



Test report No.: 2380300R-RFUSV03S-A

TEST REPORT

| | |
|--|---|
| Product Name | Notebook Computer |
| Trademark | LG |
| Model and /or type reference | 15Z90S,15ZD90S,15ZG90S,15ZB90S,15ZW90S,15ZN90S * (* can be 0 to 9 or A to Z or blank denoting buyer request) |
| FCC ID | BEJNT-15Z90S |
| 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 / Genie Chang) | <i>Genie Chang</i> |
| Tested By (Senior Engineer / Bill Lin) | <i>Bill Lin</i> |
| Approved By (Senior Engineer / Alan Chen) | <i>Alan Chen</i> |
| Date of Receipt | 2023/08/10 |
| Date of Issue | 2023/10/23 |
| Report Version | V1.0 |

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Appendix 1: EUT Test Photographs

Appendix 2: Product Photos-Please refer to the file: 2380300R-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 |
|---------------------|---------|--------------------------|-------------|
| 2380300R-RFUSV03S-A | V1.0 | Initial issue of report. | 2023/10/23 |

1. General Information

1.1. EUT Description

| | |
|------------------------------|---|
| Product Name | Notebook Computer |
| Trademark | LG |
| Model and /or type reference | 15Z90S,15ZD90S,15ZG90S,15ZB90S,15ZW90S,15ZN90S * (* can be 0 to 9 or A to Z or blank denoting buyer request) |
| EUT Rated Voltage | AC 100-240V, 50-60Hz |
| EUT Test Voltage | AC 120V/60Hz |
| 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: 25 CH 802.11n/ac/ax-40 MHz: 12 CH 802.11ac/ax-80 MHz: 6 CH 802.11ac/ax-160 MHz: 2CH |
| Data Rate | 802.11a: 6-54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 1733.3 Mbps 802.11ax: up to 2402 Mbps |
| 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 | Shielded, 2m |
| Power 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 | DQ6WAPLEL33 (WA-P-LELE-02-018) (Main) | PIFA | 2.91 dBi for 5150~5250 MHz 2.74 dBi for 5250~5350 MHz 3.39 dBi for 5470~5725 MHz 3.87 dBi for 5725~5850 MHz |
| | | DQ6WAPLEL33 (WA-P-LELE-02-018) (Aux) | | 2.93 dBi for 5150~5250 MHz 3.12 dBi for 5250~5350 MHz 3.61 dBi for 5470~5725 MHz 3.94 dBi for 5725~5850 MHz |
| 2 | Pulse | DQ602701000 (TQ27010) (Main) | PIFA | 2.80 dBi for 5150~5250 MHz 2.63 dBi for 5250~5350 MHz 3.11 dBi for 5470~5725 MHz 3.64 dBi for 5725~5850 MHz |
| | | DQ602701000 (TQ27010) (Aux) | | 2.87 dBi for 5150~5250 MHz 2.83 dBi for 5250~5350 MHz 3.53 dBi for 5470~5725 MHz 3.76 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 = GANT (According to KDB 662911 D01 F2)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) |
|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| 036 | 5180 | 040 | 5200 | 044 | 5220 | 048 | 5240 |
| 052 | 5260 | 056 | 5280 | 060 | 5300 | 064 | 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) |
|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| 038 | 5190 | 046 | 5230 | 054 | 5270 | 062 | 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) |
|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| 042 | 5210 | 058 | 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) | 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 |
|---|---------------------|
| 15Z90S | (B2C, Windows) |
| 15ZD90S | (NonOS) |
| 15ZG90S | (B2G, Windows) |
| 15ZB90S | (B2B, Windows) |
| 15ZW90S | (B2C/B2B, Whale OS) |
| 15ZN90S*(* can be 0 to 9 or A to Z or blank denoting buyer request) | (All, Whale OS) |
| The identification of test sample is 15Z90S. | |

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) |

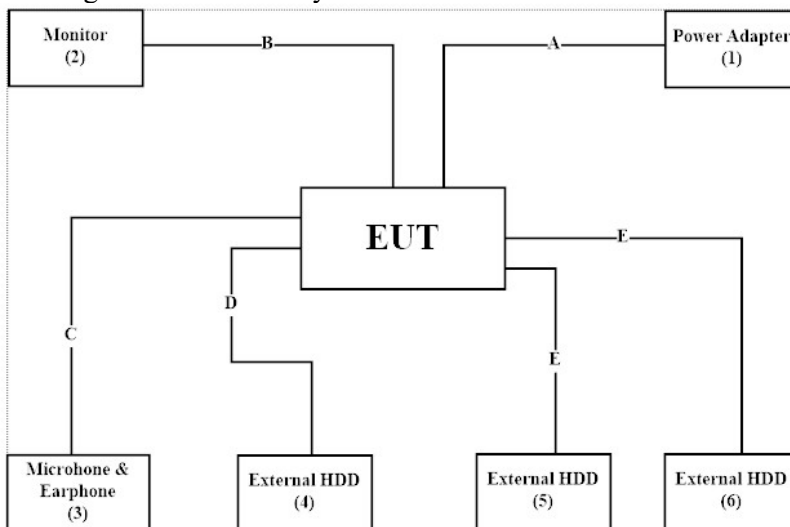
1.2. Tested System Details

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 Power Adapter | Bao Hui | LP65WFC20P-NJ W | N/A | N/A |
| 2 Monitor | DELL | U2415 | CN-01RMGX-742 61-63H-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 Ver. 04824.23” on the Notebook PC. |
| 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 | 24.5 °C |
| | Humidity (%RH) | 10~90 % | 65.7 % |
| Conductive | Temperature (°C) | 10~40 °C | 26.3 °C |
| | Humidity (%RH) | 10~90 % | 59.0 % |

| | |
|--------|---|
| 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 | 9168-0678 | 2021/09/23 | 2023/09/22 |
| 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 |
| V | Coaxial Cable | EMCI | EMC102-KM-KM-600 | 1160314 | | |
| V | 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 |
| V | Coaxial Cable | SGH | HA800 | GD20110222-8 | | |
| V | Coaxial Cable | SGH | SGH18 | 2021003-8 | | |
| V | 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.

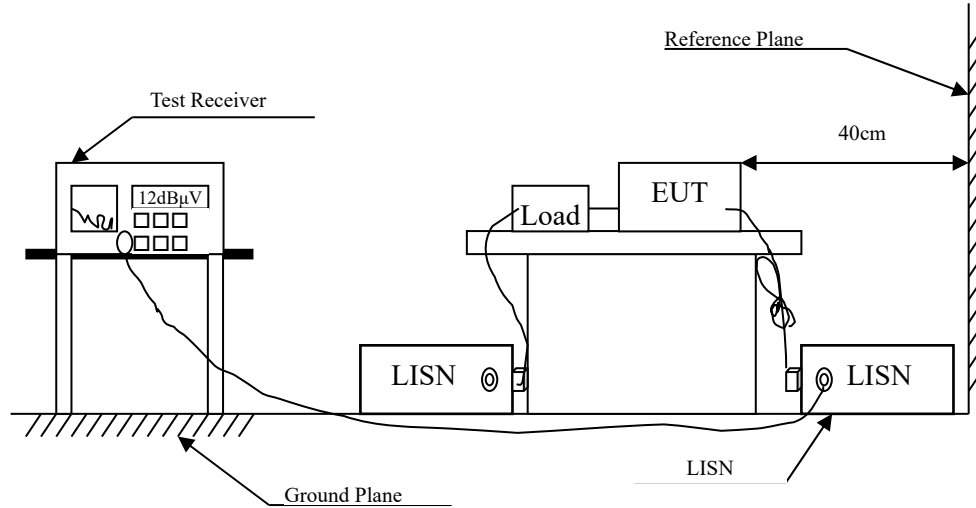
The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

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.

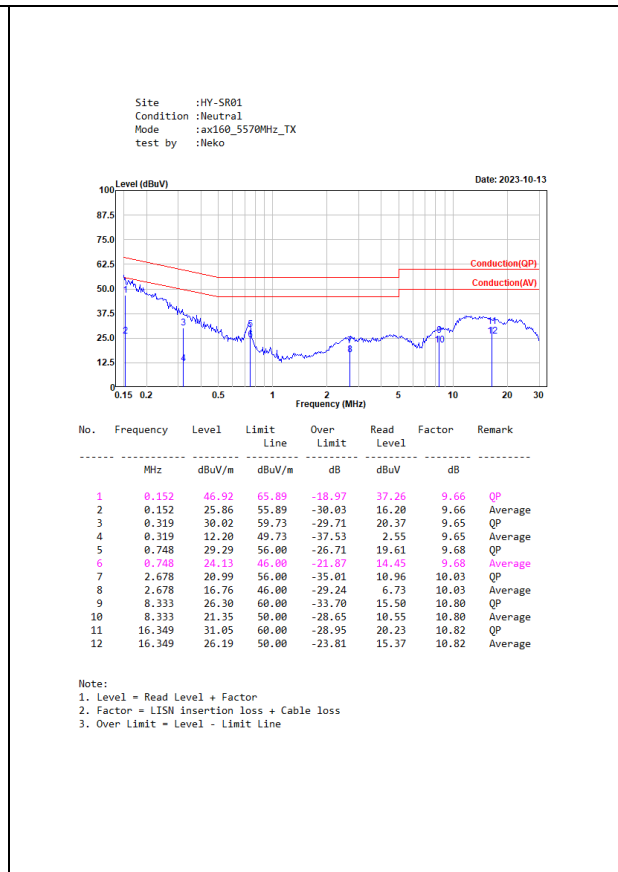
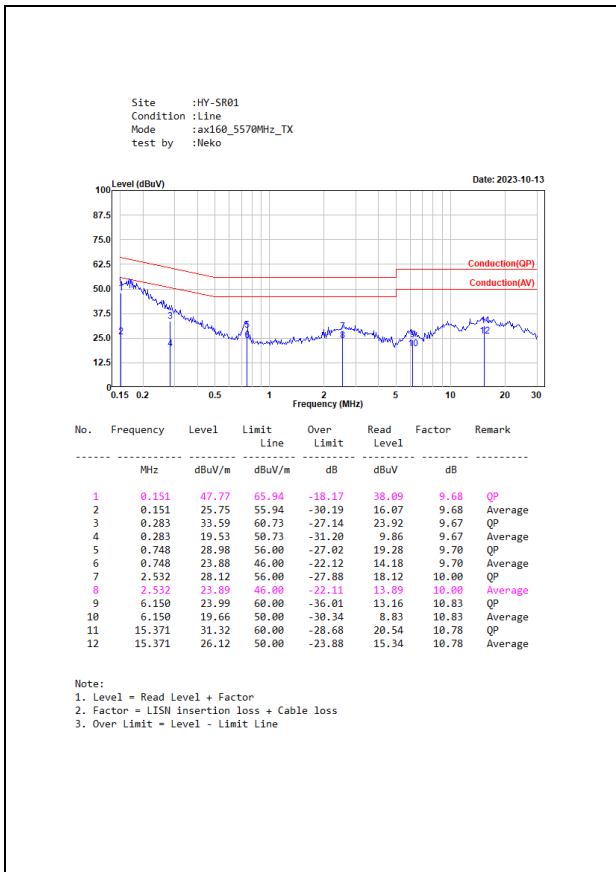
2.3. Test Procedure

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.)

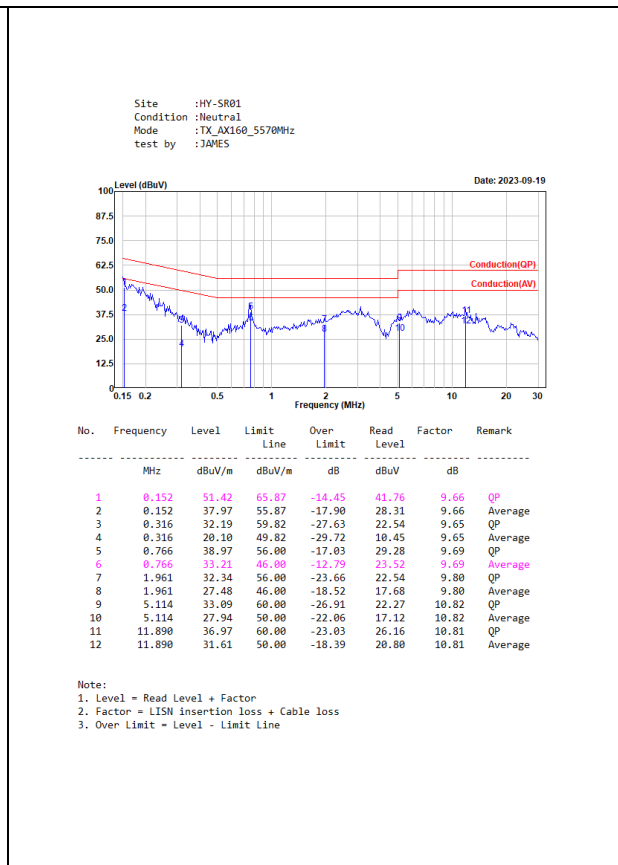
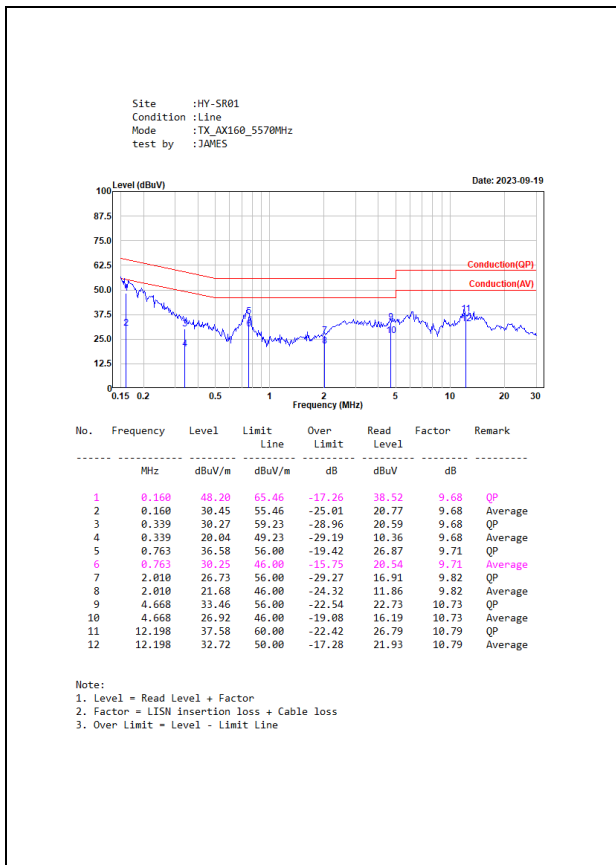
Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4:2014 on conducted measurement.

Conducted emissions were invested 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



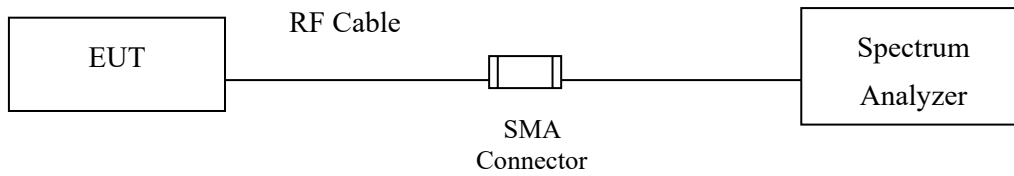
MIMO



3. Maximun conducted output power

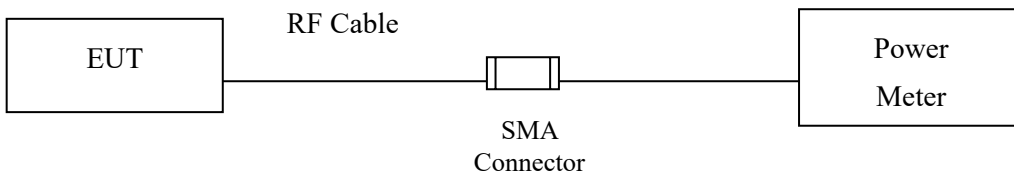
3.1. Test Setup

26dB Occupied Bandwidth

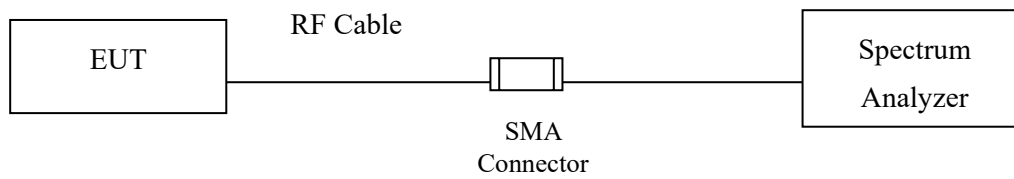


Conduction Power Measurement

Conduction Power Measurement (for 802.11an)



Conduction Power Measurement (for 802.11ac/ax)



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 than 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 160MHz) 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 160MHz) 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 | -- | 18.90 | -- | 18.90 | 24 | -- | Pass |
| 40 | 5200 | -- | 19.83 | -- | 19.83 | 24 | -- | Pass |
| 48 | 5240 | -- | 19.86 | -- | 19.86 | 24 | -- | Pass |
| 52 | 5260 | 22.38 | 19.85 | -- | 19.85 | 24 | 24.50 | Pass |
| 56 | 5280 | 23.34 | 19.82 | -- | 19.82 | 24 | 24.68 | Pass |
| 64 | 5320 | 23.54 | 19.43 | -- | 19.43 | 24 | 24.72 | Pass |
| 100 | 5500 | 22.94 | 19.45 | -- | 19.45 | 24 | 24.61 | Pass |
| 116 | 5580 | 22.50 | 19.81 | -- | 19.81 | 24 | 24.52 | Pass |
| 140 | 5700 | 22.62 | 19.43 | -- | 19.43 | 24 | 24.54 | Pass |
| 149 | 5745 | -- | 19.80 | -- | 19.80 | 30 | -- | Pass |
| 157 | 5785 | -- | 19.96 | -- | 19.96 | 30 | -- | Pass |
| 165 | 5825 | -- | 19.92 | -- | 19.92 | 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 : 2023/10/11

| 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 | -- | 18.83 | -- | 18.83 | 24 | -- | Pass |
| 40 | 5200 | -- | 19.78 | -- | 19.78 | 24 | -- | Pass |
| 48 | 5240 | -- | 19.88 | -- | 18.88 | 24 | -- | Pass |
| 52 | 5260 | 23.10 | 19.91 | -- | 19.91 | 24 | 24.64 | Pass |
| 56 | 5280 | 23.26 | 19.85 | -- | 19.85 | 24 | 24.67 | Pass |
| 64 | 5320 | 23.10 | 19.34 | -- | 19.34 | 24 | 24.64 | Pass |
| 100 | 5500 | 22.78 | 19.37 | -- | 19.37 | 24 | 24.58 | Pass |
| 116 | 5580 | 24.10 | 19.82 | -- | 19.82 | 24 | 24.82 | Pass |
| 140 | 5700 | 23.62 | 19.44 | -- | 19.44 | 24 | 24.73 | Pass |
| 144(U-NII-2C) | 5720 | 17.07 | 19.10 | 0.00 | 19.10 | 24 | 23.32 | Pass |
| 144(U-NII-3) | 5720 | -- | 12.07 | 0.00 | 12.07 | 30 | -- | Pass |
| 149 | 5745 | -- | 19.85 | -- | 19.85 | 30 | -- | Pass |
| 157 | 5785 | -- | 19.87 | -- | 19.87 | 30 | -- | Pass |
| 165 | 5825 | -- | 19.88 | -- | 19.88 | 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 : 2023/10/11

| 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 | -- | 17.09 | -- | 17.09 | 24 | -- | Pass |
| 46 | 5230 | -- | 19.37 | -- | 19.37 | 24 | -- | Pass |
| 54 | 5270 | 43.64 | 19.93 | -- | 19.93 | 24 | 27.40 | Pass |
| 62 | 5310 | 42.04 | 15.92 | -- | 15.92 | 24 | 27.24 | Pass |
| 102 | 5510 | 41.88 | 18.02 | -- | 18.02 | 24 | 27.22 | Pass |
| 110 | 5550 | 43.56 | 19.95 | -- | 19.95 | 24 | 27.39 | Pass |
| 134 | 5670 | 44.60 | 19.81 | -- | 19.81 | 24 | 27.49 | Pass |
| 142(U-NII-2C) | 5710 | 38.66 | 19.66 | 0.00 | 19.66 | 24 | 26.87 | Pass |
| 142(U-NII-3) | 5710 | 6.82 | 7.92 | 0.00 | 7.92 | 30 | 19.34 | Pass |
| 151 | 5755 | -- | 19.85 | -- | 19.85 | 30 | -- | Pass |
| 159 | 5795 | -- | 19.88 | -- | 19.88 | 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 : 2023/10/11

| 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 | -- | 16.22 | -- | 16.22 | 24 | -- | Pass |
| 58 | 5290 | 82.16 | 15.47 | -- | 15.47 | 24 | 30.15 | Pass |
| 106 | 5530 | 82.48 | 17.23 | -- | 17.23 | 24 | 30.16 | Pass |
| 122 | 5610 | 86.47 | 19.70 | -- | 19.70 | 24 | 30.37 | Pass |
| 138(U-NII-2C) | 5690 | 76.24 | 19.66 | 0.00 | 19.66 | 24 | 29.82 | Pass |
| 138(U-NII-3) | 5690 | -- | 4.08 | 0.00 | 4.08 | 30 | -- | Pass |
| 155 | 5775 | -- | 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-160 MHz)-SISO A
Test Date : 2023/10/11

| 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 | -- | 8.04 | 0.00 | 8.04 | 24 | -- | Pass |
| 50(U-NII-2A) | 5250 | 80.56 | 11.22 | 0.00 | 11.22 | 24 | 30.06 | Pass |
| 114 | 5570 | 163.04 | 14.85 | -- | 14.85 | 24 | 33.12 | 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 : 2023/10/16

| 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 | -- | 15.03 | -- | 15.03 | 24 | -- | Pass |
| | | 52/37 | -- | 17.82 | -- | 17.82 | 24 | -- | Pass |
| | | 106/53 | -- | 18.85 | -- | 18.85 | 24 | -- | Pass |
| 64 | 5320 | 26/8 | 23.10 | 15.09 | -- | 15.09 | 24 | 24.64 | Pass |
| | | 52/40 | 23.10 | 17.20 | -- | 17.20 | 24 | 24.64 | Pass |
| | | 106/54 | 23.10 | 19.35 | -- | 19.35 | 24 | 24.64 | Pass |
| 100 | 5500 | 26/0 | 22.78 | 15.06 | -- | 15.06 | 24 | 24.58 | Pass |
| | | 52/37 | 22.78 | 17.66 | -- | 17.66 | 24 | 24.58 | Pass |
| | | 106/53 | 22.78 | 19.32 | -- | 19.32 | 24 | 24.58 | Pass |
| 140 | 5700 | 26/8 | 23.62 | 14.99 | -- | 14.99 | 24 | 24.73 | Pass |
| | | 52/40 | 23.62 | 17.45 | -- | 17.45 | 24 | 24.73 | Pass |
| | | 106/54 | 23.62 | 19.25 | -- | 19.25 | 24 | 24.73 | Pass |
| 149 | 5745 | 26/0 | -- | 19.88 | -- | 19.88 | 30 | -- | Pass |
| | | 52/37 | -- | 19.89 | -- | 19.89 | 30 | -- | Pass |
| | | 106/53 | -- | 19.93 | -- | 19.93 | 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 : 2023/10/16

| 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 | -- | 17.19 | -- | 17.19 | 24 | -- | Pass |
| 62 | 5310 | 242/62 | 42.04 | 15.92 | -- | 15.92 | 24 | 27.24 | Pass |
| 102 | 5510 | 242/61 | 41.88 | 18.19 | -- | 18.19 | 24 | 27.22 | Pass |
| 134 | 5670 | 242/62 | 44.60 | 19.86 | -- | 19.86 | 24 | 27.49 | Pass |
| 151 | 5755 | 242/61 | -- | 19.95 | -- | 19.95 | 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 : 2023/10/16

| 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 | -- | 16.25 | -- | 16.25 | 24 | -- | Pass |
| 58 | 5290 | 484/66 | 82.16 | 15.58 | -- | 15.58 | 24 | 30.15 | Pass |
| 106 | 5530 | 484/65 | 82.48 | 17.19 | -- | 17.19 | 24 | 30.16 | Pass |
| 155 | 5775 | 484/66 | -- | 19.62 | -- | 19.62 | 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 : 2023/10/16

| 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 | -- | 12.88 | -- | 12.88 | 24 | -- | Pass |
| 50(U-NII-2A) | 5250 | 996/S67 | 80.56 | 12.92 | -- | 12.92 | 24 | 30.06 | Pass |
| 114 | 5570 | 996/67 | 163.04 | 14.78 | -- | 14.78 | 24 | 33.12 | Pass |
| | | 996/S67 | 163.04 | 14.82 | -- | 14.82 | 24 | 33.12 | 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 : 2023/10/16

| 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 | -- | 18.71 | -- | 18.71 | 24 | -- | Pass |
| 40 | 5200 | -- | 19.48 | -- | 19.48 | 24 | -- | Pass |
| 48 | 5240 | -- | 19.67 | -- | 19.67 | 24 | -- | Pass |
| 52 | 5260 | 23.26 | 19.62 | -- | 19.62 | 24 | 24.67 | Pass |
| 56 | 5280 | 22.94 | 19.66 | -- | 19.66 | 24 | 24.61 | Pass |
| 64 | 5320 | 22.66 | 19.05 | -- | 19.05 | 24 | 24.55 | Pass |
| 100 | 5500 | 22.38 | 19.11 | -- | 19.11 | 24 | 24.50 | Pass |
| 116 | 5580 | 22.90 | 19.59 | -- | 19.59 | 24 | 24.60 | Pass |
| 140 | 5700 | 23.14 | 19.17 | -- | 19.17 | 24 | 24.64 | Pass |
| 149 | 5745 | -- | 19.68 | -- | 19.68 | 30 | -- | Pass |
| 157 | 5785 | -- | 19.62 | -- | 19.62 | 30 | -- | Pass |
| 165 | 5825 | -- | 19.63 | -- | 19.63 | 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 : 2023/10/11

| 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 | -- | 19.37 | -- | 19.37 | 24 | -- | Pass |
| 48 | 5240 | -- | 19.77 | -- | 19.77 | 24 | -- | Pass |
| 52 | 5260 | 23.02 | 19.80 | -- | 19.80 | 24 | 24.62 | Pass |
| 56 | 5280 | 23.38 | 19.76 | -- | 19.76 | 24 | 24.69 | Pass |
| 64 | 5320 | 23.34 | 19.09 | -- | 19.09 | 24 | 24.68 | Pass |
| 100 | 5500 | 23.70 | 19.05 | -- | 19.05 | 24 | 24.75 | Pass |
| 118 | 5580 | 25.33 | 19.73 | -- | 19.73 | 24 | 25.04 | Pass |
| 140 | 5700 | 24.90 | 19.33 | -- | 19.33 | 24 | 24.96 | Pass |
| 144(U-NII-2C) | 5720 | 18.11 | 18.93 | 0.00 | 18.93 | 24 | 23.58 | Pass |
| 144(U-NII-3) | 5720 | -- | 11.91 | 0.00 | 11.91 | 30 | -- | Pass |
| 149 | 5745 | -- | 19.74 | -- | 19.74 | 30 | -- | Pass |
| 157 | 5785 | -- | 19.70 | -- | 19.70 | 30 | -- | Pass |
| 165 | 5825 | -- | 19.72 | -- | 19.72 | 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 : 2023/10/11

| 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 | -- | 16.48 | -- | 16.48 | 24 | -- | Pass |
| 46 | 5230 | -- | 18.73 | -- | 18.73 | 24 | -- | Pass |
| 54 | 5270 | 44.44 | 19.69 | -- | 19.69 | 24 | 27.48 | Pass |
| 62 | 5310 | 41.48 | 15.86 | -- | 15.86 | 24 | 27.18 | Pass |
| 102 | 5510 | 43.64 | 17.77 | -- | 17.77 | 24 | 27.40 | Pass |
| 110 | 5550 | 42.52 | 19.78 | -- | 19.78 | 24 | 27.29 | Pass |
| 134 | 5670 | 42.12 | 19.63 | -- | 19.63 | 24 | 27.24 | Pass |
| 142(U-NII-2C) | 5710 | 36.98 | 19.51 | 0.00 | 19.51 | 24 | 26.68 | Pass |
| 142(U-NII-3) | 5710 | -- | 7.72 | 0.00 | 7.72 | 30 | -- | Pass |
| 151 | 5755 | -- | 19.71 | -- | 19.71 | 30 | -- | Pass |
| 159 | 5795 | -- | 19.79 | -- | 19.79 | 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 : 2023/10/11

| 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 | -- | 16.63 | -- | 16.63 | 24 | -- | Pass |
| 58 | 5290 | 81.84 | 16.45 | -- | 16.45 | 24 | 30.13 | Pass |
| 106 | 5530 | 82.00 | 17.44 | -- | 17.44 | 24 | 30.14 | Pass |
| 122 | 5610 | 82.00 | 19.92 | -- | 19.92 | 24 | 30.14 | Pass |
| 138(U-NII-2C) | 5690 | 76.88 | 19.77 | 0.00 | 19.77 | 24 | 29.86 | Pass |
| 138(U-NII-3) | 5690 | -- | 4.22 | 0.00 | 4.22 | 30 | -- | Pass |
| 155 | 5775 | -- | 19.87 | -- | 19.87 | 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 : 2023/10/11

| 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 | -- | 9.61 | 0.00 | 9.61 | 24 | -- | Pass |
| 50(U-NII-2A) | 5250 | 80.88 | 9.97 | 0.00 | 9.97 | 24 | 30.08 | Pass |
| 114 | 5570 | 163.36 | 14.65 | -- | 14.65 | 24 | 33.13 | 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 : 2023/10/16

| 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 | -- | 14.90 | -- | 14.90 | 24 | -- | Pass |
| | | 52/37 | -- | 17.66 | -- | 17.66 | 24 | -- | Pass |
| | | 106/53 | -- | 18.68 | -- | 18.68 | 24 | -- | Pass |
| 64 | 5320 | 26/8 | 23.34 | 14.89 | -- | 14.89 | 24 | 24.68 | Pass |
| | | 52/40 | 23.34 | 17.09 | -- | 17.09 | 24 | 24.68 | Pass |
| | | 106/54 | 23.34 | 19.15 | -- | 19.15 | 24 | 24.68 | Pass |
| 100 | 5500 | 26/0 | 23.70 | 14.92 | -- | 14.92 | 24 | 24.75 | Pass |
| | | 52/37 | 23.70 | 17.50 | -- | 17.50 | 24 | 24.75 | Pass |
| | | 106/53 | 23.70 | 19.15 | -- | 19.15 | 24 | 24.75 | Pass |
| 140 | 5700 | 26/8 | 24.90 | 14.82 | -- | 14.82 | 24 | 24.96 | Pass |
| | | 52/40 | 24.90 | 17.32 | -- | 17.32 | 24 | 24.96 | Pass |
| | | 106/54 | 24.90 | 19.09 | -- | 19.09 | 24 | 24.96 | Pass |
| 149 | 5745 | 26/0 | -- | 19.75 | -- | 19.75 | 30 | -- | Pass |
| | | 52/37 | -- | 19.72 | -- | 19.72 | 30 | -- | Pass |
| | | 106/53 | -- | 19.81 | -- | 19.81 | 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 : 2023/10/16

| 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 | -- | 16.65 | -- | 16.65 | 24 | -- | Pass |
| 62 | 5310 | 242/62 | 41.48 | 15.80 | -- | 15.80 | 24 | 27.18 | Pass |
| 102 | 5510 | 242/61 | 43.64 | 17.80 | -- | 17.80 | 24 | 27.40 | Pass |
| 134 | 5670 | 242/62 | 42.12 | 19.68 | -- | 19.68 | 24 | 27.24 | Pass |
| 151 | 5755 | 242/61 | -- | 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-80 MHz) (Partial RU)-SISO B
 Test Date : 2023/10/16

| 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 | -- | 16.69 | -- | 16.69 | 24 | -- | Pass |
| 58 | 5290 | 484/66 | 81.84 | 16.36 | -- | 16.36 | 24 | 30.13 | Pass |
| 106 | 5530 | 484/65 | 82.00 | 17.33 | -- | 17.33 | 24 | 30.14 | Pass |
| 155 | 5775 | 484/65 | -- | 19.86 | -- | 19.86 | 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 : 2023/10/16

| 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 | -- | 12.71 | -- | 12.71 | 24 | -- | Pass |
| 50(U-NII-2A) | 5250 | 996/S67 | 80.88 | 12.83 | -- | 12.83 | 24 | 30.08 | Pass |
| 114 | 5570 | 996/67 | 163.36 | 14.69 | -- | 14.69 | 24 | 33.13 | Pass |
| | | 996/S67 | 163.36 | 14.65 | -- | 14.65 | 24 | 33.13 | 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 | -- | 13.98 | 13.77 | -- | 16.89 | 24 | -- | Pass |
| 40 | 5200 | -- | 15.11 | 14.73 | -- | 17.93 | 24 | -- | Pass |
| 48 | 5240 | -- | 15.02 | 14.91 | -- | 17.98 | 24 | -- | Pass |
| 52 | 5260 | 23.10 | 14.96 | 14.87 | -- | 17.93 | 24 | 24.64 | Pass |
| 56 | 5280 | 23.18 | 14.94 | 14.91 | -- | 17.94 | 24 | 24.65 | Pass |
| 64 | 5320 | 23.34 | 14.45 | 14.41 | -- | 17.44 | 24 | 24.68 | Pass |
| 100 | 5500 | 23.74 | 14.86 | 14.74 | -- | 17.81 | 24 | 24.75 | Pass |
| 116 | 5580 | 23.10 | 14.92 | 14.85 | -- | 17.90 | 24 | 24.64 | Pass |
| 140 | 5700 | 22.66 | 14.32 | 14.14 | -- | 17.24 | 24 | 24.55 | Pass |
| 144(U-NII-2C) | 5720 | 16.91 | 16.15 | 15.96 | 0.00 | 19.07 | 24 | 23.28 | Pass |
| 144(U-NII-3) | 5720 | -- | 9.43 | 9.05 | 0.00 | 12.25 | 30 | -- | Pass |
| 149 | 5745 | -- | 16.95 | 16.88 | -- | 19.93 | 30 | -- | Pass |
| 157 | 5785 | -- | 16.94 | 16.81 | -- | 19.89 | 30 | -- | Pass |
| 165 | 5825 | -- | 16.89 | 16.84 | -- | 19.88 | 30 | -- | Pass |

