

EVALUATION REPORT

Applicant Name:
SAMSUNG Electronics Co., Ltd.

Date of Issue:
December 22, 2021

Address:
129, Samsung-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

Location:
HCT CO., LTD.,
74, Seoicheon-ro 578beon-gil, Majang-myeon,
Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA

FCC ID:	A3LSMX800
APPLICANT:	SAMSUNG Electronics Co., Ltd.

As it is indicated on test report, we performed the test fully where target power has been changed or enabled channels such as WLAN 2.4 GHz 12/13ch., and Evaluation Data was verified based on reference model's mode that has same target power.

Equipment Class(es) : DSS, DTS, UNII, 6XD, DCD

Rule Part(s) : 15

Application's Statement : The applicant takes full responsibility that the test data referenced below represents compliance for this FCC ID.

Differences
Brief Description : Hardware and software of this device are identical to the implementation in A3LSMX808U
The operational description includes detailed information about the changes between the devices. The data from that application has been verified through appropriate spot checks to demonstrate compliance for this device as shown in the summary table below.

Test Reference : KDB 484596 D01 Reference Test Data v01

The detail test data can be found in this documents, Appendix A.

Category	Spot Check	Verdict
Unlicensed EMC	Band Edge	Share
	Spurious Emissions	Share

Reference Detail Section

Reference FCC ID	Equipment Class	Report Title	Section
A3LSMX808U	DSS	Bluetooth Report	All sections
	DTS	DTS Report , DTS ax Report	All sections
		BT LE Report	All sections
	NII	UNII Test Report , UNII ax Report	All sections
	6XD	UNII 6e ax Report	All sections
	DCD	WPT Report	All sections



Report prepared by : Woong Jin Kim
Engineer of Telecommunication testing center



Approved by : Jong Seok Lee
Manager of Telecommunication testing center

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	December 03, 2021	Initial Release
1	December 22, 2021	Page 1, Revised

Appendix A. The Spot check test data

1. Summary of the spot check for Unlicensed EMC

Mod	Test Item	Mod / Channel	Measured Frequency [MHz]	SM-X808U Result [dB μ V/m]		SM-X800 Result [dB μ V/m]		Deviation (dB)	
				Average	Peak	Average	Peak	Average	Peak
BT	Band Edge	DH 5 / ch 78 / ANT1	2483.5 MHz ~ 2500 MHz	28.74	61.79	27.87	61.02	0.87	0.77
	RSE	DH 5 / ch 0 / ANT1	7206 MHz	15.26	53.17	14.03	52.72	1.23	0.45
BT LE	Band Edge	2M_37 Bytes / ch 39 / ANT1	2483.5 MHz ~ 2500 MHz	50.63	63.89	50.72	63.87	-0.09	0.02
	RSE	2M_37 Bytes / ch 0 / ANT1	7206 MHz	44.71	52.51	44.91	52.64	-0.20	-0.13
WLAN	DTS BE	802.11n / ch1	2310 MHz ~ 2390 MHz	49.25	61.18	49.68	62.85	-0.43	-1.67
	DTS RSE	802.11n / ch1	7236 MHz	40.48	52.56	40.28	52.13	0.20	0.43
	UNII BE	802.11n40 / ch38	4500 MHz ~ 5150 MHz	51.54	66.01	50.06	62.91	1.48	3.10
	UNII RSE	802.11ax / CH144 / SU	17160 MHz	-	59.34	-	56.01	-	3.33
WIFI 6E	Band Edge	802.11ax20 / CH 2 / 26T	Std 5850 MHz ~ 5923 MHz	61.36	81.11	55.74	78.39	5.62	2.72
			Integral 5923 MHz ~ 5924 MHz	59.58	73.1	57.64	70.41	1.94	2.69
			Integral 5924 MHz ~ 5925 MHz	66.11	80.56	64.75	78.31	1.36	2.25
	RSE	802.11ax20 / CH 233 / SU	21345 MHz	43.92	56.29	43.83	56.74	0.09	-0.45
WPS	Fundamental		530 MHz	20.53		19.33		1.20	
	RSE		30 MHz ~ 1 GHz	3.83		3.97		-0.14	

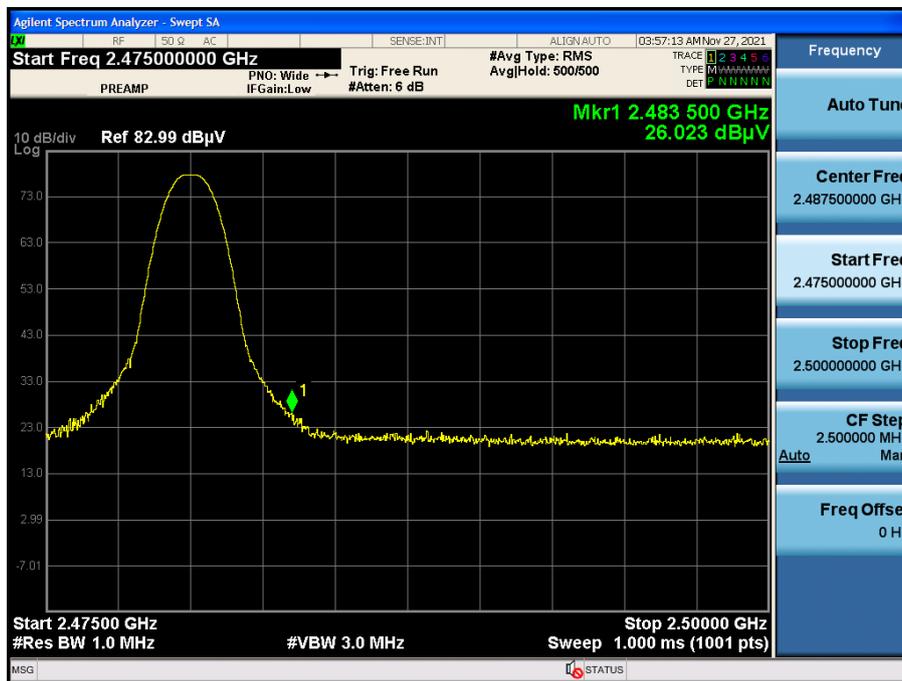
2. Test Plot

BT Band Edge (DH5/ch.78)

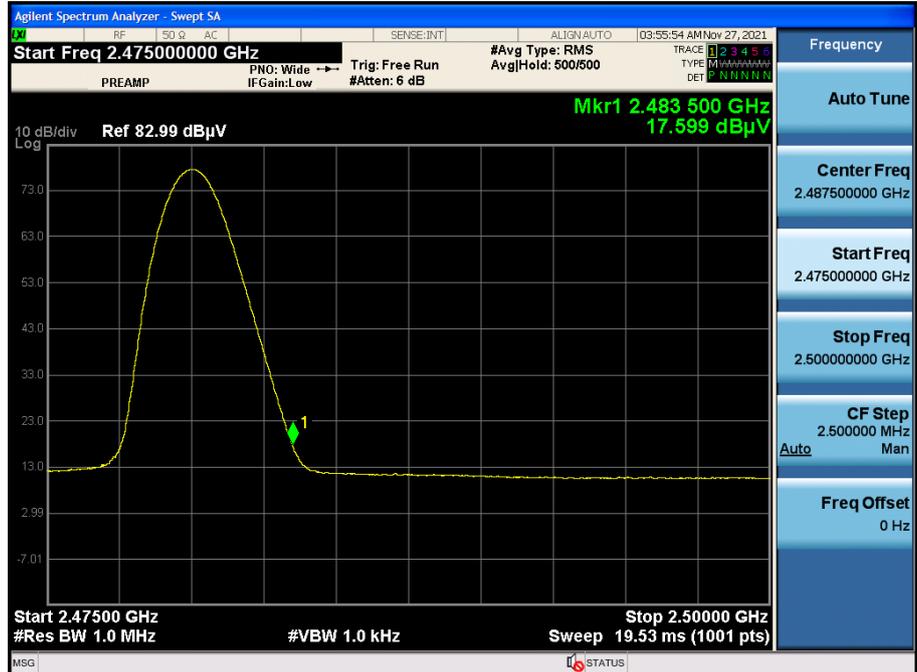
Bandedge

Frequency [MHz]	Measured Value [dBμV]	A.F+C.L+D.F [dB/m]	Pol. [H/V]	D.C.C.F [dB]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	26.023	35.00	H	0	61.02	73.98	12.96	PK
2483.5	17.599	35.00	H	-24.73	27.87	53.98	26.11	AV

