

TEST REPORT

Applicant Name: YEALINK(XIAMEN) NETWORK TECHNOLOGY CO.,LTD.
Address: No.666 Hu'an Rd. Huli District Xiamen City, Fujian, P.R. China
Report Number: 2401Y67777E-RFC
FCC ID: T2C-T73W
IC: 10741A-T73W

Test Standard (s)

FCC PART 15.247; RSS-GEN ISSUE 5, FEBRUARY 2021 AMENDMENT 2;
RSS-247 ISSUE 3, AUGUST 2023

Sample Description

Product Type: Ultra Business Phone
Model No.: SIP-T73W
Multiple Model(s) No.: N/A
Trade Mark: **Yealink**
Date Received: 2024/10/15
Issue Date: 2025/01/14

Test Result:	Pass▲
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▲ In the configuration tested, the EUT complied with the standards above.

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Note: The information marked # is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2401Y67777E-RFC	Original Report	2025/01/14

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

HVIN	T73W
FVIN	183.87.255.100
Product	Ultra Business Phone
Tested Model	SIP-T73W
Multiple Model(s)	N/A
Frequency Range	BLE: 2402-2480MHz Wi-Fi: 2412-2462MHz
Maximum Conducted Peak Output Power	BLE: 3.67dBm Wi-Fi: 19.39dBm
Modulation Technique	BLE: GFSK Wi-Fi: DSSS, OFDM, OFDMA
Antenna Specification [#]	3.11dBi (provided by the applicant)
Voltage Range	DC 5V from Adapter or DC 48V from PoE
Sample serial number	2SUF-9 for Conducted and Radiated Emissions Test 2SUF-8 for RF Conducted Test (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	Adapter 1 Model: YLPS052000B1-US Input: AC 100-240V, 50/60Hz, 0.5A Output: DC 5.0V, 2.0A Adapter 2 Model: YLPS052000C1-US Input: AC 100-240V, 50/60Hz, 0.5A Output: DC 5.0V, 2.0A Adapter 3 Model: YLPS052000E1-US Input: AC 100-240V, 50/60Hz, 0.5A Output: DC 5.0V, 2.0A
Note: The EUT powered by three adapters or PoE, the worst case power supply was selected to test for AC line conducted and radiated emission below 1GHz according to BT report test result.	

Objective

This report is in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commission's rules and RSS-GEN Issue 5, February 2021 Amendment 2 and RSS-247 Issue 3, August 2023 of the Innovation, Science and Economic Development Canada rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliant Testing of Unlicensed Wireless Devices and RSS-GEN Issue 5, February 2021 Amendment 2 and RSS-247 Issue 3, August 2023.

And KDB 558074 D01 15.247 Meas Guidance v05r02.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		109.2kHz(k=2, 95% level of confidence)
RF Frequency		56.6Hz(k=2, 95% level of confidence)
RF output power, conducted		0.86dB(k=2, 95% level of confidence)
Unwanted Emission, conducted		1.60dB(k=2, 95% level of confidence)
AC Power Lines Conducted Emissions	9 kHz~150 KHz	3.63dB(k=2, 95% level of confidence)
	150 kHz ~30MHz	3.66dB(k=2, 95% level of confidence)
Radiated Emissions	0.009MHz~30MHz	3.60dB(k=2, 95% level of confidence)
	30MHz~200MHz (Horizontal)	5.32dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	5.43dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	5.77dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.73dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.34dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.40dB(k=2, 95% level of confidence)
	18GHz - 40GHz	5.64dB(k=2, 95% level of confidence)
Temperature		±1°C
Humidity		±1%
Supply voltages		±0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 715558, the FCC Designation No. : CN5045.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0023.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

For Wi-Fi mode, total 11 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437	/	/

For 802.11b, 802.11g, 802.11n-HT20 and 802.11ax-HE20, EUT was tested with Channel 1, 6 and 11.
For 802.11n-HT40 and 802.11ax-HE40, EUT was tested with Channel 3, 6 and 9.

For BLE 1M mode, 40 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404	21	2444
2	2406	22	2446
3	2408	23	2448
4	2410	24	2450
5	2412	25	2452
6	2414	26	2454
7	2416	27	2456
8	2418	28	2458
9	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	39	2480

EUT was tested with Channel 0, 19 and 39.

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

“Authentication Tool.exe V 2.0.11.0[#]” exercise software was used and the power level is below. The software and power level was provided by the manufacturer.

The device was tested with the worst case was performed as below:

Mode	Data rate	Power Level [#]		
		Low Channel	Middle Channel	High Channel
802.11b	1Mbps	12	12	12
802.11g	6Mbps	8	8	8
802.11n20	MCS0	8	8	8
802.11n40	MCS0	8	8	8
802.11ax20	MCS0	8	8	8
802.11ax40	MCS0	8	8	8
BLE	1Mbps	Default	Default	Default
Note:				
1. The worst-case data rates are determined to be as follows for each mode based upon investigation by measuring the average power, peak power and PSD across all data rates bandwidths, and modulations.				
2. For 802.11 ax modes, the device not support partial RU mode.				

Support Equipment List and Details

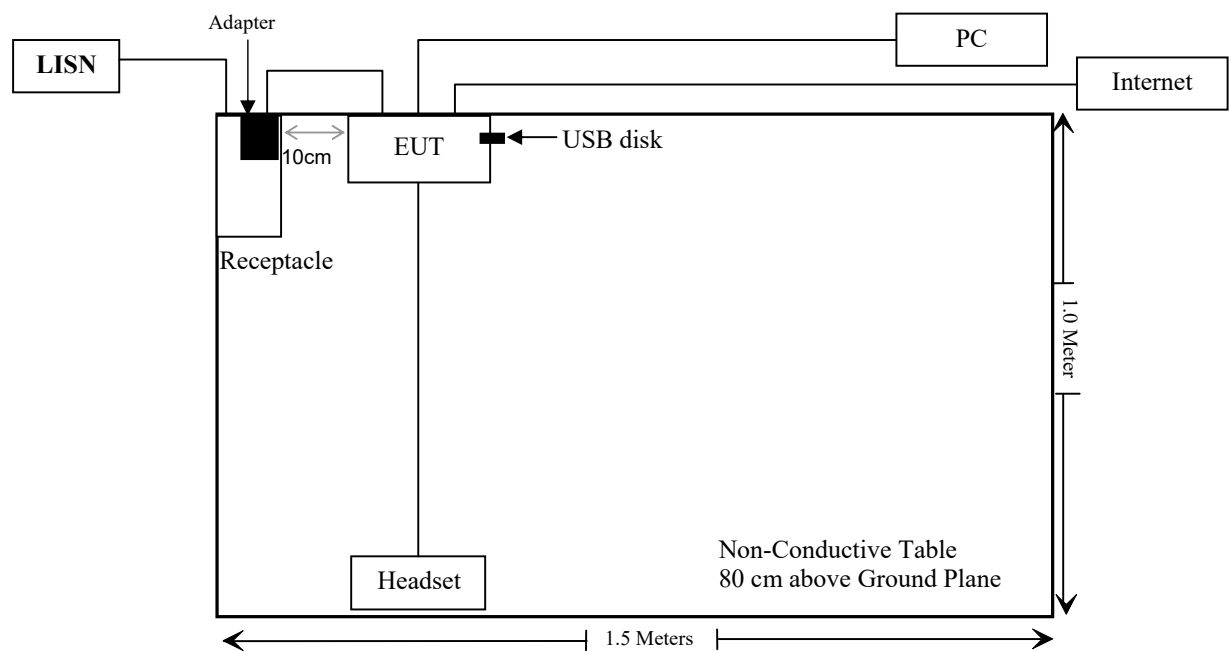
Manufacturer	Description	Model	Serial Number
DELL	PC	Latitude E5430	37K4X AOO
Unknown	USB disk	Unknown	Unknown
Unknown	Headset	Unknown	Unknown
GOSPEL	POE	G0720-480-050	200200019

External I/O Cable

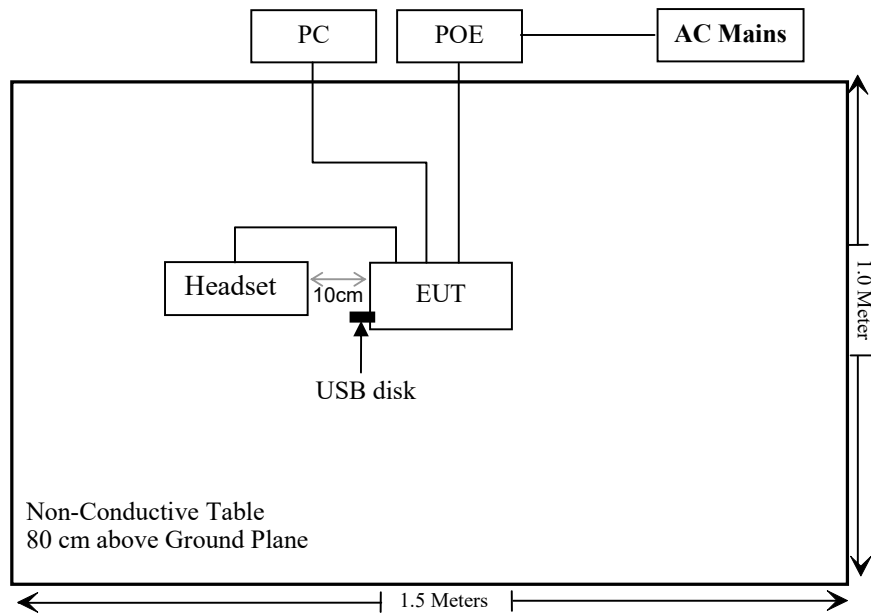
Cable Description	Length (m)	From Port	To
Un-shielded Un-detachable AC cable	1.5	Receptacle	LISN
Un-shielded Un-detachable DC cable	1.5	EUT	Adapter
Un-shielded Detachable Audio cable	1.2	EUT	Headset
Un-shielded Detachable RJ45 cable	5.0	EUT	PC
Un-shielded Detachable RJ45 cable	5.0	EUT	Internet
Un-shielded Detachable AC cable	1.0	POE	AC Mains
Un-shielded Detachable RJ45 cable	3.0	EUT	POE

Block Diagram of Test Setup

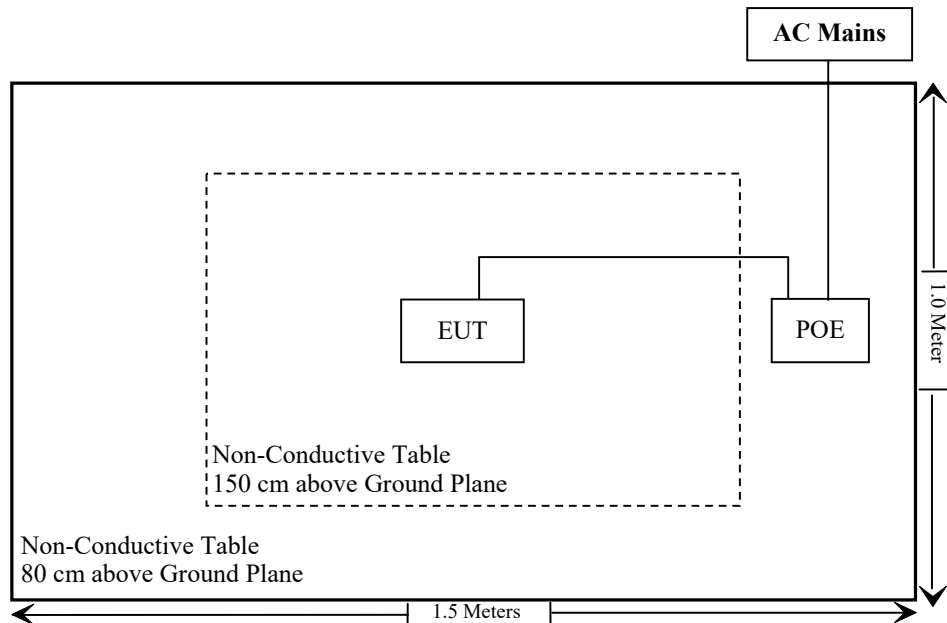
For Conducted Emissions:



For Radiated Emissions below 1GHz:



For Radiated Emissions above 1GHz:



SUMMARY OF TEST RESULTS

FCC Rules	RSS Rules	Description of Test	Result
§ 15.247 (i), §1.1307 (b) (3) & §2.1091	/	MPE-Based Exemption	Compliant
/	RSS-102 § 6.6	Field Reference Level Exposure Exemption Limits	Compliant
§15.203	RSS-Gen §6.8	Antenna Requirement	Compliant
§15.207 (a)	RSS-Gen §8.8	AC Line Conducted Emissions	Compliant
§15.205, §15.209, §15.247(d)	RSS-GEN § 8.10 & RSS-247 § 5.5	Spurious Emissions	Compliant
§15.247 (a)(2)	RSS- Gen§6.7 RSS-247 § 5.2 (a)	99% Occupied Bandwidth & 6 dB Emission Bandwidth	Compliant
§15.247(b)(3)	RSS-247 § 5.4(d)	Maximum Conducted Output Power	Compliant
§15.247(d)	RSS-247 § 5.5	100 kHz Bandwidth of Frequency Band Edge	Compliant
§15.247(e)	RSS-247 § 5.2 (b)	Power Spectral Density	Compliant
C63.10 §11.6	C63.10 §11.6	Duty Cycle	/

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2024/01/16	2025/01/15
Rohde & Schwarz	LISN	ENV216	101613	2024/01/16	2025/01/15
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2024/05/21	2025/05/20
Unknown	CE Cable	Unknown	UF A210B-1-0720-504504	2024/05/21	2025/05/20
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
Radiated Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/01/16	2025/01/15
Sonoma instrument	Pre-amplifier	310 N	186238	2024/05/21	2025/05/20
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber A Cable 1	N/A	2024/06/18	2025/06/17
Unknown	Cable	XH500C	J-10M-A	2024/06/18	2025/06/17
BACL	Active Loop Antenna	1313-1A	4031911	2024/05/14	2027/05/13
Unknown	Cable	2Y194	0735	2024/05/21	2025/05/20
Unknown	Cable	PNG214	1354	2024/05/21	2025/05/20
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2024/03/27	2025/03/26
COM-POWER	Pre-amplifier	PA-122	181919	2024/06/18	2025/06/17
Schwarzbeck	Horn Antenna	BBHA9120D(1201)	1143	2023/07/26	2026/07/25
Unknown	RF Cable	KMSE	735	2024/06/18	2025/06/17
Unknown	RF Cable	UFA147	219661	2024/06/18	2025/06/17
Unknown	RF Cable	XH750A-N	J-10M	2024/06/18	2025/06/17
JD	Multiplex Switch Test Control Set	DT7220FSU	DQ77926	2024/06/18	2025/06/17
A.H.System	Pre-amplifier	PAM-1840VH	190	2024/06/18	2025/06/17
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
UTIFLEX	RF Cable	NO. 13	232308-001	2024/06/18	2025/06/17
Audix	EMI Test software	E3	191218(V9)	NCR	NCR

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Tonscend	RF control Unit	JS0806-2	19D8060154	2024/08/06	2025/08/05
ANRITSU	Microwave peak power sensor	MA24418A	12622	2024/05/21	2025/05/20
Rohde & Schwarz	Spectrum Analyzer	FSV40	101473	2024/01/16	2025/01/15
Unknown	10dB Attenuator	Unknown	F-03-EM190	2024/06/27	2025/06/26

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §15.247 (i) & §1.1307 (b) (3) & §2.1091- MPE-BASED EXEMPTION

Applicable Standard

According to subpart 15.247 (i) and subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

According to KDB 447498 D04 Interim General RF Exposure Guidance

MPE-Based Exemption:

General frequency and separation-distance dependent MPE-based effective radiated power(ERP) thresholds are in Table B.1 [Table 1 of § 1.1307(b)(3)(i)(C)] to support an exemption from further evaluation from 300 kHz through 100 GHz.

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	$1,920 R^2$.
1.34-30	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2 f$.
1,500-100,000	$19.2 R^2$.

R is the minimum separation distance in meters

f = frequency in MHz

Result

Mode	Frequency (MHz)	Tune up conducted power [#]	Antenna Gain [#]		ERP		Evaluation Distance (m)	ERP Limit (mW)
		(dBm)	(dBi)	(dBd)	(dBm)	(mW)		
BT	2402-2480	7.0	3.11	0.96	7.96	6.25	0.2	768
BLE	2402-2480	4.0	3.11	0.96	4.96	3.13	0.2	768
2.4G Wi-Fi	2412-2462	19.5	3.11	0.96	20.46	111.17	0.2	768
5.2G Wi-Fi	5180-5240	17.0	1.02	-1.13	15.87	38.64	0.2	768
5.3G Wi-Fi	5260-5320	18.5	1.02	-1.13	17.37	54.58	0.2	768
5.6G Wi-Fi	5500-5700	18.0	1.02	-1.13	16.87	48.64	0.2	768
5.8G Wi-Fi	5745-5825	14.5	1.02	-1.13	13.37	21.73	0.2	768

Note: 1. The tune up conducted power and antenna gain was declared by the applicant.

2. The BT, 2.4G Wi-Fi and 5G Wi-Fi cannot transmit at same time.

3. 0dBd=2.15dBi

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant.

RSS-102 § 6.6 –FIELD REFERENCE LEVEL EXPOSURE EXEMPTION LIMITS

Applicable Standard

According to RSS-102 Issue 6 § (6.6):

6.6 Field reference level exposure exemption limits

Field reference level (FRL) exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm (i.e. mobile devices), except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 1 W (adjusted for tune-up tolerance)
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than $4.49/f^{0.5}W$ (adjusted for tune-up tolerance), where f is in MHz
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance)
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}W$ (adjusted for tune-up tolerance), where f is in MHz
- at or above 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 5 W (adjusted for tune-up tolerance)

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the EIRP was derived.

Result

For worst case:

Mode	Frequency (MHz)	Maximum tune-up conducted power [#]	Antenna Gain [#]	Maximum tune-up EIRP		Evaluation Distance (cm)	Limit (mW)
		(dBm)		(dBm)	(mW)		
BT	2402-2480	7.0	3.11	10.11	10.26	20	2676
BLE	2402-2480	4.0	3.11	7.11	5.14	20	2676
2.4G Wi-Fi	2412-2462	19.5	3.11	22.61	182.39	20	2684
5.2G Wi-Fi	5180-5240	17.0	1.02	18.02	63.39	20	4525
5.3G Wi-Fi	5260-5320	18.5	1.02	19.52	89.54	20	4573
5.6G Wi-Fi	5500-5700	18.0	1.02	19.02	79.80	20	4714
5.8G Wi-Fi	5745-5825	14.5	1.02	15.52	35.65	20	4857

Note: 1. The tune up conducted power and antenna gain was declared by the applicant.
2. The BT, 2.4G Wi-Fi and 5G Wi-Fi cannot transmit at same time.

To maintain compliance with the IC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: The RF Exposure evaluation can be exempted.

§15.203 & RSS-Gen §6.8 ANTENNA REQUIREMENT

Applicable Standard

According to § 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.
- c. Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

Antenna Connector Construction

The EUT has one internal antenna arrangement which was permanently attached for BLE/Wi-Fi, fulfill the requirement of this section. Please refer to the EUT photos.

Antenna Type	Antenna Gain [#]	Impedance	Frequency Range
PCB	3.11dBi	50Ω	2.4~2.5GHz

Result: Compliant.

§15.207 (a) & RSS-GEN §8.8 AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207 (a) & RSS-GEN §8.8

Unless stated otherwise in the applicable RSS, for radio apparatus that are designed to be connected to the public utility AC power network, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the range 150 kHz to 30 MHz shall not exceed the limits in table 4, as measured using a 50 μ H / 50 Ω line impedance stabilization network. This requirement applies for the radio frequency voltage measured between each power line and the ground terminal of each AC power-line mains cable of the EUT.

For an EUT that connects to the AC power lines indirectly, through another device, the requirement for compliance with the limits in table 4 shall apply at the terminals of the AC power-line mains cable of a representative support device, while it provides power to the EUT. The lower limit applies at the boundary between the frequency ranges. The device used to power the EUT shall be representative of typical applications.

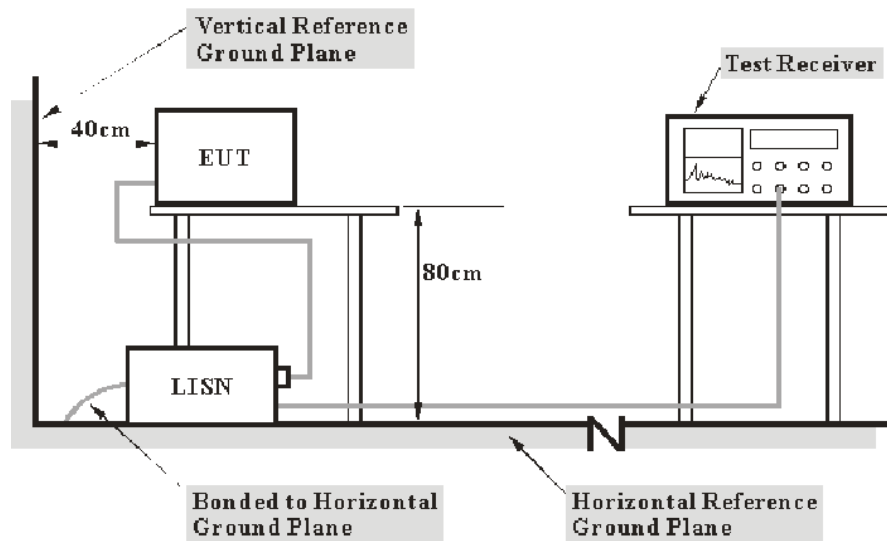
Table 4 - AC Power Lines Conducted Emission Limits		
Frequency range (MHz)	Conducted limit (dB μ V)	
	Quasi-Peak	Average
0.15 – 0.5	66 to 56 ¹	56 to 46 ¹
0.5 – 5	56	46
5 – 30	60	50

Note 1: The level decreases linearly with the logarithm of the frequency.

For an EUT with a permanent or detachable antenna operating between 150 kHz and 30 MHz, the AC power-line conducted emissions must be measured using the following configurations:

- Perform the AC power-line conducted emissions test with the antenna connected to determine compliance with the limits of table 4 outside the transmitter's fundamental emission band.
- Retest with a dummy load instead of the antenna to determine compliance with the limits of table 4 within the transmitter's fundamental emission band. For a detachable antenna, remove the antenna and connect a suitable dummy load to the antenna connector. For a permanent antenna, remove the antenna and terminate the RF output with a dummy load or network that simulates the antenna in the fundamental frequency band.

EUT Setup



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

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 & RSS-247/RSS-Gen limits.

The spacing between the peripherals was 10 cm.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All final data was recorded in the Quasi-peak and average detection mode.

Factor & Over Limit Calculation

The factor is calculated by adding LISN VDF (Voltage Division Factor) and Cable Loss. The basic equation is as follows:

$$\text{Factor} = \text{LISN VDF} + \text{Cable Loss}$$

The “**Over limit**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over limit of -7 dB means the emission is 7 dB below the limit. The equation for calculation is as follows:

$$\begin{aligned}\text{Over Limit} &= \text{Level} - \text{Limit} \\ \text{Level} &= \text{Read Level} + \text{Factor}\end{aligned}$$

Note: The term "cable loss" refers to the combination of a cable and a 10dB transient limiter (attenuator).

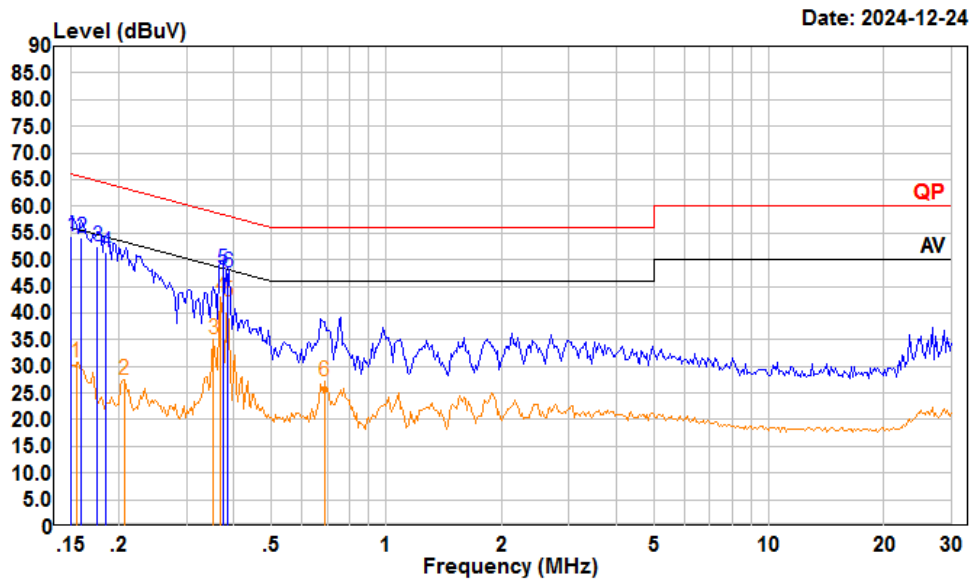
Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	44 %
ATM Pressure:	101 kPa

The testing was performed by Macy Shi on 2024-12-24.

EUT operation mode: Transmitting (Worst case is Adapter 1)

BLE: Maximum output power mode, Low channel**AC 120V/60 Hz, Line**

Condition: Line

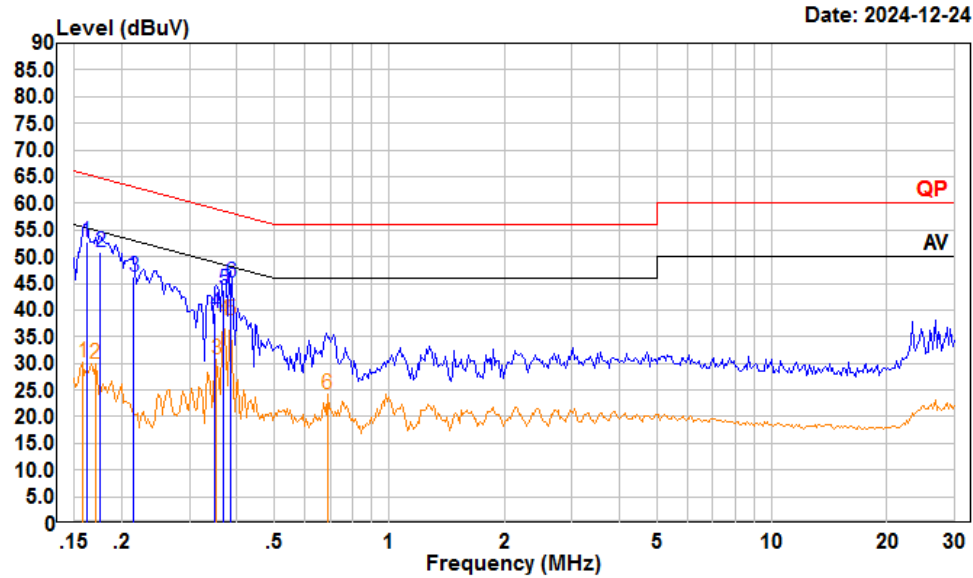
Project : 2401Y67777E-RF

tester : Macy.shi Note:Transmitting

Setting : RBW:9kHz VBW:Auto SWT:Auto

		Read		LISN	Cable	Limit	Over	
	Freq	Level	Level	Factor	Loss	Line	Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.150	33.30	54.33	10.90	10.13	66.00	-11.67	QP
2	0.160	33.09	54.09	10.88	10.12	65.47	-11.38	QP
3	0.176	31.50	52.44	10.84	10.10	64.68	-12.24	QP
4	0.185	30.40	51.32	10.83	10.09	64.24	-12.92	QP
5	0.373	27.40	48.11	10.60	10.11	58.43	-10.32	QP
6	0.385	26.89	47.59	10.59	10.11	58.17	-10.58	QP
	Freq	Read		LISN	Cable	Limit	Over	
		Level	Level	Factor	Loss	Line	Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.155	9.81	30.82	10.89	10.12	55.74	-24.92	Average
2	0.206	6.55	27.43	10.79	10.09	53.36	-25.93	Average
3	0.354	14.27	35.00	10.61	10.12	48.87	-13.87	Average
4	0.369	22.21	42.92	10.60	10.11	48.52	-5.60	Average
5	0.385	21.50	42.20	10.59	10.11	48.17	-5.97	Average
6	0.690	6.56	27.21	10.50	10.15	46.00	-18.79	Average

AC 120V/60 Hz, Neutral



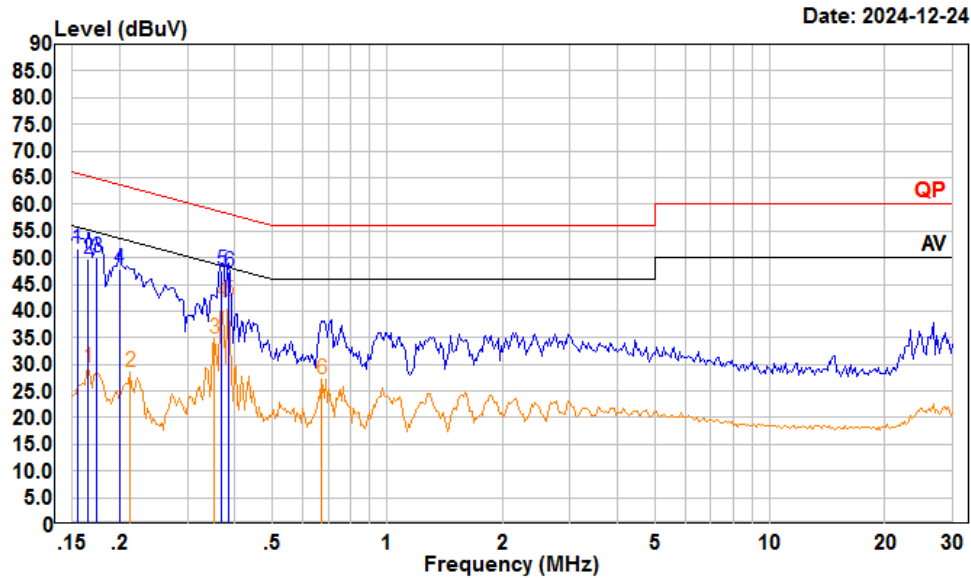
Condition: Neutral

Project : 2401Y67777E-RF

tester : Macy.shi Note:Transmitting

Setting : RBW:9kHz VBW:Auto SWT:Auto

	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.162	32.20	52.86	10.55	10.11	65.38	-12.52	QP
2	0.176	30.40	50.99	10.49	10.10	64.68	-13.69	QP
3	0.215	25.70	46.21	10.42	10.09	63.01	-16.80	QP
4	0.350	18.80	39.50	10.58	10.12	58.96	-19.46	QP
5	0.369	23.00	43.71	10.60	10.11	58.52	-14.81	QP
6	0.385	24.30	45.02	10.61	10.11	58.17	-13.15	QP
	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.158	9.50	30.18	10.56	10.12	55.56	-25.38	Average
2	0.170	9.44	30.05	10.51	10.10	54.94	-24.89	Average
3	0.354	10.07	30.78	10.59	10.12	48.87	-18.09	Average
4	0.369	17.30	38.01	10.60	10.11	48.52	-10.51	Average
5	0.385	17.29	38.01	10.61	10.11	48.17	-10.16	Average
6	0.690	3.36	24.21	10.70	10.15	46.00	-21.79	Average

2.4G Wi-Fi: Maximum output power mode, 802.11ax20 High channel**AC 120V/60 Hz, Line**

Condition: Line

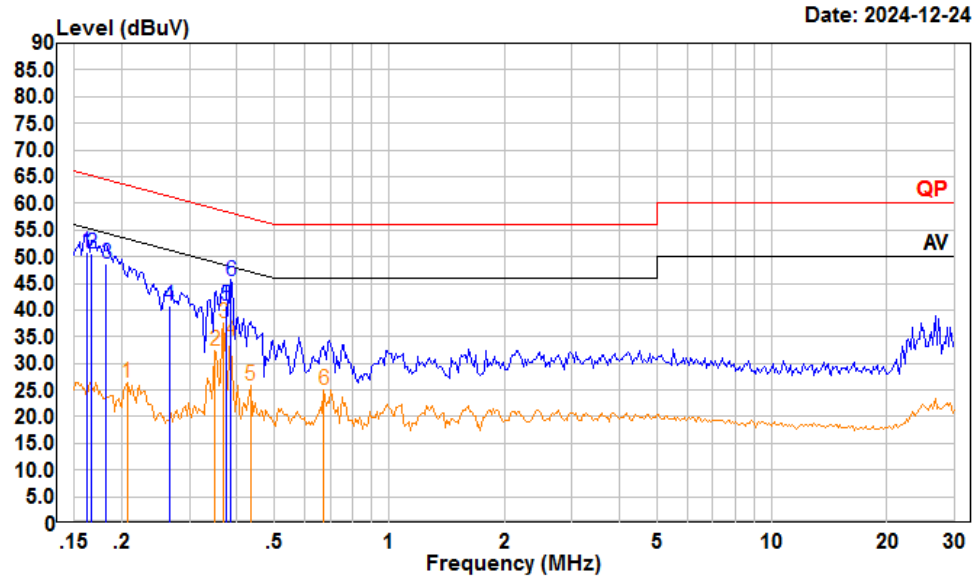
Project : 2401Y67777E-RF

tester : Macy.shi Note:Transmitting

Setting : RBW:9kHz VBW:Auto SWT:Auto

	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.155	30.70	51.71	10.89	10.12	65.74	-14.03	QP
2	0.165	28.69	49.67	10.87	10.11	65.21	-15.54	QP
3	0.174	29.00	49.95	10.85	10.10	64.77	-14.82	QP
4	0.200	27.10	47.99	10.80	10.09	63.62	-15.63	QP
5	0.369	26.90	47.61	10.60	10.11	58.52	-10.91	QP
6	0.385	26.59	47.29	10.59	10.11	58.17	-10.88	QP
	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.165	8.36	29.34	10.87	10.11	55.21	-25.87	Average
2	0.213	7.79	28.66	10.78	10.09	53.10	-24.44	Average
3	0.354	14.19	34.92	10.61	10.12	48.87	-13.95	Average
4	0.369	20.98	41.69	10.60	10.11	48.52	-6.83	Average
5	0.385	21.11	41.81	10.59	10.11	48.17	-6.36	Average
6	0.675	6.44	27.08	10.50	10.14	46.00	-18.92	Average

AC 120V/60 Hz, Neutral



Trace: 1

Condition: Neutral

Project : 2401Y67777E-RF

tester : Macy.shi Note:Transmitting

Setting : RBW:9kHz VBW:Auto SWT:Auto

	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.162	30.10	50.76	10.55	10.11	65.38	-14.62	QP
2	0.167	30.00	50.63	10.53	10.10	65.12	-14.49	QP
3	0.182	28.19	48.76	10.47	10.10	64.42	-15.66	QP
4	0.266	20.20	40.78	10.49	10.09	61.25	-20.47	QP
5	0.373	20.10	40.81	10.60	10.11	58.43	-17.62	QP
6	0.385	24.70	45.42	10.61	10.11	58.17	-12.75	QP
	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.206	5.84	26.34	10.41	10.09	53.36	-27.02	Average
2	0.350	11.59	32.29	10.58	10.12	48.96	-16.67	Average
3	0.369	16.81	37.52	10.60	10.11	48.52	-11.00	Average
4	0.385	13.68	34.40	10.61	10.11	48.17	-13.77	Average
5	0.433	4.96	25.72	10.65	10.11	47.20	-21.48	Average
6	0.675	4.31	25.15	10.70	10.14	46.00	-20.85	Average

§15.205, §15.209, §15.247(d) & RSS-GEN § 8.10 & RSS-247 § 5.5 SPURIOUS EMISSIONS

Applicable Standard

FCC §15.247 (d); §15.209; §15.205;

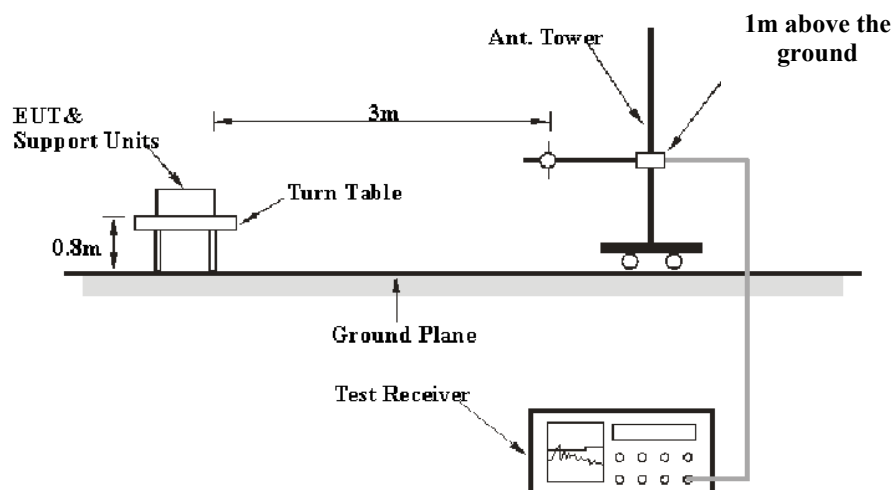
According to RSS-GEN § 8.10 & RSS-247 § 5.5

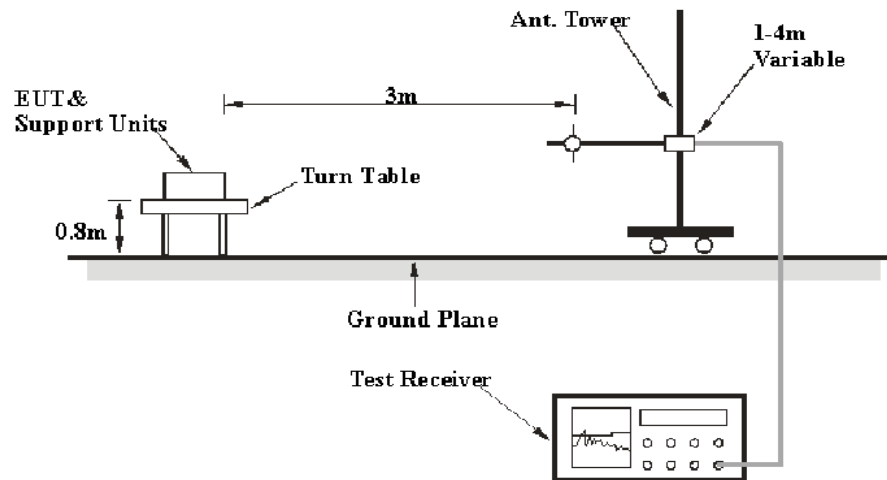
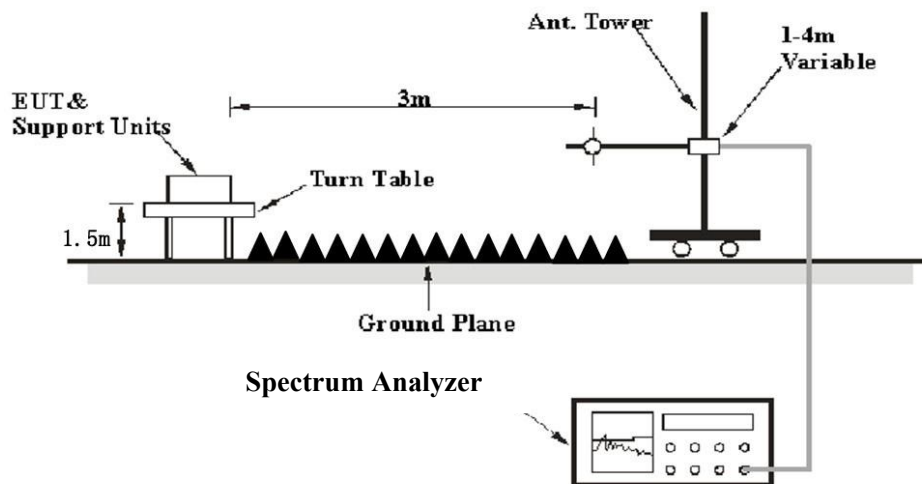
Restricted frequency bands, identified in table 7, are designated primarily for safety-of-life services (distress calling and certain aeronautical activities), certain satellite downlinks, radio astronomy and some government uses. Except where otherwise indicated, the following conditions related to the restricted frequency bands apply: (a) The transmit frequency, including fundamental components of modulation, of licence-exempt radio apparatus shall not fall within the restricted frequency bands listed in table 7 except for apparatus compliant with RSS-287, Emergency Position Indicating Radio Beacons (EPIRB), Emergency Locator Transmitters (ELT), Personal Locator Beacons (PLB), and Maritime Survivor Locator Devices (MSLD). (b) Unwanted emissions that fall into restricted frequency bands listed in table 7 shall comply with the limits specified in table 5 and table 6. (c) Unwanted emissions that do not fall within the restricted frequency bands listed in table 7 shall comply either with the limits specified in the applicable RSS or with those specified in table 5 and table 6.

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

EUT Setup

9 kHz-30MHz:



30MHz-1GHz:**Above 1GHz:**

The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.10-2013 & RSS-Gen. The specification used was the FCC 15.209, and FCC 15.247 & RSS-Gen limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

9 kHz-1GHz:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
9 kHz – 150 kHz	/	/	200 Hz	QP
	300 Hz	1 kHz	/	PK
150 kHz – 30 MHz	/	/	9 kHz	QP
	10 kHz	30 kHz	/	PK
30 MHz – 1000 MHz	/	/	120 kHz	QP
	100 kHz	300 kHz	/	PK

1-25GHz:

Pre-scan

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
AV	>98%	1MHz	5 kHz
	<98%	1MHz	≥1/Ton, not less than 5 kHz

Final measurement for emission identified during pre-scan

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
AV	>98%	1MHz	10 Hz
	<98%	1MHz	≥1/Ton

Note: Ton is minimum transmission duration

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All final data was recorded in Quasi-peak detection mode except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, average detection modes for frequency bands 9–90 kHz and 110–490 kHz, peak and average detection modes for frequencies above 1 GHz.

For 9 kHz-30MHz, the report shall list the six emissions with the smallest margin relative to the limit, for each of the three antenna orientations (parallel, perpendicular, and ground-parallel) unless the margin is greater than 20 dB.

All emissions under the average limit and under the noise floor have not recorded in the report.

Factor & Over Limit/Margin Calculation

The Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain. The basic equation is as follows:

$$\text{Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Over Limit/Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit/margin of -7dB means the emission is 7dB below the limit. The equation for calculation is as follows:

$$\begin{aligned}\text{Over Limit/Margin} &= \text{Level/Corrected Amplitude} - \text{Limit} \\ \text{Level / Corrected Amplitude} &= \text{Read Level} + \text{Factor}\end{aligned}$$

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	50 %
ATM Pressure:	101 kPa

The testing was performed by Anson Su on 2024-11-16 for below 1GHz and Zenos Qiao from 2024-11-28 to 2024-11-29 for above 1GHz.

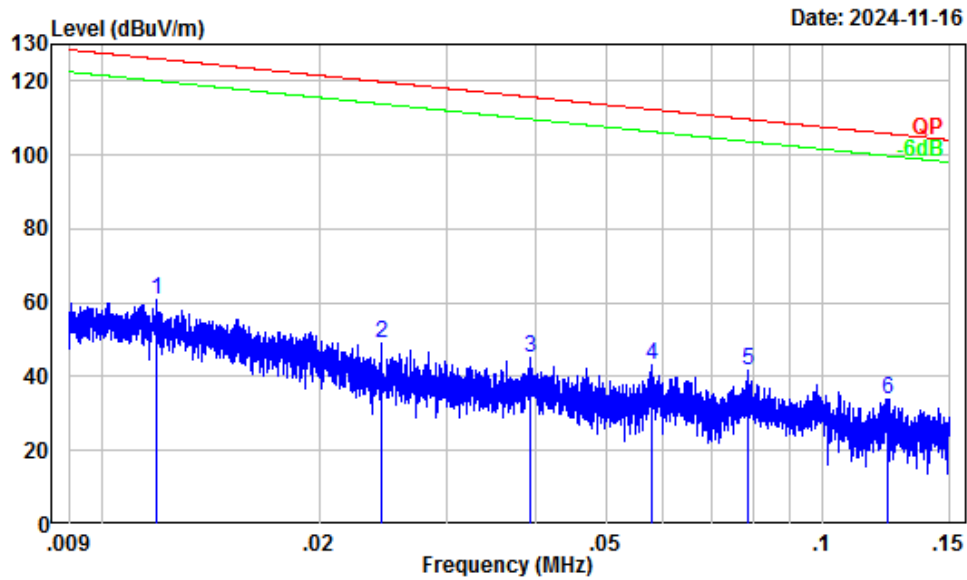
EUT operation mode: Transmitting (Worst case is POE)

Note: After pre-scan in the X, Y and Z axes of orientation, the worst case z-axis of orientation were recorded.

The spurious emission from 9 kHz-30MHz of IC RSS-Gen standard, the unit of final result on the test plots are dBμV/m, so the limit should be added by 51,5 dB from dBμA/m to dBμV/m.

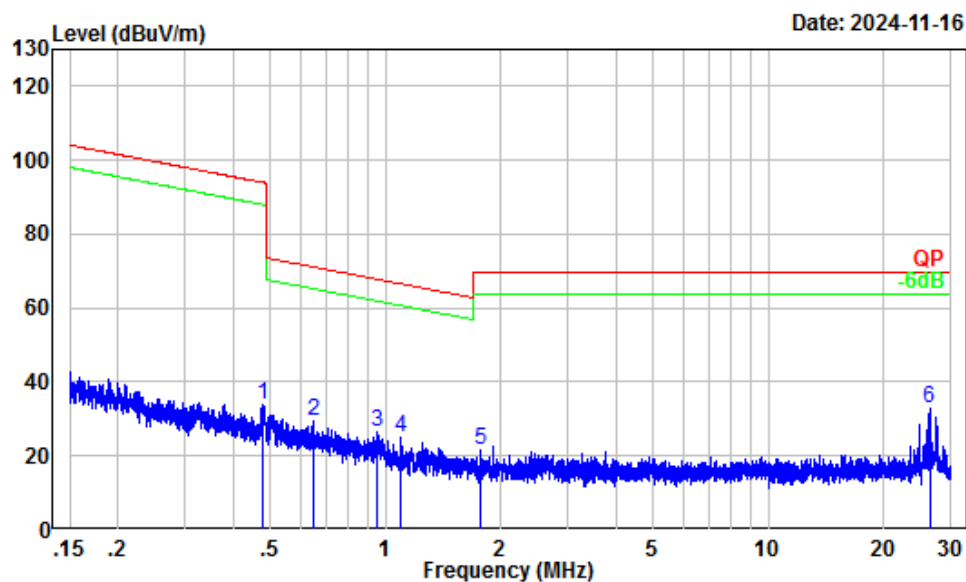
9 kHz-30MHz: Parallel (worst case)

BLE: Maximum output power mode, Low channel



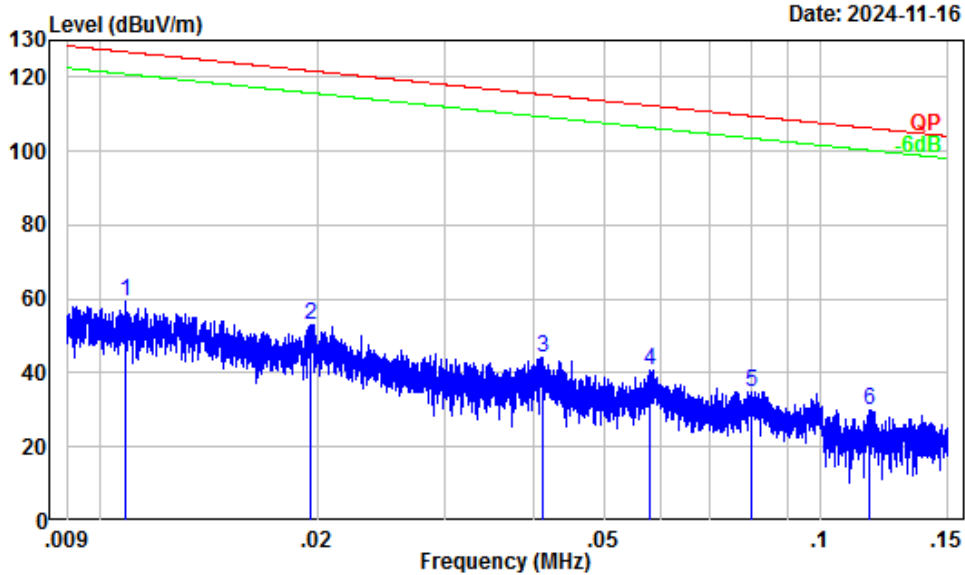
Site : Chamber A
Condition : 3m
Project Number: 2401Y67777E-RF
Test Mode : BLE Transmitting
Tester : Anson Su

	Freq Factor		Read	Limit	Over	Remark
	MHz	dB/m	Level	Level	Line	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	0.01	36.72	24.15	60.87	126.09	-65.22 Peak
2	0.02	30.35	18.56	48.91	119.87	-70.96 Peak
3	0.04	25.43	19.60	45.03	115.72	-70.69 Peak
4	0.06	22.03	21.27	43.30	112.37	-69.07 Peak
5	0.08	19.19	22.40	41.59	109.67	-68.08 Peak
6	0.12	15.96	18.13	34.09	105.78	-71.69 Peak



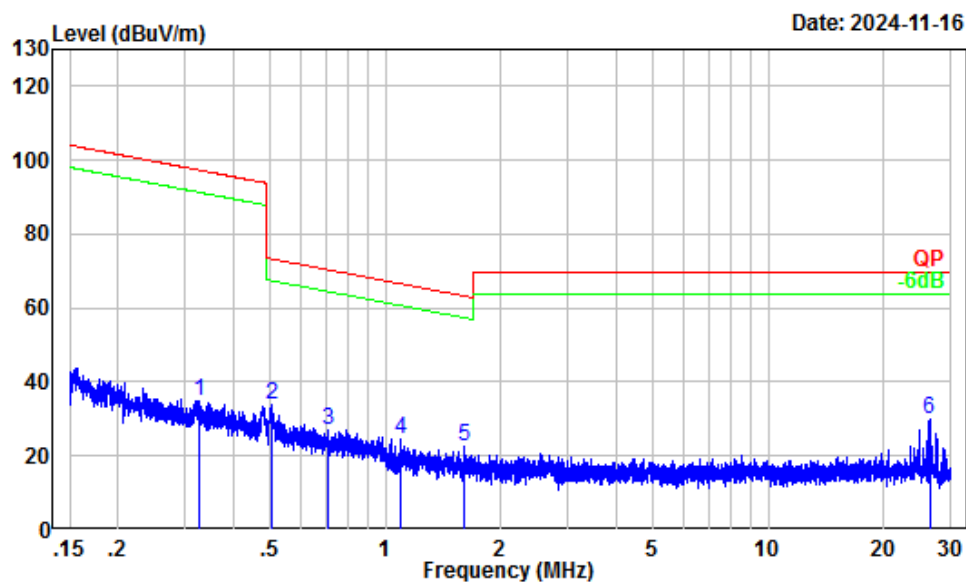
Site : Chamber A
 Condition : 3m
 Project Number: 2401Y67777E-RF
 Test Mode : BLE Transmitting
 Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.48	3.95	29.74	33.69	94.02	-60.33	Peak
2	0.65	1.73	27.83	29.56	71.35	-41.79	Peak
3	0.96	-1.27	27.89	26.62	67.87	-41.25	Peak
4	1.10	-1.94	26.87	24.93	66.62	-41.69	Peak
5	1.77	-4.27	25.87	21.60	69.54	-47.94	Peak
6	26.38	-4.88	37.94	33.06	69.54	-36.48	Peak

2.4G Wi-Fi: Maximum output power mode, 802.11ax20 High channel

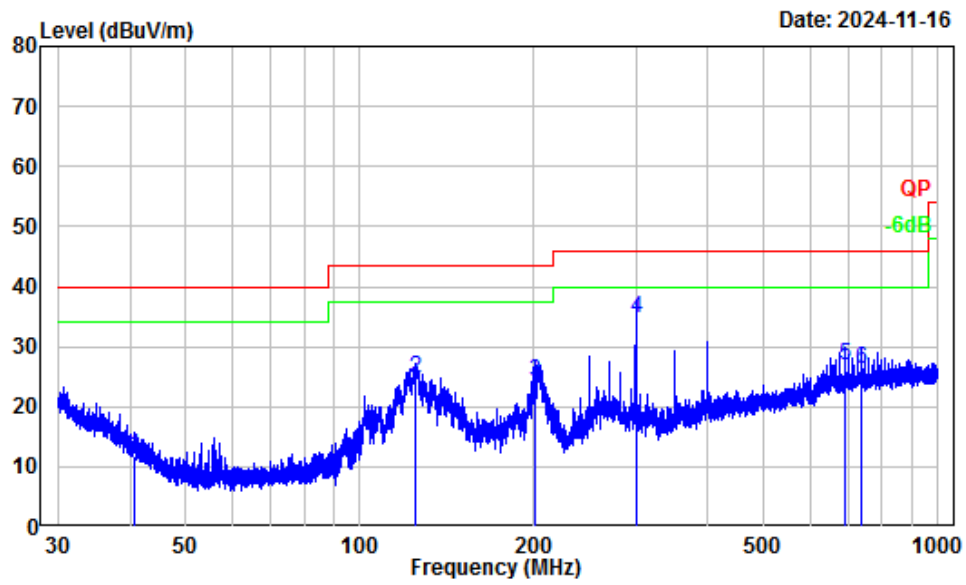
Site : Chamber A
Condition : 3m
Project Number: 2401Y67777E-RF
Test Mode : 2.4G WIFI Transmitting
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.01	37.26	22.17	59.43	126.90	-67.47	Peak
2	0.02	32.77	20.25	53.02	121.74	-68.72	Peak
3	0.04	25.02	19.06	44.08	115.32	-71.24	Peak
4	0.06	22.02	18.75	40.77	112.37	-71.60	Peak
5	0.08	19.01	15.82	34.83	109.52	-74.69	Peak
6	0.12	16.25	13.76	30.01	106.24	-76.23	Peak



Site : Chamber A
 Condition : 3m
 Project Number: 2401Y67777E-RF
 Test Mode : 2.4G WIFI Transmitting
 Tester : Anson Su

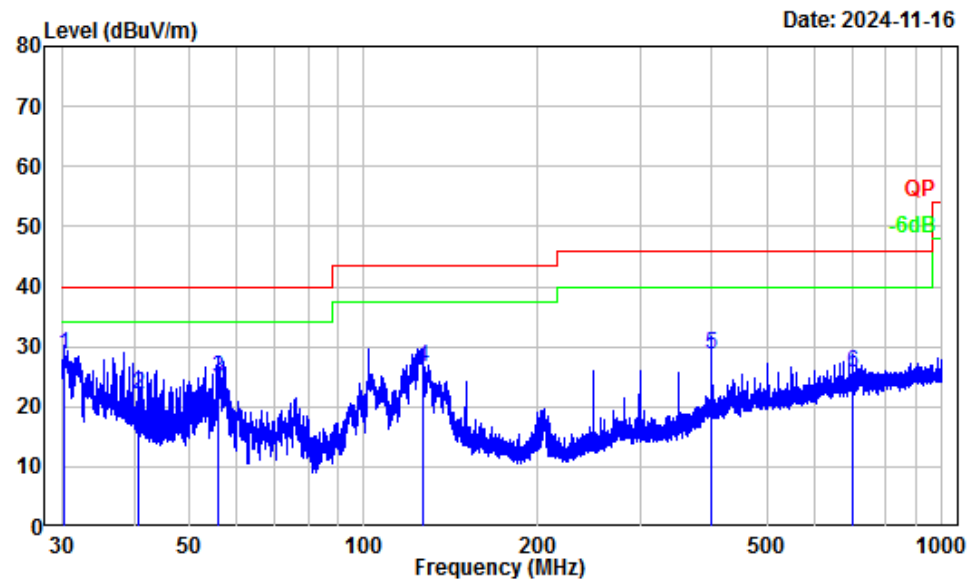
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.33	7.13	27.89	35.02	97.29	-62.27	Peak
2	0.50	3.45	30.20	33.65	73.57	-39.92	Peak
3	0.71	0.99	26.04	27.03	70.54	-43.51	Peak
4	1.09	-1.92	26.63	24.71	66.68	-41.97	Peak
5	1.60	-3.67	26.03	22.36	63.31	-40.95	Peak
6	26.38	-4.88	34.72	29.84	69.54	-39.70	Peak

30MHz-1GHz:**BLE:** *Maximum output power mode, Low channel***Horizontal**

Site : Chamber A
Condition : 3m Horizontal
Project Number: 2401Y67777E-RF
Test Mode : BLE Transmitting
Tester : Anson Su

	Freq Factor		Read Level		Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	40.70	-12.86	24.55	11.69	40.00	-28.31	QP
2	124.57	-11.14	35.91	24.77	43.50	-18.73	QP
3	200.78	-13.12	37.32	24.20	43.50	-19.30	QP
4	299.97	-11.20	46.00	34.80	46.00	-11.20	QP
5	688.96	-3.67	30.64	26.97	46.00	-19.03	QP
6	737.07	-3.05	29.46	26.41	46.00	-19.59	QP

Vertical

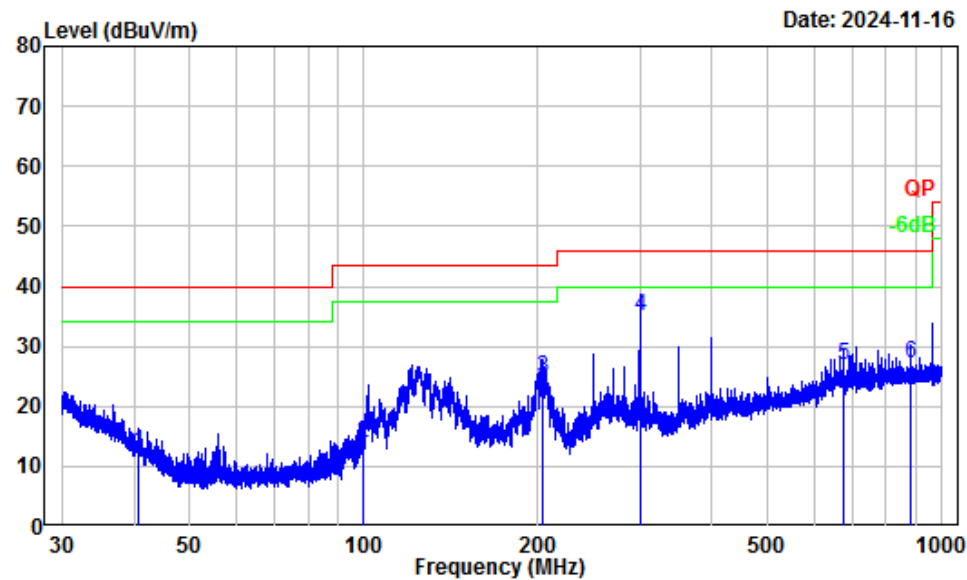


Site : Chamber A
Condition : 3m Vertical
Project Number: 2401Y67777E-RF
Test Mode : BLE Transmitting
Tester : Anson Su

	Freq Factor		Read Level		Limit	Over	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	30.20	-6.06	34.80	28.74	40.00	-11.26	QP
2	40.76	-12.90	34.97	22.07	40.00	-17.93	QP
3	56.05	-18.32	42.95	24.63	40.00	-15.37	QP
4	126.11	-11.12	37.67	26.55	43.50	-16.95	QP
5	400.08	-8.41	36.98	28.57	46.00	-17.43	QP
6	700.22	-3.52	29.15	25.63	46.00	-20.37	QP

2.4G Wi-Fi: Maximum output power mode, 802.11ax20 High channel

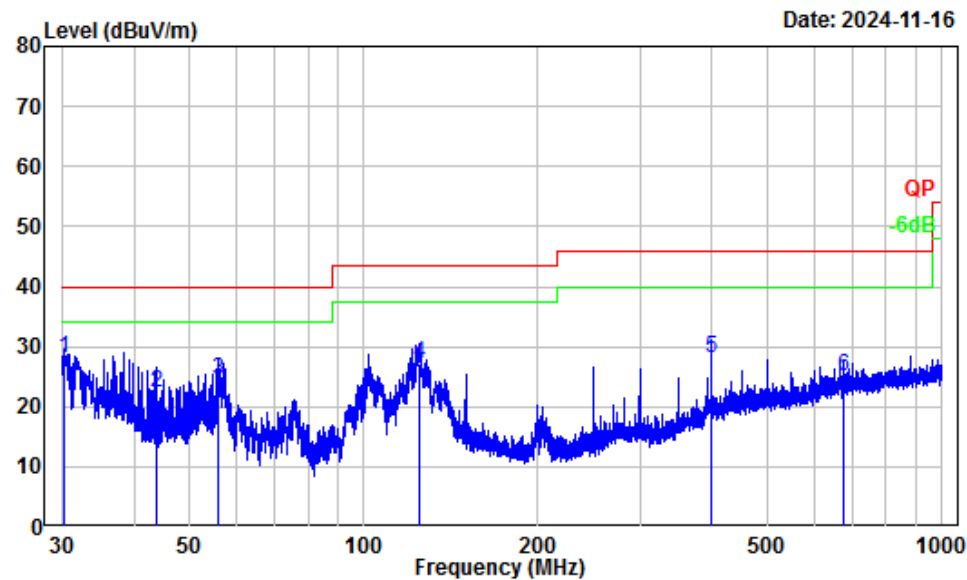
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number: 2401Y67777E-RF
Test Mode : 2.4G WIFI Transmitting
Tester : Anson Su

Freq Factor		Read		Limit	Over	Remark
MHz	dB/m	Level	Level	Line	Limit	
		dBuV	dBuV/m	dBuV/m	dB	
1	40.67	-12.84	25.11	12.27	40.00	-27.73 QP
2	100.01	-15.89	29.83	13.94	43.50	-29.56 QP
3	203.79	-13.34	37.99	24.65	43.50	-18.85 QP
4	299.97	-11.20	46.10	34.90	46.00	-11.10 QP
5	676.99	-3.78	30.64	26.86	46.00	-19.14 QP
6	884.50	-1.43	28.47	27.04	46.00	-18.96 QP

Vertical



Site : Chamber A
Condition : 3m Vertical
Project Number: 2401Y67777E-RF
Test Mode : 2.4G WIFI Transmitting
Tester : Anson Su

	Freq Factor		Read Level		Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	30.18	-6.05	33.99	27.94	40.00	-12.06	QP
2	43.62	-14.94	37.43	22.49	40.00	-17.51	QP
3	56.07	-18.32	42.75	24.43	40.00	-15.57	QP
4	124.57	-11.14	38.37	27.23	43.50	-16.27	QP
5	400.08	-8.41	36.51	28.10	46.00	-17.90	QP
6	676.99	-3.78	28.78	25.00	46.00	-21.00	QP

1-25 GHz:**BLE:**

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
BLE 1M							
Low Channel 2402MHz							
4804.00	47.25	PK	H	2.42	49.67	74	-24.33
4804.00	39.07	AV	H	2.42	41.49	54	-12.51
4804.00	48.13	PK	V	2.42	50.55	74	-23.45
4804.00	39.64	AV	V	2.42	42.06	54	-11.94
Middle Channel 2440MHz							
4880.00	48.21	PK	H	2.58	50.79	74	-23.21
4880.00	39.89	AV	H	2.58	42.47	54	-11.53
4880.00	49.15	PK	V	2.58	51.73	74	-22.27
4880.00	40.42	AV	V	2.58	43.00	54	-11.00
High Channel 2480MHz							
4960.00	47.92	PK	H	2.68	50.60	74	-23.40
4960.00	39.33	AV	H	2.68	42.01	54	-11.99
4960.00	48.84	PK	V	2.68	51.52	74	-22.48
4960.00	39.91	AV	V	2.68	42.59	54	-11.41

Note:

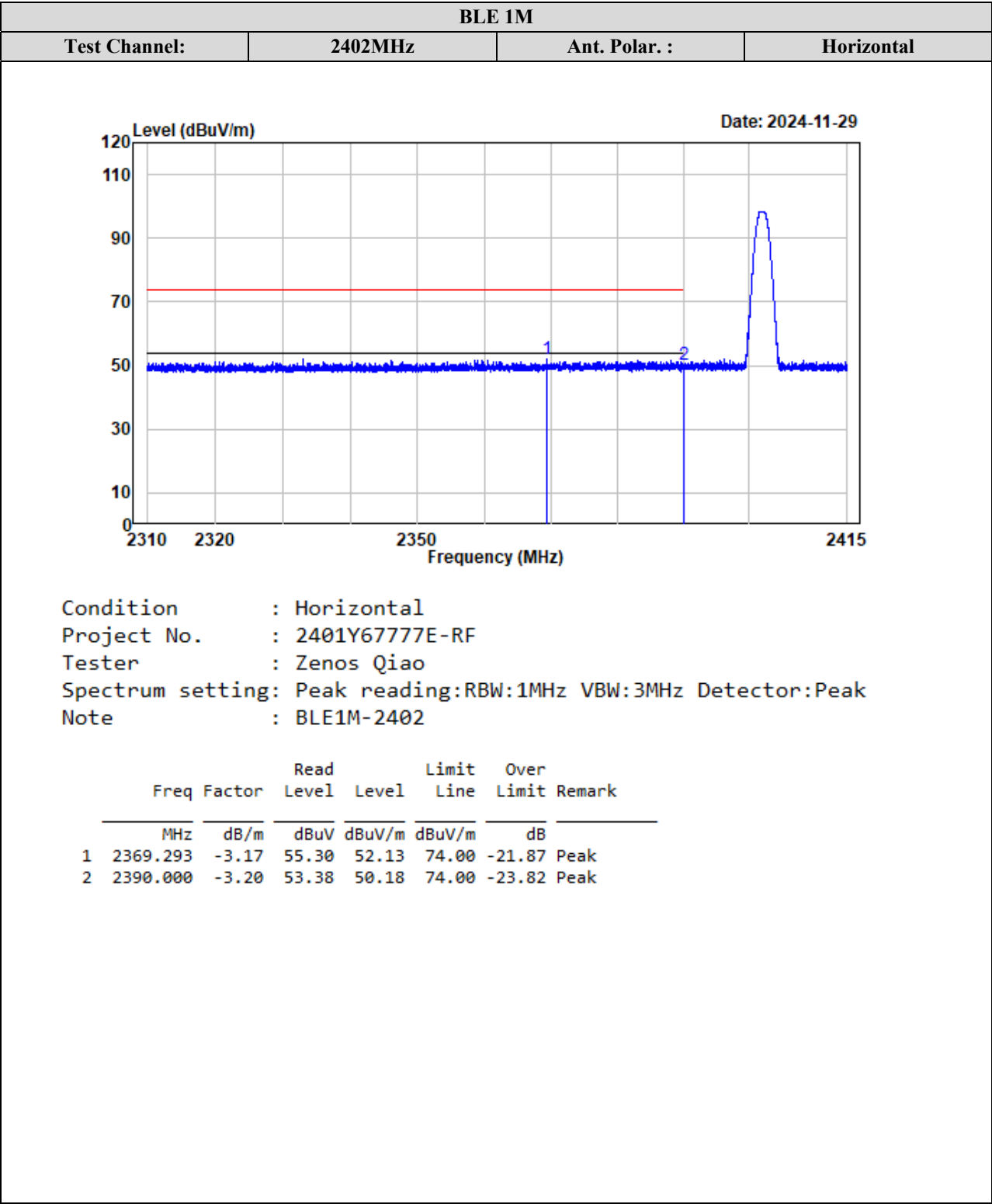
Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor

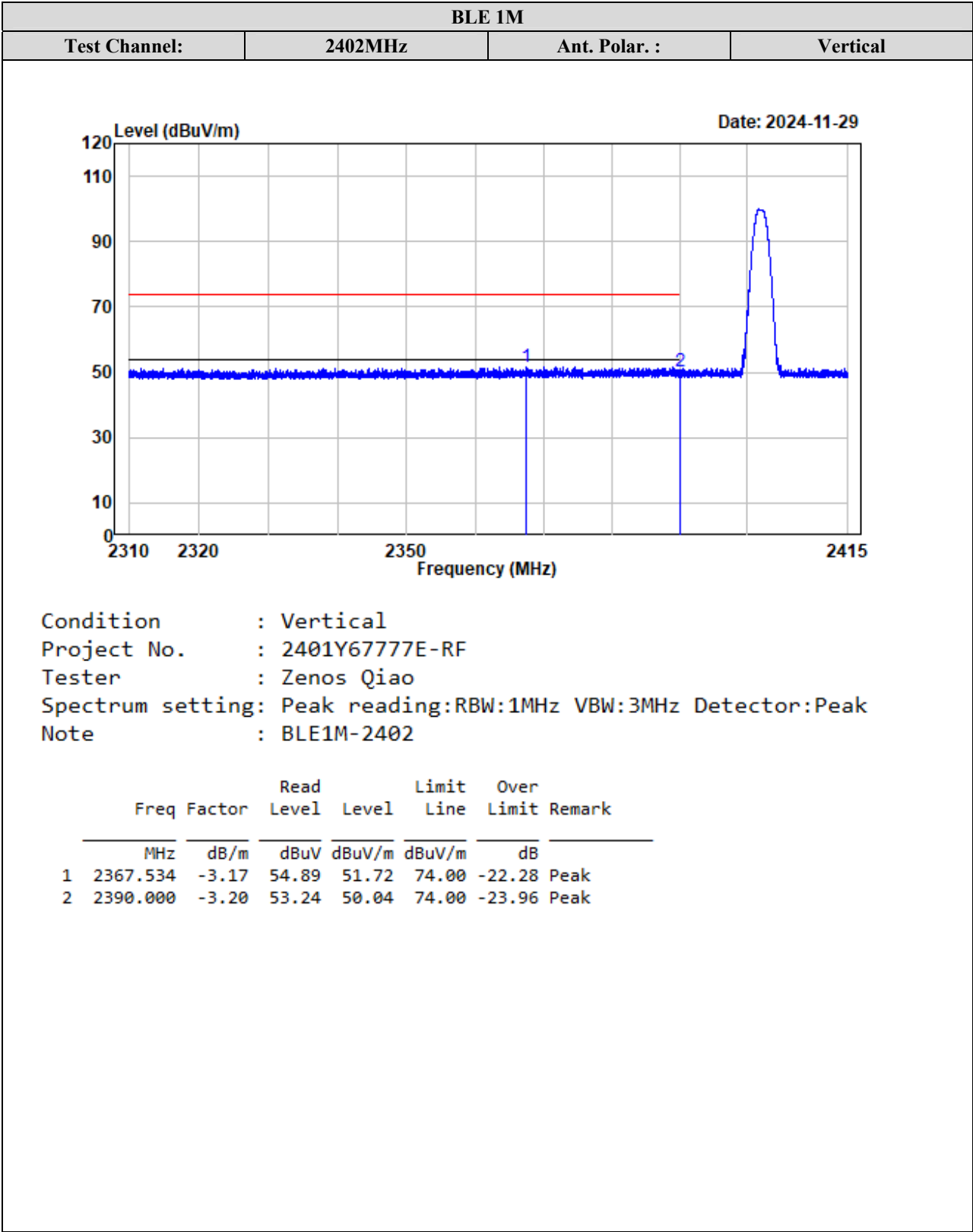
Corrected Amplitude = Corrected Factor + Reading

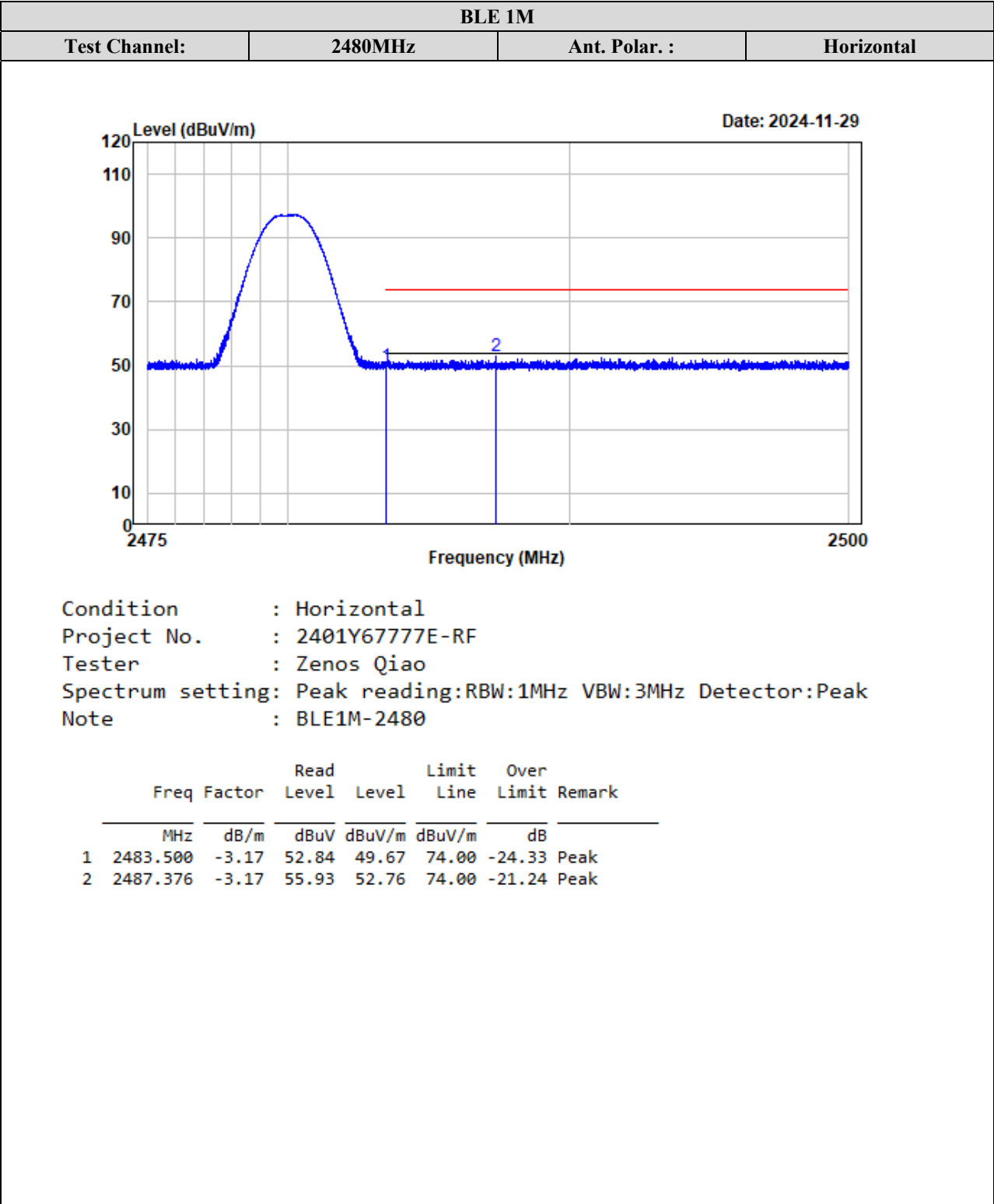
Margin = Corrected. Amplitude - Limit

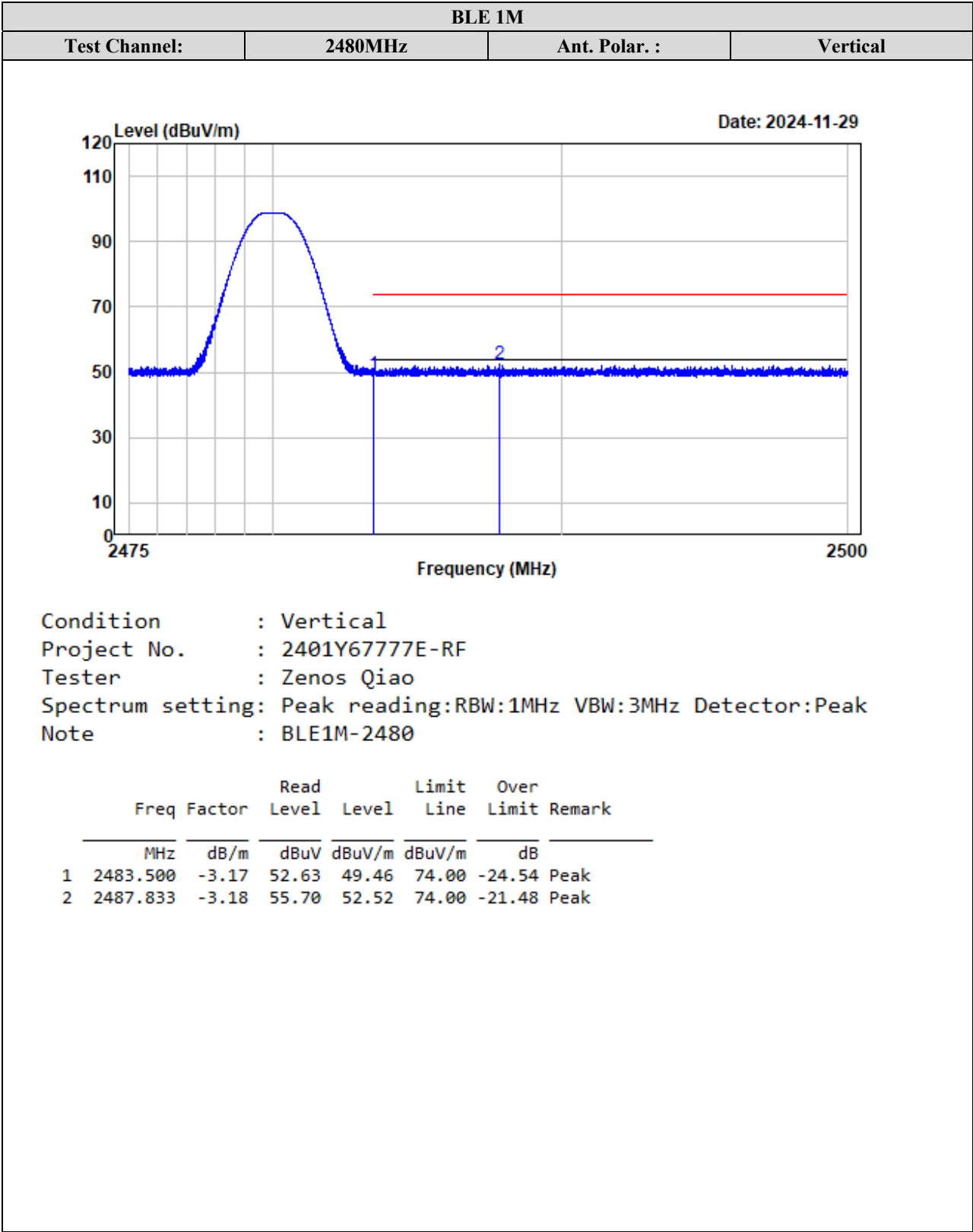
The other spurious emission which is in the noise floor level was not recorded.

