

EVALUATION REPORT

Applicant Name:
SAMSUNG Electronics Co., Ltd.

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

Date of Issue:
April 09, 2021

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

FCC ID: A3LNP340XLA

APPLICANT: SAMSUNG Electronics Co., Ltd.

Equipment Class(es) : DSS, DTS, NII

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 A3LNP345XLA. 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
A3LNP345XLA	DSS	Bluetooth Report	All sections
	DTS	DTS Report	All sections
		BT LE Report	All sections
		NII	UNII Test Report

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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	April 09, 2021	Initial Release

Appendix A. The Spot check test data

1. Summary of the spot check for Unlicensed EMC

Mod	Test Item	Mod/ Channel	Measured Frequency [MHz]	NP345XLA Result [dBuV/m]		NP340XLA Result [dBuV/m]		Deviation (dB)	
				Average	Peak	Average	Peak	Average	Peak
BT	Band Edge	DH 5 / ch 78	2483.5 MHz~ 2500 MHz	47.44	60.31	49.33	62.29	-1.89	-1.98
	RSE	DH 5 / ch 0	7206 MHz	37.79	51.68	37.74	51.39	0.05	0.29
BT LE	Band Edge	2M_37 Bytes / ch 39	2483.5 MHz~ 2500 MHz	47.52	57.28	47.93	58.05	-0.41	-0.77
	RSE	2M_37 Bytes / ch 0	7206 MHz	43.93	51.86	43.95	51.25	-0.02	0.61
WLAN	DTS Band Edge	802.11ac20 / CH1 / PLS 14	2310 MHz~ 2390 MHz	-	66.92	-	67.16	-	-0.24
			# 2389 MHz ~ 2390 MHz	51.55	-	51.85	-	-0.30	-
			2310 MHz~ 2389 MHz	50.86	-	51.88	-	-1.02	-
	DTS RSE	802.11b / ch11 / PLS 15	4924 MHz	50.94	55.35	43.10	50.20	7.84	5.15
	UNII Band Edge	802.11n20 / ch100 / PLS 14	5350 MHz ~ 5460 MHz	44.44	63.26	42.36	56.35	2.08	6.91
			5460 MHz ~ 5470 MHz	-	65.55	-	59.40	-	6.15
UNII RSE	802.11a / CH144 / PLS 15	17160 MHz	-	57.11	-	52.80	-	4.31	

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

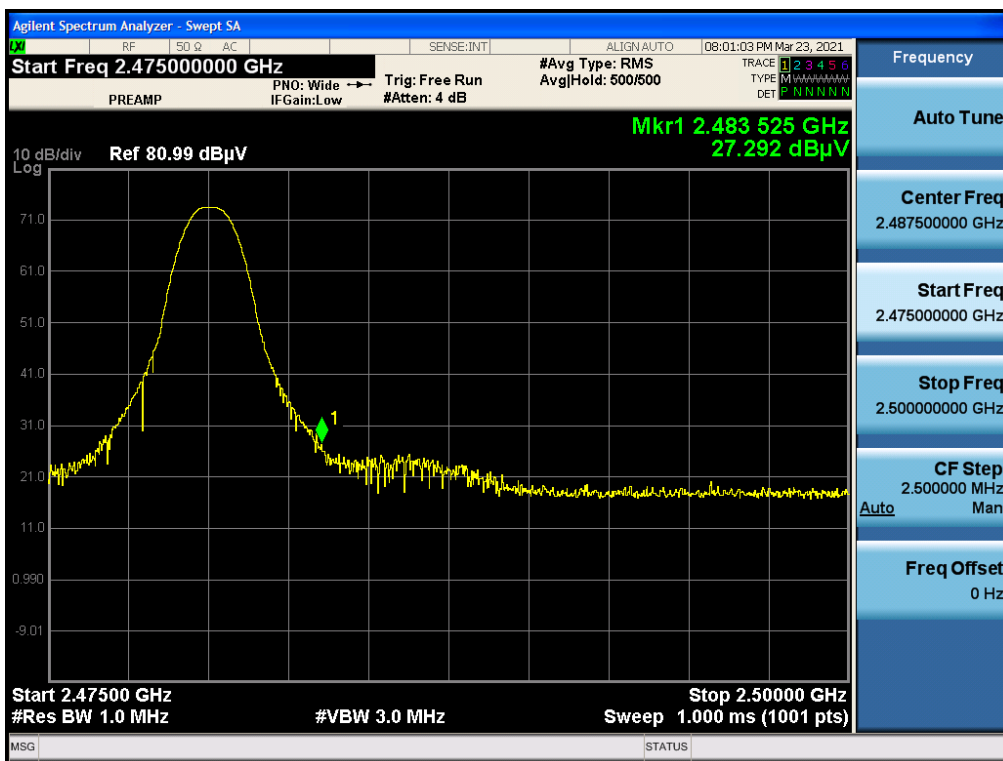
2. Test Plot

BT Band Edge (DH5/ch.78)

