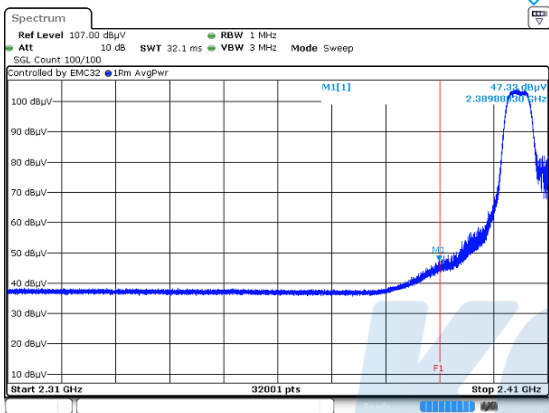


802.11ax_RU mode(HE 20 / 52T / RU offset 37) / 2 412 MHz

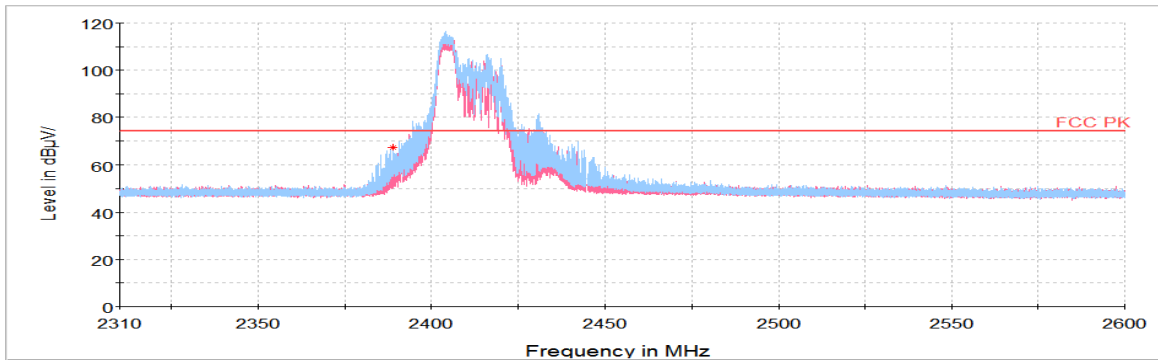
Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
2 389.88 ¹⁾	H	64.42	31.88	-29.04	-	67.26	74.00	6.74
Average Data								
2 389.88 ¹⁾	H	47.33	31.88	-29.04	0.21	50.38	54.00	3.62

Average data



Blank

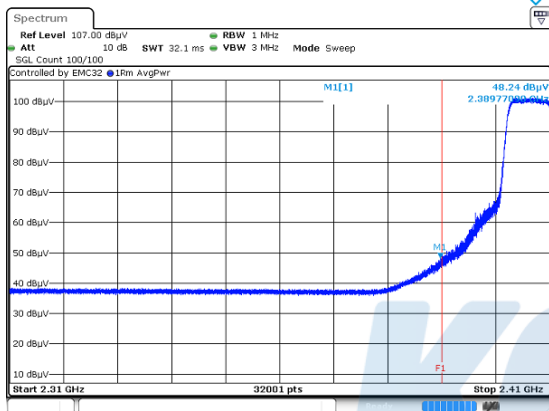
Horizontal/Vertical for Band-edge



802.11ax_RU mode(HE 20 / 106T / RU offset 53) / 2 412 MHz

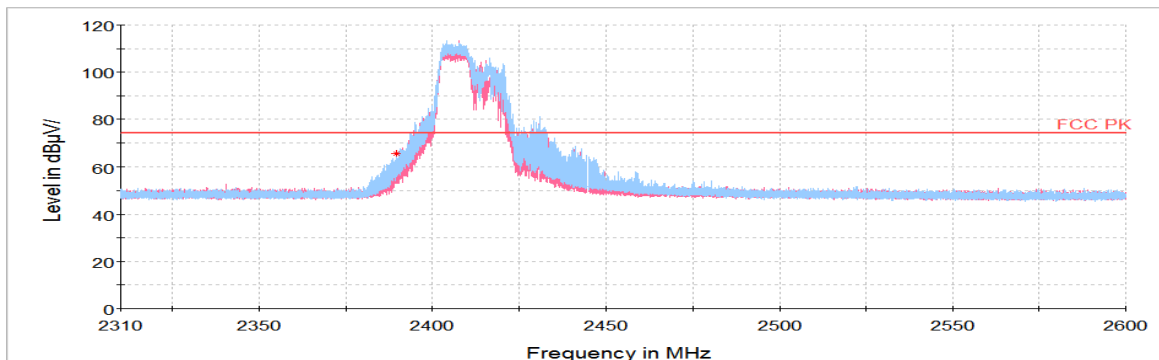
Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
2 389.77 ⁽¹⁾	H	62.63	31.88	-29.04	-	65.47	74.00	8.53
Average Data								
2 389.77 ⁽¹⁾	H	48.24	31.88	-29.04	0.38	51.46	54.00	2.54

Average data



Blank

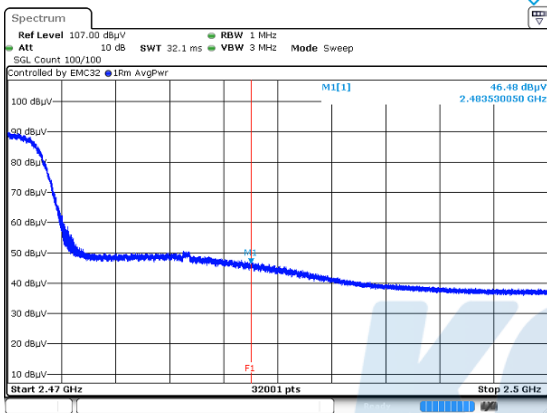
Horizontal/Vertical for Band-edge



802.11ax_HE20 SU mode / 2 462 MHz

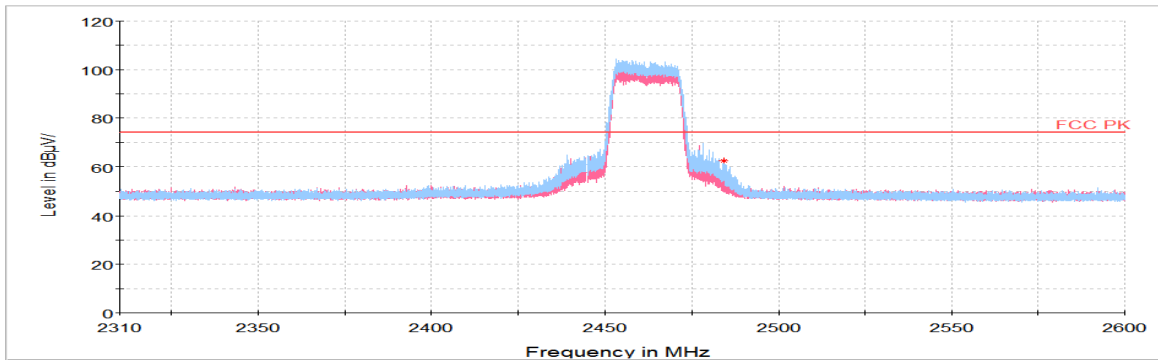
Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
2 483.53 ¹⁾	H	59.39	32.07	-29.21	-	62.25	74.00	11.75
Average Data								
2 483.53 ¹⁾	H	46.48	32.07	-29.21	0.89	50.23	54.00	3.77

Average data



Blank

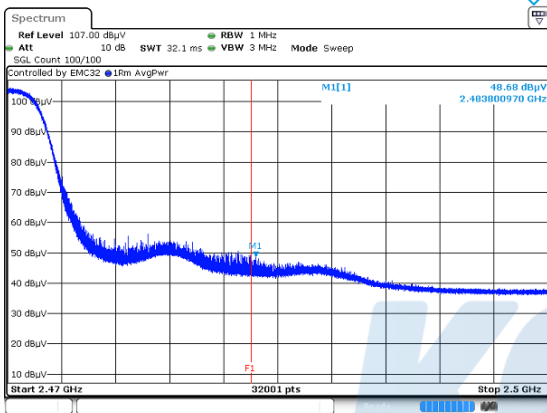
Horizontal/Vertical for Band-edge



802.11ax_RU mode(HE 20 / 26T / RU offset 8) / 2 462 MHz

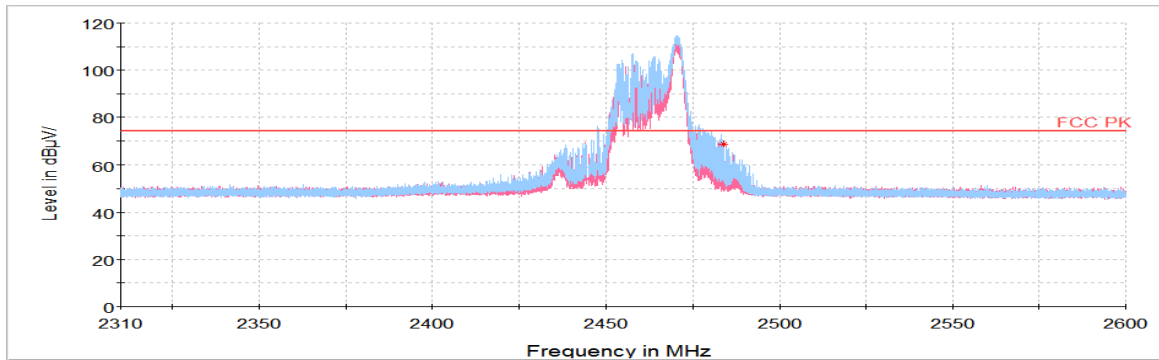
Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
2 483.80 ¹⁾	H	65.81	32.07	-29.21	-	68.67	74.00	5.33
Average Data								
2 483.80 ¹⁾	H	48.68	32.07	-29.21	0.11	51.65	54.00	2.35

Average data



Blank

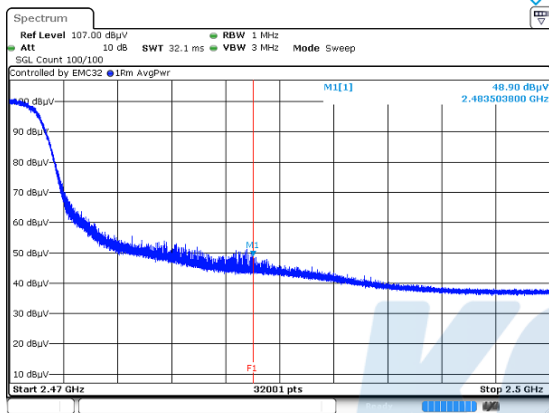
Horizontal/Vertical for Band-edge



802.11ax_RU mode(HE 20 / 52T / RU offset 40) / 2 462 MHz

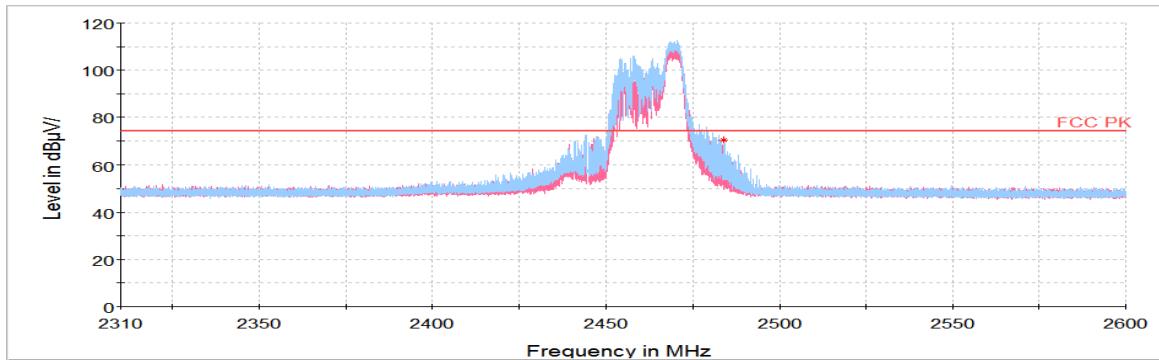
Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
2 483.50 ¹⁾	H	67.45	32.07	-29.21	-	70.31	74.00	3.69
Average Data								
2 483.50 ¹⁾	H	48.90	32.07	-29.21	0.21	51.97	54.00	2.03