Test plots for Band Edge Measurements (Radiated):

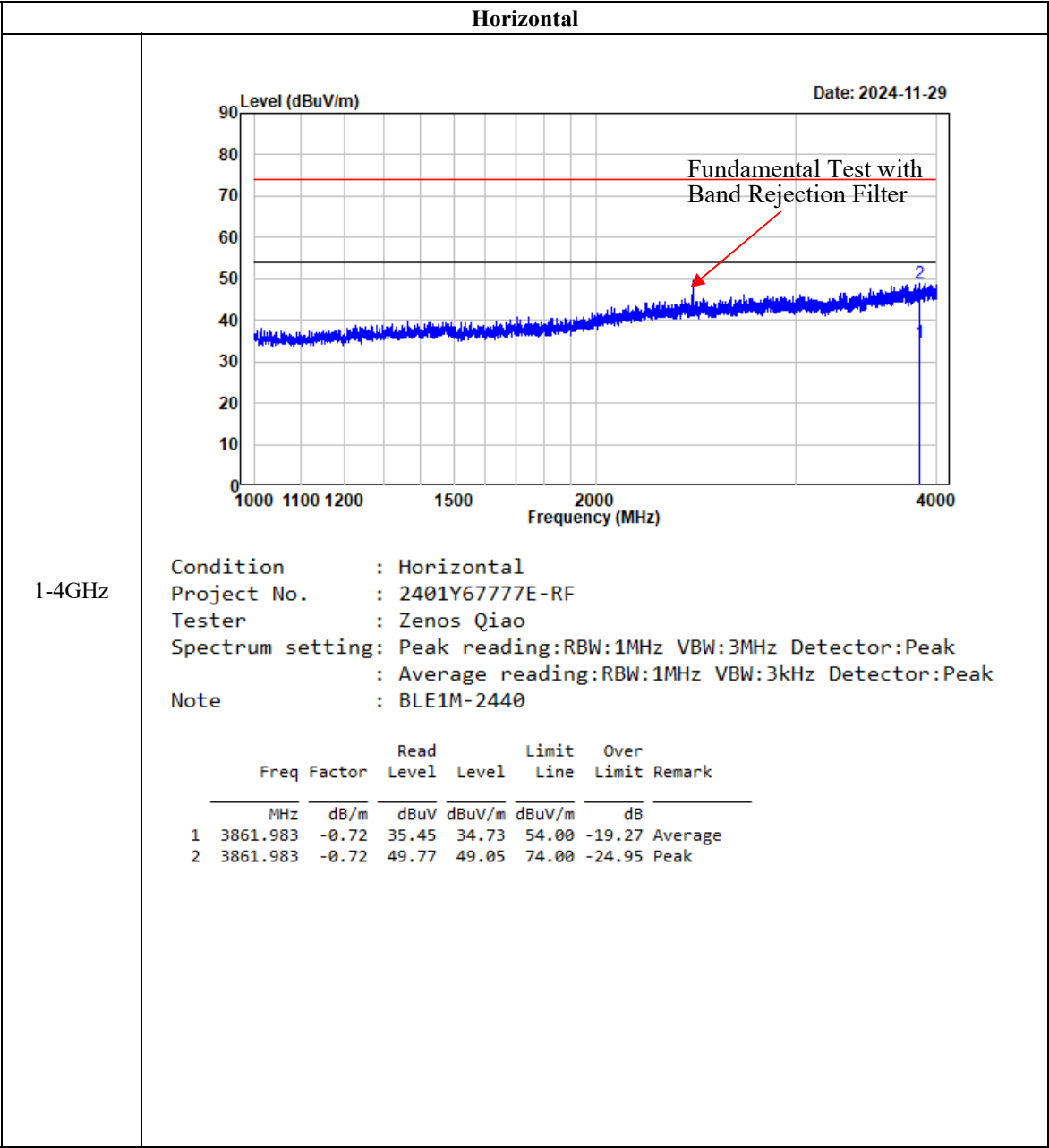




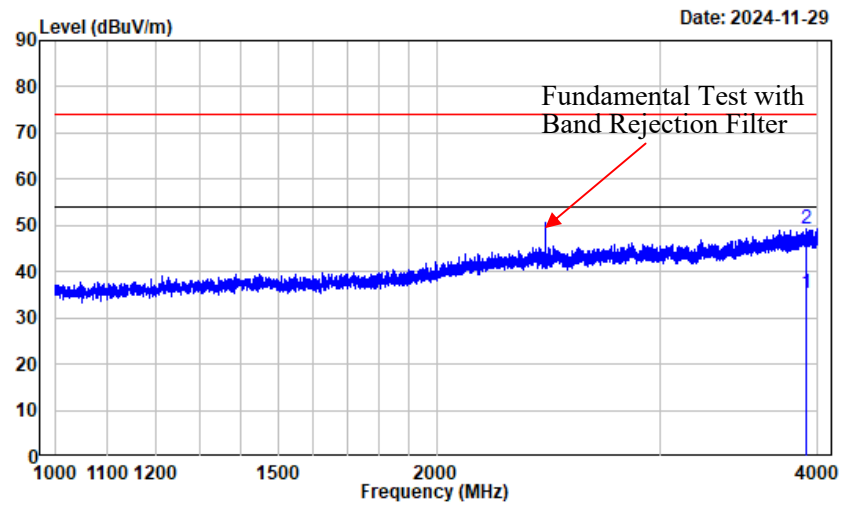




Test plots for Harmonic and Emissions Measurements:



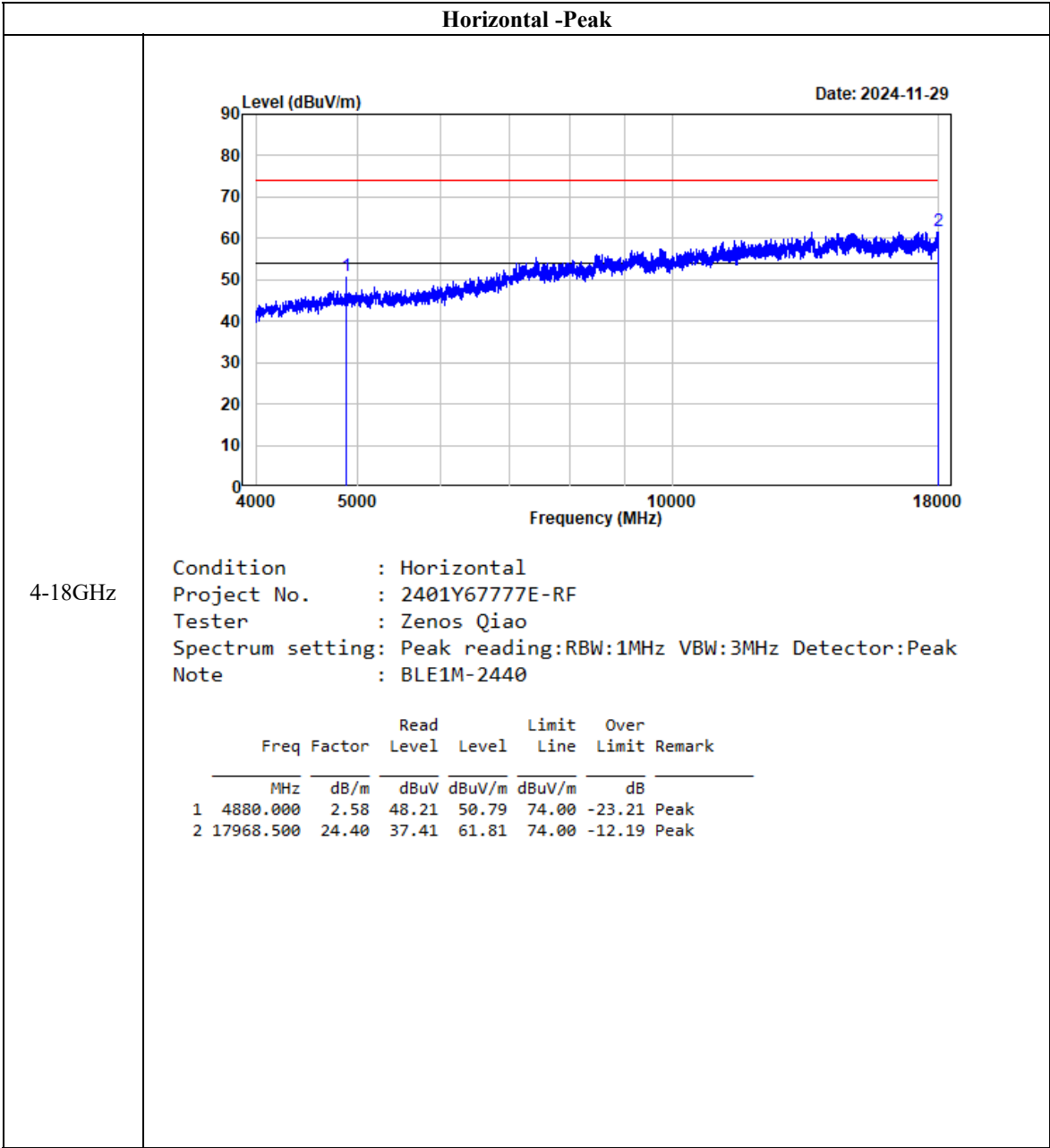
Vertical

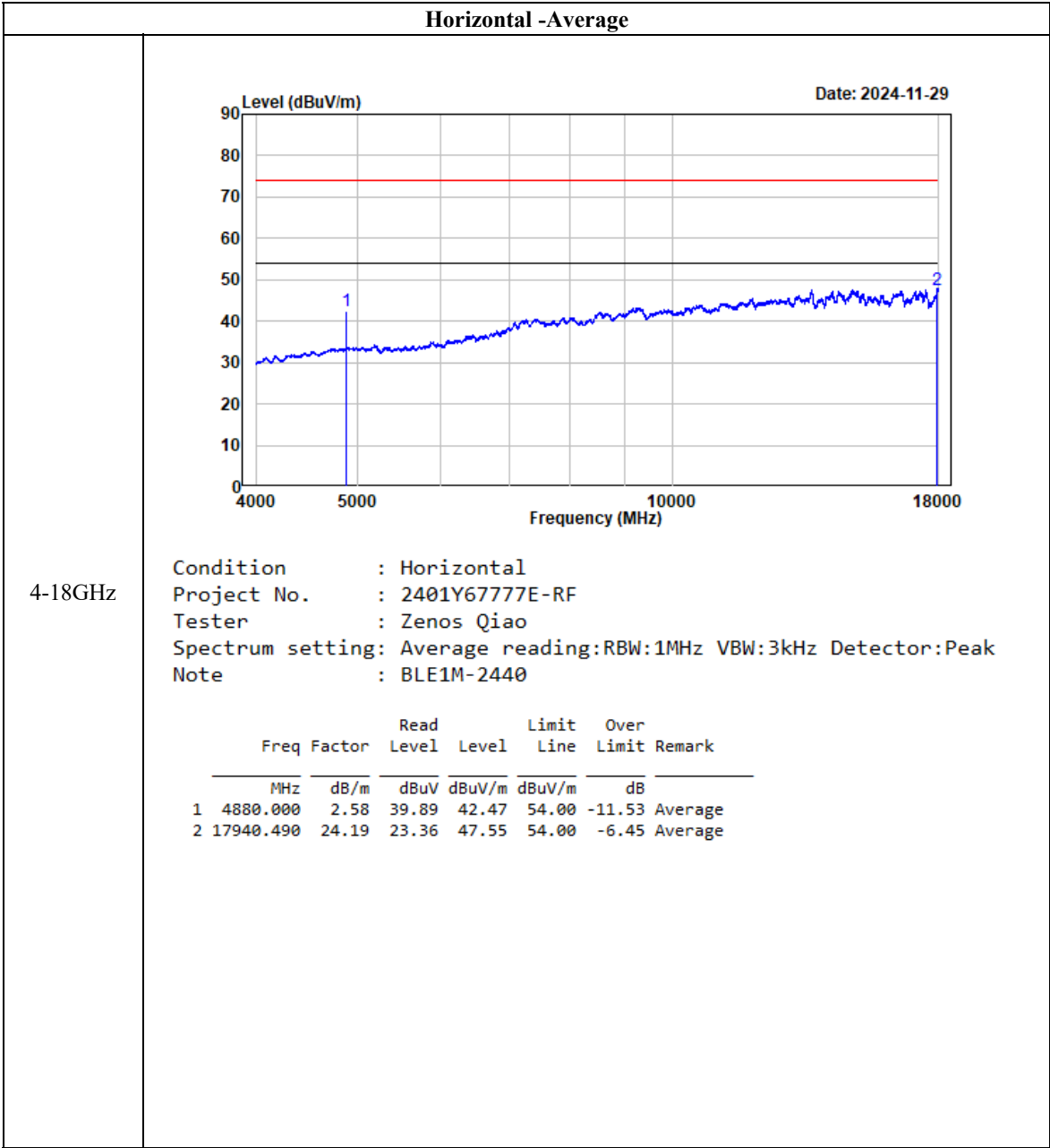


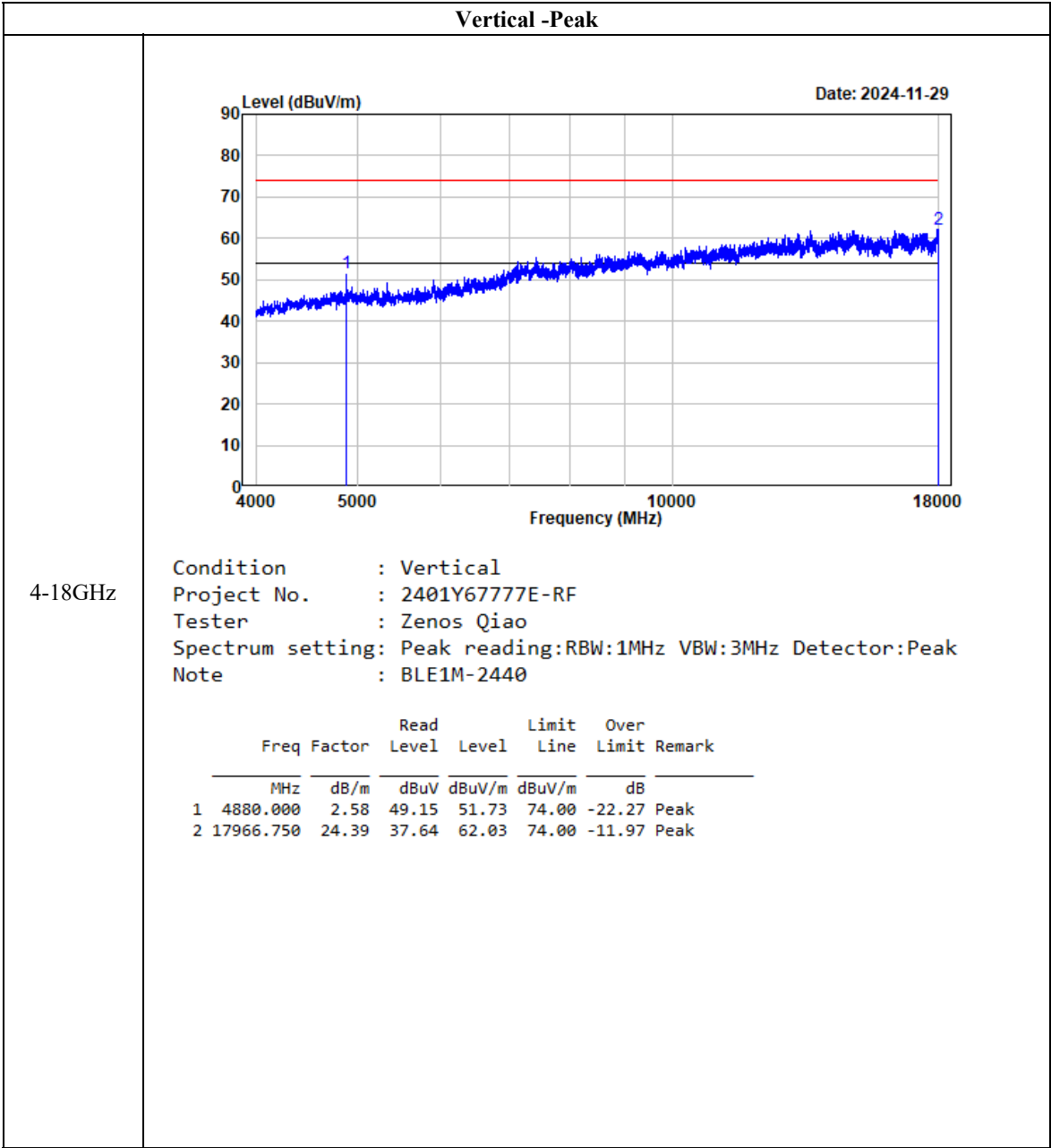
1-4GHz

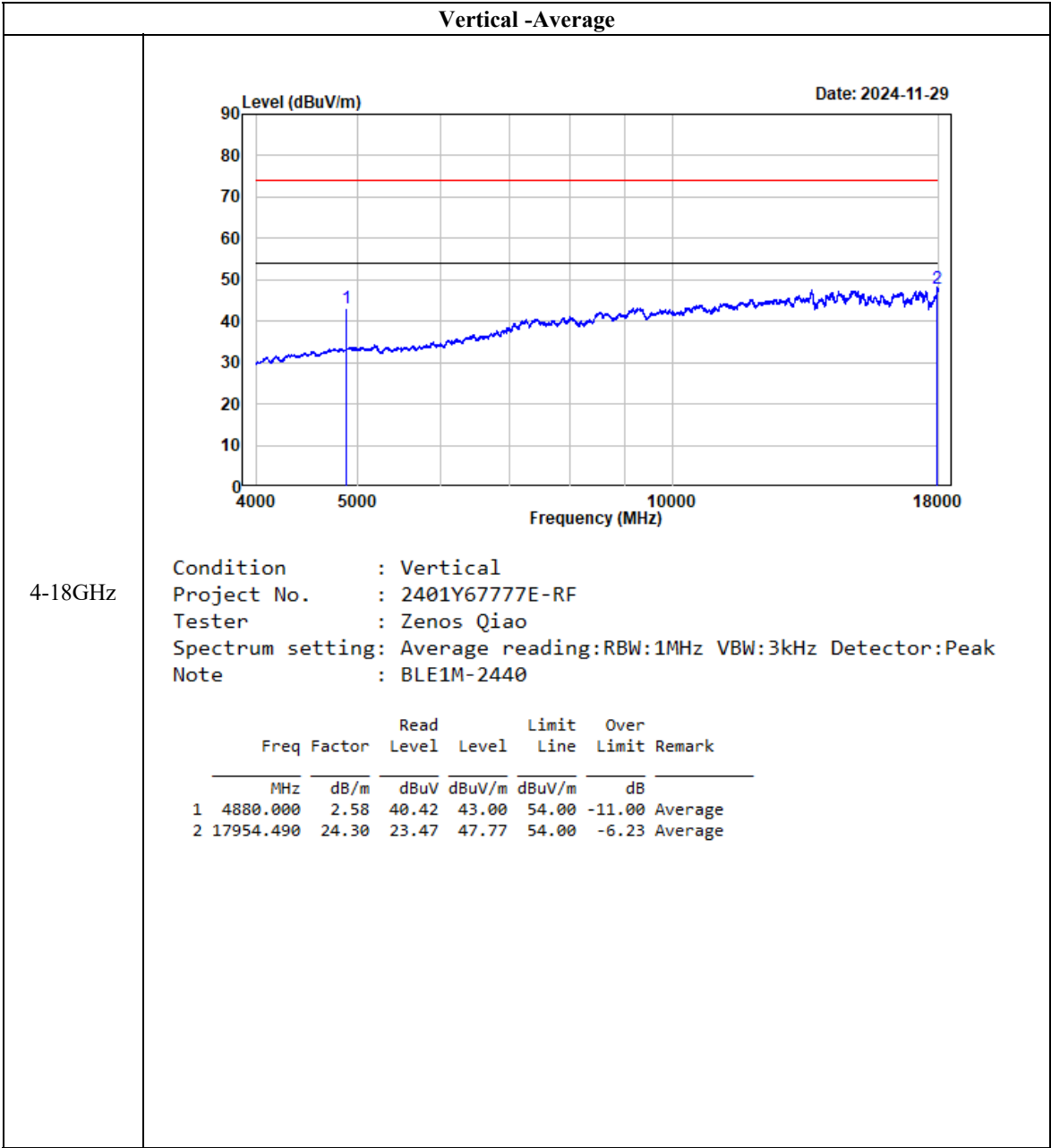
```
Condition      : Vertical
Project No.    : 2401Y67777E-RF
Tester         : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
                Average reading:RBW:1MHz VBW:3kHz Detector:Peak
Note           : BLE1M-2440
```

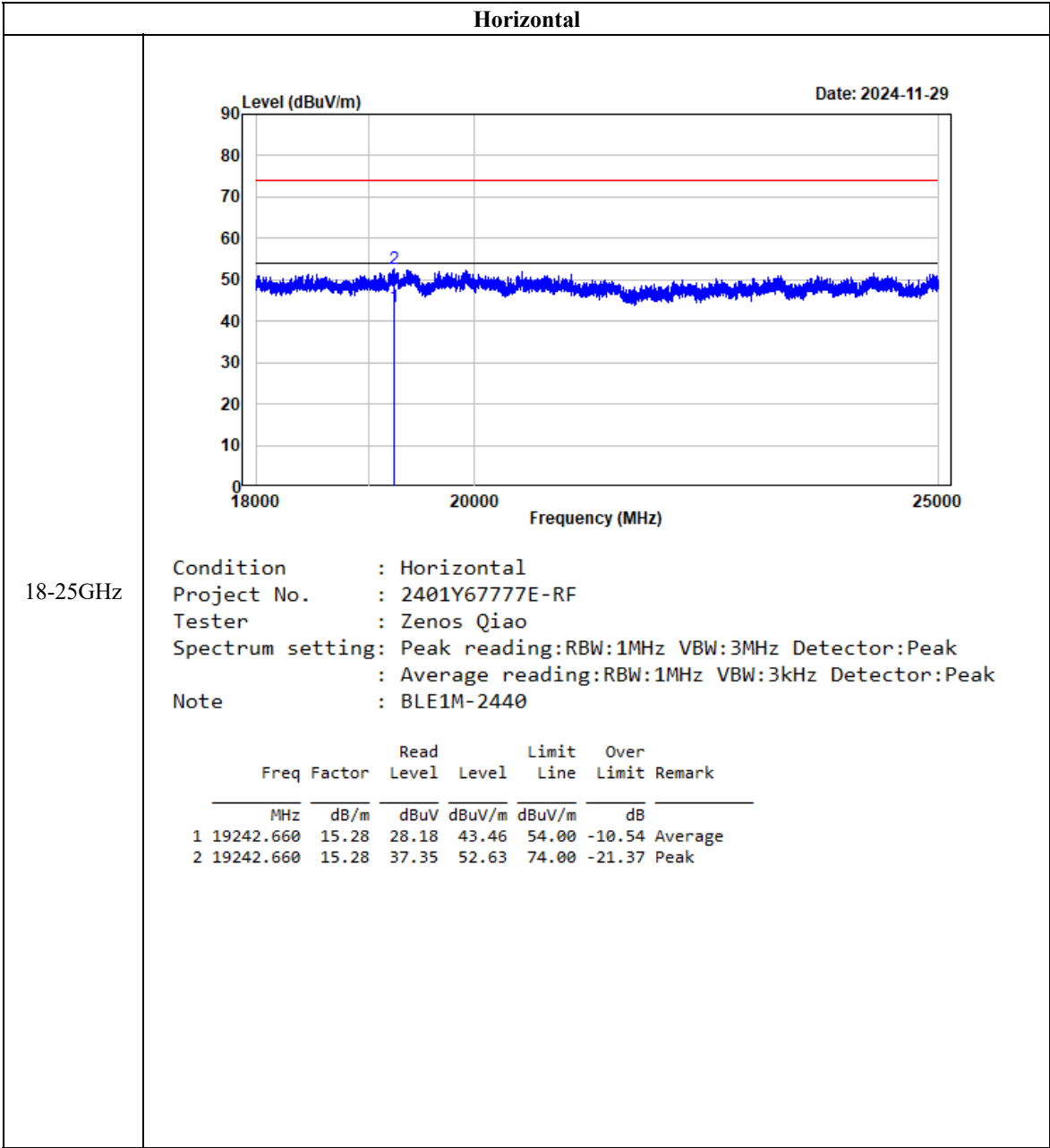
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	3918.240	-0.39	35.56	35.17	54.00	-18.83	Average
2	3918.240	-0.39	49.68	49.29	74.00	-24.71	Peak

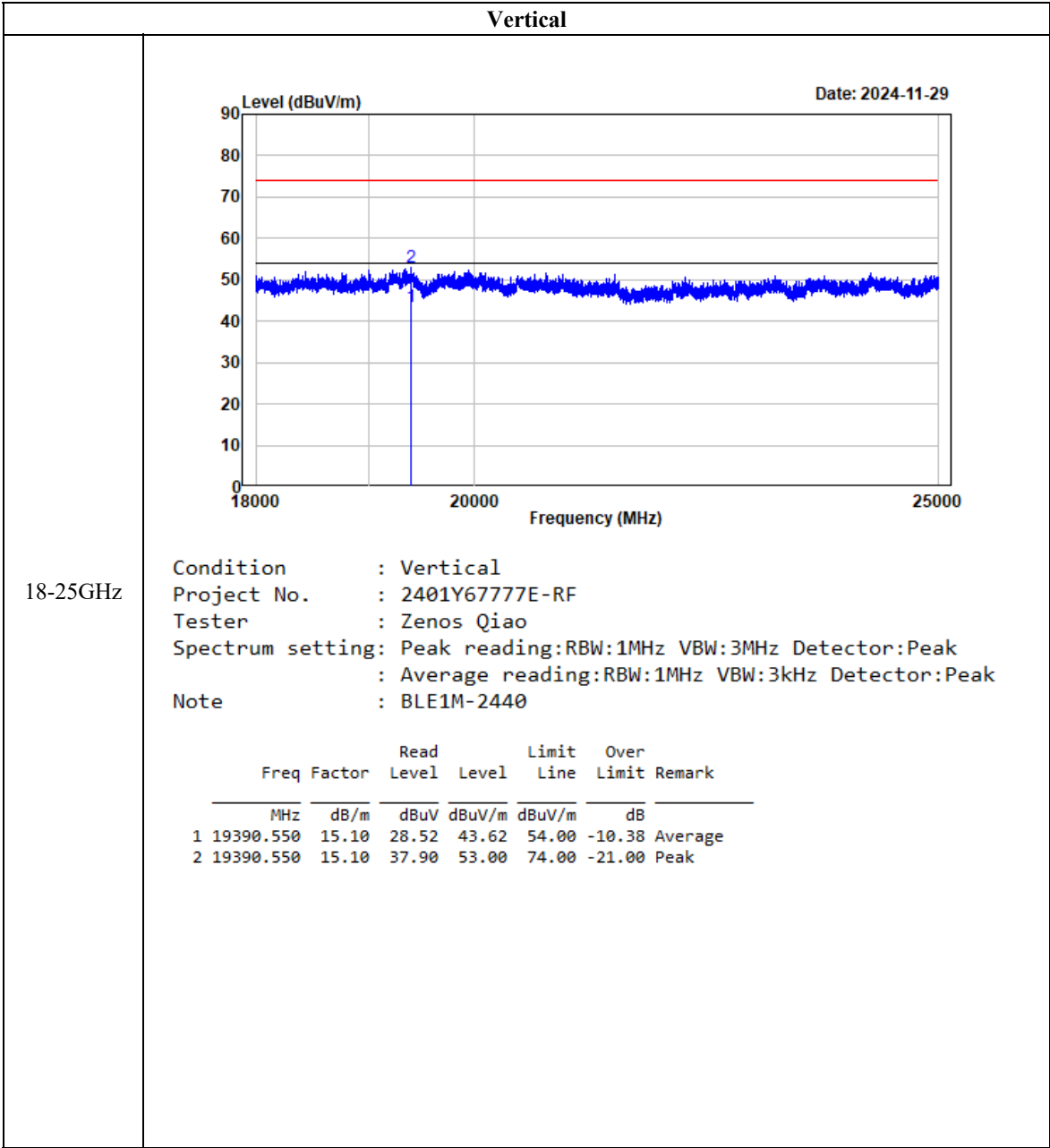












2.4G Wi-Fi

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11b							
Low Channel 2412MHz							
4824.00	47.29	PK	H	2.45	49.74	74	-24.26
4824.00	39.78	AV	H	2.45	42.23	54	-11.77
4824.00	48.84	PK	V	2.45	51.29	74	-22.71
4824.00	40.60	AV	V	2.45	43.05	54	-10.95
Middle Channel 2437MHz							
4874.00	48.32	PK	H	2.56	50.88	74	-23.12
4874.00	40.74	AV	H	2.56	43.30	54	-10.70
4874.00	49.86	PK	V	2.56	52.42	74	-21.58
4874.00	41.61	AV	V	2.56	44.17	54	-9.83
High Channel 2462MHz							
4924.00	47.67	PK	H	2.63	50.30	74	-23.70
4924.00	40.05	AV	H	2.63	42.68	54	-11.32
4924.00	49.13	PK	V	2.63	51.76	74	-22.24
4924.00	40.89	AV	V	2.63	43.52	54	-10.48
802.11g							
Low Channel 2412MHz							
4824.00	48.97	PK	H	2.45	51.42	74	-22.58
4824.00	40.28	AV	H	2.45	42.73	54	-11.27
4824.00	49.46	PK	V	2.45	51.91	74	-22.09
4824.00	41.11	AV	V	2.45	43.56	54	-10.44
Middle Channel 2437MHz							
4874.00	48.68	PK	H	2.56	51.24	74	-22.76
4874.00	41.21	AV	H	2.56	43.77	54	-10.23
4874.00	50.15	PK	V	2.56	52.71	74	-21.29
4874.00	42.03	AV	V	2.56	44.59	54	-9.41
High Channel 2462MHz							
4924.00	48.25	PK	H	2.63	50.88	74	-23.12
4924.00	40.84	AV	H	2.63	43.47	54	-10.53
4924.00	49.72	PK	V	2.63	52.35	74	-21.65
4924.00	41.69	AV	V	2.63	44.32	54	-9.68

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11n20							
Low Channel 2412MHz							
4824.00	48.19	PK	H	2.45	50.64	74	-23.36
4824.00	40.45	AV	H	2.45	42.90	54	-11.10
4824.00	49.66	PK	V	2.45	52.11	74	-21.89
4824.00	41.28	AV	V	2.45	43.73	54	-10.27
Middle Channel 2437MHz							
4874.00	49.01	PK	H	2.56	51.57	74	-22.43
4874.00	41.34	AV	H	2.56	43.90	54	-10.10
4874.00	50.49	PK	V	2.56	53.05	74	-20.95
4874.00	42.17	AV	V	2.56	44.73	54	-9.27
High Channel 2462MHz							
4924.00	48.52	PK	H	2.63	51.15	74	-22.85
4924.00	40.99	AV	H	2.63	43.62	54	-10.38
4924.00	50.04	PK	V	2.63	52.67	74	-21.33
4924.00	41.86	AV	V	2.63	44.49	54	-9.51
802.11n40							
Low Channel 2422MHz							
4844.00	48.04	PK	H	2.45	50.49	74	-23.51
4844.00	40.85	AV	H	2.45	43.30	54	-10.70
4844.00	49.51	PK	V	2.45	51.96	74	-22.04
4844.00	41.68	AV	V	2.45	44.13	54	-9.87
Middle Channel 2437MHz							
4874.00	48.38	PK	H	2.56	50.94	74	-23.06
4874.00	41.47	AV	H	2.56	44.03	54	-9.97
4874.00	49.93	PK	V	2.56	52.49	74	-21.51
4874.00	42.25	AV	V	2.56	44.81	54	-9.19
High Channel 2452MHz							
4904.00	47.89	PK	H	2.64	50.53	74	-23.47
4904.00	40.74	AV	H	2.64	43.38	54	-10.62
4904.00	49.35	PK	V	2.64	51.99	74	-22.01
4904.00	41.52	AV	V	2.64	44.16	54	-9.84

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax20							
Low Channel 2412MHz							
4824.00	47.86	PK	H	2.45	50.31	74	-23.69
4824.00	40.57	AV	H	2.45	43.02	54	-10.98
4824.00	49.28	PK	V	2.45	51.73	74	-22.27
4824.00	41.39	AV	V	2.45	43.84	54	-10.16
Middle Channel 2437MHz							
4874.00	48.74	PK	H	2.56	51.30	74	-22.70
4874.00	41.31	AV	H	2.56	43.87	54	-10.13
4874.00	50.23	PK	V	2.56	52.79	74	-21.21
4874.00	42.15	AV	V	2.56	44.71	54	-9.29
High Channel 2462MHz							
4924.00	48.24	PK	H	2.63	50.87	74	-23.13
4924.00	41.12	AV	H	2.63	43.75	54	-10.25
4924.00	49.76	PK	V	2.63	52.39	74	-21.61
4924.00	41.93	AV	V	2.63	44.56	54	-9.44
802.11ax40							
Low Channel 2422MHz							
4844.00	47.98	PK	H	2.45	50.43	74	-23.57
4844.00	40.89	AV	H	2.45	43.34	54	-10.66
4844.00	49.51	PK	V	2.45	51.96	74	-22.04
4844.00	41.70	AV	V	2.45	44.15	54	-9.85
Middle Channel 2437MHz							
4874.00	48.42	PK	H	2.56	50.98	74	-23.02
4874.00	41.36	AV	H	2.56	43.92	54	-10.08
4874.00	49.88	PK	V	2.56	52.44	74	-21.56
4874.00	42.19	AV	V	2.56	44.75	54	-9.25
High Channel 2452MHz							
4904.00	47.81	PK	H	2.64	50.45	74	-23.55
4904.00	40.64	AV	H	2.64	43.28	54	-10.72
4904.00	49.20	PK	V	2.64	51.84	74	-22.16
4904.00	41.48	AV	V	2.64	44.12	54	-9.88

Note:

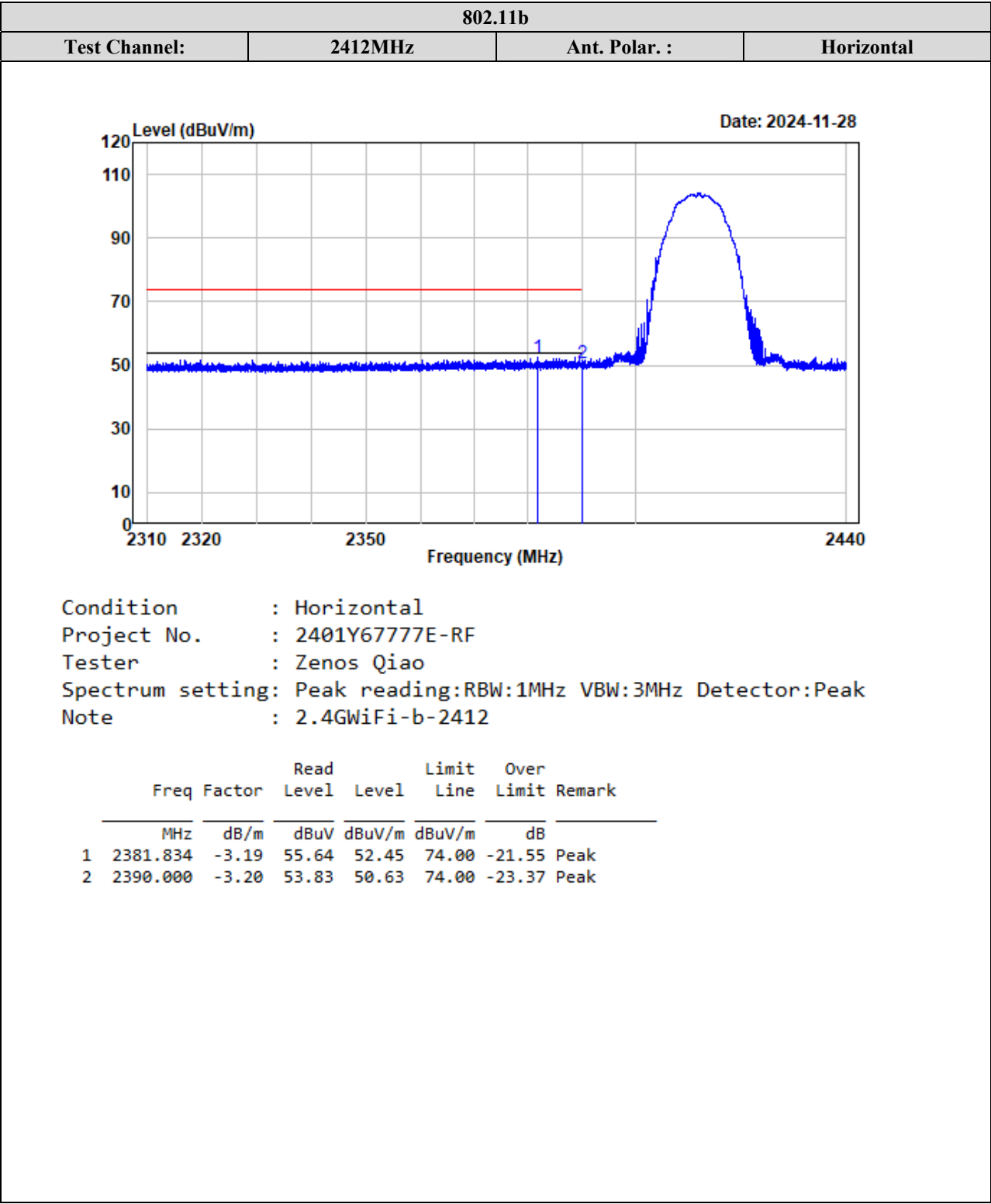
Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor

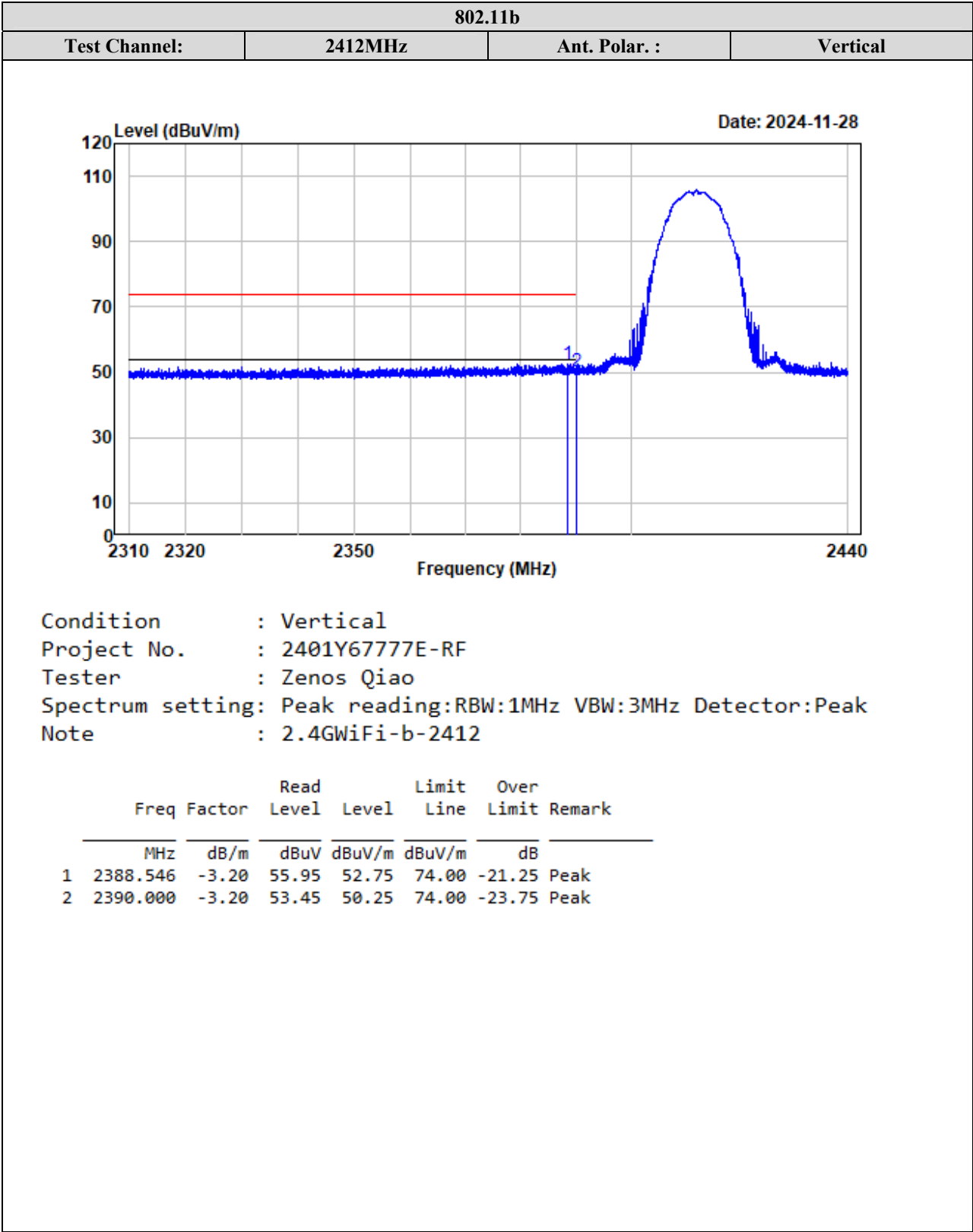
Corrected Amplitude = Corrected Factor + Reading

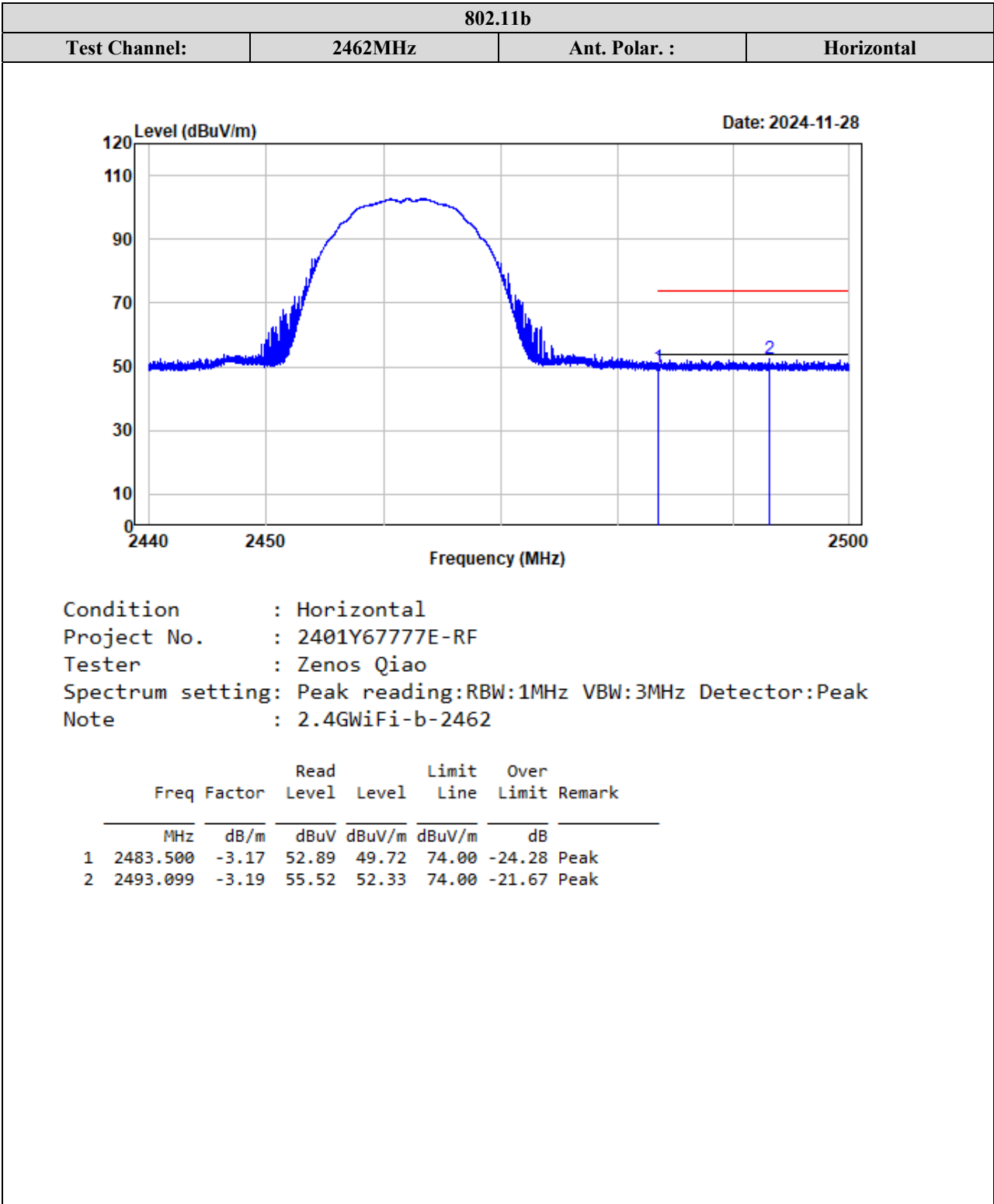
Margin = Corrected. Amplitude - Limit

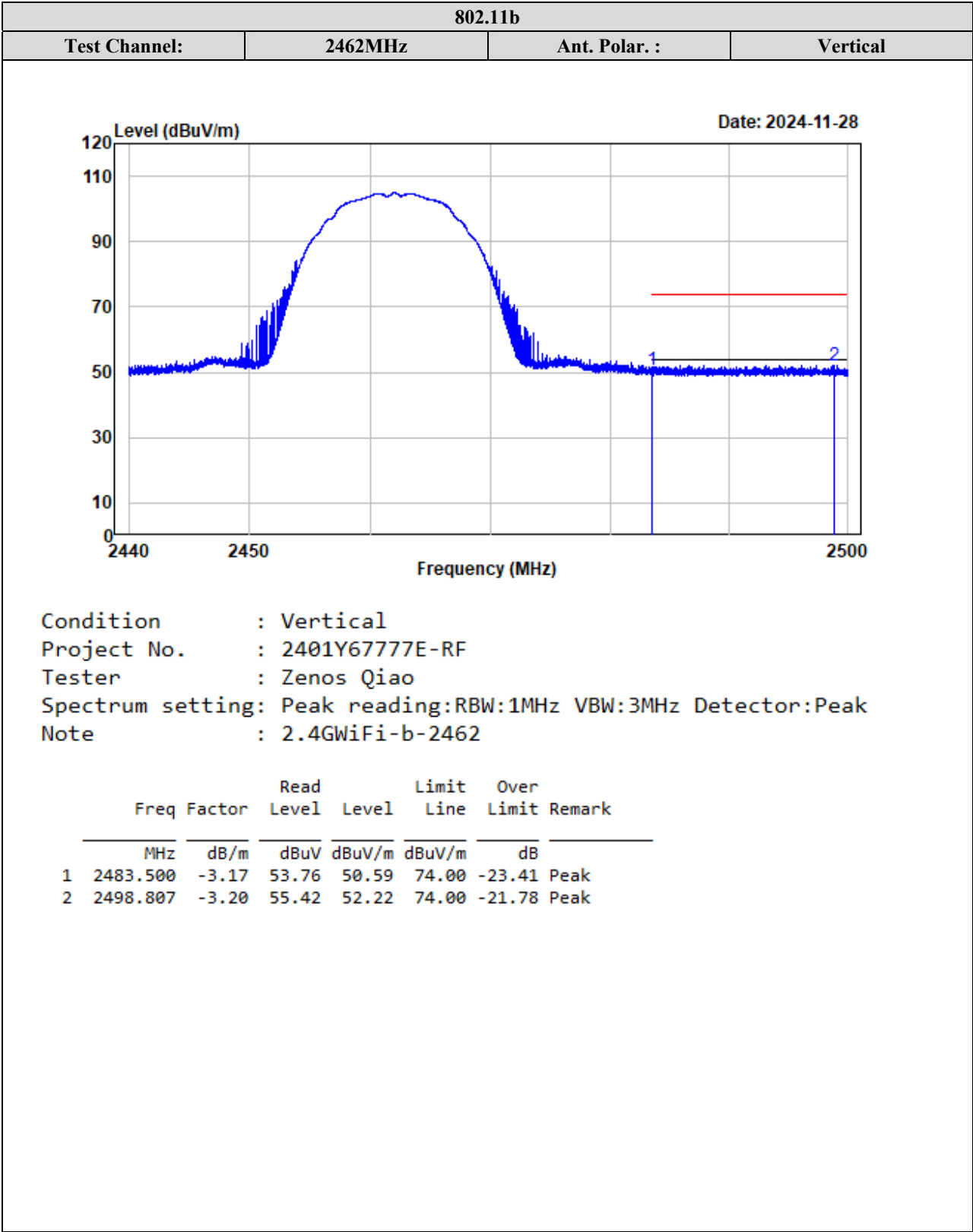
The other spurious emission which is in the noise floor level was not recorded.

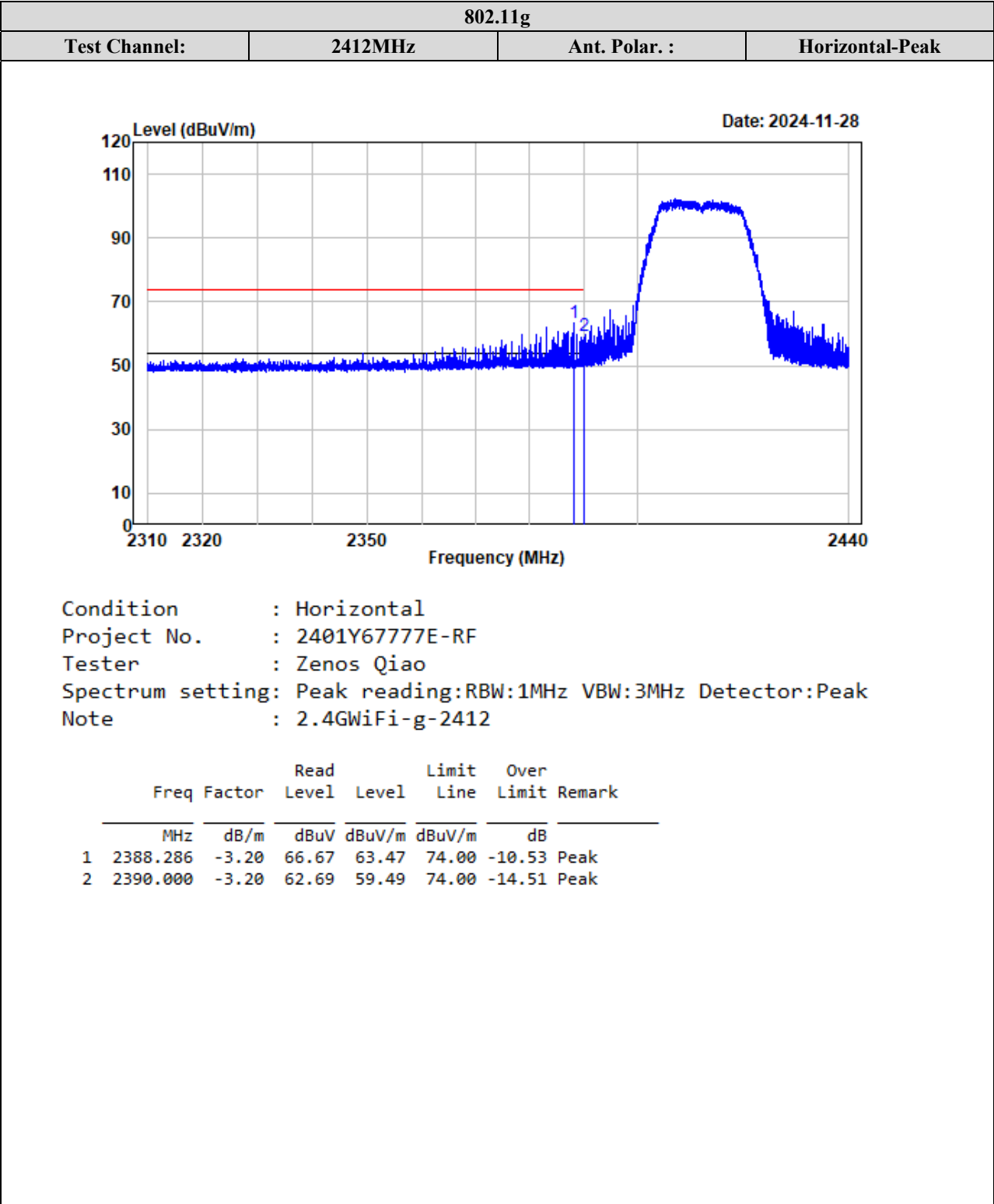
Test plots for Band Edge Measurements (Radiated):

