

TEST REPORT

Applicant Name: Grandstream Networks, Inc.
Address: 126 Brookline Ave., 3rd Floor Boston, MA 02215, USA
Report Number: 2401T49306E-RF-00
FCC ID: YZZGWN7661E

Test Standard (s)

FCC PART 15.407

Sample Description

Product Type: In-Wall AX3000 Wi-Fi 6 Access Point
Model No.: GWN7661E
Multiple Model(s) No.: N/A
Trade Mark: GRANDSTREAM
Date Received: 2024/05/20
Issue Date: 2024/07/26

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

Prepared and Checked By:

Andy Yu

Andy Yu
RF Engineer

Approved By:

Nancy Wang

Nancy Wang
RF Supervisor

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

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2401T49306E-RF-00	Original Report	2024/07/26

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	In-Wall AX3000 Wi-Fi 6 Access Point
Tested Model	GWN7661E
Multiple Model(s)	N/A
Frequency Range	5G Wi-Fi: 5150-5250MHz;5250-5350MHz;5470-5725MHz;5725-5850MHz; 5850~5895MHz
Mode	802.11a/n20/n40/ac20/ac40/ac80/ac160/ax20/ax40/ax80/ax160
Maximum Conducted Average Output Power	5150-5250MHz: 24.74dBm 5250-5350MHz: 20.00dBm 5470-5725MHz: 19.24dBm 5725-5850MHz: 24.57dBm 5850-5895MHz: 23.58dBm
Modulation Technique	OFDM, OFDMA
TPC Function	Support
Beam-Forming	Support
Antenna Specification [#]	ANT0: 5.85dBi; ANT1: 5.22dBi; ANT2: 5.37dBi (It is provided by the applicant)
Voltage Range	DC 48V From POE
Sample serial number	2LK3-2 for Conducted and Radiated Emissions 2LK3-3 for RF Conducted Test (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	N/A

Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and E of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices. And KDB789033 D02 General U-NII Test Procedures New Rules v02r01.

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

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF Frequency		213.55 Hz(k=2, 95% level of confidence)
RF output power, conducted		0.72 dB(k=2, 95% level of confidence)
Unwanted Emission, conducted		1.75 dB(k=2, 95% level of confidence)
AC Power Lines Conducted Emissions	9kHz-150kHz	3.94dB(k=2, 95% level of confidence)
	150kHz-30MHz	3.84dB(k=2, 95% level of confidence)
Radiated Emissions	9kHz - 30MHz	3.30dB(k=2, 95% level of confidence)
	30MHz~200MHz (Horizontal)	4.48dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	4.55dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	4.85dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.05dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.35dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.44dB(k=2, 95% level of confidence)
	18GHz - 40GHz	5.16dB(k=2, 95% level of confidence)
Temperature		±1°C
Humidity		±1%
Supply voltages		±0.4%

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

Test Facility

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

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

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode, which was provided by manufacturer.

The device support 802.11a/n20/n40/ac20/ac40/ac80/ac160/ax20/ax40/ax80/ax160 modes.

For 5150-5350MHz Band, 15 channels are provided to test:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	52	5260
38	5190	54	5270
40	5200	56	5280
42	5210	58	5290
44	5220	60	5300
46	5230	62	5310
48	5240	64	5320
50	5250	/	/

5150-5250MHz Band,

For 802.11a/ac/ax20 mode: channel 36, 40, 48 were tested;

For 802.11ac/ax40 mode: channel 38, 46 were tested;

For 802.11ac/ax80 mode: channel 42 was tested.

5250-5350MHz Band,

For 802.11a/ac/ax20 mode: channel 52, 56, 64 were tested;

For 802.11ac/ax40 mode: channel 54, 62 were tested;

For 802.11ac/ax80 mode: channel 58 was tested.

Cross Channel, 802.11ac/ax160, channel 50 was tested

For 5470-5725MHz Band, 19channels are provided to testing:

Channel	Frequency(MHz)	Channel	Frequency(MHz)
100	5500	120	5600
102	5510	122	5610
104	5520	124	5620
106	5530	126	5630
108	5540	128	5640
110	5550	132	5660
112	5560	134	5670
114	5570	136	5680
116	5580	140	5700
118	5590	/	/

For 802.11a/ac20/ax20 mode: channel 100, 116, 140 were tested;

For 802.11ac40/ax40 mode: channel 102, 110, 134 were tested;

For 802.11ac80/ax80 mode, channel 106, 122 was tested.

For 802.11ac160/ax160 mode, channel 114 was tested.

For 5725-5850MHz Band, 8 channels are provided to testing:

Channel	Frequency(MHz)	Channel	Frequency(MHz)
149	5745	157	5785
151	5755	159	5795
153	5765	161	5805
155	5775	165	5825

For 802.11a/ac20/ax20 mode: channel 149, 157, 165 were tested;

For 802.11ac40/ax40 mode: channel 151, 159 were tested;

For 802.11ac80/ax80 mode, channel 155 was tested.

For 5850-5895MHz band, 5725-5850MHz & 5850-5895MHz bands span channels: 7 channels are provided to testing:

Channel	Frequency(MHz)	Channel	Frequency(MHz)
163	5815	173	5865
167	5835	175	5875
169	5845	177	5885
171	5855	/	/

For 802.11a/ac20/ax20 mode: channel 169, 173, 177 were tested;

For 802.11ac40/ax40 mode: channel 167, 175 were tested;

For 802.11ac80/ax80 mode, channel 171 was tested

For 802.11ac160/ax160 mode, channel 163 was tested.

EUT Exercise Software

“QATool_Dbg.exe”[#] software was used and power level as below. The software and power level was provided by the applicant. The device was tested with the worst case was performed as below:

5150-5250 MHz Band:							
Test Modes	Test Channels	Test Frequency (MHz)	Data rate	Power Level Setting [#]			
				ANT0	ANT1	ANT2	
802.11a	Lowest	5180	6Mbps	20.5	20.5	18	
	Middle	5200	6Mbps	20.5	20.5	19.5	
	Highest	5240	6Mbps	20.5	18.5	18.5	
802.11ac-VHT20	Lowest	5180	MCS0	19	19	19	
	Middle	5200	MCS0	19	19	19	
	Highest	5240	MCS0	19	19	19	
802.11ac-VHT40	Lowest	5190	MCS0	12	12	12	
	Highest	5230	MCS0	20.5	20.5	20.5	
802.11ac-VHT80	Middle	5210	MCS0	10	10	10	
802.11ac-VHT160	Middle	5250	MCS0	11	11	11	
802.11ax-HE20	Lowest	5180	MCS0	19	19	19	
	Middle	5200	MCS0	19	19	19	
	Highest	5240	MCS0	19	19	19	
802.11ax-HE40	Lowest	5190	MCS0	12.5	12.5	12.5	
	Highest	5230	MCS0	20.5	20.5	20.5	
802.11ax-HE80	Middle	5210	MCS0	10	10	10	
802.11ax-HE160	Middle	5250	MCS0	11.5	11.5	11.5	
5250-5350 MHz Band:							
Test Modes	Test Channels	Test Frequency (MHz)	Data rate	TPC	Power Level Setting [#]		
					ANT0	ANT1	ANT2
802.11a	Lowest	5260	6Mbps	P _H /P _L	19/13	19/13	18.5/13
	Middle	5280	6Mbps	P _H /P _L	19/13	18.5/13	18/13
	Highest	5320	6Mbps	P _H /P _L	18/12	18/12	17.5/12
802.11ac-VHT20	Lowest	5260	MCS0	P _H /P _L	13/7	13/7	13/7
	Middle	5280	MCS0	P _H /P _L	13/7	13/7	13/7
	Highest	5320	MCS0	P _H /P _L	13/6.5	13/6.5	13/6.5
802.11ac-VHT40	Lowest	5270	MCS0	P _H /P _L	15/9	15/9	15/9
	Highest	5310	MCS0	P _H /P _L	15/8.5	15/8.5	15/8.5
802.11ac-VHT80	Middle	5250	MCS0	P _H /P _L	12/7	12/7	12/7
802.11ax-HE20	Lowest	5260	MCS0	P _H /P _L	13/7	13/7	13/7
	Middle	5280	MCS0	P _H /P _L	13/7	13/7	13/7
	Highest	5320	MCS0	P _H /P _L	13/6.5	13/6.5	13/6.5
802.11ax-HE40	Lowest	5270	MCS0	P _H /P _L	15/9	15/9	15/9
	Highest	5310	MCS0	P _H /P _L	15/8.5	15/8.5	15/8.5
802.11ax-HE80	Middle	5290	MCS0	P _H /P _L	12	12/7	12

5470-5725MHz Band:							
Test Modes	Test Channels	Test Frequency (MHz)	Data rate	TPC	Power Level Setting [#]		
					ANT0	ANT1	ANT2
802.11a	Lowest	5500	6Mbps	P _H /P _L	12.5/6.5	12.5/6.5	13.5/6.5
	Middle	5580	6Mbps	P _H /P _L	13/7	13.5/7	13.5/7
	Highest	5700	6Mbps	P _H /P _L	15/9.5	15.5/9.5	15.5/9.5
802.11ac-VHT20	Lowest	5500	MCS0	P _H /P _L	13.5/6.5	13.5/6.5	13.5/6.5
	Middle	5580	MCS0	P _H /P _L	13.5/7.5	13.5/7.5	13.5/7.5
	Highest	5700	MCS0	P _H /P _L	13.5/7.5	13.5/7.5	13.5/7.5
802.11ac-VHT40	Lowest	5510	MCS0	P _H /P _L	15/7.5	15/7.5	15/7.5
	Middle	5550	MCS0	P _H /P _L	15/8.5	15/8.5	15/8.5
	Highest	5670	MCS0	P _H /P _L	15.5/8.5	15.5/8.5	15.5/8.5
802.11ac-VHT80	Lowest	5530	MCS0	P _H /P _L	16/8.5	16/8.5	16/8.5
	Highest	5610	MCS0	P _H /P _L	16/9.5	16/9.5	16/9.5
802.11ac-VHT160	Middle	5570	MCS0	P _H /P _L	16.5/9	16.5/9	16.5/9
802.11ax-HE20	Lowest	5500	MCS0	P _H /P _L	14/9.5	14/9.5	14/9.5
	Middle	5580	MCS0	P _H /P _L	14/8	14/8	14/8
	Highest	5700	MCS0	P _H /P _L	14/8	14/8	14/8
802.11ax-HE40	Lowest	5510	MCS0	P _H /P _L	15/9	15/9	15/9
	Middle	5550	MCS0	P _H /P _L	15/9	15/9	15/9
	Highest	5670	MCS0	P _H /P _L	15.5/9	15.5/9	15.5/9
802.11ax-HE80	Lowest	5530	MCS0	P _H /P _L	13/7	13/7	13/7
	Highest	5610	MCS0	P _H /P _L	16/9.5	16/9.5	16/9.5
802.11ax-HE160	Middle	5570	MCS0	P _H /P _L	15/9	15/9	15/9
5725-5850 MHz Band:							
Test Modes	Test Channels	Test Frequency (MHz)	Data rate	Power Level Setting [#]			
				ANT0	ANT1	ANT2	
802.11a	Lowest	5745	6Mbps	18	17	17	
	Middle	5785	6Mbps	20.5	16	15.5	
	Highest	5825	6Mbps	20.5	20.5	20.5	
802.11ac-VHT20	Lowest	5745	MCS0	20.5	20.5	20.5	
	Middle	5785	MCS0	20.5	20.5	20.5	
	Highest	5825	MCS0	20.5	20.5	20.5	
802.11ac-VHT40	Lowest	5755	MCS0	20.5	20.5	20.5	
	Highest	5795	MCS0	20.5	20.5	20.5	
802.11ac-VHT80	Middle	5775	MCS0	17.5	17.5	17.5	
802.11ax-HE20	Lowest	5745	MCS0	20.5	20.5	20.5	
	Middle	5785	MCS0	20.5	20.5	20.5	
	Highest	5825	MCS0	20.5	20.5	20.5	
802.11ax-HE40	Lowest	5755	MCS0	20.5	20.5	20.5	
	Highest	5795	MCS0	20.5	20.5	20.5	
802.11ax-HE80	Middle	5775	MCS0	19.5	19.5	19.5	

5850-5895MHz Band, 5725-5850MHz & 5850-5895MHz Bands span channels::

Test Modes	Test Channels	Test Frequency (MHz)	Data rate	Power Level Setting [#]		
				ANT0	ANT1	ANT2
802.11a	Lowest	5845	6Mbps	20.5	20.5	20.5
	Middle	5865	6Mbps	20.5	20.5	20.5
	Highest	5885	6Mbps	20.5	20.5	20.5
802.11ac-VHT20	Lowest	5845	MCS0	16.5	16.5	16.5
	Middle	5865	MCS0	16.5	16.5	16.5
	Highest	5885	MCS0	16.5	16.5	16.5
802.11ac-VHT40	Lowest	5835	MCS0	19	19	19
	Highest	5875	MCS0	19	19	19
802.11ac-VHT80	Middle	5855	MCS0	20.5	20.5	20.5
802.11ac-VHT160	Middle	5815	MCS0	17	17	17
802.11ax-HE20	Lowest	5845	MCS0	16.5	16.5	16.5
	Middle	5865	MCS0	16.5	16.5	16.5
	Highest	5885	MCS0	16.5	16.5	16.5
802.11ax-HE40	Lowest	5835	MCS0	19	19	19
	Highest	5875	MCS0	19	19	19
802.11ax-HE80	Middle	5855	MCS0	20.5	20.5	20.5
802.11ax-HE160	Middle	5815	MCS0	17.5	17.5	17.5

Note:

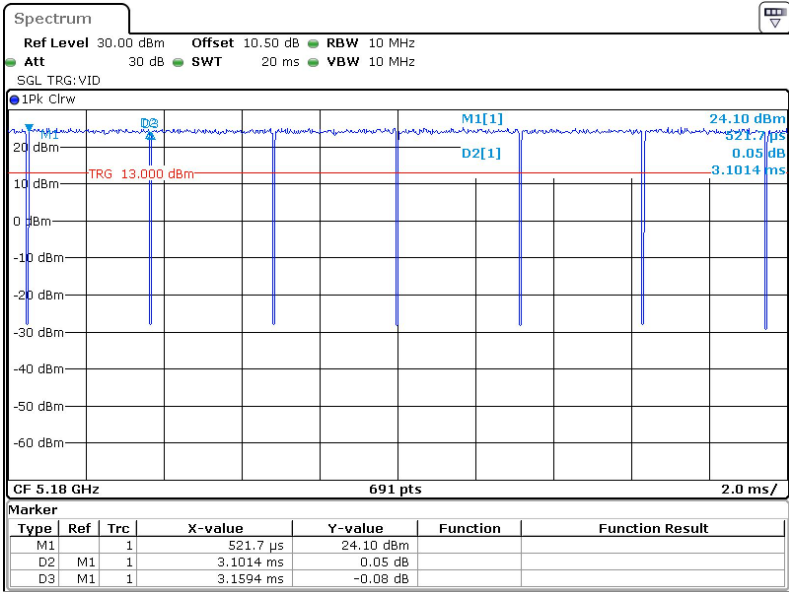
1. The worst-case data rates are determined to be as follows for each mode based upon investigation by measuring the average power, peak power and PSD across all data rates bandwidths, and modulations.
2. The device supports SISO in all modes, and MIMO 3T3R in 802.11n/ac/ax modes, per pretest, 2T2R mode was the worst mode and reported for 802.11n/ac/ax modes.
3. For 802.11n/ax modes, the device support beamforming and non-beamforming mode, all modes share the same power level setting under the same modulation. So the worst case (non-beamforming) was selected to test.
4. The n20/n40 mode was reduced test as identical parameter with ac20/ac40 mode.
5. For 802.11ax modes, the device not support partial RU mode.

Duty cycle

Test Modes	Ton (ms)	Ton+off (ms)	Duty Cycle (%)	Duty Cycle Factor (dB)	1/T (Hz)	VBW Setting (Hz)
802.11a	3.10	3.16	98.10	/	/	10
802.11ac-VHT20	4.46	4.52	98.67	/	/	10
802.11ac-VHT40	4.29	4.35	98.62	/	/	10
802.11ac-VHT80	4.29	4.34	98.85	/	/	10
802.11ac-VHT160	4.45	4.51	98.67	/	/	10
802.11ax-HE20	3.40	3.45	98.55	/	/	10
802.11ax-HE40	5.06	5.12	98.83	/	/	10
802.11ax-HE80	4.84	4.90	98.78	/	/	10
802.11ax-HE160	4.84	4.90	98.78	/	/	10

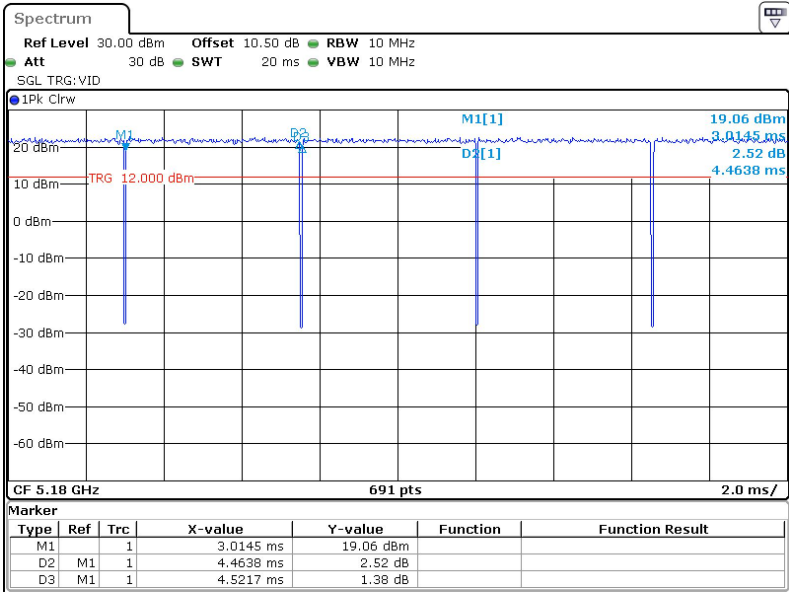
Note: Test only was performed at ANT 0.

802.11a



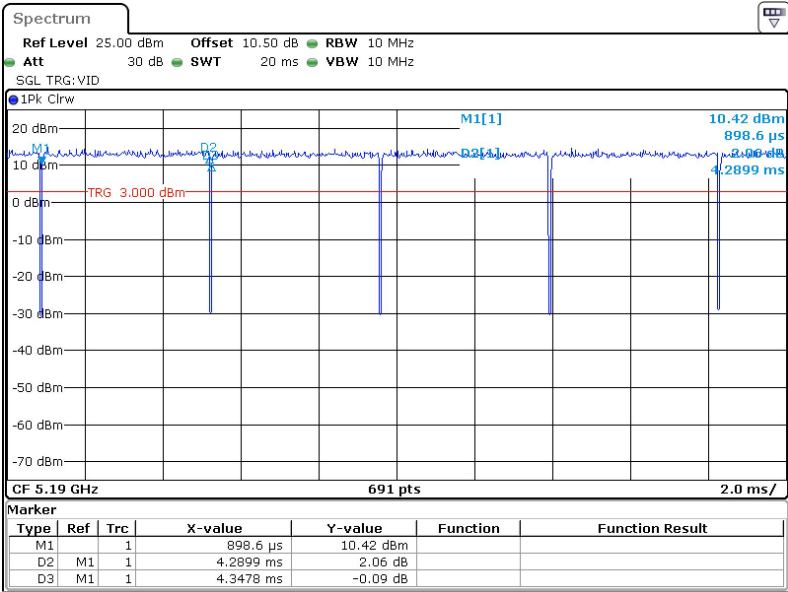
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802.11ac-VHT20



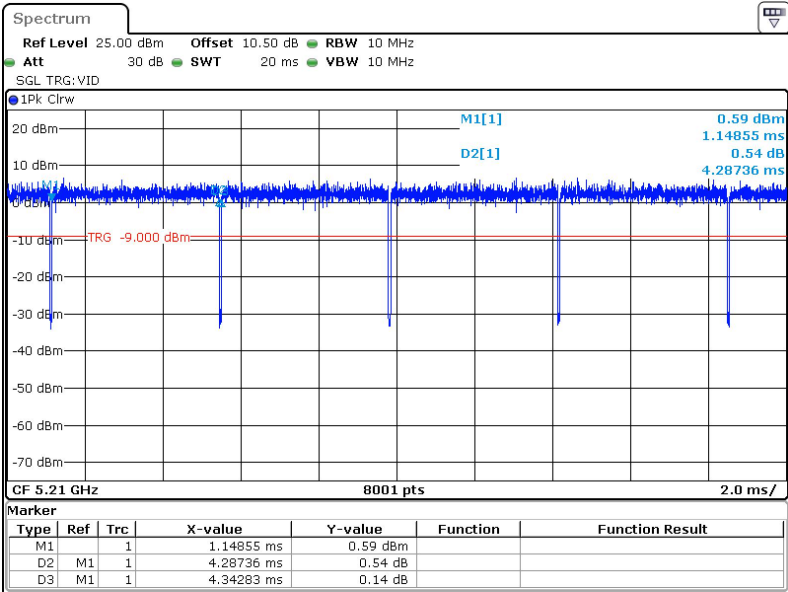
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802.11ac-VHT40



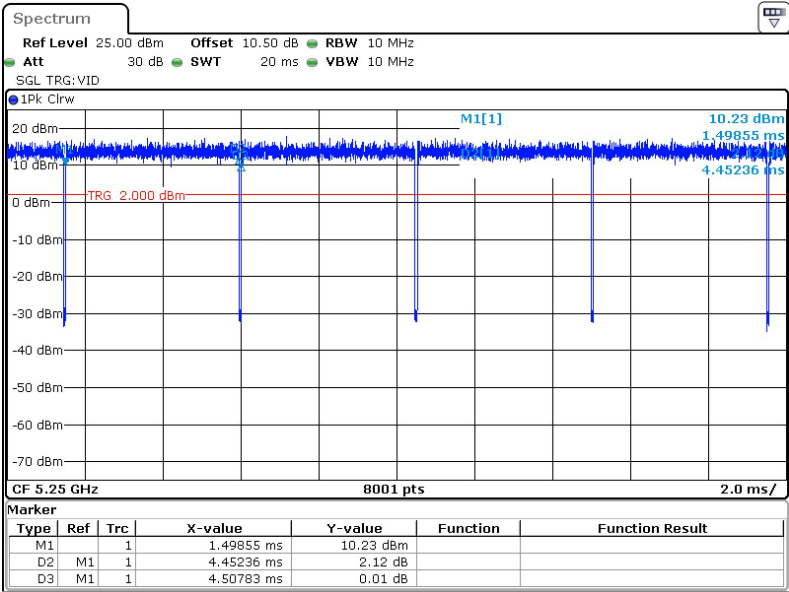
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802.11ac-VHT80



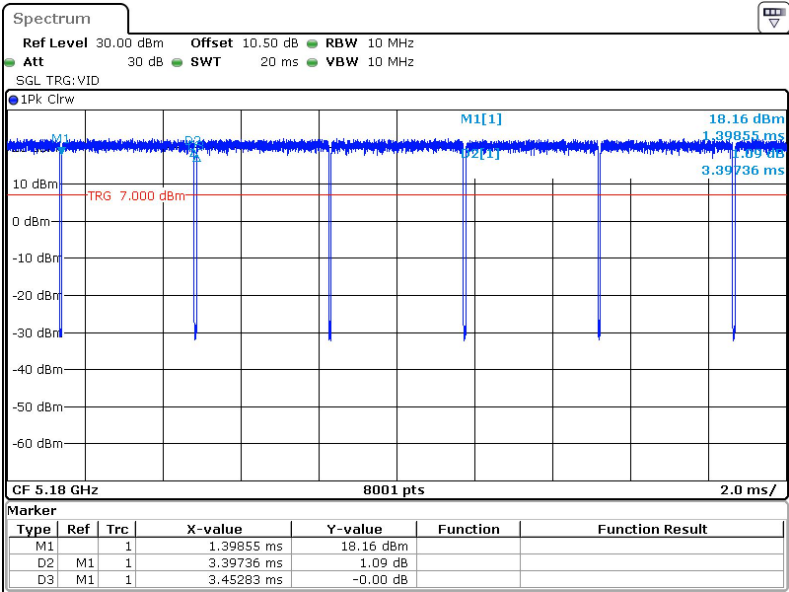
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802.11ac-VHT160



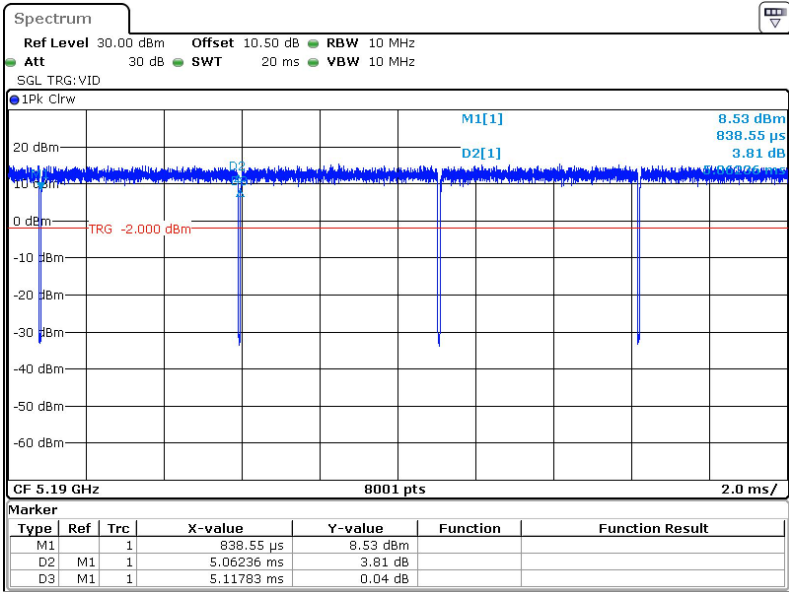
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802.11ax-HE20



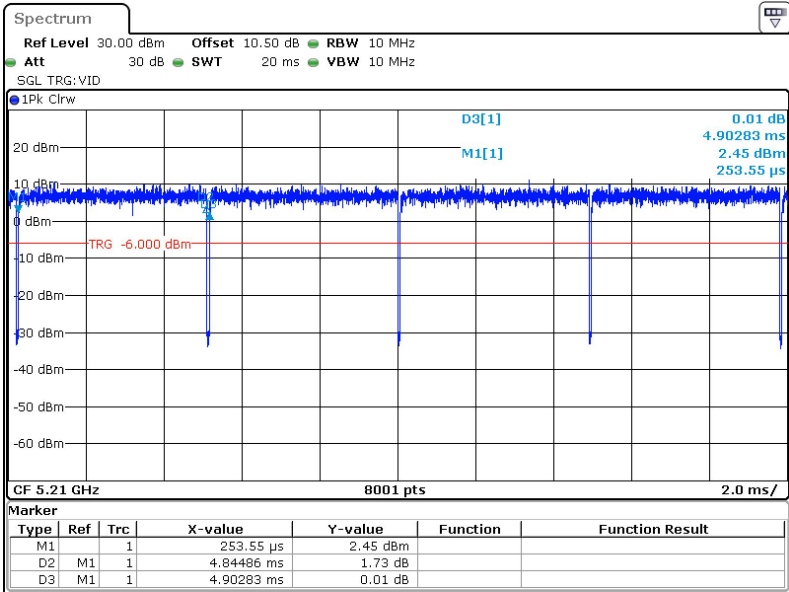
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802.11ax-HE40



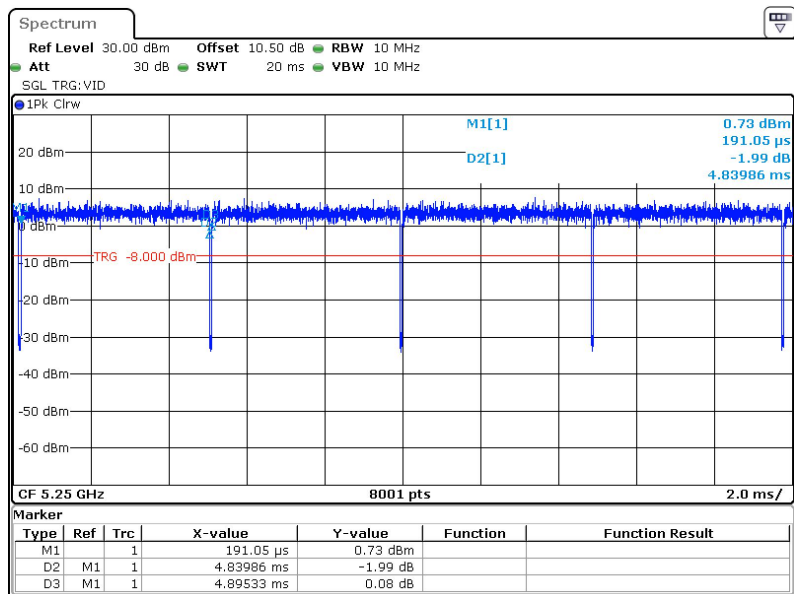
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802.11ax-HE80



ProjectNo.:2401T49306E-RF Tester:Kungfumaster Liang
Date: 27.JUN.2024 19:53:33

802.11ax-HE160



ProjectNo.:2401T49306E-RF Tester:Kungfumaster Liang
Date: 27.JUN.2024 20:09:19

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

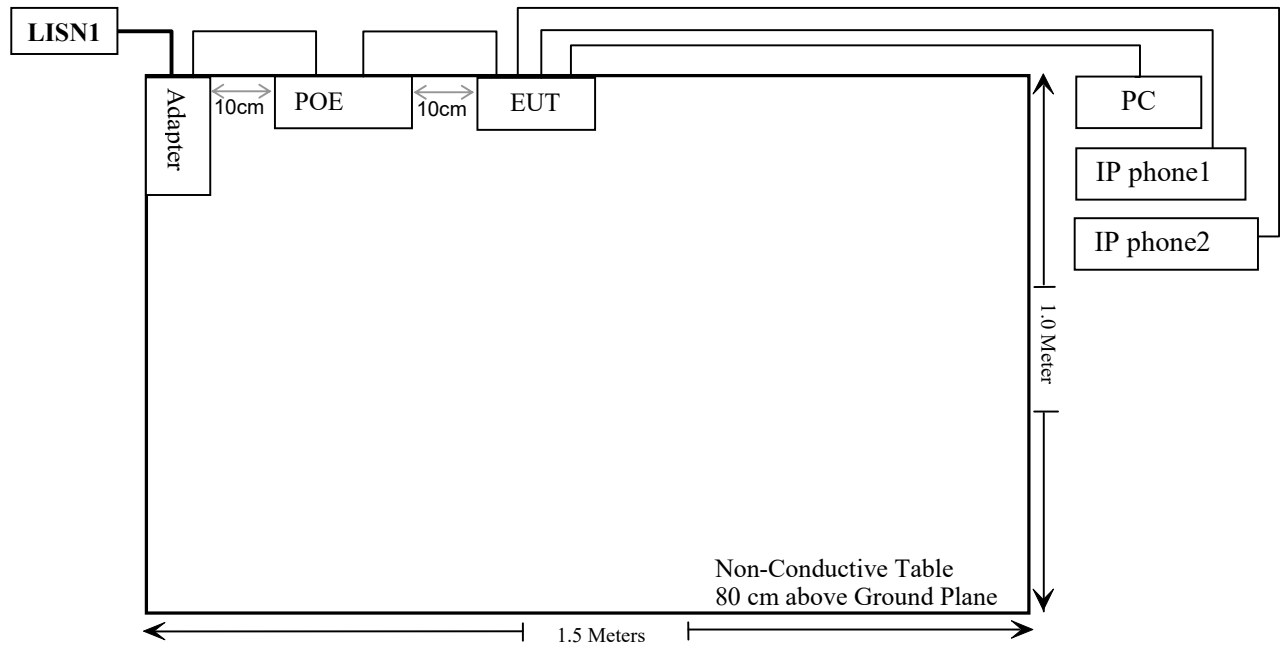
Manufacturer	Description	Model	Serial Number
DELL	PC	Latitude E7280	9RVYFH2
Grandstream	IP phone1	GXV3450	T11223323B898
Grandstream	IP phone2	GXP1625	271FVJSNB0BFDC21
TP-link	POE	ES210GP	Unknown
TP-link	Adapter	T535243-2-DT	Unknown

External I/O Cable

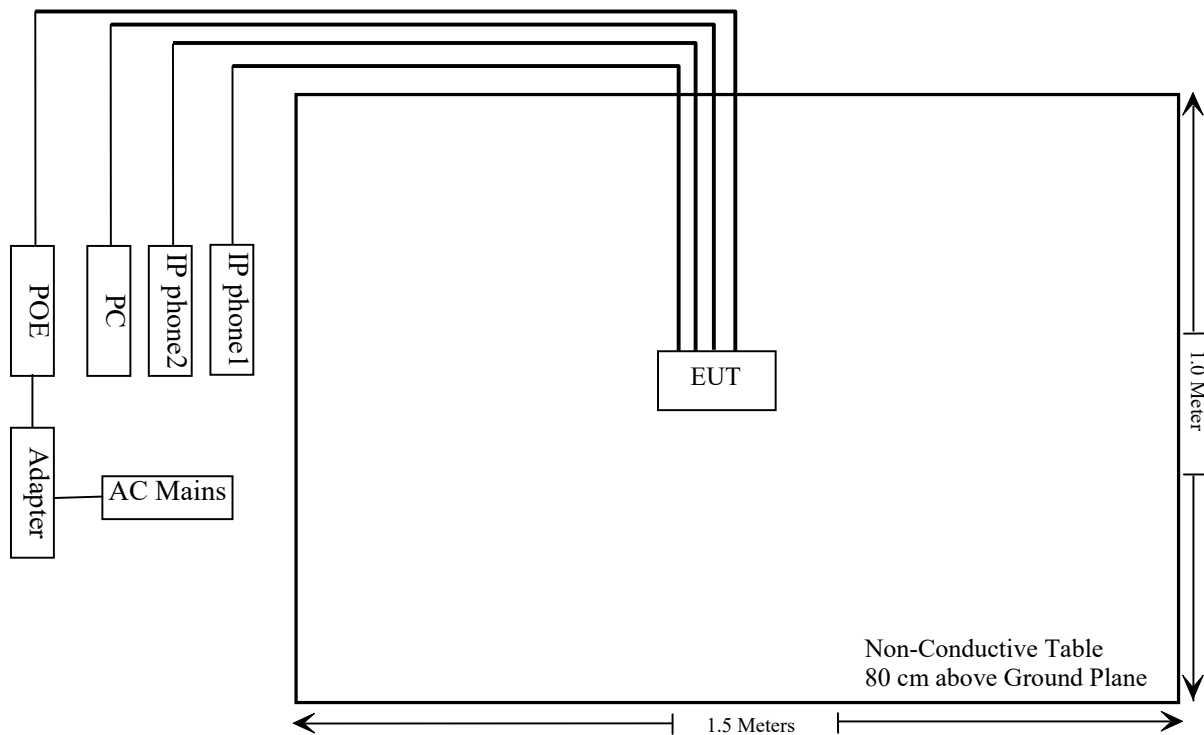
Cable Description	Length (m)	From Port	To
Un-shielded Detachable AC cable	1.4	LISN/ AC mains	Adapter
Un-shielded Un-Detachable DC cable	1.2	Adapter	POE
Un-shielded Detachable RJ45 cable	1.0	POE	EUT
Un-shielded Detachable RJ45 cable	8.0	EUT	PC
Un-shielded Detachable RJ45 cable	8.0	EUT	IP phone1
Un-shielded Detachable RJ45 cable	8.0	EUT	IP phone2

Block Diagram of Test Setup

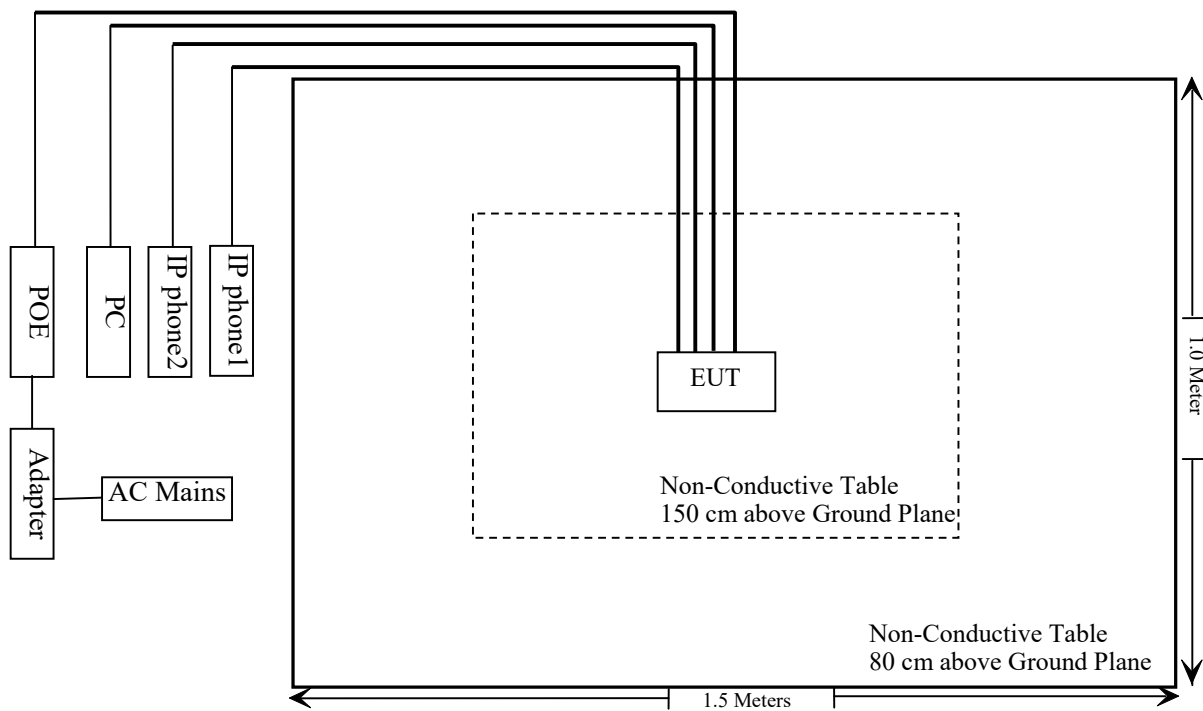
For conducted emission:



For radiated emission (Below 1GHz):



For radiated emission (Above 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310 & §2.1091	Maximum Permissible Exposure (MPE)	Compliant
§15.203	Antenna Requirement	Compliant
§15.407(b)(9)& §15.207(a)	Conducted Emissions	Compliant
§15.205& §15.209 &§15.407(b)	Undesirable Emission& Restricted Bands	Compliant
§15.407(a) (e)	26 dB Emission Bandwidth & 6dB Bandwidth	Compliant
§15.407(a)	Conducted Transmitter Output Power	Compliant
§15.407 (a)	Power Spectral Density	Compliant
§15.407 (h)	Transmit Power Control (TPC)	Compliant
§15.407 (h)	Dynamic Frequency Selection (DFS)	Compliant*

Compliant*: Please refer to the DFS report 2401T49306E-RFB.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2024/01/16	2025/01/15
Rohde & Schwarz	LISN	ENV216	101613	2024/01/16	2025/01/15
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2024/05/21	2025/05/20
Unknown	CE Cable	Unknown	UF A210B-1-0720-504504	2024/05/21	2025/05/20
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
Radiated Emissions Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/01/16	2025/01/15
Sonoma instrument	Pre-amplifier	310 N	186238	2024/05/21	2025/05/20
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber A Cable 1	N/A	2024/05/21	2025/05/20
Unknown	Cable	XH500C	J-10M-A	2024/05/21	2025/05/20
BACL	Active Loop Antenna	1313-1A	4031911	2024/05/14	2027/05/13
Unknown	Cable	2Y194	0735	2024/05/21	2025/05/20
Unknown	Cable	PNG214	1354	2024/05/21	2025/05/20
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2024/03/27	2025/03/26
COM-POWER	Pre-amplifier	PA-122	181919	2023/06/29	2024/06/28
Schwarzbeck	Horn Antenna	BBHA9120D(1201)	1143	2023/07/26	2026/07/25
Unknown	RF Cable	KMSE	0735	2023/10/08	2024/10/07
Unknown	RF Cable	UFA147	219661	2023/10/08	2024/10/07
Unknown	RF Cable	XH750A-N	J-10M	2023/10/08	2024/10/07
JD	Multiplex Switch Test Control Set	DT7220FSU	DQ77926	NCR	NCR
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
A.H.System	Pre-amplifier	PAM-1840VH	190	2023/08/02	2024/08/01
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
UTIFLEX	RF Cable	NO. 13	232308-001	2023/08/03	2024/08/02

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
R&S	spectrum analyzer	FSV40	101942	2023/12/18	2024/12/17
ANRITSU	Microwave peak power sensor	MA24418A	12622	2024/05/21	2025/05/20
MARCONI	10dB Attenuator	6534/3	2942	2023/07/04	2024/07/03
MARCONI	10dB Attenuator	6534/3	2942	2024/06/27	2025/06/26
Unknown	RF Cable	65475	01670515	2023/07/04	2024/07/03
Unknown	RF Cable	65475	01670515	2024/06/27	2025/06/26

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

FCC §1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm²)	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;

According to §1.1310 and §2.1091 RF exposure is calculated.