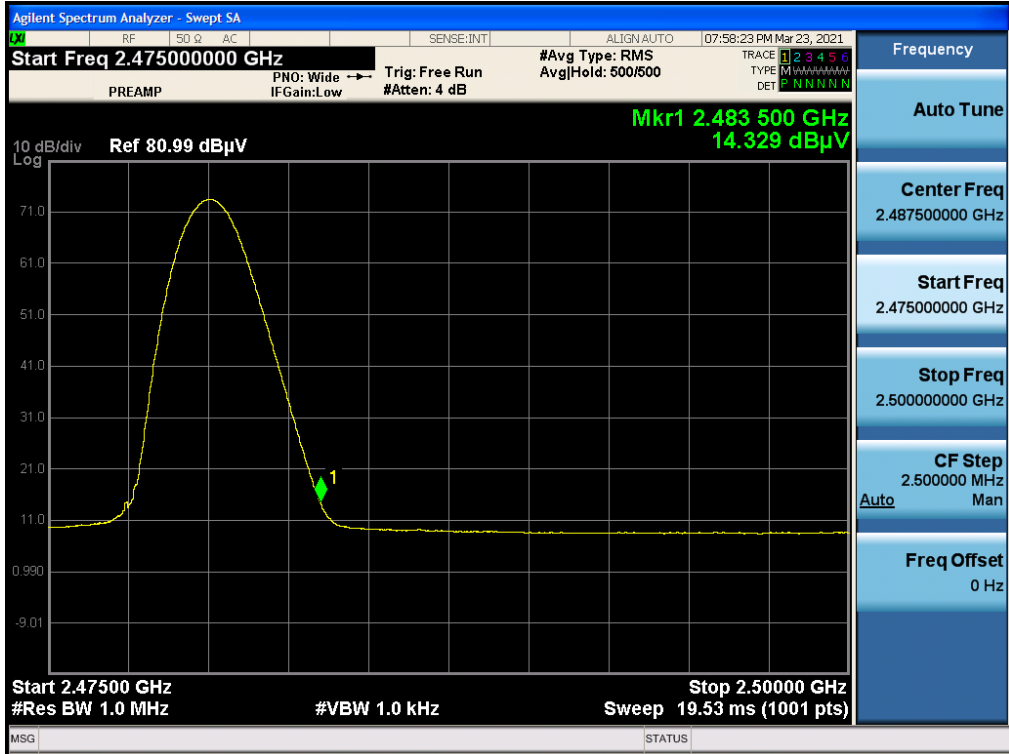
Band edge

Frequency [MHz]	Reading [dBuV]	A.F.+ C.L+ D.F [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2483.5	27.292	35.00	H	62.29	73.98	11.69	PK
2483.5	14.329	35.00	H	49.33	53.98	4.65	AV

[Radiated Restricted Band Edges plot- Peak Reading]



[Radiated Restricted Band Edges plot- Average Reading]

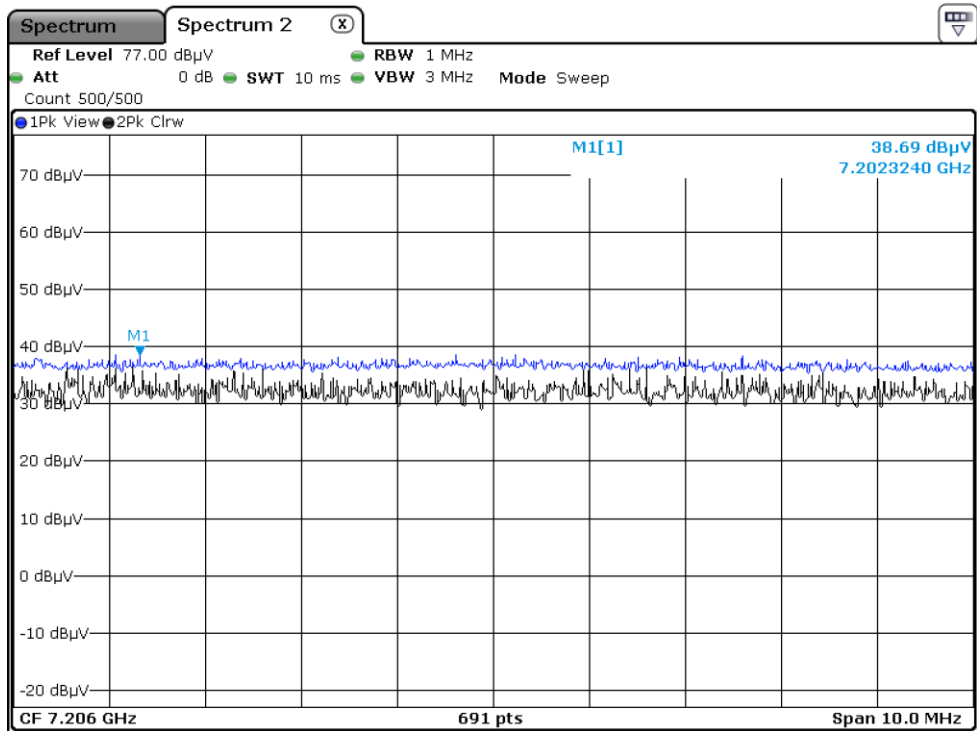


BT R.S.E 3rd Harmonic(DH5/ch.0)

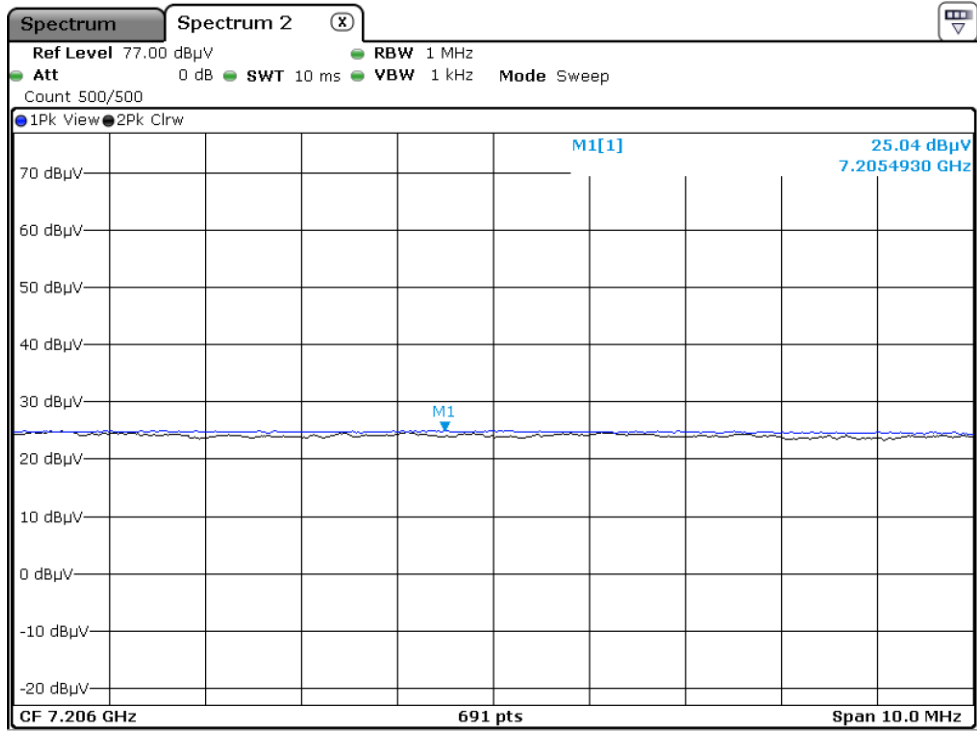
RSE

Frequency [MHz]	Reading [dBuV]	A.F.+C.L.-A.G + D.F [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
7206	38.69	12.70	H	51.39	73.98	22.59	PK
7206	25.04	12.70	H	37.74	53.98	16.24	AV