Note:

1. Output Power Value (dBm) = 10*LOG (Chain A(mW) + Chain B(mW)) + Duty factor.
2. 26dB Bandwidth is the bandwidth of chain A or 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 | -- | 11.98 | 11.95 | -- | 14.98 | 24 | -- | Pass |
| 46 | 5230 | -- | 16.33 | 16.27 | -- | 19.31 | 24 | -- | Pass |
| 54 | 5270 | 42.20 | 16.95 | 16.70 | -- | 19.84 | 24 | 27.25 | Pass |
| 62 | 5310 | 40.68 | 12.18 | 11.99 | -- | 15.10 | 24 | 27.09 | Pass |
| 102 | 5510 | 42.52 | 13.29 | 13.10 | -- | 16.21 | 24 | 27.29 | Pass |
| 110 | 5550 | 42.04 | 16.84 | 16.74 | -- | 19.80 | 24 | 27.24 | Pass |
| 134 | 5670 | 41.32 | 15.76 | 15.36 | -- | 18.57 | 24 | 27.16 | Pass |
| 142(U-NII-2C) | 5710 | 36.10 | 14.28 | 14.03 | 0.00 | 17.17 | 24 | 26.57 | Pass |
| 142(U-NII-3) | 5710 | 5.78 | 2.54 | 2.36 | 0.00 | 5.46 | 30 | 18.62 | Pass |
| 151 | 5755 | -- | 16.97 | 16.84 | -- | 19.92 | 30 | -- | Pass |
| 159 | 5795 | -- | 16.90 | 16.75 | -- | 19.84 | 30 | -- | Pass |

Note:

1. Output Power Value (dBm) = 10*LOG (Chain A(mW) + Chain B(mW)) + Duty factor.
2. 26dB Bandwidth is the bandwidth of chain A or 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 : 2023/09/05

| 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) | |
| 42 | 5210 | -- | 11.03 | 10.90 | -- | 13.98 | 24 | -- | Pass |
| 58 | 5290 | 81.36 | 11.46 | 11.25 | -- | 14.37 | 24 | 30.10 | Pass |
| 106 | 5530 | 82.00 | 12.03 | 11.91 | -- | 14.98 | 24 | 30.14 | Pass |
| 122 | 5610 | 81.52 | 17.03 | 16.91 | -- | 19.98 | 24 | 30.11 | Pass |
| 138(U-NII-2C) | 5690 | 75.44 | 16.86 | 16.65 | 0.00 | 19.77 | 24 | 29.78 | Pass |
| 138(U-NII-3) | 5690 | -- | 1.80 | 1.19 | 0.00 | 4.52 | 30 | -- | Pass |
| 155 | 5775 | -- | 16.09 | 15.78 | -- | 18.95 | 30 | -- | Pass |

Note:

1. Output Power Value (dBm) = 10*LOG (Chain A(mW) + Chain B(mW)) + Duty factor.
2. 26dB Bandwidth is the bandwidth of chain A or 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 | -- | 4.20 | 4.86 | 0.10 | 7.66 | 24 | -- | Pass |
| 50 (U-NII-2A) | 5250 | 80.24 | 5.63 | 4.85 | 0.10 | 8.37 | 24 | 30.04 | Pass |
| 114 | 5570 | 161.76 | 10.71 | 10.64 | -- | 13.69 | 24 | 33.09 | Pass |

Note:

1. Output Power Value (dBm) = 10*LOG (Chain A(mW) + Chain B(mW)) + Duty factor.
2. 26dB Bandwidth is the bandwidth of chain A or 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 : 2023/09/05

| 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 | -- | 11.30 | 11.24 | -- | 14.28 | 24 | -- | Pass |
| | | 52/37 | -- | 13.75 | 13.71 | -- | 16.74 | 24 | -- | Pass |
| | | 106/53 | -- | 13.96 | 13.75 | -- | 16.87 | 24 | -- | Pass |
| 64 | 5320 | 26/8 | 23.34 | 10.88 | 10.76 | -- | 13.83 | 24 | 24.68 | Pass |
| | | 52/40 | 23.34 | 13.77 | 13.54 | -- | 16.67 | 24 | 24.68 | Pass |
| | | 106/54 | 23.34 | 14.41 | 14.28 | -- | 17.36 | 24 | 24.68 | Pass |
| 100 | 5500 | 26/0 | 23.74 | 11.46 | 11.36 | -- | 14.42 | 24 | 24.75 | Pass |
| | | 52/37 | 23.74 | 13.57 | 13.39 | -- | 16.49 | 24 | 24.75 | Pass |
| | | 106/53 | 23.74 | 14.81 | 14.72 | -- | 17.78 | 24 | 24.75 | Pass |
| 140 | 5700 | 26/8 | 22.66 | 10.99 | 10.76 | -- | 13.89 | 24 | 24.55 | Pass |
| | | 52/40 | 22.66 | 13.26 | 13.25 | -- | 16.27 | 24 | 24.55 | Pass |
| | | 106/54 | 22.66 | 14.31 | 14.12 | -- | 17.23 | 24 | 24.55 | Pass |
| 149 | 5745 | 26/0 | -- | 16.93 | 16.82 | -- | 19.89 | 30 | -- | Pass |
| | | 52/37 | -- | 16.07 | 15.82 | -- | 18.96 | 30 | -- | Pass |
| | | 106/53 | -- | 16.91 | 16.78 | -- | 19.86 | 30 | -- | Pass |

Note:

1. Output Power Value (dBm) = 10*LOG (Chain A(mW) + Chain B(mW)) + Duty factor.
2. 26dB Bandwidth is the bandwidth of chain A or 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 : 2023/09/05

| 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 | -- | 11.96 | 11.93 | -- | 14.96 | 24 | -- | Pass |
| 62 | 5310 | 242/62 | 40.68 | 12.11 | 11.97 | -- | 15.05 | 24 | 27.09 | Pass |
| 102 | 5510 | 242/61 | 42.52 | 13.27 | 13.08 | -- | 16.19 | 24 | 27.29 | Pass |
| 134 | 5670 | 242/62 | 41.32 | 15.67 | 15.31 | -- | 18.50 | 24 | 27.16 | Pass |
| 151 | 5755 | 242/61 | -- | 16.95 | 16.81 | -- | 19.89 | 30 | -- | Pass |

Note:

- Output Power Value (dBm) = 10*LOG (Chain A(mW) + Chain B(mW)) + Duty factor.
- 26dB Bandwidth is the bandwidth of chain A or 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 : 2023/09/05

| 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 | -- | 10.80 | 10.69 | -- | 13.76 | 24 | -- | Pass |
| 58 | 5290 | 484/66 | 81.36 | 11.45 | 11.21 | -- | 14.34 | 24 | 30.10 | Pass |
| 106 | 5530 | 484/65 | 82.00 | 11.76 | 11.64 | -- | 14.71 | 24 | 30.14 | Pass |
| 155 | 5775 | 484/66 | -- | 15.82 | 15.59 | -- | 18.72 | 30 | -- | Pass |

Note:

1. Output Power Value (dBm) = 10*LOG (Chain A(mW) + Chain B(mW)) + Duty factor.
2. 26dB Bandwidth is the bandwidth of chain A or 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 : 2023/09/05

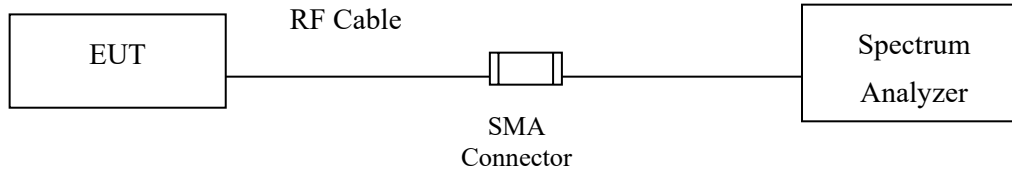
| Channel No. | Frequency (MHz) | RU Config | 26dB Bandwidth (MHz) | Chain A Power (dBm) | Chain B Power (dBm) | Duty factor (dB) | Output Power (dBm) | Output Power Limit | | Result |
|---------------|--------------------|--------------|----------------------------|---------------------------|---------------------------|------------------------|--------------------------|--------------------|---------------|--------|
| | | | | | | | | (dBm) | dBm+10log(BW) | |
| 50 (U-NII-1) | 5250 | 996/67 | -- | 7.85 | 7.73 | -- | 10.80 | 24 | -- | Pass |
| 50 (U-NII-2A) | 5250 | 996/S67 | 80.24 | 7.79 | 7.78 | -- | 10.80 | 24 | 30.04 | Pass |
| 114 | 5570 | 996/67 | 161.76 | 10.67 | 10.61 | -- | 13.65 | 24 | 33.09 | Pass |
| | | 996/S67 | 161.76 | 10.69 | 10.62 | -- | 13.67 | 24 | 33.09 | Pass |

Note:

- Output Power Value (dBm) = 10*LOG (Chain A(mW) + Chain B(mW)) + Duty factor.
- 26dB Bandwidth is the bandwidth of chain A or 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

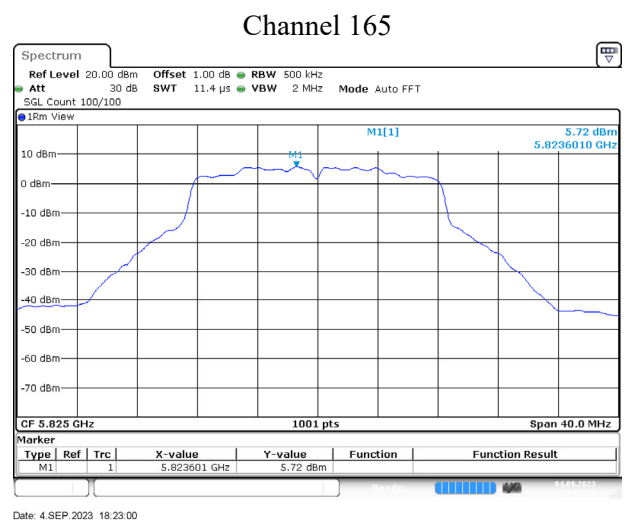
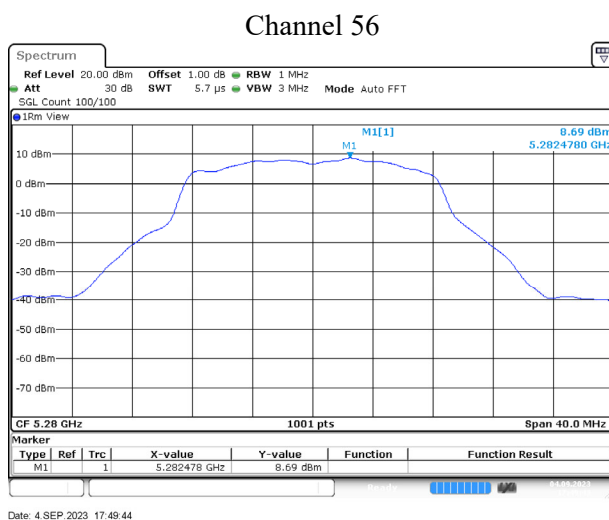
Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11a)-SISO A
 Test Date : 2023/09/04

| Channel No. | Frequency (MHz) | Data Rate (Mbps) | PPSD/MHz (dBm) | Duty factor (dB) | Total PPSD/MHz (dBm) | Required Limit (dBm) |
|-------------|-----------------|------------------|----------------|------------------|----------------------|----------------------|
| 36 | 5180 | 6 | 7.01 | 0.12 | 7.13 | <11 |
| 40 | 5200 | 6 | 8.06 | 0.12 | 8.18 | <11 |
| 48 | 5240 | 6 | 8.15 | 0.12 | 8.27 | <11 |
| 52 | 5260 | 6 | 8.26 | 0.12 | 8.38 | <11 |
| 56 | 5280 | 6 | 8.69 | 0.12 | 8.81 | <11 |
| 64 | 5320 | 6 | 7.73 | 0.12 | 7.85 | <11 |
| 100 | 5500 | 6 | 8.00 | 0.12 | 8.12 | <11 |
| 116 | 5580 | 6 | 8.29 | 0.12 | 8.41 | <11 |
| 140 | 5700 | 6 | 7.95 | 0.12 | 8.07 | <11 |

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

| Channel No. | Frequency (MHz) | Data Rate (Mbps) | PPSD (dBm) | Duty factor (dB) | Total PPSD (dBm) | Required Limit (dBm) |
|-------------|-----------------|------------------|------------|------------------|------------------|----------------------|
| 149 | 5745 | 6 | 5.15 | 0.12 | 5.27 | <30 |
| 157 | 5785 | 6 | 5.65 | 0.12 | 5.77 | <30 |
| 165 | 5825 | 6 | 5.72 | 0.12 | 5.84 | <30 |

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



Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-20 MHz)-SISO A
 Test Date : 2023/10/11

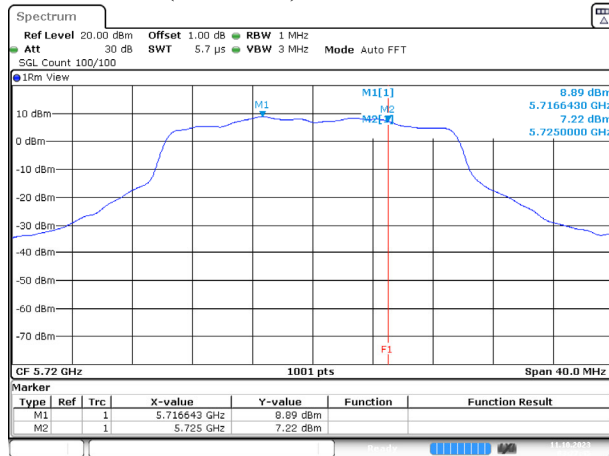
| Channel No. | Frequency (MHz) | PPSD/MHz (dBm) | Duty factor (dB) | Total PPSD/MHz (dBm) | Required Limit (dBm) | Result |
|---------------|-----------------|----------------|------------------|----------------------|----------------------|--------|
| 36 | 5180 | 6.65 | 0.00 | 6.65 | <11 | Pass |
| 40 | 5200 | 7.68 | 0.00 | 7.68 | <11 | Pass |
| 48 | 5240 | 7.99 | 0.00 | 7.99 | <11 | Pass |
| 52 | 5260 | 7.51 | 0.00 | 7.51 | <11 | Pass |
| 56 | 5280 | 8.52 | 0.00 | 8.52 | <11 | Pass |
| 64 | 5320 | 7.29 | 0.00 | 7.29 | <11 | Pass |
| 100 | 5500 | 8.02 | 0.00 | 8.02 | <11 | Pass |
| 116 | 5580 | 8.87 | 0.00 | 8.87 | <11 | Pass |
| 140 | 5700 | 8.53 | 0.00 | 8.53 | <11 | Pass |
| 144(U-NII-2C) | 5720 | 8.89 | 0.00 | 8.89 | <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 | 3.59 | 0.00 | 3.59 | <30 | Pass |
| 149 | 5745 | 5.75 | 0.00 | 5.75 | <30 | Pass |
| 157 | 5785 | 6.54 | 0.00 | 6.54 | <30 | Pass |
| 165 | 5825 | 7.13 | 0.00 | 7.13 | <30 | Pass |

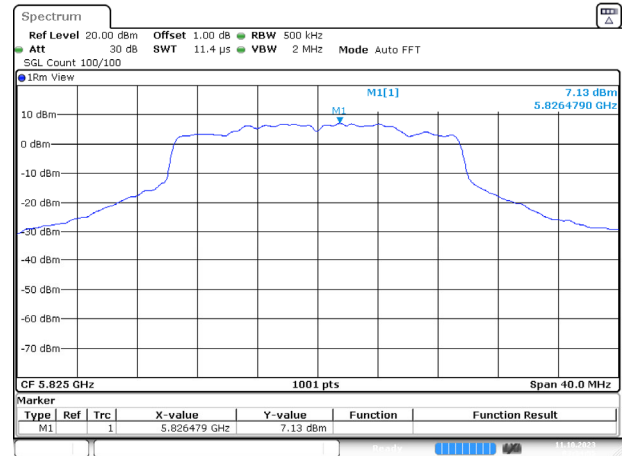
Note: Total PPSD = PPSD + Duty factor.

Channel 144 (U-NII-2C)



Date: 11.OCT.2023 03:27:45

Channel 165



Date: 11.OCT.2023 03:34:55

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-40 MHz)-SISO A
 Test Date : 2023/10/11

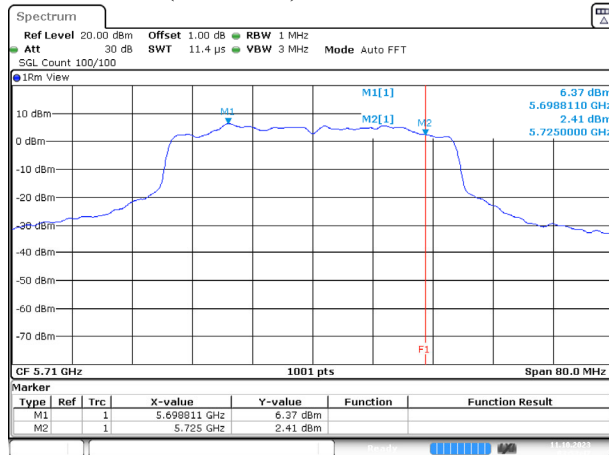
| Channel No. | Frequency (MHz) | PPSD/MHz (dBm) | Duty factor (dB) | Total PPSD/MHz (dBm) | Required Limit (dBm) | Result |
|---------------|-----------------|----------------|------------------|----------------------|----------------------|--------|
| 38 | 5190 | 1.99 | 0.00 | 1.99 | <11 | Pass |
| 46 | 5230 | 4.51 | 0.00 | 4.51 | <11 | Pass |
| 54 | 5270 | 4.72 | 0.00 | 4.72 | <11 | Pass |
| 62 | 5310 | 1.22 | 0.00 | 1.22 | <11 | Pass |
| 102 | 5510 | 3.53 | 0.00 | 3.53 | <11 | Pass |
| 110 | 5550 | 5.29 | 0.00 | 5.29 | <11 | Pass |
| 134 | 5670 | 5.67 | 0.00 | 5.67 | <11 | Pass |
| 142(U-NII-2C) | 5710 | 6.37 | 0.00 | 6.37 | <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 | -0.78 | 0.00 | -0.78 | <30 | Pass |
| 151 | 5755 | 3.16 | 0.00 | 3.16 | <30 | Pass |
| 159 | 5795 | 3.38 | 0.00 | 3.38 | <30 | Pass |

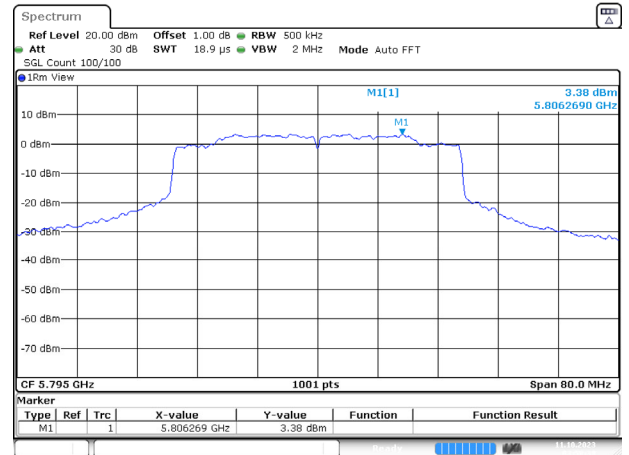
Note: Total PPSD = PPSD + Duty factor.

Channel 142 (U-NII-2C)



Date: 11.OCT.2023 03:53:47

Channel 159

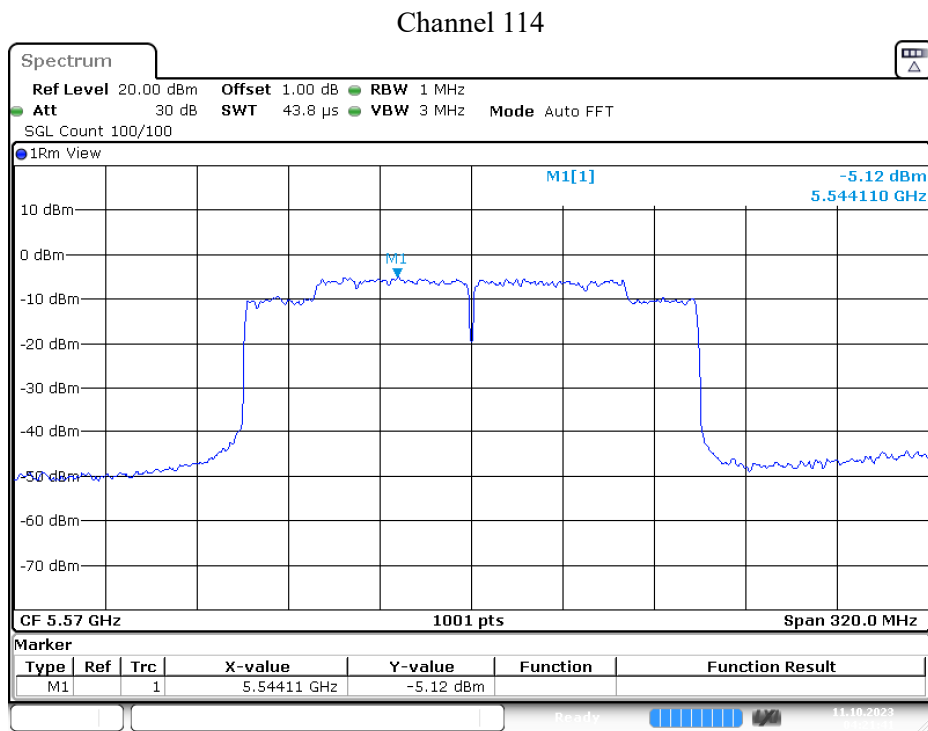


Date: 11.OCT.2023 03:58:39

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-160 MHz)-SISO A
 Test Date : 2023/10/11

| Channel No. | Frequency (MHz) | PPSD/MHz (dBm) | Duty factor (dB) | Total PPSD/MHz (dBm) | Required Limit (dBm) | Result |
|--------------|-----------------|----------------|------------------|----------------------|----------------------|--------|
| 50(U-NII-1) | 5250 | -8.44 | 0.00 | -8.44 | <11 | Pass |
| 50(U-NII-2A) | 5250 | -6.56 | 0.00 | -6.56 | <11 | Pass |
| 114 | 5570 | -5.12 | 0.00 | -5.12 | <11 | Pass |

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



Date: 11.OCT.2023 04:21:42

Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-80 MHz)-SISO B
 Test Date : 2023/10/11

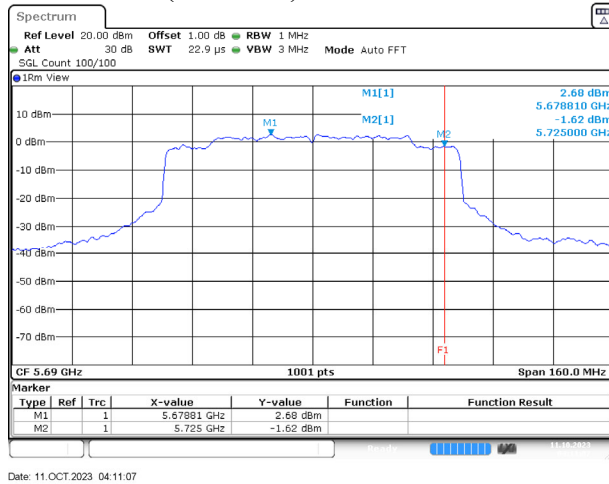
| Channel No. | Frequency (MHz) | PPSD/MHz (dBm) | Duty factor (dB) | Total PPSD/MHz (dBm) | Required Limit (dBm) | Result |
|---------------|-----------------|----------------|------------------|----------------------|----------------------|--------|
| 42 | 5210 | -0.67 | 0.00 | -0.67 | <11 | Pass |
| 58 | 5290 | -0.89 | 0.00 | -0.89 | <11 | Pass |
| 106 | 5530 | 0.15 | 0.00 | 0.15 | <11 | Pass |
| 122 | 5610 | 2.38 | 0.00 | 2.38 | <11 | Pass |
| 138(U-NII-2C) | 5690 | 2.68 | 0.00 | 2.68 | <11 | Pass |

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

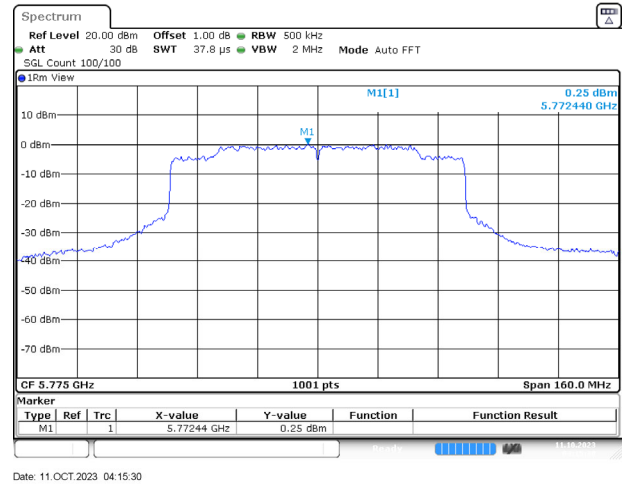
| Channel No. | Frequency (MHz) | PPSD (dBm) | Duty factor (dB) | Total PPSD (dBm) | Required Limit (dBm) | Result |
|--------------|-----------------|------------|------------------|------------------|----------------------|--------|
| 138(U-NII-3) | 5690 | -4.48 | 0.00 | -4.48 | <30 | Pass |
| 155 | 5775 | 0.25 | 0.00 | 0.25 | <30 | Pass |

Note: Total PPSD = PPSD + Duty factor.

