



Test report No.: 2380298R-RFUSV03S-A

TEST REPORT

Product Name	Notebook Computer
Trademark	LG
Model and /or type reference	14Z90S,14ZD90S,14ZG90S,14ZB90S,14ZW90S,14ZN90S* (* can be 0 to 9 or A to Z or blank denoting buyer request)
FCC ID	BEJNT-14Z90S
Applicant's name / address	LG Electronics USA, Inc. 111 Sylvan Avenue North Building Englewood Cliffs, NJ 07632 United States
Manufacturer's name	LG ELECTRONICS INC.
Test method requested, standard	FCC CFR Title 47 Part 15 Subpart E ANSI C63.4: 2014, ANSI C63.10: 2013 KDB Publication 789033
Verdict Summary	IN COMPLIANCE
Documented By (Senior Project Specialist / Joanne Lin)	<i>Joanne Lin</i>
Tested By (Senior Engineer / Ivan Chuang)	<i>Ivan Chuang</i>
Approved By (Senior Engineer / Jack Hsu)	<i>Jack Hsu</i>
Date of Receipt	2023/08/10
Date of Issue	2023/10/31
Report Version	V1.0

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Appendix 1: EUT Test Photographs

Appendix 2: Product Photos-Please refer to the file: 2380298R-Product Photos

Competences and Guarantees

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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General conditions

1. The test results relate only to the samples tested.
2. The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
3. This report must not be used to claim product endorsement by TAF or any agency of the government.
4. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
5. Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Revision History

Report No.	Version	Description	Issued Date
2380298R-RFUSV03S-A	V1.0	Initial issue of report.	2023/10/31

1. General Information

1.1. EUT Description

Product Name	Notebook Computer
Trademark	LG
Model No.	14Z90S,14ZD90S,14ZG90S,14ZB90S,14ZW90S,14ZN90S* (* can be 0 to 9 or A to Z or blank denoting buyer request)
FCC ID	BEJNT-14Z90S
EUT Rated Voltage	AC 100-240 V, 50-60 Hz
EUT Test Voltage	AC 110 V/60 Hz
Frequency Range	802.11a/n/ac/ax-20 MHz: 5180-5320 MHz, 5500-5720 MHz, 5745-5825 MHz 802.11n/ac/ax-40 MHz: 5190-5310 MHz, 5510-5710 MHz, 5755-5795 MHz 802.11ac/ax-80 MHz: 5210-5290 MHz, 5530-5690 MHz, 5775 MHz 802.11ac/ax-160 MHz: 5250 MHz, 5570 MHz
Number of Channels	802.11a/n/ac/ax-20 MHz: 25CH 802.11n/ac/ax-40 MHz: 12CH 802.11ac/ax-80 MHz: 6CH 802.11ac/ax-160 MHz: 2CH
Data Rate	802.11a: 6-54Mbps 802.11n: up to 300Mbps 802.11ac: up to 1733.3Mbps 802.11ax: up to 2402Mbps
Type of Modulation	802.11a/n/ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Channel Control	Auto
Type C to Type C Cable	LG / EAD65830111, Shielded, 2m
Adapter	Bao Hui / LP65WFC20P-NJ W Input: AC 100-240 V~1.6A, 50-60 Hz Output: 5.0V=3A, 15W or 9V=3A, 27W or 15V=3A, 45W or 20V=3.25A, 65W

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	INPAQ	DQ6WAPLEL31 (WA-P-LELE-02-017) (Main)	PIFA	2.63 dBi for 5150~5250 MHz 2.63 dBi for 5250~5350 MHz 3.89 dBi for 5470~5725 MHz 4.12 dBi for 5725~5850 MHz
		DQ6WAPLEL31 (WA-P-LELE-02-017) (Aux)		3.23 dBi for 5150~5250 MHz 3.23 dBi for 5250~5350 MHz 4.04 dBi for 5470~5725 MHz 3.99 dBi for 5725~5850 MHz
2	Pulse	QD602700000 (TQ27000) (Main)	PIFA	2.42 dBi for 5150~5250 MHz 2.37 dBi for 5250~5350 MHz 3.71 dBi for 5470~5725 MHz 4.04 dBi for 5725~5850 MHz
		QD602700000 (TQ27000) (Aux)		3.16 dBi for 5150~5250 MHz 3.02 dBi for 5250~5350 MHz 4.01 dBi for 5470~5725 MHz 3.75 dBi for 5725~5850 MHz

Note:

1. The antenna of EUT is conforming to FCC 15.203.
2. The antenna gain as by the manufacturer provided.
3. Each antenna has been evaluated and only the worst case (higher gain antenna) is presented in the report.
4. The device uses Space Time Block Codes (STBC) technical, not support CDD and Beamforming modes. STBC mode signals are completely uncorrelated, the Directional gain = G_{ANT} (According to KDB 662911 D01 F)2)a)ii).

802.11a/n/ac/ax-20 MHz Center Working Frequency of Each Channel:

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

802.11n/ac/ax-40 MHz Center Working Frequency of Each Channel:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230	54	5270	62	5310
102	5510	110	5550	118	5590	126	5630
134	5670	142	5710	151	5755	159	5795

802.11ac/ax-80 MHz Center Working Frequency of Each Channel:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	58	5290	106	5530	122	5610
138	5690	155	5775	--	--	--	--

802.11ac/ax-160 MHz Center Working Frequency of Each Channel:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	--	--	--	--
50	5250	114	5570	--	--	--	--

Note:

1. This device is a Notebook Computer with built-in WLAN and Bluetooth transceiver, this report for 5GHz WLAN.
2. It's declared by manufacture about all models are electrically identical, different model names for marketing purpose. The different of each model is shown as below:

Model Number	System
14Z90S	(B2C, Windows)
14ZD90S	(NonOS)
14ZG90S	(B2G, Windows)
14ZB90S	(B2B, Windows)
14ZW90S	(B2C/B2B, Whale OS)
14ZN90S* (* can be 0 to 9 or A to Z or blank denoting buyer request)	(All, Whale OS)
The identification of test sample is 14Z90S.	

3. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
4. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11a is 6Mbps, 802.11ax is MCS0)
5. The modulation and bandwidth are similar for 802.11n mode and 802.11ac mode and 802.11ax mode, therefore investigated worst case (802.11ax) to representative mode.
6. The spectrum plot against conducted item only shows the worst case.
7. DEKRA has evaluated each test mode. Only the worst case is shown in the report.
8. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance of transmitter with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.

Test Mode	Mode 1	Transmit (802.11a) Transmit (802.11ax-20 MHz) Transmit (802.11ax-40 MHz) Transmit (802.11ax-80 MHz) Transmit (802.11ax-160 MHz) Transmit (802.11ax-20 MHz) (Partial RU) Transmit (802.11ax-40 MHz) (Partial RU) Transmit (802.11ax-80 MHz) (Partial RU) Transmit (802.11ax-160 MHz) (Partial RU)
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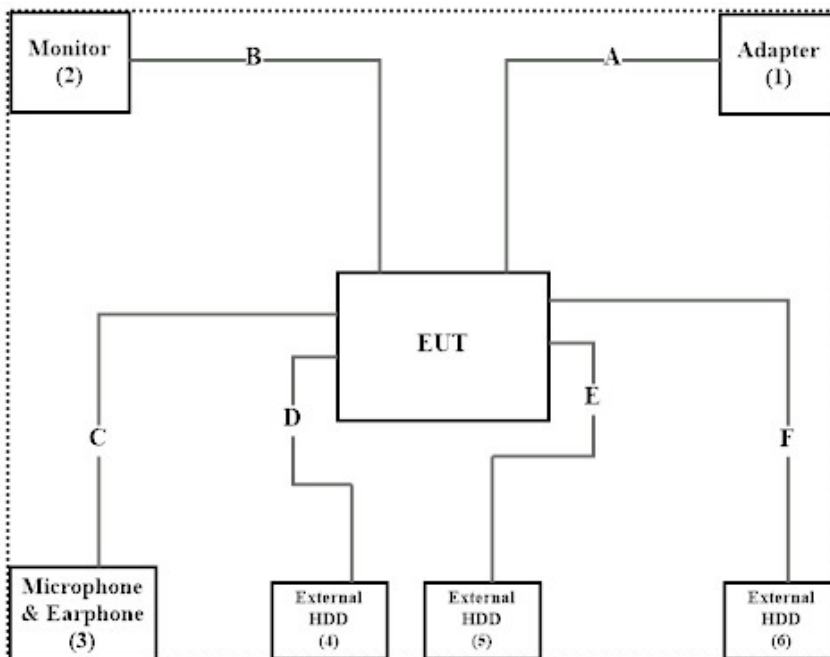
1.2. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	Power Cord
1 Adapter	Bao Hui	LP65WFC20P-NJ W	N/A	N/A
2 Monitor	DELL	U2415	CN-01RMGX-74261 -63H-09UL-A02	Non-Shielded, 1.8m
3 Microphone & Earphone	Verbatim	C09024VB	N/A	N/A
4 External HDD	Transcend	TS1TSJ25MC	F30467-0011	N/A
5 External HDD	Transcend	TS1TSJ25H3B	F21786-0019	N/A
6 External HDD	Transcend	TS1TSJ25H3B	F21786-0103	N/A

Cable Type	Cable Description
A Type C to Type C Cable	Shielded, 2m
B HDMI Cable	Shielded, 1.8m
C Microphone & Earphone Cable	Non-shielded, 1.2m
D USB Cable	Shielded, 0.5m
E USB Cable	Shielded, 0.5m
F USB Cable	Shielded, 0.5m

1.3. Configuration of tested System



1.4. EUT Exercise Software

1	Setup the EUT as shown in Section 1.3.
2	Execute software "DRTU version 04824.23.0.0" on the EUT.
3	Configure the test mode, the test channel, and the data rate.
4	Press "OK" to start the continuous transmit.
5	Verify that the EUT works properly.

1.5. Test Facility

Ambient conditions in the laboratory:

Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	10~40 °C	25.1 °C
	Humidity (%RH)	10~90 %	56.0 %
Radiated Emission	Temperature (°C)	10~40 °C	24.1 °C
	Humidity (%RH)	10~90 %	65.7 %
Conductive	Temperature (°C)	10~40 °C	22.0 °C
	Humidity (%RH)	10~90 %	55.0 %

USA	FCC Registration Number: TW0033
Canada	CAB Identifier Number: TW3023 / Company Number: 26930

Site Description	Accredited by TAF
	Accredited Number: 3023

Test Laboratory	DEKRA Testing and Certification Co., Ltd.
	Linkou Laboratory
Address	No.5-22, Ruishukeng Linkou District, New Taipei City, 24451, Taiwan, R.O.C
Performed Location	No. 26, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan, R.O.C.
Phone Number	+886-3-275-7255
Fax Number	+886-3-327-8031

1.6. List of Test Equipment

For Conduction Measurements / HY-SR01

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
V	EMI Test Receiver	R&S	ESR7	101601	2023/06/20	2024/06/19
V	Two-Line V-Network	R&S	ENV216	101306	2023/03/16	2024/03/15
V	Two-Line V-Network	R&S	ENV216	101307	2023/08/17	2024/08/16
V	Coaxial Cable	SUHNER	RG400 BNC	RF001	2023/01/10	2024/01/09

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with “V” are used to measure the final test results.
3. Test Software Version: e3 230303 dekra V9.

For Conducted Measurements / HY-SR02

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
V	Spectrum Analyzer	R&S	FSV30	103466	2022/12/22	2023/12/21
V	Spectrum Analyzer	KEYSIGHT	N9010A	MY53470892	2022/11/07	2023/11/06
V	Peak Power Analyzer	KEYSIGHT	8990B	MY51000539	2023/05/15	2024/05/14
V	Wideband Power Sensor	KEYSIGHT	N1923A	MY59240002	2023/05/18	2024/05/18
V	Wideband Power Sensor	KEYSIGHT	N1923A	MY59240003	2023/05/18	2024/05/17

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with “V” are used to measure the final test results.
3. Test Software Version: RF Conducted Test Tools R3 V3.0.0.14.

For Radiated Measurements / HY-CB01

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
V	Loop Antenna	AMETEK	HLA6121	56736	2023/05/23	2024/05/24
V	Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-0675	2023/08/09	2025/08/08
V	Horn Antenna	RF SPIN	DRH18-E	210802A18ES	2023/07/19	2024/03/22
V	Horn Antenna	Com-Power	AH-840	101101	2021/11/30	2023/11/29
V	Pre-Amplifier	SGH	0301	20211007-7	2023/01/10	2024/01/09
V	Pre-Amplifier	EMCI	EMC051845SE	980632	2023/01/10	2024/01/09
V	Pre-Amplifier	EMCI	EMC05820SE	980362	2023/01/10	2024/01/09
V	Pre-Amplifier	EMCI	EMC184045SE	980369	2023/01/10	2024/01/09
	Coaxial Cable	EMCI	EMC102-KM-KM-600	1160314		
	Coaxial Cable	EMCI	EMC102-KM-KM-7000	170242		
	Filter	MICRO TRONICS	BRM50702	G251	2023/01/05	2024/01/04
V	Filter	MICRO TRONICS	BRM50716	067	2023/01/05	2024/01/04
	WIFI 6E Filter	MVE	MFN-5850/5895/S1	A80006N	2023/01/05	2024/01/04
	WIFI 6E Filter	MVE	MFN-5925/6425/S1	A80007N	2023/01/05	2024/01/04
	WIFI 6E Filter	MVE	MFN-6425/6525/S1	A80008N	2023/01/05	2024/01/04
	WIFI 6E Filter	MVE	MFN-6525/6875/S1	A80009N	2023/01/05	2024/01/04
	WIFI 6E Filter	MVE	MFN-6875/7125/S1	A80010N	2023/01/05	2024/01/04
V	EMI Test Receiver	R&S	ESR3	102792	2022/12/29	2023/12/28
V	Spectrum Analyzer	R&S	FSV3044	101115	2023/01/06	2024/01/05
V	Coaxial Cable	SUHNER	SUCOFLEX 106	25450/6	2023/01/10	2024/01/09
	Coaxial Cable	SGH	HA800	GD20110222-8		
	Coaxial Cable	SGH	SGH18	2021003-8		
	Coaxial Cable	EMCI	EMC106	151113		

Note:

1. Bi-Log Antenna and Horn Antenna(AH-840) is calibrated every two years, the other equipments are calibrated every one year.
2. The test instruments marked with “V” are used to measure the final test results.
3. Test Software Version: e3 230303 dekra V9.

1.7. Uncertainty

Uncertainties have been calculated according to the DEKRA internal document.

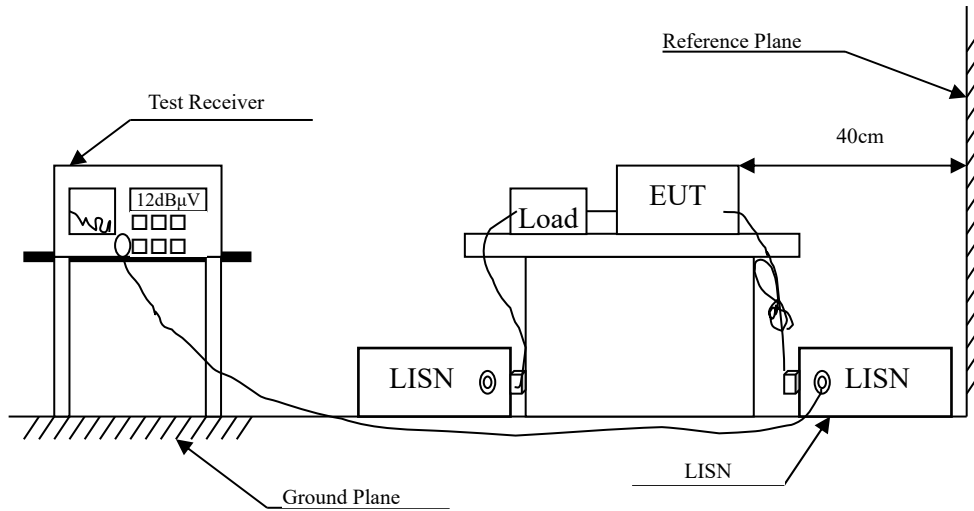
The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test item	Uncertainty
Conducted Emission	± 3.50 dB
Maximum conducted output power	Spectrum Analyzer: ± 2.14 dB Power Meter: ± 1.05 dB
Peak Power Spectral Density	± 2.14 dB
Radiated Emission	9 kHz~30 MHz: ± 3.88 dB 30 MHz~1 GHz: ± 4.42 dB 1 GHz~18 GHz: ± 4.28 dB 18 GHz~40 GHz: ± 3.90 dB
Band Edge	9 kHz~30 MHz: ± 3.88 dB 30 MHz~1 GHz: ± 4.42 dB 1 GHz~18 GHz: ± 4.28 dB 18 GHz~40 GHz: ± 3.90 dB
Occupied Bandwidth	± 1580.61 Hz
Duty Cycle	± 0.53 %

2. Conducted Emission

2.1. Test Setup



2.2. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dB μ V) Limit		
Frequency MHz	Limits	
	QP	AV
0.15 - 0.50	66-56	56-46
0.50 - 5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

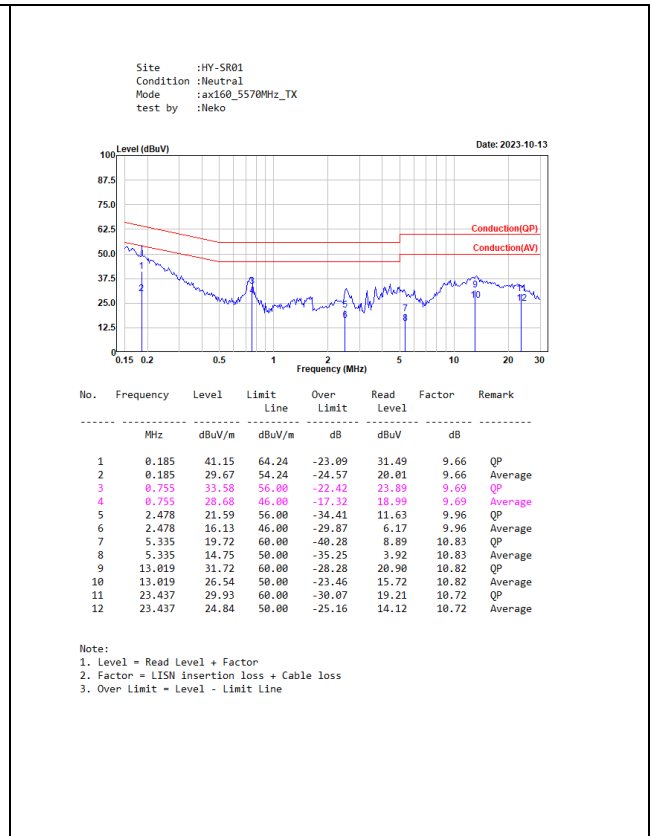
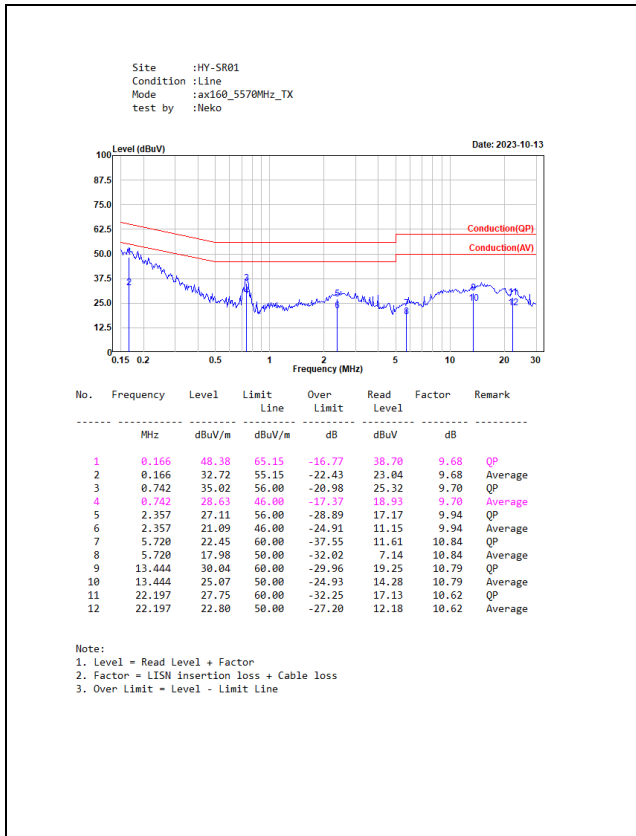
2.3. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.) Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4:2014 on conducted measurement.

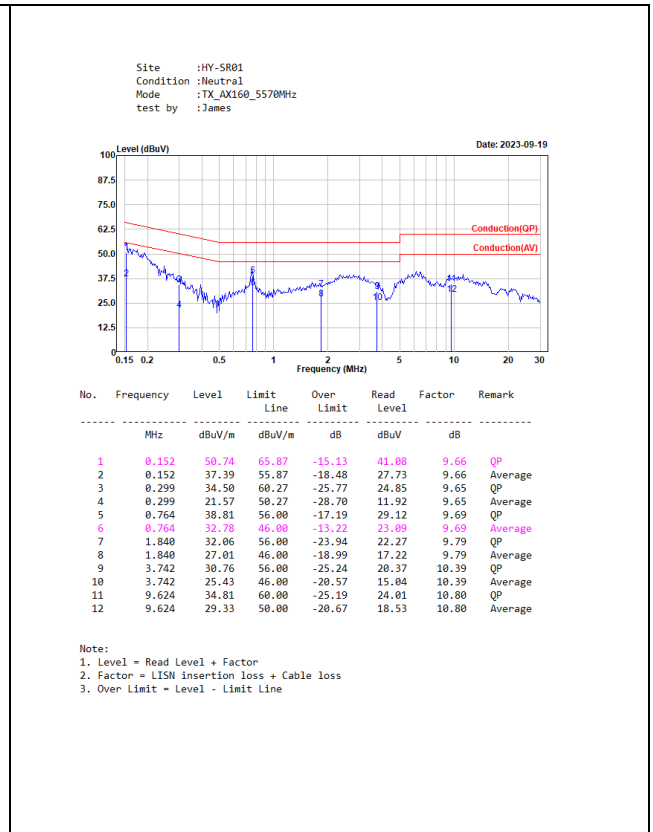
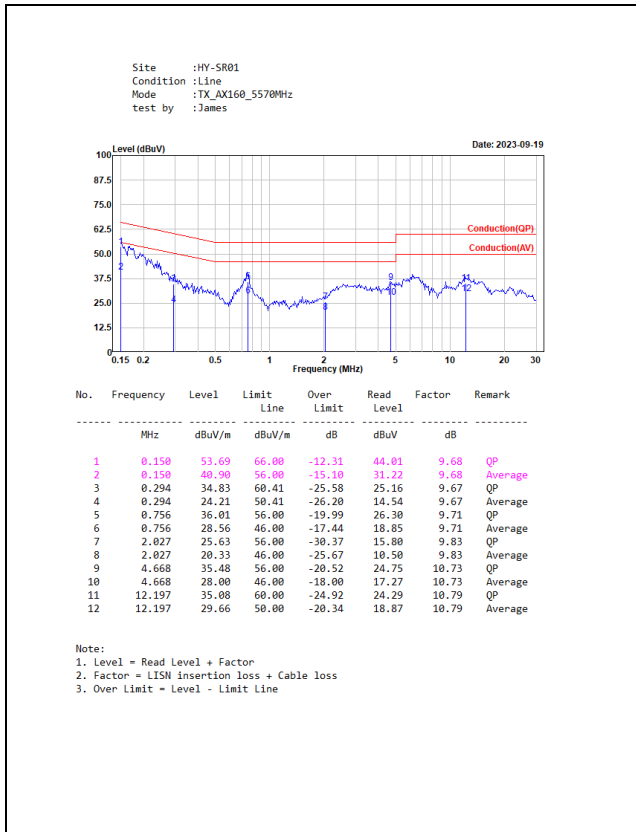
Conducted emissions were investigated over the frequency range from 0.15 MHz to 30 MHz using a receiver bandwidth of 9 kHz.

2.4. Test Result of Conducted Emission

SISO A



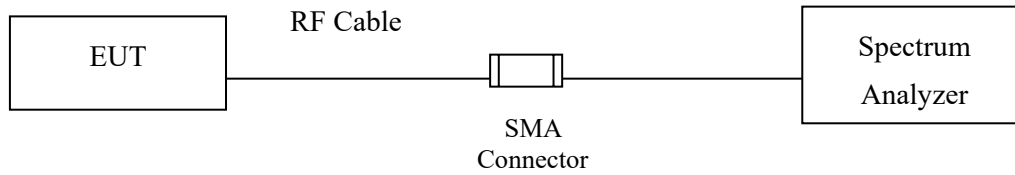
MIMO



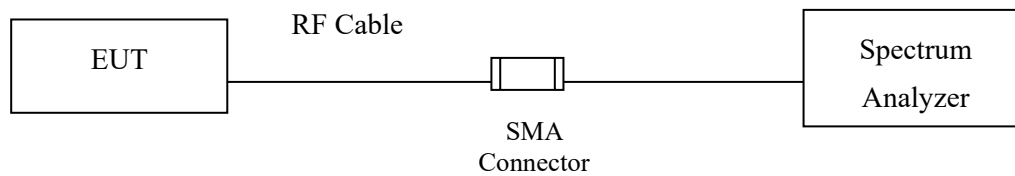
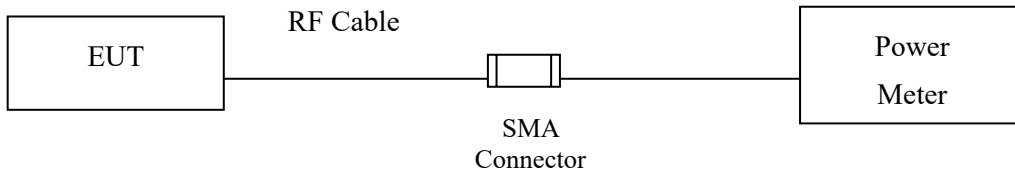
3. Maximum conducted output power

3.1. Test Setup

26dB Occupied Bandwidth



Conduction Power Measurement



3.2. Limits

For the band 5.15-5.25 GHz,

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power is required for each 1 dB of antenna gain in excess of 23 dBi. 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.

(iv) For mobile and portable 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. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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 26dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII 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.

3.3. Test Procedure

As an alternative to FCC KDB-789033, the EUT maximum conducted output power was measured with an average power meter employing a video bandwidth greater the 6dB BW of the emission under test. Maximum conducted output power was read directly from the meter across all data rates, and across three channels within each sub-band. Special care was used to make sure that the EUT was transmitting in continuous mode. This method exceeds the limitations of FCC KDB-789033, and provides more accurate measurements.

802.11a/n/ac/ax ($BW \leq 160\text{MHz}$) Maximum conducted output power using KDB 789033 section E)3)b) Method PM-G (Measurement using a gated RF average power meter)

Note: the power meter have a video bandwidth that is greater than or equal to the measurement bandwidth. (KEYSIGHT / 8990B video bandwidth: 160MHz)

802.11n/ac/ax ($BW \geq 160\text{MHz}$) Maximum conducted output power using KDB 789033 section E)2)b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep).

When transmitted signals consist of two or more non-contiguous spectrum segments (e.g., 80+80 MHz mode) or when a single spectrum segment of a transmission crosses the boundary between two adjacent U-NII bands, KDB 644545 D03 section D) procedure is used for measurements.

3.4. Test Result of Maximum conducted output power

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11a)-SISO A
 Test Date : 2023/09/04

Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
						(dBm)	dBm+10log(BW)	
36	5180	--	18.75	--	18.75	24	--	Pass
40	5200	--	19.78	--	19.78	24	--	Pass
48	5240	--	19.72	--	19.72	24	--	Pass
52	5260	22.70	19.70	--	19.70	24	24.56	Pass
56	5280	23.06	19.68	--	19.68	24	24.63	Pass
64	5320	22.98	19.30	--	19.30	24	24.61	Pass
100	5500	22.86	19.28	--	19.28	24	24.59	Pass
116	5580	22.62	19.65	--	19.65	24	24.54	Pass
140	5700	23.38	19.30	--	19.30	24	24.69	Pass
149	5745	--	19.74	--	19.74	30	--	Pass
157	5785	--	19.72	--	19.72	30	--	Pass
165	5825	--	19.65	--	19.65	30	--	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-20 MHz)-SISO A
 Test Date : 2023/10/12

Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
						(dBm)	dBm+10log(BW)	
36	5180	--	18.80	--	18.80	24	--	Pass
40	5200	--	19.75	--	19.75	24	--	Pass
48	5240	--	19.85	--	19.85	24	--	Pass
52	5260	23.14	19.86	--	19.86	24	24.64	Pass
56	5280	23.18	19.83	--	19.83	24	24.65	Pass
64	5320	23.62	19.30	--	19.30	24	24.73	Pass
100	5500	22.98	19.36	--	19.36	24	24.61	Pass
116	5580	23.50	19.79	--	19.79	24	24.71	Pass
140	5700	23.58	19.41	--	19.41	24	24.72	Pass
144(U-NII-2C)	5720	17.31	19.07	0.00	19.07	24	23.38	Pass
144(U-NII-3)	5720	--	12.09	0.00	12.09	30	--	Pass
149	5745	--	19.82	--	19.82	30	--	Pass
157	5785	--	19.80	--	19.80	30	--	Pass
165	5825	--	19.84	--	19.84	30	--	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-40 MHz)-SISO A
 Test Date : 2023/10/12

Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
						(dBm)	dBm+10log(BW)	
38	5190	--	17.03	--	17.03	24	--	Pass
46	5230	--	19.33	--	19.33	24	--	Pass
54	5270	42.20	19.85	--	19.85	24	27.25	Pass
62	5310	43.16	15.90	--	15.90	24	27.35	Pass
102	5510	42.60	17.99	--	17.99	24	27.29	Pass
110	5550	43.32	19.87	--	19.87	24	27.37	Pass
134	5670	44.28	19.76	--	19.76	24	27.46	Pass
142(U-NII-2C)	5710	38.18	19.58	0.00	19.58	24	26.82	Pass
142(U-NII-3)	5710	6.98	7.88	0.00	7.88	30	19.44	Pass
151	5755	--	19.80	--	19.80	30	--	Pass
159	5795	--	19.85	--	19.85	30	--	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-80 MHz)-SISO A
 Test Date : 2023/10/12

Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
						(dBm)	dBm+10log(BW)	
42	5210	--	16.19	--	16.19	24	--	Pass
58	5290	80.88	15.44	--	15.44	24	30.08	Pass
106	5530	82.16	17.18	--	17.18	24	30.15	Pass
122	5610	83.44	19.68	--	19.68	24	30.21	Pass
138(U-NII-2C)	5690	82.79	19.54	0.00	19.54	24	30.18	Pass
138(U-NII-3)	5690	--	5.39	0.00	5.39	30	--	Pass
155	5775	--	19.71	--	19.71	30	--	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
Test Item : Maximum conducted output power
Test Mode : Transmit (802.11ax-160 MHz)-SISO A
Test Date : 2023/10/12

Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
						(dBm)	dBm+10log(BW)	
50(U-NII-1)	5250	--	9.95	0.00	9.95	24	--	Pass
50(U-NII-2A)	5250	81.20	9.82	0.00	9.82	24	20.92	Pass
114	5570	162.72	14.78	--	14.78	24	22.70	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-20 MHz) (Partial RU)-SISO A
 Test Date : 2023/10/13

Channel No.	Frequency (MHz)	RU Config	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
							(dBm)	dBm+10log(BW)	
36	5180	26/0	--	14.95	--	14.95	24	--	Pass
		52/37	--	17.66	--	17.66	24	--	Pass
		106/53	--	18.78	--	18.78	24	--	Pass
64	5320	26/8	23.62	14.90	--	14.90	24	24.73	Pass
		52/40	23.62	17.05	--	17.05	24	24.73	Pass
		106/54	23.62	19.28	--	19.28	24	24.73	Pass
100	5500	26/0	22.98	15.03	--	15.03	24	24.61	Pass
		52/37	22.98	17.46	--	17.46	24	24.61	Pass
		106/53	22.98	19.35	--	19.35	24	24.61	Pass
140	5700	26/8	23.58	15.52	--	15.52	24	23.38	Pass
		52/40	23.58	18.15	--	18.15	24	23.38	Pass
		106/54	23.58	19.34	--	19.34	24	23.38	Pass
149	5745	26/0	--	19.80	--	19.80	30	--	Pass
		52/37	--	19.70	--	19.70	30	--	Pass
		106/53	--	19.78	--	19.78	30	--	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-40 MHz) (Partial RU)-SISO A
 Test Date : 2023/10/13

Channel No.	Frequency (MHz)	RU Config	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
							(dBm)	dBm+10log(BW)	
38	5190	242/61	--	17.00	--	17.00	24	--	Pass
62	5310	242/62	43.16	15.88	--	15.88	24	27.35	Pass
102	5510	242/61	42.60	17.92	--	17.92	24	27.29	Pass
134	5670	242/62	44.28	19.68	--	19.68	24	27.46	Pass
151	5755	242/61	--	19.75	--	19.75	30	--	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-80 MHz) (Partial RU)-SISO A
 Test Date : 2023/10/13

Channel No.	Frequency (MHz)	RU Config	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
							(dBm)	dBm+10log(BW)	
42	5210	484/65	--	16.18	--	16.18	24	--	Pass
58	5290	484/66	80.88	15.16	--	15.16	24	30.08	Pass
106	5530	484/65	82.16	17.15	--	17.15	24	30.15	Pass
155	5775	484/65	--	19.70	--	19.70	30	--	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-160 MHz) (Partial RU)-SISO A
 Test Date : 2023/10/13

Channel No.	Frequency (MHz)	RU Config	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
							(dBm)	dBm+10log(BW)	
50(U-NII-1)	5250	996/67	--	12.80	--	12.80	24	--	Pass
50(U-NII-2A)	5250	996/S67	81.20	12.78	--	12.78	24	30.10	Pass
114	5570	996/67	162.72	14.68	--	14.68	24	33.11	Pass
		996/S67	162.72	14.67	--	14.67	24	33.11	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11a)-SISO B
 Test Date : 2023/10/12

Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
						(dBm)	dBm+10log(BW)	
36	5180	--	18.66	--	18.66	24	--	Pass
40	5200	--	19.44	--	19.44	24	--	Pass
48	5240	--	19.61	--	19.61	24	--	Pass
52	5260	23.14	19.60	--	19.60	24	24.64	Pass
56	5280	22.74	19.56	--	19.56	24	24.57	Pass
64	5320	23.02	19.03	--	19.03	24	24.62	Pass
100	5500	23.14	19.09	--	19.09	24	24.64	Pass
116	5580	22.70	19.53	--	19.53	24	24.56	Pass
140	5700	23.06	19.11	--	19.11	24	24.63	Pass
149	5745	--	19.64	--	19.64	30	--	Pass
157	5785	--	19.60	--	19.60	30	--	Pass
165	5825	--	19.55	--	19.55	30	--	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-20 MHz)-SISO B
 Test Date : 2023/10/12

Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
						(dBm)	dBm+10log(BW)	
36	5180	--	18.70	--	18.70	24	--	Pass
40	5200	--	19.31	--	19.31	24	--	Pass
48	5240	--	19.73	--	19.73	24	--	Pass
52	5260	23.66	19.75	--	19.75	24	24.74	Pass
56	5280	24.30	19.71	--	19.71	24	24.86	Pass
64	5320	23.46	19.02	--	19.02	24	24.70	Pass
100	5500	23.38	18.92	--	18.92	24	24.69	Pass
116	5580	23.46	19.68	--	19.68	24	24.70	Pass
140	5700	22.70	19.30	--	19.30	24	24.56	Pass
144(U-NII-2C)	5720	16.55	18.93	0.00	18.93	24	23.19	Pass
144(U-NII-3)	5720	--	11.78	0.00	11.78	30	--	Pass
149	5745	--	19.70	--	19.70	30	--	Pass
157	5785	--	19.69	--	19.69	30	--	Pass
165	5825	--	19.71	--	19.71	30	--	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-40 MHz)-SISO B
 Test Date : 2023/10/12

Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
						(dBm)	dBm+10log(BW)	
38	5190	--	16.44	--	16.44	24	--	Pass
46	5230	--	18.70	--	18.70	24	--	Pass
54	5270	42.68	19.66	--	19.66	24	27.30	Pass
62	5310	42.84	15.80	--	15.80	24	27.32	Pass
102	5510	42.20	17.71	--	17.71	24	27.25	Pass
110	5550	43.08	19.69	--	19.69	24	27.34	Pass
134	5670	42.76	19.58	--	19.58	24	27.31	Pass
142(U-NII-2C)	5710	37.78	19.48	0.00	19.48	24	26.77	Pass
142(U-NII-3)	5710	6.18	7.59	0.00	7.59	30	18.91	Pass
151	5755	--	19.68	--	19.68	30	--	Pass
159	5795	--	19.73	--	19.73	30	--	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-80 MHz)-SISO B
 Test Date : 2023/10/12

Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
						(dBm)	dBm+10log(BW)	
42	5210	--	16.56	--	16.56	24	--	Pass
58	5290	81.36	16.41	--	16.41	24	30.10	Pass
106	5530	81.68	17.39	--	17.39	24	30.12	Pass
122	5610	82.16	19.87	--	19.87	24	30.15	Pass
138(U-NII-2C)	5690	78.80	19.73	0.00	19.73	24	29.97	Pass
138(U-NII-3)	5690	--	4.19	0.00	4.19	30	--	Pass
155	5775	--	19.83	--	19.83	30	--	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
Test Item : Maximum conducted output power
Test Mode : Transmit (802.11ax-160 MHz)-SISO B
Test Date : 2023/10/12

Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
						(dBm)	dBm+10log(BW)	
50(U-NII-1)	5250	--	9.68	0.00	9.68	24	--	Pass
50(U-NII-2A)	5250	80.56	9.81	0.00	9.81	24	20.92	Pass
114	5570	161.76	14.73	--	14.73	24	22.68	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-20 MHz) (Partial RU)-SISO B
 Test Date : 2023/10/13

Channel No.	Frequency (MHz)	RU Config	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
							(dBm)	dBm+10log(BW)	
36	5180	26/0	--	14.80	--	14.80	24	--	Pass
		52/37	--	17.41	--	17.41	24	--	Pass
		106/53	--	18.56	--	18.56	24	--	Pass
64	5320	26/8	23.46	14.72	--	14.72	24	24.70	Pass
		52/40	23.46	16.88	--	16.88	24	24.70	Pass
		106/54	23.46	19.00	--	19.00	24	24.70	Pass
100	5500	26/0	23.38	14.81	--	14.81	24	24.69	Pass
		52/37	23.38	17.22	--	17.22	24	24.69	Pass
		106/53	23.38	18.90	--	18.90	24	24.69	Pass
140	5700	26/8	22.70	15.23	--	15.23	24	24.56	Pass
		52/40	22.70	17.89	--	17.89	24	24.56	Pass
		106/54	22.70	19.13	--	19.13	24	24.56	Pass
149	5745	26/0	--	19.68	--	19.68	30	--	Pass
		52/37	--	19.52	--	19.52	30	--	Pass
		106/53	--	19.61	--	19.61	30	--	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-40 MHz) (Partial RU)-SISO B
 Test Date : 2023/10/13

Channel No.	Frequency (MHz)	RU Config	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
							(dBm)	dBm+10log(BW)	
38	5190	242/61	--	16.38	--	16.38	24	--	Pass
62	5310	242/62	42.84	15.77	--	15.77	24	27.32	Pass
102	5510	242/61	42.20	17.63	--	17.63	24	27.25	Pass
134	5670	242/62	42.76	19.54	--	19.54	24	27.31	Pass
151	5755	242/61	--	19.65	--	19.65	30	--	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-80 MHz) (Partial RU)-SISO B
 Test Date : 2023/10/13

Channel No.	Frequency (MHz)	RU Config	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
							(dBm)	dBm+10log(BW)	
42	5210	484/65	--	16.55	--	16.55	24	--	Pass
58	5290	484/66	81.36	16.38	--	16.38	24	30.10	Pass
106	5530	484/65	81.68	17.38	--	17.38	24	30.12	Pass
155	5775	484/65	--	19.78	--	19.78	30	--	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-160 MHz) (Partial RU)-SISO B
 Test Date : 2023/10/13

Channel No.	Frequency (MHz)	RU Config	26dB Bandwidth (MHz)	Output Power (dBm)	Duty factor (dB)	Total Power (dBm)	Output Power Limit		Result
							(dBm)	dBm+10log(BW)	
50(U-NII-1)	5250	996/67	--	12.68	--	12.68	24	--	Pass
50(U-NII-2A)	5250	996/S67	80.56	12.57	--	12.57	24	30.06	Pass
114	5570	996/67	161.76	14.60	--	14.60	24	33.09	Pass
		996/S67	161.76	14.59	--	14.59	24	33.09	Pass

Note: Total Power = Output Power + Duty factor.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-20 MHz)-MIMO
 Test Date : 2023/09/04

Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Duty factor (dB)	Output Power (dBm)	Output Power Limit		Result
							(dBm)	dBm+10log(BW)	
36	5180	--	13.88	13.74	--	16.82	24	--	Pass
40	5200	--	15.02	14.90	--	17.97	24	--	Pass
48	5240	--	14.97	14.80	--	17.90	24	--	Pass
52	5260	23.22	15.10	14.80	--	17.96	24	24.66	Pass
56	5280	22.98	15.08	14.64	--	17.88	24	24.61	Pass
64	5320	23.50	14.62	14.33	--	17.49	24	24.71	Pass
100	5500	23.82	15.15	14.70	--	17.94	24	24.77	Pass
116	5580	23.46	15.02	14.88	--	17.96	24	24.70	Pass
140	5700	23.78	14.52	14.22	--	17.38	24	24.76	Pass
144(U-NII-2C)	5720	16.67	15.98	15.93	0.00	18.97	24	23.22	Pass
144(U-NII-3)	5720	--	8.80	8.82	0.00	11.82	30	--	Pass
149	5745	--	17.00	16.62	--	19.82	30	--	Pass
157	5785	--	16.94	16.85	--	19.91	30	--	Pass
165	5825	--	16.92	16.88	--	19.91	30	--	Pass

Note:

1. Output Power (dBm) = 10log (Chain A Power (mW)+Chain B Power (mW)) +Duty factor.
2. 26dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-40 MHz)-MIMO
 Test Date : 2023/09/04

Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Duty factor (dB)	Output Power (dBm)	Output Power Limit		Result
							(dBm)	dBm+10log(BW)	
38	5190	--	11.86	11.80	--	14.84	24	--	Pass
46	5230	--	16.57	16.12	--	19.36	24	--	Pass
54	5270	41.96	16.82	16.55	--	19.69	24	27.23	Pass
62	5310	42.28	12.30	11.94	--	15.13	24	27.26	Pass
102	5510	41.00	13.30	12.95	--	16.14	24	27.13	Pass
110	5550	41.52	17.14	16.64	--	19.91	24	27.18	Pass
134	5670	41.24	15.82	15.40	--	18.63	24	27.15	Pass
142(U-NII-2C)	5710	35.94	14.29	14.11	0.00	17.21	24	26.56	Pass
142(U-NII-3)	5710	5.78	2.45	2.19	0.00	5.33	30	18.62	Pass
151	5755	--	17.02	16.70	--	19.87	30	--	Pass
159	5795	--	16.90	16.62	--	19.77	30	--	Pass

Note :

1. Output Power (dBm) = 10log (Chain A Power (mW)+Chain B Power (mW)) +Duty factor.
2. 26dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-80 MHz)-MIMO
 Test Date : 2023/09/04

Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Duty factor (dB)	Output Power (dBm)	Output Power Limit		Result
							(dBm)	dBm+10log(BW)	
42	5210	--	11.04	10.72	--	13.89	24	--	Pass
58	5290	82.48	11.58	11.25	--	14.43	24	30.16	Pass
106	5530	82.96	12.18	11.75	--	14.98	24	30.19	Pass
122	5610	82.16	16.92	16.72	--	19.83	24	30.15	Pass
138(U-NII-2C)	5690	75.28	16.82	16.46	0.00	19.65	24	29.77	Pass
138(U-NII-3)	5690	--	1.02	0.66	0.00	3.85	30	--	Pass
155	5775	--	16.08	15.78	--	18.94	30	--	Pass

Note:

1. Output Power (dBm) = 10log (Chain A Power (mW)+Chain B Power (mW)) +Duty factor.
2. 26dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-160 MHz)-MIMO
 Test Date : 2023/09/04

Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Duty factor (dB)	Output Power (dBm)	Output Power Limit		Result
							(dBm)	dBm+10log(BW)	
50(U-NII-1)	5250	--	4.8	4.62	0.11	7.83	24	--	Pass
50(U-NII-2A)	5250	80.88	4.91	4.51	0.11	7.84	24	17.91	Pass
114	5570	161.76	10.74	10.48	--	13.62	24	21.31	Pass

Note:

1. Output Power (dBm) = 10log (Chain A Power (mW)+Chain B Power (mW)) +Duty factor.
2. 26dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-20 MHz) (Partial RU)-MIMO
 Test Date : 2023/09/04

Channel No.	Frequency (MHz)	RU Config	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Duty factor (dB)	Output Power (dBm)	Output Power Limit		Result
								(dBm)	dBm+10log(BW)	
36	5180	26/0	--	11.70	11.68	--	14.70	24	--	Pass
		52/37	--	13.84	13.65	--	16.76	24	--	Pass
		106/53	--	13.88	13.70	--	16.80	24	--	Pass
64	5320	26/8	23.50	11.80	11.52	--	14.67	24	24.71	Pass
		52/40	23.50	14.20	13.65	--	16.94	24	24.71	Pass
		106/54	23.50	14.80	14.12	--	17.48	24	24.71	Pass
100	5500	26/0	23.82	12.08	11.98	--	15.04	24	24.77	Pass
		52/37	23.82	14.08	13.64	--	16.88	24	24.77	Pass
		106/53	23.82	15.00	14.74	--	17.88	24	24.77	Pass
140	5700	26/8	23.78	11.98	11.15	--	14.60	24	24.76	Pass
		52/40	23.78	14.00	13.87	--	16.95	24	24.76	Pass
		106/54	23.78	14.50	14.08	--	17.31	24	24.76	Pass
149	5745	26/0	--	16.88	16.48	--	19.69	30	--	Pass
		52/37	--	16.08	15.76	--	18.93	30	--	Pass
		106/53	--	17.00	16.50	--	19.77	30	--	Pass

Note:

1. Output Power (dBm) = 10log (Chain A Power (mW)+Chain B Power (mW)) +Duty factor.
2. 26 dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-40 MHz) (Partial RU)-MIMO
 Test Date : 2023/09/04

Channel No.	Frequency (MHz)	RU Config	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Duty factor (dB)	Output Power (dBm)	Output Power Limit		Result
								(dBm)	dBm+10log(BW)	
38	5190	242/61	--	12.00	11.60	--	14.81	24	--	Pass
62	5310	242/62	42.28	12.28	11.85	--	15.08	24	27.26	Pass
102	5510	242/61	41.00	13.22	12.90	--	16.07	24	27.13	Pass
134	5670	242/62	41.24	15.78	15.30	--	18.56	24	27.15	Pass
151	5755	242/61	--	16.95	16.60	--	19.79	30	--	Pass

Note:

1. Output Power (dBm) = 10log (Chain A Power (mW)+Chain B Power (mW)) +Duty factor.
2. 26 dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-80 MHz) (Partial RU)-MIMO
 Test Date : 2023/09/04

Channel No.	Frequency (MHz)	RU Config	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Duty factor (dB)	Output Power (dBm)	Output Power Limit		Result
								(dBm)	dBm+10log(BW)	
42	5210	484/65	--	11.00	10.62	--	13.82	24	--	Pass
58	5290	484/66	82.48	11.50	11.18	--	14.35	24	30.16	Pass
106	5530	484/65	82.96	12.08	11.70	--	14.90	24	30.19	Pass
155	5775	484/65	--	16.05	15.56	--	18.82	30	--	Pass

Note:

1. Output Power (dBm) = 10log (Chain A Power (mW)+Chain B Power (mW)) +Duty factor.
2. 26 dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

Product : Notebook Computer
 Test Item : Maximum conducted output power
 Test Mode : Transmit (802.11ax-160 MHz) (Partial RU)-MIMO
 Test Date : 2023/09/04

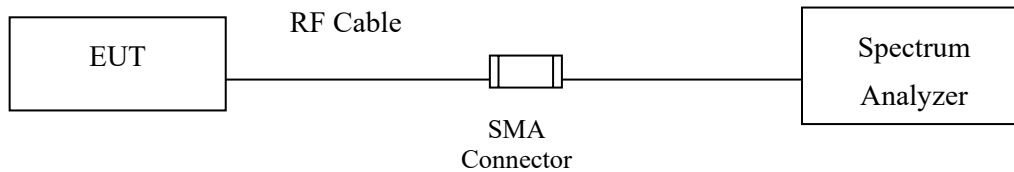
Channel No.	Frequency (MHz)	RU Config	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Duty factor (dB)	Output Power (dBm)	Output Power Limit		Result
								(dBm)	dBm+10log(BW)	
50(U-NII-1)	5250	996/67	--	8.04	7.72	--	10.89	24	--	Pass
50(U-NII-2A)	5250	996/S67	80.88	7.94	7.68	--	10.82	24	30.08	Pass
114	5570	996/67	161.76	10.65	10.38	--	13.53	24	33.09	Pass
		996/S67	161.76	10.64	10.35	--	13.51	24	33.09	Pass

Note:

1. Output Power (dBm) = 10log (Chain A Power (mW)+Chain B Power (mW)) + Duty factor.
2. 26 dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

4. Peak Power Spectral Density

4.1. Test Setup



4.2. Limits

For the band 5.15-5.25 GHz,

- (i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- (iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. 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.
- (iv) For mobile and portable client devices in the 5.15-5.25 GHz band, 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, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, 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, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, 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, 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 UNII 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.