[Radiated Restricted Band Edges plot- Peak Result]



[Radiated Restricted Band Edges plot- Average Result]

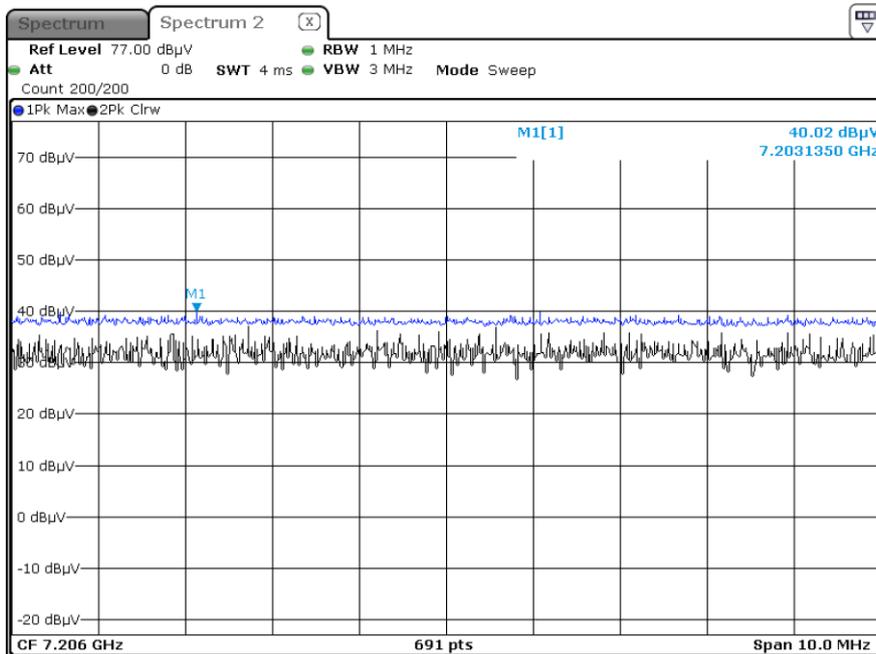


BT R.S.E 3rd Harmonic(DH5/ch.0)

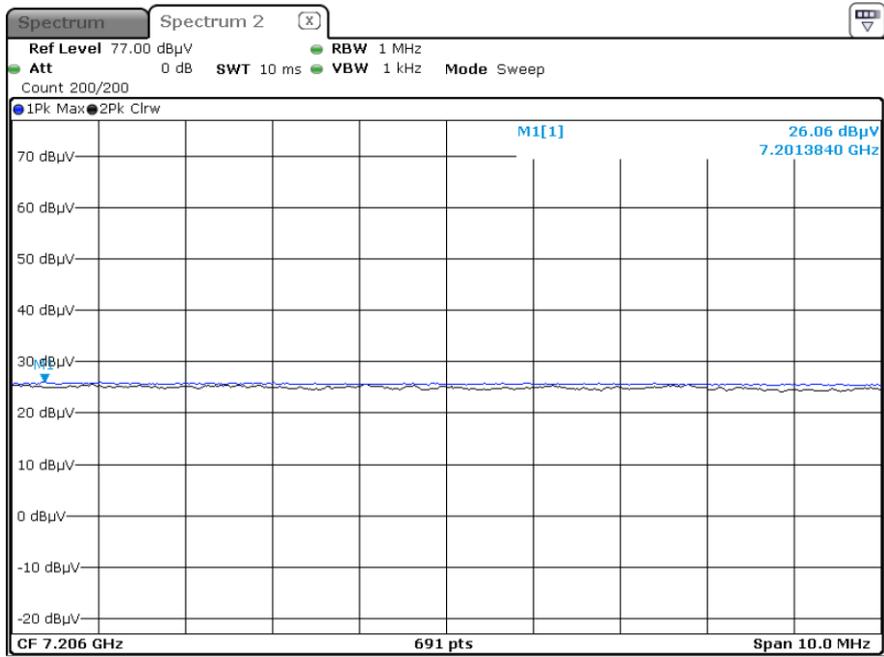
RSE

Frequency [MHz]	Measured Value [dB μ V]	A.F+C.L-A.G+D.F [dB/m]	Pol. [H/V]	Duty Cycle Correction [dB]	Total [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Measurement Type
7206	40.02	12.70	H	0	52.72	73.98	21.26	PK
7206	26.06	12.70	H	-24.73	14.03	53.98	39.95	AV

[Radiated Spurious Emissions plot – Peak Result]



[Radiated Spurious Emissions plot – Average Result]

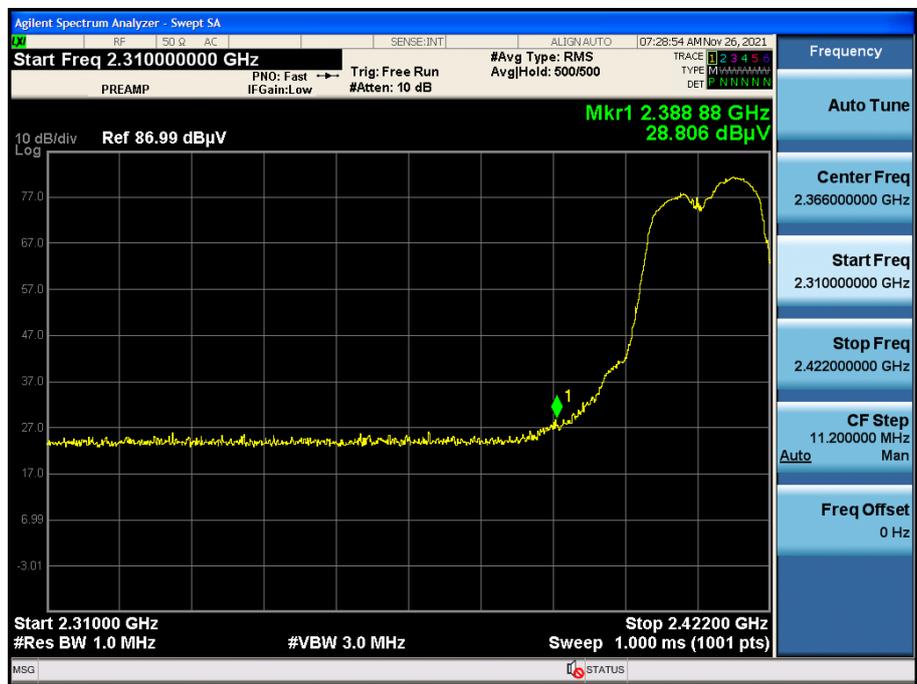


DTS Band Edge (802.11n_20 MHz BW 6.5 Mbps_ch1)

