

5.1.5 TEST PROTOCOL – LOCATION NÜRNBERG

Ambient temperature: 19 °C
 Air Pressure: 986 hPa
 Humidity: 50 %

WLAN a-Mode; 20 MHz; 6 Mbit/s				FCC		ISED	
U-NII-Subband	Ch. No.	TX Freq. [MHz]	EIRP [dBm]	FCC EIRP Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]
1	36	5180	7.5	30.0	22.5	22.0	14.6
	40	5200	7.5	30.0	22.5	22.0	14.6
	48	5240	6.4	30.0	23.6	22.0	15.6
3	149	5745	5.2	36.0	30.8	36.0	30.8
	157	5785	5.1	36.0	30.9	36.0	30.9
	165	5825	5.8	36.0	30.2	36.0	30.2

WLAN n-Mode; 20 MHz; MCS 0; SISO				FCC		ISED	
U-NII-Subband	Ch. No.	TX Freq. [MHz]	EIRP [dBm]	FCC EIRP Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]
1	36	5180	7.3	30.0	22.7	22.8	15.5
	40	5200	7.3	30.0	22.7	22.8	15.5
	48	5240	6.2	30.0	23.8	22.8	16.6
3	149	5745	4.6	36.0	31.4	36.0	31.4
	157	5785	4.7	36.0	31.3	36.0	31.3
	165	5825	5.3	36.0	30.7	36.0	30.7

WLAN n-Mode; 40 MHz; MCS 0; SISO				FCC		ISED	
U-NII-Subband	Ch. No.	TX Freq. [MHz]	EIRP [dBm]	FCC EIRP Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]
1	38	5190	6.5	30.0	23.5	22.8	16.3
	46	5230	5.6	30.0	24.5	22.8	17.2
3	151	5755	5.8	36.0	30.2	36.0	30.2
	159	5795	4.6	36.0	31.4	36.0	31.4

WLAN ac-Mode; 20 MHz; MCS 0; SISO				FCC		ISED	
U-NII-Subband	Ch. No.	TX Freq. [MHz]	EIRP [dBm]	FCC EIRP Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]
1	36	5180	7.2	30.0	22.8	22.8	15.6
	40	5200	7.2	30.0	22.8	22.8	15.6
	48	5240	6.4	30.0	23.7	22.8	16.4
3	149	5745	4.6	36.0	31.4	36.0	31.4
	157	5785	4.6	36.0	31.4	36.0	31.4
	165	5825	5.3	36.0	30.7	36.0	30.7

WLAN ac-Mode; 40 MHz; MCS 0; SISO				FCC		ISED	
U-NII-Subband	Ch. No.	TX Freq. [MHz]	EIRP [dBm]	FCC EIRP Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]
1	38	5190	6.4	30.0	23.6	22.8	16.3
	46	5230	5.5	30.0	24.5	22.8	17.3
3	151	5755	5.8	36.0	30.2	36.0	30.2
	159	5795	4.3	36.0	31.7	36.0	31.7

WLAN ac-Mode; 80 MHz; MCS 0; SISO				FCC		ISED	
U-NII-Subband	Ch. No.	TX Freq. [MHz]	EIRP [dBm]	FCC EIRP Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]
1	42	5210	2.8	30.0	27.2	22.8	20.0
3	155	5775	3.0	36.0	33.0	36.0	33.0

WLAN ax-Mode; 20 MHz; MCS 0; SISO				FCC		ISED	
U-NII-Subband	Ch. No.	TX Freq. [MHz]	EIRP [dBm]	FCC EIRP Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]
1	36	5180	6.9	30.0	23.1	22.8	15.9
	40	5200	7.0	30.0	23.0	22.8	15.8
	48	5240	5.4	30.0	24.6	22.8	17.4
3	149	5745	3.9	36.0	32.1	36.0	32.1
	157	5785	4.0	36.0	32.0	36.0	32.0
	165	5825	4.6	36.0	31.4	36.0	31.4

WLAN ax-Mode; 40 MHz; MCS 0; SISO				FCC		ISED	
U-NII-Subband	Ch. No.	TX Freq. [MHz]	EIRP [dBm]	FCC EIRP Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]
1	38	5190	5.1	30.0	24.9	22.8	17.7
	46	5230	4.8	30.0	25.2	22.8	18.0
3	151	5755	5.1	36.0	30.9	36.0	30.9
	159	5795	3.8	36.0	32.2	36.0	32.2

WLAN ax-Mode; 80 MHz; MCS 0; SISO				FCC		ISED	
U-NII-Subband	Ch. No.	TX Freq. [MHz]	EIRP [dBm]	FCC EIRP Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]
1	42	5210	2.4	30.0	27.6	22.8	20.4
3	155	5775	1.9	36.0	34.1	36.0	34.1

COMMENT:

- The values of the 99% OBW – to calculate the ISED EIRP limit in subband 1 - have been taken from the original report of the EUT with the reference: MDE_SIEM_1911_FCC_02_REV01
- The spectrum analyser transducer "TDF TS DUT CAL" contains the attenuation of the measurement cable
- The "Reference Level Offset" in the analyser contains the correction of the far-field attenuation and the gain of the receiving antenna.
 Example calculation:
 FF-ATT: 56.3 dB (5180 MHz@3.0m), Antenna Gain: 10.0 dB
 Reference Level Offset: 56.3 dB -10.0 dB = 46.3 dB

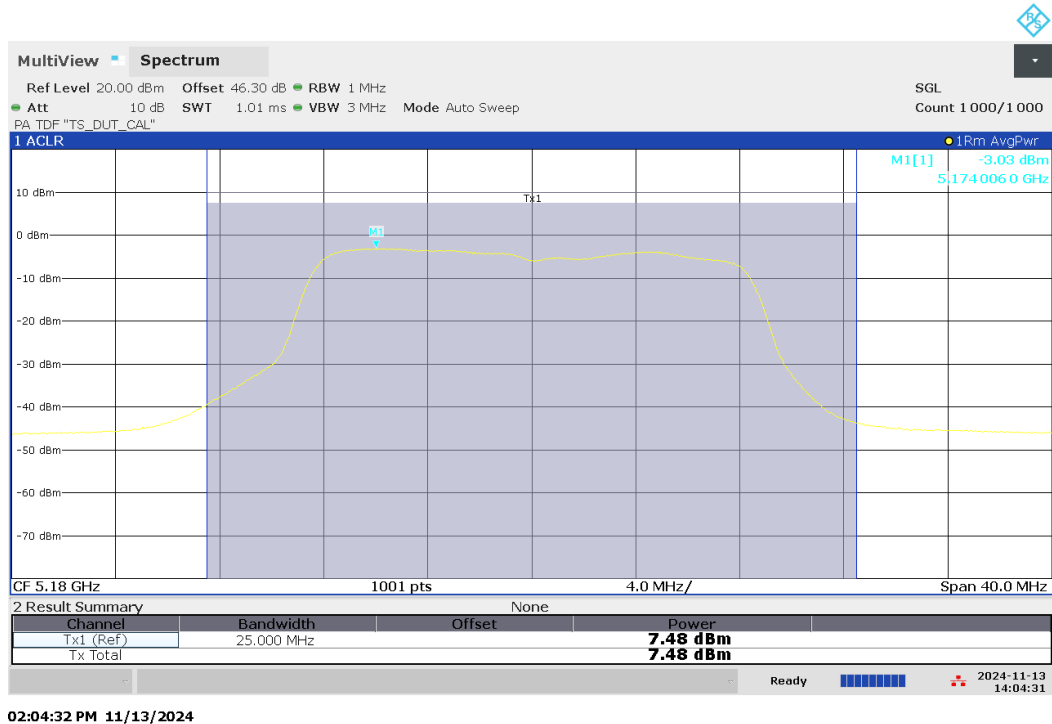
5.1.5.1 RESULTS OF WORST-CASE SEARCH

$D_{\text{STABLE DECREASE}} = 20.0 \text{ m}$

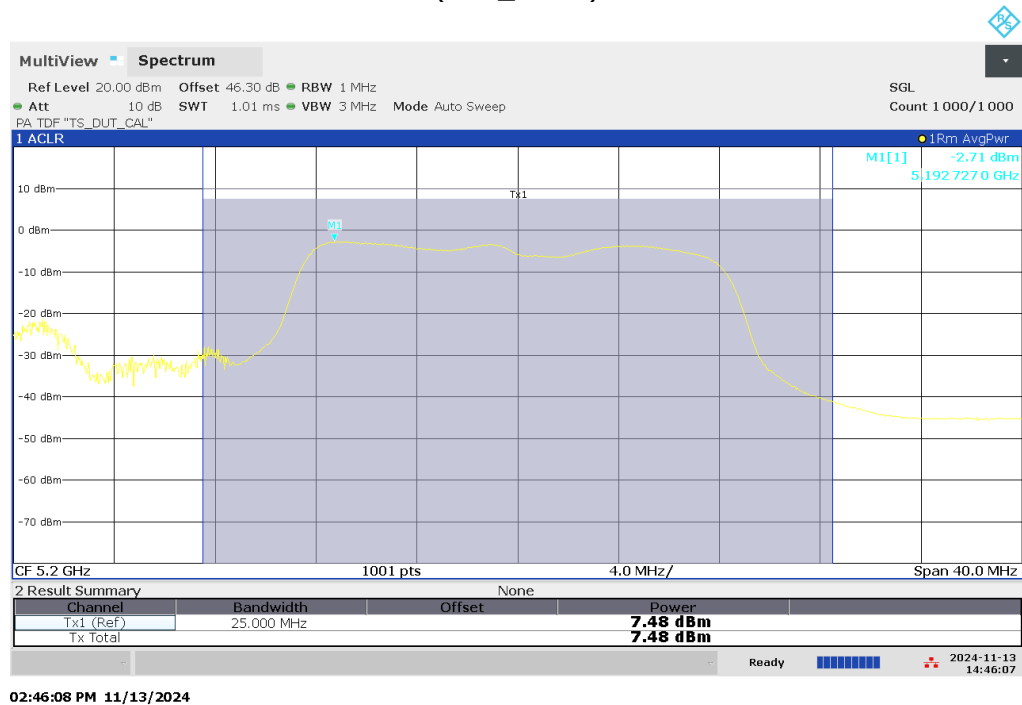
Channel Bandwidth [MHz]	Center Frequency [MHz]	Measurement Distance [m]	Measurement height [m]	Polarisation of receiving antenna	Worst-Case distance from feeding point [m]
20	5180	3.0	1.48	horizontal	11.59
	5200	3.0	1.48	horizontal	11.56
	5240	3.0	1.48	horizontal	11.62
	5745	3.0	1.48	horizontal	7.97
	5785	3.0	1.48	horizontal	7.98
	5825	3.0	1.48	horizontal	9.40
40	5190	3.0	1.48	horizontal	11.57
	5230	3.0	1.48	horizontal	11.64
	5755	3.0	1.48	horizontal	10.55
	5795	3.0	1.48	horizontal	10.80
80	5210	3.0	1.48	horizontal	11.67
	5775	3.0	1.48	horizontal	10.70

5.1.5.2 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

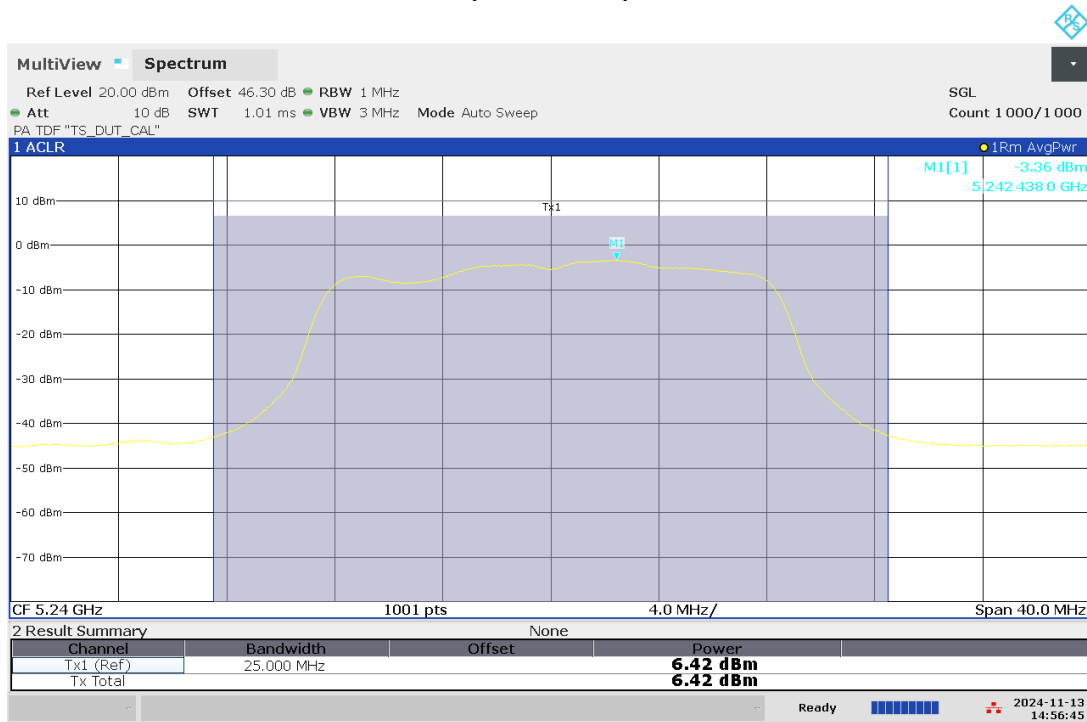
Radio Technology = WLAN a 20 MHz, Operating Frequency = low, Subband = U-NII-1 (S03_AO04)



Radio Technology = WLAN a 20 MHz, Operating Frequency = mid, Subband = U-NII-1 (S03_AO04)



Radio Technology = WLAN a 20 MHz, Operating Frequency = high, Subband = U-NII-1
(S03_AO04)



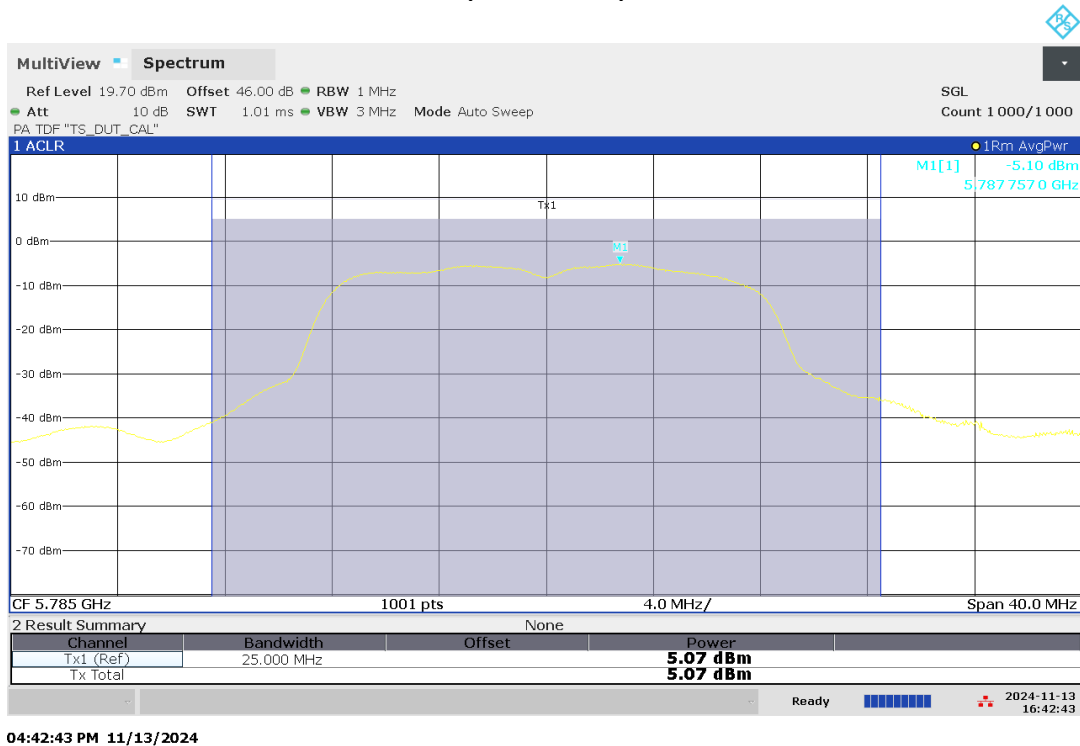
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Radio Technology = WLAN a 20 MHz, Operating Frequency = low, Subband = U-NII-3
(S03_AO04)

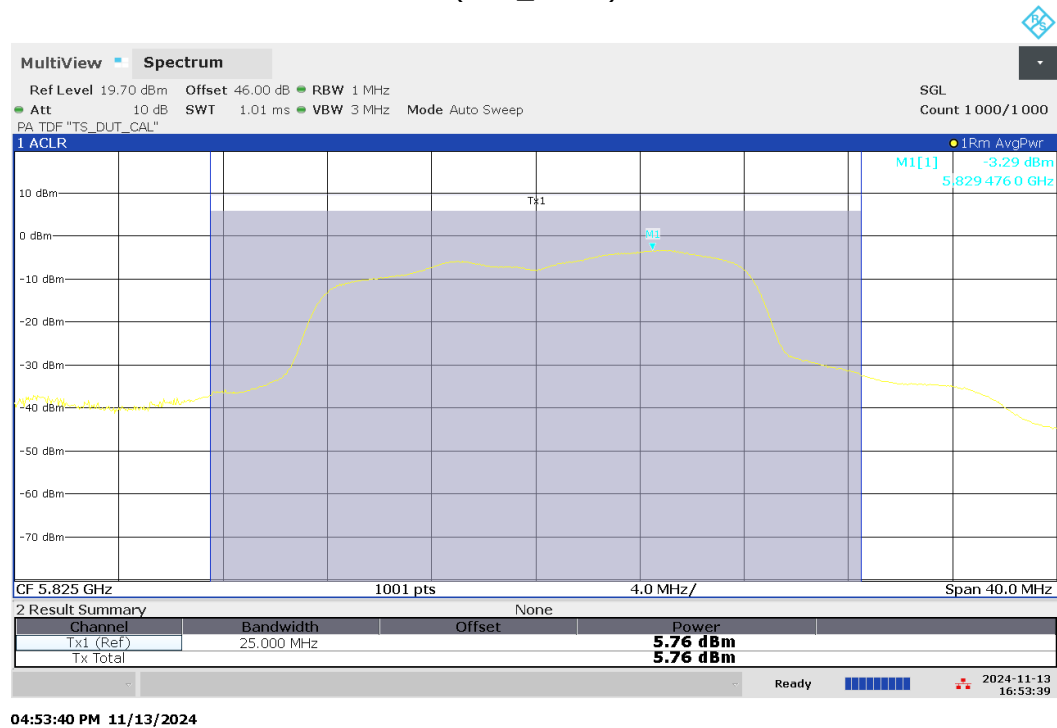


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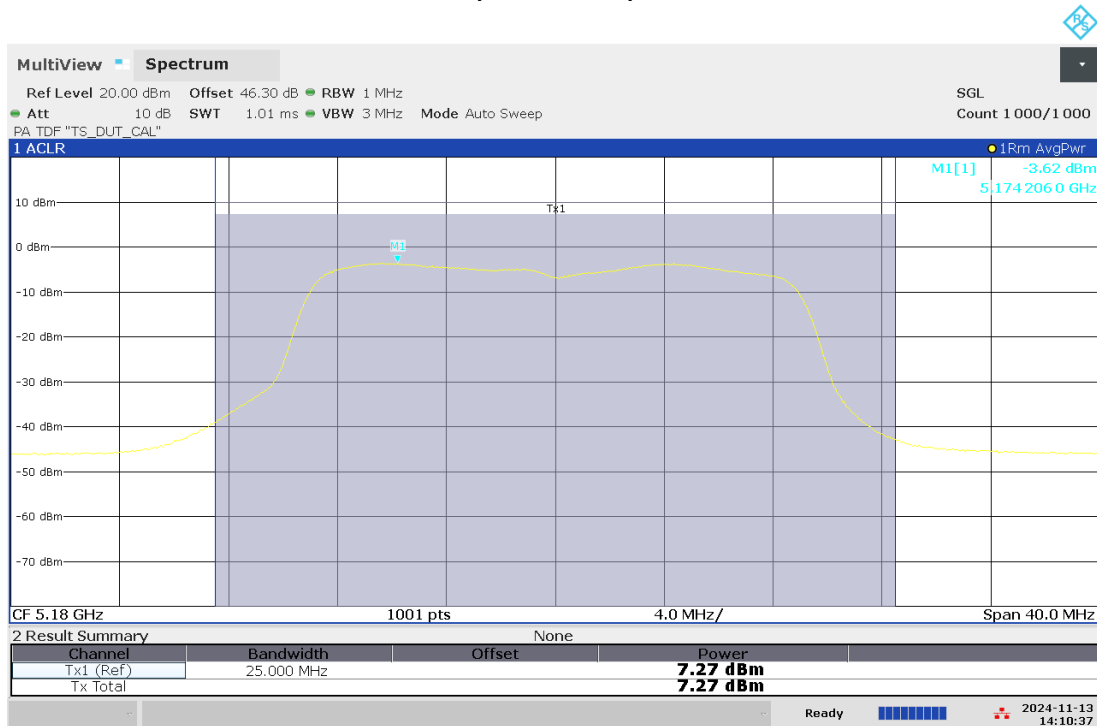
Radio Technology = WLAN a 20 MHz, Operating Frequency = mid, Subband = U-NII-3
(S03_AO04)



Radio Technology = WLAN a 20 MHz, Operating Frequency = high, Subband = U-NII-3
(S03_AO04)

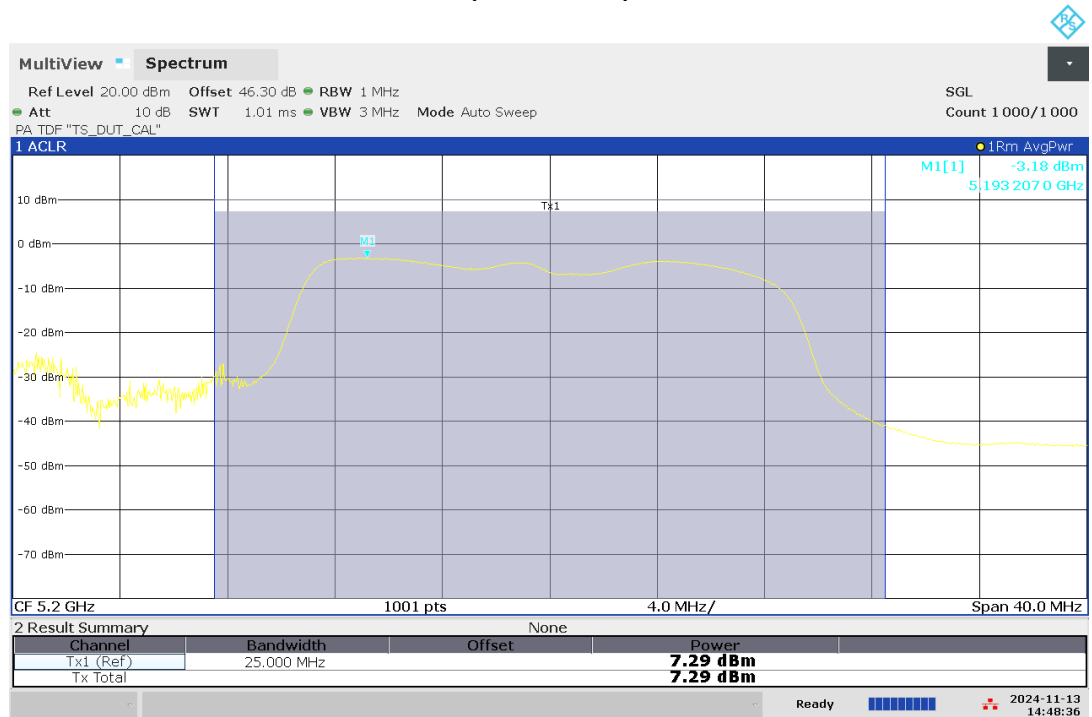


Radio Technology = WLAN n 20 MHz, Operating Frequency = low, Subband = U-NII-1
(S03_AO04)



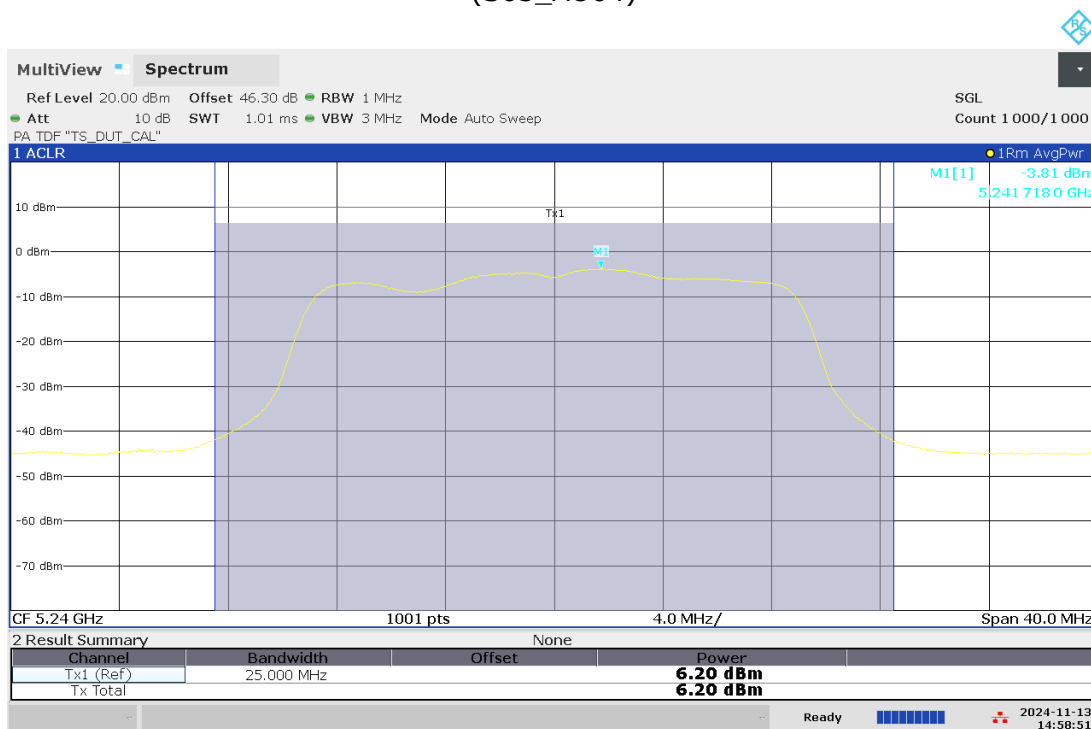
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Radio Technology = WLAN n 20 MHz, Operating Frequency = mid, Subband = U-NII-1
(S03_AO04)



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Radio Technology = WLAN n 20 MHz, Operating Frequency = high, Subband = U-NII-1
(S03_AO04)



