

# FCC Test Report

**Report No.:** 2505Q43596EE

**Applicant:** Shenzhen Qianyan Technology LTD

**Address:** No.3301, Block C, Section 1, Chuangzhi Yuncheng Building,  
Liuxian Avenue, Xili Community, Xili Street, Nanshan District,  
Shenzhen, China

**Product Name:** Smart Countertop Ice Maker 2 Pro

**Product Model:** H8121

**Multiple Models:** N/A

**Trade Mark:** GoveeLife

**FCC ID:** 2A7VD-H8121

**Standards:** FCC CFR Title 47 Part 15C (§15.247)

**Test Date:** 2025-02-10 to 2025-03-11

**Test Result:** Complied

**Report Date:** 2025-03-12

**Reviewed by:**

*Abel chen*

**Approved by:**

*Jacob Kong*

Abel Chen  
Project Engineer

Jacob Kong  
Manager

**Prepared by:**

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## Revision History

Version No.	Issued Date	Description
00	2025-03-12	Original

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# 1 General Information

## 1.1 Client Information

Applicant:	Shenzhen Qianyan Technology LTD
Address:	No.3301, Block C, Section 1, Chuangzhi Yuncheng Building, Liuxian Avenue, Xili Community, Xili Street, Nanshan District, Shenzhen, China
Manufacturer:	Shenzhen Qianyan Technology LTD
Address:	No.3301, Block C, Section 1, Chuangzhi Yuncheng Building, Liuxian Avenue, Xili Community, Xili Street, Nanshan District, Shenzhen, China

## 1.2 Product Description of EUT

The EUT is Smart Countertop Ice Maker 2 Pro that contains BLE and 2.4G WLAN radios, this report covers the full testing of the 2.4G WLAN radio.

Sample Serial Number	2Y7J-1 for CE test, 2Y7J-2 for RE&RF conducted test(assigned by WATC)
Sample Received Date	2025-02-10
Sample Status	Good Condition
Frequency Range	2412MHz - 2472MHz(802.11b, g, n-HT20) 2422MHz - 2462MHz(802.11n-HT40)
Maximum Conducted Peak Output Power	14.58dBm
Modulation Technology	DSSS, OFDM
Antenna Gain <sup>#</sup>	2.28dBi
Spatial Streams <sup>#</sup>	SISO (1TX, 1RX)
Power Supply	AC 120V 60Hz
Adapter Information	N/A
Modification	Sample No Modification by the test lab

## 1.3 Antenna information

<p><b>15.203 requirement:</b></p> <p>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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</p>	
<b>Device Antenna information:</b>	
<p>The Wi-Fi antenna is an internal antenna which cannot replace by end-user. Please see product internal photos for details.</p>	

## 1.4 Related Submittal(s)/Grant(s)

No Related Submittal(s)/Grant(s)

## 1.5 Measurement Uncertainty

Parameter		Expanded Uncertainty (Confidence of 95%(U = 2Uc(y)))
AC Power Lines Conducted Emissions		±3.14dB
Emissions, Radiated	Below 30MHz	±2.78dB
	Below 1GHz	±4.84dB
	Above 1GHz	±5.44dB
Emissions, Conducted		1.75dB
Conducted Power		0.74dB
Frequency Error		150Hz
Bandwidth		0.34%
Power Spectral Density		0.74dB
<b>Note:</b> 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.		

## 1.6 Laboratory Location

World Alliance Testing & Certification (Shenzhen) Co., Ltd

No. 1002, East Block, Laobing Building, Xingye Road 3012, Xixiang street, Bao'an District, Shenzhen, Guangdong, People's Republic of China

Tel: +86-755-29691511, Email: [qa@watc.com.cn](mailto:qa@watc.com.cn)

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. : 463912, the FCC Designation No. : CN5040.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0160.

## 1.7 Test Methodology

FCC CFR 47 Part 2

FCC CFR 47 Part 15

KDB 558074 D01 15.247 Meas Guidance v05r02

ANSI CC63.10-2013

Unless otherwise stated there are no any additions to, deviations, or exclusions from the method

## 2 Description of Measurement

### 2.1 Test Configuration

Operating channels:					
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2412	6	2437	11	2462
2	2417	7	2442	12	2467
3	2422	8	2447	13	2472
4	2427	9	2452	/	/
5	2432	10	2457	/	/
According to ANSI CC63.10-2013 chapter 5.6.1 Table 11 requirement, select lowest channel, middle channel, and highest channel in the frequency range in which device operates for testing. The detailed frequency points are as follows:					
802.11b, 802.11g, 802.11n-HT20					
Lowest channel		Middle channel		Highest channel	
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2412	7	2442	13	2472
802.11n-HT40					
Lowest channel		Middle channel		Highest channel	
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
3	2422	7	2442	11	2462

Test Mode:				
Transmitting mode:		Keep the EUT in continuous transmitting with modulation		
Exercise software#:		EspRFTTestTool_v3.6		
Mode	Worst-case Data rate	Power Level Setting <sup>#</sup>		
		Low Channel	Middle Channel	High Channel
802.11b	1Mbps	Attenuation 40	Attenuation 40	Attenuation 40
802.11g	6Mbps	Attenuation 52	Attenuation 52	Attenuation 52
802.11n-HT20	6.5Mbps	Attenuation 52	Attenuation 52	Attenuation 52
802.11n-HT40	13.5Mbps	Attenuation 52	Attenuation 52	Attenuation 52
The exercise software and the maximum power setting that provided by manufacturer.				

Worst-Case Configuration:
For AC power line conducted emission and radiated emission 9kHz-1GHz and above 18GHz were performed with the EUT transmits at the channel with highest output power as worst-case scenario.
For radiated emissions below 30MHz, three antenna orientations (parallel, perpendicular, ground-parallel) were tested, only record the worse case test data in report.

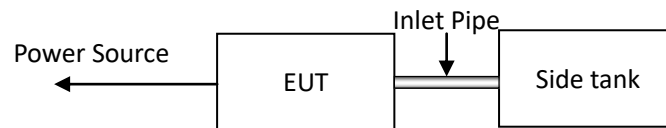
## 2.2 Test Auxiliary Equipment

Manufacturer	Description	Model	Serial Number
/	/	/	/

## 2.3 Interconnecting Cables

Manufacturer	Description	Length(m)	From	To
Qianyan	AC Power Cable	1.2	Power source	EUT

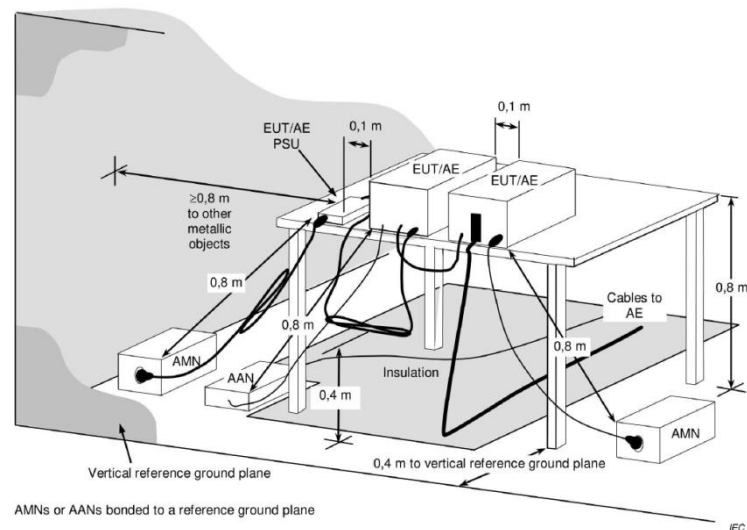
## 2.4 Block Diagram of Connection between EUT and AE



*Note: for reference only, the actual connection setup used for testing please refer to the test photos.*

## 2.5 Test Setup

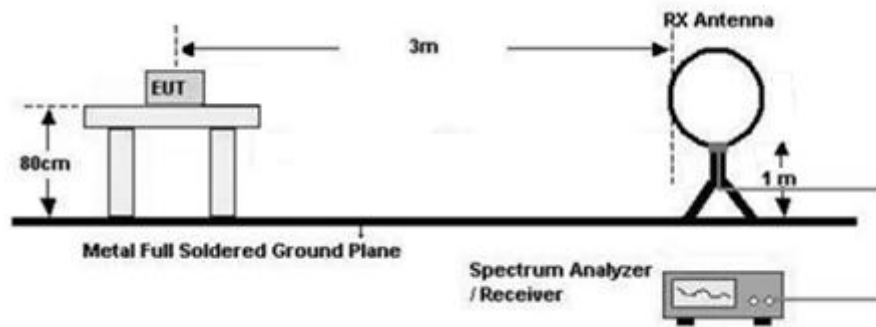
**1) Conducted emission measurement:**



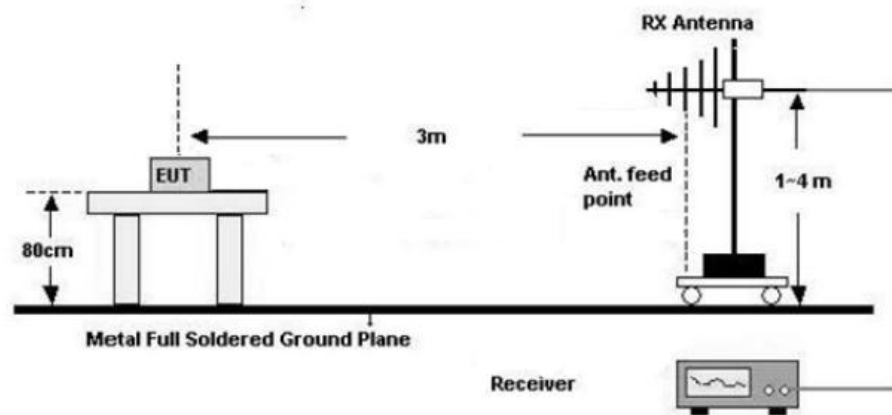
**Note:** The 0.8 m distance specified between EUT/AE/PSU and AMN/AAN, is applicable only to the EUT being measured. If the device is AE then it shall be >0.8 m.

## 2) Radiated emission measurement:

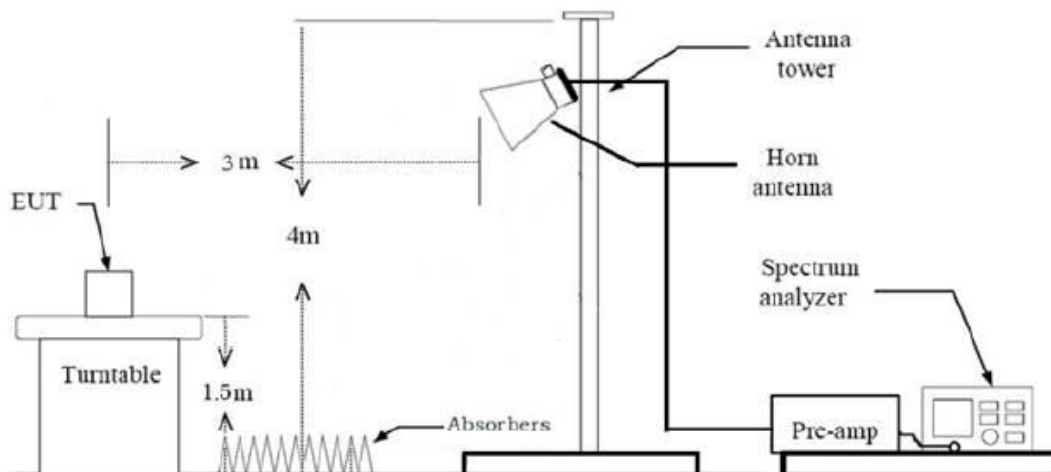
Below 30MHz (3m SAC)



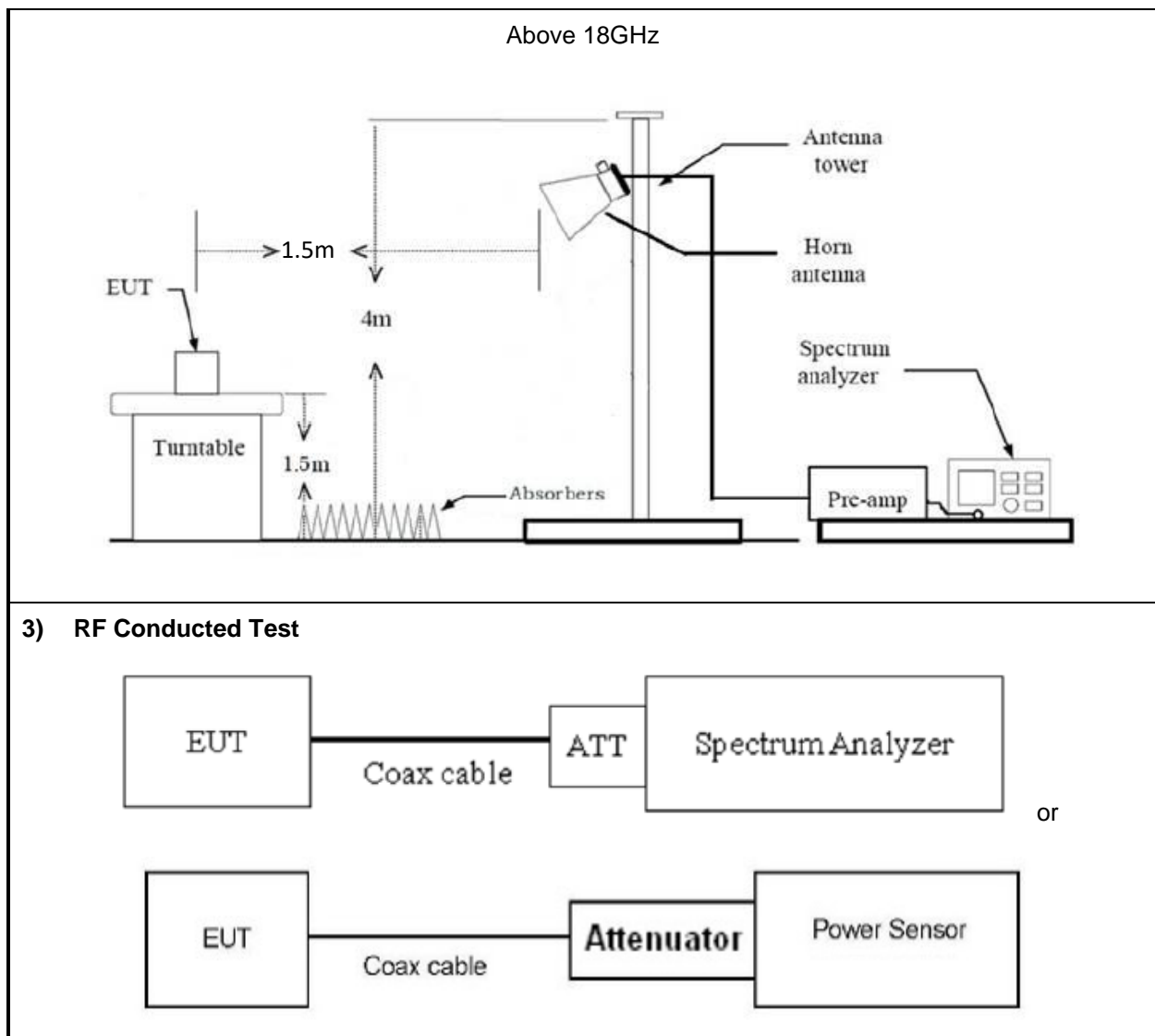
30MHz-1GHz (3m SAC)



1GHz-18GHz







## 2.6 Test Procedure

### Conducted emission:

1. The E.U.T is placed on a non-conducting table 40cm from the vertical ground plane and 80cm above the horizontal ground plane (Please refer to the block diagram of the test setup and photographs).
2. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.
3. Line conducted data is recorded for both Line and Neutral

### Radiated Emission Procedure:

#### a) For below 30MHz

1. All measurements were made at a test distance of 3 m. The measured data was extrapolated from the test distance (3m) to the specification distance (300 m from 9-490 kHz and 30 m from 490 kHz- 30 MHz) to clearly show the relative levels of fundamental and spurious emissions and demonstrate compliance with the requirement that the level of any spurious emissions be below the level of the intentionally transmitted signal. The extrapolation factor for the limits were  $40 \cdot \log(\text{test distance} / \text{specification distance})$ .

2. Loop antenna use, investigation was done on the three antenna orientations (parallel, perpendicular, ground-parallel)
3. The RBW/VBW of receiver is set to 300Hz/1kHz for 9kHz to 150kHz range, to 9kHz/30kHz for 150kHz to 30MHz range for scan Peak emission, 200Hz/9kHz IF BW was used for final measurement in the Quasi-peak or average detection mode for frequency range 9~150kHz/150kHz~30MHz respectively.
4. If the Peak emission complies with the QP limit, then perform final measurement is optional.

**b) For 30MHz-1GHz:**

1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m.
2. EUT works in each mode of operation that needs to be tested. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations.
3. The RBW/VBW of receiver is set to 100kHz/300kHz for scan Peak emission, 120kHz IF BW was used for final measurement in the Quasi-peak detection mode.
4. If the Peak emission complies with the QP limit, then perform final measurement is optional.

**c) For above 1GHz:**

1. The EUT was placed on the tabletop of a rotating table 1.5 m the ground at a 3 m chamber. The measurement distance from the EUT to the receiving antenna is 3 m (1-18GHz) and 1.5 m (above 18GHz).
2. EUT works in each mode of operation that needs to be tested, and having the EUT continuously working. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations.
3. The RBW/VBW of spectrum analyzer is set to 1MHz/3MHz for scan Peak emission, for measured average emission, reduce the VBW to 10Hz(for duty cycle $\geq$ 98%), or  $\geq 1/T$ (for duty cycle $<$ 98%). T is minimum transmission duration. (Note: a high VBW (for example 5kHz, not less than 1/T) may used to scan average emissions to avoid long sweep time.)
4. If the Peak emission complies with the Average limit, then perform average measurement is optional.
5. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.
6. Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

**RF Conducted Test:**

1. The antenna port of EUT was connected to the RF port of the test equipment (Power Meter or Spectrum analyzer) through Attenuator and RF cable.
2. The cable assembly insertion loss of 8.0dB (including 6.0 dB Attenuator and 2.0 dB cable) was entered as an offset in the power meter. Note: Actual cable loss was unavailable at the time of testing, therefore a loss of 2.0dB was assumed as worst case. This was later verified to be true by laboratory. ( if the RF cable provided by client, the cable loss declared by client)
3. The EUT is keeping in continuous transmission mode and tested in all modulation modes.

## 2.7 Measurement Method

Description of Test	Measurement Method
AC Line Conducted Emissions	ANSI CC63.10-2013 Section 6.2
Maximum Conducted Output Power	ANSI CC63.10-2013 Section 11.9.1.2 PKPM1 Peak power meter method or ANSI CC63.10-2013 Section 11.9.2.3.2 Method AVGPM-G
Power Spectral Density	ANSI CC63.10-2013 Section 11.10.2 Method PKPSD (peak PSD)
6 dB Emission Bandwidth	ANSI CC63.10-2013 Section 11.8.1
99% Occupied Bandwidth	ANSI CC63.10-2013 Section 6.9.3
100kHz Bandwidth of Frequency Band Edge	ANSI CC63.10-2013 Section 6.10
Radiated emission	ANSI CC63.10-2013 Section 11.11&11.12
Duty Cycle	ANSI CC63.10-2013 Section 11.6

## 2.8 Measurement Equipment

Manufacturer	Description	Model	Management No.	Calibration Date	Calibration Due Date
AC Line Conducted Emission Test					
ROHDE& SCHWARZ	EMI TEST RECEIVER	ESR	101817	2024/6/4	2025/6/3
R&S	LISN	ENV216	101748	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.12	N/A	2024/6/4	2025/6/3
Farad	Test Software	EZ-EMC	Ver. EMEC-3A1	/	/
Radiated Emission Test					
R&S	EMI test receiver	ESR3	102758	2024/6/4	2025/6/3
ROHDE& SCHWARZ	SPECTRUM ANALYZER	FSV40-N	101608	2024/6/4	2025/6/3
SONOMA INSTRUMENT	Low frequency amplifier	310	186014	2024/6/4	2025/6/3
A.H. Systems	PREAMPLIFIER	PAM-0118P	531	2024/6/4	2025/6/3
COM-POWER	Amplifier	PAM-840A	461306	2024/8/7	2025/8/6
BACL	Loop Antenna	1313-1A	4010611	2024/2/7	2027/2/6
SCHWARZBECK	Log - periodic wideband antenna	VULB 9163	9163-872	2023/7/7	2026/7/6
Astro Antenna Ltd	Horn antenna	AHA-118S	3015	2023/7/6	2026/7/5
Ducommun technologies	Horn Antenna	ARH-4223-02	1007726-03	2023/7/10	2026/7/9
Oulitong	Band Reject Filter	OBSF-2400-248 3.5-50N	OE02103119	2024/6/4	2025/6/3
Unknown	6.7G High Pass Filter	Unknown	6.7G	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.9	N/A	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.13	N/A	2024/8/7	2025/8/6
N/A	Coaxial Cable	NO.15	N/A	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.16	N/A	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.17	N/A	2024/6/4	2025/6/3
Audix	Test Software	E3	191218 V9	/	/
RF Conducted Test					
ROHDE& SCHWARZ	SPECTRUM ANALYZER	FSV40	101419	2024/6/4	2025/6/3
ANRITSU	USB Power Sensor	MA24418A	12620	2024/6/4	2025/6/3
narda	6dB attenuator	603-06-1	N/A	2024/6/4	2025/6/3

Note: All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or International standards.

### 3 Test Results

#### 3.1 Test Summary

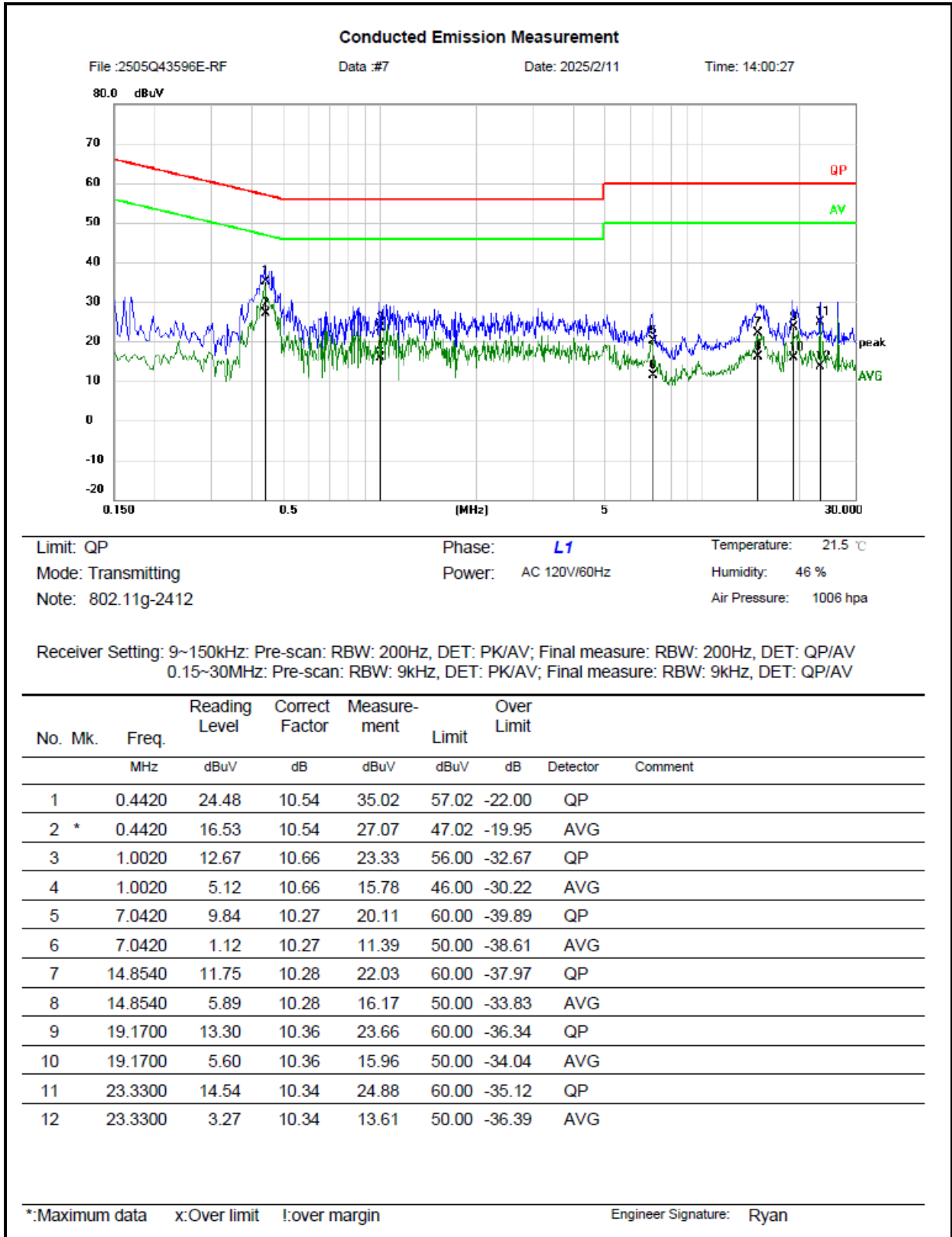
FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliance
§15.207 (a)	AC Line Conducted Emissions	Compliance
§15.247(b)(3)	Maximum Conducted Output Power	Compliance
§15.247(e)	Power Spectral Density	Compliance
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliance
-	99% Occupied Bandwidth	Report only
§15.247(d)	100kHz Bandwidth of Frequency Band Edge	Compliance
§15.205, §15.209, §15.247(d)	Radiated emission	Compliance
-	Duty Cycle	Report only

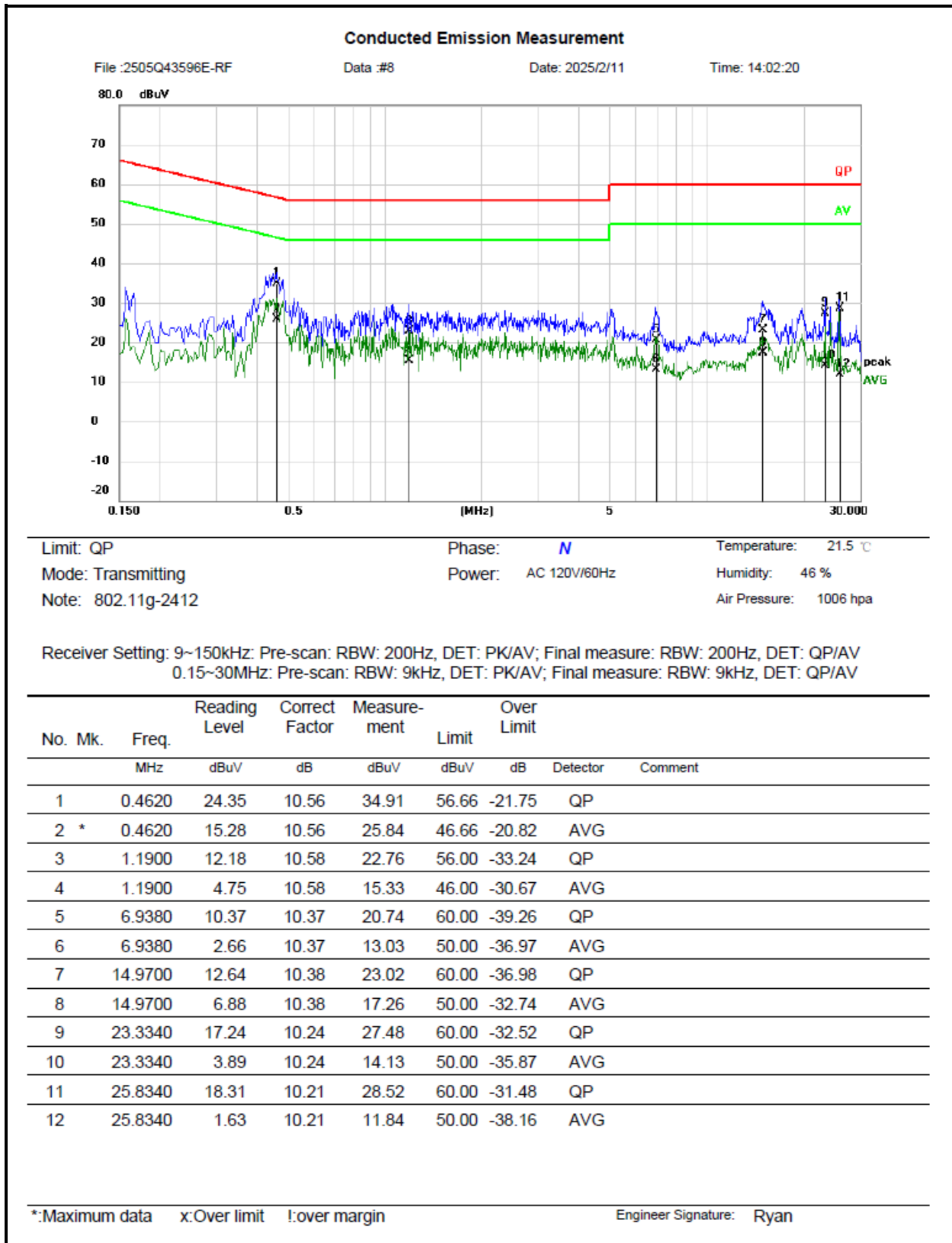
## 3.2 Limit

Test items	Limit
AC Line Conducted Emissions	See details §15.207 (a)
Conducted Output Power	For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.
6dB Emission Bandwidth	The minimum 6 dB bandwidth shall be at least 500 kHz.
Power Spectral Density	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.
Spurious Emissions, 100kHz Bandwidth of Frequency Band Edge	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)).