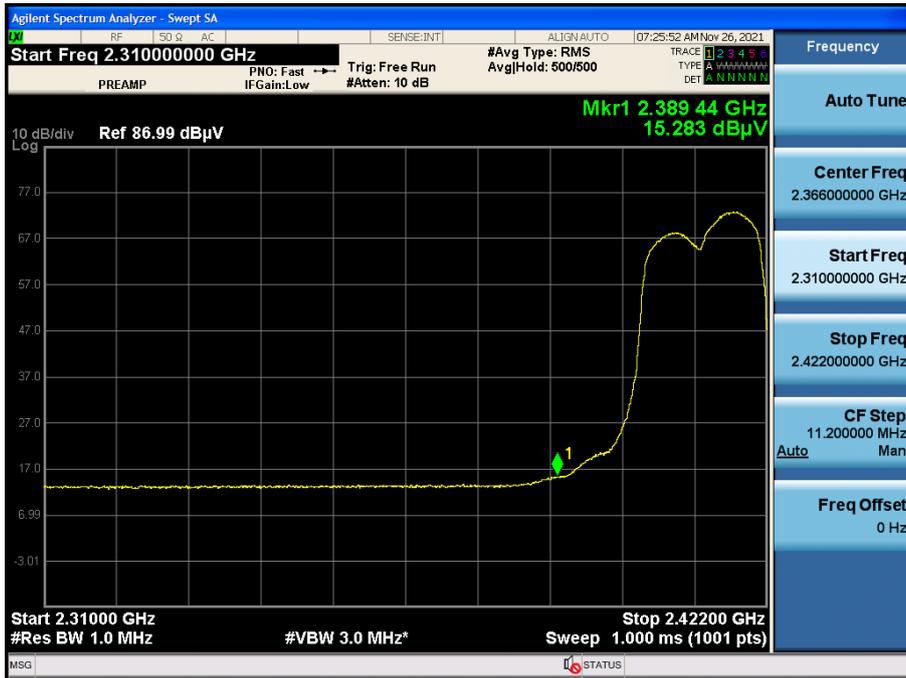
Bandedge

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor[dB]	A.F+C.L+D.F [dB/m]	Pol. [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2390.0	28.806	0.000	34.04	H	62.85	73.98	11.13	PK
2390.0	15.283	0.354	34.04	H	49.68	53.98	4.30	AV

[Radiated Restricted Band Edges plot – Peak Result]



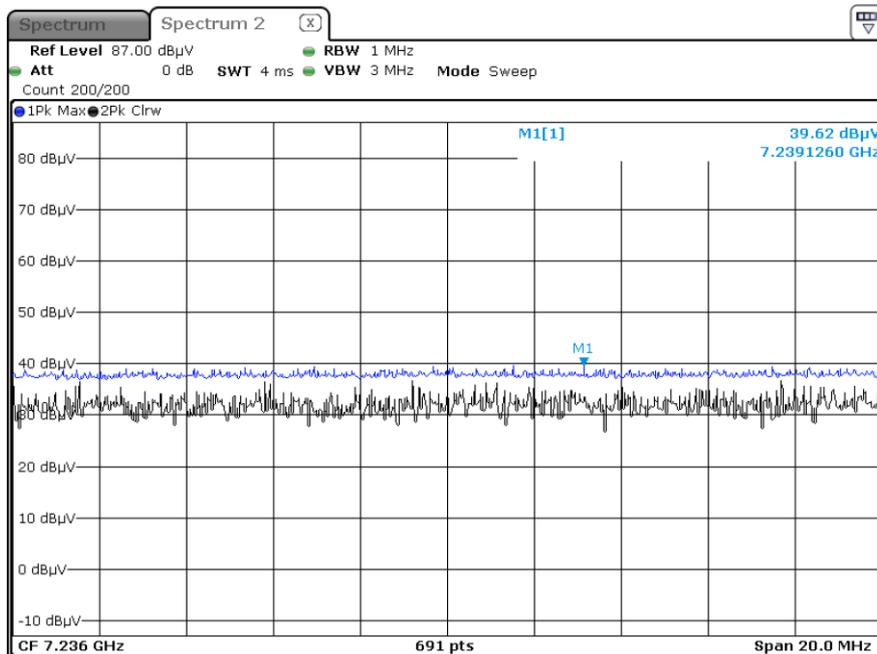
[Radiated Restricted Band Edges plot – Average Result]



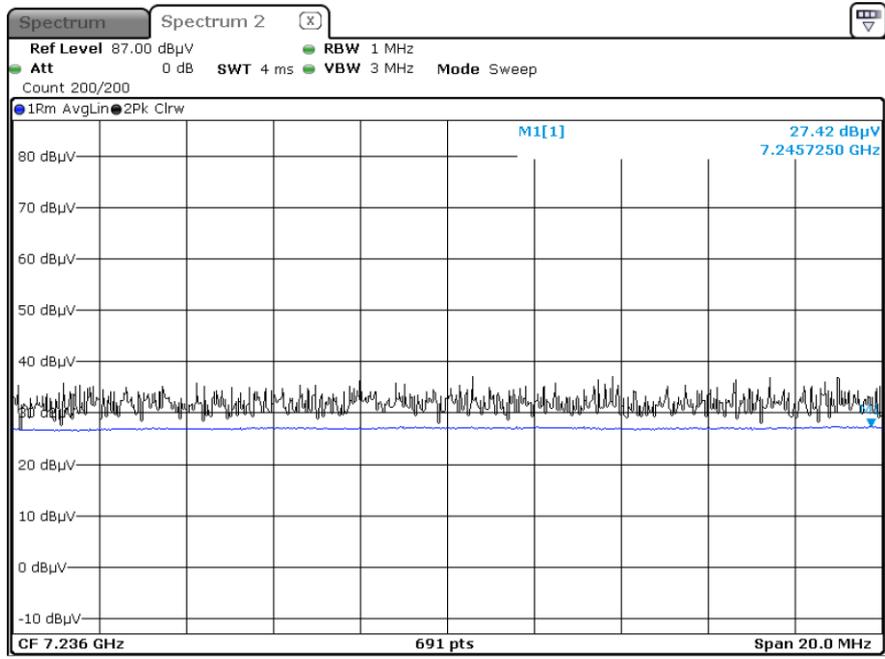
DTS R.S.E 3rd Harmonic(802.11n_20 MHz BW 6.5 Mbps Ch.1)

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor[dB]	A.F.+C.L-A.G+D.F [dB/m]	Pol. [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
7236	39.62	0.000	12.51	H	52.13	73.98	21.85	PK
7236	27.42	0.354	12.51	H	40.28	53.98	13.70	AV

[Radiated Spurious Emissions plot – Peak Result]



[Radiated Spurious Emissions plot – Average Result]

