



中认信通

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



TEST REPORT

Applicant: Inrico Technologies Co.,Ltd

Address: A1703, Shenzhen National Engineering Laboratory Building, No. 20 Gaoxin
South 7th Road , Shenzhen,China

FCC ID: 2AIV6- IRC380

Product Name: SMART MULTI-MODE RADIO

Standard(s): 47 CFR Part 15, Subpart E(15.407)

ANSI C63.10-2013

KDB 789033 D02 General U-NII Test Procedures New
Rules v02r01

The above device has been tested and found compliant with the requirement of the relative standards by
China Certification ICT Co., Ltd (Dongguan)

Report Number: CR231058645-00D

Date Of Issue: 2024/6/1

Reviewed By: Calvin Chen

Title: RF Engineer

Approved By: Sun Zhong

Title: Manager

Test Laboratory: China Certification ICT Co., Ltd (Dongguan)

No. 113, Pingkang Road, Dalang Town, Dongguan,
Guangdong, China
Tel: +86-769-82016888

Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, 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. : 442868, the FCC Designation No. : CN1314.

Declarations

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CONTENTS

DOCUMENT REVISION HISTORY	5
1. GENERAL INFORMATION	6
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	6
1.2 DESCRIPTION OF TEST CONFIGURATION.....	9
1.2.1 EUT Operation Condition	9
1.2.2 Support Equipment List and Details	11
1.2.3 Support Cable List and Details	11
1.2.4 Block Diagram of Test Setup	11
1.3 MEASUREMENT UNCERTAINTY	12
2. SUMMARY OF TEST RESULTS	13
3. REQUIREMENTS AND TEST PROCEDURES	14
3.1 AC LINE CONDUCTED EMISSIONS.....	14
3.1.1 Applicable Standard.....	14
3.1.2 EUT Setup.....	15
3.1.3 EMI Test Receiver Setup	15
3.1.4 Test Procedure	16
3.1.5 Corrected Amplitude & Margin Calculation.....	16
3.2 RADIATION SPURIOUS EMISSIONS.....	17
3.2.1 Applicable Standard.....	17
3.2.2 EUT Setup.....	18
3.2.3 EMI Test Receiver & Spectrum Analyzer Setup	19
3.2.4 Test Procedure	20
3.2.5 Corrected Amplitude & Margin Calculation.....	20
3.3 EMISSION BANDWIDTH:	21
3.3.1 Applicable Standard.....	21
3.3.2 EUT Setup.....	21
3.3.3 Test Procedure	21
3.4 MAXIMUM CONDUCTED OUTPUT POWER:	23
3.4.1 Applicable Standard.....	23
3.4.2 EUT Setup.....	23
3.4.3 Test Procedure	23
3.5 MAXIMUM POWER SPECTRAL DENSITY:	24
3.5.1 Applicable Standard.....	24
3.5.2 EUT Setup.....	24
3.5.3 Test Procedure	25
3.6 DUTY CYCLE:.....	26
3.6.1 EUT Setup.....	26
3.6.2 Test Procedure	26
3.7 ANTENNA REQUIREMENT.....	27
3.7.1 Applicable Standard.....	27
3.7.2 Judgment.....	27

4. Test DATA AND RESULTS	28
4.1 AC LINE CONDUCTED EMISSIONS	28
4.2 RADIATION SPURIOUS EMISSIONS	31
4.3 EMISSION BANDWIDTH	114
4.4 MAXIMUM CONDUCTED OUTPUT POWER	149
4.5 MAXIMUM POWER SPECTRAL DENSITY	152
4.6 DUTY CYCLE	171
5. EUT PHOTOGRAPHS	174
6. TEST SETUP PHOTOGRAPHS	175

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR231058645-00D	Original Report	2024/6/1

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

1.1.1 General:

EUT Name:	SMART MULTI-MODE RADIO
EUT Model:	IRC380
Operation Frequency:	Band1: 5180-5240 MHz (802.11a/n ht20/ac vht20) 5190-5230 MHz(802.11n ht40/ac vht40) 5210 MHz(802.11ac vht80) Band2: 5260-5320 MHz (802.11a/n ht20/ac vht20) 5270-5310 MHz(802.11n ht40/ac vht40) 5290 MHz(802.11ac vht80) Band3: 5500-5720 MHz (802.11a/n ht20/ac vht20) 5510-5710 MHz(802.11n ht40/ac vht40) 5530-5690MHz(802.11ac vht80) Band4: 5745-5825 MHz (802.11a/n ht20/ac vht20) 5755-5795 MHz(802.11n ht40/ac vht40) 5775 MHz(802.11ac vht80)
Maximum Average Output Power (Conducted):	13.62dBm (5150-5250 MHz) 13.68dBm (5250-5350 MHz) 13.74dBm (5470-5725 MHz) 13.85dBm (5725-5850 MHz)
Modulation Type:	802.11a/n/ac: OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM
Rated Input Voltage:	DC 5V charging from adapter or 7.6V from battery or DC 12V charging from Charging Dock
Serial Number:	CE/RE:2C04-2, RF: 2C04-3
EUT Received Date:	2023/10/13
EUT Received Status:	Good

1.1.2 Operation Frequency Detail: For 802.11a/n ht20/ ac vht20:

5150-5250MHz Band		5250-5350 MHz Band		5470-5725 MHz Band		5725-5850MHz Band	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	52	5260	100	5500	149	5745
40	5200	56	5280	104	5520	153	5765
44	5220	60	5300	108	5540	157	5785
48	5240	64	5320	112	5560	161	5805
/	/	/	/	116	5580	165	5825
/	/	/	/	120	5600	/	/
/	/	/	/	124	5620	/	/
/	/	/	/	128	5640	/	/
/	/	/	/	132	5660	/	/
/	/	/	/	136	5680	/	/
/	/	/	/	140	5700	/	/
/	/	/	/	144	5720	/	/

Per section 15.31(m), the below frequencies were performed the test:

Test Channel	Test Frequency (MHz)			
	5150-5250MHz Band	5250-5350 MHz Band	5470-5725 MHz Band	5725-5850MHz Band
Lowest	5180	5260	5500	5745
Middle	5200	5280	5580	5785
Highest	5240	5320	5700	5825
Cross	/	/	5720	/

For 802.11n ht40/ ac vht40:

5150-5250MHz Band		5250-5350 MHz Band		5470-5725 MHz Band		5725-5850MHz Band	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	54	5270	102	5510	151	5755
46	5230	62	5310	110	5550	159	5795
/	/	/	/	118	5590	/	/
/	/	/	/	126	5630	/	/
/	/	/	/	134	5670	/	/
/	/	/	/	142	5710	/	/

Per section 15.31(m), the below frequencies were performed the test:

Test Channel	Test Frequency (MHz)			
	5150-5250MHz Band	5250-5350 MHz Band	5470-5725 MHz Band	5725-5850MHz Band
Lowest	5190	5270	5510	5755
Middle	/	/	5550	/
Highest	5230	5310	5670	5795
Cross	/	/	5710	/

For 802.11ac vht80:

5150-5250MHz Band		5250-5350 MHz Band		5470-5725 MHz Band		5725-5850MHz Band	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	58	5290	106	5530	155	5775
/	/	/	/	122	5610	/	/

Per section 15.31(m), the below frequencies were performed the test:

Test Channel	Test Frequency (MHz)			
	5150-5250MHz Band	5250-5350 MHz Band	5470-5725 MHz Band	5725-5850MHz Band
Lowest	/	/	5530	/
Middle	5210	5290	/	5775
Highest	/	/	5610	/
Cross	/	/	5690	/

1.1.3 Antenna Information Detail▲:

Antenna Type	input impedance (Ohm)	Frequency Range	Antenna Gain
FPC	50	5.15~5.25GHz	4.35dBi
		5.25~5.35 GHz	4.35dBi
		5.47~5.725 GHz	4.35dBi
		5.725-5.85 GHz	4.35dBi

The Method of §15.203 Compliance:

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

1.1.4 Accessory Information:

Accessory Description	Manufacturer	Model
Adapter	ShenZhen HuaJin Electronics CO.,LTD	HJ-0503000-US
Small Hand Microphone	Unknown	Unknown
Big Hand Microphone	Unknown	Unknown
Charging Dock	Unknown	CI-80G

1.2 Description of Test Configuration

1.2.1 EUT Operation Condition

EUT Operation Mode:		The system was configured for testing in Engineering Mode, which was provided by the manufacturer. Per BT report test, Power by Adapter with Small Hand Microphone was the worst for Conducted Emissions Test, Power by Charging Dock with Big Hand Microphone was worst for Radiation Spurious Emissions Test.		
Equipment Modifications:		No		
EUT Exercise Software:		QRCT3		
The software was provided by manufacturer. The maximum power was configured as below, that was provided by the manufacturer▲:				
5150-5250 MHz Band:				
Test Modes	Test Channels	Test Frequency	Data Rate	Power Level Setting
802.11a	Lowest	5180	6Mbps	14
	Middle	5200	6Mbps	14
	Highest	5240	6Mbps	14
802.11n ht20	Lowest	5180	MCS0	14
	Middle	5200	MCS0	14
	Highest	5240	MCS0	14
802.11n ht40	Lowest	5190	MCS0	16
	Highest	5230	MCS0	16
802.11ac vht80	Middle	5210	MCS0	16
5250-5350 MHz Band:				
Test Modes	Test Channels	Test Frequency	Data Rate	Power Level Setting
802.11a	Lowest	5260	6Mbps	14
	Middle	5280	6Mbps	14
	Highest	5320	6Mbps	14
802.11n ht20	Lowest	5260	MCS0	14
	Middle	5280	MCS0	14
	Highest	5320	MCS0	14
802.11n ht40	Lowest	5270	MCS0	16
	Highest	5310	MCS0	16
802.11ac vht80	Middle	5290	MCS0	16

5470-5725 MHz Band:				
Test Modes	Test Channels	Test Frequency	Data Rate	Power Level Setting
802.11a	Lowest	5500	6Mbps	14
	Middle	5580	6Mbps	14
	Highest	5700	6Mbps	14
	Cross	5720	6Mbps	14
802.11n ht20	Lowest	5500	MCS0	14
	Middle	5580	MCS0	14
	Highest	5700	MCS0	14
	Cross	5720	MCS0	14
802.11n ht40	Lowest	5510	MCS0	16
	Highest	5550	MCS0	16
	Lowest	5670	MCS0	16
	Cross	5710	MCS0	16
802.11ac vht80	Lowest	5530	MCS0	16
	Highest	5610	MCS0	16
	Cross	5690	MCS0	16
5725-5850 MHz Band:				
Test Modes	Test Channels	Test Frequency	Data Rate	Power Level Setting
802.11a	Lowest	5745	6Mbps	14
	Middle	5785	6Mbps	14
	Highest	5825	6Mbps	14
802.11n ht20	Lowest	5745	MCS0	14
	Middle	5785	MCS0	14
	Highest	5825	MCS0	14
802.11n ht40	Lowest	5755	MCS0	16
	Highest	5795	MCS0	16
802.11ac vht80	Middle	5775	MCS0	16
Note: 1. The above are the worst-case data rates, which are determined for each mode based upon investigations by measuring the average power and PSD across all data rates, bandwidths, and modulations. 2. The system support 802.11a/n ht20/n ht40/ac vht20//ac vht40/ac vht80, the vht20/vht40 were reduced since the identical parameters with 802.11n ht20 and ht40				

1.2.2 Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
/	/	/	/

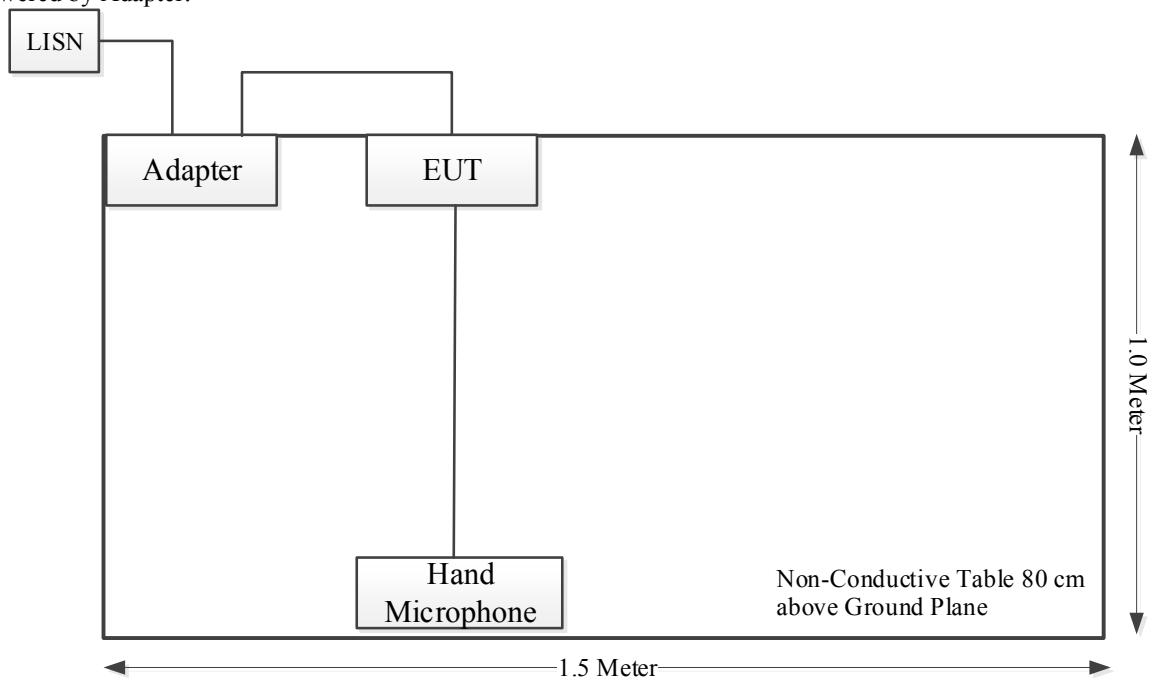
1.2.3 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
USB Cable	No	No	1	Adapter	EUT
Hand Microphone Cable	No	No	1.2	EUT	Hand Microphone
Hand Microphone Cable	No	No	0.8	EUT	Hand Microphone
USB Cable	No	No	1	Adapter	Charging Dock

1.2.4 Block Diagram of Test Setup

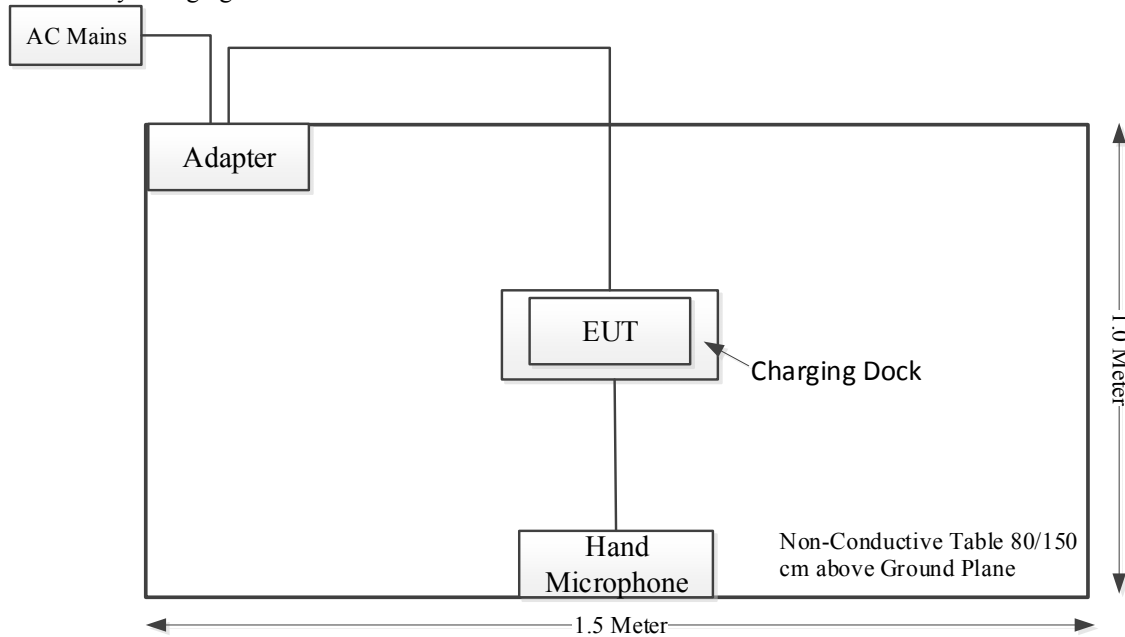
AC Line Conducted Emissions:

Powered by Adapter:



Radiation Spurious Emissions:

Powered by Charging Dock:



1.3 Measurement Uncertainty

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

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	$\pm 5\%$
RF output power, conducted	$\pm 0.61\text{ dB}$
Power Spectral Density, conducted	$\pm 0.61\text{ dB}$
Unwanted Emissions, radiated	9kHz~30MHz: 4.12dB, 30MHz~200MHz: 4.15 dB, 200MHz~1GHz: 5.61 dB, 1GHz~6GHz: 5.14 dB, 6GHz~18GHz: 5.93 dB, 18GHz~26.5GHz: 5.47 dB, 26.5GHz~40GHz: 5.63 dB
Unwanted Emissions, conducted	$\pm 1.26\text{ dB}$
Temperature	$\pm 1^\circ\text{C}$
Humidity	$\pm 5\%$
DC and low frequency voltages	$\pm 0.4\%$
Duty Cycle	1%
AC Power Lines Conducted Emission	2.8 dB (150 kHz to 30 MHz)

2. SUMMARY OF TEST RESULTS

Standard(s) Section	Test Items	Result
FCC§15.207(a)	AC line conducted emissions	Compliant
FCC§15.205& §15.209 &§15.407(b)	Radiated Spurious Emissions	Compliant
FCC§15.407(a) (e)	Emission Bandwidth	Compliant
FCC§15.407(a)	Maximum Conducted Output Power	Compliant
FCC§15.407 (a)	Power Spectral Density	Compliant
FCC§15.203	Antenna Requirement	Compliant

3. REQUIREMENTS AND TEST PROCEDURES

3.1 AC Line Conducted Emissions

3.1.1 Applicable Standard

FCC§15.207(a).

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

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

*Decreases with the logarithm of the frequency.

(b) The limit shown in paragraph (a) of this section shall not apply to carrier current systems operating as intentional radiators on frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

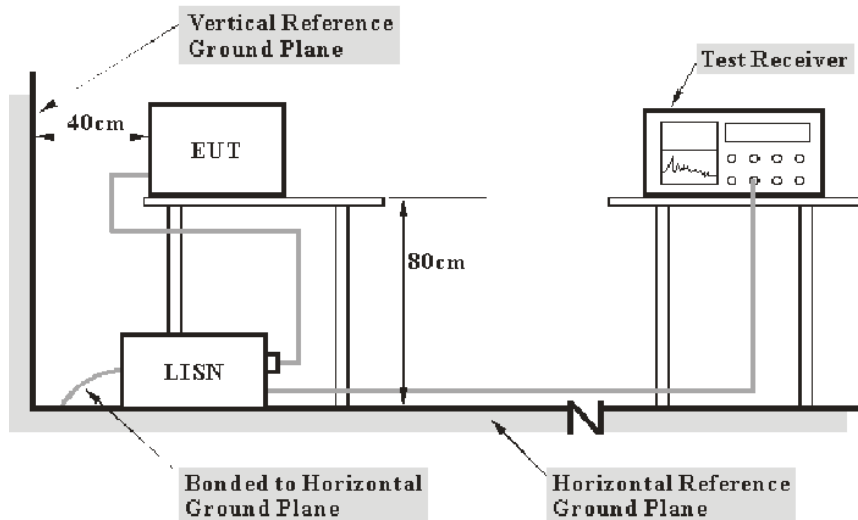
(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 μ V within the frequency band 535-1705 kHz, as measured using a 50 μ H/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits in §15.205, §15.209, §15.221, §15.223, or §15.227, as appropriate.

(c) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provisions for, the use of battery chargers which permit operating while charging, AC adapters or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

3.1.2 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 limits.

The spacing between the peripherals was 10 cm.

3.1.3 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

3.1.4 Test Procedure

The frequency and amplitude of the six highest ac power-line conducted emissions relative to the limit, measured over all the current-carrying conductors of the EUT power cords, and the operating frequency or frequency to which the EUT is tuned (if appropriate), should be reported, unless such emissions are more than 20 dB below the limit. AC power-line conducted emissions measurements are to be separately carried out only on each of the phase (“hot”) line(s) and (if used) on the neutral line(s), but not on the ground [protective earth] line(s). If less than six emission frequencies are within 20 dB of the limit, then the noise level of the measuring instrument at representative frequencies should be reported. The specific conductor of the power-line cord for each of the reported emissions should be identified. Measure the six highest emissions with respect to the limit on each current-carrying conductor of each power cord associated with the EUT (but not the power cords of associated or peripheral equipment that are part of the test configuration). Then, report the six highest emissions with respect to the limit from among all the measurements identifying the frequency and specific current-carrying conductor identified with the emission. The six highest emissions should be reported for each of the current-carrying conductors, or the six highest emissions may be reported over all the current-carrying conductors.

3.1.5 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor

Factor = attenuation caused by cable loss + voltage division factor of AMN

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

3.2 Radiation Spurious Emissions

3.2.1 Applicable Standard

FCC §15.407 (b);

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating solely in the 5.725-5.850 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in § 15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in § 15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

(8) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(9) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in § 15.207.

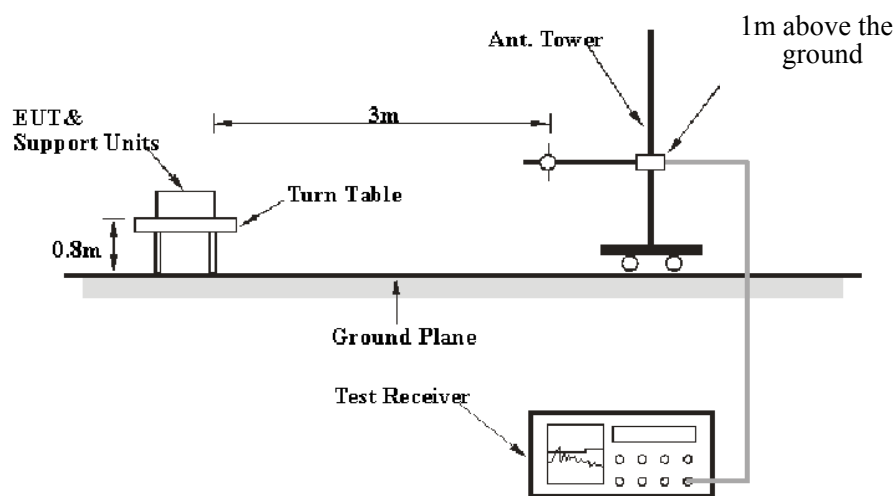
(10) The provisions of § 15.205 apply to intentional radiators operating under this section.

(11) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

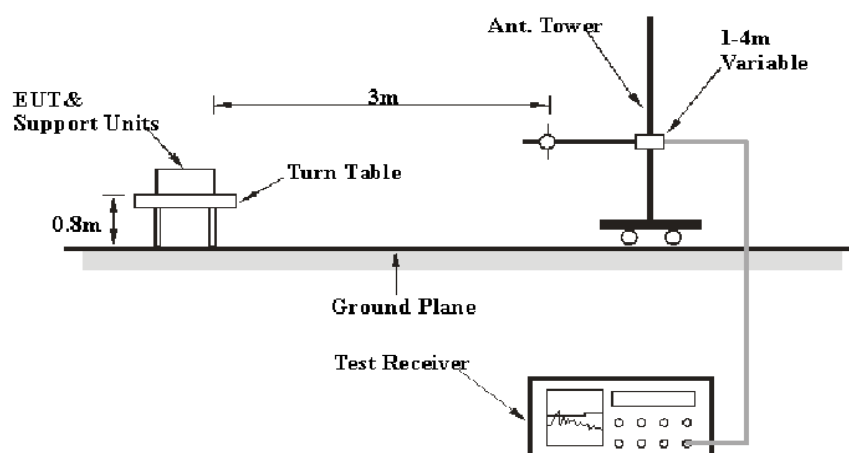
(c) The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signalling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

3.2.2 EUT Setup

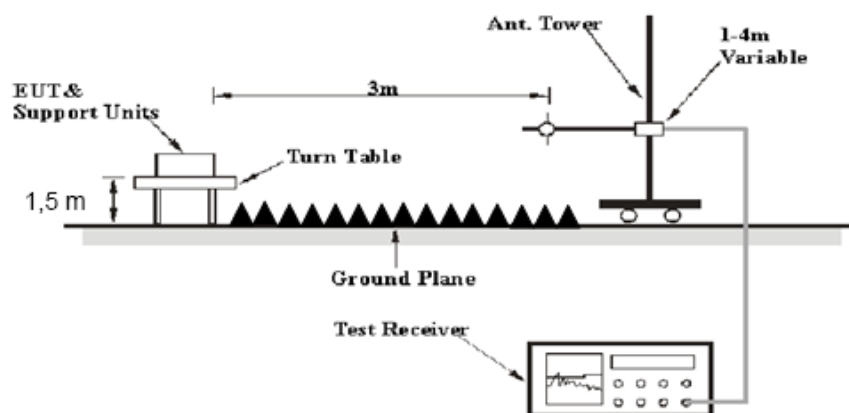
9kHz~30MHz:

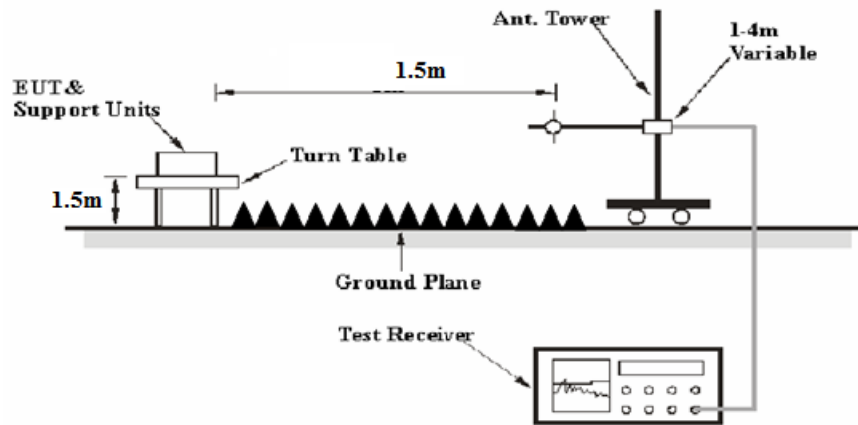


30MHz~1GHz:



1GHz-26.5 GHz:



26.5GHz - 40 GHz:

The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was FCC 15.209, FCC 15.407 limits.

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

The spacing between the peripherals was 10 cm.

For 9kHz-30MHz test, the lowest height of the magnetic antenna shall be 1 m above the ground and three antenna orientations (parallel, perpendicular, and ground-parallel) shall be measured.

3.2.3 EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9kHz to 40 GHz.

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

9kHz-1000MHz:

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

1GHz- 40GHz:

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
AV	>98%	1MHz	10 Hz
	<98%	1MHz	$\geq 1/T$

Note: T 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.

3.2.4 Test Procedure

During the radiated emission test, the adapter was connected to the first AC floor outlet.

Data was recorded in Quasi-peak detection mode for frequency range of 9 kHz-1 GHz except 9 – 90 kHz, 110 – 490 kHz, employing an average detector, peak and Average detection modes for frequencies above 1 GHz.

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, emission shall be computed as: $E [dB\mu V/m] = EIRP[dBm] + 95.2$, for $d = 3$ meters.

According to C63.10, the above 1G test result shall be extrapolated to the specified distance using an extrapolation Factor of 20dB/decade from 3m to 1.5m

Distance extrapolation Factor = $20 \log (\text{specific distance } [3m] / \text{test distance } [1.5m])$ dB = 6.02 dB

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

3.2.5 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Factor = Antenna Factor + Cable Loss- Amplifier Gain

Result = Reading + Factor

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

3.3 Emission Bandwidth:

3.3.1 Applicable Standard

FCC §15.407 (a)

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

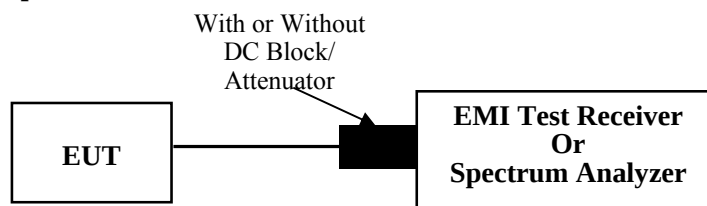
FCC §15.407 (e)

Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

FCC §15.407 (h)

(h)(2) Radar Detection Function of Dynamic Frequency Selection (DFS). U-NII devices operating with any part of its 26 dB emission bandwidth in the 5.25-5.35 GHz and 5.47-5.725 GHz bands shall employ a DFS radar detection mechanism to detect the presence of radar systems and to avoid co-channel operation with radar systems.

3.3.2 EUT Setup



3.3.3 Test Procedure

26dB Emission Bandwidth:

According to ANSI C63.10-2013 Section 12.4.1

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = peak.
- Trace mode = max hold
- Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the instrument. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

6 dB emission bandwidth:

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) ≥ 3 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.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described in this section. For devices that use channel aggregation refer to III.A and III.C for determining emission bandwidth.

99% Occupied Bandwidth:

According to ANSI C63.10-2013 Section 12.4.2&6.9.3

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

- 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, 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 $[10 \log (OBW/RBW)]$ 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 per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

3.4 Maximum Conducted Output Power:

3.4.1 Applicable Standard

FCC §15.407(a) (1)(iv)

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

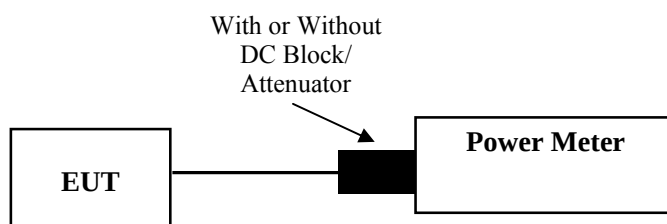
FCC §15.407(a) (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

FCC §15.407(a) (3)(i)

For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

3.4.2 EUT Setup



3.4.3 Test Procedure

According to ANSI C63.10-2013 Section 12.3.3.2

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

3.5 Maximum Power Spectral Density:

3.5.1 Applicable Standard

FCC §15.407(a) (1)(iv)

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

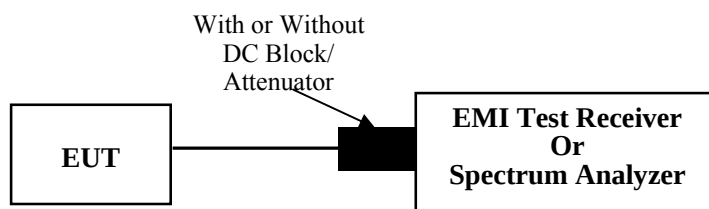
FCC §15.407(a) (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

FCC §15.407(a) (3)(i)

For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

3.5.2 EUT Setup



3.5.3 Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01

Duty cycle $\geq 98\%$

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-1 should be applied.

Duty cycle $< 98\%$, duty cycle variations are less than $\pm 2\%$

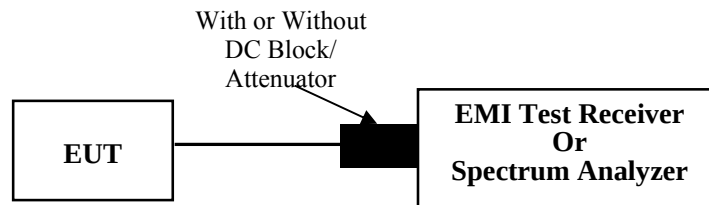
KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-2 should be applied.

Duty cycle $< 98\%$, duty cycle variations exceed $\pm 2\%$

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-3 should be applied.

3.6 Duty Cycle:

3.6.1 EUT Setup



3.6.2 Test Procedure

According to ANSI C63.10-2013 Section 12.2

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:

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

3.7 Antenna Requirement

3.7.1 Applicable Standard

FCC §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 use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§15.211, 15.213, 15.217, 15.219, 15.221, or §15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

3.7.2 Judgment

Result: Compliant. Please refer to the Antenna Information detail in Section 1.

4. Test DATA AND RESULTS

4.1 AC Line Conducted Emissions

Serial Number:	2C04-2	Test Date:	2024/1/15
Test Site:	CE	Test Mode:	Transmitting(maximum output power mode, 802.11n ht20 5825MHz)
Tester:	David Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.9	Relative Humidity: (%)	44	ATM Pressure: (kPa)	101.3
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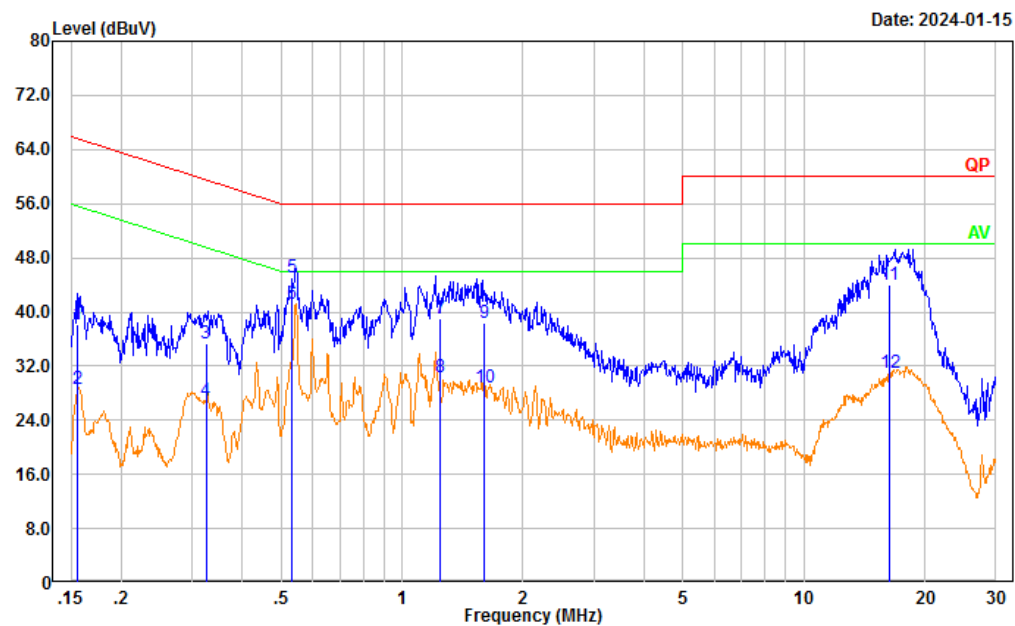
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101134	2023/3/31	2024/3/30
R&S	EMI Test Receiver	ESR3	102726	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2023/8/6	2024/8/5
Audix	Test Software	E3	190306 (V9)	N/A	N/A

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

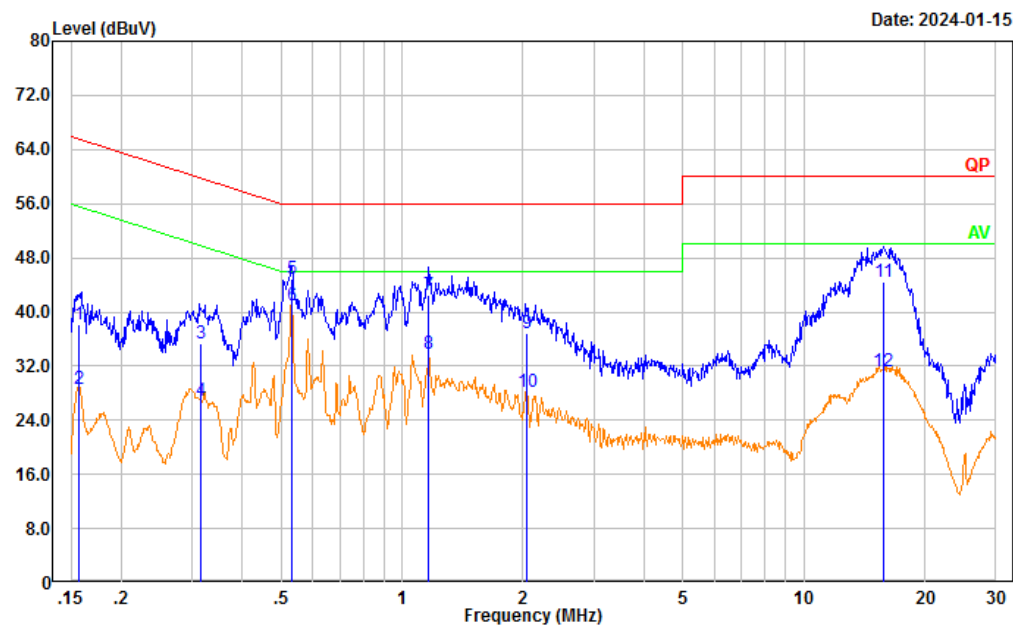
Power by Adapter with Small Hand Microphone

Project No.: CR231058645-RF
Tester: David Huang
Port: Line
Note: Trasmitting(5G WIFI)



No.	Frequency (MHz)	Reading (dBUV)	Factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.156	28.51	9.61	38.12	65.68	27.56	QP
2	0.156	19.03	9.61	28.64	55.68	27.04	Average
3	0.325	25.67	9.61	35.28	59.58	24.30	QP
4	0.325	17.25	9.61	26.86	49.58	22.72	Average
5	0.531	35.44	9.61	45.05	56.00	10.95	QP
6	0.531	31.64	9.61	41.25	46.00	4.75	Average
7	1.239	29.37	9.62	38.99	56.00	17.01	QP
8	1.239	20.70	9.62	30.32	46.00	15.68	Average
9	1.597	28.68	9.63	38.31	56.00	17.69	QP
10	1.597	19.25	9.63	28.88	46.00	17.12	Average
11	16.317	34.24	9.72	43.96	60.00	16.04	QP
12	16.317	21.33	9.72	31.05	50.00	18.95	Average

Project No.: CR231058645-RF
Tester: David Huang
Port: neutral
Note: Transmitting(5G WIFI)



No.	Frequency (MHz)	Reading (dBUV)	Factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.157	28.50	9.61	38.11	65.61	27.50	QP
2	0.157	19.07	9.61	28.68	55.61	26.93	Average
3	0.315	25.66	9.61	35.27	59.85	24.58	QP
4	0.315	17.18	9.61	26.79	49.85	23.06	Average
5	0.530	35.28	9.61	44.89	56.00	11.11	QP
6	0.530	31.38	9.61	40.99	46.00	5.01	Average
7	1.167	32.84	9.62	42.46	56.00	13.54	QP
8	1.167	24.23	9.62	33.85	46.00	12.15	Average
9	2.043	27.32	9.63	36.95	56.00	19.05	QP
10	2.043	18.60	9.63	28.23	46.00	17.77	Average
11	15.719	34.66	9.69	44.35	60.00	15.65	QP
12	15.719	21.56	9.69	31.25	50.00	18.75	Average

4.2 Radiation Spurious Emissions

Serial Number:	2C04-2	Test Date:	Above 1GHz: 2024/1/15 Below 1GHz: 2024/6/1
Test Site:	966-2,966-1	Test Mode:	Transmitting
Tester:	Carl Xue, Mack Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.4-25.9	Relative Humidity: (%)	57-60	ATM Pressure: (kPa)	100.1-101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiation Spurious Emissions Below 1GHz					
Sunol Sciences	Antenna	JB6	A082520-5	2023/12/1	2026/11/30
BACL	Loop Antenna	1313-1A	3110611	2023/12/4	2026/12/3
Daruikang	Coaxial Cable	BNC-JJ-RG58	C-0300-01	2024/1/11	2025/1/10
Daruikang	Coaxial Cable	BNC-JJ-RG58	C-0500-01	2024/1/11	2025/1/10
R&S	EMI Test Receiver	ESR3	102724	2024/2/29	2025/2/28
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0100-03	2023/12/4	2024/12/3
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0370-01	2023/12/4	2024/12/3
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2023/12/4	2024/12/3
Sonoma	Amplifier	310N	186165	2023/12/4	2024/12/3
Audix	Test Software	E3	191218 (V9)	N/A	N/A
Radiation Spurious Emissions Above 1GHz					
AH	Double Ridge Guide Horn Antenna	SAS-571	1394	2023/2/22	2026/2/21
R&S	Spectrum Analyzer	FSV40	101591	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2023/8/6	2024/8/5
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2023/8/6	2024/8/5
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2023/11/8	2024/11/7
Audix	Test Software	E3	201021 (V9)	N/A	N/A
PASTERNAK	Horn Antenna	PE9852/2F-20	112002	2021/2/5	2024/2/4
Quinstar	Preamplifier	QLW-18405536-JO	15964001005	2023/9/15	2024/9/14
MICRO-COAX	Coaxial Cable	UFB142A-1-2362-200200	235772-001	2023/8/6	2024/8/5
E-Microwave	Band Rejection Filter	5150-5850MHz	OE01902423	2023/8/6	2024/8/5
Mini Circuits	High Pass Filter	VHF-6010+	31119	2023/8/6	2024/8/5
PASTERNAK	Horn Antenna	PE9850/2F-20	072001	2021/2/5	2024/2/4

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data:

Please refer to the below table and plots.