4.3. Test Procedure

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

The Peak Power Spectral Density using KDB 789033 section F) procedure, Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E)2) for measuring maximum conducted output power using a spectrum analyzer.

SA-1 method is selected to run the test.

4.4. Test Result of Peak Power Spectral Density

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11a)-SISO A
 Test Date : 2023/09/04

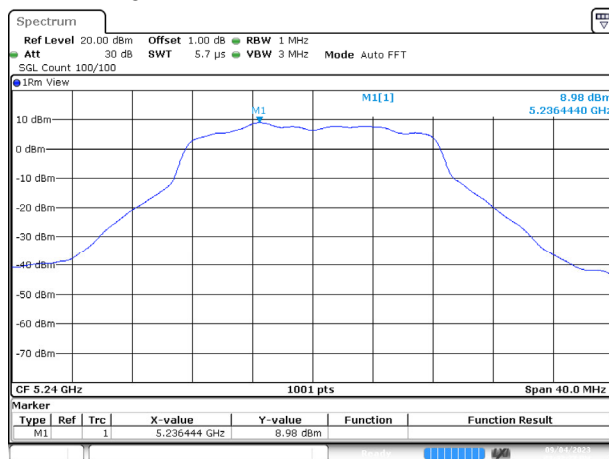
Channel No.	Frequency (MHz)	PPSD/MHz (dBm)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
36	5180	7.66	0.12	7.78	<11	Pass
40	5200	8.42	0.12	8.54	<11	Pass
48	5240	8.98	0.12	9.10	<11	Pass
52	5260	8.80	0.12	8.92	<11	Pass
56	5280	8.64	0.12	8.76	<11	Pass
64	5320	8.34	0.12	8.46	<11	Pass
100	5500	7.47	0.12	7.59	<11	Pass
116	5580	7.99	0.12	8.11	<11	Pass
140	5700	8.49	0.12	8.61	<11	Pass

Note: Total PPSD/MHz = PPSD/MHz + Duty factor.

Channel No.	Frequency (MHz)	PPSD (dBm)	Duty factor (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
149	5745	6.08	0.12	6.20	<30	Pass
157	5785	6.05	0.12	6.17	<30	Pass
165	5825	5.61	0.12	5.73	<30	Pass

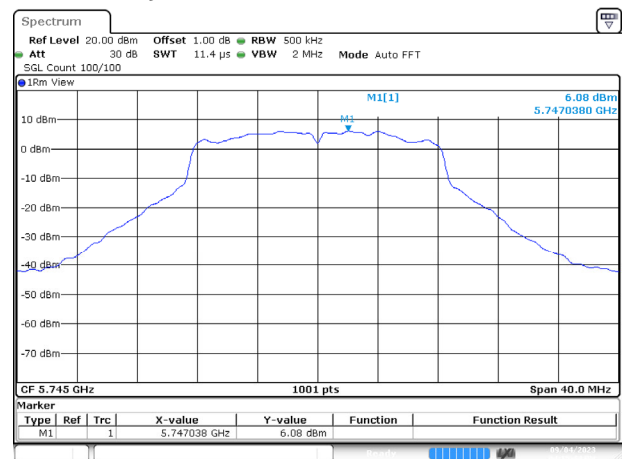
Note: Total PPSD = PPSD + Duty factor.

Channel 48



Date: 4.SEP.2023 15:42:27

Channel 149



Date: 4.SEP.2023 16:15:44

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-20 MHz)-SISO A
 Test Date : 2023/10/06

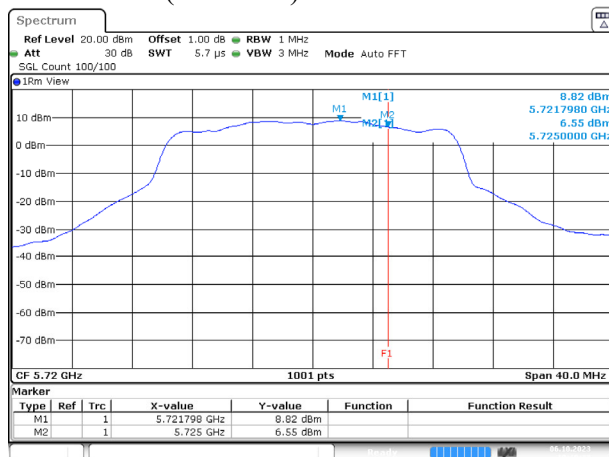
Channel No.	Frequency (MHz)	PPSD/MHz (dBm)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
36	5180	6.82	0.00	6.82	<11	Pass
40	5200	8.14	0.00	8.14	<11	Pass
48	5240	8.11	0.00	8.11	<11	Pass
52	5260	8.55	0.00	8.55	<11	Pass
56	5280	7.61	0.00	7.61	<11	Pass
64	5320	7.37	0.00	7.37	<11	Pass
100	5500	7.91	0.00	7.91	<11	Pass
116	5580	8.50	0.00	8.5	<11	Pass
140	5700	8.11	0.00	8.11	<11	Pass
144(U-NII-2C)	5720	8.82	0.00	8.82	<11	Pass

Note: Total PPSD/MHz = PPSD/MHz + Duty factor.

Channel No.	Frequency (MHz)	PPSD (dBm)	Duty factor (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
144(U-NII-3)	5720	4.01	0.00	4.01	<30	Pass
149	5745	6.26	0.00	6.26	<30	Pass
157	5785	6.81	0.00	6.81	<30	Pass
165	5825	6.87	0.00	6.87	<30	Pass

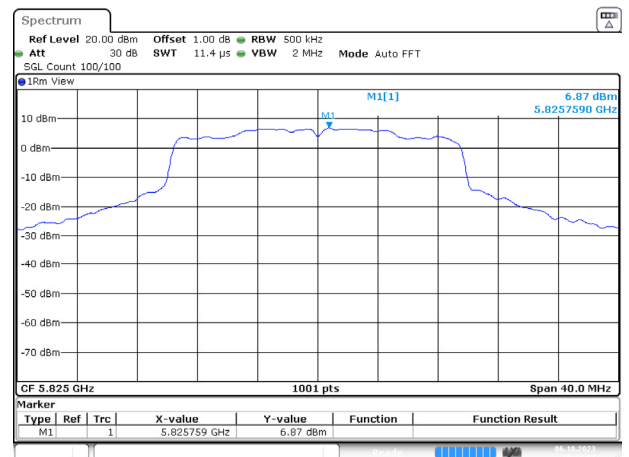
Note: Total PPSD = PPSD + Duty factor.

Channel 144 (U-NII-2C)



Date: 6.OCT.2023 10:10:23

Channel 165



Date: 6.OCT.2023 10:14:01

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-40 MHz)-SISO A
 Test Date : 2023/10/06

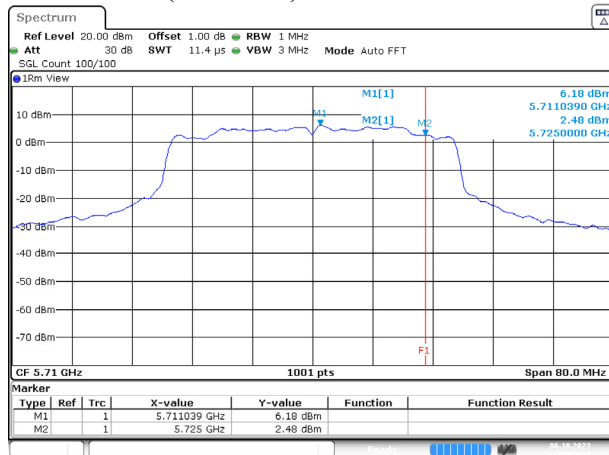
Channel No.	Frequency (MHz)	PPSD/MHz (dBm)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
38	5190	2.59	0.00	2.59	<11	Pass
46	5230	4.17	0.00	4.17	<11	Pass
54	5270	4.55	0.00	4.55	<11	Pass
62	5310	0.40	0.00	0.4	<11	Pass
102	5510	3.56	0.00	3.56	<11	Pass
110	5550	5.68	0.00	5.68	<11	Pass
134	5670	5.44	0.00	5.44	<11	Pass
142(U-NII-2C)	5710	6.18	0.00	6.18	<11	Pass

Note: Total PPSD/MHz = PPSD/MHz + Duty factor.

Channel No.	Frequency (MHz)	PPSD (dBm)	Duty factor (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
142(U-NII-3)	5710	-0.70	0.00	-0.70	<30	Pass
151	5755	3.33	0.00	3.33	<30	Pass
159	5795	3.82	0.00	3.82	<30	Pass

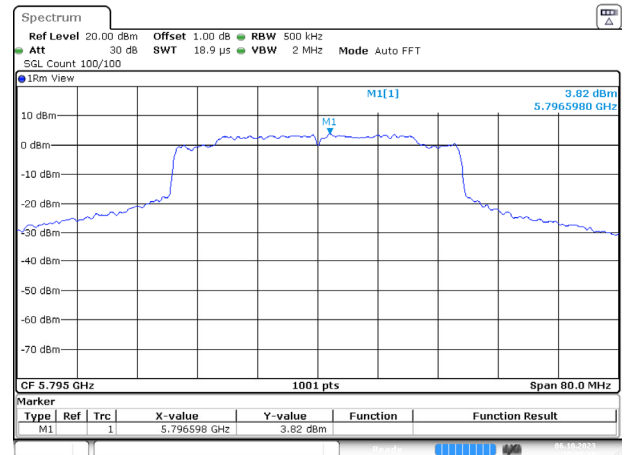
Note: Total PPSD = PPSD + Duty factor.

Channel 142 (U-NII-2C)



Date: 6.OCT.2023 10:23:11

Channel 159

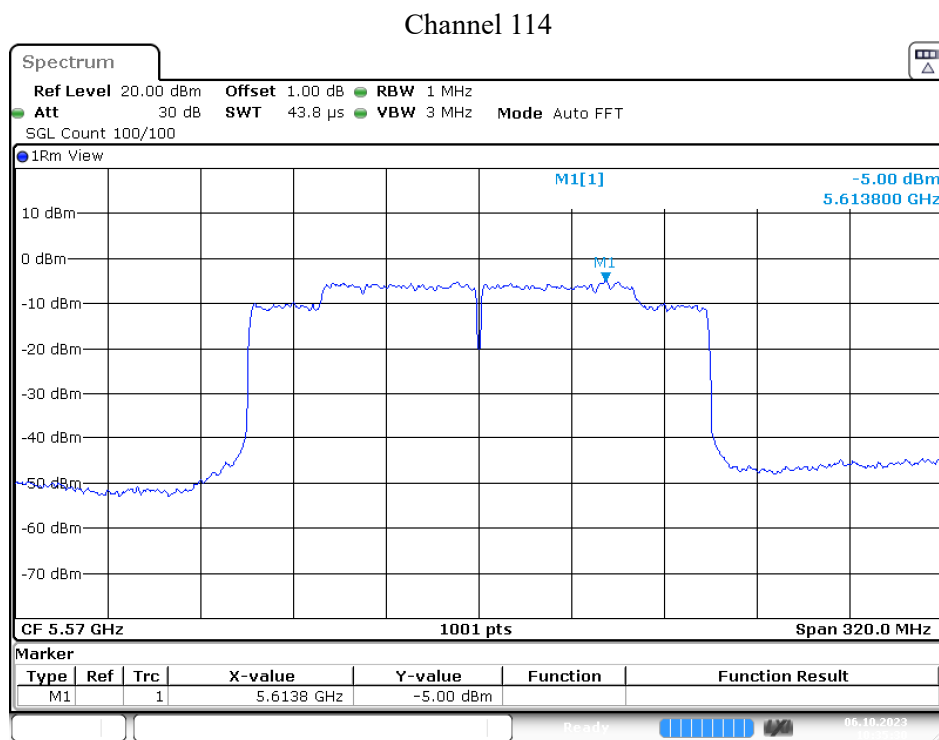


Date: 6.OCT.2023 10:25:30

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-160 MHz)-SISO A
 Test Date : 2023/10/06

Channel No.	Frequency (MHz)	PPSD/MHz (dBm)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
50(U-NII-1)	5250	-7.78	0.00	-7.78	<11	Pass
50(U-NII-2A)	5250	-7.59	0.00	-7.59	<11	Pass
114	5570	-5.00	0.00	-5.00	<11	Pass

Note: Total PPSD/MHz = PPSD/MHz + Duty factor.



Date: 6.OCT.2023 10:35:30

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-80 MHz)-SISO B
 Test Date : 2023/10/06

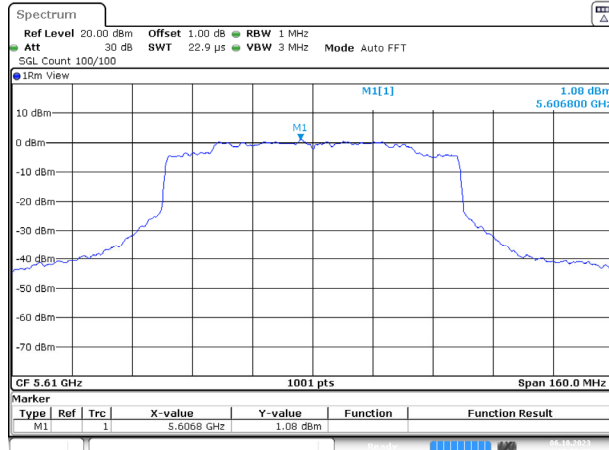
Channel No.	Frequency (MHz)	PPSD/MHz (dBm)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
42	5210	-2.22	0.00	-2.22	<11	Pass
58	5290	-2.94	0.00	-2.94	<11	Pass
106	5530	-1.65	0.00	-1.65	<11	Pass
122	5610	1.08	0.00	1.08	<11	Pass
138(U-NII-2C)	5690	0.31	0.00	0.31	<11	Pass

Note: Total PPSD/MHz = PPSD/MHz + Duty factor.

Channel No.	Frequency (MHz)	PPSD (dBm)	Duty factor (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
138(U-NII-3)	5690	-6.61	0.00	-6.61	<30	Pass
155	5775	-2.47	0.00	-2.47	<30	Pass

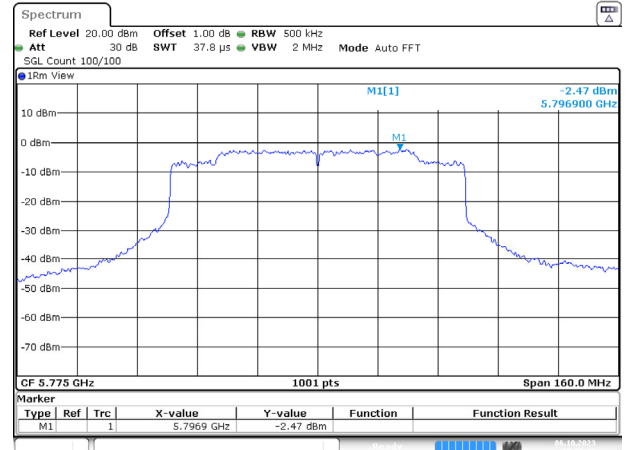
Note: Total PPSD = PPSD + Duty factor.

Channel 122



Date: 6.OCT.2023 10:28:27

Channel 155



Date: 6.OCT.2023 10:31:41

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11 ax-20 MHz)-MIMO
 Test Date : 2023/09/04

Channel No.	Frequency (MHz)	Chain	PPSD/MHz (dBm)	10*log(2) (dB)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
36	5180	A	2.30	3.01	0.00	5.31	<11	Pass
		B	2.71	3.01	0.00	5.72	<11	Pass
40	5200	A	5.13	3.01	0.00	8.14	<11	Pass
		B	3.35	3.01	0.00	6.36	<11	Pass
48	5240	A	4.34	3.01	0.00	7.35	<11	Pass
		B	3.69	3.01	0.00	6.70	<11	Pass
52	5260	A	4.45	3.01	0.00	7.46	<11	Pass
		B	3.51	3.01	0.00	6.52	<11	Pass
56	5280	A	4.60	3.01	0.00	7.61	<11	Pass
		B	3.33	3.01	0.00	6.34	<11	Pass
64	5320	A	4.23	3.01	0.00	7.24	<11	Pass
		B	2.19	3.01	0.00	5.20	<11	Pass
100	5500	A	4.32	3.01	0.00	7.33	<11	Pass
		B	2.93	3.01	0.00	5.94	<11	Pass
116	5580	A	3.24	3.01	0.00	6.25	<11	Pass
		B	3.10	3.01	0.00	6.11	<11	Pass
140	5700	A	3.65	3.01	0.00	6.66	<11	Pass
		B	2.57	3.01	0.00	5.58	<11	Pass
144(U-NII-2C)	5720	A	5.39	3.01	0.00	8.40	<11	Pass
		B	5.39	3.01	0.00	8.40	<11	Pass

Note:

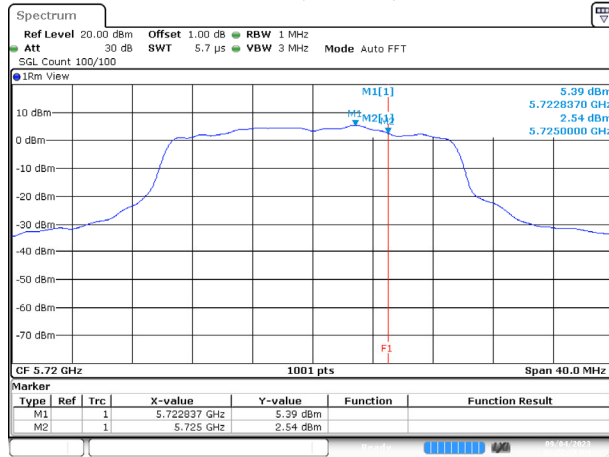
- Total PPSD/MHz = PPSD/MHz + 10*log(2) + Duty factor.
- The quantity 10*log(2) (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel No.	Frequency (MHz)	Chain	PPSD (dBm)	10*log(2) (dB)	Duty factor (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
144(U-NII-3)	5720	A	-0.13	3.01	0.00	2.88	<30	Pass
		B	0.44	3.01	0.00	3.45	<30	Pass
149	5745	A	1.94	3.01	0.00	4.95	<30	Pass
		B	2.17	3.01	0.00	5.18	<30	Pass
157	5785	A	2.03	3.01	0.00	5.04	<30	Pass
		B	2.16	3.01	0.00	5.17	<30	Pass
165	5825	A	2.37	3.01	0.00	5.38	<30	Pass
		B	3.07	3.01	0.00	6.08	<30	Pass

Note:

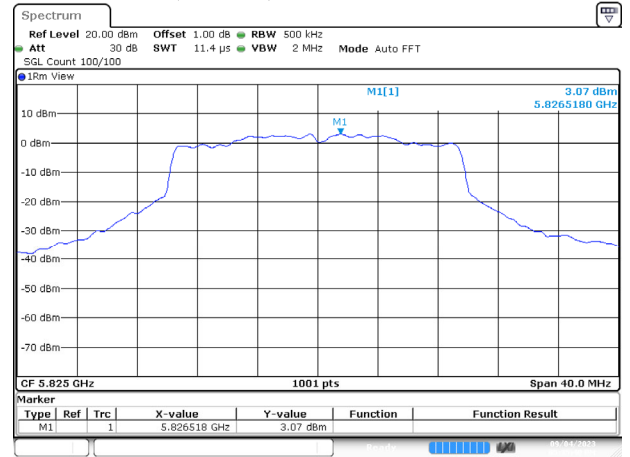
- Total PPSD = PPSD + 10*log(2) + Duty factor.
- The quantity 10*log(2) (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 144 (U-NII-2C) (Chain A)



Date: 4 SEP 2023 17:22:28

Channel 165 (Chain B)



Date: 4 SEP 2023 17:35:41

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11 ax-40 MHz)-MIMO
 Test Date : 2023/09/04

Channel No.	Frequency (MHz)	Chain	PPSD/MHz (dBm)	10*log(2) (dB)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
38	5190	A	-2.25	3.01	0.00	0.76	<11	Pass
		B	-1.85	3.01	0.00	1.16	<11	Pass
46	5230	A	2.49	3.01	0.00	5.50	<11	Pass
		B	1.81	3.01	0.00	4.82	<11	Pass
54	5270	A	3.13	3.01	0.00	6.14	<11	Pass
		B	2.97	3.01	0.00	5.98	<11	Pass
62	5310	A	-2.35	3.01	0.00	0.66	<11	Pass
		B	-2.76	3.01	0.00	0.25	<11	Pass
102	5510	A	-1.36	3.01	0.00	1.65	<11	Pass
		B	-2.54	3.01	0.00	0.47	<11	Pass
110	5550	A	3.06	3.01	0.00	6.07	<11	Pass
		B	1.96	3.01	0.00	4.97	<11	Pass
134	5670	A	2.03	3.01	0.00	5.04	<11	Pass
		B	0.30	3.01	0.00	3.31	<11	Pass
142(U-NII-2C)	5710	A	1.33	3.01	0.00	4.34	<11	Pass
		B	-0.65	3.01	0.00	2.36	<11	Pass

Note:

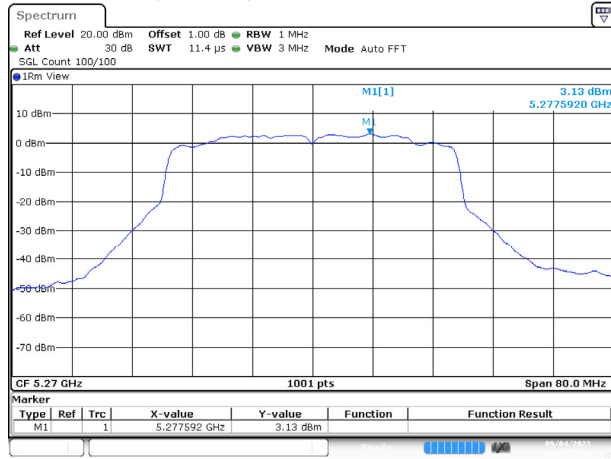
- Total PPSD/MHz = PPSD/MHz + 10*log(2) + Duty factor.
- The quantity 10*log(2) (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel No.	Frequency (MHz)	Chain	PPSD (dBm)	10*log(2) (dB)	Duty factor (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
142(U-NII-3)	5710	A	-4.86	3.01	0.00	-1.85	<30	Pass
		B	-6.60	3.01	0.00	-3.59	<30	Pass
151	5755	A	-0.31	3.01	0.00	2.70	<30	Pass
		B	-0.65	3.01	0.00	2.36	<30	Pass
159	5795	A	-0.42	3.01	0.00	2.59	<30	Pass
		B	-1.38	3.01	0.00	1.63	<30	Pass

Note:

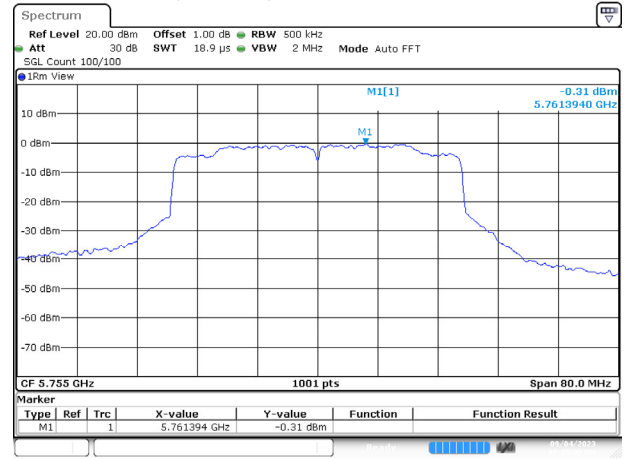
- Total PPSD = PPSD + 10*log(2) + Duty factor.
- The quantity 10*log(2) (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 54 (Chain A)



Date: 4 SEP 2023 18:59:56

Channel 151 (Chain A)



Date: 4 SEP 2023 19:15:07

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-80 MHz)-MIMO
 Test Date : 2023/09/04

Channel No.	Frequency (MHz)	Chain	PPSD/MHz (dBm)	10*log(2) (dB)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
42	5210	A	-6.52	3.01	0.00	-3.51	<11	Pass
		B	-6.69	3.01	0.00	-3.68	<11	Pass
58	5290	A	-5.95	3.01	0.00	-2.94	<11	Pass
		B	-5.08	3.01	0.00	-2.07	<11	Pass
106	5530	A	-4.58	3.01	0.00	-1.57	<11	Pass
		B	-4.94	3.01	0.00	-1.93	<11	Pass
122	5610	A	0.64	3.01	0.00	3.65	<11	Pass
		B	-0.69	3.01	0.00	2.32	<11	Pass
138(U-NII-2C)	5690	A	0.70	3.01	0.00	3.71	<11	Pass
		B	-0.91	3.01	0.00	2.10	<11	Pass

Note:

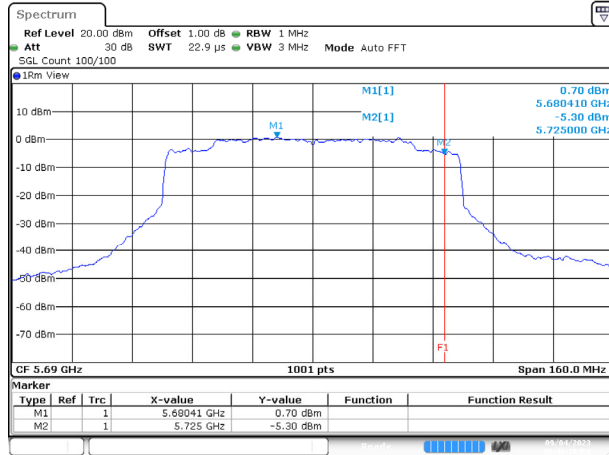
1. Total PPSD/MHz = PPSD/MHz + 10*log(2) + Duty factor.
2. The quantity 10*log(2) (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel No.	Frequency (MHz)	Chain	PPSD (dBm)	10*log(2) (dB)	Duty factor (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
138(U-NII-3)	5690	A	-6.52	3.01	0.00	-3.51	<30	Pass
		B	-7.70	3.01	0.00	-4.69	<30	Pass
155	5775	A	-3.42	3.01	0.00	-0.41	<30	Pass
		B	-3.85	3.01	0.00	-0.84	<30	Pass

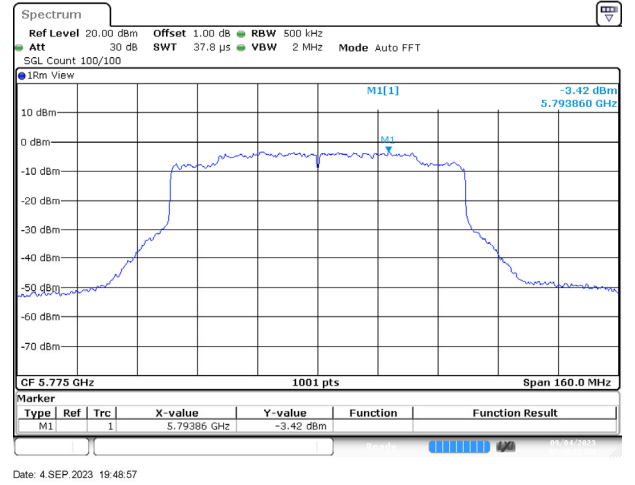
Note:

1. Total PPSD = PPSD + 10*log(2) + Duty factor.
2. The quantity 10*log(2) (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 138 (U-NII-2C) (Chain A)



Channel 155 (Chain A)



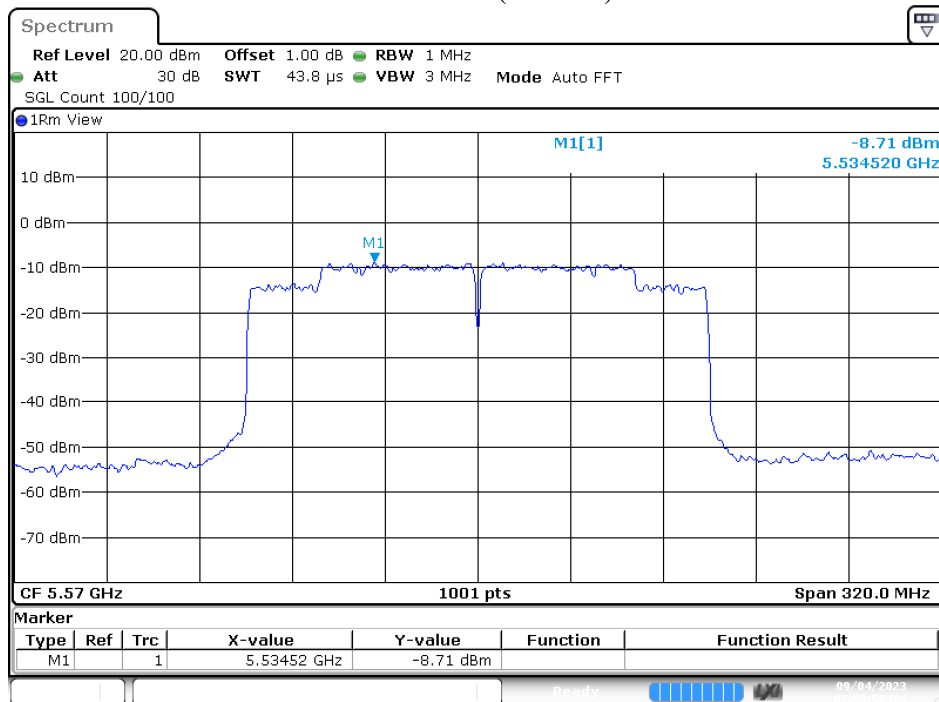
Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11 ax-160 MHz)-MIMO
 Test Date : 2023/09/04

Channel No.	Frequency (MHz)	Chain	PPSD/MHz (dBm)	10*log(2) (dB)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
50(U-NII-1)	5250	A	-11.99	3.01	0.11	-8.87	<11	Pass
		B	-11.42	3.01	0.11	-8.30	<11	Pass
50(U-NII-2A)	5250	A	-11.89	3.01	0.11	-8.77	<11	Pass
		B	-11.75	3.01	0.11	-8.63	<11	Pass
114	5570	A	-8.71	3.01	0.11	-5.59	<11	Pass
		B	-9.81	3.01	0.11	-6.69	<11	Pass

Note:

1. Total PPSD/MHz = PPSD/MHz + 10*log(2) + Duty factor.
2. The quantity 10*log(2) (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 114 (Chain A)



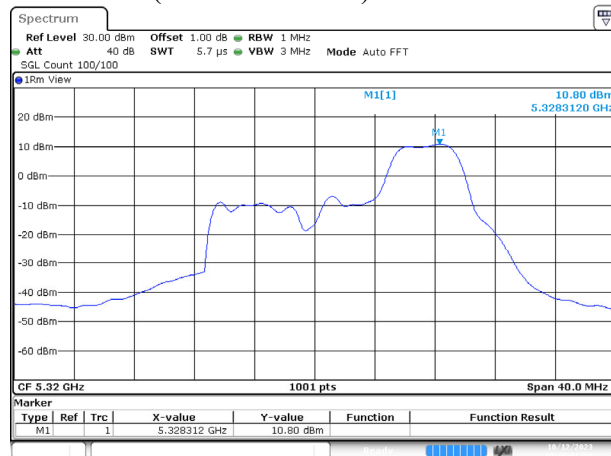
Date: 4.SEP.2023 19:58:59

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-20 MHz) (Partial RU)-SISO A
 Test Date : 2023/10/12

Channel No.	Frequency (MHz)	RU Config	PPSD/MHz (dBm)	Duty factor (dB)	Total PPSSD/MHz (dBm)	Required Limit (dBm)	Result
36	5180	26/0	10.63	0.00	10.63	<11	Pass
		52/37	10.55	0.00	10.55	<11	Pass
		106/53	9.41	0.00	9.41	<11	Pass
64	5320	26/8	10.75	0.00	10.75	<11	Pass
		52/40	10.80	0.00	10.80	<11	Pass
		106/54	10.25	0.00	10.25	<11	Pass
100	5500	26/0	10.51	0.00	10.51	<11	Pass
		52/37	10.73	0.00	10.73	<11	Pass
		106/53	9.19	0.00	9.19	<11	Pass
140	5700	26/8	10.63	0.00	10.63	<11	Pass
		52/40	10.68	0.00	10.68	<11	Pass
		106/54	8.91	0.00	8.91	<11	Pass

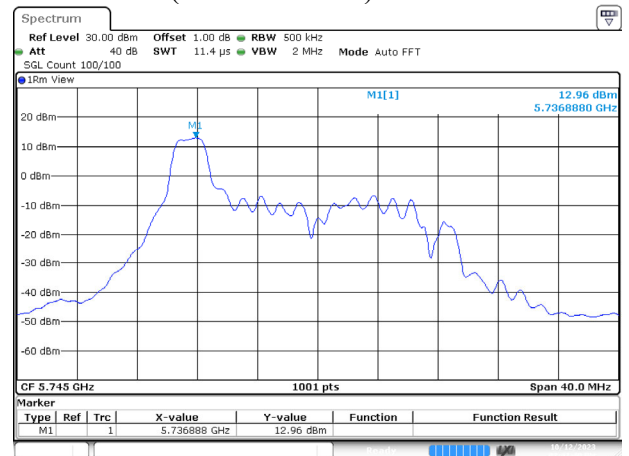
Channel No.	Frequency (MHz)	RU Config	PPSD (dBm)	Duty factor (dB)	Total PPSSD (dBm)	Required Limit (dBm)	Result
149	5745	26/0	12.96	0.00	12.96	<30	Pass
		52/37	9.48	0.00	9.48	<30	Pass
		106/53	6.77	0.00	6.77	<30	Pass

Channel 64 (Partial RU 52/40)



Date: 12.OCT.2023 14:38:52

Channel 149 (Partial RU 26/0)



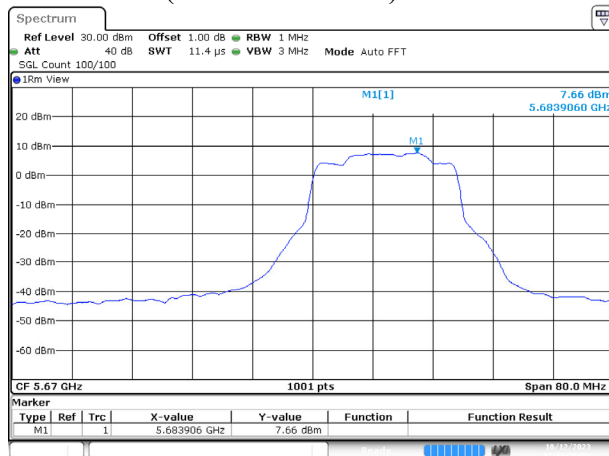
Date: 12.OCT.2023 14:47:40

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-40 MHz) (Partial RU)-SISO A
 Test Date : 2023/10/12

Channel No.	Frequency (MHz)	RU Config	PPSD/MHz (dBm)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
38	5190	242/61	5.21	0.10	5.31	<11	Pass
62	5310	242/62	4.59	0.10	4.69	<11	Pass
102	5510	242/61	5.75	0.10	5.85	<11	Pass
134	5670	242/62	7.66	0.10	7.76	<11	Pass

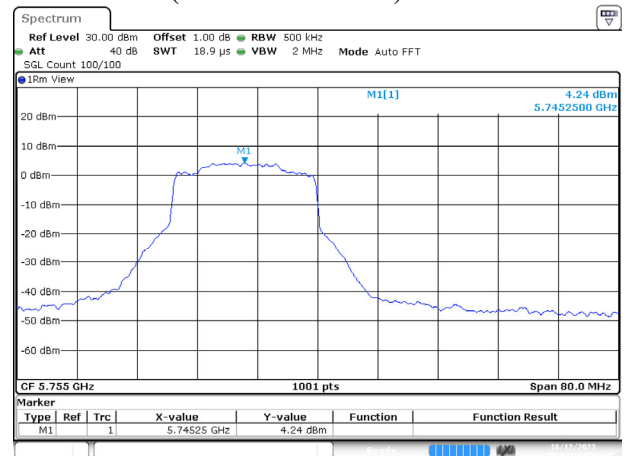
Channel No.	Frequency (MHz)	RU Config	PPSD (dBm)	Duty factor (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
151	5755	242/61	4.24	0.10	4.34	<30	Pass

Channel 134 (Partial RU 242/62)



Date: 12.OCT.2023 14:51:38

Channel 151 (Partial RU 242/61)

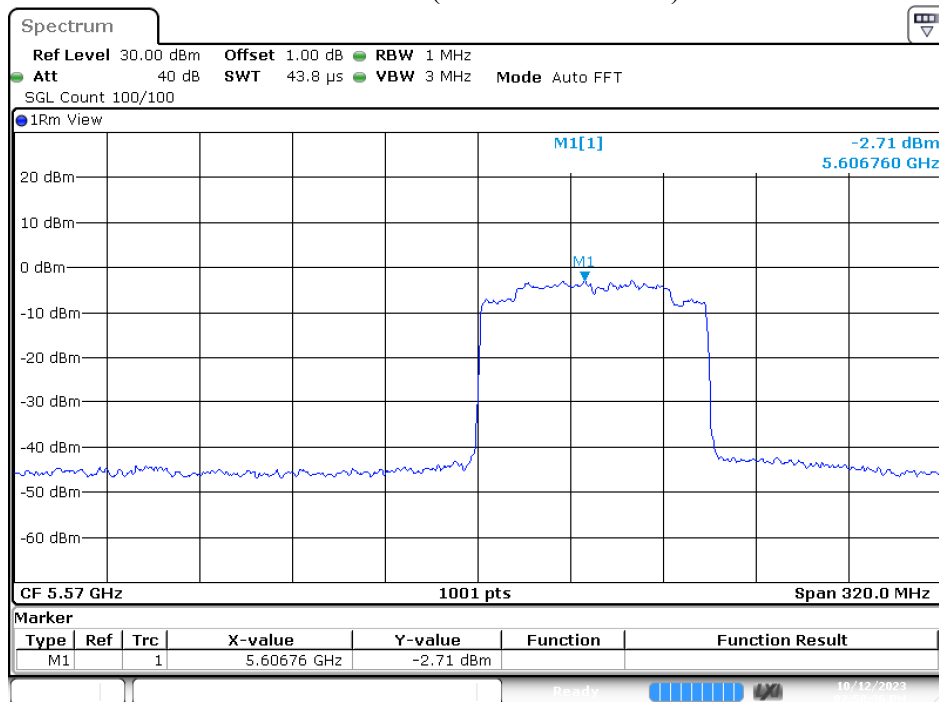


Date: 12.OCT.2023 14:52:15

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-160 MHz) (Partial RU)-SISO A
 Test Date : 2023/10/12

Channel No.	Frequency (MHz)	RU Config	PPSD/MHz (dBm)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
50(U-NII-1)	5250	996/67	-5.01	0.10	-4.91	<11	Pass
50(U-NII-2A)	5250	996/S67	-4.82	0.10	-4.72	<11	Pass
114	5570	996/67	-3.34	0.10	-3.24	<11	Pass
		996/S67	-2.71	0.10	-2.61	<11	Pass

Channel 114 (Partial RU 996/S67)



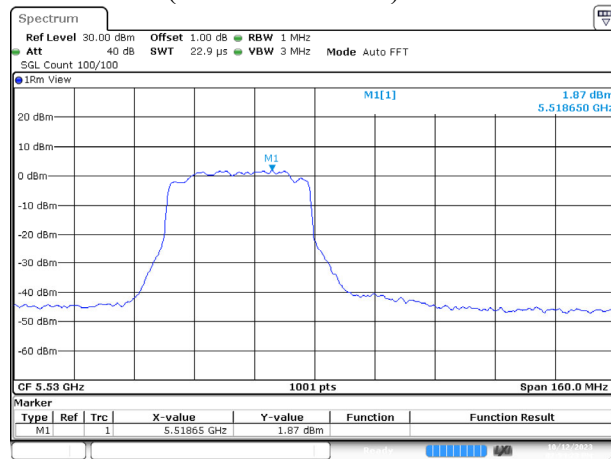
Date: 12.OCT.2023 14:58:36

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-80 MHz) (Partial RU)-SISO B
 Test Date : 2023/10/12

Channel No.	Frequency (MHz)	RU Config	PPSD/MHz (dBm)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
42	5210	484/65	1.53	0.00	1.53	<11	Pass
58	5290	484/66	1.08	0.00	1.08	<11	Pass
106	5530	484/65	1.87	0.00	1.87	<11	Pass

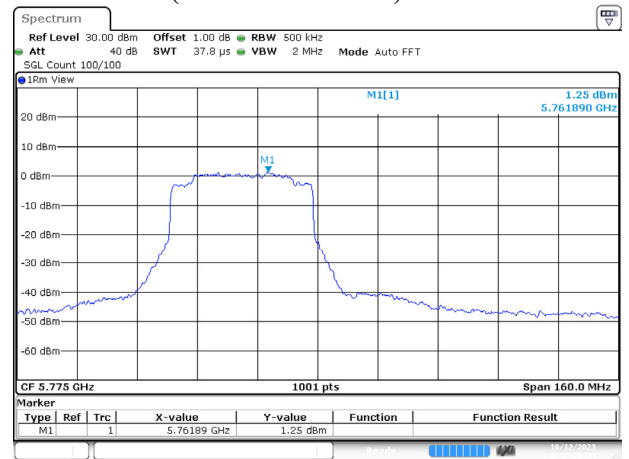
Channel No.	Frequency (MHz)	RU Config	PPSD (dBm)	Duty factor (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
155	5775	484/66	1.25	0.00	1.25	<30	Pass

Channel 106 (Partial RU 484/65)



Date: 12.OCT.2023 14:54:24

Channel 155 (Partial RU 484/66)



Date: 12.OCT.2023 14:55:06

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-20 MHz) (Partial RU)-MIMO
 Test Date : 2023/09/12