Channel 138 (U-NII-2C)



Channel 155



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

| Channel No. | Frequency (MHz) | Data Rate (Mbps) | Chain | PPSD/MHz (dBm) | 10*log(2) (dB) | Duty factor (dB) | Total PPSD/MHz (dBm) | Required Limit (dBm) | Result |
|----------------|-----------------|------------------|-------|----------------|----------------|------------------|----------------------|----------------------|--------|
| 36 | 5180 | MCS0 | A | 2.69 | 3.01 | -- | 5.70 | <11 | Pass |
| | | | B | 2.10 | 3.01 | -- | 5.11 | | Pass |
| 40 | 5200 | MCS0 | A | 3.13 | 3.01 | -- | 6.14 | <11 | Pass |
| | | | B | 3.69 | 3.01 | -- | 6.70 | | Pass |
| 48 | 5240 | MCS0 | A | 2.26 | 3.01 | -- | 5.27 | <11 | Pass |
| | | | B | 2.26 | 3.01 | -- | 5.27 | | Pass |
| 52 | 5260 | MCS0 | A | 2.42 | 3.01 | -- | 5.43 | <11 | Pass |
| | | | B | 2.29 | 3.01 | -- | 5.30 | | Pass |
| 56 | 5280 | MCS0 | A | 2.84 | 3.01 | -- | 5.85 | <11 | Pass |
| | | | B | 2.96 | 3.01 | -- | 5.97 | | Pass |
| 64 | 5320 | MCS0 | A | 3.03 | 3.01 | -- | 6.04 | <11 | Pass |
| | | | B | 2.57 | 3.01 | -- | 5.58 | | Pass |
| 100 | 5500 | MCS0 | A | 3.94 | 3.01 | -- | 6.95 | <11 | Pass |
| | | | B | 3.46 | 3.01 | -- | 6.47 | | Pass |
| 116 | 5580 | MCS0 | A | 3.09 | 3.01 | -- | 6.10 | <11 | Pass |
| | | | B | 2.53 | 3.01 | -- | 5.54 | | Pass |
| 140 | 5700 | MCS0 | A | 2.84 | 3.01 | -- | 5.85 | <11 | Pass |
| | | | B | 3.13 | 3.01 | -- | 6.14 | | Pass |
| 144 (U-NII-2C) | 5720 | MCS0 | A | 5.21 | 3.01 | -- | 8.22 | <11 | Pass |
| | | | B | 5.74 | 3.01 | -- | 8.75 | | Pass |

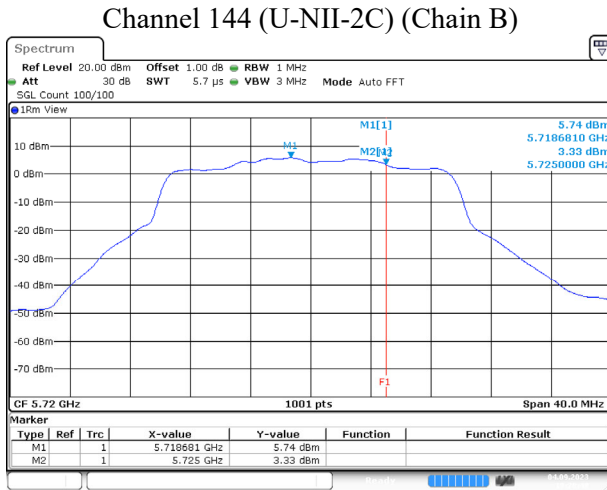
Note:

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

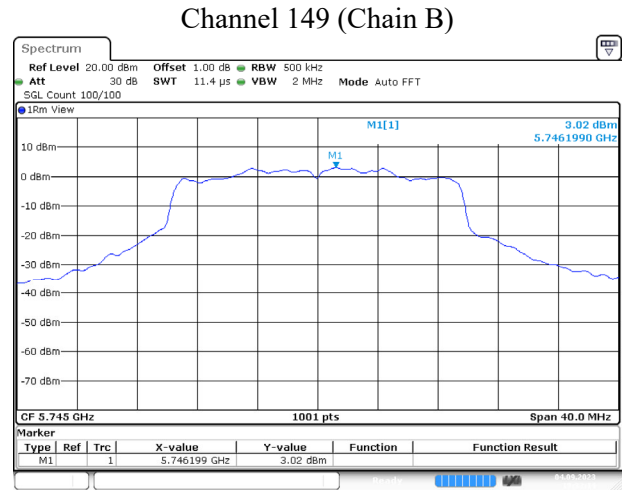
| Channel No. | Frequency (MHz) | Data Rate (Mbps) | Chain | PPSD (dBm) | 10*log(2) (dB) | Duty factor (dB) | Total PPSD (dBm) | Required Limit (dBm) | Result |
|---------------|-----------------|------------------|-------|------------|----------------|------------------|------------------|----------------------|--------|
| 144 (U-NII-3) | 5720 | MCS0 | A | 0.55 | 3.01 | -- | 3.56 | <30 | Pass |
| | | | B | 1.05 | 3.01 | -- | 4.06 | | Pass |
| 149 | 5745 | MCS0 | A | 2.88 | 3.01 | -- | 5.89 | <30 | Pass |
| | | | B | 3.02 | 3.01 | -- | 6.03 | | Pass |
| 157 | 5785 | MCS0 | A | 2.09 | 3.01 | -- | 5.10 | <30 | Pass |
| | | | B | 2.48 | 3.01 | -- | 5.49 | | Pass |
| 165 | 5825 | MCS0 | A | 2.44 | 3.01 | -- | 5.45 | <30 | Pass |
| | | | B | 2.52 | 3.01 | -- | 5.53 | | Pass |

Note:

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



Date: 4.SEP.2023 19:28:49



Date: 4.SEP.2023 19:33:15

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) | Data Rate (Mbps) | Chain | PPSD/MHz (dBm) | 10*log(2) (dB) | Duty factor (dB) | Total PPSD/MHz (dBm) | Required Limit (dBm) | Result |
|----------------|-----------------|------------------|-------|----------------|----------------|------------------|----------------------|----------------------|--------|
| 38 | 5190 | MCS0 | A | -2.26 | 3.01 | -- | 0.75 | <11 | Pass |
| | | | B | -1.88 | 3.01 | -- | 1.13 | | Pass |
| 46 | 5230 | MCS0 | A | 1.99 | 3.01 | -- | 5.00 | <11 | Pass |
| | | | B | 1.47 | 3.01 | -- | 4.48 | | Pass |
| 54 | 5270 | MCS0 | A | 2.09 | 3.01 | -- | 5.10 | <11 | Pass |
| | | | B | 2.01 | 3.01 | -- | 5.02 | | Pass |
| 62 | 5310 | MCS0 | A | -2.52 | 3.01 | -- | 0.49 | <11 | Pass |
| | | | B | -2.35 | 3.01 | -- | 0.66 | | Pass |
| 102 | 5510 | MCS0 | A | -1.15 | 3.01 | -- | 1.86 | <11 | Pass |
| | | | B | -1.58 | 3.01 | -- | 1.43 | | Pass |
| 110 | 5550 | MCS0 | A | 1.65 | 3.01 | -- | 4.66 | <11 | Pass |
| | | | B | 1.10 | 3.01 | -- | 4.11 | | Pass |
| 134 | 5670 | MCS0 | A | 0.95 | 3.01 | -- | 3.96 | <11 | Pass |
| | | | B | 0.76 | 3.01 | -- | 3.77 | | Pass |
| 142 (U-NII-2C) | 5710 | MCS0 | A | 0.03 | 3.01 | -- | 3.04 | <11 | Pass |
| | | | B | -0.04 | 3.01 | -- | 2.97 | | Pass |

Note:

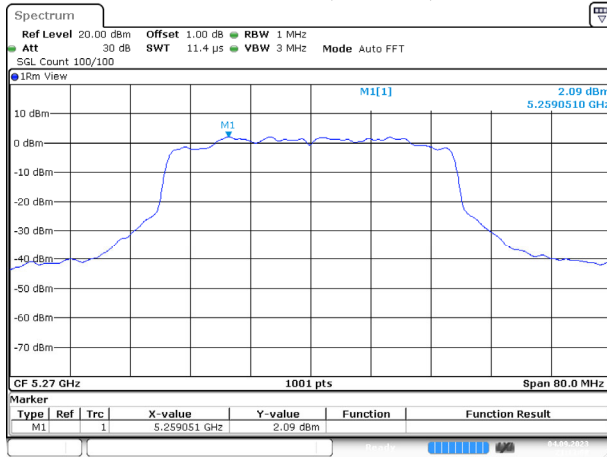
1. Total PPSD/MHz = PPSD/MHz + Duty factor.
2. The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

| Channel No. | Frequency (MHz) | Data Rate (Mbps) | Chain | PPSD (dBm) | 10*log(2) (dB) | Duty factor (dB) | Total PPSD (dBm) | Required Limit (dBm) | Result |
|---------------|-----------------|------------------|-------|------------|----------------|------------------|------------------|----------------------|--------|
| 142 (U-NII-3) | 5710 | MCS0 | A | -6.27 | 3.01 | -- | -3.26 | <30 | Pass |
| | | | B | -6.42 | 3.01 | -- | -3.41 | | Pass |
| 151 | 5755 | MCS0 | A | -0.31 | 3.01 | -- | 2.70 | <30 | Pass |
| | | | B | -0.30 | 3.01 | -- | 2.71 | | Pass |
| 159 | 5795 | MCS0 | A | -0.59 | 3.01 | -- | 2.42 | <30 | Pass |
| | | | B | -0.61 | 3.01 | -- | 2.40 | | Pass |

Note:

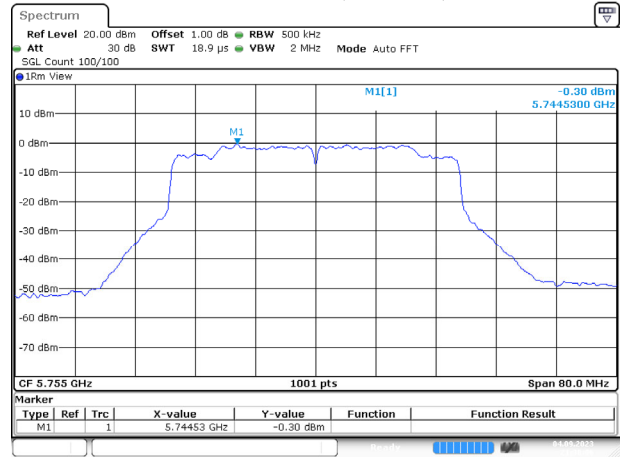
1. Total PPSD = PPSD + Duty factor.
2. The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 54 (Chain A)



Date: 4 SEP 2023 21:13:08

Channel 151 (Chain B)



Date: 4 SEP 2023 21:38:06

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) | Data Rate (Mbps) | Chain | PPSD/MHz (dBm) | 10*log(2) (dB) | Duty factor (dB) | Total PPSD/MHz (dBm) | Required Limit (dBm) | Result |
|------------------|-----------------|------------------|-------|----------------|----------------|------------------|----------------------|----------------------|--------|
| 42 | 5210 | MCS0 | A | -6.15 | 3.01 | -- | -3.14 | <11 | Pass |
| | | | B | -6.02 | 3.01 | -- | -3.01 | | Pass |
| 58 | 5290 | MCS0 | A | -5.72 | 3.01 | -- | -2.71 | <11 | Pass |
| | | | B | -6.75 | 3.01 | -- | -3.74 | | Pass |
| 106 | 5530 | MCS0 | A | -5.11 | 3.01 | -- | -2.10 | <11 | Pass |
| | | | B | -5.81 | 3.01 | -- | -2.80 | | Pass |
| 122 | 5610 | MCS0 | A | -0.44 | 3.01 | -- | 2.57 | <11 | Pass |
| | | | B | -0.82 | 3.01 | -- | 2.19 | | Pass |
| 138 (U-NII-3) | 5690 | MCS0 | A | 0.01 | 3.01 | -- | 3.02 | <11 | Pass |
| | | | B | -1.09 | 3.01 | -- | 1.92 | | Pass |

Note:

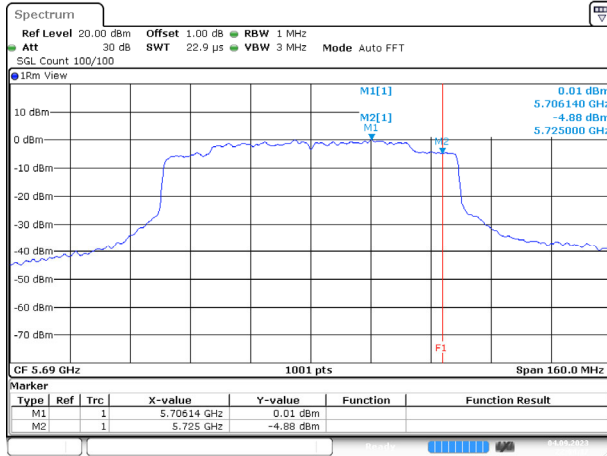
- Total PPSD/MHz = PPSD/MHz + Duty factor.
- The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

| Channel No. | Frequency (MHz) | Data Rate (Mbps) | Chain | PPSD (dBm) | 10*log(2) (dB) | Duty factor (dB) | Total PPSD (dBm) | Required Limit (dBm) | Result |
|------------------|-----------------|------------------|-------|------------|----------------|------------------|------------------|----------------------|--------|
| 138 (U-NII-3) | 5690 | MCS0 | A | -6.74 | 3.01 | -- | -3.73 | <30 | Pass |
| | | | B | -7.98 | 3.01 | -- | -4.97 | | Pass |
| 155 | 5775 | MCS0 | A | -4.28 | 3.01 | -- | -1.27 | <30 | Pass |
| | | | B | -4.11 | 3.01 | -- | -1.10 | | Pass |

Note:

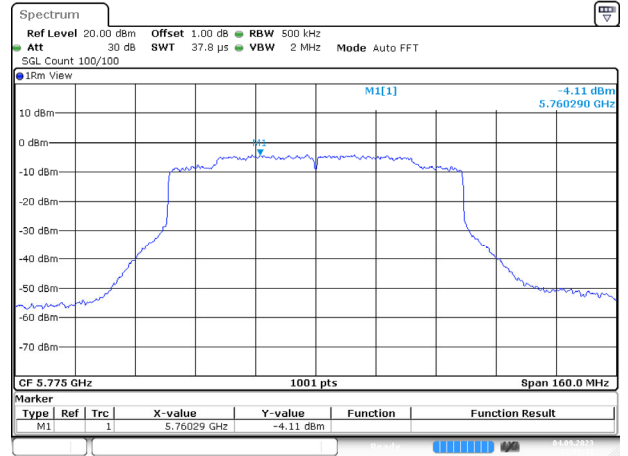
- Total PPSD = PPSD + Duty factor.
- The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 138 (U-NII-3) (Chain A)



Date: 4.SEP.2023 22:04:17

Channel 155 (Chain B)



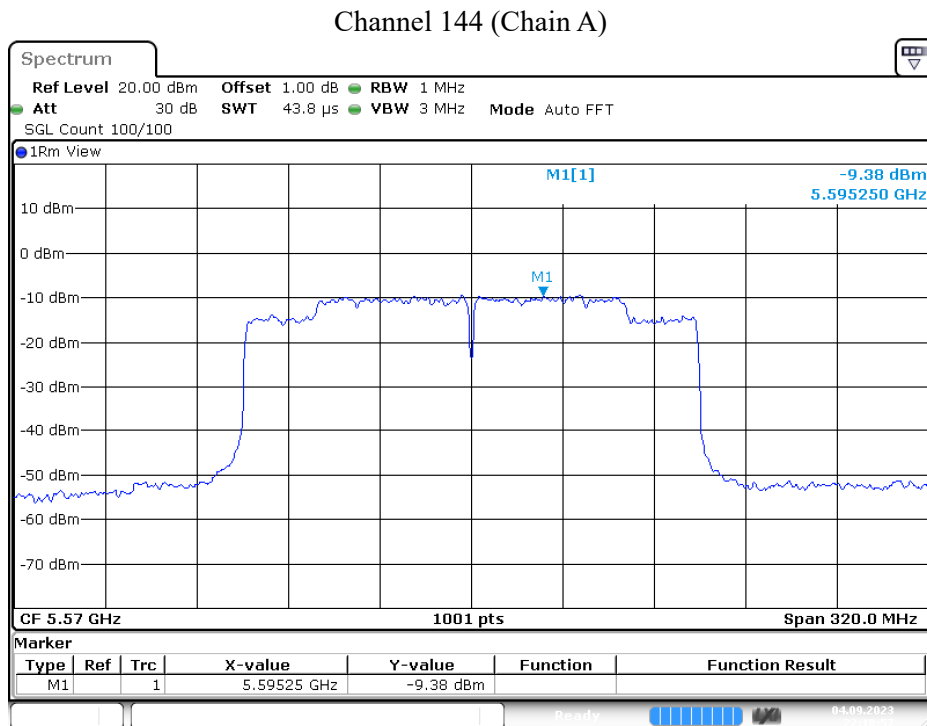
Date: 4.SEP.2023 22:09:31

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

| Channel No. | Frequency (MHz) | Data Rate (Mbps) | Chain | PPSD/MHz (dBm) | 10*log(2) (dB) | Duty factor (dB) | Total PPSD/MHz (dBm) | Required Limit (dBm) | Result |
|---------------|-----------------|------------------|-------|----------------|----------------|------------------|----------------------|----------------------|--------|
| 50 (U-NII-1) | 5250 | MCS0 | A | -13.15 | 3.01 | 0.10 | -10.04 | <11 | Pass |
| | | | B | -12.47 | 3.01 | 0.10 | -9.36 | | Pass |
| 50 (U-NII-2A) | 5250 | MCS0 | A | -11.55 | 3.01 | 0.10 | -8.44 | <11 | Pass |
| | | | B | -12.47 | 3.01 | 0.10 | -9.36 | | Pass |
| 114 | 5570 | MCS0 | A | -9.38 | 3.01 | 0.10 | -6.27 | <11 | Pass |
| | | | B | -9.48 | 3.01 | 0.10 | -6.37 | | Pass |

Note:

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



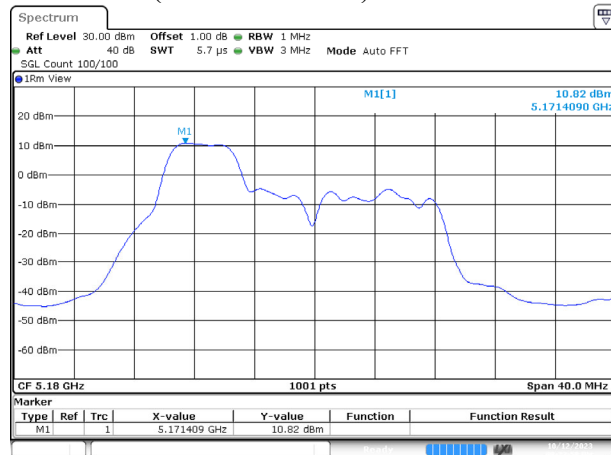
Date: 4.SEP.2023 22:18:58

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 PPSD/MHz (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-----------|----------------|------------------|----------------------|----------------------|--------|
| 36 | 5180 | 26/0 | 10.77 | 0.10 | 10.87 | <11 | Pass |
| | | 52/37 | 10.82 | 0.10 | 10.92 | <11 | Pass |
| | | 106/53 | 9.18 | 0.10 | 9.28 | <11 | Pass |
| 64 | 5320 | 26/8 | 10.65 | 0.10 | 10.75 | <11 | Pass |
| | | 52/40 | 10.51 | 0.10 | 10.61 | <11 | Pass |
| | | 106/54 | 9.70 | 0.10 | 9.80 | <11 | Pass |
| 100 | 5500 | 26/0 | 10.77 | 0.10 | 10.87 | <11 | Pass |
| | | 52/37 | 10.72 | 0.10 | 10.82 | <11 | Pass |
| | | 106/53 | 10.17 | 0.10 | 10.27 | <11 | Pass |
| 140 | 5700 | 26/8 | 10.80 | 0.10 | 10.90 | <11 | Pass |
| | | 52/40 | 10.59 | 0.10 | 10.69 | <11 | Pass |
| | | 106/54 | 10.12 | 0.10 | 10.22 | <11 | Pass |

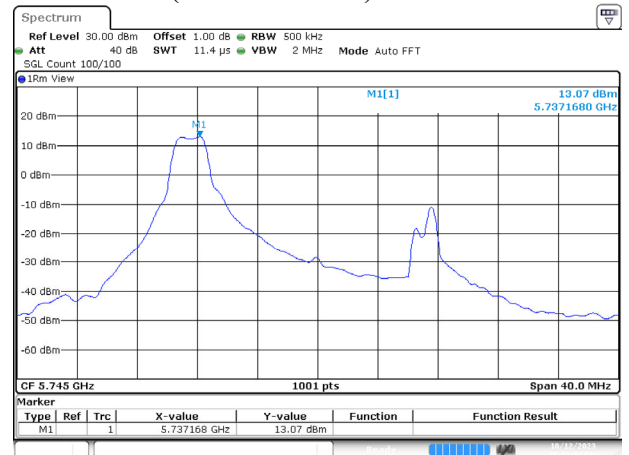
| Channel No. | Frequency (MHz) | RU Config | PPSD (dBm) | Duty factor (dB) | Total PPSD (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-----------|------------|------------------|------------------|----------------------|--------|
| 149 | 5745 | 26/0 | 13.07 | 0.10 | 13.17 | <30 | Pass |
| | | 52/37 | 10.90 | 0.10 | 11.00 | <30 | Pass |
| | | 106/53 | 8.00 | 0.10 | 8.10 | <30 | Pass |

Channel 36 (Partial RU 52/37)



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

Channel 149 (Partial RU 26/0)



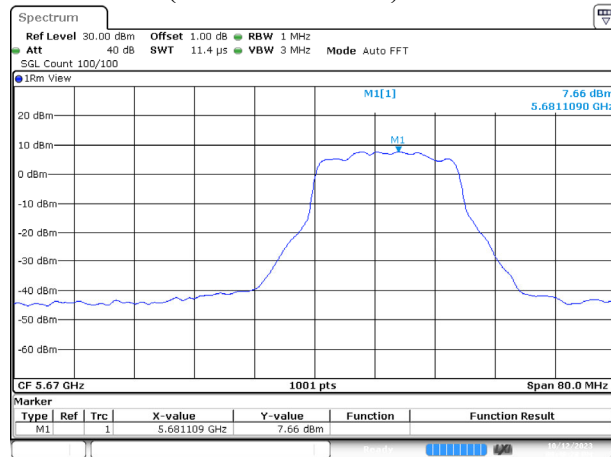
Date: 12.OCT.2023 20:41:44

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 | 5.24 | 0.00 | 5.24 | <11 | Pass |
| 62 | 5310 | 242/62 | 4.89 | 0.00 | 4.89 | <11 | Pass |
| 102 | 5510 | 242/61 | 6.42 | 0.00 | 6.42 | <11 | Pass |
| 134 | 5670 | 242/62 | 7.66 | 0.00 | 7.66 | <11 | Pass |

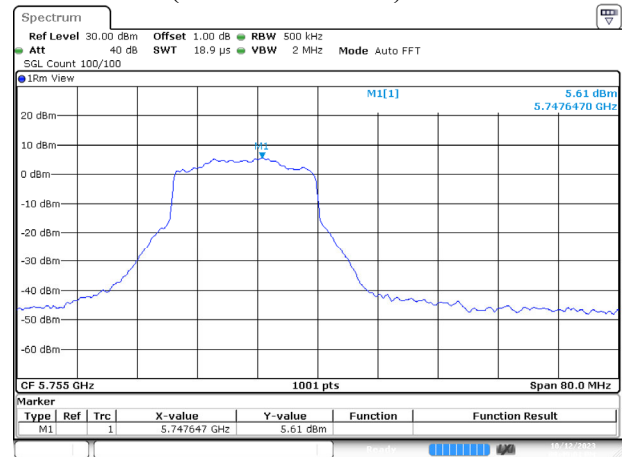
| Channel No. | Frequency (MHz) | RU Config | PPSD (dBm) | Duty factor (dB) | Total PPSD (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-----------|------------|------------------|------------------|----------------------|--------|
| 151 | 5755 | 242/61 | 5.61 | 0.00 | 5.61 | <30 | Pass |

Channel 134 (Partial RU 242/62)



Date: 12.OCT.2023 20:48:28

Channel 151 (Partial RU 242/61)

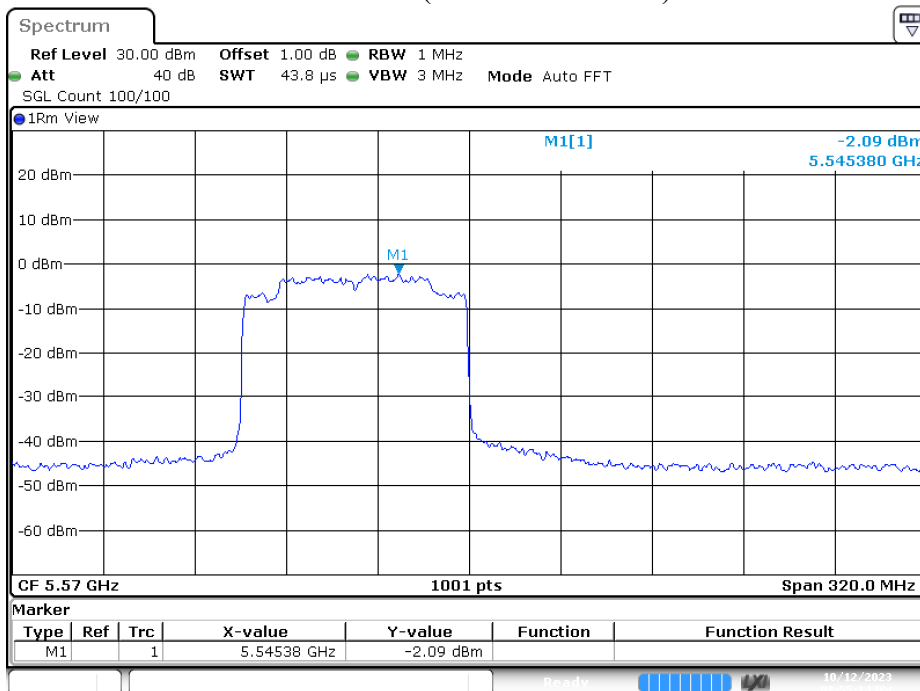


Date: 12.OCT.2023 20:49:01

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 | -4.74 | 0.10 | -4.64 | <11 | Pass |
| 50(U-NII-2A) | 5250 | 996/S67 | -4.88 | 0.10 | -4.78 | <11 | Pass |
| 114 | 5570 | 996/67 | -2.09 | 0.10 | -1.99 | <11 | Pass |
| | | 996/S67 | -2.73 | 0.10 | -2.63 | <11 | Pass |

Channel 114 (Partial RU 996/S67)



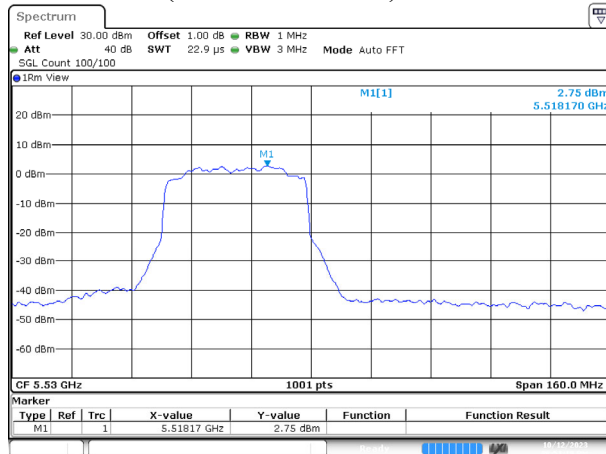
Date: 12.OCT.2023 20:55:15

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 | 1.71 | 0.00 | 1.71 | <11 | Pass |
| 58 | 5290 | 484/66 | 1.29 | 0.00 | 1.29 | <11 | Pass |
| 106 | 5530 | 484/65 | 2.75 | 0.00 | 2.75 | <11 | Pass |

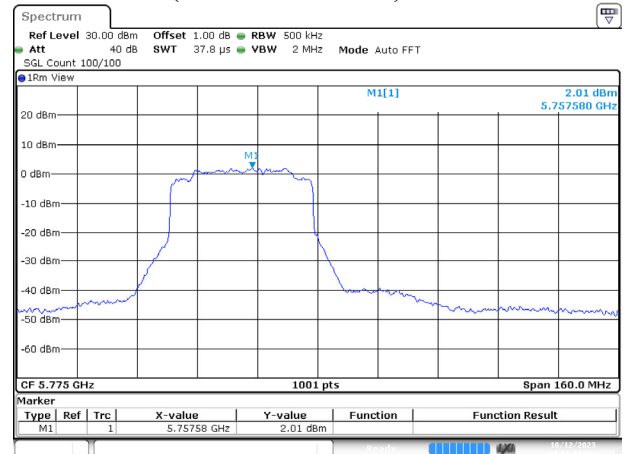
| Channel No. | Frequency (MHz) | RU Config | PPSD (dBm) | Duty factor (dB) | Total PPSD (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-----------|------------|------------------|------------------|----------------------|--------|
| 155 | 5775 | 484/66 | 2.01 | 0.00 | 2.01 | <30 | Pass |

Channel 106 (Partial RU 484/65)



Date: 12.OCT.2023 20:51:18

Channel 155 (Partial RU 484/65)



Date: 12.OCT.2023 20:51:58

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 | Data Rate | Chain | PPSD/MHz (dBm) | 10*log(2) (dB) | Duty factor (dB) | Total PPSD/MHz (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-----------|-----------|-------|----------------|----------------|------------------|----------------------|----------------------|--------|
| 36 | 5180 | 26/0 | MCS0 | A | 7.80 | 3.01 | -- | 10.81 | <11 | Pass |
| | | | | B | 7.91 | 3.01 | -- | 10.92 | | Pass |
| | | 52/37 | MCS0 | A | 7.75 | 3.01 | -- | 10.76 | | Pass |
| | | | | B | 7.59 | 3.01 | -- | 10.60 | | Pass |
| | | 106/53 | MCS0 | A | 4.95 | 3.01 | -- | 7.96 | | Pass |
| | | | | B | 5.48 | 3.01 | -- | 8.49 | | Pass |
| 64 | 5320 | 26/8 | MCS0 | A | 7.88 | 3.01 | -- | 10.89 | <11 | Pass |
| | | | | B | 7.83 | 3.01 | -- | 10.84 | | Pass |
| | | 52/40 | MCS0 | A | 7.76 | 3.01 | -- | 10.77 | | Pass |
| | | | | B | 7.84 | 3.01 | -- | 10.85 | | Pass |
| | | 106/54 | MCS0 | A | 5.80 | 3.01 | -- | 8.81 | | Pass |
| | | | | B | 5.75 | 3.01 | -- | 8.76 | | Pass |
| 100 | 5500 | 26/0 | MCS0 | A | 7.75 | 3.01 | -- | 10.76 | <11 | Pass |
| | | | | B | 7.69 | 3.01 | -- | 10.70 | | Pass |
| | | 52/37 | MCS0 | A | 7.79 | 3.01 | -- | 10.80 | | Pass |
| | | | | B | 7.74 | 3.01 | -- | 10.75 | | Pass |
| | | 106/53 | MCS0 | A | 6.69 | 3.01 | -- | 9.70 | | Pass |
| | | | | B | 6.41 | 3.01 | -- | 9.42 | | Pass |
| 140 | 5700 | 26/8 | MCS0 | A | 7.98 | 3.01 | -- | 10.99 | <11 | Pass |
| | | | | B | 7.70 | 3.01 | -- | 10.71 | | Pass |
| | | 52/40 | MCS0 | A | 7.67 | 3.01 | -- | 10.68 | | Pass |
| | | | | B | 7.86 | 3.01 | -- | 10.87 | | Pass |
| | | 106/54 | MCS0 | A | 5.41 | 3.01 | -- | 8.42 | | Pass |
| | | | | B | 5.88 | 3.01 | -- | 8.89 | | Pass |

Note:

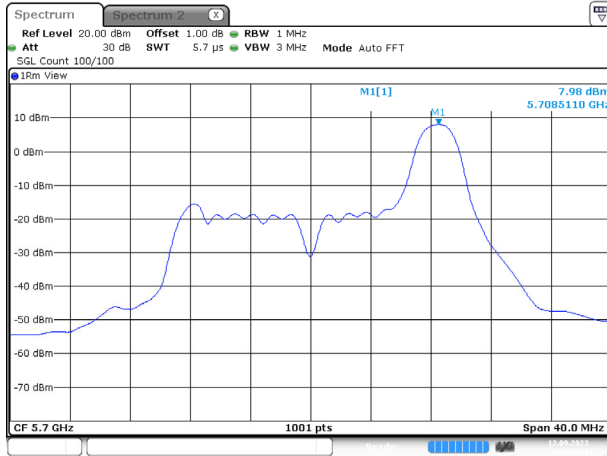
1. Total PPSD/MHz = PPSD/MHz + Duty factor.
2. The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

| Channel No. | Frequency (MHz) | RU Config | Data Rate | Chain | PPSD (dBm) | 10*log(2) (dB) | Duty factor (dB) | Total PPSD (dBm) | Required Limit (dBm) | Result | |
|-------------|-----------------|-----------|-----------|-------|------------|----------------|------------------|------------------|----------------------|--------|------|
| 149 | 5745 | 26/0 | MCS0 | A | 9.70 | 3.01 | -- | 12.71 | <30 | Pass | |
| | | | | B | 10.91 | 3.01 | -- | 13.92 | | | |
| | | 52/37 | MCS0 | A | 6.48 | 3.01 | -- | 9.49 | | <30 | Pass |
| | | | | B | 7.02 | 3.01 | -- | 10.03 | | | |
| | | 106/53 | MCS0 | A | 4.47 | 3.01 | -- | 7.48 | | <30 | Pass |
| | | | | B | 5.76 | 3.01 | -- | 8.77 | | | |

Note:

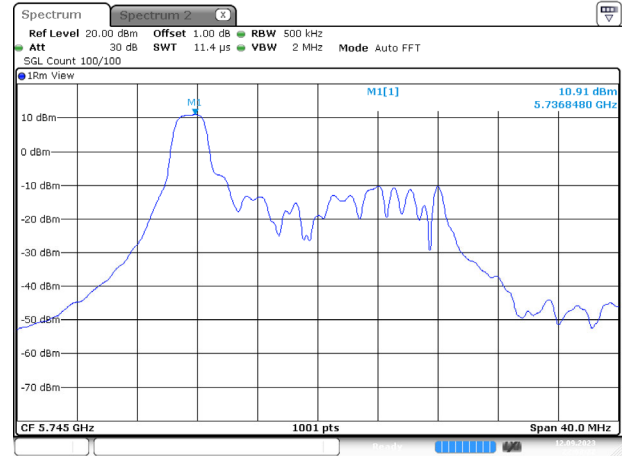
1. Total PPSD = PPSD + Duty factor.
2. The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 140 (Partial RU 26/8) (Chain A)



Date: 12.SEP.2023 21:51:11

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



Date: 12.SEP.2023 22:03:22

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 | Data Rate | Chain | PPSD/MHz (dBm) | 10*log(2) (dB) | Duty factor (dB) | Total PPSD/MHz (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-----------|-----------|-------|----------------|----------------|------------------|----------------------|----------------------|--------|
| 38 | 5190 | 242/61 | MCS0 | A | 1.22 | 3.01 | -- | 4.23 | <11 | Pass |
| | | | | B | 0.45 | 3.01 | -- | 3.46 | | Pass |
| 62 | 5310 | 242/62 | MCS0 | A | 0.81 | 3.01 | -- | 3.82 | <11 | Pass |
| | | | | B | 0.74 | 3.01 | -- | 3.75 | | Pass |
| 102 | 5510 | 242/61 | MCS0 | A | 2.71 | 3.01 | -- | 5.72 | <11 | Pass |
| | | | | B | 2.26 | 3.01 | -- | 5.27 | | Pass |
| 134 | 5670 | 242/62 | MCS0 | A | 3.71 | 3.01 | -- | 6.72 | <11 | Pass |
| | | | | B | 3.92 | 3.01 | -- | 6.93 | | Pass |