Result

Calculation formula:

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$ = 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);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Calculated Data:

For worst case:

Mode	Frequency (MHz)	Antenna Gain [#]		Max Tune-up Power [#]		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
2.4G Wi-Fi	2412-2462	6.85	4.84	29.5	891.25	31	0.357	1.0
5.2G Wi-Fi	5180-5240	10.62	11.53	25.0	316.23	31	0.302	1.0
5.3G Wi-Fi	5260-5320	10.62	11.53	20.5	112.20	31	0.107	1.0
5.6G Wi-Fi	5500-5700	10.62	11.53	20.0	100.00	31	0.096	1.0
5.8G Wi-Fi	5745-5825	10.62	11.53	25.0	316.23	31	0.302	1.0
5.9G Wi-Fi	5850-5895	10.62	11.53	24.0	251.19	31	0.240	1.0

Note:

- 1) The tune up conducted power and antenna gain was declared by the applicant.
- 2) For the Wi-Fi mode, the antenna gain would be the directional gain.
- 3) The 2.4G Wi-Fi and 5G Wi-Fi can transmit simultaneously.

The ratio= $MPE_{2.4G\ Wi-Fi}/limit + MPE_{5G\ Wi-Fi}/limit = 0.357/1.0 + 0.302/1.0 = 0.659 < 1.0$, simultaneous exposure is not required.

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 31cm from nearby persons.

Result: Compliant

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to 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.

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.

Antenna Connector Construction

The EUT has three internal antennas which was permanently attached, and the maximum antenna gain[#] as below table, fulfill the requirement of this section. Please refer to the EUT photos.

Antenna	Antenna Type	Antenna Gain [#]	Impedance	Frequency Range
ANT0	Dipole	5.85dBi	50Ω	5150-5895MHz
ANT1	Dipole	5.22dBi	50Ω	5150-5895MHz
ANT2	Dipole	5.37dBi	50Ω	5150-5895MHz

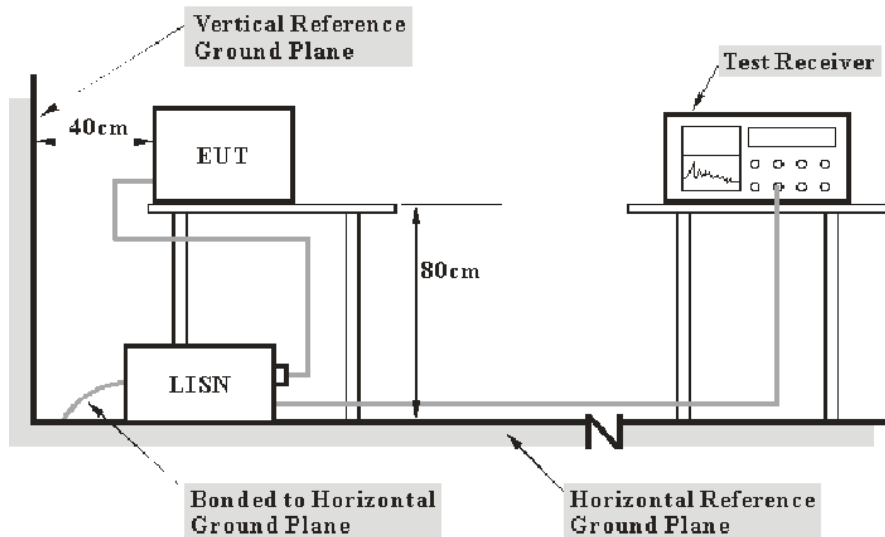
Result: Compliant

FCC §15.407 (b) (6) §15.207 (a) - CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207, §15.407(b) (6)

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.

EMI Test Receiver Setup

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

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

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

Test Procedure

During the conducted emission test, the adapter was connected to the LISN.

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

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

Factor & Over Limit Calculation

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

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

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

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

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

Test Data

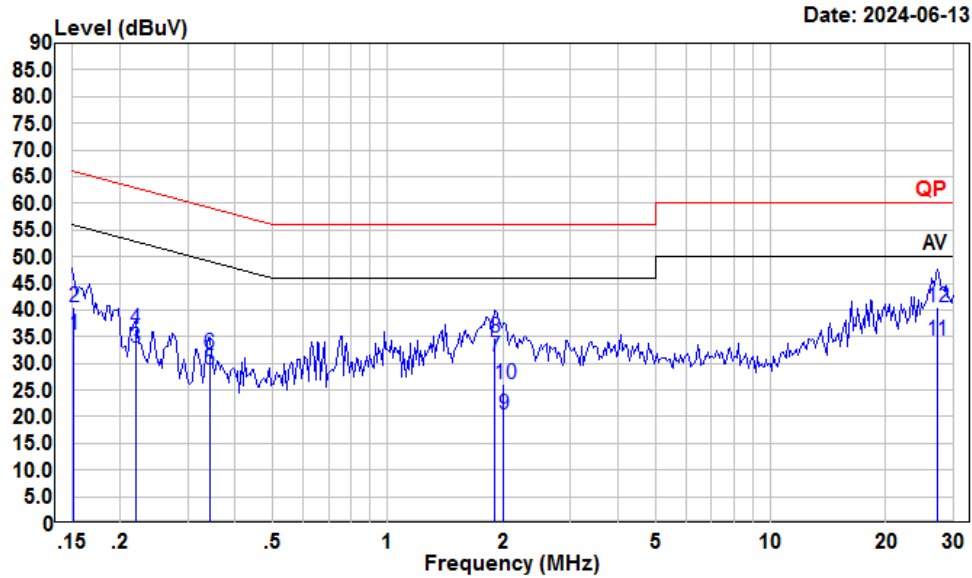
Environmental Conditions

Temperature:	25 °C
Relative Humidity:	65 %
ATM Pressure:	101 kPa

The testing was performed by Macy Shi on 2024-06-13.

EUT operation mode: Transmitting (Maximum output power mode, 802.11 ax 40, 5230MHz MIMO)

AC 120V/60 Hz, Line



Condition: Line

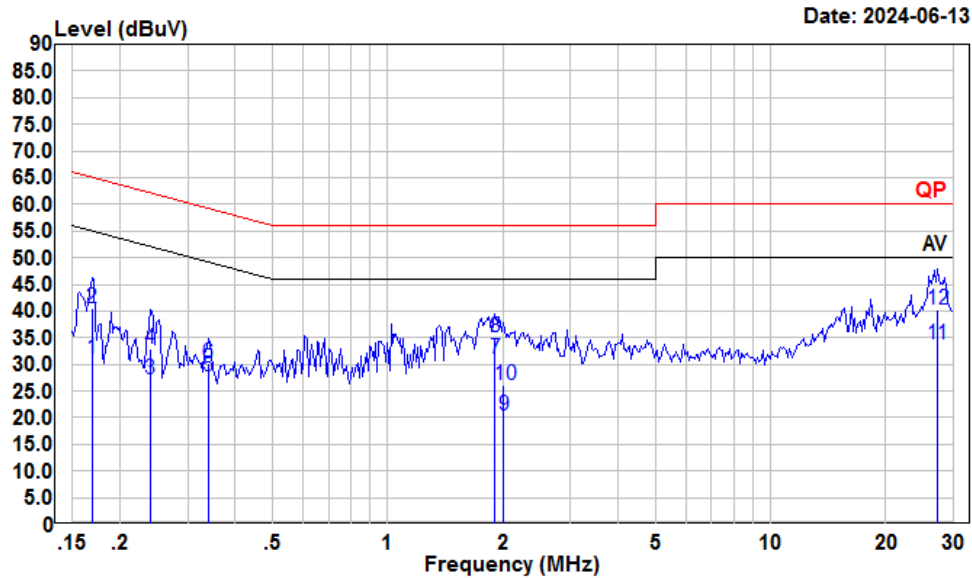
Project : 2401T49306E-RF

tester : Macy.shi

Note : 5G WIFI

	Freq	Read Level	LISN Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.15	14.81	35.34	10.40	10.13	55.91	-20.57	Average
2	0.15	19.88	40.41	10.40	10.13	65.91	-25.50	QP
3	0.22	12.42	32.89	10.38	10.09	52.83	-19.94	Average
4	0.22	16.03	36.50	10.38	10.09	62.83	-26.33	QP
5	0.34	8.46	28.86	10.28	10.12	49.13	-20.27	Average
6	0.34	11.32	31.72	10.28	10.12	59.13	-27.41	QP
7	1.91	10.84	31.34	10.32	10.18	46.00	-14.66	Average
8	1.91	14.34	34.84	10.32	10.18	56.00	-21.16	QP
9	2.01	-0.14	20.35	10.30	10.19	46.00	-25.65	Average
10	2.01	5.52	26.01	10.30	10.19	56.00	-29.99	QP
11	27.27	13.45	34.27	10.62	10.20	50.00	-15.73	Average
12	27.27	19.61	40.43	10.62	10.20	60.00	-19.57	QP

AC 120V/60 Hz, Neutral



Condition: Neutral
Project : 2401T49306E-RF
tester : Macy.shi
Note : 5G WIFI

	Freq	Read Level	LISN Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.17	10.56	31.02	10.36	10.10	55.03	-24.01	Average
2	0.17	20.09	40.55	10.36	10.10	65.03	-24.48	QP
3	0.24	6.61	27.33	10.64	10.08	52.13	-24.80	Average
4	0.24	12.18	32.90	10.64	10.08	62.13	-29.23	QP
5	0.34	6.77	27.61	10.72	10.12	49.22	-21.61	Average
6	0.34	9.44	30.28	10.72	10.12	59.22	-28.94	QP
7	1.91	10.80	31.09	10.11	10.18	46.00	-14.91	Average
8	1.91	14.93	35.22	10.11	10.18	56.00	-20.78	QP
9	2.01	0.10	20.39	10.10	10.19	46.00	-25.61	Average
10	2.01	5.73	26.02	10.10	10.19	56.00	-29.98	QP
11	27.27	13.20	33.68	10.28	10.20	50.00	-16.32	Average
12	27.27	19.68	40.16	10.28	10.20	60.00	-19.84	QP

§15.205 & §15.209 & §15.407(B) - UNDESIRABLE EMISSION

Applicable Standard

FCC §15.407 (b); §15.209; §15.205;

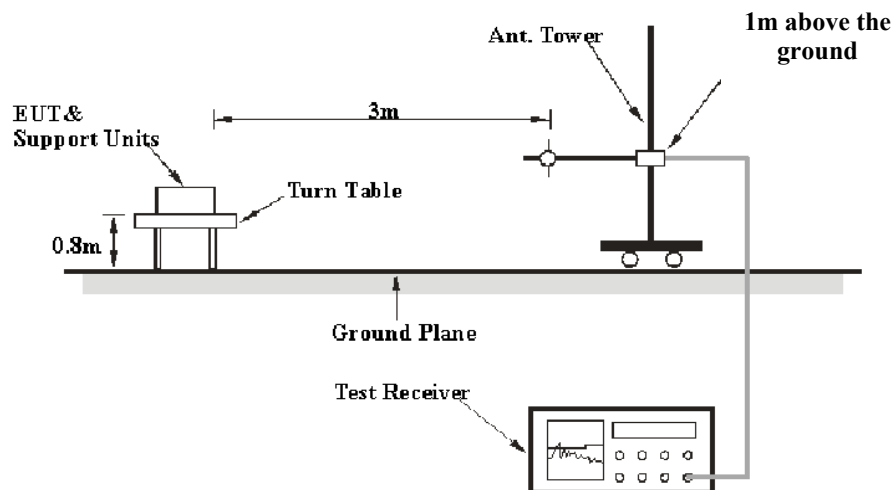
(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

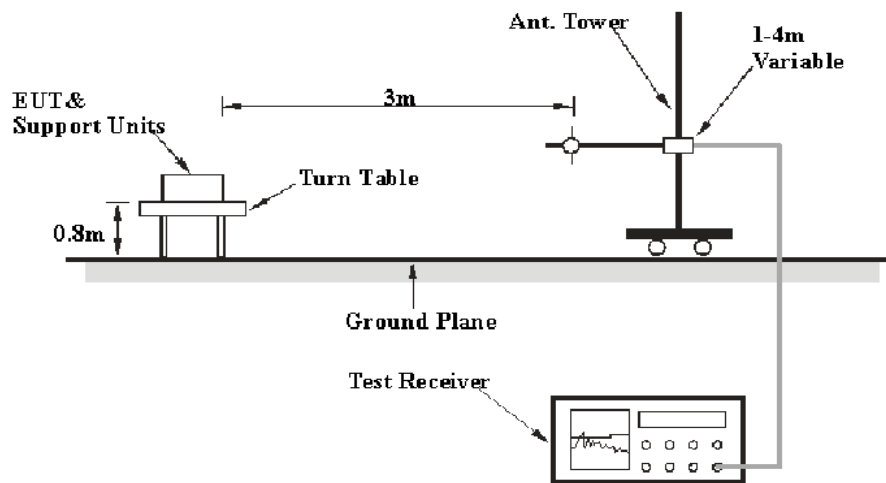
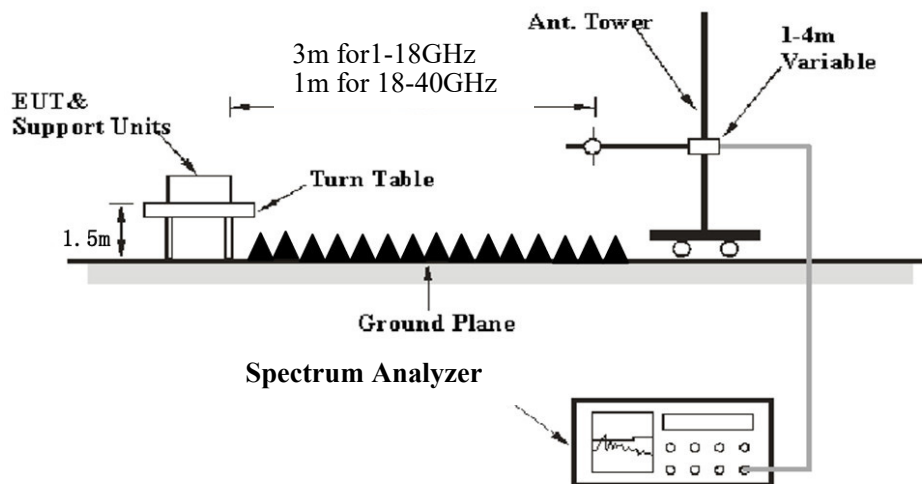
- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (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 in the 5.725-5.85 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.
- (5) For transmitters operating solely in the 5.850-5.895 GHz band or operating on a channel that spans across 5.725-5.895 GHz:
 - (i) For an indoor access point or subordinate device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of 15 dBm/MHz and shall decrease linearly to an e.i.r.p. of -7 dBm/MHz at or above 5.925 GHz.
 - (iii) For a client device or indoor access point or subordinate device, all emissions below 5.725 GHz shall not exceed an e.i.r.p. of -27 dBm/MHz at 5.65 GHz increasing linearly to 10 dBm/MHz at 5.7 GHz, and from 5.7 GHz increasing linearly to a level of 15.6 dBm/MHz at 5.72 GHz, and from 5.72 GHz increasing linearly to a level of 27 dBm/MHz at 5.725 GHz.

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

EUT Setup

9 kHz-30MHz:



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

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC 15.209 and FCC 15.407 limits.

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

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-1GHz:

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

1-40GHz:

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

Note: Ton is minimum transmission duration

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

Test Procedure

Radiated Spurious Emission

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

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

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

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

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

According to ANSI C63.10-2013,9.4: For field strength measurements made at other than the distance at which the applicable limit is specified, extrapolate the measured field strength to the field strength at the distance specified by the limit using an inverse distance correction factor (20 dB/decade of distance). In some cases, a different distance correction factor may be required;

$$E_{\text{SpecLimit}} = E_{\text{Meas}} + 20 \log \left(\frac{d_{\text{Meas}}}{d_{\text{SpecLimit}}} \right)$$

where

$E_{\text{SpecLimit}}$	is the field strength of the emission at the distance specified by the limit, in dB μ V/m
E_{Meas}	is the field strength of the emission at the measurement distance, in dB μ V/m
d_{Meas}	is the measurement distance, in m
$d_{\text{SpecLimit}}$	is the distance specified by the limit, in m

So the extrapolation factor of 1m is $20 \cdot \log(1/3) = -9.5$ dB, for 18-40GHz range, the limit of 1m distance was added by 9.5dB from limit of 3m to compared with the result measurement at 1m distance.

Factor & Over Limit/Margin Calculation

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

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

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

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

Test Data

Environmental Conditions

Temperature:	20~25.5°C
Relative Humidity:	50~58 %
ATM Pressure:	101 kPa

The testing was performed by Anson Su on 2024-06-14 for below 1GHz and Dylan Yang from 2024-05-30 to 2024-06-25 for above 1GHz.

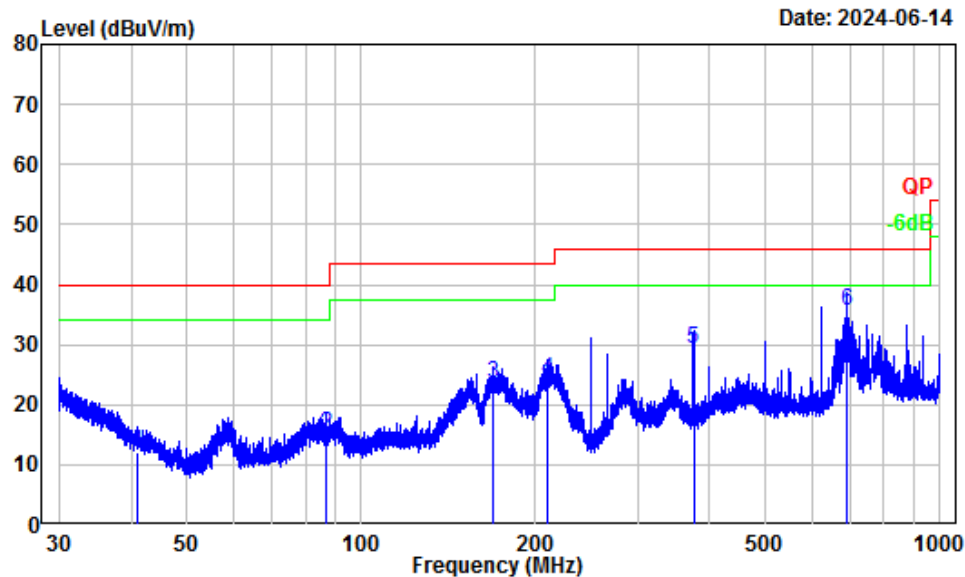
EUT operation mode: Transmitting

9 kHz-30MHz: *(Maximum output power mode, 802.11ax 40, 5230MHz MIMO)*

The amplitude of spurious emissions attenuated more than 20 dB below the limit was not recorded.

30 MHz–1 GHz: (Maximum output power mode, 802.11ax 40, 5230MHz MIMO)

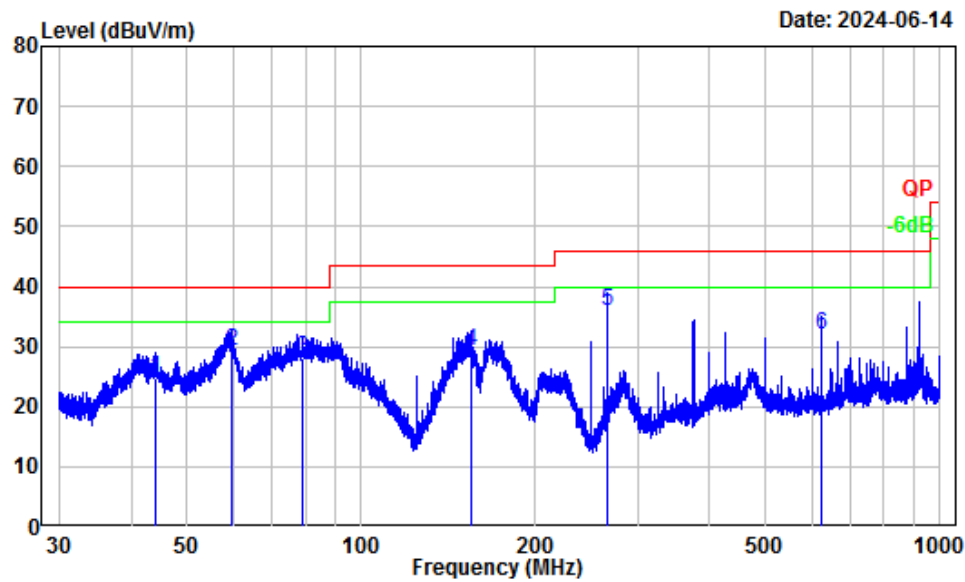
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number: 2401T49306E-RF
Test Mode : 5G WIFI
Tester : Anson Su

	Freq Factor		Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	40.93	-12.12	24.27	12.15	40.00	-27.85	QP
2	86.84	-18.13	33.21	15.08	40.00	-24.92	QP
3	168.71	-14.24	37.70	23.46	43.50	-20.04	QP
4	209.50	-13.69	37.91	24.22	43.50	-19.28	QP
5	375.12	-11.29	40.43	29.14	46.00	-16.86	QP
6	691.38	-6.26	41.94	35.68	46.00	-10.32	QP

Vertical



Site : Chamber A
Condition : 3m Vertical
Project Number: 2401T49306E-RF
Test Mode : 5G WIFI
Tester : Anson Su

Freq Factor		Read Level	Level	Limit Line	Over Limit	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	44.18	-15.39	40.21	24.82	40.00	-15.18 QP
2	59.54	-18.85	48.12	29.27	40.00	-10.73 QP
3	79.17	-18.71	46.80	28.09	40.00	-11.91 QP
4	154.68	-14.01	43.43	29.42	43.50	-14.08 QP
5	266.73	-14.34	50.12	35.78	46.00	-10.22 QP
6	625.08	-7.68	39.81	32.13	46.00	-13.87 QP

**Above 1GHz:
5150-5250 MHz:**

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a (ANT 0)							
5180MHz							
5149.53	58.67	PK	H	2.77	61.44	74	-12.56
5149.53	45.36	AV	H	2.77	48.13	54	-5.87
5149.18	57.94	PK	V	2.77	60.71	74	-13.29
5149.18	44.89	AV	V	2.77	47.66	54	-6.34
10360.00	51.54	PK	H	13.07	64.61	68.2	-3.59
10360.00	52.29	PK	V	13.07	65.36	68.2	-2.84
5200MHz							
10400.00	51.63	PK	H	13.12	64.75	68.2	-3.45
10400.00	52.30	PK	V	13.12	65.42	68.2	-2.78
5240MHz							
5366.16	55.66	PK	H	3.07	58.73	74	-15.27
5366.16	43.89	AV	H	3.07	46.96	54	-7.04
5355.65	55.24	PK	V	3.07	58.31	74	-15.69
5355.65	43.37	AV	V	3.07	46.44	54	-7.56
10480.00	53.28	PK	H	13.07	66.35	68.2	-1.85
10480.00	54.01	PK	V	13.07	67.08	68.2	-1.12
802.11a (ANT 1)							
5180MHz							
5149.69	63.14	PK	H	2.77	65.91	74	-8.09
5149.69	48.76	AV	H	2.77	51.53	54	-2.47
5149.36	61.92	PK	V	2.77	64.69	74	-9.31
5149.36	48.21	AV	V	2.77	50.98	54	-3.02
10360.00	52.45	PK	H	13.07	65.52	68.2	-2.68
10360.00	53.28	PK	V	13.07	66.35	68.2	-1.85
5200MHz							
10400.00	52.72	PK	H	13.12	65.84	68.2	-2.36
10400.00	53.69	PK	V	13.12	66.81	68.2	-1.39
5240MHz							
5360.12	55.95	PK	H	3.07	59.02	74	-14.98
5360.12	44.01	AV	H	3.07	47.08	54	-6.92
5357.45	55.52	PK	V	3.07	58.59	74	-15.41
5357.45	43.64	AV	V	3.07	46.71	54	-7.29
10480.00	52.99	PK	H	13.07	66.06	68.2	-2.14
10480.00	53.74	PK	V	13.07	66.81	68.2	-1.39

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a (ANT 2)							
5180MHz							
5149.71	61.72	PK	H	2.77	64.49	74	-9.51
5149.71	49.97	AV	H	2.77	52.74	54	-1.26
5149.54	61.52	PK	V	2.77	64.29	74	-9.71
5149.54	50.08	AV	V	2.77	52.85	54	-1.15
10360.00	50.94	PK	H	13.07	64.01	68.2	-4.19
10360.00	51.89	PK	V	13.07	64.96	68.2	-3.24
5200MHz							
10400.00	53.12	PK	H	13.12	66.24	68.2	-1.96
10400.00	53.91	PK	V	13.12	67.03	68.2	-1.17
5240MHz							
5359.95	58.57	PK	H	3.07	61.64	74	-12.36
5359.95	49.08	AV	H	3.07	52.15	54	-1.85
5356.68	57.96	PK	V	3.07	61.03	74	-12.97
5356.68	48.43	AV	V	3.07	51.50	54	-2.50
10480.00	53.00	PK	H	13.07	66.07	68.2	-2.13
10480.00	53.92	PK	V	13.07	66.99	68.2	-1.21
802.11ac20							
5180MHz							
5149.03	65.34	PK	H	2.77	68.11	74	-5.89
5149.03	49.99	AV	H	2.77	52.76	54	-1.24
5149.24	64.89	PK	V	2.77	67.66	74	-6.34
5149.24	49.67	AV	V	2.77	52.44	54	-1.56
10360.00	49.97	PK	H	13.07	63.04	68.2	-5.16
10360.00	50.88	PK	V	13.07	63.95	68.2	-4.25
5200MHz							
10400.00	51.27	PK	H	13.12	64.39	68.2	-3.81
10400.00	52.05	PK	V	13.12	65.17	68.2	-3.03
5240MHz							
5358.57	58.69	PK	H	3.07	61.76	74	-12.24
5358.57	48.85	AV	H	3.07	51.92	54	-2.08
5855.42	57.91	PK	V	4.09	62.00	74	-12.00
5855.42	48.32	AV	V	4.09	52.41	54	-1.59
10480.00	51.96	PK	H	13.07	65.03	68.2	-3.17
10480.00	53.48	PK	V	13.07	66.55	68.2	-1.65

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac40							
5190MHz							
5149.66	59.06	PK	H	2.77	61.83	74	-12.17
5149.66	50.17	AV	H	2.77	52.94	54	-1.06
5149.73	58.86	PK	V	2.77	61.63	74	-12.37
5149.73	50.07	AV	V	2.77	52.84	54	-1.16
10380.00	46.01	PK	H	13.09	59.10	68.2	-9.10
10380.00	46.27	PK	V	13.09	59.36	68.2	-8.84
5230MHz							
5350.25	63.08	PK	H	3.07	66.15	74	-7.85
5350.25	49.59	AV	H	3.07	52.66	54	-1.34
5350.64	63.91	PK	V	3.07	66.98	74	-7.02
5350.64	49.87	AV	V	3.07	52.94	54	-1.06
10460.00	50.57	PK	H	13.09	63.66	68.2	-4.54
10460.00	51.46	PK	V	13.09	64.55	68.2	-3.65
802.11ac80							
5210MHz							
5149.53	60.09	PK	H	2.77	62.86	74	-11.14
5149.53	50.19	AV	H	2.77	52.96	54	-1.04
5149.72	58.60	PK	V	2.77	61.37	74	-12.63
5149.72	49.70	AV	V	2.77	52.47	54	-1.53
5370.14	56.45	PK	H	3.07	59.52	74	-14.48
5370.14	44.29	AV	H	3.07	47.36	54	-6.64
5368.39	55.92	PK	V	3.07	58.99	74	-15.01
5368.39	43.64	AV	V	3.07	46.71	54	-7.29
10420.00	45.68	PK	H	13.12	58.80	68.2	-9.40
10420.00	45.97	PK	V	13.12	59.09	68.2	-9.11
802.11ac160							
5250MHz							
5145.69	59.69	PK	H	2.77	62.46	74	-11.54
5145.69	49.79	AV	H	2.77	52.56	54	-1.44
5144.83	59.02	PK	V	2.77	61.79	74	-12.21
5144.83	49.59	AV	V	2.77	52.36	54	-1.64
5355.01	60.67	PK	H	3.07	63.74	74	-10.26
5355.01	49.88	AV	H	3.07	52.95	54	-1.05
5353.48	59.46	PK	V	3.07	62.53	74	-11.47
5353.48	49.67	AV	V	3.07	52.74	54	-1.26
10500.00	45.79	PK	H	13.07	58.86	68.2	-9.34
10500.00	46.12	PK	V	13.07	59.19	68.2	-9.01

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE20							
5180MHz							
5149.57	63.71	PK	H	2.77	66.48	74	-7.52
5149.57	50.11	AV	H	2.77	52.88	54	-1.12
5149.38	62.60	PK	V	2.77	65.37	74	-8.63
5149.38	49.99	AV	V	2.77	52.76	54	-1.24
10360.00	49.69	PK	H	13.07	62.76	68.2	-5.44
10360.00	50.52	PK	V	13.07	63.59	68.2	-4.61
5200MHz							
10400.00	50.84	PK	H	13.12	63.96	68.2	-4.24
10400.00	51.65	PK	V	13.12	64.77	68.2	-3.43
5240MHz							
5360.59	59.28	PK	H	3.07	62.35	74	-11.65
5360.59	49.05	AV	H	3.07	52.12	54	-1.88
5358.68	58.12	PK	V	3.07	61.19	74	-12.81
5358.68	48.44	AV	V	3.07	51.51	54	-2.49
10480.00	52.78	PK	H	13.07	65.85	68.2	-2.35
10480.00	53.72	PK	V	13.07	66.79	68.2	-1.41
802.11ax-HE40							
5190MHz							
5149.53	58.54	PK	H	2.77	61.31	74	-12.69
5149.53	50.20	AV	H	2.77	52.97	54	-1.03
5149.27	57.68	PK	V	2.77	60.45	74	-13.55
5149.27	49.97	AV	V	2.77	52.74	54	-1.26
10380.00	46.12	PK	H	13.09	59.21	68.2	-8.99
10380.00	46.45	PK	V	13.09	59.54	68.2	-8.66
5230MHz							
5350.88	65.41	PK	H	3.07	68.48	74	-5.52
5350.88	49.49	AV	H	3.07	52.56	54	-1.44
5350.43	63.25	PK	V	3.07	66.32	74	-7.68
5350.43	49.59	AV	V	3.07	52.66	54	-1.34
10460.00	51.89	PK	H	13.09	64.98	68.2	-3.22
10460.00	52.78	PK	V	13.09	65.87	68.2	-2.33

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE80							
5210MHz							
5149.53	60.88	PK	H	2.77	63.65	74	-10.35
5149.53	50.12	AV	H	2.77	52.89	54	-1.11
5149.69	59.87	PK	V	2.77	62.64	74	-11.36
5149.69	50.09	AV	V	2.77	52.86	54	-1.14
5369.75	55.84	PK	H	3.07	58.91	74	-15.09
5369.75	44.52	AV	H	3.07	47.59	54	-6.41
5370.38	55.37	PK	V	3.07	58.44	74	-15.56
5370.38	43.96	AV	V	3.07	47.03	54	-6.97
10420.00	45.98	PK	H	13.12	59.10	68.2	-9.10
10420.00	46.33	PK	V	13.12	59.45	68.2	-8.75
802.11ax-HE160							
5250MHz							
5144.83	60.02	PK	H	2.77	62.79	74	-11.21
5144.83	50.16	AV	H	2.77	52.93	54	-1.07
5145.32	58.95	PK	V	2.77	61.72	74	-12.28
5145.32	49.63	AV	V	2.77	52.40	54	-1.60
5355.48	60.69	PK	H	3.07	63.76	74	-10.24
5355.48	49.91	AV	H	3.07	52.98	54	-1.02
5355.75	58.59	PK	V	3.07	61.66	74	-12.34
5355.75	49.61	AV	V	3.07	52.68	54	-1.32
10500.00	46.18	PK	H	13.07	59.25	68.2	-8.95
10500.00	46.53	PK	V	13.07	59.60	68.2	-8.60

5250-5350MHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a(ANT 0)							
5260MHz							
5148.81	56.02	PK	H	2.77	58.79	74	-15.21
5148.81	43.97	AV	H	2.77	46.74	54	-7.26
5147.32	55.39	PK	V	2.77	58.16	74	-15.84
5147.32	43.41	AV	V	2.77	46.18	54	-7.82
10520.00	53.72	PK	H	13.05	66.77	68.2	-1.43
10520.00	54.07	PK	V	13.05	67.12	68.2	-1.08
5280MHz							
10560.00	53.71	PK	H	13.02	66.73	68.2	-1.47
10560.00	54.08	PK	V	13.02	67.10	68.2	-1.10
5320MHz							
5351.67	57.29	PK	H	3.07	60.36	74	-13.64
5351.67	43.98	AV	H	3.07	47.05	54	-6.95
5350.56	56.72	PK	V	3.07	59.79	74	-14.21
5350.56	43.45	AV	V	3.07	46.52	54	-7.48
10640.00	52.00	PK	H	13.19	65.19	74	-8.81
10640.00	39.36	AV	H	13.19	52.55	54	-1.45
10640.00	53.04	PK	V	13.19	66.23	74	-7.77
10640.00	39.54	AV	V	13.19	52.73	54	-1.27
802.11a (ANT 1)							
5260MHz							
5146.74	56.15	PK	H	2.77	58.92	74	-15.08
5146.74	43.67	AV	H	2.77	46.44	54	-7.56
5148.49	55.53	PK	V	2.77	58.30	74	-15.70
5148.49	43.22	AV	V	2.77	45.99	54	-8.01
10520.00	53.56	PK	H	13.05	66.61	68.2	-1.59
10520.00	54.12	PK	V	13.05	67.17	68.2	-1.03
5280MHz							
10560.00	53.62	PK	H	13.02	66.64	68.2	-1.564
10560.00	53.70	PK	V	13.02	66.72	68.2	-1.48
5320MHz							
5350.24	58.39	PK	H	3.07	61.46	74	-12.54
5350.24	45.25	AV	H	3.07	48.32	54	-5.68
5350.57	57.86	PK	V	3.07	60.93	74	-13.07
5350.57	44.68	AV	V	3.07	47.75	54	-6.25
10640.00	52.54	PK	H	13.19	65.73	74	-8.27
10640.00	39.55	AV	H	13.19	52.74	54	-1.26
10640.00	53.27	PK	V	13.19	66.46	74	-7.54
10640.00	39.58	AV	V	13.19	52.77	54	-1.23