Channel No.	Frequency (MHz)	RU Config	Chain	PPSD/MHz (dBm)	10*log(2) (dB)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
36	5180	26/0	A	7.61	3.01	0.00	10.62	<11	Pass
			B	7.60	3.01	0.00	10.61	<11	Pass
		52/37	A	6.85	3.01	0.00	9.86	<11	Pass
			B	6.93	3.01	0.00	9.94	<11	Pass
		106/53	A	4.57	3.01	0.00	7.58	<11	Pass
			B	4.27	3.01	0.00	7.28	<11	Pass
64	5320	26/8	A	7.82	3.01	0.00	10.83	<11	Pass
			B	7.83	3.01	0.00	10.84	<11	Pass
		52/40	A	7.79	3.01	0.00	10.80	<11	Pass
			B	7.72	3.01	0.00	10.73	<11	Pass
		106/54	A	5.43	3.01	0.00	8.44	<11	Pass
			B	5.38	3.01	0.00	8.39	<11	Pass
100	5500	26/0	A	7.87	3.01	0.00	10.88	<11	Pass
			B	7.70	3.01	0.00	10.71	<11	Pass
		52/37	A	7.63	3.01	0.00	10.64	<11	Pass
			B	7.56	3.01	0.00	10.57	<11	Pass
		106/53	A	5.76	3.01	0.00	8.77	<11	Pass
			B	5.31	3.01	0.00	8.32	<11	Pass
140	5700	26/8	A	7.63	3.01	0.00	10.64	<11	Pass
			B	7.60	3.01	0.00	10.61	<11	Pass
		52/40	A	7.75	3.01	0.00	10.76	<11	Pass
			B	6.19	3.01	0.00	9.20	<11	Pass
		106/54	A	5.60	3.01	0.00	8.61	<11	Pass
			B	4.86	3.01	0.00	7.87	<11	Pass

Note:

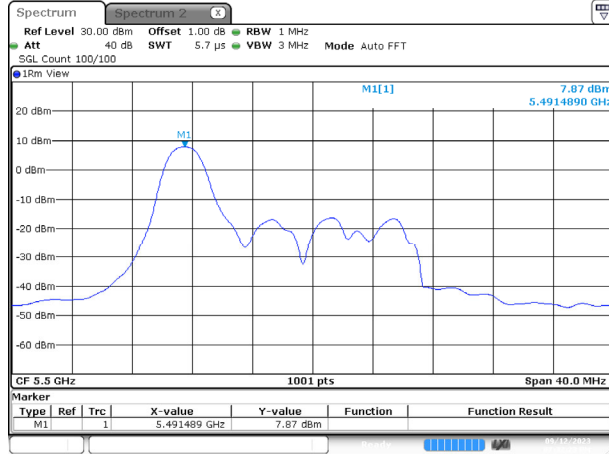
1. Total PPSD/MHz = PPSD/MHz + 10*log(2) + Duty factor.
2. The quantity 10*log(2) (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel No.	Frequency (MHz)	RU Config	Chain	PPSD (dBm)	10*log(2) (dB)	Duty factor (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
149	5745	26/0	A	10.92	3.01	0.00	13.93	<30	Pass
			B	9.62	3.01	0.00	12.63	<30	Pass
		52/37	A	6.79	3.01	0.00	9.80	<30	Pass
			B	5.61	3.01	0.00	8.62	<30	Pass
		106/53	A	5.60	3.01	0.00	8.61	<30	Pass
			B	4.34	3.01	0.00	7.35	<30	Pass

Note:

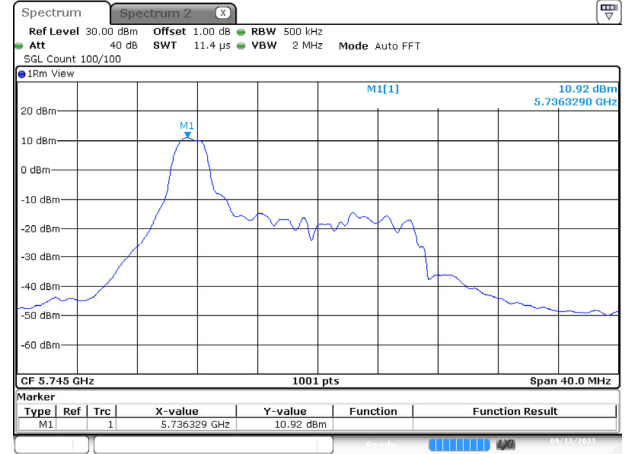
1. Total PPSD = PPSD + 10*log(2) + Duty factor.
2. The quantity 10*log(2) (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 100 (Partial RU 26/0) (Chain A)



Date: 12.SEP.2023 19:32:24

Channel 149 (Partial RU 26/0) (Chain A)



Date: 12.SEP.2023 19:54:22

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-40 MHz) (Partial RU)-MIMO
 Test Date : 2023/09/12

Channel No.	Frequency (MHz)	RU Config	Chain	PPSD/MHz (dBm)	10*log(2) (dB)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
38	5190	242/61	A	0.39	3.01	0.10	3.50	<11	Pass
			B	-0.57	3.01	0.10	2.54	<11	Pass
62	5310	242/62	A	1.10	3.01	0.10	4.21	<11	Pass
			B	-0.07	3.01	0.10	3.04	<11	Pass
102	5510	242/61	A	1.97	3.01	0.10	5.08	<11	Pass
			B	1.15	3.01	0.10	4.26	<11	Pass
134	5670	242/62	A	4.54	3.01	0.10	7.65	<11	Pass
			B	3.73	3.01	0.10	6.84	<11	Pass

Note:

1. Total PPSD/MHz = PPSD/MHz + 10*log(2) + Duty factor.
2. The quantity 10*log(2) (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel No.	Frequency (MHz)	RU Config	Chain	PPSD (dBm)	10*log(2) (dB)	Duty factor (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
151	5755	242/61	A	2.74	3.01	0.10	5.85	<30	Pass
			B	1.15	3.01	0.10	4.26	<30	Pass

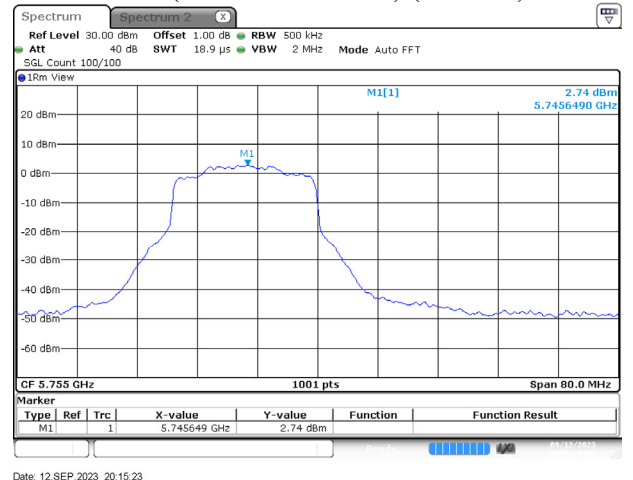
Note:

1. Total PPSD = PPSD + 10*log(2) + Duty factor.
2. The quantity 10*log(2) (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 134 (Partial RU 242/62) (Chain A)



Channel 151 (Partial RU 242/61) (Chain A)



Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-80 MHz) (Partial RU)-MIMO
 Test Date : 2023/09/12

Channel No.	Frequency (MHz)	RU Config	Chain	PPSD/MHz (dBm)	10*log(2) (dB)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
42	5210	484/65	A	-3.66	3.01	0.00	-0.65	<11	Pass
			B	-5.13	3.01	0.00	-2.12	<11	Pass
58	5290	484/66	A	-2.73	3.01	0.00	0.28	<11	Pass
			B	-3.65	3.01	0.00	-0.64	<11	Pass
106	5530	484/65	A	-2.74	3.01	0.00	0.27	<11	Pass
			B	-3.37	3.01	0.00	-0.36	<11	Pass

Note:

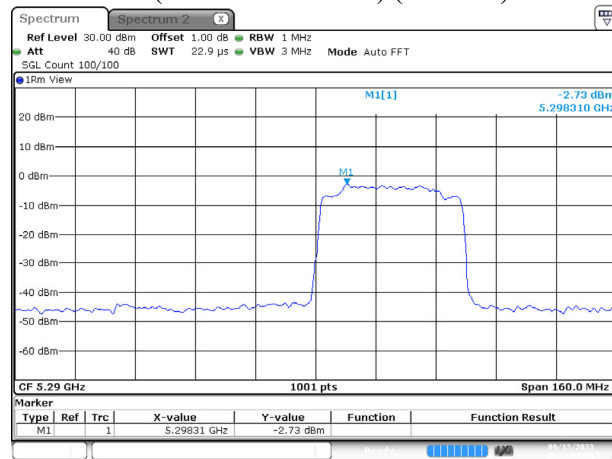
1. Total PPSD/MHz = PPSD/MHz + 10*log(2) + Duty factor.
2. The quantity 10*log(2) (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel No.	Frequency (MHz)	RU Config	Chain	PPSD (dBm)	10*log(2) (dB)	Duty factor (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
155	5775	484/65	A	-1.66	3.01	0.00	1.35	<30	Pass
			B	-2.33	3.01	0.00	0.68	<30	Pass

Note:

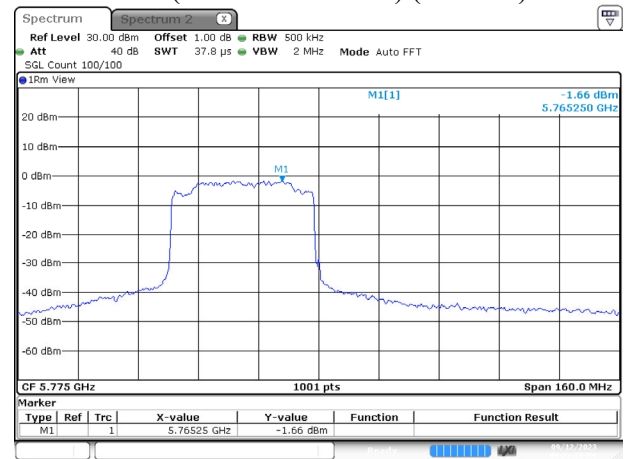
1. Total PPSD = PPSD + 10*log(2) + Duty factor.
2. The quantity 10*log(2) (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 58 (Partial RU 484/66) (Chain A)



Date: 12.SEP.2023 20:18:32

Channel 155 (Partial RU 484/65) (Chain A)



Date: 12.SEP.2023 20:23:59

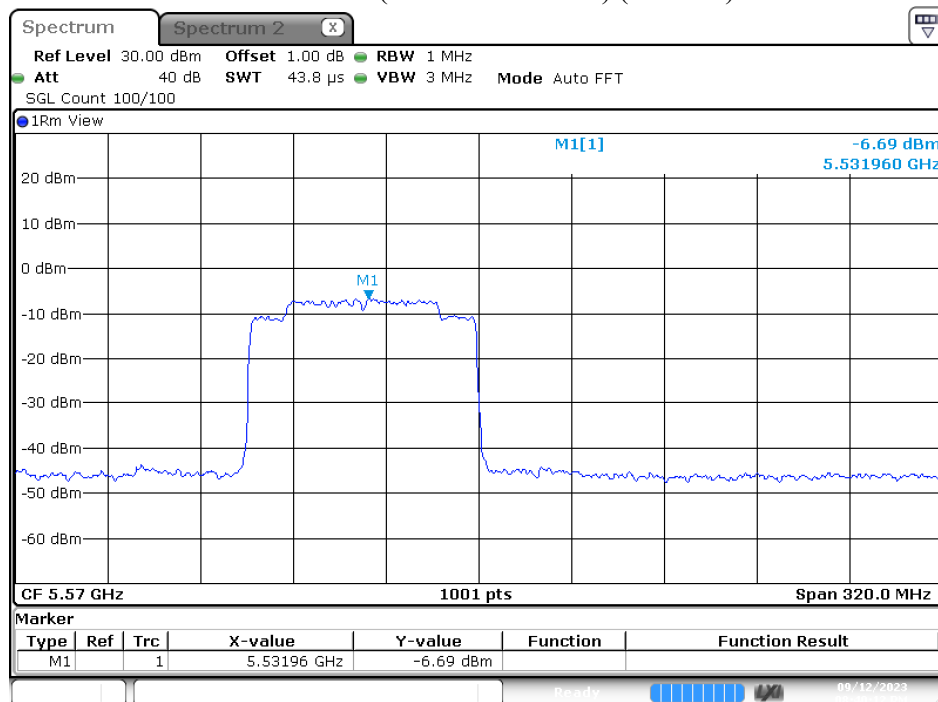
Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-160 MHz) (Partial RU)-MIMO
 Test Date : 2023/09/12

Channel No.	Frequency (MHz)	RU Config	Chain	PPSD/MHz (dBm)	10*log(2) (dB)	Duty factor (dB)	Total PSD/MHz (dBm)	Required Limit (dBm)	Result
50(U-NII-1)	5250	996/67	A	-9.77	3.01	0.10	-6.66	<11	Pass
			B	-9.62	3.01	0.10	-6.51	<11	Pass
50(U-NII-2A)	5250	996/S67	A	-9.56	3.01	0.10	-6.45	<11	Pass
			B	-9.13	3.01	0.10	-6.02	<11	Pass
114	5570	996/67	A	-6.69	3.01	0.10	-3.58	<11	Pass
			B	-7.54	3.01	0.10	-4.43	<11	Pass
		996/S67	A	-6.70	3.01	0.10	-3.59	<11	Pass
			B	-7.28	3.01	0.10	-4.17	<11	Pass

Note:

- Total PSD/MHz = PSD/MHz + 10*log(2) + Duty factor.
- The quantity 10*log(2) (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 114 (Partial RU 996/67) (Chain A)

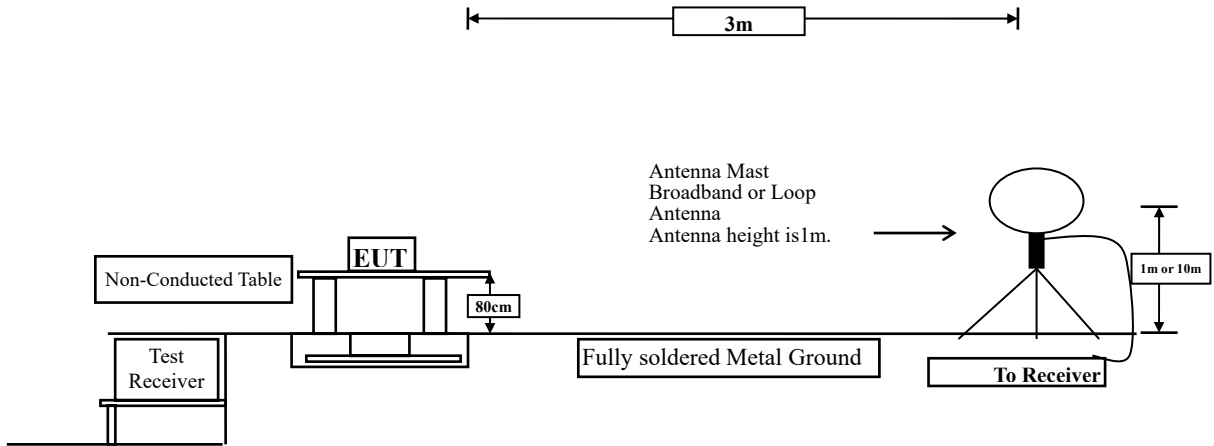


Date: 12.SEP.2023 20:40:13

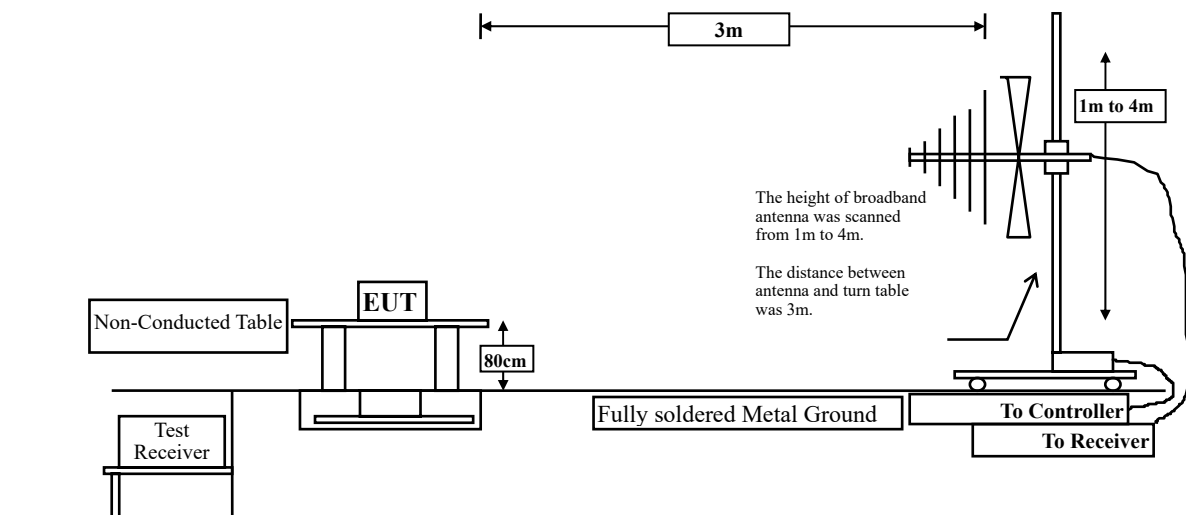
5. Radiated Emission

5.1. Test Setup

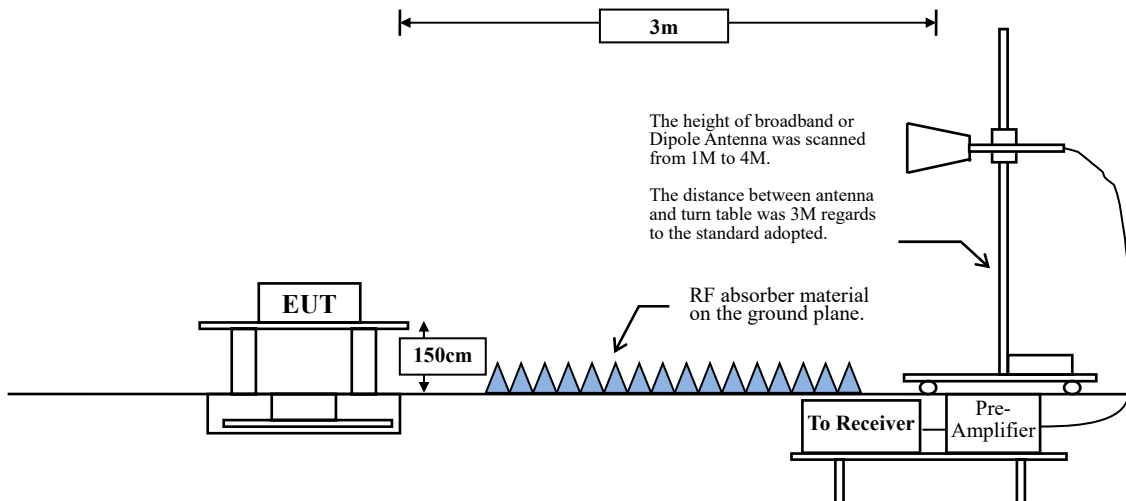
Radiated Emission Under 30 MHz



Radiated Emission Below 1 GHz



Radiated Emission Above 1 GHz



5.2. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks: E field strength (dB μ V/m) = 20 log E field strength (μ V/m)

- 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.
- 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.
- 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.
- For transmitters operating in the 5.725-5.85 GHz band:
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.
- For transmitters operating in the 5.850-5.895 GHz band:
 - (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.
 - (ii) For a client device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of -5 dBm/MHz and shall decrease linearly to an e.i.r.p. of -27 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.
- For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed an e.i.r.p. of -27 dBm/MHz.

Based on ANSI C63.10-2013 Section 12.7.3 d) provides the conversion formula between field strength and EIRP, if distance is 3m, -27dBm is equivalent to 68.22dBuV/m.

5.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to FCC KDB-789033 test procedure for compliance to FCC 47CFR 15. 407 requirements.

Measuring the frequency range below 1 GHz, the EUT is placed on a turn table which is 0.8 meter above ground, when measuring the frequency range above 1 GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 30 MHz setting on the field strength meter is 9kHz and 30 MHz~1 GHz is 120 kHz and above 1 GHz is 1 MHz.

Radiated emission measurements below 30 MHz are made using Loop Antenna and 30 MHz~1 GHz are made using broadband Bilog antenna and above 1 GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The measurement frequency range from 9 kHz - 10th Harmonic of fundamental was investigated.

RBW and VBW Parameter setting:

According to KDB 789033 section II.G.5 Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz.

RBW = 1 MHz.

VBW \geq 3 MHz.

According to KDB 789033 section II.G.6 Procedures for Average Unwanted Emissions Measurements above 1000 MHz.

RBW = 1 MHz.

VBW = 10 Hz, when duty cycle \geq 98 %

VBW \geq 1/T, when duty cycle < 98 %

(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

SISO A

5 GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11a	97.38	2.0800	481	500
802.11ax-20 MHz	98.32	3.9780	251	10
802.11ax-40 MHz	98.31	3.9610	252	10
802.11ax-80 MHz	98.31	3.9610	252	10
802.11ax-160 MHz	98.32	3.9780	251	10
802.11ax-20 MHz (Partial RU)	98.11	2.5900	386	10
802.11ax-40 MHz (Partial RU)	97.73	2.5800	388	500
802.11ax-80 MHz (Partial RU)	98.11	2.5900	386	10
802.11ax-160 MHz (Partial RU)	97.73	2.5800	388	500

SISO B

5 GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11a	97.20	2.0800	481	500
802.11ax-20 MHz	98.14	3.9600	253	10
802.11ax-40 MHz	98.51	3.9750	252	10
802.11ax-80 MHz	98.51	3.9750	252	10
802.11ax-160 MHz	98.51	3.9750	252	10
802.11ax-20 MHz (Partial RU)	98.10	2.5800	388	10
802.11ax-40 MHz (Partial RU)	97.73	2.5800	388	500
802.11ax-80 MHz (Partial RU)	98.10	2.5800	388	10
802.11ax-160 MHz (Partial RU)	98.11	2.5900	386	10

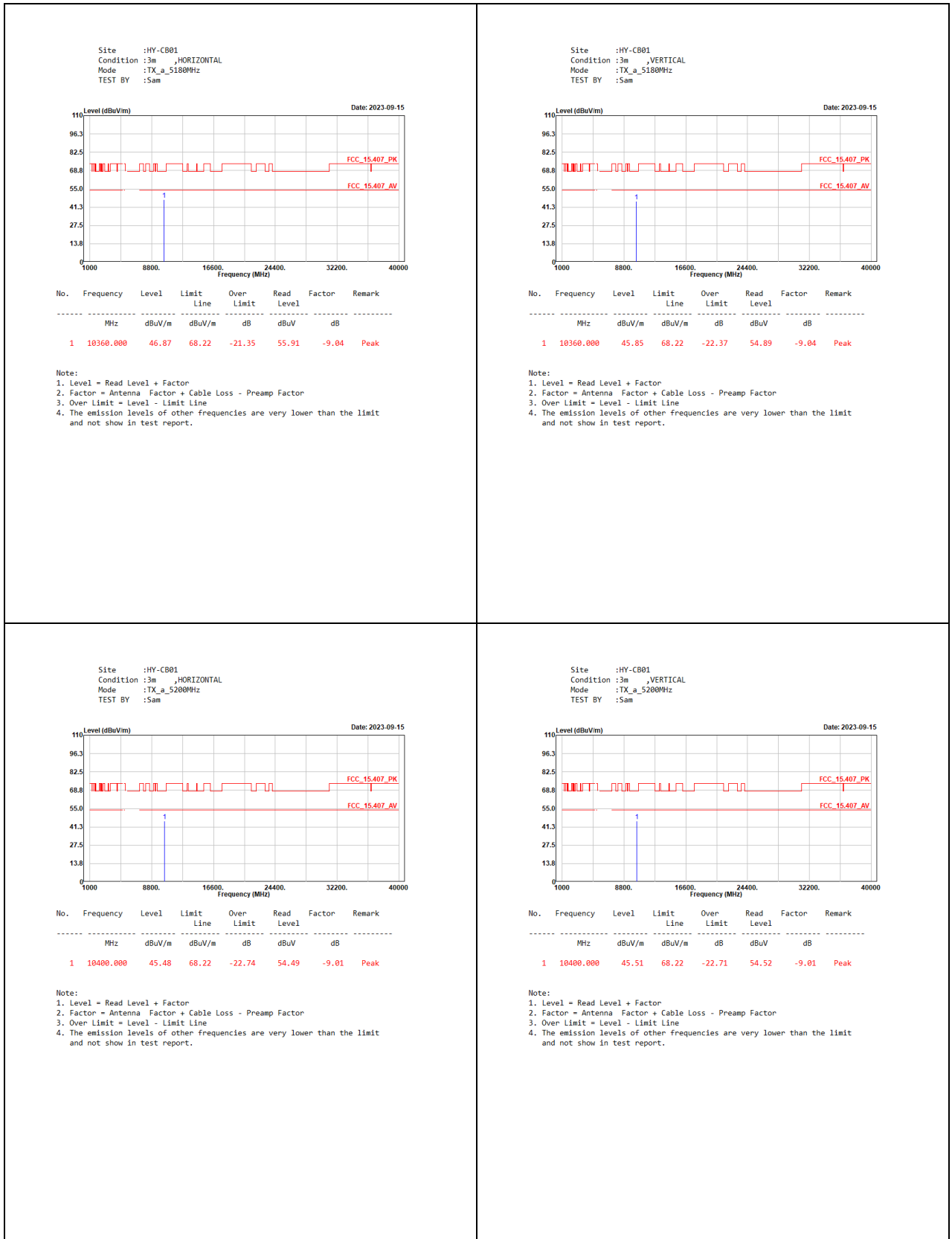
MIMO

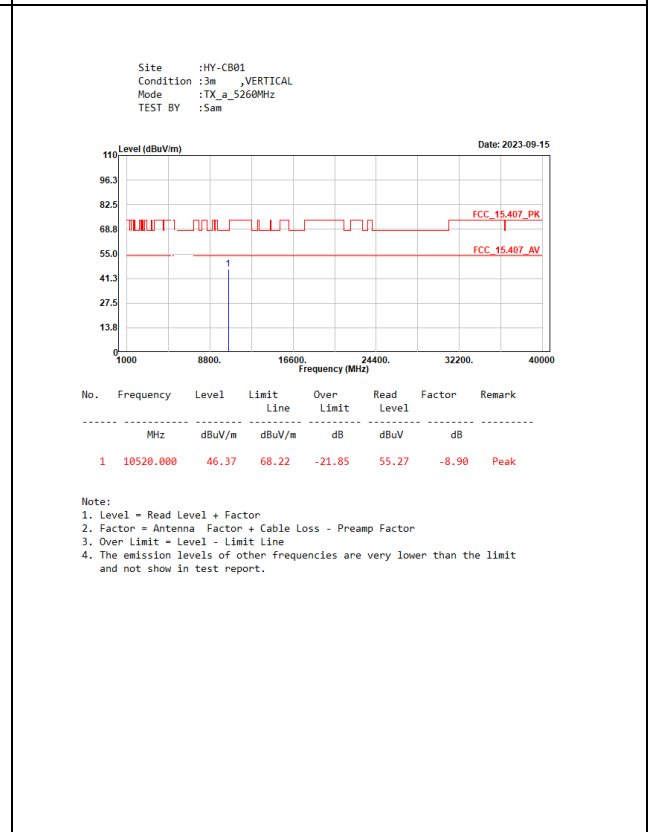
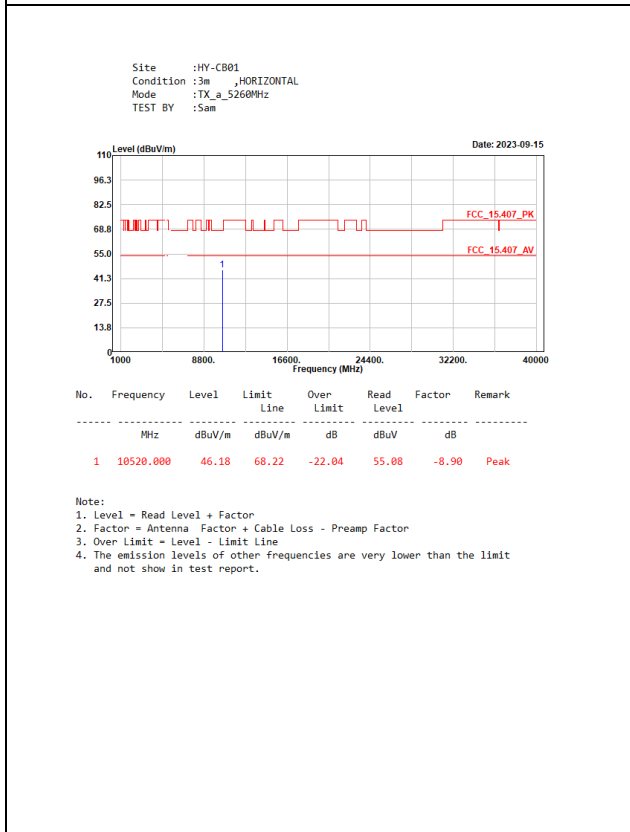
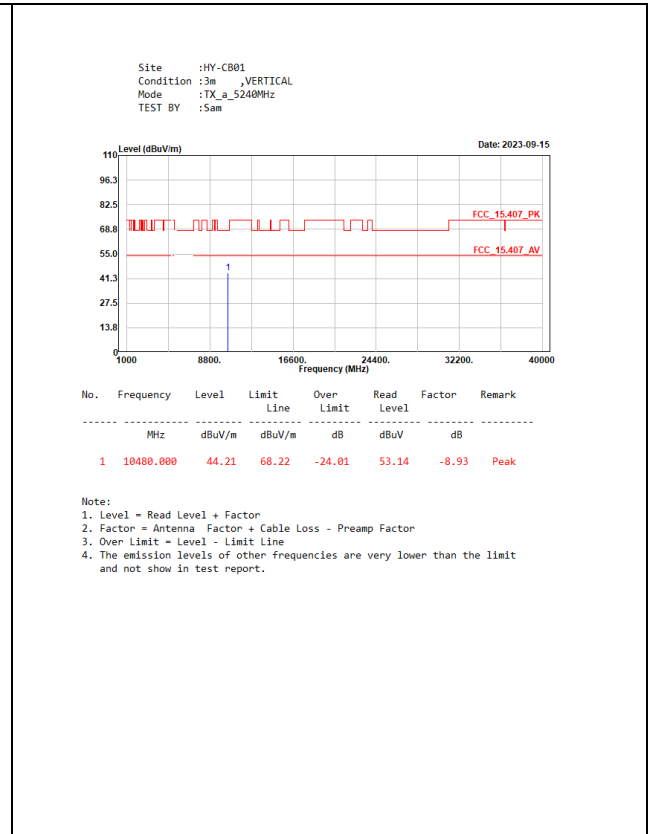
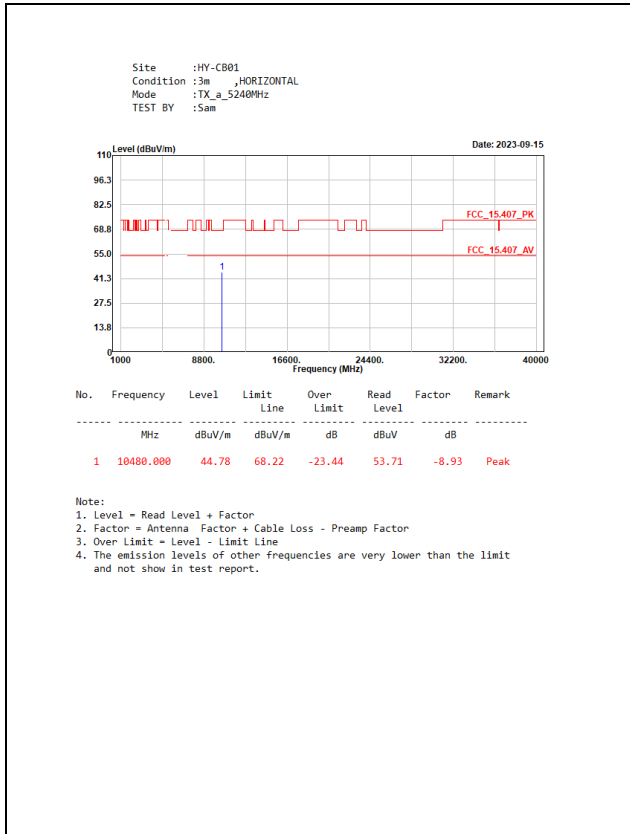
5 GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11ax-20 MHz	98.51	3.9600	253	10
802.11ax-40 MHz	98.51	3.9750	252	10
802.11ax-80 MHz	98.51	3.9750	252	10
802.11ax-160 MHz	97.45	2.2900	437	500
802.11ax-20 MHz (Partial RU)	98.35	2.5942	385	10
802.11ax-40 MHz (Partial RU)	97.81	2.5942	385	500
802.11ax-80 MHz (Partial RU)	98.35	2.5942	385	10
802.11ax-160 MHz (Partial RU)	97.81	2.5942	385	500

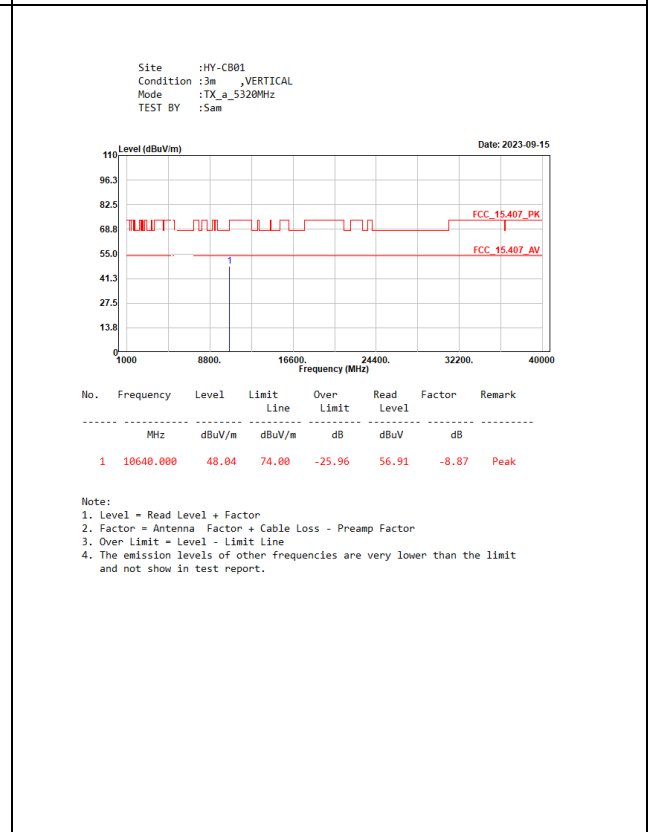
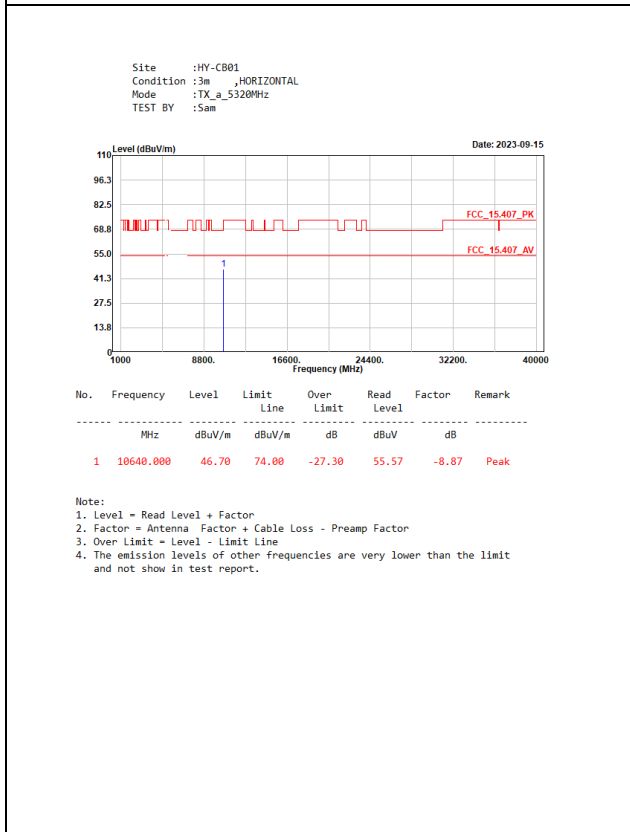
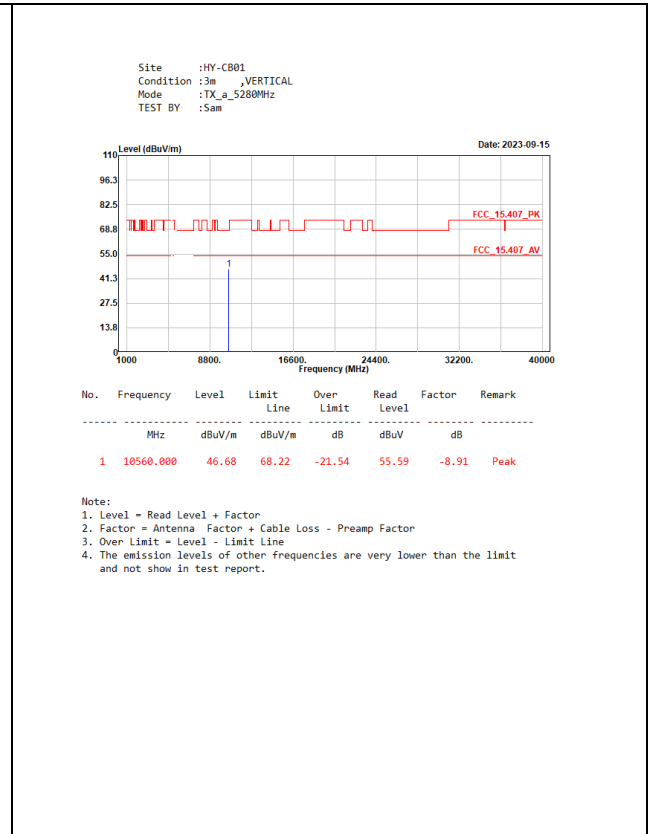
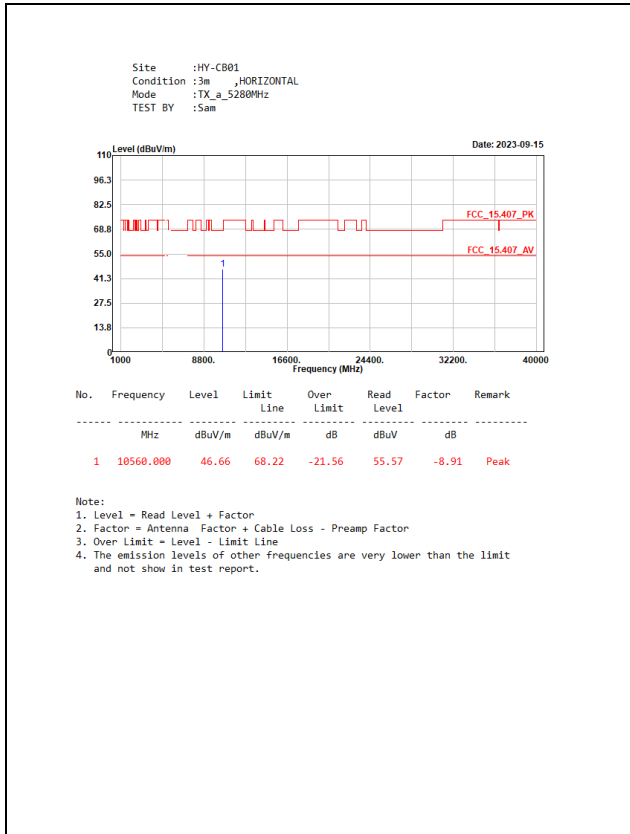
Note: Duty Cycle Refer to Section 8.