### 3.3 AC Line Conducted Emissions Test Data

<b>Test Date:</b>	2025-02-11	<b>Test By:</b>	Ryan Zhang
<b>Environment condition:</b>	Temperature: 21.5°C; Relative Humidity:46%; ATM Pressure: 100.6kPa		





**Remark:**

Measurement (dBuV)= Reading Level (dBuV) + Correct Factor(dB)

Correct Factor (dB)= LISN Voltage Division Factor (dB)+ Cable loss(dB)

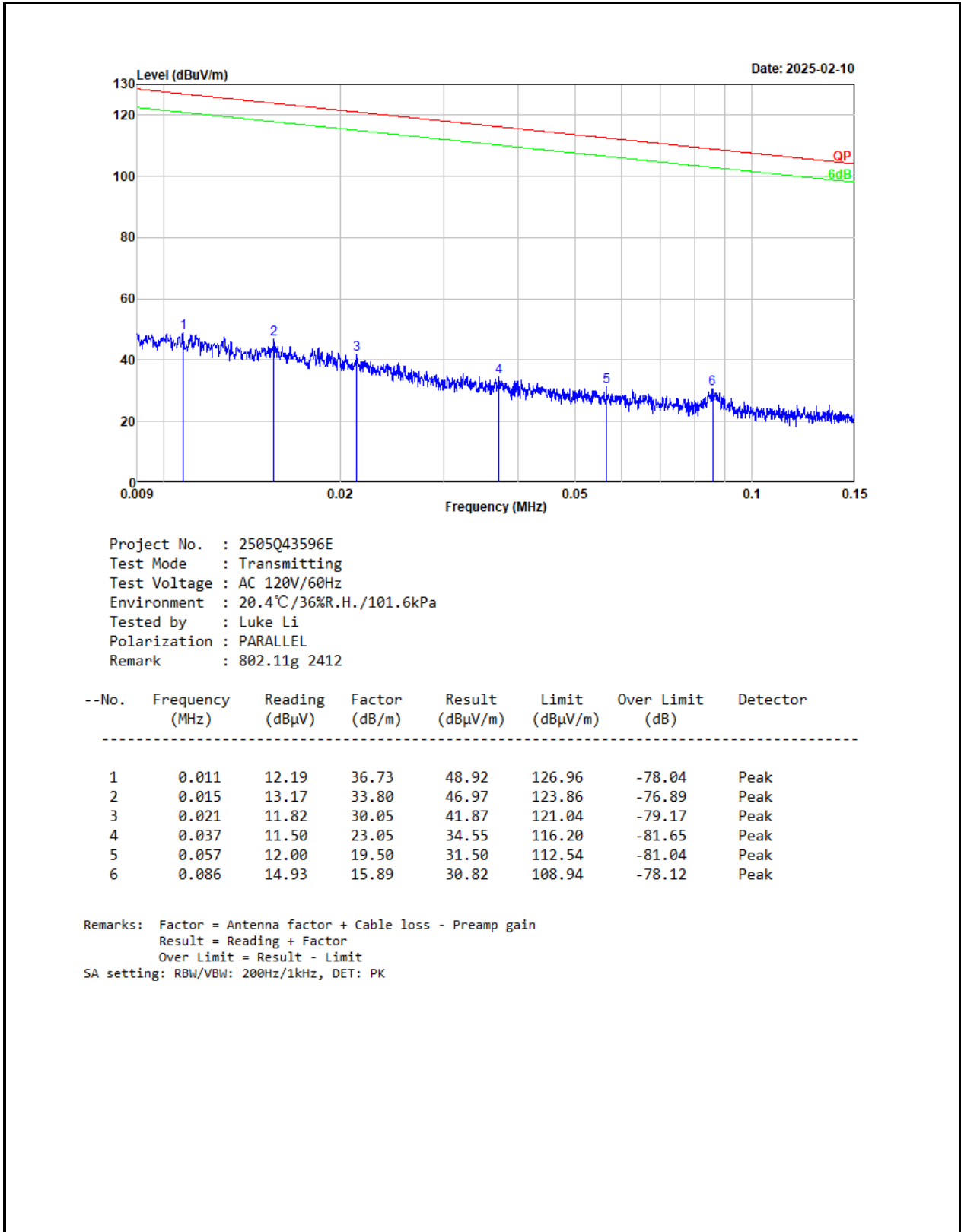
OverLimit = Measurement – Limit

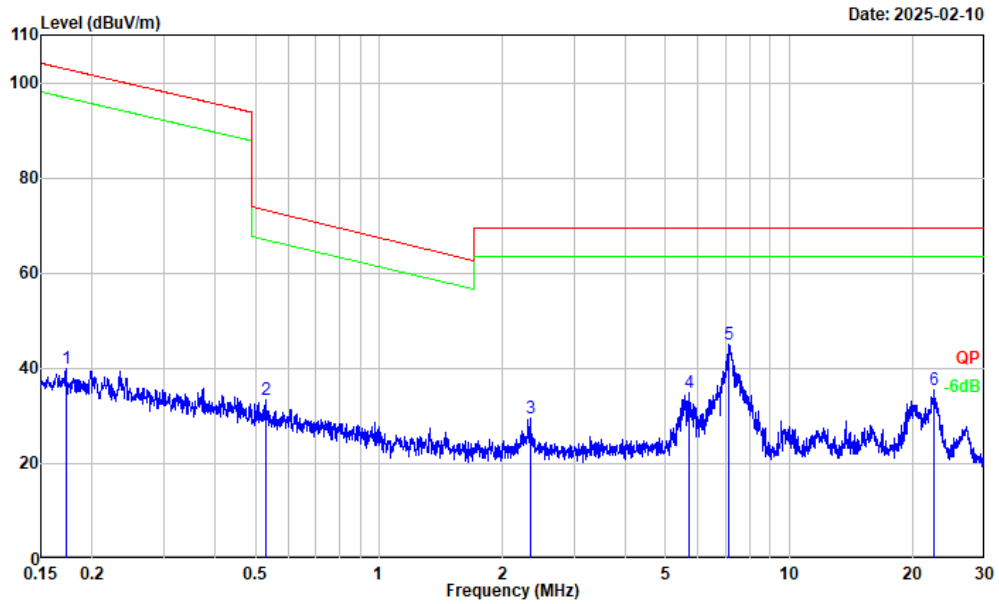


### 3.4 Radiated emission Test Data

9 kHz-30MHz:

<b>Test Date:</b>	2025-02-10	<b>Test By:</b>	Luke Li
<b>Environment condition:</b>	Temperature: 20.4°C; Relative Humidity:36%; ATM Pressure: 101.6kPa		





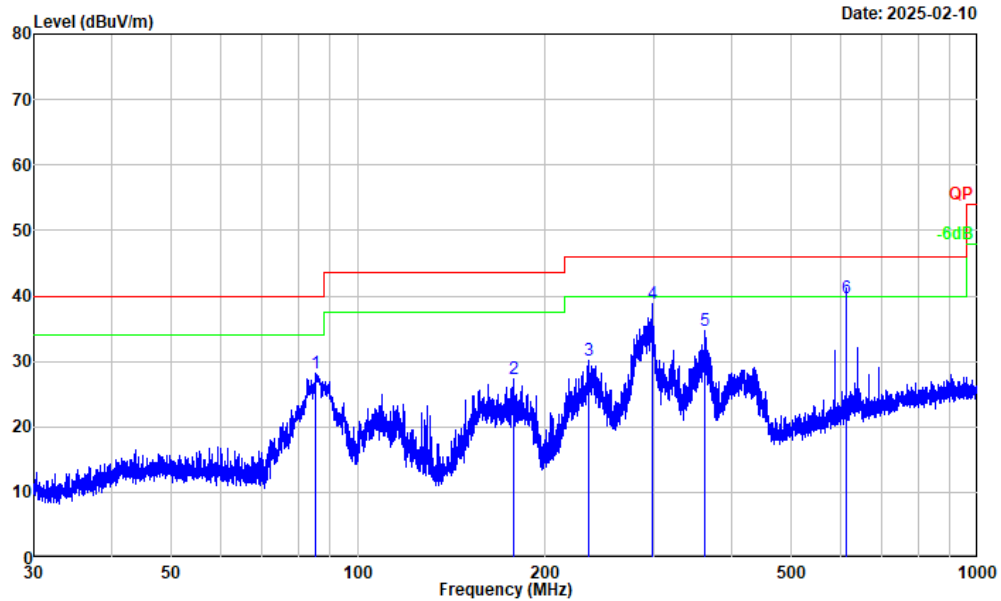
Project No. : 2505Q43596E  
Test Mode : Transmitting  
Test Voltage : AC 120V/60Hz  
Environment : 20.4°C/36%R.H./101.6kPa  
Tested by : Luke Li  
Polarization : PARALLEL  
Remark : 802.11g 2412

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	0.173	26.90	12.93	39.83	102.85	-63.02	Peak
2	0.529	28.03	5.27	33.30	73.13	-39.83	Peak
3	2.336	32.18	-2.76	29.42	69.54	-40.12	Peak
4	5.710	38.95	-4.05	34.90	69.54	-34.64	Peak
5	7.109	49.04	-3.97	45.07	69.54	-24.47	Peak
6	22.533	38.88	-3.41	35.47	69.54	-34.07	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain  
Result = Reading + Factor  
Over Limit = Result - Limit  
SA setting: RBW/VBW: 9kHz/30kHz, DET: PK

**30MHz-1GHz:**

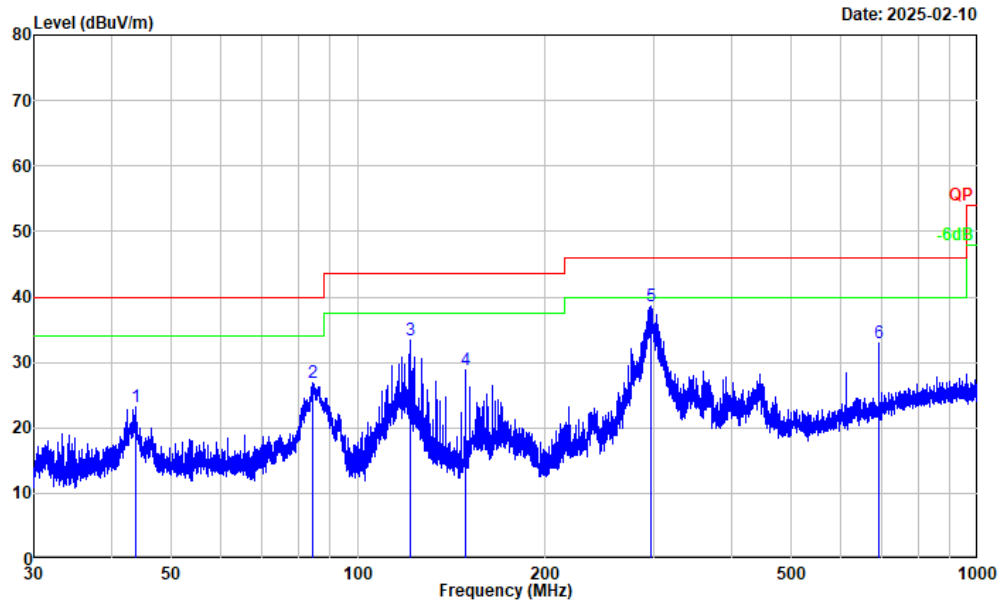
<b>Test Date:</b>	2025-02-10	<b>Test By:</b>	Luke Li
<b>Environment condition:</b>	Temperature: 20.4°C; Relative Humidity:36%; ATM Pressure: 101.6kPa		



Project No. : 2505Q43596E  
Test Mode : Transmitting  
Test Voltage : AC 120V/60Hz  
Environment : 20.4°C/36%R.H./101.6kPa  
Tested by : Luke Li  
Polarization : horizontal  
Remark : 802.11g 2412

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
<hr/>							
1	85.448	45.02	-16.94	28.08	40.00	-11.92	Peak
2	178.524	43.02	-15.65	27.37	43.50	-16.13	Peak
3	235.403	42.83	-12.73	30.10	46.00	-15.90	Peak
4	298.399	50.09	-11.31	38.78	46.00	-7.22	Peak
5	362.031	44.14	-9.48	34.66	46.00	-11.34	Peak
6	613.407	44.50	-4.81	39.69	46.00	-6.31	QP

Remarks: Factor = Antenna factor + Cable loss - Preamp gain  
Result = Reading + Factor  
Over Limit = Result - Limit  
SA setting: Pre-scan: RBW/VBW: 100kHz/300kHz, DET: PK  
Final measure: RBW: 120kHz, DET: QP



Project No. : 2505Q43596E  
Test Mode : Transmitting  
Test Voltage : AC 120V/60Hz  
Environment : 20.4°C/36%R.H./101.6kPa  
Tested by : Luke Li  
Polarization : vertical  
Remark : 802.11g 2412

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
-----							
1	43.793	35.39	-12.22	23.17	40.00	-16.83	Peak
2	84.517	44.10	-17.14	26.96	40.00	-13.04	Peak
3	121.336	49.39	-16.00	33.39	43.50	-10.11	Peak
4	149.093	46.23	-17.33	28.90	43.50	-14.60	Peak
5	296.184	50.01	-11.37	38.64	46.00	-7.36	Peak
6	693.505	37.05	-4.05	33.00	46.00	-13.00	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain  
Result = Reading + Factor  
Over Limit = Result - Limit  
SA setting: Pre-scan: RBW/VBW: 100kHz/300kHz, DET: PK  
Final measure: RBW: 120kHz, DET: QP

**Above 1GHz:**

<b>Test Date:</b>	2025-03-03~2025-03-05	<b>Test By:</b>	Bard Huang
<b>Environment condition:</b>	Temperature: 23.4°C; Relative Humidity:62%; ATM Pressure:100.6 kPa		

Frequency (MHz)	Reading level (dBμV)	Polar (H/V)	Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
802.11b							
Low Channel							
1281.000	57.91	horizontal	-6.72	51.19	74.00	-22.81	Peak
1756.000	54.19	horizontal	-3.68	50.51	74.00	-23.49	Peak
4824.000	47.79	horizontal	-2.29	45.50	74.00	-28.50	Peak
1593.000	55.24	vertical	-4.27	50.97	74.00	-23.03	Peak
2665.000	55.83	vertical	-2.41	53.42	74.00	-20.58	Peak
4824.000	48.19	vertical	-2.29	45.90	74.00	-28.10	Peak
Middle Channel							
1264.000	58.12	horizontal	-6.84	51.28	74.00	-22.72	Peak
1594.000	54.44	horizontal	-4.26	50.18	74.00	-23.82	Peak
4884.000	48.64	horizontal	-1.84	46.80	74.00	-27.20	Peak
1594.000	57.72	vertical	-4.26	53.46	74.00	-20.54	Peak
2661.000	52.12	vertical	-2.41	49.71	74.00	-24.29	Peak
4884.000	47.52	vertical	-1.84	45.68	74.00	-28.32	Peak
High Channel							
1263.000	58.06	horizontal	-6.84	51.22	74.00	-22.78	Peak
4944.000	47.86	horizontal	-1.70	46.16	74.00	-27.84	Peak
1598.000	55.78	vertical	-4.23	51.55	74.00	-22.45	Peak
2125.000	51.53	vertical	-3.98	47.55	74.00	-26.45	Peak
4944.000	49.30	vertical	-1.70	47.60	74.00	-26.40	Peak
802.11g							
Low Channel							
1257.000	57.47	horizontal	-6.88	50.59	74.00	-23.41	Peak
1666.000	52.29	horizontal	-3.77	48.52	74.00	-25.48	Peak
4824.000	48.03	horizontal	-2.29	45.74	74.00	-28.26	Peak
1595.000	55.21	vertical	-4.25	50.96	74.00	-23.04	Peak
1864.000	52.05	vertical	-3.97	48.08	74.00	-25.92	Peak
4824.000	47.70	vertical	-2.29	45.41	74.00	-28.59	Peak
Middle Channel							
1274.000	58.69	horizontal	-6.78	51.91	74.00	-22.09	Peak

1665.000	52.64	horizontal	-3.78	48.86	74.00	-25.14	Peak
4884.000	47.21	horizontal	-1.84	45.37	74.00	-28.63	Peak
1596.000	56.93	vertical	-4.24	52.69	74.00	-21.31	Peak
2654.000	54.97	vertical	-2.42	52.55	74.00	-21.45	Peak
4884.000	47.54	vertical	-1.84	45.70	74.00	-28.30	Peak
High Channel							
1274.000	57.56	horizontal	-6.78	50.78	74.00	-23.22	Peak
1334.000	56.49	horizontal	-6.18	50.31	74.00	-23.69	Peak
4944.000	48.10	horizontal	-1.70	46.40	74.00	-27.60	Peak
1592.000	55.62	vertical	-4.28	51.34	74.00	-22.66	Peak
1819.000	52.55	vertical	-3.80	48.75	74.00	-25.25	Peak
4944.000	47.65	vertical	-1.70	45.95	74.00	-28.05	Peak
802.11n20							
Low Channel							
1270.000	58.10	horizontal	-6.80	51.30	74.00	-22.70	Peak
1594.000	53.00	horizontal	-4.26	48.74	74.00	-25.26	Peak
4824.000	46.90	horizontal	-2.29	44.61	74.00	-29.39	Peak
1597.000	56.28	vertical	-4.23	52.05	74.00	-21.95	Peak
2654.000	54.77	vertical	-2.42	52.35	74.00	-21.65	Peak
4824.000	47.66	vertical	-2.29	45.37	74.00	-28.63	Peak
Middle Channel							
1265.000	57.75	horizontal	-6.83	50.92	74.00	-23.08	Peak
1593.000	52.12	horizontal	-4.27	47.85	74.00	-26.15	Peak
4884.000	48.70	horizontal	-1.84	46.86	74.00	-27.14	Peak
1592.000	55.79	vertical	-4.28	51.51	74.00	-22.49	Peak
1871.000	51.68	vertical	-3.99	47.69	74.00	-26.31	Peak
2664.000	54.93	vertical	-2.41	52.52	74.00	-21.48	Peak
4884.000	47.51	vertical	-1.84	45.67	74.00	-28.33	Peak
High Channel							
1279.000	57.77	horizontal	-6.74	51.03	74.00	-22.97	Peak
1871.000	53.15	horizontal	-3.99	49.16	74.00	-24.84	Peak
4944.000	48.53	horizontal	-1.70	46.83	74.00	-27.17	Peak
1598.000	56.01	vertical	-4.23	51.78	74.00	-22.22	Peak
2126.000	57.18	vertical	-3.98	53.20	74.00	-20.80	Peak
4944.000	47.82	vertical	-1.70	46.12	74.00	-27.88	Peak
802.11n40							
Low Channel							
1239.000	57.93	horizontal	-6.97	50.96	74.00	-23.04	Peak

1871.000	52.23	horizontal	-3.99	48.24	74.00	-25.76	Peak
4844.000	47.50	horizontal	-2.17	45.33	74.00	-28.67	Peak
1659.000	56.58	vertical	-3.81	52.77	74.00	-21.23	Peak
2665.000	55.71	vertical	-2.41	53.30	74.00	-20.70	Peak
4844.000	47.88	vertical	-2.17	45.71	74.00	-28.29	Peak
Middle Channel							
1262.000	57.73	horizontal	-6.84	50.89	74.00	-23.11	Peak
2514.000	52.34	horizontal	-2.62	49.72	74.00	-24.28	Peak
4884.000	48.55	horizontal	-1.84	46.71	74.00	-27.29	Peak
1594.000	56.46	vertical	-4.26	52.20	74.00	-21.80	Peak
2664.000	52.79	vertical	-2.41	50.38	74.00	-23.62	Peak
4884.000	47.97	vertical	-1.84	46.13	74.00	-27.87	Peak
High Channel							
1244.000	57.58	horizontal	-6.94	50.64	74.00	-23.36	Peak
1871.000	51.47	horizontal	-3.99	47.48	74.00	-26.52	Peak
4924.000	48.70	horizontal	-1.70	47.00	74.00	-27.00	Peak
1282.000	54.65	vertical	-6.72	47.93	74.00	-26.07	Peak
1493.000	53.69	vertical	-4.90	48.79	74.00	-25.21	Peak
1597.000	54.97	vertical	-4.23	50.74	74.00	-23.26	Peak
1664.000	51.77	vertical	-3.78	47.99	74.00	-26.01	Peak
1871.000	50.26	vertical	-3.99	46.27	74.00	-27.73	Peak
2665.000	53.54	vertical	-2.41	51.13	74.00	-22.87	Peak
4924.000	49.10	vertical	-1.70	47.40	74.00	-26.60	Peak

*Remark:*

*Corrected Amplitude= Reading level + corrected Factor*

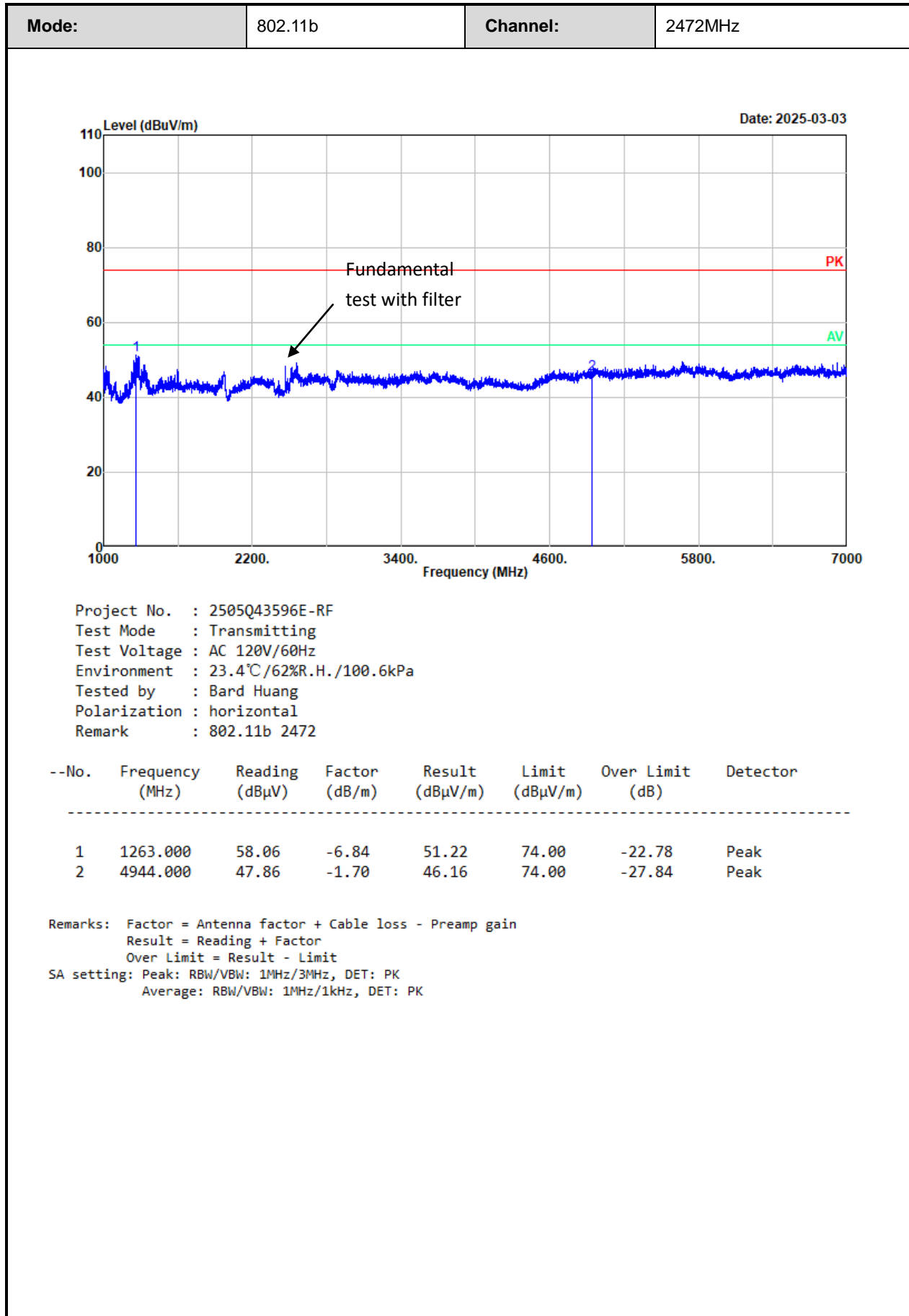
*Corrected Factor = Antenna factor + Cable loss – Amplifier gain*

*Margin = Corrected Amplitude – Limit*

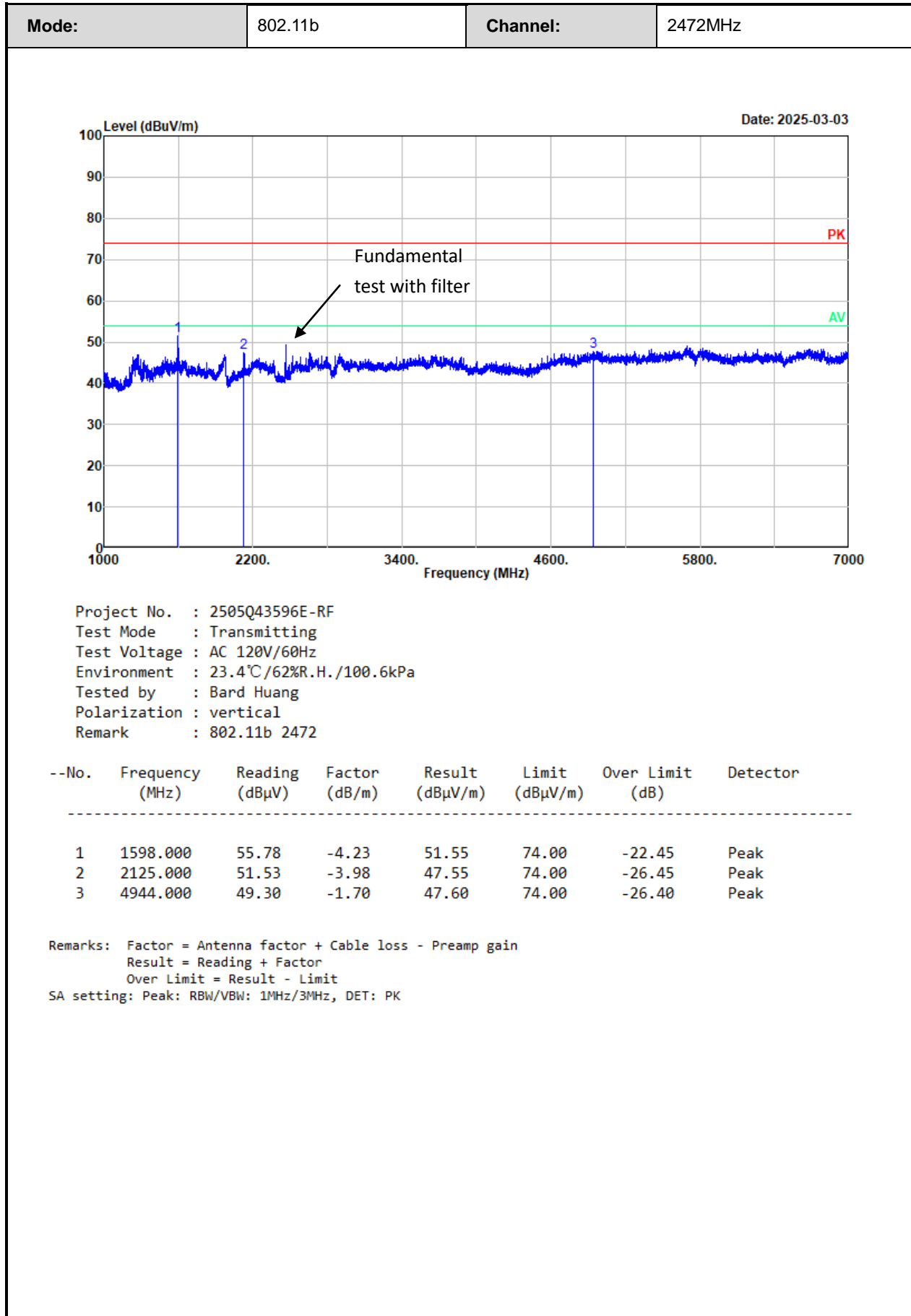
*For the test result of Peak below the Peak limit more than 20dB, which can compliance with the average limit, just the Peak level was recorded.*