Average data



Blank

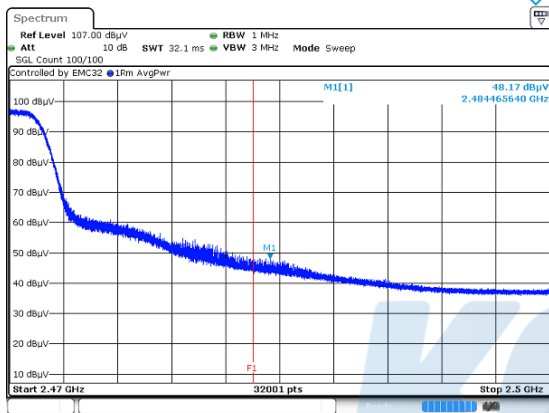
Horizontal/Vertical for Band-edge



802.11ax_RU mode(HE 20 / 106T / RU offset 54) / 2 462 MHz

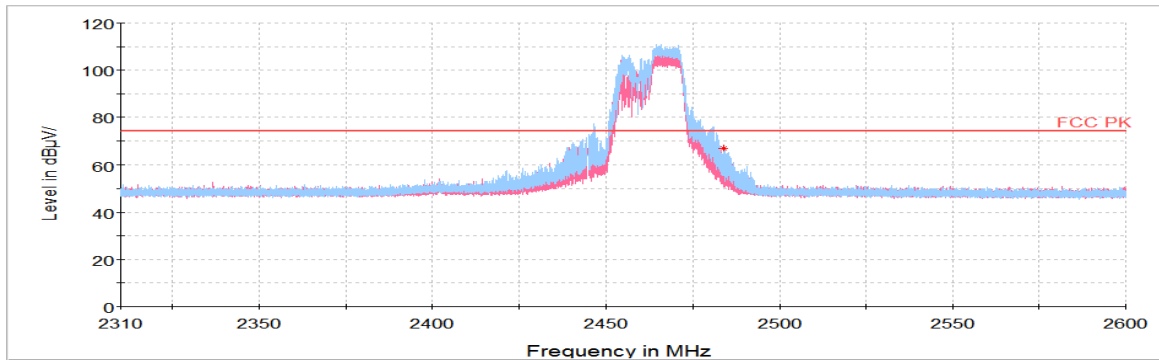
Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
2 484.47 ⁽¹⁾	H	63.81	32.07	-29.22	-	66.66	74.00	7.34
Average Data								
2 484.47 ⁽¹⁾	H	48.17	32.07	-29.22	0.38	51.40	54.00	2.60

Average data



Blank

Horizontal/Vertical for Band-edge



MIMO Harmonics and Spurious Emissions

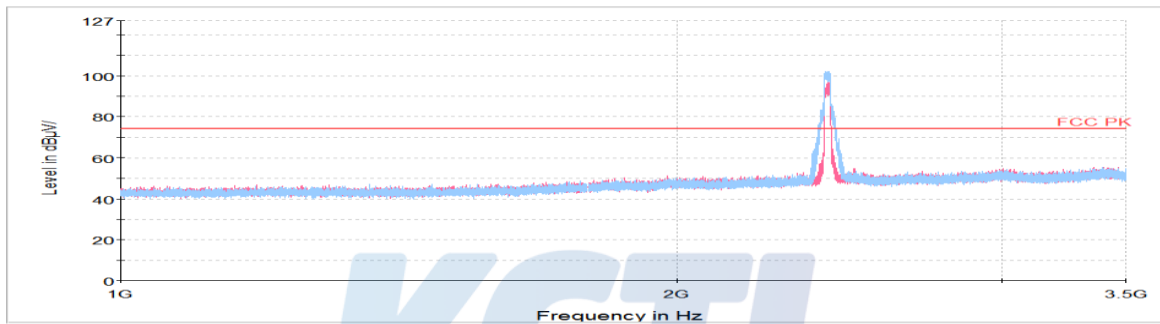
802.11ax_HE20 SU mode / 2 412 MHz

Frequency (MHz)	Pol. (V/H)	Reading (dB(μV))	Ant. Factor (dB)	Amp. + Cable (dB)	DCF (dB)	Result (dB(μV/m))	Limit (dB(μV/m))	Margin (dB)
Peak data								
4 822.67 ¹⁾	V	60.89	33.93	-53.54	-	41.28	74.00	32.72
16 854.05	H	57.05	41.85	-46.71	-	52.19	74.00	21.81

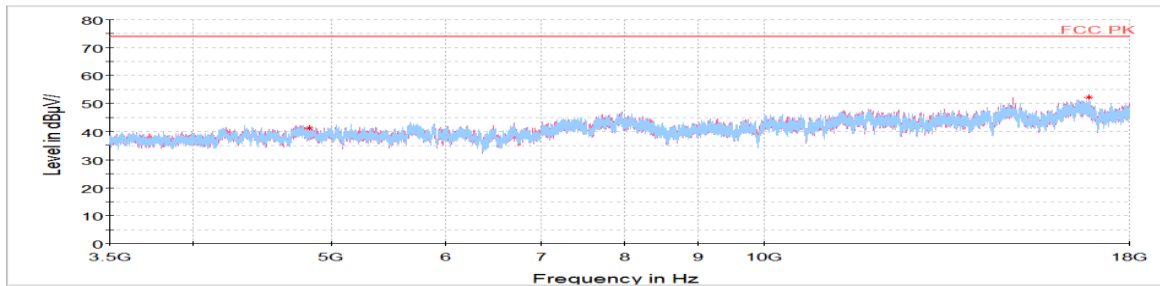
Average Data

No spurious emissions were detected within 20 dB of the limit

Horizontal/Vertical for 1 GHz ~ 3.5 GHz



Horizontal/Vertical for 3.5 GHz ~ 18 GHz



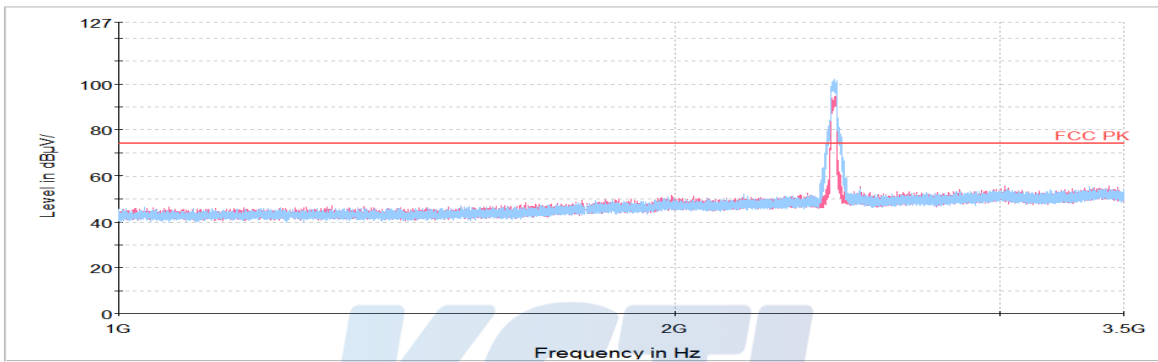
802.11ax_HE20 SU mode / 2 437 MHz

Frequency (MHz)	Pol. (V/H)	Reading (dB(μV))	Ant. Factor (dB)	Amp. + Cable (dB)	DCF (dB)	Result (dB(μV/m))	Limit (dB(μV/m))	Margin (dB)
Peak data								
4 867.08 ¹⁾	V	62.59	33.95	-54.80	-	41.74	74.00	32.26
16 559.97	V	55.95	41.56	-45.70	-	51.81	74.00	22.19

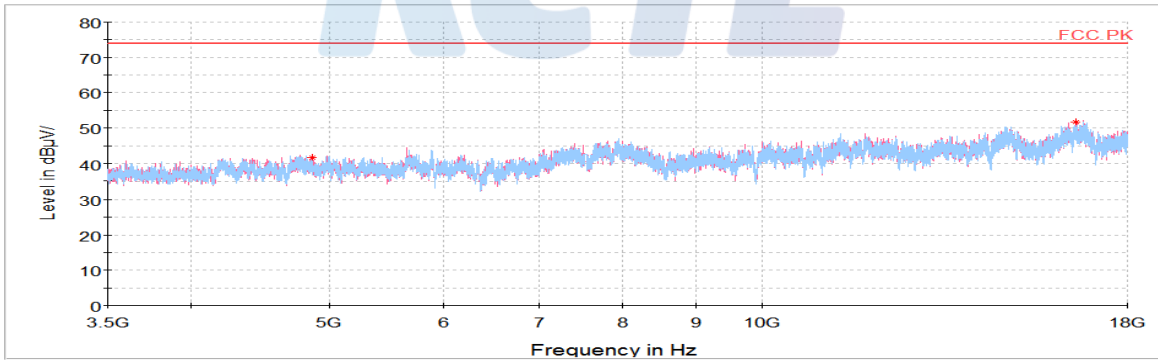
Average Data

No spurious emissions were detected within 20 dB of the limit

Horizontal/Vertical for 1 GHz ~ 3.5 GHz



Horizontal/Vertical for 3.5 GHz ~ 18 GHz



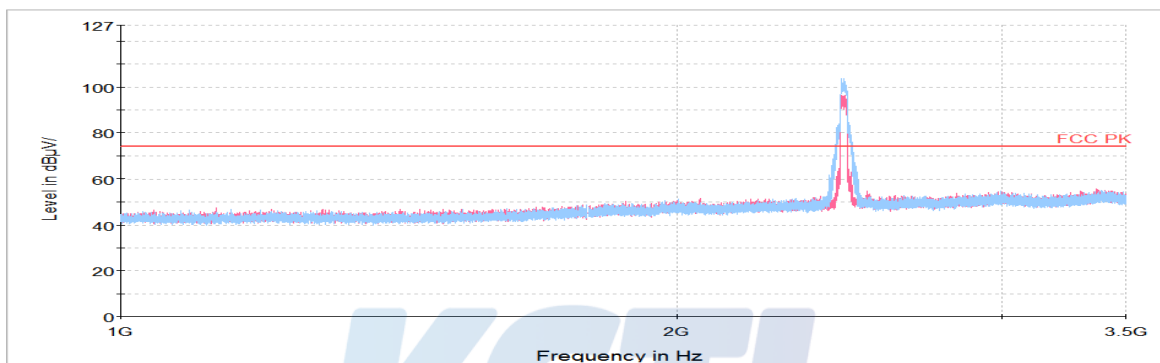
802.11ax_HE20 SU mode / 2 462 MHz

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
4 969.48 ¹⁾	V	61.93	33.99	-54.49	-	41.43	74.00	32.57
16 546.38	V	56.84	41.55	-45.66	-	52.73	74.00	21.27