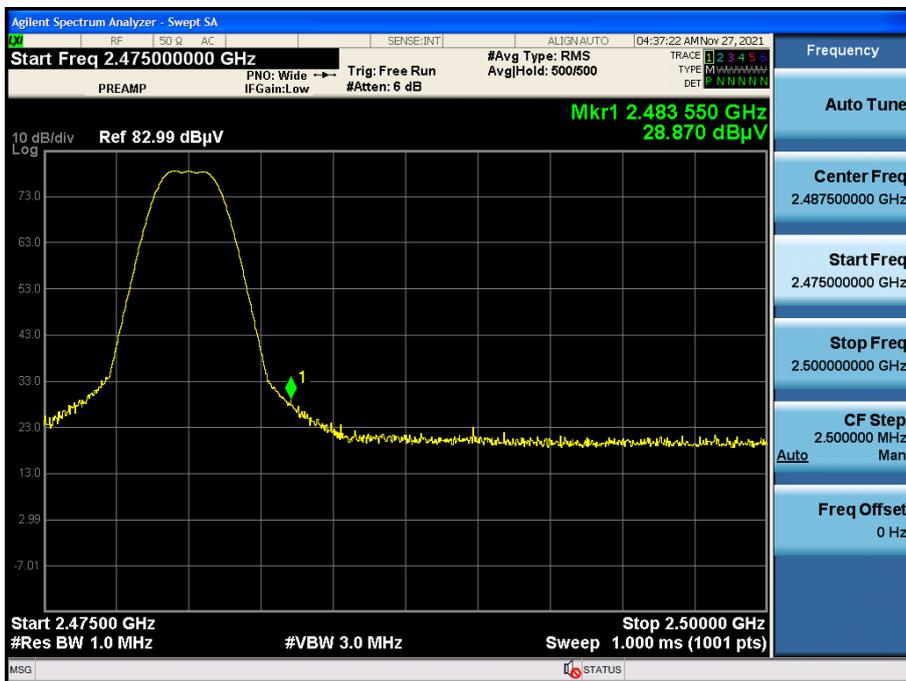


BT(LE) Band Edge (LE(5.2) 2M 37 byte/ch.39)

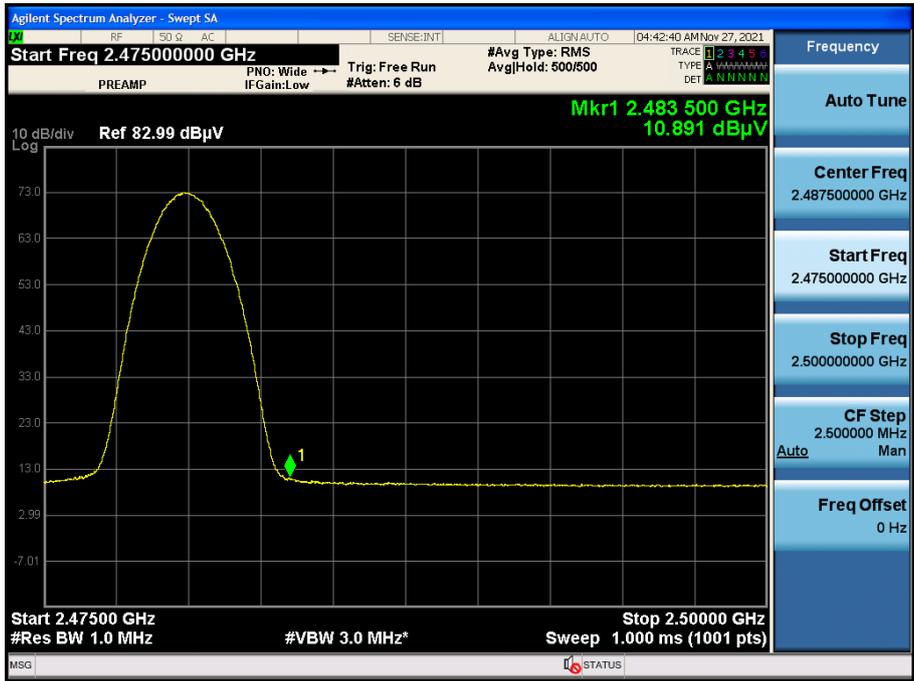
Bandedge

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor[dB]	A.F+C.L+D.F [dB/m]	Pol. [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	28.870	0.00	35.00	H	63.87	73.98	10.11	PK
2483.5	10.891	4.83	35.00	H	50.72	53.98	3.26	AV

[Radiated Restricted Band Edges plot – Peak Result]



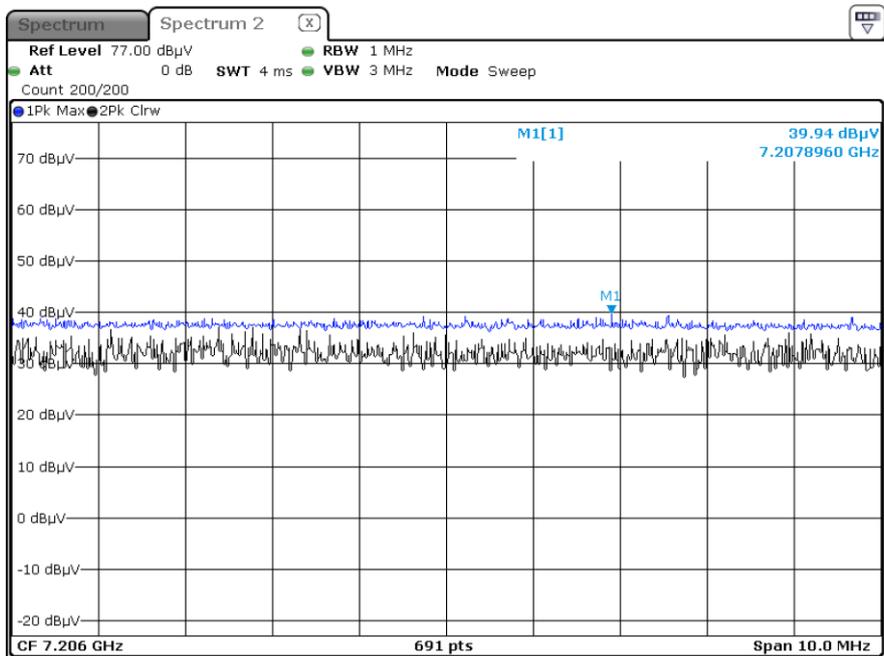
[Radiated Restricted Band Edges plot – Average Result]



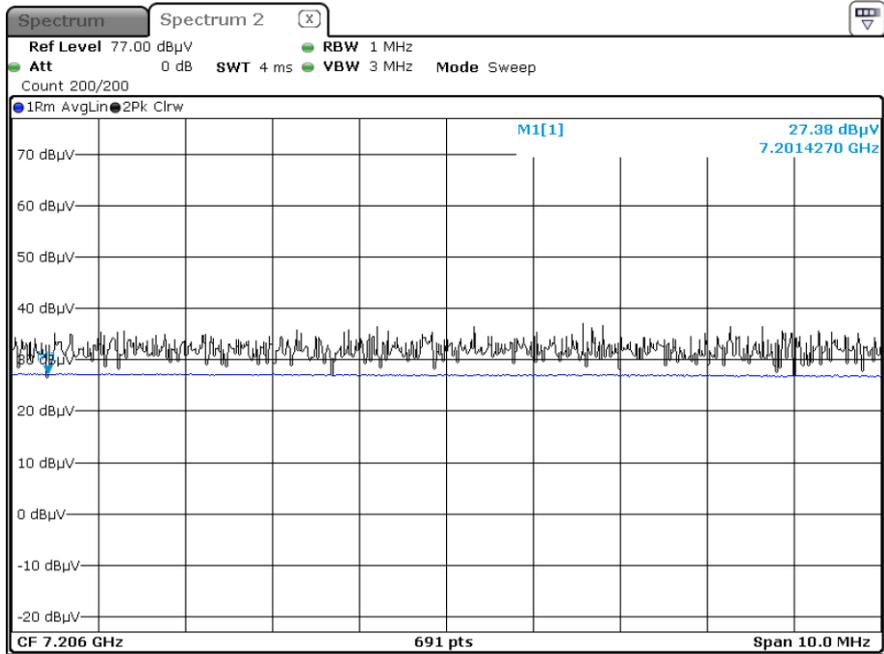
BT(LE) R.S.E 3rd Harmonic (LE(5.2) 2M 37 byte/ch.0)

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor[dB]	A.F+C.L-A.G+D.F [dB/m]	Pol. [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
7206	39.94	0.00	12.70	H	52.64	73.98	21.34	PK
7206	27.38	4.83	12.70	H	44.91	53.98	9.07	AV