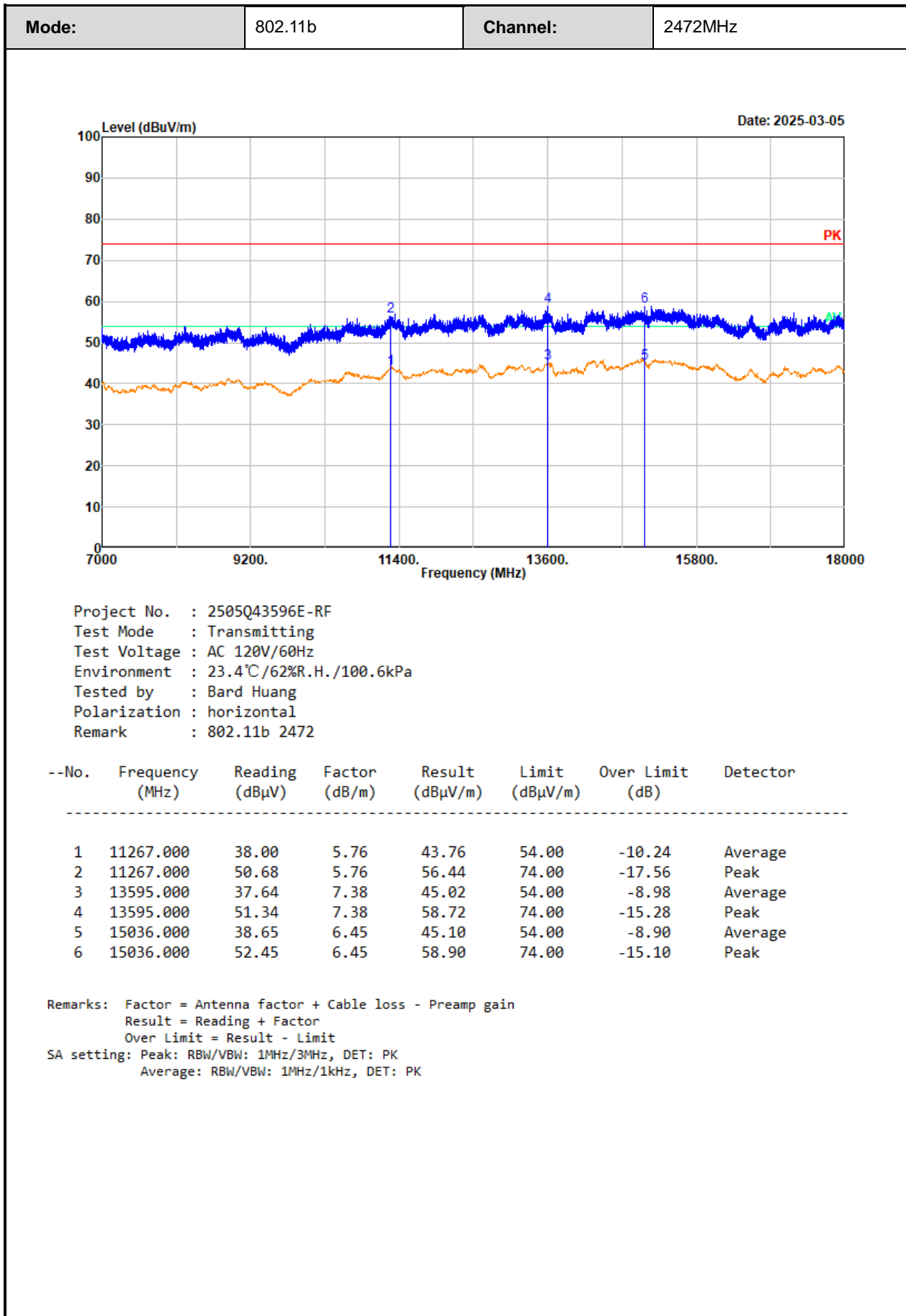
*The emission levels of other frequencies that were lower than the limit 20dB, not show in test report.*