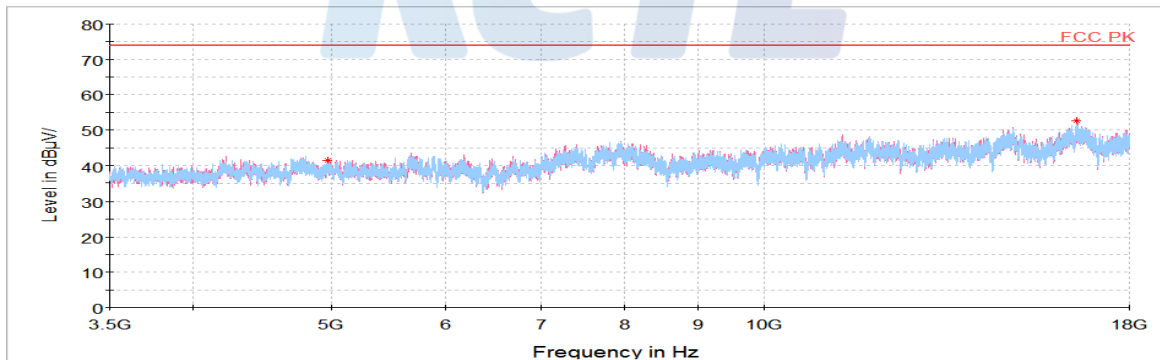
Average Data

No spurious emissions were detected within 20 dB of the limit

Horizontal/Vertical for 1 GHz ~ 3.5 GHz



Horizontal/Vertical for 3.5 GHz ~ 18 GHz



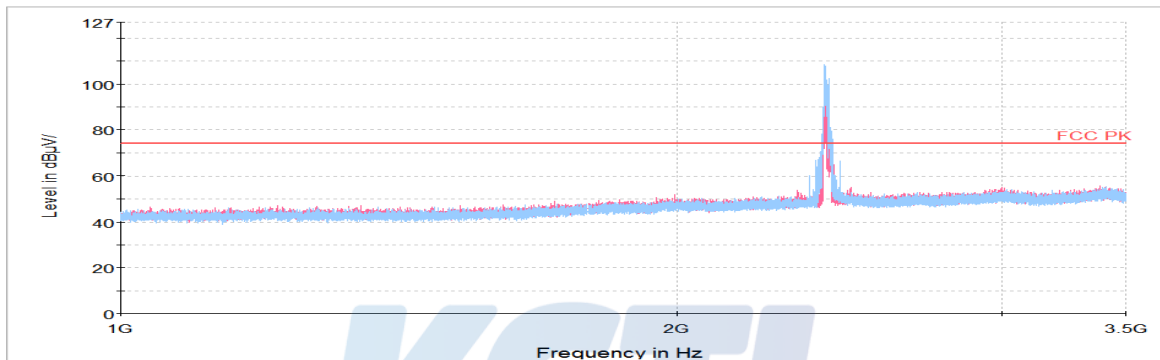
802.11ax_RU mode(HE 20 / 26T / RU offset 0) / 2 412 MHz

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
7 210.64	V	66.04	35.40	-53.07	-	48.37	74.00	25.63
16 547.28	H	55.80	41.55	-45.66	-	51.69	74.00	22.31

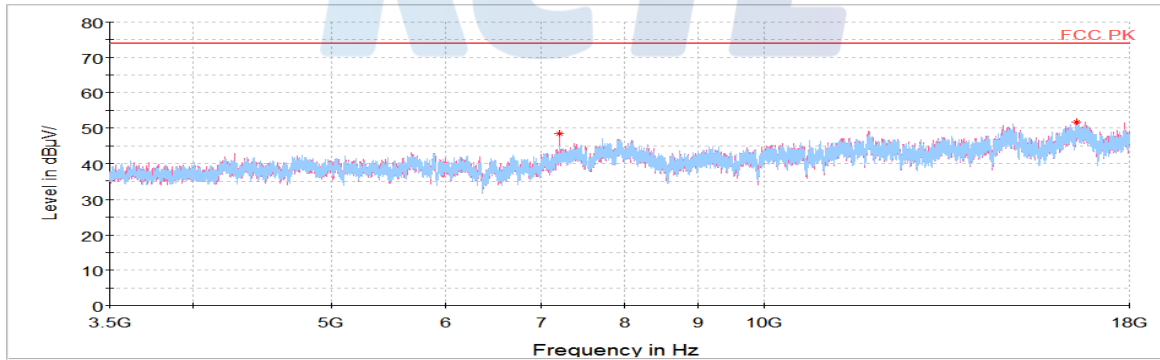
Average Data

No spurious emissions were detected within 20 dB of the limit

Horizontal/Vertical for 1 GHz ~ 3.5 GHz



Horizontal/Vertical for 3.5 GHz ~ 18 GHz



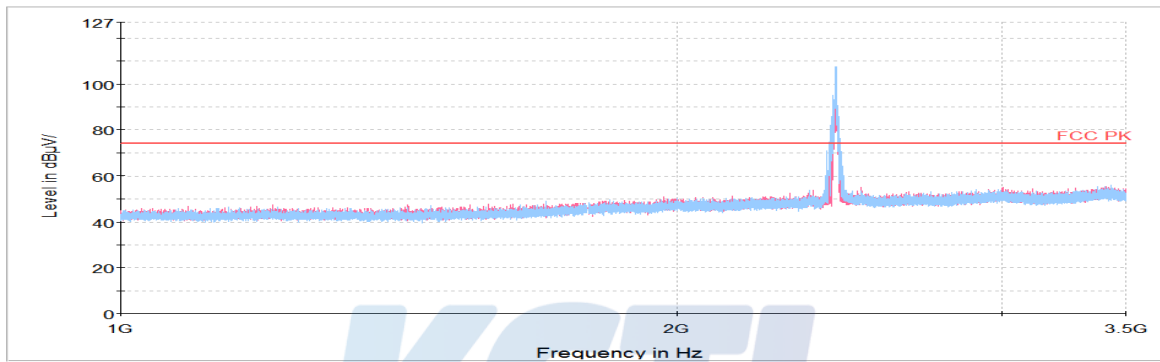
802.11ax_RU mode(HE 20 / 26T / RU offset 4) / 2 437 MHz

Frequency (MHz)	Pol. (V/H)	Reading (dB(μV))	Ant. Factor (dB)	Amp. + Cable (dB)	DCF (dB)	Result (dB(μV/m))	Limit (dB(μV/m))	Margin (dB)
Peak data								
4 842.61 ¹⁾	H	61.60	33.94	-54.11	-	41.43	74.00	32.57
16 594.41	V	56.26	41.59	-45.82	-	52.03	74.00	21.97

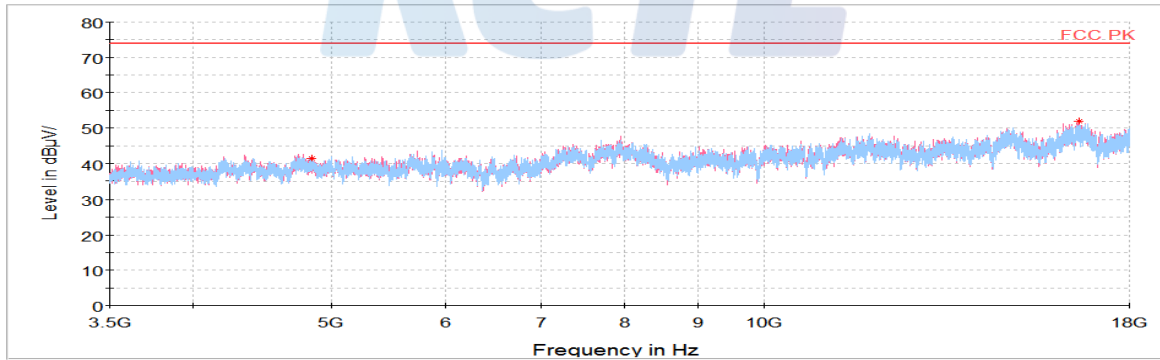
Average Data

No spurious emissions were detected within 20 dB of the limit

Horizontal/Vertical for 1 GHz ~ 3.5 GHz



Horizontal/Vertical for 3.5 GHz ~ 18 GHz



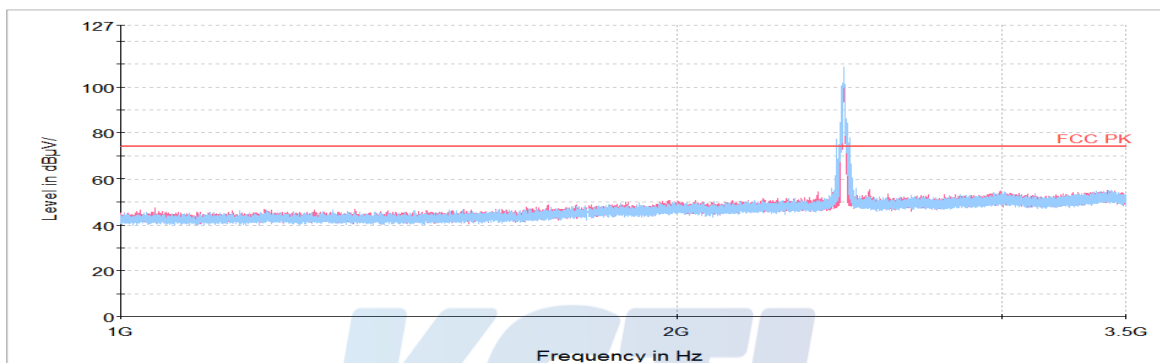
802.11ax_RU mode(HE 20 / 26T / RU offset 4) / 2 462 MHz

Frequency (MHz)	Pol. (V/H)	Reading (dB(μV))	Ant. Factor (dB)	Amp. + Cable (dB)	DCF (dB)	Result (dB(μV/m))	Limit (dB(μV/m))	Margin (dB)
Peak data								
4 934.59 ¹⁾	H	61.83	33.97	-55.12	-	40.68	74.00	33.32
16 535.95	H	56.46	41.54	-45.62	-	52.38	74.00	21.62

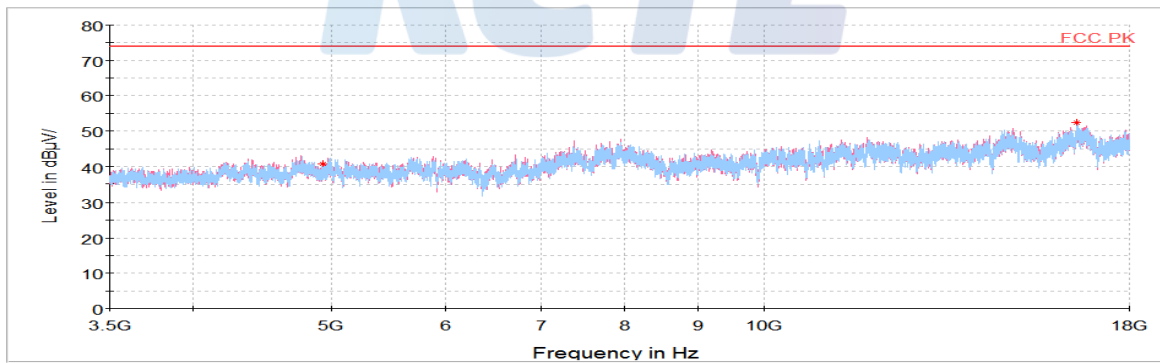
Average Data

No spurious emissions were detected within 20 dB of the limit

Horizontal/Vertical for 1 GHz ~ 3.5 GHz

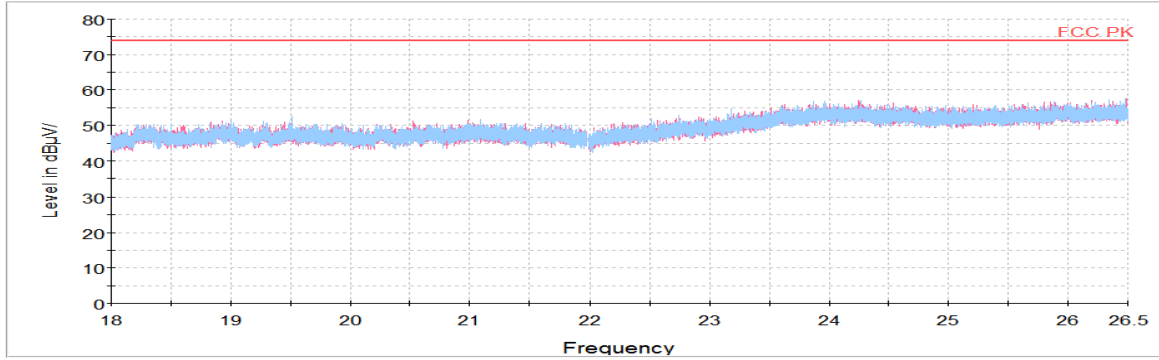


Horizontal/Vertical for 3.5 GHz ~ 18 GHz



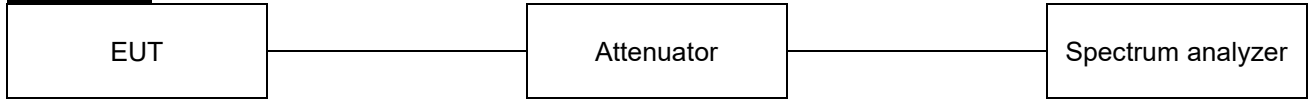
Test results (Above 18 GHz) – Worst case: MIMO_106T_RU Offset 53 / 2 437 MHz

Horizontal/Vertical for 18 GHz ~ 26.5 GHz



8.5. Conducted Spurious Emission

Test setup



Limit

According to §15.247(d) and RSS-247(5.5), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operation, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation specified in §15.209(a) is not required. In addition, radiated emission limits specified in §15.209(a) (see §15.205(c)).

