



中认信通

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



TEST REPORT

Applicant: Grandstream Networks, Inc.

Address: 126 Brookline Ave., 3rd Floor Boston, MA 02215, USA

FCC ID: YZZGHP63XW

Product Name: Compact Hotel Phone with Color LCD

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: CR231171096-00B

Date Of Issue: 2024/1/30

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

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

This report cannot be reproduced except in full, without prior written approval of the Company.

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

This report may contain data that are not covered by the accreditation scope and shall be marked with an asterisk “★”.

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	13
2. SUMMARY OF TEST RESULTS	14
3. REQUIREMENTS AND TEST PROCEDURES	15
3.1 AC LINE CONDUCTED EMISSIONS.....	15
3.1.1 Applicable Standard.....	15
3.1.2 EUT Setup.....	16
3.1.3 EMI Test Receiver Setup	16
3.1.4 Test Procedure	16
3.1.5 Corrected Amplitude & Margin Calculation.....	17
3.2 RADIATION SPURIOUS EMISSIONS	18
3.2.1 Applicable Standard.....	18
3.2.2 EUT Setup.....	19
3.2.3 EMI Test Receiver & Spectrum Analyzer Setup	20
3.2.4 Test Procedure	20
3.2.5 Corrected Amplitude & Margin Calculation.....	21
3.3 EMISSION BANDWIDTH:	22
3.3.1 Applicable Standard.....	22
3.3.2 EUT Setup.....	22
3.3.3 Test Procedure	22
3.4 MAXIMUM CONDUCTED OUTPUT POWER.....	24
3.4.1 Applicable Standard.....	24
3.4.2 EUT Setup.....	24
3.4.3 Test Procedure	24
3.5 MAXIMUM POWER SPECTRAL DENSITY	25
3.5.1 Applicable Standard.....	25
3.5.2 EUT Setup.....	25
3.5.3 Test Procedure	26
3.6 DUTY CYCLE	27
3.6.1 EUT Setup.....	27
3.6.2 Test Procedure	27
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.....	89
4.4 MAXIMUM CONDUCTED OUTPUT POWER.....	141
4.5 MAXIMUM POWER SPECTRAL DENSITY.....	146
4.6 DUTY CYCLE	175
5. RF EXPOSURE EVALUATION	178
5.1 MAXIMUM PERMISSIBLE EXPOSURE (MPE)	178
5.1.1 Applicable Standard.....	178
5.1.2 Result	178
6. EUT PHOTOGRAPHS	180
7. TEST SETUP PHOTOGRAPHS	181

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR231171096-00B	Original Report	2024/1/30

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	Compact Hotel Phone with Color LCD
EUT Model:	GHP631W
Multiple Model(s):	GHP630W
Trade Name:	GRANDSTREAM
Operation Frequency:	Band 1: 5180-5240 MHz (802.11a/ax hew20/ac vht20) 5190-5230 MHz(802.11ax hew40/ac vht40) Band 2: 5260-5320 MHz (802.11a/ax hew20/ac vht20) 5270-5310 MHz(802.11ax hew40/ac vht40) Band 3: 5500-5720 MHz (802.11a/ax hew20/ac vht20) 5510-5710 MHz (802.11ax hew40/ac vht40) Band 4: 5745-5825 MHz (802.11a/ax hew20/ac vht20) 5755-5795 MHz(802.11ax hew40/ac vht40)
Maximum Average Conducted Output Power:	17.25dBm (5150-5250 MHz) 17.39dBm (5250-5350 MHz) 16.58dBm (5470-5725 MHz) 16.86dBm (5725-5850 MHz)
Modulation Type:	OFDM, OFDMA
Rated Input Voltage:	DC 12V from adapter, DC 48V from PoE
Serial Number:	RE/CE: 2EE8-1 RF: 2EE8-2
EUT Received Date:	2023/11/29
EUT Received Status:	Good
Note: The Multiple models are electrically identical with the test model. Please refer to the declaration letter for more detail, which was provided by manufacturer.	

1.1.2 Operation Frequency Detail:**For 802.11a/ac vht20/ax hew20:**

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 as below:							
36	5180	52	5260	100	5500	149	5745
40	5200	56	5280	116	5580	157	5785
48	5240	64	5320	140	5700	165	5825
/	/	/	/	144	5720	/	/

For 802.11ac vht40/ax hew40:

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 as below:							
38	5190	54	5270	102	5510	151	5755
46	5230	62	5310	110	5550	159	5795
/	/	/	/	134	5670	/	/
/	/	/	/	142	5710	/	/

1.1.3 Antenna Information Detail▲:

Antenna Type	input impedance (Ohm)	Frequency Range (MHz)	Maximum Antenna Gain (dBi)
PCB	50	5150-5850	2.85
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	Parameters
Adapter	GANGQI	GQ06-120050-ZU	Input: AC 100-240V, 50/60Hz, 0.3A Max Output: DC 12.0V, 0.5A
Adapter	Dachuan	DCT06W120050US-D0	Input: AC 100-240V, 50/60Hz, 0.2A Output: DC 12.0V, 0.5A
Adapter	Sunlight	F06US1200050A	Input: AC 100-240V, 50/60Hz, 0.2A Max Output: DC 12.0V, 0.5A

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. According to the test result of Part 15B report, for AC line conducted emission, PoE power supply was the worst case select to test; for radiated emission below 1GHz, adapter power supply was the worst case select to test.
Equipment Modifications:	No
EUT Exercise Software:	Secare CRT.exe
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 (MHz)	Data rate	Power Level Setting
802.11a	Lowest	5180	6Mbps	default
	Middle	5200	6Mbps	default
	Highest	5240	6Mbps	default
802.11ac vht20	Lowest	5180	MCS0	default
	Middle	5200	MCS0	default
	Highest	5240	MCS0	default
802.11ac vht40	Lowest	5190	MCS0	default
	Highest	5230	MCS0	default
802.11ax hew20	Lowest	5180	MCS0	default
	Middle	5200	MCS0	default
	Highest	5240	MCS0	default
802.11ax hew40	Lowest	5190	MCS0	default
	Highest	5230	MCS0	default
5250-5350 MHz Band:				
Test Modes	Test Channels	Test Frequency (MHz)	Data rate	Power Level Setting
802.11a	Lowest	5260	6Mbps	default
	Middle	5280	6Mbps	default
	Highest	5320	6Mbps	default
802.11ac vht20	Lowest	5260	MCS0	default
	Middle	5280	MCS0	default
	Highest	5320	MCS0	default
802.11ac vht40	Lowest	5270	MCS0	default
	Highest	5310	MCS0	default
802.11ax hew20	Lowest	5260	MCS0	default
	Middle	5280	MCS0	default
	Highest	5320	MCS0	default
802.11ax hew40	Lowest	5270	MCS0	default
	Highest	5310	MCS0	default

5470-5725 MHz Band:

Test Modes	Test Channels	Test Frequency (MHz)	Data rate	Power Level Setting
802.11a	Lowest	5500	6Mbps	default
	Middle	5580	6Mbps	default
	Highest	5700	6Mbps	11
	Cross	5720	6Mbps	default
802.11ac vht20	Lowest	5500	MCS0	default
	Middle	5580	MCS0	default
	Highest	5700	MCS0	default
	Cross	5720	MCS0	default
802.11ac vht40	Lowest	5510	MCS0	default
	Middle	5550	MCS0	default
	Highest	5670	MCS0	default
	Cross	5710	MCS0	default
802.11ax hew20	Lowest	5500	MCS0	default
	Middle	5580	MCS0	default
	Highest	5700	MCS0	default
	Cross	5720	MCS0	default
802.11ax hew40	Lowest	5510	MCS0	13
	Middle	5550	MCS0	default
	Highest	5670	MCS0	default
	Cross	5710	MCS0	default

5725-5850 MHz Band:

Test Modes	Test Channels	Test Frequency (MHz)	Data rate	Power Level Setting
802.11a	Lowest	5745	6Mbps	default
	Middle	5785	6Mbps	default
	Highest	5825	6Mbps	default
802.11ac vht20	Lowest	5745	MCS0	default
	Middle	5785	MCS0	default
	Highest	5825	MCS0	default
802.11ac vht40	Lowest	5755	MCS0	default
	Highest	5795	MCS0	default
802.11ax hew20	Lowest	5745	MCS0	default
	Middle	5785	MCS0	default
	Highest	5825	MCS0	default
802.11ax hew40	Lowest	5755	MCS0	default
	Highest	5795	MCS0	default

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 EUT can support the 802.11a/n ht20/n ht40/ac vht20/ac vht40/ax he20/ax he40 modes, the 802.11n ht20/n ht40 were reduced since the identical parameters with 802.11ac vht20/ac vht40.

1.2.2 Support Equipment List and Details

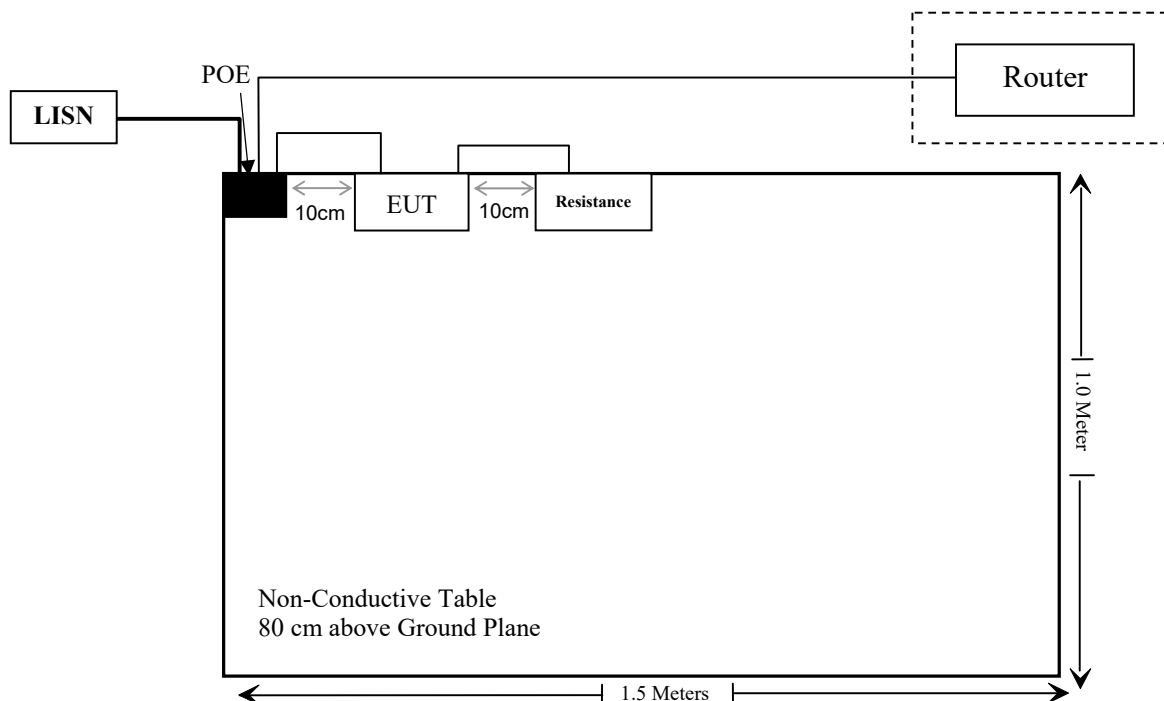
Manufacturer	Description	Model	Serial Number
TOTO LINK	Router	X5000R	X5000RK9T0560
DIGITAL	PoE	G0720-480-050	3TV4E338182
N/A	Resistance	N/A	N/A

1.2.3 Support Cable List and Details

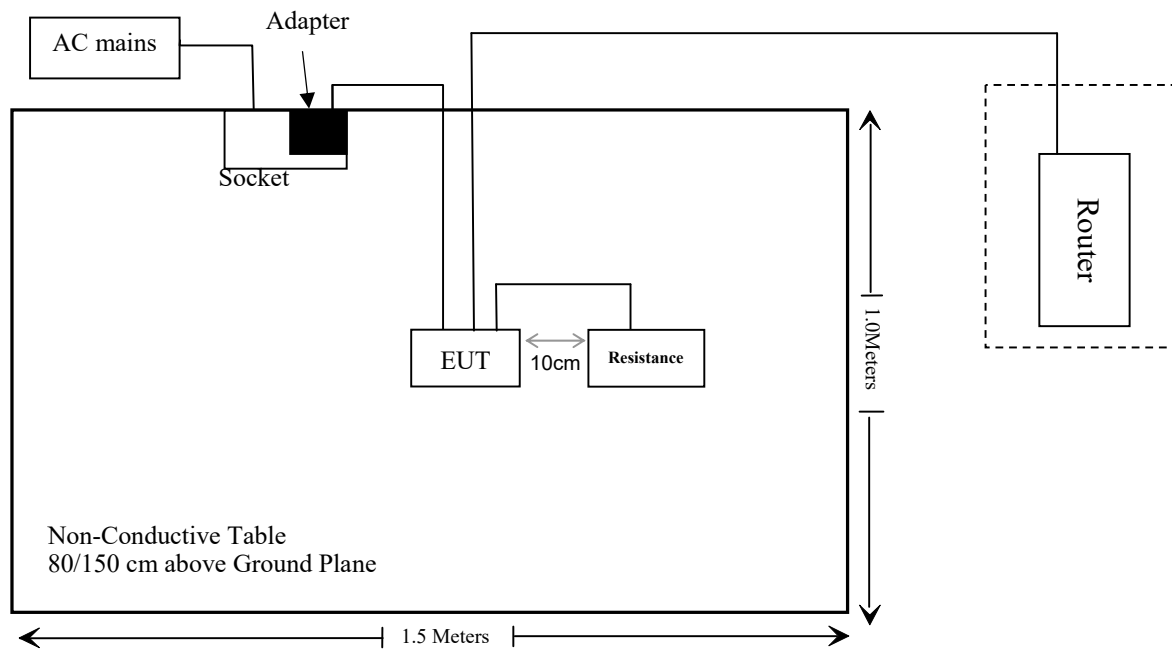
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
AC cable	No	No	1.2	LISN/AC mains	Socket
DC cable	No	No	1.8	Adapter	EUT
RJ45 cable	No	Yes	8.0	EUT/PoE	Router
RJ45 cable	No	Yes	1.0	EUT	Resistance
AC cable	No	No	1.2	LISN/AC mains	PoE
RJ45 cable	No	Yes	8.0	PoE	EUT

1.2.4 Block Diagram of Test Setup

AC line conducted emissions:



Spurious Emissions:



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	±5 %
RF output power, conducted	±0.61dB
Power Spectral Density, conducted	±0.61 dB
Unwanted Emissions, radiated	9k~30MHz:4.12dB,30M~200MHz: 4.15 dB,200M~1GHz: 5.61 dB,1G~6GHz: 5.14 dB, 6G~18GHz: 5.93 dB,18G~26.5G:5.47 dB,26.5G~40G:5.63 dB
Unwanted Emissions, conducted	±1.26 dB
Temperature	±1℃
Humidity	±5%
DC and low frequency voltages	±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
§15.207(a)	AC line conducted emissions	Compliant
FCC§15.205& §15.209 &§15.407(b)	Undesirable Emission& Restricted Bands	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
§15.203	Antenna Requirement	Compliant
FCC §2.1091	Maximum Permissible exposure	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:

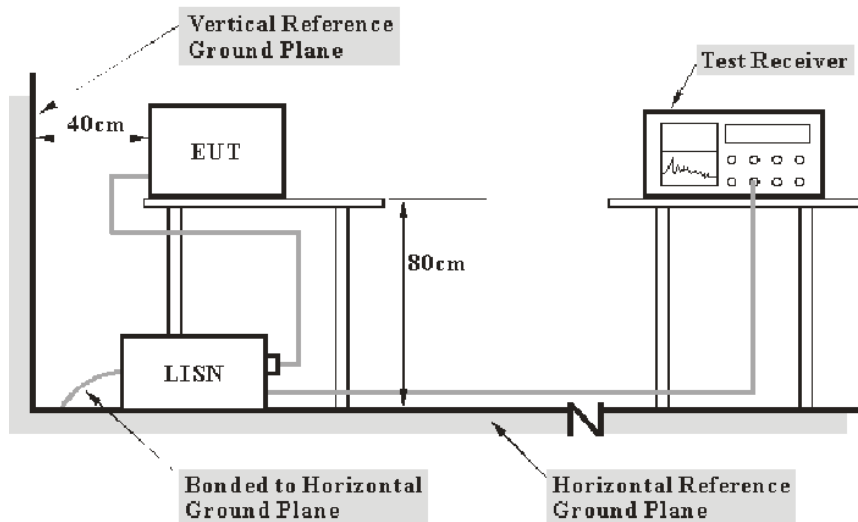
(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(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.

The adapter or EUT was connected to the main LISN with a 120 V/60 Hz AC power source.

3.1.3 EMI Test Receiver Setup

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

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

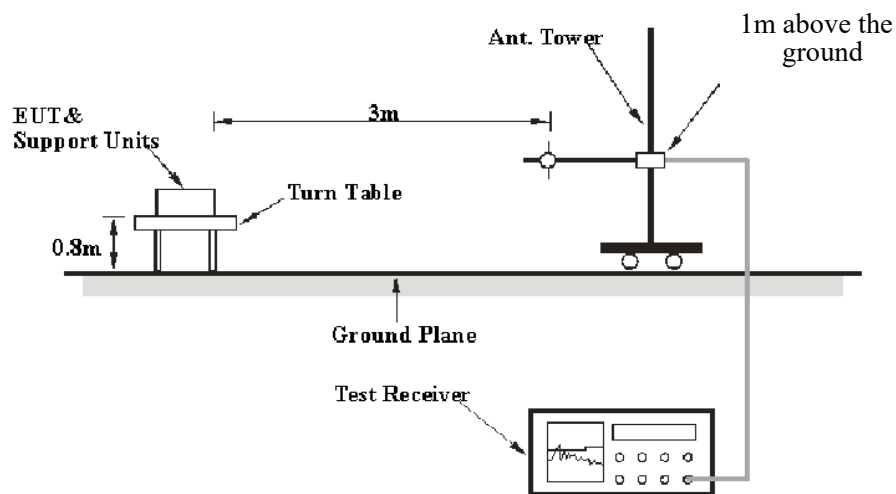
FCC §15.407 (b);

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:

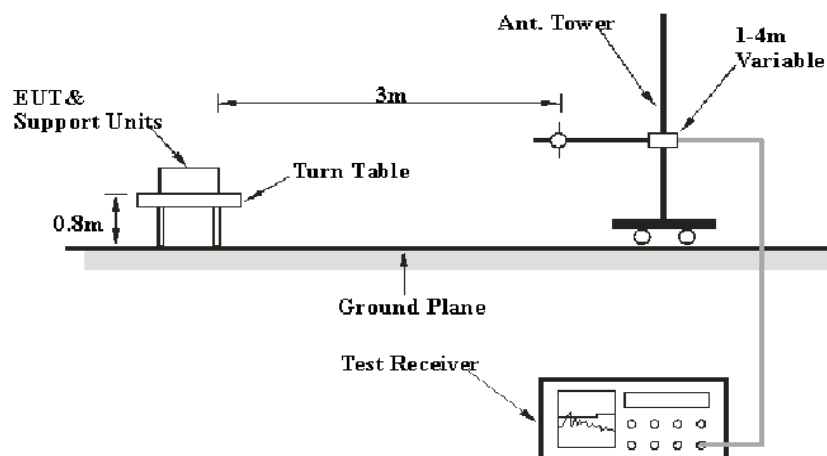
- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.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

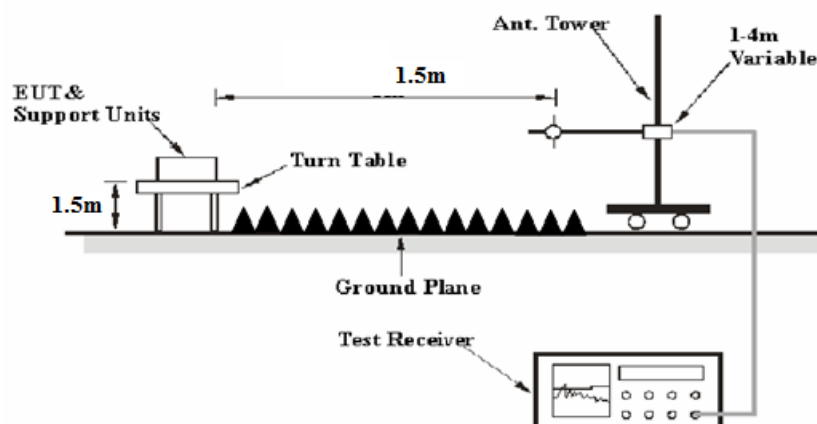
9 kHz-30MHz:



30MHz-1GHz:



1-40 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 40cm long in the middle.

The spacing between the peripherals was 10cm.

3.2.3 EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 40 GHz.

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

9 kHz-1000MHz:

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

1GHz- 40GHz:

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
AV	>98%	1MHz	10 Hz
	<98%	1MHz	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-1GHz, peak and Average detection modes for frequencies above 1GHz.

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

For 30MHz-1GHz:

Result = Reading + Factor

For 1GHz-40GHz

Result = Reading + Factor-Distance extrapolation 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

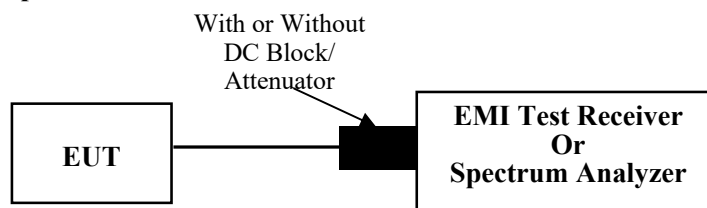
FCC §15.407 (a),(h)

(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.

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.

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

- Set RBW = 100 kHz.
 - Set the video bandwidth (VBW) ≥ 3 RBW.
 - Detector = Peak.
 - Trace mode = max hold.
 - Sweep = auto couple.
 - Allow the trace to stabilize.
 - 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.

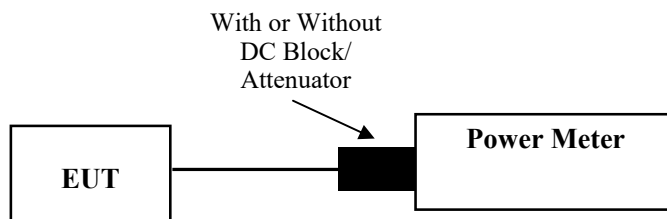
FCC §15.407(a) (2)

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.

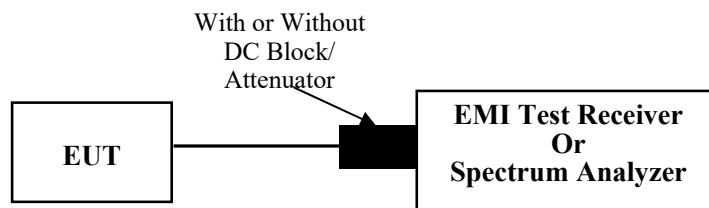
FCC §15.407(a) (2)

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 $\pm 2\%$

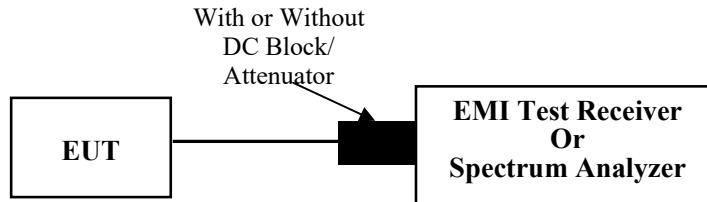
KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-2 should be applied.

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:	2EE8-1	Test Date:	2024/1/11
Test Site:	CE	Test Mode:	Transmitting(maximum output power mode 802.11a 5280MHz)
Tester:	David Huang	Test Result:	Pass

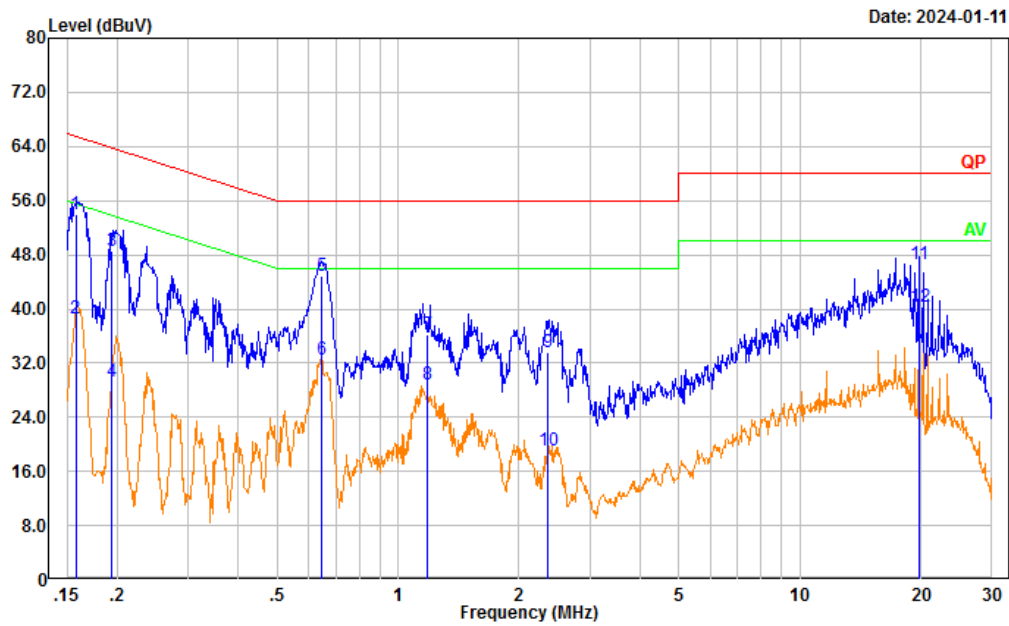
Environmental Conditions:					
Temperature: (°C)	25.5	Relative Humidity: (%)	38	ATM Pressure: (kPa)	101.4

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

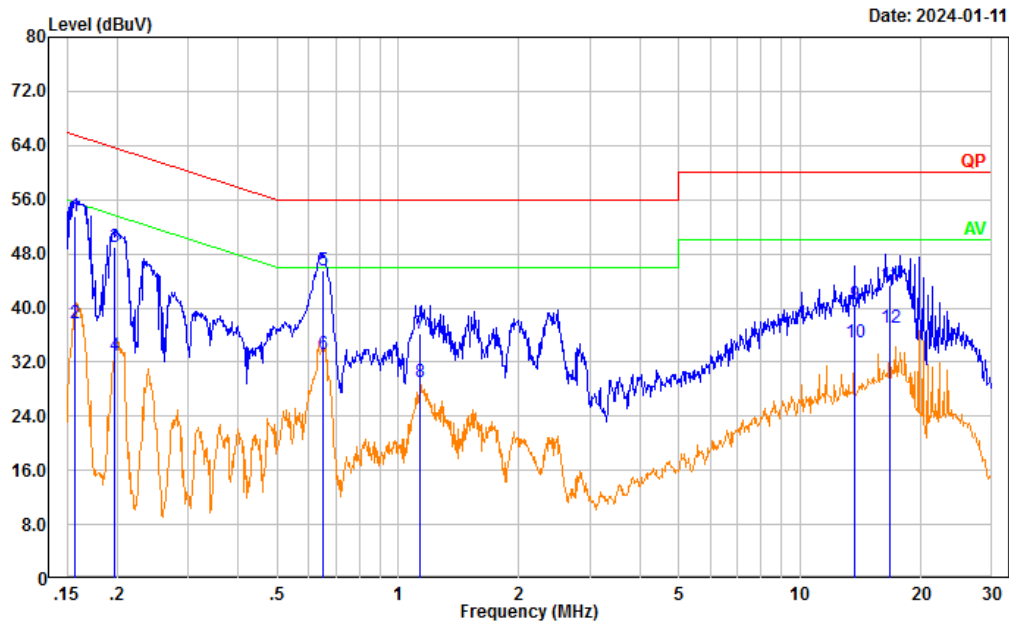
** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Project No.: CR231171096-RF
 Tester: David Huang
 Port: Line
 Note: Transmitting(5G WIFI)



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.158	44.31	9.61	53.92	65.59	11.67	QP
2	0.158	29.06	9.61	38.67	55.59	16.92	Average
3	0.193	38.99	9.61	48.60	63.89	15.29	QP
4	0.193	19.72	9.61	29.33	53.89	24.56	Average
5	0.648	35.30	9.62	44.92	56.00	11.08	QP
6	0.648	22.92	9.62	32.54	46.00	13.46	Average
7	1.180	26.60	9.62	36.22	56.00	19.78	QP
8	1.180	19.20	9.62	28.82	46.00	17.18	Average
9	2.353	24.01	9.64	33.65	56.00	22.35	QP
10	2.353	9.47	9.64	19.11	46.00	26.89	Average
11	19.782	36.83	9.80	46.63	60.00	13.37	QP
12	19.782	30.53	9.80	40.33	50.00	9.67	Average

Project No.: CR231171096-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	43.90	9.61	53.51	65.64	12.13	QP
2	0.157	28.18	9.61	37.79	55.64	17.85	Average
3	0.197	39.33	9.61	48.94	63.74	14.80	QP
4	0.197	23.36	9.61	32.97	53.74	20.77	Average
5	0.651	36.00	9.62	45.62	56.00	10.38	QP
6	0.651	23.58	9.62	33.20	46.00	12.80	Average
7	1.131	26.57	9.62	36.19	56.00	19.81	QP
8	1.131	19.52	9.62	29.14	46.00	16.86	Average
9	13.696	30.94	9.68	40.62	60.00	19.38	QP
10	13.696	25.22	9.68	34.90	50.00	15.10	Average
11	16.733	33.72	9.69	43.41	60.00	16.59	QP
12	16.733	27.35	9.69	37.04	50.00	12.96	Average

4.2 Radiation Spurious Emissions

Serial Number:	2EE8-1		Test Date:	Below 1G: 2024/1/10 Above 1G: 2024/1/9	
Test Site:	966-1, 966-2		Test Mode:	Transmitting	
Tester:	Vic Du, Tao Zhu		Test Result:	Pass	
Environmental Conditions:					
Temperature: (°C)	25.1~26.1	Relative Humidity: (%)	46~56	ATM Pressure: (kPa)	101.1~101.2

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Below 1G					
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	2023/3/31	2024/3/30
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2023/7/16	2024/7/15
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2023/7/16	2024/7/15
Sonoma	Amplifier	310N	186165	2023/7/16	2024/7/15
Audix	Test Software	E3	201021 (V9)	N/A	N/A
Above 1G					
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).

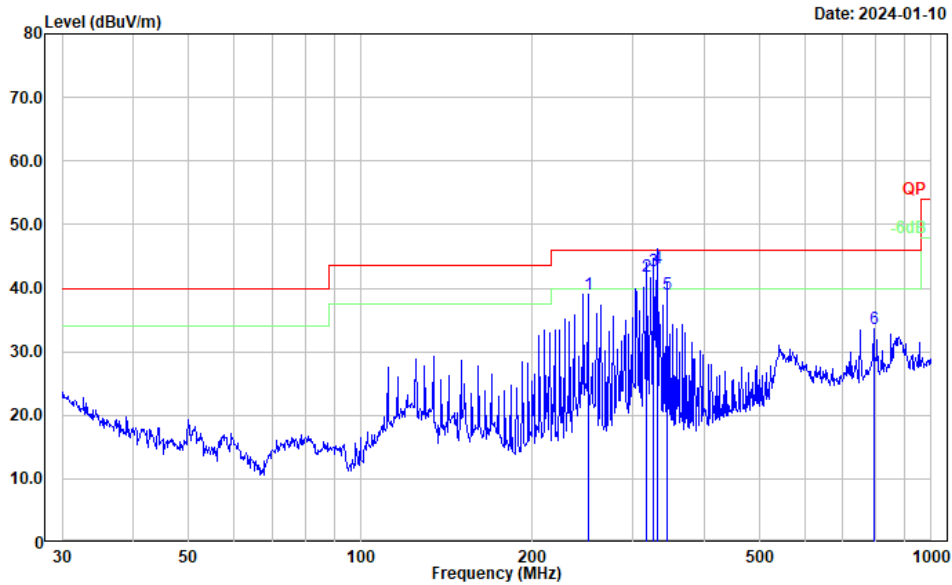
Test Data:

After pre-scan in the X, Y and Z axes of orientation, the worst case is refer to plots.

For 9kHz-30MHz, The amplitude of spurious emissions attenuated more than 20 dB below the limit was not be recorded.

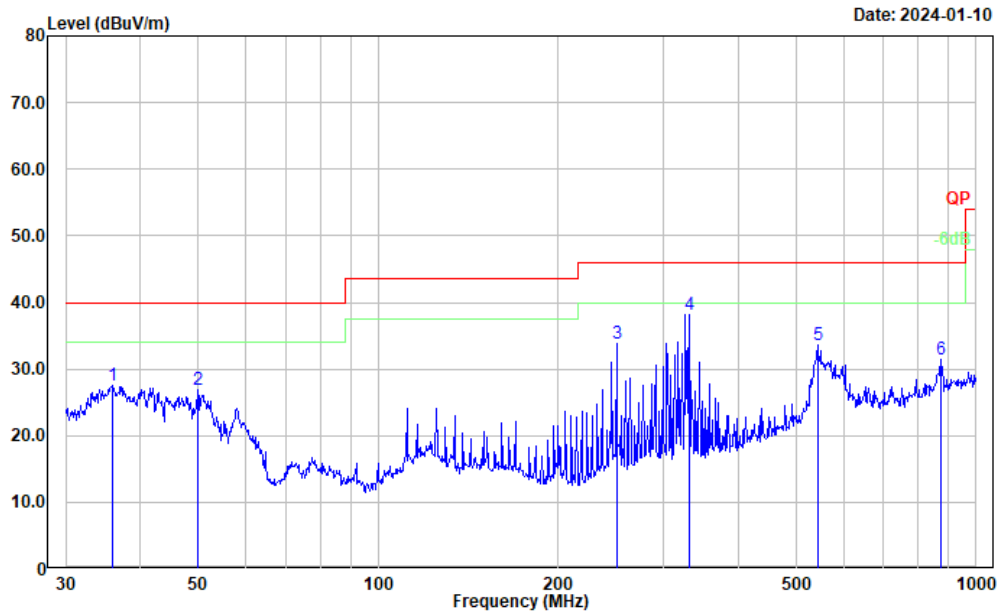
1) 30MHz-1GHz (Maximum Conducted Output Power 802.11a mode, Adapter GQ06-120050-ZU)
5150-5250MHz

Project No.: CR231171096-RF
Tester: Vic Du
Polarization: horizontal
Note: Transmitting 5g WiFi 5150~5250 MHz GQ06-120050-ZU



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	250.301	51.95	-12.94	39.01	46.00	6.99	Peak
2	317.701	51.98	-10.07	41.91	46.00	4.09	QP
3	326.740	52.64	-9.91	42.73	46.00	3.27	QP
4	331.355	53.00	-9.80	43.20	46.00	2.80	QP
5	344.386	48.74	-9.70	39.04	46.00	6.96	QP
6	793.396	35.02	-1.46	33.56	46.00	12.44	Peak

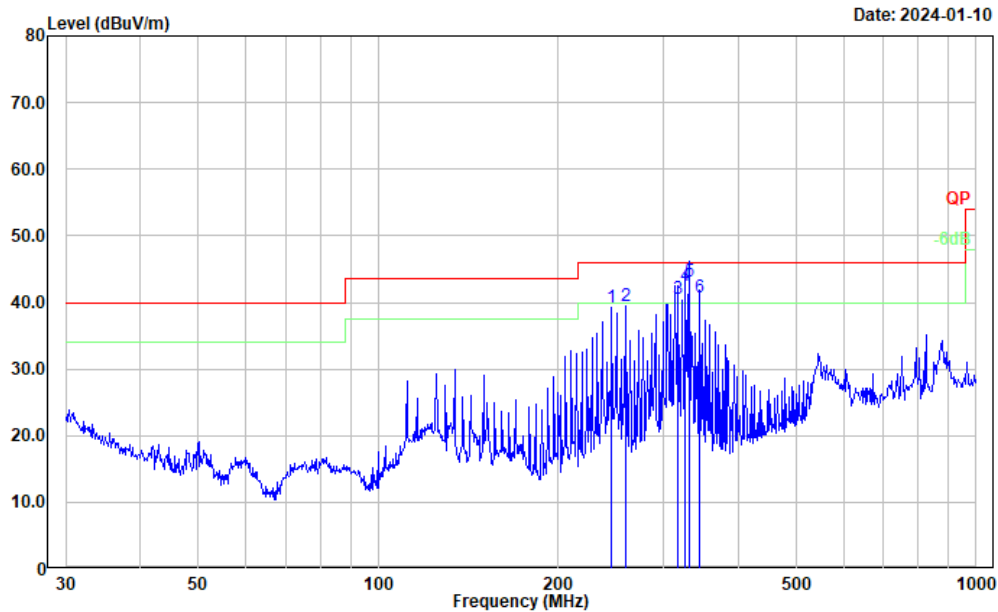
Project No.: CR231171096-RF
Tester: Vic Du
Polarization: vertical
Note: Transmitting 5g WiFi 5150~5250 MHz G006-120050-ZU



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	35.875	35.52	-8.05	27.47	40.00	12.53	Peak
2	49.881	43.86	-16.93	26.93	40.00	13.07	Peak
3	250.301	46.71	-12.94	33.77	46.00	12.23	Peak
4	331.355	48.03	-9.80	38.23	46.00	7.77	Peak
5	543.274	38.94	-5.36	33.58	46.00	12.42	Peak
6	875.247	31.98	-0.48	31.50	46.00	14.50	Peak

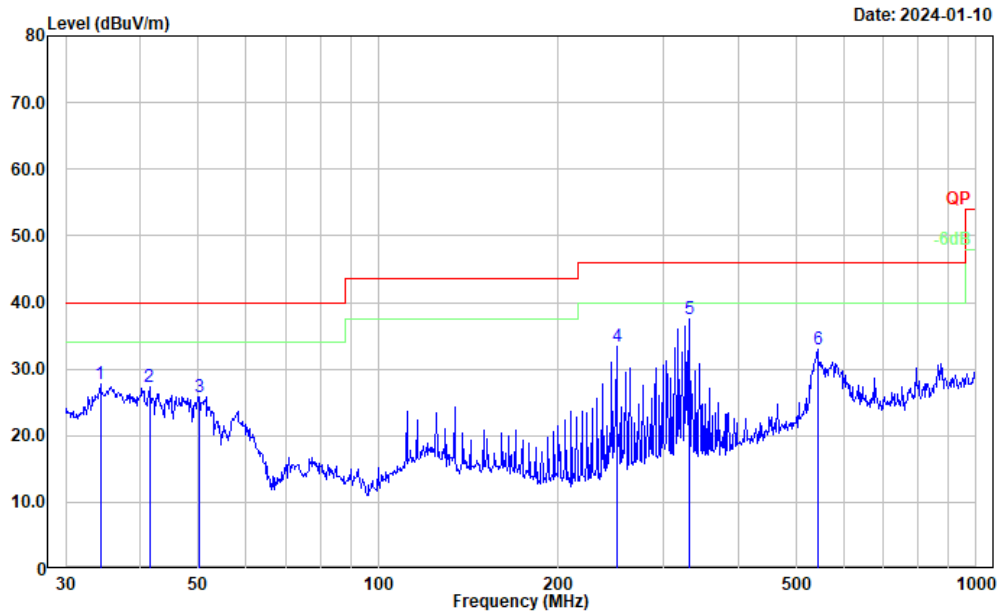
5250-5350MHz

Project No.: CR231171096-RF
Tester: Vic Du
Polarization: horizontal
Note: Transmitting 5g WiFi 5250~5350MHz GQ06-120050-ZU



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	245.951	52.04	-12.90	39.14	46.00	6.86	Peak
2	259.234	51.50	-11.95	39.55	46.00	6.45	Peak
3	317.701	50.65	-10.07	40.58	46.00	5.42	QP
4	326.740	52.43	-9.91	42.52	46.00	3.48	QP
5	331.355	53.04	-9.80	43.24	46.00	2.76	QP
6	344.386	50.54	-9.70	40.84	46.00	5.16	QP

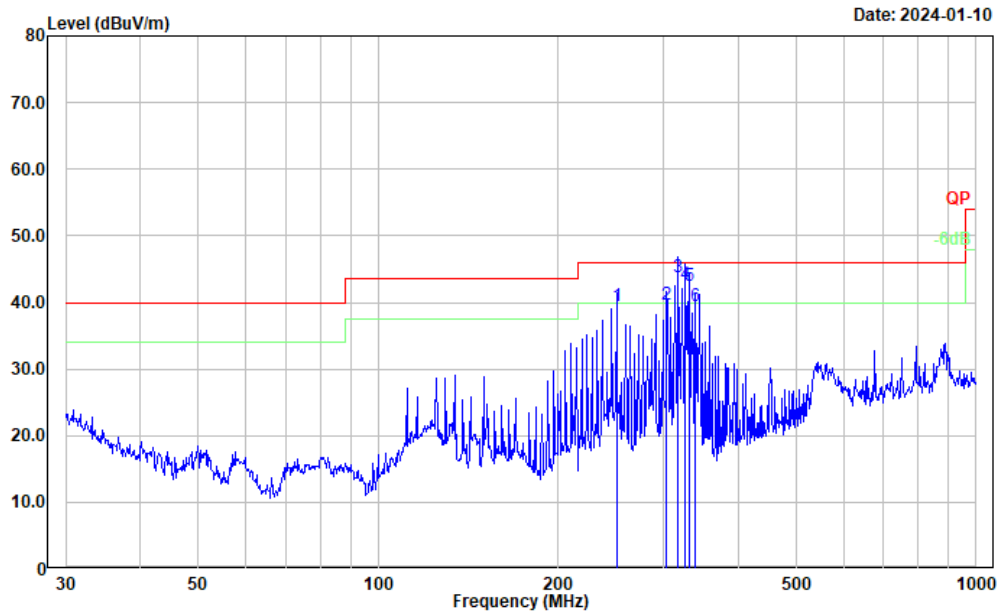
Project No.: CR231171096-RF
Tester: Vic Du
Polarization: vertical
Note: Transmitting 5g WiFi 5250~5350MHz GQ06-120050-ZU



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	34.276	34.83	-7.02	27.81	40.00	12.19	Peak
2	41.422	39.53	-12.31	27.22	40.00	12.78	Peak
3	50.057	42.88	-16.99	25.89	40.00	14.11	Peak
4	250.301	46.39	-12.94	33.45	46.00	12.55	Peak
5	331.355	47.36	-9.80	37.56	46.00	8.44	Peak
6	543.274	38.32	-5.36	32.96	46.00	13.04	Peak