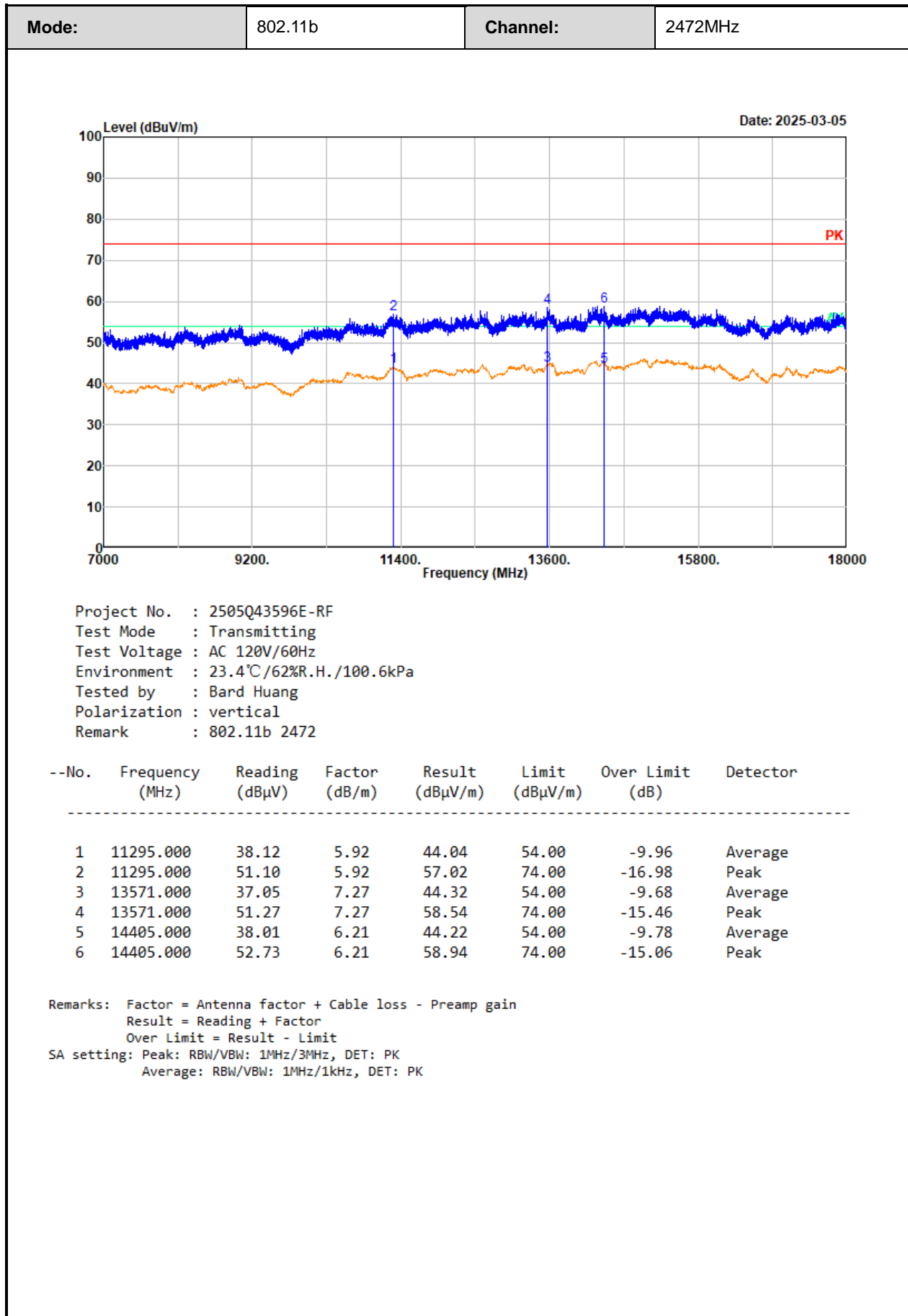
**Test plot for worst case as below:**

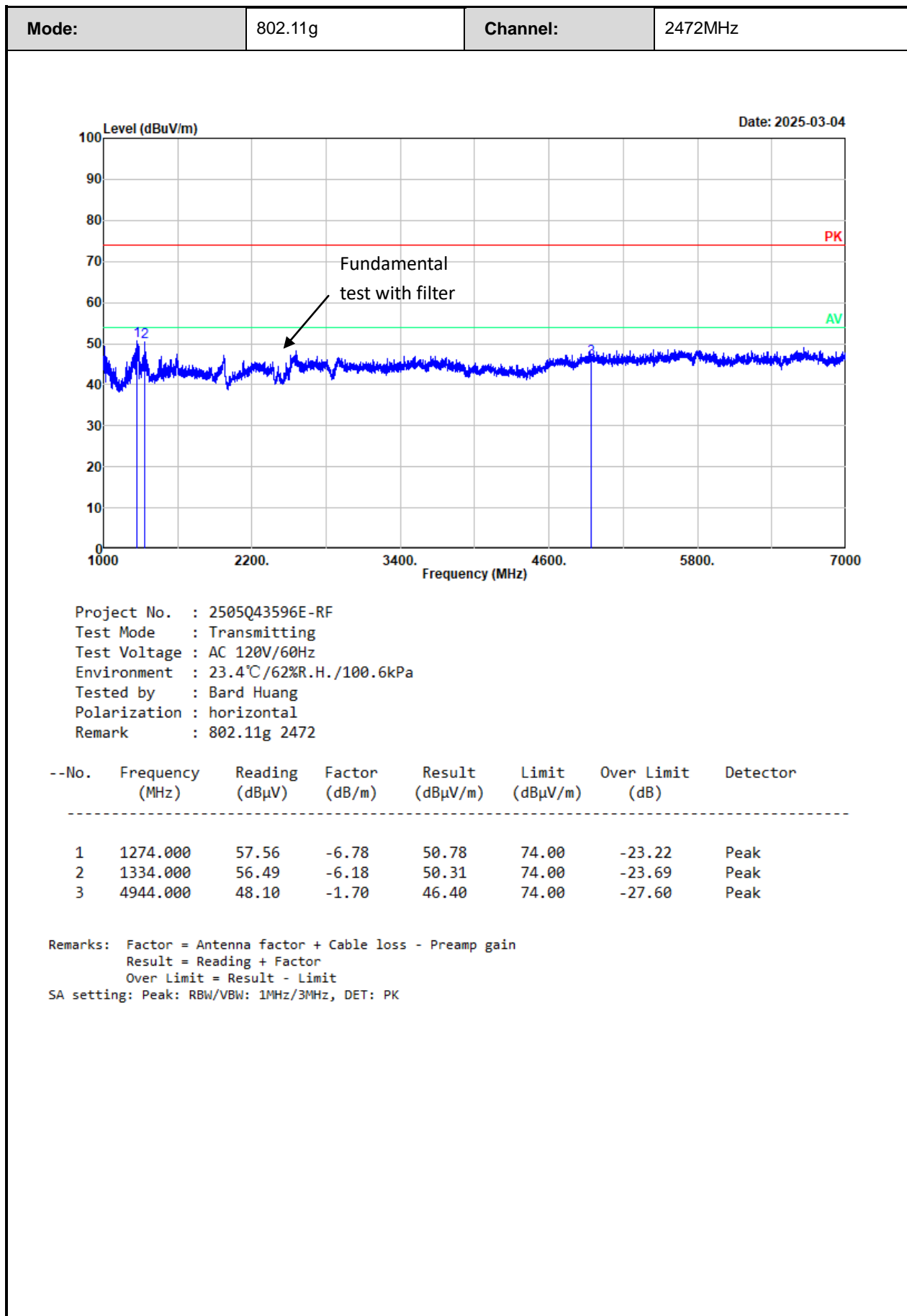


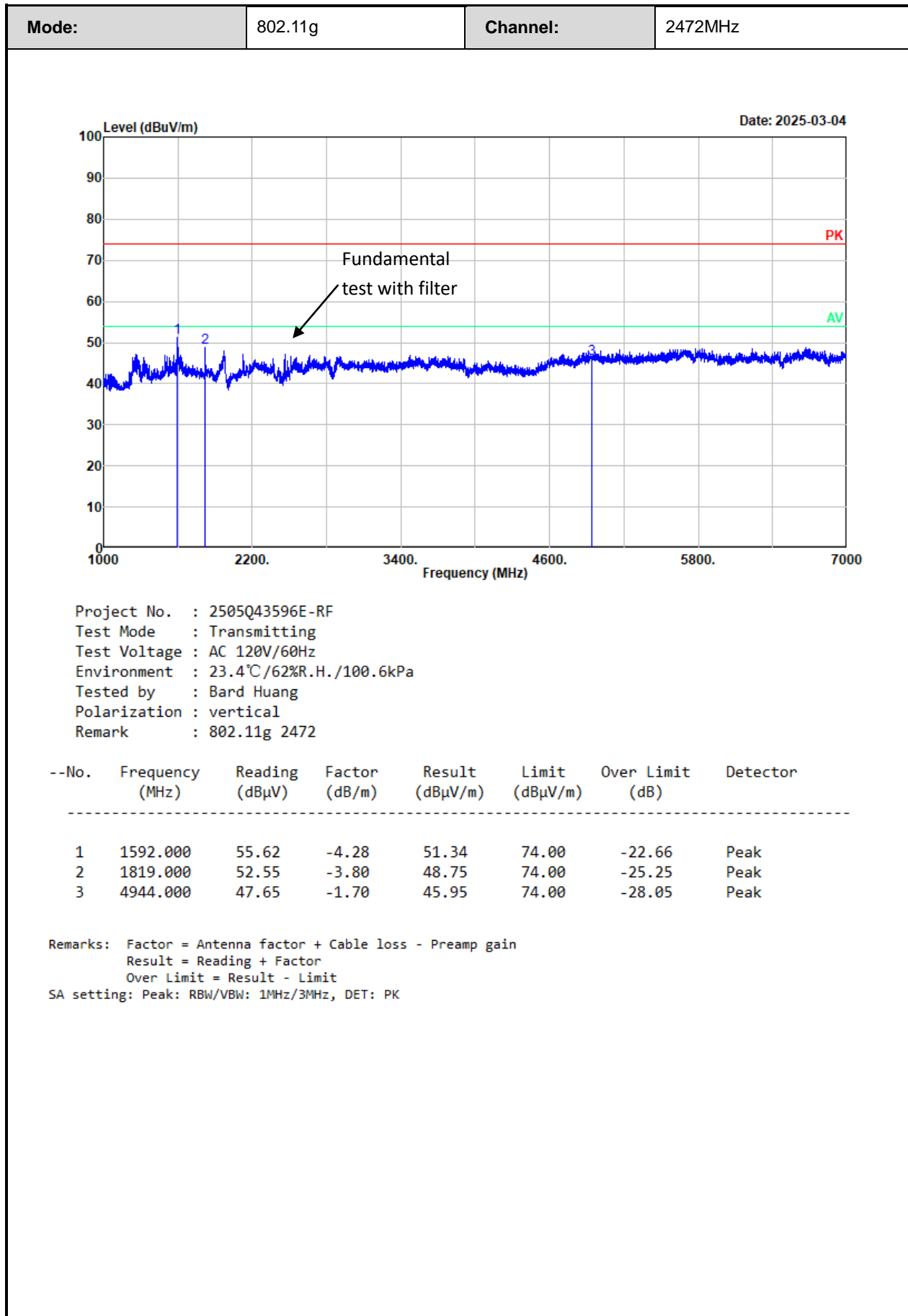


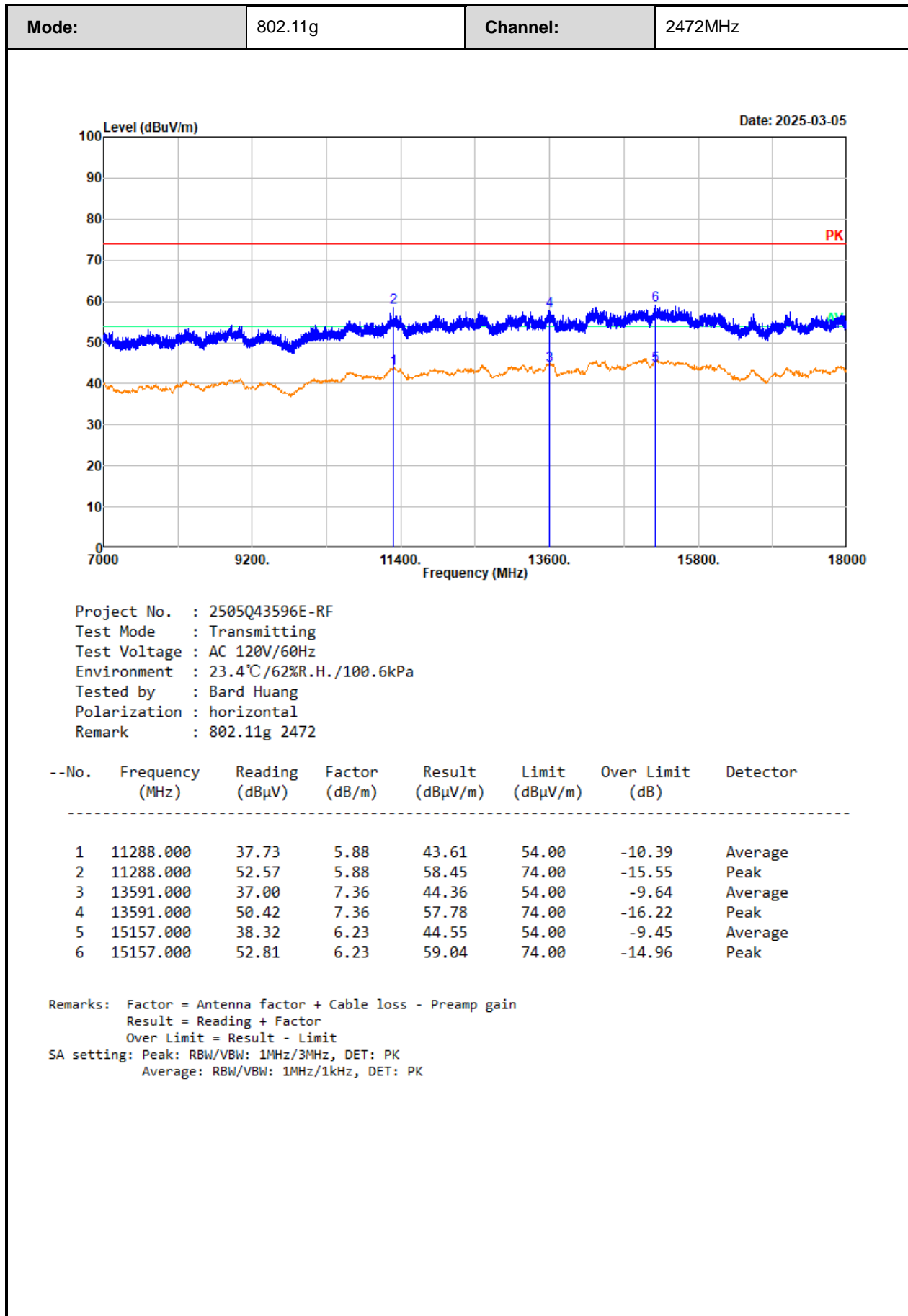


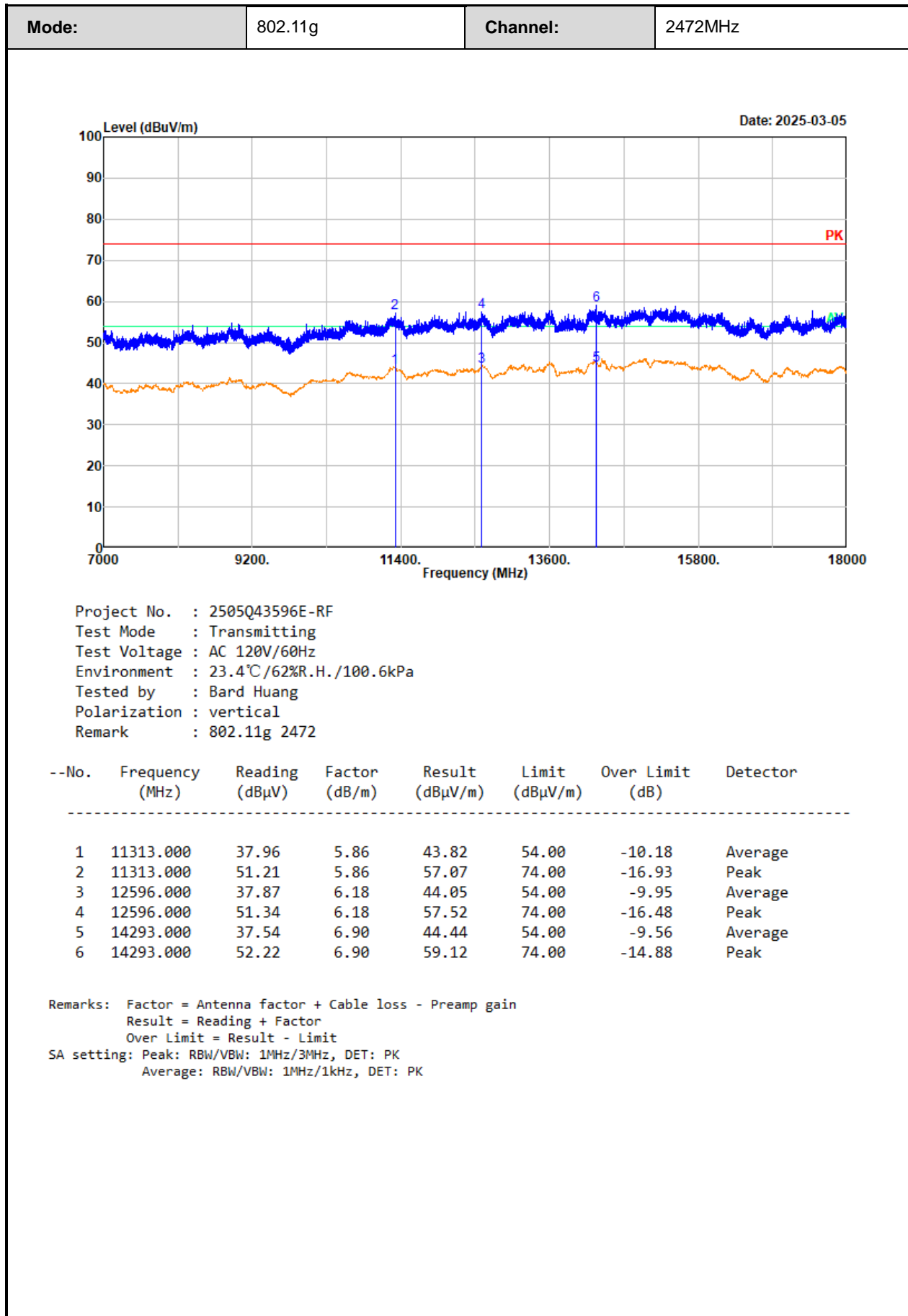


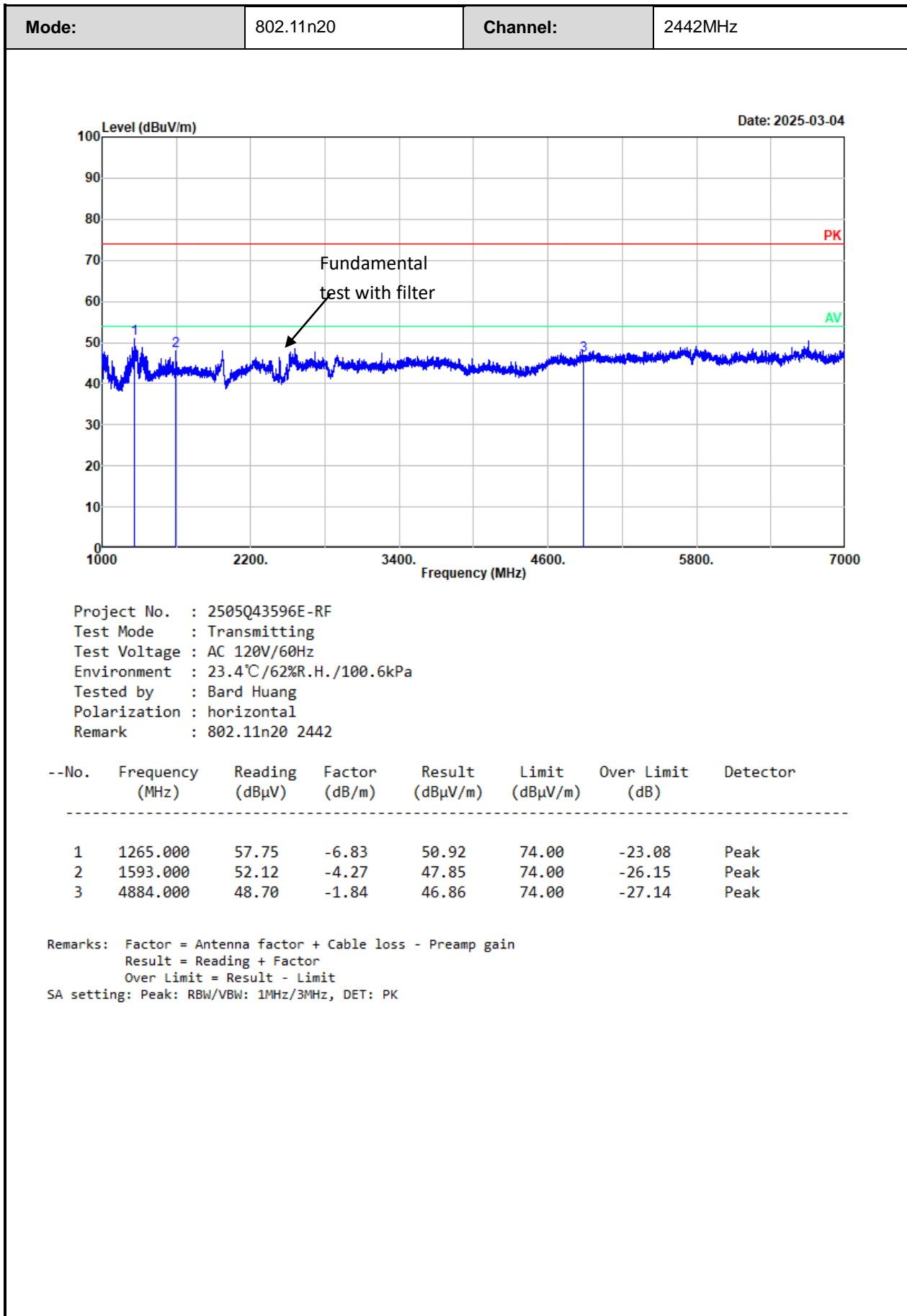




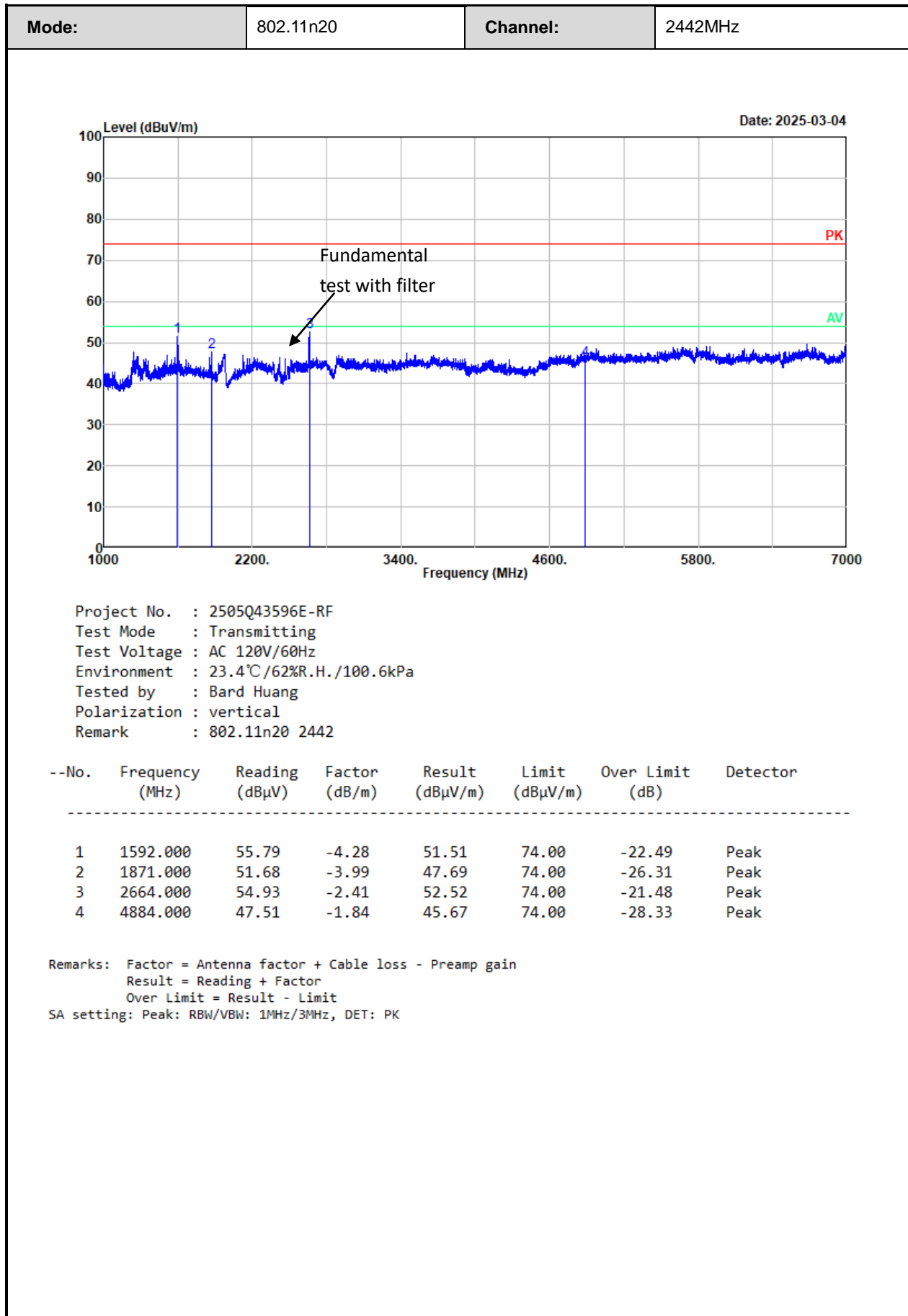


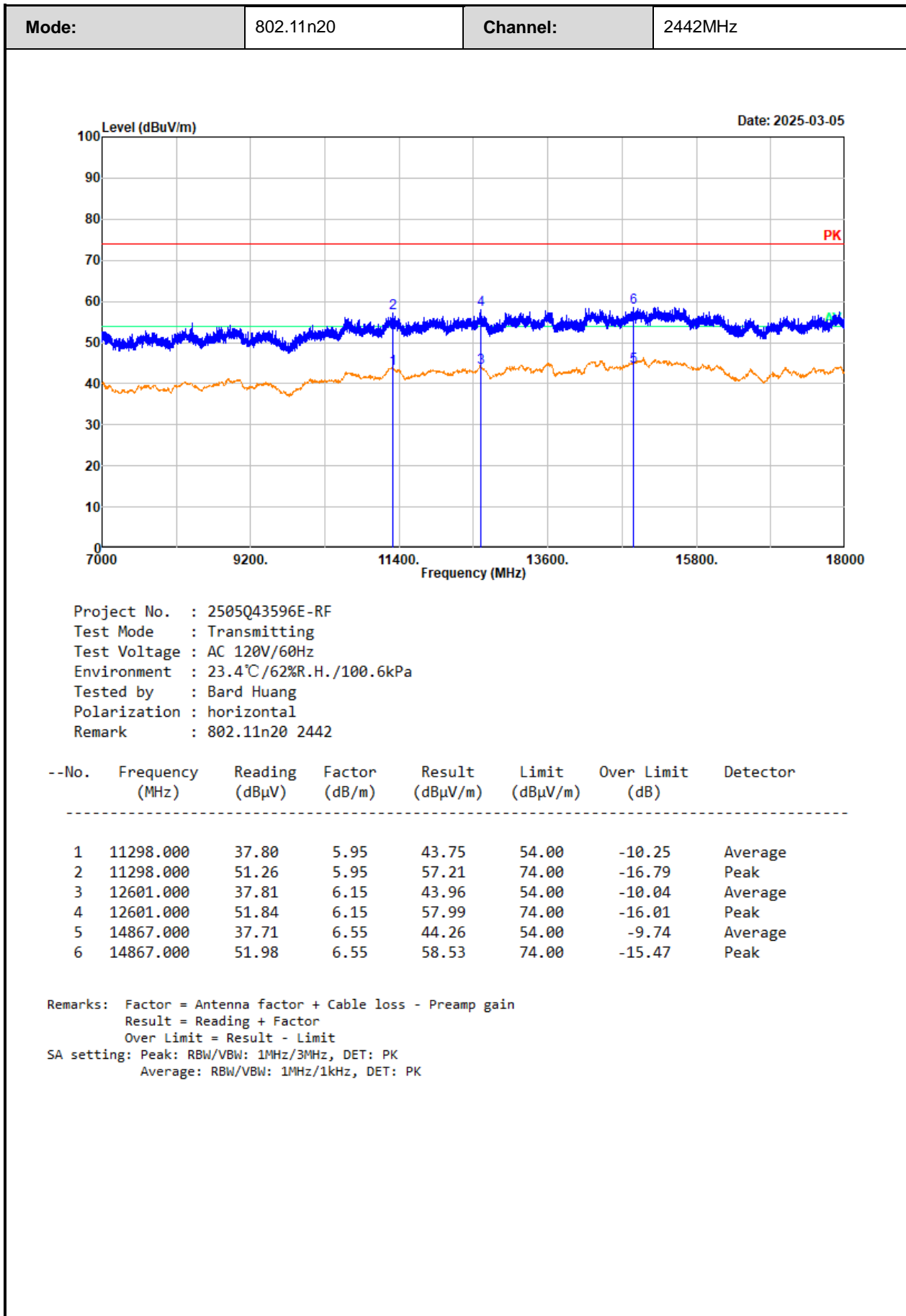


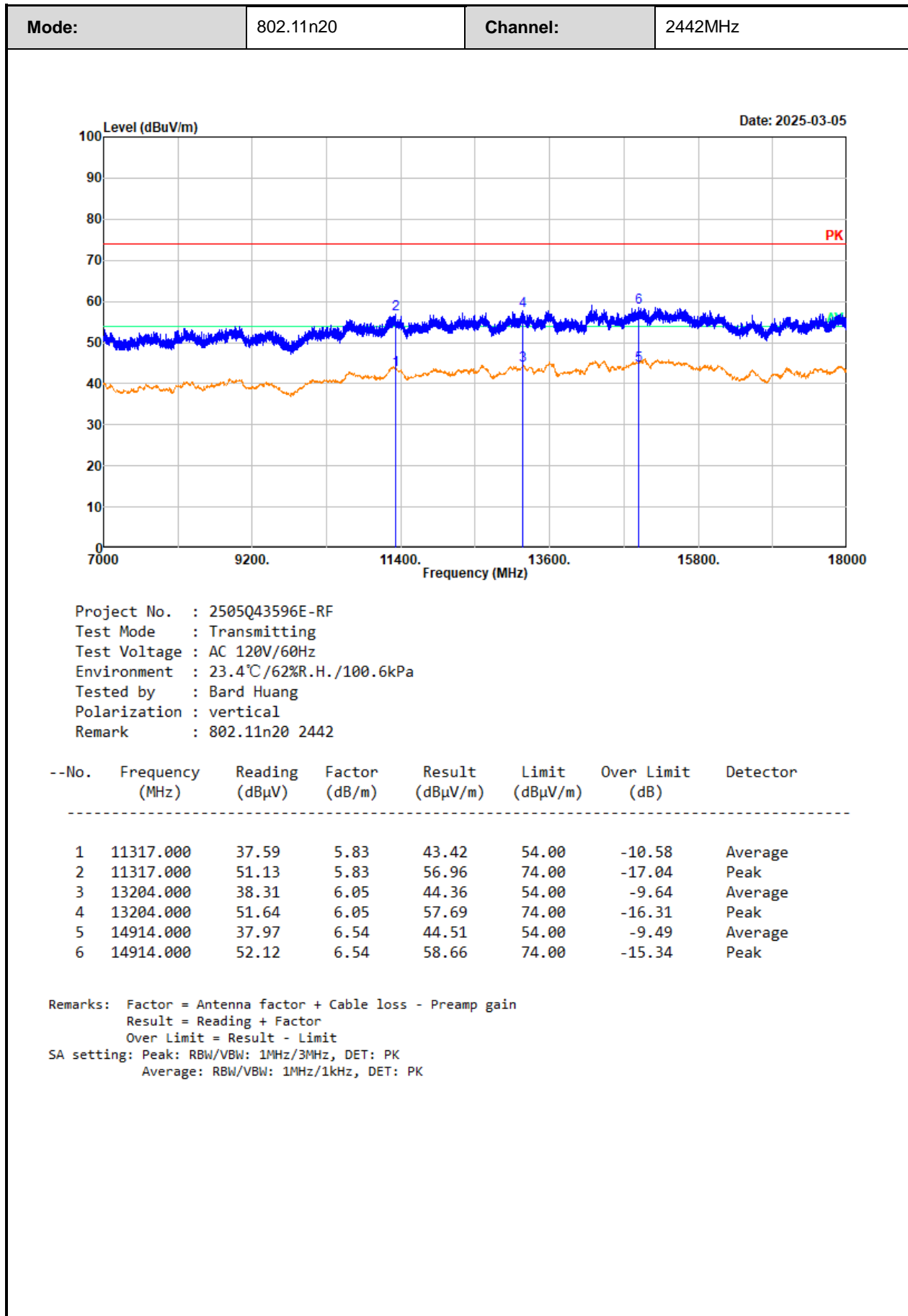


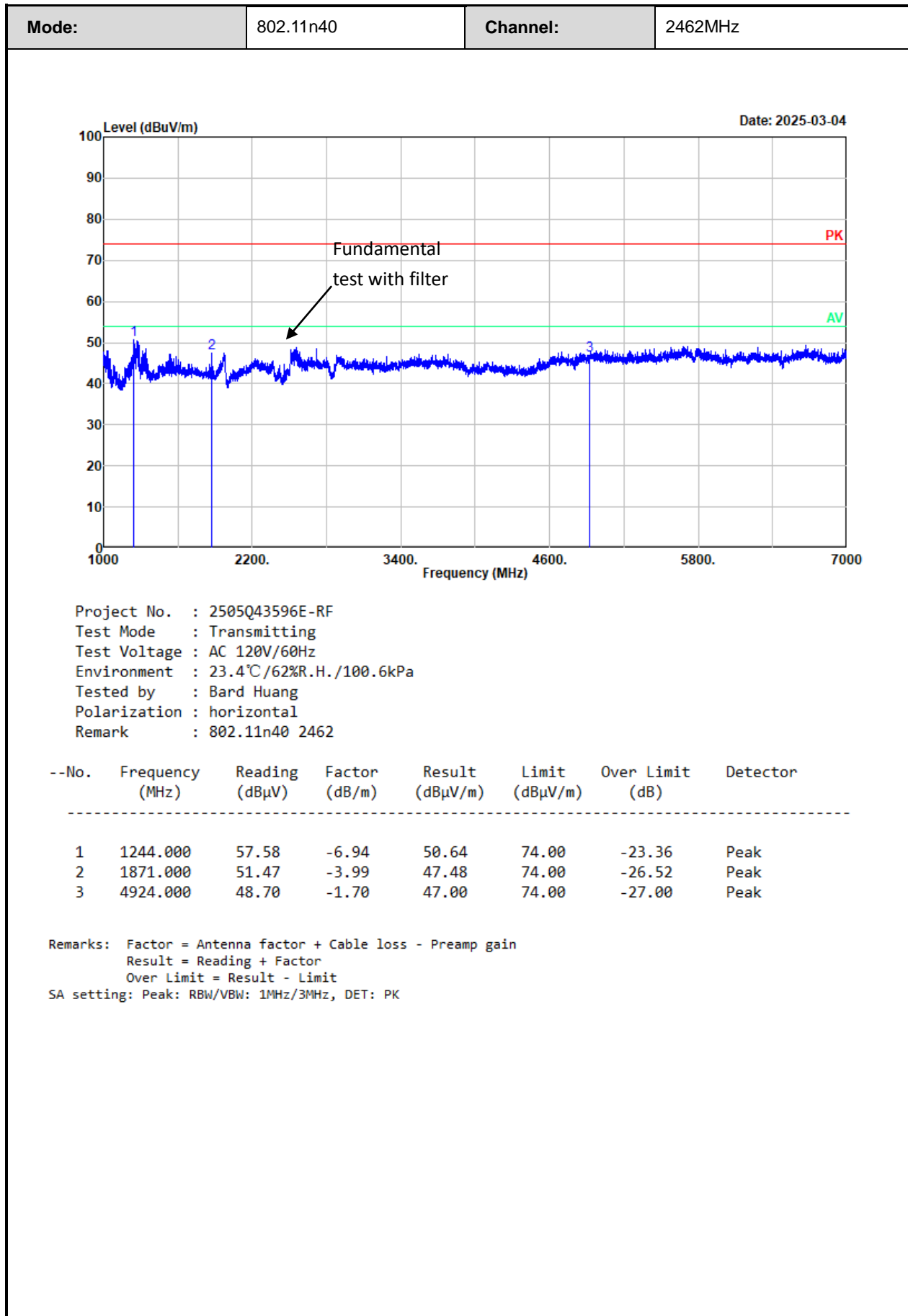


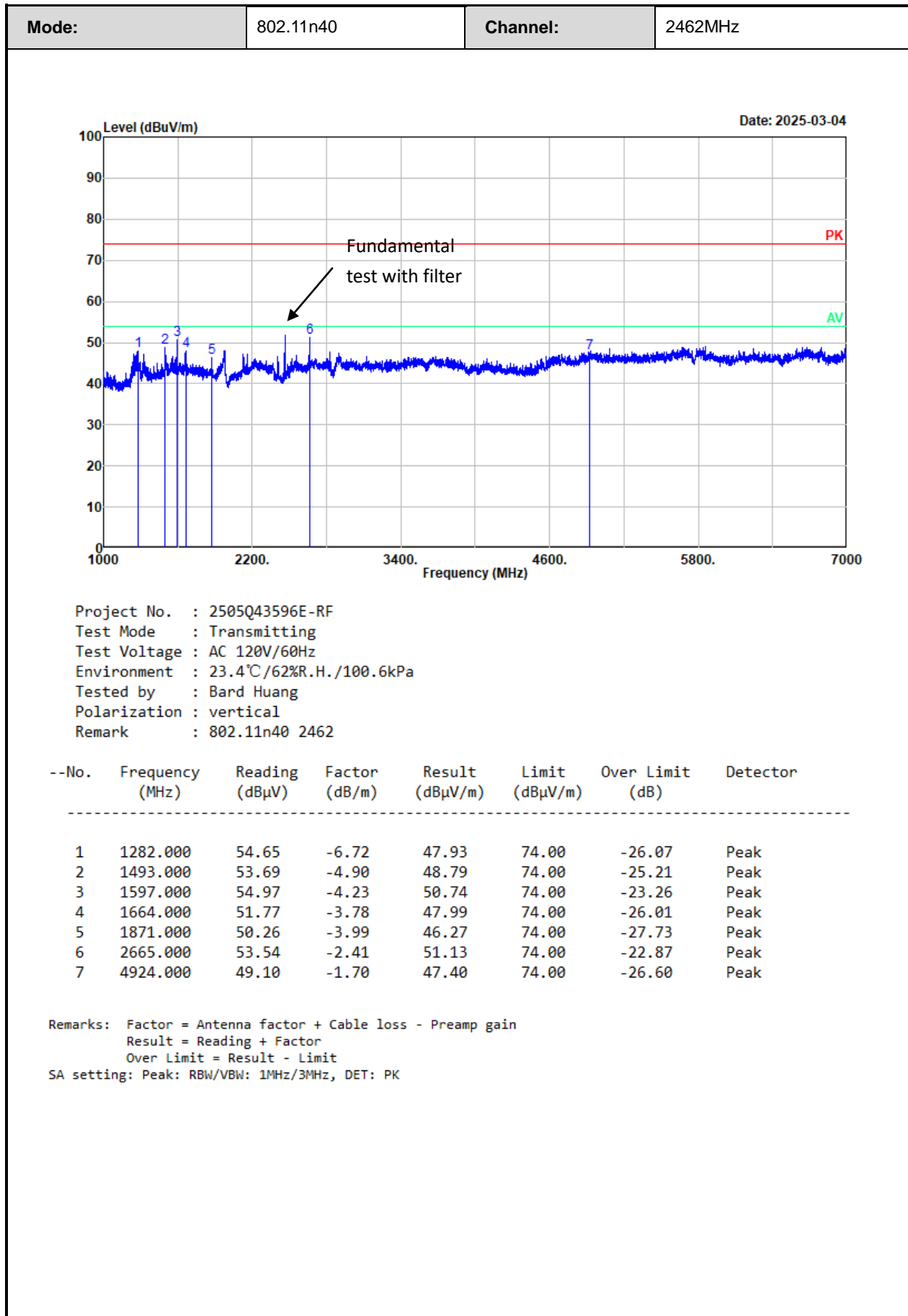


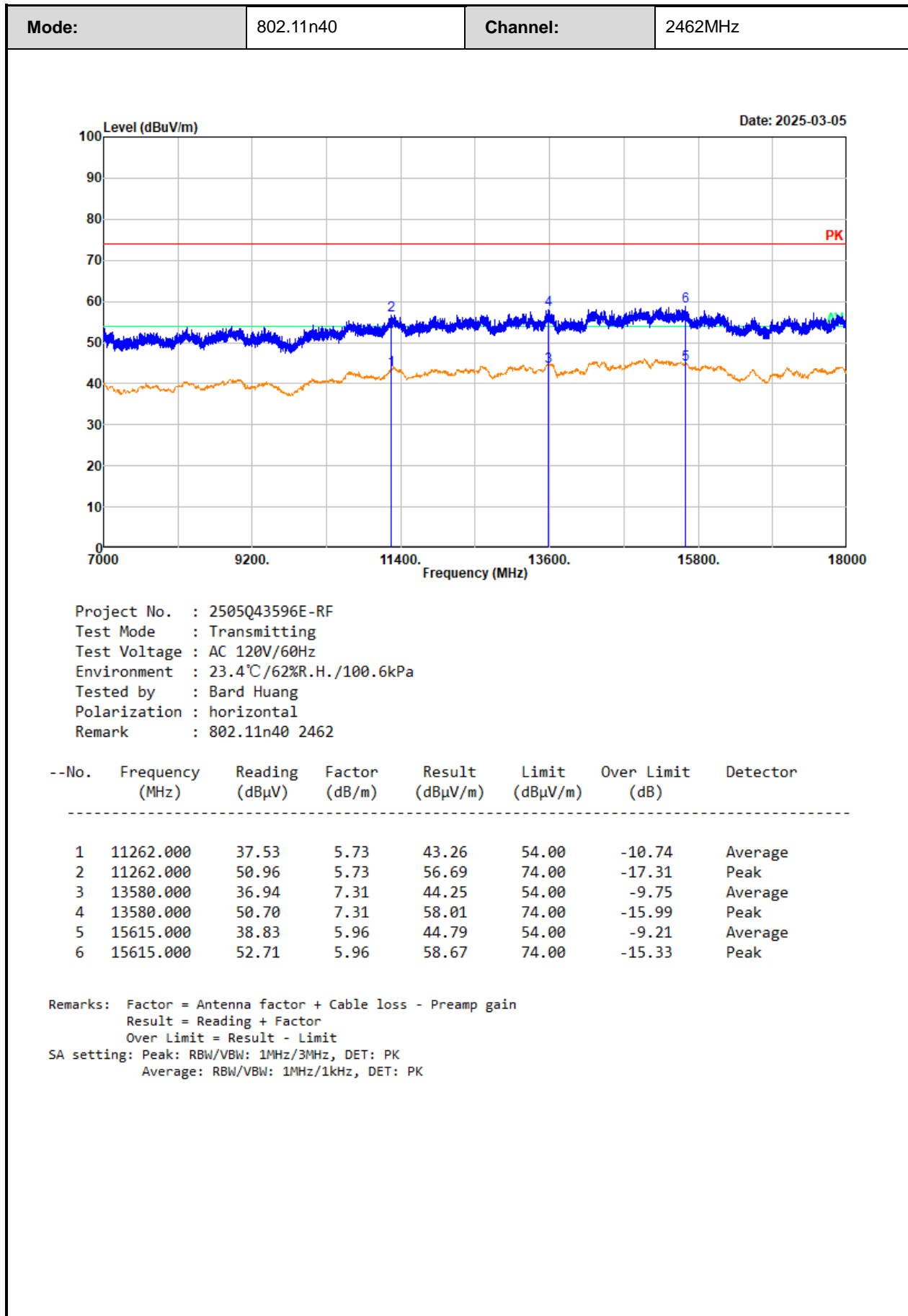


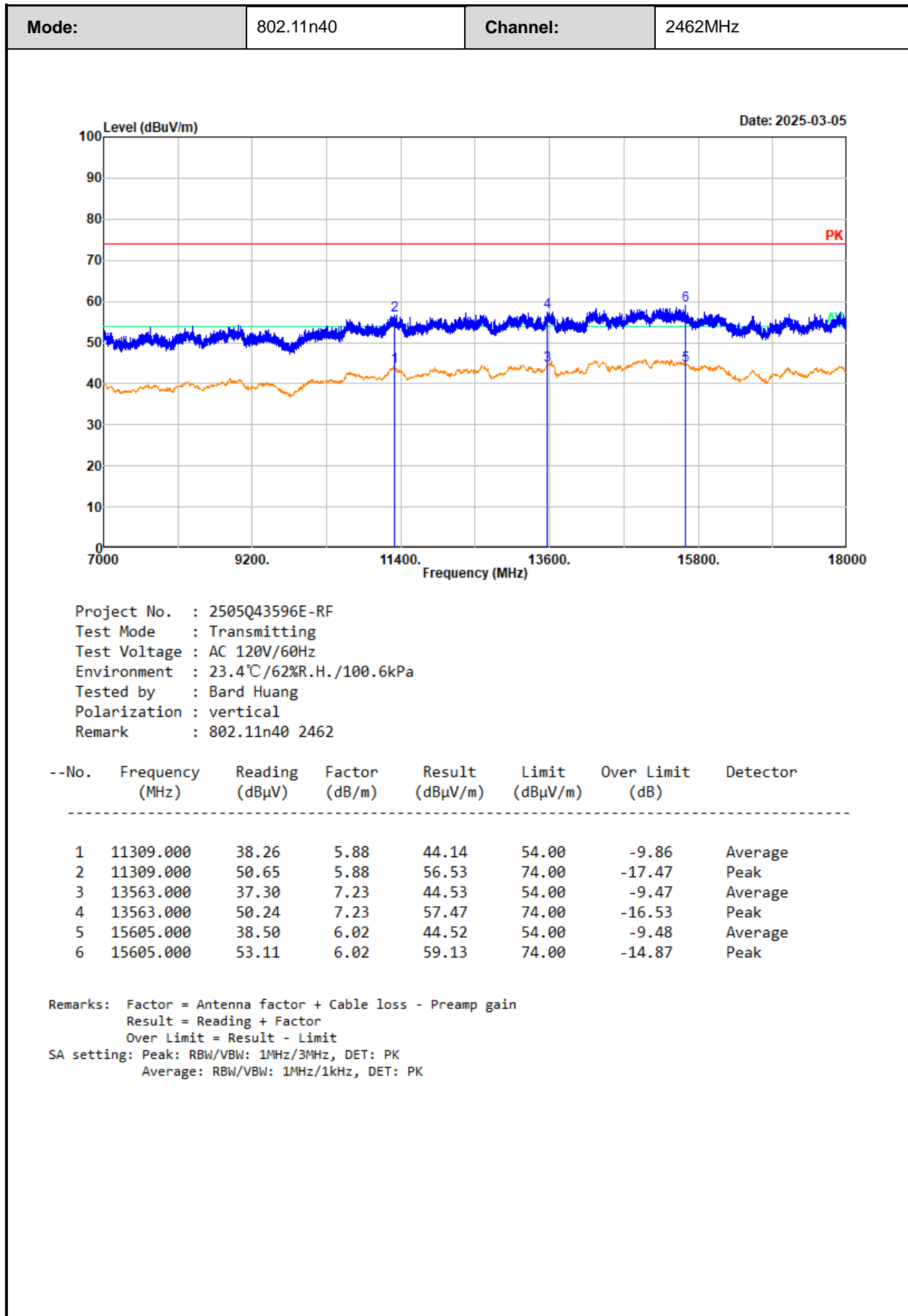


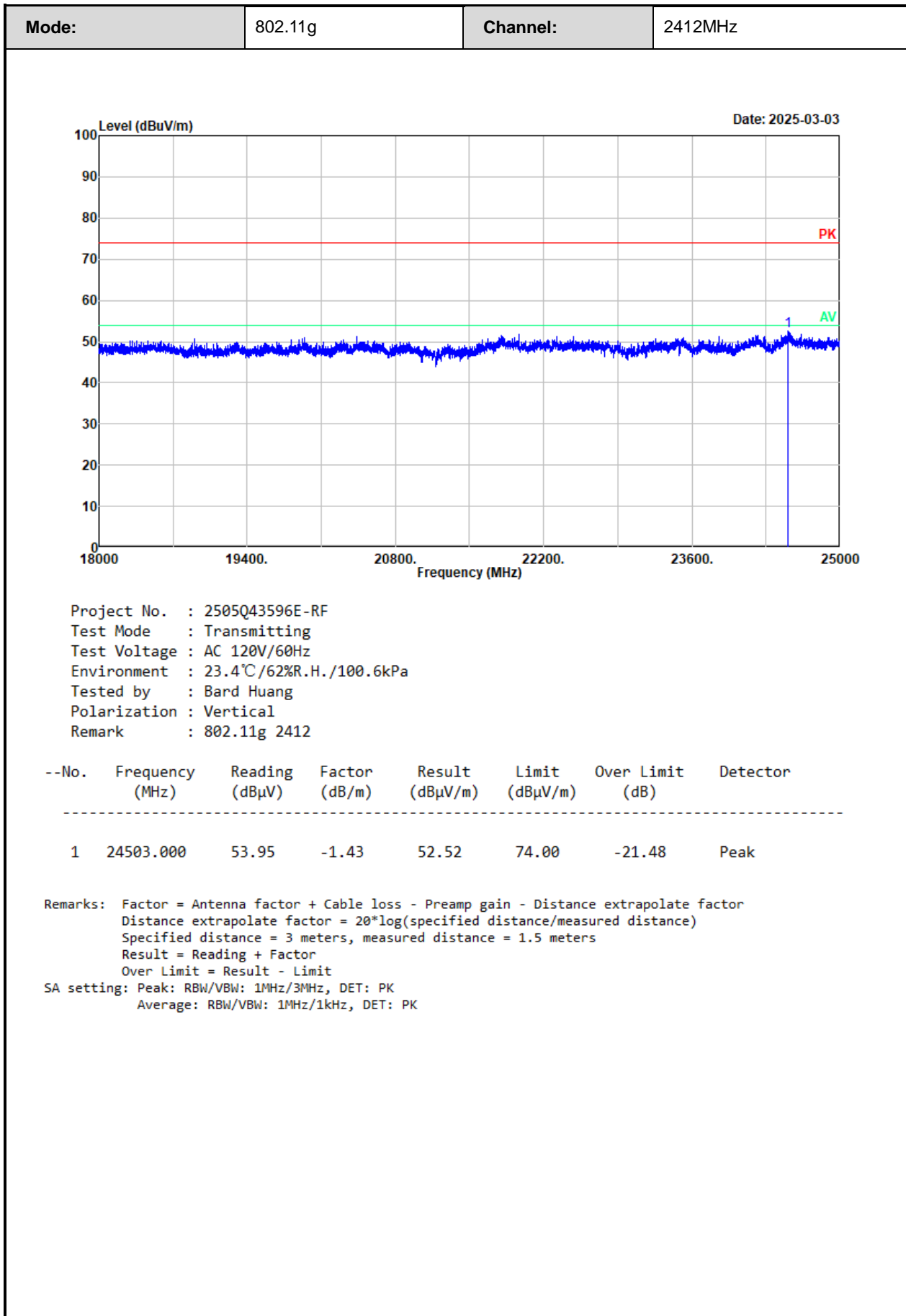




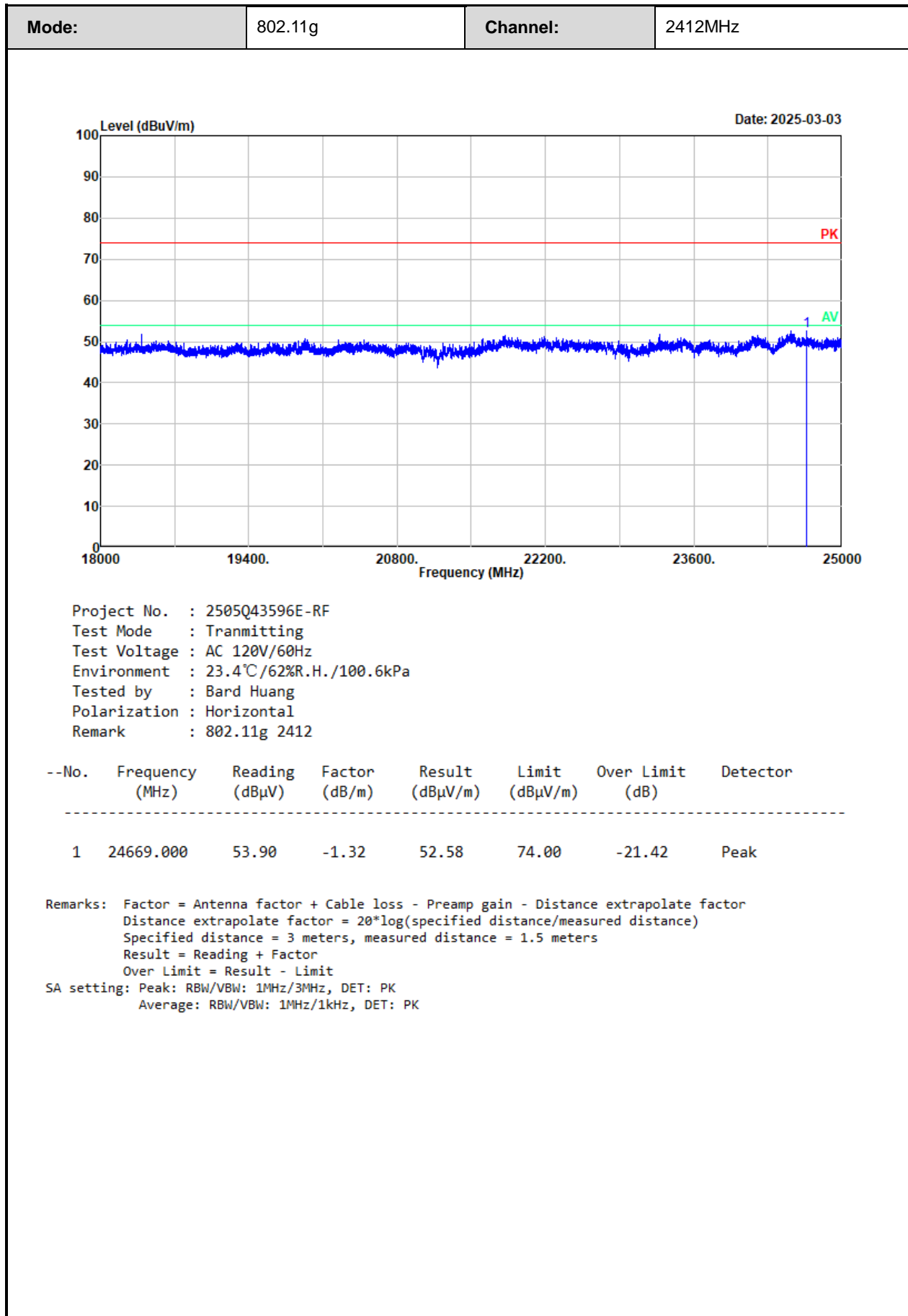




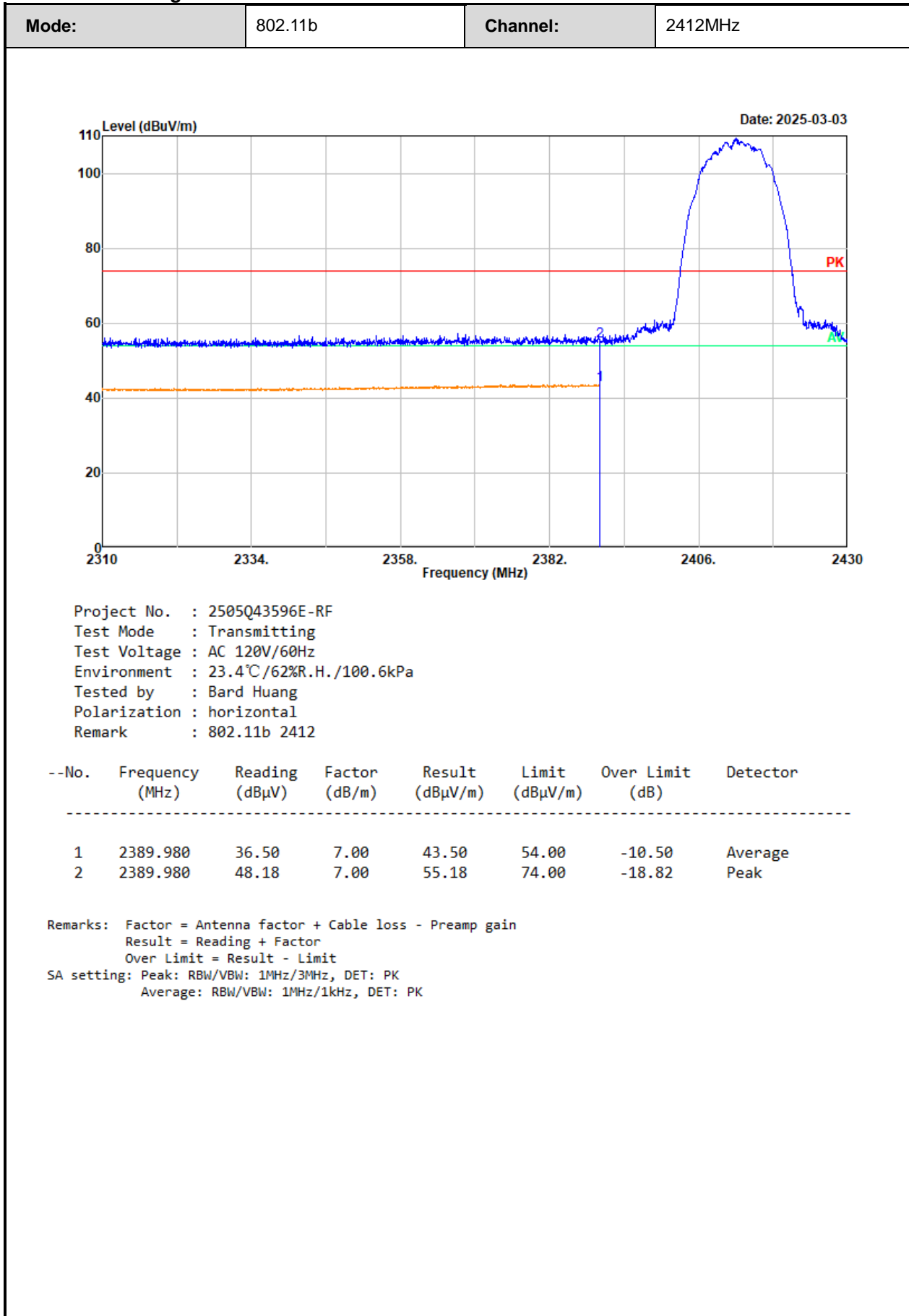


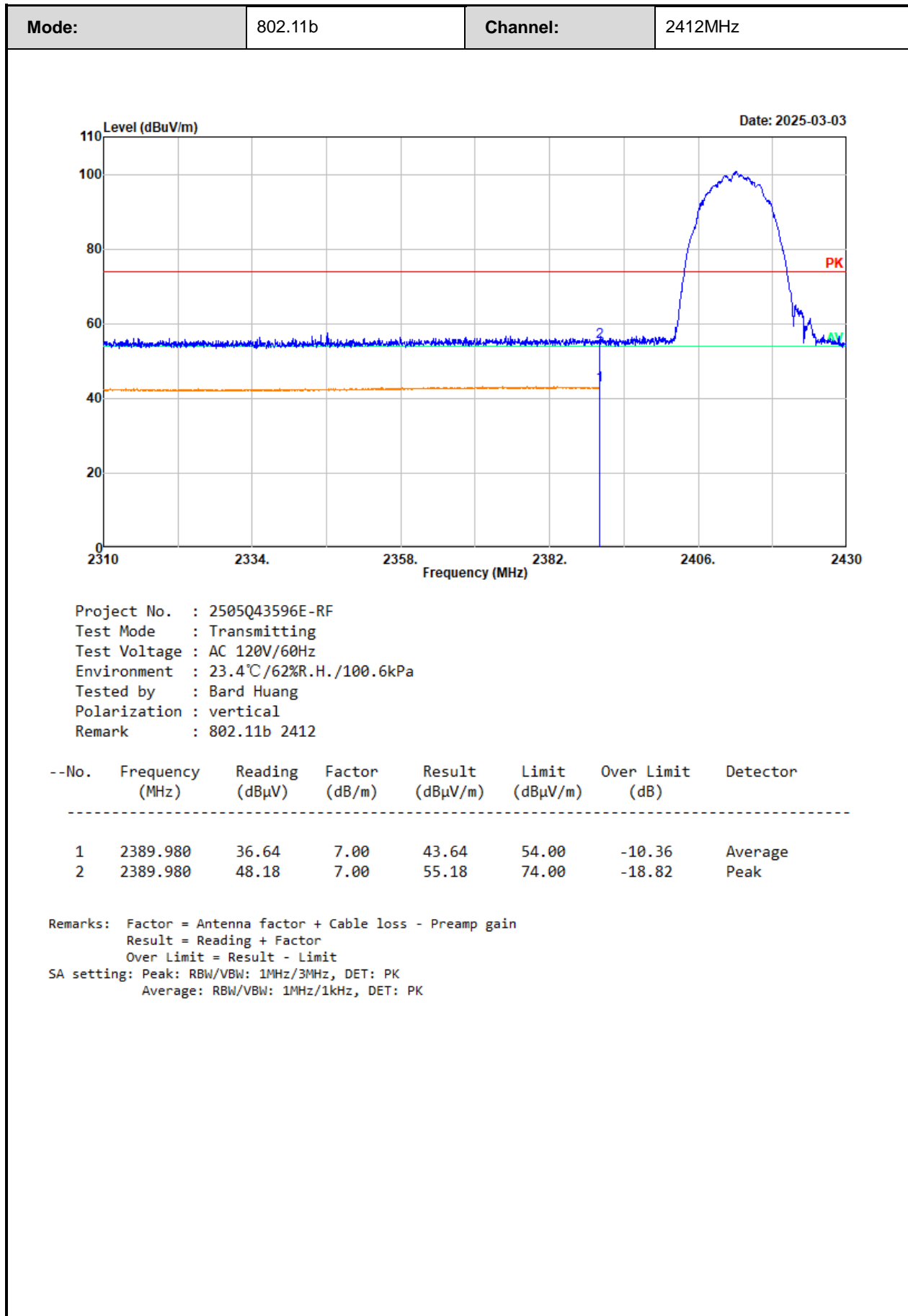


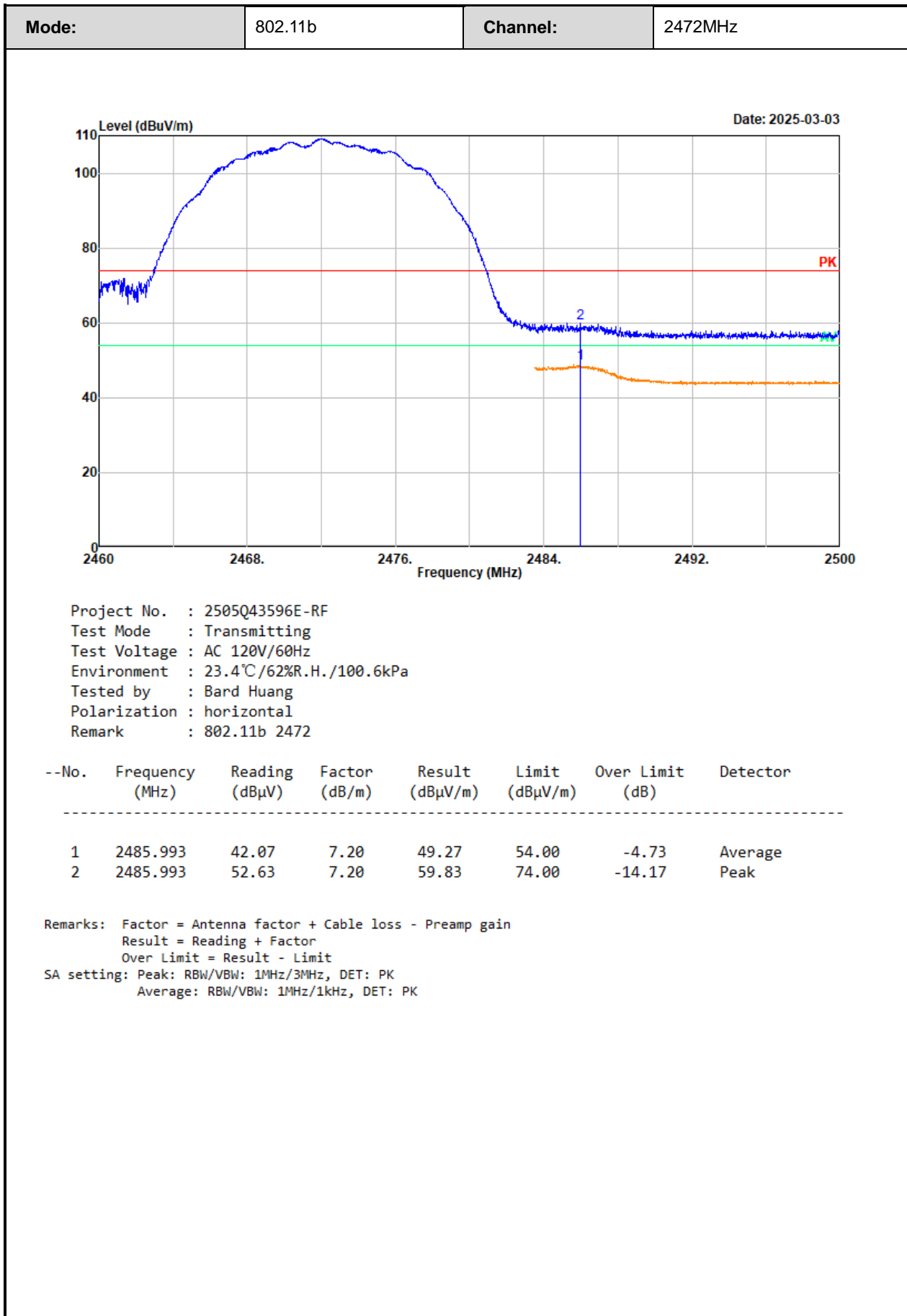


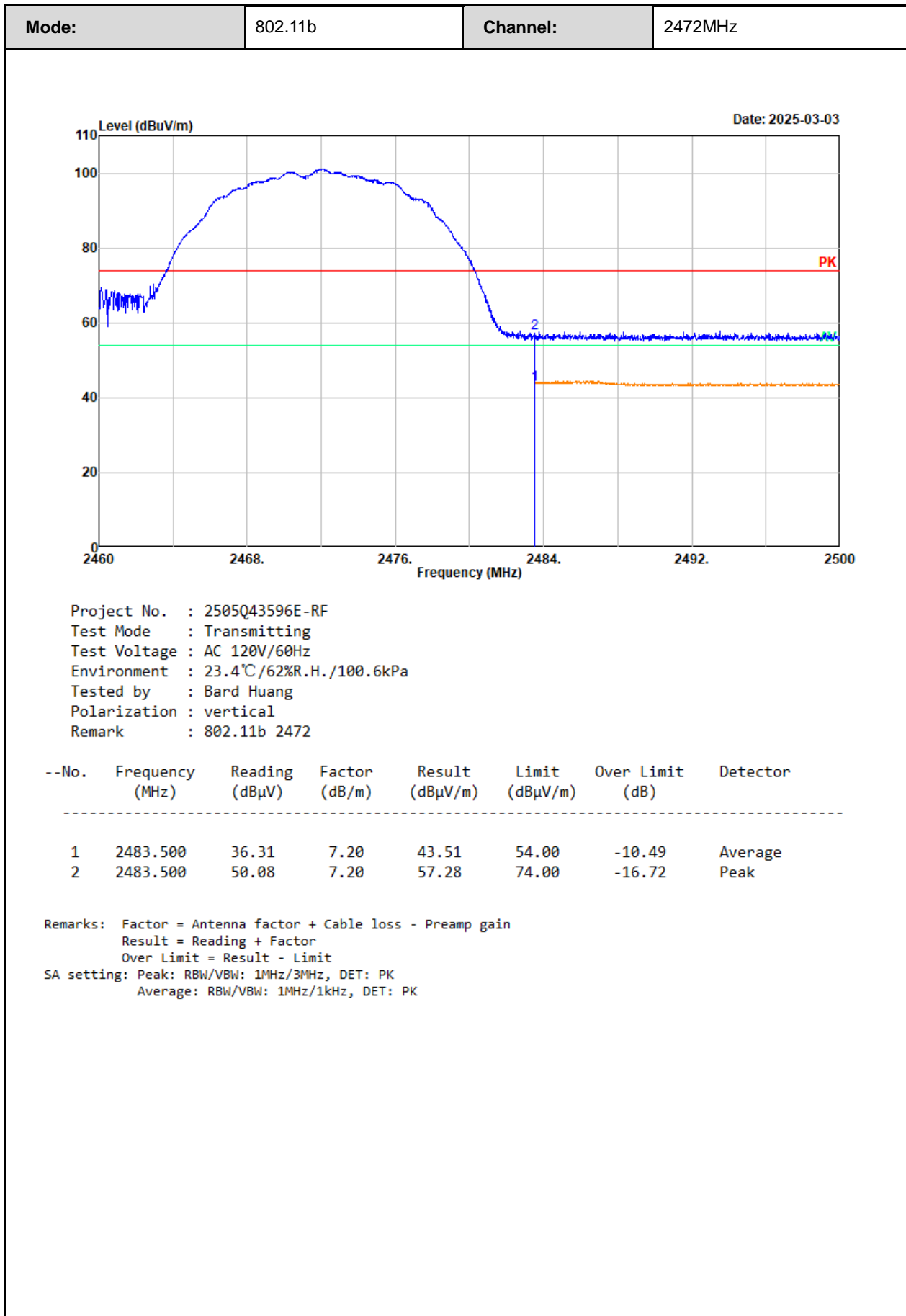


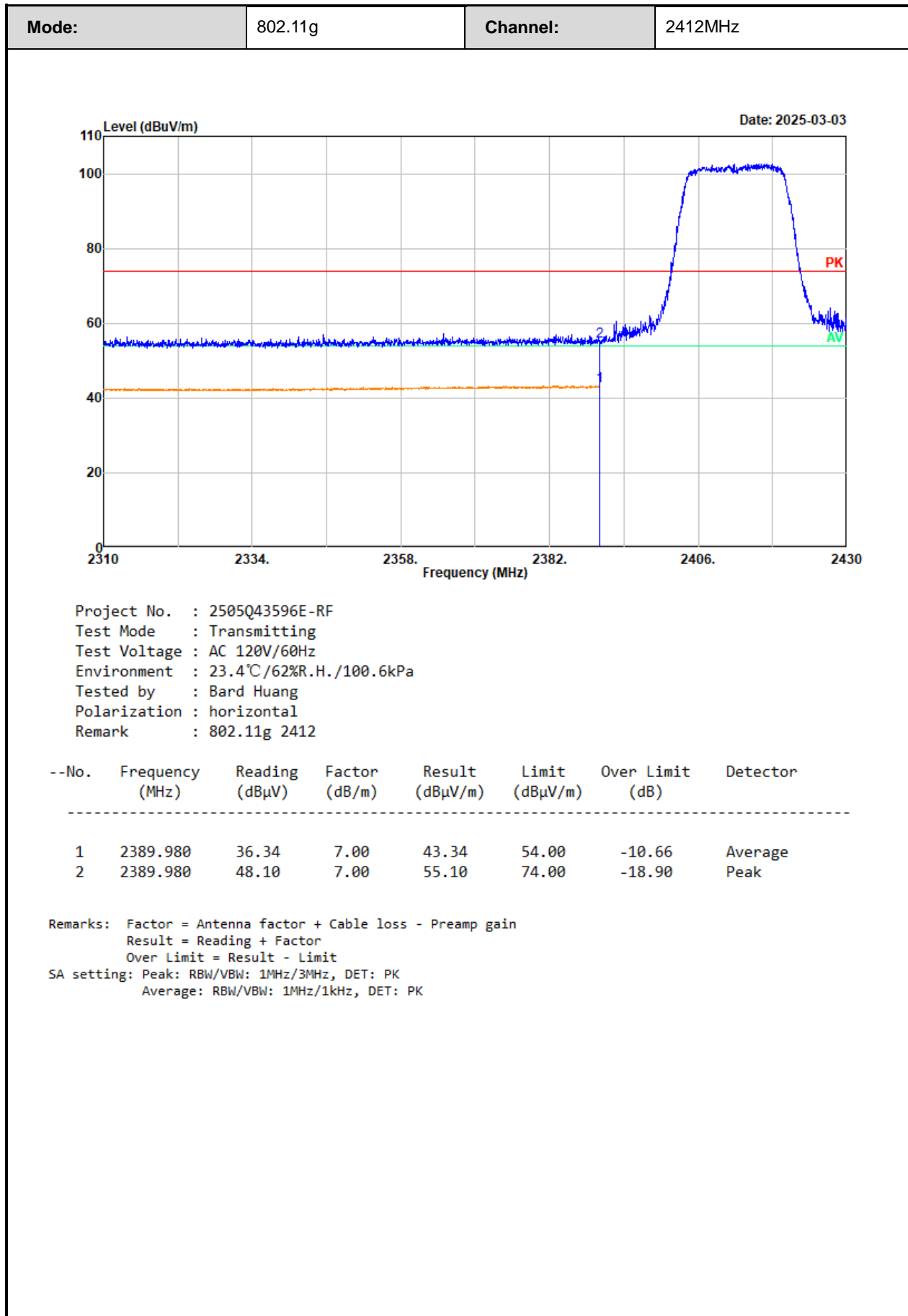
**Radiated Band edge:**

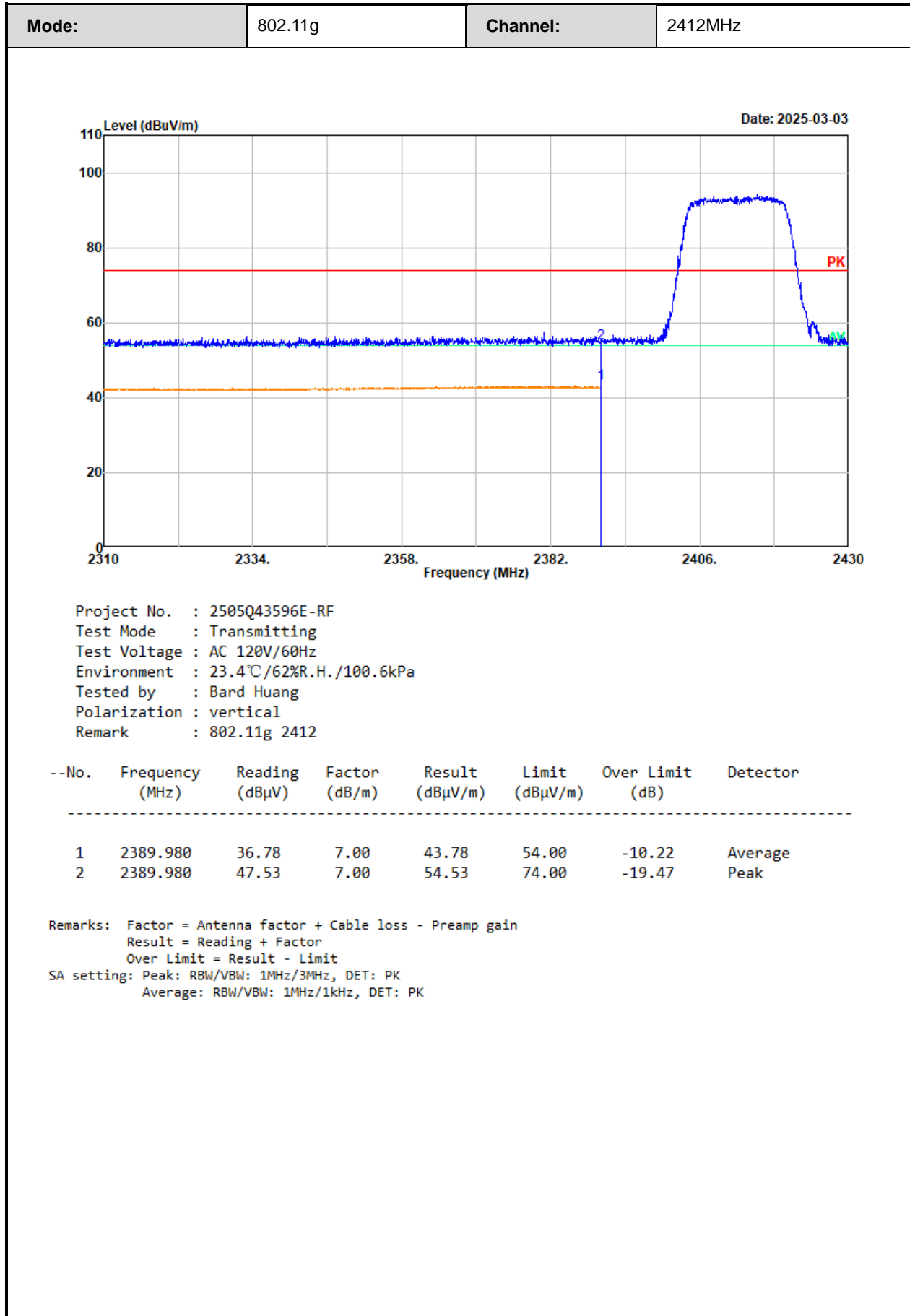


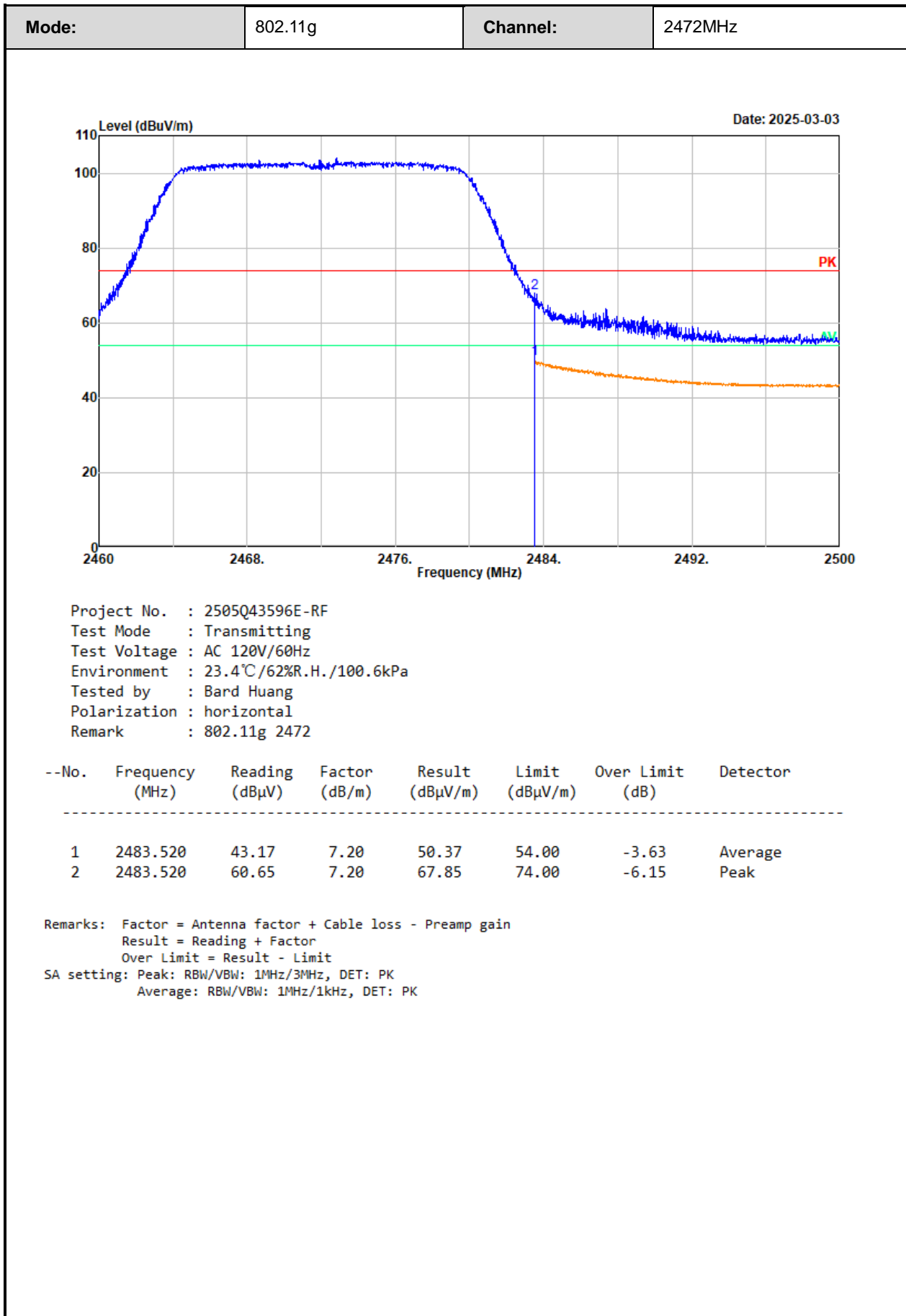




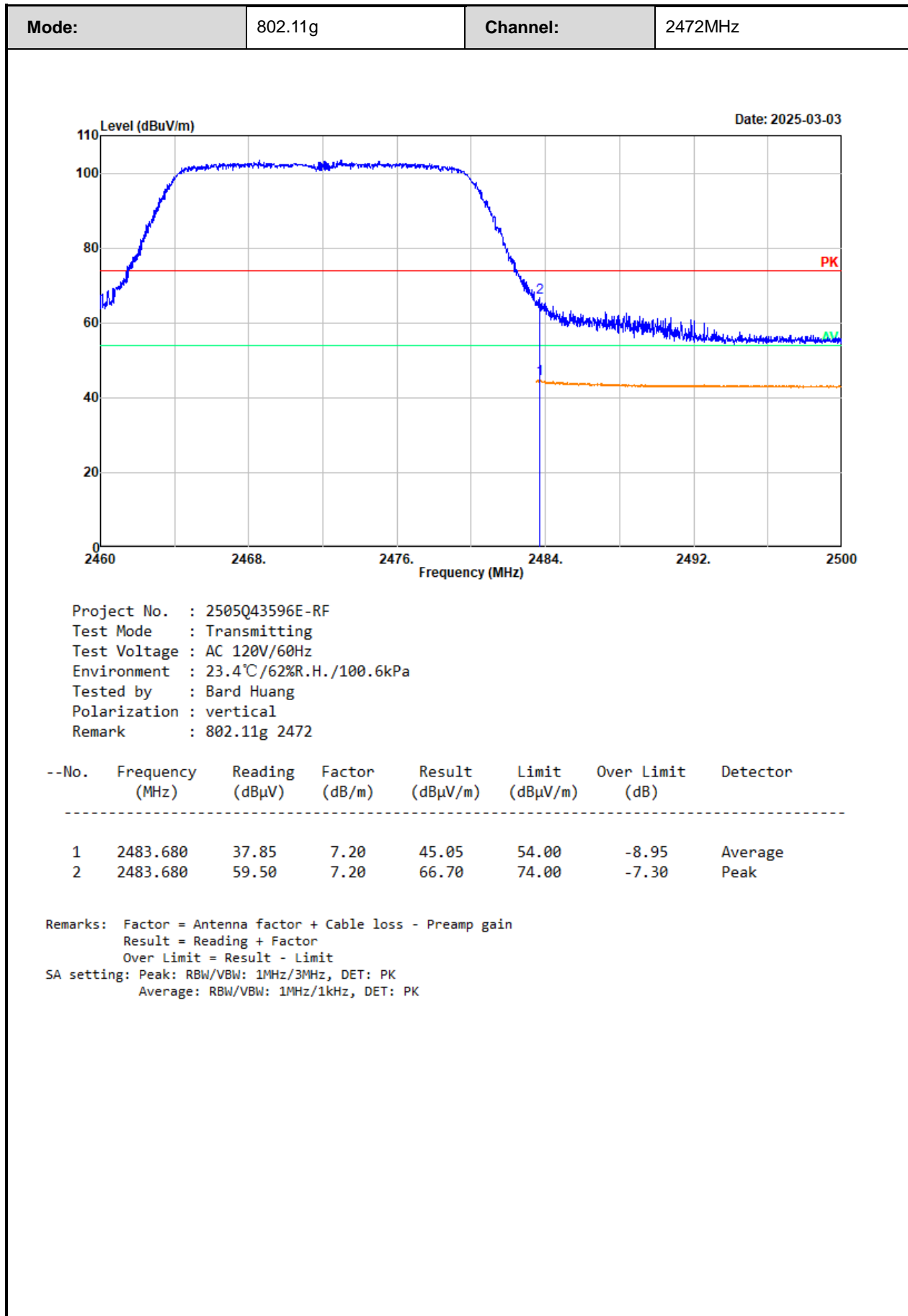


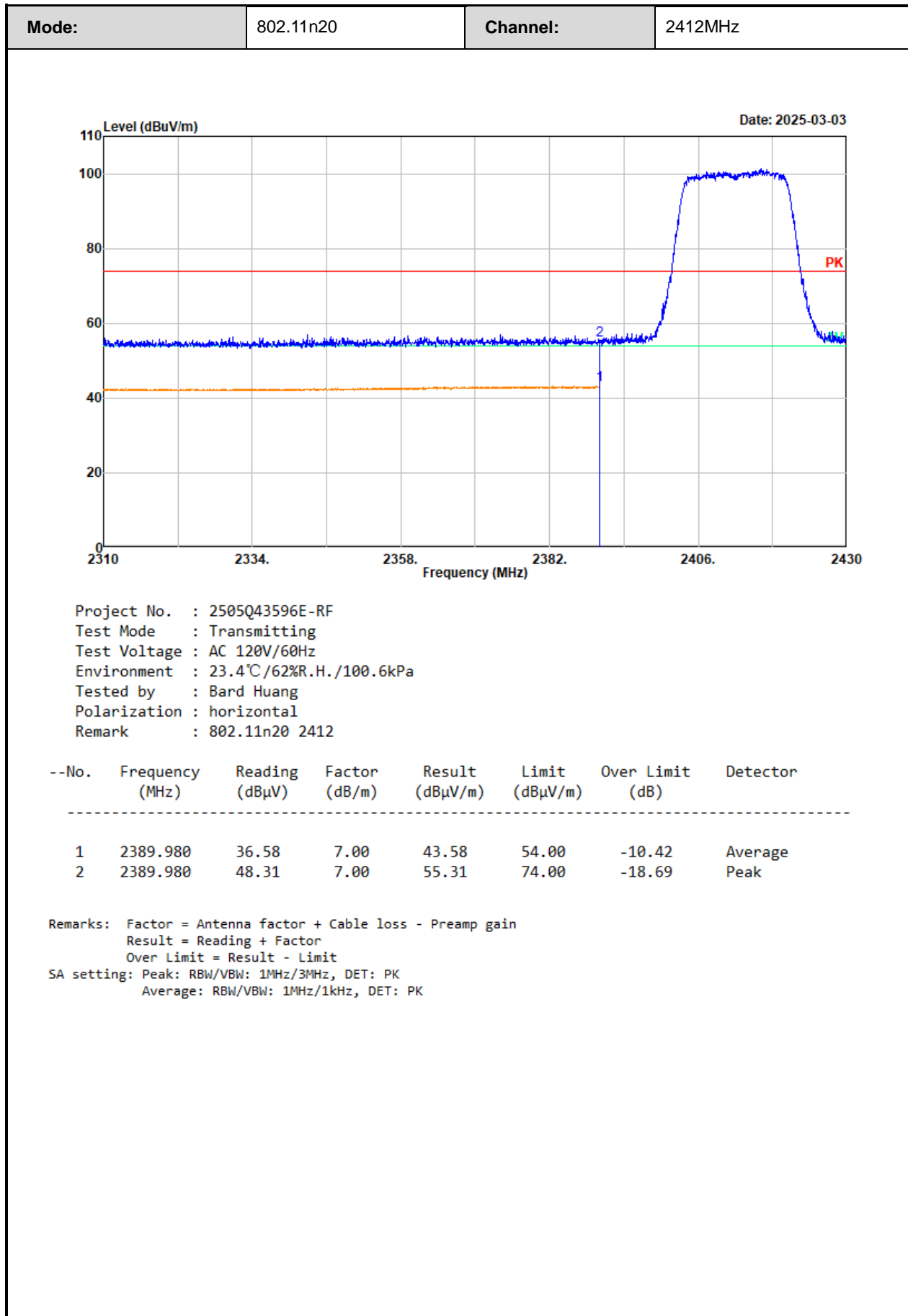


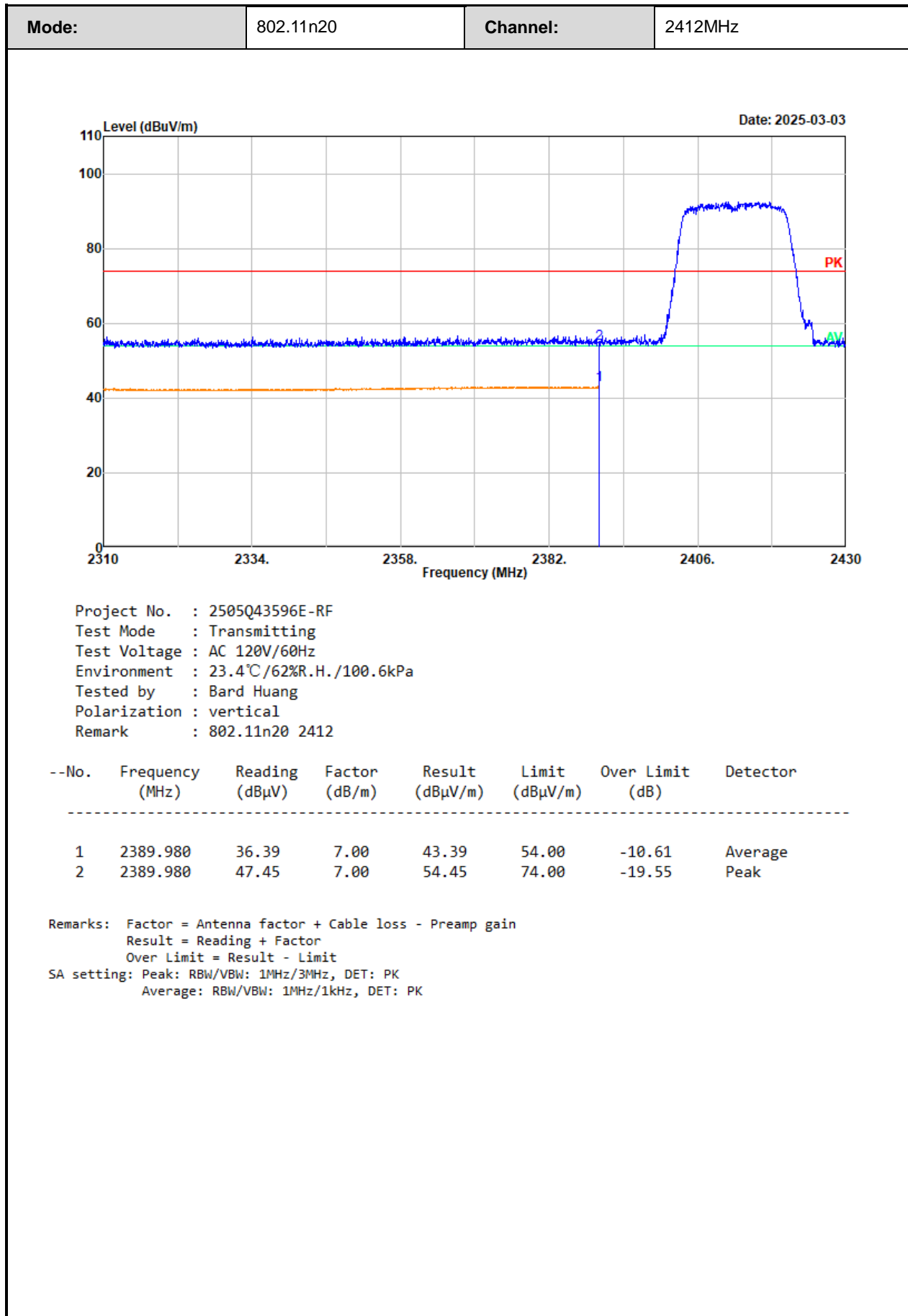


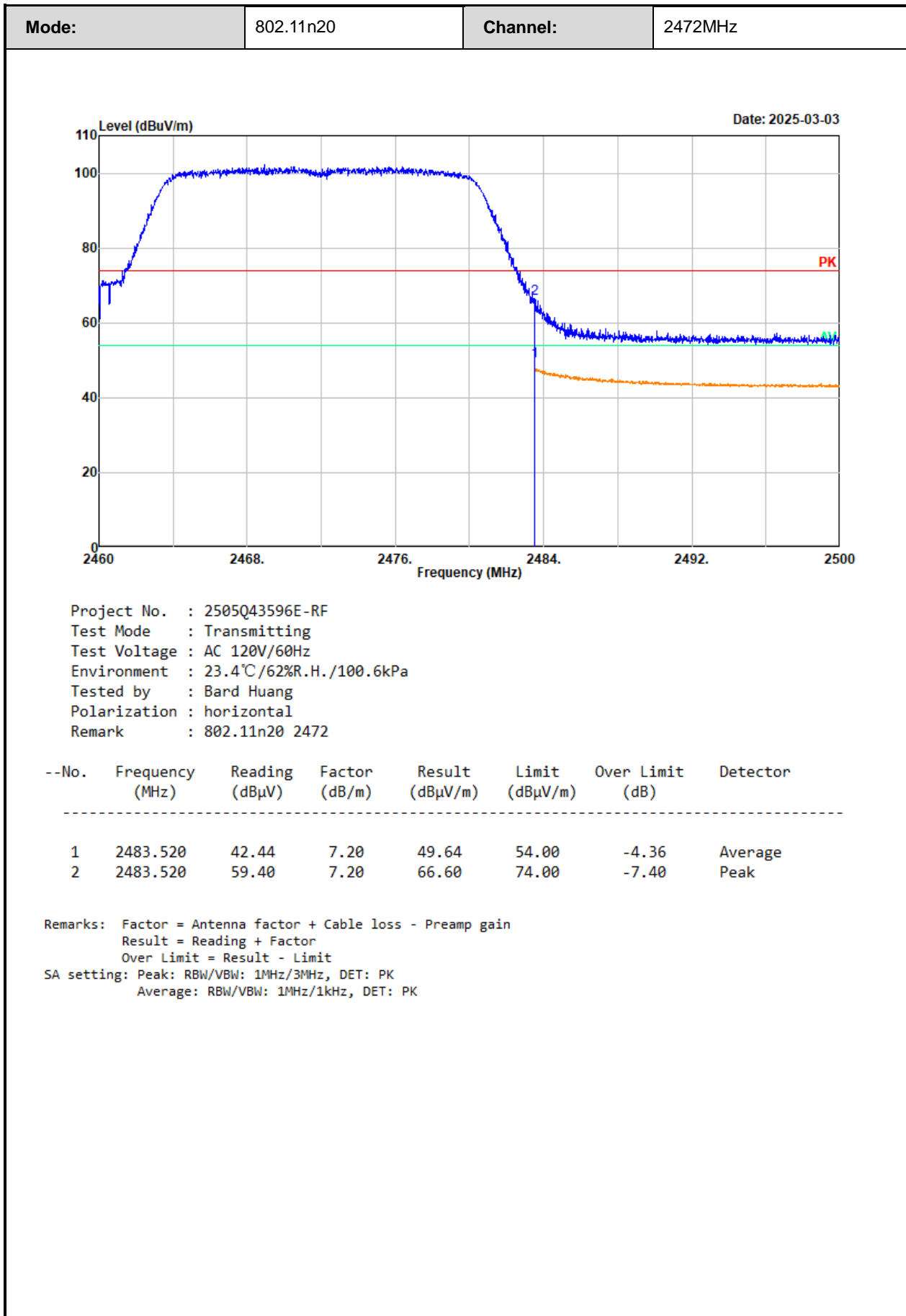


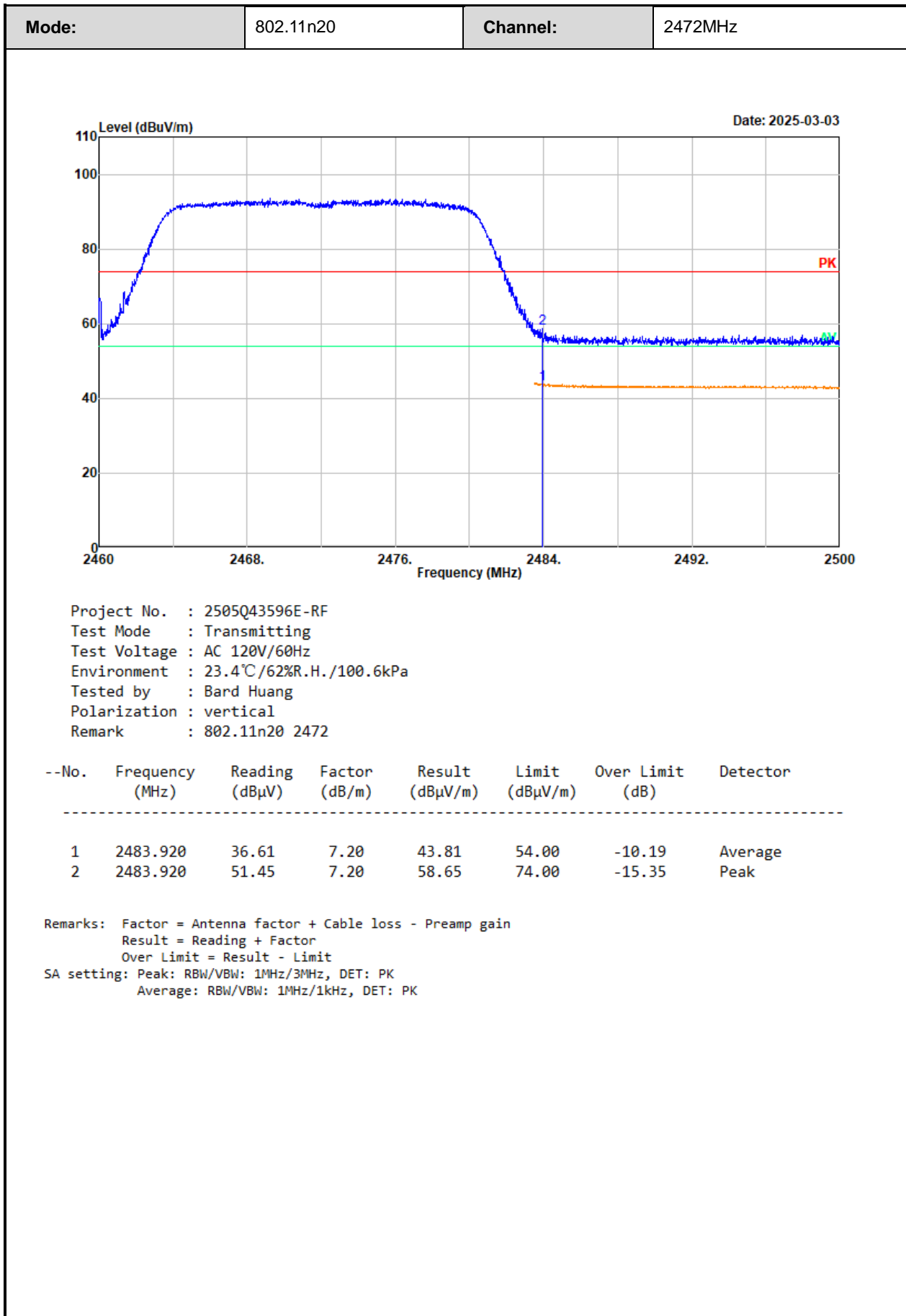


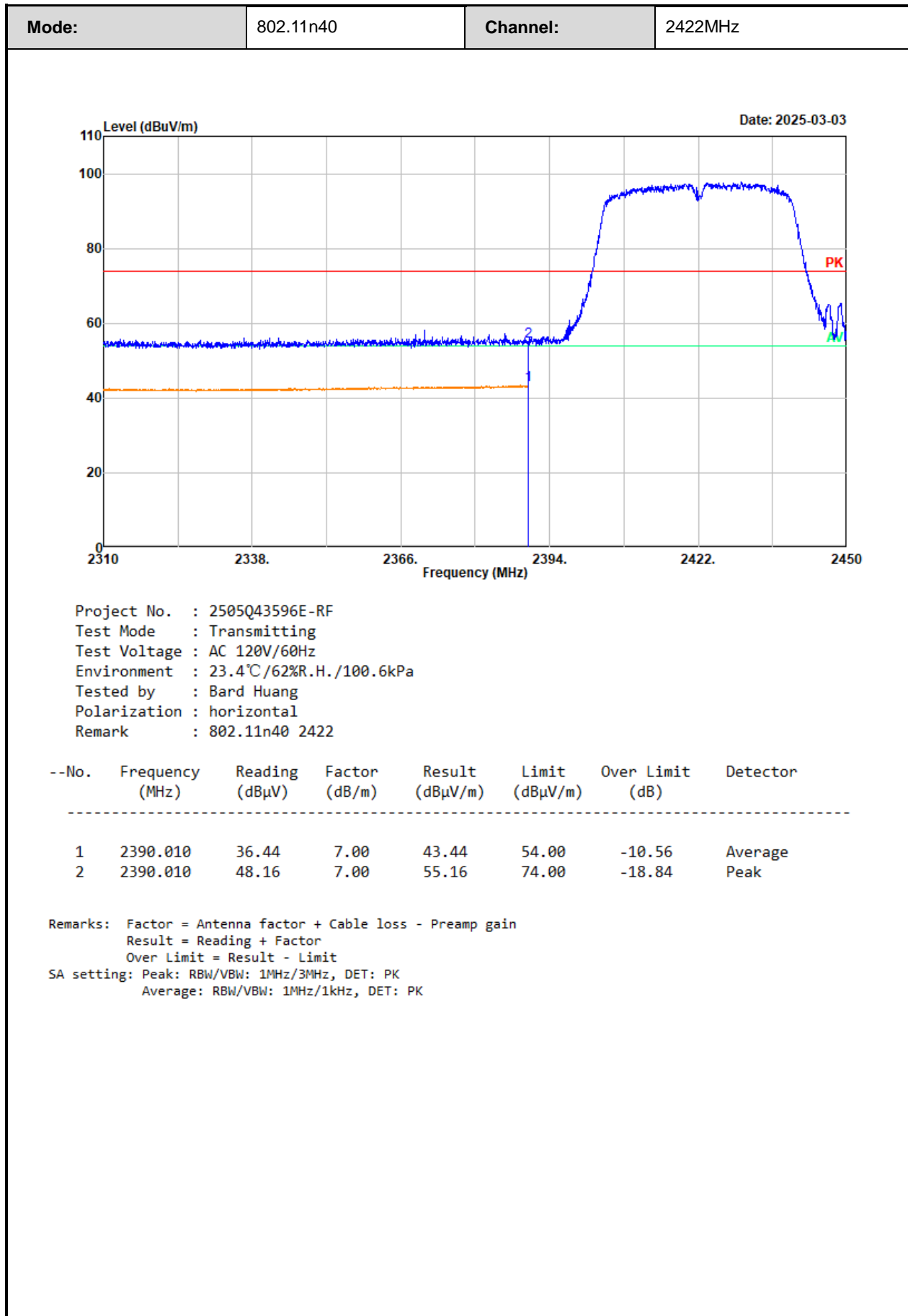


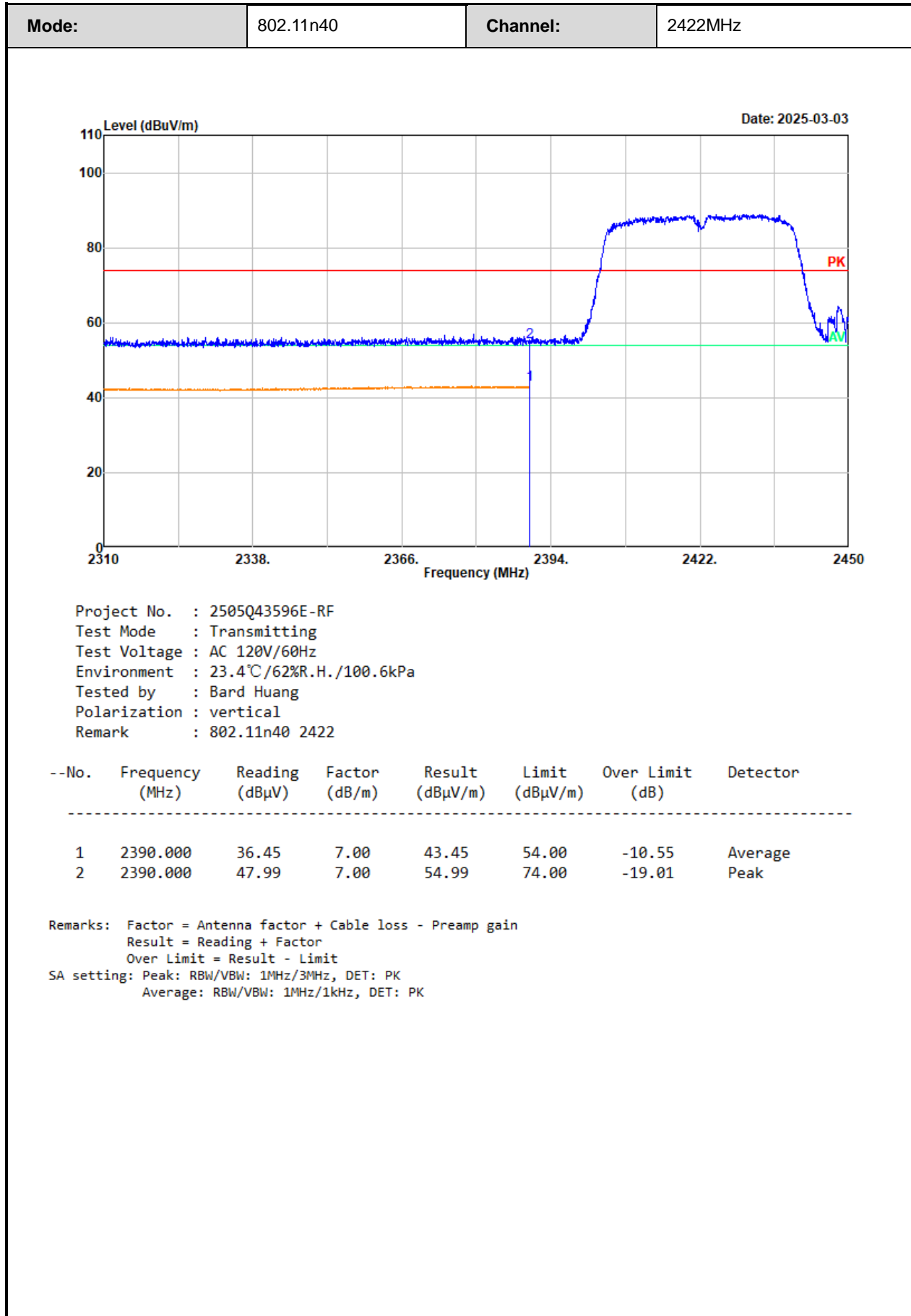


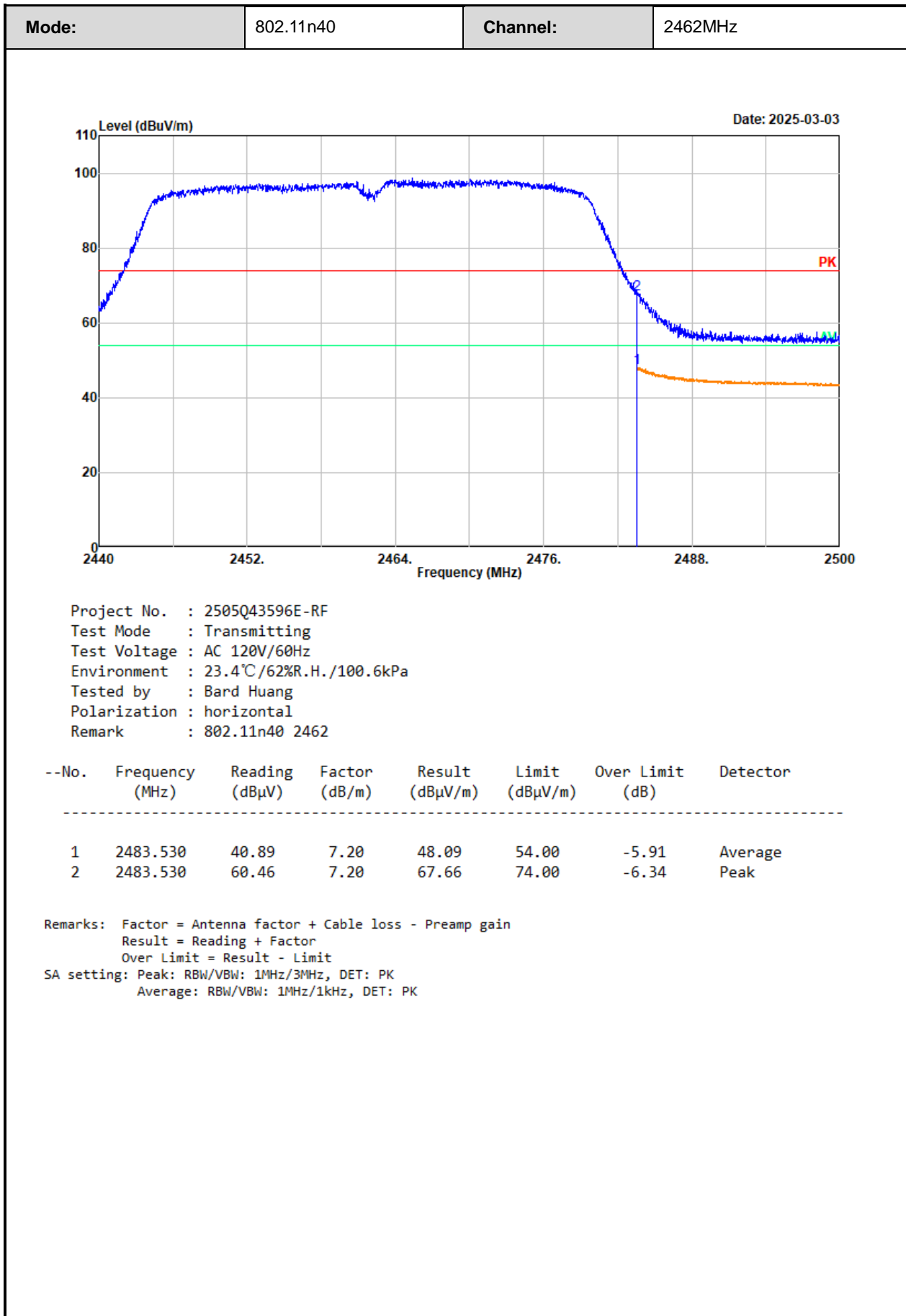




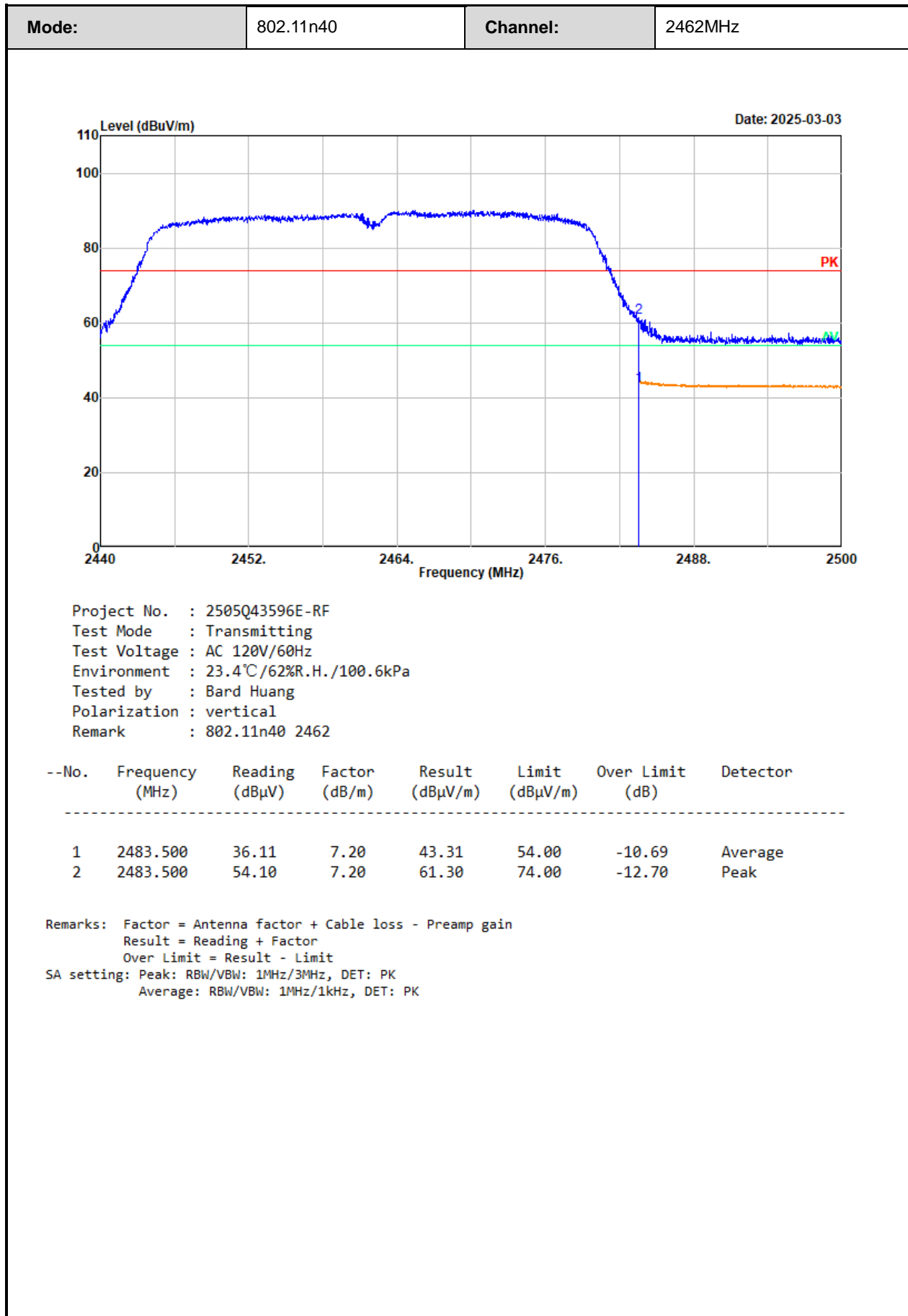