[Radiated Spurious Emissions plot – Peak Reading]



[Radiated Spurious Emissions plot – Average Reading]



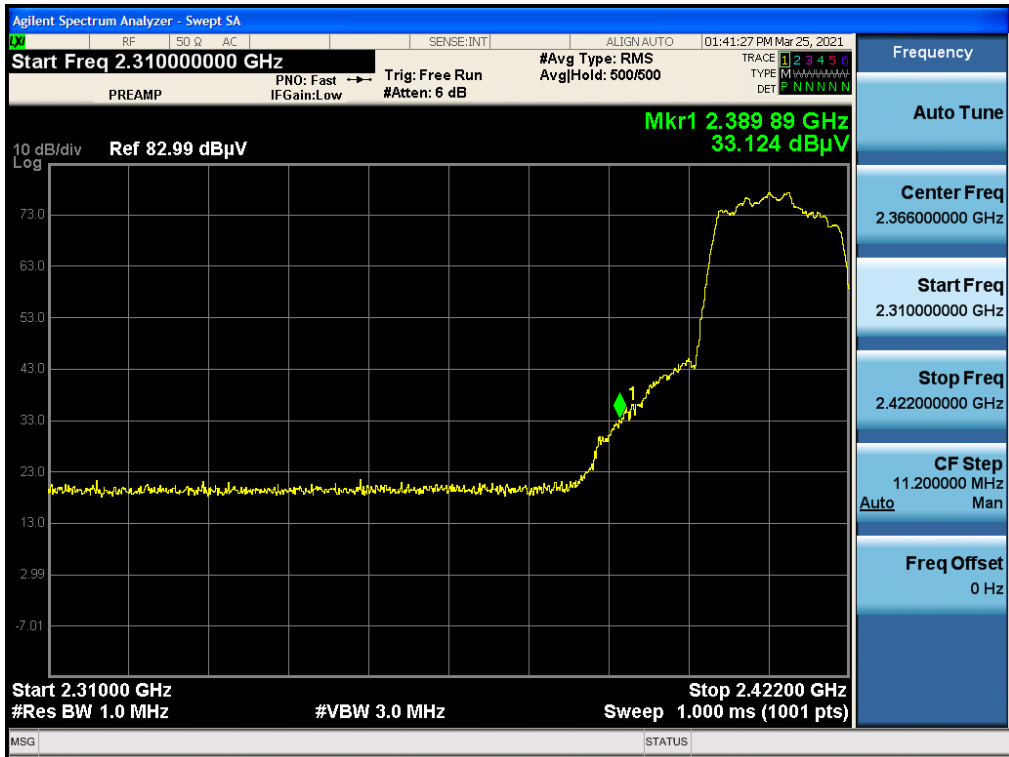
DTS Band Edge (802.11ac_20 MHz BW 6.5 Mbps/ch.1)

Band edge

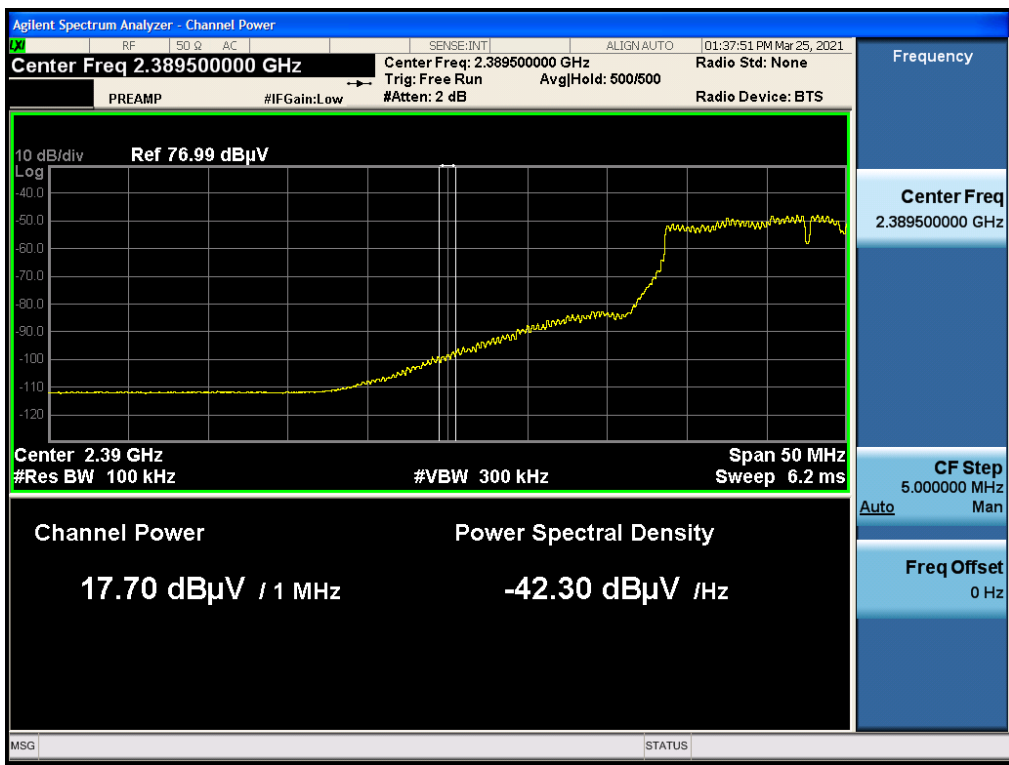
Frequency [MHz]	Reading [dBuV]	Duty Cycle Factor	A.F.+ C.L+ D.F [dB]	FANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2310.0~2390.0	33.124	0.00	34.04	H	67.16	73.98	6.82	PK
# 2389.5	17.700	0.113	34.04	H	51.85	53.98	2.13	AV
2310.0~2389.0	17.727	0.113	34.04	V	51.88	73.98	22.10	AV

