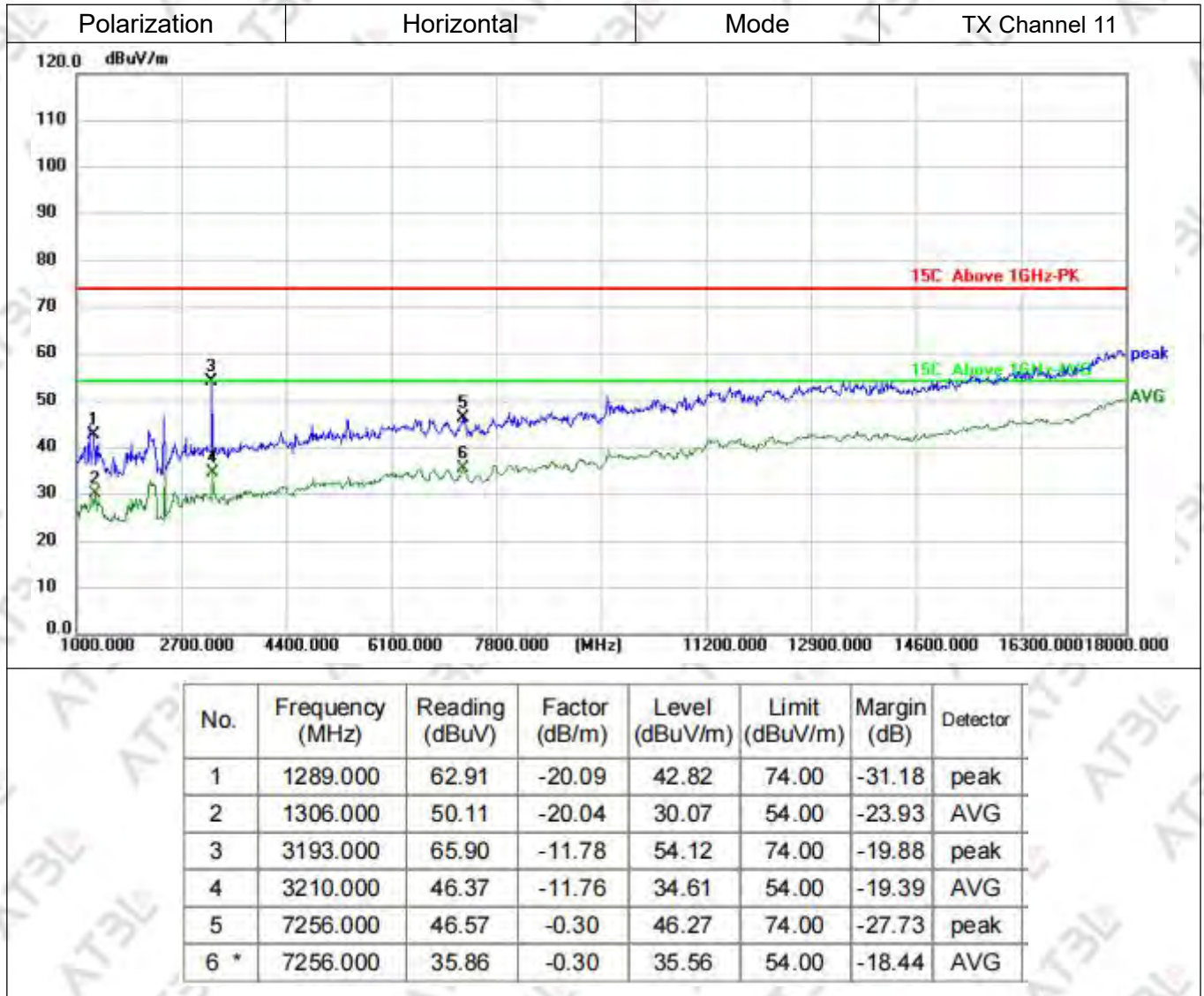
802.11n(20MHz)

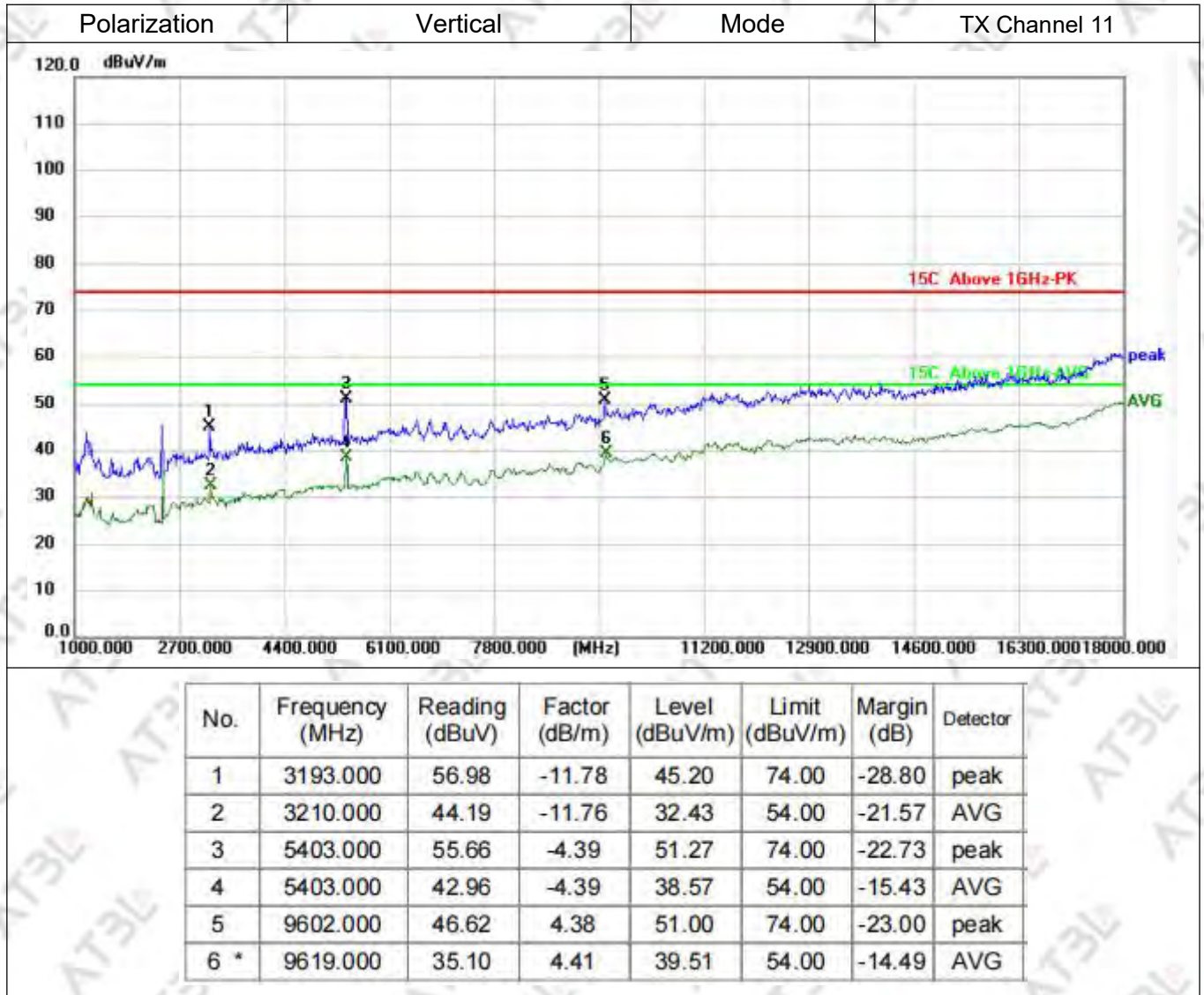




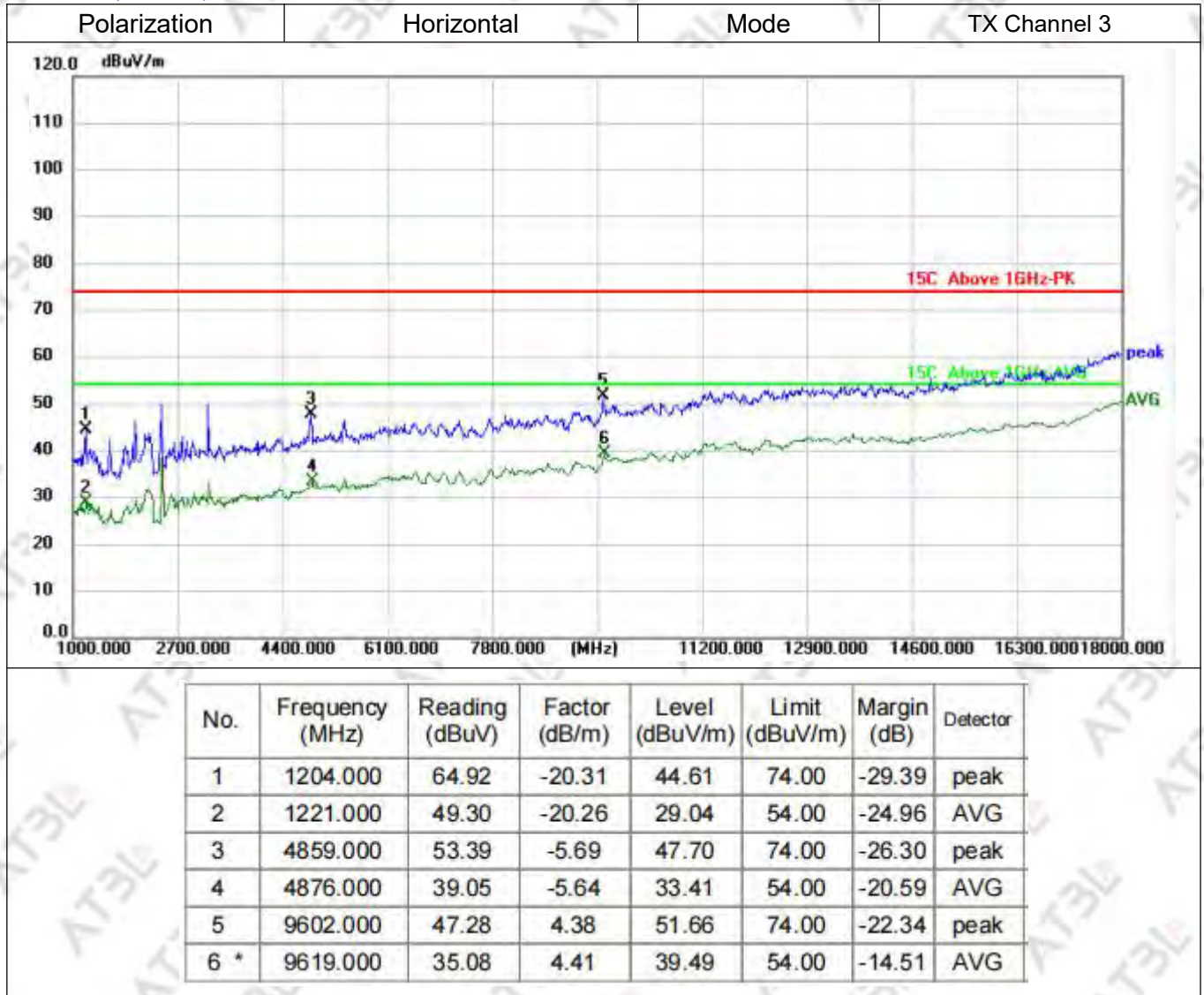


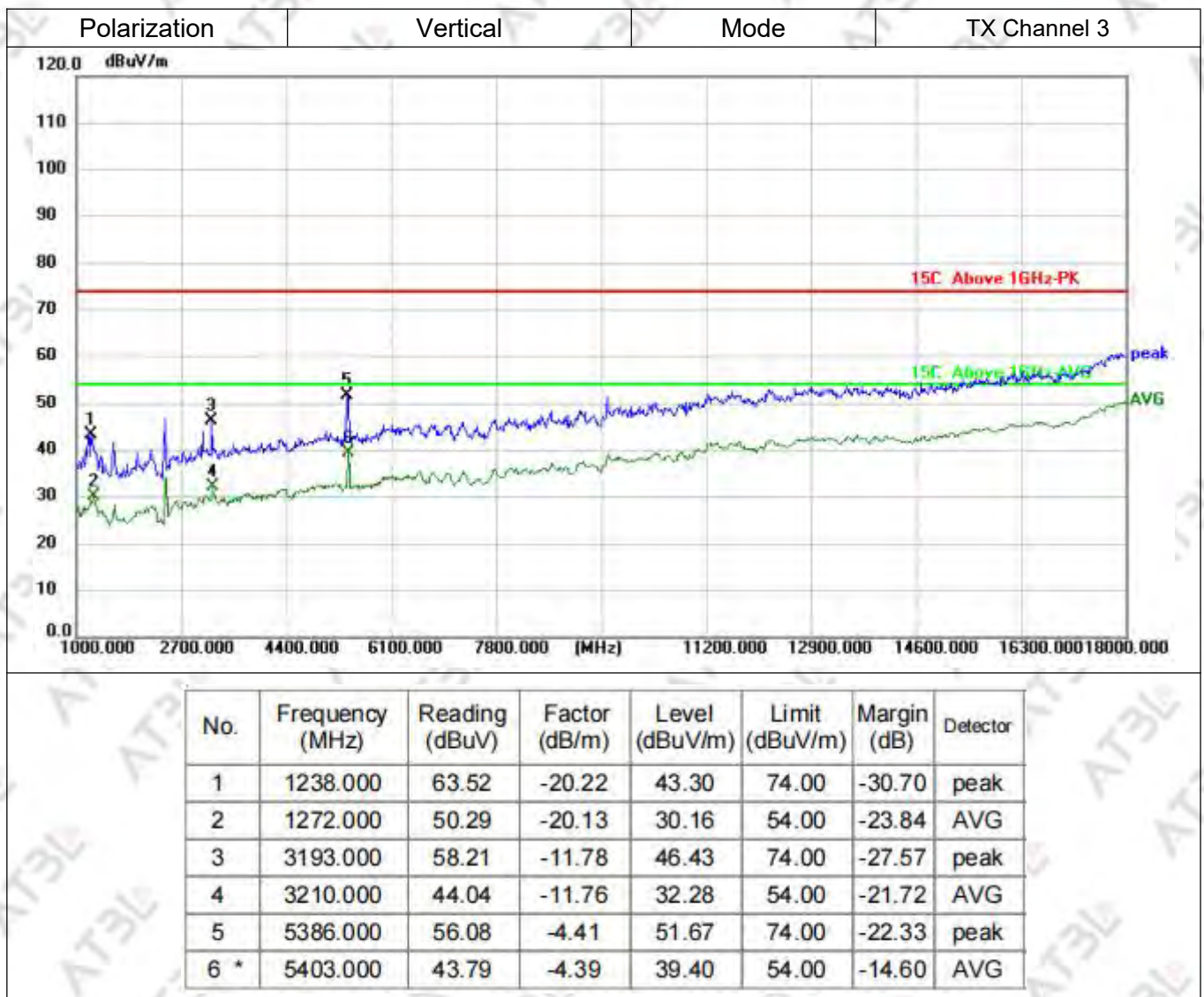


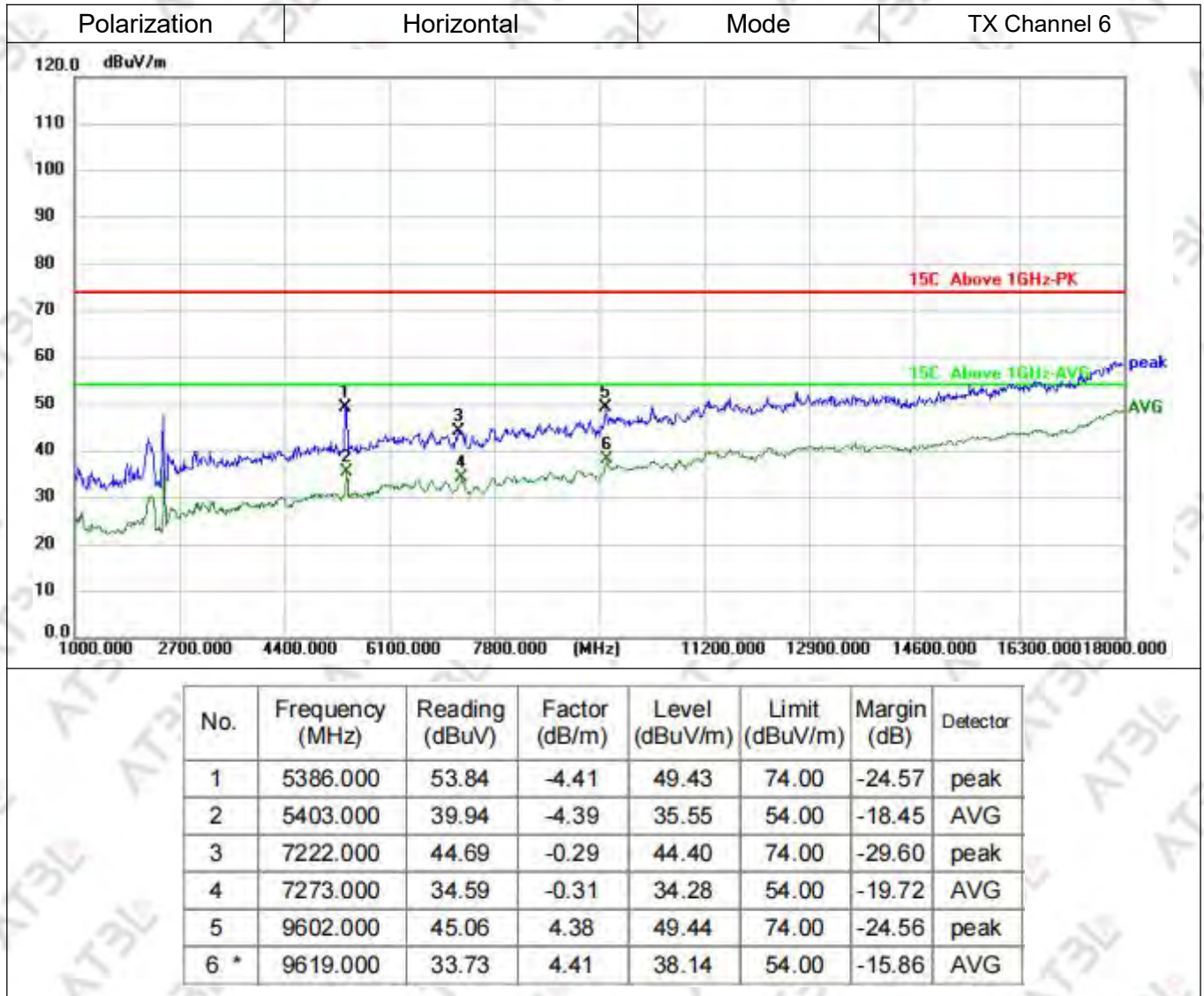


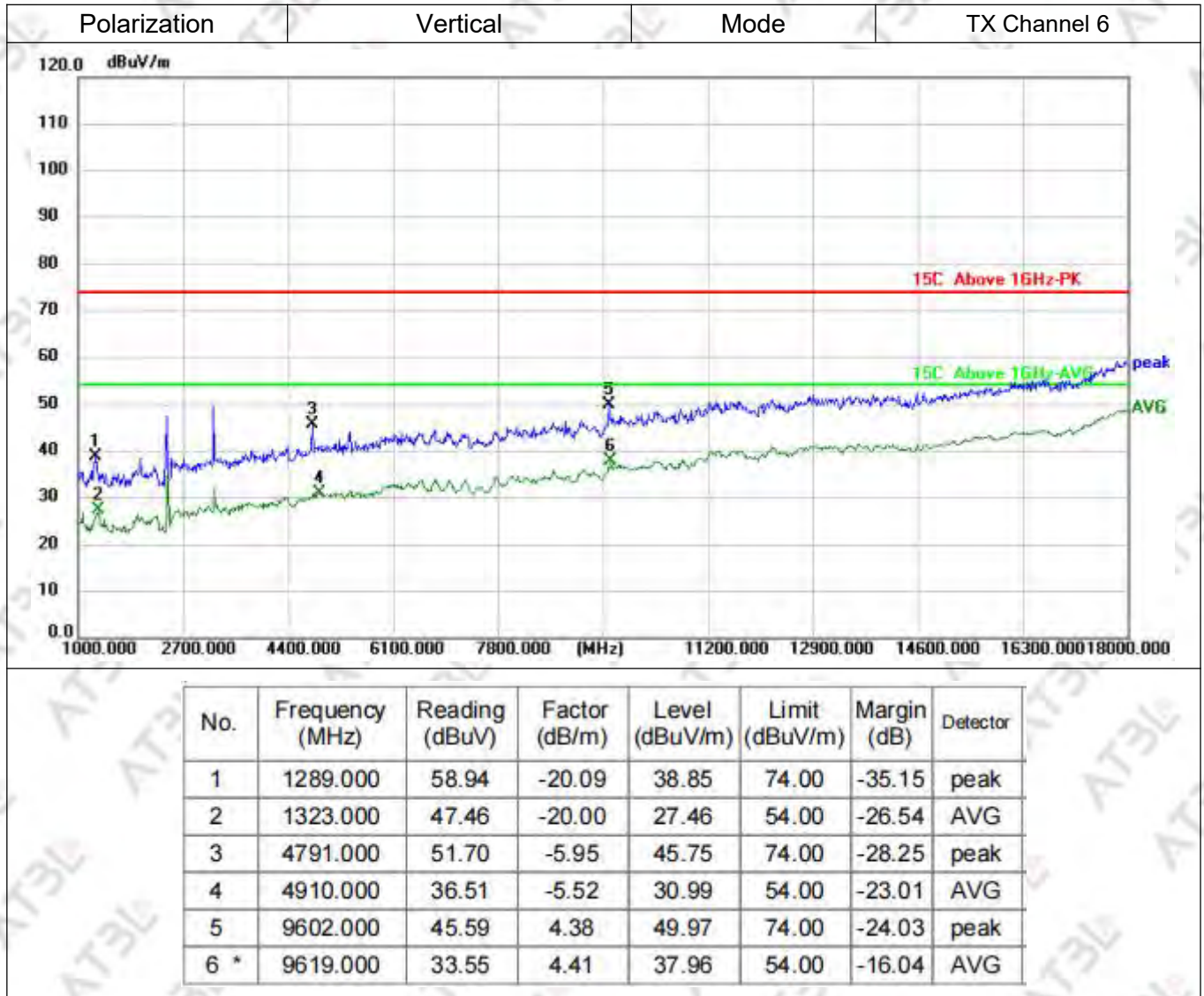


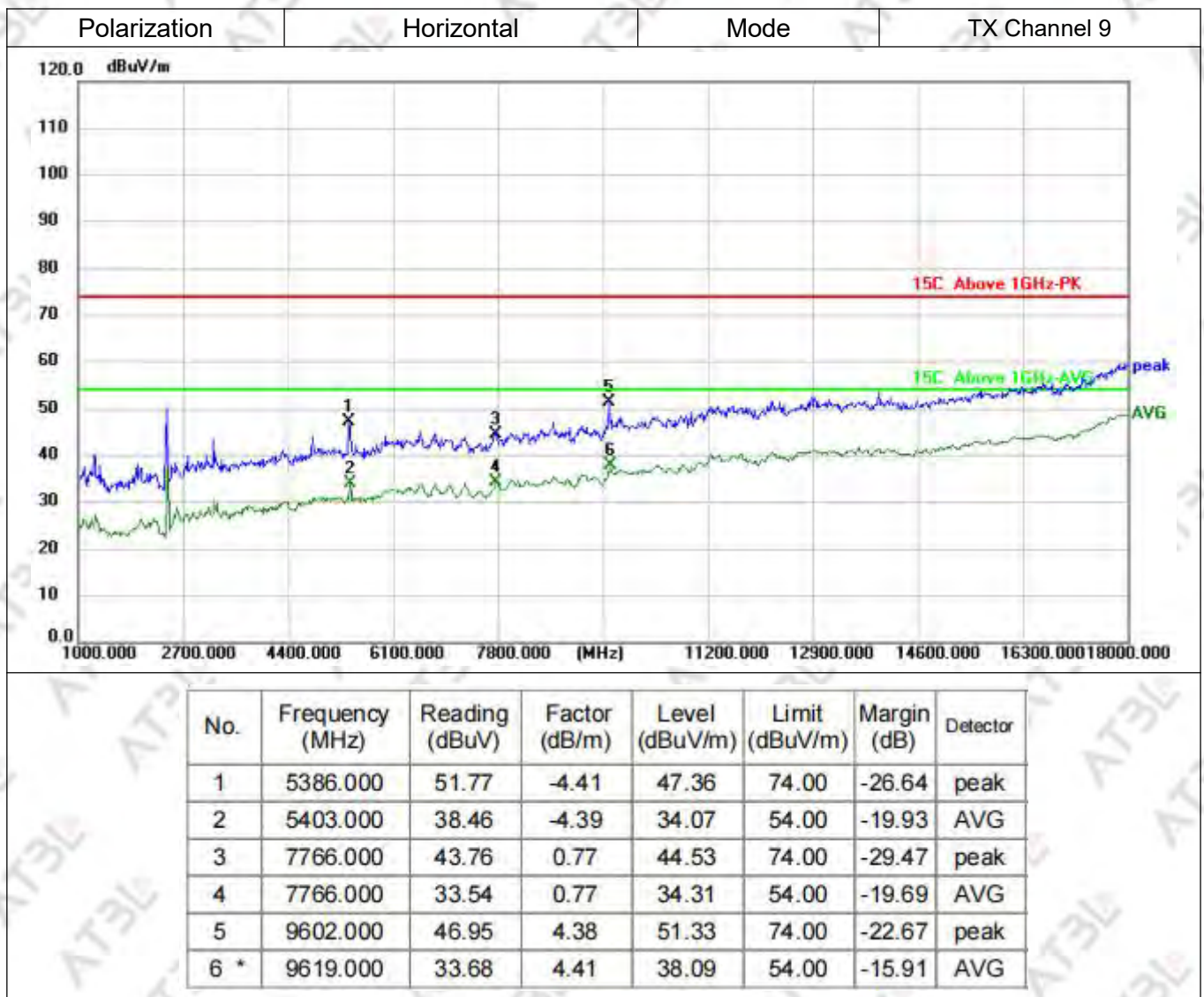
802.11n(40MHz)

