

TEST REPORT

EVALUATION Test for SM-T720

APPLICANT

SAMSUNG Electronics Co., Ltd.

DATE OF ISSUE

July 08, 2019

HCT Co., Ltd.

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**TEST
REPORT**
EVALUATION Test
for SM-T720

DATE OF ISSUE

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FCC ID/IC

A3LSMT720U/649E-SMT720U

Applicant

SAMSUNG Electronics Co., Ltd.
129, Samsung-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

Equipment Class(es)

DSS, DTS, NII, DXX

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

Bluetooth & WLAN hardware and software of this device are identical to the implementation in A3LSMT725U. 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 result shown in this test report refer only to the sample(s) tested unless otherwise stated.

Tested by
Jung Ki Lim

(signature)

Technical Manager
Jong Seok Lee

(signature)

HCT CO., LTD.

Soo Chan Lee
SooChan Lee / CEO



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
A3LSMT725U	DSS	Bluetooth Report	All sections
	DTS	WLAN DTS Report	All sections
		BT LE Report	All sections
	NII	UNII Test Report	All sections
	DXX	ANT+ Report	All sections

Appendix A. The Spot check test data

1. Summary of the spot check for Unlicensed EMC

	Test Item	Mod/Channel	Measured Frequency	SM-T725 Result [dBuV/m]		SM-T720 Result [dBuV/m]		Deviation (dB)	
				Peak	Average	Peak	Average	Peak	Average
BT	Band Edge	2-DH5/ch.78	2483.5 MHz~2500 MHz	64.04	39.31	63.09	38.36	-0.95	-0.95
	RSE	3-DH5/ch.39	7323 MHz	60.50	45.88	60.41	45.74	-0.09	-0.14
DTS	Band Edge	802.11g 6Mbps/ch.11	2483.5 MHz~2500 MHz	66.84	51.73	63.80	50.59	-1.91	0.10
	RSE	802.11b 1Mbps/ch.11	4924 MHz	55.46	49.63	56.68	49.81	1.22	0.18
BT(LE)	Band Edge	LE(5.0) 2M 37byte/ch.39	2483.5 MHz~2500 MHz	55.81	47.18	56.44	47.26	0.63	0.08
		LE(5.0) 2M 37byte/ch.0	2310.0 MHz~2390.0 MHz	53.46	47.21	54.15	47.40	0.69	0.19
	RSE	LE(5.0) 1M 37byte/ch.19	7320 MHz	59.62	49.26	60.09	50.21	0.47	0.95
UNII	Band Edge	802.11ac 80MHz MCS0/ch.58	5350 MHz~5460 MHz	66.84	50.50	62.44	51.43	-4.40	0.93
	RSE	802.11a 20MHz 6Mbps/ch.36	10360 MHz	64.43	-	65.03	-	0.60	-
ANT+	Band Edge	Period 128(0dBm)/ch.0	2310.0 MHz~2400.0 MHz	63.03	31.15	62.96	31.08	-0.07	-0.07
	RSE	Period 128(0dBm)/ch.39	7323 MHz	59.68	48.05	59.86	48.29	0.18	0.24
	Field Strength	Period 128(0dBm)/ch.78	2480 MHz	88.80	56.92	89.15	57.27	0.35	0.35

2. List of test equipment for EMC

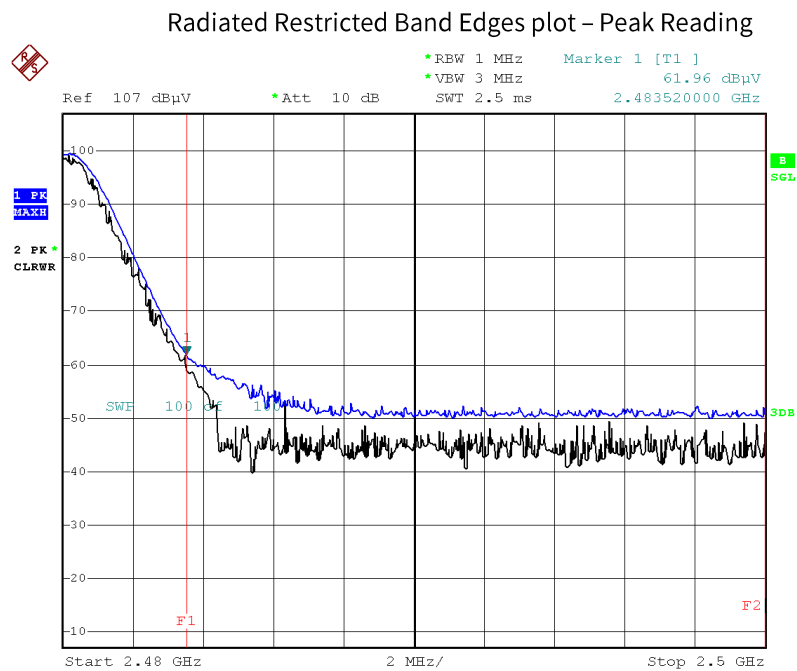
Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Innco system	CO3000 / Controller(Antenna mast)	N/A	N/A	CO3000-4p
Innco system	MA4640/800-XP-EP / Antenna Position Tower	N/A	N/A	N/A
Audix	EM1000 / Controller	N/A	N/A	060520
Audix	Turn Table	N/A	N/A	N/A
Rohde & Schwarz	Loop Antenna	08/23/2018	Biennial	1513-175
Schwarzbeck	VULB 9168 / Hybrid Antenna	08/31/2018	Biennial	00895
Schwarzbeck	VULB 9168 / Hybrid Antenna	08/09/2018	Annual	3368
Schwarzbeck	BBHA 9120D / Horn Antenna	06/30/2017	Biennial	1300
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	12/04/2017	Biennial	BBHA9170541
Rohde & Schwarz	FSP(9 kHz ~ 40 GHz) / Spectrum Analyzer	07/24/2018	Annual	100843
Wainwright Instruments	WHK3.0/18G-10EF / High Pass Filter	01/03/2019	Annual	F6
Wainwright Instruments	WHFX7.0/18G-8SS / High Pass Filter	05/03/2019	Annual	29
Wainwright Instruments	WRCJV2400/2483.5-2370/2520-60/12SS / Band Reject Filter	06/29/2018	Annual	2
Wainwright Instruments	WRCJV5100/5850-40/50-8EEK / Band Reject Filter	01/03/2019	Annual	2
Weinschel	2-3 / Attenuator (3 dB)	10/10/2018	Annual	BR0617
H+S	5910-N-50-010 / Attenuator(10 dB)	11/08/2018	Annual	NONE
CERNEX	CBLU1183540B-01 / Power Amplifier	12/21/2018	Annual	25540
CERNEX	CBL06185030 / Power Amplifier	03/26/2019	Annual	28550
CERNEX	CBL18265035 / Power Amplifier	01/03/2019	Annual	22966
CERNEX	CBL26405040 / Power Amplifier	06/29/2018	Annual	25956
TESCOM	TC-3000C / Bluetooth Tester	03/26/2019	Annual	3000C000276