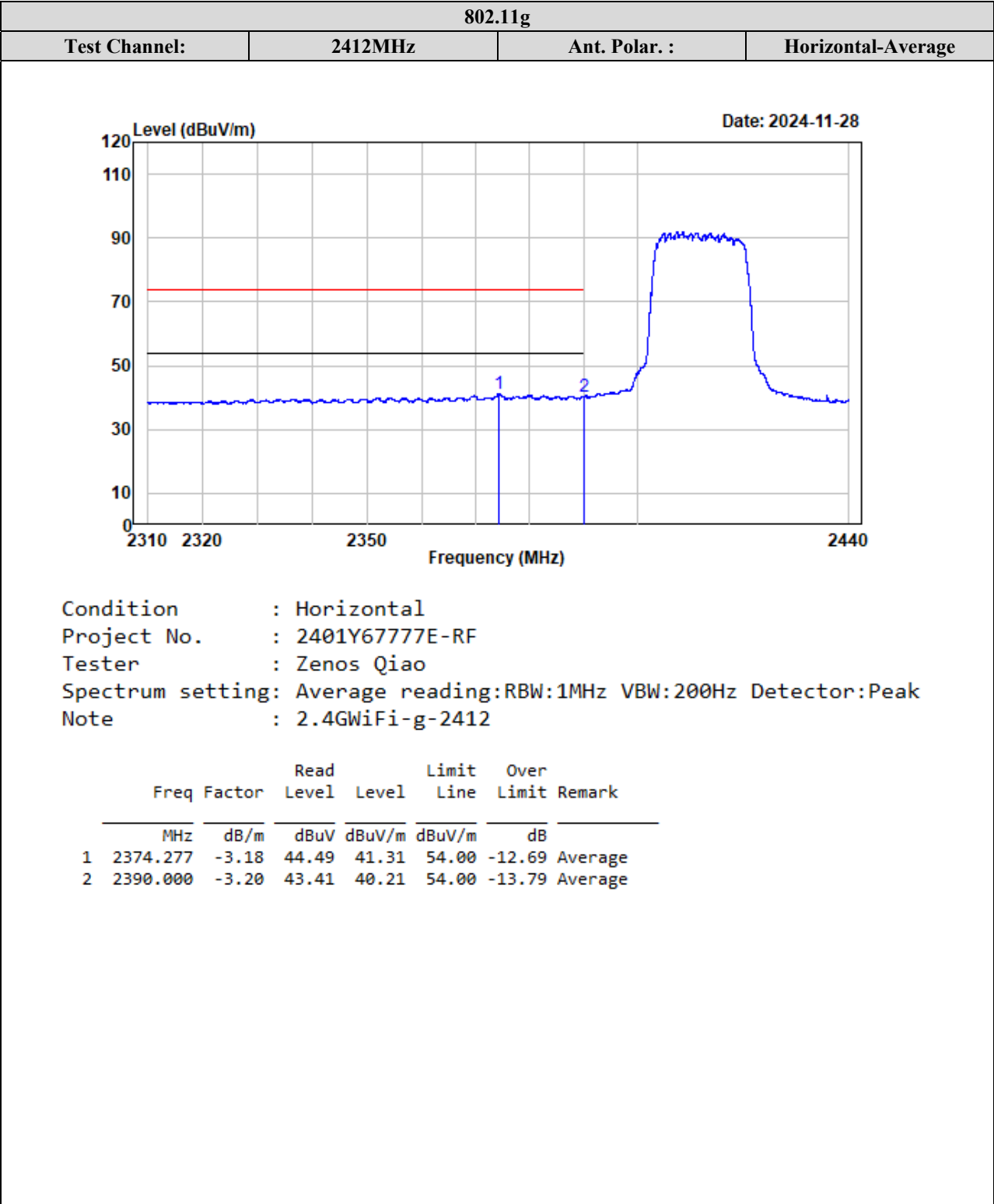


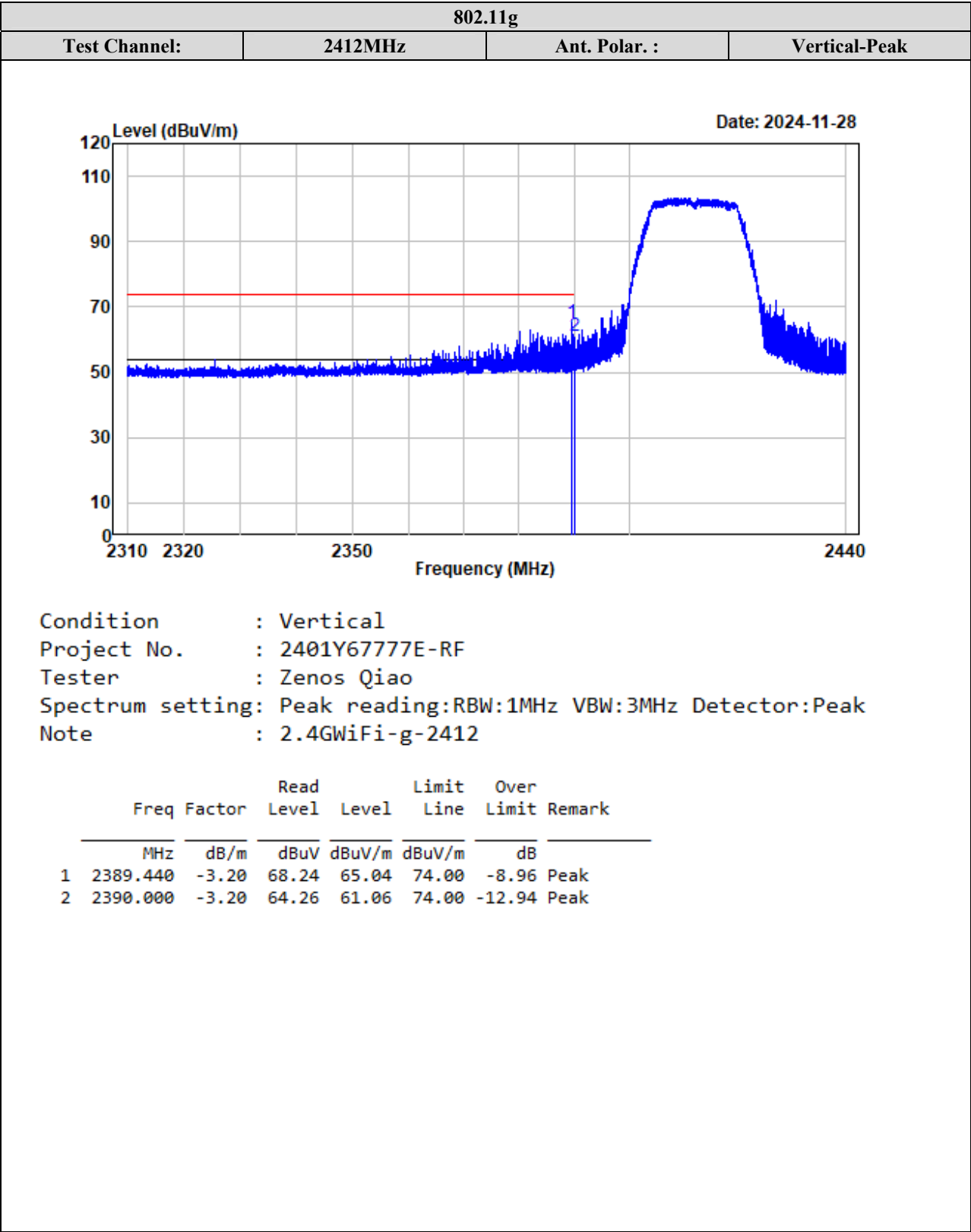


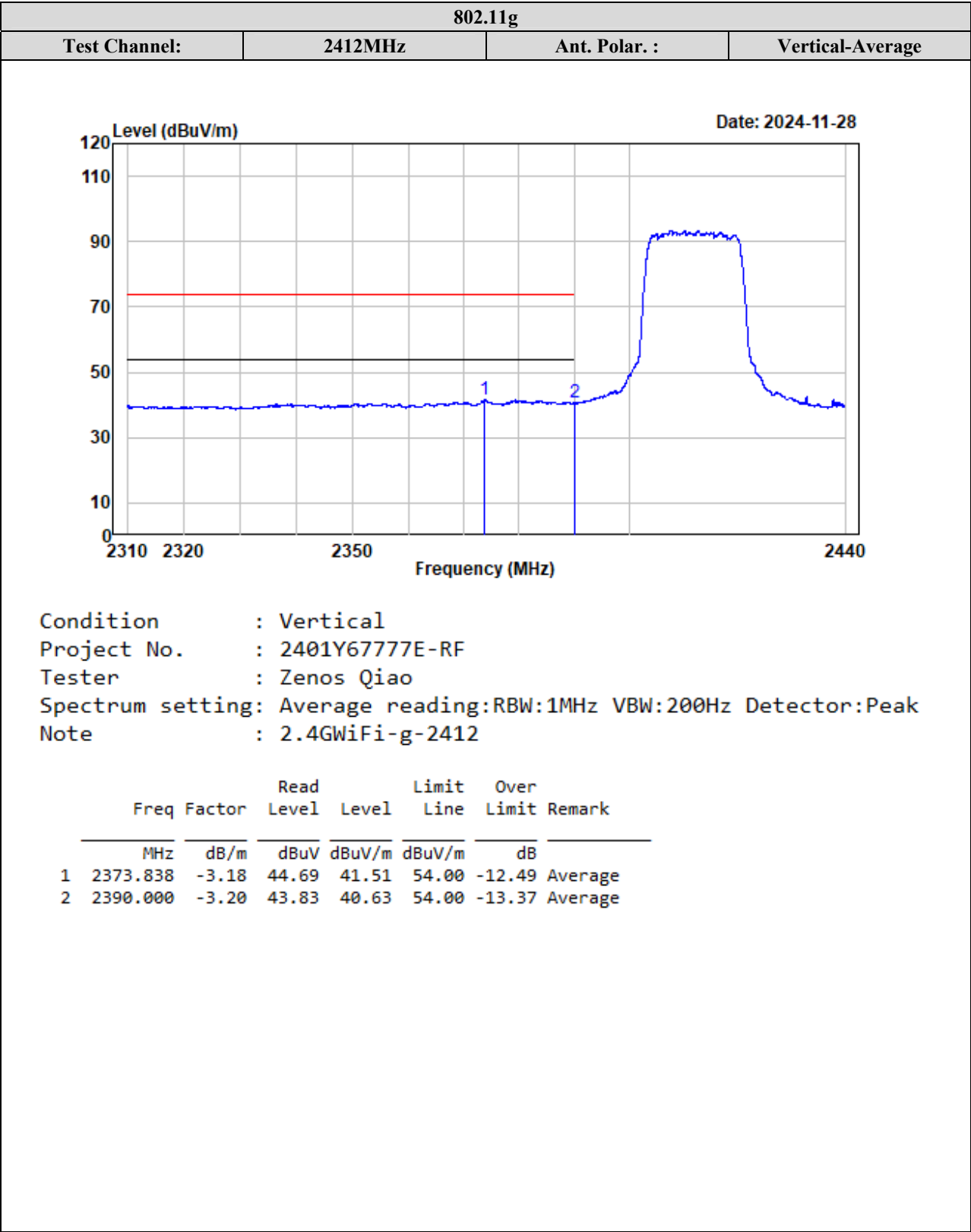


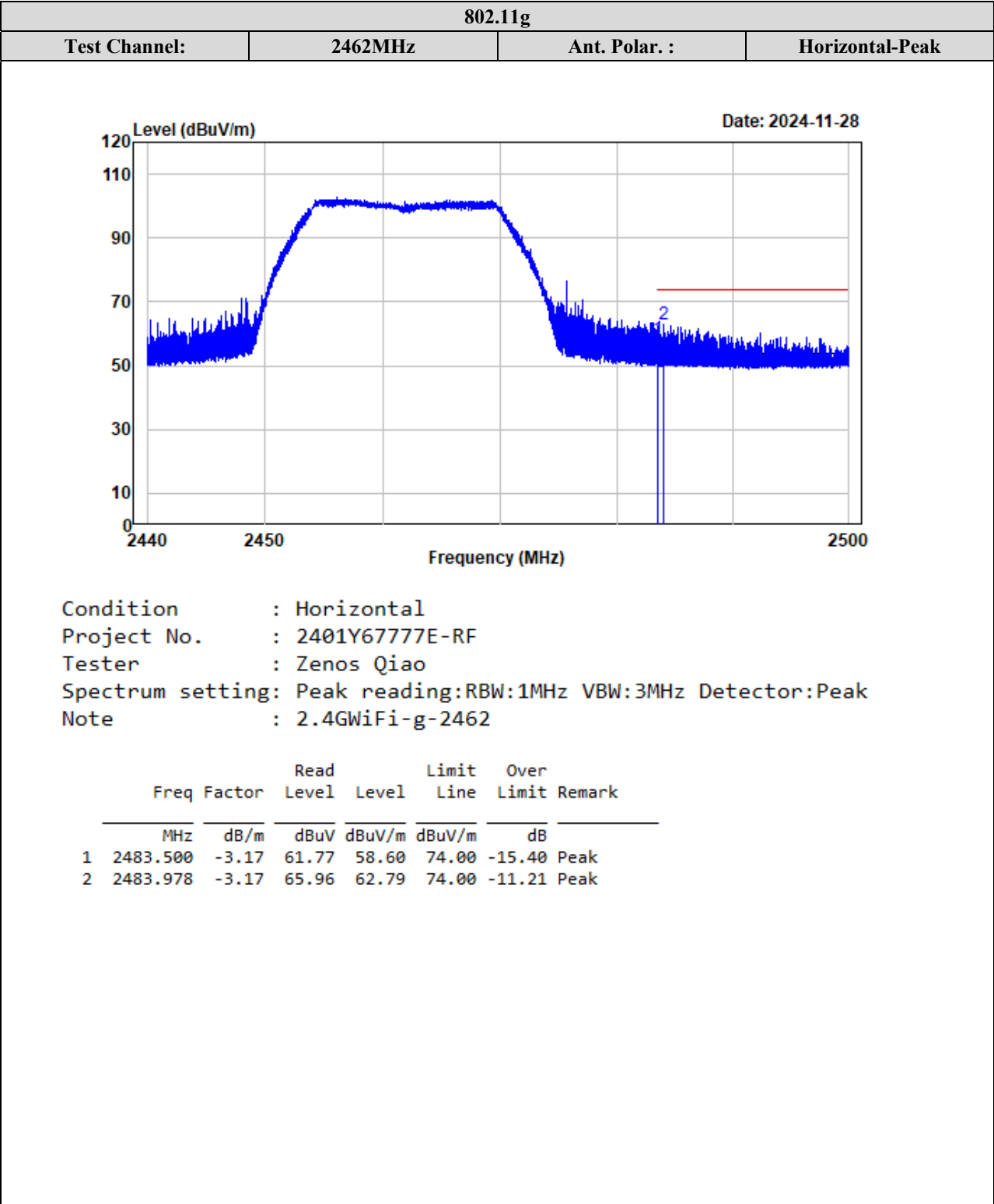


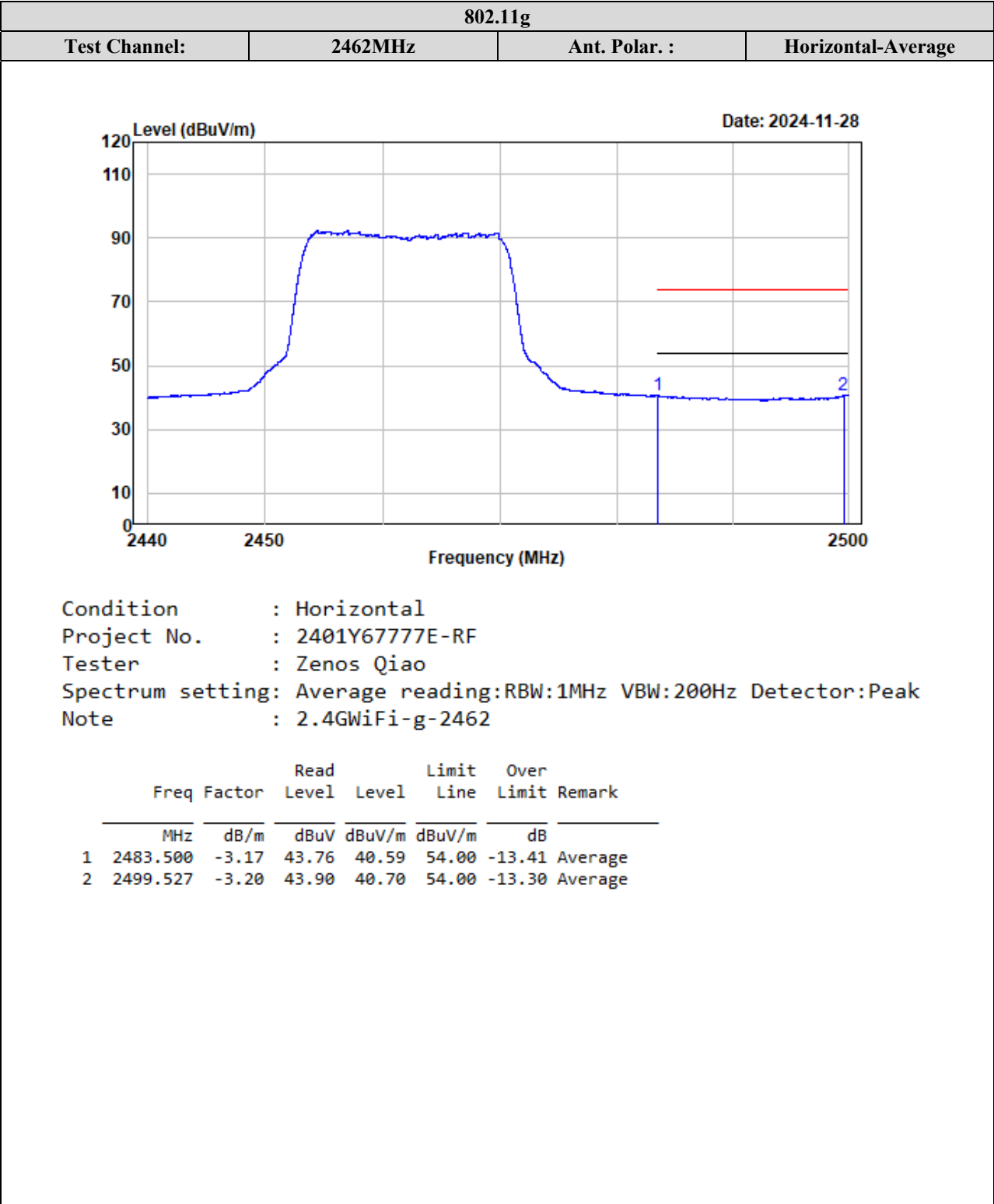


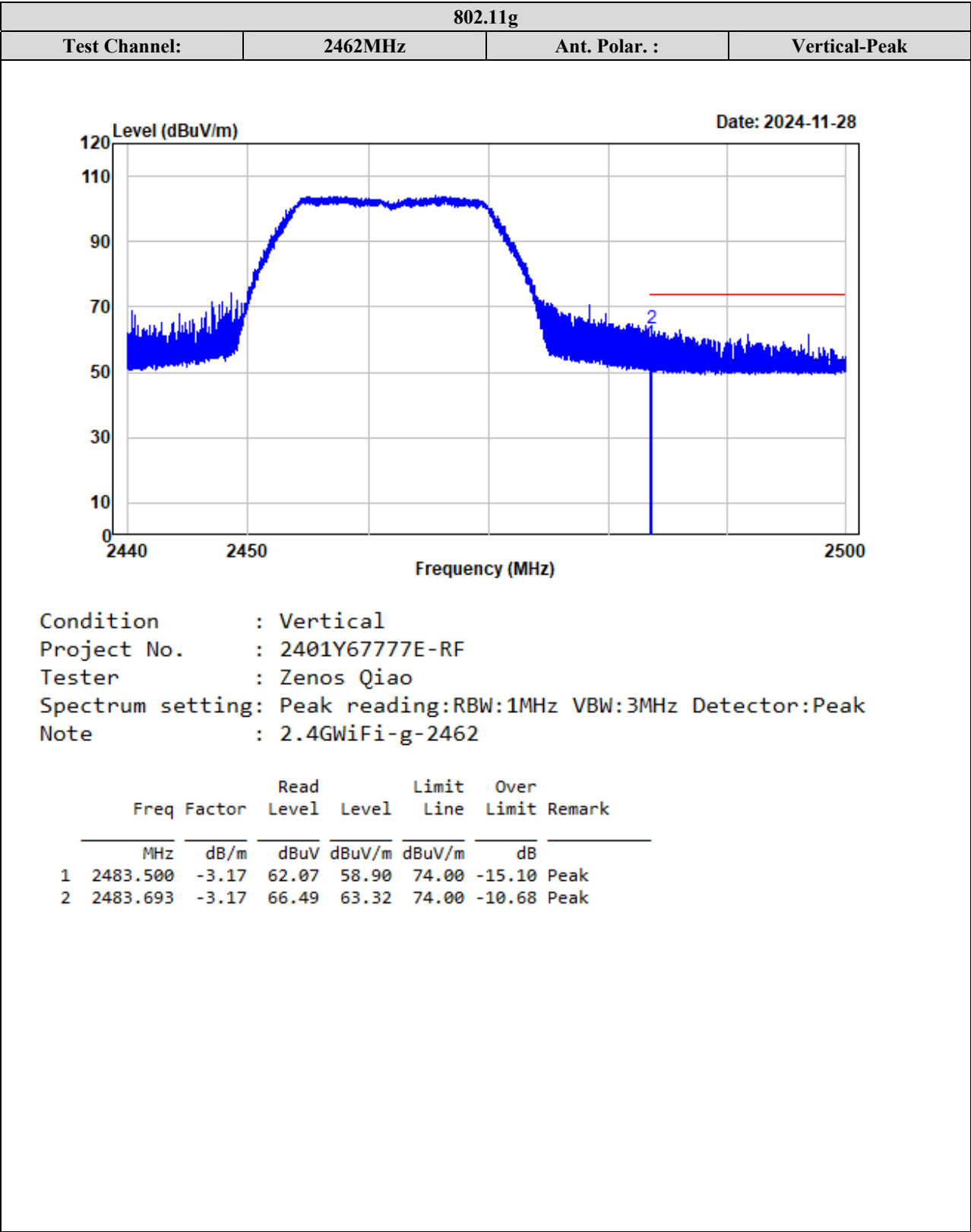


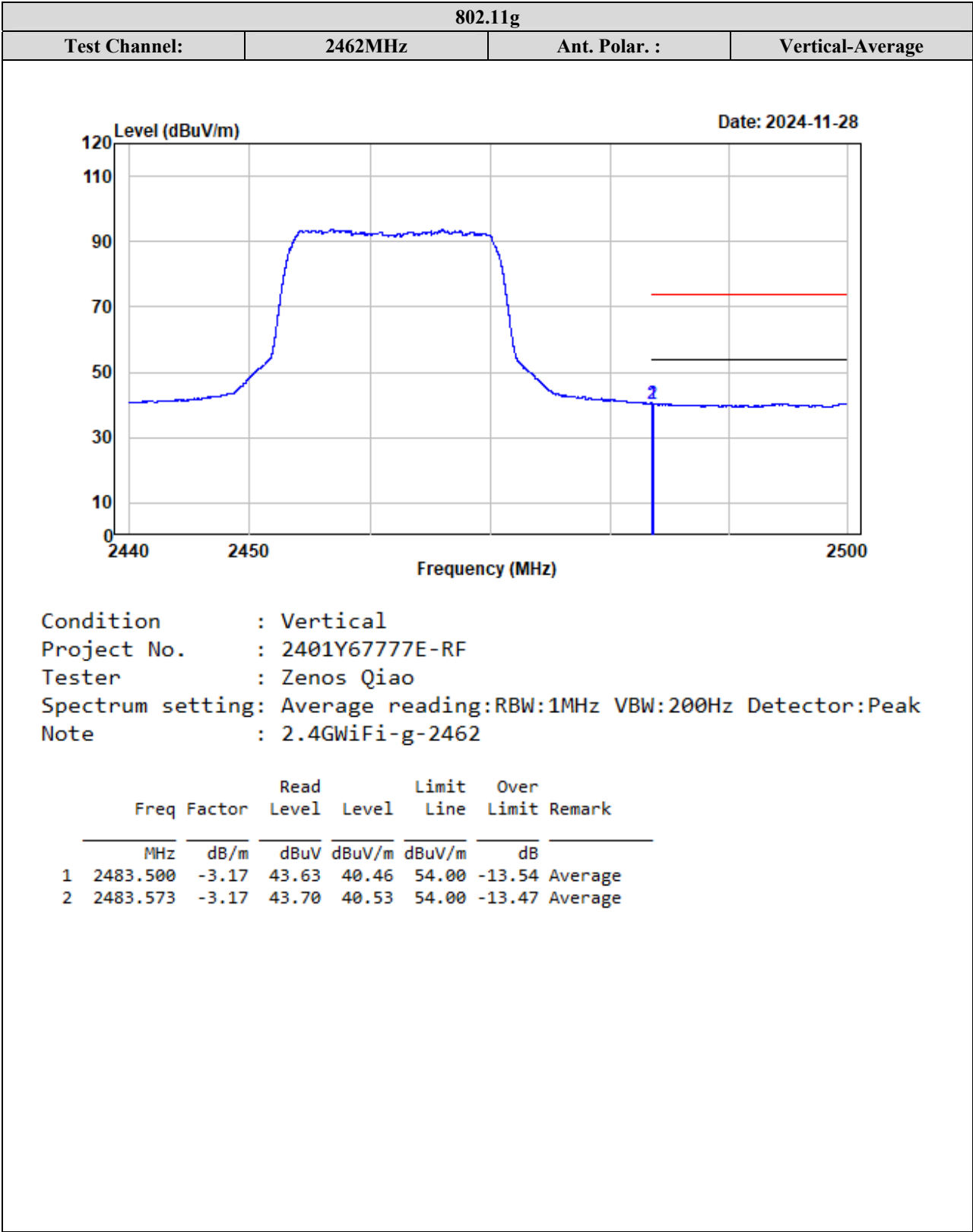


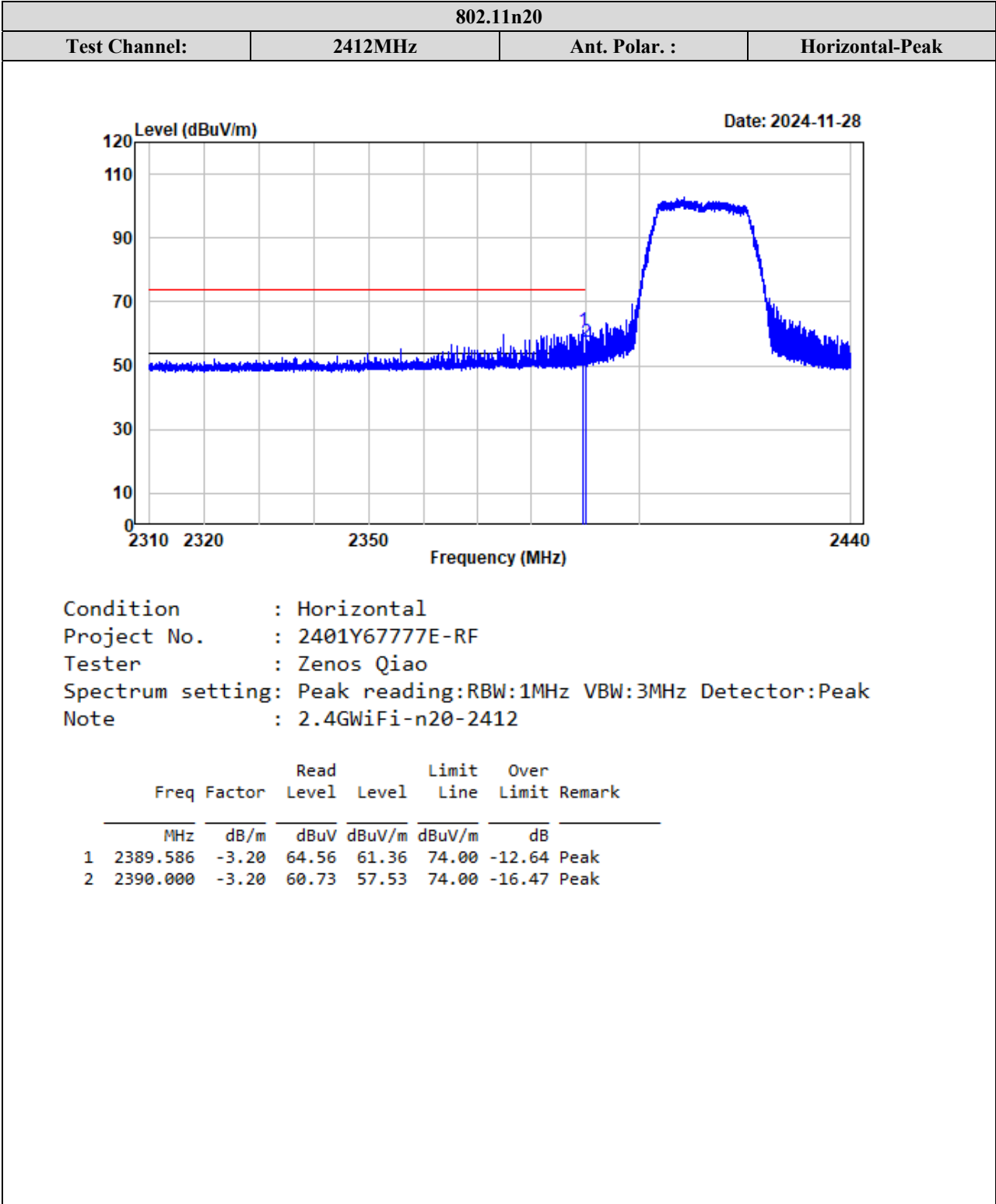


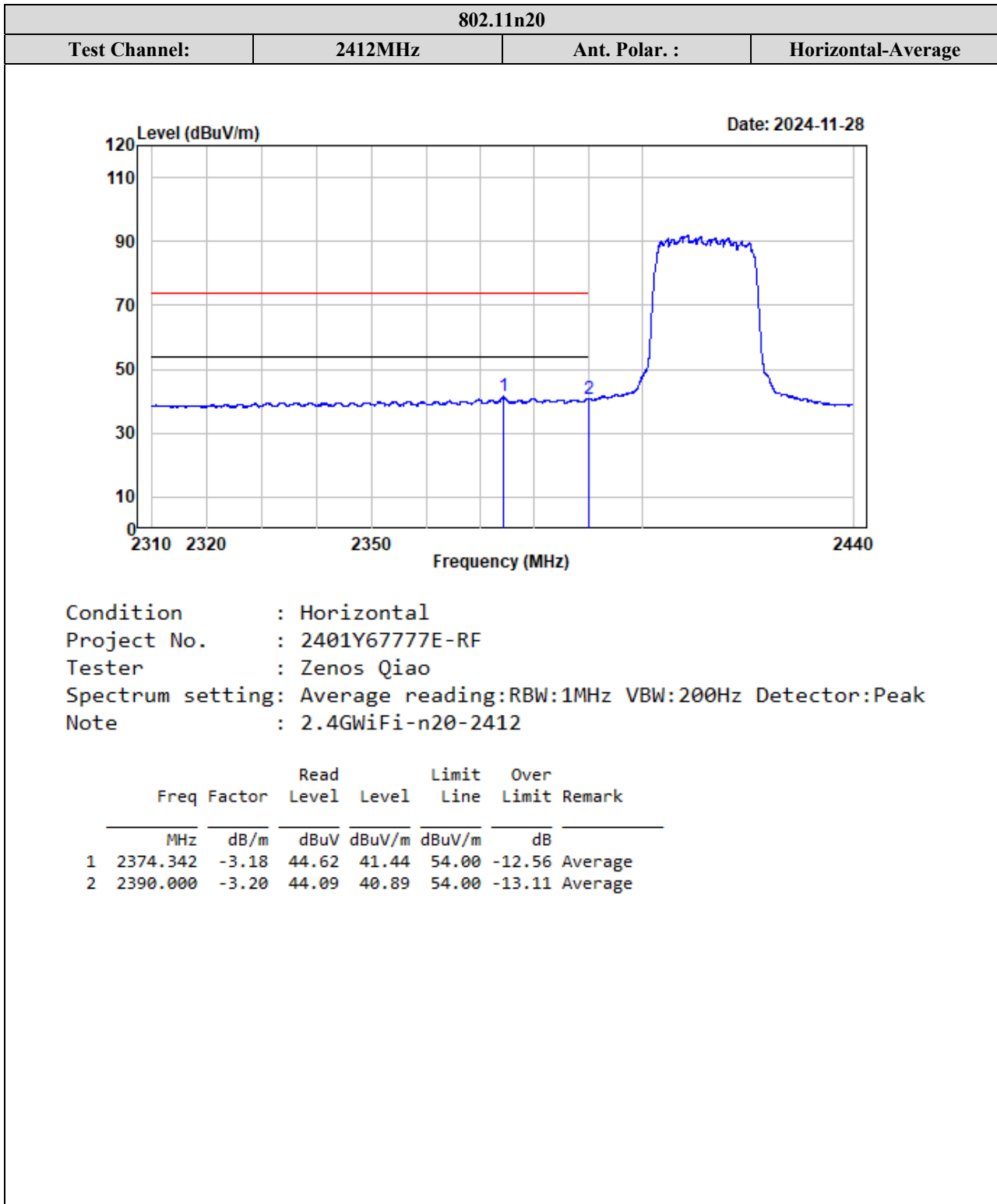












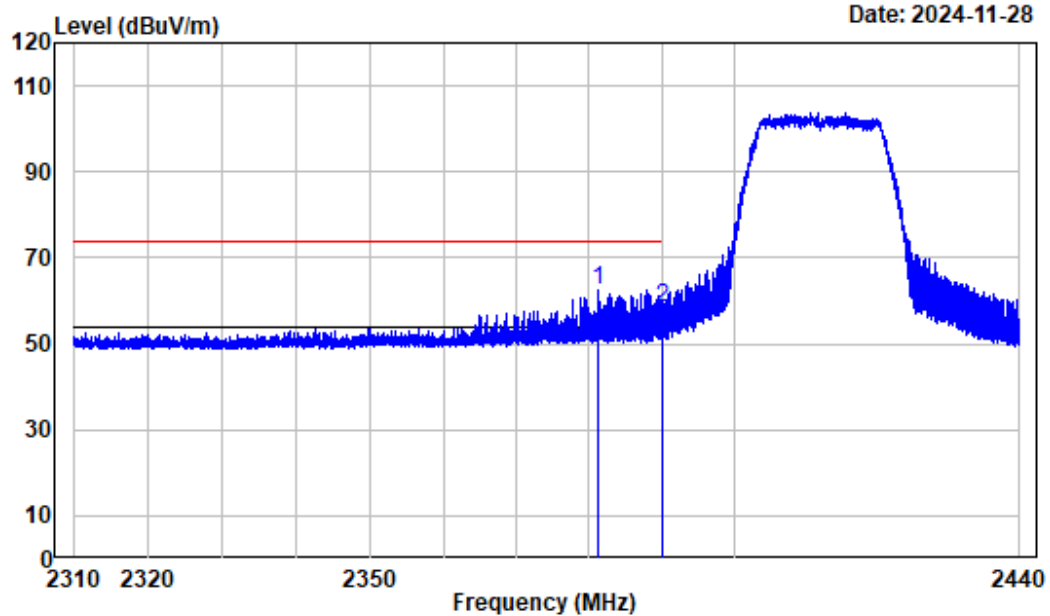
802.11n20

Test Channel:

2412MHz

Ant. Polar. :

Vertical-Peak



Condition : Vertical

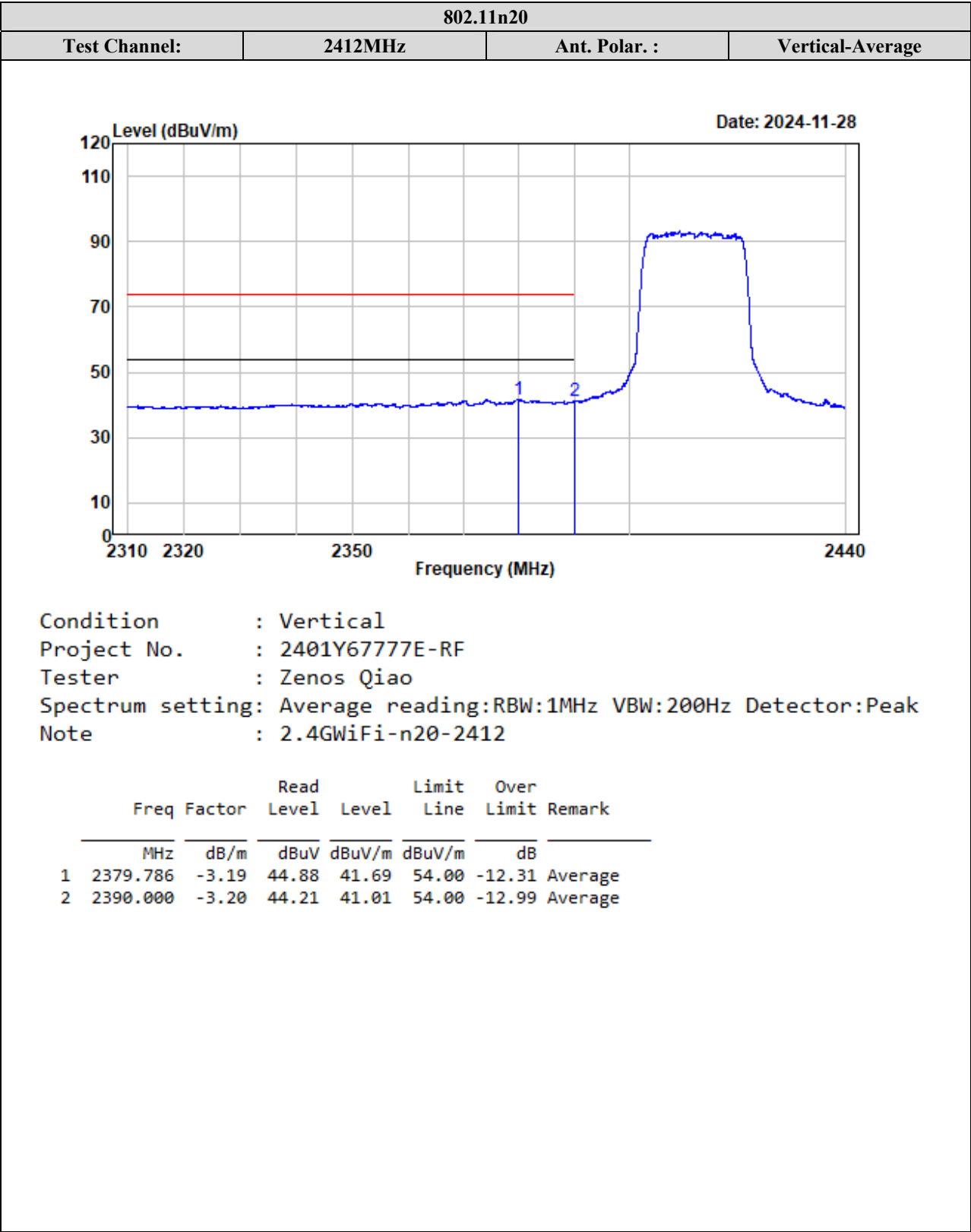
Project No. : 2401Y67777E-RF

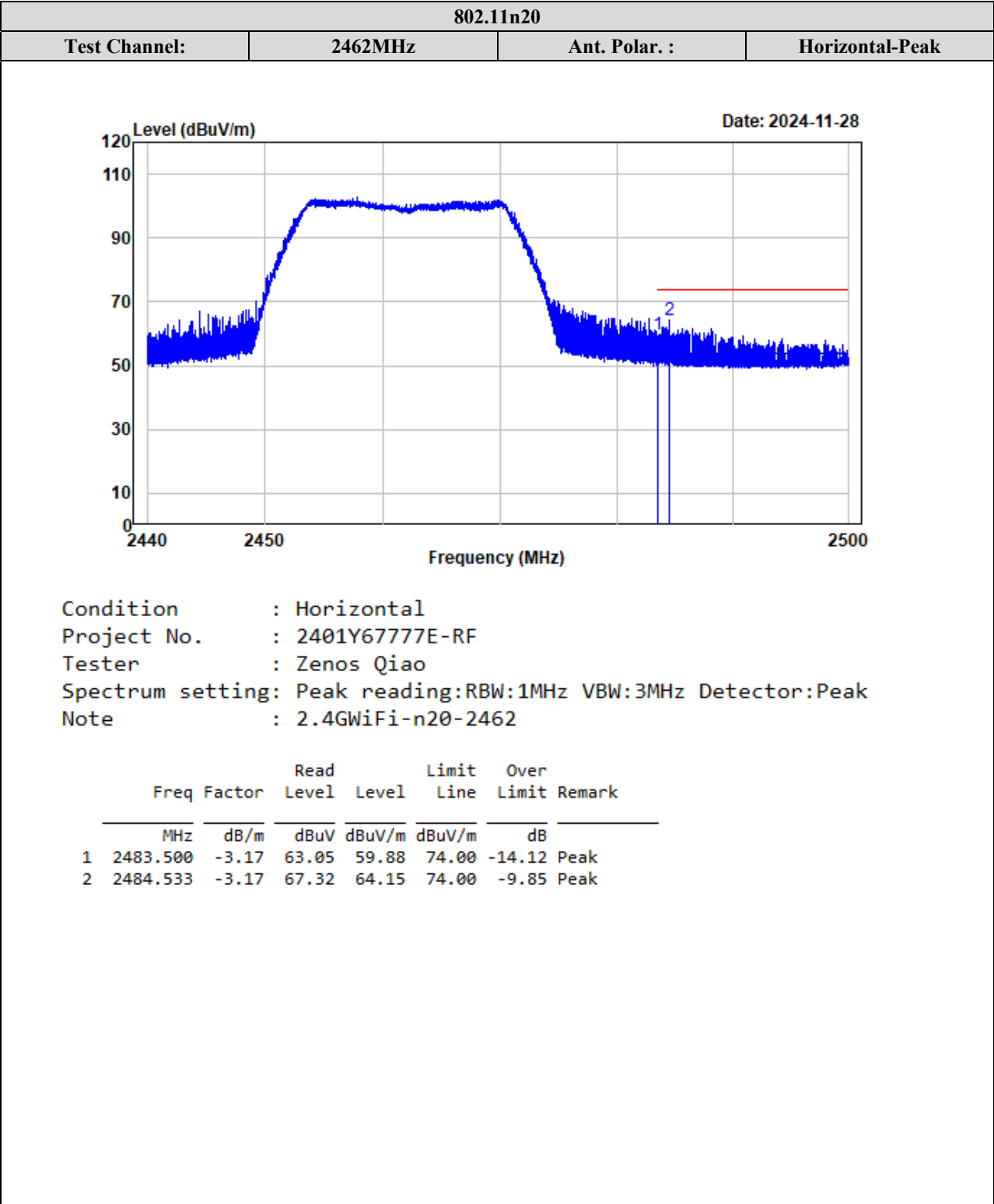
Tester : Zenos Qiao

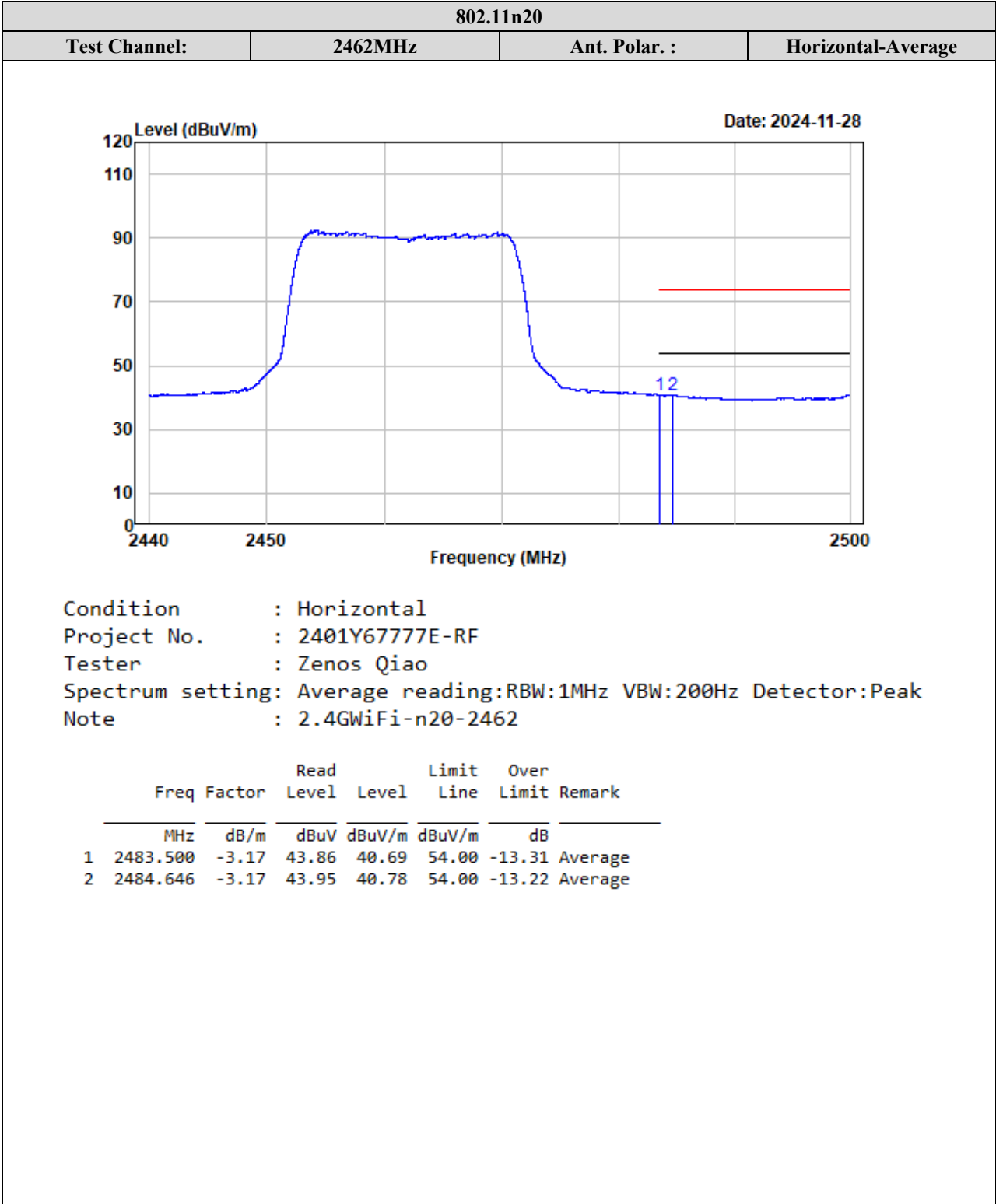
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak

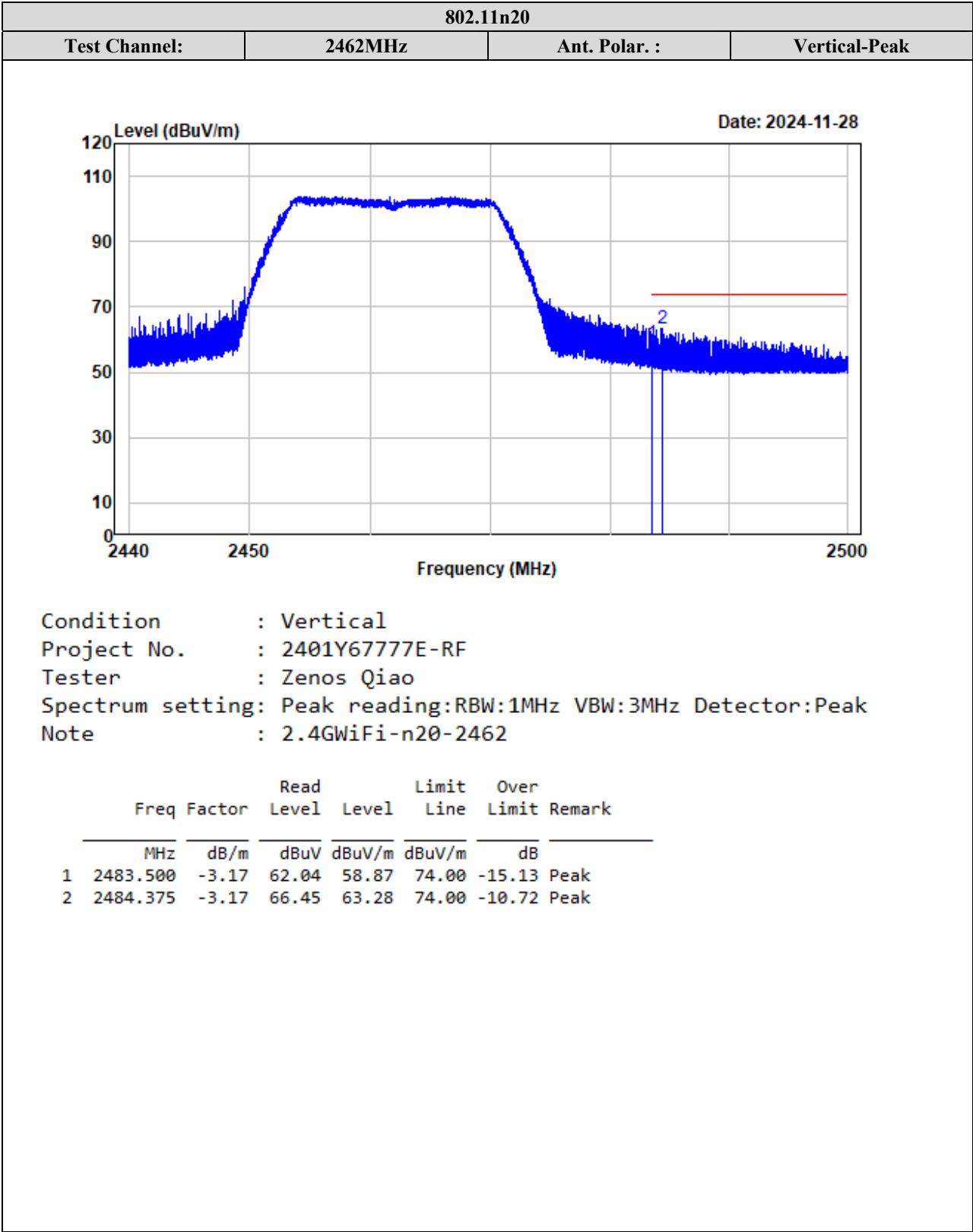
Note : 2.4GWiFi-n20-2412

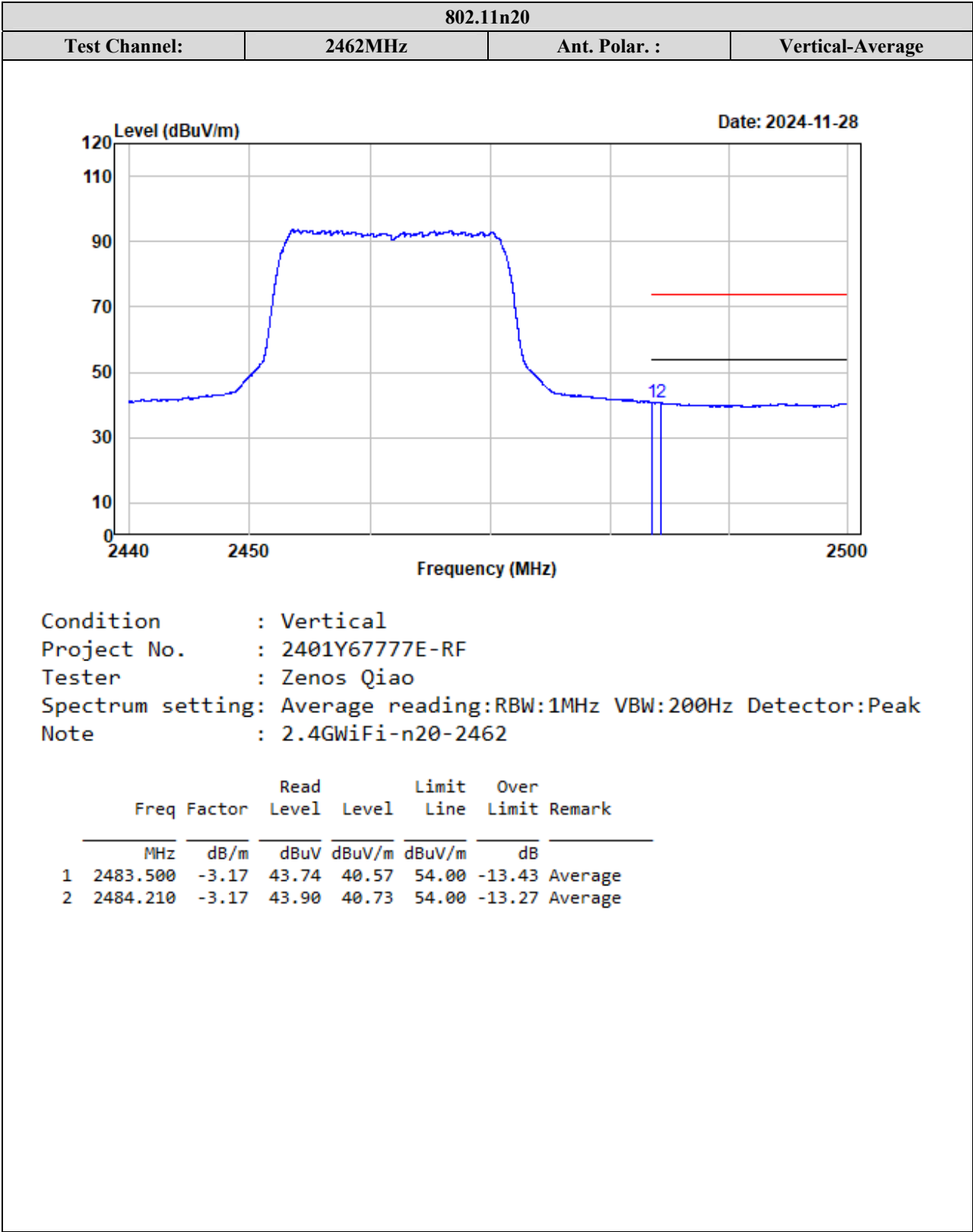
		Read		Limit	Over	Remark
Freq Factor		Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2381.249	-3.19	65.54	62.35	74.00	-11.65 Peak
2	2390.000	-3.20	61.50	58.30	74.00	-15.70 Peak

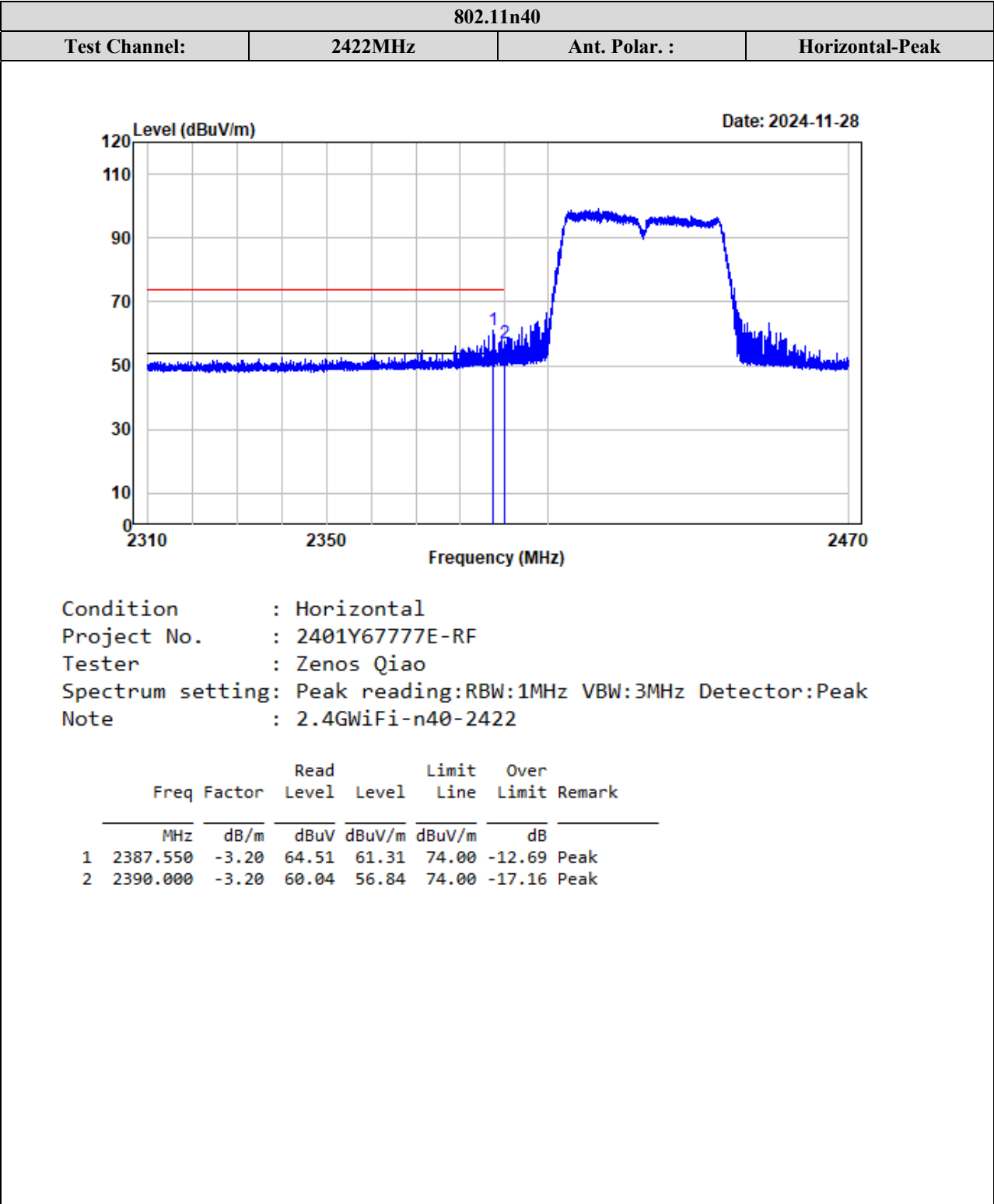


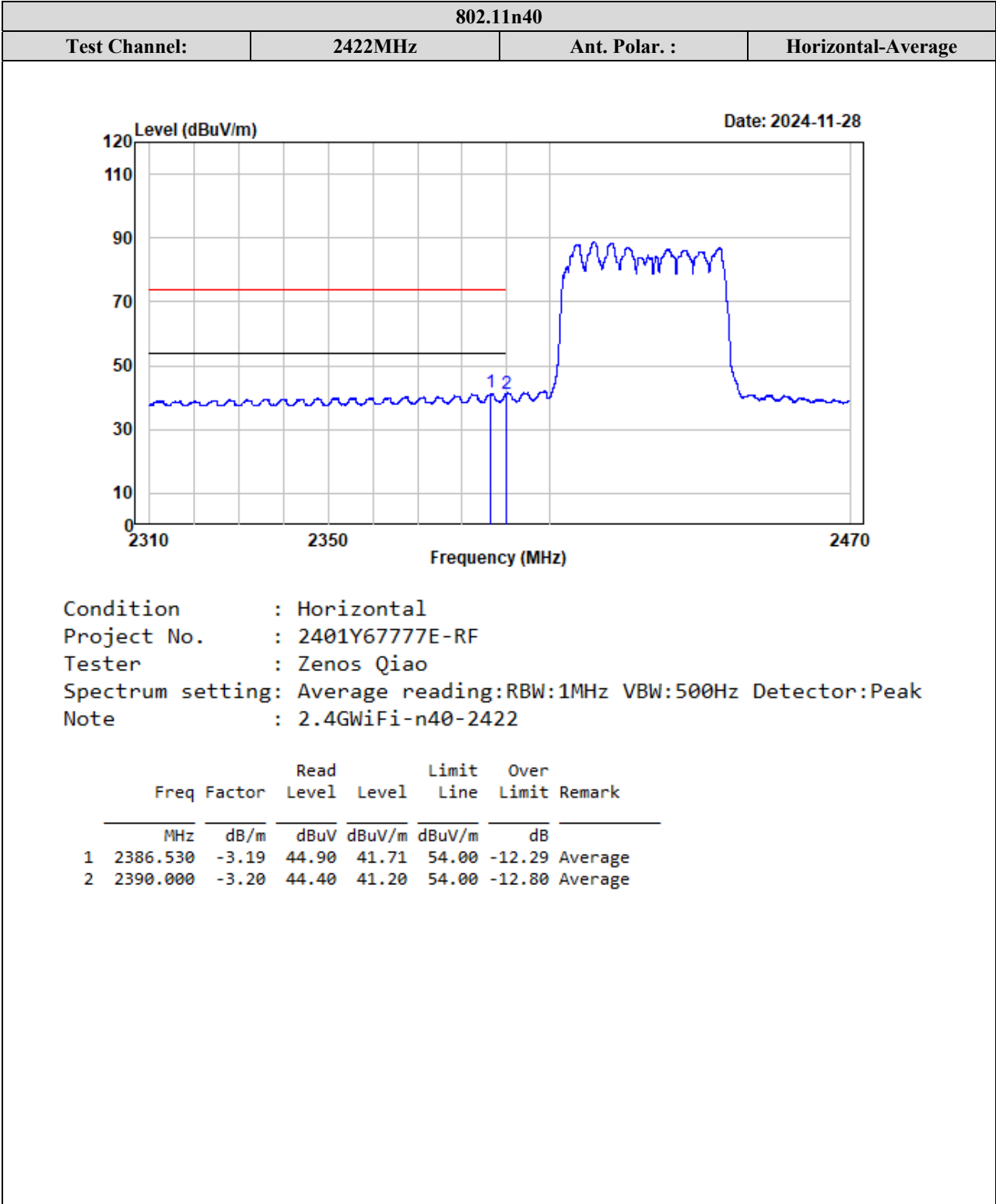


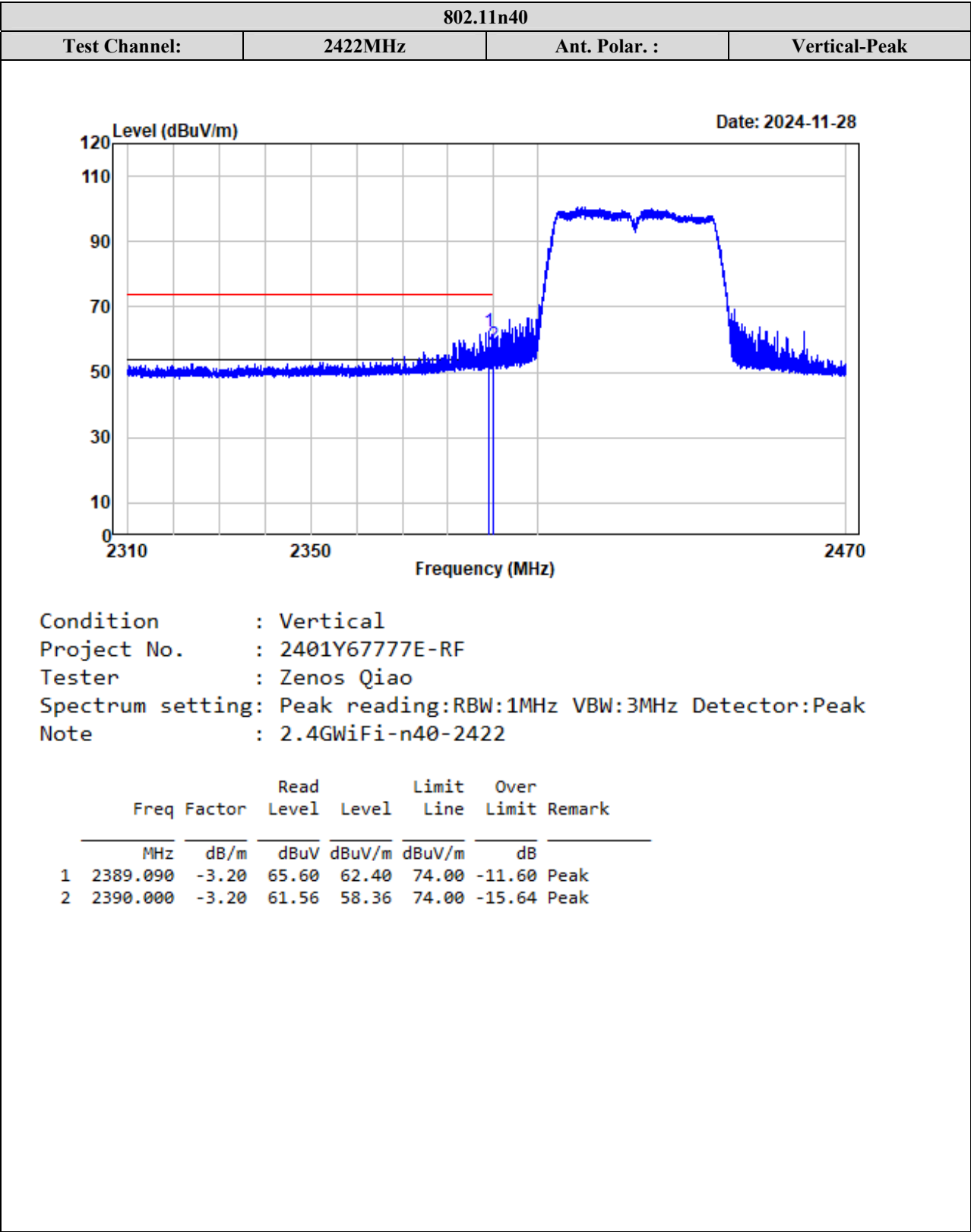


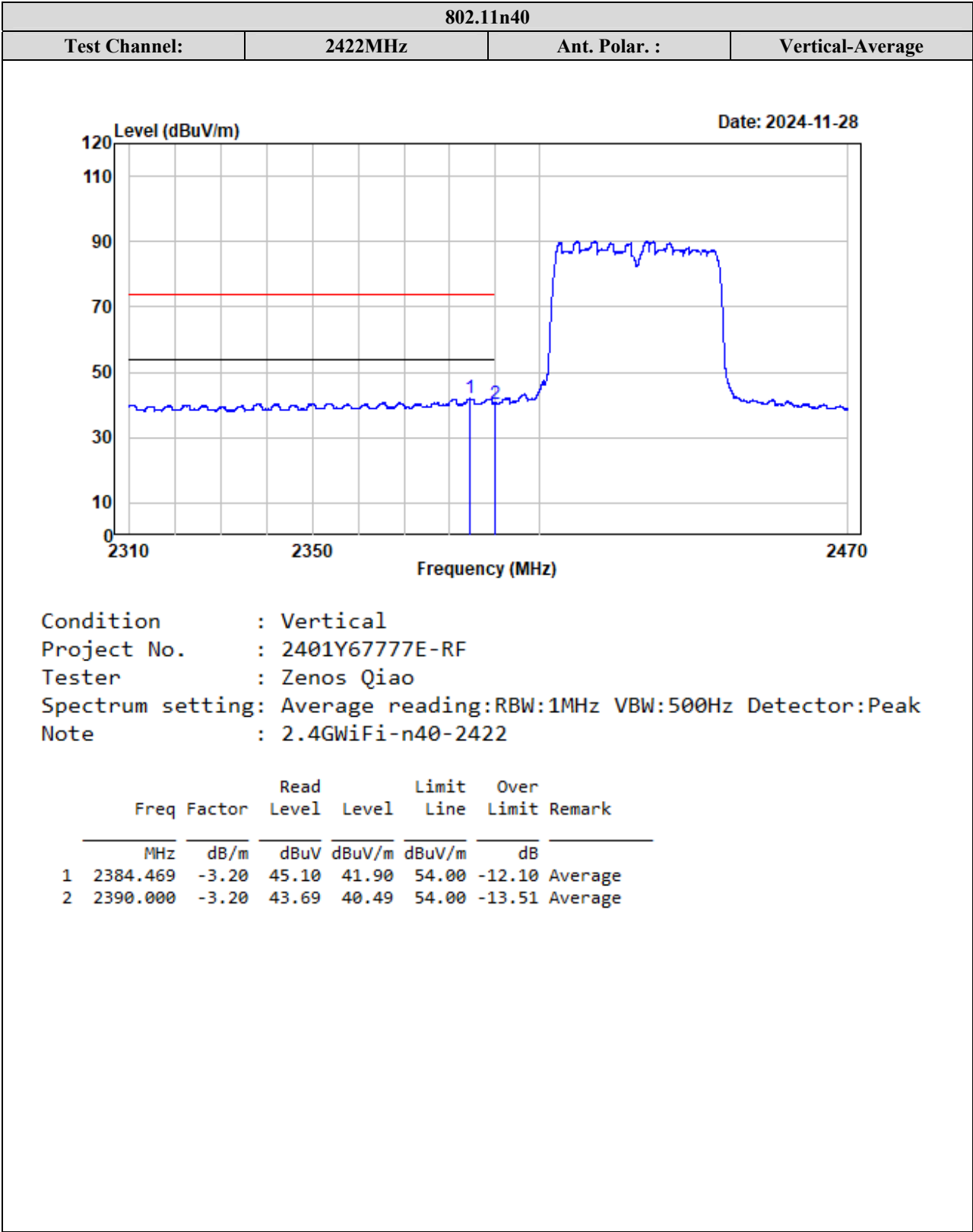


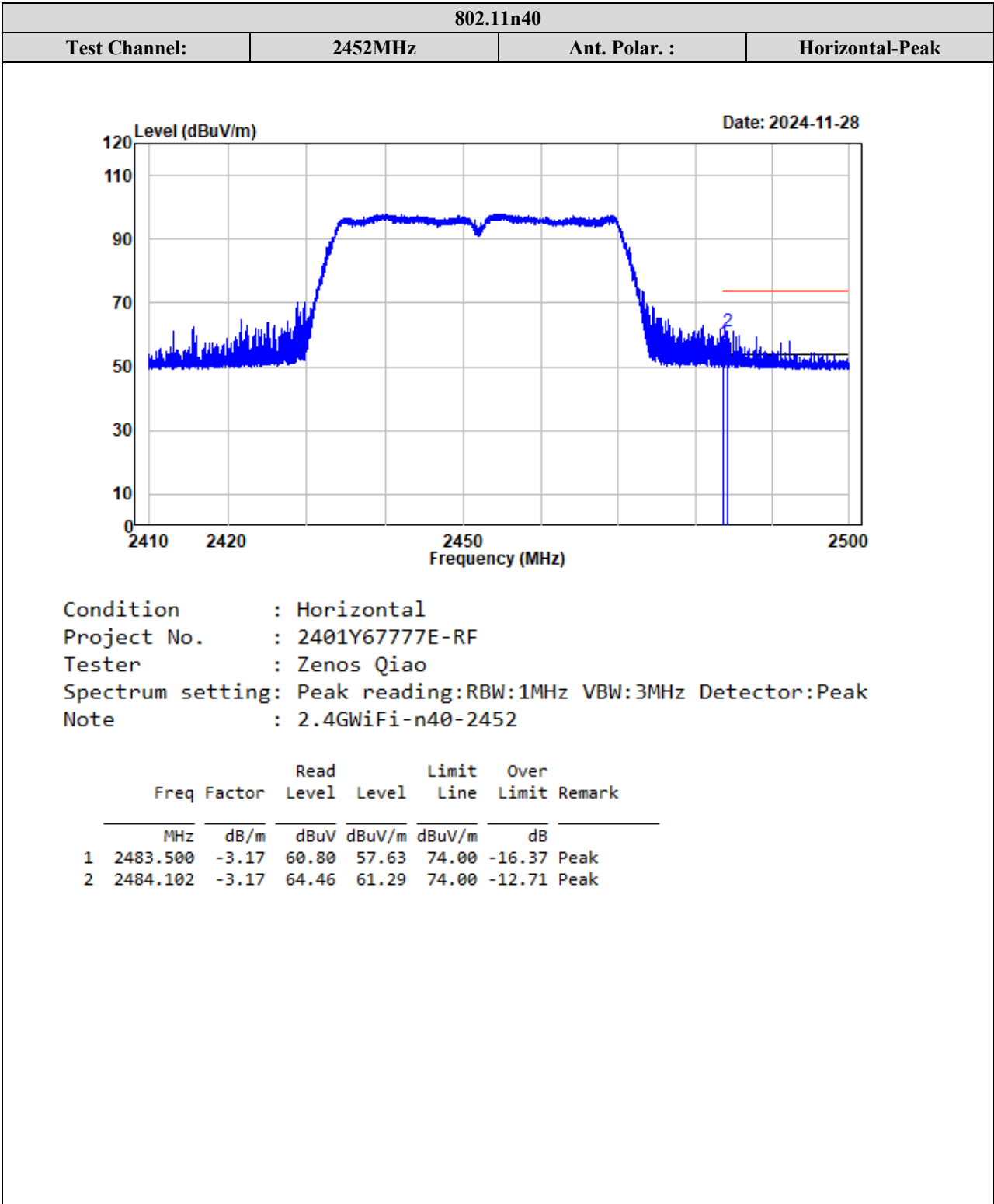












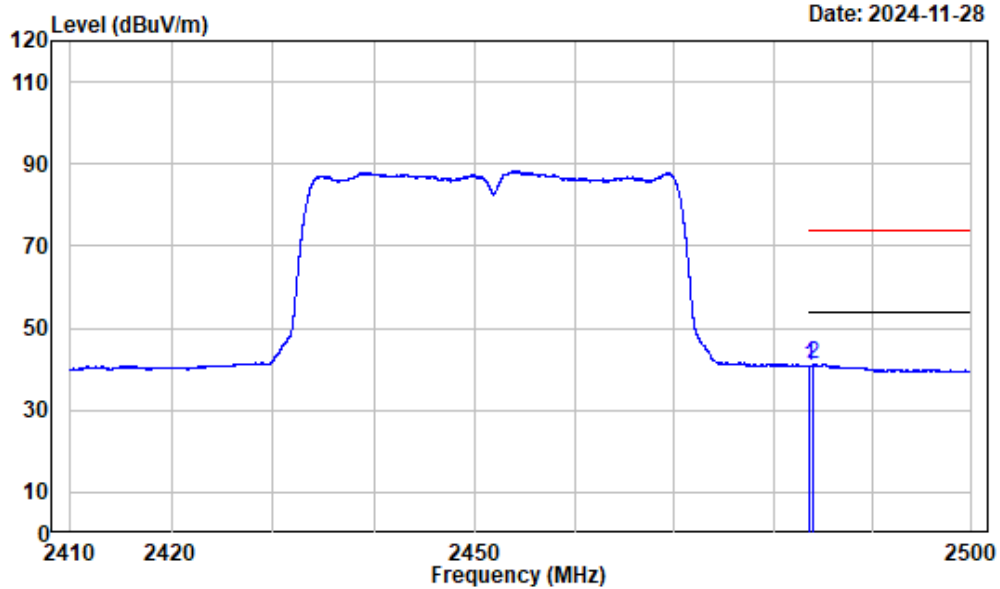
802.11n40

Test Channel:

2452MHz

Ant. Polar. :

Horizontal-Average



Condition : Horizontal

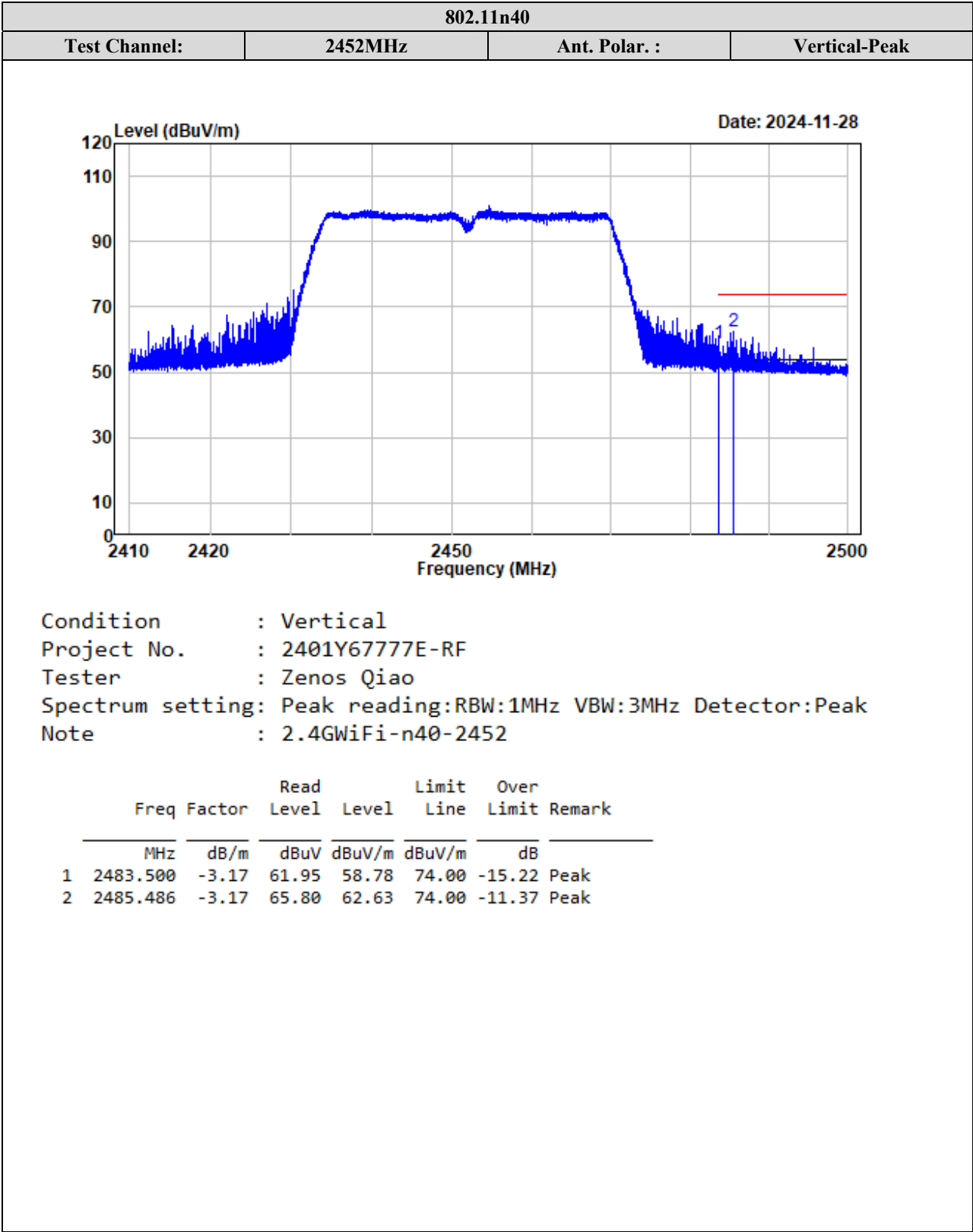
Project No. : 2401Y67777E-RF

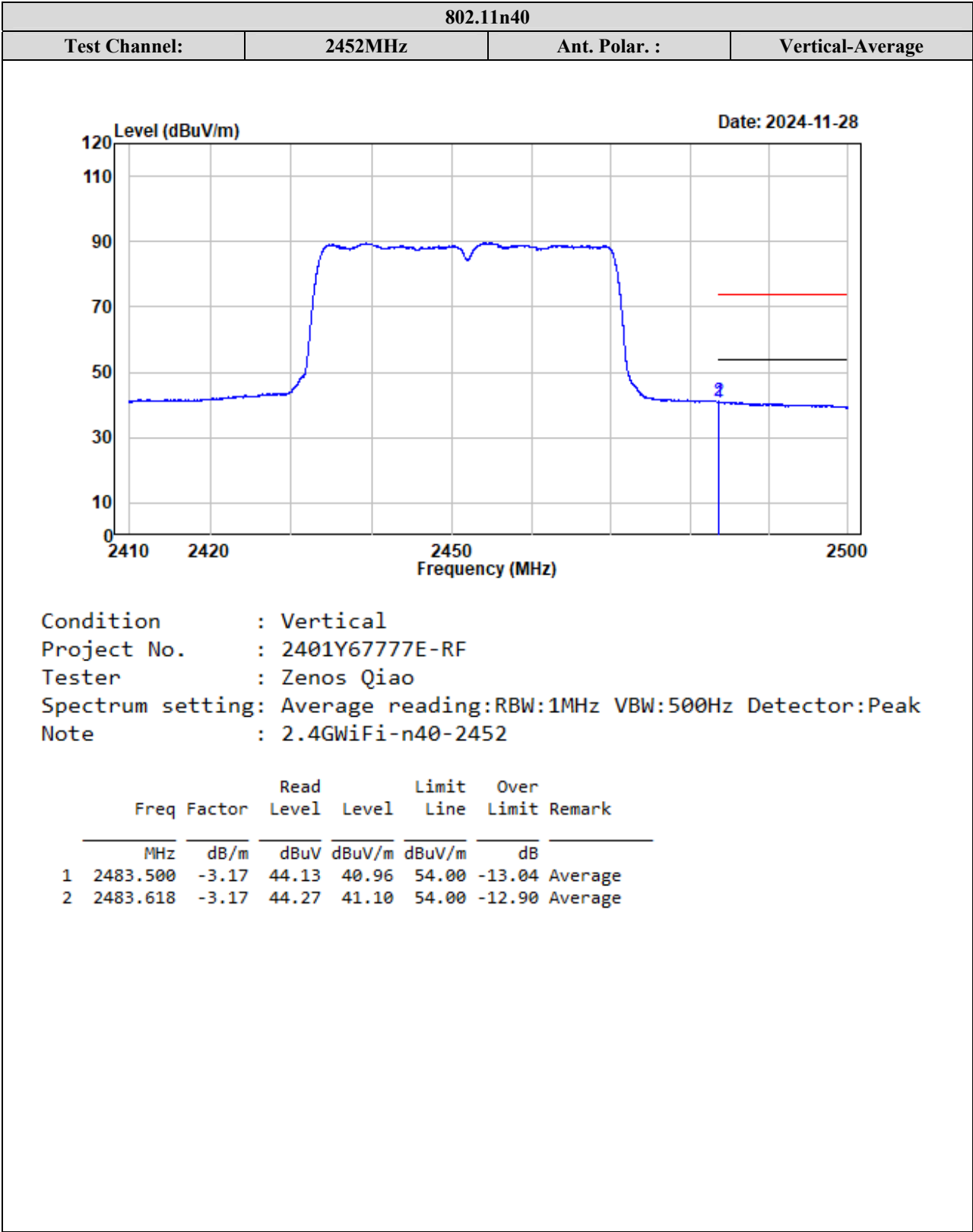
Tester : Zenos Qiao

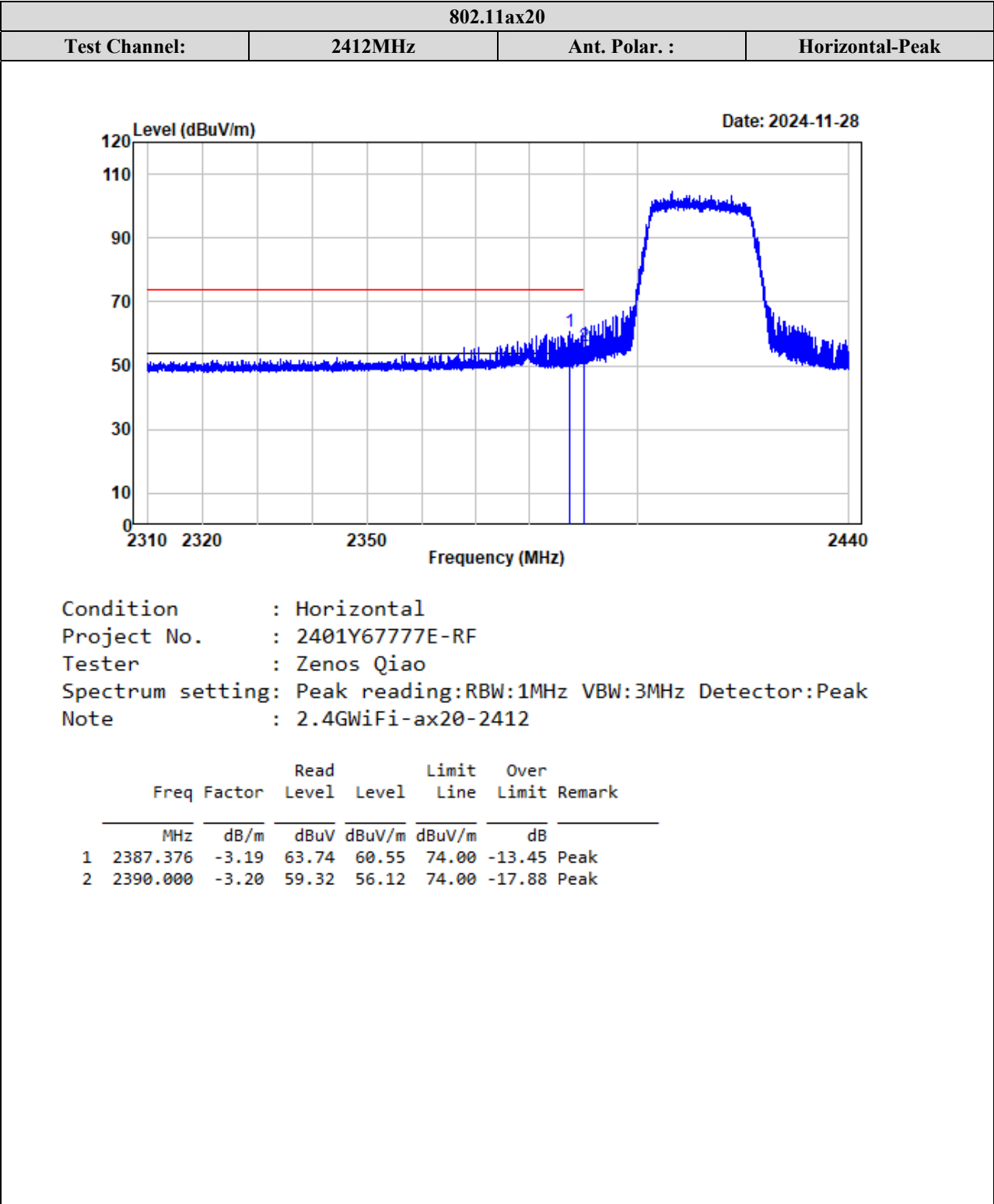
Spectrum setting: Average reading:RBW:1MHz VBW:500Hz Detector:Peak