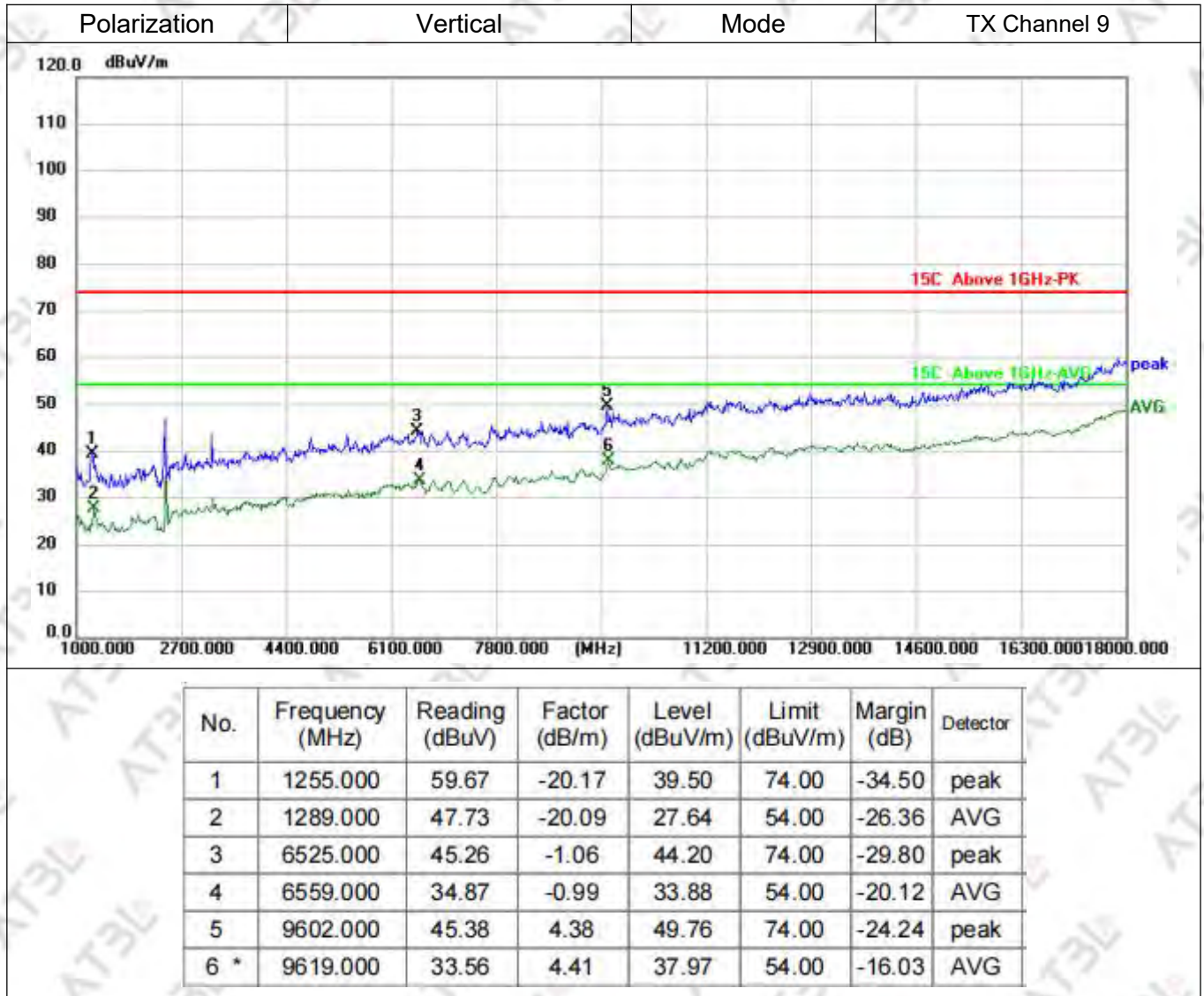






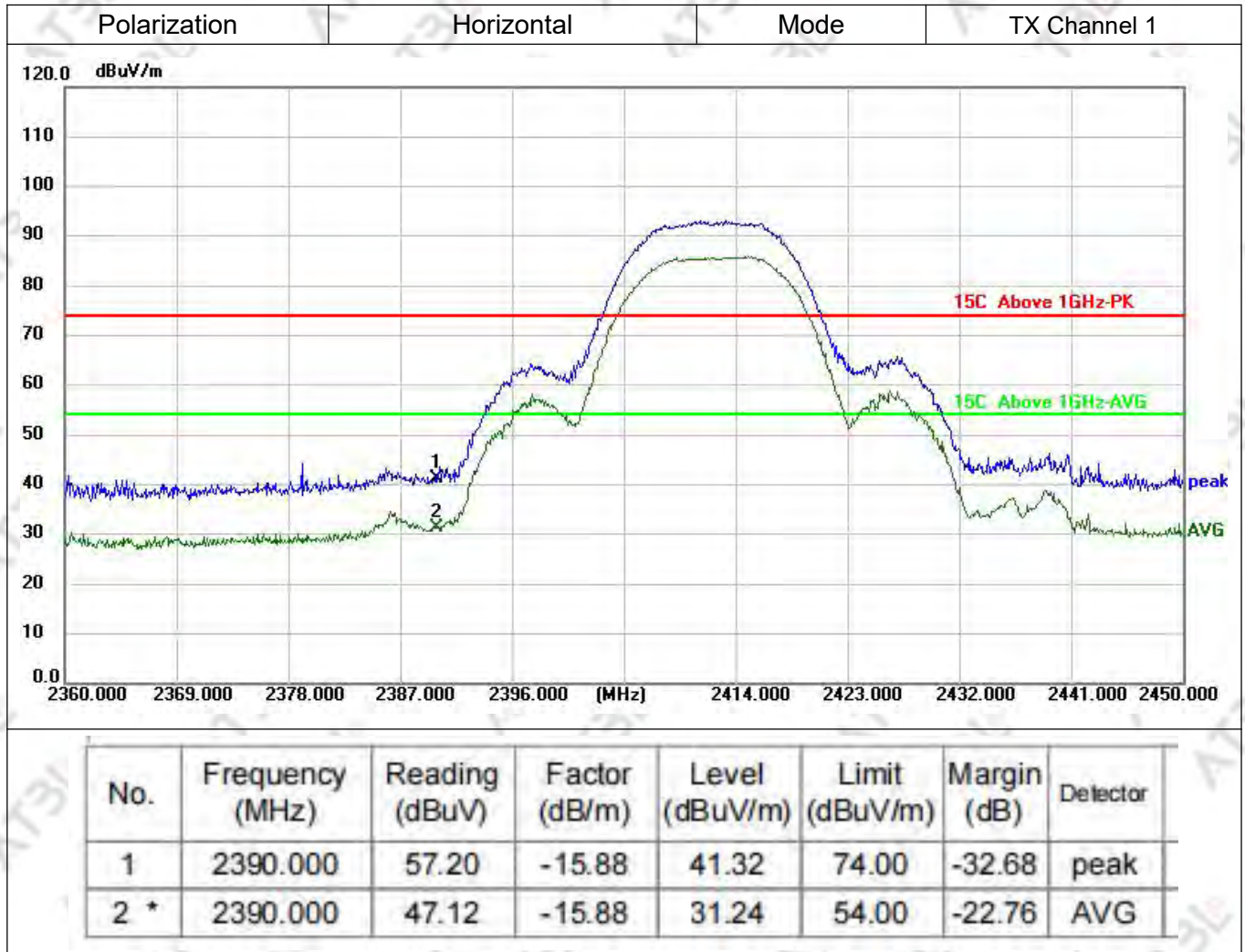


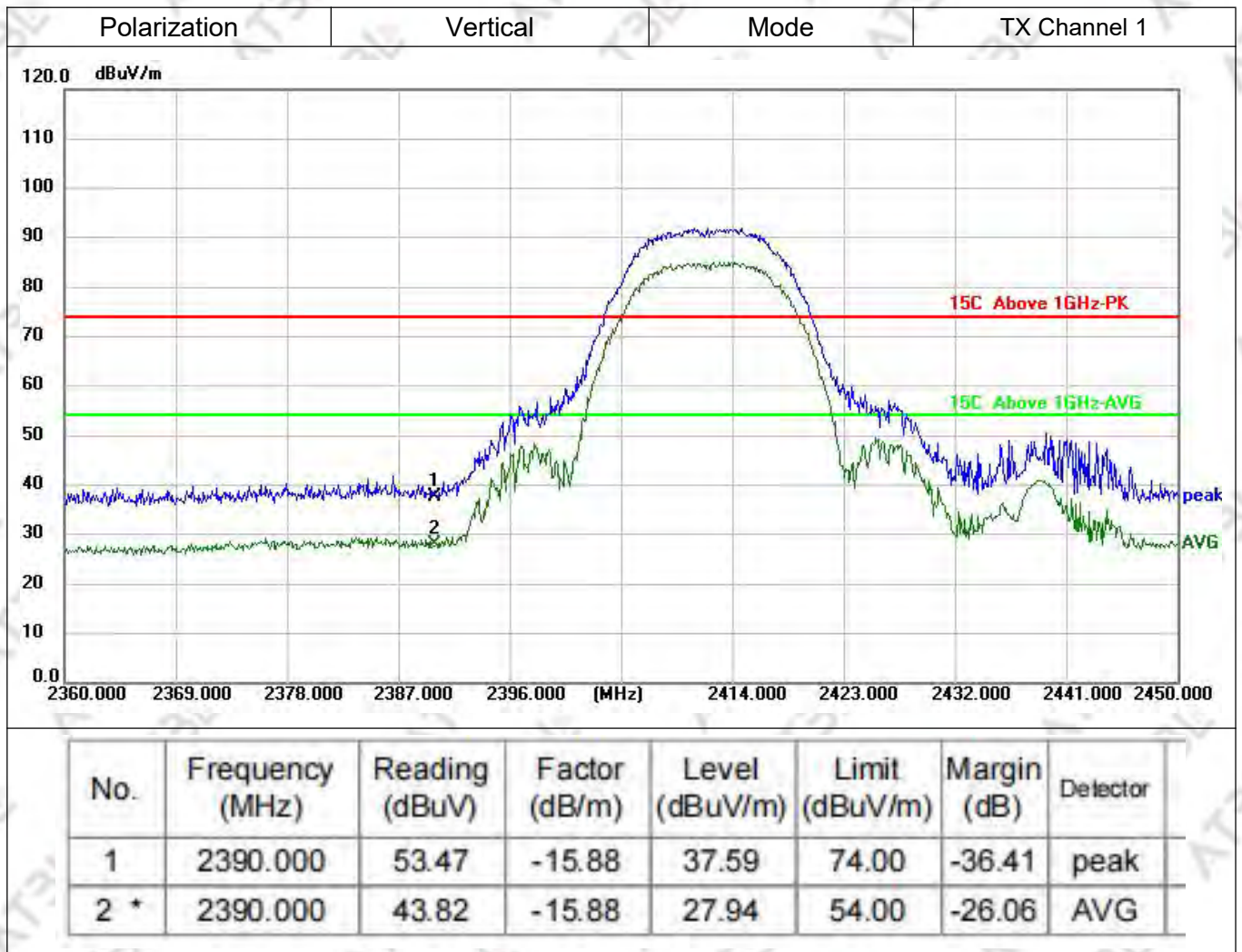


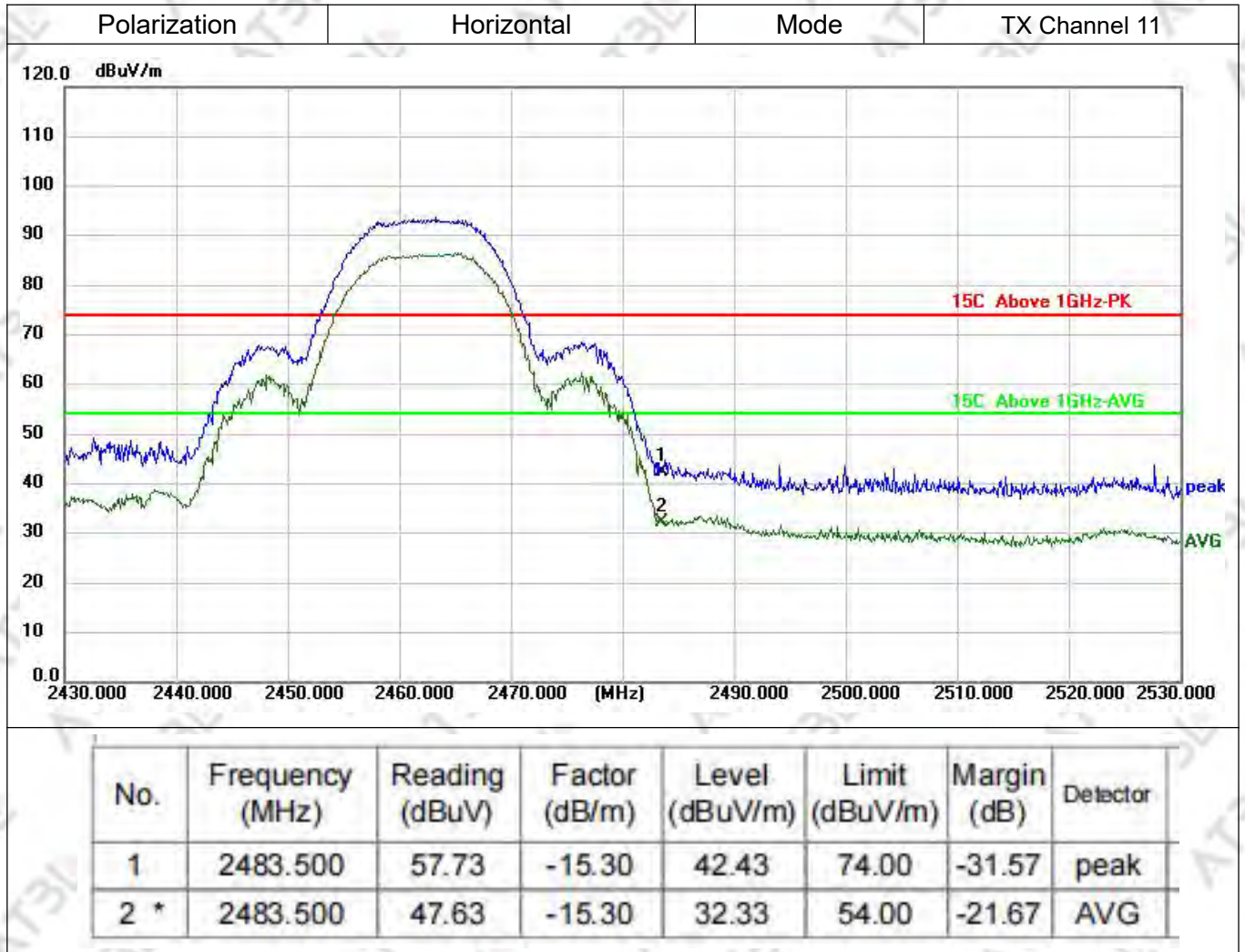


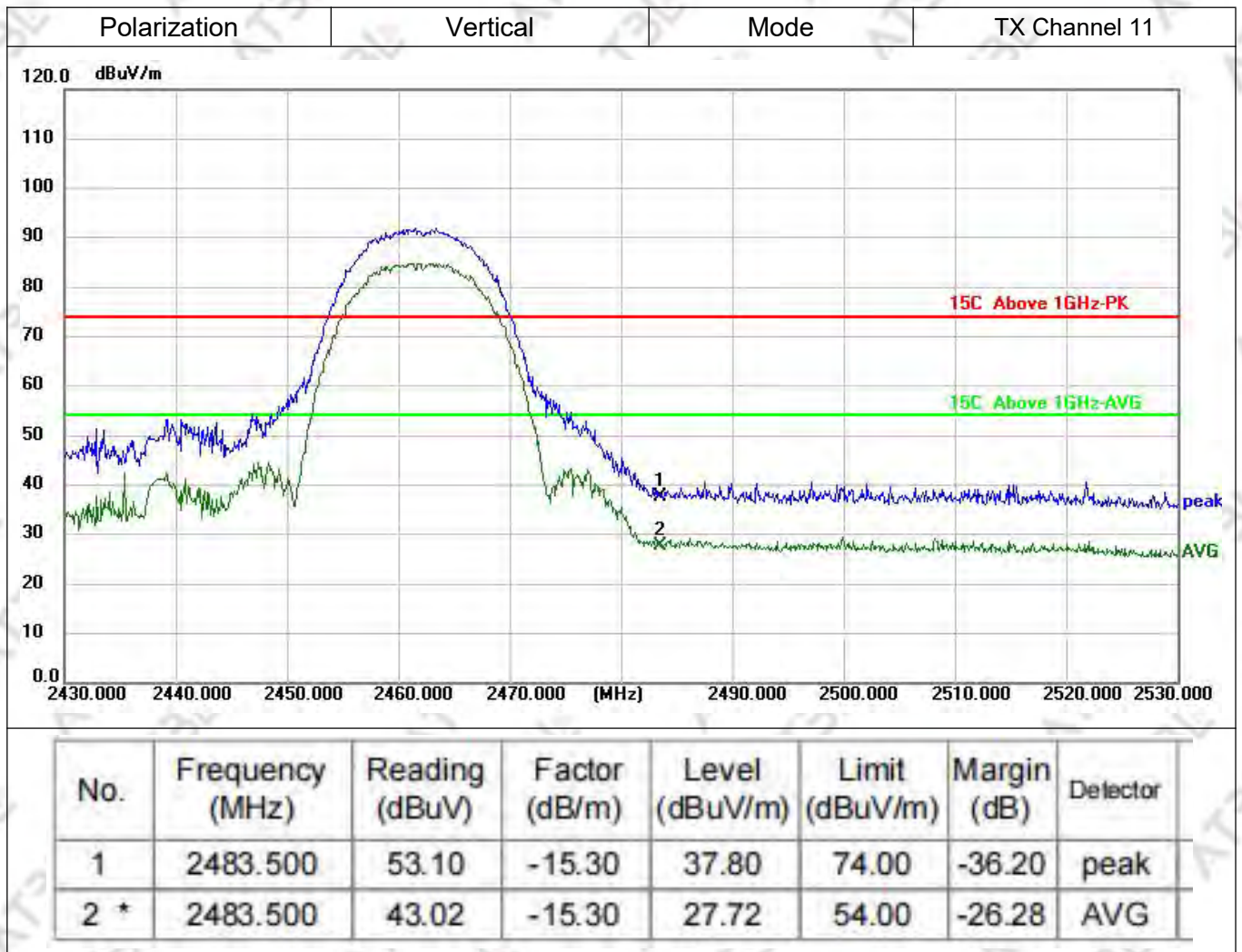
3.7.5. Test Result of Restricted Band

802.11b

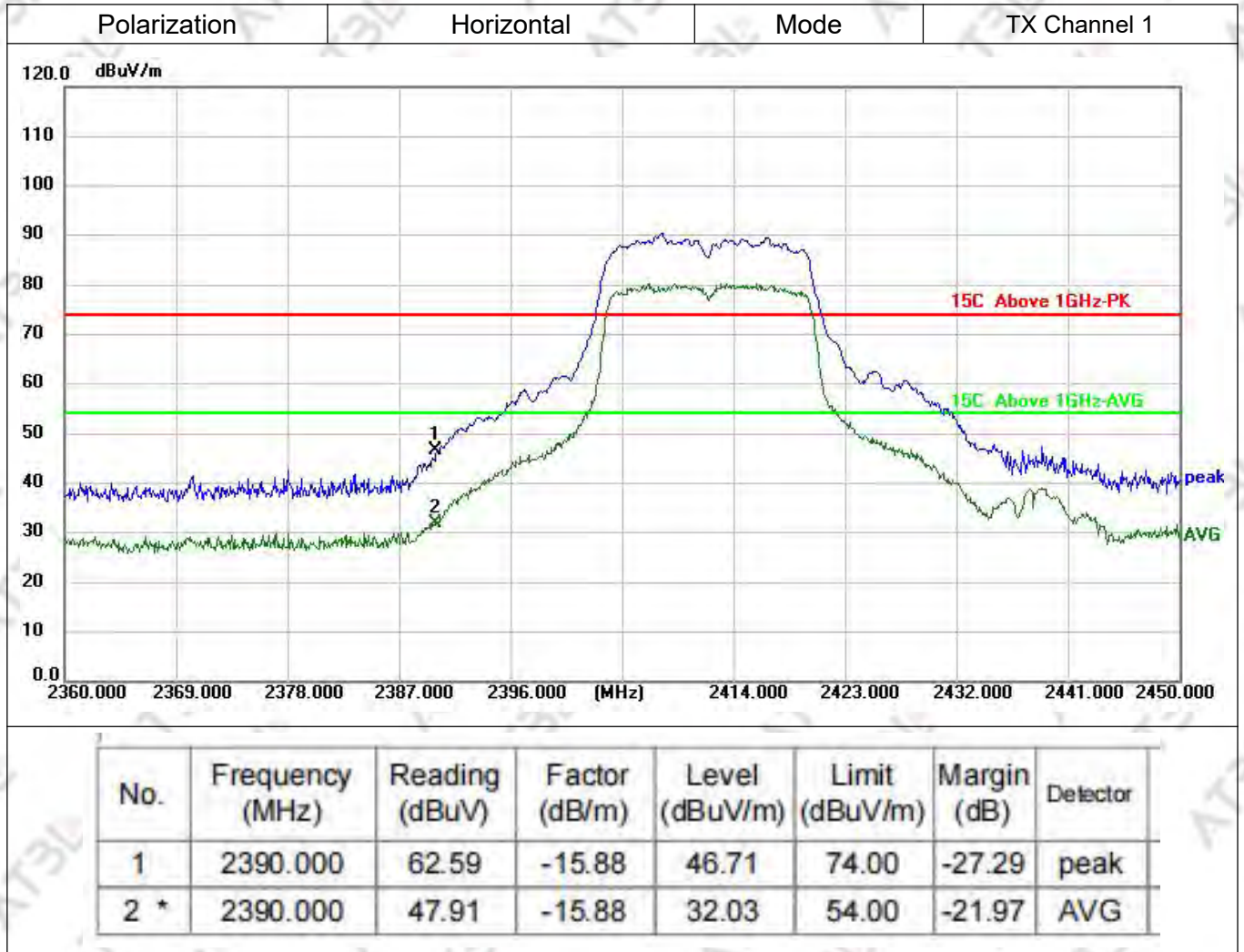