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

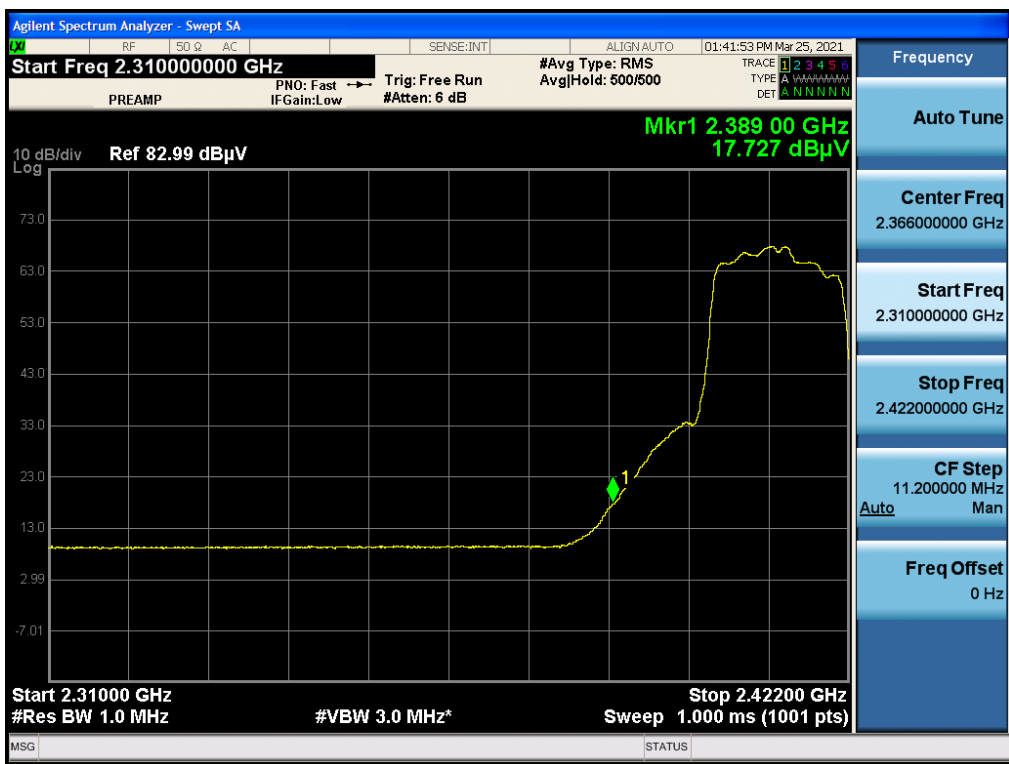
[Radiated Restricted Band Edges plot – Peak Reading]



[Radiated Restricted Band Edges plot – Average Reading_integ]



[Radiated Restricted Band Edges plot – Average Reading_standard]

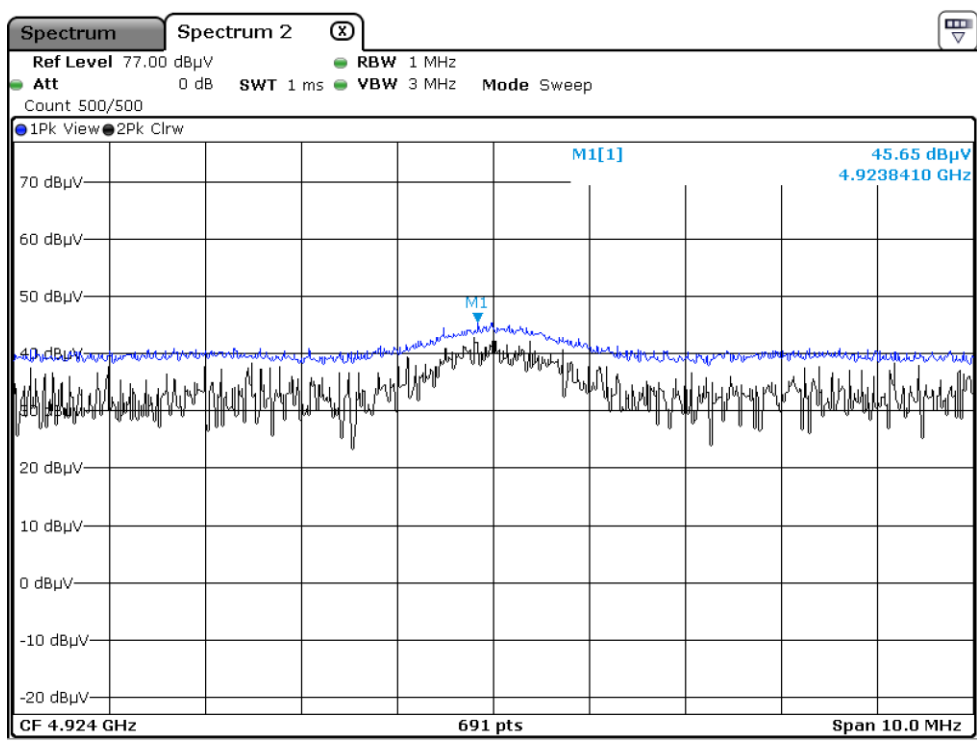


DTS R.S.E 2nd Harmonic (802.11b_1 Mbps/ch.11)