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a (ANT 2)							
5260MHz							
5141.06	56.91	PK	H	2.77	59.68	74	-14.32
5141.06	49.08	AV	H	2.77	51.85	54	-2.15
5140.39	56.24	PK	V	2.77	59.01	74	-14.99
5140.39	48.35	AV	V	2.77	51.12	54	-2.88
10520.00	53.18	PK	H	13.05	66.23	68.2	-1.97
10520.00	54.09	PK	V	13.05	67.14	68.2	-1.06
5280MHz							
10560.00	53.56	PK	H	13.02	66.58	68.2	-1.62
10560.00	53.77	PK	V	13.02	66.79	68.2	-1.41
5320MHz							
5351.19	59.58	PK	H	3.07	62.65	74	-11.35
5351.19	49.66	AV	H	3.07	52.73	54	-1.27
5350.86	59.78	PK	V	3.07	62.85	74	-11.15
5350.86	49.45	AV	V	3.07	52.52	54	-1.48
10640.00	52.49	PK	H	13.19	65.68	74	-8.32
10640.00	39.09	AV	H	13.19	52.28	54	-1.72
10640.00	52.67	PK	V	13.19	65.86	74	-8.14
10640.00	39.24	AV	V	13.19	52.43	54	-1.57
802.11ac-VHT20							
5260MHz							
5145.54	57.77	PK	H	2.77	60.54	74	-13.46
5145.54	49.43	AV	H	2.77	52.20	54	-1.80
5144.93	57.05	PK	V	2.77	59.82	74	-14.18
5144.93	48.64	AV	V	2.77	51.41	54	-2.59
10520.00	53.11	PK	H	13.05	66.16	68.2	-2.04
10520.00	53.94	PK	V	13.05	66.99	68.2	-1.21
5280MHz							
10560.00	53.35	PK	H	13.02	66.37	68.2	-1.83
10560.00	53.47	PK	V	13.02	66.49	68.2	-1.71
5320MHz							
5350.25	63.05	PK	H	3.07	66.12	74	-7.88
5350.25	49.48	AV	H	3.07	52.55	54	-1.45
5350.69	61.72	PK	V	3.07	64.79	74	-9.21
5350.69	49.29	AV	V	3.07	52.36	54	-1.64
10640.00	52.05	PK	H	13.19	65.24	74	-8.76
10640.00	39.36	AV	H	13.19	52.55	54	-1.45
10640.00	53.20	PK	V	13.19	66.39	74	-7.61
10640.00	39.63	AV	V	13.19	52.82	54	-1.18

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT40							
5270MHz							
5149.59	57.62	PK	H	2.77	60.39	74	-13.61
5149.59	50.13	AV	H	2.77	52.90	54	-1.10
5149.24	56.75	PK	V	2.77	59.52	74	-14.48
5149.24	49.27	AV	V	2.77	52.04	54	-1.96
10540.00	52.78	PK	H	13.03	65.81	68.2	-2.39
10540.00	53.62	PK	V	13.03	66.65	68.2	-1.55
5310MHz							
5350.39	61.37	PK	H	3.07	64.44	74	-9.56
5350.39	49.86	AV	H	3.07	52.93	54	-1.07
5350.66	61.09	PK	V	3.07	64.16	74	-9.84
5350.66	49.42	AV	V	3.07	52.49	54	-1.51
10620.00	47.35	PK	H	13.09	60.44	74	-13.56
10620.00	35.52	AV	H	13.09	48.61	54	-5.39
10620.00	48.04	PK	V	13.09	61.13	74	-12.87
10620.00	36.13	AV	V	13.09	49.22	54	-4.78
802.11ac-VHT80							
5290MHz							
5063.93	55.75	PK	H	2.97	58.72	74	-15.28
5063.93	45.44	AV	H	2.97	48.41	54	-5.59
5065.45	55.36	PK	V	2.97	58.33	74	-15.67
5065.45	44.89	AV	V	2.97	47.86	54	-6.14
5350.24	62.05	PK	H	3.07	65.12	74	-8.88
5350.24	49.57	AV	H	3.07	52.64	54	-1.36
5350.95	61.24	PK	V	3.07	64.31	74	-9.69
5350.95	49.72	AV	V	3.07	52.79	54	-1.21
10580.00	46.18	PK	H	13.00	59.18	68.2	-9.02
10580.00	46.57	PK	V	13.00	59.57	68.2	-8.63

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE20							
5260MHz							
5140.52	57.53	PK	H	2.77	60.30	74	-13.70
5140.52	49.64	AV	H	2.77	52.41	54	-1.59
5140.89	56.78	PK	V	2.77	59.55	74	-14.45
5140.89	48.85	AV	V	2.77	51.62	54	-2.38
10520.00	52.48	PK	H	13.05	65.53	68.2	-2.67
10520.00	53.50	PK	V	13.05	66.55	68.2	-1.65
5280MHz							
10560.00	53.42	PK	H	13.02	66.44	68.2	-1.76
10560.00	53.95	PK	V	13.02	66.97	68.2	-1.23
5320MHz							
5350.79	64.14	PK	H	3.07	67.21	74	-6.79
5350.79	49.39	AV	H	3.07	52.46	54	-1.54
5351.14	64.01	PK	V	3.07	67.08	74	-6.92
5351.14	49.66	AV	V	3.07	52.73	54	-1.27
10640.00	53.29	PK	H	13.19	66.48	74	-7.52
10640.00	39.60	AV	H	13.19	52.79	54	-1.21
10640.00.	53.68	PK	V	13.19	66.87	74	-7.13
10640.00	39.67	AV	V	13.19	52.86	54	-1.14
802.11ax-HE40							
5270MHz							
5148.59	61.54	PK	H	2.77	64.31	74	-9.69
5148.59	50.16	AV	H	2.77	52.93	54	-1.07
5148.94	60.37	PK	V	2.77	63.14	74	-10.86
5148.94	49.41	AV	V	2.77	52.18	54	-1.82
10540	52.89	PK	H	13.03	65.92	68.2	-2.28
10540	53.92	PK	V	13.03	66.95	68.2	-1.25
5310MHz							
5350.24	62.89	PK	H	3.07	65.96	74	-8.04
5350.24	49.67	AV	H	3.07	52.74	54	-1.26
5350.45	62.04	PK	V	3.07	65.11	74	-8.89
5350.45	49.89	AV	V	3.07	52.96	54	-1.04
10620.00	47.76	PK	H	13.09	60.85	74	-13.15
10620.00	35.42	AV	H	13.09	48.51	54	-5.49
10620.00	48.57	PK	V	13.09	61.66	74	-12.34
10620.00	36.15	AV	V	13.09	49.24	54	-4.76

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE80							
5290MHz							
5068.48	55.97	PK	H	2.97	58.94	74	-15.06
5068.48	45.69	AV	H	2.97	48.66	54	-5.34
5065.35	55.32	PK	V	2.97	58.29	74	-15.71
5065.35	44.85	AV	V	2.97	47.82	54	-6.18
5350.78	62.28	PK	H	3.07	65.35	74	-8.65
5350.78	49.75	AV	H	3.07	52.82	54	-1.18
5350.53	61.42	PK	V	3.07	64.49	74	-9.51
5350.53	49.83	AV	V	3.07	52.90	54	-1.10
10580.00	46.57	PK	H	13.00	59.57	68.2	-8.63
10580.00	46.84	PK	V	13.00	59.84	68.2	-8.36

5470-5725MHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a(ANT 0)							
5500MHz							
5460.00	55.07	PK	H	3.59	58.66	74	-15.34
5460.00	44.27	AV	H	3.59	47.86	54	-6.14
5460.00	53.32	PK	V	3.59	56.91	74	-17.09
5460.00	42.87	AV	V	3.59	46.46	54	-7.54
5469.99	63.33	PK	H	3.69	67.02	68.2	-1.18
5469.09	55.62	PK	V	3.69	59.31	68.2	-8.89
11000.00	48.75	PK	H	13.98	62.73	74	-11.27
11000.00	35.62	AV	H	13.98	49.60	54	-4.40
11000.00	52.88	PK	V	13.98	66.86	74	-7.14
11000.00	38.78	AV	V	13.98	52.76	54	-1.24
5580MHz							
11160.00	47.85	PK	H	13.38	61.23	74	-12.77
11160.00	33.68	PK	H	13.38	47.06	54	-6.94
11160.00	53.51	PK	V	13.38	66.89	74	-7.11
11160.00	39.26	PK	V	13.38	52.64	54	-1.36
5700MHz							
5731.79	53.31	PK	H	4.19	57.50	68.2	-10.70
5737.24	53.07	PK	V	4.19	57.26	68.2	-10.94
11400.00	46.75	PK	H	13.48	60.23	74	-13.77
11400.00	33.65	AV	H	13.48	47.13	54	-6.87
11400.00	51.87	PK	V	13.48	65.35	74	-8.65
11400.00	39.26	AV	V	13.48	52.74	54	-1.26

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a (ANT 1)							
5500MHz							
5460.00	53.11	PK	H	3.59	56.70	74	-17.30
5460.00	42.01	AV	H	3.59	45.60	54	-8.40
5460.00	52.67	PK	V	3.59	56.26	74	-17.74
5460.00	41.26	AV	V	3.59	44.85	54	-9.15
5466.94	53.35	PK	H	3.59	56.94	68.2	-11.26
5468.36	52.56	PK	V	3.69	56.25	68.2	-11.95
11000.00	46.59	PK	H	13.98	60.57	74	-13.43
11000.00	35.62	AV	H	13.98	49.60	54	-4.40
11000.00	50.80	PK	V	13.98	64.78	74	-9.22
11000.00	38.86	AV	V	13.98	52.84	54	-1.16
5580MHz							
11160.00	47.62	PK	H	13.38	61.00	74	-13.00
11160.00	34.51	AV	H	13.38	47.89	54	-6.11
11160.00	51.97	PK	V	13.38	65.35	74	-8.65
11160.00	39.31	AV	V	13.38	52.69	54	-1.31
5700MHz							
5727.98	54.43	PK	H	4.09	58.52	68.2	-9.68
5740.18	53.21	PK	V	4.19	57.40	68.2	-10.80
11400.00	47.89	PK	H	13.48	61.37	74	-12.63
11400.00	35.46	AV	H	13.48	48.94	54	-5.06
11400.00	51.87	PK	V	13.48	65.35	74	-8.65
11400.00	39.39	AV	V	13.48	52.87	54	-1.13

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a (ANT 2)							
5500MHz							
5460.00	87.25	PK	H	3.59	90.84	74	16.84
5460.00	49.00	AV	H	3.59	52.59	54	-1.41
5460.00	54.31	PK	V	3.59	57.90	74	-16.10
5460.00	48.69	AV	V	3.59	52.28	54	-1.72
5460.46	55.55	PK	H	3.59	59.14	68.2	-9.06
5460.25	52.78	PK	V	3.59	56.37	68.2	-11.83
11000.00	48.67	PK	H	13.98	62.65	74	-11.35
11000.00	36.43	AV	H	13.98	50.41	54	-3.59
11000.00	51.06	PK	V	13.98	65.04	74	-8.96
11000.00	38.66	AV	V	13.98	52.64	54	-1.36
5580MHz							
11160.00	50.07	PK	H	13.38	63.45	74	-10.55
11160.00	35.12	AV	H	13.38	48.50	54	-5.50
11160.00	51.73	PK	V	13.38	65.11	74	-8.89
11160.00	39.29	AV	V	13.38	52.67	54	-1.33
5700MHz							
5725.07	59.05	PK	H	4.09	63.14	68.2	-5.06
5726.84	53.26	PK	V	4.09	57.35	68.2	-10.85
11400.00	49.86	PK	H	13.48	63.34	74	-10.66
11400.00	35.84	AV	H	13.48	49.32	54	-4.68
11400.00	53.06	PK	V	13.48	66.54	74	-7.46
11400.00	39.34	AV	V	13.48	52.82	54	-1.18

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT20							
5500MHz							
5460.00	55.61	PK	H	3.59	59.20	74	-14.80
5460.00	46.73	AV	H	3.59	50.32	54	-3.68
5460.00	54.17	PK	V	3.59	57.76	74	-16.24
5460.00	45.34	AV	V	3.59	48.93	54	-5.07
5460.46	55.93	PK	H	3.59	59.52	68.2	-8.68
5462.21	52.94	PK	V	3.59	56.53	68.2	-11.67
11000.00	47.68	PK	H	13.98	61.66	74	-12.34
11000.00	35.77	AV	H	13.98	49.75	54	-4.25
11000.00	51.83	PK	V	13.98	65.81	74	-8.19
11000.00	38.77	AV	V	13.98	52.75	54	-1.25
5580MHz							
11160.00	47.65	PK	H	13.38	61.03	74	-12.97
11160.00	34.29	AV	H	13.38	47.67	54	-6.33
11160.00	52.35	PK	V	13.38	65.73	74	-8.27
11160.00	39.52	AV	V	13.38	52.90	54	-1.10
5700MHz							
5726.87	62.33	PK	H	4.09	66.42	68.2	-1.78
5740.55	53.17	PK	V	4.19	57.36	68.2	-10.84
11400.00	48.69	PK	H	13.48	62.17	74	-11.83
11400.00	35.33	AV	H	13.48	48.81	54	-5.19
11400.00	52.28	PK	V	13.48	65.76	74	-8.24
11400.00	39.20	AV	V	13.48	52.68	54	-1.32

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT40							
5510MHz							
5460.00	59.61	PK	H	3.59	63.20	74	-10.80
5460.00	44.26	AV	H	3.59	47.85	54	-6.15
5460.00	58.64	PK	V	3.59	62.23	74	-11.77
5460.00	43.14	AV	V	3.59	46.73	54	-7.27
5469.89	60.49	PK	H	3.69	64.18	68.2	-4.02
5469.71	53.75	PK	V	3.69	57.44	68.2	-10.76
11020.00	48.59	PK	H	13.98	62.57	74	-11.43
11020.00	36.74	AV	H	13.98	50.72	54	-3.28
11020.00	51.93	PK	V	13.98	65.91	74	-8.09
11020.00	38.42	AV	V	13.98	52.40	54	-1.60
5550MHz							
11100.00	47.68	PK	H	13.38	61.06	74	-12.94
11100.00	36.11	AV	H	13.38	49.49	54	-4.51
11100.00	52.18	PK	V	13.38	65.56	74	-8.44
11100.00	39.50	AV	V	13.38	52.88	54	-1.12
5670MHz							
5731.07	60.41	PK	H	4.09	64.50	68.2	-3.70
5728.92	53.83	PK	V	4.09	57.92	68.2	-10.28
11340.00	46.84	PK	H	13.48	60.32	74	-13.68
11340.00	34.52	AV	H	13.48	48.00	54	-6.00
11340.00	52.52	PK	V	13.48	66.00	74	-8.00
11340.00	39.07	AV	V	13.48	52.55	54	-1.45

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT80							
5530MHz							
5460.00	62.80	PK	H	3.59	66.39	74	-7.61
5460.00	49.26	AV	H	3.59	52.85	54	-1.15
5460.00	63.12	PK	V	3.59	66.71	74	-7.29
5460.00	48.46	AV	V	3.59	52.05	54	-1.95
5469.46	63.37	PK	H	3.69	67.06	68.2	-1.14
5466.41	57.09	PK	V	3.59	60.68	68.2	-7.52
5744.31	61.12	PK	H	3.52	64.64	68.2	-3.56
5744.31	54.33	PK	V	3.52	57.85	68.2	-10.35
11060.00	46.78	PK	H	13.98	60.76	74	-13.24
11060.00	35.26	AV	H	13.98	49.24	54	-4.76
11060.00	51.61	PK	V	13.98	65.59	74	-8.41
11060.00	38.43	AV	V	13.98	52.41	54	-1.59
5610MHz							
5731.55	62.49	PK	H	4.19	66.68	68.2	-1.52
5732.27	55.06	PK	V	4.19	59.25	68.2	-8.95
11220.00	47.63	PK	H	13.38	61.01	74	-12.99
11220.00	34.38	AV	H	13.38	47.76	54	-6.24
11220.00	51.23	PK	V	13.38	64.61	74	-9.39
11220.00	38.96	AV	V	13.38	52.34	54	-1.66

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/AV					
802.11ac-VHT160							
5570MHz							
5460.00	57.76	PK	H	3.59	61.35	74	-12.65
5460.00	49.06	AV	H	3.59	52.65	54	-1.35
5460.00	58.38	PK	V	3.59	61.97	74	-12.03
5460.00	48.17	AV	V	3.59	51.76	54	-2.24
5464.16	62.87	PK	H	3.59	66.46	68.2	-1.74
5466.43	56.05	PK	V	3.59	59.64	68.2	-8.56
5726.69	60.91	PK	H	4.09	65.00	68.2	-3.20
5736.97	55.83	PK	V	4.19	60.02	68.2	-8.18
11140.00	45.27	PK	H	13.38	58.65	74	-15.35
11140.00	33.39	AV	H	13.38	46.77	54	-7.23
11140.00	45.82	PK	V	13.38	59.20	74	-14.80
11140.00	33.82	AV	V	13.38	47.20	54	-6.80

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE20							
5500MHz							
5460.00	57.77	PK	H	3.59	61.36	74	-12.64
5460.00	49.20	AV	H	3.59	52.79	54	-1.21
5460.00	58.17	PK	V	3.59	61.76	74	-12.24
5460.00	48.21	AV	V	3.59	51.80	54	-2.20
5460.21	59.15	PK	H	3.59	62.74	68.2	-5.46
5468.61	55.15	PK	V	3.69	58.84	68.2	-9.36
11000.00	48.52	PK	H	13.98	62.50	74	-11.50
11000.00	34.83	AV	H	13.98	48.81	54	-5.19
11000.00	51.23	PK	V	13.98	65.21	74	-8.79
11000.00	37.62	AV	V	13.98	51.60	54	-2.40
5580MHz							
11160.00	50.29	PK	H	13.38	63.67	74	-10.33
11160.00	36.52	AV	H	13.38	49.90	54	-4.10
11160.00	53.08	PK	V	13.38	66.46	74	-7.54
11160.00	38.77	AV	V	13.38	52.15	54	-1.85
5700MHz							
5726.48	62.56	PK	H	4.09	66.65	68.2	-1.55
5725.04	55.14	PK	V	4.09	59.23	68.2	-8.97
11400.00	49.75	PK	H	13.48	63.23	74	-10.77
11400.00	36.63	AV	H	13.48	50.11	54	-3.89
11400.00	51.16	PK	V	13.48	64.64	74	-9.36
11400.00	38.91	AV	V	13.48	52.39	54	-1.61

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE40							
5510MHz							
5460.00	59.31	PK	H	3.59	62.90	74	-11.10
5460.00	45.64	AV	H	3.59	49.23	54	-4.77
5460.00	58.65	PK	V	3.59	62.24	74	-11.76
5460.00	44.26	AV	V	3.59	47.85	54	-6.15
5467.96	62.73	PK	H	3.59	66.32	68.2	-1.88
5467.98	55.03	PK	V	3.59	58.62	68.2	-9.58
11020.00	46.77	PK	H	13.98	60.75	74	-13.25
11020.00	34.92	AV	H	13.98	48.90	54	-5.10
11020.00	50.09	PK	V	13.98	64.07	74	-9.93
11020.00	38.01	AV	V	13.98	51.99	54	-2.01
5550MHz							
11100.00	49.27	PK	H	13.38	62.65	74	-11.35
11100.00	36.72	AV	H	13.38	50.10	54	-3.90
11100.00	51.08	PK	V	13.38	64.46	74	-9.54
11100.00	39.25	AV	V	13.38	52.63	54	-1.37
5670MHz							
5725.31	62.55	PK	H	4.09	66.64	68.2	-1.56
5735.34	56.27	PK	V	4.19	60.46	68.2	-7.74
11340.00	47.61	PK	H	13.48	61.09	74	-12.91
11340.00	35.29	AV	H	13.48	48.77	54	-5.23
11340.00	50.87	PK	V	13.48	64.35	74	-9.65
11340.00	38.21	AV	V	13.48	51.69	54	-2.31

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE80							
5530MHz							
5460.00	58.84	PK	H	3.59	62.43	74	-11.57
5460.00	48.45	AV	H	3.59	52.04	54	-1.96
5460.00	57.68	PK	V	3.59	61.27	74	-12.73
5460.00	47.32	AV	V	3.59	50.91	54	-3.09
5466.15	62.84	PK	H	3.59	66.43	68.2	-1.77
5469.99	55.76	PK	V	3.69	59.45	68.2	-8.75
5744.31	60.06	PK	H	3.52	63.58	68.2	-4.62
5744.31	53.11	PK	V	3.52	56.63	68.2	-11.57
11060.00	45.08	PK	H	13.98	59.06	74	-14.94
11060.00	33.17	AV	H	13.98	47.15	54	-6.85
11060.00	45.72	PK	V	13.98	59.70	74	-14.30
11060.00	33.28	AV	V	13.98	47.26	54	-6.74
5610MHz							
5734.25	62.60	PK	H	4.19	66.79	68.2	-1.41
5725.88	55.36	PK	V	4.09	59.45	68.2	-8.75
11220.00	45.84	PK	H	13.38	59.22	74	-14.78
11220.00	34.12	AV	H	13.38	47.50	54	-6.50
11220.00	47.64	PK	V	13.38	61.02	74	-12.98
11220.00	36.11	AV	V	13.38	49.49	54	-4.51
802.11ax-HE160							
5570MHz							
5460.00	58.18	PK	H	3.59	61.77	74	-12.23
5460.00	48.66	AV	H	3.59	52.25	54	-1.75
5460.00	58.32	PK	V	3.59	61.91	74	-12.09
5460.00	47.65	AV	V	3.59	51.24	54	-2.76
5465.23	61.89	PK	H	3.59	65.48	68.2	-2.72
5464.18	56.32	PK	V	3.59	59.91	68.2	-8.29
5725.42	60.57	PK	H	4.09	64.66	68.2	-3.54
5728.69	54.72	PK	V	4.09	58.81	68.2	-9.39
11140.00	45.67	PK	H	13.38	59.05	74	-14.95
11140.00	33.61	AV	H	13.38	46.99	54	-7.01
11140.00	45.82	PK	V	13.38	59.20	74	-14.80
11140.00	33.71	AV	V	13.38	47.09	54	-6.91

5725-5850 MHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a(ANT 0)							
5745MHz							
5647.38	54.74	PK	H	3.25	57.99	68.20	-10.21
5650.84	55.51	PK	H	3.27	58.78	68.83	-10.05
5716.92	57.10	PK	H	3.47	60.57	109.94	-49.37
5724.61	61.07	PK	H	3.48	64.55	121.30	-56.75
5645.75	54.59	PK	V	3.24	57.83	68.20	-10.37
5695.02	54.27	PK	V	3.43	57.70	101.53	-43.83
5710.90	55.47	PK	V	3.46	58.93	108.26	-49.33
5724.82	58.41	PK	V	3.48	61.89	121.78	-59.89
11490.00	47.89	PK	H	14.03	61.92	74	-12.08
11490.00	35.79	AV	H	14.03	49.82	54	-4.18
11490.00	51.18	PK	V	14.03	65.21	74	-8.79
11490.00	38.74	AV	V	14.03	52.77	54	-1.23
5785MHz							
11570.00	47.62	PK	H	14.13	61.75	74	-12.25
11570.00	34.52	AV	H	14.13	48.65	54	-5.35
11570.00	50.92	PK	V	14.13	65.05	74	-8.95
11570.00	38.24	AV	V	14.13	52.37	54	-1.63
5825MHz							
5850.00	65.93	PK	H	4.09	70.02	122.20	-52.18
5855.00	64.32	PK	H	4.09	68.41	110.80	-42.39
5875.00	57.31	PK	H	4.19	61.50	105.20	-43.70
5925.00	54.01	PK	H	4.69	58.70	68.20	-9.50
5850.00	65.66	PK	V	4.09	69.75	122.20	-52.45
5855.00	64.03	PK	V	4.09	68.12	110.80	-42.68
5875.00	56.87	PK	V	4.19	61.06	105.20	-44.14
5925.00	53.13	PK	V	4.69	57.82	68.20	-10.38
11650.00	48.79	PK	H	13.83	62.62	74	-11.38
11650.00	34.31	AV	H	13.83	48.14	54	-5.86
11650.00	51.14	PK	V	13.83	64.97	74	-9.03
11650.00	38.12	AV	V	13.83	51.95	54	-2.05

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a(ANT 1)							
5745MHz							
5650.00	56.12	PK	H	3.59	59.71	68.20	-8.49
5700.00	56.35	PK	H	4.09	60.44	105.20	-44.76
5720.00	61.61	PK	H	4.09	65.70	110.80	-45.10
5725.00	61.68	PK	H	4.09	65.77	122.20	-56.43
5650.00	55.27	PK	V	3.59	58.86	68.20	-9.34
5700.00	55.61	PK	V	4.09	59.70	105.20	-45.50
5720.00	60.88	PK	V	4.09	64.97	110.80	-45.83
5725.00	60.71	PK	V	4.09	64.80	122.20	-57.40
11490.00	46.89	PK	H	14.03	60.92	74	-13.08
11490.00	34.39	AV	H	14.03	48.42	54	-5.58
11490.00	51.05	PK	V	14.03	65.08	74	-8.92
11490.00	38.83	AV	V	14.03	52.86	54	-1.14
5785MHz							
11570.00	47.85	PK	H	14.13	61.98	74	-12.02
11570.00	35.12	AV	H	14.13	49.25	54	-4.75
11570.00	51.13	PK	V	14.13	65.26	74	-8.74
11570.00	38.43	AV	V	14.13	52.56	54	-1.44
5825MHz							
5850.00	69.65	PK	H	4.09	73.74	122.20	-48.46
5855.00	68.01	PK	H	4.09	72.10	110.80	-38.70
5875.00	57.79	PK	H	4.19	61.98	105.20	-43.22
5925.00	54.74	PK	H	4.69	59.43	68.20	-8.77
5850.00	68.89	PK	V	4.09	72.98	122.20	-49.22
5855.00	67.91	PK	V	4.09	72.00	110.80	-38.80
5875.00	57.76	PK	V	4.19	61.95	105.20	-43.25
5925.00	54.39	PK	V	4.69	59.08	68.20	-9.12
11650.00	48.62	PK	H	13.83	62.45	74	-11.55
11650.00	34.18	AV	H	13.83	48.01	54	-5.99
11650.00	50.93	PK	V	13.83	64.76	74	-9.24
11650.00	37.63	AV	V	13.83	51.46	54	-2.54

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a(ANT 2)							
5745MHz							
5650.00	56.41	PK	H	3.59	60.00	68.20	-8.20
5700.00	57.33	PK	H	4.09	61.42	105.20	-43.78
5720.00	61.67	PK	H	4.09	65.76	110.80	-45.04
5725.00	69.73	PK	H	4.09	73.82	122.20	-48.38
5650.00	56.39	PK	V	3.59	59.98	68.20	-8.22
5700.00	56.61	PK	V	4.09	60.70	105.20	-44.50
5720.00	61.55	PK	V	4.09	65.64	110.80	-45.16
5725.00	69.38	PK	V	4.09	73.47	122.20	-48.73
11490.00	48.57	PK	H	14.03	62.60	74	-11.40
11490.00	36.59	AV	H	14.03	50.62	54	-3.38
11490.00	51.41	PK	V	14.03	65.44	74	-8.56
11490.00	38.88	AV	V	14.03	52.91	54	-1.09
5785MHz							
11570.00	48.62	PK	H	14.13	62.75	74	-11.25
11570.00	37.27	AV	H	14.13	51.40	54	-2.60
11570.00	51.22	PK	V	14.13	65.35	74	-8.65
11570.00	38.62	AV	V	14.13	52.75	54	-1.25
5825MHz							
5850.00	84.27	PK	H	4.09	88.36	122.20	-33.84
5855.00	79.65	PK	H	4.09	83.74	110.80	-27.06
5875.00	65.94	PK	H	4.19	70.13	105.20	-35.07
5925.00	56.77	PK	H	4.69	61.46	68.20	-6.74
5850.00	83.93	PK	V	4.09	88.02	122.20	-34.18
5855.00	78.97	PK	V	4.09	83.06	110.80	-27.74
5875.00	65.67	PK	V	4.19	69.86	105.20	-35.34
5925.00	56.16	PK	V	4.69	60.85	68.20	-7.35
11650.00	48.75	PK	H	13.83	62.58	74	-11.42
11650.00	36.97	AV	H	13.83	50.80	54	-3.20
11650.00	50.86	PK	V	13.83	64.69	74	-9.31
11650.00	38.28	AV	V	13.83	52.11	54	-1.89

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT20							
5745MHz							
5650.00	56.79	PK	H	3.59	60.38	68.20	-7.82
5700.00	60.75	PK	H	4.09	64.84	105.20	-40.36
5720.00	77.21	PK	H	4.09	81.30	110.80	-29.50
5725.00	80.73	PK	H	4.09	84.82	122.20	-37.38
5650.00	55.95	PK	V	3.59	59.54	68.20	-8.66
5700.00	60.39	PK	V	4.09	64.48	105.20	-40.72
5720.00	76.73	PK	V	4.09	80.82	110.80	-29.98
5725.00	80.47	PK	V	4.09	84.56	122.20	-37.64
11490.00	47.84	PK	H	14.03	61.87	74	-12.13
11490.00	36.55	AV	H	14.03	50.58	54	-3.42
11490.00	50.32	PK	V	14.03	64.35	74	-9.65
11490.00	38.76	AV	V	14.03	52.79	54	-1.21
5785MHz							
11570.00	47.68	PK	H	14.13	61.81	74	-12.19
11570.00	36.73	AV	H	14.13	50.86	54	-3.14
11570.00	51.28	PK	V	14.13	65.41	74	-8.59
11570.00	38.63	AV	V	14.13	52.76	54	-1.24
5825MHz							
5850.00	72.86	PK	H	4.09	76.95	122.20	-45.25
5855.00	72.71	PK	H	4.09	76.80	110.80	-34.00
5875.00	60.21	PK	H	4.19	64.40	105.20	-40.80
5925.00	57.11	PK	H	4.69	61.80	68.20	-6.40
5850.00	72.64	PK	V	4.09	76.73	122.20	-45.47
5855.00	71.88	PK	V	4.09	75.97	110.80	-34.83
5875.00	59.61	PK	V	4.19	63.80	105.20	-41.40
5925.00	56.92	PK	V	4.69	61.61	68.20	-6.59
11650.00	48.62	PK	H	13.83	62.45	74	-11.55
11650.00	35.86	AV	H	13.83	49.69	54	-4.31
11650.00	50.44	PK	V	13.83	64.27	74	-9.73
11650.00	37.87	AV	V	13.83	51.70	54	-2.30

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT40							
5755MHz							
5650.00	58.04	PK	H	3.59	61.63	68.20	-6.57
5700.00	67.36	PK	H	4.09	71.45	105.20	-33.75
5720.00	79.43	PK	H	4.09	83.52	110.80	-27.28
5725.00	80.04	PK	H	4.09	84.13	122.20	-38.07
5650.00	57.74	PK	V	3.59	61.33	68.20	-6.87
5700.00	66.91	PK	V	4.09	71.00	105.20	-34.20
5720.00	78.99	PK	V	4.09	83.08	110.80	-27.72
5725.00	79.58	PK	V	4.09	83.67	122.20	-38.53
11510.00	45.69	PK	H	14.23	59.92	74	-14.08
11510.00	34.74	AV	H	14.23	48.97	54	-5.03
11510.00	48.85	PK	V	14.23	63.08	74	-10.92
11510.00	37.31	AV	V	14.23	51.54	54	-2.46
5795MHz							
5850.00	79.04	PK	H	4.09	83.13	122.20	-39.07
5855.00	77.15	PK	H	4.09	81.24	110.80	-29.56
5875.00	73.56	PK	H	4.19	77.75	105.20	-27.45
5925.00	61.36	PK	H	4.69	66.05	68.20	-2.15
5850.00	78.46	PK	V	4.09	82.55	122.20	-39.65
5855.00	76.99	PK	V	4.09	81.08	110.80	-29.72
5875.00	73.19	PK	V	4.19	77.38	105.20	-27.82
5925.00	60.43	PK	V	4.69	65.12	68.20	-3.08
11590.00	47.63	PK	H	14.13	61.76	74	-12.24
11590.00	35.65	AV	H	14.13	49.78	54	-4.22
11590.00	49.82	PK	V	14.13	63.95	74	-10.05
11590.00	37.48	AV	V	14.13	51.61	54	-2.39

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT80							
5775MHz							
5650.00	60.99	PK	H	3.59	64.58	68.20	-3.62
5700.00	72.84	PK	H	4.09	76.93	105.20	-28.27
5720.00	76.73	PK	H	4.09	80.82	110.80	-29.98
5725.00	79.06	PK	H	4.09	83.15	122.20	-39.05
5850.00	74.07	PK	H	4.09	78.16	122.20	-44.04
5855.00	73.91	PK	H	4.09	78.00	110.80	-32.80
5875.00	69.84	PK	H	4.19	74.03	105.20	-31.17
5925.00	62.38	PK	H	4.69	67.07	68.20	-1.13
5650.00	60.66	PK	V	3.59	64.25	68.20	-3.95
5700.00	72.56	PK	V	4.09	76.65	105.20	-28.55
5720.00	75.94	PK	V	4.09	80.03	110.80	-30.77
5725.00	79.04	PK	V	4.09	83.13	122.20	-39.07
5850.00	73.21	PK	V	4.09	77.30	122.20	-44.90
5855.00	73.46	PK	V	4.09	77.55	110.80	-33.25
5875.00	69.76	PK	V	4.19	73.95	105.20	-31.25
5925.00	61.71	PK	V	4.69	66.40	68.20	-1.80
11550.00	45.68	PK	H	14.23	59.91	74	-14.09
11550.00	33.84	AV	H	14.23	48.07	54	-5.93
11550.00	47.77	PK	V	14.23	62.00	74	-12.00
11550.00	35.61	AV	V	14.23	49.84	54	-4.16

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE20							
5745MHz							
5650.00	56.88	PK	H	3.59	60.47	68.20	-7.73
5700.00	60.19	PK	H	4.09	64.28	105.20	-40.92
5720.00	77.97	PK	H	4.09	82.06	110.80	-28.74
5725.00	87.18	PK	H	4.09	91.27	122.20	-30.93
5650.00	56.52	PK	V	3.59	60.11	68.20	-8.09
5700.00	59.92	PK	V	4.09	64.01	105.20	-41.19
5720.00	76.98	PK	V	4.09	81.07	110.80	-29.73
5725.00	86.81	PK	V	4.09	90.90	122.20	-31.30
11490.00	46.71	PK	H	14.03	60.74	74	-13.26
11490.00	35.88	AV	H	14.03	49.91	54	-4.09
11490.00	51.84	PK	V	14.03	65.87	74	-8.13
11490.00	38.79	AV	V	14.03	52.82	54	-1.18
5785MHz							
11570.00	46.82	PK	H	14.13	60.95	74	-13.05
11570.00	36.95	AV	H	14.13	51.08	54	-2.92
11570.00	49.68	PK	V	14.13	63.81	74	-10.19
11570.00	37.95	AV	V	14.13	52.08	54	-1.92
5825MHz							
5850.00	76.79	PK	H	4.09	80.88	122.20	-41.32
5855.00	71.42	PK	H	4.09	75.51	110.80	-35.29
5875.00	62.59	PK	H	4.19	66.78	105.20	-38.42
5925.00	57.21	PK	H	4.69	61.90	68.20	-6.30
5850.00	76.64	PK	V	4.09	80.73	122.20	-41.47
5855.00	71.20	PK	V	4.09	75.29	110.80	-35.51
5875.00	62.15	PK	V	4.19	66.34	105.20	-38.86
5925.00	57.08	PK	V	4.69	61.77	68.20	-6.43
11650.00	47.86	PK	H	13.83	61.69	74	-12.31
11650.00	36.03	AV	H	13.83	49.86	54	-4.14
11650.00	49.17	PK	V	13.83	63.00	74	-11.00
11650.00	38.28	AV	V	13.83	52.11	54	-1.89