Note:

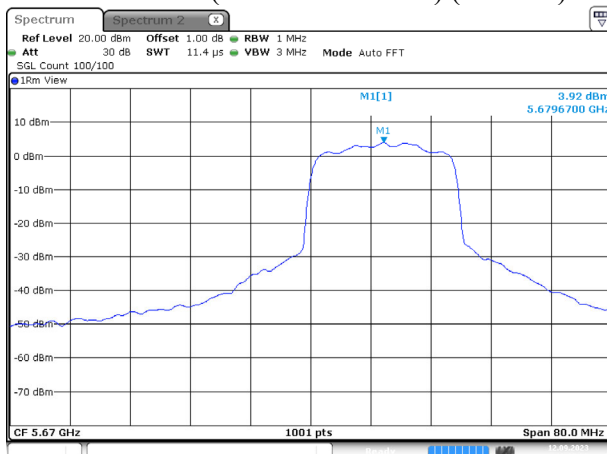
1. Total PPSD/MHz = PPSD/MHz + Duty factor.
2. The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

| Channel No. | Frequency (MHz) | RU Config | Data Rate | Chain | PPSD (dBm) | 10*log(2) (dB) | Duty factor (dB) | Total PPSD (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-----------|-----------|-------|------------|----------------|------------------|------------------|----------------------|--------|
| 151 | 5755 | 242/61 | MCS0 | A | 2.62 | 3.01 | -- | 5.63 | <30 | Pass |
| | | | | B | 2.54 | 3.01 | -- | 5.55 | | |

Note:

1. Total PPSD = PPSD + 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 B)



Date: 12.SEP.2023 22:18:56

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



Date: 12.SEP.2023 22:20:42

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 | Data Rate | Chain | PPSD/MHz (dBm) | 10*log(2) (dB) | Duty factor (dB) | Total PPSD/MHz (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-----------|-----------|-------|----------------|----------------|------------------|----------------------|----------------------|--------|
| 42 | 5210 | 484/65 | MCS0 | A | -3.57 | 3.01 | 0.10 | -0.46 | <11 | Pass |
| | | | | B | -3.56 | 3.01 | 0.10 | -0.45 | | Pass |
| 58 | 5290 | 484/66 | MCS0 | A | -2.20 | 3.01 | 0.10 | 0.91 | <11 | Pass |
| | | | | B | -3.46 | 3.01 | 0.10 | -0.35 | | Pass |
| 106 | 5530 | 484/65 | MCS0 | A | -2.65 | 3.01 | 0.10 | 0.46 | <11 | Pass |
| | | | | B | -2.97 | 3.01 | 0.10 | 0.14 | | Pass |

Note:

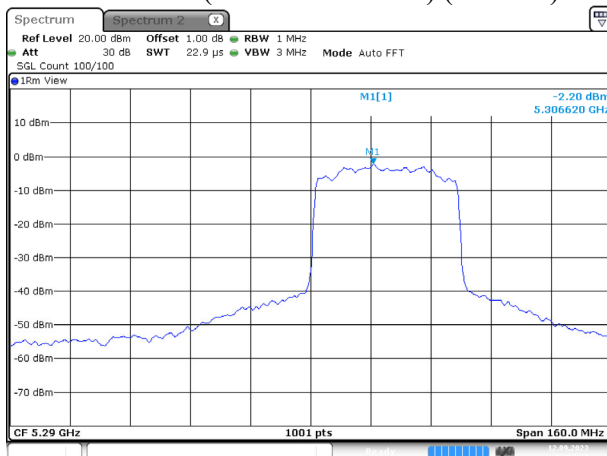
1. Total PPSD/MHz = PPSD/MHz + Duty factor.
2. The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

| Channel No. | Frequency (MHz) | RU Config | Data Rate | Chain | PPSD (dBm) | 10*log(2) (dB) | Duty factor (dB) | Total PPSD (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-----------|-----------|-------|------------|----------------|------------------|------------------|----------------------|--------|
| 155 | 5775 | 484/66 | MCS0 | A | -2.62 | 3.01 | 0.10 | 0.49 | <30 | Pass |
| | | | | B | -1.94 | 3.01 | 0.10 | 1.17 | | |

Note:

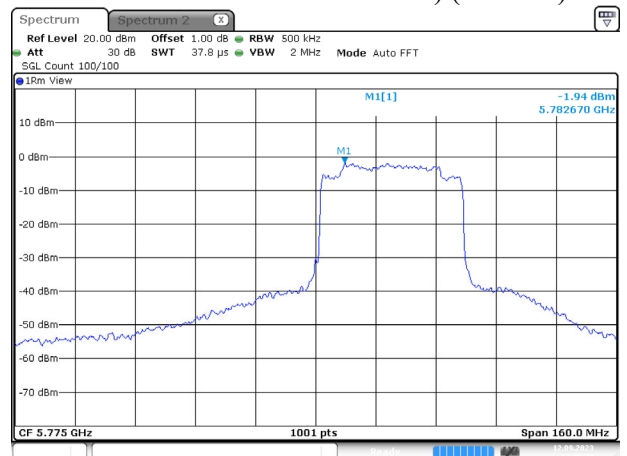
1. Total PPSD = PPSD + Duty factor.
2. The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

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



Date: 12 SEP. 2023 22:24:13

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



Date: 12 SEP. 2023 22:28:40

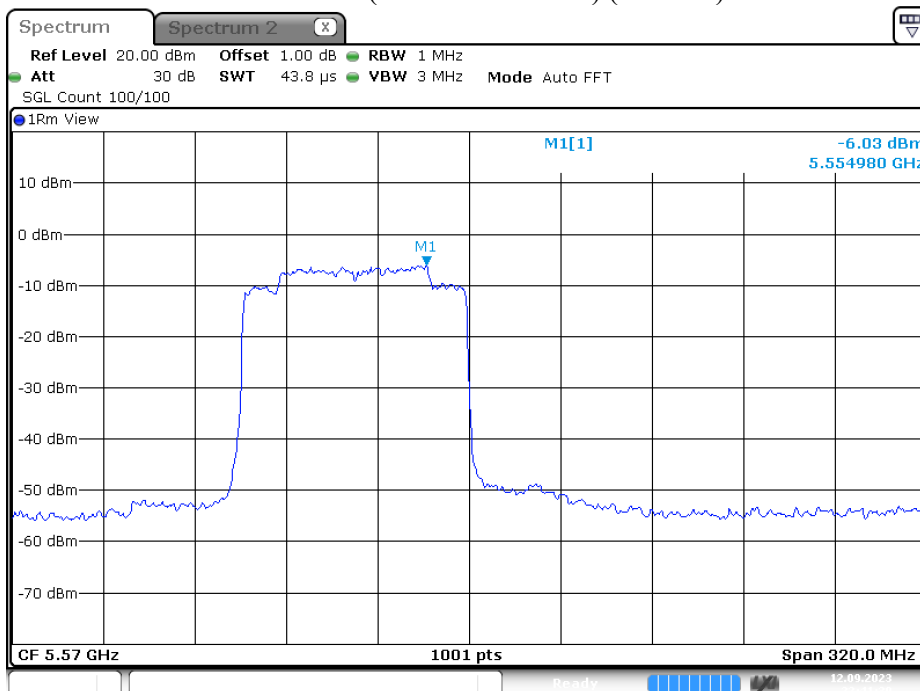
Product : Notebook Computer
 Test Item : Peak Power Spectral Density
 Test Mode : Transmit (802.11ax-160 MHz) (Partial RU)-MIMO
 Test Date : 2023/09/12

| Channel No. | Frequency (MHz) | RU Config | Data Rate | Chain | PPSD/MHz (dBm) | 10*log(2) (dB) | Duty factor (dB) | Total PPSD/MHz (dBm) | Required Limit (dBm) | Result |
|--------------|-----------------|-----------|-----------|-------|----------------|----------------|------------------|----------------------|----------------------|--------|
| 50(U-NII-1) | 5250 | 996/67 | MCS0 | A | -9.60 | 3.01 | -- | -6.59 | <11 | Pass |
| | | | | B | -8.81 | 3.01 | -- | -5.80 | | Pass |
| 50(U-NII-2A) | 5250 | 996/S67 | MCS0 | A | -8.98 | 3.01 | -- | -5.97 | | Pass |
| | | | | B | -8.85 | 3.01 | -- | -5.84 | | Pass |
| 114 | 5570 | 996/67 | MCS0 | A | -6.03 | 3.01 | -- | -3.02 | <11 | Pass |
| | | | | B | -6.10 | 3.01 | -- | -3.09 | | Pass |
| | 5570 | 996/S67 | MCS0 | A | -6.81 | 3.01 | -- | -3.80 | | Pass |
| | | | | B | -6.95 | 3.01 | -- | -3.94 | | Pass |

Note:

1. Total PPSD/MHz = PPSD/MHz + Duty factor.
2. 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)

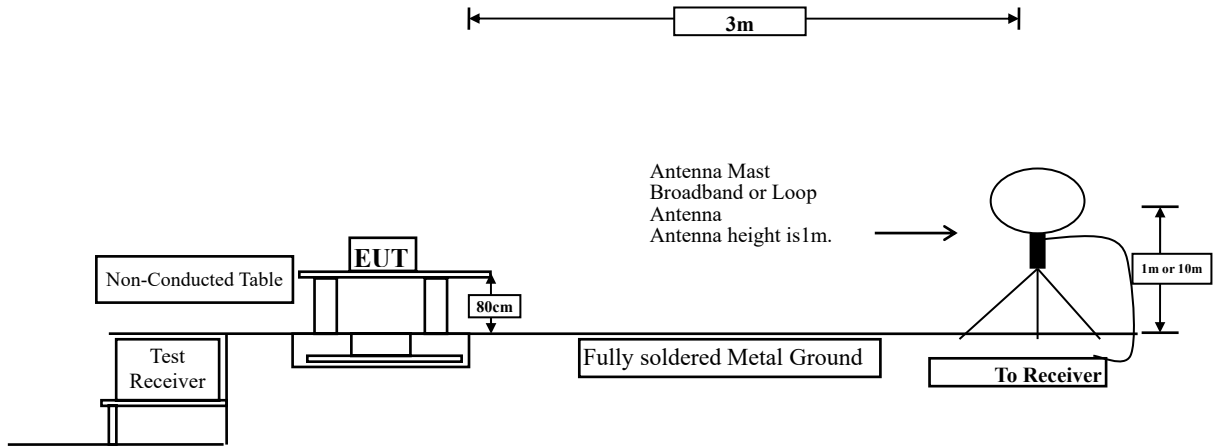


Date: 12.SEP.2023 22:41:31

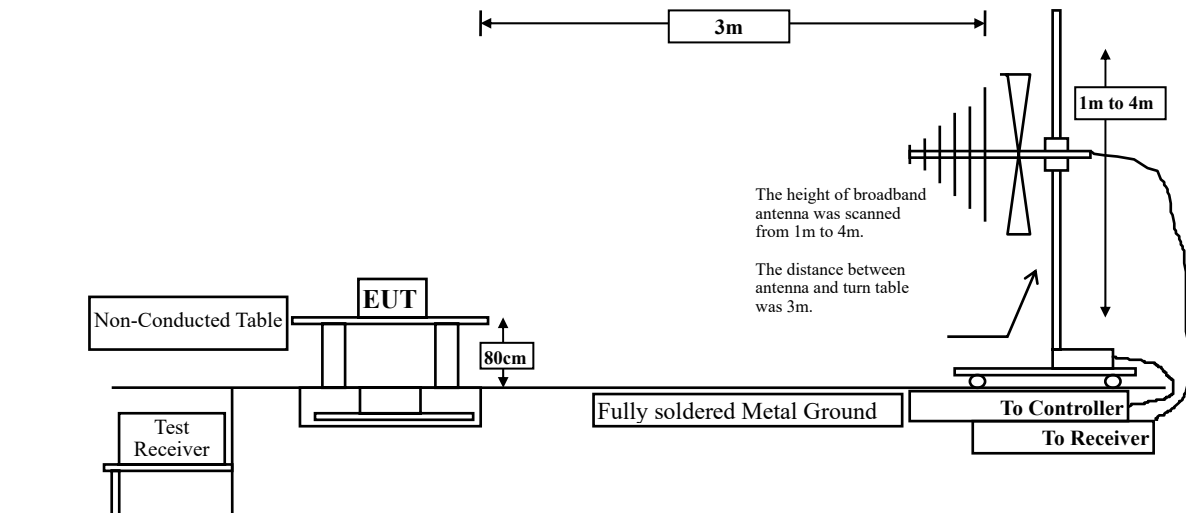
5. Radiated Emission

5.1. Test Setup

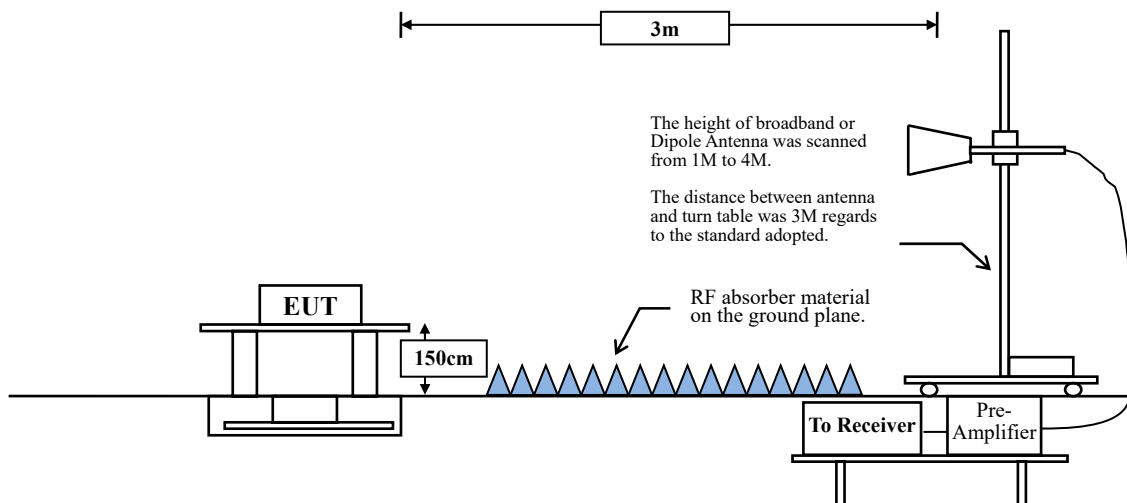
Radiated Emission Under 30 MHz



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 | 97.20 | 2.0800 | 481 | 500 |
| 802.11ax-20 MHz | 98.51 | 3.9750 | 252 | 10 |
| 802.11ax-40 MHz | 98.51 | 3.9750 | 252 | 10 |
| 802.11ax-80 MHz | 98.14 | 3.9600 | 253 | 10 |
| 802.11ax-160 MHz | 98.51 | 3.9750 | 252 | 10 |
| 802.11 ax-20 MHz (Partial RU) | 97.73 | 2.5800 | 388 | 500 |
| 802.11 ax-40 MHz (Partial RU) | 98.10 | 2.5800 | 388 | 10 |
| 802.11 ax-80 MHz (Partial RU) | 97.73 | 2.5800 | 388 | 500 |
| 802.11 ax-160 MHz (Partial RU) | 97.73 | 2.5800 | 388 | 500 |

SISO B

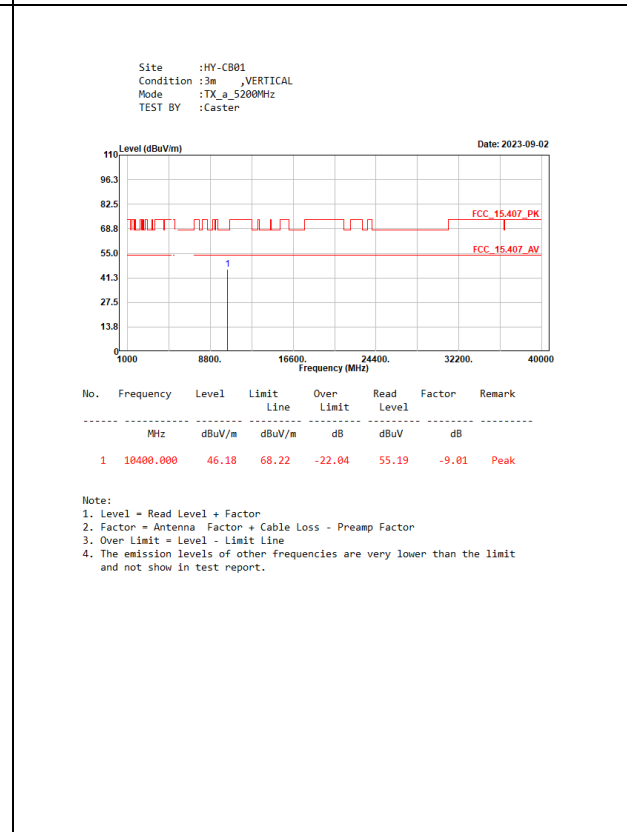
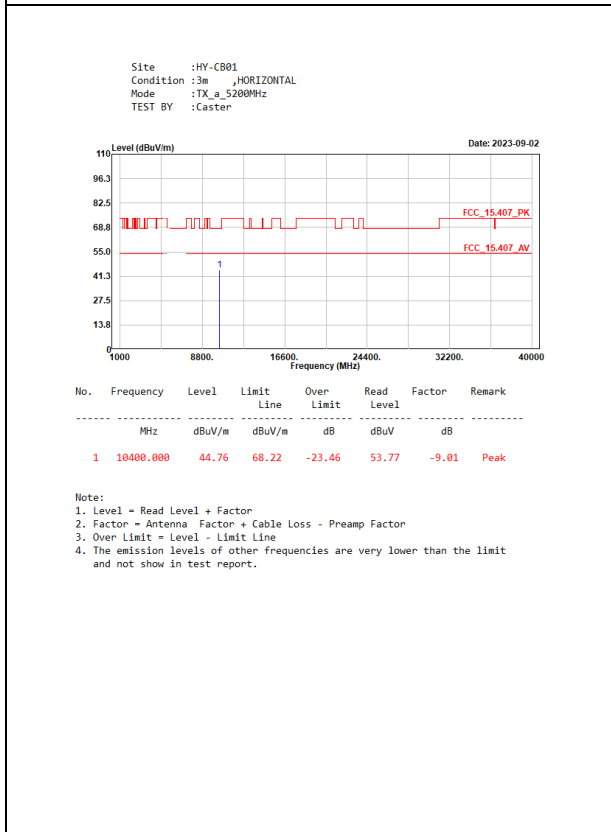
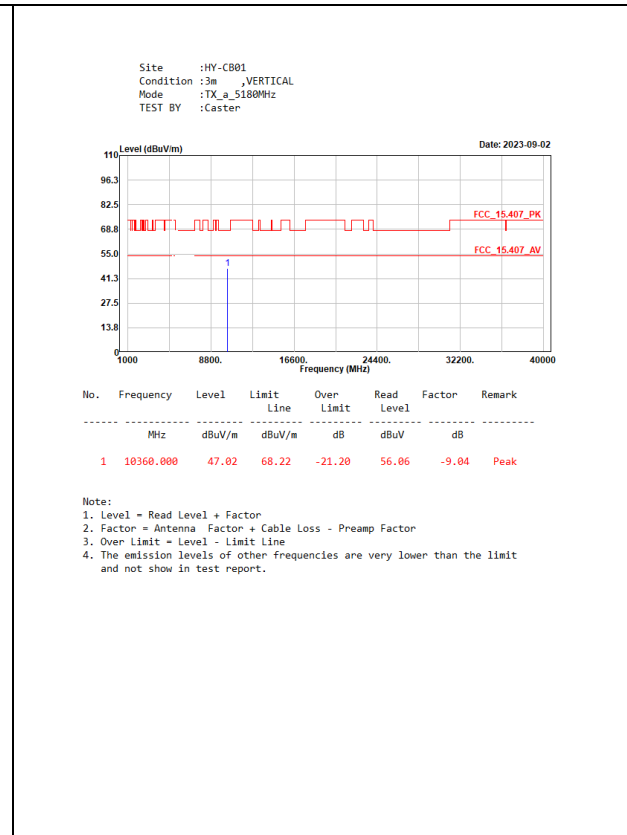
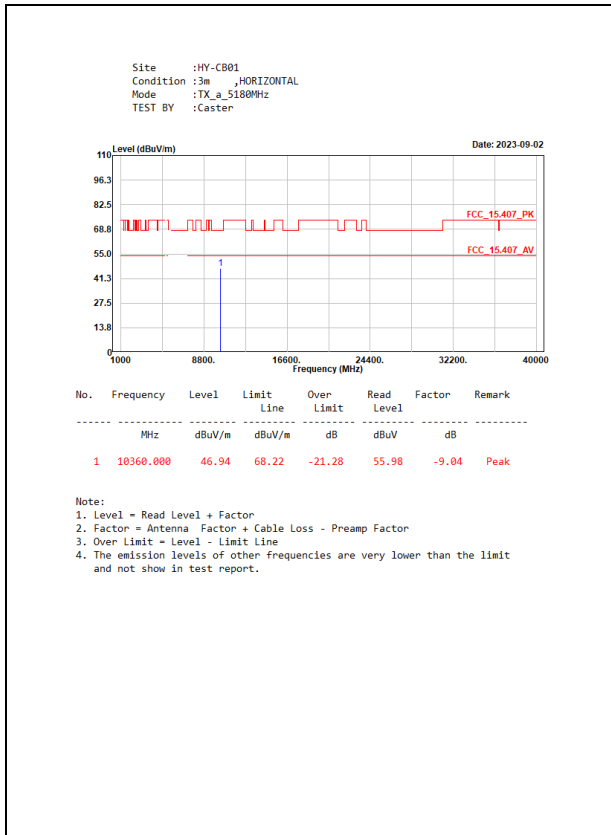
| 5 GHz band | Duty Cycle (%) | T (ms) | 1/T (Hz) | VBW (Hz) |
|--------------------------------|----------------|--------|----------|----------|
| 802.11a | 97.18 | 2.0700 | 483 | 500 |
| 802.11ax-20 MHz | 98.51 | 3.9750 | 252 | 10 |
| 802.11ax-40 MHz | 98.51 | 3.9750 | 252 | 10 |
| 802.11ax-80 MHz | 98.51 | 3.9750 | 252 | 10 |
| 802.11ax-160 MHz | 98.51 | 3.9600 | 253 | 10 |
| 802.11 ax-20 MHz (Partial RU) | 98.10 | 2.5800 | 388 | 10 |
| 802.11 ax-40 MHz (Partial RU) | 97.73 | 2.5800 | 388 | 500 |
| 802.11 ax-80 MHz (Partial RU) | 98.10 | 2.5800 | 388 | 10 |
| 802.11 ax-160 MHz (Partial RU) | 98.11 | 2.5900 | 386 | 10 |

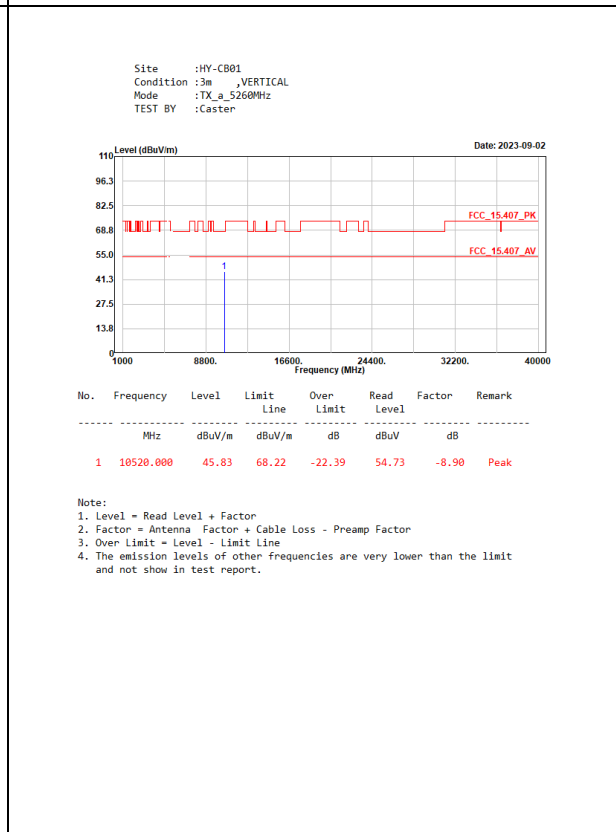
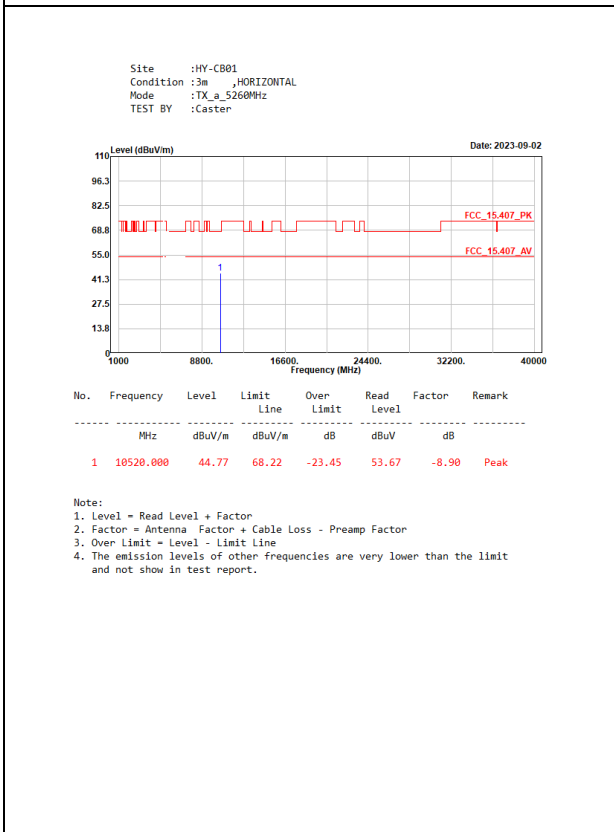
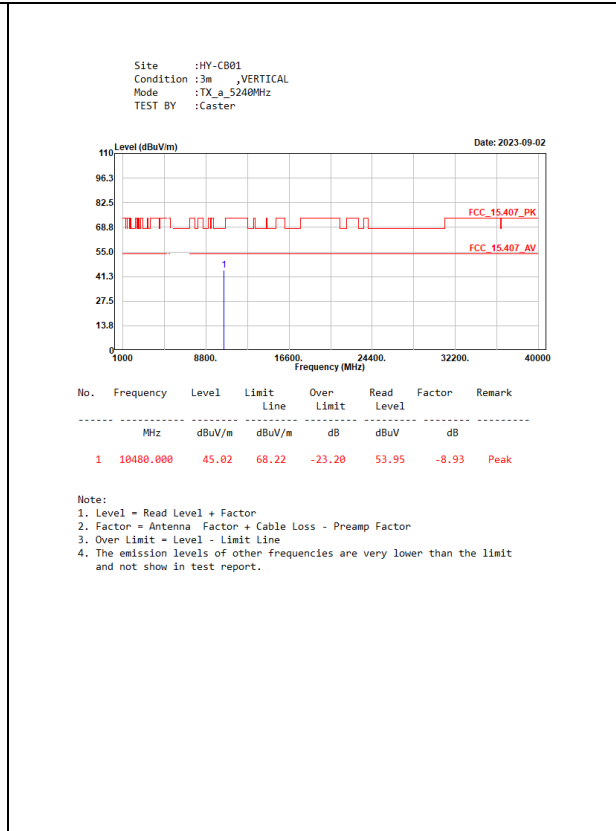
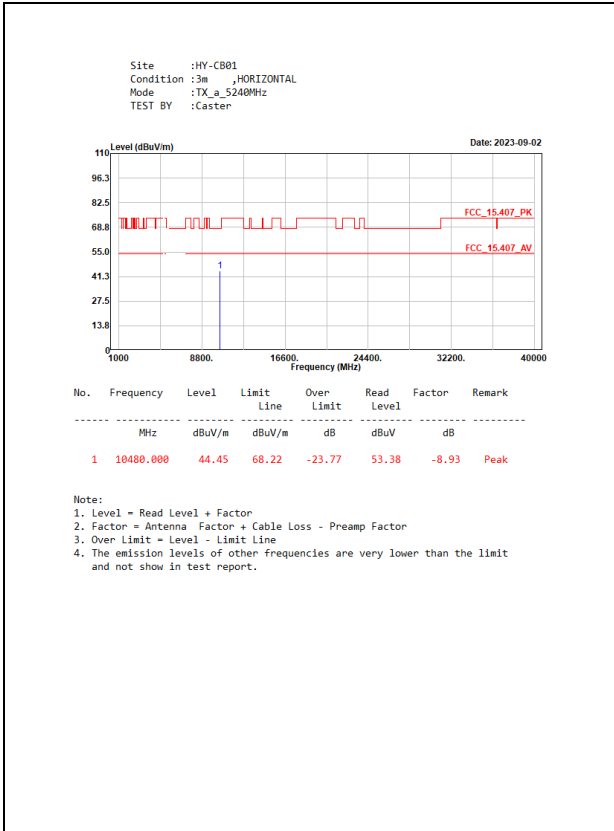
MIMO