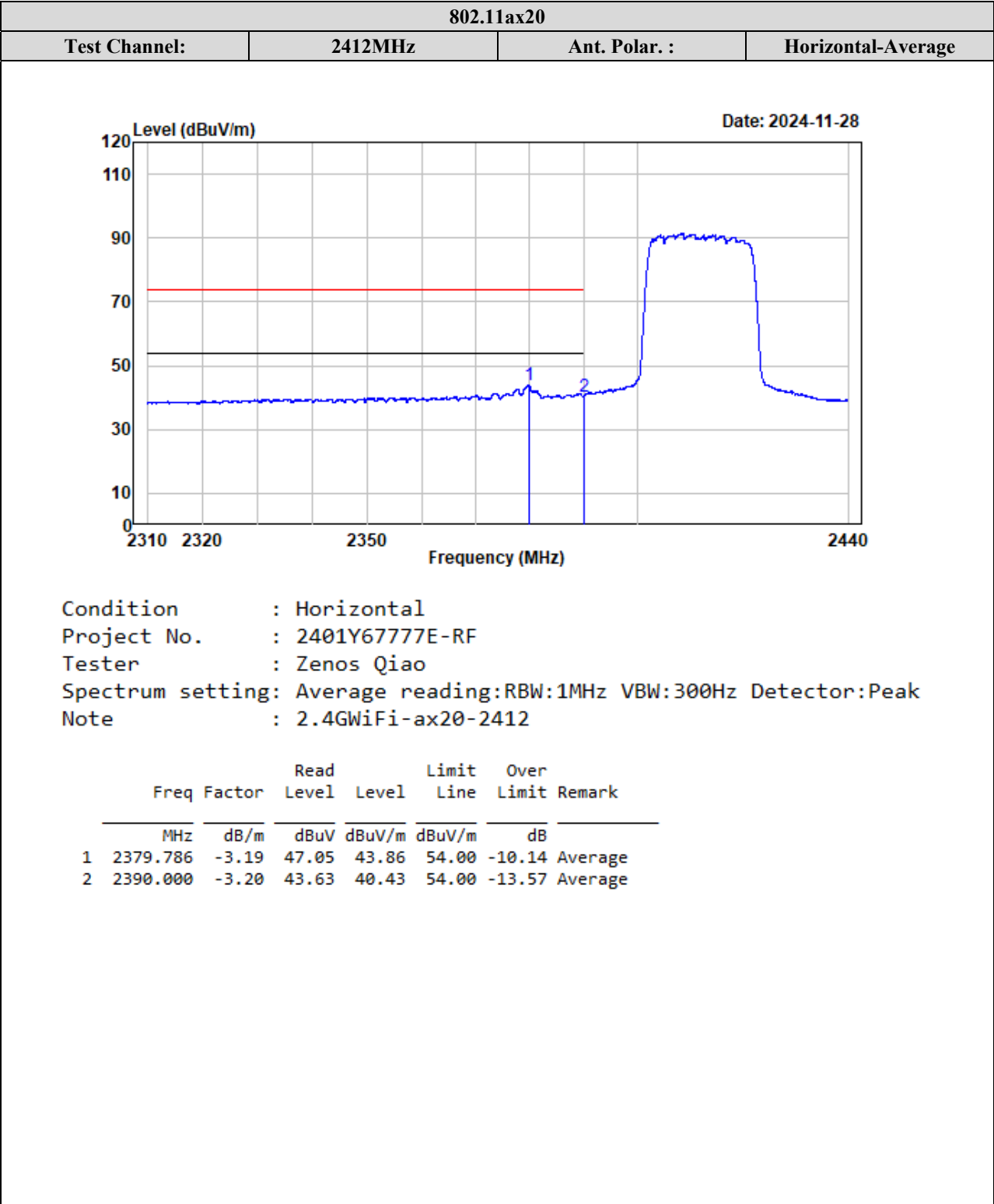
Note : 2.4GWiFi-n40-2452

		Read		Limit	Over	Remark
Freq	Factor	Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 2483.500	-3.17	43.94	40.77	54.00	-13.23	Average
2 2484.023	-3.17	44.42	41.25	54.00	-12.75	Average









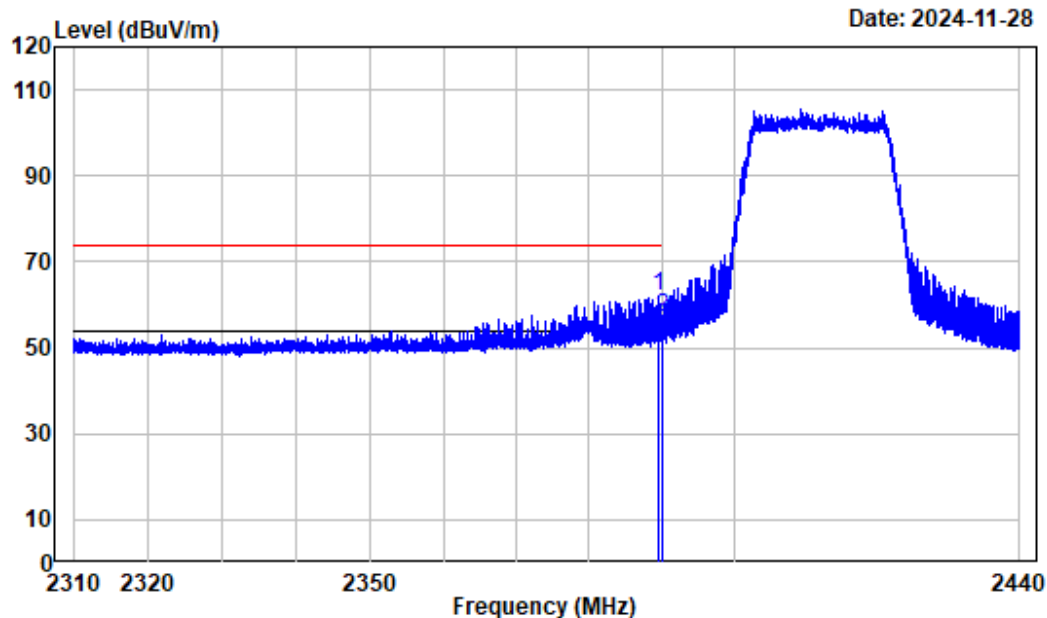
802.11ax20

Test Channel:

2412MHz

Ant. Polar. :

Vertical-Peak



Condition : Vertical

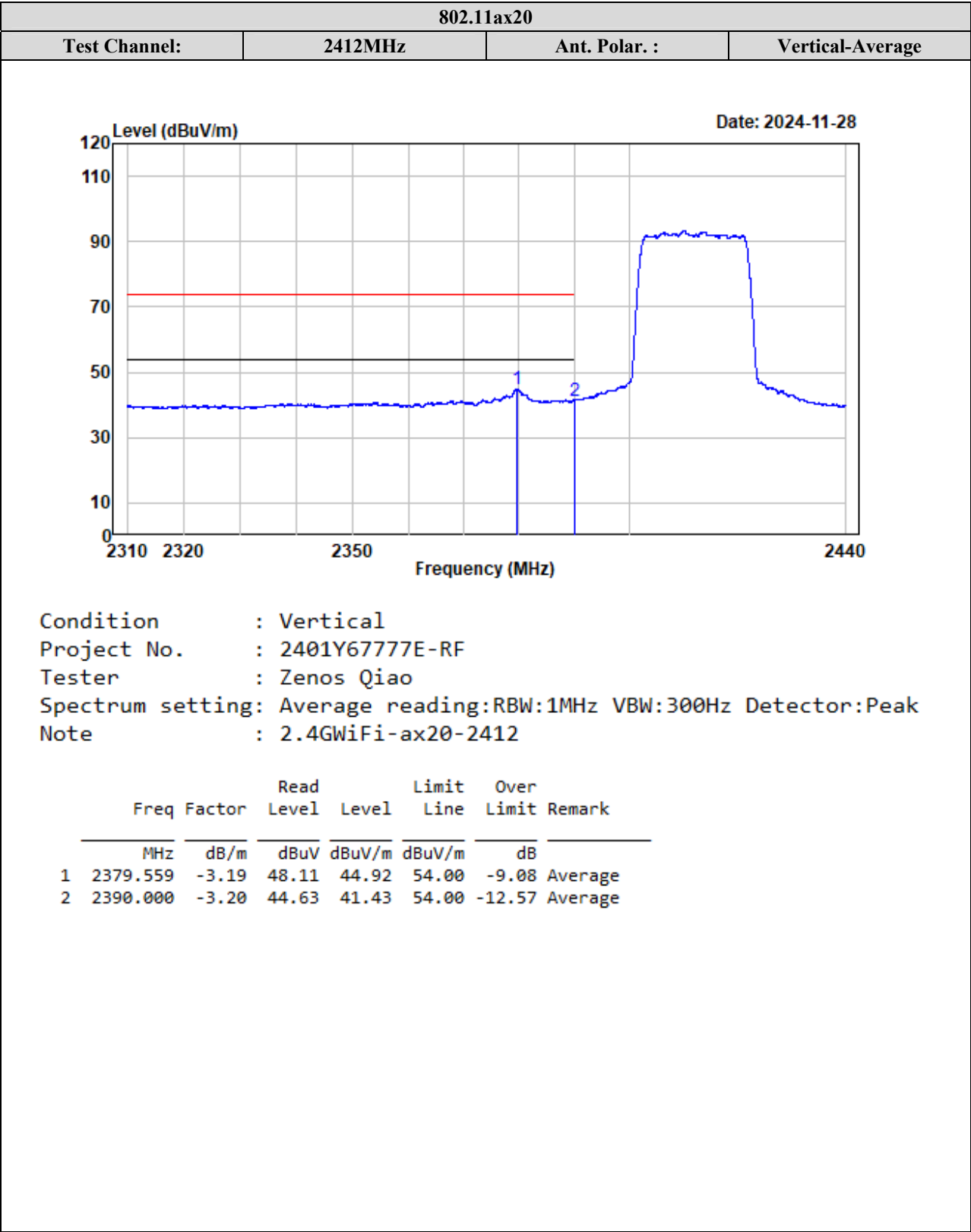
Project No. : 2401Y67777E-RF

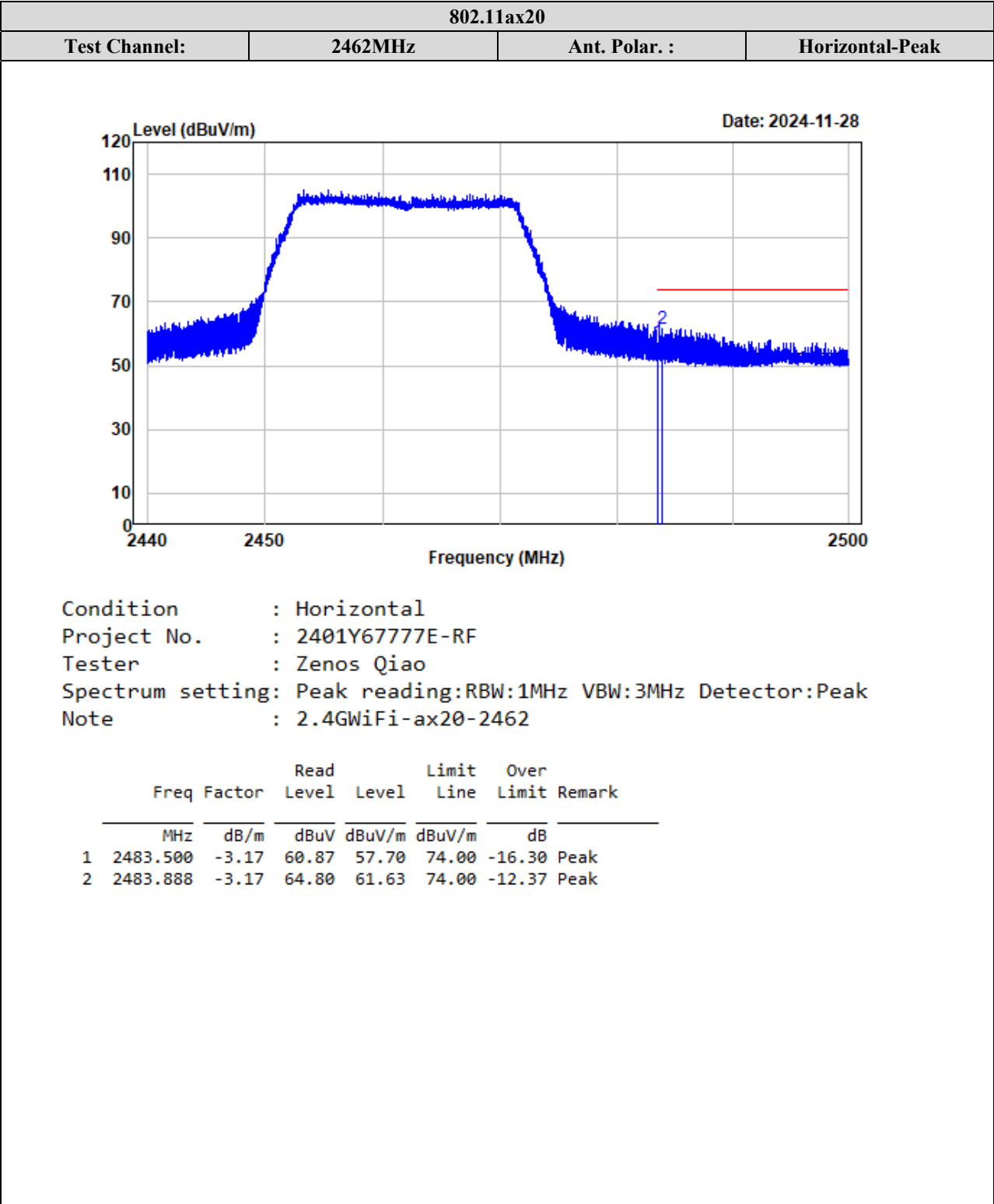
Tester : Zenos Qiao

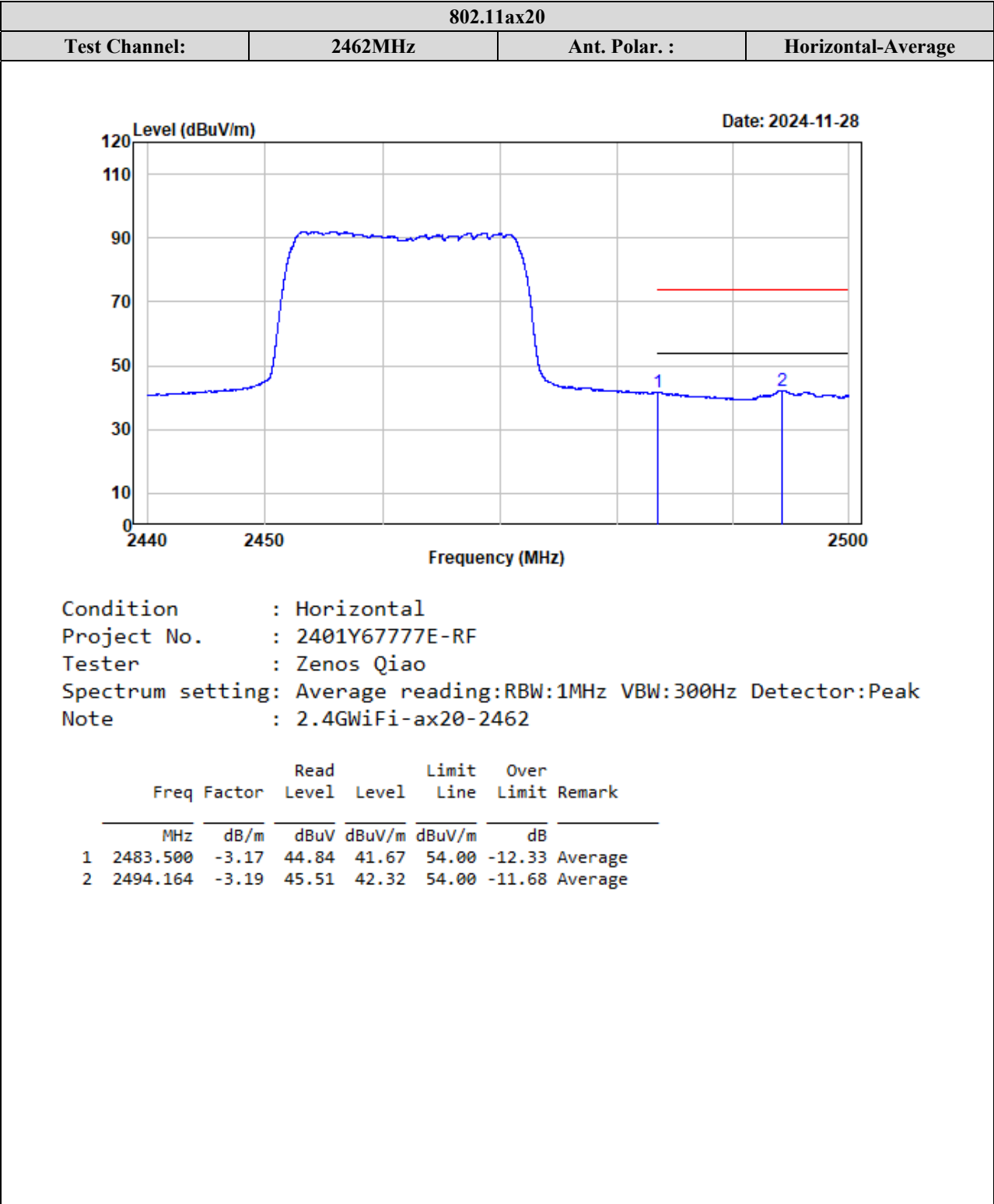
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak

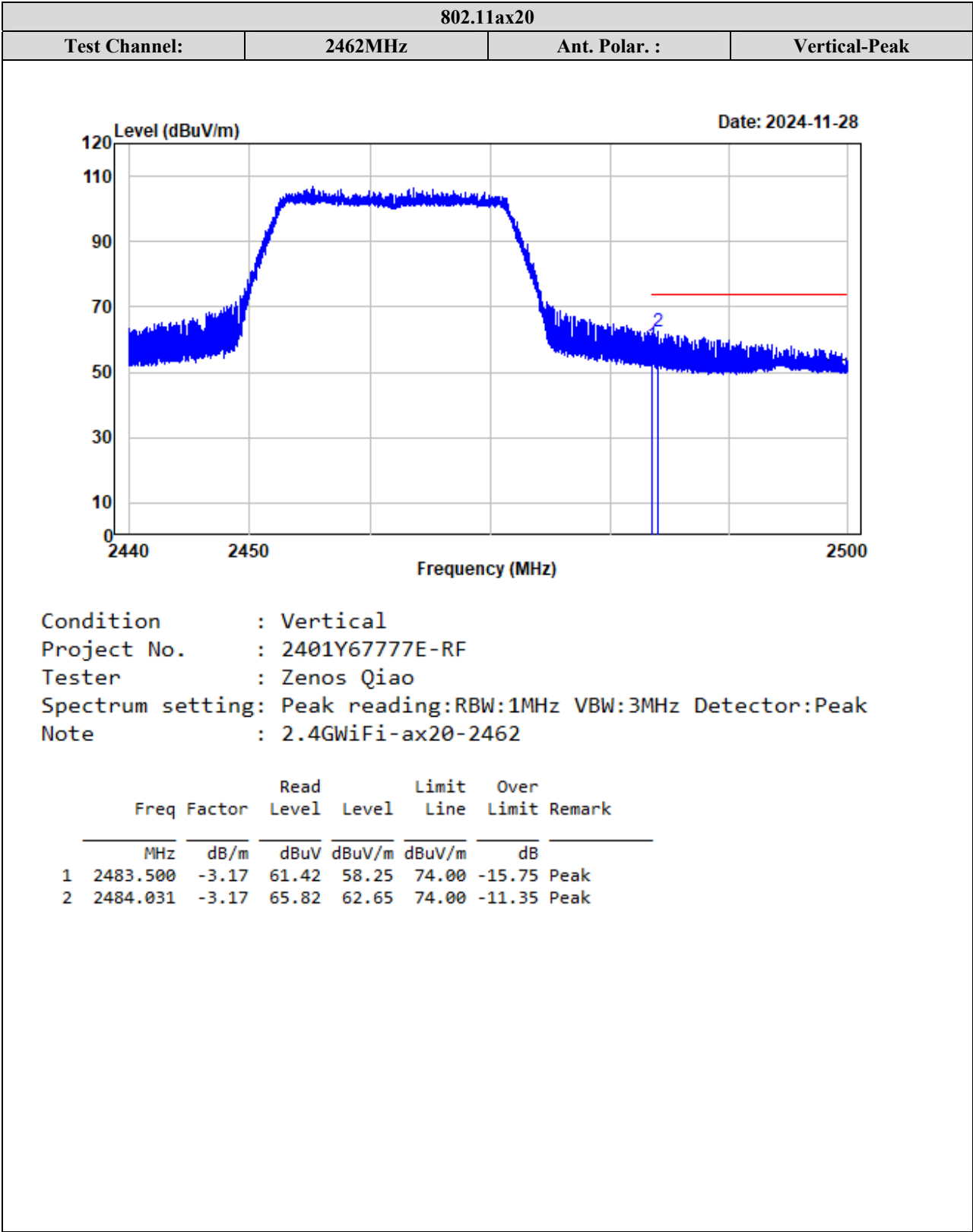
Note : 2.4GWiFi-ax20-2412

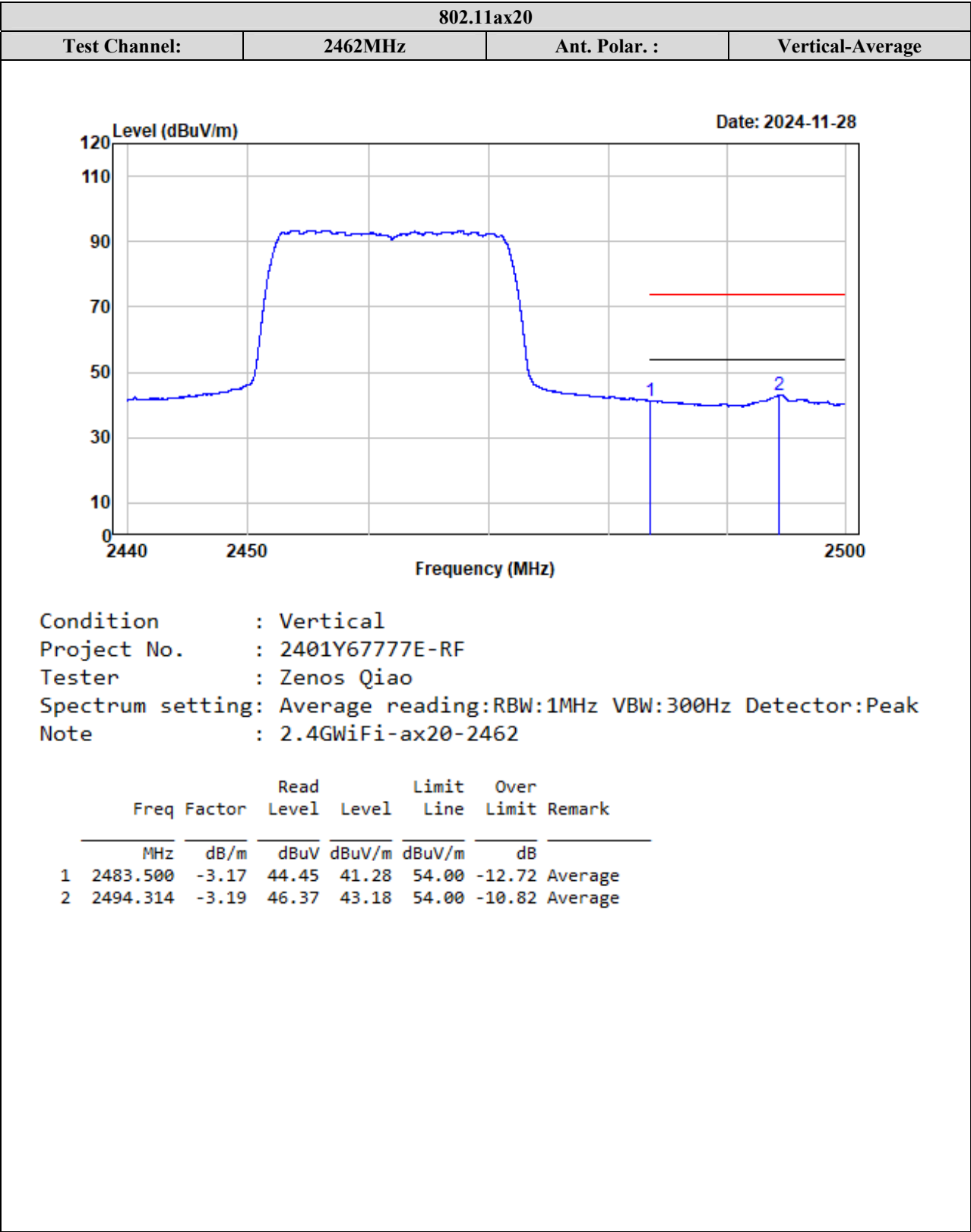
		Read		Limit	Over	Remark
Freq Factor		Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 2389.586	-3.20	65.18	61.98	74.00	-12.02	Peak
2 2390.000	-3.20	60.44	57.24	74.00	-16.76	Peak

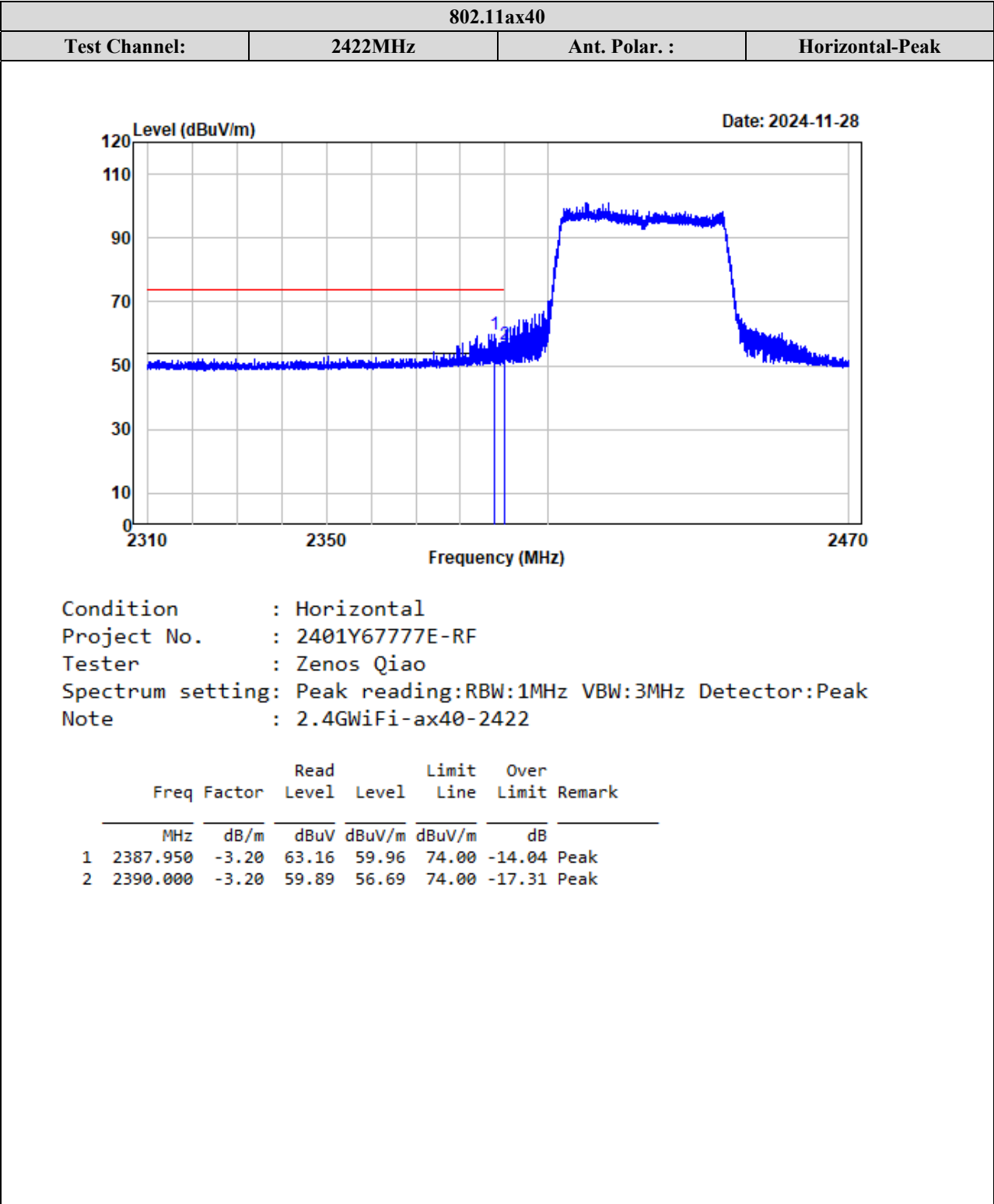












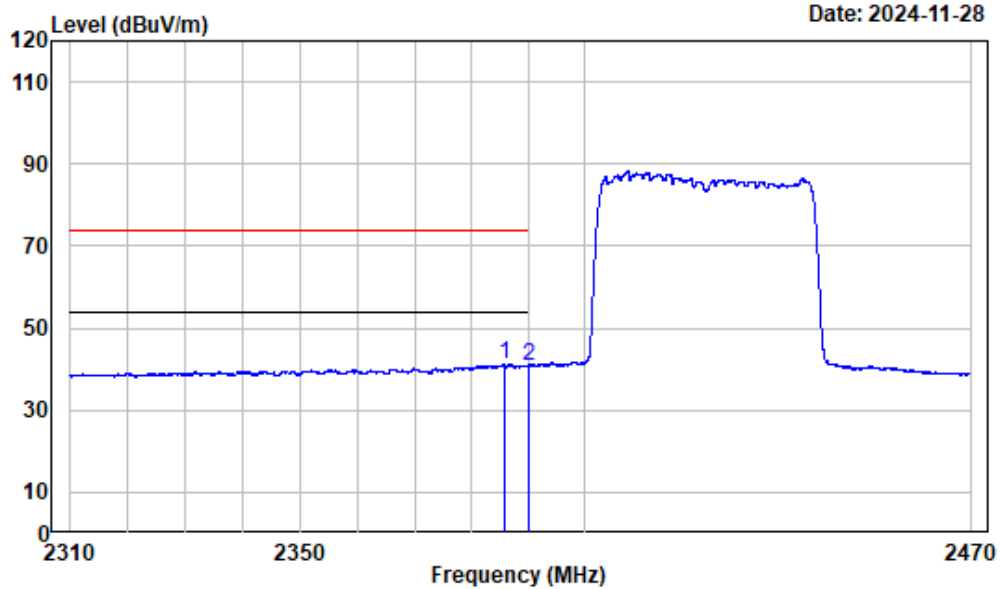
802.11ax40

Test Channel:

2422MHz

Ant. Polar. :

Horizontal-Average



Condition : Horizontal

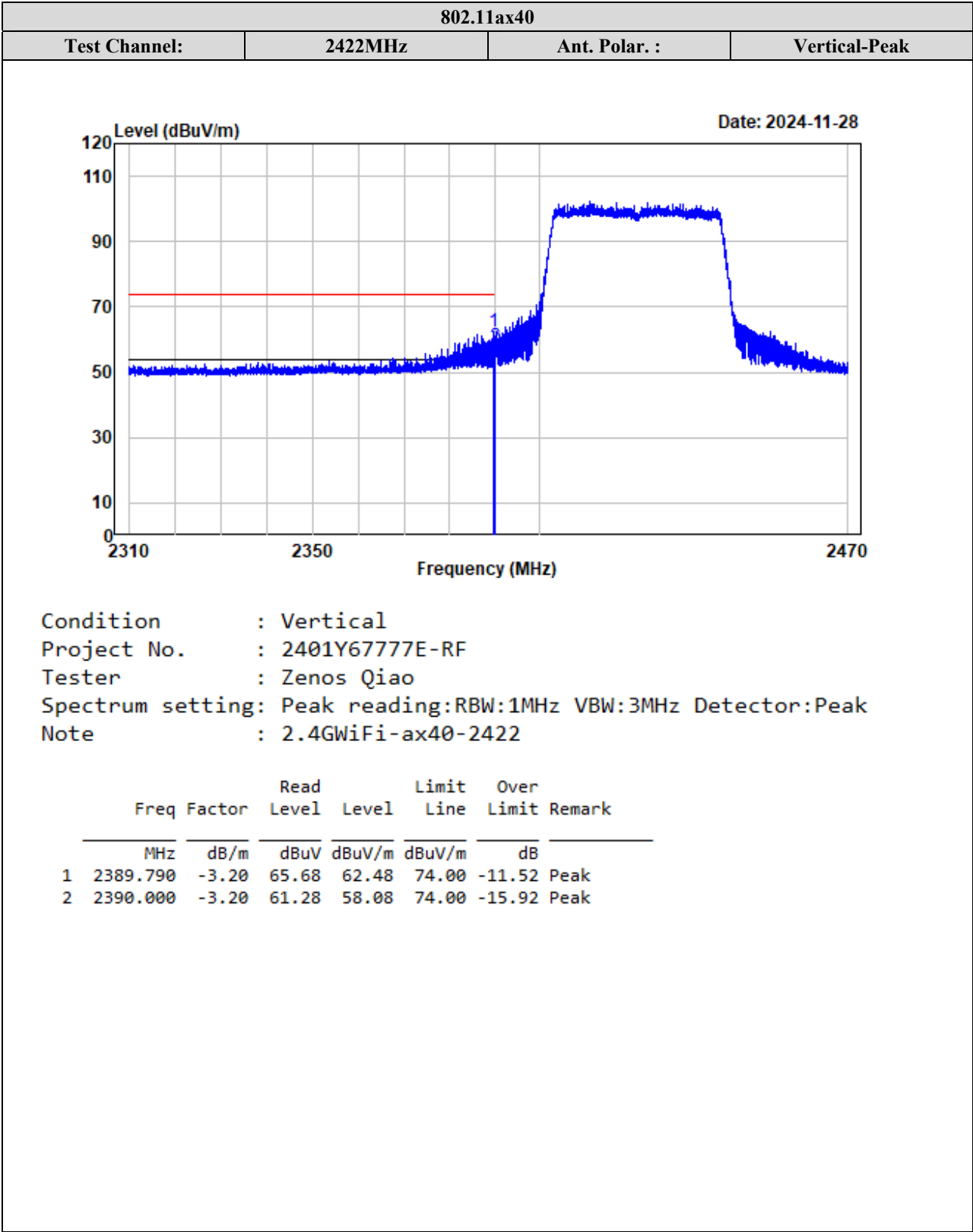
Project No. : 2401Y67777E-RF

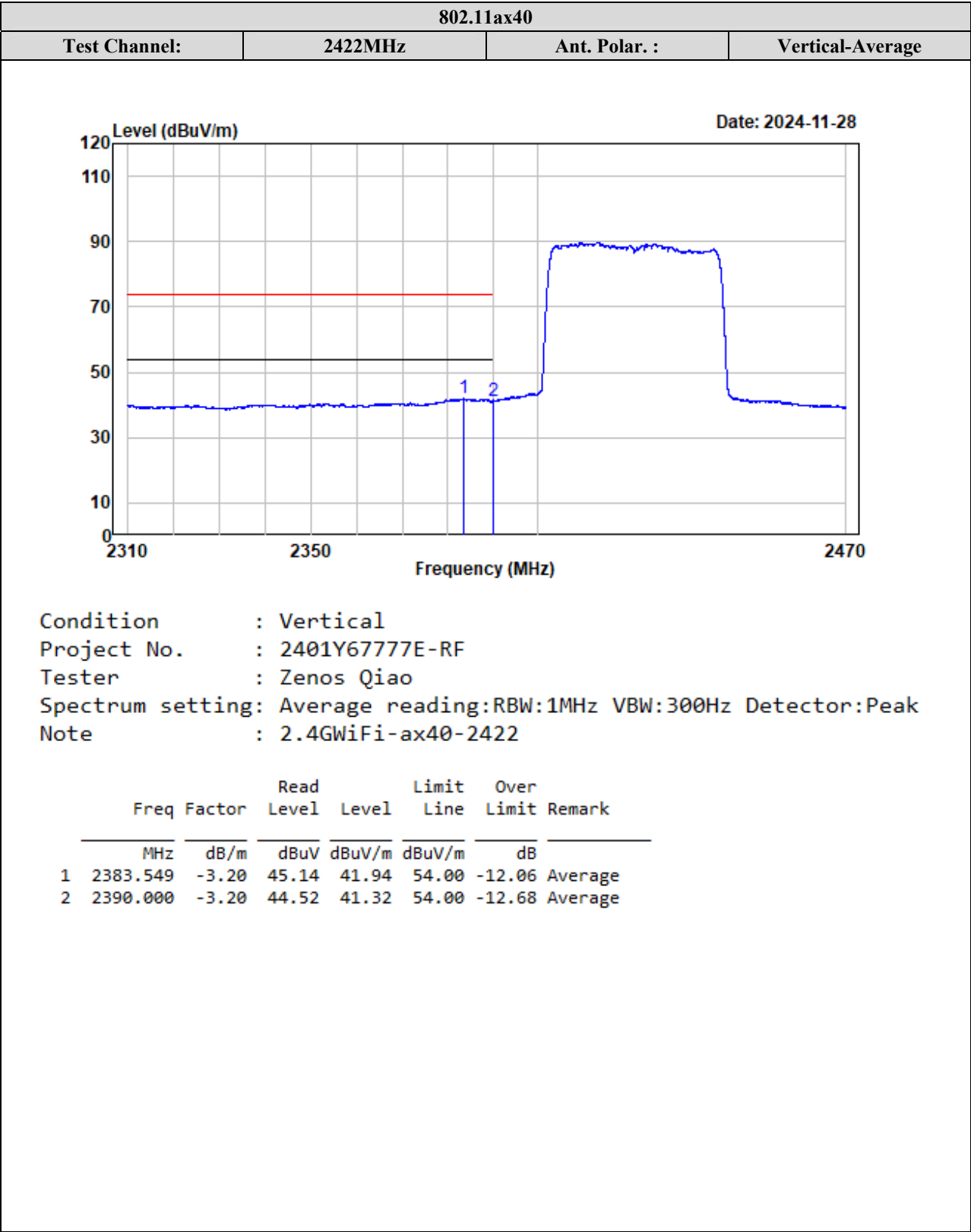
Tester : Zenos Qiao

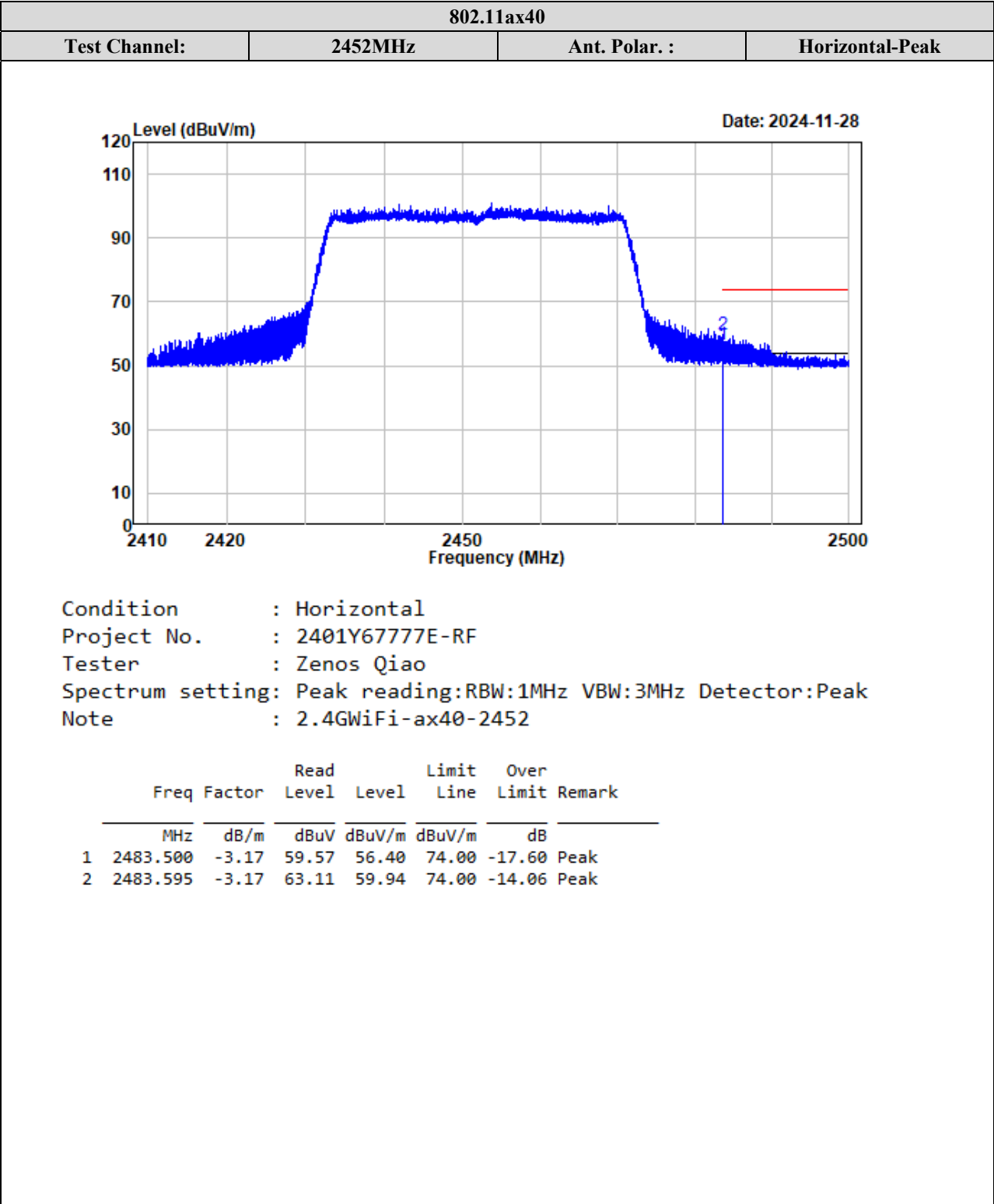
Spectrum setting: Average reading:RBW:1MHz VBW:300Hz Detector:Peak

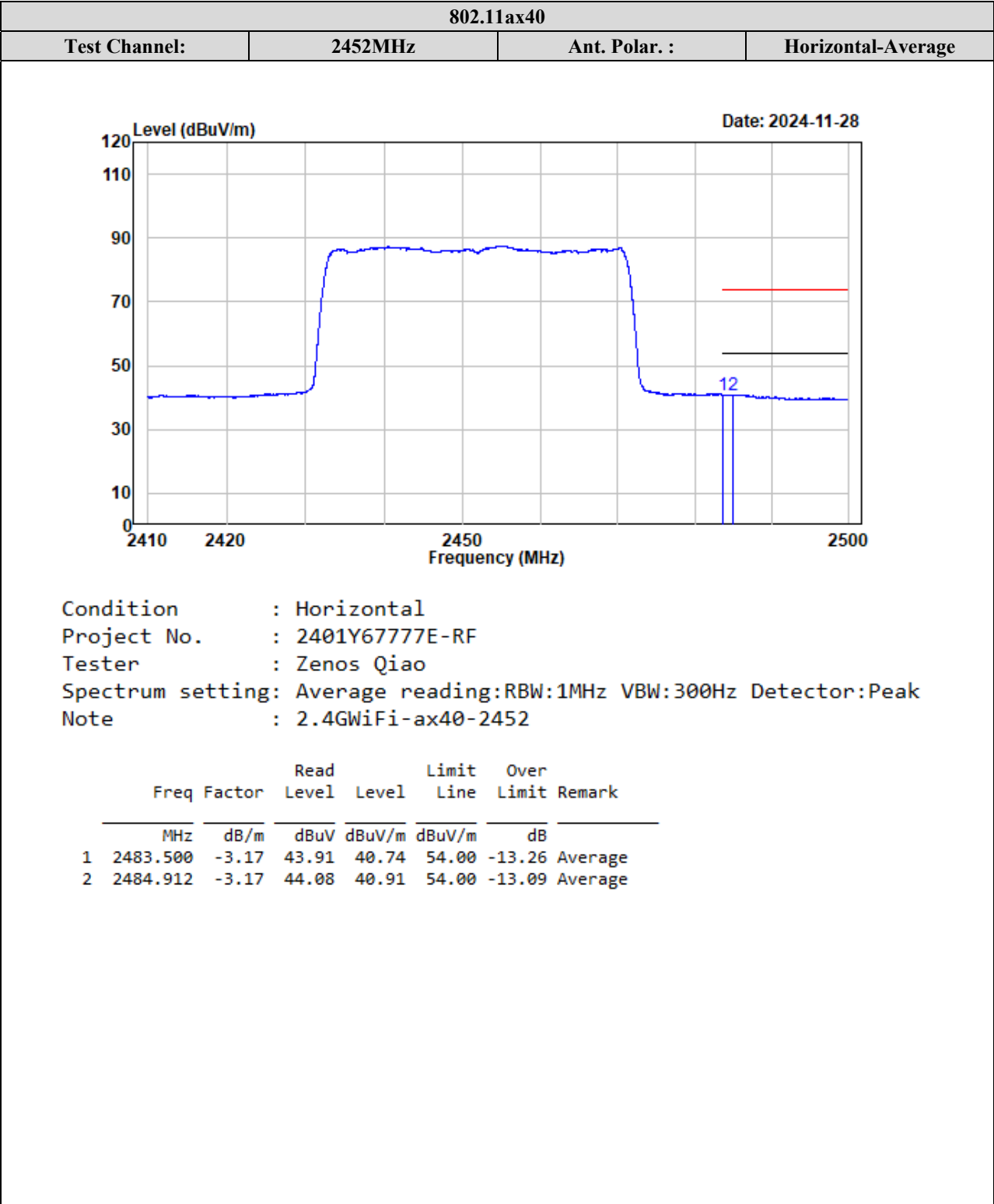
Note : 2.4GWiFi-ax40-2422

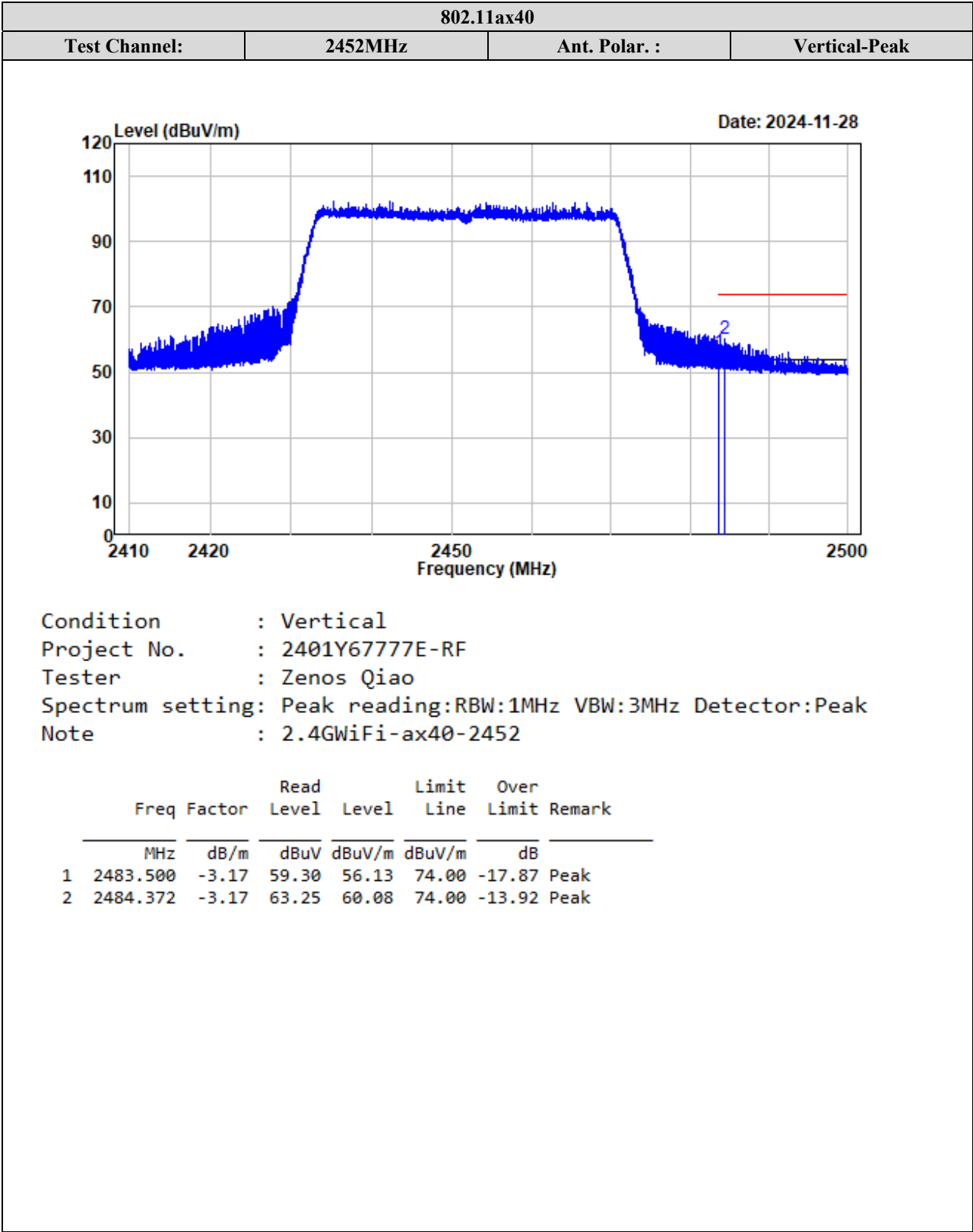
Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2385.770	-3.19	44.35	41.16	54.00	-12.84 Average
2	2390.000	-3.20	43.96	40.76	54.00	-13.24 Average

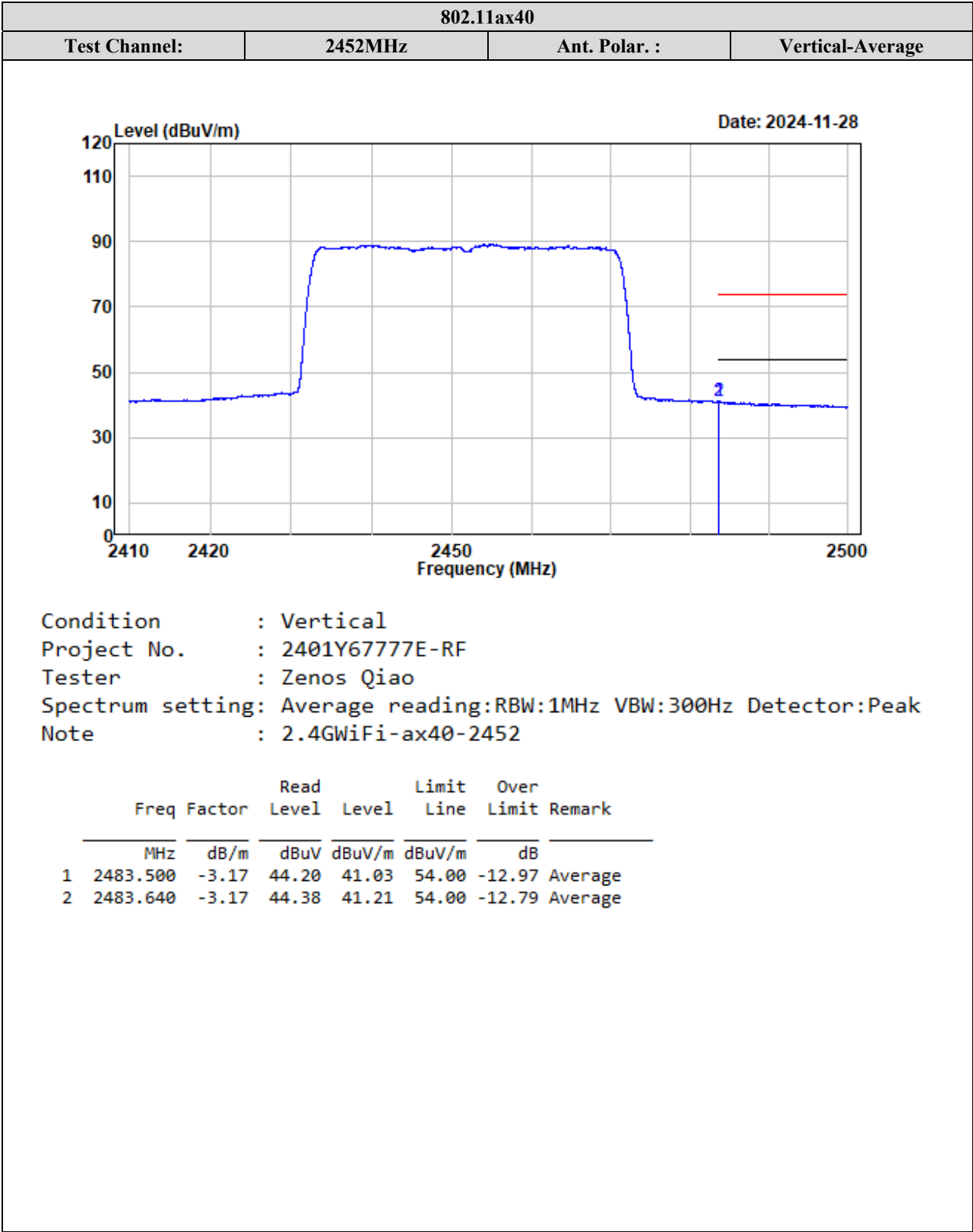






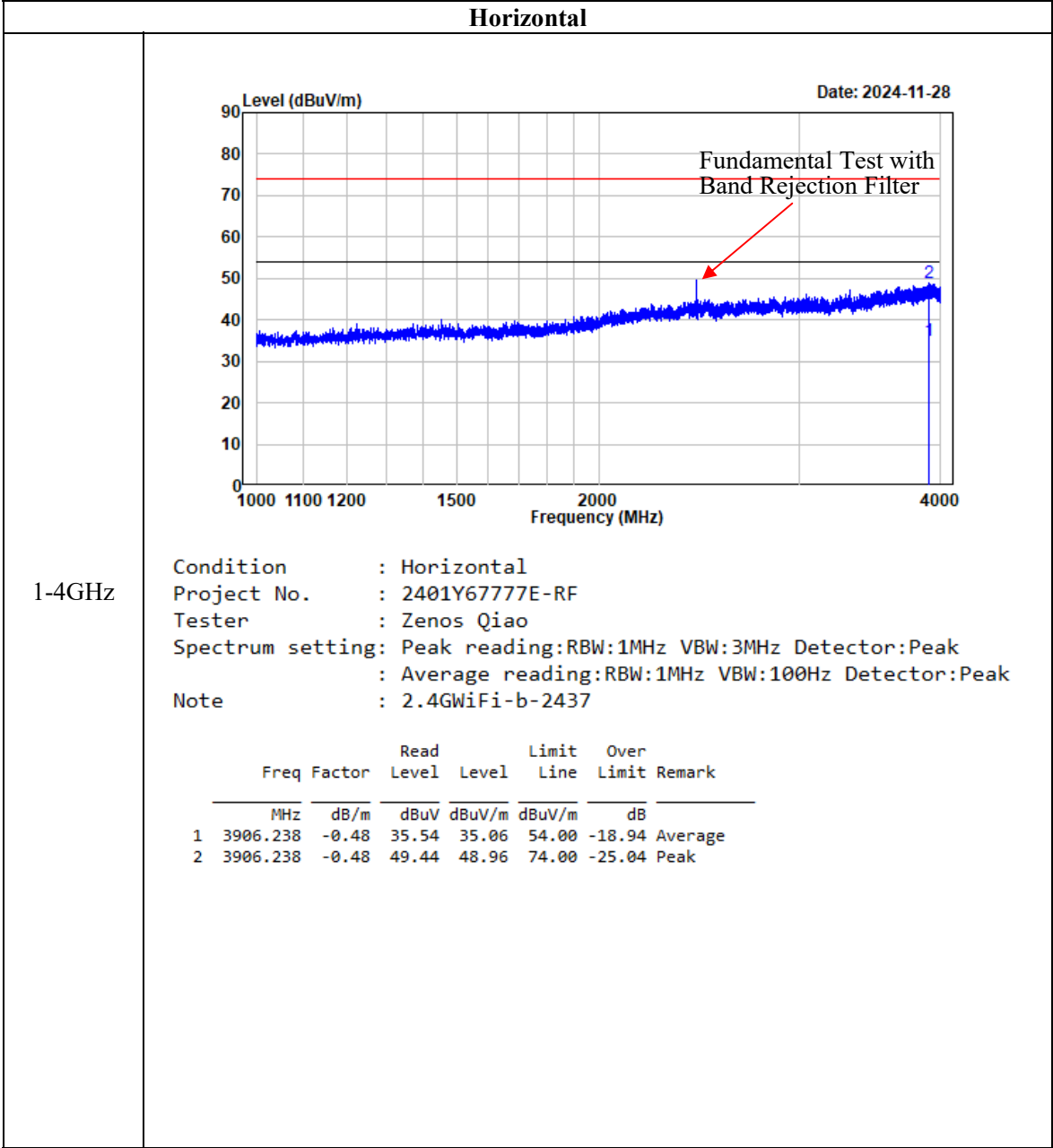


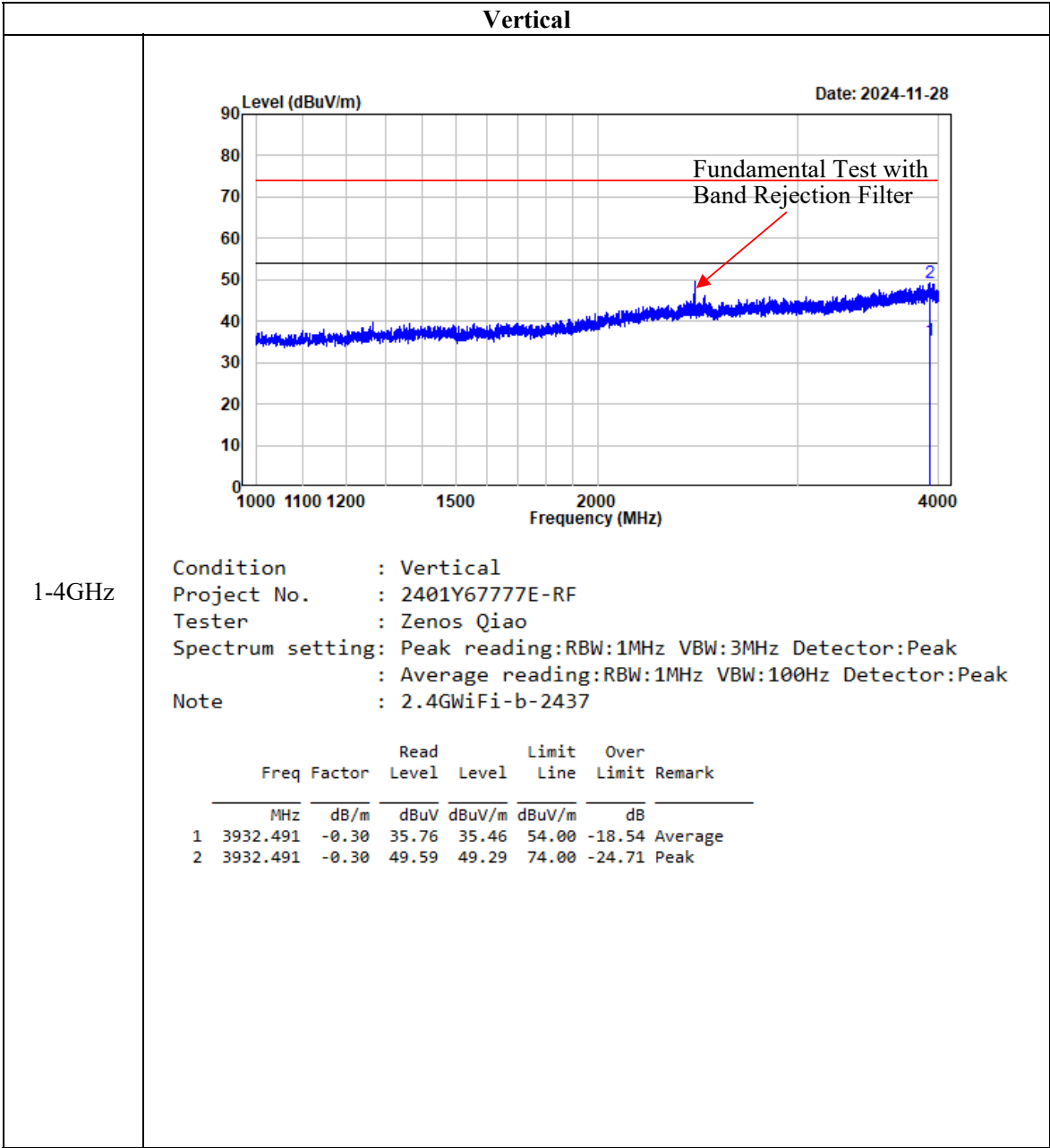


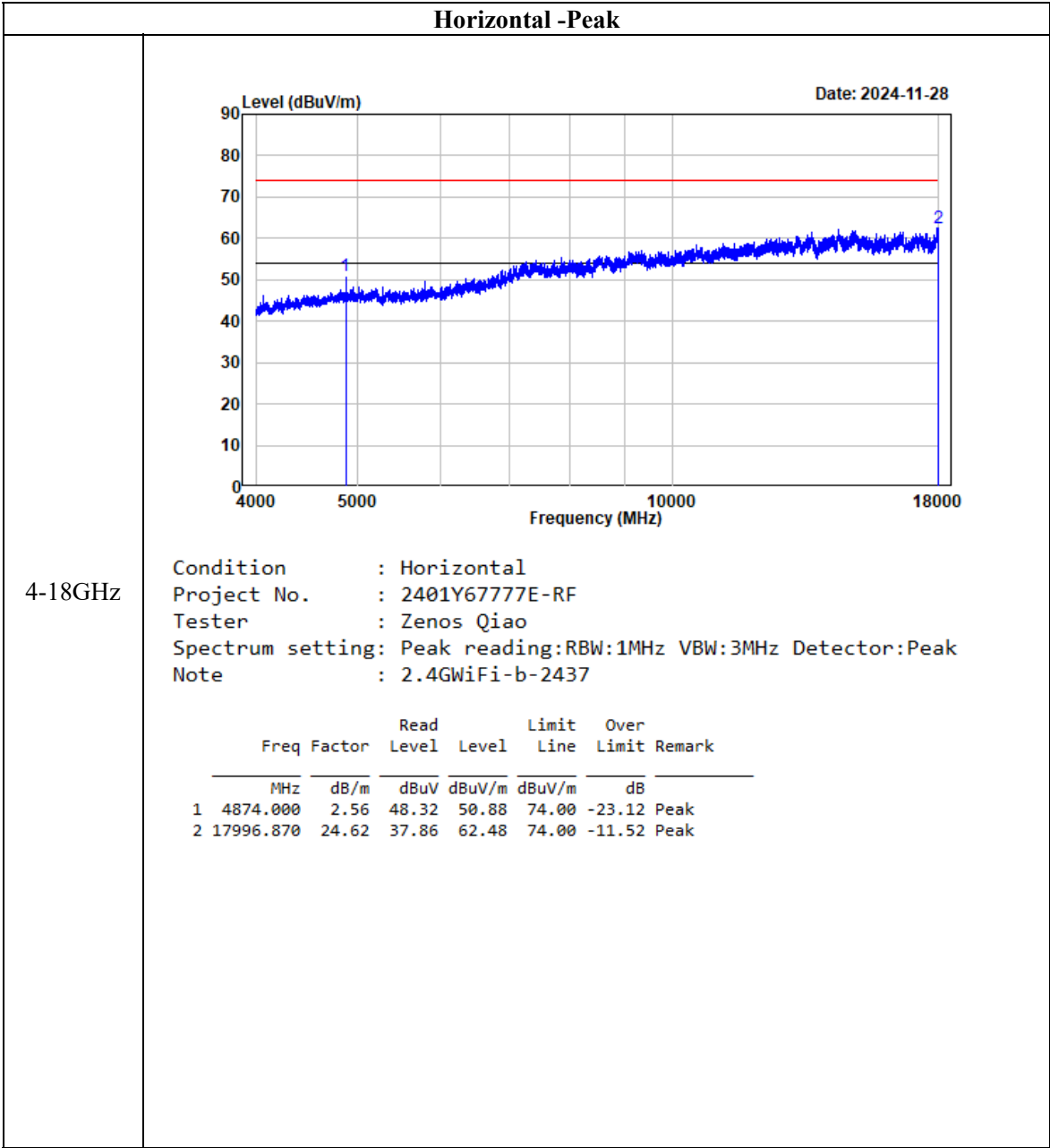


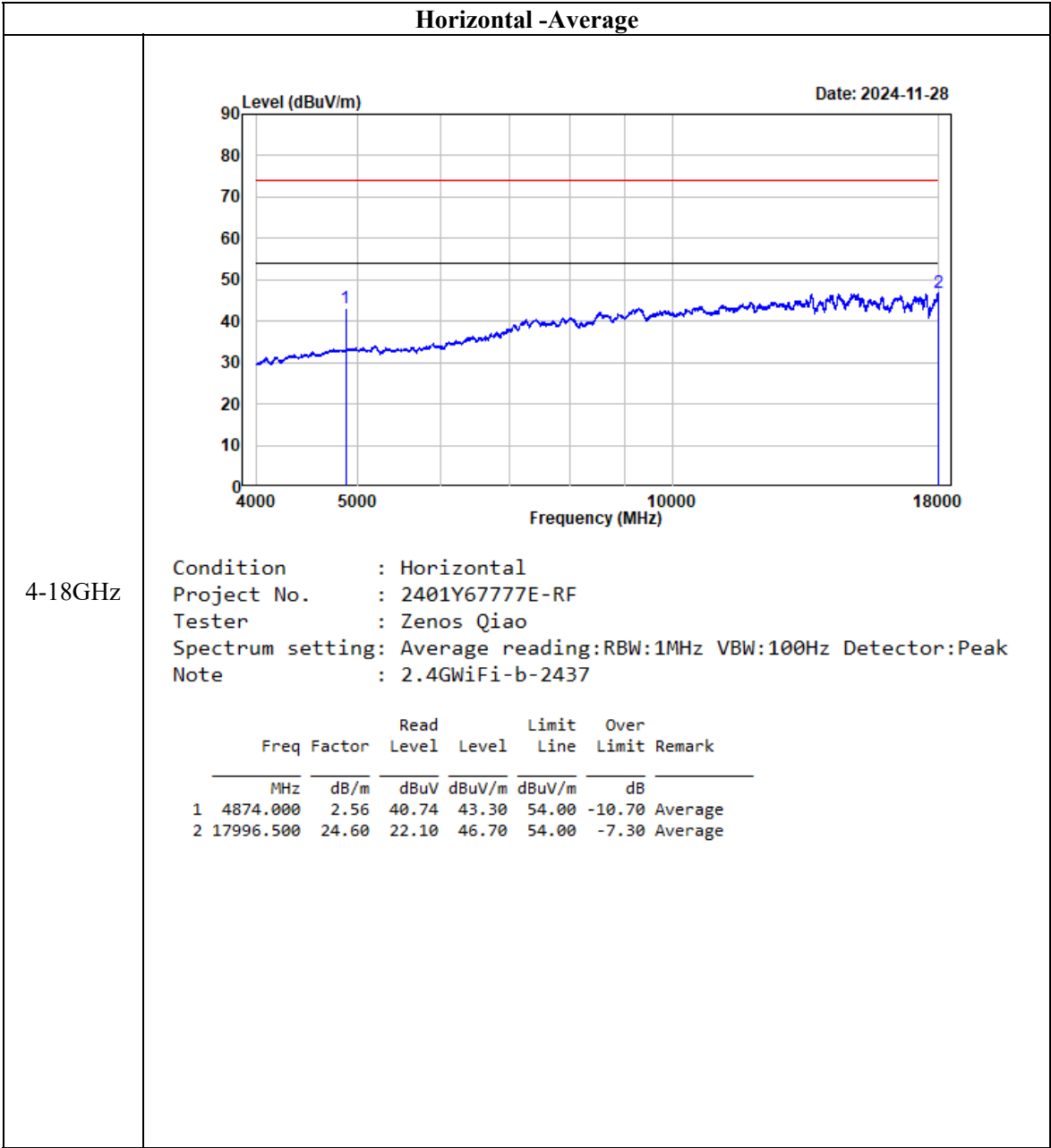
1-18GHz (Listed with the worst harmonic margin test plots):

