



## Test report No.: 2340335R-RFUSV03S-A

## **TEST REPORT**

Product Name	TCx EDGE Cam+
Trademark	TOSHIBA
Model and /or type reference	6260-002
FCC ID	2AW3T-6260-002
Applicant's name / address	Toshiba Global Commerce Solutions, Inc. 3901 South Miami Blvd., Durham,North Carolina United States 27703
Manufacturer's name	Toshiba Global Commerce Solutions, 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)	Grente Chang
Tested By (Senior Engineer / Bill Lin)	Grenie Chang Bill Lin Man Chen
Approved By (Senior Engineer / Alan Chen)	Ban Chen
Date of Receipt	2023/04/13
Date of Issue	2023/05/19
Report Version	V1.0



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# DEKRA

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Appendix 1: EUT Test Photographs

Appendix 2: Product Photos-Please refer to the file: 2340335R-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
2340335R-RFUSV03S-A	V1.0	Initial issue of report.	2023/05/19



## 1. General Information

## 1.1. EUT Description

Product Name	TCx EDGE Cam+
Trade Name	TOSHIBA
Model No.	6260-002
EUT Rated Voltage	PoE, 48-57V==/ 25.5W max
	USB 12V==2.25A / 9V==3A / 27W max
EUT Test Voltage	DC 12V (by USB-Type C)
	DC 48V (by PoE)
Frequency Range	802.11a/n/ac/ax-20 MHz:
	5180-5320 MHz, 5500-5700 MHz, 5720 MHz, 5745-5825 MHz
	802.11n/ac/ax-40 MHz:
	5190-5310 MHz, 5510-5670 MHz, 5710 MHz, 5755-5795 MHz
	802.11ac/ax-80 MHz:
	5210-5290 MHz, 5530-5690 MHz, 5775 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
Data Rate	802.11a: 6-54 Mbps
	802.11n: up to 300 Mbps
	802.11ac: up to 866.7 Mbps
	802.11ax: up to 1201 Mbps
Type of Modulation	802.11a/n/ac/ax:
	OFDM, OFDMA, BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
Channel Control	Auto
USB Cable	Shielded, 2.5m
RJ45 Cable	Non-Shielded, 4.3m
Mounting Pipe	N/A

## Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Pulse	TZ2531W (Main)	PIFA	7.3 dBi for 5150~5250 MHz
				7.6 dBi for 5250~5350 MHz
				7.2 dBi for 5470~5725 MHz
				6.4 dBi for 5725~5850 MHz
		TZ2530W (Aux)		7.9 dBi for 5150~5250 MHz
				7.9 dBi for 5250~5350 MHz
				7.9 dBi for 5470~5725 MHz
				6.6 dBi for 5725~5850 MHz

Note: The antenna of EUT is conforming to FCC 15.203.



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						

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

Note:

- 1. This device is a TCx EDGE Cam+ with built-in WLAN and Bluetooth transceiver, this report for 5GHz WLAN.
- 2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
- 3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report.
- 4. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.
- 5. DEKRA has evaluated each test mode. Only the worst case is shown in the report.
- 6. This device does not support partial RU function, only support full RU function.
- 7. The MIMO mode does not support CDD and Beamforming.
- 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)
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## 1.2. Tested System Datails

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

PD Mode

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Power Adapter	DELTA	DPS-180AB-21	N/A	N/A
2	Point of Sale System	TOSHIBA	6201-25C	N/A	N/A
3	Mounting Pipe	N/A	N/A	N/A	N/A

Cable Type		Cable Description	
А	Power Cable	Non-shielded, 1.5m, with two ferrite cores bonded.	
В	USB-Type C Cable	Shielded, 2.5m	

PoE Mode

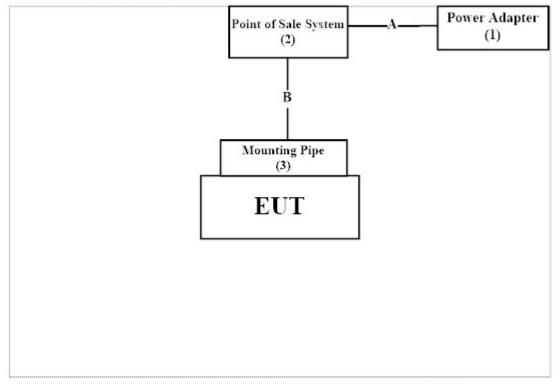
Proc	luct	Manufacturer	Model No.	Serial No.	Power Cord
1	Power Adapter	NETGEAR	2ACL068S	N/A	N/A
2	PoE Switch	NETGEAR	GS305Pv2	N/A	N/A
3	Notebook PC	DELL	Latitude E5440	FS9TK32	N/A

Cable Type		Cable Description
А	Power Cable	Non-shielded, 1.5m
В	LAN Cable	Non-shielded, 4.2m
С	USB-Type C Cable	Shielded, 2.5m

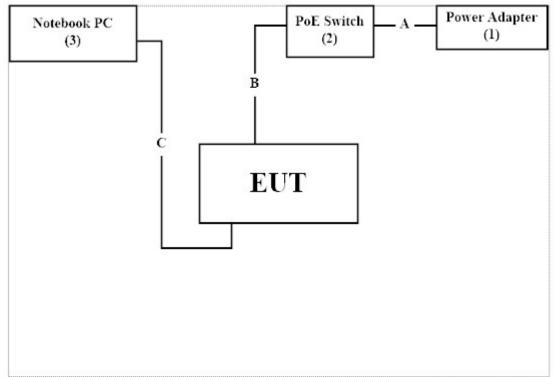


## 1.3. Configuration of tested System

## PD Mode



## PoE Mode





## 1.4. EUT Exercise Software

1	Setup the EUT as shown in Section 1.3.		
2	Execute software "QRCT Ver. 4.0.210.0" 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
	Temperature (°C)	10~40 °C	23.8 °C
Conducted Emission	Humidity (%RH)	10~90 %	52.2 %
	Temperature (°C)	10~40 °C	23.4 °C
Radiated Emission	Humidity (%RH)	10~90 %	66.8 %
	Temperature (°C)	10~40 °C	24.5 °C
Conductive	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	2022/06/23	2023/06/22
V	Two-Line V-Network	R&S	ENV216	101306	2023/03/16	2024/03/15
V	Two-Line V-Network	R&S	ENV216	101307	2022/07/04	2023/07/03
V	Coaxial Cable	SUHNER	RG400_BNC	RF001	2022/05/24	2023/05/23

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	Peak Power Analyzer	KEYSIGHT	8990B	MY51000410	2022/08/06	2023/08/05
V	Wideband Power Sensor	KEYSIGHT	N1923A	MY56080003	2022/08/05	2023/08/04
V	Wideband Power Sensor	KEYSIGHT	N1923A	MY56080004	2022/08/05	2023/08/04

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 V3.0.1.14.

#### For Radiated Measurements / HY-CB01

_				1		
	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
V	Loop Antenna	AMETEK	HLA6121	49611	2023/02/21	2024/02/20
V	Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-0675	2021/08/11	2023/08/10
V	Horn Antenna	RF SPIN	DRH18-E	210802A18ES	2023/03/23	2024/03/22
V	Horn Antenna	Com-Power	AH-840	101101	2021/11/30	2023/11/29
V	Pre-Asmplifier	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	980361	2023/01/10	2024/01/09
	Pre-Amplifier	EMCI	EMC184045SE	980369	2023/01/10	2024/01/09
V	Coaxial Cable	EMCI	EMC102-KM-KM-600	1160314		
	Coaxial Cable	EMCI	EMC102-KM-KM-7000	170242		
	Filter	MICRO TRONICS	BRM50702	G251	2023/01/05	2024/01/04
V	Filter	MICRO TRONICS	BRM50716	067	2023/01/05	2024/01/04
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
	Coaxial Cable	SUHNER	SUCOFLEX 106	25450/6	2023/01/10	2024/01/09
v	Coaxial Cable	SGH	HA800	GD20110222-8		
	Coaxial Cable	SGH	SGH18	2021003-8		
	Coaxial Cable	EMCI	EMC106	151113		
ът						

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%.

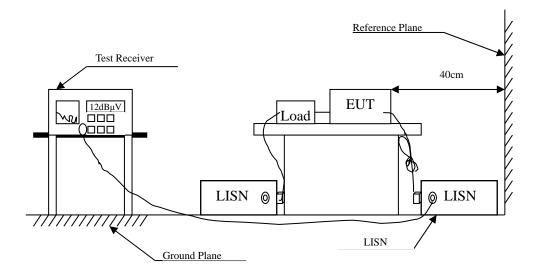
Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test item	Uncertainty	
Conducted Emission	±3.50 dB	
	Spectrum Analyzer: ±2.14 dB	
Maximum conducted output power	Power Meter: ±1.05 dB	
Peak Power Spectral Density	±2.14 dB	
	9 kHz~30 MHz: ±3.88 dB	
	30 MHz~1 GHz: ±4.42 dB	
Radiated Emission	1 GHz~18 GHz: ±4.28 dB	
	18 GHz~40 GHz: ±3.90 dB	
	9 kHz~30 MHz: ±3.88 dB	
	30 MHz~1 GHz: ±4.42 dB	
Band Edge	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 Par	FCC Part 15 Subpart C Paragraph 15.207 (dBµV) Limit									
Frequency	Limits									
MHz	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.)

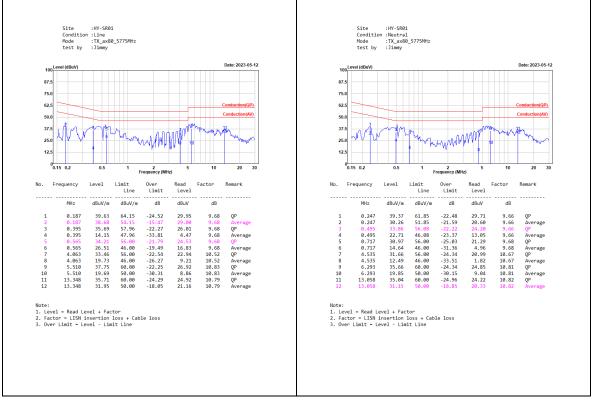
Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4:2014 on conducted measurement.

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

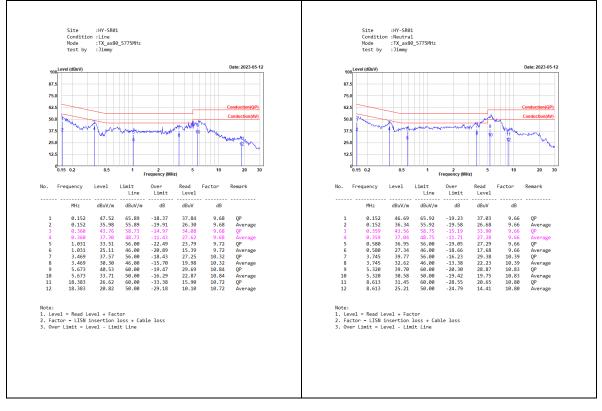


## 2.4. Test Result of Conducted Emission

## PD Mode



#### PoE Mode

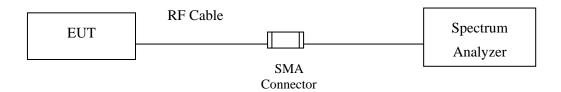




## 3. Maximun conducted output power

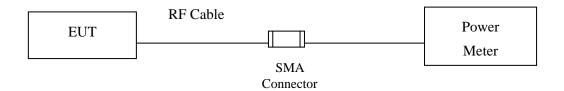
3.1. Test Setup

26dB Occupied Bandwidth

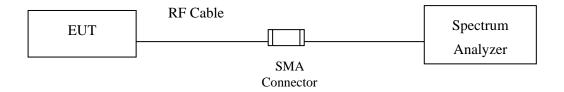


#### Conduction Power Measurement

## 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-topoint 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 dBm 10 log B, where B is the 26dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

## 3.3. Test Procedure

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

802.11an (BW  $\leq$  40MHz) Maximum conducted output power using KDB 789033 section E)3)b) Method PM-G (Measurement using a gated RF average power meter) <u>Note: the power meter have a video bandwidth that is greater than or equal to the measurement</u> <u>bandwidth, (Anritsu/ MA2411B video bandwidth: 65MHz)</u>

802.11ac (BW=80MHz) 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	:	TCx EDGE Cam+
Test Item	:	Maximum conducted output power
Test Mode	:	Transmit (802.11a)
Test Date	:	2023/04/18

Channel No.	Frequency	26dB Bandwidth	Chain A Power	Chain B Power	Duty factor	Output Power	Outp	out Power Limit
	(MHz)	(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	dBm+10log(BW)
36		16.50	11.52	11.85		14.70	22.1	
44		16.50	11.48	11.76		14.63	22.1	
48		16.50	11.51	12.03		14.79	22.1	
52	5260	19.06	11.32	11.84		14.60	22.1	23.80
60	5300	19.26	11.44	11.92		14.70	22.1	23.85
64	5320	19.18	11.51	11.83		14.68	22.1	23.83
100	5500	19.02	11.54	11.92		14.74	22.1	23.79
116	5580	19.42	11.61	11.96		14.80	22.1	23.88
140	5700	19.18	11.39	11.98		14.71	22.1	23.83
144(U-NII-2C)	5720	14.43	10.34	11.04	0.34	14.06	22.1	22.59
144(U-NII-3)	5720		4.16	4.76	0.34	7.82	29.4	
149	5745		11.47	11.98		14.74	29.4	
157	5785		11.33	11.92		14.65	29.4	
165	5825		11.21	11.98		14.62	29.4	

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.



## 26dB Occupied Bandwidth:

## Channel 144 (Chain A)

Spect	rum		1								
Ref Li	evel :	20.00 30	Bm Offset 1 dB SWT 1		RBW 500 kHz VBW 2 MHz	Mode A	uto FFT	0			
O IPR VI	eW										
10 dBm	- 12	1 4.65	0 dBm	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		Mi Mi Mi		-61		5.7	-21.59 dBm 104096 GHz 4.65 dBm 224380 GHz
0 dBm-	-	-	1	~~							
-10 dBn	-	_	/	-	-		-		-		
-20 d8n	+	—D2	-21.350 dem=	-	-		-	8	2		
-30 dBr	-	. (	1					-		>	
-40 dBm										~~~~	-
-50 dBm	∩						_				
-60 dBr											
-70 dBn	<u>ا</u>						F1	F	2		
CF 5.7:	2 GHz				1001 p	ts				Spar	1 40.0 MHz
Marker											
Туре	Ref		X-value		Y-value	Funct	ion		Func	tion Resul	t l
M1		1	5.710409		-21.59 dBm						
D2 M3	М1	1	19.42 5.72243	1 MHz 38 GHz	0.69 dB 4.65 dBm						

Date: 18.APR.2023 23:50:59

Att	-	20.00 di 30		1.00 dB 11.4 µs	<ul> <li>RBW 500 kH</li> <li>VBW 2 MH</li> </ul>		lode Auto I	FFT			
0 dBm-	1	1 6.550	dBm		mm	~	M1[1] 	hay		5.7	-19.60 dBm 105694 GHz 6.55 dBm 187610 GHz
-10 dBm -20 dBm		-02 -	19.450 dBm=	/					82		
-30 dBm -40 dBm		nd	and a						>	har	m. m
-50 dBm -60 dBm											
-70 dBm							F1	F	 		
CF 5.72	2 GHz				1001	pts				Spai	n 40.0 MHz
Marker Type	Ref	Trc	X-valı		Y-value	1	Function		Fund	ction Resul	t
M1 D2 M3	M1	1 1 1	18.	694 GHz 941 MHz 761 GHz	-19.60 dB 0.76 ( 6.55 dB	зB					

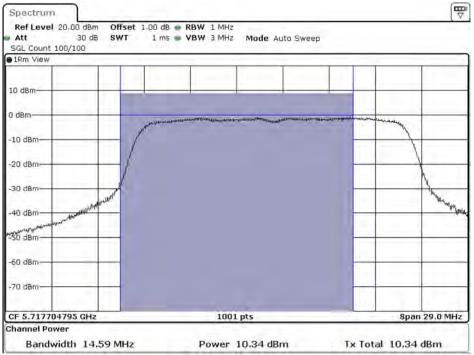
#### Channel 144 (Chain B)

Date: 18.APR.2023 23:51:58



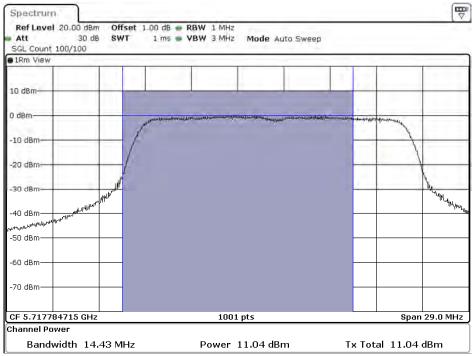
## Maximum conducted output power:

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



Date: 18 APR 2023 23:51 31

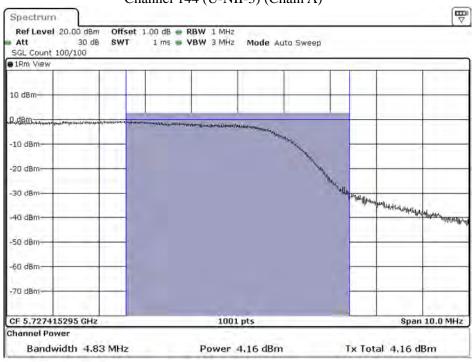




Date: 18.APR.2023 23:52:30

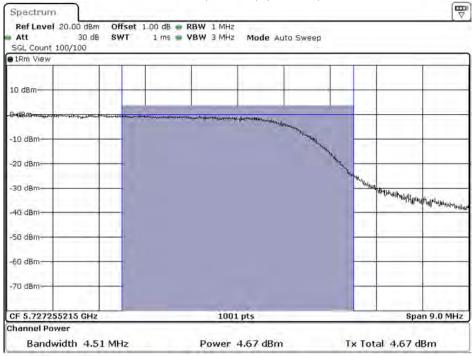


#### Maximum conducted output power: Channel 144 (U-NII-3) (Chain A)



Date: 18 APR 2023 23:51:33

#### Channel 144 (U-NII-3) (Chain B)



Date: 18 APR 2023 23:52 33



Product	:	TCx EDGE Cam+
Test Item	:	Maximum conducted output power

Test Mode : Transmit (802.11ax-20 MHz)

Test Date : 2023/04/18

Channel No.	Frequency	26dB Bandwidth	Chain A Power	Chain B Power	Duty factor	Output Power	Outj	out Power Limit
	(MHz)	(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	dBm+10log(BW)
36		19.02	11.39	11.77		14.59	22.1	
44		19.02	11.52	12.01		14.78	22.1	
48		18.90	11.44	11.85		14.66	22.1	
52	5260	21.10	11.57	11.97		14.78	22.1	24.24
60	5300	21.10	11.25	11.85		14.57	22.1	24.24
64	5320	20.90	11.39	11.72		14.57	22.1	24.20
100	5500	20.98	11.33	11.83		14.60	22.1	24.22
116	5580	20.90	11.45	11.88		14.68	22.1	24.20
140	5700	20.86	11.30	11.75		14.54	22.1	24.19
144(U-NII-2C)	5720	15.47	10.18	10.84		13.53	22.1	22.89
144(U-NII-3)	5720		4.36	4.98		7.69	29.4	
149	5745		11.25	11.89		14.59	29.4	
157	5785		11.33	11.75		14.56	29.4	
165	5825		11.33	12.27		14.84	29.4	

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.