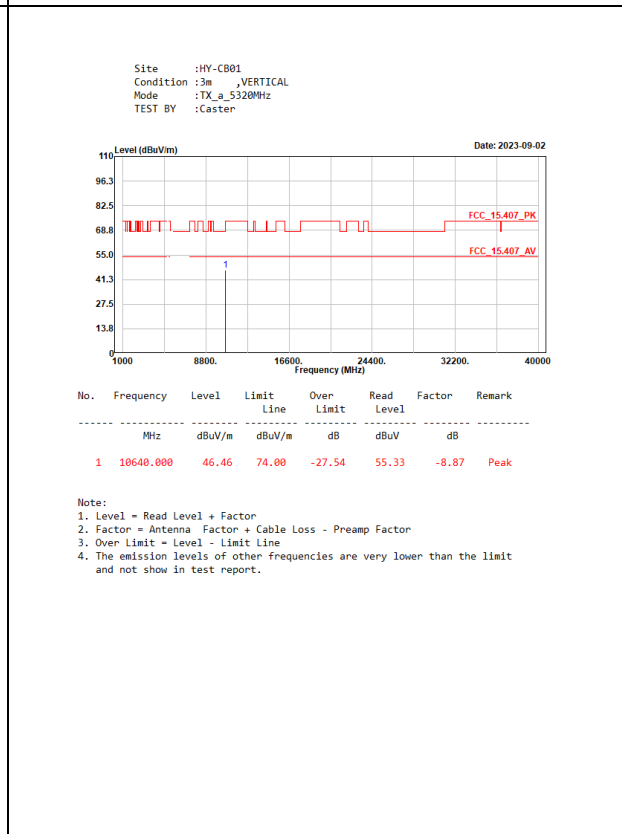
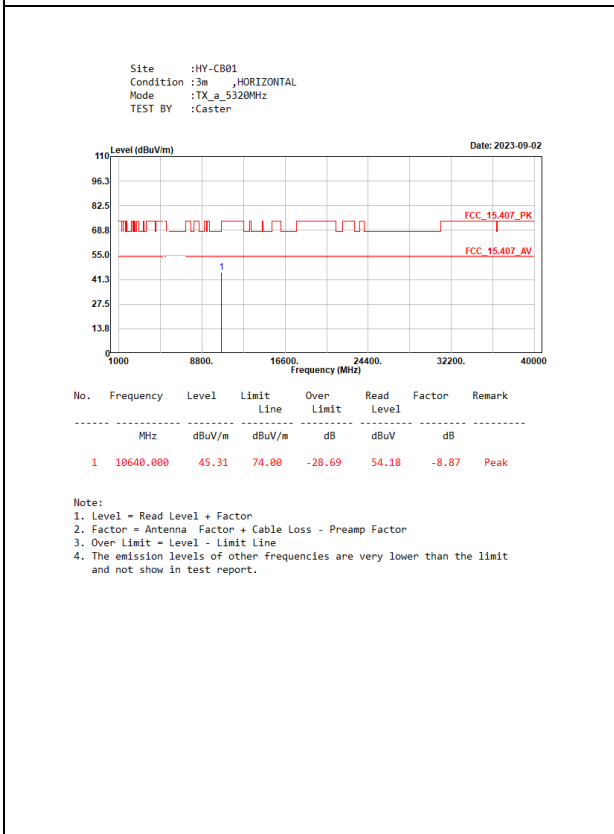
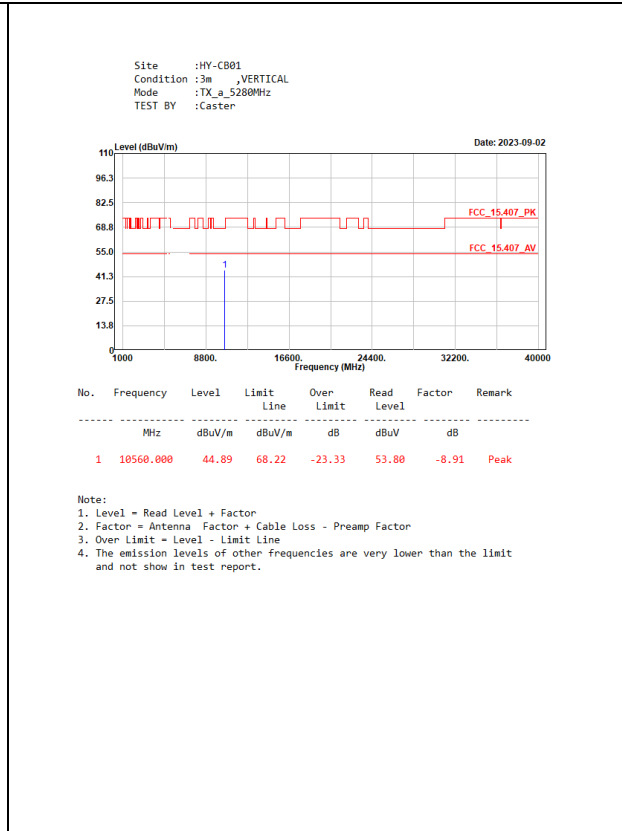
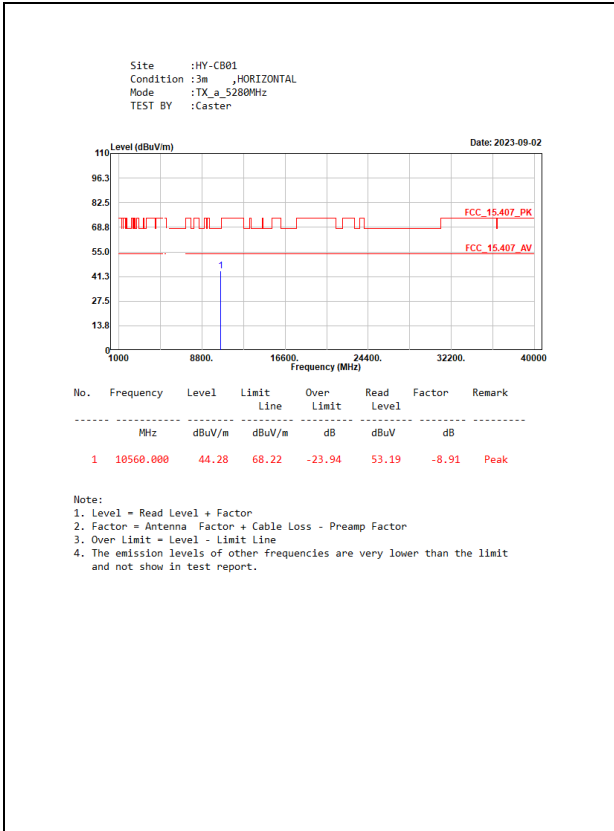
| 5 GHz band | Duty Cycle (%) | T (ms) | 1/T (Hz) | VBW (Hz) |
|--------------------------------|----------------|--------|----------|----------|
| 802.11ax-20 MHz | 98.51 | 3.9700 | 252 | 10 |
| 802.11ax-40 MHz | 98.51 | 3.9700 | 252 | 10 |
| 802.11ax-80 MHz | 98.51 | 3.9750 | 252 | 10 |
| 802.11ax-160 MHz | 97.63 | 2.3040 | 434 | 500 |
| 802.11 ax-20 MHz (Partial RU) | 98.11 | 2.5900 | 386 | 10 |
| 802.11 ax-40 MHz (Partial RU) | 98.11 | 2.5900 | 386 | 10 |
| 802.11 ax-80 MHz (Partial RU) | 97.74 | 2.5900 | 386 | 500 |
| 802.11 ax-160 MHz (Partial RU) | 98.11 | 2.6000 | 385 | 10 |

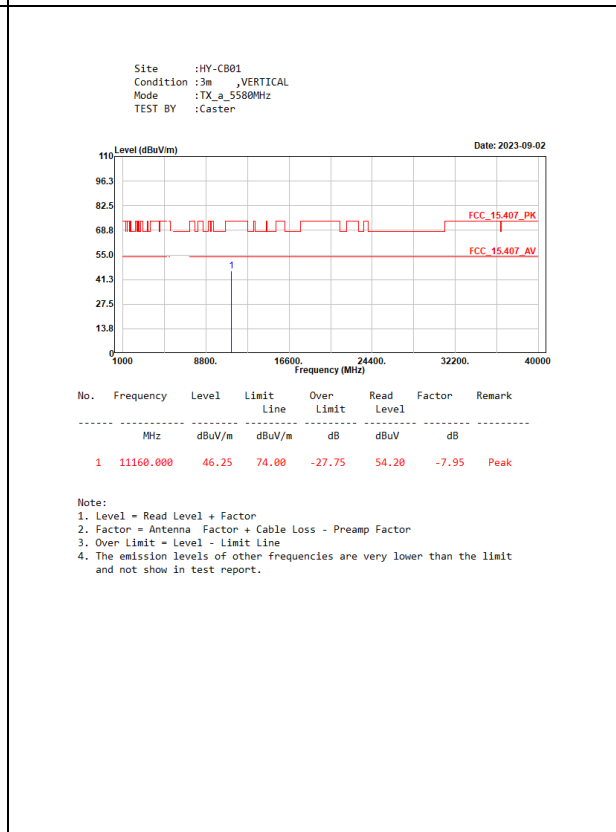
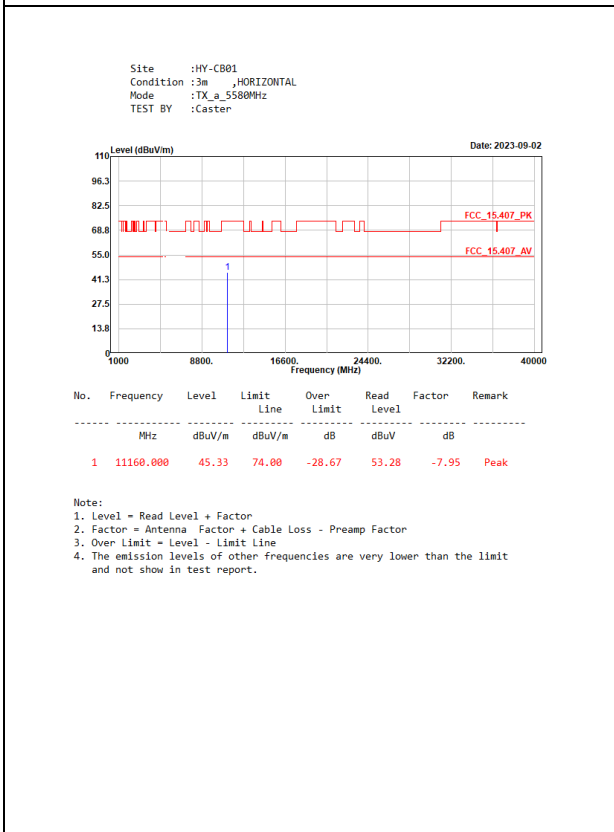
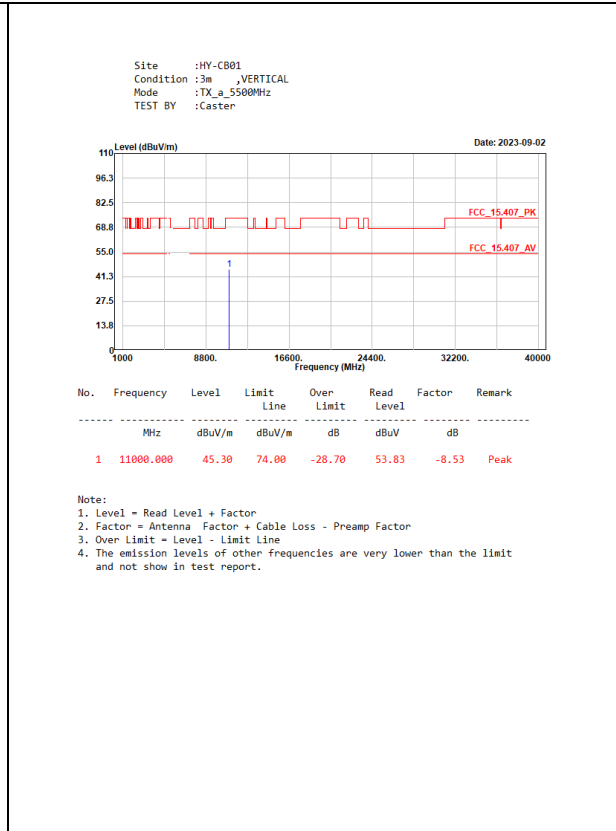
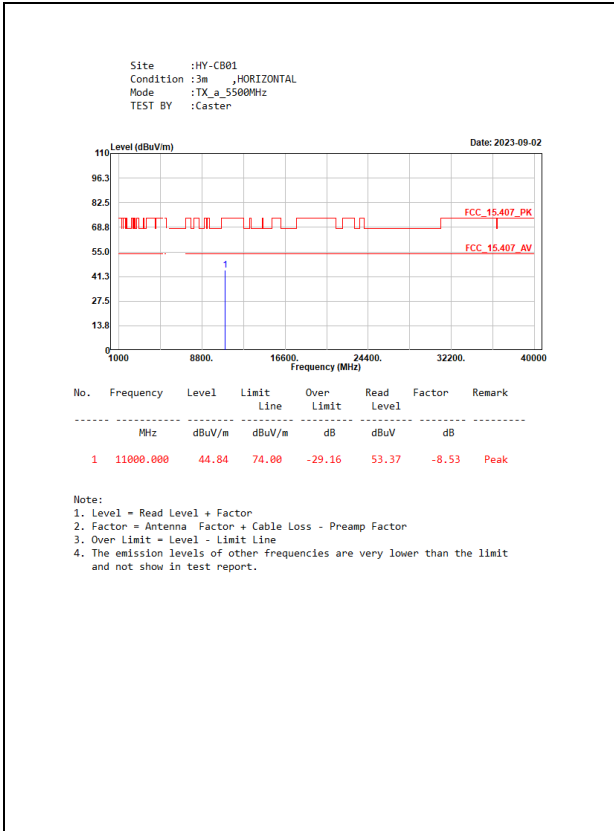
Note: Duty Cycle Refer to Section 8.

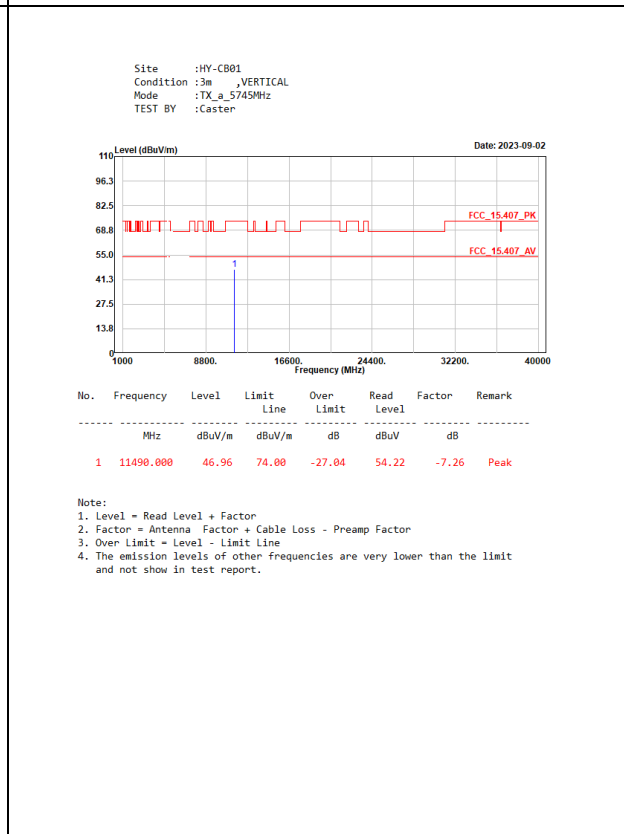
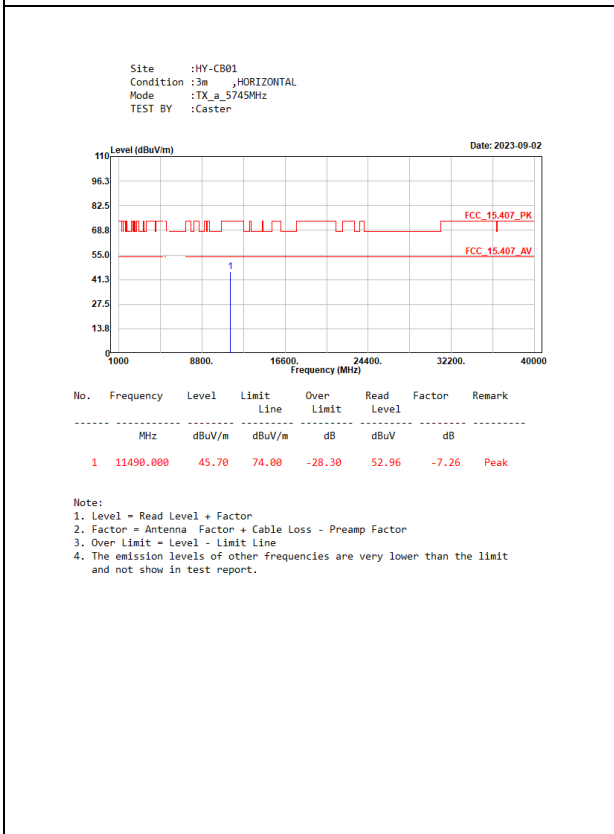
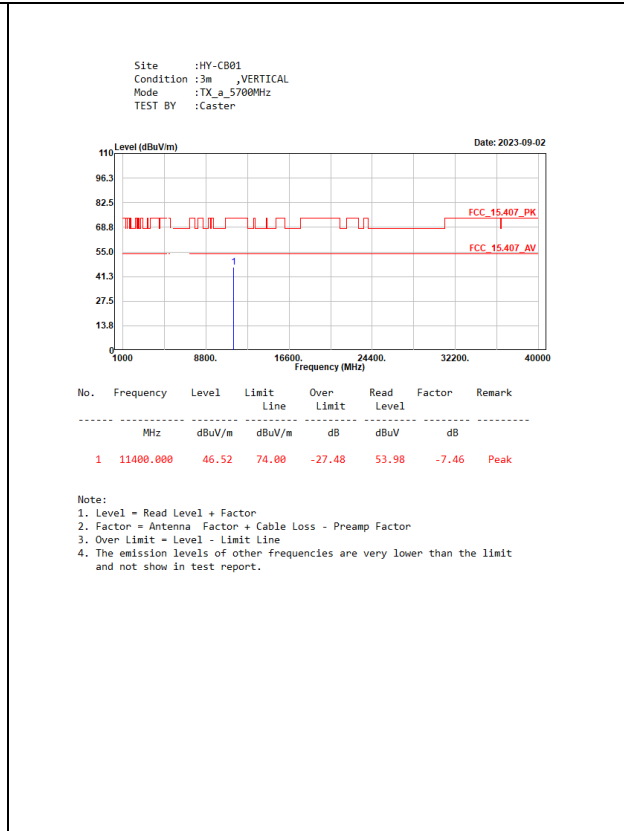
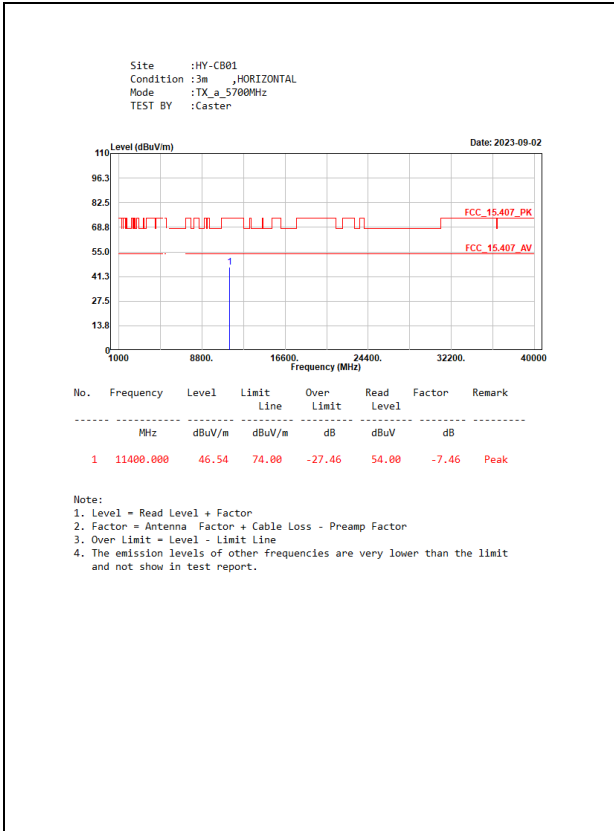
5.4. Test Result of Radiated Emission SISO A

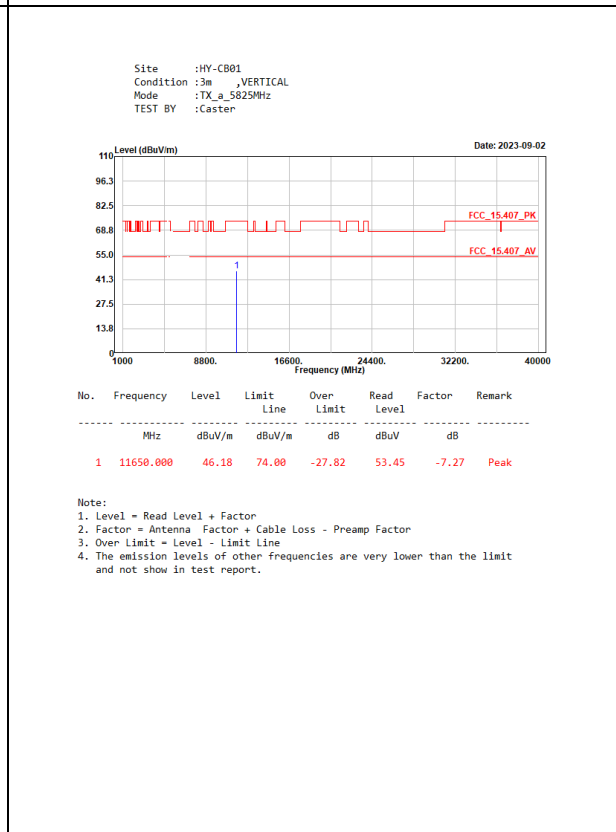
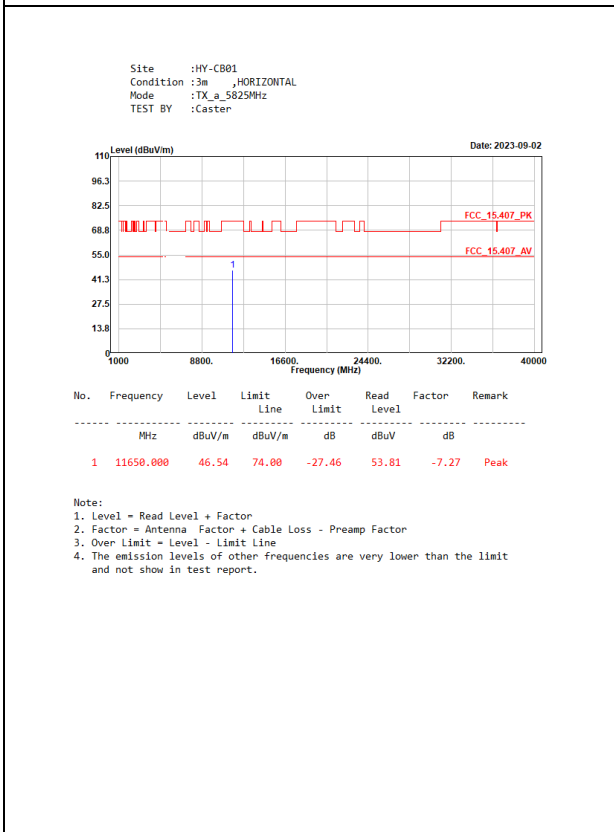
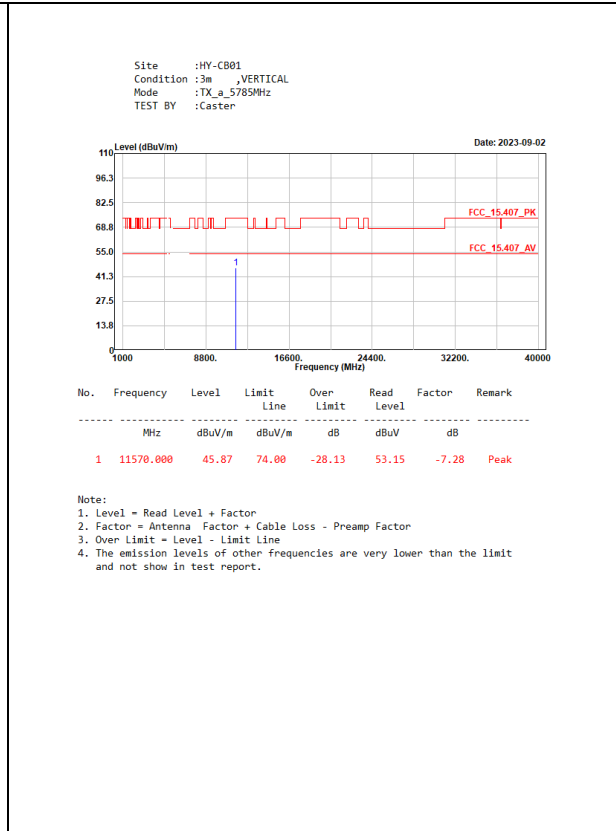
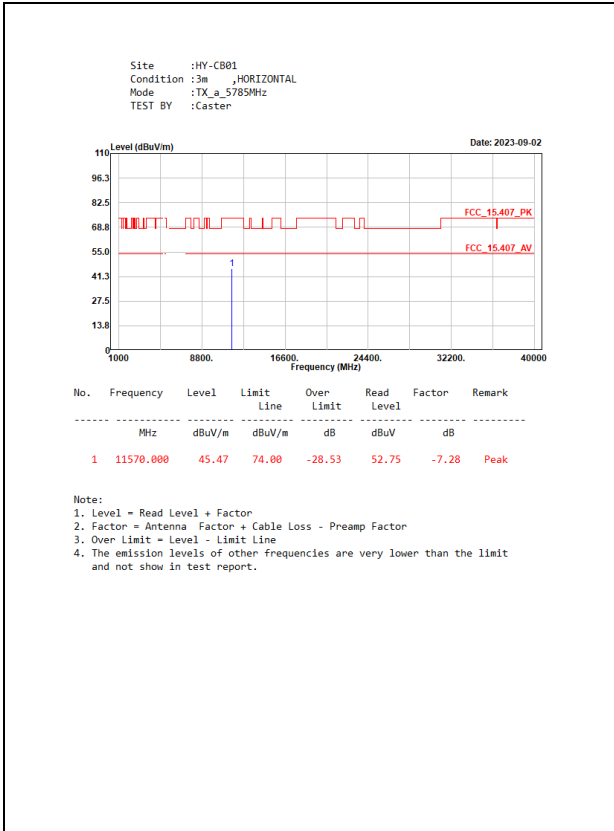


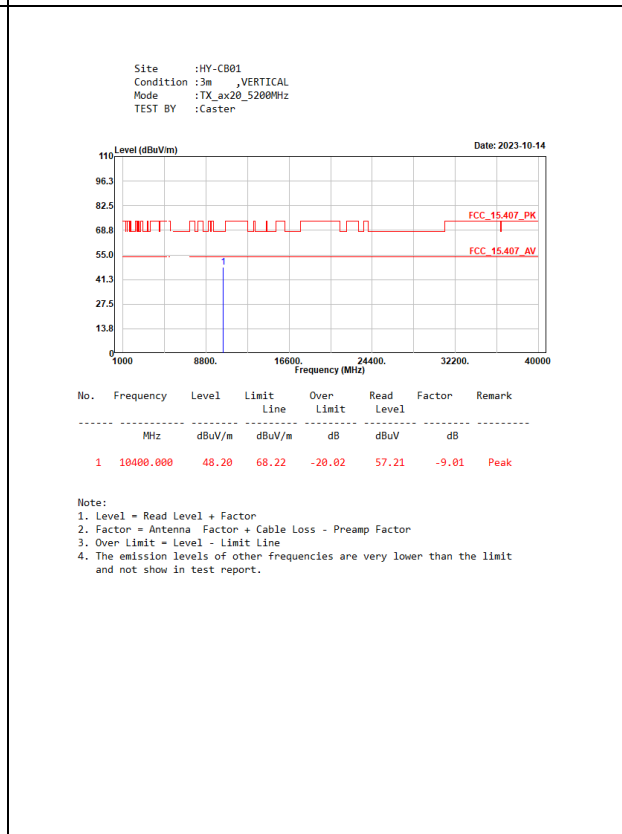
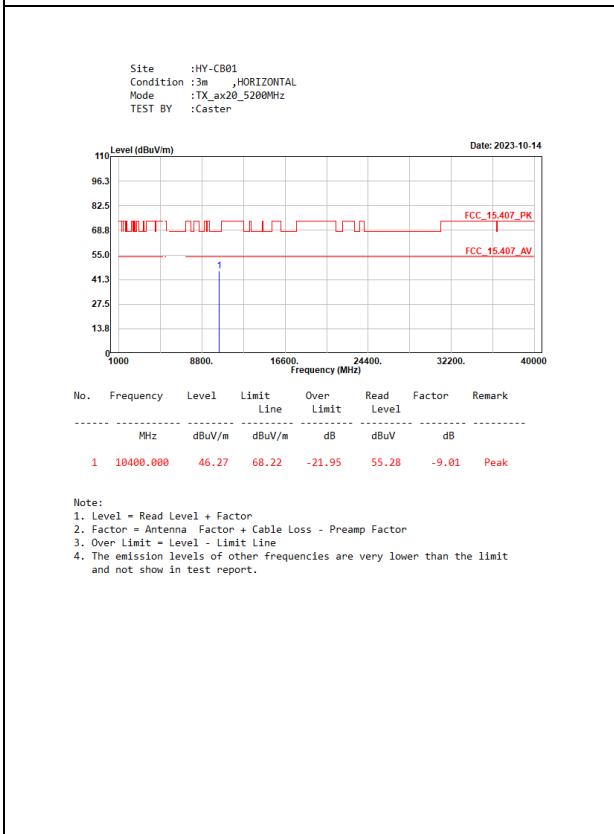
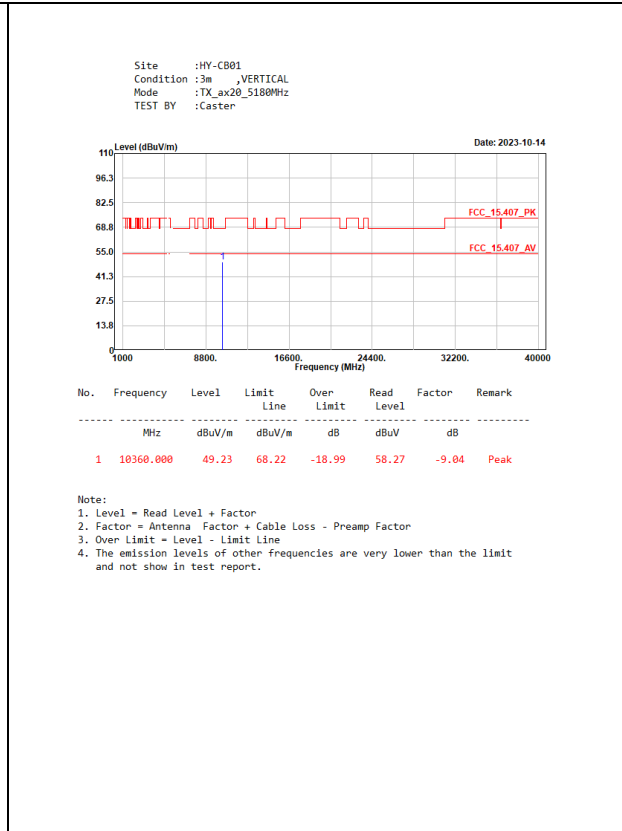
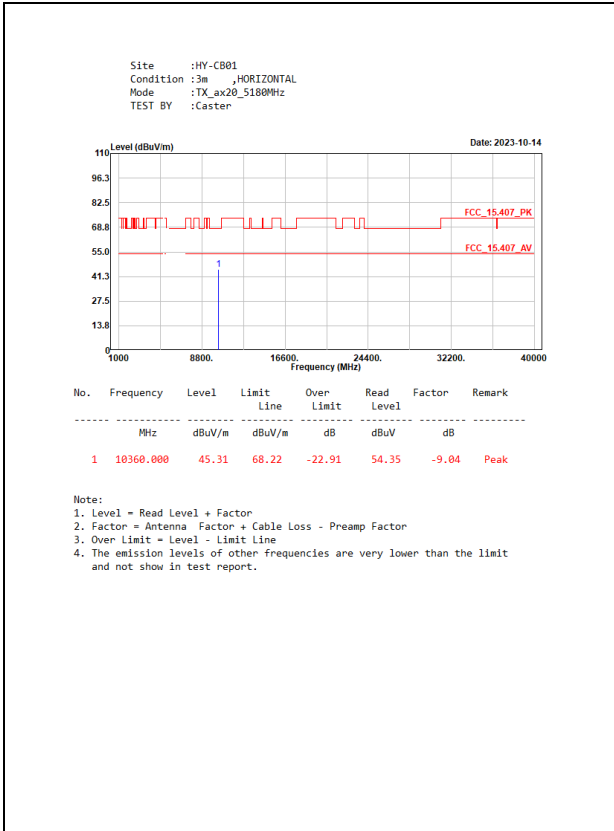