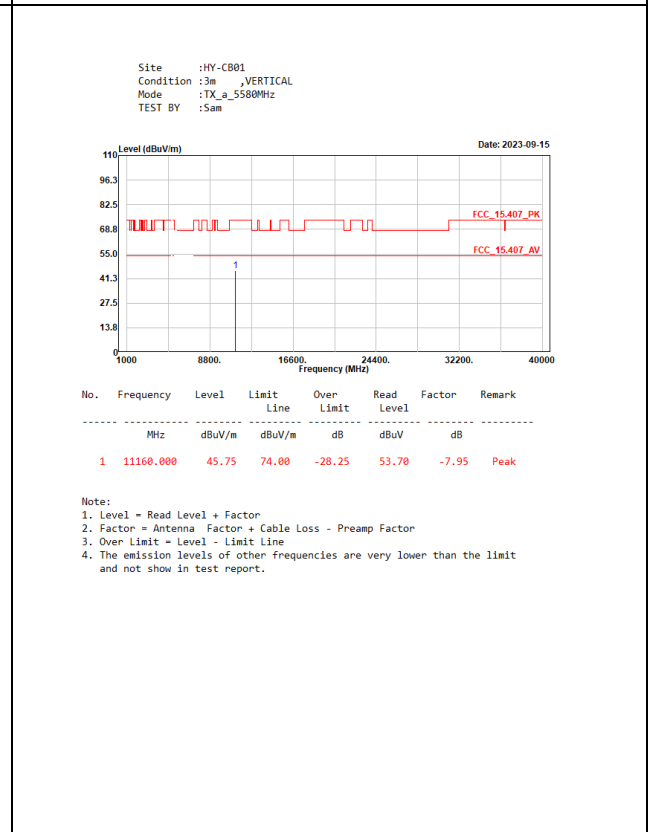
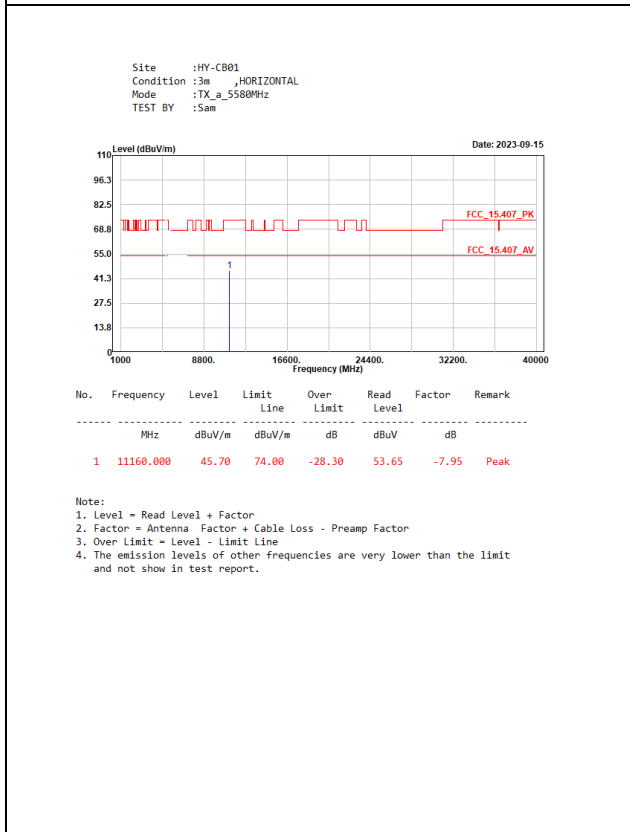
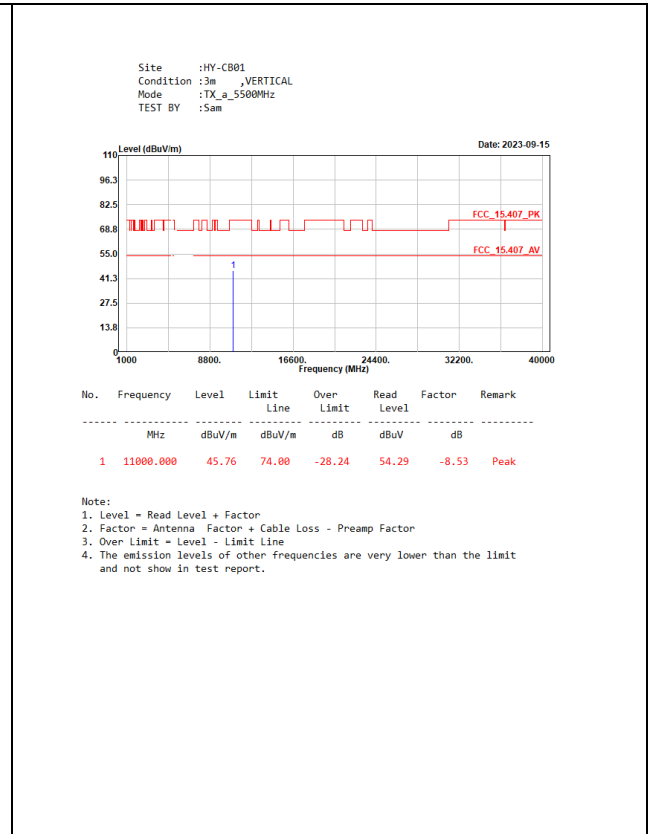
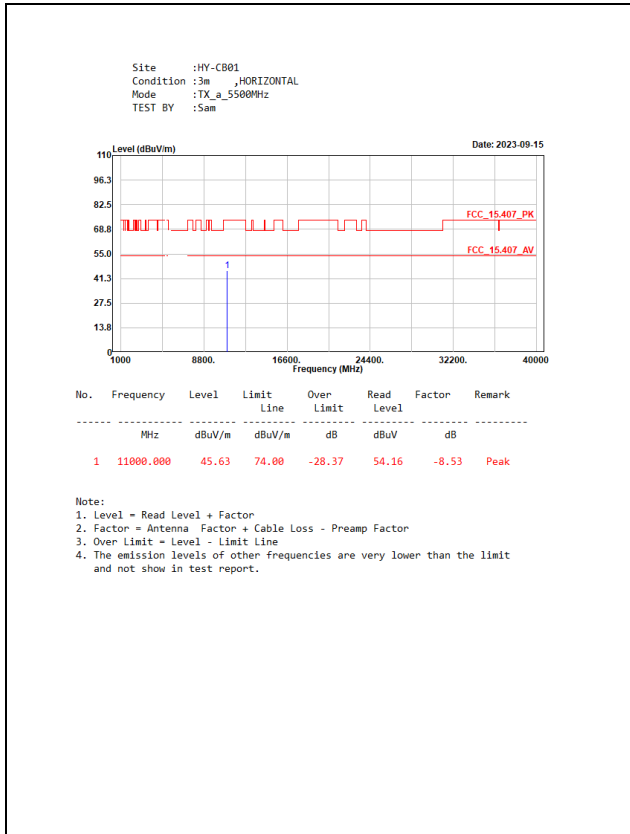
5.4. Test Result of Radiated Emission

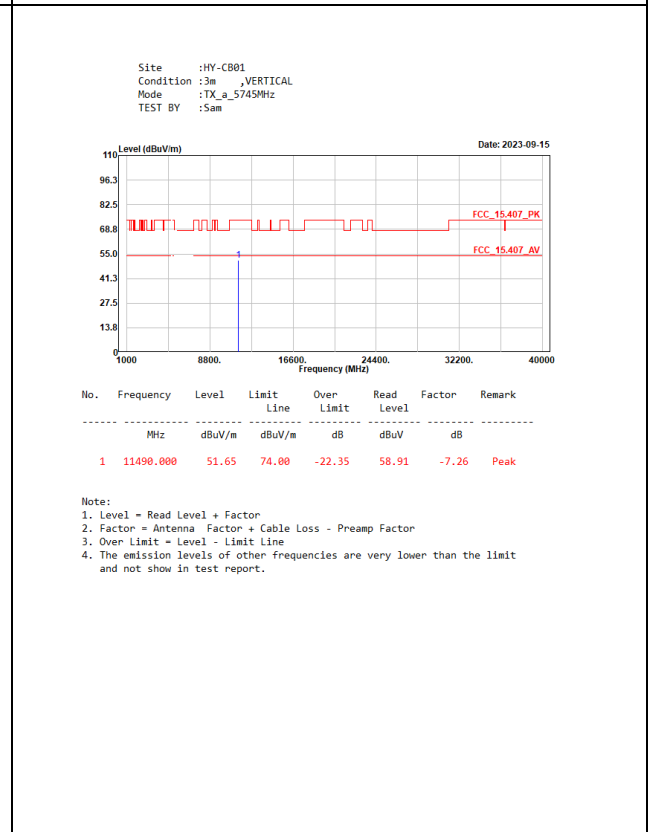
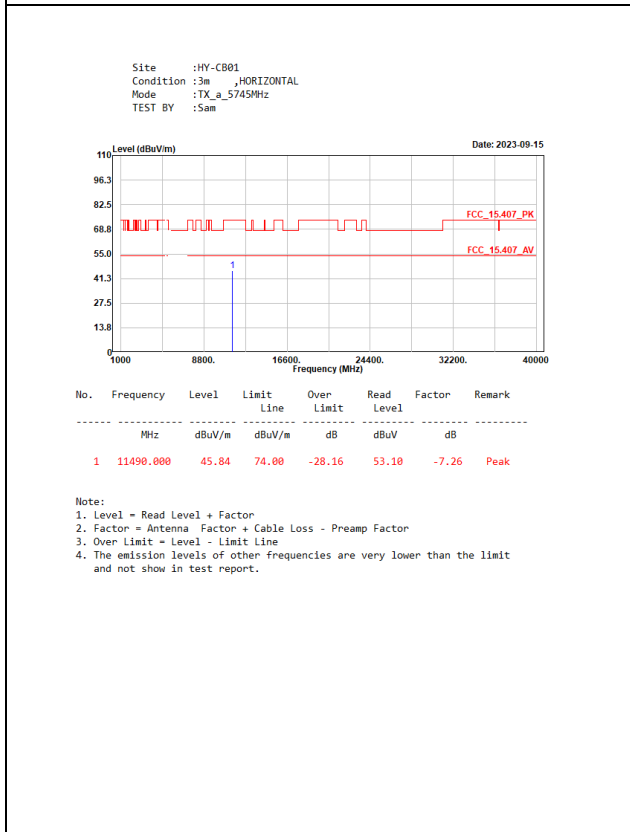
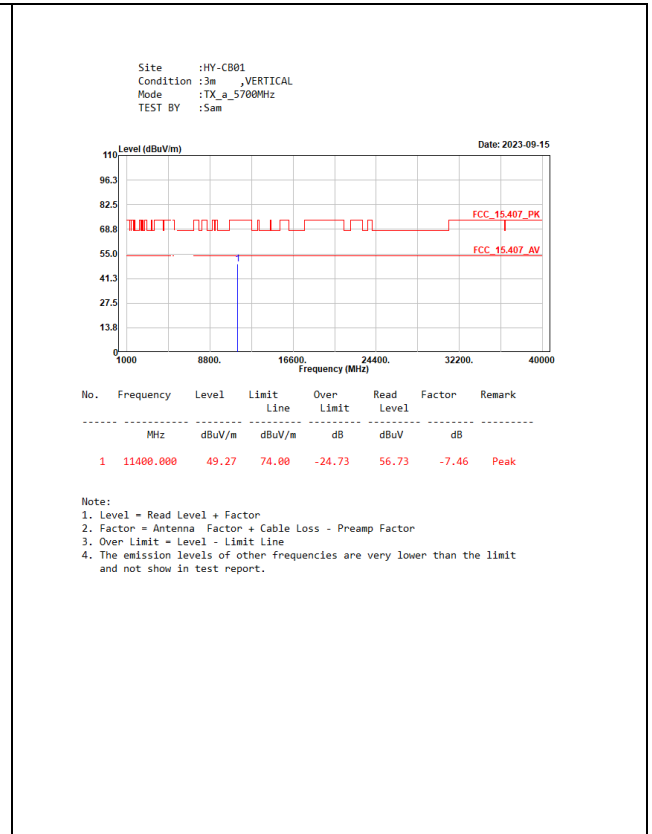
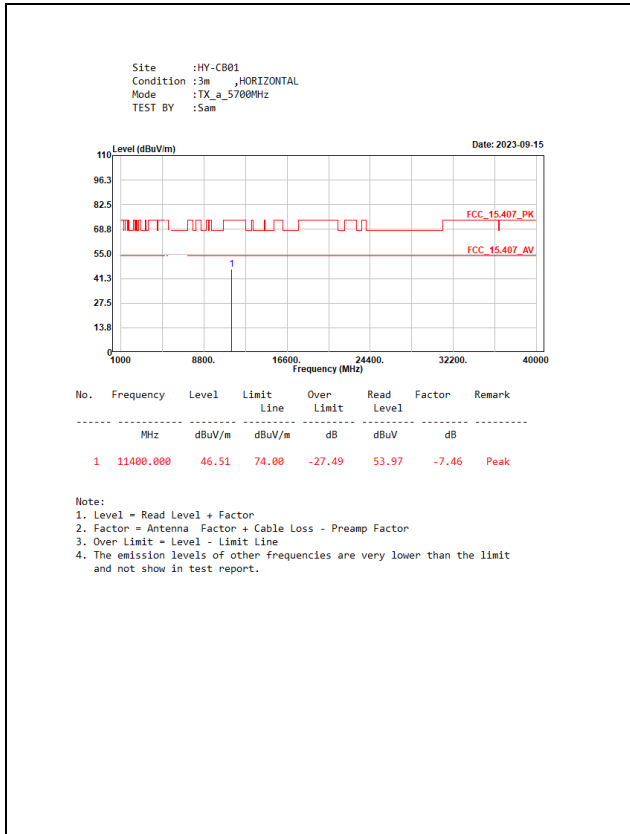
SISO A

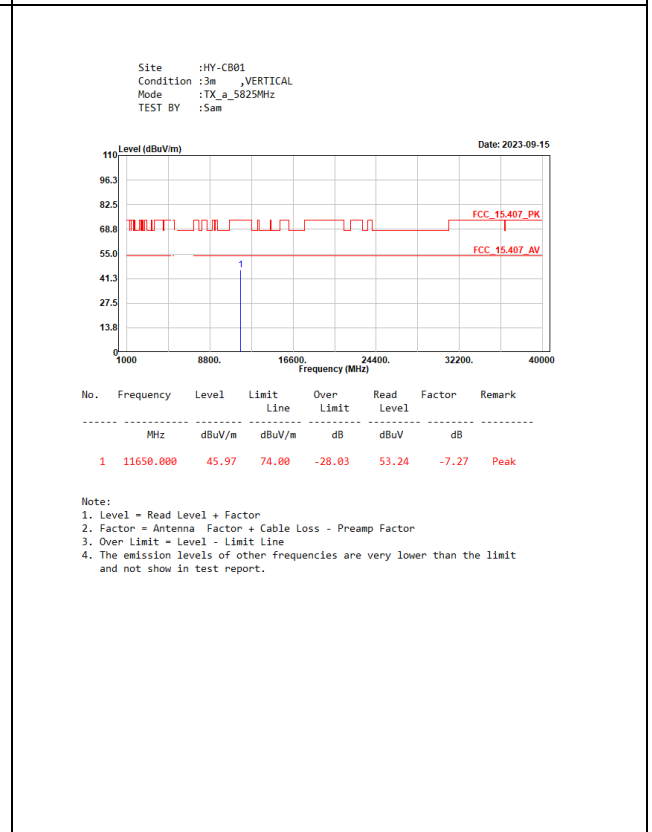
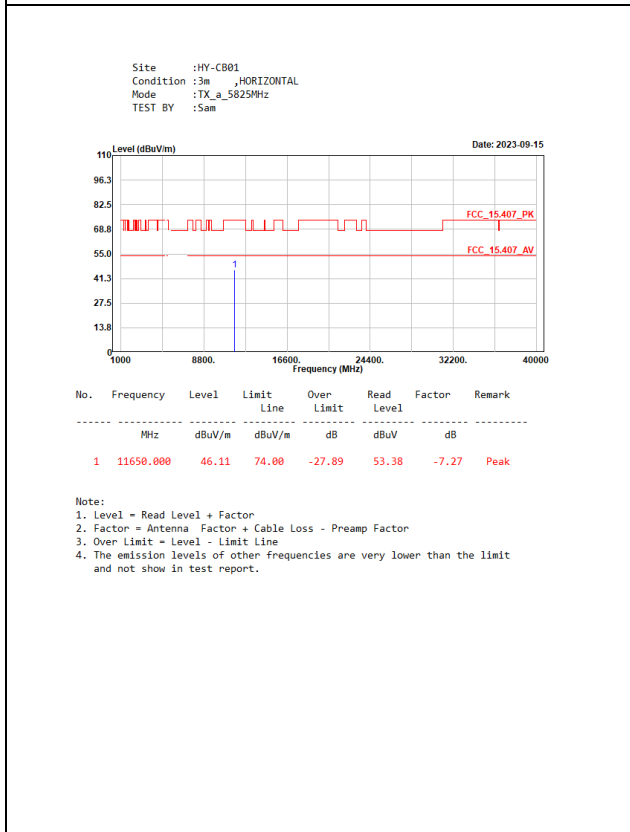
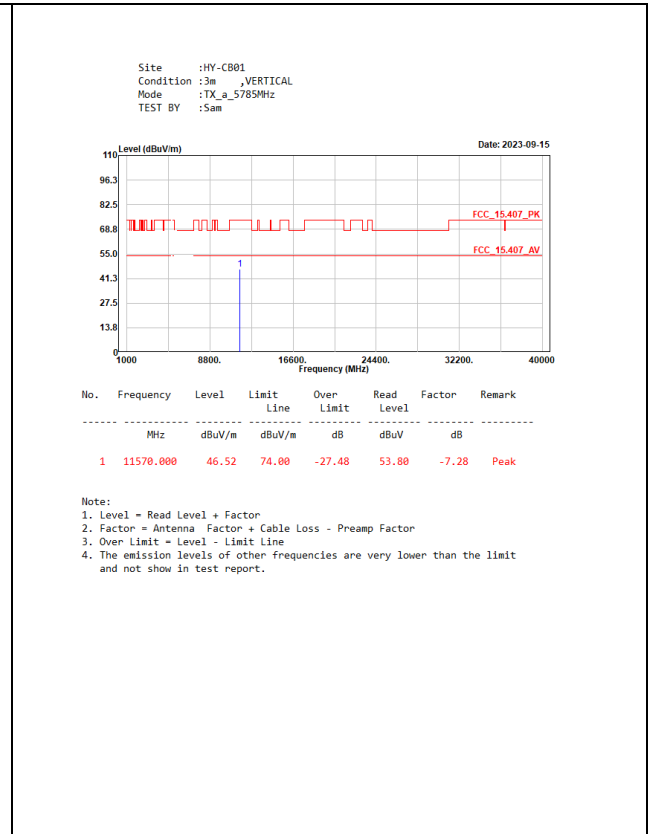
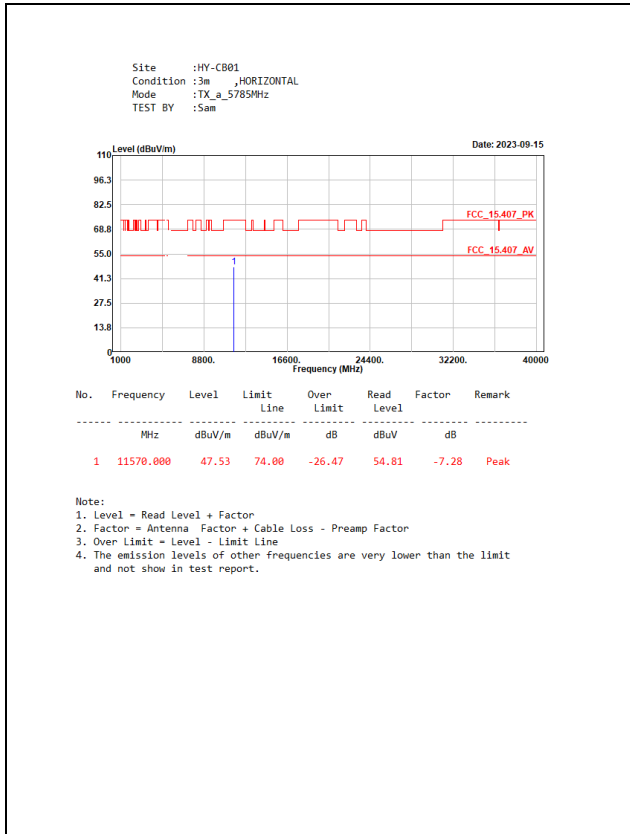


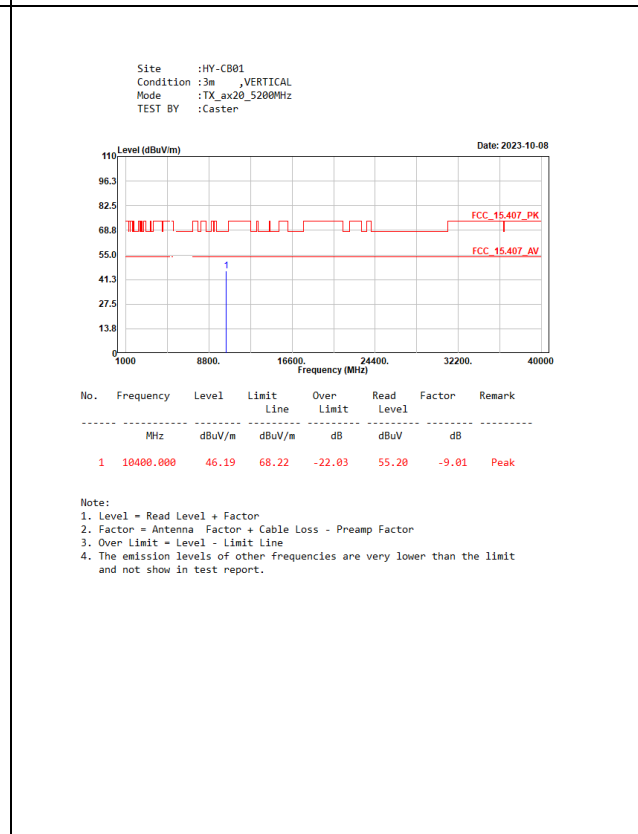
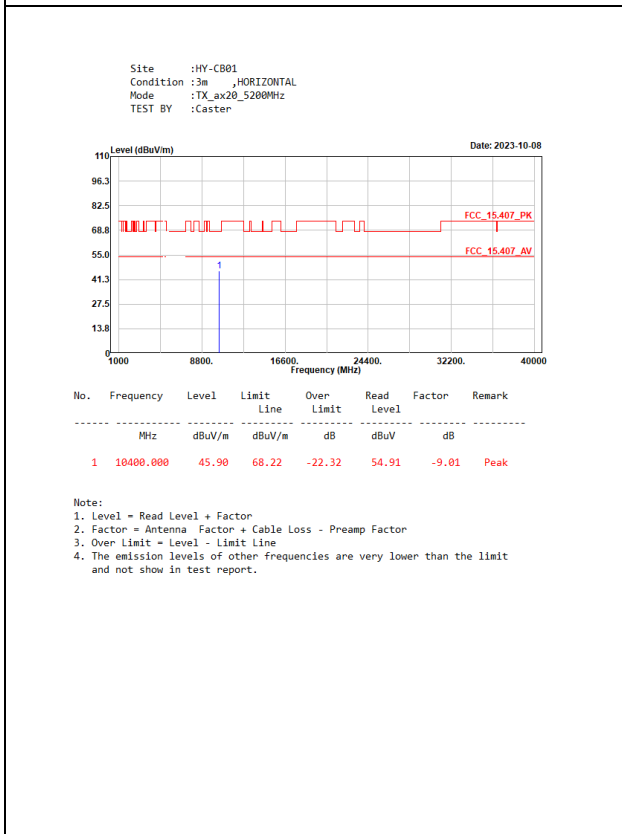
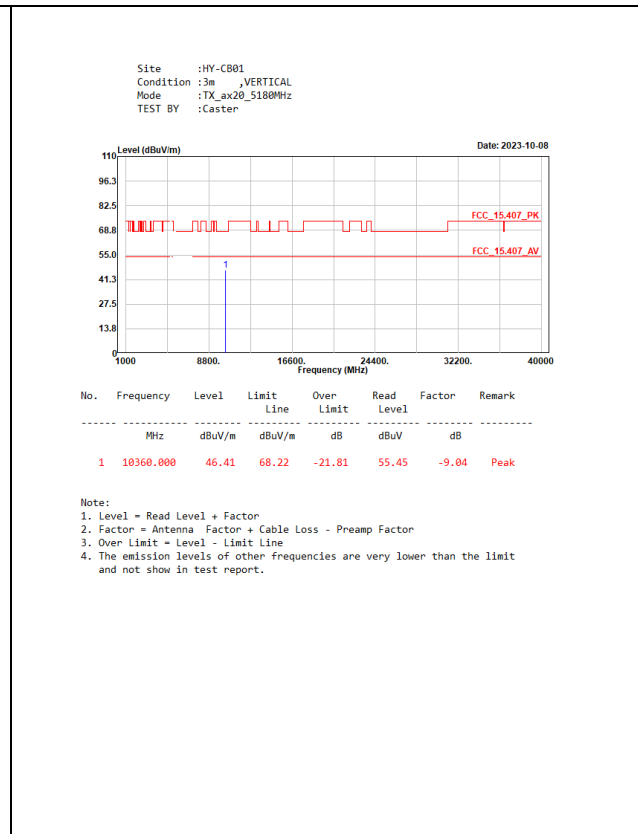
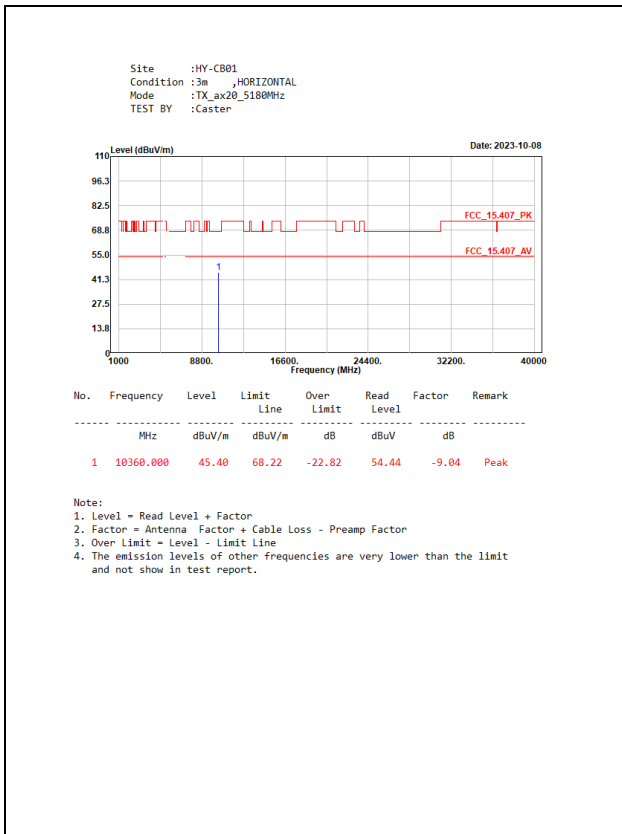


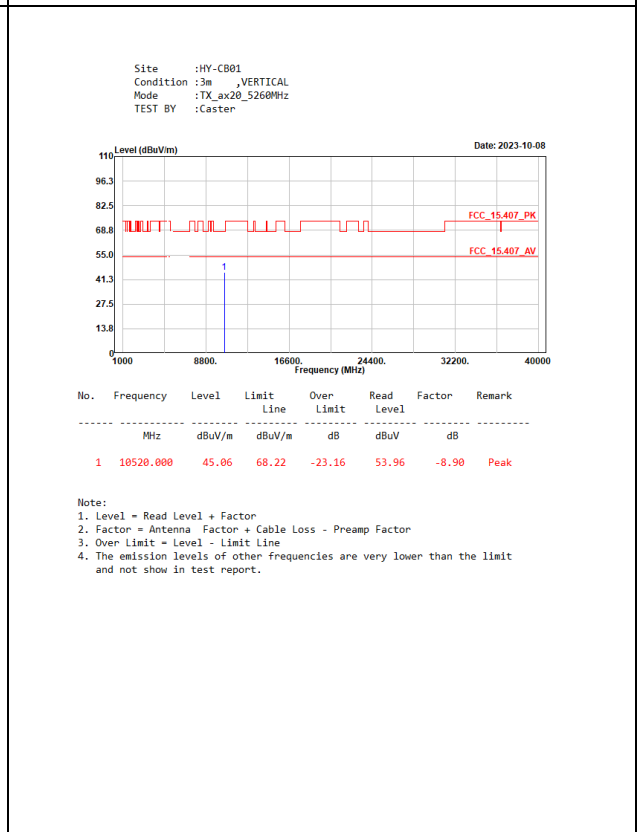
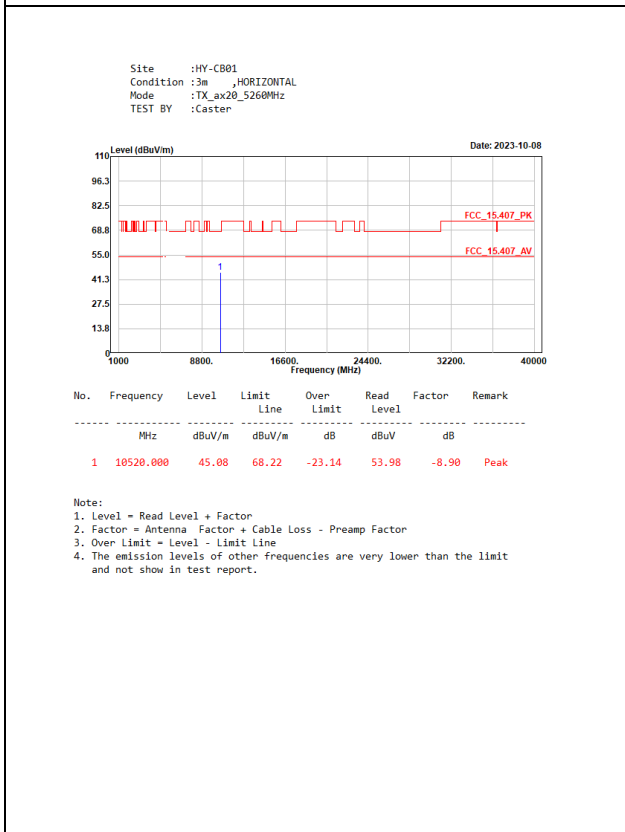
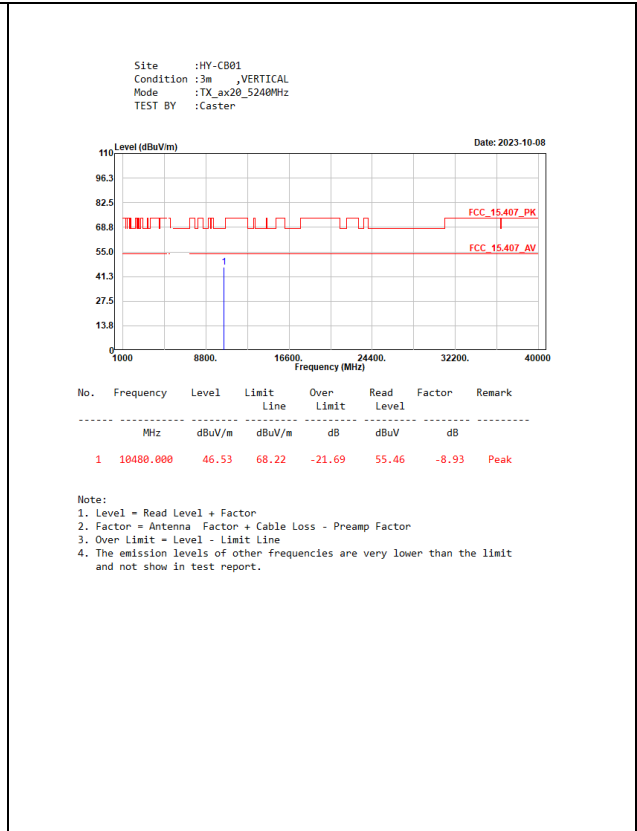
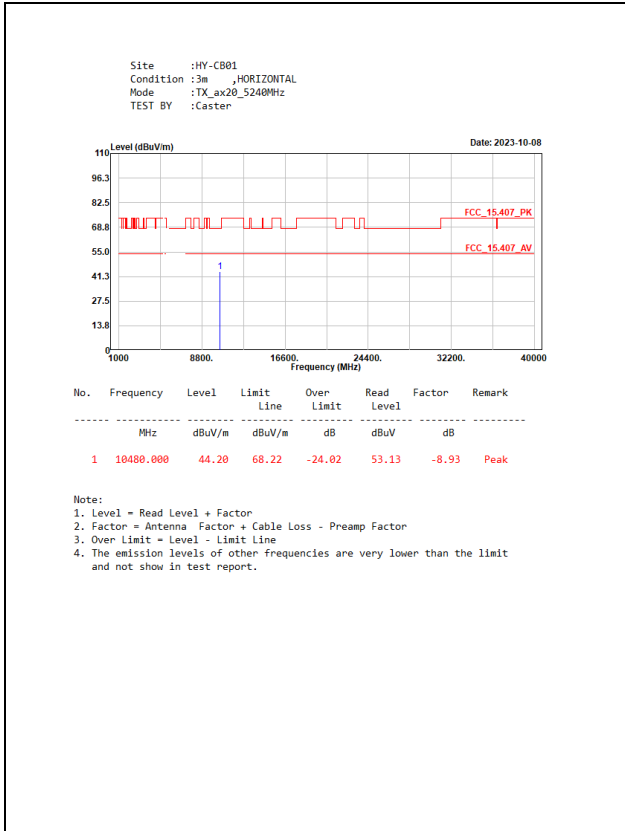


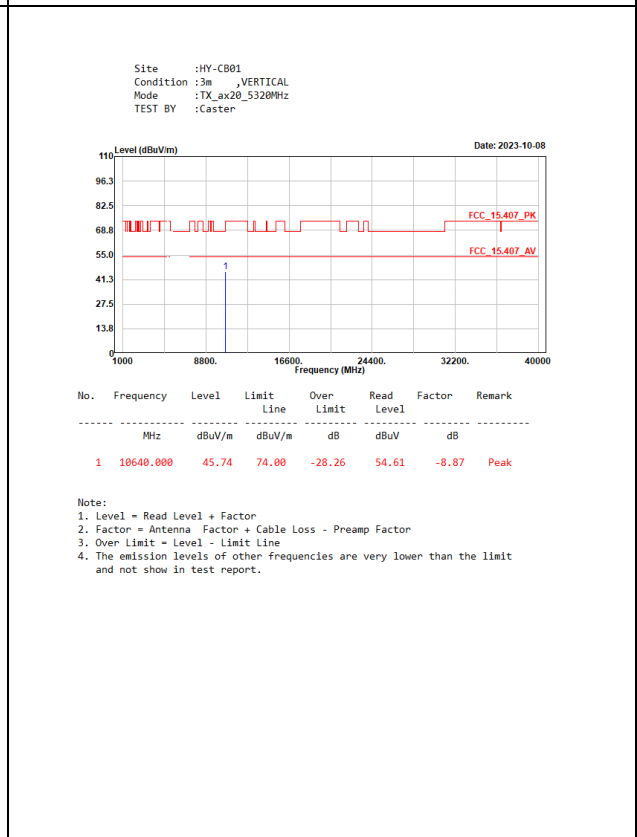
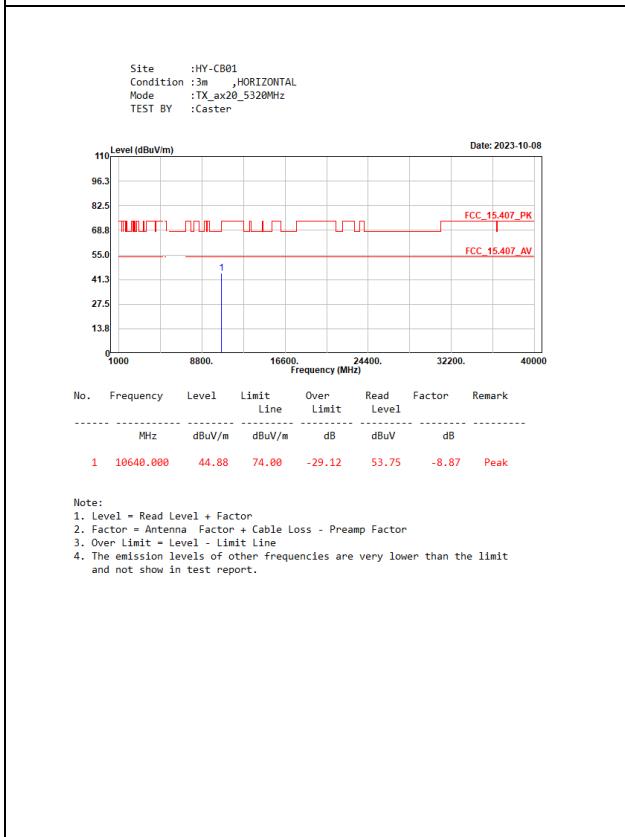
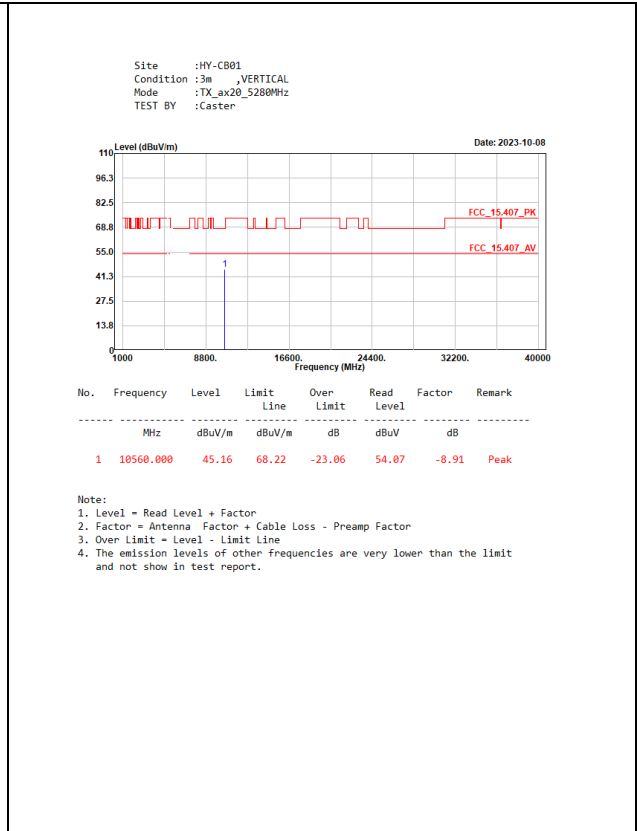
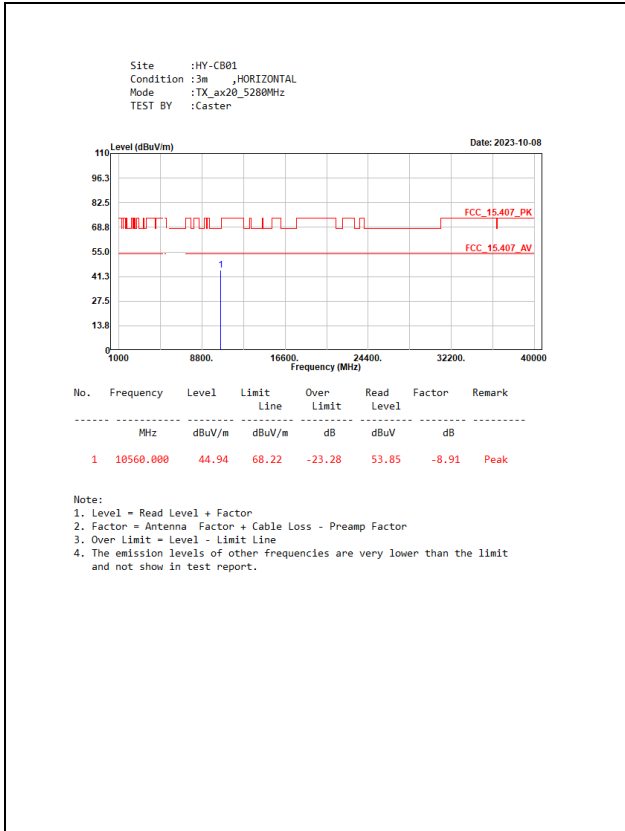


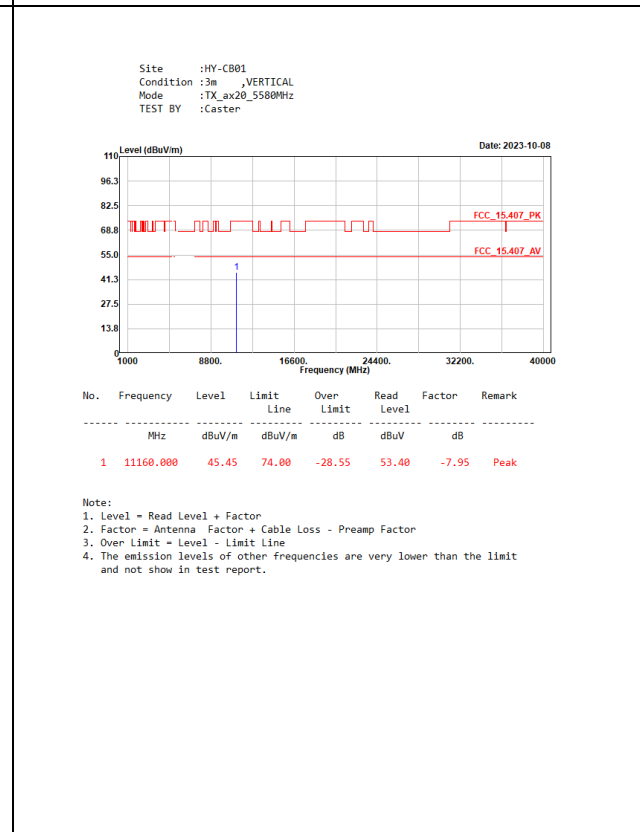
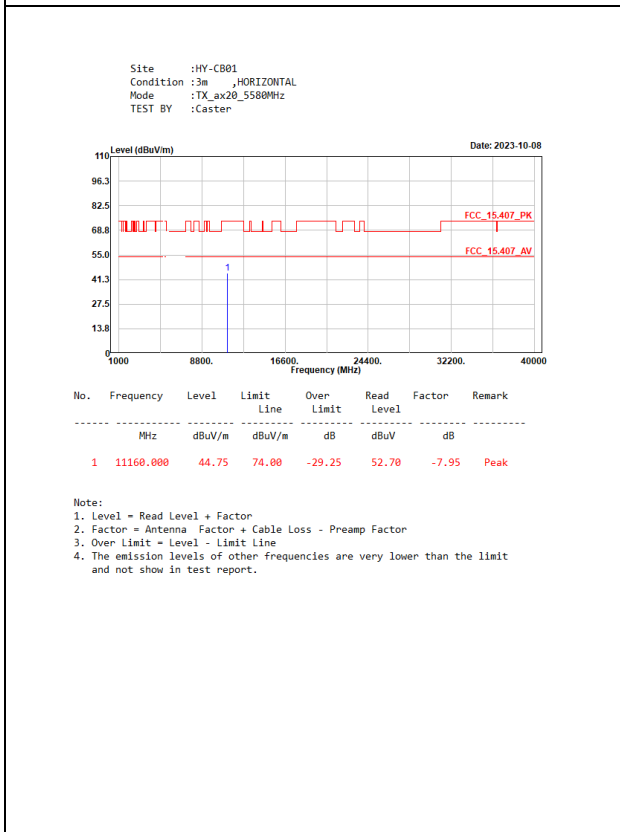
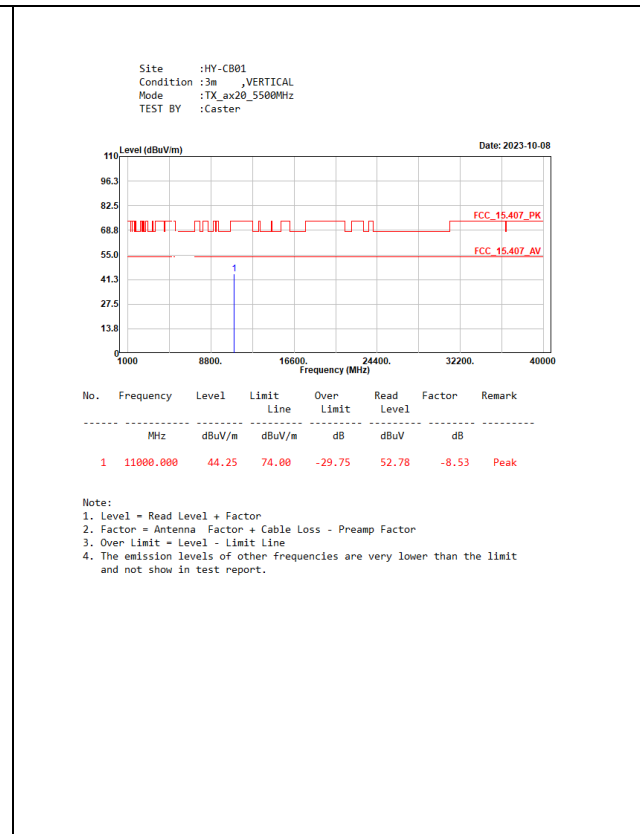
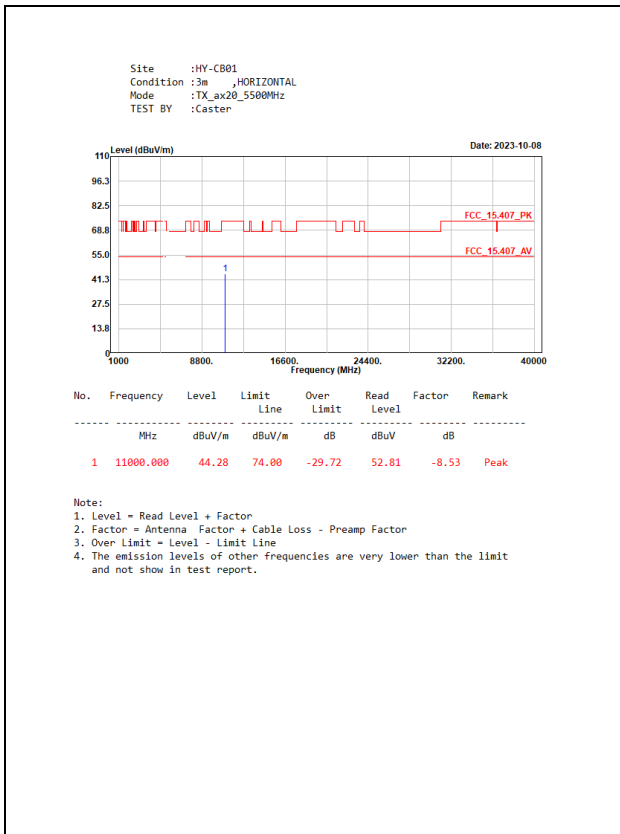


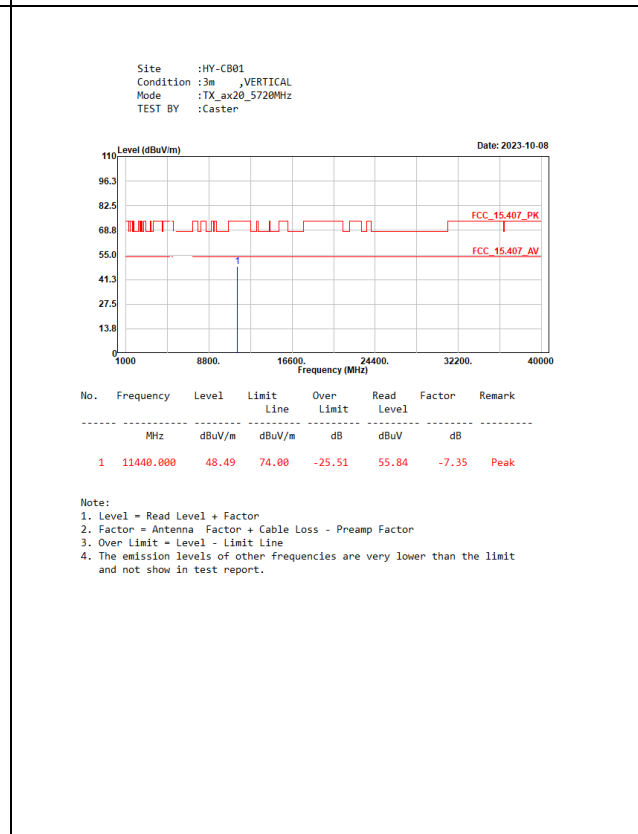
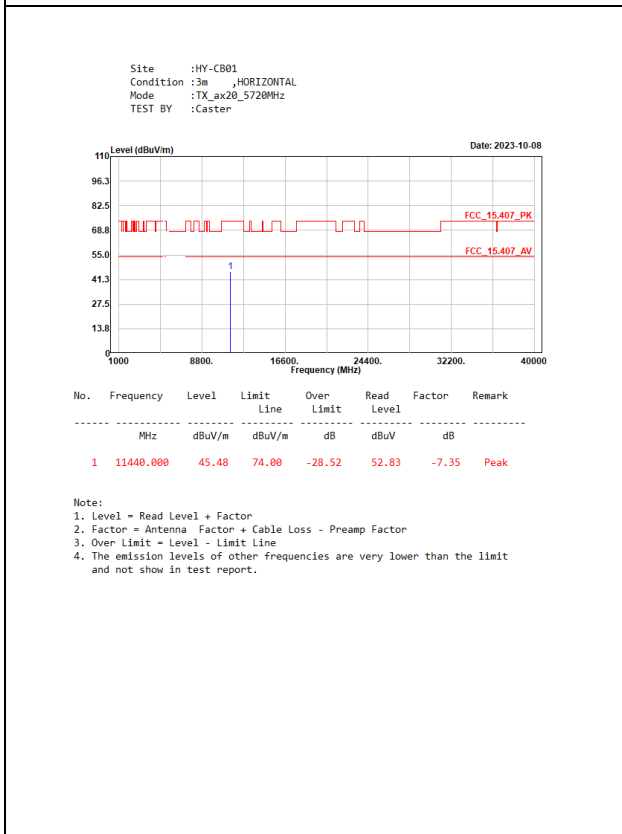
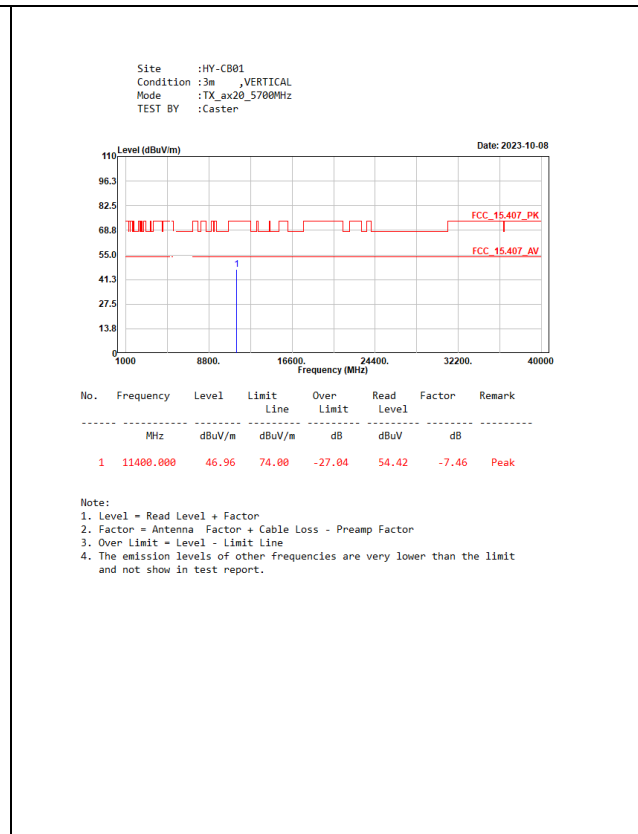
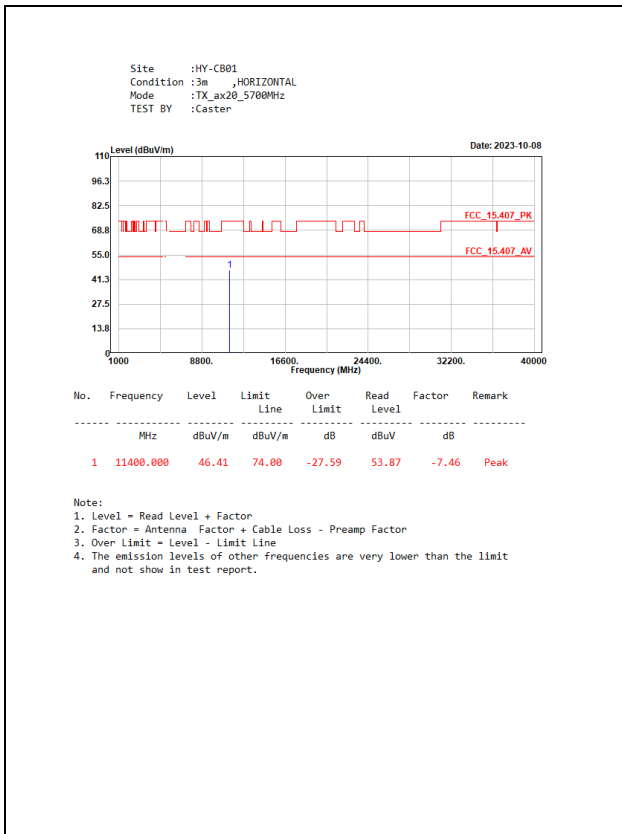