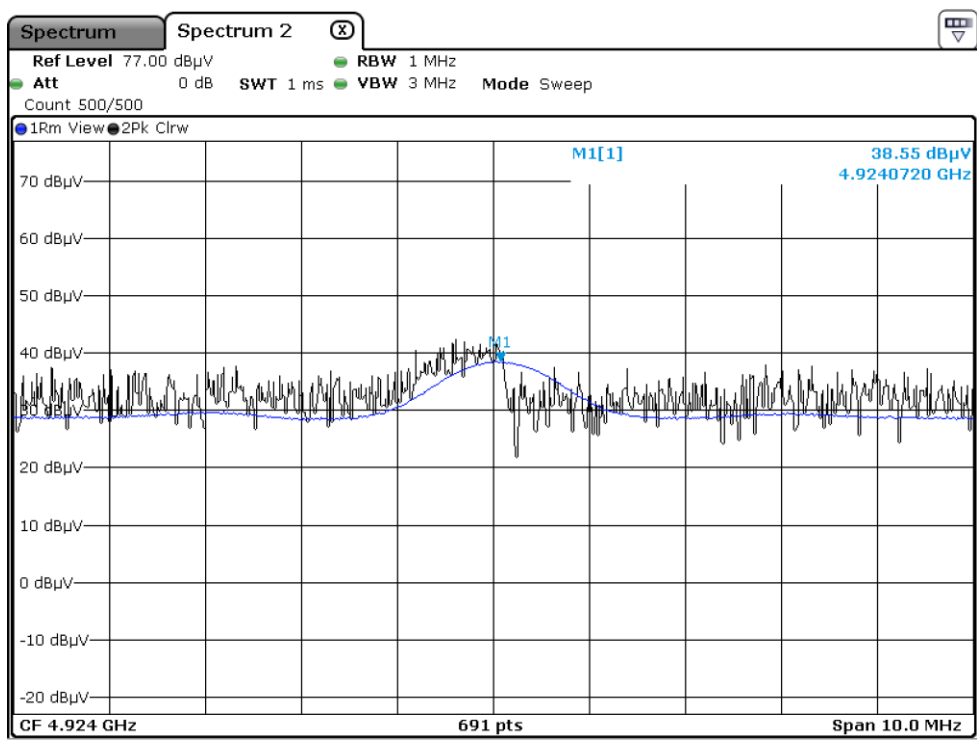
RSE

Frequency [MHz]	Reading [dBuV]	A.F.+C.L.-A.G + D.F [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
4924	45.65	4.55	H	50.20	73.98	23.78	PK
4924	38.55	4.55	H	43.10	53.98	10.88	AV

[Radiated Spurious Emissions plot – Peak Reading]



[Radiated Spurious Emissions plot – Average Reading]

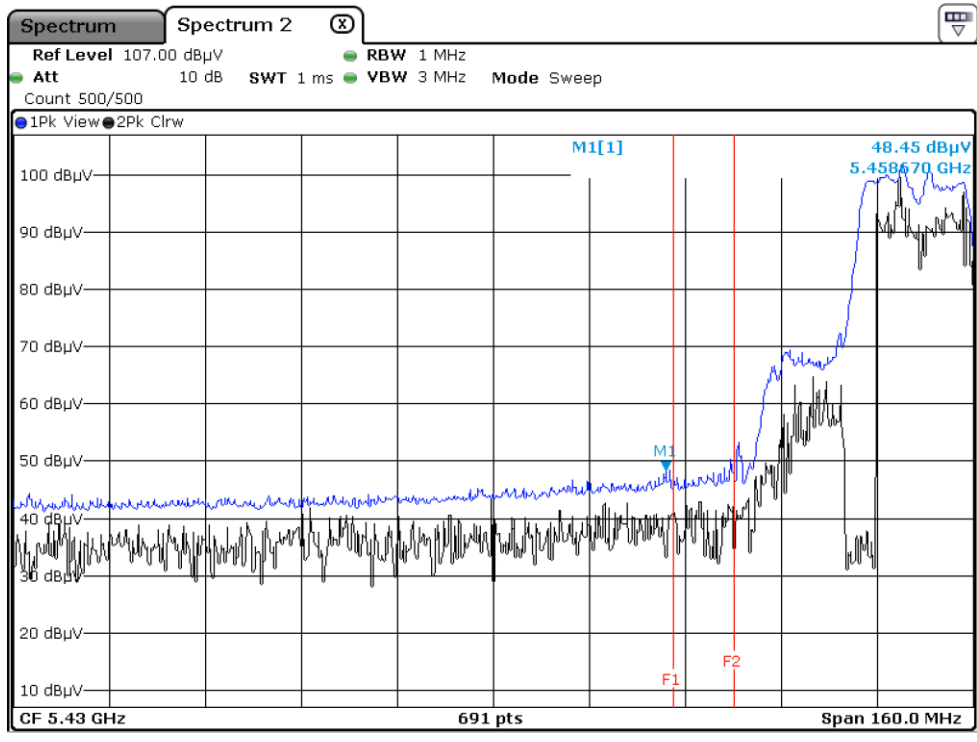


U-NII Band Edge (802.11n_20 MHz BW 6.5 Mbps_ch.100)

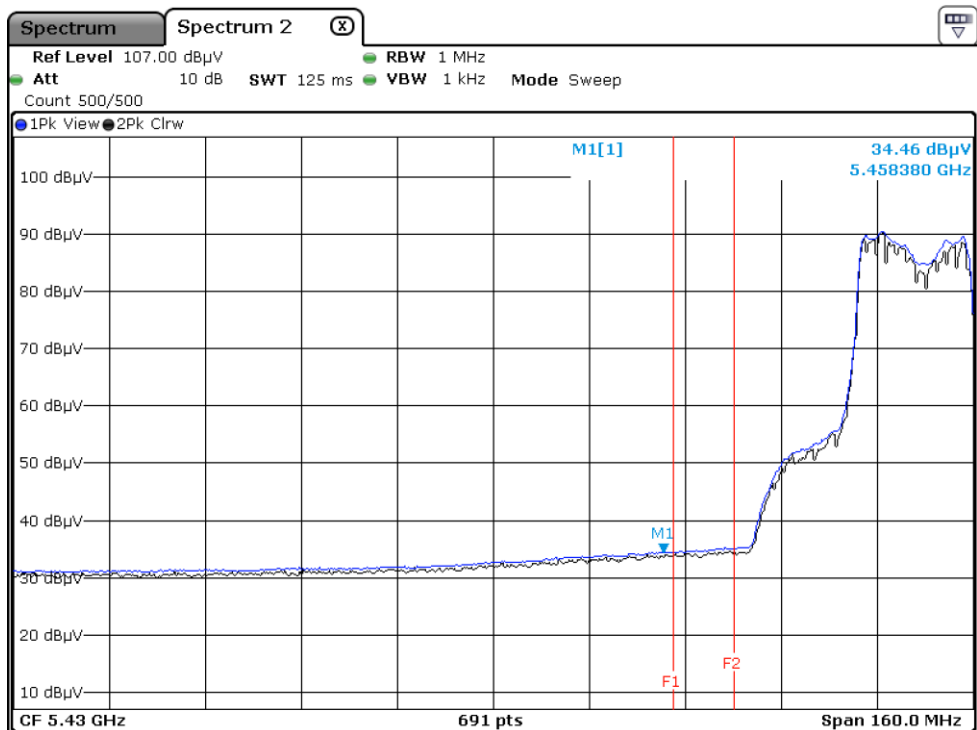
Band edge

Frequency	Reading	A.F+C.L+	ANT. POL	Total	Limit	Margin	Measurement Type
[MHz]	[dBuV]	D.F-A.G+ATT	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
5460	48.45	7.90	H	56.35	73.98	17.63	PK
5460	34.46	7.90	H	42.36	53.98	11.62	AV
5470	51.16	8.24	H	59.40	68.20	8.80	PK