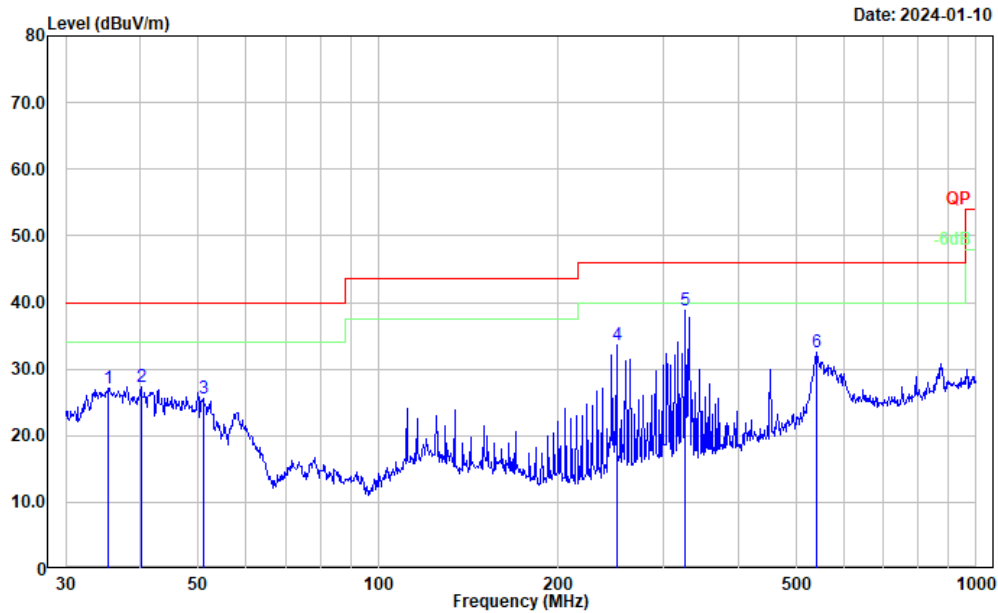
5470~5725MHz

Project No.: CR231171096-RF
Tester: Vic Du
Polarization: horizontal
Note: Transmitting 5g WiFi 5470~5725 MHz G006-120050-ZU



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	250.301	52.38	-12.94	39.44	46.00	6.56	QP
2	303.544	50.03	-10.34	39.69	46.00	6.31	QP
3	317.701	53.97	-10.07	43.90	46.00	2.10	QP
4	326.740	52.68	-9.91	42.77	46.00	3.23	QP
5	331.355	52.26	-9.80	42.46	46.00	3.54	QP
6	339.589	49.18	-9.71	39.47	46.00	6.53	QP

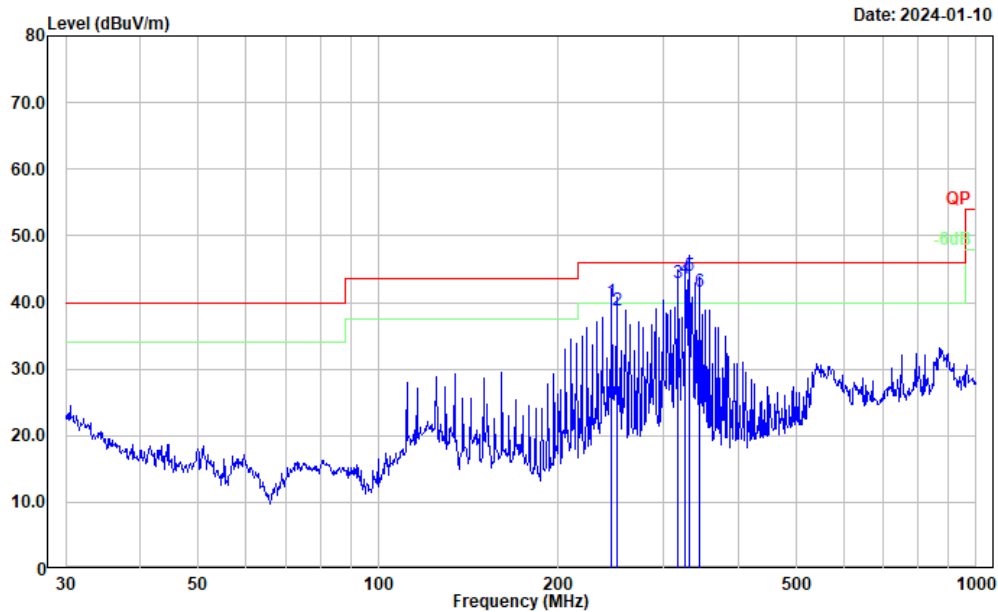
Project No.: CR231171096-RF
Tester: Vic Du
Polarization: vertical
Note: Transmitting 5g WiFi 5470~5725 MHz G006-120050-ZU



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	35.251	34.82	-7.63	27.19	40.00	12.81	Peak
2	40.135	38.51	-11.24	27.27	40.00	12.73	Peak
3	50.942	42.85	-17.25	25.60	40.00	14.40	Peak
4	250.301	46.65	-12.94	33.71	46.00	12.29	Peak
5	326.740	48.80	-9.91	38.89	46.00	7.11	Peak
6	541.373	37.91	-5.36	32.55	46.00	13.45	Peak

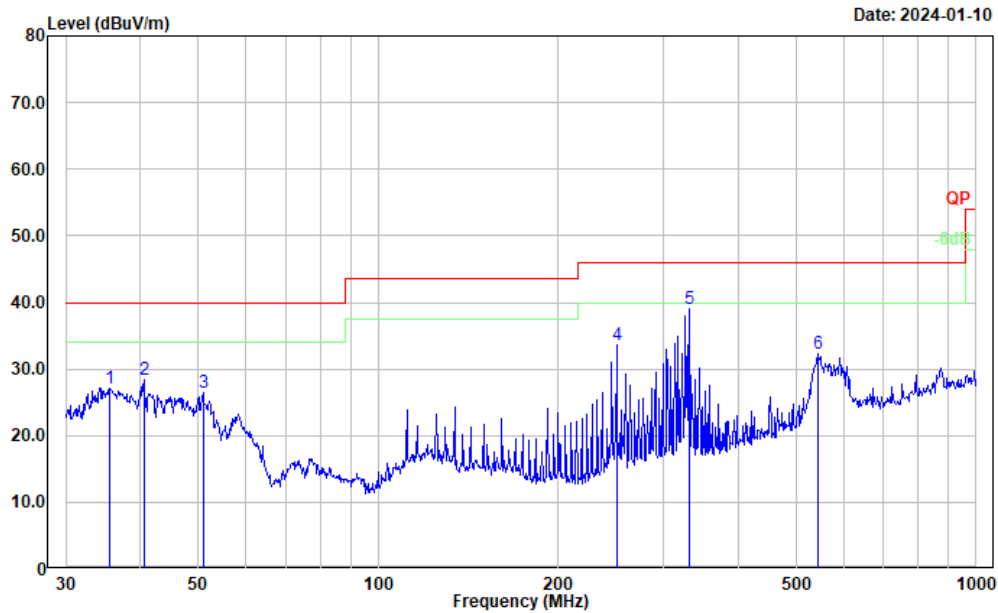
5725~5850MHz

Project No.: CR231171096-RF
Tester: Vic Du
Polarization: horizontal
Note: Transmitting 5g WiFi 5725~5850 MHz G006-120050-ZU



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	245.951	53.00	-12.90	40.10	46.00	5.90	QP
2	250.301	51.77	-12.94	38.83	46.00	7.17	QP
3	317.701	52.99	-10.07	42.92	46.00	3.08	QP
4	326.740	53.42	-9.91	43.51	46.00	2.49	QP
5	331.355	53.75	-9.80	43.95	46.00	2.05	QP
6	344.386	51.43	-9.70	41.73	46.00	4.27	QP

Project No.: CR231171096-RF
Tester: Vic Du
Polarization: vertical
Note: Transmitting 5g WiFi 5725~5850 MHz G006-120050-ZU



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	35.624	35.02	-7.88	27.14	40.00	12.86	Peak
2	40.559	40.07	-11.61	28.46	40.00	11.54	Peak
3	50.942	43.61	-17.25	26.36	40.00	13.64	Peak
4	250.301	46.44	-12.94	33.50	46.00	12.50	Peak
5	331.355	48.72	-9.80	38.92	46.00	7.08	Peak
6	543.274	37.71	-5.36	32.35	46.00	13.65	Peak

2) 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		
5150.000	54.08	PK	H	11.67	65.75	74.00	8.25
5150.000	37.41	AV	H	11.67	49.08	54.00	4.92
5150.000	52.45	PK	V	11.67	64.12	74.00	9.88
5150.000	36.36	AV	V	11.67	48.03	54.00	5.97
10360.000	34.61	PK	H	20.47	55.08	68.20	13.12
10360.000	36.44	PK	V	20.47	56.91	68.20	11.29
Middle Channel:				5200	MHz		
10400.000	35.54	PK	H	20.54	56.08	68.20	12.12
10400.000	36.40	PK	V	20.54	56.94	68.20	11.26
High Channel:				5240	MHz		
5350.000	46.25	PK	H	11.94	58.19	74.00	15.81
5350.000	33.19	AV	H	11.94	45.13	54.00	8.87
5350.000	45.96	PK	V	11.94	57.90	74.00	16.10
5350.000	32.88	AV	V	11.94	44.82	54.00	9.18
10480.000	35.85	PK	H	20.42	56.27	68.20	11.93
10480.000	36.47	PK	V	20.42	56.89	68.20	11.31

802.11ac vht20 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		
5150.000	51.72	PK	H	11.67	63.39	74.00	10.61
5150.000	37.34	AV	H	11.67	49.01	54.00	4.99
5150.000	50.47	PK	V	11.67	62.14	74.00	11.86
5150.000	36.51	AV	V	11.67	48.18	54.00	5.82
10360.000	34.90	PK	H	20.47	55.37	68.20	12.83
10360.000	36.07	PK	V	20.47	56.54	68.20	11.66
Middle Channel:				5200	MHz		
10400.000	34.70	PK	H	20.54	55.24	68.20	12.96
10400.000	35.45	PK	V	20.54	55.99	68.20	12.21
High Channel:				5240	MHz		
5350.000	46.37	PK	H	11.94	58.31	74.00	15.69
5350.000	32.69	AV	H	11.94	44.63	54.00	9.37
5350.000	45.86	PK	V	11.94	57.80	74.00	16.20
5350.000	32.10	AV	V	11.94	44.04	54.00	9.96
10480.000	33.53	PK	H	20.42	53.95	68.20	14.25
10480.000	35.27	PK	V	20.42	55.69	68.20	12.51

802.11ac vht40 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		
5150.000	48.08	PK	H	11.67	59.75	74.00	14.25
5150.000	38.19	AV	H	11.67	49.86	54.00	4.14
5150.000	47.27	PK	V	11.67	58.94	74.00	15.06
5150.000	37.62	AV	V	11.67	49.29	54.00	4.71
10380.000	35.08	PK	H	20.51	55.59	68.20	12.61
10380.000	35.90	PK	V	20.51	56.41	68.20	11.79
High Channel:				5230	MHz		
5350.000	46.56	PK	H	11.94	58.50	74.00	15.50
5350.000	32.69	AV	H	11.94	44.63	54.00	9.37
5350.000	45.98	PK	V	11.94	57.92	74.00	16.08
5350.000	31.85	AV	V	11.94	43.79	54.00	10.21
10460.000	36.14	PK	H	20.45	56.59	68.20	11.61
10460.000	37.27	PK	V	20.45	57.72	68.20	10.48

802.11ax hew20Mode:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 5180 MHz							
5150.000	54.55	PK	H	11.67	66.22	74.00	7.78
5150.000	41.26	AV	H	11.67	52.93	54.00	1.07
5150.000	53.27	PK	V	11.67	64.94	74.00	9.06
5150.000	40.18	AV	V	11.67	51.85	54.00	2.15
10360.000	36.42	PK	H	20.47	56.89	68.20	11.31
10360.000	37.30	PK	V	20.47	57.77	68.20	10.43
Middle Channel: 5200 MHz							
10400.000	34.63	PK	H	20.54	55.17	68.20	13.03
10400.000	35.31	PK	V	20.54	55.85	68.20	12.35
High Channel: 5240 MHz							
5350.000	46.37	PK	H	11.94	58.31	74.00	15.69
5350.000	33.51	AV	H	11.94	45.45	54.00	8.55
5350.000	45.96	PK	V	11.94	57.90	74.00	16.10
5350.000	33.20	AV	V	11.94	45.14	54.00	8.86
10480.000	35.52	PK	H	20.42	55.94	68.20	12.26
10480.000	36.44	PK	V	20.42	56.86	68.20	11.34

802.11ax hew40Mode:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 5190 MHz							
5150.000	48.82	PK	H	11.67	60.49	74.00	13.51
5150.000	39.77	AV	H	11.67	51.44	54.00	2.56
5150.000	47.39	PK	V	11.67	59.06	74.00	14.94
5150.000	38.16	AV	V	11.67	49.83	54.00	4.17
10380.000	29.43	PK	H	20.51	49.94	68.20	18.26
10380.000	30.14	PK	V	20.51	50.65	68.20	17.55
High Channel: 5230 MHz							
5350.000	46.70	PK	H	11.94	58.64	74.00	15.36
5350.000	33.37	AV	H	11.94	45.31	54.00	8.69
5350.000	46.12	PK	V	11.94	58.06	74.00	15.94
5350.000	32.88	AV	V	11.94	44.82	54.00	9.18
10460.000	29.99	PK	H	20.45	50.44	68.20	17.76
10460.000	29.63	PK	V	20.45	50.08	68.20	18.12

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		
5150.000	48.37	PK	H	11.67	60.04	74.00	13.96
5150.000	38.06	AV	H	11.67	49.73	54.00	4.27
5150.000	47.23	PK	V	11.67	58.90	74.00	15.10
5150.000	36.12	AV	V	11.67	47.79	54.00	6.21
10520.000	34.89	PK	H	20.53	55.42	68.20	12.78
10520.000	35.65	PK	V	20.53	56.18	68.20	12.02
Middle Channel:				5280	MHz		
10560.000	35.33	PK	H	20.81	56.14	68.20	12.06
10560.000	35.95	PK	V	20.81	56.76	68.20	11.44
High Channel:				5320	MHz		
5350.000	54.68	PK	H	11.94	66.62	74.00	7.38
5350.000	35.26	AV	H	11.94	47.20	54.00	6.80
5350.000	53.19	PK	V	11.94	65.13	74.00	8.87
5350.000	35.36	AV	V	11.94	47.30	54.00	6.70
10640.000	34.03	PK	H	21.13	55.16	74.00	18.84
10640.000	23.97	AV	H	21.13	45.10	54.00	8.90
10640.000	34.37	PK	V	21.13	55.50	74.00	18.50
10640.000	24.74	AV	V	21.13	45.87	54.00	8.13

802.11ac vht20 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		
5150.000	49.55	PK	H	11.67	61.22	74.00	12.78
5150.000	38.07	AV	H	11.67	49.74	54.00	4.26
5150.000	47.42	PK	V	11.67	59.09	74.00	14.91
5150.000	35.56	AV	V	11.67	47.23	54.00	6.77
10520.000	34.92	PK	H	20.53	55.45	68.20	12.75
10520.000	35.72	PK	V	20.53	56.25	68.20	11.95
Middle Channel:				5280	MHz		
10560.000	35.34	PK	H	20.81	56.15	68.20	12.05
10560.000	35.09	PK	V	20.81	55.90	68.20	12.30
High Channel:				5320	MHz		
5350.000	47.28	PK	H	11.94	59.22	74.00	14.78
5350.000	33.20	AV	H	11.94	45.14	54.00	8.86
5350.000	46.65	PK	V	11.94	58.59	74.00	15.41
5350.000	32.89	AV	V	11.94	44.83	54.00	9.17
10640.000	35.10	PK	H	21.13	56.23	74.00	17.77
10640.000	23.64	AV	H	21.13	44.77	54.00	9.23
10640.000	36.28	PK	V	21.13	57.41	74.00	16.59
10640.000	23.87	AV	V	21.13	45.00	54.00	9.00

802.11ac vht40 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							
5150.000	50.66	PK	H	11.67	62.33	74.00	11.67
5150.000	40.07	AV	H	11.67	51.74	54.00	2.26
5150.000	49.11	PK	V	11.67	60.78	74.00	13.22
5150.000	37.44	AV	V	11.67	49.11	54.00	4.89
10540.000	36.47	PK	H	20.68	57.15	68.20	11.05
10540.000	35.30	PK	V	20.68	55.98	68.20	12.22
High Channel: 5310 MHz							
5350.000	46.68	PK	H	11.94	58.62	74.00	15.38
5350.000	33.19	AV	H	11.94	45.13	54.00	8.87
5350.000	45.95	PK	V	11.94	57.89	74.00	16.11
5350.000	32.90	AV	V	11.94	44.84	54.00	9.16
10620.000	36.15	PK	H	21.11	57.26	74.00	16.74
10620.000	23.79	AV	H	21.11	44.90	54.00	9.10
10620.000	36.60	PK	V	21.11	57.71	74.00	16.29
10620.000	23.51	AV	V	21.11	44.62	54.00	9.38

802.11ax hew20 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							
5150.000	48.91	PK	H	11.67	60.58	74.00	13.42
5150.000	38.84	AV	H	11.67	50.51	54.00	3.49
5150.000	47.12	PK	V	11.67	58.79	74.00	15.21
5150.000	36.49	AV	V	11.67	48.16	54.00	5.84
10520.000	34.29	PK	H	20.53	54.82	68.20	13.38
10520.000	36.10	PK	V	20.53	56.63	68.20	11.57
Middle Channel: 5280 MHz							
10560.000	35.43	PK	H	20.81	56.24	68.20	11.96
10560.000	36.34	PK	V	20.81	57.15	68.20	11.05
High Channel: 5320 MHz							
5350.000	46.61	PK	H	11.94	58.55	74.00	15.45
5350.000	33.19	AV	H	11.94	45.13	54.00	8.87
5350.000	46.08	PK	V	11.94	58.02	74.00	15.98
5350.000	32.84	AV	V	11.94	44.78	54.00	9.22
10640.000	36.72	PK	H	21.13	57.85	74.00	16.15
10640.000	25.01	AV	H	21.13	46.14	54.00	7.86
10640.000	37.88	PK	V	21.13	59.01	74.00	14.99
10640.000	26.37	AV	V	21.13	47.50	54.00	6.50

802.11ax hew40 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							
5150.000	51.48	PK	H	11.67	63.15	74.00	10.85
5150.000	40.56	AV	H	11.67	52.23	54.00	1.77
5150.000	48.49	PK	V	11.67	60.16	74.00	13.84
5150.000	37.44	AV	V	11.67	49.11	54.00	4.89
10540.000	29.90	PK	H	20.68	50.58	68.20	17.62
10540.000	29.41	PK	V	20.68	50.09	68.20	18.11
High Channel: 5310 MHz							
5350.000	46.52	PK	H	11.94	58.46	74.00	15.54
5350.000	33.35	AV	H	11.94	45.29	54.00	8.71
5350.000	46.07	PK	V	11.94	58.01	74.00	15.99
5350.000	32.96	AV	V	11.94	44.90	54.00	9.10
10620.000	37.94	PK	H	21.11	59.05	74.00	14.95
10620.000	23.08	AV	H	21.11	44.19	54.00	9.81
10620.000	36.46	PK	V	21.11	57.57	74.00	16.43
10620.000	23.72	AV	V	21.11	44.83	54.00	9.17

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							
5470.000	52.84	PK	H	11.84	64.68	68.20	3.52
5470.000	51.72	PK	V	11.84	63.56	68.20	4.64
11000.000	37.37	PK	H	21.53	58.90	74.00	15.10
11000.000	24.94	AV	H	21.53	46.47	54.00	7.53
11000.000	38.73	PK	V	21.53	60.26	74.00	13.74
11000.000	26.21	AV	V	21.53	47.74	54.00	6.26
Middle Channel: 5580 MHz							
11160.000	42.03	PK	H	21.38	63.41	74.00	10.59
11160.000	28.71	AV	H	21.38	50.09	54.00	3.91
11160.000	42.65	PK	V	21.38	64.03	74.00	9.97
11160.000	29.62	AV	V	21.38	51.00	54.00	3.00
High Channel: 5700 MHz							
5725.000	53.11	PK	H	12.57	65.68	68.20	2.52
5725.000	51.87	PK	V	12.57	64.44	68.20	3.76
11400.000	38.20	PK	H	21.91	60.11	74.00	13.89
11400.000	24.91	AV	H	21.91	46.82	54.00	7.18
11400.000	38.85	PK	V	21.91	60.76	74.00	13.24
11400.000	25.77	AV	V	21.91	47.68	54.00	6.32
Channel: 5720 MHz							
11440.000	38.88	PK	H	21.73	60.61	74.00	13.39
11440.000	25.20	AV	H	21.73	46.93	54.00	7.07
11440.000	39.13	PK	V	21.73	60.86	74.00	13.14
11440.000	26.69	AV	V	21.73	48.42	54.00	5.58

802.11ac vht20 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							
5470.000	47.97	PK	H	11.84	59.81	68.20	8.39
5470.000	47.46	PK	V	11.84	59.30	68.20	8.90
11000.000	38.28	PK	H	21.53	59.81	74.00	14.19
11000.000	25.17	AV	H	21.53	46.70	54.00	7.30
11000.000	38.44	PK	V	21.53	59.97	74.00	14.03
11000.000	25.80	AV	V	21.53	47.33	54.00	6.67
Middle Channel: 5580 MHz							
11160.000	38.78	PK	H	21.38	60.16	74.00	13.84
11160.000	25.70	AV	H	21.38	47.08	54.00	6.92
11160.000	39.12	PK	V	21.38	60.50	74.00	13.50
11160.000	26.49	AV	V	21.38	47.87	54.00	6.13
High Channel: 5700 MHz							
5725.000	47.41	PK	H	12.57	59.98	68.20	8.22
5725.000	46.65	PK	V	12.57	59.22	68.20	8.98
11400.000	38.00	PK	H	21.91	59.91	74.00	14.09
11400.000	25.26	AV	H	21.91	47.17	54.00	6.83
11400.000	38.27	PK	V	21.91	60.18	74.00	13.82
11400.000	26.42	AV	V	21.91	48.33	54.00	5.67
Channel: 5720 MHz							
11440.000	38.32	PK	H	21.73	60.05	74.00	13.95
11440.000	26.13	AV	H	21.73	47.86	54.00	6.14
11440.000	39.00	PK	V	21.73	60.73	74.00	13.27
11440.000	27.38	AV	V	21.73	49.11	54.00	4.89

802.11ac vht40 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							
5470.000	46.84	PK	H	11.84	58.68	68.20	9.52
5470.000	46.38	PK	V	11.84	58.22	68.20	9.98
11020.000	37.61	PK	H	21.52	59.13	74.00	14.87
11020.000	23.92	AV	H	21.52	45.44	54.00	8.56
11020.000	38.04	PK	V	21.52	59.56	74.00	14.44
11020.000	24.39	AV	V	21.52	45.91	54.00	8.09
Middle Channel: 5550 MHz							
11100.000	37.98	PK	H	21.47	59.45	74.00	14.55
11100.000	24.07	AV	H	21.47	45.54	54.00	8.46
11100.000	38.60	PK	V	21.47	60.07	74.00	13.93
11100.000	24.66	AV	V	21.47	46.13	54.00	7.87
High Channel: 5670 MHz							
5725.000	45.99	PK	H	12.57	58.56	68.20	9.64
5725.000	45.65	PK	V	12.57	58.22	68.20	9.98
11340.000	39.01	PK	H	21.86	60.87	74.00	13.13
11340.000	25.06	AV	H	21.86	46.92	54.00	7.08
11340.000	39.52	PK	V	21.86	61.38	74.00	12.62
11340.000	25.49	AV	V	21.86	47.35	54.00	6.65
Channel: 5710 MHz							
11420.000	39.14	PK	H	21.81	60.95	74.00	13.05
11420.000	26.34	AV	H	21.81	48.15	54.00	5.85
11420.000	40.39	PK	V	21.81	62.20	74.00	11.80
11420.000	27.17	AV	V	21.81	48.98	54.00	5.02

802.11ax hew20 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							
5470.000	46.94	PK	H	11.84	58.78	68.20	9.42
5470.000	46.42	PK	V	11.84	58.26	68.20	9.94
11000.000	38.41	PK	H	21.53	59.94	74.00	14.06
11000.000	25.53	AV	H	21.53	47.06	54.00	6.94
11000.000	38.62	PK	V	21.53	60.15	74.00	13.85
11000.000	26.08	AV	V	21.53	47.61	54.00	6.39
Middle Channel: 5580 MHz							
11160.000	38.28	PK	H	21.38	59.66	74.00	14.34
11160.000	26.15	AV	H	21.38	47.53	54.00	6.47
11160.000	39.37	PK	V	21.38	60.75	74.00	13.25
11160.000	27.02	AV	V	21.38	48.40	54.00	5.60
High Channel: 5700 MHz							
5725.000	46.25	PK	H	12.57	58.82	68.20	9.38
5725.000	45.81	PK	V	12.57	58.38	68.20	9.82
11400.000	37.15	PK	H	21.91	59.06	74.00	14.94
11400.000	25.29	AV	H	21.91	47.20	54.00	6.80
11400.000	38.82	PK	V	21.91	60.73	74.00	13.27
11400.000	26.83	AV	V	21.91	48.74	54.00	5.26
Channel: 5720 MHz							
11440.000	39.60	PK	H	21.73	61.33	74.00	12.67
11440.000	25.59	AV	H	21.73	47.32	54.00	6.68
11440.000	40.14	PK	V	21.73	61.87	74.00	12.13
11440.000	26.97	AV	V	21.73	48.70	54.00	5.30

802.11ax hew40 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							
5470.000	54.31	PK	H	11.84	66.15	68.20	2.05
5470.000	53.84	PK	V	11.84	65.68	68.20	2.52
11020.000	38.42	PK	H	21.52	59.94	74.00	14.06
11020.000	26.04	AV	H	21.52	47.56	54.00	6.44
11020.000	38.59	PK	V	21.52	60.11	74.00	13.89
11020.000	27.25	AV	V	21.52	48.77	54.00	5.23
Middle Channel: 5550 MHz							
11100.000	39.07	PK	H	21.47	60.54	74.00	13.46
11100.000	26.30	AV	H	21.47	47.77	54.00	6.23
11100.000	39.52	PK	V	21.47	60.99	74.00	13.01
11100.000	27.61	AV	V	21.47	49.08	54.00	4.92
High Channel: 5670 MHz							
5725.000	47.98	PK	H	12.57	60.55	68.20	7.65
5725.000	47.35	PK	V	12.57	59.92	68.20	8.28
11340.000	39.37	PK	H	21.86	61.23	74.00	12.77
11340.000	26.26	AV	H	21.86	48.12	54.00	5.88
11340.000	39.79	PK	V	21.86	61.65	74.00	12.35
11340.000	27.01	AV	V	21.86	48.87	54.00	5.13
Channel: 5710 MHz							
11420.000	38.52	PK	H	21.81	60.33	74.00	13.67
11420.000	26.63	AV	H	21.81	48.44	54.00	5.56
11420.000	39.56	PK	V	21.81	61.37	74.00	12.63
11420.000	27.32	AV	V	21.81	49.13	54.00	4.87

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	39.70	PK	H	21.49	61.19	74.00	12.81
11490.000	26.48	AV	H	21.49	47.97	54.00	6.03
11490.000	39.27	PK	V	21.49	60.76	74.00	13.24
11490.000	26.33	AV	V	21.49	47.82	54.00	6.18
Middle Channel:				5785	MHz		
11570.000	40.10	PK	H	21.71	61.81	74.00	12.19
11570.000	26.89	AV	H	21.71	48.60	54.00	5.40
11570.000	39.96	PK	V	21.71	61.67	74.00	12.33
11570.000	26.46	AV	V	21.71	48.17	54.00	5.83
High Channel:				5825	MHz		
11650.000	38.79	PK	H	22.04	60.83	74.00	13.17
11650.000	26.27	AV	H	22.04	48.31	54.00	5.69
11650.000	40.07	PK	V	22.04	62.11	74.00	11.89
11650.000	26.94	AV	V	22.04	48.98	54.00	5.02

802.11ac vht20 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	40.41	PK	H	21.49	61.90	74.00	12.10
11490.000	25.51	AV	H	21.49	47.00	54.00	7.00
11490.000	39.15	PK	V	21.49	60.64	74.00	13.36
11490.000	24.80	AV	V	21.49	46.29	54.00	7.71
Middle Channel:				5785	MHz		
11570.000	40.04	PK	H	21.71	61.75	74.00	12.25
11570.000	26.86	AV	H	21.71	48.57	54.00	5.43
11570.000	40.02	PK	V	21.71	61.73	74.00	12.27
11570.000	26.71	AV	V	21.71	48.42	54.00	5.58
High Channel:				5825	MHz		
11650.000	39.54	PK	H	22.04	61.58	74.00	12.42
11650.000	25.91	AV	H	22.04	47.95	54.00	6.05
11650.000	39.19	PK	V	22.04	61.23	74.00	12.77
11650.000	25.34	AV	V	22.04	47.38	54.00	6.62

802.11ac vht40 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	40.28	PK	H	21.48	61.76	74.00	12.24
11510.000	26.05	AV	H	21.48	47.53	54.00	6.47
11510.000	39.46	PK	V	21.48	60.94	74.00	13.06
11510.000	25.81	AV	V	21.48	47.29	54.00	6.71
High Channel: 5795 MHz							
11590.000	39.78	PK	H	21.78	61.56	74.00	12.44
11590.000	26.56	AV	H	21.78	48.34	54.00	5.66
11590.000	39.63	PK	V	21.78	61.41	74.00	12.59
11590.000	26.45	AV	V	21.78	48.23	54.00	5.77

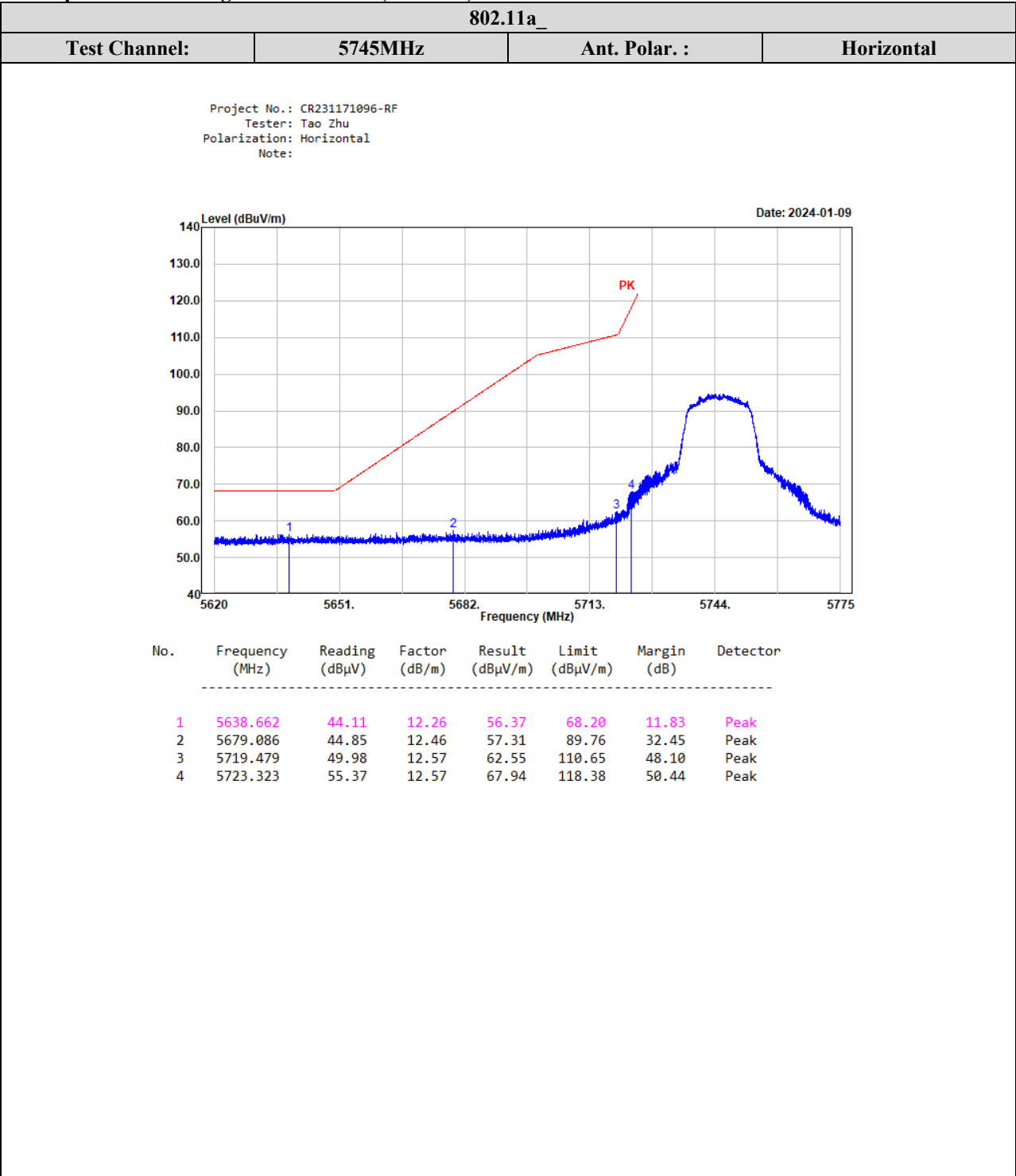
802.11ax hew20 Mode:

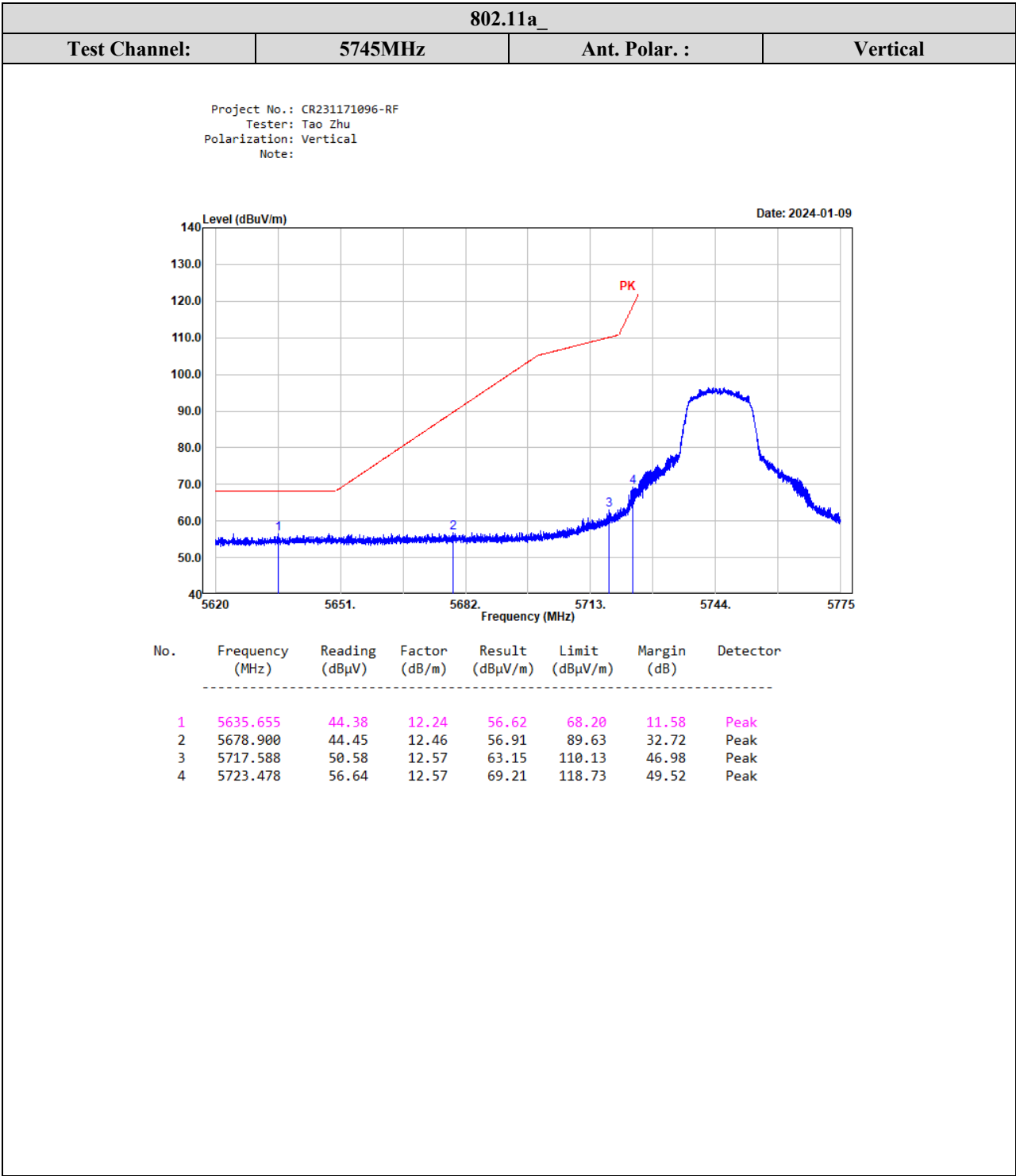
Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 5745 MHz							
11490.000	39.82	PK	H	21.49	61.31	74.00	12.69
11490.000	27.16	AV	H	21.49	48.65	54.00	5.35
11490.000	39.36	PK	V	21.49	60.85	74.00	13.15
11490.000	26.03	AV	V	21.49	47.52	54.00	6.48
Middle Channel: 5785 MHz							
11570.000	40.06	PK	H	21.71	61.77	74.00	12.23
11570.000	26.84	AV	H	21.71	48.55	54.00	5.45
11570.000	39.37	PK	V	21.71	61.08	74.00	12.92
11570.000	26.36	AV	V	21.71	48.07	54.00	5.93
High Channel: 5825 MHz							
11650.000	39.08	PK	H	22.04	61.12	74.00	12.88
11650.000	25.89	AV	H	22.04	47.93	54.00	6.07
11650.000	39.60	PK	V	22.04	61.64	74.00	12.36
11650.000	26.75	AV	V	22.04	48.79	54.00	5.21

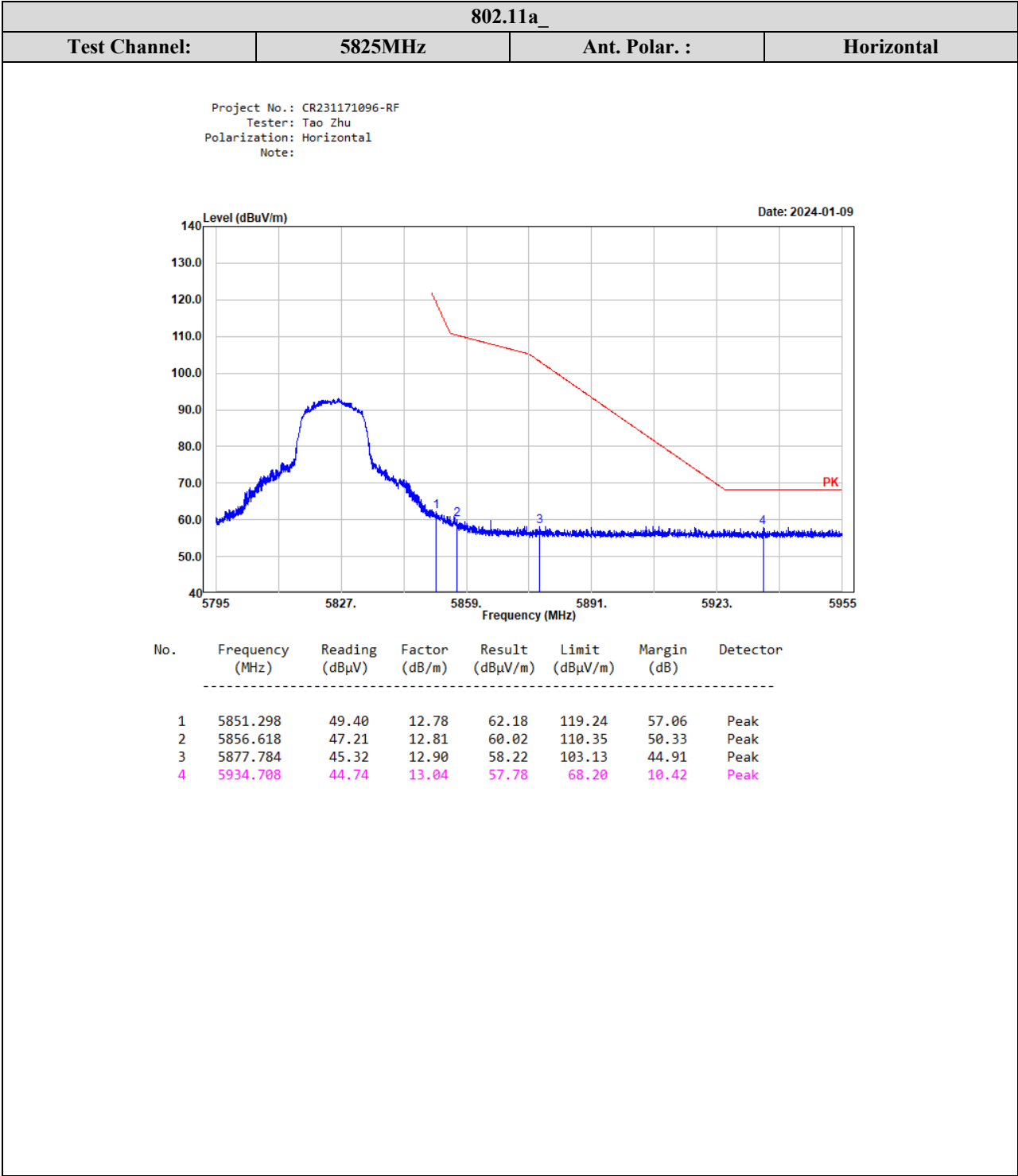
802.11ax hew40 Mode:

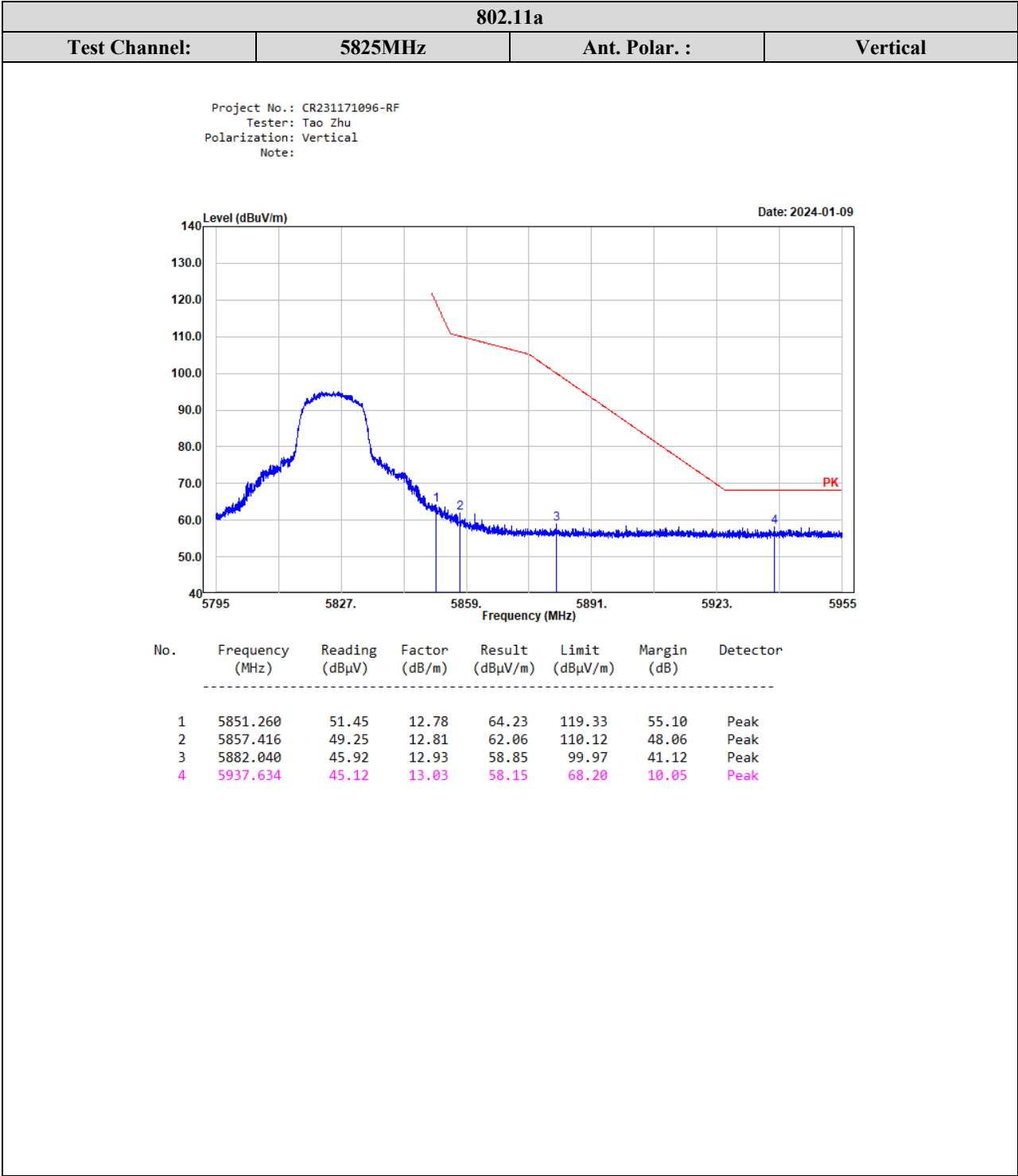
Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 5755 MHz							
11510.000	39.81	PK	H	21.48	61.29	74.00	12.71
11510.000	26.03	AV	H	21.48	47.51	54.00	6.49
11510.000	39.49	PK	V	21.48	60.97	74.00	13.03
11510.000	25.67	AV	V	21.48	47.15	54.00	6.85
High Channel: 5795 MHz							
11590.000	39.97	PK	H	21.78	61.75	74.00	12.25
11590.000	26.29	AV	H	21.78	48.07	54.00	5.93
11590.000	39.74	PK	V	21.78	61.52	74.00	12.48
11590.000	25.74	AV	V	21.78	47.52	54.00	6.48