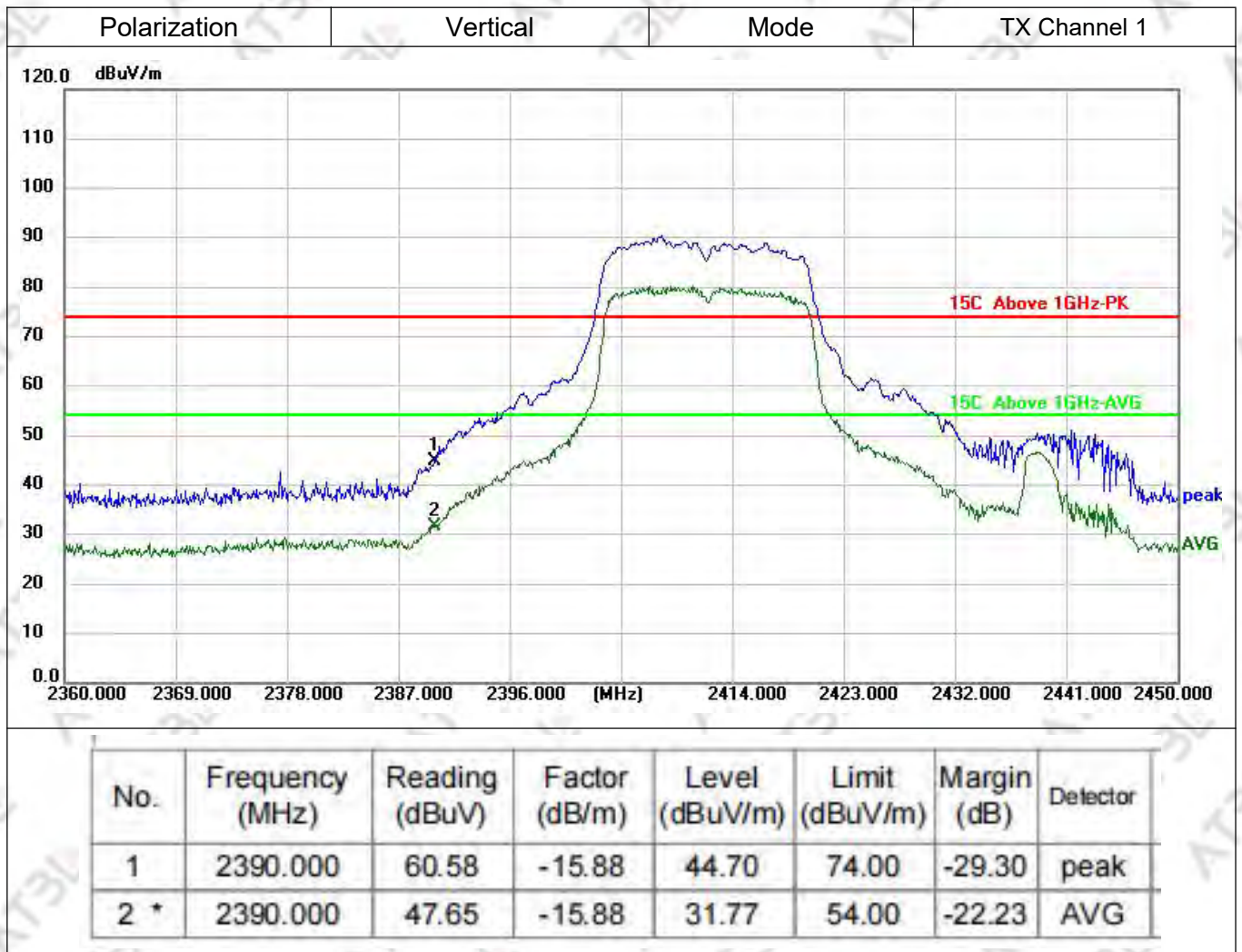


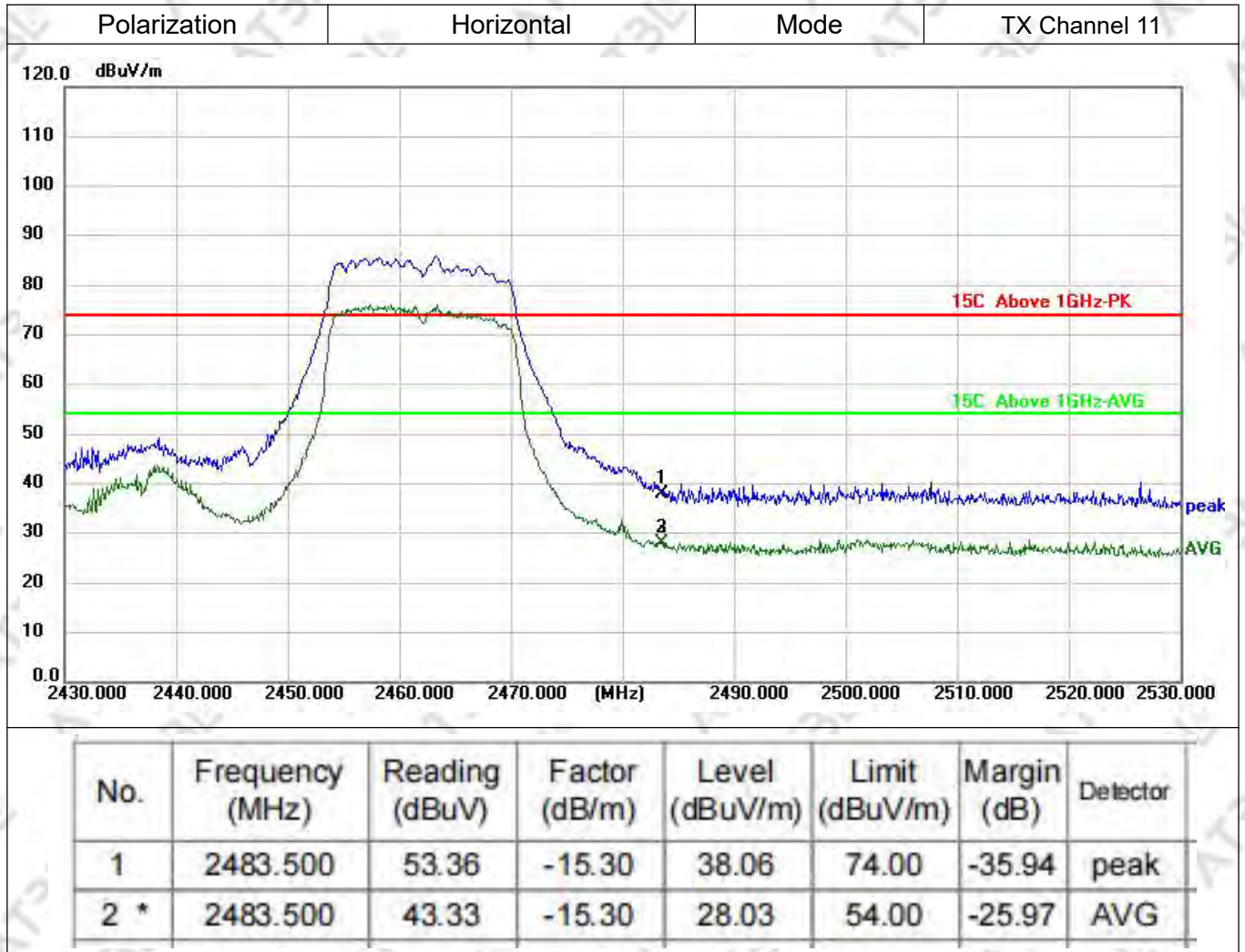


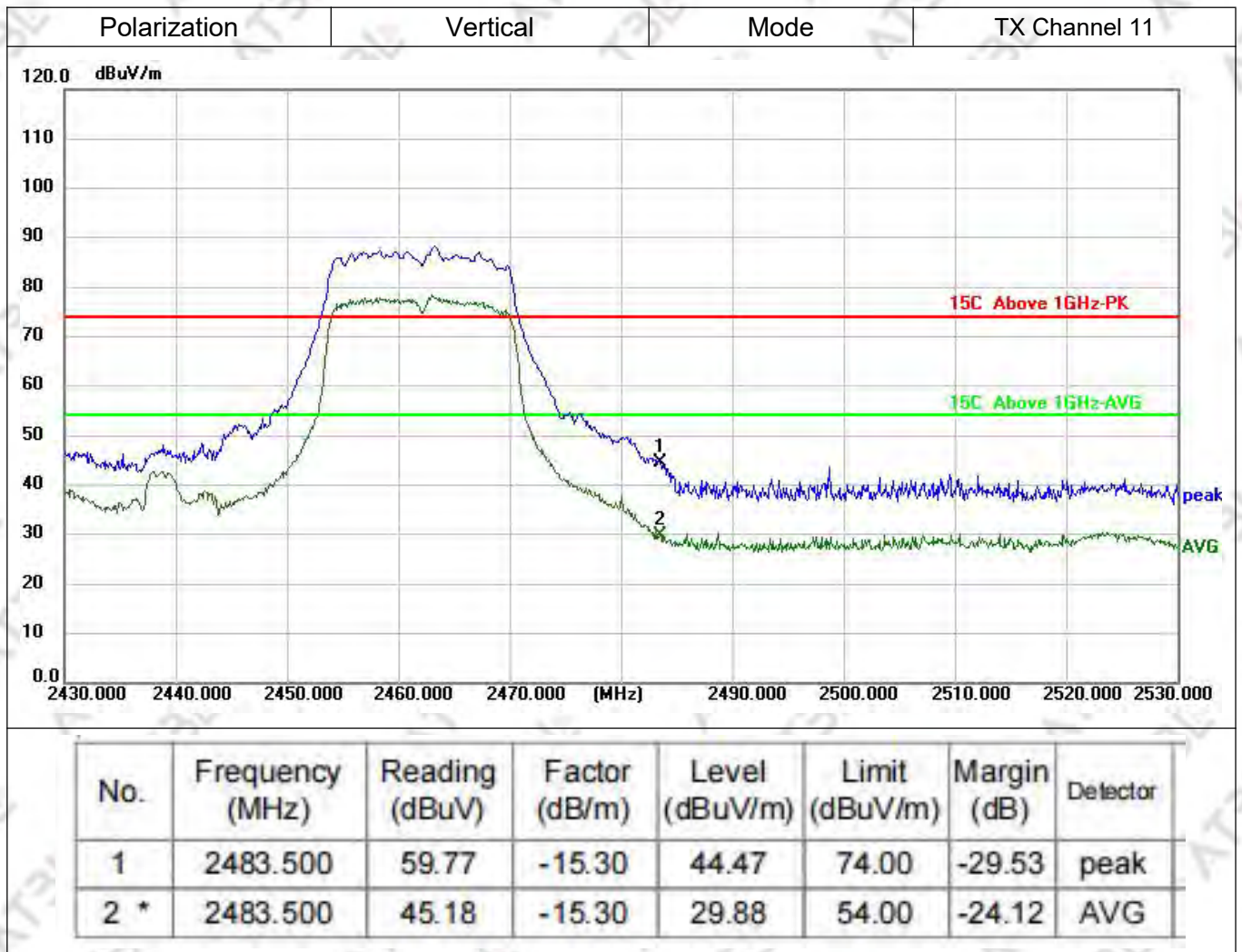


802.11g

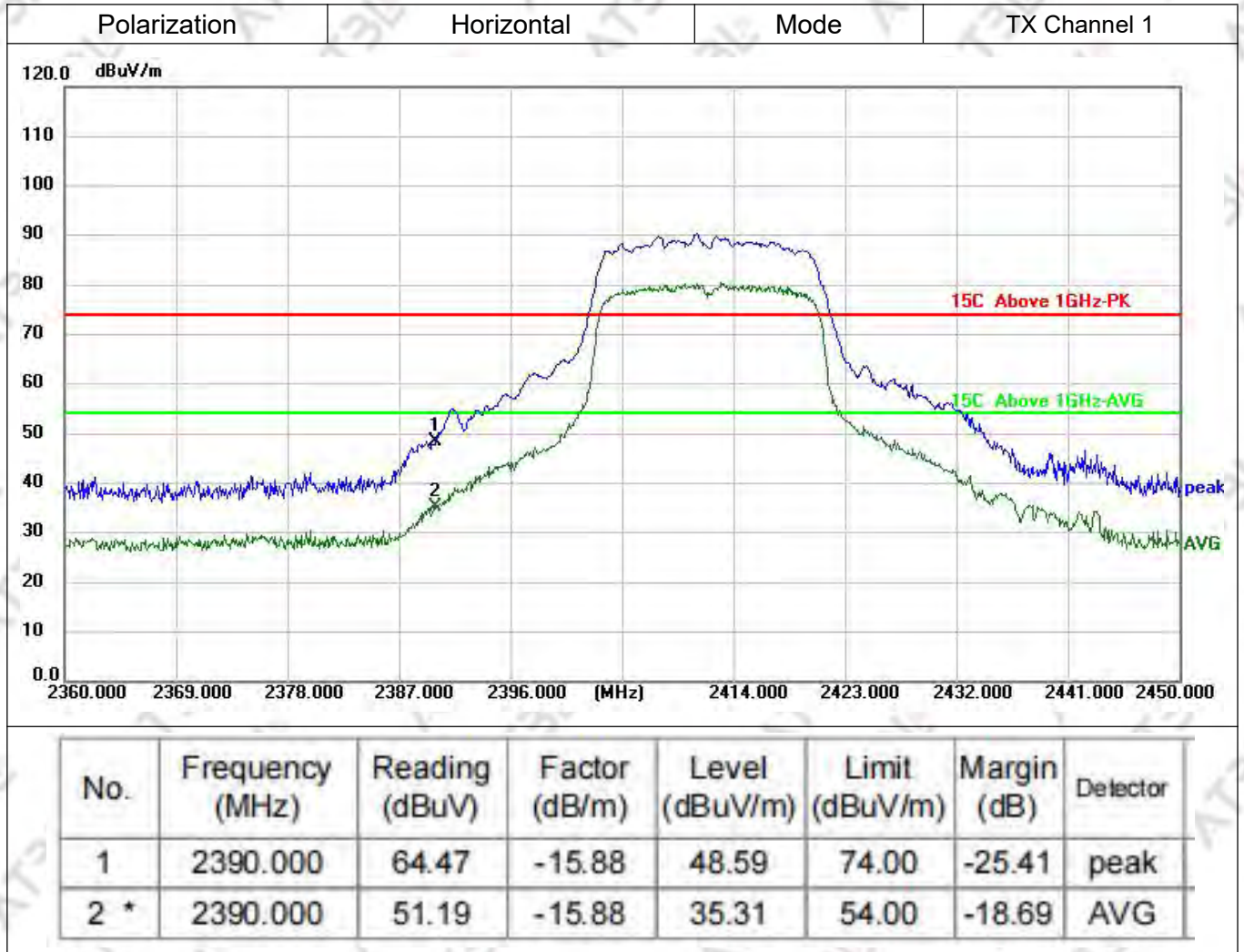


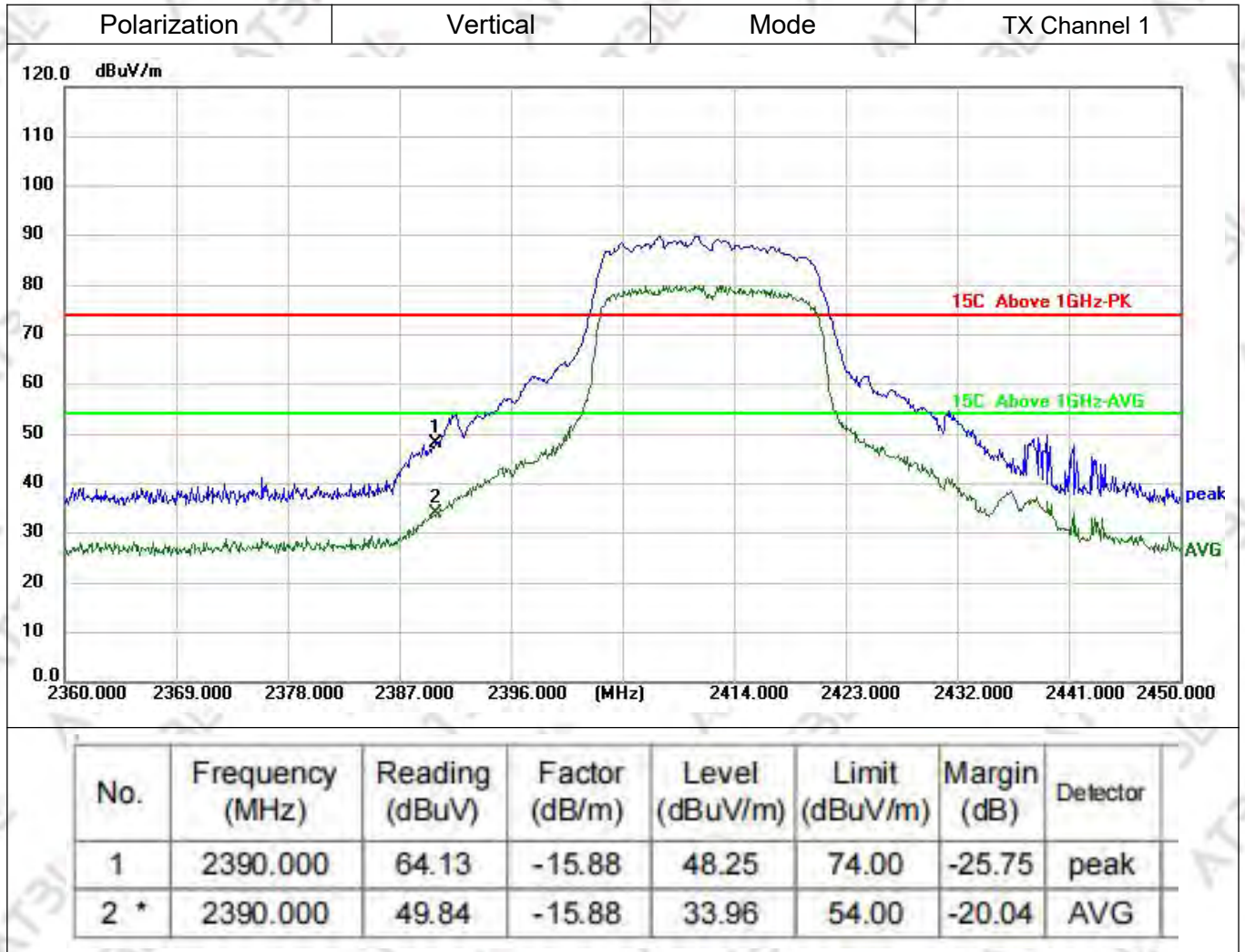


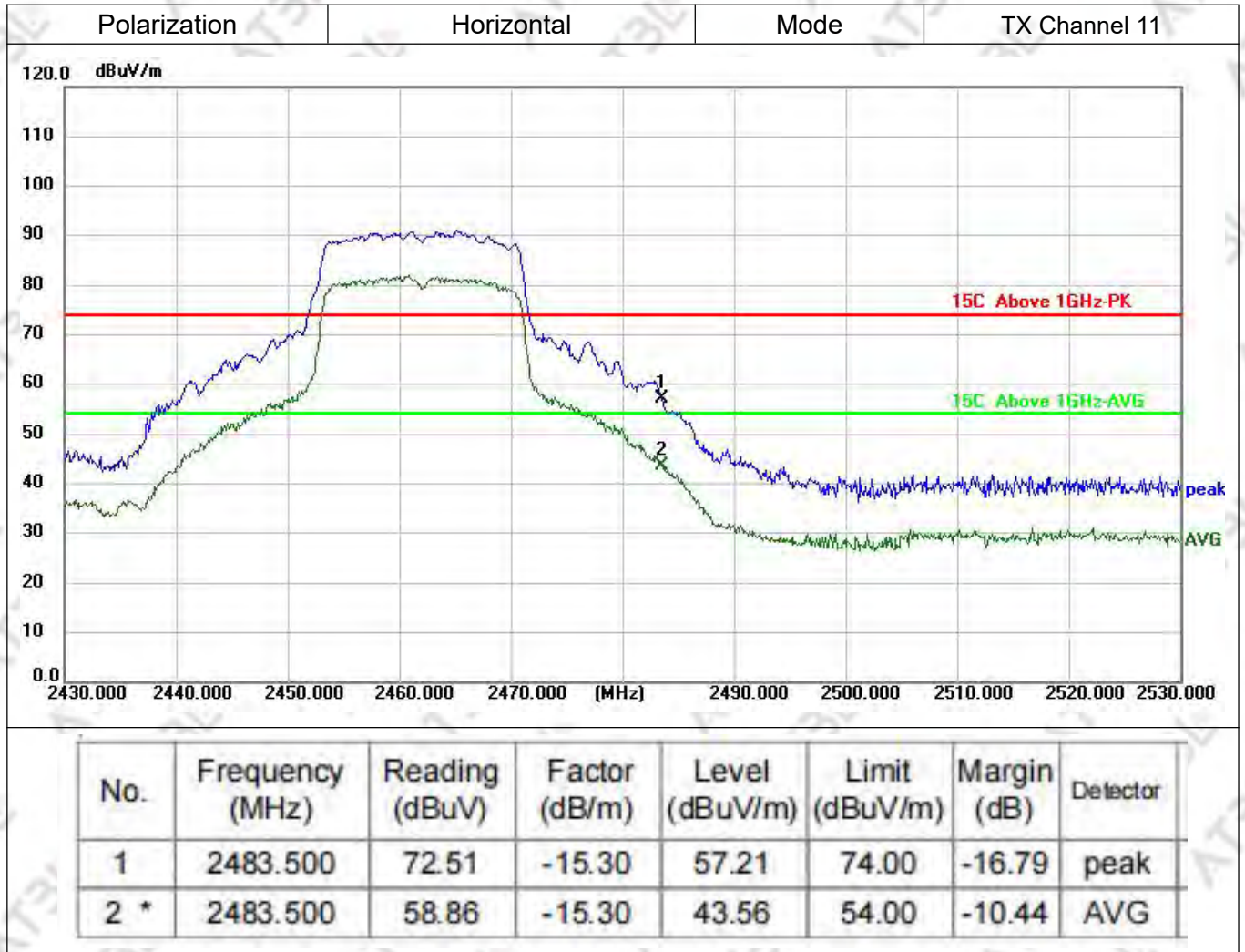


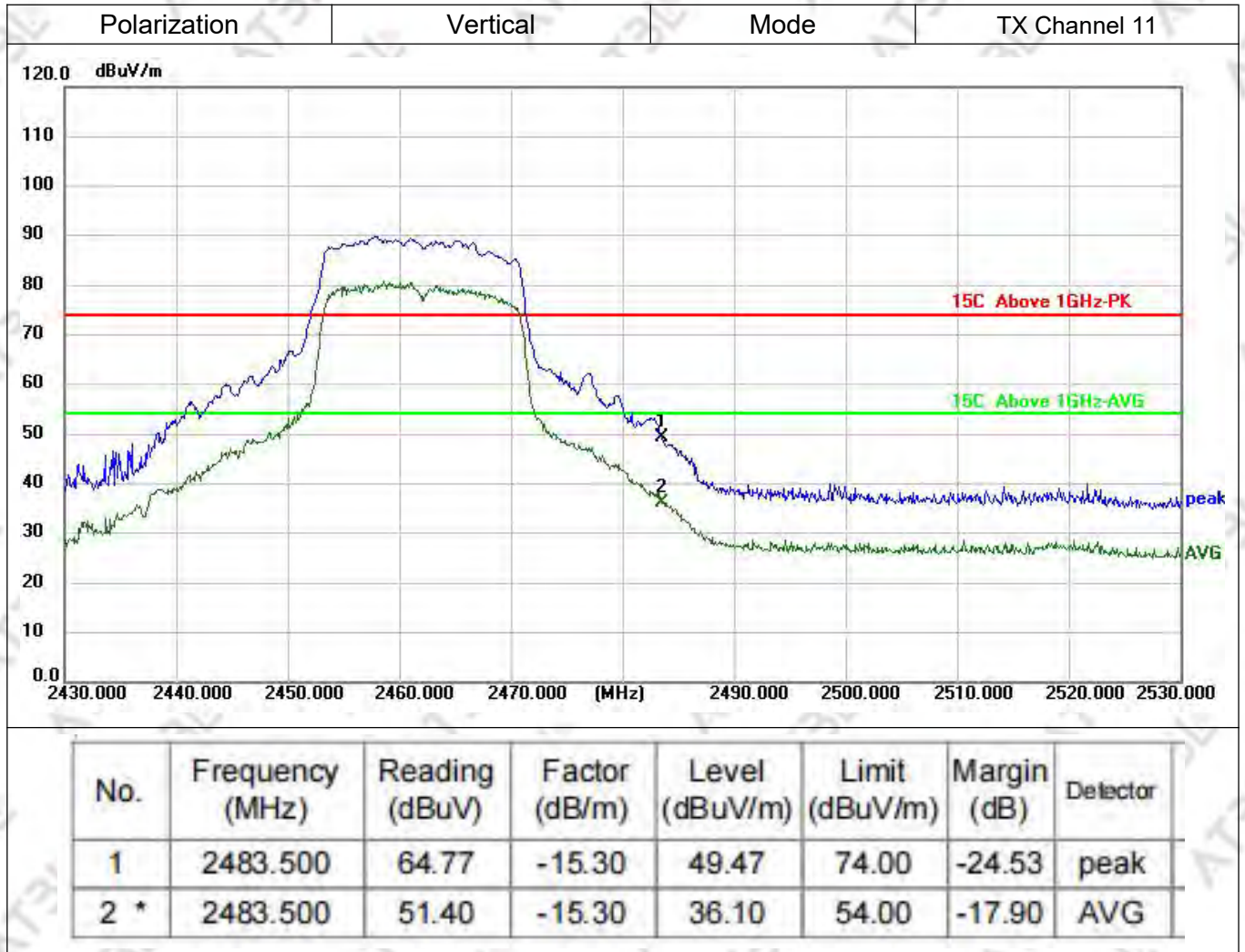


802.11n(20MHz)