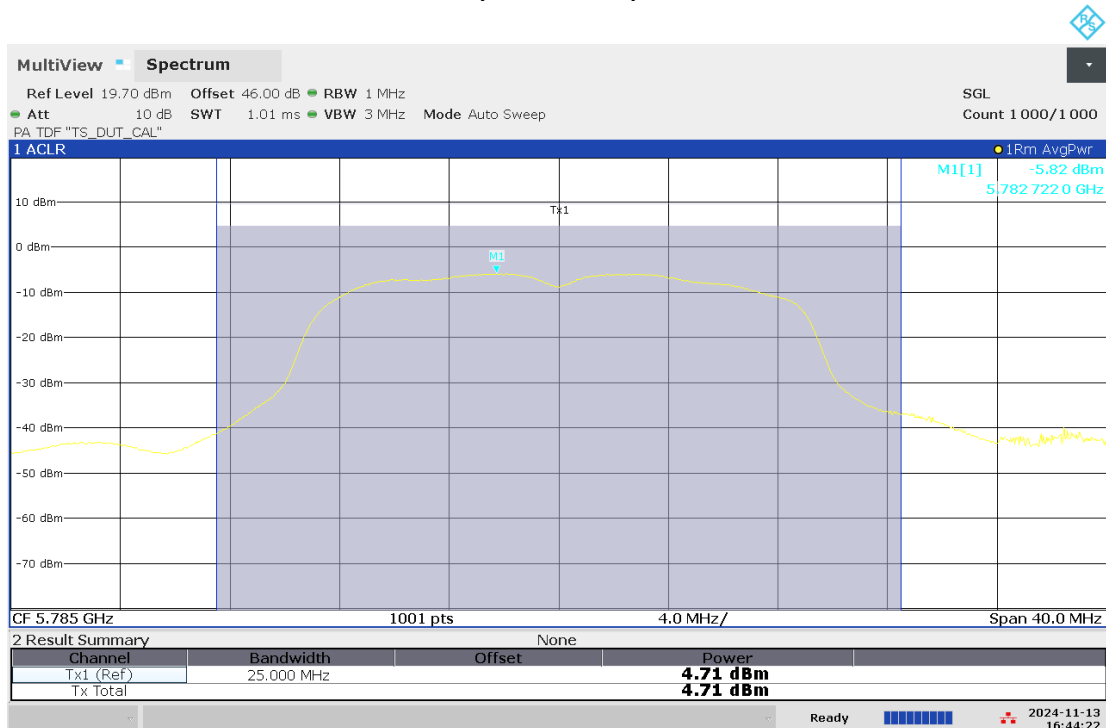
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Radio Technology = WLAN n 20 MHz, Operating Frequency = low, Subband = U-NII-3
(S03_AO04)



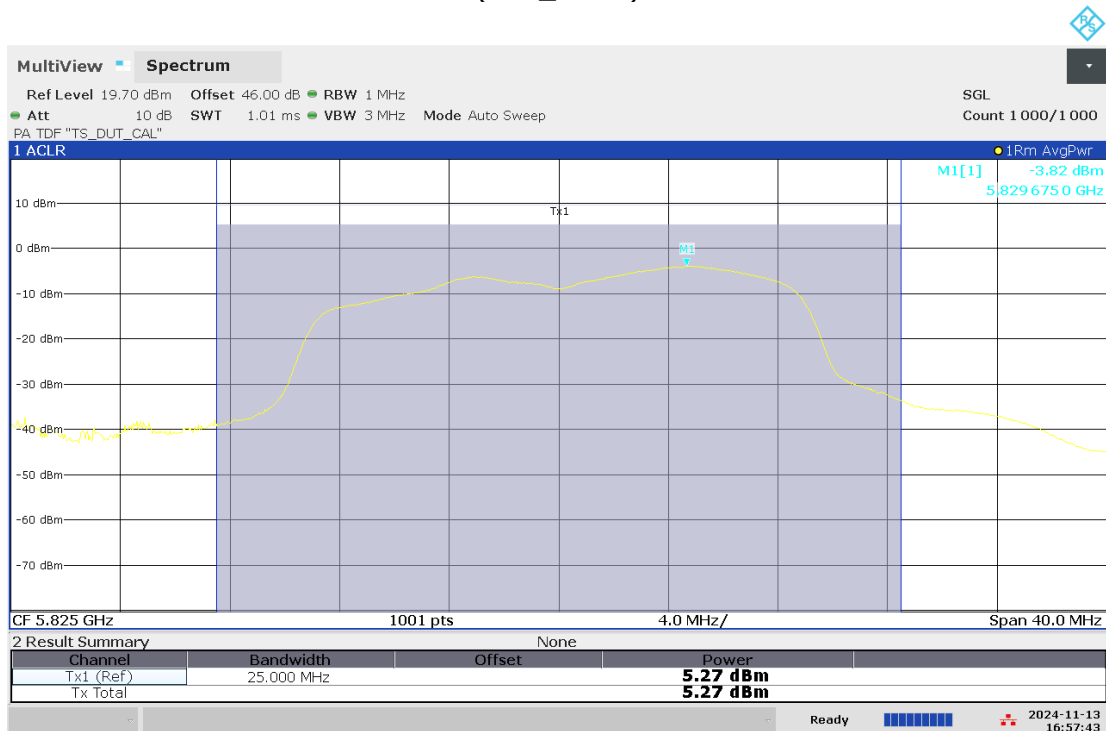
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Radio Technology = WLAN n 20 MHz, Operating Frequency = mid, Subband = U-NII-3
(S03_AO04)



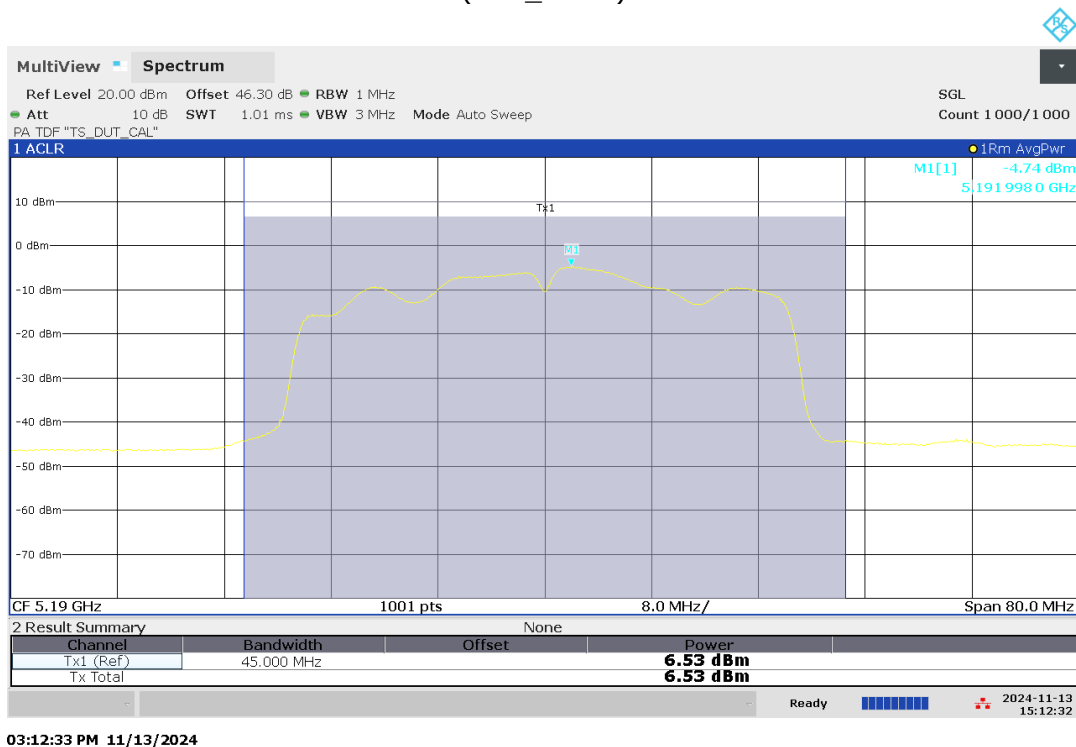
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Radio Technology = WLAN n 20 MHz, Operating Frequency = high, Subband = U-NII-3
(S03_AO04)

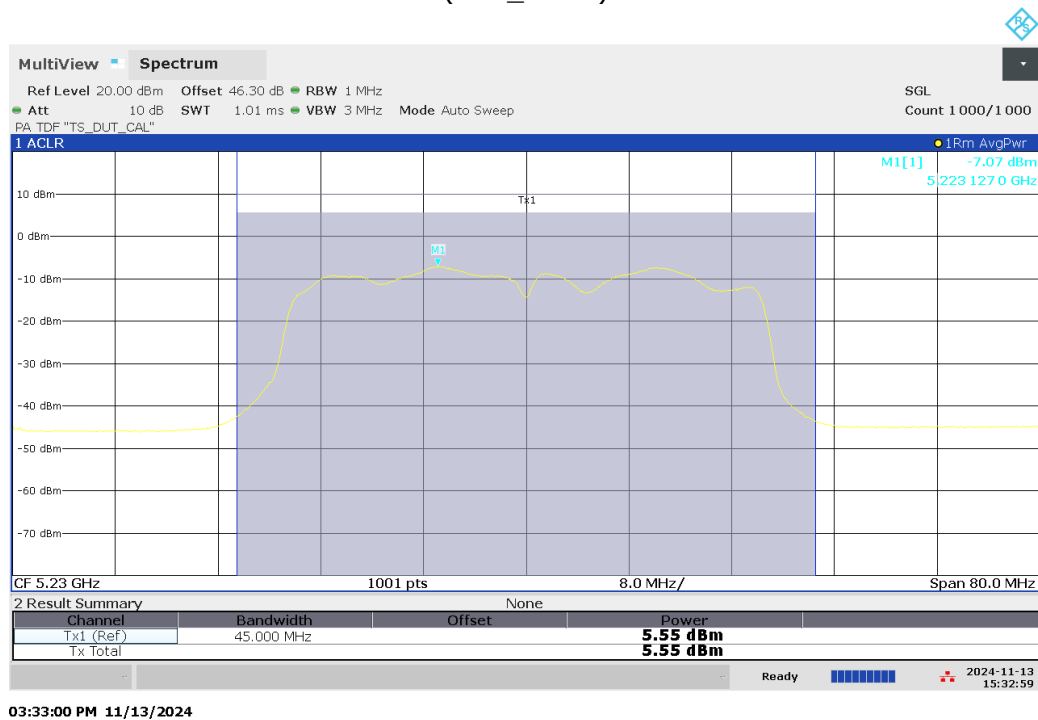


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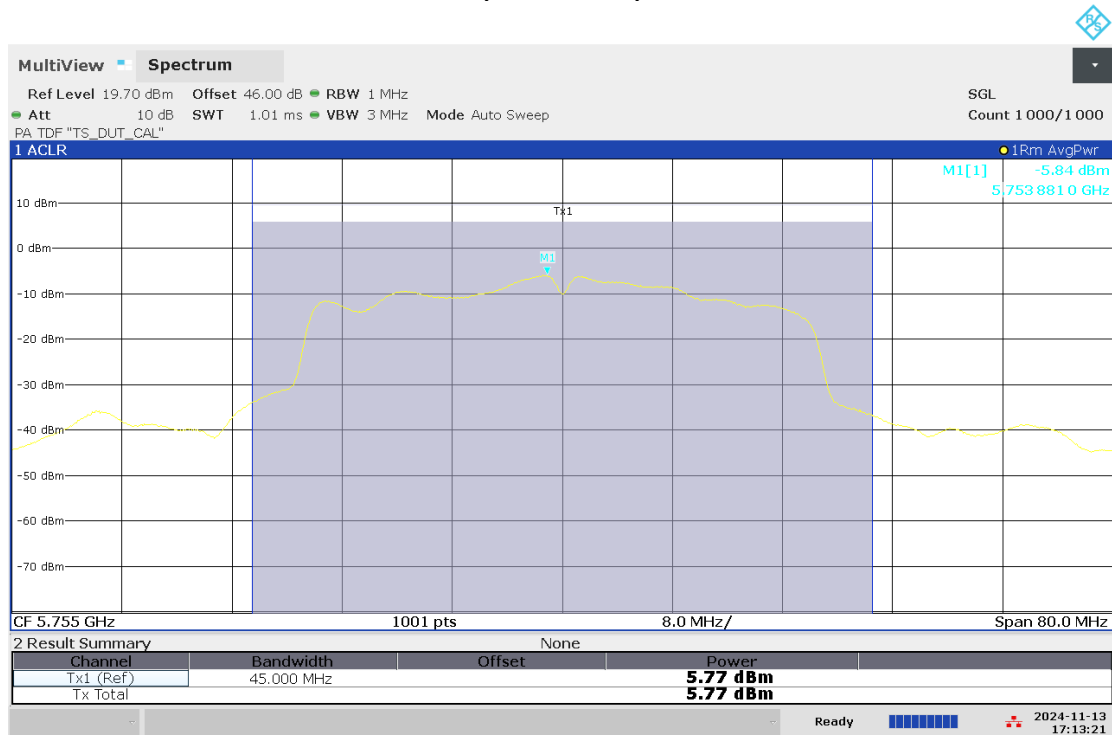
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(S03_AO04)



Radio Technology = WLAN n 40 MHz, Operating Frequency = high, Subband = U-NII-1
(S03_AO04)

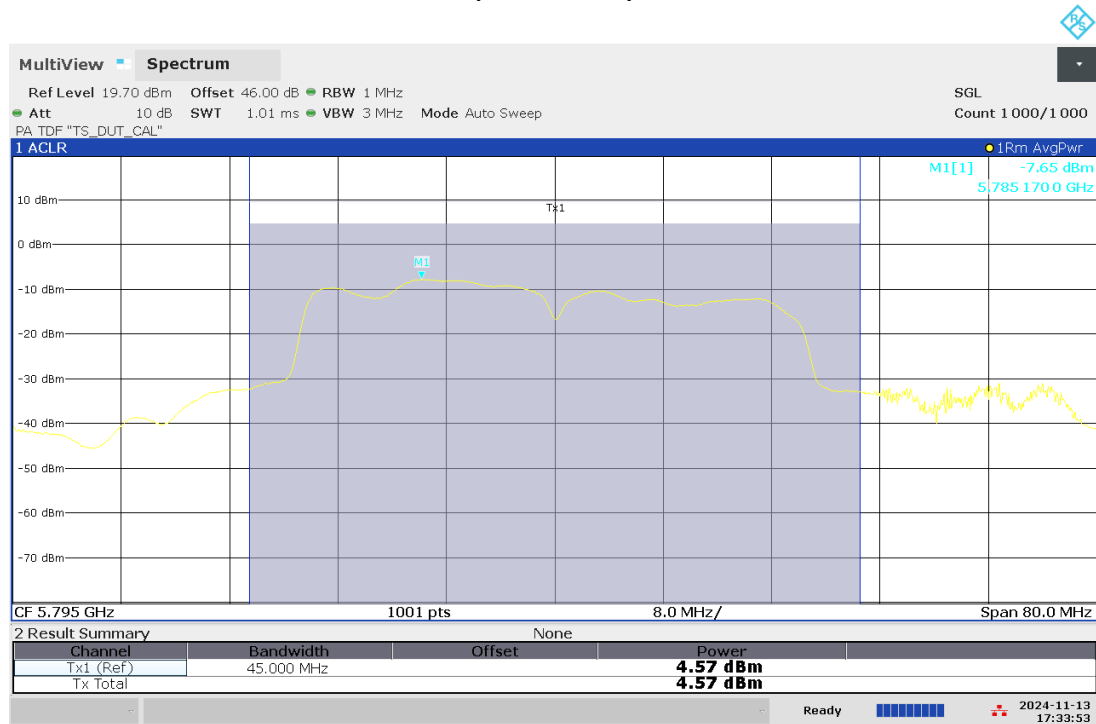


Radio Technology = WLAN n 40 MHz, Operating Frequency = low, Subband = U-NII-3
(S03_AO04)



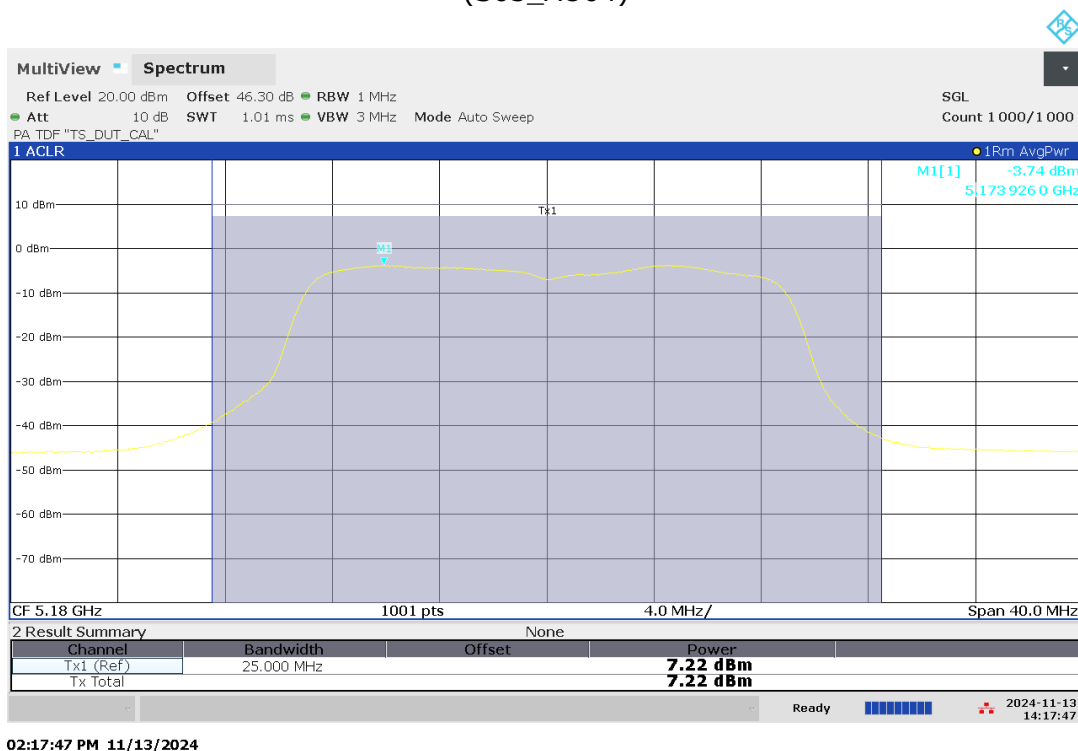
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Radio Technology = WLAN n 40 MHz, Operating Frequency = high, Subband = U-NII-3
(S03_AO04)

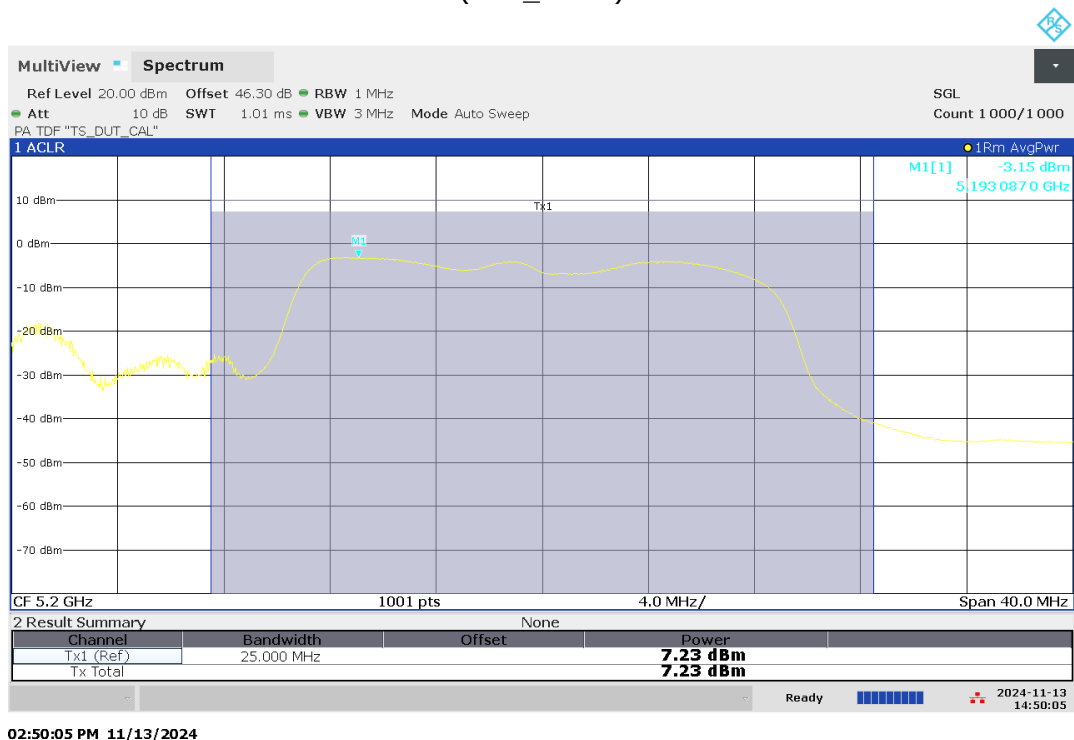


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Radio Technology = WLAN ac 20 MHz, Operating Frequency = low, Subband = U-NII-1
(S03_AO04)



Radio Technology = WLAN ac 20 MHz, Operating Frequency = mid, Subband = U-NII-1
(S03_AO04)

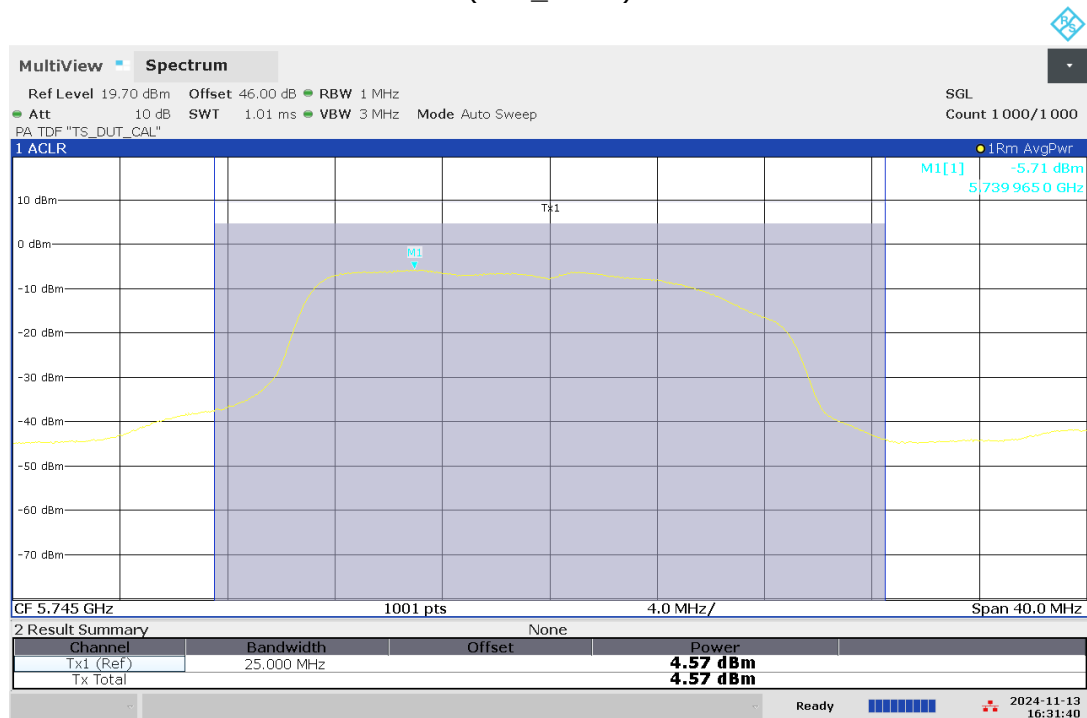


Radio Technology = WLAN ac 20 MHz, Operating Frequency = high, Subband = U-NII-1
(S03_A004)



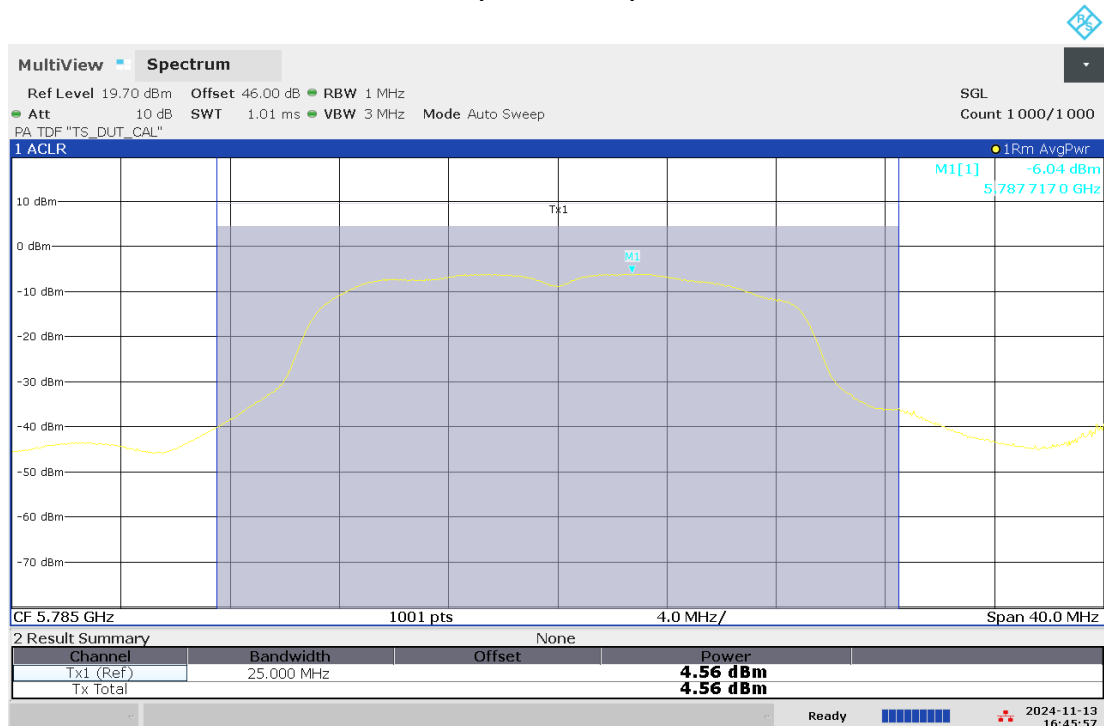
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Radio Technology = WLAN ac 20 MHz, Operating Frequency = low, Subband = U-NII-3
(S03_A004)



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Radio Technology = WLAN ac 20 MHz, Operating Frequency = mid, Subband = U-NII-3
(S03_AO04)