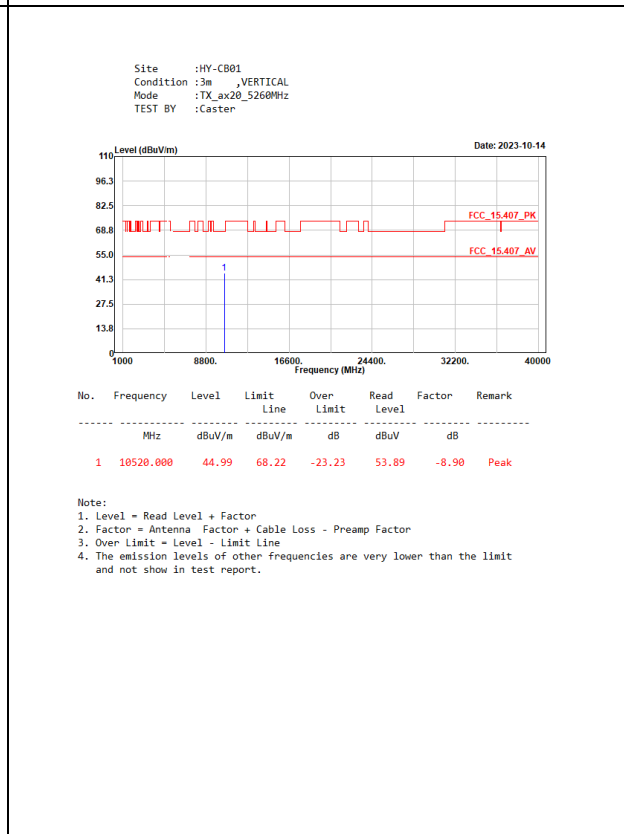
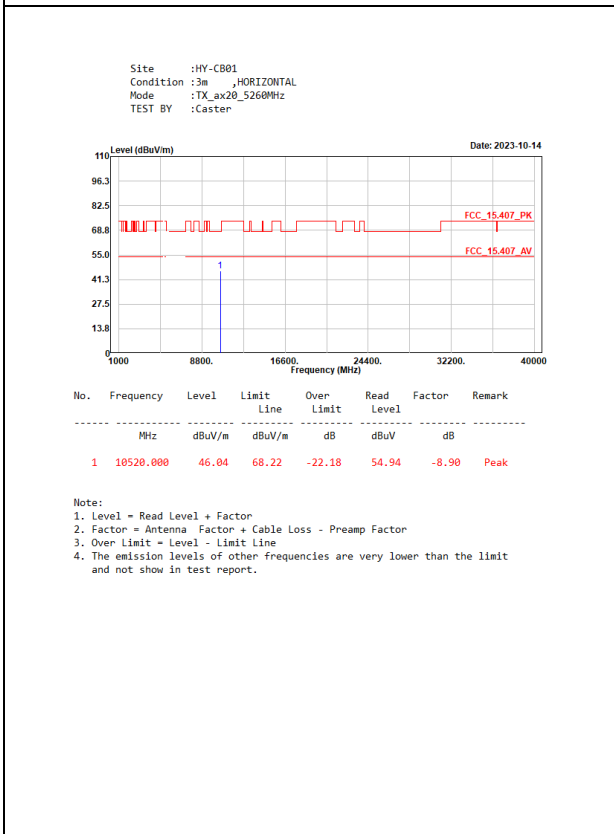
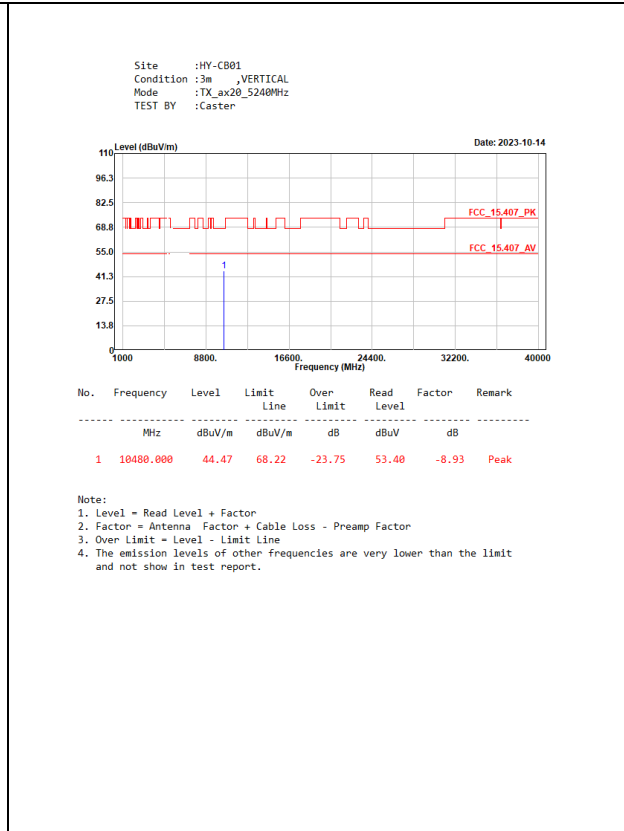
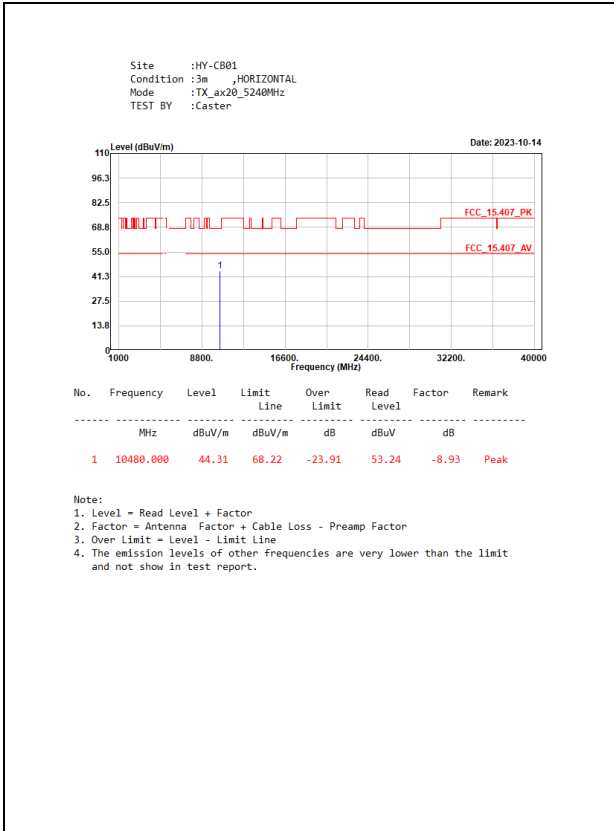


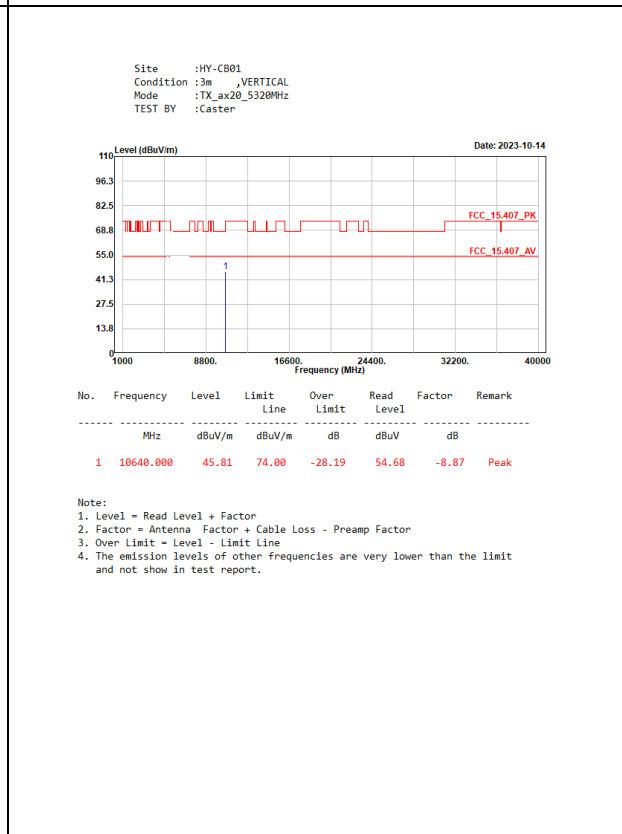
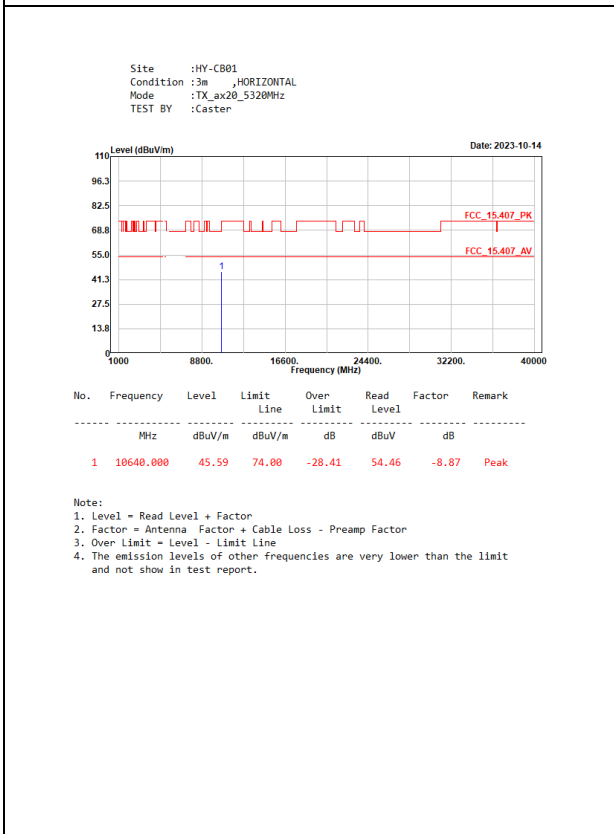
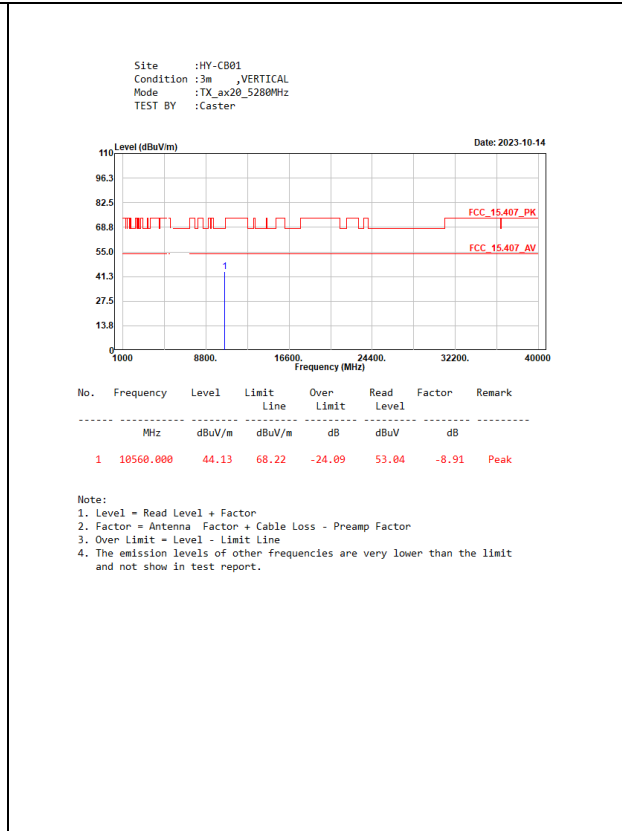
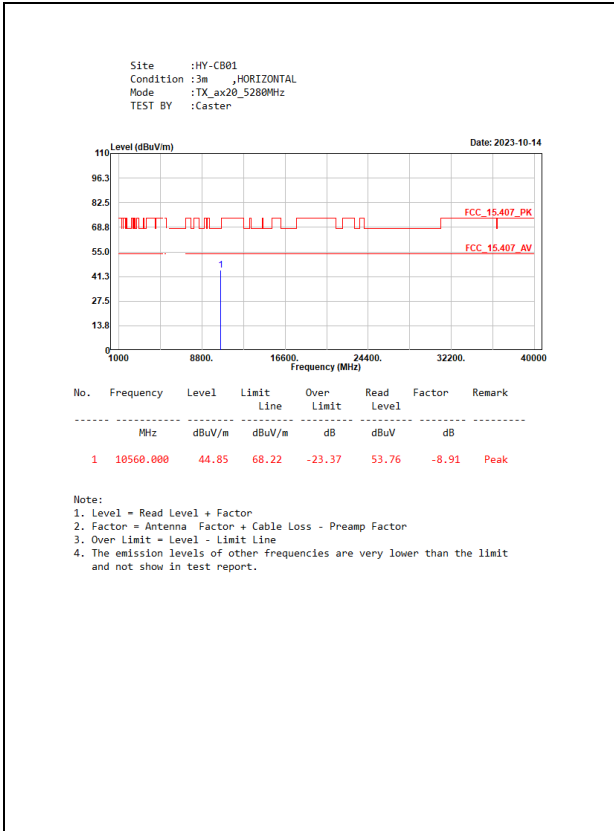


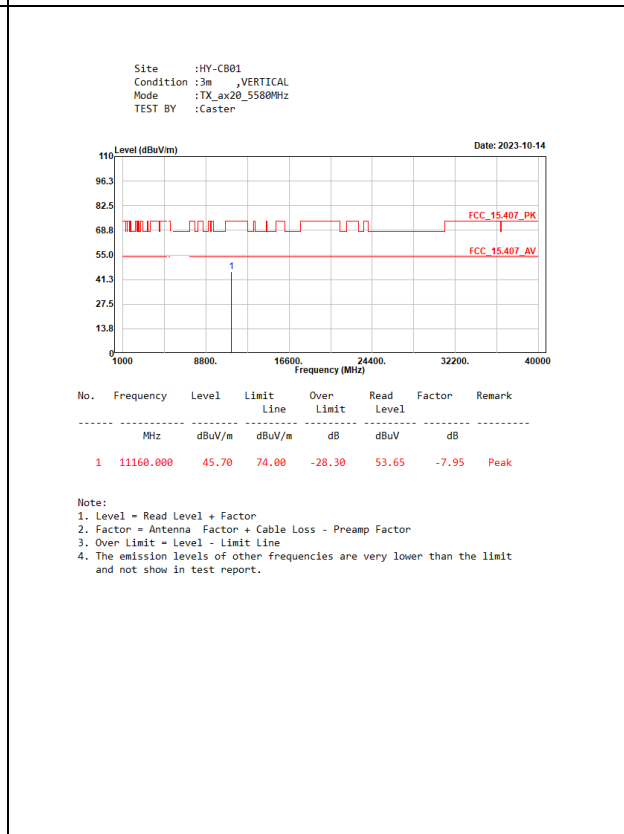
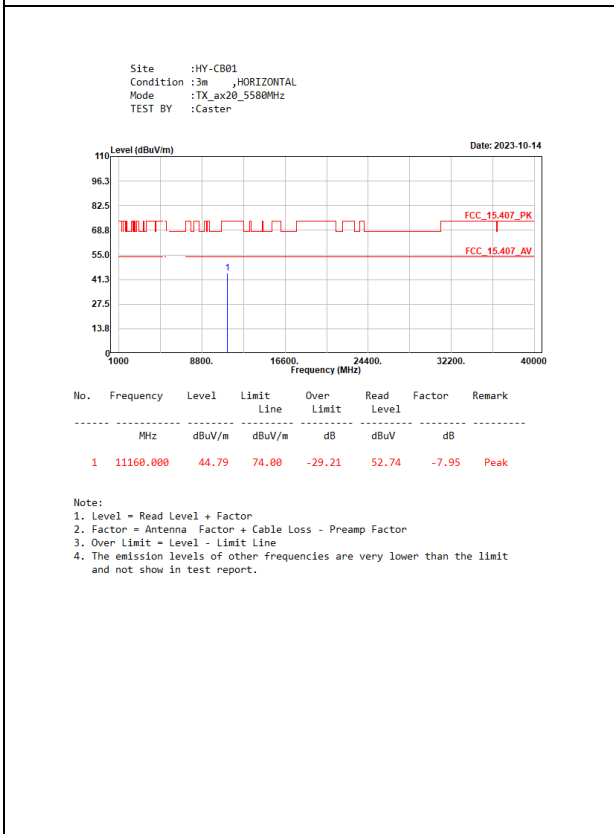
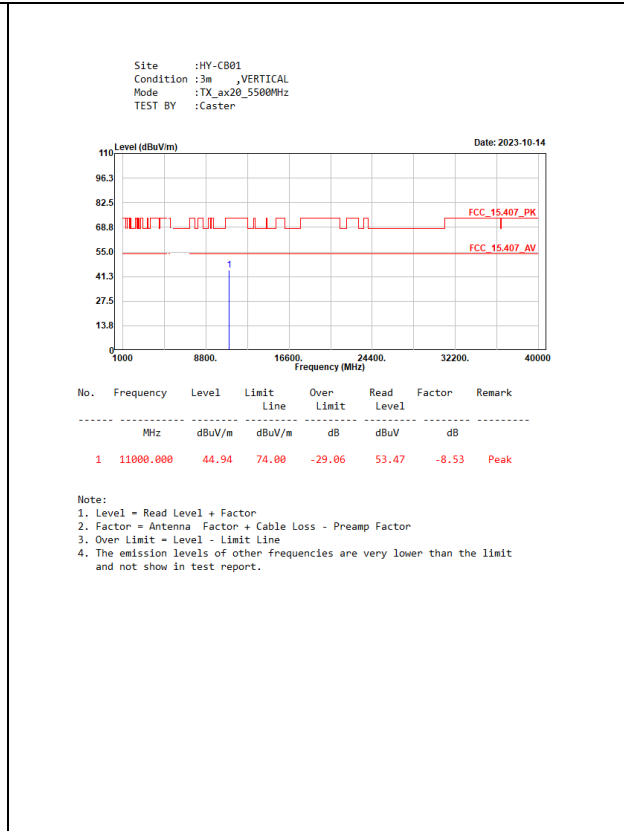
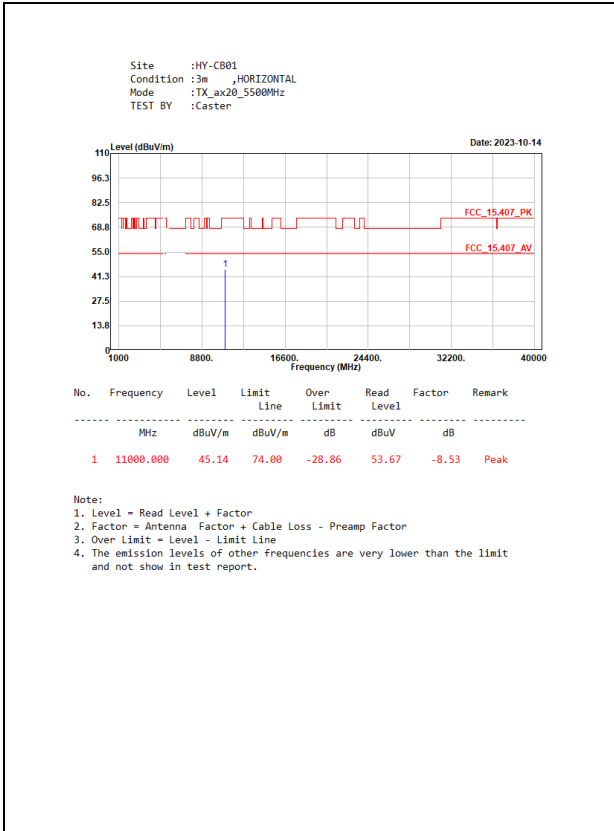


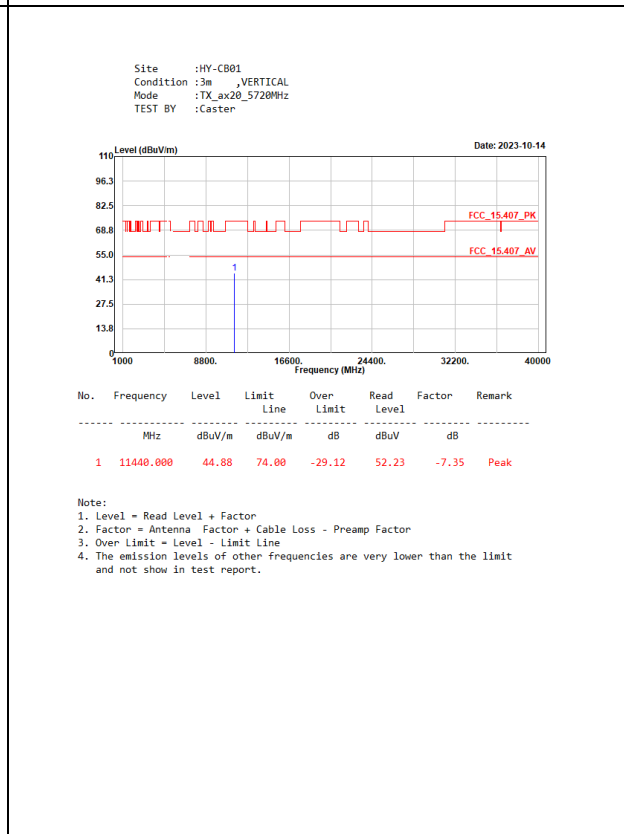
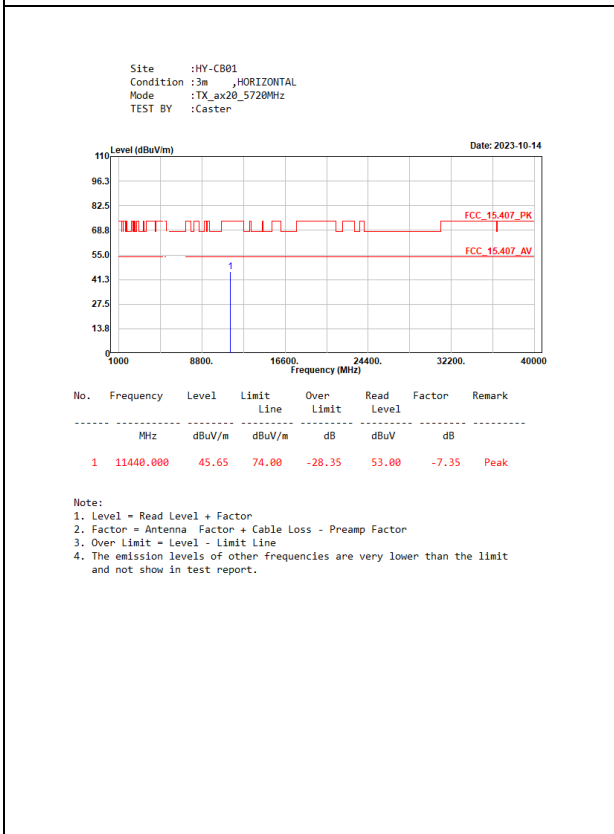
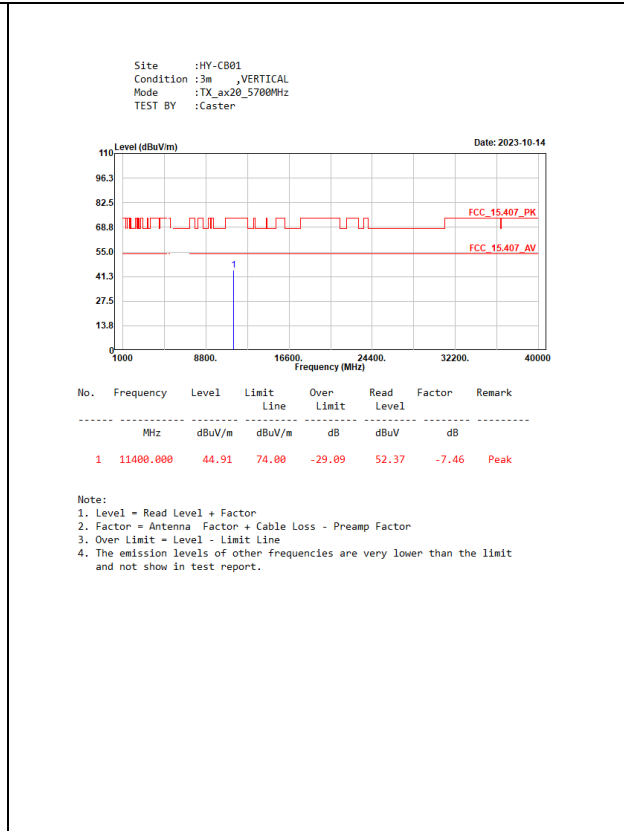
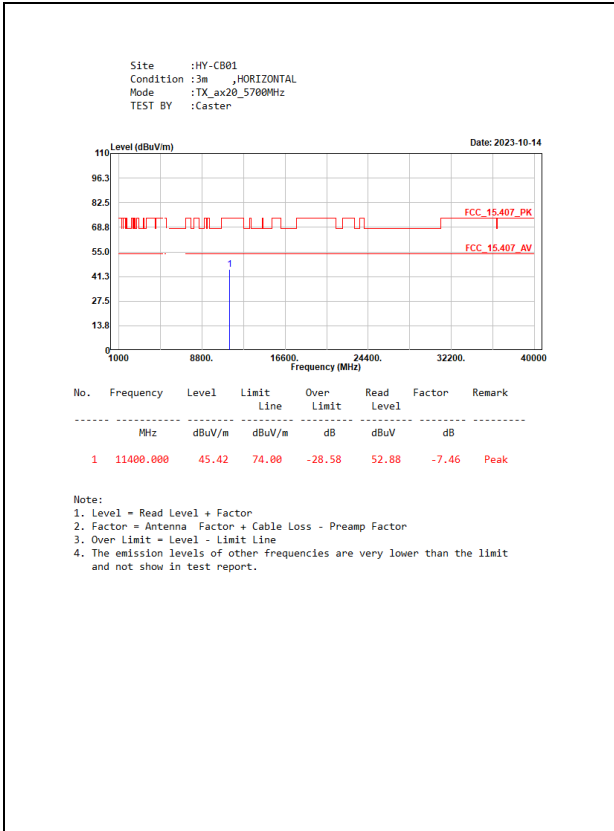


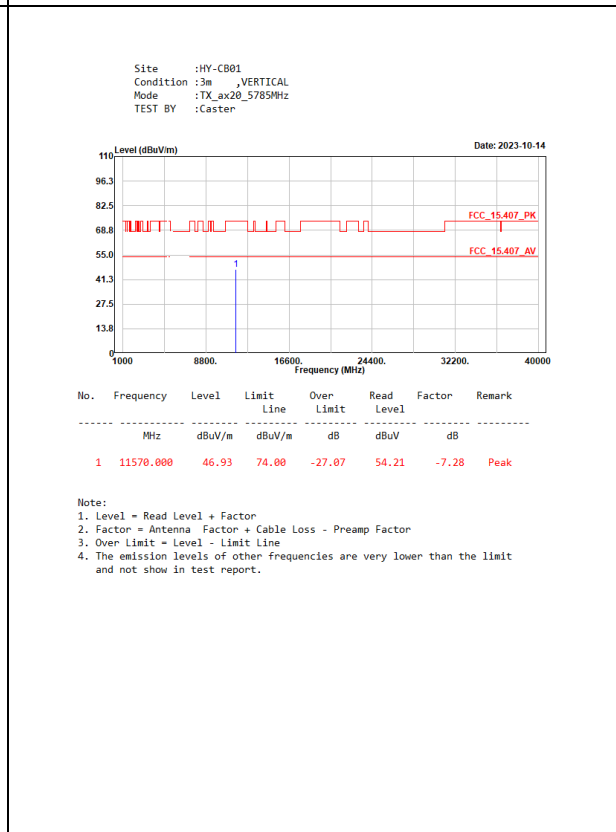
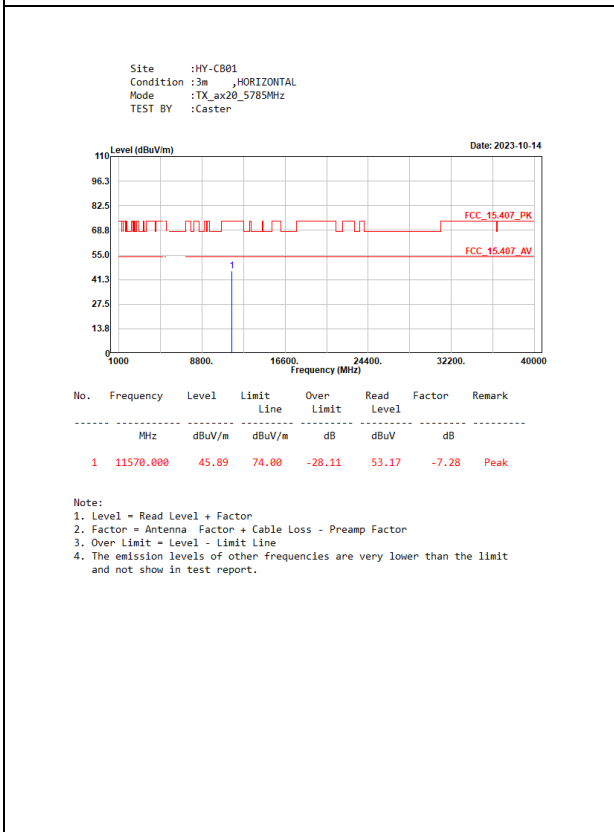
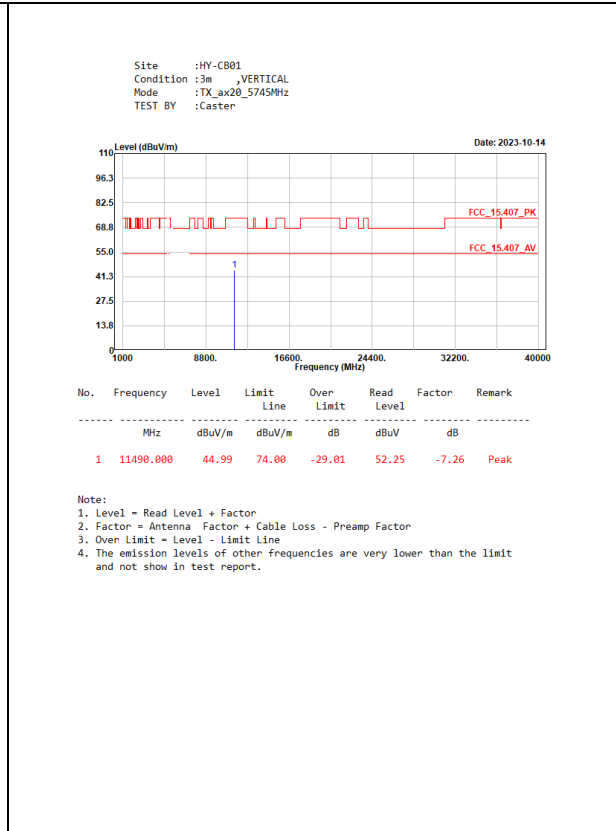
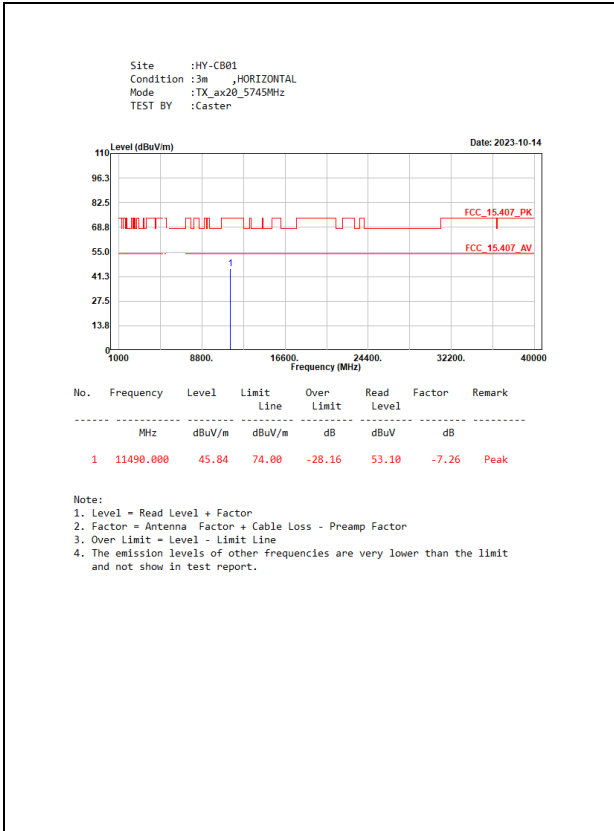