## 26dB Occupied Bandwidth:

## Channel 144 (Chain A)

Specto Ref Le Att		20.00	dBm Offset 1 dB SWT	1.00 dB	RBW 500 kH		Auto FF	r	
O 1PR VI	eW						-		
10 dBm-		1 6 61	0 dBm			A42	41[1]   43[1]		–19.51 dBm 5.7095305 GHz 6.61 dBm
0 dBm-	-	1 0.01	- m	m	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	ma	m	m	5.7207590 GHz
-10 dBm	-	_			-				
-20 dBm	+	-02	-19.390 dBm=	-	-	-		DP2	
-30 dBm	-	-	1		-				
-40 dBm		$\int^{\infty}$	1						
-50 dBm	-								
-60 dBm									
-70 dBm							F1	F2	
CF 5.72	2 GHz		1		1001	. pts			Span 40.0 MHz
Marker						•			
Туре	Ref	Trc	X-valı		Y-value		ction	Fund	ction Result
M1		1		305 GHz	-19.51 dB				
D2 M3	M1	1		939 MHz )759 GHz	1.23 d 6.61 dB				

Date: 18.APR.2023 23:54:10

## Channel 144 (Chain B)

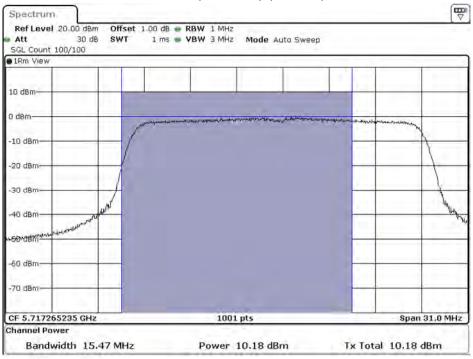
Spect	nun.					. (-		_,				
Ref L	evel :		dBm Offset 1.0 dB SWT 11.		RBW 500 kHz VBW 2 MHz		lode Au	to FF	т			1.5
O 1Pk VI	eW											
10 dBm	0	1 7 55	i0 dBm			M	M1[ 	1				-18.76 dBm 094505 GHz 7.55 dBm
0 dBm-	_		pro	~~	www	~	-+	m	m		5.7	215580 GHz
-10 dBm	-	-	M	-		-	-	-	-	1	-	
-20 dBm	-	D2	-19.450 dBm	_		-	-	-	-	np N		-
-30 dBm	-	/	1	-	-	-	-	-	-	-	1	
-40 dBrr		~									- n	h
-50 dBm												
-60 dBm	\											
-70 dBm								-1		 F2		
CF 5.7	2 GHz				1001	pts					Spa	n 40.0 MHz
Marker Type	Ref	Trc	X-value	- 1	Y-value	-	Functio			Eup	ction Resu	I+
M1	1/61	1	5.7094505	GHz	-18.76 dBr	n	- unctit			Full	coon Resu	n
D2	M1	1	21.019		0.90 d							
MЗ		1	5.721558	GHz	7.55 dBr	n						

Date: 18.APR.2023 23:53:11



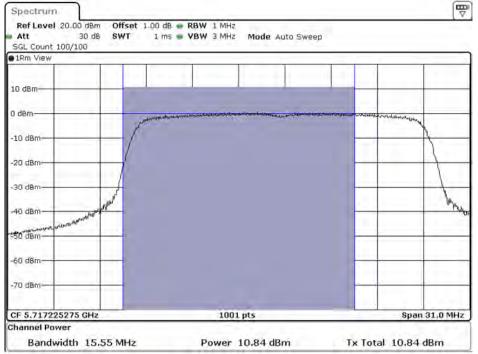
#### Maximum conducted output power:

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



Date: 18 APR 2023 23:54 42

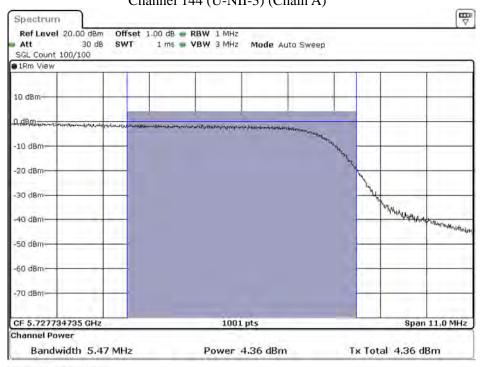
#### Channel 144 (U-NII-2C) (Chain B)



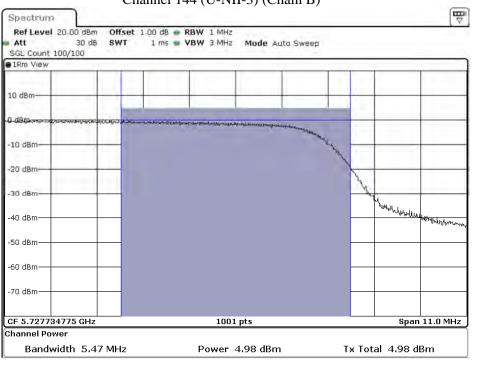
Date: 18 APR 2023 23:53:43



#### Maximum conducted output power: Channel 144 (U-NII-3) (Chain A)



Date: 18 APR 2023 23:54 45



Channel 144 (U-NII-3) (Chain B)

Date: 18.APR.2023 23:53:46



Product	:	TCx EDGE Cam+
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Test Item : Maximum conducted output power

Test Mode : Transmit (802.11ax-40 MHz)

Test Date : 2023/04/18

Channel No.	Frequency	26dB Bandwidth	Chain A Power	Chain B Power	Duty factor	Output Power	Outp	out Power Limit
	(MHz)	(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	dBm+10log(BW)
38	5190		11.77	11.82		14.81	22.1	
46	5230		11.61	12.02		14.83	22.1	
54	5270	40.20	11.56	12.11		14.85	22.1	27.04
62	5310	40.04	11.36	11.87		14.63	22.1	27.02
102	5510	40.04	11.36	11.77		14.58	22.1	27.02
110	5550	39.96	11.21	11.87		14.56	22.1	27.02
134	5670	39.88	11.59	11.92		14.77	22.1	27.01
142(U-NII-2C)	5710	35.14	10.94	11.40		14.19	22.1	26.46
142(U-NII-3)	5710	4.98	0.36	1.27		3.85	29.4	17.97
151	5755		11.26	11.89		14.60	29.4	
159	5795		11.24	12.10		14.70	29.4	

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.

3.99% Bandwidth for Band 1.



## 26dB Occupied Bandwidth:



DIPK VI	eW				WBW 2 M	Ha Moo	B AULO FFT				
10 dBm-	1	1 3.13	0 dBm	- M c. 0/30	manmin		M1[1] M3[1]			5.6	-22.94 dBm 898601 GH 3.13 dBm 163140 GH
-10 dBm	+	-	+	4 100			Q				
-20 dBm -30 dBm		D2	-22.870 Br	n					5		
-40 dBm ഹഹഹ -50 dBm	mr	m	w M						h	Mr.Am	m.m.
-60 dBm											
-70 dBm								F1 F			
CF 5.7	l GHz				100	1 pts				Spa	n 80.0 MHz
Marker Type M1	Ref	Trc 1	<b>X-v</b> a 5.68	alue 98601 GHz	<b>Y-value</b> -22.94 d		unction		Funct	ion Resu	lt
D2 M3	М1	1		40.12 MHz 16314 GHz	2.04 3.13 d						

Date: 18.APR.2023 23:55:25

## Channel 142 (Chain B)

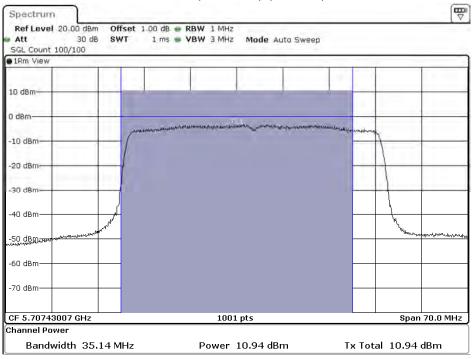
Spectr	um.						<i>'</i>				
Ref Le	evel :				RBW 500 kHz /BW 2 MHz	Mode Aut	to FFT				10
O 1PR Vie	₽₩			-							
10 dBm-	- 11	1.1.05	20 dBm			M1[ M3	1]			5.6	-24.89 dBm 897802 GHz 1.82 dBm 158340 GHz
0 dBm-	T	1 1.84	www.	Willy ( Ja	Anonan ho	warder	m	www			
-10 dBm	-	_				-		+ }	-		-
-20 dBm	-		ML	-					2		
-30 dBm	-	-02	-24.180 8Bm						E		
-40 dBm			N. O.						h	h	
-40 UBM \	~~~~ 	~~~~									· · » ~
-60 dBm											
-70 dBm									2		
CF 5.71					1001			F1		0	1 80.0 MHz
Marker	GHZ				1001 pt	<b>`</b>				shar	TOU.U MIHZ
	Ref	Trc	X-value	1	Y-value	Functio	n I		Fund	tion Resul	t
M1		1	5.6897802 G	Iz	-24.89 dBm						-
D2	M1	1	40.44 Mł	łz	2.32 dB						
MЗ		1	5.715834 Gł	lz	1.82 dBm						

Date: 18.APR.2023 23:56:25



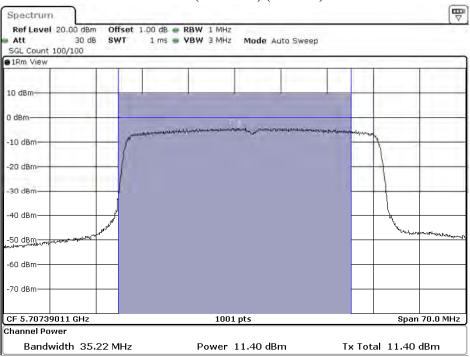
#### Maximum conducted output power:

#### Channel 142 (U-NII-2C) (Chain A)



Date: 18.APR.2023 23:55:57

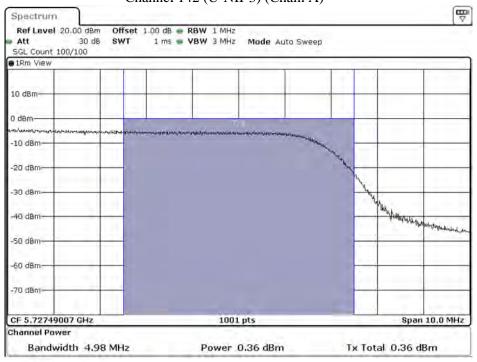
## Channel 142 (U-NII-2C) (Chain B)



Date: 18.APR.2023 23:56:57

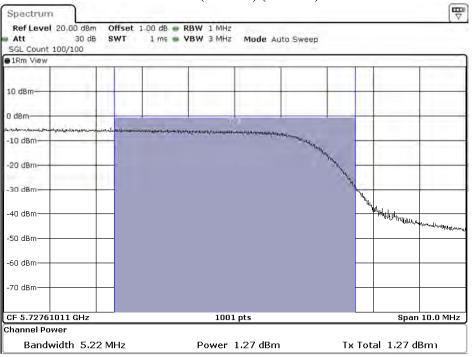


#### Maximum conducted output power: Channel 142 (U-NII-3) (Chain A)



Date: 18 APR 2023 23:56:00





Date: 18.APR.2023 23:57:00



Product	:	TCx EDGE Cam+
Test Item	:	Maximum conducted output power
Test Mode	:	Transmit (802.11ax-80 MHz)

Test Date : 2023/04/18

Channel No.	Frequency	26dB Bandwidth	Chain A Power	Chain B Power	Duty factor	Output Power	Outp	out Power Limit
	(MHz)	(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	dBm+10log(BW)
42	5210		11.39	11.75		14.58	22.1	
58	5290	81.36	11.41	11.89		14.67	22.1	30.10
106	5530	80.72	11.34	11.92		14.65	22.1	30.07
122	5610	81.36	11.39	11.89		14.66	22.1	30.10
138(U-NII-2C)	5690	75.60	11.14	11.85		14.52	22.1	29.79
138(U-NII-3)	5690		-3.18	-1.88		0.53	29.4	
155	5775		11.39	11.95		14.69	29.4	

Note:

1. Output Power Value (dBm) = 10\*LOG (Chain A(mW) + Chain B(mW))

2. 26dB Bandwidth is the bandwidth of chain A or B whichever is less bandwidth, output power limitation is more stringent.



## 26dB Occupied Bandwidth:

#### Channel 138 (Chain A)

Spect			1.			-					
Ref Li	evel :				BBW 1 MHz BW 3 MHz	Mode A	uto FFT				
O 1PR VI	eW										
10 dBm	- 1	1 3.8	70 dBm		M3	N	11[1] 13[1]			5.	-22.31 dBm 649401 GHz 3.87 dBm 686320 GHz
0 dBm-	-	-	N	wwww	- the second where	an Artas	and	with	1		
-10 dBm		_		-	-	-	-		1	_	
-20 dBm	-	-D2	-22.130 Bm-	-		-	-	-#	the state		
-30 dBm									$\uparrow$		
-40 dBm سى ركى مى -50 dBm	MA	Maro	m						- h		hunn
-60 dBm	<u> </u>										
-70 dBm								F1	 		
CF 5.69	J GHz				1001	pts				 Span	160.0 MHz
Marker											
Туре	Ref	Trc	X-valu	e	Y-value	Fund	tion		Fund	ction Resu	lt 🛛
M1		1		401 GHz	-22.31 dBr						
D2 M3	M1	1		.36 MHz 532 GHz	1.34 d 3.87 dBr						

Date: 18.APR.2023 23:49:00

## Channel 138 (Chain B)

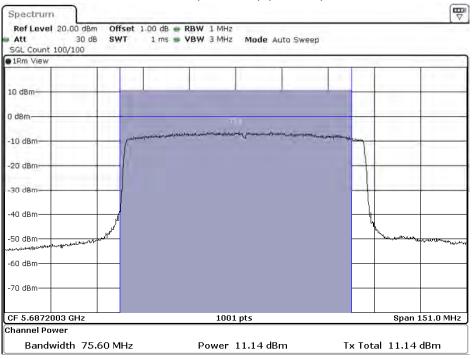
Spect	rum										
Ref Li	evel	20.00 d 30	Bm Offset dB SWT		RBW 1 MHz	Mod	e Auto FFT				
O IPR VI	eW							_			
10 dBm-				M3		M1[1] M3[1]			-22.52 5.649401 3.89		
0 dBm-	D	1 3.89	) dBm	Amore	man Jam M			motion	5.6610		
-10 dBm		_		-	-	-	-	++	-	-	
-20 dBm	-	-D2	-22.110 Bm-	-	-	_	_		2		
-30 dBm		_	1/	-	-	-			$\left\{ \right.$	-	
-40 dBm		~~~{	mar						- Con	wyburn	Muhan
‹‹∿ሌሌ <sup>ቢ</sup> -50 dBm	)	~ V									
-60 dBm	<u>ا</u> -۱										
-70 dBm	<u>-</u>							F1 F2	2		
CF 5.69	9 GHz	2			100:	l pts				Span	160.0 MHz
Marker											
Туре	Ref		X-val		Y-value		unction	Function Result			lt
M1 D2	M1	1		401 GHz	-22.52 dE 1.77						
M3		1		107 GHz	3.89 di						

Date: 18.APR.2023 23:47:32

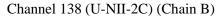


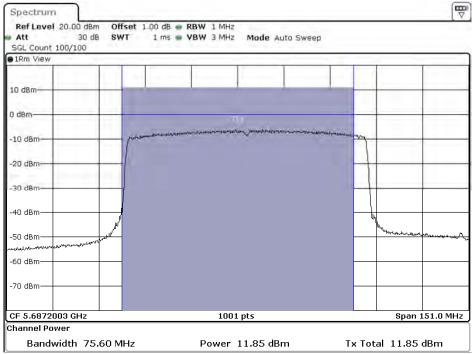
#### Maximum conducted output power:

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



Date: 18.APR.2023 23:49:34



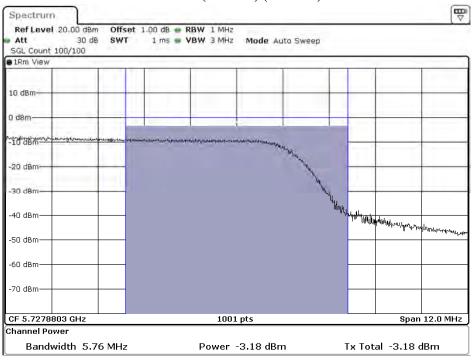


Date: 18.APR.2023 23:48:07



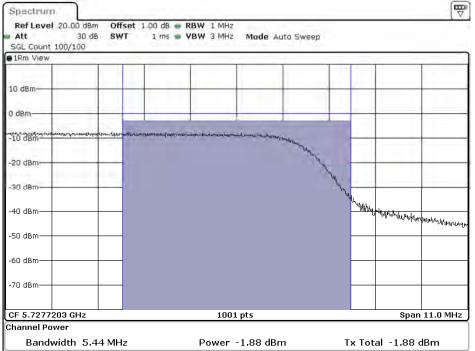
## Maximum conducted output power:

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



Date: 18.APR.2023 23:49:36

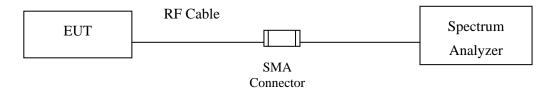
#### Channel 138 (U-NII-3) (Chain B)



Date: 18.APR.2023 23:48:09

## 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-topoint 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	:	TCx EDGE Cam+
Test Item	:	Peak Power Spectral Density
Test Mode	:	Transmit (802.11a)
Test Date	:	2023/04/18

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Chain	PPSD/MHz (dBm)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
26	7100	(	А	-1.07	0.34	2.28	.0.1	Pass
36	5180	6	В	-0.77	0.34	2.58	<9.1	Pass
44	5220	6	А	-0.68	0.34	2.67	<9.1	Pass
44	5220	0	В	-0.52	0.34	2.83	<9.1	Pass
48	5240	6	А	-0.89	0.34	2.46	<9.1	Pass
48	5240	6	В	0.15	0.34	3.50	<9.1	Pass
50	5260	C	А	-0.37	0.34	2.98	-0.1	Pass
52	5260	6	В	-0.32	0.34	3.03	<9.1	Pass
(0)	5300	C	А	-0.43	0.34	2.92	-0.1	Pass
60	5300	6	В	-0.37	0.34	2.98	<9.1	Pass
<i>C</i> <b>1</b>	5220	C C	А	-0.72	0.34	2.63	-0.1	Pass
64	5320	6	В	-0.62	0.34	2.73	<9.1	Pass
100	5500	<i>(</i>	А	-1.28	0.34	2.07	-0.1	Pass
100	5500	6	В	-0.97	0.34	2.38	<9.1	Pass
116	5500	C C	А	-0.72	0.34	2.63	-0.1	Pass
116	5580	6	В	-0.26	0.34	3.09	<9.1	Pass
140	5700		А	-0.28	0.34	3.07	-0.1	Pass
140	5700	6	В	0.48	0.34	3.83	<9.1	Pass
144	5720		А	-0.86	0.34	2.49	-0.1	Pass
(U-NII-2C)	5720	6	В	0.07	0.34	3.42	<9.1	Pass

Note:

1. Total PPSD/MHz = PPSD/MHz + $10*\log 2$  (two antennas)+Duty factor.



Channel No.	Frequency (MHz)	Data Rate (Mbps)	Chain	PPSD/MHz (dBm)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
144	5720		А	-3.88	0.34	-0.53	20.4	Pass
(U-NII-3)	5720	6	В	-3.59	0.34	-0.24	<29.4	Pass
157	5705	6	А	-3.16	0.34	0.19	-20.4	Pass
157	5785	6	В	-2.38	0.34	0.97	<29.4	Pass
165	5975	6	А	-3.61	0.34	-0.26	-20.4	Pass
165	5825	6	В	-2.78	0.34	0.57	<29.4	Pass
165	5975	C	А	-4.04	0.34	-0.69	-20.4	Pass
165	5825	6	В	-3.20	0.34	0.15	<29.4	Pass

1. Total PPSD/MHz = PPSD/MHz + $10*\log 2$  (two antennas)+Duty factor.



SGL Count 100/100	1 MHz 3 MHz Mode Auto FFT		
1Rm View	M1[1]		0.48 dBm 3180 GHz
0 dBm			
dBm	MI	_	 
10 dBm		<u> </u>	 
20 d8m-			_
30 dBm-		1	 -
40 dBm-			_
50 dBm-	_		
60 dBm			 
70 dBm-			 -

Channel 140 (Chain B)

Date: 18 APR.2023 22.49.42



Ref Level         20.00 dBm         Offset         1.00 d           Att         30 dB         SWT         11.4 µ           SGL Count         100/100		uto FFT	Č.
1Rm View			
	M	1[1]	-2.38 dBn 5.7438410 GHz
10 dBm			
	M1		
) dBm-	~~~	~~	
10 dBm			
20 dBm			
-30 dBm-			
		1	
40 dBm			
50 dBm			m
60 dBm			
70 dBm-			
/u ubm-			
CF 5.745 GHz	1001 pts		Span 40.0 MHz

Date: 18 APR 2023 22:54:16



Product	:	TCx EDGE Cam+
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Test Item : Peak Power Spectral Density

Test Mode : Transmit (802.11ax-20 MHz)

Test Date : 2023/04/18

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Chain	PPSD/MHz (dBm)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
26	<b>Z100</b>	MCCO	А	-0.53		2.48	.0.1	Pass
36	5180	MCS0	В	0.05		3.06	<9.1	Pass
44	5220	MCS0	А	-0.01		3.00	<9.1	Pass
44	5220	MCSU	В	0.73		3.74	<9.1	Pass
48	5240	MCS0	А	-0.47		2.54	-0.1	Pass
48	5240	MCS0	В	-0.07		2.94	<9.1	Pass
50	5260	MCGO	А	-0.30		2.71	-0.1	Pass
52	5260	MCS0	В	0.22		3.23	<9.1	Pass
(0)	5200	MCSO	А	-0.47		2.54	-0.1	Pass
60	5300	MCS0	В	0.12		3.13	<9.1	Pass
64	5220	MCGO	А	-0.37		2.64	-0.1	Pass
64	5320	MCS0	В	-0.36		2.65	<9.1	Pass
100	5500	MGGO	А	-1.56		1.45	-0.1	Pass
100	5500	MCS0	В	-0.76		2.25	<9.1	Pass
11.6	5500	MGGO	А	-0.92		2.09	-0.1	Pass
116	5580	MCS0	В	0.34		3.35	<9.1	Pass
140	5700	MCGO	А	-0.33		2.68	-0.1	Pass
140	5700	MCS0	В	-0.27		2.74	<9.1	Pass
144	5700	Maga	А	-0.99		2.02	.0.1	Pass
(U-NII-2C)	5720	MCS0	В	0.04		3.05	<9.1	Pass

Note:

1. Total PPSD/MHz = PPSD/MHz + $10*\log 2$  (two antennas)+Duty factor.



Channel No.	Frequency (MHz)	Data Rate (Mbps)	Chain	PPSD/MHz (dBm)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
144	5720	MCGO	А	-4.79		-1.78	-20.4	Pass
(U-NII-3)	5720	MCS0	В	-3.40		-0.39	<29.4	Pass
157	5705	MCCO	А	-2.96		0.05	-20.4	Pass
157	5785	MCS0	В	-2.55		0.46	<29.4	Pass
165	5975	MCGO	А	-3.80		-0.79	-20.4	Pass
165	5825	MCS0	В	-2.86		0.15	<29.4	Pass
165	5975	MCSO	А	-3.75		-0.74	-20.4	Pass
165	5825	MCS0	В	-3.08		-0.07	<29.4	Pass

1. Total PPSD/MHz = PPSD/MHz + $10*\log 2$  (two antennas)+Duty factor.



Channel	44	(Chain	B)
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1Rm View								
		-	· · · · ·	 M	1[1]		5,2	0.73 dBm 228770 GHz
10 dBm	-		-			-		1
				MI				1.1.1.1
0 dBm		1	-	~	~	5		
-10 dBm	_			 -		$\rightarrow$		
-20 d8m	-			-	_	++		
-30 dBm					-			
-40 dBm				_		1		
-S0 dBm-						-	~	~
-60 dBm	-					-	-	-
-70 dBm-	-			 -				

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Channel 149	(Chain B)
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1Rm View								_		
	1			M1	[1]	_	5.7	-2.55 dBr 5.7422030 GH		
10 dBm				-	-		-			
0 dBm			MI		~ -		-			
-10 dBm	+ f					7				
-20 dBm-	+	-					-	-		
-30 dBm-										
-40 dBm			-			1		-		
-S0 dBm		-					-			
-60 dBm	-									
-70 dBm		-						-		
CF 5.745 GHz			1001	ots			Spar	1 40.0 MHz		



Product	:	TCx EDGE Cam+
Test Item	:	Peak Power Spectral Density
Test Mode	:	Transmit (802.11ax-40 MHz)
Test Date	:	2023/04/18

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Chain	PPSD/MHz (dBm)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
20	5190	MCGO	А	-2.58		0.43	-0.1	Pass
38	5190	MCS0	В	-2.39		0.62	<9.1	Pass
10	5220	MCGO	А	-2.56		0.45	-0.1	Pass
46	5230	MCS0	В	-2.77		0.24	<9.1	Pass
<b>5</b> 4	5070	MCGO	А	-3.43		-0.42	.0.1	Pass
54	5270	MCS0	В	-2.54		0.47	<9.1	Pass
60	5210	MCGO	А	-3.13		-0.12	.0.1	Pass
62	5310	MCS0	В	-2.78		0.23	<9.1	Pass
102	5510	MCGO	А	-4.08		-1.07	.0.1	Pass
102	5510	MCS0	В	-3.66		-0.65	<9.1	Pass
110		MGGO	А	-4.20		-1.19	0.1	Pass
110	5550	MCS0	В	-3.29		-0.28	<9.1	Pass
104		MGGO	А	-3.27		-0.26	0.1	Pass
134	5670	MCS0	В	-2.72		0.29	<9.1	Pass
142	5710	MCGO	А	-3.52		-0.51	.0.1	Pass
(U-NII-2C)	5710	MCS0	В	-4.36		-1.35	<9.1	Pass

- 1. Total PPSD/MHz = PPSD/MHz + $10*\log 2$  (two antennas)+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/MHz (dBm)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
142	5710	MCGO	А	-8.18		-5.17	-20.4	Pass
(U-NII-3)	5710	MCS0	В	-9.08		-6.07	<29.4	Pass
150	5705	MCGO	А	-6.29		-3.28	-20.4	Pass
159	5795	MCS0	В	-5.33		-2.32	<29.4	Pass
150	5705	MCCO	А	-6.54		-3.53	-20.4	Pass
159	5795	MCS0	В	-5.05		-2.04	<29.4	Pass

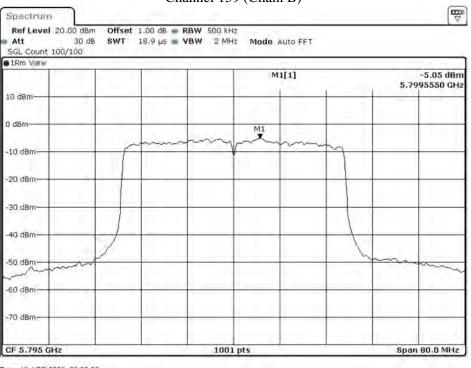
1. Total PPSD/MHz = PPSD/MHz + $10*\log 2$  (two antennas)+Duty factor.



Channel 38 (Chain B)

1Rm View	100							
Dout them				N	11[1]	_	5,11	-2.39 dBn 876020 GH
10 dBm	-		-	1		1		
0 dBm	_	-	M1				-	
-10 dBm		A		¥		A		
-20 d8m	-			-		+		
-30 dBm		_	_			++		
40 dBm	-+					+		
50 dBm	~			-	-		$\sim$	
60 dBm	_	_	_					
-70 dBm				1				

Date: 18 APR 2023 23 18 54



Channel 159 (Chain B)

Date: 18.APR.2023 23.30.59



Product	:	TCx EDGE Cam+
Test Item	:	Peak Power Spectral Density
Test Mode	:	Transmit (802.11ax-80 MHz)
Test Date	:	2023/04/18

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Chain	PPSD/MHz (dBm)	Duty factor (dB)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
10	5010	MCGO	А	-6.15		-3.14	-0.1	Pass
42	5210	MCS0	В	-6.24		-3.23	<9.1	Pass
50	5200	MCGO	А	-6.46		-3.45	-0.1	Pass
58	5290	MCS0	В	-5.89		-2.88	<9.1	Pass
100	5520	MCGO	А	-6.82		-3.81	-0.1	Pass
106	5530	MCS0	В	-7.30		-4.29	<9.1	Pass
100	5(10	MCGO	А	-6.83		-3.82	-0.1	Pass
122	5610	MCS0	В	-6.89		-3.88	<9.1	Pass
138	5(00	MCGO	А	-6.60		-3.59	-0.1	Pass
(U-NII-3)	5690	MCS0	В	-6.17		-3.16	<9.1	Pass

- 1. Total PPSD/MHz = PPSD/MHz + $10*\log 2$  (two antennas)+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	Data Rate	Chain	PPSD/MHz	Duty factor	Total PPSD/MHz	Required Limit	Result
	(MHz)	(Mbps)		(dBm)	(dB)	(dBm)	(dBm)	
138	<b>7</b> (00)	MGGO	А	-11.94		-8.93	20.4	Pass
(U-NII-3)	5690	MCS0	В	-11.21		-8.20	<29.4	Pass
1.5.5			А	-9.01		-6.00	20.4	Pass
155	5775	MCS0	В	-8.93		-5.92	<29.4	Pass

Note:

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



Channel 58 (Chain B)

Ref Level 20.00 di Att 30 SGL Count 100/100	dB SWT 2			Mode Au	to FFT			
1Rm View								
				M	1[1]		5.	-5.89 dBn 275290 GH
10 dBm		_	-		-			
	1	1.1	1				1	1.1.1.1
0 dBm		1	11					
-10 dBm	F	m	km			m		
-20 d8m				_				
		1.11						
-30 dBm-								
-40 dBm	+							
CO dDay	1/					1	(	1
-50 dBm	4							m
-60 dBm								
-70 dBm				-	-			-
1						-	1	

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Channel 155 (Chain B)

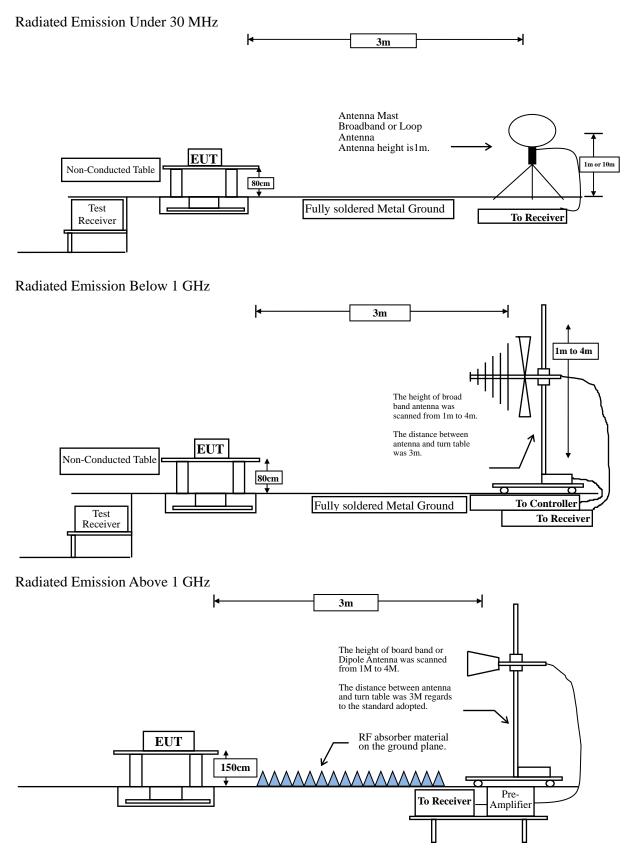
Ref Level 20.00 di Att 30 SGL Count 100/100	dB SWT			Mode Aut	FFT			
1Rm View								
1.1				M1[1	1			-8.93 dBm 58290 GHz
10 dBm					-	-		aria an
시 기본 프	1 1	12 1 1						
) dBm-								
10 dBm		www	MI		when and a			
	- for a				- martine	1		
20 d8m-								
30 d8m-								
201								
40 dBm								
S0 dBm								h
SU UBIN	write					W. w.	minimum	man
60 dBm	-							
	1.000							
70 dBm-								

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# 5. Radiated Emission

5.1. Test Setup



# 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 Par	FCC Part 15 Subpart C Paragraph 15.209(a) Limits							
Frequency	Field strength	Maannant distance (mater)						
MHz	(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  $(dB\mu V/m) = 20 \log E$  field strength  $(\mu V/m)$ 

- 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 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 form 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. $VBW \ge 3 MHz.$ 

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  $\ge$  98 %

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

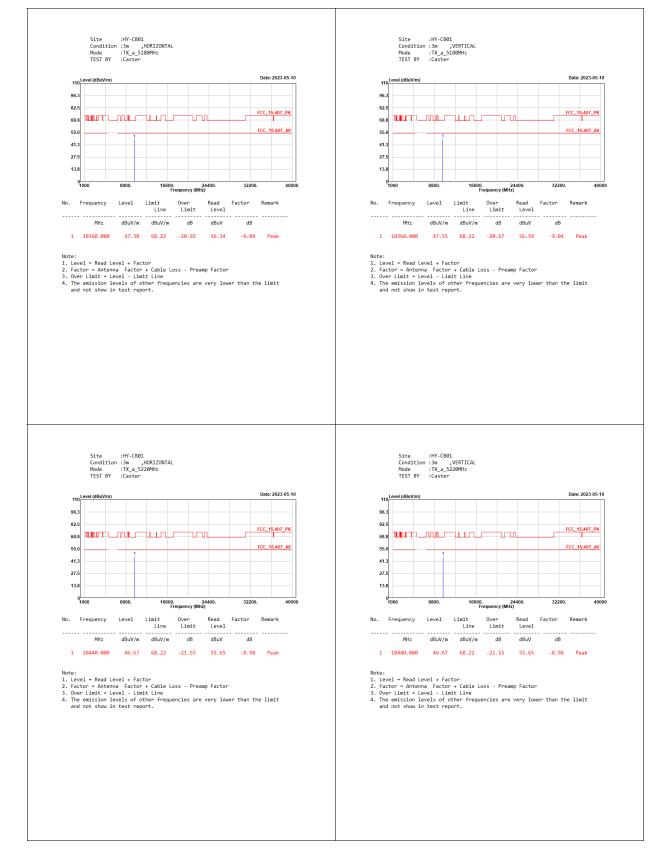
(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

5 GHz band	Duty Cycle	Т	1/T	VBW
	(%)	(ms)	(Hz)	(Hz)
802.11a	92.40	0.2310	4329	5000
802.11ax-20 MHz	99.45	5.4400	184	10
802.11ax-40 MHz	99.54	5.4348	184	10
802.11ax-80 MHz	99.54	5.4348	184	10

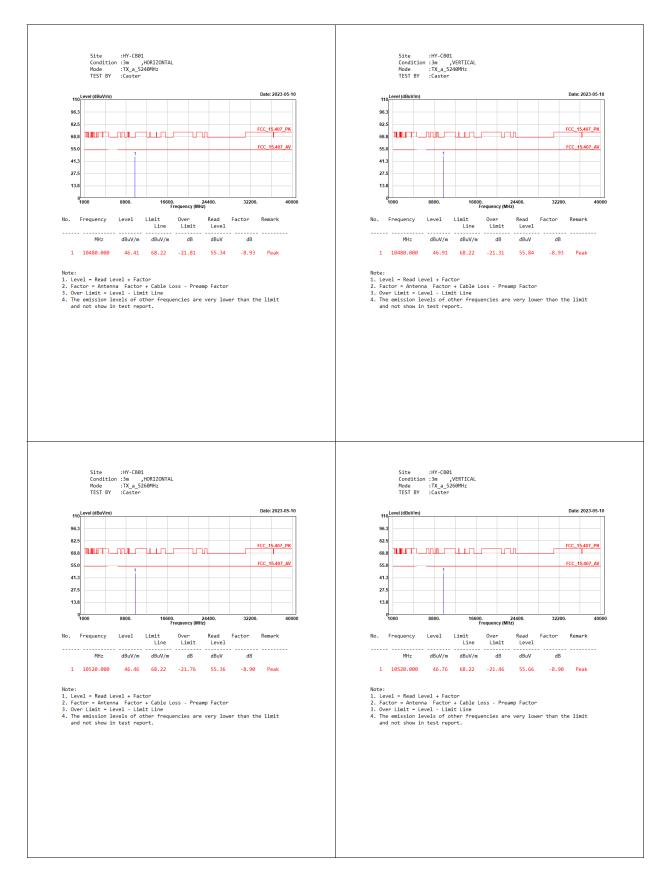
Note: Duty Cycle Refer to Section 8.