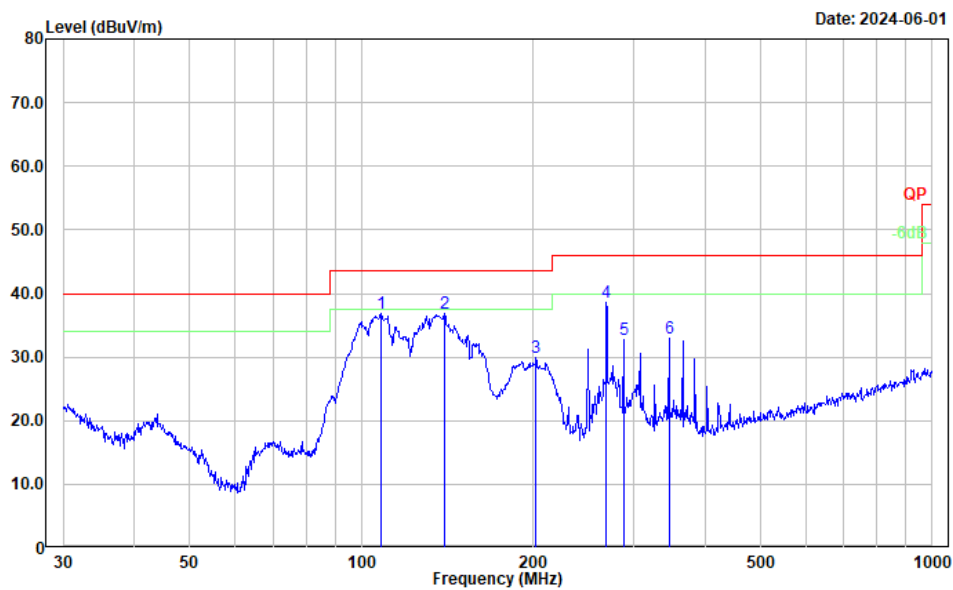
After pre-scan in the X, Y and Z axes of orientation, the worst-case Y axes is below:

1) 9kHz~30MHz

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

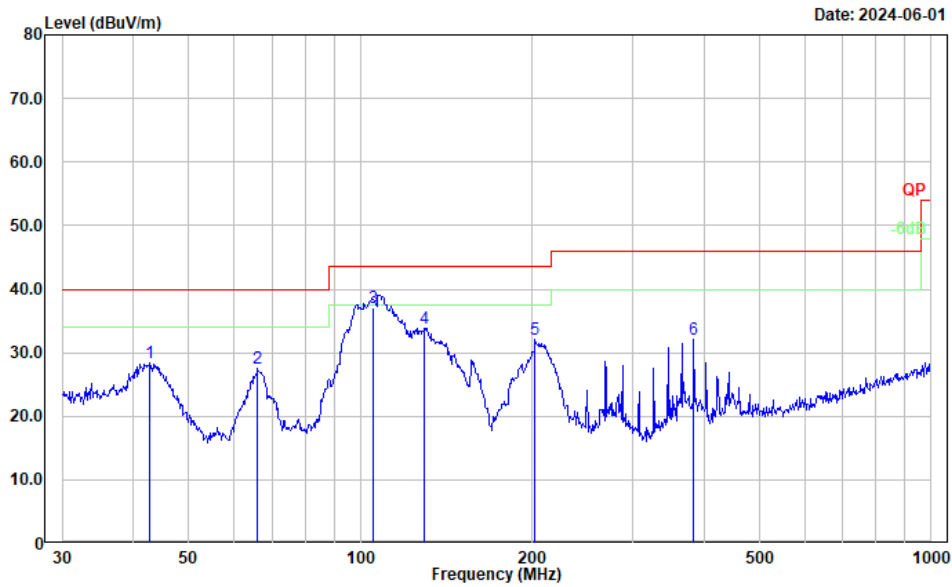
2) 30MHz-1GHz(maximum output power mode, 802.11n ht20 5825MHz)

Project No.: CR231058645-RF
Tester: Carl Xue
Polarization: horizontal
Note: Transmitting 5G WIFI



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	108.267	49.35	-12.60	36.75	43.50	6.75	Peak
2	139.851	48.71	-11.91	36.80	43.50	6.70	Peak
3	202.100	42.60	-12.75	29.85	43.50	13.65	Peak
4	268.485	49.46	-10.97	38.49	46.00	7.51	Peak
5	287.990	43.24	-10.41	32.83	46.00	13.17	Peak
6	345.595	42.75	-9.69	33.06	46.00	12.94	Peak

Project No.: CR231058645-RF
Tester: Carl Xue
Polarization: vertical
Note: Transmitting 5G WIFI



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	42.750	41.79	-13.31	28.48	40.00	11.52	Peak
2	66.034	44.86	-17.40	27.46	40.00	12.54	Peak
3	105.271	50.29	-13.18	37.11	43.50	6.39	QP
4	129.468	44.98	-11.22	33.76	43.50	9.74	Peak
5	202.100	44.79	-12.75	32.04	43.50	11.46	Peak
6	383.932	40.74	-8.61	32.13	46.00	13.87	Peak

3) 1GHz-40GHz**5150-5250MHz:****802.11a Mode:**

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel:				5180	MHz		
10360.000	36.77	PK	H	20.47	57.24	68.20	10.96
10360.000	36.83	PK	V	20.47	57.30	68.20	10.90
15540.000	36.01	PK	H	24.62	60.63	74.00	13.37
15540.000	22.49	AV	H	24.62	47.11	54.00	6.89
15540.000	35.83	PK	V	24.62	60.45	74.00	13.55
15540.000	22.76	AV	V	24.62	47.38	54.00	6.62
Middle Channel:				5200	MHz		
10400.000	35.93	PK	H	20.54	56.47	68.20	11.73
10400.000	36.37	PK	V	20.54	56.91	68.20	11.29
15600.000	36.96	PK	H	24.71	61.67	74.00	12.33
15600.000	22.88	AV	H	24.71	47.59	54.00	6.41
15600.000	36.02	PK	V	24.71	60.73	74.00	13.27
15600.000	22.40	AV	V	24.71	47.11	54.00	6.89
High Channel:				5240	MHz		
10480.000	36.77	PK	H	20.42	57.19	68.20	11.01
10480.000	36.72	PK	V	20.42	57.14	68.20	11.06
15720.000	36.91	PK	H	24.82	61.73	74.00	12.27
15720.000	23.47	AV	H	24.82	48.29	54.00	5.71
15720.000	36.18	PK	V	24.82	61.00	74.00	13.00
15720.000	22.83	AV	V	24.82	47.65	54.00	6.35

802.11n ht20 Mode:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel:				5180	MHz		
10360.000	36.58	PK	H	20.47	57.05	68.20	11.15
10360.000	37.42	PK	V	20.47	57.89	68.20	10.31
15540.000	36.07	PK	H	24.62	60.69	74.00	13.31
15540.000	22.56	AV	H	24.62	47.18	54.00	6.82
15540.000	35.60	PK	V	24.62	60.22	74.00	13.78
15540.000	23.48	AV	V	24.62	48.10	54.00	5.90
Middle Channel:				5200	MHz		
10400.000	36.24	PK	H	20.54	56.78	68.20	11.42
10400.000	36.76	PK	V	20.54	57.30	68.20	10.90
15600.000	36.07	PK	H	24.71	60.78	74.00	13.22
15600.000	22.67	AV	H	24.71	47.38	54.00	6.62
15600.000	36.32	PK	V	24.71	61.03	74.00	12.97
15600.000	23.30	AV	V	24.71	48.01	54.00	5.99
High Channel:				5240	MHz		
10480.000	36.75	PK	H	20.42	57.17	68.20	11.03
10480.000	36.16	PK	V	20.42	56.58	68.20	11.62
15720.000	35.86	PK	H	24.82	60.68	74.00	13.32
15720.000	23.20	AV	H	24.82	48.02	54.00	5.98
15720.000	35.27	PK	V	24.82	60.09	74.00	13.91
15720.000	22.31	AV	V	24.82	47.13	54.00	6.87

802.11n ht40 Mode:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel:				5190	MHz		
10380.000	38.28	PK	H	20.51	58.79	68.20	9.41
10380.000	36.85	PK	V	20.51	57.36	68.20	10.84
15570.000	35.62	PK	H	24.67	60.29	74.00	13.71
15570.000	22.77	AV	H	24.67	47.44	54.00	6.56
15570.000	36.89	PK	V	24.67	61.56	74.00	12.44
15570.000	24.02	AV	V	24.67	48.69	54.00	5.31
High Channel:				5230	MHz		
10460.000	36.09	PK	H	20.45	56.54	68.20	11.66
10460.000	35.28	PK	V	20.45	55.73	68.20	12.47
15690.000	35.33	PK	H	24.77	60.10	74.00	13.90
15690.000	22.13	AV	H	24.77	46.90	54.00	7.10
15690.000	36.67	PK	V	24.77	61.44	74.00	12.56
15690.000	23.37	AV	V	24.77	48.14	54.00	5.86

802.11ac80 Mode:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Middle Channel:				5210	MHz		
10420.000	36.31	PK	H	20.51	56.82	68.20	11.38
10420.000	36.06	PK	V	20.51	56.57	68.20	11.63
15630.000	37.52	PK	H	24.73	62.25	74.00	11.75
15630.000	23.41	AV	H	24.73	48.14	54.00	5.86
15630.000	37.36	PK	V	24.73	62.09	74.00	11.91
15630.000	22.96	AV	V	24.73	47.69	54.00	6.31

5250-5350MHz:**802.11a Mode:**

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 5260 MHz							
10520.000	37.08	PK	H	20.53	57.61	68.20	10.59
10520.000	37.33	PK	V	20.53	57.86	68.20	10.34
15780.000	36.04	PK	H	24.92	60.96	74.00	13.04
15780.000	22.68	AV	H	24.92	47.60	54.00	6.40
15780.000	36.74	PK	V	24.92	61.66	74.00	12.34
15780.000	23.36	AV	V	24.92	48.28	54.00	5.72
Middle Channel: 5280 MHz							
10560.000	37.05	PK	H	20.81	57.86	68.20	10.34
10560.000	38.83	PK	V	20.81	59.64	68.20	8.56
15840.000	36.36	PK	H	25.12	61.48	74.00	12.52
15840.000	22.32	AV	H	25.12	47.44	54.00	6.56
15840.000	36.82	PK	V	25.12	61.94	74.00	12.06
15840.000	23.43	AV	V	25.12	48.55	54.00	5.45
High Channel: 5320 MHz							
10640.000	38.87	PK	H	21.13	60.00	74.00	14.00
10640.000	25.70	AV	H	21.13	46.83	54.00	7.17
10640.000	37.86	PK	V	21.13	58.99	74.00	15.01
10640.000	24.62	AV	V	21.13	45.75	54.00	8.25
15960.000	37.01	PK	H	25.24	62.25	74.00	11.75
15960.000	22.93	AV	H	25.24	48.17	54.00	5.83
15960.000	36.36	PK	V	25.24	61.60	74.00	12.40
15960.000	22.19	AV	V	25.24	47.43	54.00	6.57

802.11n ht20 Mode:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 5260 MHz							
10520.000	38.08	PK	H	20.53	58.61	68.20	9.59
10520.000	37.97	PK	V	20.53	58.50	68.20	9.70
15780.000	37.23	PK	H	24.92	62.15	74.00	11.85
15780.000	23.81	AV	H	24.92	48.73	54.00	5.27
15780.000	37.16	PK	V	24.92	62.08	74.00	11.92
15780.000	23.05	AV	V	24.92	47.97	54.00	6.03
Middle Channel: 5280 MHz							
10560.000	37.57	PK	H	20.81	58.38	68.20	9.82
10560.000	37.90	PK	V	20.81	58.71	68.20	9.49
15840.000	36.08	PK	H	25.12	61.20	74.00	12.80
15840.000	23.86	AV	H	25.12	48.98	54.00	5.02
15840.000	36.81	PK	V	25.12	61.93	74.00	12.07
15840.000	23.35	AV	V	25.12	48.47	54.00	5.53
High Channel: 5320 MHz							
10640.000	38.19	PK	H	21.13	59.32	74.00	14.68
10640.000	24.44	AV	H	21.13	45.57	54.00	8.43
10640.000	36.57	PK	V	21.13	57.70	74.00	16.30
10640.000	24.81	AV	V	21.13	45.94	54.00	8.06
15960.000	37.61	PK	H	25.24	62.85	74.00	11.15
15960.000	23.18	AV	H	25.24	48.42	54.00	5.58
15960.000	37.89	PK	V	25.24	63.13	74.00	10.87
15960.000	23.45	AV	V	25.24	48.69	54.00	5.31

802.11n ht40 Mode:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 5270 MHz							
10540.000	37.91	PK	H	20.68	58.59	68.20	9.61
10540.000	36.36	PK	V	20.68	57.04	68.20	11.16
15810.000	35.48	PK	H	25.00	60.48	74.00	13.52
15810.000	22.24	AV	H	25.00	47.24	54.00	6.76
15810.000	35.52	PK	V	25.00	60.52	74.00	13.48
15810.000	22.98	AV	V	25.00	47.98	54.00	6.02
High Channel: 5310 MHz							
10620.000	37.98	PK	H	21.11	59.09	74.00	14.91
10620.000	24.27	AV	H	21.11	45.38	54.00	8.62
10620.000	37.70	PK	V	21.11	58.81	74.00	15.19
10620.000	24.22	AV	V	21.11	45.33	54.00	8.67
15930.000	36.91	PK	H	25.30	62.21	74.00	11.79
15930.000	23.05	AV	H	25.30	48.35	54.00	5.65
15930.000	36.89	PK	V	25.30	62.19	74.00	11.81
15930.000	22.50	AV	V	25.30	47.80	54.00	6.20

802.11ac80 Mode:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Middle Channel:				5290	MHz		
10580.000	38.07	PK	H	20.96	59.03	68.20	9.17
10580.000	39.28	PK	V	20.96	60.24	68.20	7.96
15870.000	37.16	PK	H	25.23	62.39	74.00	11.61
15870.000	23.76	AV	H	25.23	48.99	54.00	5.01
15870.000	36.56	PK	V	25.23	61.79	74.00	12.21
15870.000	22.70	AV	V	25.23	47.93	54.00	6.07

5470-5725MHz**802.11a Mode:**

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel:				5500	MHz		
11000.000	36.03	PK	H	21.53	57.56	74.00	16.44
11000.000	22.40	AV	H	21.53	43.93	54.00	10.07
11000.000	35.46	PK	V	21.53	56.99	74.00	17.01
11000.000	22.35	AV	V	21.53	43.88	54.00	10.12
16500.000	36.19	PK	H	25.93	62.12	68.20	6.08
16500.000	35.31	PK	V	25.93	61.24	68.20	6.96
Middle Channel:				5580	MHz		
11160.000	36.23	PK	H	21.38	57.61	74.00	16.39
11160.000	23.63	AV	H	21.38	45.01	54.00	8.99
11160.000	35.81	PK	V	21.38	57.19	74.00	16.81
11160.000	23.19	AV	V	21.38	44.57	54.00	9.43
16740.000	36.48	PK	H	26.59	63.07	68.20	5.13
16740.000	34.49	PK	V	26.59	61.08	68.20	7.12
High Channel:				5700	MHz		
11400.000	35.97	PK	H	21.91	57.88	74.00	16.12
11400.000	22.81	AV	H	21.91	44.72	54.00	9.28
11400.000	36.01	PK	V	21.91	57.92	74.00	16.08
11400.000	24.25	AV	V	21.91	46.16	54.00	7.84
17100.000	34.27	PK	H	28.51	62.78	68.20	5.42
17100.000	34.04	PK	V	28.51	62.55	68.20	5.65

802.11n ht20 Mode:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel:				5500	MHz		
11000.000	34.74	PK	H	21.53	56.27	74.00	17.73
11000.000	22.02	AV	H	21.53	43.55	54.00	10.45
11000.000	34.88	PK	V	21.53	56.41	74.00	17.59
11000.000	22.34	AV	V	21.53	43.87	54.00	10.13
16500.000	35.11	PK	H	25.93	61.04	68.20	7.16
16500.000	34.69	PK	V	25.93	60.62	68.20	7.58
Middle Channel:				5580	MHz		
11160.000	35.27	PK	H	21.38	56.65	74.00	17.35
11160.000	22.72	AV	H	21.38	44.10	54.00	9.90
11160.000	35.18	PK	V	21.38	56.56	74.00	17.44
11160.000	22.60	AV	V	21.38	43.98	54.00	10.02
16740.000	35.86	PK	H	26.59	62.45	68.20	5.75
16740.000	35.03	PK	V	26.59	61.62	68.82	7.20
High Channel:				5700	MHz		
11400.000	35.98	PK	H	21.91	57.89	74.00	16.11
11400.000	23.36	AV	H	21.91	45.27	54.00	8.73
11400.000	36.65	PK	V	21.91	58.56	74.00	15.44
11400.000	22.97	AV	V	21.91	44.88	54.00	9.12
17100.000	39.69	PK	H	28.51	68.20	74.00	4.73
17100.000	39.69	PK	V	28.51	68.20	54.00	3.79

802.11n ht40 Mode:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 5510 MHz							
11020.000	35.18	PK	H	21.52	56.70	74.00	17.30
11020.000	22.67	AV	H	21.52	44.19	54.00	9.81
11020.000	35.48	PK	V	21.52	57.00	74.00	17.00
11020.000	22.95	AV	V	21.52	44.47	54.00	9.53
16530.000	35.44	PK	H	26.18	61.62	68.20	6.58
16530.000	34.82	PK	V	26.18	61.00	68.20	7.20
Middle Channel: 5550 MHz							
11100.000	35.23	PK	H	21.47	56.70	74.00	17.30
11100.000	23.47	AV	H	21.47	44.94	54.00	9.06
11100.000	35.74	PK	V	21.47	57.21	74.00	16.79
11100.000	23.27	AV	V	21.47	44.74	54.00	9.26
16650.000	35.56	PK	H	26.67	62.23	68.20	5.97
16650.000	35.69	PK	V	26.67	62.36	68.20	5.84
High Channel: 5670 MHz							
11340.000	35.78	PK	H	21.86	57.64	74.00	16.36
11340.000	23.06	AV	H	21.86	44.92	54.00	9.08
11340.000	34.58	PK	V	21.86	56.44	74.00	17.56
11340.000	22.00	AV	V	21.86	43.86	54.00	10.14
17010.000	40.08	PK	H	28.12	68.20	74.00	7.85
17010.000	40.08	PK	V	28.12	68.20	54.00	7.84

802.11ac80 Mode:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel:				5530	MHz		
11060.000	35.48	PK	H	21.49	56.97	74.00	17.03
11060.000	22.17	AV	H	21.49	43.66	54.00	10.34
11060.000	36.23	PK	V	21.49	57.72	74.00	16.28
11060.000	22.80	AV	V	21.49	44.29	54.00	9.71
16590.000	34.91	PK	H	26.68	61.59	68.20	6.61
16590.000	35.22	PK	V	26.68	61.90	68.20	6.30
High Channel:				5610	MHz		
11220.000	36.22	PK	H	21.43	57.65	74.00	16.35
11220.000	23.43	AV	H	21.43	44.86	54.00	9.14
11220.000	35.75	PK	V	21.43	57.18	74.00	16.82
11220.000	22.78	AV	V	21.43	44.21	54.00	9.79
16830.000	41.26	PK	H	26.94	68.20	74.00	6.23
16830.000	41.26	PK	V	26.94	68.20	54.00	6.18

5725-5850MHz**802.11a Mode:**

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel:				5745	MHz		
11490.000	36.14	PK	H	21.49	57.63	74.00	16.37
11490.000	23.65	AV	H	21.49	45.14	54.00	8.86
11490.000	36.62	PK	V	21.49	58.11	74.00	15.89
11490.000	23.08	AV	V	21.49	44.57	54.00	9.43
17235.000	35.62	PK	H	28.71	64.33	68.20	3.87
17235.000	34.90	PK	V	28.71	63.61	68.20	4.59
Middle Channel:				5785	MHz		
11570.000	36.59	PK	H	21.71	58.30	74.00	15.70
11570.000	22.67	AV	H	21.71	44.38	54.00	9.62
11570.000	35.94	PK	V	21.71	57.65	74.00	16.35
11570.000	22.17	AV	V	21.71	43.88	54.00	10.12
17355.000	34.83	PK	H	29.35	64.18	68.20	4.02
17355.000	35.01	PK	V	29.35	64.36	68.20	3.84
High Channel:				5825	MHz		
11650.000	36.66	PK	H	22.04	58.70	74.00	15.30
11650.000	22.94	AV	H	22.04	44.98	54.00	9.02
11650.000	36.08	PK	V	22.04	58.12	74.00	15.88
11650.000	22.33	AV	V	22.04	44.37	54.00	9.63
17475.000	35.14	PK	H	29.89	65.03	68.20	3.17
17475.000	34.54	PK	V	29.89	64.43	68.20	3.77

802.11n ht20 Mode:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel:				5745	MHz		
11490.000	36.11	PK	H	21.49	57.60	74.00	16.40
11490.000	22.72	AV	H	21.49	44.21	54.00	9.79
11490.000	36.25	PK	V	21.49	57.74	74.00	16.26
11490.000	23.24	AV	V	21.49	44.73	54.00	9.27
17235.000	35.52	PK	H	28.71	64.23	68.20	3.97
17235.000	34.06	PK	V	28.71	62.77	68.20	5.43
Middle Channel:				5785	MHz		
11570.000	34.76	PK	H	21.71	56.47	74.00	17.53
11570.000	22.02	AV	H	21.71	43.73	54.00	10.27
11570.000	35.70	PK	V	21.71	57.41	74.00	16.59
11570.000	22.67	AV	V	21.71	44.38	54.00	9.62
17355.000	34.59	PK	H	29.35	63.94	68.20	4.26
17355.000	34.56	PK	V	29.35	63.91	68.20	4.29
High Channel:				5825	MHz		
11650.000	36.22	PK	H	22.04	58.26	74.00	15.74
11650.000	22.83	AV	H	22.04	44.87	54.00	9.13
11650.000	35.96	PK	V	22.04	58.00	74.00	16.00
11650.000	22.64	AV	V	22.04	44.68	54.00	9.32
17475.000	34.54	PK	H	29.89	64.43	68.20	3.77
17475.000	34.19	PK	V	29.89	64.08	68.20	4.12

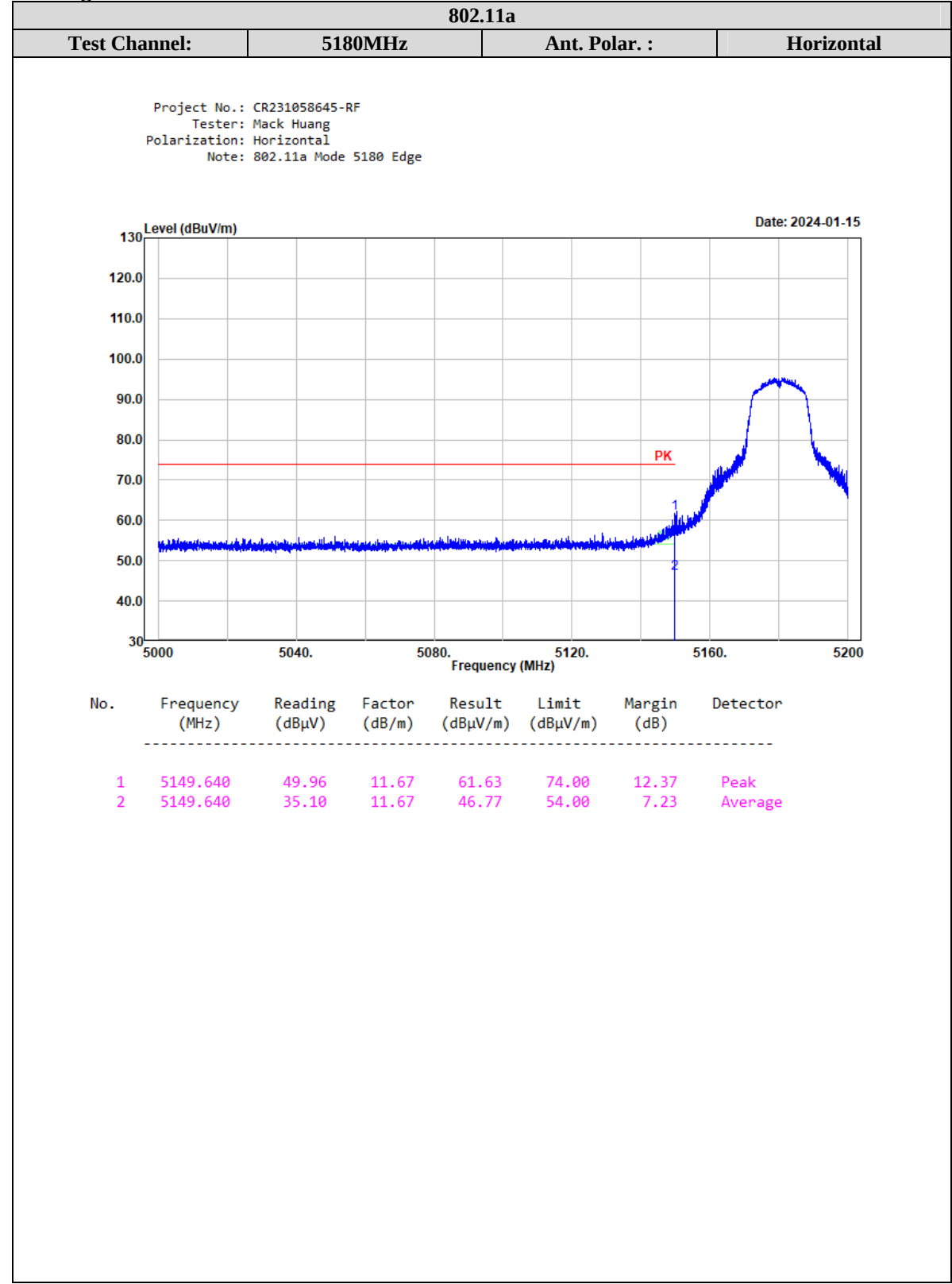
802.11n ht40 Mode:

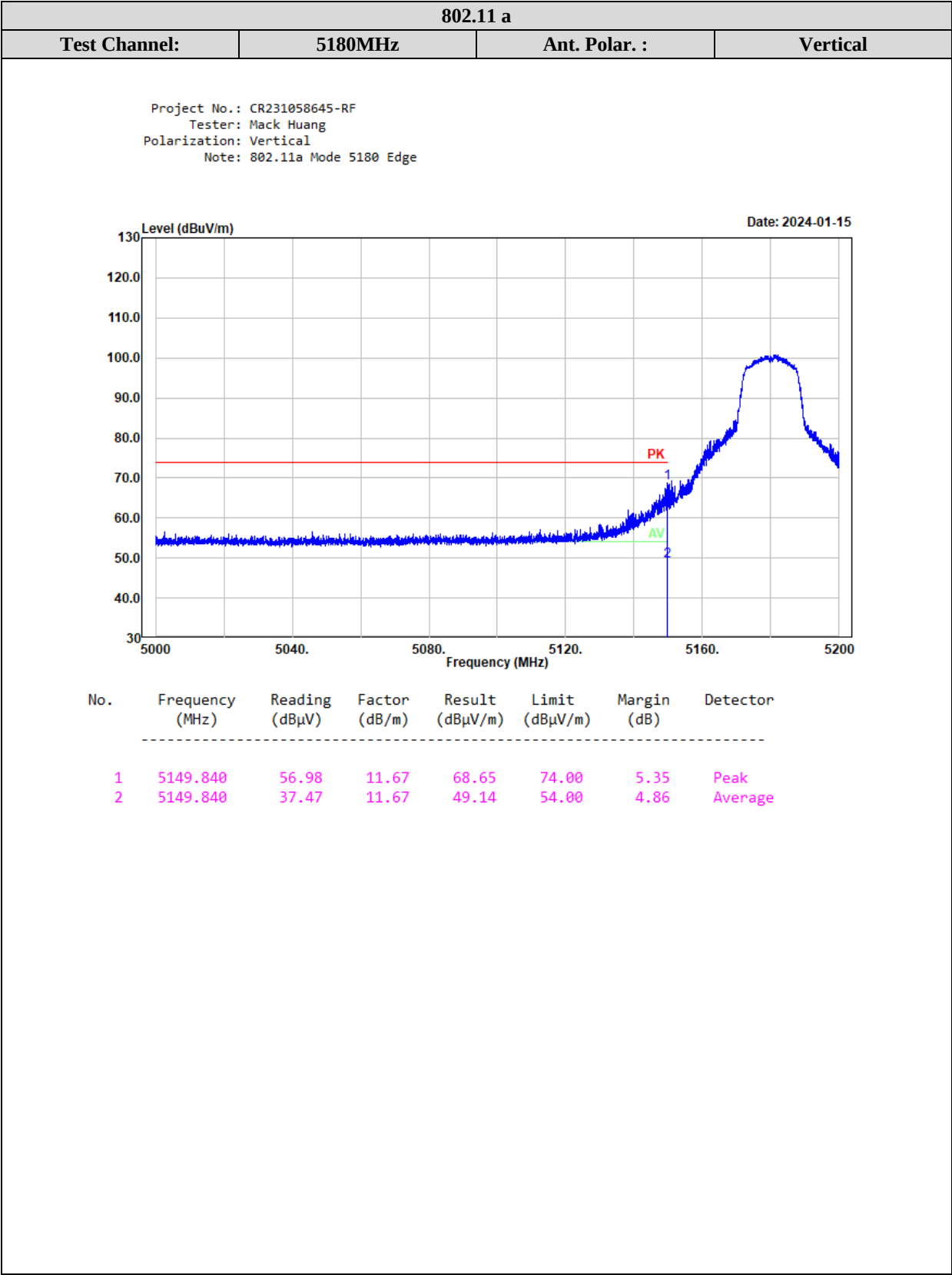
Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel:				5755	MHz		
11510.000	38.09	PK	H	21.48	59.57	74.00	14.43
11510.000	23.82	AV	H	21.48	45.30	54.00	8.70
11510.000	37.81	PK	V	21.48	59.29	74.00	14.71
11510.000	24.14	AV	V	21.48	45.62	54.00	8.38
17265.000	34.53	PK	H	28.79	63.32	68.20	4.88
17265.000	35.51	PK	V	28.79	64.30	68.20	3.90
High Channel:				5795	MHz		
11590.000	35.96	PK	H	21.78	57.74	74.00	16.26
11590.000	23.18	AV	H	21.78	44.96	54.00	9.04
11590.000	36.32	PK	V	21.78	58.10	74.00	15.90
11590.000	23.24	AV	V	21.78	45.02	54.00	8.98
17385.000	34.96	PK	H	29.59	64.55	68.20	3.65
17385.000	34.86	PK	V	29.59	64.45	68.20	3.75

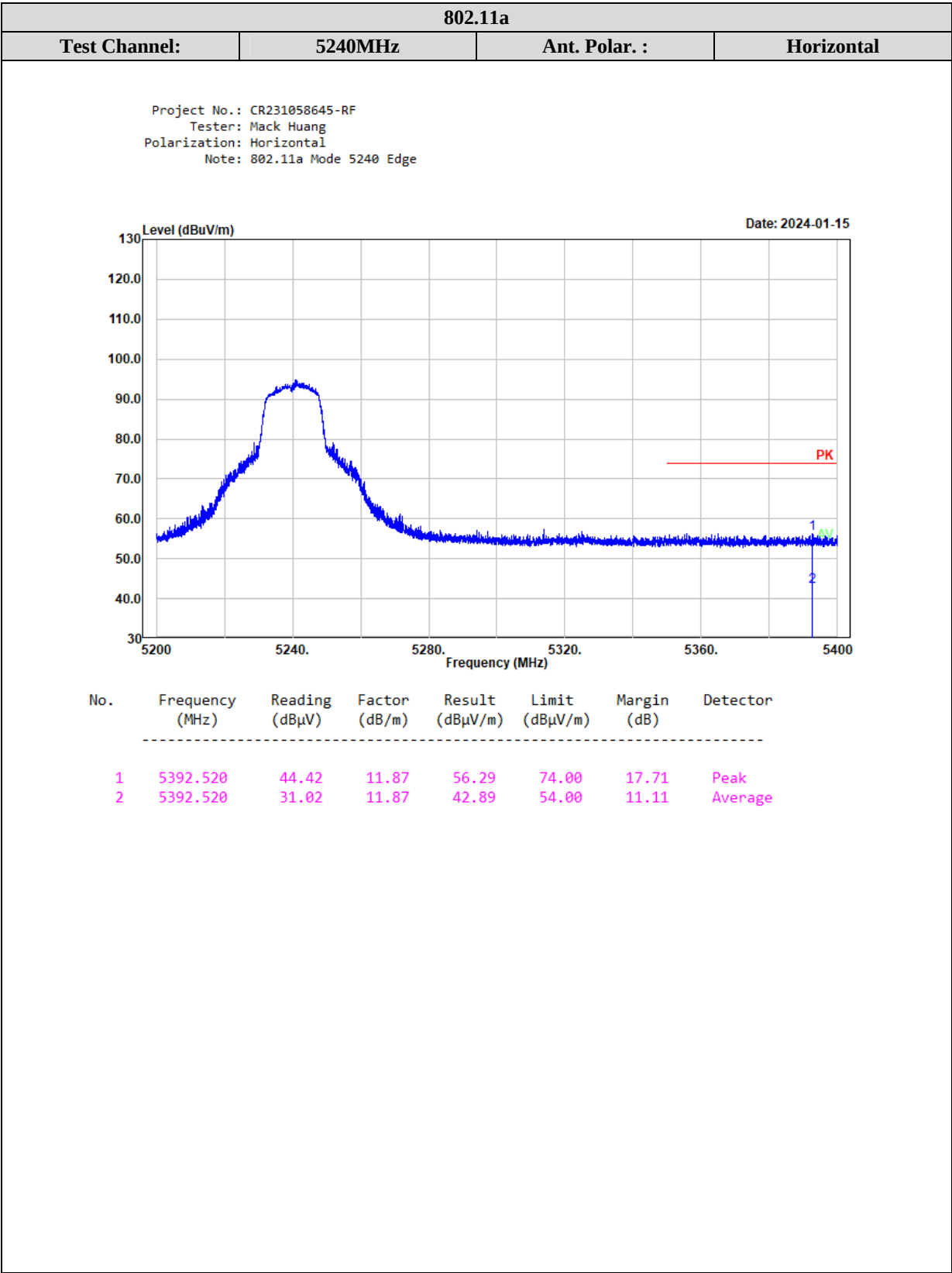
802.11ac80 Mode:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Middle Channel:				5775	MHz		
11550.000	39.03	PK	H	21.63	60.66	74.00	13.34
11550.000	25.22	AV	H	21.63	46.85	54.00	7.15
11550.000	37.07	PK	V	21.63	58.70	74.00	15.30
11550.000	24.43	AV	V	21.63	46.06	54.00	7.94
17325.000	34.73	PK	H	29.11	63.84	68.20	4.36
17325.000	35.15	PK	V	29.11	64.26	68.20	3.94

Band Edge Test Plots:







802.11 a

Test Channel:

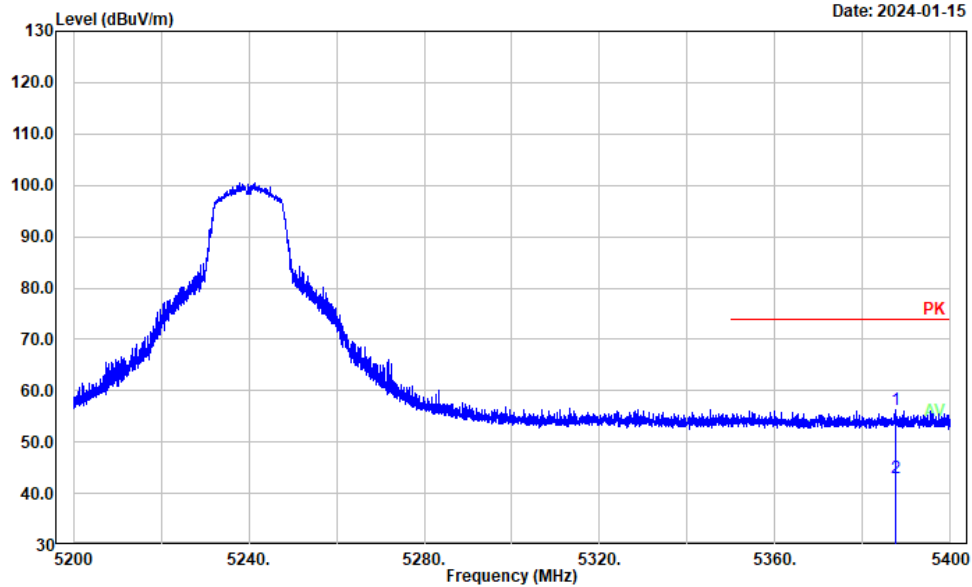
5240MHz

Ant. Polar. :

Vertical

Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Vertical
Note: 802.11a Mode 5240 Edge

Date: 2024-01-15



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5387.560	44.45	11.88	56.33	74.00	17.67	Peak
2	5387.560	31.20	11.88	43.08	54.00	10.92	Average

802.11n ht20

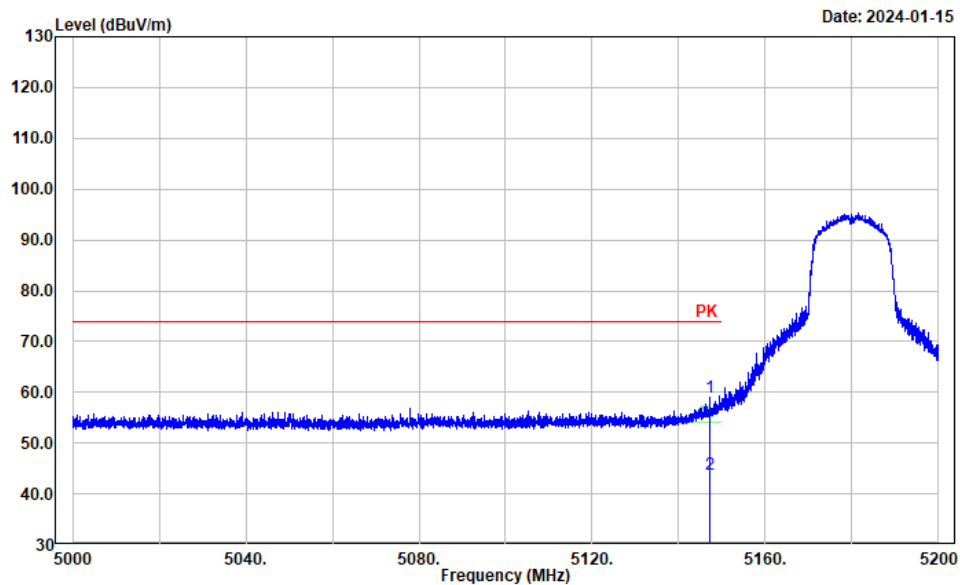
Test Channel:

5180MHz

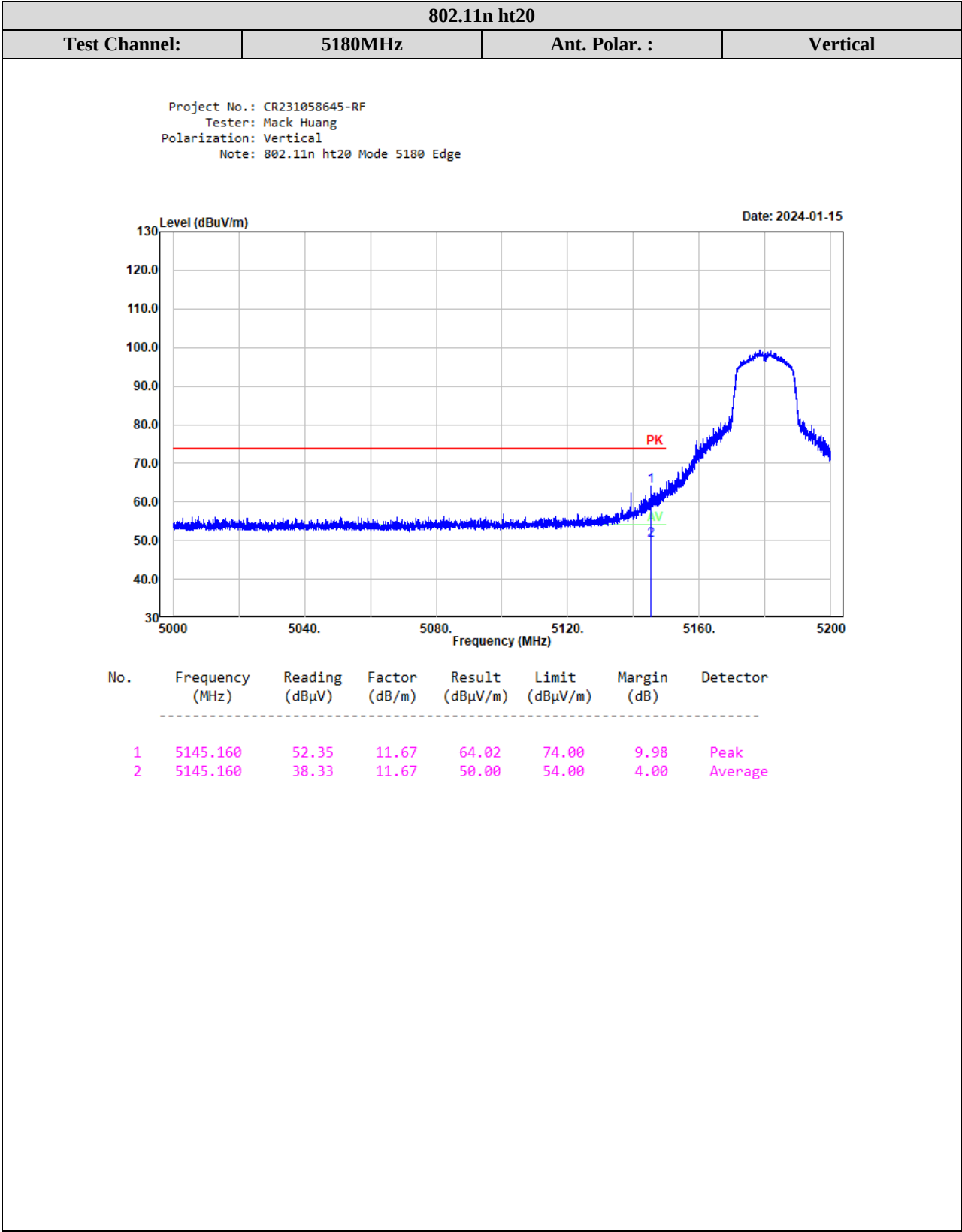
Ant. Polar. :

Horizontal

Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Horizontal
Note: 802.11n ht20 Mode 5180 Edge



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5147.240	47.35	11.68	59.03	74.00	14.97	Peak
2	5147.240	32.27	11.68	43.95	54.00	10.05	Average



802.11n ht20

Test Channel:

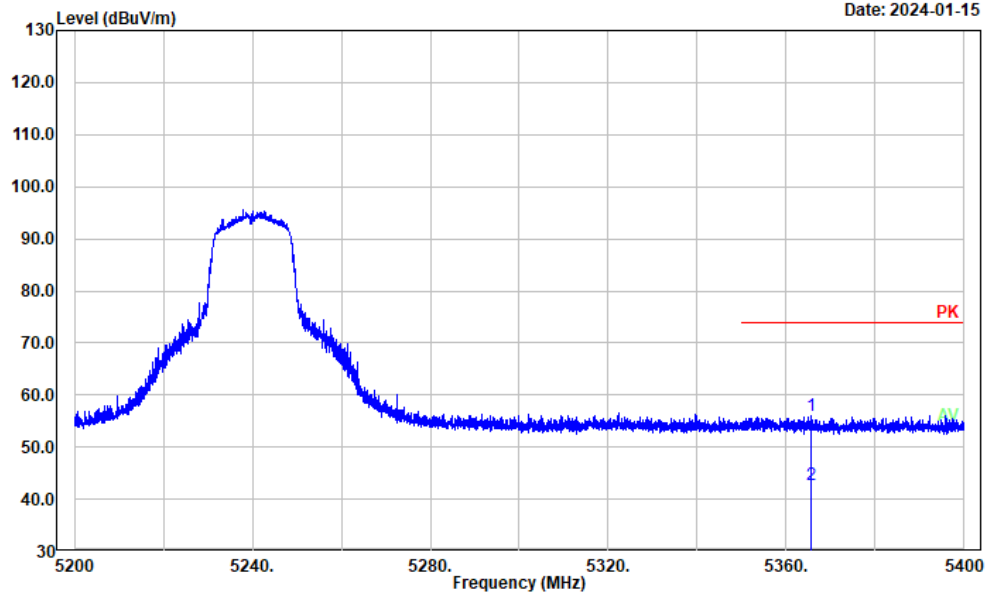
5240MHz

Ant. Polar. :

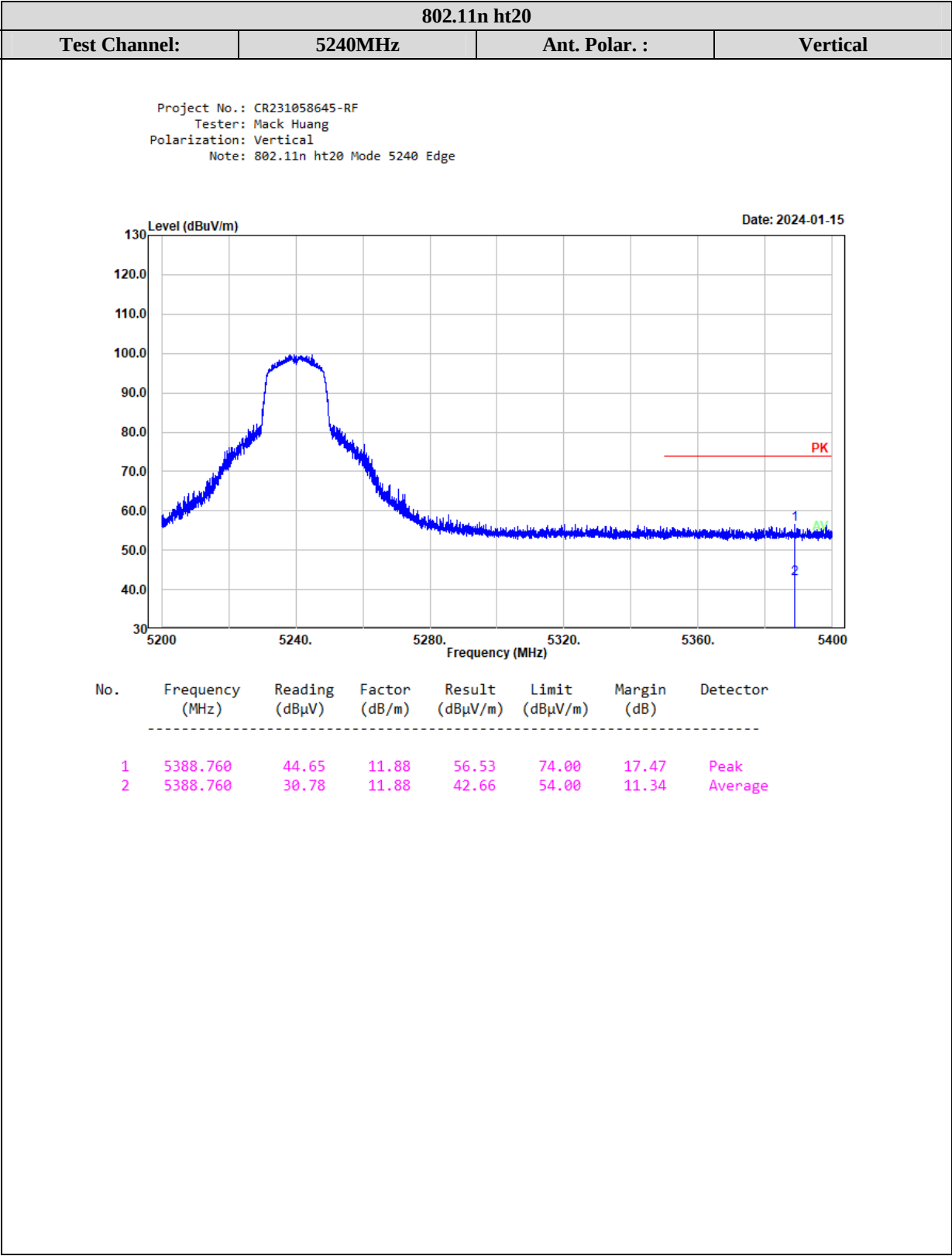
Horizontal

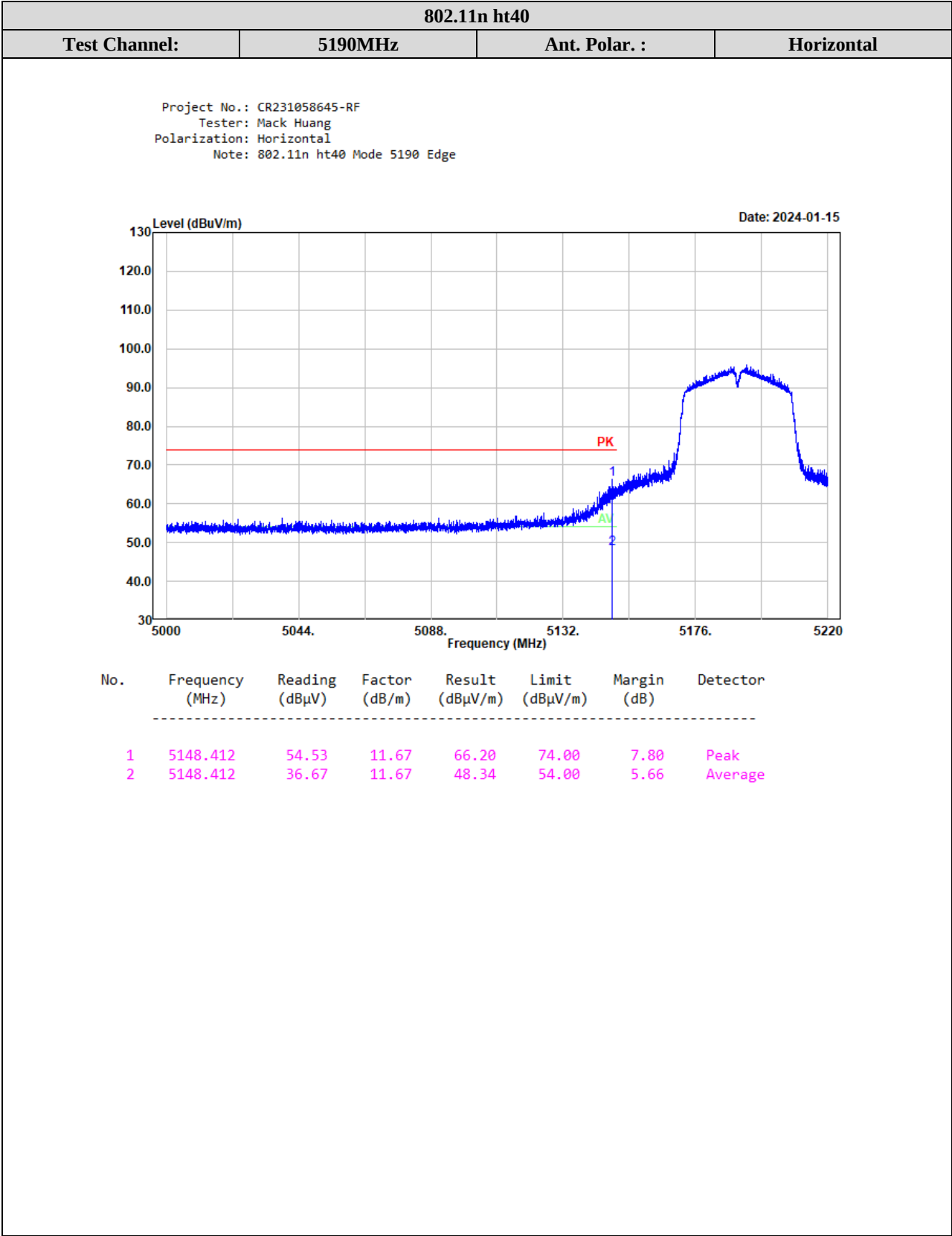
Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Horizontal
Note: 802.11n ht20 Mode 5240 Edge

Date: 2024-01-15



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5365.640	44.00	11.92	55.92	74.00	18.08	Peak
2	5365.640	30.69	11.92	42.61	54.00	11.39	Average





802.11n ht40

Test Channel:

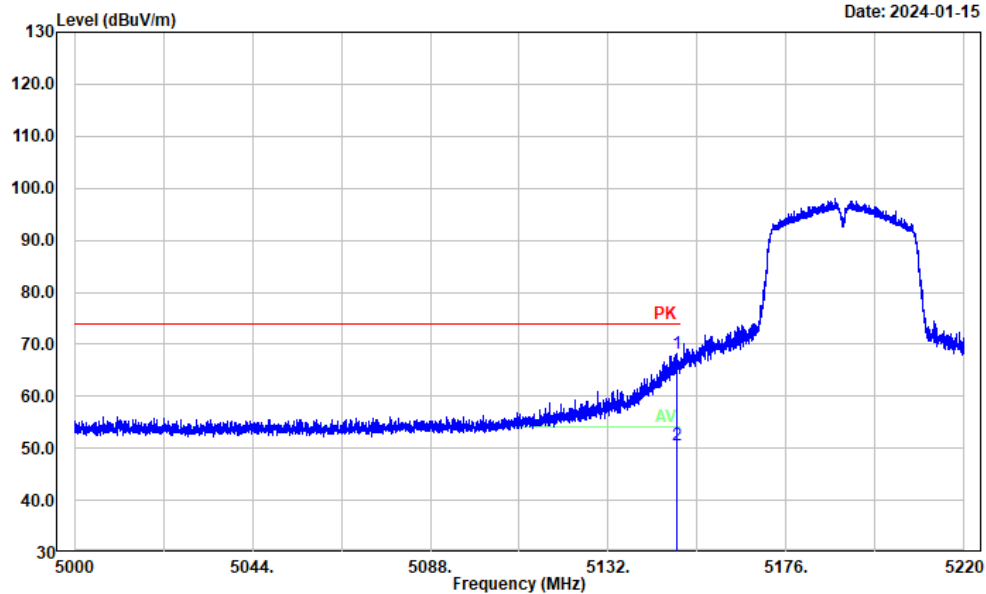
5190MHz

Ant. Polar. :

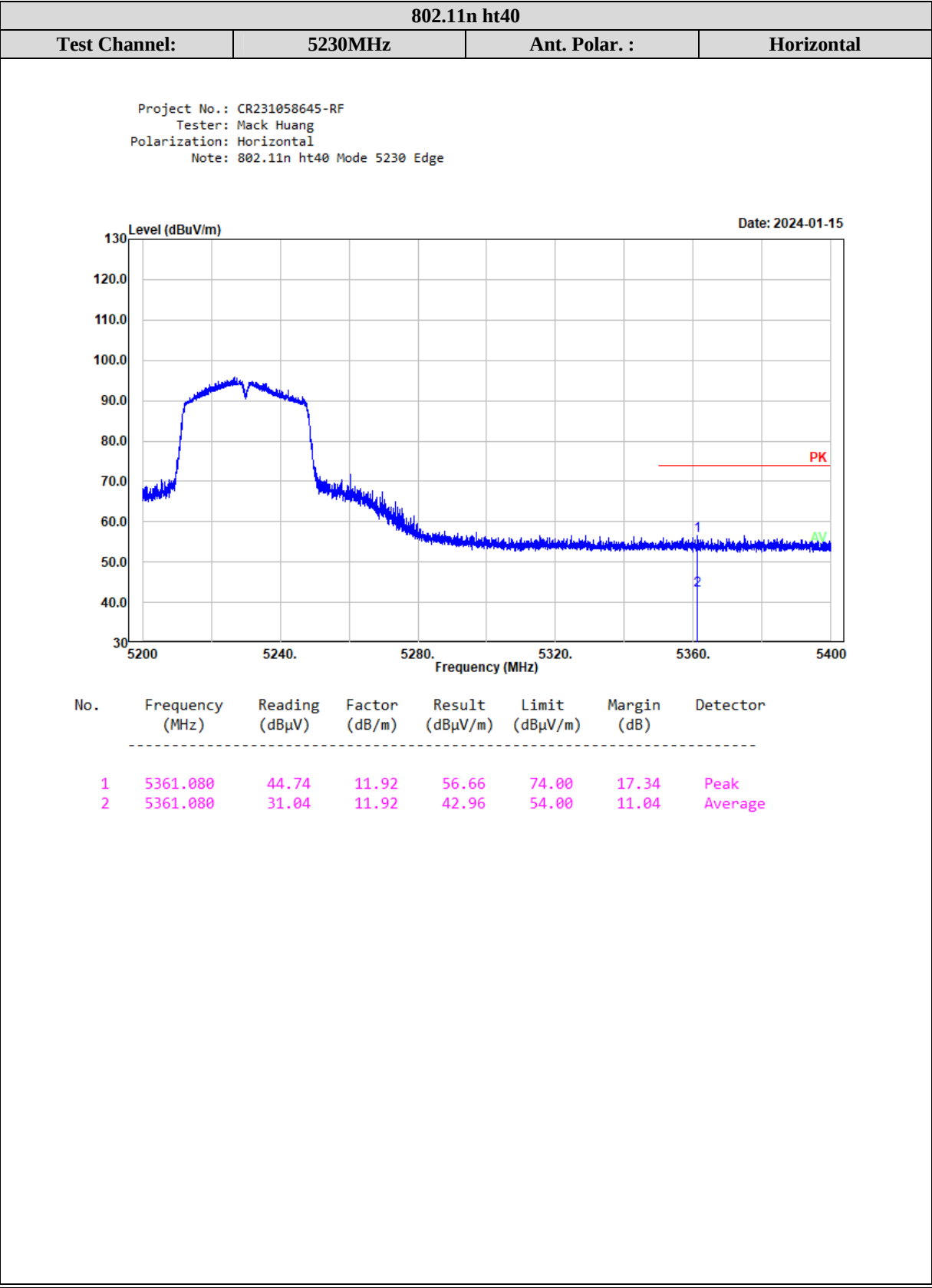
Vertical

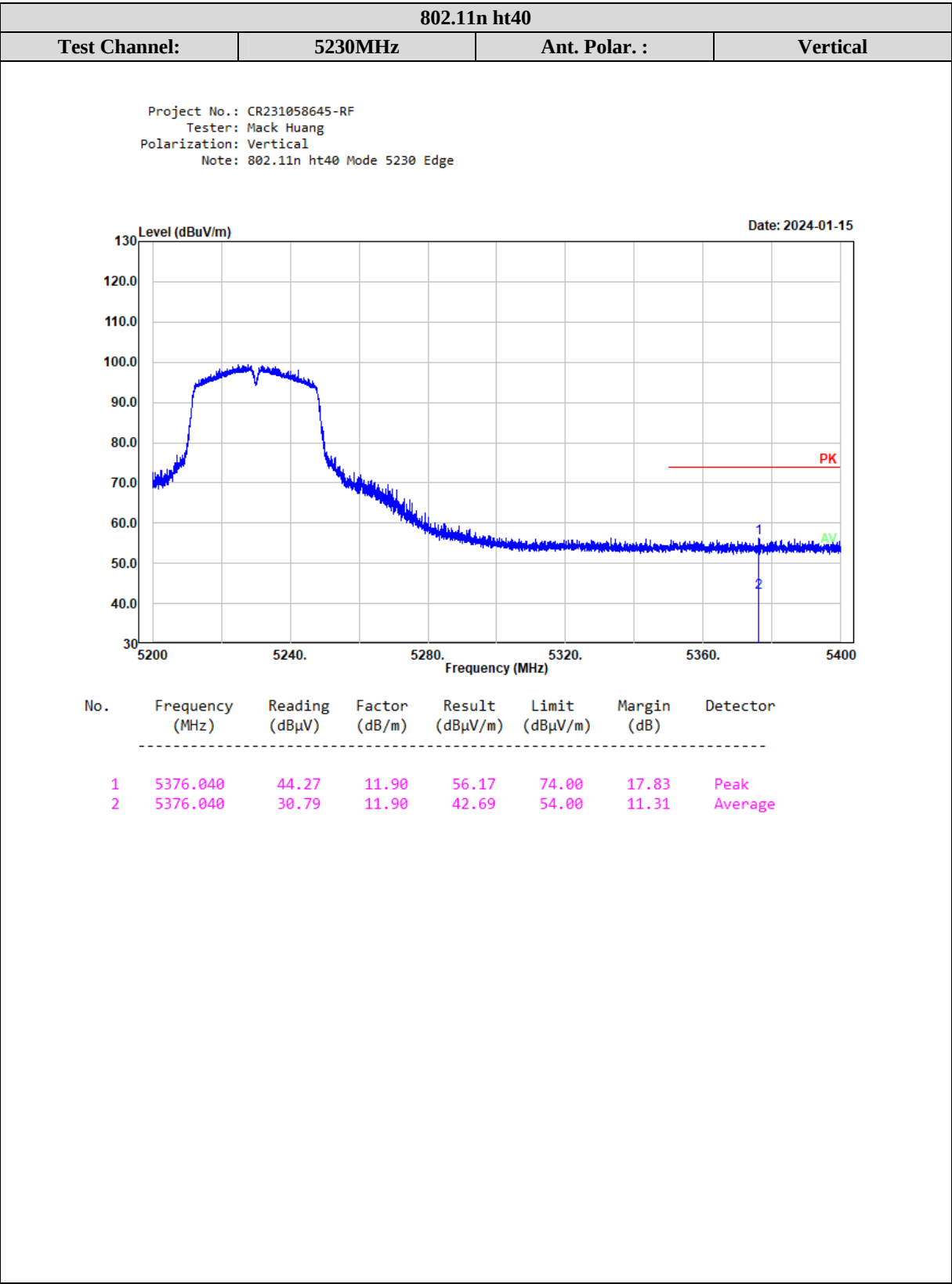
Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Vertical
Note: 802.11n ht40 Mode 5190 Edge

Date: 2024-01-15



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5148.808	56.43	11.67	68.10	74.00	5.90	Peak
2	5148.808	38.79	11.67	50.46	54.00	3.54	Average





802.11ac vht80

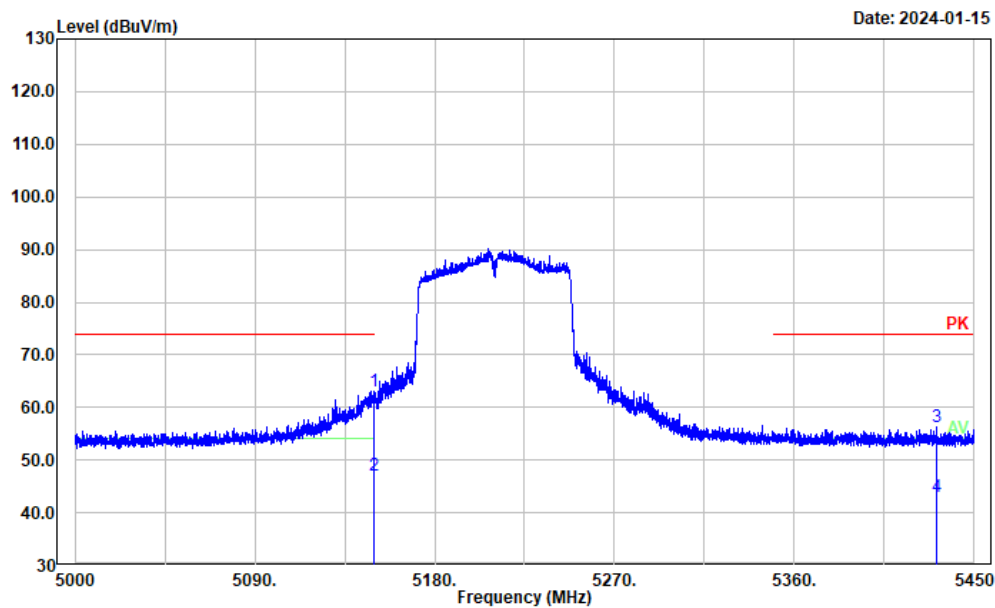
Test Channel:

5210MHz

Ant. Polar. :

Horizontal

Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Horizontal
Note: 802.11ac80 Mode 5210 Edge



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5149.670	51.32	11.67	62.99	74.00	11.01	Peak
2	5149.670	35.47	11.67	47.14	54.00	6.86	Average
3	5431.100	44.39	11.87	56.26	74.00	17.74	Peak
4	5431.100	31.07	11.87	42.94	54.00	11.06	Average

802.11ac vht80

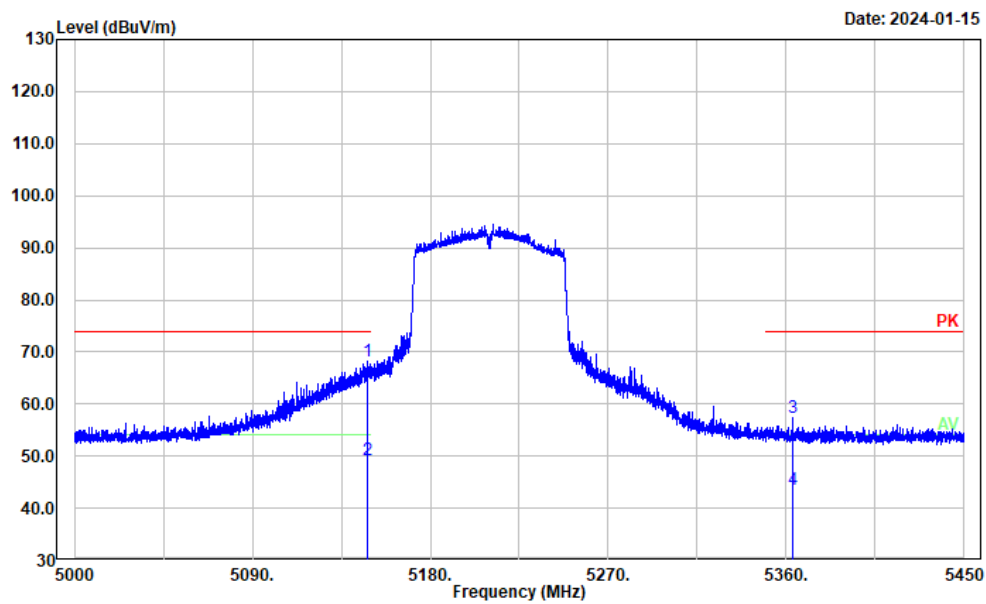
Test Channel:

5210MHz

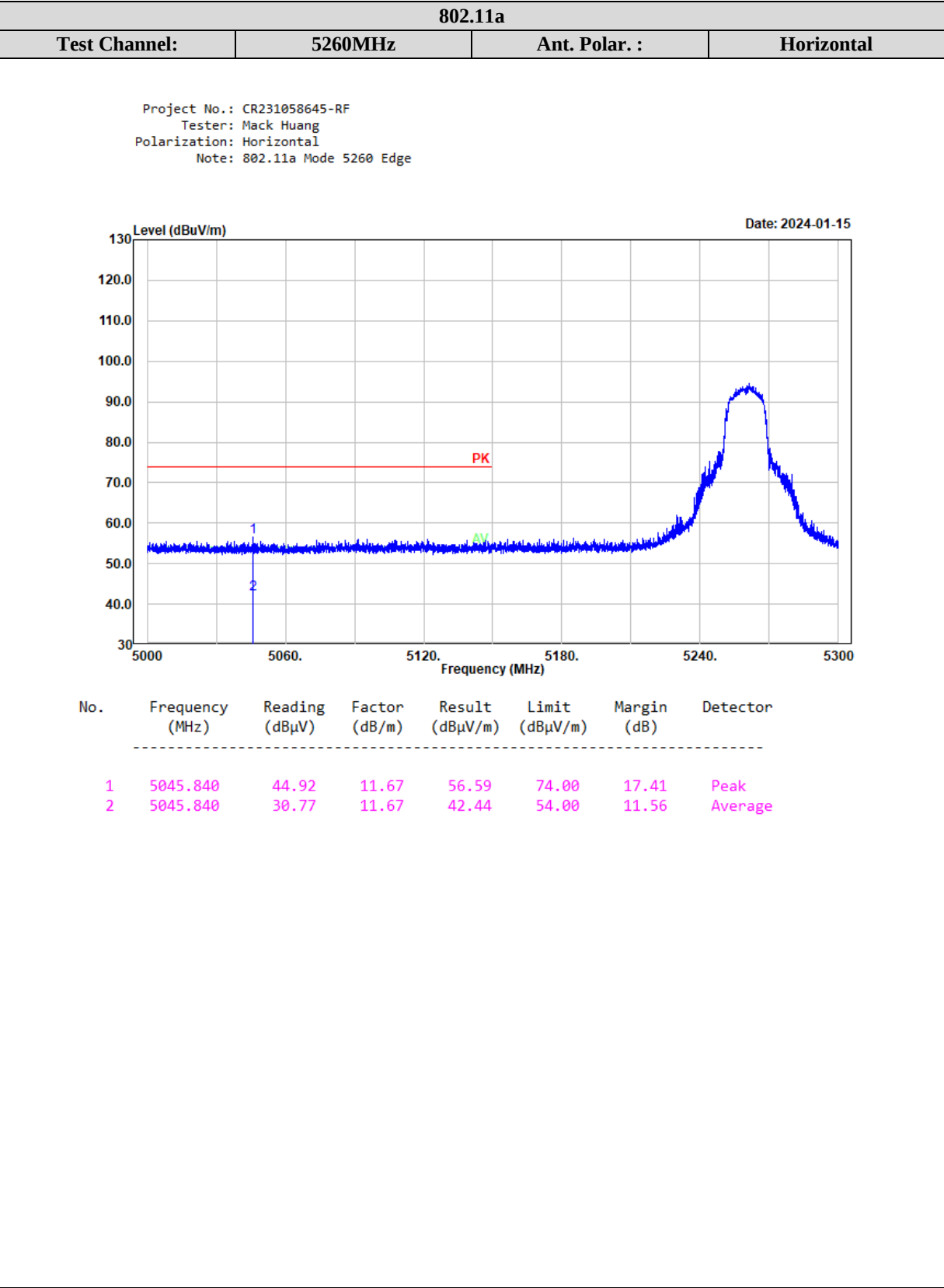
Ant. Polar. :

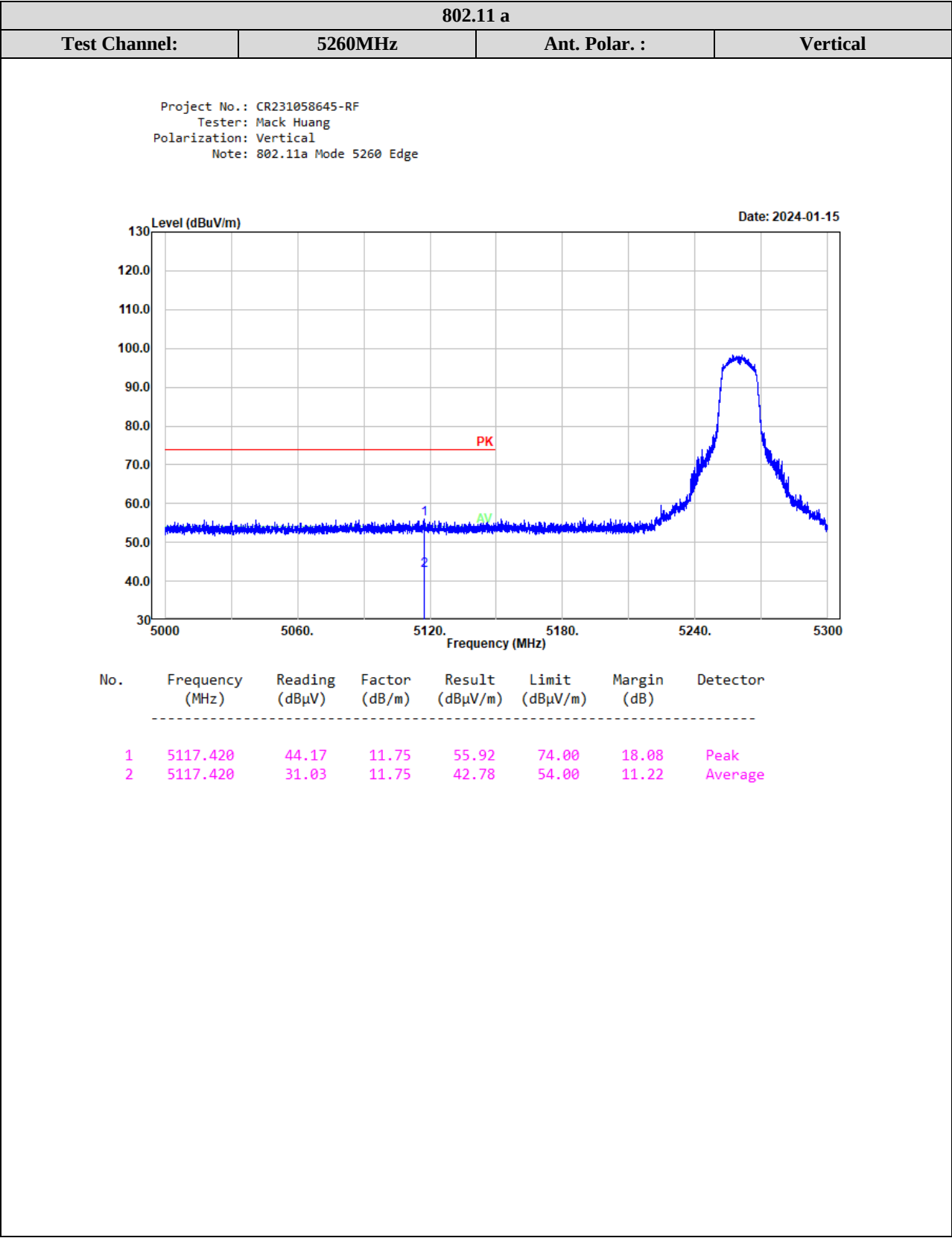
Vertical

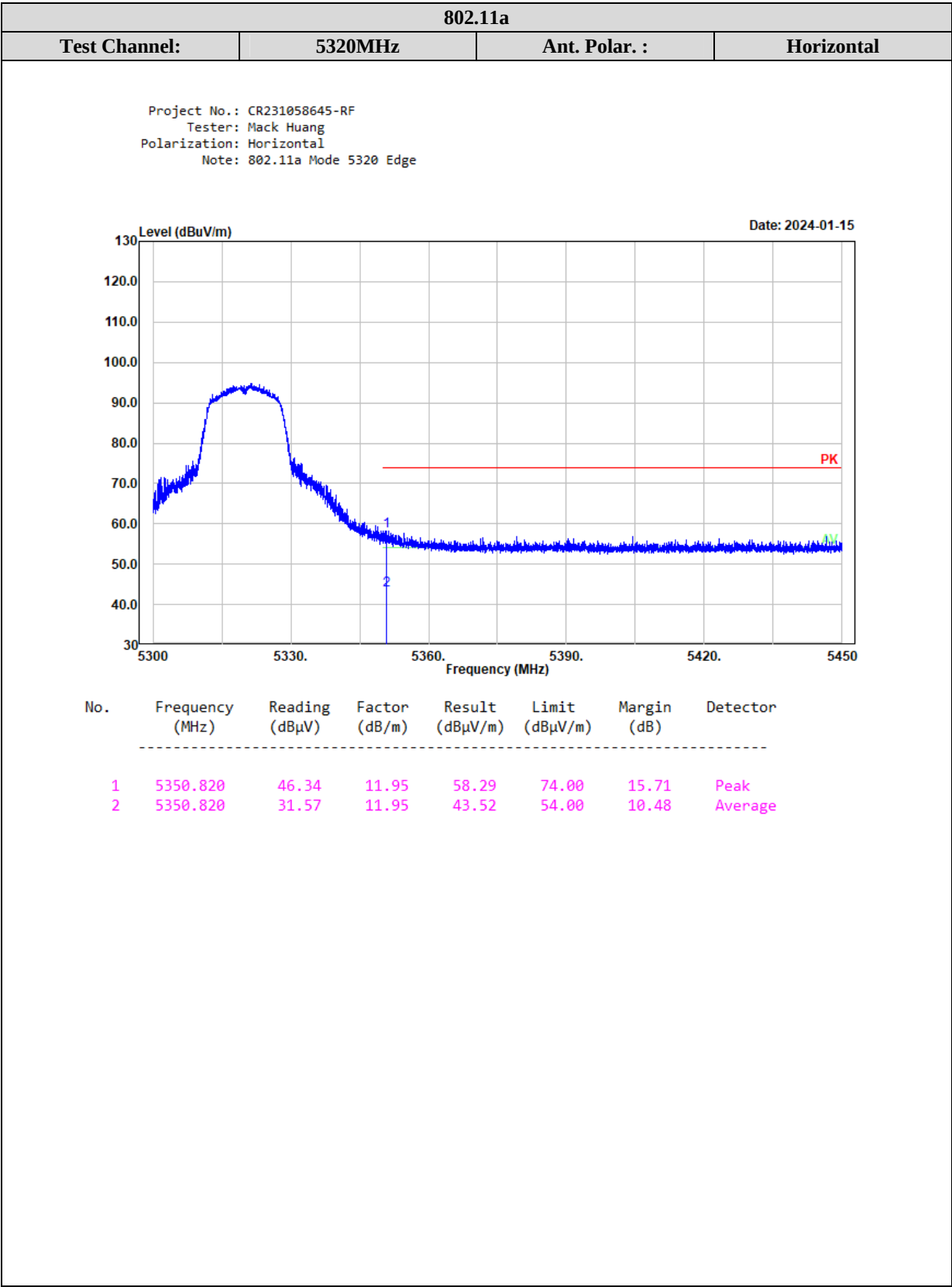
Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Vertical
Note: 802.11ac80 Mode 5210 Edge

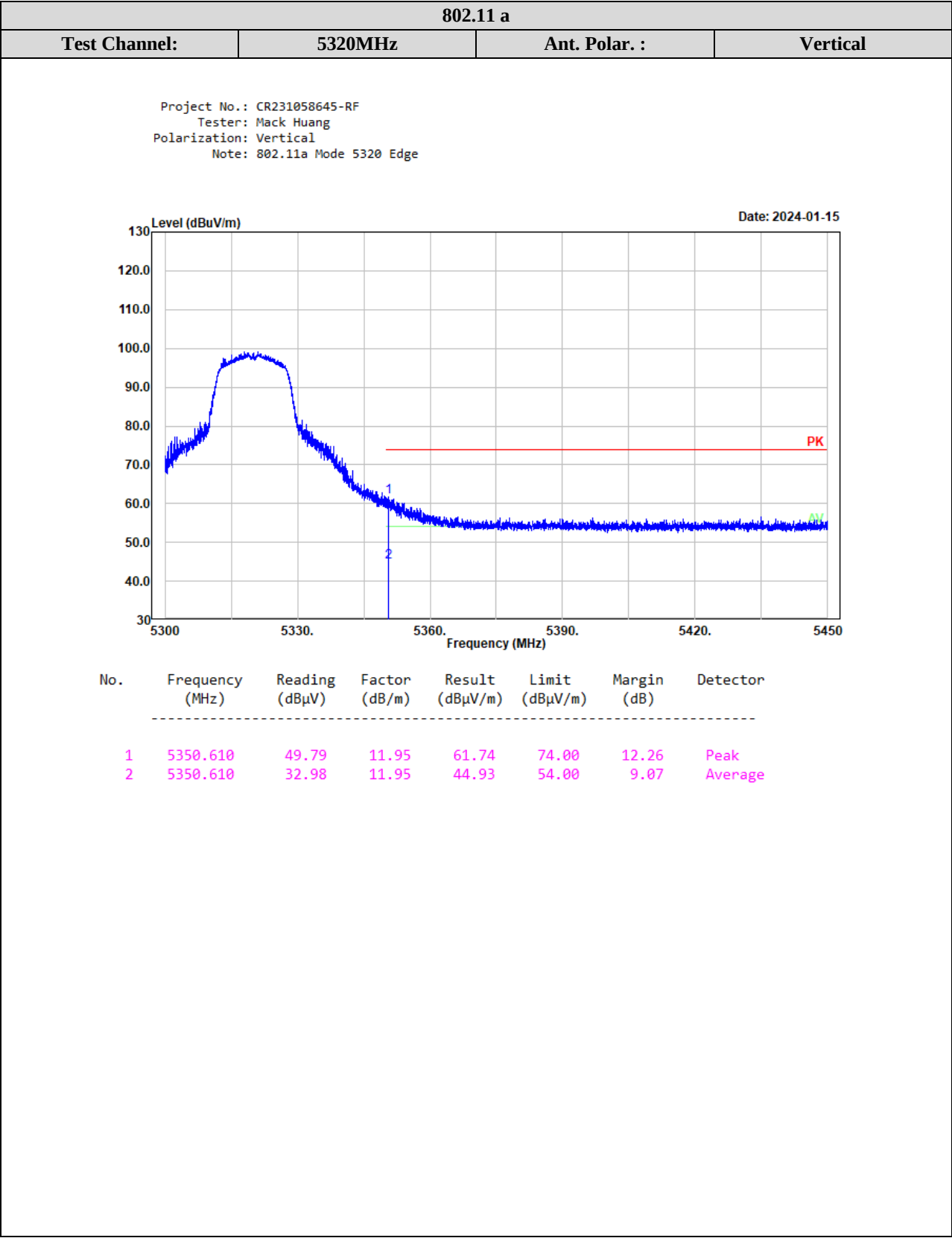


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5148.410	56.44	11.67	68.11	74.00	5.89	Peak
2	5148.410	37.48	11.67	49.15	54.00	4.85	Average
3	5363.420	45.49	11.92	57.41	74.00	16.59	Peak
4	5363.420	31.66	11.92	43.58	54.00	10.42	Average









802.11n ht20

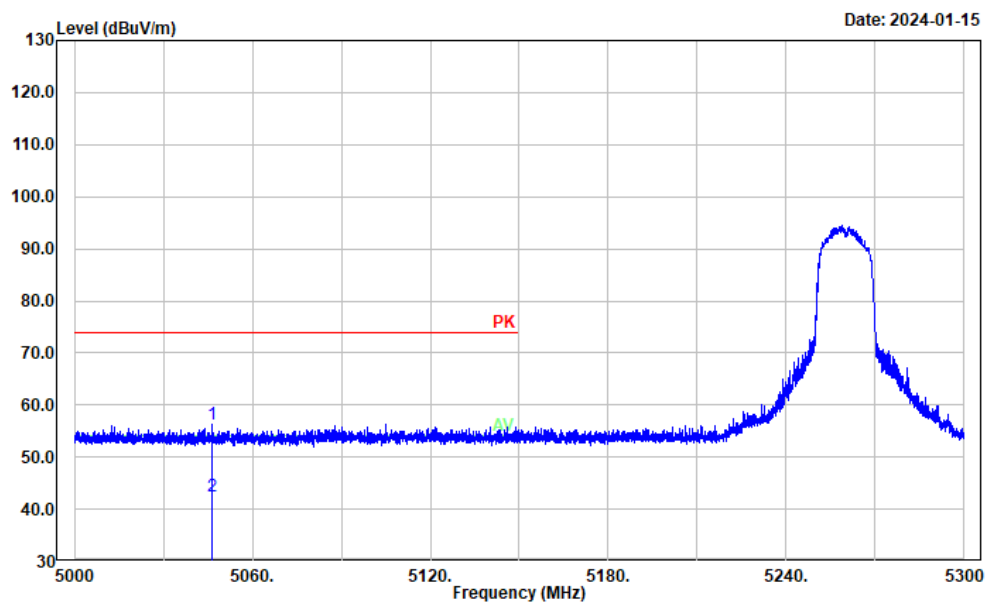
Test Channel:

5260MHz

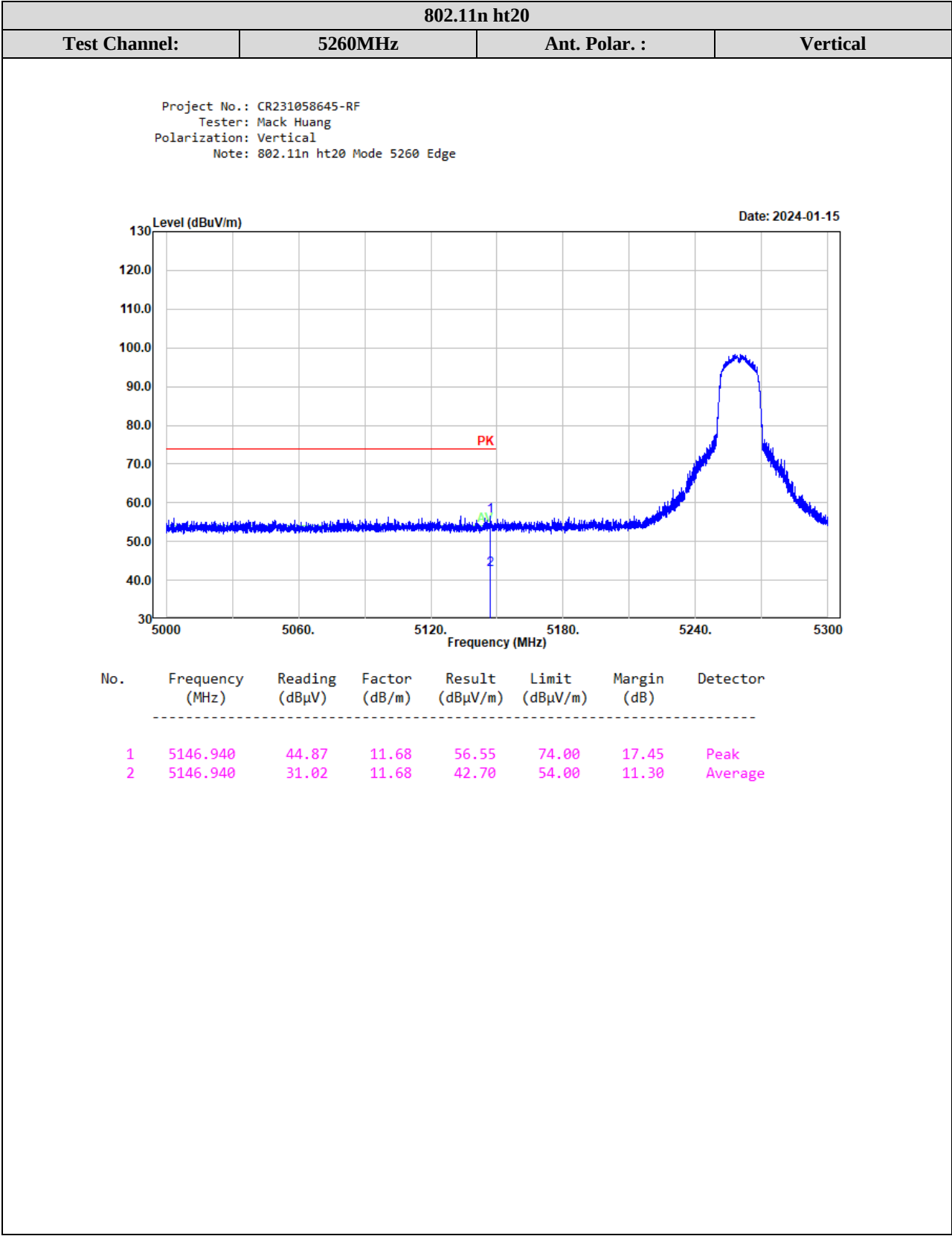
Ant. Polar. :

Horizontal

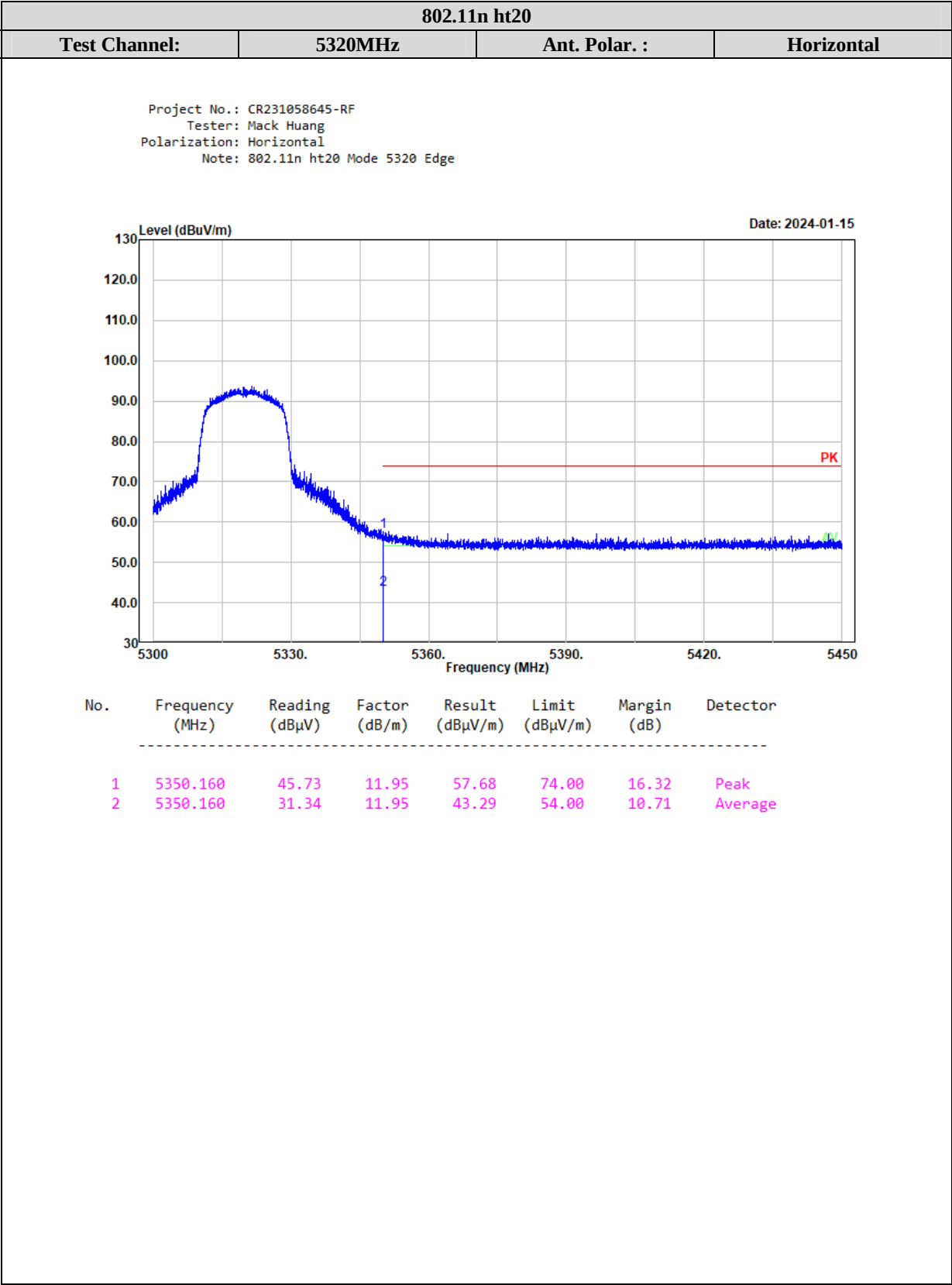
Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Horizontal
Note: 802.11n ht20 Mode 5260 Edge

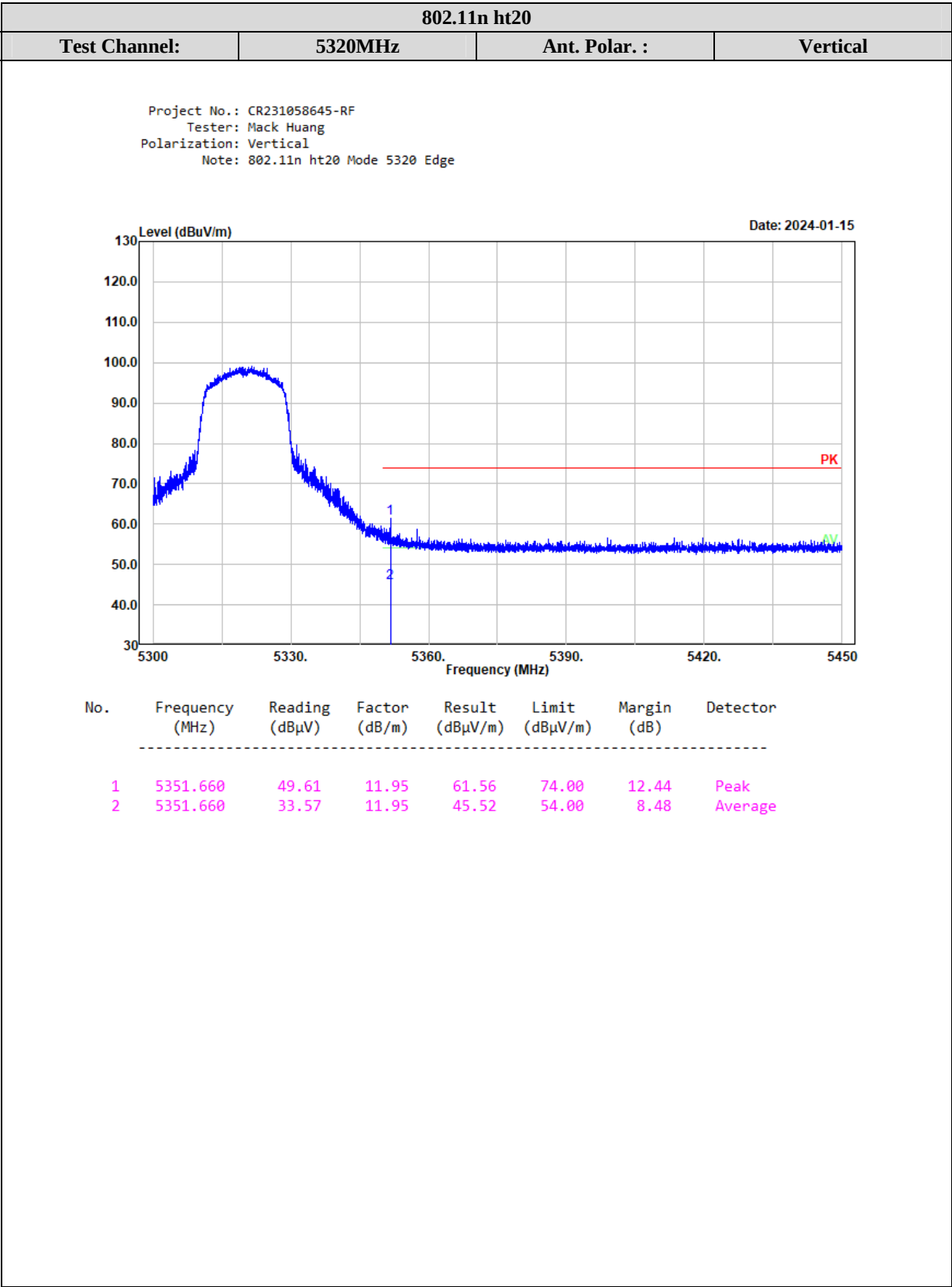


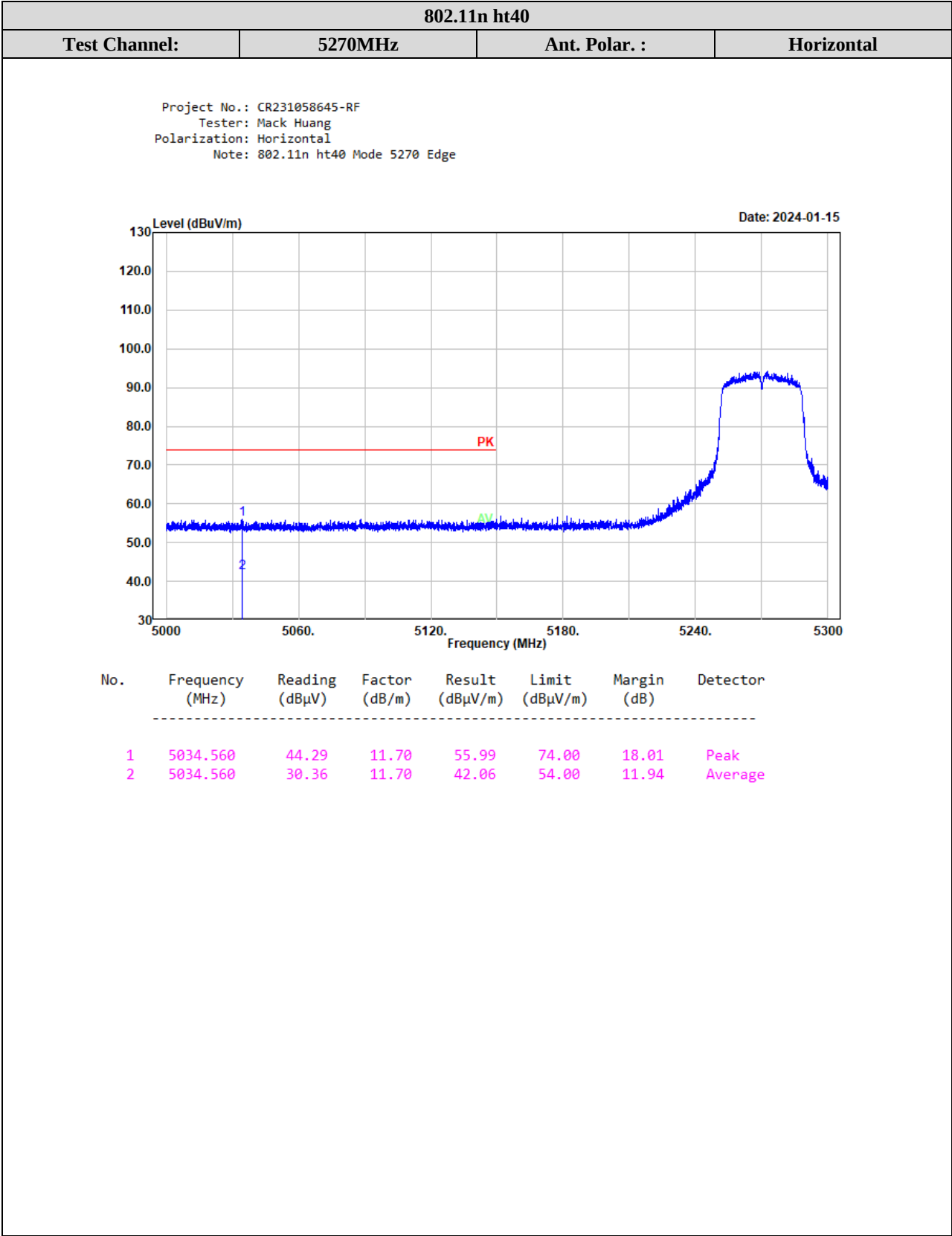
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5046.380	44.64	11.67	56.31	74.00	17.69	Peak
2	5046.380	30.78	11.67	42.45	54.00	11.55	Average