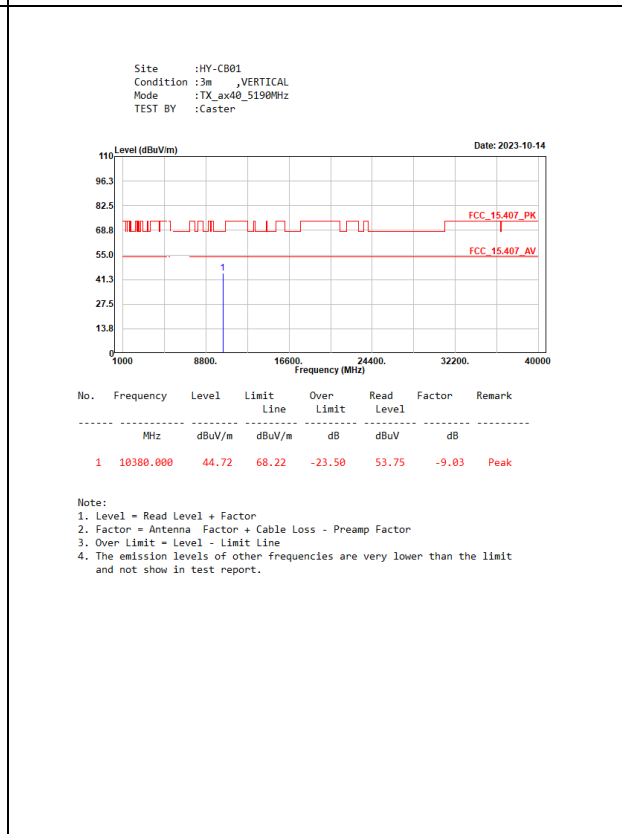
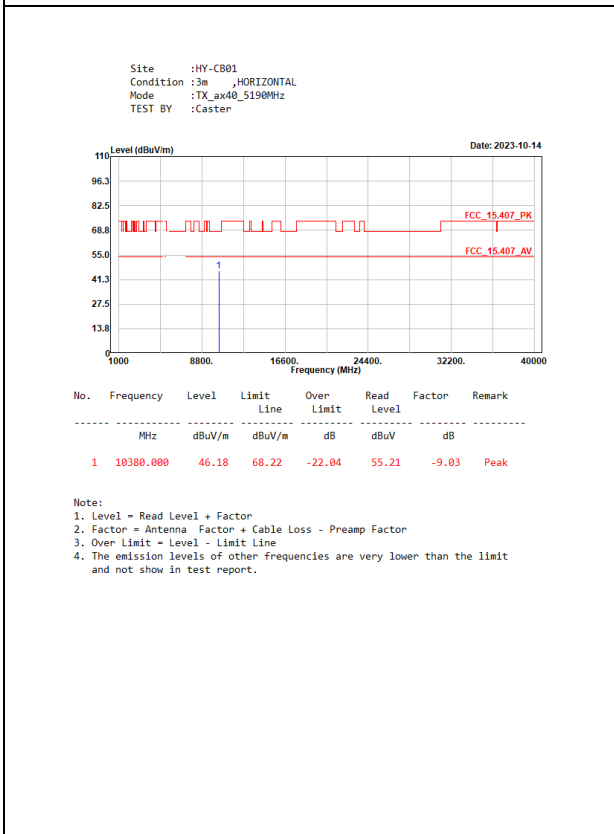
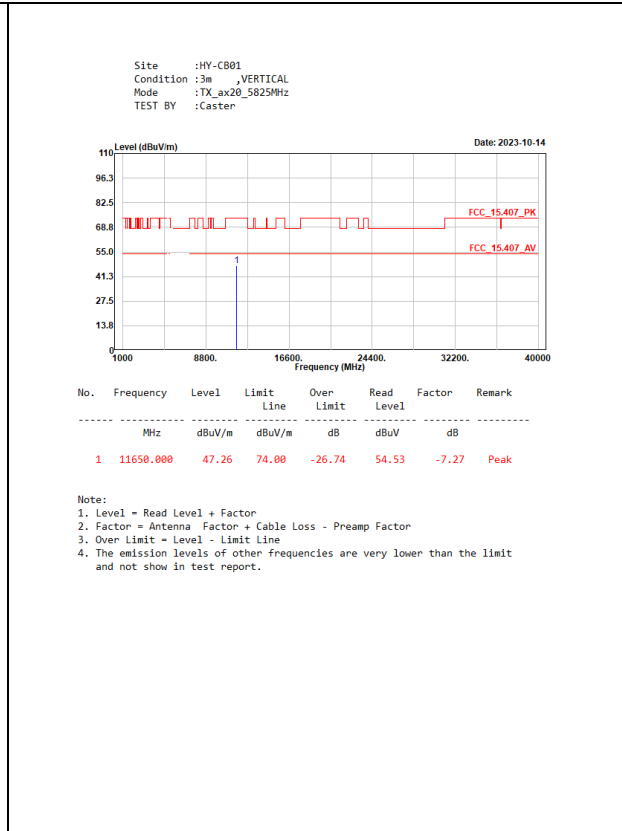
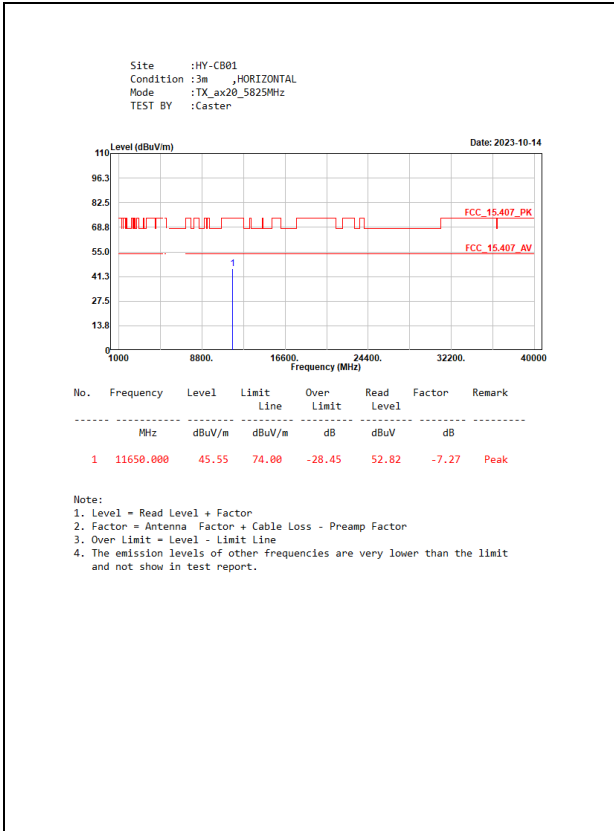


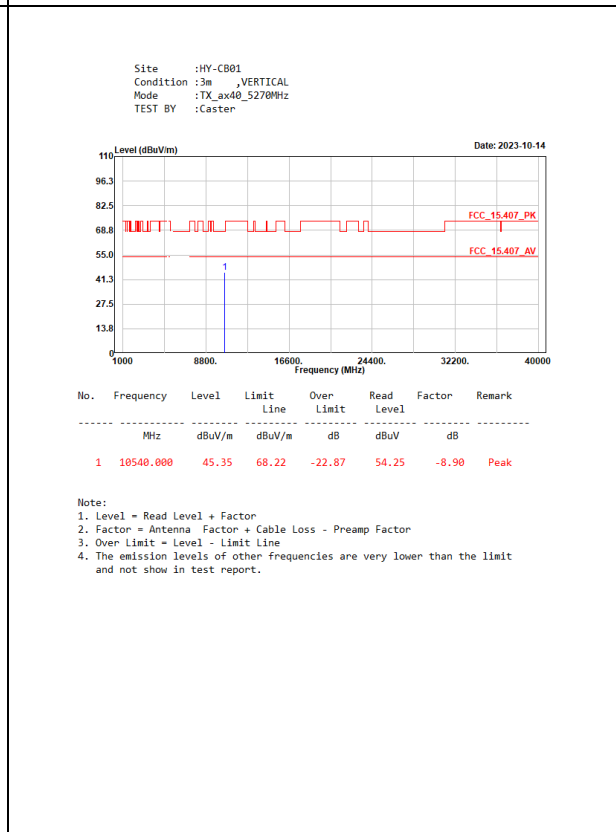
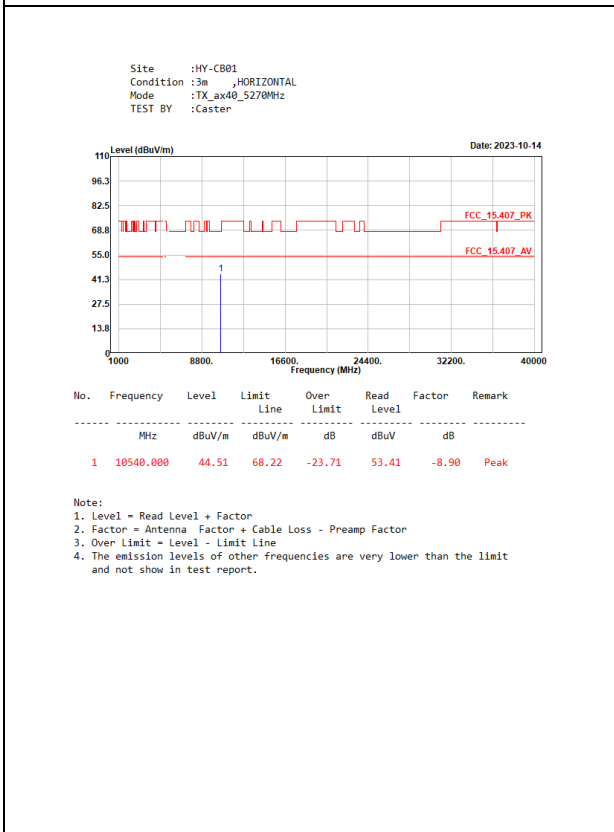
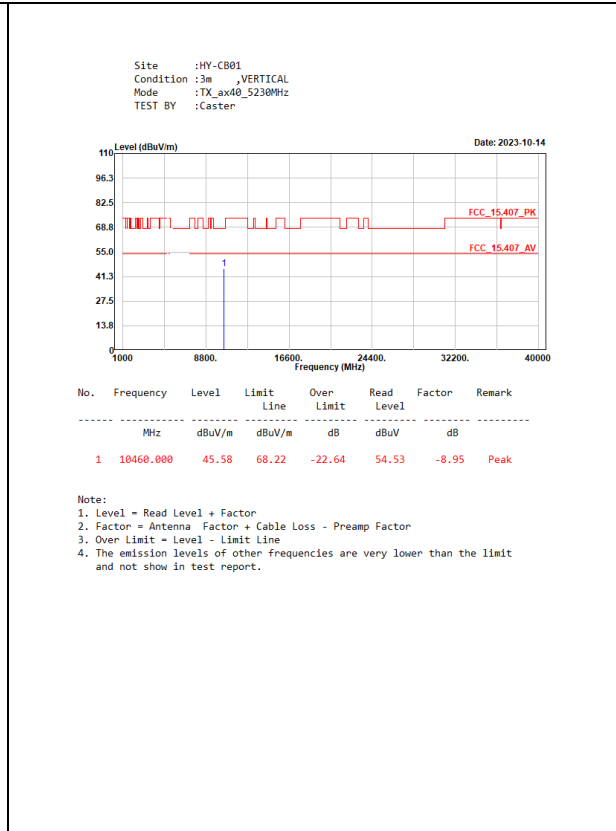
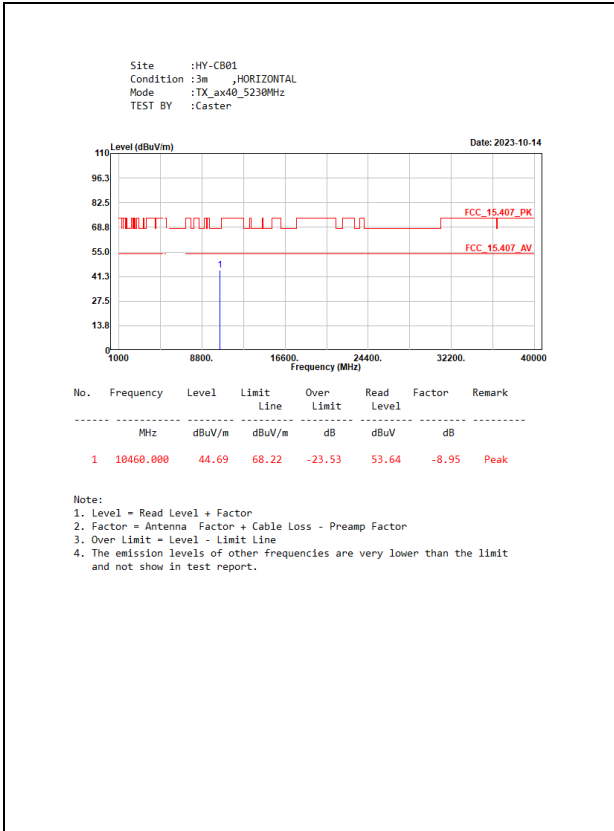


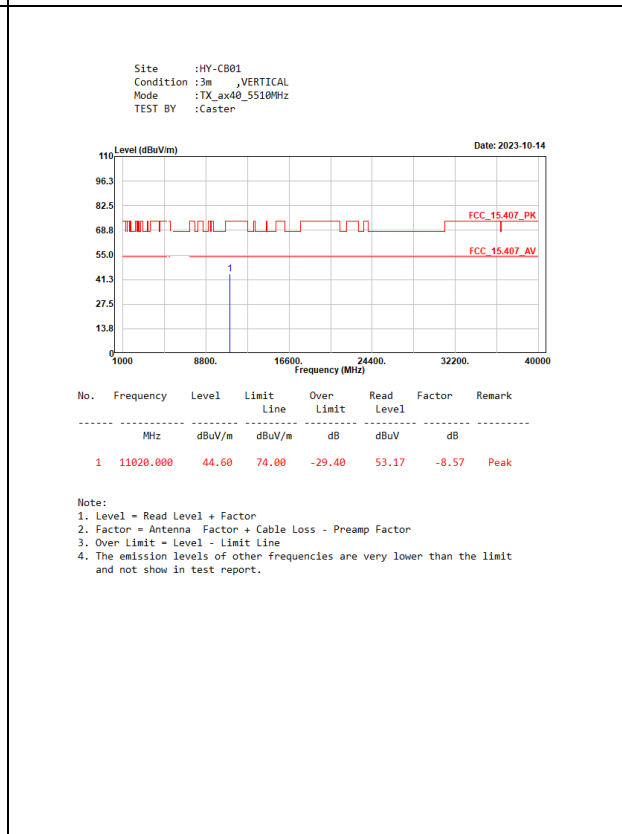
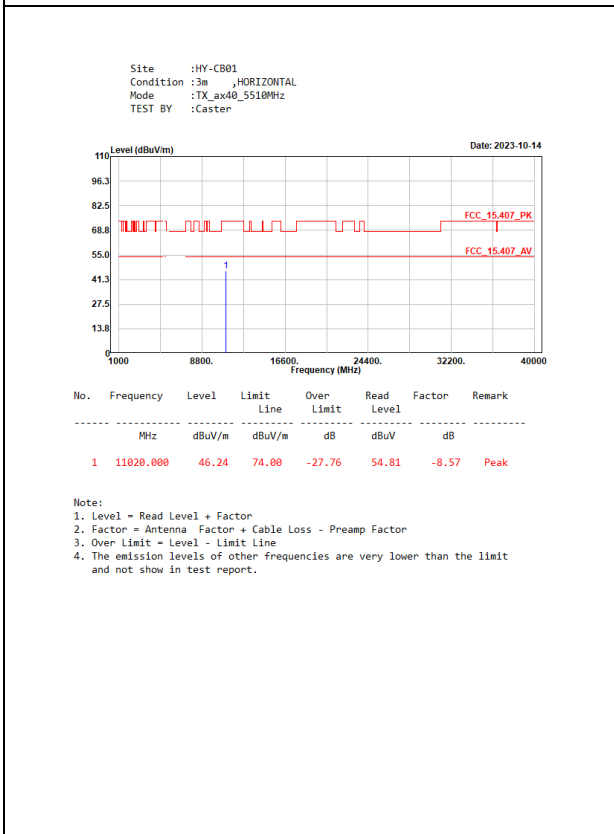
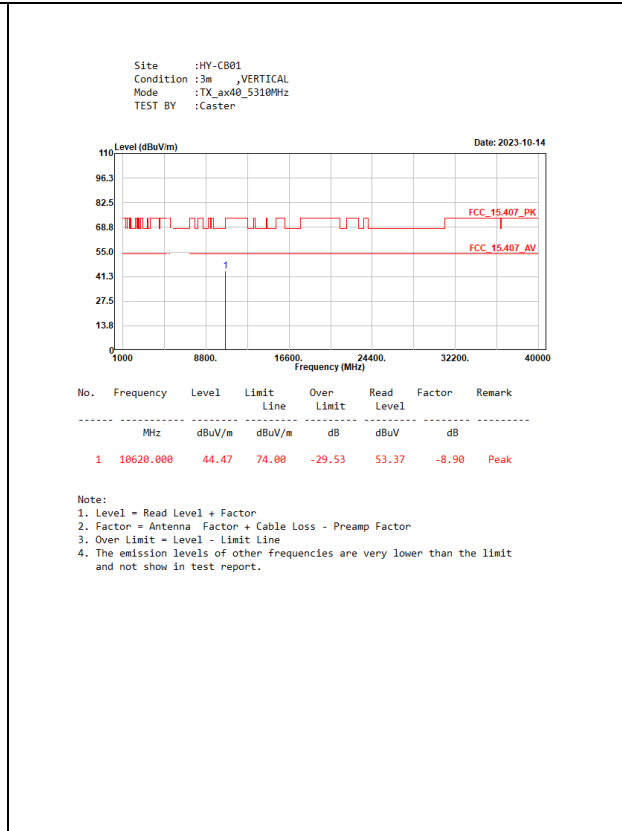
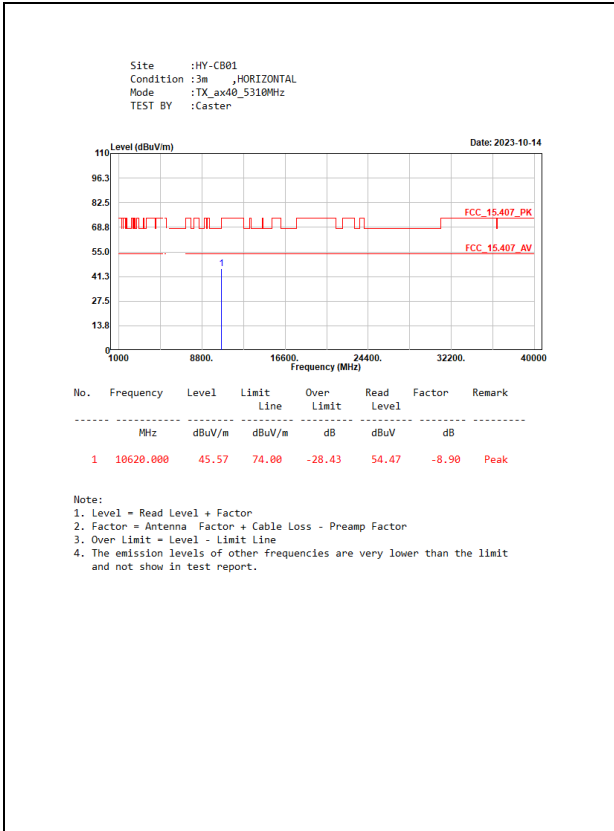


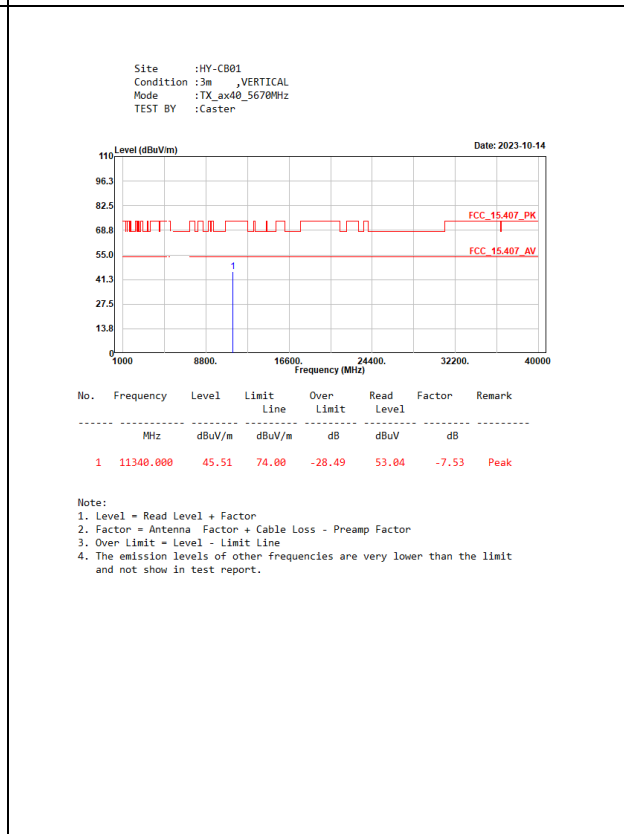
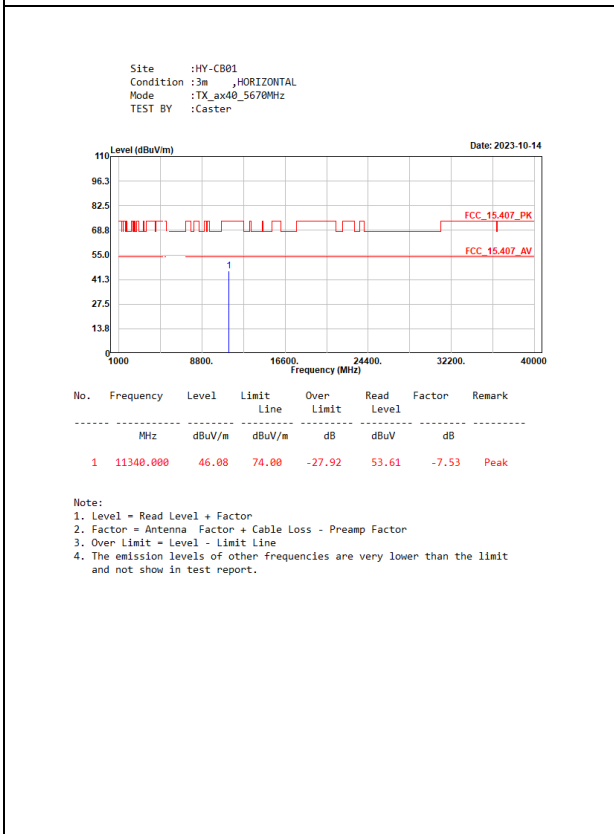
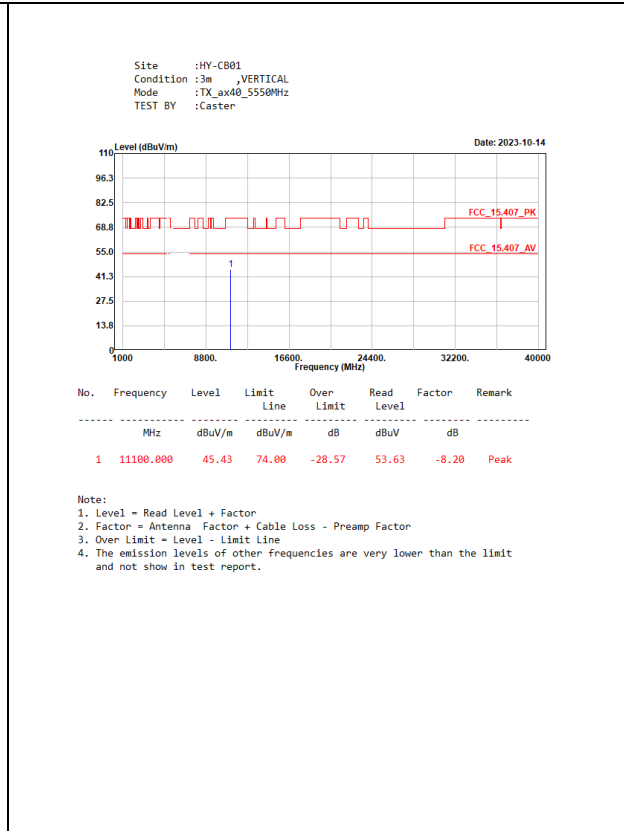
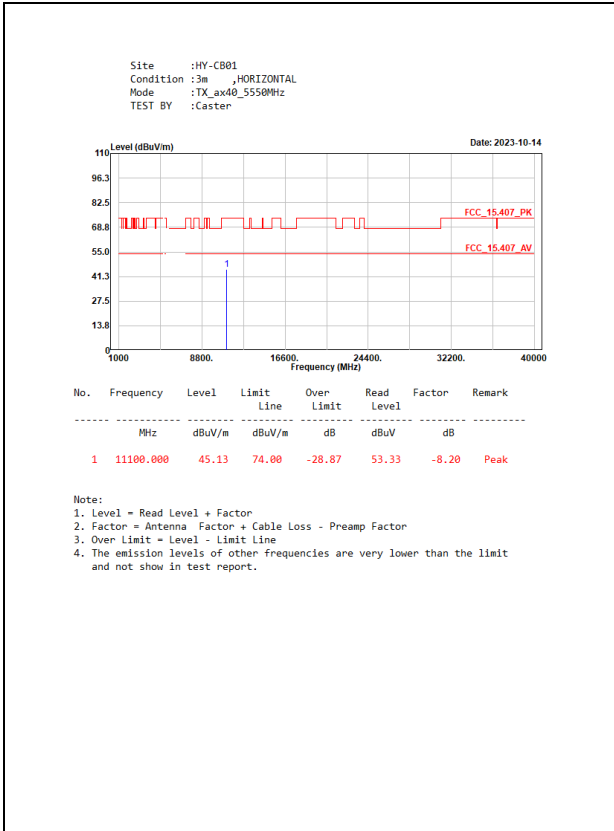


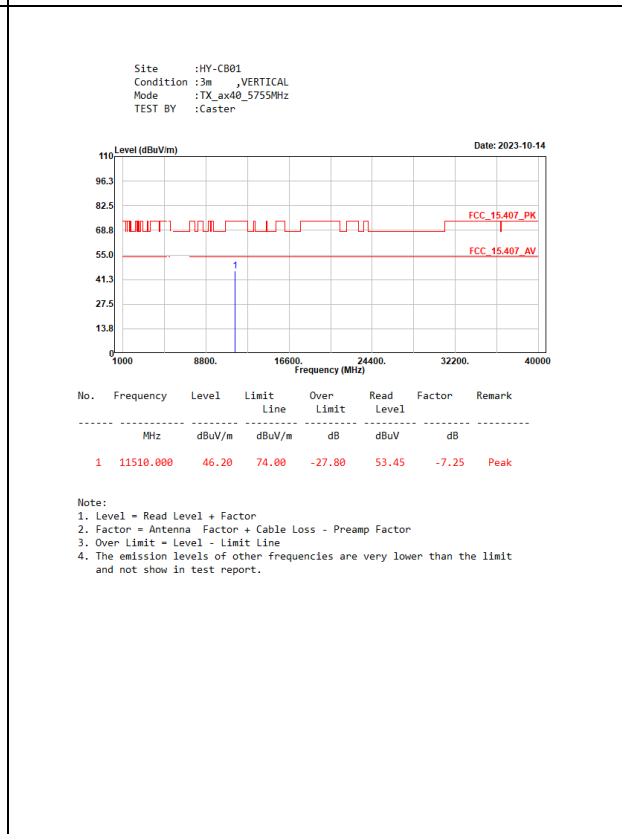
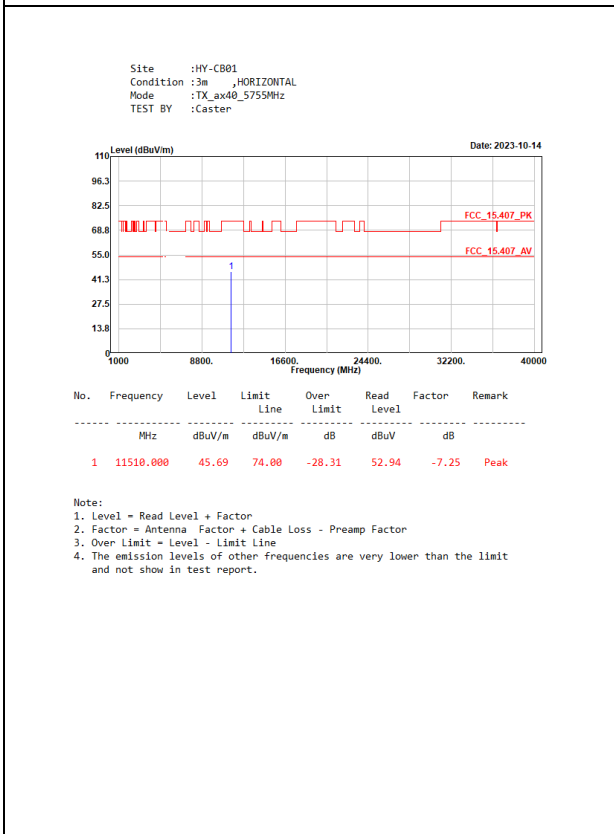
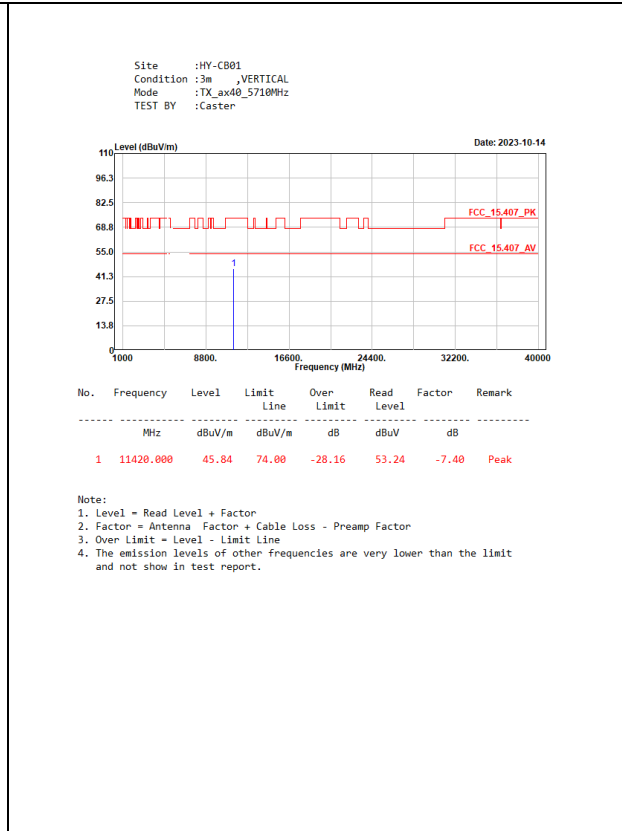
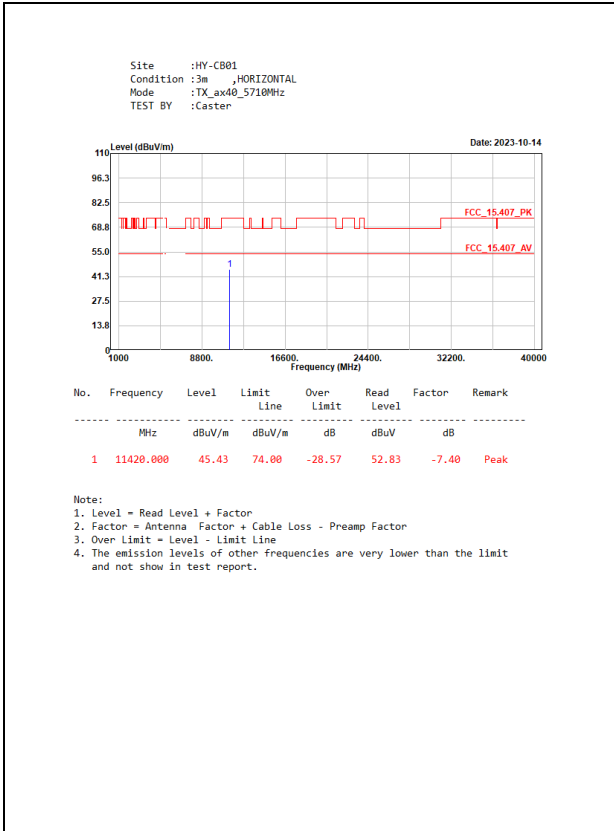