3. Test Plot

BT Band Edge (2-DH5/ch.78)

Bandedge

Frequency [MHz]	Reading [dBuV]	A.F + C.L - A.G + D.F -AMP+ATT [dB]	Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2483.5	61.96	1.13	V	63.09	73.98	10.89	PK
2483.5	61.96	1.13	V	38.36	53.98	15.62	AV



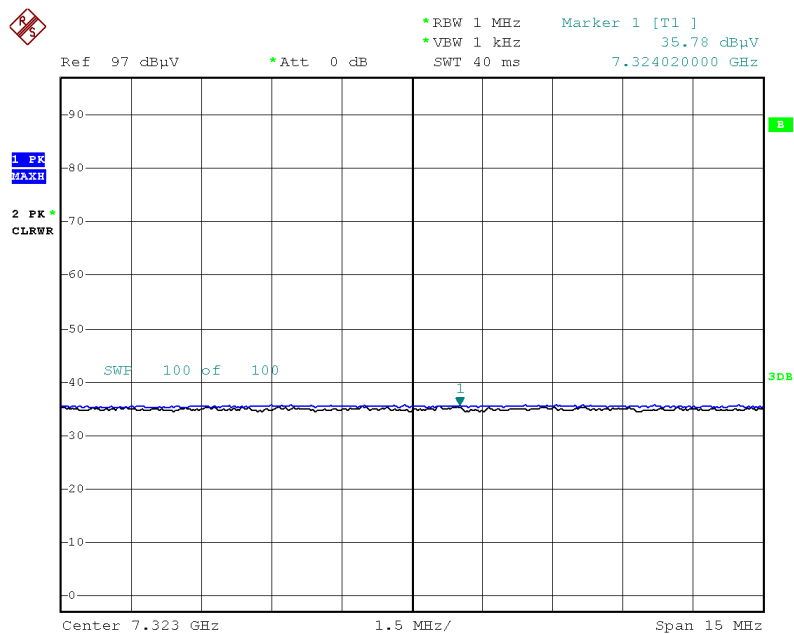
Date: 28.MAY.2019 10:27:32

BT R.S.E 3rd Harmonic(3-DH5/ch.39)

RSE

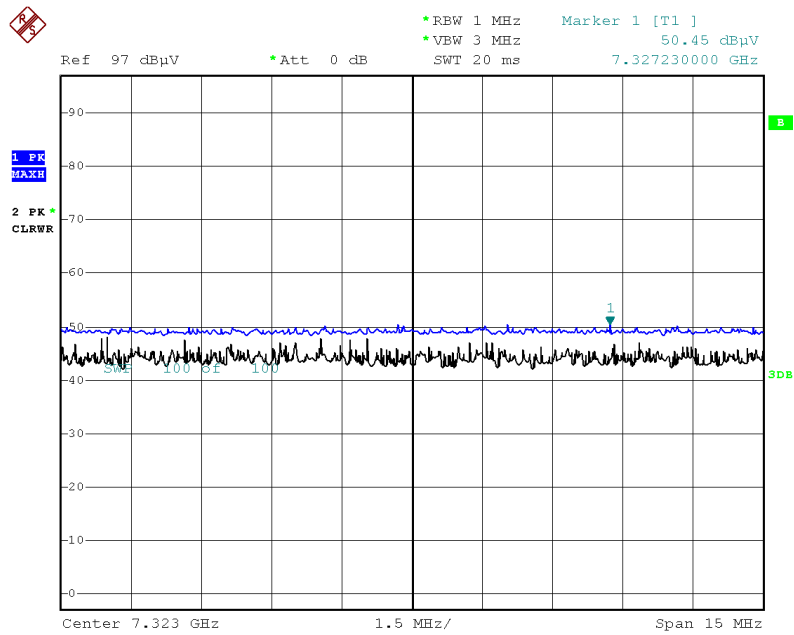
Frequency [MHz]	Reading [dBuV]	A.F + C.L - A.G + D.F [dB]	Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
7323	50.45	9.96	H	60.41	73.98	13.57	PK
7323	35.78	9.96	H	45.74	53.98	8.24	AV