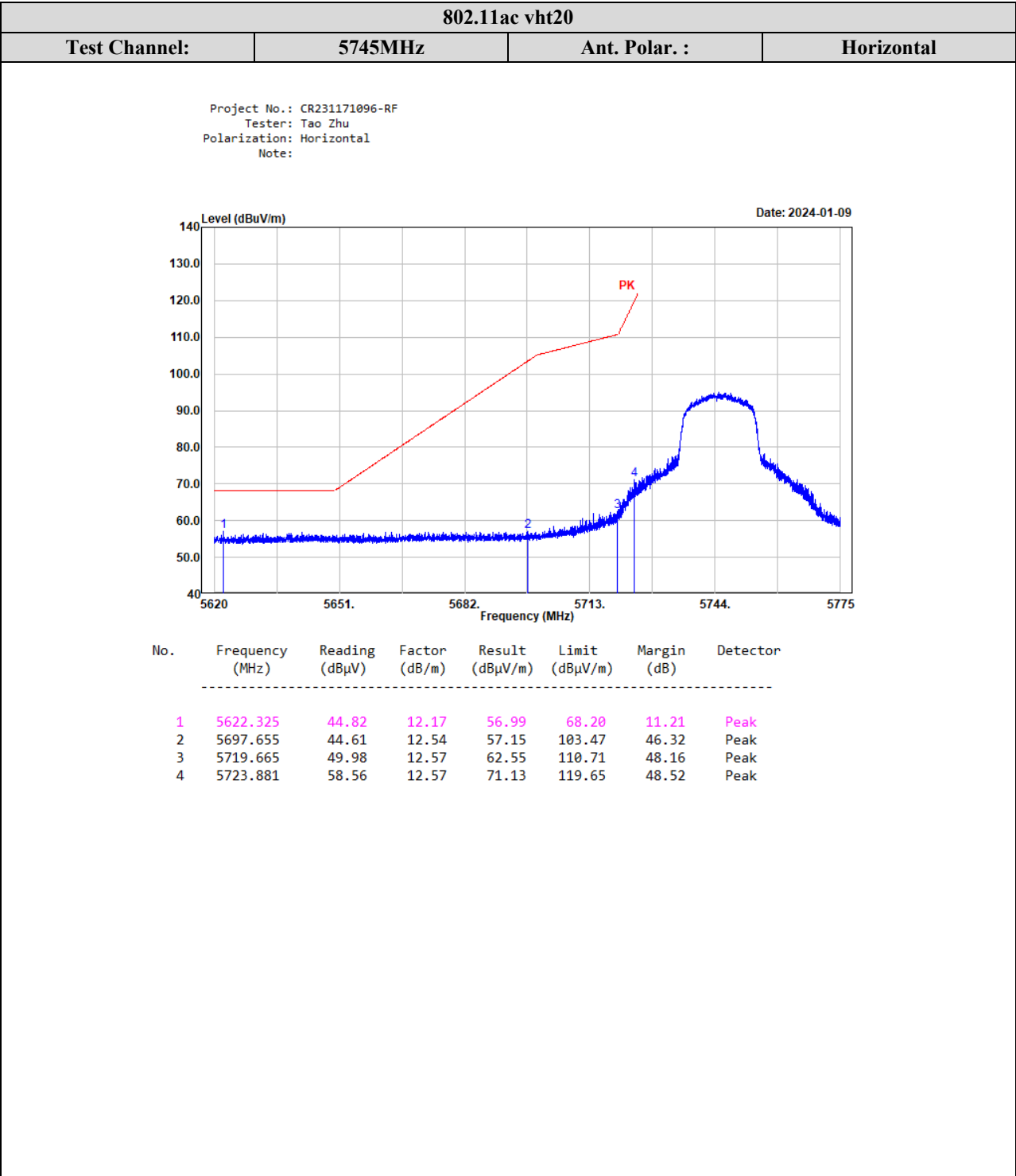
Test plots for Band Edge Measurements (Radiated)