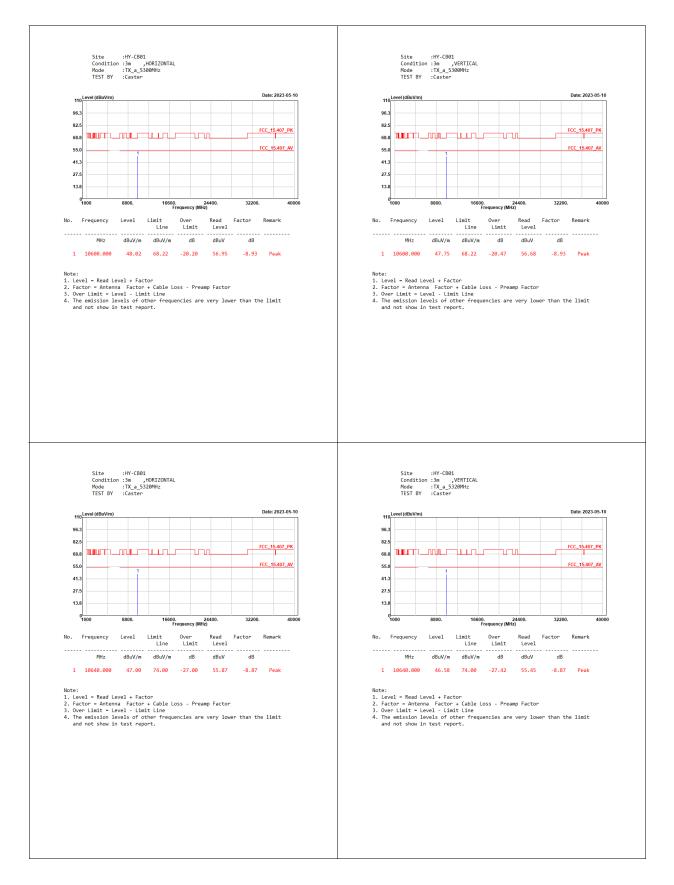
### 5.4. Test Result of Radiated Emission