[Radiated Spurious Emissions plot – Peak Result]



[Radiated Spurious Emissions plot – Average Result]

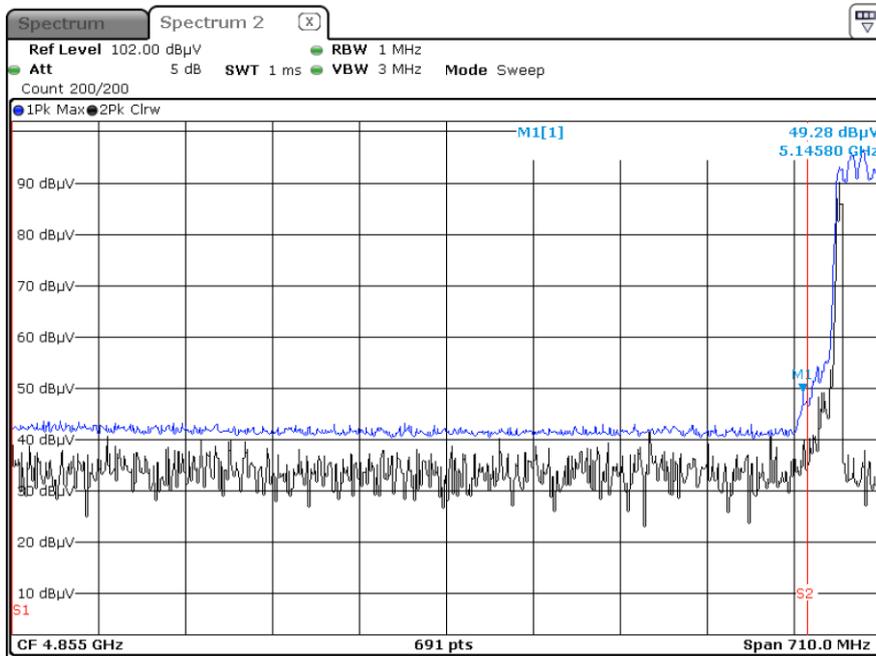


U-NII Band Edge (802.11n_40 MHz BW 13.5 Mbps_ch38)

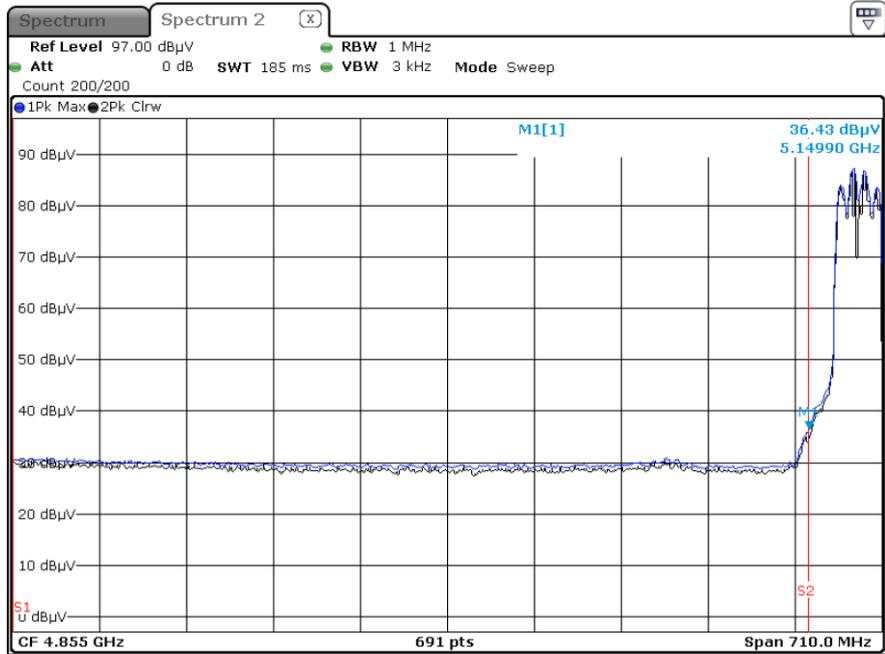
Bandedge

Frequency [MHz]	Measured Value [dBμV]	A.F+C.L-A.G+D.F+ATT [dB/m]	Pol. [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5150	49.28	13.63	H	62.91	73.98	11.07	PK
5150	36.43	13.63	H	50.06	53.98	3.92	AV

Radiated Restricted Band Edges plot – Peak Result



Radiated Restricted Band Edges plot – Average Result

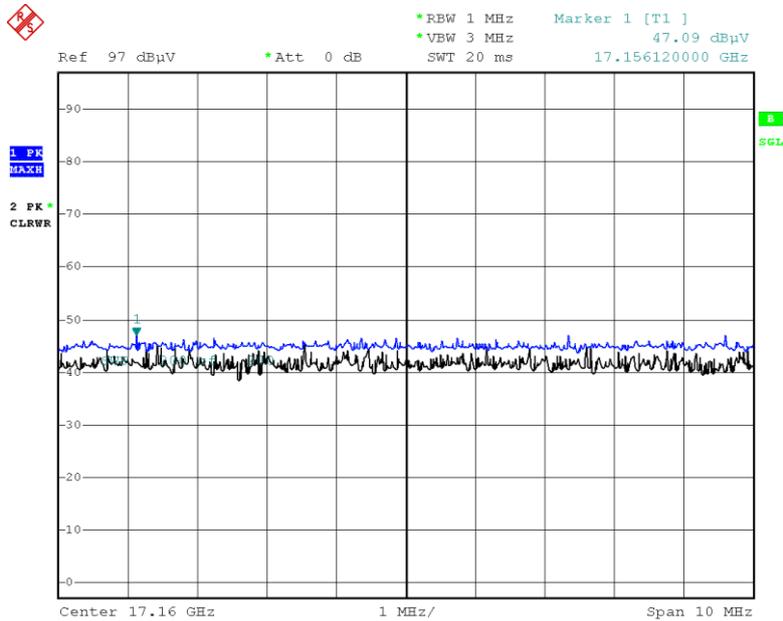


U-NII R.S.E 3rd Harmonic (802.11ax_HE20_ch144)

RSE

Frequency [MHz]	Measured Value [dBμV]	A.F+C.L+A.G [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
17160	47.09	8.92	H	56.01	68.20	12.19	PK

[Radiated Spurious Emissions plot – Peak Result]



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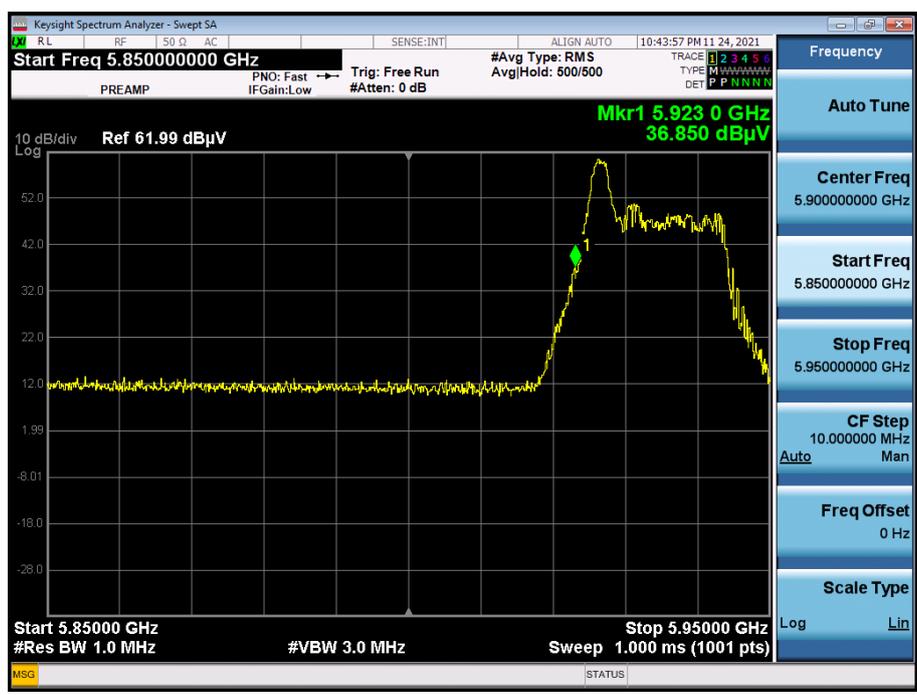
WIFI 6E Band Edge (802.11ax(HE20) 26T_ch2)