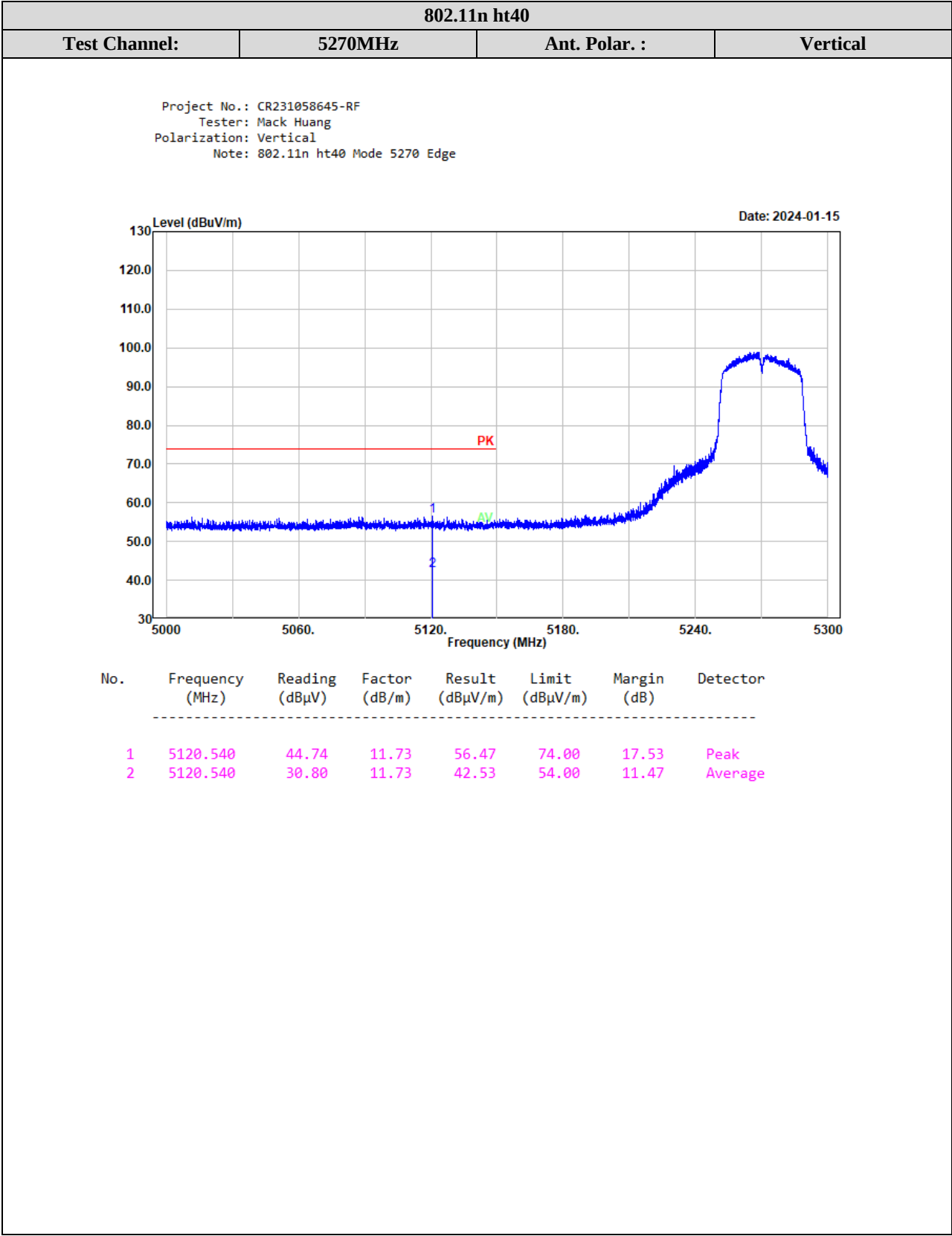


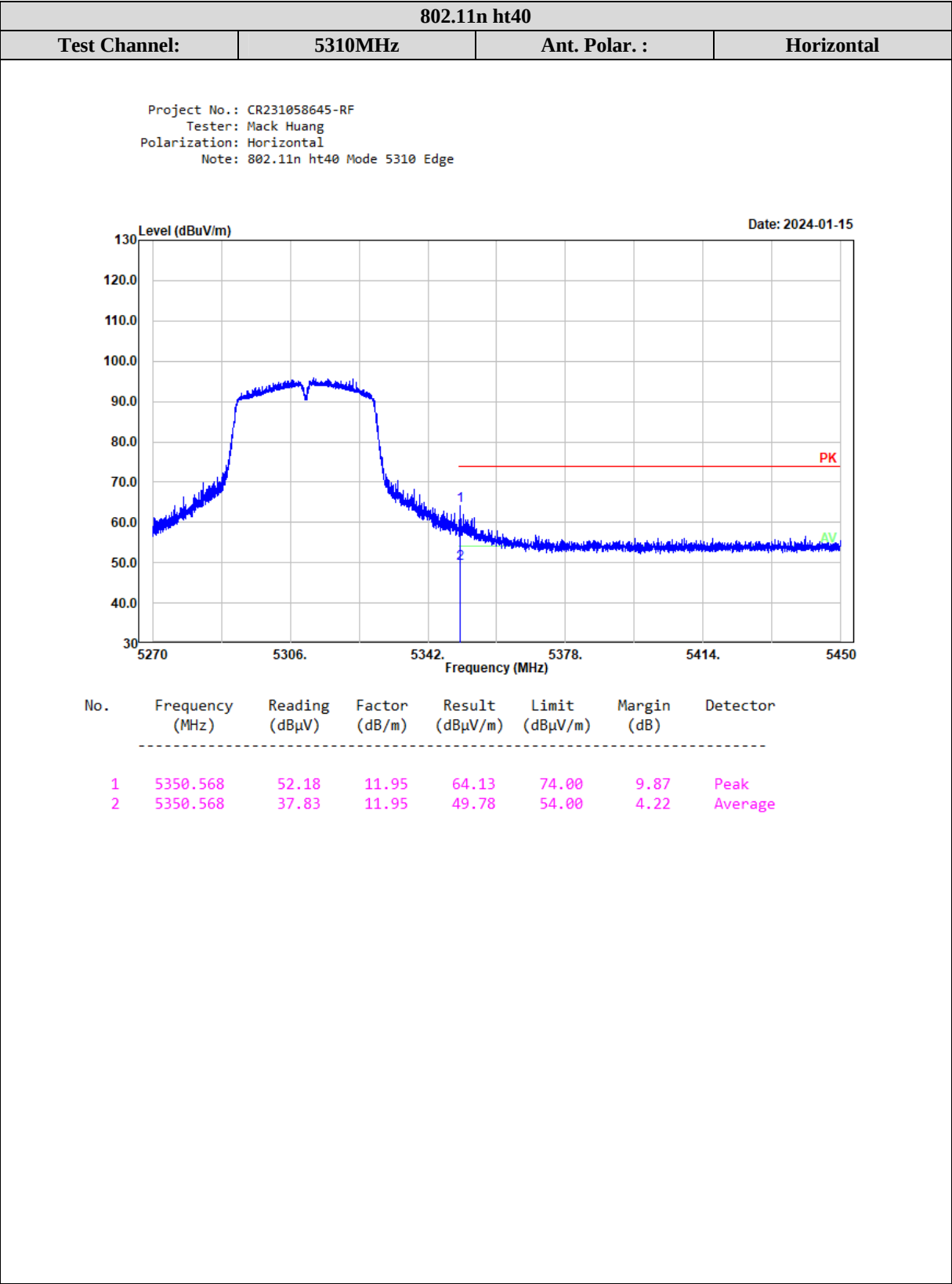
Page 67 of 175

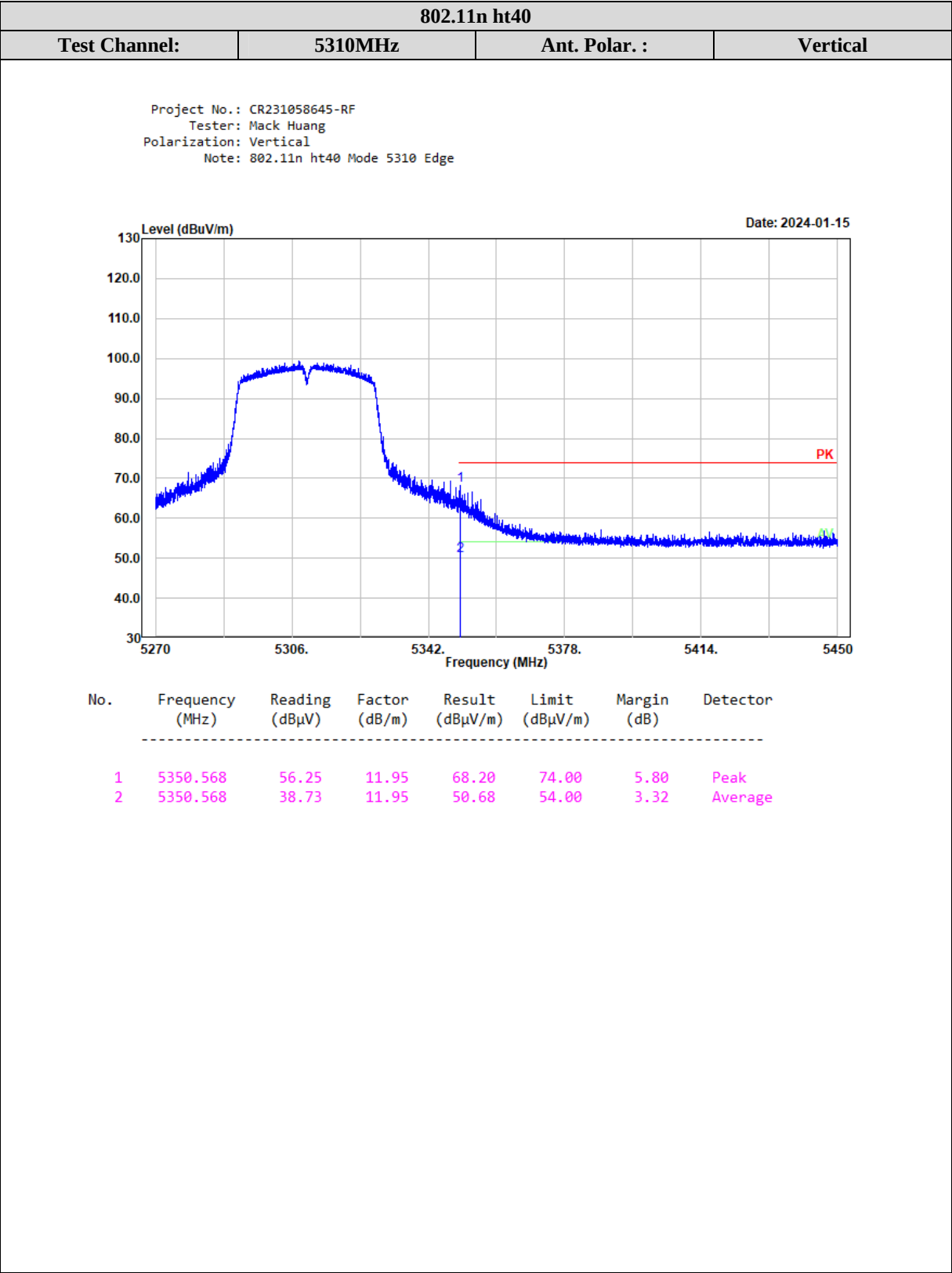


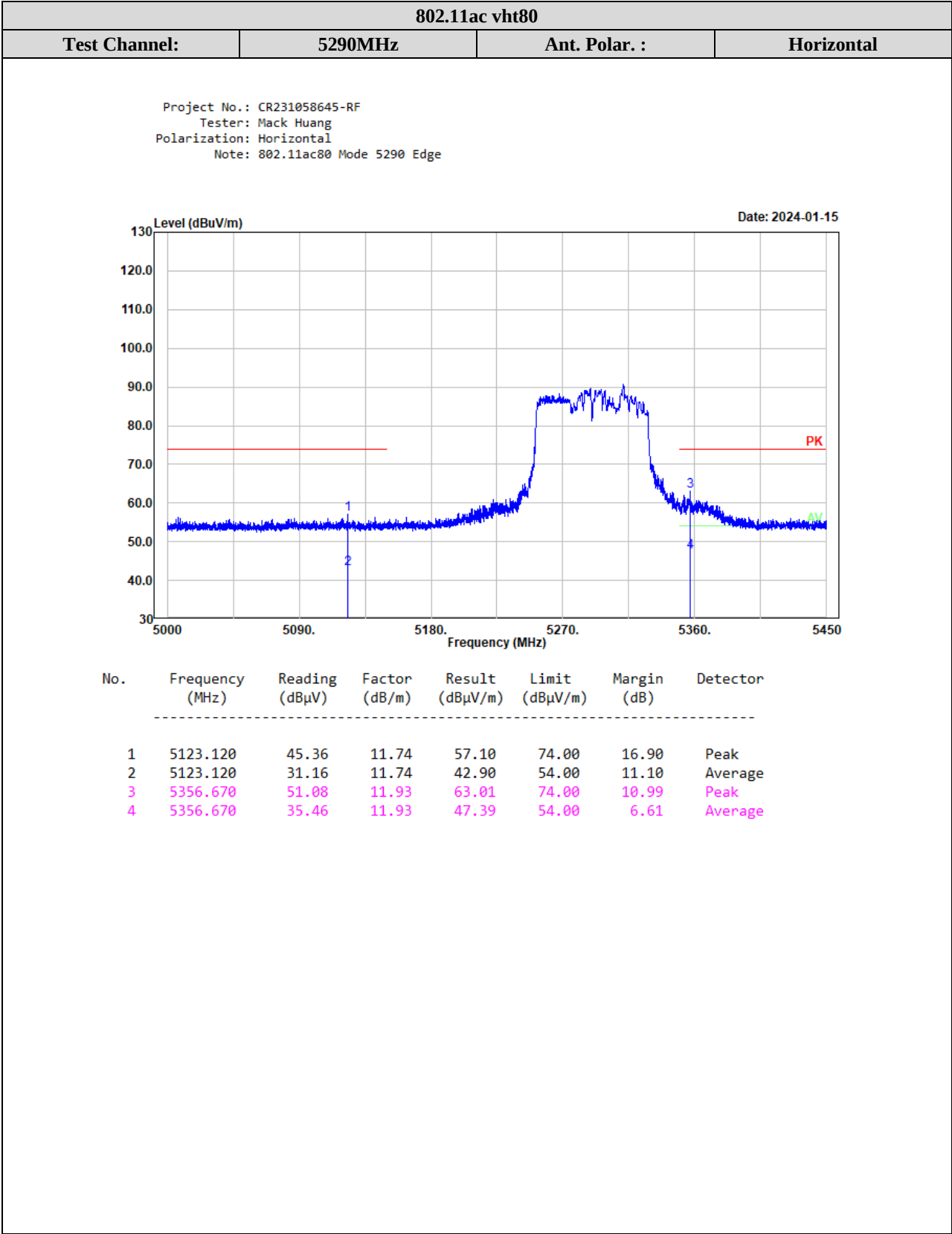












802.11ac vht80

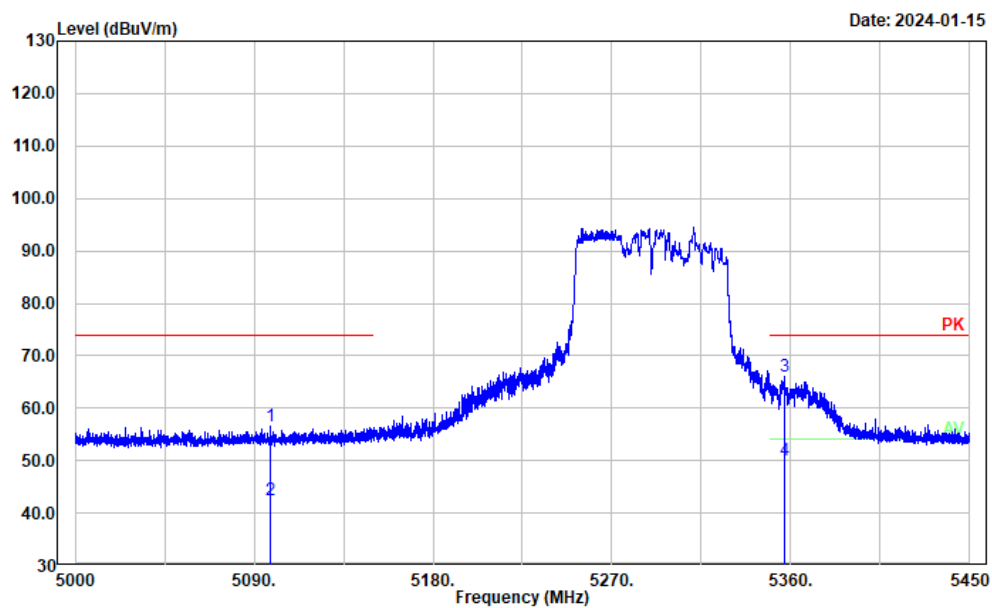
Test Channel:

5290MHz

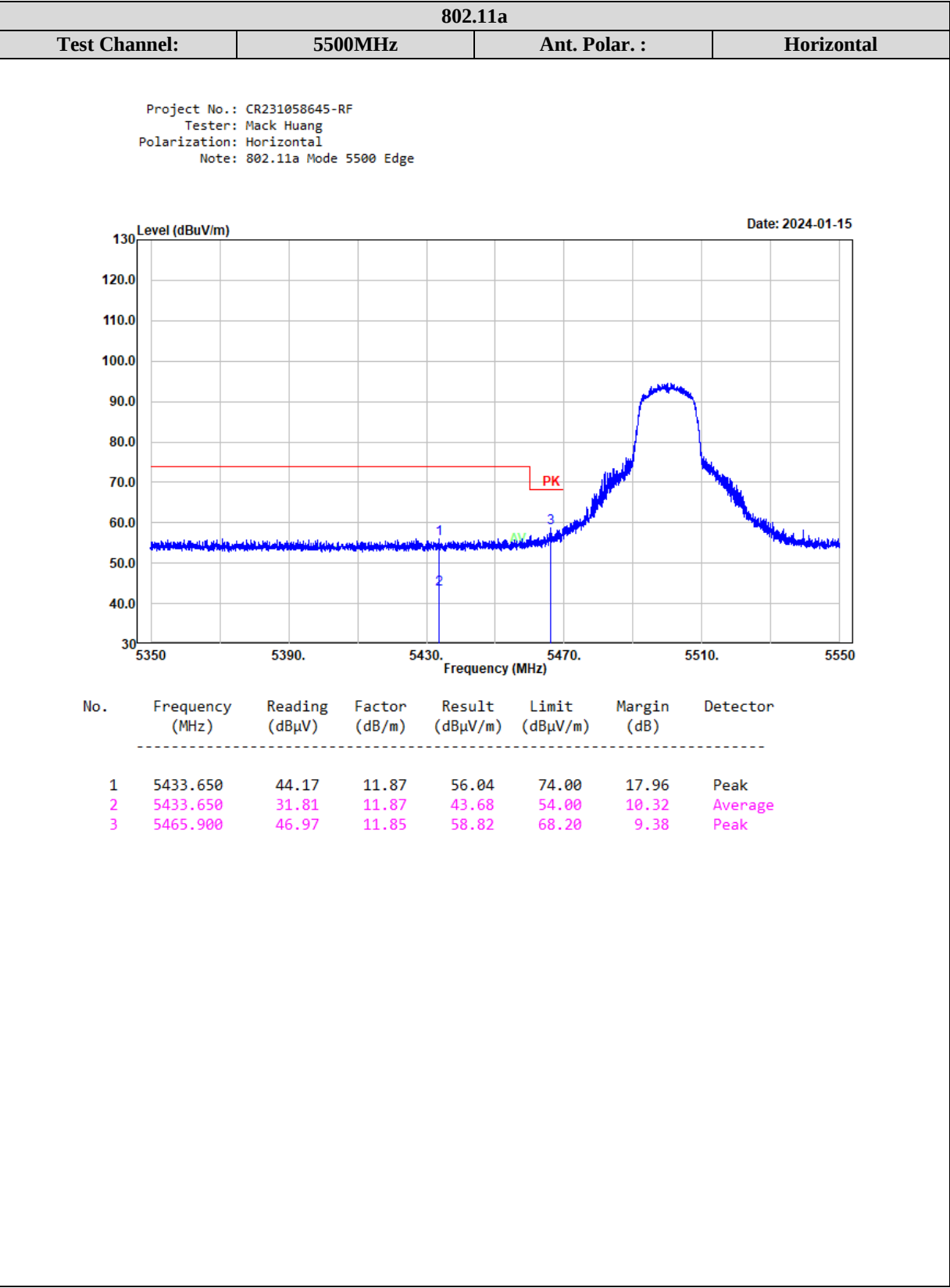
Ant. Polar. :

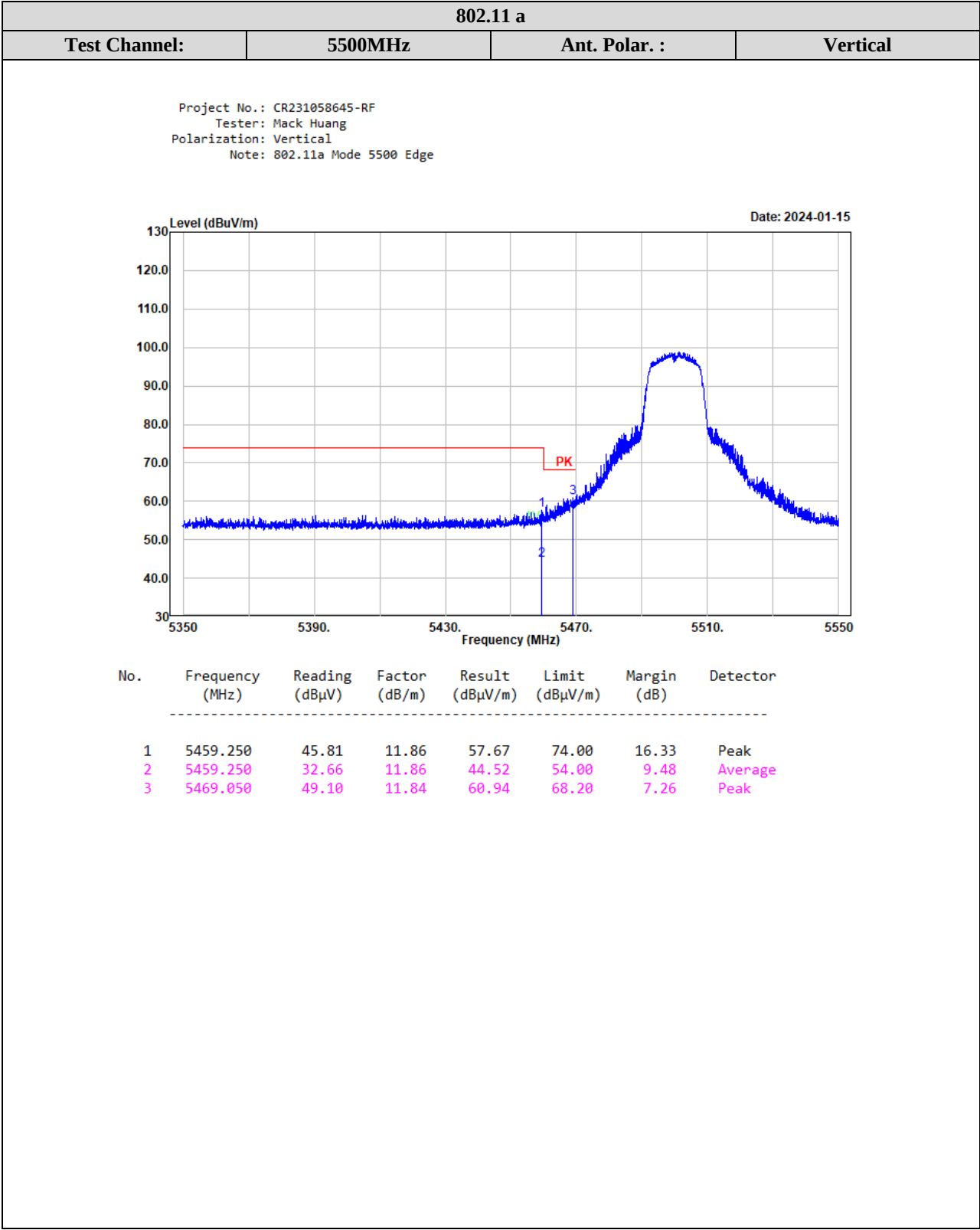
Vertical

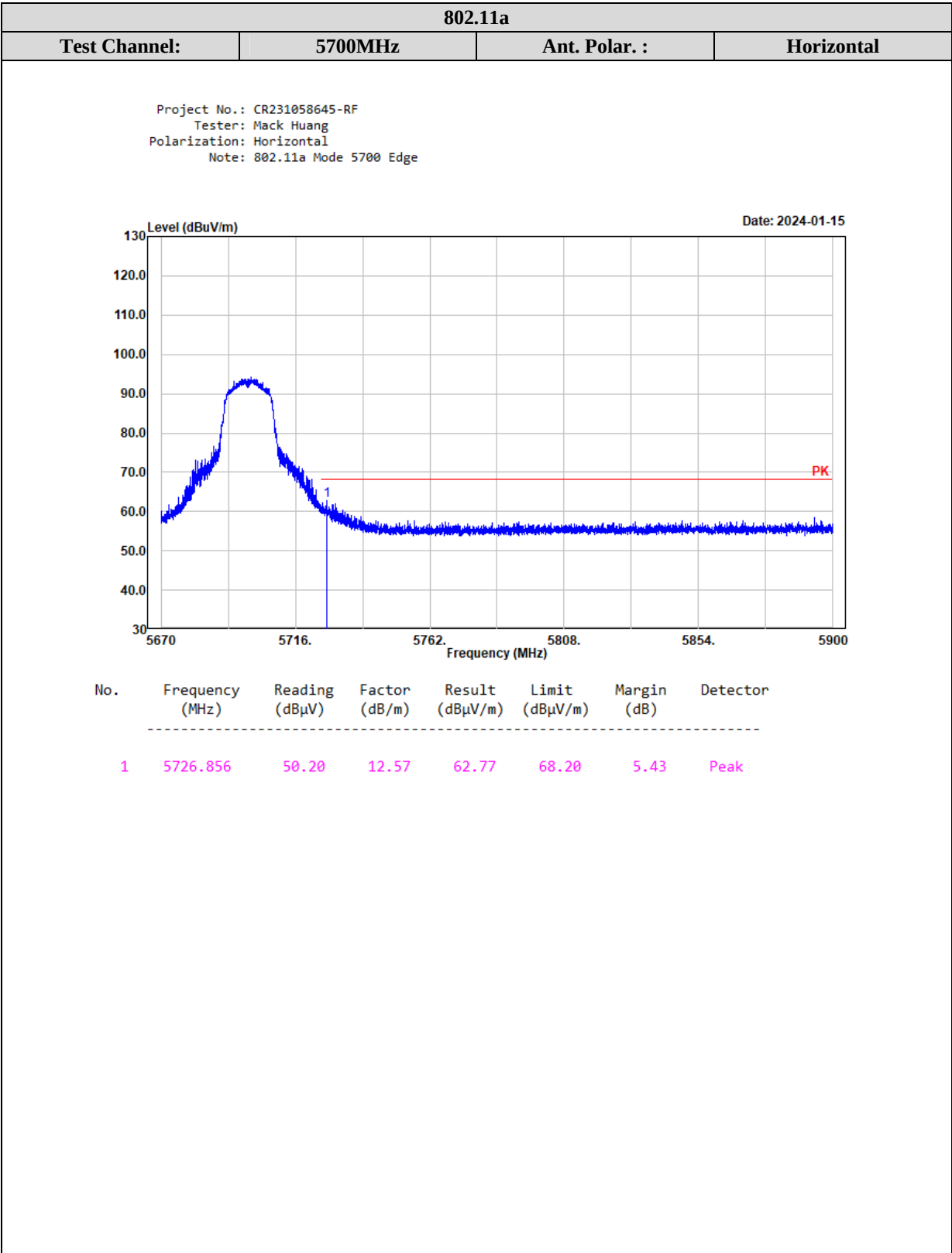
Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Vertical
Note: 802.11ac80 Mode 5290 Edge

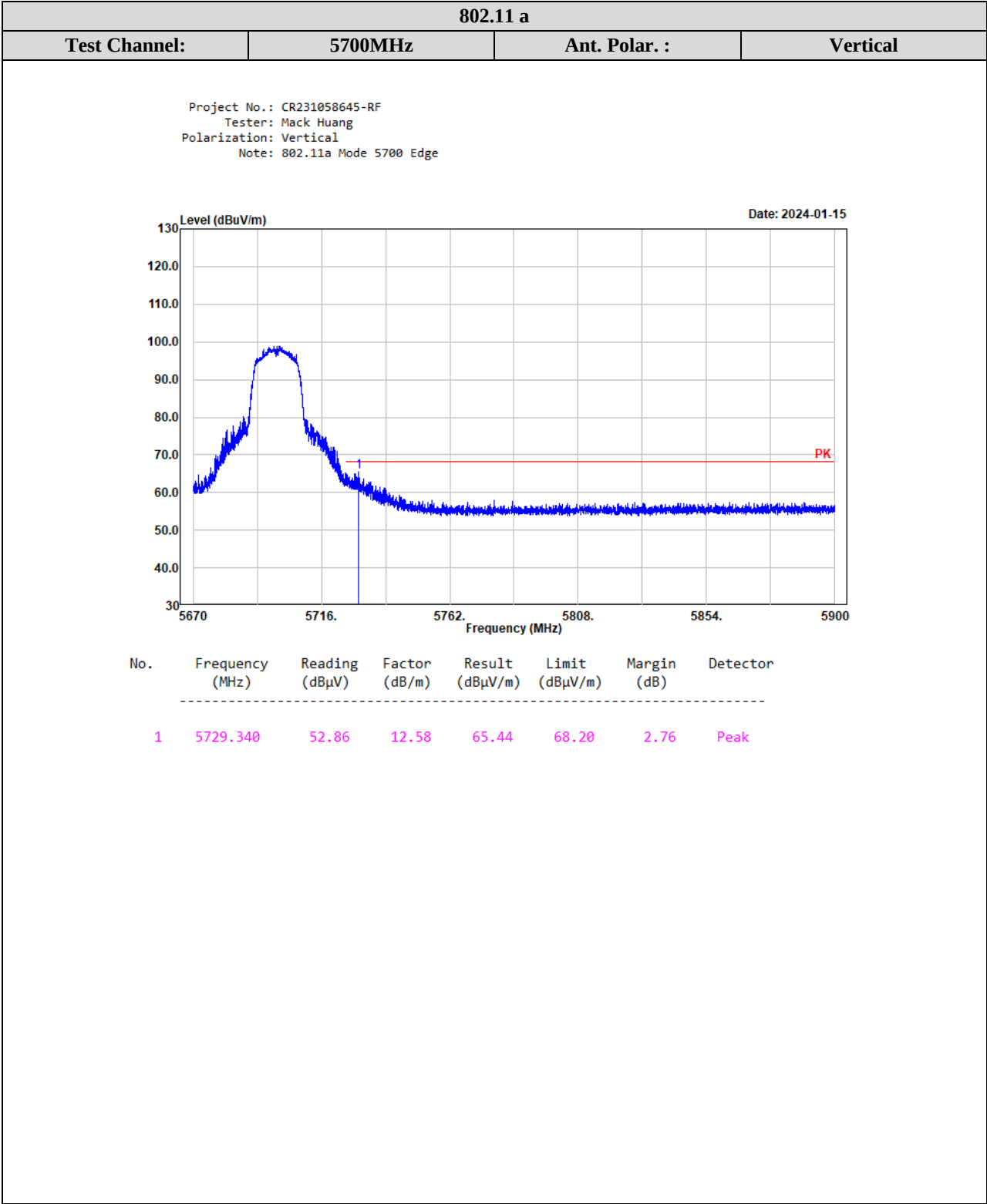


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5097.920	44.78	11.78	56.56	74.00	17.44	Peak
2	5097.920	30.57	11.78	42.35	54.00	11.65	Average
3	5356.760	54.23	11.93	66.16	74.00	7.84	Peak
4	5356.760	38.13	11.93	50.06	54.00	3.94	Average









802.11n ht20

Test Channel:

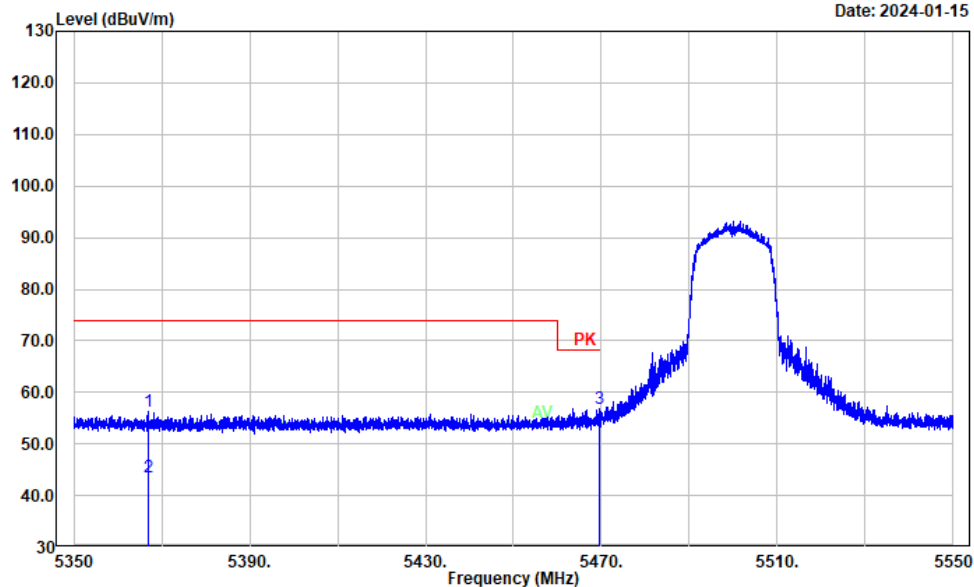
5500MHz

Ant. Polar. :

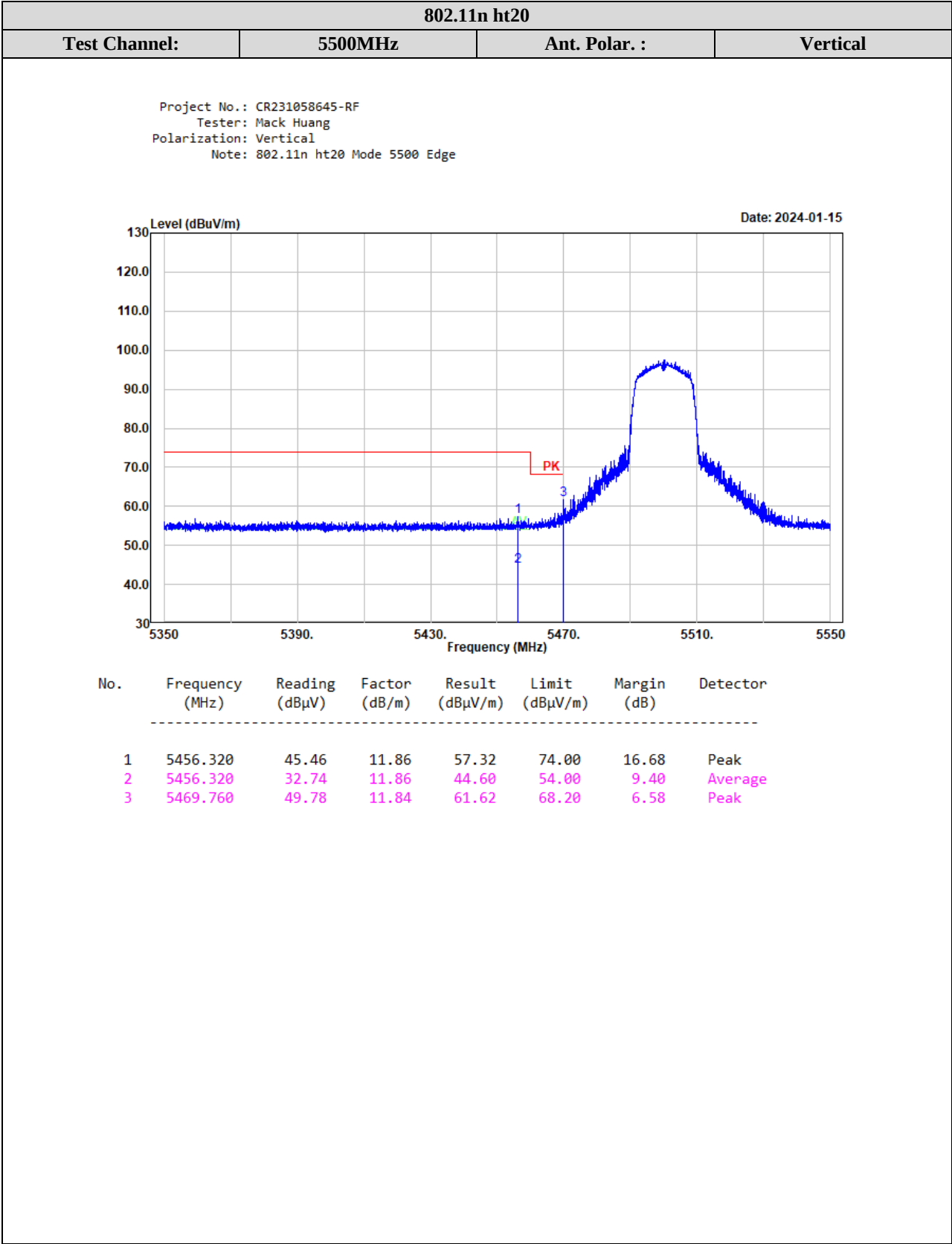
Horizontal

Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Horizontal
Note: 802.11n ht20 Mode 5500 Edge

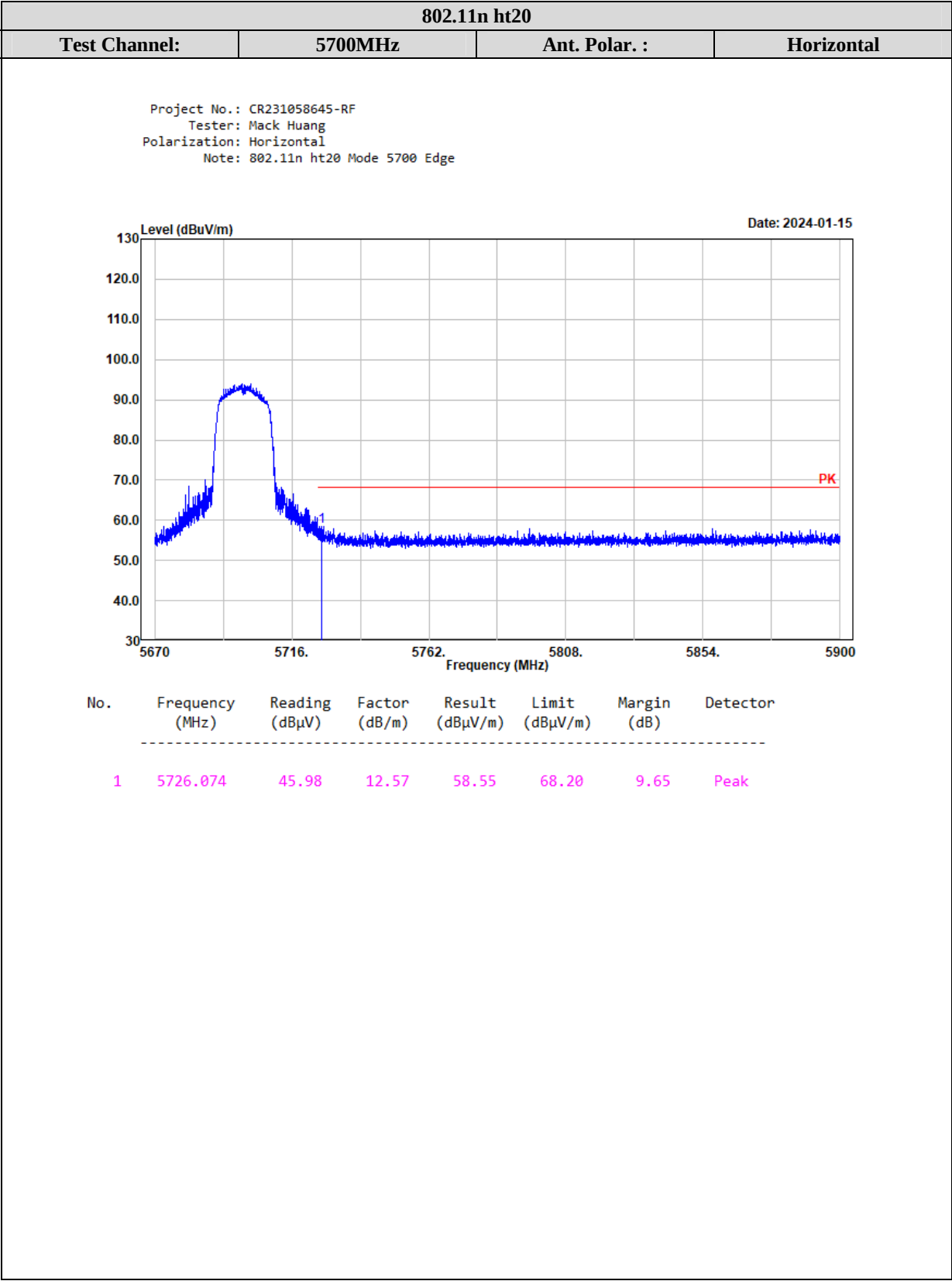
Date: 2024-01-15

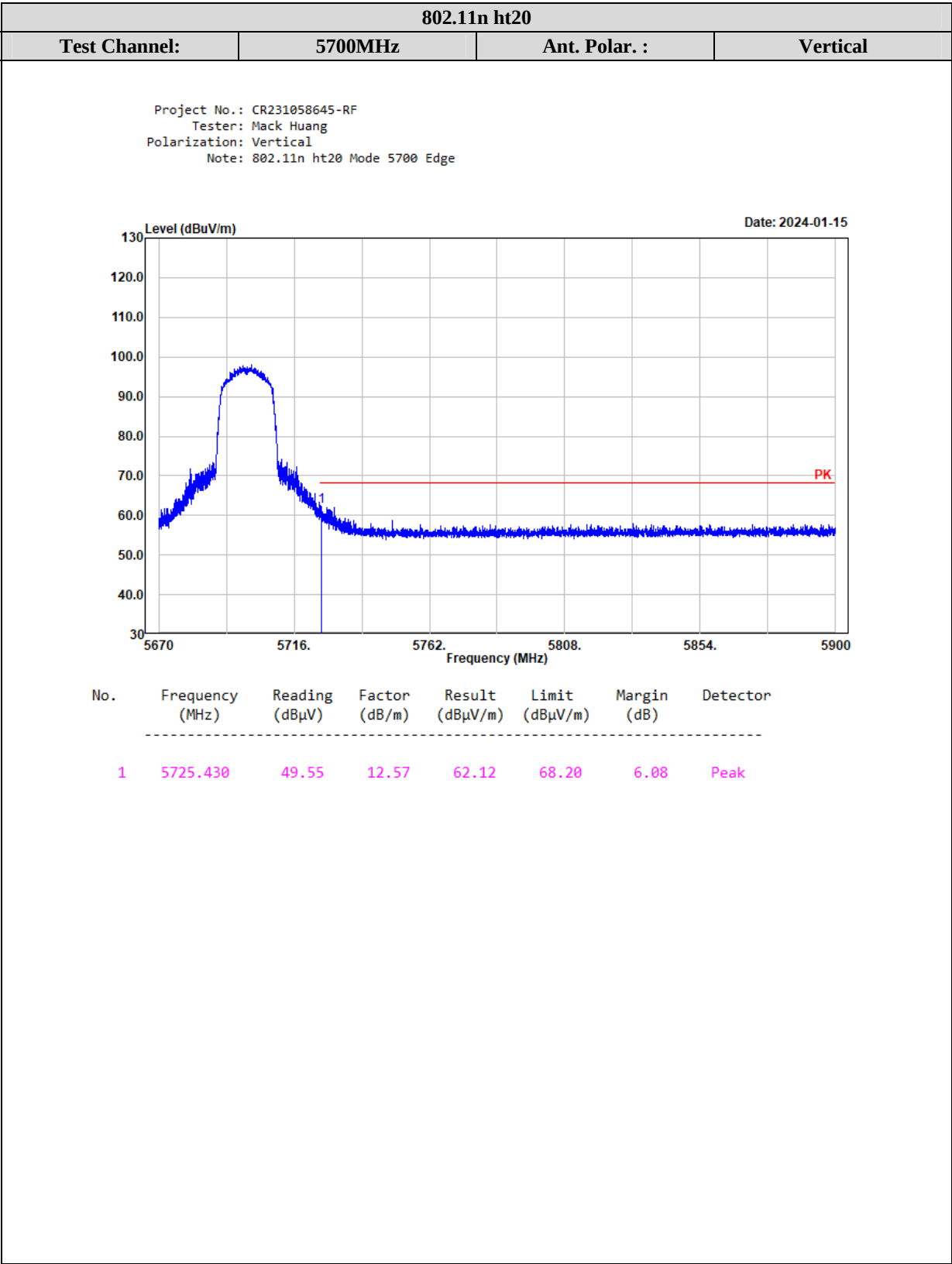


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5367.000	44.28	11.92	56.20	74.00	17.80	Peak
2	5367.000	31.66	11.92	43.58	54.00	10.42	Average
3	5469.520	45.05	11.84	56.89	68.20	11.31	Peak



Page 81 of 175





802.11n ht40

Test Channel:

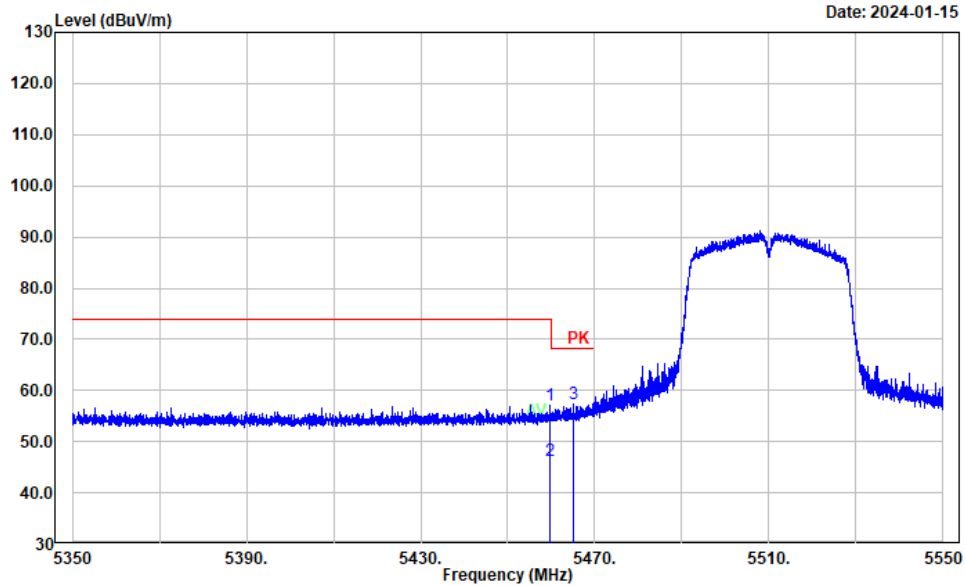
5510MHz

Ant. Polar. :