Radiated Spurious Emissions plot – Average Reading



Date: 28.MAY.2019 10:18:14

Radiated Spurious Emissions plot – Peak Reading



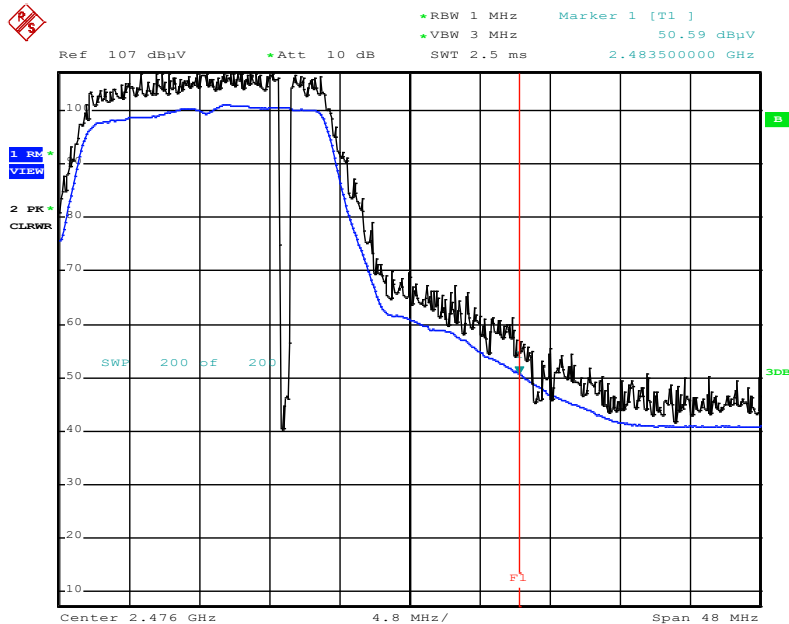
Date: 28.MAY.2019 10:17:05

DTS Band Edge (802.11g_6Mbps/ch.11)

Bandedge

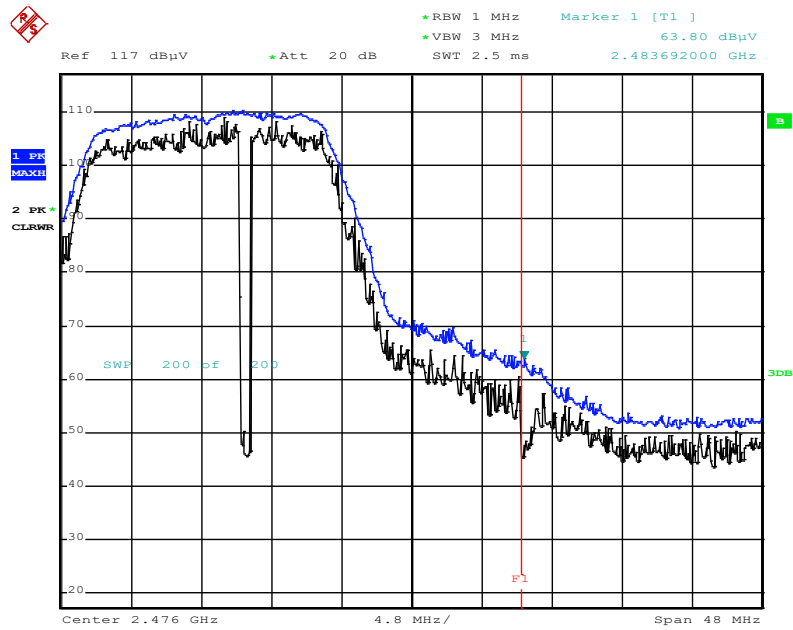
Frequency [MHz]	Reading [dBuV]	Duty Cycle Factor [dB]	A.F + C.L + D.F -A.G+ATT [dB]	Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2483.5	63.80	0.00	1.13	H	64.93	73.98	9.05	PK
2483.5	50.59	0.11	1.13	H	51.83	53.98	2.15	AV

Radiated Restricted Band Edges plot – Average Reading



Date: 12.JUN.2019 10:16:02

Radiated Restricted Band Edges plot – Peak Reading



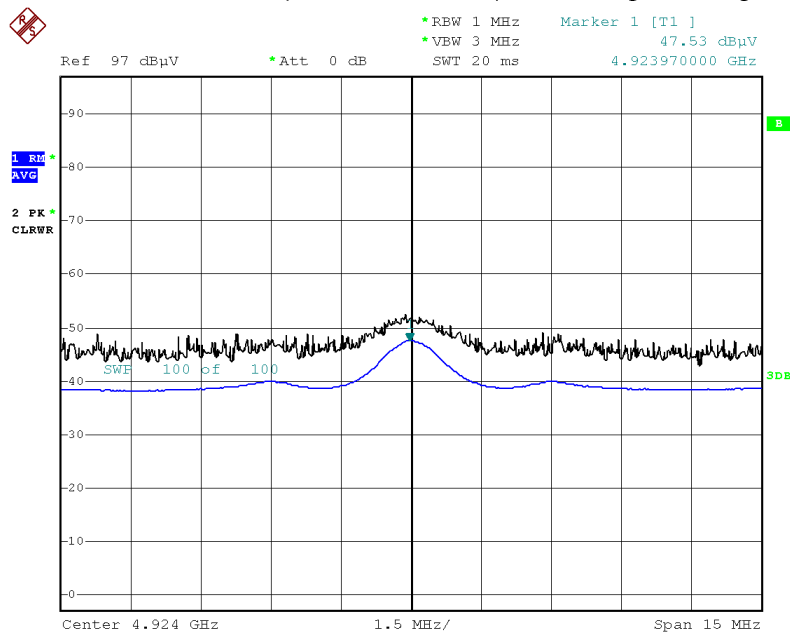
Date: 12.JUN.2019 10:16:35

DTS R.S.E 2nd Harmonic (802.11b 1Mbps/ch.11)

RSE

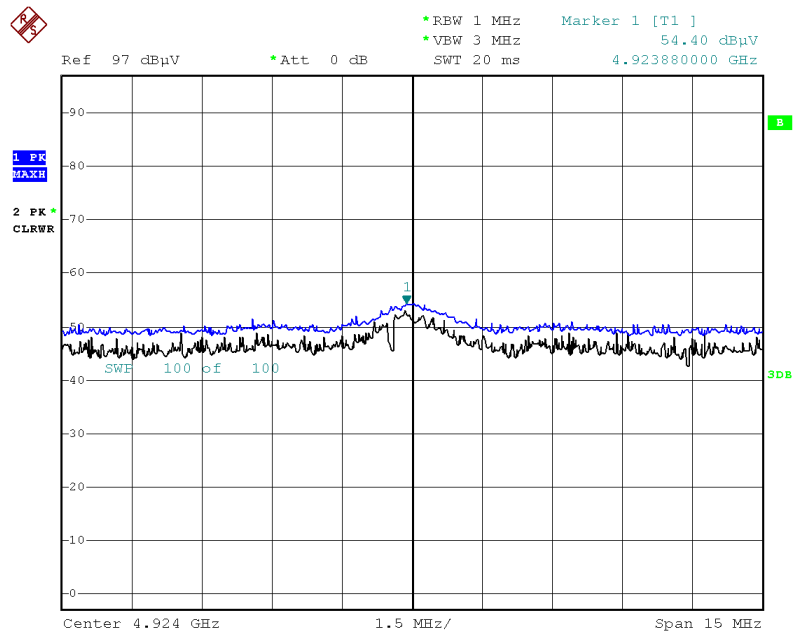
Frequency [MHz]	Reading [dBuV]	A.F + C.L - A.G + D.F [dB]	Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
4924	54.40	2.28	H	56.68	73.98	17.30	PK
4924	47.53	2.28	H	49.81	53.98	4.17	AV