Bandedge

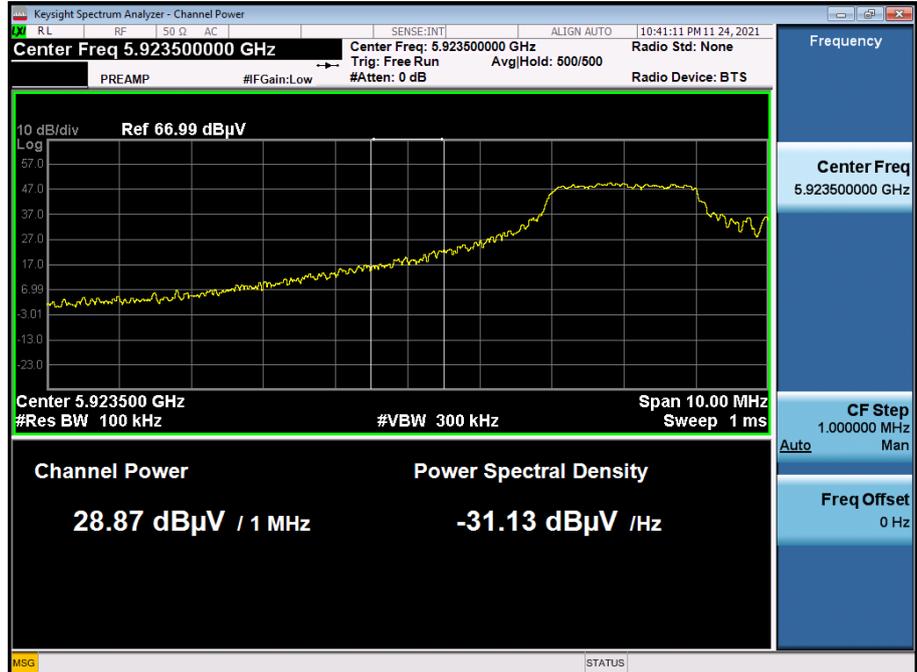
Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor	A.F+C.L+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5850-5923	36.85	0.00	41.54	H	78.39	88.23	9.84	PK
#5923-5924	28.87	0.00	41.54	H	70.41	88.23	17.82	PK
#5924-5925	36.77	0.00	41.54	H	78.31	88.23	9.92	PK
5850-5923	14.19	0.00	41.54	H	55.74	68.23	12.49	AV
#5923-5924	16.10	0.00	41.54	H	57.64	68.23	10.59	AV
#5924-5925	23.21	0.00	41.54	H	64.75	68.23	3.48	AV

Note : integration method Used (ANSI C63.10 Section11.13.3)

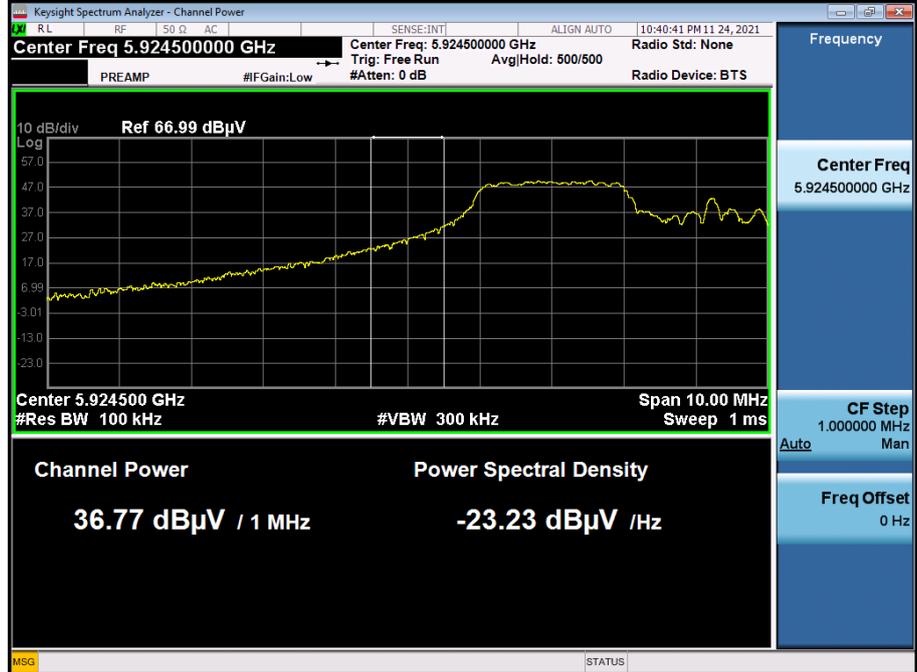
[Radiated Restricted Band Edges plot – Peak Result(Std 5850 MHz ~ 5923 MHz)]



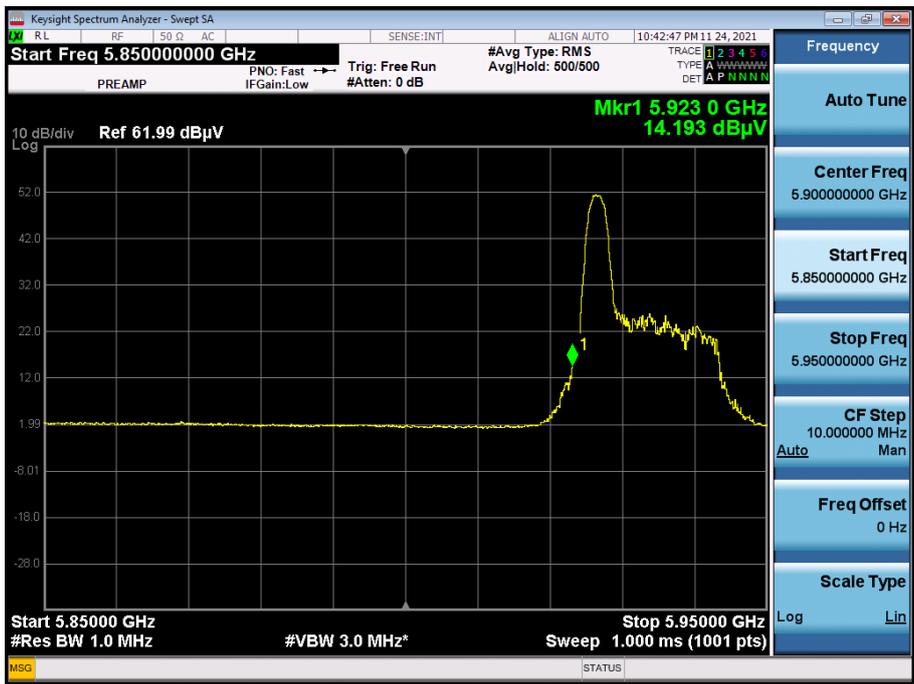
[Radiated Restricted Band Edges plot – Peak Result(Integral 5923 MHz ~ 5924 MHz)]