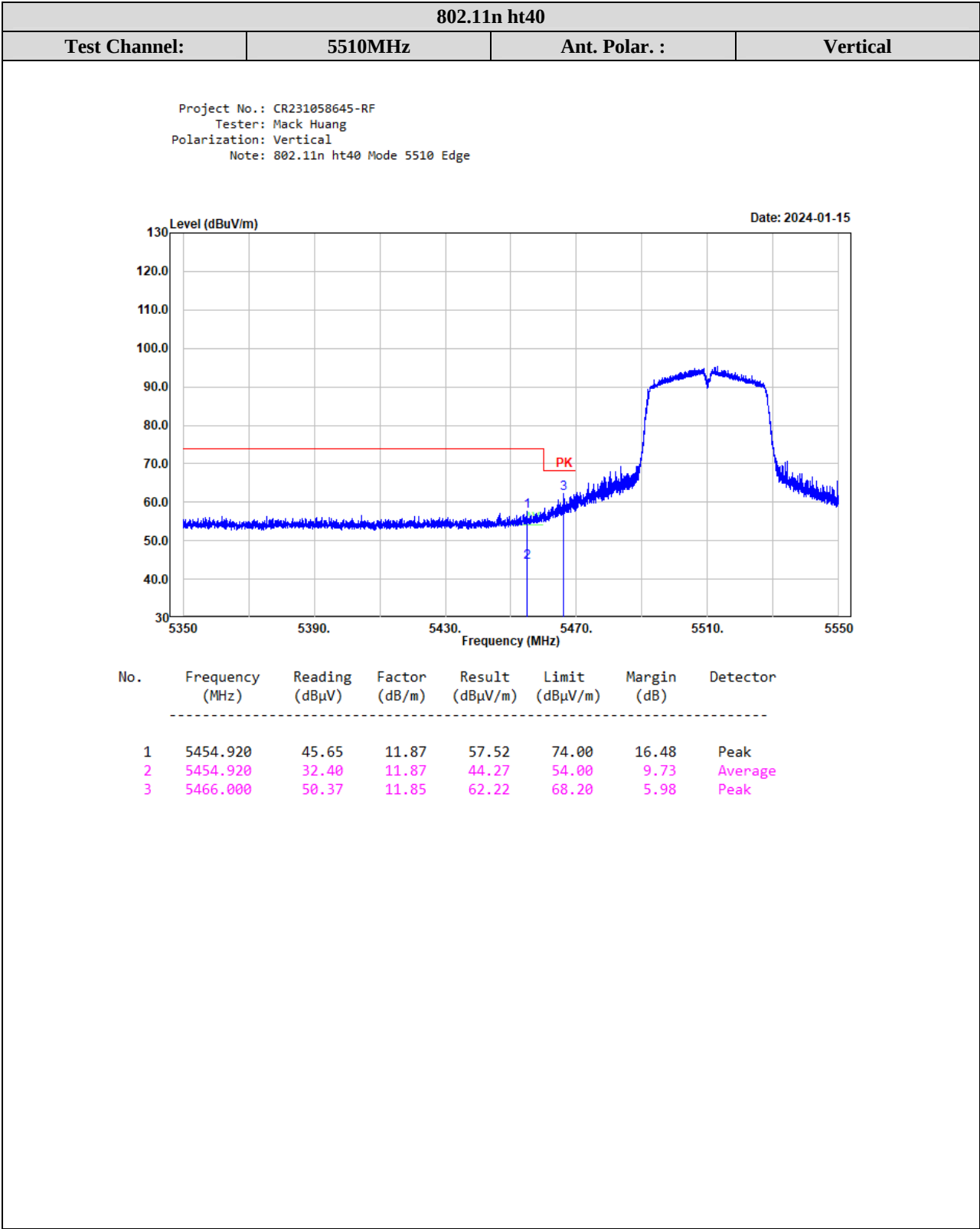
Horizontal

Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Horizontal
Note: 802.11n ht40 Mode 5510 Edge

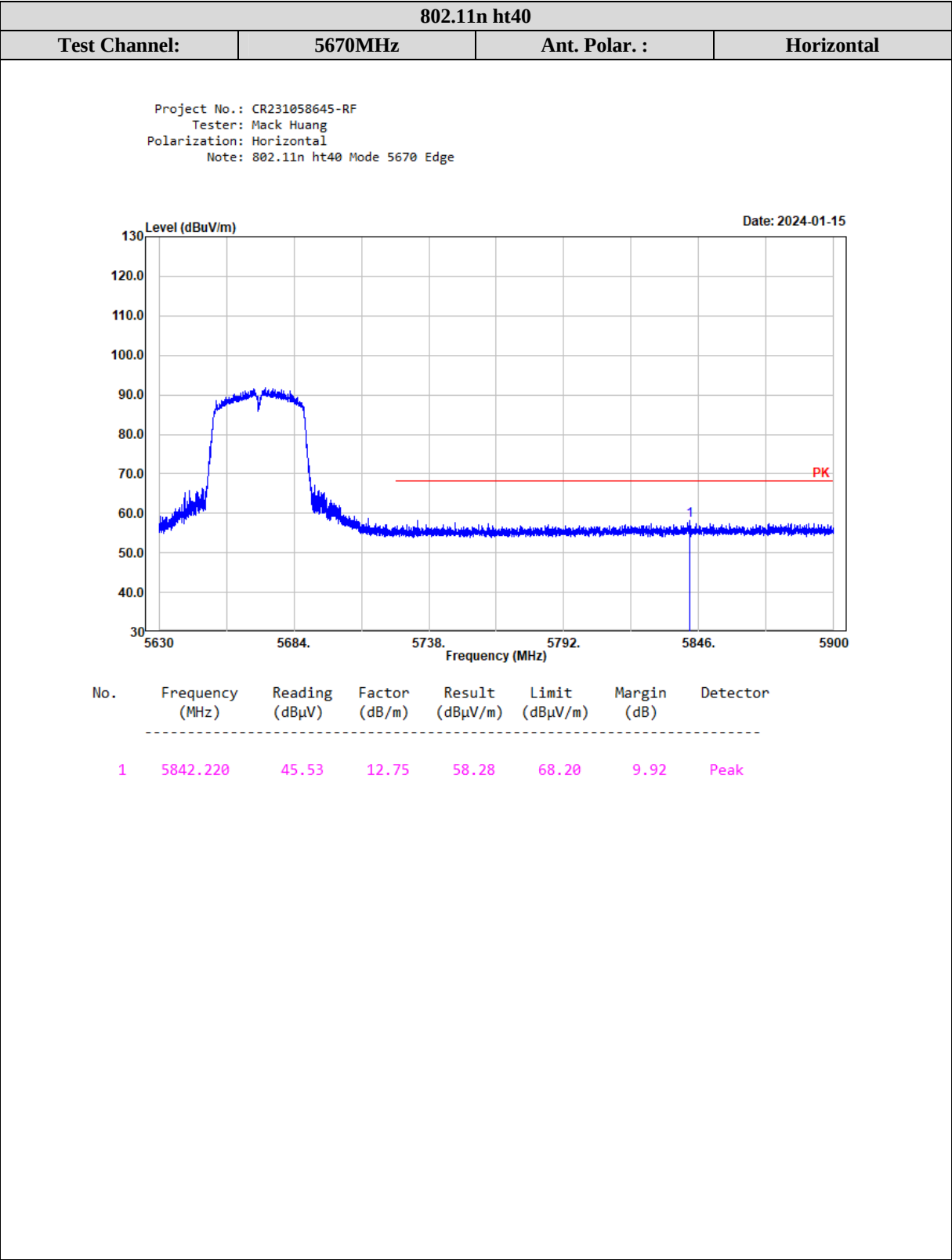
Date: 2024-01-15

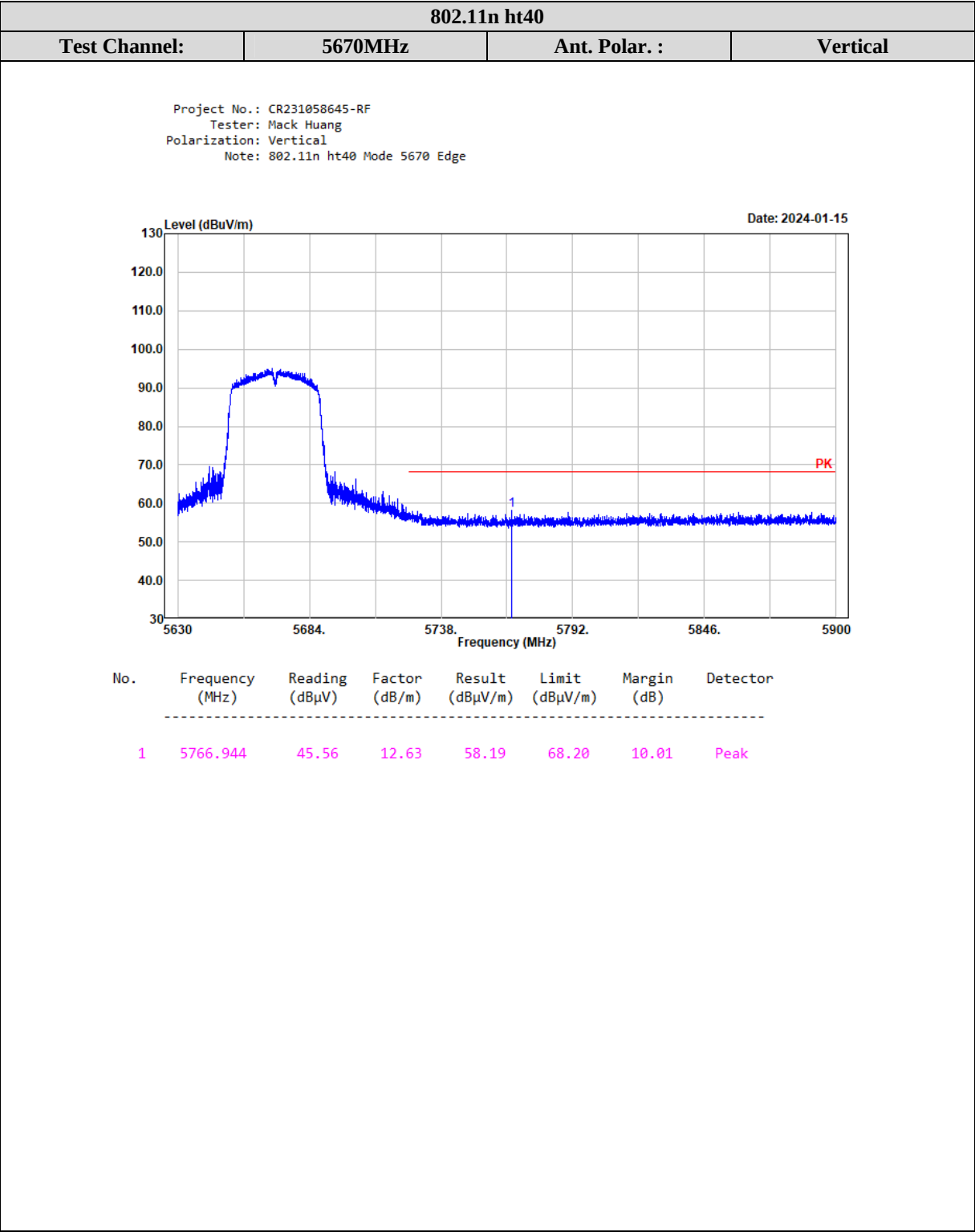


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5459.600	45.34	11.86	57.20	74.00	16.80	Peak
2	5459.600	34.46	11.86	46.32	54.00	7.68	Average
3	5465.200	45.42	11.85	57.27	68.20	10.93	Peak



Page 85 of 175





802.11ac vht80

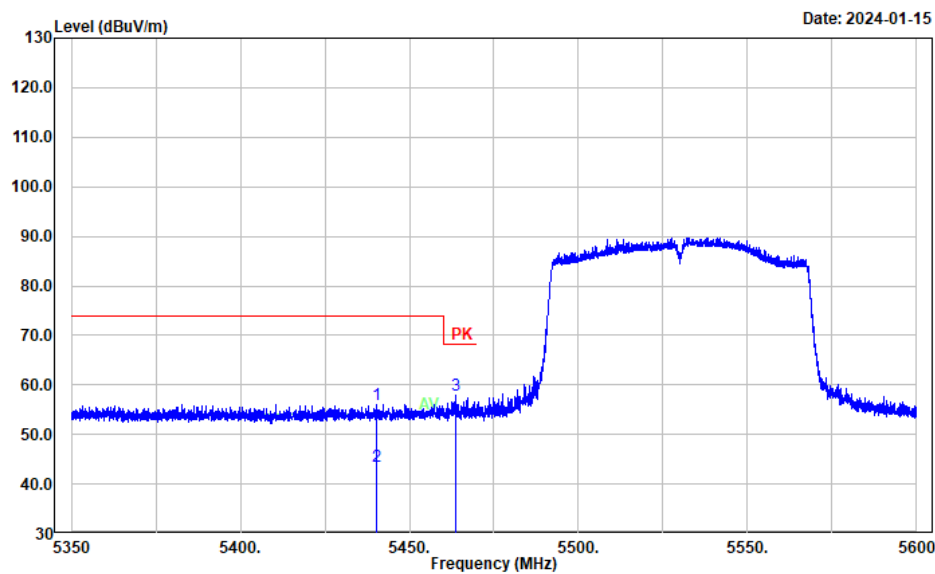
Test Channel:

5530MHz

Ant. Polar. :

Horizontal

Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Horizontal
Note: 802.11ac80 Mode 5530 Edge



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5440.450	44.25	11.87	56.12	74.00	17.88	Peak
2	5440.450	31.78	11.87	43.65	54.00	10.35	Average
3	5463.850	46.13	11.85	57.98	68.20	10.22	Peak

802.11ac vht80

Test Channel:

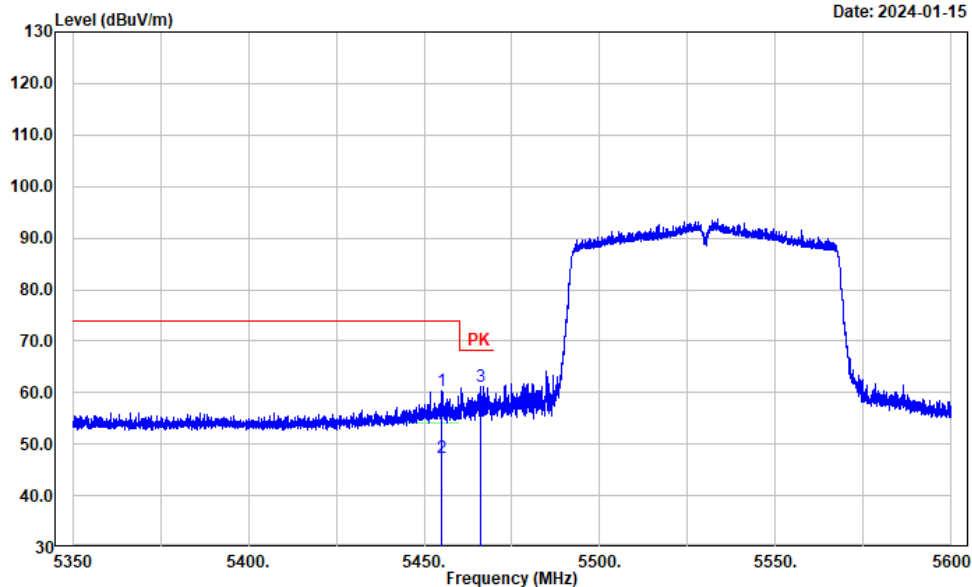
5530MHz

Ant. Polar. :

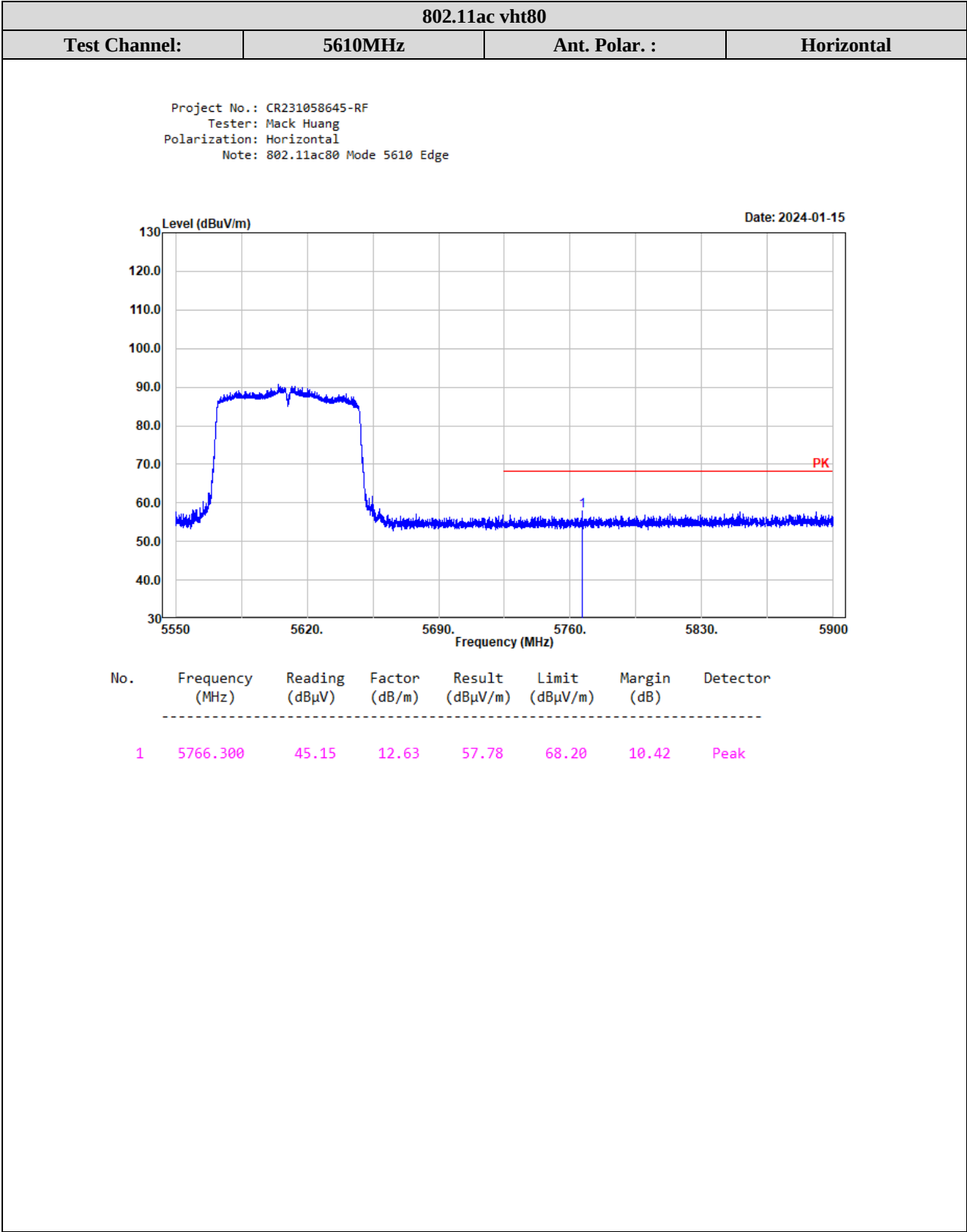
Vertical

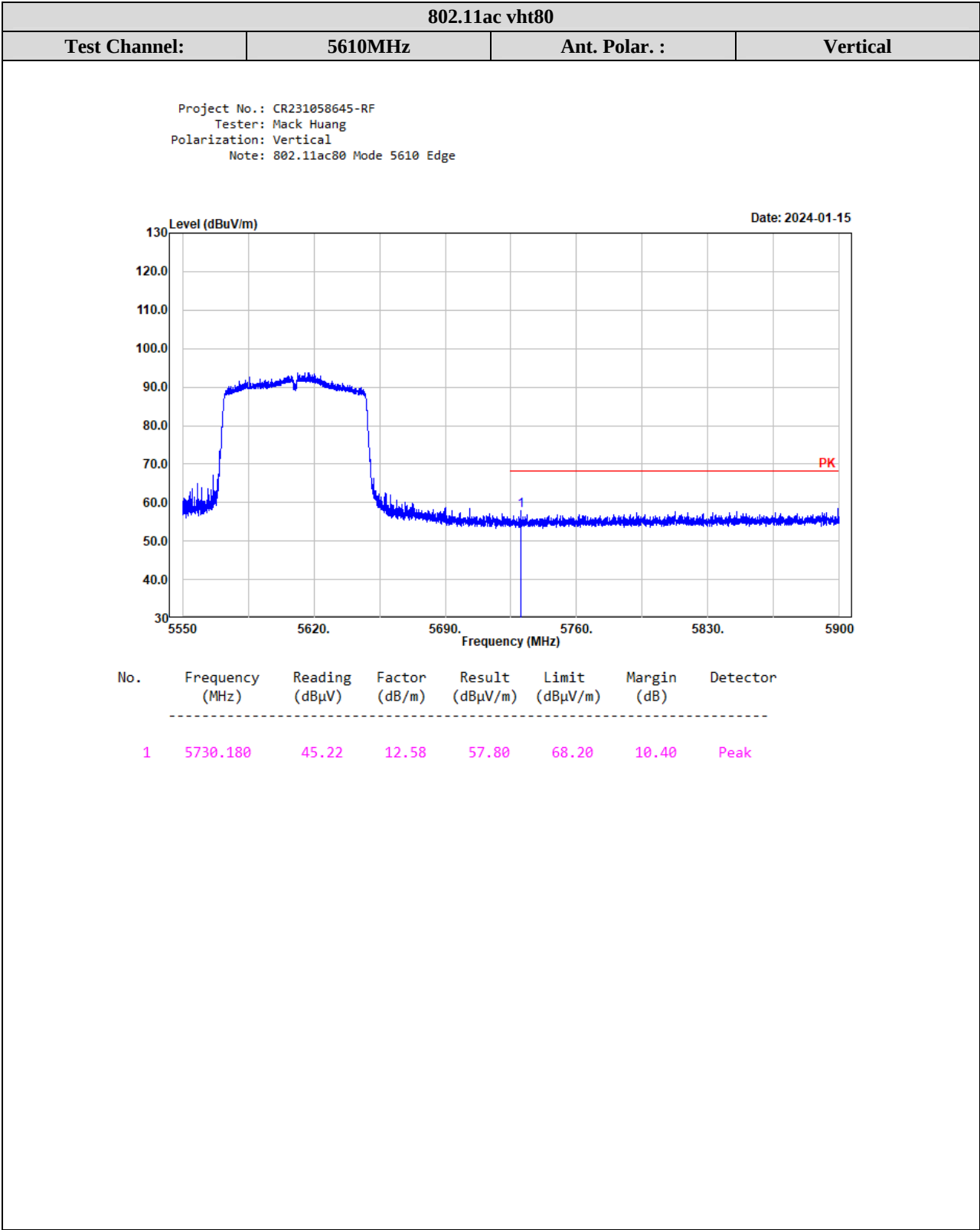
Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Vertical
Note: 802.11ac80 Mode 5530 Edge

Date: 2024-01-15



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5455.000	48.45	11.87	60.32	74.00	13.68	Peak
2	5455.000	35.42	11.87	47.29	54.00	6.71	Average
3	5466.250	49.44	11.85	61.29	68.20	6.91	Peak





802.11a

Test Channel:

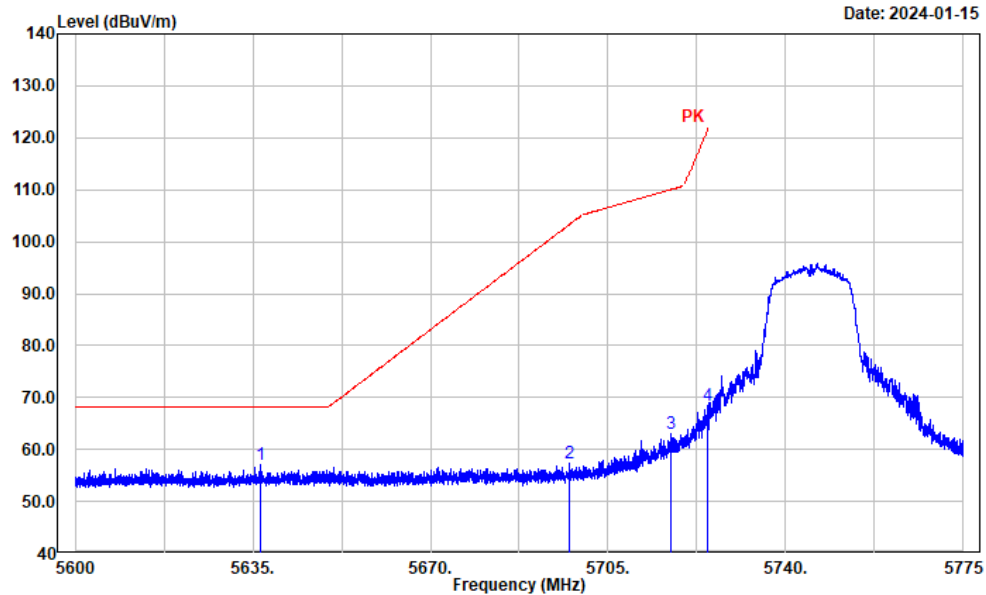
5745MHz

Ant. Polar. :

Horizontal

Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Horizontal
Note: 802.11a Mode 5745 Edge

Date: 2024-01-15



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5636.470	44.80	12.25	57.05	68.20	11.15	Peak
2	5697.440	44.82	12.54	57.36	103.31	45.95	Peak
3	5717.495	50.45	12.57	63.02	110.10	47.08	Peak
4	5724.705	55.95	12.57	68.52	121.53	53.01	Peak

802.11 a

Test Channel:

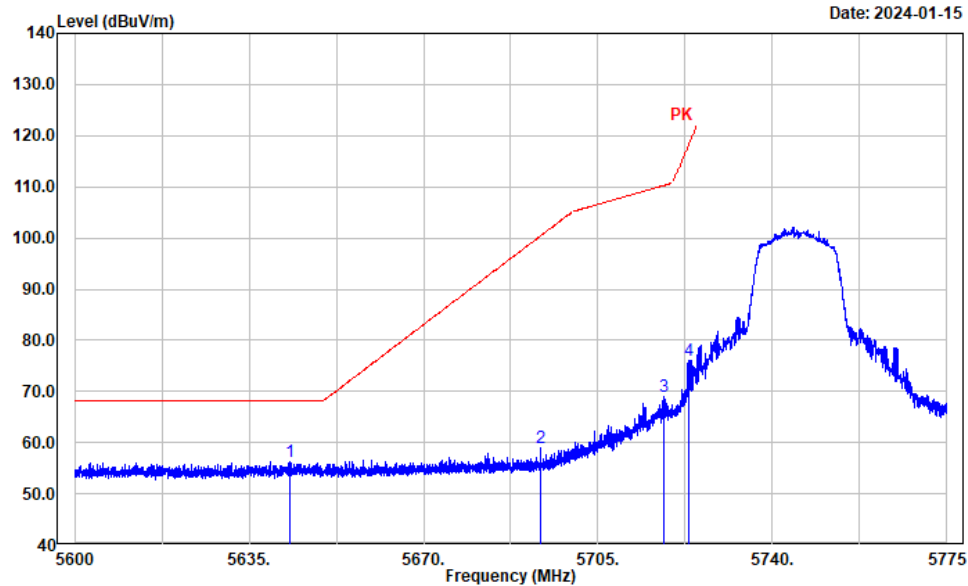
5745MHz

Ant. Polar. :

Vertical

Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Vertical
Note: 802.11a Mode 5745 Edge

Date: 2024-01-15



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5643.260	43.94	12.29	56.23	68.20	11.97	Peak
2	5693.380	46.50	12.52	59.02	100.32	41.30	Peak
3	5718.335	56.40	12.57	68.97	110.33	41.36	Peak
4	5723.235	63.44	12.57	76.01	118.18	42.17	Peak

802.11a

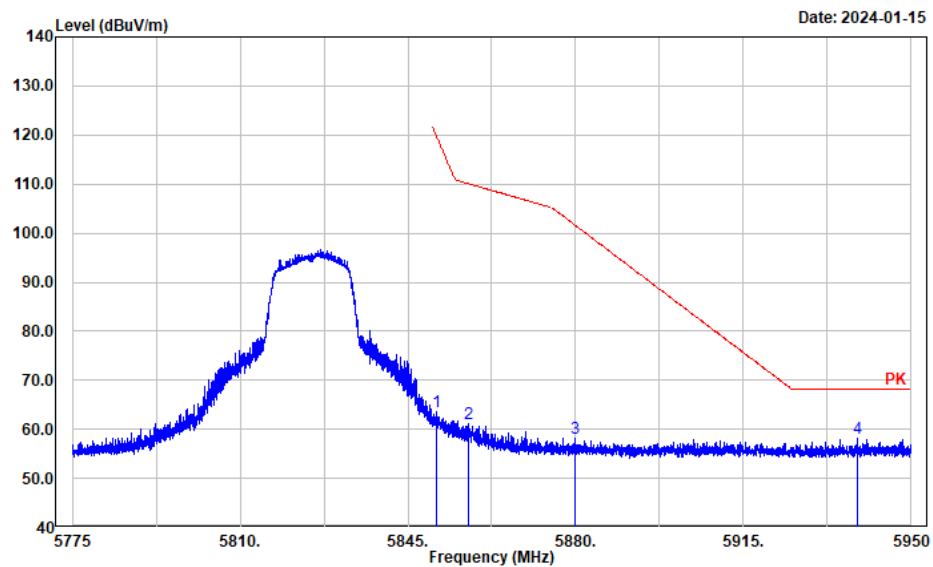
Test Channel:

5825MHz

Ant. Polar. :

Horizontal

Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Horizontal
Note: 802.11a Mode 5825 Edge



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5850.880	50.92	12.77	63.69	120.19	56.50	Peak
2	5857.530	48.22	12.81	61.03	110.09	49.06	Peak
3	5879.965	45.35	12.92	58.27	101.51	43.24	Peak
4	5938.870	45.20	13.03	58.23	68.20	9.97	Peak

802.11 a

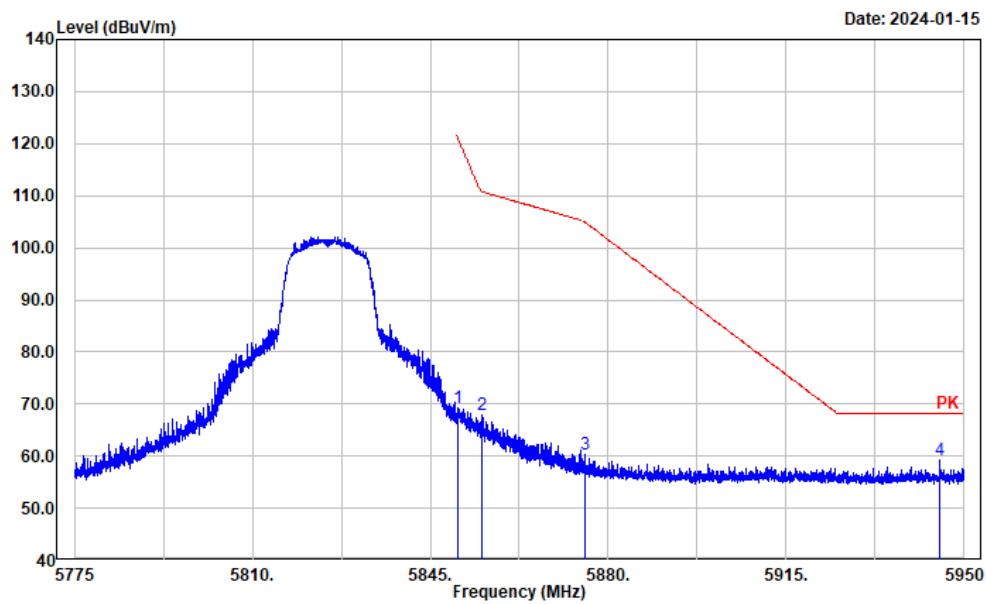
Test Channel:

5825MHz

Ant. Polar. :

Vertical

Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Vertical
Note: 802.11a Mode 5825 Edge



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5850.530	56.39	12.77	69.16	120.99	51.83	Peak
2	5855.255	55.24	12.80	68.04	110.73	42.69	Peak
3	5875.520	47.44	12.89	60.33	104.81	44.48	Peak
4	5945.275	46.30	13.03	59.33	68.20	8.87	Peak

802.11n ht20

Test Channel:

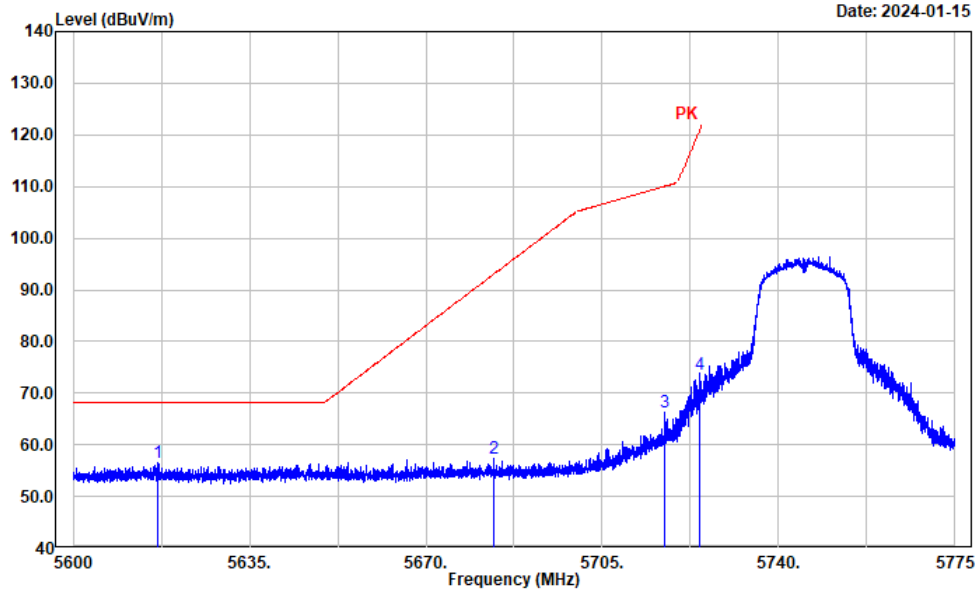
5745MHz

Ant. Polar. :

Horizontal

Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Horizontal
Note: 802.11n ht20 Mode 5745 Edge

Date: 2024-01-15



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBUV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5616.660	44.28	12.14	56.42	68.20	11.78	Peak
2	5683.510	44.80	12.47	57.27	93.03	35.76	Peak
3	5717.495	53.76	12.57	66.33	110.10	43.77	Peak
4	5724.285	60.93	12.57	73.50	120.57	47.07	Peak

802.11n ht20

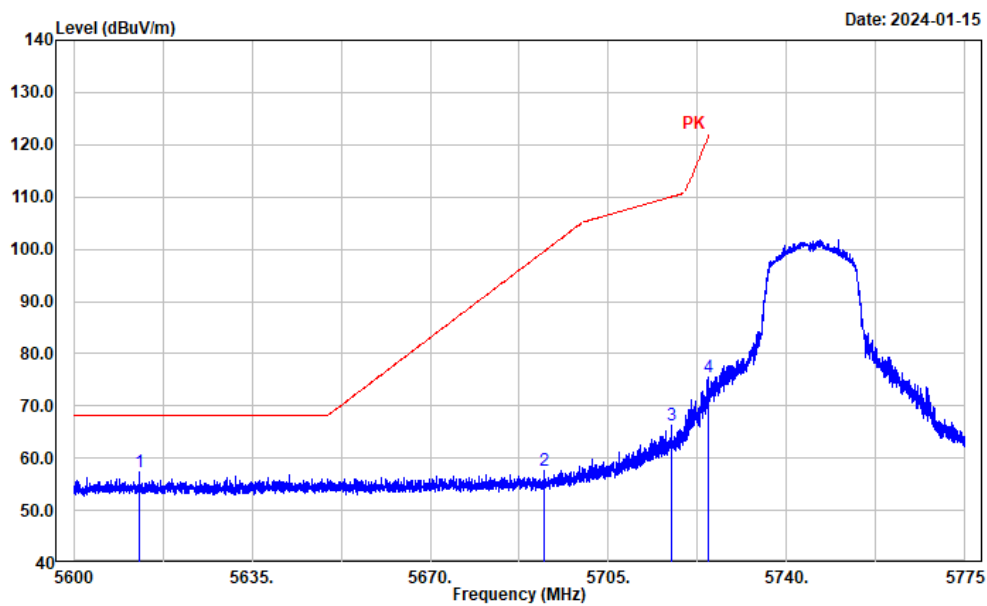
Test Channel:

5745MHz

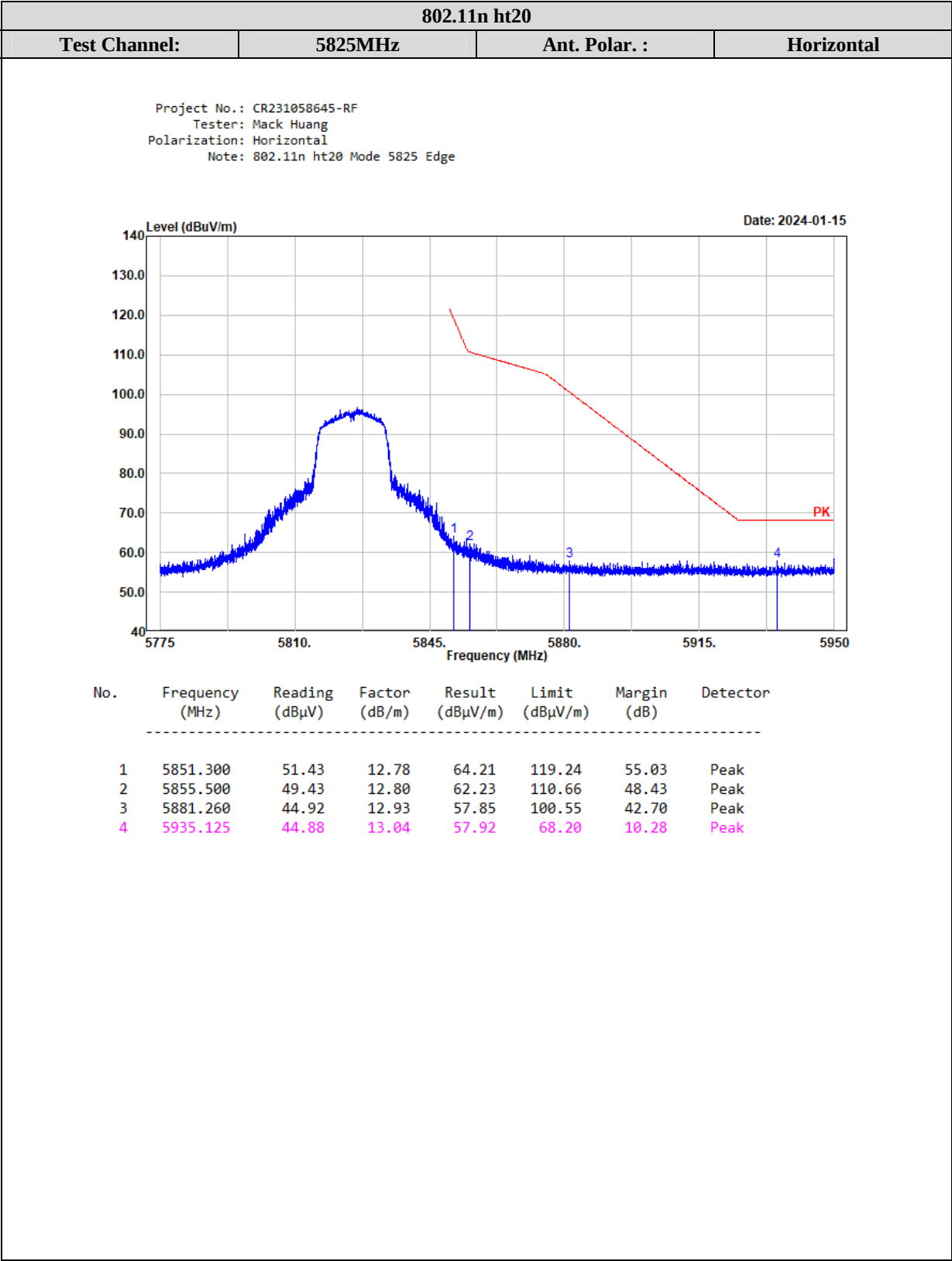
Ant. Polar. :

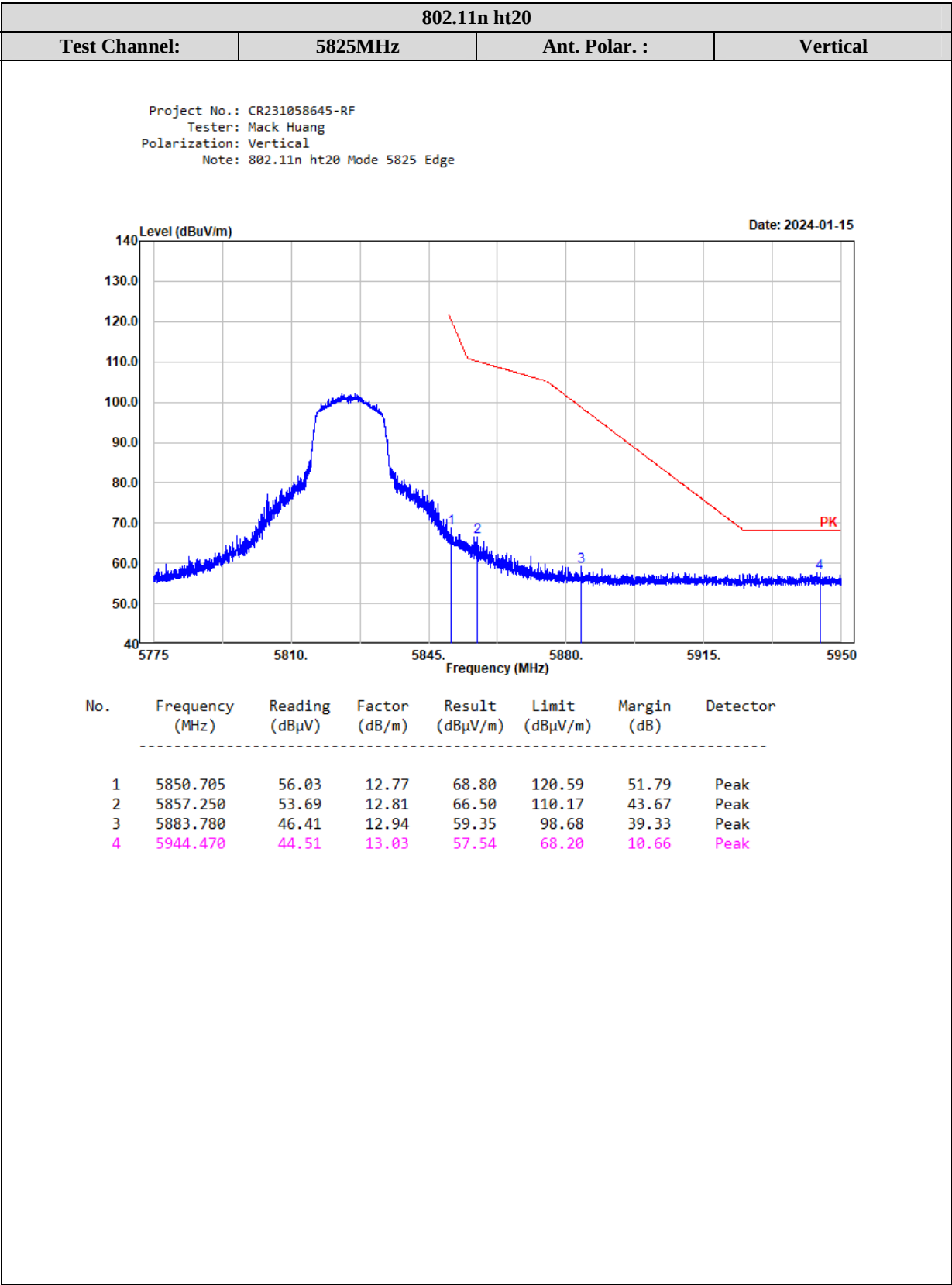
Vertical

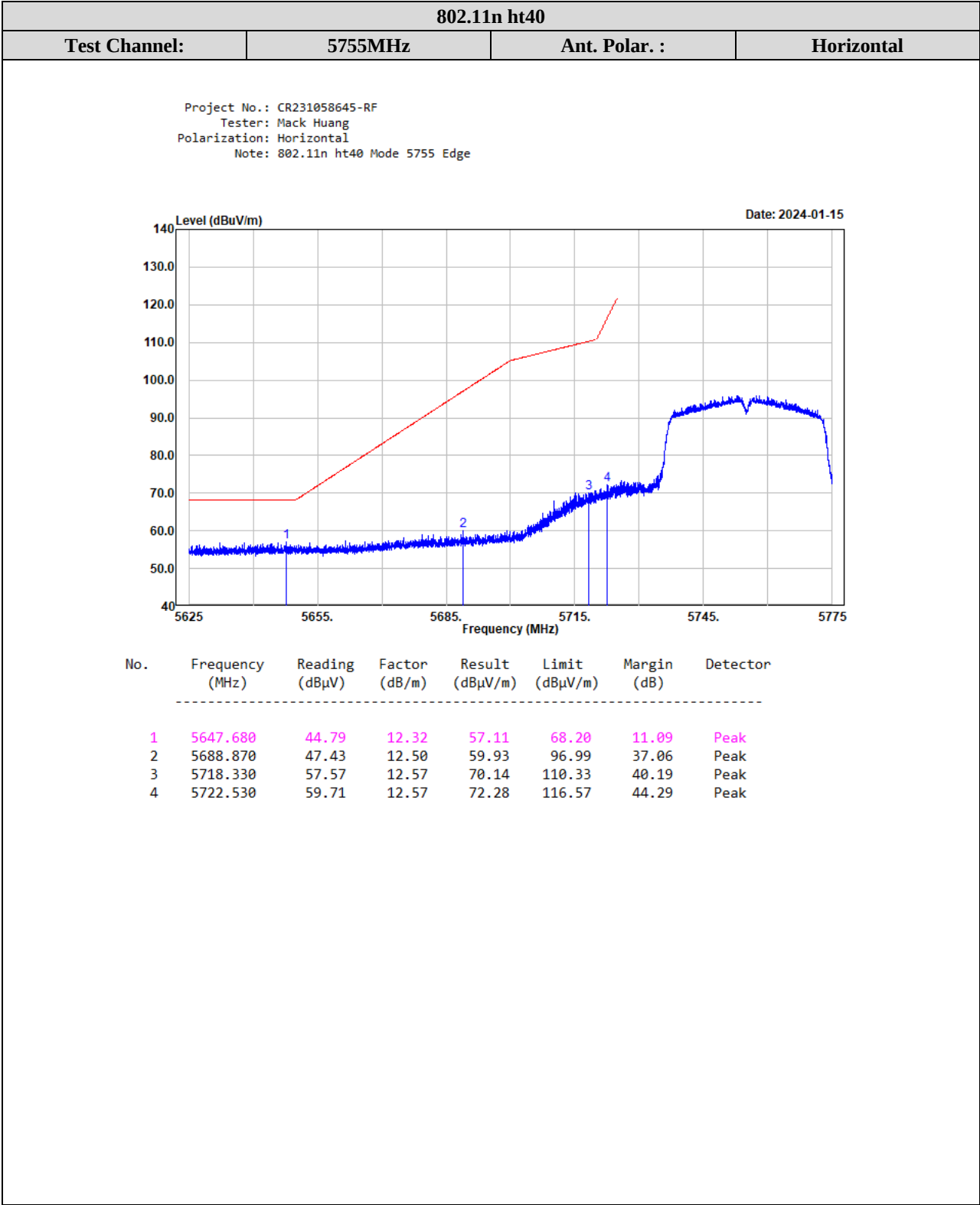
Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Vertical
Note: 802.11n ht20 Mode 5745 Edge