Radiated Spurious Emissions plot – Average Reading



Date: 26.JUN.2019 10:51:32

Radiated Spurious Emissions plot – Peak Reading



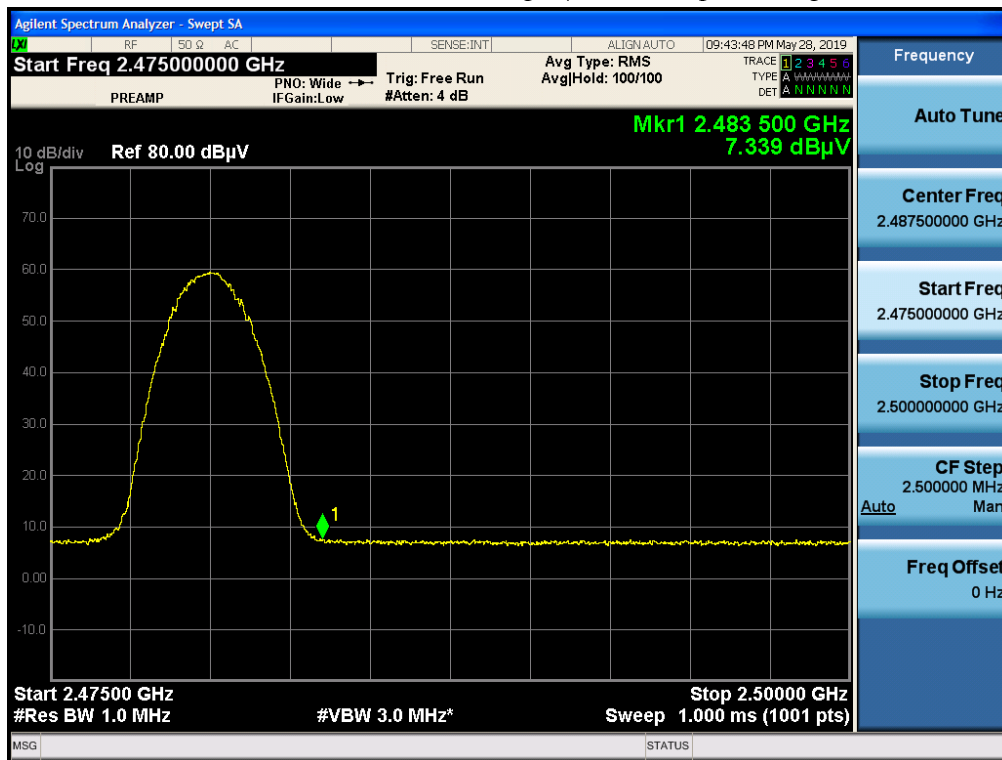
Date: 26.JUN.2019 10:52:07

BT(LE) Band Edge (LE(5.0) 2M 37byte/ch.39)

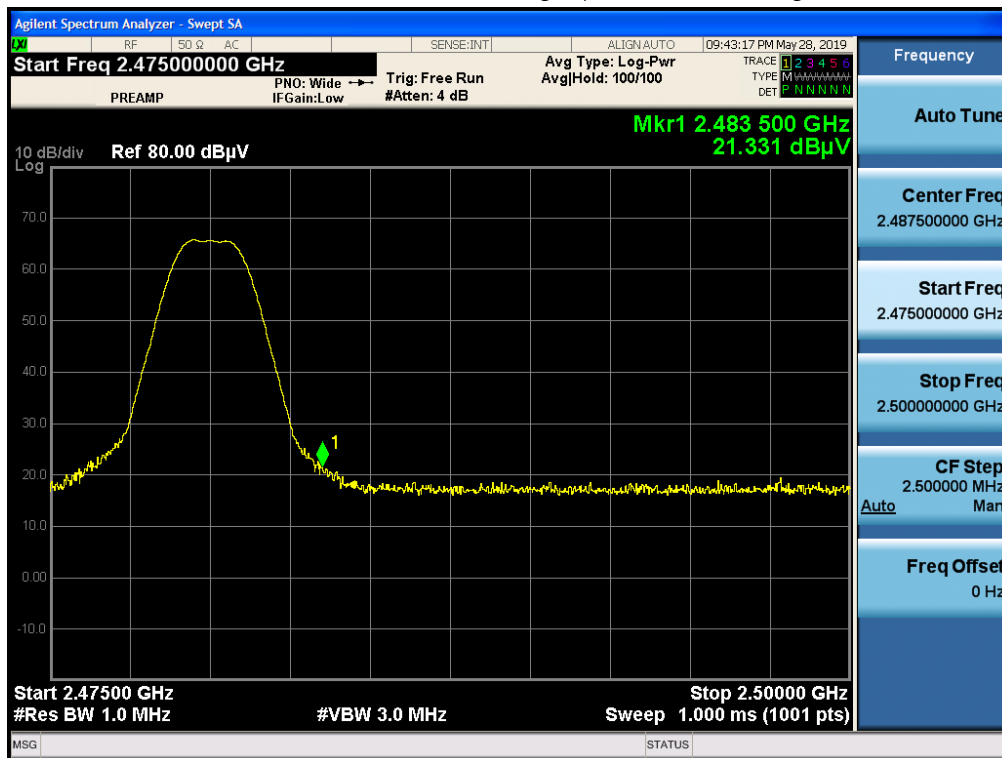
Bandedge

Frequency [MHz]	Reading [dBuV]	Duty Cycle Factor [dB]	A.F + C.L + D.F -AMP+ATT [dB]	Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2483.5	21.33	0.00	35.11	H	56.44	73.98	17.54	PK
2483.5	7.34	4.81	35.11	H	47.26	53.98	6.72	AV