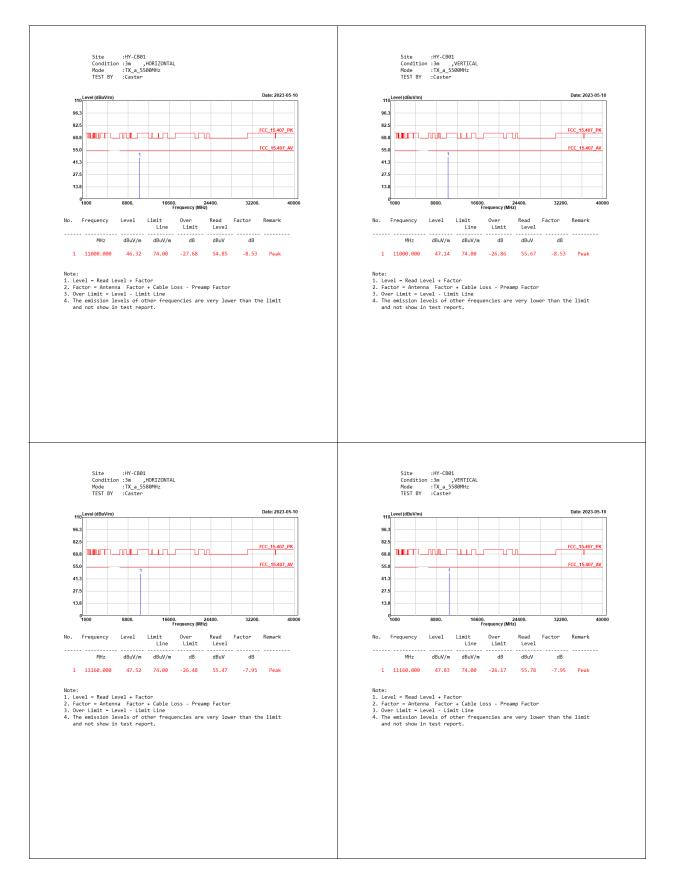




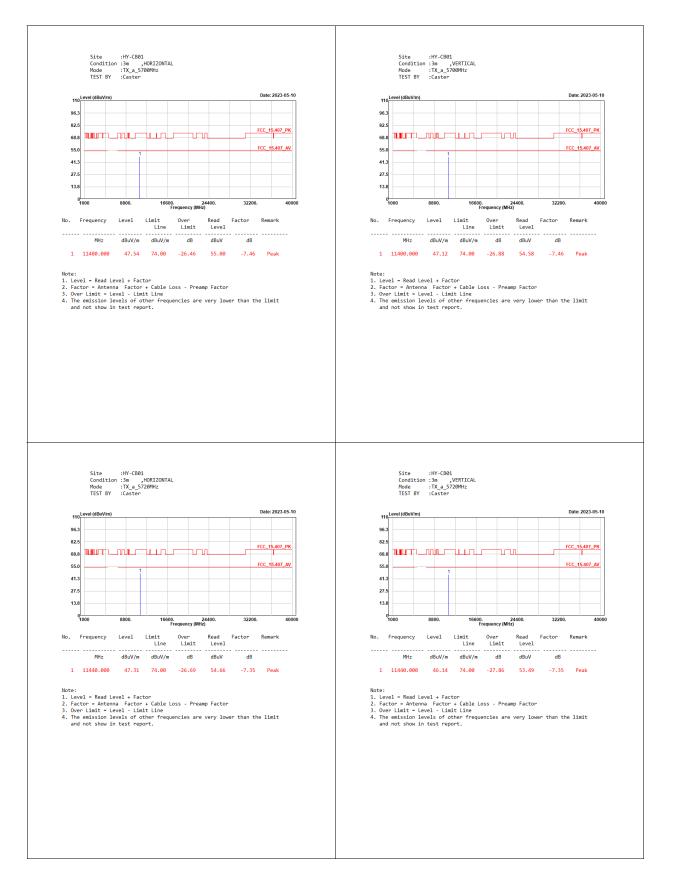




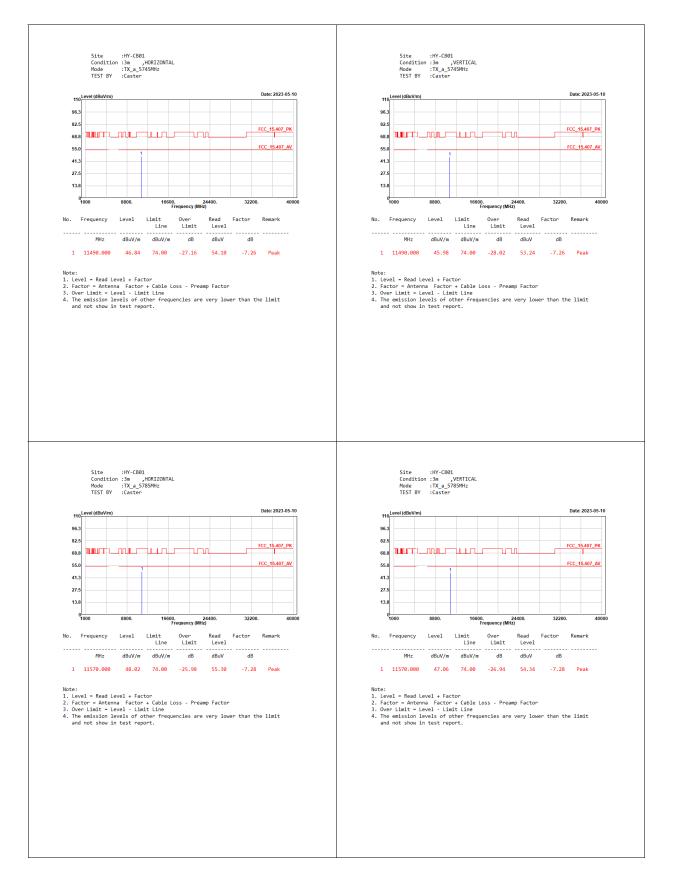




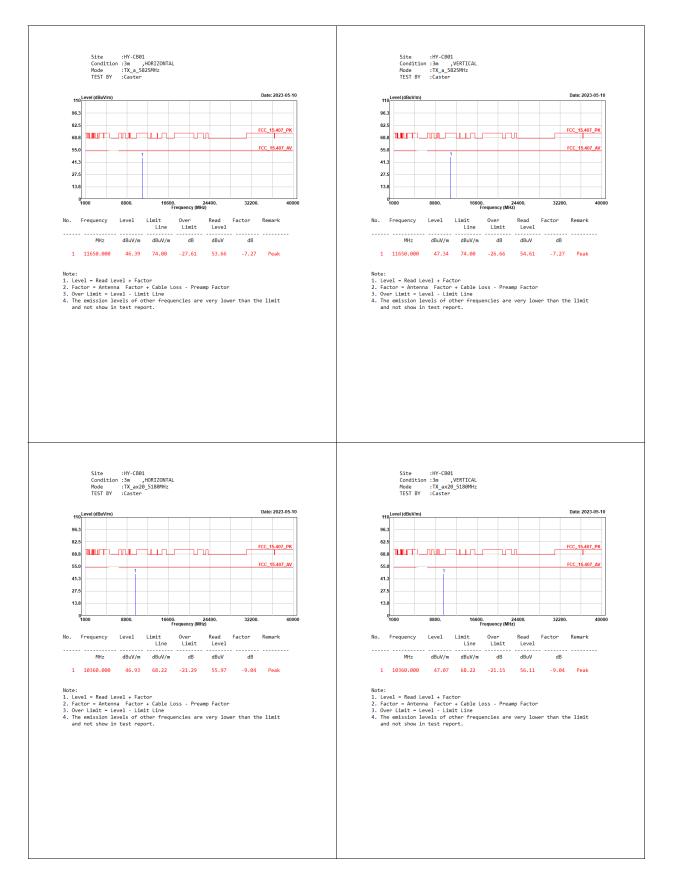




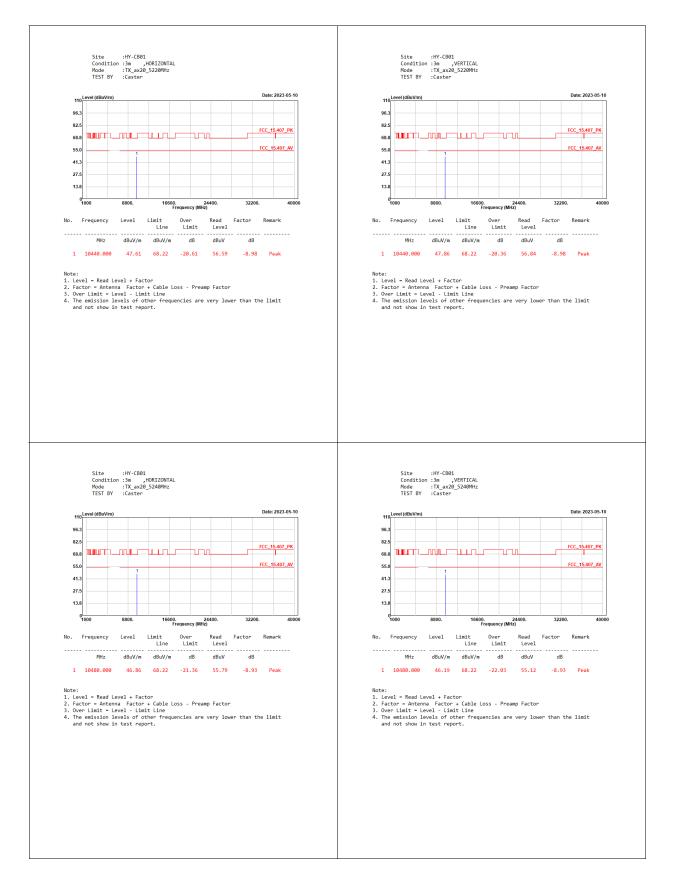




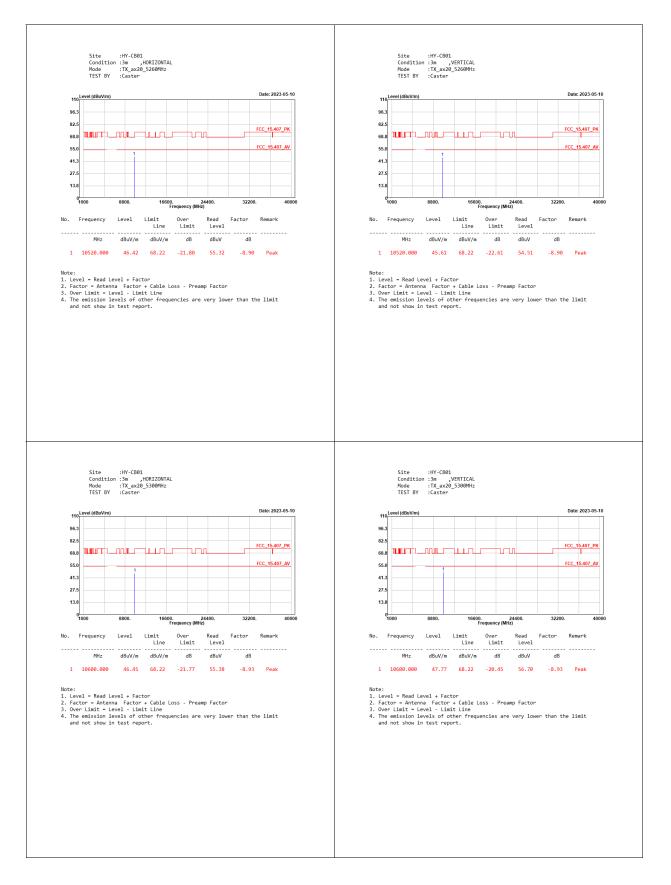




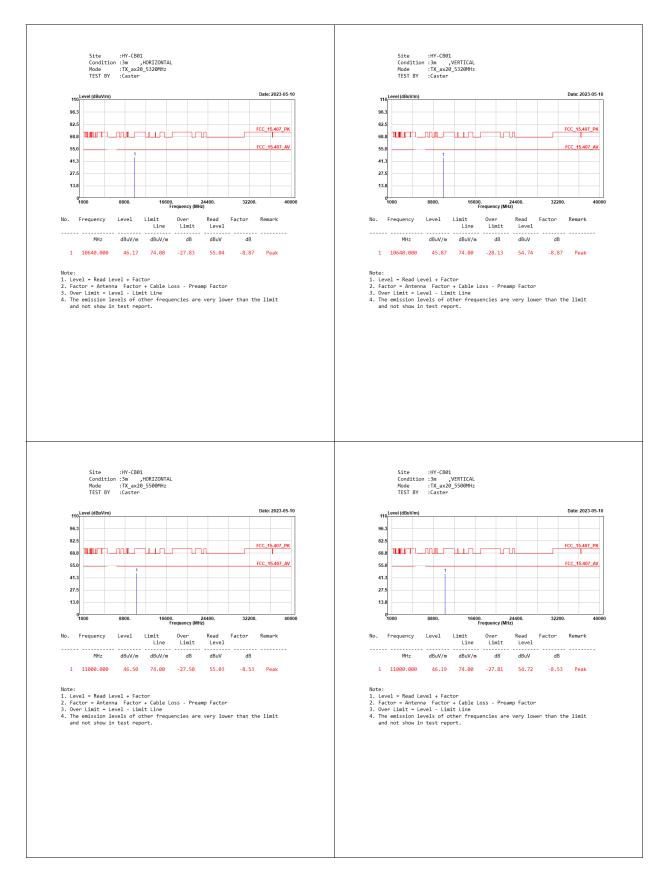




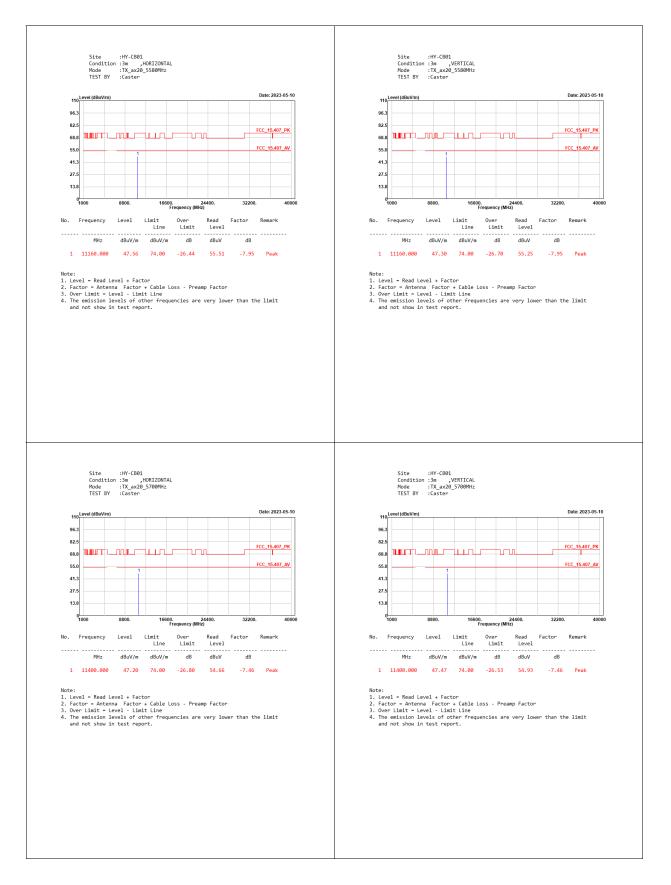




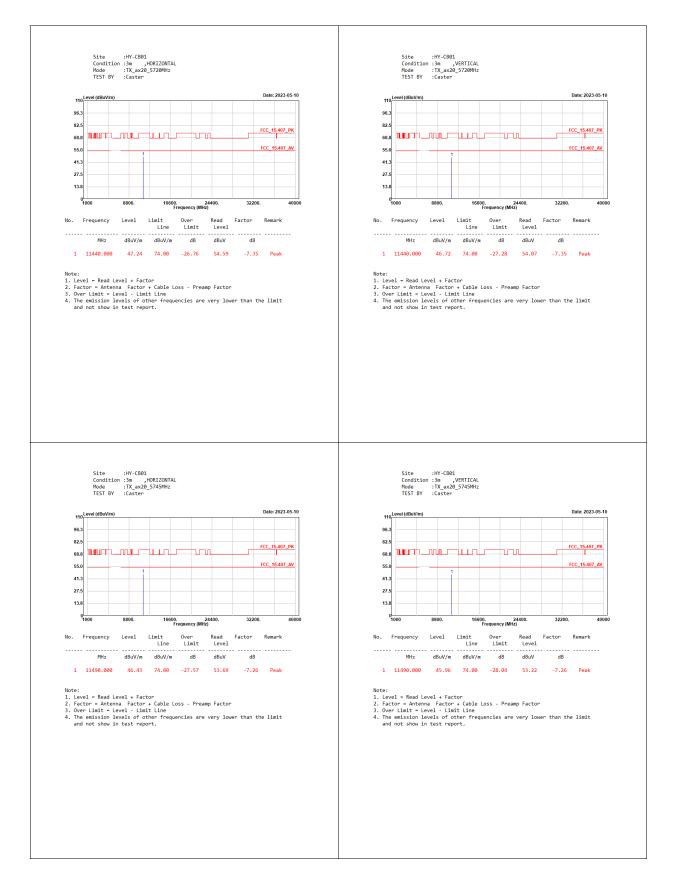




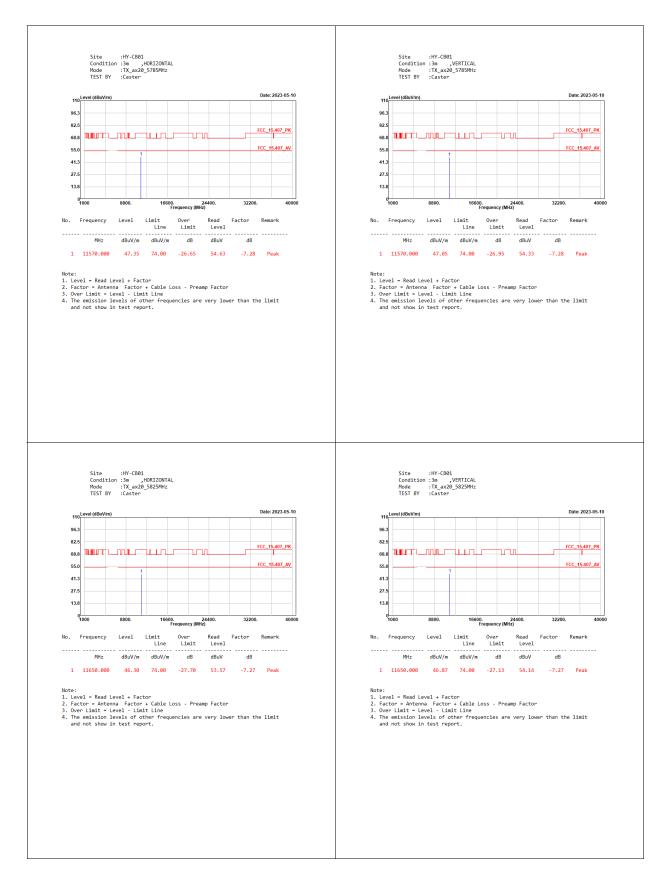




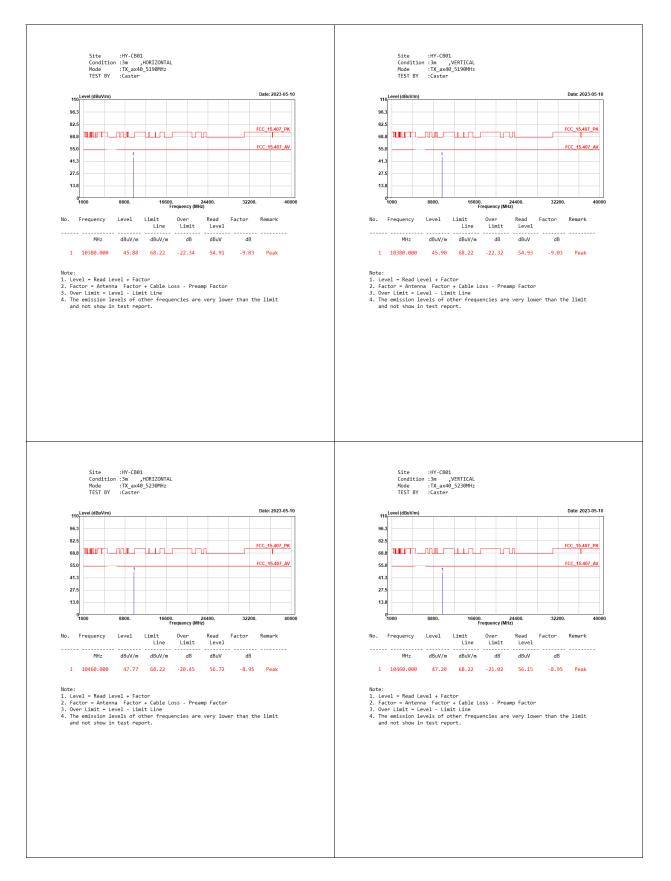




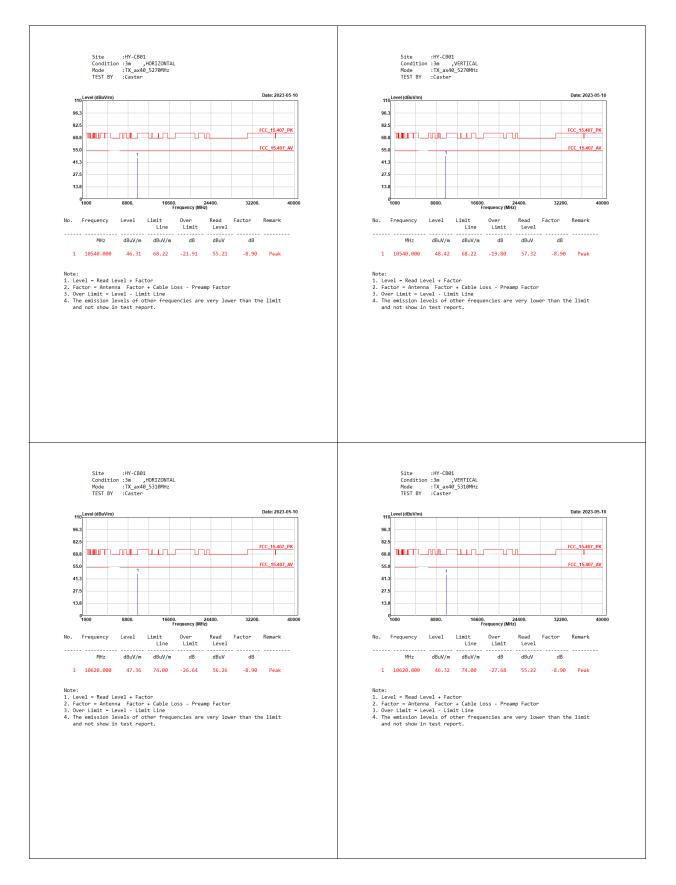




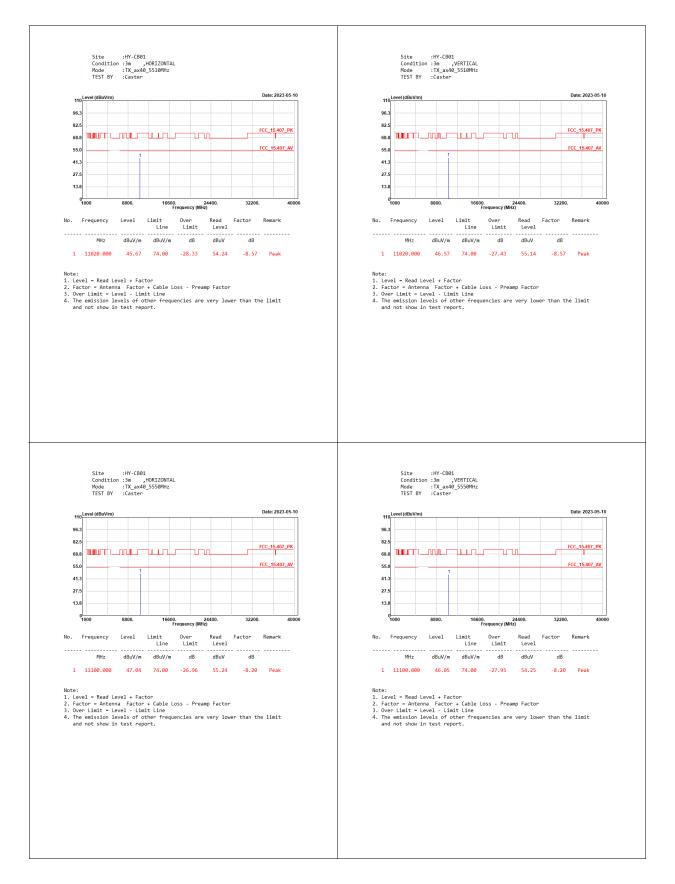




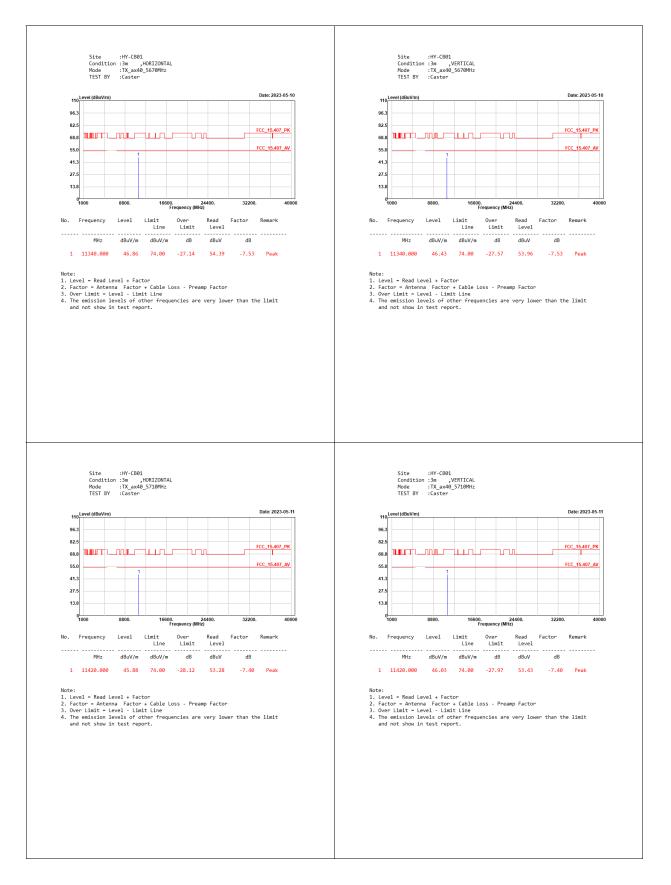




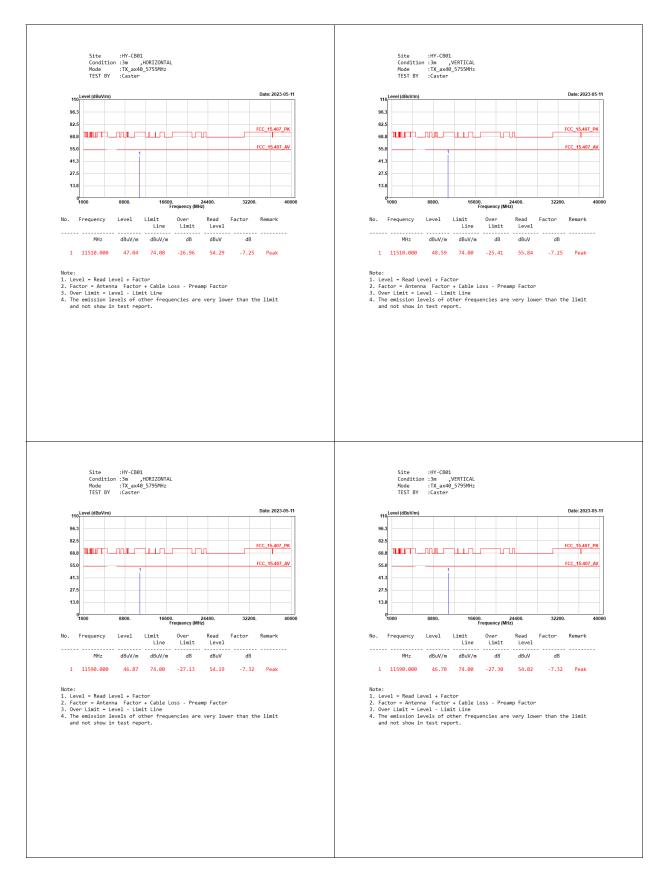




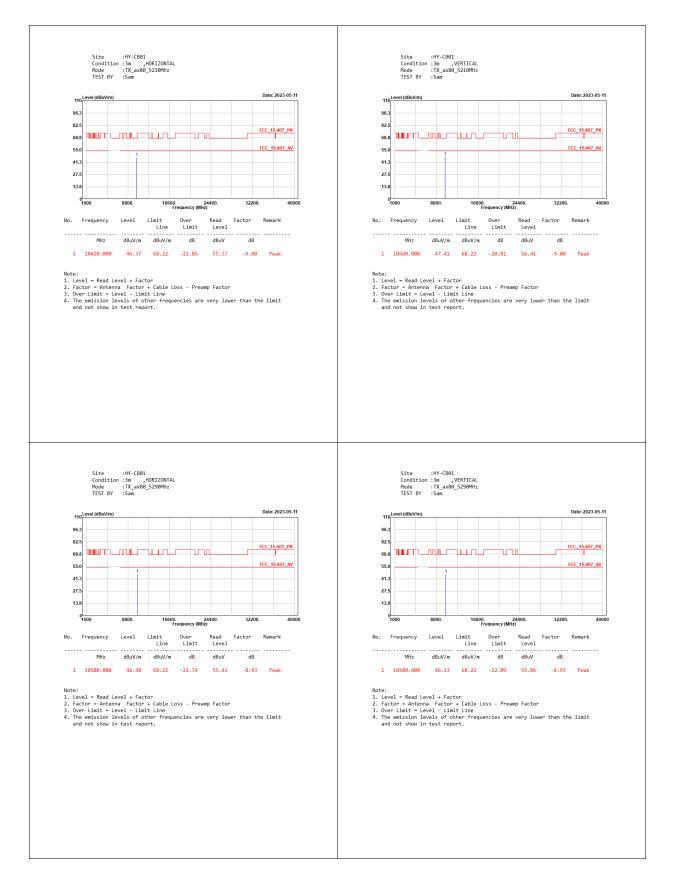




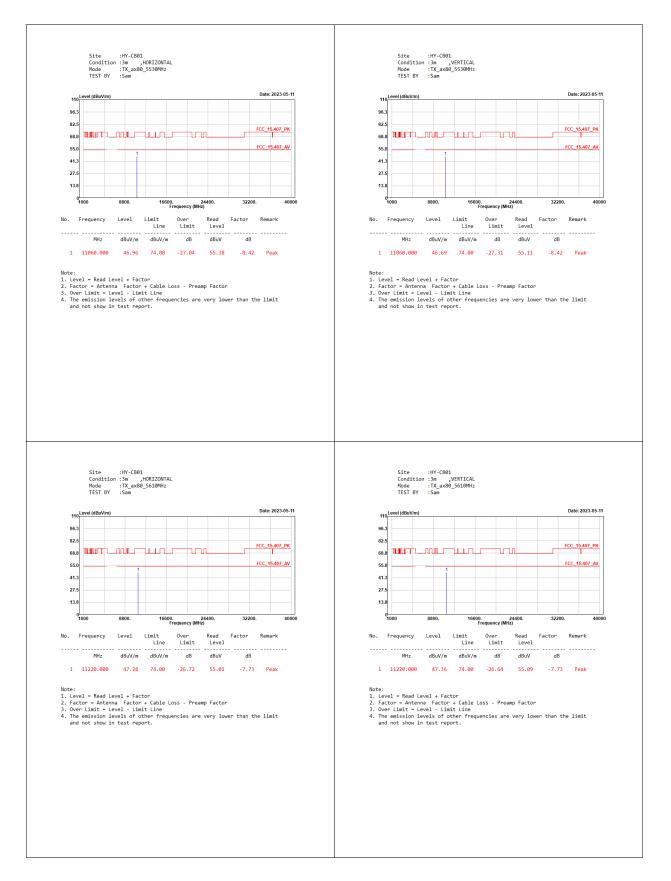




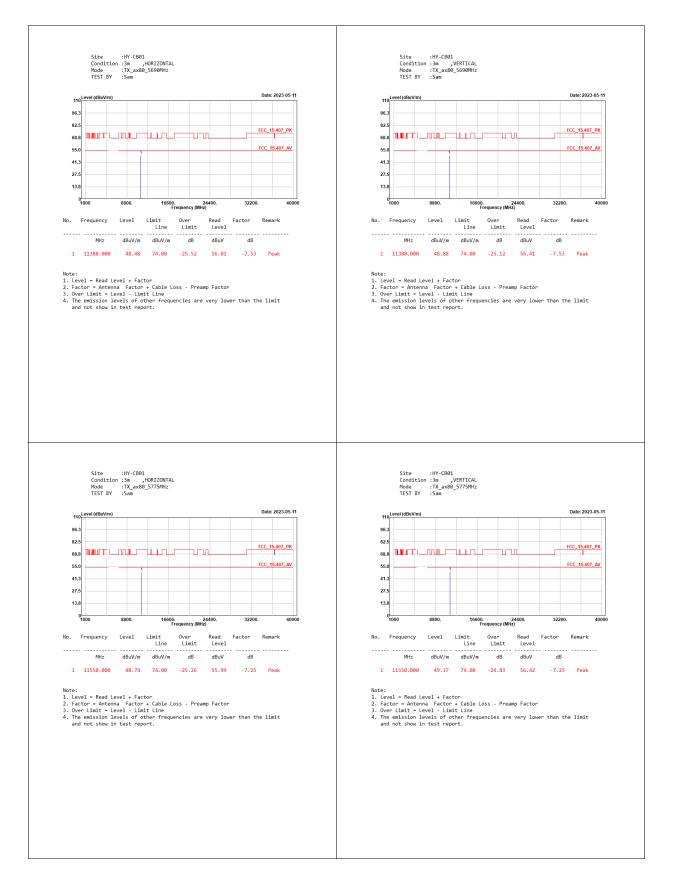






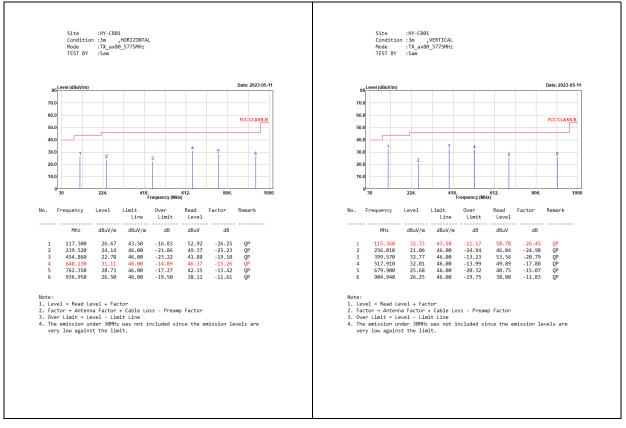




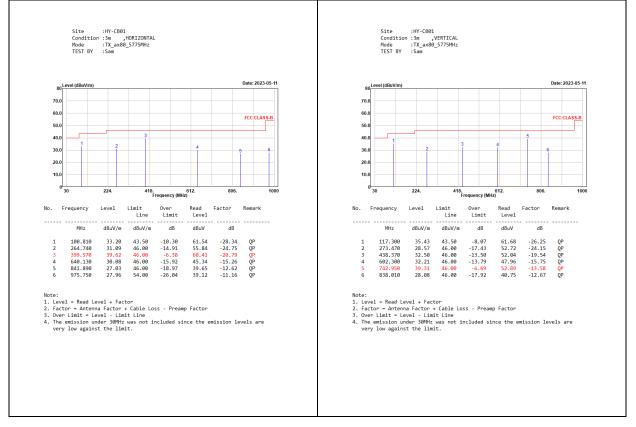




PD Mode



#### PoE Mode

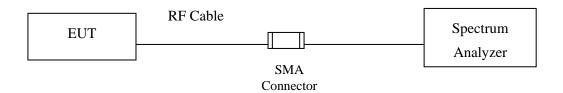




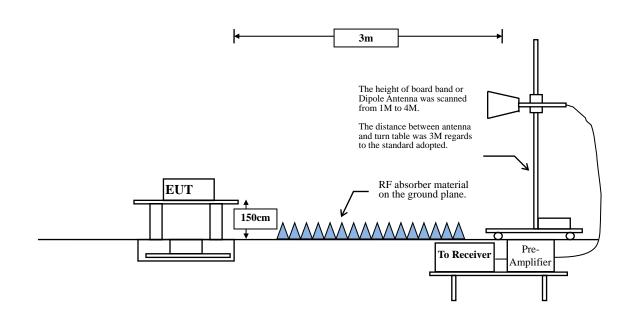
## 6. Band Edge

6.1. Test Setup

RF Conducted Measurement:



### RF Radiated Measurement:



### 6.2. Limits

The provisions of Section 15.205 of this part apply to intentional radiators operating under this section. Radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209:

FCC Part 15 Subpart C Paragraph 15.209 Limits				
Frequency MHz	μV/m @3m	dBµV/m@3m		