Limit : 20 dBc

Test procedure

ANSI C63.10 - Section 11.11.3, 14.3.3

KDB 558074 D01 v05 - Section 8.5

KDB 662911 D01 v02r01 – section (E)(3)(b)

Test settings

Establish an emission level by using the following procedure:

- 1) Set the center frequency and span to encompass frequency range to be measured.
- 2) Set the RBW = 100 kHz
- 3) Set the VBW \geq [3 x RBW]
- 4) Detector = peak
- 5) Sweep time = auto couple
- 6) Trace mode = max hold
- 7) Allow trace to fully stabilize.
- 8) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

Notes:

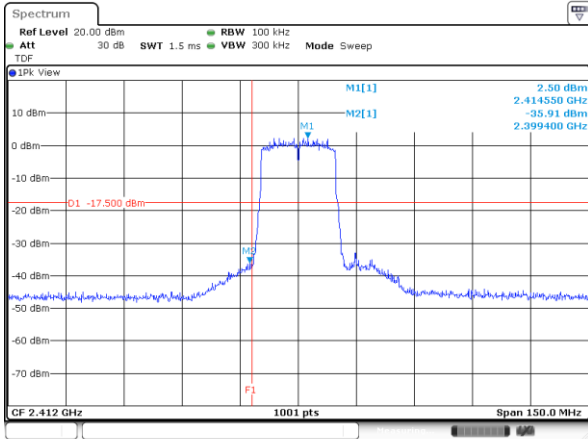
1. For the Conducted spurious, it was tested at the RU allocation with actual highest power and RU allocation with actual highest PSD for channel