### 3.5 RF Conducted Test Data

<b>Test Date:</b>	2025-03-10	<b>Test By:</b>	Ryan Zhang
<b>Environment condition:</b>	Temperature: 23.9°C;RelativeHumidity:58%; ATM Pressure: 101.0 kPa		

#### 3.5.1 6dB Emission Bandwidth

Mode	Test Frequency (MHz)	Result (MHz)	Limit (MHz)	Verdict
802.11b	2412	9.610	≥0.5	Pass
	2442	9.690	≥0.5	Pass
	2472	9.650	≥0.5	Pass
802.11g	2412	16.376	≥0.5	Pass
	2442	16.416	≥0.5	Pass
	2472	16.376	≥0.5	Pass
802.11n20	2412	17.137	≥0.5	Pass
	2442	17.337	≥0.5	Pass
	2472	17.297	≥0.5	Pass
802.11n40	2422	35.796	≥0.5	Pass
	2442	35.556	≥0.5	Pass
	2462	35.395	≥0.5	Pass

#### 3.5.2 99% Occupied Bandwidth

Mode	Test Frequency (MHz)	99% OBW (MHz)
802.11b	2412	12.960
	2442	12.960
	2472	12.920
802.11g	2412	16.360
	2442	16.400
	2472	16.400
802.11n20	2412	17.280
	2442	17.280
	2472	17.280
802.11n40	2422	35.840
	2442	35.760
	2462	35.840

### 3.5.3 Maximum Conducted Peak Output Power

Mode	Test Frequency (MHz)	Peak Output Power(dBm)	Limit (dBm)	Verdict
802.11b	2412	11.93	30	Pass
	2442	11.70	30	Pass
	2472	11.50	30	Pass
802.11g	2412	14.58	30	Pass
	2442	13.94	30	Pass
	2472	13.73	30	Pass
802.11n20	2412	11.29	30	Pass
	2442	11.02	30	Pass
	2472	10.68	30	Pass
802.11n40	2422	11.24	30	Pass
	2442	11.34	30	Pass
	2462	11.03	30	Pass

### 3.5.4 Power Spectral Density

Mode	Test Frequency (MHz)	Result (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
802.11b	2412	-12.52	8	Pass
	2442	-13.59	8	Pass
	2472	-12.93	8	Pass
802.11g	2412	-20.05	8	Pass
	2442	-20.38	8	Pass