30-88	100	40		
88-216	150	43.5		
216-960	200	46		
Above 960	500	54		

Remarks : 1. RF Voltage  $(dB\mu V) = 20 \log RF$  Voltage  $(\mu V)$ 

2. In the Above Table, the tighter limit applies at the band edges.

- 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
- 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 5 MHz
- 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.

### 6.3. Test Procedure

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table can rotate 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 can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2013 on radiated measurement.

The bandwidth below 1 GHz setting on the field strength meter is 120 kHz, above 1 GHz are 1 MHz. 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.

### **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  $\ge$  98 %

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

(T refers to the minimum transmission duration over which the transmitter is on and is

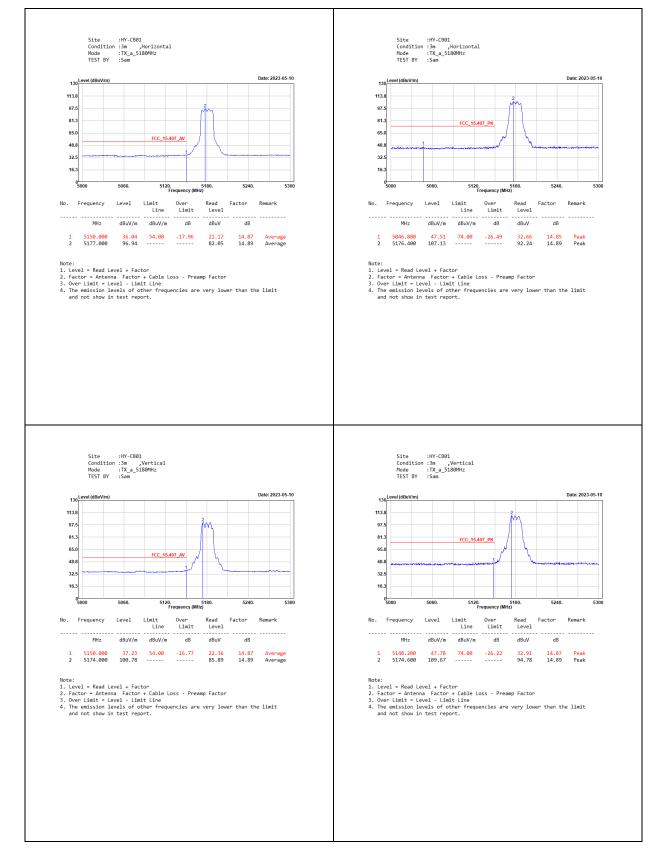
transmitting at its maximum power control level for the tested mode of operation.)

5 GHz band	Duty Cycle	Т	1/T	VBW
	(%)	(ms)	(Hz)	(Hz)
802.11a	92.40	0.2310	4329	5000
802.11ax-20 MHz	99.45	5.4400	184	10
802.11ax-40 MHz	99.54	5.4348	184	10
802.11ax-80 MHz	99.54	5.4348	184	10

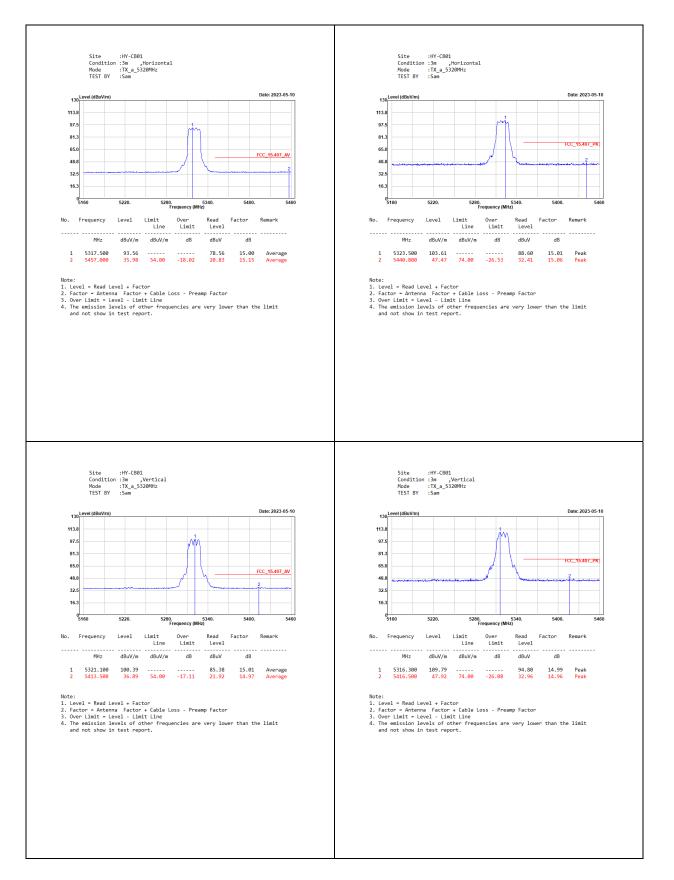
Note: Duty Cycle Refer to Section 8.