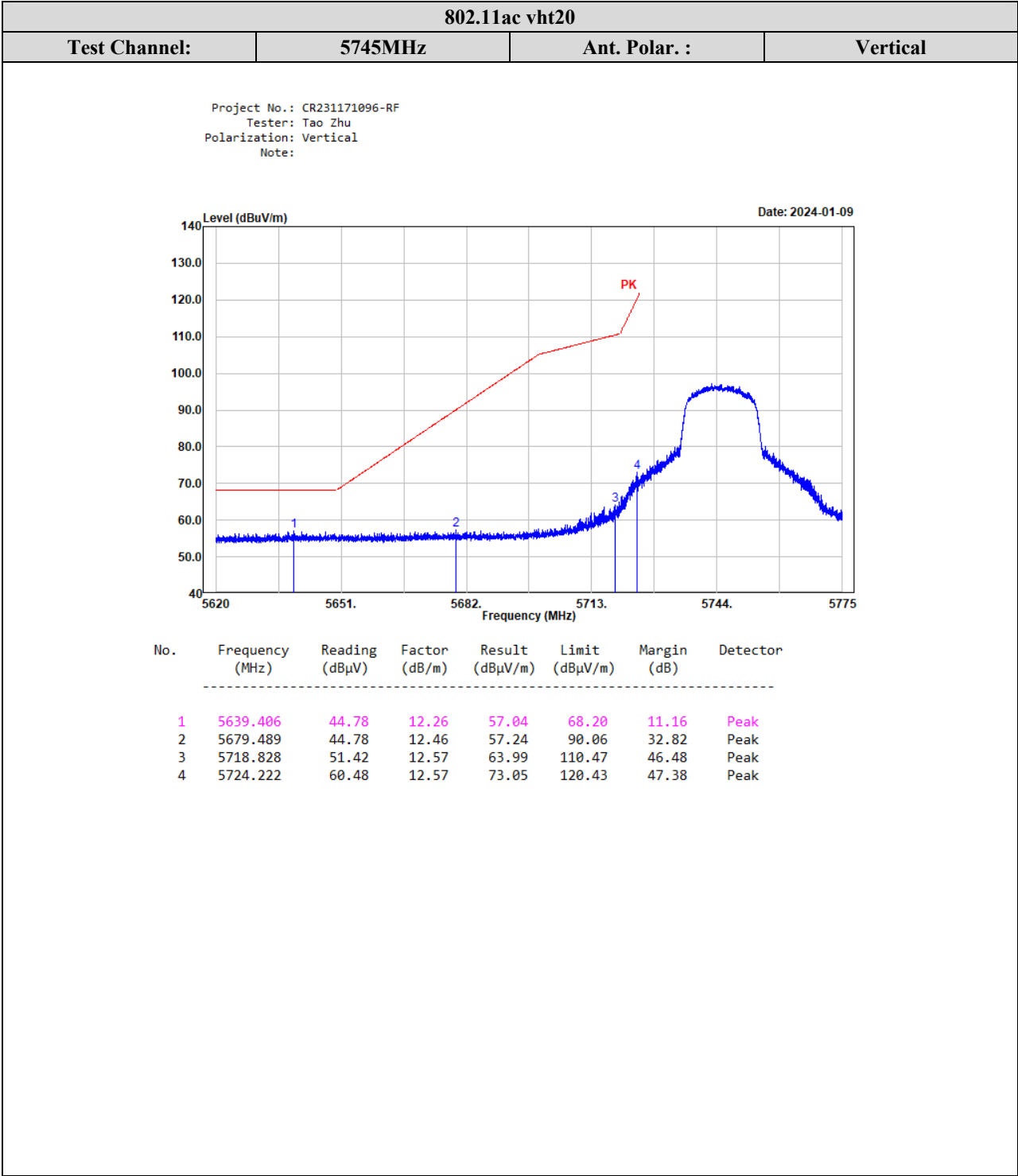


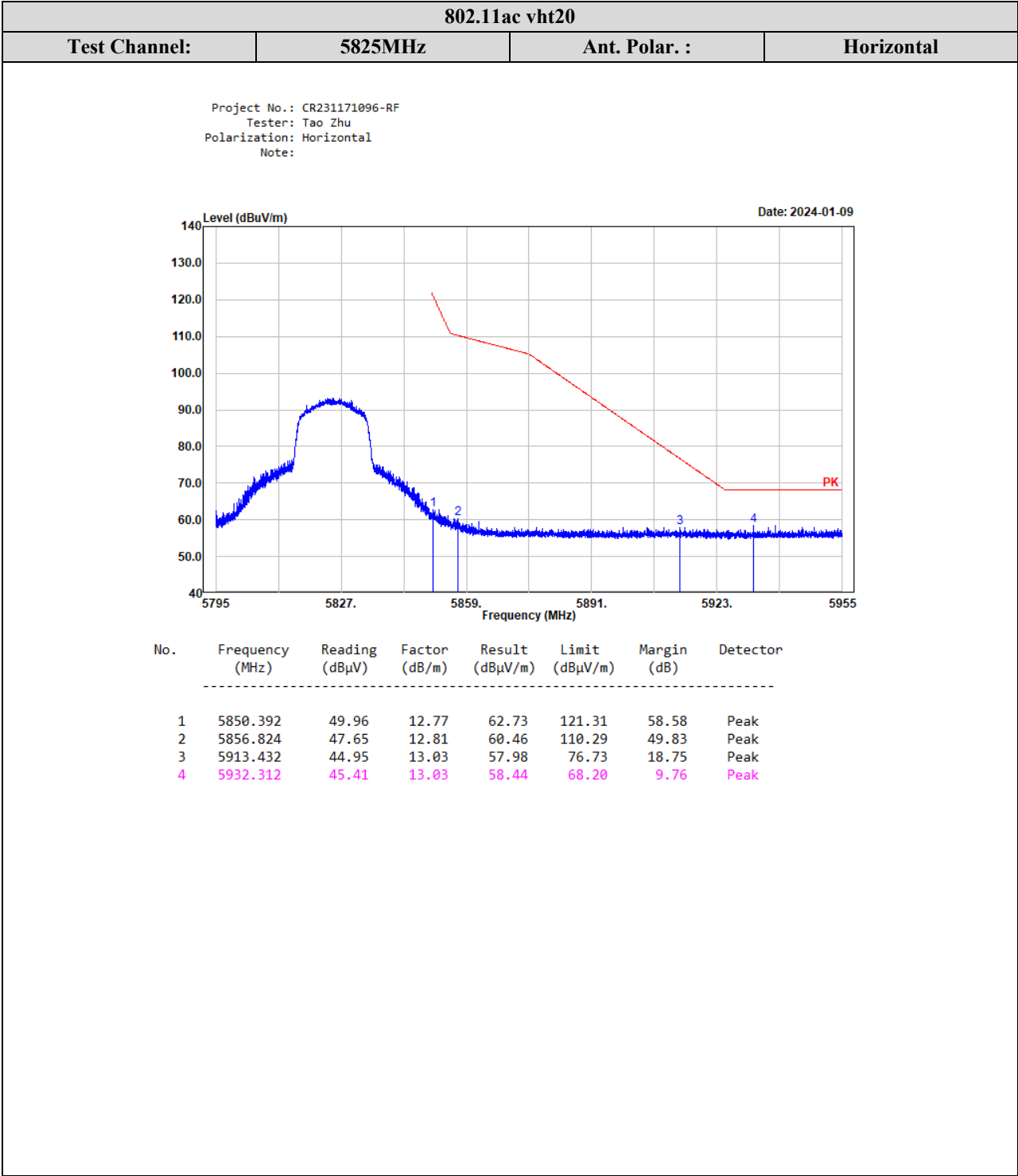




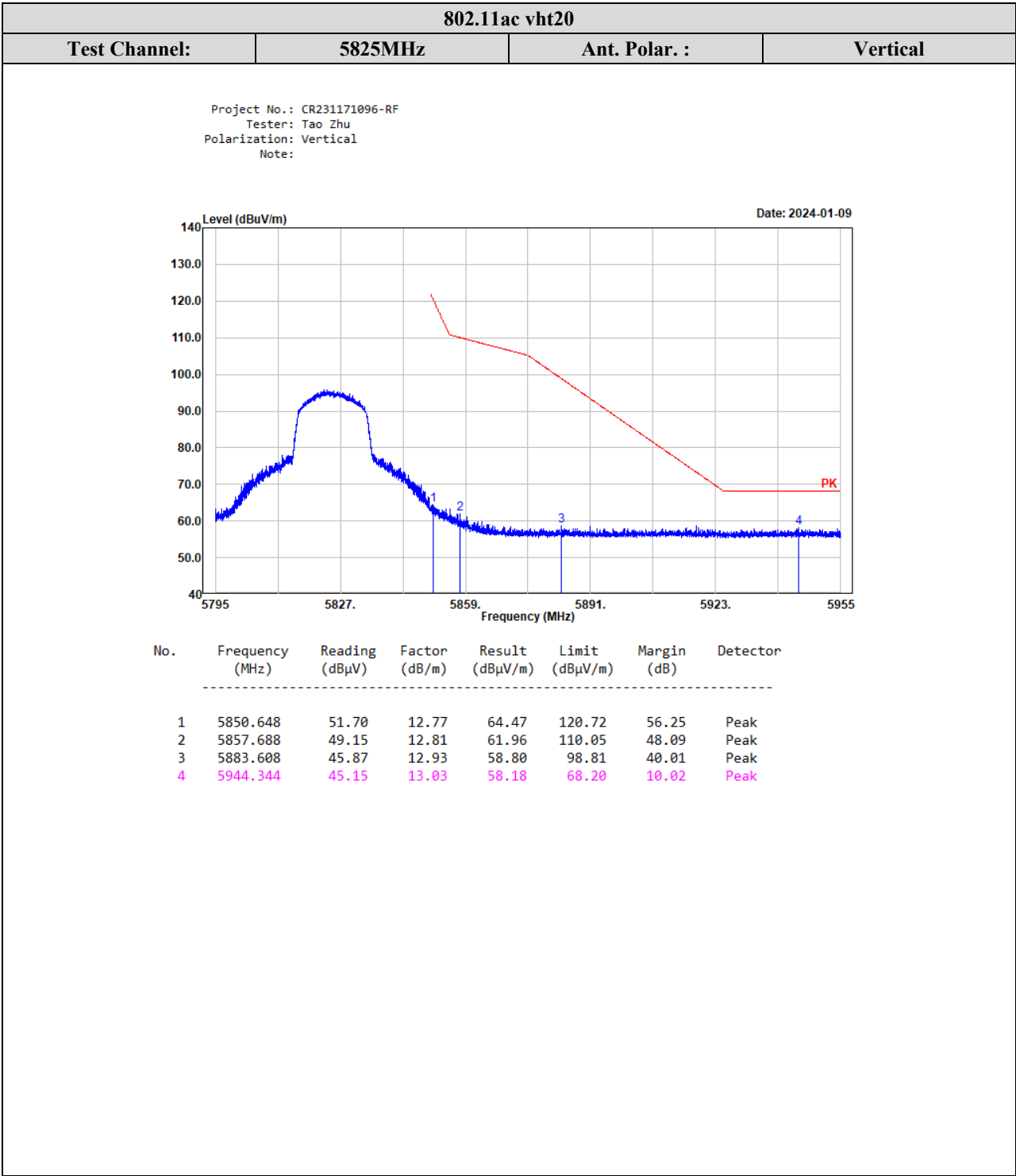


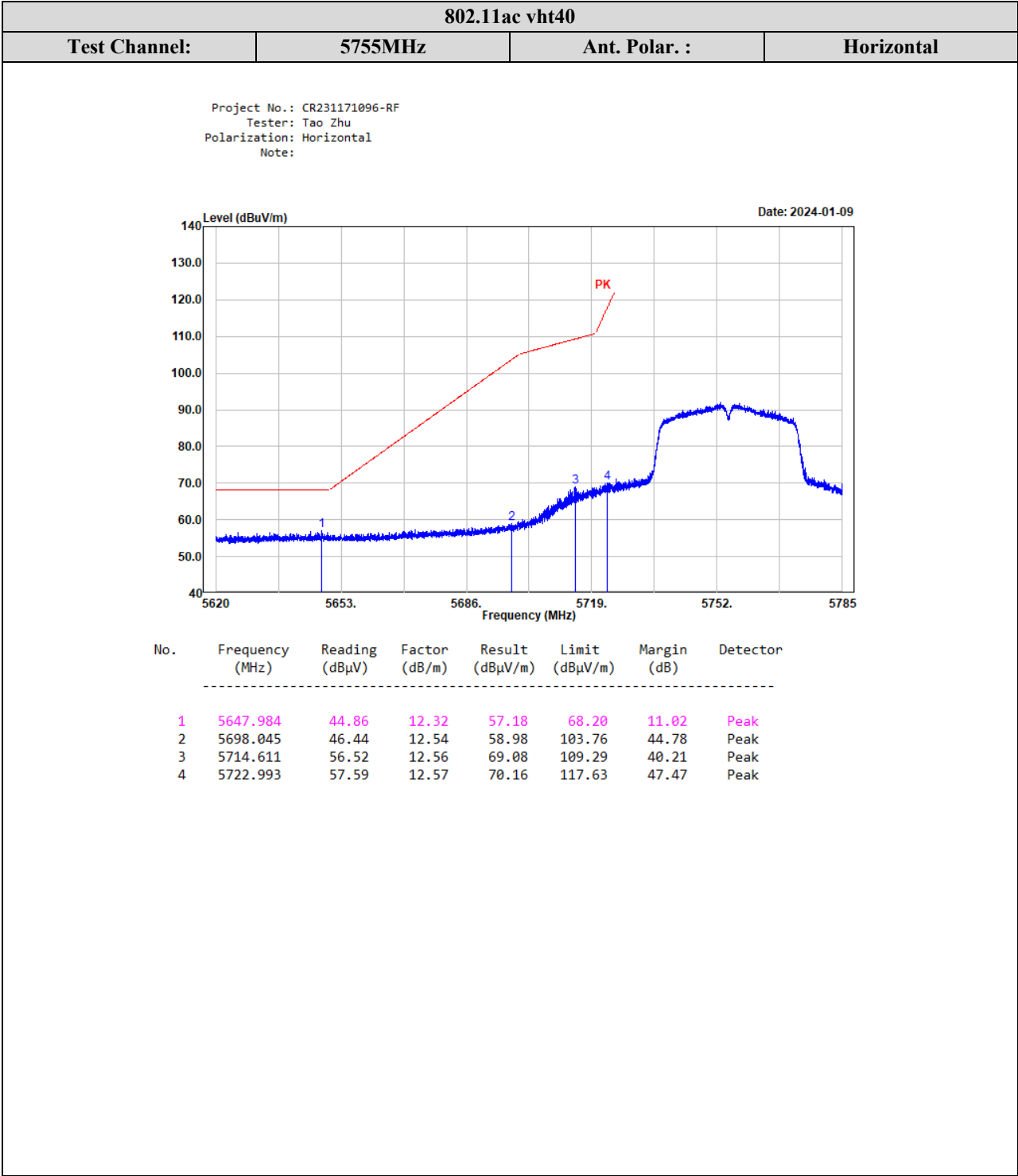
Page 65 of 181



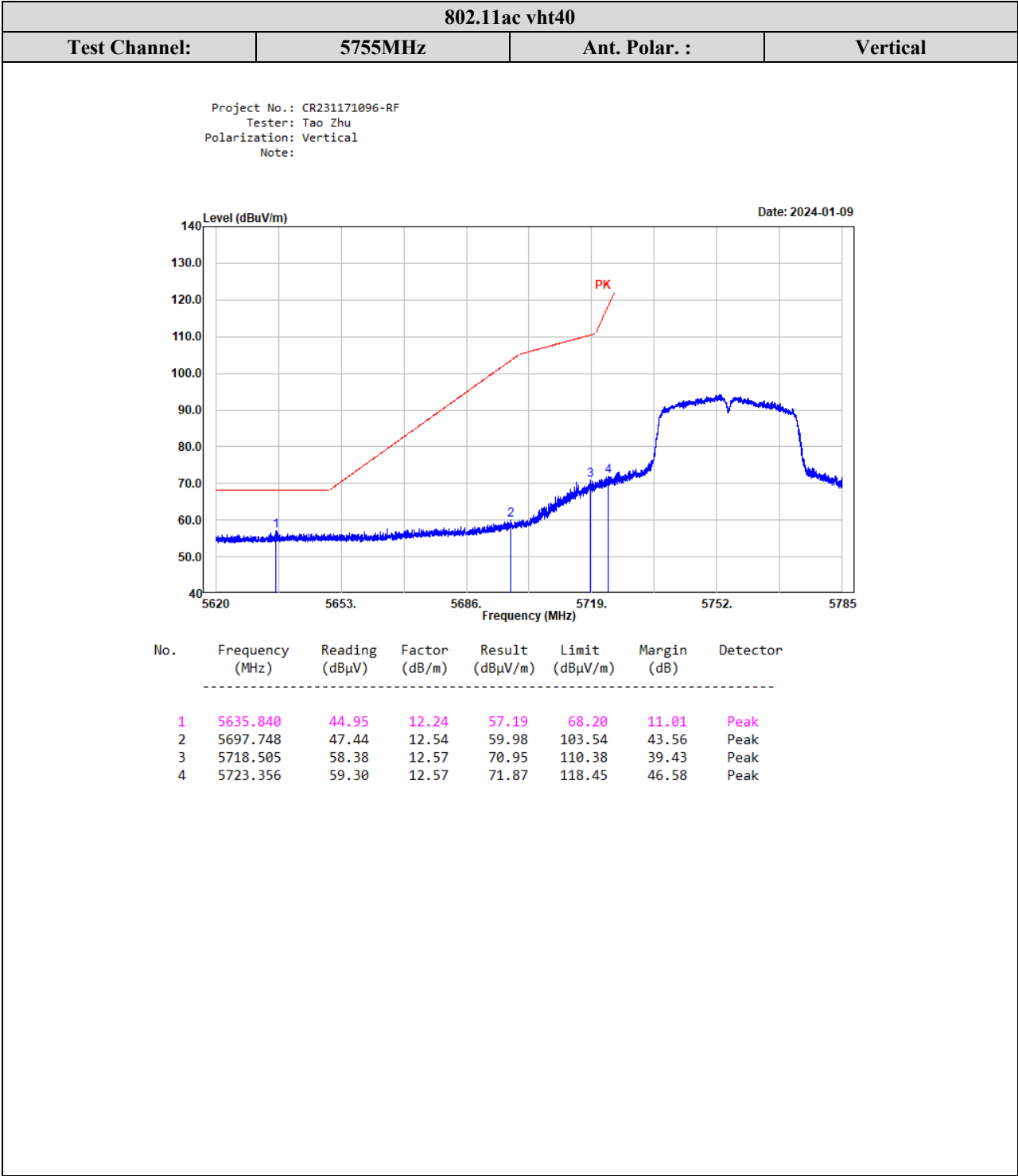


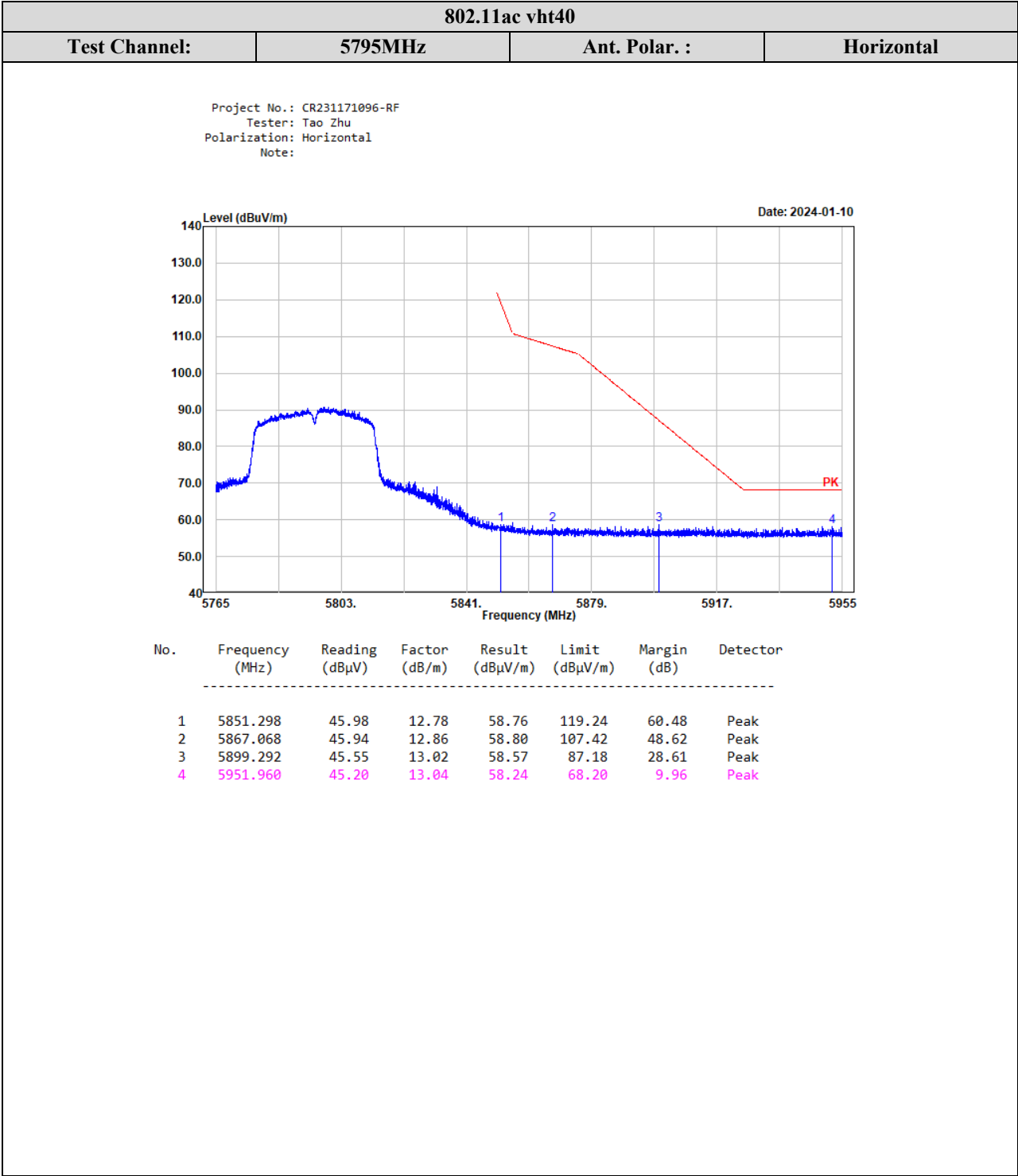
Page 67 of 181

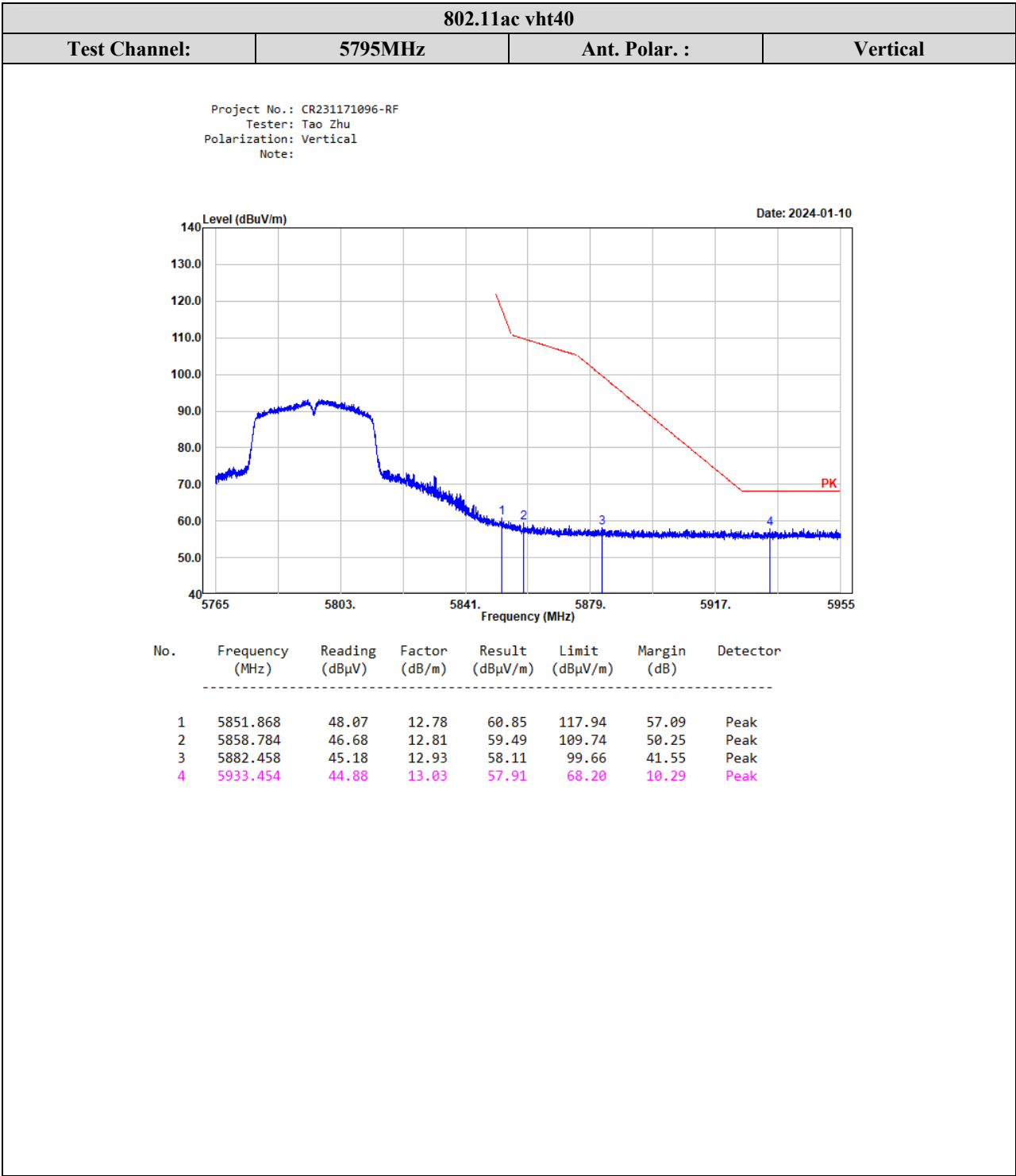


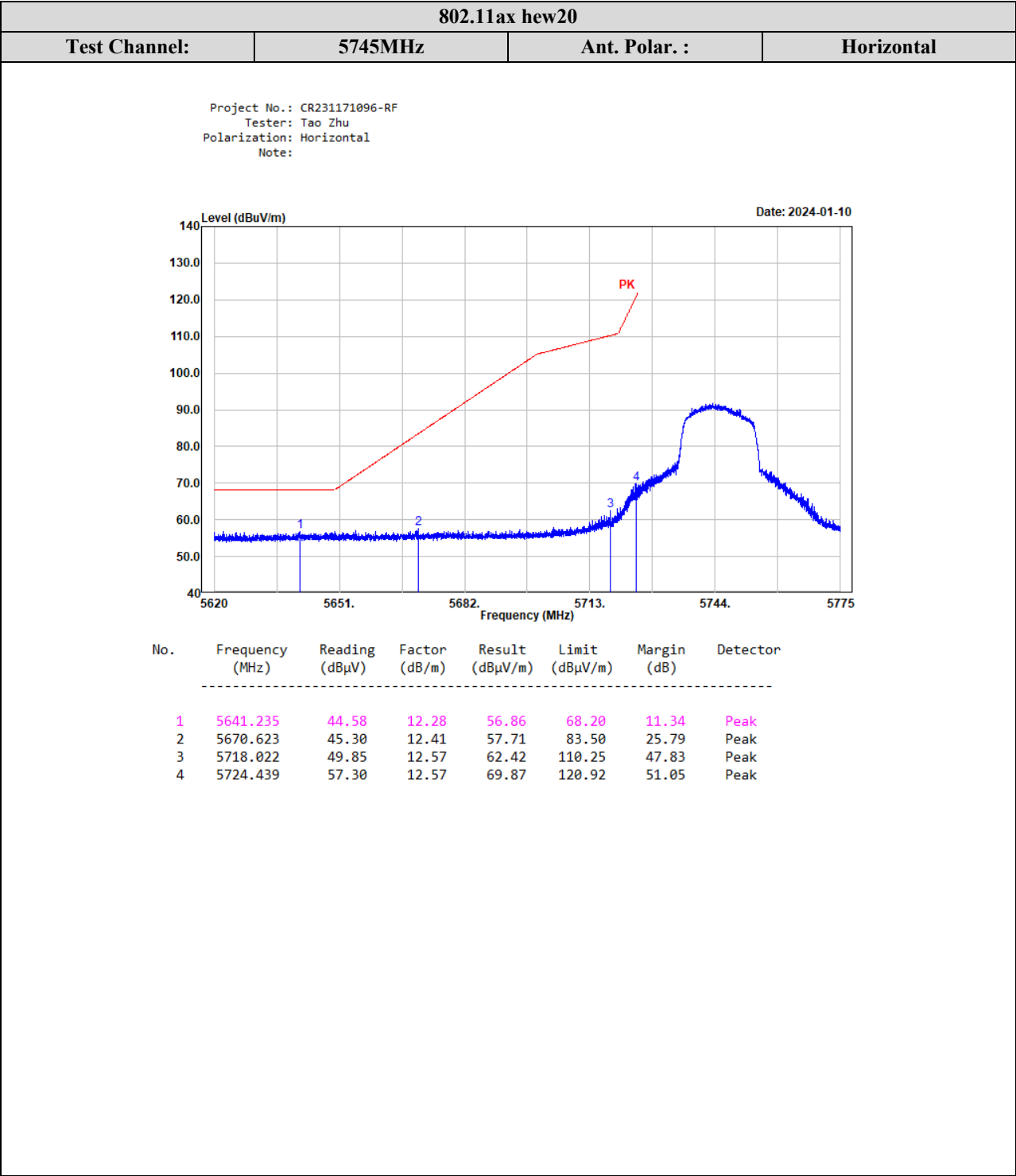


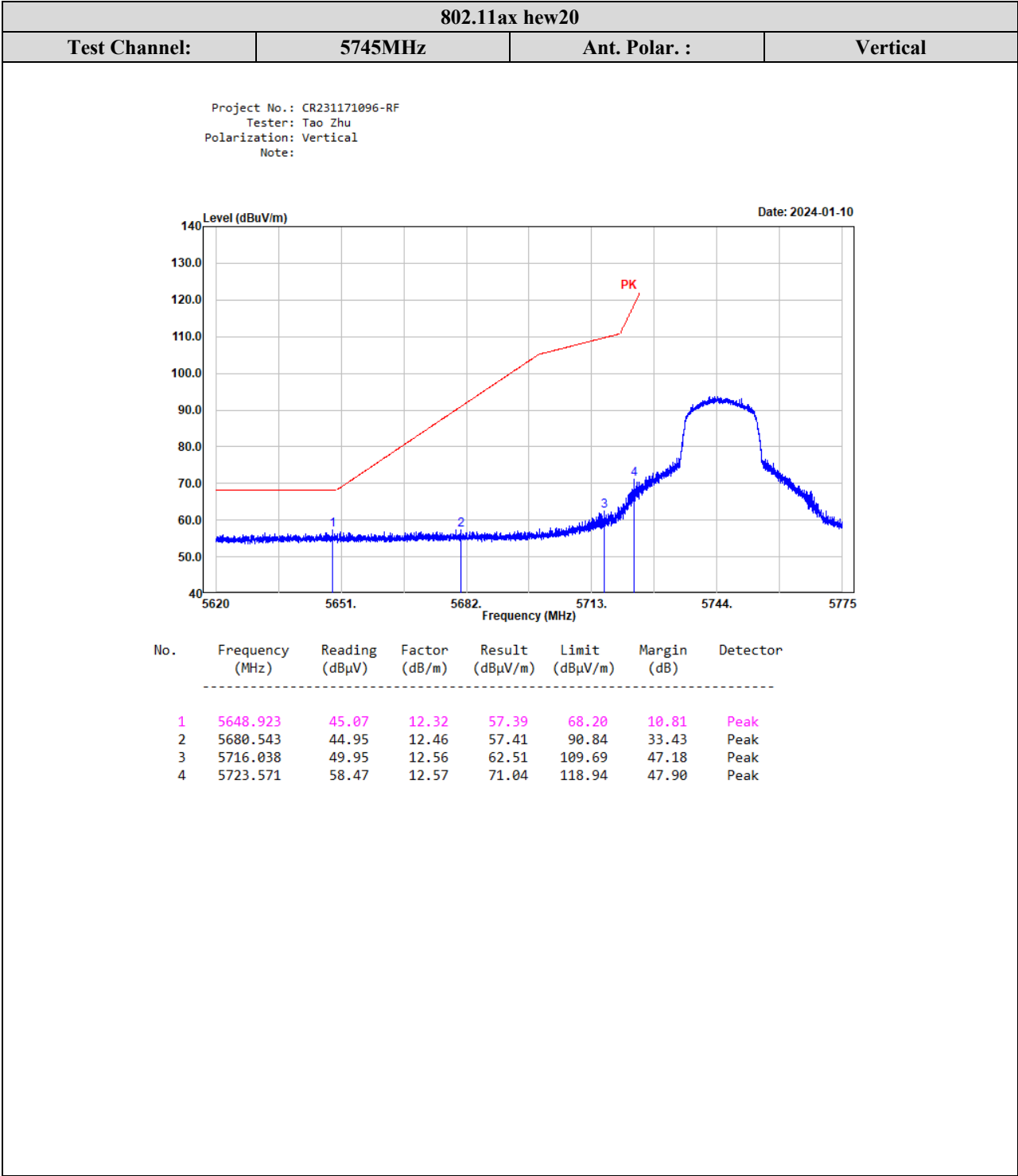
Page 69 of 181



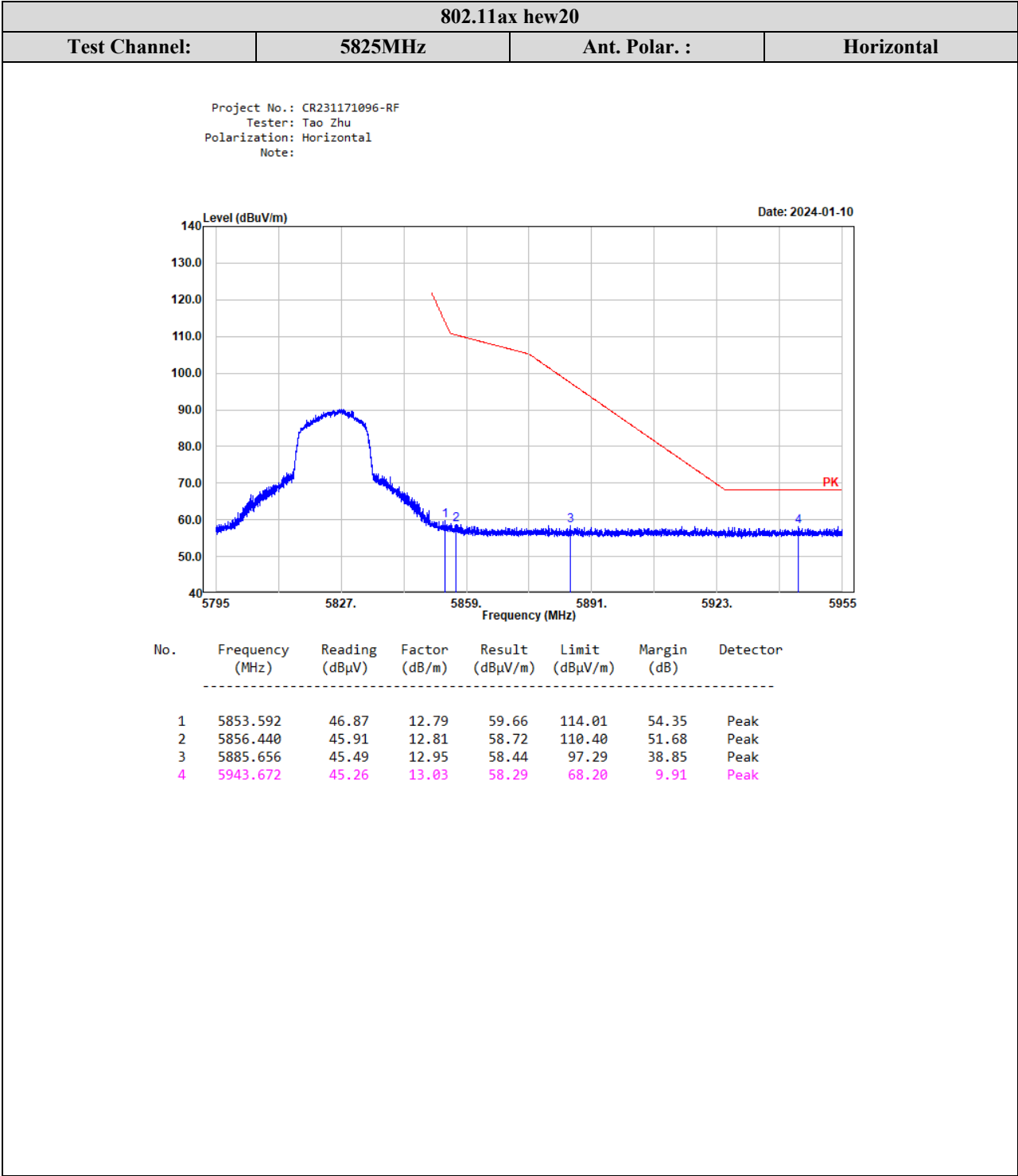


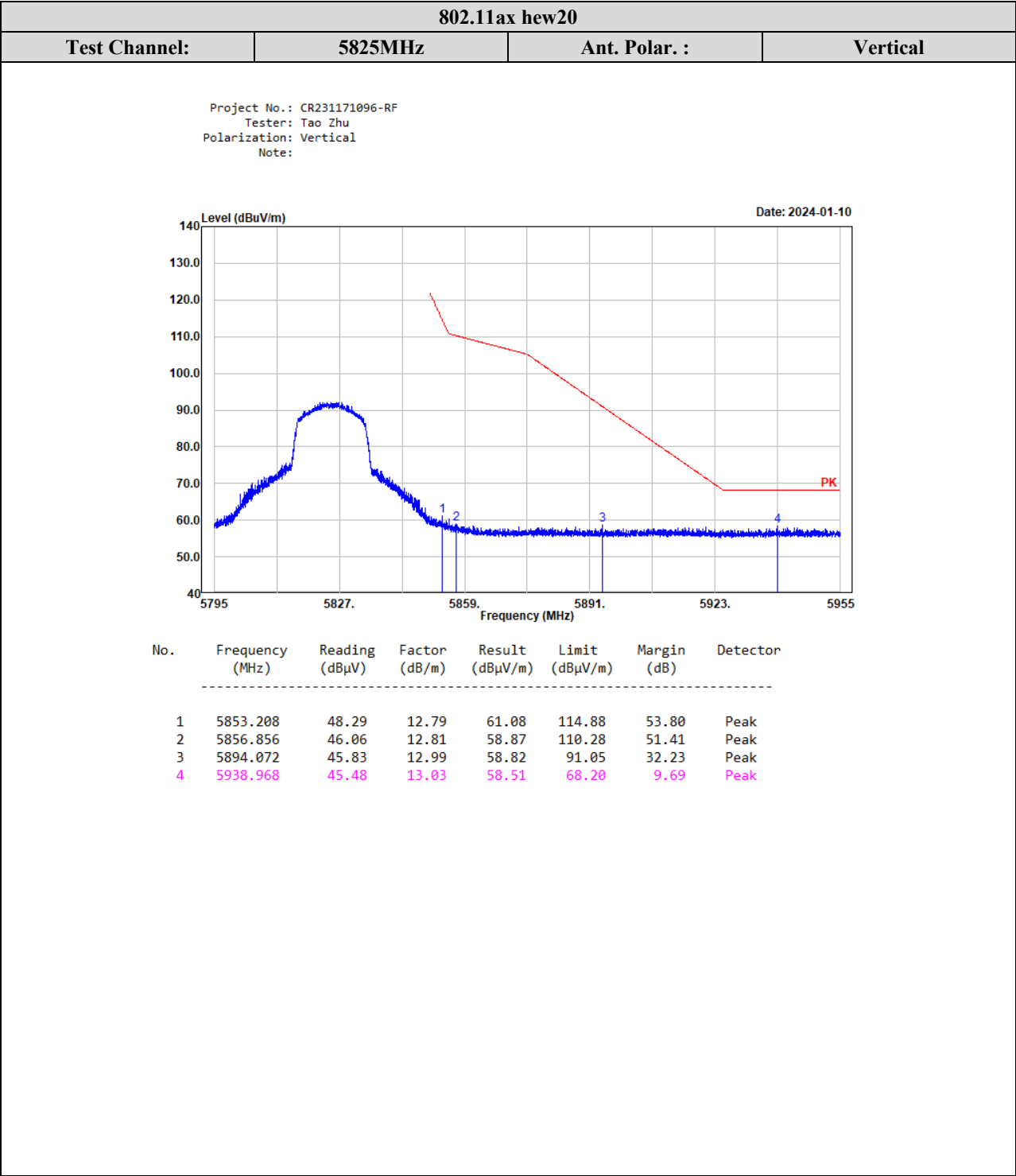






Page 74 of 181

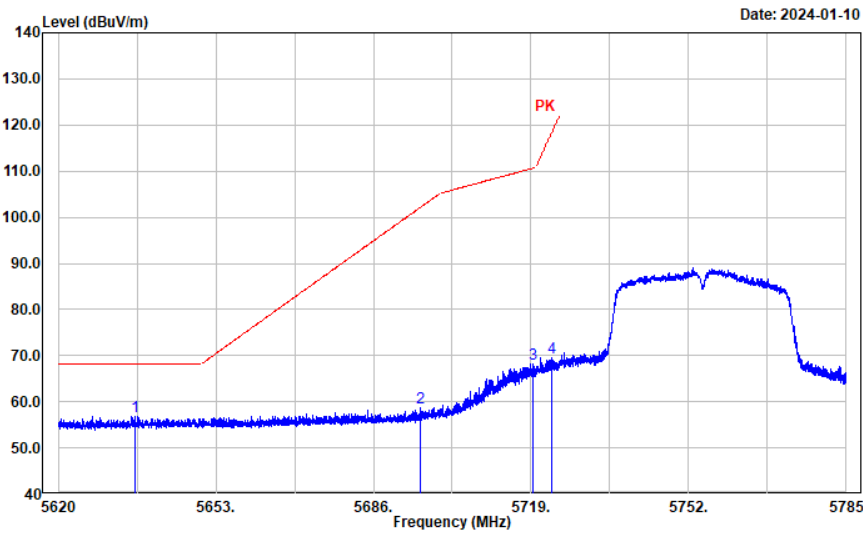




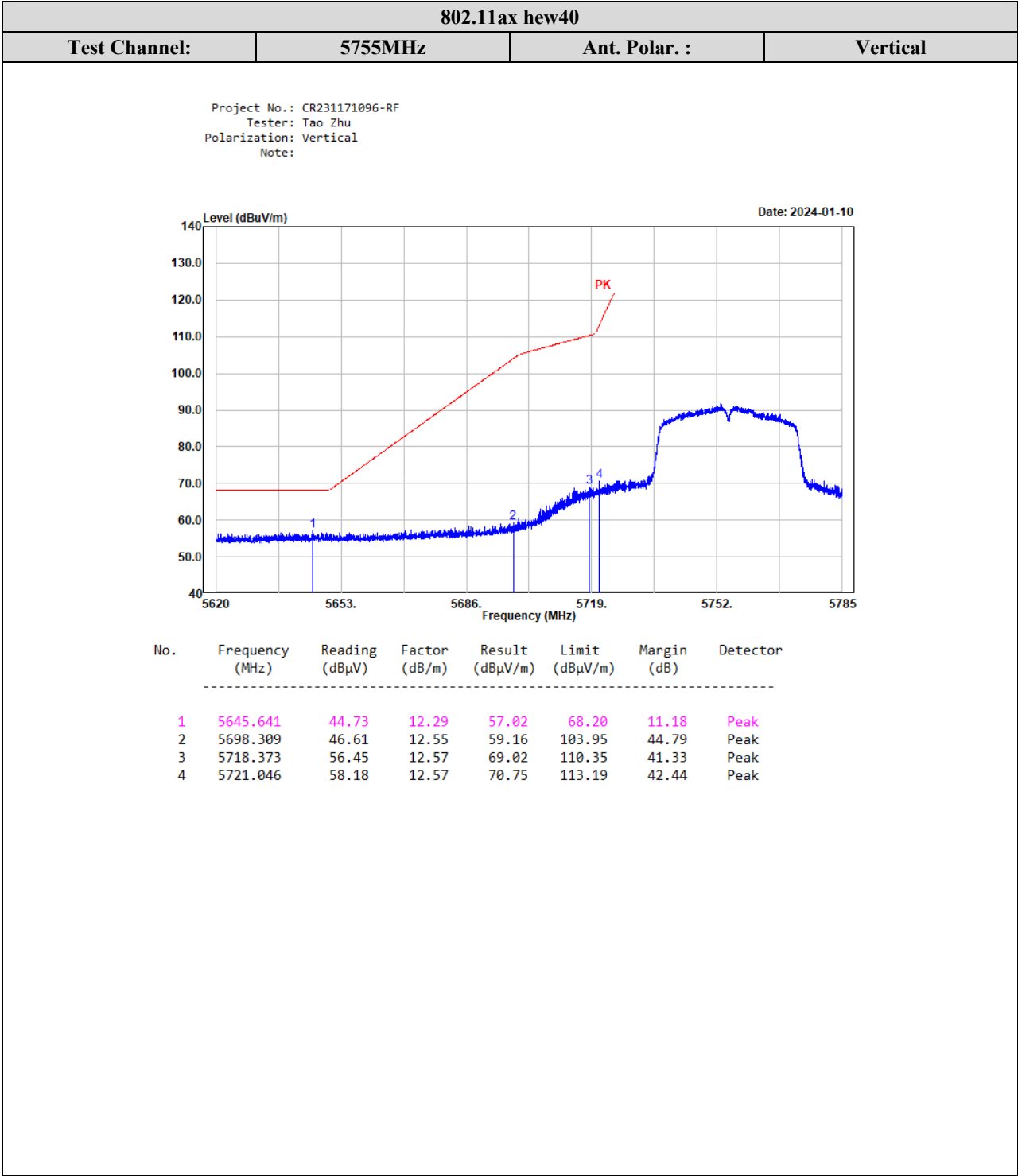
802.11ax hew40

Test Channel: 5755MHz Ant. Polar. : Horizontal

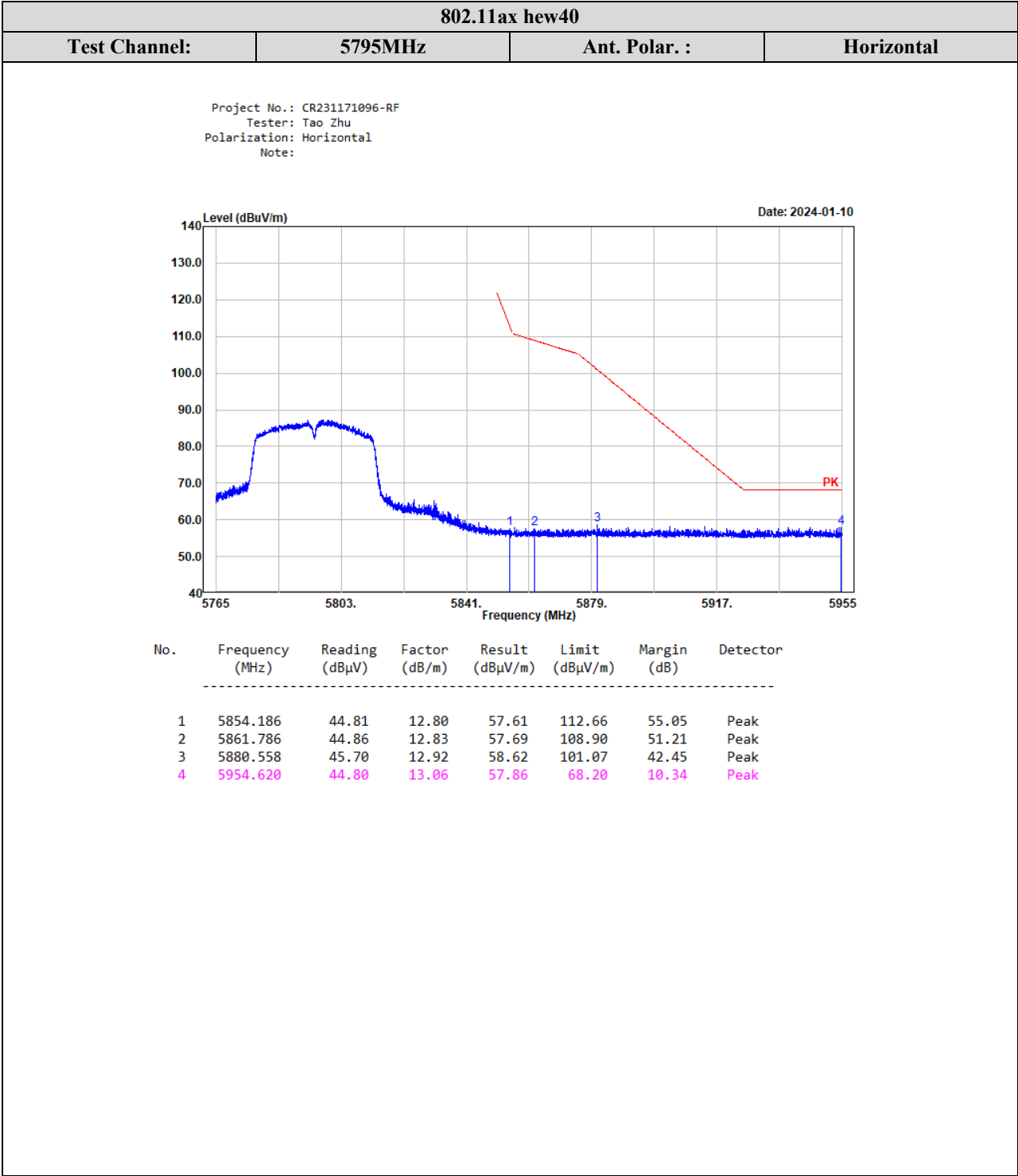
Project No.: CR231171096-RF
Tester: Tao Zhu
Polarization: Horizontal
Note:

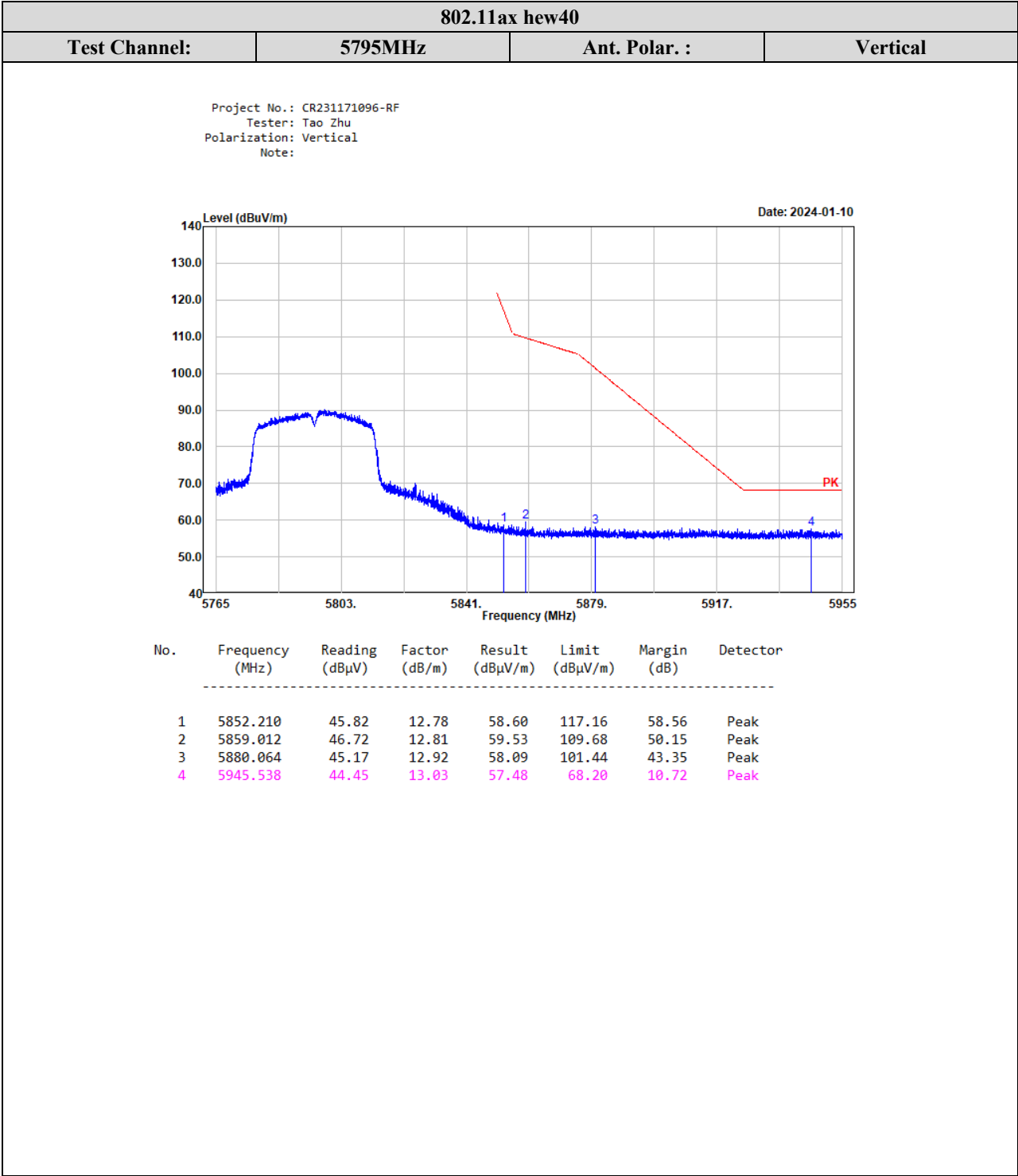


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5635.972	44.61	12.24	56.85	68.20	11.35	Peak
2	5695.768	46.20	12.53	58.73	102.08	43.35	Peak
3	5719.297	55.66	12.57	68.23	110.60	42.37	Peak
4	5723.356	56.88	12.57	69.45	118.45	49.00	Peak

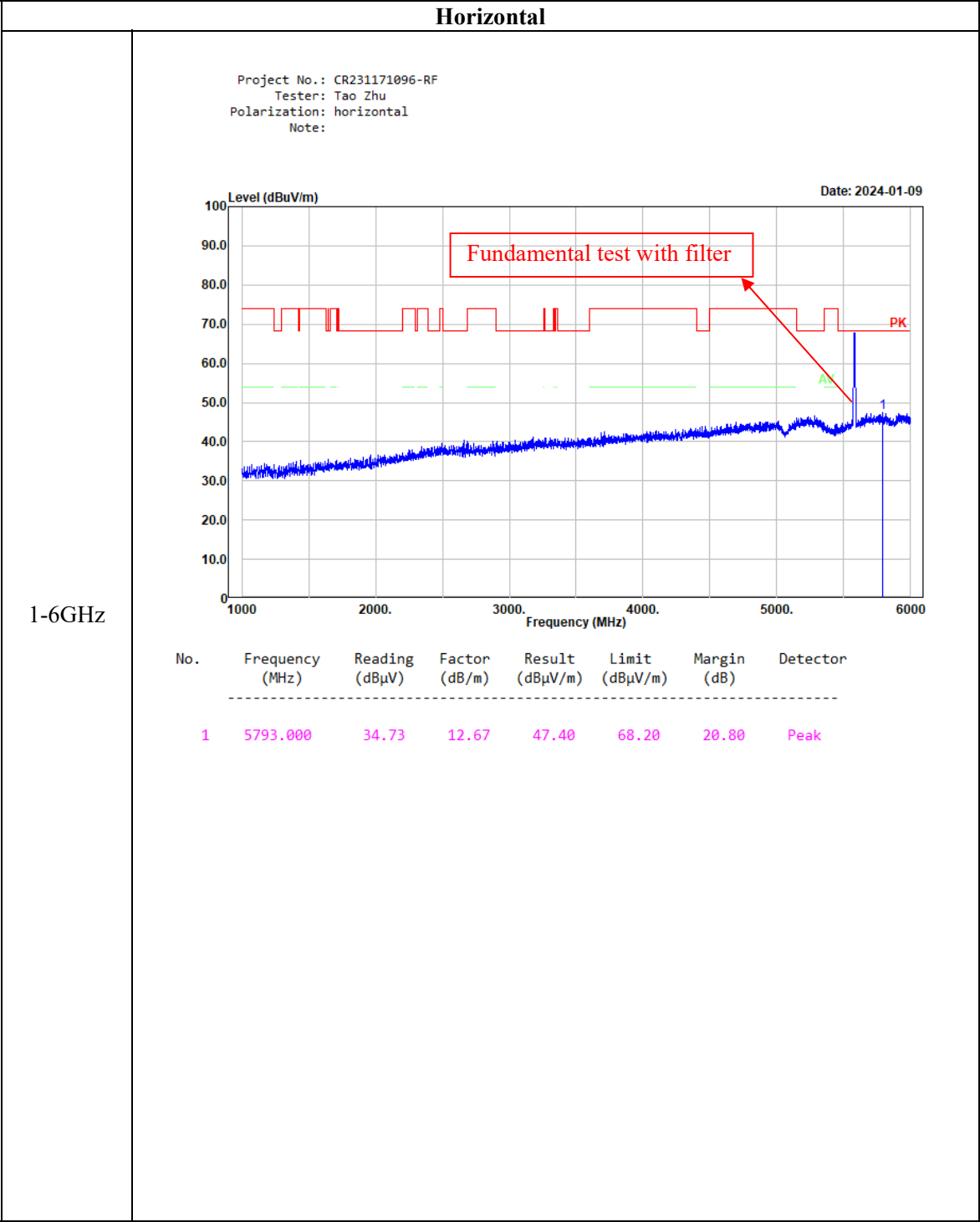


Page 78 of 181



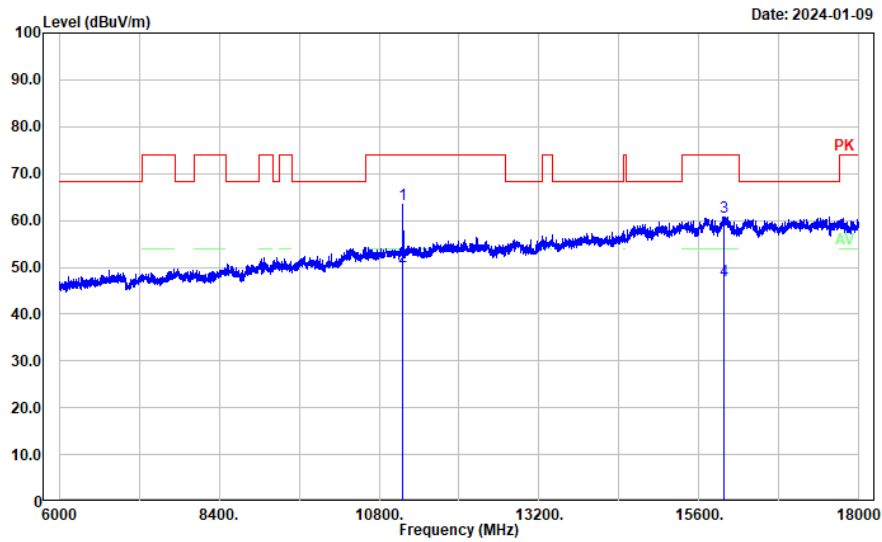


Listed with the worst harmonic margin test plot (802.11a Mode 5280MHz)



Horizontal

Project No.: CR231171096-RF
Tester: Tao Zhu
Polarization: horizontal
Note:

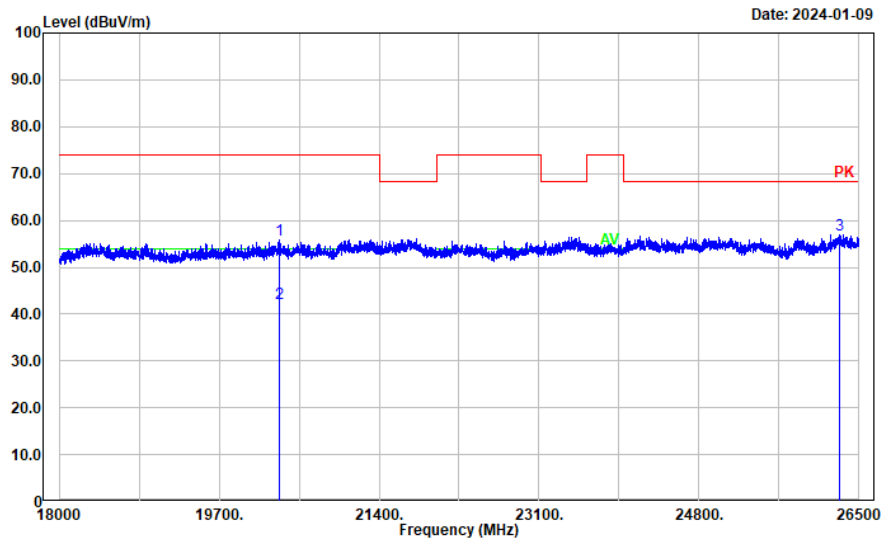


6-18GHz

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	11160.000	42.03	21.38	63.41	74.00	10.59	Peak
2	11160.000	28.71	21.38	50.09	54.00	3.91	Average
3	15976.800	35.55	25.21	60.76	74.00	13.24	Peak
4	15976.800	22.04	25.21	47.25	54.00	6.75	Average

Horizontal

Project No.: CR231171096-RF
Tester: Tao Zhu
Polarization: Horizontal
Note:

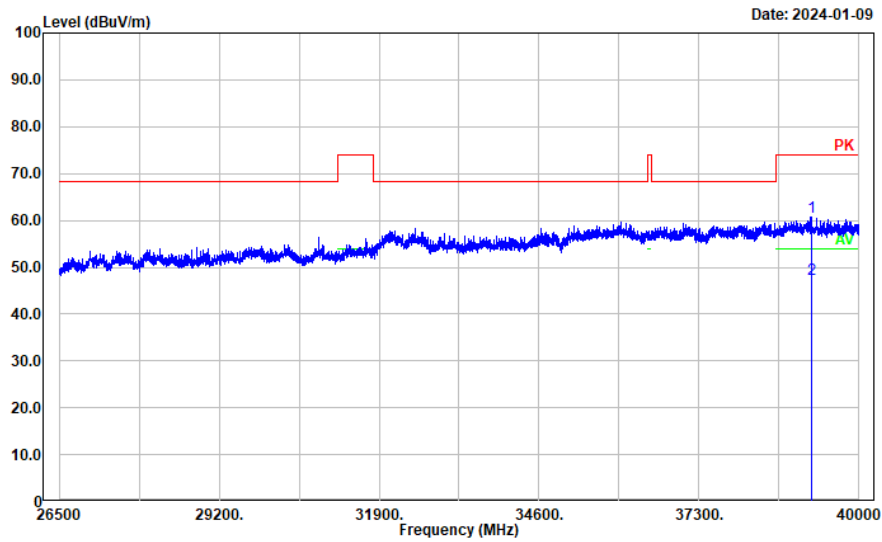


18-26.5GHz

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	20339.200	51.21	4.57	55.78	74.00	18.22	Peak
2	20339.200	37.71	4.57	42.28	54.00	11.72	Average
3	26297.700	49.93	6.93	56.86	68.20	11.34	Peak

Horizontal

Project No.: CR231171096-RF
Tester: Tao Zhu
Polarization: Horizontal
Note:

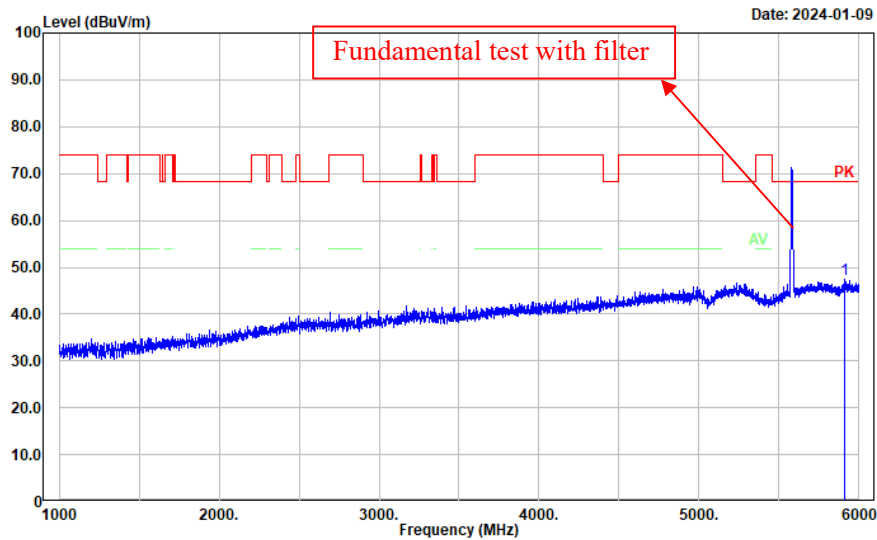


26.5-40GHz

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	39190.000	50.46	10.25	60.71	74.00	13.29	Peak
2	39190.000	37.31	10.25	47.56	54.00	6.44	Average

Vertical

Project No.: CR231171096-RF
Tester: Tao Zhu
Polarization: vertical
Note:



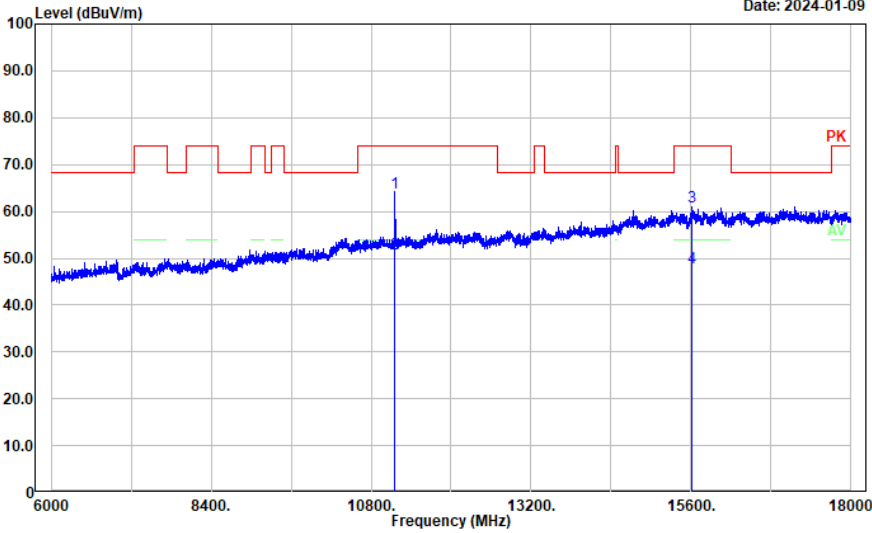
1-6GHz

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5913.000	34.30	13.03	47.33	68.20	20.87	Peak

Vertical

Project No.: CR231171096-RF
Tester: Tao Zhu
Polarization: vertical
Note:

Date: 2024-01-09

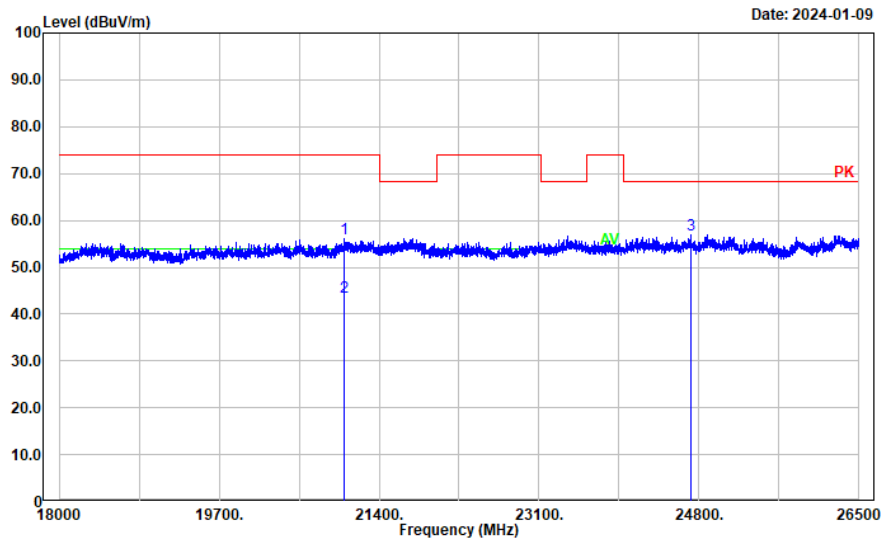


6-18GHz

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	11160.000	42.65	21.38	64.03	74.00	9.97	Peak
2	11160.000	29.62	21.38	51.00	54.00	3.00	Average
3	15607.200	36.30	24.72	61.02	74.00	12.98	Peak
4	15607.200	23.16	24.72	47.88	54.00	6.12	Average

Vertical

Project No.: CR231171096-RF
Tester: Tao Zhu
Polarization: vertical
Note:

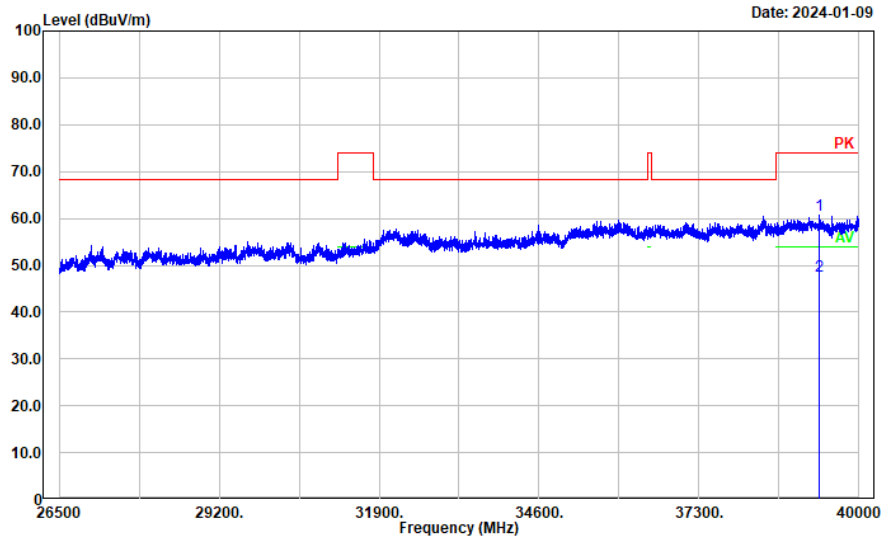


18-26.5GHz

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	21029.400	51.49	4.62	56.11	74.00	17.89	Peak
2	21029.400	39.07	4.62	43.69	54.00	10.31	Average
3	24709.900	51.63	5.39	57.02	68.20	11.18	Peak

Vertical

Project No.: CR231171096-RF
Tester: Tao Zhu
Polarization: Vertical
Note:



26.5-40GHz

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	39327.700	50.50	10.17	60.67	74.00	13.33	Peak
2	39327.700	37.44	10.17	47.61	54.00	6.39	Average

4.3 Emission Bandwidth

Serial Number:	2EE8-2	Test Date:	2024/1/8-2024/1/11
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ken Tang	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	24.2-25	Relative Humidity: (%)	35-50	ATM Pressure: (kPa)	101

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40-N	102259	2023/4/18	2024/4/17
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	22.40	17.62
	5200	22.50	17.58
	5240	22.52	17.54
802.11ac vht20	5180	22.88	18.42
	5200	22.80	18.46
	5240	22.50	18.38
802.11ac vht40	5190	41.52	36.76
	5230	41.40	36.68
802.11ax hew20	5180	22.84	19.34
	5200	22.76	19.34
	5240	22.92	19.34
802.11ax hew40	5190	41.68	37.88
	5230	41.68	37.96

5250-5350 MHz:

Test Modes	Test Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5260	22.48	17.58
	5280	22.36	17.54
	5320	22.32	17.58
802.11ac vht20	5260	22.68	18.42
	5280	22.48	18.42
	5320	22.84	18.42
802.11ac vht40	5270	41.68	36.68
	5310	41.44	36.68
802.11ax hew20	5260	22.92	19.34
	5280	23.04	19.34
	5320	22.96	19.34
802.11ax hew40	5270	41.68	37.96
	5310	41.52	37.88

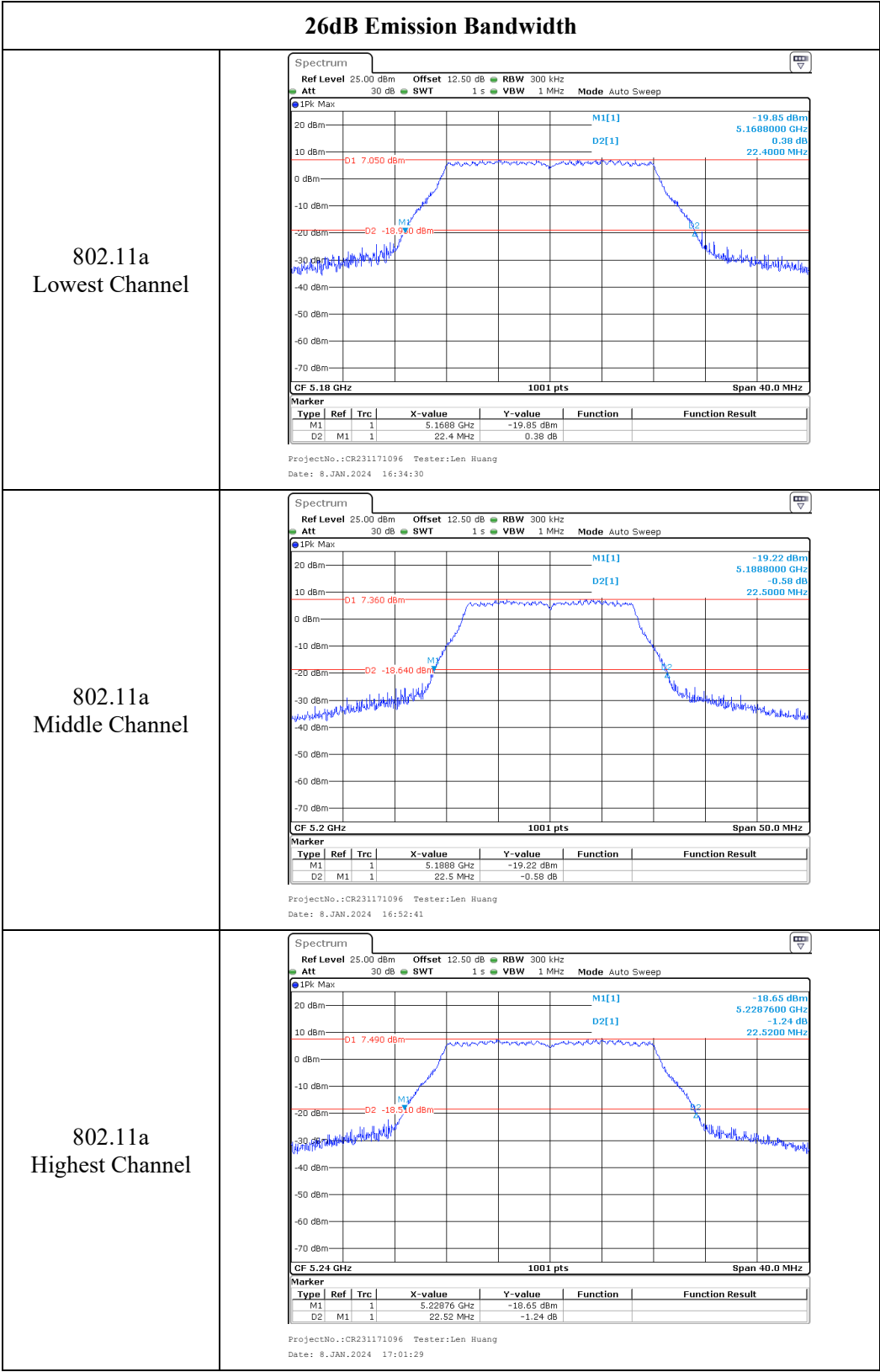
5470-5725 MHz:

Test Modes	Test Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5500	22.28	17.58
	5580	22.40	17.54
	5700	22.40	17.66
	5720	22.44	17.58
802.11ac vht20	5500	22.72	18.38
	5580	22.56	18.42
	5700	22.60	18.38
	5720	22.56	18.38
802.11ac vht40	5510	41.20	36.76
	5550	42.40	36.76
	5670	41.44	36.76
	5710	41.28	36.76
802.11ax hew20	5500	22.76	19.34
	5580	22.80	19.30
	5700	23.04	19.34
	5720	22.96	19.34
802.11ax hew40	5510	41.60	37.88
	5550	41.68	37.96
	5670	41.44	37.88
	5710	41.60	37.96

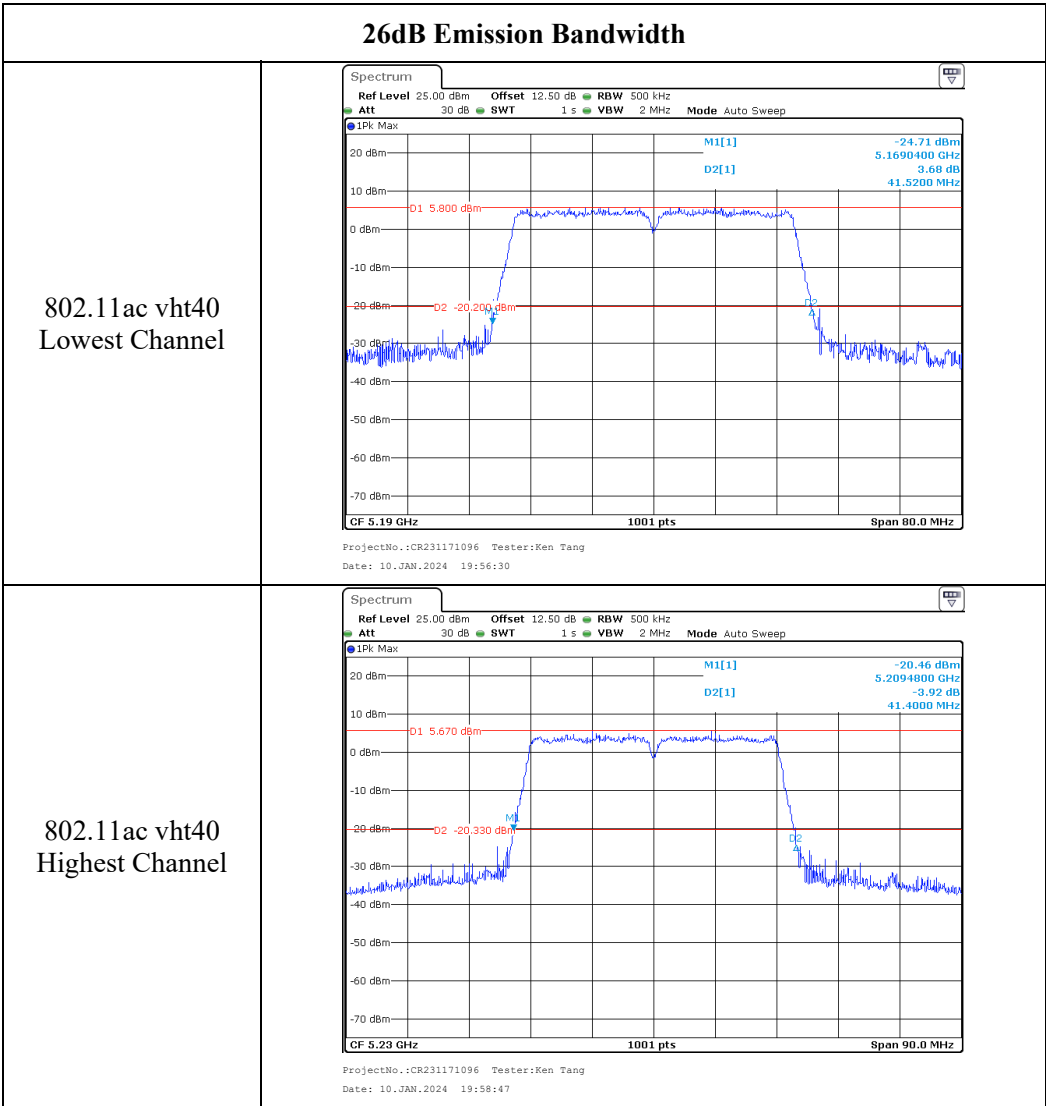
5725-5850 MHz:

Test Modes	Test Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5745	16.52	17.62
	5785	16.52	17.58
	5825	16.44	17.54
802.11ac vht20	5745	17.68	18.42
	5785	17.68	18.38
	5825	17.68	18.42
802.11ac vht40	5755	36.48	36.76
	5795	36.48	36.76
802.11ax hew20	5745	19.20	19.34
	5785	19.12	19.30
	5825	19.16	19.34
802.11ax hew40	5755	38.24	37.96
	5795	38.24	37.88
Note: 6dB Emission Bandwidth Limit: ≥ 0.5 MHz			