Test results

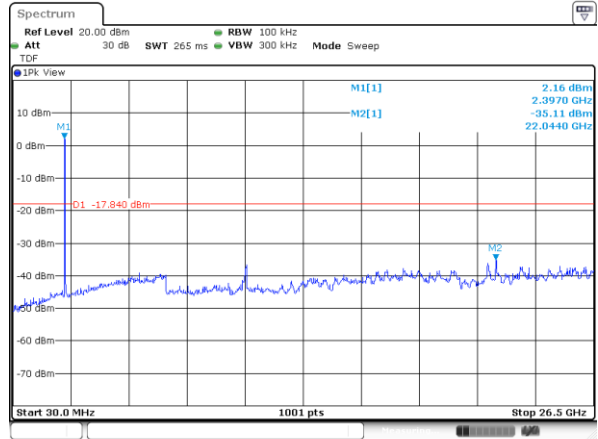
SISO_ANT 1

SU

Conducted band-edge / 2 412 MHz



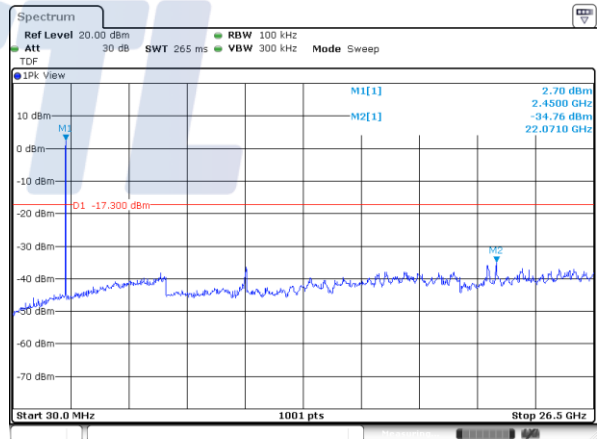
Conducted spurious / 2 412 MHz



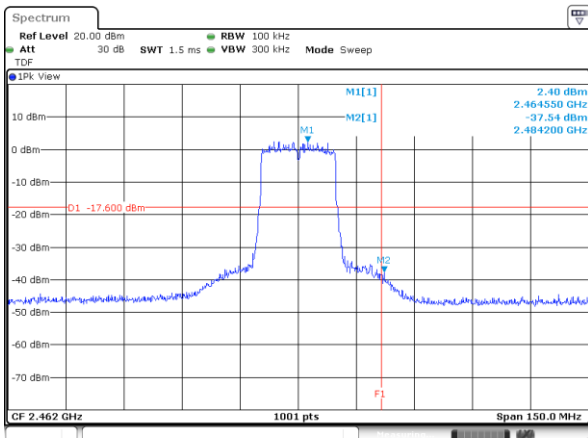
Conducted band-edge / 2 437 MHz

Blank

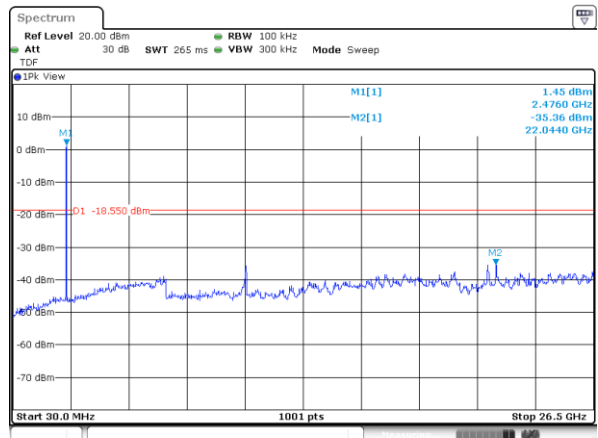
Conducted spurious / 2 437 MHz



Conducted band-edge / 2 462 MHz

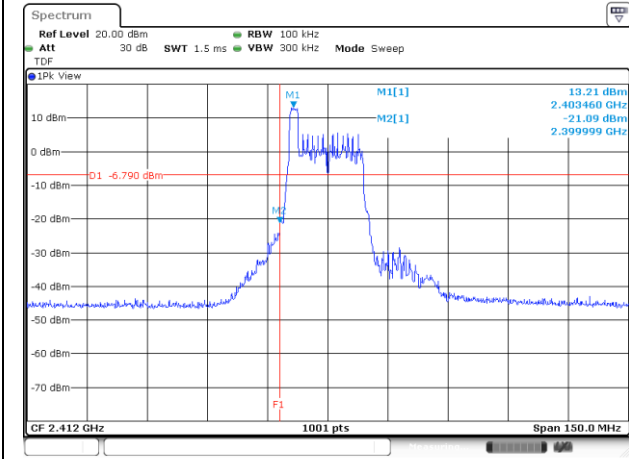


Conducted spurious / 2 462 MHz

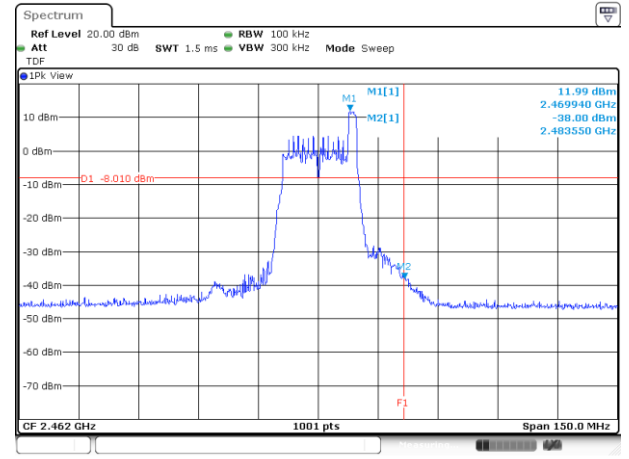


26T / Low : 0, High : 8

Conducted band-edge / 2 412 MHz

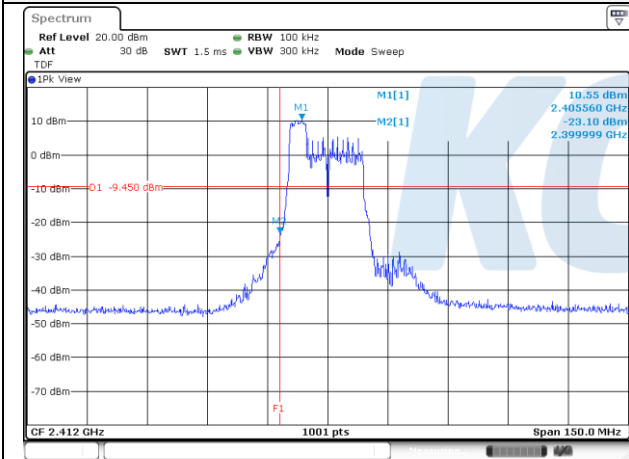


Conducted band-edge / 2 462 MHz

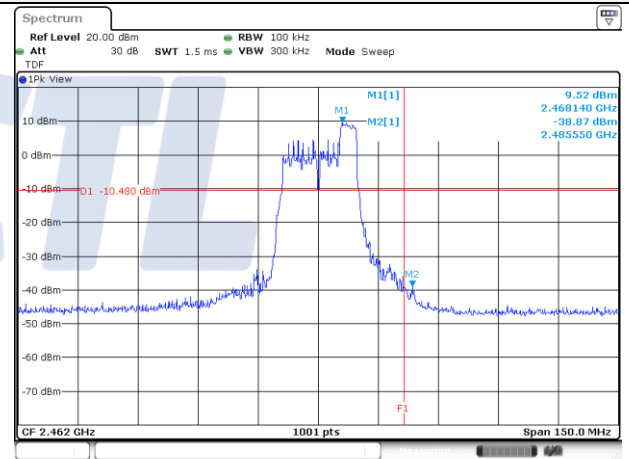


52T / Low : 37, High : 40

Conducted band-edge / 2 412 MHz

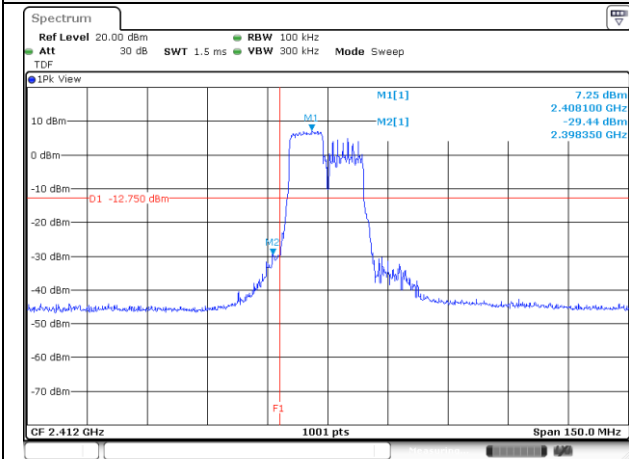


Conducted band-edge / 2 462 MHz

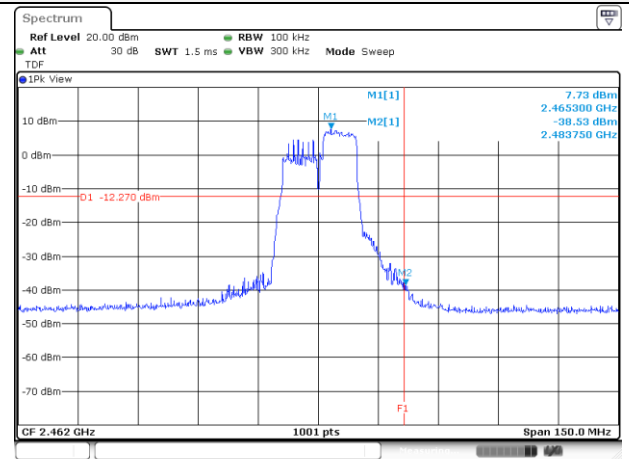


106T / Low : 53, High : 54

Conducted band-edge / 2 412 MHz

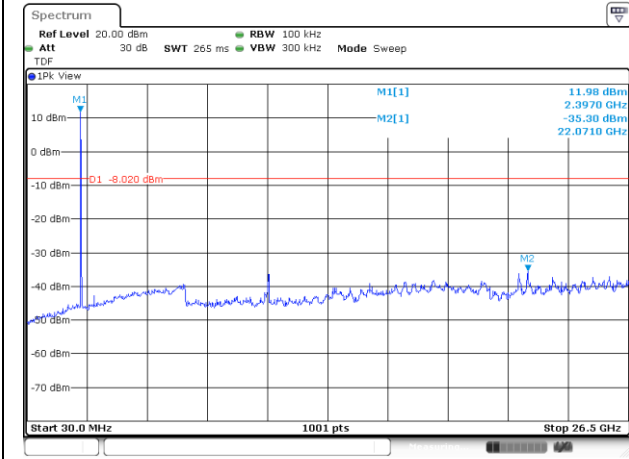


Conducted band-edge / 2 462 MHz

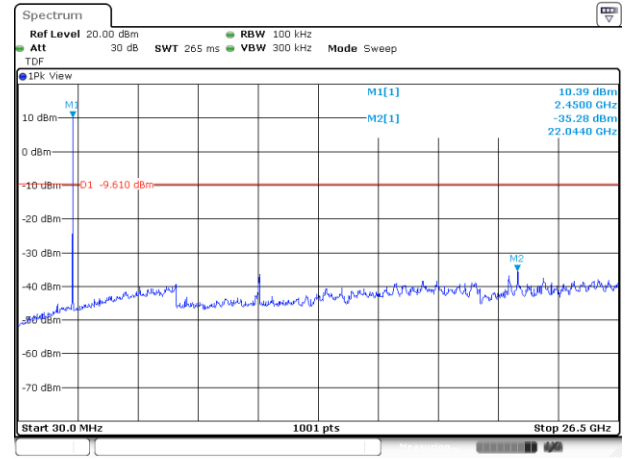


26T / Low : 0, Mid : 8 High : 0

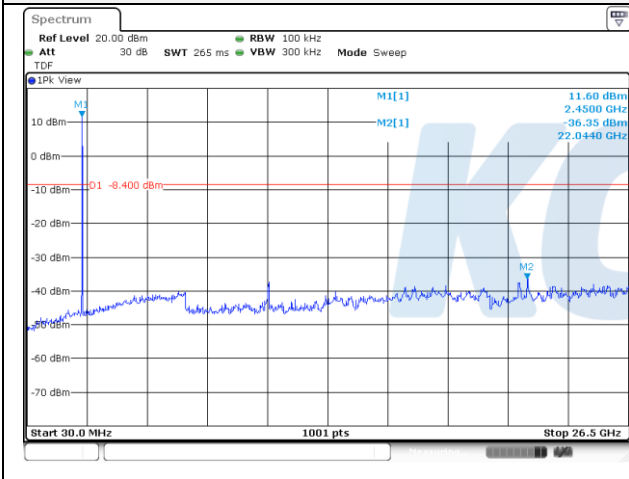
Conducted spurious / 2 412 MHz



Conducted spurious / 2 437 MHz



Conducted spurious / 2 462 MHz

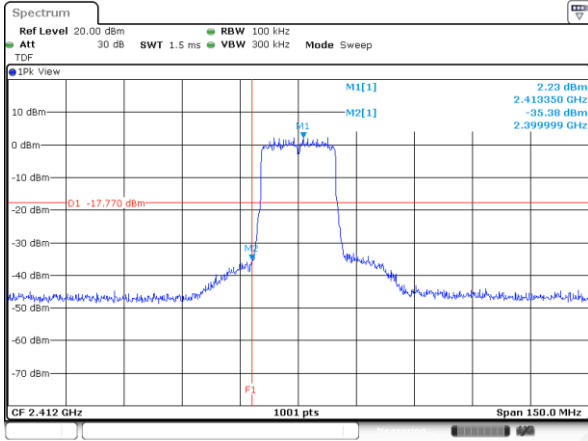


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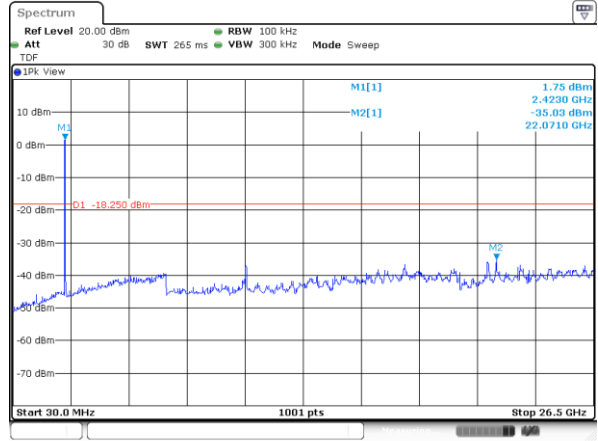
SISO_ANT 2