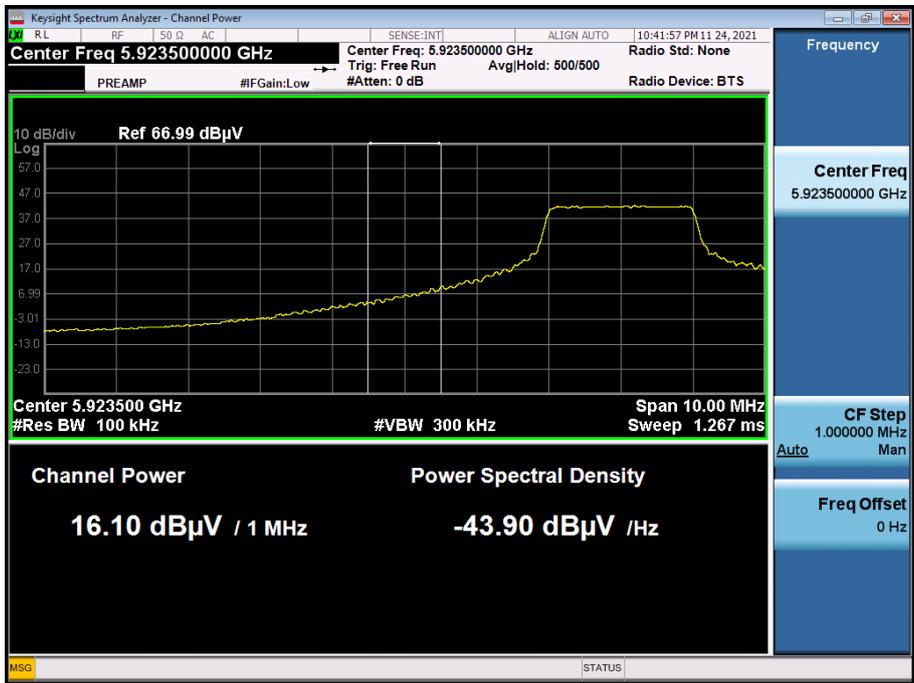
[Radiated Restricted Band Edges plot – Peak Result(Integral 5924 MHz ~ 5925 MHz)]



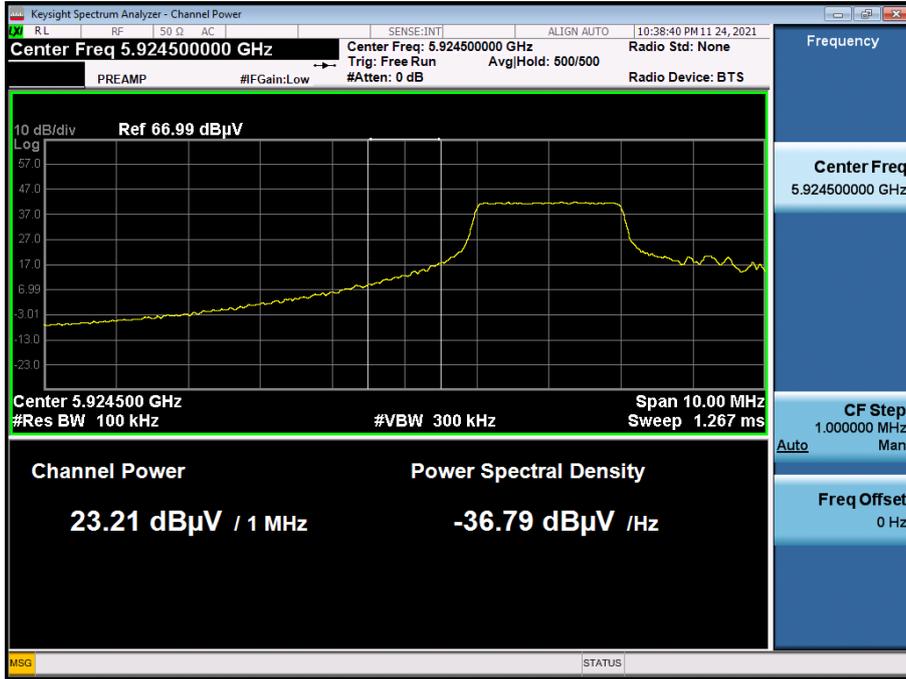
[Radiated Restricted Band Edges plot – Average Result(Std 5850 MHz ~ 5923 MHz)]



[Radiated Restricted Band Edges plot – Average Result(Integral 5923 MHz ~ 5924 MHz)]



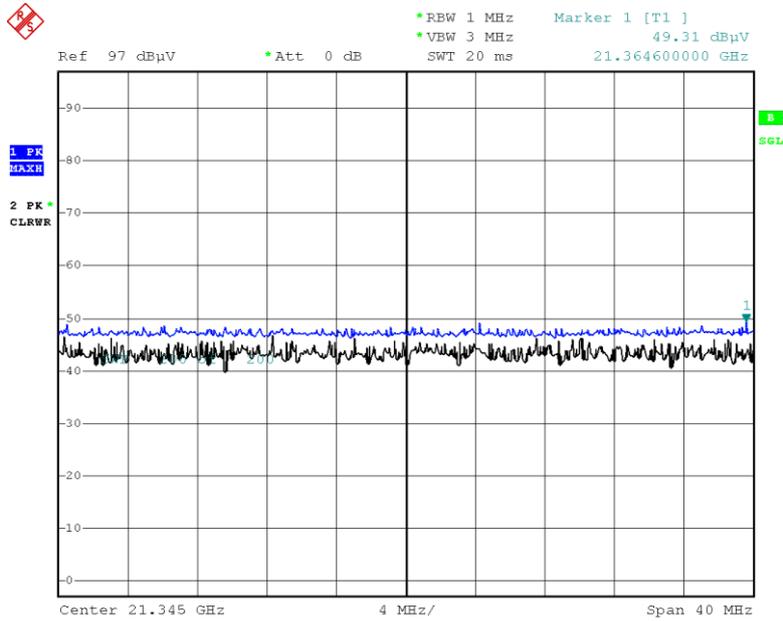
[Radiated Restricted Band Edges plot – Average Result(Integral 5924 MHz ~ 5925 MHz)]



WIFI 6E R.S.E 3rd Harmonic(802.11ax(HE20) SU Ch.233)

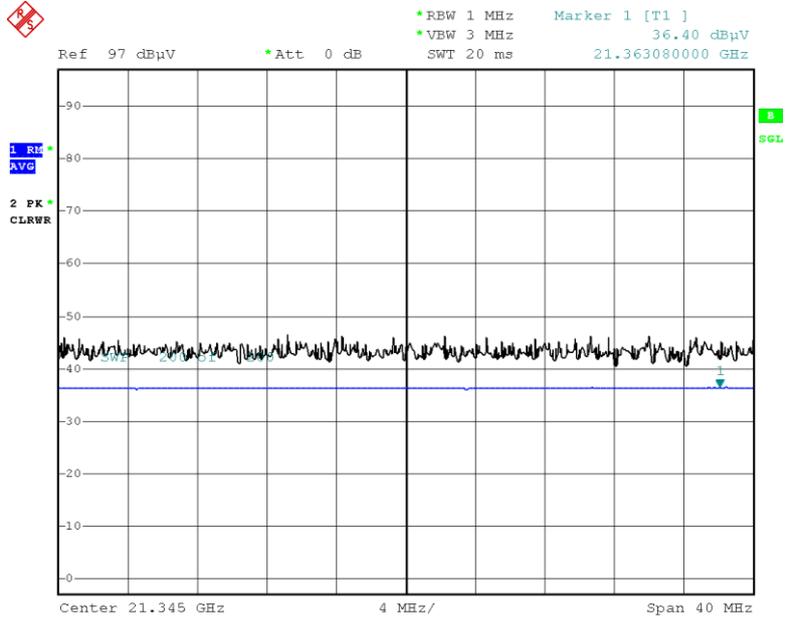
Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F [dB/m]	Pol. [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
21345	49.31	0.000	7.43	H	56.74	73.98	17.24	PK
21345	36.40	0.000	7.43	H	43.83	53.98	10.15	AV