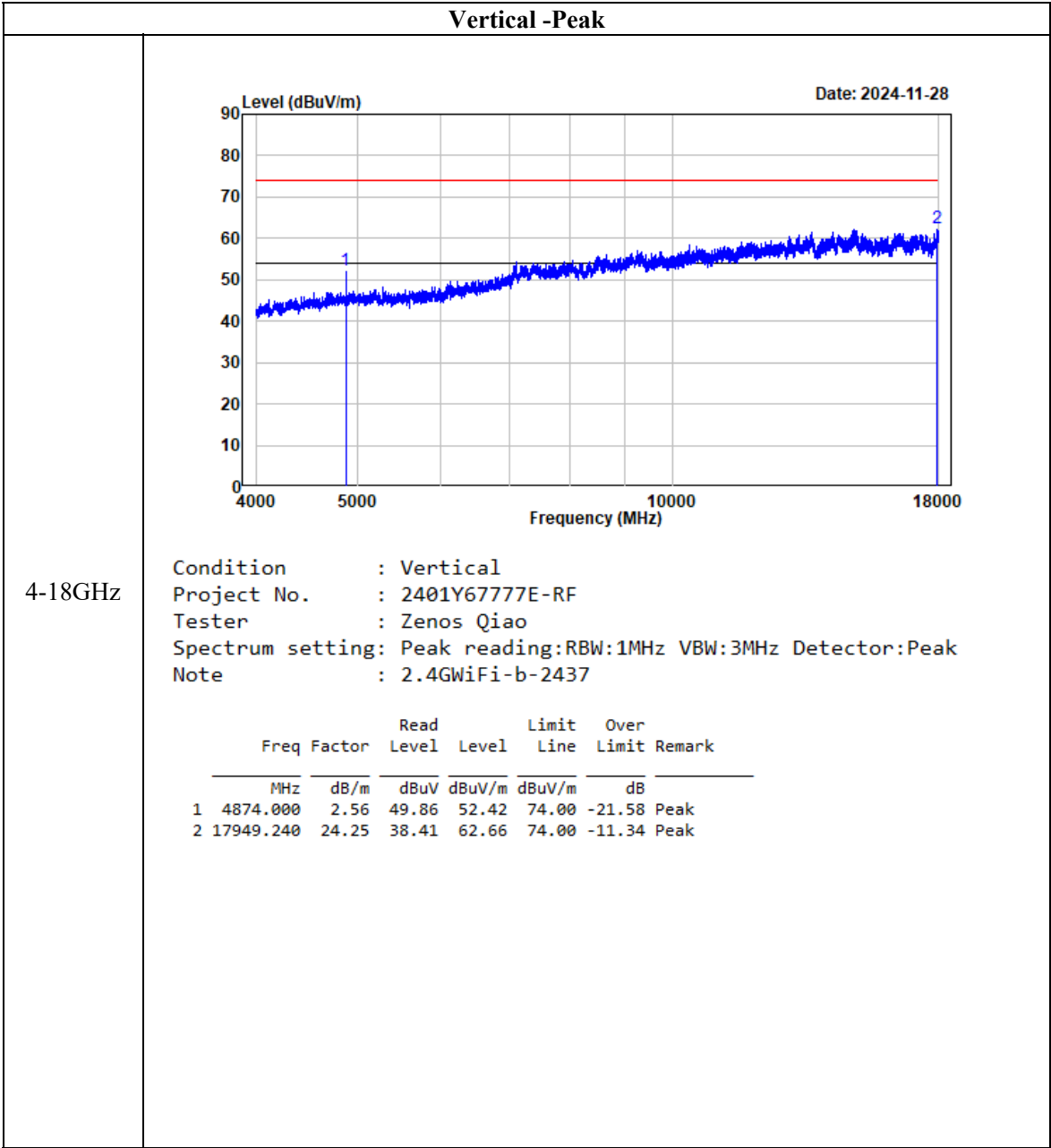
802.11b

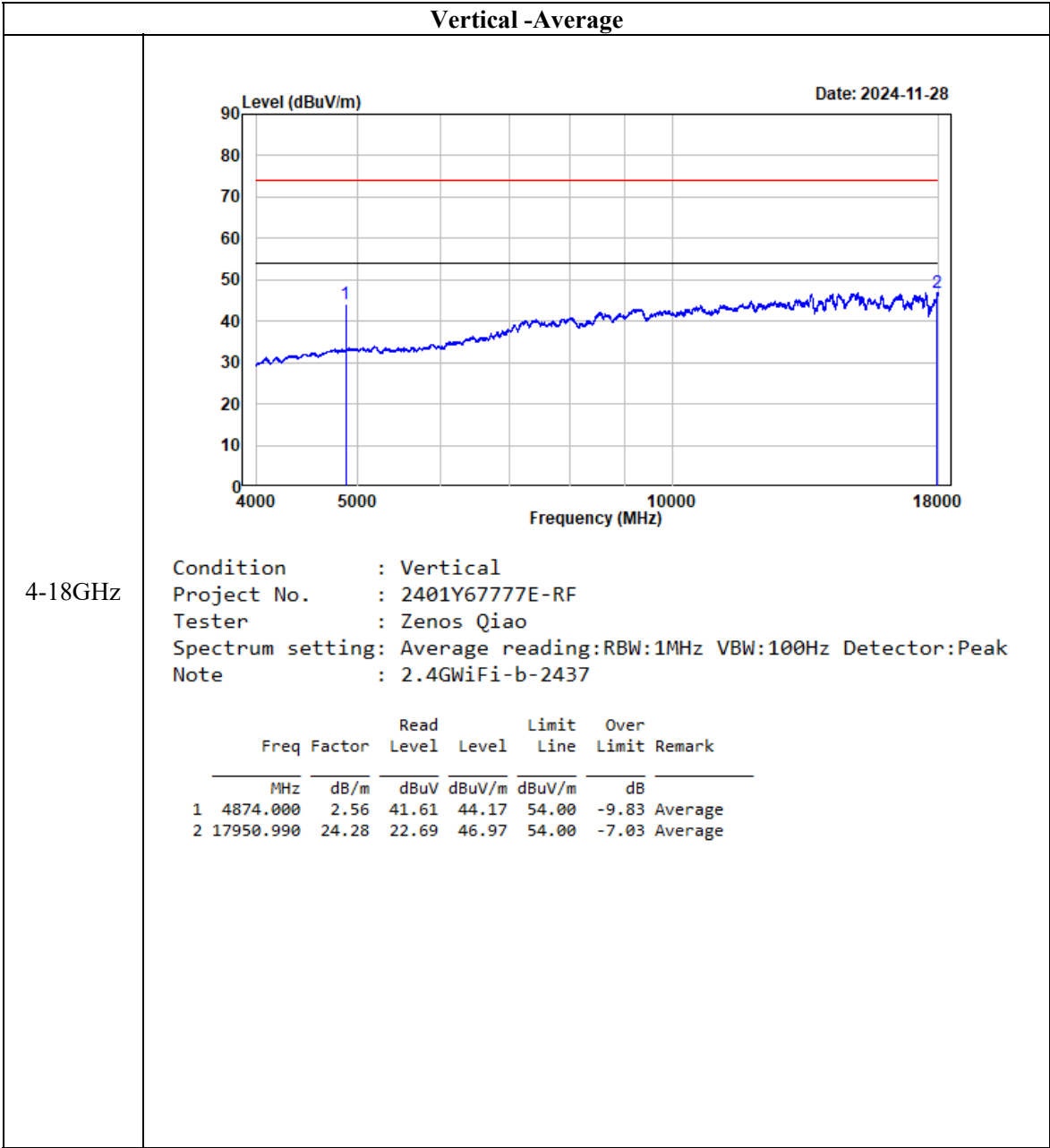




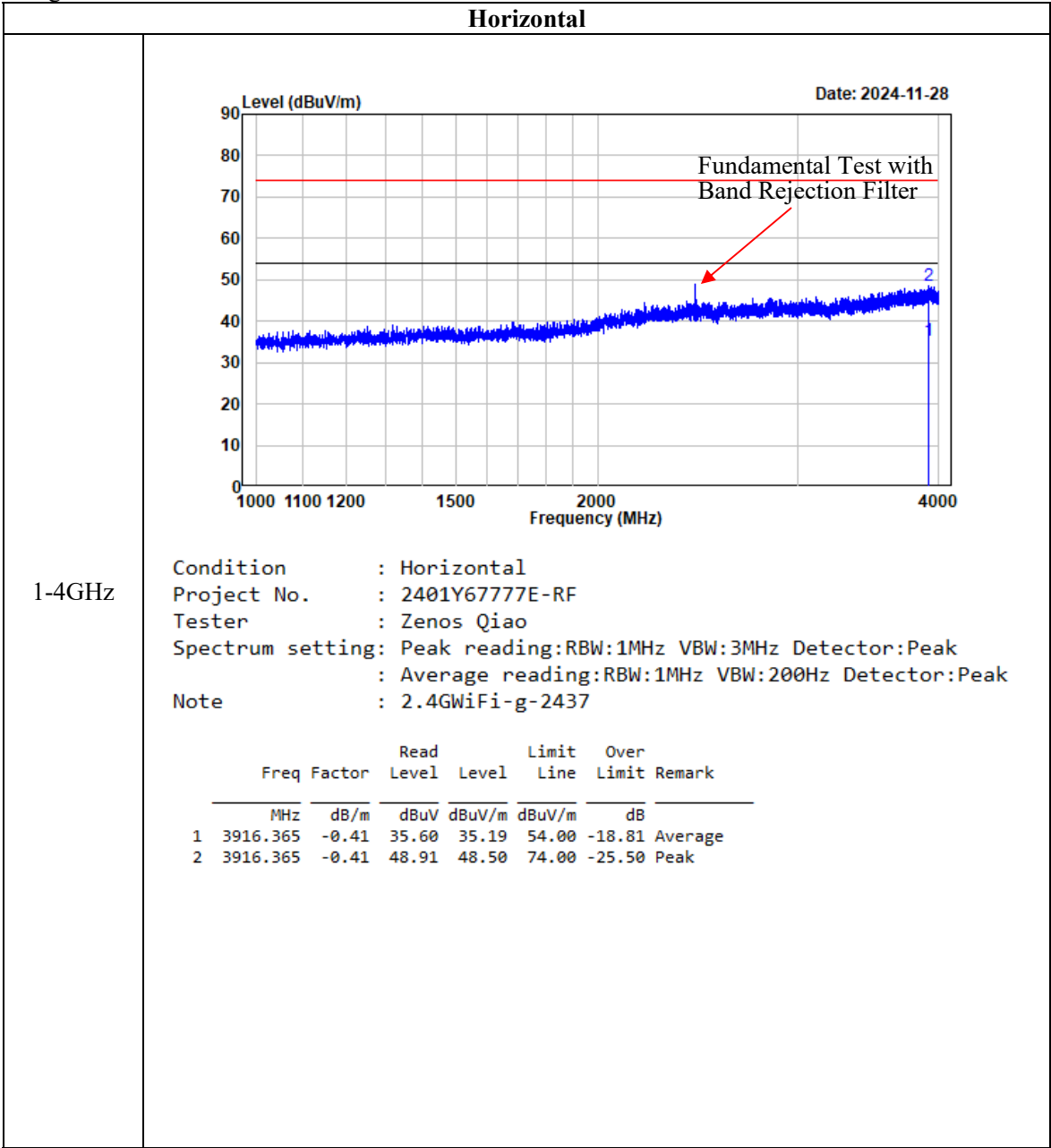


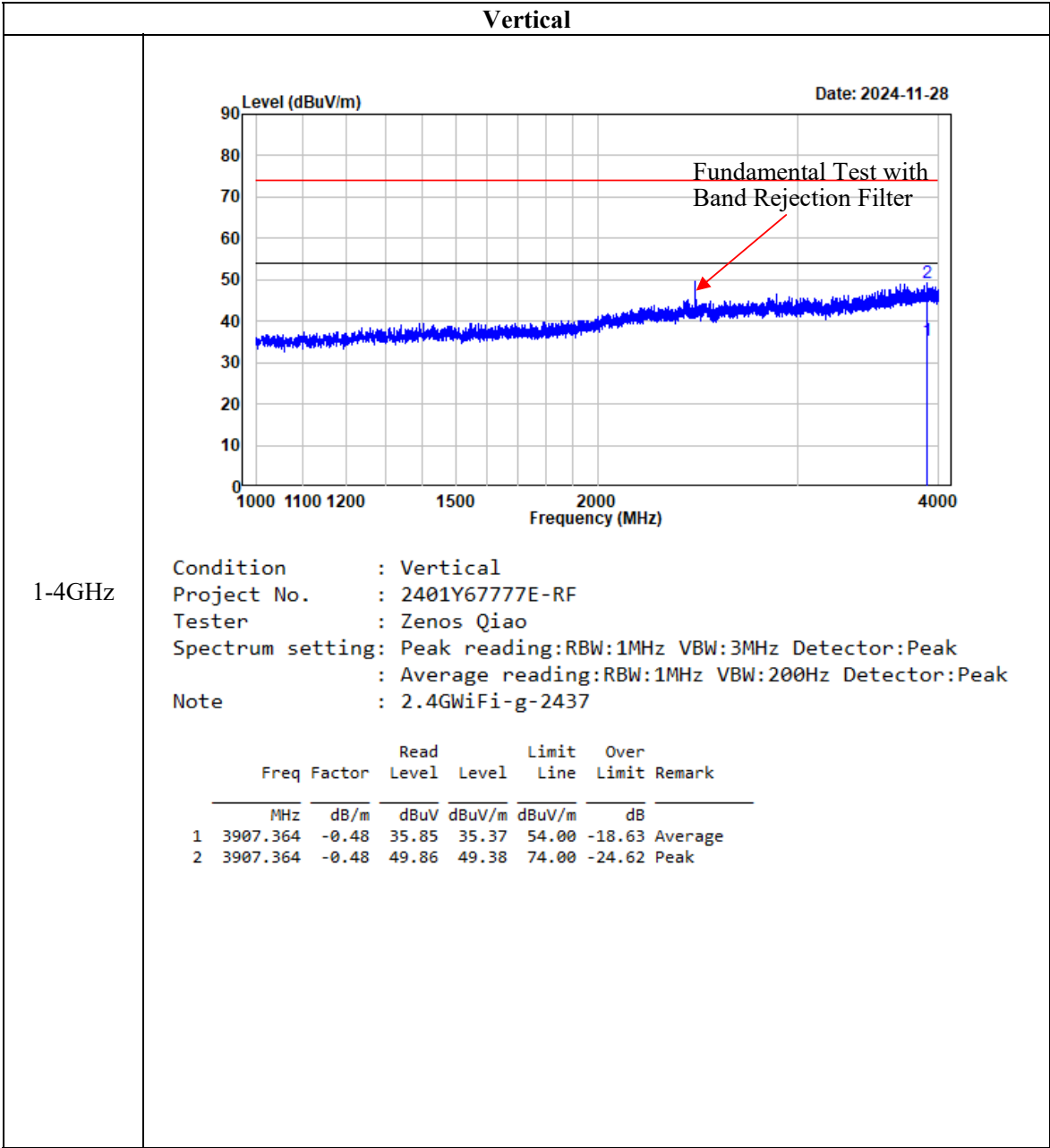


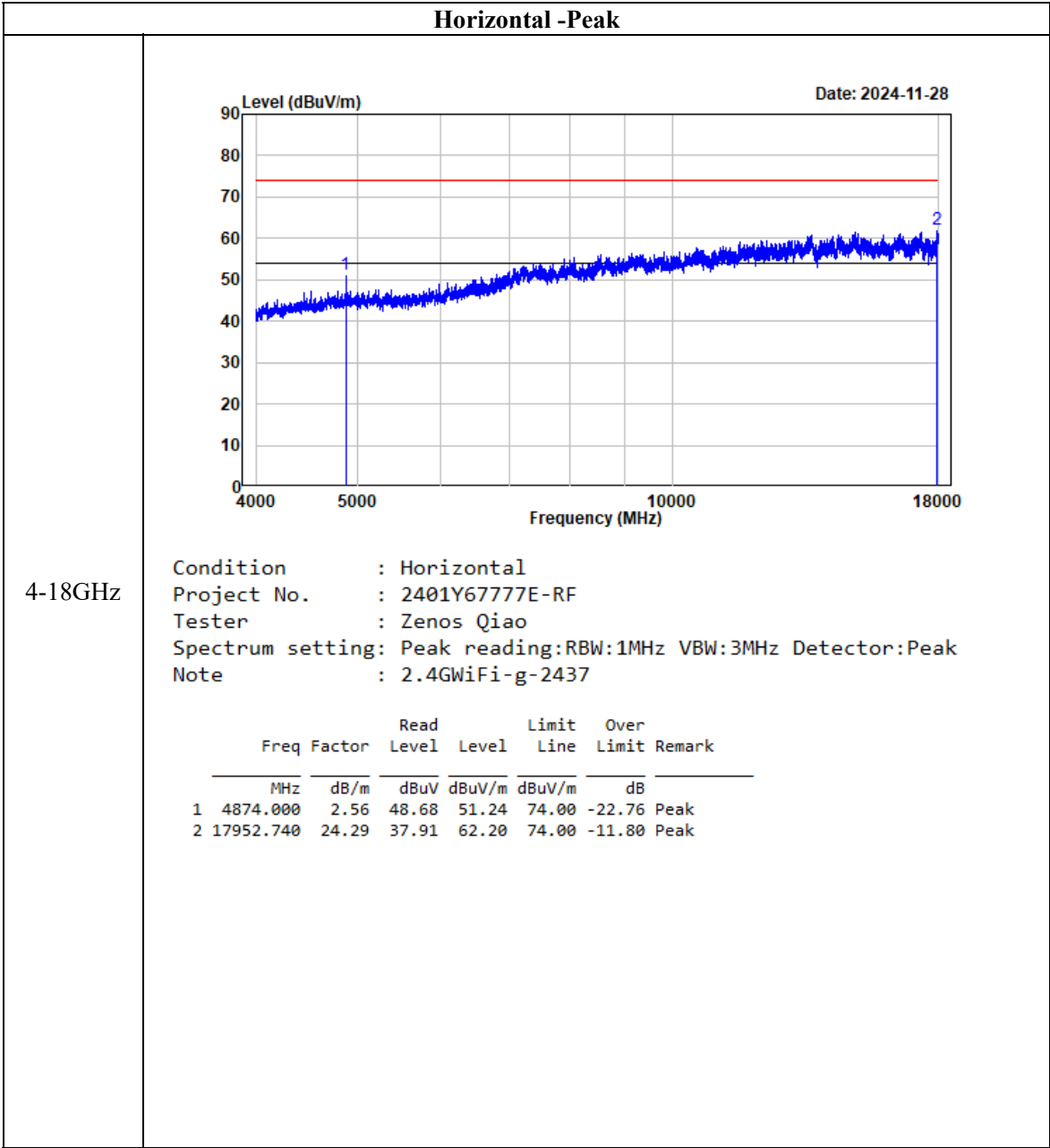


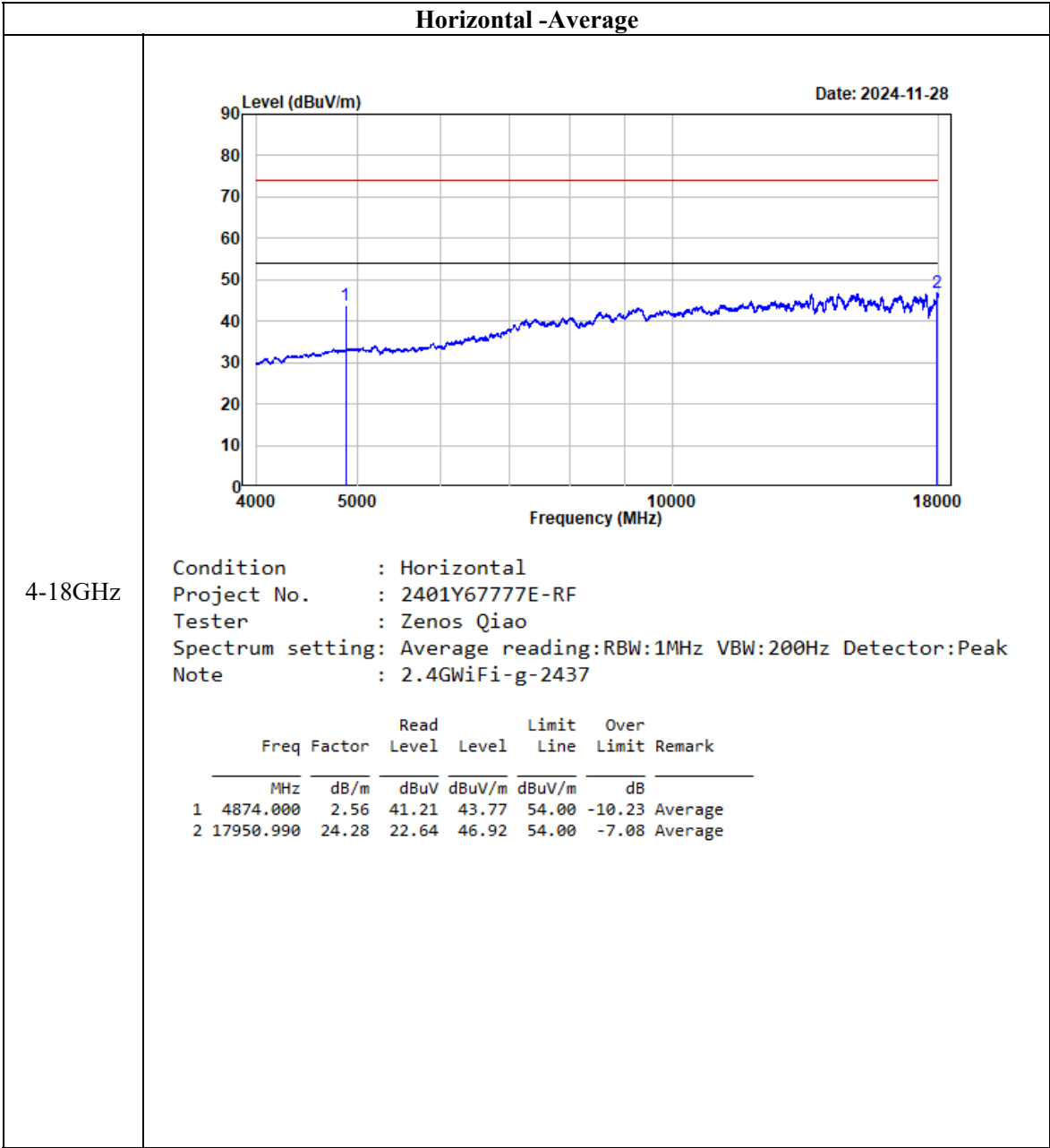


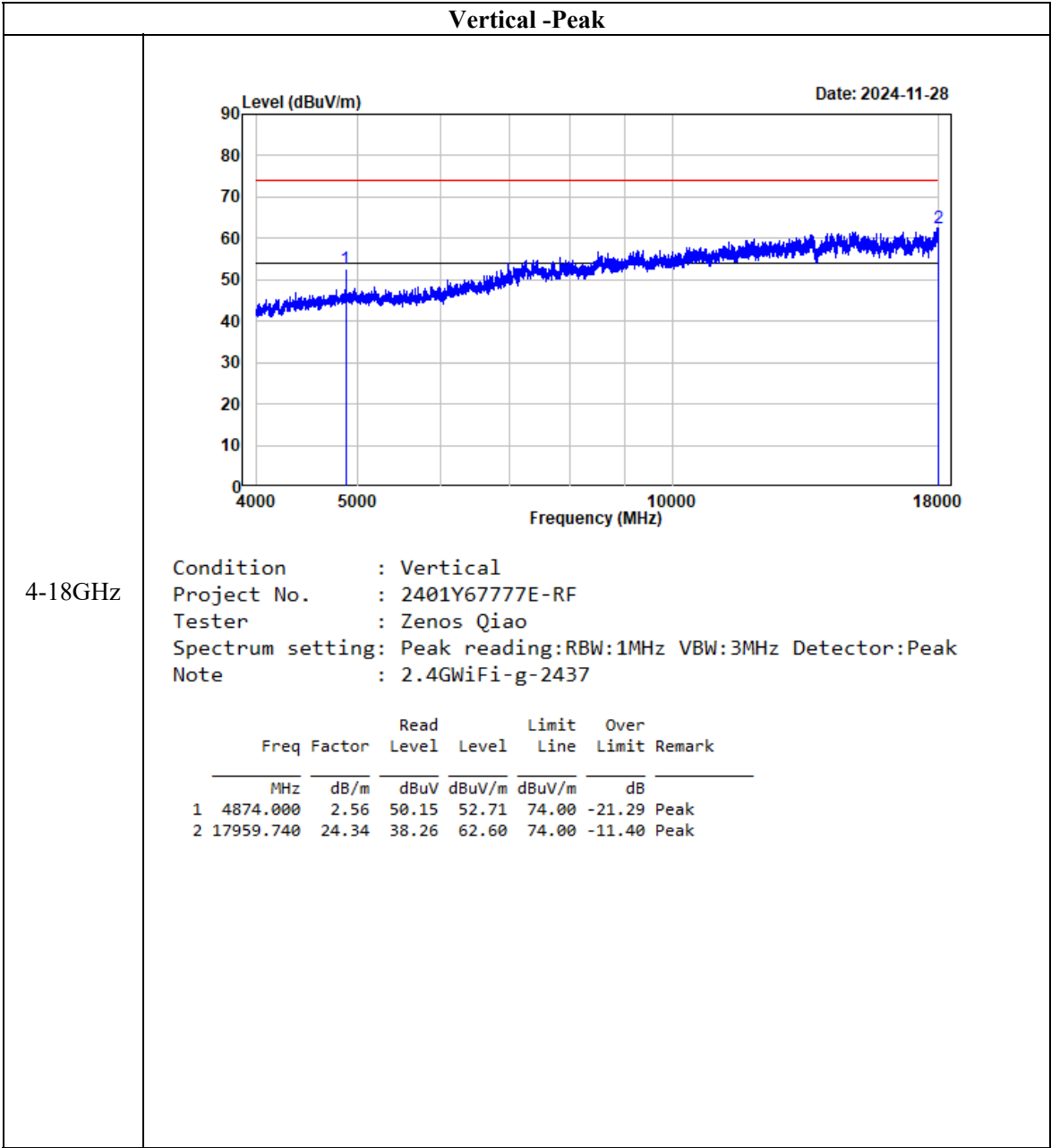
802.11g

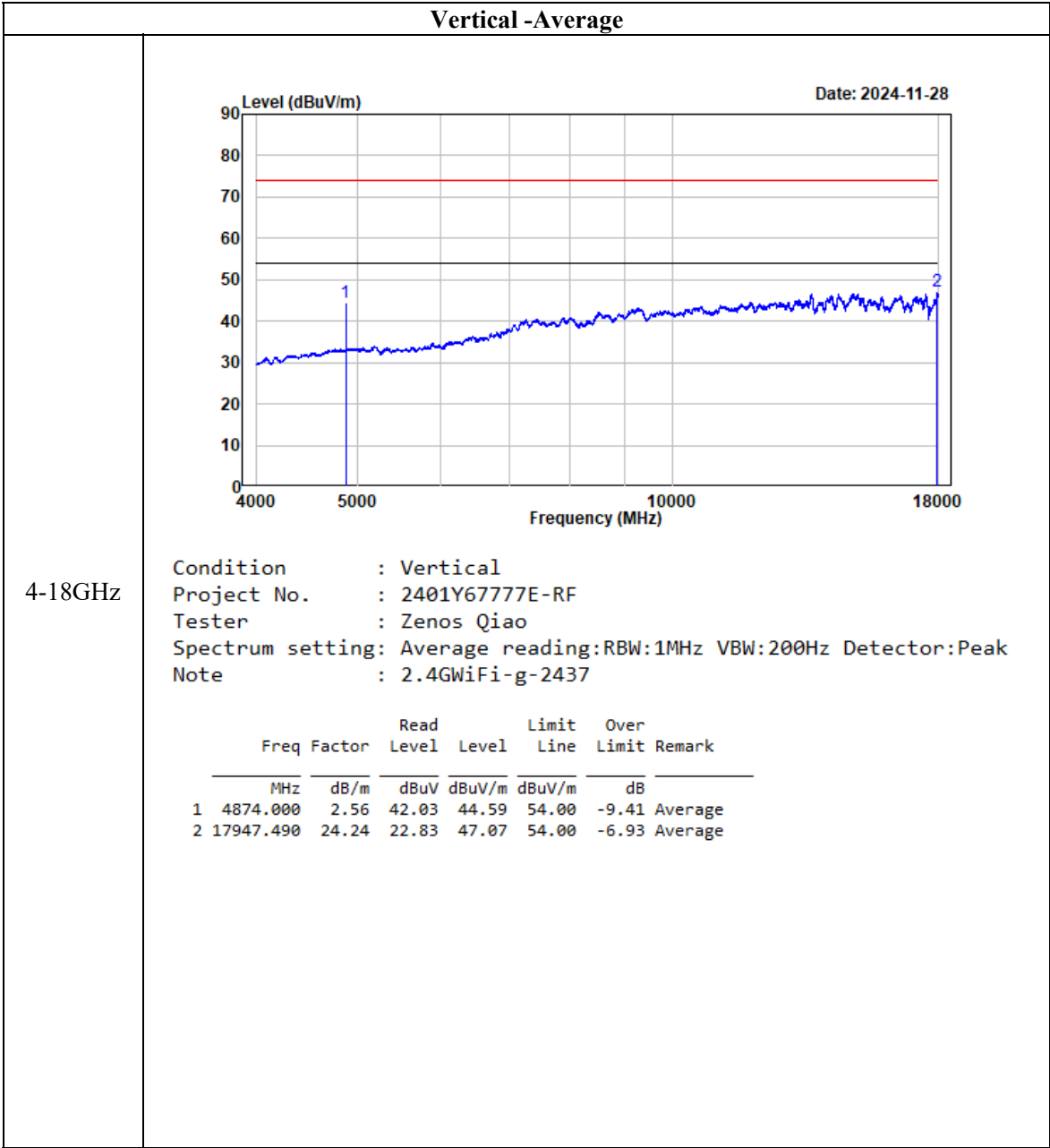




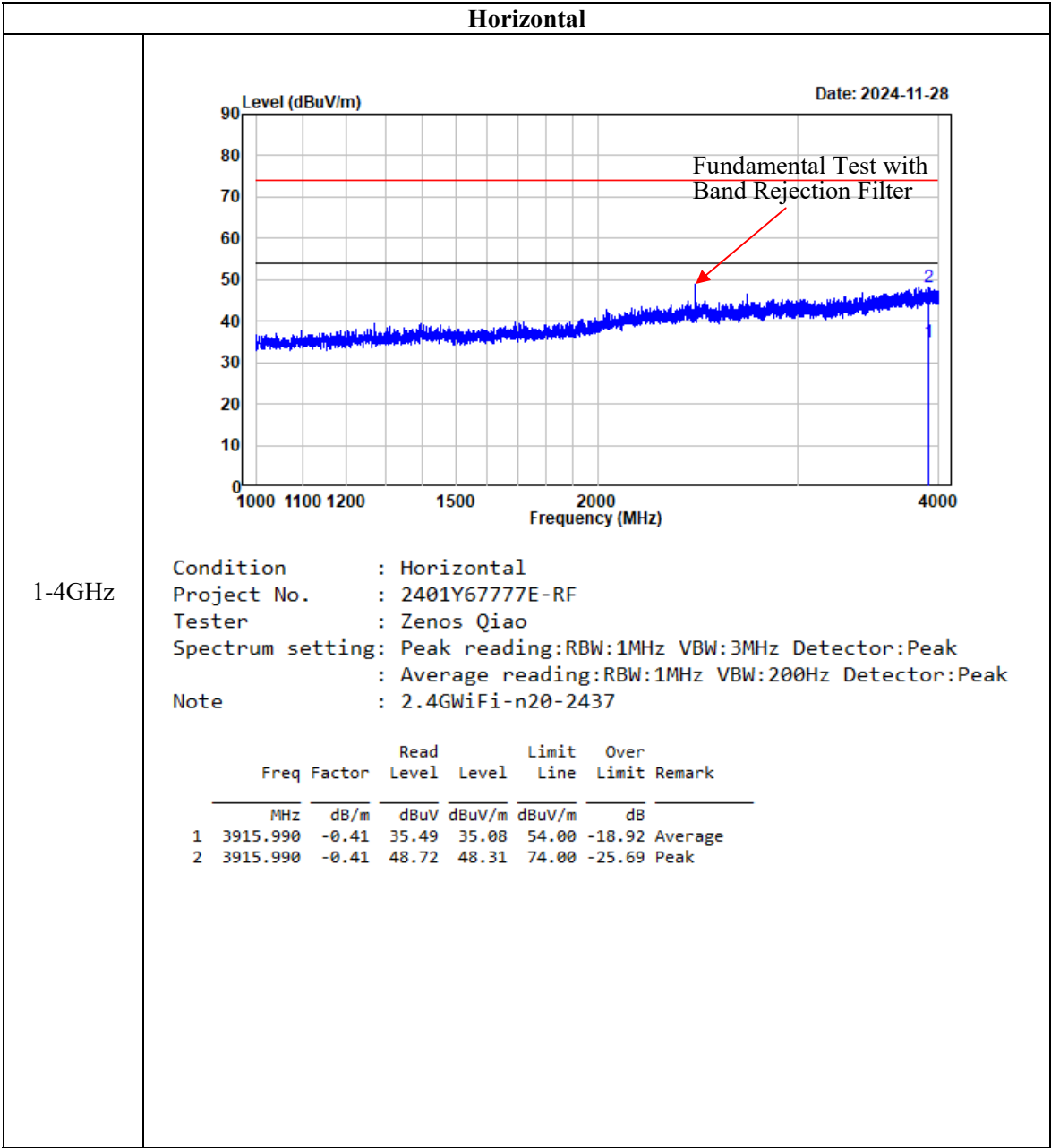


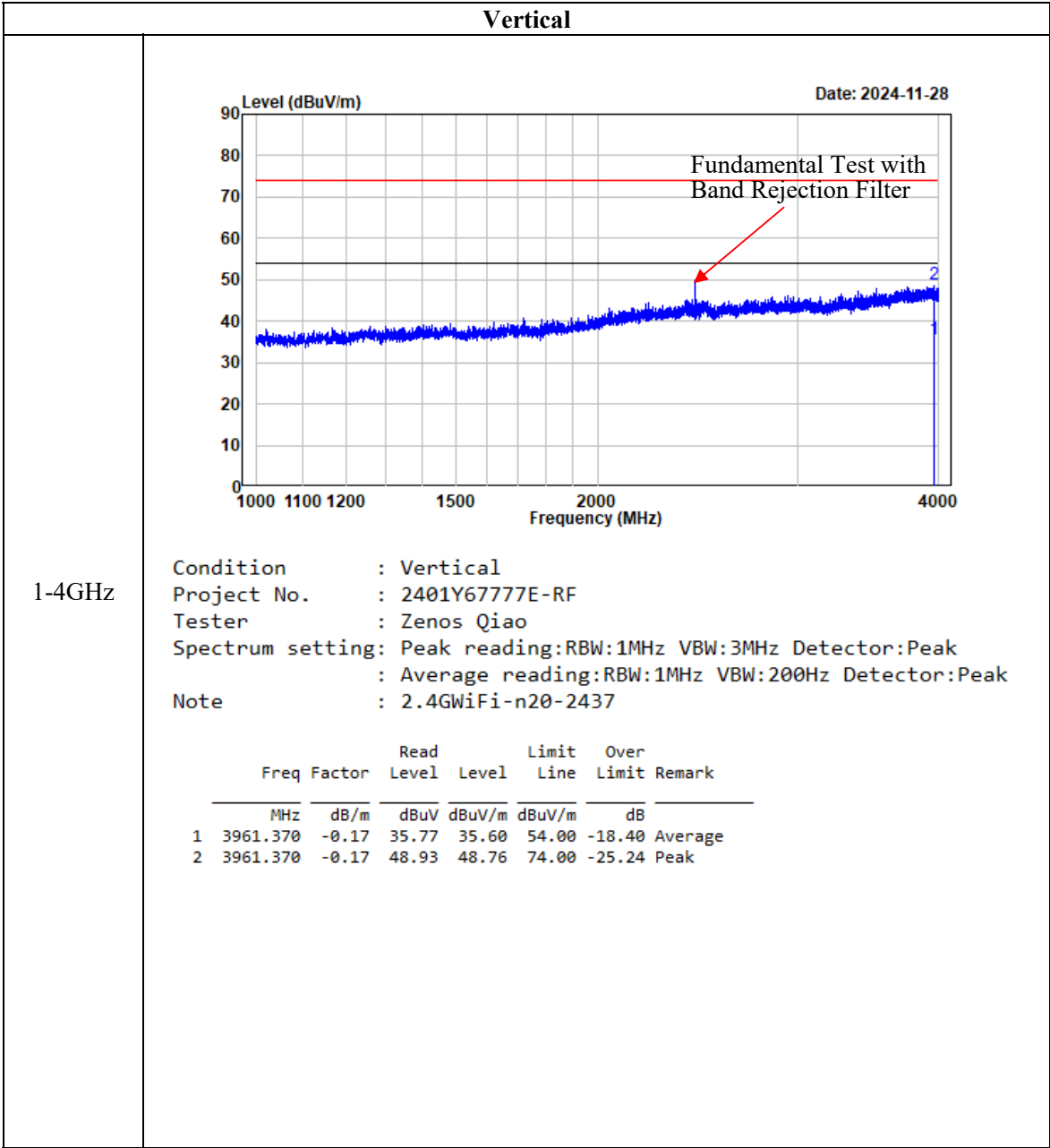


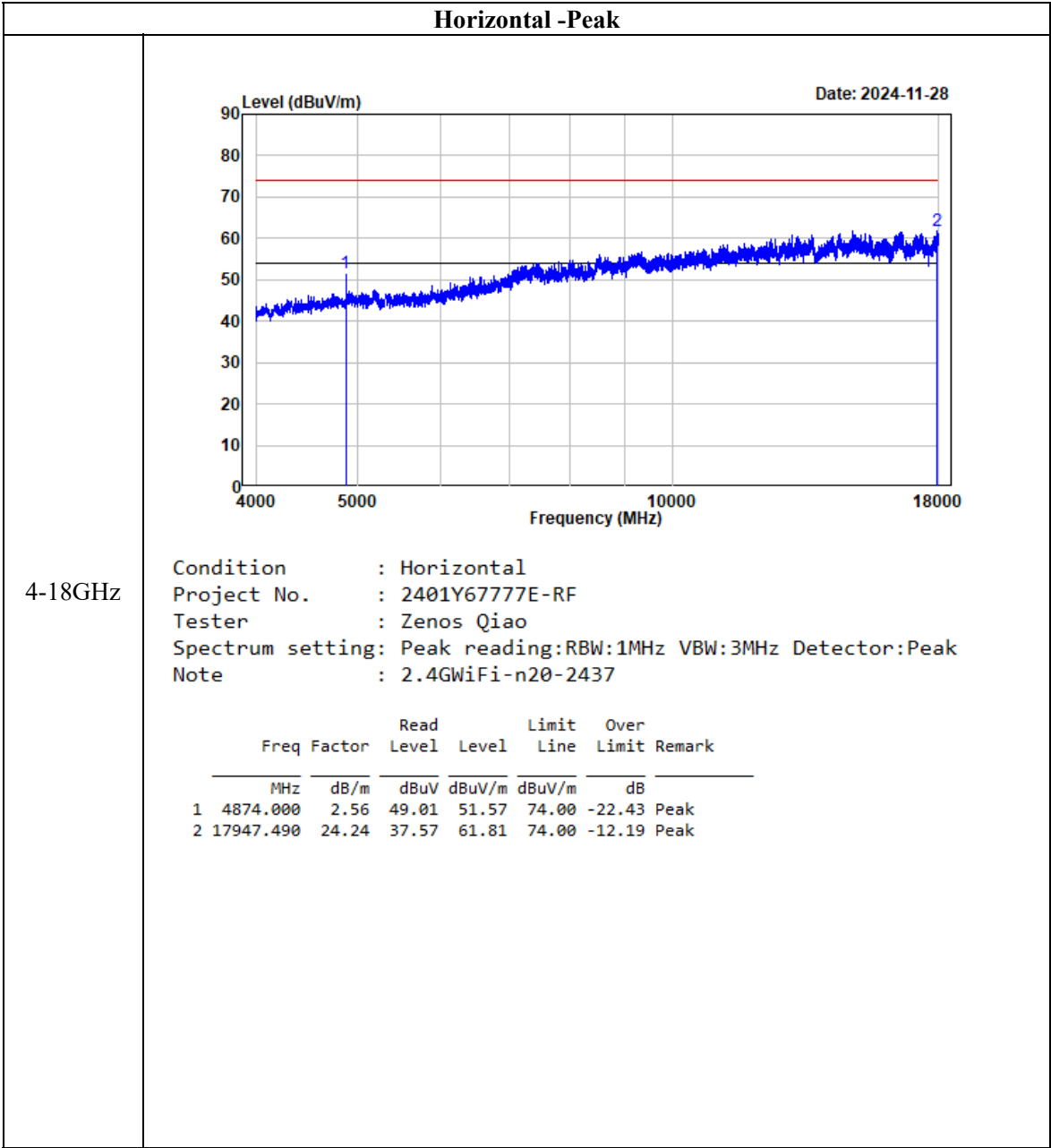


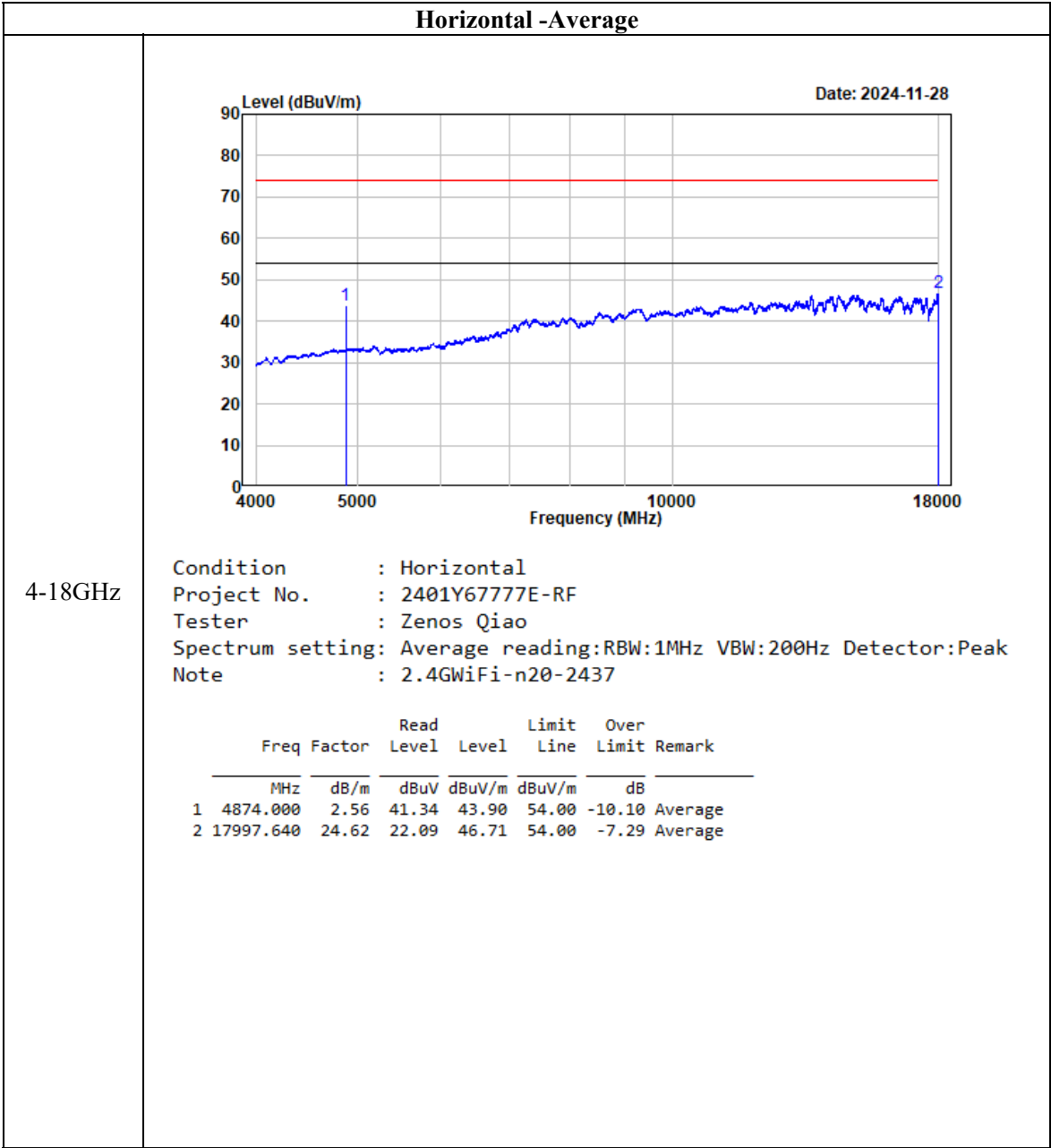


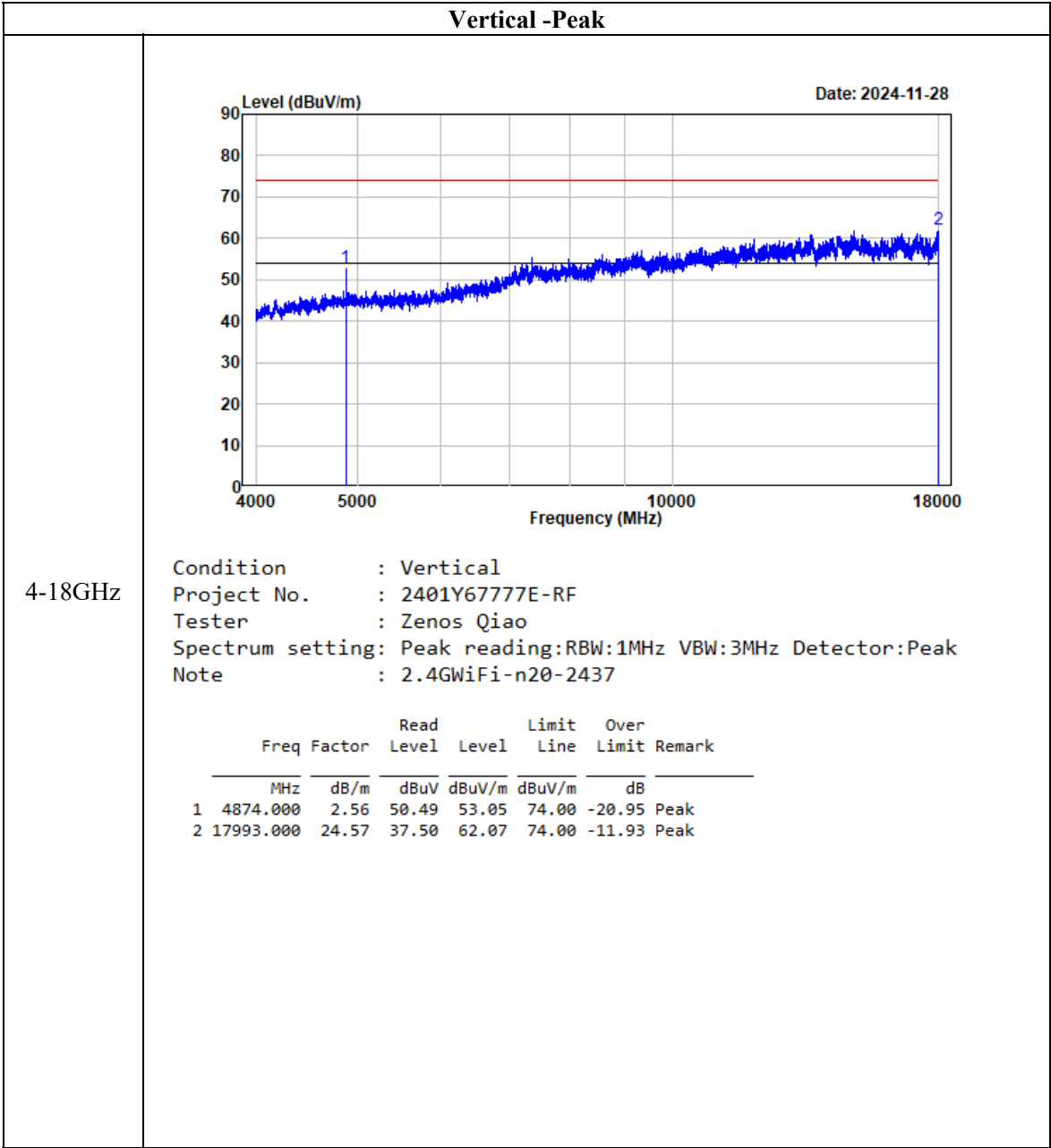
802.11n20

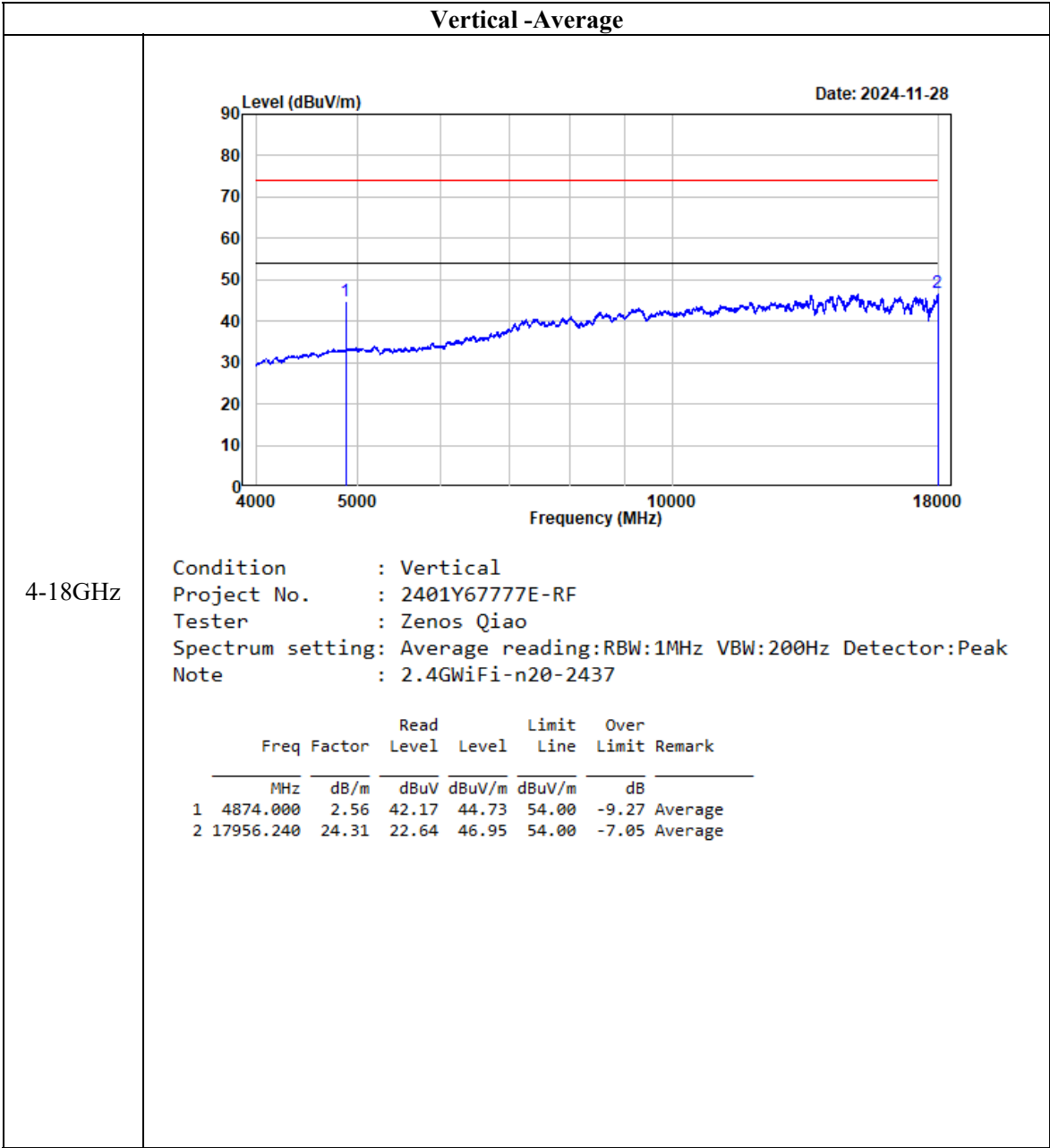




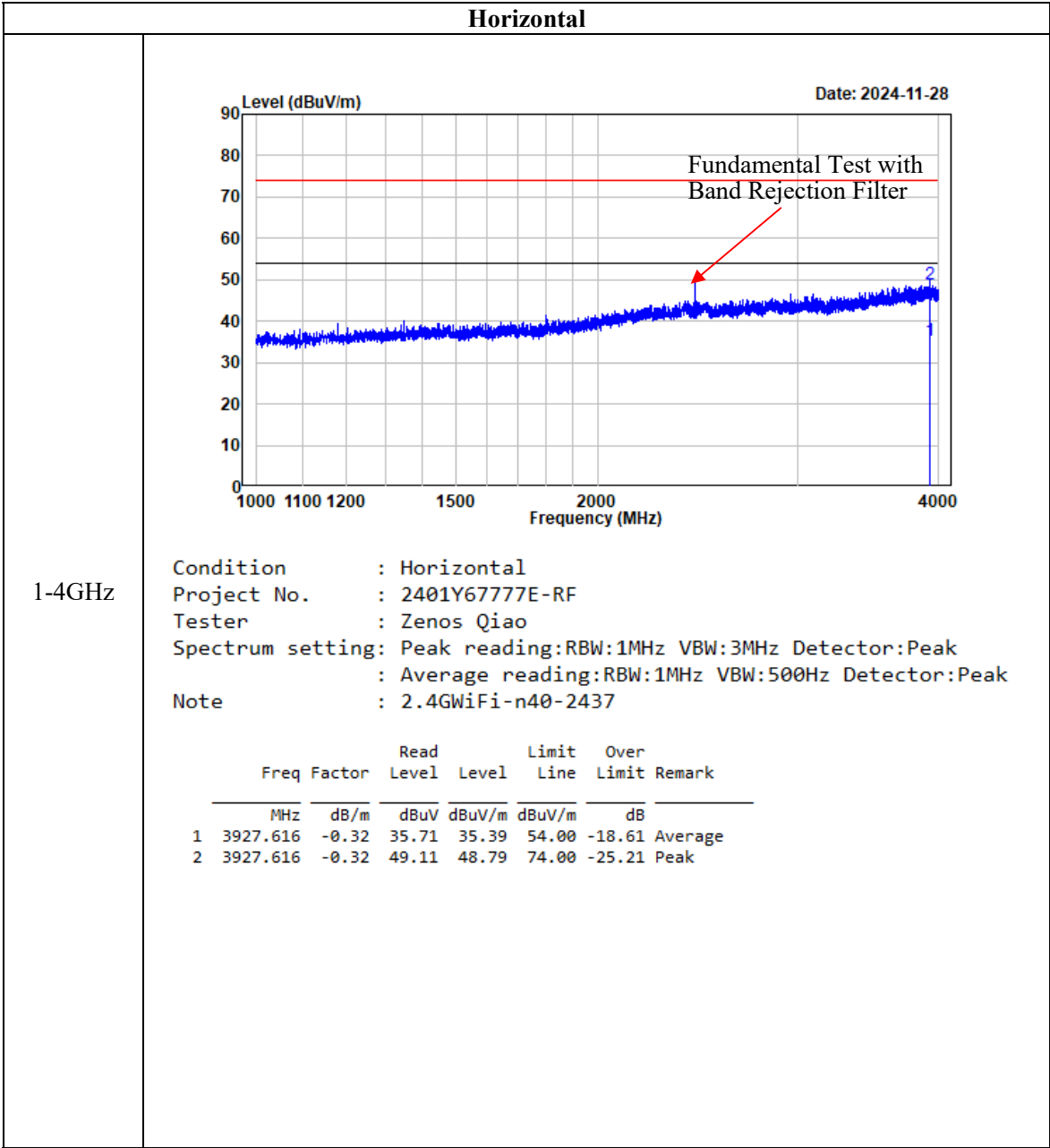


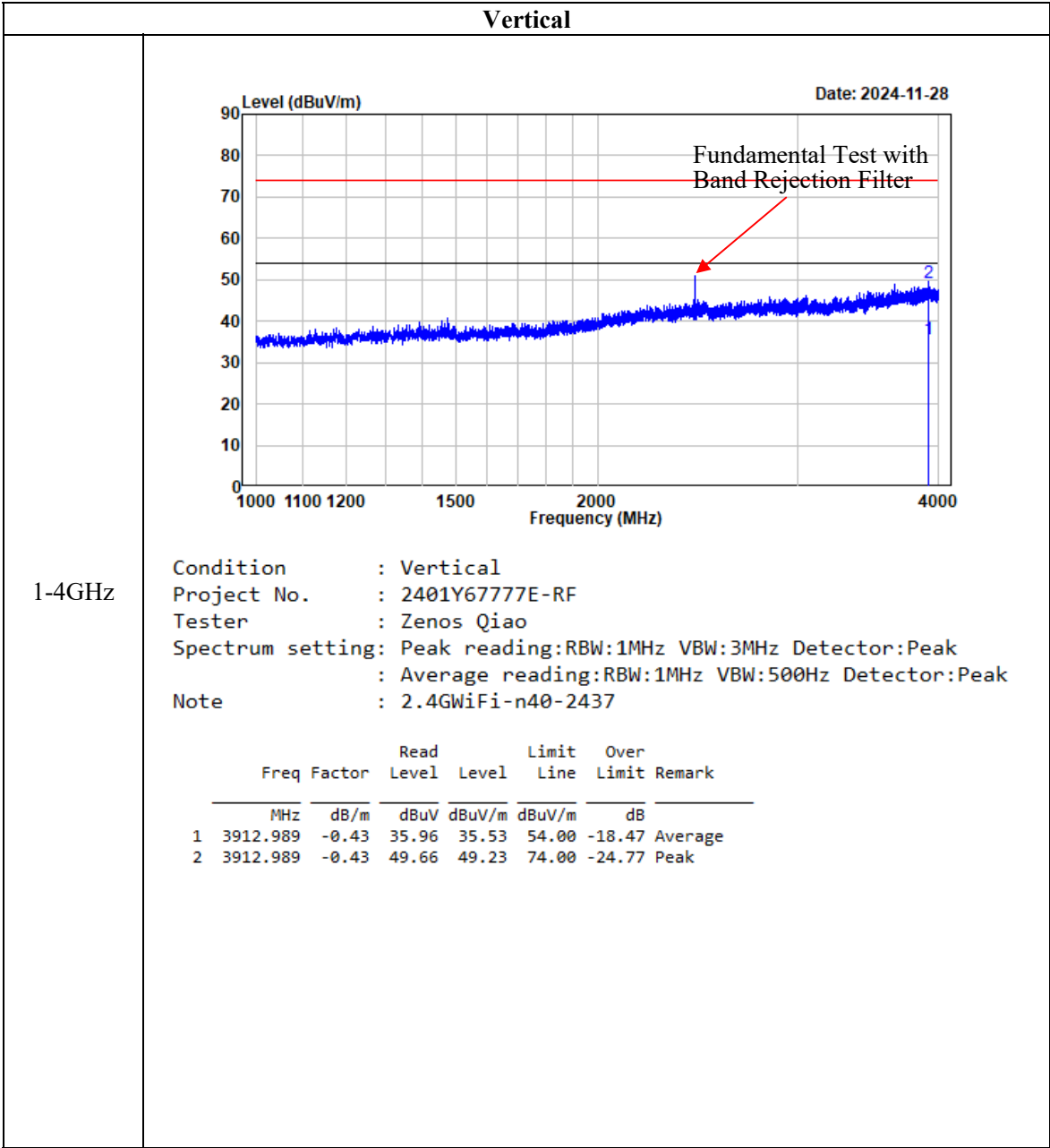


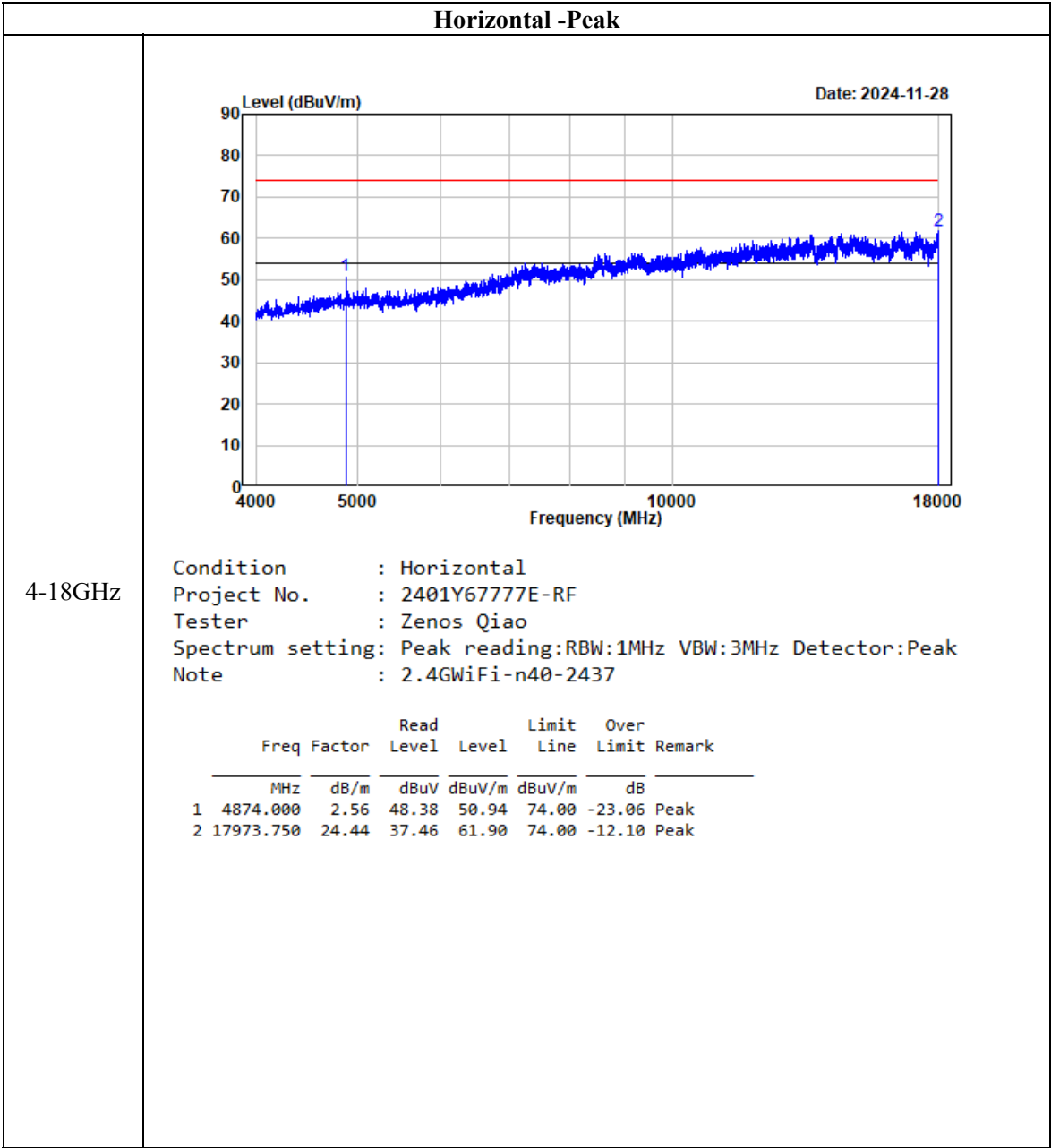


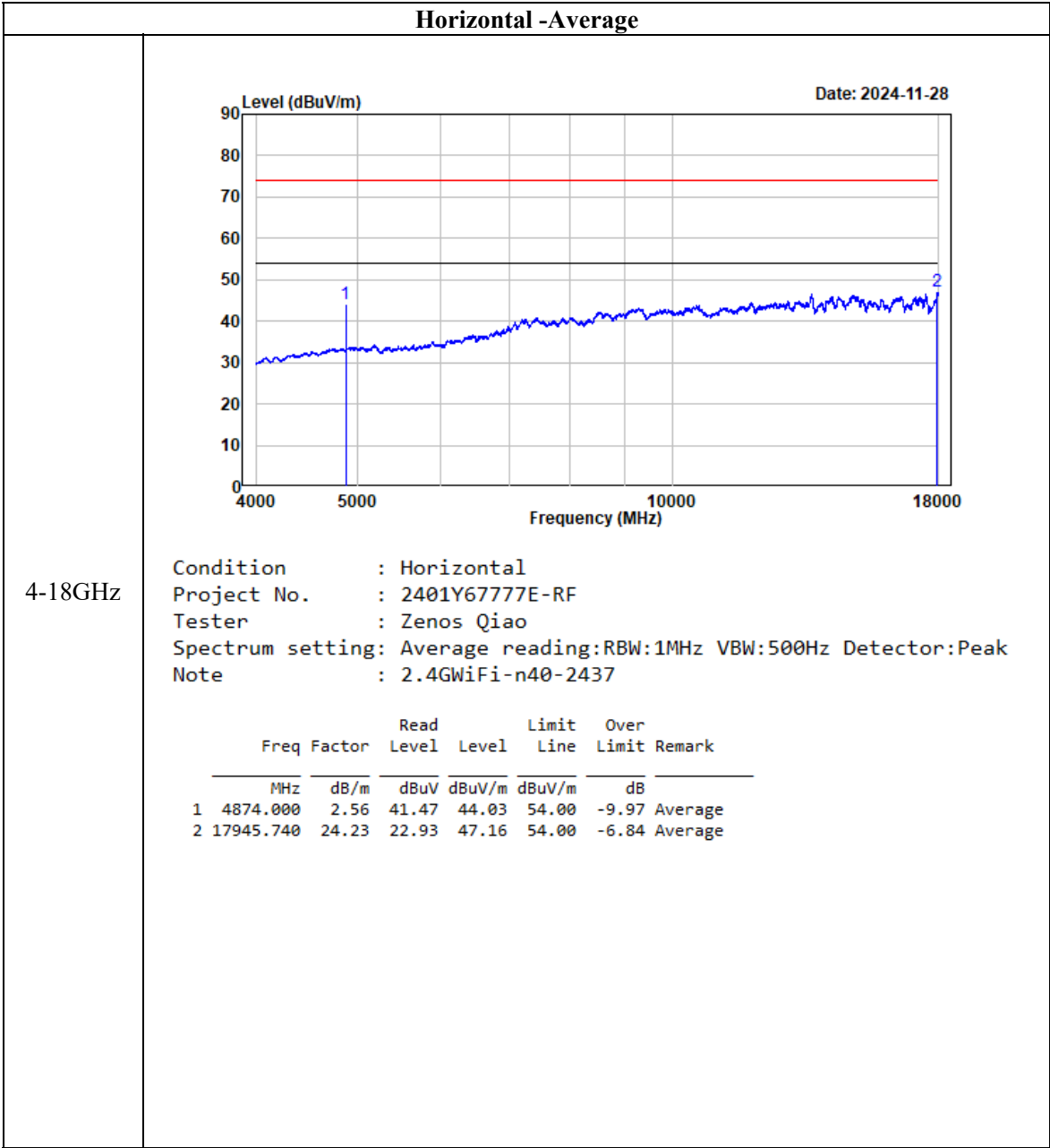


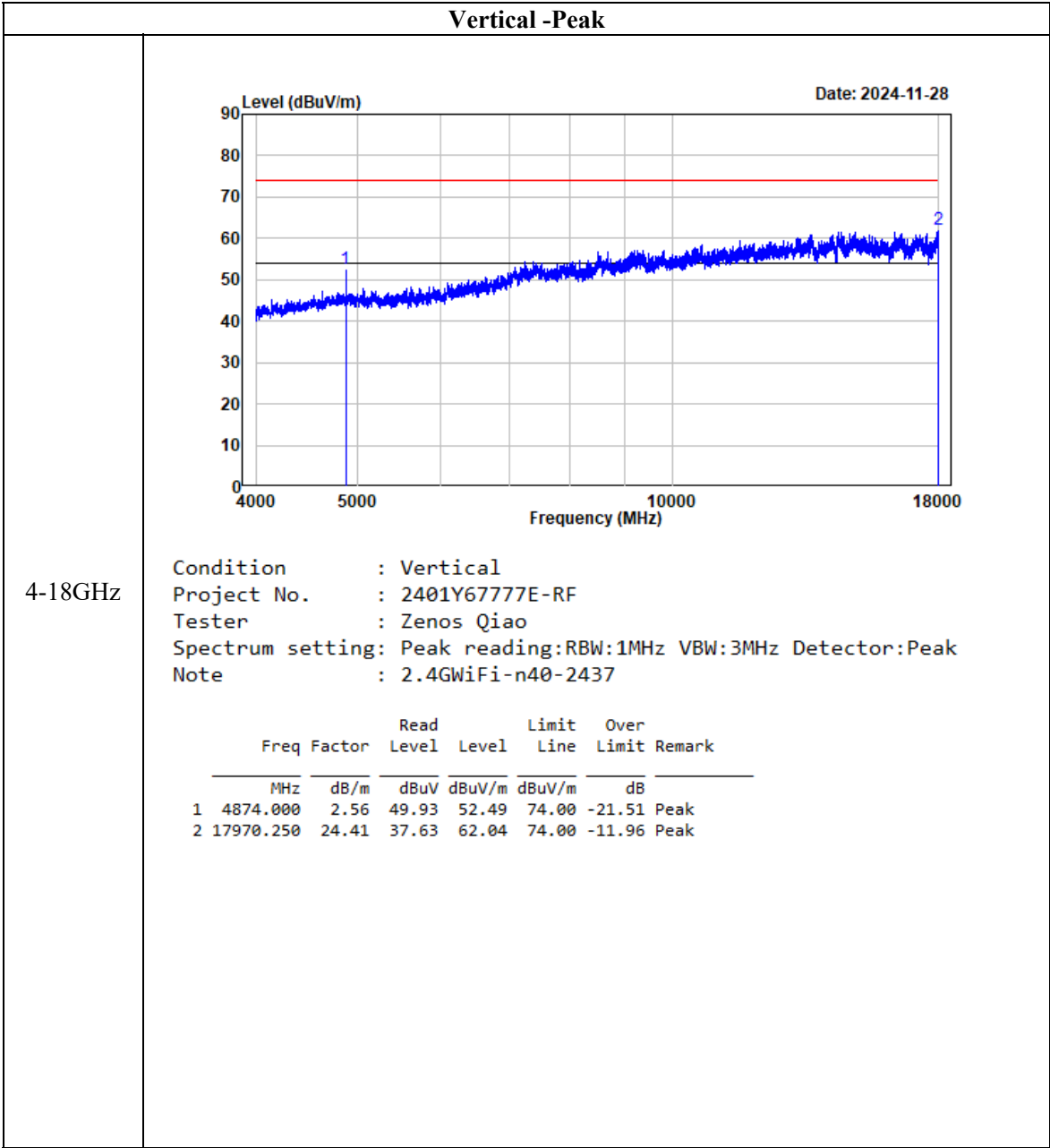
802.11n40

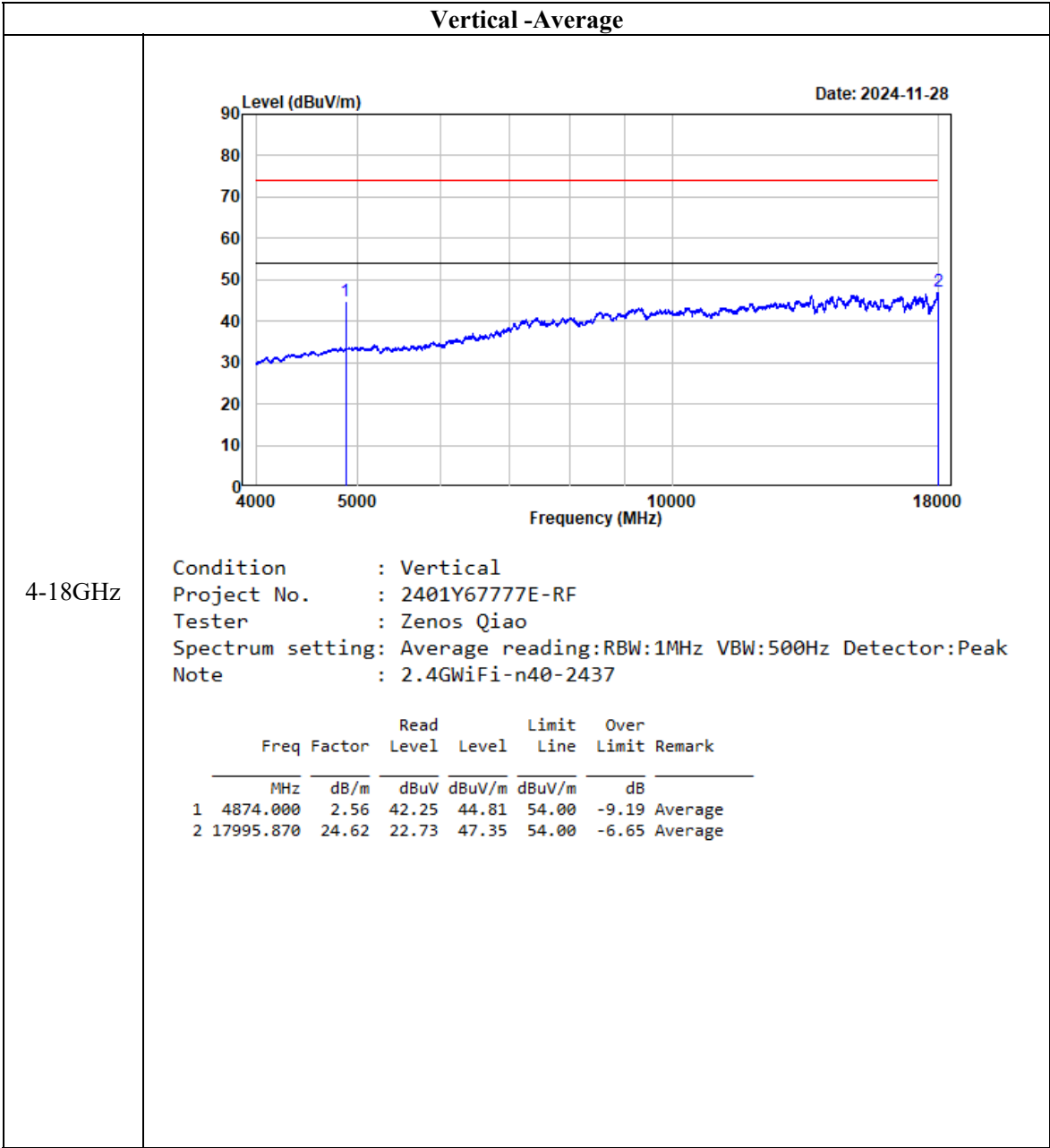




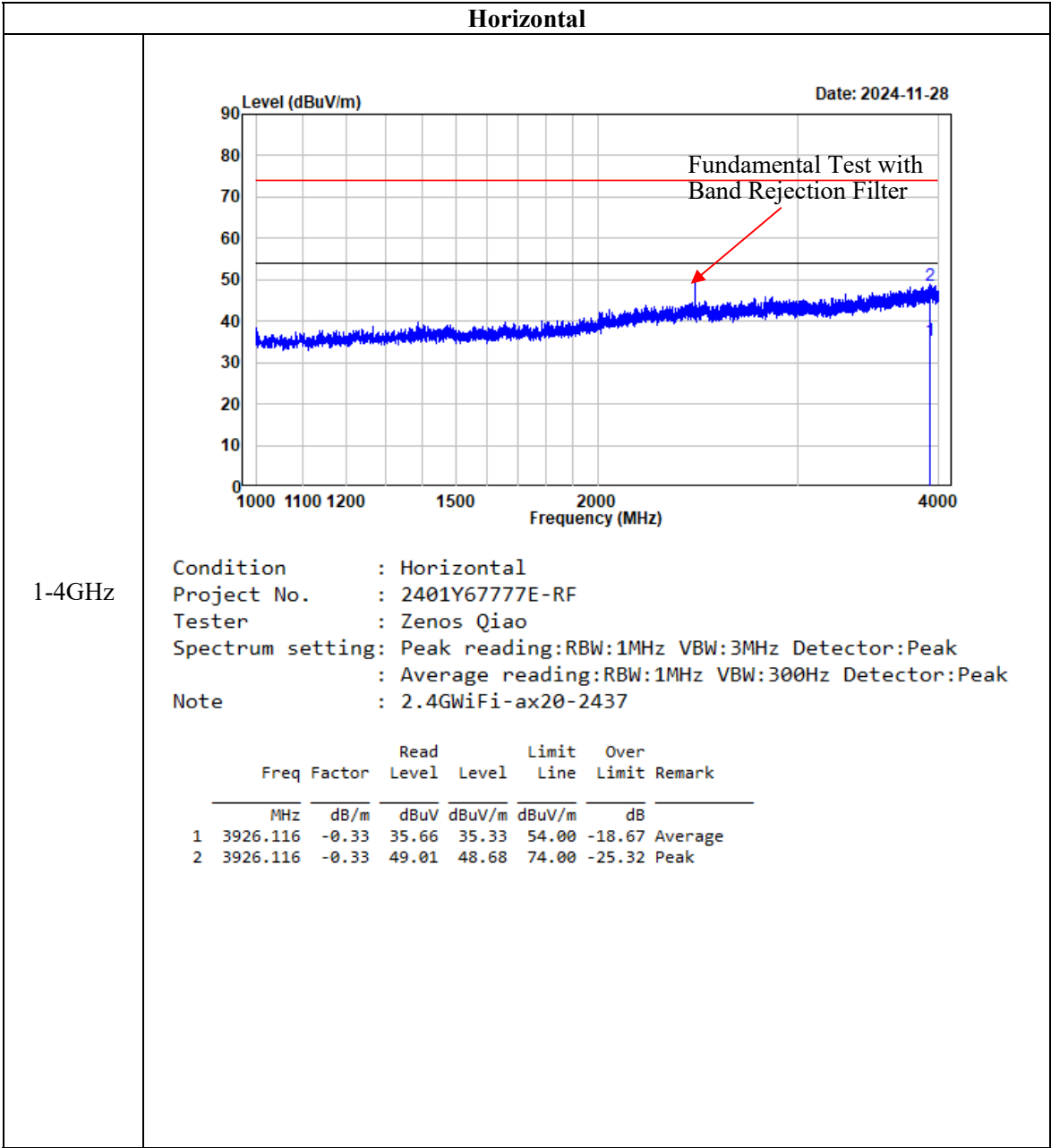


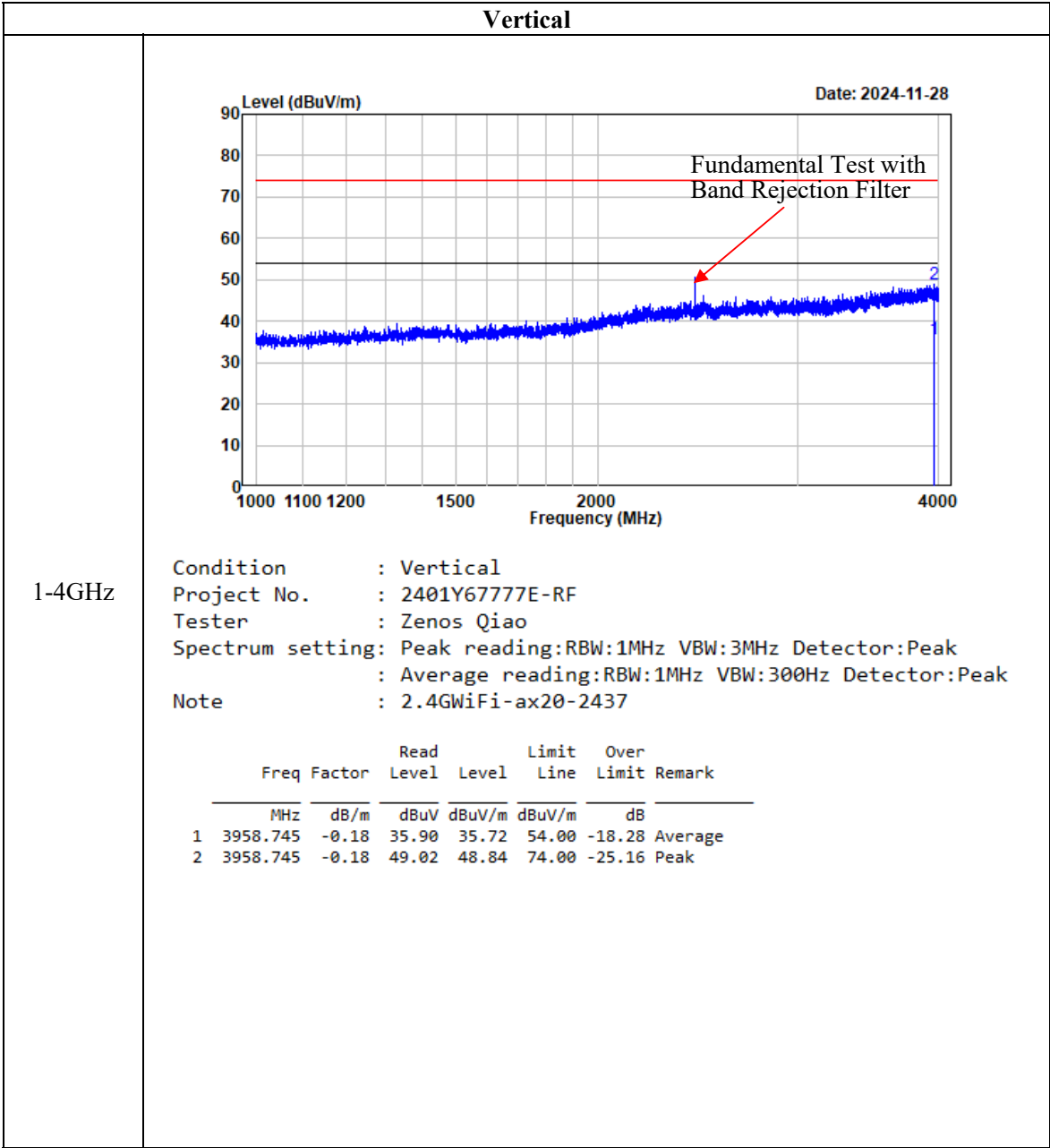


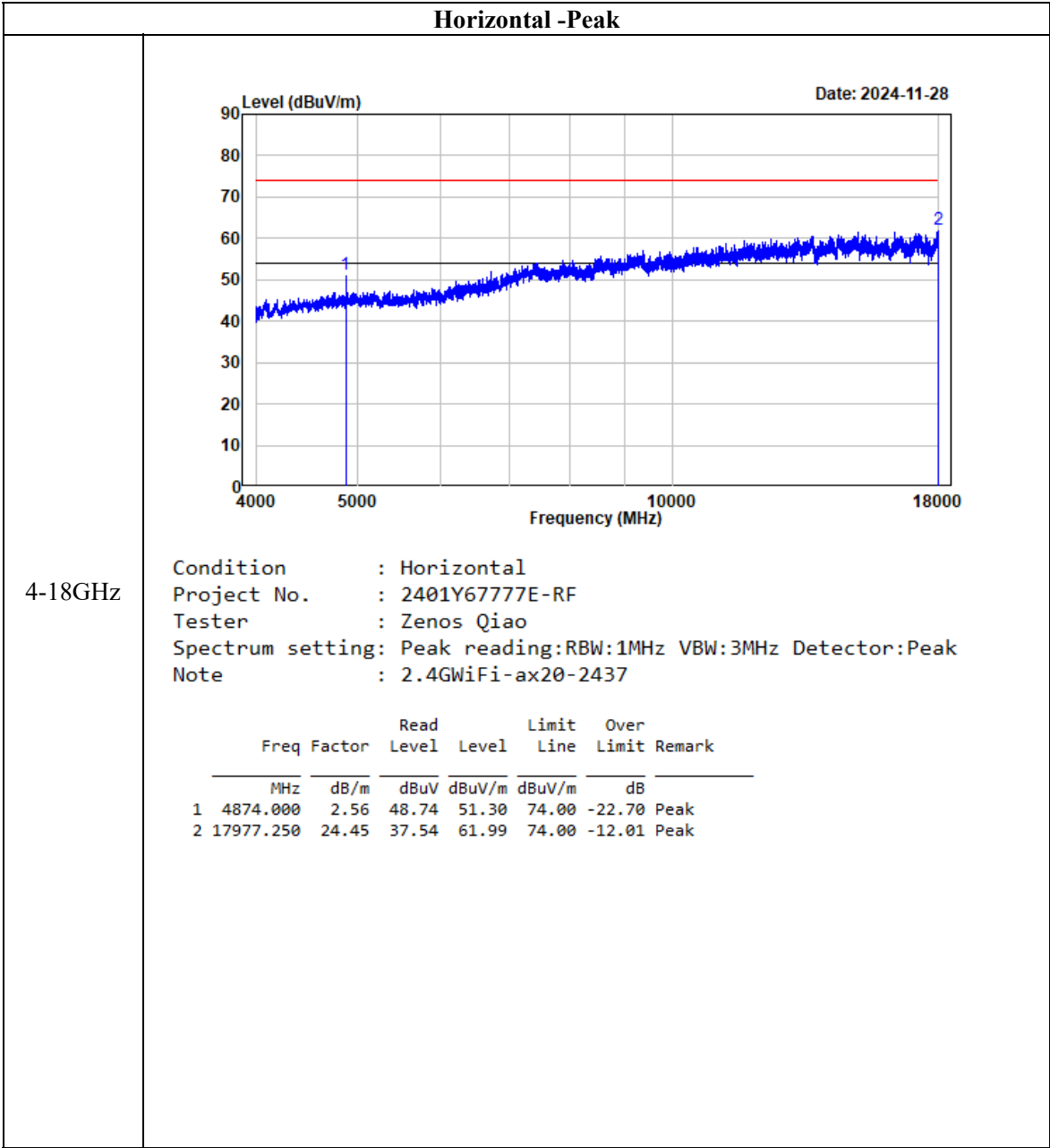


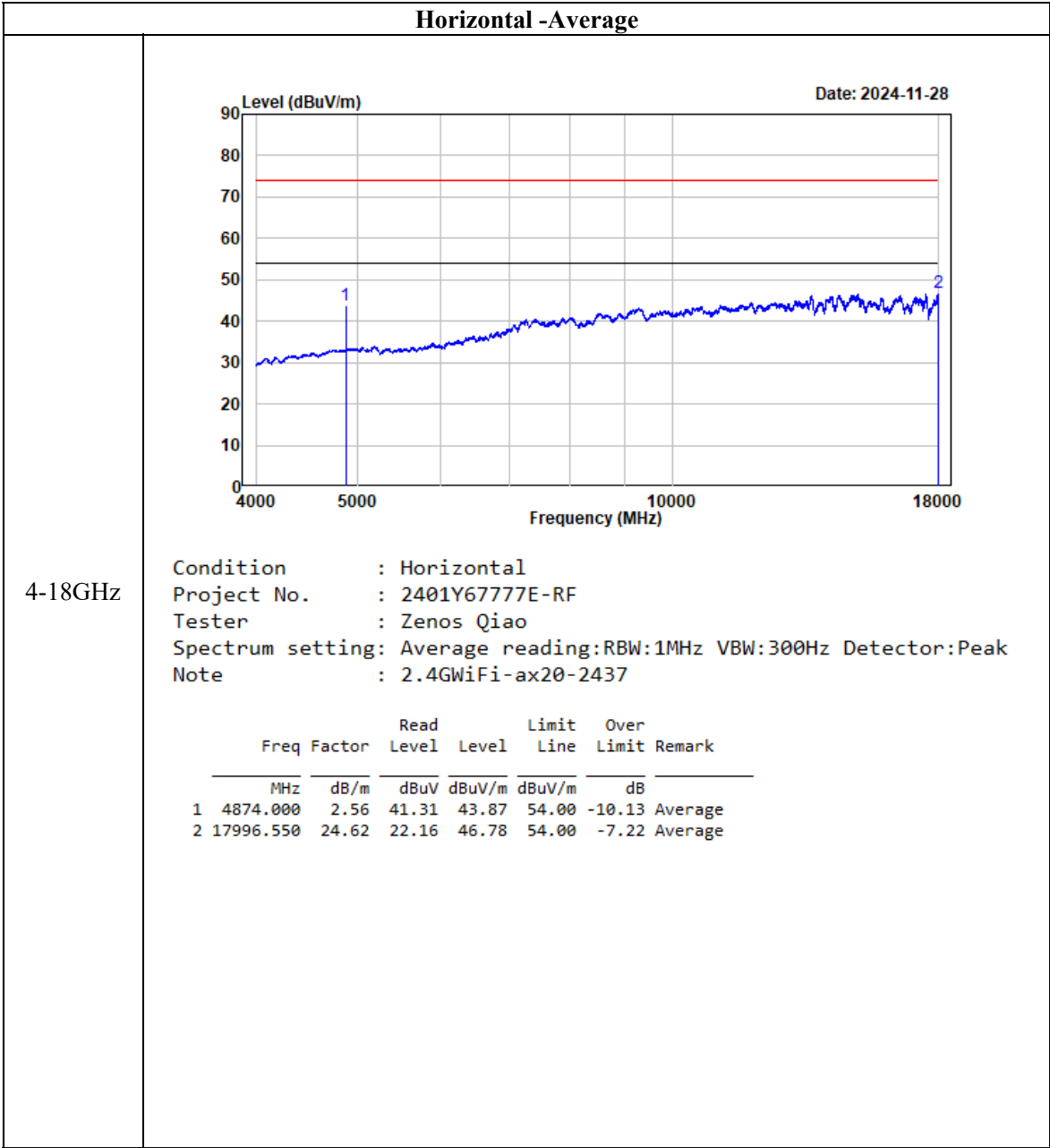


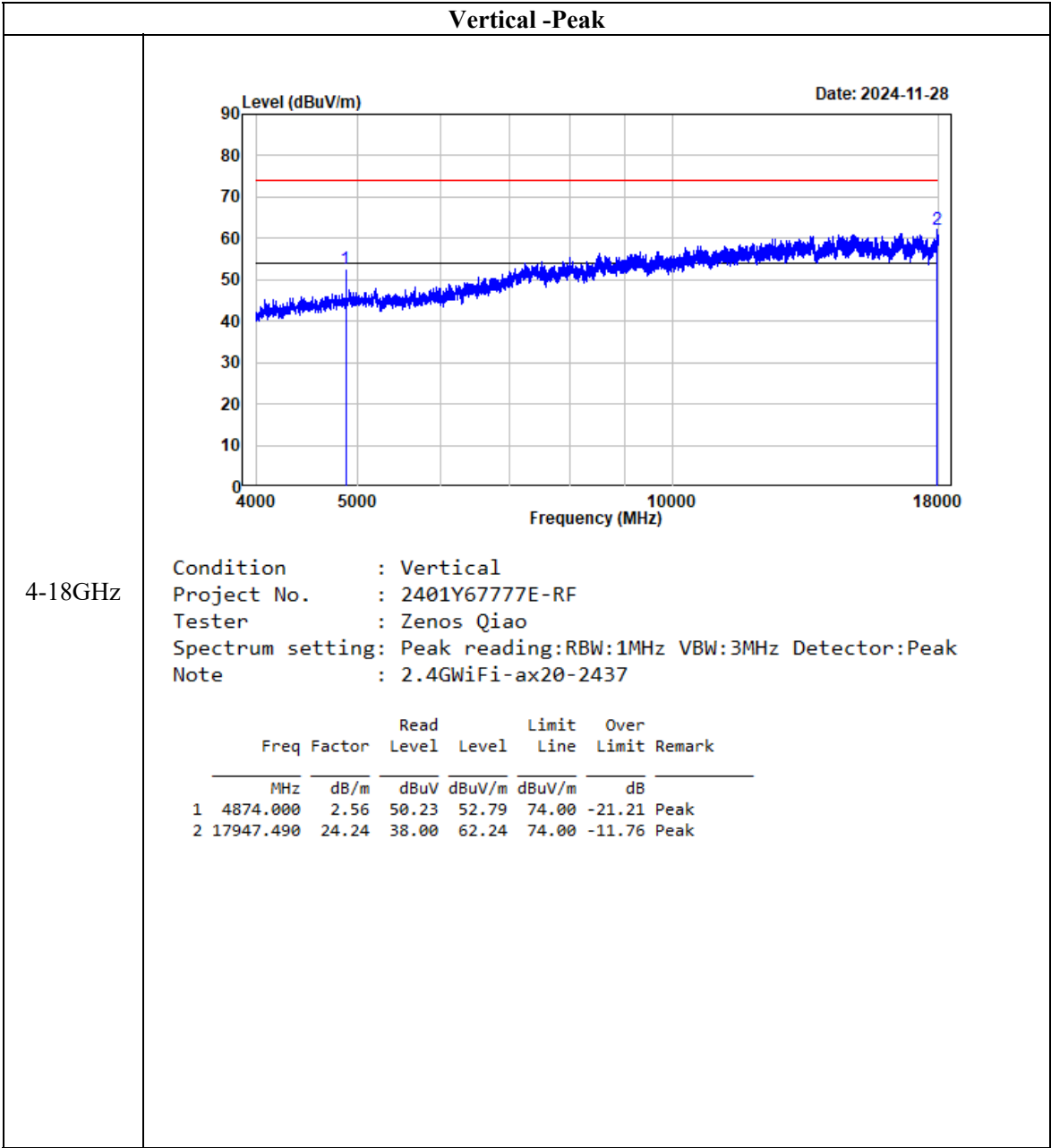
802.11ax20

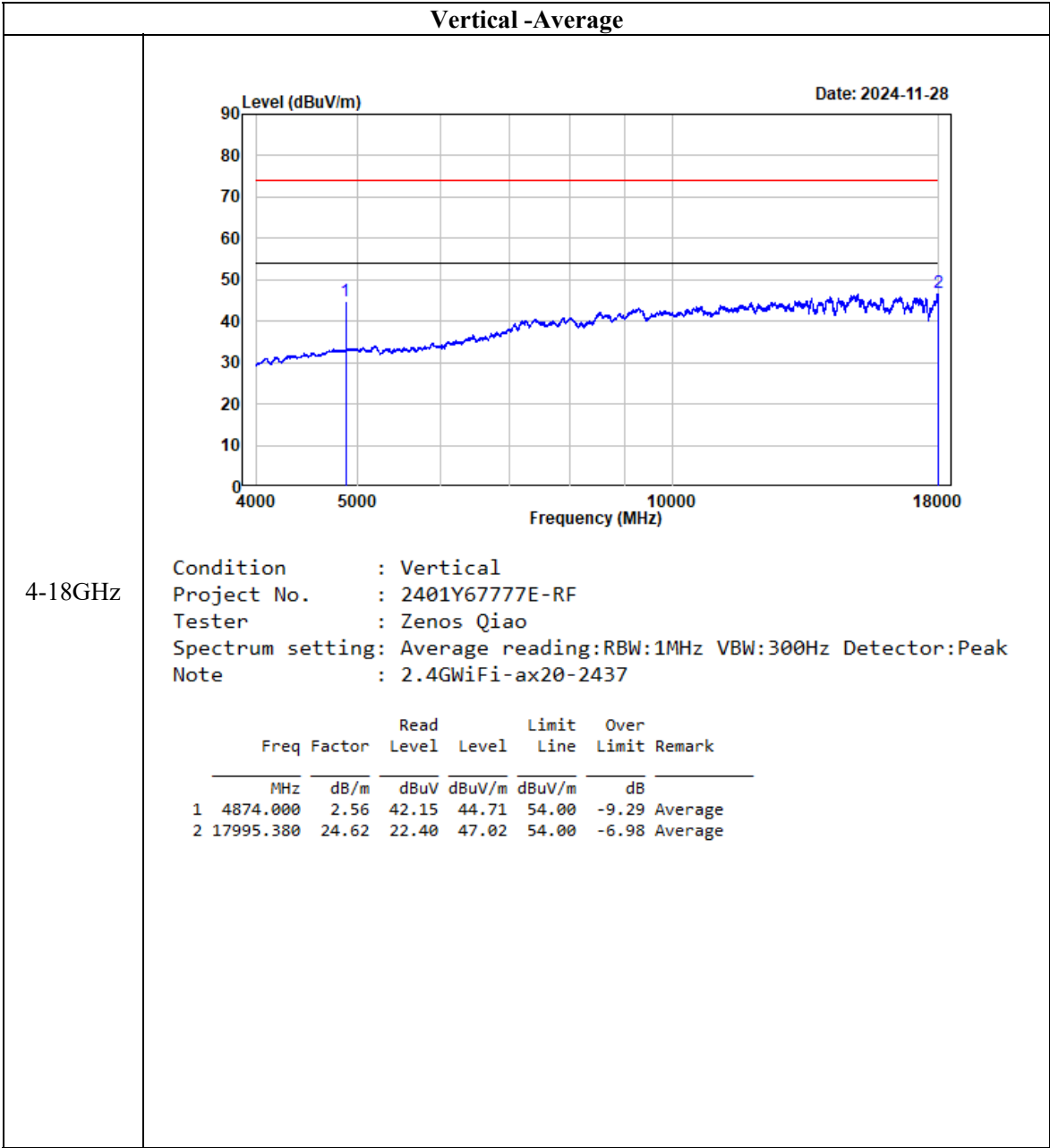




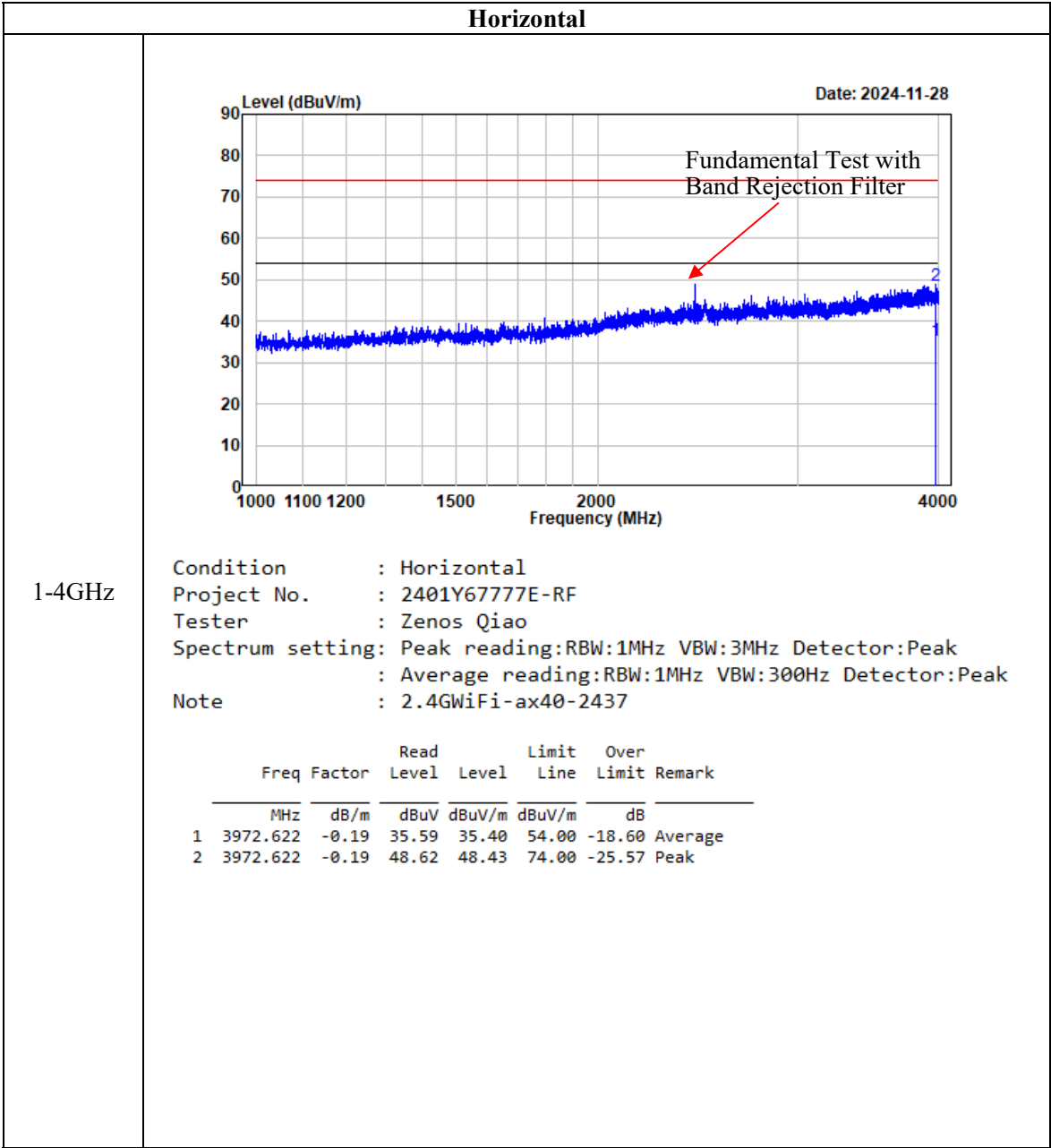


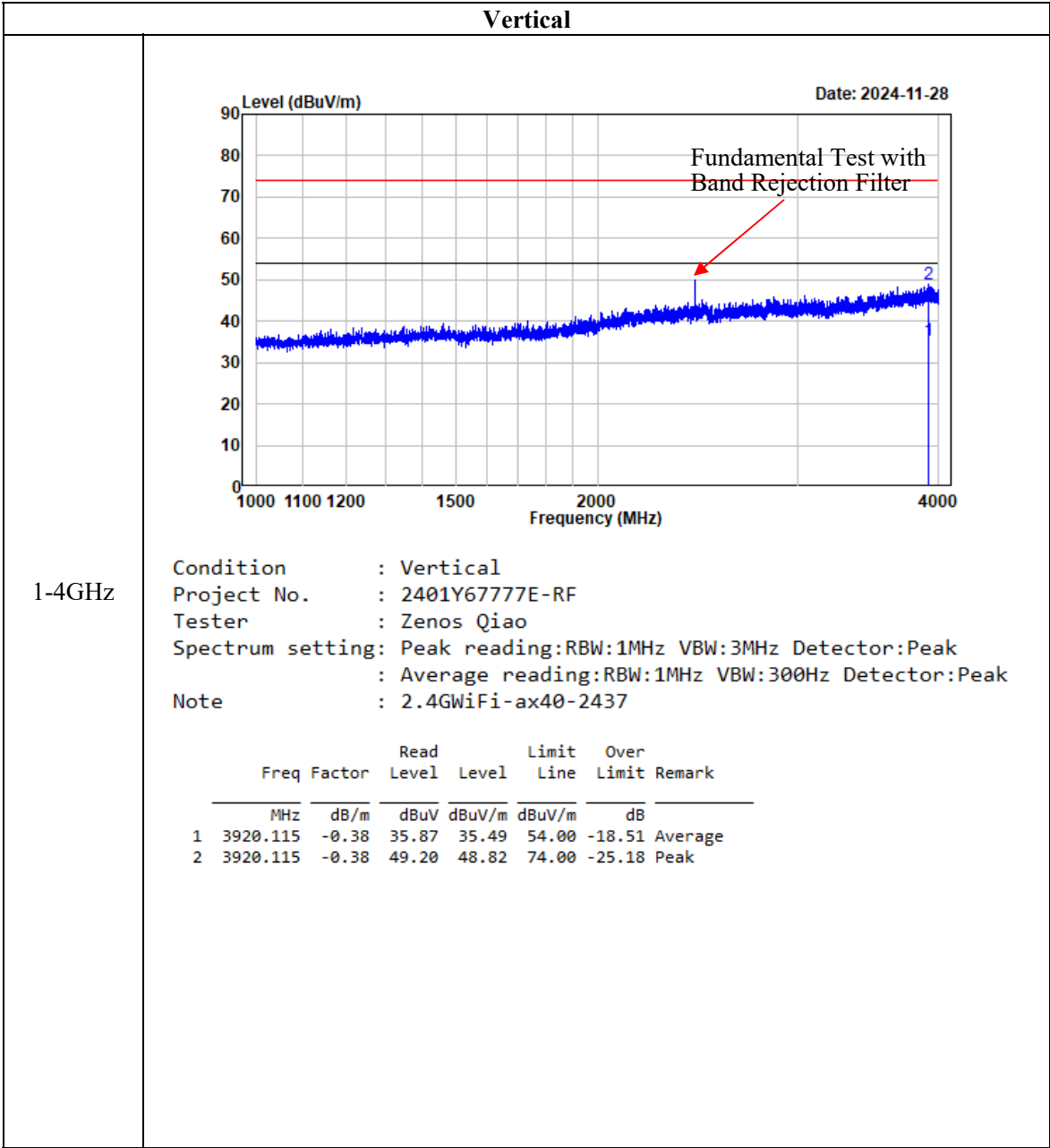


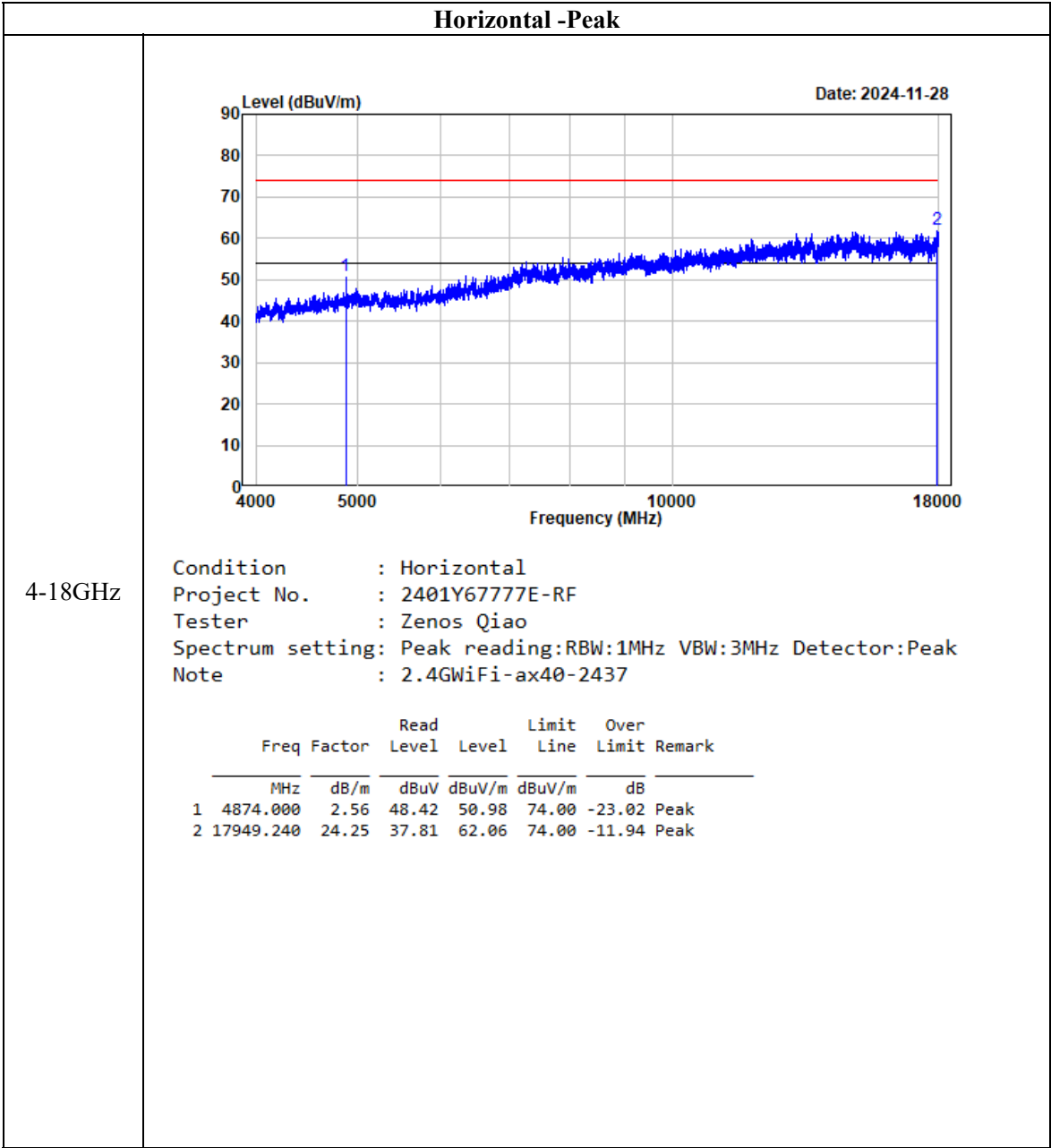


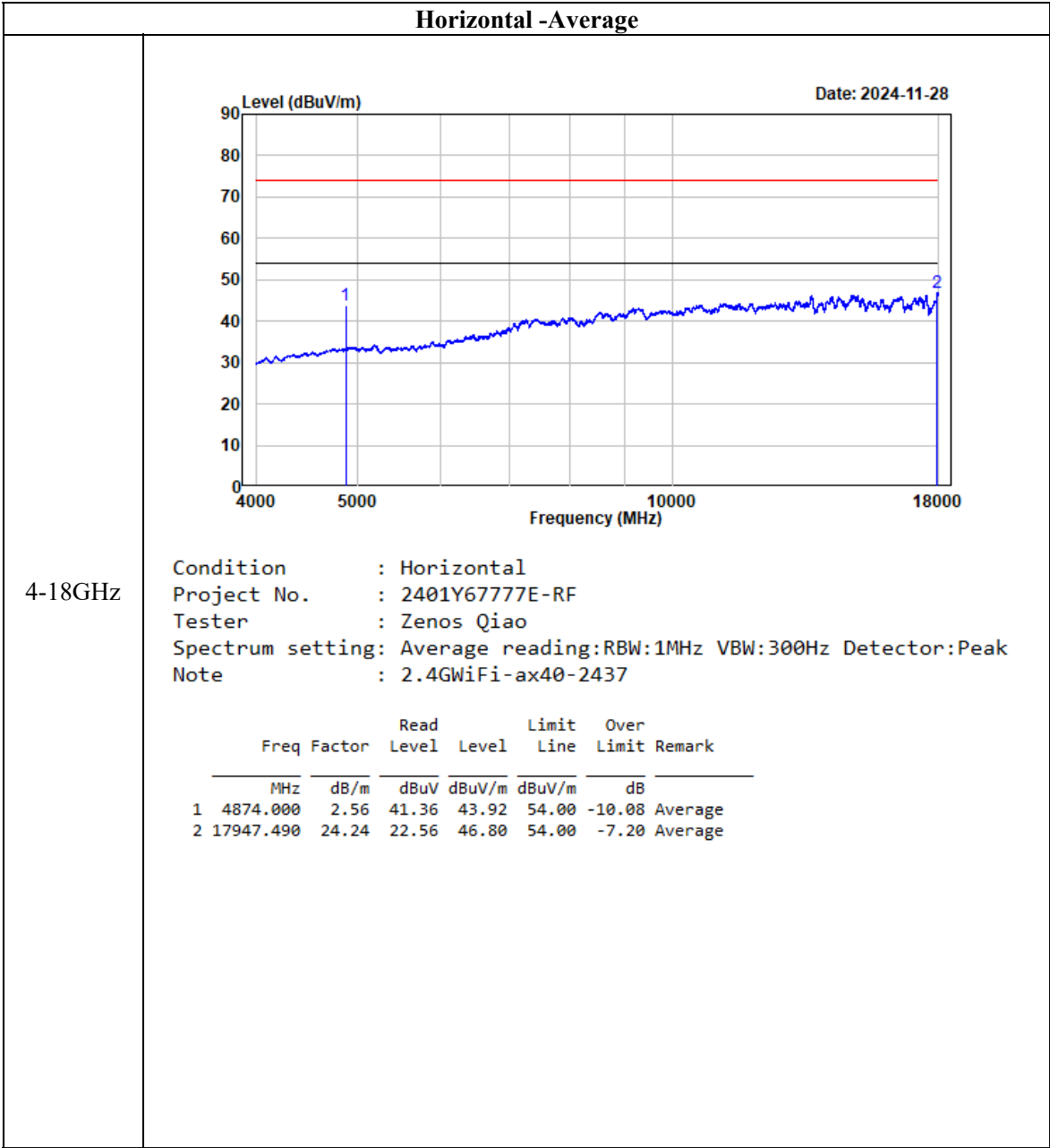


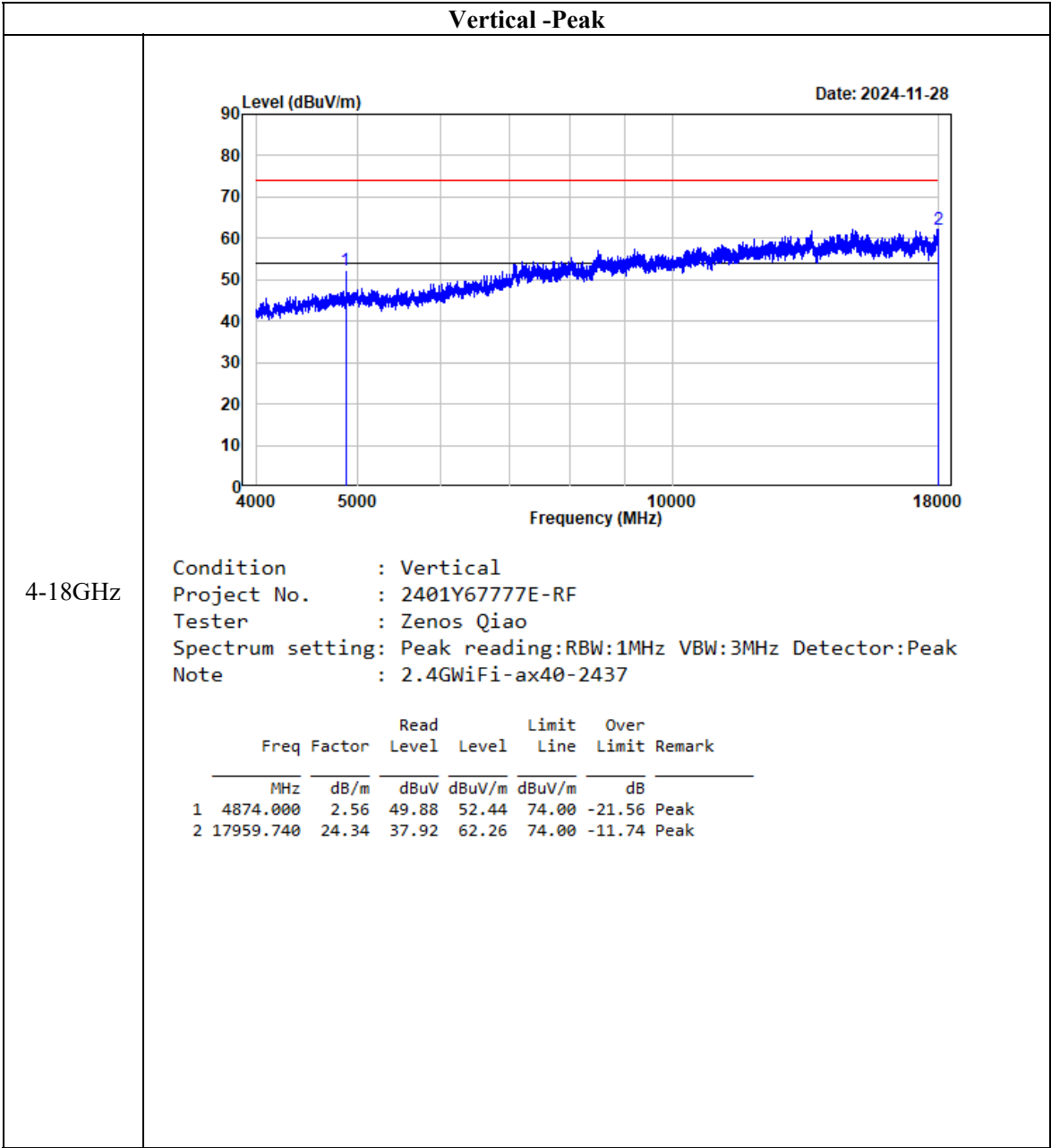
802.11ax40

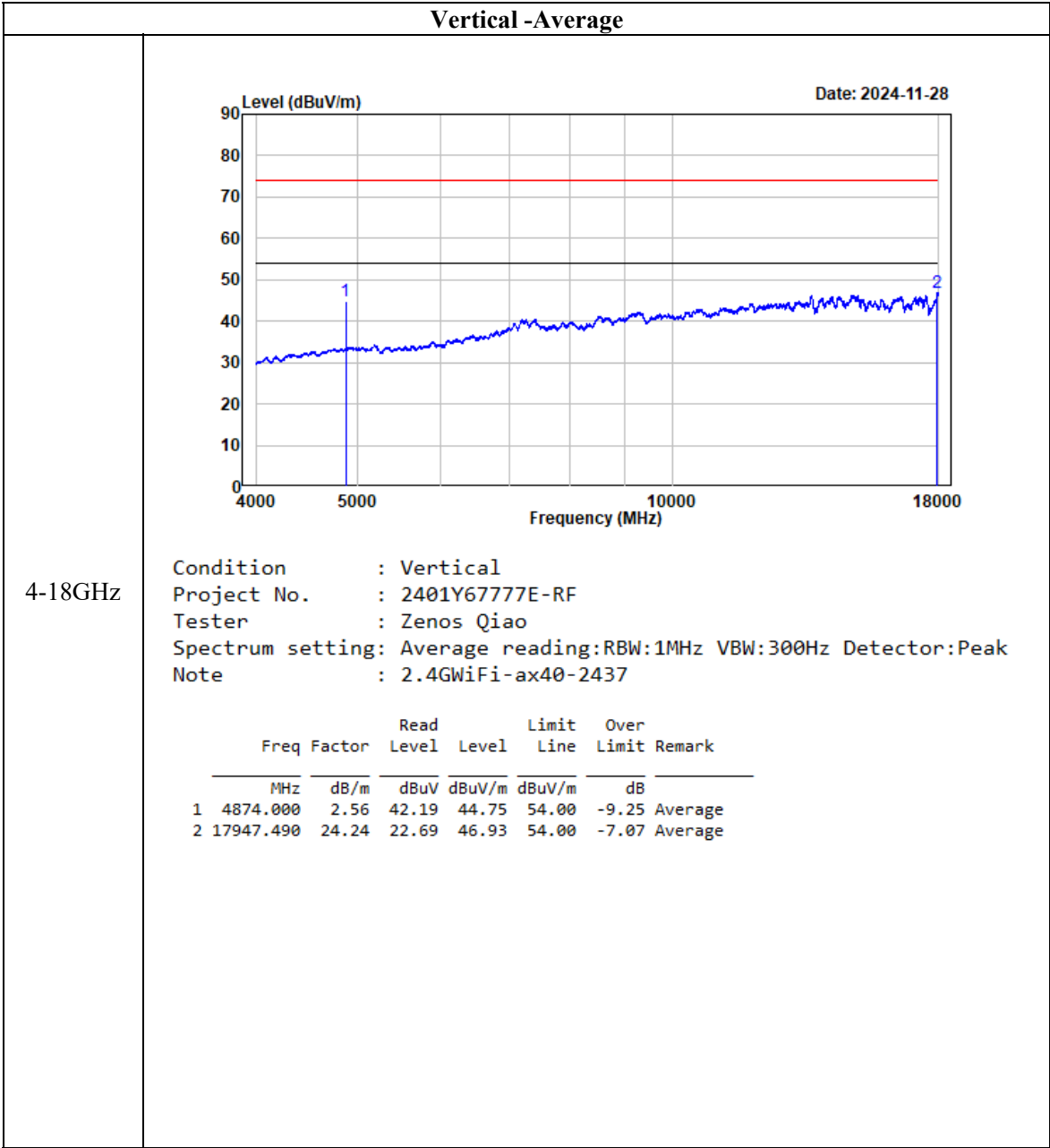




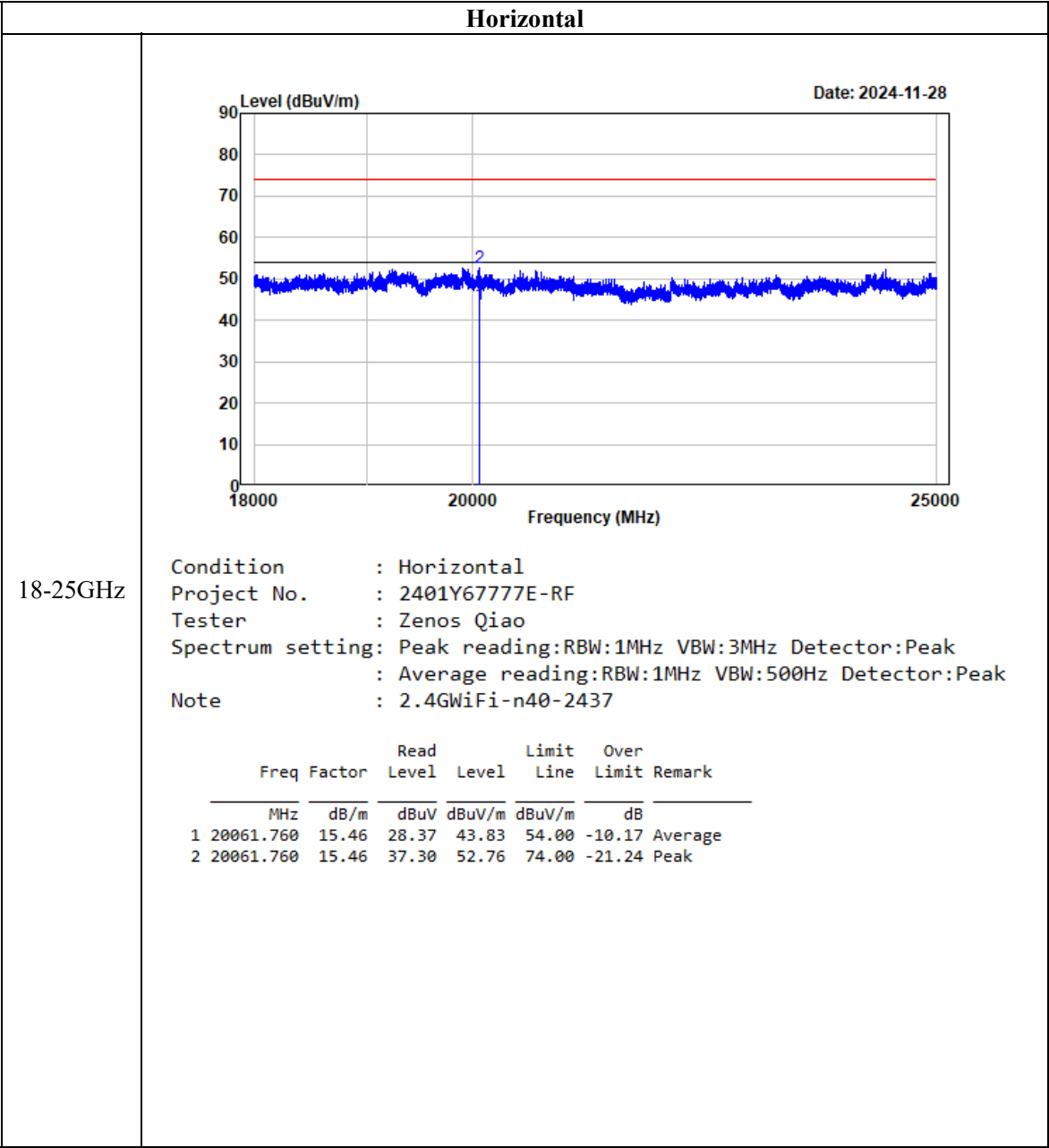


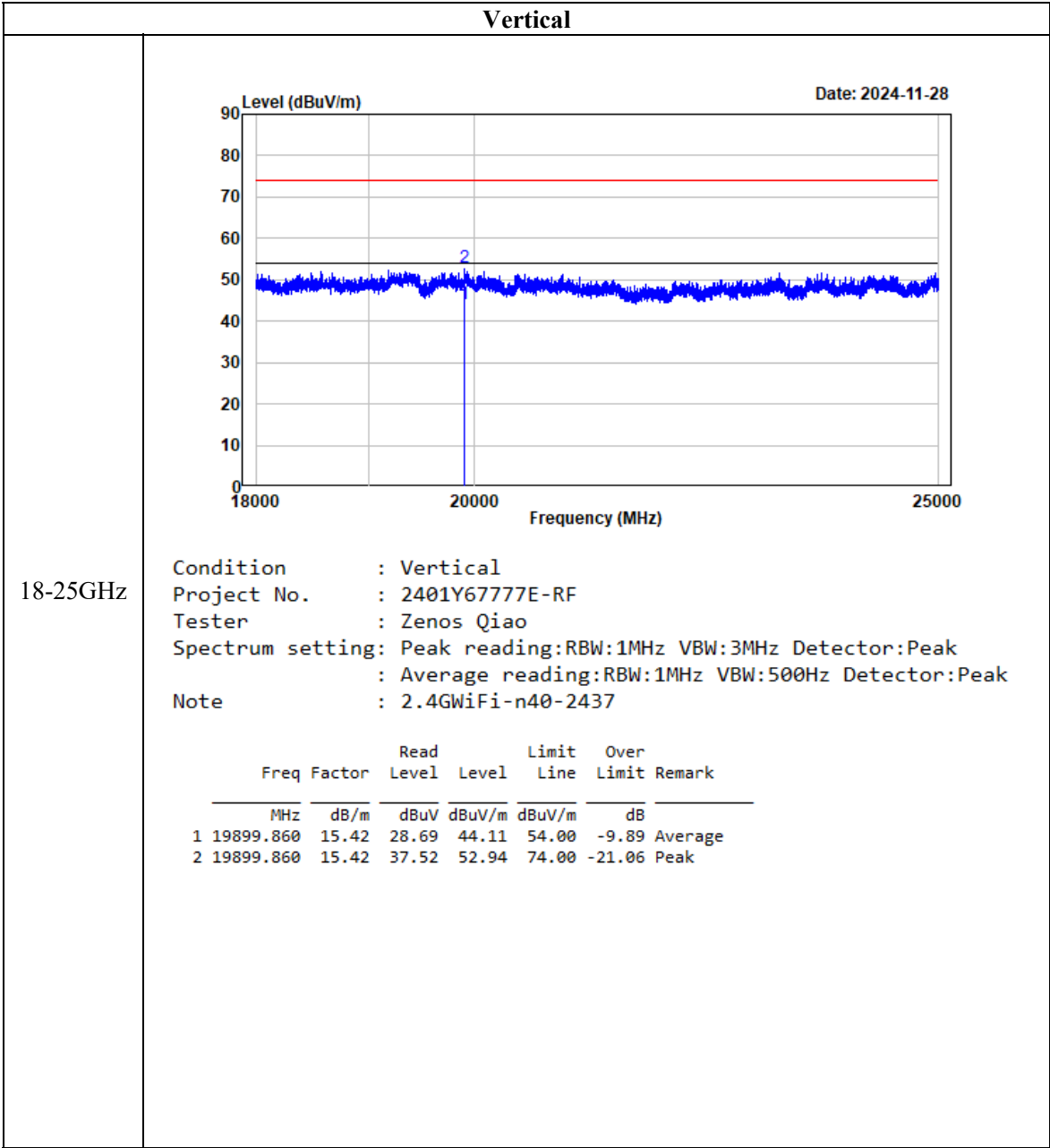






18-25GHz (Only with worst case margin mode plot):





§15.247 (a)(2) & RSS-Gen§6.7 & RSS-247 § 5.2 (a) 99% OCCUPIED BANDWIDTH & 6 dB EMISSION BANDWIDTH

Applicable Standard

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.

The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

In some cases, the “6 dB bandwidth” is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated 6 dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emission.

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.8.1 and Clause 6.9.3& RSS-Gen§6.7

6 dB Emission Bandwidth

The steps for the first option are as follows:

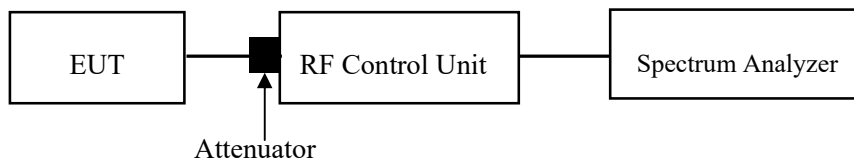
- a) Set RBW = 100 kHz.
- b) Set the VBW $\geq [3 \times \text{RBW}]$.
- c) Detector = peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

99% Occupied Bandwidth

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:

- a) 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.
- b) 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 (Note: for RSS-GEN rules, VBW shall not be smaller than three times the RBW value. Video averaging is not permitted) , unless otherwise specified by the applicable requirement.
- c) 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 4.1.5.2.

- d) Step a) through step c) might require iteration to adjust within the specified range.
- e) 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.
- f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
- g) 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.
- h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units



Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	55 %
ATM Pressure:	101 kPa

The testing was performed by Lee Li from 2024-11-08 to 2024-12-11

EUT operation mode: Transmitting

Test Result: Compliant.

Please refer to the Appendix.

§15.247(b)(3) & RSS-247 § 5.4(d) MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

According to FCC §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. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W. The e.i.r.p. shall not exceed 4 W, except as provided in section 5.4(e).

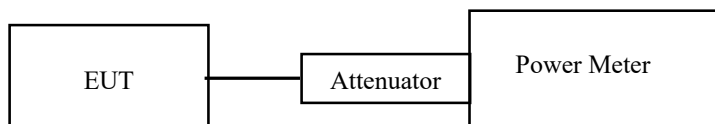