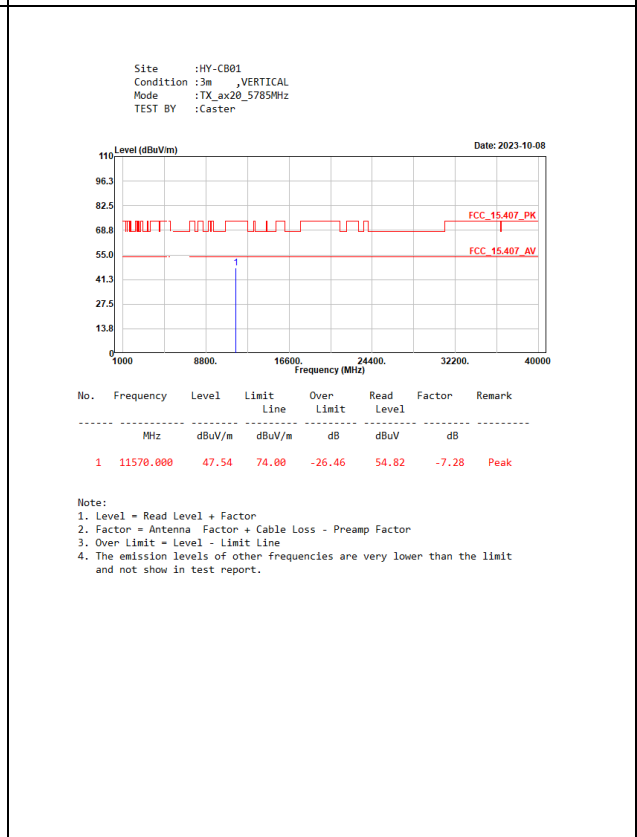
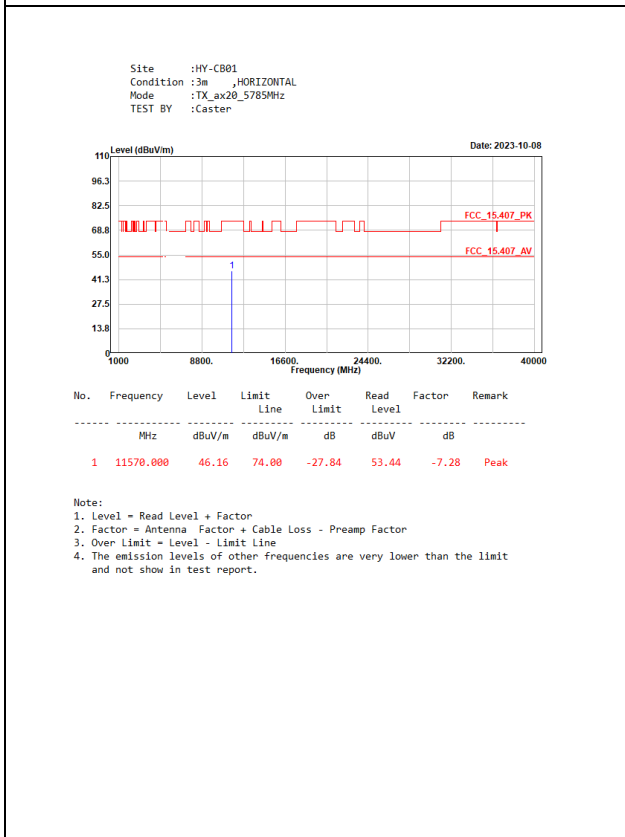
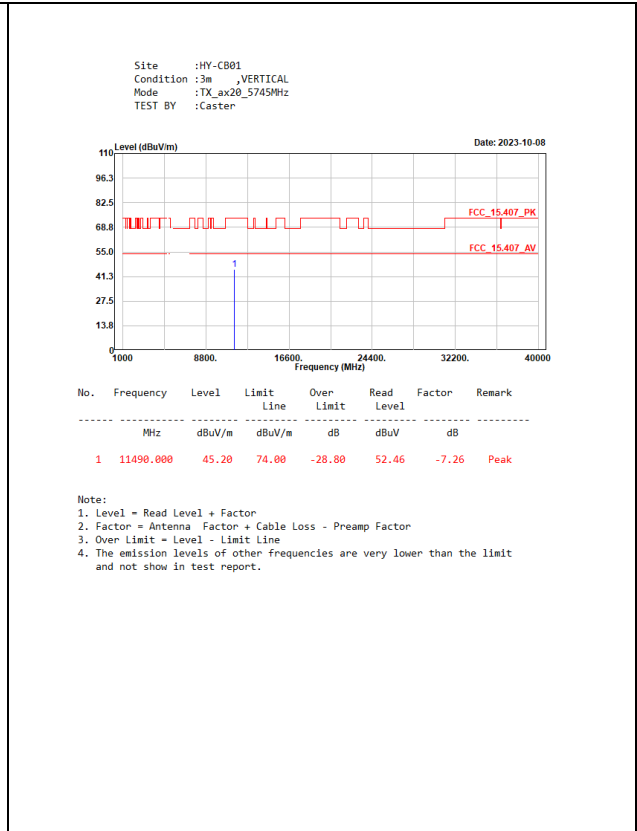
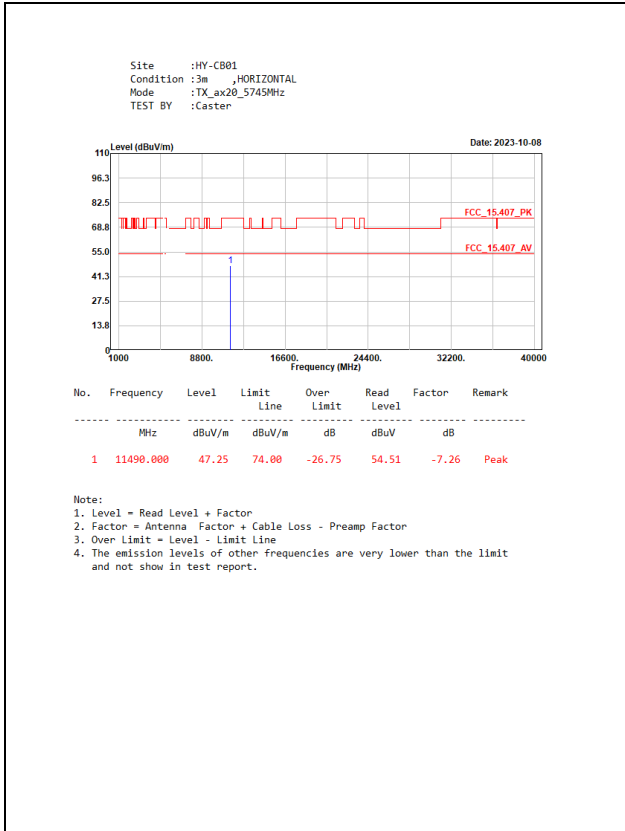


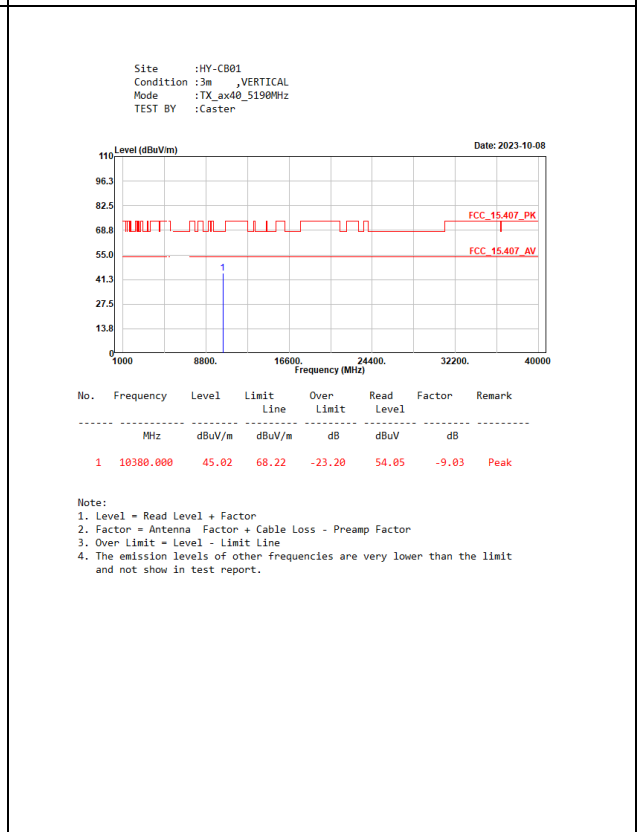
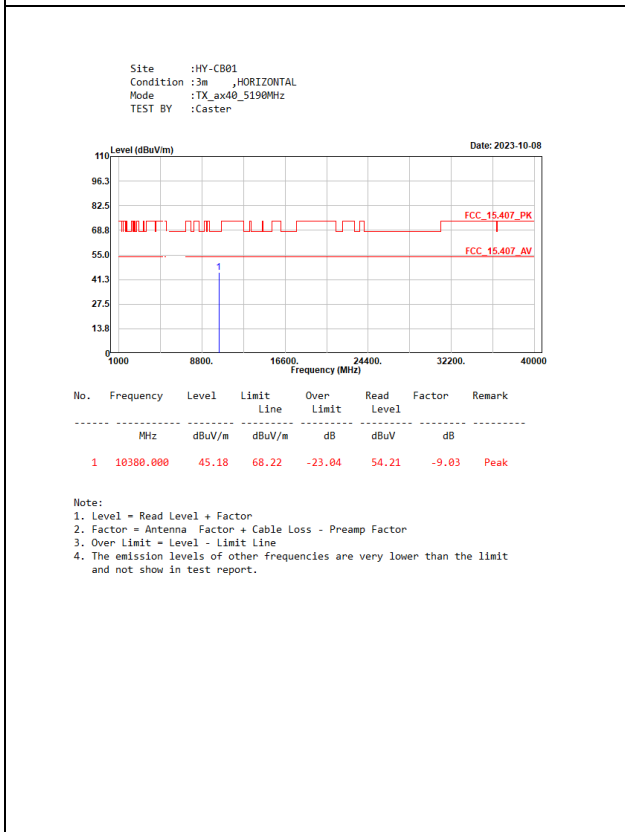
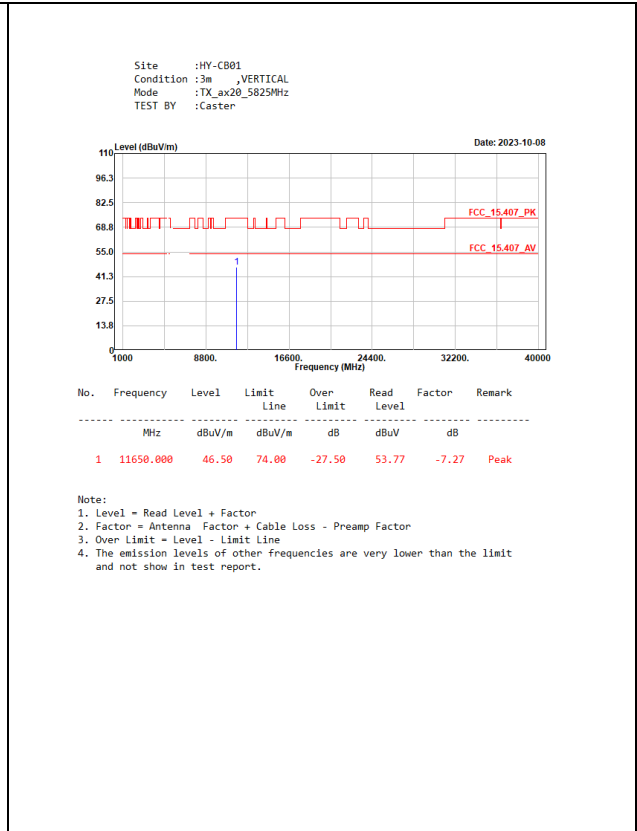
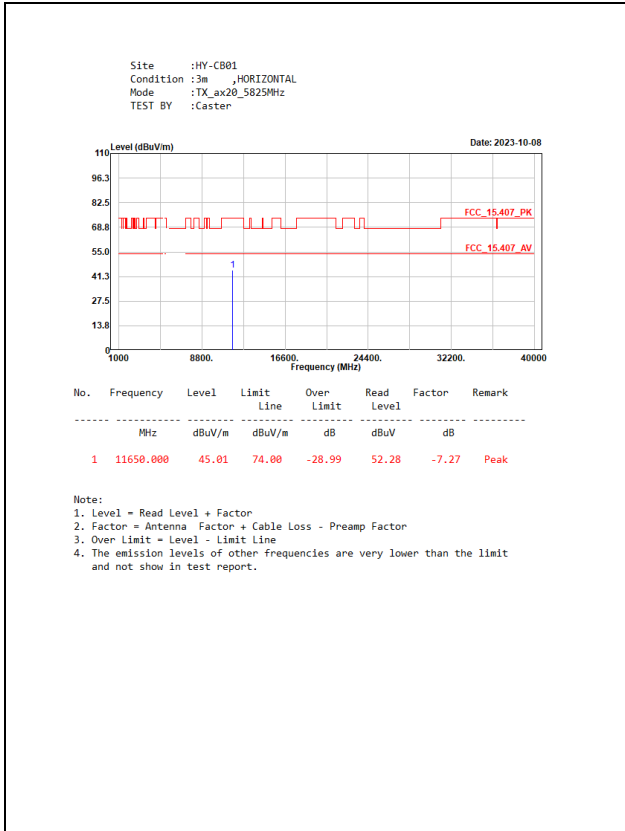


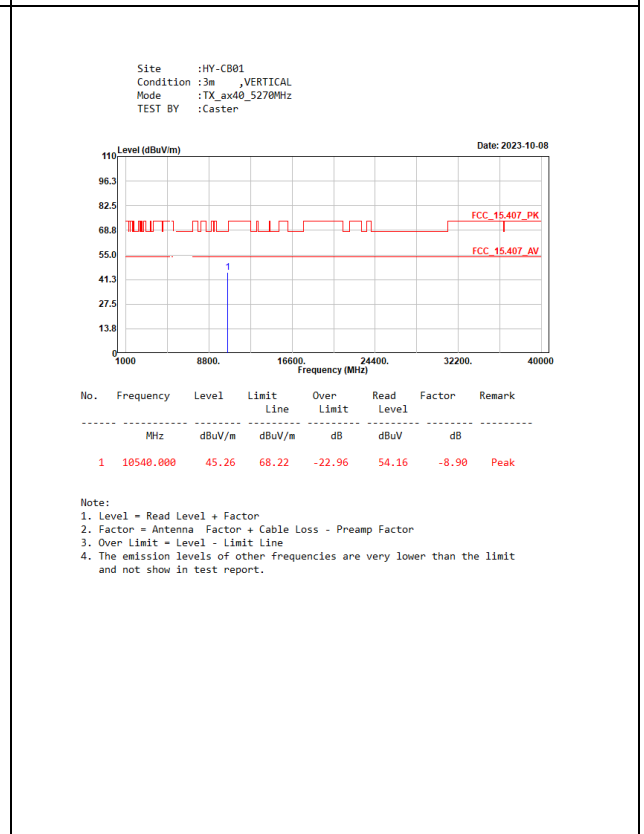
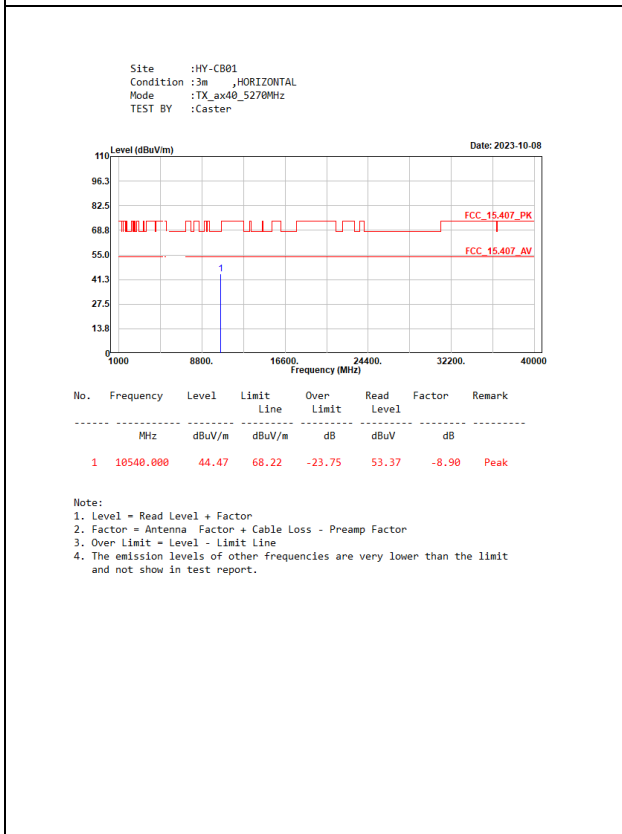
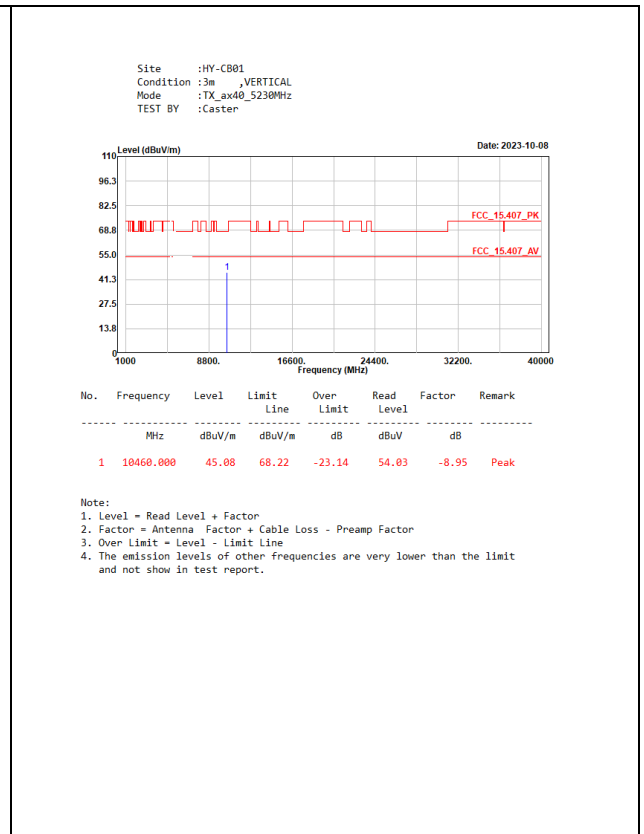
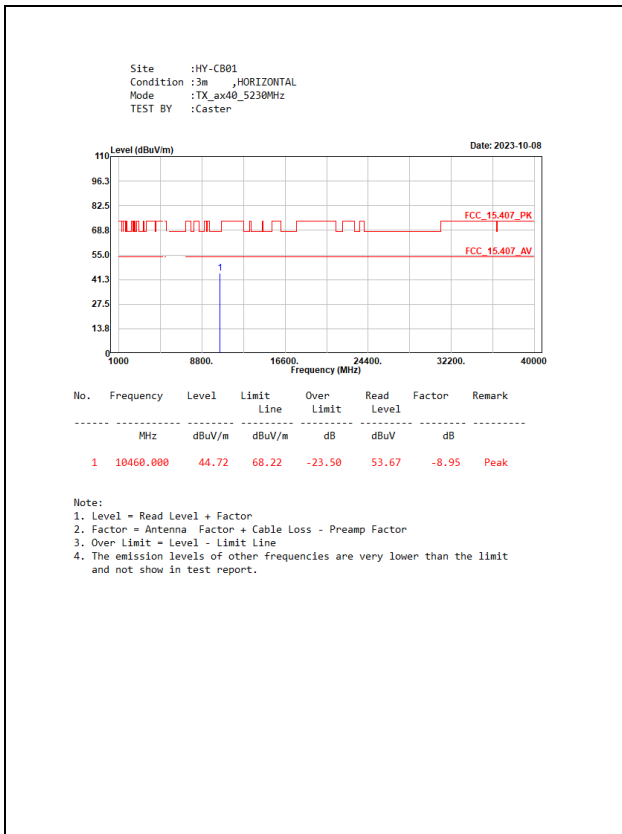


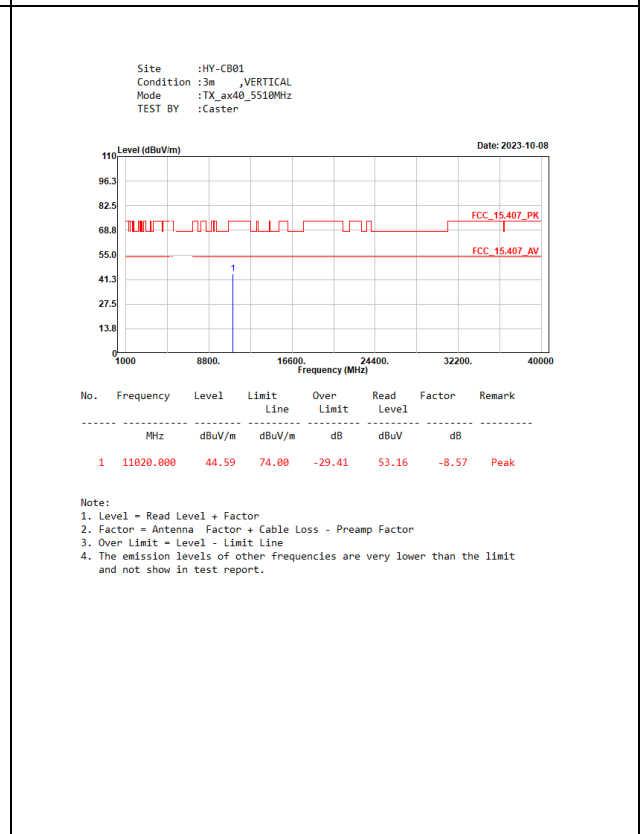
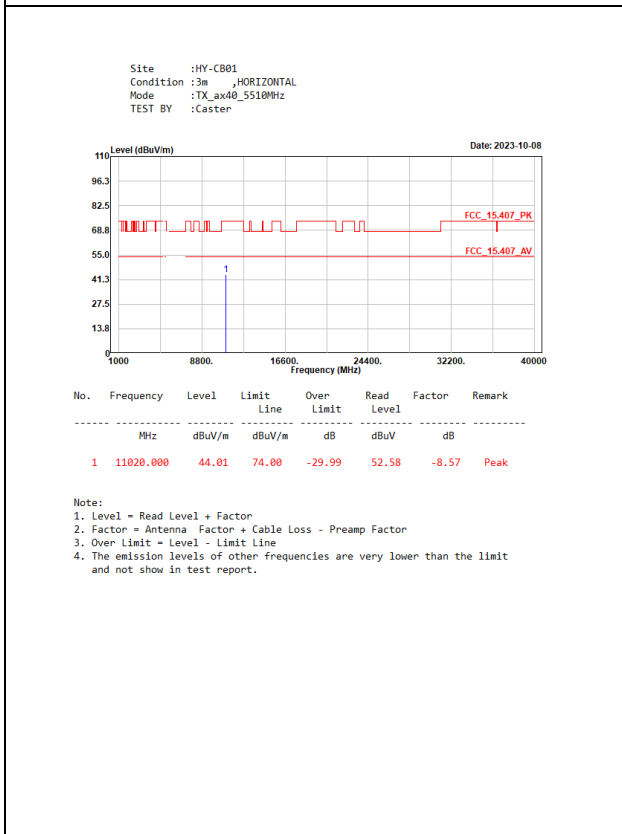
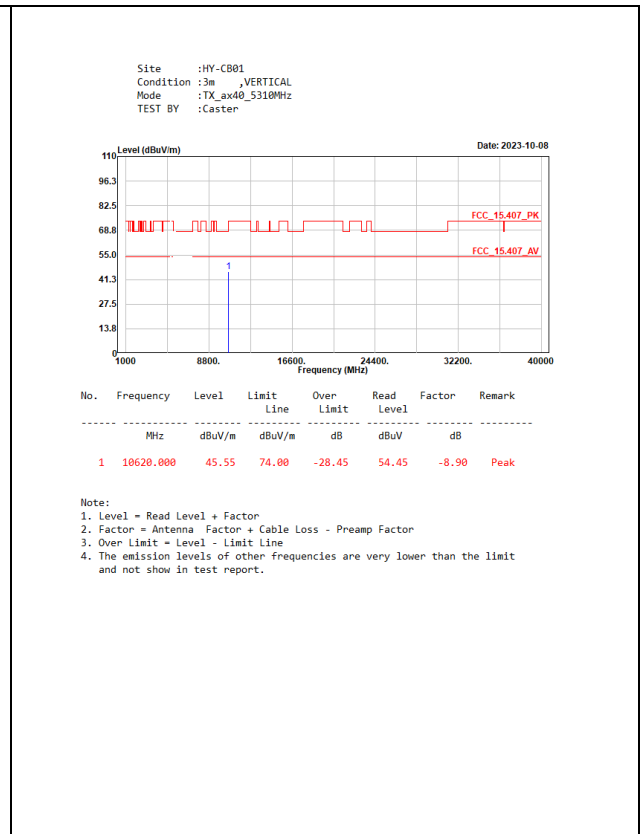
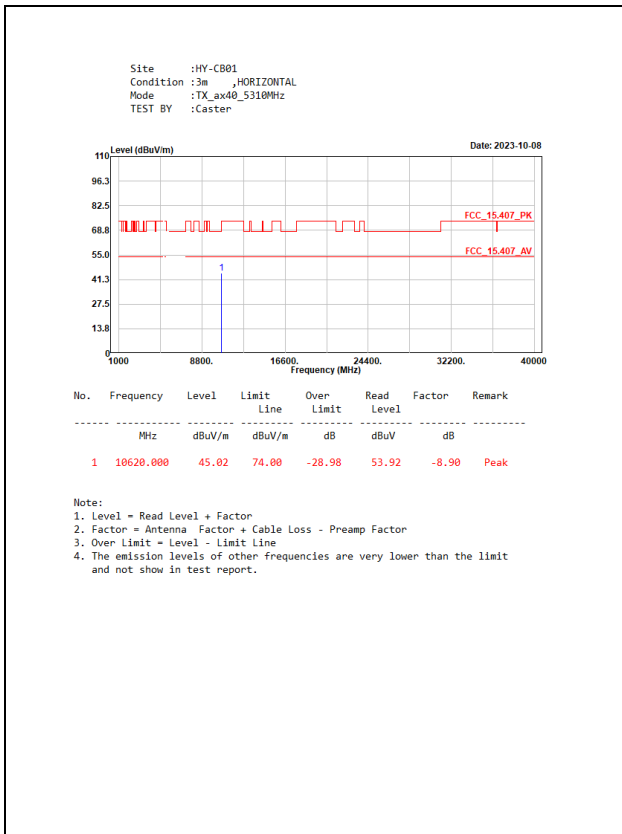


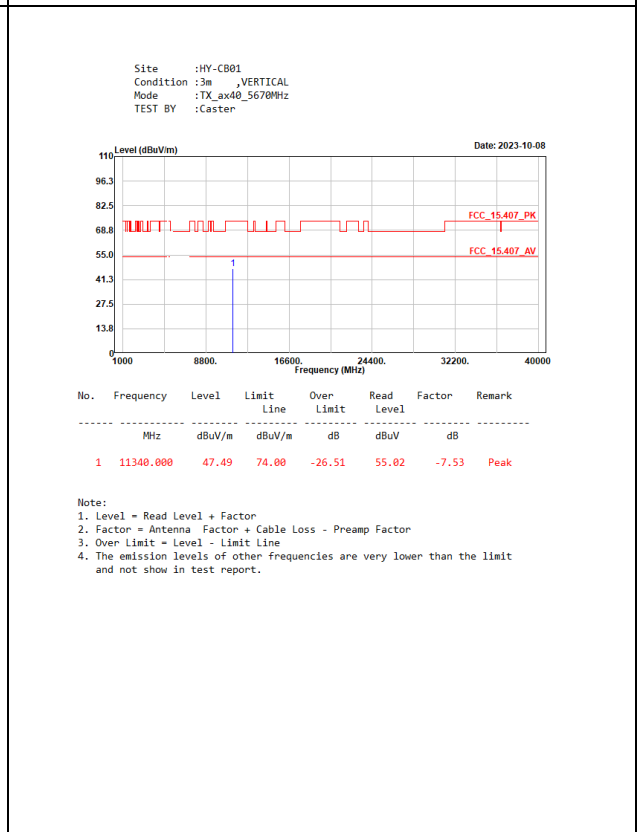
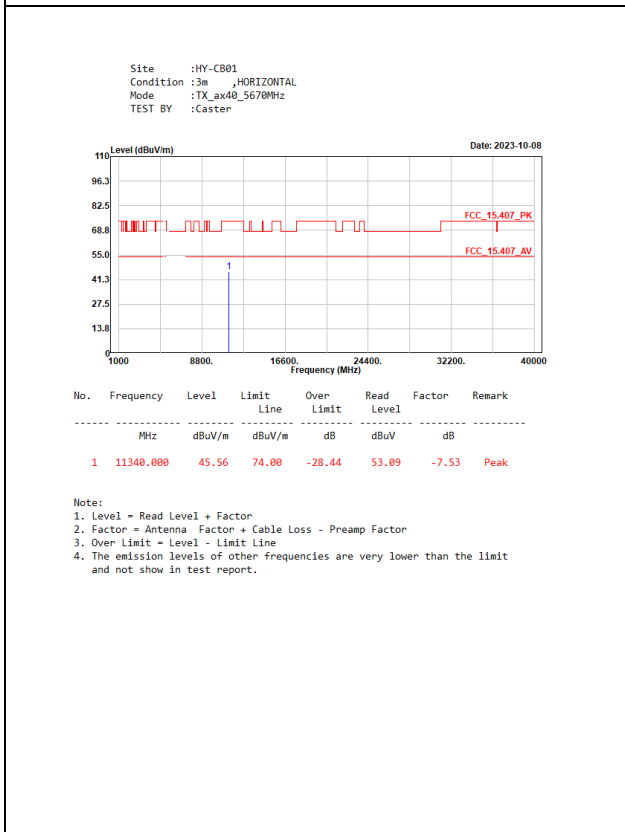
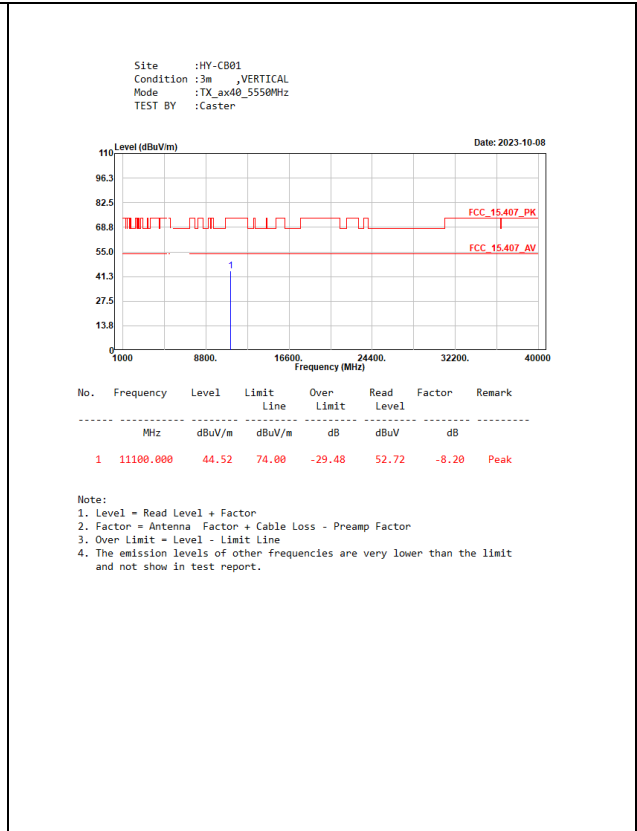
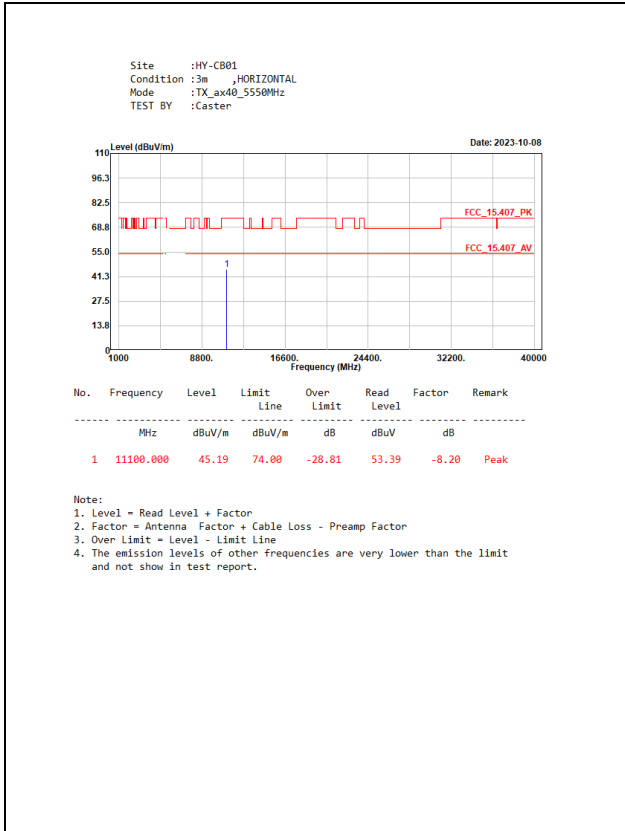


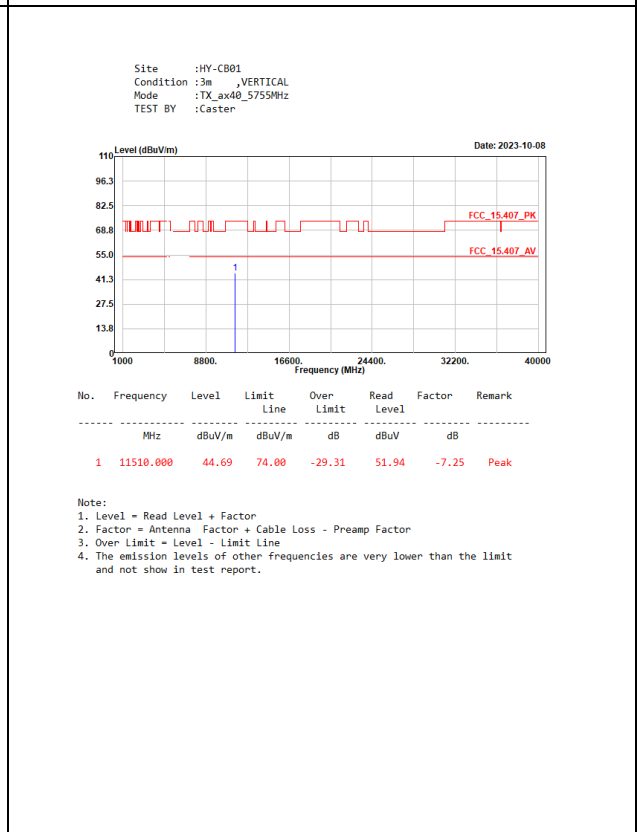
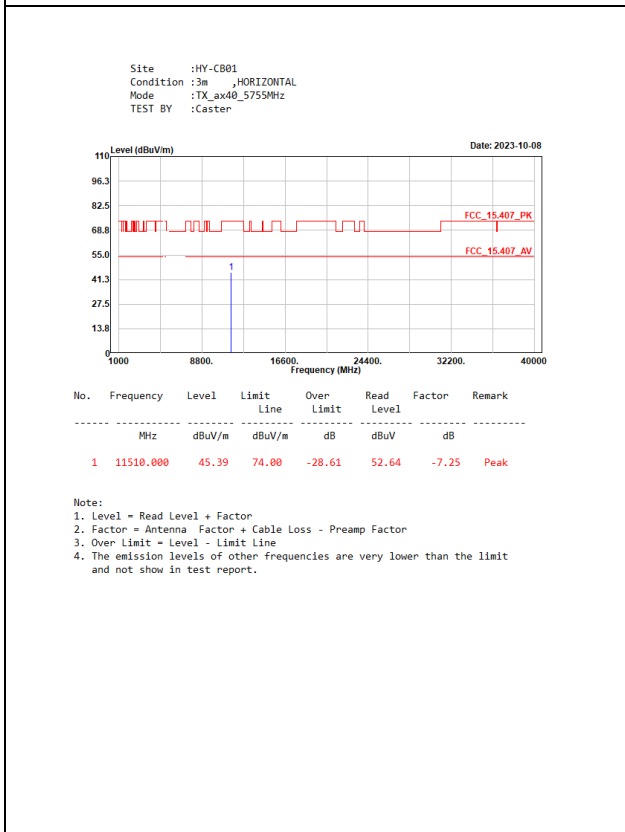
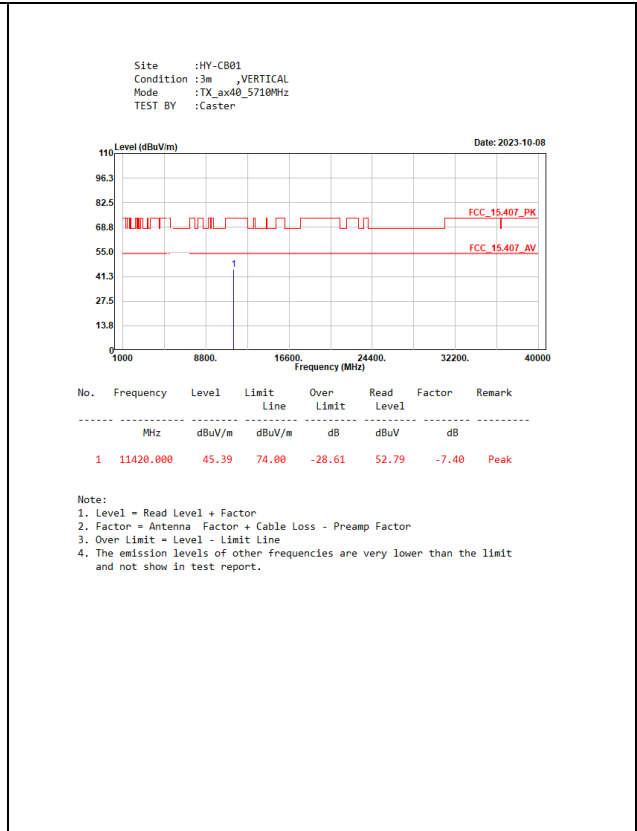
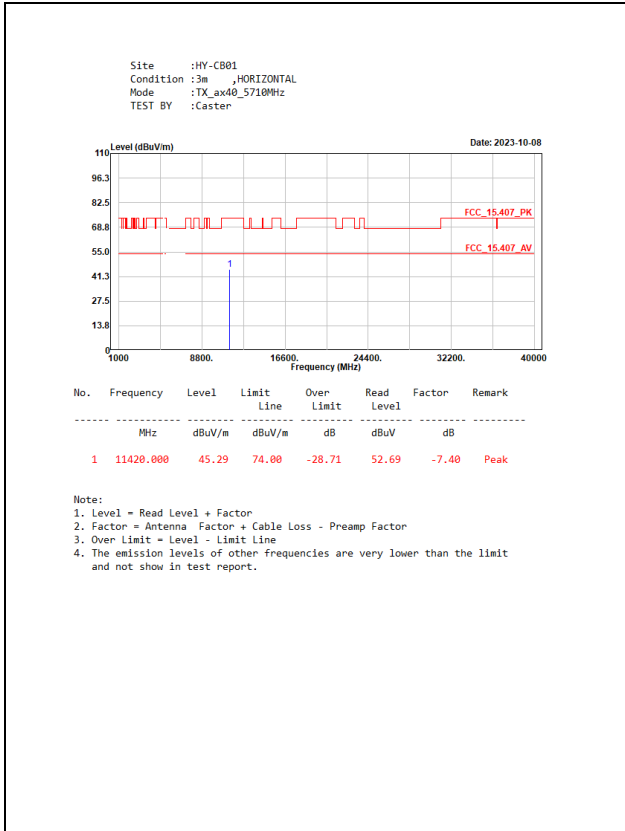


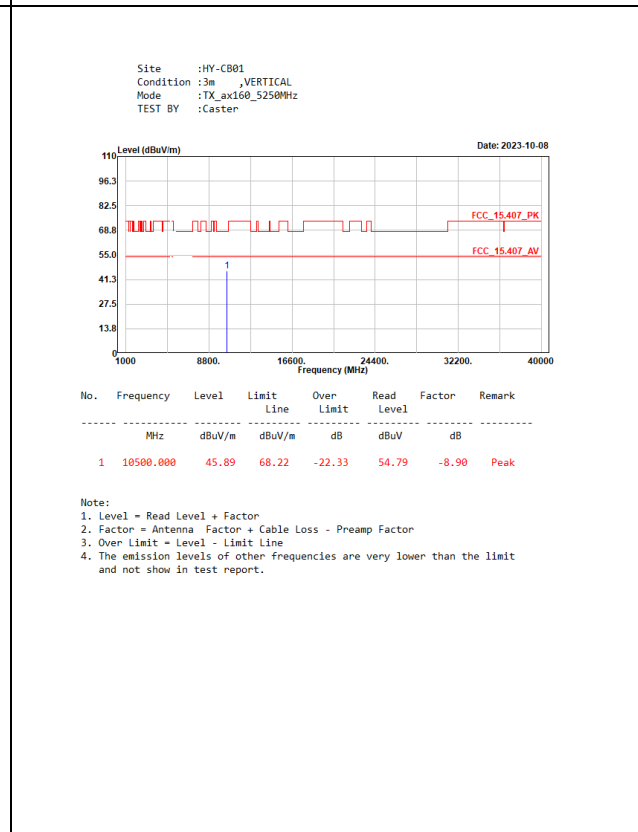
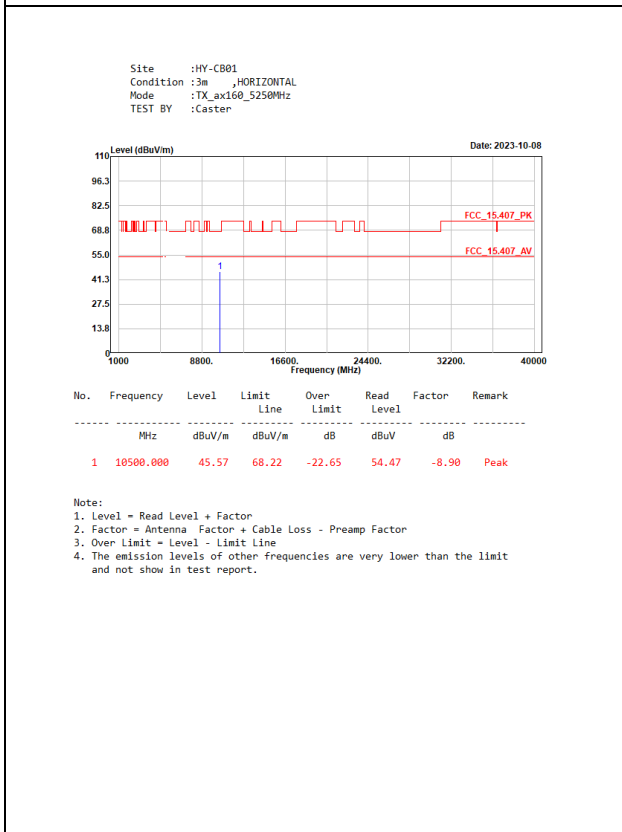
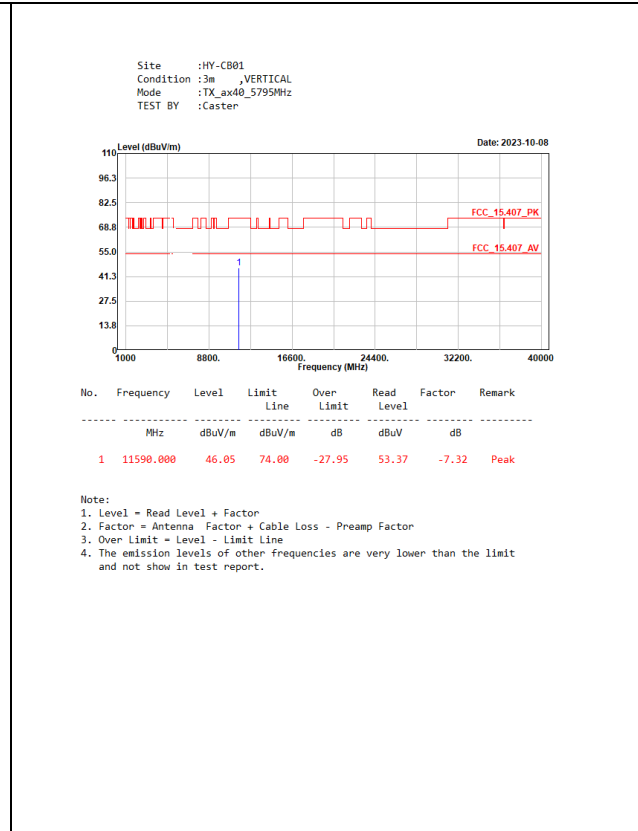
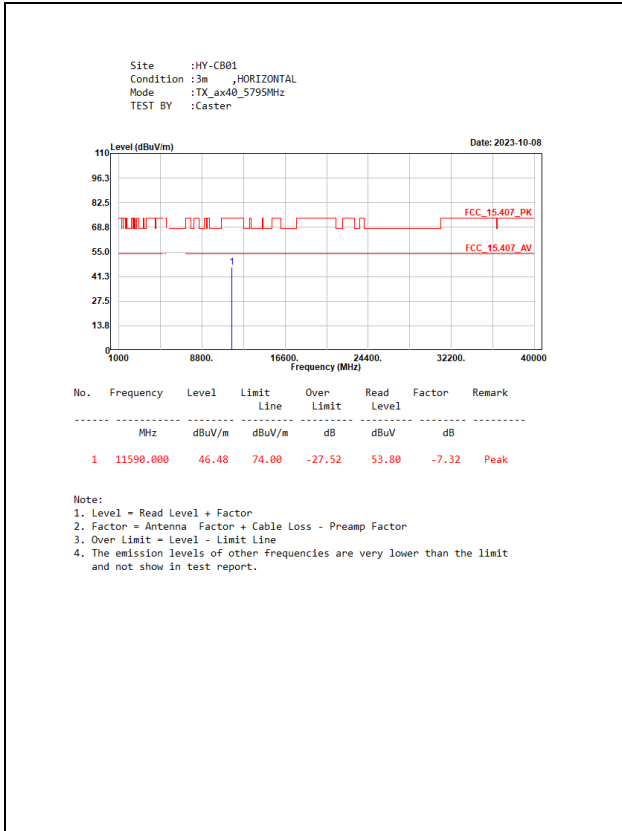