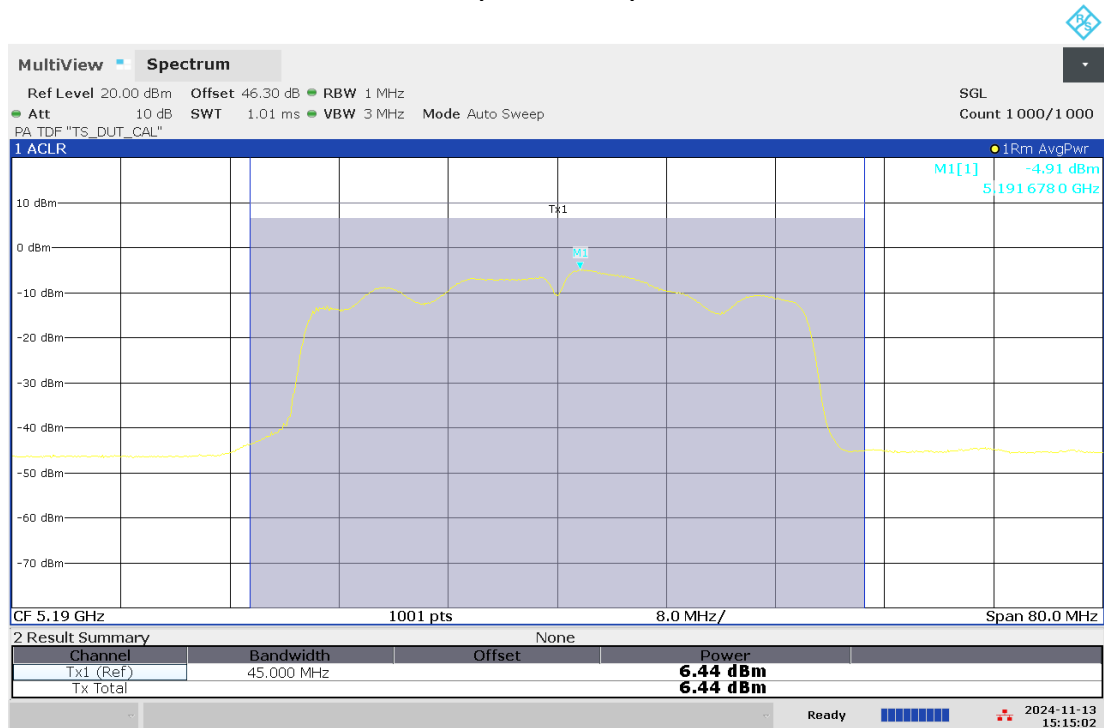
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Radio Technology = WLAN ac 20 MHz, Operating Frequency = high, Subband = U-NII-3
(S03_AO04)



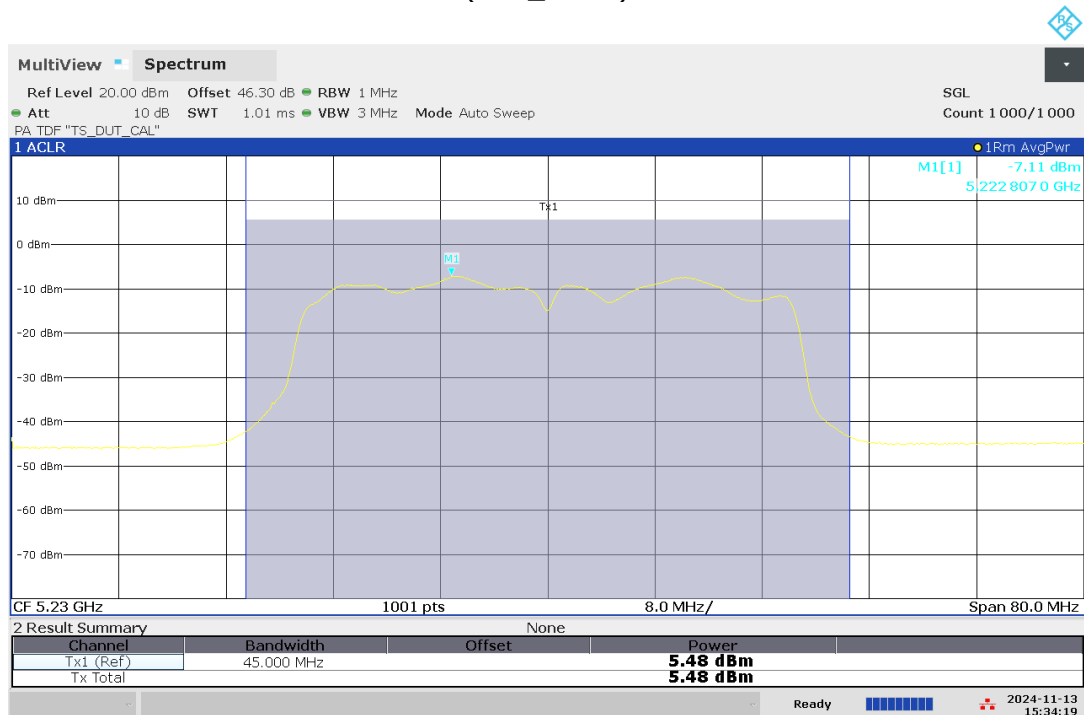
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Radio Technology = WLAN ac 40 MHz, Operating Frequency = low, Subband = U-NII-1
(S03_AO04)



03:15:03 PM 11/13/2024

Radio Technology = WLAN ac 40 MHz, Operating Frequency = high, Subband = U-NII-1
(S03_AO04)



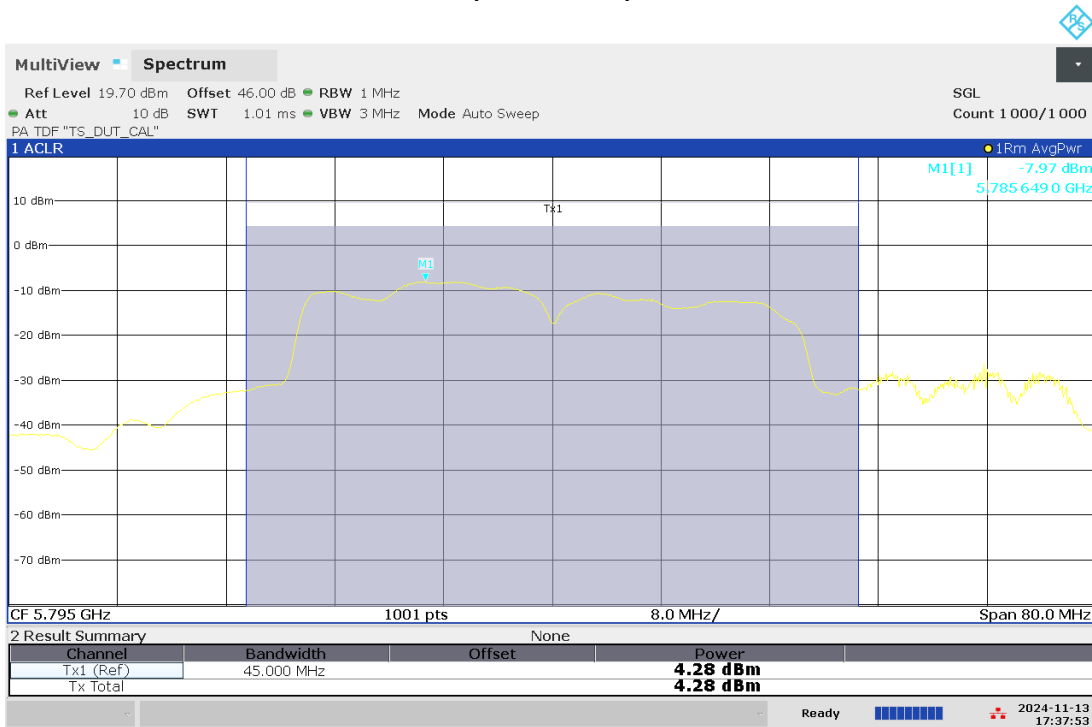
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Radio Technology = WLAN ac 40 MHz, Operating Frequency = low, Subband = U-NII-3
(S03_AO04)



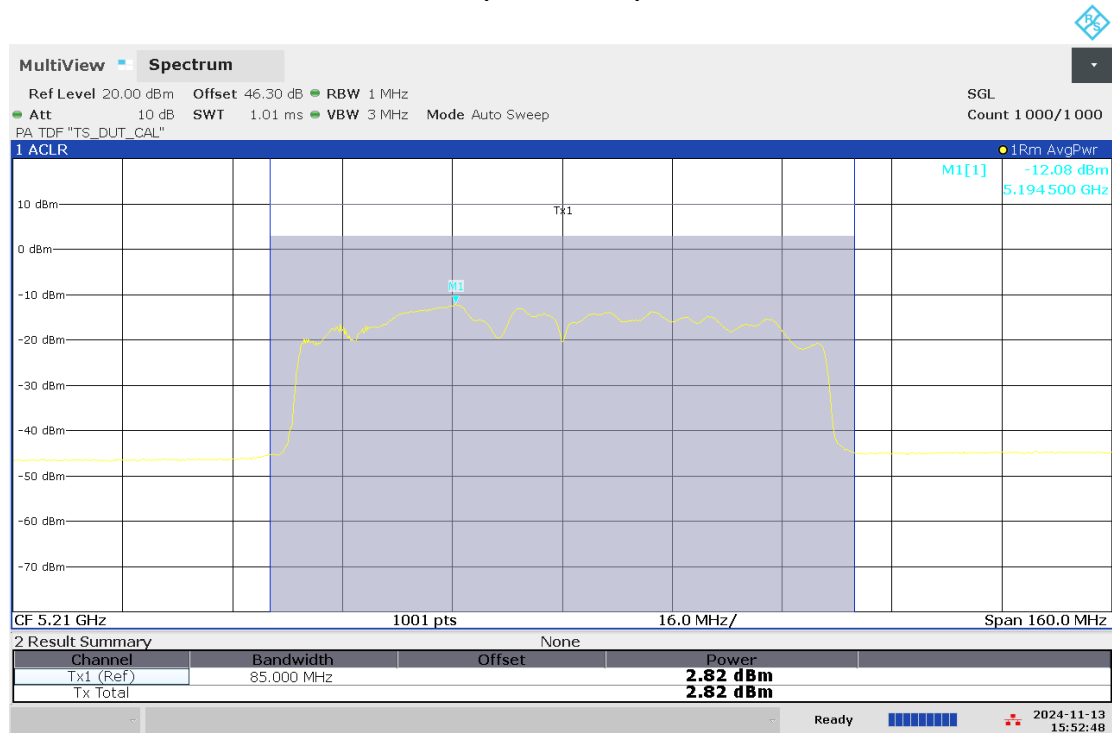
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Radio Technology = WLAN ac 40 MHz, Operating Frequency = high, Subband = U-NII-3
(S03_AO04)



05:37:53 PM 11/13/2024

Radio Technology = WLAN ac 80 MHz, Operating Frequency = mid, Subband = U-NII-1
(S03_AO04)



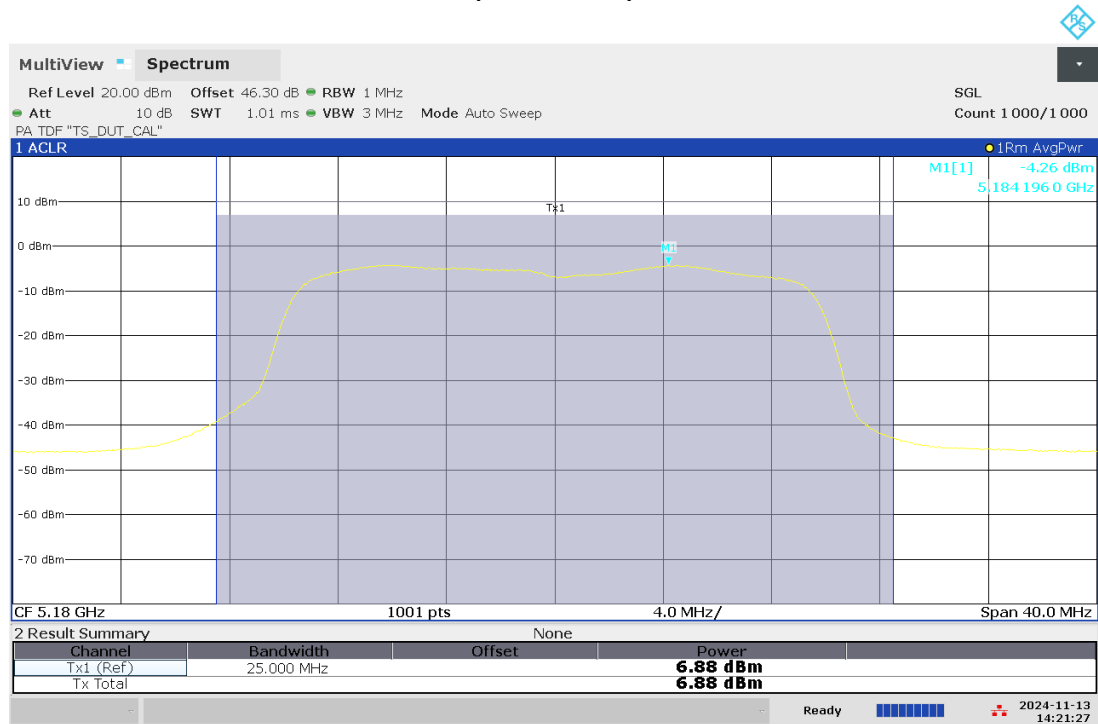
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Radio Technology = WLAN ac 80 MHz, Operating Frequency = mid, Subband = U-NII-3
(S03_AO04)



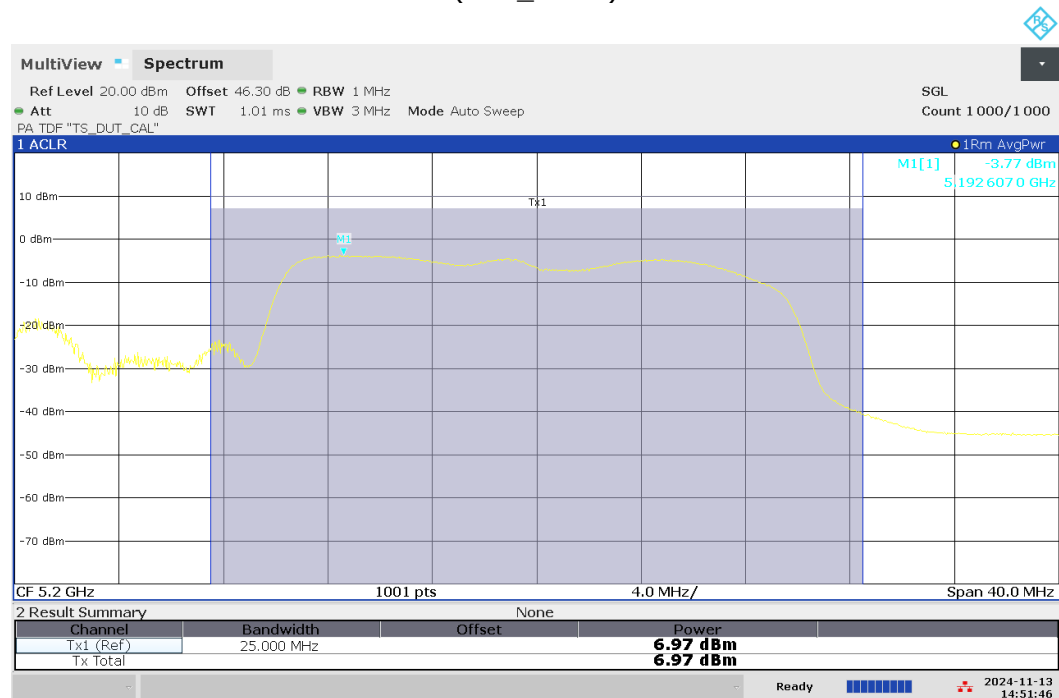
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Radio Technology = WLAN ax 20 MHz, Operating Frequency = low, Subband = U-NII-1
(S03_AO04)



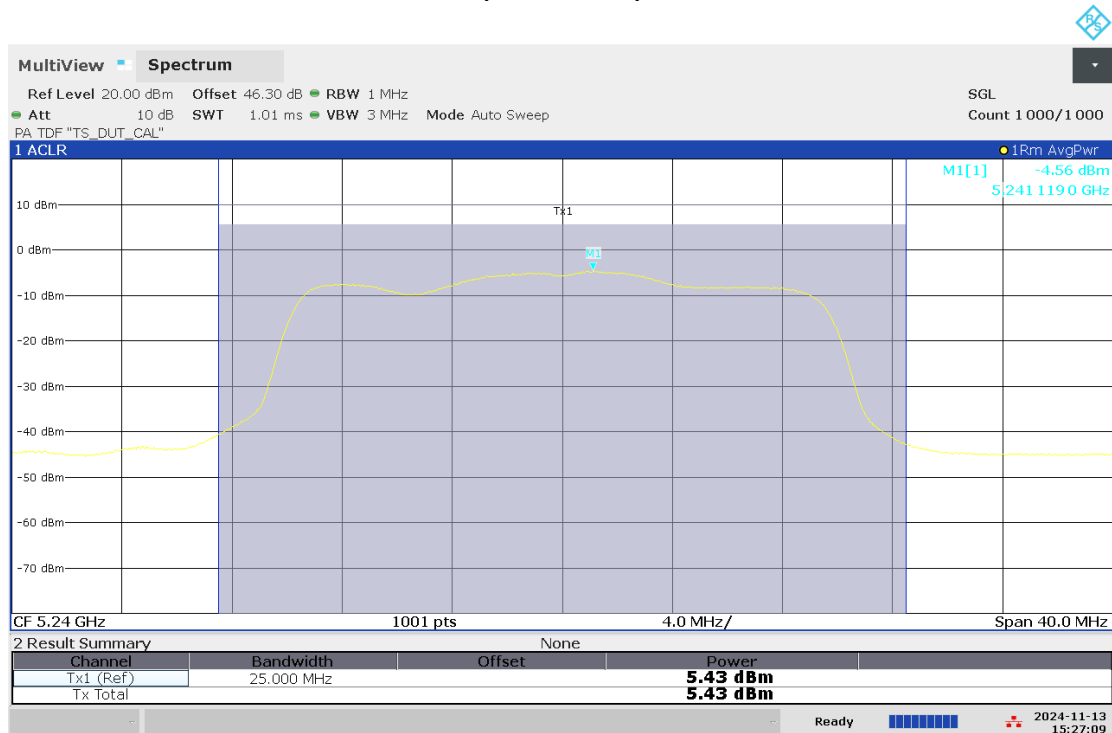
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Radio Technology = WLAN ax 20 MHz, Operating Frequency = mid, Subband = U-NII-1
(S03_AO04)



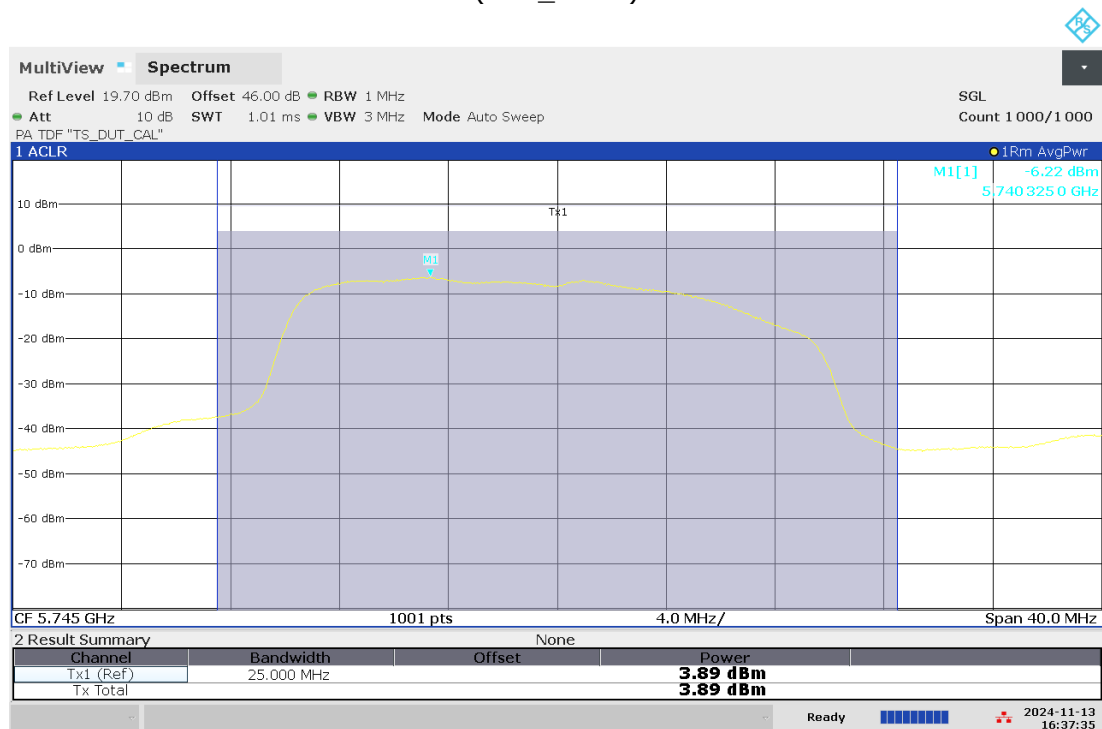
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(S03_AO04)



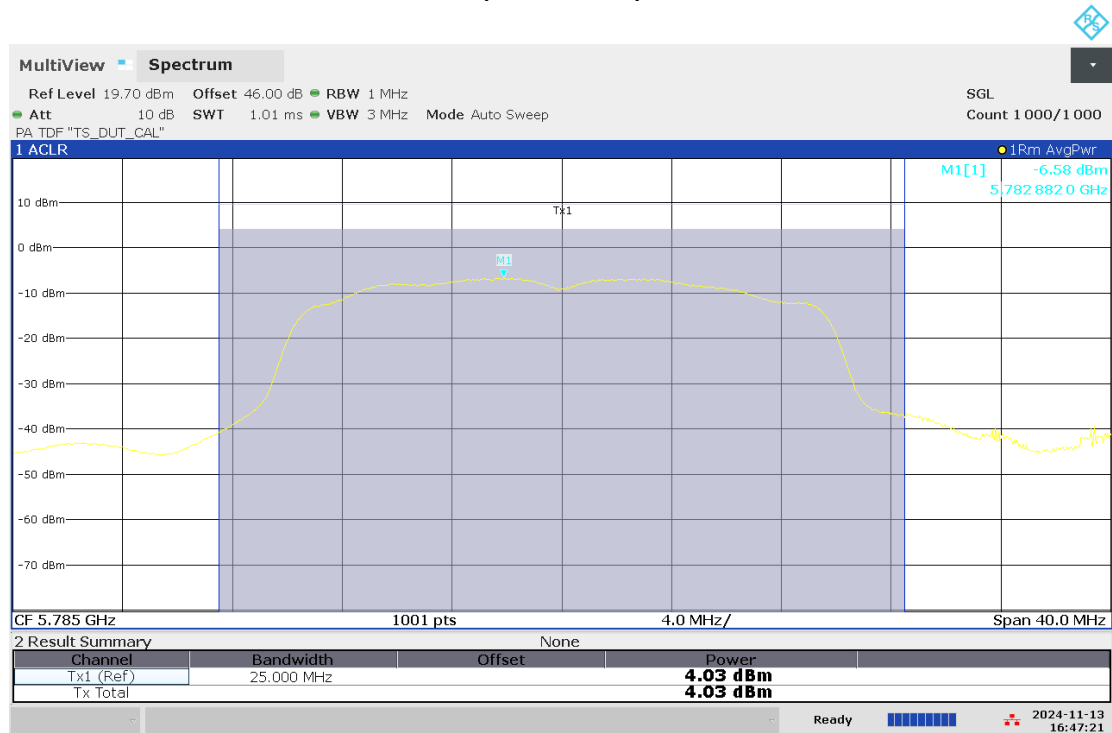
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Radio Technology = WLAN ax 20 MHz, Operating Frequency = low, Subband = U-NII-3
(S03_AO04)



04:37:36 PM 11/13/2024

Radio Technology = WLAN ax 20 MHz, Operating Frequency = mid, Subband = U-NII-3
(S03_AO04)



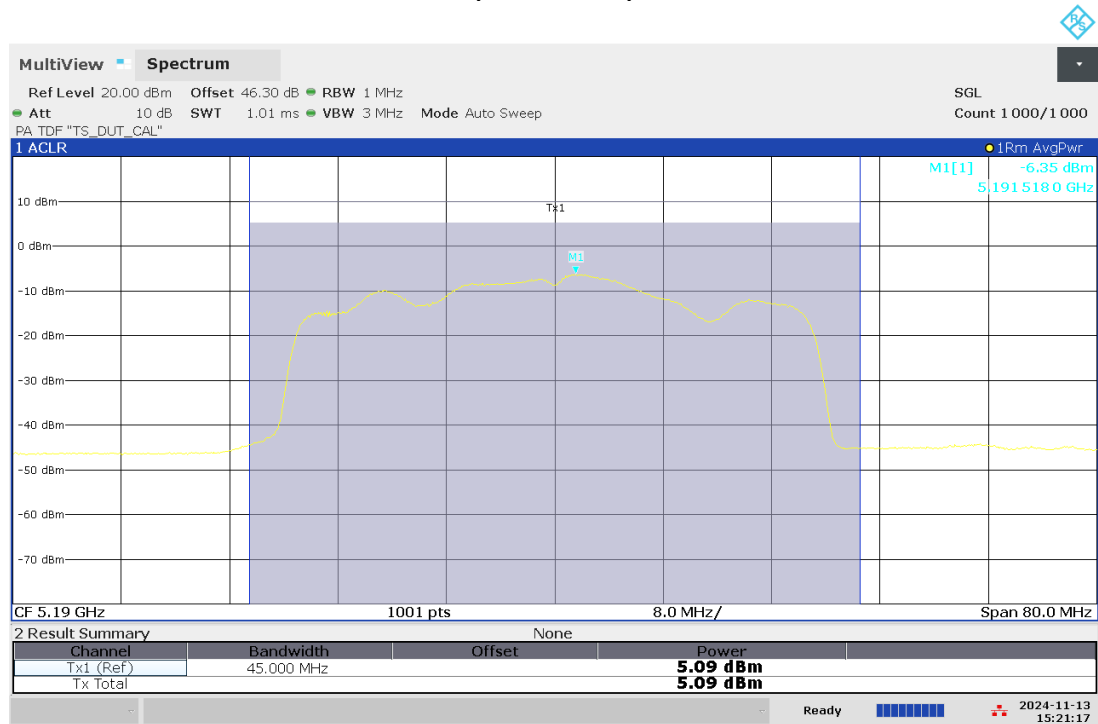
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Radio Technology = WLAN ax 20 MHz, Operating Frequency = high, Subband = U-NII-3
(S03_AO04)



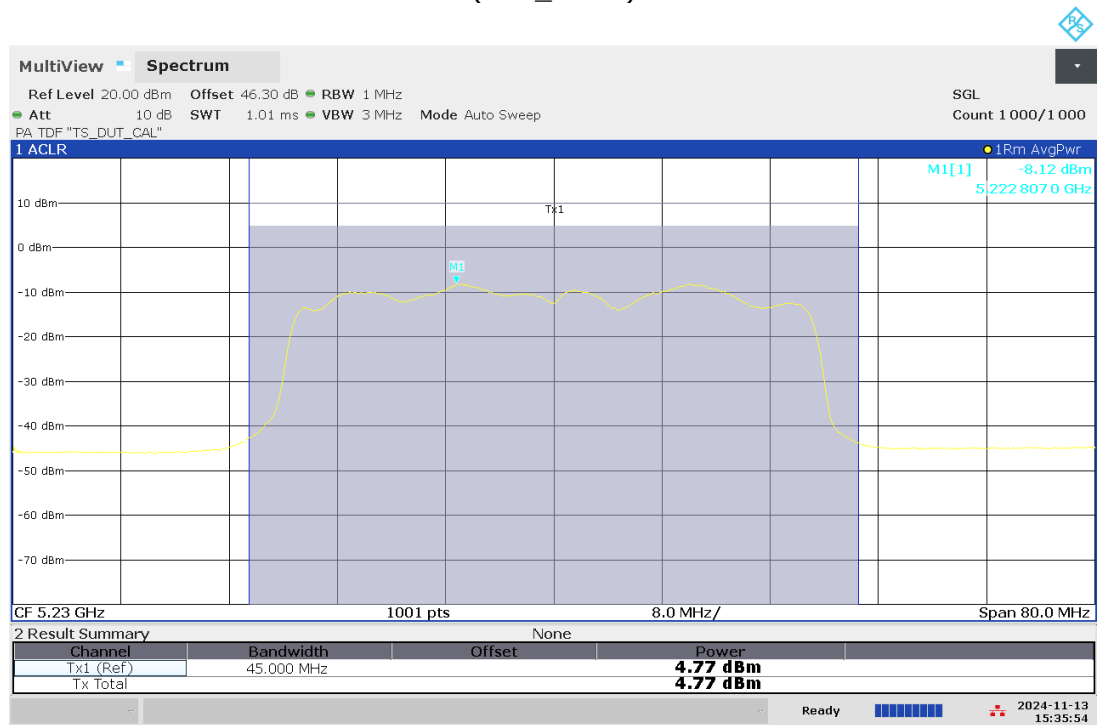
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Radio Technology = WLAN ax 40 MHz, Operating Frequency = low, Subband = U-NII-1
(S03_AO04)