As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power. The maximum conducted output power is the total transmit power delivered to all antennas and antenna elements, averaged across all symbols in the signalling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or transmitting at a reduced power level. If multiple modes of operation are implemented, the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

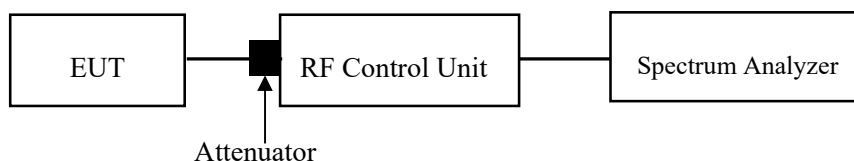
Test Method: ANSI C63.10-2013 Clause 11.9.1.1 for BLE and Clause 11.9.1.3 & 11.9.2.3.2 for Wi-Fi

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
3. Add a correction factor to the display.

For Wi-Fi mode:



For BLE mode:



Note: A short RF cable with low cable loss connected to the EUT antenna port, which was provided by client or lab, the cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable and/or power splitter loss.

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	55 %
ATM Pressure:	101 kPa

The testing was performed by Lee Li from 2024-11-08 to 2024-12-11

EUT operation mode: Transmitting

Test Result: Compliant.

Please refer to the Appendix.

§15.247(d) & RSS-247 § 5.5 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

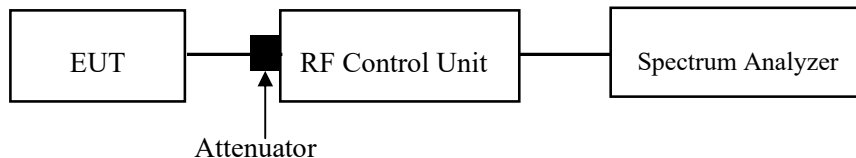
Applicable Standard

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. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.11

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.



Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	55 %
ATM Pressure:	101 kPa

The testing was performed by Lee Li from 2024-11-08 to 2024-12-11

EUT operation mode: Transmitting

Test Result: Compliant.

Please refer to the Appendix.

§15.247(e) & RSS-247 § 5.2 (b) POWER SPECTRAL DENSITY

Applicable Standard

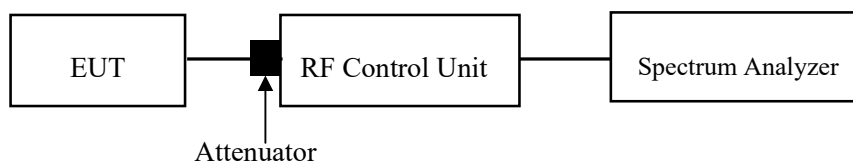
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of section 5.4(d), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.10.2

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
2. Set the RBW to: $3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}$.
3. Set the VBW $\geq 3 \times \text{RBW}$.
4. Set the span to 1.5 times the DTS bandwidth.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



Note: A short RF cable with low cable loss connected to the EUT antenna port, which was provided by client or lab, the cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable and/or power splitter loss.

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	55 %
ATM Pressure:	101 kPa

The testing was performed by Lee Li from 2024-11-08 to 2024-12-11

EUT operation mode: Transmitting

Test Result: Compliant.

Please refer to the Appendix.

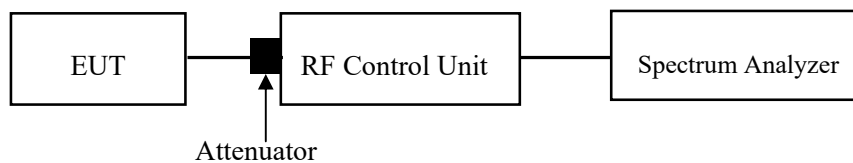
C63.10 §11.6- DUTY CYCLE

Test Procedure

According to ANSI C63.10-2013 Section 11.6

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 $T \leq 16.7 \mu s$.)



Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	55 %
ATM Pressure:	101 kPa

The testing was performed by Lee Li from 2024-11-08 to 2024-12-11

EUT operation mode: Transmitting

Test Result: Compliant.

Please refer to the Appendix.

EUT PHOTOGRAPHS

Please refer to the attachment 2401Y6777E-RF External photo and 2401Y6777E-RF Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2401Y6777E-RFB Test Setup photo.

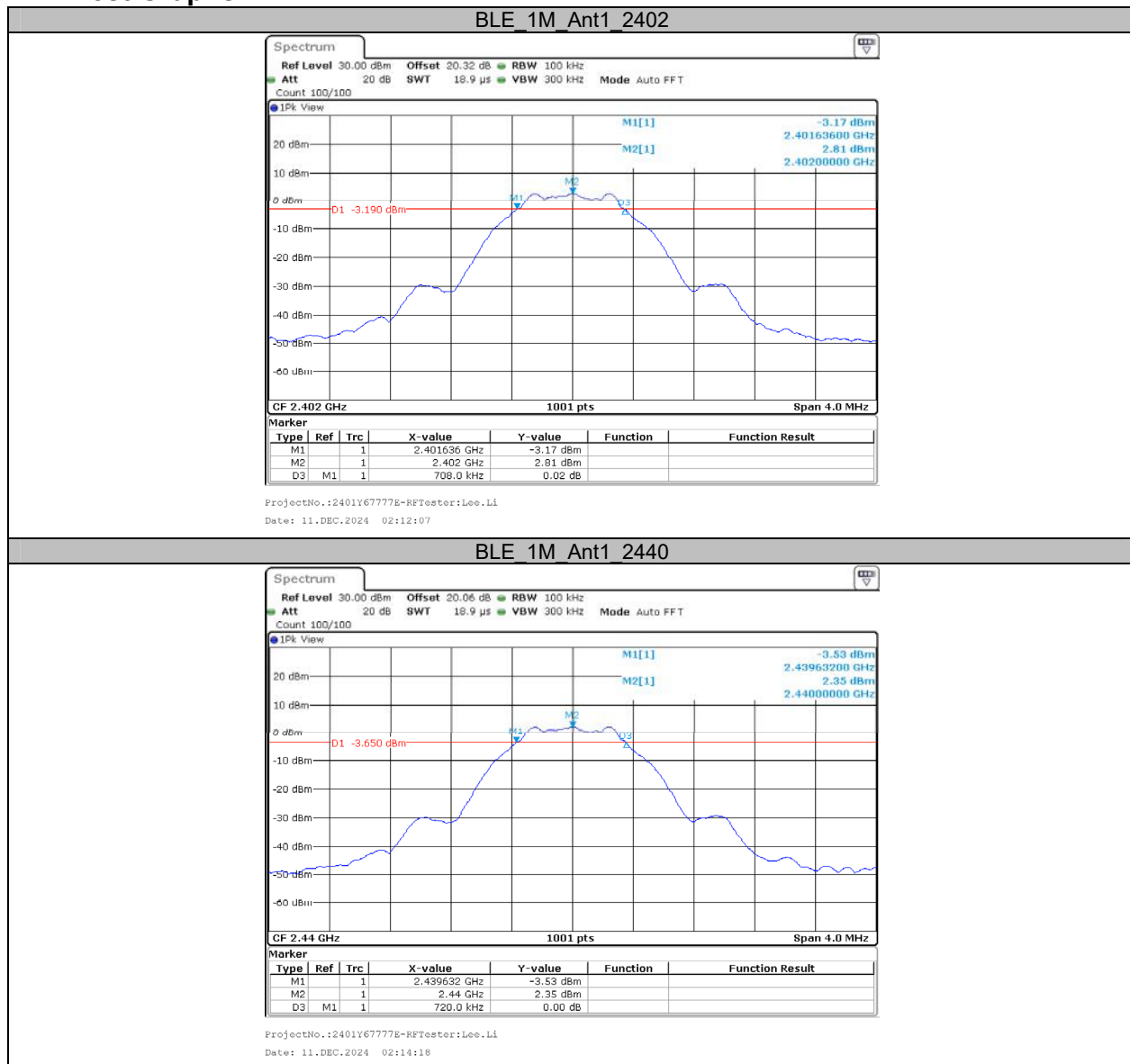
APPENDIX-BLE

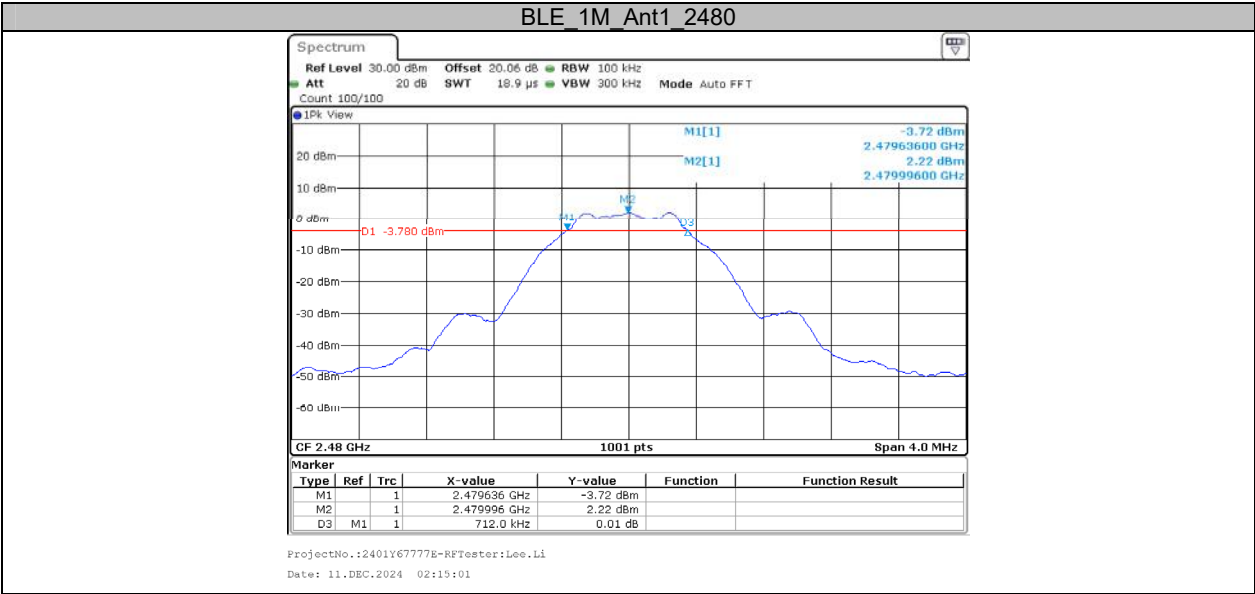
Appendix A: DTS Bandwidth

Test Result

Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.71	2401.64	2402.34	0.5	PASS
		2440	0.72	2439.63	2440.35	0.5	PASS
		2480	0.71	2479.64	2480.35	0.5	PASS

Test Graphs



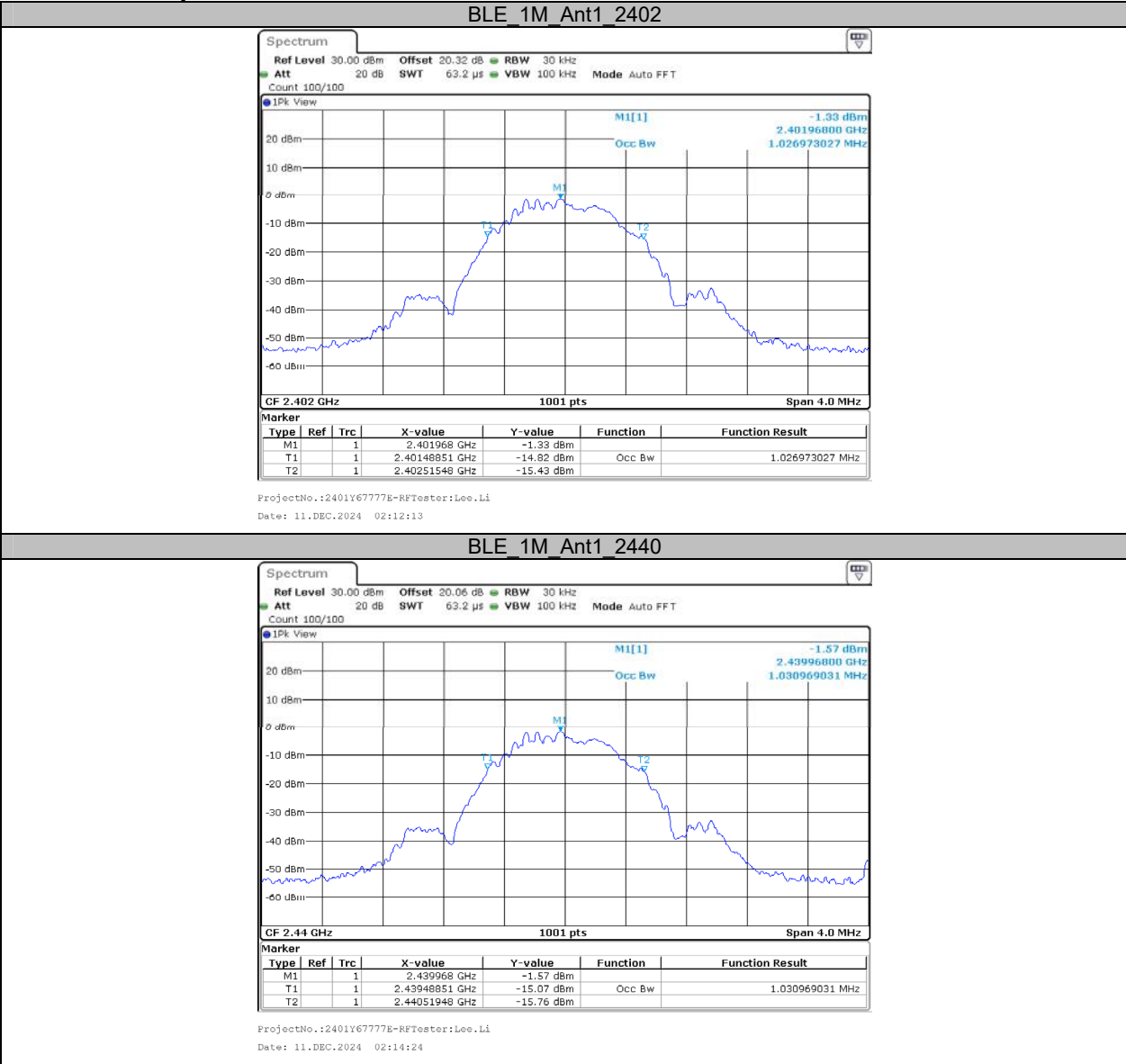


Appendix B: Occupied Channel Bandwidth

Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.027	2401.4885	2402.5155	---	---
		2440	1.031	2439.4885	2440.5195	---	---
		2480	1.027	2479.4885	2480.5155	---	---