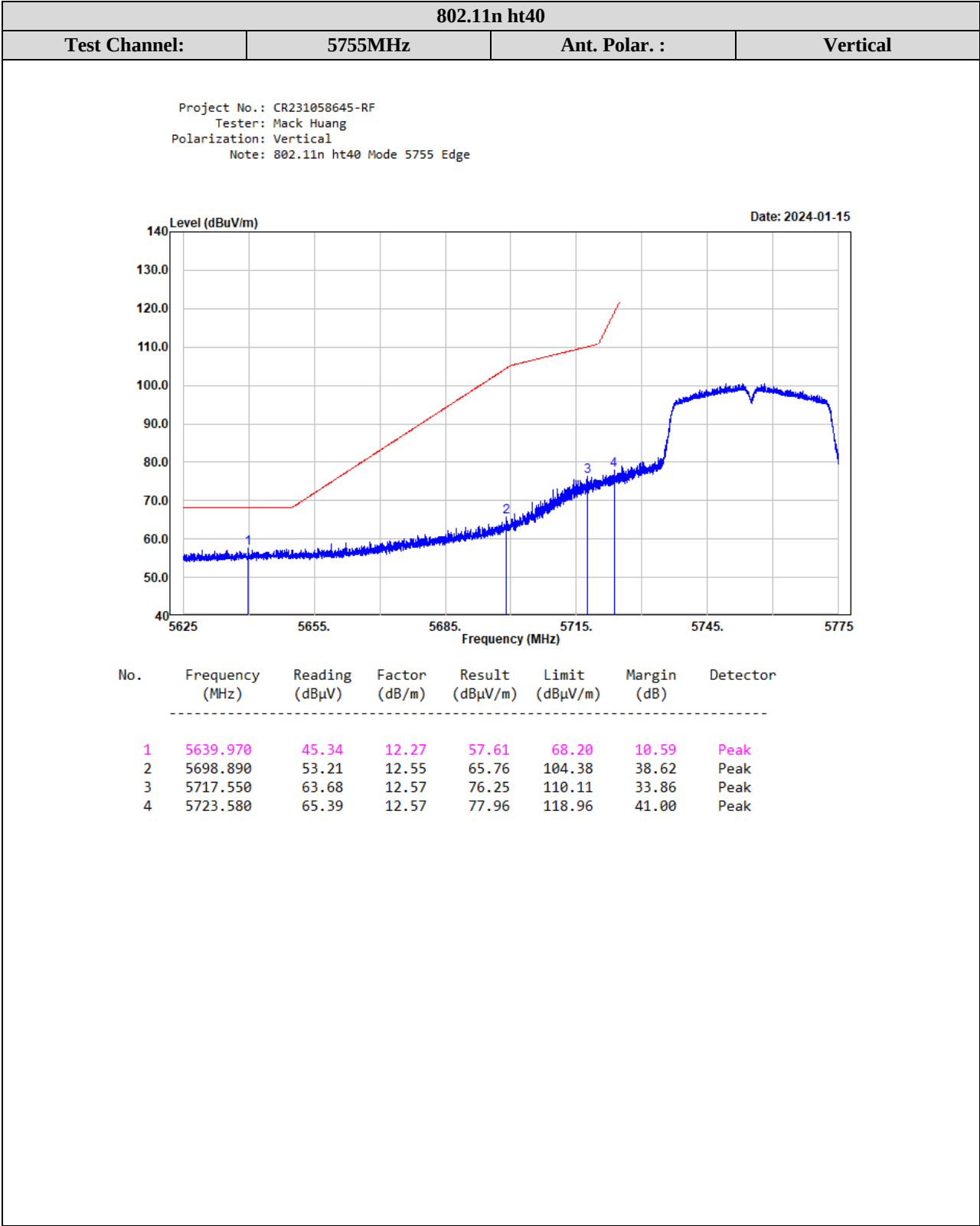
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5612.810	45.32	12.12	57.44	68.20	10.76	Peak
2	5692.470	45.17	12.52	57.69	99.65	41.96	Peak
3	5717.425	53.82	12.57	66.39	110.08	43.69	Peak
4	5724.600	62.89	12.57	75.46	121.29	45.83	Peak

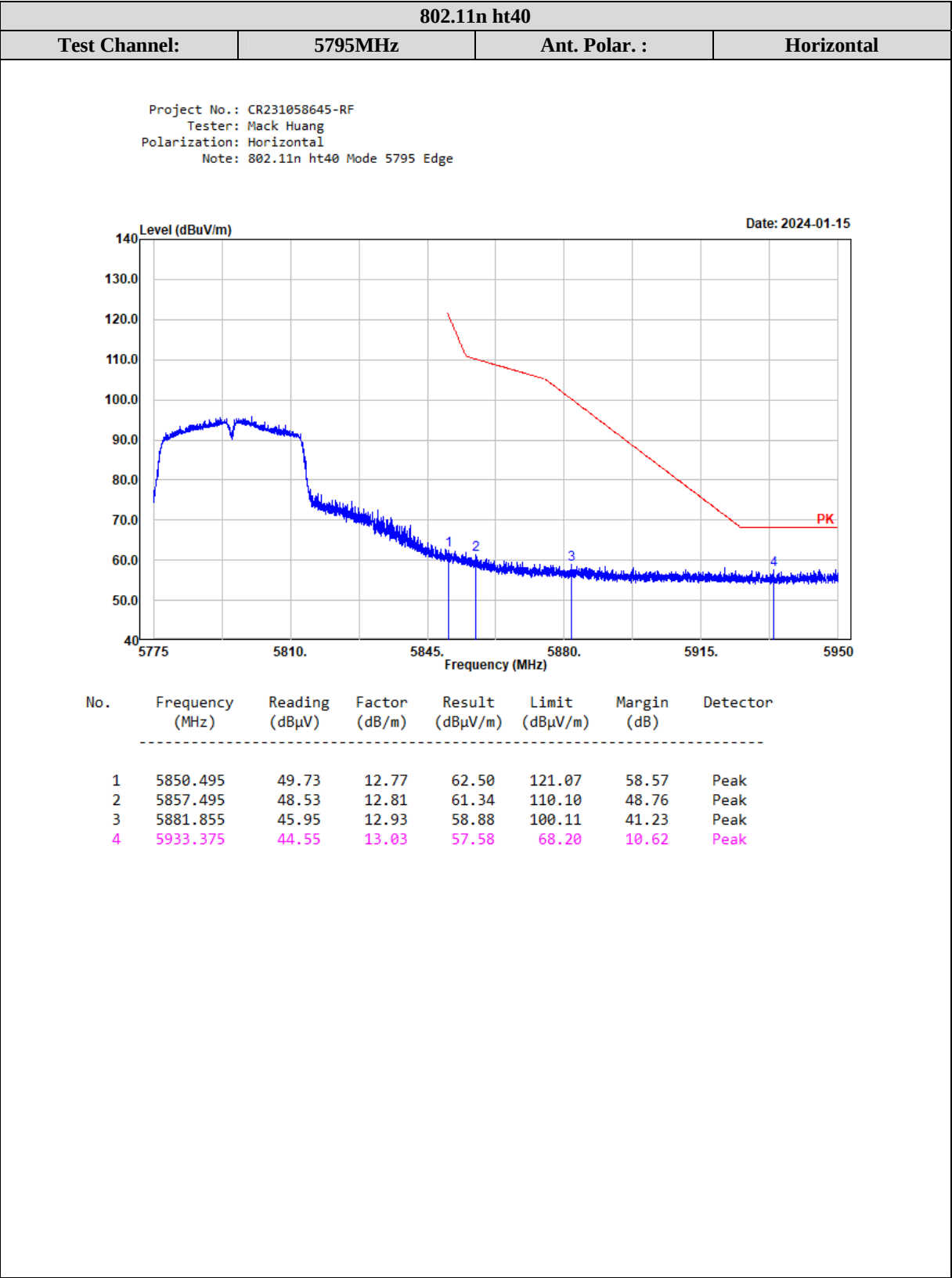


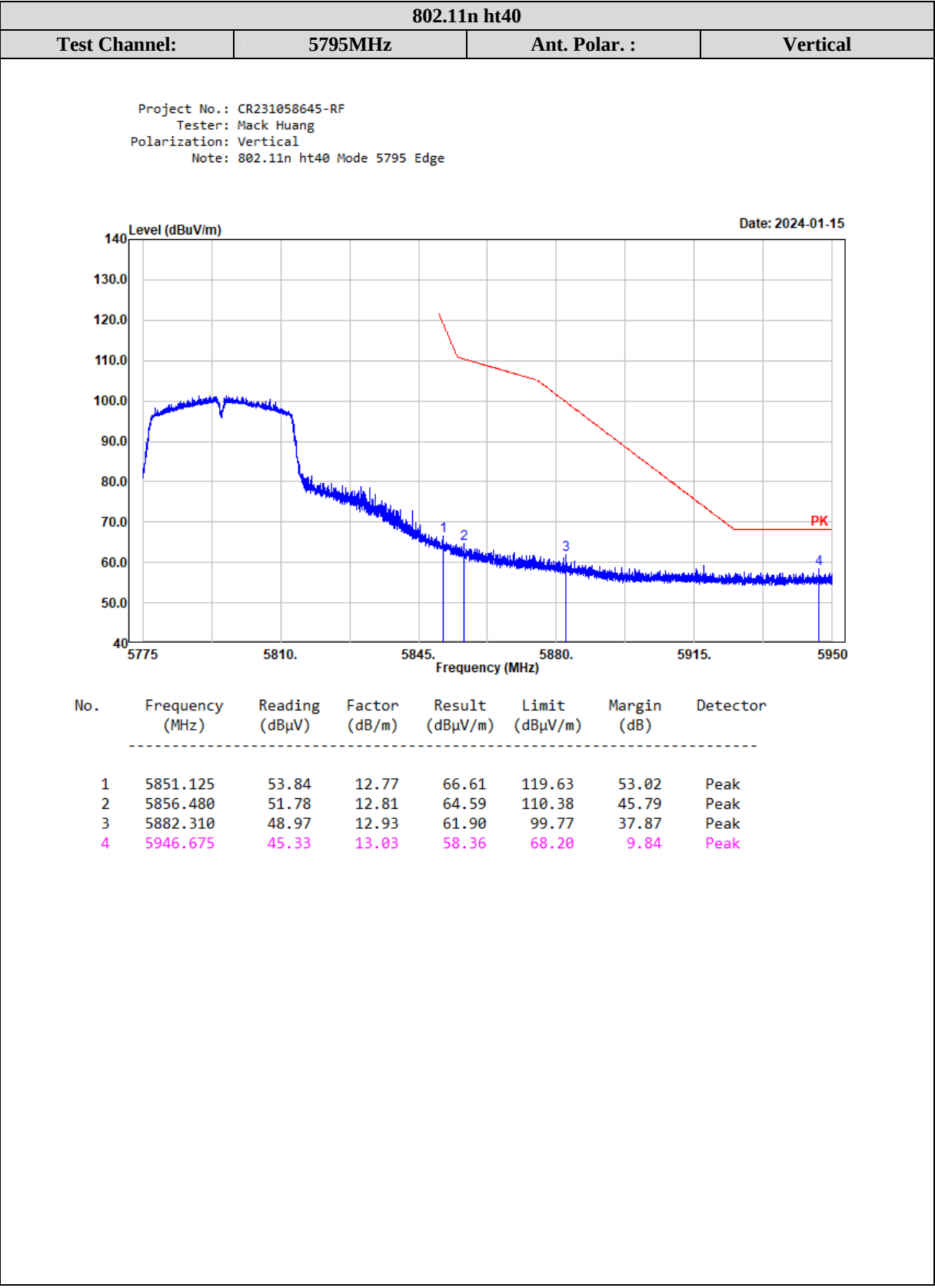




Page 100 of 175







802.11ac vht80

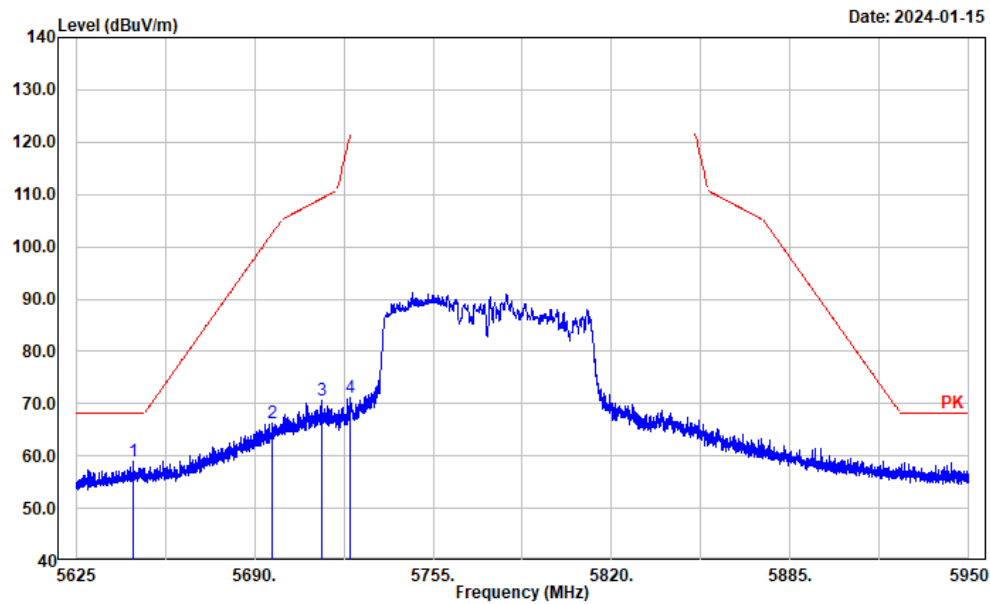
Test Channel:

5795MHz

Ant. Polar. :

Horizontal

Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Horizontal
Note: 802.11ac80 Mode 5795 Edge



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5645.735	46.69	12.29	58.98	68.20	9.22	Peak
2	5696.630	53.73	12.53	66.26	102.72	36.46	Peak
3	5714.635	58.11	12.56	70.67	109.30	38.63	Peak
4	5724.775	58.56	12.57	71.13	121.69	50.56	Peak

802.11ac vht80

Test Channel:

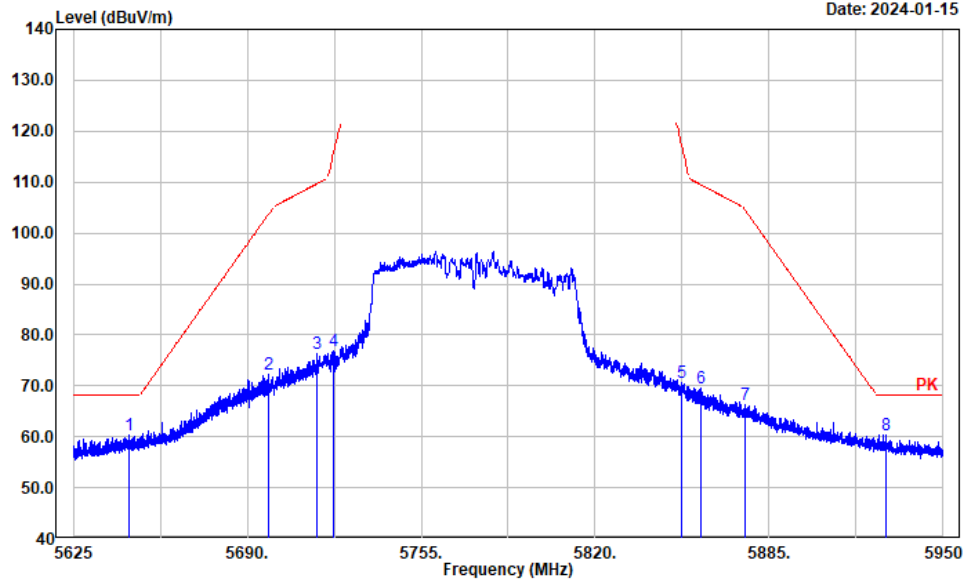
5795MHz

Ant. Polar. :

Vertical

Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Vertical
Note: 802.11ac80 Mode 5795 Edge

Date: 2024-01-15

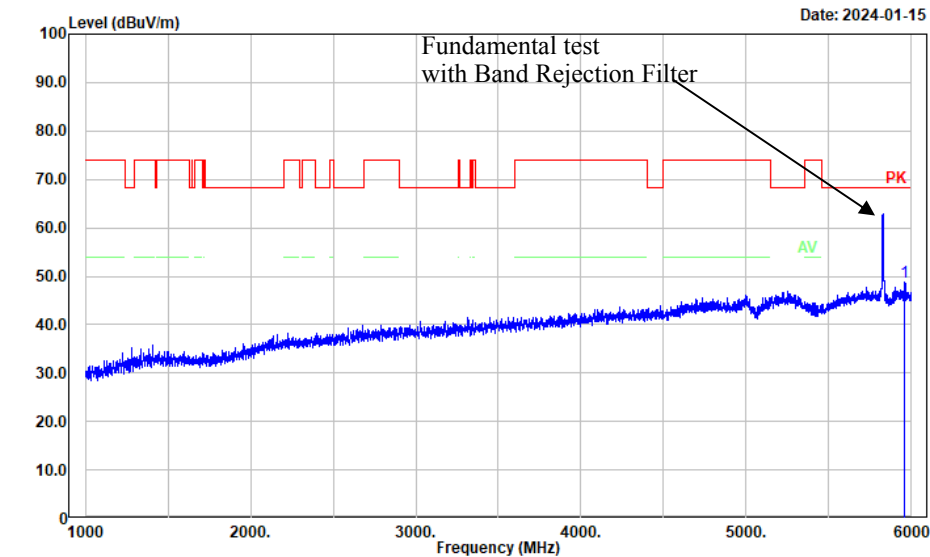


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5645.995	47.91	12.30	60.21	68.20	7.99	Peak
2	5697.930	59.62	12.54	72.16	103.67	31.51	Peak
3	5716.130	63.86	12.56	76.42	109.72	33.30	Peak
4	5722.240	64.35	12.57	76.92	115.91	38.99	Peak
5	5852.110	57.76	12.78	70.54	117.39	46.85	Peak
6	5859.455	56.74	12.82	69.56	109.55	39.99	Peak
7	5875.835	53.52	12.89	66.41	104.58	38.17	Peak
8	5928.420	47.43	13.03	60.46	68.20	7.74	Peak

worst radiation spurious emissions margin test plots(802.11a Mode 5825MHz)

1-6GHz Horizontal

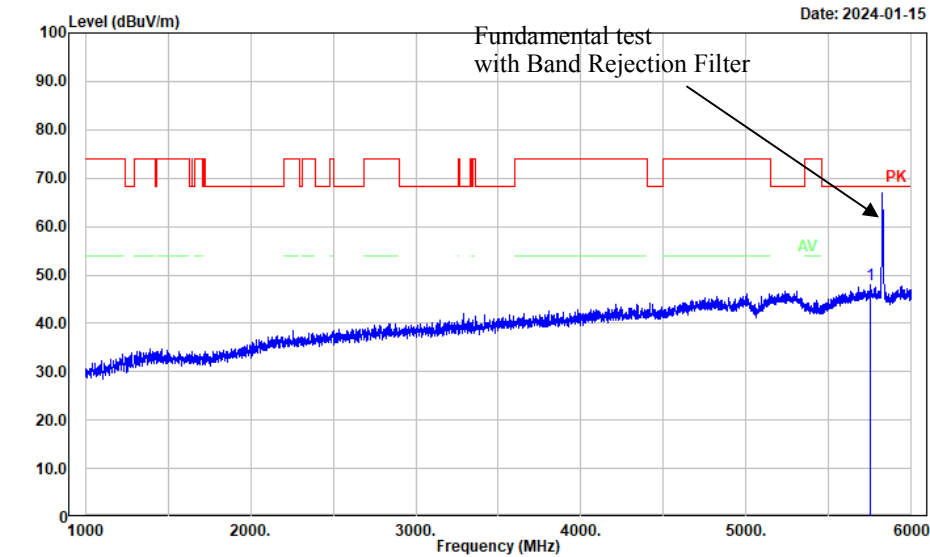
Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: horizontal
Note: 802.11a Mode High Channel



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5958.000	35.62	13.07	48.69	68.20	19.51	Peak

1-6GHz Vertical

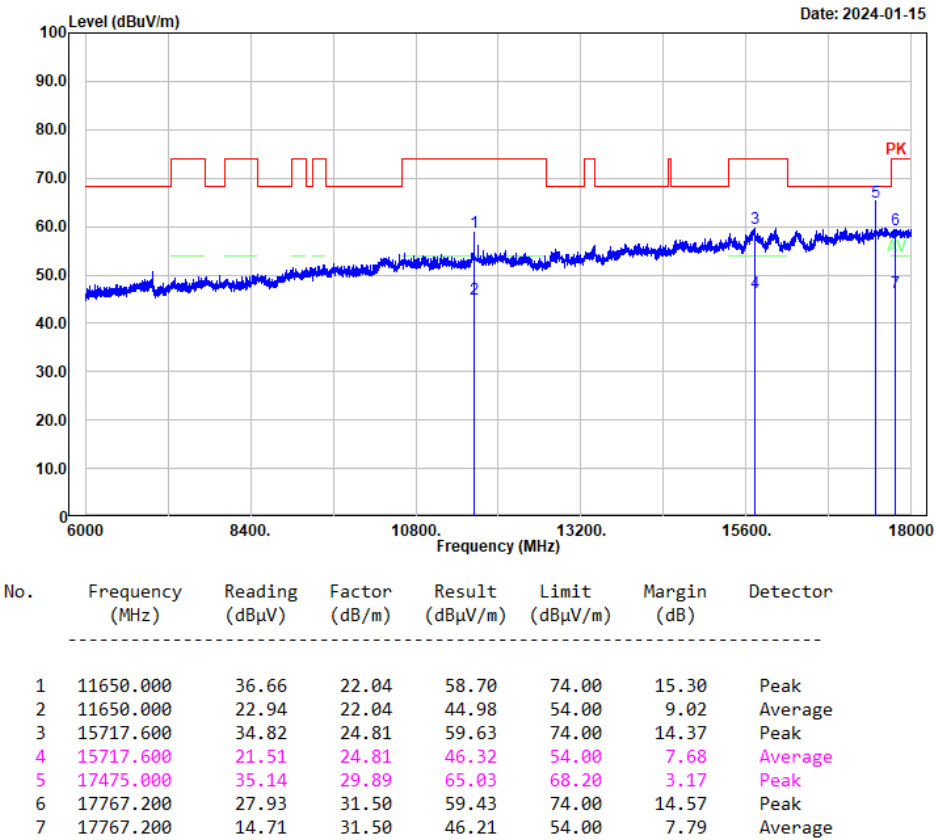
Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: vertical
Note: 802.11a Mode High Channel



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5748.000	35.27	12.59	47.86	68.20	20.34	Peak

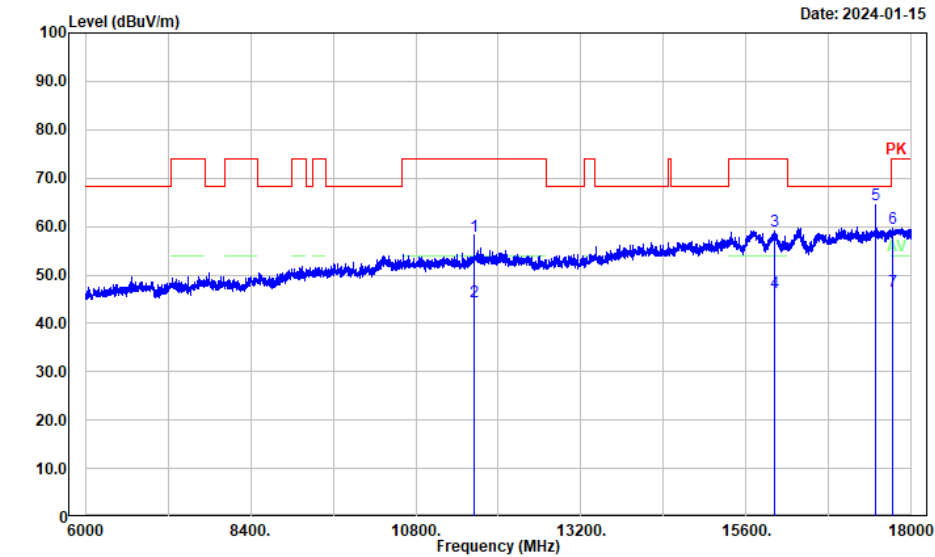
6-18GHz Horizontal

Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: horizontal
Note: 802.11a Mode High Channel



6-18GHz Vertical

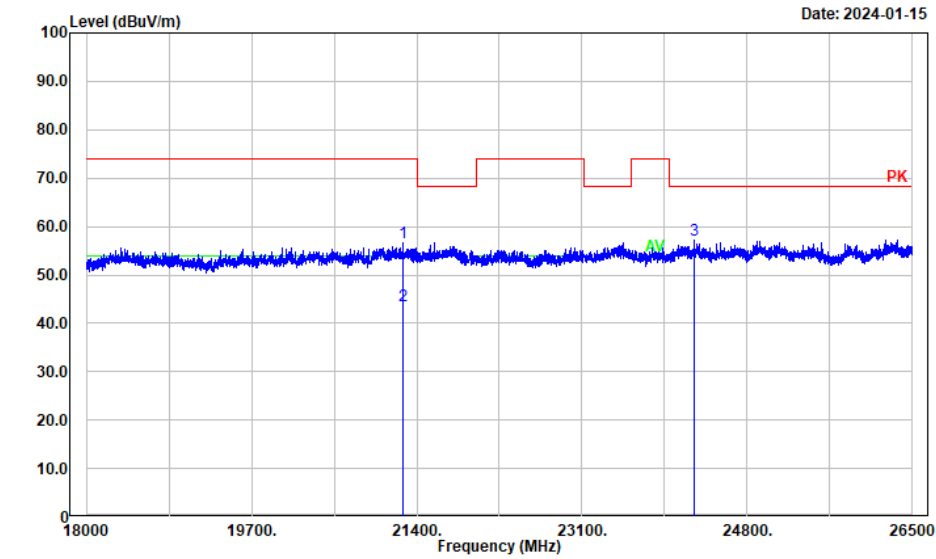
Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: vertical
Note: 802.11a Mode High Channel



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	11650.000	36.08	22.04	58.12	74.00	15.88	Peak
2	11650.000	22.33	22.04	44.37	54.00	9.63	Average
3	16003.200	33.95	25.17	59.12	74.00	14.88	Peak
4	16003.200	21.22	25.17	46.39	54.00	7.61	Average
5	17475.000	34.54	29.89	64.43	68.20	3.77	Peak
6	17731.200	28.17	31.37	59.54	74.00	14.46	Peak
7	17731.200	15.15	31.37	46.52	54.00	7.48	Average

18-26.5GHz Horizontal

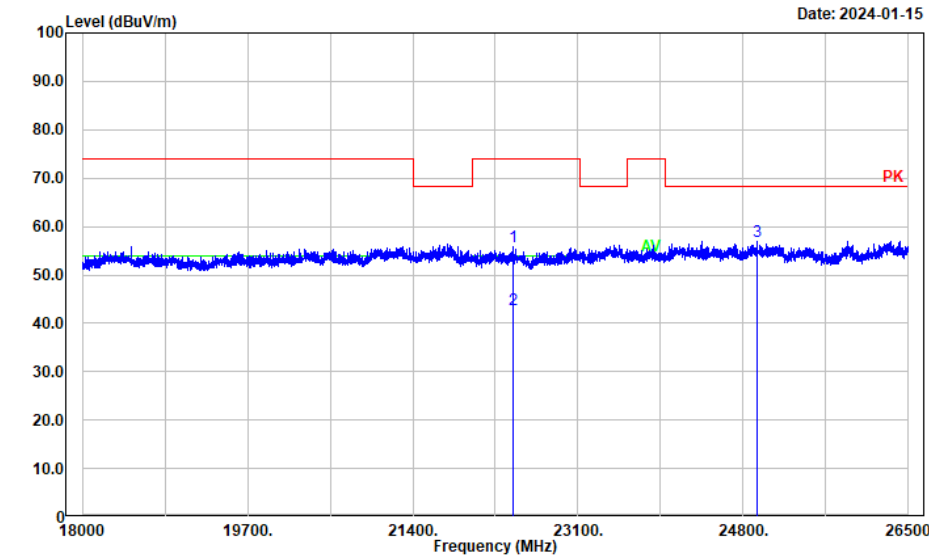
Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Horizontal
Note: 802.11a Mode High Channel



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	21262.300	51.76	4.84	56.60	74.00	17.40	Peak
2	21262.300	38.84	4.84	43.68	54.00	10.32	Average
3	24249.200	52.14	5.03	57.17	68.20	11.03	Peak

18-26.5GHz Vertical

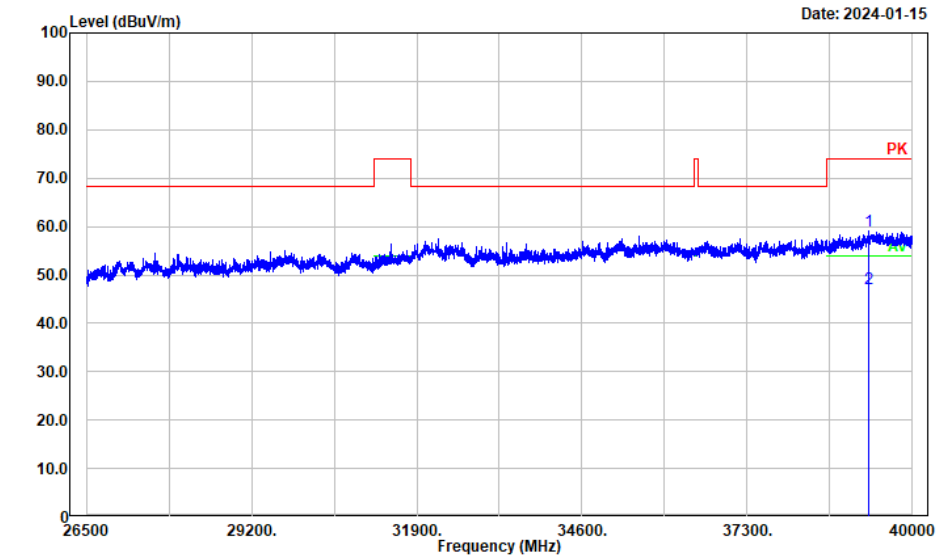
Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: vertical
Note: 802.11a Mode High Channel



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	22435.300	50.36	5.51	55.87	74.00	18.13	Peak
2	22435.300	37.34	5.51	42.85	54.00	11.15	Average
3	24941.100	50.54	6.48	57.02	68.20	11.18	Peak

26.5-40GHz Horizontal

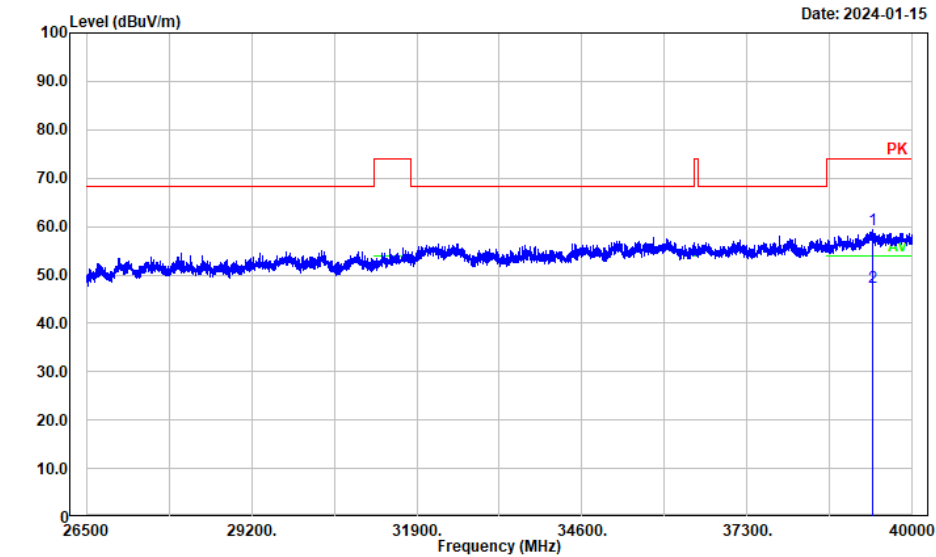
Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Horizontal
Note: 802.11a Mode High Channel



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	39279.100	48.92	10.18	59.10	74.00	14.90	Peak
2	39279.100	37.04	10.18	47.22	54.00	6.78	Average

26.5-40GHz Vertical

Project No.: CR231058645-RF
Tester: Mack Huang
Polarization: Vertical
Note: 802.11a Mode High Channel



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	39341.200	49.11	10.17	59.28	74.00	14.72	Peak
2	39341.200	37.28	10.17	47.45	54.00	6.55	Average

4.3 Emission Bandwidth

Serial Number:	2C04-3	Test Date:	2023/12/11-2023/12/12
Test Site:	RF	Test Mode:	Transmitting
Tester:	Lingling Li	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23	Relative Humidity: (%)	52-54	ATM Pressure: (kPa)	101.54
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101590	2022/11/25	2023/11/24
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data:

5150-5250 MHz:

Test Modes	Test Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180	22.76	17.38
	5200	23.04	17.34
	5240	23.84	17.38
802.11n ht20	5180	23.2	18.22
	5200	23.12	18.26
	5240	23.08	18.26
802.11n ht40	5190	45.12	36.52
	5230	44.8	36.52
802.11ac vht80	5210	84.64	74.81

Note:

The 99% Occupied Bandwidth have not fall into the band 5250-5350MHz, please refer to the test plots of 99% Occupied Bandwidth

5250-5350 MHz:

Test Modes	Test Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5260	22.64	17.34
	5280	22.72	17.34
	5320	22.8	17.3
802.11n ht20	5260	22.68	18.26
	5280	23.12	18.26
	5320	22.88	18.26
802.11n ht40	5270	44.64	36.44
	5310	44.96	36.52
802.11ac vht80	5290	84.96	74.97

5470-5725 MHz:

Test Modes	Test Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5500	23.48	17.42
	5580	23.04	17.34
	5700	23	17.38
	5720	22.88	17.38
802.11n ht20	5500	23.32	18.26
	5580	23.56	18.3
	5700	22.92	18.3
	5720	23.08	18.26
802.11n ht40	5510	44.72	36.52
	5550	45.52	36.52
	5670	44.72	36.44
	5710	44.56	36.44
802.11ac vht80	5530	85.44	74.97
	5610	84.64	74.81
	5690	85.6	74.81

5725-5850 MHz:

Test Modes	Test Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5745	16.48	17.38
	5785	16.48	17.34
	5825	16.48	17.38
802.11n ht20	5745	17.68	18.26
	5785	17.68	18.22
	5825	17.68	18.26
802.11n ht40	5755	35.84	36.44
	5795	35.84	36.52
802.11ac vht80	5775	75.36	75.28

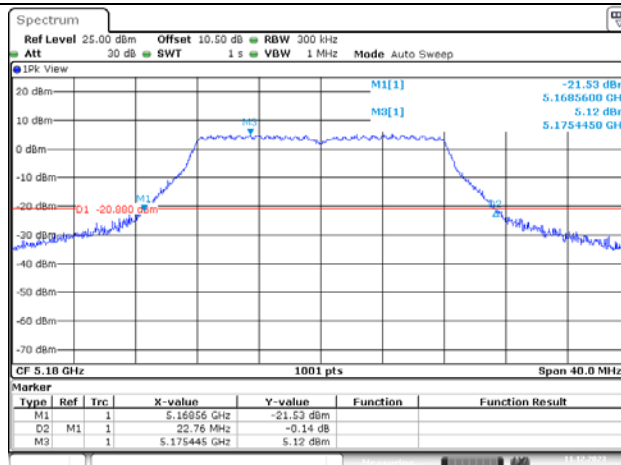
Note:

1. 6dB Emission Bandwidth Limit: ≥ 0.5 MHz

2. The 99% Occupied Bandwidth have not fall into the band 5470-5725MHz, please refer to the test plots of 99% Occupied Bandwidth.

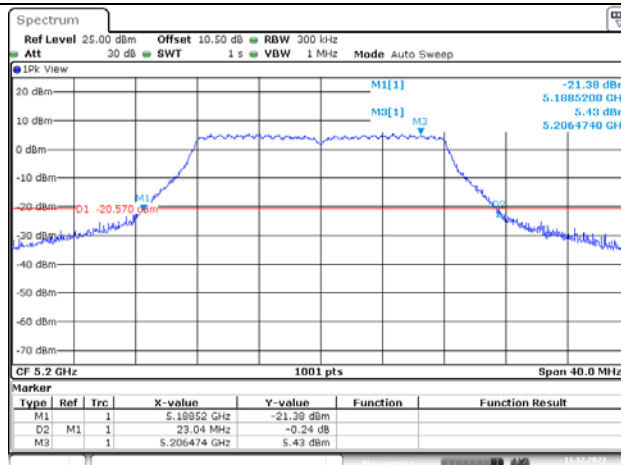
5150-5250MHz:

26dB Emission Bandwidth

802.11a
Lowest Channel

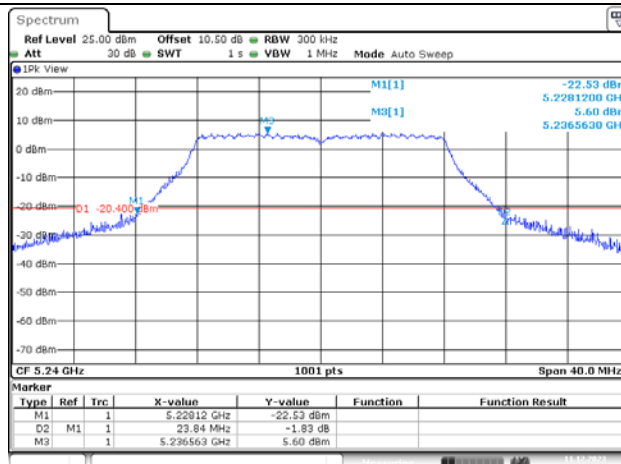
ProjectNo.:CR231058645-RF Tester:Lingling Li

Date: 11.DEC.2023 14:41:02

802.11a
Middle Channel

ProjectNo.:CR231058645-RF Tester:Lingling Li

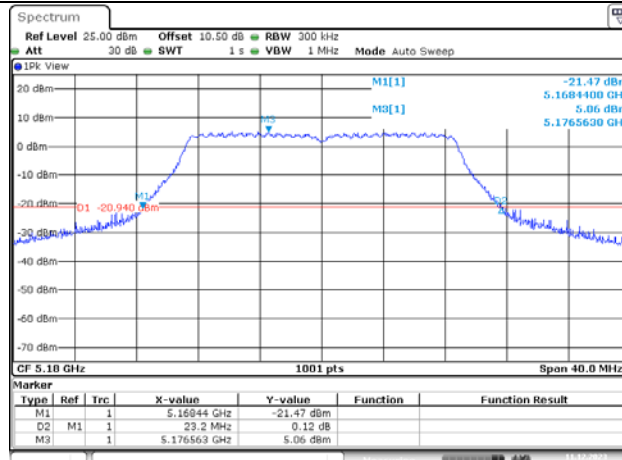
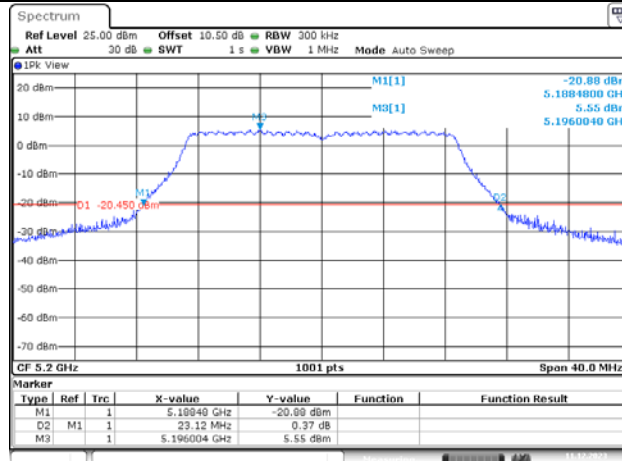
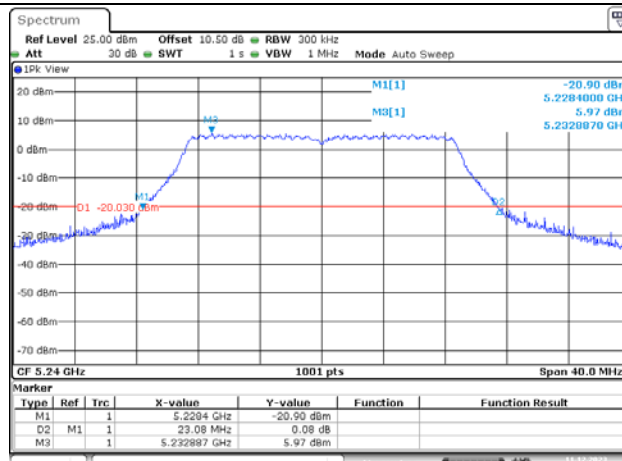
Date: 11.DEC.2023 14:44:21

802.11a
Highest Channel

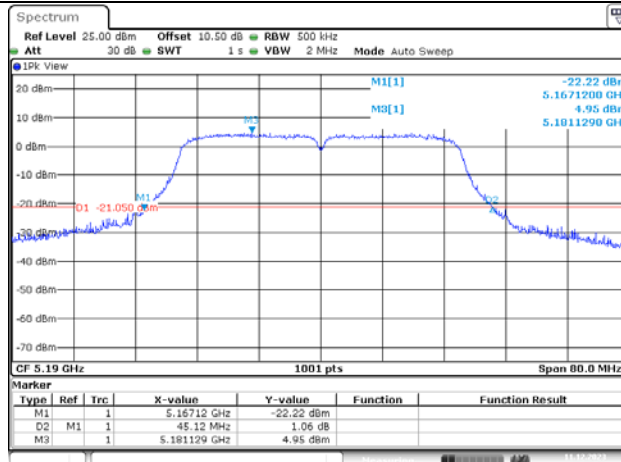
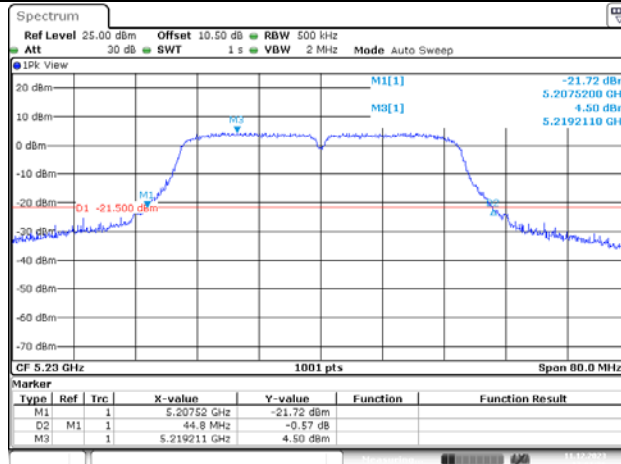
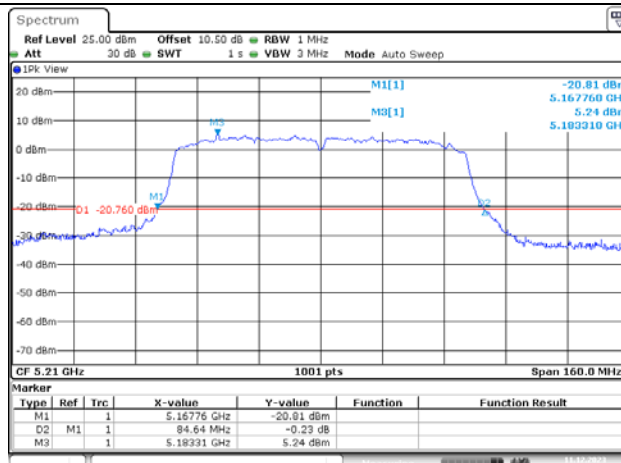
ProjectNo.:CR231058645-RF Tester:Lingling Li

Date: 11.DEC.2023 14:47:13

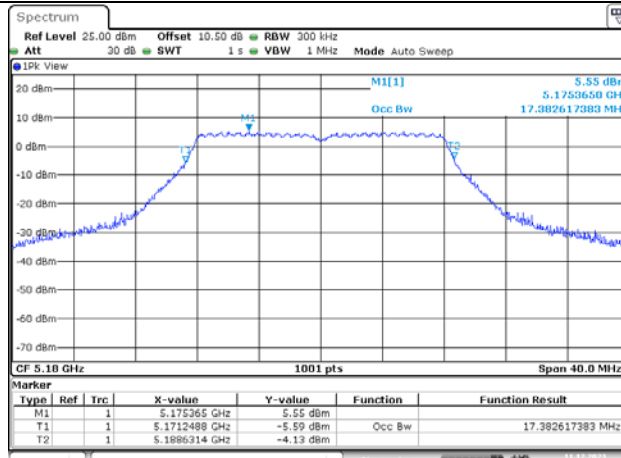
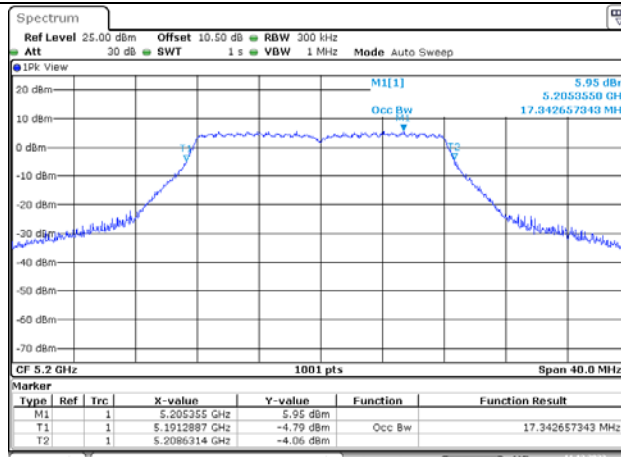
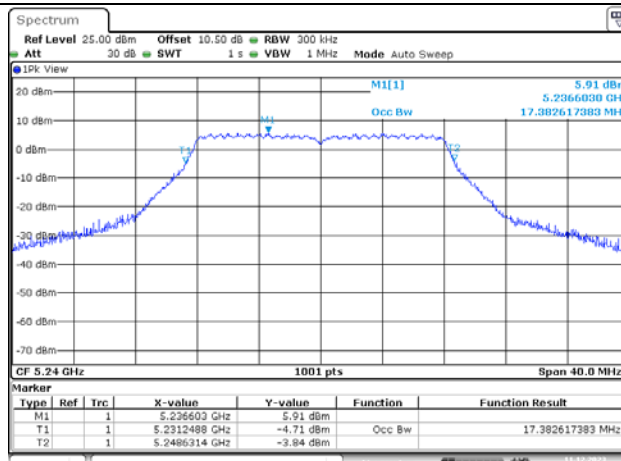
26dB Emission Bandwidth

802.11n ht20
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:30:32802.11n ht20
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:35:03802.11n ht20
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:39:12