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE40							
5755MHz							
5650.00	58.13	PK	H	3.59	61.72	68.20	-6.48
5700.00	66.44	PK	H	4.09	70.53	105.20	-34.67
5720.00	79.05	PK	H	4.09	83.14	110.80	-27.66
5725.00	80.65	PK	H	4.09	84.74	122.20	-37.46
5650.00	57.16	PK	V	3.59	60.75	68.20	-7.45
5700.00	66.38	PK	V	4.09	70.47	105.20	-34.73
5720.00	78.08	PK	V	4.09	82.17	110.80	-28.63
5725.00	79.77	PK	V	4.09	83.86	122.20	-38.34
11510.00	46.74	PK	H	14.23	60.97	74	-13.03
11510.00	35.39	AV	H	14.23	49.62	54	-4.38
11510.00	49.83	PK	V	14.23	64.06	74	-9.94
11510.00	38.37	AV	V	14.23	52.60	54	-1.40
5795MHz							
5850.00	81.04	PK	H	4.09	85.13	122.20	-37.07
5855.00	79.95	PK	H	4.09	84.04	110.80	-26.76
5875.00	73.27	PK	H	4.19	77.46	105.20	-27.74
5925.00	62.10	PK	H	4.69	66.79	68.2	-1.41
5850.00	80.56	PK	V	4.09	84.65	122.20	-37.55
5855.00	79.26	PK	V	4.09	83.35	110.80	-27.45
5875.00	72.75	PK	V	4.19	76.94	105.20	-28.26
5925.00	62.16	PK	V	4.69	66.85	68.20	-1.35
11590.00	47.85	PK	H	14.13	61.98	74	-12.02
11590.00	35.41	AV	H	14.13	49.54	54	-4.46
11590.00	49.93	PK	V	14.13	64.06	74	-9.94
11590.00	37.71	AV	V	14.13	51.84	54	-2.16

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE80							
5775MHz							
5650.00	63.23	PK	H	3.59	66.82	68.20	-1.38
5700.00	76.88	PK	H	4.09	80.97	105.20	-24.23
5720.00	83.18	PK	H	4.09	87.27	110.80	-23.53
5725.00	82.83	PK	H	4.09	86.92	122.20	-35.28
5850.00	77.66	PK	H	4.09	81.75	122.20	-40.45
5855.00	77.48	PK	H	4.09	81.57	110.80	-29.23
5875.00	74.02	PK	H	4.19	78.21	105.20	-26.99
5925.00	62.28	PK	H	4.69	66.97	68.2	-1.23
5650.00	62.73	PK	V	3.59	66.32	68.20	-1.88
5700.00	76.66	PK	V	4.09	80.75	105.20	-24.45
5720.00	82.55	PK	V	4.09	86.64	110.80	-24.16
5725.00	82.38	PK	V	4.09	86.47	122.20	-35.73
5850.00	77.34	PK	V	4.09	81.43	122.20	-40.77
5855.00	76.50	PK	V	4.09	80.59	110.80	-30.21
5875.00	73.89	PK	V	4.19	78.08	105.20	-27.12
5925.00	62.16	PK	V	4.69	66.85	68.2	-1.35
11550.00	45.72	PK	H	14.23	59.95	74	-14.05
11550.00	34.35	AV	H	14.23	48.58	54	-5.42
11550.00	46.89	PK	V	14.23	61.12	74	-12.88
11550.00	37.23	AV	V	14.23	51.46	54	-2.54

5850-5895 MHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a(ANT 0)							
5845MHz							
11690.00	48.81	PK	H	13.83	62.64	74	-11.36
11690.00	35.09	AV	H	13.83	48.92	54	-5.08
11690.00	52.18	PK	V	13.83	66.01	74	-7.99
11690.00	38.07	AV	V	13.83	51.90	54	-2.10
5865MHz							
11730.00	48.02	PK	H	13.63	61.65	74	-12.35
11730.00	35.36	AV	H	13.63	48.99	54	-5.01
11730.00	51.05	PK	V	13.63	64.68	74	-9.32
11730.00	37.98	AV	V	13.63	51.61	54	-2.39
5885MHz							
11770.00	48.67	PK	H	13.63	62.30	74	-11.70
11770.00	36.51	AV	H	13.63	50.14	54	-3.86
11770.00	51.95	PK	V	13.63	65.58	74	-8.42
11770.00	38.85	AV	V	13.63	52.48	54	-1.52
802.11a(ANT 1)							
5845MHz							
11690.00	48.64	PK	H	13.83	62.47	74	-11.53
11690.00	35.33	AV	H	13.83	49.16	54	-4.84
11690.00	51.82	PK	V	13.83	65.65	74	-8.35
11690.00	38.23	AV	V	13.83	52.06	54	-1.94
5865MHz							
11730.00	49.29	PK	H	13.63	62.92	74	-11.08
11730.00	35.73	AV	H	13.63	49.36	54	-4.64
11730.00	51.33	PK	V	13.63	64.96	74	-9.04
11730.00	38.72	AV	V	13.63	52.35	54	-1.65
5885MHz							
11770.00	48.48	PK	H	13.63	62.11	74	-11.89
11770.00	36.74	AV	H	13.63	50.37	54	-3.63
11770.00	51.72	PK	V	13.63	65.35	74	-8.65
11770.00	39.01	AV	V	13.63	52.64	54	-1.36

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a(ANT 2)							
5845MHz							
11690.00	48.97	PK	H	13.83	62.80	74	-11.20
11690.00	37.75	AV	H	13.83	51.58	54	-2.42
11690.00	53.22	PK	V	13.83	67.05	74	-6.95
11690.00	39.11	AV	V	13.83	52.94	54	-1.06
5865MHz							
11730.00	51.56	PK	H	13.63	65.19	74	-8.81
11730.00	39.12	AV	H	13.63	52.75	54	-1.25
11730.00	51.98	PK	V	13.63	65.61	74	-8.39
11730.00	39.36	AV	V	13.63	52.99	54	-1.01
5885MHz							
11770.00	50.78	PK	H	13.63	64.41	74	-9.59
11770.00	37.99	AV	H	13.63	51.62	54	-2.38
11770.00	51.63	PK	V	13.63	65.26	74	-8.74
11770.00	38.98	AV	V	13.63	52.61	54	-1.39
802.11ac-VHT20							
5845MHz							
11690.00	51.11	PK	H	13.83	64.94	74	-9.06
11690.00	36.72	AV	H	13.83	50.55	54	-3.45
11690.00	52.24	PK	V	13.83	66.07	74	-7.93
11690.00	38.45	AV	V	13.83	52.28	54	-1.72
5865MHz							
11730.00	49.42	PK	H	13.63	63.05	74	-10.95
11730.00	35.72	AV	H	13.63	49.35	54	-4.65
11730.00	52.21	PK	V	13.63	65.84	74	-8.16
11730.00	38.55	AV	V	13.63	52.18	54	-1.82
5885MHz							
11770.00	50.62	PK	H	13.63	64.25	74	-9.75
11770.00	37.13	AV	H	13.63	50.76	54	-3.24
11770.00	50.69	PK	V	13.63	64.32	74	-9.68
11770.00	38.68	AV	V	13.63	52.31	54	-1.69
802.11ac-VHT40							
5835MHz							
11670.00	48.15	PK	H	13.83	61.98	74	-12.02
11670.00	36.55	AV	H	13.83	50.38	54	-3.62
11670.00	49.06	PK	V	13.83	62.89	74	-11.11
11670.00	37.02	AV	V	13.83	50.85	54	-3.15
5875MHz							
11750.00	49.23	PK	H	13.63	62.86	74	-11.14
11750.00	35.82	AV	H	13.63	49.45	54	-4.55
11750.00	51.02	PK	V	13.63	64.65	74	-9.35
11750.00	37.32	AV	V	13.63	50.95	54	-3.05

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT80							
5855MHz							
11710.00	47.66	PK	H	13.63	61.29	74	-12.71
11710.00	34.43	AV	H	13.63	48.06	54	-5.94
11710.00	48.42	PK	V	13.63	62.05	74	-11.95
11710.00	35.72	AV	V	13.63	49.35	54	-4.65
802.11ac-VHT160							
5815MHz							
11630.00	44.72	PK	H	13.83	58.55	74	-15.45
11630.00	33.93	AV	H	13.83	47.76	54	-6.24
11630.00	46.11	PK	V	13.83	59.94	74	-14.06
11630.00	36.12	AV	V	13.83	49.95	54	-4.05
802.11ax-HE20							
5845MHz							
11690.00	51.47	PK	H	13.83	65.30	74	-8.70
11690.00	37.18	AV	H	13.83	51.01	54	-2.99
11690.00	52.15	PK	V	13.83	65.98	74	-8.02
11690.00	38.96	AV	V	13.83	52.79	54	-1.21
5865MHz							
11730.00	49.53	PK	H	13.63	63.16	74	-10.84
11730.00	37.65	AV	H	13.63	51.28	54	-2.72
11730.00	51.98	PK	V	13.63	65.61	74	-8.39
11730.00	38.64	AV	V	13.63	52.27	54	-1.73
5885MHz							
11770.00	48.56	PK	H	13.63	62.19	74	-11.81
11770.00	36.77	AV	H	13.63	50.40	54	-3.60
11770.00	51.84	PK	V	13.63	65.47	74	-8.53
11770.00	38.66	AV	V	13.63	52.29	54	-1.71
802.11ax-HE40							
5835MHz							
11670.00	48.55	PK	H	13.83	62.38	74	-11.62
11670.00	35.45	AV	H	13.83	49.28	54	-4.72
11670.00	49.97	PK	V	13.83	63.80	74	-10.20
11670.00	36.75	AV	V	13.83	50.58	54	-3.42
5875MHz							
11750.00	48.62	PK	H	13.63	62.25	74	-11.75
11750.00	35.86	AV	H	13.63	49.49	54	-4.51
11750.00	50.06	PK	V	13.63	63.69	74	-10.31
11750.00	37.63	AV	V	13.63	51.26	54	-2.74

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE80							
5855MHz							
11710.00	47.36	PK	H	13.63	60.99	74	-13.01
11710.00	34.78	AV	H	13.63	48.41	54	-5.59
11710.00	48.45	PK	V	13.63	62.08	74	-11.92
11710.00	36.04	AV	V	13.63	49.67	54	-4.33
802.11ax-HE160							
5815MHz							
11630.00	45.36	PK	H	13.83	59.19	74	-14.81
11630.00	33.25	AV	H	13.83	47.08	54	-6.92
11630.00	45.72	PK	V	13.83	59.55	74	-14.45
11630.00	34.81	AV	V	13.83	48.64	54	-5.36

Note:

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

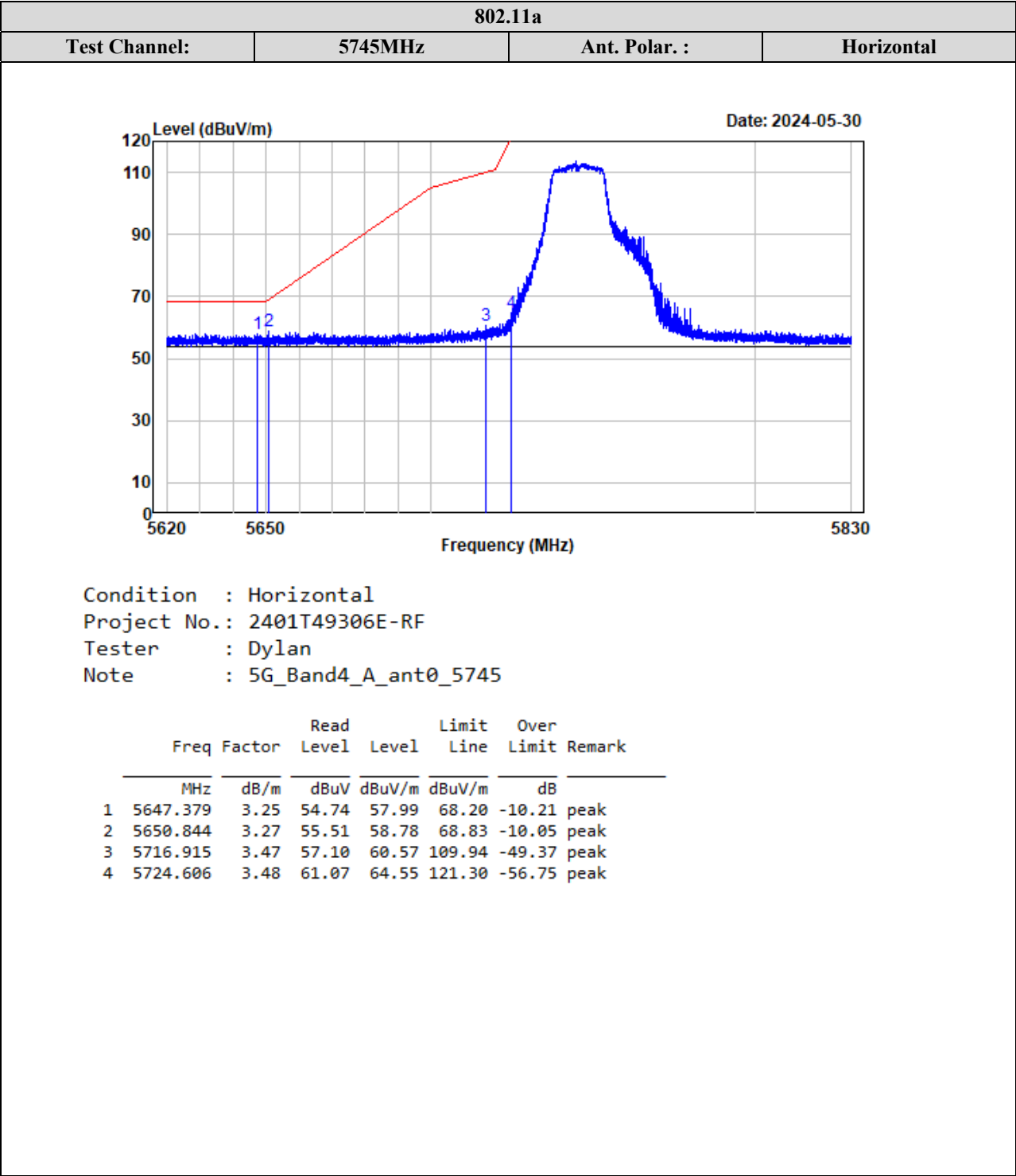
Corrected Amplitude = Factor + Reading

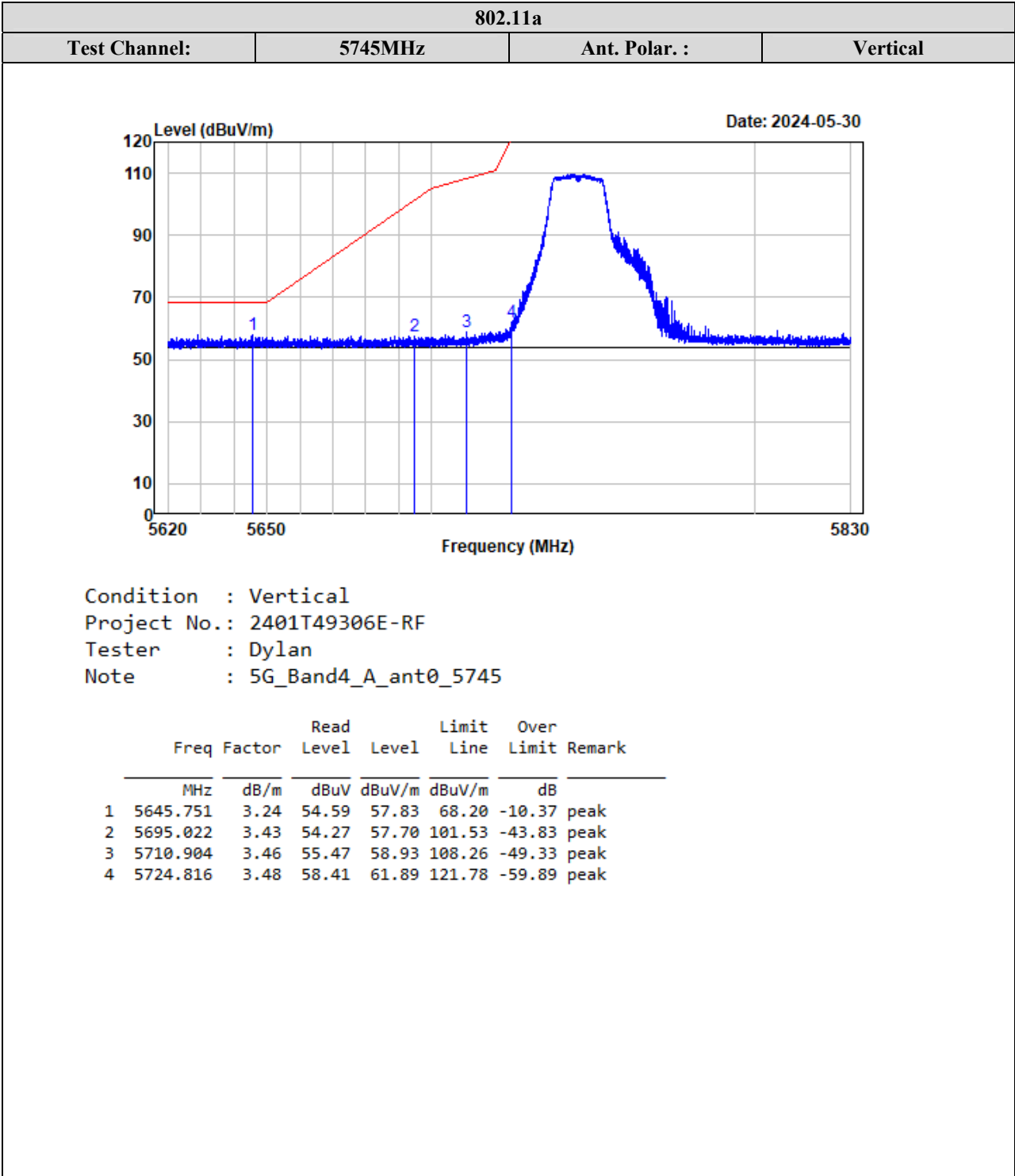
Margin = Corrected. Amplitude - Limit

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

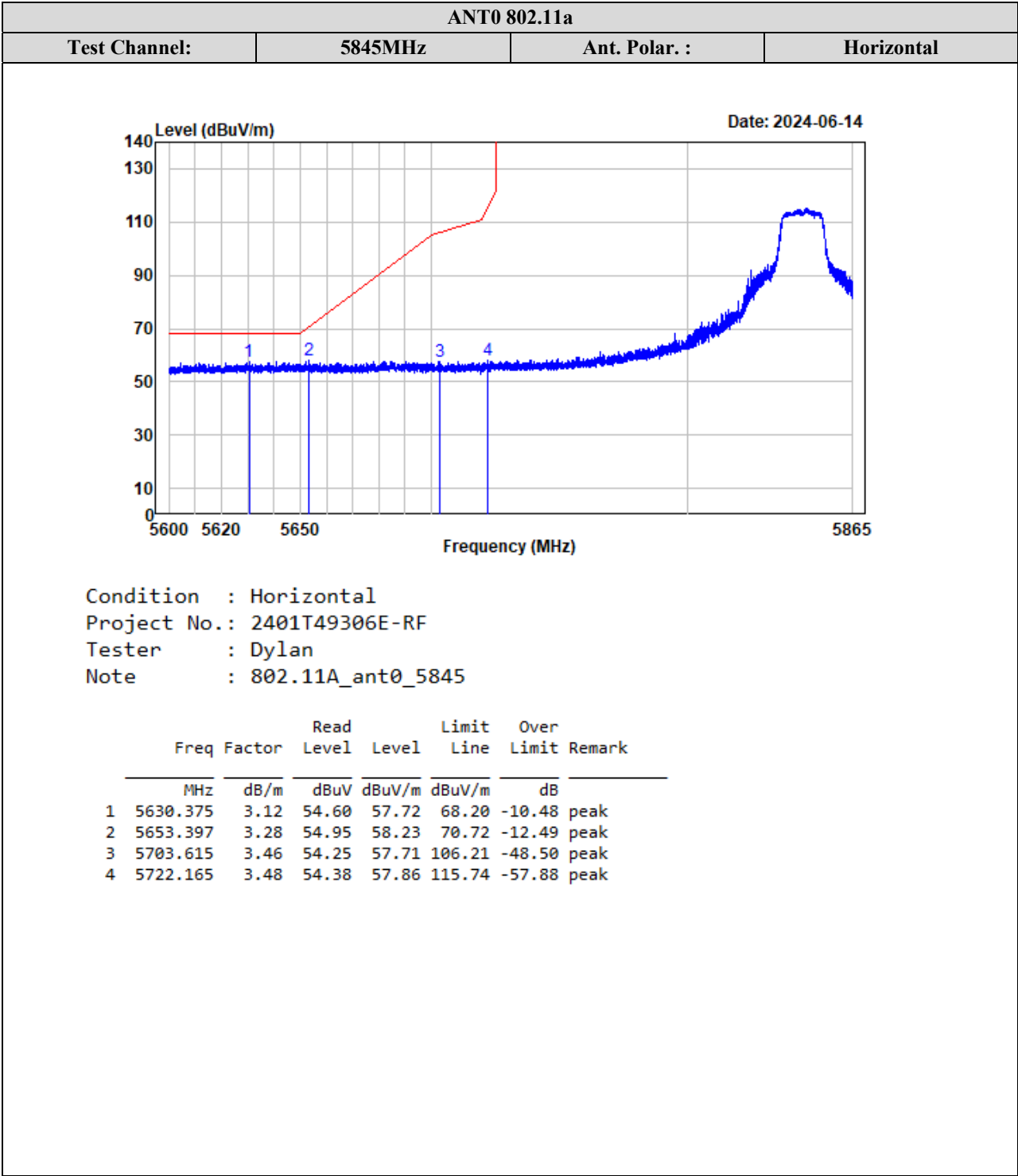
Test plots for Band Edge Measurements (Radiated)

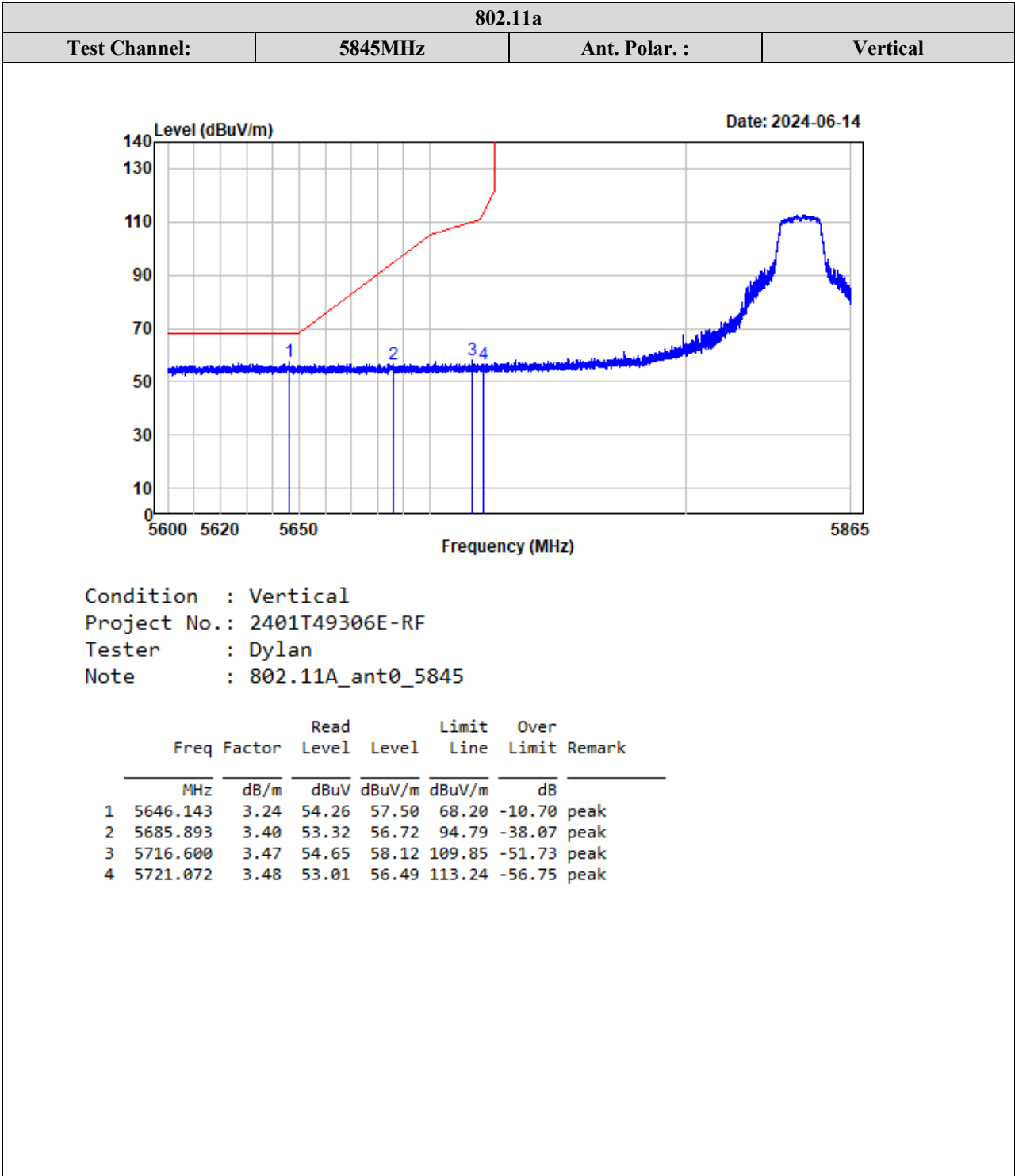
5725~5850 MHz:

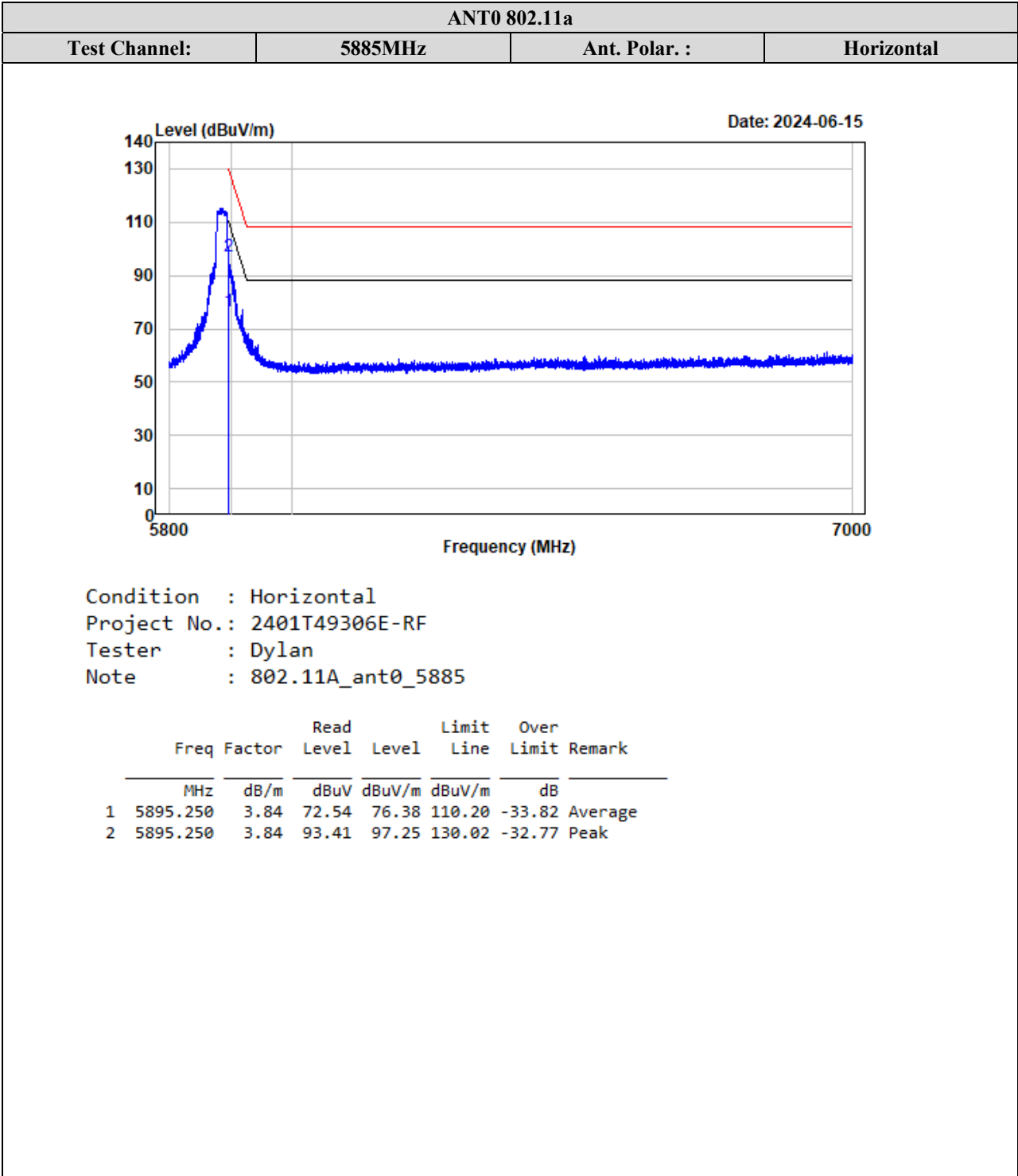


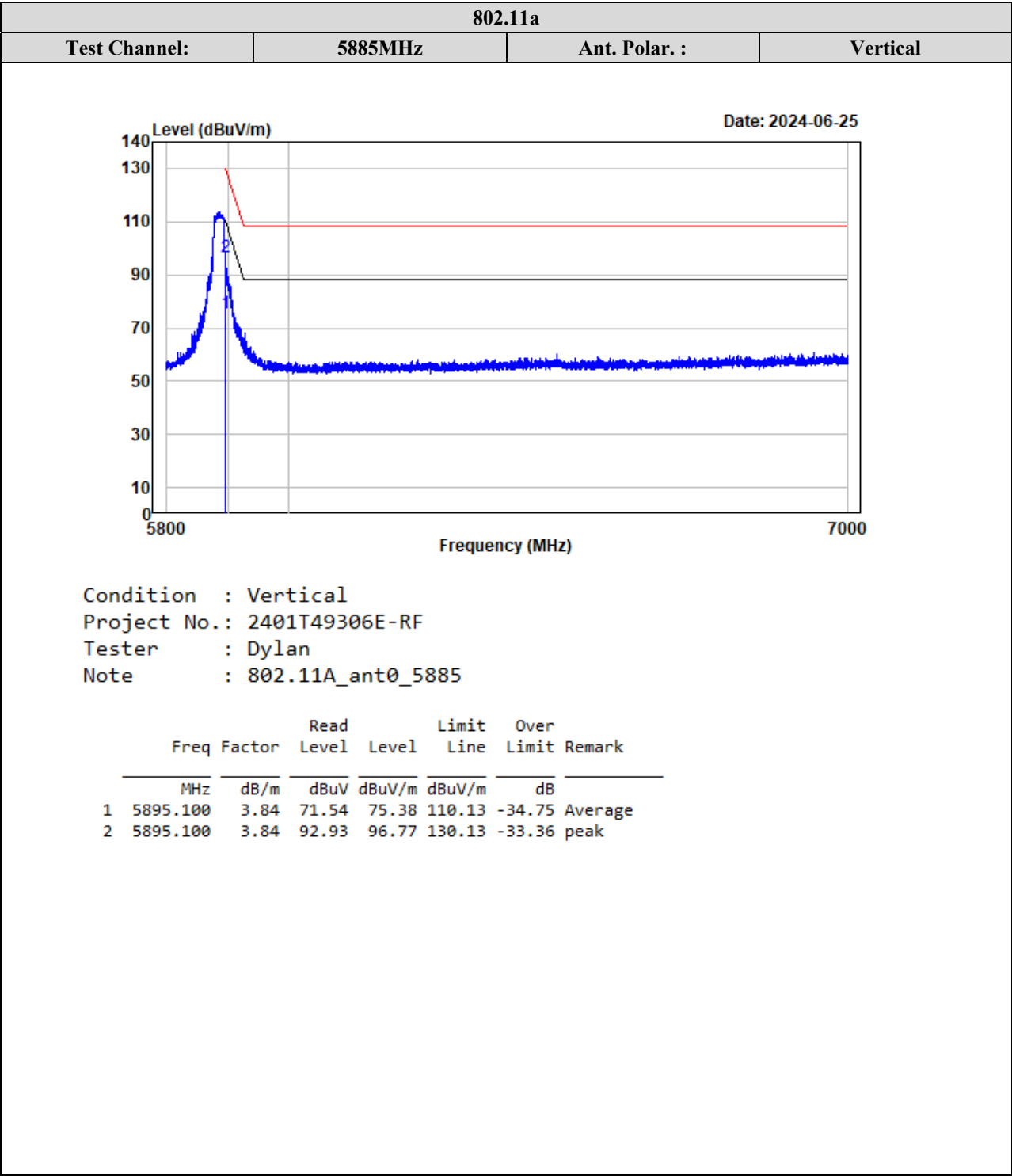


5850~5895 MHz:

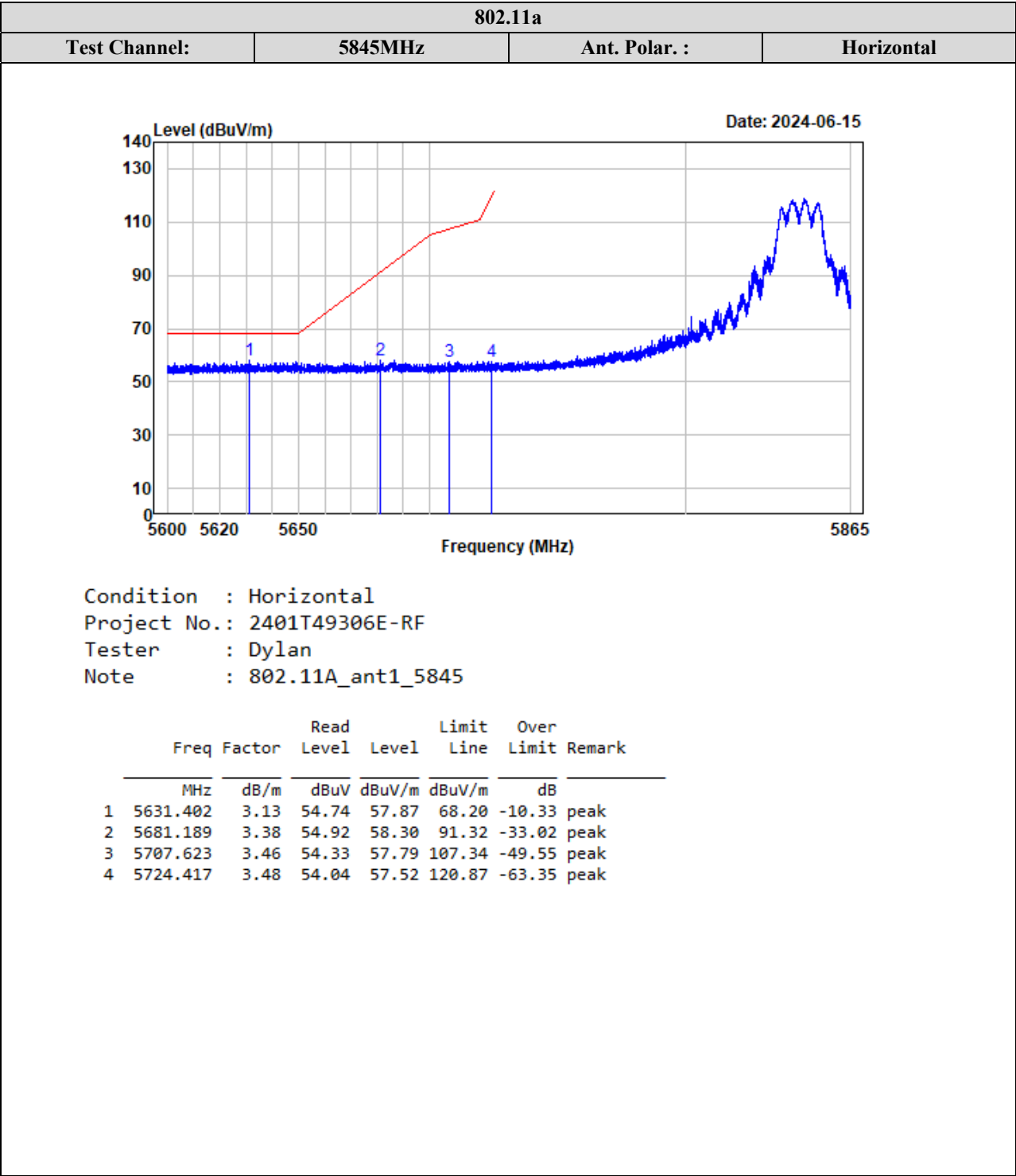


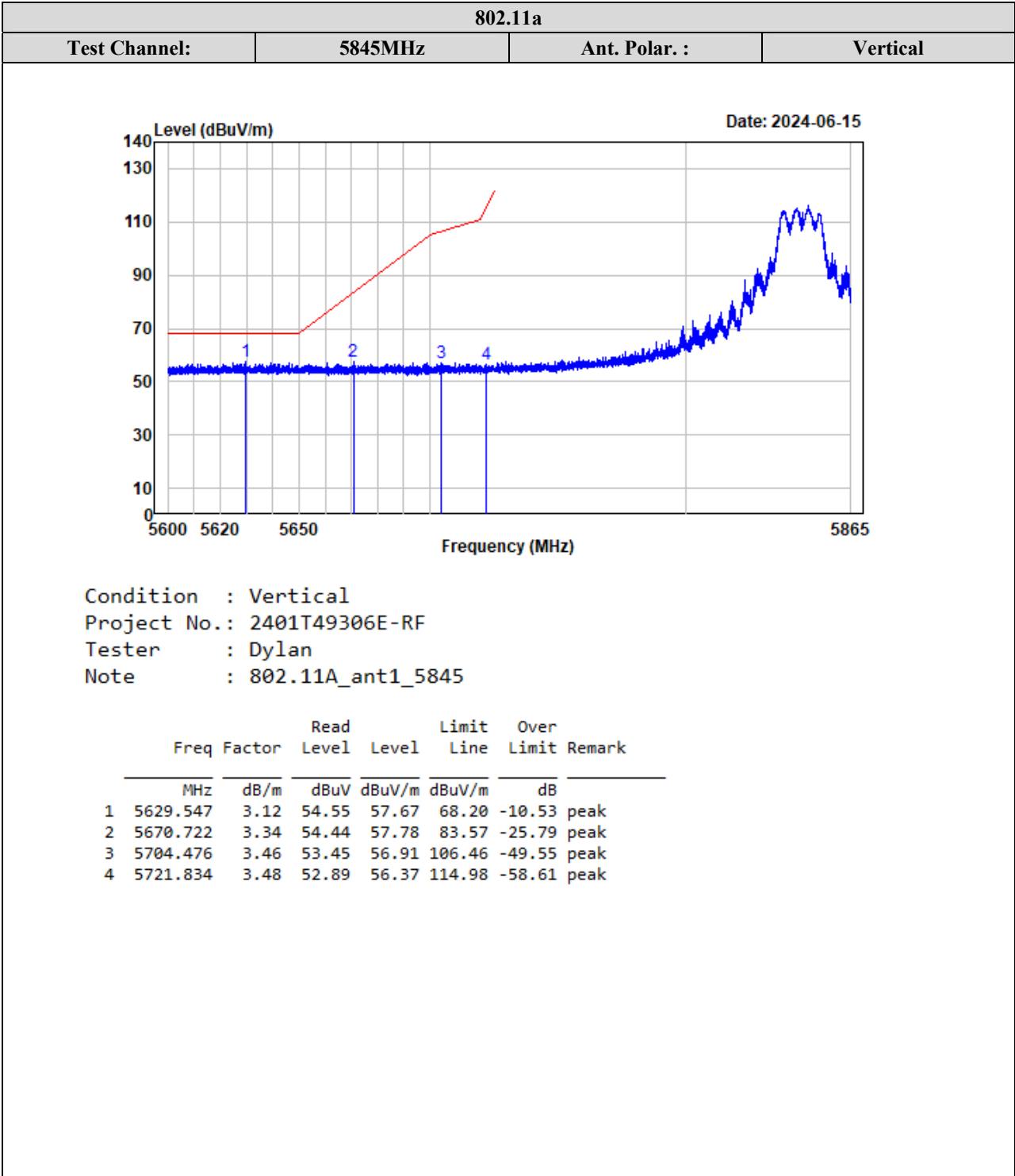


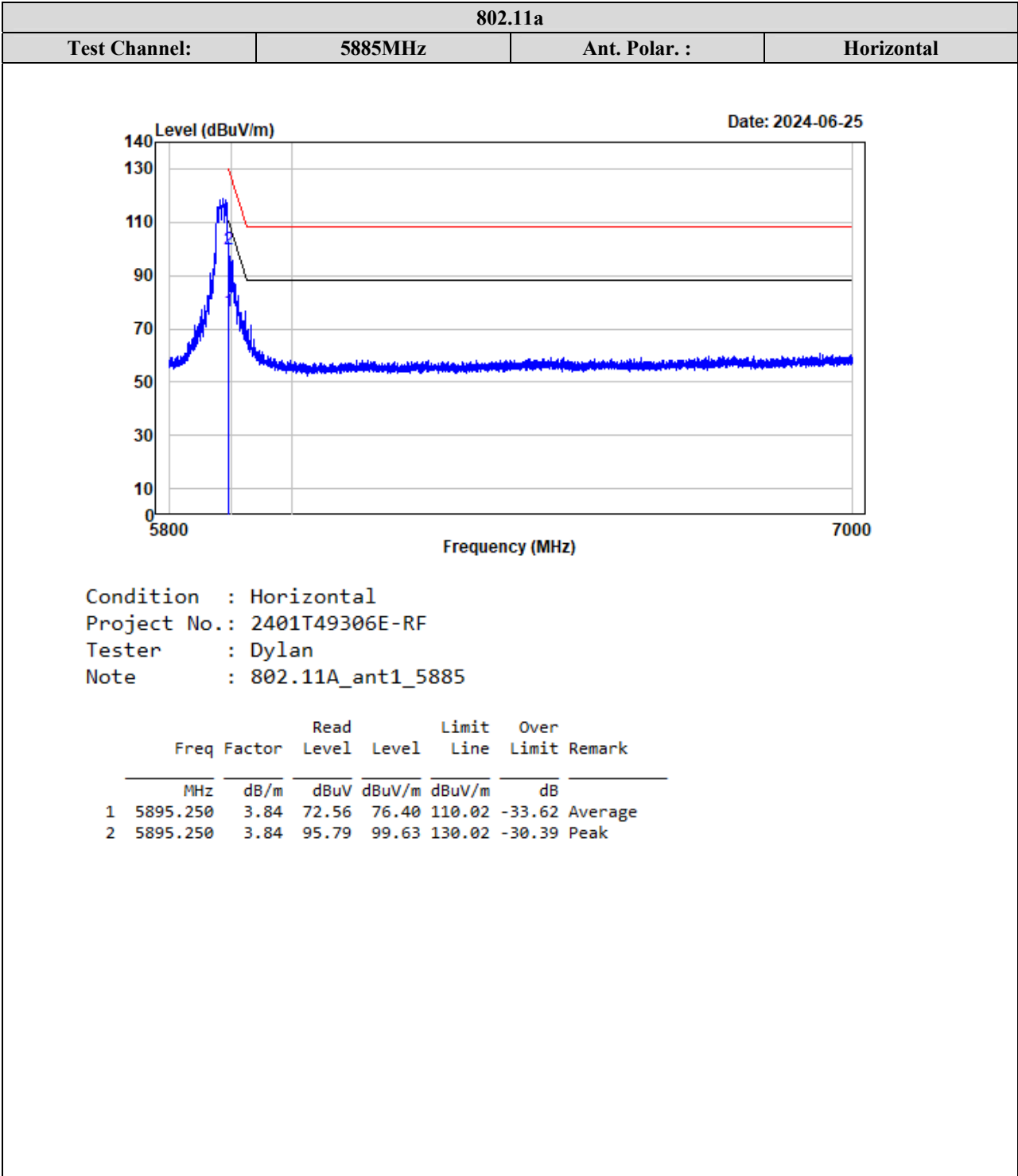


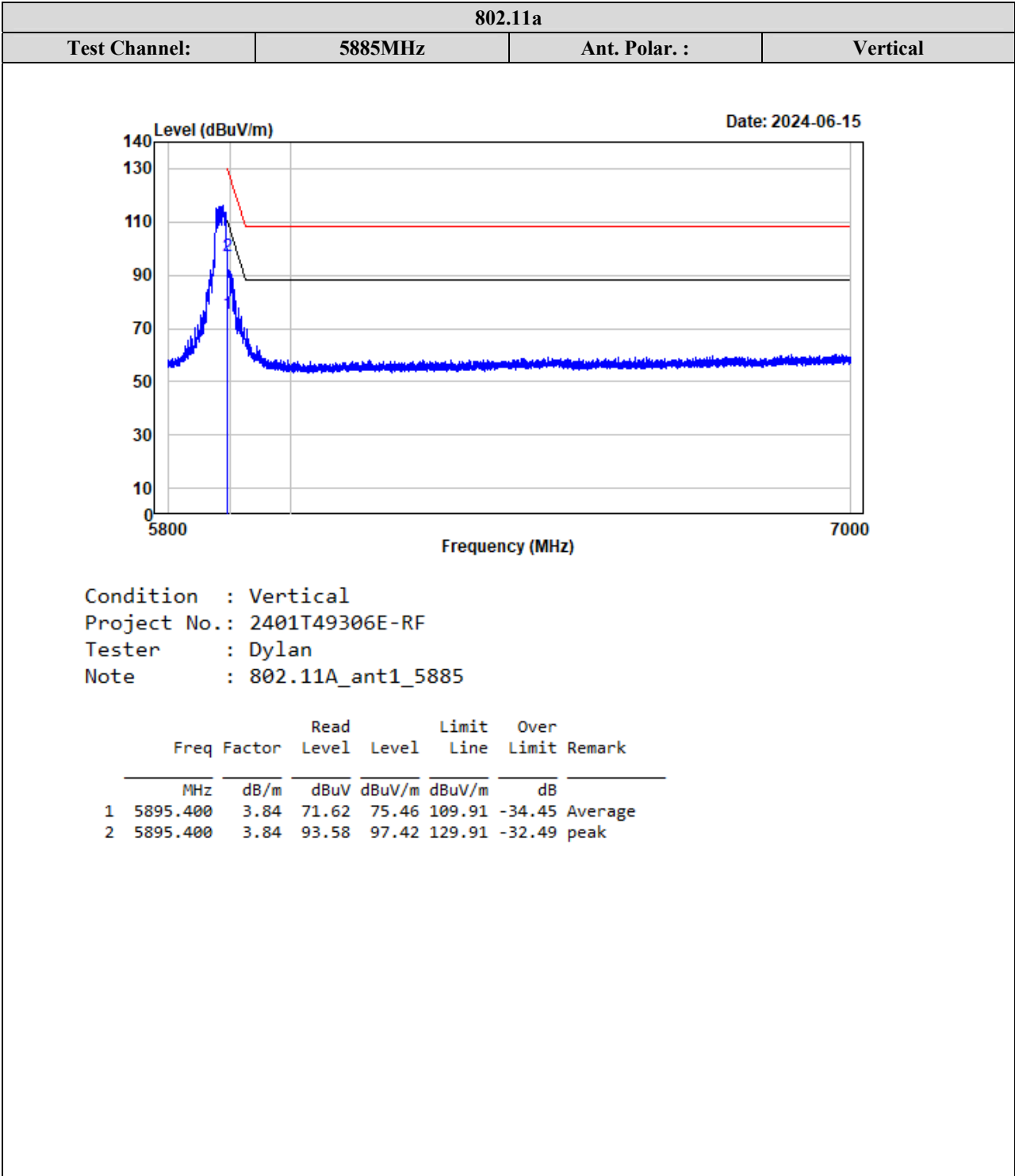


ANT1

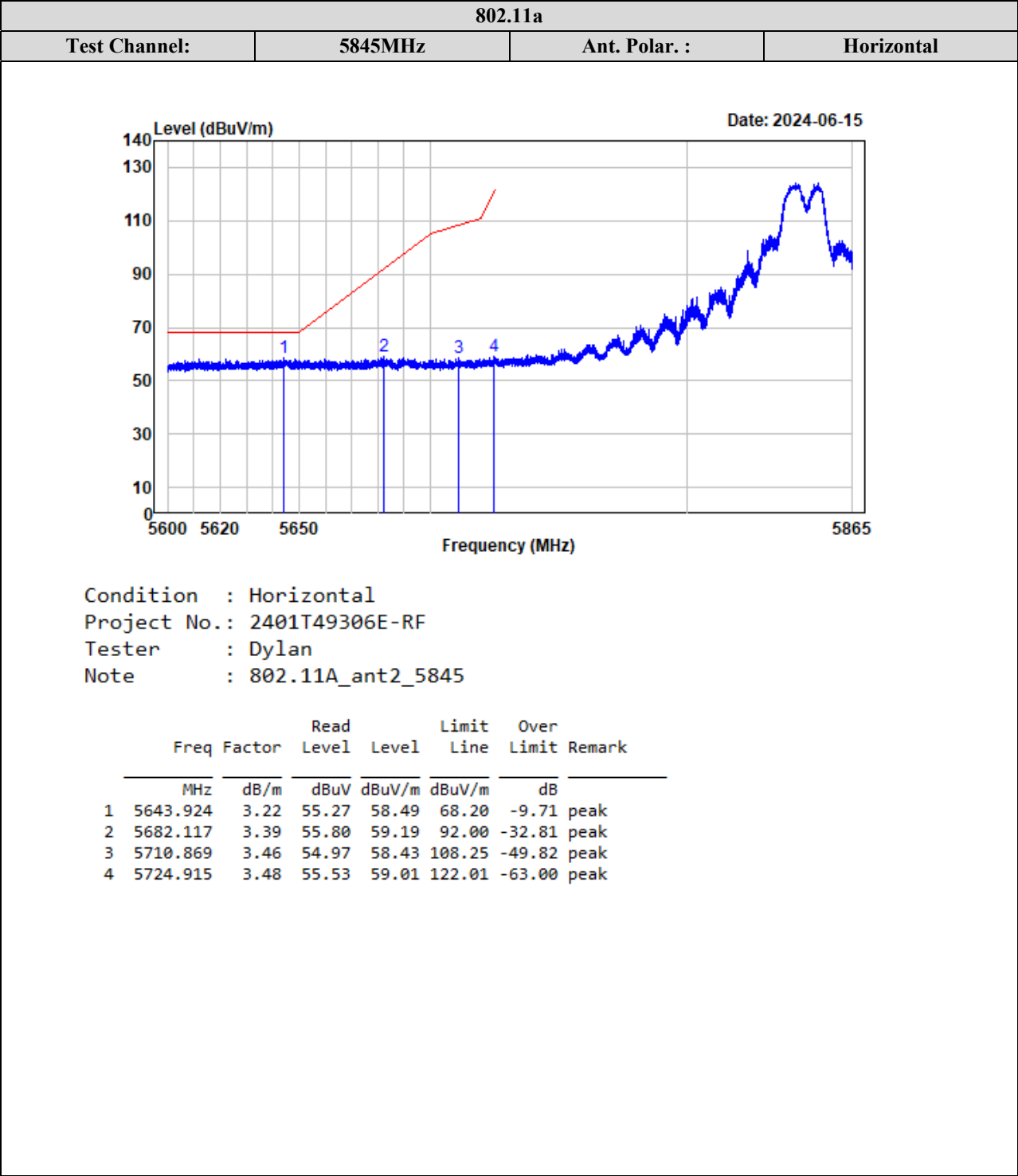


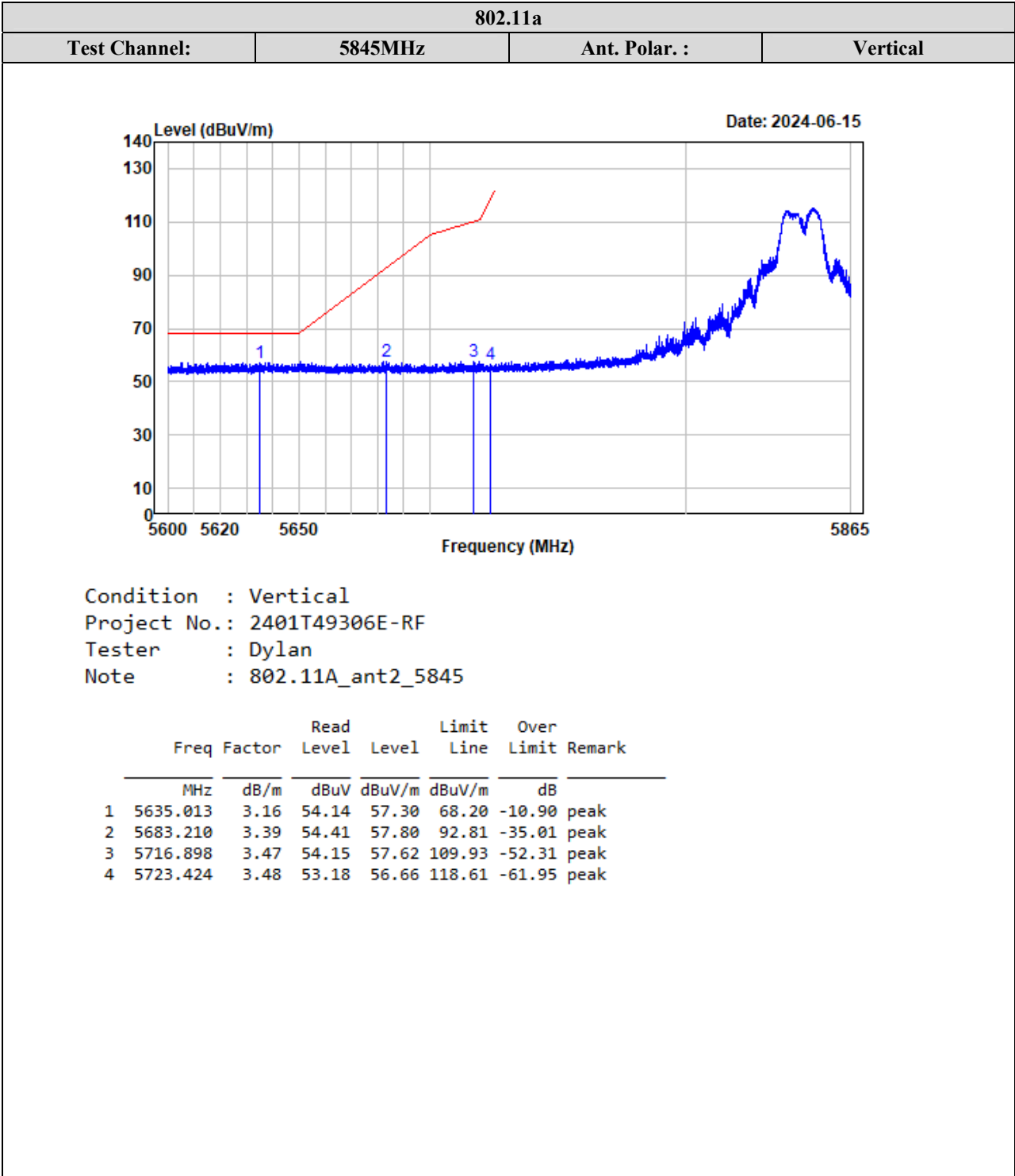


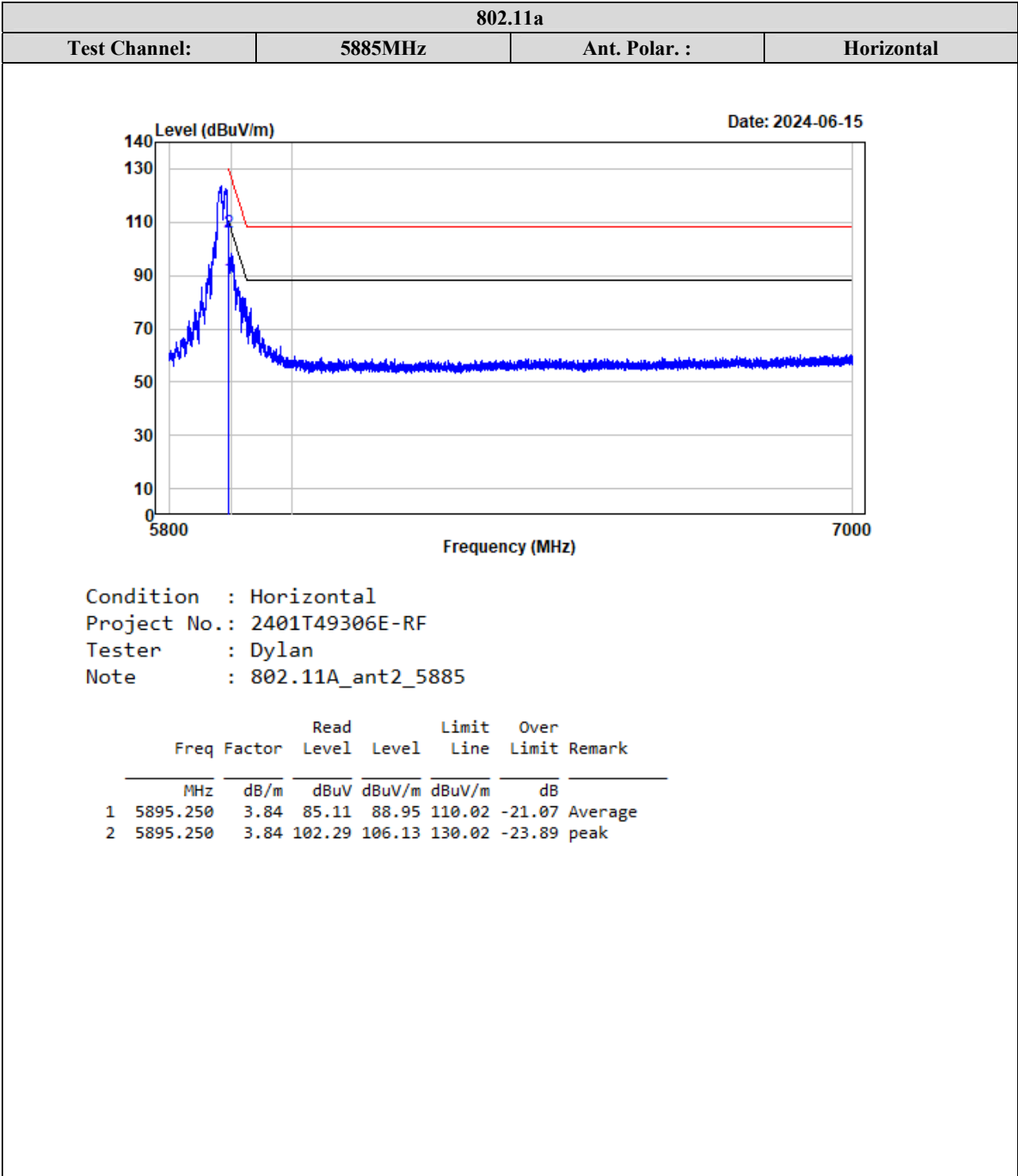


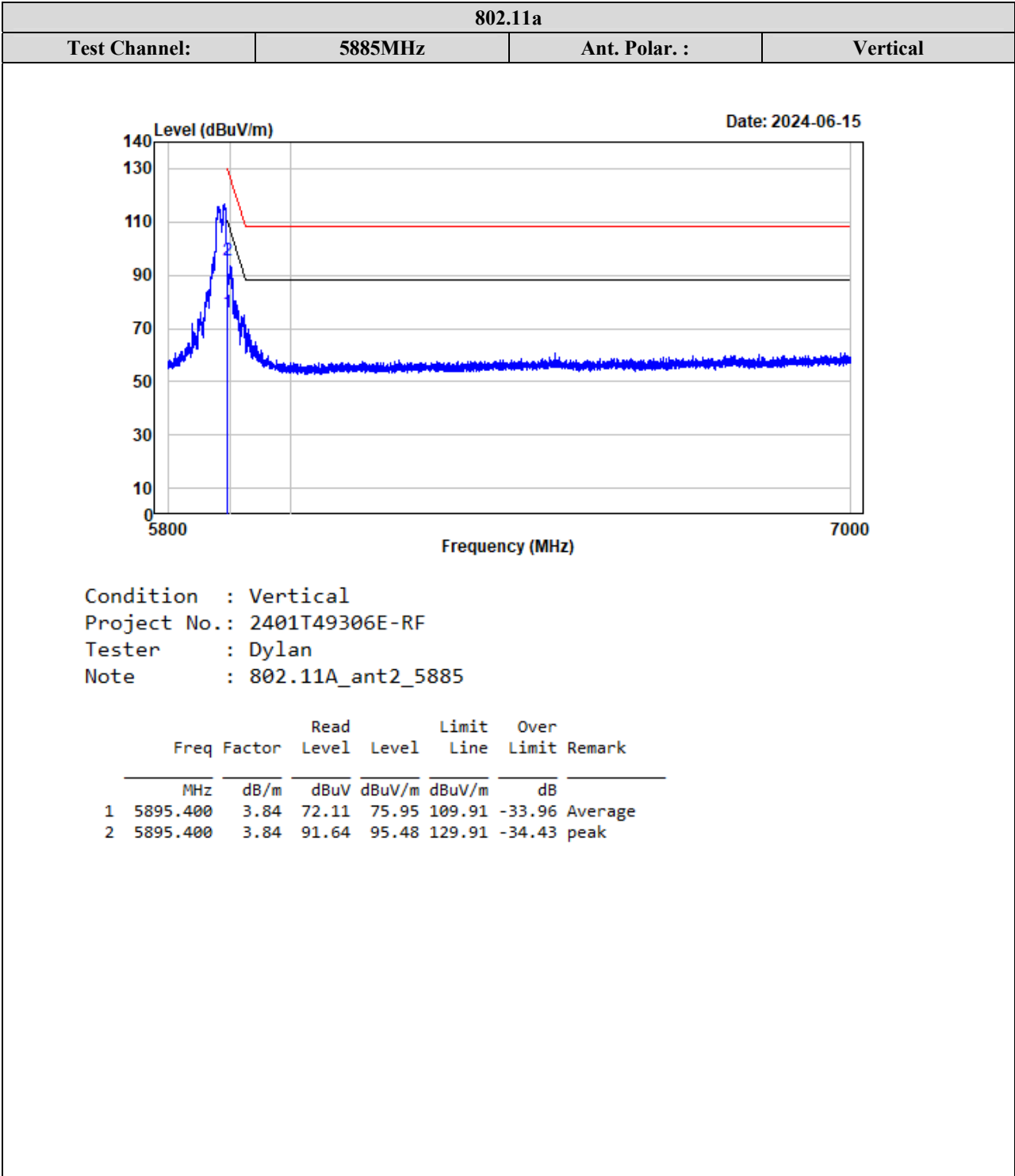


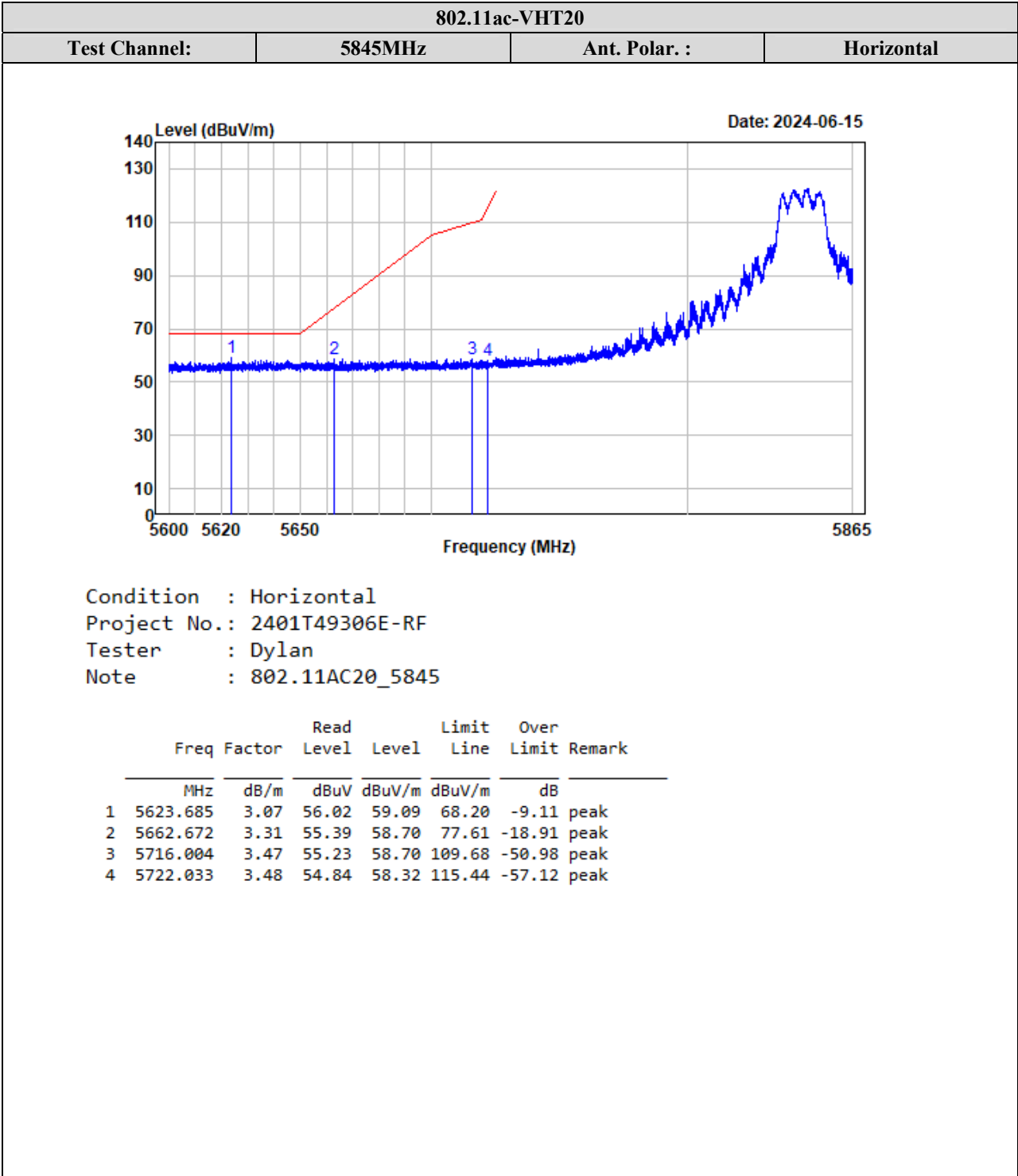
ANT2

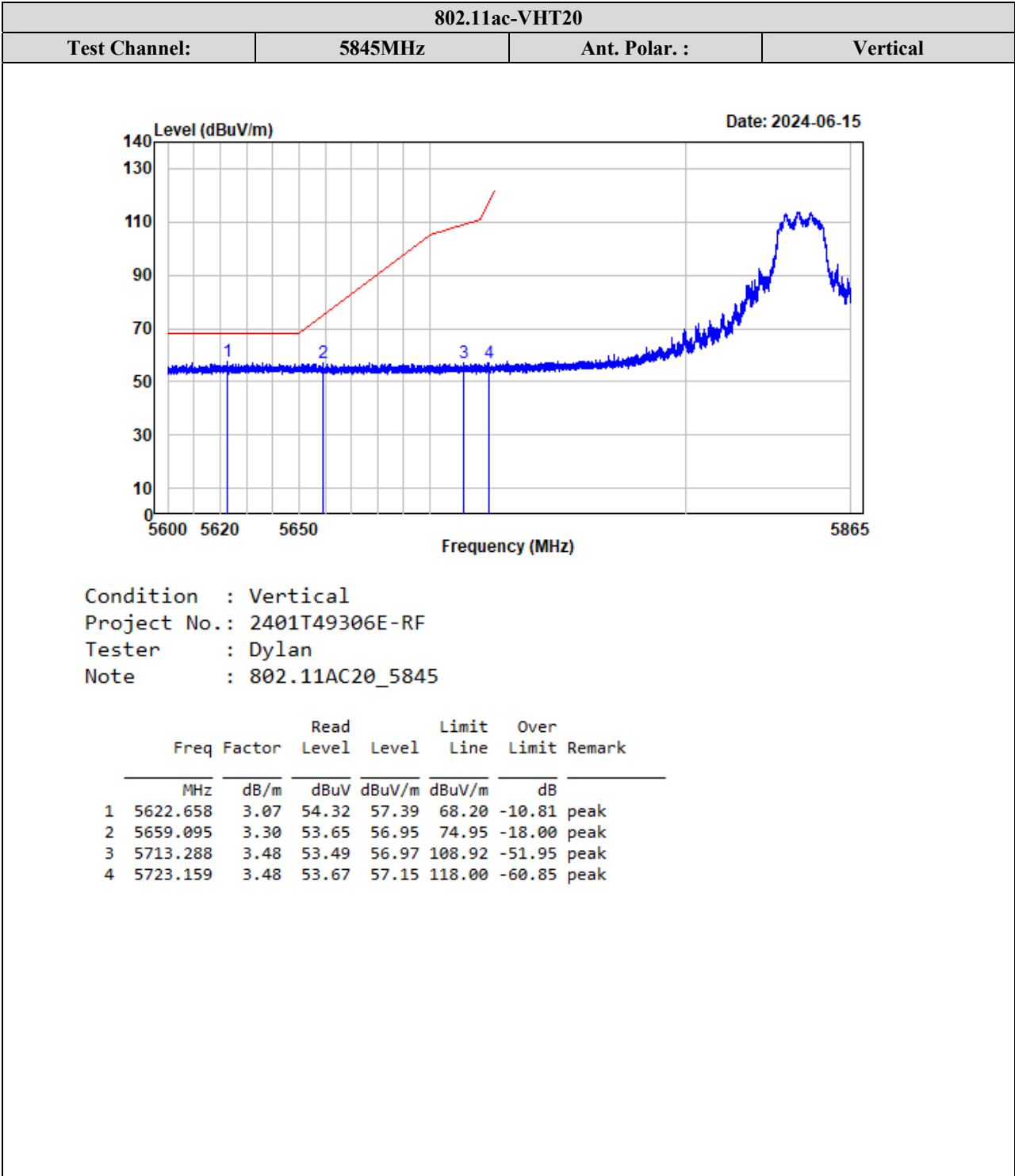