[Radiated Spurious Emissions plot – Peak Result]



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[Radiated Spurious Emissions plot – Average Result]



Date: 26.NOV.2021 15:59:17

WPT

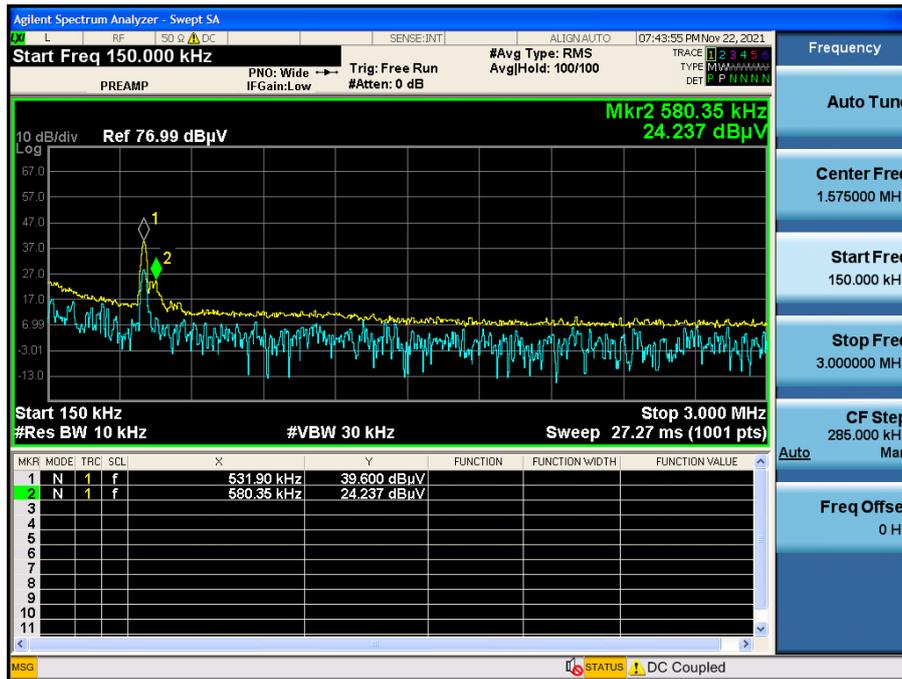
Fundamental

Frequency [kHz]	Measured Value [dBμV]@3 m	Ant. Factor [dB/m]	Cable Loss [dB]	Distance Correction [dB]	Result Level [dBμV/m] @300 m	Limit [dBμV/m]	Margin [dB]
531.9	39.600	19.2	0.53	-40	19.33	33.09	13.76

RSE

Frequency [kHz]	Measured Value [dBμV]@3 m	Ant. Factor [dB/m]	Cable Loss [dB]	Distance Correction [dB]	Result Level [dBμV/m] @300 m	Limit [dBμV/m]	Margin [dB]
580.35	24.237	19.2	0.53	-40	3.97	32.33	28.36

[WPT plot]



3. List of test equipment

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
Controller(Antenna mast)	CO3000	Innco system	CO3000-4p	N/A	N/A
Antenna Position Tower	MA4640/800-XP-EP	Innco system	N/A	N/A	N/A
Controller	EM1000	Audix	060520	N/A	N/A
Turn Table	N/A	Audix	N/A	N/A	N/A
Bluetooth Tester	TC-3000B	TESCOM	3000B670110	12/18/2021	Annual
Loop Antenna	FMZB 1513	Rohde & Schwarz	1513-333	03/19/2022	Biennial
Hybrid Antenna	VULB 9168	Schwarzbeck	760	02/22/2023	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	02299	05/19/2022	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	9120D-1191	11/18/2023	Biennial
Horn Antenna (15 GHz ~ 40 GHz)	BBHA9170	Schwarzbeck	BBHA9170541	11/16/2023	Biennial
Horn Antenna (15 GHz ~ 40 GHz)	BBHA9170	Schwarzbeck	BBHA9170124	04/12/2022	Biennial
Spectrum Analyzer	FSV40-N	Rohde & Schwarz	102168	07/05/2022	Annual
Signal Analyzer	N9030A	Agilent	MY49431210	01/11/2022	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments	5	06/24/2022	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments	6	06/24/2022	Annual
Band Reject Filter	WRCJV2400/2483.5-2370/2520-60/12SS	Wainwright Instruments	2	01/06/2022	Annual
Band Reject Filter	WRCJV5100/5850-40/50-8EEK	Wainwright Instruments	1	02/08/2022	Annual
High Pass Filter	WHK3.0/18G-10EF	Wainwright Instruments	8	02/03/2022	Annual
High Pass Filter	WHKX8-6090-7000-18000-40SS	Wainwright Instruments	25	02/03/2022	Annual
Attenuator (3 dB)	18B-03	Api tech.	1	02/03/2022	Annual
Attenuator(10 dB)	8493C-10	Agilent	08285	02/03/2022	Annual
Power Amplifier	CBLU1183540	CERNEX	22964	02/03/2022	Annual
Power Amplifier	CBL06185030	CERNEX	22965	02/03/2022	Annual
Power Amplifier	CBL18265035	CERNEX	22966	12/04/2021	Annual
Power Amplifier	CBL26405040	CERNEX	25956	03/23/2022	Annual

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
Controller (Antenna mast)	CO3000	Innco system	CO3000-4p	N/A	N/A
Antenna Position Tower	MA4640/800-XP-EP	Innco system	N/A	N/A	N/A
Controller	2090	Emco	060520	N/A	N/A
Turn Table	Turn Table	Ets	N/A	N/A	N/A
Hybrid Antenna	VULB 9168	Schwarzbeck	9168-0895	09/04/2022	Biennial
Spectrum Analyzer	FSP (9 kHz ~ 30 GHz)	Rohde & Schwarz	836650/016	09/13/2022	Annual
Spectrum Analyzer	FSV40-N	Rohde & Schwarz	101068-SZ	09/15/2022	Annual
Attenuator (10 dB)	CBLU1183540B-01	CERNEX	N/A	12/23/2021	Annual
56-10	56-10	WEINSCHTEL			
Broadband Low Noise Amplifier	CBL06185030	CERNEX	N/A	12/23/2021	Annual
Attenuator (3 dB)	18B-03	Api tech.			
High Pass Filter	WHKX10-2700-3000-18000-40SS	Wainwright Instruments	N/A	12/23/2021	Annual
High Pass Filter	WHKX8-6090-7000-18000-40SS	Wainwright Instruments	N/A	12/23/2021	Annual
High Pass Filter	WHKX10-7150-8000-18000-50SS	Wainwright Instruments	1	04/02/2022	Annual
Thru	COAXIAL ATTENUATOR	T&M SYSTEM	N/A	12/23/2021	Annual
Power Amplifier	CBL18265035	CERNEX	22966	12/04/2021	Annual
Power Amplifier	CBL26405040	CERNEX	25956	03/23/2022	Annual