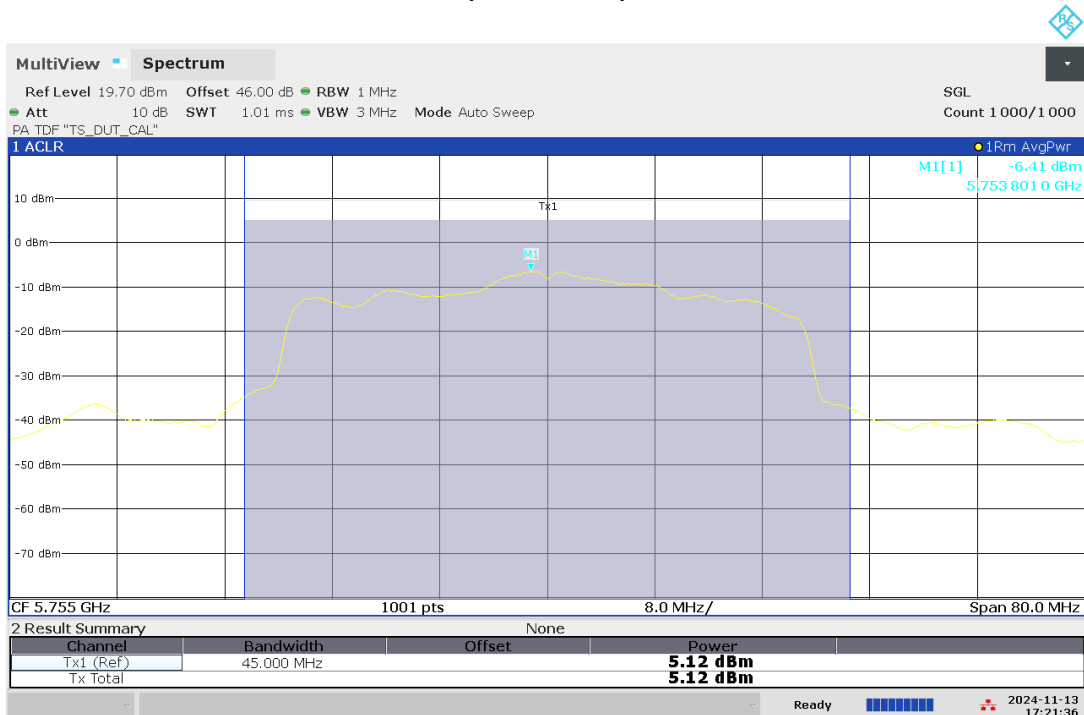
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Radio Technology = WLAN ax 40 MHz, Operating Frequency = high, Subband = U-NII-1
(S03_AO04)



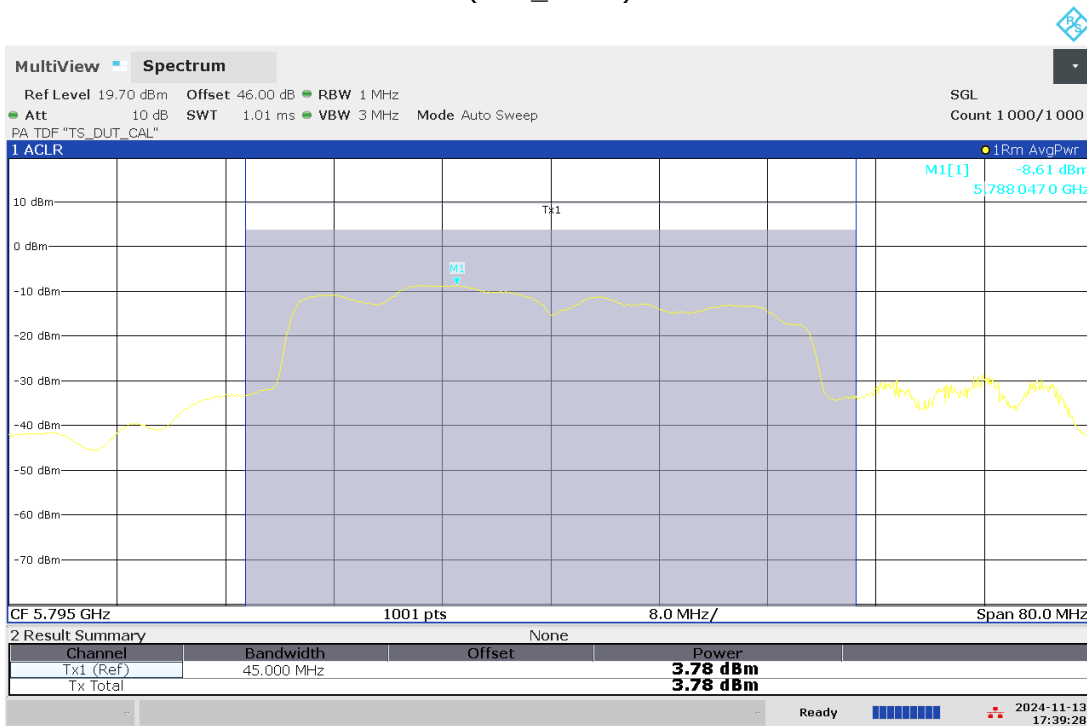
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Radio Technology = WLAN ax 40 MHz, Operating Frequency = low, Subband = U-NII-3
(S03_AO04)



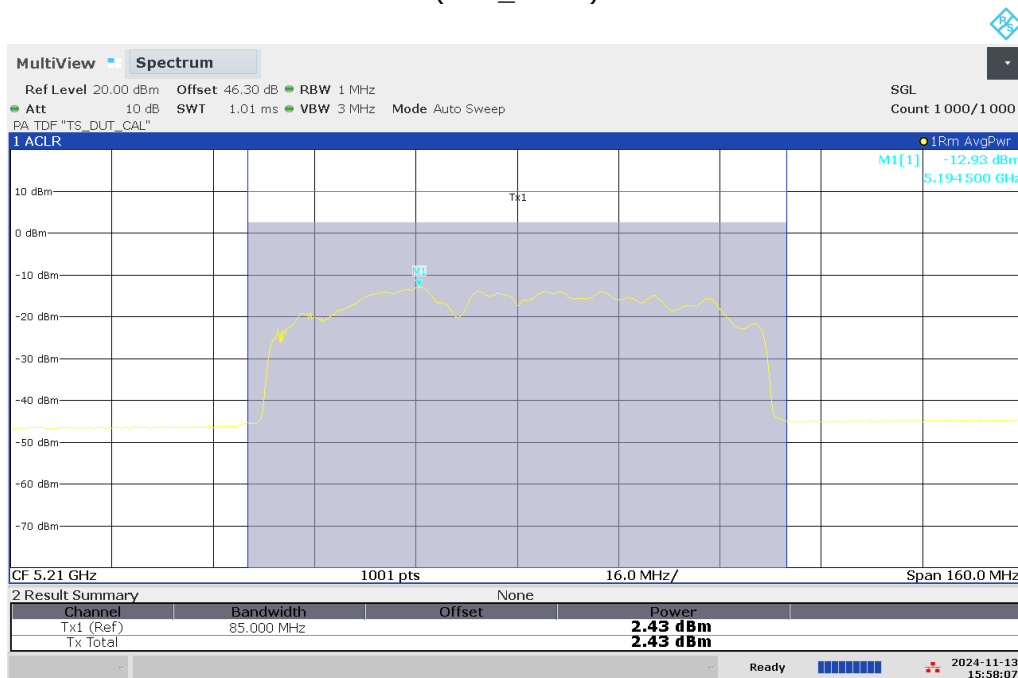
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Radio Technology = WLAN ax 40 MHz, Operating Frequency = high, Subband = U-NII-3
(S03_AO04)



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Radio Technology = WLAN ax 80 MHz, Operating Frequency = mid, Subband = U-NII-1
(S03_A004)



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Radio Technology = WLAN ax 80 MHz, Operating Frequency = mid, Subband = U-NII-3
(S03_A004)



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5.1.6 TEST EQUIPMENT USED

- FCC In-Situ measurement equipment

5.2 RADIATED PEAK POWER SPECTRAL DENSITY

Standard **FCC Part 15 Subpart E**

The test was performed according to:

- Measurement setup: ANSI C63.10, chapter 6.11.3
- Analyser settings: ANSI C63.10, chapter 12.5 (SA-3)

5.2.1 TEST DESCRIPTION

The Equipment Under Test (EUT) was installed in a typical installation in the test location. A RCoax cable was connected to one antenna connector (Port A). The other antenna output was terminated with 50 Ohm.

The following information can be found in the description of each measurement location.

- Length of the connected RCoax cable (chapter 3.5)
- Installation height of the RCoax cable (chapter 3.5)
- Length of the feeder cable (chapter 3.5)
- Measurement distance
- Maximum measurement distance from feeding point
- Maximum measurement height of the receiving antenna (during worst-case search)
- Worst-case measurement polarisation

Measurement procedure:

1. Determining of the worst-case position – highest emission of the fundamental for every TX frequency and occupied bandwidth – for both receiving antenna polarisations between:
 - a. Determination of the maximum measurement distance [$D_{\text{STABLE DECREASE}}$] from the feeding point
 - b. Search of worst-case distance between 0.0 m and maximum measurement distance from the feeding point of RCoax cable for both measurement polarisations.
 - c. Height variation of the Receiving antenna: continuously from 1.0 m to maximum receiving antenna height for both polarisations.
 - d. Determination of worst-case receiving antenna polarisation
2. Measurement of the output power at the worst-case position.
3. Measurement of the environmental electromagnetic spectrum – with EUT switched off – at worst-case position for both polarisations.

The results recorded were measured with the modulation which produces the worst-case (highest) output power

For U-NII bands 1, 3:

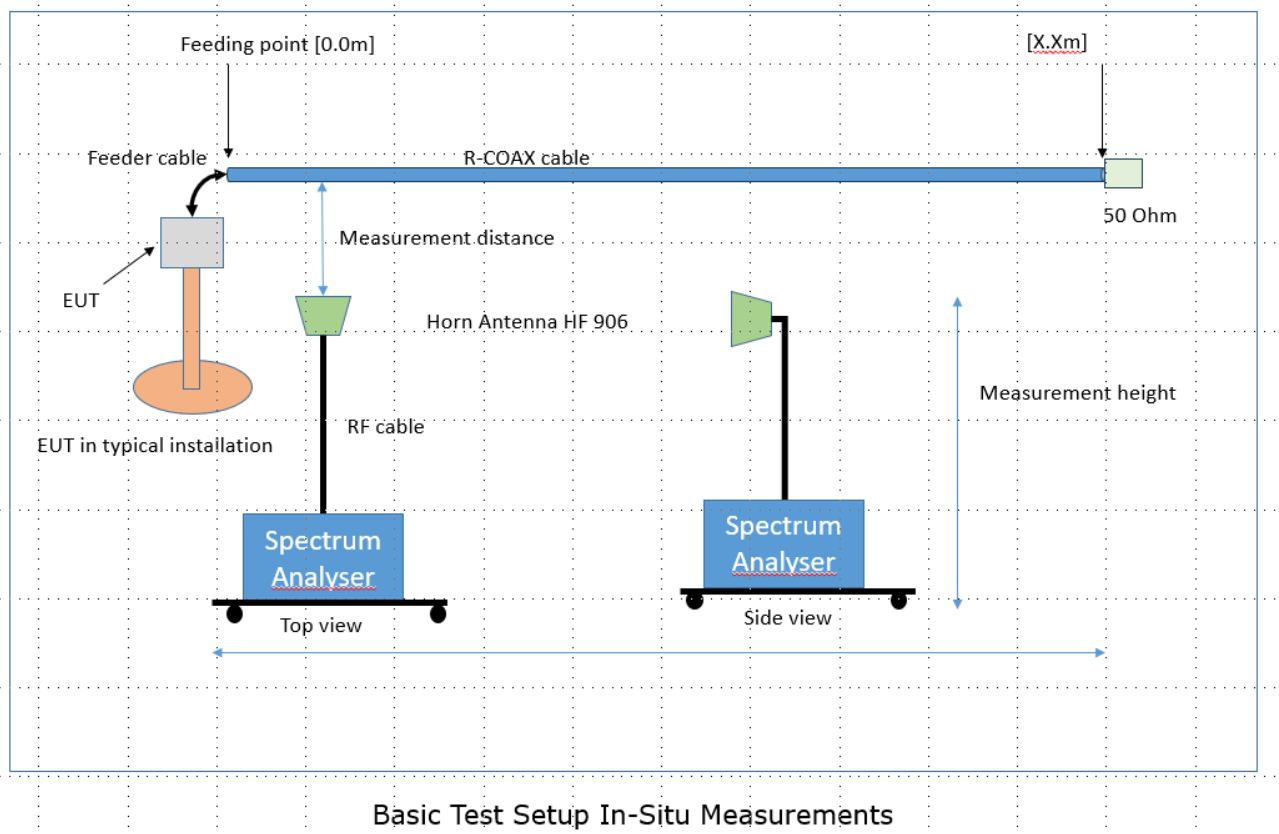
Analyzer settings:

- Resolution Bandwidth (RBW): 1 MHz
- Video Bandwidth (VBW): 3 MHz
- Trace: Max Hold
- Sweeps: till stable (at least 100, max. 900)
- Sweep time: \leq Number of sweep points x Min. Transmitter on time
- Detector: RMS
- Trigger: free run

Note:

The analyser settings are according FCC Public Note "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E, 789033 D02", method **SA-2**.

The following diagram shows the basic measurement set up:



For details please see pictures of the measurement setup for every location.

5.2.2 TEST REQUIREMENTS / LIMITS

A) FCC

FCC Part 15, Subpart E, §15.407 (a) (1)

For systems using digital modulation techniques in the 5.15 – 5.25 GHz bands:

(i) and (ii), outdoor and indoor access points: Limit: 17 dBm/MHz.

(iv), mobile and portable client devices: Limit: 11 dBm/MHz.

FCC Part 15, Subpart E, §15.407 (a) (2)

For systems using digital modulation techniques in the 5.25 – 5.35 GHz and 5.47 – 5.725 GHz bands:

Limit: 11 dBm/MHz.

FCC Part 15, Subpart E, §15.407 (a) (3)

For systems using digital modulation techniques in the 5.725 – 5.850 GHz bands:

Limit: 30 dBm/500 kHz.

FCC Part 15, Subpart E, §15.407 (a) (4):

For a standard power access point and fixed client devices in the 5.925 – 6.425 GHz and 6.525 – 6.875 GHz bands:

Limit: 23 dBm/MHz e.i.r.p.

FCC Part 15, Subpart E, §15.407 (a) (5):

For an indoor access point in the 5.925 – 7.125 GHz bands:

Limit: 5 dBm/MHz e.i.r.p.

FCC Part 15, Subpart E, §15.407 (a) (6):

For a subordinate device operating under an indoor access point in the 5.925 – 7.125 GHz bands:

Limit: 5 dBm/MHz e.i.r.p.

FCC Part 15, Subpart E, §15.407 (a) (7):

For a client device, except for fixed client devices, operating under standard power access point in the 5.925-6.425 GHz and 6.525-6.875 GHz bands:

Limit: 17 dBm/MHz e.i.r.p.

FCC Part 15, Subpart E, §15.407 (a) (8):

For client devices operating under the control of an indoor access point in the 5.925 – 7.125 GHz bands:

Limit: -1 dBm/MHz e.i.r.p.

B) IC

Different frequency bands and limits apply, as compared to the FCC requirements.

RSS-247, 6.2.1 (1), Band 5150-5250 MHz, indoor operation only:

Limit (e.i.r.p.): 10 dBm/MHz.

RSS-247, 6.2.2 (1), Band 5250-5350 MHz:

Limit: 11 dBm/MHz.

RSS-247, 6.2.3 (1), Bands 5470-5600 MHz and 5650-5725 MHz:

Limit: 11 dBm/MHz.

RSS-247, 6.2.4 (1), Band 5725-5850 MHz:

Limit: 30 dBm/500 kHz.

5.2.3 TEST PROTOCOL - EUPEN

Ambient temperature: 12 – 13 °C
 Air Pressure: 990 – 994 hPa
 Humidity: 83 – 84 %

WLAN a-Mode; 20 MHz; 6 Mbit/s					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	36	5180	-3.9	10.0	13.9
	40	5200	-6.2	10.0	16.2
	48	5240	-5.7	10.0	15.7

WLAN n-Mode; 20 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	36	5180	-4.5	10.0	14.5
	40	5200	-6.9	10.0	16.9
	48	5240	-6.3	10.0	16.3

WLAN n-Mode; 40 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	38	5190	-7.6	10.0	17.6
	46	5230	-8.9	10.0	18.9

WLAN ac-Mode; 20 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	36	5180	-4.9	10.0	14.9
	40	5200	-6.9	10.0	16.9
	48	5240	-6.7	10.0	16.7

WLAN ac-Mode; 40 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	38	5190	-7.1	10.0	17.1
	46	5230	-8.9	10.0	18.9

WLAN ac-Mode; 80 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	42	5210	-13.7	10.0	23.7

WLAN ax-Mode; 20 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	36	5180	-5.3	10.0	15.3
	40	5200	-7.4	10.0	17.4
	48	5240	-7.0	10.0	17.0

WLAN ax-Mode; 40 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	38	5190	-8.2	10.0	18.2
	46	5230	-9.8	10.0	19.8

WLAN ax-Mode; 80 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	42	5210	-14.7	10.0	24.7

COMMENT:

- The values of the 99% OBW – to calculate the ISED EIRP limit in subband 1 - have been taken from the original report of the EUT with the reference:
MDE_SIEM_1911_FCC_02_REV01
- The spectrum analyser transducer TDF DUT3 contains the attenuation of the measurement cable
- The "Reference Level Offset" in the analyser contains the correction of the far-field attenuation and the gain of the receiving antenna.
Example calculation:
FF-ATT: 51.9 dB (5180 MHz@1.81m), Antenna Gain: 10.0 dB
Reference Level Offset: 51.9 dB -10.0 dB = 41.9 dB

Remark: Please see next sub-clause for the measurement plot.

5.2.3.1 RESULTS OF WORST-CASE SEARCH

For the corresponding worst-case search results, please see chapter 5.1.3.1

5.2.3.2 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

For the corresponding measurement plots, please see chapter 5.1.3.2

5.2.4 TEST PROTOCOL - ERLANGEN

Ambient temperature: 20 °C
 Air Pressure: 992 hPa
 Humidity: 46 %

WLAN a-Mode; 20 MHz; 6 Mbit/s					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	36	5180	-7.2	10.0	17.2
	40	5200	-9.5	10.0	19.5
	48	5240	-7.6	10.0	17.6

WLAN n-Mode; 20 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	36	5180	-8.0	10.0	18.0
	40	5200	-10.1	10.0	20.1
	48	5240	-8.4	10.0	18.4

WLAN n-Mode; 40 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	38	5190	-10.2	10.0	20.2
	46	5230	-11.1	10.0	21.1

WLAN ac-Mode; 20 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	36	5180	-8.1	10.0	18.1
	40	5200	-11.1	10.0	21.1
	48	5240	-8.6	10.0	18.6

WLAN ac-Mode; 40 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	38	5190	-10.7	10.0	20.7
	46	5230	-11.3	10.0	21.3

WLAN ac-Mode; 80 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	42	5210	-18.4	10.0	28.4

WLAN ax-Mode; 20 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	36	5180	-9.1	10.0	19.1
	40	5200	-12.1	10.0	22.1
	48	5240	-9.2	10.0	19.2

WLAN ax-Mode; 40 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	38	5190	-11.5	10.0	21.5
	46	5230	-12.2	10.0	22.2

WLAN ax-Mode; 80 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	42	5210	-19.0	10.0	29.0

COMMENT:

- The values of the 99% OBW – to calculate the ISED EIRP limit in subband 1 - have been taken from the original report of the EUT with the reference: MDE_SIEM_1911_FCC_02_REV01
- The spectrum analyser transducer "TDF TS DUT CAL" contains the attenuation of the measurement cable
- The "Reference Level Offset" in the analyser contains the correction of the far-field attenuation and the gain of the receiving antenna.
Example calculation:
FF-ATT: 62.6 dB (5180 MHz@7.0m), Antenna Gain: 10.0 dB
Reference Level Offset: 62.6 dB -10.0 dB = 52.6 dB

Remark: Please see next sub-clause for the measurement plot.

5.2.4.1 RESULTS OF WORST-CASE SEARCH

For the corresponding worst-case search results, please see chapter 5.1.4.1

5.2.4.2 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

For the corresponding measurement plots, please see chapter 5.1.4.2

5.2.5 TEST PROTOCOL - NÜRNBERG

Ambient temperature: 19 °C
 Air Pressure: 986 hPa
 Humidity: 50 %

WLAN a-Mode; 20 MHz; 6 Mbit/s					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	36	5180	-3.0	10.0	13.0
	40	5200	-2.7	10.0	12.7
	48	5240	-3.4	10.0	13.4

WLAN n-Mode; 20 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	36	5180	-3.6	10.0	13.6
	40	5200	-3.2	10.0	13.2
	48	5240	-3.8	10.0	13.8

WLAN n-Mode; 40 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	38	5190	-4.7	10.0	14.7
	46	5230	-7.1	10.0	17.1

WLAN ac-Mode; 20 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	36	5180	-3.7	10.0	13.7
	40	5200	-3.2	10.0	13.2
	48	5240	-3.8	10.0	13.8

WLAN ac-Mode; 40 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	38	5190	-4.9	10.0	14.9
	46	5230	-7.1	10.0	17.1

WLAN ac-Mode; 80 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	42	5210	-12.1	10.0	22.1

WLAN ax-Mode; 20 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	36	5180	-4.3	10.0	14.3
	40	5200	-3.8	10.0	13.8
	48	5240	-4.6	10.0	14.6

WLAN ax-Mode; 40 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	38	5190	-6.4	10.0	16.4
	46	5230	-8.1	10.0	18.1

WLAN ax-Mode; 80 MHz; MCS 0; SISO					
U-NII-Subband	Ch. No.	Freq. [MHz]	E.I.R.P MPD [dBm/MHz]	ISED E.I.R.P limit [dBm/MHz]	Margin [dB]
1	42	5210	-12.9	10.0	22.9

COMMENT:

- The values of the 99% OBW – to calculate the ISED EIRP limit in subband 1 - have been taken from the original report of the EUT with the reference: MDE_SIEM_1911_FCC_02_REV01
- The spectrum analyser transducer "TDF TS DUT CAL" contains the attenuation of the measurement cable
- The "Reference Level Offset" in the analyser contains the correction of the far-field attenuation and the gain of the receiving antenna.
Example calculation:
FF-ATT: 56.3 dB (5180 MHz@3.0m), Antenna Gain: 10.0 dB
Reference Level Offset: 56.3 dB -10.0 dB = 46.3 dB
-

Remark: Please see next sub-clause for the measurement plot.

5.2.5.1 RESULTS OF WORST-CASE SEARCH

For the corresponding worst-case search results, please see chapter 5.1.5.1

5.2.5.2 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

For the corresponding measurement plots, please see chapter 5.1.5.2

5.2.6 TEST EQUIPMENT USED

- FCC In-Situ measurement equipment

5.3 UNDESIRABLE EMISSIONS; GENERAL FIELD STRENGTH LIMITS

Standard **FCC Part 15 Subpart E**

The test was performed according to:

- Measurement setup: ANSI C63.10, chapter 6.11.2, 6.11.3

5.3.1 TEST DESCRIPTION

The Equipment Under Test (EUT) was installed in a typical installation in the test location. A RCoax cable was connected to one antenna connector (Port A). The other antenna output was terminated with 50 Ohm.

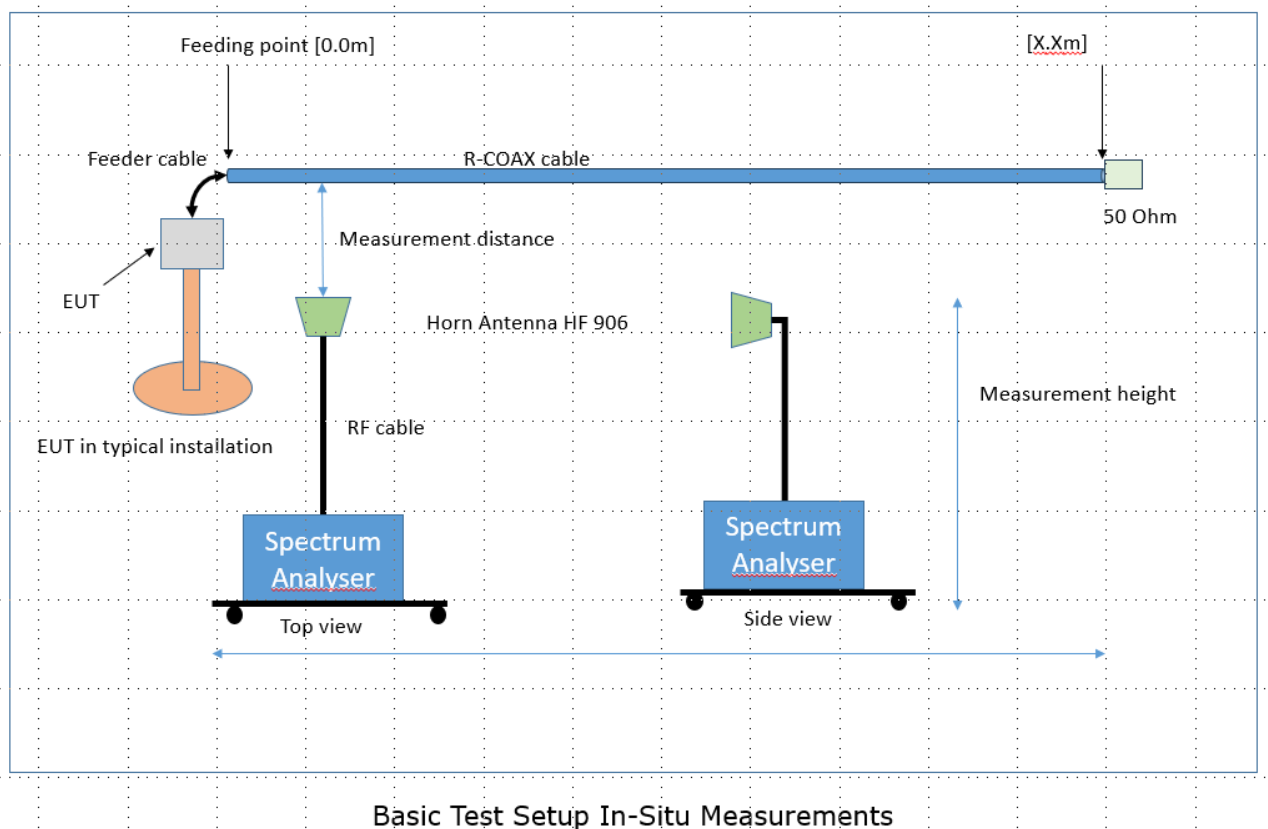
The following information can be found in the description of each measurement location.