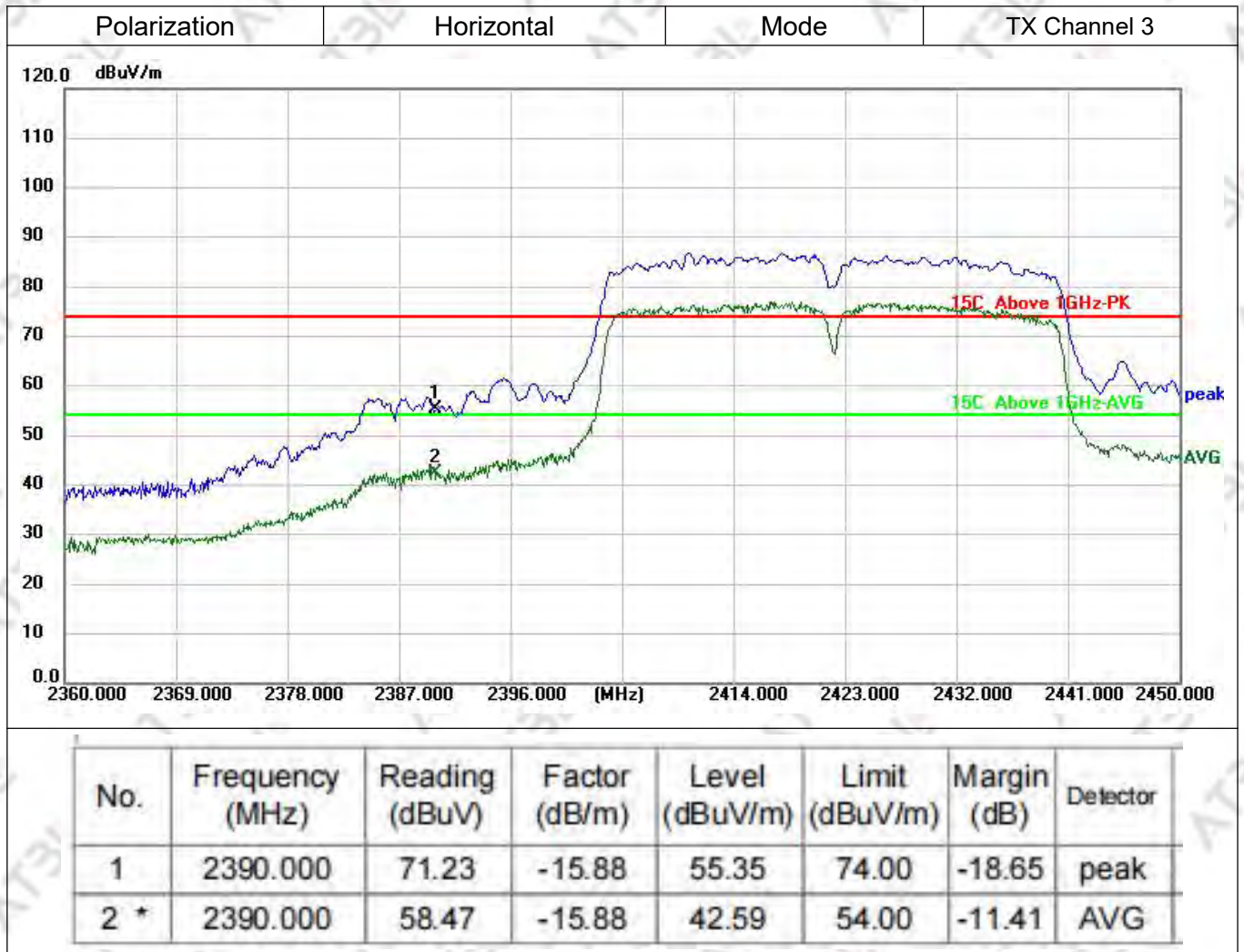


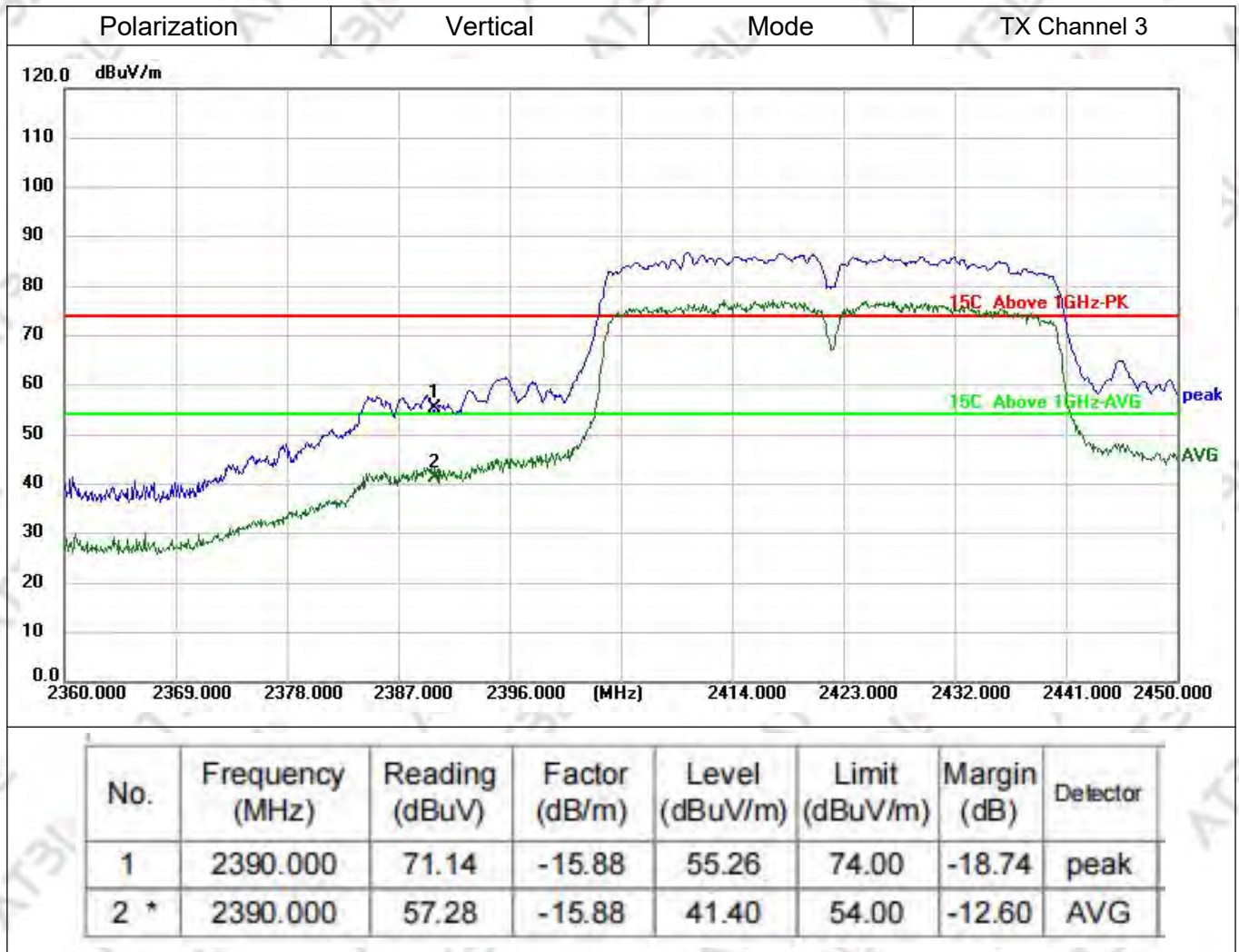


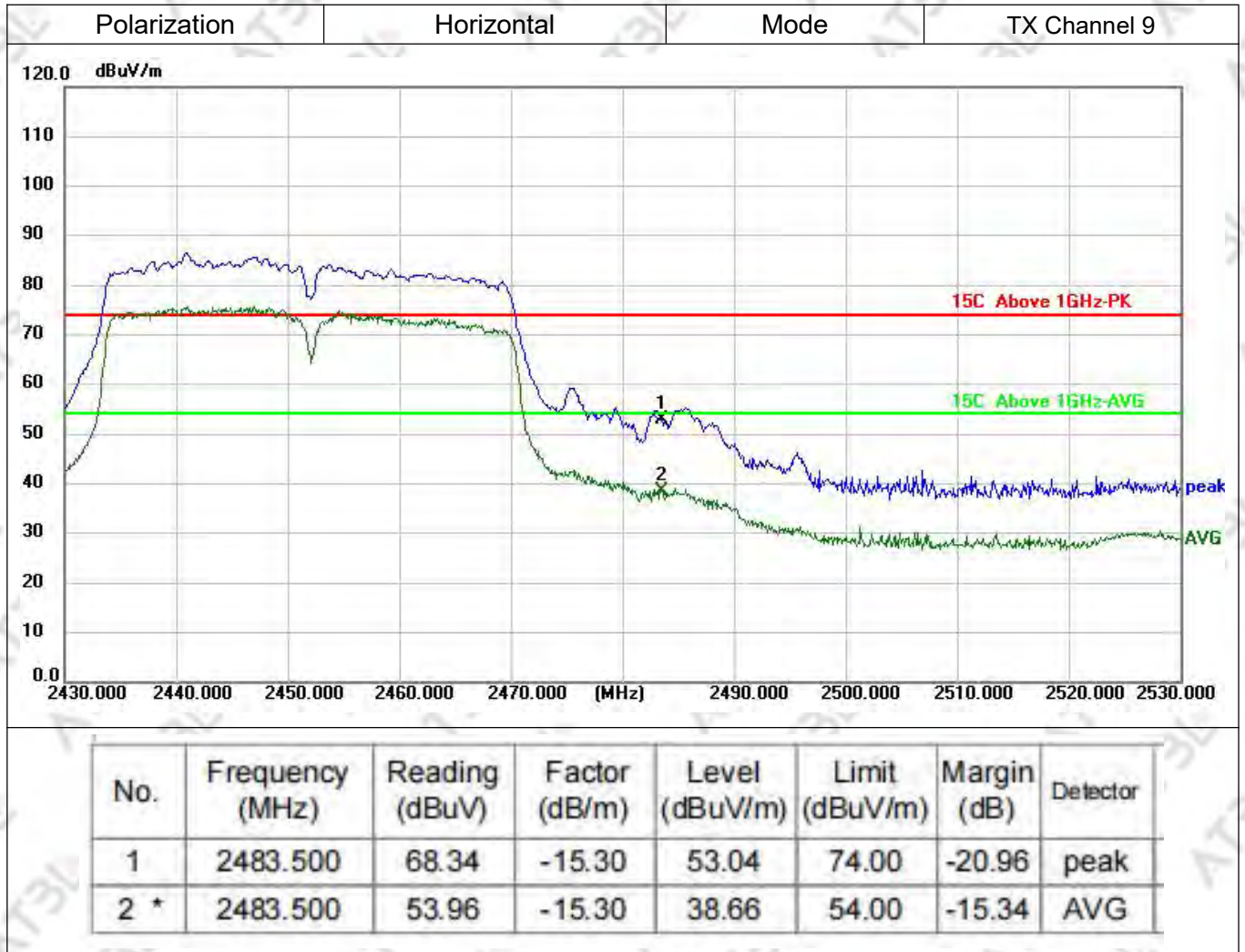


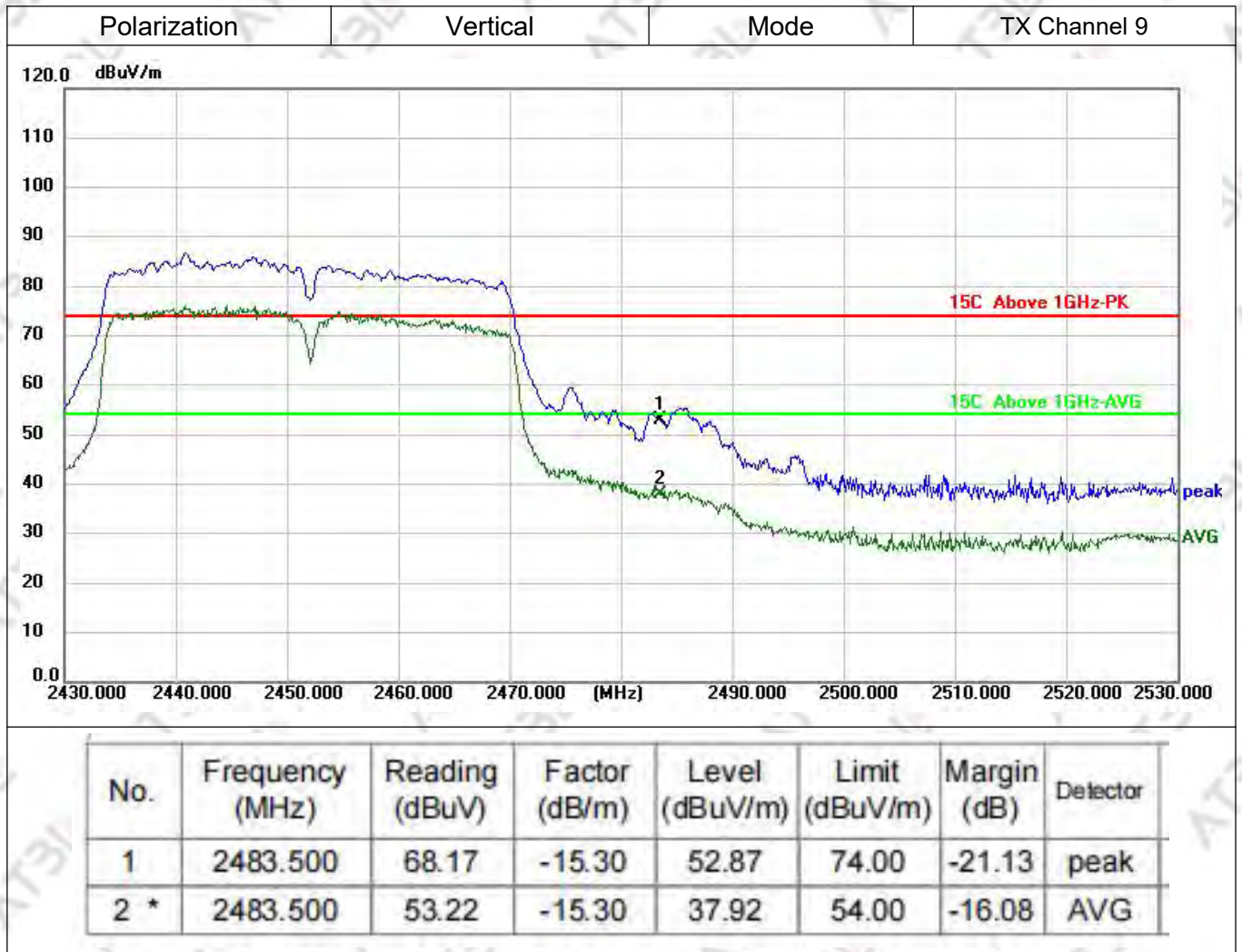


802.11n(40MHz)









3.8. AC Power-Line Conducted Emission

3.8.1. Limit

47 CFR 15.207(a): For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table:

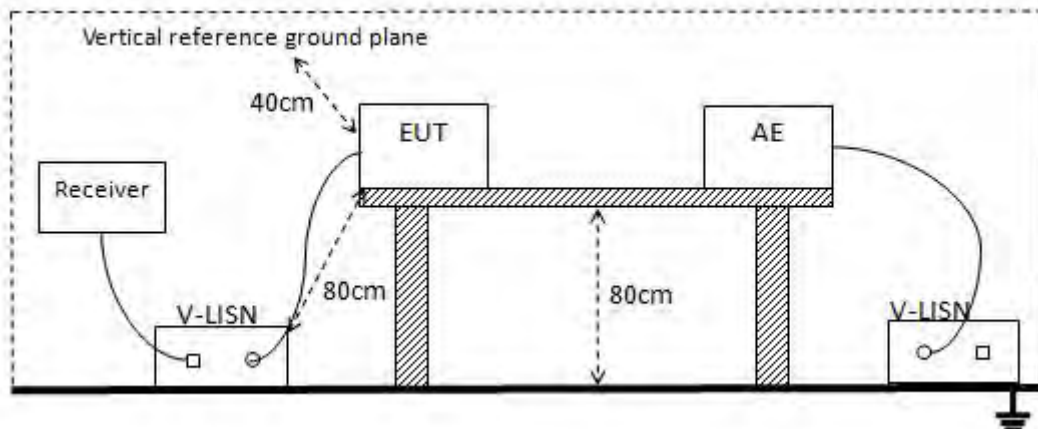
Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

3.8.2. Test Procedure

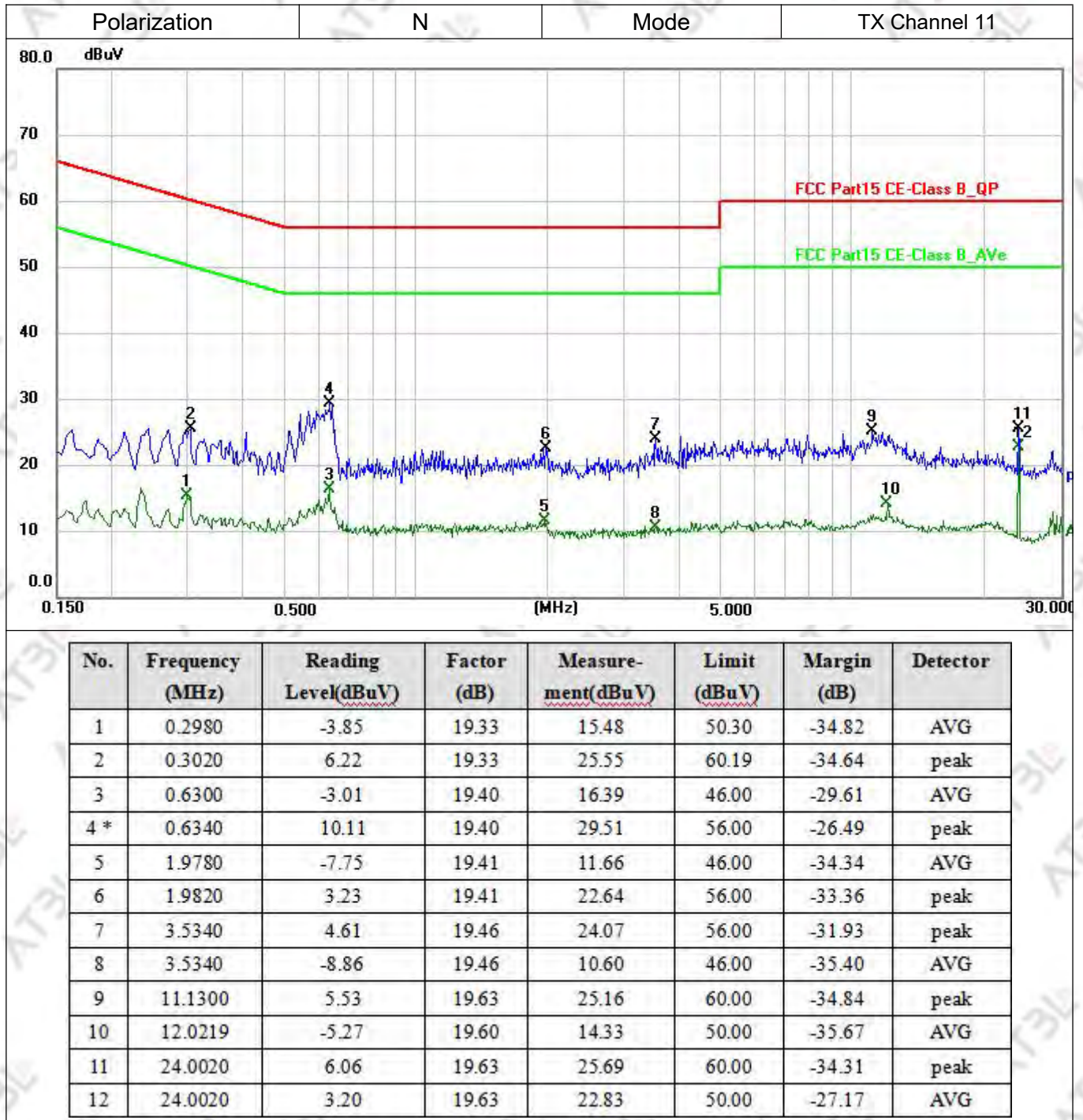
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9 kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

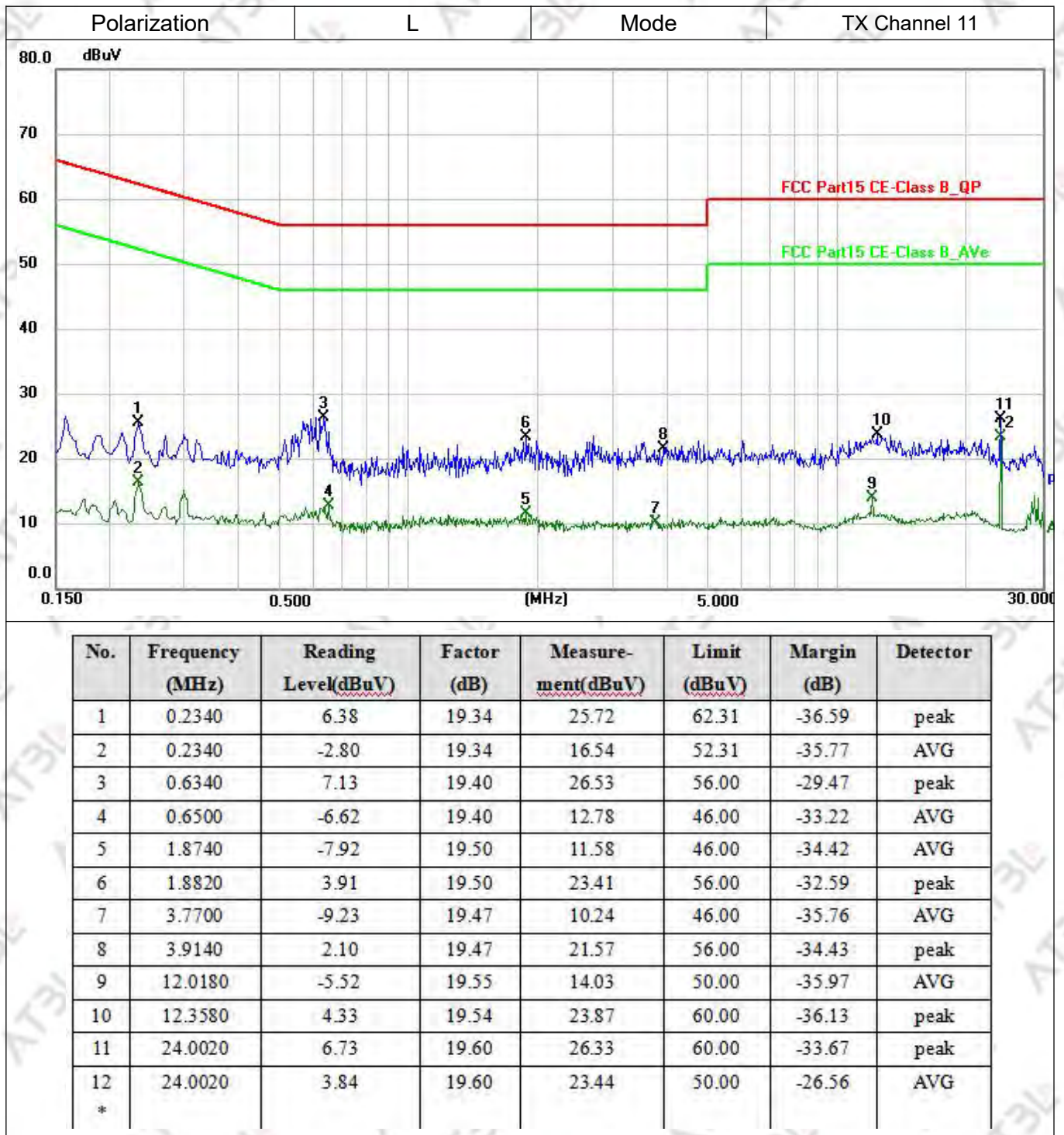
3.8.3. Test Setup



3.8.4. Test Result of AC Power-Line Conducted Emission

Note:only worst case (802.11b) mode was recorded in the test report if no any others.





3.9. Antenna Requirement

3.9.1. Standard Requirement

According to 47 CFR 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

3.9.2. EUT Antenna

The antenna used for the EUT is FPC Antenna, which meets the antenna requirements.

4. Test Setup Photographs

Please refer to the Appendix F.

Appendix A of data

A1.Maximum conducted output power

Test Result

Conducted Output Power

Mode	Channel	Ant. 0 (dBm)	Ant. 1 (dBm)	Total (dBm)	Limit (dBm)	Result
IEEE 802.11b	1	18.89	22.30	N/A	30	PASS
	6	18.53	21.65	N/A	30	PASS
	11	17.92	21.10	N/A	30	PASS
IEEE 802.11g	1	20.46	24.05	N/A	30	PASS
	6	20.07	23.58	N/A	30	PASS
	11	19.67	22.08	N/A	30	PASS
IEEE 802.11n_20	1	20.32	23.84	25.43	29	PASS
	6	20.07	23.38	25.05	29	PASS
	11	19.74	19.13	22.46	29	PASS
IEEE 802.11n_40	3	20.75	23.00	25.03	29	PASS
	6	20.24	23.47	25.16	29	PASS
	9	20.16	19.38	22.8	29	PASS

Conducted AVG output power

Mode	Channel	Ant. 0 (dBm)	Ant. 1 (dBm)	Total (dBm)	Limit (dBm)	Result
IEEE 802.11b	1	13.366	16.696	N/A	30	PASS
	6	13.012	16.184	N/A	30	PASS
	11	12.228	16.359	N/A	30	PASS
IEEE 802.11g	1	13.332	16.197	N/A	30	PASS
	6	13.173	16.654	N/A	30	PASS
	11	12.382	14.956	N/A	30	PASS
IEEE 802.11n_20	1	13.251	16.923	18.47	29	PASS
	6	13.499	15.957	17.91	29	PASS
	11	12.597	12.46	15.54	29	PASS
IEEE 802.11n_40	3	12.433	16.254	17.76	29	PASS
	6	13.517	13.245	16.41	29	PASS
	9	12.943	12.587	15.78	29	PASS

Note:

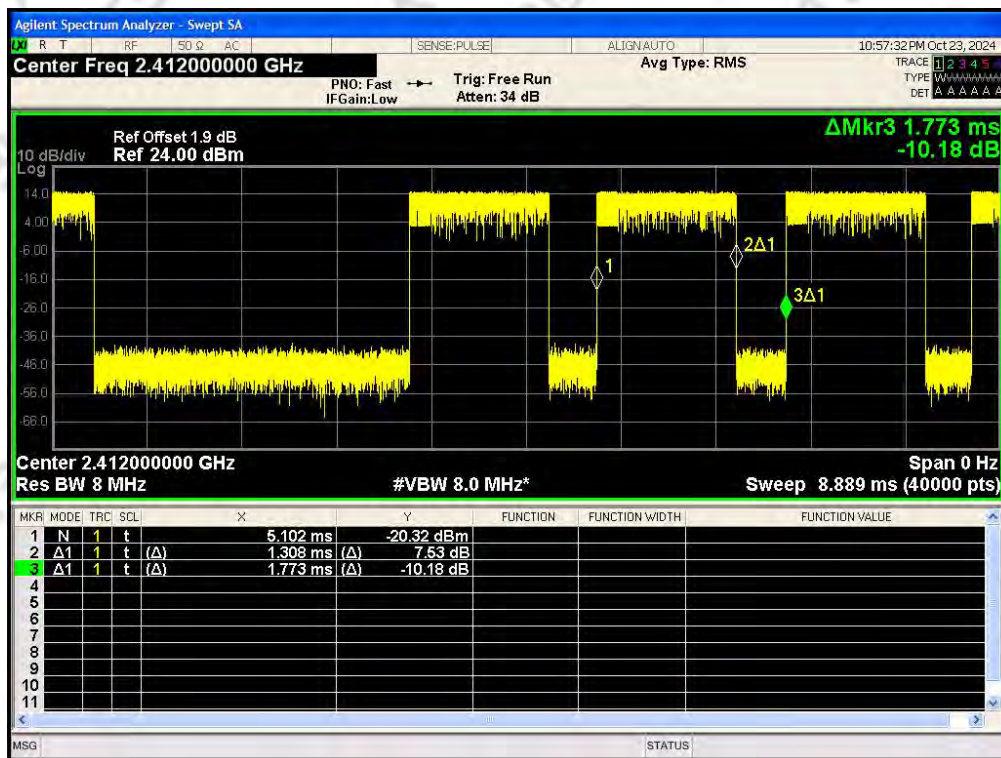
1. The power of antenna 0 and antenna 1 is converted into milliwatt units, and the added power is taken logarithmically and multiplied by 10.
2. Refer to the Section 1.5 for calculation of power limits.