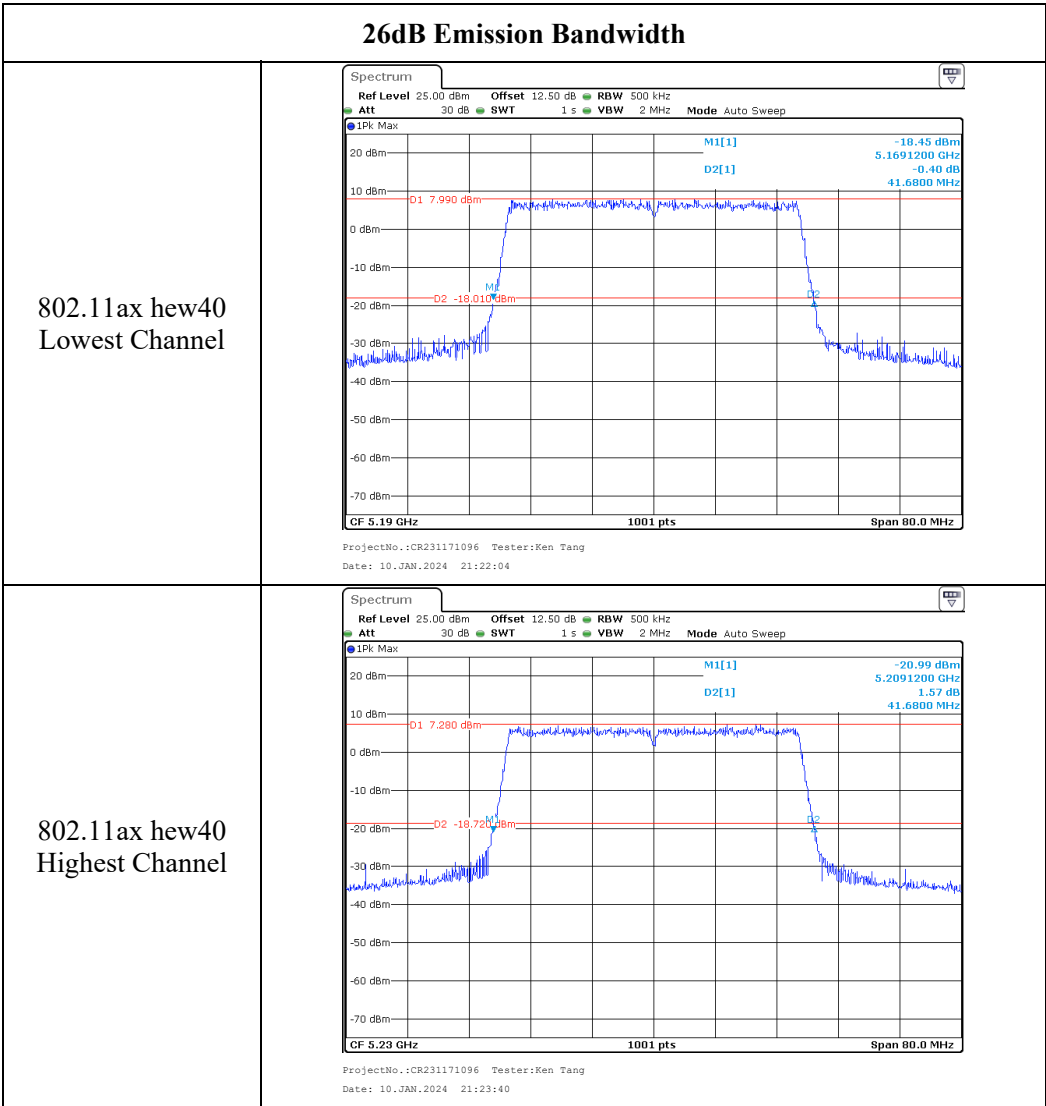
5150-5250MHz:



26dB Emission Bandwidth	
802.11ac vht20 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWI 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] -19.92 dBm 5.1686000 GHz -1.00 dB 22.8800 MHz D2[1] D1 7.200 dBm D2 -19.900 dBm CF 5.18 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Len Huang Date: 9.JAN.2024 13:31:37
802.11ac vht20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWI 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] -20.93 dBm 5.1865500 GHz 1.19 dB 22.8000 MHz D2[1] D1 6.400 dBm D2 -19.600 dBm CF 5.2 GHz 1001 pts Span 50.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 19:29:11
802.11ac vht20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWI 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] -20.15 dBm 5.2287000 GHz 0.17 dB 22.5000 MHz D2[1] D1 6.610 dBm D2 -19.390 dBm CF 5.24 GHz 1001 pts Span 50.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 19:33:24

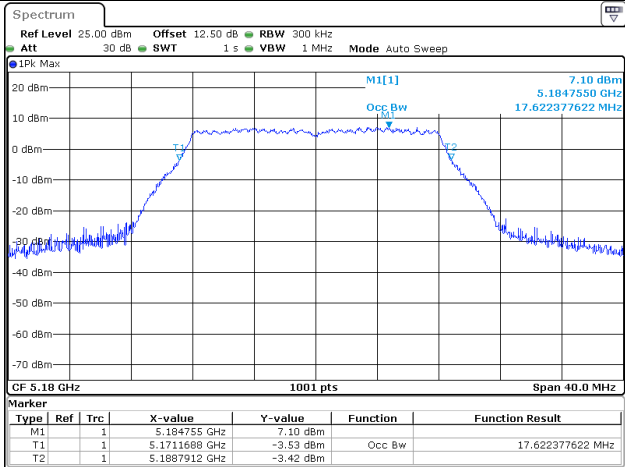


26dB Emission Bandwidth	
802.11ax hew20 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] -17.23 dBm 5.1686000 GHz -0.32 dB 22.8400 MHz D2[1] -16.750 dBm D1 9.250 dBm D2 -16.750 dBm CF 5.18 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 20:19:28
802.11ax hew20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] -17.29 dBm 5.1886400 GHz 0.27 dB 22.7600 MHz D2[1] -16.900 dBm D1 9.200 dBm D2 -16.900 dBm CF 5.2 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 20:24:57
802.11ax hew20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] -17.47 dBm 5.2285600 GHz -0.68 dB 22.9200 MHz D2[1] -17.390 dBm D1 8.670 dBm D2 -17.390 dBm CF 5.24 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 20:33:46



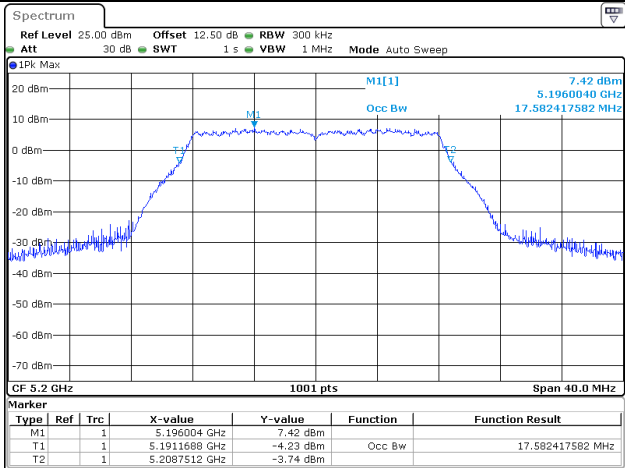
99% Emission Bandwidth

802.11a
Lowest Channel



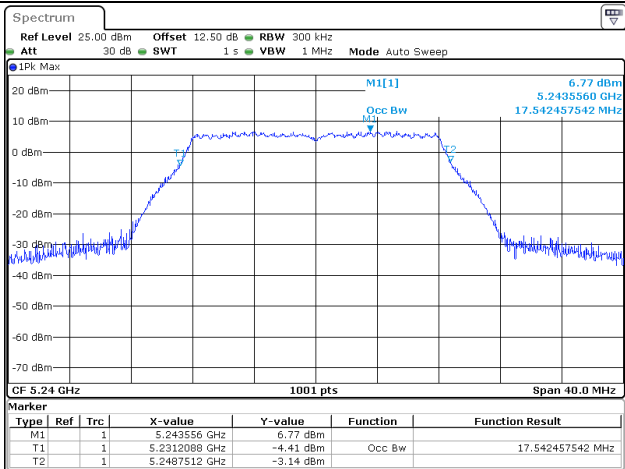
ProjectNo.:CR231171096 Tester:Len Huang
Date: 8.JAN.2024 16:33:05

802.11a
Middle Channel



ProjectNo.:CR231171096 Tester:Len Huang
Date: 8.JAN.2024 16:50:59

802.11a
Highest Channel

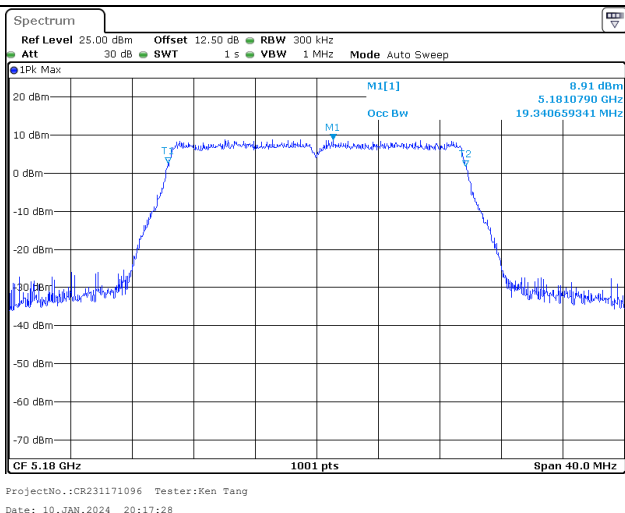
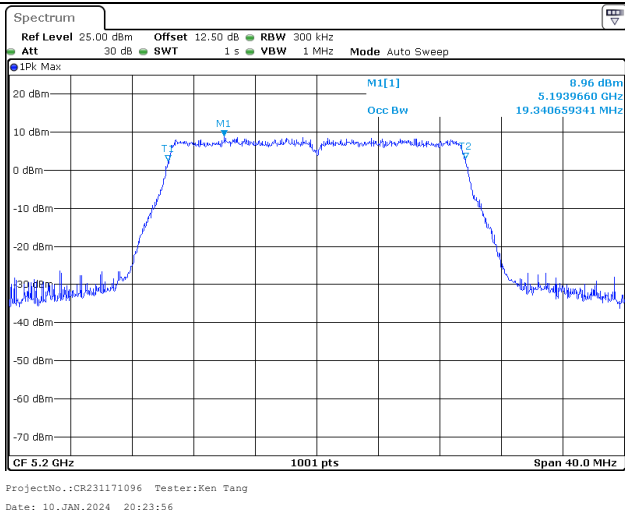
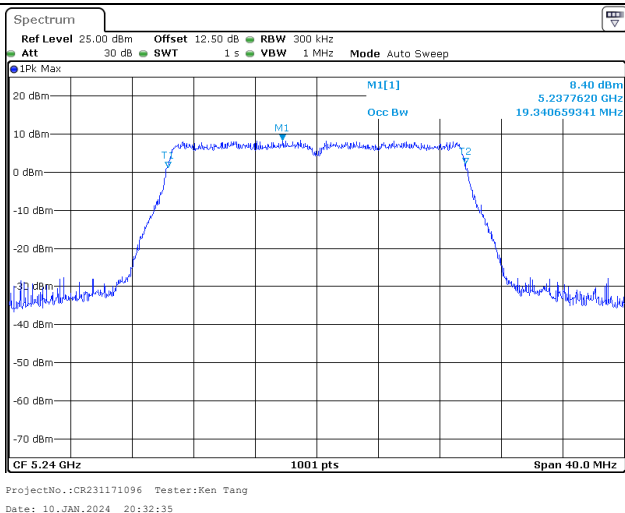


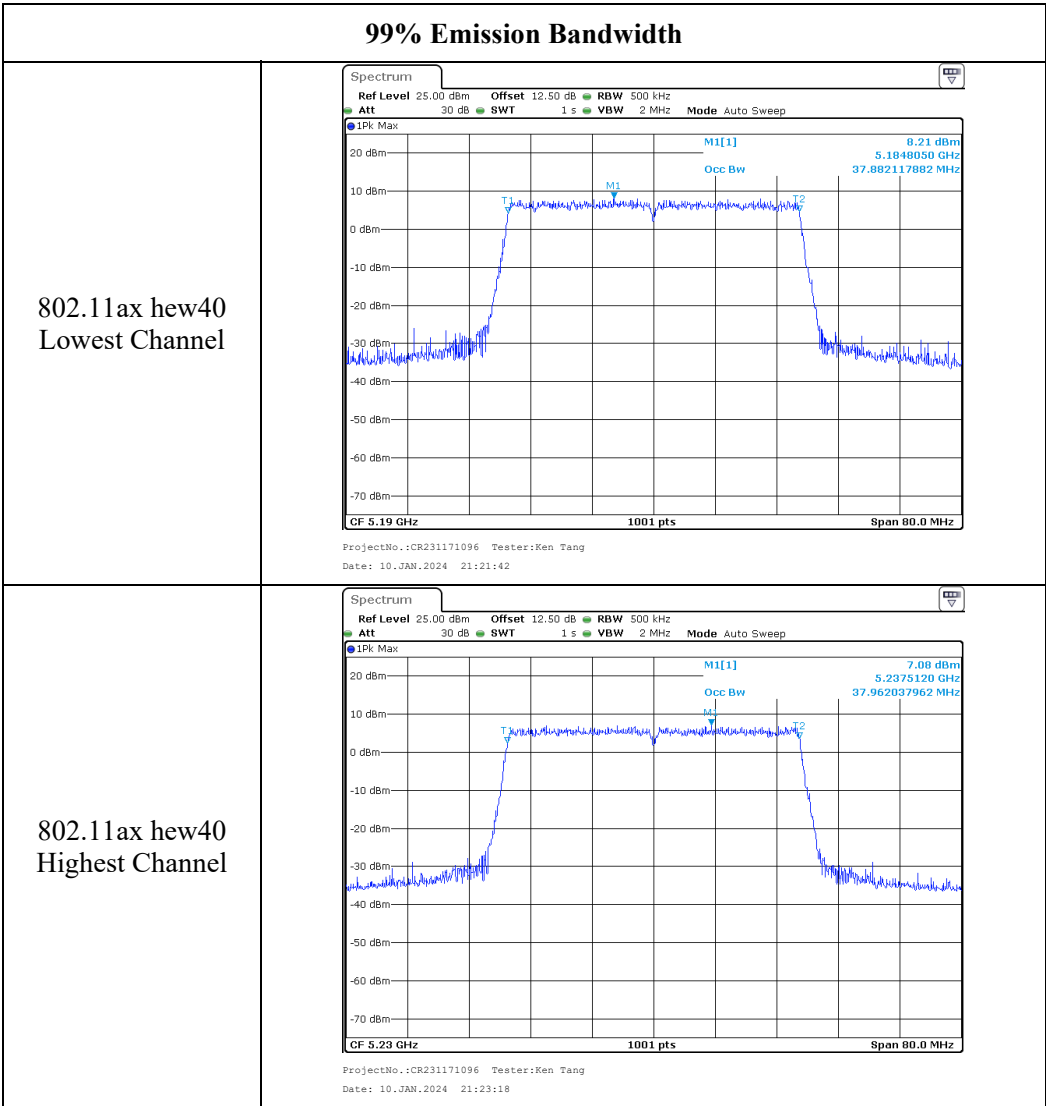
ProjectNo.:CR231171096 Tester:Len Huang
Date: 8.JAN.2024 16:55:57

99% Emission Bandwidth	
802.11ac vht20 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] 7.20 dBm 5.1845950 GHz 18.421578422 MHz Occ Bw M1 T1 T2 CF 5.18 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Len Huang Date: 9.JAN.2024 13:29:38
802.11ac vht20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] 6.46 dBm 5.1958440 GHz 18.461538462 MHz Occ Bw M1 T1 T2 CF 5.2 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 19:27:36
802.11ac vht20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] 6.51 dBm 5.2366030 GHz 18.381618382 MHz Occ Bw M1 T1 T2 CF 5.24 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 19:32:37

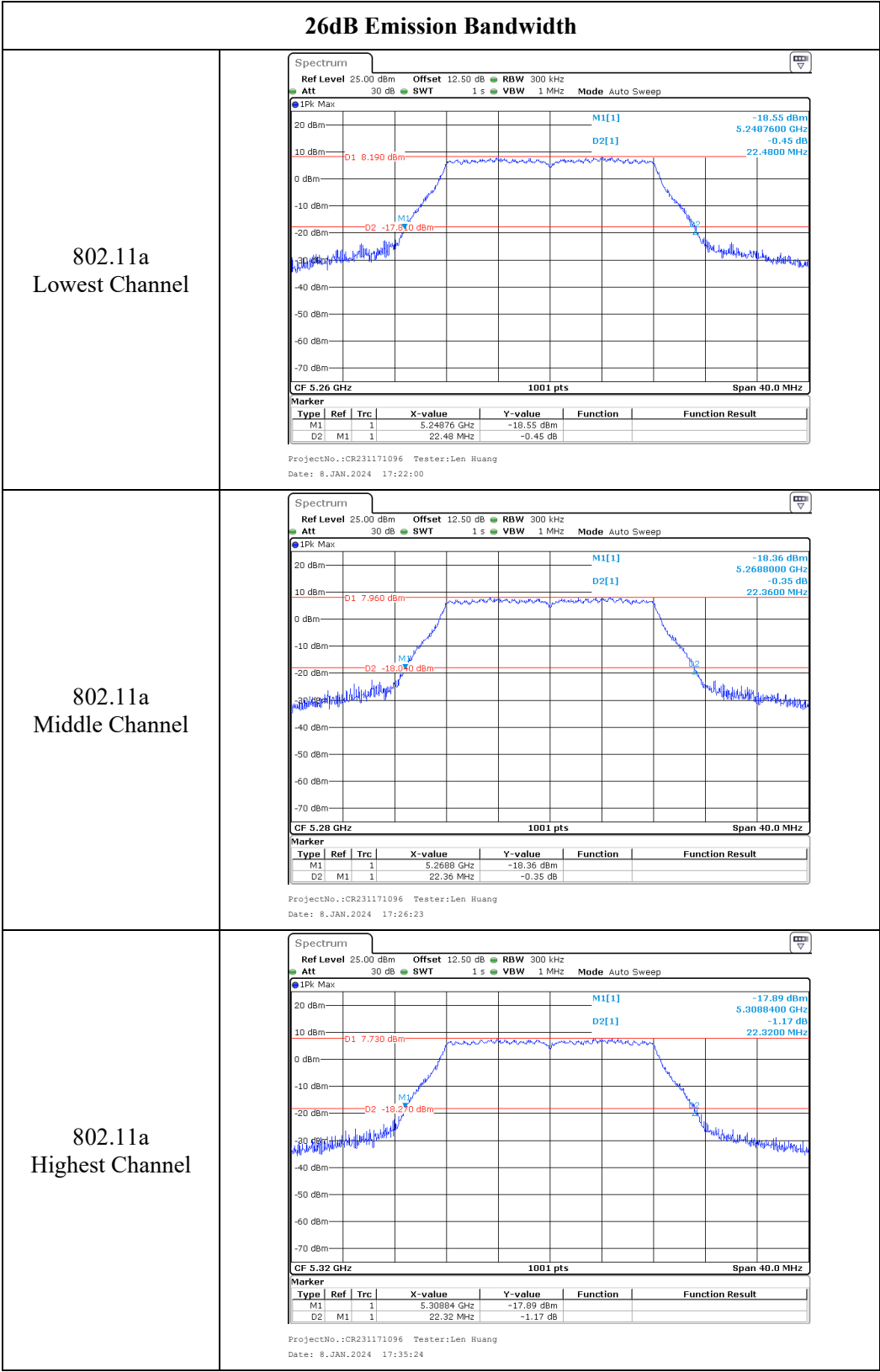
99% Emission Bandwidth	
802.11ac vht40 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 500 kHz Att 30 dB SWT 1 s VBW 2 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1 M1[1] Occ Bw 5.79 dBm 5.1778520 GHz 36.763236763 MHz CF 5.19 GHz 1001 pts Span 80.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 19:56:08
802.11ac vht40 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 500 kHz Att 30 dB SWT 1 s VBW 2 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1 M1[1] Occ Bw 5.11 dBm 5.2468630 GHz 36.683316683 MHz CF 5.23 GHz 1001 pts Span 80.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 19:58:25

99% Emission Bandwidth

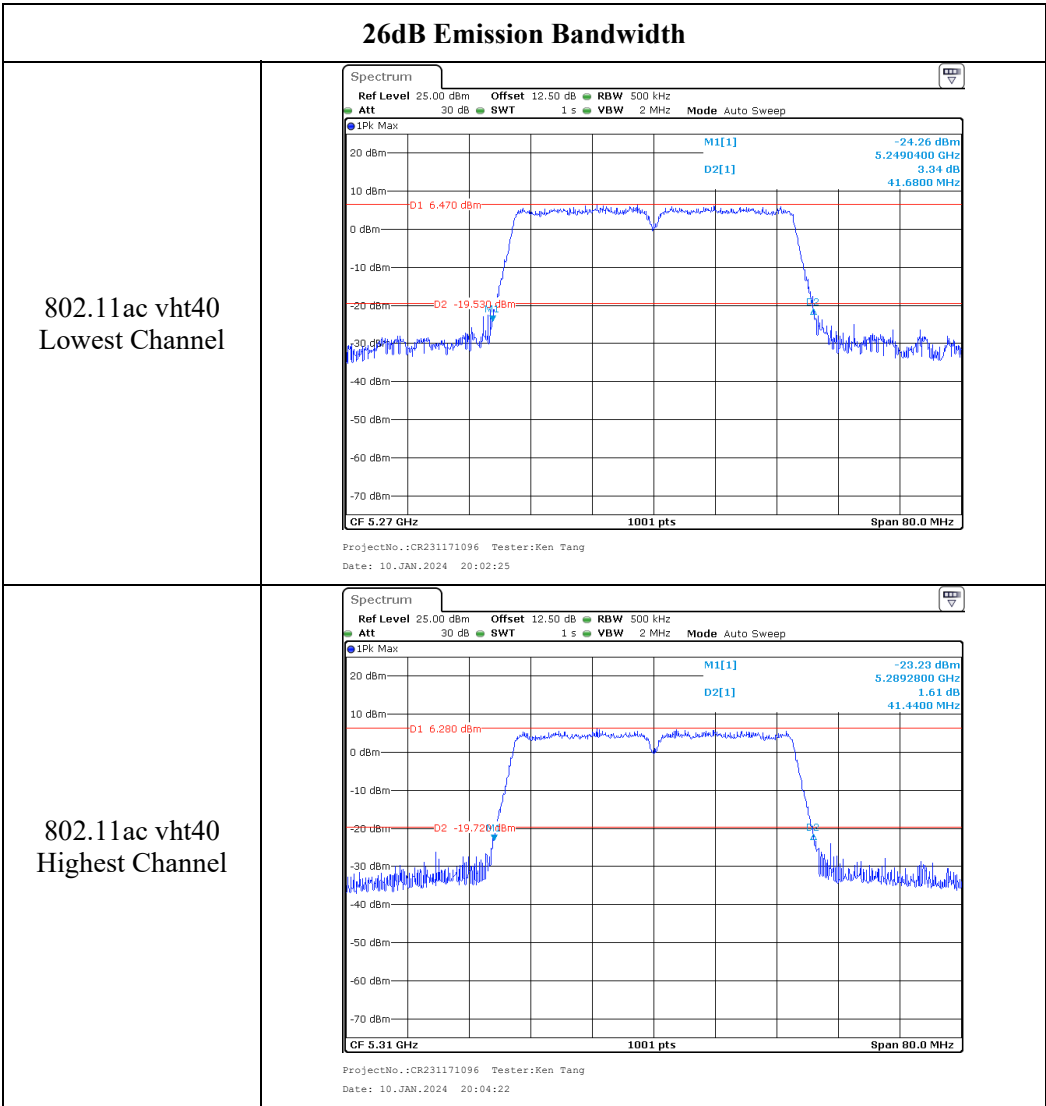
802.11ax hew20
Lowest Channel802.11ax hew20
Middle Channel802.11ax hew20
Highest Channel



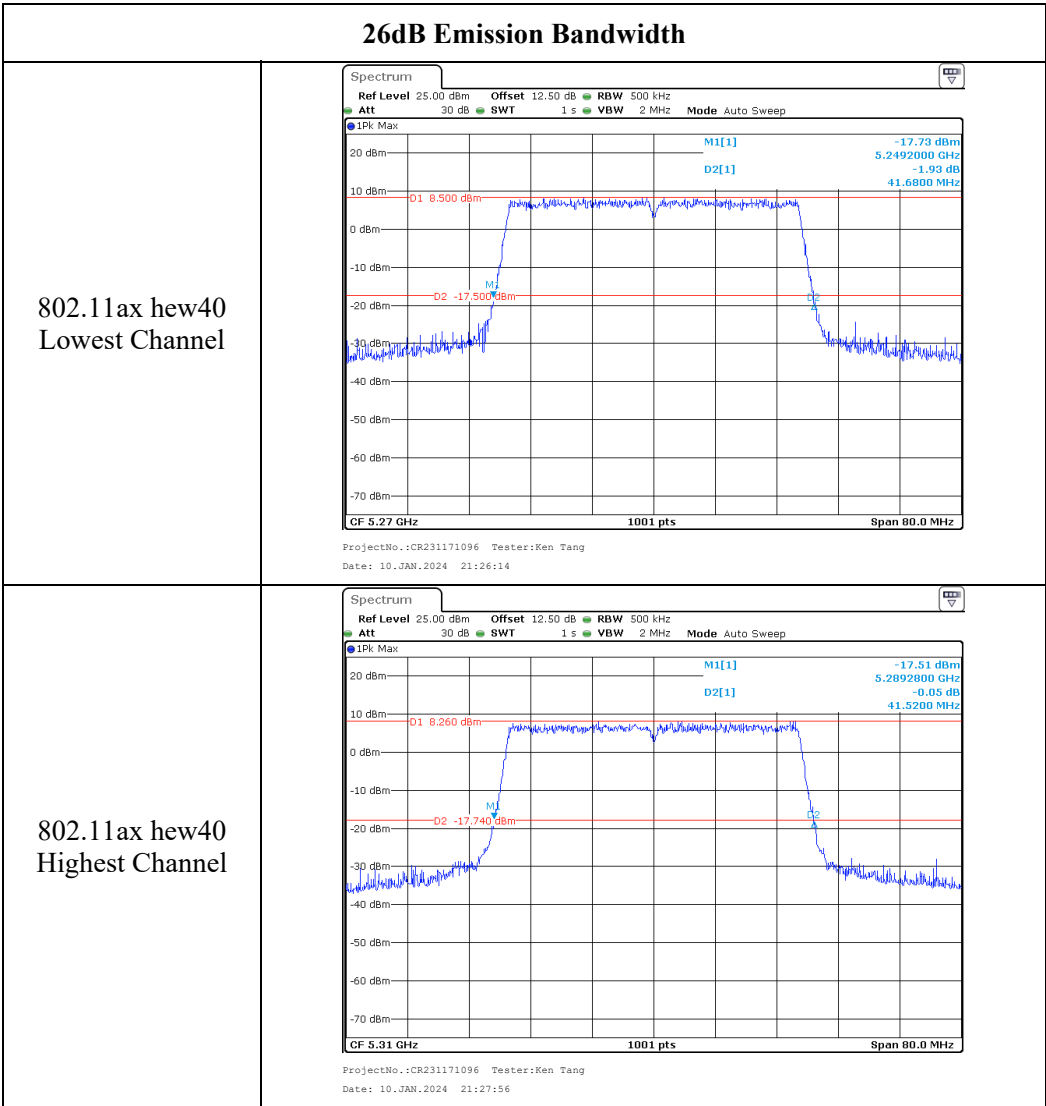
5250-5350MHz:



26dB Emission Bandwidth	
802.11ac vht20 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] -19.03 dBm 5.2487200 GHz -1.01 dB 22.6800 MHz D2[1] -19.03 dBm 5.2487200 GHz -1.01 dB 22.6800 MHz D1 7.200 dBm D2 -18.800 dBm CF 5.26 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 19:40:38
802.11ac vht20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] -18.89 dBm 5.2687200 GHz 0.73 dB 22.4800 MHz D2[1] -18.89 dBm 5.2687200 GHz 0.73 dB 22.4800 MHz D1 7.910 dBm D2 -18.800 dBm CF 5.28 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 19:44:04
802.11ac vht20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] -21.49 dBm 5.3085200 GHz 1.12 dB 22.8400 MHz D2[1] -21.49 dBm 5.3085200 GHz 1.12 dB 22.8400 MHz D1 6.820 dBm D2 -19.150 dBm CF 5.32 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 19:48:12

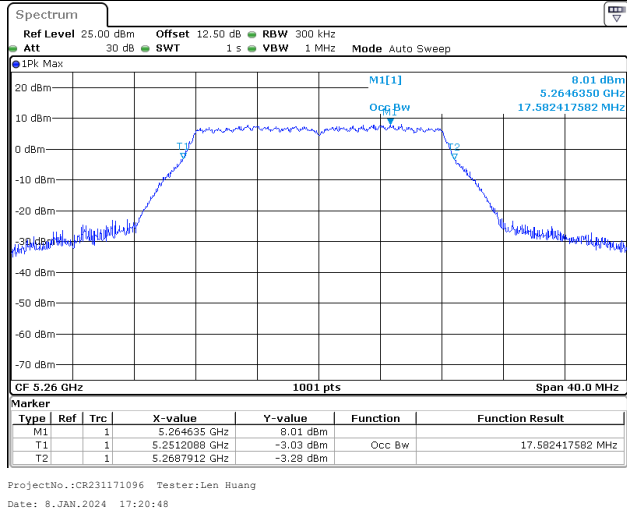


26dB Emission Bandwidth	
802.11ax hew20 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] -16.87 dBm 5.2485200 GHz 0.58 dB 22.9200 MHz D1 9.740 dBm D2 -16.750 dBm 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.26 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 20:40:16
802.11ax hew20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] -17.12 dBm 5.2685600 GHz -2.04 dB 23.0400 MHz D1 9.660 dBm D2 -16.740 dBm 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.28 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 20:45:05
802.11ax hew20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] -17.17 dBm 5.3085600 GHz -0.17 dB 22.9600 MHz D1 8.930 dBm D2 -17.070 dBm 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.32 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 20:50:19

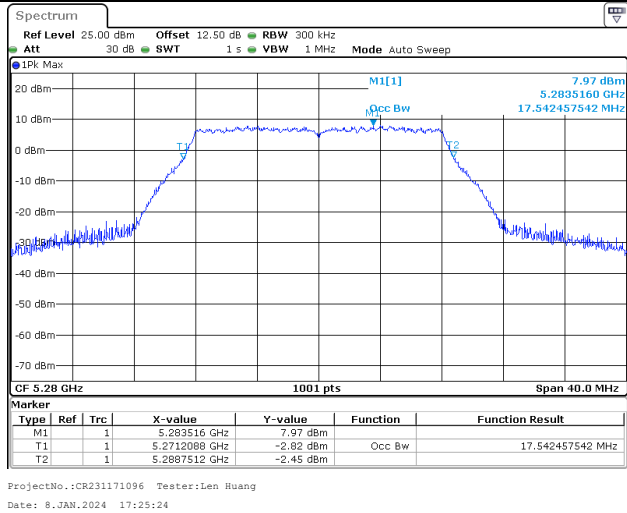


99% Emission Bandwidth

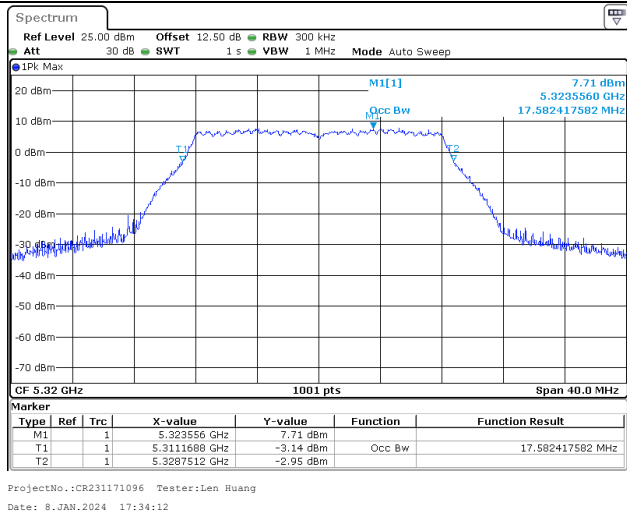
802.11a
Lowest Channel



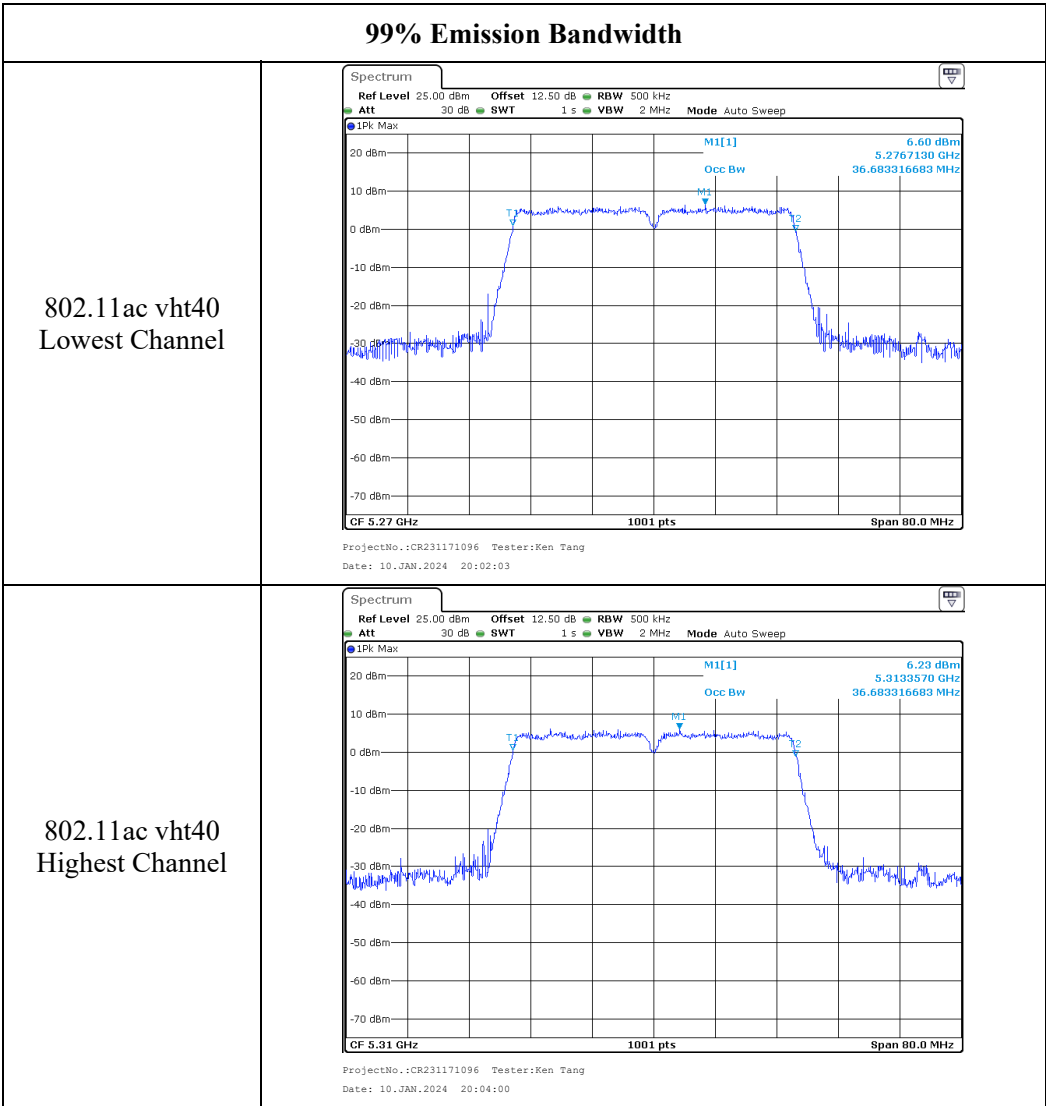
802.11a
Middle Channel



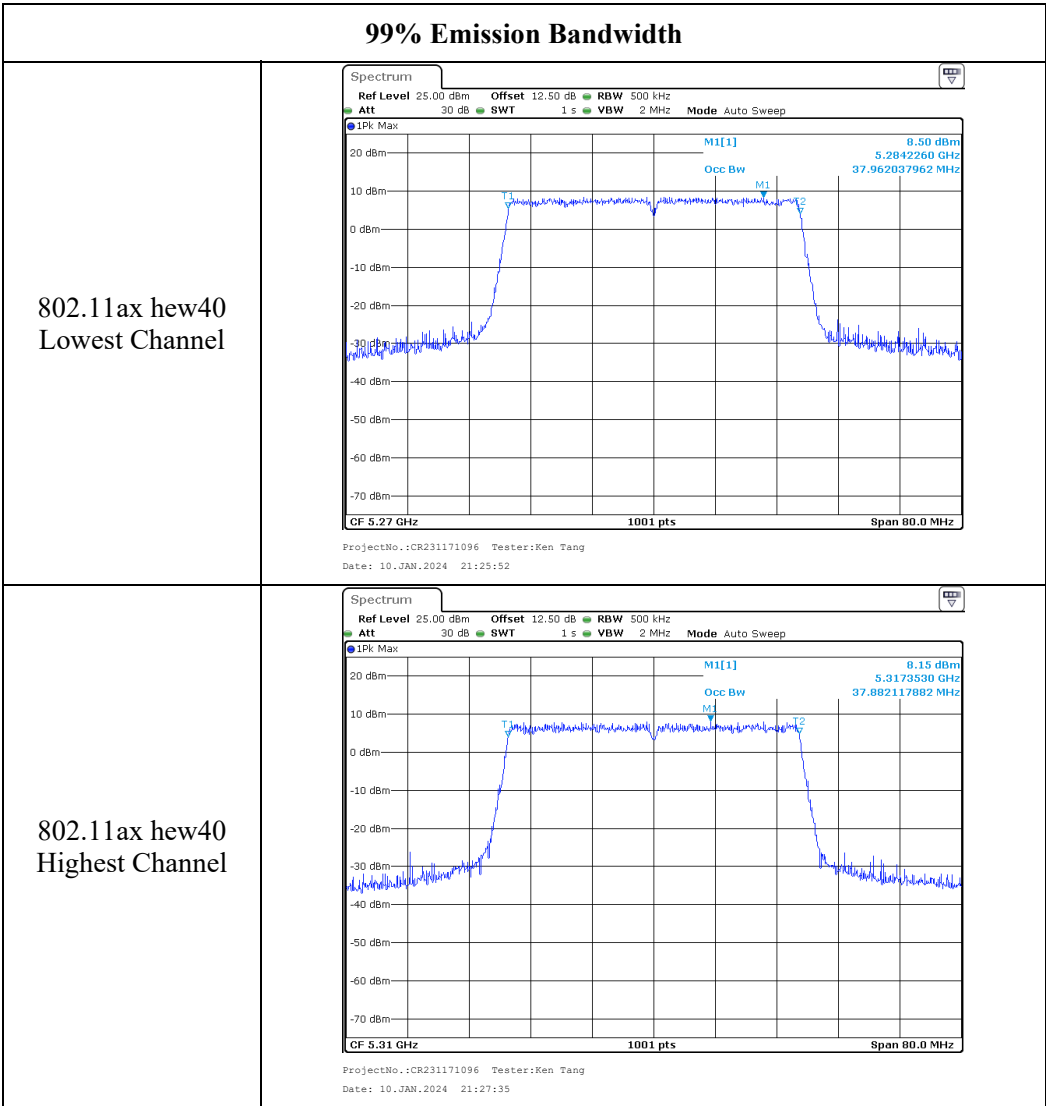
802.11a
Highest Channel



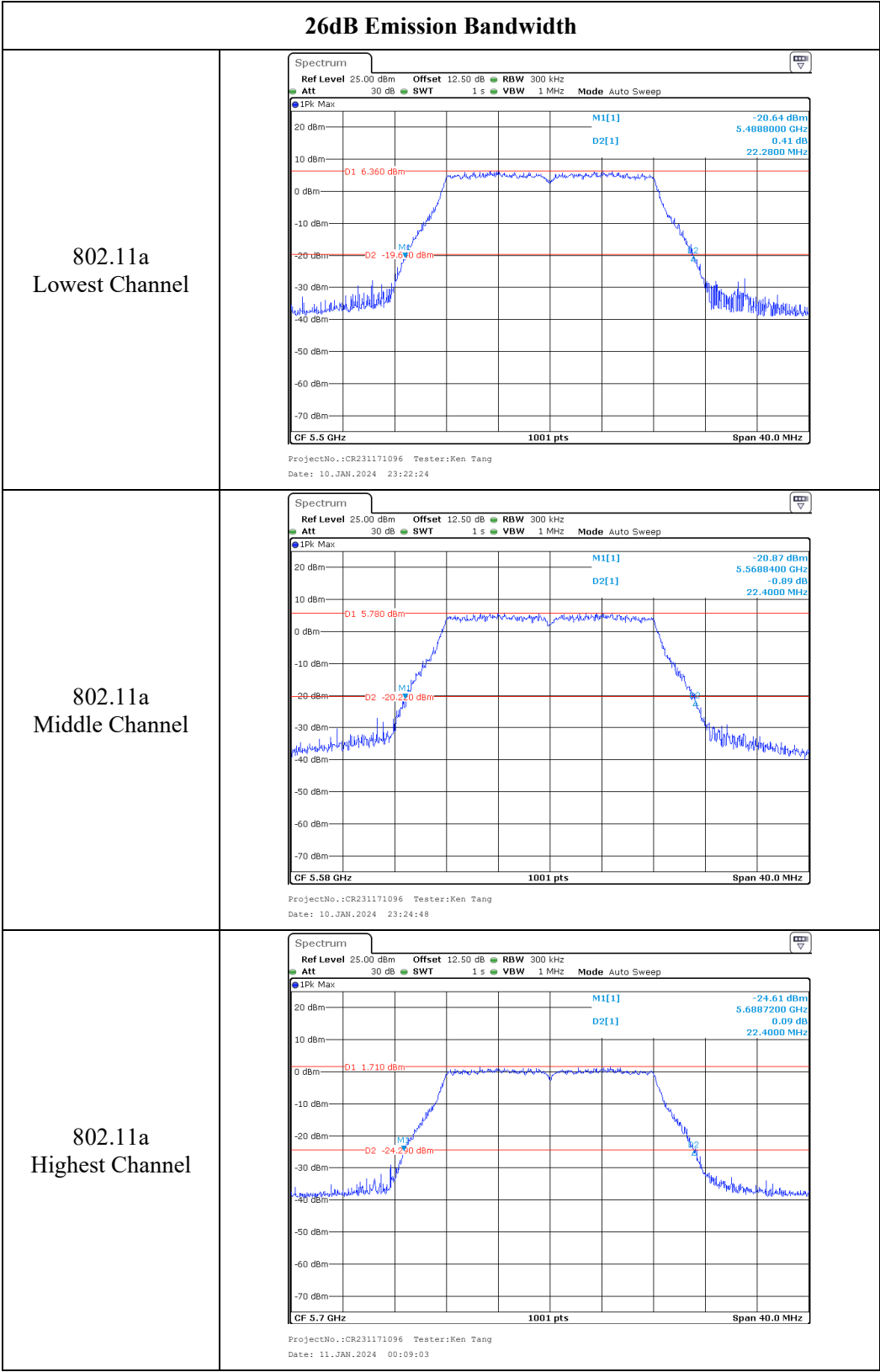
99% Emission Bandwidth	
802.11ac vht20 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 7.37 dBm 5.2639960 GHz 18.421578422 MHz Occ Bw T1 T2 CF 5.26 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 19:39:45
802.11ac vht20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 6.98 dBm 5.2827570 GHz 18.421578422 MHz Occ Bw T1 T2 CF 5.28 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 19:43:05
802.11ac vht20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 6.59 dBm 5.3210390 GHz 18.421578422 MHz Occ Bw T1 T2 CF 5.32 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 19:46:48