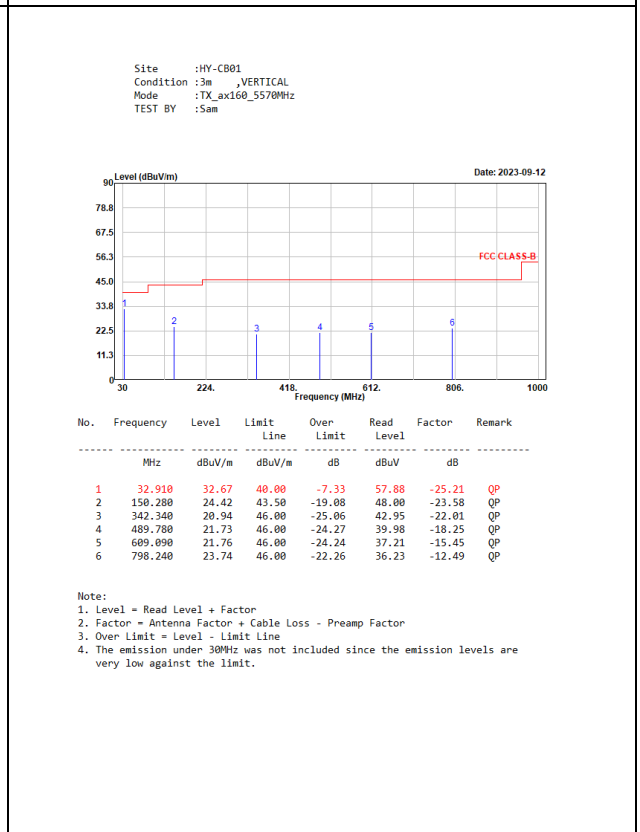
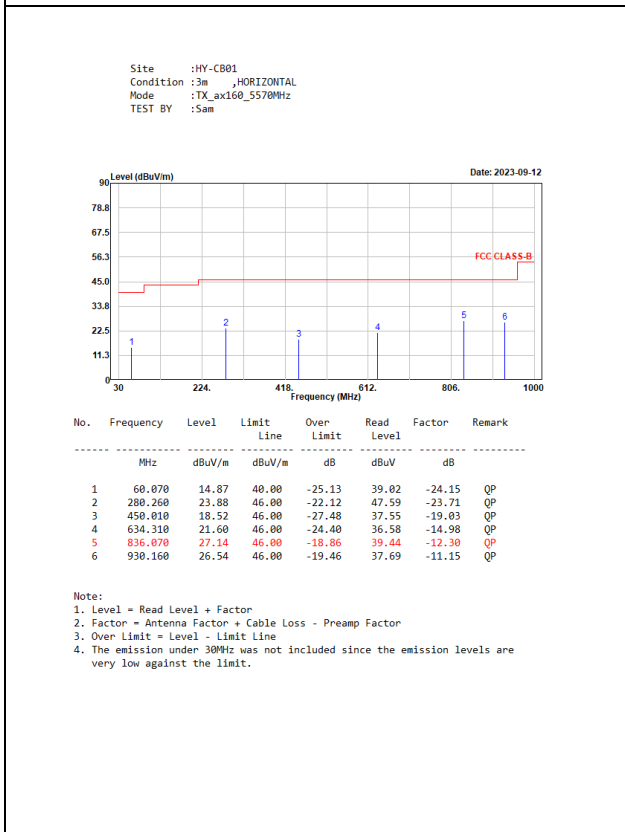
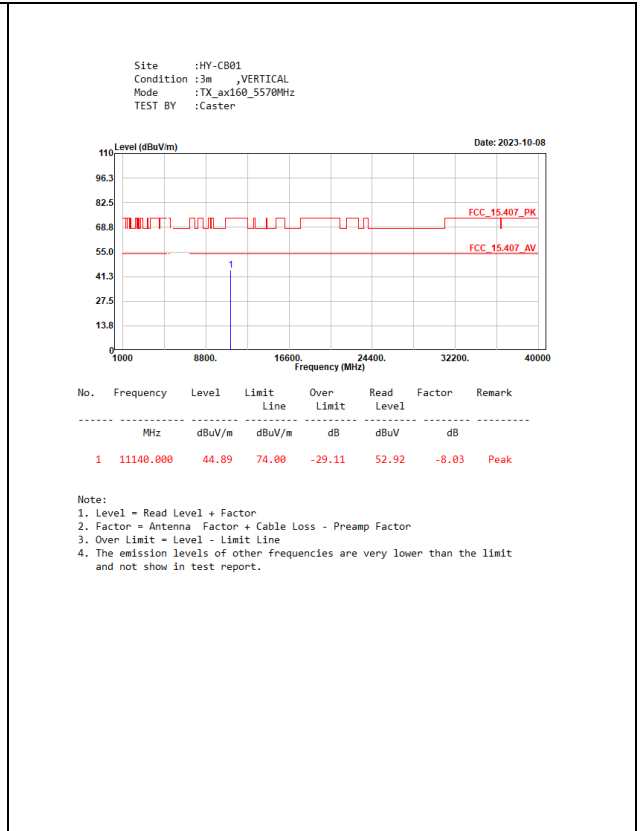
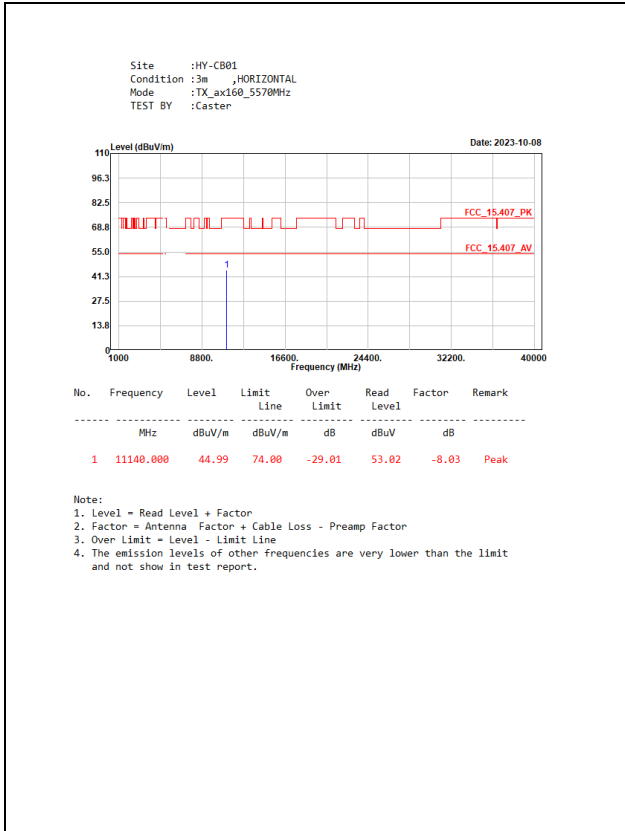




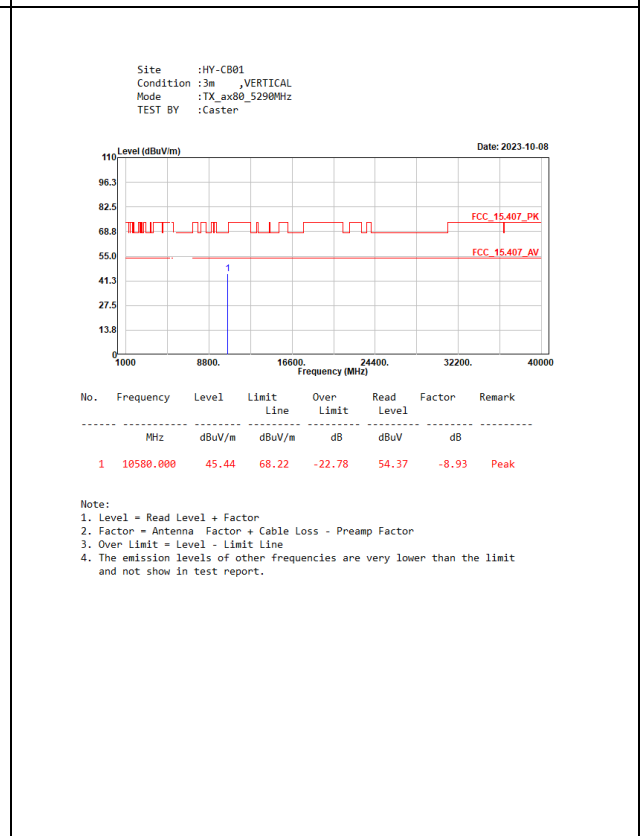
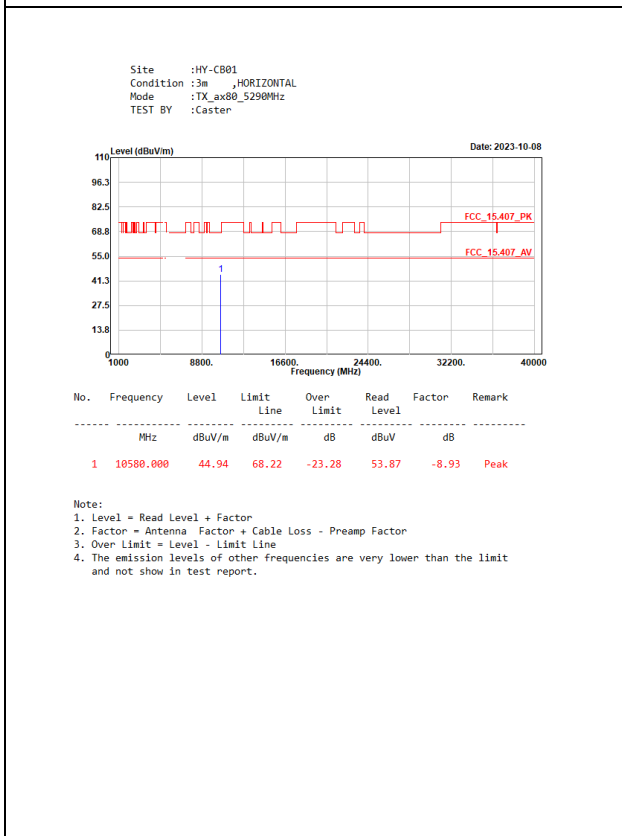
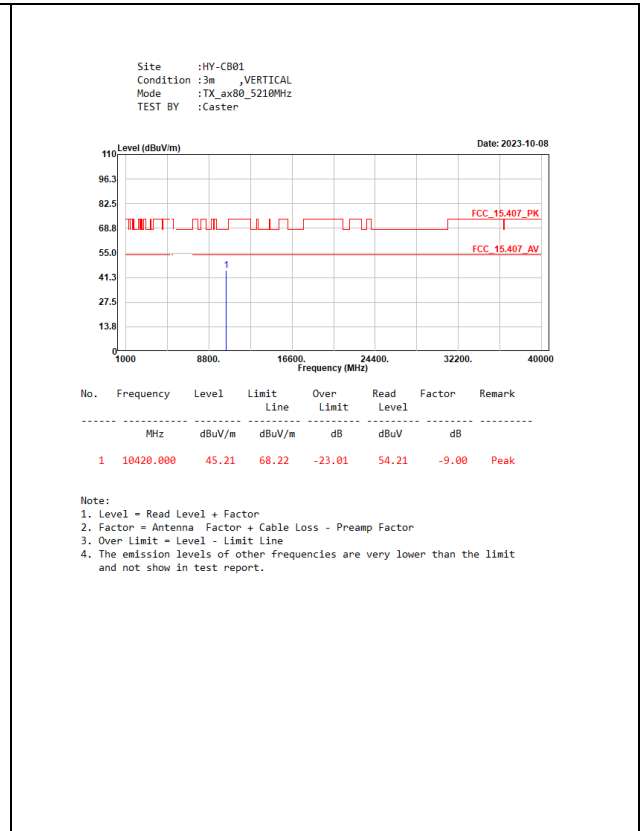
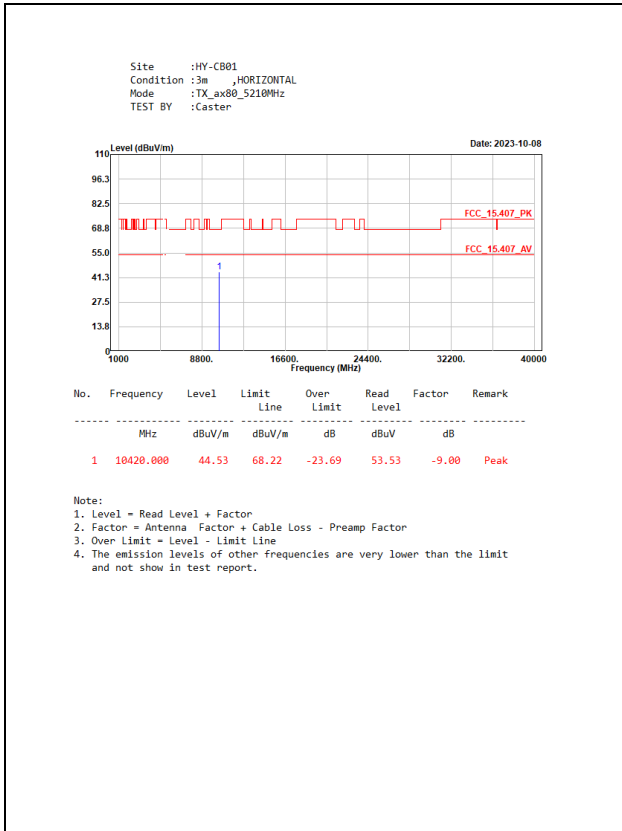


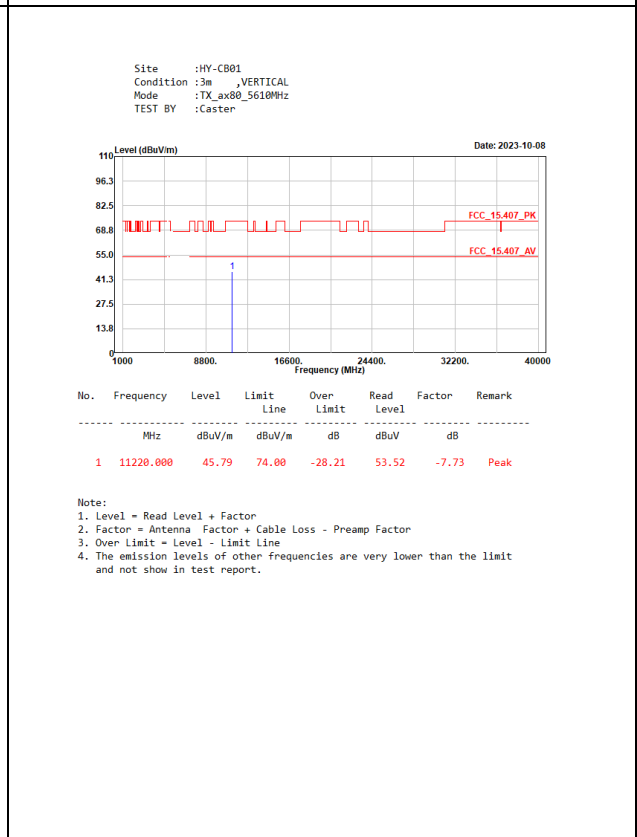
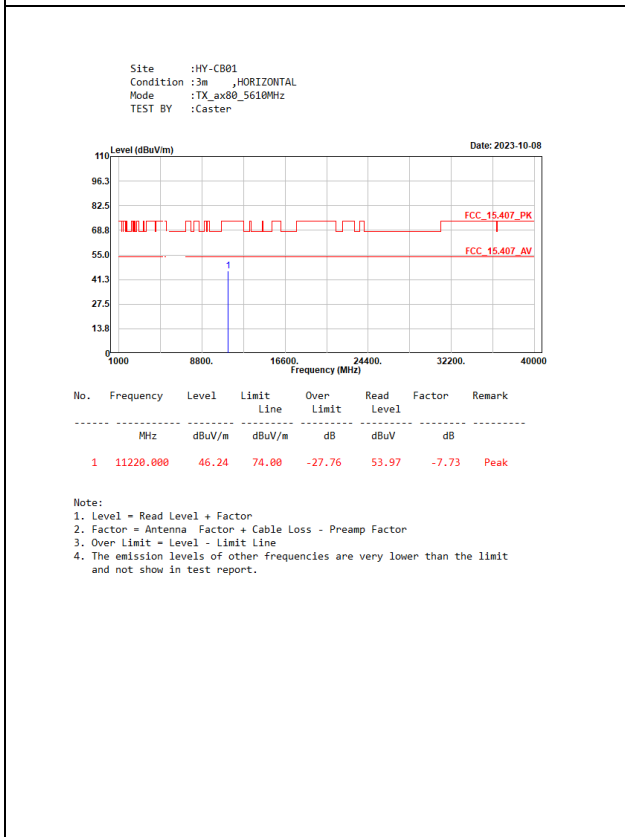
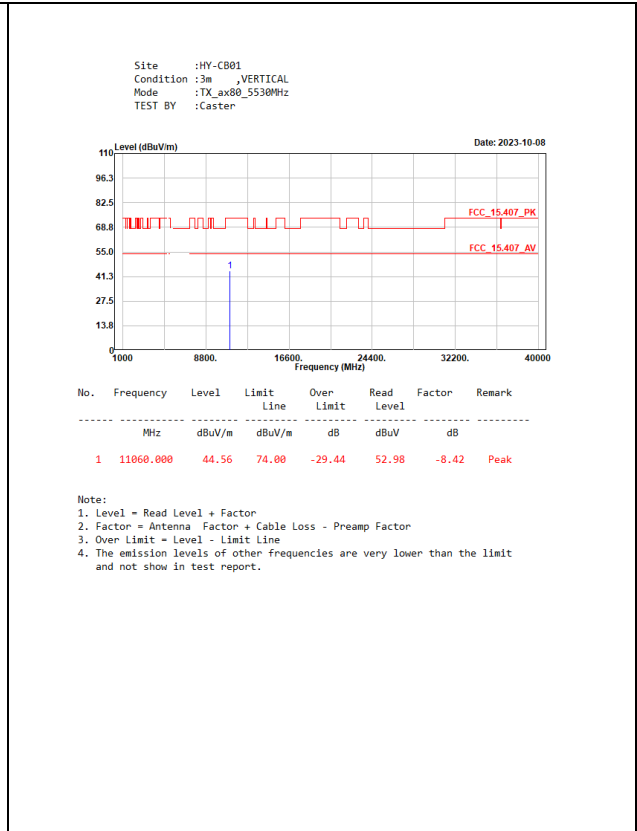
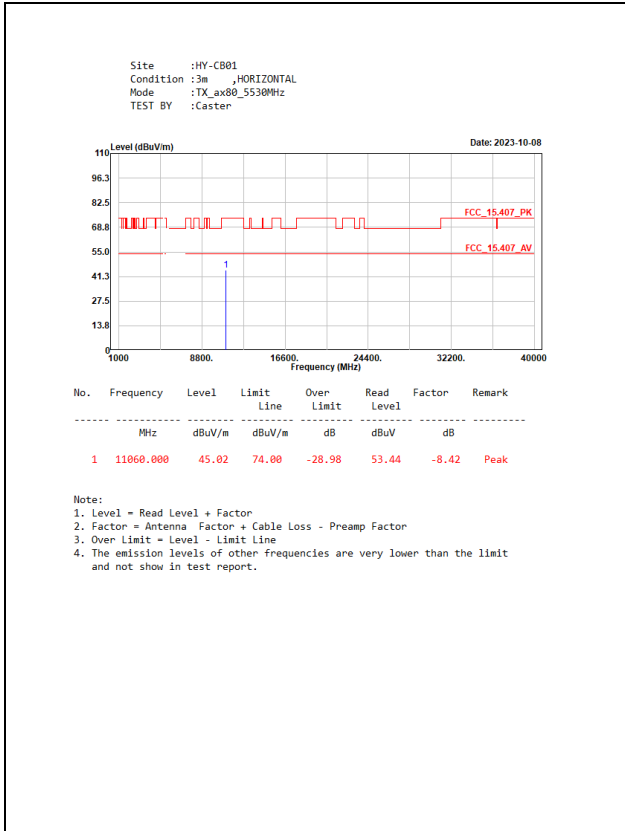


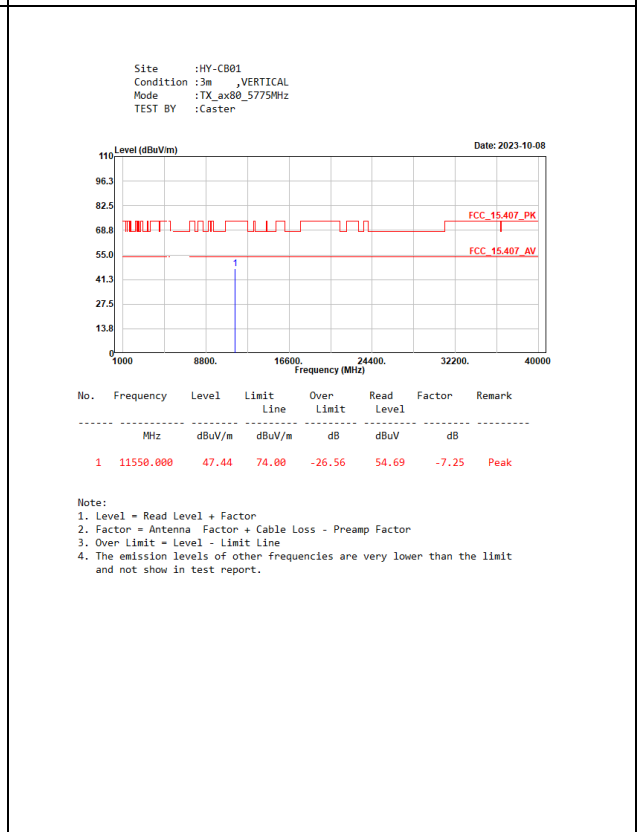
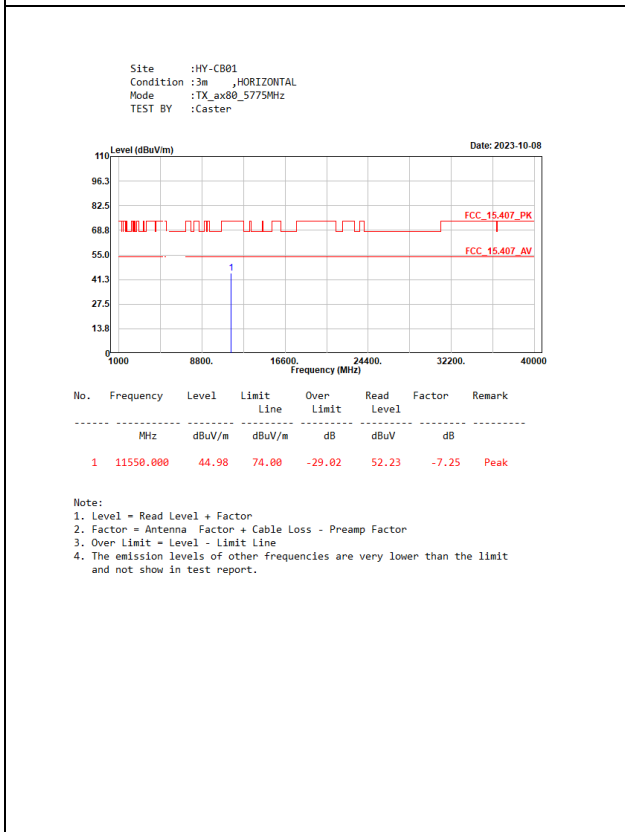
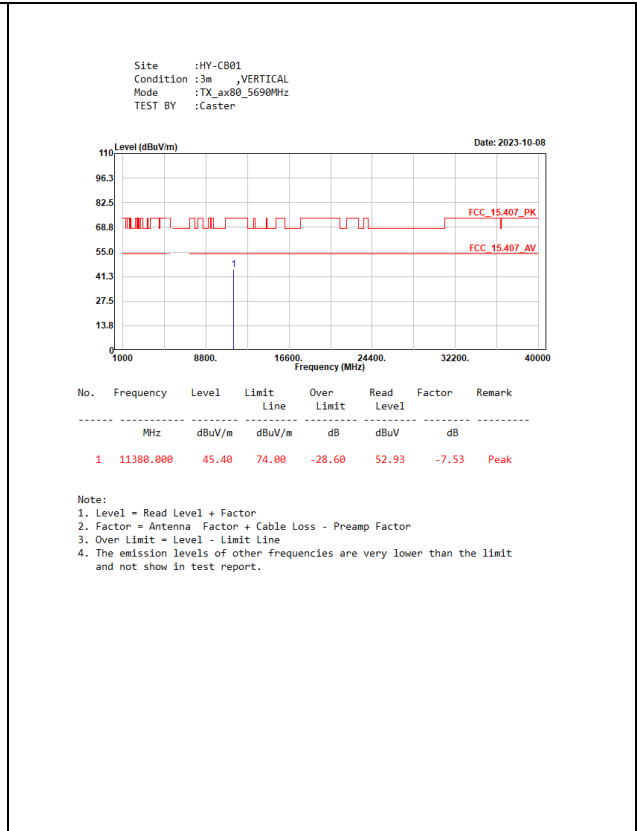
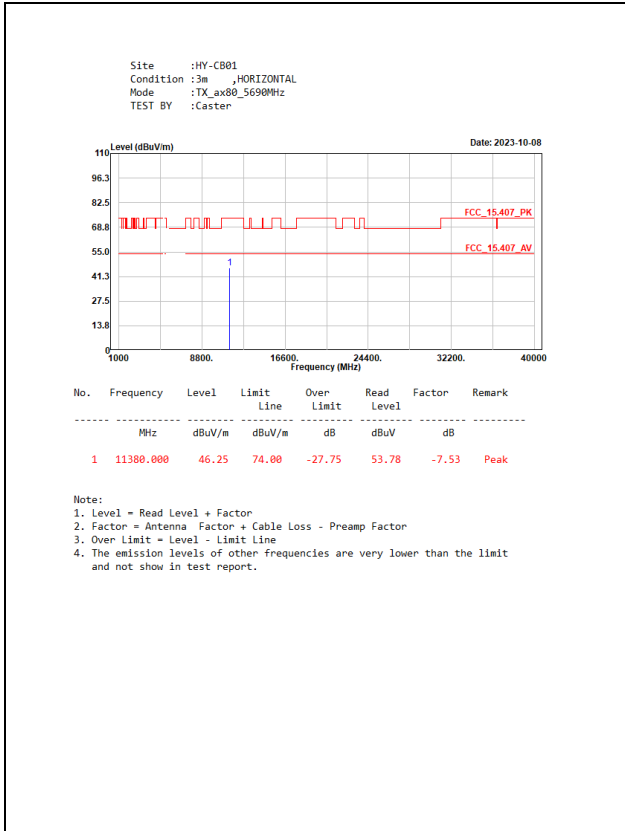




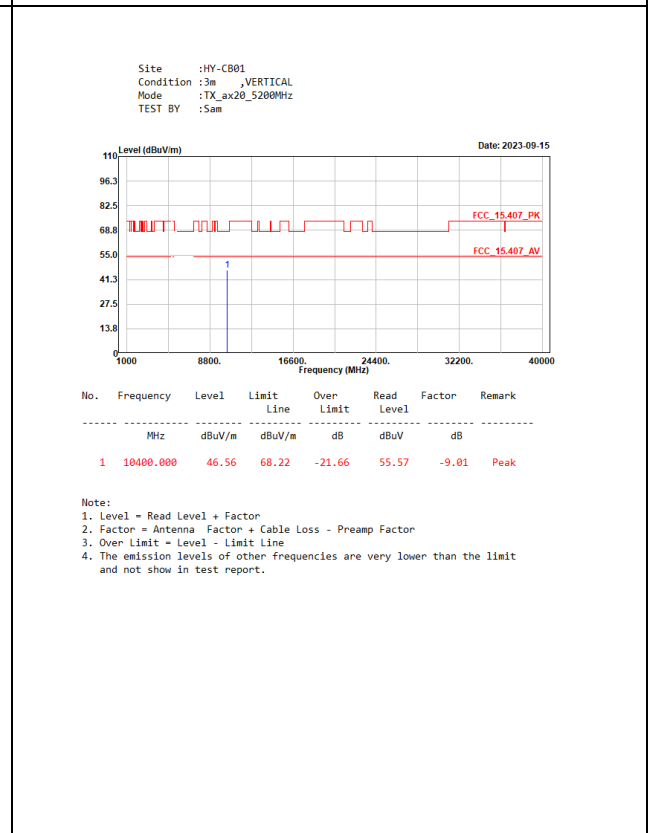
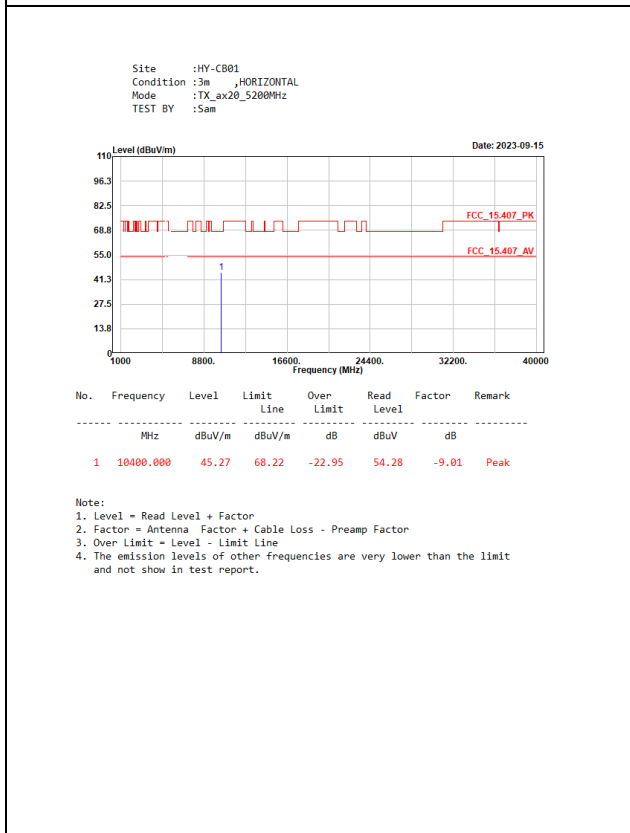
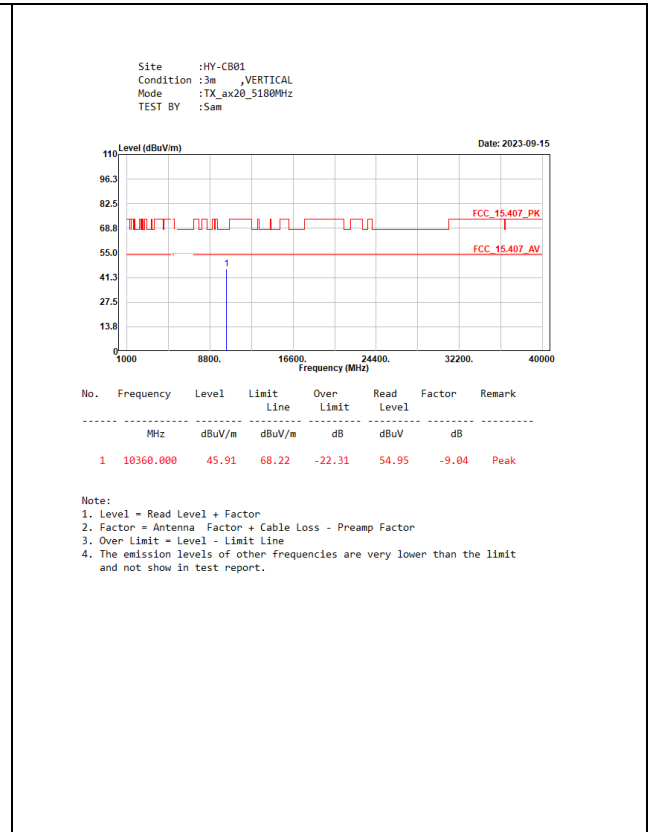
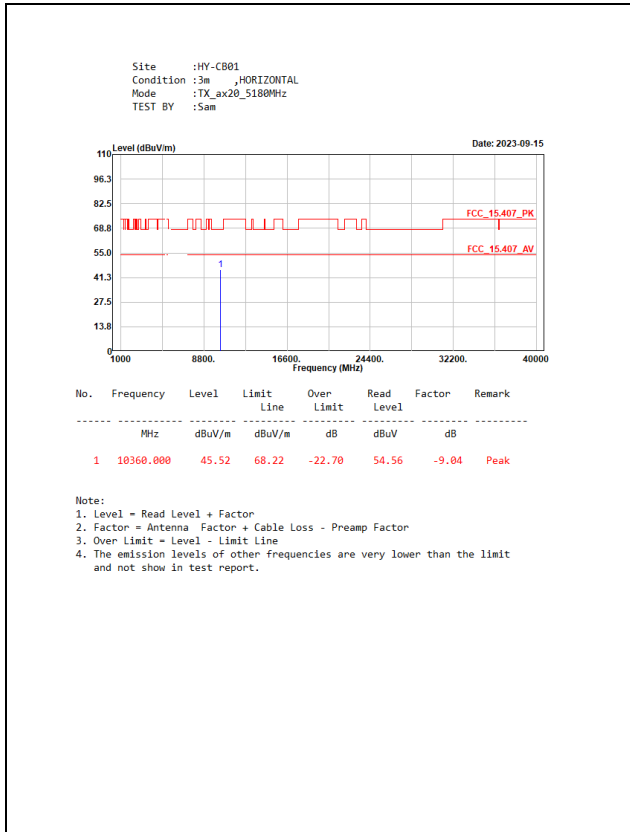
SISO B

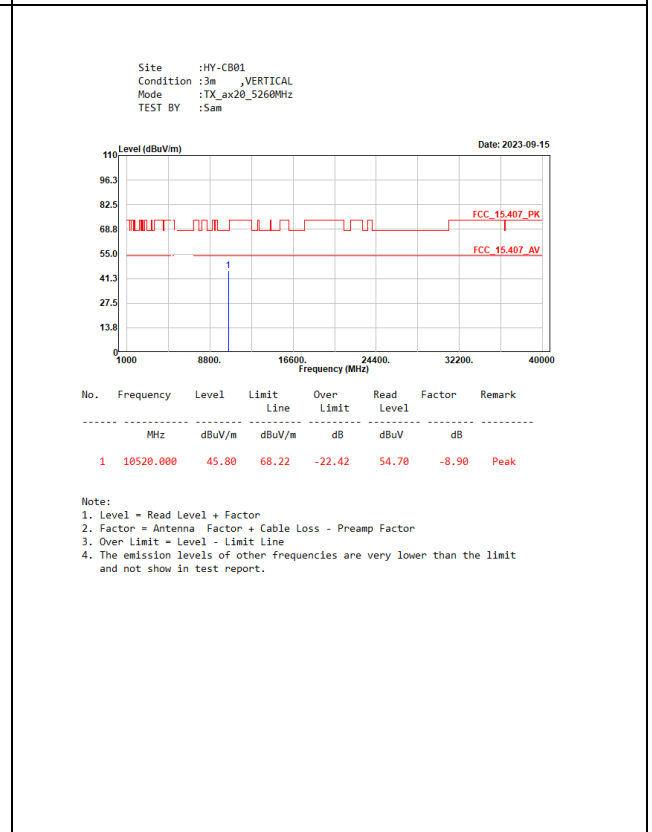
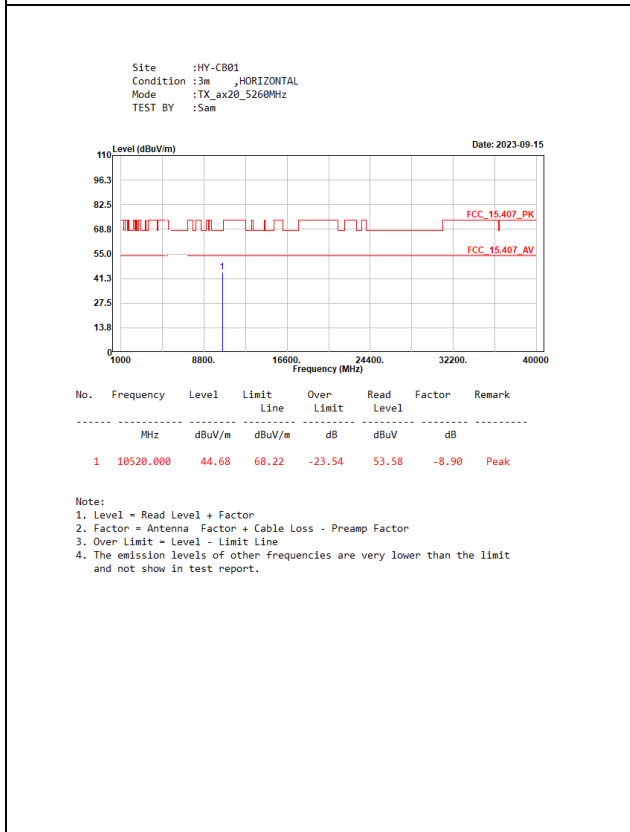
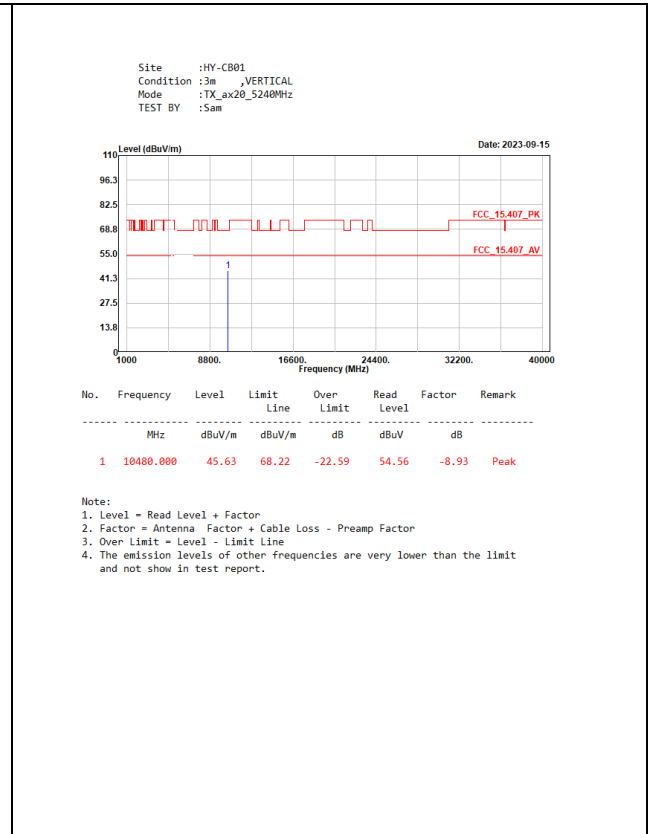
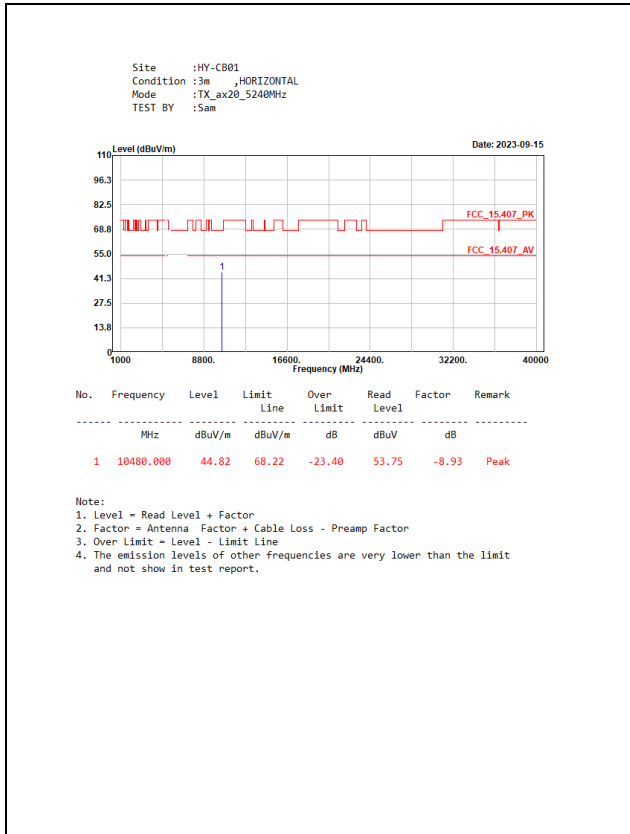


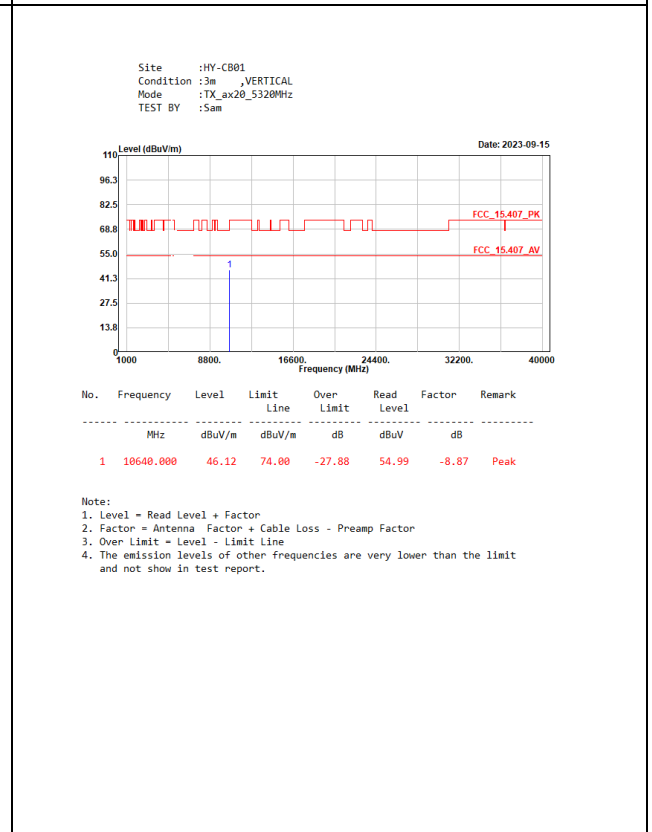
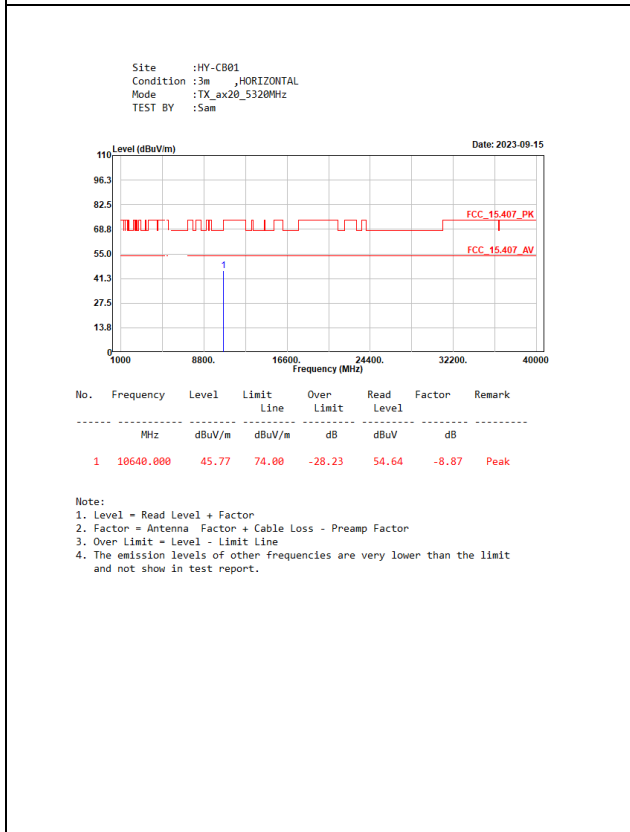
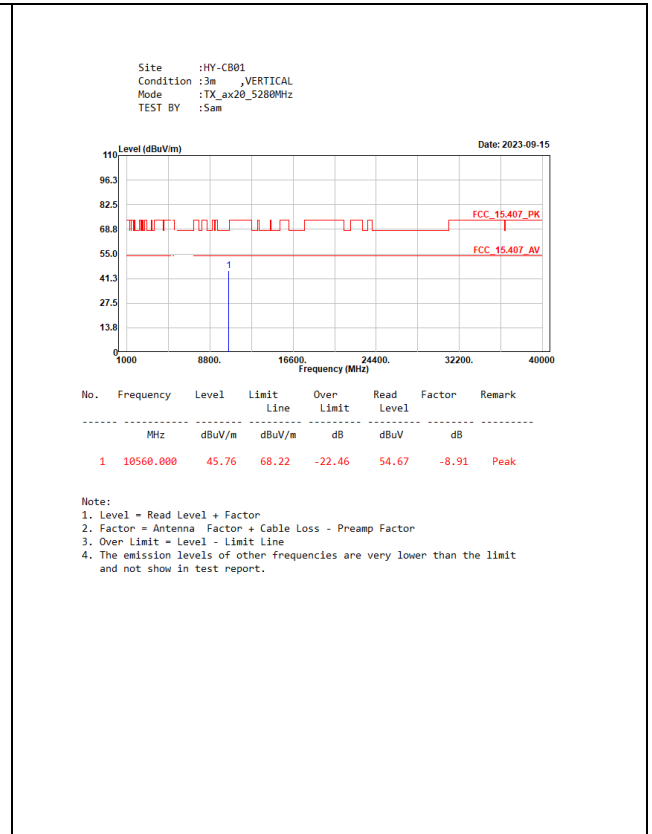
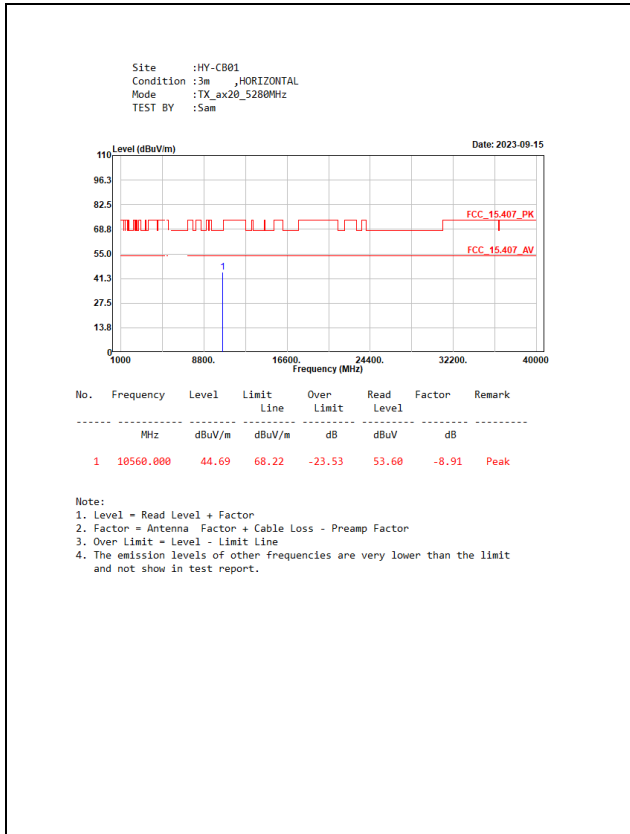