- Length of the connected RCoax cable (chapter 3.5)
- Installation height of the RCoax cable (chapter 3.5)
- Length of the feeder cable (chapter 3.5)
- Measurement distance
- Maximum measurement distance from feeding point
- Maximum measurement height of the receiving antenna (during worst-case search)
- Worst-case measurement polarisation

Measurement procedure:

1. Determining of the worst-case position – highest emission of the fundamental – for both receiving antenna polarisations between:
 - a. Determination of the maximum measurement distance [$D_{\text{STABLE DECREASE}}$] from the feeding point
 - b. Height variation of the Receiving antenna: continuously from 1.0 m to maximum receiving antenna height for both polarisations.
 - c. Determination of worst-case receiving antenna polarisation
2. Continuous measurement of the undesirable emission from 0.0 to maximum measurement distance [$D_{\text{STABLE DECREASE}}$] from the feeding point with “Maxhold”
3. Measurement of the environmental electromagnetic spectrum – with EUT switched off – from 0.0 to maximum measurement distance [$D_{\text{STABLE DECREASE}}$] from the feeding point with “Maxhold”.

The following diagram shows the basic measurement set up:



Analyser settings

Below 1 GHz:

1. Measurement up to 30 MHz

The Loop antenna HFH2-Z2 is used.

Step 1: pre measurement

Measurement parameters

- Frequency range: 0.009 - 30 MHz
- RBW: 10 kHz
- VBW: 30 kHz
- Sweep-time: 31 ms (FFT-based)
- Sweep-points: 1001

Intention of this step is, to determine the radiated EMI-profile of the EUT. Afterwards the relevant emissions for the final measurement are identified.

Step 2: final measurement

Not performed, because pre-measurement with the EUT switched-on show the same results as the ambient RF spectrum. The ambient RF spectrum is continuously above the applicable limit.

2. Measurement above 30 MHz and up to 1 GHz

Step 1: Preliminary scan

This is a preliminary test to identify the highest amplitudes relative to the limit.

Settings for step 1:

- Detector: Peak
- Frequency range: 30 – 1000 MHz
- RBW: 100 kHz
- VBW: 300 kHz
- Sweep-time: 10 ms
- Sweep-points: 1001

Intention of this step is, to determine the radiated EMI-profile of the EUT. Afterwards the relevant emissions for the final measurement are identified.

Step 2: Final measurement with QP detector

Not performed, because pre-measurement with the EUT switched-on show the same results as the ambient RF spectrum. The ambient RF spectrum is in most frequency ranges above the applicable limit.

Above 1 GHz:

3. Measurement 1 GHz up to 40 GHz

Spectrum analyser settings:

- Frequency range: 1 – 18 GHz
- Detector: Peak/Average
- RBW: 1 MHz
- VBW: 3 MHz
- Sweep-time: 3 s
- Sweep-points: 40001

- Frequency range: 18 – 26.5 GHz
- Detector: Peak/Average
- RBW: 1 MHz
- VBW: 3 MHz
- Sweep-time: 3 s
- Sweep-points: 40001

- Frequency range: 26.5 – 40 GHz
- Detector: Peak/Average
- RBW: 300 kHz
- VBW: 300 kHz
- Sweep-time: 10 s
- Sweep-points: 100000

5.3.2 TEST REQUIREMENTS / LIMITS

A) FCC

FCC Part 15 Subpart E, §15.407 (b)(1)

For transmitters operating in the 5150–5250 MHz band:

Limit: –27 dBm/MHz EIRP outside of the band 5150–5350 MHz.

FCC Part 15 Subpart E, §15.407 (b)(2)

For transmitters operating in the 5250–5350 MHz band:

Limit: –27 dBm/MHz EIRP outside of the band 5150–5350 MHz.

FCC Part 15 Subpart E, §15.407 (b)(3)

For transmitters operating in the 5470–5725 MHz band:

Limit: –27 dBm/MHz EIRP outside of the band 5470–5725 MHz.

FCC Part 15 Subpart E, §15.407 (b)(4)

For transmitters operating in the 5725–5850 MHz band:

Limit: –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
increasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edge
increasing linearly to 27 dBm/MHz at the band edge.

FCC Part 15 Subpart E, §15.407 (b) (5)

For transmitters operating within the 5.925–7.125 GHz band:

Limit: –27 dBm/MHz EIRP outside of the band 5.925–7.125 GHz.

FCC Part 15 Subpart E, §15.407 (b) (6)

For transmitters operating within the 5.925–7.125 GHz bands:

Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.

B) IC

Different frequency bands and limits apply, as compared to the FCC requirements.

RSS-247, 6.2.1.2, Emissions outside the band 5150–5250 MHz, indoor operation only:

Limit: –27 dBm/MHz EIRP outside of the band 5150–5250 MHz.

RSS-247, 6.2.2.2, Emissions outside the band 5250–5350 MHz:

Limit: –27 dBm/MHz EIRP outside of the band 5250–5350 MHz.

RSS-247, 6.2.3.2, Emissions outside the bands 5470–5600 MHz and 5650–5725 MHz:

Limit: –27 dBm/MHz EIRP outside of the band 5470–5725 MHz.

However, devices with bandwidth overlapping the band edge of 5725 MHz can meet the emission limit of –27 dBm/MHz e.i.r.p. at 5850 MHz instead of 5725 MHz.

Note: No operation is permitted for the frequency range 5600–5650 MHz.

RSS-247, 6.2.4.2, Emissions outside the band 5725–5850 MHz:

- a. 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 Bm/MHz at 5 MHz above or below the band edges;
- b. 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges;
- c. 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and
- d. -27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.

C) FCC & IC

FCC Part 15 Subpart E, §15.405

The provisions of §§ 15.203 and 15.205 are included.

§15.407 (b)(6)

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.

§15.407 (b)(7)

The provisions of §15.205 apply to intentional radiators operating under this section

FCC Part 15, Subpart C, §15.209, Radiated Emission Limits

Frequency in MHz	Limit (µV/m)	Measurement distance (m)	Limits (dBµV/m)
0.009 – 0.49	2400/F(kHz)@300m	3	(48.5 – 13.8)@300m
0.49 – 1.705	24000/F(kHz)@30m	3	(33.8 – 23.0)@30m
1.705 – 30	30@30m	3	29.5@30m

The measured values are corrected with an inverse linear distance extrapolation factor (40 dB/decade) according FCC 15.31 (2).

Frequency in MHz	Limit (µV/m)	Measurement distance (m)	Limits (dBµV/m)
30 – 88	100@3m	3	40.0@3m
88 – 216	150@3m	3	43.5@3m
216 – 960	200@3m	3	46.0@3m
960 – 26000	500@3m	3	54.0@3m
26000 – 40000	500@3m	1	54.0@3m

The measured values above 26 GHz are corrected with an inverse linear distance extrapolation factor (20 dB/decade).

§15.35(b) ..., there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit....

Used conversion factor:

- Limit (dBµV/m) = 20 log (Limit (µV/m)/1µV/m)
- Limit (dBµV/m) = EIRP [dBm] – 20 log (d [m]) + 104.8

Limit types (in result tables):

RB – Emissions falls into a "Restricted Band" according to FCC §§15.205 and 15.209 *)

UE – "Undesirable Emission Limit" according to FCC §15.407

BE-RB – Band Edge Limit basing on "Restricted Band Limits"

BE-UE – Band Edge Limit basing on "Undesirable Emission Limit"

*) Below 1 GHz the limits of §15.209 are applied for all frequencies.

5.3.3 TEST PROTOCOL - EUPEN

Ambient temperature: 12 – 13 °C
 Air Pressure: 990 – 994 hPa
 Humidity: 83 – 84 %

WLAN a-Mode; 20 MHz; 6 Mbit/s

Applied duty cycle correction (AV): 0.6 dB

Ch. No.	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBµV/m]	Detector	RBW [kHz]	Limit [dBµV/m]	Margin [dB]	Limit Type
36	5180	7045.3	56.3	PEAK	1000	68.2	11.9	UE
36	5180	10361.9	57.5	PEAK	1000	68.2	10.7	UE
40	5200	7069.1	53.8	PEAK	1000	68.2	14.4	UE
40	5200	10401.0	57.0	PEAK	1000	68.2	11.2	UE
48	5240	7112.0	55.8	PEAK	1000	68.2	12.4	UE
48	5240	10482.2	56.7	PEAK	1000	68.2	11.5	UE
149	5745	7613.5	50.8	PEAK	1000	74.0	23.2	RB
149	5745	7617.7	40.6	AV	1000	54.0	13.4	RB
149	5745	11496.2	53.1	PEAK	1000	74.0	20.9	RB
149	5745	11490.2	43.8	AV	1000	54.0	10.2	RB
157	5785	7665.1	51.7	PEAK	1000	74.0	22.3	RB
157	5785	7655.1	42.5	AV	1000	54.0	11.5	RB
157	5785	11564.6	53.0	PEAK	1000	74.0	21.0	RB
157	5785	11564.6	45.1	AV	1000	54.0	8.9	RB
165	5825	7693.4	51.4	PEAK	1000	74.0	22.6	RB
165	5825	7695.5	40.8	AV	1000	54.0	13.2	RB
165	5825	11646.6	51.7	PEAK	1000	74.0	22.3	RB
165	5825	11647.9	42.8	AV	1000	54.0	11.2	RB

WLAN n-Mode; 20 MHz; MCS0

Applied duty cycle correction (AV): 0.5 dB

Ch. No.	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin [dB]	Limit Type
36	5180	7045.3	56.3	PEAK	1000	68.2	11.9	UE
36	5180	10361.9	57.5	PEAK	1000	68.2	10.7	UE
40	5200	7069.1	53.8	PEAK	1000	68.2	14.4	UE
40	5200	10401.0	57.0	PEAK	1000	68.2	11.2	UE
48	5240	7112.0	55.8	PEAK	1000	68.2	12.4	UE
48	5240	10482.2	56.7	PEAK	1000	68.2	11.5	UE
149	5745	7613.5	50.8	PEAK	1000	74.0	23.2	RB
149	5745	7617.7	40.6	AV	1000	54.0	13.4	RB
149	5745	11496.2	53.1	PEAK	1000	74.0	20.9	RB
149	5745	11490.2	43.8	AV	1000	54.0	10.2	RB
157	5785	7665.1	51.7	PEAK	1000	74.0	22.3	RB
157	5785	7655.1	42.5	AV	1000	54.0	11.5	RB
157	5785	11564.6	53.0	PEAK	1000	74.0	21.0	RB
157	5785	11564.6	45.1	AV	1000	54.0	8.9	RB
165	5825	7693.4	51.4	PEAK	1000	74.0	22.6	RB
165	5825	7695.5	40.8	AV	1000	54.0	13.2	RB
165	5825	11646.6	51.7	PEAK	1000	74.0	22.3	RB
165	5825	11647.9	42.8	AV	1000	54.0	11.2	RB

WLAN n-Mode; 40 MHz; MCS0

Applied duty cycle correction (AV): 0.5 dB

Ch. No.	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin [dB]	Limit Type
38	5190	7045.3	49.2	PEAK	1000	68.2	19.0	UE
38	5190	10380.2	55.0	PEAK	1000	68.2	13.2	UE

WLAN ac-Mode; 20 MHz; MCS0

Applied duty cycle correction (AV): 0.5 dB

Ch. No.	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin [dB]	Limit Type
36	5180	7045.3	51.3	PEAK	1000	68.2	16.9	UE
36	5180	10355.1	59.2	PEAK	1000	68.2	9.0	UE

WLAN ac-Mode; 40 MHz; MCS0

Applied duty cycle correction (AV): 0.5 dB

Ch. No.	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin [dB]	Limit Type
38	5190	7045.3	49.2	PEAK	1000	68.2	19.0	38
38	5190	10380.2	55.0	PEAK	1000	68.2	13.2	38

WLAN ac-Mode; 80 MHz; MCS0

Applied duty cycle correction (AV): 0.5 dB

Ch. No.	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin [dB]	Limit Type
42	5210	7045.3	45.8	PEAK	1000	68.2	22.4	UE
42	5210	10417.6	51.6	PEAK	1000	68.2	16.6	UE

WLAN ax-Mode; 20 MHz; MCS0

Applied duty cycle correction (AV): 1.3 dB

Ch. No.	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin [dB]	Limit Type
36	5180	7045.3	48.9	PEAK	1000	68.2	19.3	UE
36	5180	10361.9	54.0	PEAK	1000	68.2	14.2	UE
40	5200	7069.1	48.5	PEAK	1000	68.2	19.7	UE
40	5200	10397.2	58.3	PEAK	1000	68.2	9.9	UE
48	5240	7110.3	52.2	PEAK	1000	68.2	16.0	UE
48	5240	10483.0	55.0	PEAK	1000	68.2	13.2	UE
149	5745	7555.1	50.6	PEAK	1000	74.0	23.4	RB
149	5745	7557.6	39.5	AV	1000	54.0	14.5	RB
149	5745	11493.6	51.6	PEAK	1000	74.0	22.4	RB
149	5745	11495.4	42.1	AV	1000	54.0	11.9	RB
157	5785	7653.0	49.9	PEAK	1000	74.0	24.1	RB
157	5785	7655.1	42.6	AV	1000	54.0	11.4	RB
157	5785	11582.9	40.1	PEAK	1000	74.0	33.9	RB
157	5785	11572.7	51.8	AV	1000	54.0	2.2	RB
165	5825	7697.6	51.5	PEAK	1000	74.0	22.5	RB
165	5825	7697.2	41.6	AV	1000	54.0	12.4	RB
165	5825	11650.5	52.0	PEAK	1000	74.0	22.0	RB
165	5825	11645.4	42.5	AV	1000	54.0	11.5	RB

WLAN ax-Mode; 40 MHz; MCS0

Applied duty cycle correction (AV): 1.3 dB

Ch. No.	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin [dB]	Limit Type
38	5190	7045.3	49.2	PEAK	1000	68.2	19.0	UE
38	5190	10375.5	56.8	PEAK	1000	68.2	11.4	UE

WLAN ax-Mode; 80 MHz; MCS0

Applied duty cycle correction (AV): 1.3 dB

Ch. No.	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin [dB]	Limit Type
42	5210	7046.3	46.3	PEAK	1000	68.2	21.9	UE
42	5210	10417.6	48.4	PEAK	1000	68.2	19.8	UE

COMMENT:

- The spectrum analyser transducers "TDS DUT3" and "TDS UFA147A" contains the attenuation of the used measurement cable.
- The spectrum analyser transducers "HFH2-Z2", "VUBA916", "HF906_001", ETS3160-09", "ETS3160-10" contains the antenna factor of the used measurement antenna.
- The spectrum analyser transducer "TDF DUT3" contains the attenuation of the measurement cable.
- The measurement plot contains no measurement distance correction.
- The correction factor for the difference between measurement distance and limit has been subtracted in the result tables within this chapter.

Example calculation:

Measurement distance: 1.81 m, Limit distance: 3.0 m

Correction factor: $20 \text{ LOG}(1.81/3) = -4.4 \text{ dB}$

Value in plot: 65.75 dB μ V/m

Value in table: 65.75 dB μ V/m – 4.4 dB = 61.35 dB μ V/m

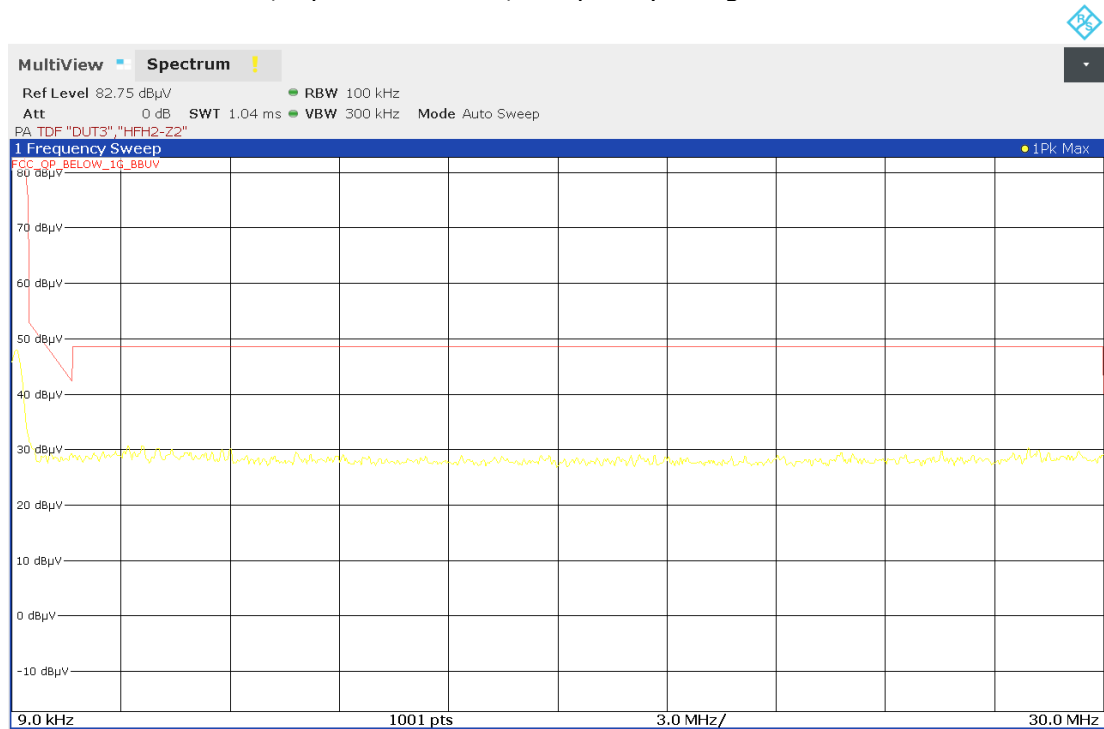
5.3.3.1 RESULTS OF WORST-CASE SEARCH

$D_{\text{STABLE DECREASE}} = 21.0 \text{ m}$

Worst- case receiving antenna polarisation: horizontal

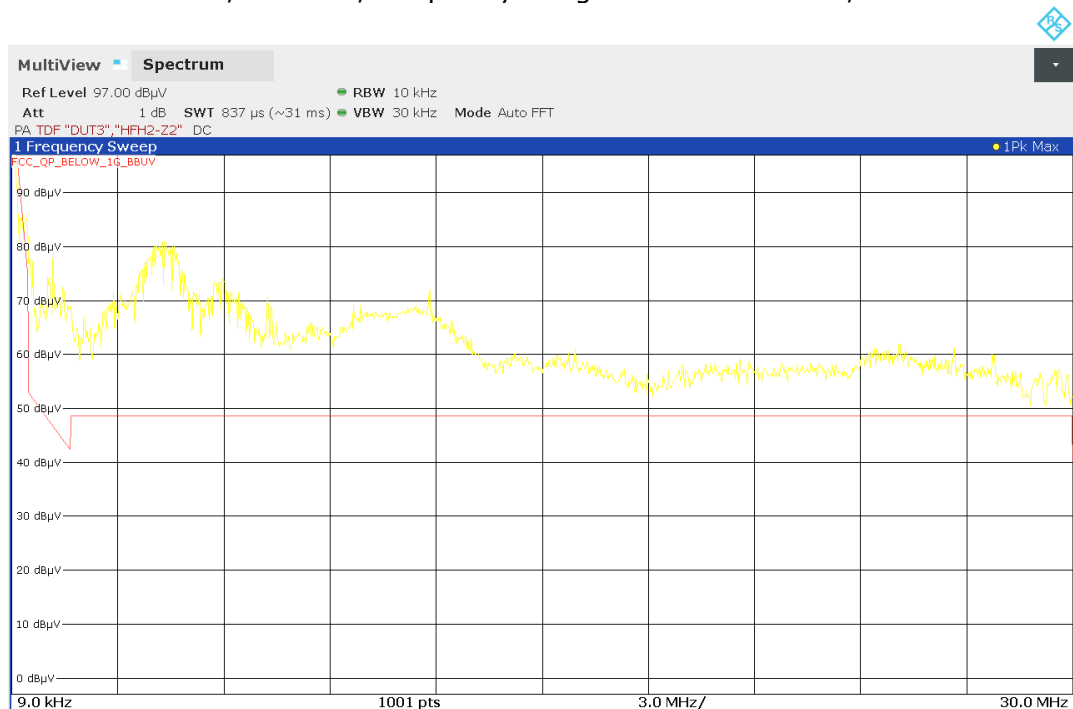
5.3.3.2 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

Noise Level, Open Connector, Frequency Range = 9 kHz -30 MHz



05:08:28 PM 10/29/2024

Noise Level, Ambient, Frequency Range = 9 kHz -30 MHz, three-axes



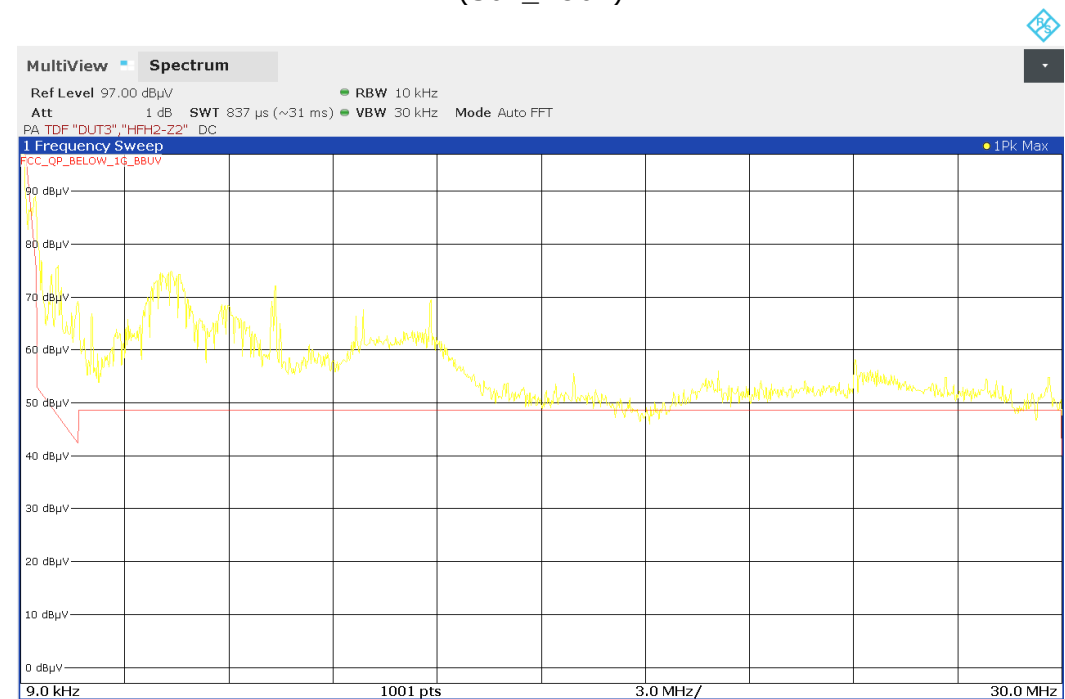
05:17:15 PM 10/29/2024

Radio Technology = WLAN a, Operating Frequency = mid, Subband = U-NII-1,
Frequency Range = 9 kHz – 30 MHz, three-axes
(S01_AO04)



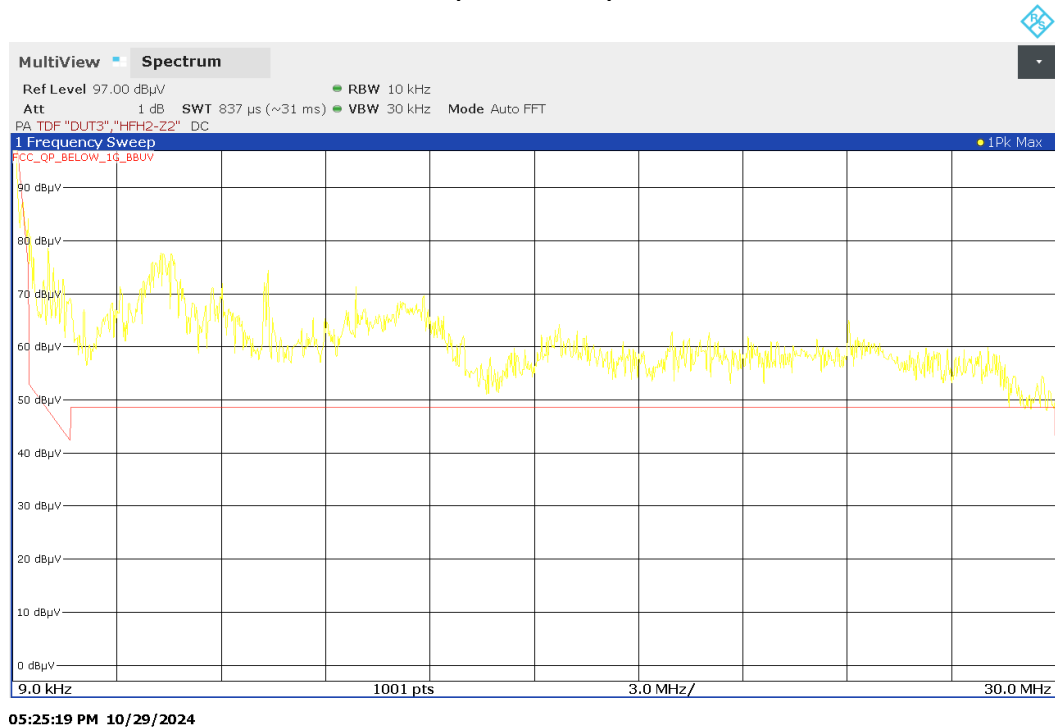
05:22:10 PM 10/29/2024

Radio Technology = WLAN a, Operating Frequency = mid, Subband = U-NII-3,
Frequency Range = 9 kHz – 30 MHz, three-axes
(S01_AO04)