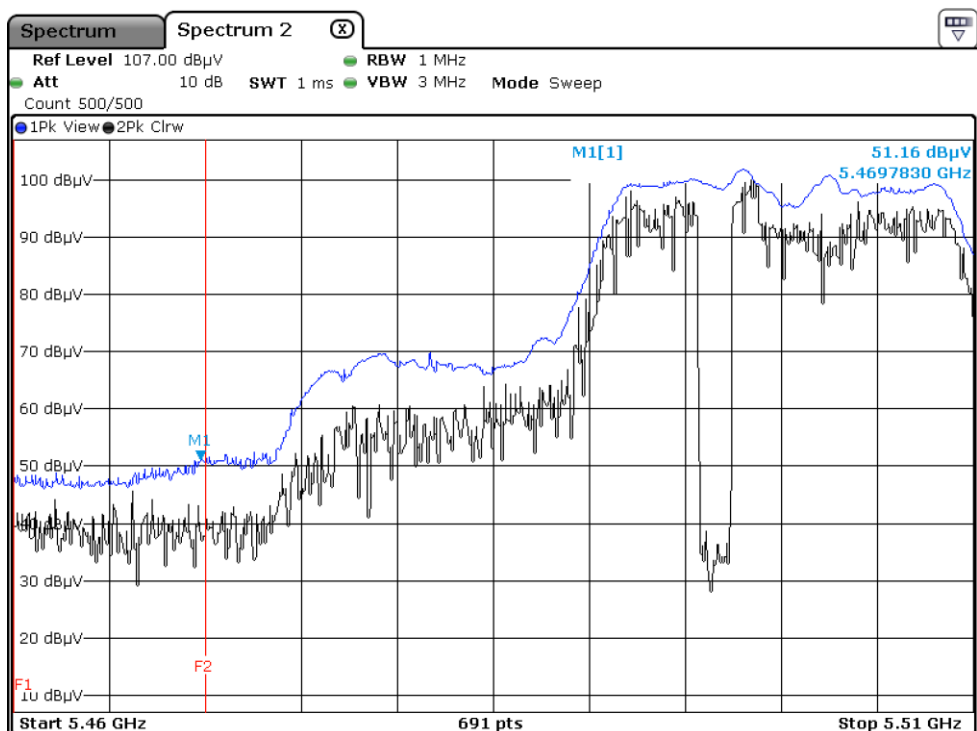
[Radiated Restricted Band Edges plot – Peak Reading_ 5350~5460 MHz]



[Radiated Restricted Band Edges plot – Average Reading_5350~5460 MHz]



[Radiated Band Edges plot – Peak Reading_ 5460~5470 MHz]

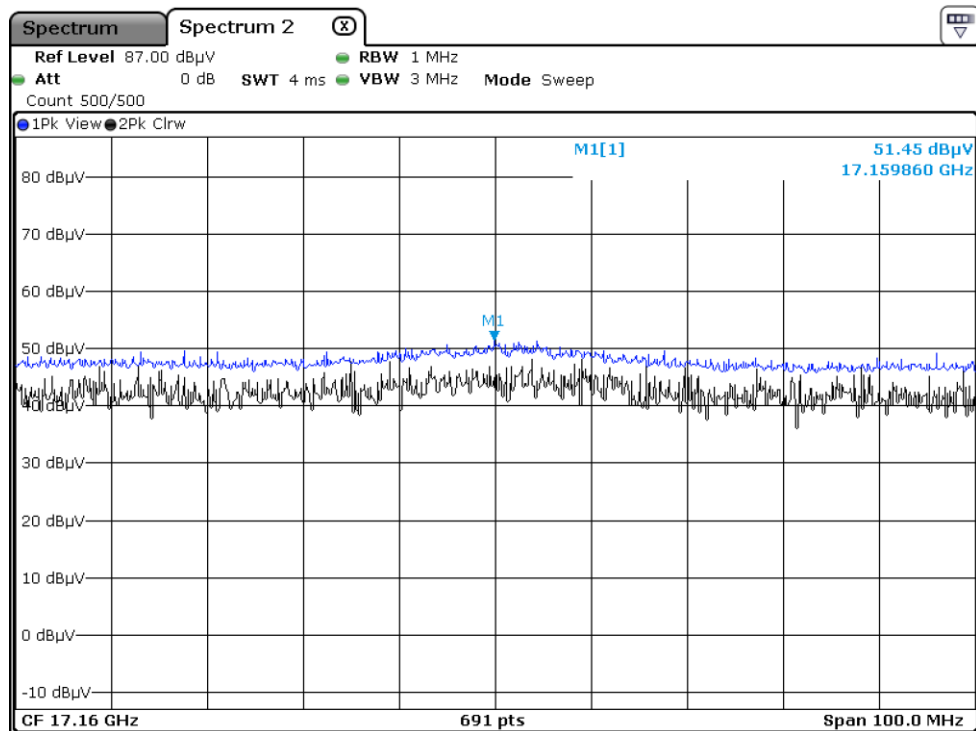


U-NII R.S.E 3rd Harmonic (802.11a_6 Mbps _ ch 144)

RSE

Frequency [MHz]	Reading [dBuV]	A.F+C.L-A.G+D.F [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
17160	51.45	1.35	H	52.80	68.20	15.40	PK

[Radiated Spurious Emissions plot – Peak Reading]