SU

Conducted band-edge / 2 412 MHz



Conducted spurious / 2 412 MHz



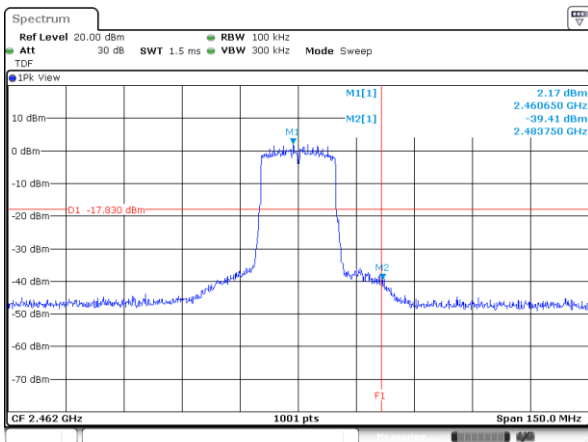
Conducted band-edge / 2 437 MHz

Blank

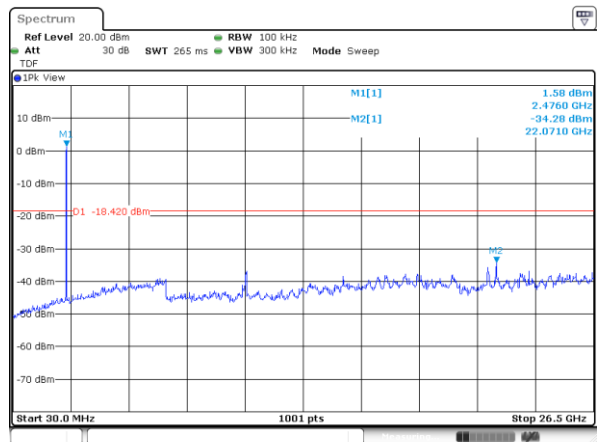
Conducted spurious / 2 437 MHz



Conducted band-edge / 2 462 MHz



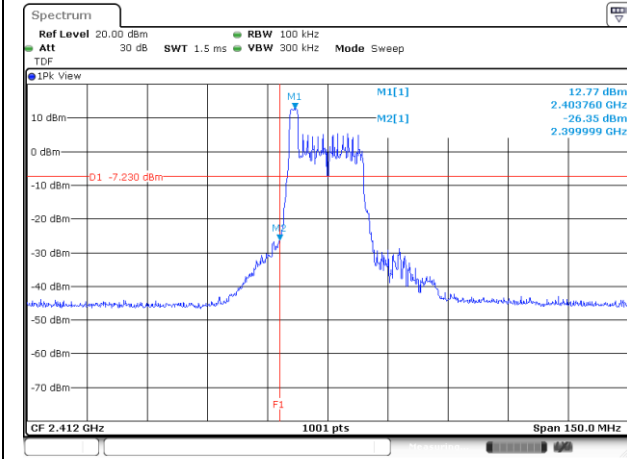
Conducted spurious / 2 462 MHz



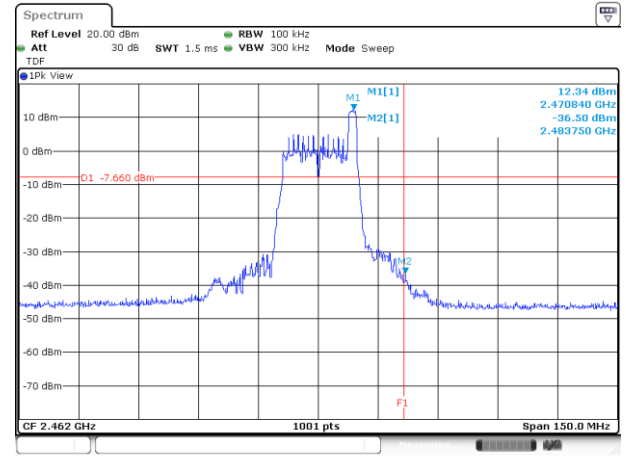
SU

26T / Low : 0, High : 8

Conducted band-edge / 2 412 MHz

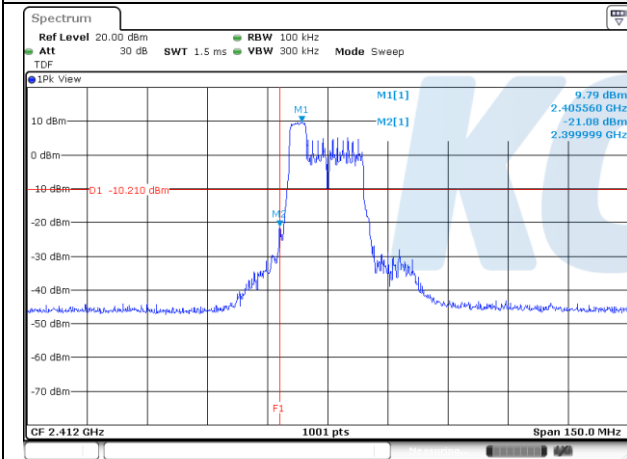


Conducted band-edge / 2 462 MHz

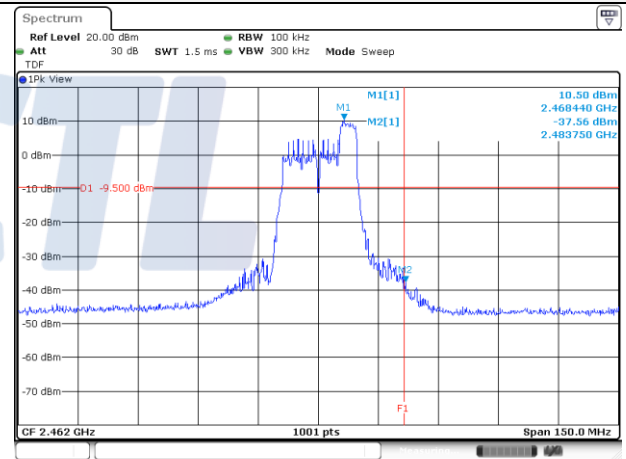


52T / Low : 37, High : 40

Conducted band-edge / 2 412 MHz

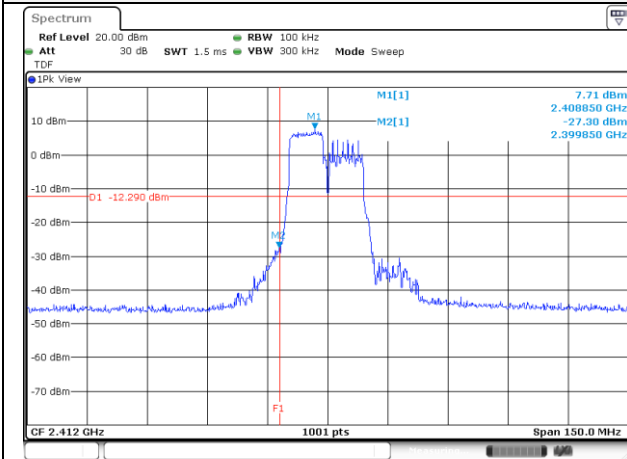


Conducted band-edge / 2 462 MHz

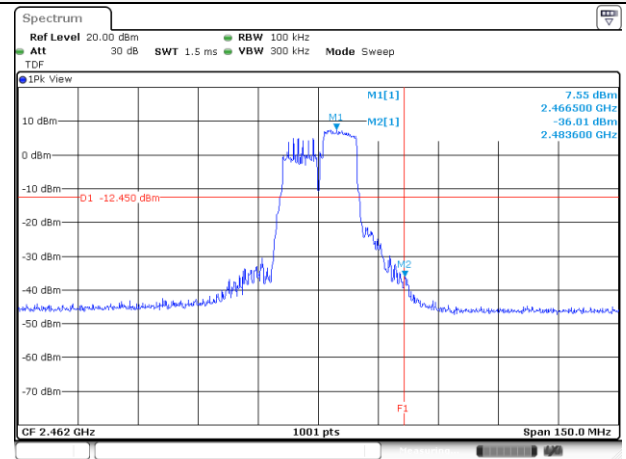


106T / Low : 53, High : 54

Conducted band-edge / 2 412 MHz

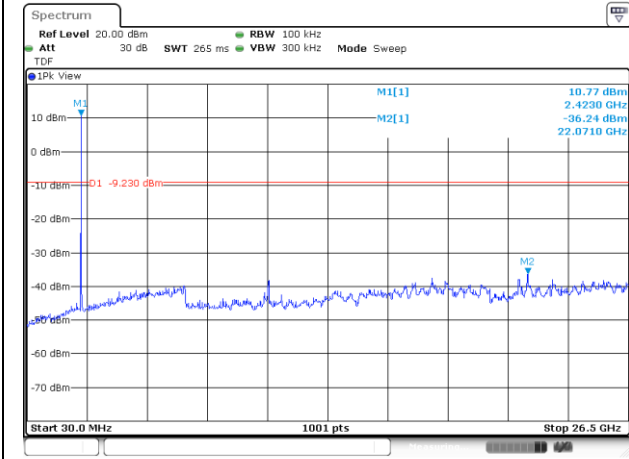


Conducted band-edge / 2 462 MHz

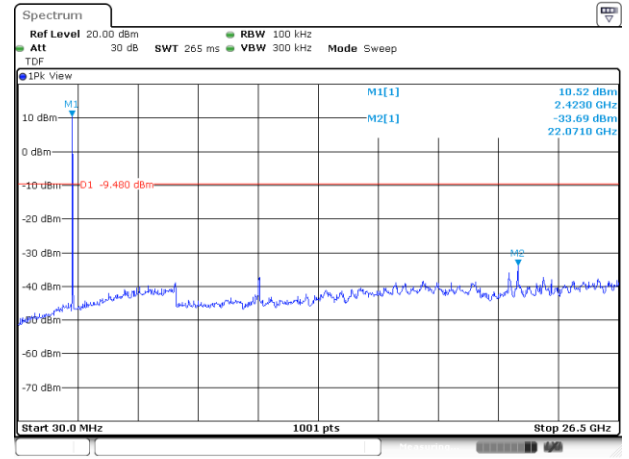


26T / Low : 8, Mid : 0 High : 0

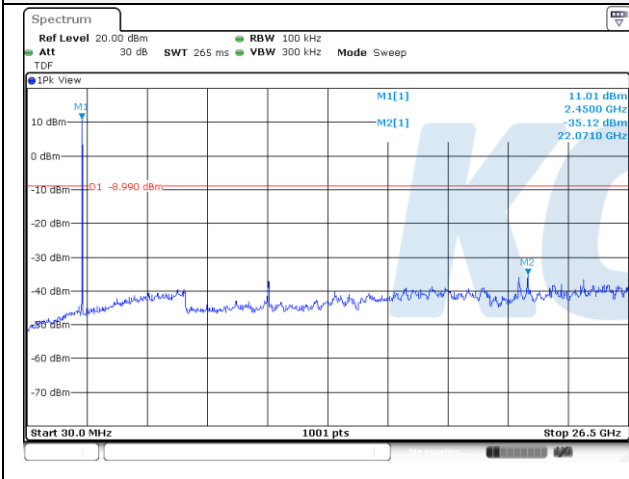
Conducted spurious / 2 412 MHz



Conducted spurious / 2 437 MHz



Conducted spurious / 2 462 MHz



Blank

MIMO

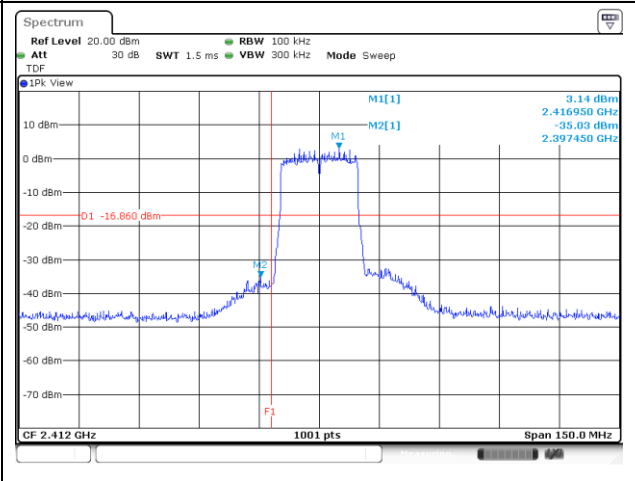
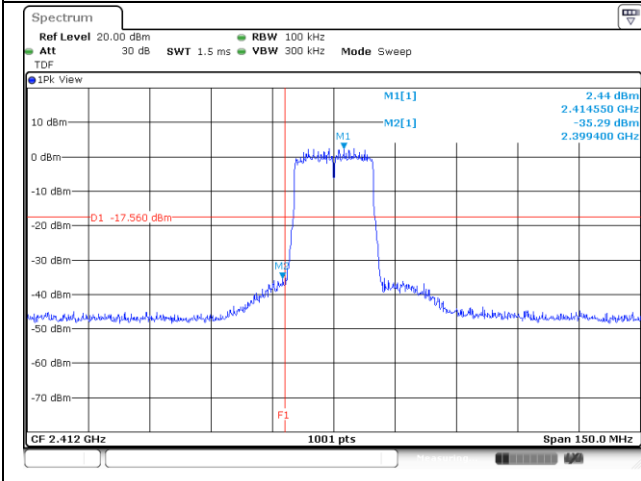
SU

ANT 1

ANT 2

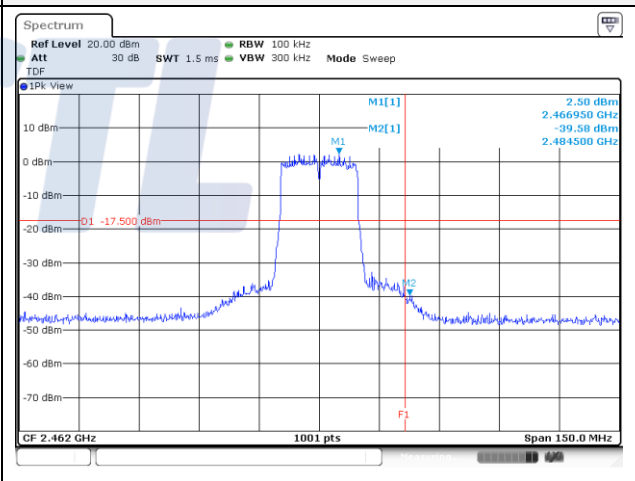
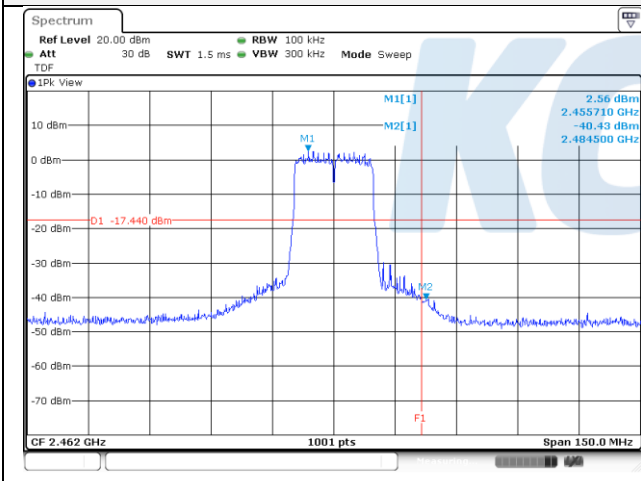
Conducted band-edge / 2 412 MHz