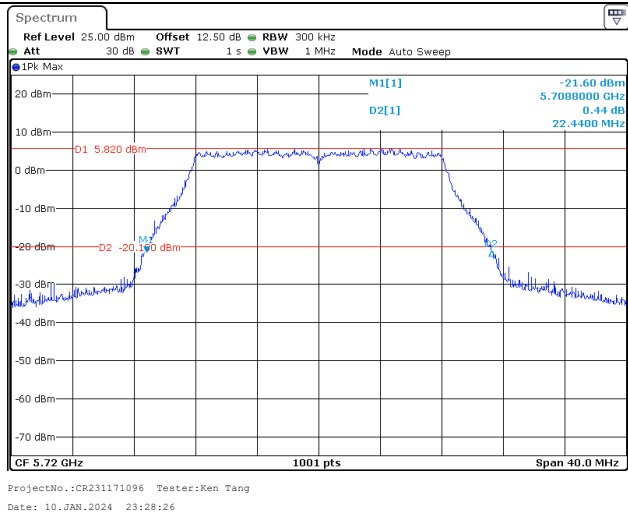
99% Emission Bandwidth	
802.11ax hew20 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 9.33 dBm 5.2590410 GHz 19.340659341 MHz Occ Bw M1 M2 CF 5.26 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 20:37:38
802.11ax hew20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 9.27 dBm 5.2851950 GHz 19.340659341 MHz Occ Bw M1 M2 CF 5.28 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 20:43:35
802.11ax hew20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 9.10 dBm 5.3156440 GHz 19.340659341 MHz Occ Bw M1 M2 CF 5.32 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 20:48:54



5470-5725 MHz:

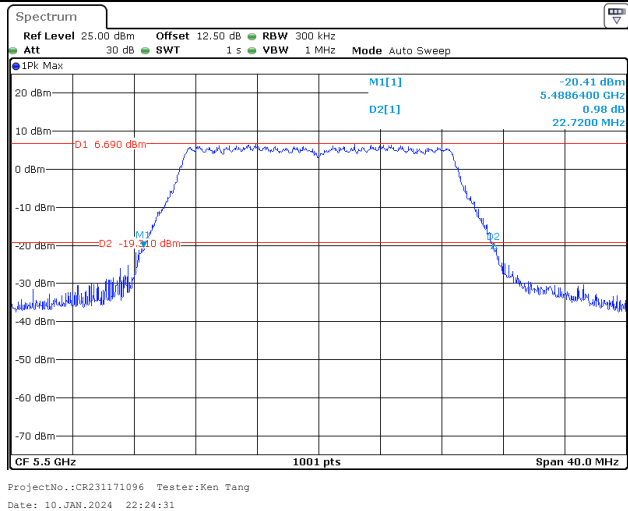


802.11a
Cross Channel

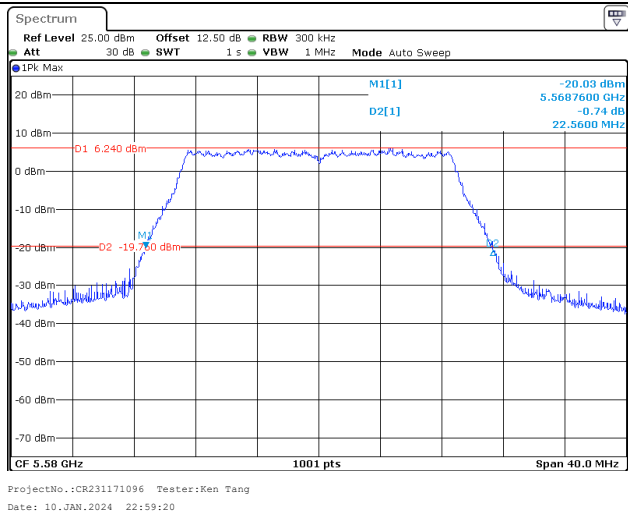


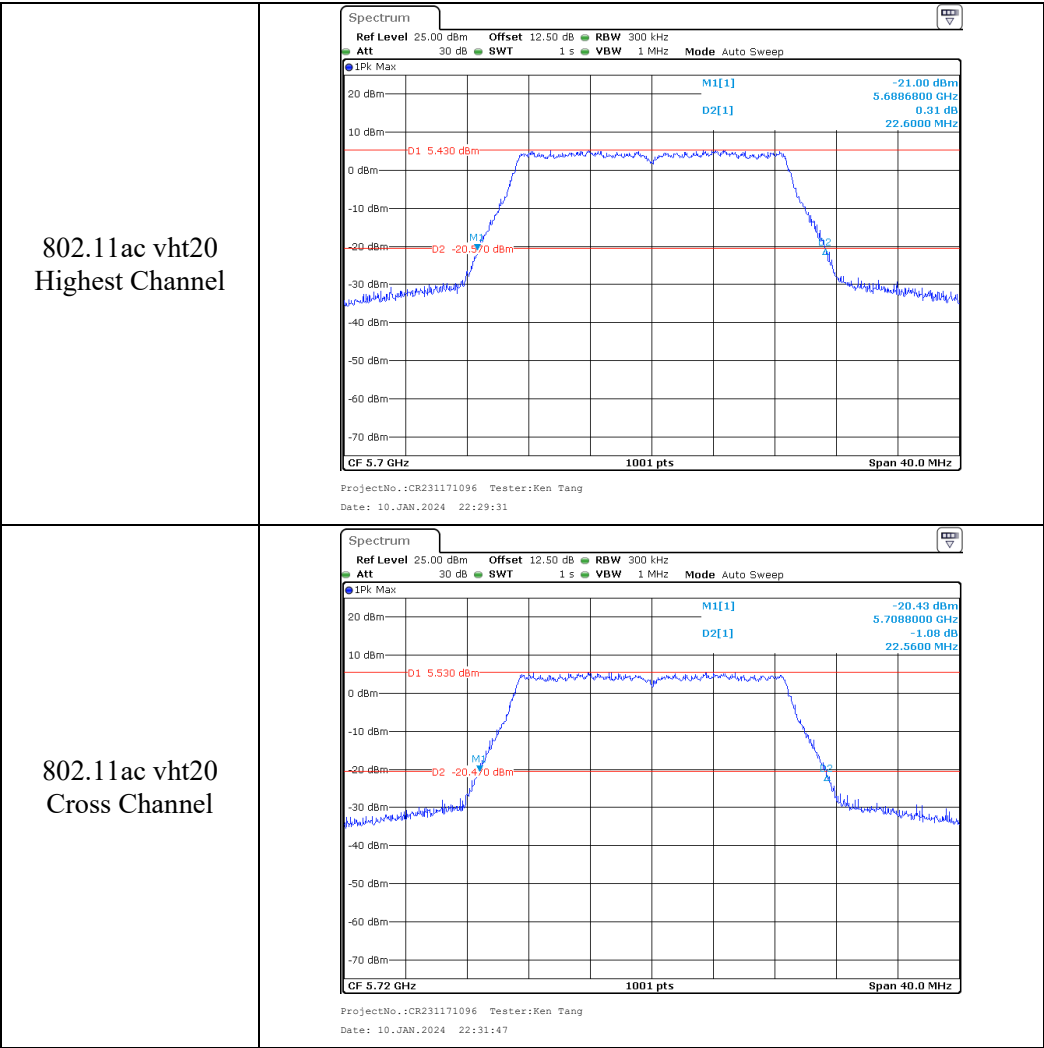
26dB Emission Bandwidth

802.11ac vht20
Lowest Channel

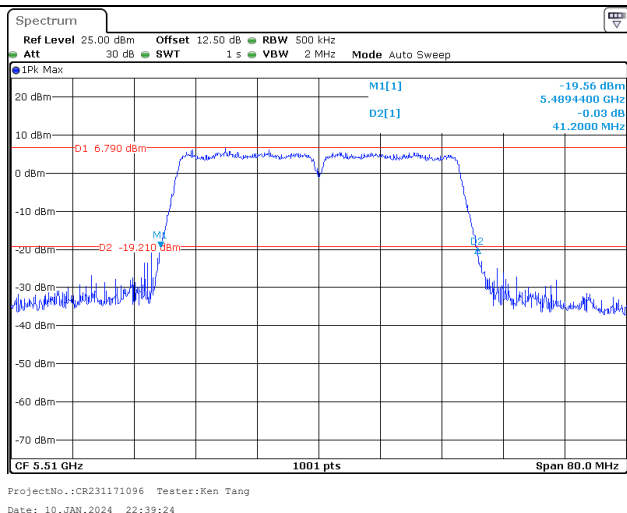
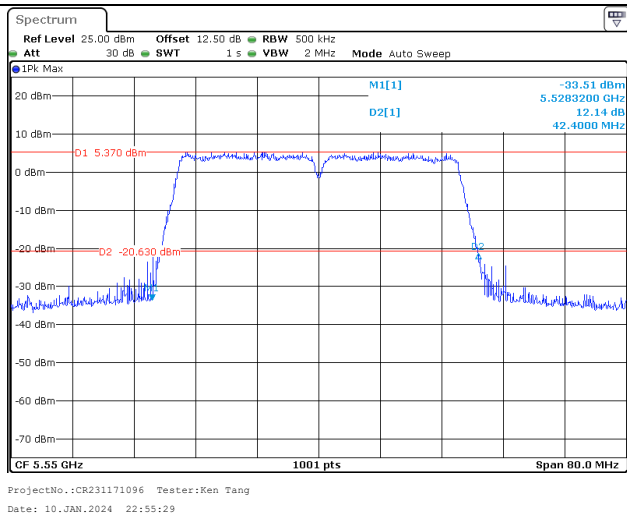
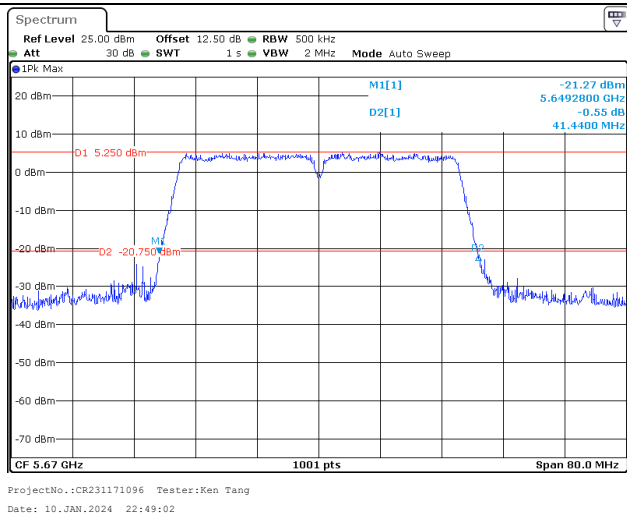


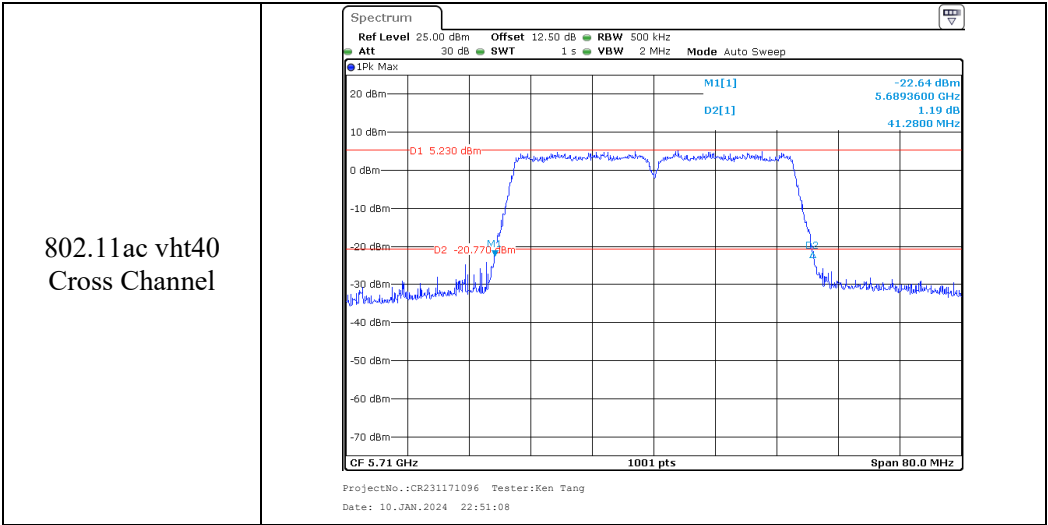
802.11ac vht20
Middle Channel





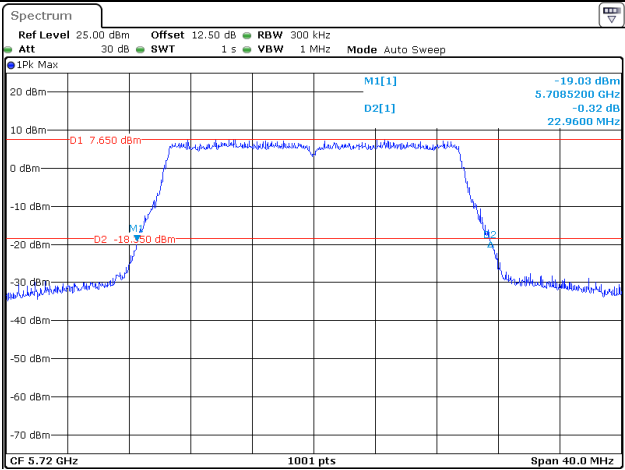
26dB Emission Bandwidth

802.11ac vht40
Lowest Channel802.11ac vht40
Middle Channel802.11ac vht40
Highest Channel



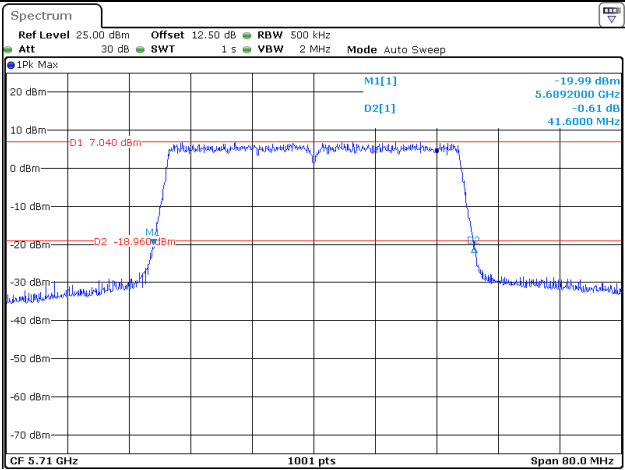
26dB Emission Bandwidth	
802.11ax hew20 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] -17.61 dBm 5.4886400 GHz D2[1] -0.49 dB 22.7600 MHz D1 8.550 dBm D2 -17.450 dBm CF 5.5 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 23:06:27
802.11ax hew20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] -20.57 dBm 5.5685600 GHz D2[1] 1.69 dB 22.8000 MHz D1 8.220 dBm D2 -17.450 dBm CF 5.58 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 23:10:21
802.11ax hew20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] -18.97 dBm 5.6885600 GHz D2[1] -2.01 dB 23.0400 MHz D1 7.690 dBm D2 -18.710 dBm CF 5.7 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 23:13:11

802.11ax hew20
Cross Channel

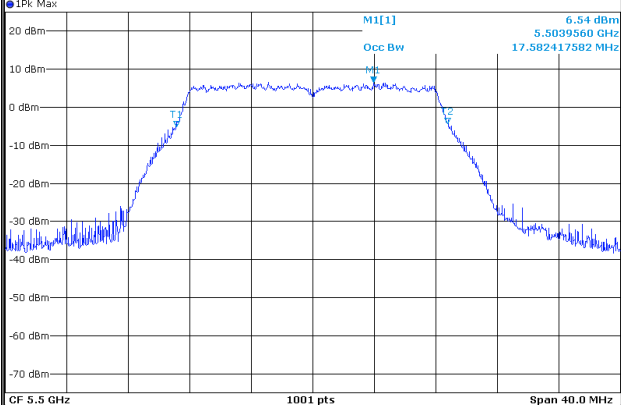
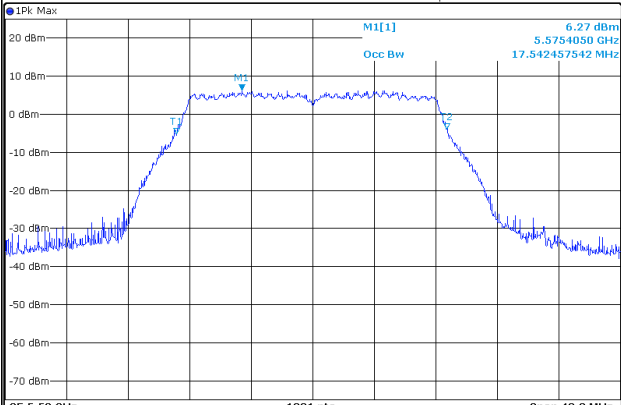
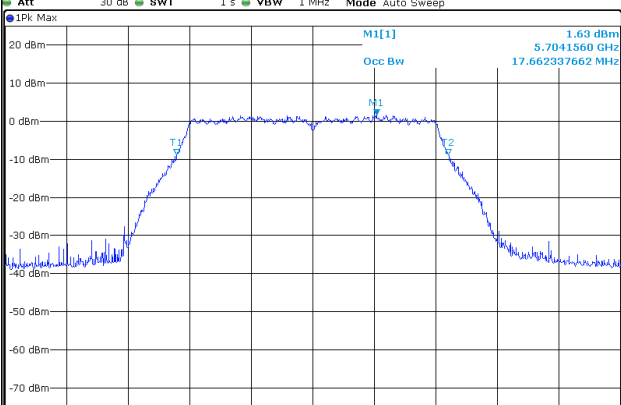


ProjectNo.:CR231171096 Tester:Ken Tang
Date: 10.JAN.2024 23:15:58

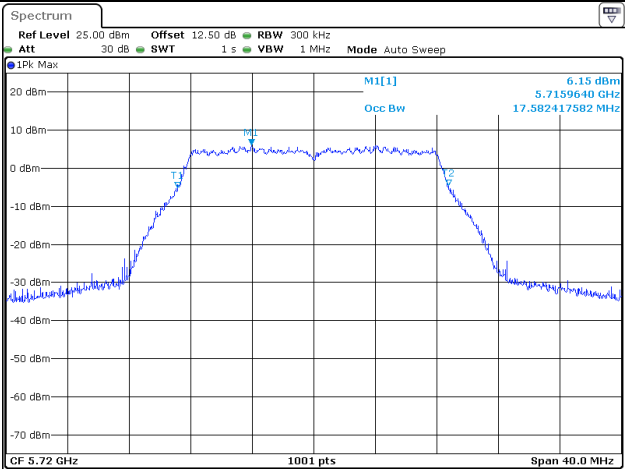
802.11ax hew40
Cross Channel



ProjectNo.:CR231171096 Tester:Ken Tang
Date: 11.JAN.2024 00:26:05

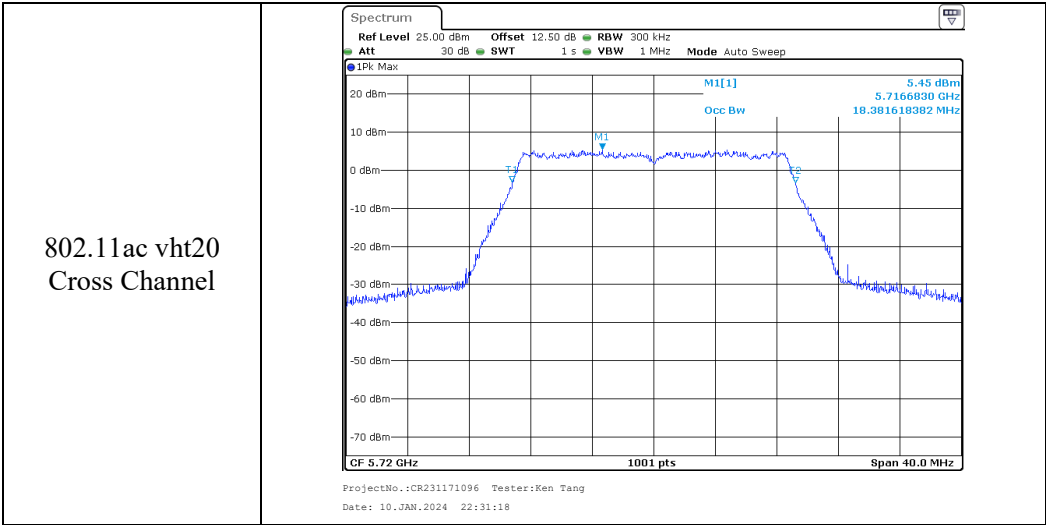
99% Emission Bandwidth	
802.11a Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] 6.54 dBm 5.5039560 GHz 17.582417582 MHz  CF 5.5 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 23:22:05
802.11a Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] 6.27 dBm 5.5754050 GHz 17.542457342 MHz  CF 5.58 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 23:24:31
802.11a Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] 1.63 dBm 5.7041560 GHz 17.662337662 MHz  CF 5.7 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 11.JAN.2024 00:08:28

802.11a
Cross Channel

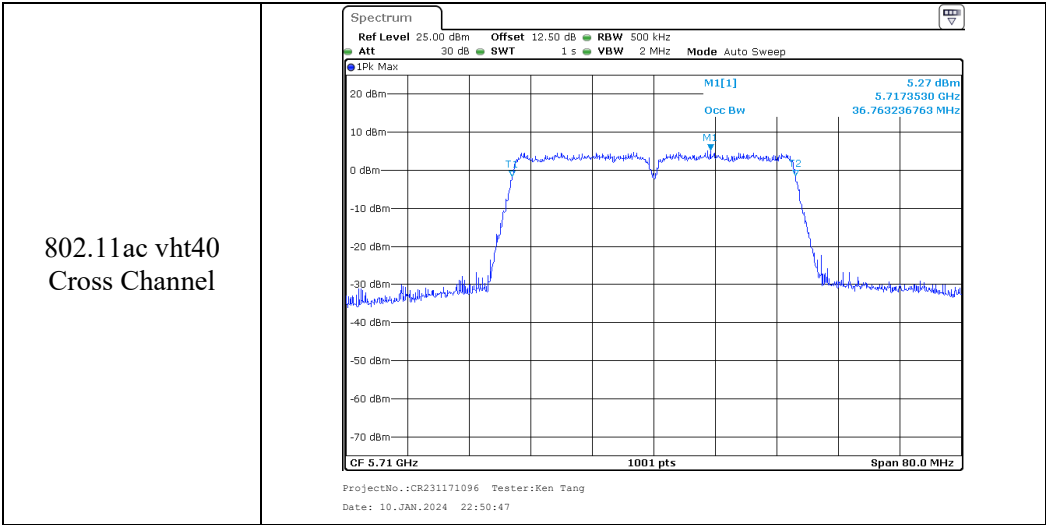


ProjectNo.:CR231171096 Tester:Ken Tang
Date: 10.JAN.2024 23:28:03

99% Emission Bandwidth	
802.11ac vht20 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] Occ Bw M1 T1 T2 6.84 dBm 5.5046350 GHz 18.381618382 MHz CF 5.5 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 22:23:27
802.11ac vht20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] Occ Bw M1 T1 T2 6.34 dBm 5.5772430 GHz 18.421578422 MHz CF 5.58 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 22:58:32
802.11ac vht20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] Occ Bw M1 T1 T2 6.07 dBm 5.7039560 GHz 18.381618382 MHz CF 5.7 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 22:29:07

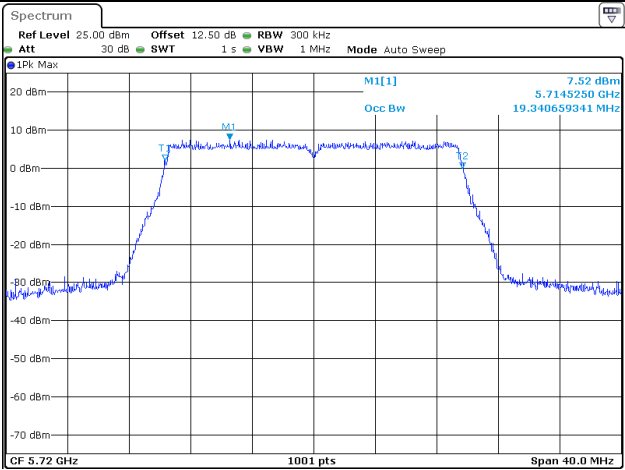


99% Emission Bandwidth	
802.11ac vht40 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 500 kHz Att 30 dB SWT 1 s VBW 2 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 6.42 dBm 5.5016880 GHz 36.763236763 MHz Occ Bw CF 5.51 GHz 1001 pts Span 80.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 22:39:03
802.11ac vht40 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 500 kHz Att 30 dB SWT 1 s VBW 2 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 5.56 dBm 5.5560740 GHz 36.763236763 MHz Occ Bw CF 5.55 GHz 1001 pts Span 80.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 22:55:07
802.11ac vht40 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 500 kHz Att 30 dB SWT 1 s VBW 2 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 5.33 dBm 5.6589710 GHz 36.763236763 MHz Occ Bw CF 5.67 GHz 1001 pts Span 80.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 22:48:41



99% Emission Bandwidth	
802.11ax hew20 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 8.24 dBm 5.5043560 GHz 19.340659341 MHz Occ Bw 41 CF 5.5 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 23:05:58
802.11ax hew20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 8.35 dBm 5.5746850 GHz 19.300699301 MHz Occ Bw M1 CF 5.58 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 23:09:46
802.11ax hew20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 7.88 dBm 5.7026370 GHz 19.340659341 MHz Occ Bw M1 CF 5.7 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 23:12:36

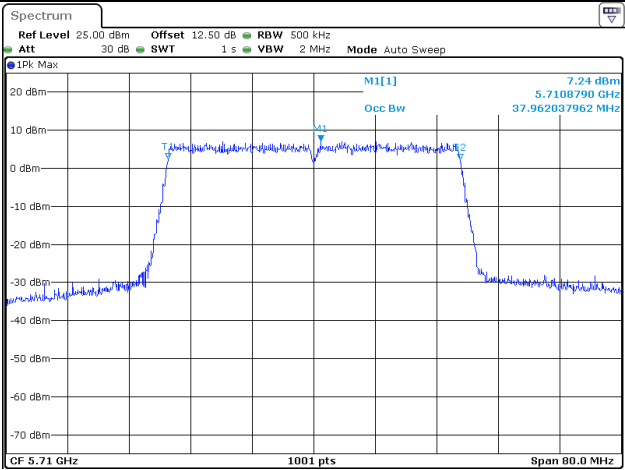
802.11ax hew20
Cross Channel



ProjectNo.:CR231171096 Tester:Ken Tang
Date: 10.JAN.2024 23:15:22

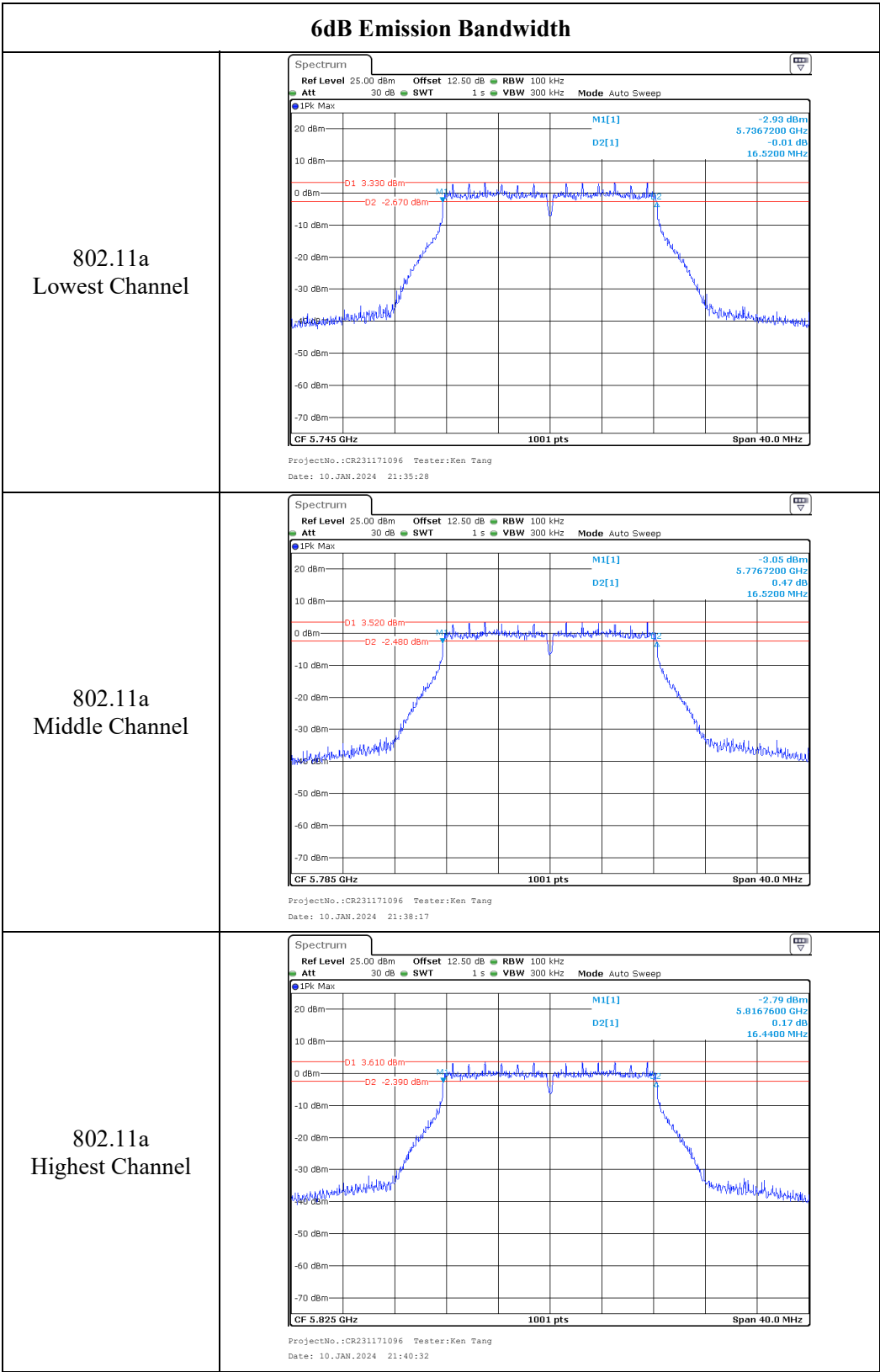
99% Emission Bandwidth	
802.11ax hew40 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 500 kHz Att 30 dB SWT 1 s VBW 2 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 5.76 dBm 5.5157540 GHz 37.882117882 MHz Occ Bw M1 M2 CF 5.51 GHz 1001 pts Span 80.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 23:56:02
802.11ax hew40 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 500 kHz Att 30 dB SWT 1 s VBW 2 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 7.60 dBm 5.5405690 GHz 37.962037962 MHz Occ Bw M1 M2 CF 5.55 GHz 1001 pts Span 80.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 23:41:42
802.11ax hew40 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 500 kHz Att 30 dB SWT 1 s VBW 2 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 7.39 dBm 5.6783120 GHz 37.882117882 MHz Occ Bw M1 M2 CF 5.67 GHz 1001 pts Span 80.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 23:43:47

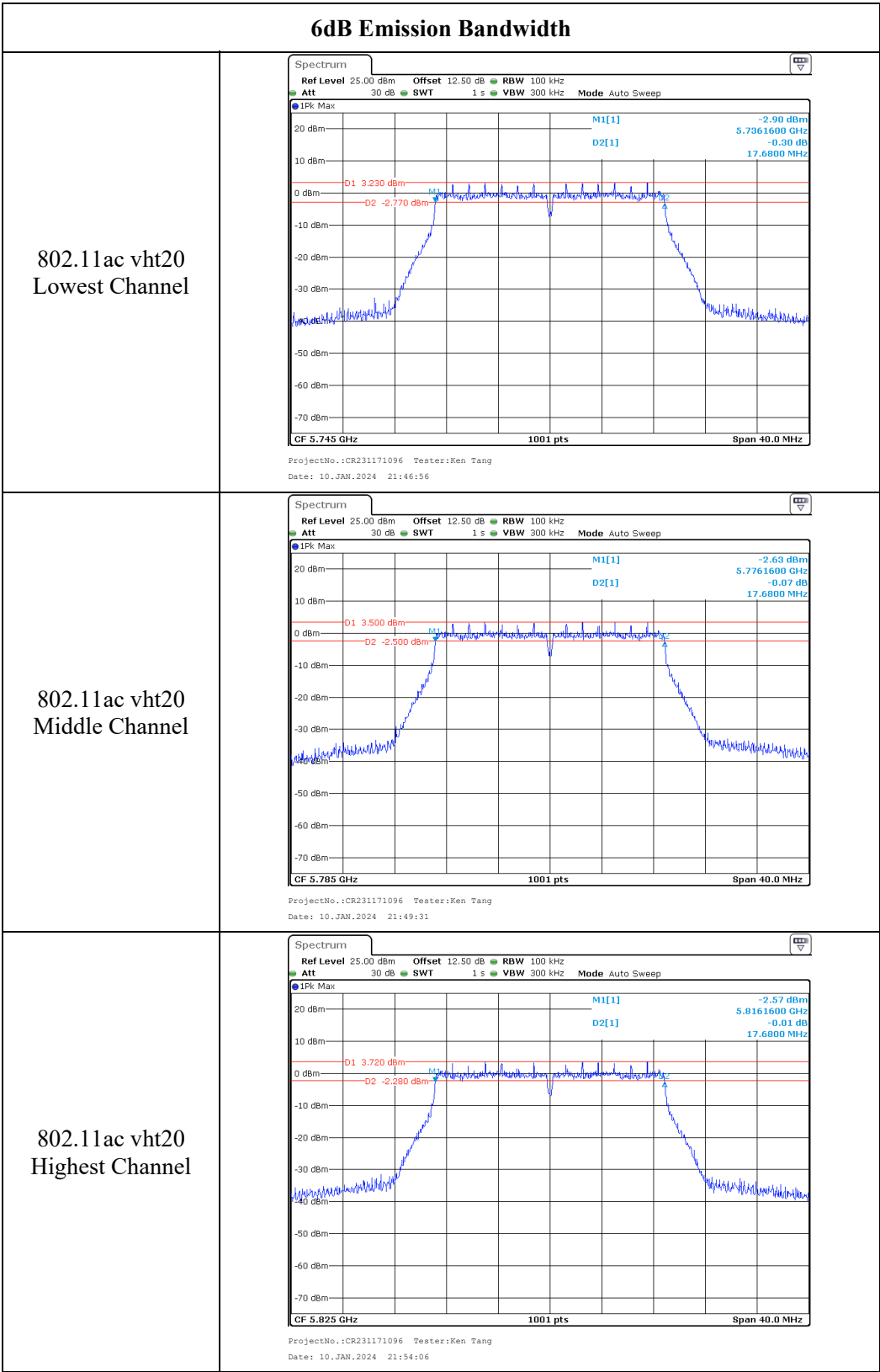
802.11ax hew40
Cross Channel

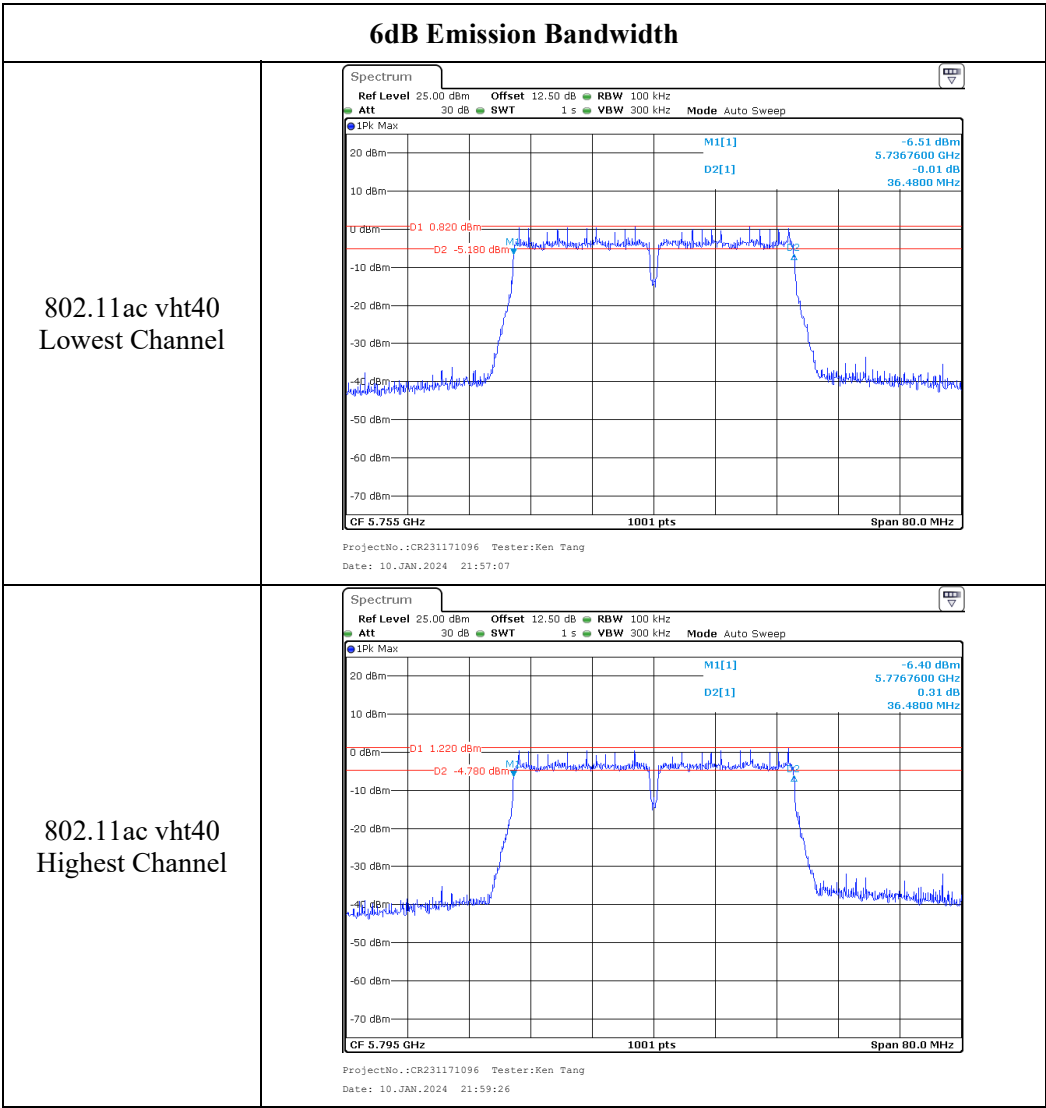


ProjectNo.:CR231171096 Tester:Ken Tang
Date: 11.JAN.2024 00:25:44

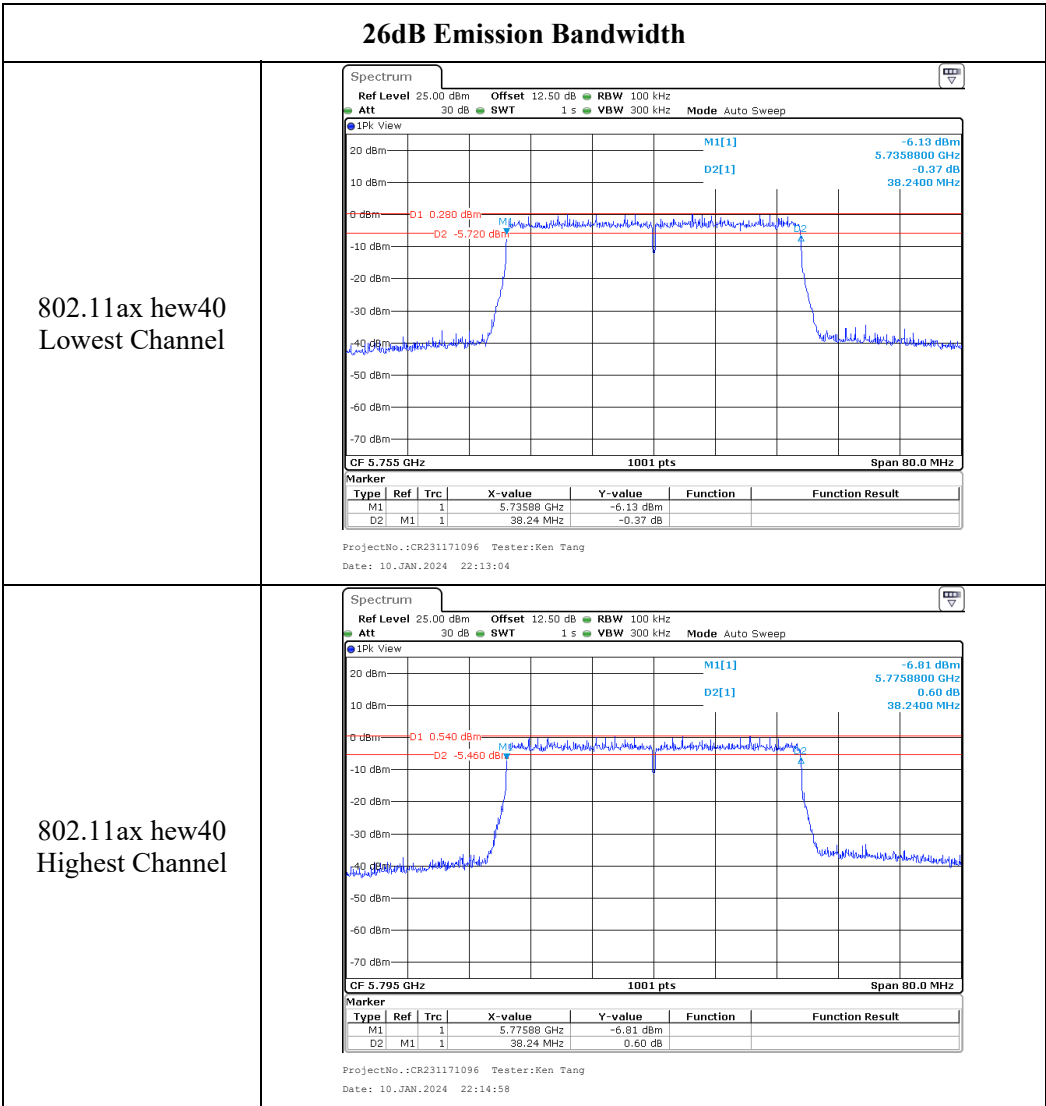
5725-5850MHz:





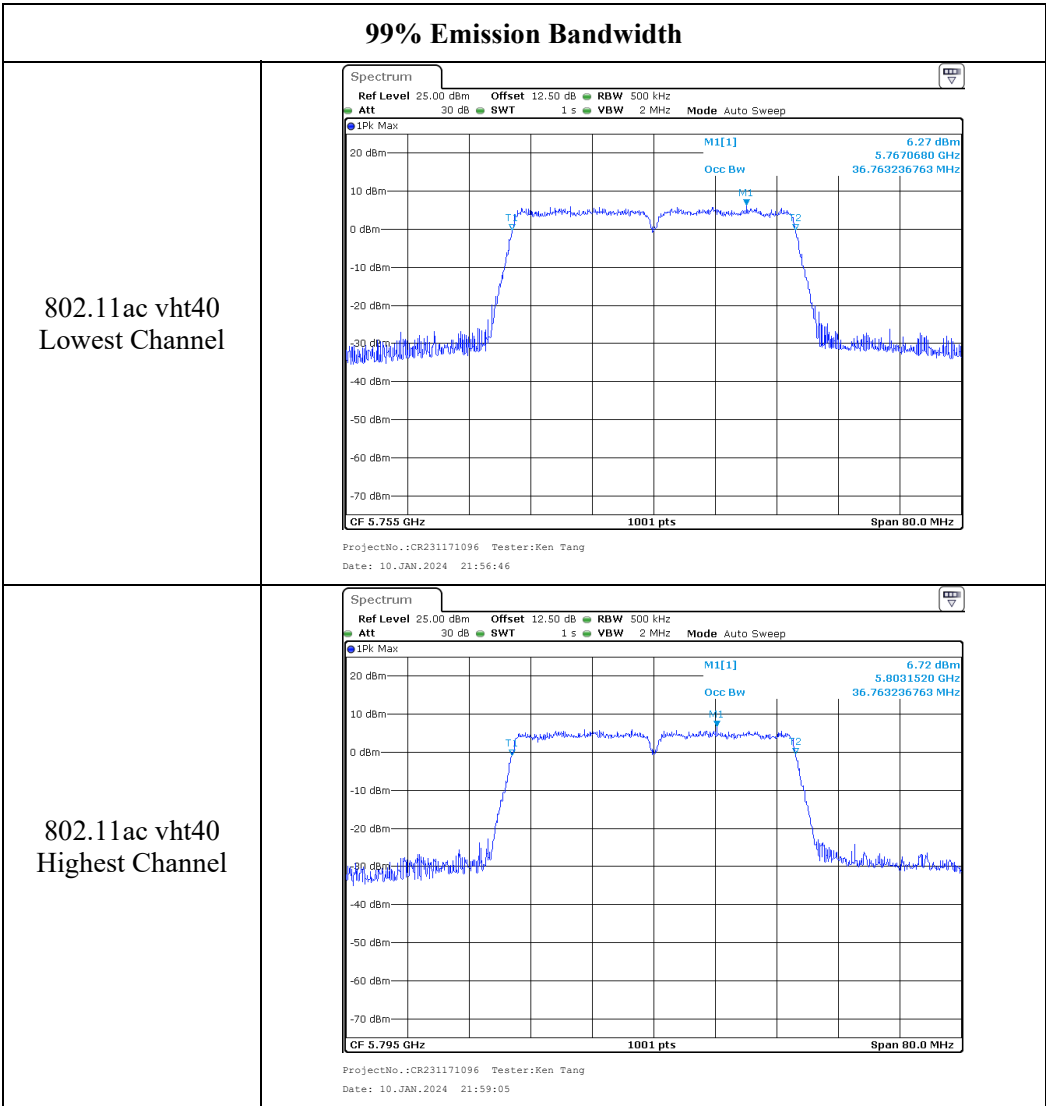


26dB Emission Bandwidth	
802.11ax hew20 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 100 kHz Att 30 dB SWT 1 s VBW 300 kHz Mode Auto Sweep 1Pk Max M1[1] -4.63 dBm D2[1] 5.7353600 GHz 1.56 dB 19.2000 MHz D1 3.150 dBm D2 -2.850 dBm CF 5.745 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 22:03:52
802.11ax hew20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 100 kHz Att 30 dB SWT 1 s VBW 300 kHz Mode Auto Sweep 1Pk Max M1[1] -3.36 dBm D2[1] 5.7754400 GHz 0.70 dB 19.1200 MHz D1 3.400 dBm D2 -2.600 dBm CF 5.785 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 22:06:33
802.11ax hew20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 100 kHz Att 30 dB SWT 1 s VBW 300 kHz Mode Auto Sweep 1Pk Max M1[1] -3.27 dBm D2[1] 5.8154000 GHz 0.62 dB 19.1600 MHz D1 3.550 dBm D2 -2.450 dBm CF 5.825 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 22:09:12

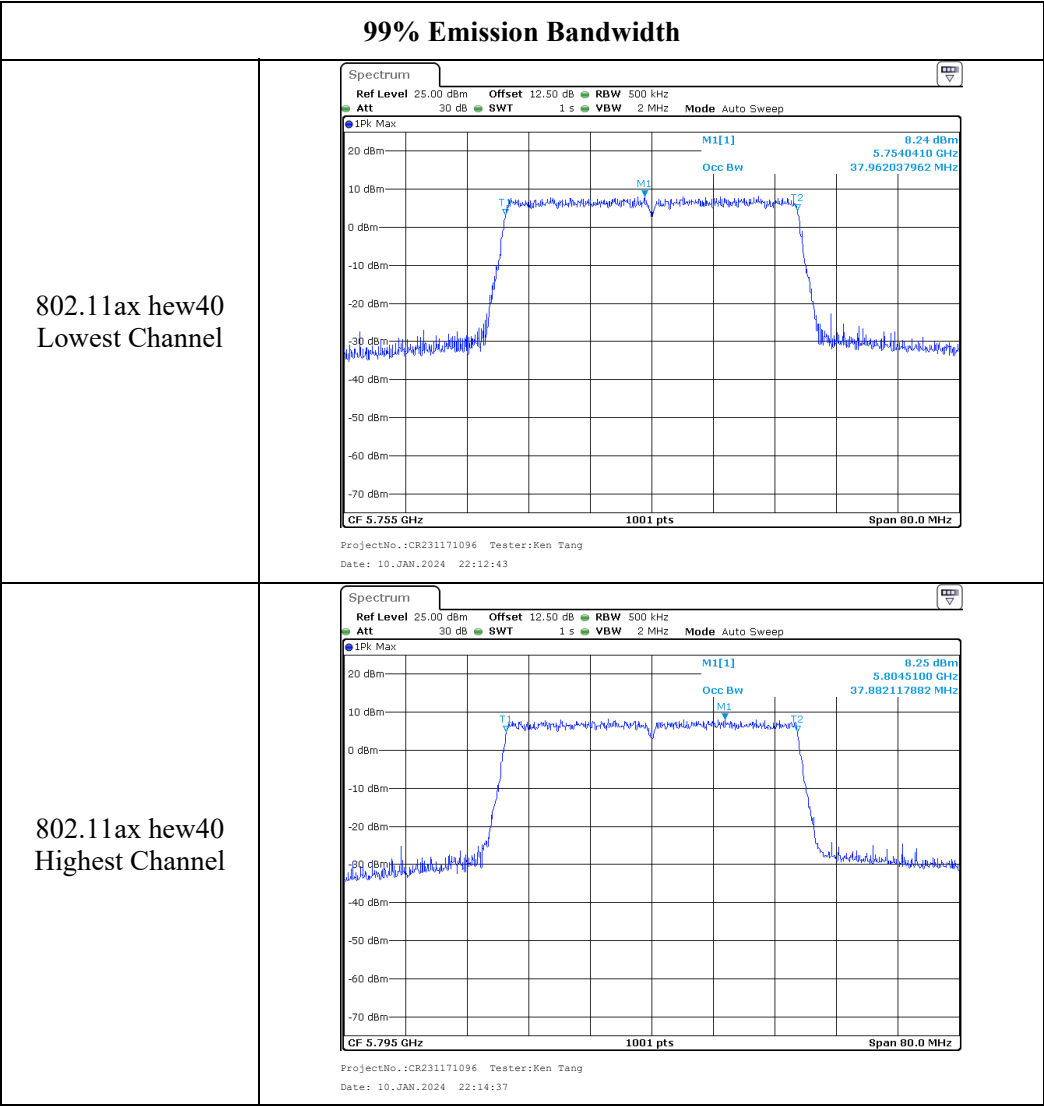


99% Emission Bandwidth	
802.11a Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] 6.96 dBm 5.7497150 GHz 17.622377622 MHz Occ Bw M1 CF 5.745 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 21:34:54
802.11a Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] 7.16 dBm 5.7889960 GHz 17.582417582 MHz Occ Bw M1 CF 5.785 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 21:37:40
802.11a Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max M1[1] 7.29 dBm 5.8297150 GHz 17.542457542 MHz Occ Bw M1 CF 5.825 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 21:39:57

99% Emission Bandwidth	
802.11ac vht20 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 6.76 dBm 5.7403650 GHz 18.421578422 MHz Occ Bw M1 T1 T2 CF 5.745 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 21:46:09
802.11ac vht20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 6.57 dBm 5.7899960 GHz 18.381618382 MHz Occ Bw M1 T1 T2 CF 5.785 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 21:48:56
802.11ac vht20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 7.37 dBm 5.8295950 GHz 18.421578422 MHz Occ Bw M1 T1 T2 CF 5.825 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 21:53:33



99% Emission Bandwidth	
802.11ax hew20 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] Occ Bw 8.31 dBm 5.7458390 GHz 19.340659341 MHz CF 5.745 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 22:03:23
802.11ax hew20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] Occ Bw 8.77 dBm 5.7883970 GHz 19.300699301 MHz CF 5.785 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 22:05:57
802.11ax hew20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 300 kHz Att 30 dB SWT 1 s VBW 1 MHz Mode Auto Sweep 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] Occ Bw 8.94 dBm 5.8195650 GHz 19.340659341 MHz CF 5.825 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 22:08:36



4.4 Maximum Conducted Output Power

Serial Number:	2EE8-2	Test Date:	2024/1/8-2024/1/30
Test Site:	RF	Test Mode:	Transmitting
Tester:	Len Huang, Ken Tang	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	24.2-25	Relative Humidity: (%)	35-50	ATM Pressure: (kPa)	101

Test Equipment List and Details:

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

** 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		
		Reading (dBm)	Output power with duty cycle factor (dBm)	Limit (dBm)
802.11a	5180	14.31	17.08	24
	5200	14.17	16.94	24
	5240	14.05	16.82	24
802.11ac vht20	5180	14.40	17.25	24
	5200	13.92	16.77	24
	5240	13.78	16.63	24
802.11ac vht40	5190	13.69	16.72	24
	5230	12.95	15.98	24
802.11ax hew20	5180	13.61	17.08	24
	5200	13.45	16.92	24
	5240	13.28	16.75	24
802.11ax hew40	5190	13.51	17.00	24
	5230	12.67	16.16	24

Note: the EUT is client device.

5250-5350 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power		
		Reading (dBm)	Output power with duty cycle factor (dBm)	Limit (dBm)
802.11a	5260	14.52	17.29	24
	5280	14.62	17.39	24
	5320	13.60	16.37	24
802.11ac vht20	5260	14.03	16.88	24
	5280	14.13	16.98	24
	5320	13.69	16.54	24
802.11ac vht40	5270	13.77	16.80	24
	5310	13.38	16.41	24
802.11ax hew20	5260	13.55	17.02	24
	5280	13.63	17.10	24
	5320	13.22	16.69	24
802.11ax hew40	5270	13.48	16.97	24
	5310	13.05	16.54	24

5470-5725 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power		
		Reading (dBm)	Output Power with duty cycle factor (dBm)	Limit (dBm)
802.11a	5500	13.36	16.13	24
	5580	12.89	15.66	24
	5700	12.33	15.10	24
	5720	12.68	15.45	24
802.11ac vht20	5500	13.42	16.27	24
	5580	12.97	15.82	24
	5700	12.67	15.52	24
	5720	12.63	15.48	24
802.11ac vht40	5510	13.55	16.58	24
	5550	12.89	15.92	24
	5670	12.92	15.95	24
	5710	12.39	15.42	24
802.11ax hew20	5500	12.90	16.37	24
	5580	12.40	15.87	24
	5700	12.22	15.69	24
	5720	12.19	15.66	24
802.11ax hew40	5510	11.04	14.53	24
	5550	12.51	16.00	24
	5670	12.64	16.13	24
	5710	11.92	15.41	24

5725-5850 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power		
		Reading (dBm)	Output Power with duty cycle factor (dBm)	Limit (dBm)
802.11a	5745	13.49	16.26	30
	5785	13.72	16.49	30
	5825	13.82	16.59	30
802.11ac vht20	5745	13.40	16.25	30
	5785	13.68	16.53	30
	5825	13.83	16.68	30
802.11ac vht40	5755	13.45	16.48	30
	5795	13.51	16.54	30
802.11ax hew20	5745	12.96	16.43	30
	5785	13.27	16.74	30
	5825	13.39	16.86	30
802.11ax hew40	5755	13.22	16.71	30
	5795	13.27	16.76	30

4.5 Maximum power spectral density

Serial Number:	2EE8-2	Test Date:	2024/1/8-2024/1/30
Test Site:	RF	Test Mode:	Transmitting
Tester:	Len Huang, Ken Tang	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	24.2-25	Relative Humidity: (%)	35-50	ATM Pressure: (kPa)	101

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40-N	102259	2023/4/18	2024/4/17
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:

Test Modes	Test Frequency (MHz)	Maximum Power Spectral Density		
		Reading (dBm/MHz)	Power Spectral Density with duty cycle factor (dBm/MHz)	Limit (dBm/MHz)
802.11a	5180	1.27	4.04	11
	5200	1.01	3.78	11
	5240	1.15	3.92	11
802.11ac vht20	5180	0.81	3.66	11
	5200	1.03	3.88	11
	5240	0.28	3.13	11
802.11ac vht40	5190	-2.19	0.84	11
	5230	-3.50	-0.47	11
802.11ax hew20	5180	0.23	3.70	11
	5200	-0.22	3.25	11
	5240	-0.41	3.06	11
802.11ax hew40	5190	-3.22	0.27	11
	5230	-3.28	0.21	11

Note: Duty cycle <98%, and duty cycle variations are less than $\pm 2\%$, method ANSI C63.10-2013 Section 12.3.2.4 was used.

5250-5350 MHz:

Test Modes	Test Frequency (MHz)	Maximum Power Spectral Density		
		Reading (dBm/MHz)	Power Spectral Density with duty cycle factor (dBm/MHz)	Limit (dBm/MHz)
802.11a	5260	1.72	4.49	11
	5280	1.82	4.59	11
	5320	1.26	4.03	11
802.11ac vht20	5260	1.29	4.14	11
	5280	1.48	4.33	11
	5320	1.22	4.07	11
802.11ac vht40	5270	-1.85	1.18	11
	5310	-1.70	1.33	11
802.11ax hew20	5260	0.90	4.37	11
	5280	0.45	3.92	11
	5320	-0.01	3.46	11
802.11ax hew40	5270	-2.19	1.30	11
	5310	-2.28	1.21	11

Note: Duty cycle <98%, and duty cycle variations are less than $\pm 2\%$, method ANSI C63.10-2013 Section 12.3.2.4 was used.

5470-5725 MHz:

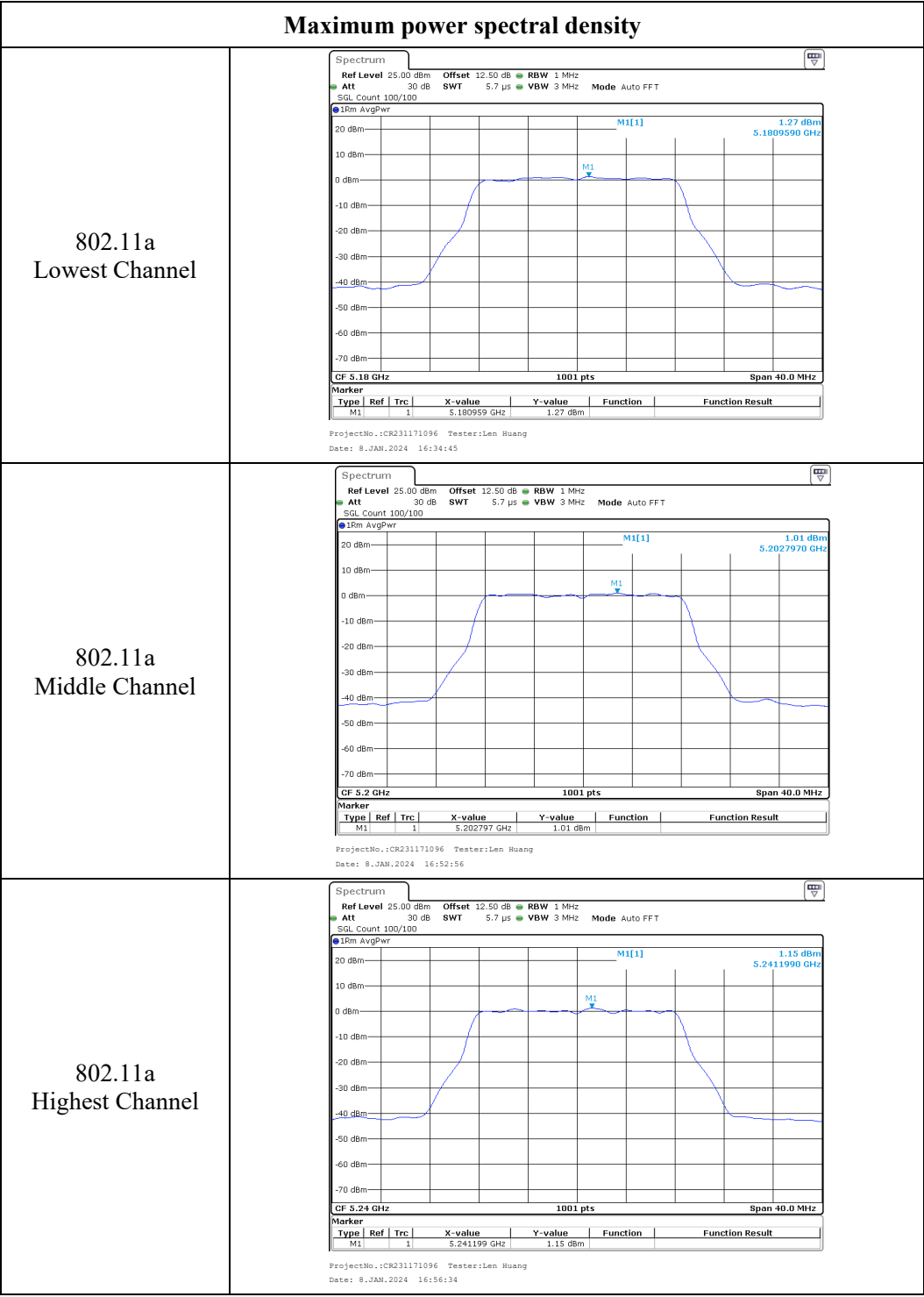
Test Modes	Test Frequency (MHz)	Maximum Power Spectral Density		
		Reading (dBm/MHz)	Power Spectral Density with duty cycle factor (dBm/MHz)	Limit (dBm/MHz)
802.11a	5500	1.02	3.79	11
	5580	-0.12	2.65	11
	5700	0.05	2.82	11
	5720	0.24	3.01	11
802.11ac vht20	5500	0.64	3.49	11
	5580	0.59	3.44	11
	5700	-0.56	2.29	11
	5720	-0.09	2.76	11
802.11ac vht40	5510	-2.41	0.62	11
	5550	-2.80	0.23	11
	5670	-2.73	0.30	11
	5710	-3.45	-0.42	11
802.11ax hew20	5500	-0.35	3.12	11
	5580	0.09	3.56	11
	5700	-0.15	3.32	11
	5720	-0.41	3.06	11
802.11ax hew40	5510	-4.50	-1.01	11
	5550	-3.21	0.28	11
	5670	-3.08	0.41	11
	5710	-3.79	-0.30	11

Note: Duty cycle <98%, and duty cycle variations are less than $\pm 2\%$, method ANSI C63.10-2013 Section 12.3.2.4 was used.

Test Modes	Test Frequency (MHz)	Maximum Power Spectral Density		
		Reading (dBm/500kHz)	Power Spectral Density with duty cycle factor (dBm/500kHz)	Limit (dBm/500kHz)
802.11a	5745	-2.07	0.70	30
	5785	-1.60	1.17	30
	5825	-1.32	1.45	30
802.11ac vht20	5745	-2.18	0.67	30
	5785	-1.79	1.06	30
	5825	-1.82	1.03	30
802.11ac vht40	5755	-5.16	-2.13	30
	5795	-4.59	-1.56	30
802.11ax hew20	5745	-2.56	0.91	30
	5785	-2.16	1.31	30
	5825	-2.68	0.79	30
802.11ax hew40	5755	-5.17	-1.68	30
	5795	-5.48	-1.99	30

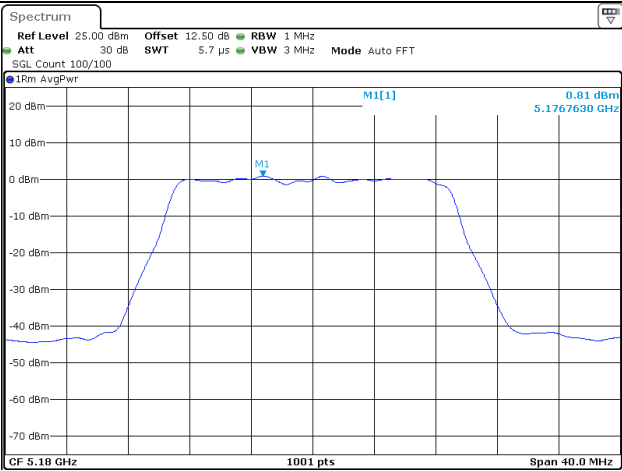
Note: Duty cycle <98%, and duty cycle variations are less than $\pm 2\%$, method ANSI C63.10-2013 Section 12.3.2.4 was used.

5150-5250MHz:



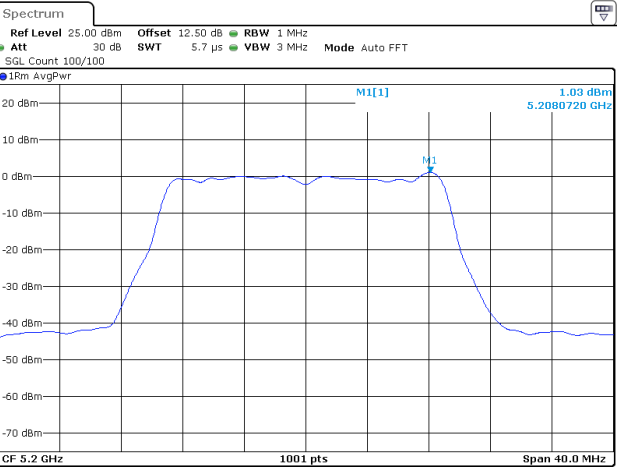
Maximum power spectral density

802.11ac vht20
Lowest Channel



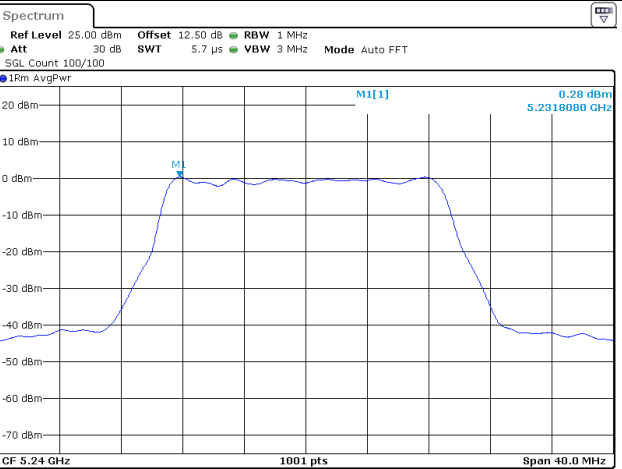
ProjectNo.:CR231171096 Tester:Len Huang
Date: 9.JAN.2024 13:31:53

802.11ac vht20
Middle Channel



ProjectNo.:CR231171096 Tester:Ken Tang
Date: 10.JAN.2024 19:29:27

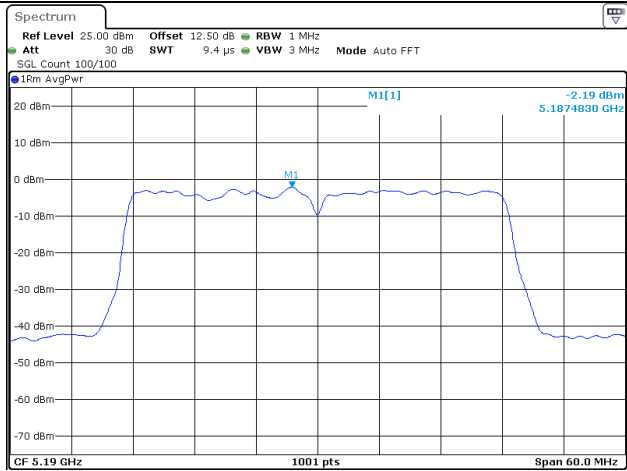
802.11ac vht20
Highest Channel



ProjectNo.:CR231171096 Tester:Ken Tang
Date: 10.JAN.2024 19:33:40

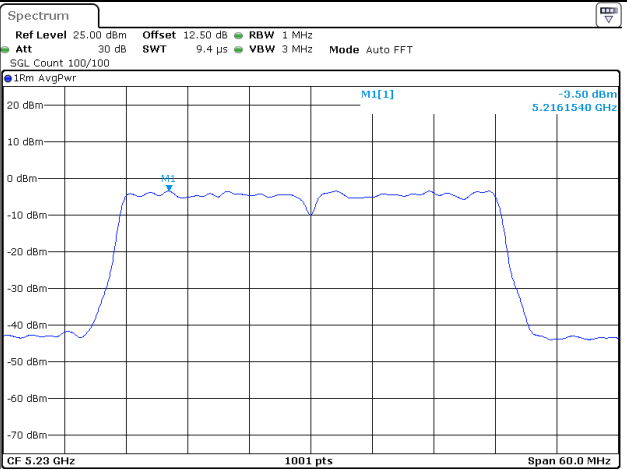
Maximum power spectral density

802.11ac vht40
Lowest Channel



ProjectNo.:CR231171096 Tester:Ken Tang
Date: 10.JAN.2024 19:56:45

802.11ac vht40
Highest Channel



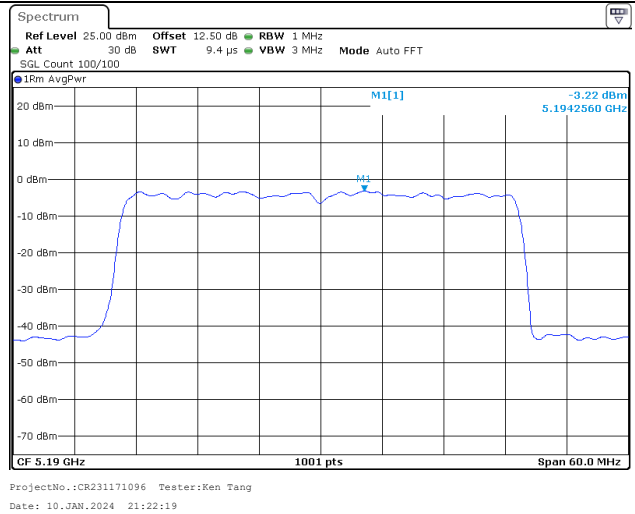
ProjectNo.:CR231171096 Tester:Ken Tang
Date: 10.JAN.2024 19:59:03

Maximum power spectral density

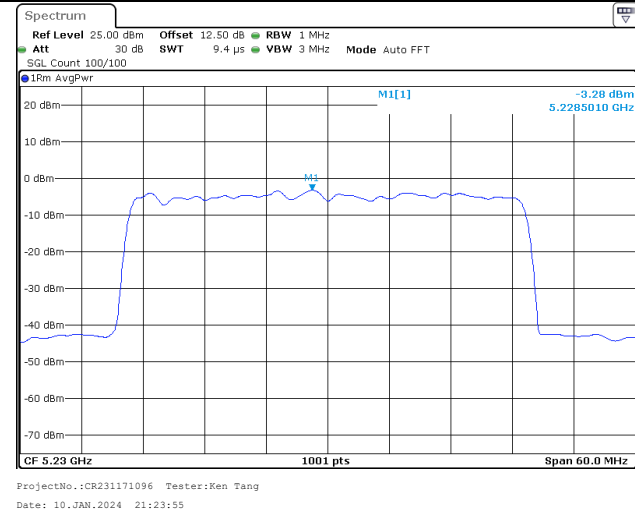
802.11ax hew20 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 1 MHz Att 30 dB SWT 5.7 μs VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] 0.23 dBm 5.1749250 GHz M1 CF 5.18 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 20:19:44
802.11ax hew20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 1 MHz Att 30 dB SWT 5.7 μs VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] -0.22 dBm 5.1962040 GHz M1 CF 5.2 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 20:25:13
802.11ax hew20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 1 MHz Att 30 dB SWT 5.7 μs VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] -0.41 dBm 5.2422780 GHz M1 CF 5.24 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 20:34:01

Maximum power spectral density

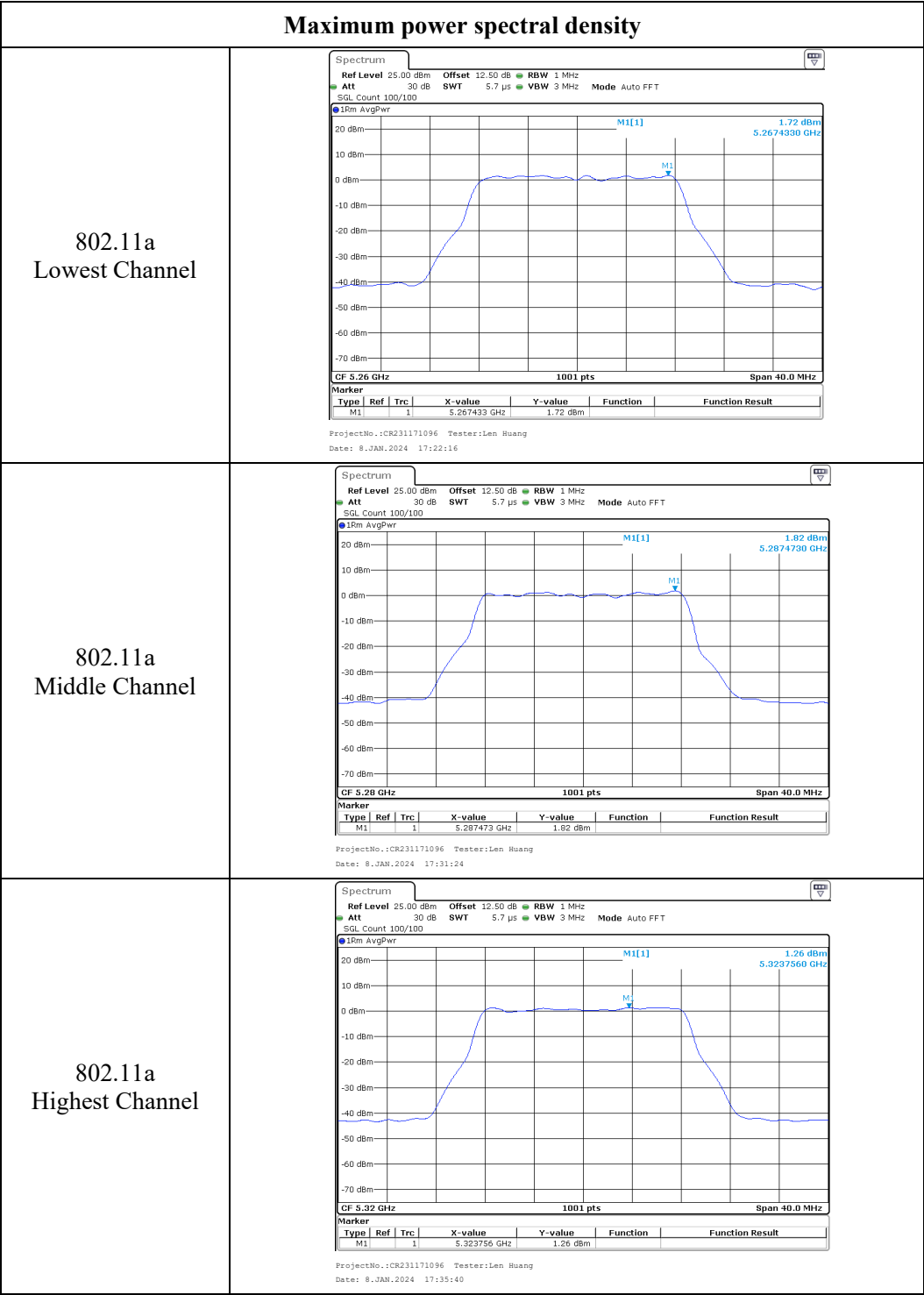
802.11ax hew40
Lowest Channel



802.11ax hew40
Highest Channel

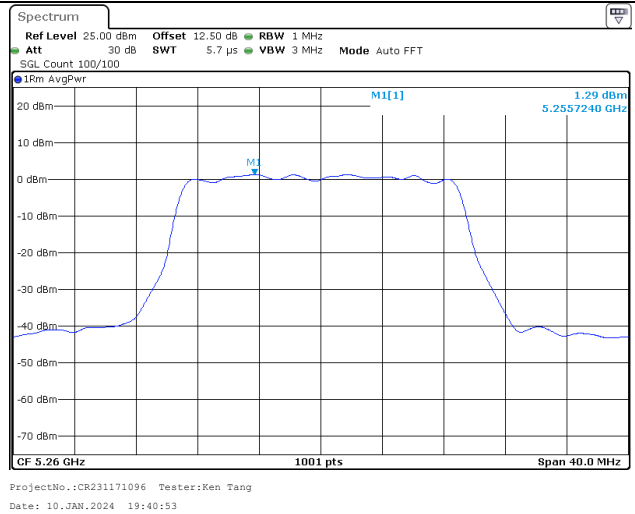


5250-5350MHz:

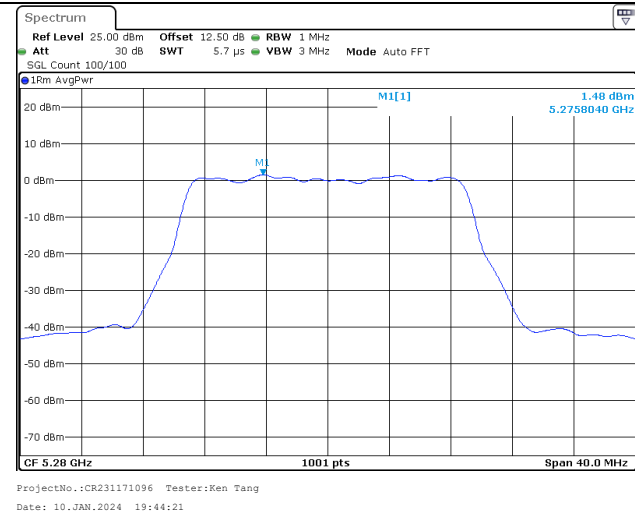


Maximum power spectral density

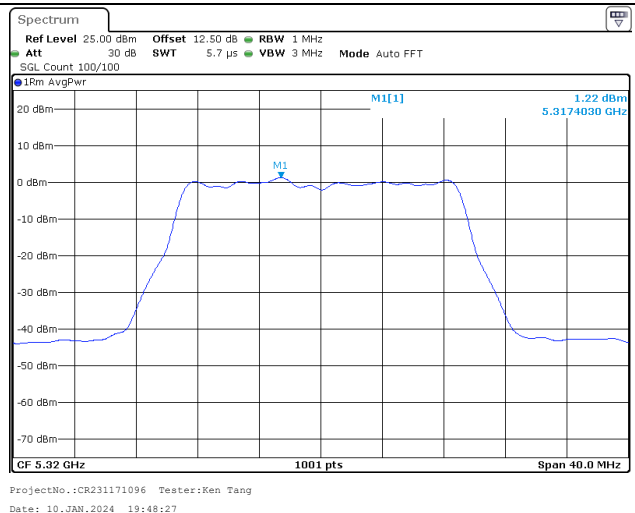
802.11ac vht20
Lowest Channel



802.11ac vht20
Middle Channel

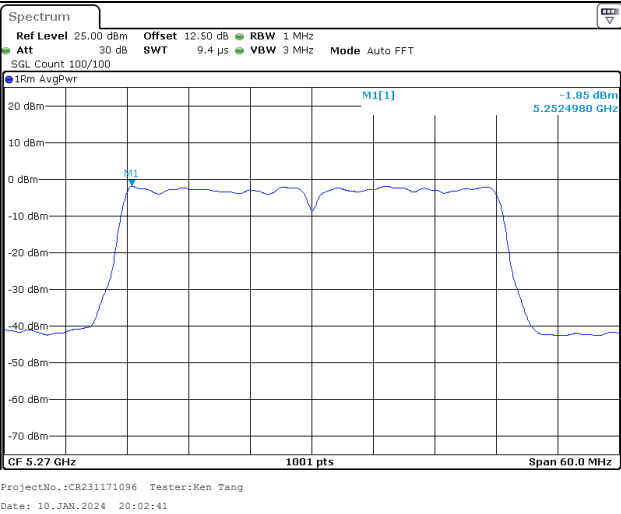


802.11ac vht20
Highest Channel

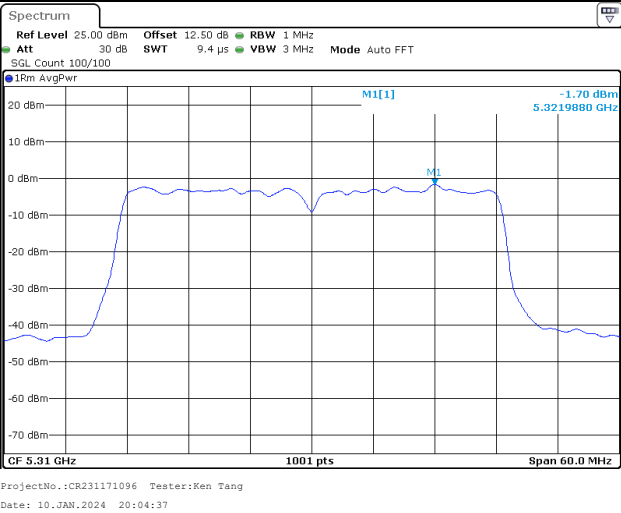


Maximum power spectral density

802.11ac vht40
Lowest Channel

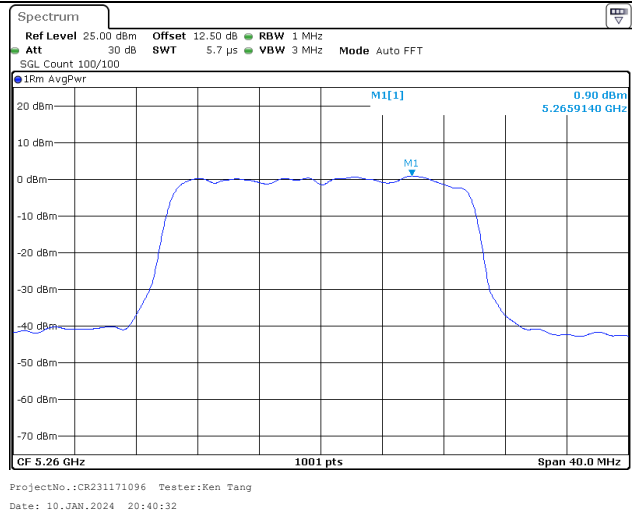


802.11ac vht40
Highest Channel

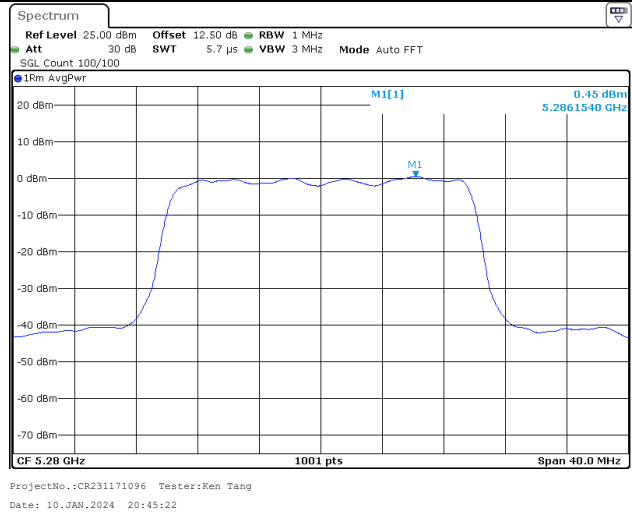


Maximum power spectral density

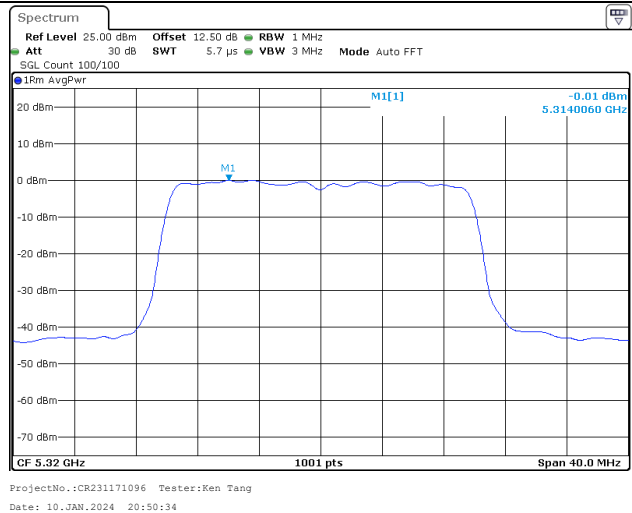
802.11ax hew20
Lowest Channel



802.11ax hew20
Middle Channel

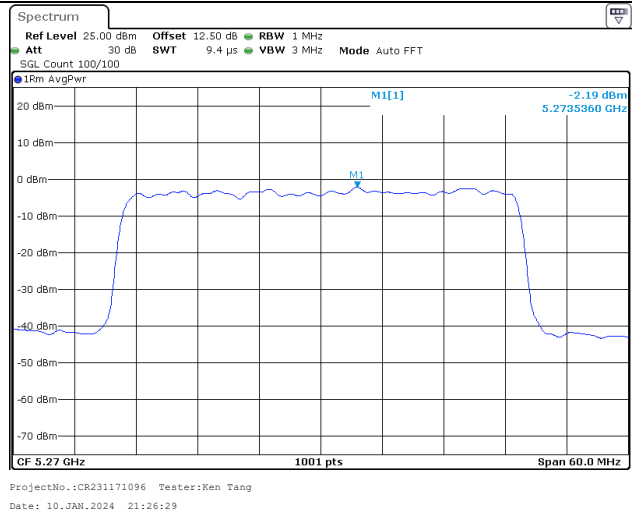


802.11ax hew20
Highest Channel

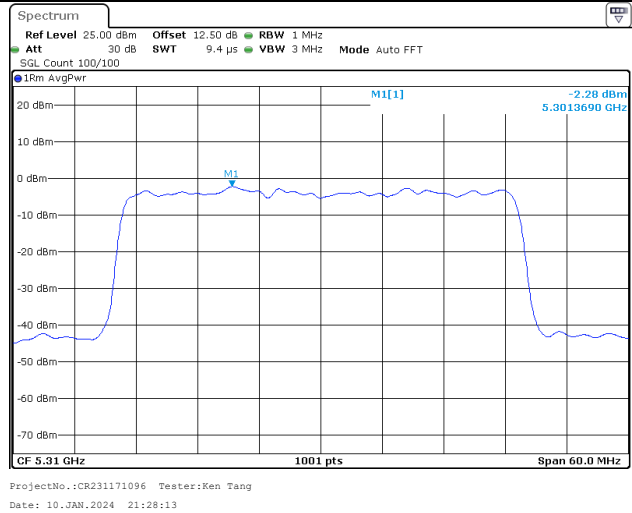


Maximum power spectral density

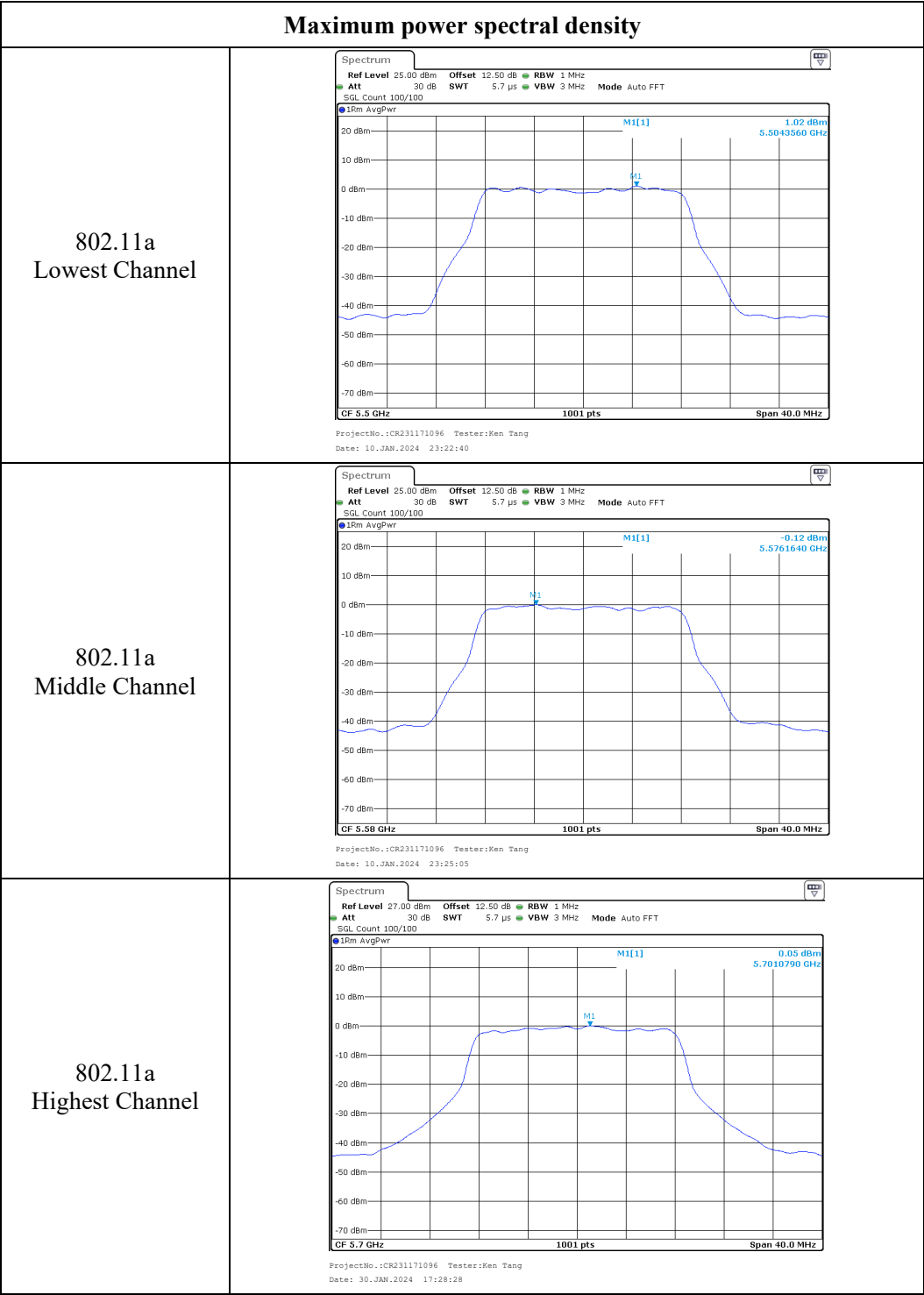
802.11ax hew40
Lowest Channel

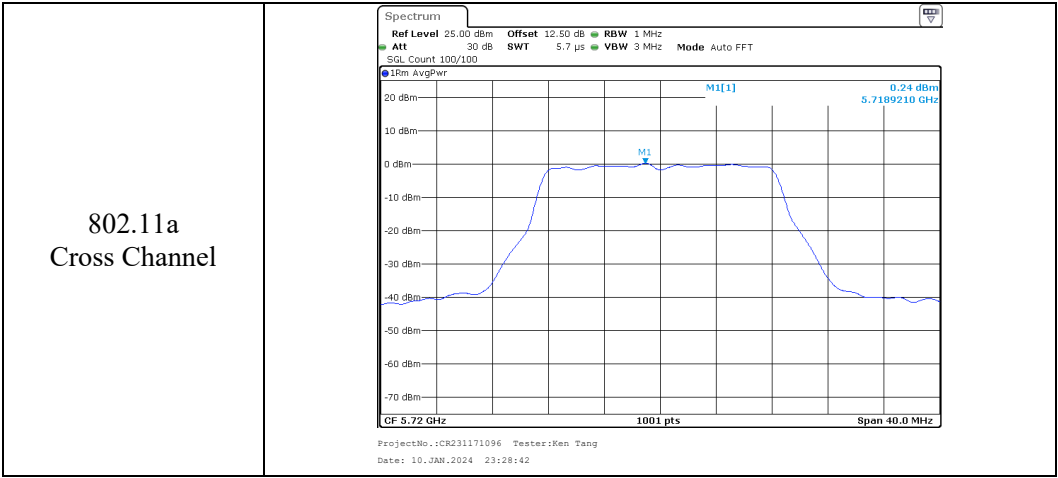


802.11ax hew40
Highest Channel



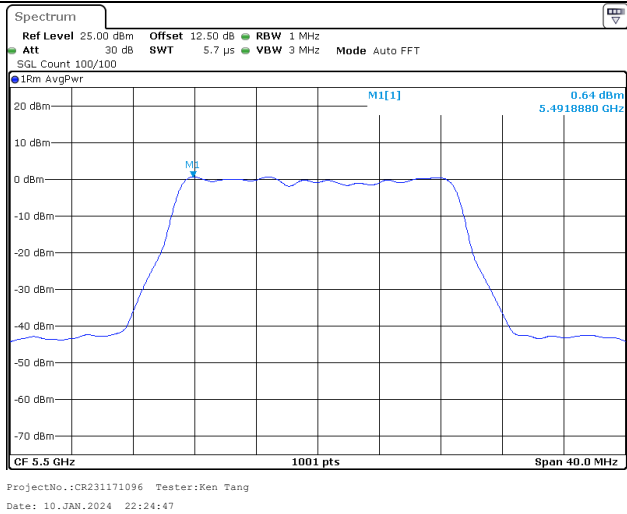
5470-5725 MHz:



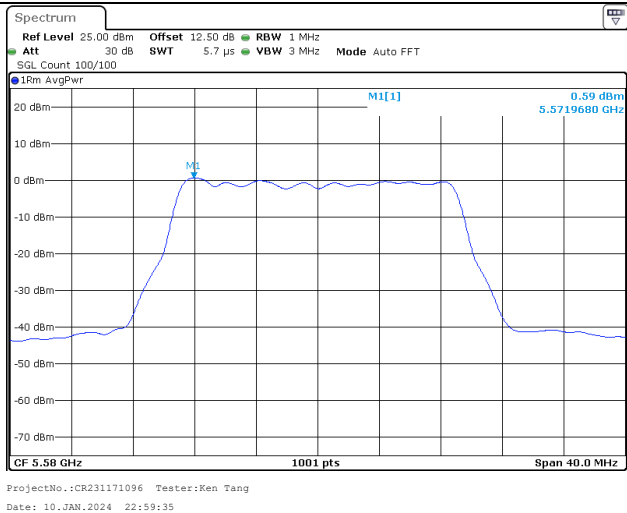


Maximum power spectral density

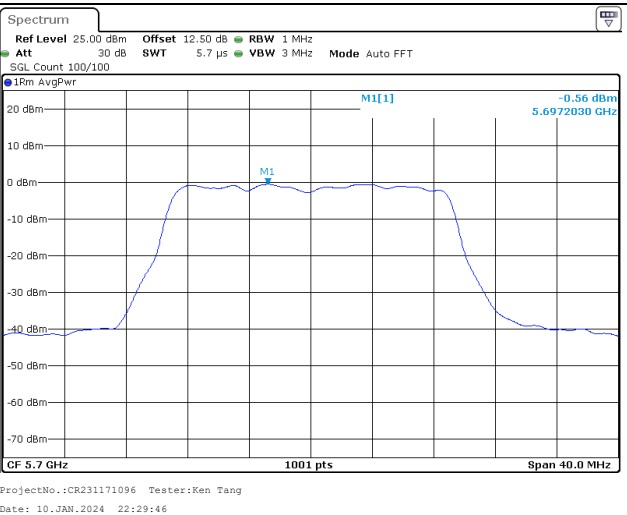
802.11ac vht20
Lowest Channel

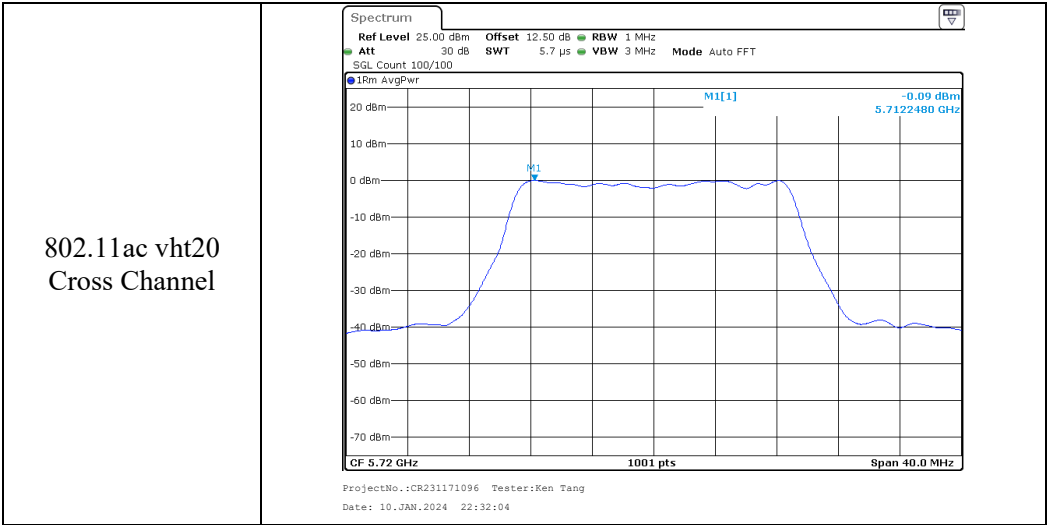


802.11ac vht20
Middle Channel



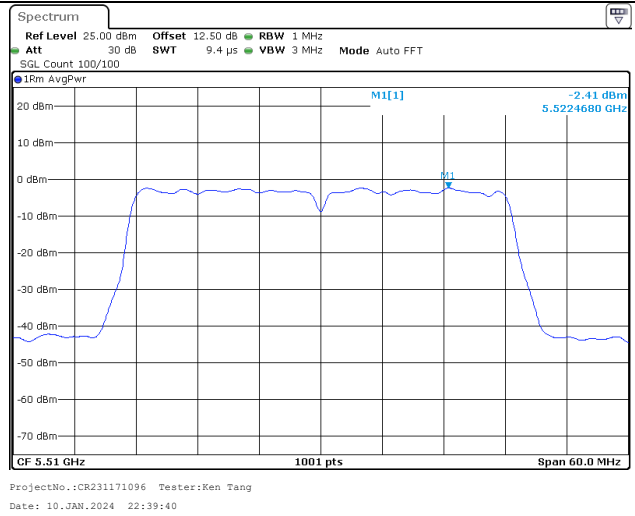
802.11ac vht20
Highest Channel



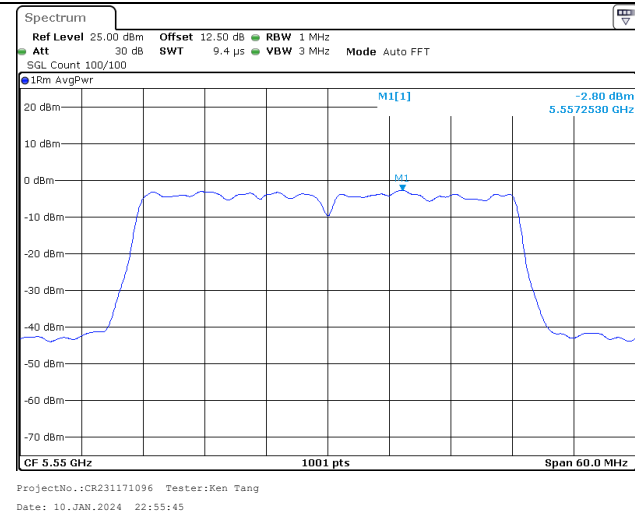


Maximum power spectral density

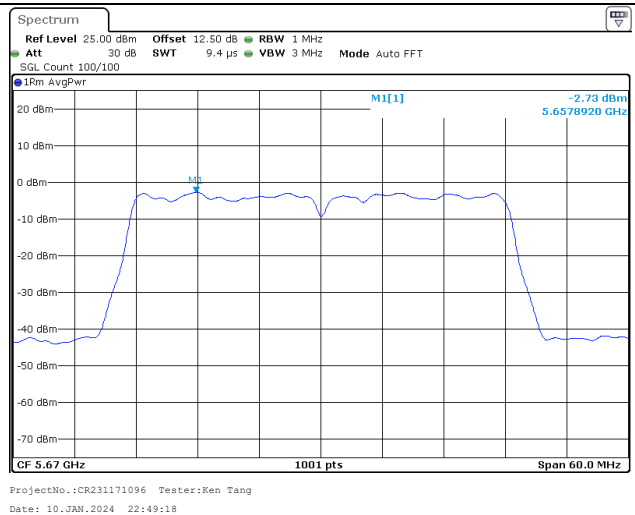
802.11ac vht40
Lowest Channel

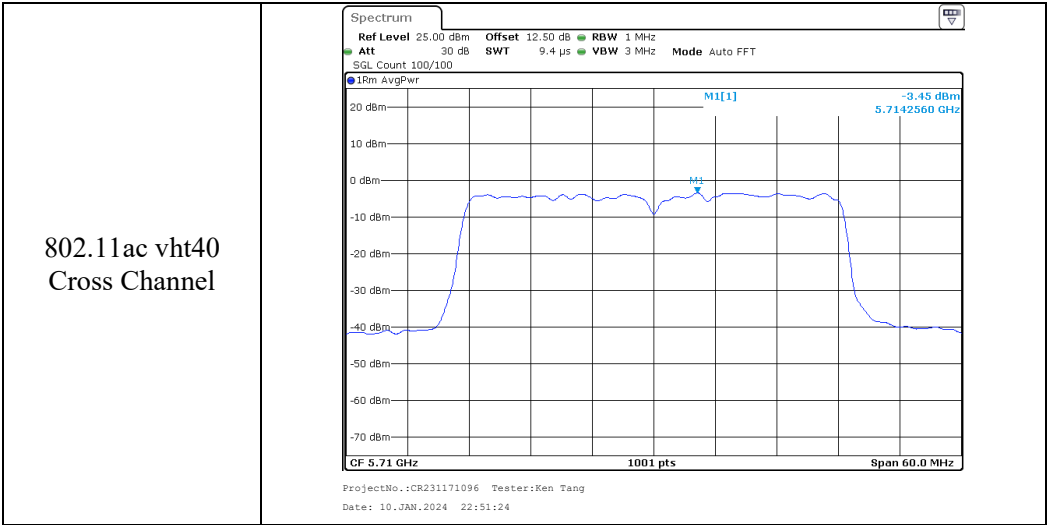


802.11ac vht40
Middle Channel

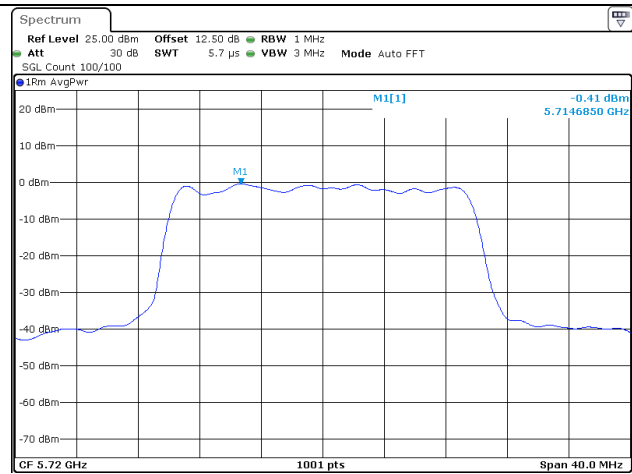


802.11ac vht40
Highest Channel





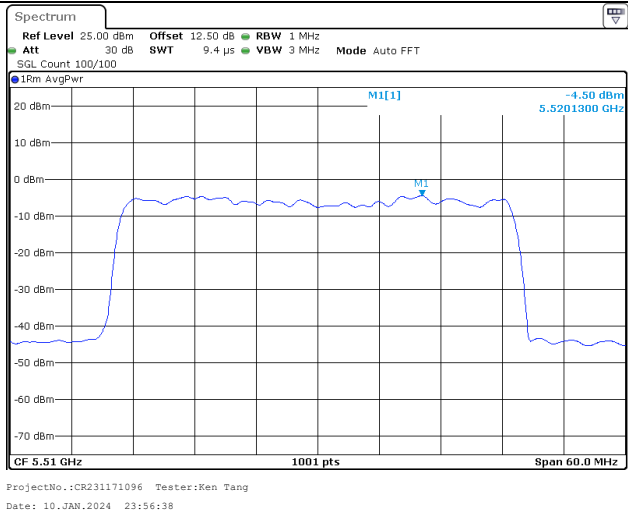
Maximum power spectral density	
802.11ax hew20 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 1 MHz Att 30 dB SWT 5.7 μs VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr M1[1] -0.35 dBm 5.4914490 GHz M1 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.5 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 23:06:43
802.11ax hew20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 1 MHz Att 30 dB SWT 5.7 μs VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr M1[1] 0.09 dBm 5.5814790 GHz M1 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.58 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 23:10:37
802.11ax hew20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 1 MHz Att 30 dB SWT 5.7 μs VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr M1[1] -0.15 dBm 5.6960840 GHz M1 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.7 GHz 1001 pts Span 40.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 23:13:27

802.11ax hew20
Cross Channel

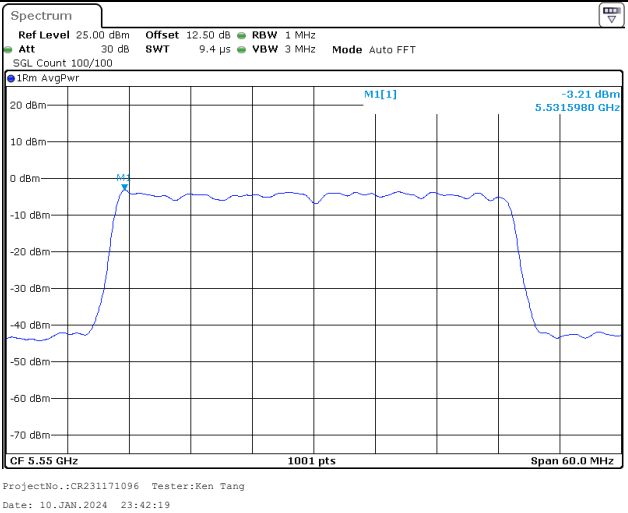
ProjectNo.:CR231171096 Tester:Ken Tang
Date: 10.JAN.2024 23:16:14

Maximum power spectral density

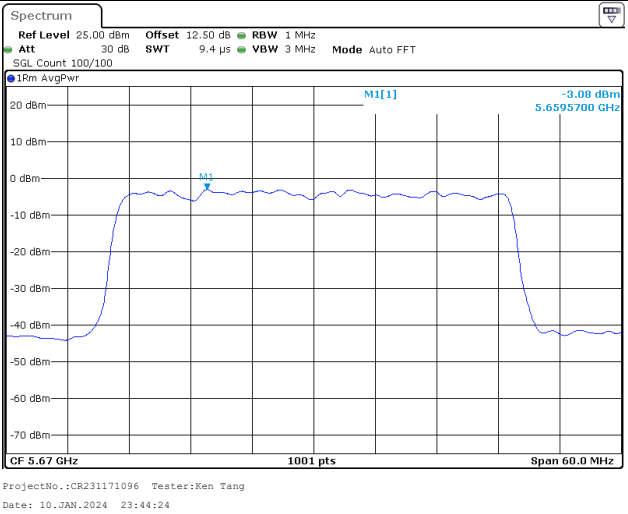
802.11ax hew40
Lowest Channel



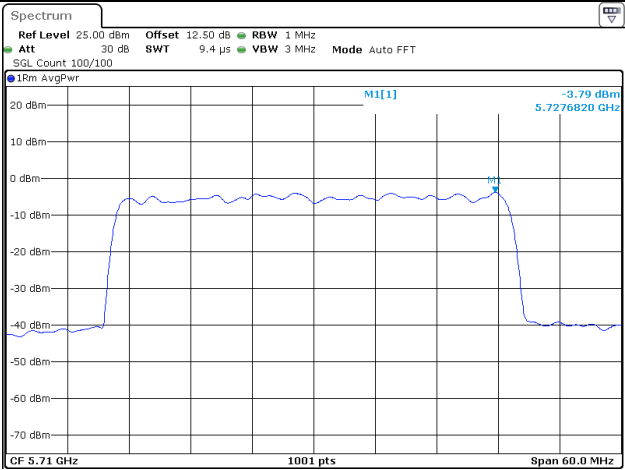
802.11ax hew40
Middle Channel



802.11ax hew40
Highest Channel

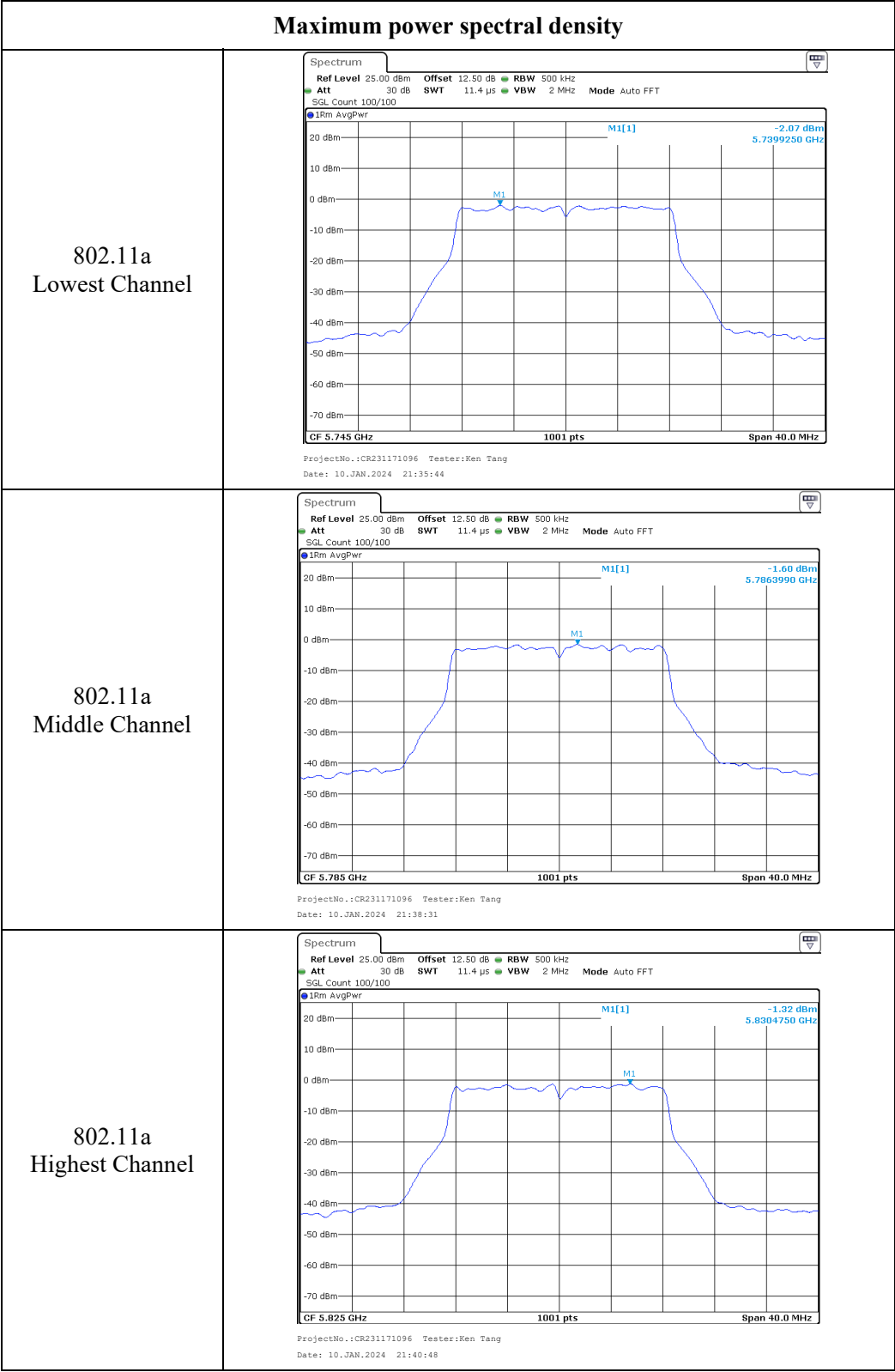


802.11ax hew40
Cross Channel



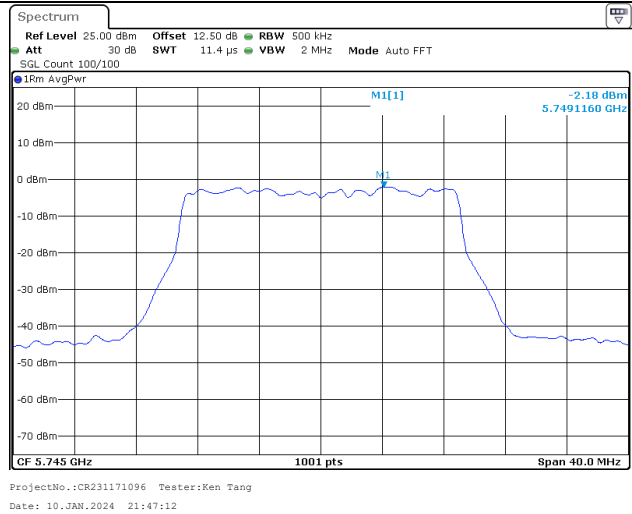
ProjectNo.:CR231171096 Tester:Ken Tang
Date: 11.JAN.2024 00:26:21

5725-5850MHz

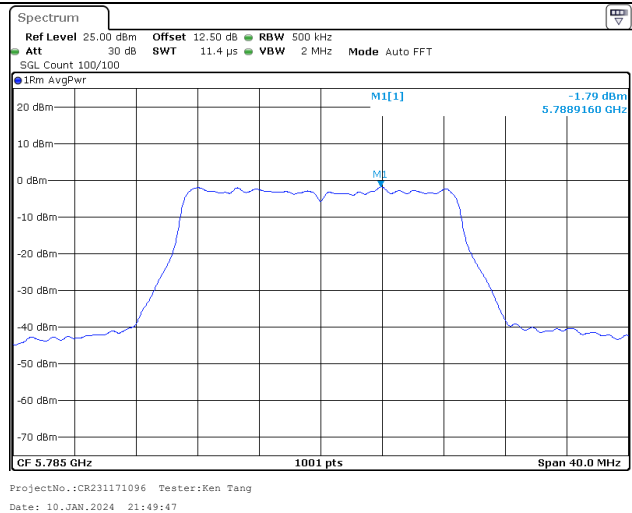


Maximum power spectral density

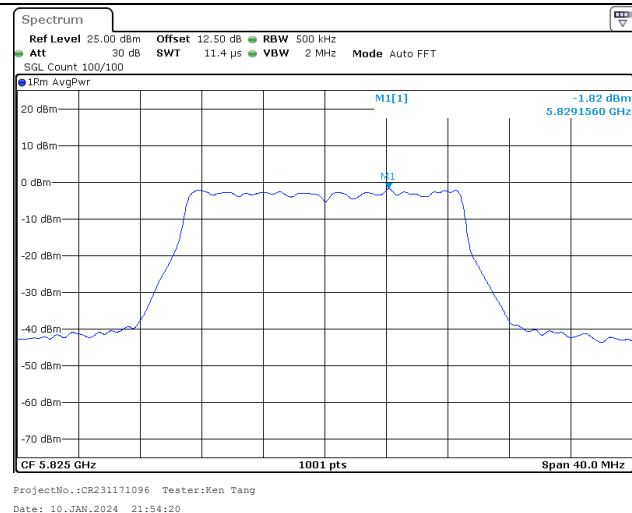
802.11ac vht20
Lowest Channel

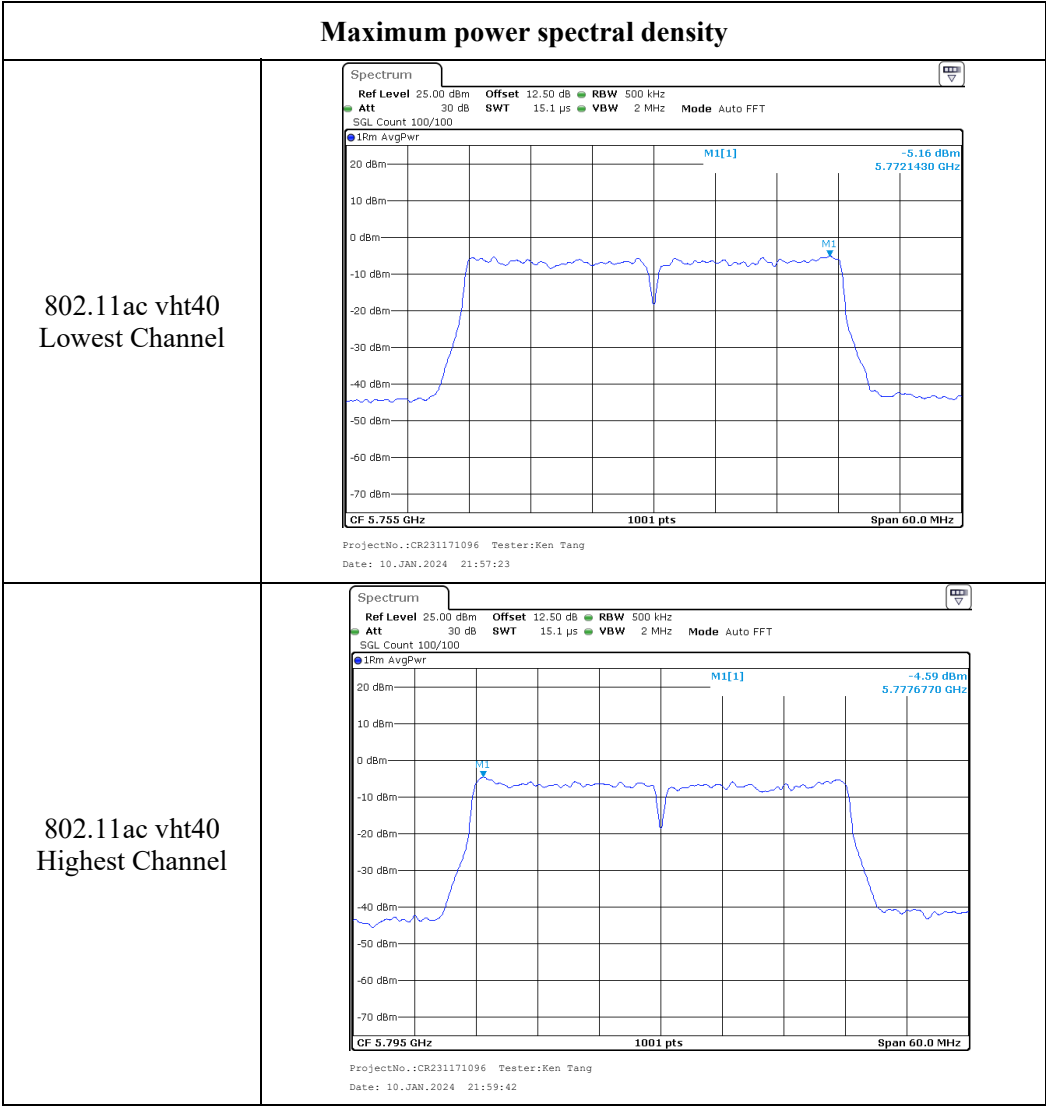


802.11ac vht20
Middle Channel



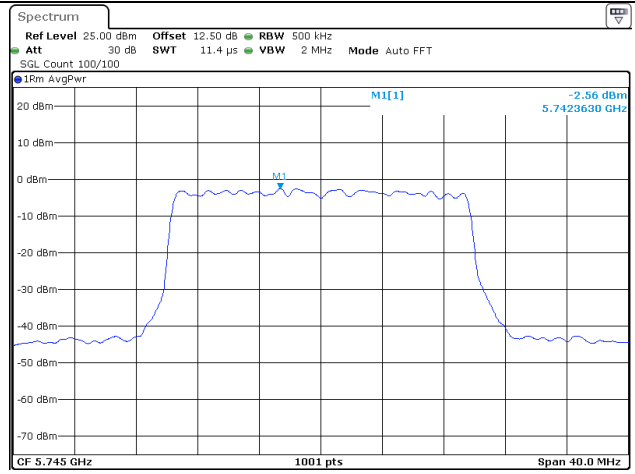
802.11ac vht20
Highest Channel





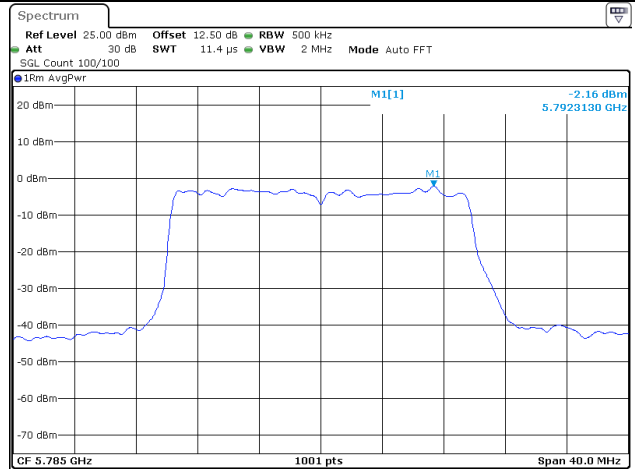
Maximum power spectral density

802.11ax hew20
Lowest Channel



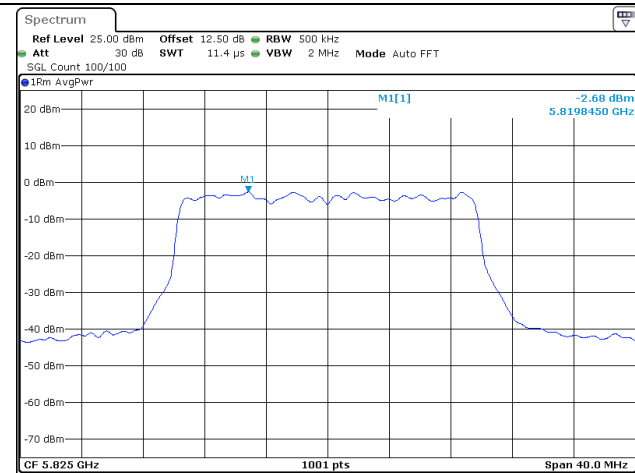
ProjectNo.:CR231171096 Tester:Ken Tang
Date: 10.JAN.2024 22:04:08

802.11ax hew20
Middle Channel



ProjectNo.:CR231171096 Tester:Ken Tang
Date: 10.JAN.2024 22:06:49

802.11ax hew20
Highest Channel



ProjectNo.:CR231171096 Tester:Ken Tang
Date: 10.JAN.2024 22:09:28

Maximum power spectral density	
802.11ax hew40 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 500 kHz Att 30 dB SWT 15.1 μs VBW 2 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] -5.17 dBm 5.7619530 GHz CF 5.755 GHz 1001 pts Span 60.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 22:13:20
802.11ax hew40 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 12.50 dB RBW 500 kHz Att 30 dB SWT 15.1 μs VBW 2 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] -5.48 dBm 5.7905040 GHz CF 5.795 GHz 1001 pts Span 60.0 MHz ProjectNo.:CR231171096 Tester:Ken Tang Date: 10.JAN.2024 22:15:14

4.6 Duty Cycle

Serial Number:	2EE8-2	Test Date:	2024/1/8-2024/1/10
Test Site:	RF	Test Mode:	Transmitting
Tester:	Len Huang, Ken Tang	Test Result:	N/A

Environmental Conditions:

Temperature: (°C)	24.2-25	Relative Humidity: (%)	35-50	ATM Pressure: (kPa)	101
----------------------	---------	------------------------------	-------	------------------------	-----

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40-N	102259	2023/4/18	2024/4/17
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A

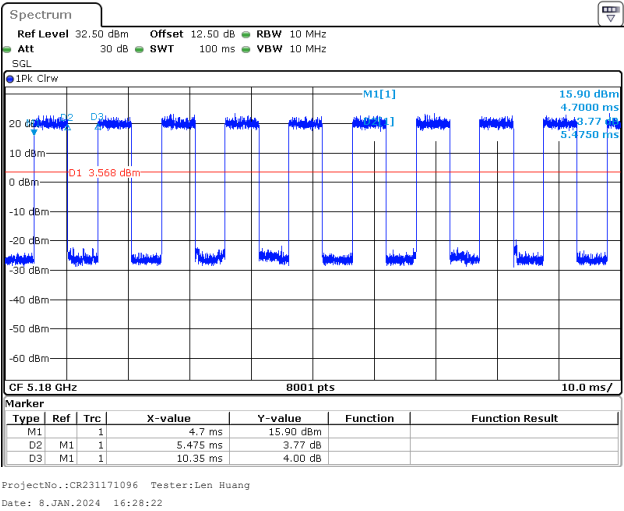
** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

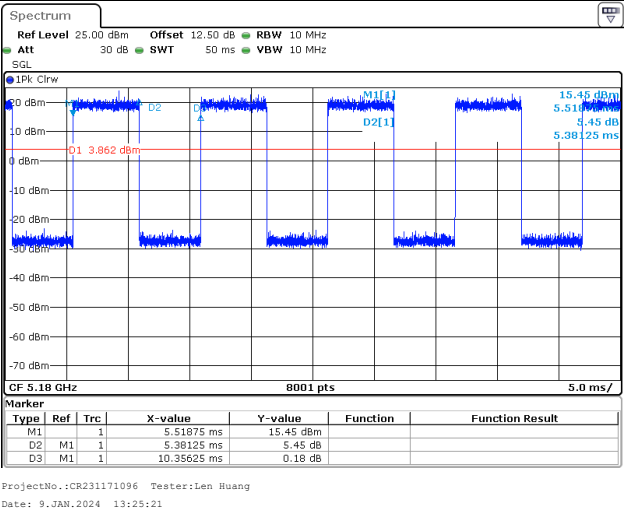
Test Modes	Ton (ms)	Ton+off (ms)	Duty cycle (%)	1/T (Hz)	Duty Factor (dB)	VBW Setting (Hz)
802.11a	5.475	10.35	52.90	183	2.77	200
802.11ac vht20	5.38	10.36	51.93	186	2.85	200
802.11ac vht40	5.15	10.35	49.76	194	3.03	200
802.11ax hew20	4.654	10.354	44.95	215	3.47	300
802.11ax hew40	4.635	10.345	44.80	216	3.49	300

Duty Cycle

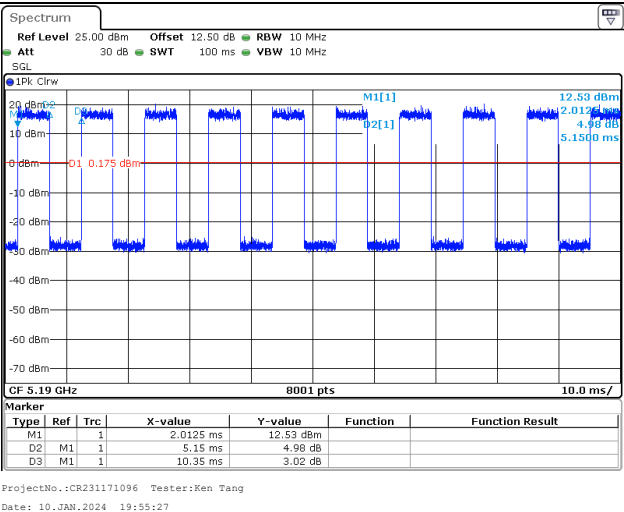
802.11a



802.11ac vht20

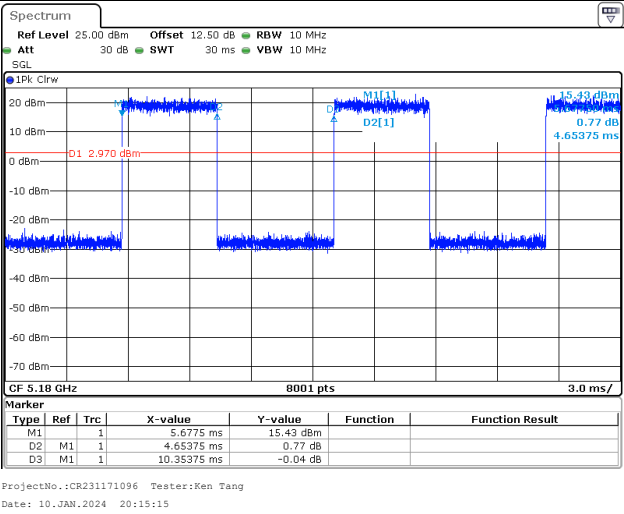


802.11ac vht40

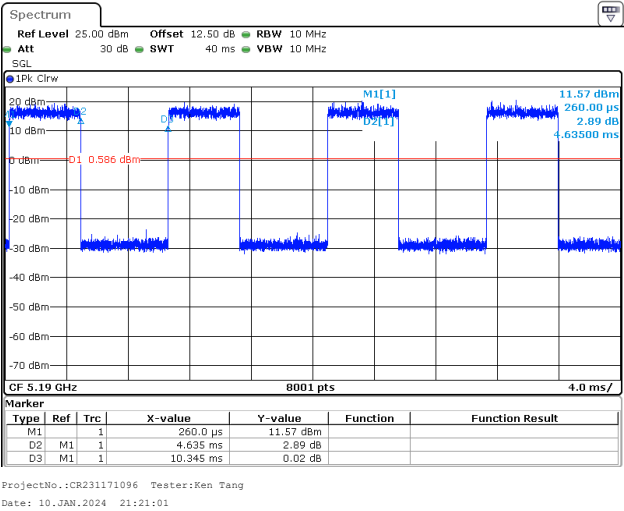


Duty Cycle

802.11ax hew20



802.11ax hew40



5. RF EXPOSURE EVALUATION

5.1 MAXIMUM PERMISSIBLE EXPOSURE (MPE)

5.1.1 Applicable Standard

According to subpart 1.1307 (b)(1), 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (Minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

5.1.2 Result

Calculated Formulary:

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Mode	Frequency (MHz)	Tune Up Conducted Power (dBm)	Antenna Gain (dBi)	Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
2.4G Wi-Fi	2412-2462	27.0	3.51	20	0.22	1.0
5G Wi-Fi	5180-5240	17.5	2.85	20	0.02	1.0
	5260-5320	17.5	2.85	20	0.02	1.0
	5500-5720	17.0	2.85	20	0.02	1.0
	5745-5825	17.0	2.85	20	0.02	1.0

Note: 1) The tune up conducted power was declared by the applicant.

2) The 2.4G Wi-Fi can't transmit at the same time with 5G Wi-Fi.

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

Result: Compliance

6. EUT PHOTOGRAPHS

Please refer to the attachment CR231171096-EXP EUT EXTERNAL PHOTOGRAPHS and CR231171096-INP EUT INTERNAL PHOTOGRAPHS.

7. TEST SETUP PHOTOGRAPHS

Please refer to the attachment CR231171096-00B-TSP TEST SETUP PHOTOGRAPHS.

===== END OF REPORT =====