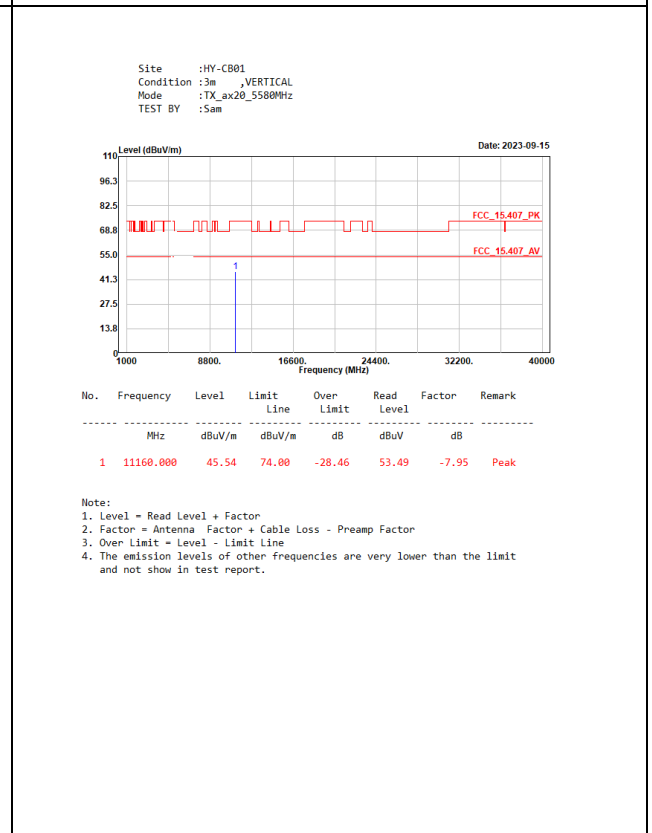
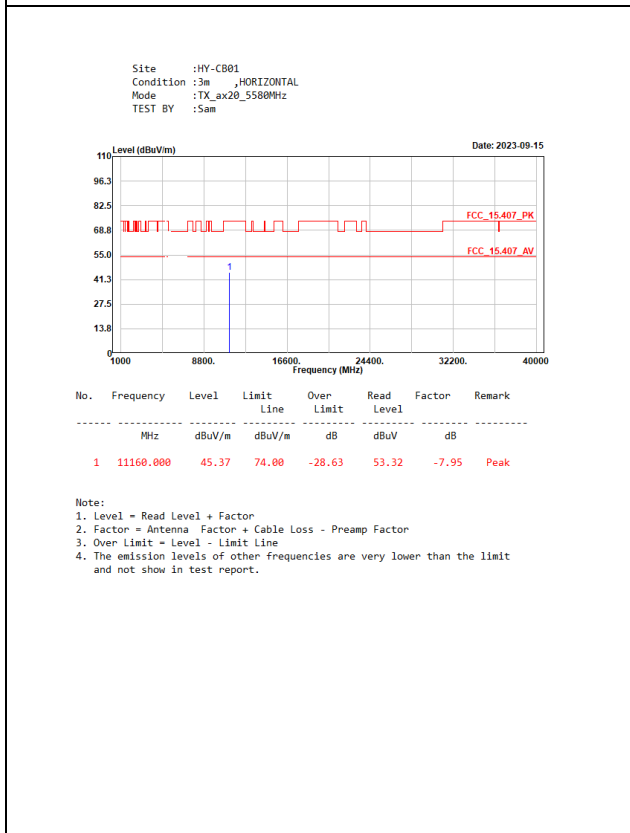
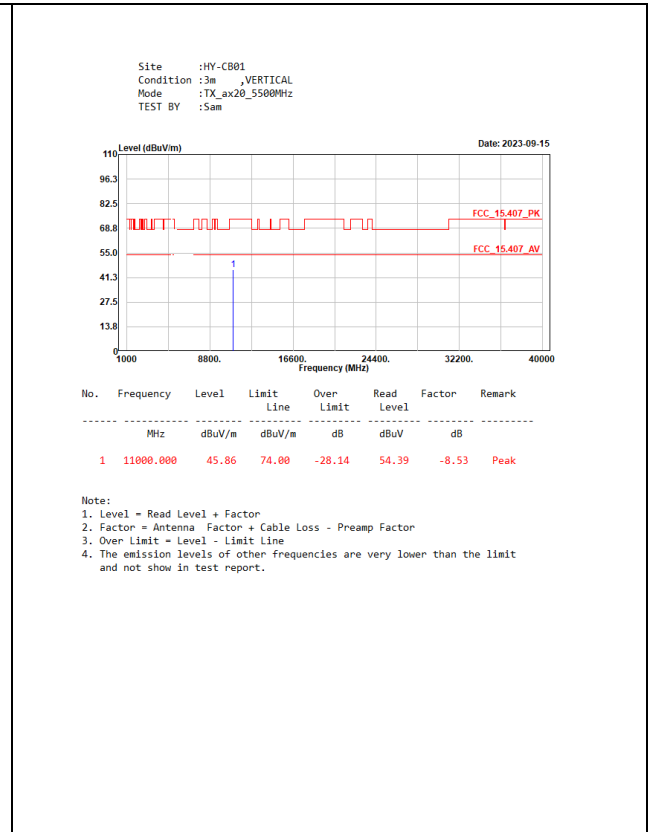
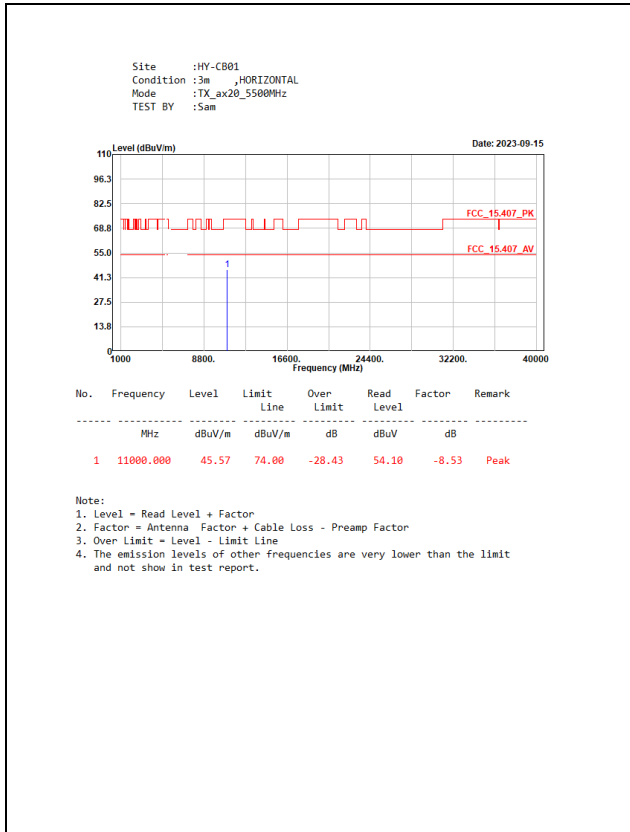


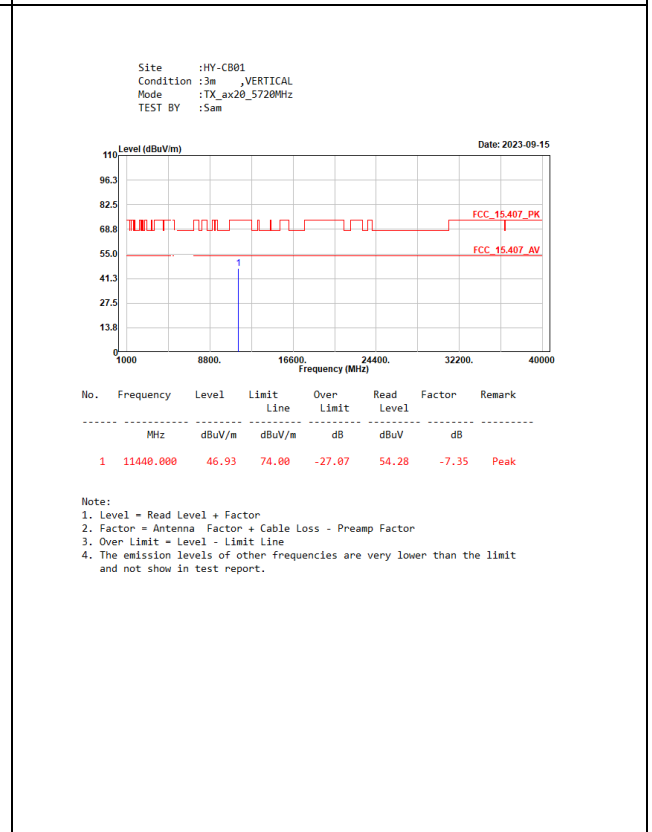
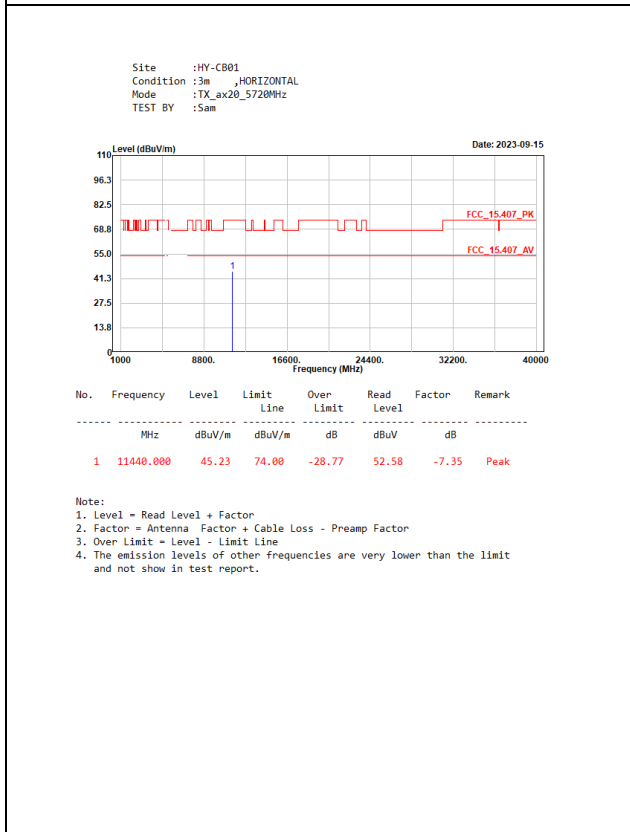
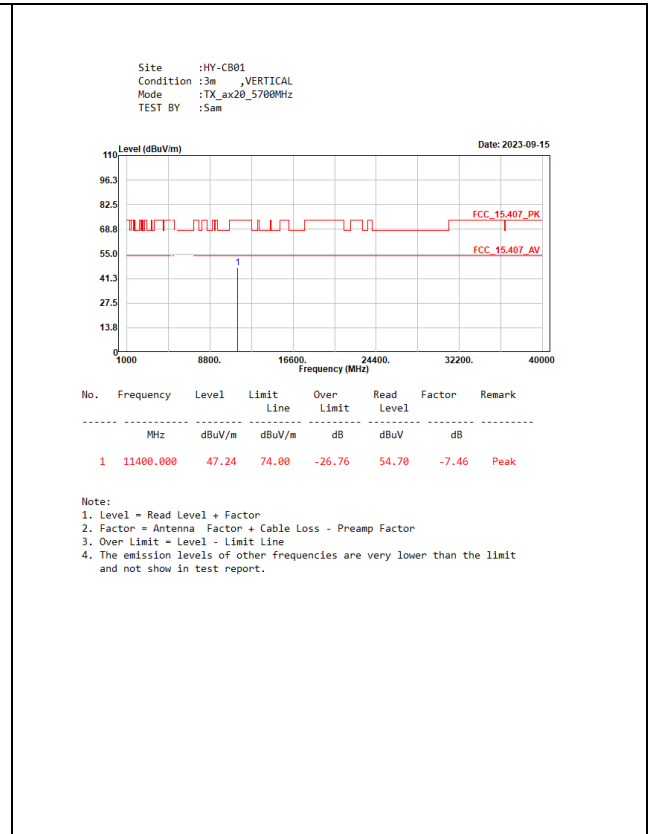
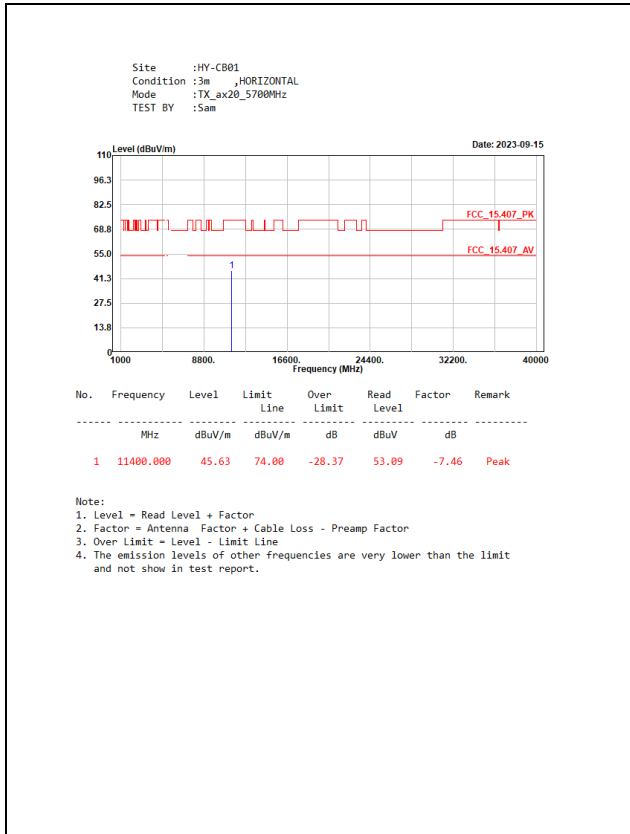
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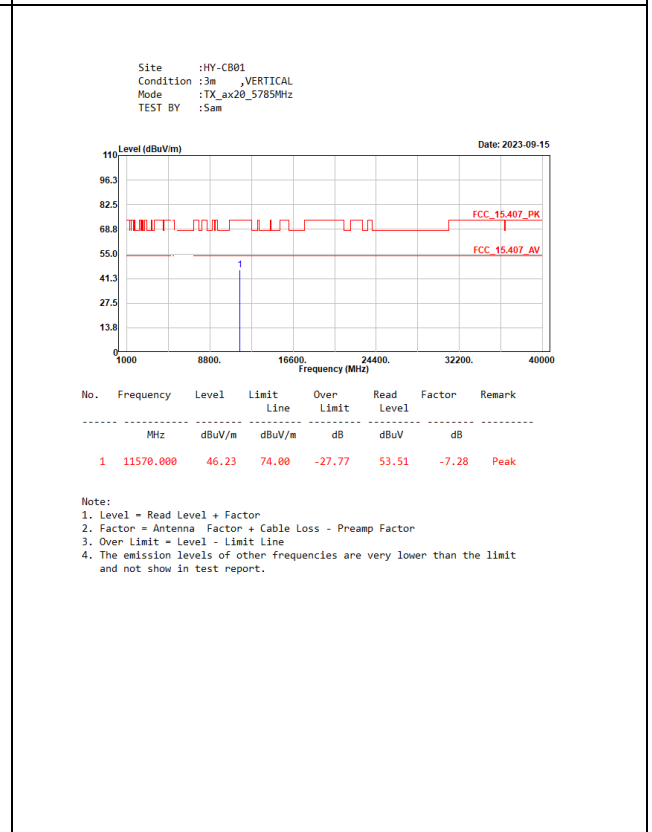
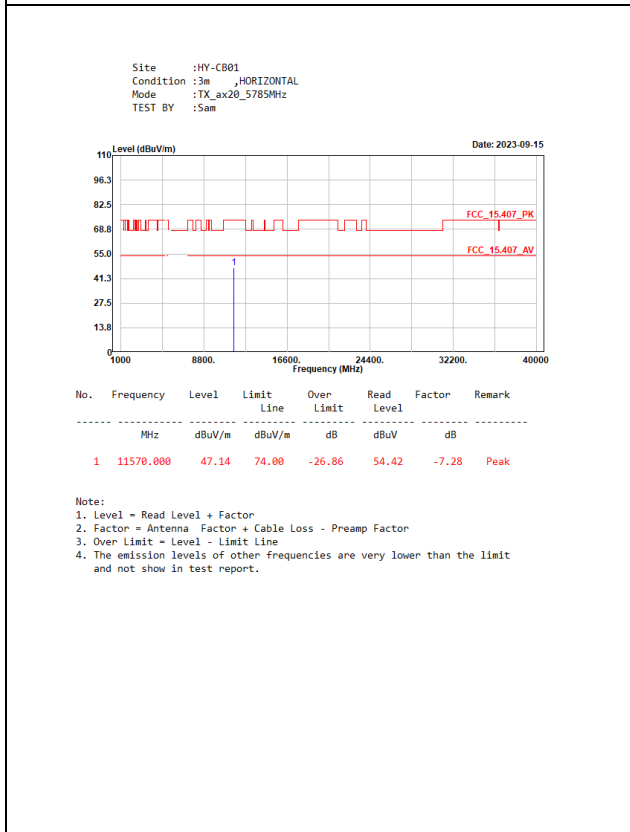
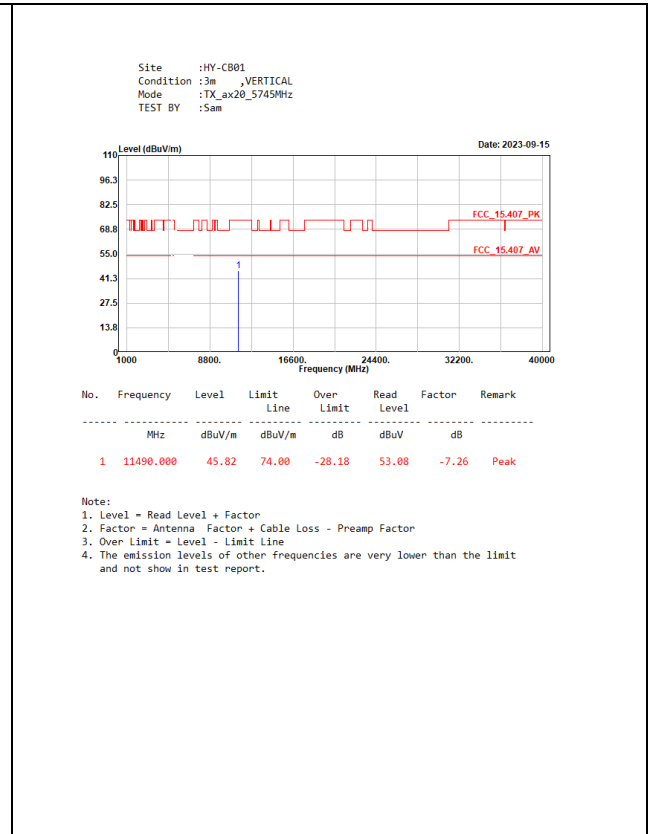
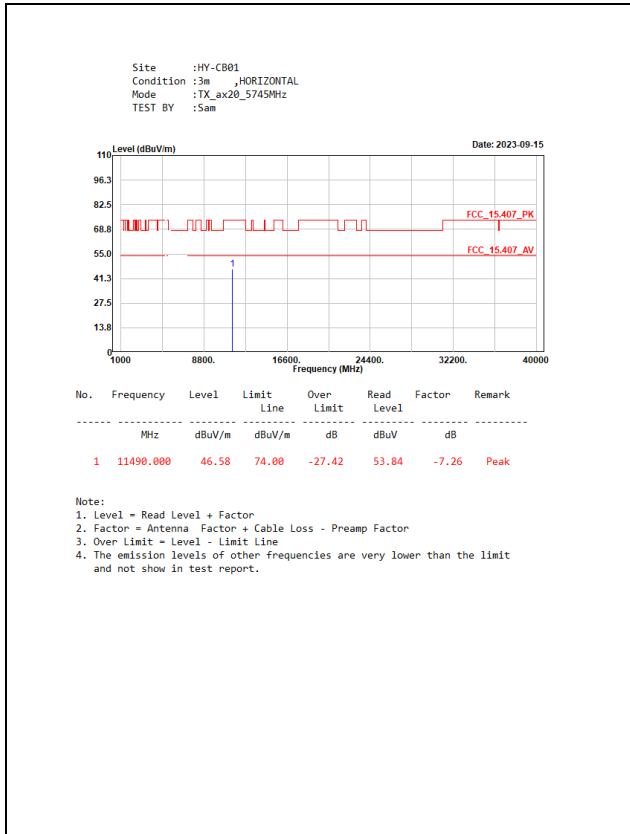


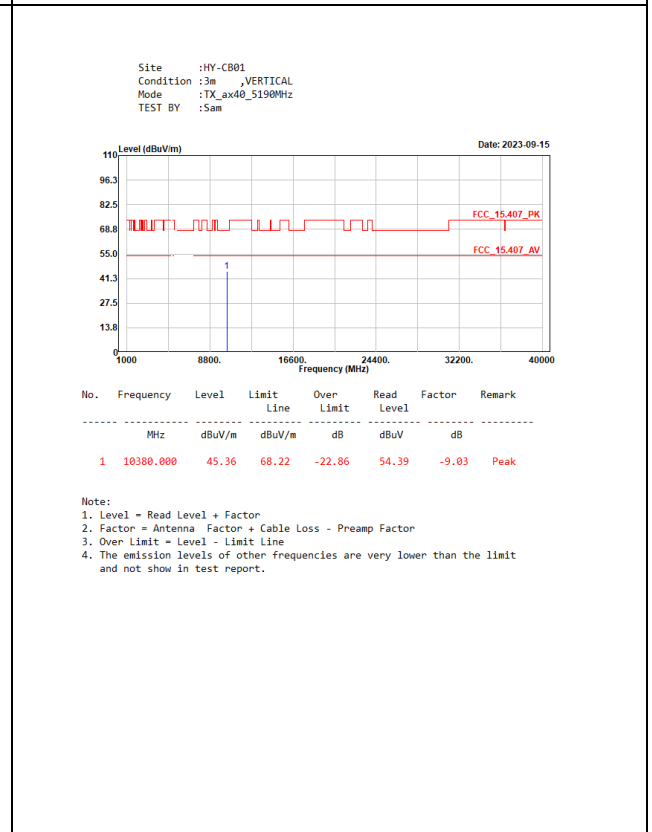
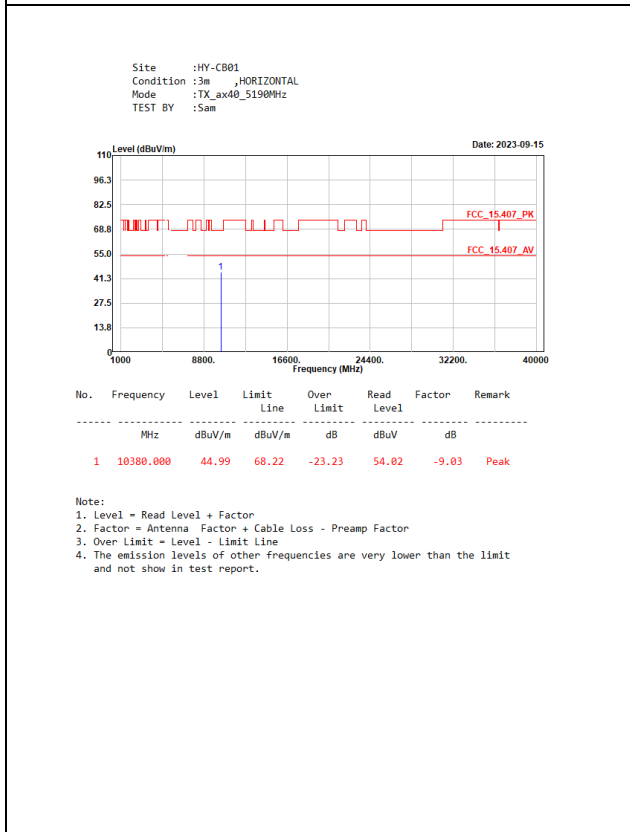
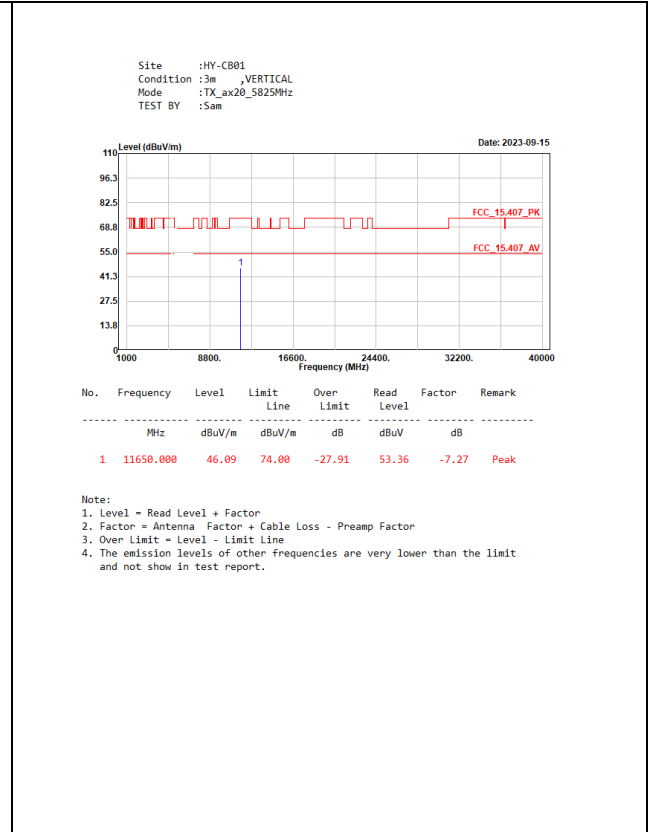
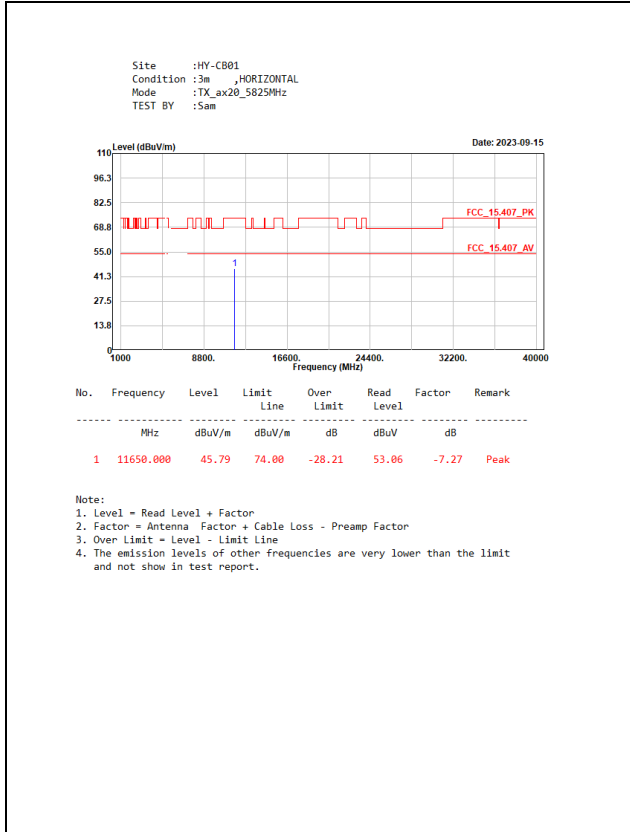


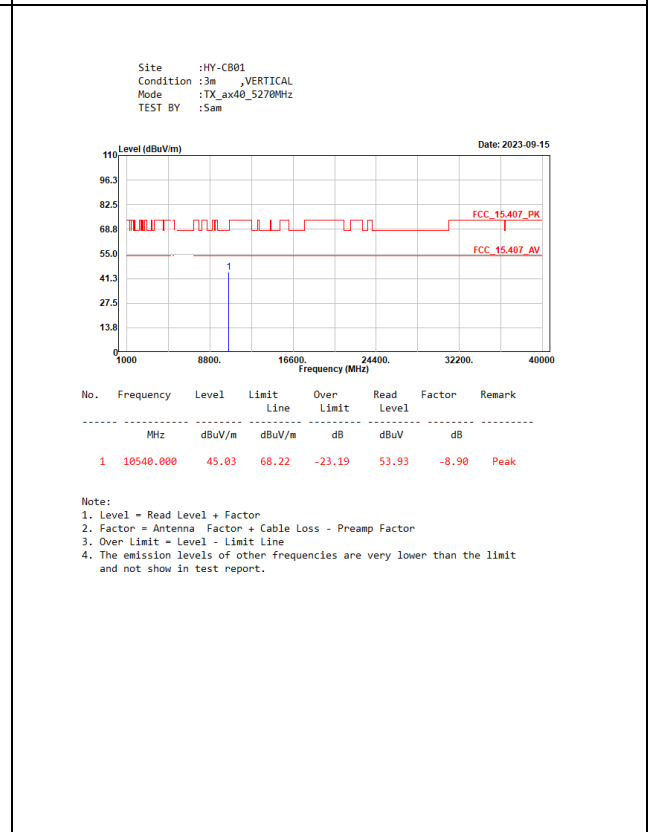
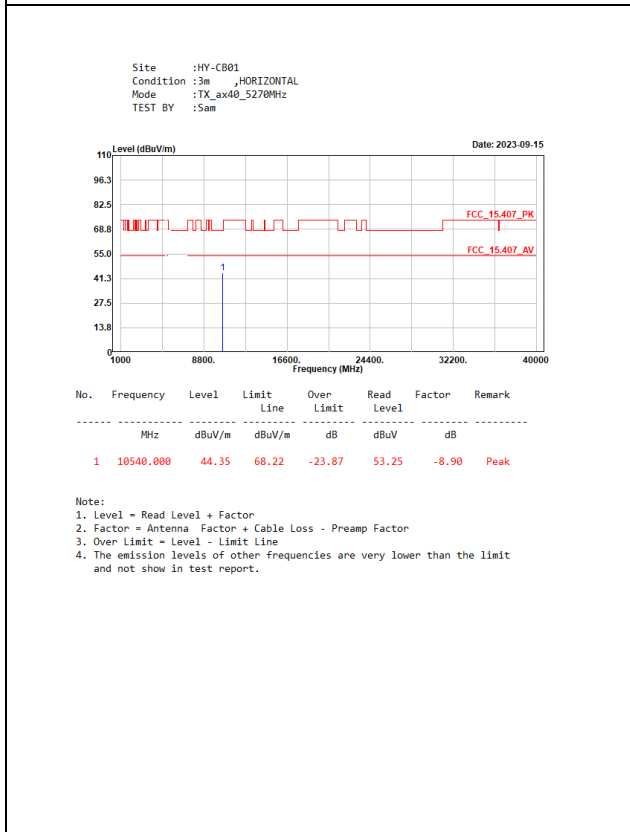
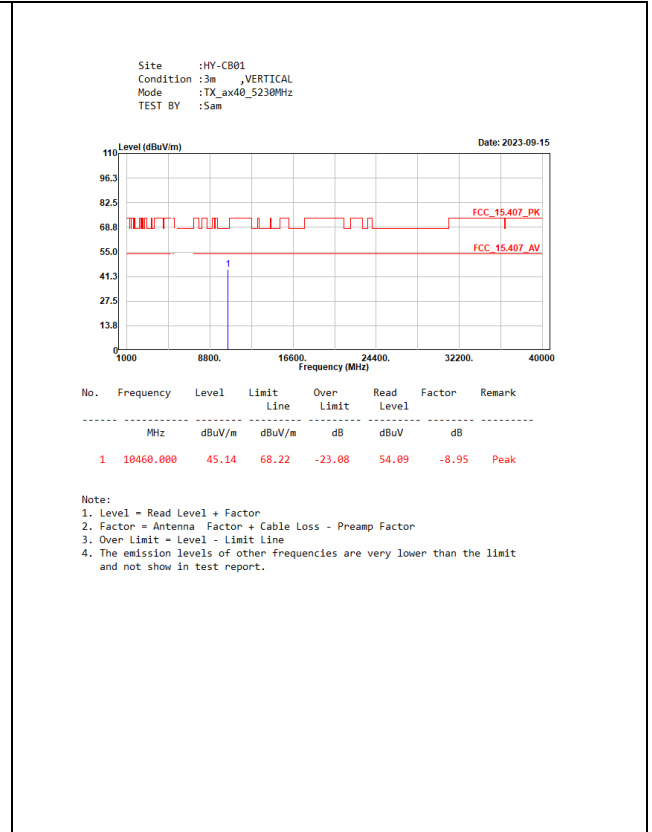
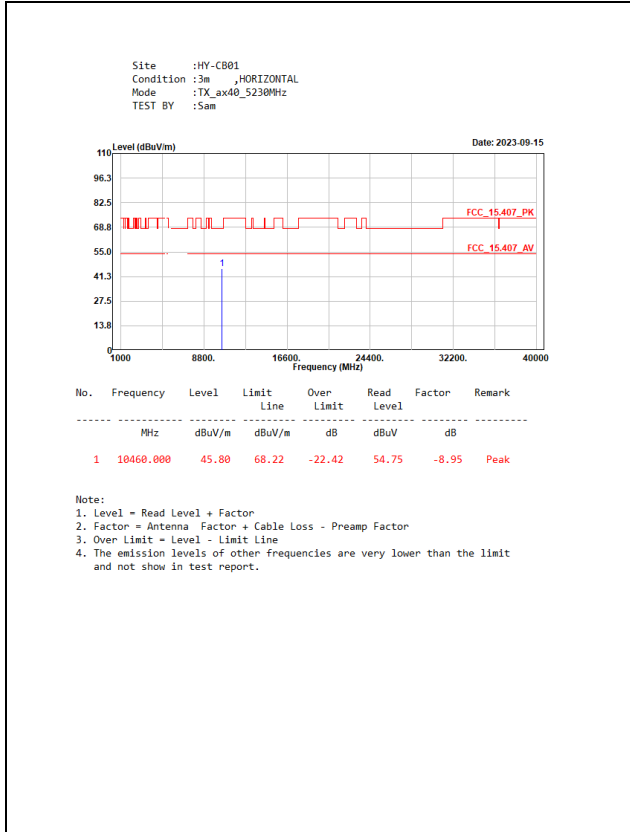


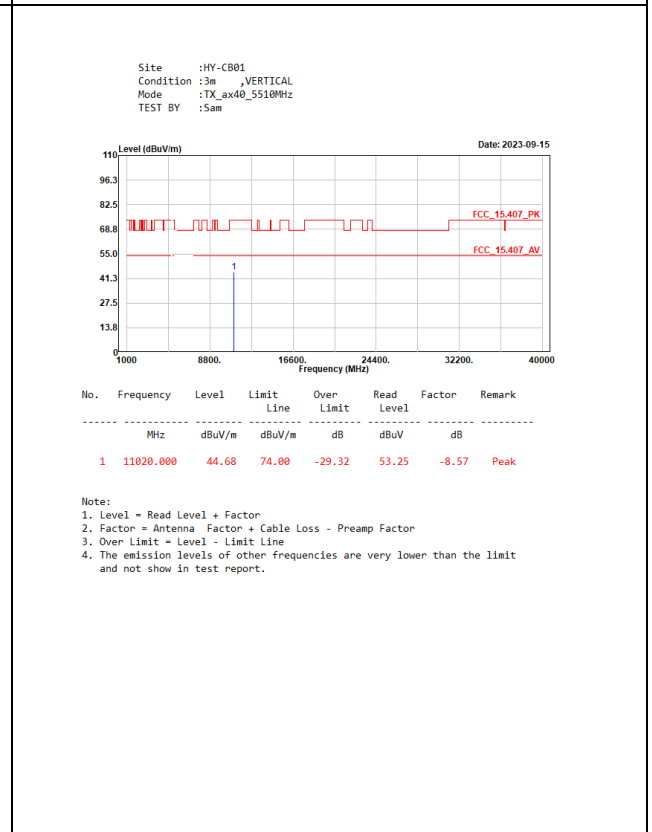
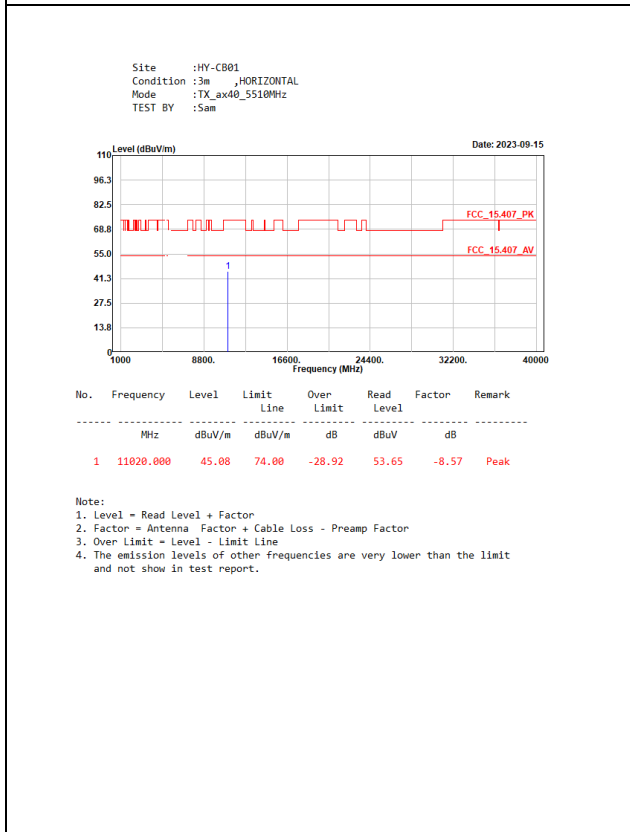
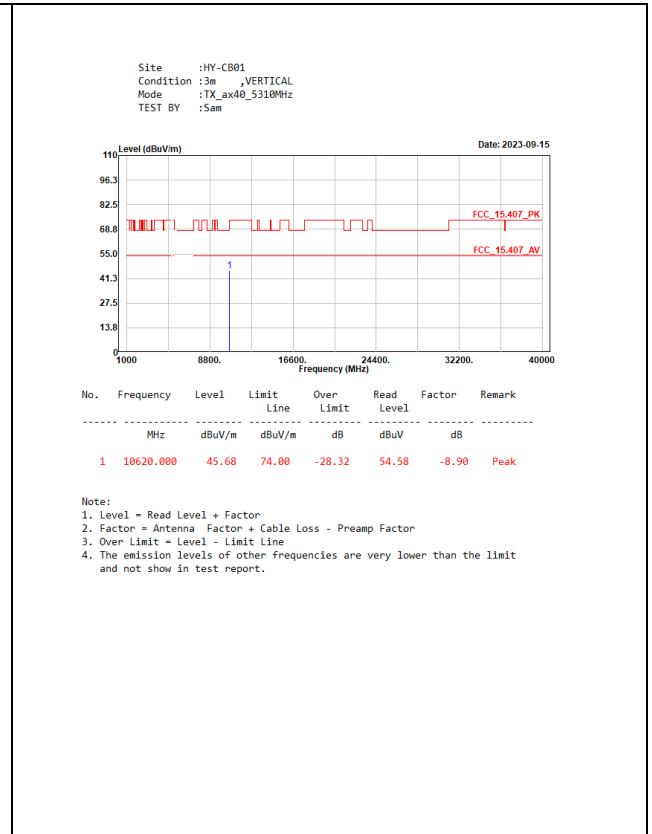
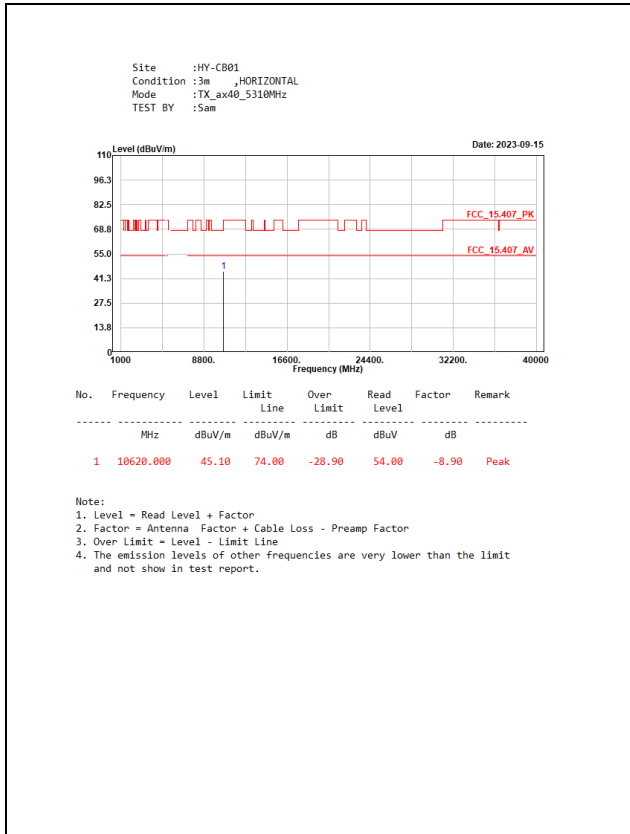