Radiated Restricted Band Edges plot – Average Reading



Radiated Restricted Band Edges plot – Peak Reading

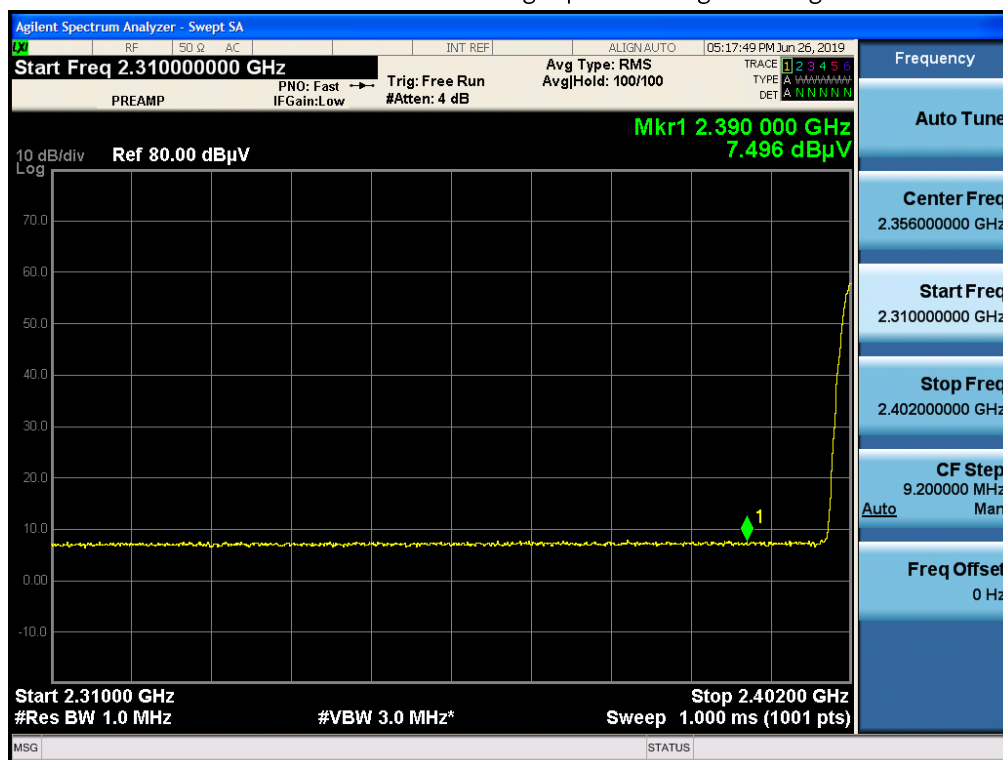


BT(LE) Band Edge (LE(5.0) 2M 37byte/ch.39)

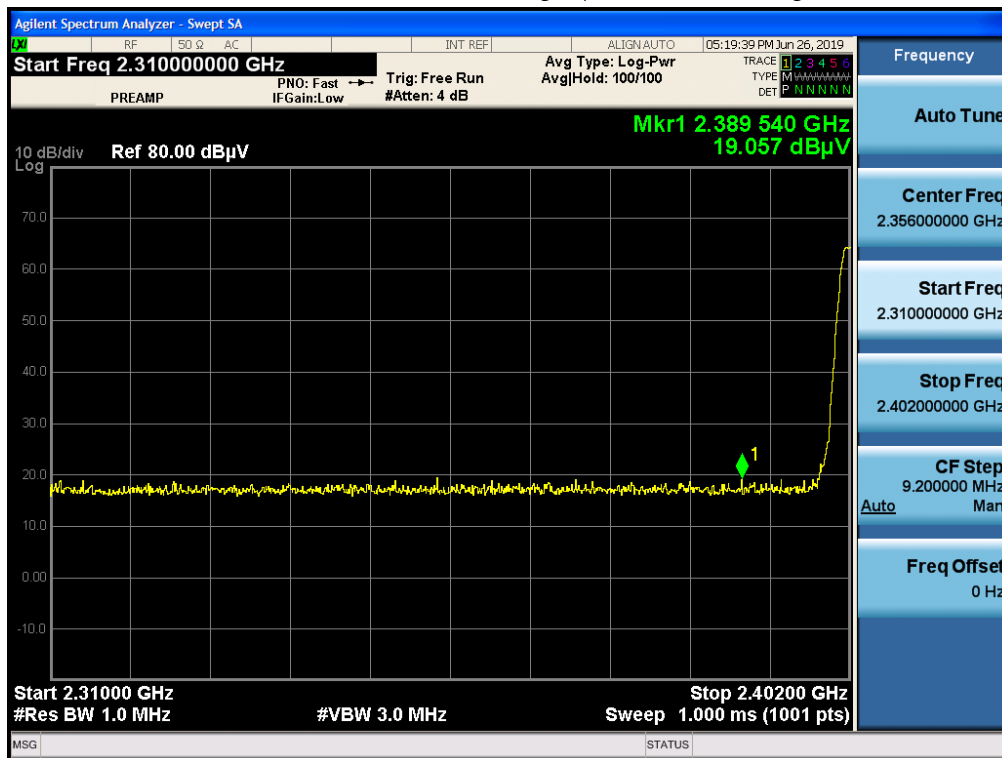
Bandedge

Frequency [MHz]	Reading [dBuV]	Duty Cycle Factor [dB]	A.F + C.L + D.F -AMP+ATT [dB]	Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2390.0	19.06	0.00	35.09	H	54.15	73.98	19.83	PK
2390.0	7.50	4.81	35.09	H	47.40	53.98	6.58	AV