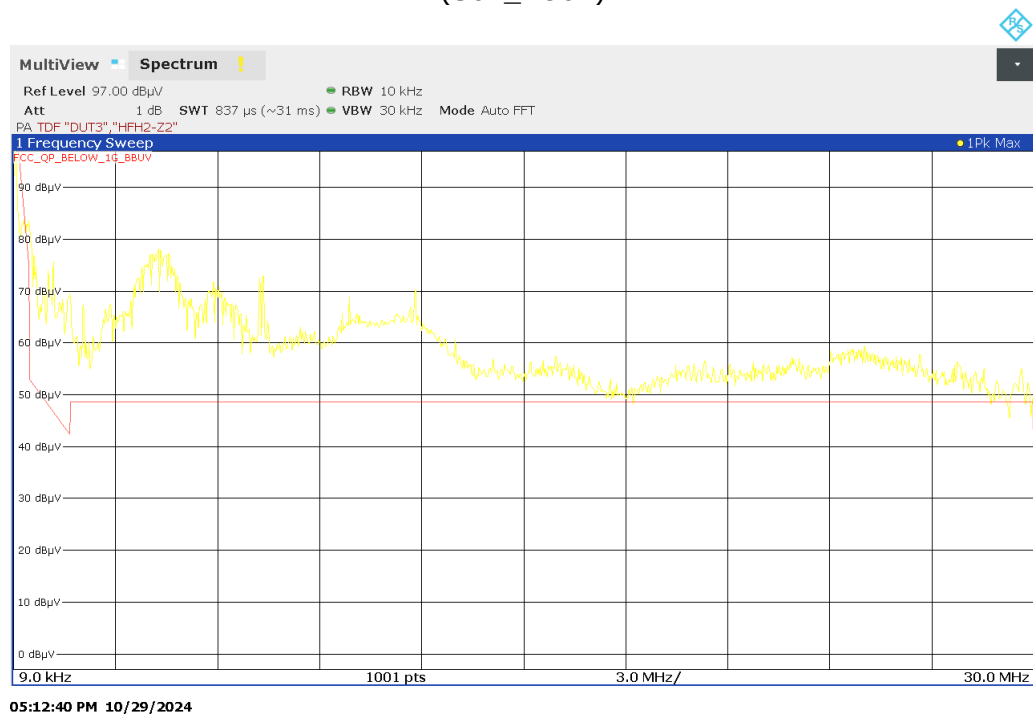


05:19:28 PM 10/29/2024

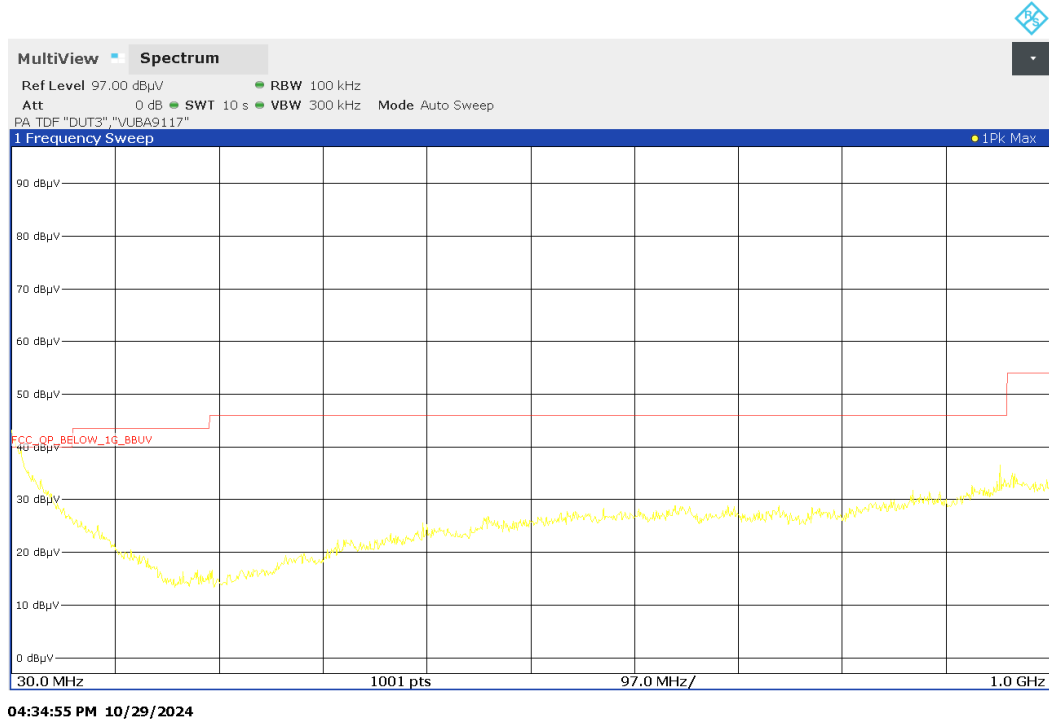
Radio Technology = WLAN ax 20 MHz, Operating Frequency = mid, Subband = U-NII-1
Frequency Range = 9 kHz – 30 MHz, three-axes
(S01_AO04)



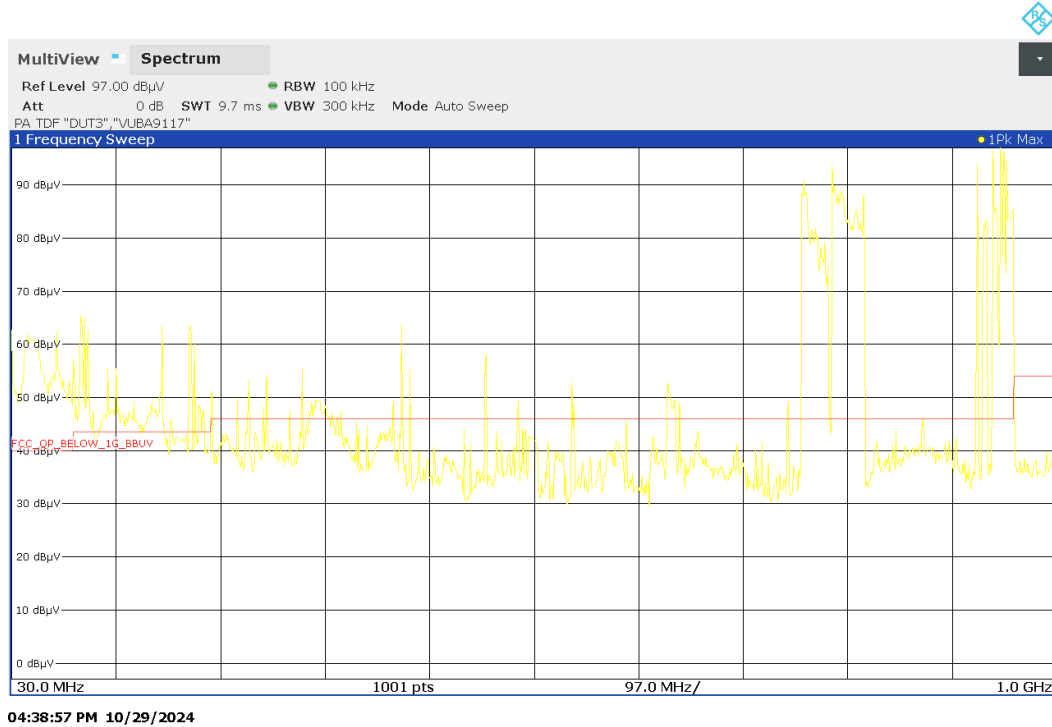
Radio Technology = WLAN ax 20 MHz, Operating Frequency = mid, Subband = U-NII-3
Frequency Range = 9 kHz – 30 MHz, three-axes
(S01_AO04)



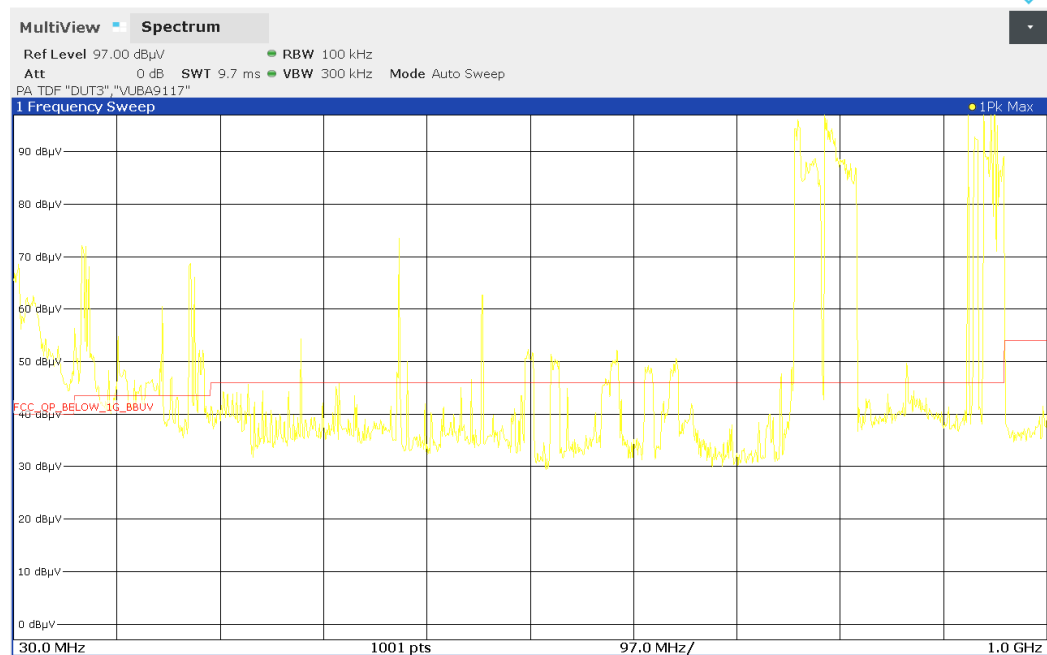
Noise Level, Open Connector, Frequency Range = 30 MHz -1 GHz



Noise Level, Ambient, Frequency Range = 30 MHz -1 GHz, Polarisation = horizontal

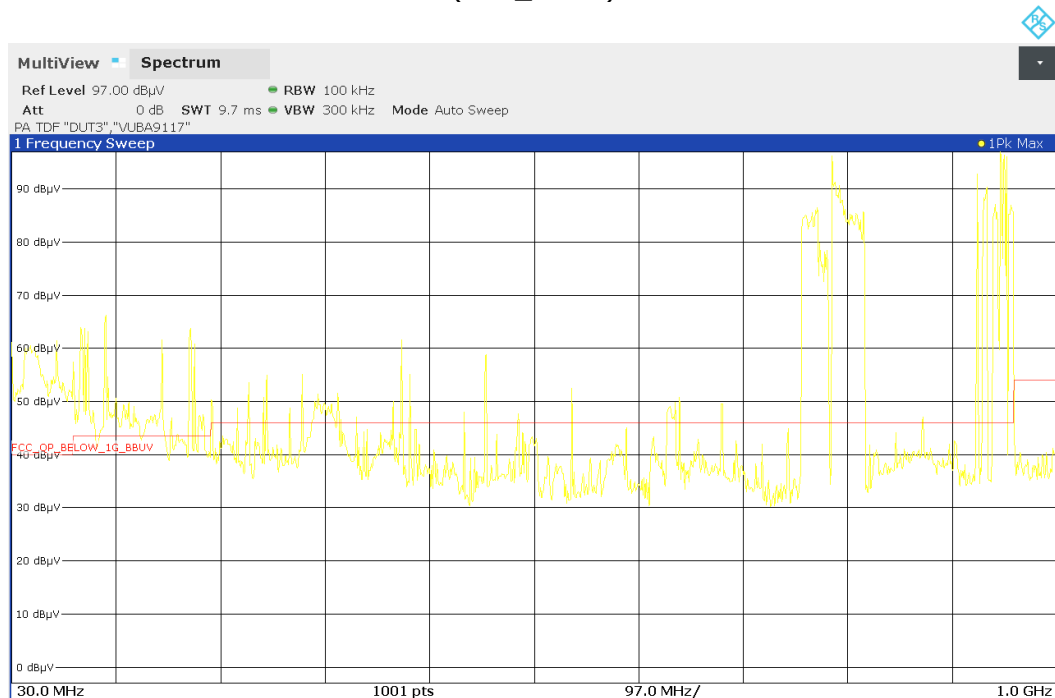


Noise Level, Ambient, Frequency Range = 30 MHz -1 GHz, Polarisation = vertical



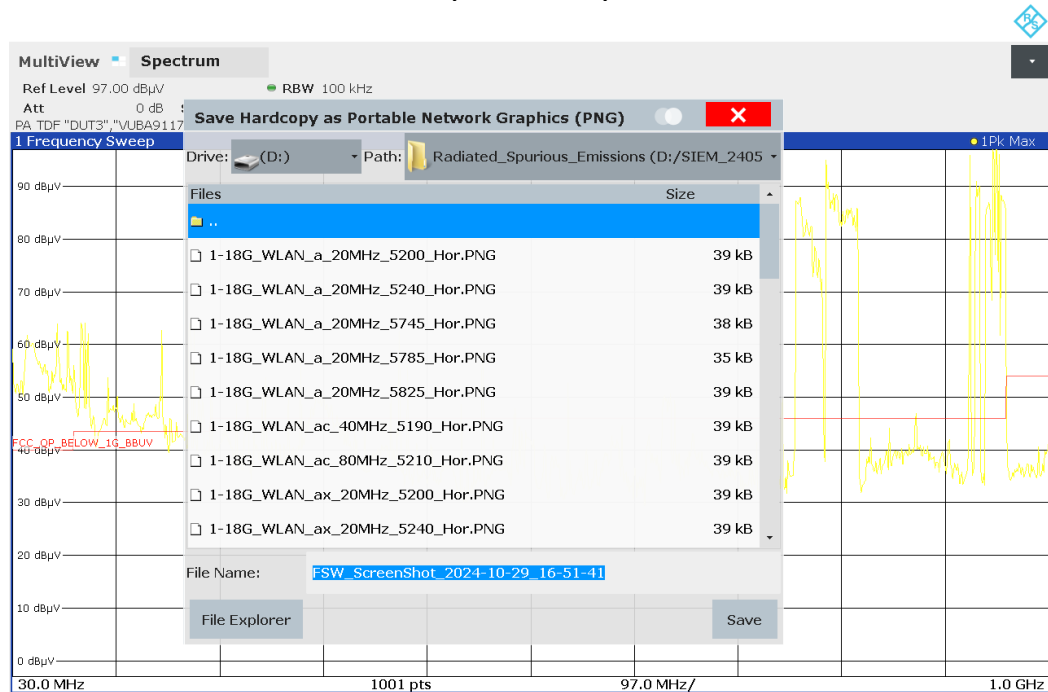
04:41:39 PM 10/29/2024

Radio Technology = WLAN a, Operating Frequency = mid, Subband = U-NII-1,
Frequency Range = 30 MHz – 1 GHz, Polarisation = horizontal
(S01_A004)



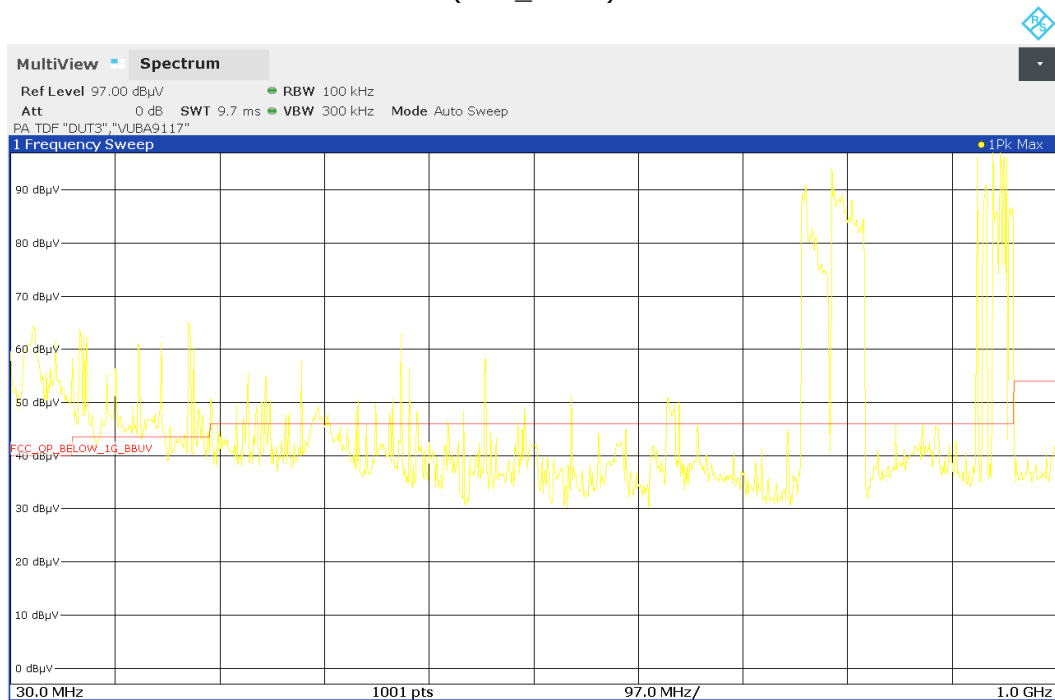
04:44:46 PM 10/29/2024

Radio Technology = WLAN a, Operating Frequency = mid, Subband = U-NII-3,
Frequency Range = 30 MHz – 1 GHz, Polarisation = horizontal
(S01_AO04)



04:51:44 PM 10/29/2024

Radio Technology = WLAN ax 20, Operating Frequency = mid, Subband = U-NII-1,
Frequency Range = 30 MHz – 1 GHz, Polarisation = horizontal
(S01_AO04)



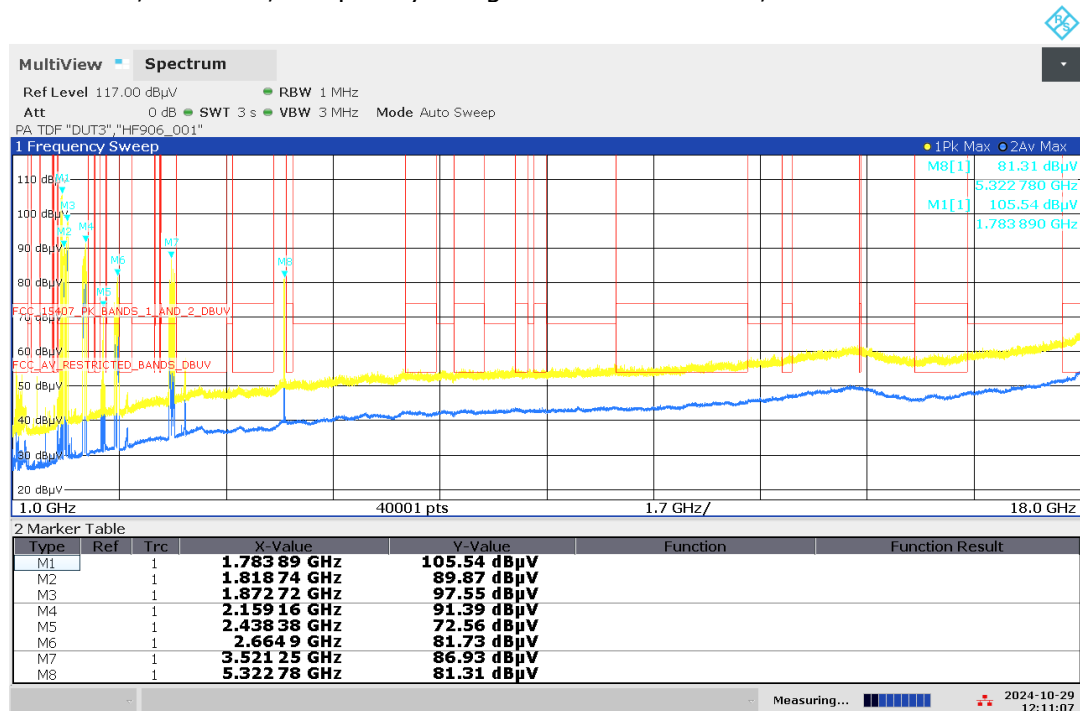
04:49:09 PM 10/29/2024

Radio Technology = WLAN ax 20, Operating Frequency = mid, Subband = U-NII-3,
Frequency Range = 30 MHz – 1 GHz, Polarisation = horizontal
(S01_AO04)



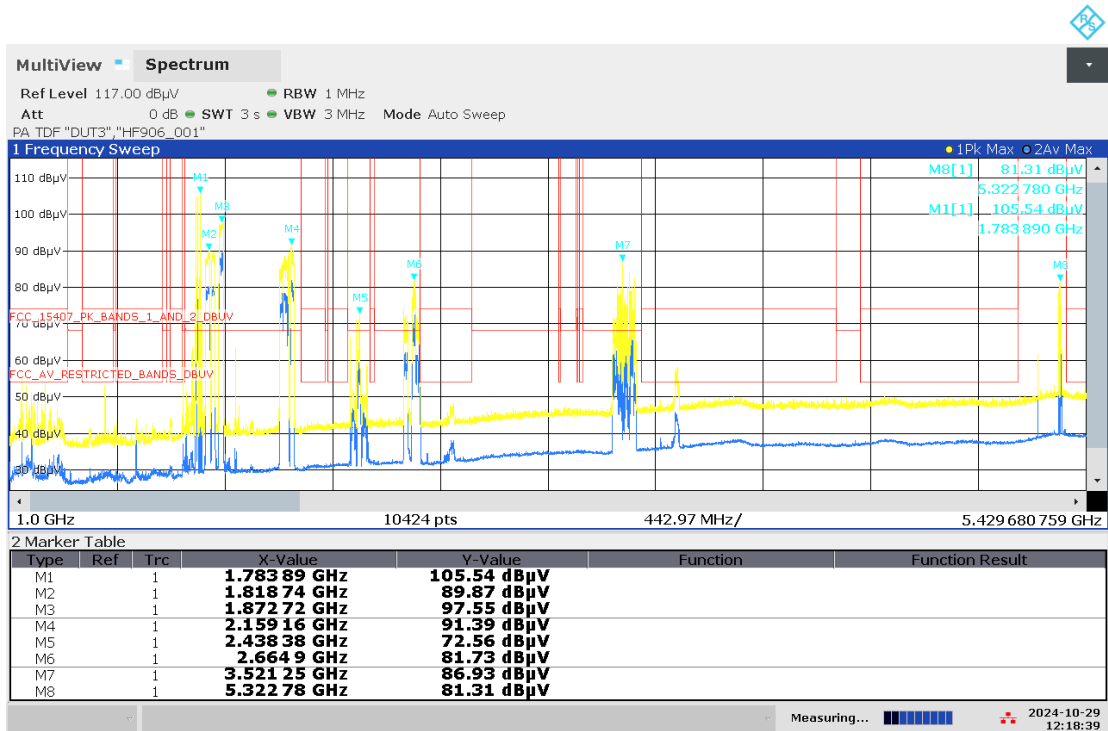
04:55:48 PM 10/29/2024

Noise Level, Ambient, Frequency Range = 1 GHz -18 GHz, Polarisation = horizontal



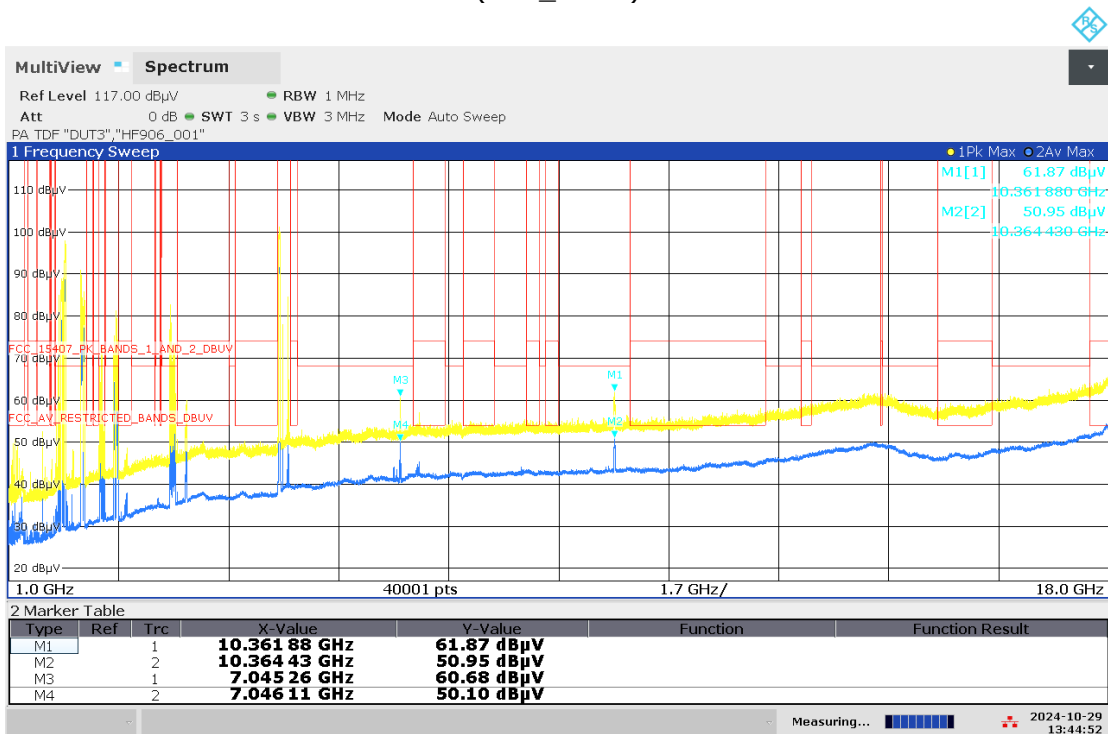
12:11:08 PM 10/29/2024

Noise Level, Ambient, Frequency Range = 1 GHz -18 GHz, Polarisation = horizontal,
marker zoomed



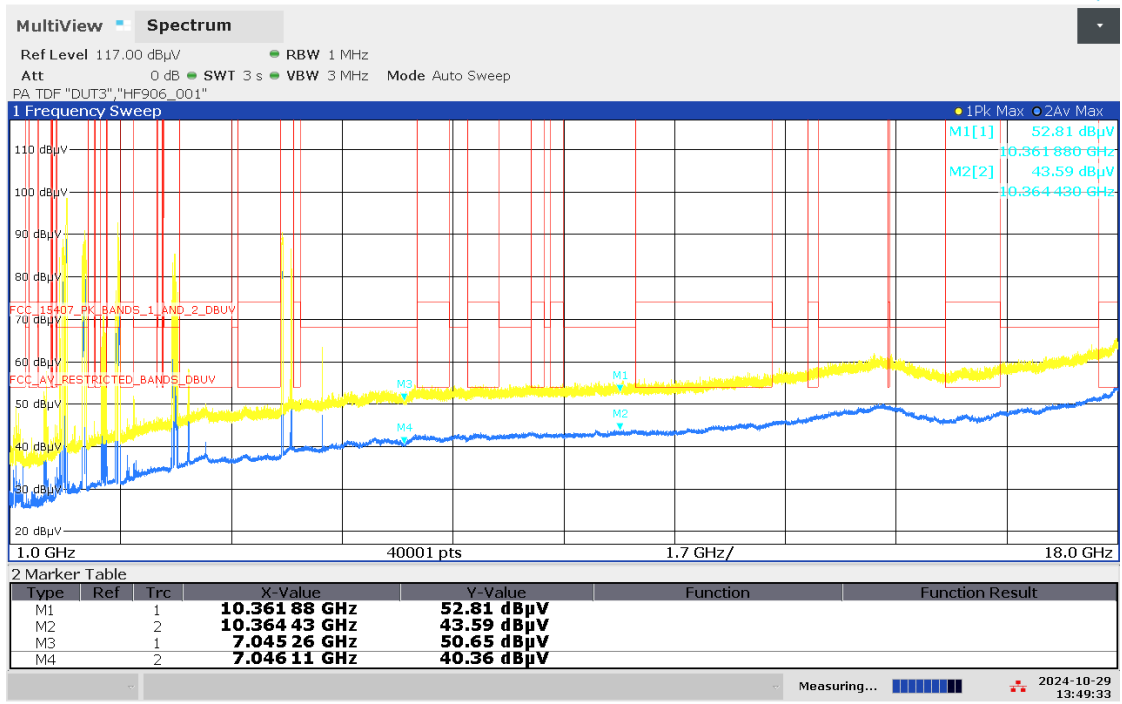
12:18:39 PM 10/29/2024

Radio Technology = WLAN a, Operating Frequency = low, Subband = U-NII-1,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