A2.Duty Cycle

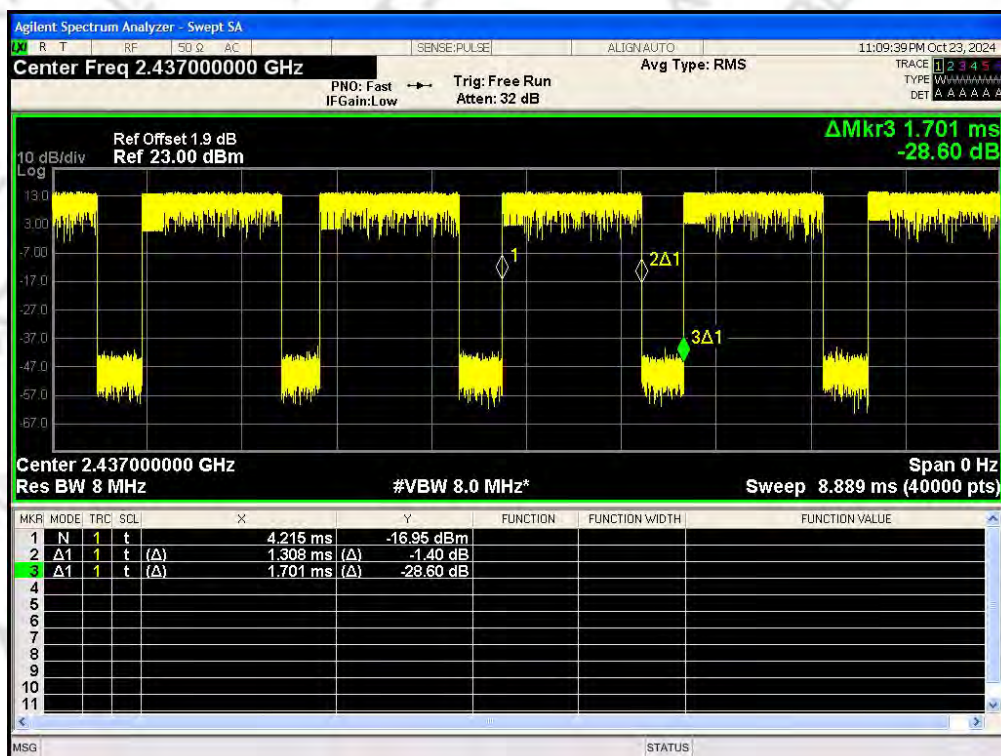
Test Result

Mode	Data rates	Channel	Antenna	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)
IEEE 802.11b	1	1	1	1.308	1.773	73.78	0.7378	1.3206
			2	1.304	1.662	78.49	0.7849	1.0519
		6	1	1.308	1.701	76.91	0.7691	1.1402
			2	1.304	1.715	76.04	0.7604	1.1896
		11	1	1.308	1.782	73.40	0.7340	1.343
			2	1.304	4.386	29.74	0.2974	5.2666
IEEE 802.11g	6	1	1	0.250	0.407	61.40	0.6140	2.1183
			2	0.256	0.354	72.32	0.7232	1.4074
		6	1	0.250	0.434	57.68	0.5768	2.3897
			2	0.261	0.453	57.62	0.5762	2.3943
		11	1	0.250	0.443	56.40	0.5640	2.4872
			2	0.258	0.472	54.66	0.5466	2.6233
IEEE 802.11n_20	MCS 0	1	1	0.230	0.387	59.45	0.5945	2.2585
			2	0.236	0.406	58.13	0.5813	2.356
		6	1	0.236	0.442	53.39	0.5339	2.7254
			2	0.236	0.362	65.19	0.6519	1.8582
		11	1	0.236	0.424	55.66	0.5566	2.5446
			2	0.236	0.460	51.30	0.5130	2.8988
IEEE 802.11n_40		3	1	0.136	0.226	60.18	0.6018	2.2055
			2	0.135	0.307	43.91	0.4391	3.5744
		6	1	0.135	0.315	42.80	0.4280	3.6856
			2	0.147	3.261	4.52	0.0452	13.4486
		9	1	0.138	0.352	39.20	0.3920	4.0671
			2	0.136	0.360	37.78	0.3778	4.2274

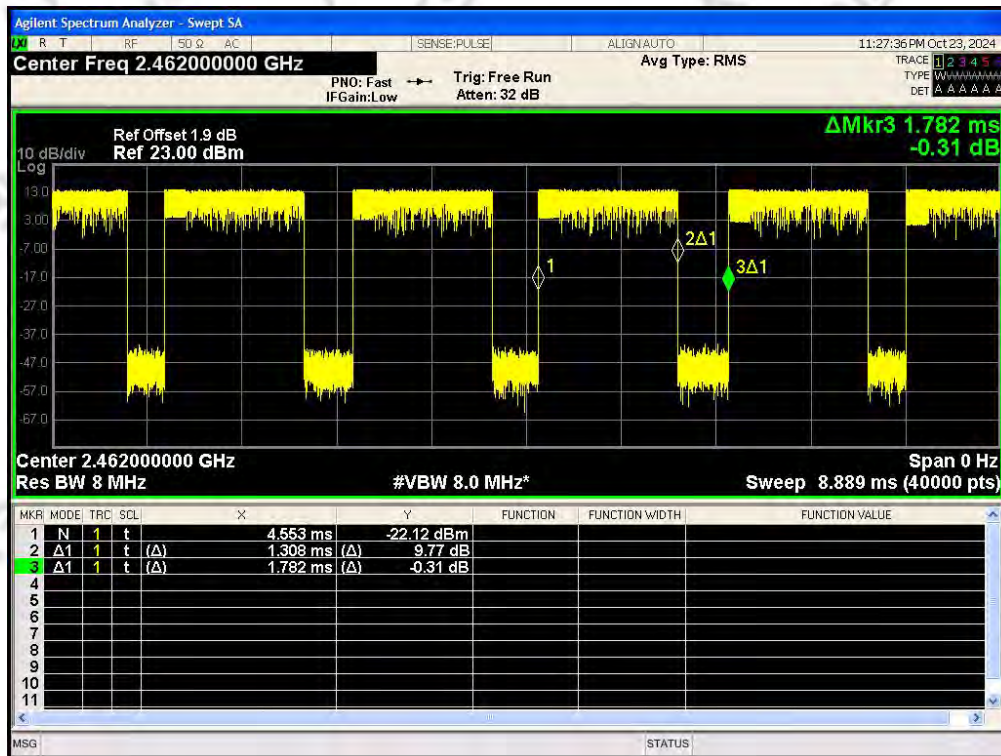
Test Graphs



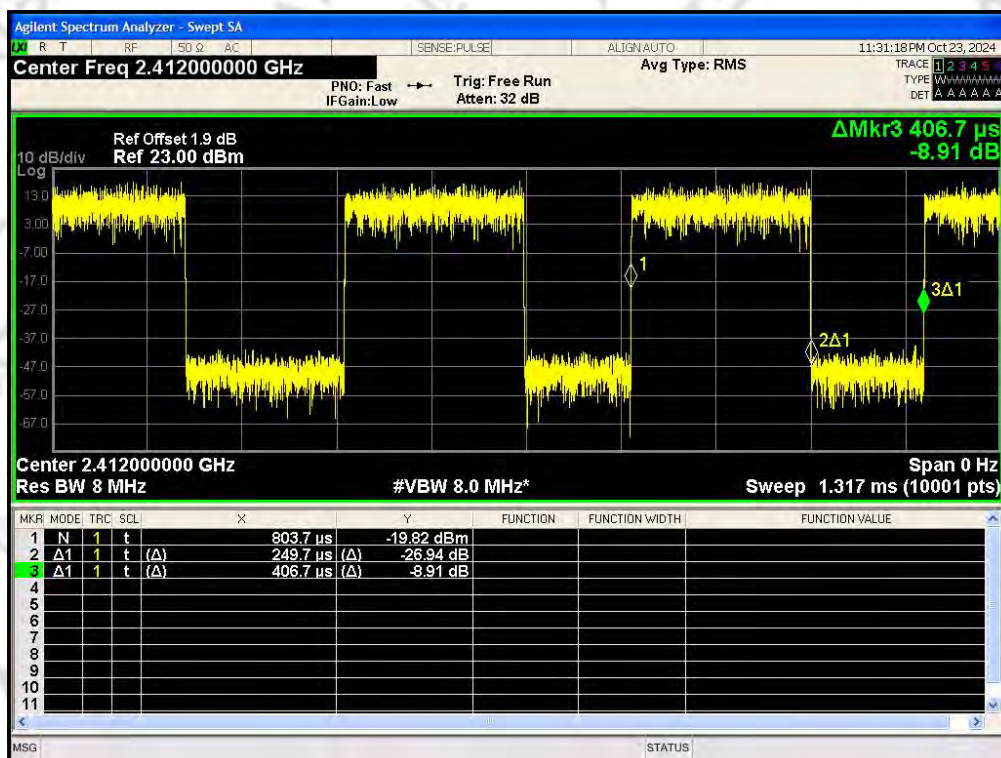
IEEE 802.11b_20MHz_Channel 1



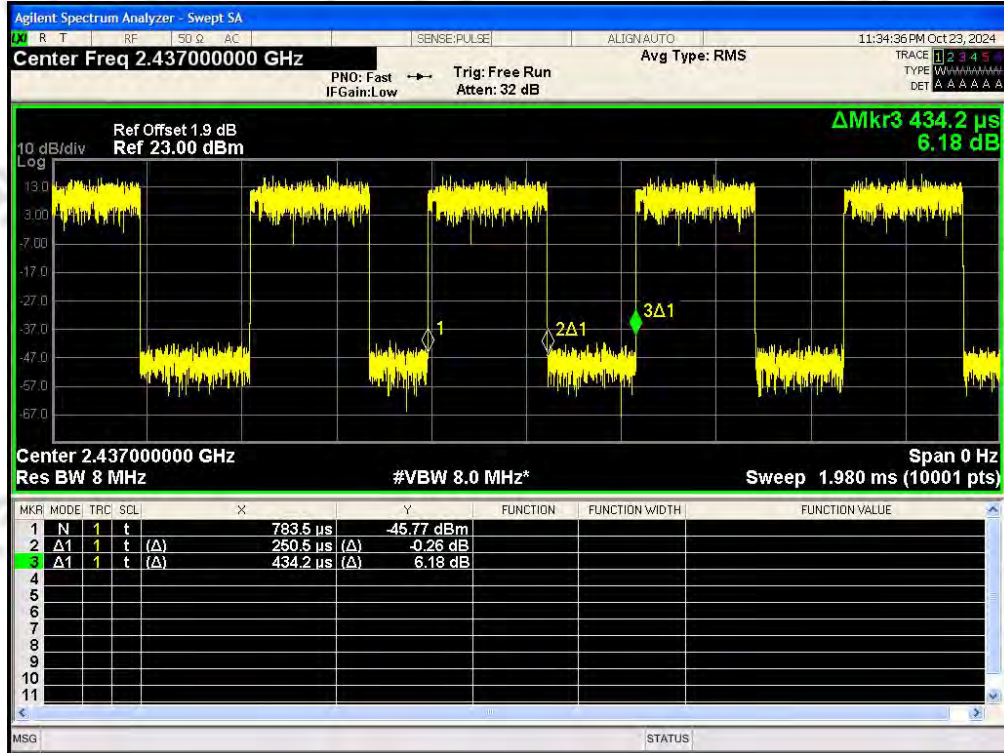
IEEE 802.11b_20MHz_Channel 6



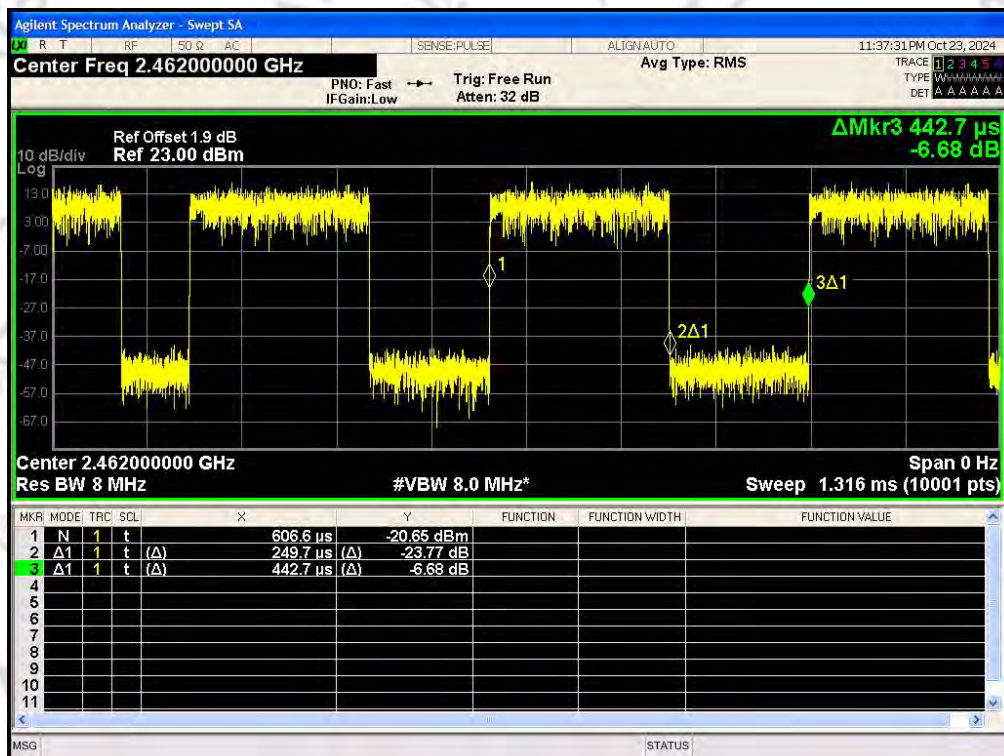
IEEE 802.11b_20MHz_Channel 11



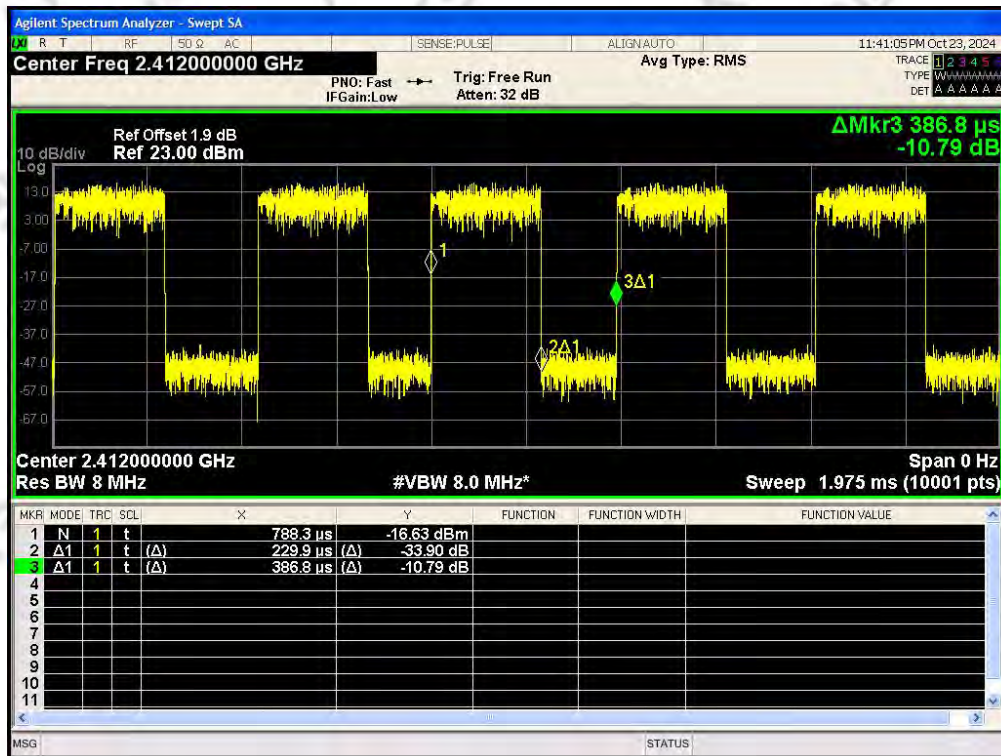
IEEE 802.11g_20MHz_Channel 1



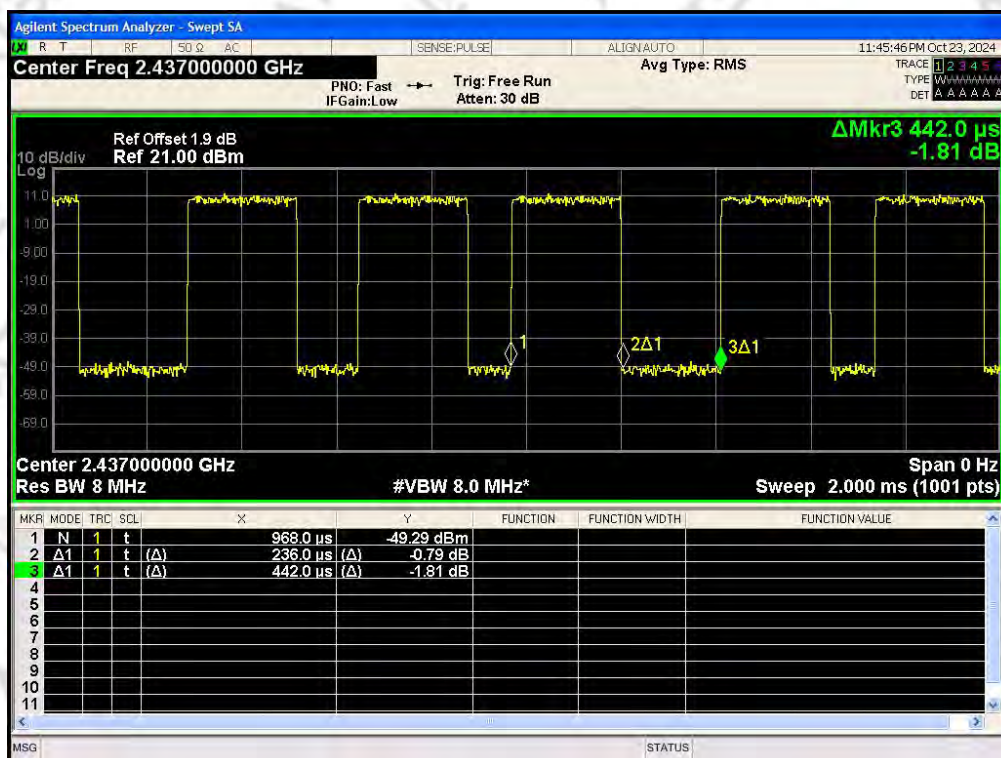
IEEE 802.11g_20MHz_Channel 6



IEEE 802.11g_20MHz_Channel 11



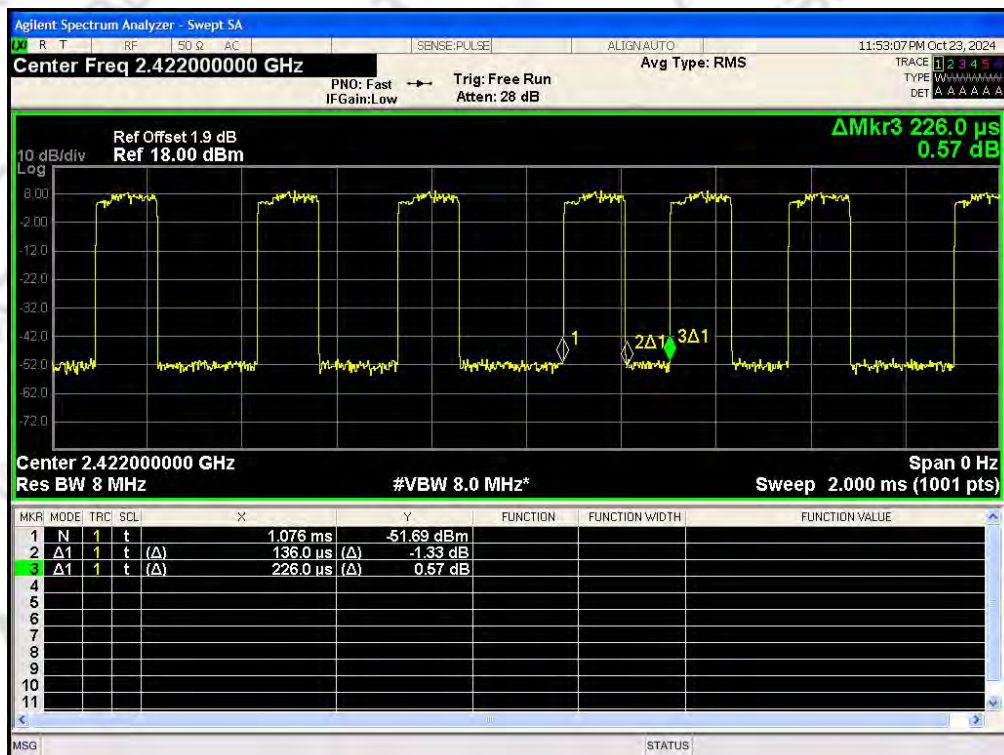
IEEE 802.11n_20MHz_Channel 1



IEEE 802.11n_20MHz_Channel 6



IEEE 802.11n_20MHz_Channel 11



IEEE 802.11n_40MHz_Channel 3



IEEE 802.11n_40MHz_Channel 6



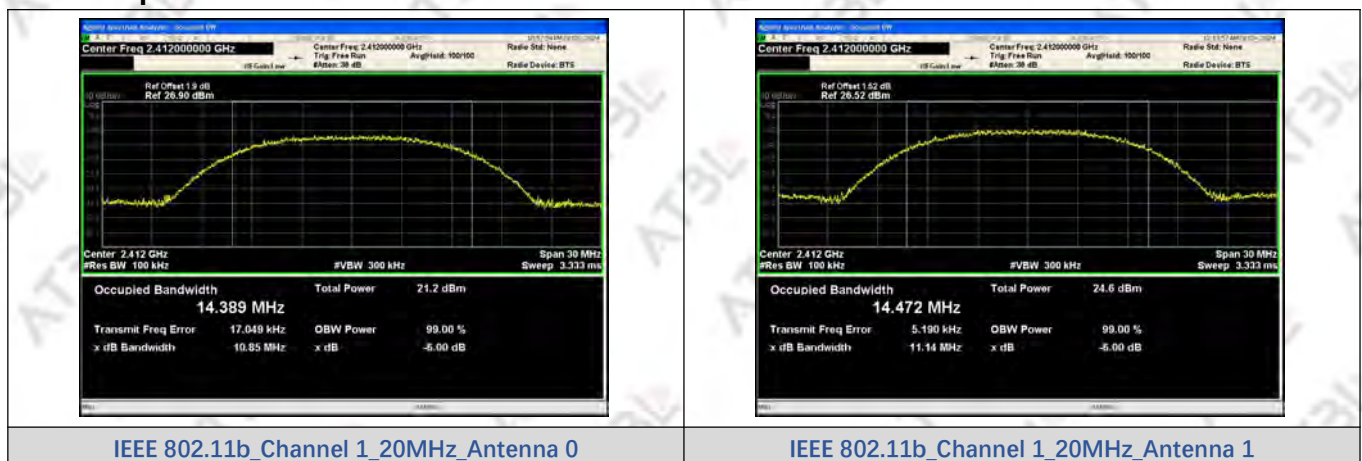
IEEE 802.11n_40MHz_Channel 9

A3.6dB Bandwidth and 99% Bandwidth

6dB Bandwidth

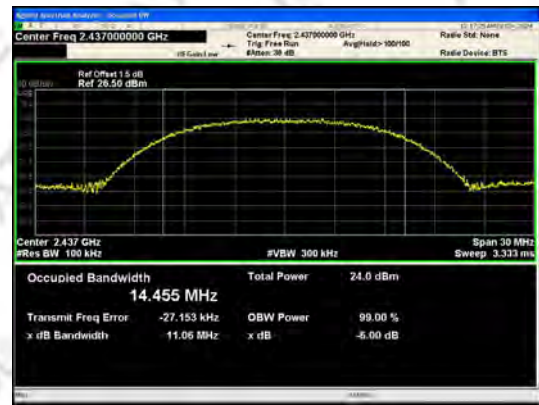
Mode	Channel	Ant.	Center Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11b	1	0	2412	10.85	≥ 0.5	PASS
		1	2412	11.14		PASS
	6	0	2437	10.77		PASS
		1	2437	11.06		PASS
	11	0	2462	10.34		PASS
		1	2462	10.95		PASS
IEEE 802.11g	1	0	2412	16.03		PASS
		1	2412	16.29		PASS
	6	0	2437	16.33		PASS
		1	2437	16.33		PASS
	11	0	2462	16.10		PASS
		1	2462	16.27		PASS
IEEE 802.11n_20	1	0	2412	15.70		PASS
		1	2412	17.23		PASS
	6	0	2437	16.59		PASS
		1	2437	16.91		PASS
	11	0	2462	16.52		PASS
		1	2462	16.88		PASS
IEEE 802.11n_40	3	0	2422	35.97		PASS
		1	2422	35.71		PASS
	6	0	2437	35.77		PASS
		1	2437	35.75		PASS
	9	0	2452	35.18		PASS
		1	2452	35.14		PASS