Radiated Restricted Band Edges plot – Average Reading



Radiated Restricted Band Edges plot – Peak Reading

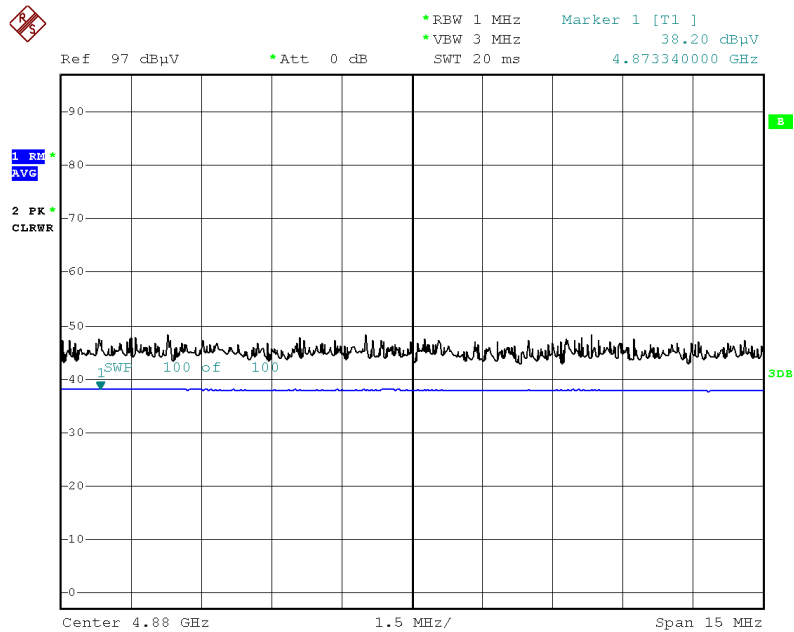


BT(LE) R.S.E 3rd Harmonic (LE(5.0) 1M 37byte/ch.19)

RSE

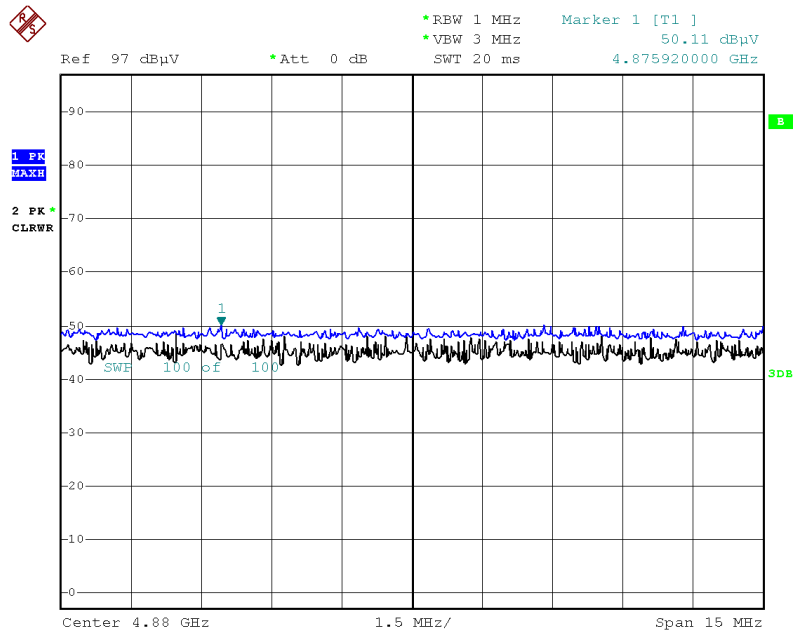
Frequency	Reading	Duty Cycle Factor	A.F.+C.L.+D.F -AMP+ATT.	Ant. Pol.	Total	Limit	Margin	Measurement Type
[MHz]	[dBuV/m]	[dB]	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
7320	50.11	0	9.98	H	60.09	73.98	13.89	PK
7320	38.20	2.03	9.98	H	50.21	53.98	3.77	AV

Radiated Spurious Emissions plot – Average Reading



Date: 28.MAY.2019 20:34:08

Radiated Spurious Emissions plot – Peak Reading



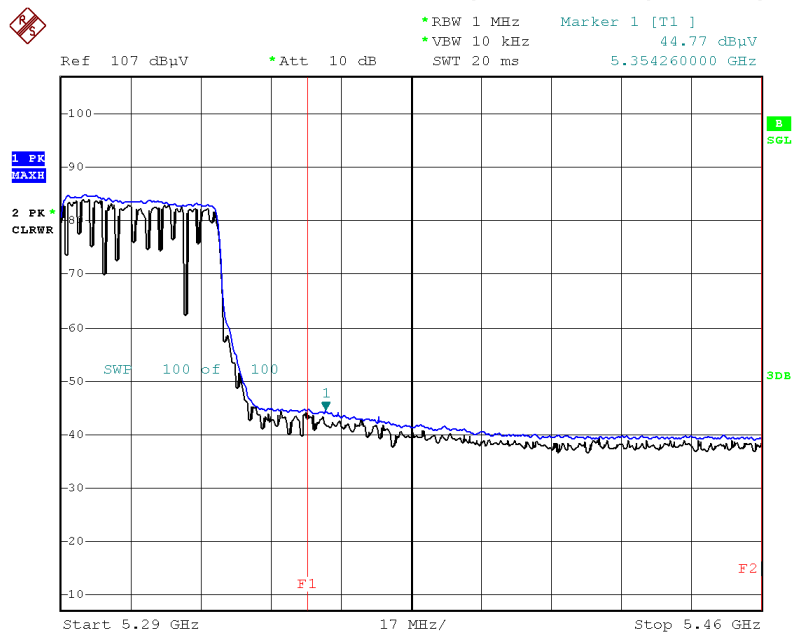
Date: 28.MAY.2019 20:29:01

U-NII Band Edge (802.11ac_80MHz MCS0/ch.58)