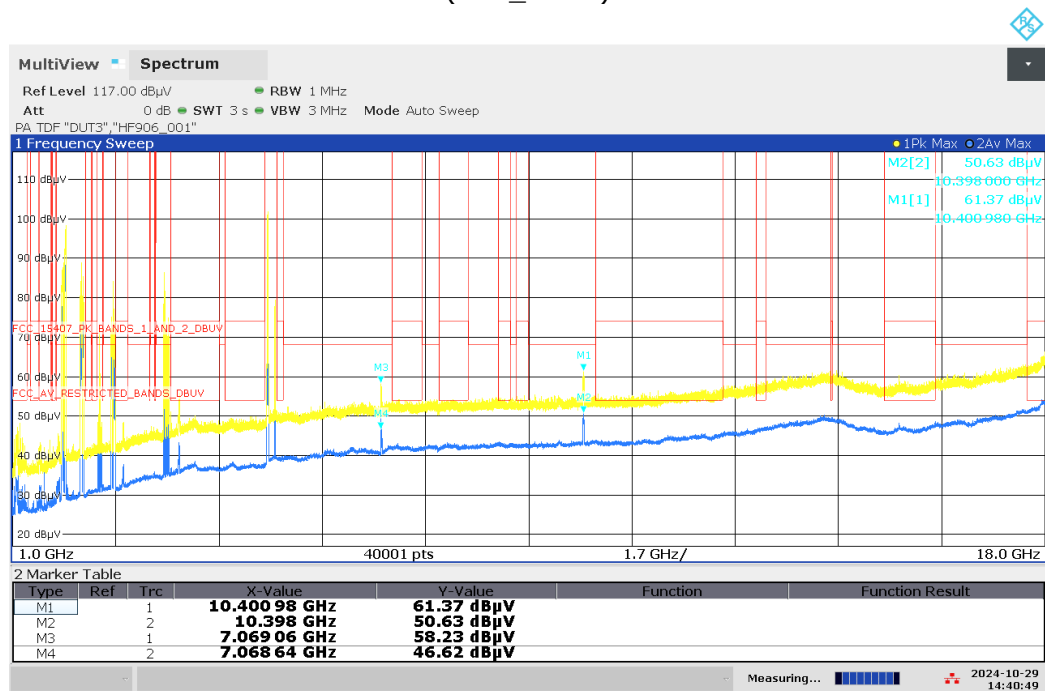
01:44:53 PM 10/29/2024

Radio Technology = WLAN a, Operating Frequency = low, Subband = U-NII-1,
Frequency Range = 1 GHz – 18 GHz, Polarisation = vertical
(S01_AO04)



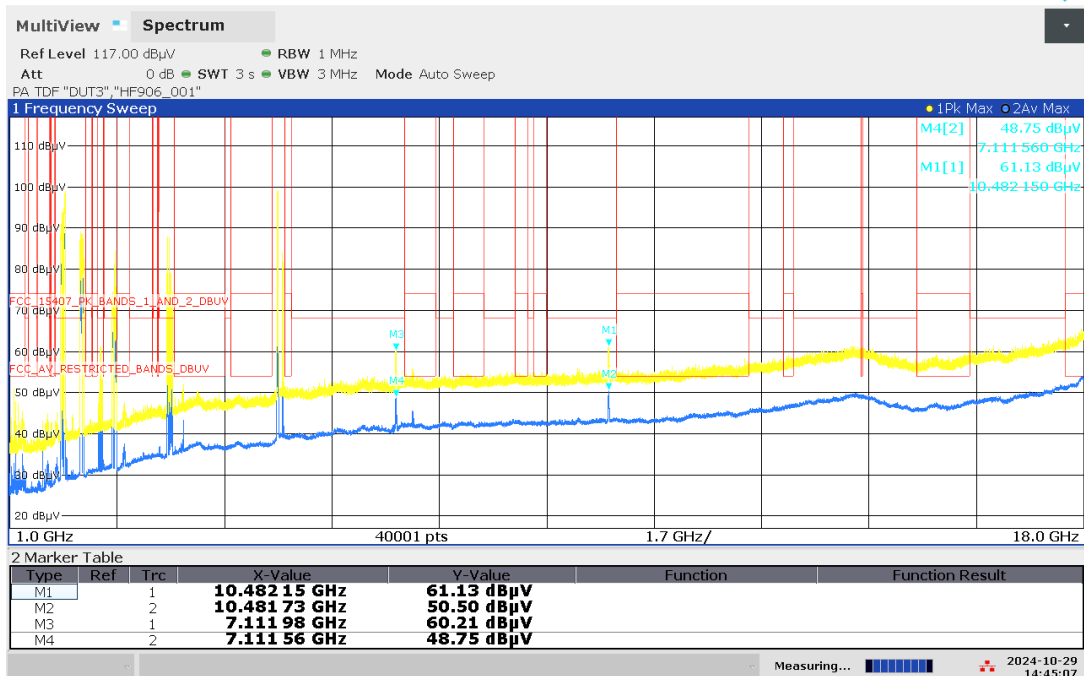
01:49:33 PM 10/29/2024

Radio Technology = WLAN a, Operating Frequency = mid, Subband = U-NII-1,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



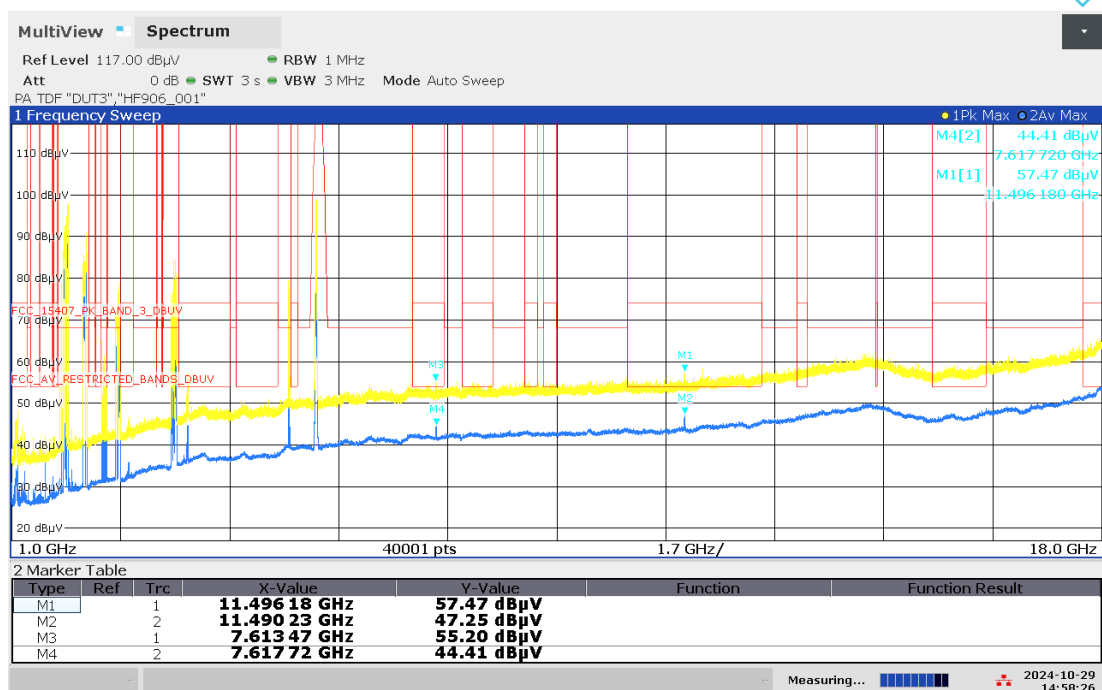
02:40:49 PM 10/29/2024

Radio Technology = WLAN a, Operating Frequency = high, Subband = U-NII-1,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



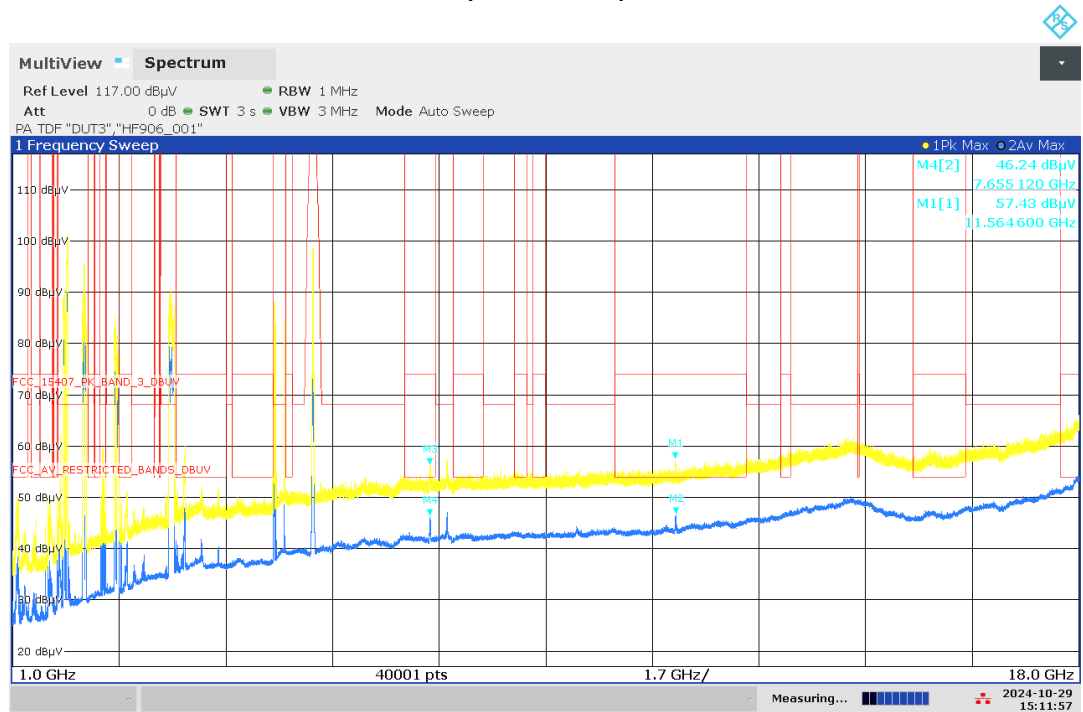
02:45:07 PM 10/29/2024

Radio Technology = WLAN a, Operating Frequency = low, Subband = U-NII-3,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



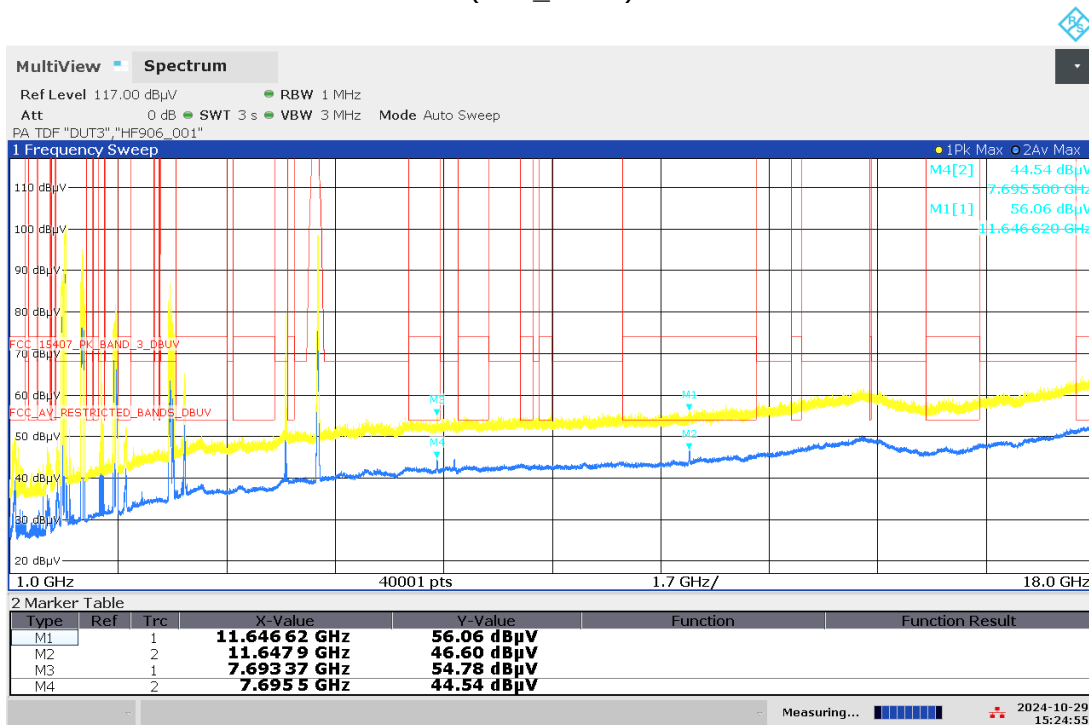
02:58:27 PM 10/29/2024

Radio Technology = WLAN a, Operating Frequency = mid, Subband = U-NII-3,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



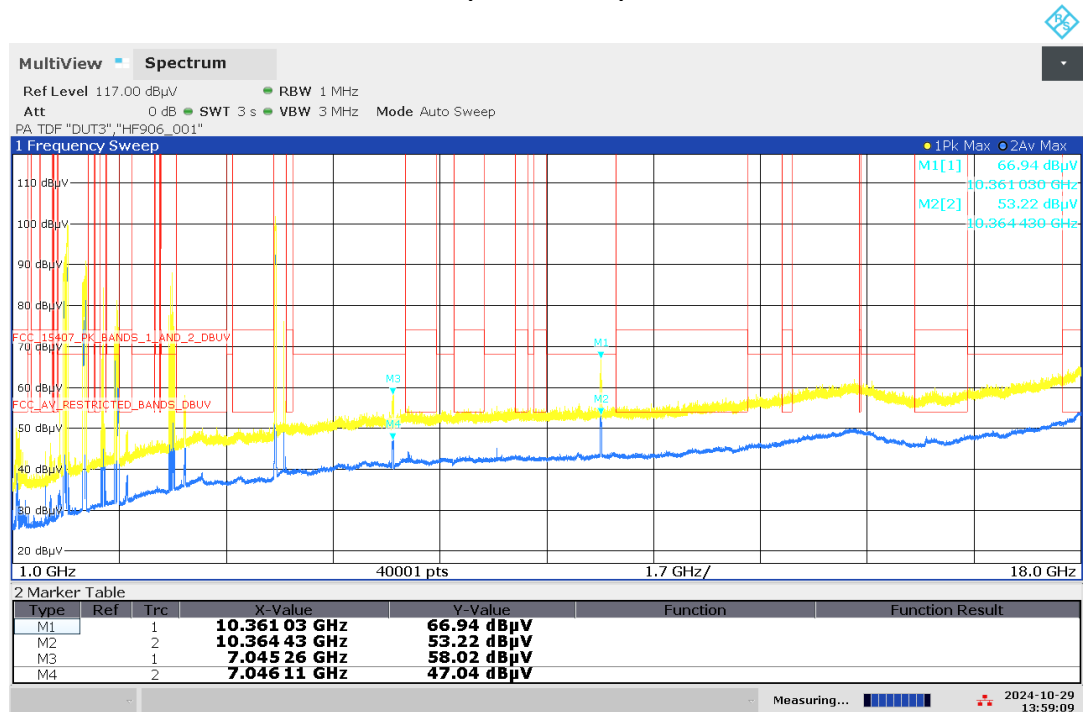
03:11:58 PM 10/29/2024

Radio Technology = WLAN a, Operating Frequency = high, Subband = U-NII-3,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



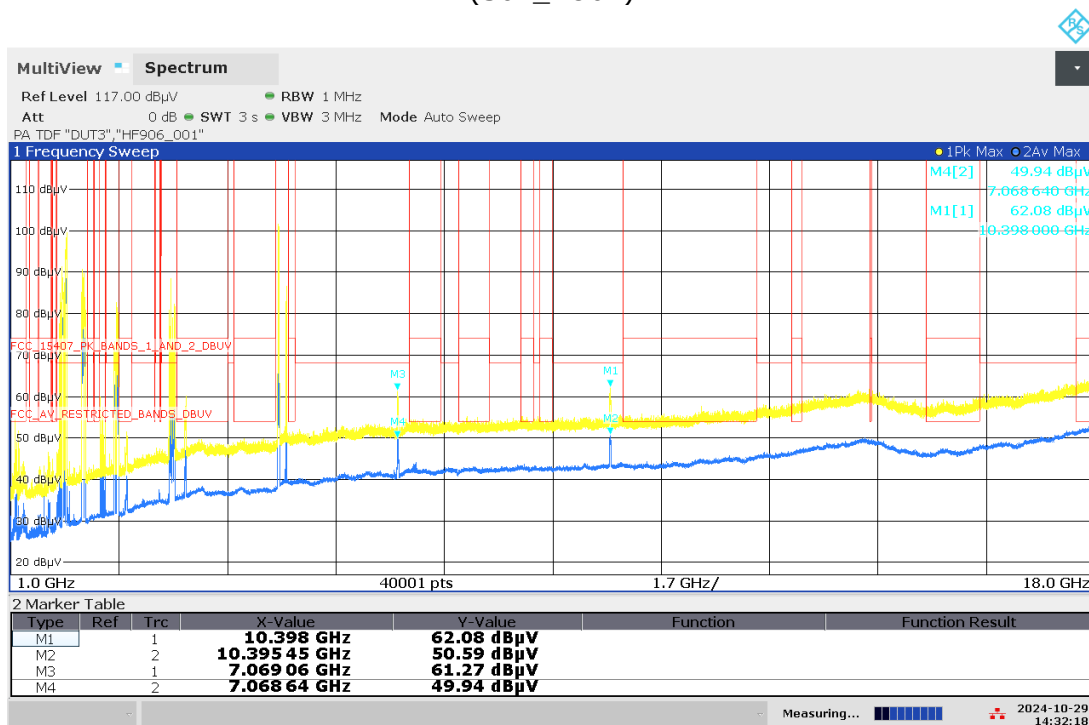
03:24:55 PM 10/29/2024

Radio Technology = WLAN n 20, Operating Frequency = low, Subband = U-NII-1,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



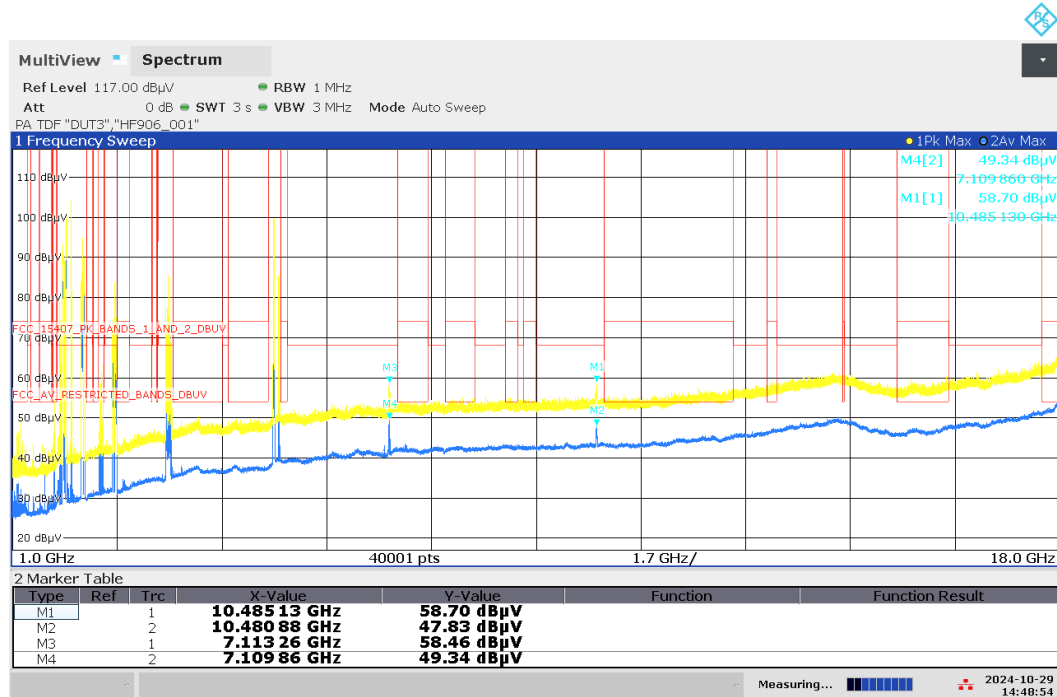
01:59:09 PM 10/29/2024

Radio Technology = WLAN n 20, Operating Frequency = mid, Subband = U-NII-1,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



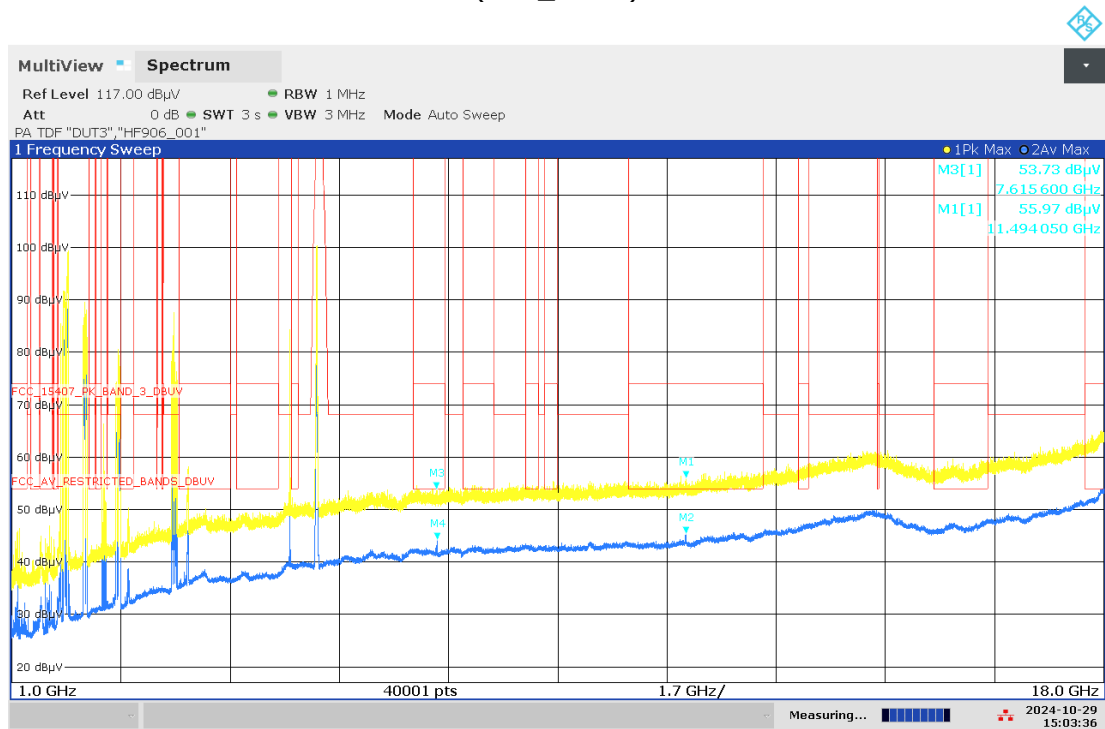
02:32:19 PM 10/29/2024

Radio Technology = WLAN n 20, Operating Frequency = high, Subband = U-NII-1,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



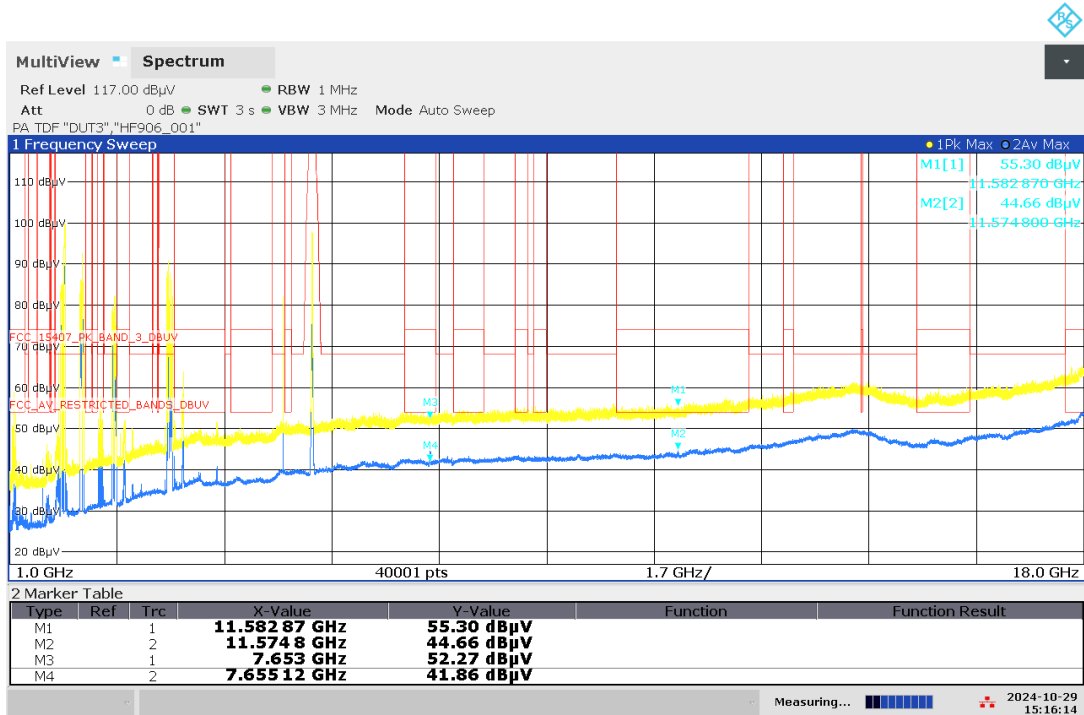
02:48:55 PM 10/29/2024

Radio Technology = WLAN n 20, Operating Frequency = low, Subband = U-NII-3,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



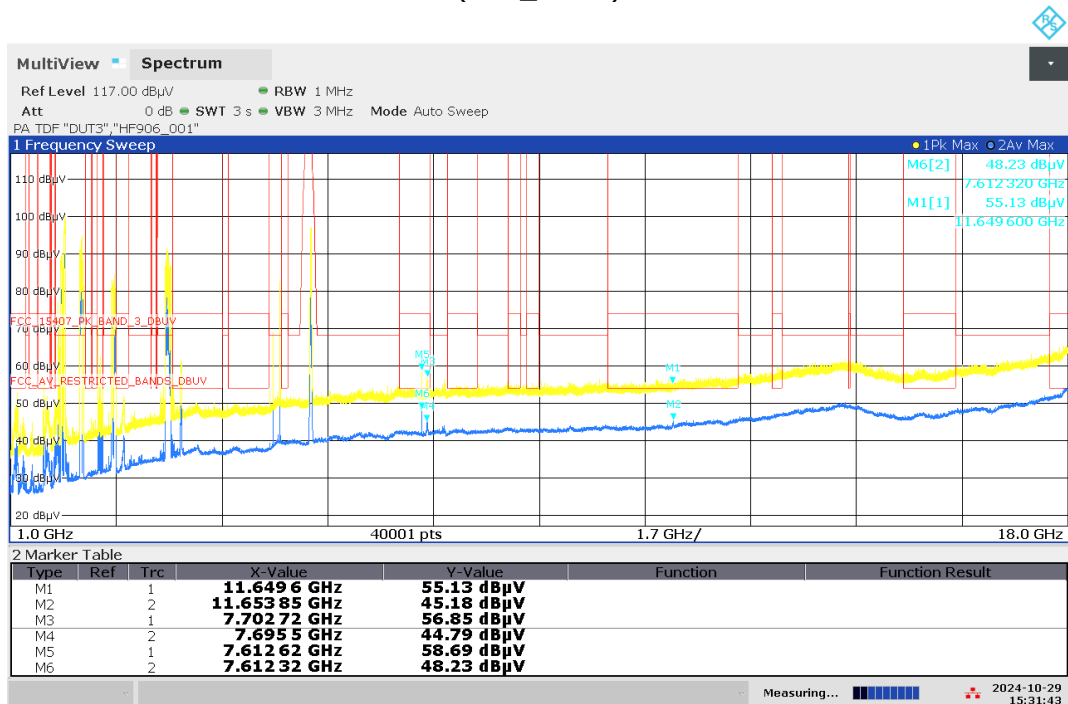
03:03:37 PM 10/29/2024

Radio Technology = WLAN n 20, Operating Frequency = mid, Subband = U-NII-3,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