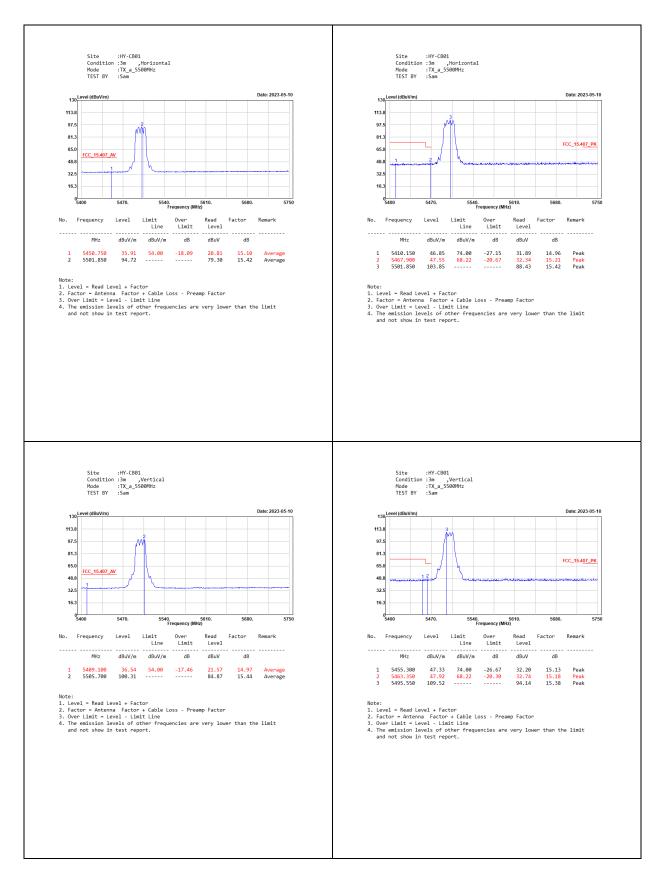
#### 6.4. Test Result of Band Edge



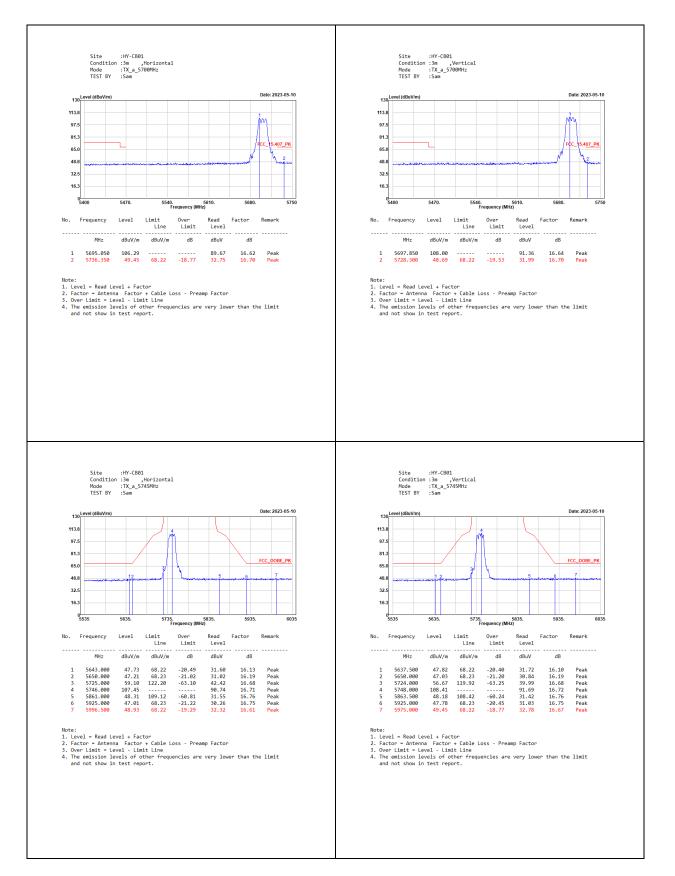




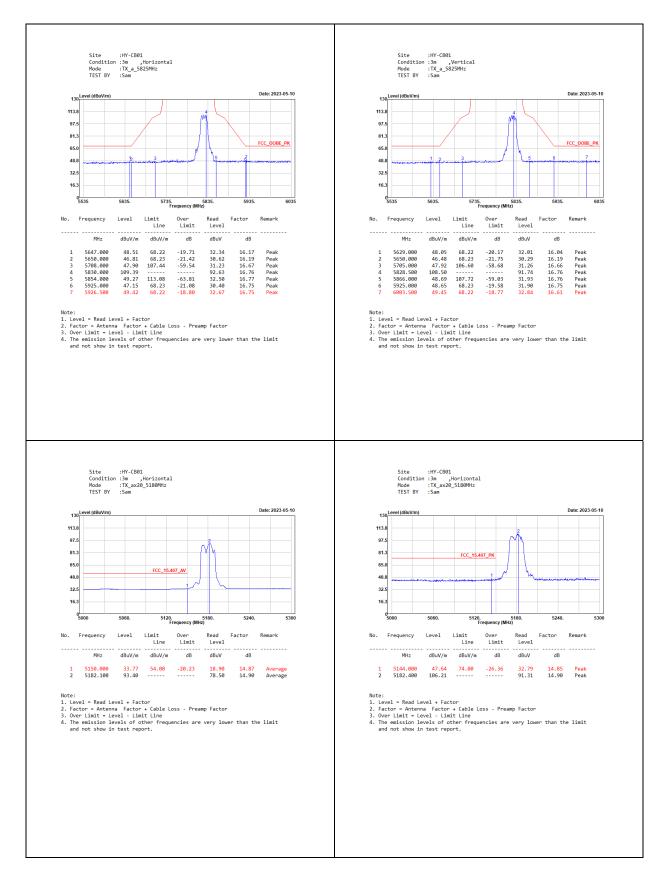




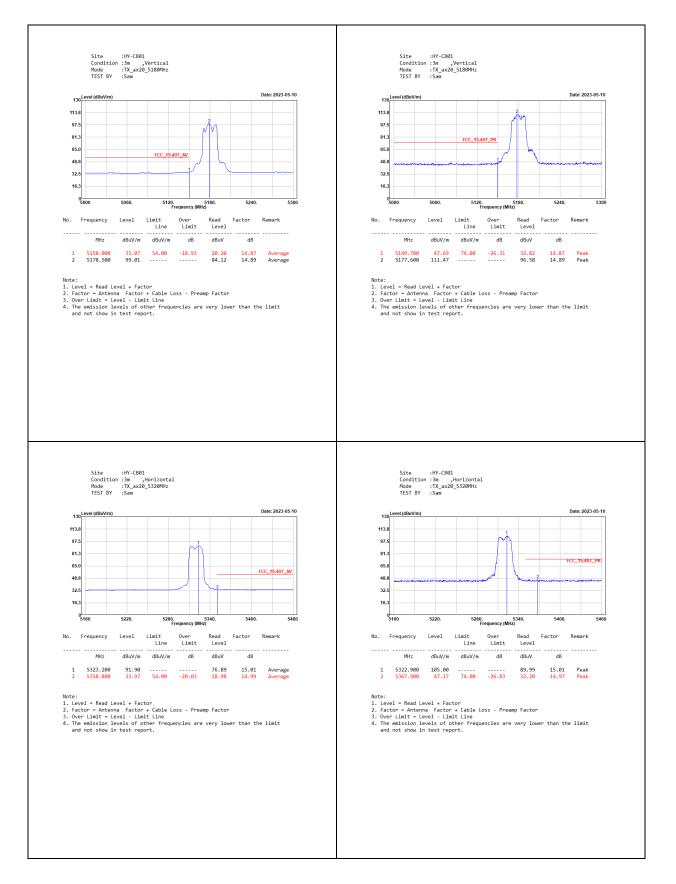




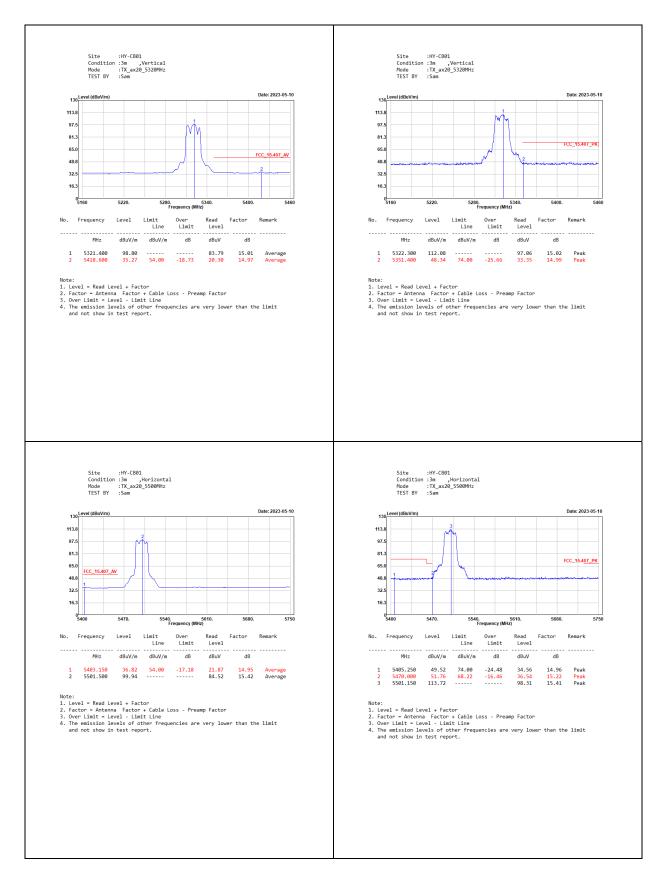




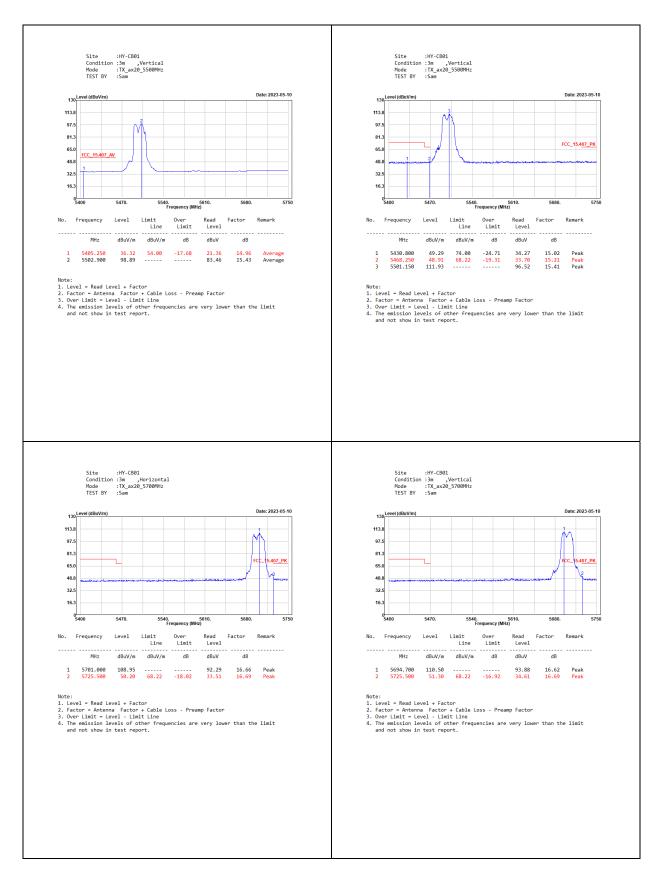




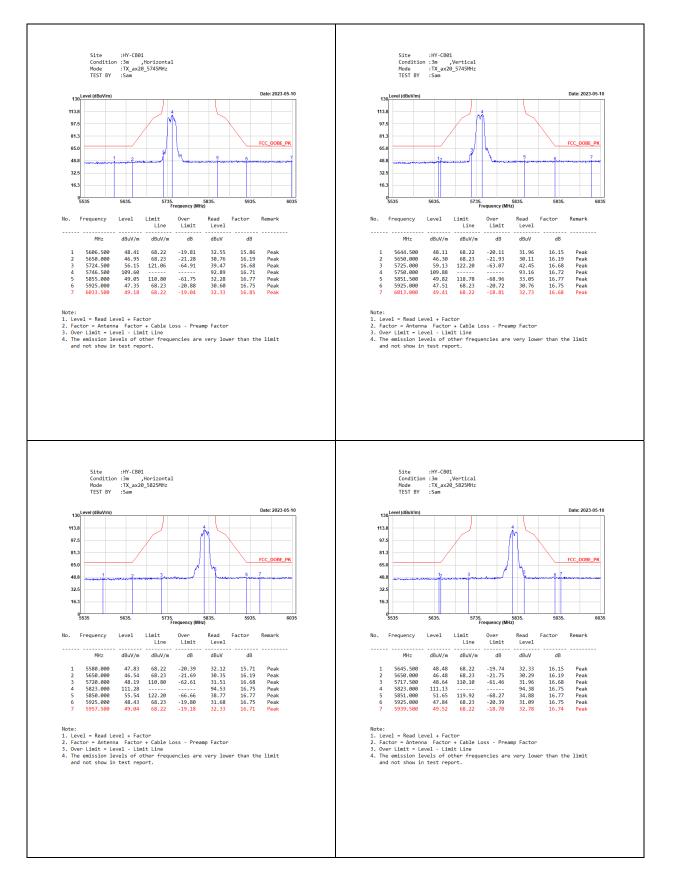




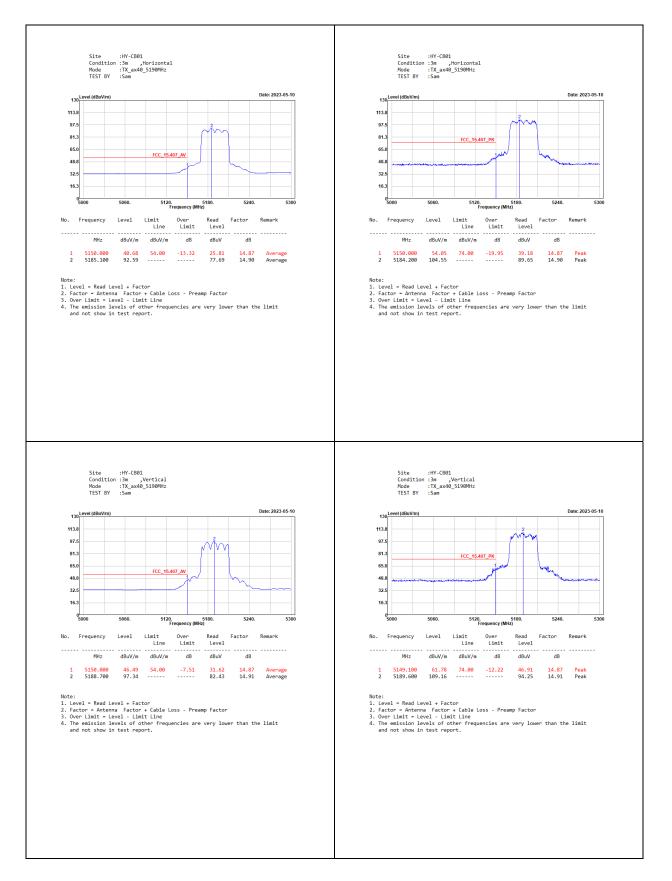




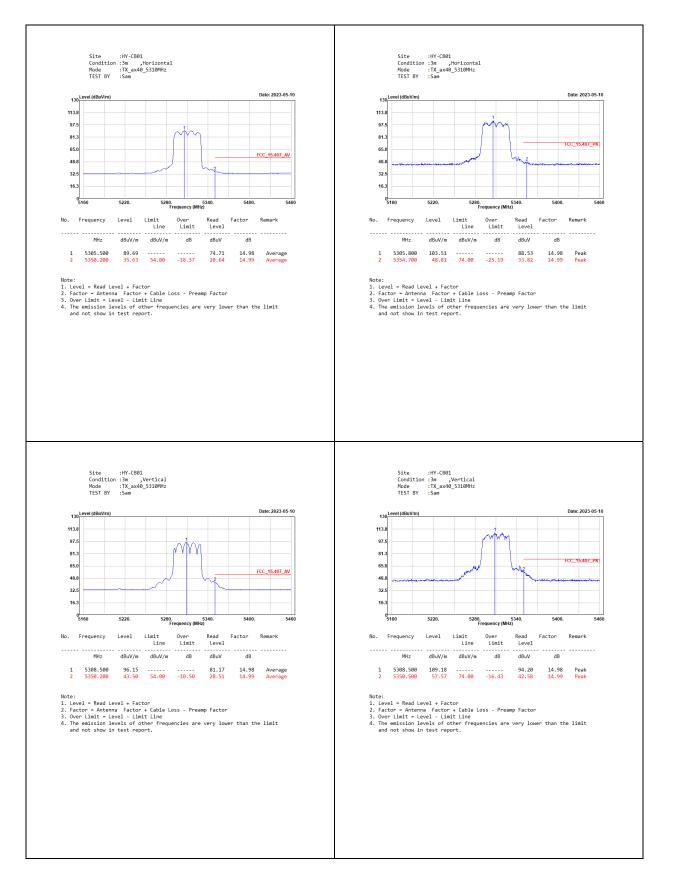




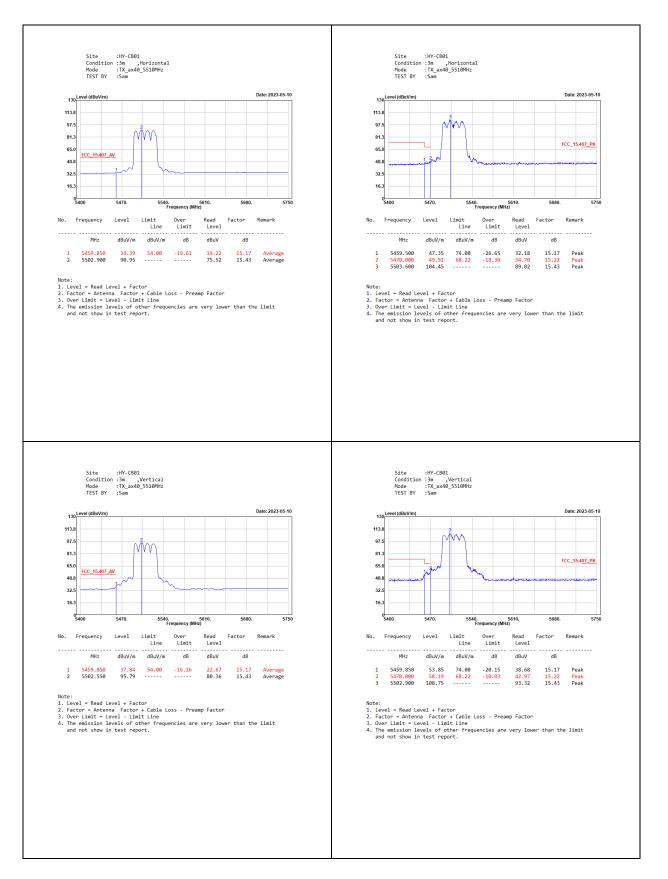




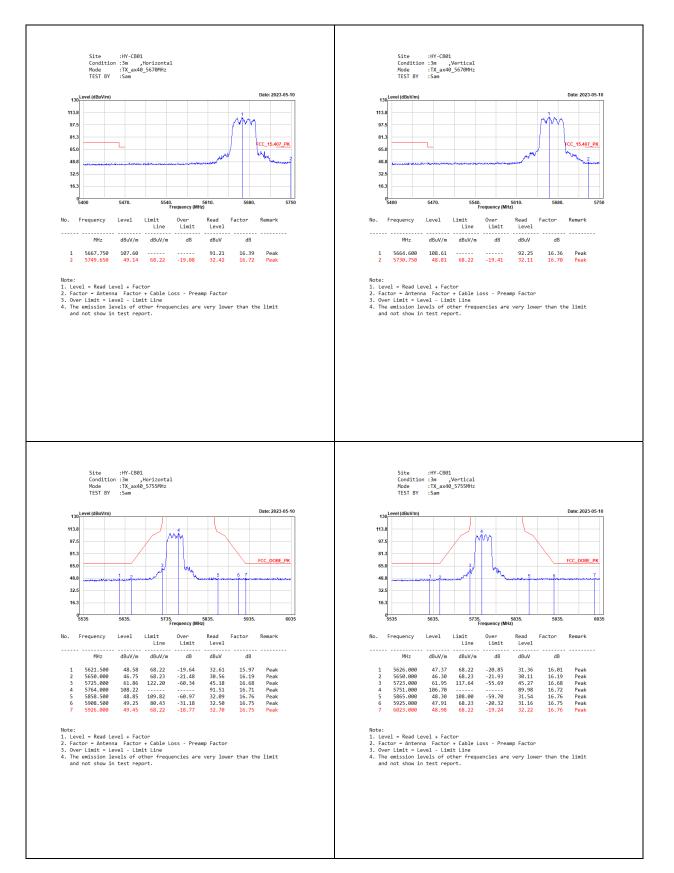




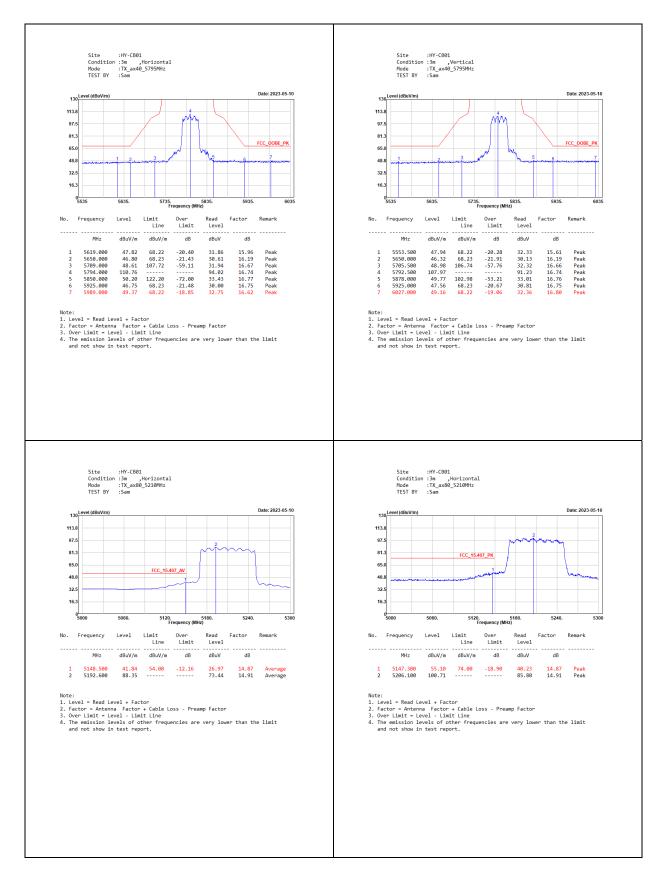




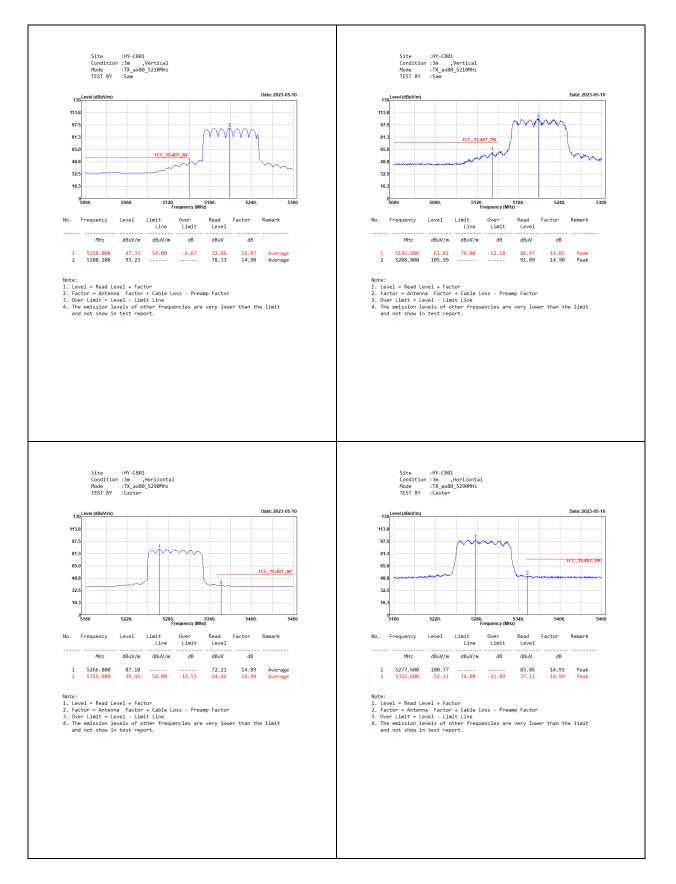




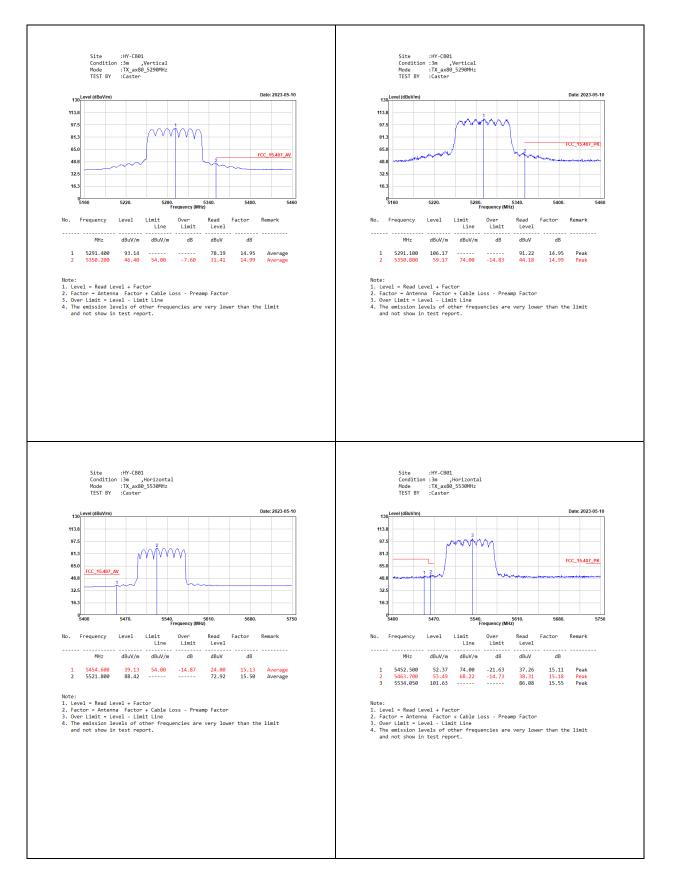




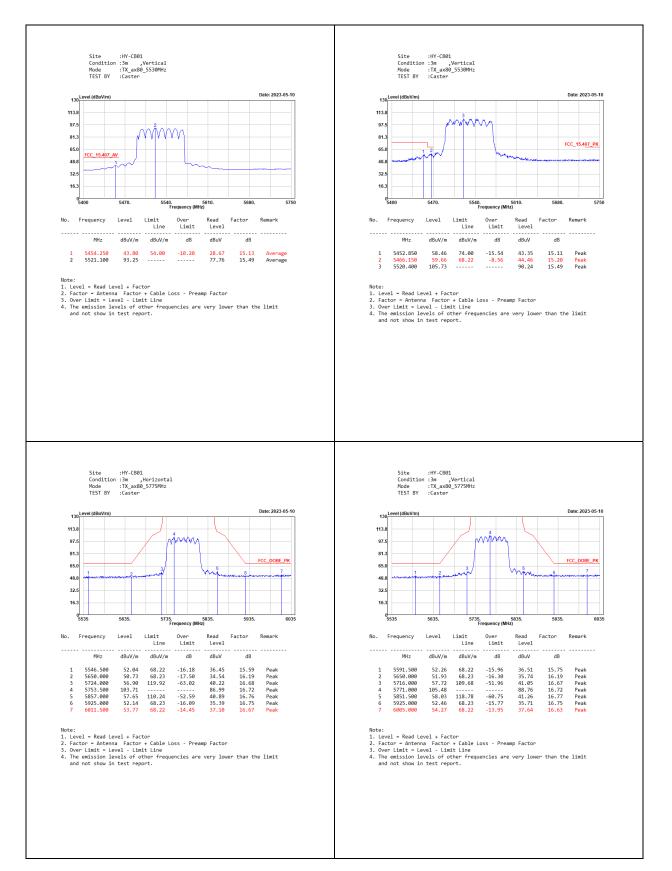














Product	:	TCx EDGE Cam+
Test Item	:	Band Edge Data
Test Mode	:	Transmit (802.11a) (5240MHz)