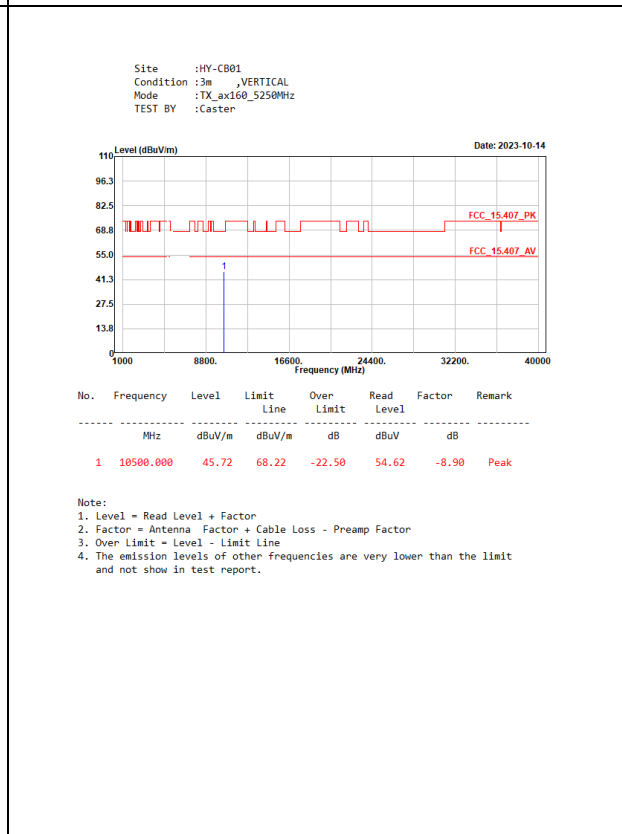
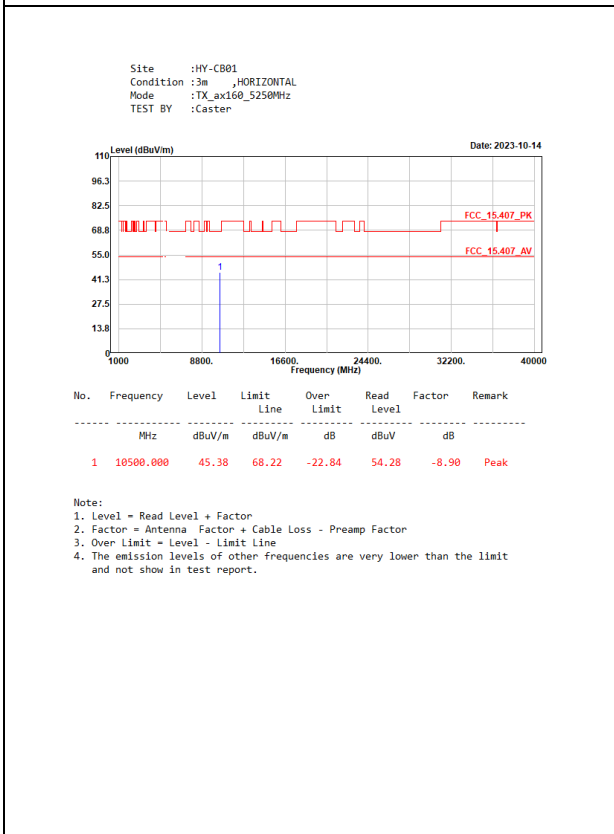
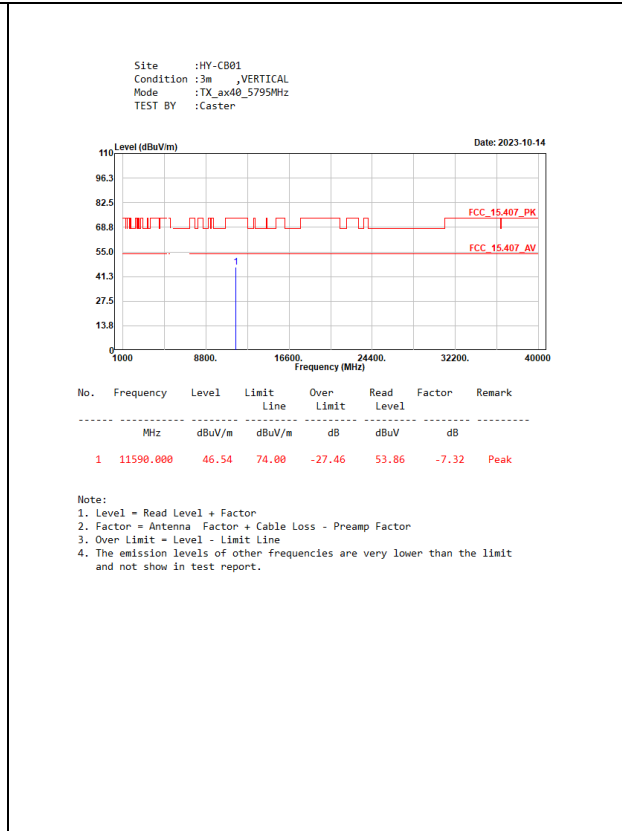
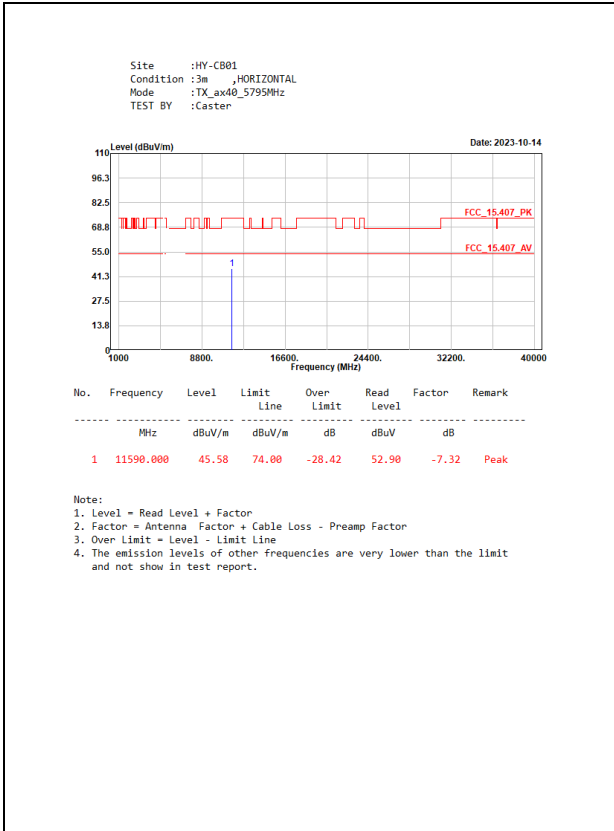


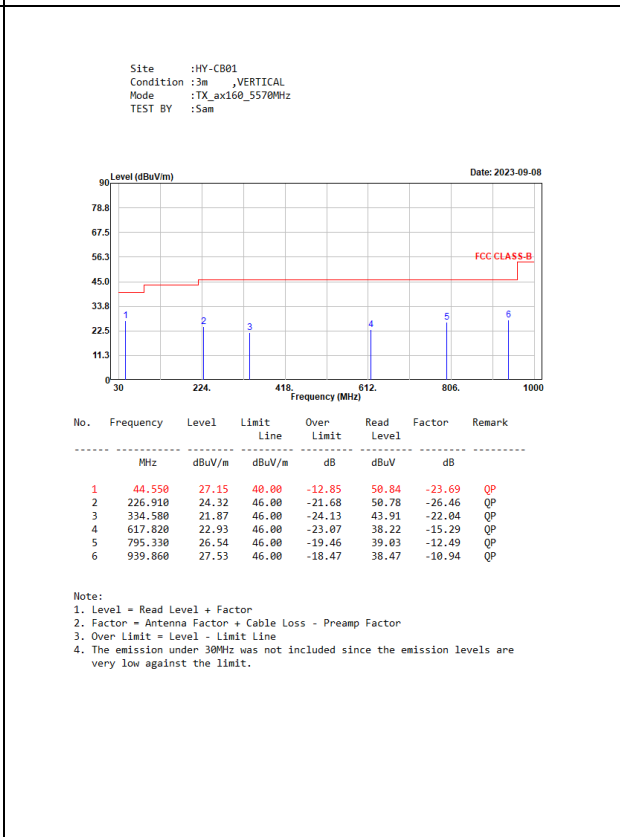
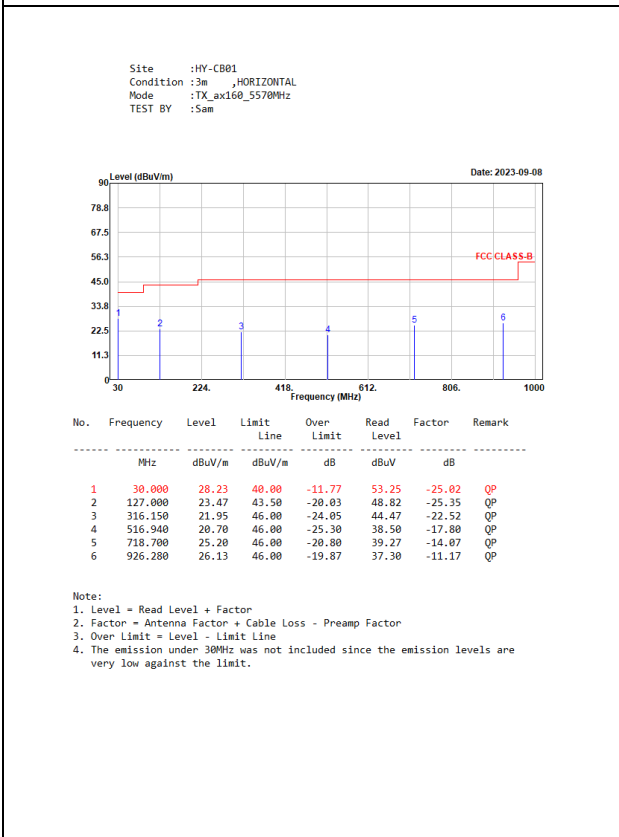
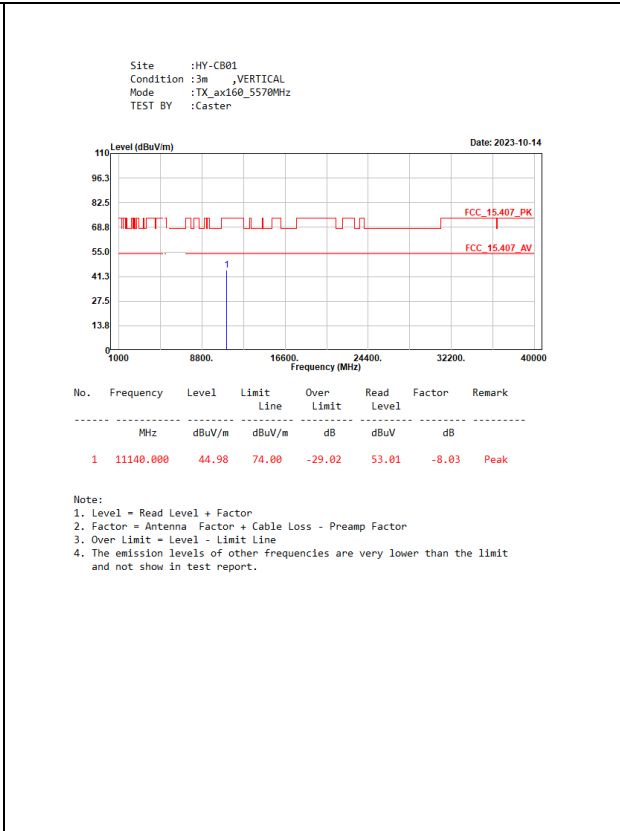
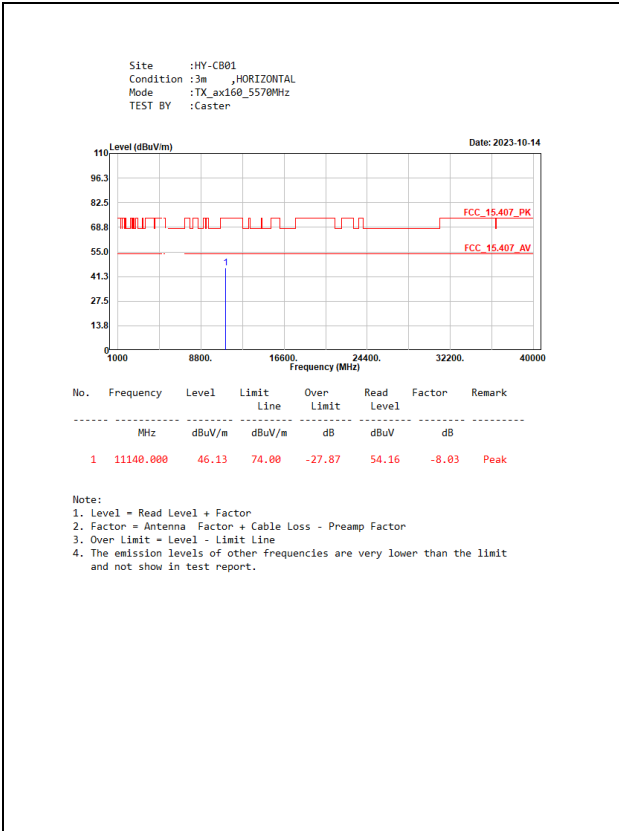




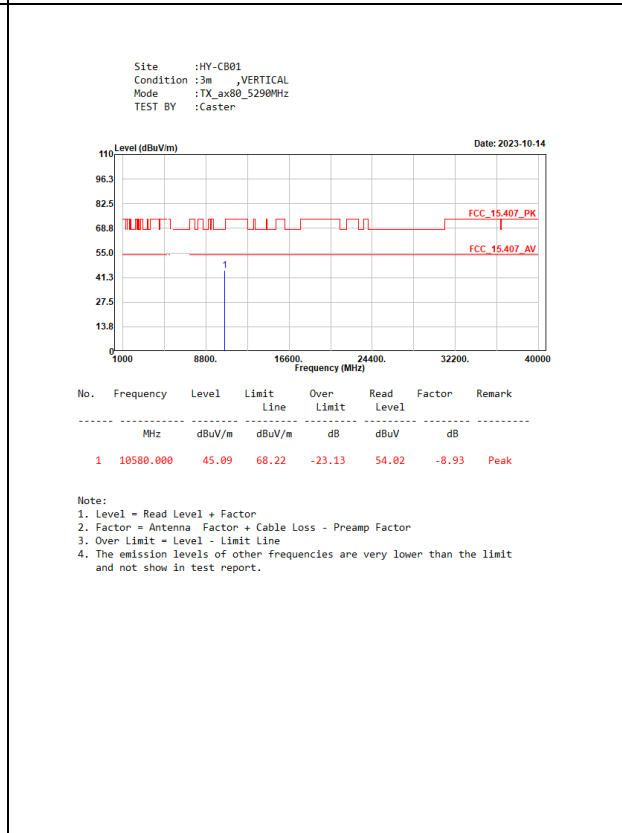
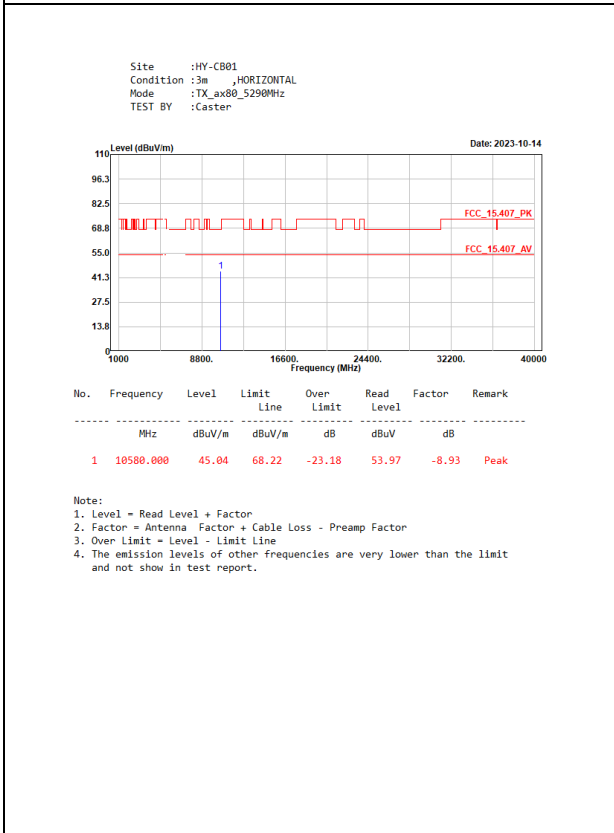
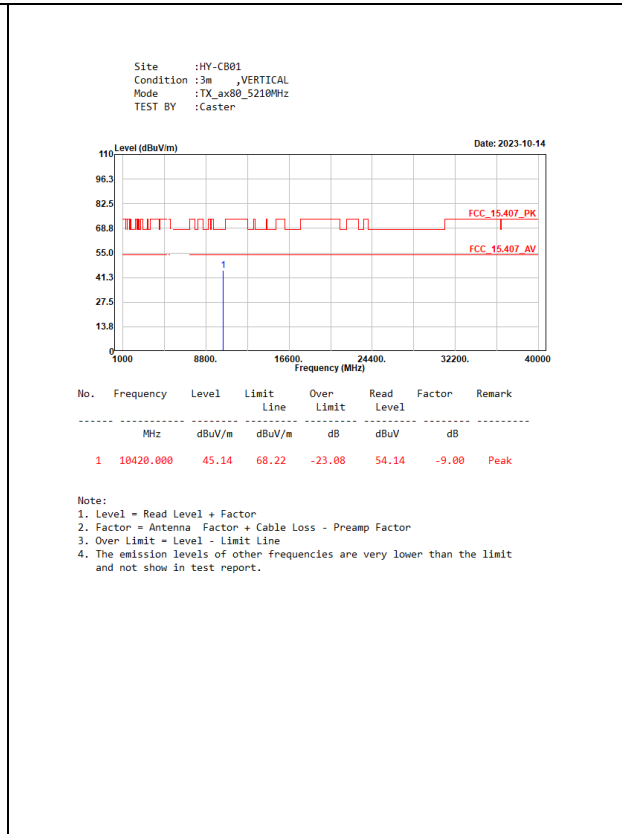
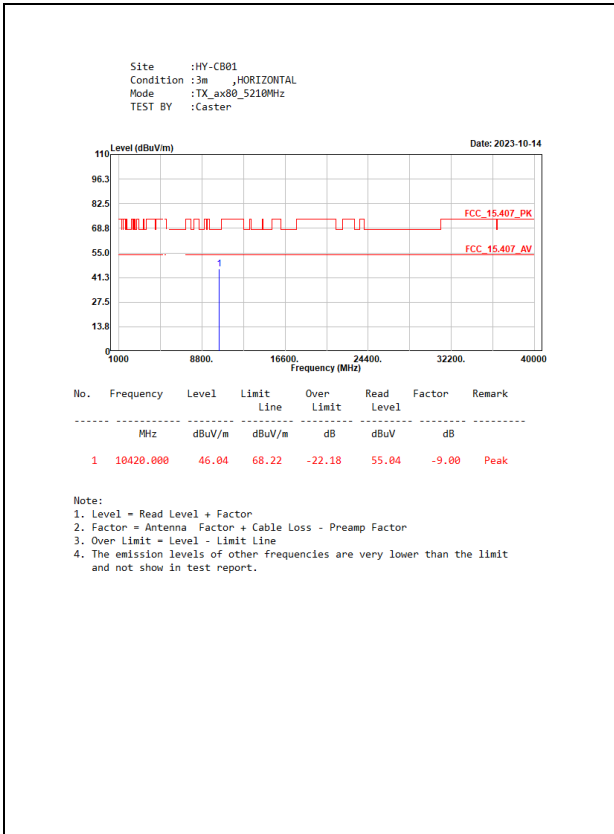


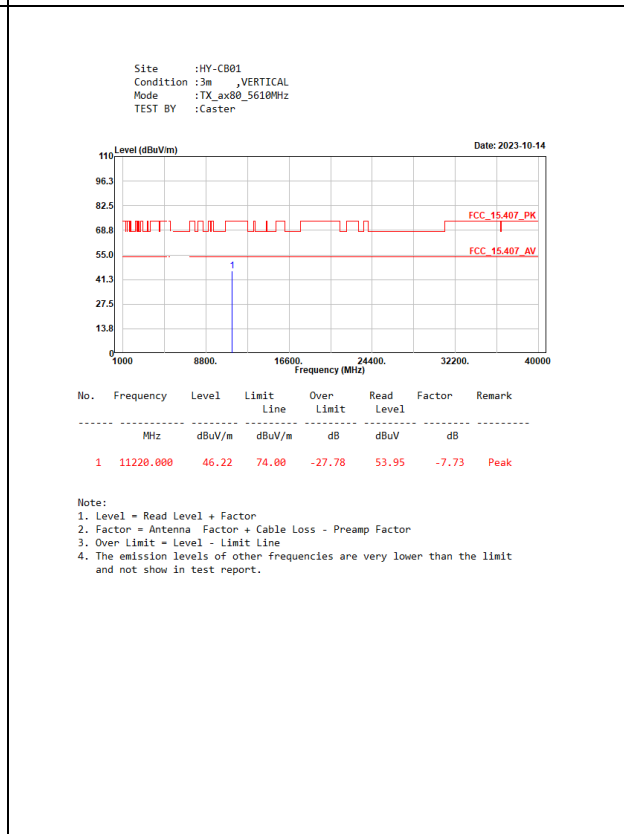
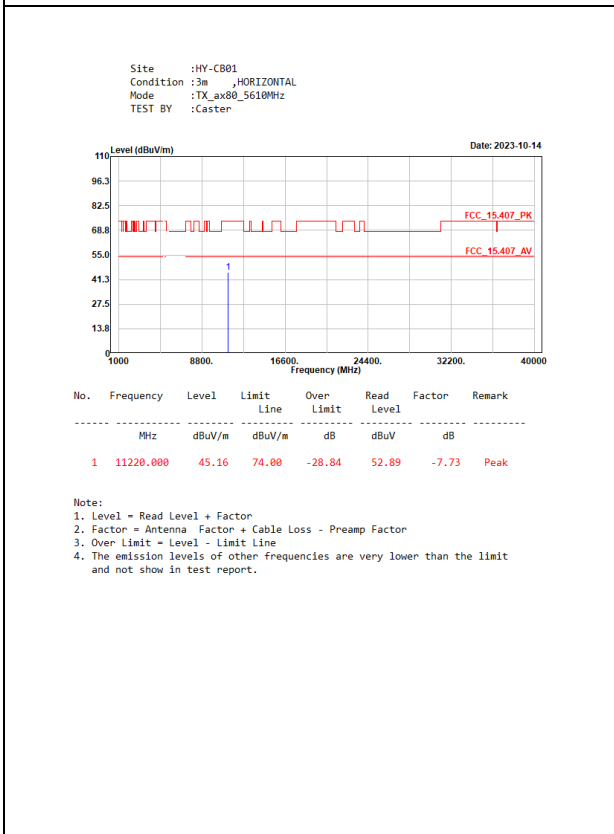
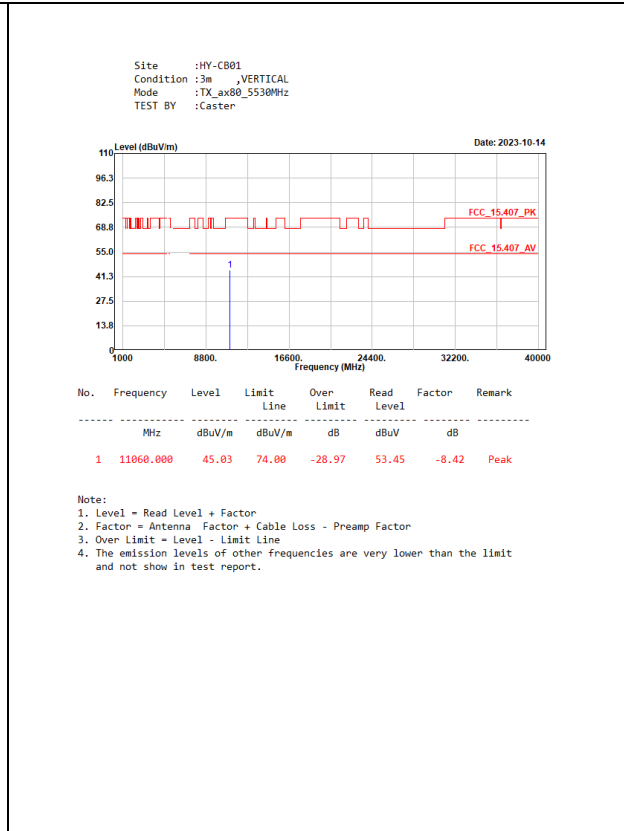
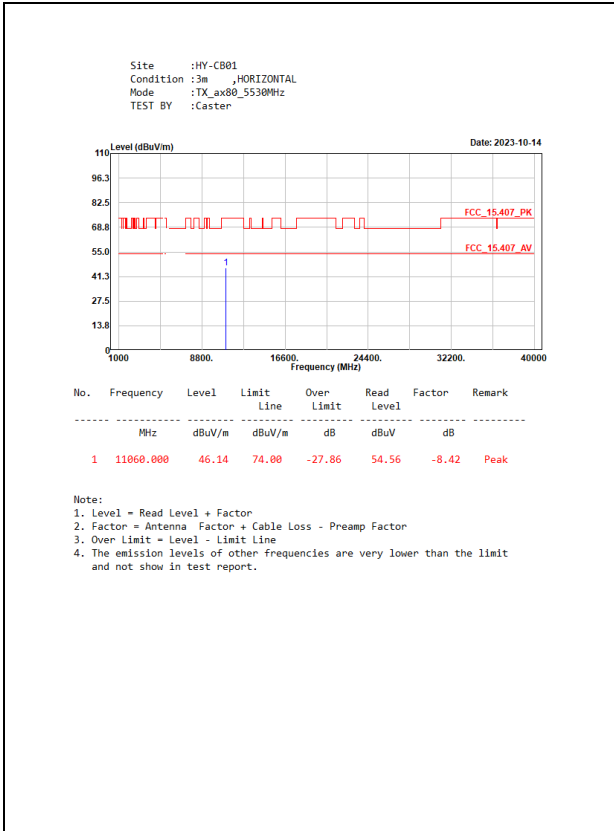


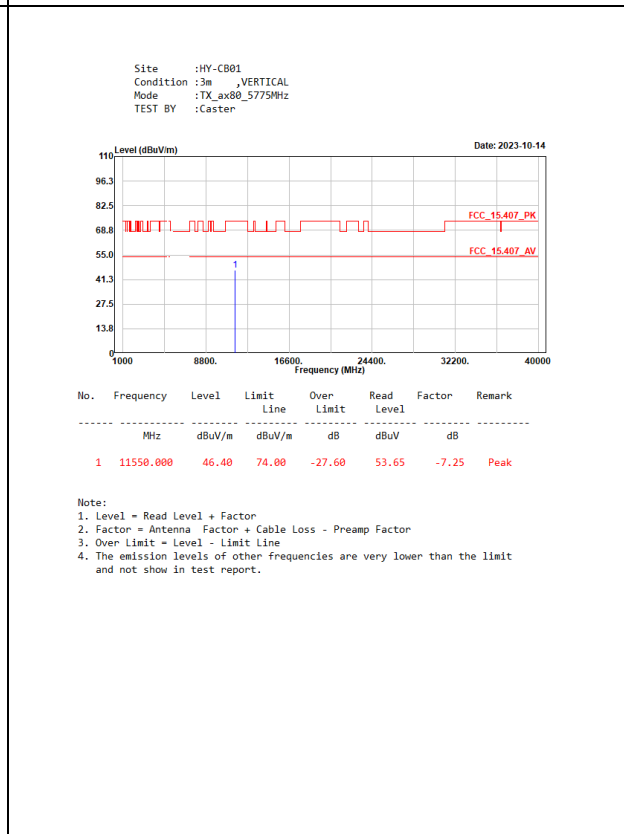
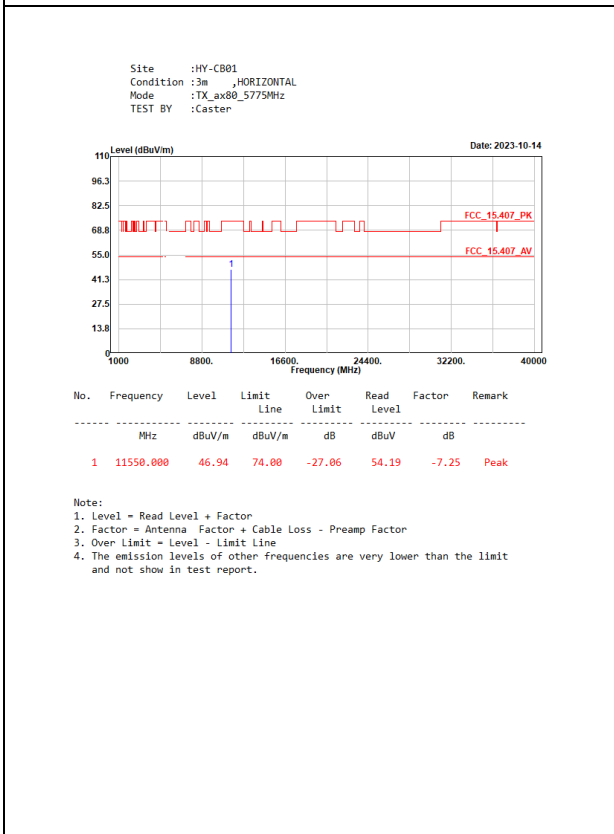
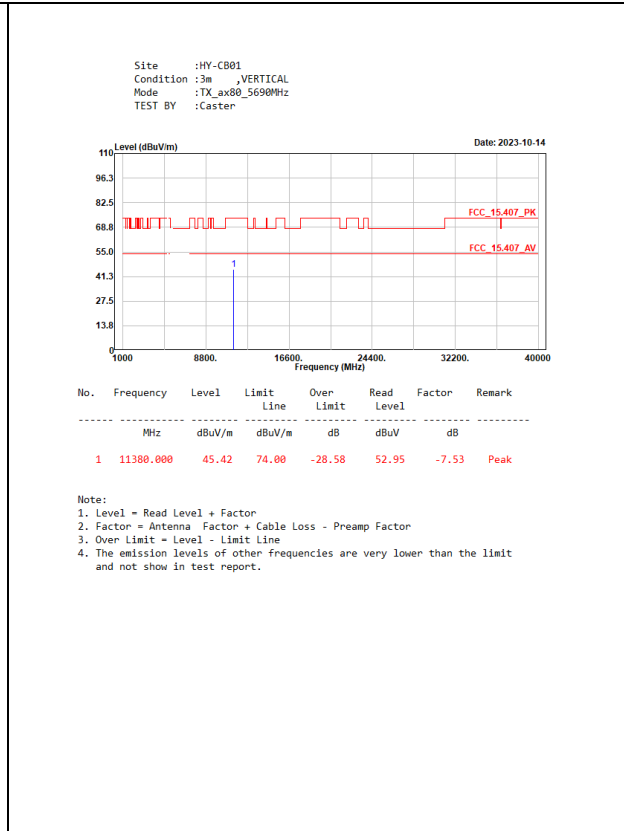
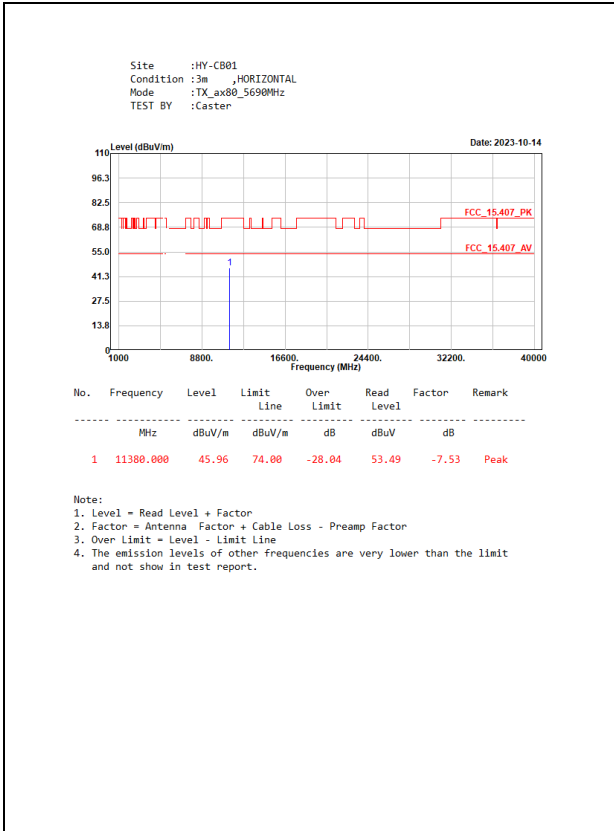




SISO B







MIMO