Test Graphs





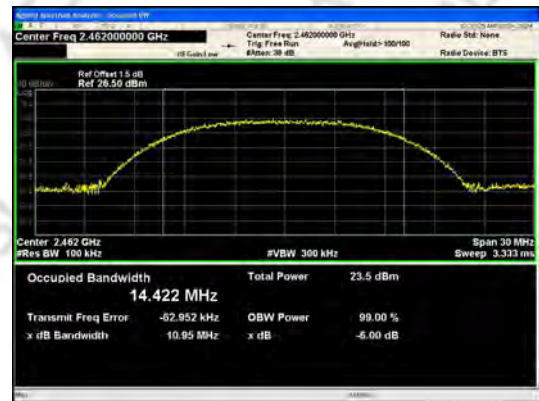
IEEE 802.11b_Channel 6_20MHz_Antenna 0



IEEE 802.11b_Channel 6_20MHz_Antenna 1



IEEE 802.11b_Channel 11_20MHz_Antenna 0



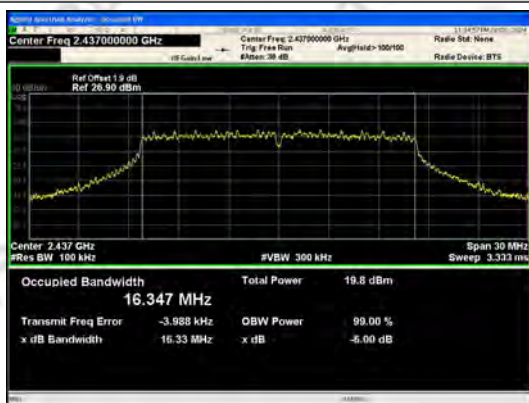
IEEE 802.11b_Channel 11_20MHz_Antenna 1



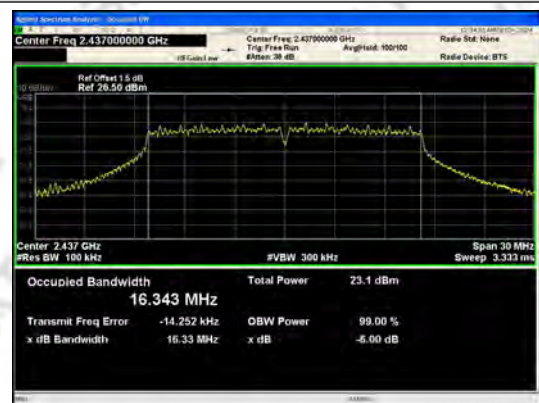
IEEE 802.11g_Channel 1_20MHz_Antenna 0



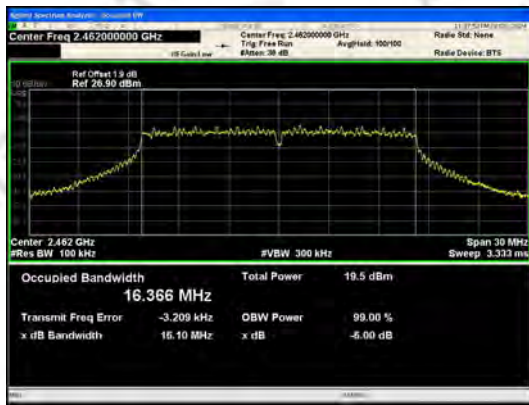
IEEE 802.11g_Channel 1_20MHz_Antenna 1



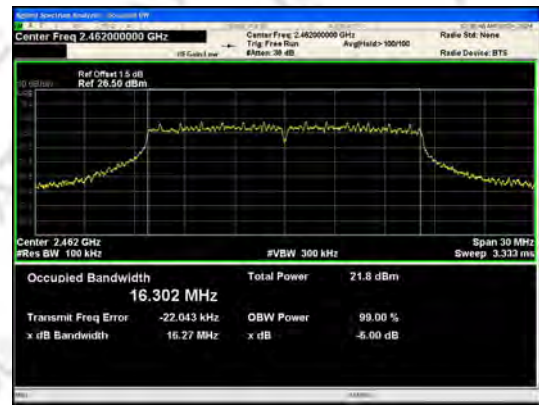
IEEE 802.11g_Channel 6_20MHz_Antenna 0



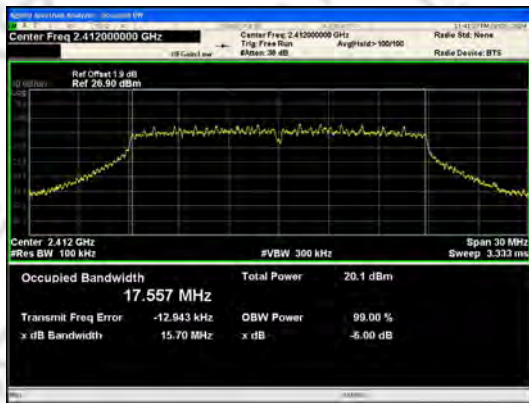
IEEE 802.11g_Channel 6_20MHz_Antenna 1



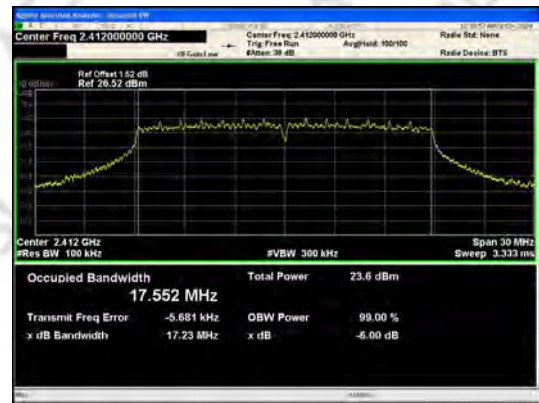
IEEE 802.11g_Channel 11_20MHz_Antenna 0



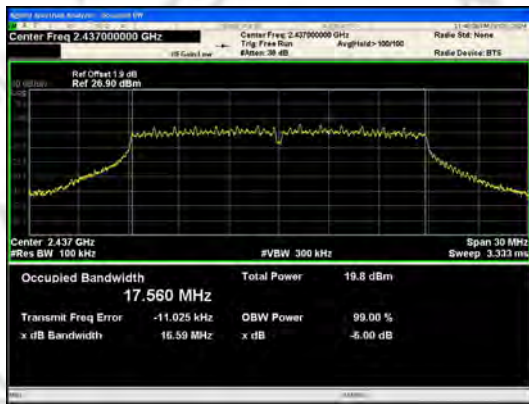
IEEE 802.11g_Channel 11_20MHz_Antenna 1



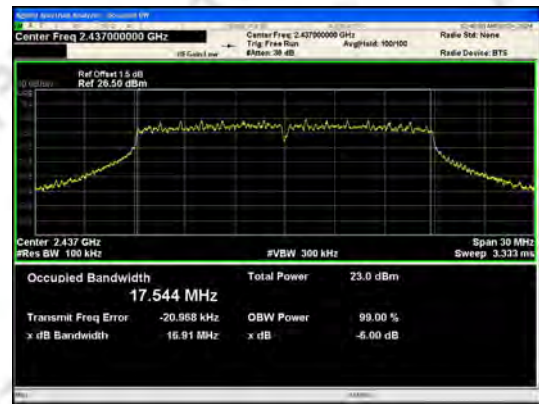
IEEE 802.11n_Channel 1_20MHz_Antenna 0



IEEE 802.11n_Channel 1_20MHz_Antenna 1



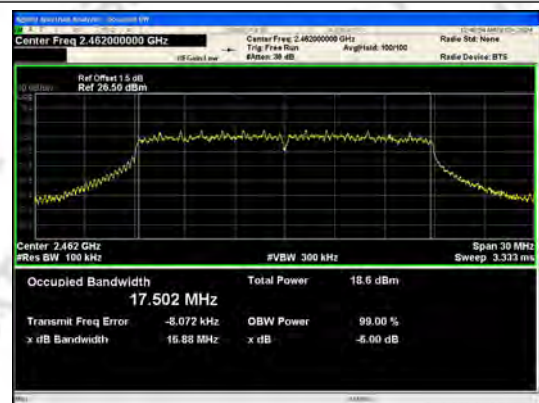
IEEE 802.11n_Channel 6_20MHz_Antenna 0



IEEE 802.11n_Channel 6_20MHz_Antenna 1



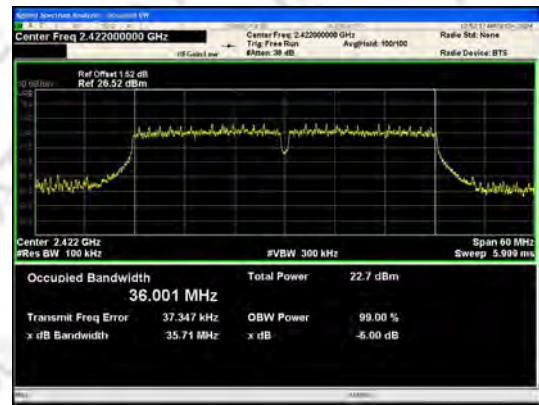
IEEE 802.11n_Channel 11_20MHz_Antenna 0



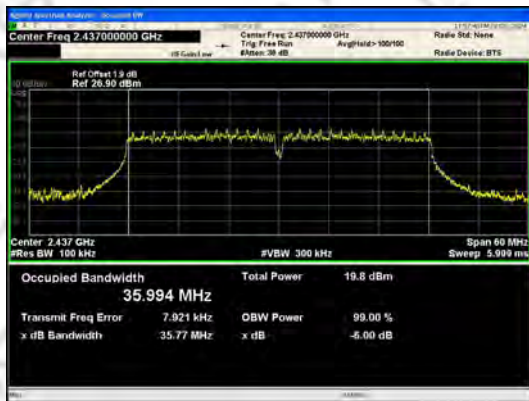
IEEE 802.11n_Channel 11_20MHz_Antenna 1



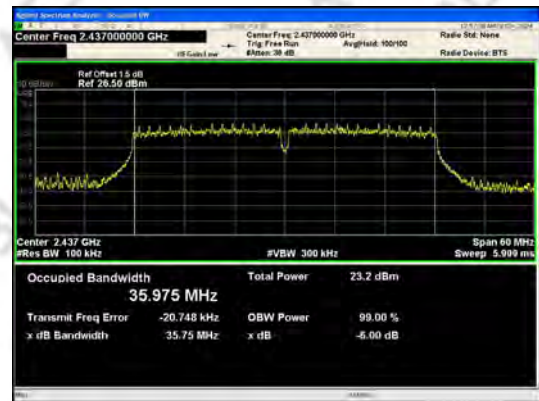
IEEE 802.11n_Channel 3_40MHz_Antenna 0



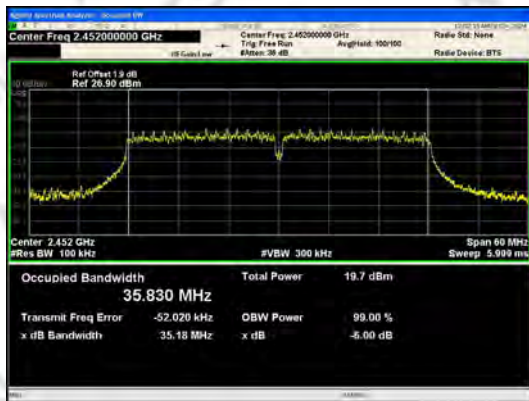
IEEE 802.11n_Channel 3_40MHz_Antenna 1



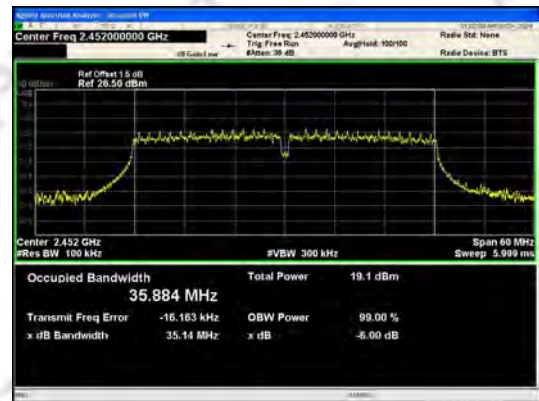
IEEE 802.11n_Channel 6_40MHz_Antenna 0



IEEE 802.11n_Channel 6_40MHz_Antenna 1



IEEE 802.11n_Channel 9_40MHz_Antenna 0



IEEE 802.11n_Channel 9_40MHz_Antenna 1

99% Bandwidth Test Graphs

Mode	Channel	Ant.	Center Frequency (MHz)	99% BW (MHz)
IEEE 802.11b	1	0	2412	14.400
		1	2412	14.388
	6	0	2437	14.424
		1	2437	14.428
	11	0	2462	14.491
		1	2462	14.458
IEEE 802.11g	1	0	2412	16.443
		1	2412	16.507
	6	0	2437	16.489
		1	2437	16.510
	11	0	2462	16.528
		1	2462	16.429
IEEE 802.11n_20	1	0	2412	17.715
		1	2412	17.699
	6	0	2437	17.620
		1	2437	17.641
	11	0	2462	17.628
		1	2462	17.593
IEEE 802.11n_40	3	0	2422	36.086
		1	2422	36.194
	6	0	2437	36.240
		1	2437	36.080
	9	0	2452	36.018
		1	2452	36.061