ſ	Test Frequency	Measurement Level	Limit	Result
	(MHz)	(MHz)	(MHz)	
	5240	5248.23	<5250	PASS

Spectrum							
Ref Level Att Count 10/10	30 d	D. T. Chyles and the late of		Mode Auto FFT			
1Pk View						N 201	
10 d8m		тули	M1	M1[1]	nt2	6.38 dBn 5.2381620 GH 16.503496503 MH	
0 dBm		y y			K		
-10 dBm					1		
-20 dBm					1		
-30 d8m	/			-			
-49. d8.m	~~			-	-	margan	
-50 dBm-	-				-		
-60 d8m					-		
-70 dBm-					-		
CF 5.24 GH	z		1001 pt:	5		Span 40.0 MHz	
Marker	1.	201700 F					
the second second second	Trc	X-value	Y-value	Function	Fun	ction Result	
M1	1	5.238162 GHz	6.38 dBm -1.75 dBm	Chain Data		16 500206500 MIL	
T1 T2	1	5.2317283 GHz 5.2492318 GHz	-0.84 dBm	Occ BW	16.503496503 MHz		
14	1	0.6406010.0012	0.04 000				

Date 18.APR.2023 22.36.06



Product	:	TCx EDGE Cam+
Test Item	:	Band Edge Data
Test Mode	:	Transmit (802.11ax-20 MHz) (5240MHz)

Test Frequency	Measurement Level	Limit	Result
(MHz)	(MHz)	(MHz)	
5240	5249.47	<5250	PASS

Ref Level Att Count 10/10	30 d	m Offset 1.00 dB B SWT 11,4 µs	RBW 500 kHz VBW 2 MHz	Mode Auto FFT		
1Pk View		1 1	1 1	M1[1]		6.51 dBn
10 dBm			M1	Occ Bw		5.2406390 GH 18.901098901 MH
0 dBm		There	Arrest Aug	mm	12	
-10 dBm					+	
-20 dBm	-					
-30 d8m		f in the second			1	
40 dBm	sur .				-	Josephin
-50 dBm				-	-	
-60 d8m					-	
-70 dBm					-	
CF 5.24 GHz			1001 pts	1		Span 40.0 MHz
larker Type   Ref	Tre	X-value	Y-value	Function	Euro	tion Result
M1	1	5.240639 GHz	6.51 dBm	rancton	, unc	aton Acoun
T1	1	5,2305694 GHz	0.93 dBm	Occ Bw		18.901098901 MHz
T2	1	5.2494705 GHz	-0.27 dBm			

Date 18.APR.2023 23.01 47



Product	:	TCx EDGE Cam+
Test Item	:	Band Edge Data
Test Mode	:	Transmit (802.11ax-40 MHz) (5230MHz)

Test Frequency	Measurement Level	Limit	Result
(MHz)	(MHz)	(MHz)	
5230	5248.86	<5250	PASS

Ref Level				Mode Auto EET			
Count 10/1			TON STORE	HOUB AUTO PET			
1Pk View						5.5.1	
10 d8m-				M1[1]		3.02 dBn 5.2280820 GH 37.802197802 MH	
		T1 Com	M1		T2	37.802197802 MH	
0 dBm		T1 mmmm	mannaha	manghan	good		
-10 dBm-	_	+ + +			+		
-20 dBm-	-		-				
-30 d8m	_	1					
50 00111		1 /			1		
-40 dBm	mon n'				1	monter	
-50 dBm		1		_	-	a manuframa	
-60 d8m				-	-		
-70 dBm							
CF 5.23 GH	z		1001 pt	5		Span 80.0 MHz	
larker	1 - 1						
Type Ref M1	Trc	X-value 5.228082 GHz	Y-value 3.02 dBm	Function	Fund	tion Result	
M1 T1	1	5.228082 GHZ 5.2110589 GHz	-1.36 dBm	Occ BW		37.802197802 MHz	
T2	1	5.2488611 GHz	-0.93 dBm	OLC DW	37.002197802 MHz		

Date 18.APR.2023 23.19.45



Product	:	TCx EDGE Cam+
Test Item	:	Band Edge Data
Test Mode	:	Transmit (802.11ax-80 MHz) (5210MHz)

Test Frequency	Measurement Level	Limit	Result
(MHz)	(MHz)	(MHz)	
5210	5248.68	<5250	PASS

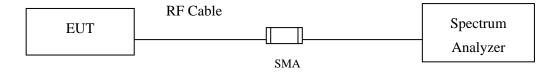
Ref Level		m Offset 1.00 dB =		ode Auto FFT		
Count 10/10	100 000 000	a but bere be a	ten state in	ade Haterry		
1Pk View		1 1	1 1			0.00.00
10 s				M1[1]		3.62 dBn 5.221830 GH
10 dBm-	-			MIOCC BW		77.202797203 MH
		T1	na - mana	· · · · · · · · · · · · · · · · · · ·	T2	
0 dBm		Kunner	war washer	and when the	many	
S. 100						
-10 dBm					11	
-20 dBm		1				1
-30 d8m						
-30 0000					1	
-40 dBm		N			h	San San
40 dBm	NAM	M .				anoran human
-50 dBm					-	
				1.1.1		1
-60 d8m						
-70 dBm-			-		-	
1.1.1		The second se	10000			(1) [1] [1] [2]
CF 5.21 GHz			1001 pts	1		Span 160.0 MHz
Marker						
Type   Ref	Tre	X-value	Y-value	Function	Fund	tion Result
M1	1	5,22183 GHz	3.62 dBm			
T1	1	5.171479 GHz	-1,96 dBm	Occ Bw		77.202797203 MHz
T2	1	5.248681 GHz	-1.17 dBm			

Date 18.APR.2023 23:35:24



## 7. Occupied Bandwidth

## 7.1. Test Setup



### 7.2. Limits

For the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz

### 7.3. 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.



# 7.4. Test Result of Occupied Bandwidth

Product	:	TCx EDGE Cam+
Test Item	:	Occupied Bandwidth Data
Test Mode	:	Transmit (802.11a)
Test Date	:	2023/04/18

### Chain A

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	15784	>500	Pass
157	5785	16024	>500	Pass
165	5825	16024	>500	Pass

Chain B

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	16304	>500	Pass
157	5785	16304	>500	Pass
165	5825	16264	>500	Pass

### Channel 149 (Chain A)

Ref Le	evel ;	20.00 de 30			RBW 100 kHz VBW 300 kHz	Mode Auto	FET			
O IPR VI	eW			the Fra	Service and a					-
10 dBm·		10.10		M	3	5.737 M3[1]		5.7370		-6.71 dBm 70480 GHz 0.16 dBm 00050 GHz
0 dBm	0	1 0,160	M	1. And	not will will may not	hydredhall	unly ble			
-10 dBm		-02 -	5.840 dBm 🕴	MAN	1			-	-	
-20 dBm			1 /	11	-		1	_	1 0.0	
-30 dBm	-	_	North Start	-		_	4	Ma		
-40 dBm	-		Min		-			man	1050	
USU ABIT	inn	North Contraction of the Contrac	Man	-					""Invertina	Milmining
-60 dBm			-	_	-		_	-	_	
-70 dBm	-	_		_		_	F2			
			F1						1	1 I.
CF 5.7	45 GH	z			1001 pt	5			Span	40.0 MHz
Marker	-									
Туре	Ref		X-value		Y-value	Function	1	Fun	ction Result	t
M1	142	1	5.73704		-6.71 dBm	A				
D2 M3	M1	1	15.78		0.95 dB 0.16 dBm					

Date: 18.APR.2023 22.52.52



Product	:	TCx EDGE Cam+
Test Item	:	Occupied Bandwidth Data
Test Mode	:	Transmit (802.11ax-20 MHz)
Test Date	:	2023/04/18

Chain A

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	18941	>500	Pass
157	5785	18621	>500	Pass
165	5825	18741	>500	Pass

Chain B

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	18501	>500	Pass
157	5785	18781	>500	Pass
165	5825	18142	>500	Pass

## Channel 165 (Chain B)

	101				VBW 300 kHz	Mode	1000011-1				
10 dBm						м	1[1] 3[1] M3				-6.35 dBm 158092 GHz 0.67 dBm 299950 GHz
0 dBm-	D:	1 0,670	dBm 1 M1	more high	Manky	whether	Relande	1 DE		_	
-10 dBm	-	-02 <	5.330 dBm		1					_	
-20 dBm	-		- /-			_					
-30 dBm	-		/		-						
-40 dBm		An	right						May	4	1.004
-50 dBm	renter	menthe								mymly	Withermon
-60 dBm						-	-				11.1
											1.1
-70 dBm			F1					F2			
CF 5.83	25 GH	z	-1	1	1001 ;	ts	-			Spar	40.0 MHz
larker	-	1.1					-				
Type	Ref		X-valu		Y-value	Func	tion	_	Func	tion Resul	t
M1	- 112	1	TAY BUCK MARK	092 GHz	-6.35 dBm						
D2	M1	1		142 MHz 995 GHz	1.80 dB 0.67 dBm						

Date: 18 APR.2023 23 16 17



Product	:	TCx EDGE Cam+
Test Item	:	Occupied Bandwidth Data
Test Mode	:	Transmit (802.11ax-40 MHz)
Test Date	:	2023/04/18

Chain A

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755	37642	>500	Pass
159	5795	37562	>500	Pass

## Chain B

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755	36444	>500	Pass
159	5795	37562	>500	Pass

## Channel 151 (Chain B)

	ew				VBW 300 kHz	Mode Au	50 I ). I			
10 dBm-					МЗ	M1[ 	S			-8.68 dBn 367782 GH: -1.91 dBn 525220 GH:
U dBm-	D	1 -1,910	d8m M1 .910 d8m <b>a</b> r <sup>4</sup>	. He he will a	4 John John John John John John John John	d set whether	Jalalahou	1. \$2		
-10 dBm			.910 dBm and	Machenlinemer		and a second	to a reserver fit.	ways.	-	
-20 dBm	-		·		-	-				
-30 dBm	-						_	1	-	_
-40 dBm									10 - O	
			- Andrew -					MAN	Mary head .	monumental
-50 gBg	and por	mound			-				An a second	and you will
-60 dBm	-	_			-				-	-
70 40-									_	
-70 dBm			F1	1.1.1				F2		1000
CF 5.7	55 GH	z	4 <u>-</u> 455		1001 p	ts			Spa	n 80.0 MHz
Marker		21						-		
Type M1	Ref	1	X-value 5.73677		Y-value -8.68 dBm	Functio	on j	Fun	ction Resul	II.
D2	MI	1		4 MHz	0.78 dB		-	-		
MB	1994	1	5.7525		-1.91 dBm	1	100			

Date: 18 APR.2023 23:29:37



Product	:	TCx EDGE Cam+
Test Item	:	Occupied Bandwidth Data
Test Mode	:	Transmit (802.11ax-80 MHz)
Test Date	:	2023/04/18

Chain A

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
155	5775	76400	>500	Pass

### Chain B

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
155	5775	78000	>500	Pass

Att		20.00 de 30			<ul> <li>RBW 100 k</li> <li>VBW 300 k</li> </ul>		Auto FF	r.			
1PR Vie	W										
10 dBm-	+				-		1[1] 3[1]			5.3	-11.96 dBm 735999 GHz -5.91 dBm 779960 GHz
0 dBm—	-		1		-	M3	-	+			1
-10 dBm		1 -5.910 	1 dBm M	h itterenation	the three many for	Julian Mal	Martin Mart	MAR	2		
-20 dBm	+				-		-	-	+		
-30 dBm	+	_			-		-	-	-		
40 dBm	-		1	-	-				1		-
-50 dBm	an a	NAMERICA	Kighland						144	looungpranting	1 - was allowed as have
-60 dBm		-									1
-70 dBm	+	-	F1		-			F2		1	-
CF 5.77	5 GH	z			1001	pts				Span	160.0 MHz
larker	-								-		
	Ref	Trc		alue	Y-value	Func	tion		Fund	tion Result	t
M1 D2	MI	1	5,1	735999 GHz 76.4 MHz	-11.96 dg				-		
M3	1011	1		76.4 MHZ	-5.91 dB		_	_			

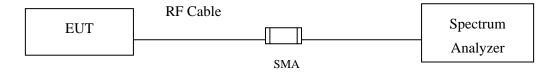
## Channel 155 (Chain A)

Date: 18.APR.2023 23.41.35



## 8. Duty Cycle

### 8.1. Test Setup



### 8.2. Test Procedure

The EUT was setup according to ANSI C63.10 2013; tested according to U-NII test procedure of KDB789033 for compliance to FCC 47CFR 15.407 requirements.



Test Result of Duty Cycle 8.3.

Product	:	TCx EDGE Cam+
Test Item	:	Duty Cycle
Test Mode	:	Transmit

Duty Cycle Formula:

Duty Cycle = Ton / (Ton + Toff)

Duty Factor = 10 Log (1/Duty Cycle)

Results:

5 GHz band	5 GHz band Ton		Duty Cycle	Duty Factor
	(ms)	(ms)	(%)	(dB)
802.11a	0.2310	0.2500	92.40	0.34
802.11ax-20 MHz	5.4400	5.4700	99.45	0.02
802.11ax-40 MHz	5.4348	5.4600	99.54	0.02
802.11ax-80 MHz	5.4348	5.4600	99.54	0.02

### 802.11b

1Ph Minut			10 - 7 + 10 - 10 - 11	tr.				
Anu M1 10 dem	1	wywww.	radio-characteristic		Dalij Dalij	www.hanatatata	Mary	11,59 dBm 1,59 dBm 2,88 dE 231,000 µ
-10 dem-								
20 obr-	-			-	-	-	-	
-30 dB/			-		-		-	-
40 000	-		-	Ħ	1	1	d	-
-50 dem-			-					-
-60 dBm-							_	
-70 dBm			-	1			-	in a
CF 5.18 0	242		1001	pts	-			100.0 µs/
farker				1.00				
	of Drc	x-value	Y-value		nction	Func	tim Resu	tr
M1. D2	1 M1 1	65,0 j 231,0 j						
	M1 1	250.0 1						

## 802.11ax-20 MHz

Spectr	vel 20.0	1	-		RBW 107						_	q
AUL	A61.5070		= SWT		VBW 107							
1Ph Mie	W	-										
10 d8m-	r.A.S.b.	man	n provinsi primo	relearned	actes the com	when	Dal 1 Paris <sup>d</sup> and		(Altradian	al fairfully	4.4100 1.8 5.4400	10 n
0 65m-	-	-		-		+	-	-	-	-	-	-
-10 dBm	+	-				+	-	_	-	-	-	-
-20 dBm	-	-				+	-		-	-	-	÷
-50 đBm	-	-	-	-		+	-		-	+	-	-
-40 diam	-			-		t	-	-	+	-		-
-Sil dem-	-					1		_	-			-
-67 dBm	1					t						
-76 dBm-											1.	
CF 5.18	GHz	-	-		10	01 pts			-		1.01	ms/
farker	-			-	0.000	<u> </u>		-	-			
Type	Ref D	1	x-valu		Y-value		Functio	n -	F	unction R	esult	_
M1. D2	MI	1		5.44 ms	12.26							-
De	141	1		5.47 ms	0,1							_

Date: 18 APR 2023 22:52 21

### 802.11ax-40 MHz

Ref Level 20.00 dBm Offset	1.00 dE # R81	M 10 MHz				(m
	8.4 mg = VB					
1Ph View						
however a strategy and a strategy and the strategy and th	her-ender	the hours	M1[1] M1[1]	-the-stern	-	8.72 dBn (ho <b>1,54560</b> ,17 2.76 di 5.43460 m
0.6hm				_		
-) 0 dBm			-	_		-
-20 oun-		-	-	_		
-30 dBm-			-	_		-
-40 d&m	-		-		1	-
GD dem:	-		_		-	
-50 dBm						-
-78 dBm						
CF 5.19 GHz		1001 pts	-	-		840.0 µs/
Marker						
Type Ref Trc X-value		value	Function		Function Re	sult
	56 ms 46 ms	8.72 dBm 2.76 dB				
	46 ms	-0.19 dB		-		

### 802.11ax-80 MHz

		VBW 10 MHz			
• 1Ph View	the souther the straight	V. Marathardine	M1[1]	hundrenance	4.30 d8 2.53680 m 4.9 m 5.43400 m
0.6hm				-	
-)a dem					
-20 dBn					
-30 dBm-		-		-	
-40 dam		-	_		
SII dem				-	
-50 dBm			_		
-70 dBm-	1		_		
CF 5.21 GHz		1001 pt			840.0 µs,
Marker					
Type   Ref   Trc	x-value	Y-value	Function	Func	tim Result
M1 1 D2 M1 1	2,5368 ms	4.30 dBm 3.31 dB			
D2 M1 1	5,46 ms	-0.13 dB			