Conducted band-edge / 2 412 MHz



Conducted band-edge / 2 462 MHz

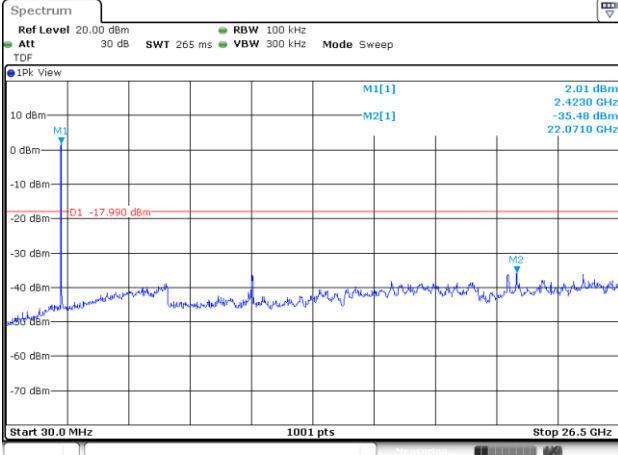
Conducted band-edge / 2 462 MHz



SU

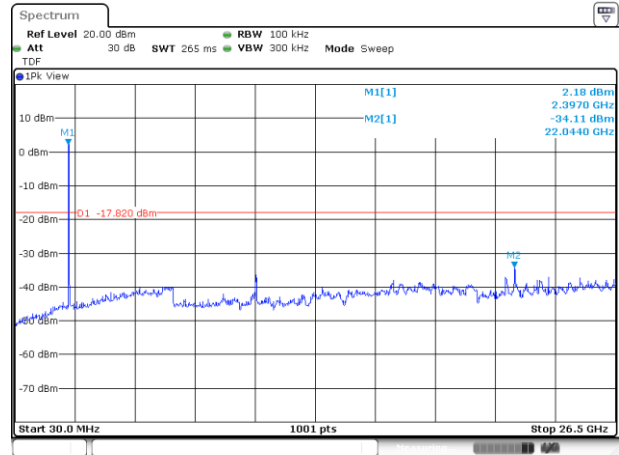
ANT 1

Conducted spurious / 2 412 MHz

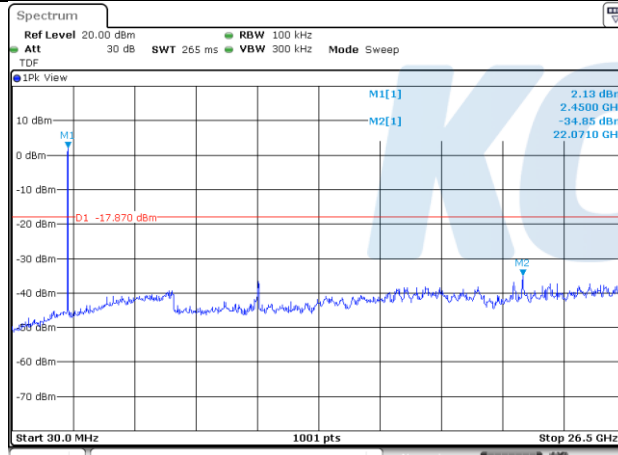


ANT 2

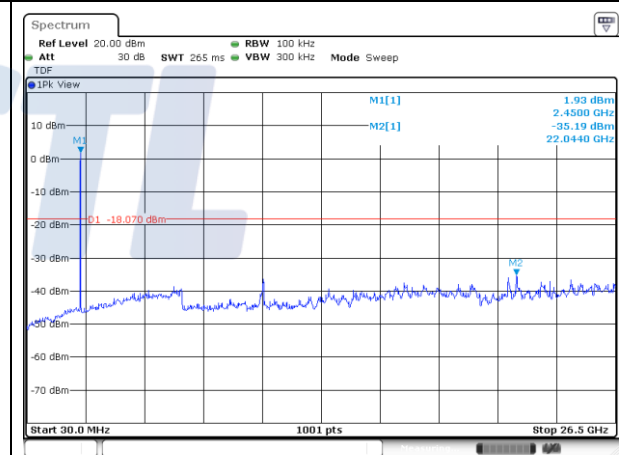
Conducted spurious / 2 412 MHz



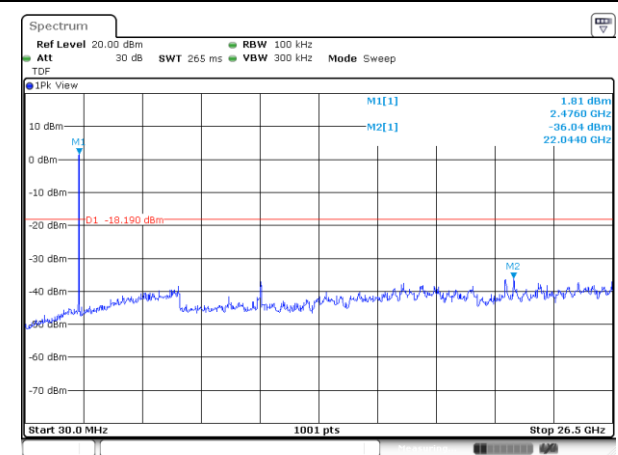
Conducted spurious / 2 437 MHz



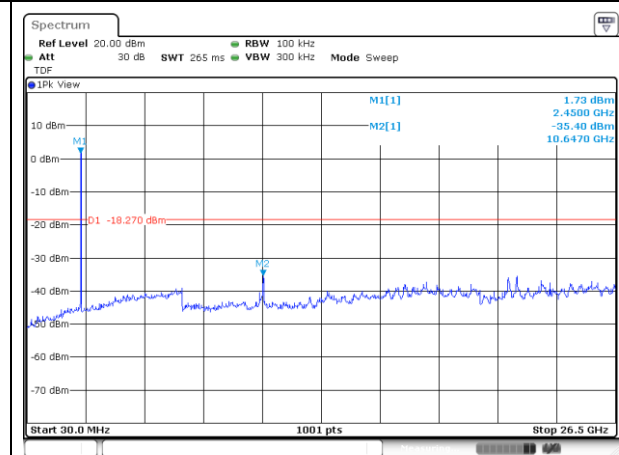
Conducted spurious / 2 437 MHz



Conducted spurious / 2 462 MHz



Conducted spurious / 2 462 MHz



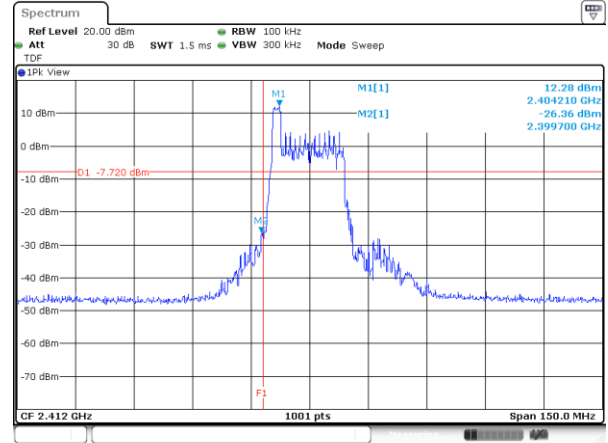
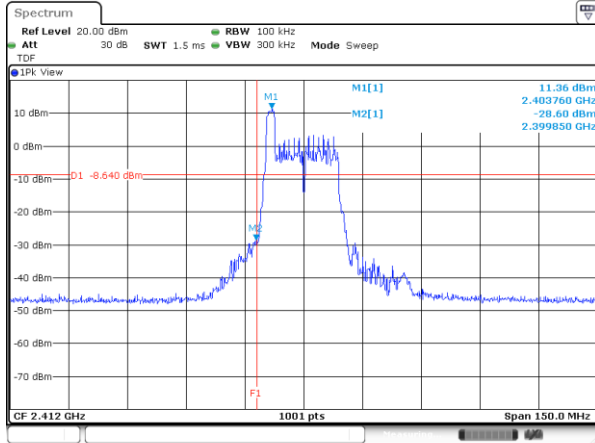
26T / Low : 0, High : 8

ANT 1

ANT 2

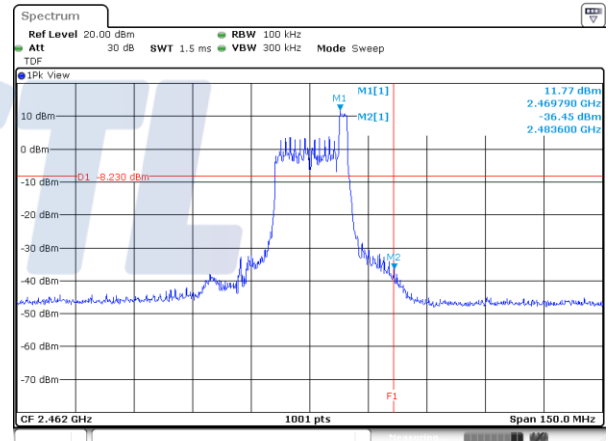
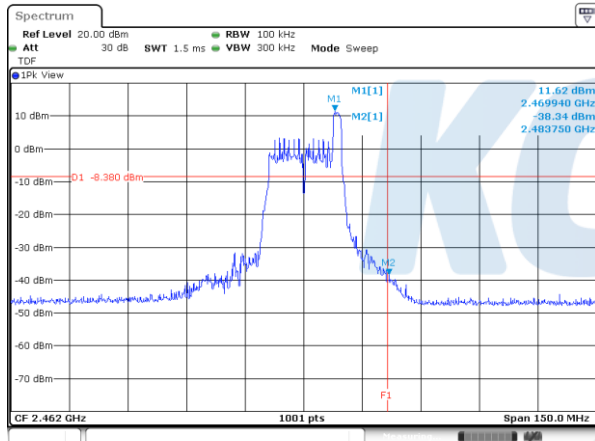
Conducted band-edge / 2 412 MHz