Test Graphs



IEEE 802.11b_Channel 1_20MHz_Antenna 0



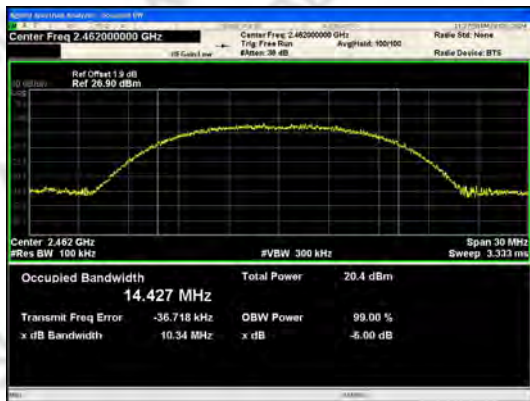
IEEE 802.11b_Channel 1_20MHz_Antenna 1



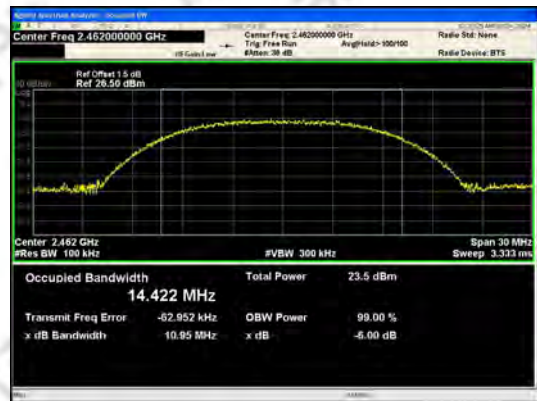
IEEE 802.11b_Channel 6_20MHz_Antenna 0



IEEE 802.11b_Channel 6_20MHz_Antenna 1



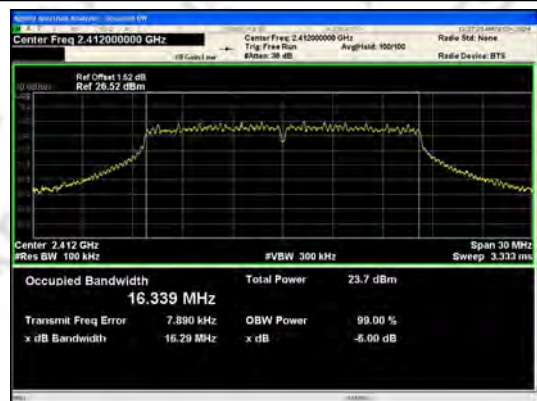
IEEE 802.11b_Channel 11_20MHz_Antenna 0



IEEE 802.11b_Channel 11_20MHz_Antenna 1



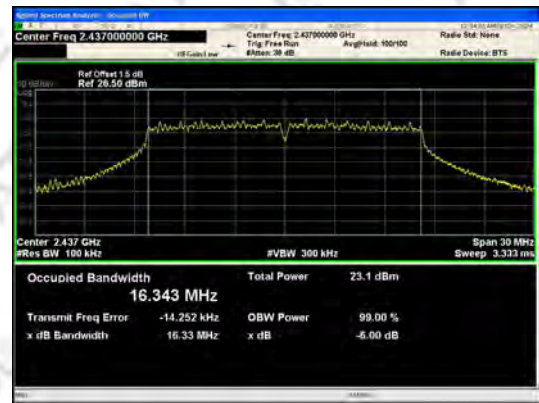
IEEE 802.11g_Channel 1_20MHz_Antenna 0



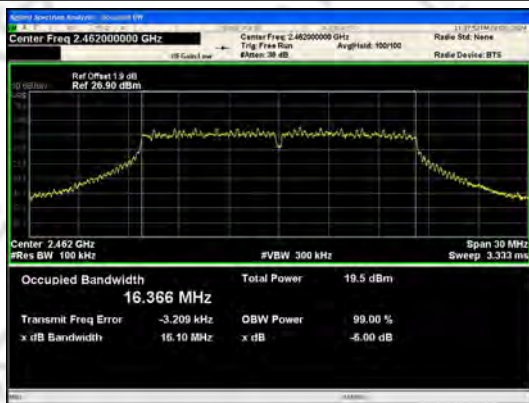
IEEE 802.11g_Channel 1_20MHz_Antenna 1



IEEE 802.11g_Channel 6_20MHz_Antenna 0



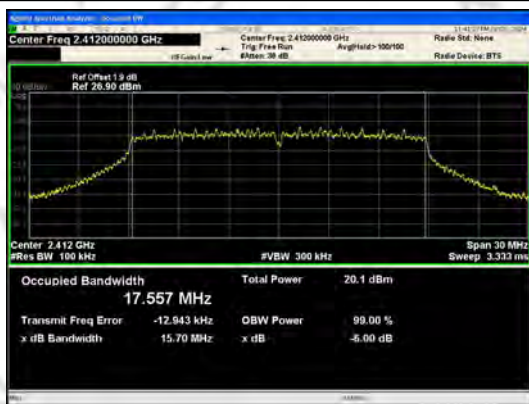
IEEE 802.11g_Channel 6_20MHz_Antenna 1



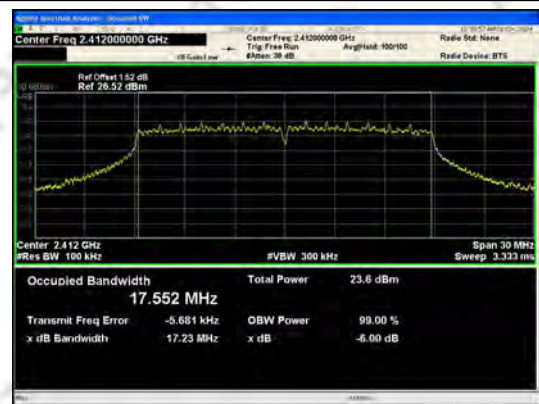
IEEE 802.11g_Channel 11_20MHz_Antenna 0



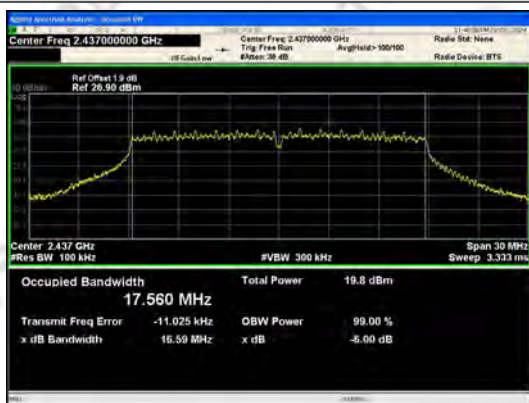
IEEE 802.11g_Channel 11_20MHz_Antenna 1



IEEE 802.11n_Channel 1_20MHz_Antenna 0



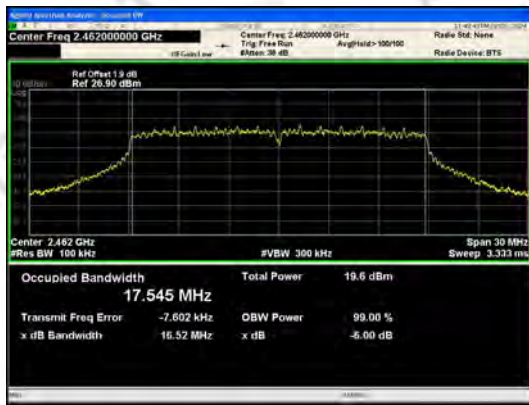
IEEE 802.11n_Channel 1_20MHz_Antenna 1



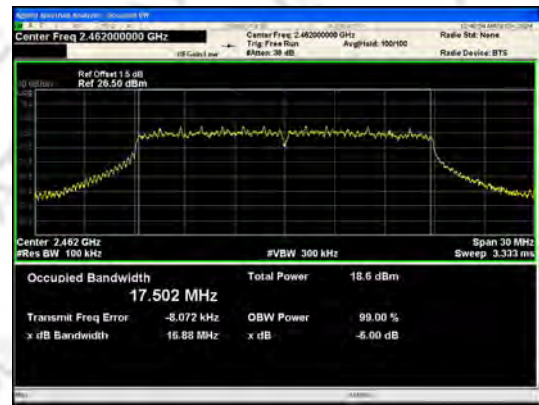
IEEE 802.11n_Channel 6_20MHz_Antenna 0



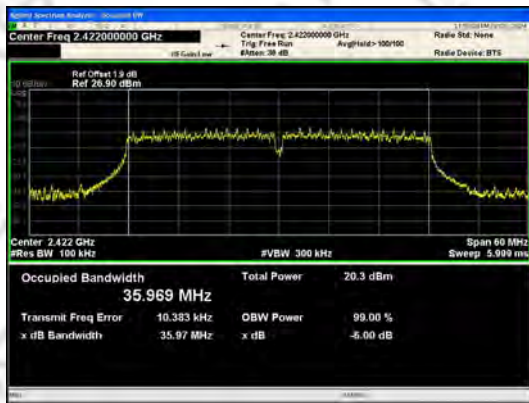
IEEE 802.11n_Channel 6_20MHz_Antenna 1



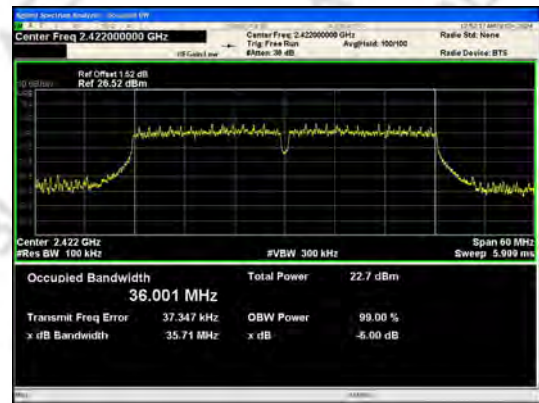
IEEE 802.11n_Channel 11_20MHz_Antenna 0



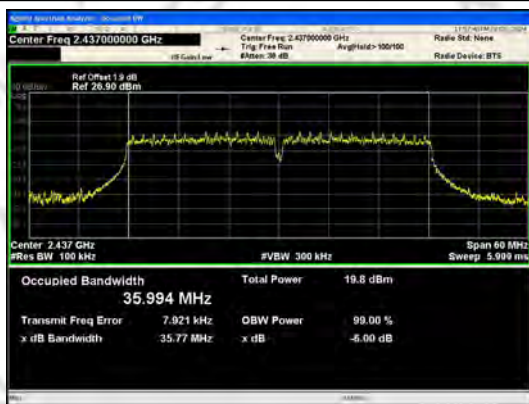
IEEE 802.11n_Channel 11_20MHz_Antenna 1



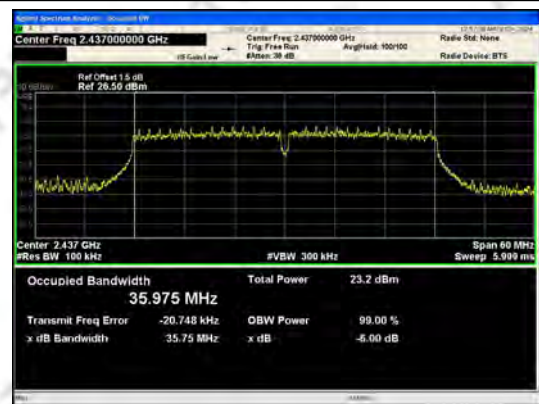
IEEE 802.11n_Channel 3_40MHz_Antenna 0



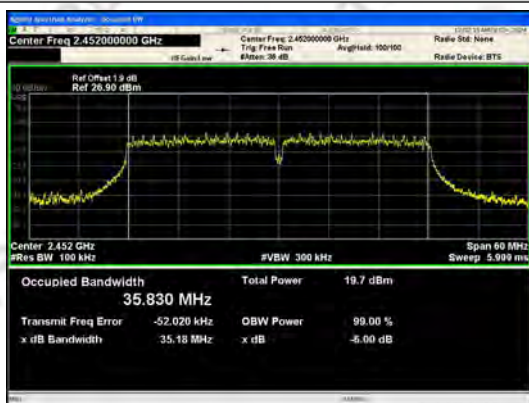
IEEE 802.11n_Channel 3_40MHz_Antenna 1



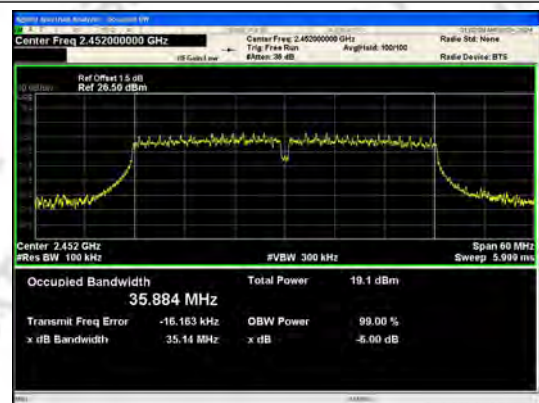
IEEE 802.11n_Channel 6_40MHz_Antenna 0



IEEE 802.11n_Channel 6_40MHz_Antenna 1



IEEE 802.11n_Channel 9_40MHz_Antenna 0



IEEE 802.11n_Channel 9_40MHz_Antenna 1

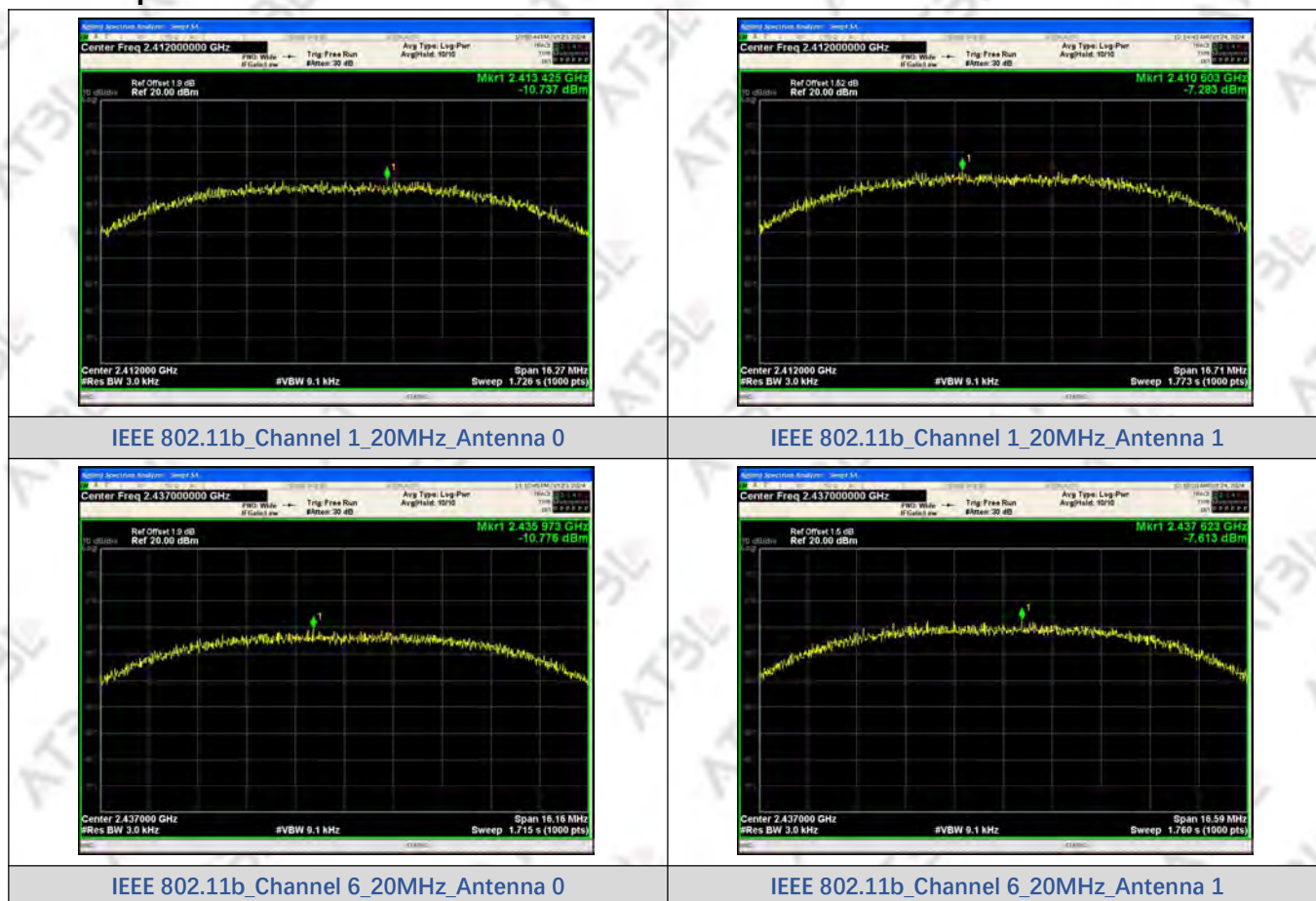
A4.Power Spectral Density

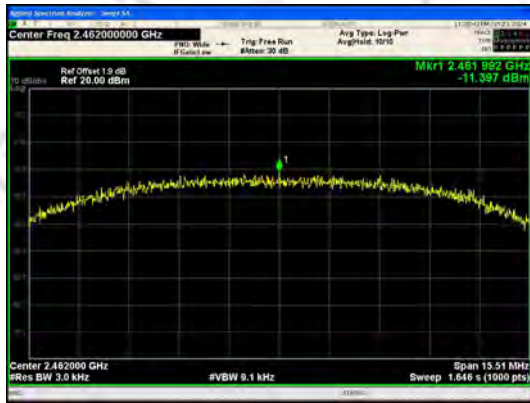
Test Result

Mode	Channel	PSD (dBm/3kHz) Ant. 0	PSD (dBm/3kHz) Ant. 1	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
IEEE 802.11b	1	-10.737	-7.283	N/A	8	PASS
	6	-10.776	-7.613	N/A		PASS
	11	-11.397	-8.388	N/A		PASS
IEEE 802.11g	1	-13.045	-7.995	N/A	8	PASS
	6	-12.485	-9.831	N/A		PASS
	11	-12.222	-11.081	N/A		PASS
IEEE 802.11n_20	1	-12.823	-9.985	-8.17	7	PASS
	6	-13.316	-10.575	-8.72		PASS
	11	-13.925	-13.887	-10.9		PASS
IEEE 802.11n_40	3	-16.219	-13.622	-11.72	7	PASS
	6	-16.621	-12.708	-11.23		PASS
	9	-16.874	-16.308	-13.57		PASS

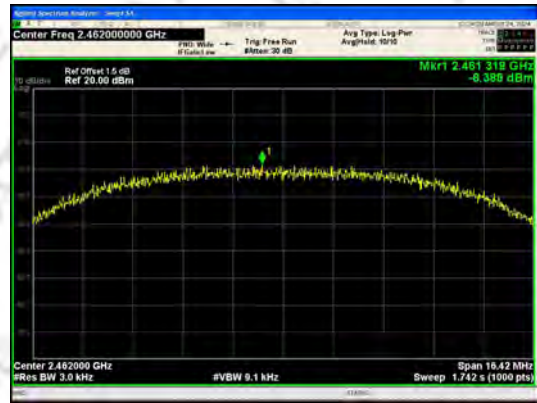
Note:The power density of antenna 0 and antenna 1 is converted into milliwatt units, and the added power density is taken logarithmically and multiplied by 10.

Test Graphs





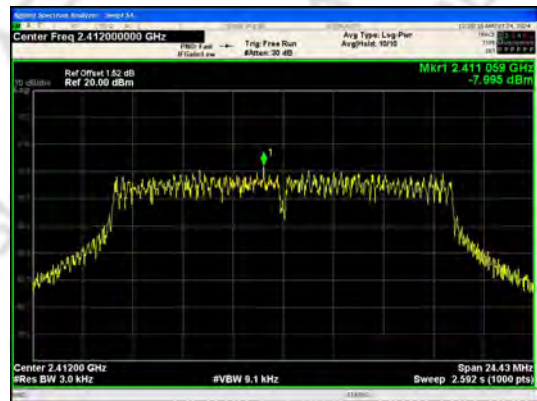
IEEE 802.11b_Channel 11_20MHz_Antenna 0



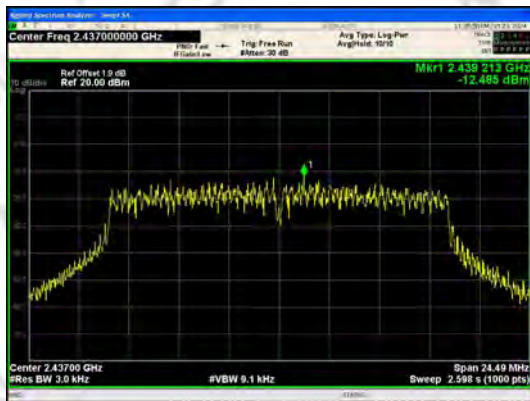
IEEE 802.11b_Channel 11_20MHz_Antenna 1



IEEE 802.11g_Channel 1_20MHz_Antenna 0



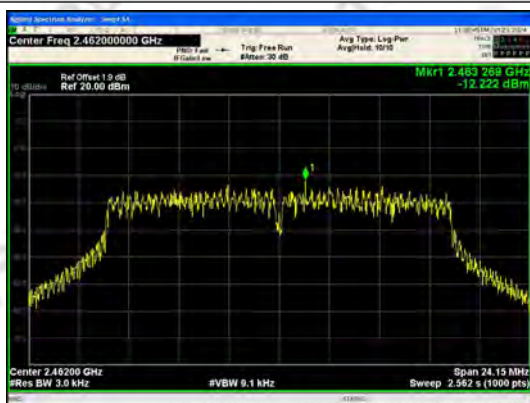
IEEE 802.11g_Channel 1_20MHz_Antenna 1



IEEE 802.11g_Channel 6_20MHz_Antenna 0



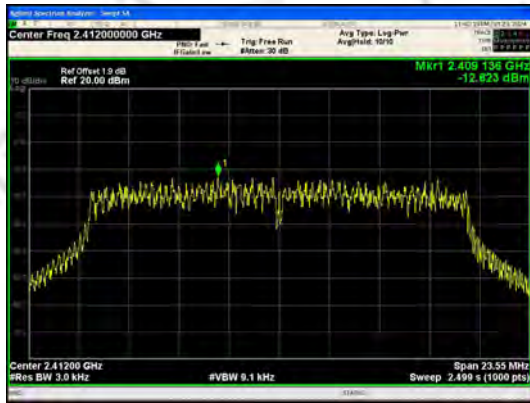
IEEE 802.11g_Channel 6_20MHz_Antenna 1



IEEE 802.11g_Channel 11_20MHz_Antenna 0



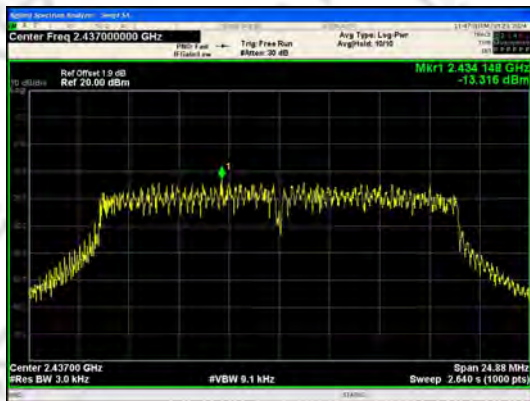
IEEE 802.11g_Channel 11_20MHz_Antenna 1



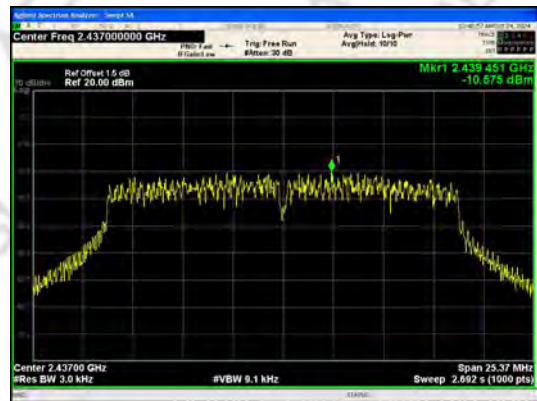
IEEE 802.11n_Channel 1_20MHz_Antenna 0



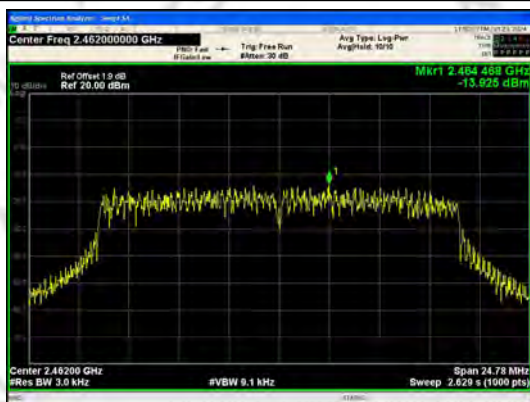
IEEE 802.11n_Channel 1_20MHz_Antenna 1



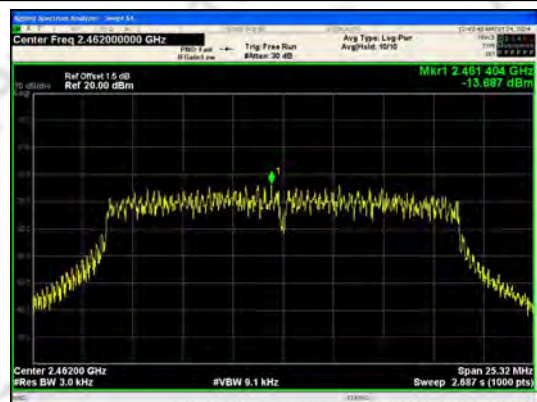
IEEE 802.11n_Channel 6_20MHz_Antenna 0



IEEE 802.11n_Channel 6_20MHz_Antenna 1



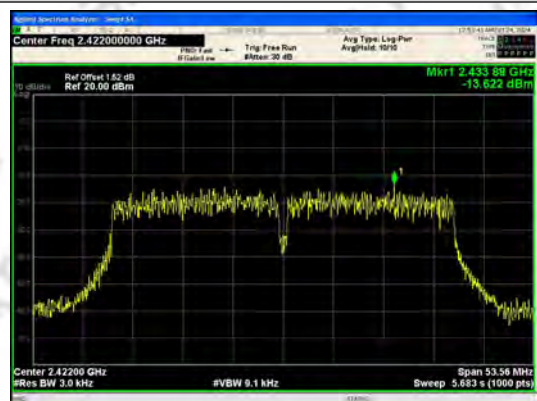
IEEE 802.11n_Channel 11_20MHz_Antenna 0



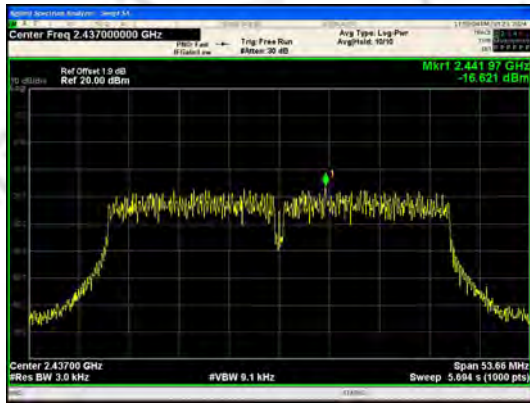
IEEE 802.11n_Channel 11_20MHz_Antenna 1



IEEE 802.11n_Channel 3_40MHz_Antenna 0



IEEE 802.11n_Channel 3_40MHz_Antenna 1



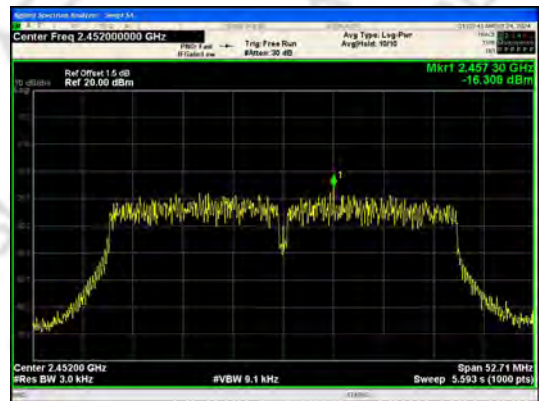
IEEE 802.11n_Channel 6_40MHz_Antenna 0



IEEE 802.11n_Channel 6_40MHz_Antenna 1



IEEE 802.11n_Channel 9_40MHz_Antenna 0



IEEE 802.11n_Channel 9_40MHz_Antenna 1

A5.Conducted Band Edge and Conducted Spurious Emission

Test Result

Mode	Channel	Ant.	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
IEEE 802.11b	1	0	2398.01	-38.873	-15.98	-22.893	PASS
			2400.00	-39.866	-15.98	-23.886	PASS
			4834.20	-54.121	-15.98	-38.141	PASS
			7242.60	-52.994	-15.98	-37.014	PASS
			9628.50	-53.793	-15.98	-37.813	PASS
			24879.5	-39.856	-15.98	-23.876	PASS
		1	2396.97	-34.346	-12.4	-21.946	PASS
			2400.00	-39.136	-12.4	-26.736	PASS
			4835.50	-54.674	-12.4	-42.274	PASS
			7237.00	-53.540	-12.4	-41.140	PASS
			9652.20	-54.001	-12.4	-41.601	PASS
			24900.7	-41.264	-12.4	-28.864	PASS
	6	0	4861.07	-54.030	-16.28	-37.750	PASS
			7308.76	-52.607	-16.28	-36.327	PASS
			9740.83	-53.968	-16.28	-37.688	PASS
			24877.6	-39.924	-16.28	-23.644	PASS
		1	4867.94	-54.401	-12.65	-41.752	PASS
			7313.12	-52.779	-12.65	-40.129	PASS
			9757.69	-54.874	-12.65	-42.224	PASS
			24865.2	-40.525	-12.65	-27.875	PASS
	11	0	2483.50	-51.405	-16.53	-34.875	PASS
			4934.73	-54.041	-16.53	-37.511	PASS
			7401.77	-51.883	-16.53	-35.353	PASS
			9858.19	-53.641	-16.53	-37.111	PASS
			24901.4	-39.543	-16.53	-23.013	PASS
		1	2483.50	-49.578	-13.46	-36.118	PASS
			4934.73	-53.902	-13.46	-40.442	PASS
			7376.17	-51.763	-13.46	-38.303	PASS
			9856.32	-53.482	-13.46	-40.022	PASS
			24943.8	-40.611	-13.46	-27.151	PASS
IEEE 802.11g	1	0	2400.00	-34.781	-17.0	-17.781	PASS
			4835.48	-54.397	-17.0	-37.397	PASS
			7226.35	-52.657	-17.0	-35.657	PASS
			9645.95	-52.822	-17.0	-35.822	PASS
			24940.7	-39.930	-17.0	-22.930	PASS
		1	2400.00	-33.413	-13.41	-20.003	PASS
			4826.11	-54.333	-13.41	-40.923	PASS
			7253.82	-52.861	-13.41	-39.451	PASS
			9644.70	-53.478	-13.41	-40.068	PASS

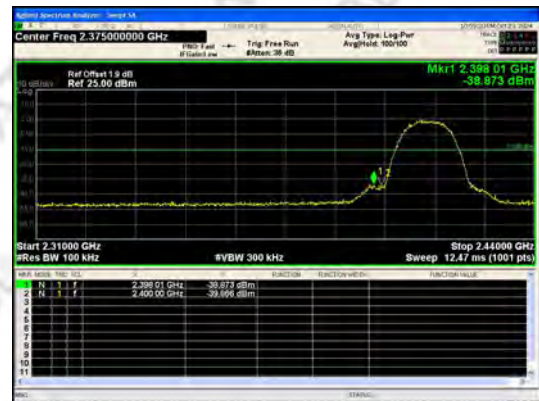
	6	0	24859.5	-39.995	-13.41	-26.585	PASS
			4882.92	-52.978	-17.36	-35.618	PASS
			7291.90	-52.829	-17.36	-35.469	PASS
			9760.18	-54.537	-17.36	-37.177	PASS
			24863.3	-39.454	-17.36	-22.094	PASS
		1	4886.04	-54.049	-14.09	-39.959	PASS
			7311.88	-52.555	-14.09	-38.465	PASS
			9737.71	-54.539	-14.09	-40.449	PASS
			24862.0	-40.315	-14.09	-26.225	PASS
			11	0	2483.50	-49.169	-17.65
	4938.48	-53.664			-17.65	-36.014	PASS
	7369.31	-52.240			-17.65	-34.590	PASS
	9844.46	-53.405			-17.65	-35.755	PASS
	24937.6	-39.388			-17.65	-21.738	PASS
	1	2483.50		-45.047	-15.43	-29.617	PASS
		4942.85		-54.133	-15.43	-38.703	PASS
		7398.02		-51.881	-15.43	-36.451	PASS
		9835.72		-55.020	-15.43	-39.590	PASS
		24849.6		-40.813	-15.43	-25.383	PASS
	IEEE 802.11n_20	1	0	2400.00	-34.735	-16.86	-17.875
4832.36				-53.874	-16.86	-37.014	PASS
7235.72				-52.890	-16.86	-36.030	PASS
9648.44				-53.937	-16.86	-37.077	PASS
24829.6				-39.203	-16.86	-22.343	PASS
1			2400.00	-31.164	-13.54	-17.624	PASS
			4839.85	-53.925	-13.54	-40.385	PASS
			7244.46	-53.050	-13.54	-39.510	PASS
			9640.95	-53.732	-13.54	-40.192	PASS
			24831.5	-40.423	-13.54	-26.883	PASS
6		0	4885.42	-55.071	-17.2	-37.871	PASS
			7318.12	-52.361	-17.2	-35.161	PASS
			9739.58	-53.697	-17.2	-36.497	PASS
			24872.0	-39.876	-17.2	-22.676	PASS
		1	4872.31	-54.541	-14.17	-40.371	PASS
			7323.11	-52.495	-14.17	-38.325	PASS
			9751.45	-54.596	-14.17	-40.426	PASS
			24867.7	-40.248	-14.17	-26.078	PASS
11		0	2483.50	-47.782	-18.0	-29.782	PASS
			4941.60	-53.254	-18.0	-35.254	PASS
	7401.14		-52.508	-18.0	-34.508	PASS	
	9865.06		-54.092	-18.0	-36.092	PASS	
	24840.2		-39.867	-18.0	-21.867	PASS	
	1	2483.50	-47.486	-18.19	-29.296	PASS	
		4931.61	-53.820	-18.19	-35.630	PASS	
		7366.19	-52.425	-18.19	-34.235	PASS	

IEEE 802.11n_40			9864.43	-53.472	-18.19	-35.282	PASS
			24901.4	-40.110	-18.19	-21.920	PASS
	3	0	2385.14	-36.984	-19.76	-17.224	PASS
			2400.00	-37.920	-19.76	-18.160	PASS
			4823.60	-53.658	-19.76	-33.898	PASS
			7298.80	-52.450	-19.76	-32.690	PASS
			9720.90	-53.540	-19.76	-33.780	PASS
			24883.9	-39.729	-19.76	-19.969	PASS
		1	2394.76	-31.840	-17.39	-14.450	PASS
			2400.00	-36.393	-17.39	-19.003	PASS
			4811.10	-54.031	-17.39	-36.641	PASS
			7252.60	-53.262	-17.39	-35.872	PASS
			9697.80	-54.380	-17.39	-36.989	PASS
			24915.1	-40.161	-17.39	-22.771	PASS
	6	0	4897.90	-53.355	-20.26	-33.095	PASS
			7338.09	-51.741	-20.26	-31.481	PASS
			9755.19	-54.010	-20.26	-33.750	PASS
			24835.2	-39.379	-20.26	-19.119	PASS
		1	4912.88	-54.035	-17.02	-37.015	PASS
			7278.17	-52.919	-17.02	-35.899	PASS
			9715.86	-54.238	-17.02	-37.218	PASS
			24789.6	-40.257	-17.02	-23.237	PASS
	9	0	2483.50	-46.927	-20.3	-26.627	PASS
			4939.73	-53.670	-20.3	-33.370	PASS
			7348.71	-51.543	-20.3	-31.243	PASS
			9839.46	-52.956	-20.3	-32.656	PASS
			24937.6	-38.245	-20.3	-17.945	PASS
		1	2483.50	-47.397	-20.82	-26.577	PASS
			4903.52	-53.644	-20.82	-32.824	PASS
			7331.85	-52.566	-20.82	-31.746	PASS
			9810.12	-53.238	-20.82	-32.418	PASS
			24883.9	-40.578	-20.82	-19.758	PASS