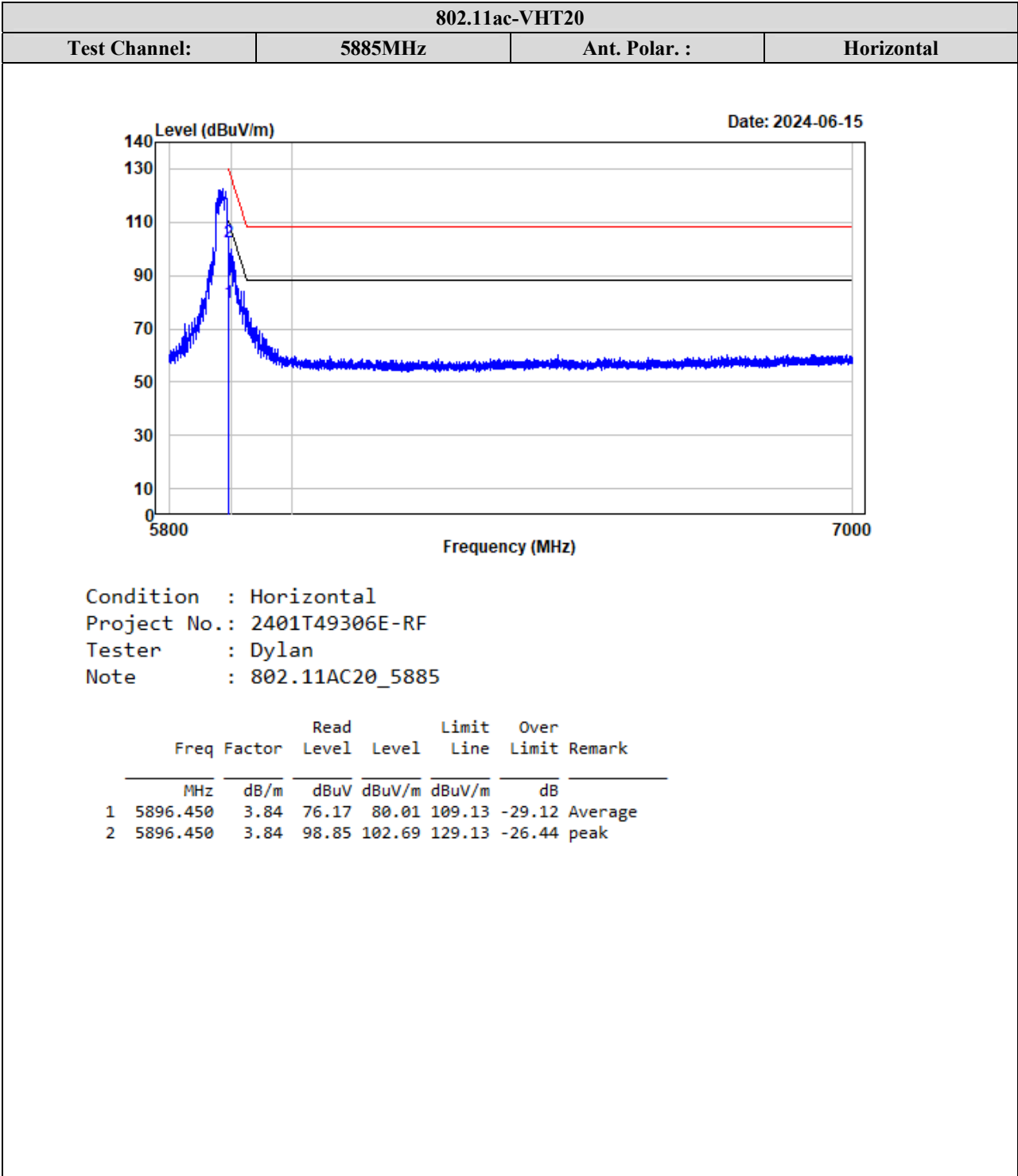


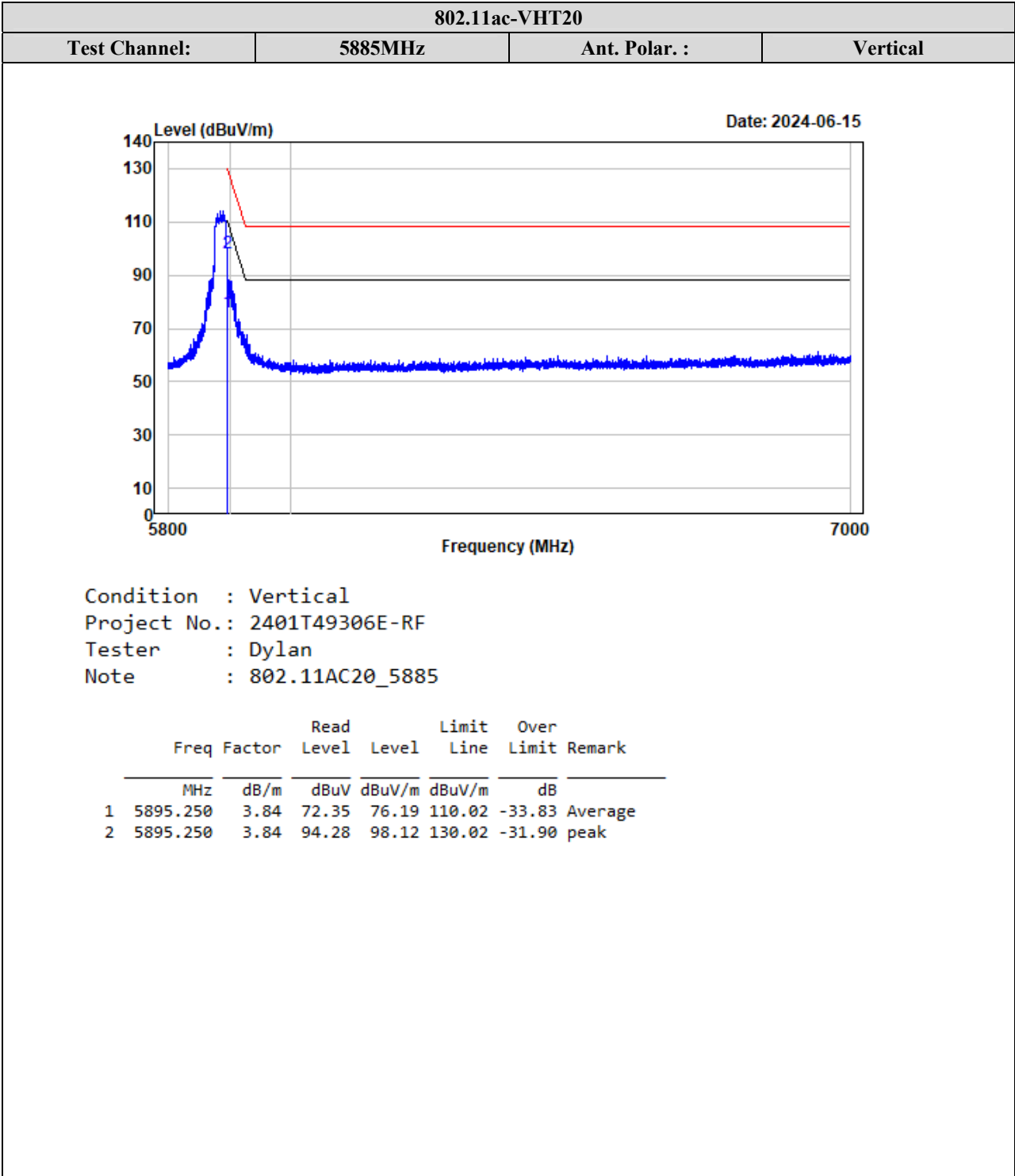


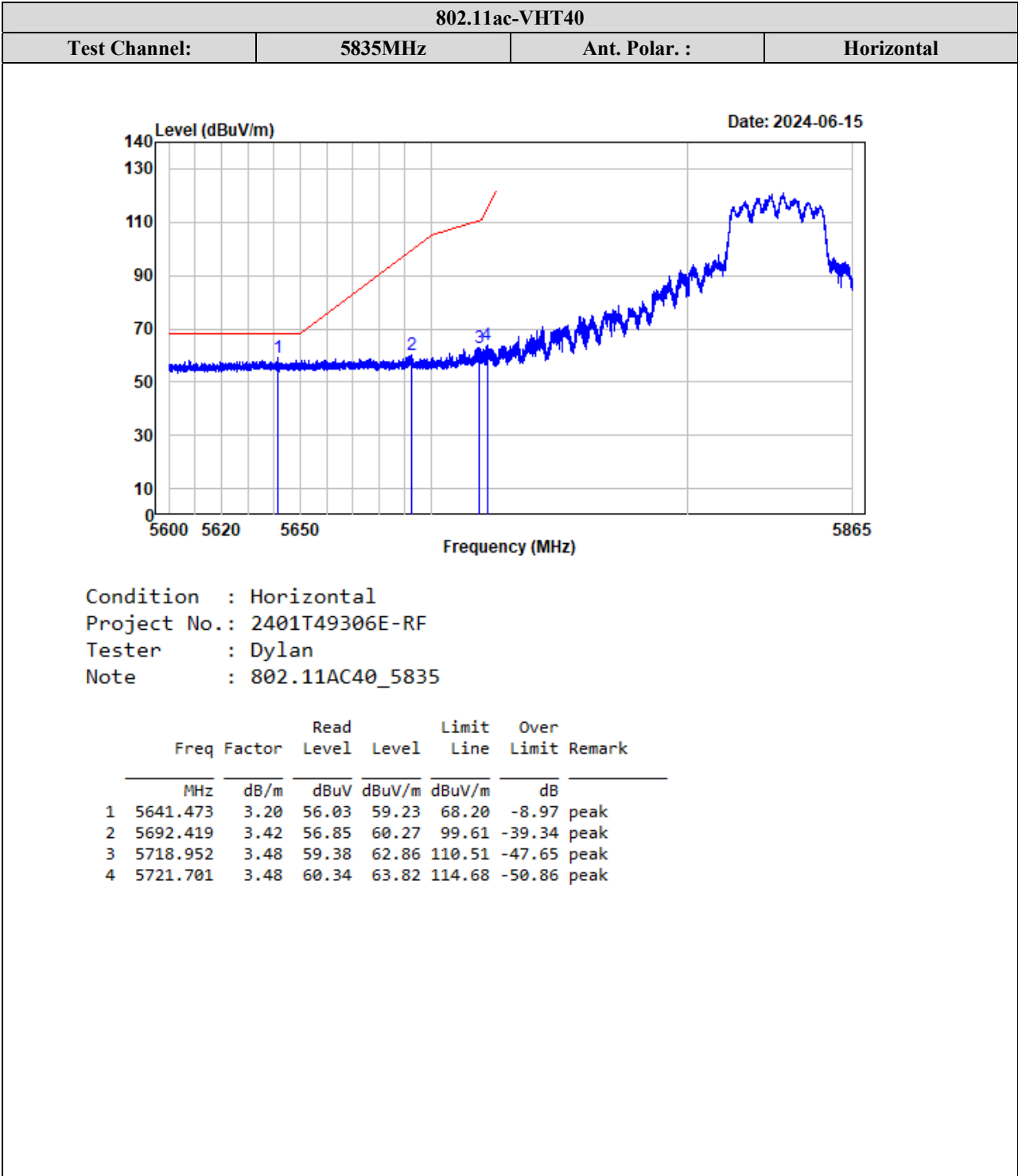


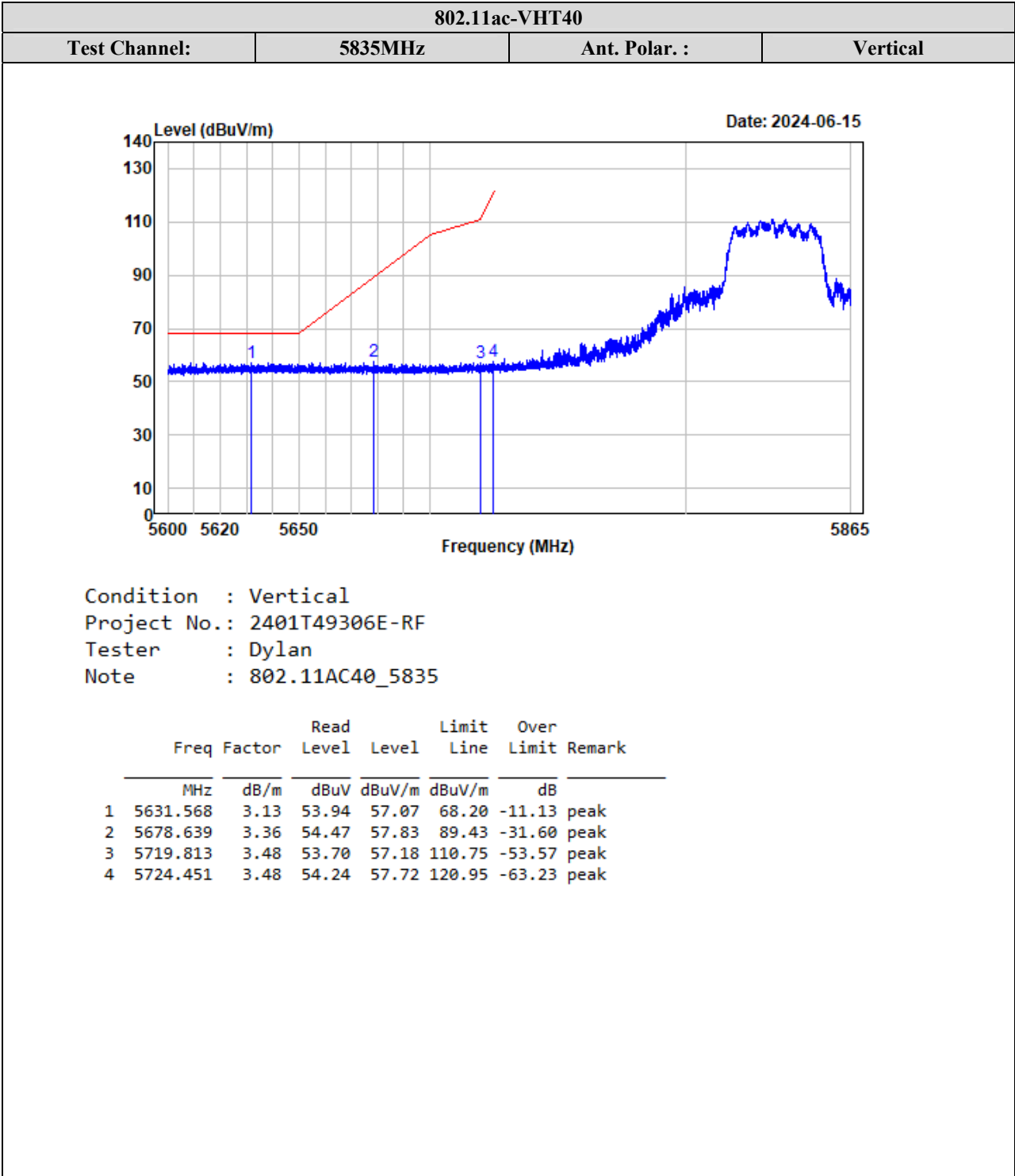


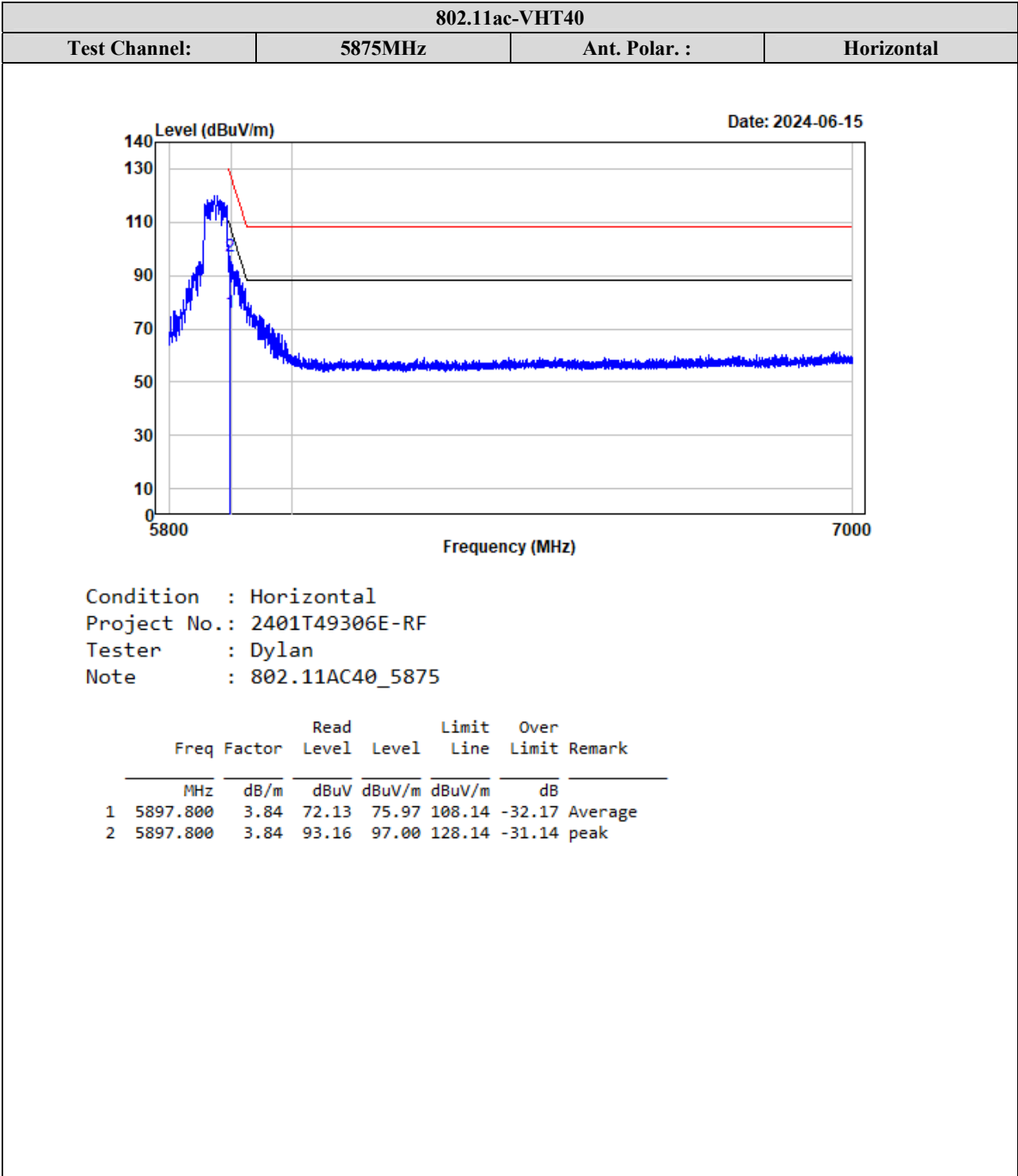


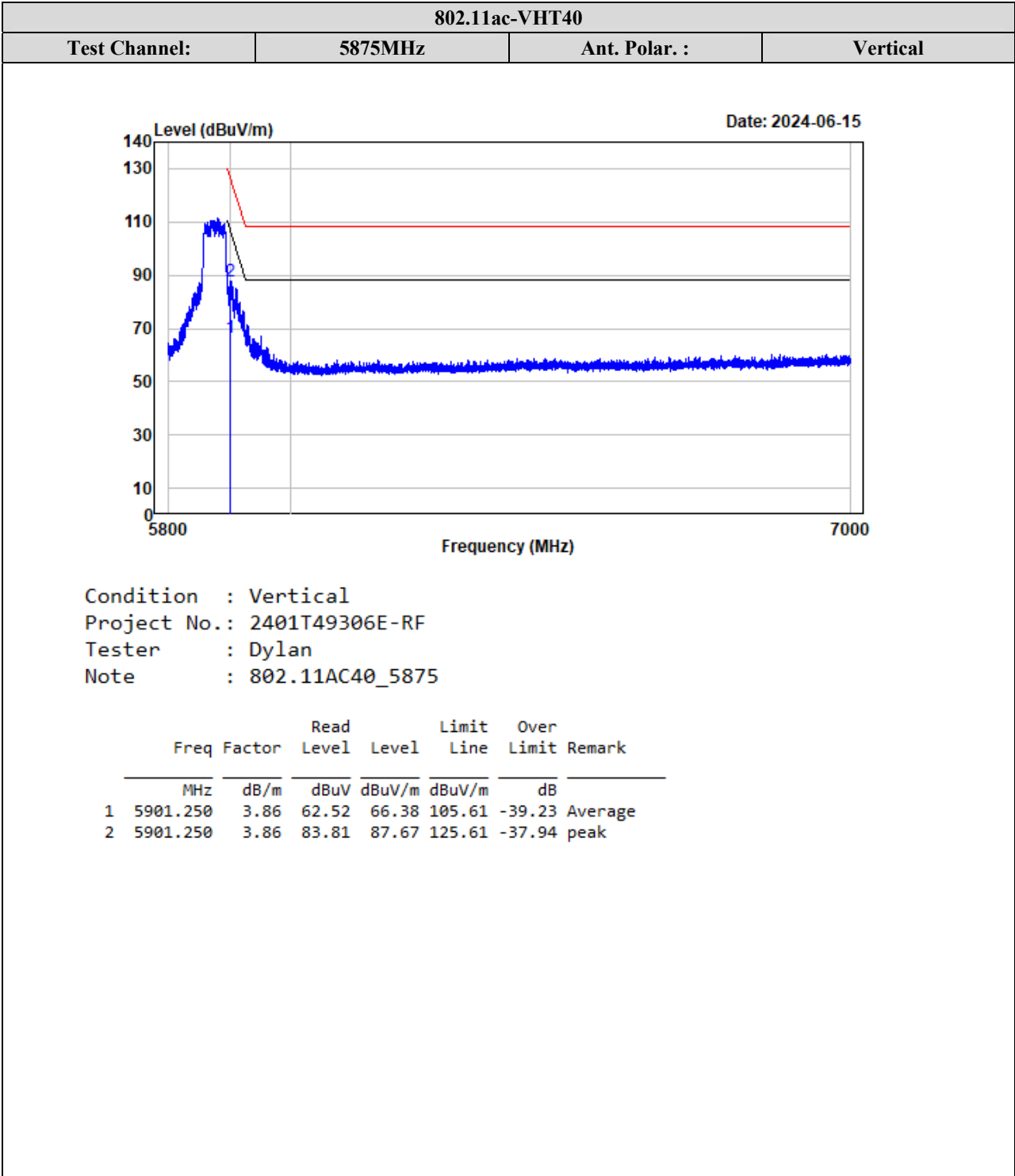


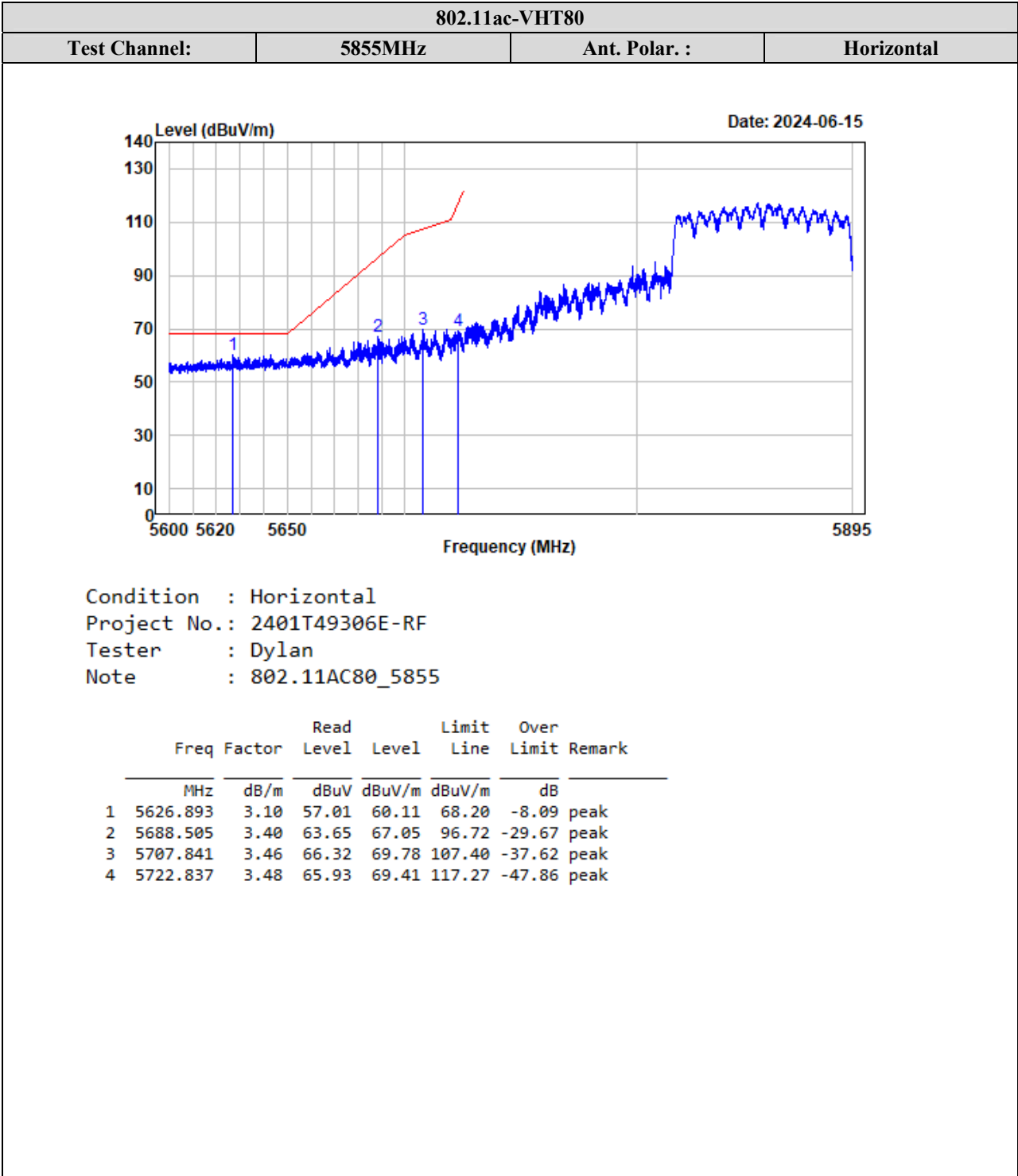


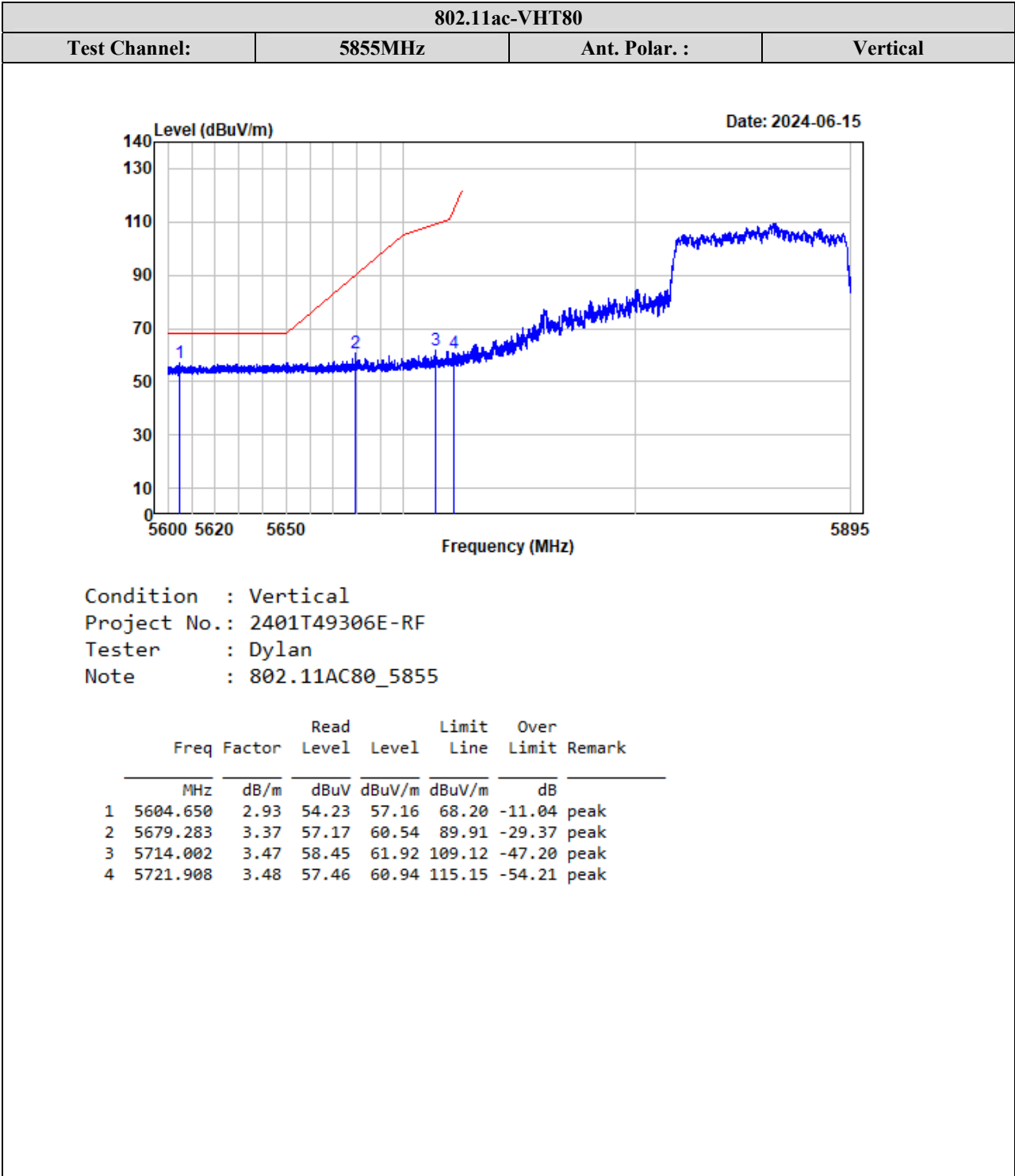


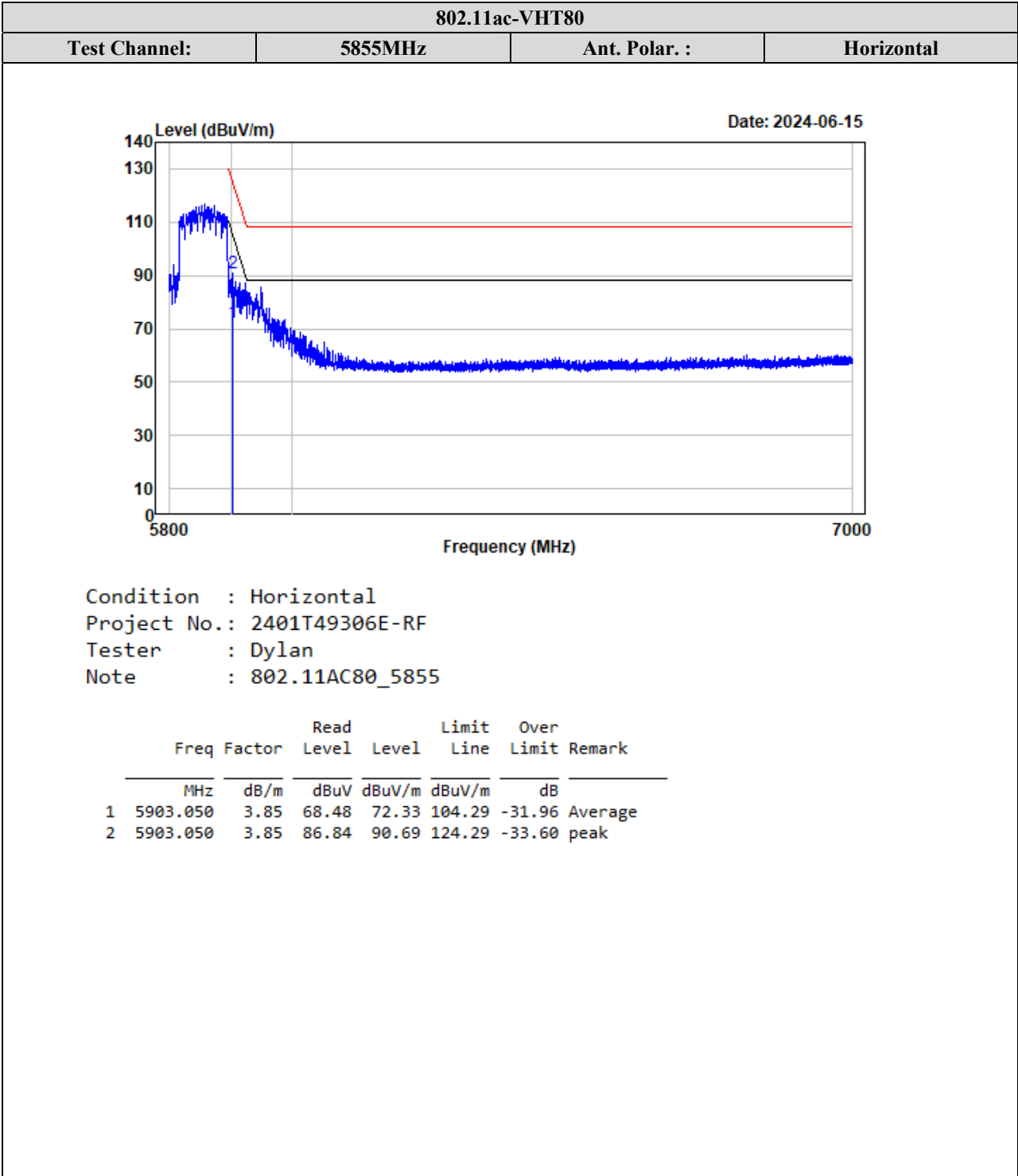


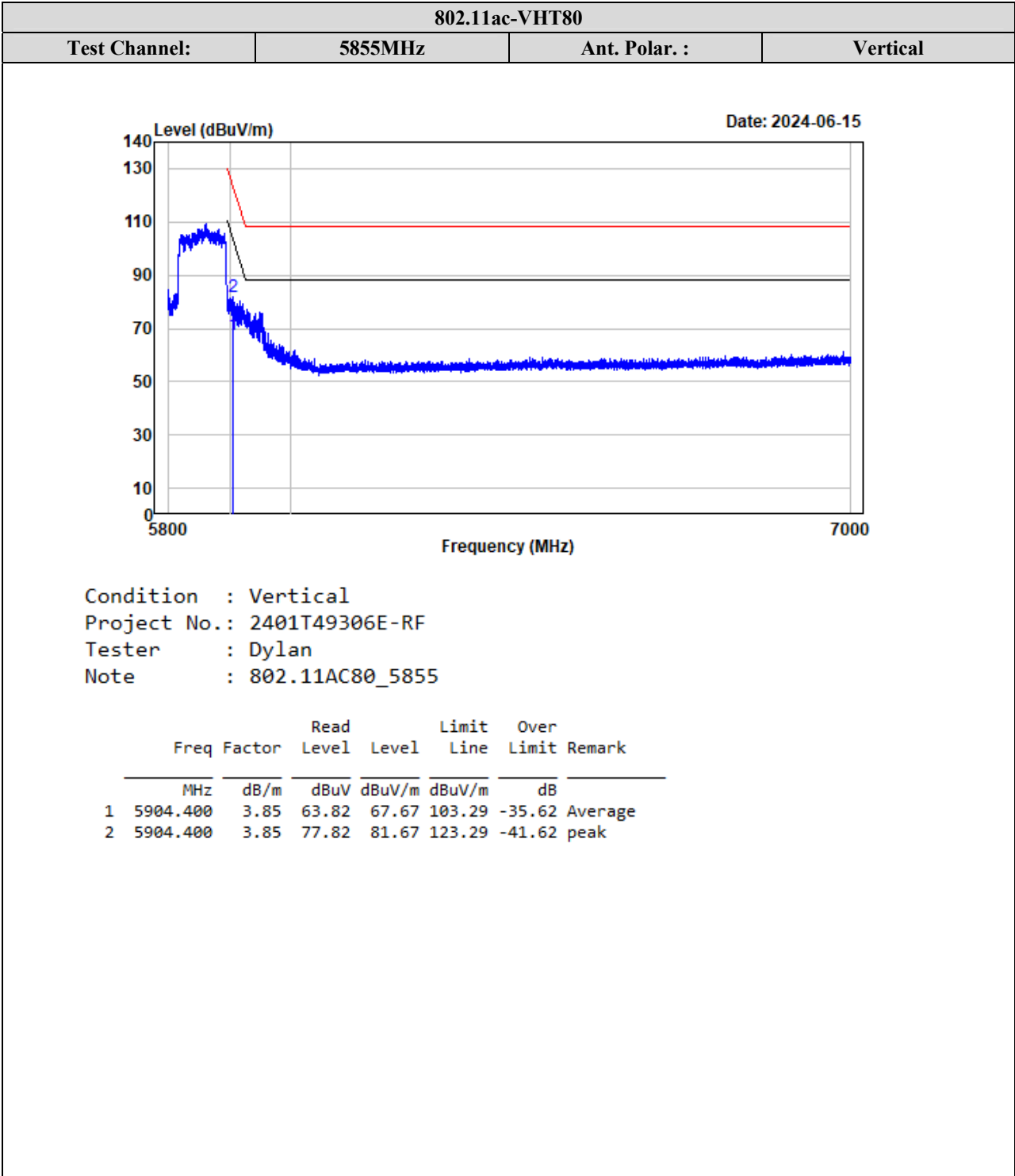


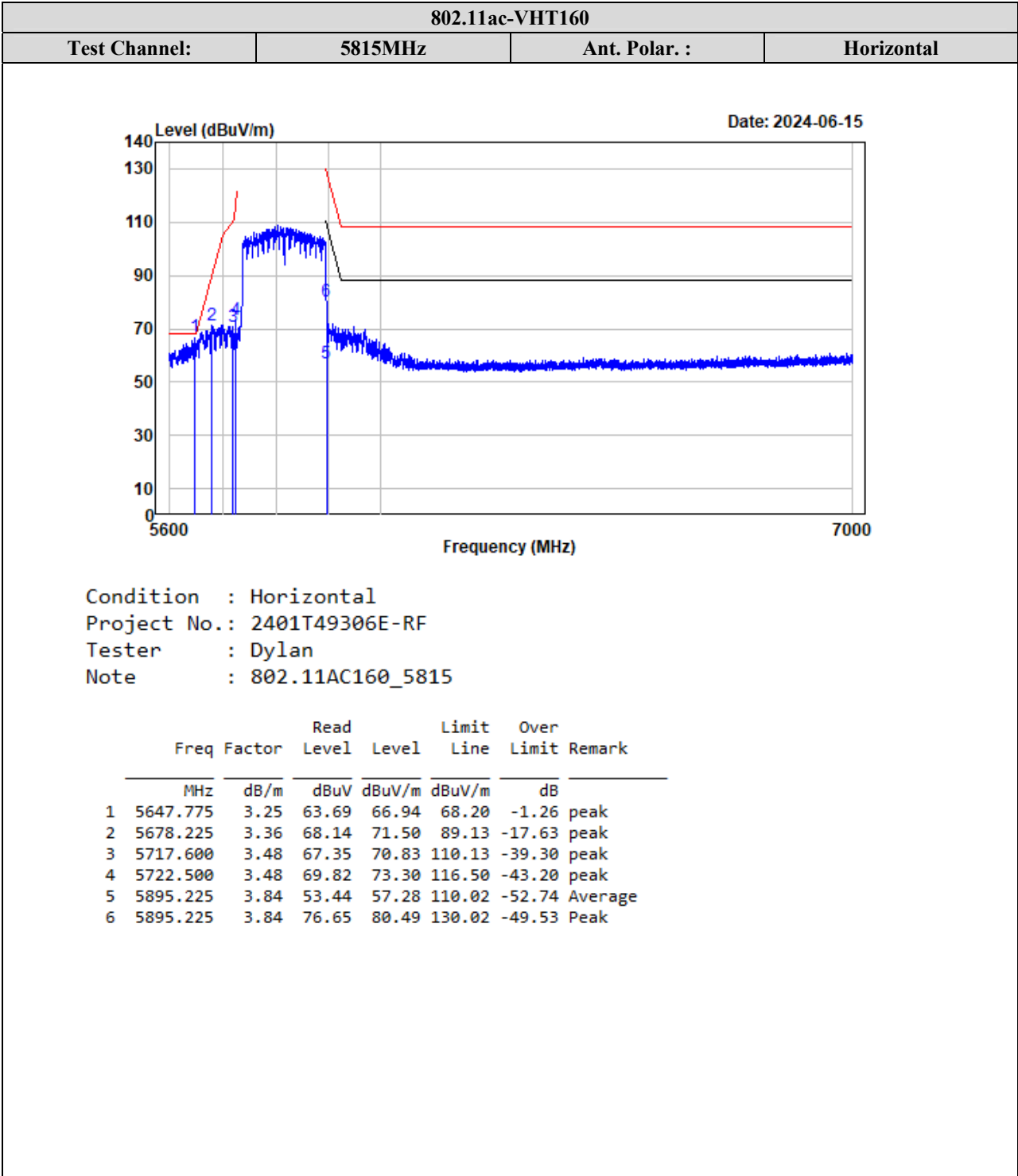