Conducted band-edge / 2 412 MHz



Conducted band-edge / 2 462 MHz

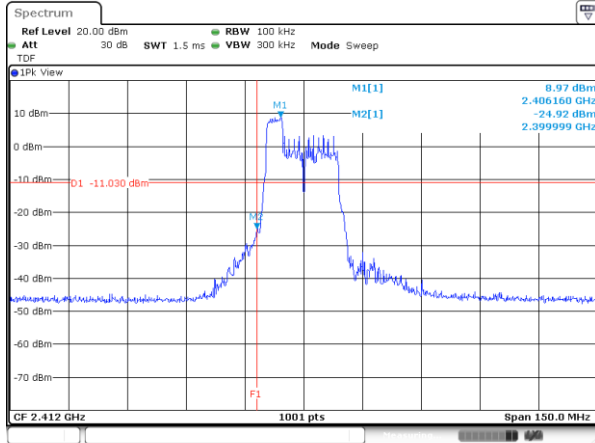
Conducted band-edge / 2 462 MHz



52T / Low : 37, High : 40

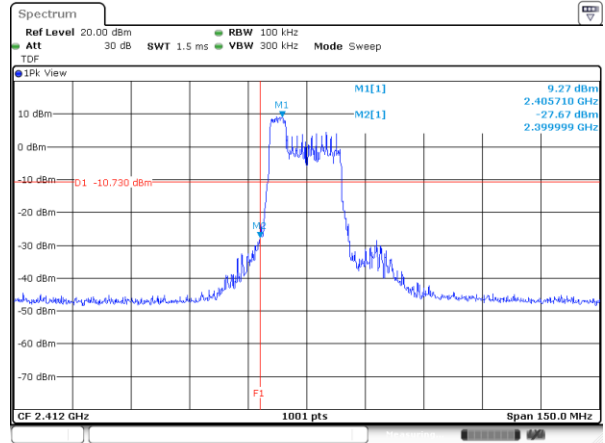
ANT 1

Conducted band-edge / 2 412 MHz

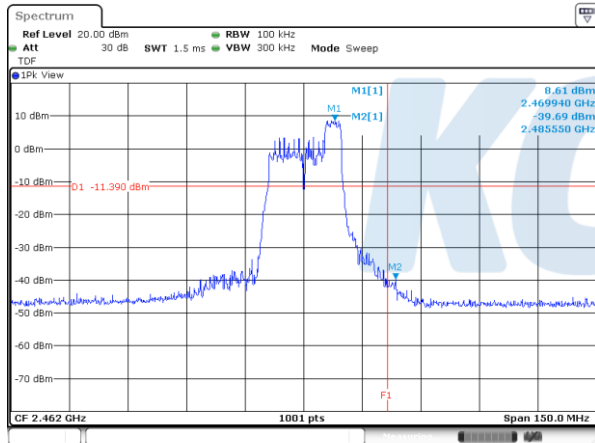


ANT 2

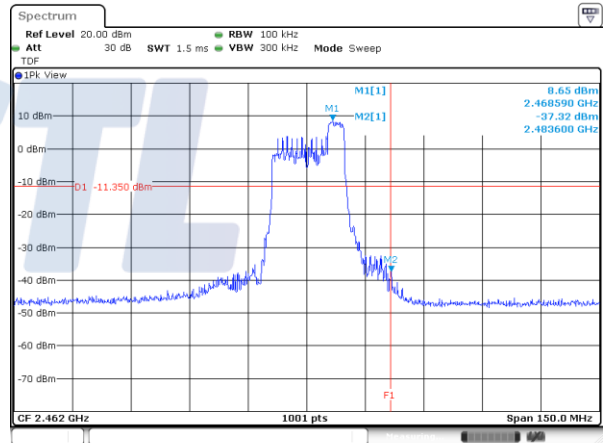
Conducted band-edge / 2 412 MHz



Conducted band-edge / 2 462 MHz



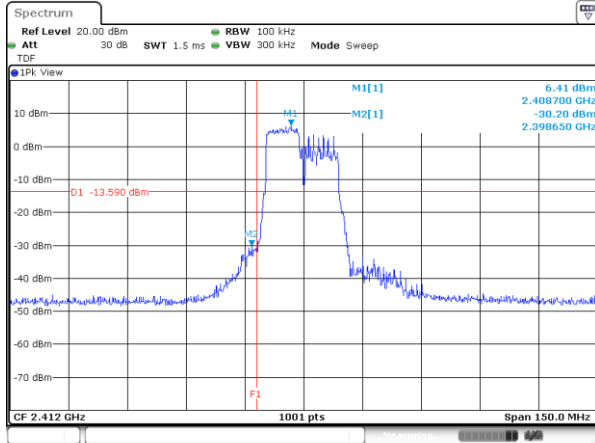
Conducted band-edge / 2 462 MHz



106T / Low : 53, High : 54

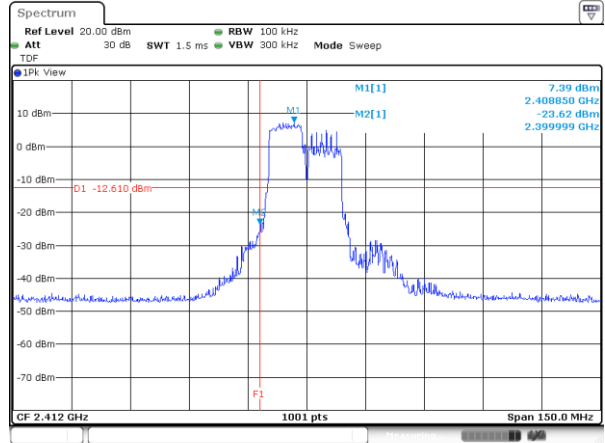
ANT 1

Conducted band-edge / 2 412 MHz

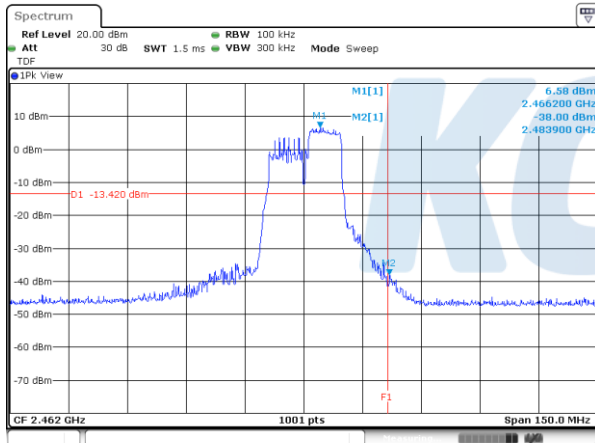


ANT 2

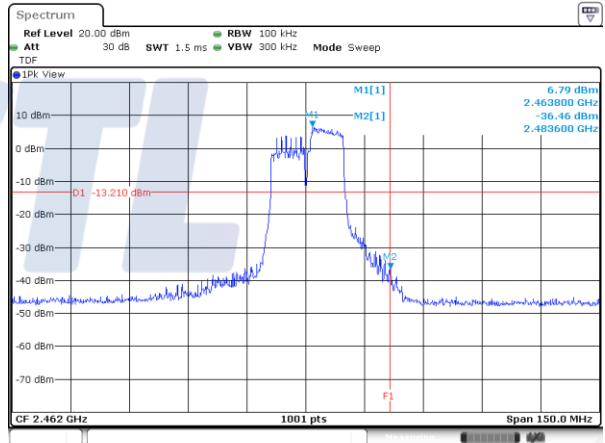
Conducted band-edge / 2 412 MHz



Conducted band-edge / 2 462 MHz



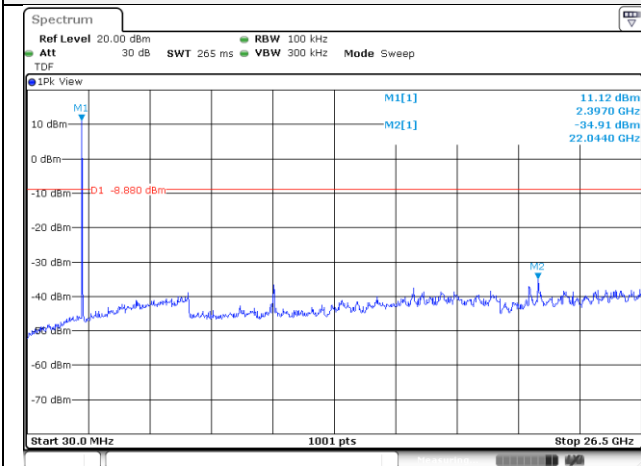
Conducted band-edge / 2 462 MHz



26T / Low : 0, Mid : 4, High : 4

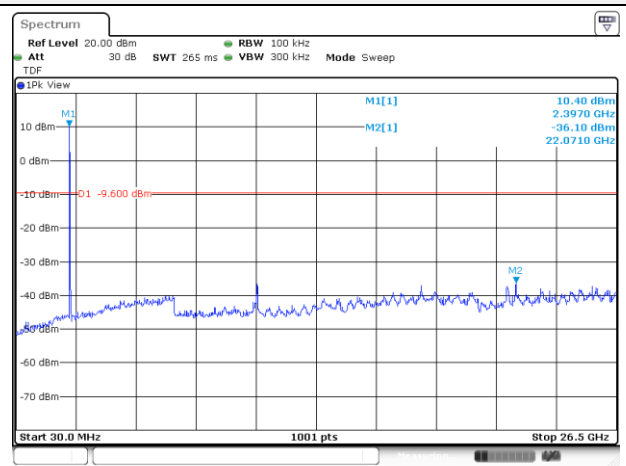
ANT 1

Conducted spurious / 2 412 MHz

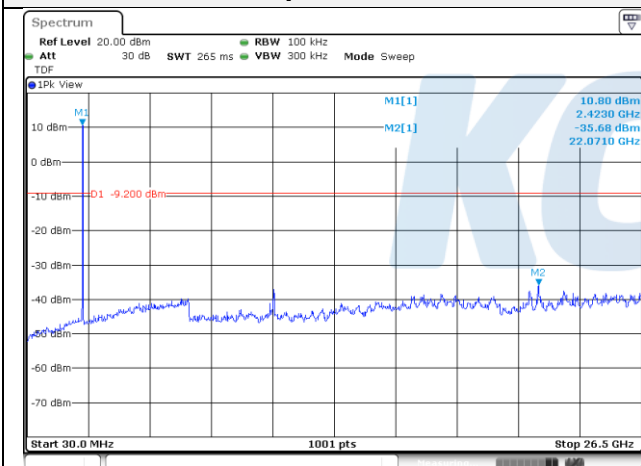


ANT 2

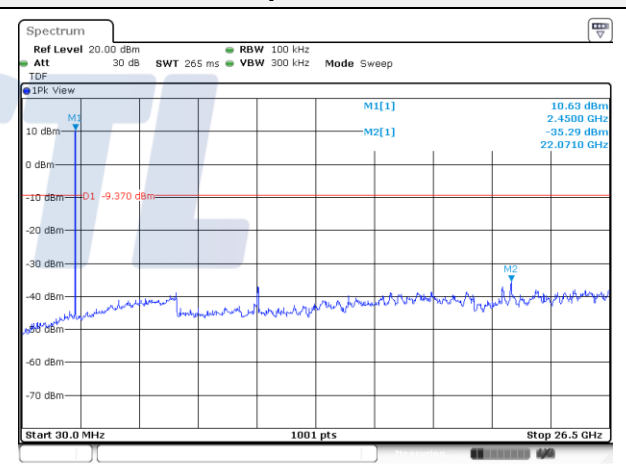
Conducted spurious / 2 412 MHz



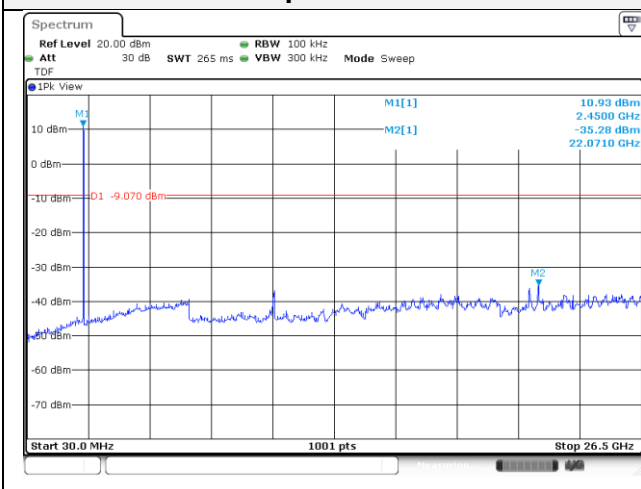
Conducted spurious / 2 437 MHz



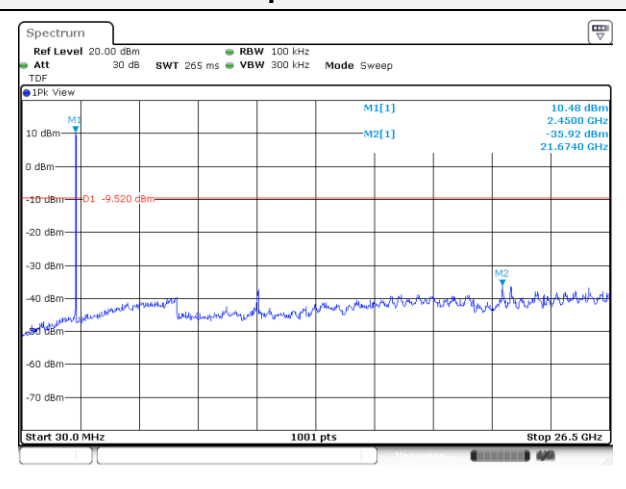
Conducted spurious / 2 437 MHz



Conducted spurious / 2 462 MHz



Conducted spurious / 2 462 MHz



9. Measurement equipment

Equipment Name	Manufacturer	Model No.	Serial No.	Next Cal. Date
Spectrum Analyzer	R&S	FSV30	100806	21.07.29*
Attenuator	Weinschel ENGINEERING	56-10	51395	21.01.22
Signal Generator	R&S	SMB100A	176206	21.01.21
Vector Signal Generator	R&S	SMBV100A	257566	21.07.13
Power Sensor	R&S	NRP-Z81	1137.9009.02- 106224-tg	21.05.25
Attenuator	R&S	DNF Dämpfungsglied 10 dB in N-50 Ohm	31210	21.05.11
DC Power Supply	AGILENT	E3632A	MY40001543	21.05.11
Spectrum Analyzer	R&S	FSV40	100989	21.01.03
EMI TEST RECEIVER	R&S	ESC17	100732	21.03.04
Bi-Log Antenna	SCHWARZBECK	VULB9168	583	22.04.23
Amplifier	SONOMA INSTRUMENT	310N	284608	21.08.20*
COAXIAL FIXED ATTENUATOR	Agilent	8491B-003	2708A18758	21.04.23
Horn antenna	ETS.lindgren	3117	155787	20.10.24
Horn antenna	ETS.lindgren	3116	00086632	21.02.17
Attenuator	API Inmet	40AH2W-10	12	21.05.12
Broadband Pre-Amplifier	SCHWARZBECK	BBV9718	216	21.07.28*
AMPLIFIER	L-3 Narda-MITEQ	AMF-7D-01001800 -22-10P	2031196	21.02.12
AMPLIFIER	L-3 Narda-MITEQ	JS44-18004000-33-8P	2000996	21.01.22
LOOP Antenna	R&S	HFH2-Z2	100355	22.08.21*
Antenna Mast	Innco Systems	MA4640-XP-ET	-	-
Turn Table	Innco Systems	DT2000	79	-
Antenna Mast	Innco Systems	MA4000-EP	303	-
Turn Table	Innco Systems	DT2000	79	-
High pass Filter	WT	WT-A1698-HS	WT160411001	21.05.11
TWO-LINE V - NETWORK	R&S	ENV216	101358	20.10.02
EMI TEST RECEIVER	R&S	ESCI	100001	21.08.20*

* Tests related to this equipment were progressed after the calibration was completed.

End of test report