	2472	-20.92	8	Pass
802.11n20	2412	-20.60	8	Pass
	2442	-20.76	8	Pass
	2472	-21.00	8	Pass
802.11n40	2422	-23.63	8	Pass
	2442	-23.73	8	Pass
	2462	-24.02	8	Pass

### 3.5.5 100 kHz Bandwidth of Frequency Band Edge

Mode	Test Frequency (MHz)	Result (dB)	Limit (dB)	Verdict
802.11b	2412	47.74	20	Pass
	2472	46.66	20	Pass
802.11g	2412	39.71	20	Pass
	2472	37.52	20	Pass
802.11n20	2412	40.66	20	Pass
	2472	40.48	20	Pass
802.11n40	2422	37.39	20	Pass
	2462	33.46	20	Pass

### 3.5.6 Duty Cycle

Mode	Test Frequency (MHz)	Ton (ms)	Ton+Toff (ms)	Duty Cycle (%)	Duty Cycle Factor(dB)	1/Ton (Hz)	VBW Setting (kHz)
802.11b	2442	32.945	32.971	99.92	/	/	0.010
802.11g	2442	5.475	5.506	99.44	/	/	0.010
802.11n20	2442	5.075	5.106	99.39	/	/	0.010
802.11n40	2442	2.465	2.494	98.84	/	/	0.010

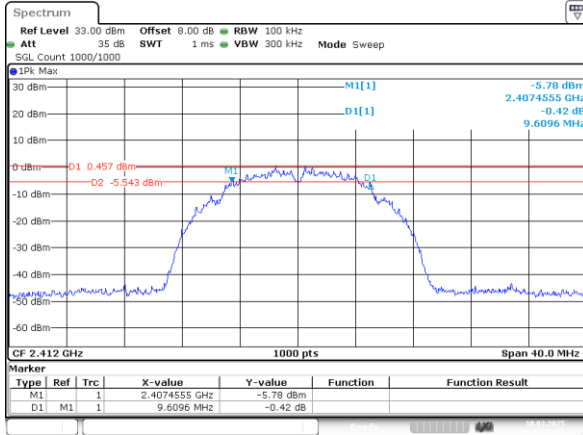
Duty Cycle = Ton/(Ton+Toff)\*100%

## Test Plots:

### 6 dB Emission Bandwidth:

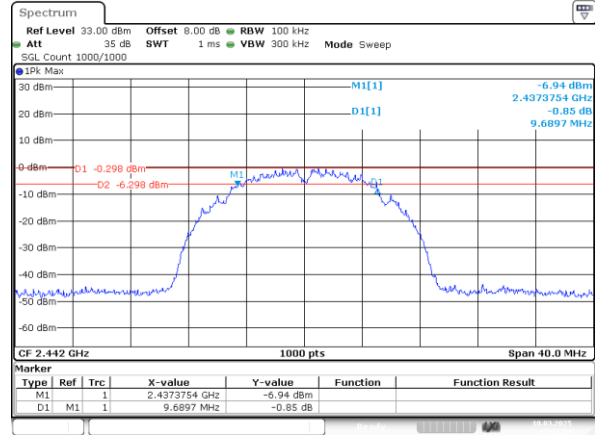
2412~2472

802.11b\_2412MHz



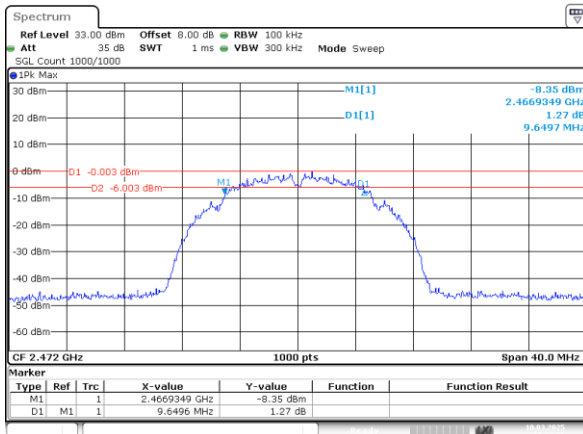
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:25:19

802.11b\_2442MHz



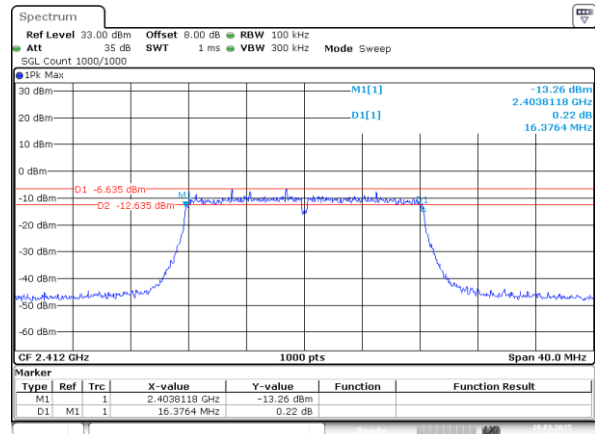
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Date: 10.MAR.2025 17:31:54

802.11b\_2472MHz



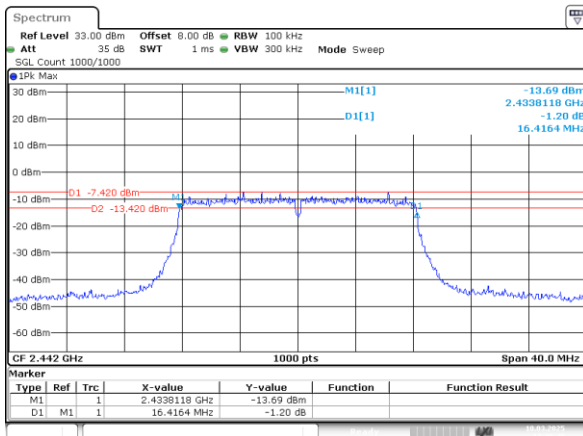
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:34:26

802.11g\_2412MHz



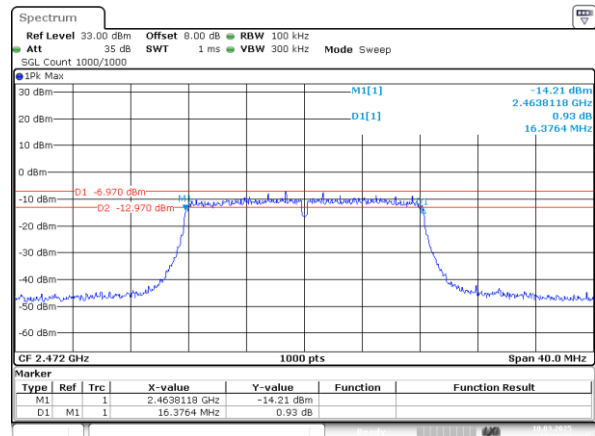
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:37:14