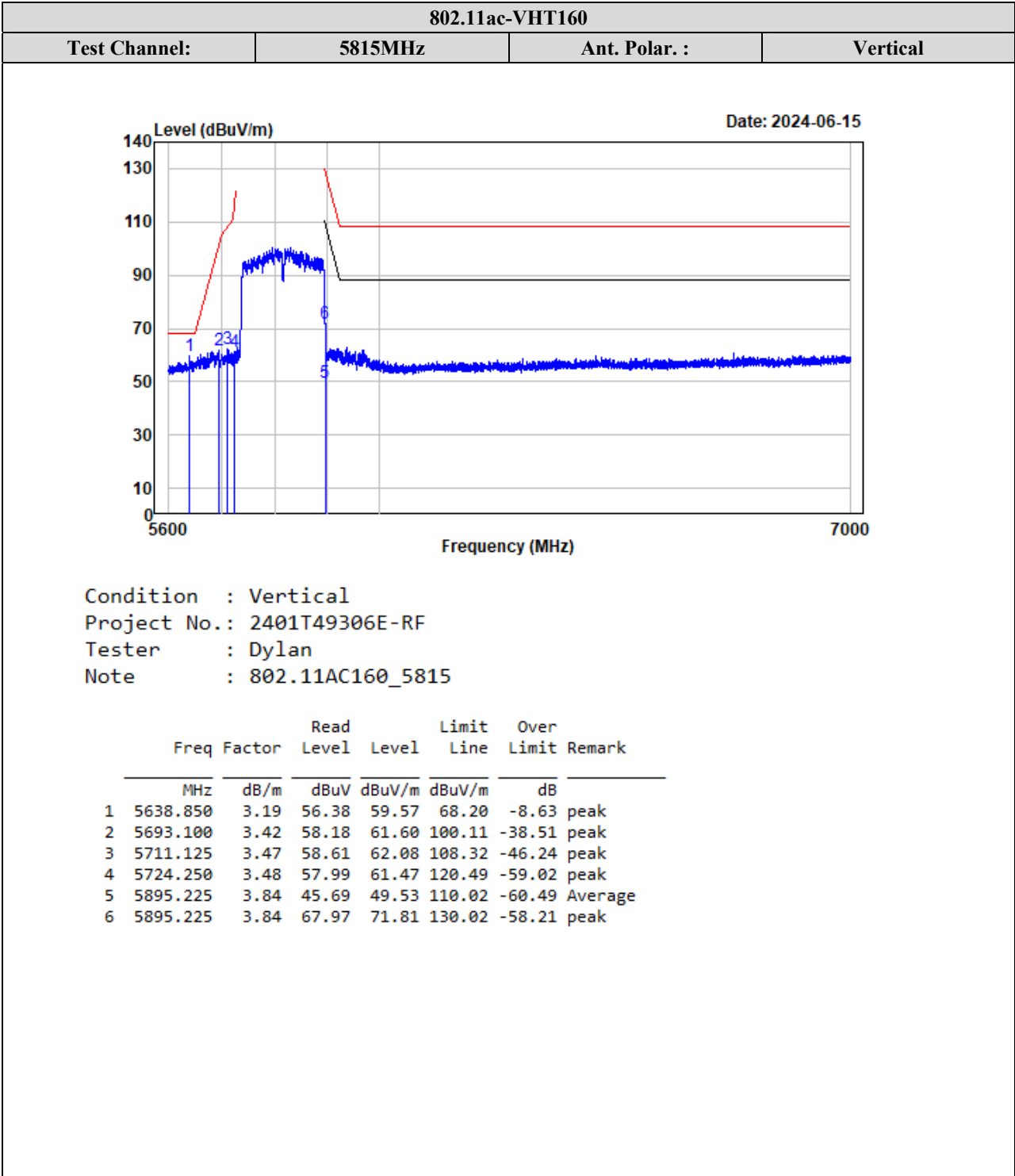


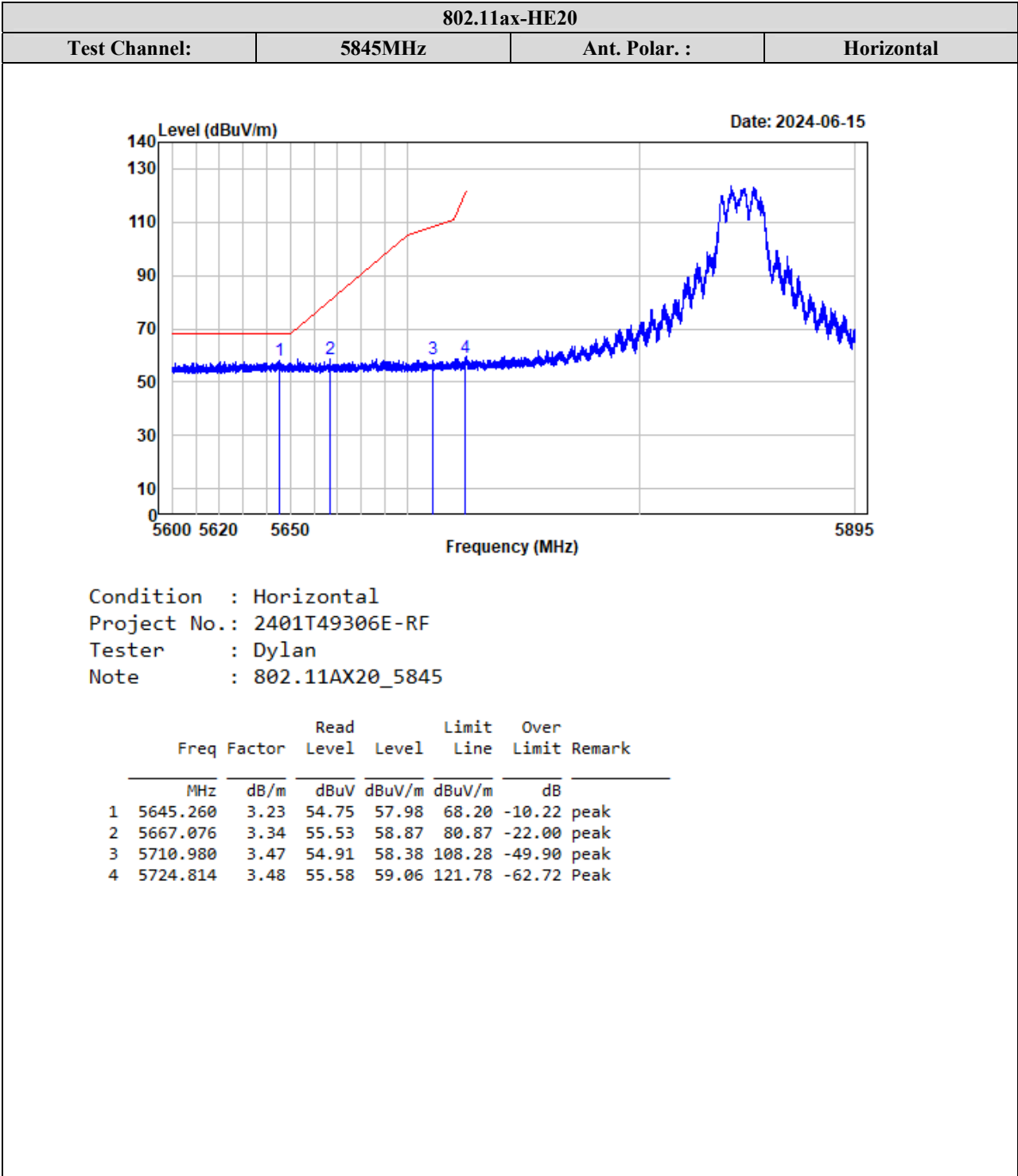


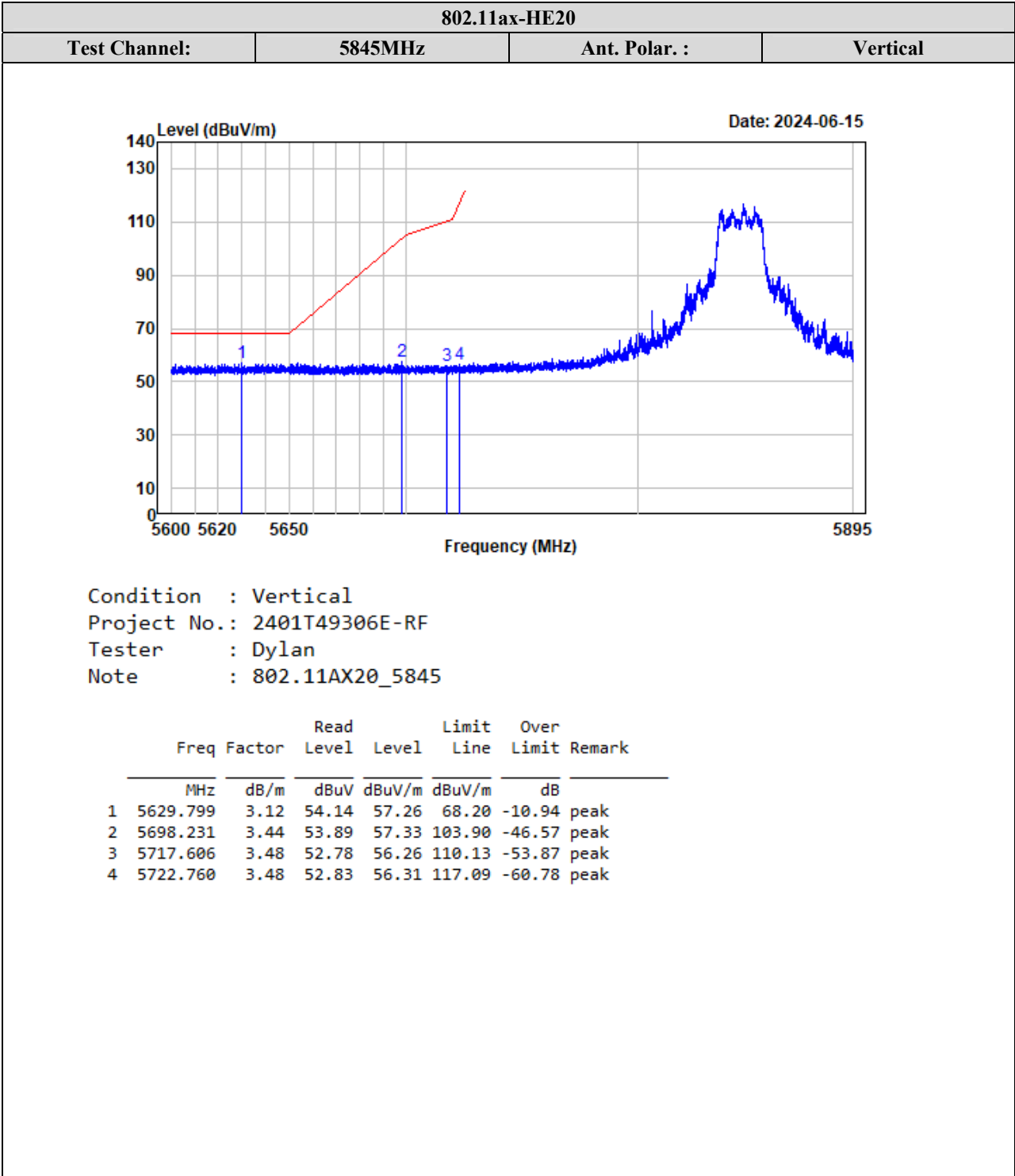








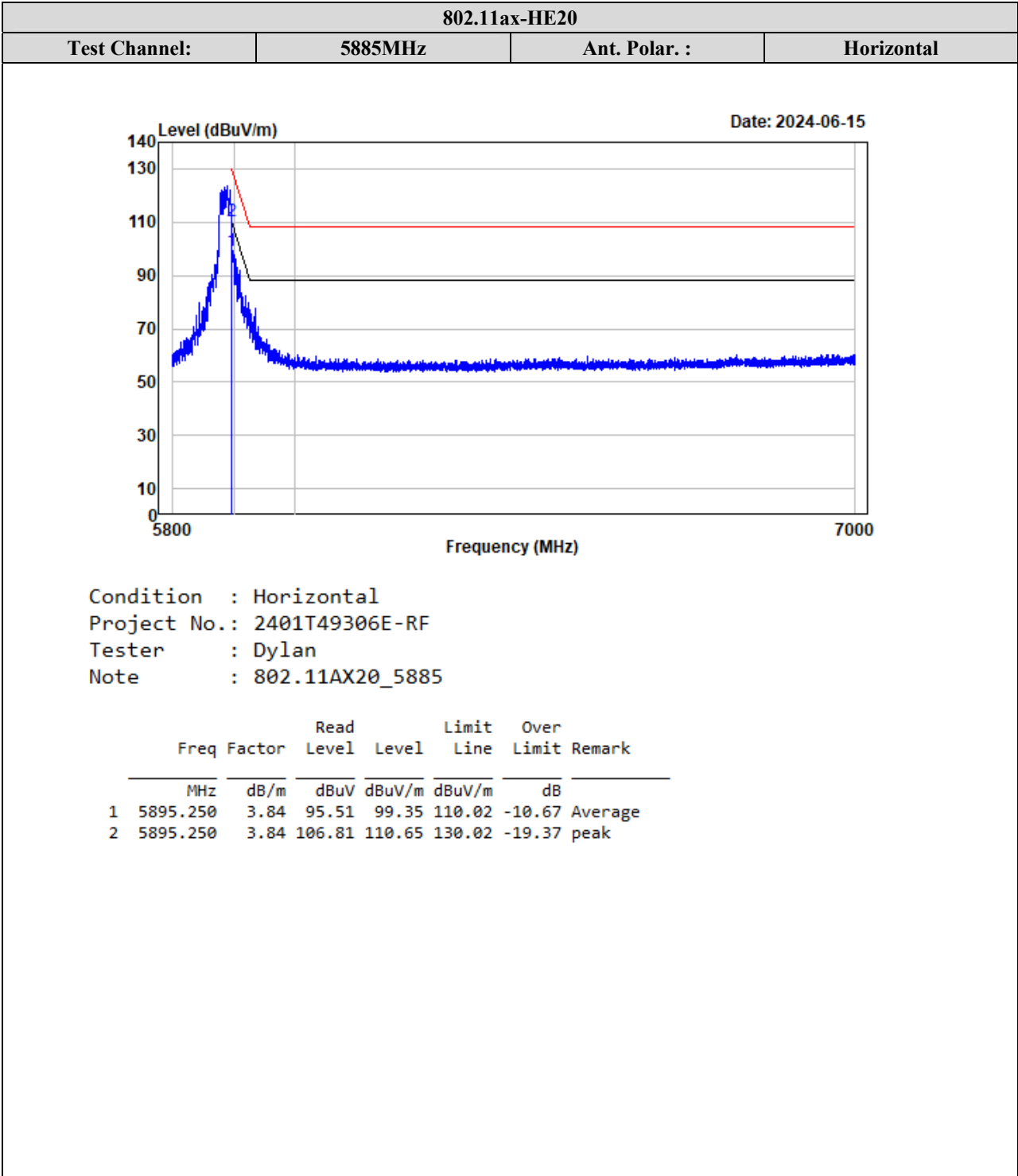


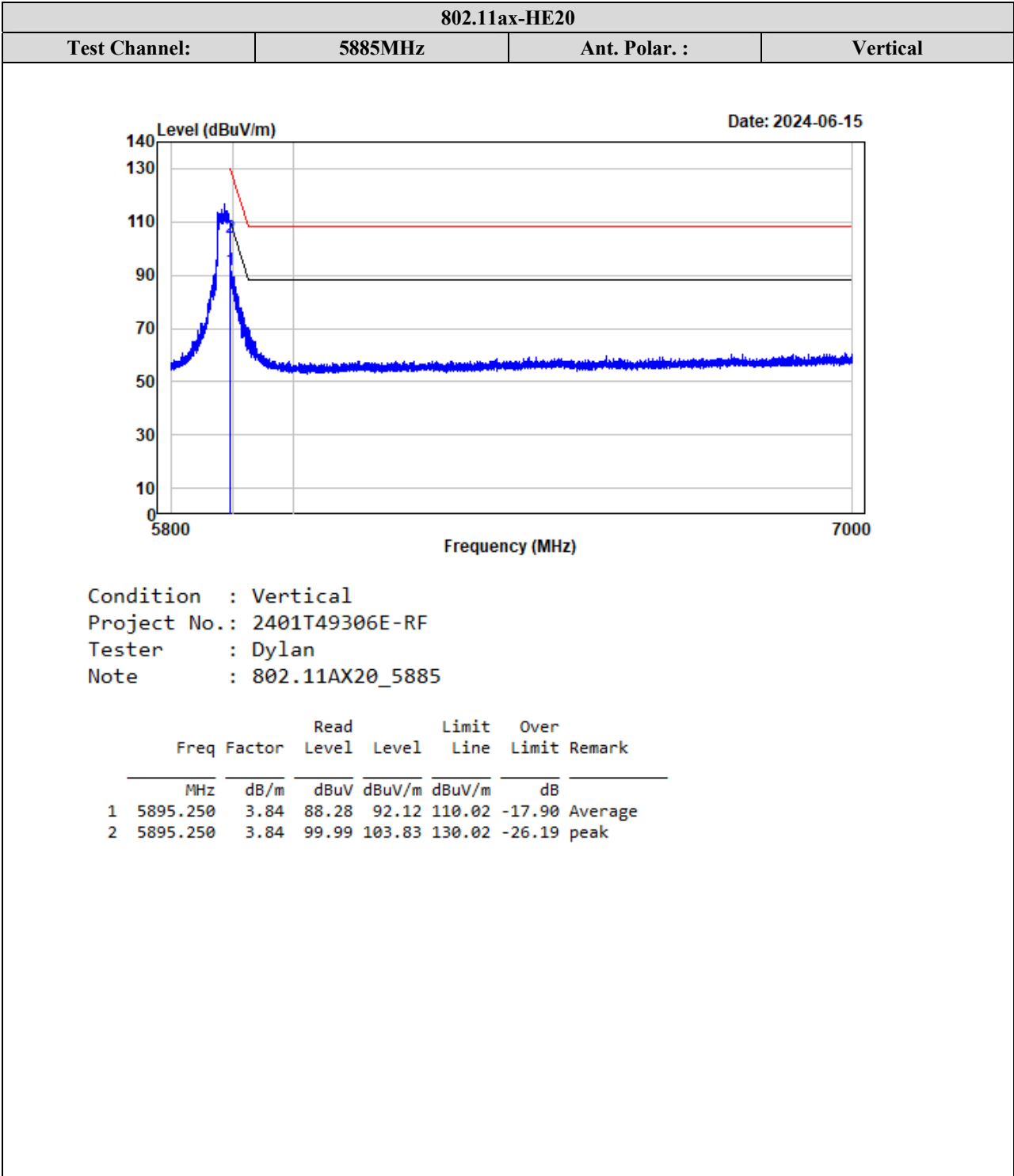


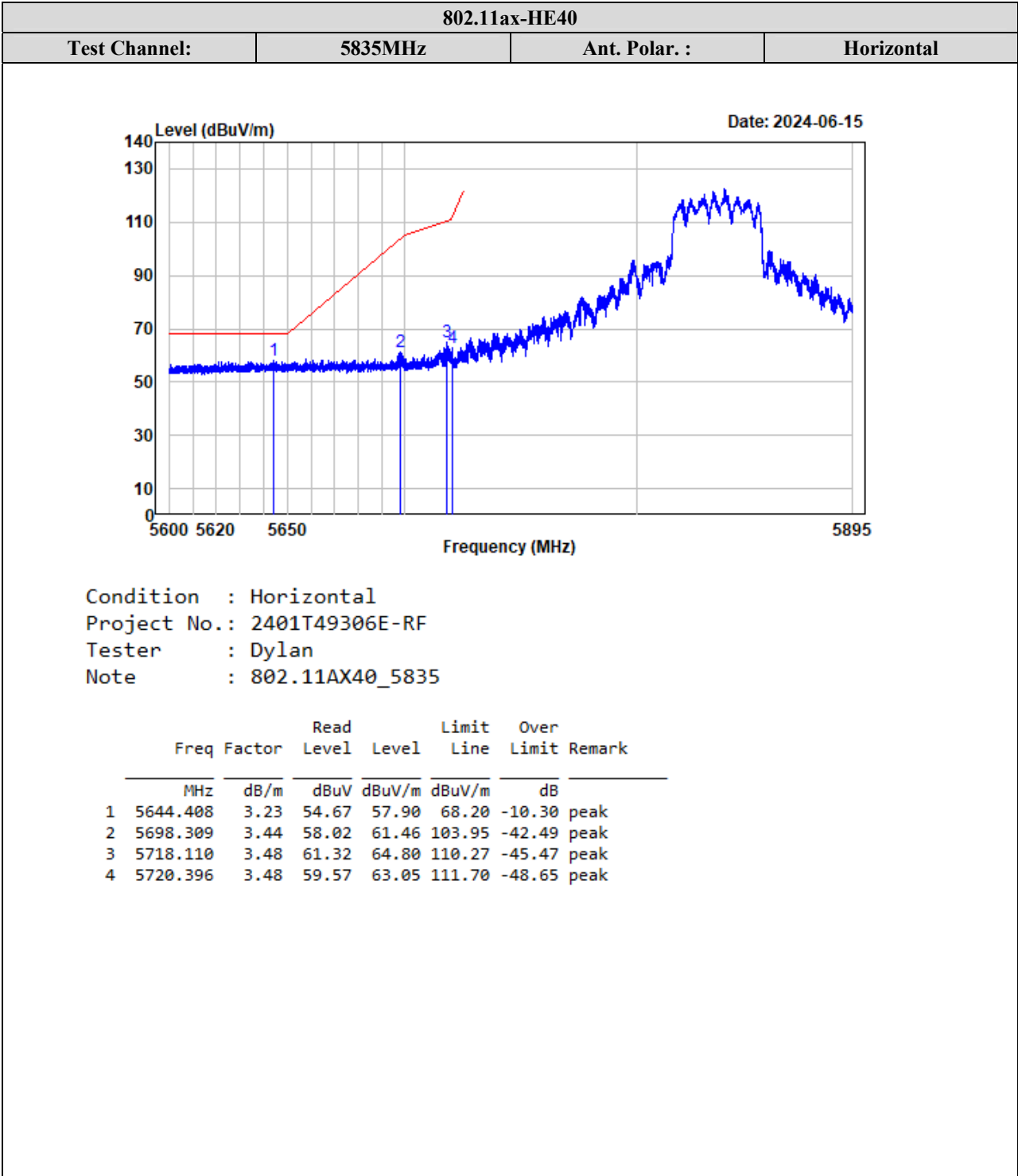
TR-EM-RF015

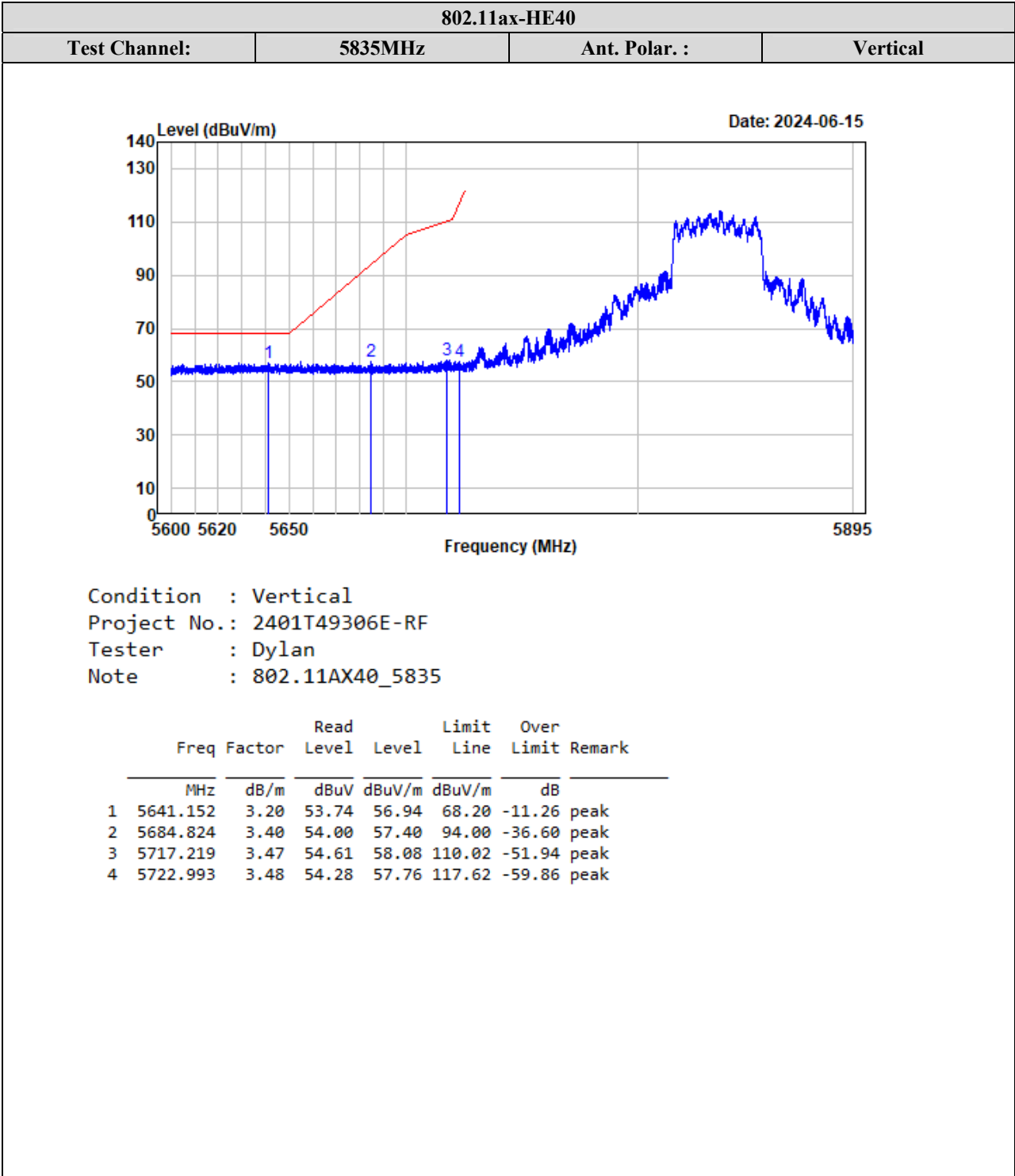
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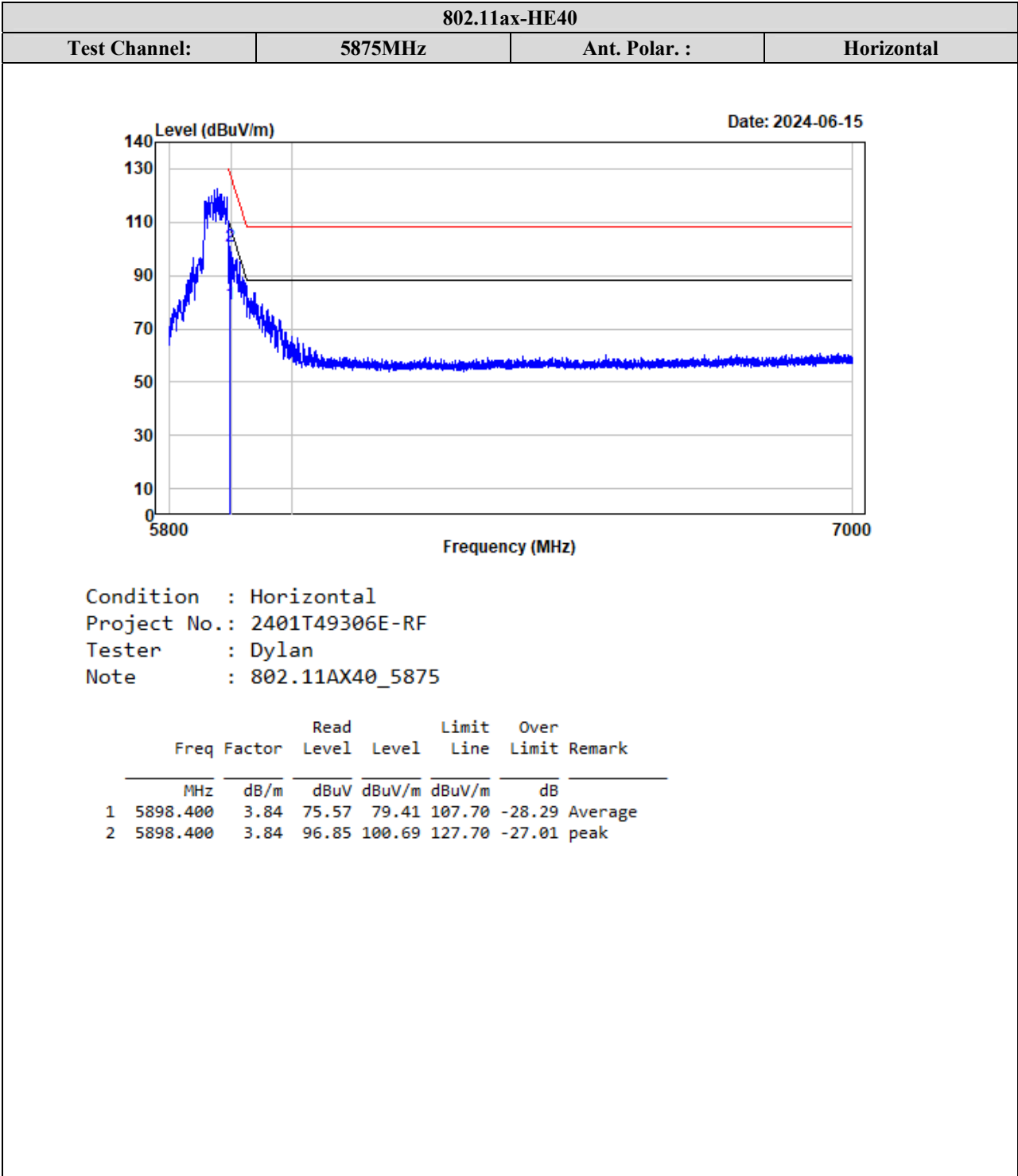
Version 1.0 (2023/10/07)