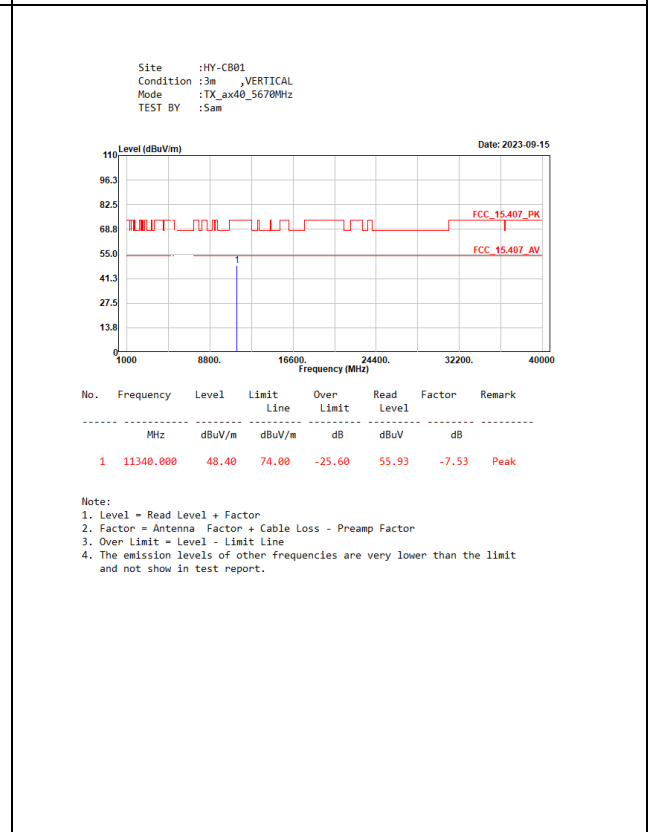
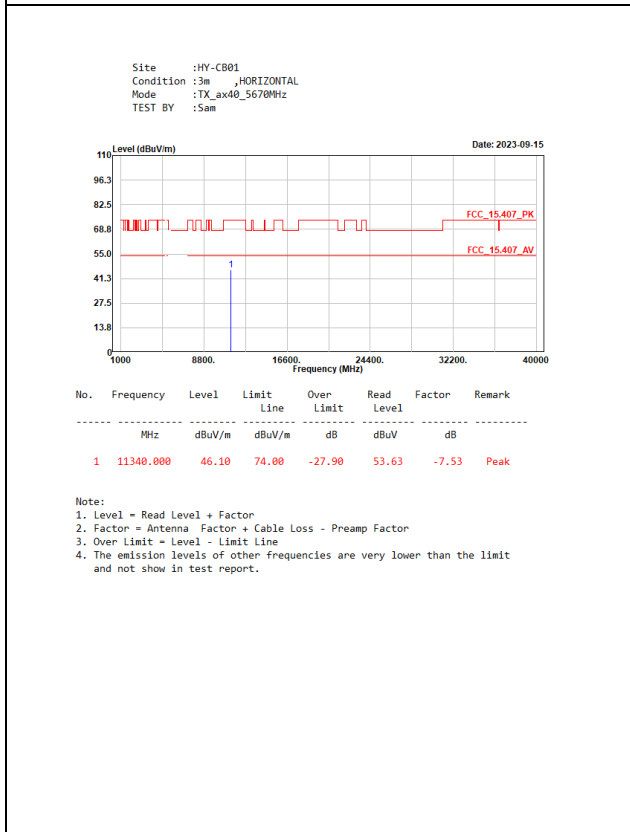
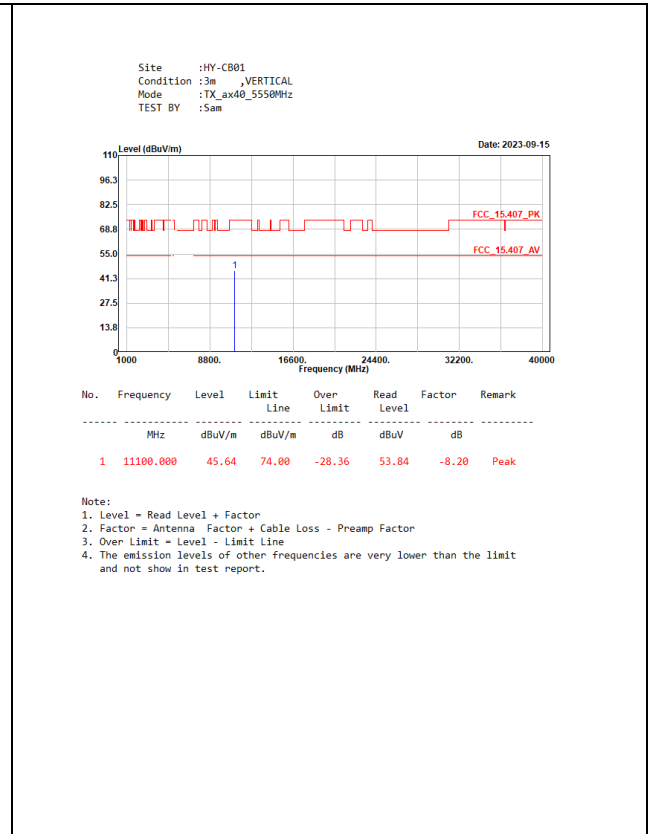
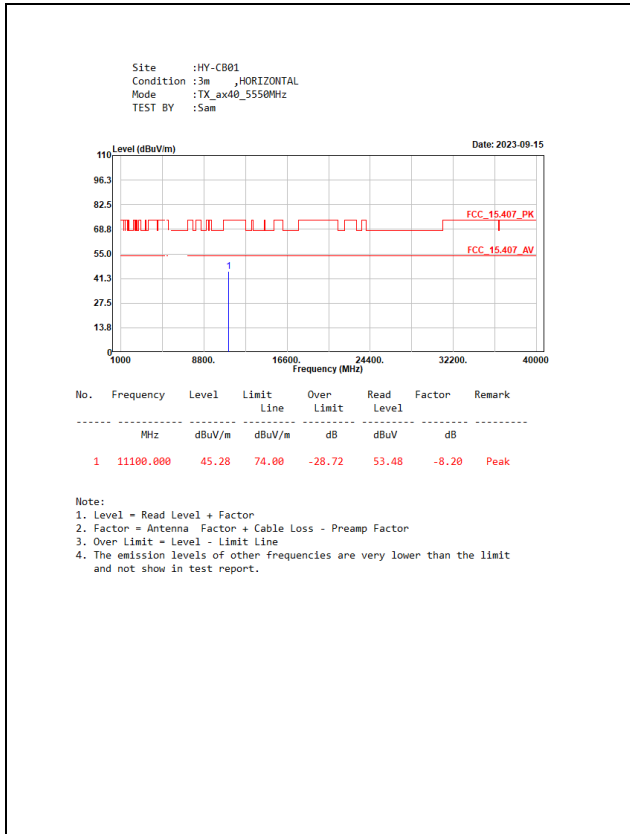


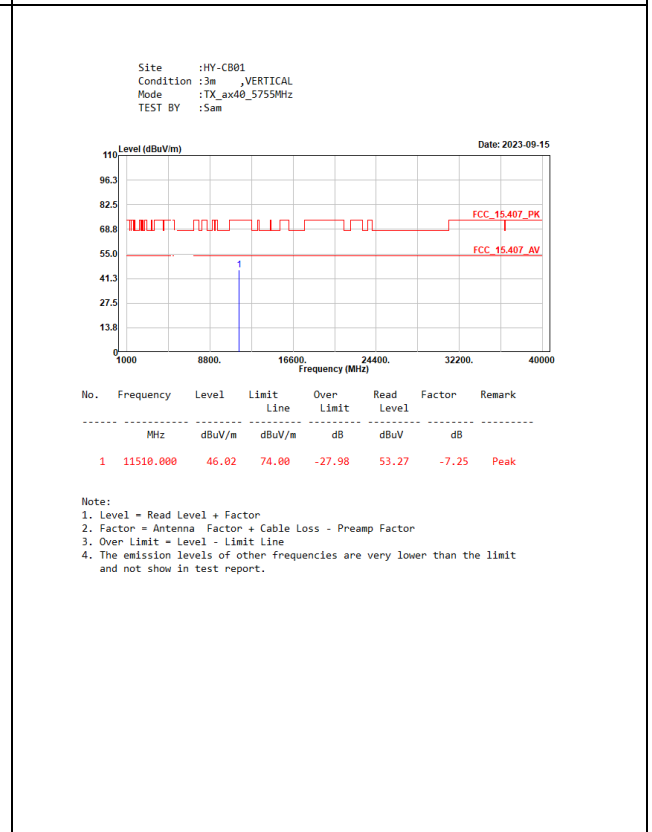
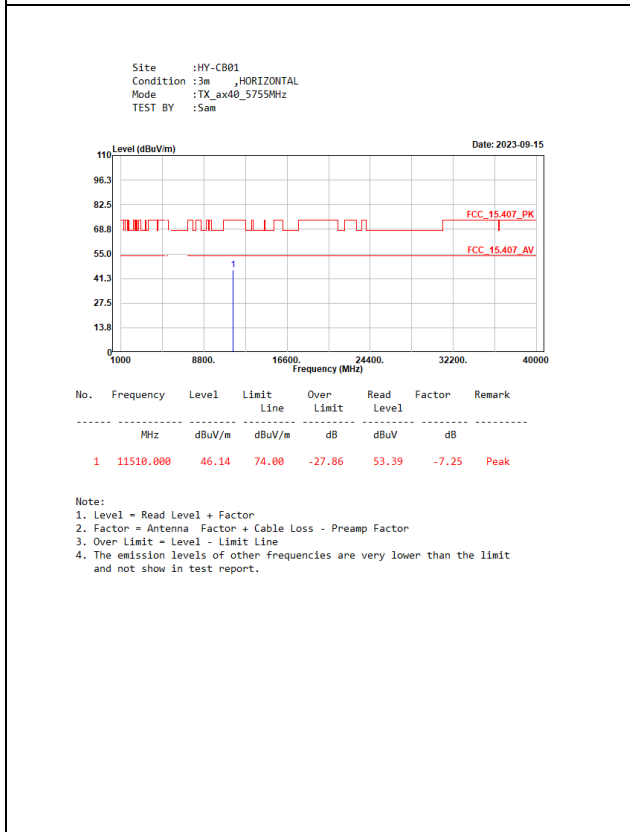
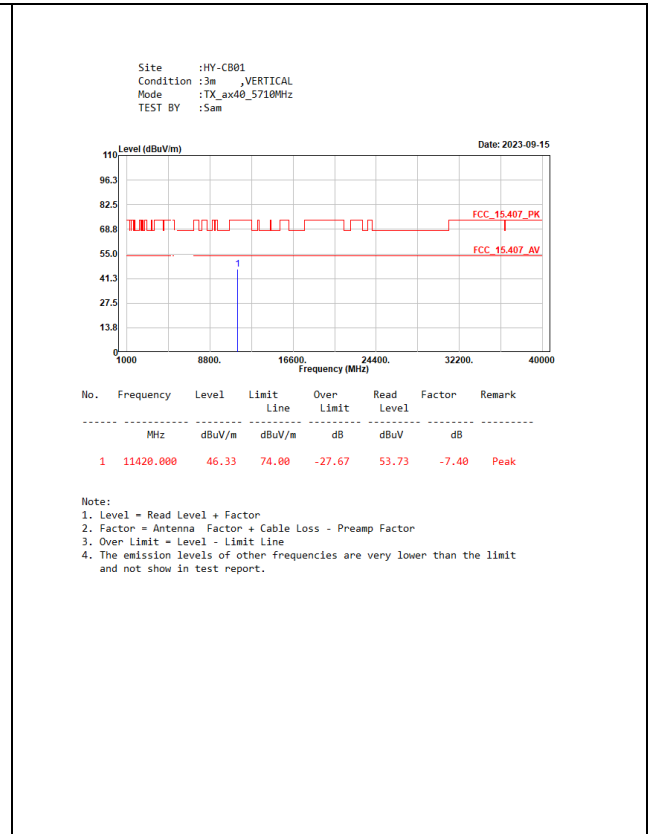
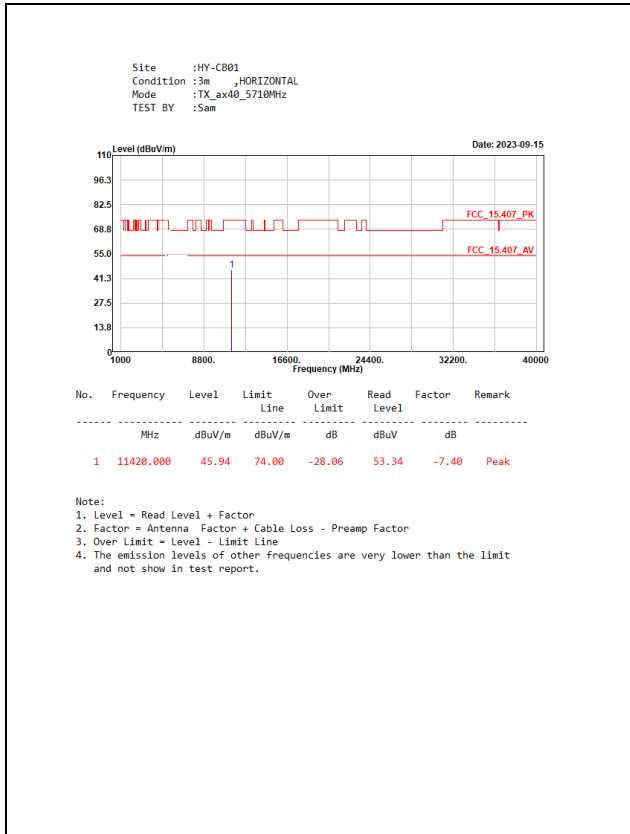


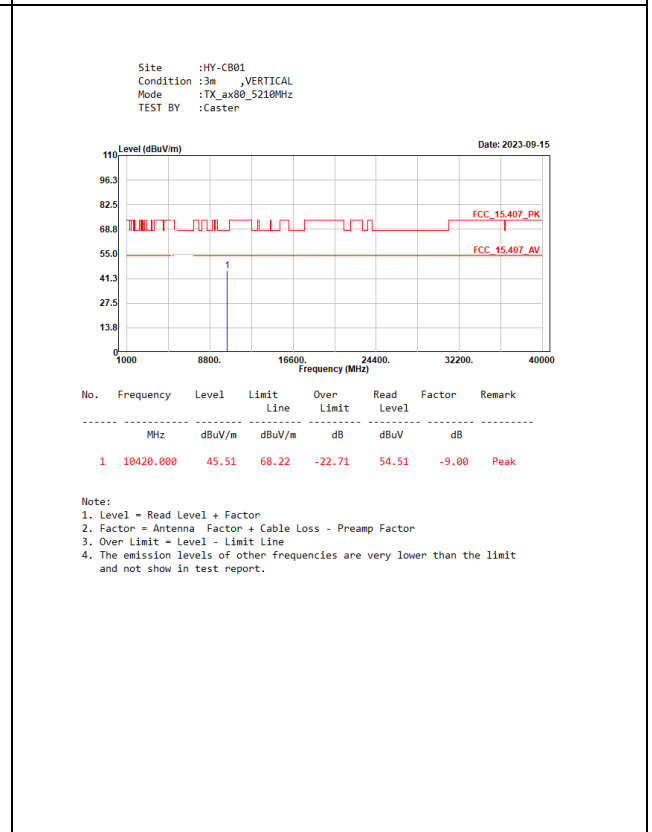
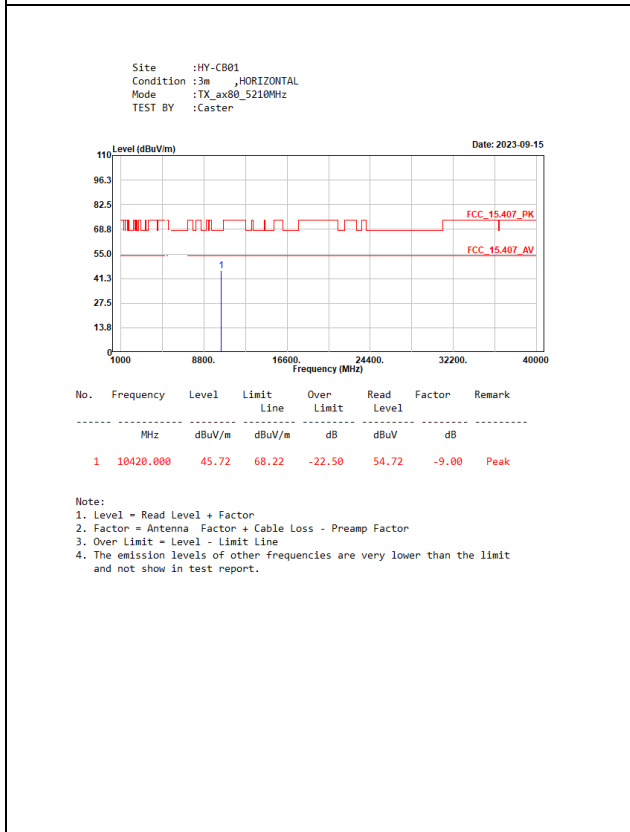
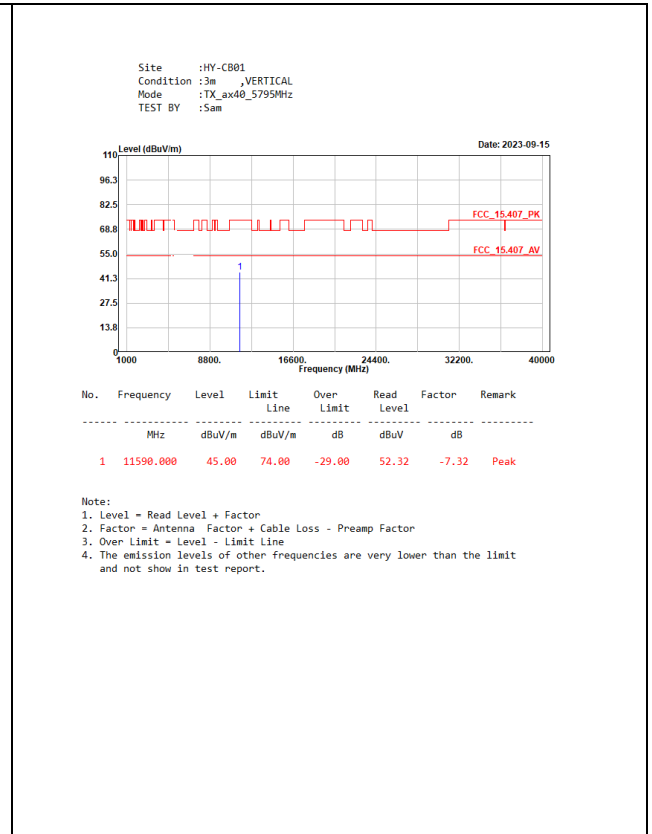
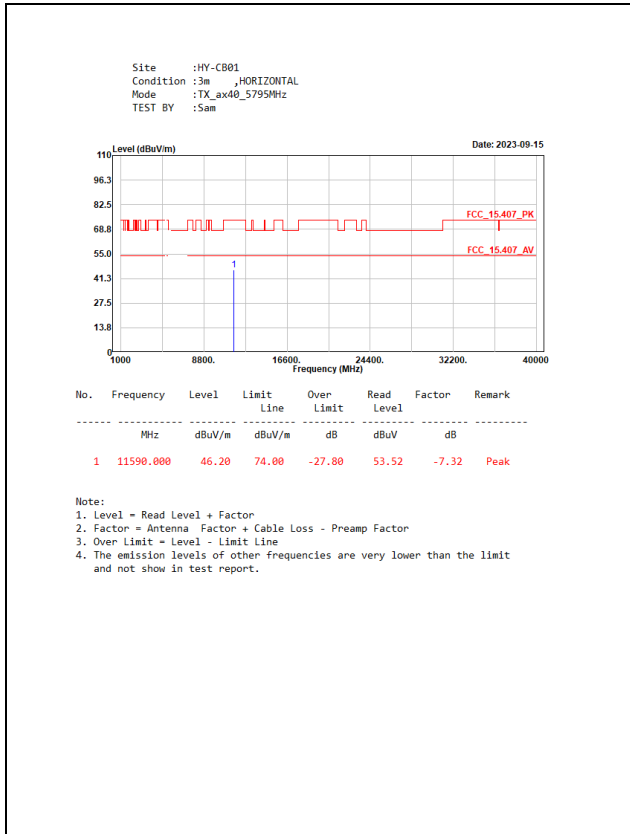


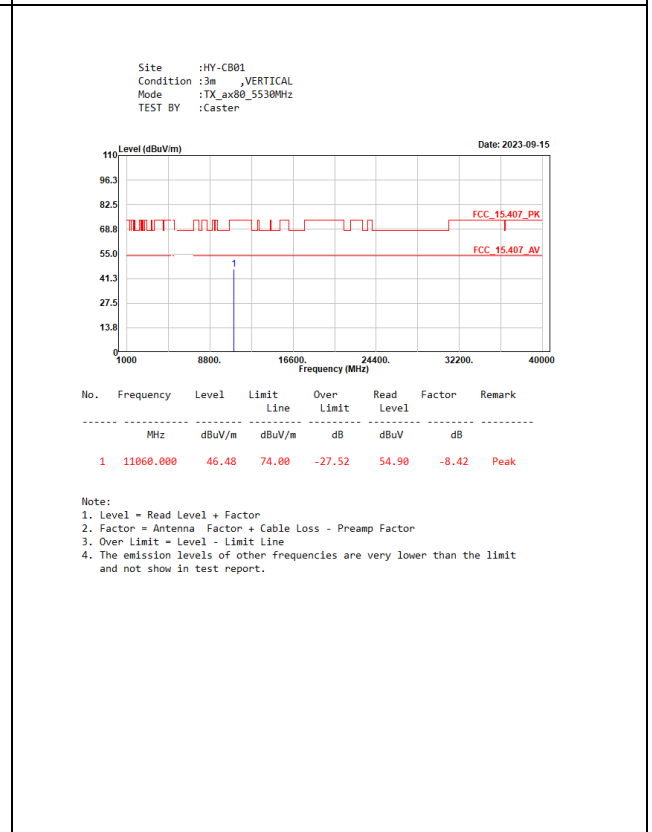
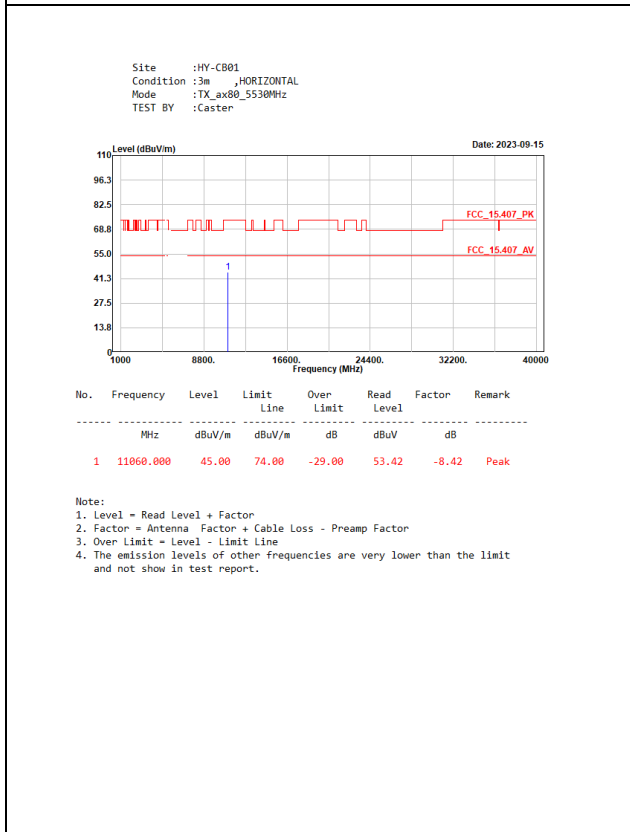
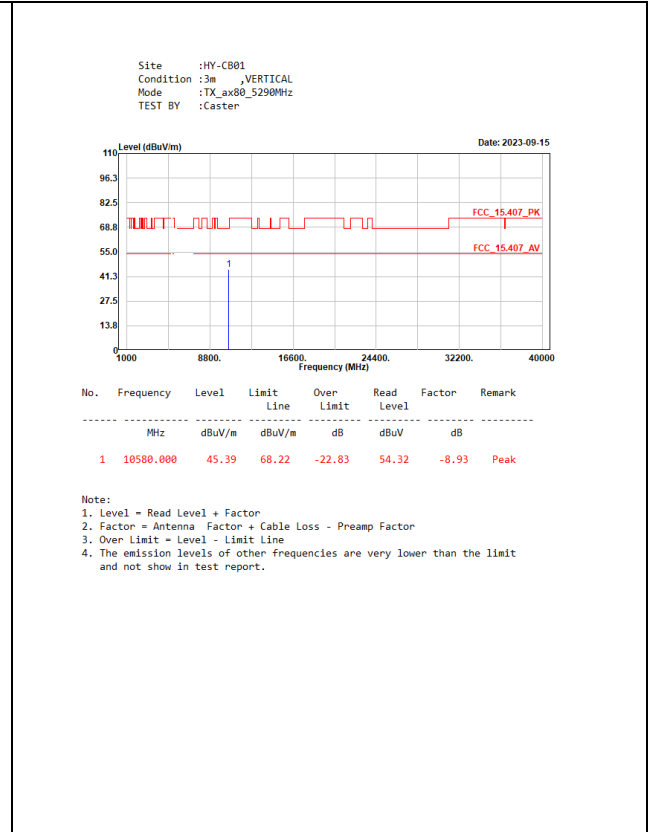
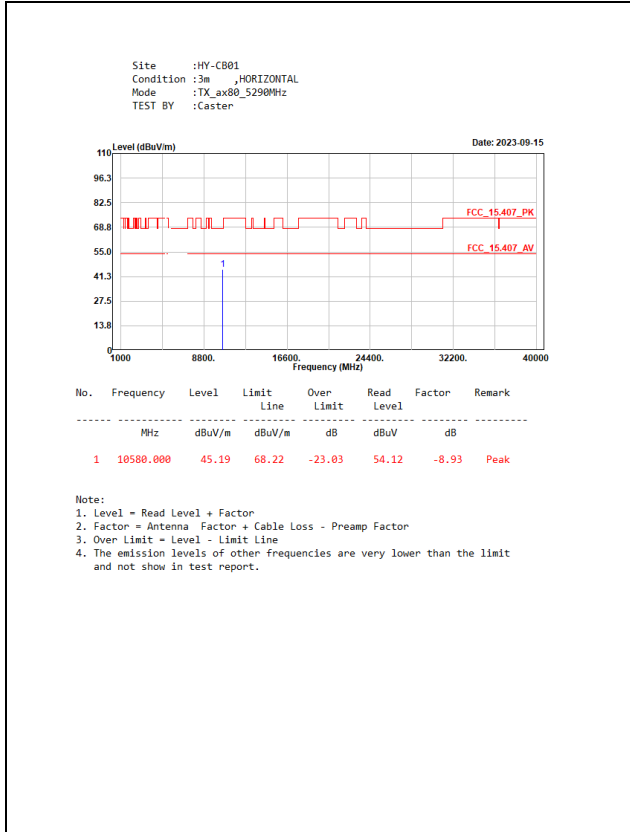


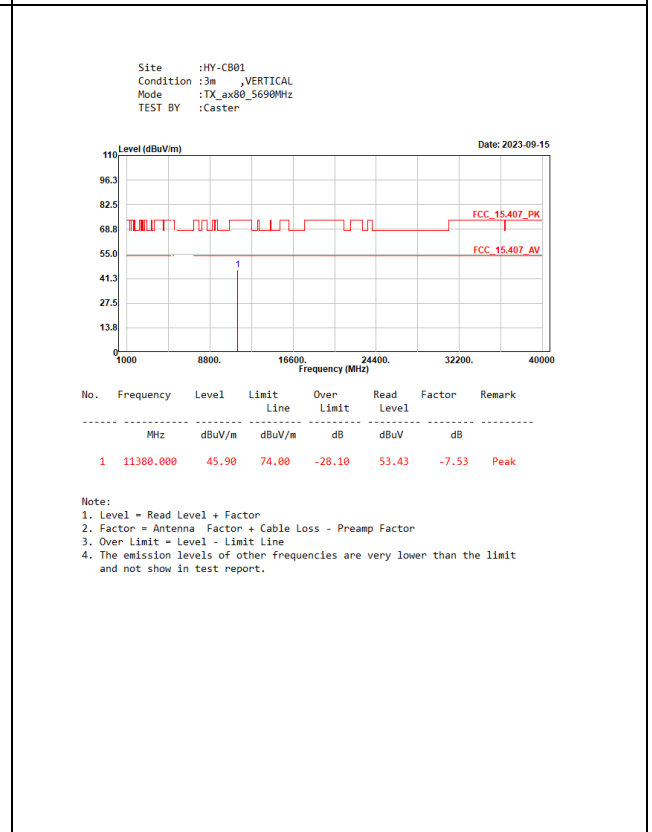
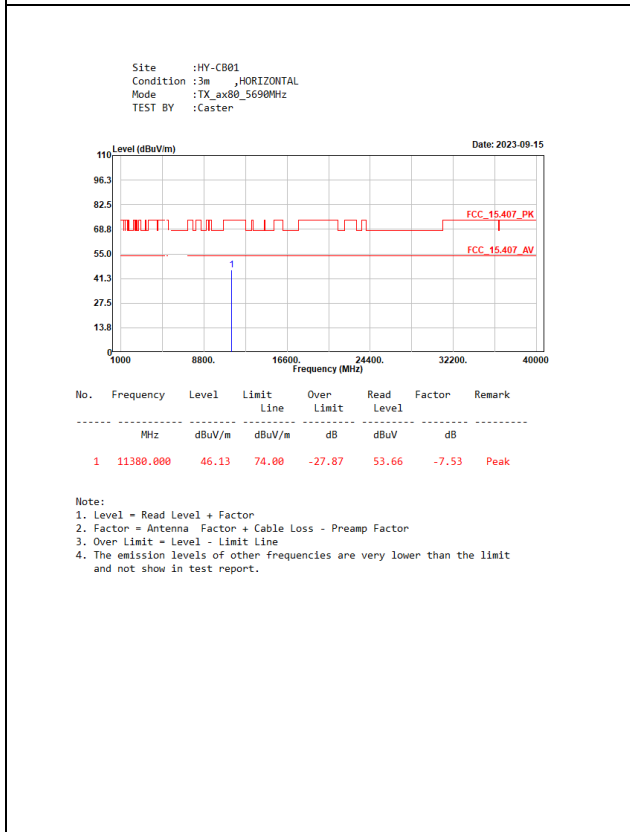
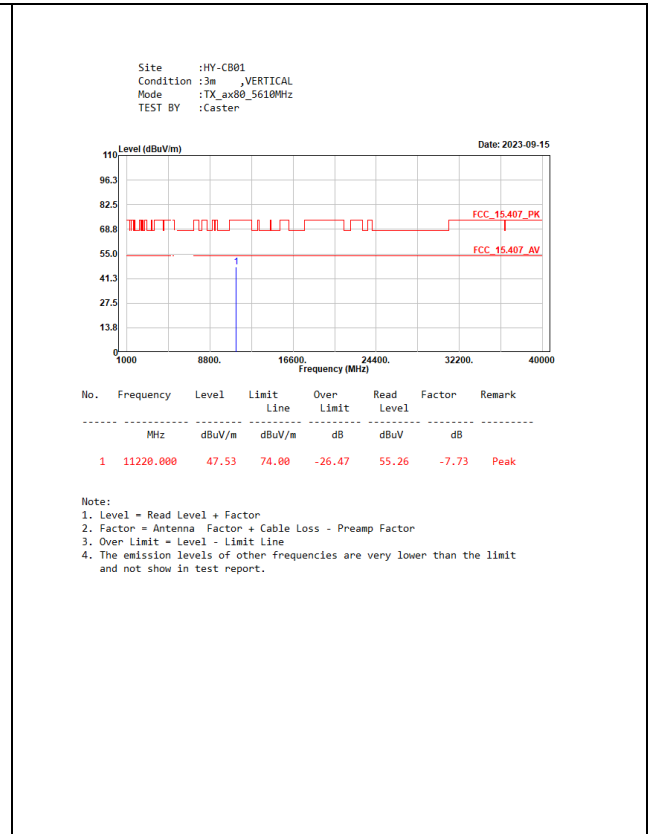
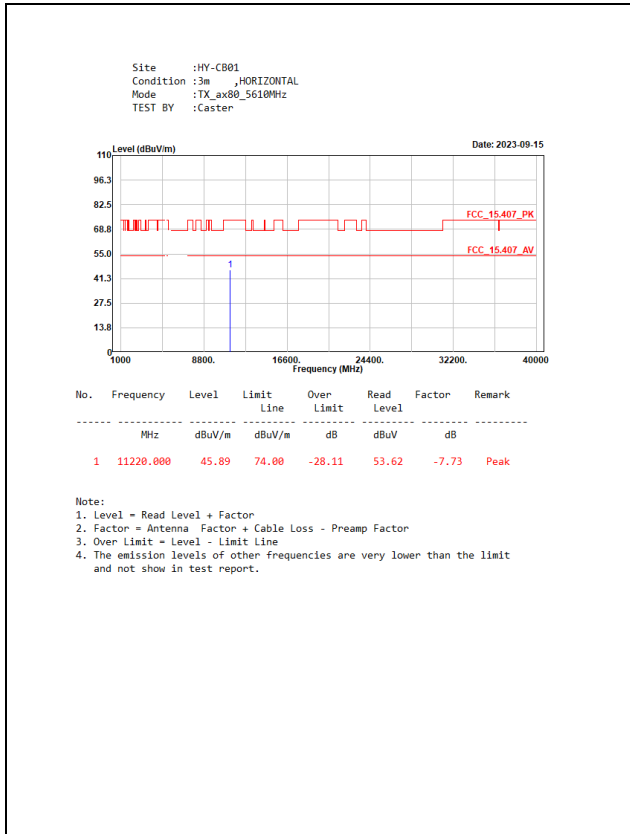


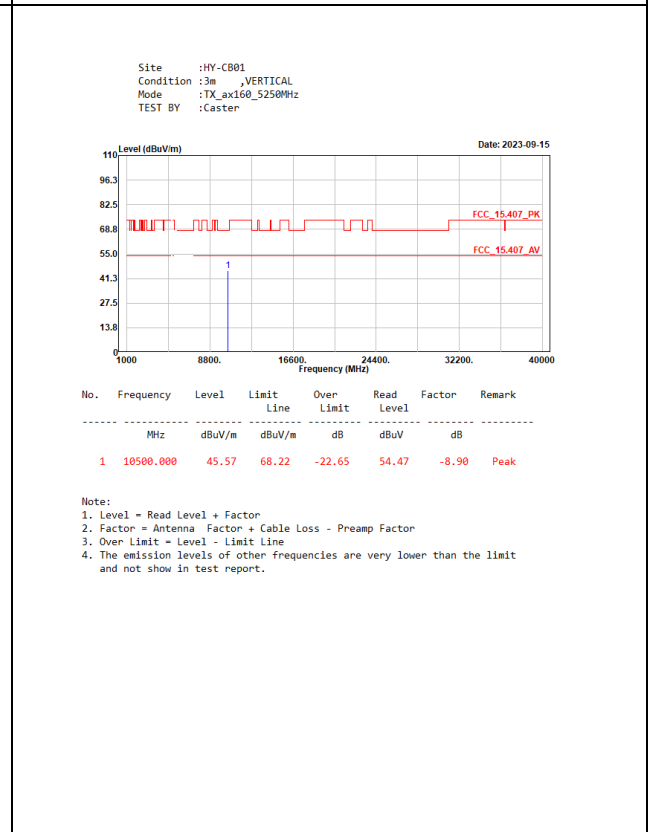
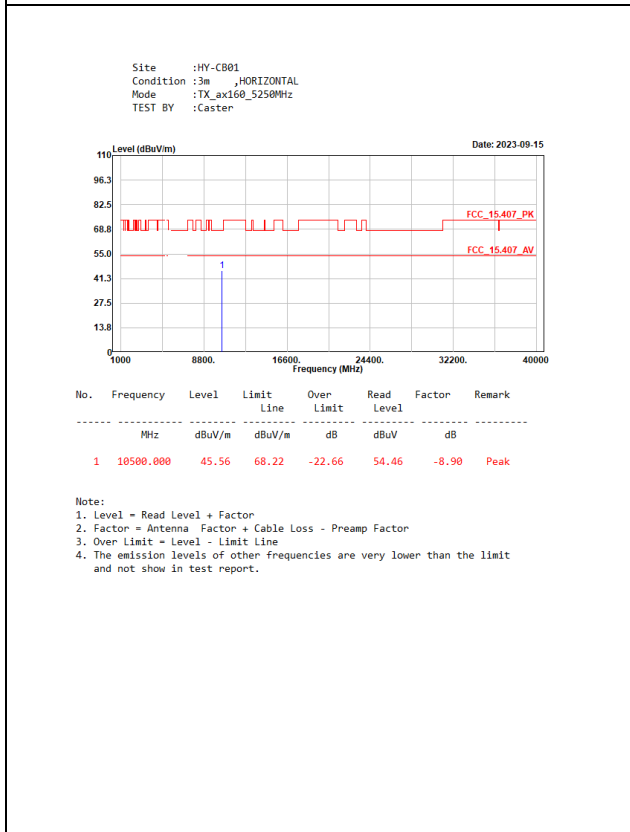
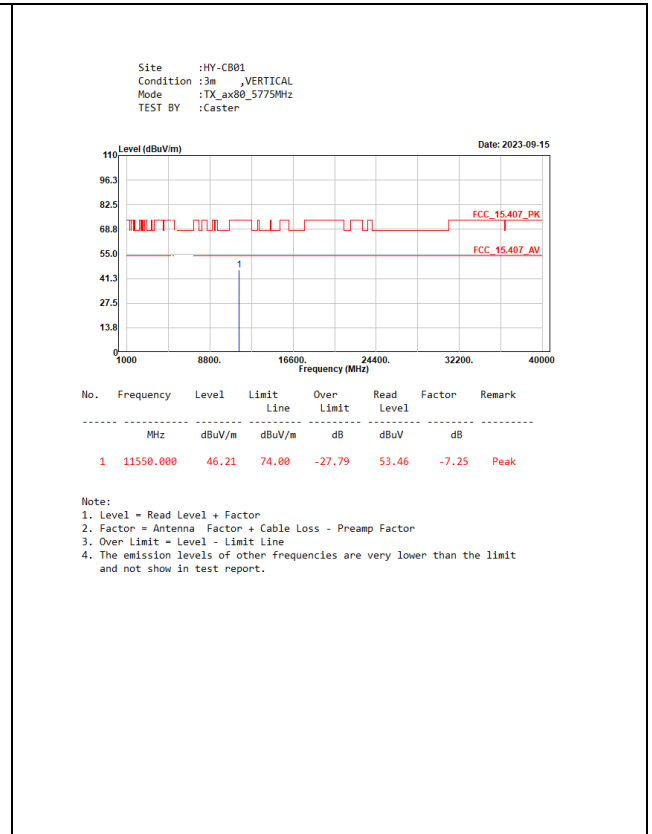
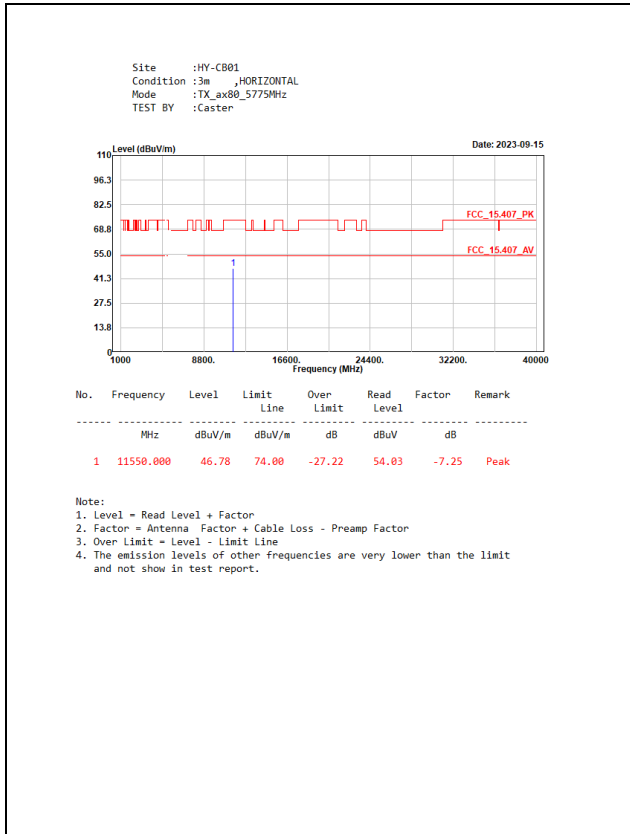


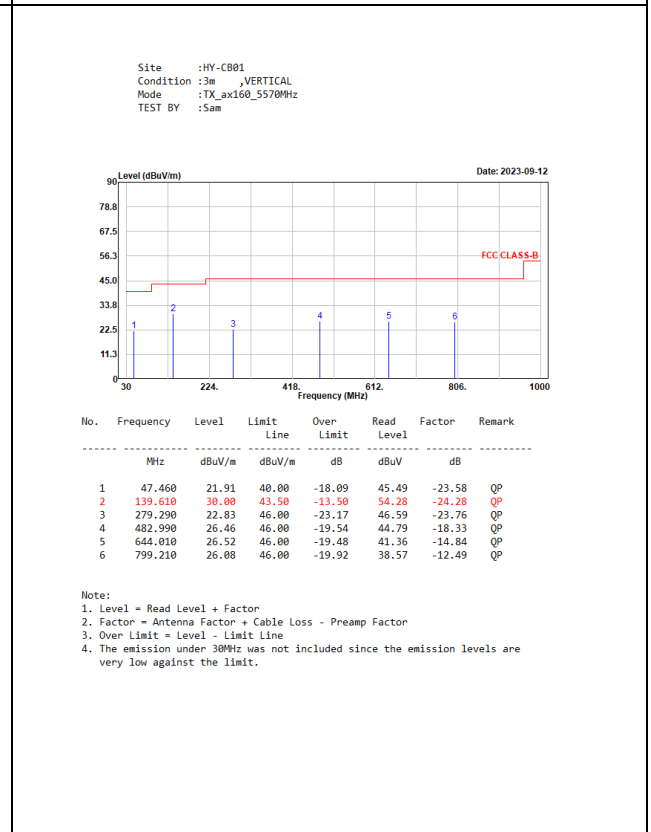
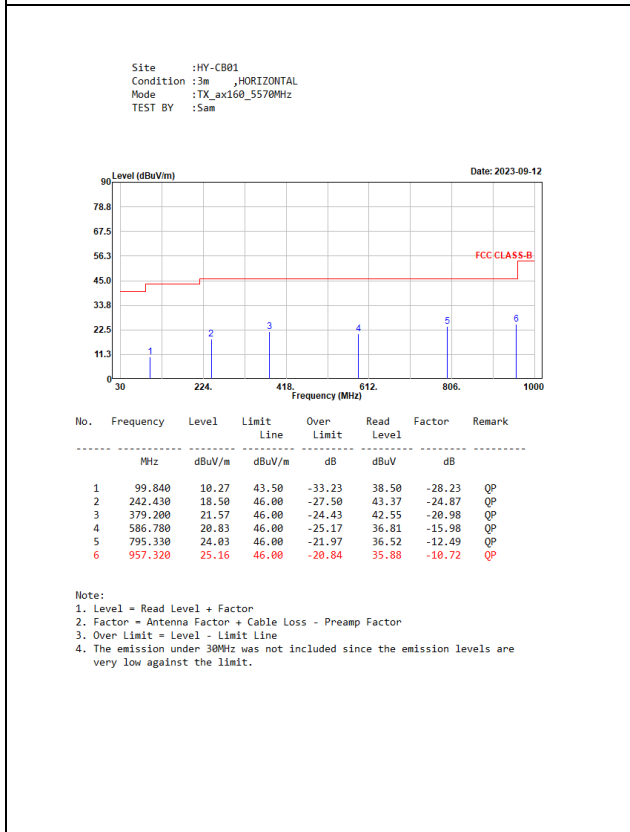
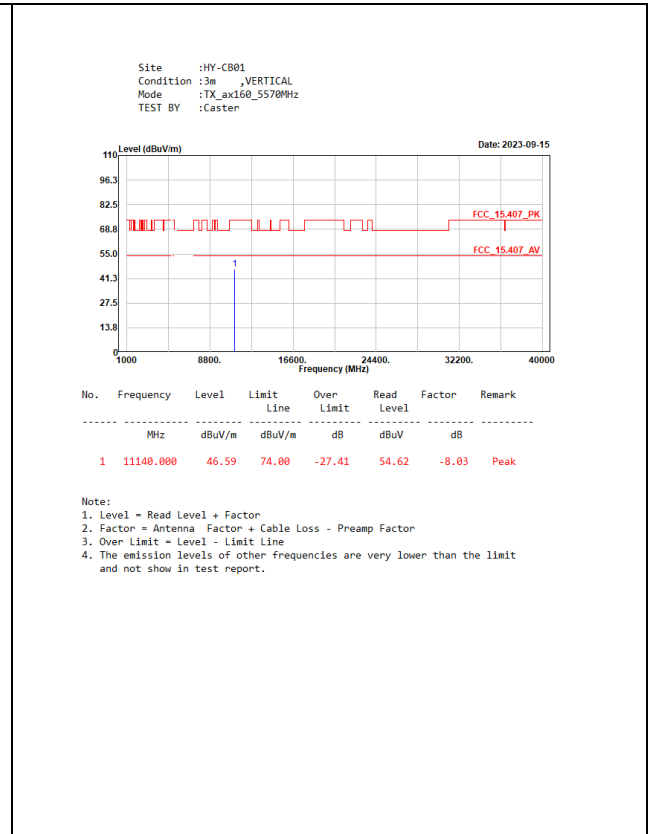
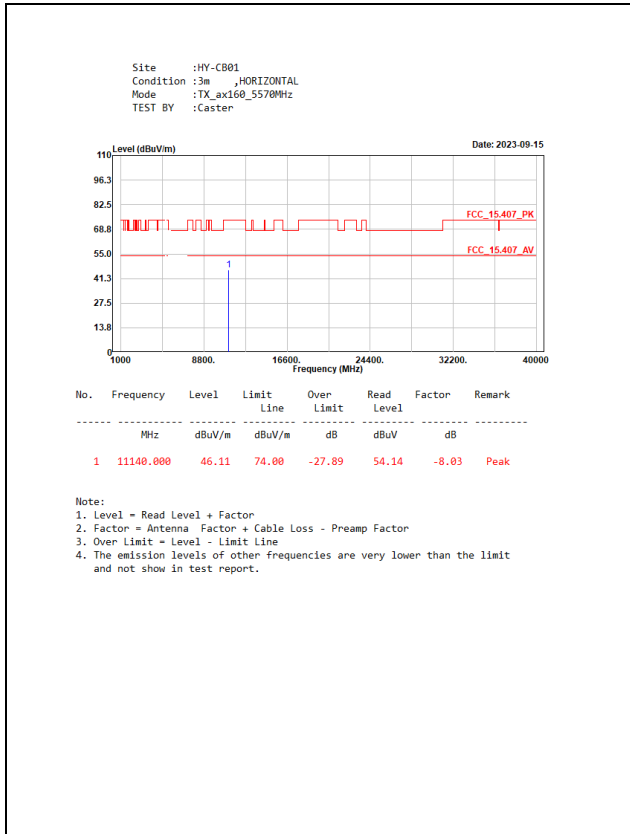












Partial RU-SISO A