802.11g\_2442MHz



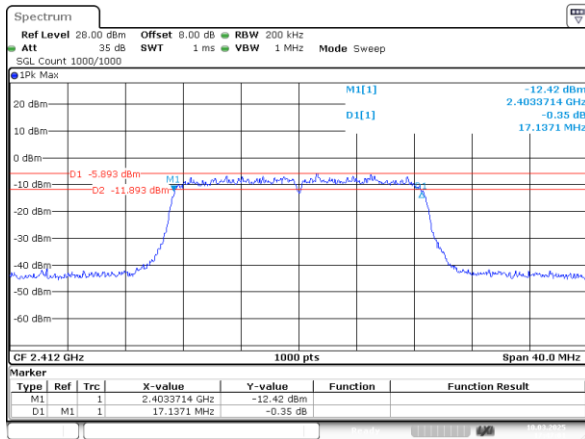
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:40:48

802.11g\_2472MHz



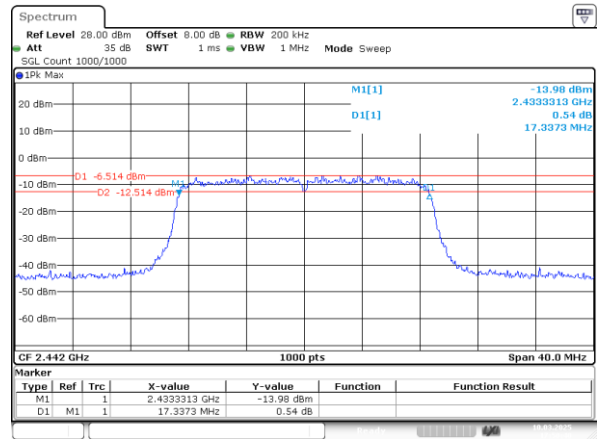
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Date: 10.MAR.2025 17:43:22

802.11n20\_2412MHz



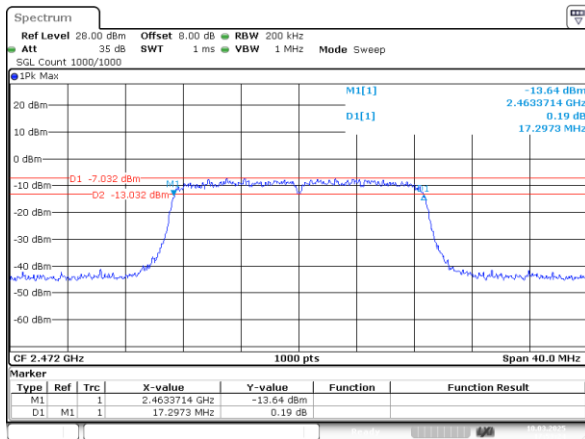
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Date: 10.MAR.2025 17:47:01

802.11n20\_2442MHz



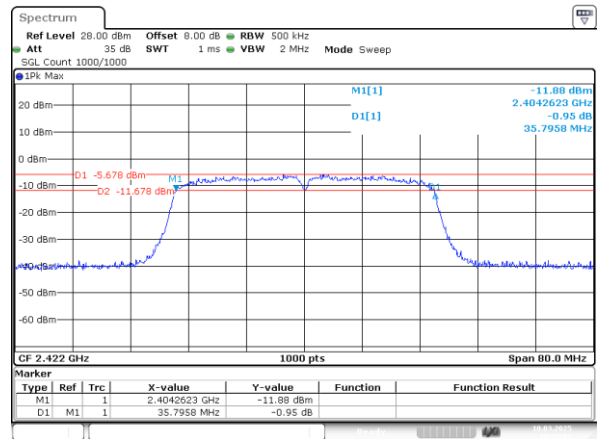
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:50:40

802.11n20\_2472MHz



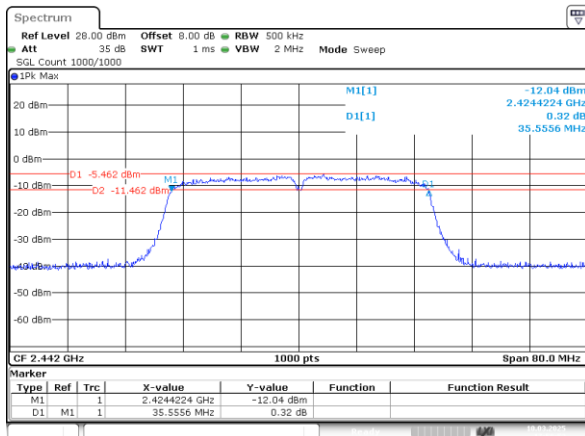
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:53:24

802.11n40\_2422MHz



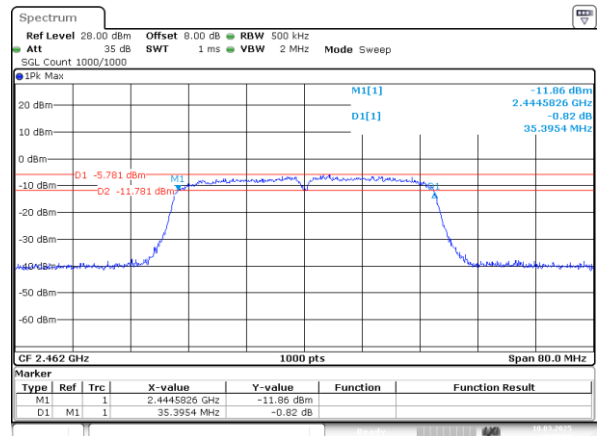
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:56:01

802.11n40\_2442MHz



ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:59:52

802.11n40\_2462MHz

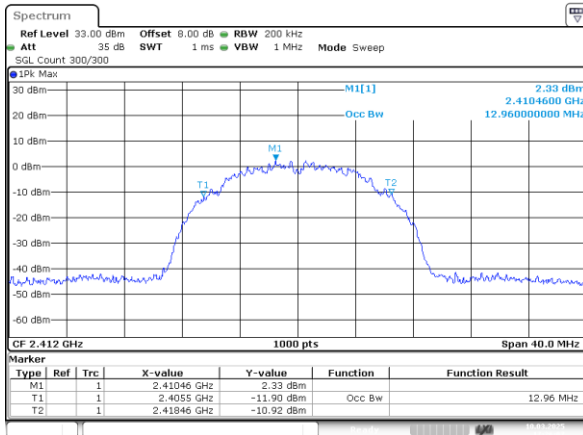


ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 18:02:58

99% Occupied Bandwidth:

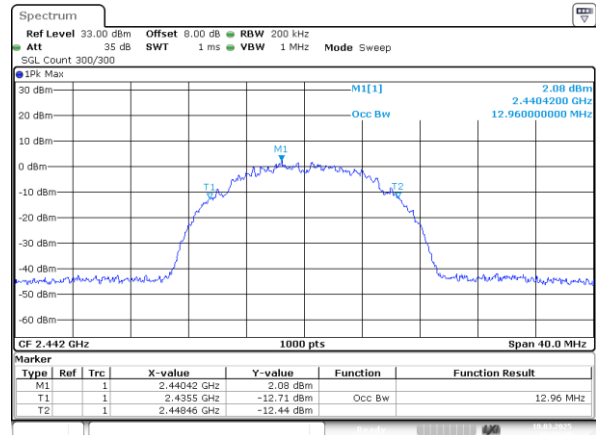
2412~2472

802.11b\_2412MHz



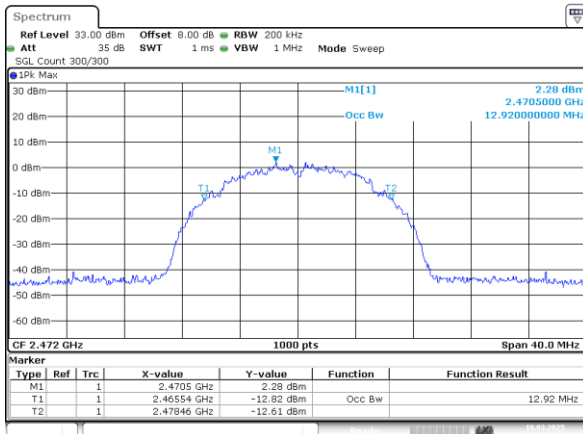
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:26:07

802.11b\_2442MHz



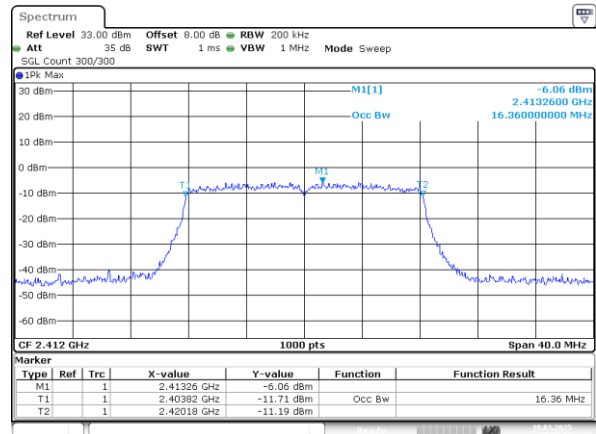
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:32:20

802.11b\_2472MHz



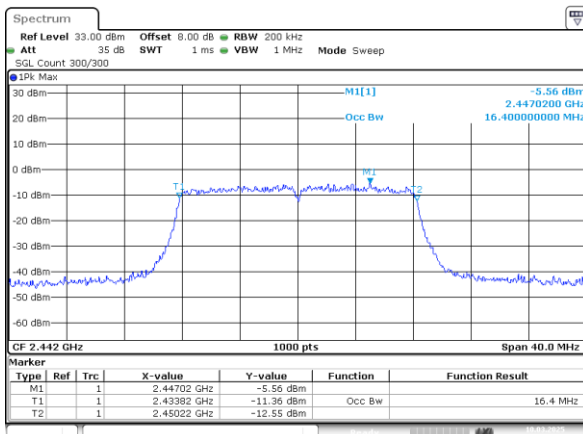
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Date: 10.MAR.2025 17:34:52