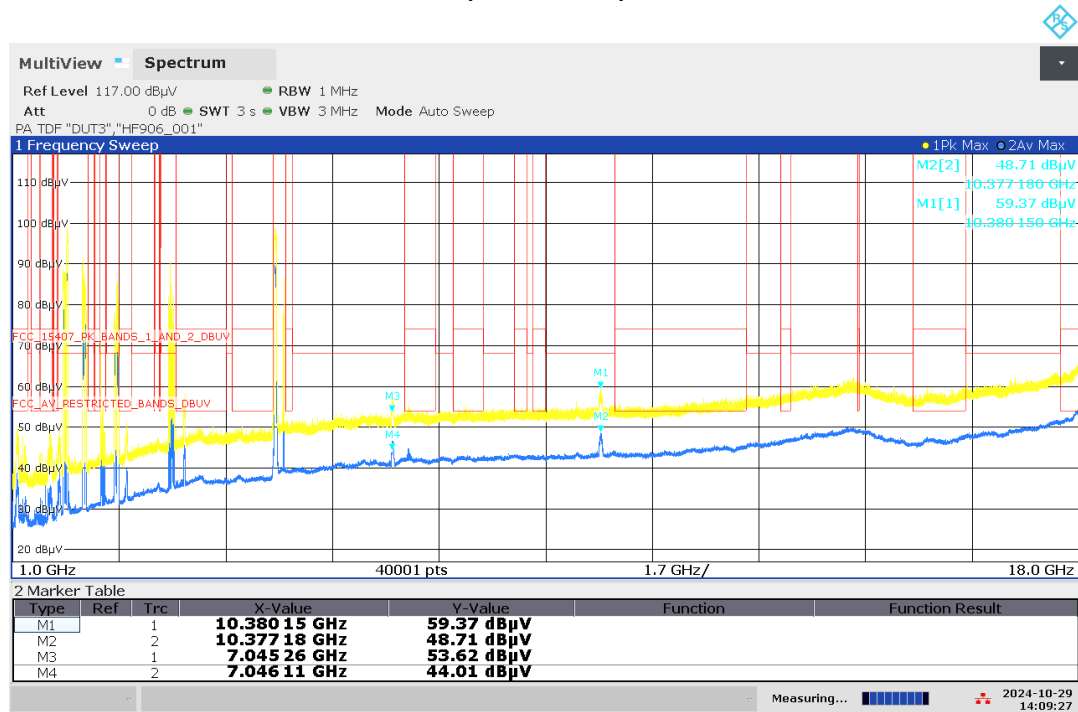
03:16:14 PM 10/29/2024

Radio Technology = WLAN n 20, Operating Frequency = high, Subband = U-NII-3,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



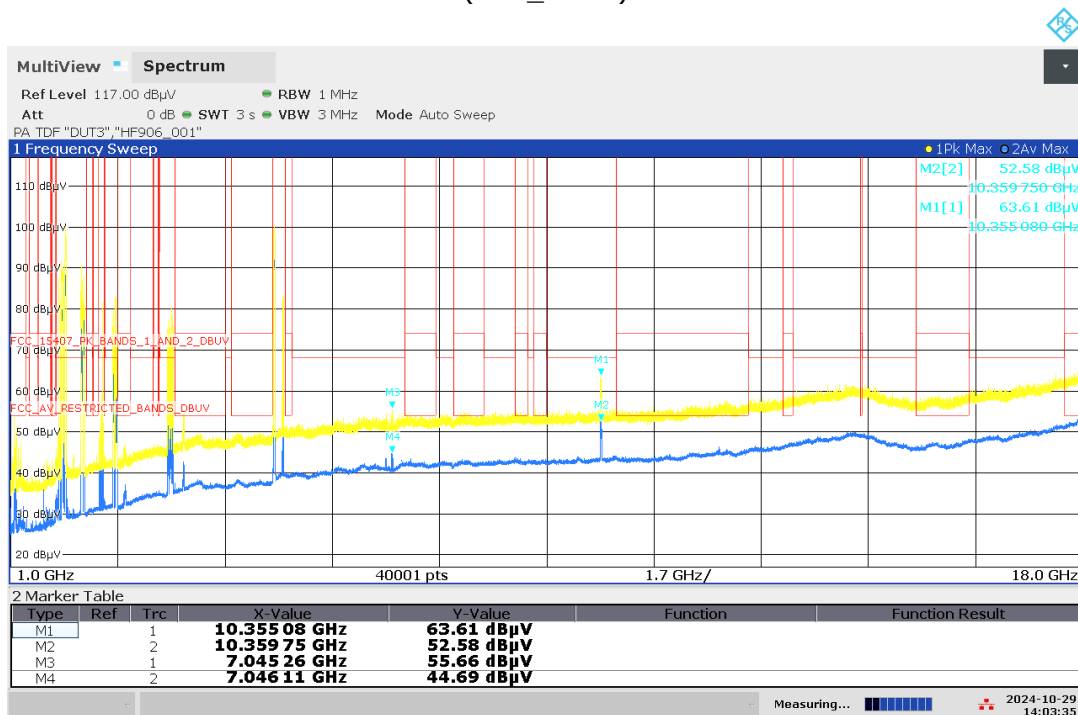
03:31:43 PM 10/29/2024

Radio Technology = WLAN n 40, Operating Frequency = low, Subband = U-NII-1,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



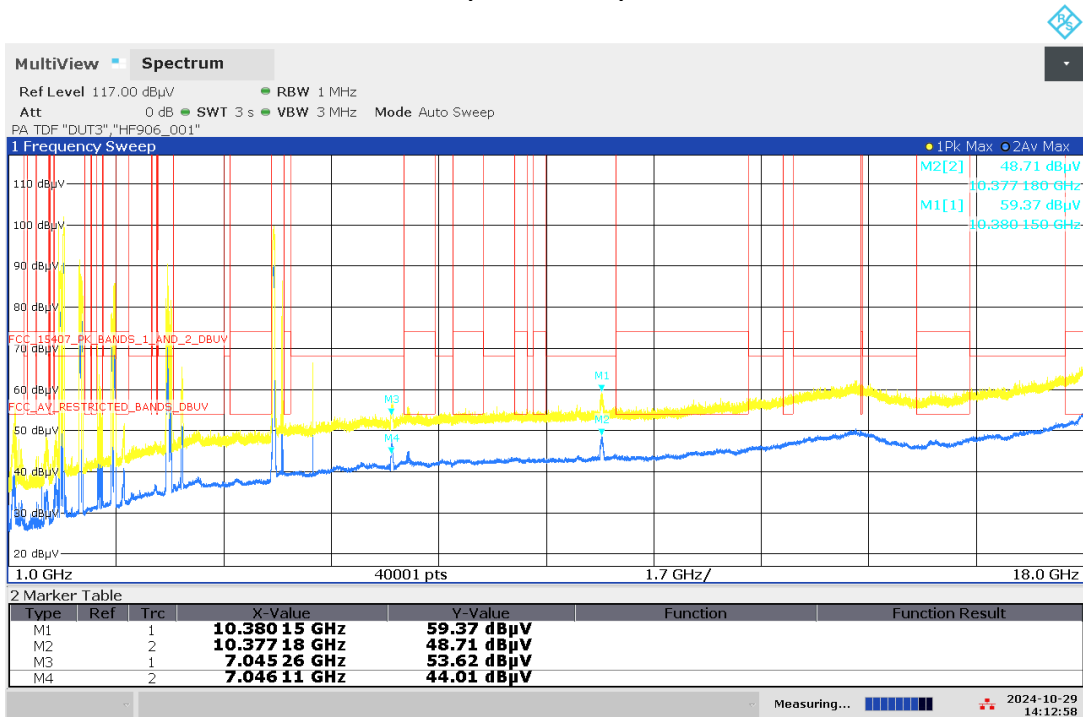
02:09:28 PM 10/29/2024

Radio Technology = WLAN ac 20, Operating Frequency = low, Subband = U-NII-1,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



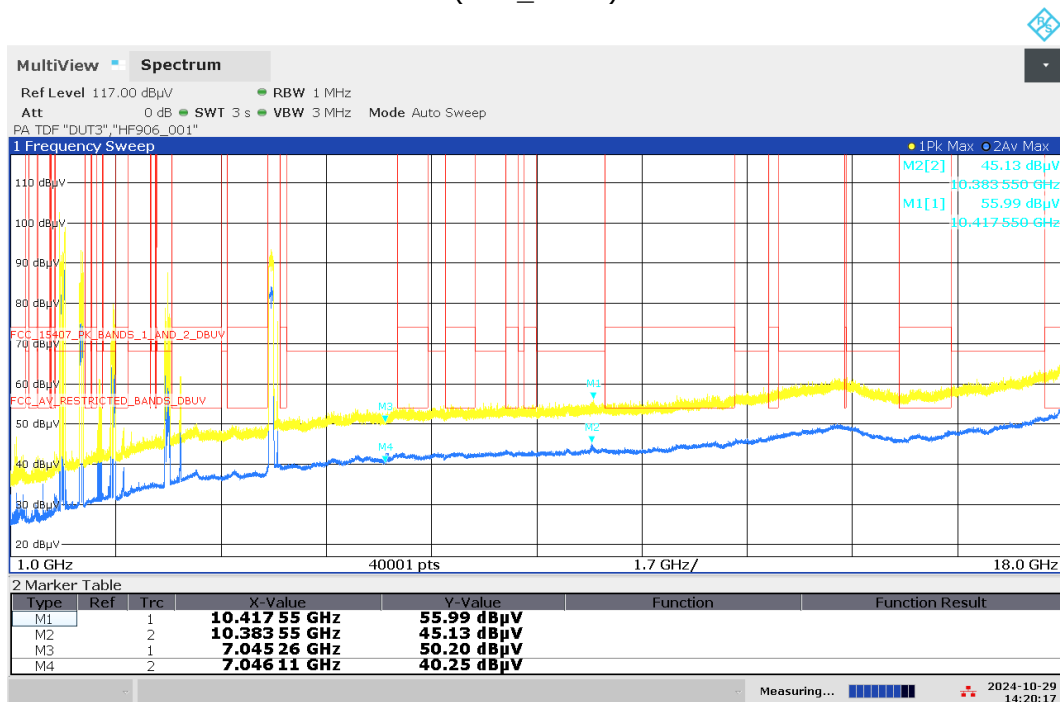
02:03:36 PM 10/29/2024

Radio Technology = WLAN ac 40, Operating Frequency = low, Subband = U-NII-1,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



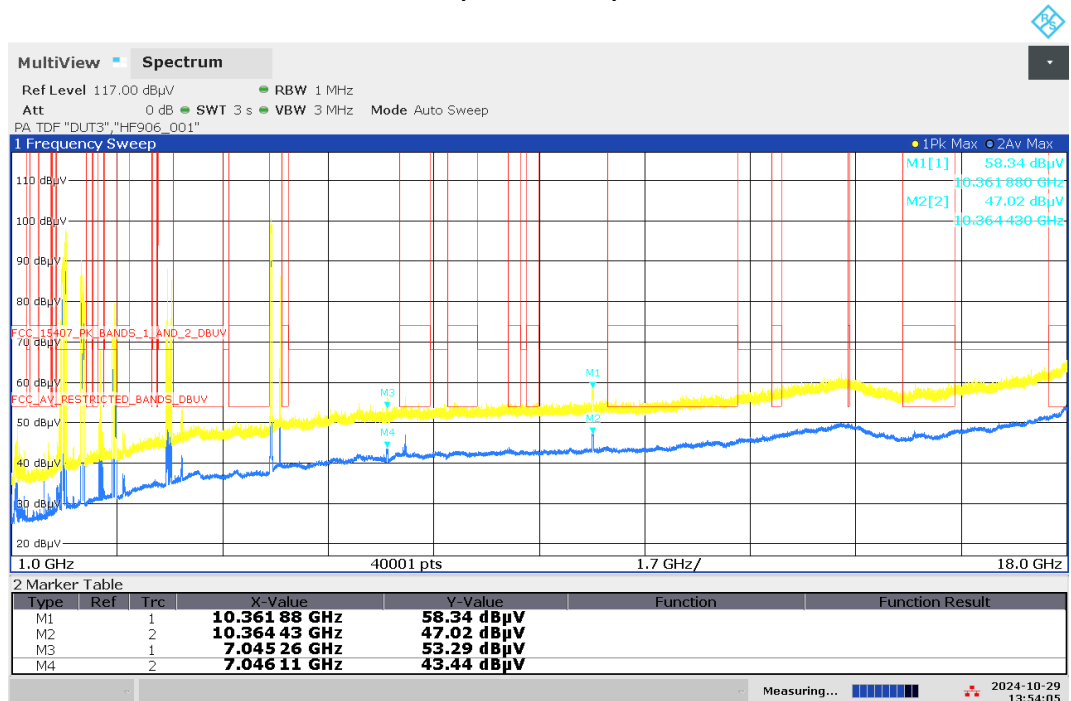
02:12:58 PM 10/29/2024

Radio Technology = WLAN ac 80, Operating Frequency = mid, Subband = U-NII-1,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



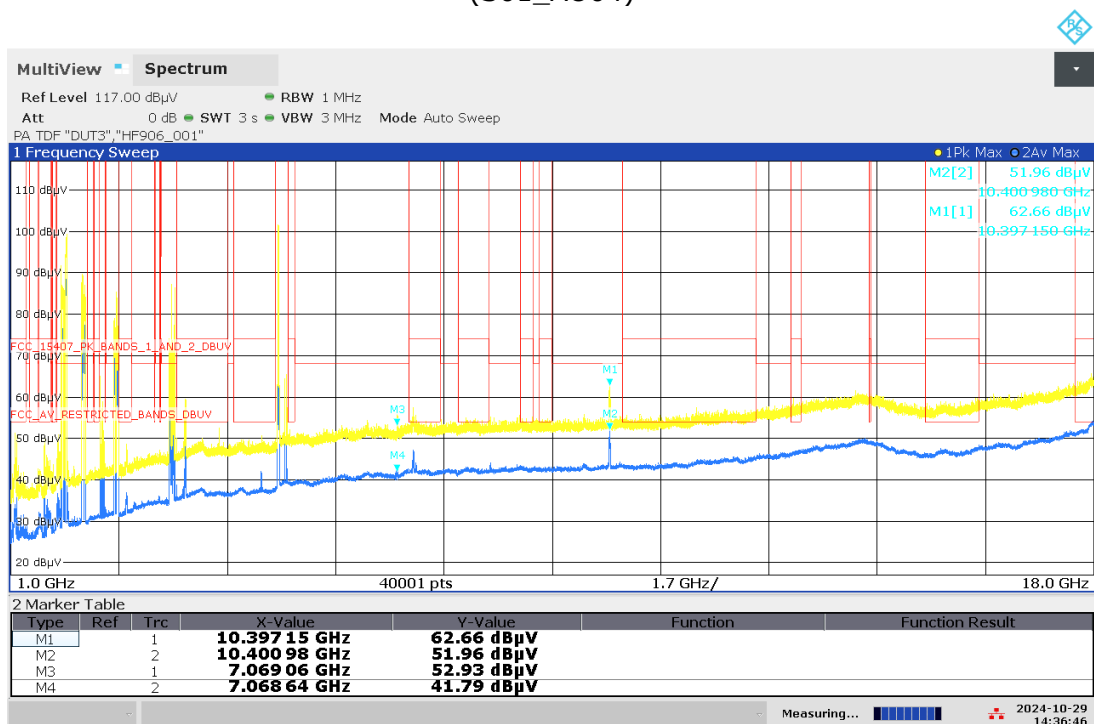
02:20:18 PM 10/29/2024

Radio Technology = WLAN ax 20, Operating Frequency = low, Subband = U-NII-1,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



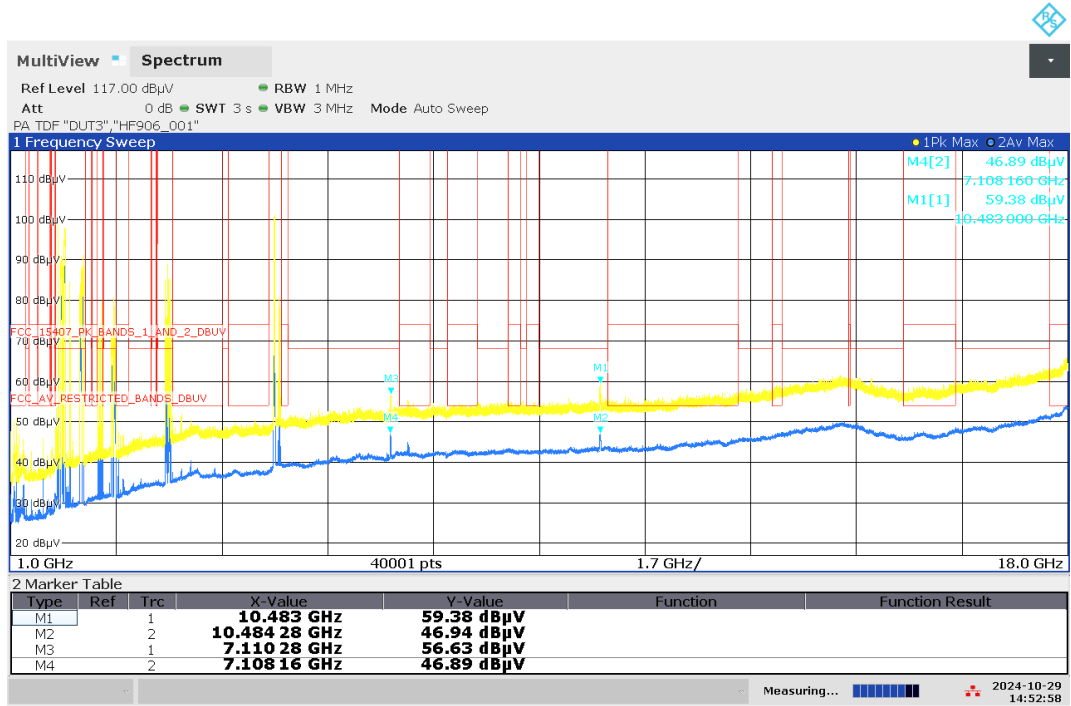
01:54:05 PM 10/29/2024

Radio Technology = WLAN ax 20, Operating Frequency = mid, Subband = U-NII-1,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



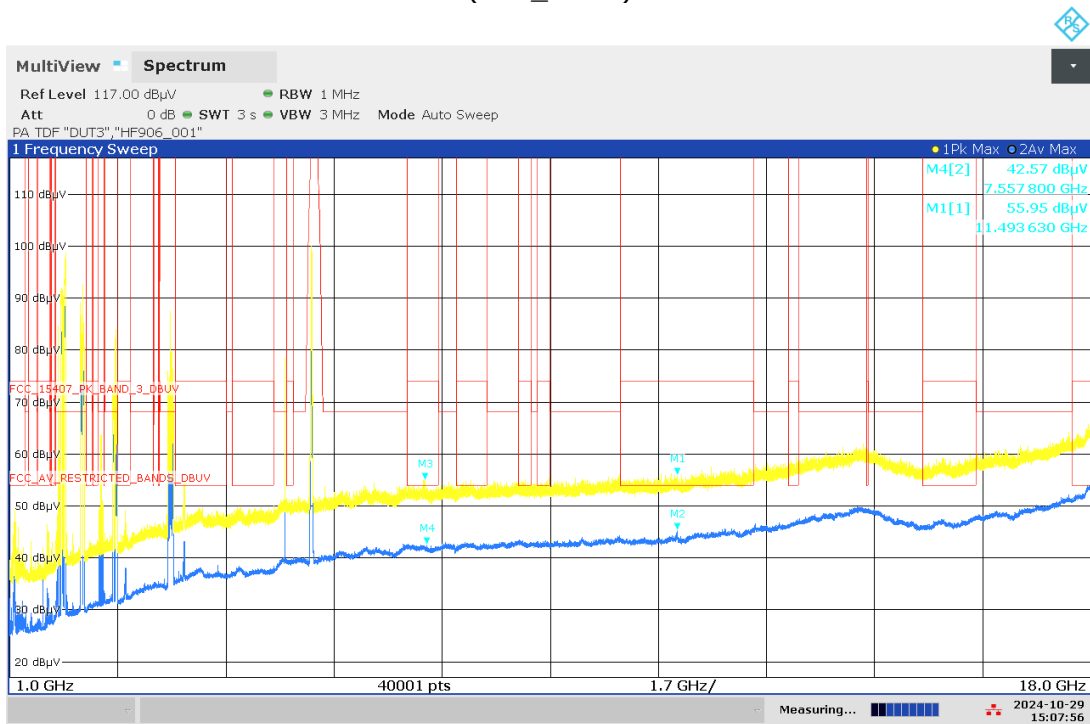
02:36:46 PM 10/29/2024

Radio Technology = WLAN ax 20, Operating Frequency = high, Subband = U-NII-1,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



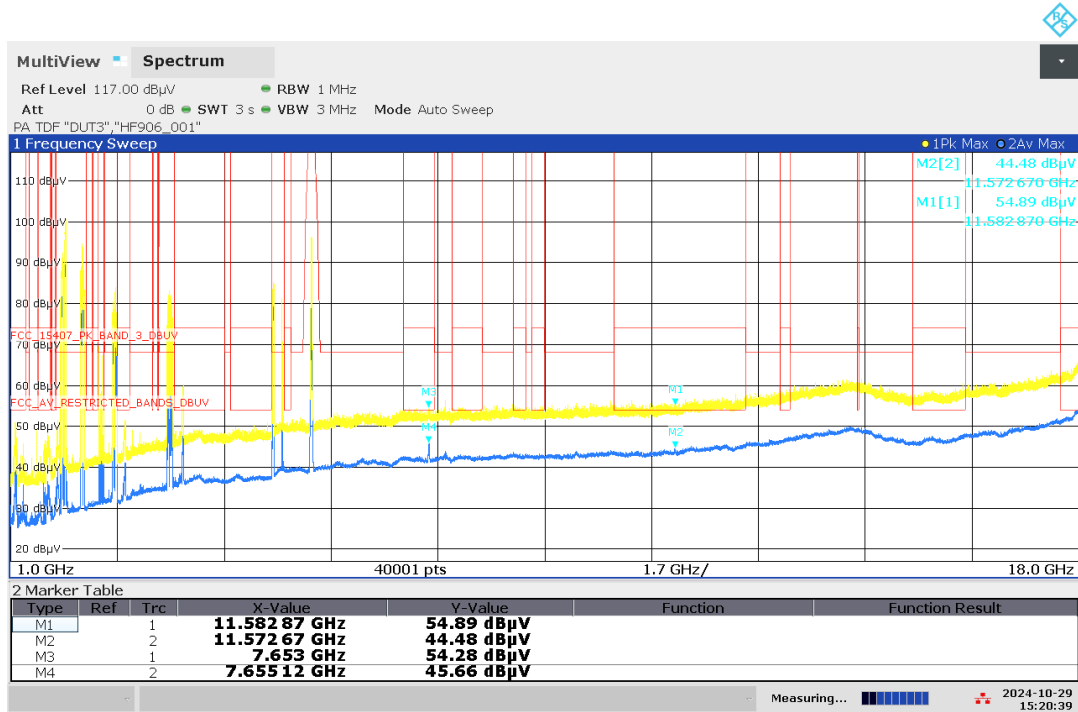
02:52:58 PM 10/29/2024

Radio Technology = WLAN ax 20, Operating Frequency = low, Subband = U-NII-3,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



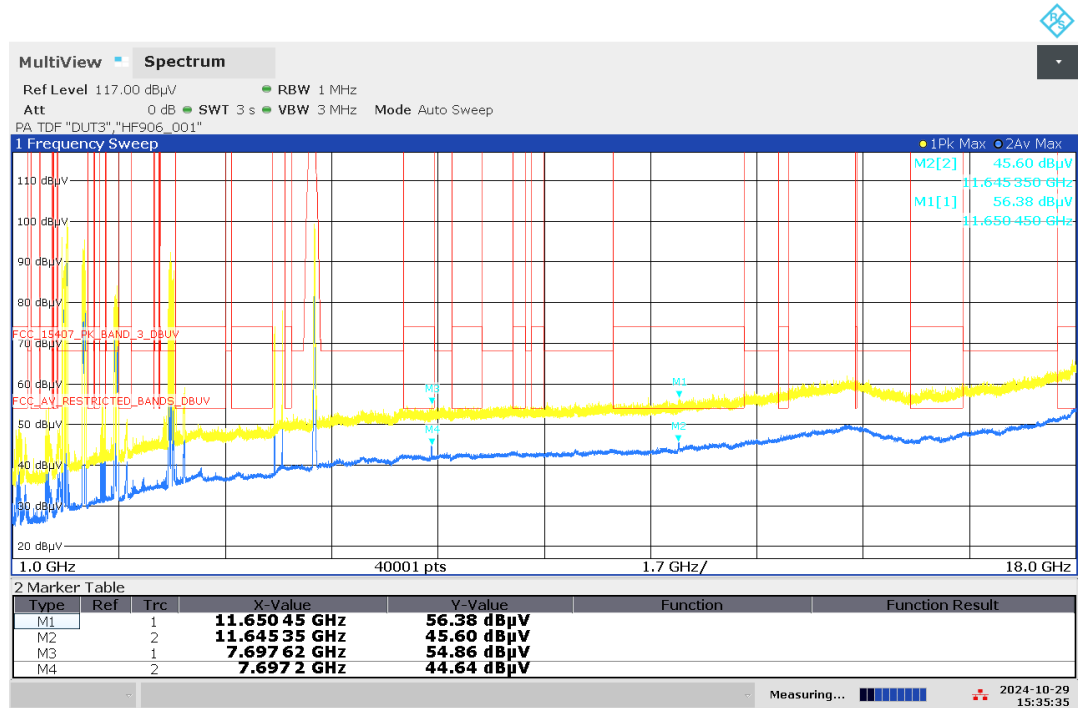
03:07:56 PM 10/29/2024

Radio Technology = WLAN ax 20, Operating Frequency = mid, Subband = U-NII-3,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



03:20:39 PM 10/29/2024

Radio Technology = WLAN ax 20, Operating Frequency = high, Subband = U-NII-3,
Frequency Range = 1 GHz – 18 GHz, Polarisation = horizontal
(S01_AO04)



03:35:35 PM 10/29/2024