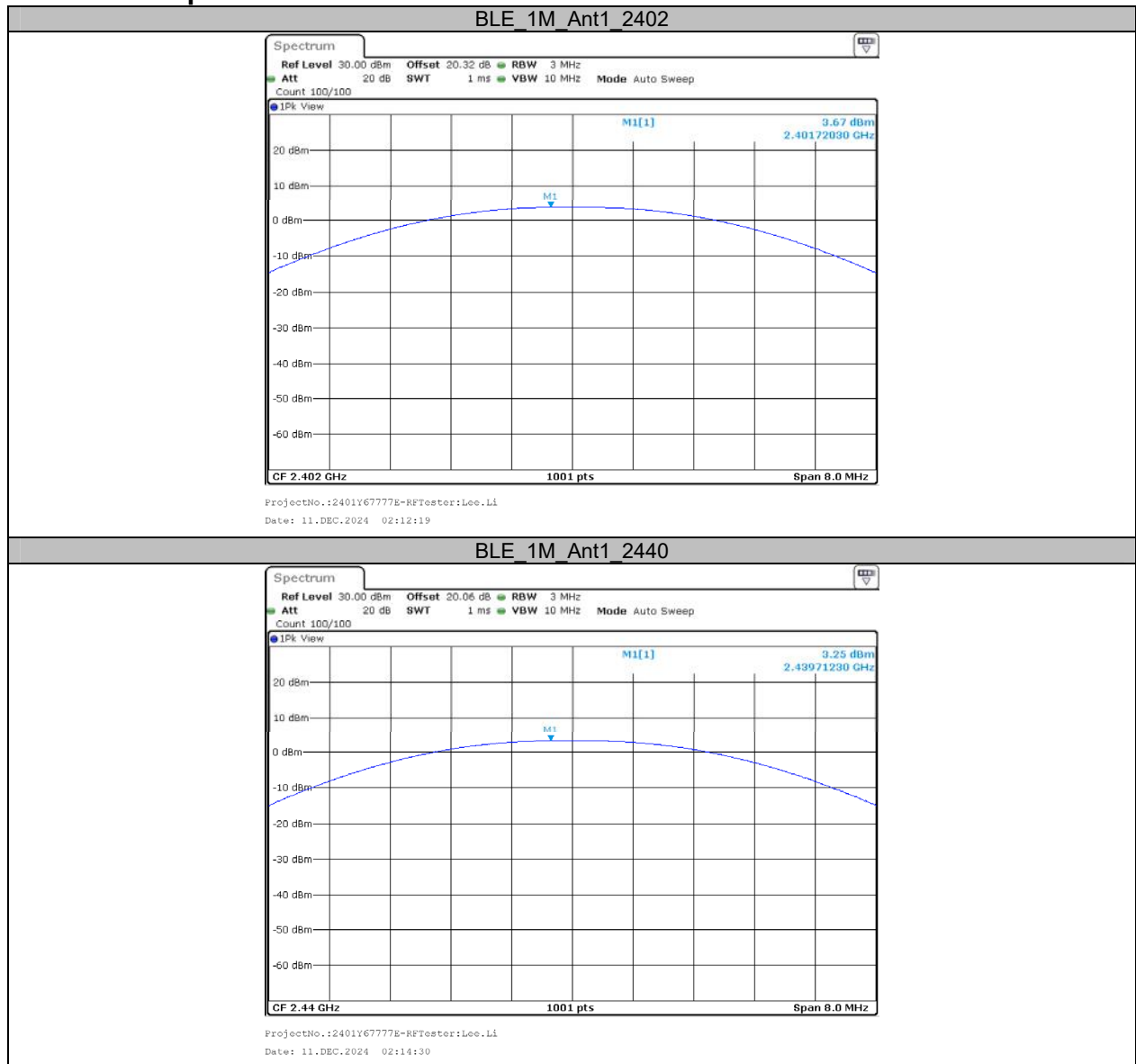
Test Graphs

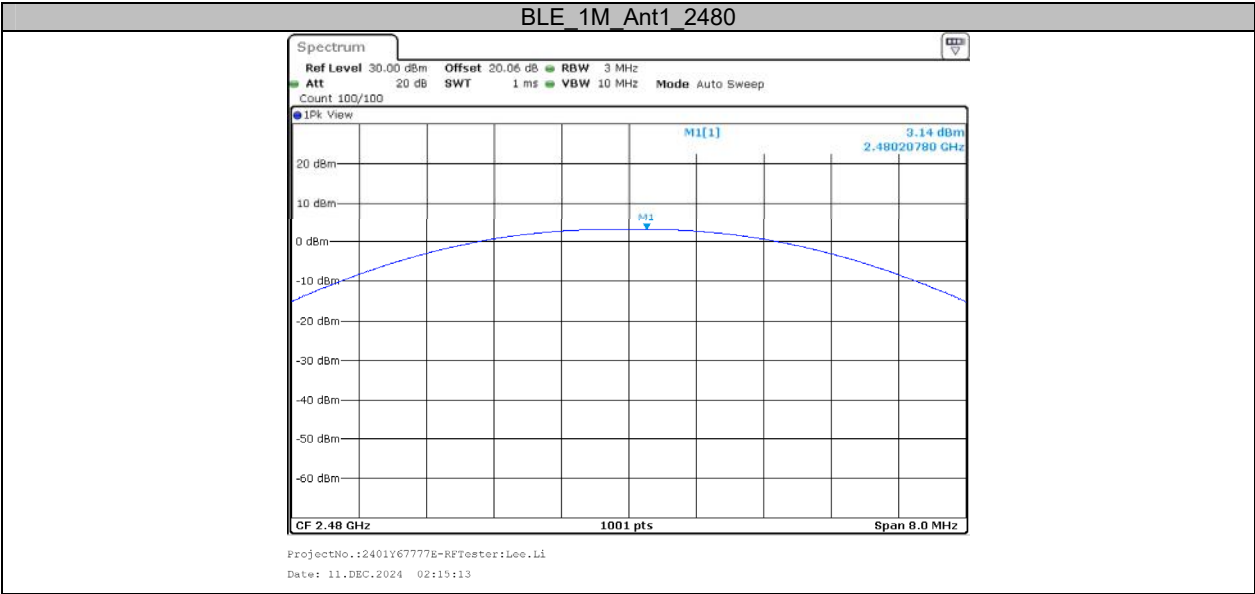




Appendix C: Maximum Conducted Output Power**Test Result Peak**

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	Ant1	2402	3.67	≤30	6.78	≤36	PASS
		2440	3.25	≤30	6.36	≤36	PASS
		2480	3.14	≤30	6.25	≤36	PASS

Test Graphs Peak

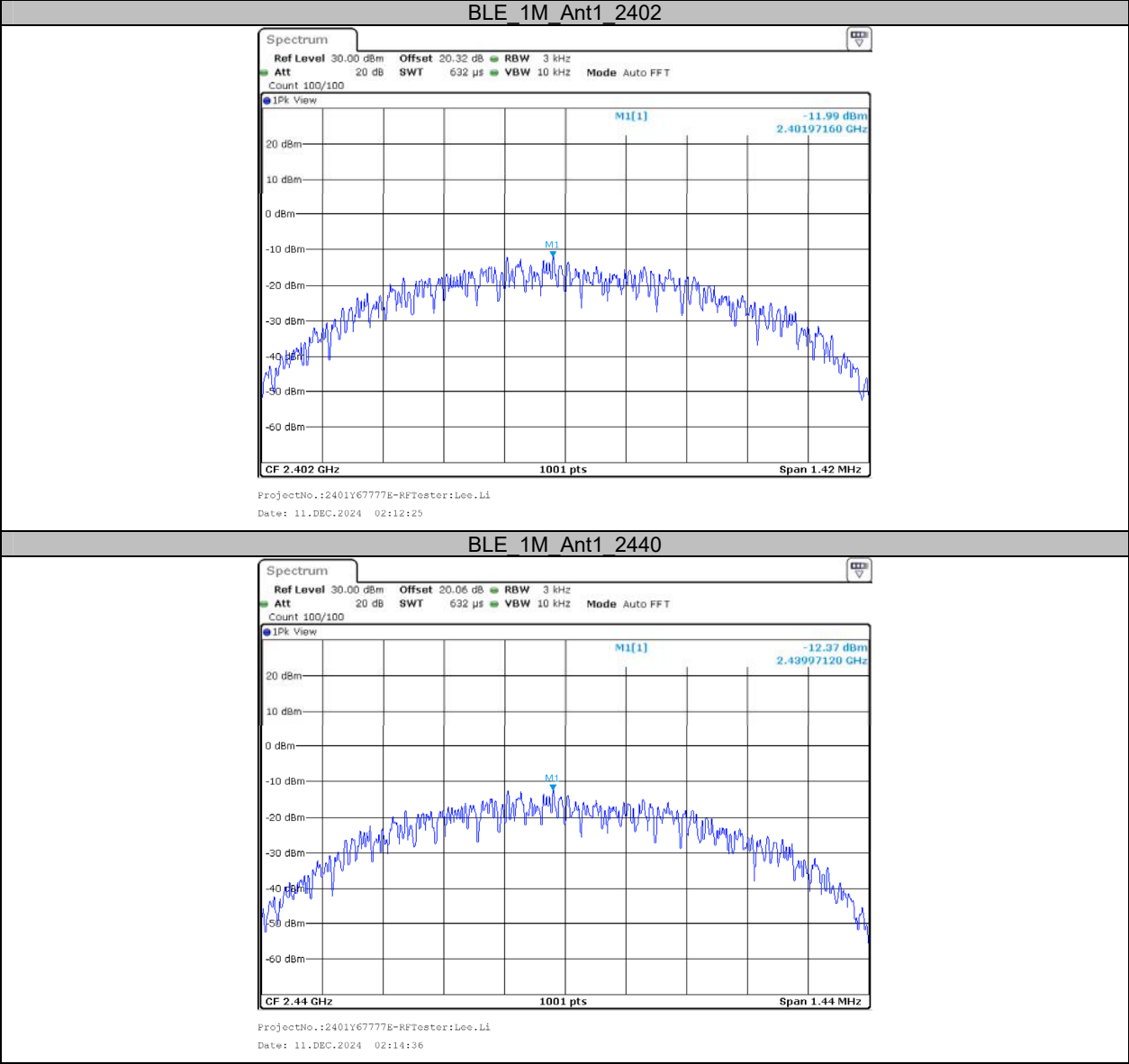


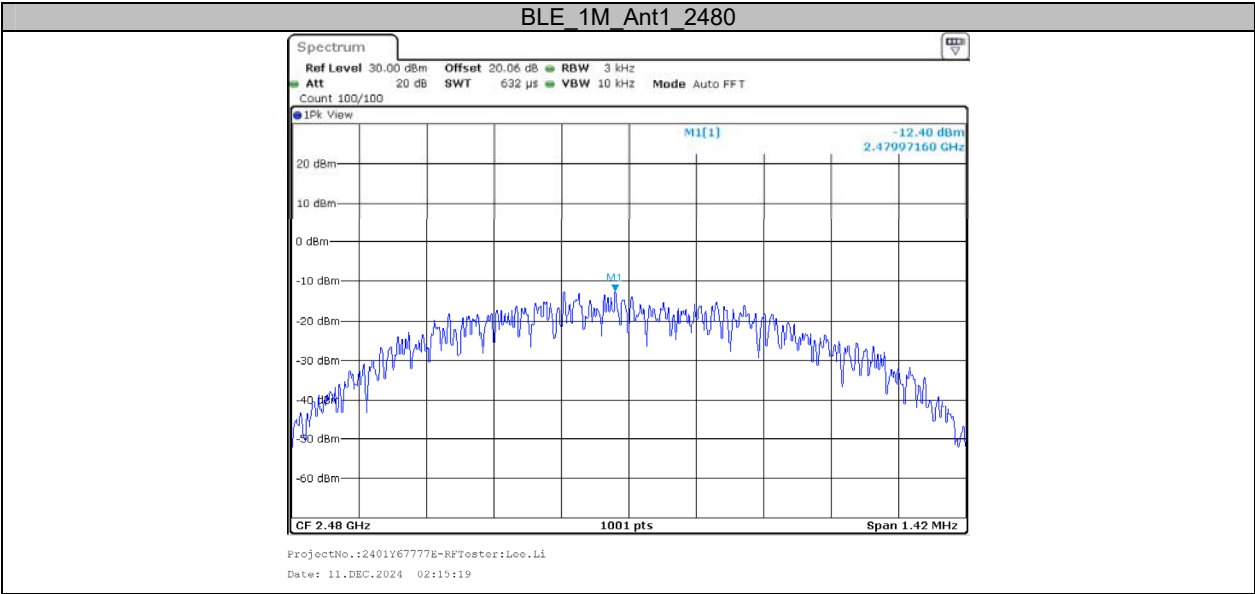
Appendix D: Maximum Power Spectral Density

Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-11.99	≤8.00	PASS
		2440	-12.37	≤8.00	PASS
		2480	-12.40	≤8.00	PASS

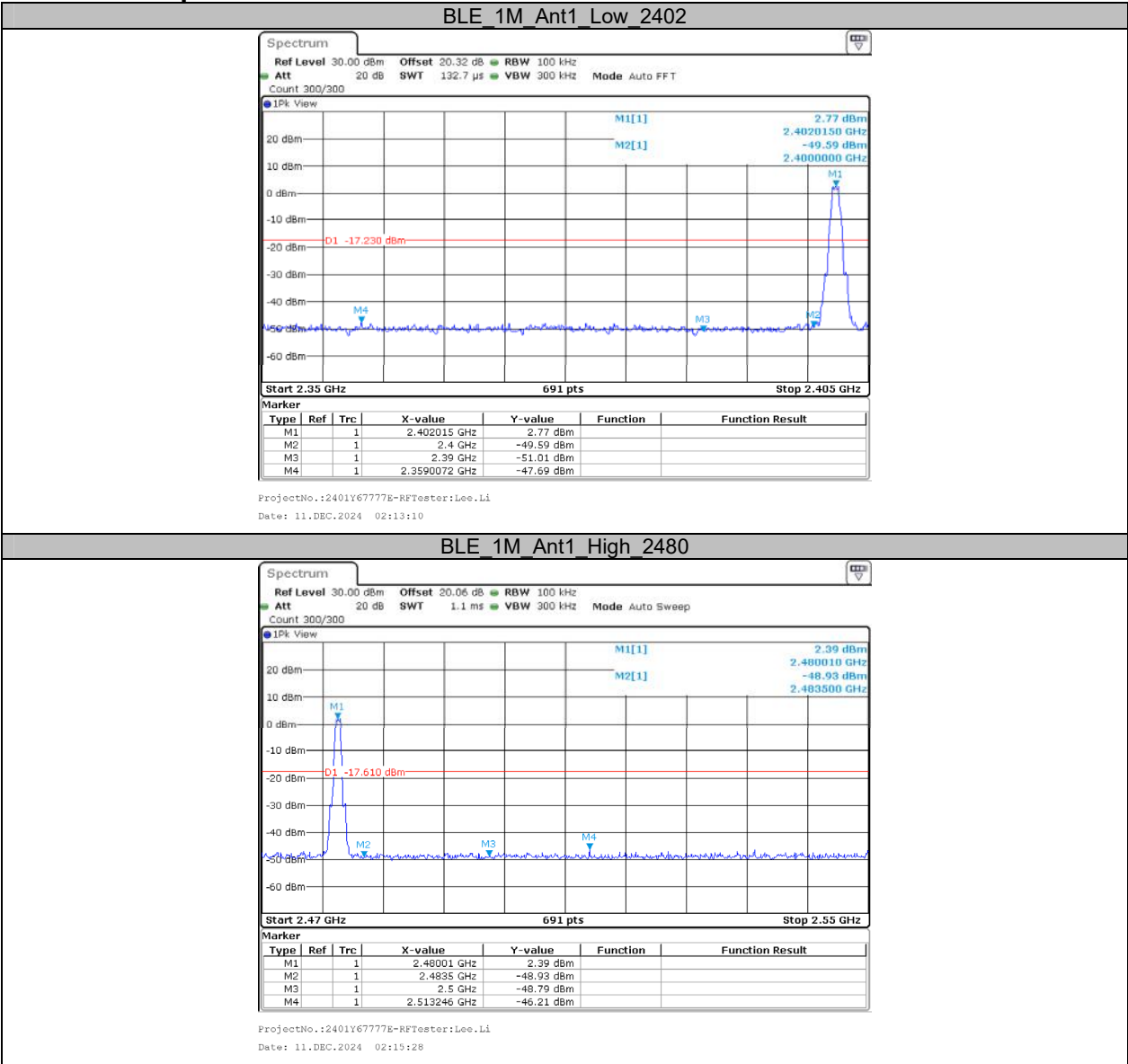
Test Graphs





Appendix E: Band Edge Measurements

Test Graphs

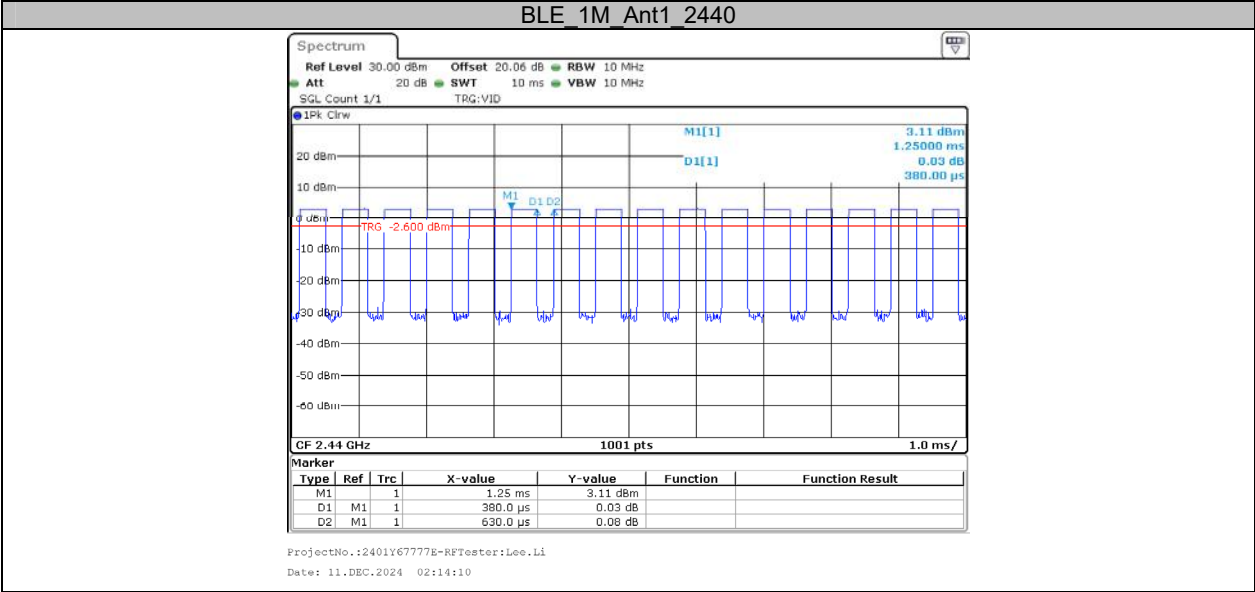


Appendix F: Duty Cycle

Test Result

Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]	1/T[Hz]	VBW Setting[Hz]
BLE 1M	Ant1	2440	0.38	0.63	60.32	2.20	2632	3000

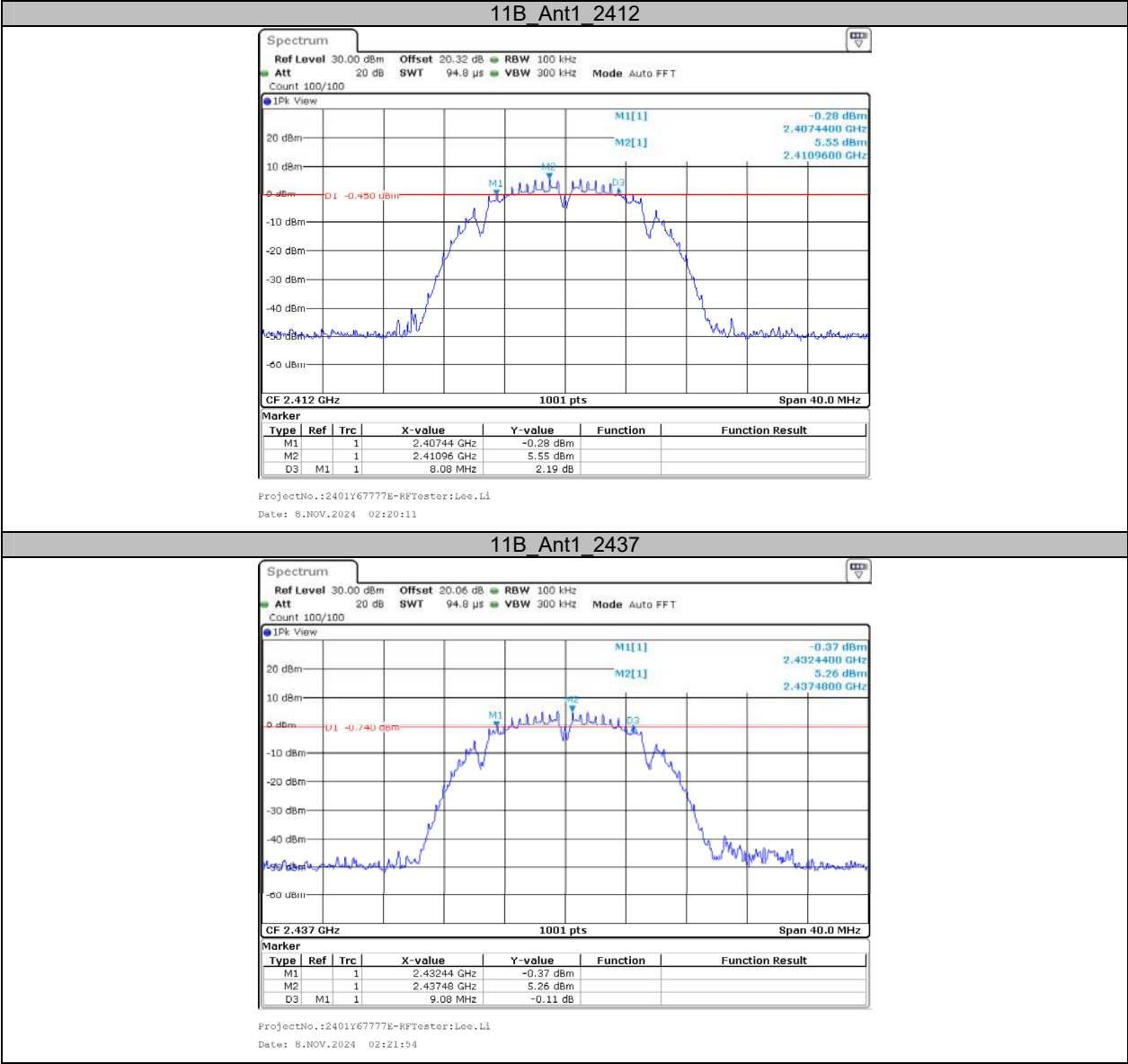
Test Graphs

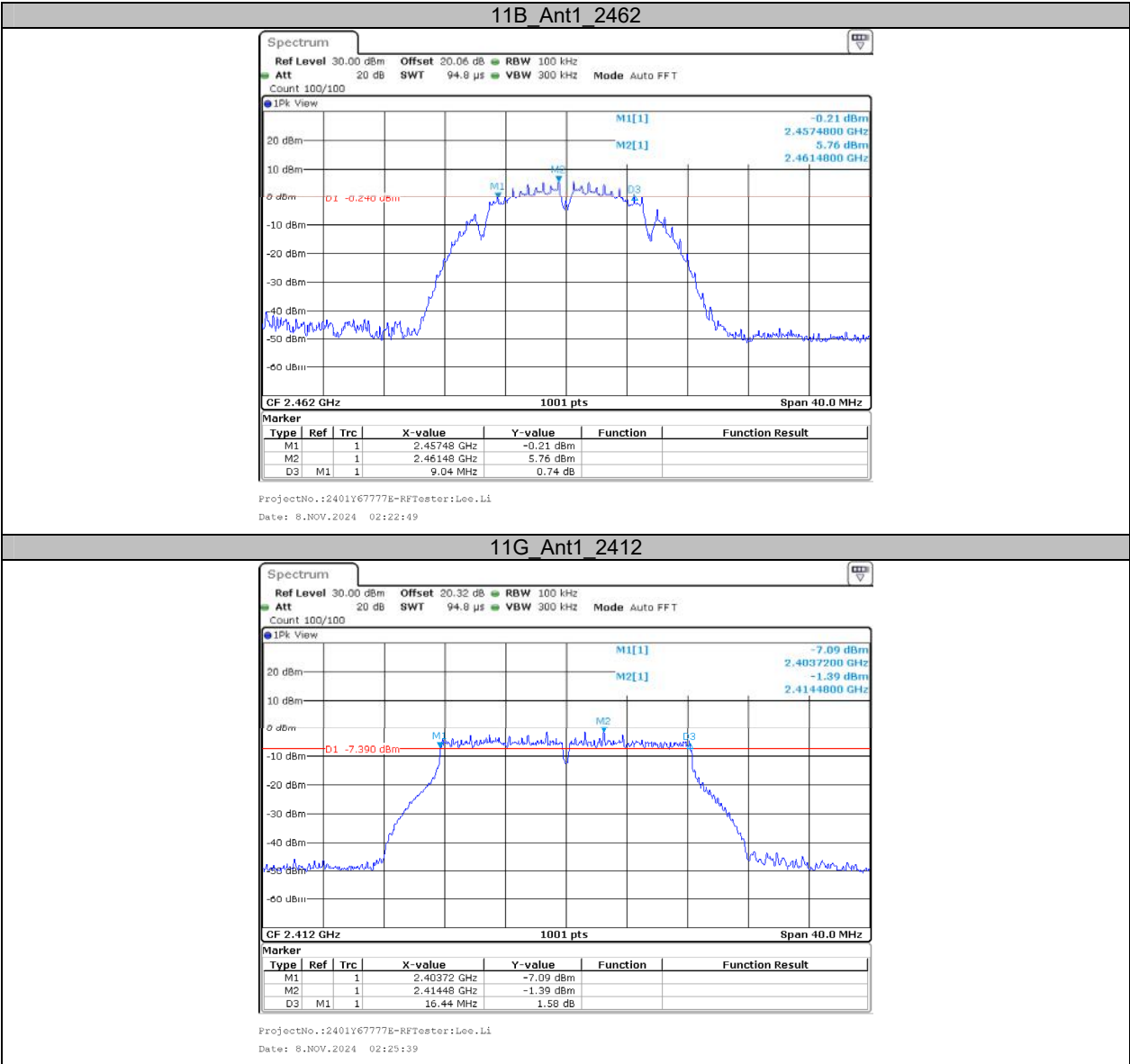


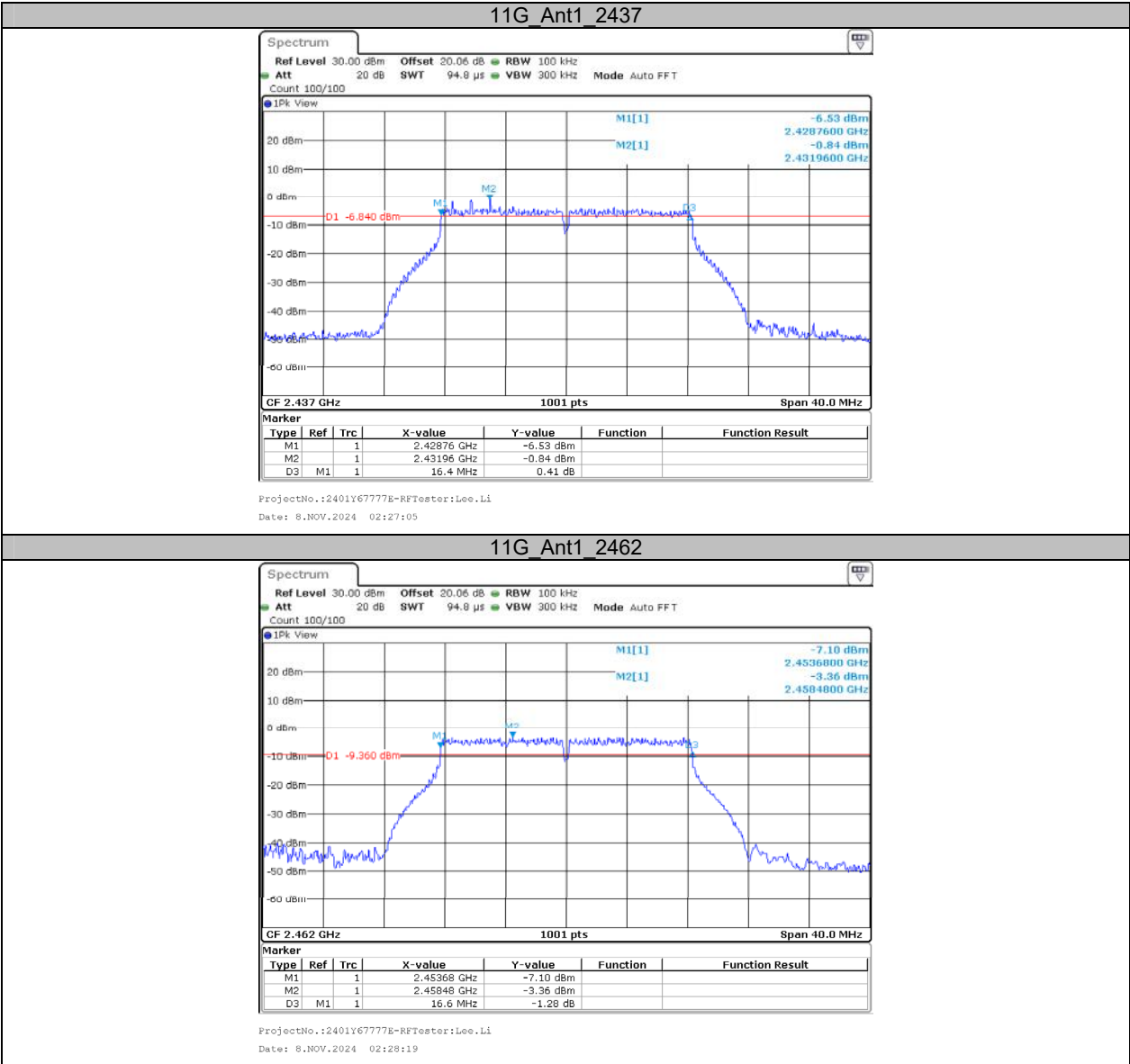
APPENDIX- 2.4G Wi-Fi**Appendix A: DTS Bandwidth****Test Result**

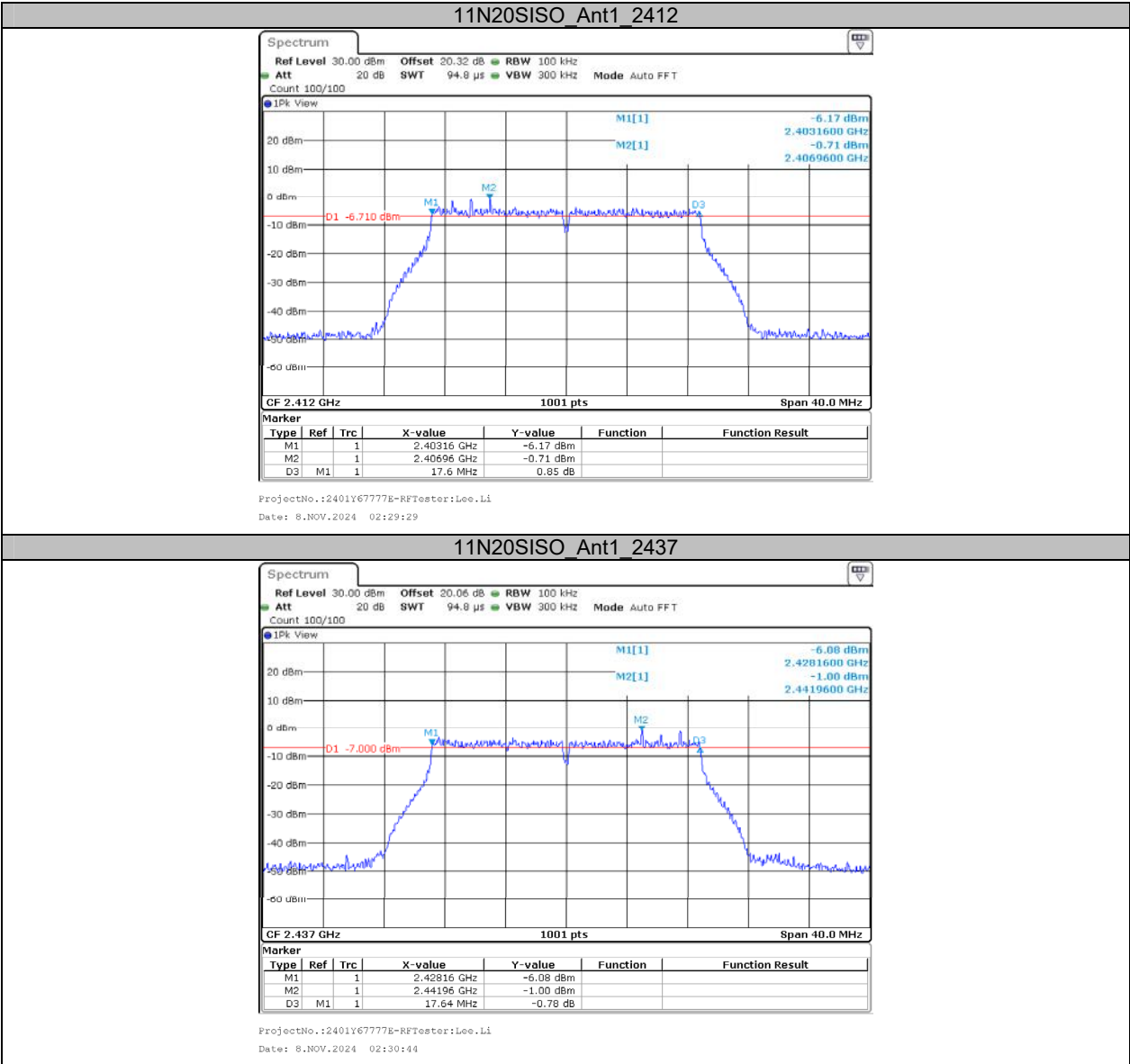
Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.08	2407.44	2415.52	0.5	PASS
		2437	9.08	2432.44	2441.52	0.5	PASS
		2462	9.04	2457.48	2466.52	0.5	PASS
11G	Ant1	2412	16.44	2403.72	2420.16	0.5	PASS
		2437	16.40	2428.76	2445.16	0.5	PASS
		2462	16.60	2453.68	2470.28	0.5	PASS
11N20SISO	Ant1	2412	17.60	2403.16	2420.76	0.5	PASS
		2437	17.64	2428.16	2445.80	0.5	PASS
		2462	17.72	2453.08	2470.80	0.5	PASS
11N40SISO	Ant1	2422	36.32	2403.84	2440.16	0.5	PASS
		2437	36.32	2418.84	2455.16	0.5	PASS
		2452	36.32	2433.84	2470.16	0.5	PASS
11AX20SISO	Ant1	2412	19.12	2402.40	2421.52	0.5	PASS
		2437	19.20	2427.40	2446.60	0.5	PASS
		2462	19.12	2452.36	2471.48	0.5	PASS
11AX40SISO	Ant1	2422	38.08	2402.96	2441.04	0.5	PASS
		2437	38.00	2417.96	2455.96	0.5	PASS
		2452	38.16	2432.96	2471.12	0.5	PASS

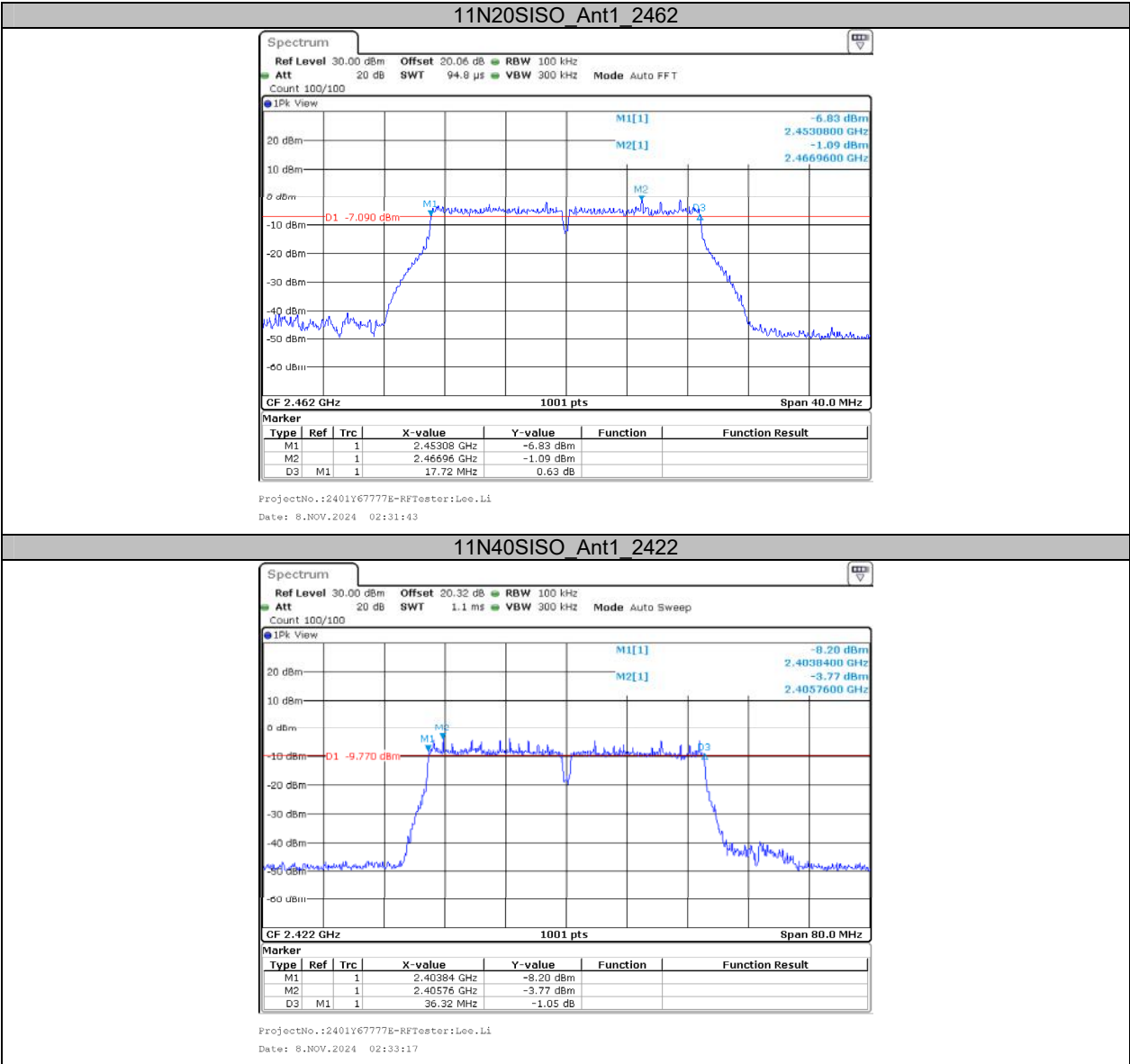
Test Graphs

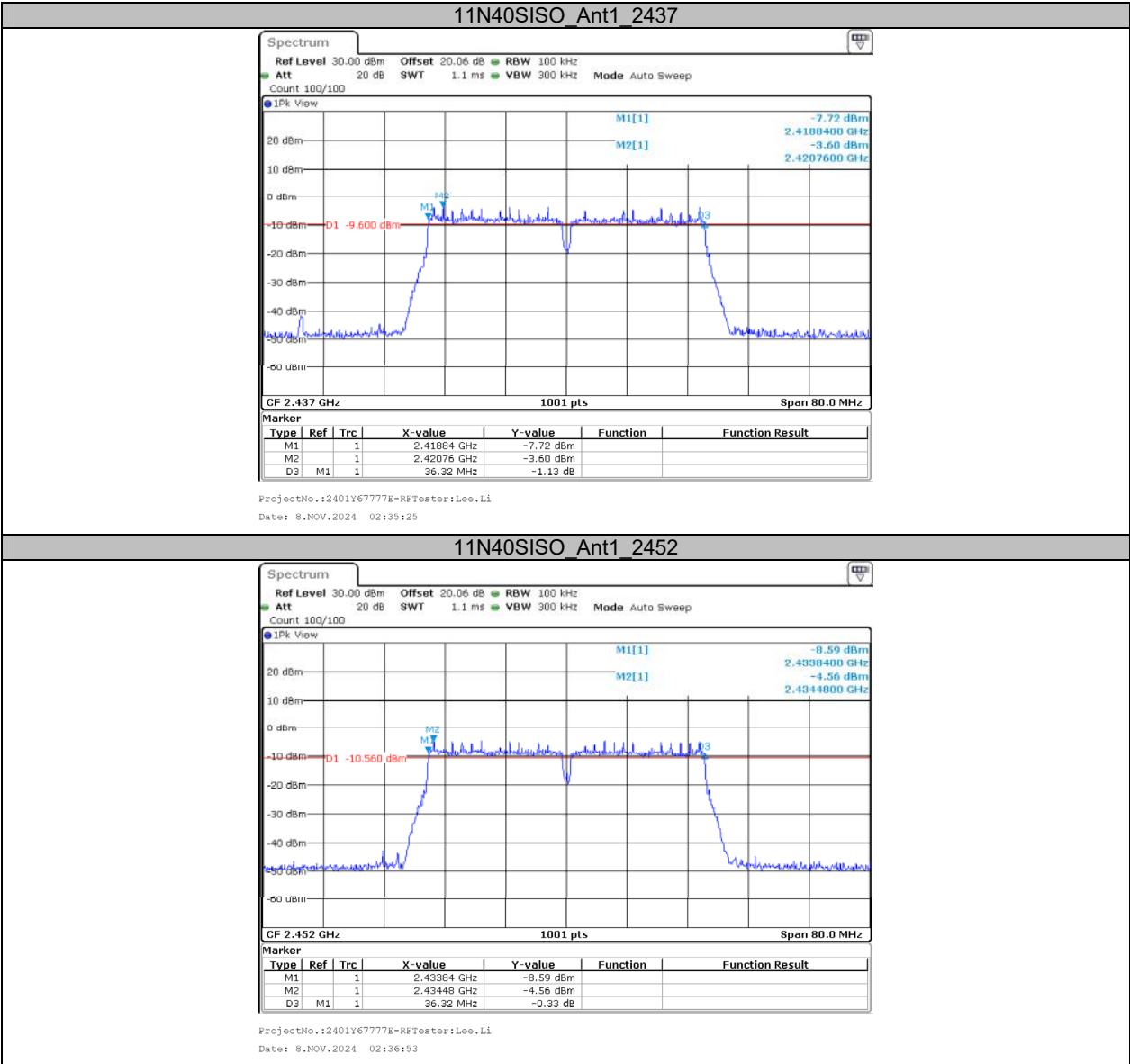


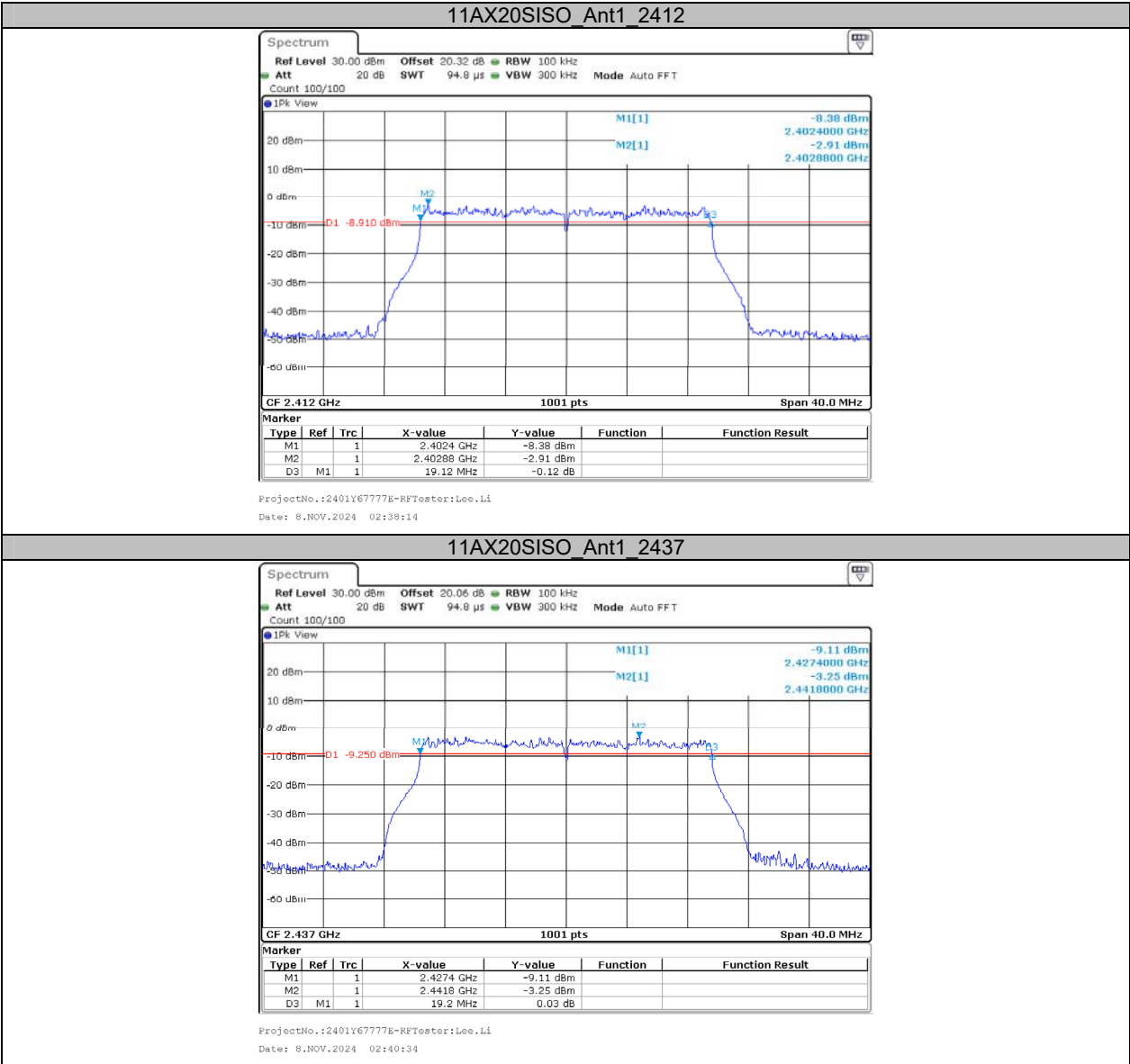


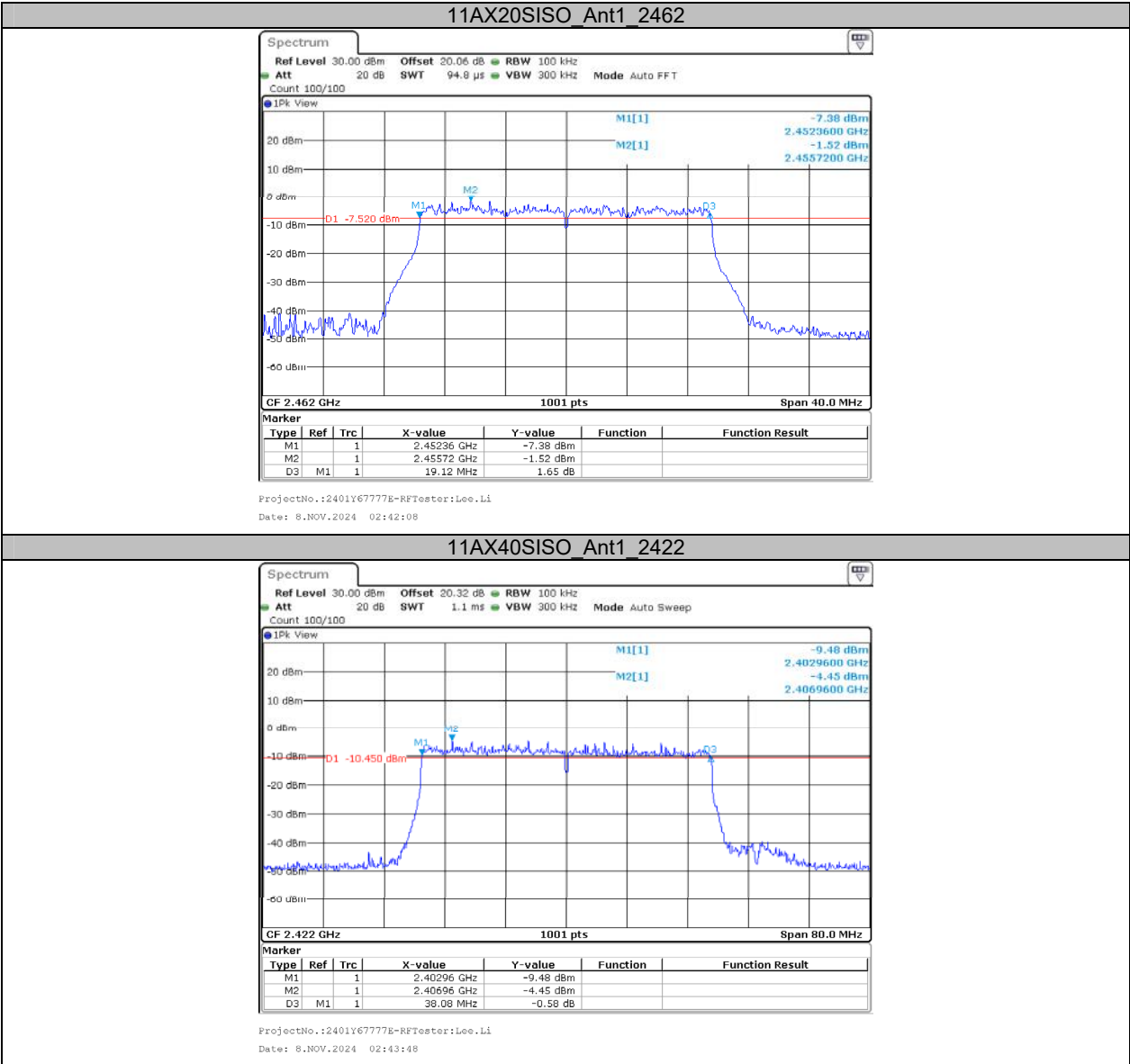


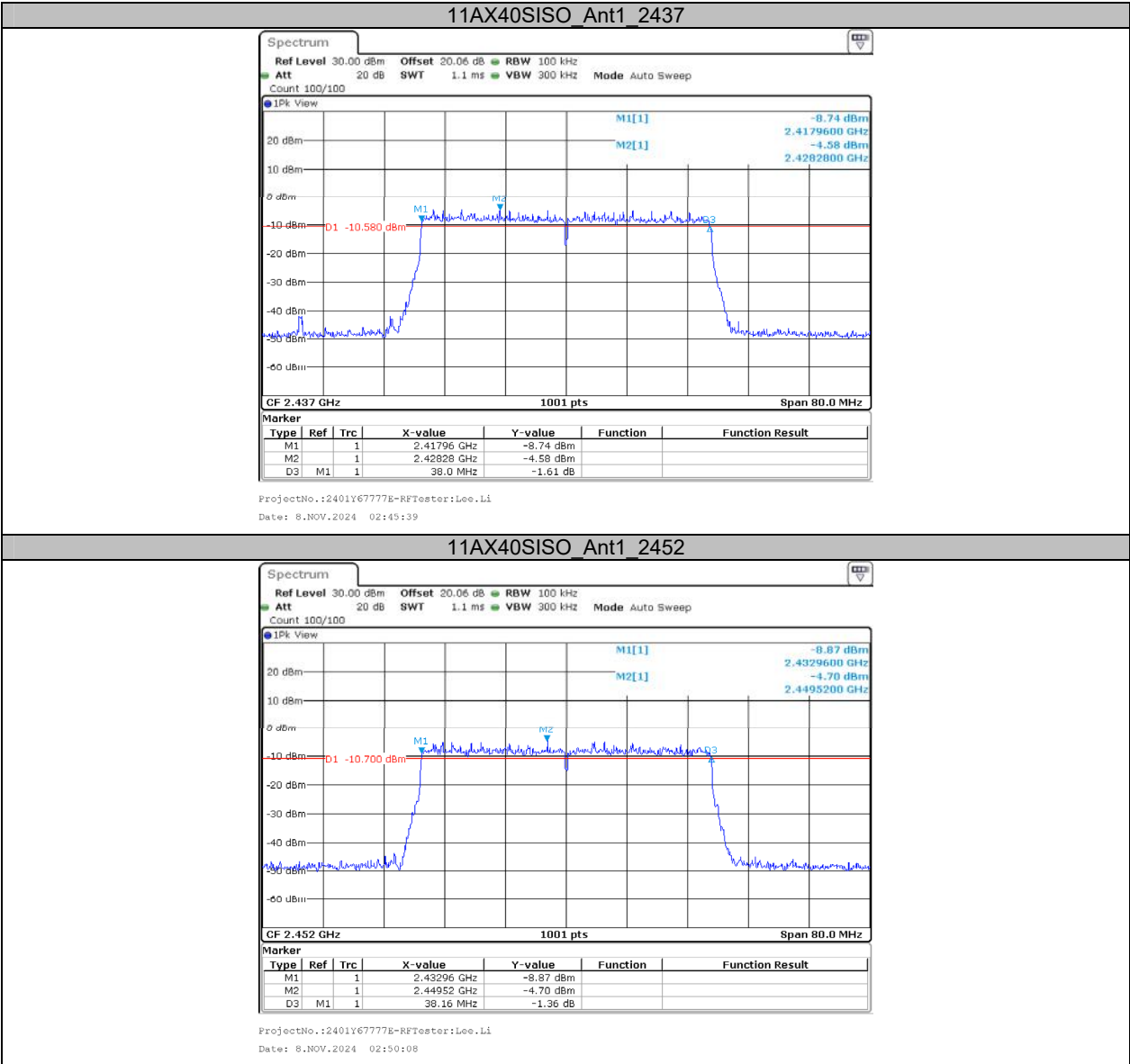








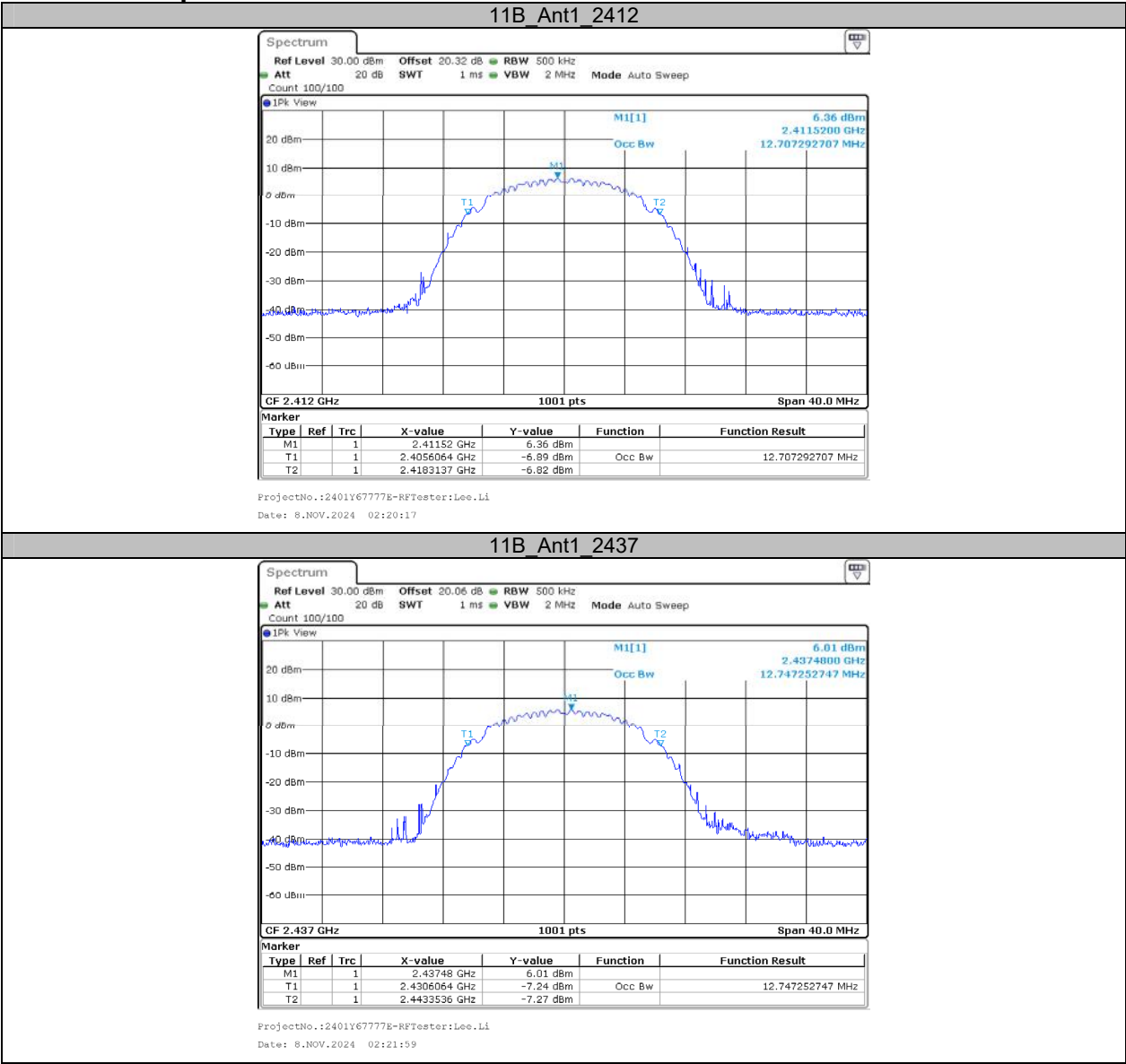


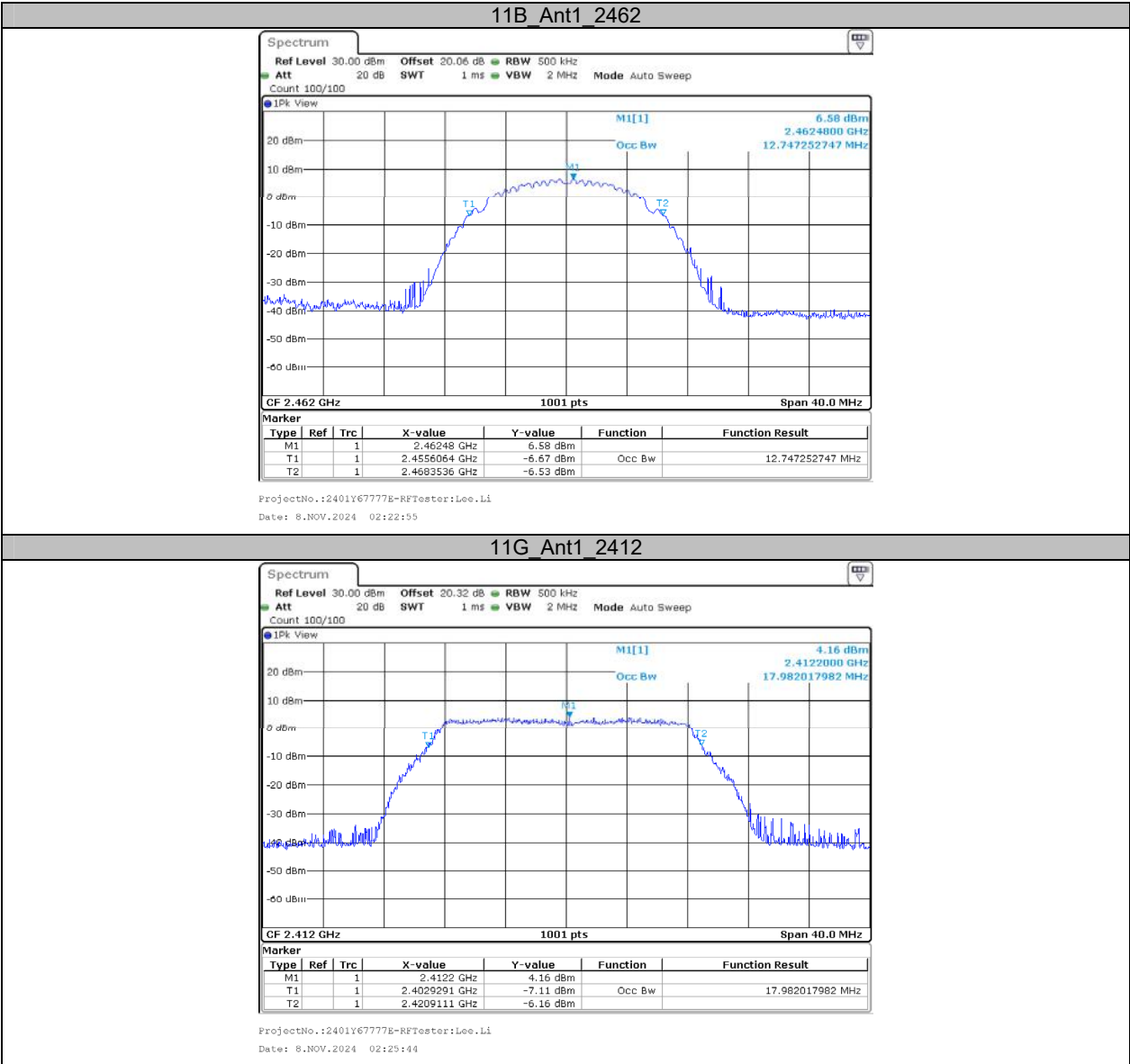


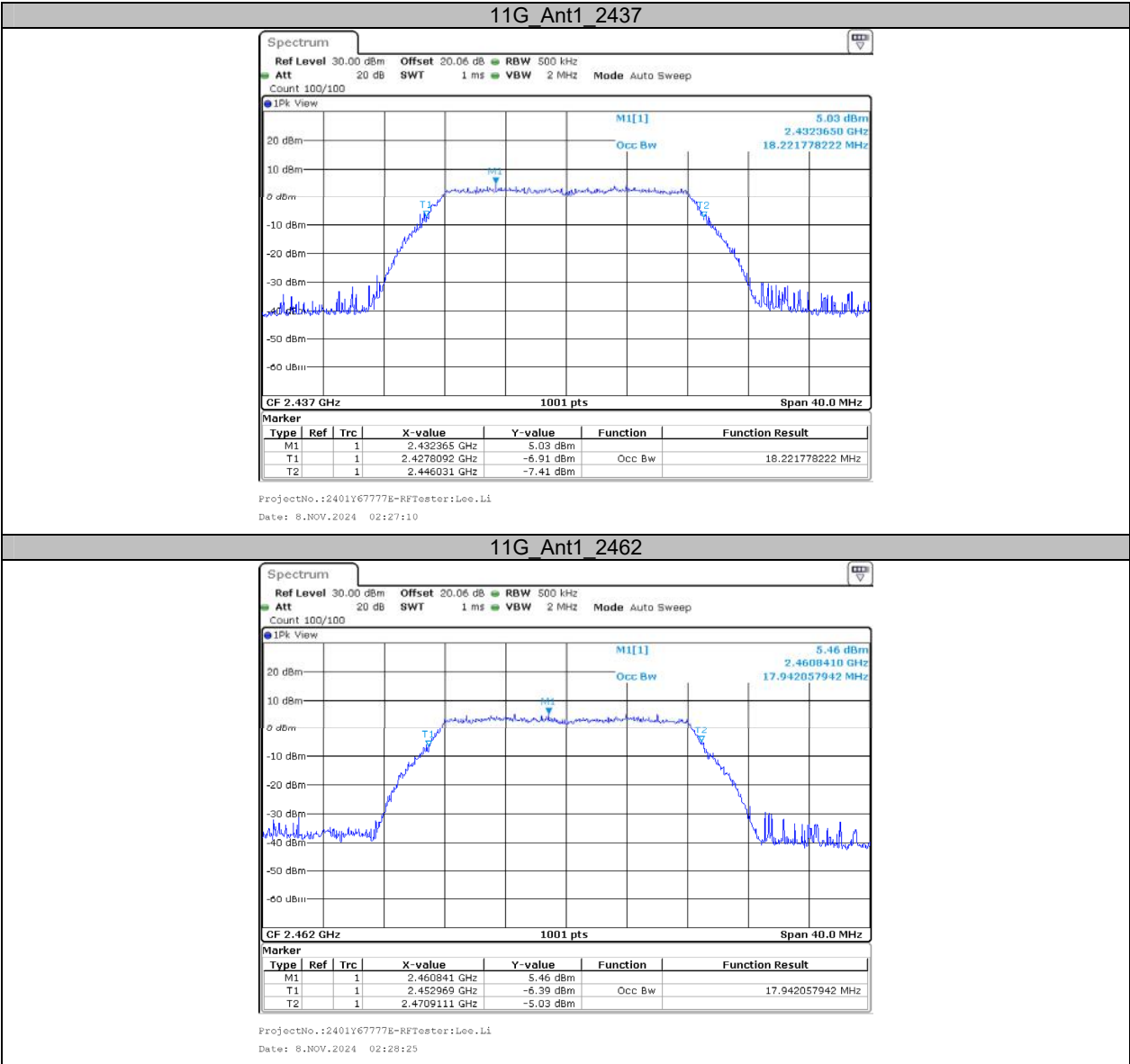
Appendix B: Occupied Channel Bandwidth**Test Result**

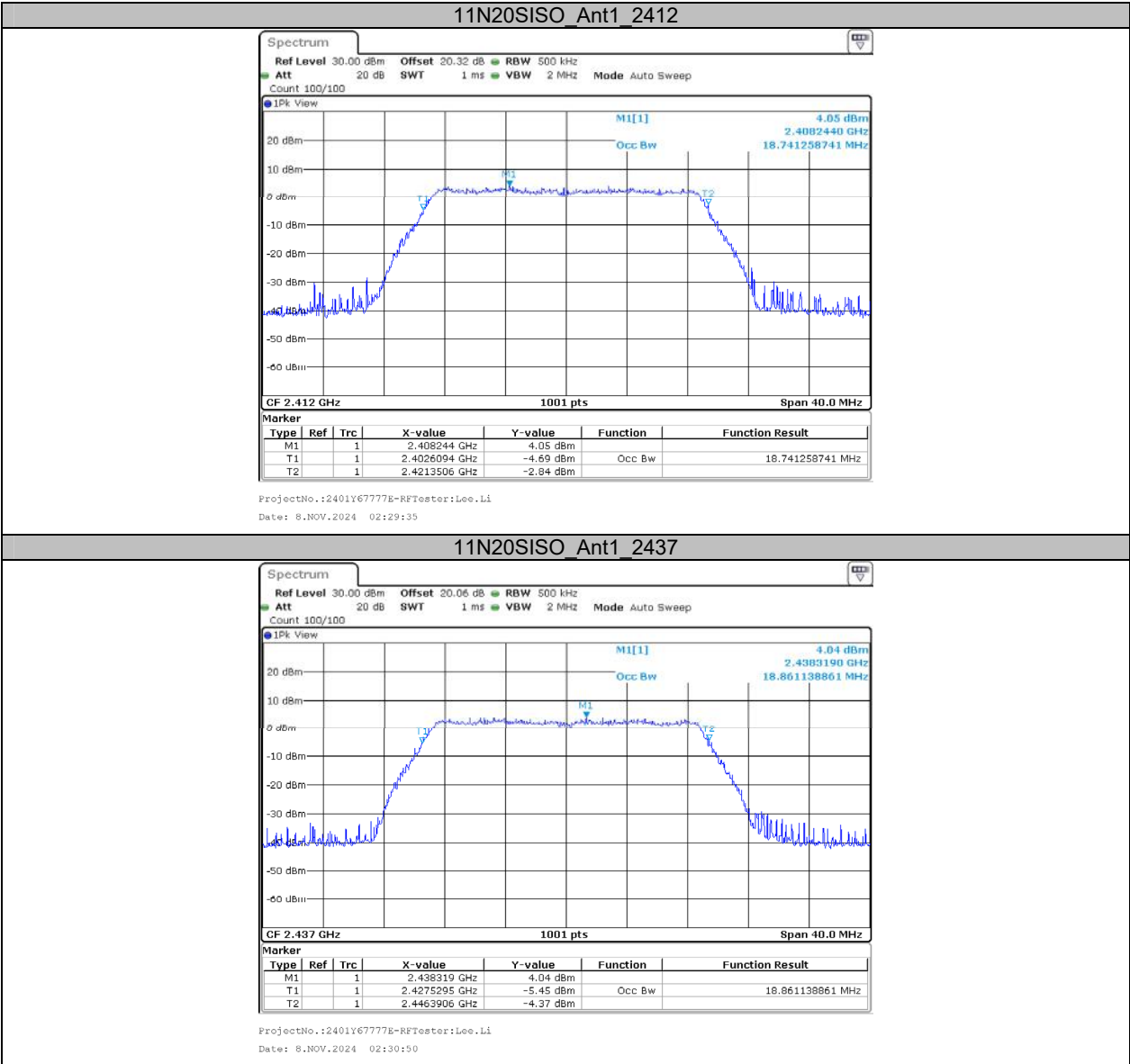
Test Mode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.707	2405.6064	2418.3137	---	---
		2437	12.747	2430.6064	2443.3536	---	---
		2462	12.747	2455.6064	2468.3536	---	---
11G	Ant1	2412	17.982	2402.9291	2420.9111	---	---
		2437	18.222	2427.8092	2446.0310	---	---
		2462	17.942	2452.9690	2470.9111	---	---
11N20SISO	Ant1	2412	18.741	2402.6094	2421.3506	---	---
		2437	18.861	2427.5295	2446.3906	---	---
		2462	18.781	2452.5694	2471.3506	---	---
11N40SISO	Ant1	2422	37.083	2403.3786	2440.4615	---	---
		2437	37.163	2418.3786	2455.5415	---	---
		2452	37.003	2433.4585	2470.4615	---	---
11AX20SISO	Ant1	2412	19.461	2402.2498	2421.7103	---	---
		2437	19.500	2427.2098	2446.7103	---	---
		2462	19.461	2452.2498	2471.7103	---	---
11AX40SISO	Ant1	2422	38.282	2402.8192	2441.1009	---	---
		2437	38.202	2417.8991	2456.1009	---	---
		2452	38.122	2432.8991	2471.0210	---	---