802.11g\_2412MHz



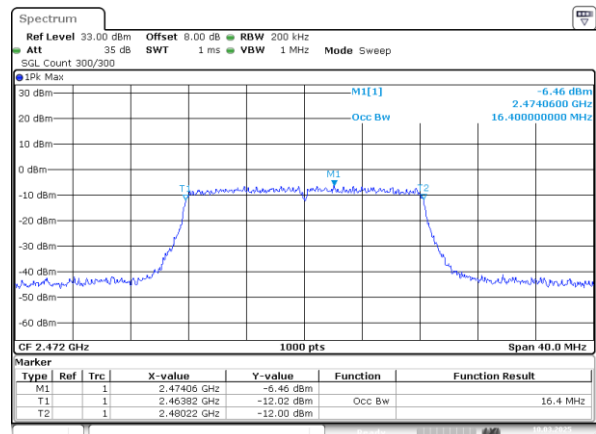
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:38:01

802.11g\_2442MHz



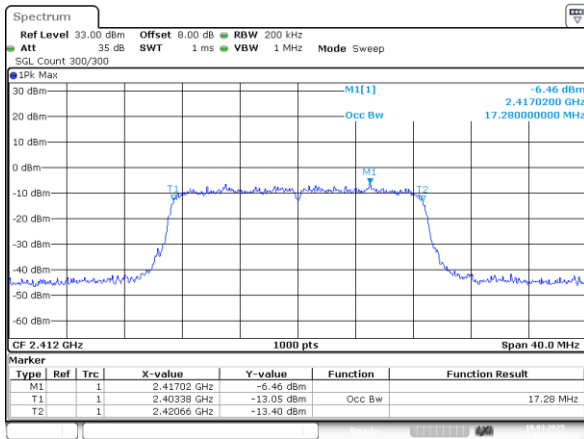
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:41:12

802.11g\_2472MHz



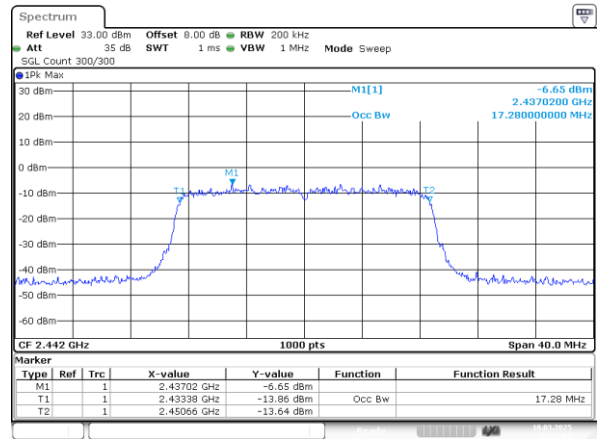
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:43:47

802.11n20\_2412MHz



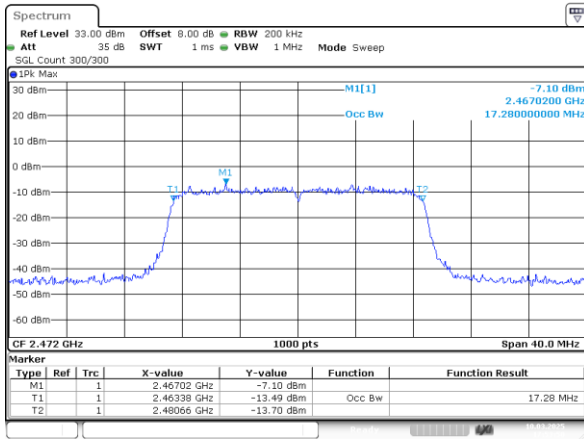
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:47:29

802.11n20\_2442MHz



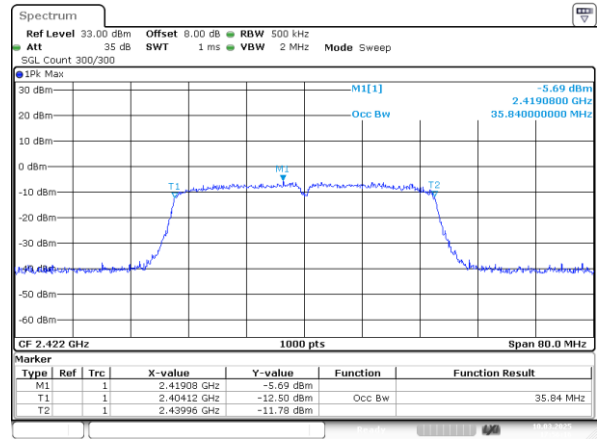
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:51:05

802.11n20\_2472MHz



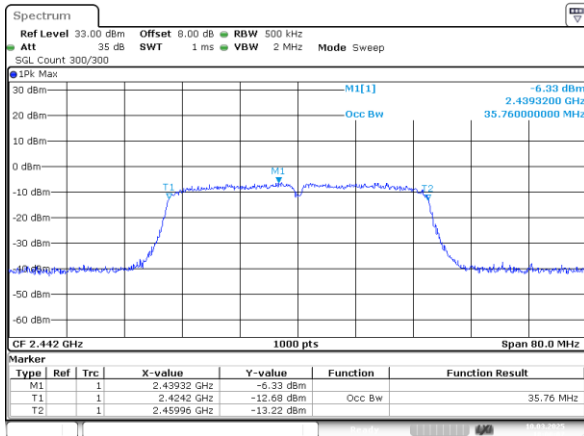
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Date: 10.MAR.2025 17:53:50

802.11n40\_2422MHz



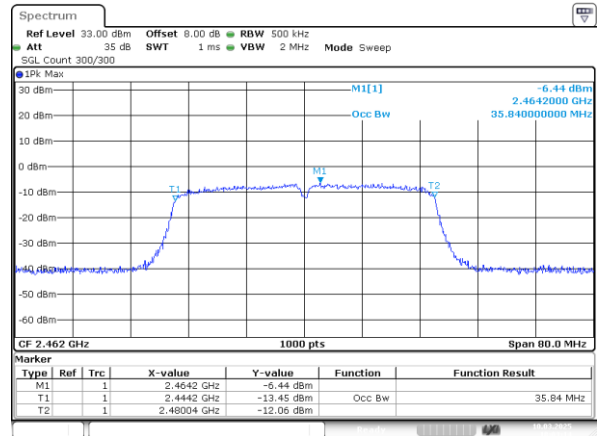
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:56:16

802.11n40\_2442MHz



ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 18:00:07

802.11n40\_2462MHz

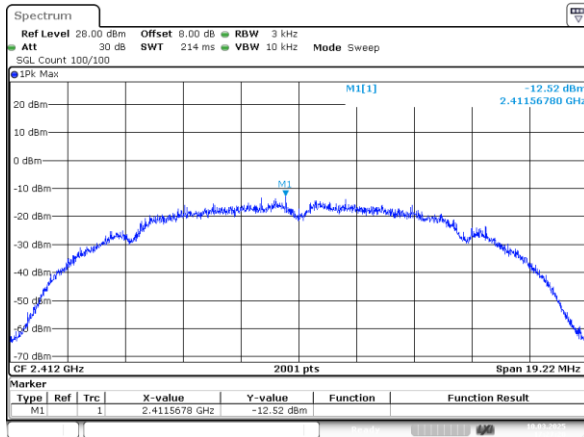


ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 18:03:14



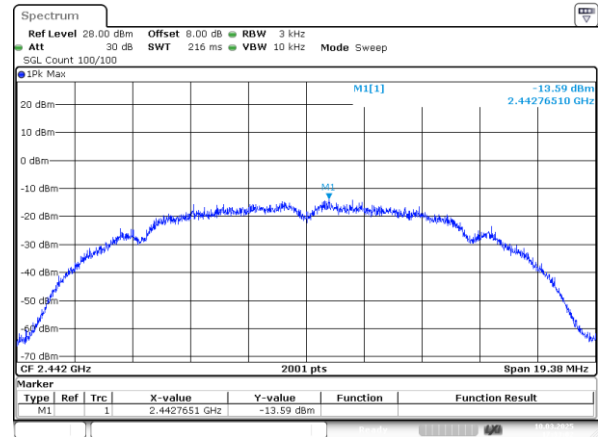
## Power Spectral Density: 2412~2472

802.11b\_2412MHz



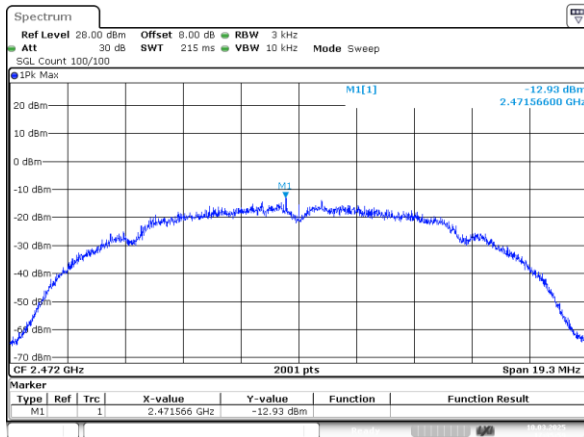
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Date: 10.MAR.2025 17:27:19

802.11b\_2442MHz



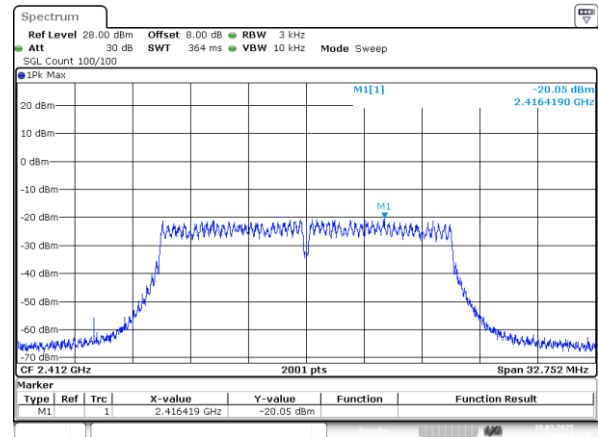
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:33:02

802.11b\_2472MHz



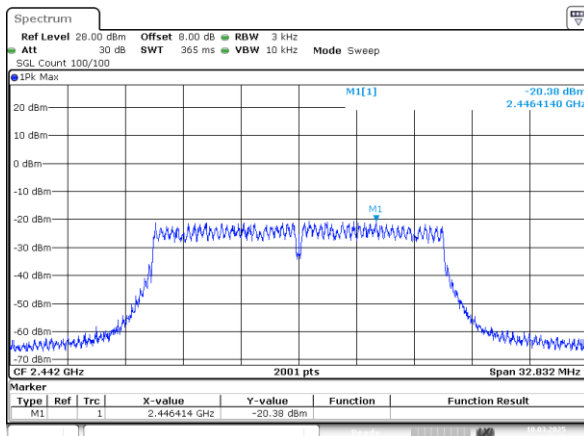
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:35:59

802.11g\_2412MHz



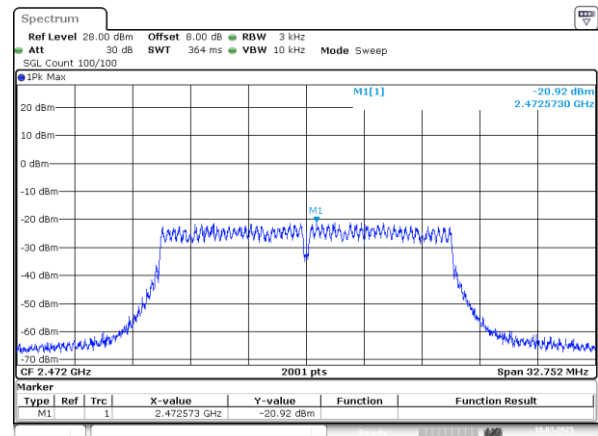
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:39:29

802.11g\_2442MHz



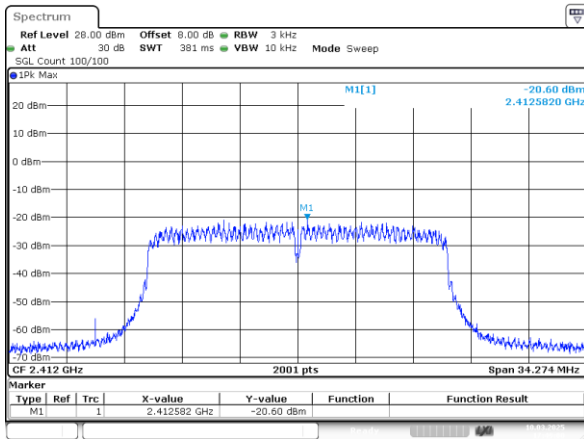
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:42:14

802.11g\_2472MHz



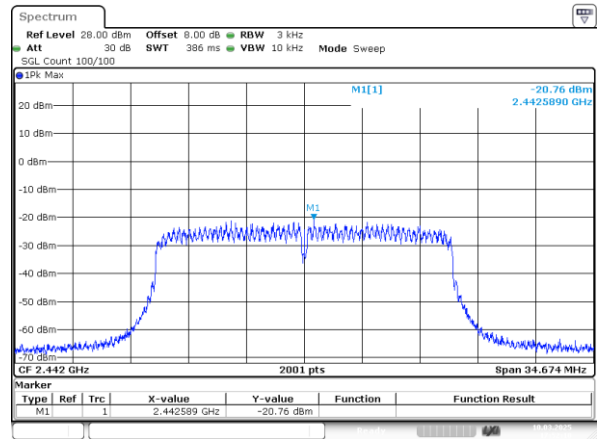
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Date: 10.MAR.2025 17:45:15

802.11n20\_2412MHz



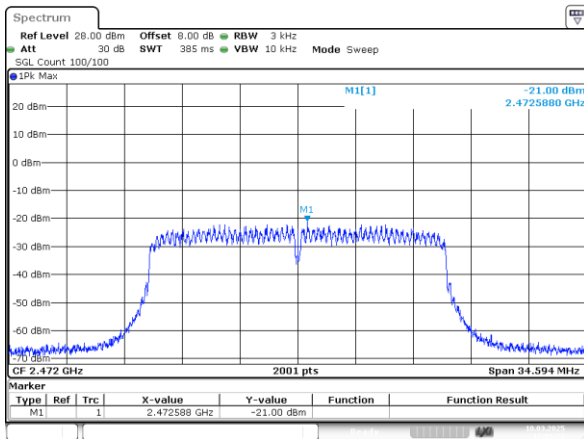
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:49:00

802.11n20\_2442MHz



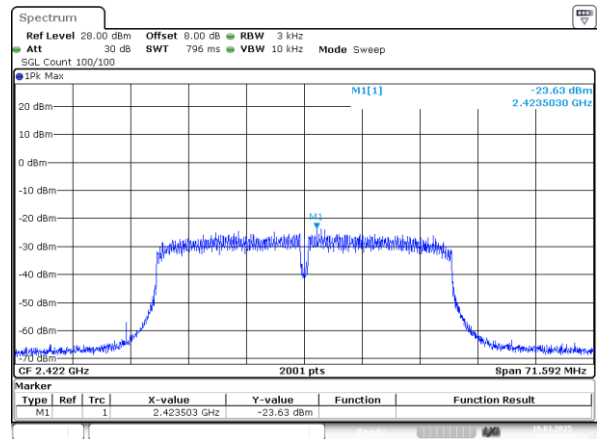
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:52:10

802.11n20\_2472MHz



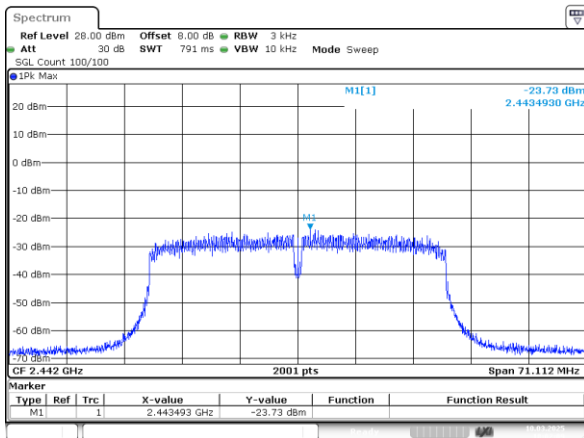
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:55:20

802.11n40\_2422MHz



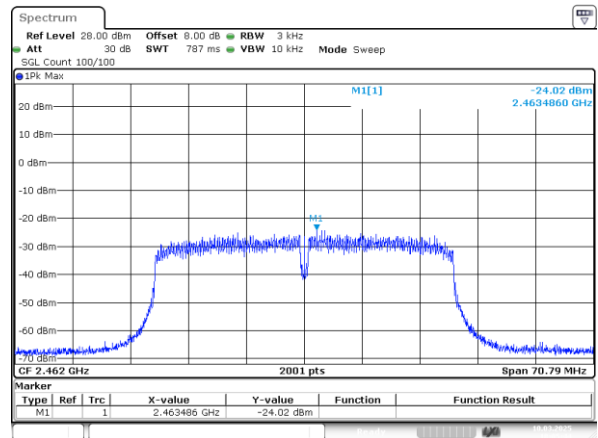
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:58:44

802.11n40\_2442MHz



ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 18:02:09

802.11n40\_2462MHz

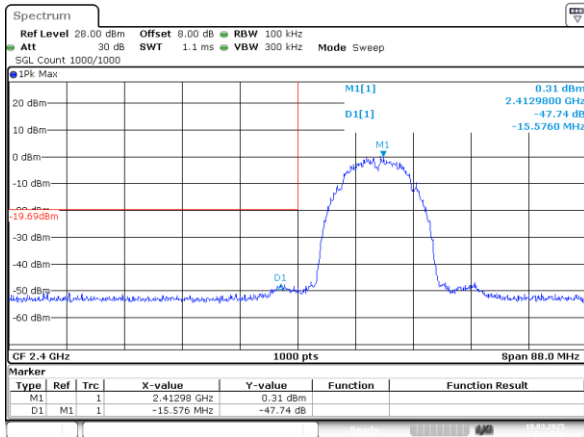


ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 18:05:44

## 100kHz Bandwidth of Frequency Band Edge:

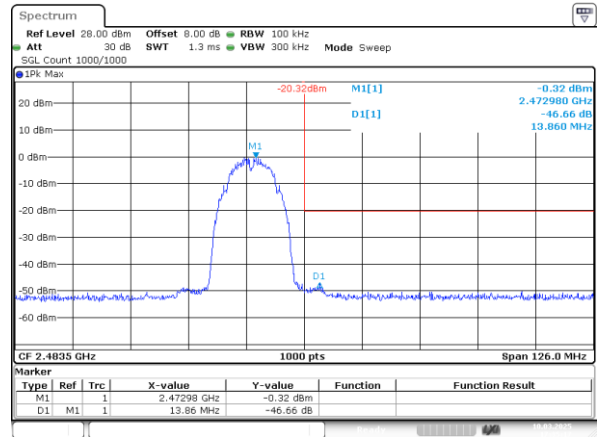
2412~2472

802.11b\_2412MHz



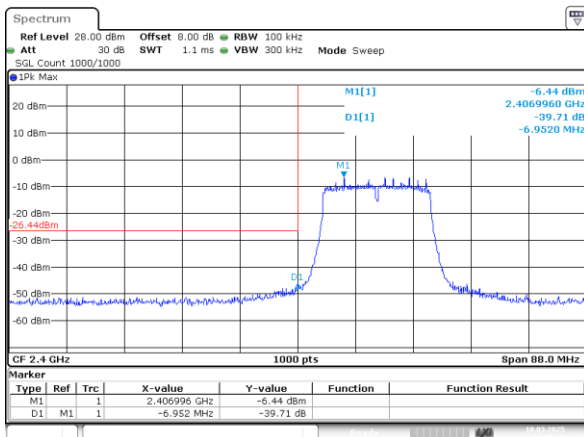
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:26:36

802.11b\_2472MHz



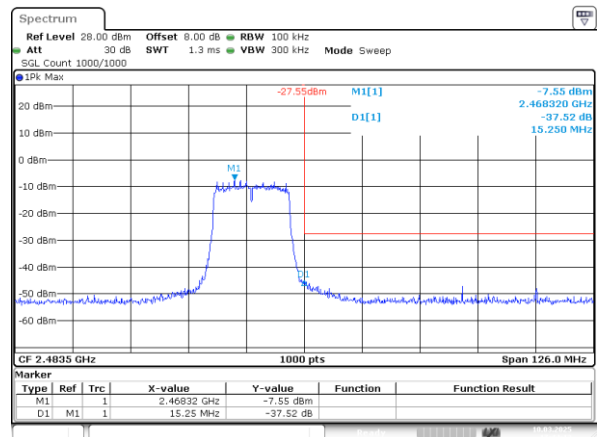
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:35:17

802.11g\_2412MHz



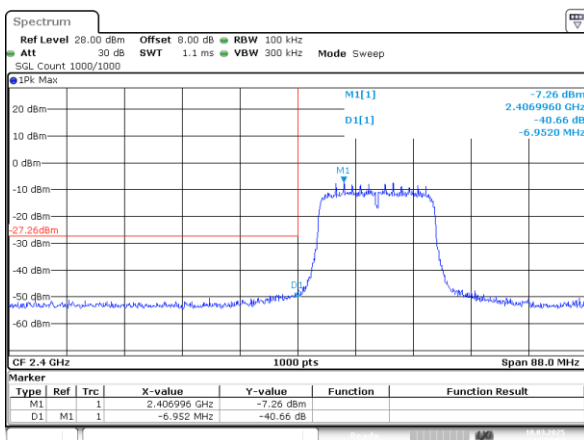
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:38:26

802.11g\_2472MHz



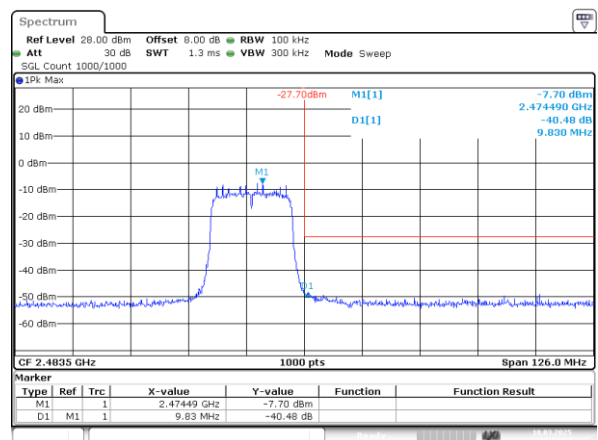
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:44:12

802.11n20\_2412MHz



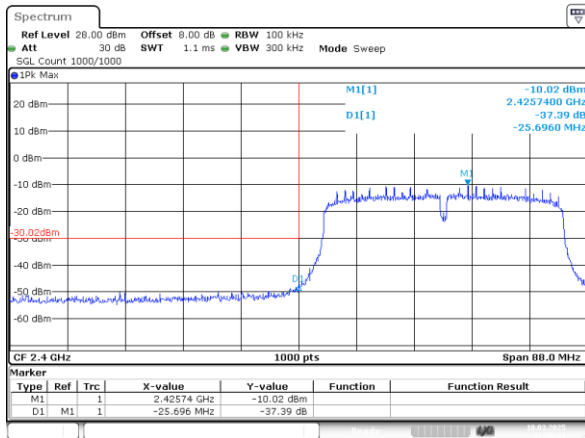
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:47:53

802.11n20\_2472MHz



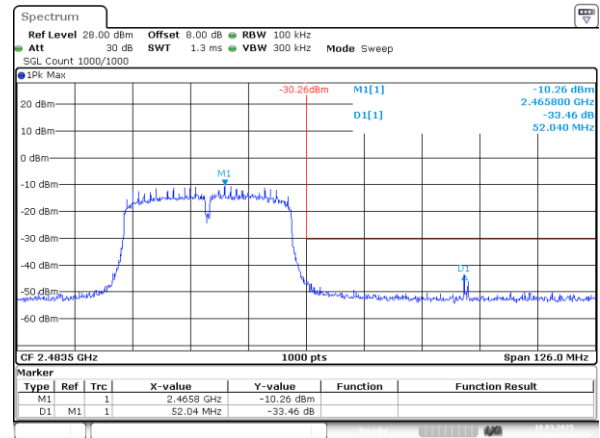
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:54:14

802.11n40\_2422MHz



ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:56:40

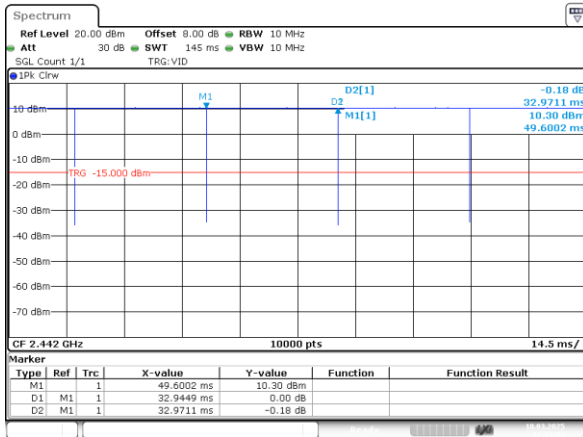
802.11n40\_2462MHz



ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 18:03:41

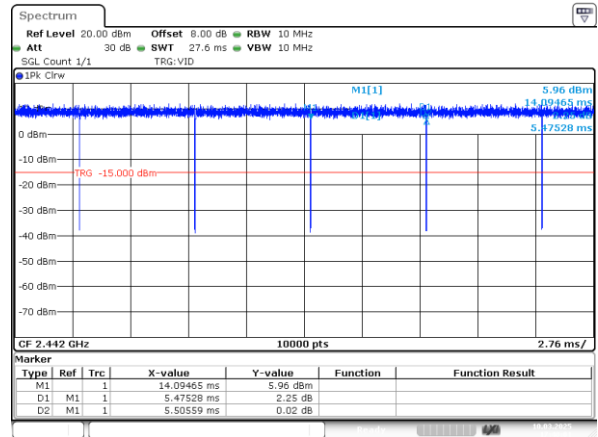
# Duty Cycle: 2412~2472

## 802.11b\_2442MHz



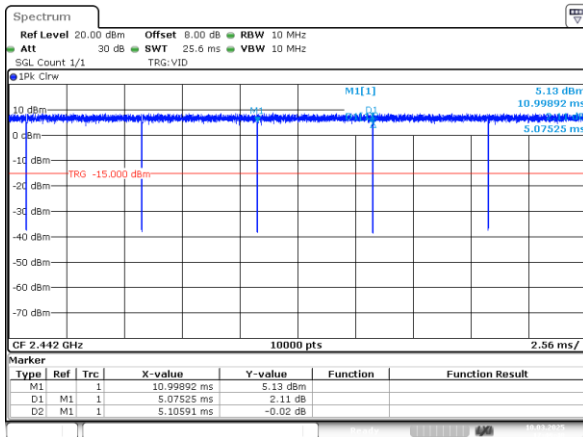
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Date: 10.MAR.2025 17:31:03

## 802.11g\_2442MHz



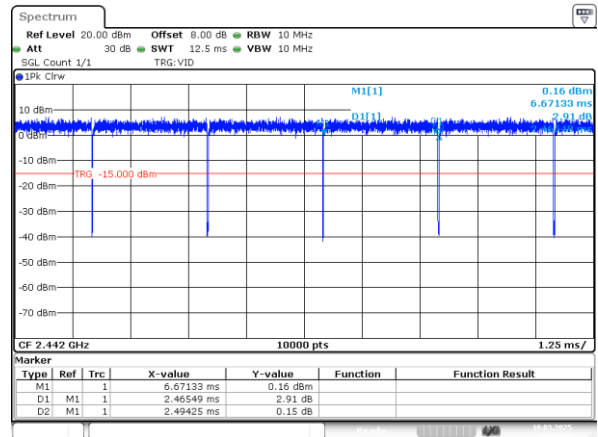
ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:40:01

## 802.11n20\_2442MHz



ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:49:48

## 802.11n40\_2442MHz



ProjectNo.:2505Q43596E-RF Tester:Ryan Zhang  
Date: 10.MAR.2025 17:59:29

## 4 Test Setup Photo

Please refer to the attachment 2505Q43596E Test Setup photo.

## 5 E.U.T Photo

Please refer to the attachment 2505Q43596E External photo and 2505Q43596E Internal photo.

**---End of Report---**