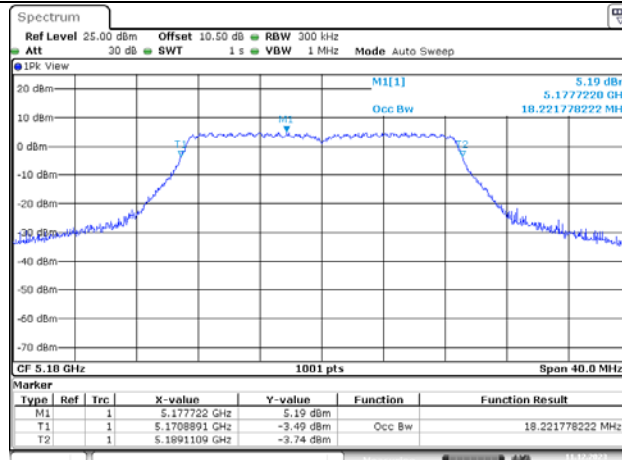
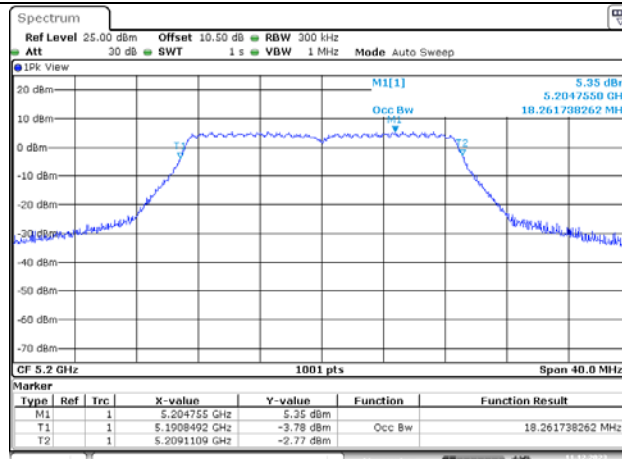
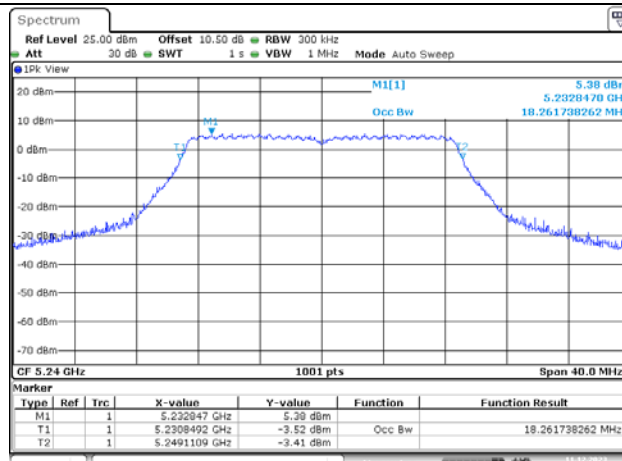
26dB Emission Bandwidth

802.11n ht40
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 16:57:19802.11n ht40
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 17:01:56802.11ac vht80
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 18:11:42

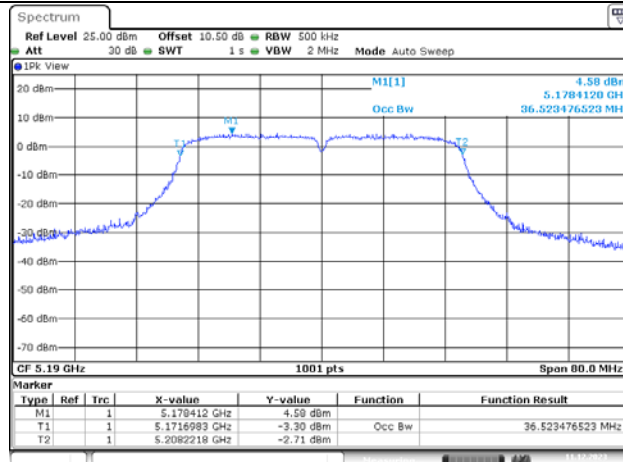
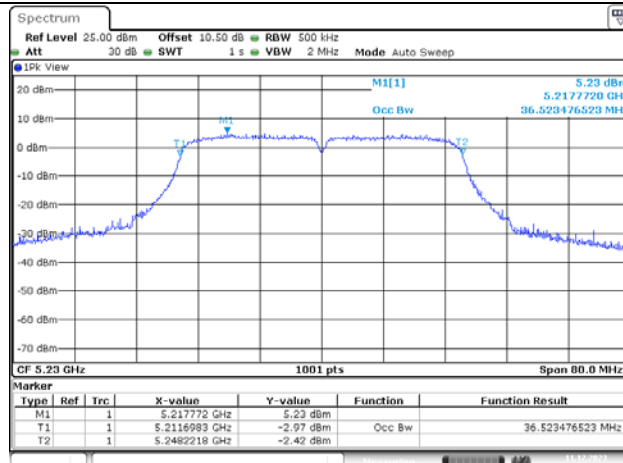
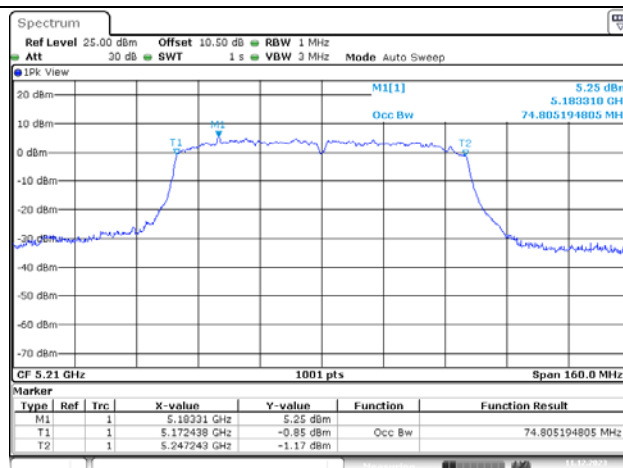
99% Emission Bandwidth

802.11a
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 14:40:31802.11a
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 14:43:34802.11a
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 14:46:31

99% Emission Bandwidth

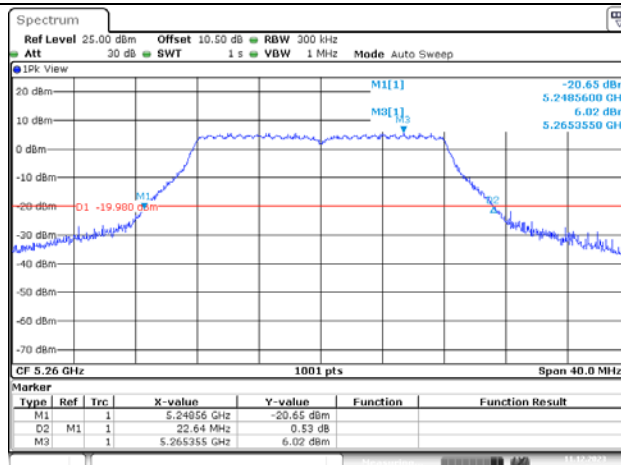
802.11n ht20
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:29:37802.11n ht20
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:34:07802.11n ht20
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:37:52

99% Emission Bandwidth

802.11n ht40
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 16:56:24802.11n ht40
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 17:01:01802.11ac vht80
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 18:11:24

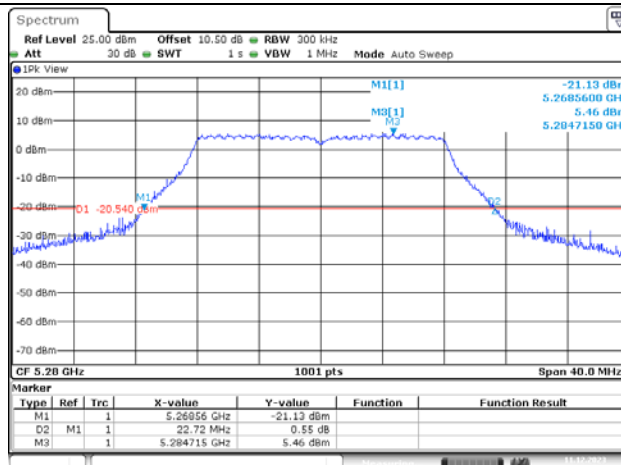
5250-5350MHz:

26dB Emission Bandwidth

802.11a
Lowest Channel

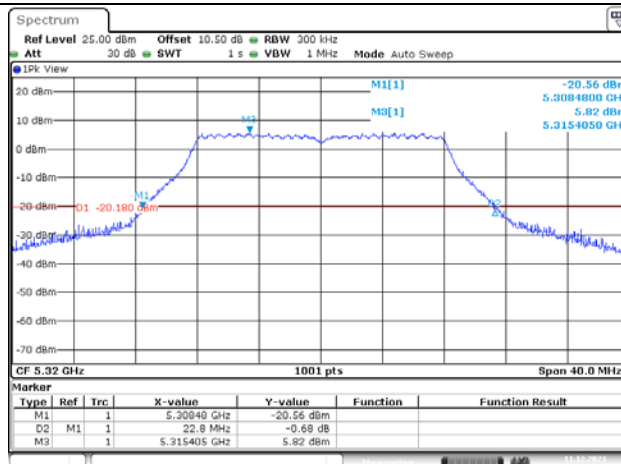
ProjectNo.:CR231058645-RF Tester:Lingling Li

Date: 11.DEC.2023 14:51:50

802.11a
Middle Channel

ProjectNo.:CR231058645-RF Tester:Lingling Li

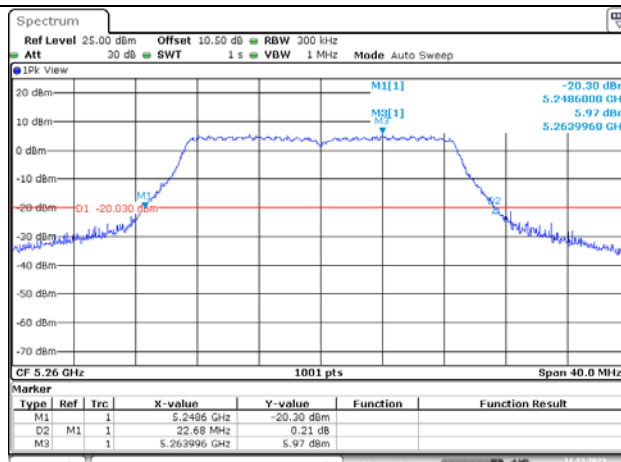
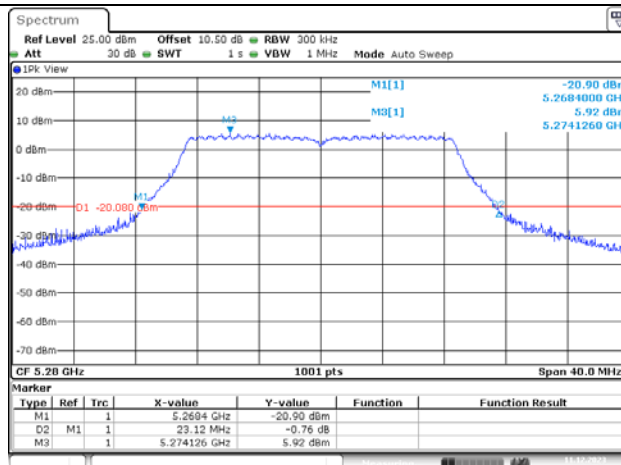
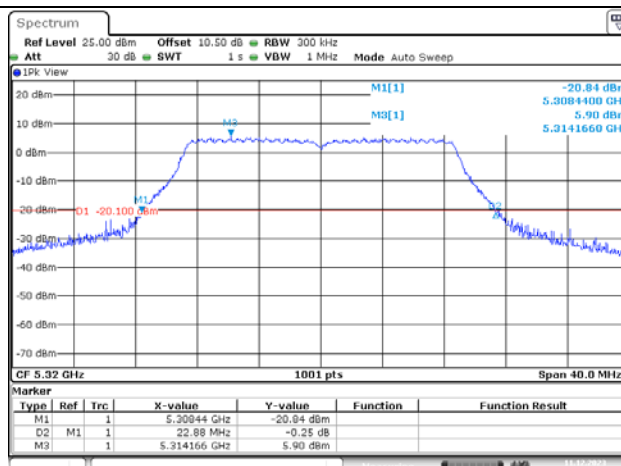
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802.11a
Highest Channel

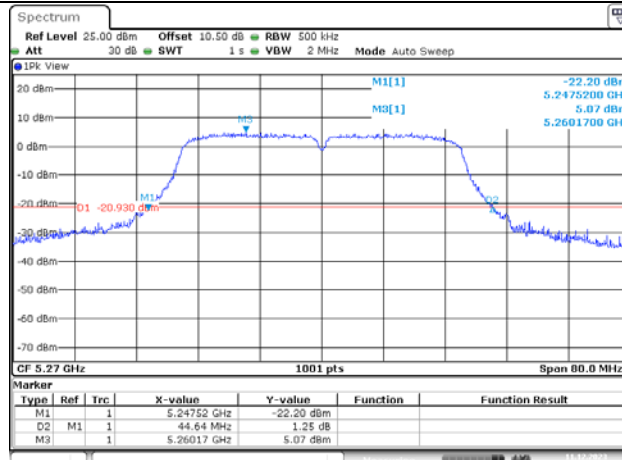
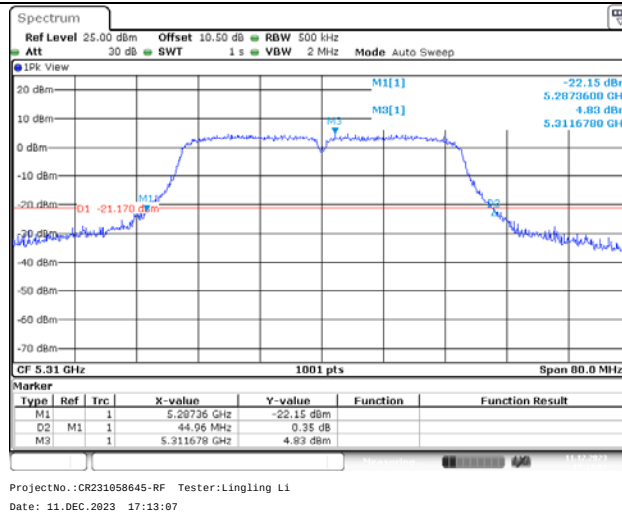
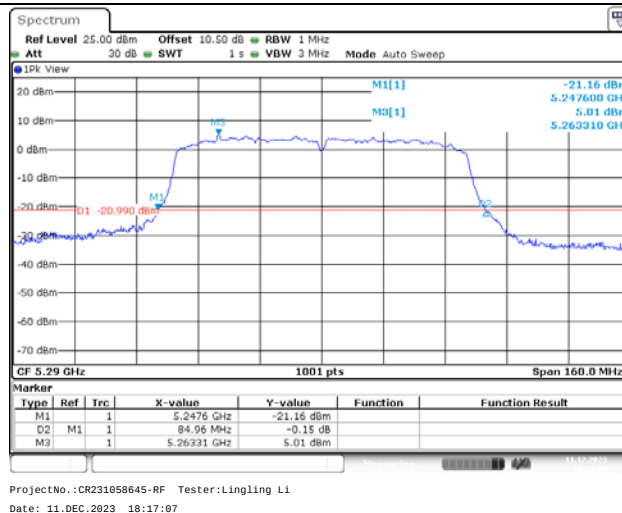
ProjectNo.:CR231058645-RF Tester:Lingling Li

Date: 11.DEC.2023 14:59:33

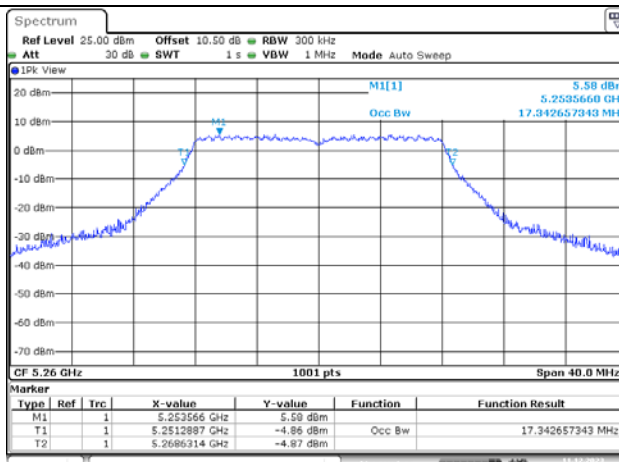
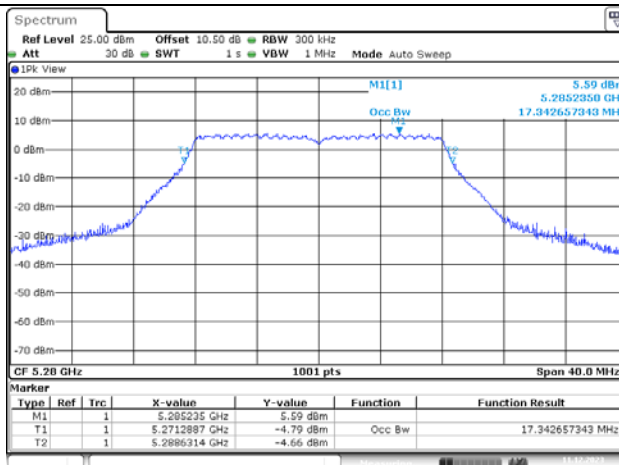
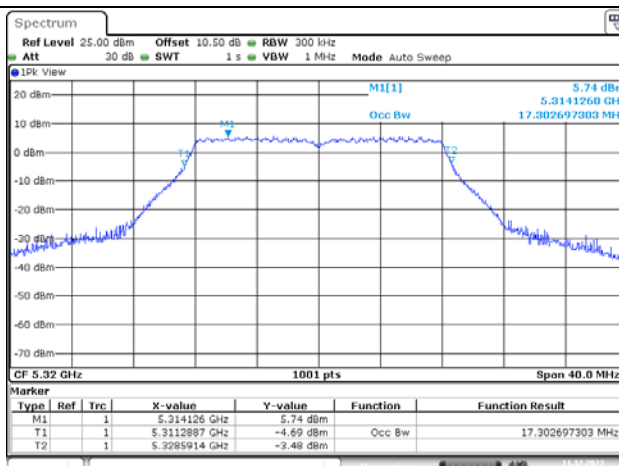
26dB Emission Bandwidth

802.11n ht20
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:43:26802.11n ht20
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:46:12802.11n ht20
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:48:32

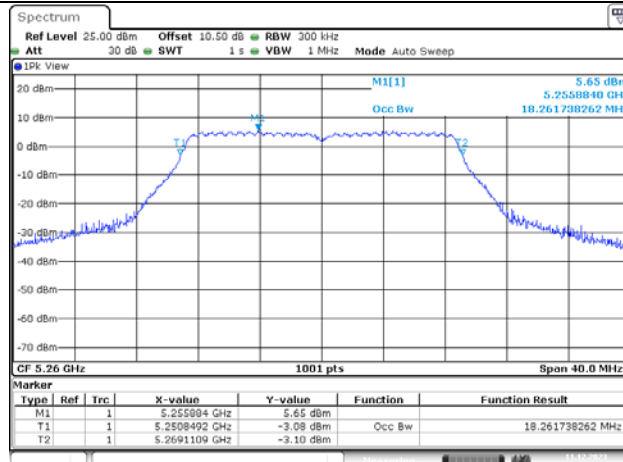
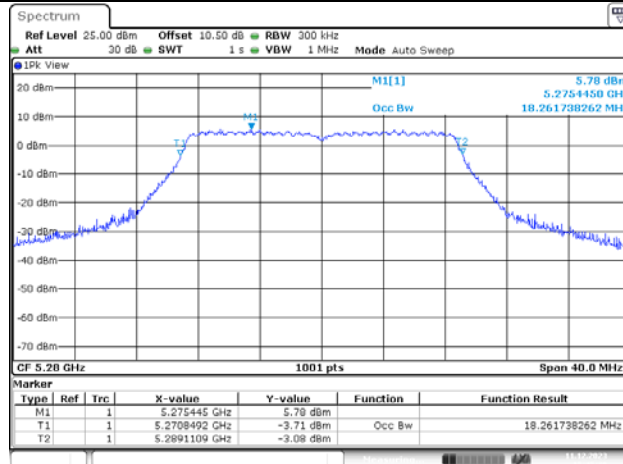
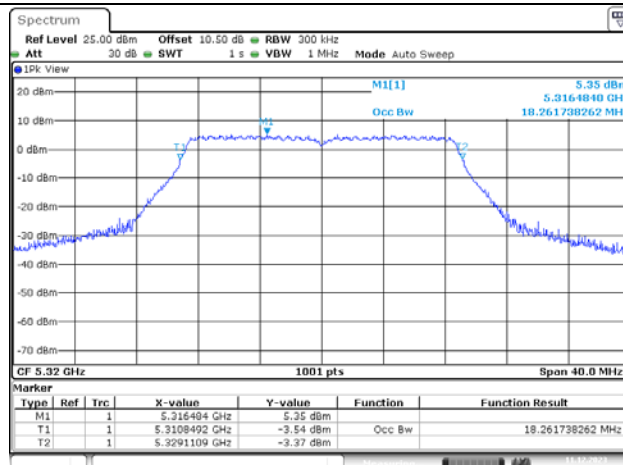
26dB Emission Bandwidth

802.11n ht40
Lowest Channel802.11n ht40
Highest Channel802.11ac vht80
Middle Channel

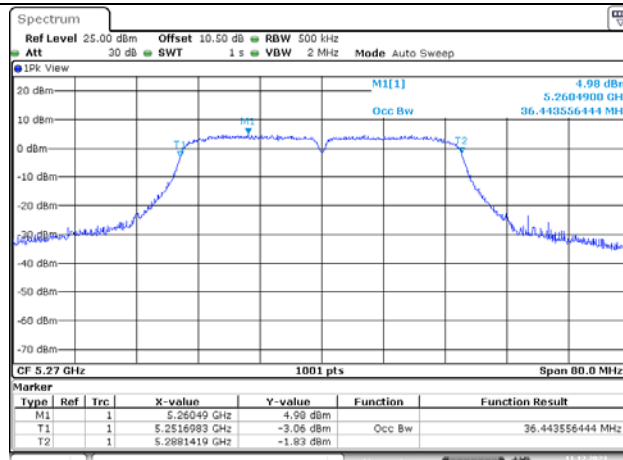
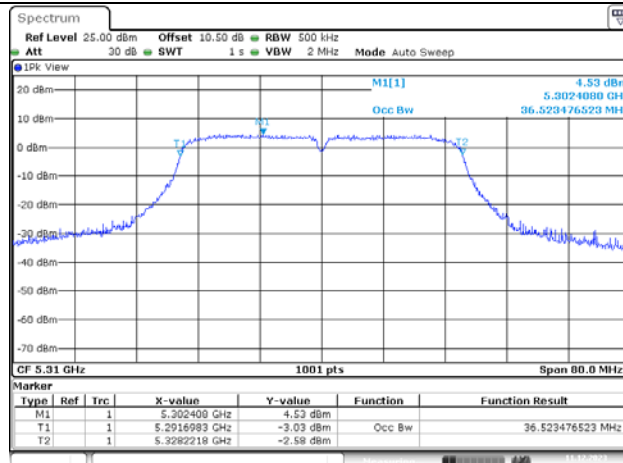
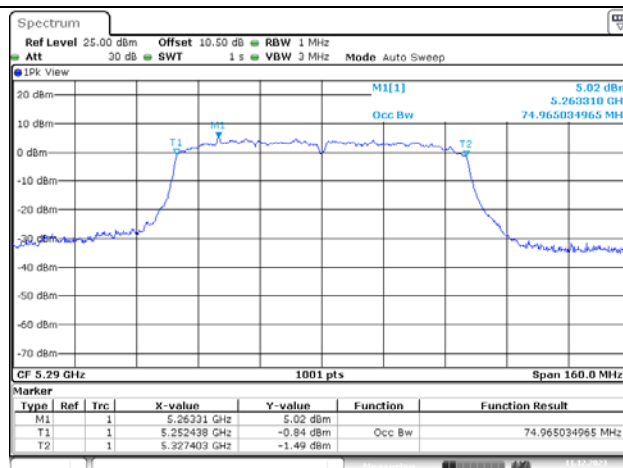
99% Emission Bandwidth

802.11a
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 14:51:07802.11a
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 14:55:30802.11a
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 14:58:24

99% Emission Bandwidth

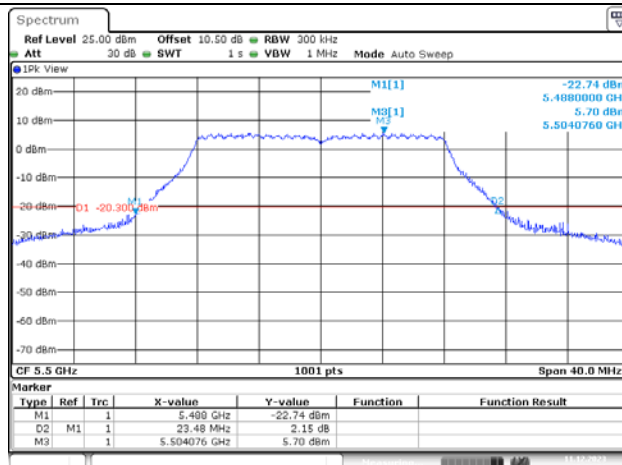
802.11n ht20
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Date: 11.DEC.2023 15:42:55802.11n ht20
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:45:30802.11n ht20
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:47:49

99% Emission Bandwidth

802.11n ht40
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 17:09:30802.11n ht40
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 17:12:44802.11ac vht80
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 18:16:49

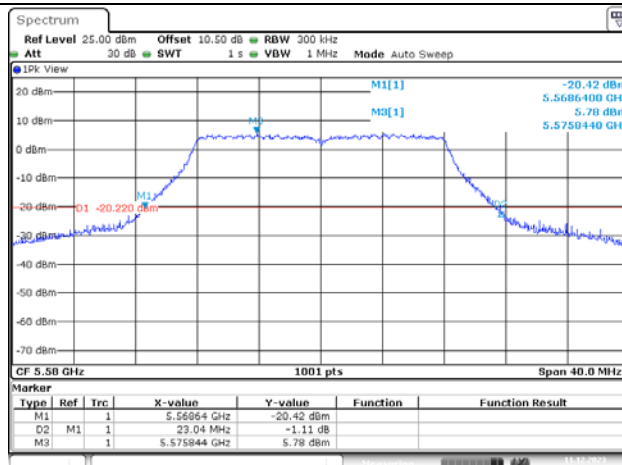
5470-5725 MHz:

26dB Emission Bandwidth

802.11a
Lowest Channel

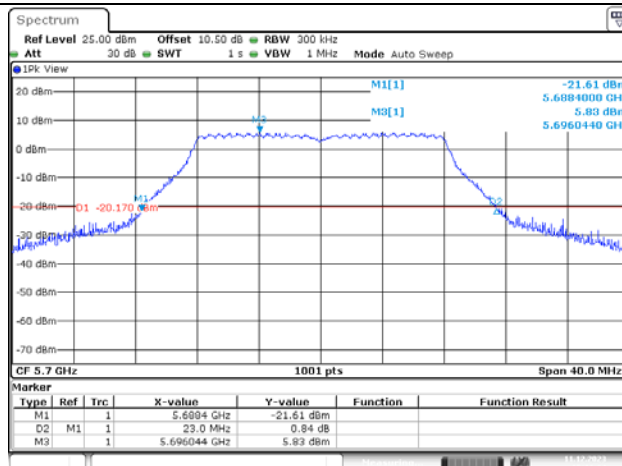
ProjectNo.:CR231058645-RF Tester:Lingling Li

Date: 11.DEC.2023 15:02:59

802.11a
Middle Channel

ProjectNo.:CR231058645-RF Tester:Lingling Li

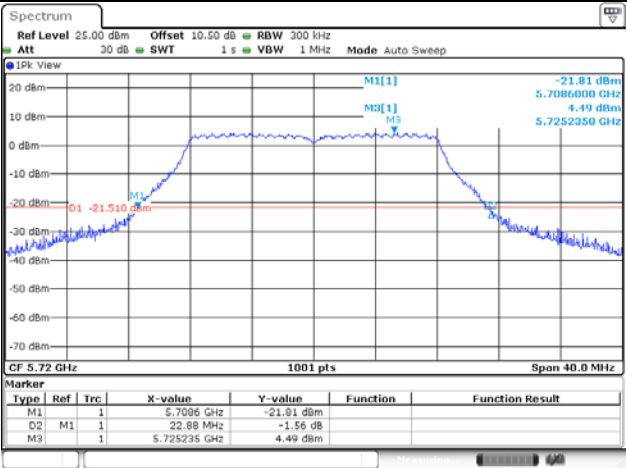
Date: 11.DEC.2023 15:05:31

802.11a
Highest Channel

ProjectNo.:CR231058645-RF Tester:Lingling Li

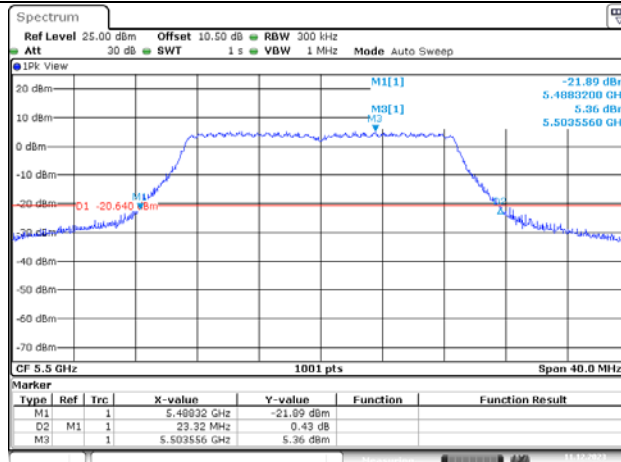
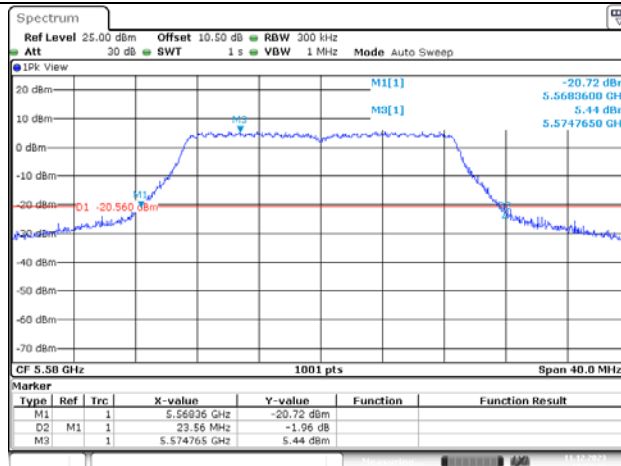
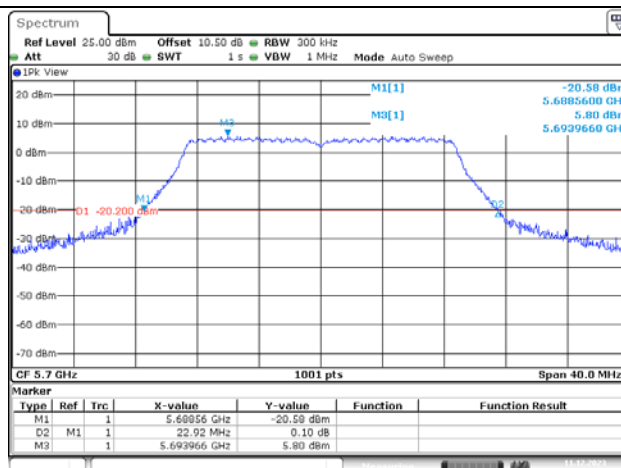
Date: 11.DEC.2023 15:11:14

cross_5720MHz

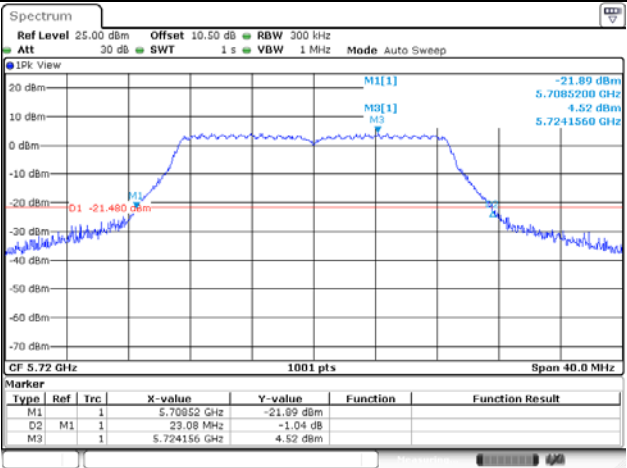


ProjectNo.: CR231058645-RF Tester: Lingling Li
Date: 12.DEC.2023 18:17:28

26dB Emission Bandwidth

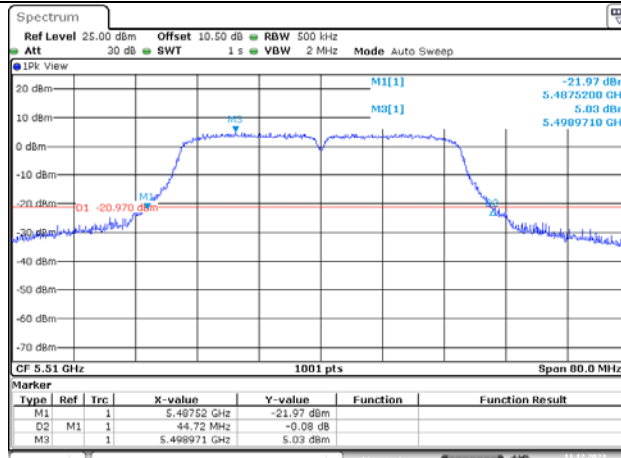
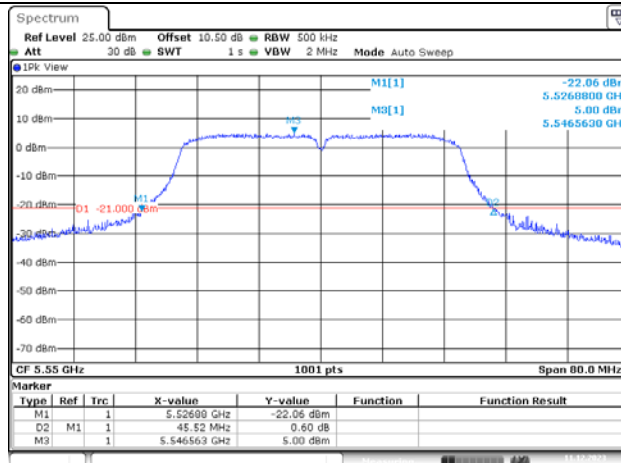
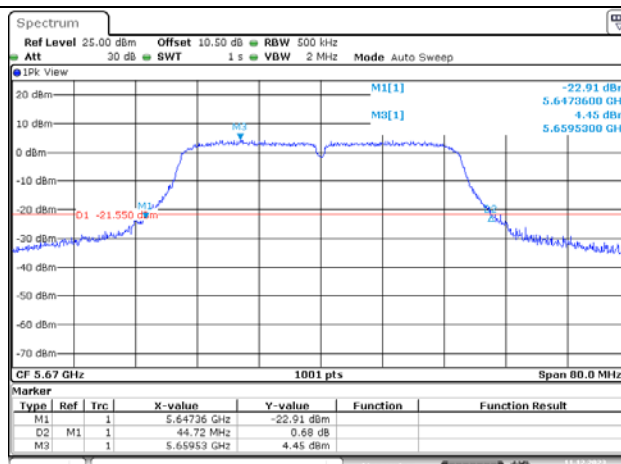
802.11n ht20
Lowest Channel802.11n ht20
Middle Channel802.11n ht20
Highest Channel

cross_5720MHz

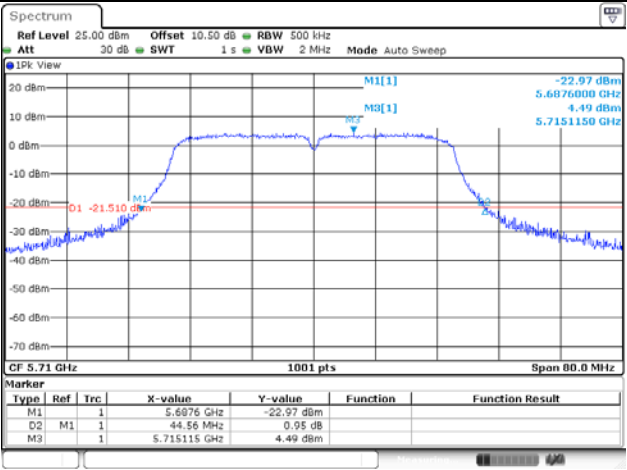


ProjectNo.: CR231058645-RF Tester: Lingling Li
Date: 12.DEC.2023 18:20:33

26dB Emission Bandwidth

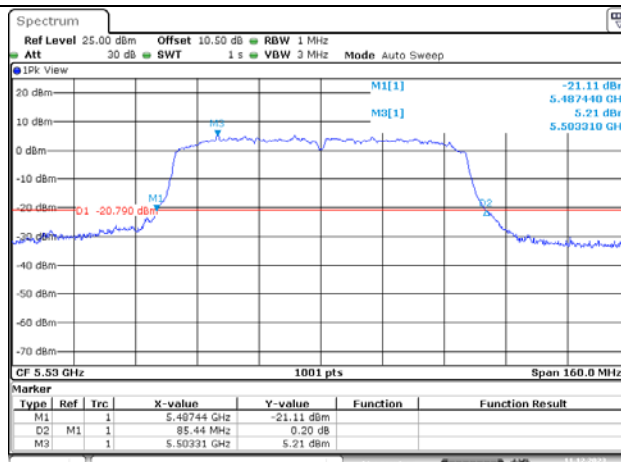
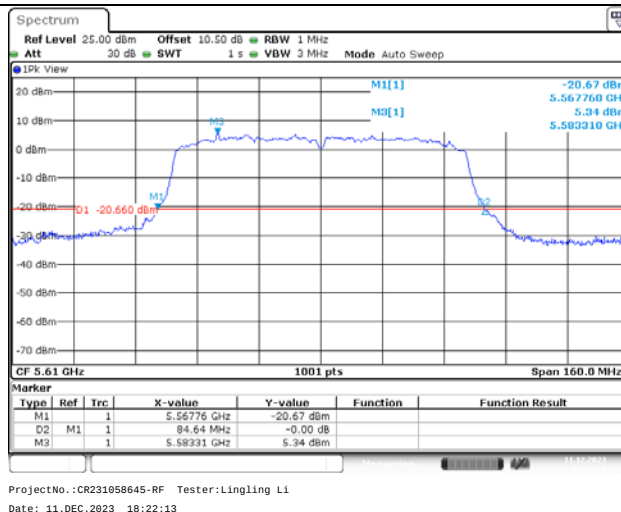
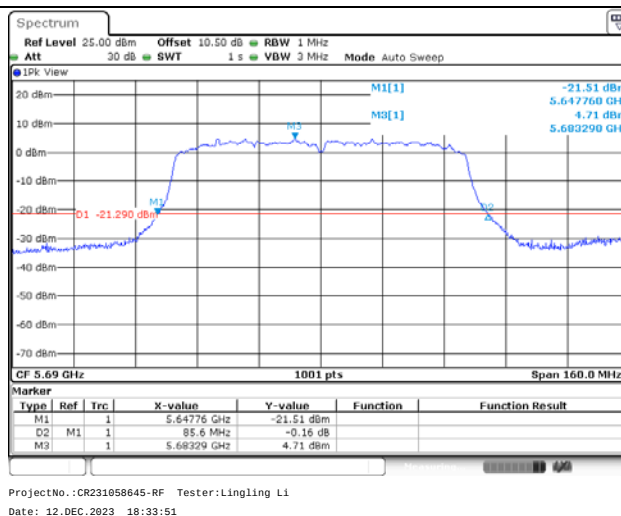
802.11n ht40
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 17:15:34802.11n ht40
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 17:18:51802.11n ht40
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 17:21:30

cross_5710MHz

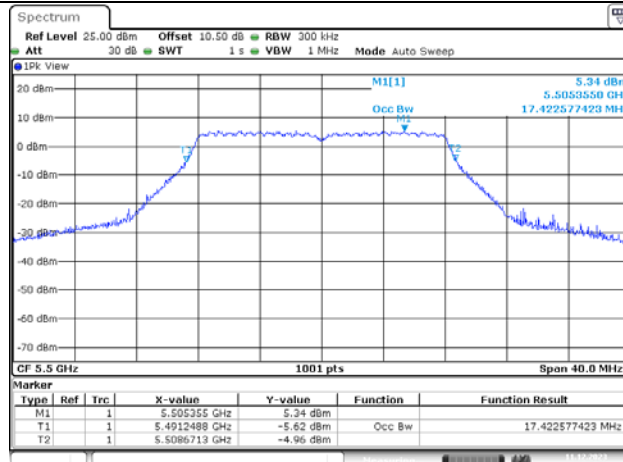
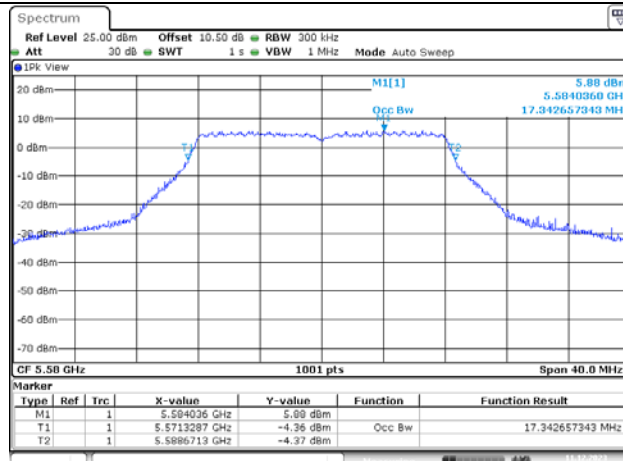
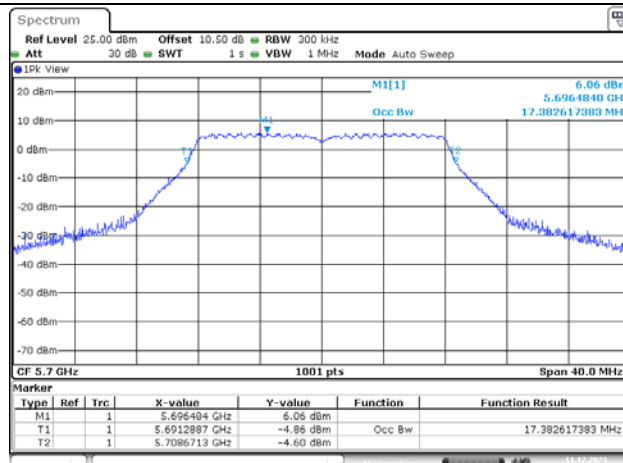


ProjectNo.: CR231058645-RF Tester: Lingling Li
Date: 12.DEC.2023 18:27:11

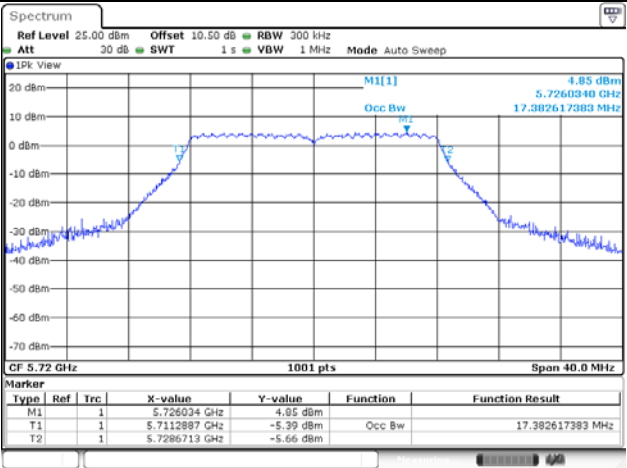
26dB Emission Bandwidth

802.11ac vht80
Lowest Channel802.11ac vht80
Middle Channel802.11ac vht80
Highest Channel