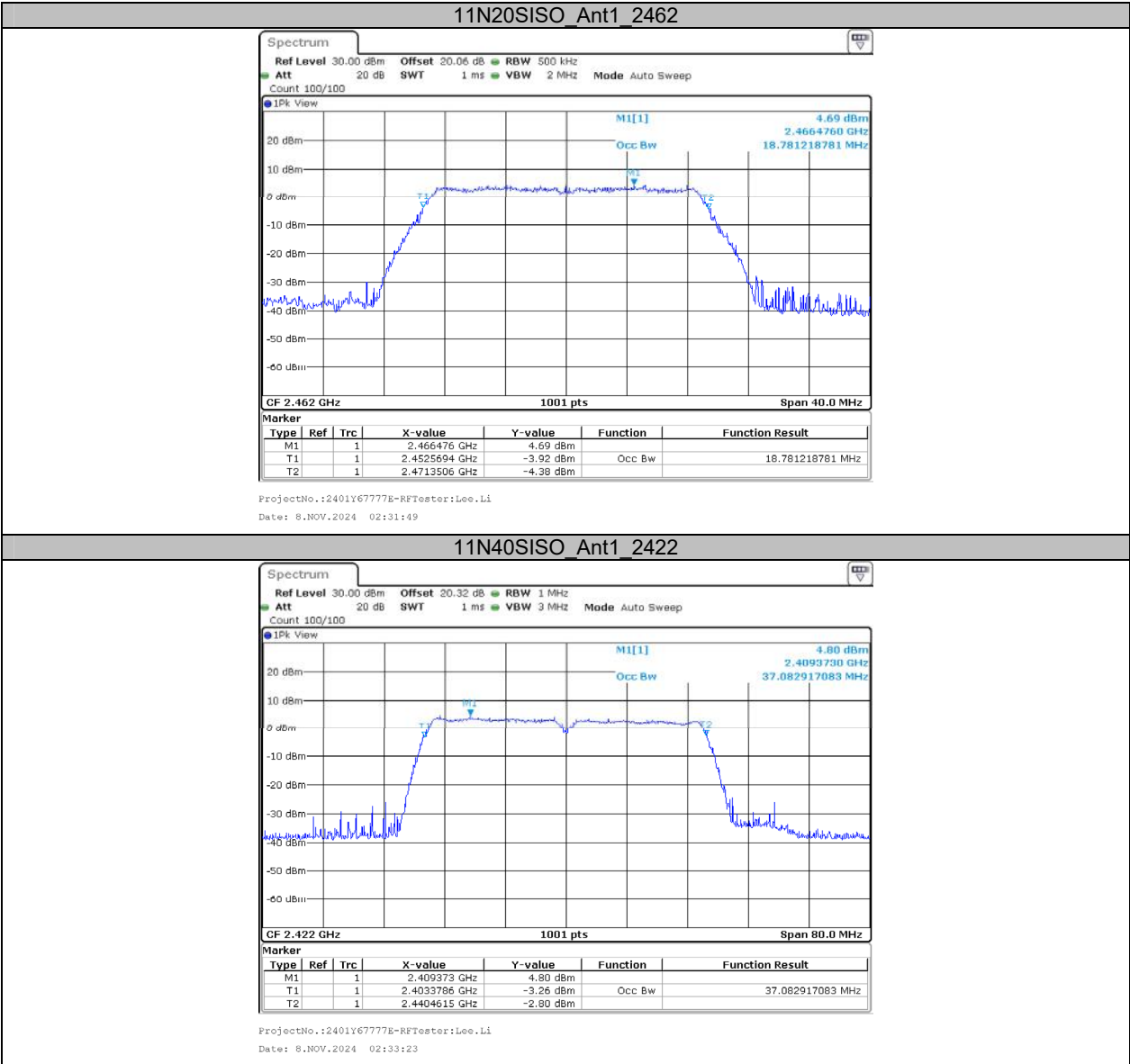
Test Graphs

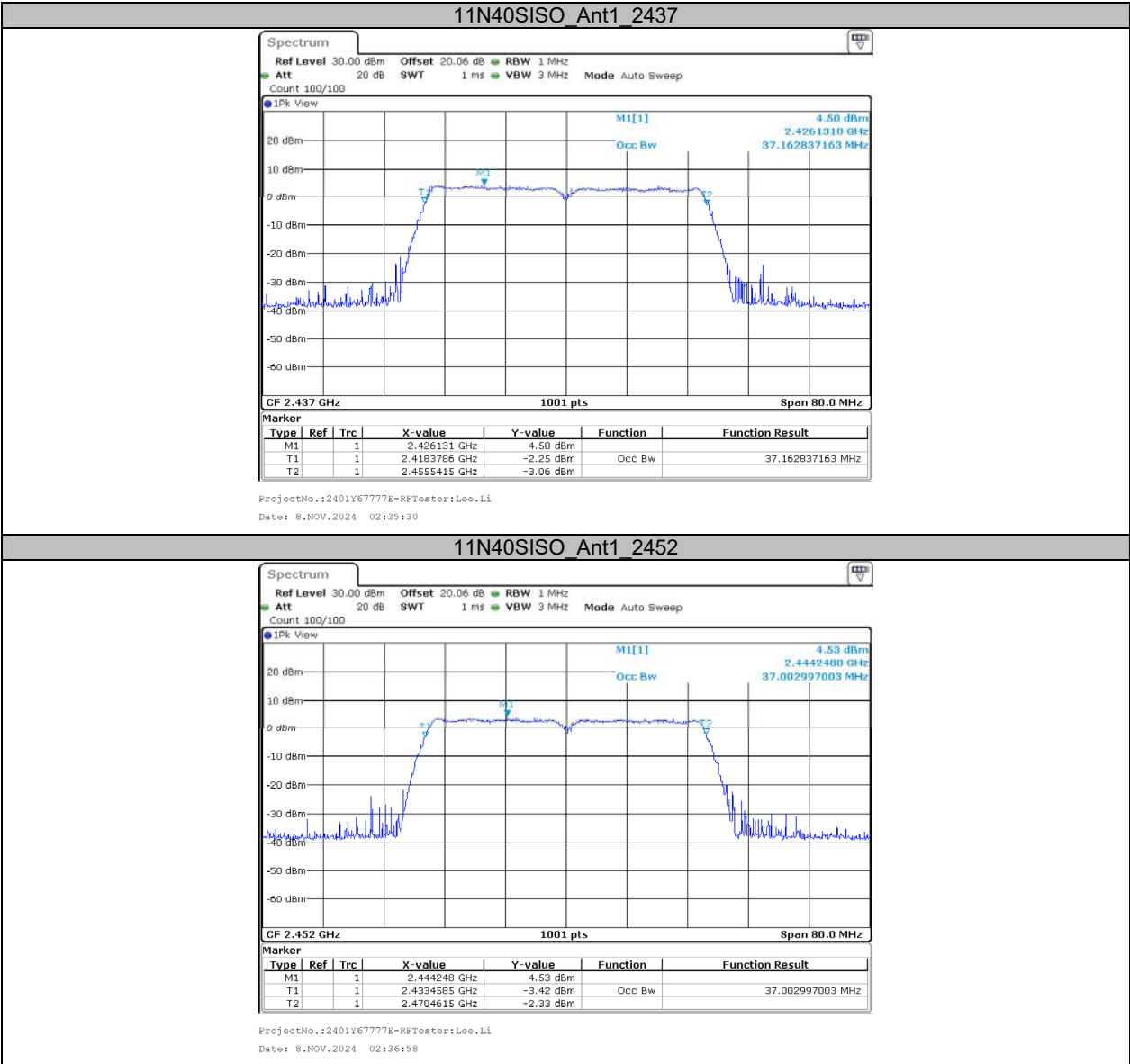


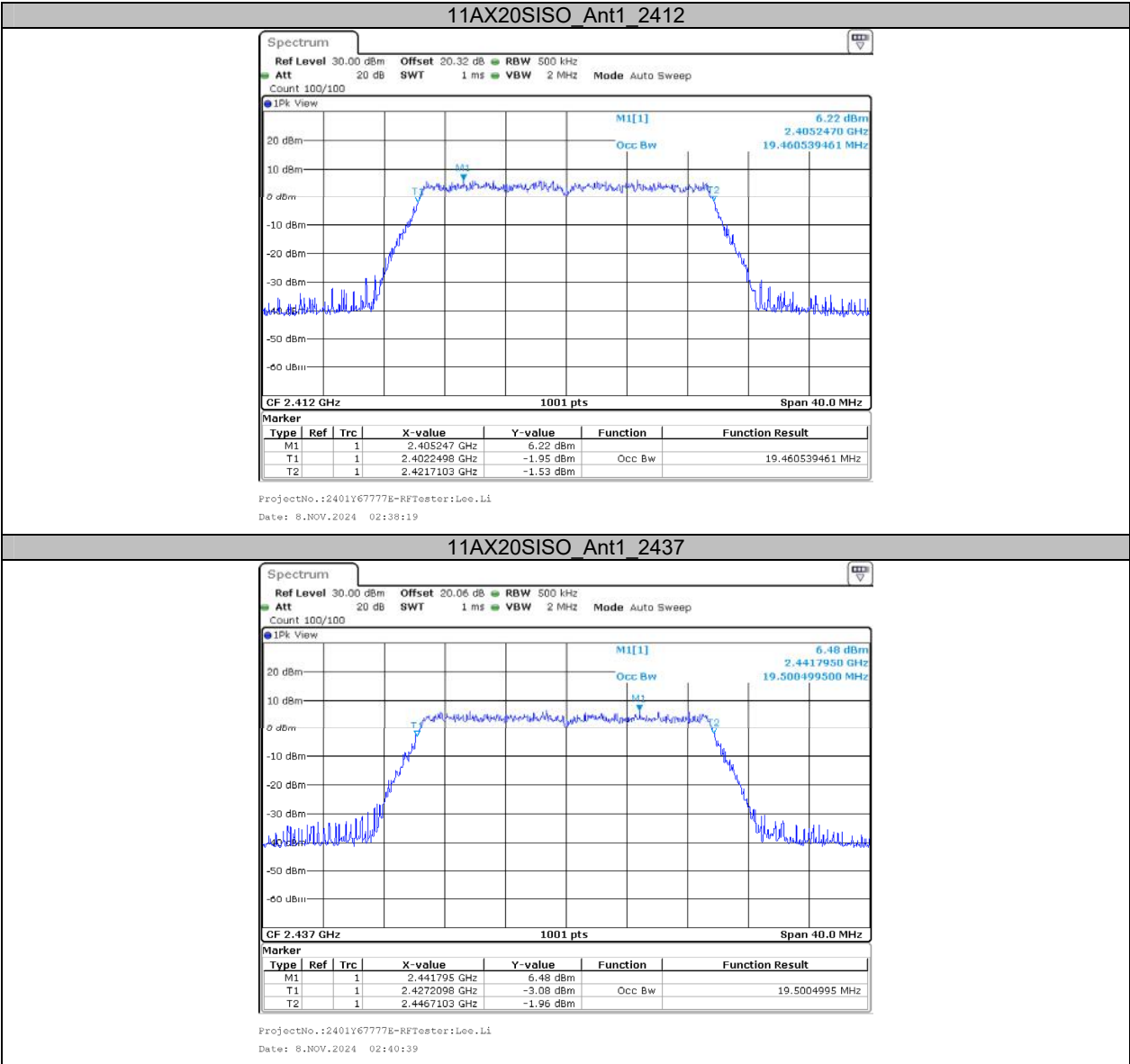


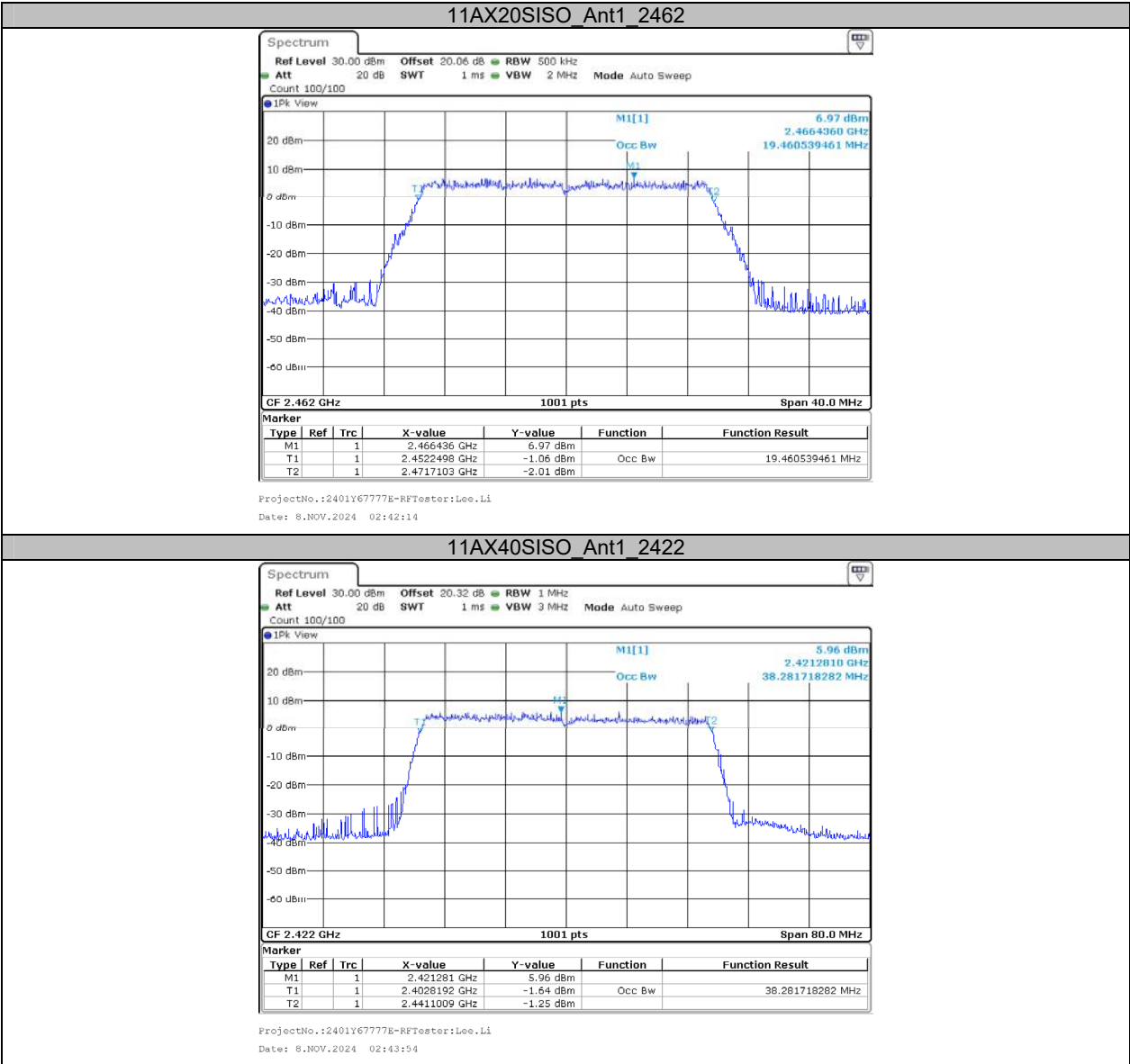


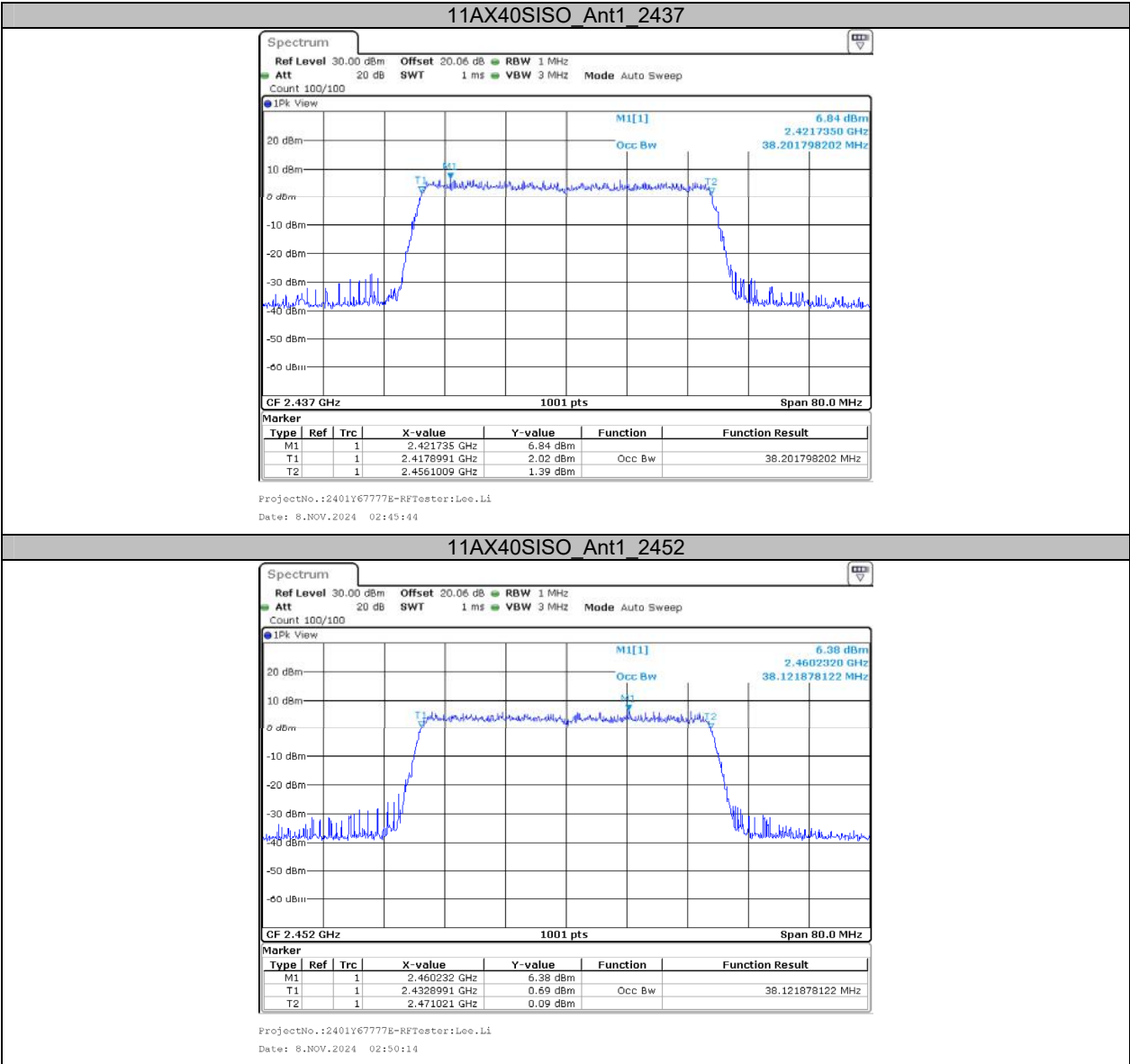












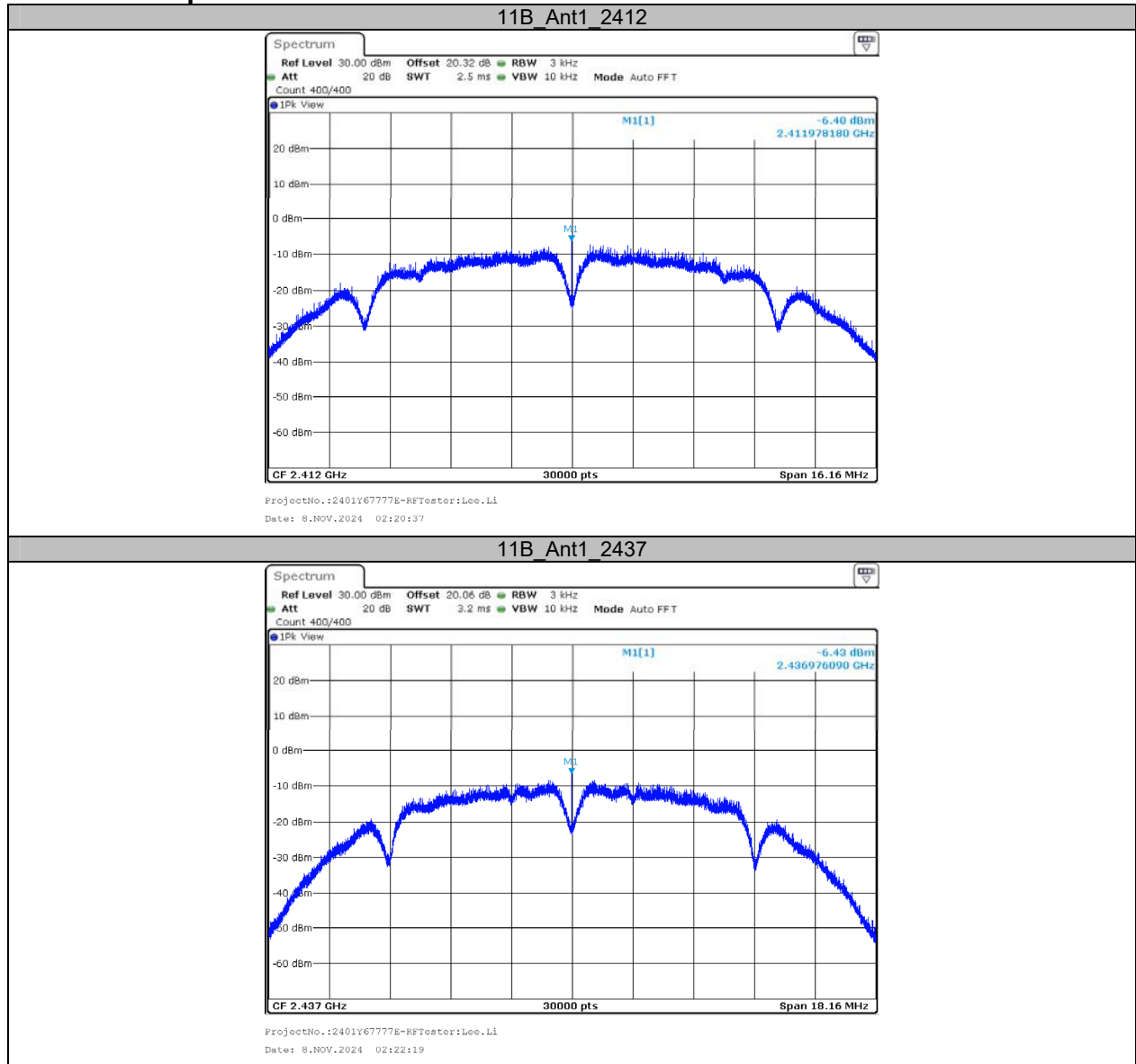
Appendix C: Maximum Conducted Output Power**Test Result**

Test Mode	Antenna	Frequency [MHz]	Average Power [dBm]	Peak Power [dBm]	Conducted Limit[dBm]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
11B	Ant1	2412	13.92	17.36	≤30.00	20.47	≤36.00	PASS
		2437	14.19	16.98	≤30.00	20.09	≤36.00	PASS
		2462	14.54	17.63	≤30.00	20.74	≤36.00	PASS
11G	Ant1	2412	10.54	18.02	≤30.00	21.13	≤36.00	PASS
		2437	10.91	17.89	≤30.00	21.00	≤36.00	PASS
		2462	11.43	18.58	≤30.00	21.69	≤36.00	PASS
11N20SISO	Ant1	2412	10.45	18.11	≤30.00	21.22	≤36.00	PASS
		2437	11.03	17.98	≤30.00	21.09	≤36.00	PASS
		2462	11.34	18.69	≤30.00	21.80	≤36.00	PASS
11N40SISO	Ant1	2422	10.21	17.46	≤30.00	20.57	≤36.00	PASS
		2437	10.78	17.83	≤30.00	20.94	≤36.00	PASS
		2452	10.49	17.52	≤30.00	20.63	≤36.00	PASS
11AX20SISO	Ant1	2412	10.88	18.80	≤30.00	21.91	≤36.00	PASS
		2437	11.34	18.69	≤30.00	21.80	≤36.00	PASS
		2462	11.71	19.39	≤30.00	22.50	≤36.00	PASS
11AX40SISO	Ant1	2422	10.03	18.10	≤30.00	21.21	≤36.00	PASS
		2437	10.88	18.47	≤30.00	21.58	≤36.00	PASS
		2452	10.41	18.09	≤30.00	21.20	≤36.00	PASS

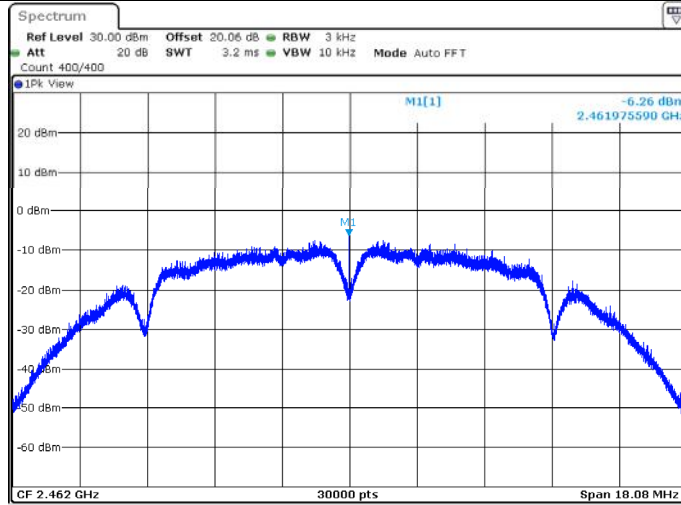
Appendix D: Maximum Power Spectral Density**Test Result**

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-6.40	≤8.00	PASS
		2437	-6.43	≤8.00	PASS
		2462	-6.26	≤8.00	PASS
11G	Ant1	2412	-13.25	≤8.00	PASS
		2437	-12.89	≤8.00	PASS
		2462	-13.10	≤8.00	PASS
11N20SISO	Ant1	2412	-13.95	≤8.00	PASS
		2437	-13.64	≤8.00	PASS
		2462	-13.72	≤8.00	PASS
11N40SISO	Ant1	2422	-16.94	≤8.00	PASS
		2437	-16.61	≤8.00	PASS
		2452	-16.82	≤8.00	PASS
11AX20SISO	Ant1	2412	-14.79	≤8.00	PASS
		2437	-14.66	≤8.00	PASS
		2462	-13.65	≤8.00	PASS
11AX40SISO	Ant1	2422	-17.99	≤8.00	PASS
		2437	-17.56	≤8.00	PASS
		2452	-17.81	≤8.00	PASS

Test Graphs

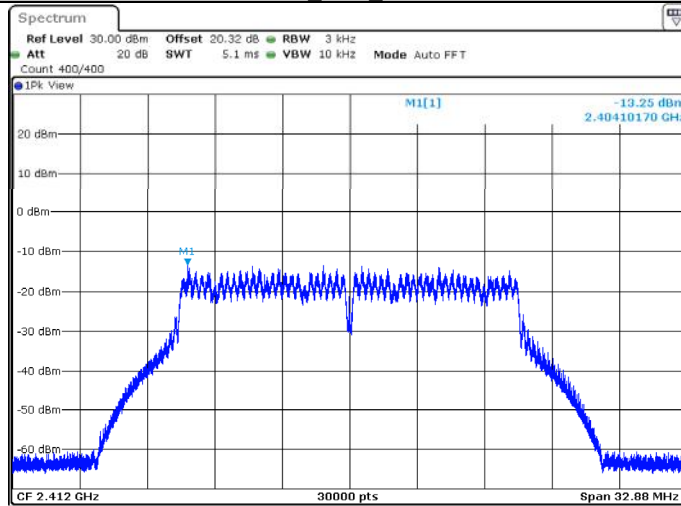


11B_Ant1_2462



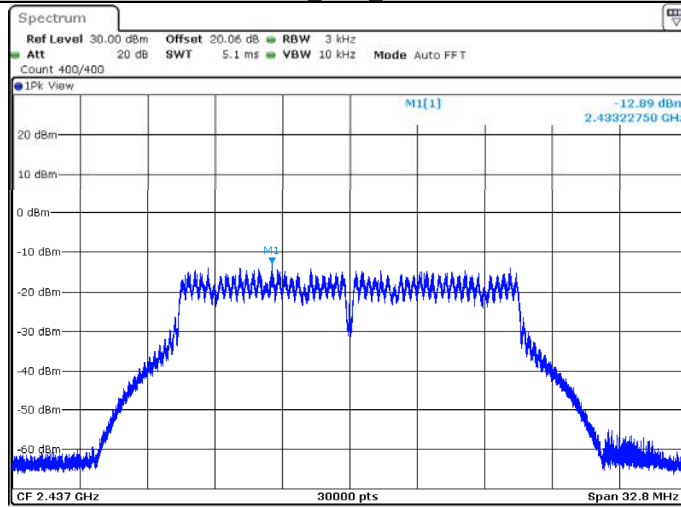
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Date: 8.NOV.2024 02:23:14

11G_Ant1_2412



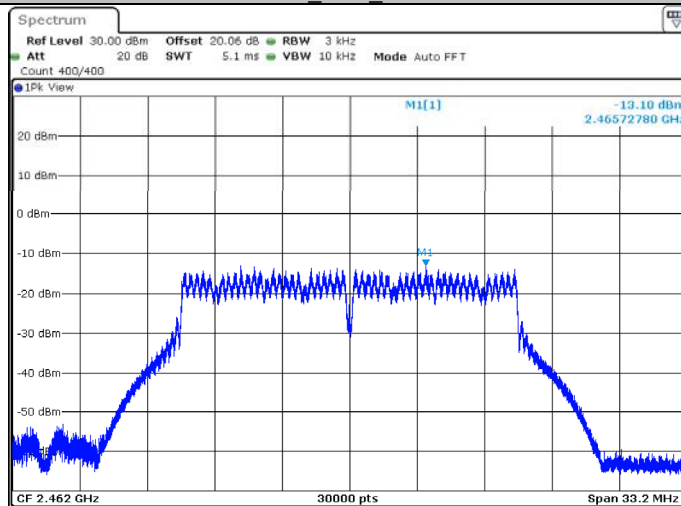
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11G_Ant1_2437

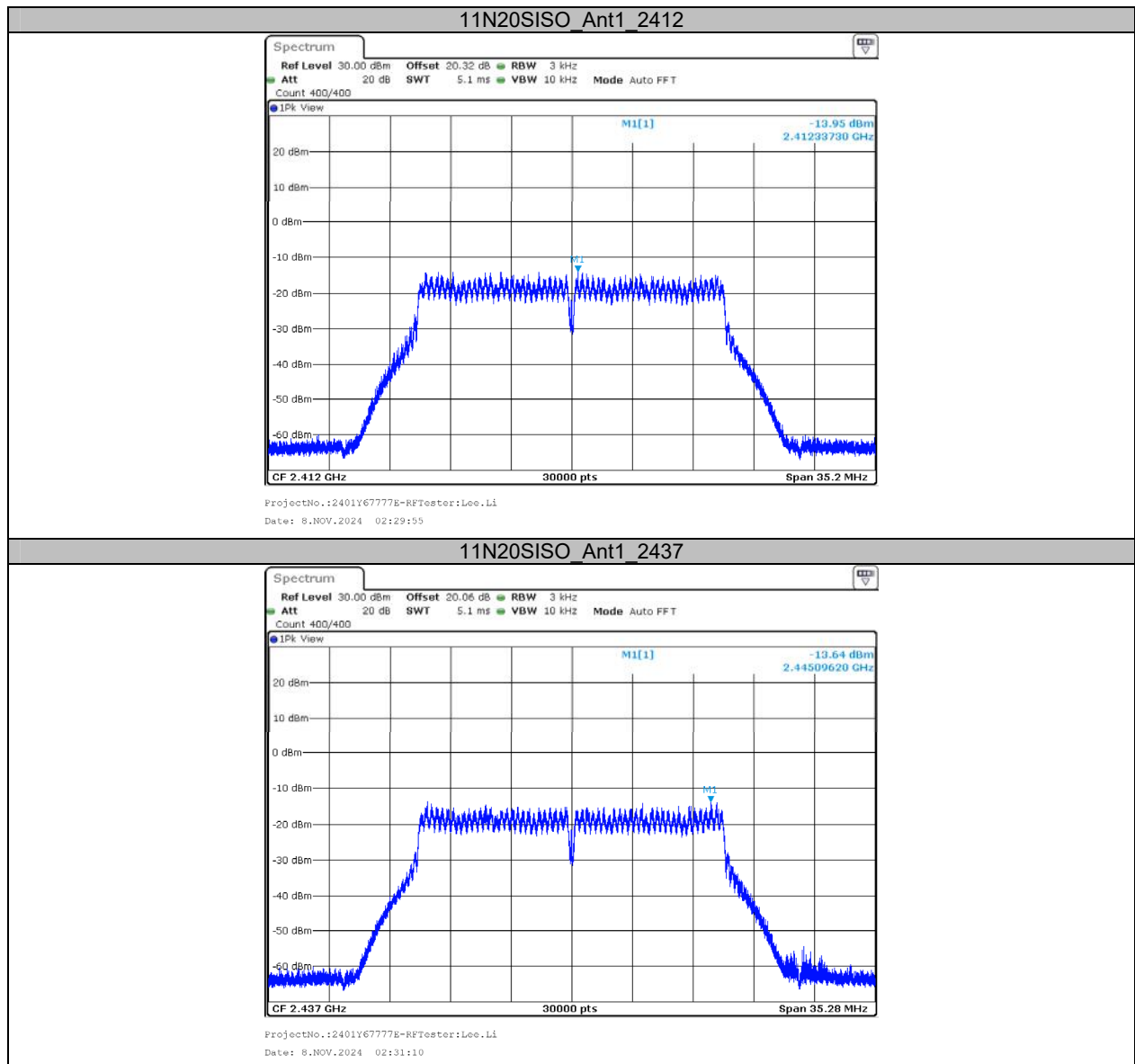


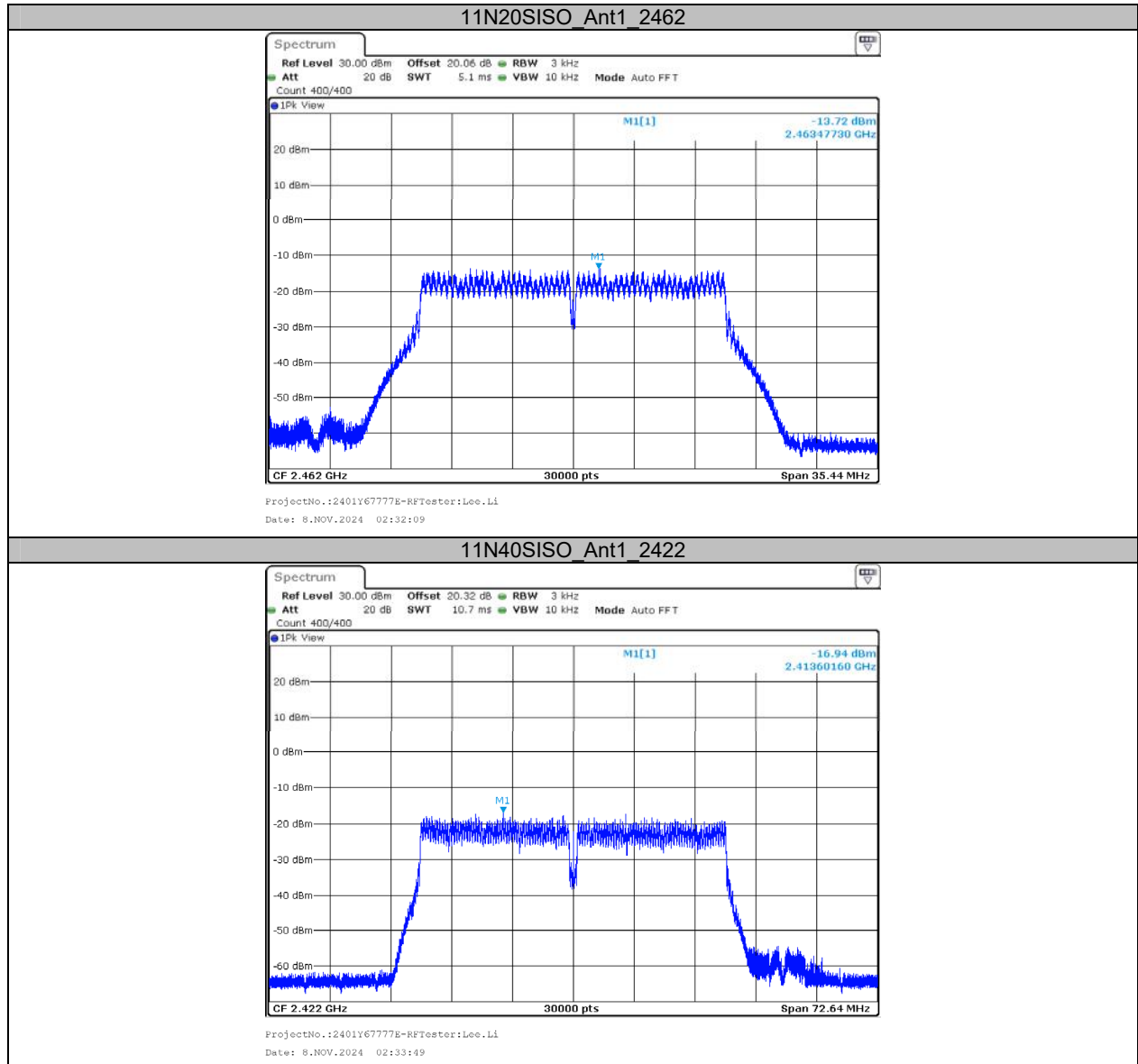
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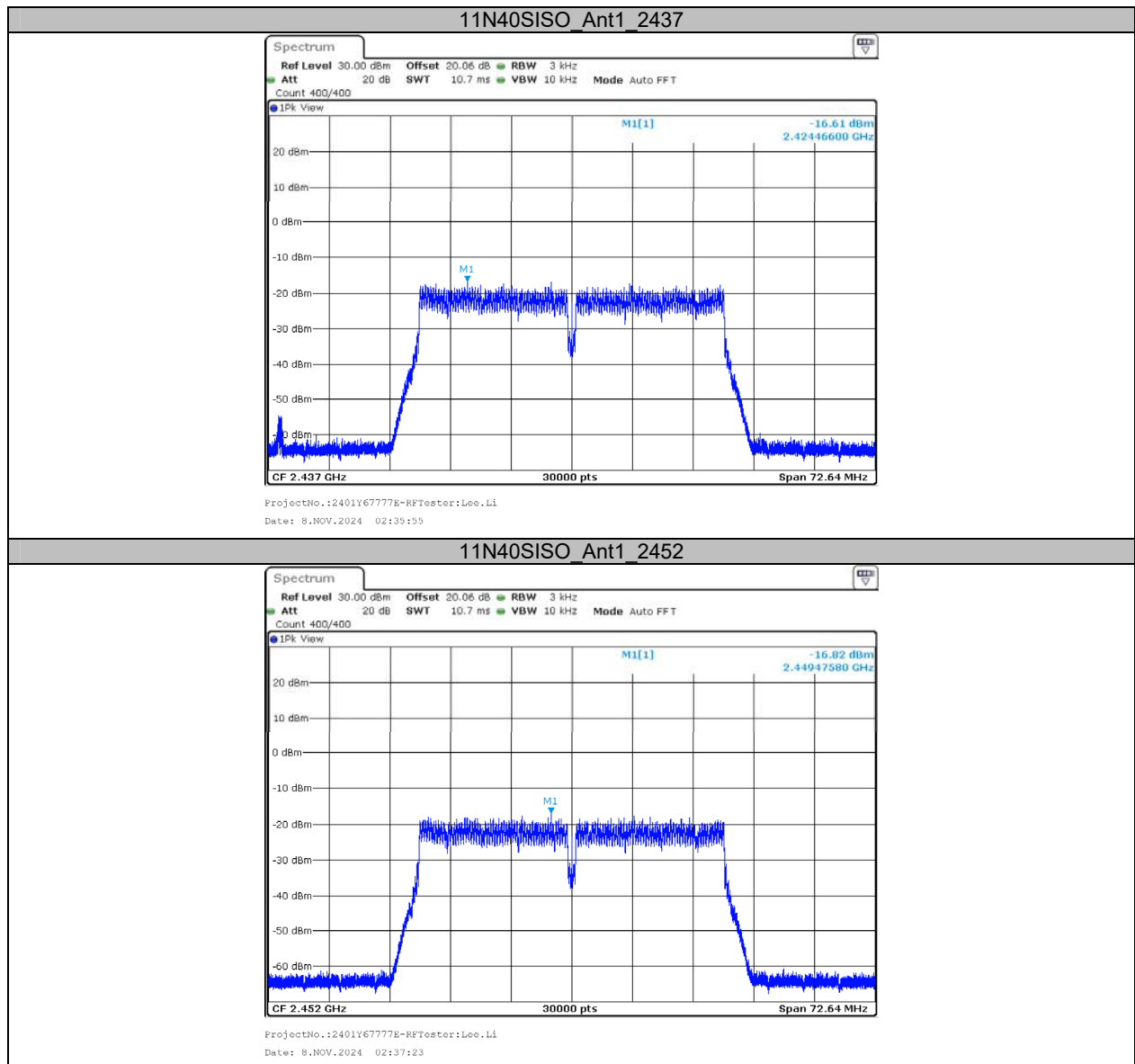
11G_Ant1_2462

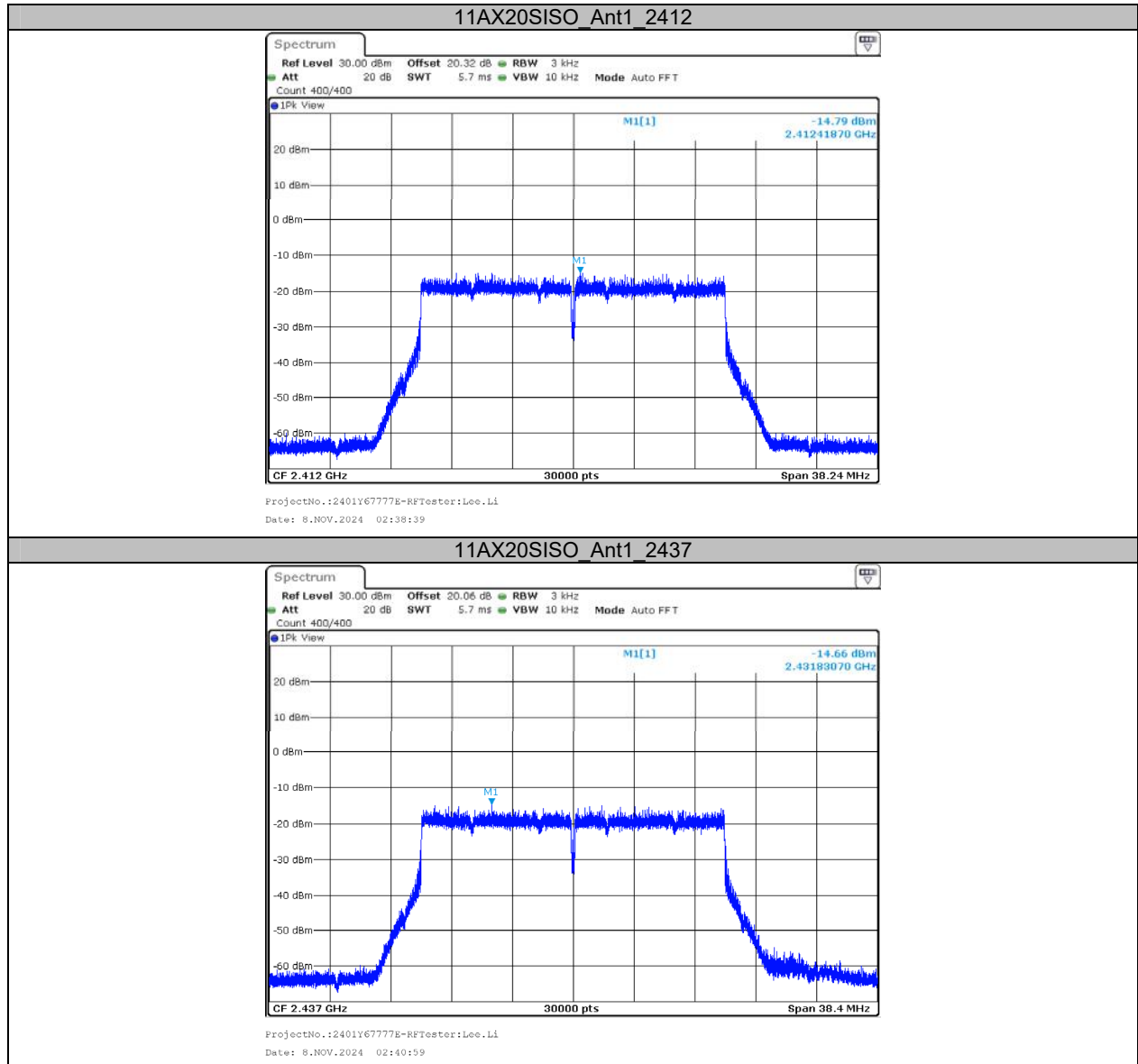


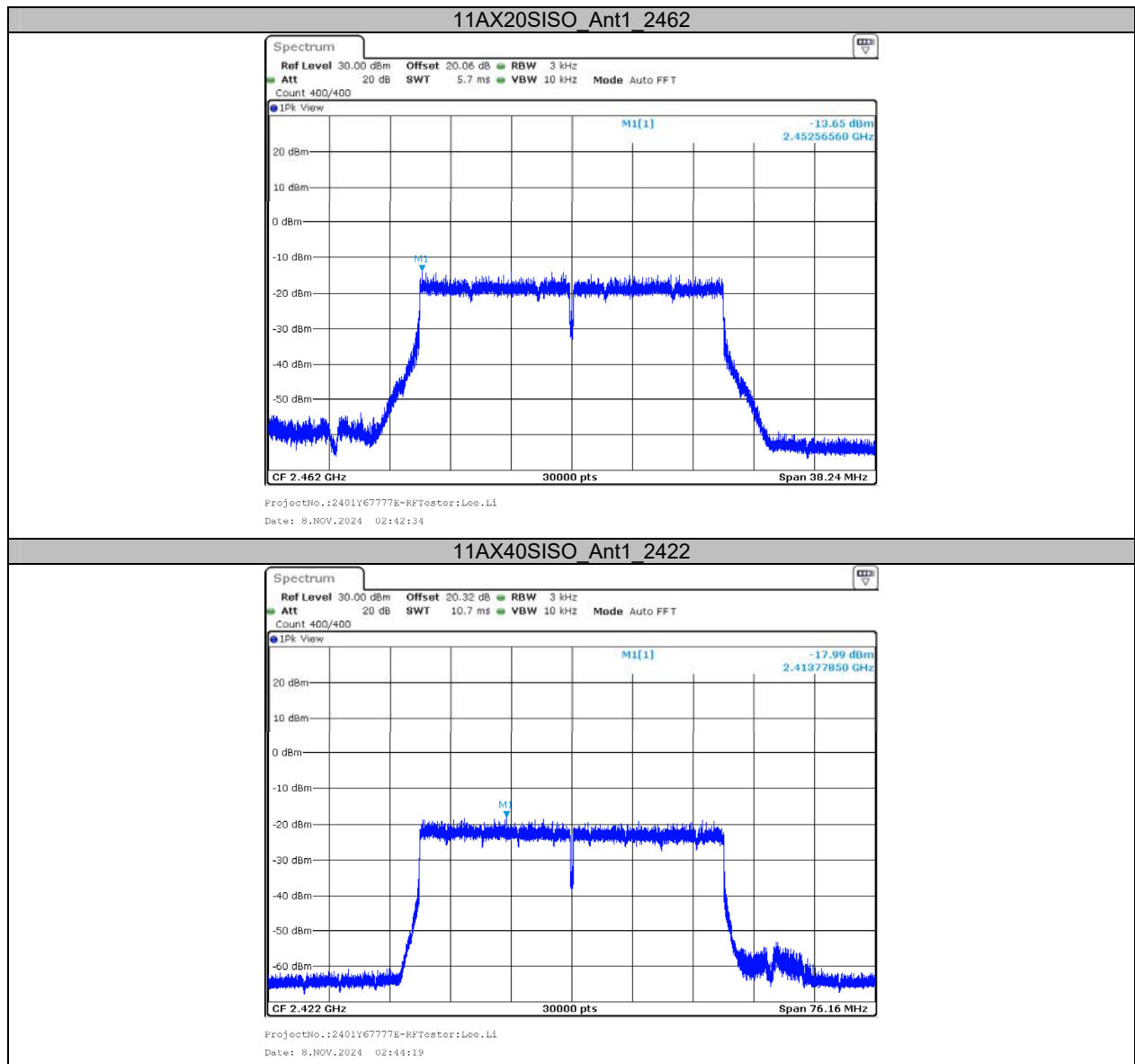
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Date: 8.NOV.2024 02:28:45

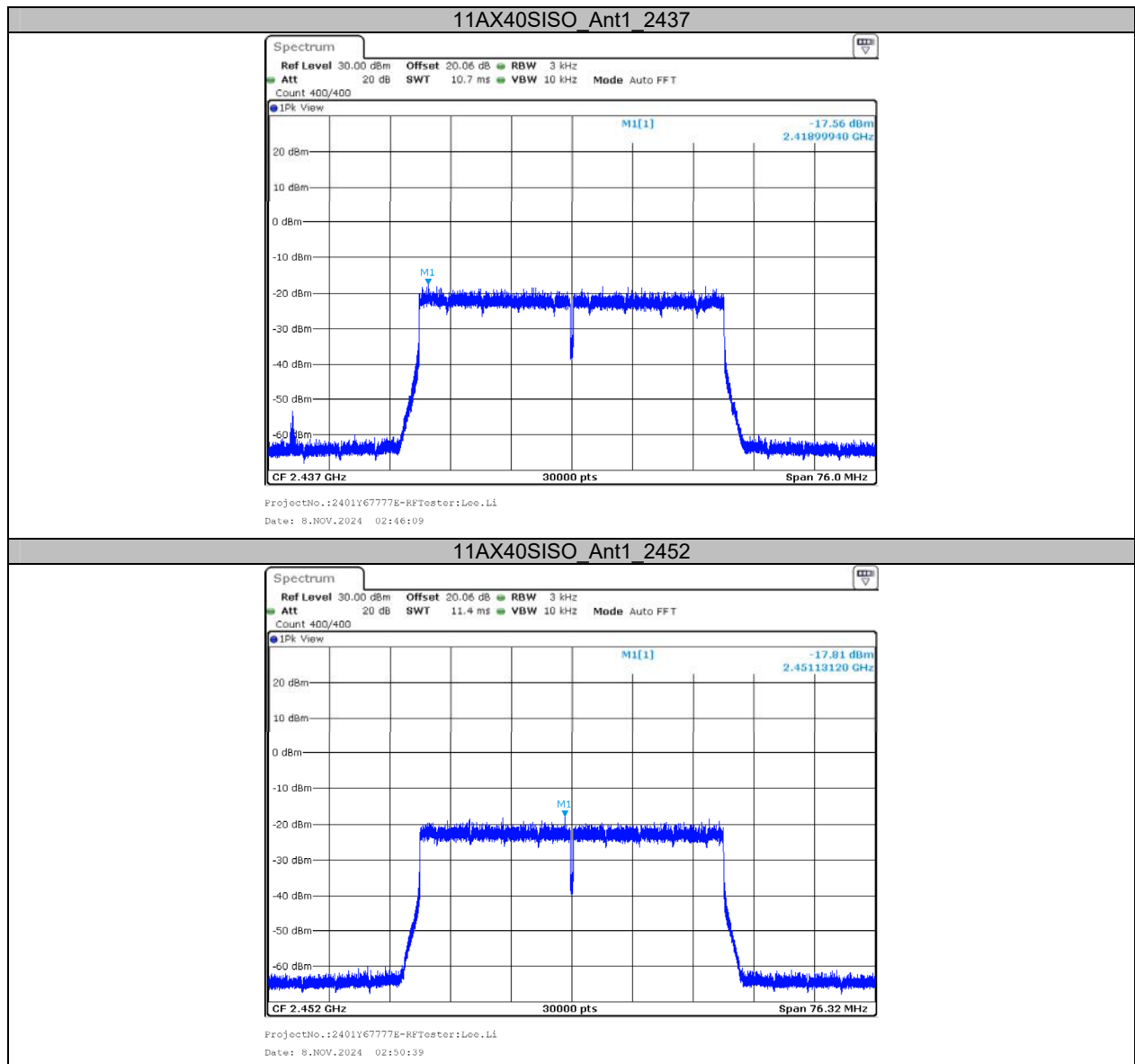






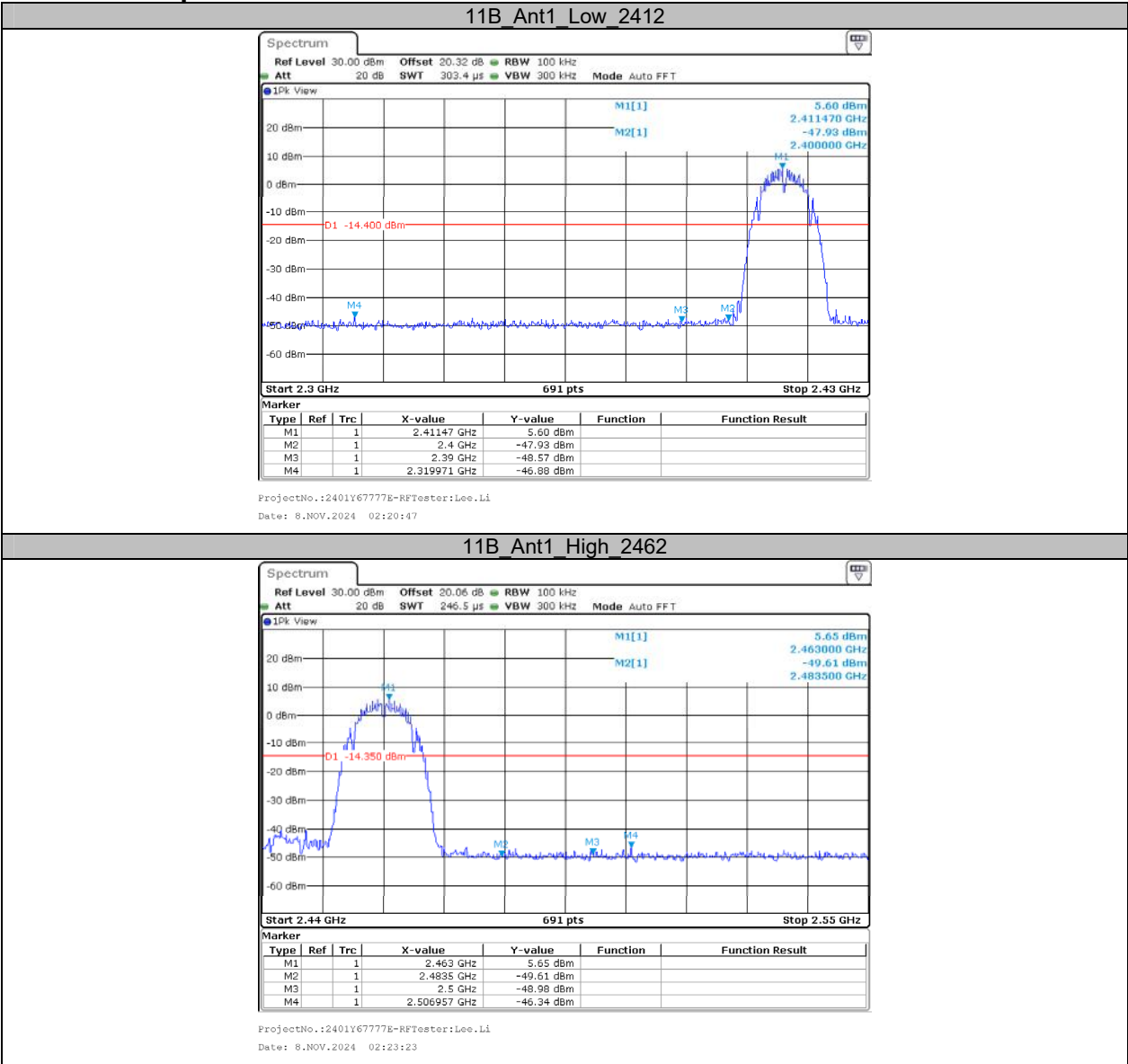


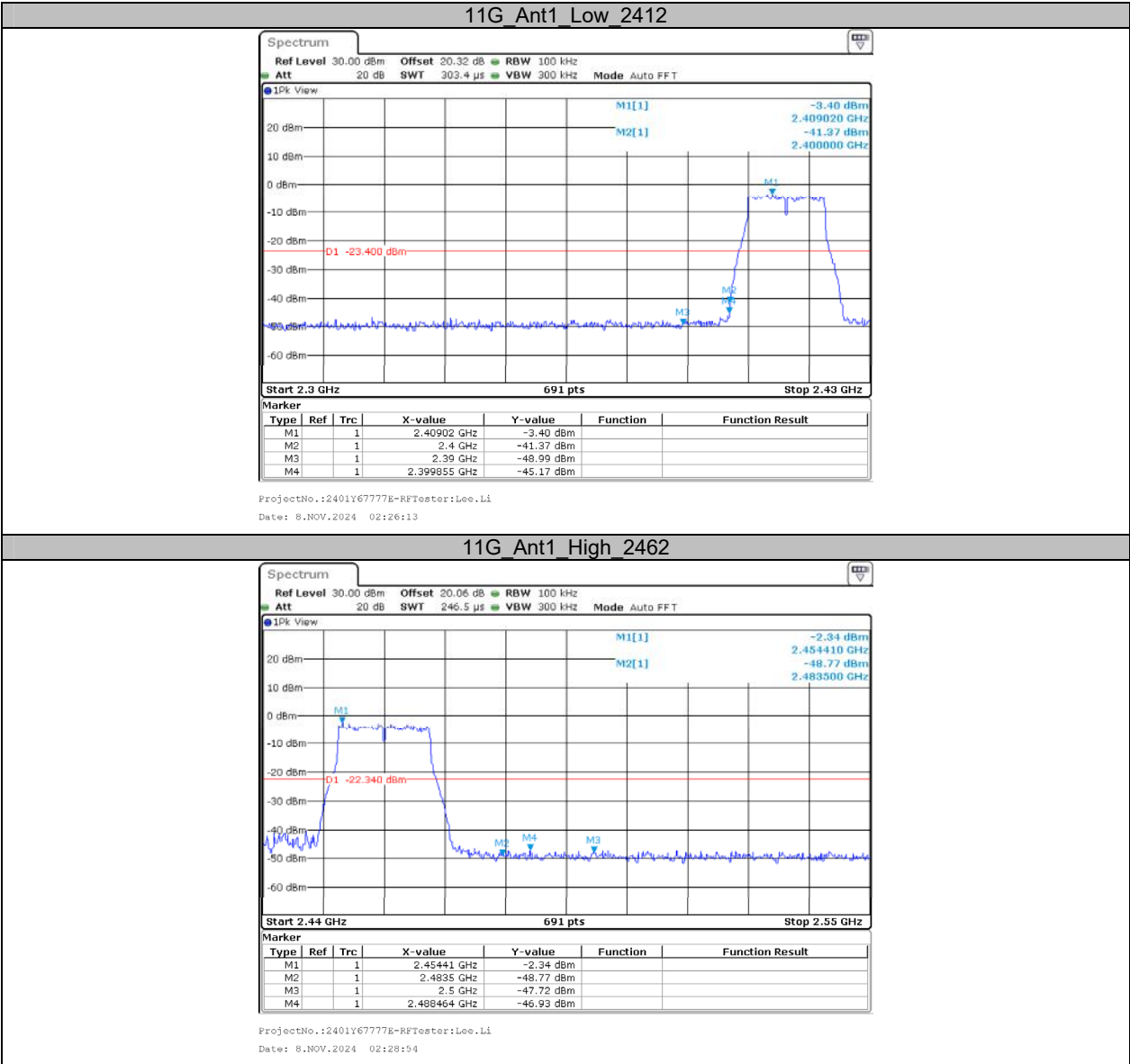


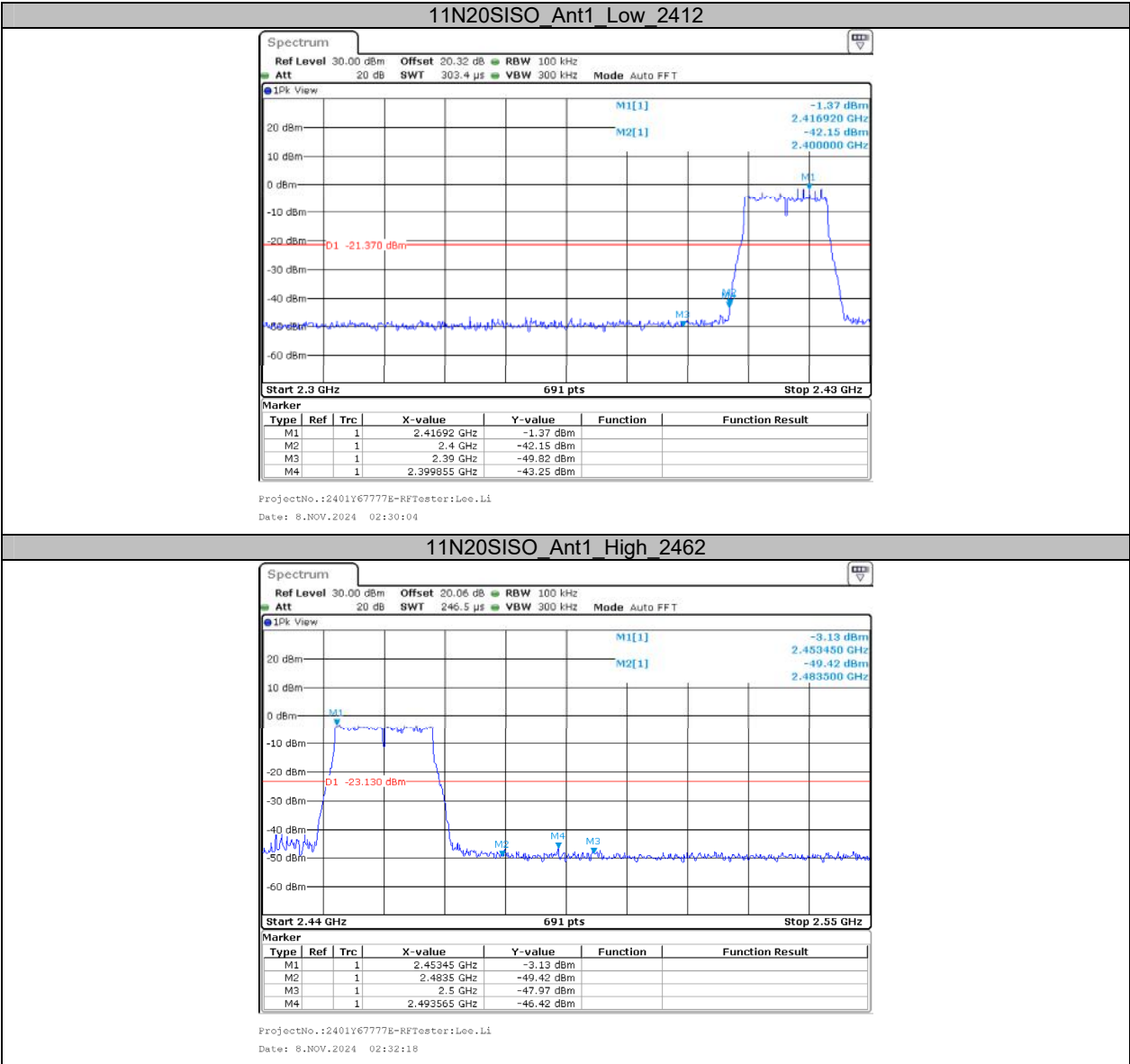


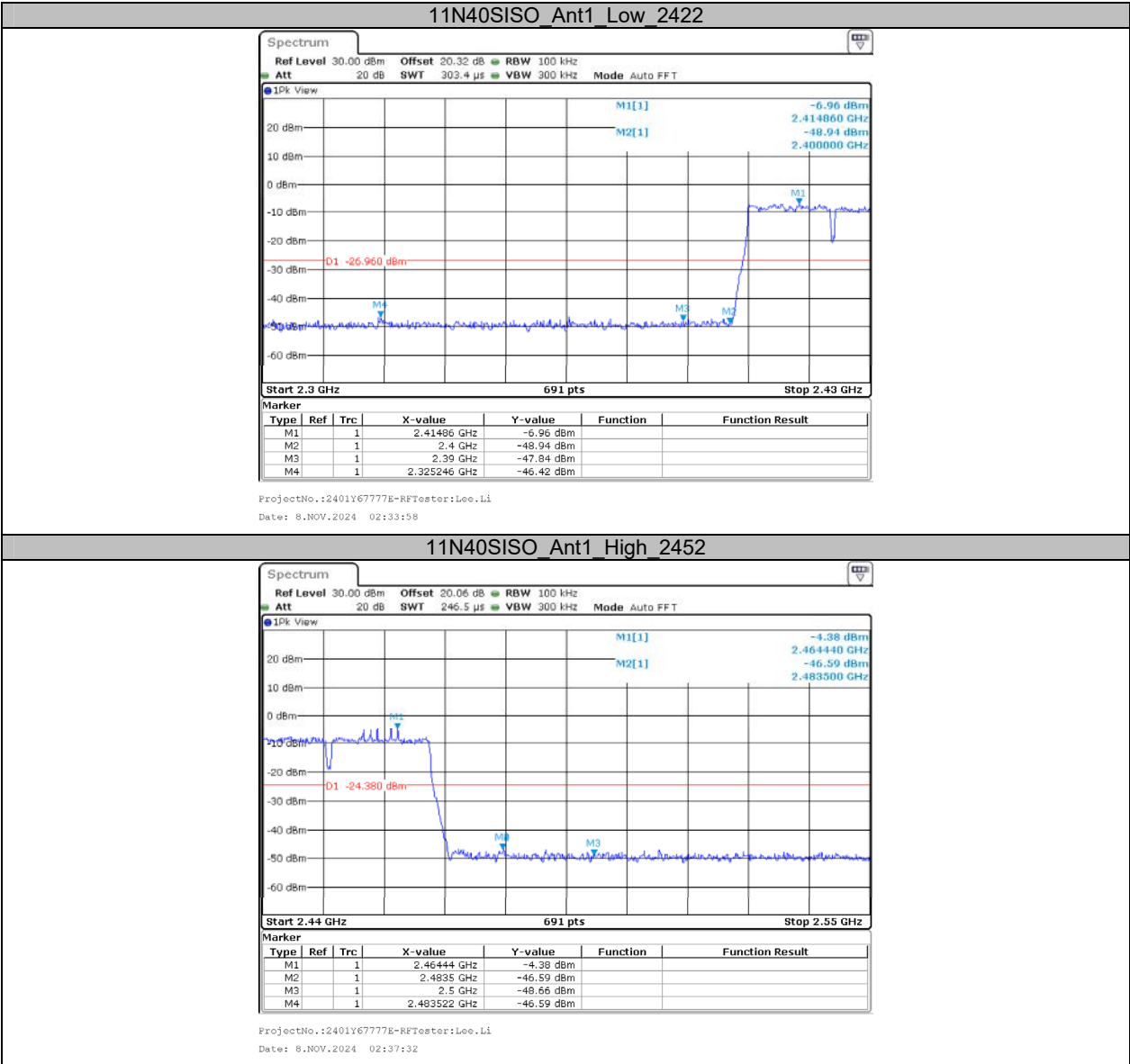
Appendix E: Band Edge Measurements

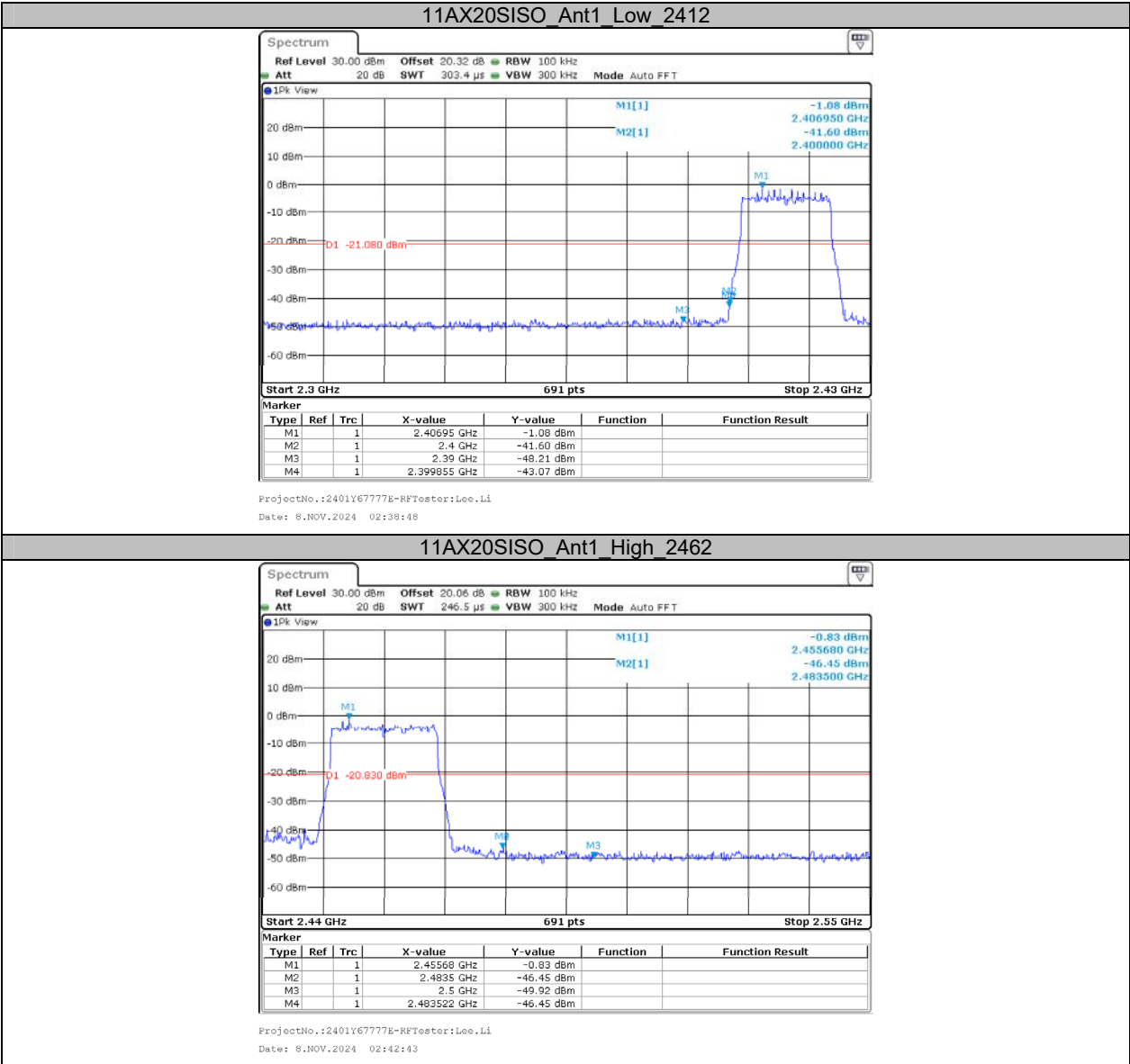
Test Graphs

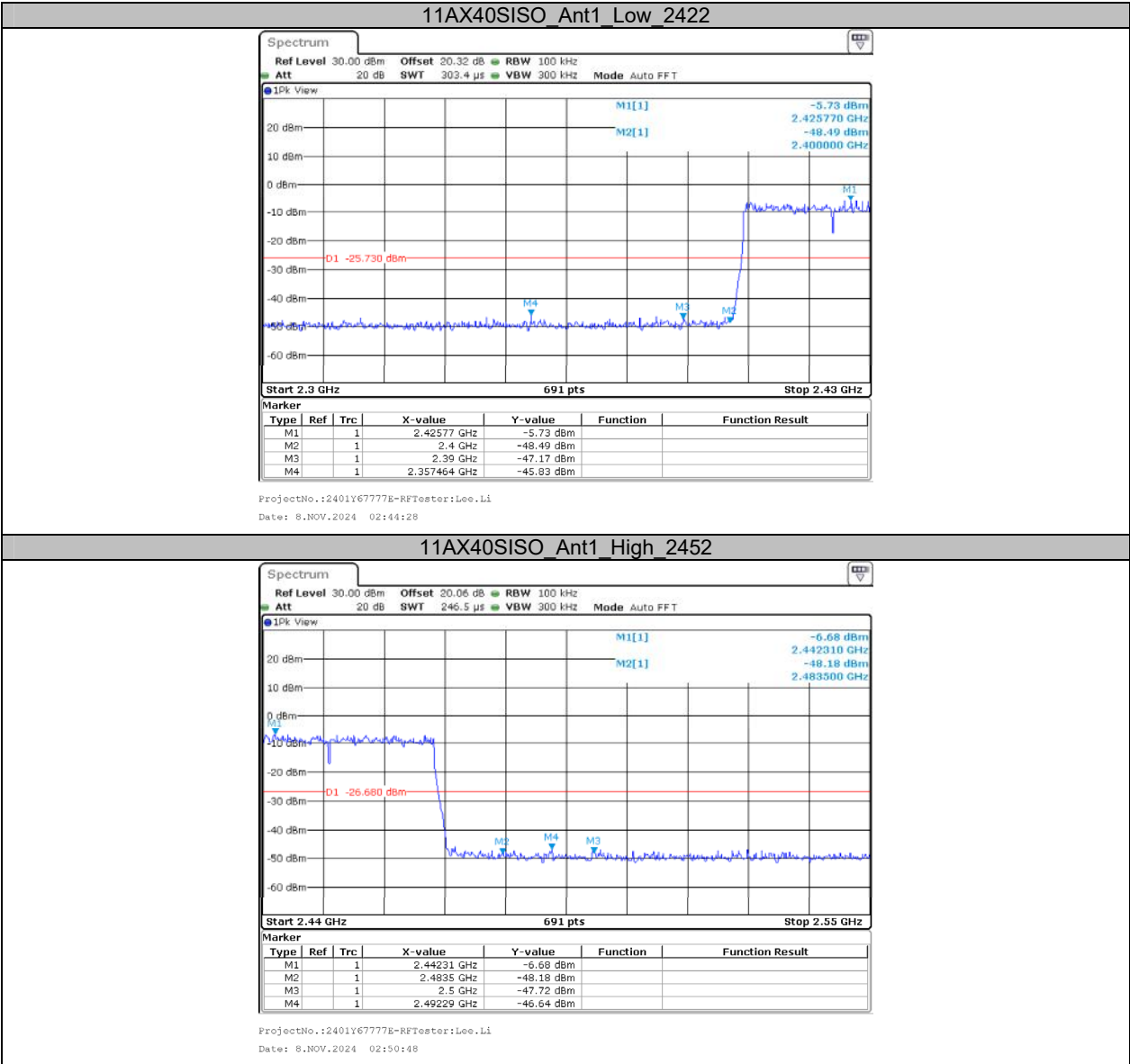












Appendix F: Duty Cycle**Test Result**

Test Mode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T [Hz]	VBW Setting[Hz]
11B	Ant1	2437	12.43	24.36	51.03	80	100
11G	Ant1	2437	5.47	10.33	52.95	183	200
11N20SISO	Ant1	2437	5.36	10.36	51.74	187	200
11N40SISO	Ant1	2437	3.00	6.33	47.39	333	500
11AX20SISO	Ant1	2437	4.63	10.33	44.82	216	300
11AX40SISO	Ant1	2437	4.64	10.37	44.74	216	300

Test Graphs