Bandedge

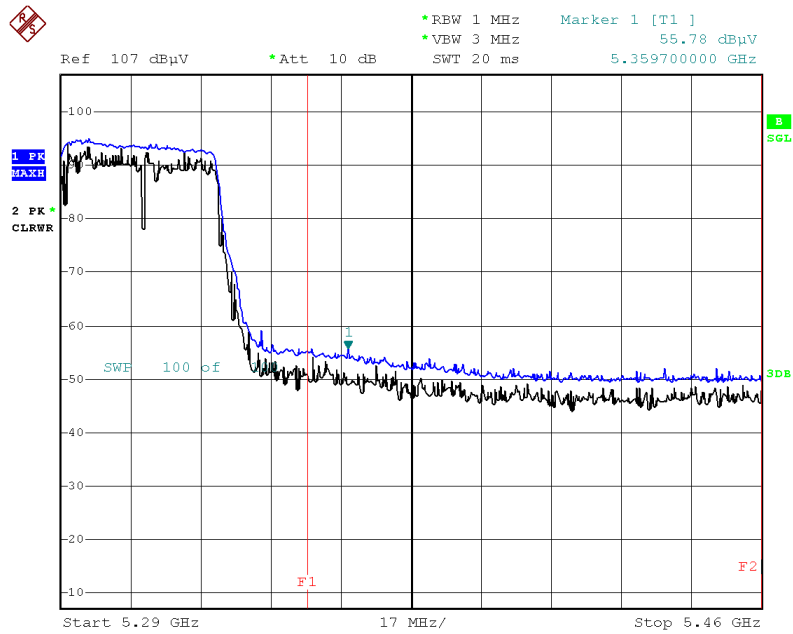
Frequency [MHz]	Reading [dBuV]	A.F.+C.L.-AMP+ATT +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	55.78	6.66	H	62.44	73.98	11.54	PK
5350	44.77	6.66	H	51.43	53.98	2.55	AV

Radiated Restricted Band Edges plot – Average Reading



Date: 25.JUN.2019 19:29:28

Radiated Restricted Band Edges plot – Peak Reading

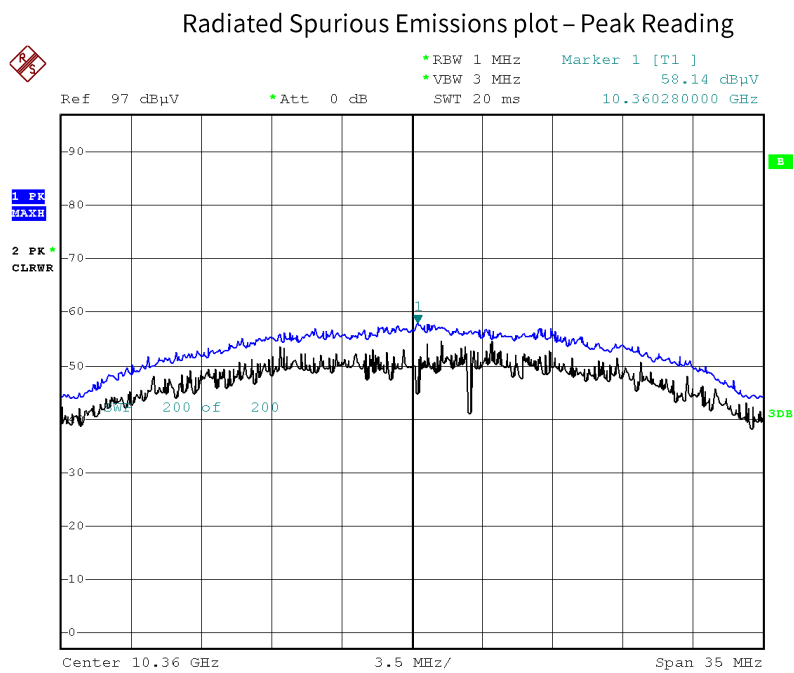


Date: 25.JUN.2019 19:30:24

U-NII R.S.E 2nd Harmonic (802.11a_20MHz 6Mbps/ch.36)

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
10360	58.14	6.89	V	65.03	68.20	3.17	PK



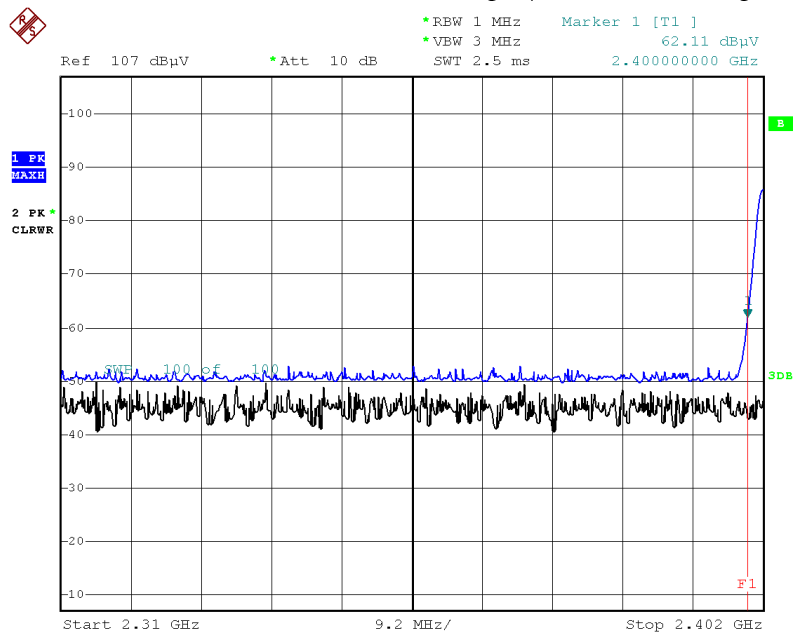
Date: 28.MAY.2019 19:09:58

ANT+ Band Edge (Period 128(0dBm)/ch.0

Bandedge

Frequency [MHz]	Reading [dBuV]	A.F+C.L-A.G+D.F+ATT [dB]	Pol. [H/V]	D.C.C.F [dB]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2400.0	62.11	0.85	H	0	62.96	73.98	11.02	PK
2400.0	62.11	0.85	H	-31.88	31.08	53.98	22.90	AV