99% Emission Bandwidth

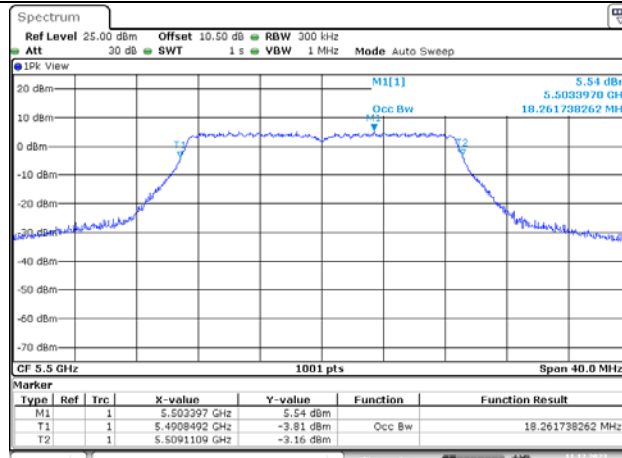
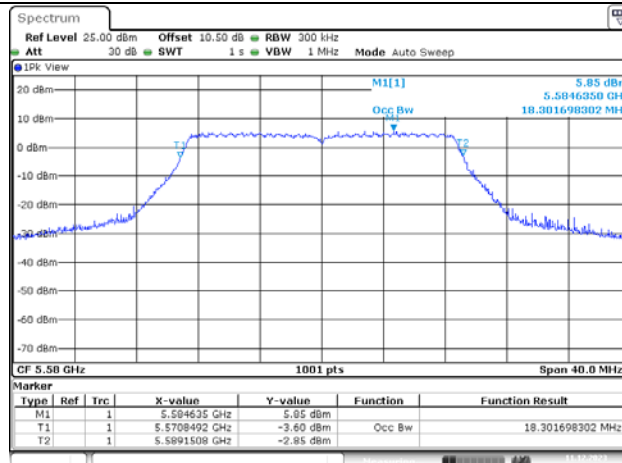
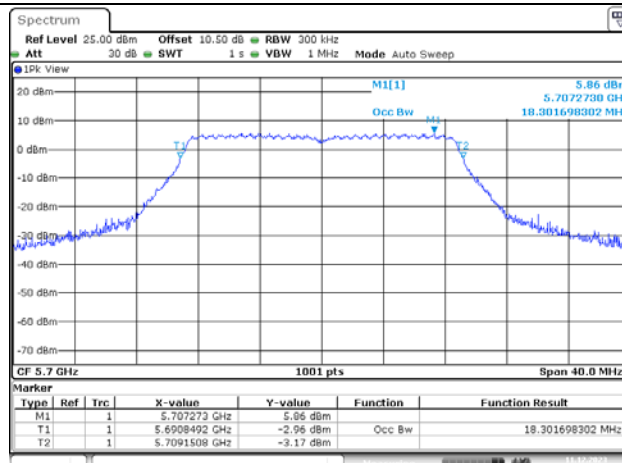
802.11a
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:02:04802.11a
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:05:13802.11a
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:10:05

cross_5720MHz

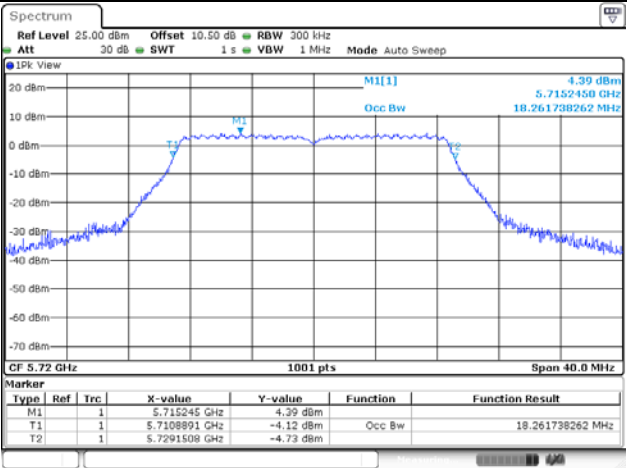


ProjectNo.: CR231058645-RF Tester: Lingling Li
Date: 12.DEC.2023 18:16:35

99% Emission Bandwidth

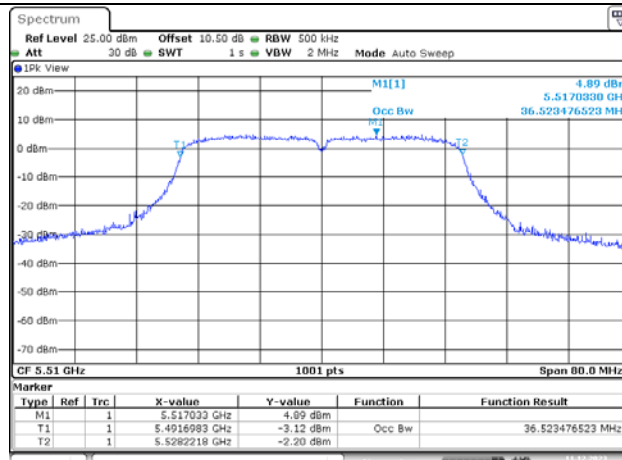
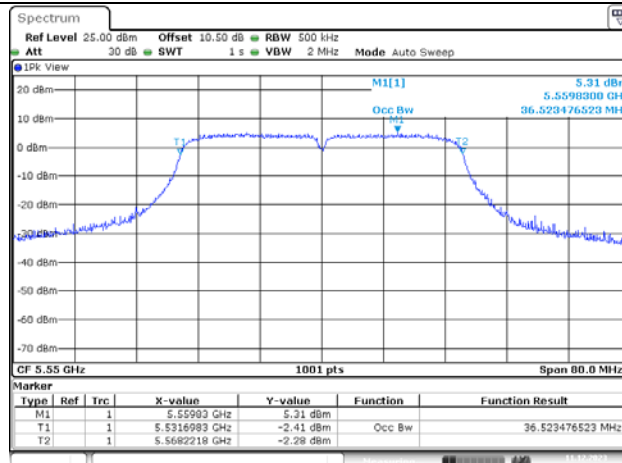
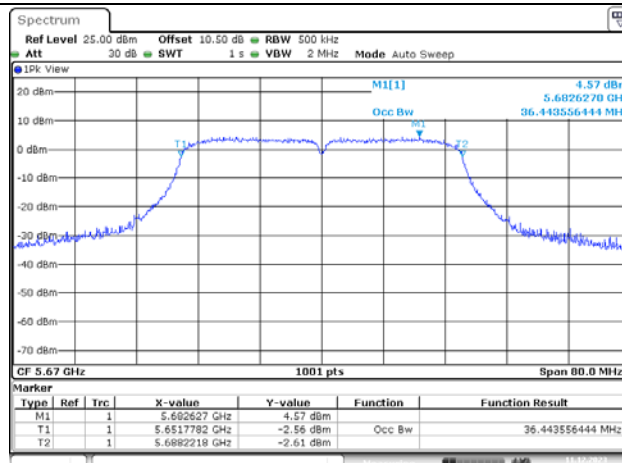
802.11n ht20
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:50:45802.11n ht20
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:53:54802.11n ht20
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:57:00

cross_5720MHz

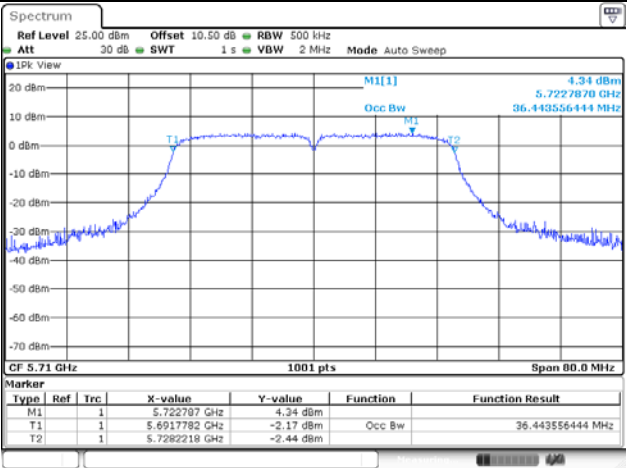


ProjectNo.: CR231058645-RF Tester: Lingling Li
Date: 12.DEC.2023 18:19:49

99% Emission Bandwidth

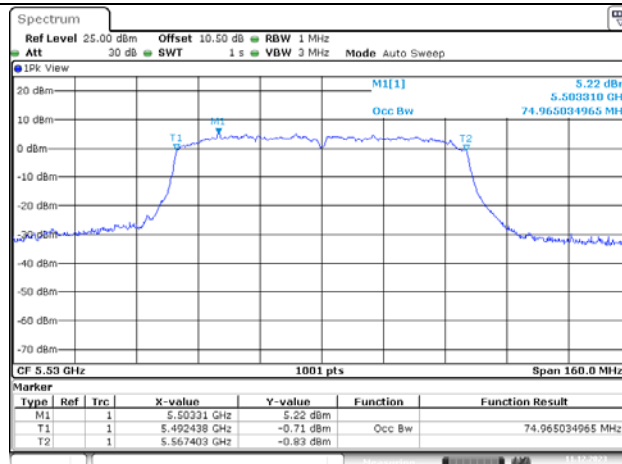
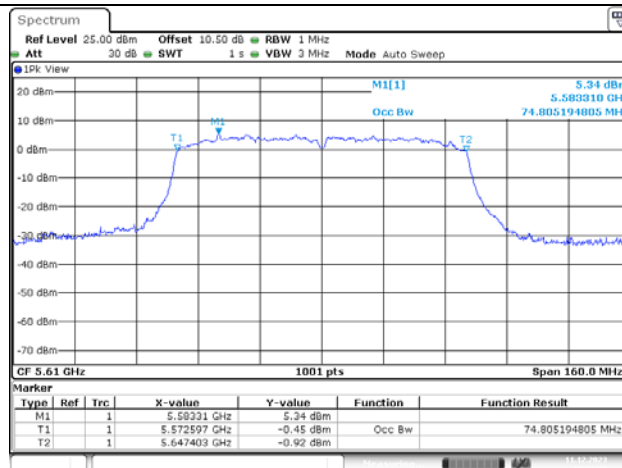
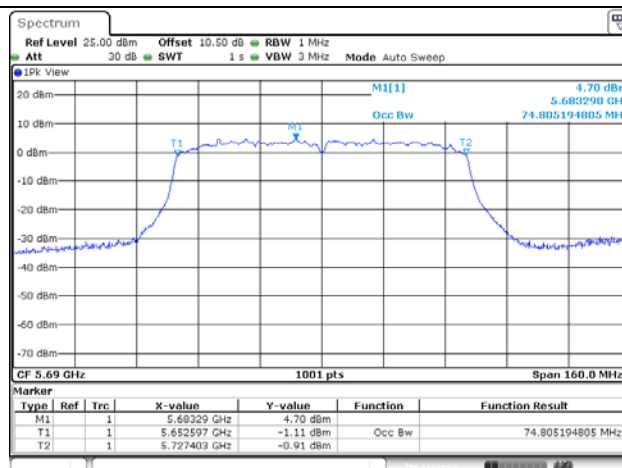
802.11n ht40
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 17:15:03802.11n ht40
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 17:18:09802.11n ht40
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 17:20:59

cross_5710MHz

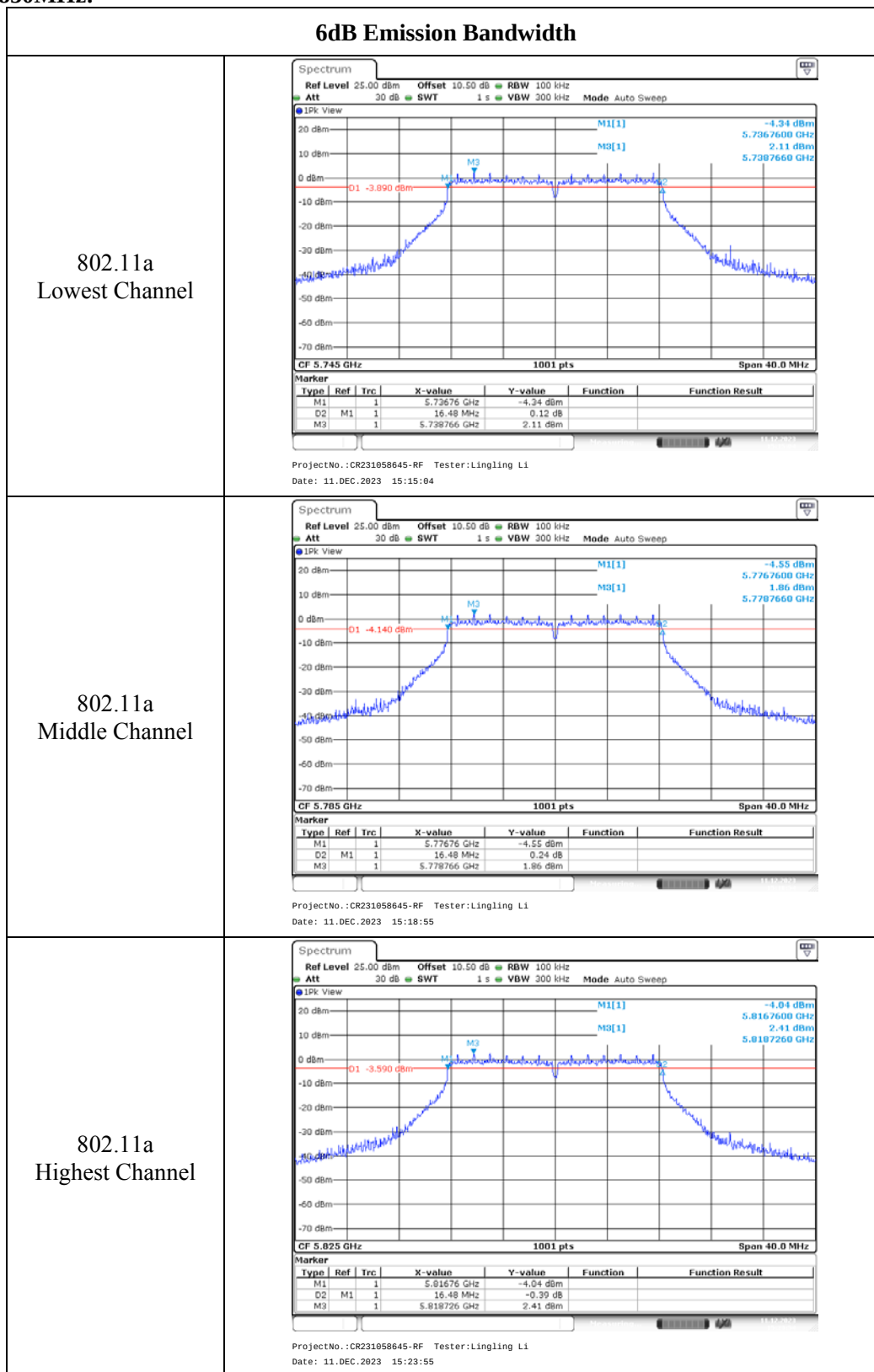


ProjectNo.: CR231058645-RF Tester: Lingling Li
Date: 12.DEC.2023 18:26:29

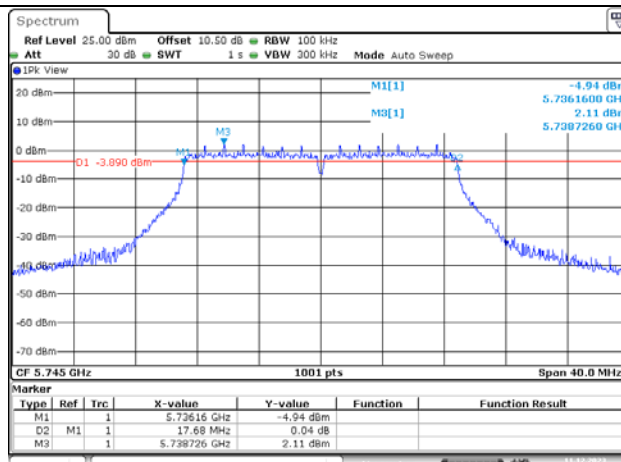
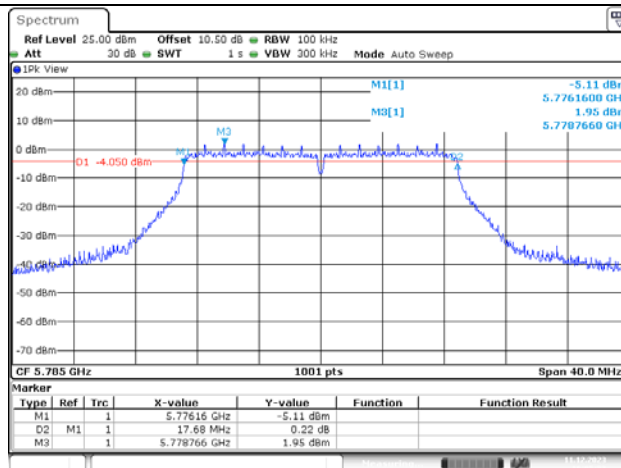
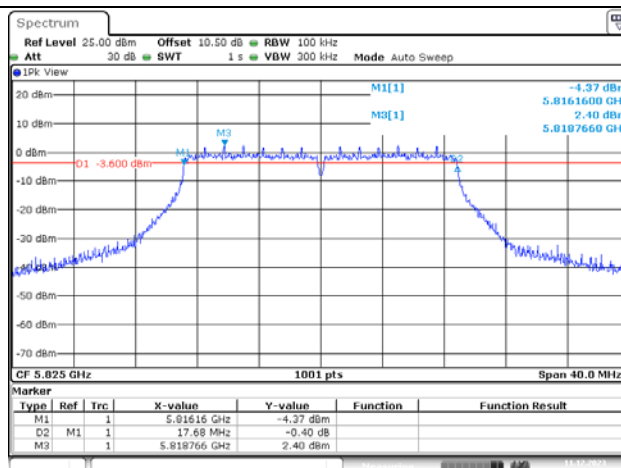
99% Emission Bandwidth

802.11ac vht80
Lowest Channel802.11ac vht80
Middle Channel802.11ac vht80
Highest Channel

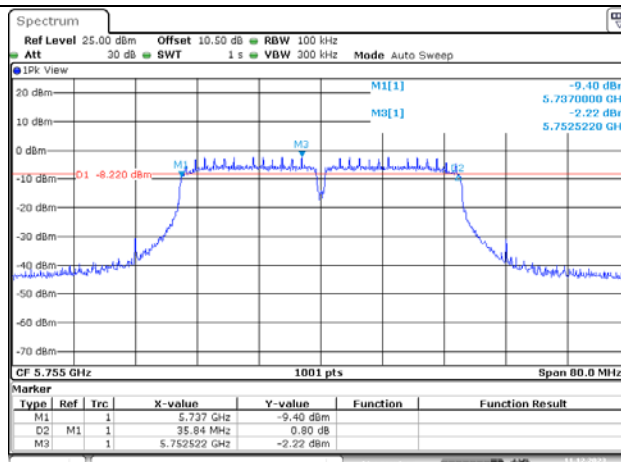
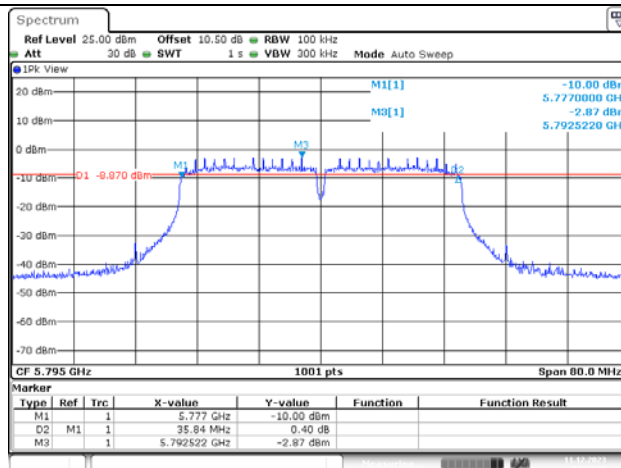
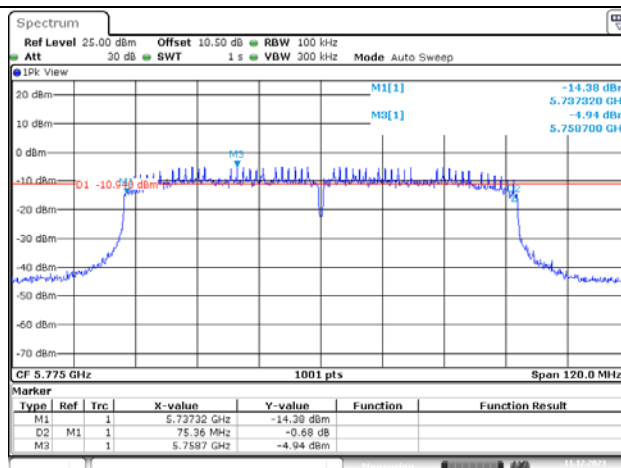
5725-5850MHz:



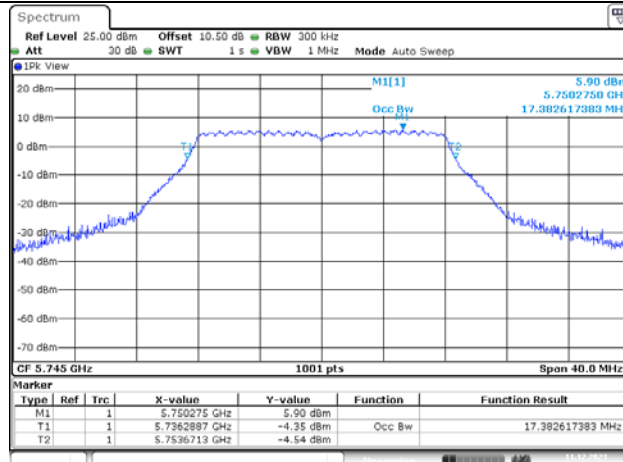
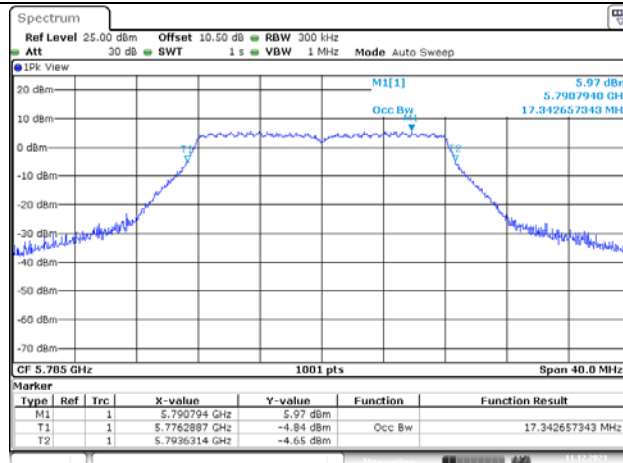
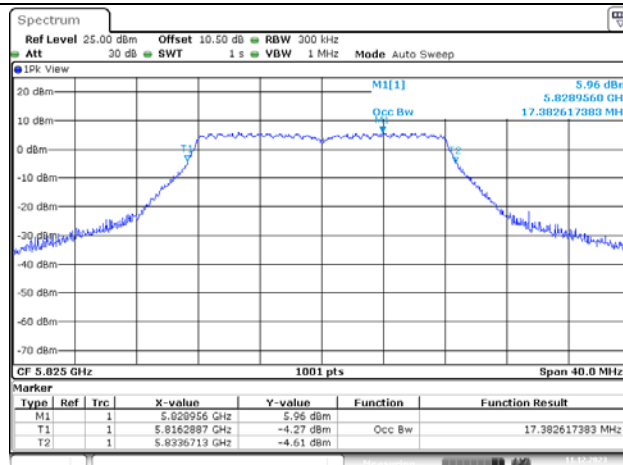
6dB Emission Bandwidth

802.11n ht20
Lowest Channel802.11n ht20
Middle Channel802.11n ht20
Highest Channel

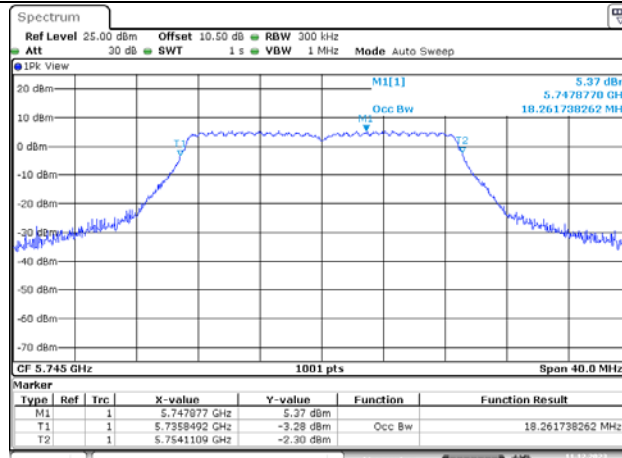
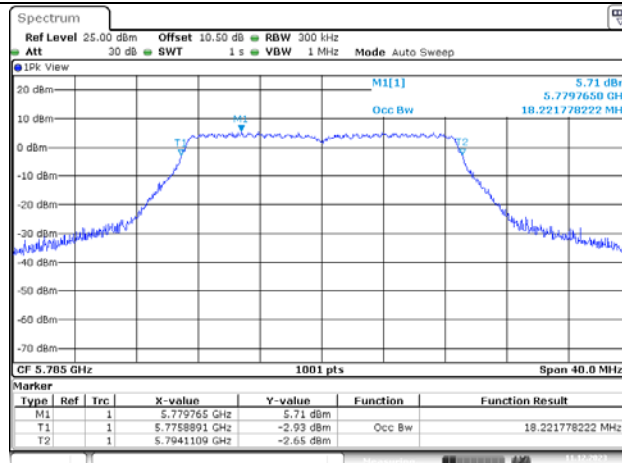
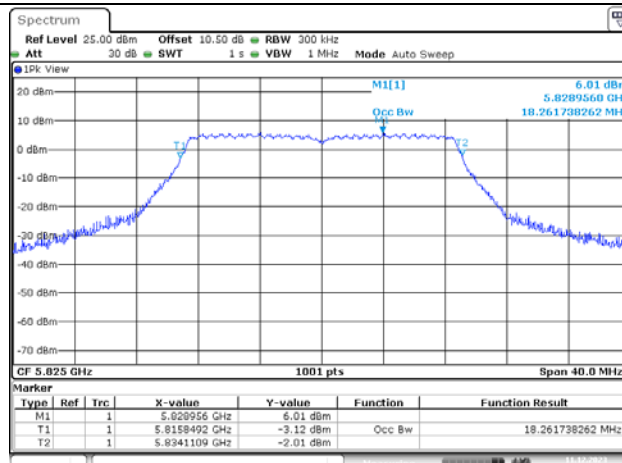
6dB Emission Bandwidth

802.11n ht40
Lowest Channel802.11n ht40
Highest Channel802.11ac vht80
Middle Channel

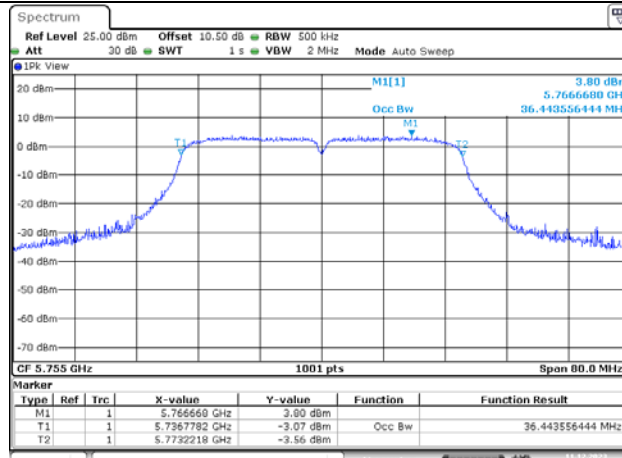
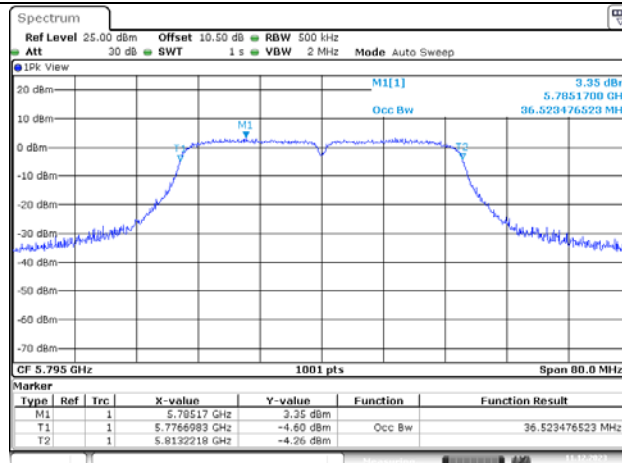
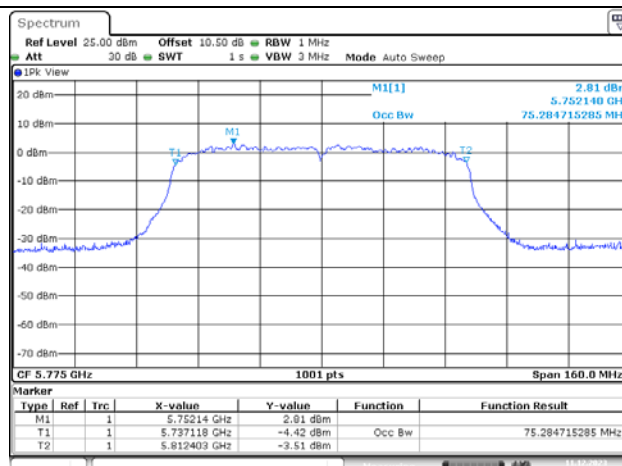
99% Emission Bandwidth

802.11a
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:14:09802.11a
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:18:00802.11a
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:22:59

99% Emission Bandwidth

802.11n ht20
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 16:02:09802.11n ht20
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 16:04:56802.11n ht20
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 16:08:12

99% Emission Bandwidth

802.11n ht40
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 17:24:05802.11n ht40
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 17:27:29802.11ac vht80
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 18:24:03

4.4 Maximum Conducted Output Power

Serial Number:	2C04-3	Test Date:	2023/12/11-2023/12/12
Test Site:	RF	Test Mode:	Transmitting
Tester:	Lingling Li	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23	Relative Humidity: (%)	52-54	ATM Pressure: (kPa)	101.54
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Anritsu	Power Meter	ML2495A	1106009	2023/8/4	2024/8/3
Anritsu	Pulse Power Sensor	MA2411A	10780	2023/8/4	2024/8/3
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data:

5150-5250 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power(dBm)	
		Result	Limit
802.11a	5180	13.17	24
	5200	13.43	24
	5240	13.59	24
802.11n ht20	5180	13.19	24
	5200	13.61	24
	5240	13.62	24
802.11n ht40	5190	13.01	24
	5230	12.97	24
802.11ac vht80	5210	13.44	24
Note: The device is a client device.			

5250-5350 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power(dBm)	
		Result	Limit
802.11a	5260	13.44	24
	5280	13.39	24
	5320	13.53	24
802.11n ht20	5260	13.68	24
	5280	13.51	24
	5320	13.47	24
802.11n ht40	5270	13.1	24
	5310	13.09	24
802.11ac vht80	5290	13.45	24

5470-5725 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power(dBm)	
		Result	Limit
802.11a	5500	13.43	24
	5580	13.74	24
	5700	13.69	24
	5720	12.33	24
802.11n ht20	5500	13.42	24
	5580	13.74	24
	5700	13.68	24
	5720	12.4	24
802.11n ht40	5510	13.13	24
	5550	13.31	24
	5670	12.74	24
	5710	12.89	24
802.11ac vht80	5530	13.69	24
	5610	13.68	24
	5690	13.46	24

5725-5850 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power(dBm)	
		Result	Limit
802.11a	5745	13.54	30
	5785	13.46	30
	5825	13.82	30
802.11n ht20	5745	13.6	30
	5785	13.46	30
	5825	13.85	30
802.11n ht40	5755	12.02	30
	5795	11.34	30
802.11ac vht80	5775	11.96	30

4.5 Maximum Power Spectral Density

Serial Number:	2C04-3	Test Date:	2023/12/11-2023/12/12
Test Site:	RF	Test Mode:	Transmitting
Tester:	Lingling Li	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23	Relative Humidity: (%)	52-54	ATM Pressure: (kPa)	101.54
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101590	2022/11/25	2023/11/24
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A

*** Statement of Traceability:** China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data:

Please refer to the below table and plots.

5150-5250 MHz:

Test Modes	Test Frequency (MHz)	Reading (dBm/MHz)	Duty Cycle Factor (dB)	Maximum Power Spectral Density (dBm/MHz)	
				Result	Limit
802.11a	5180	1.18	0.16	1.34	11
	5200	1.47	0.16	1.63	11
	5240	1.68	0.16	1.84	11
802.11n ht20	5180	0.96	0.17	1.13	11
	5200	1.31	0.17	1.48	11
	5240	1.43	0.17	1.60	11
802.11n ht40	5190	-1.99	0.34	-1.65	11
	5230	-2.02	0.34	-1.68	11
802.11ac vht80	5210	-6.82	2.57	-4.25	11

Note: The device is a client device.

Method SA-2 in KDB 789033 D02 General UNII Test Procedures New Rules v02r01 was used

5250-5350 MHz:

Test Modes	Test Frequency (MHz)	Reading (dBm/MHz)	Duty Cycle Factor (dB)	Maximum Power Spectral Density (dBm/MHz)	
				Result	Limit
802.11a	5260	1.52	0.16	1.68	11
	5280	1.57	0.16	1.73	11
	5320	1.64	0.16	1.80	11
802.11n ht20	5260	1.35	0.17	1.52	11
	5280	1.28	0.17	1.45	11
	5320	1.24	0.17	1.41	11
802.11n ht40	5270	-1.48	0.34	-1.14	11
	5310	-1.91	0.34	-1.57	11
802.11ac vht80	5290	-6.8	2.57	-4.23	11

Note: Method SA-2 in KDB 789033 D02 General UNII Test Procedures New Rules v02r01 was used

5470-5725 MHz:

Test Modes	Test Frequency (MHz)	Reading (dBm/MHz)	Duty Cycle Factor (dB)	Maximum Power Spectral Density (dBm/MHz)	
				Result	Limit
802.11a	5500	1.35	0.16	1.51	11
	5580	1.71	0.16	1.87	11
	5700	1.81	0.16	1.97	11
	5720	0.96	0.16	1.12	11
802.11n ht20	5500	1.14	0.17	1.31	11
	5580	1.46	0.17	1.63	11
	5700	1.39	0.17	1.56	11
	5720	0.76	0.17	0.93	11
802.11n ht40	5510	-1.91	0.34	-1.57	11
	5550	-1.61	0.34	-1.27	11
	5670	-2.4	0.34	-2.06	11
	5710	-1.91	0.34	-1.57	11
802.11ac vht80	5530	-6.53	2.57	-3.96	11
	5610	-6.51	2.57	-3.94	11
	5690	-5.91	2.57	-3.34	11

Note: Method SA-2 in KDB 789033 D02 General UNII Test Procedures New Rules v02r01 was used

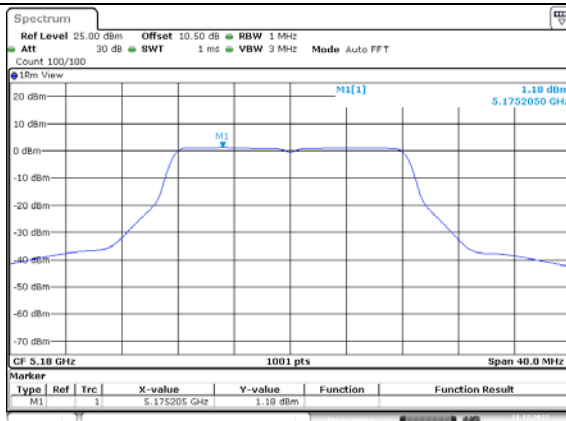
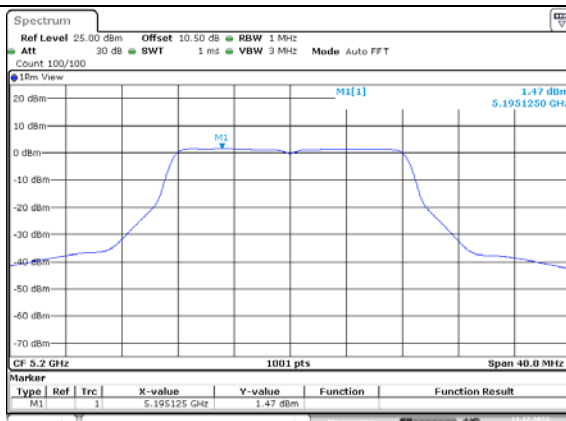
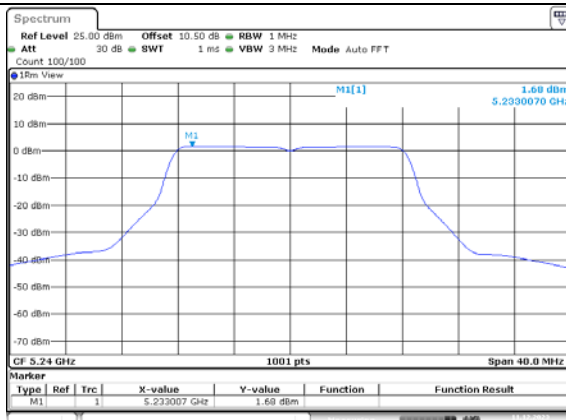
5725-5850 MHz:

Test Modes	Test Frequency (MHz)	Reading (dBm/500kHz)	Duty Cycle Factor (dB)	Maximum Power Spectral Density (dBm/500kHz)	
				Result	Limit
802.11a	5745	-1.34	0.16	-1.18	11
	5785	-1.53	0.16	-1.37	11
	5825	-1.11	0.16	-0.95	11
802.11n ht20	5745	-1.63	0.17	-1.46	11
	5785	-1.75	0.17	-1.58	11
	5825	-1.37	0.17	-1.20	11
802.11n ht40	5755	-6.06	0.34	-5.72	11
	5795	-6.83	0.34	-6.49	11
802.11ac vht80	5775	-11.72	2.57	-9.15	11

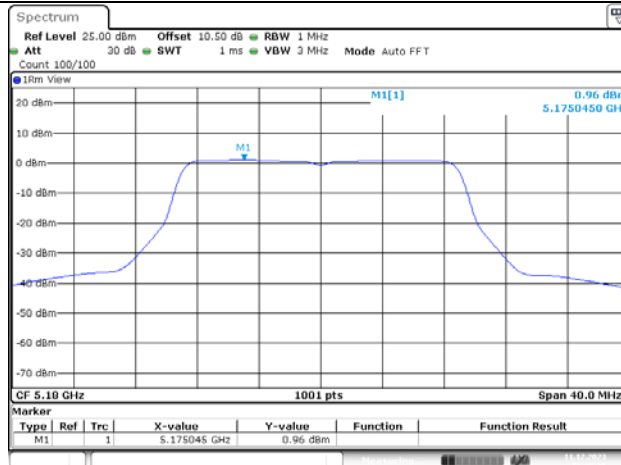
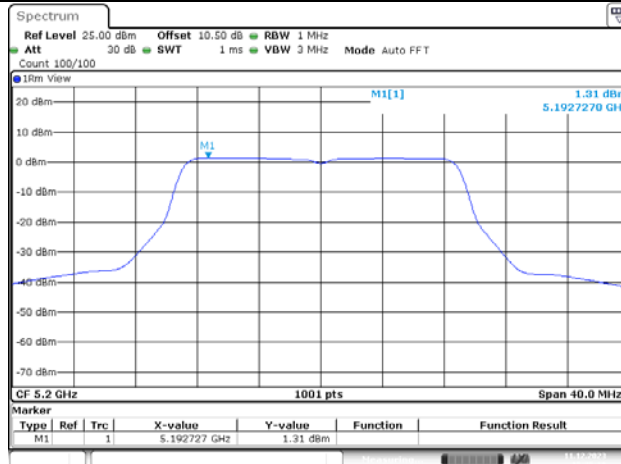
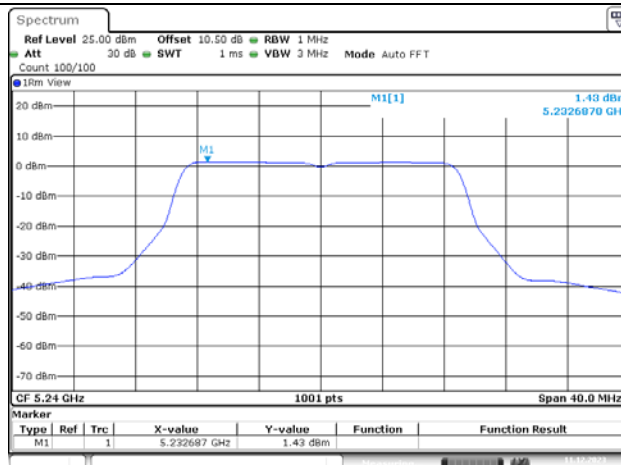
Note: Method SA-2 in KDB 789033 D02 General UNII Test Procedures New Rules v02r01 was used

5150-5250MHz:

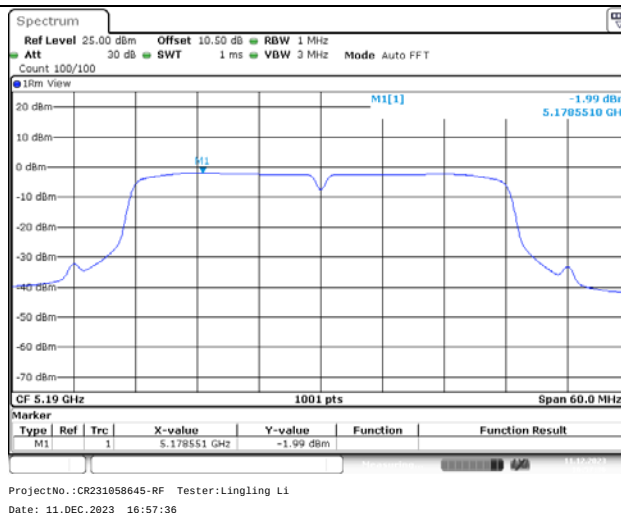
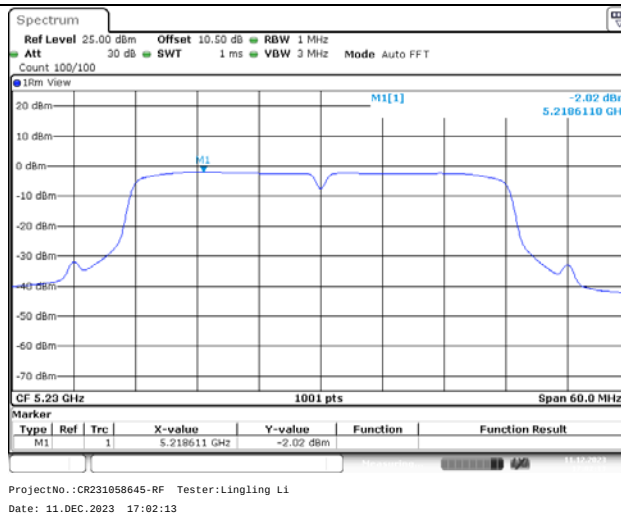
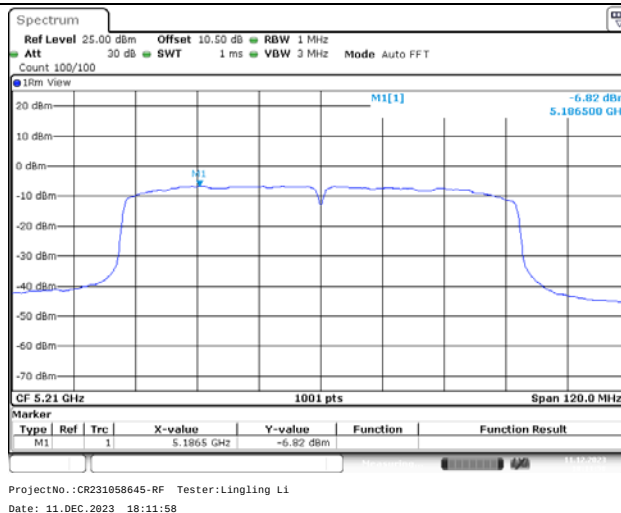
Maximum power spectral density

802.11a
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 14:41:19802.11a
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 14:44:38802.11a
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 14:47:30

Maximum power spectral density

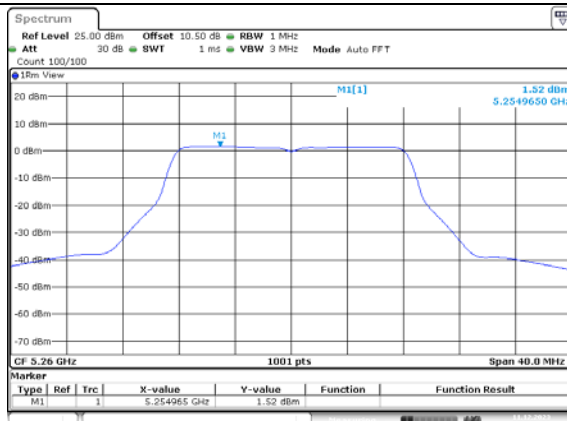
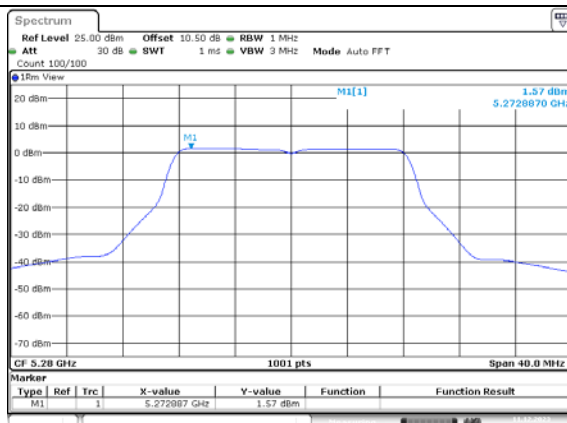
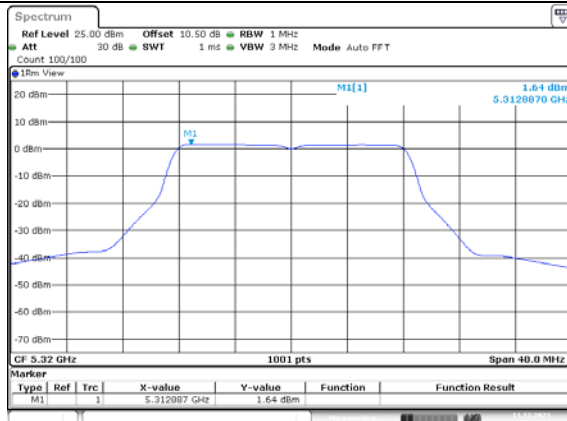
802.11n ht20
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:30:48802.11n ht20
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:35:19802.11n ht20
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:39:28

Maximum power spectral density

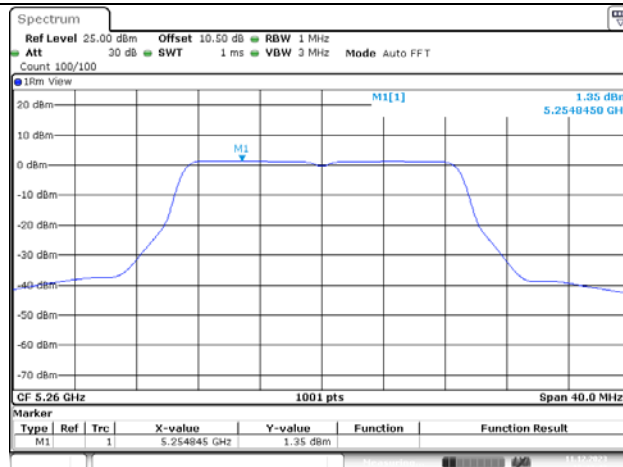
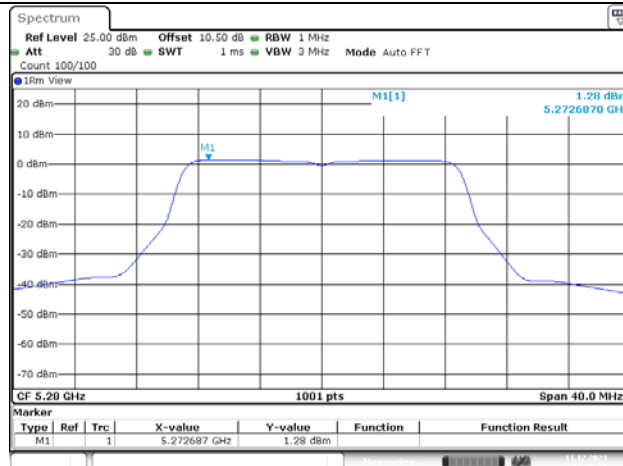
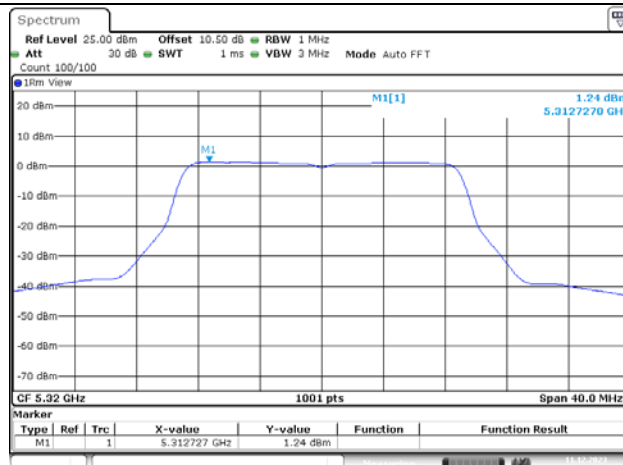
802.11n ht40
Lowest Channel802.11n ht40
Highest Channel802.11ac vht80
Middle Channel

5250-5350MHz:

Maximum power spectral density

802.11a
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 14:52:06802.11a
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 14:56:17802.11a
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 14:59:49

Maximum power spectral density

802.11n ht20
Lowest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:43:42802.11n ht20
Middle ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:46:28802.11n ht20
Highest ChannelProjectNo.:CR231058645-RF Tester:Lingling Li
Date: 11.DEC.2023 15:48:49