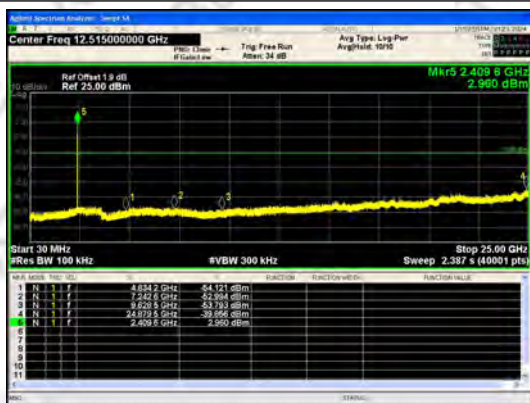
Test Graphs



In-Band Reference Level
IEEE 802.11b_Channel 1_20MHz_Antenna 0



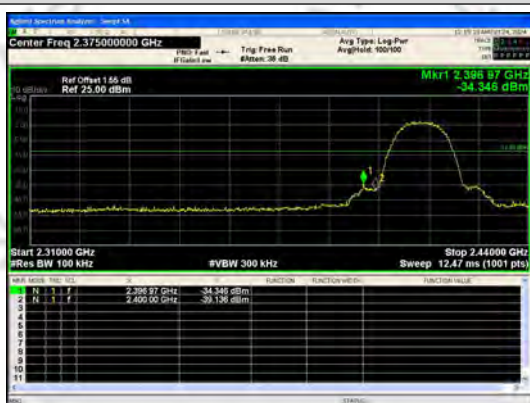
Out Of Band Emission
IEEE 802.11b_Channel 1_20MHz_Antenna 0



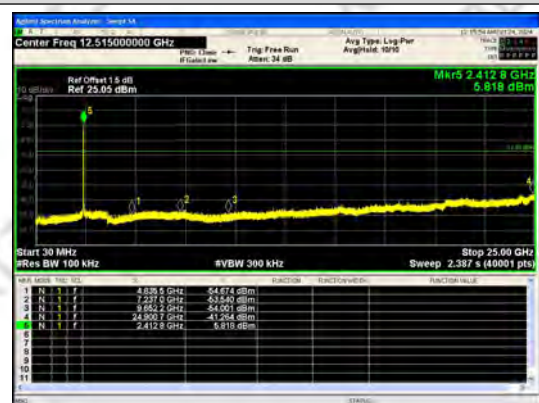
30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 1_20MHz_Antenna 0



In-Band Reference Level
IEEE 802.11b_Channel 1_20MHz_Antenna 1



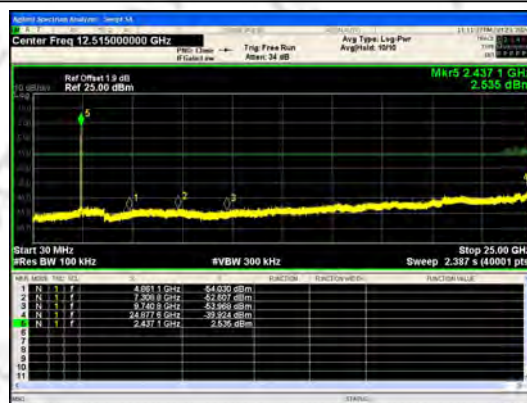
Out Of Band Emission
IEEE 802.11b_Channel 1_20MHz_Antenna 1



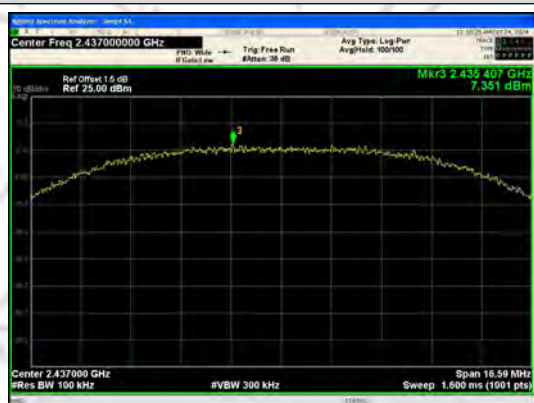
30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 1_20MHz_Antenna 1



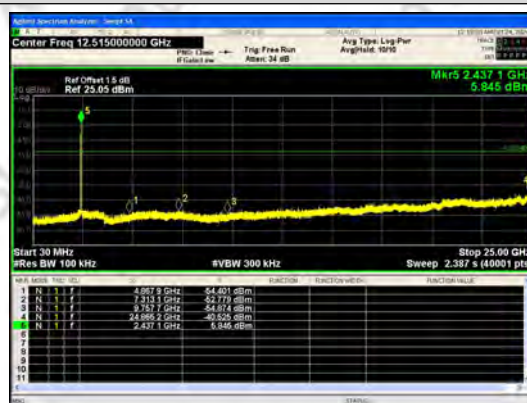
In-Band Reference Level



30.0 MHz - 25000.0 MHz



In-Band Reference Level



30.0 MHz - 25000.0 MHz



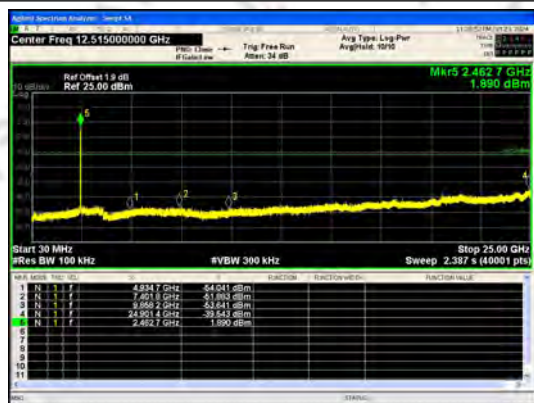
In-Band Reference Level

IEEE 802.11b Channel 11 20MHz Antenna 0



Out Of Band Emission

IEEE 802.11b Channel 11 20MHz Antenna 0



30.0 MHz - 25000.0 MHz

IEEE 802.11b_Channel 11_20MHz_Antenna 0



In-Band Reference Level

IEEE 802.11b_Channel 11_20MHz_Antenna 1



Out Of Band Emission

IEEE 802.11b_Channel 11_20MHz_Antenna 1



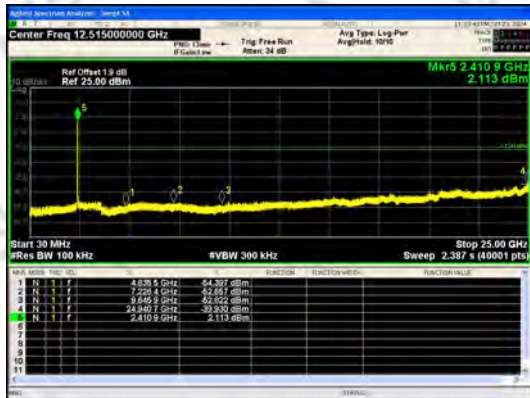
30.0 MHz - 25000.0 MHz

IEEE 802.11b_Channel 11_20MHz_Antenna 1



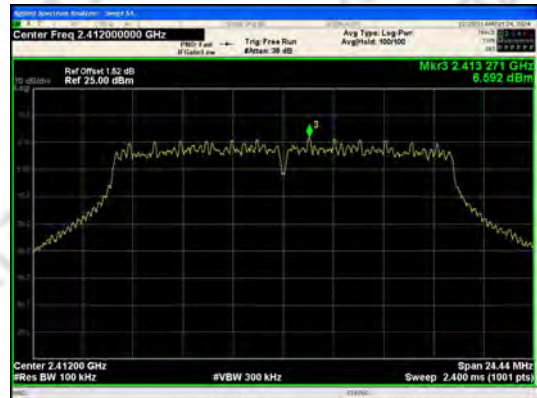
In-Band Reference Level

IEEE 802.11g_Channel 1_20MHz_Antenna 0



Out Of Band Emission

IEEE 802.11g_Channel 1_20MHz_Antenna 0

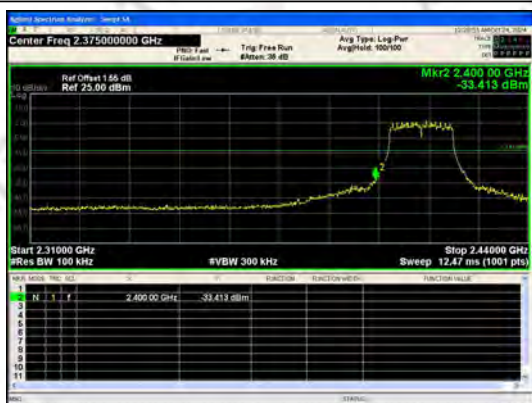


30.0 MHz - 25000.0 MHz

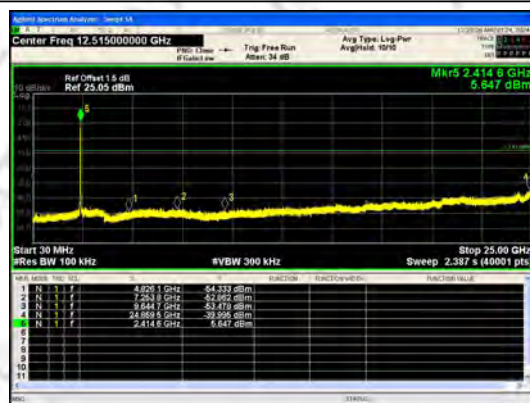
IEEE 802.11g_Channel 1_20MHz_Antenna 0

In-Band Reference Level

IEEE 802.11g_Channel 1_20MHz_Antenna 1



Out Of Band Emission
IEEE 802.11g_Channel 1_20MHz_Antenna 1



30.0 MHz - 25000.0 MHz
IEEE 802.11g_Channel 1_20MHz_Antenna 1



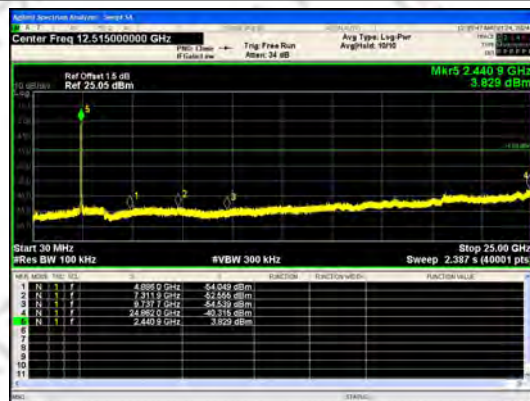
In-Band Reference Level
IEEE 802.11g_Channel 6_20MHz_Antenna 0



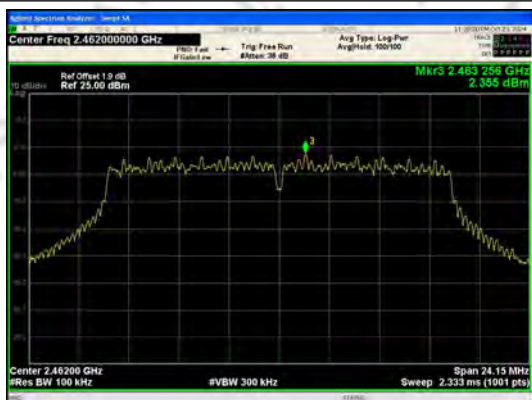
30.0 MHz - 25000.0 MHz
IEEE 802.11g_Channel 6_20MHz_Antenna 0



In-Band Reference Level
IEEE 802.11g_Channel 6_20MHz_Antenna 1



30.0 MHz - 25000.0 MHz
IEEE 802.11g_Channel 6_20MHz_Antenna 1



In-Band Reference Level

IEEE 802.11g_Channel 11_20MHz_Antenna 0



Out Of Band Emission

IEEE 802.11g_Channel 11_20MHz_Antenna 0



30.0 MHz - 25000.0 MHz

IEEE 802.11g_Channel 11_20MHz_Antenna 0



In-Band Reference Level

IEEE 802.11g_Channel 11_20MHz_Antenna 1



Out Of Band Emission

IEEE 802.11g_Channel 11_20MHz_Antenna 1



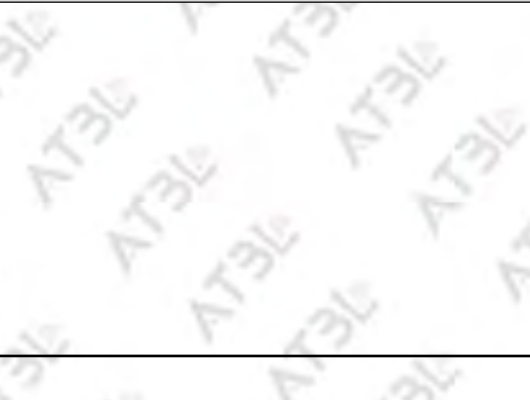
30.0 MHz - 25000.0 MHz

IEEE 802.11g_Channel 11_20MHz_Antenna 1



In-Band Reference Level

IEEE 802.11n_Channel 1_20MHz_Antenna 0



Out Of Band Emission

IEEE 802.11n_Channel 1_20MHz_Antenna 0





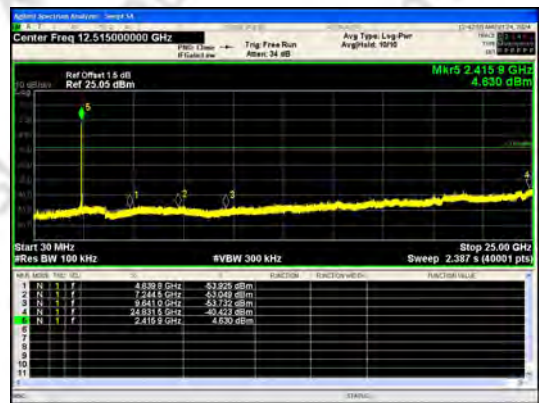
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 1_20MHz_Antenna 0



In-Band Reference Level
IEEE 802.11n_Channel 1_20MHz_Antenna 1



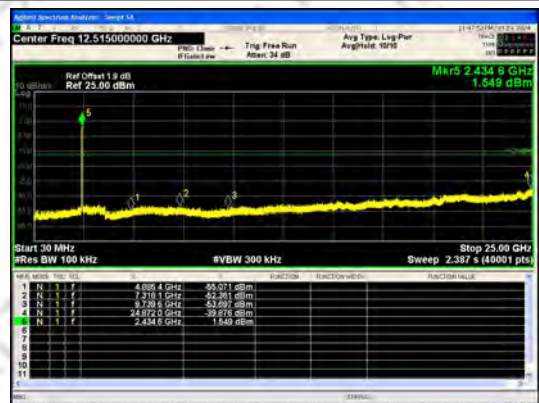
Out Of Band Emission
IEEE 802.11n_Channel 1_20MHz_Antenna 1



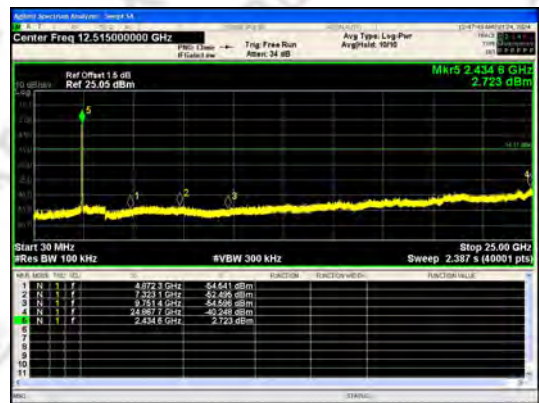
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 1_20MHz_Antenna 1



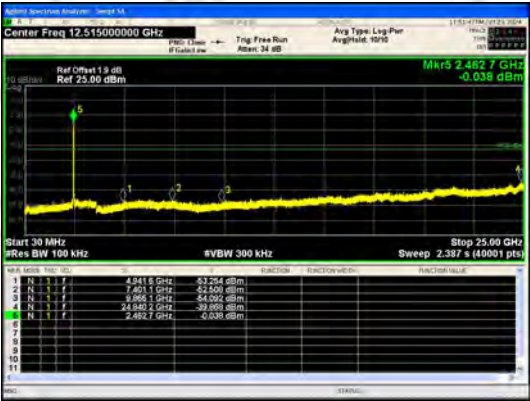





In-Band Reference Level
IEEE 802.11n_Channel 6_20MHz_Antenna 0



30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 6_20MHz_Antenna 0



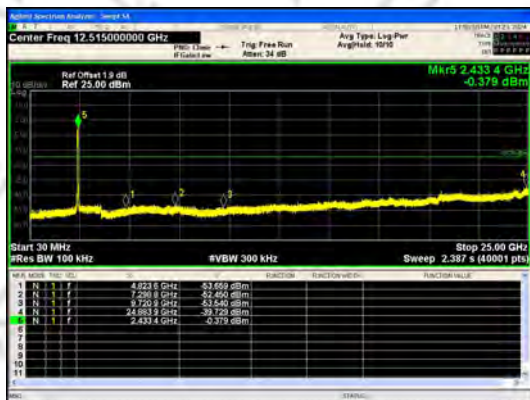
<p>In-Band Reference Level</p> <p>IEEE 802.11n_Channel 6_20MHz_Antenna 1</p> 	<p>30.0 MHz - 25000.0 MHz</p> <p>IEEE 802.11n_Channel 6_20MHz_Antenna 1</p> 
<p>In-Band Reference Level</p> <p>IEEE 802.11n_Channel 11_20MHz_Antenna 0</p> 	<p>Out Of Band Emission</p> <p>IEEE 802.11n_Channel 11_20MHz_Antenna 0</p> 
<p>30.0 MHz - 25000.0 MHz</p> <p>IEEE 802.11n_Channel 11_20MHz_Antenna 0</p> 	<p>In-Band Reference Level</p> <p>IEEE 802.11n_Channel 11_20MHz_Antenna 1</p> 
<p>Out Of Band Emission</p> <p>IEEE 802.11n_Channel 11_20MHz_Antenna 1</p>	<p>30.0 MHz - 25000.0 MHz</p> <p>IEEE 802.11n_Channel 11_20MHz_Antenna 1</p>



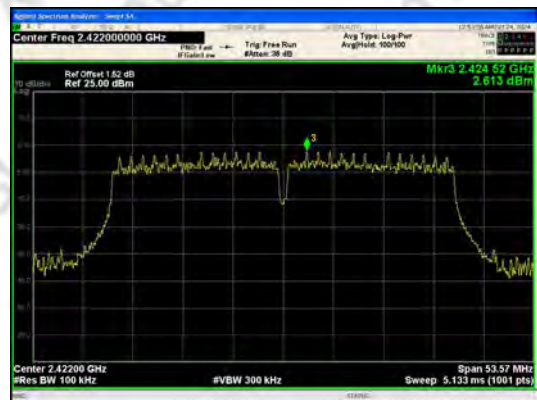
In-Band Reference Level
IEEE 802.11n_Channel 3_40MHz_Antenna 0



Out Of Band Emission
IEEE 802.11n_Channel 3_40MHz_Antenna 0



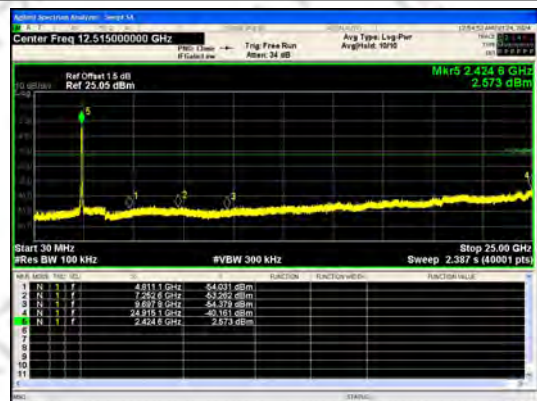
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IEEE 802.11n_Channel 3_40MHz_Antenna 0



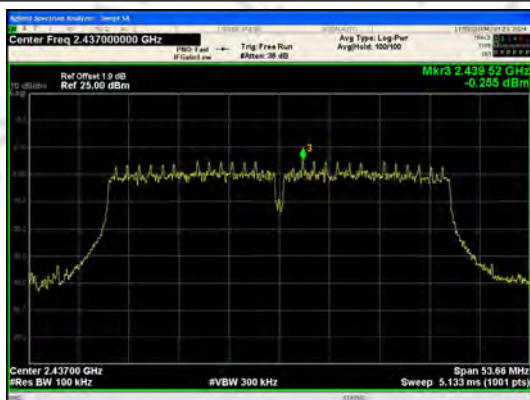
In-Band Reference Level
IEEE 802.11n_Channel 3_40MHz_Antenna 1


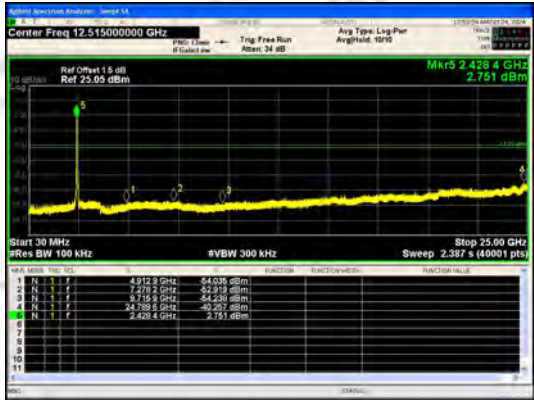






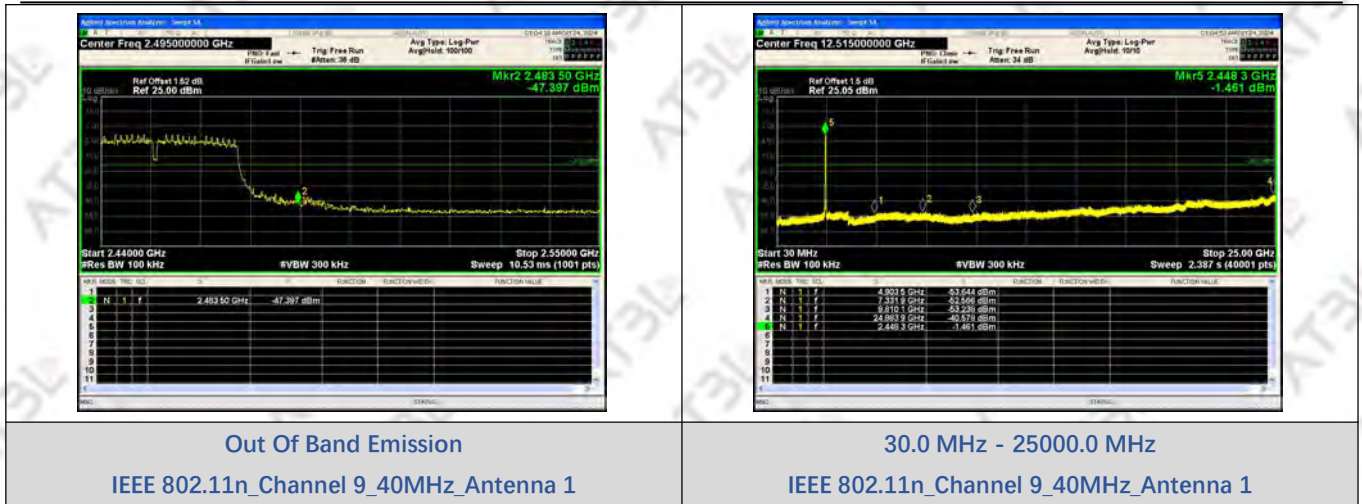
Out Of Band Emission
IEEE 802.11n_Channel 3_40MHz_Antenna 1



30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 3_40MHz_Antenna 1



<p>In-Band Reference Level</p> <p>IEEE 802.11n_Channel 6_40MHz_Antenna 0</p> 	<p>30.0 MHz - 25000.0 MHz</p> <p>IEEE 802.11n_Channel 6_40MHz_Antenna 0</p> 
<p>In-Band Reference Level</p> <p>IEEE 802.11n_Channel 6_40MHz_Antenna 1</p> 	<p>30.0 MHz - 25000.0 MHz</p> <p>IEEE 802.11n_Channel 6_40MHz_Antenna 1</p> 
<p>In-Band Reference Level</p> <p>IEEE 802.11n_Channel 9_40MHz_Antenna 0</p> 	<p>Out Of Band Emission</p> <p>IEEE 802.11n_Channel 9_40MHz_Antenna 0</p> 
<p>30.0 MHz - 25000.0 MHz</p> <p>IEEE 802.11n_Channel 9_40MHz_Antenna 0</p>	<p>In-Band Reference Level</p> <p>IEEE 802.11n_Channel 9_40MHz_Antenna 1</p>



*****END OF THE REPORT*****