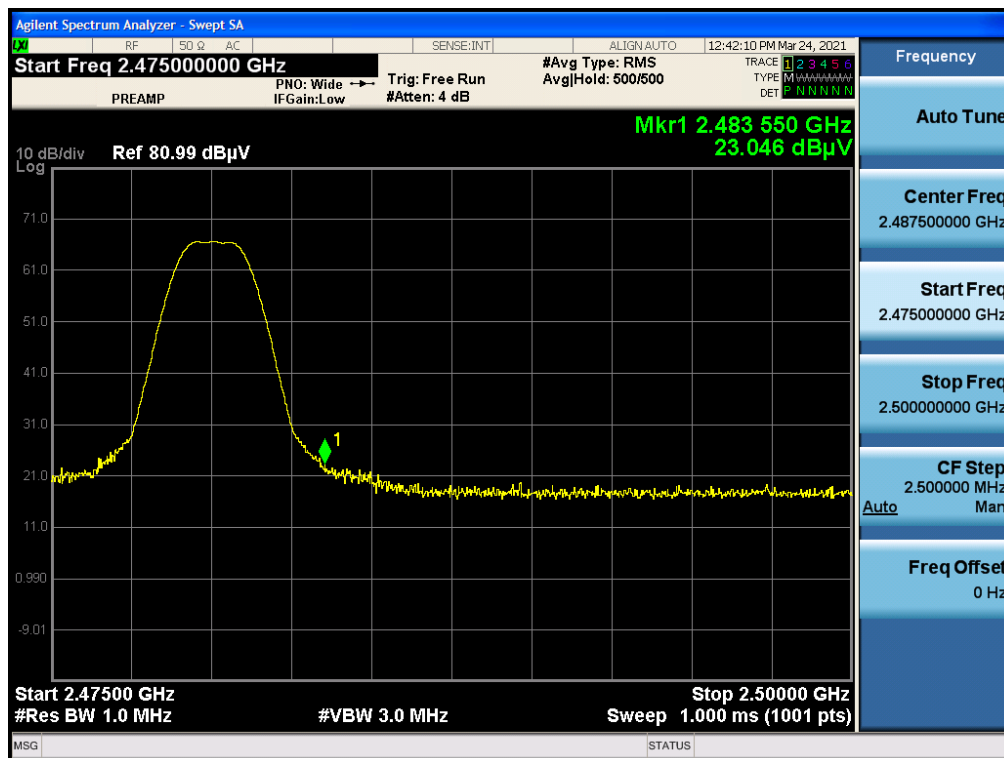


BT(LE) Band Edge (LE(5.1) 2M_37byte /ch.39)

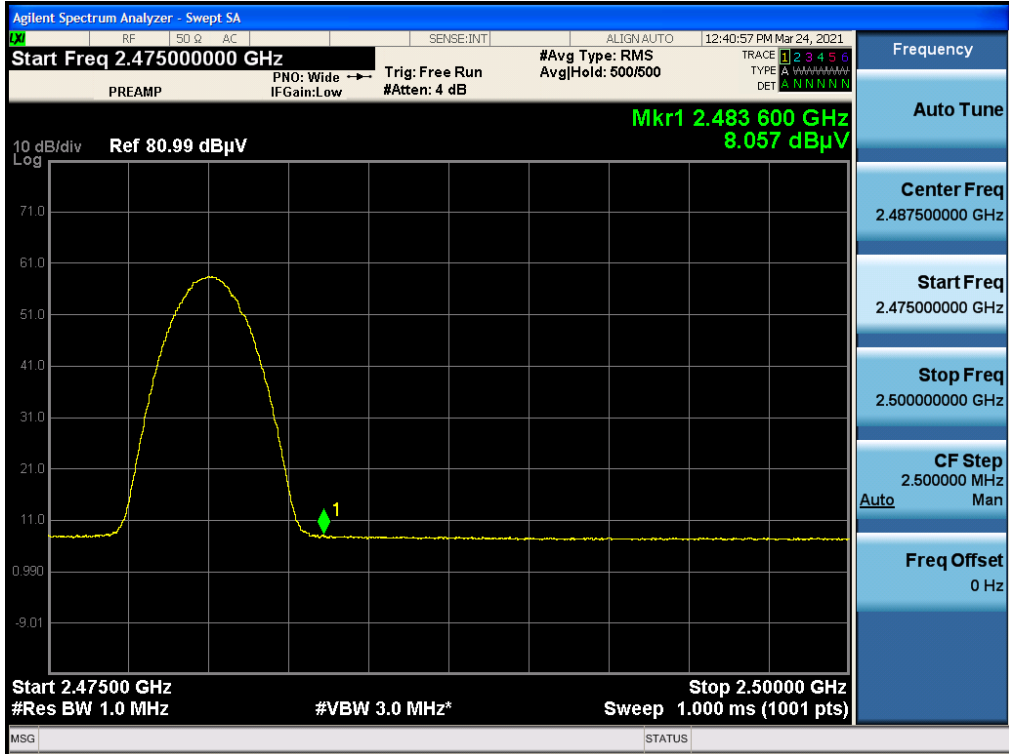
Band edge

Frequency [MHz]	Reading [dBuV]	Duty cycle Factor	A.F.+C.L.+D.F [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2483.5	23.046	0.00	35.00	H	58.05	73.98	15.93	PK
2483.5	8.057	4.87	35.00	H	47.93	53.98	6.05	AV

[Radiated Restricted Band Edges plot – Peak Reading]



[Radiated Restricted Band Edges plot – Average Reading]

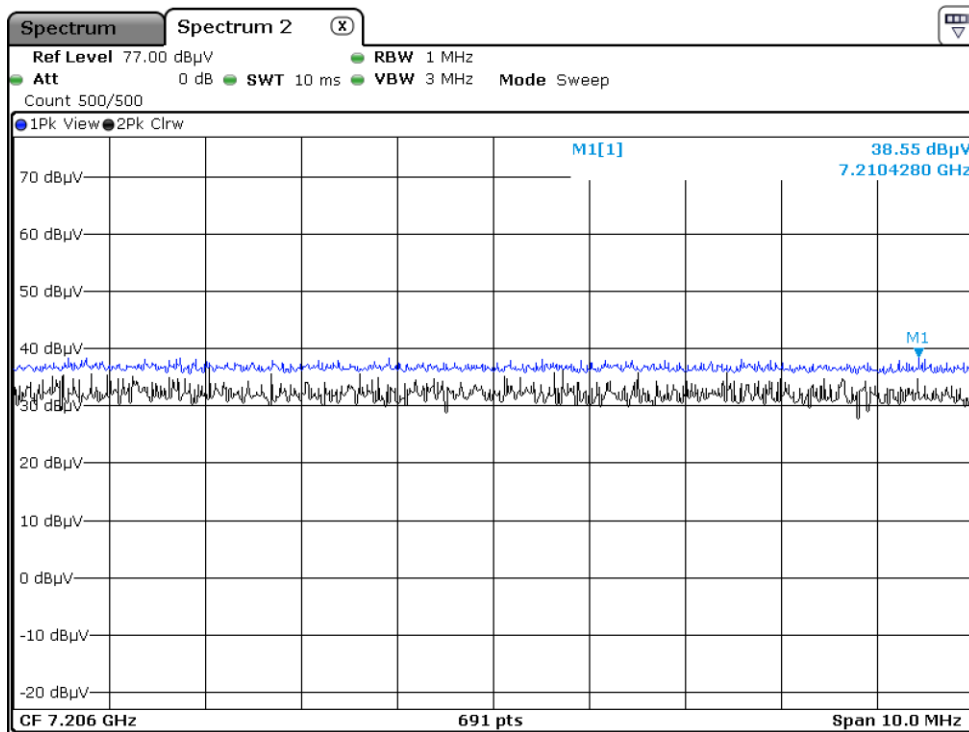


BT(LE) R.S.E 3rd Harmonic (LE(5.1) 2M_37byte/ch.0)

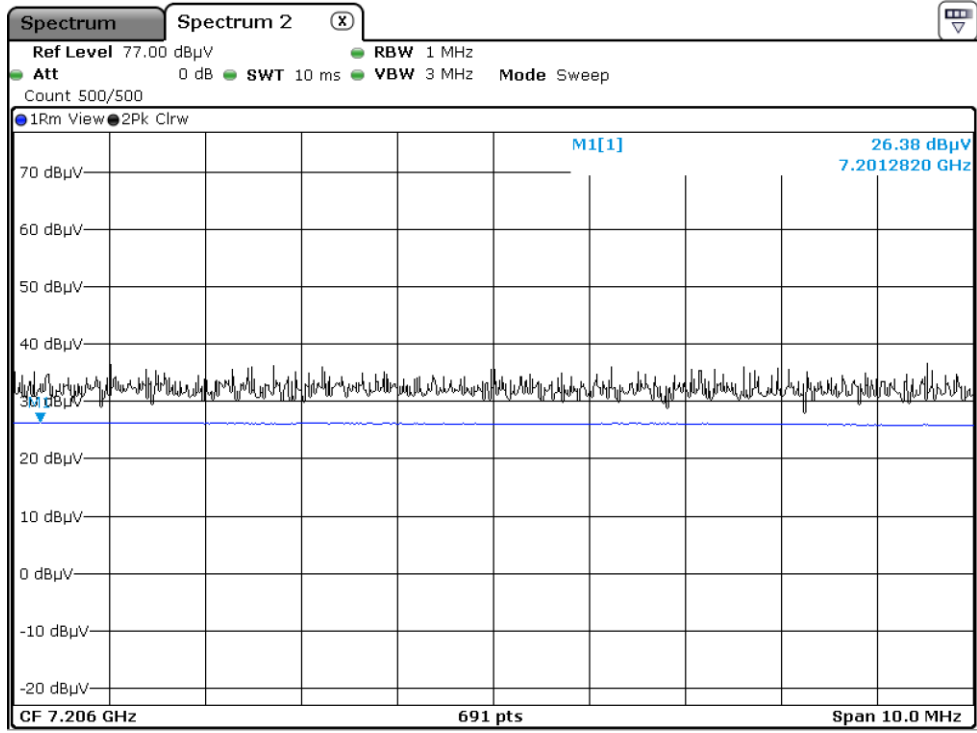
RSE

Frequency [MHz]	Reading [dBuV]	Duty cycle Factor	A.F + C.L - A.G + D.F [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
7206	38.55	0.00	12.70	H	51.25	73.98	22.73	PK
7206	26.38	4.87	12.70	H	43.95	53.98	10.03	AV

[Radiated Spurious Emissions plot – Peak Reading]



[Radiated Spurious Emissions plot – Average Reading]



3. List of test equipment

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Innco system	CO3000 / Controller(Antenna mast)	N/A	N/A	CO3000-4p
Innco system	MA4640/800-XP-EP / Antenna Position Tower	N/A	N/A	N/A
Audix	EM1000 / Controller	N/A	N/A	060520
Audix	Turn Table	N/A	N/A	N/A
Rohde & Schwarz	Loop Antenna	05/18/2020	Biennial	1513-175
Schwarzbeck	VULB 9168 / Hybrid Antenna	02/22/2021	Biennial	760
Schwarzbeck	BBHA 9120D / Horn Antenna	02/17/2021	Biennial	9120D-937
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	11/29/2019	Biennial	BBHA9170541
Rohde & Schwarz	FSV40-N / Spectrum Analyzer	07/28/2020	Annual	102168
Agilent	N9030A / Signal Analyzer	01/11/2021	Annual	MY49431210
Wainwright Instruments	WRCJV2400/2483.5-2370/2520-60/12SS / Band Reject Filter	01/06/2021	Annual	2
Wainwright Instruments	WRCJV5100/5850-40/50-8EEK / Band Reject Filter	02/08/2021	Annual	1
Wainwright Instruments	WHK3.0/18G-10EF / High Pass Filter	02/03/2021	Annual	8
Wainwright Instruments	WHKX8-6090-7000-18000-40SS/ High Pass Filter	02/03/2021	Annual	25
Api tech.	18B-03 / Attenuator (3 dB)	02/03/2021	Annual	1
Agilent	8493C-10 / Attenuator(10 dB)	02/03/2021	Annual	08285
CERNEX	CBLU1183540 / Power Amplifier	02/03/2021	Annual	22964
CERNEX	CBL06185030 / Power Amplifier	02/03/2021	Annual	22965
CERNEX	CBL18265035 / Power Amplifier	12/04/2020	Annual	22966
CERNEX	CBL26405040 / Power Amplifier	03/23/2021	Annual	25956