Radiated Restricted Band Edges plot – Peak Reading



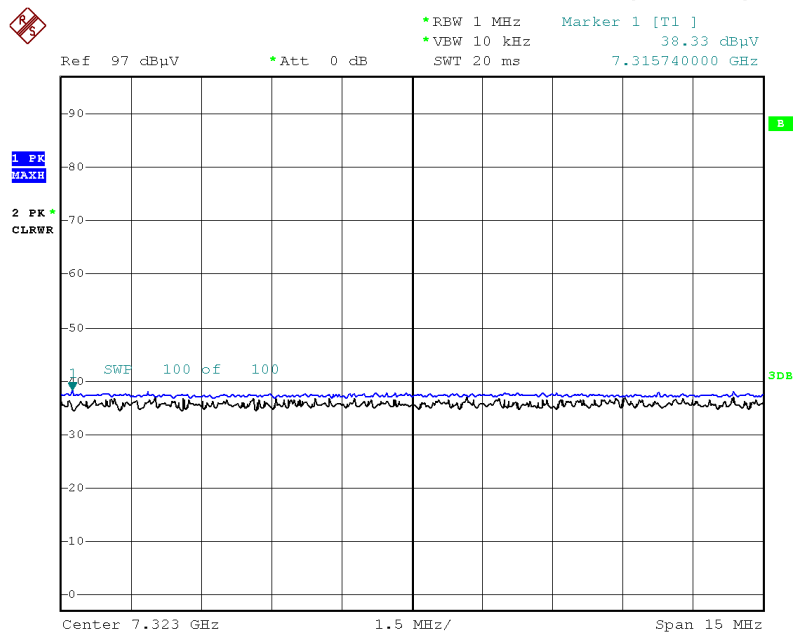
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ANT+ R.S.E 3rd Harmonic(Period 128(0dBm)/ch.39)

RSE

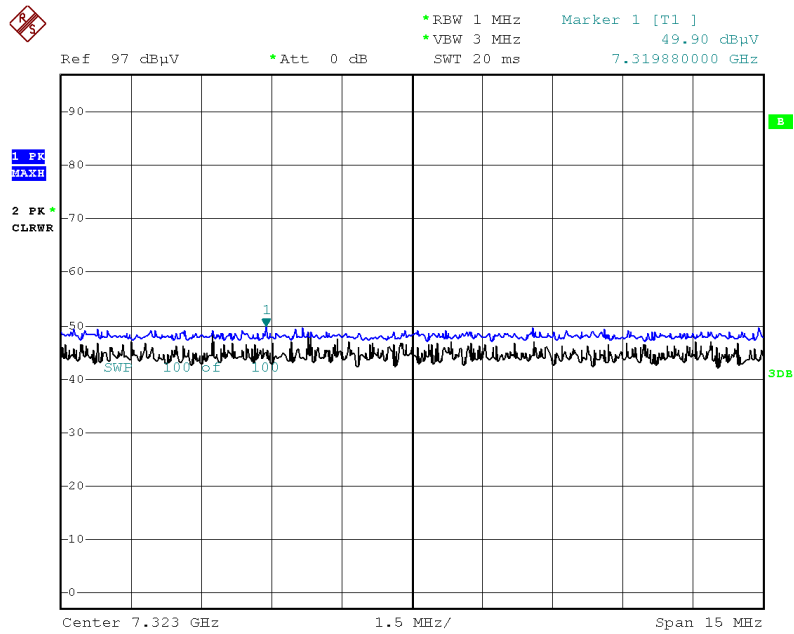
Frequency [MHz]	Reading [dBuV]	A.F.+C.L.-A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
7323	49.90	9.96	V	59.86	73.98	14.12	PK
7323	38.33	9.96	V	48.29	53.98	5.69	AV

Radiated Spurious Emissions plot – Average Reading



Date: 28.MAY.2019 12:00:27

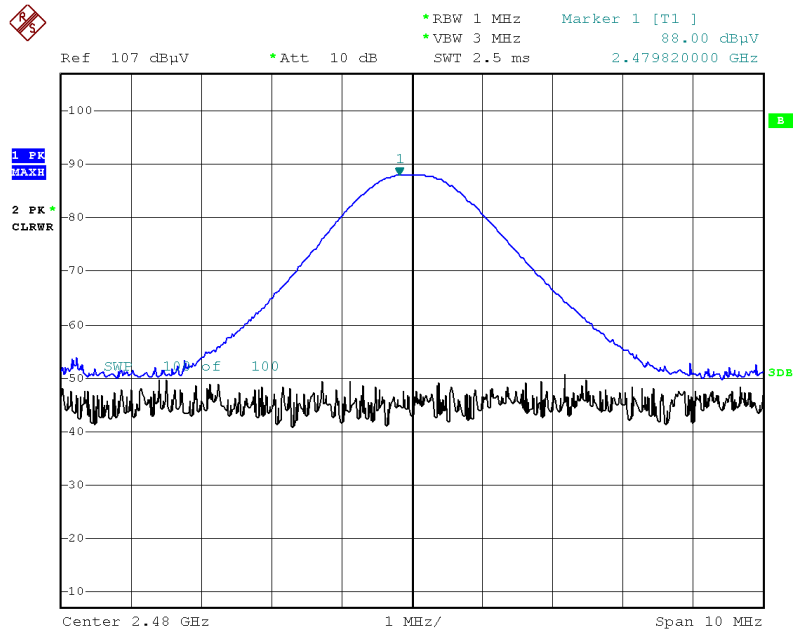
Radiated Spurious Emissions plot – Peak Reading



Date: 28.MAY.2019 11:59:43

ANT+ Field Strength (Period 128(0dBm)/ch.78)

Frequency [MHz]	Reading [dBuV]	A.F+C.L-A.G+D.F+ATT [dB]	Pol. [H/V]	D.C.C.F [dB]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2480	88.00	1.15	H	0.00	89.15	113.98	24.83	PK
2480	88.00	1.15	H	-31.88	57.27	93.98	36.71	AV



Date: 28.MAY.2019 11:32:48