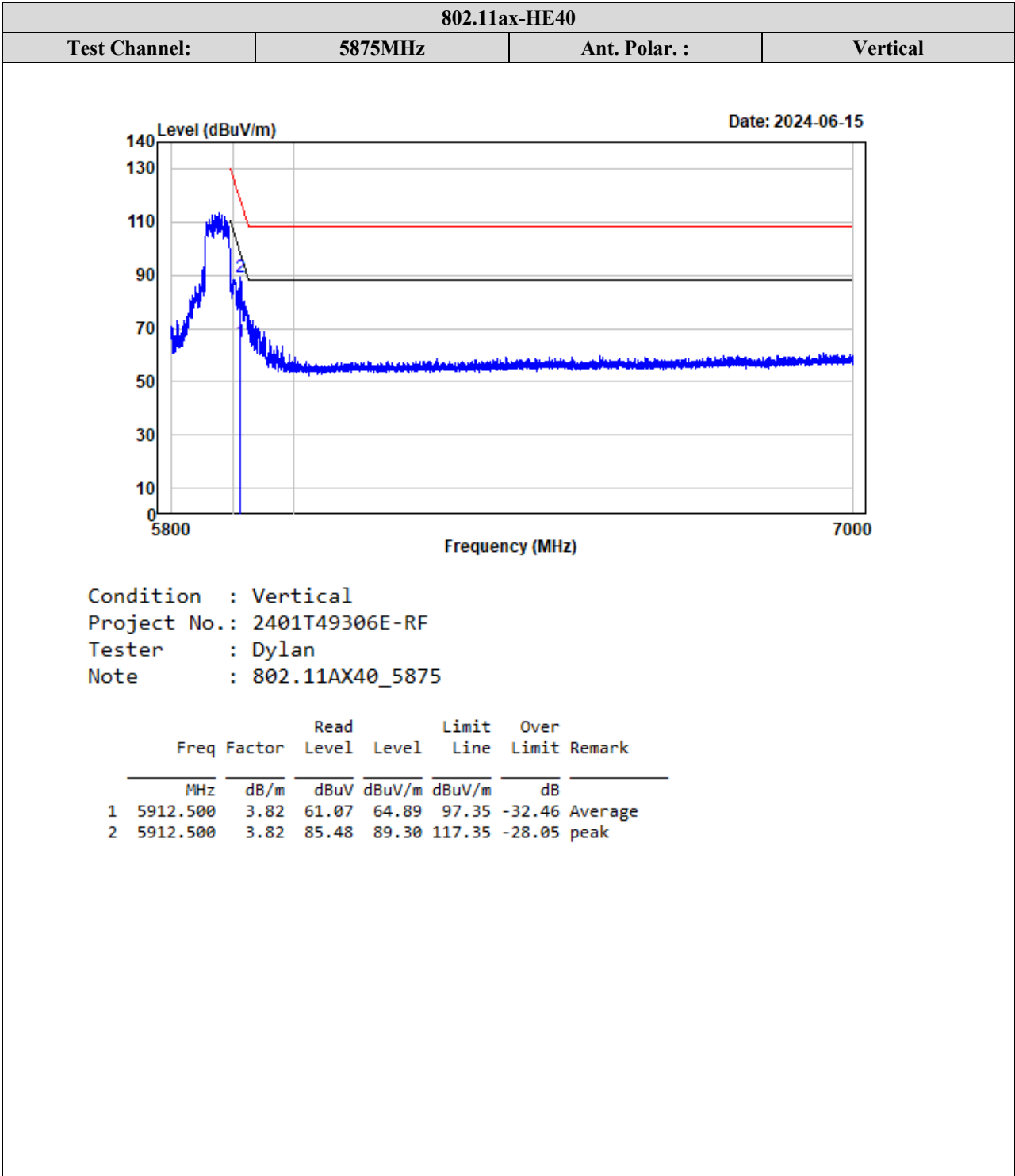


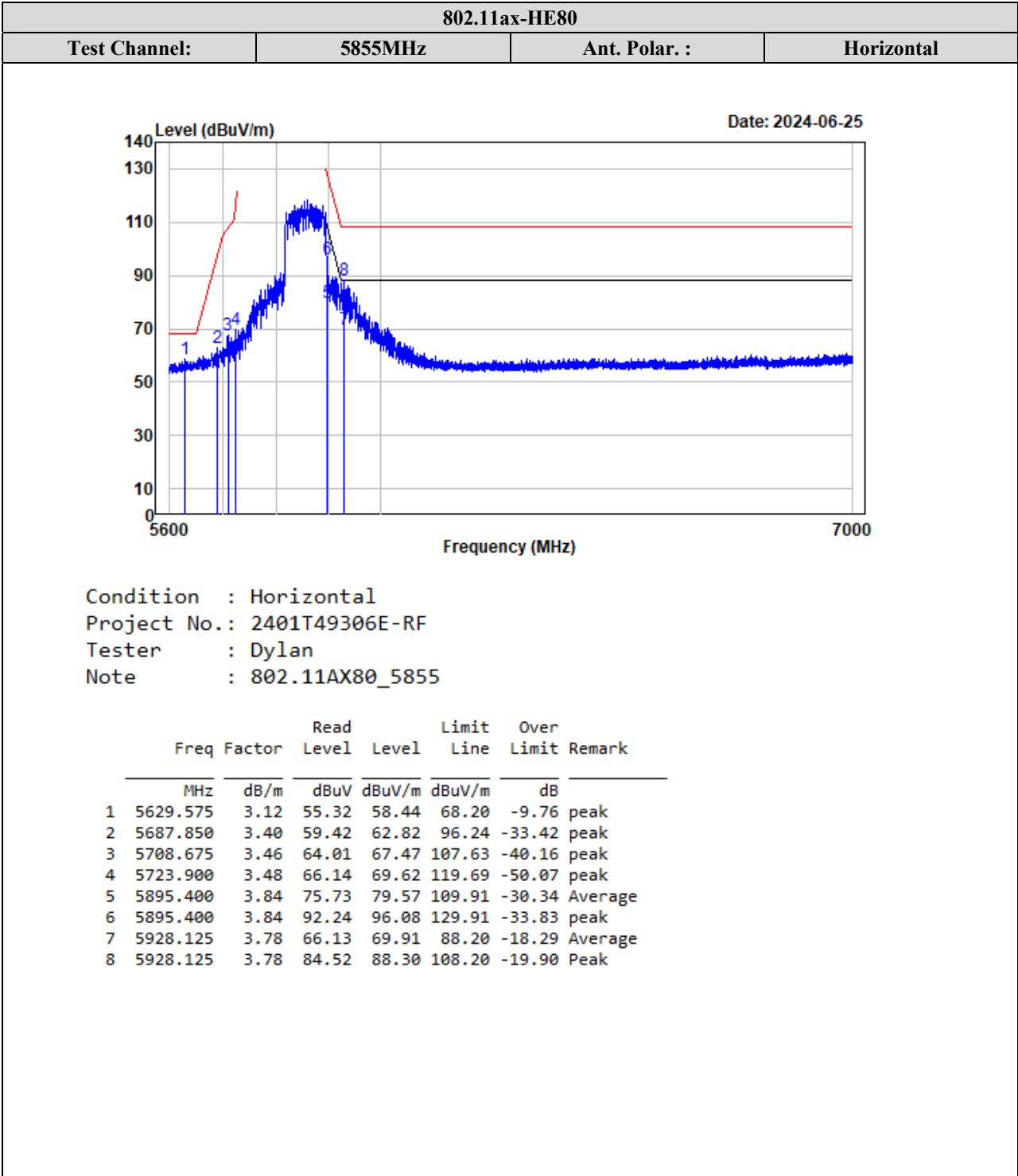


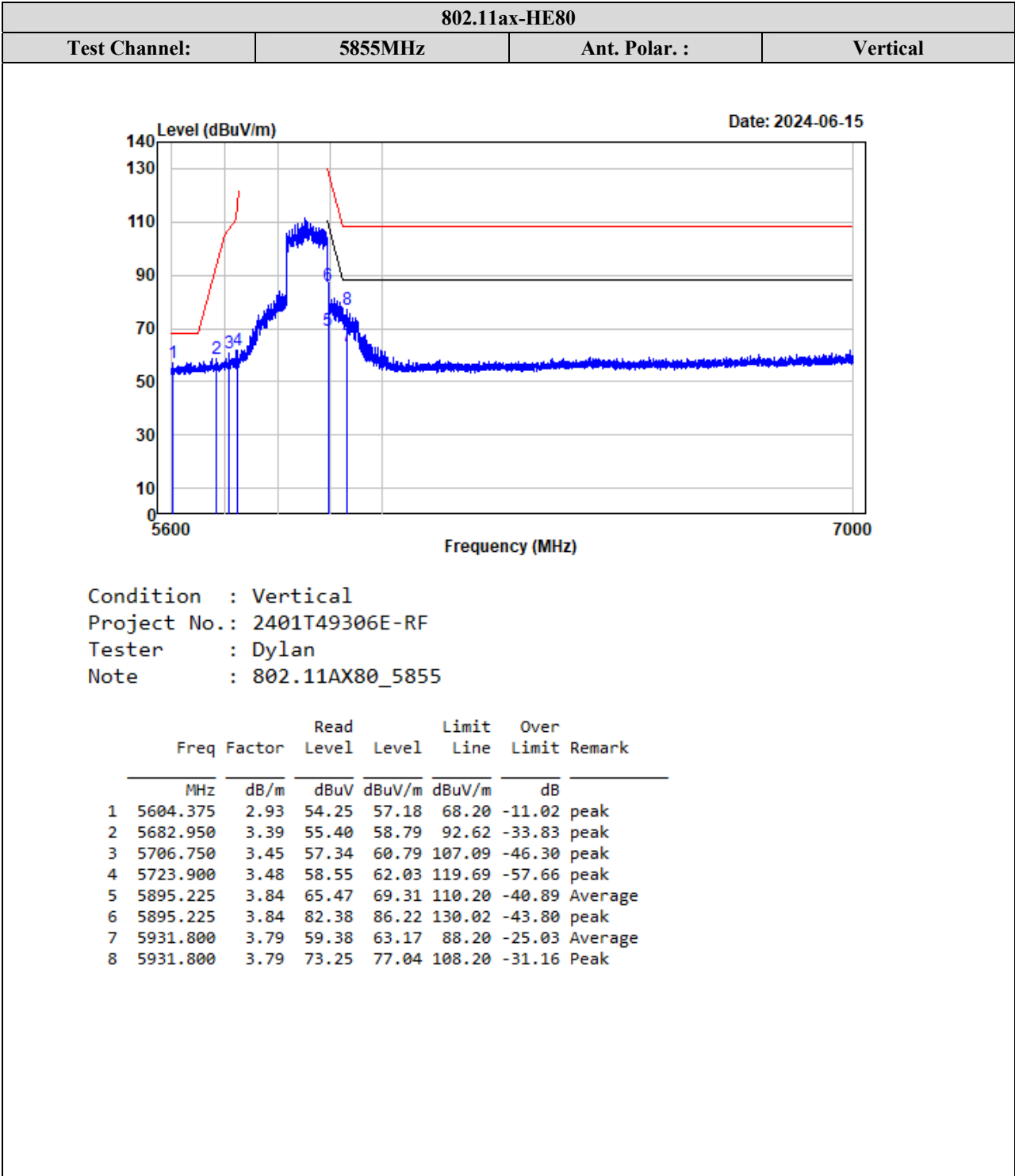


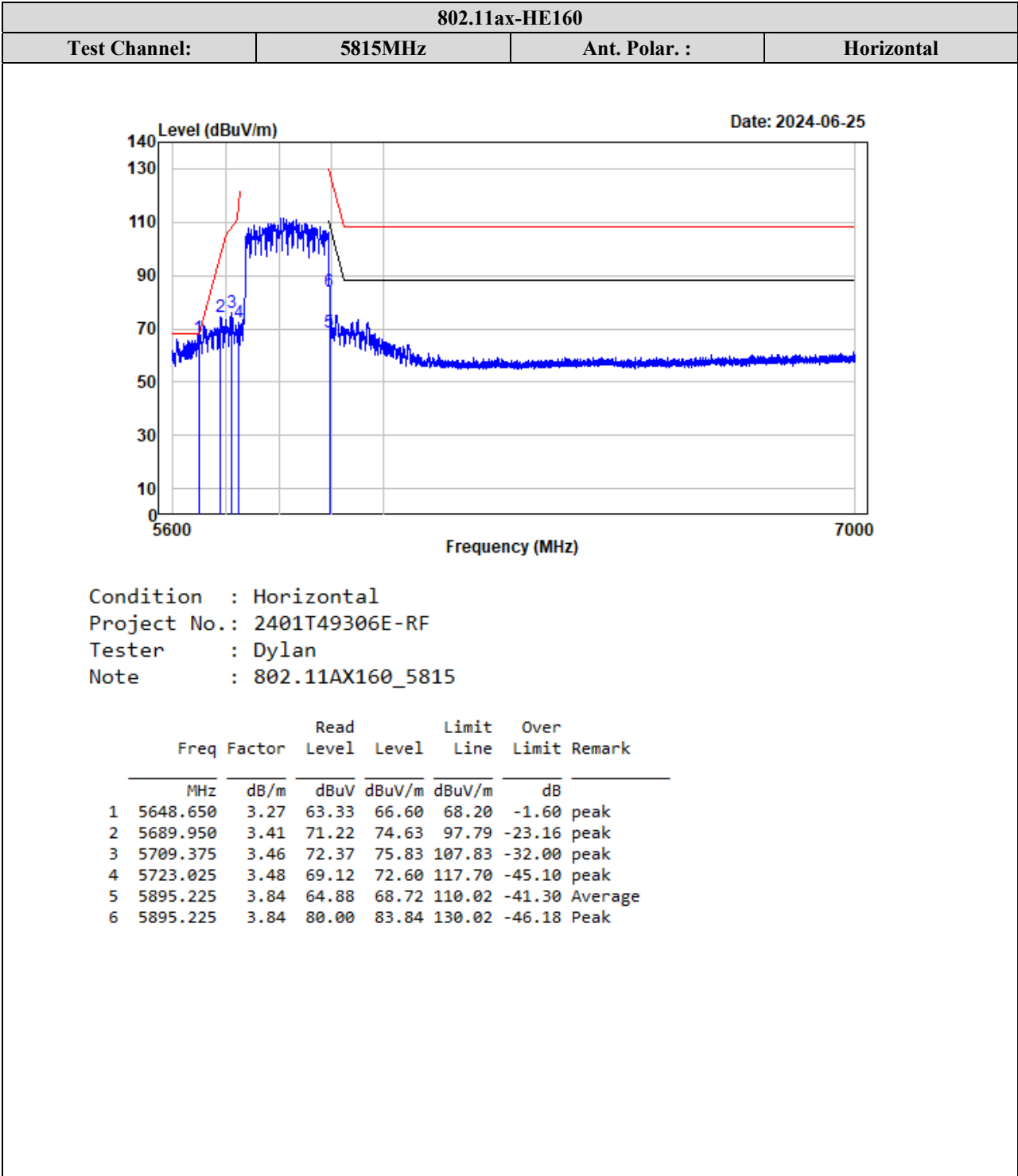


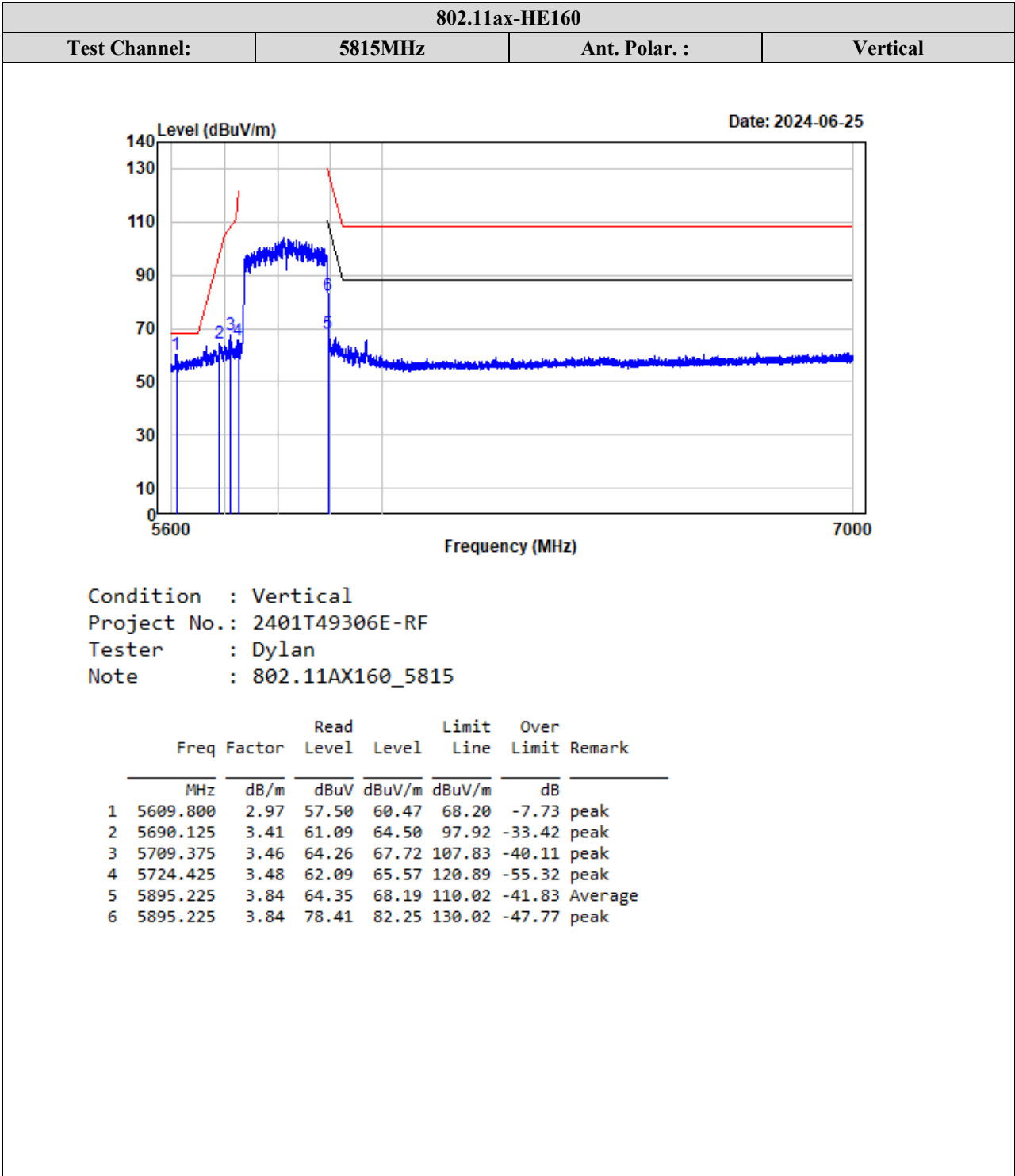










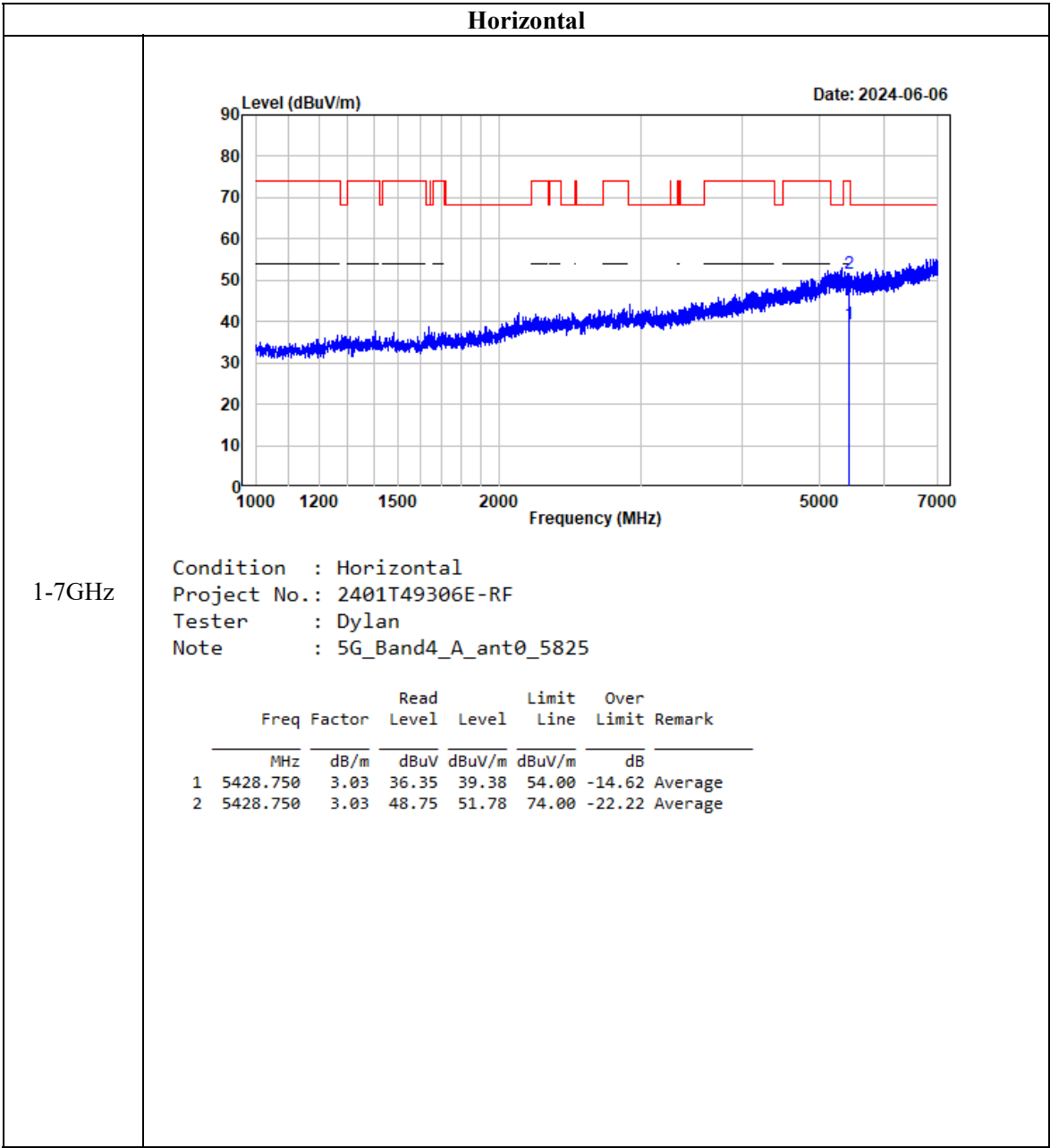


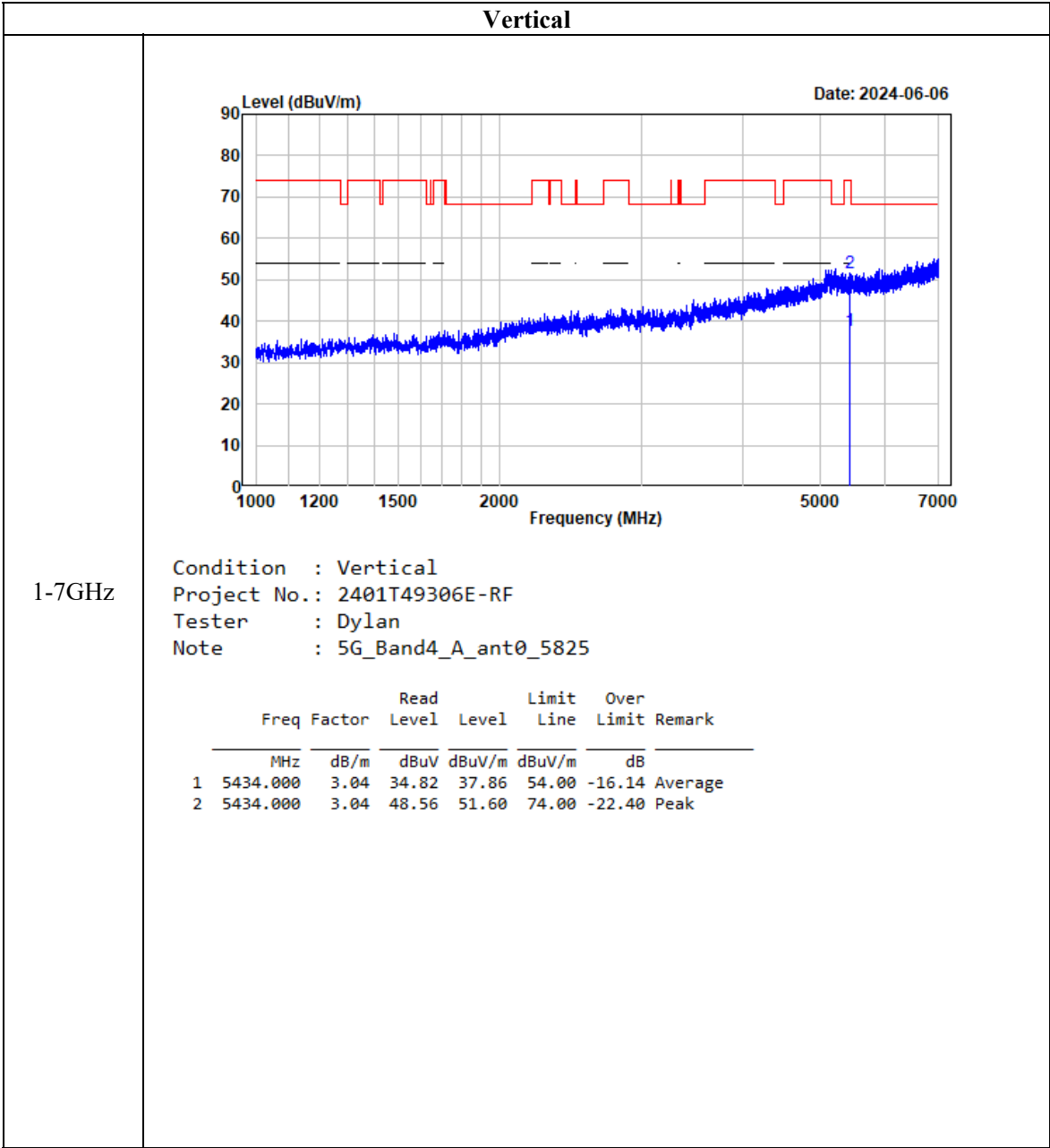
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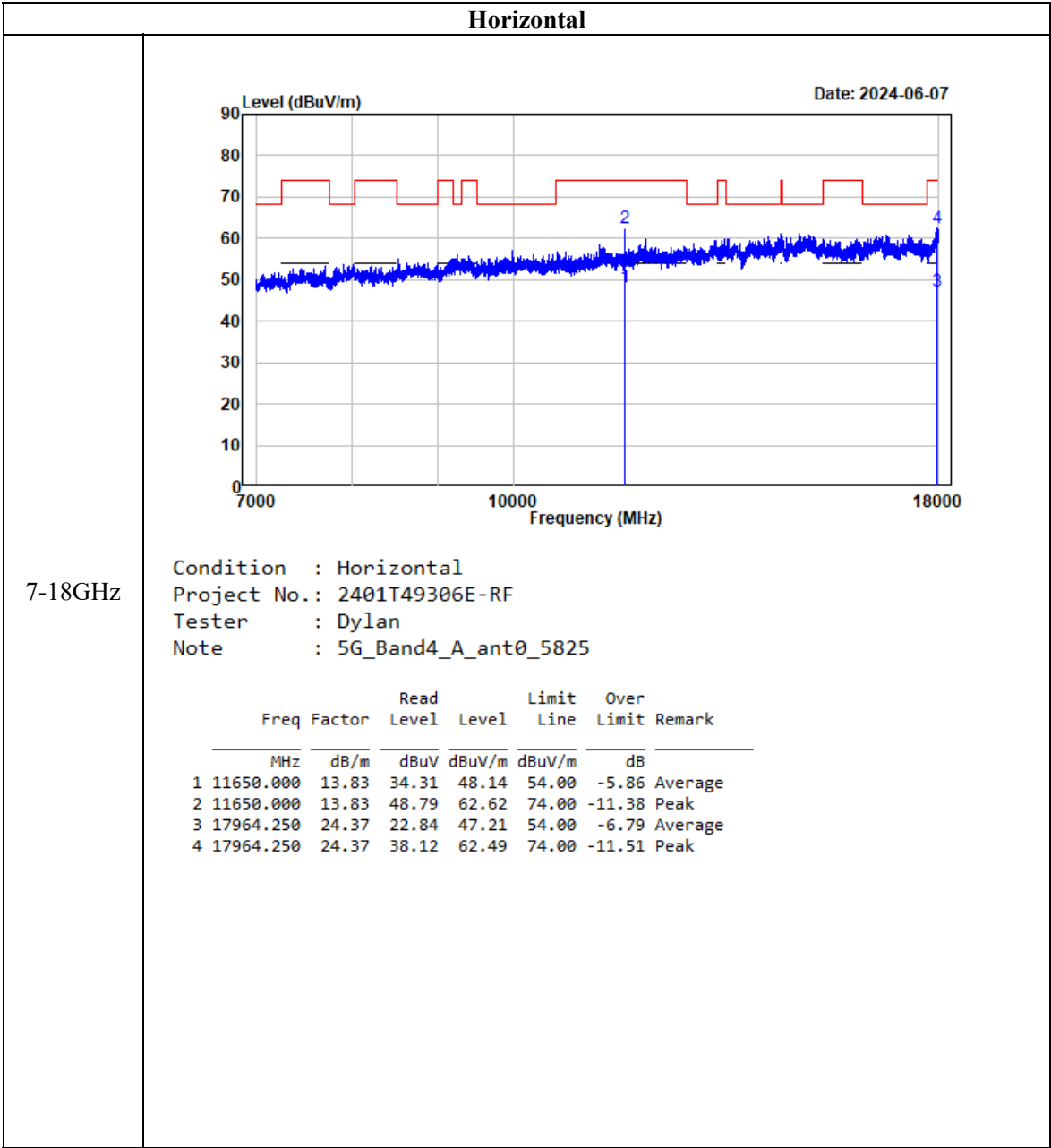
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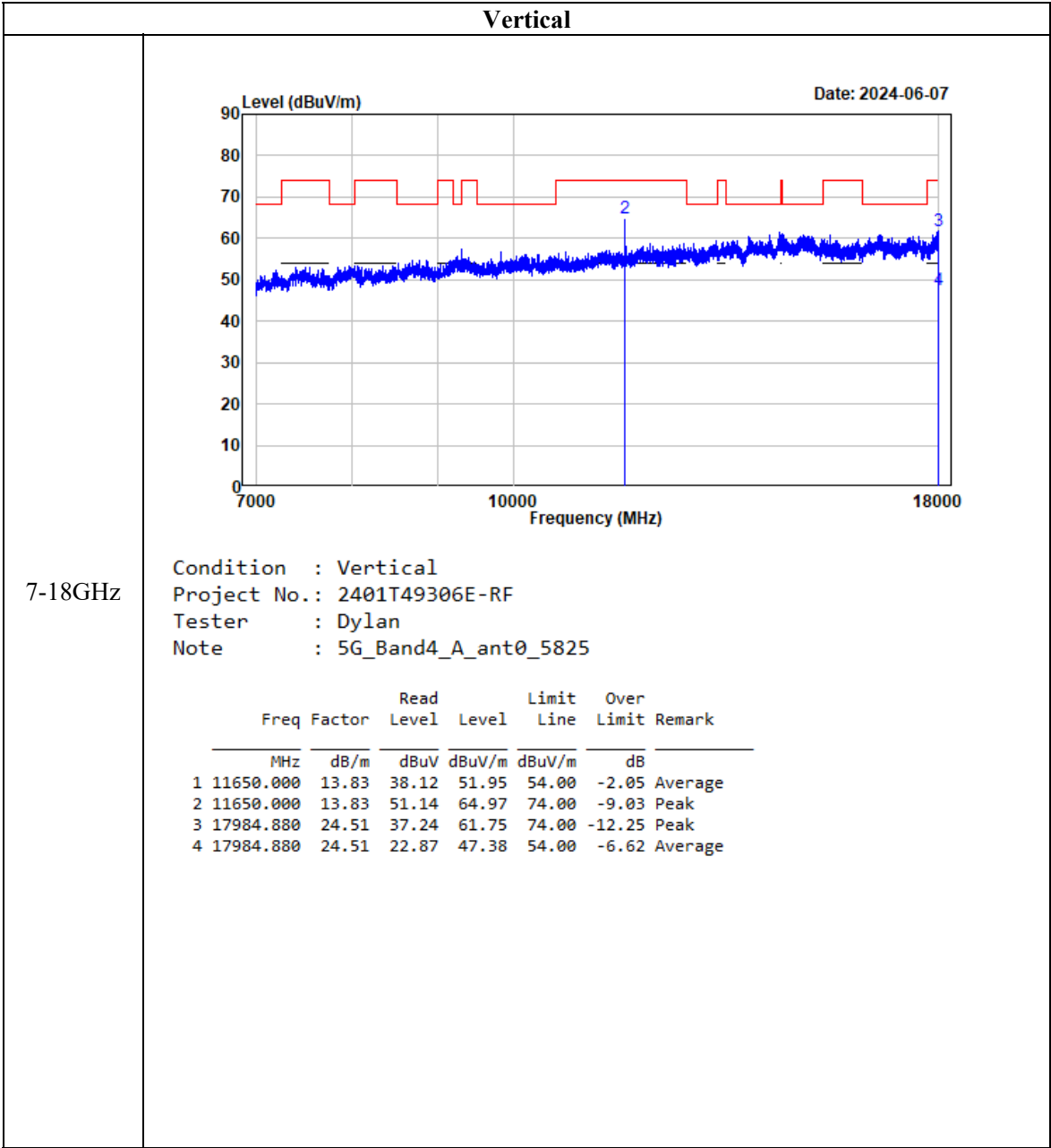
Version 1.0 (2023/10/07)

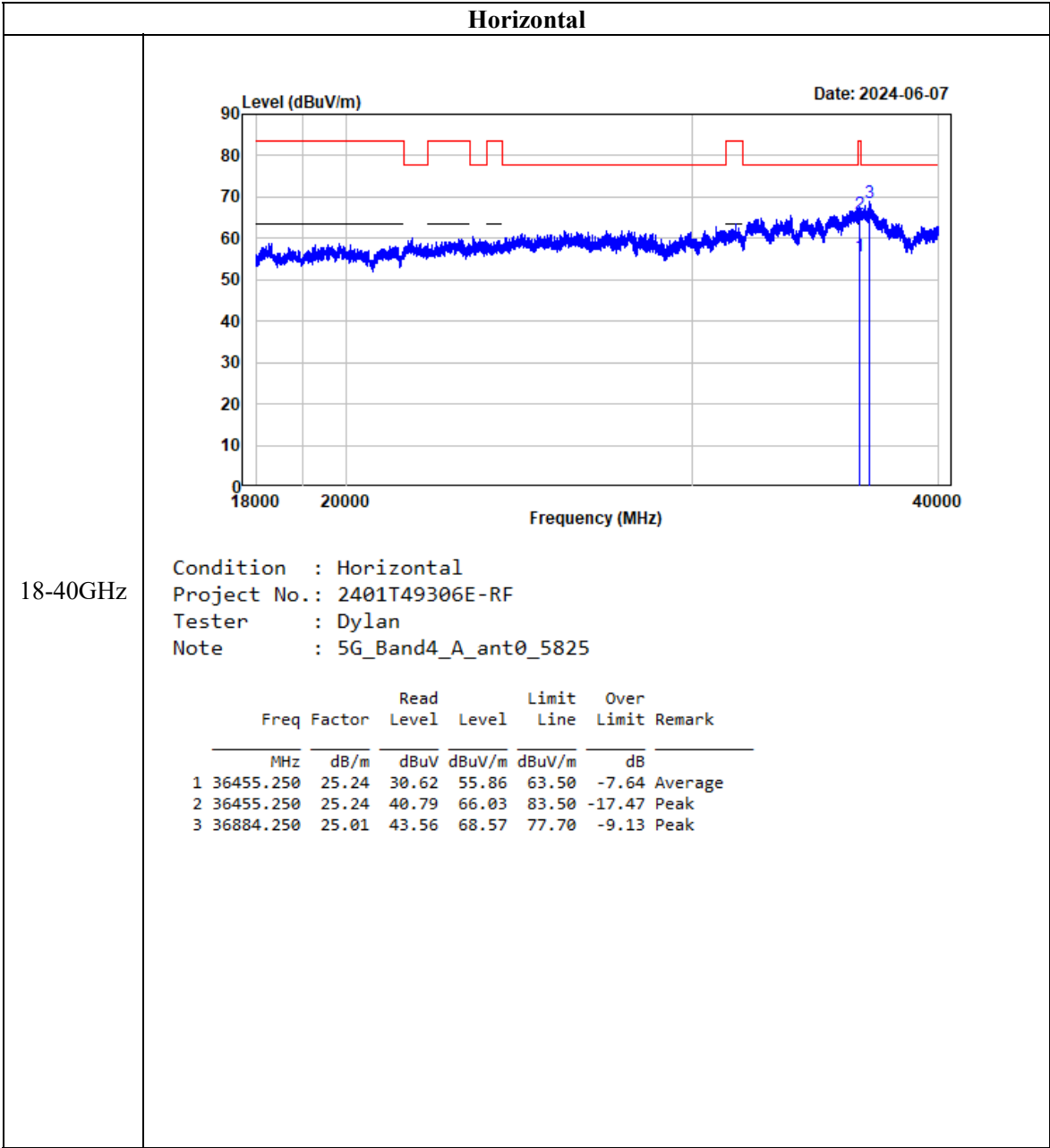
Test plots for Harmonic and Emissions Measurements:

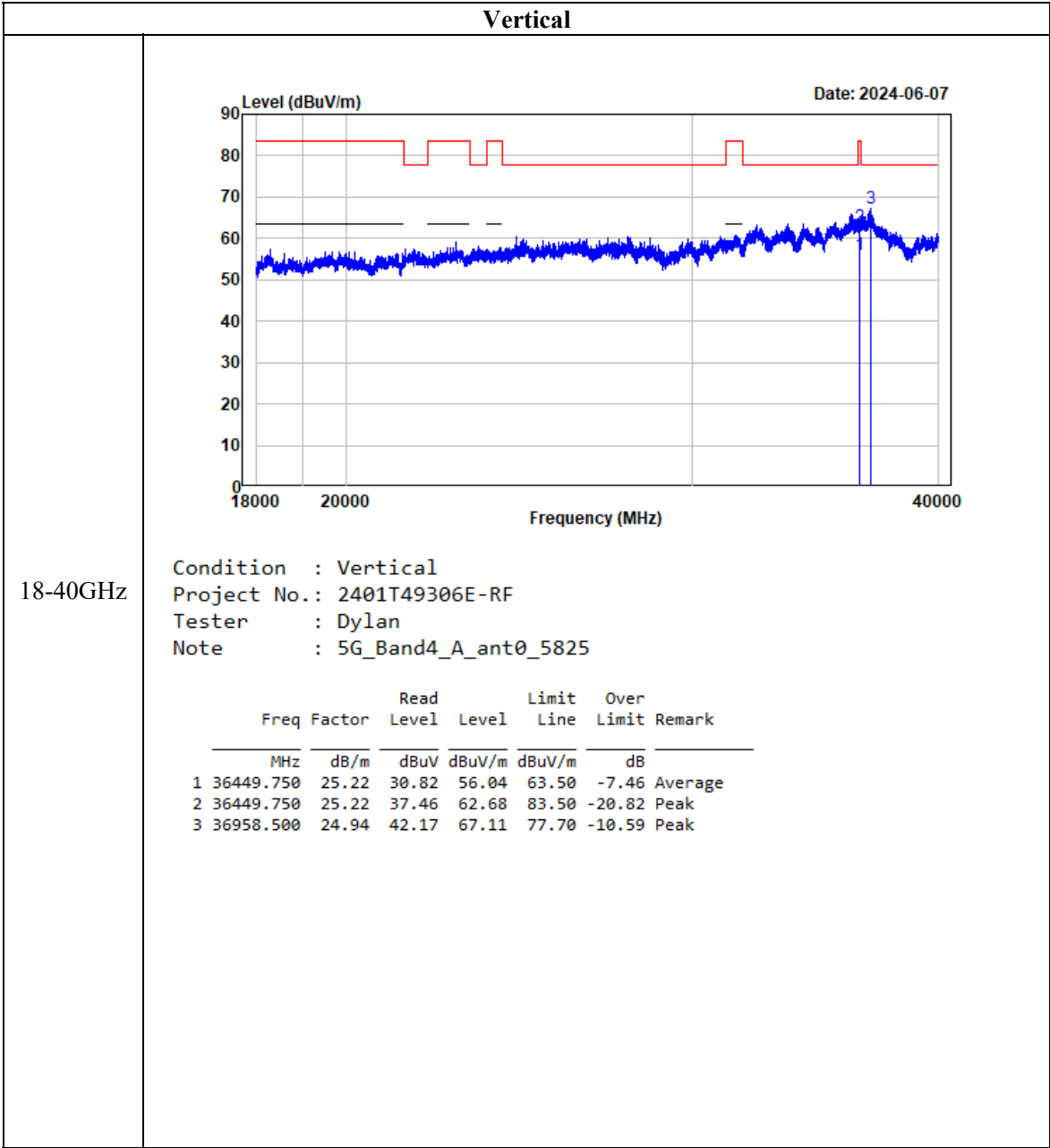












FCC §15.407(a), (e) - 26 dB & 6dB EMISSION BANDWIDTH

Applicable Standard

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

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.

Test Procedure

According to KDB789033 D02 section II.C and section II.D

1. Emission Bandwidth (EBW)

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

2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

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

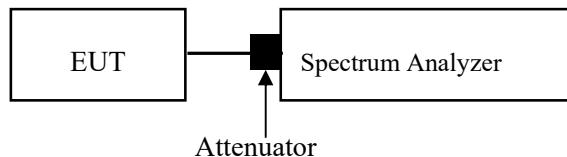
3. 99% Occupied Bandwidth:

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 $[10 \log (\text{OBW/RBW})]$ 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).



Test Data

Environmental Conditions

Temperature:	22.5~25.5 °C
Relative Humidity:	50~58 %
ATM Pressure:	101kPa

The testing was performed by KungfuMaster Liang from 2024-06-27 to 2024-07-16.

EUT operation mode: Transmitting

Test Result: Compliant.

5150-5250MHz:

Test Modes	Test Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180	32.93	17.78
	5200	34.47	17.94
	5240	28.77	17.38
802.11ac-VHT20	5180	27.61	18.50
	5200	29.37	18.54
	5240	20.74	18.10
802.11ac-VHT40	5190	49.25	37.08
	5230	41.38	36.52
802.11ac-VHT80	5210	114.97	75.92
802.11ac-VHT160	5250	174.15	153.77
802.11ax-HE20	5180	28.45	19.38
	5200	31.27	19.46
	5240	20.10	18.90
802.11ax-HE40	5190	49.87	37.96
	5230	40.00	37.64
802.11ax-HE80	5210	107.73	77.68
802.11ax-HE160	5250	164.04	155.36

Note: Test only was performed at ANT0.

No transmitted signal in the 99% bandwidth extends into the U-NII-2A band.

5250-5350MHz:

Test Modes	Test Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5260	24.74	17.30
	5280	27.32	17.30
	5320	30.65	17.90
802.11ac-VHT20	5260	22.46	18.18
	5280	22.24	18.14
	5320	28.69	18.50
802.11ac-VHT40	5270	41.10	36.68
	5310	51.61	37.08
802.11ac-VHT80	5290	114.37	75.92
802.11ax-HE20	5260	22.74	19.18
	5280	22.88	19.22
	5320	29.57	19.34
802.11ax-HE40	5270	39.98	37.64
	5310	48.51	37.96
802.11ax-HE80	5290	102.46	77.52

Note: Test only was performed at ANT0.

5470-5725MHz:

Test Modes	Test Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5500	31.81	17.78
	5580	21.90	17.26
	5700	28.45	17.70
802.11ac-VHT20	5500	27.77	18.46
	5580	22.22	18.18
	5700	26.77	18.38
802.11ac-VHT40	5510	50.77	37.00
	5550	41.22	36.60
	5670	54.83	37.16
802.11ac-VHT80	5530	111.77	75.76
	5610	80.52	75.28
802.11ac-VHT160	5570	170.71	153.85
802.11ax-HE20	5500	26.73	19.38
	5580	22.50	19.14
	5700	27.01	19.30
802.11ax-HE40	5510	52.93	37.88
	5550	39.86	37.64
	5670	56.66	38.04
802.11ax-HE80	5530	110.45	77.68
	5610	80.64	77.04
802.11ax-HE160	5570	165.51	155.84

Note: Test only was performed at ANT0.

5725-5850MHz:

Test Modes	Test Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5745	16.34	17.66
	5785	16.38	17.66
	5825	16.34	17.86
802.11ac-VHT20	5745	17.58	18.42
	5785	17.66	18.22
	5825	17.66	18.42
802.11ac-VHT40	5755	35.27	37.00
	5795	35.23	36.76
802.11ac-VHT80	5775	74.65	75.12
802.11ax-HE20	5745	19.06	19.34
	5785	19.06	19.22
	5825	19.02	19.34
802.11ax-HE40	5755	37.40	37.88
	5795	37.12	37.80
802.11ax-HE80	5775	75.76	77.20

Note: Test only was performed at ANT0.
No transmitted signal in the 99% bandwidth extends into the U-NII-2C band.

5850~5895 MHz:

Test Modes	Test Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5845	16.38	17.66
	5865	16.34	17.74
	5885	16.34	17.74
802.11ac-VHT20	5845	17.66	18.18
	5865	17.68	18.14
	5885	17.62	18.18
802.11ac-VHT40	5835	34.79	36.68
	5875	34.75	36.68
802.11ac-VHT80	5855	75.21	75.44
802.11ac-VHT160	5815	154.85	153.45
802.11ax-HE20	5845	19.05	19.22
	5865	19.07	19.18
	5885	19.05	19.18
802.11ax-HE40	5835	37.56	37.72
	5875	37.76	37.72
802.11ax-HE80	5855	76.94	77.36
802.11ax-HE160	5815	154.51	155.36

Note: Test only was performed at ANT0.

5150-5250MHz:

