



LCIE



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TEST REPORT

N°: 24111489-806170-B(FILE#9376726-NOR)

Version: 01

Subject Radio spectrum tests according to the standards:
FCC CFR 47 Part 15.247 & ANSI C63.10
RSS-247 & RSS-Gen

Issued to ENLAPS
26 avenue Jean Kuntzmann
38330 – MONTBONNOT
FRANCE

Apparatus under test

Product	Timelapse digital cameras
Trade mark	ENLAPS
Manufacturer	ENLAPS
Family range	None
Model under test	Tikee 4
Serial number	T-4TK-4Q-E01492
FCCID	2ASLI-TIKEE003
IC	24785-TIKEE003

Conclusion See Test Program chapter

Test date	November 04, 2024 to November 14, 2024
Test location	LCIE Grenoble
FCC Test site	FR0008 - 918017 (MOI)
ISED Test site	6500A (MOI)
Sample receipt date	November 04, 2024
Composition of document	62 pages
Document issued on	February 13, 2025

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PUBLICATION HISTORY

Version	Date	Author	Modification
01	February 13, 2025	Akram HAKKARI	Creation of the document

Each new edition of this test report replaces and cancels the previous edition. The control of the old editions of report is under responsibility of client.



SUMMARY

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1. TEST PROGRAM

References

- 47 CFR Part 15.247 (2023)
- RSS 247 Issue 3
- RSS Gen Issue 5
- KDB 558074 D01 DTS Meas Guidance v05r02 [Pb](#)
- KDB 662911 D01 Multiple Transmitter Output v02r01 [Pb](#)
- ANSI C63.10 (2013)

Radio requirement:

Clause - Test Description		Test result - Comments
Occupied Bandwidth	<i>ISED</i>	PASS
6dB Bandwidth	<i>FCC & ISED</i>	PASS
Maximum Conducted Output Power	<i>FCC & ISED</i>	PASS
Power Spectral Density	<i>FCC & ISED</i>	PASS
Unwanted Emissions in Non-Restricted Frequency Bands	<i>FCC & ISED</i>	PASS
Unwanted Emissions in Restricted Frequency Bands	<i>FCC & ISED</i>	PASS
Receiver Radiated Emissions	<i>ISED</i>	PASS(2)

This table is a summary of test report, see conclusion of each clause of this test report for detail.

(1) Limited program

(2) Testing covered the receive mode, and receiver spurious emissions are considered to be the same as transmitter.

PASS: EUT complies with standard's requirement

FAIL: EUT does not comply with standard's requirement

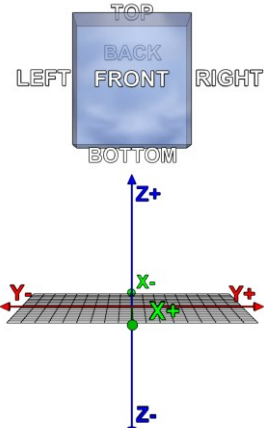
NA: Not Applicable

NP: Test Not Performed

2. EQUIPMENT UNDER TEST: CONFIGURATION (DECLARED BY PROVIDER)

2.1. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES):

Equipment under test (EUT):

Model under test:	Tikee 4		
Serial Number:	T-4TK-4Q-E01492		
			
Dimensions:	18.5cm x 18cm x 8cm (Length x Width x Height)		
Type:	Table-Top		

Power supply:

Name	Type	Rating	Reference / Sn	Comments
Supply1	Battery	3.6Vdc [2.5Vdc-4.2Vdc]	/	Internal battery charged by USB-C or proprietary connector
Supply2	Solar Panel			
Supply3	AC	100-240V/50-60Hz	Intertek MX15Z-0502500VX E467127	Proprietary, No provided by manufacturer

NC: Not communicated by provider

**Inputs/outputs - Cable:**

Access	Type	Length used (m)	Declared <3m	Shielded	Comments
Supply1	Battery	/	/	/	/
Supply2	AC	2	No	Yes	/
Supply3	Solar Panel	/	/	/	/
Access1	μUSB connector	None	NA	NA	No
Access2	μSD connector	None	NA	NA	NA
Access3	SIM connector	None	NA	NA	NA

NC: Not communicated by provider

Auxiliary equipment used during test:

Type	Reference	Sn	Comments
Wifi Router	ASUS RT-AC68U	/	/
Laptop	ASUS Vivobook S530F	/	Test Laptop (communication with EUT)

NC: Not communicated by provider



Equipment information (declaration of provider):

WiFi				
Chipset / RF Module	AMPAK AP6256			
Frequency band:	[2400 – 2483.5] MHz			
Standard:	☒ 802.11b	☒ 802.11g	☒ 802.11n HT20	☐ 802.11n HT40
Spectrum Modulation:	DSSS	OFDM		
Number of Channel:	11 max (see channel plan)			
Spacing channel:	5MHz			
Channel bandwidth:	20MHz			
Antenna Type:	Internal			
Antenna connector:	Temporary for tests			
Antenna requirements §15.203	The transmitter uses an integral antenna and it permanently connected			
Transmit chains:	1			
Beamforming gain:	No			
Receiver chains	1			
Ad-Hoc mode:	No			

CHANNEL PLAN			
802.11b / 802.11g / 802.11n HT20		802.11n HT40	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
Cmin: 1	2412	Cmin: 3	2422
2	2417	4	2427
3	2422	5	2432
4	2427	Cmid: 6	2437
5	2432	7	2442
Cmid: 6	2437	8	2447
7	2442	Cmax: 9	2452
8	2447		
9	2452		
10	2457		
Cmax: 11	2462		

DATA RATE			
802.11b			
Available for EUT	Data Rate (Mbps)	Modulation Type	Modulation Worst Case
☒	1	DBPSK	☒
	2	DQPSK	☐
	5.5	DQPSK	☐
	11	CCK	☐
802.11g			
Available for EUT	Data Rate (Mbps)	Modulation Type	Modulation Worst Case
☒	6	BPSK	☒
	9	BPSK	☐
	12	QPSK	☐
	18	QPSK	☐
	24	16-QAM	☐
	36	16-QAM	☐
	48	64-QAM	☐
	54	64-QAM	☐



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DATA RATE									
802.11n HT20									
Available for EUT	MCS Index	Spatial streams	Modulation				Data Rate (Mbps)		Worst Case Modulation
							(GI = 800ns)	(GI = 400ns)	
☑	0	1	BPSK				6.5	7.2	☐
	1	1	QPSK				13	14.4	☐
	2	1	QPSK				19.5	21.7	☐
	3	1	16-QAM				26	28.9	☐
	4	1	16-QAM				39	43.3	☐
	5	1	64-QAM				52	57.8	☐
	6	1	64-QAM				58.5	65	☐
	7	1	64-QAM				65	72.2	☐
☐	32	1	BPSK	-	-	-	-	-	☐
	8	2	BPSK				13	14.4	☐
	9	2	QPSK				26	28.9	☐
	10	2	QPSK				39	43.3	☐
	11	2	16-QAM				52	57.8	☐
	12	2	16-QAM				78	86.7	☐
	13	2	64-QAM				104	115.6	☐
	14	2	64-QAM				117	130.3	☐
	15	2	64-QAM				130	144.4	☐
	33	2	16-QAM	QPSK	-	-	39	43.3	☐
	34	2	64-QAM	QPSK	-	-	52	57.8	☐
	35	2	64-QAM	16-QAM	-	-	65	72.2	☐
	36	2	16-QAM	QPSK	-	-	58.5	65	☐
	37	2	64-QAM	QPSK	-	-	78	86.7	☐
	38	2	64-QAM	16-QAM	-	-	97.5	108.3	☐
☐	16	3	BPSK				19.5	21.7	☐
	17	3	QPSK				39	43.3	☐
	18	3	QPSK				58.5	65	☐
	19	3	16-QAM				78	86.7	☐
	20	3	16-QAM				117	130	☐
	21	3	64-QAM				156	173.3	☐
	22	3	64-QAM				175.5	195	☐
	23	3	64-QAM				195	216.7	☐
	39	3	16-QAM	QPSK	QPSK	-	52	57.8	☐
	40	3	16-QAM	16-QAM	QPSK	-	65	72.2	☐
	41	3	64-QAM	QPSK	QPSK	-	65	72.2	☐
	42	3	64-QAM	16-QAM	QPSK	-	78	86.7	☐
	43	3	64-QAM	16-QAM	16-QAM	-	91	101.1	☐
	44	3	64-QAM	64-QAM	QPSK	-	91	101.1	☐
	45	3	64-QAM	64-QAM	16-QAM	-	104	115.6	☐
	46	3	16-QAM	QPSK	QPSK	-	78	86.7	☐
	47	3	16-QAM	16-QAM	QPSK	-	97.5	108.3	☐
	48	3	64-QAM	QPSK	QPSK	-	97.5	108.3	☐
	49	3	64-QAM	16-QAM	QPSK	-	117	130	☐
	50	3	64-QAM	16-QAM	16-QAM	-	136.5	151.7	☐
51	3	64-QAM	64-QAM	QPSK	-	136.5	151.7	☐	
52	3	64-QAM	64-QAM	16-QAM	-	156	173.3	☐	
☐	24	4	BPSK				26	28.9	☐
	25	4	QPSK				52	57.8	☐
	26	4	QPSK				78	86.7	☐
	27	4	16-QAM				104	115.6	☐
	28	4	16-QAM				156	173.3	☐
	29	4	64-QAM				208	231.1	☐
	30	4	64-QAM				234	260	☐
	31	4	64-QAM				260	288.9	☐
	53	4	16-QAM	QPSK	QPSK	QPSK	65	72.2	☐
	54	4	16-QAM	16-QAM	QPSK	QPSK	78	86.7	☐
	55	4	16-QAM	16-QAM	16-QAM	QPSK	91	101.1	☐
	56	4	64-QAM	QPSK	QPSK	QPSK	78	86.7	☐
	57	4	64-QAM	16-QAM	QPSK	QPSK	91	101.1	☐
	58	4	64-QAM	16-QAM	16-QAM	QPSK	104	115.6	☐
	59	4	64-QAM	16-QAM	16-QAM	16-QAM	117	130	☐
	60	4	64-QAM	QPSK	QPSK	QPSK	104	115.6	☐
	61	4	64-QAM	16-QAM	16-QAM	QPSK	117	130	☐
	62	4	64-QAM	16-QAM	16-QAM	16-QAM	130	144.4	☐
	63	4	64-QAM	64-QAM	64-QAM	QPSK	130	144.4	☐
	64	4	64-QAM	64-QAM	64-QAM	16-QAM	143	158.9	☐
	65	4	16-QAM	QPSK	QPSK	QPSK	97.5	108.3	☐
	66	4	16-QAM	16-QAM	QPSK	QPSK	117	130	☐
	67	4	16-QAM	16-QAM	16-QAM	QPSK	136.5	151.7	☐
	68	4	64-QAM	QPSK	QPSK	QPSK	117	130	☐
	69	4	64-QAM	16-QAM	QPSK	QPSK	136.5	151.7	☐
	70	4	64-QAM	16-QAM	16-QAM	QPSK	156	173.3	☐
	71	4	64-QAM	16-QAM	16-QAM	16-QAM	175.5	195	☐
	72	4	64-QAM	64-QAM	QPSK	QPSK	156	173.3	☐
	73	4	64-QAM	64-QAM	16-QAM	QPSK	175.5	195	☐
	74	4	64-QAM	64-QAM	16-QAM	16-QAM	195	216.7	☐



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	75	4	64-QAM	64-QAM	64-QAM	QPSK	195	216.7	☐
	76	4	64-QAM	64-QAM	64-QAM	16-QAM	214.5	238.3	☐

DATA RATE 802.11n HT40									
Available for EUT	MCS Index	Spatial streams	Modulation				Data Rate (Mbps)		Worst Case Modulation
							(GI = 800ns)	(GI = 400ns)	
☐	0	1	BPSK				13	15	☐
	1	1	QPSK				27	30	☐
	2	1	QPSK				40.5	45	☐
	3	1	16-QAM				54	60	☐
	4	1	16-QAM				81	90	☐
	5	1	64-QAM				108	120	☐
	6	1	64-QAM				121.5	135	☐
	7	1	64-QAM				135	150	☐
☐	32	1	BPSK	-	-	-	6.0	6.7	☐
	8	2	BPSK				27	30	☐
	9	2	QPSK				54	60	☐
	10	2	QPSK				81	90	☐
	11	2	16-QAM				108	120	☐
	12	2	16-QAM				162	180	☐
	13	2	64-QAM				216	240	☐
	14	2	64-QAM				243	270	☐
	15	2	64-QAM				270	300	☐
	33	2	16-QAM	QPSK	-	-	81	90.0	☐
	34	2	64-QAM	QPSK	-	-	108	120	☐
	35	2	64-QAM	16-QAM	-	-	135	150	☐
	36	2	16-QAM	QPSK	-	-	121.5	135	☐
	37	2	64-QAM	QPSK	-	-	162	180	☐
	38	2	64-QAM	16-QAM	-	-	202.5	225	☐
☐	16	3	BPSK				40.5	45	☐
	17	3	QPSK				81	90	☐
	18	3	QPSK				121.5	135	☐
	19	3	16-QAM				162	180	☐
	20	3	16-QAM				243	270	☐
	21	3	64-QAM				324	360	☐
	22	3	64-QAM				364.5	405	☐
	23	3	64-QAM				405	450	☐
	39	3	16-QAM	QPSK	QPSK	-	108	120	☐
	40	3	16-QAM	16-QAM	QPSK	-	135	150	☐
	41	3	64-QAM	QPSK	QPSK	-	135	150	☐
	42	3	64-QAM	16-QAM	QPSK	-	162	180	☐
	43	3	64-QAM	16-QAM	16-QAM	-	189	210	☐
	44	3	64-QAM	64-QAM	QPSK	-	189	210	☐
	45	3	64-QAM	64-QAM	16-QAM	-	216	240	☐
	46	3	16-QAM	QPSK	QPSK	-	162	180	☐
	47	3	16-QAM	16-QAM	QPSK	-	202.5	225	☐
	48	3	64-QAM	QPSK	QPSK	-	202.5	225	☐
	49	3	64-QAM	16-QAM	QPSK	-	243	270	☐
	50	3	64-QAM	16-QAM	16-QAM	-	283.5	315	☐
☐	51	3	64-QAM	64-QAM	QPSK	-	283.5	315	☐
	52	3	64-QAM	64-QAM	16-QAM	-	324	360	☐
	24	4	BPSK				54	60	☐
	25	4	QPSK				108	120	☐
	26	4	QPSK				162	180	☐
	27	4	16-QAM				216	240	☐
	28	4	16-QAM				324	360	☐
	29	4	64-QAM				432	480	☐
	30	4	64-QAM				486	540	☐
	31	4	64-QAM				540	600	☐
	53	4	16-QAM	QPSK	QPSK	QPSK	135	150	☐
	54	4	16-QAM	16-QAM	QPSK	QPSK	162	180	☐
	55	4	16-QAM	16-QAM	16-QAM	QPSK	189	210	☐
	56	4	64-QAM	QPSK	QPSK	QPSK	162	180	☐
	57	4	64-QAM	16-QAM	QPSK	QPSK	189	210	☐
	58	4	64-QAM	16-QAM	16-QAM	QPSK	216	240	☐
	59	4	64-QAM	16-QAM	16-QAM	16-QAM	243	270	☐
	60	4	64-QAM	QPSK	QPSK	QPSK	216	240	☐
	61	4	64-QAM	16-QAM	16-QAM	QPSK	243	270	☐
	62	4	64-QAM	16-QAM	16-QAM	16-QAM	270	300	☐
	63	4	64-QAM	64-QAM	64-QAM	QPSK	270	300	☐
	64	4	64-QAM	64-QAM	64-QAM	16-QAM	297	330	☐
	65	4	16-QAM	QPSK	QPSK	QPSK	202.5	225	☐
	66	4	16-QAM	16-QAM	QPSK	QPSK	243	270	☐
	67	4	16-QAM	16-QAM	16-QAM	QPSK	283.5	315	☐
	68	4	64-QAM	QPSK	QPSK	QPSK	243	270	☐
	69	4	64-QAM	16-QAM	QPSK	QPSK	283.5	315	☐
	70	4	64-QAM	16-QAM	16-QAM	QPSK	324	360	☐
	71	4	64-QAM	16-QAM	16-QAM	16-QAM	364.5	405	☐
	72	4	64-QAM	64-QAM	QPSK	QPSK	324	360	☐
	73	4	64-QAM	64-QAM	16-QAM	QPSK	364.5	405	☐



	74	4	64-QAM	64-QAM	16-QAM	16-QAM	405	450	☐
	75	4	64-QAM	64-QAM	64-QAM	QPSK	405	450	☐
	76	4	64-QAM	64-QAM	64-QAM	16-QAM	445.5	495	☐

Antenna Characteristic			
Antenna reference	Gain (dBi)	Frequency Band (MHz)	Impedance(Ω)
Taoglass WLA.01	1	2400-2483.5	50

Hardware information				
Highest internal frequency (PLL, Quartz, Clock, Microprocessor...):		F _{Highest} :	2690	MHz
Firmware (if applicable):		V:	6	
Software (if applicable):		V:	NA	
Equipment intended:	Fixed			
Type of equipment:	Stand-alone			
Equipment sample:	Production model			
Duty cycle:	Continuous operation			
Operating temperature range:	T _{min} :	-10 °C		
	T _{nom} :	20°C		
	T _{max} :	50 °C		
Operating voltage:	V _{nom} :	3.6VDC		

NC: Not communicated by provider



2.2. RUNNING MODE

Test mode	Description of test mode
Test mode 1	Permanent emission with modulation on a fixed channel in the data rate that produced the highest power. 20dBm Output power
Test mode 2	Permanent reception

Test	Running mode
Occupied Bandwidth	Test mode 1
6dB Bandwidth	Test mode 1
Maximum Conducted Output Power	Test mode 1
Power Spectral Density	Test mode 1
Conducted Spurious Emission at the Band Edge	Test mode 1
Unwanted Emissions in Non-Restricted Frequency Bands	Test mode 1
AC Power Line Conducted Emission	Test mode 1
Unwanted Emissions in Restricted Frequency Bands	Test mode 1
Receiver Radiated Emissions	Test mode 2 (1)

(1) Testing covered the receive mode, and receiver spurious emissions are considered to be the same as transmitter.

2.3. EQUIPMENT MODIFICATIONS DURING THE TESTS

None



2.4. FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follow:

$$FS = RA + AF + CF - AG$$

Where:

FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Factor

AG = Amplifier Gain

Example:

Assume a receiver reading of 52.5dBμV is obtained. The antenna factor of 7.4 and a cable factor of 1.1 are added. The amplifier gain of 29dB is subtracted, giving a field strength of 32 dBμV/m.

$$FS = 52.5 + 7.4 + 1.1 - 29 = 32 \text{ dB}\mu\text{V/m}$$

The 32 dBμV/m value can be mathematically converted to its corresponding level in μV/m.

$$\text{Level in } \mu\text{V/m} = \text{Common Antilogarithm } [(32\text{dB}\mu\text{V/m})/20] = 39.8 \mu\text{V/m}.$$

2.5. TEST DISTANCE EXTRAPOLATION – FCC/ISED

The field strength is extrapolated to the new measurement distance using formula from FCC Part15.31 (f) and §6.5-6.6 RSS-GEN:

Below 30MHz,

$$FS_{\text{limit}} = FS_{\text{max}} - 40 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}} \right)$$

Above 30MHz,

$$FS_{\text{limit}} = FS_{\text{max}} - 20 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}} \right)$$

Where:

FS_{limit} is the calculation of field strength at the limit distance, expressed in dBμV/m

FS_{max} is the measured field strength, expressed in dBμV/m

d_{measure} is the distance of the measurement point from the EUT

d_{limit} is the reference limit distance

2.6. CALIBRATION DATE

The calibration intervals are extended cal due +2 months. This extended interval is based on the fact that there is sufficient calibration data to statistically establish a trend or based on experience of use of the test equipment to assure good measurement results for a longer period. The symbol -/- replaces the date for equipment checking before test or that have none impact on the test or that have no calibration required by the standard.

3. OCCUPIED BANDWIDTH

3.1. TEST CONDITIONS

Date of test : November 11, 2024
Test performed by : Akram HAKKARI
Relative humidity (%) : 42
Ambient temperature (°C) : 21

3.2. TEST SETUP

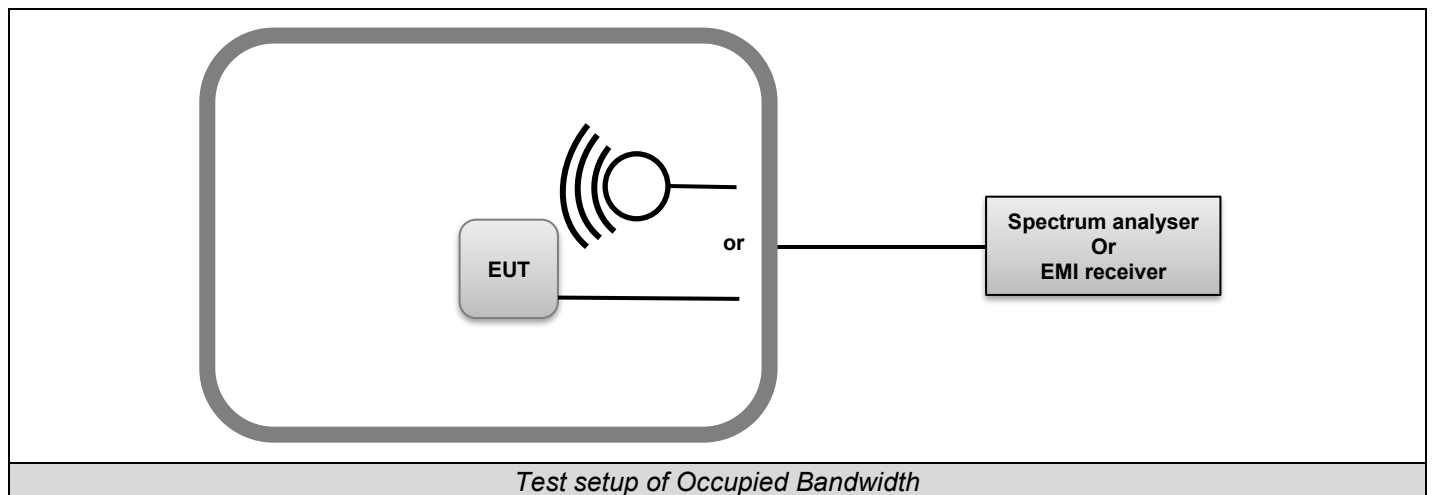
The Equipment Under Test is installed in an anechoic chamber.
Measurement is performed with a spectrum analyzer in conducted method.

The EUT is turned ON, the center frequency of the spectrum analyzer is set to the fundamental frequency. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

Test Procedure:

ANSI C63.10 § 6.9.2 and RSS-Gen Issue 5 § 6.7

- RBW used in the range of 1% to 5% of the anticipated emission bandwidth
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- Detector = Peak.
- Trace mode = Max Hold.
- Sweep = Auto couple.
- Allow the trace to stabilize.
- OBW 99% function of spectrum analyzer used



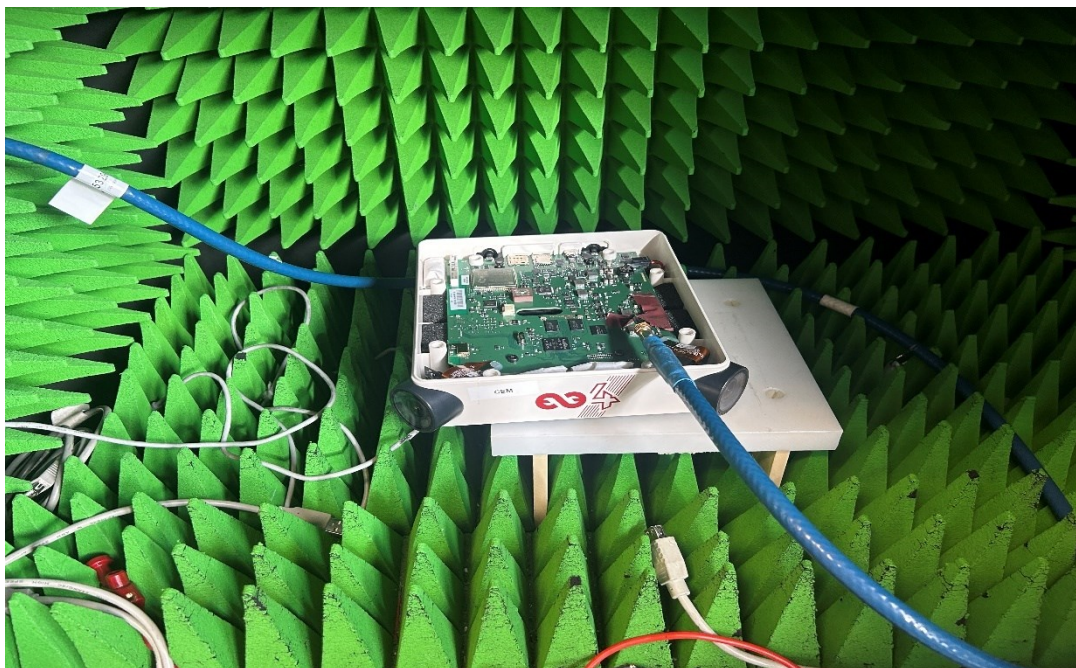


Photo of Occupied bandwidth

3.3. **LIMIT**

None

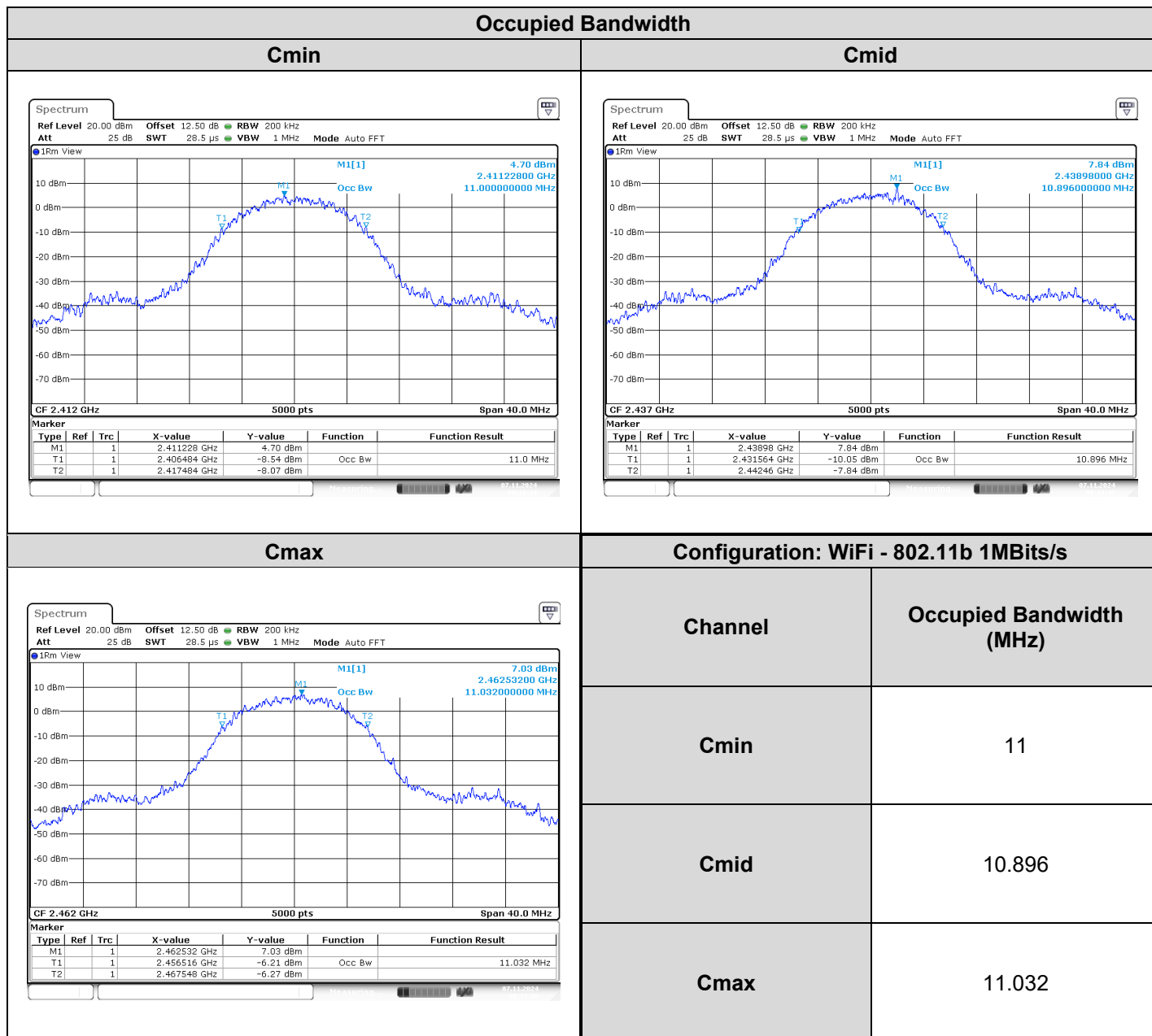
3.4. **TEST EQUIPMENT LIST**

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Attenuator 10dB	AEROFLEX	—	A7122268	07/23	07/25
Full Anechoic Room	SIEPEL	—	D3044024	-/-	-/-
SMA 1.5m	SUCOFLEX	18GHz	A5329863	08/24	08/25
SMA 1.5m	SUCOFLEX	18GHz	A5329864	10/23	10/24
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	04/24	04/26
Thermo-hygrometer	TESTO	608-H1	B4204120	03/23	03/25

3.5. **DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION**

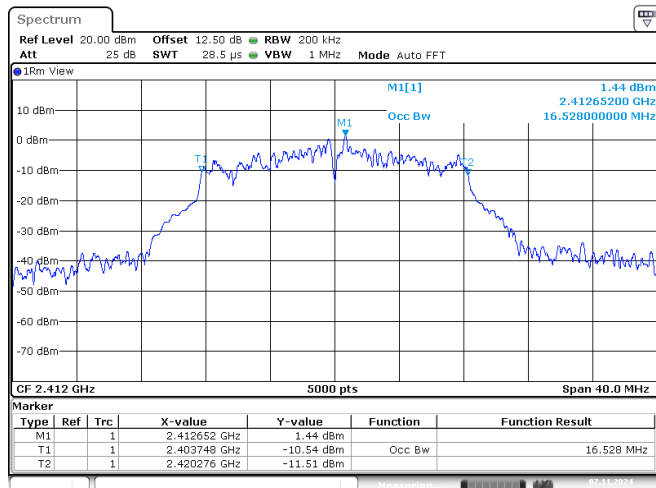
None

3.6. RESULTS

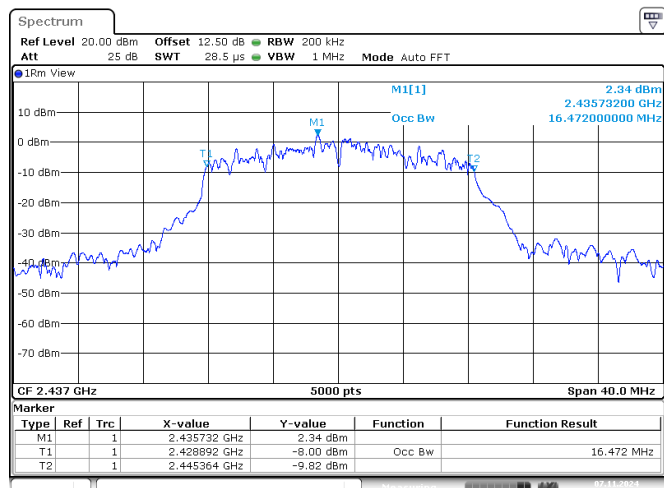


Occupied Bandwidth

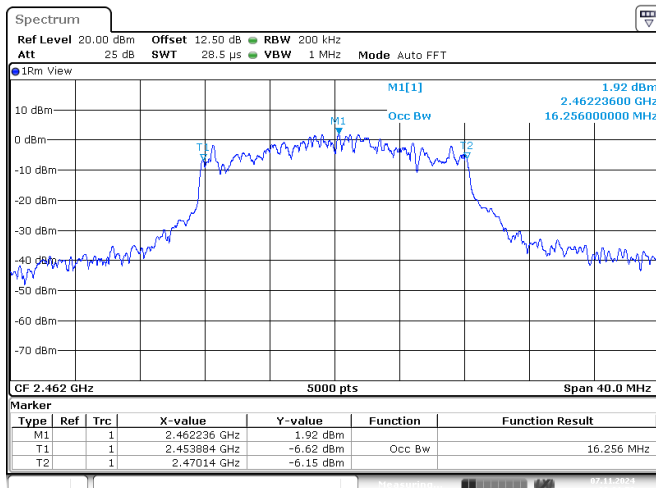
Cmin



Cmid



Cmax



Configuration: WiFi - 802.11g 6Mbits/s

Channel

Occupied Bandwidth (MHz)

Cmin

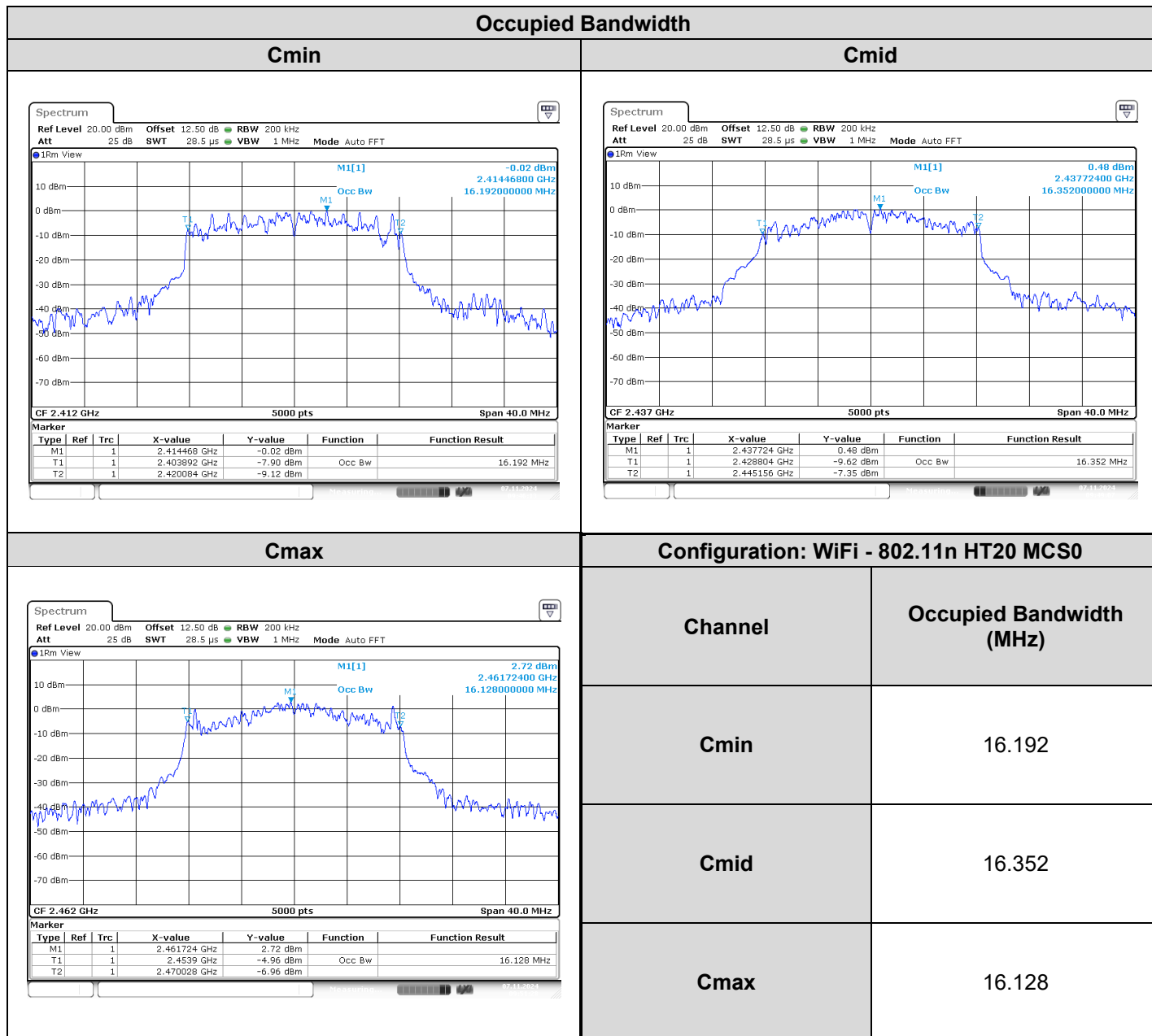
16.528

Cmid

16.472

Cmax

16.256



3.7. CONCLUSION

Occupied Channel Bandwidth measurement performed on the sample of the product **Tikee 4**, Sn: **T-4TK-4Q-E01492**, in configuration and description presented in this test report, show levels **compliant** to the **RSS-GEN** limits.

4. 6dB BANDWIDTH

4.1. TEST CONDITIONS

Date of test : November 11, 2024
Test performed by : Akram HAKKARI
Relative humidity (%) : 41
Ambient temperature (°C) : 21

4.2. TEST SETUP

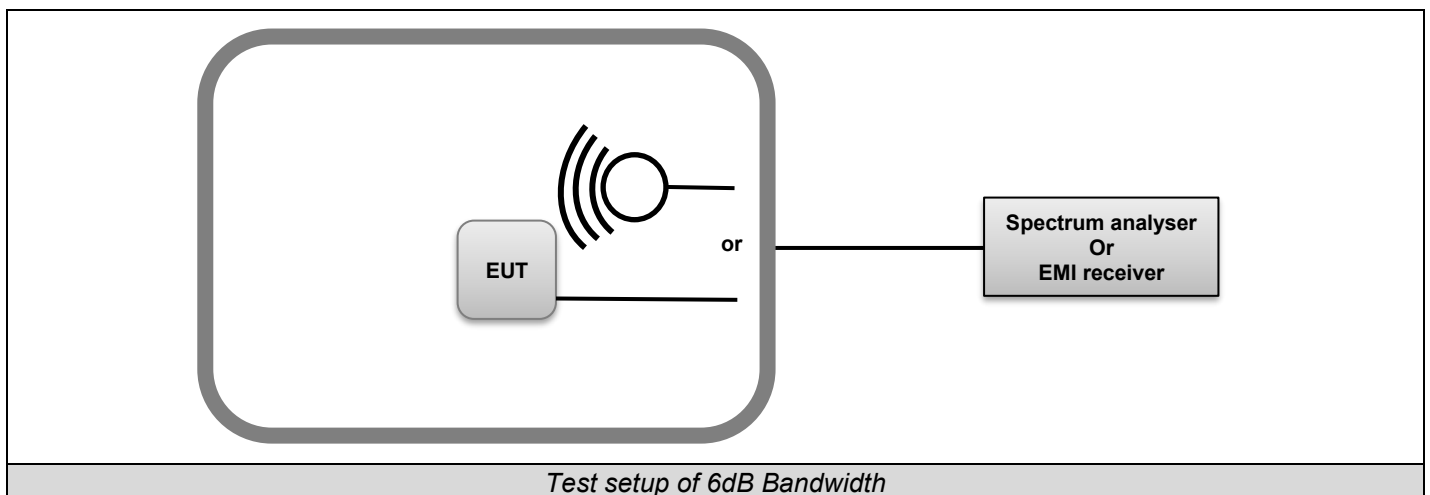
The Equipment Under Test is installed in an anechoic chamber.
Measurement is performed with a spectrum analyzer in conducted method.

The EUT is turned ON, the center frequency of the spectrum analyzer is set to the fundamental frequency. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

Test Procedure:

KDB 558074 D01 DTS Meas Guidance v05r02 § 8.2

- Set resolution bandwidth (RBW) = 100kHz.
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Allow the trace to stabilize.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission. Compare the resultant bandwidth with the RBW setting of the analyzer.



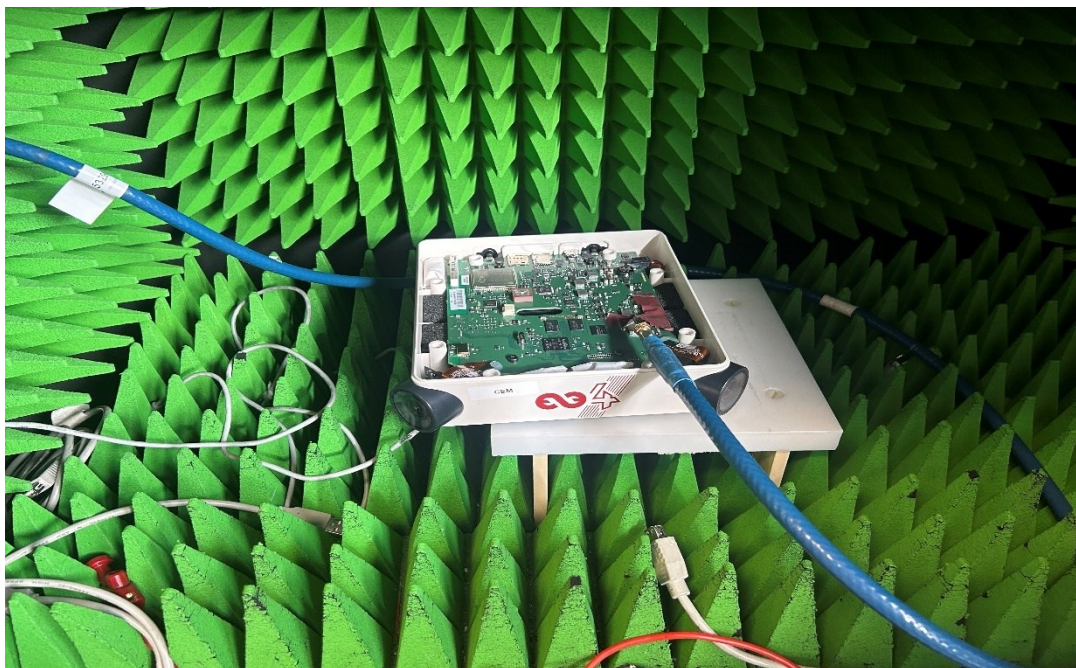


Photo of 6dB bandwidth

4.3. **LIMIT**

Frequency range	6dB bandwidth
902-928MHz 2400MHz to 2483.5MHz 5725-5850 MHz	≥500kHz



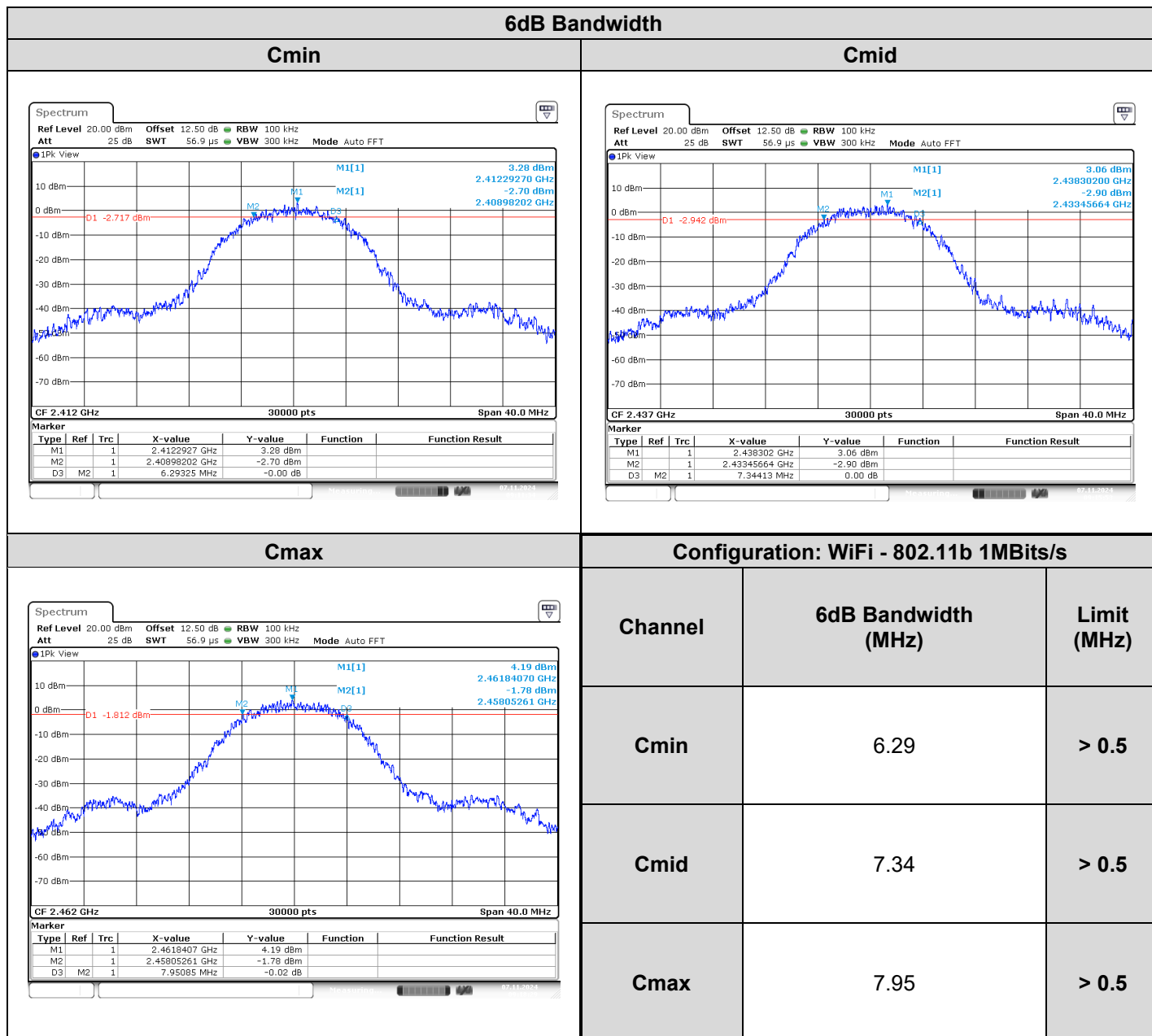
4.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Attenuator 10dB	AEROFLEX	—	A7122268	07/23	07/25
Full Anechoic Room	SIEPEL	—	D3044024	-/-	-/-
SMA 1.5m	SUCOFLEX	18GHz	A5329863	08/24	08/25
SMA 1.5m	SUCOFLEX	18GHz	A5329864	10/23	10/24
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	04/24	04/26
Thermo-hygrometer	TESTO	608-H1	B4204120	03/23	03/25

4.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

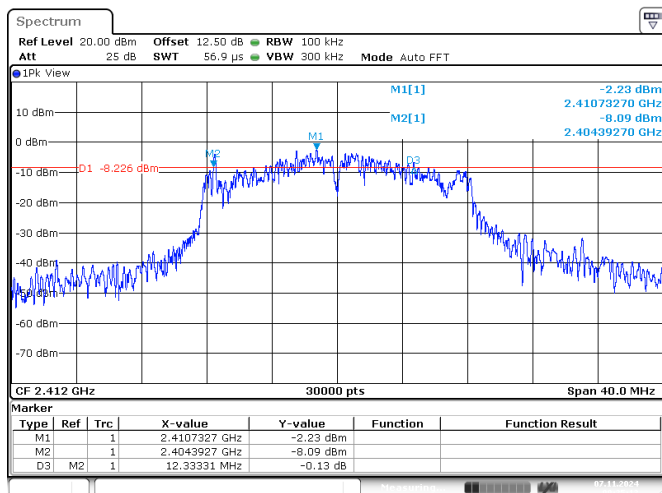
None

4.6. RESULTS

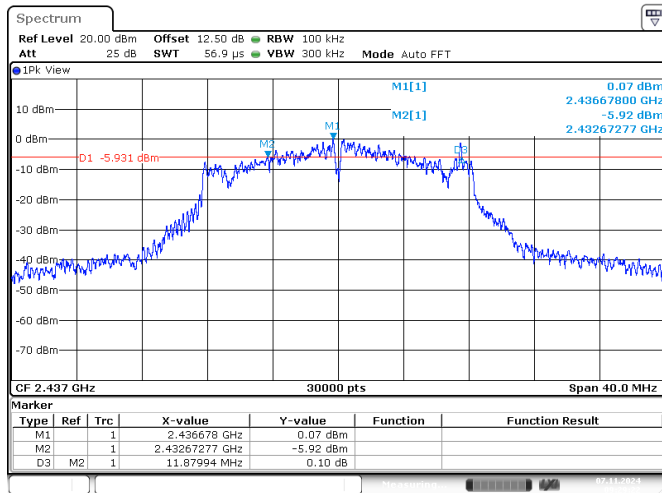


6dB Bandwidth

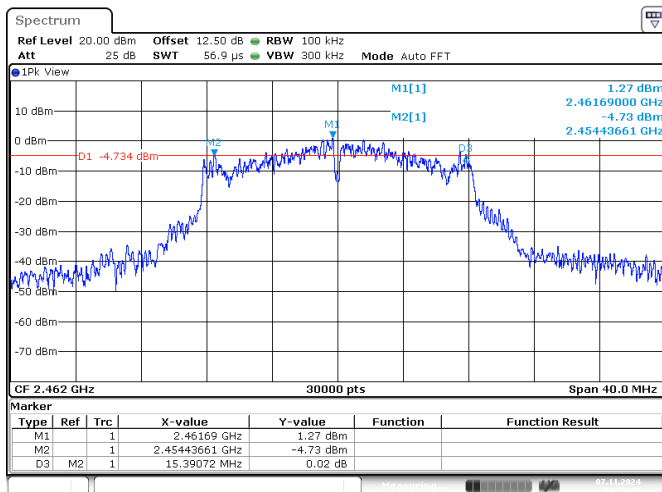
Cmin



Cmid

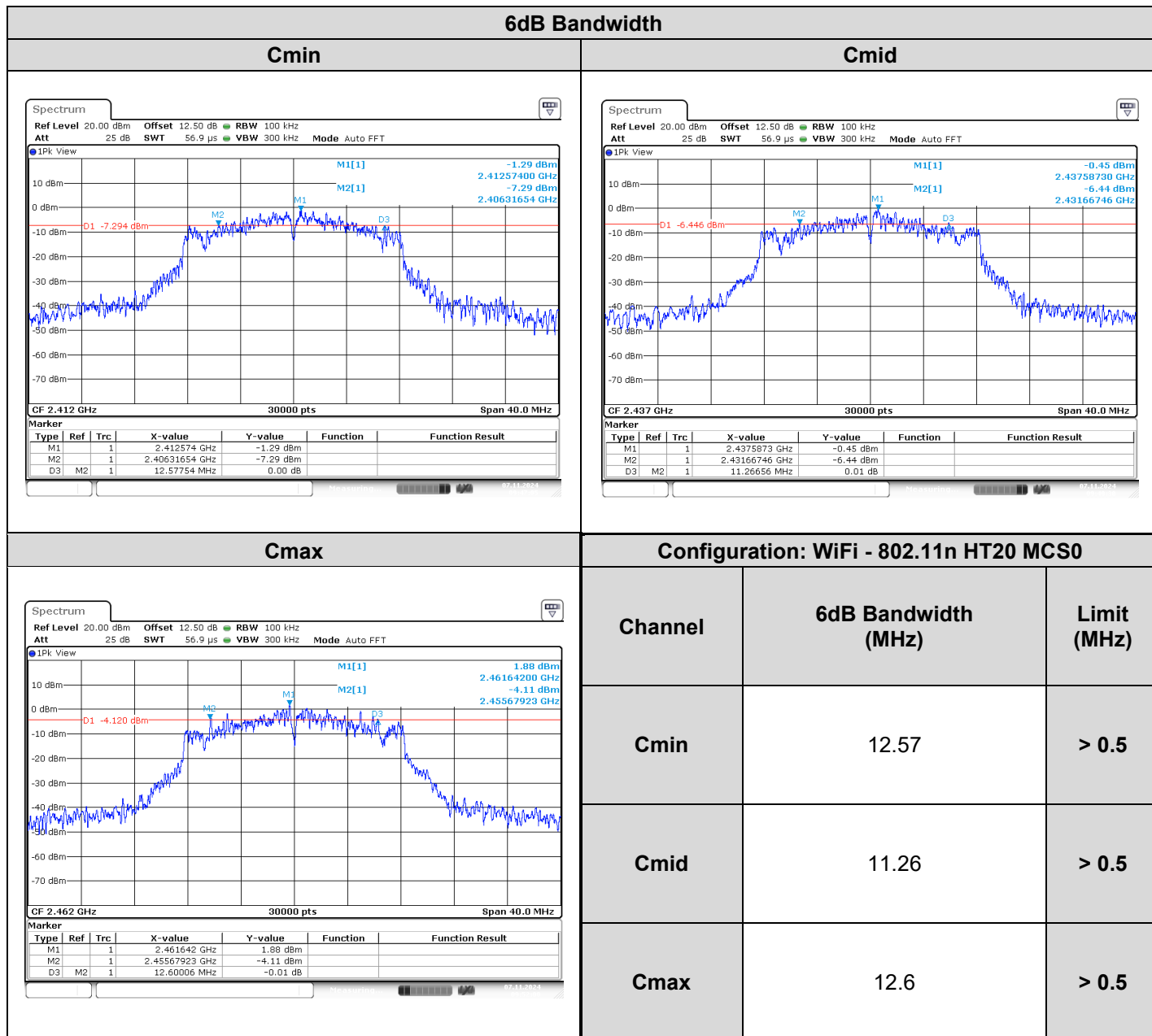


Cmax



Configuration: WiFi - 802.11g 6Mbits/s

Channel	6dB Bandwidth (MHz)	Limit (MHz)
Cmin	12.33	> 0.5
Cmid	11.87	> 0.5
Cmax	15.39	> 0.5



4.7. CONCLUSION

6dB Bandwidth measurement performed on the sample of the product **Tikee 4**, Sn: **T-4TK-4Q-E01492**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247** limits.



5. MAXIMUM CONDUCTED OUTPUT POWER

5.1. TEST CONDITIONS

Date of test : November 12, 2024
Test performed by : Akram HAKKARI
Relative humidity (%) : 42
Ambient temperature (°C) : 21

5.2. TEST SETUP

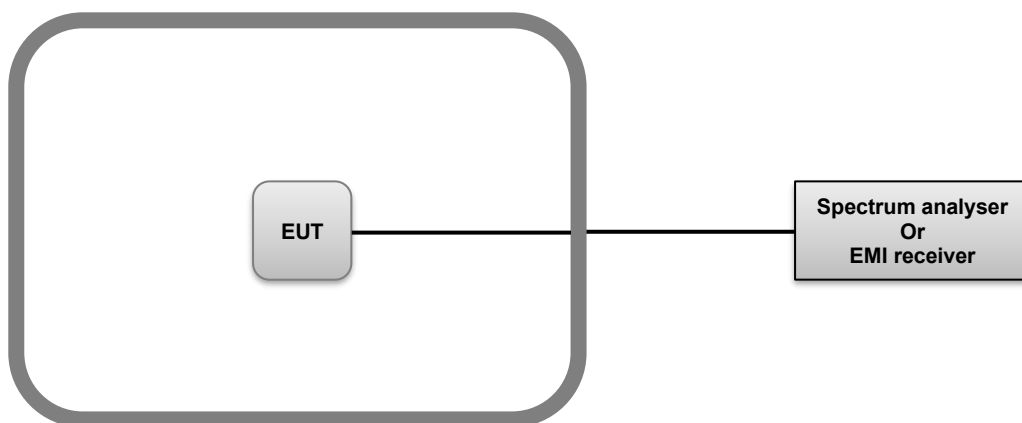
The Equipment Under Test is installed in an anechoic chamber.
Measurement is performed with a spectrum analyzer in conducted method.

The EUT is turned ON, the center frequency of the spectrum analyzer is set to the fundamental frequency. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

KDB 558074 D01 DTS Meas Guidance v05r02 § 8.3.2.2(Method AVGSA-1)

Subclause 11.9.2.2 of ANSI C63.10 is applicable, Method AVGSA-1 uses trace averaging with the EUT transmitting at full power throughout each sweep.

- a) Set span to at least 1.5 times the OBW.
- b) Set RBW = 1% to 5% of the OBW, not to exceed 1 MHz.
- c) Set VBW $\geq [3 \times \text{RBW}]$.
- d) Number of points in sweep $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
- e) Sweep time = auto.
- f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- g) If transmit duty cycle < 98%, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at the maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no OFF intervals) or at duty cycle $\geq 98\%$, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run."
- h) Trace average at least 100 traces in power averaging (rms) mode.
- i) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.



Test setup of Maximum Conducted Output Power

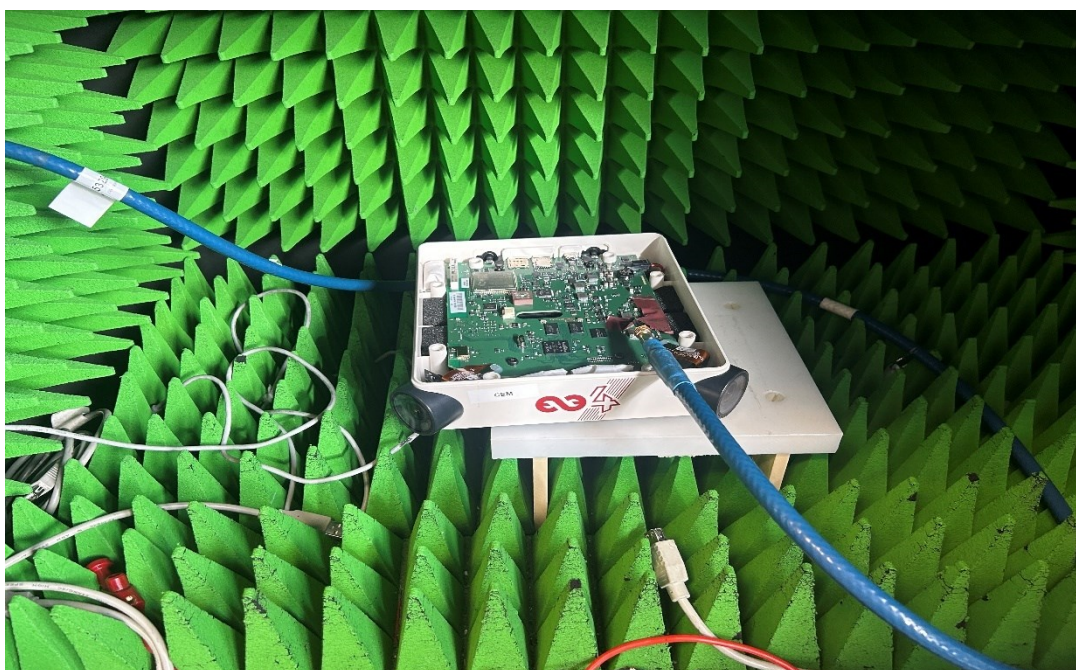


Photo of Maximum Conducted Output Power



5.3. LIMIT

Frequency range	Maximum Conducted Output Power
902-928MHz 2400MHz to 2483.5MHz 5725-5850 MHz	≤30dBm*

*Remark: Limits are reduced by G-6dBi if Overall Antenna Gain above 6dBi

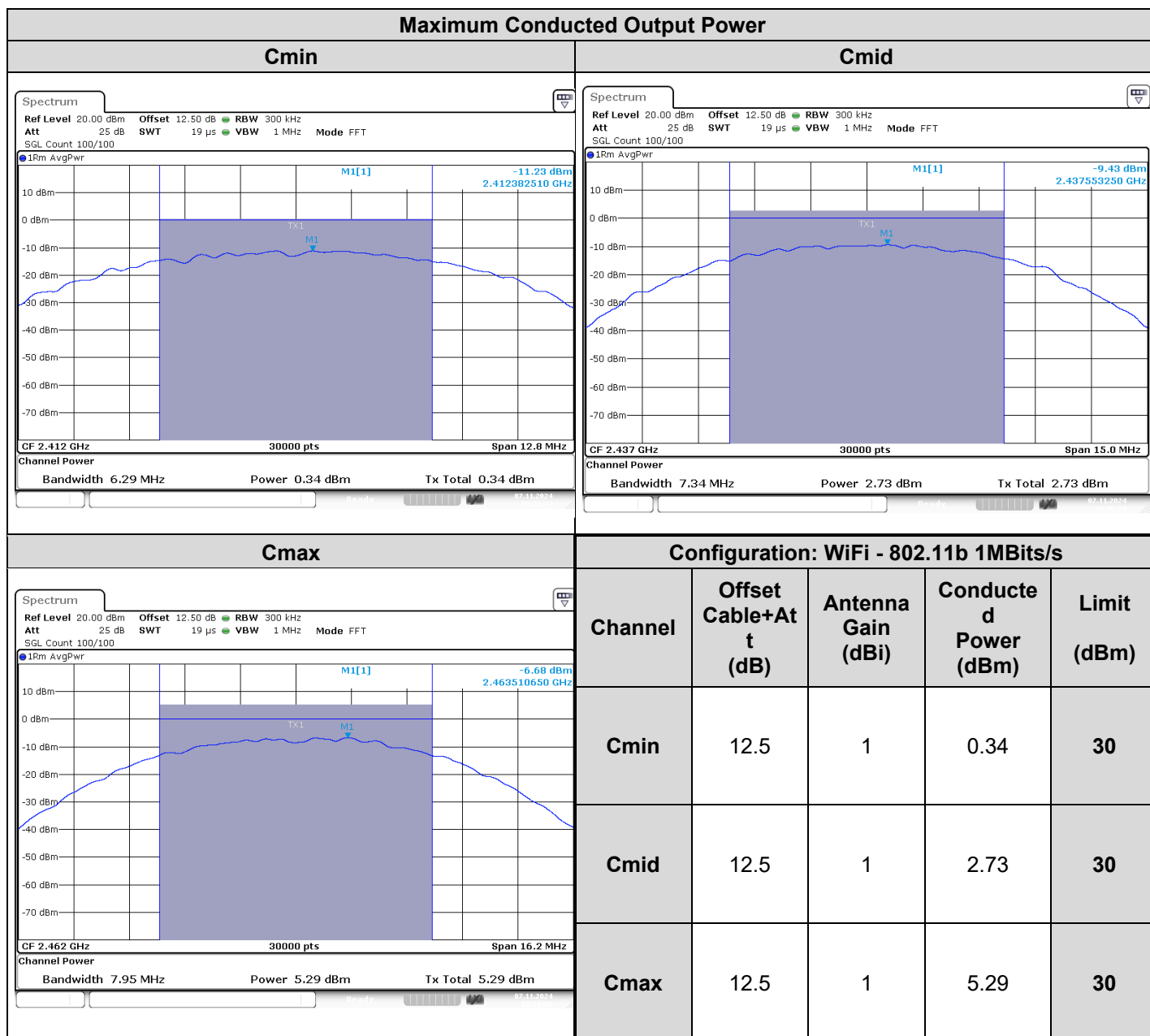
5.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Attenuator 10dB	AEROFLEX	—	A7122268	07/23	07/25
Full Anechoic Room	SIEPEL	—	D3044024	-/-	-/-
SMA 1.5m	SUCOFLEX	18GHz	A5329863	08/24	08/25
SMA 1.5m	SUCOFLEX	18GHz	A5329864	10/23	10/24
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	04/24	04/26
Thermo-hygrometer	TESTO	608-H1	B4204120	03/23	03/25

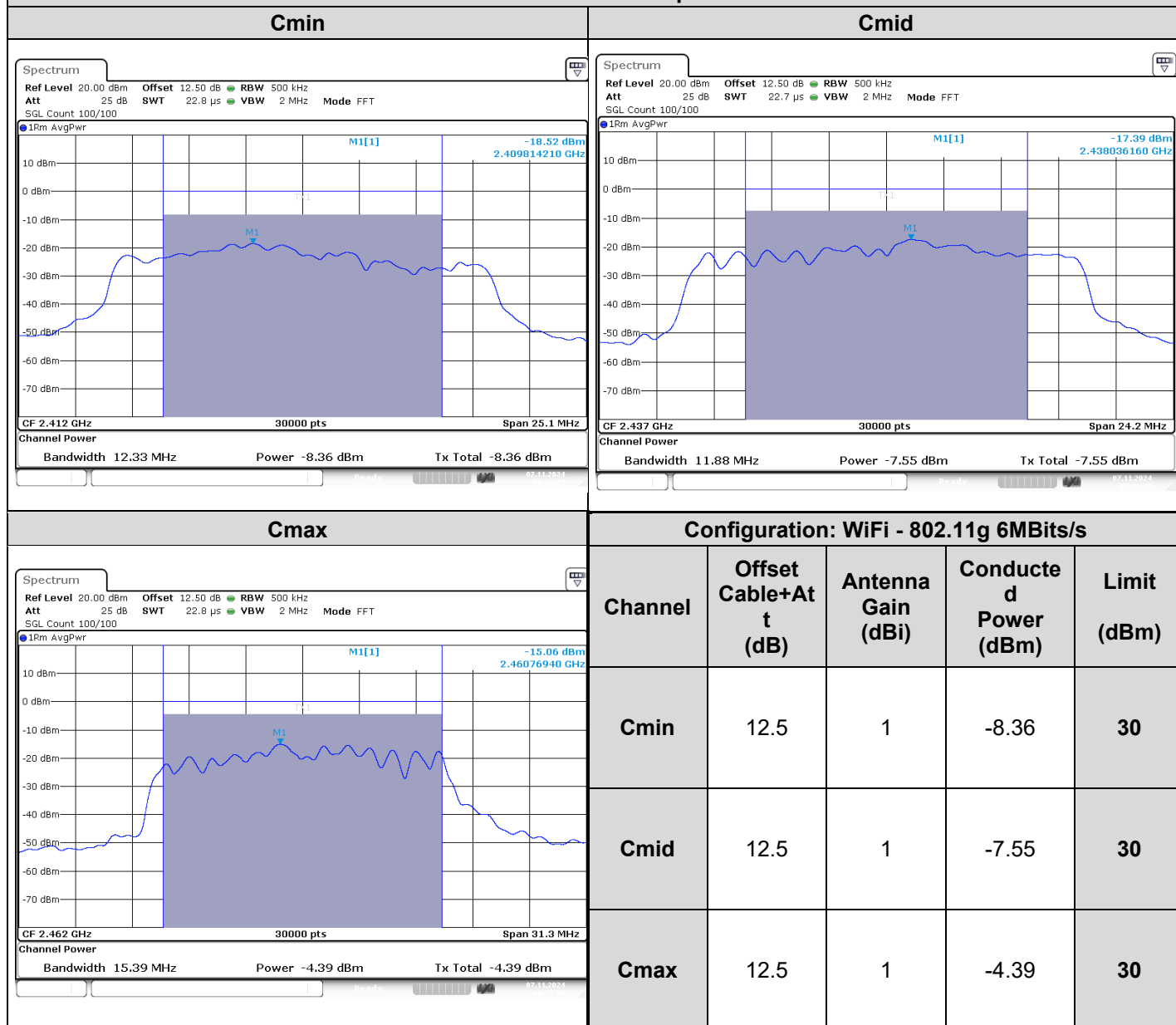
5.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

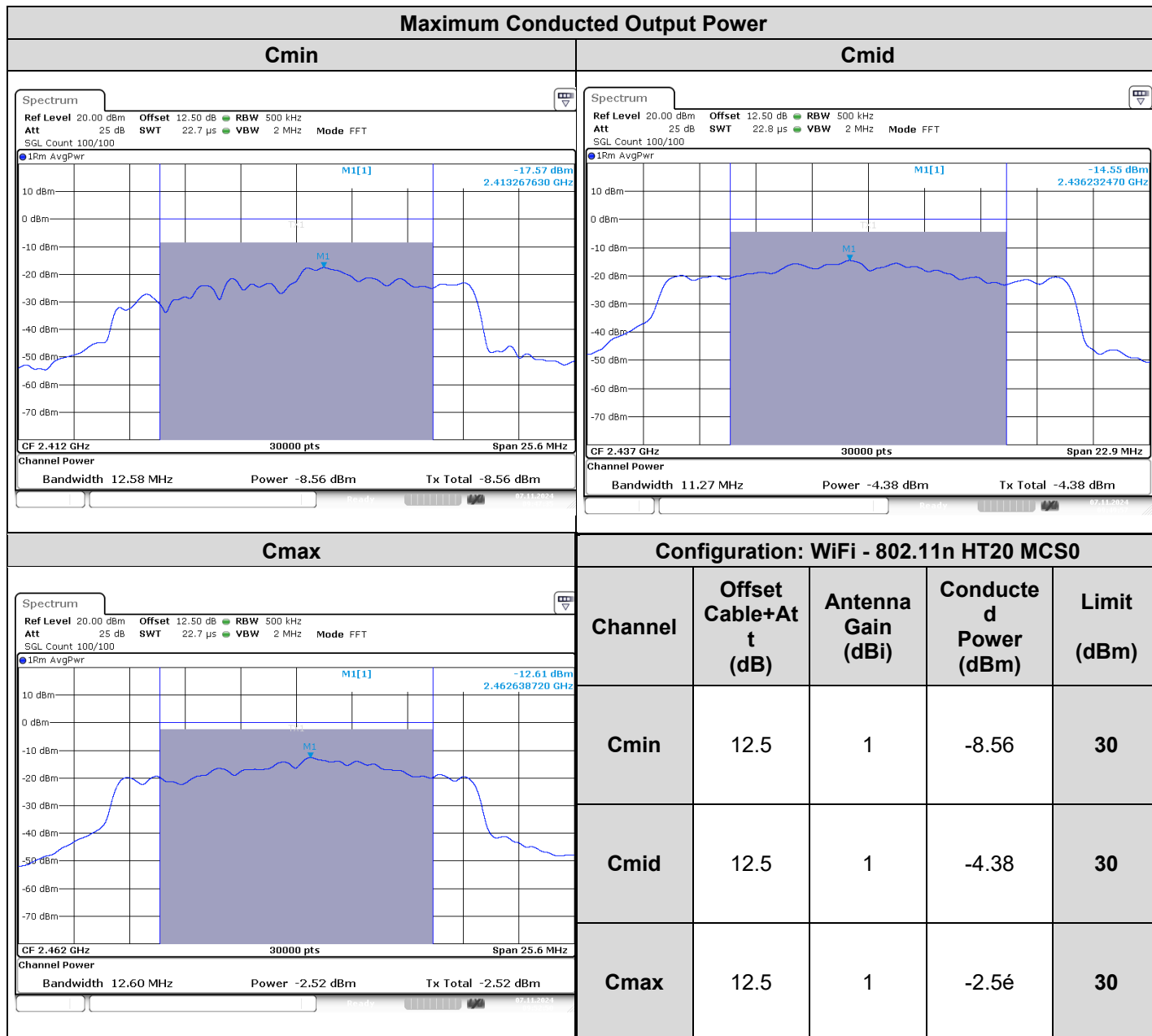
None

5.6. RESULTS



Maximum Conducted Output Power





5.7. CONCLUSION

Maximum Output Conducted Power measurement performed on the sample of the product **Tikee 4**, Sn: **T-4TK-4Q-E01492**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247** limits.

6. POWER SPECTRAL DENSITY

6.1. TEST CONDITIONS

Date of test : November 11, 2024
Test performed by : Akram HAKKARI
Relative humidity (%) : 41
Ambient temperature (°C) : 21

6.2. TEST SETUP

The Equipment Under Test is installed in an anechoic chamber.
Measurement is performed with a spectrum analyzer in conducted method.

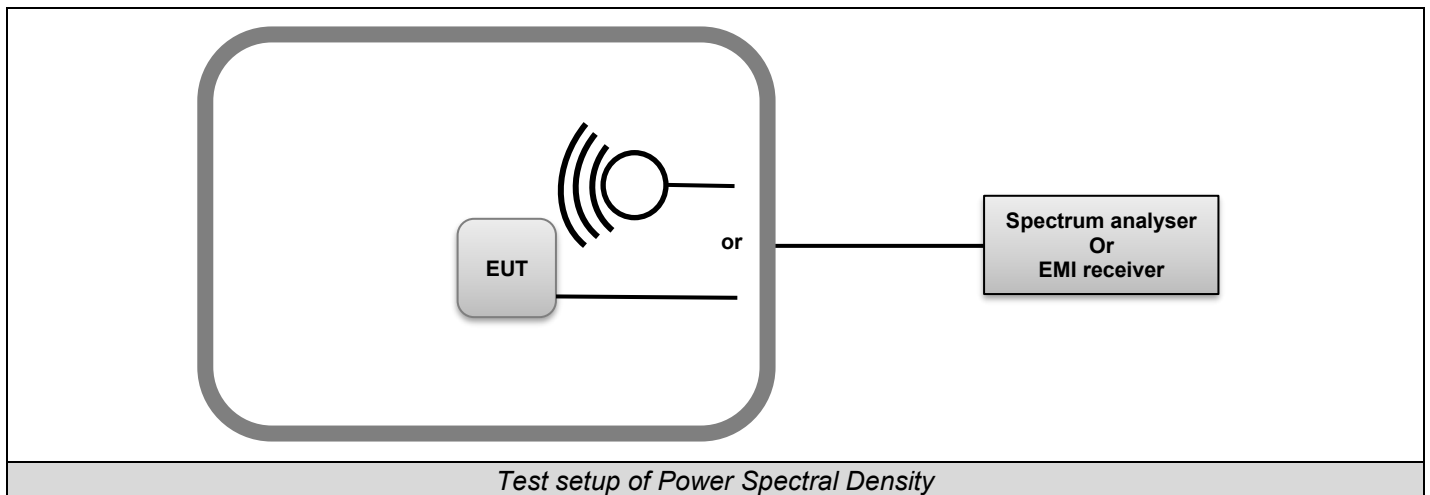
The EUT is turned ON, the center frequency of the spectrum analyzer is set to the fundamental frequency. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

Test Procedure used: KDB 558074 D01 DTS Meas Guidance v05r02 § 8.4 (Method PKPSD)

KDB 558074 D01 DTS Meas Guidance v05r02 § 8.4 (Method PKPSD)

Subclause 11.10 of ANSI C63.10 is applicable

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set the RBW to: 3 kHz.
- Set the VBW $\geq 3 \times$ RBW.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.
- If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



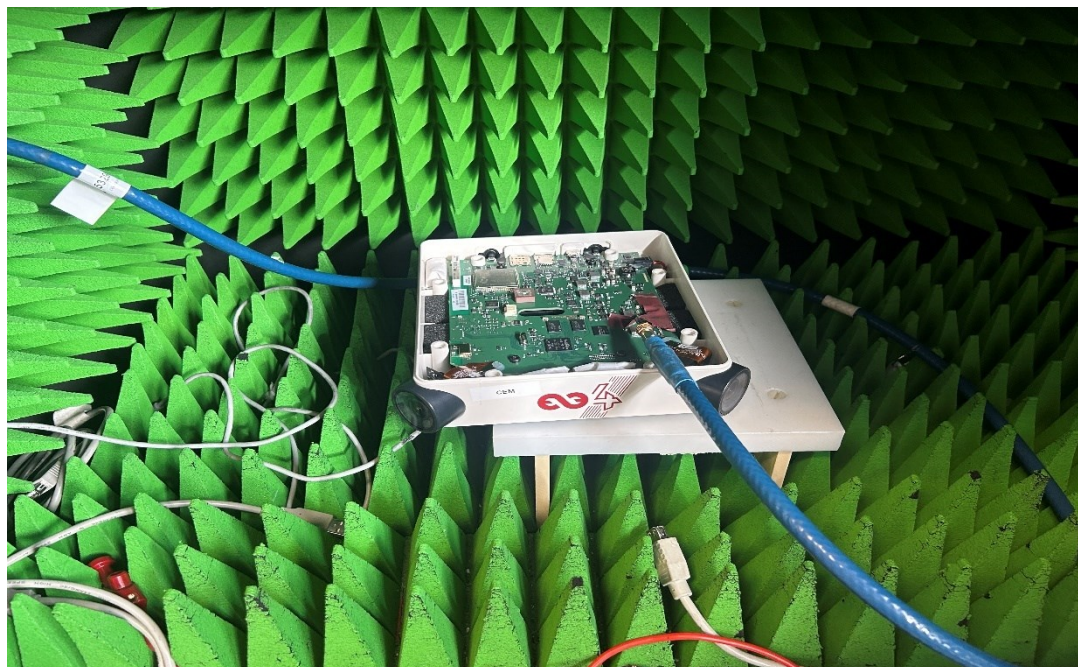


Photo of Power Spectral Density

6.3. LIMIT

Frequency range	Power Spectral Density
902-928MHz 2400MHz to 2483.5MHz 5725-5850 MHz	$\leq 8\text{dBm} / 3\text{kHz}^*$

*Remark: Limits are reduced by G-6dBi if Overall Antenna Gain above 6dBi

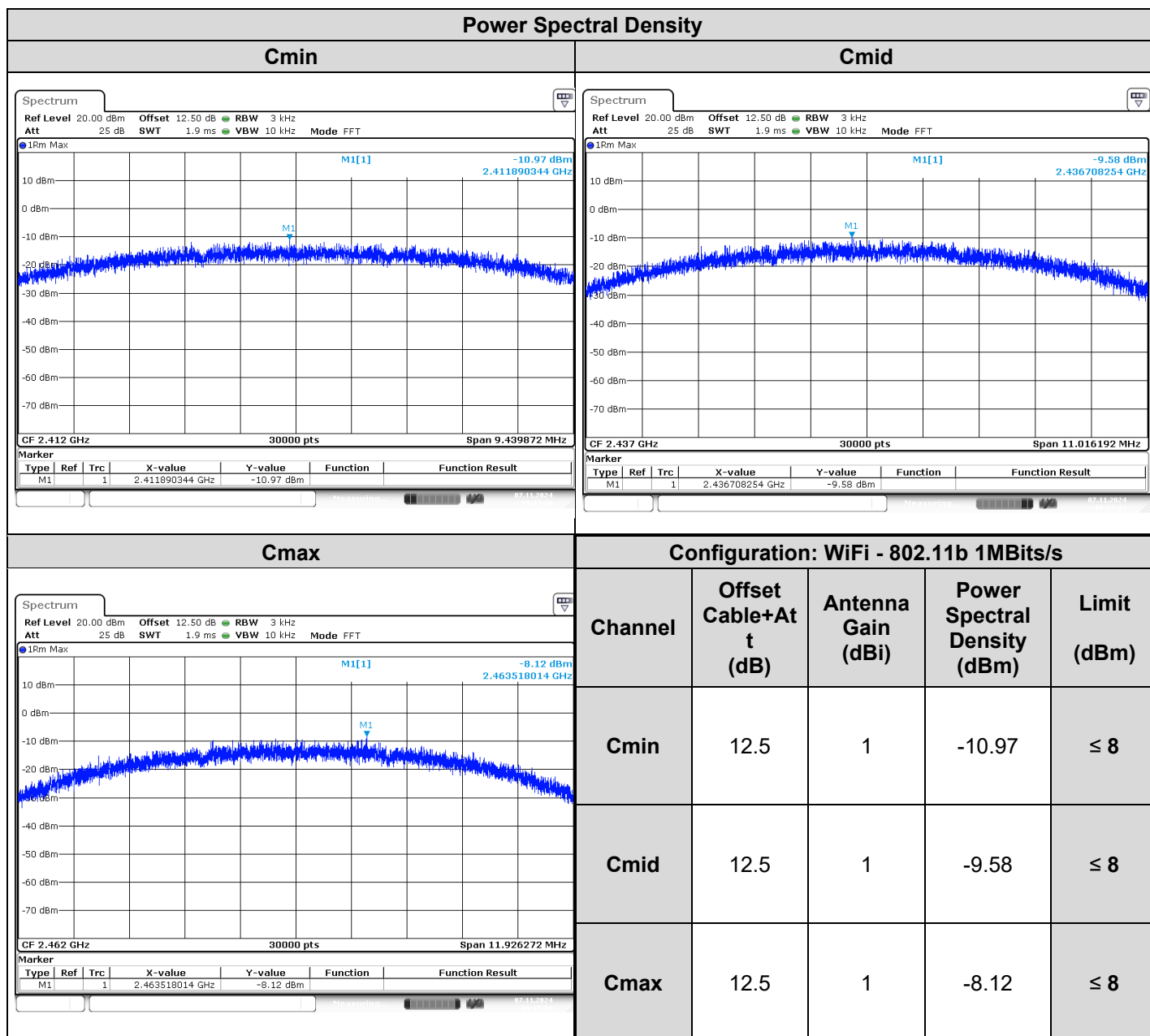
6.4. TEST EQUIPMENT LIST

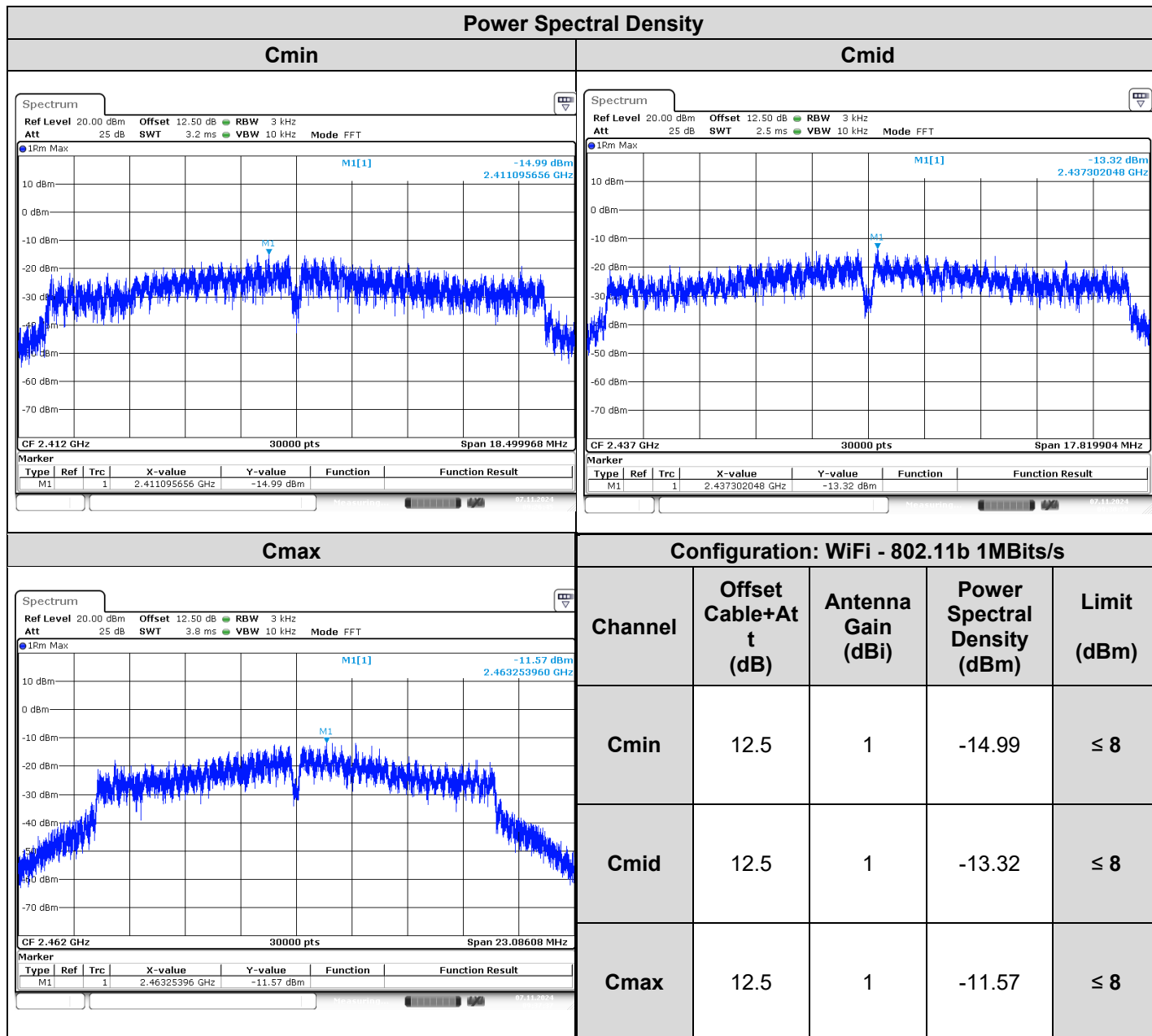
TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Attenuator 10dB	AEROFLEX	—	A7122268	07/23	07/25
Full Anechoic Room	SIEPEL	—	D3044024	-/-	-/-
SMA 1.5m	SUCOFLEX	18GHz	A5329863	08/24	08/25
SMA 1.5m	SUCOFLEX	18GHz	A5329864	10/23	10/24
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	04/24	04/26
Thermo-hygrometer	TESTO	608-H1	B4204120	03/23	03/25

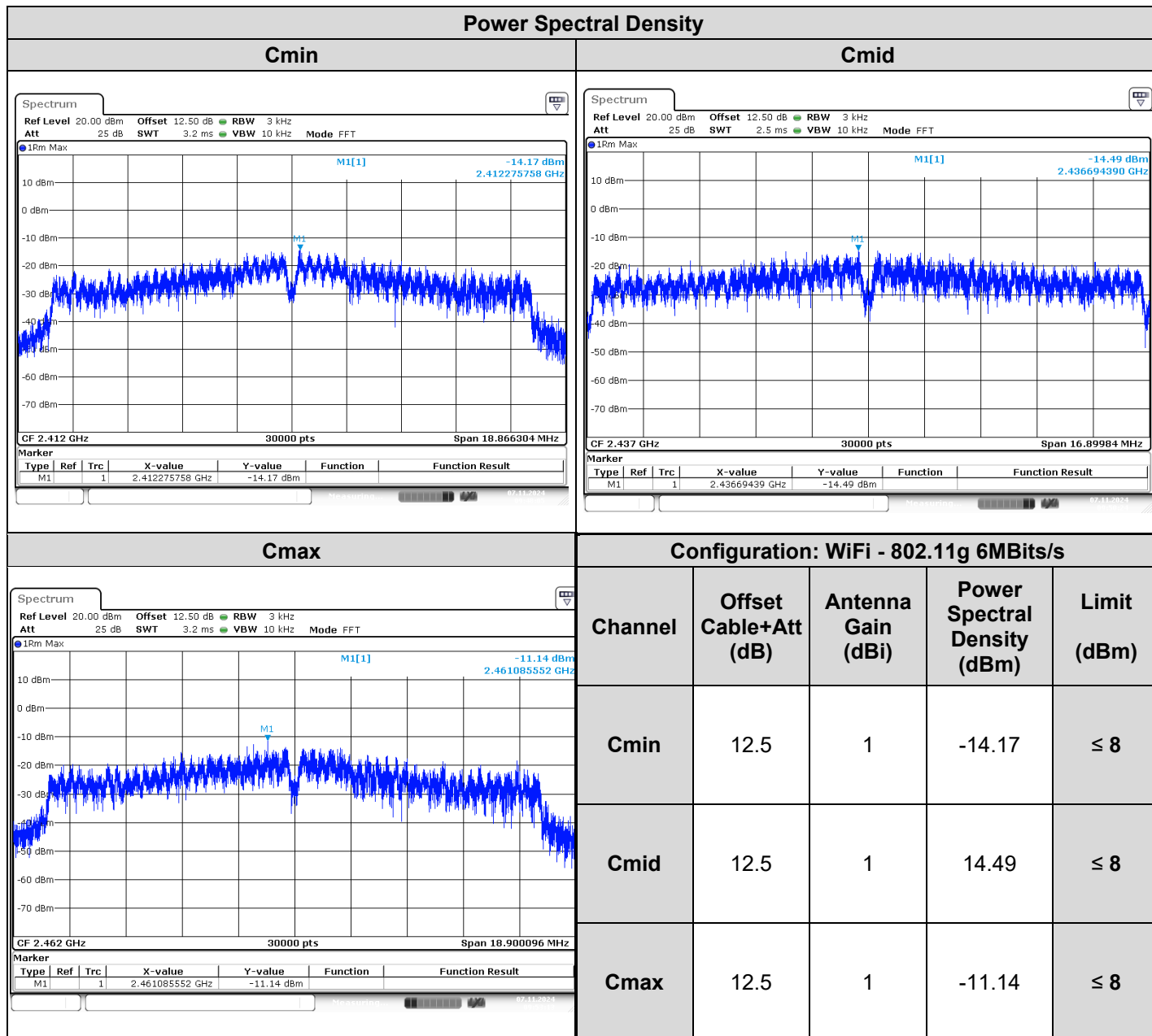
6.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

6.6. RESULTS







6.7. CONCLUSION

Power Spectral Density measurement performed on the sample of the product **Tikee 4**, Sn: **T-4TK-4Q-E01492**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247** limits.

7. UNWANTED EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS

7.1. TEST CONDITIONS

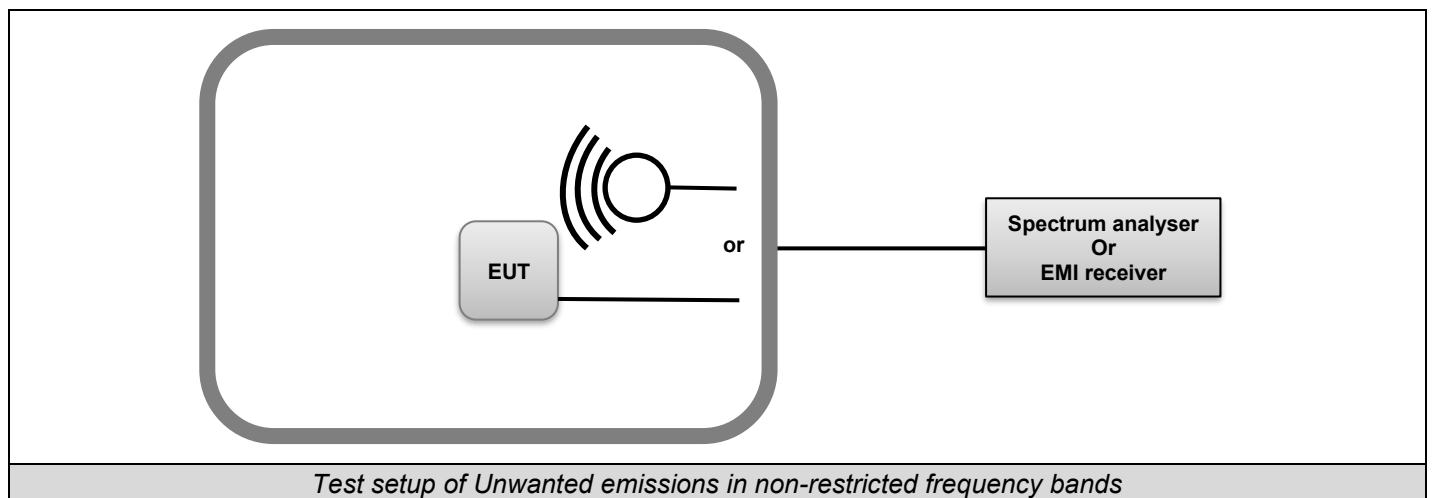
Date of test : November 11, 2024
Test performed by : Akram HAKKARI
Relative humidity (%) : 41
Ambient temperature (°C) : 21

7.2. TEST SETUP

The Equipment Under Test is installed in an anechoic chamber.
Measurement is performed with a spectrum analyzer in conducted method.

The EUT is turned ON, the captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

Test Procedure:
KDB 558074 D01 DTS Meas Guidance v05r02 § 8.5



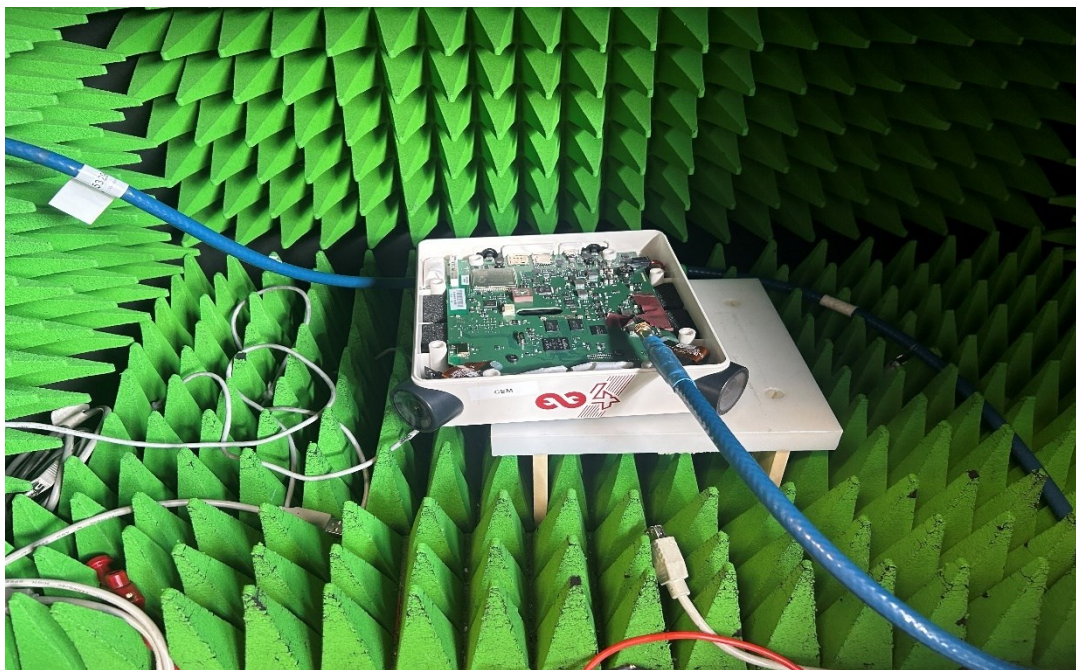


Photo of Unwanted emissions in non-restricted frequency bands



7.3. LIMIT

All Spurious Emissions must be at least 20dB below the Fundamental Radiator Level at the Band Edge of operating frequency band and in non-restricted bands.

7.4. TEST EQUIPMENT LIST

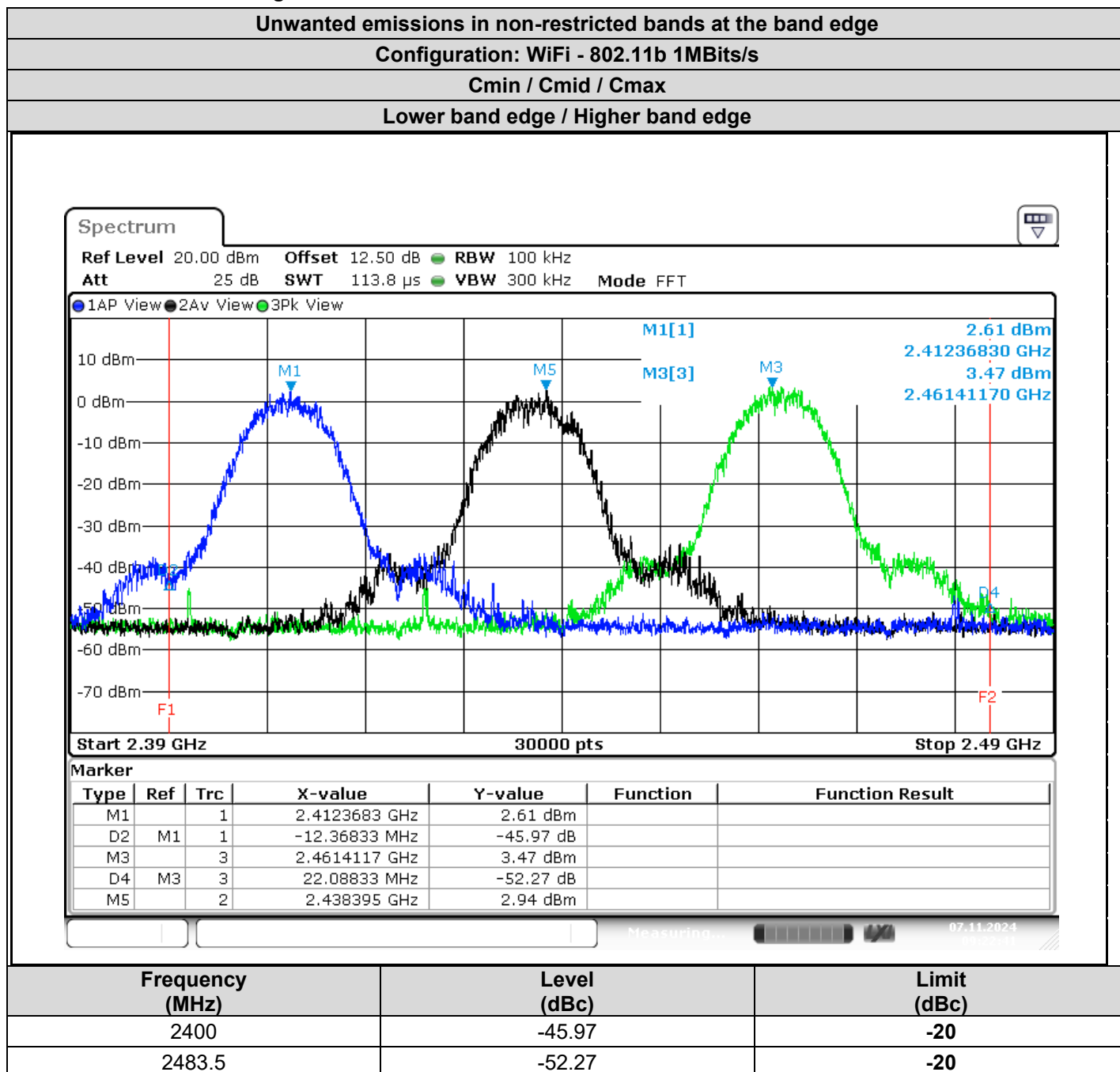
TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Attenuator 10dB	AEROFLEX	—	A7122268	07/23	07/25
Full Anechoic Room	SIEPEL	—	D3044024	-/-	-/-
SMA 1.5m	SUCOFLEX	18GHz	A5329863	08/24	08/25
SMA 1.5m	SUCOFLEX	18GHz	A5329864	10/23	10/24
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	04/24	04/26
Thermo-hygrometer	TESTO	608-H1	B4204120	03/23	03/25

7.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

7.6. RESULTS

7.6.1. At the band edge





L C I E

Unwanted emissions in non-restricted bands at the band edge

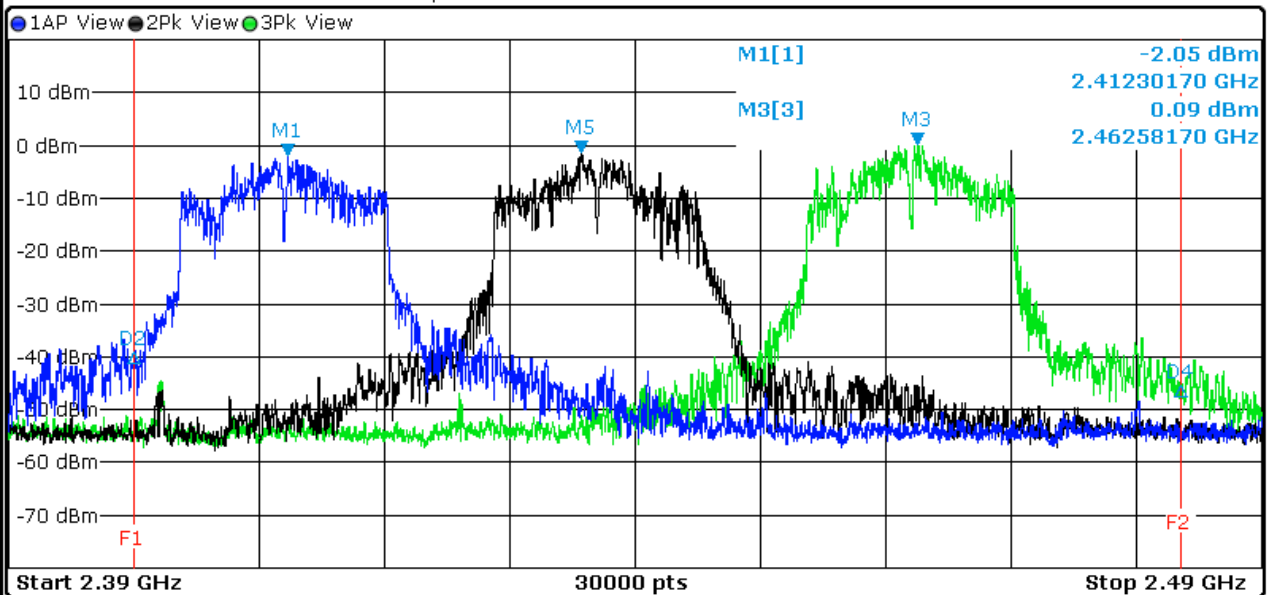
Configuration: WiFi - 802.11g 6Mbits/s

Cmin / Cmid / Cmax

Lower band edge / Higher band edge

Spectrum

Ref Level 20.00 dBm Offset 12.50 dB RBW 100 kHz
Att 25 dB SWT 113.8 μ s VBW 300 kHz Mode FFT



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4123017 GHz	-2.05 dBm		
D2	M1	1	-12.30167 MHz	-37.22 dB		
M3		3	2.4625817 GHz	0.09 dBm		
D4	M3	3	20.91833 MHz	-45.56 dB		
M5		2	2.4357417 GHz	-1.35 dBm		

Measuring...

07.11.2024
09:38:01

Frequency (MHz)	Level (dBc)	Limit (dBc)
2400	-37.22	-20
2483.5	-45.56	-20



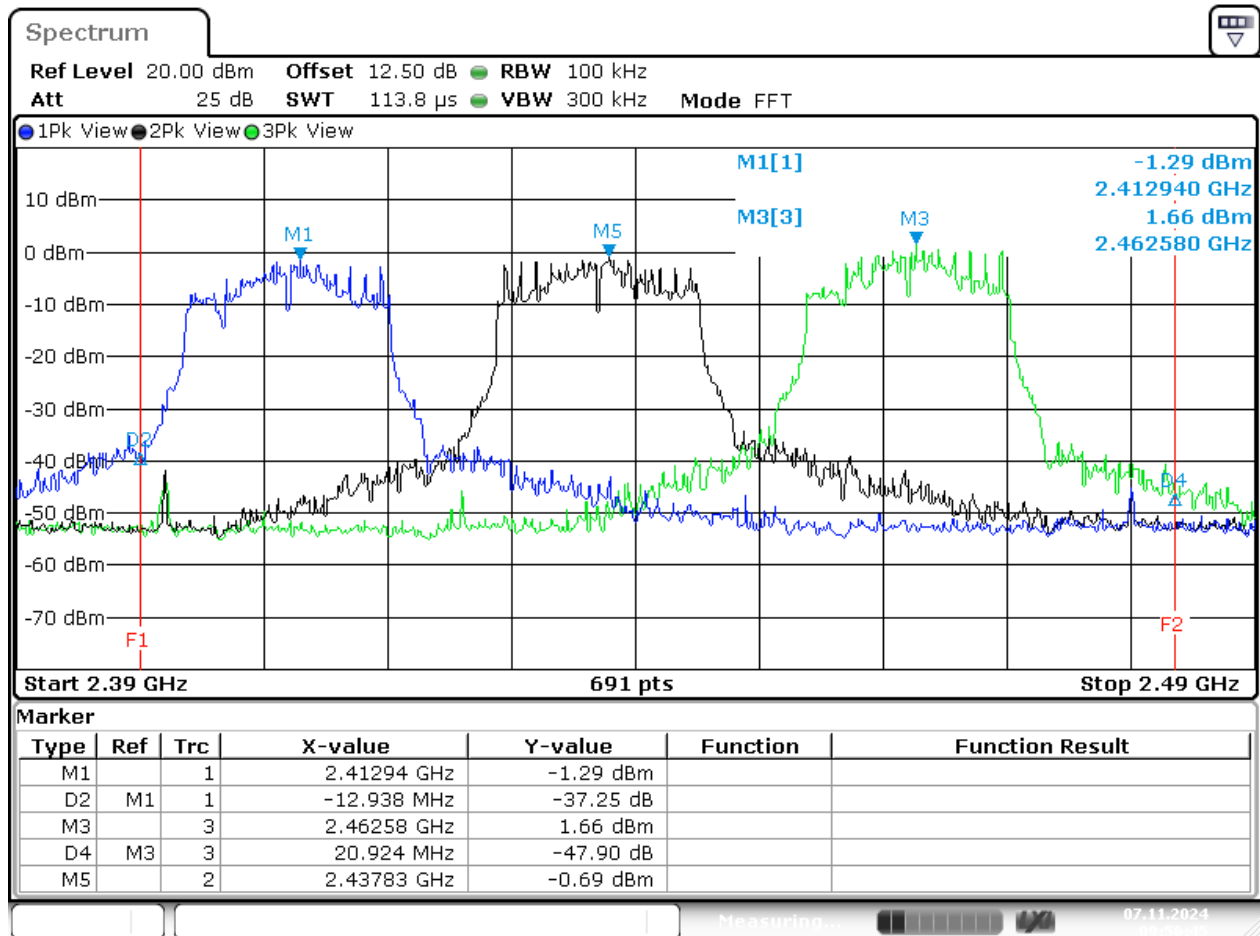
L C I E

Unwanted emissions in non-restricted bands at the band edge

Configuration: WiFi - 802.11n HT20 MCS0

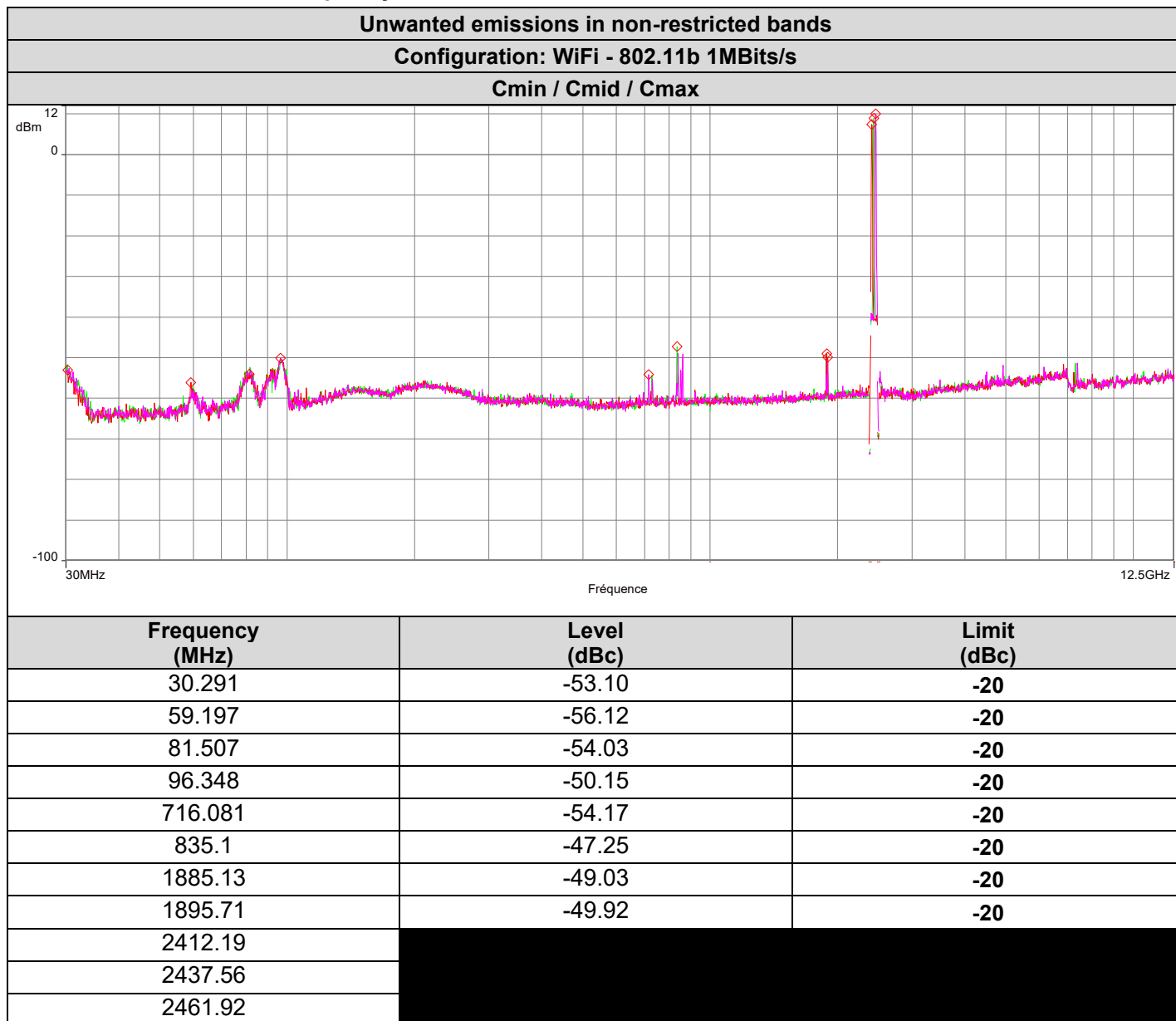
Cmin / Cmid / Cmax

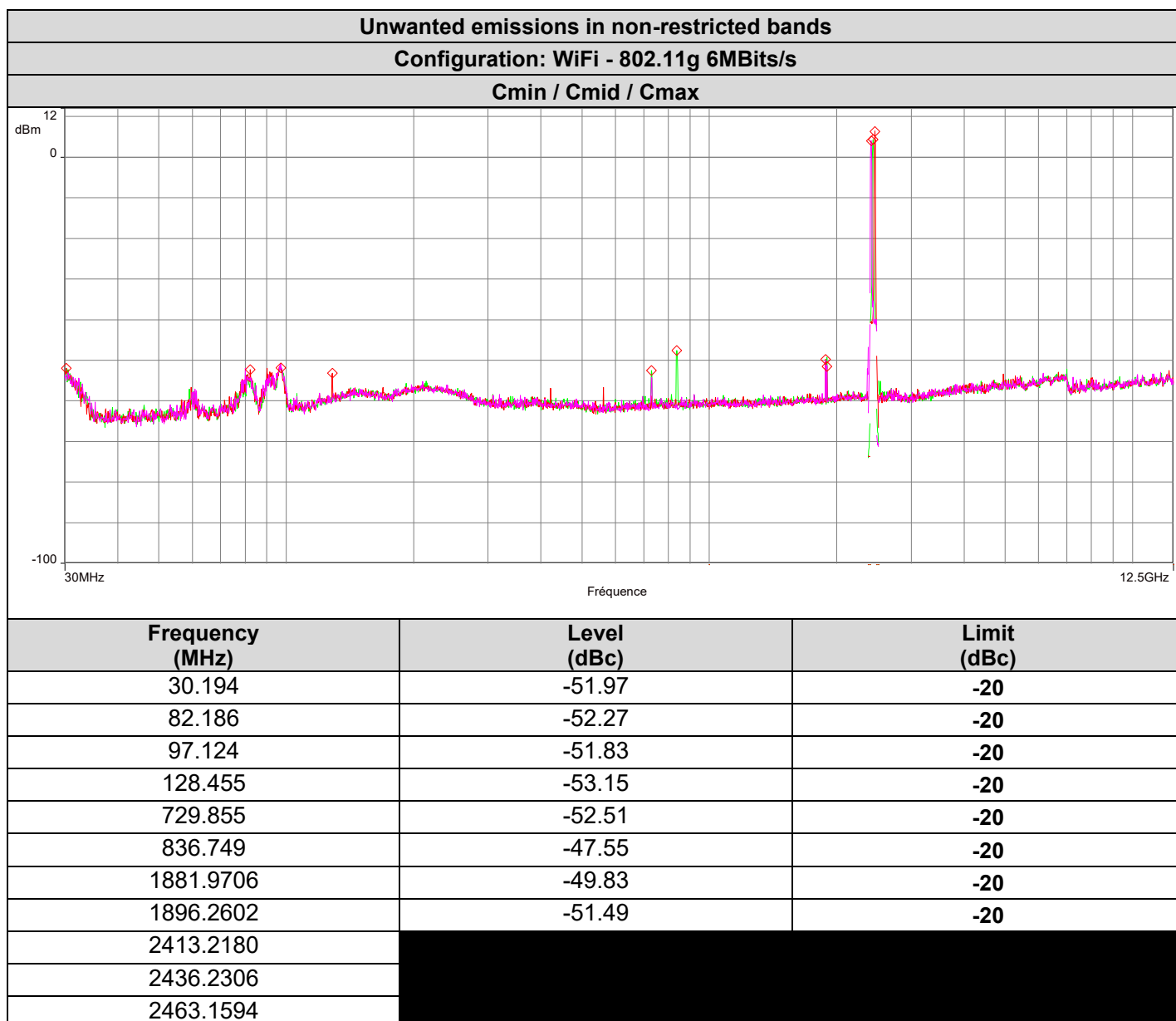
Lower band edge / Higher band edge

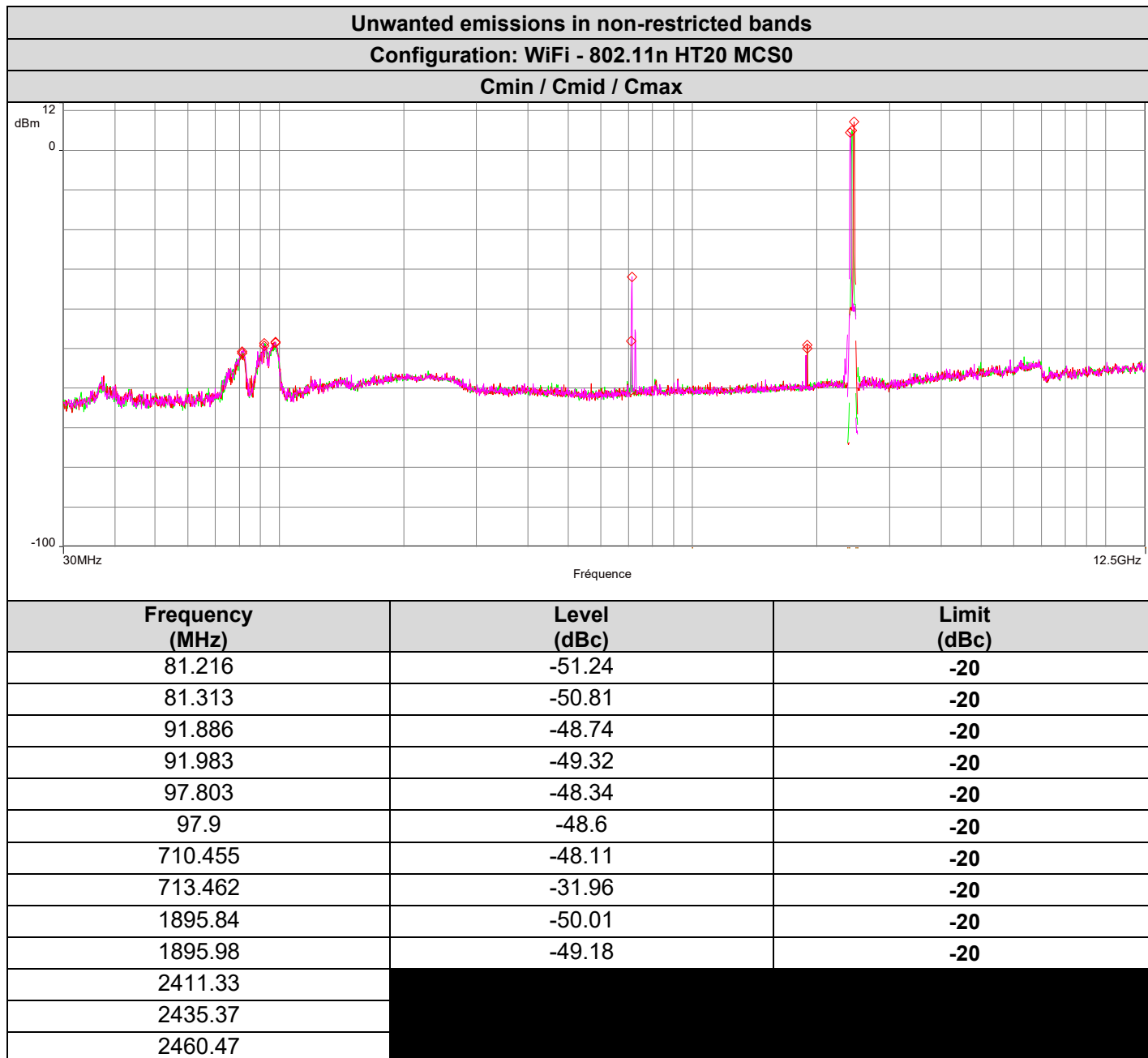


Frequency (MHz)	Level (dBc)	Limit (dBc)
2400	-37.25	-20
2483.5	-47.9	-20

7.6.2. Non restricted frequency bands







7.7. CONCLUSION

Unwanted emissions in non-restricted bands and at the band edge measurement performed on the sample of the product **Tikee 4**, Sn: **T-4TK-4Q-E01492**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247** limits.



8. UNWANTED EMISSIONS IN RESTRICTED FREQUENCY BANDS

8.1. TEST CONDITIONS

Date of test : November 06, 2024
Test performed by : Akram HAKKARI
Relative humidity (%) : 43
Ambient temperature (°C) : 21

8.2. TEST SETUP

Test procedure:
ANSI C63.10 & FCC Part 15 subpart C

Following frequency ranges, test setup parameters are different and specified in this table:

Frequency range:	9kHz to 30MHz	
Test:	Pre-Characterization	Qualification
Antenna Polarization:	Parallel, Perpendicular and Ground parallel	
Antenna Height:	Centered on EUT (§6.6.5 ANSI C63-10)	1m
Antenna Type:	Loop	
RBW Filter:	200Hz below 150kHz / 9kHz above 150kHz	
Maximization:	Turntable rotation of 360 degrees range and all axis of EUT used in normal configuration	
EUT height:	1.0m	1.0m
Test site:	Full Anechoic Chamber	Open Aera Test Site
Distance EUT - Antenna:	3m	3m
Detector:	Peak	QPeak

Frequency range:	30MHz to 1GHz	
Test:	Pre-Characterization	Qualification
Antenna Polarization:	Horizontal and Vertical	
Antenna Height:	Centered on EUT (§6.6.5 ANSI C63-10)	Varied from 1m to 4m
Antenna Type:	Bi-Log	
RBW Filter:	120kHz	
Maximization:	Turntable rotation of 360 degrees range and all axis of EUT used in normal configuration	
EUT height:	1.0m	1.0m
Test site:	Full Anechoic Chamber	Open Aera Test Site
Distance EUT - Antenna:	3m	10m
Detector:	Peak	QPeak



Frequency range:	1GHz to 14GHz	
Test:	Pre-Characterization	Qualification
Antenna Polarization:	Horizontal and Vertical	
Antenna Height:	Centered on EUT (§6.6.5 ANSI C63-10)	Centered on EUT (§6.6.5 ANSI C63-10)
Antenna Type:	Horn	
RBW Filter:	1MHz	
Maximization:	Turntable rotation of 360 degrees range and all axis of EUT used in normal configuration	
EUT height:	1.5m	1.5m
Test site:	Full Anechoic Chamber	Full Anechoic Chamber
Distance EUT - Antenna:	3m	10m
Detector:	Peak & Average	Peak & Average

Frequency range:	14GHz to 25GHz	
Test:	Pre-Characterization	Qualification
Antenna Polarization:	Horizontal and Vertical	
Antenna Height:	Centered on EUT (§6.6.5 ANSI C63-10)	Centered on EUT (§6.6.5 ANSI C63-10)
Antenna Type:	Horn	
RBW Filter:	1MHz	
Maximization:	Turntable rotation of 360 degrees range and all axis of EUT used in normal configuration	
EUT height:	1.5m	1.5m
Test site:	Full Anechoic Chamber	Full Anechoic Chamber
Distance EUT - Antenna:	1m	1m
Detector:	Peak & Average	Peak & Average



Test setup of Unwanted Emissions in Restricted Frequency Bands



Photo of Unwanted Emissions in Restricted Frequency Bands



8.3. ***LIMIT***

Measure at 300m		
Frequency range	Level	Detector
9kHz-490kHz	67.6dB μ V/m /F(kHz)	QPeak
Measure at 30m		
Frequency range	Level	Detector
490kHz-1.705MHz	87.6dB μ V/m /F(kHz)	QPeak
1.705MHz-30MHz	29.5dB μ V/m	QPeak
Measure at 10m		
Frequency range	Level	Detector
30MHz to 88MHz	29.5dB μ V/m	QPeak
88MHz to 216MHz	33dB μ V/m	QPeak
216MHz to 960MHz	35.5dB μ V/m	QPeak
960MHz to 1000MHz	43.5dB μ V/m	QPeak
Above 1000MHz	63.5dB μ V/m	Peak
	43.5dB μ V/m	Average
Measure at 3m		
Frequency range	Level	Detector
30MHz to 88MHz	40dB μ V/m	QPeak
88MHz to 216MHz	43.5dB μ V/m	QPeak
216MHz to 960MHz	46B μ V/m	QPeak
960MHz to 1000MHz	54dB μ V/m	QPeak
Above 1000MHz	74dB μ V/m	Peak
	54dB μ V/m	Average

8.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Amplifier 10MHz - 18GHz	LCIE SUD EST	—	A7102082	05/22	09/24
Antenna Bi-log	AH System	SAS-521-7	C2040180	05/23	05/25
Antenna horn 18GHz	EMCO	3115	C2042027	04/22	04/25
BAT EMC	NEXIO	v3.21.0.32	L1000115	-/-	-/-
CABLE	TELEDYNE	R82-0404-0.5M	A5330010	03/22	03/25
Cable 0.75m	-	18GHz	A5329900	08/24	08/26
Cable SMA 40cm	WITHWAVE	W101-SM1-0.4M	A5329979	10/23	10/26
CONTROLLER	INNCO	CO3000	D3044034	-/-	-/-
Emission Cable (SMA 1m)	TELEDYNE	26GHz	A5329874	08/22	08/25
Emission Cable (SMA 3.3m)	TELEDYNE	26GHz	A5329875	08/22	08/25
Filter Matrice	LCIE SUD EST	Combined filters	A7484078	03/23	03/25
Multimeter - CEM	FLUKE	87	A1240251	10/23	10/25
Rehausse Table C3	LCIE	—	F2000511	-/-	-/-
Rehausse Table C3	LCIE	—	F2000507	-/-	-/-
Semi-Anechoic chamber #3 (BF)	SIEPEL	—	D3044017_BF	04/22	04/25
Semi-Anechoic chamber #3 (VSWR)	SIEPEL	—	D3044017_VSWR	04/22	04/25
Spectrum analyzer	ROHDE & SCHWARZ	FSU 26	A4060058	09/23	09/25
Table C3	LCIE	—	F2000461	-/-	-/-
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	05/23	05/25
TILT	INNCO	TILT	D3044033	-/-	-/-
Turntable chamber (Cage#3)	ETS Lingren	Model 2165	F2000371	-/-	-/-
Turntable controller (Cage#3)	ETS Lingren	Model 2090	F2000444	-/-	-/-
Antenna Mat (OATS)	ETS Lingren	2071-2	F2000392	-/-	-/-
Biconic Antenna	EATON	94455-1	C2040234	05/23	05/25
Cable (OATS)	—	1GHz	A5329623	09/24	09/25
Emission Cable	CABELTEL	6GHz	A5329069	02/24	02/25
Emission Cable	MICRO-COAX	1GHz	A5329656	09/24	09/25
Emission Cable	RADIALEX	-/-	A5329061	07/24	07/25
OATS	—	—	F2000409	07/24	07/25
Rehausse Table C1/OATS	LCIE	—	F2000512	-/-	-/-
Table C1/OATS	LCIE	—	F2000445	-/-	-/-
Turntable (OATS)	ETS Lingren	Model 2187	F2000403	-/-	-/-
Turntable / Mast controller (OATS)	ETS Lingren	Model 2066	F2000372	-/-	-/-
Antenna horn 40GHz	SCHWARZBECK	BBHA 9170	C2042028	06/22	06/25
Cable 1m 40GHz	INTELLICONNECT	C-KPKP-1503-1M	A5329987	04/21	08/24



Emission Cable 0.5m (Ampl <-> receptor)	INTELLICONNECT	C-KPKP-1503-500MM	A5329988	04/23	04/26
PRE-AMPLIFIER	LCIE SUD EST	PRE-AMPLIFIER (40GHz)	A7080078	09/22	09/24
SMK 1.2m Emission Cable 0.5m (Ampl <->Chamber)	HUBER-SUHNER	SUCOFLEX 102	A5330063	08/24	08/25

8.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

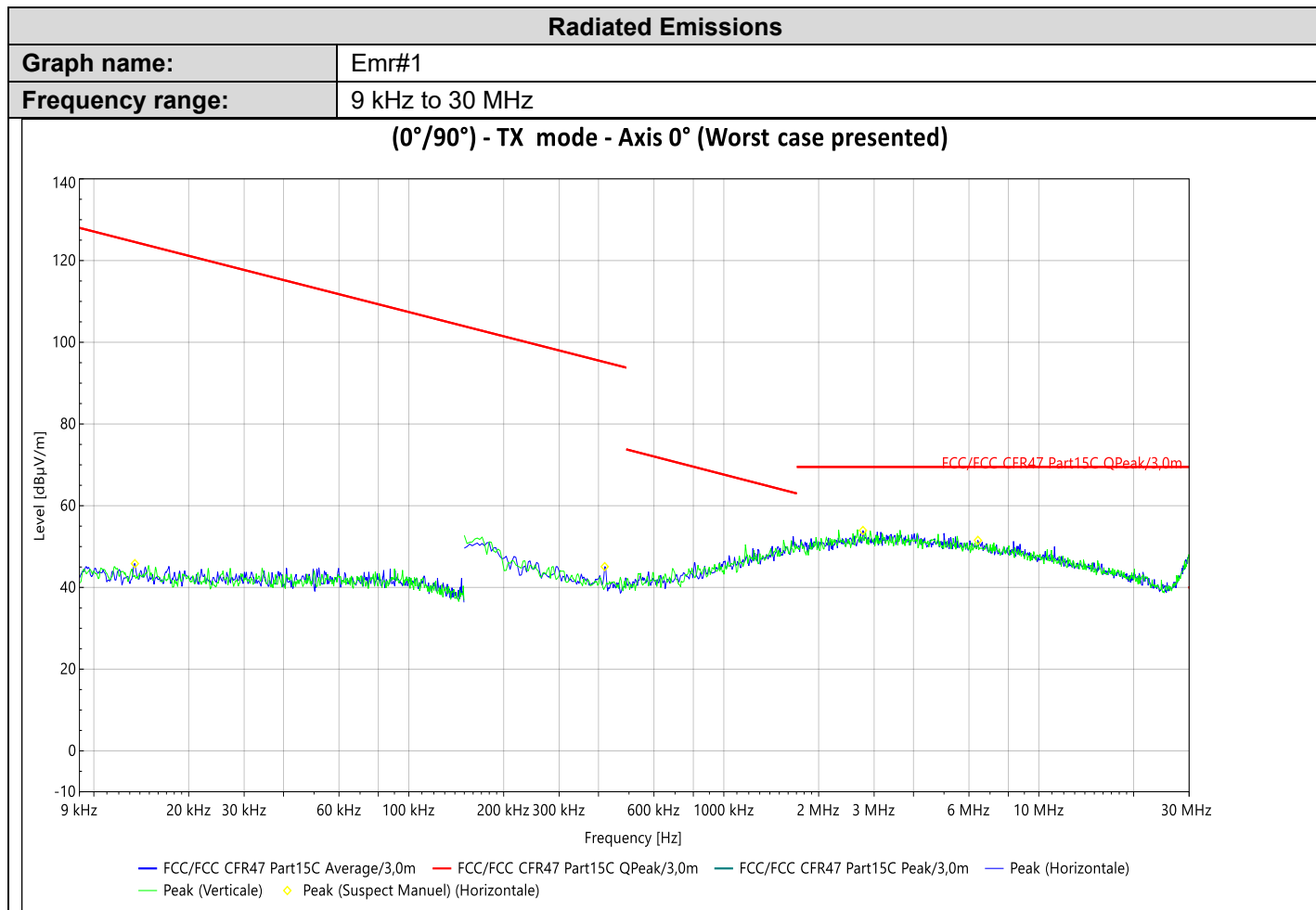
8.6. RESULTS

For all following measurements, worst case is presented with different configurations and modulations of EUT.

8.6.1. 9kHz to 30MHz

Graphs – Pre characterization:

Graph identifier	Polarization	Mode	Channel	EUT position	Comments
Emr# 1	H/V	TX	Single	Axis XY/Z	See the following results
Emr# 2	H/V	TX	Single	Axis XY/Z	See the following results



Pre-Characterization:

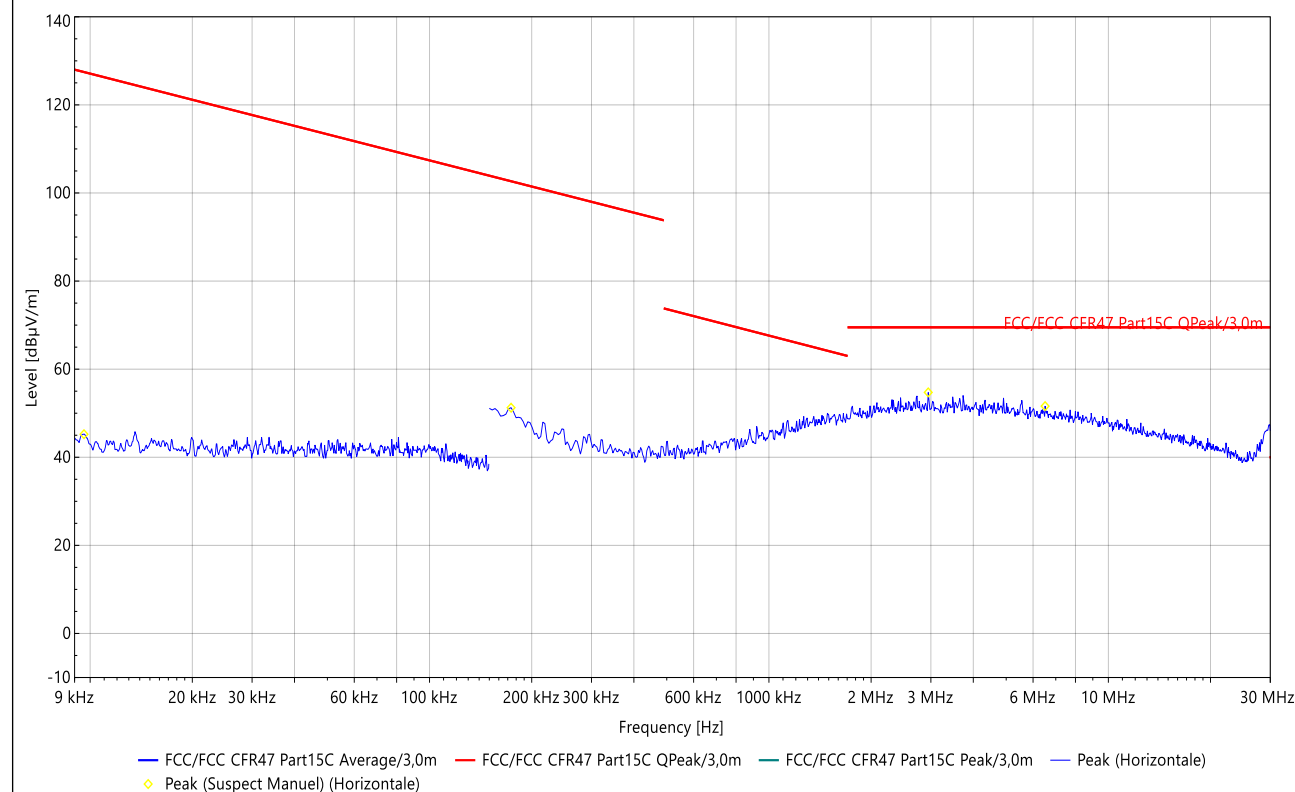
Frequency	PK Level (dBµV/m)	Lim.QP (dBµV/m)	Angle (°)	Polar.	Correct. (dB)
13.497 kHz	45.83	124.53	244	H	60.42
418.649 kHz	45.09	95.15	230	H	48.38
2.76486 MHz	53.94	69.50	309	H	40.48
6.40656 MHz	51.52	69.50	338	H	40.02

No significant frequency observed

Radiated Emissions

Graph name: Emr#2
Frequency range: 9 kHz to 30 MHz

(180°) - TX mode - Axis 0° (Worst case presented)



Pre-Characterization:

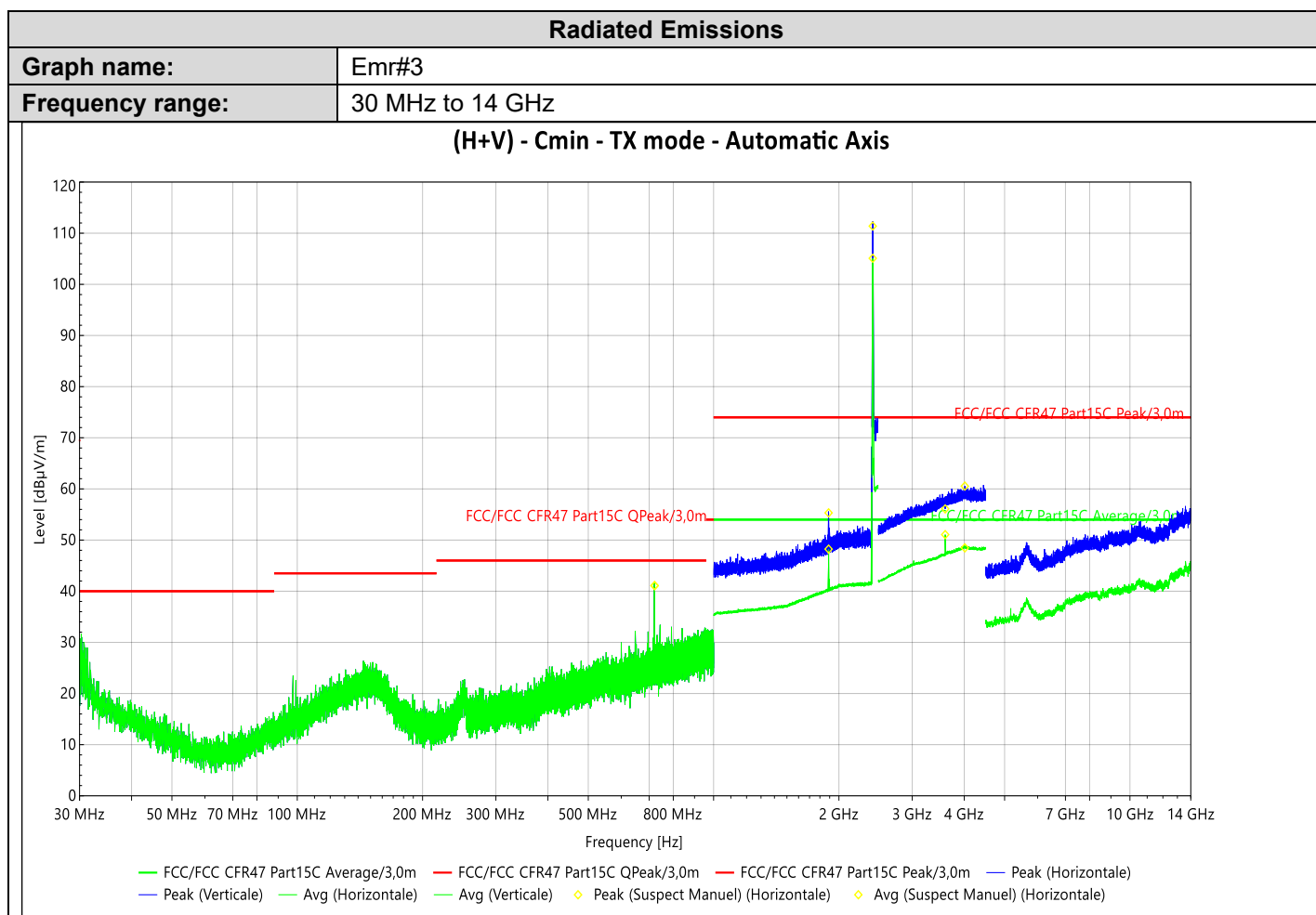
Frequency	PK Level (dBμV/m)	Lim.QP (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
9.592 kHz	45.23	127.46	0	H	60.60
173.88 kHz	51.25	102.66	353	H	55.58
2.946945 MHz	54.73	69.50	301	H	40.40
6.511035 MHz	51.61	69.50	191	H	40.01

No significant frequency observed

8.6.2. 30MHz to 14GHz

Graphs – Pre characterization:

Graph identifier	Polarization	Mode	Channel	EUT position	Comments
Emr# 3	H/V	TX	Cmin	Axis XY/Z	See the following results
Emr# 4	H/V	TX	Cmid	Axis XY/Z	See the following results
Emr# 5	H/V	TX	Cmax	Axis XY/Z	See the following results



Pre-Characterization:

Frequency	PK Level (dBµV/m)	Lim.PK (dBµV/m)	Avg (dBµV/m)	Lim.Avg (dBµV/m)	Lim.QP (dBµV/m)	Angle (°)	Polar.	Correct. (dB)
2.4109385 GHz*	111.39	/	105.09	/	/	62	H	35.72
721.5615 MHz	41.09	/	41.09	/	46.00	359	H	26.49
1.889 GHz	55.32	74.00	48.23	54.00	/	0	H	34.68
3.599834399 GHz	56.09	74.00	51.07	54.00	/	332	H	40.39
4.0124103 GHz	60.55	74.00	48.48	54.00	/	96	H	41.72

*Carrier frequency

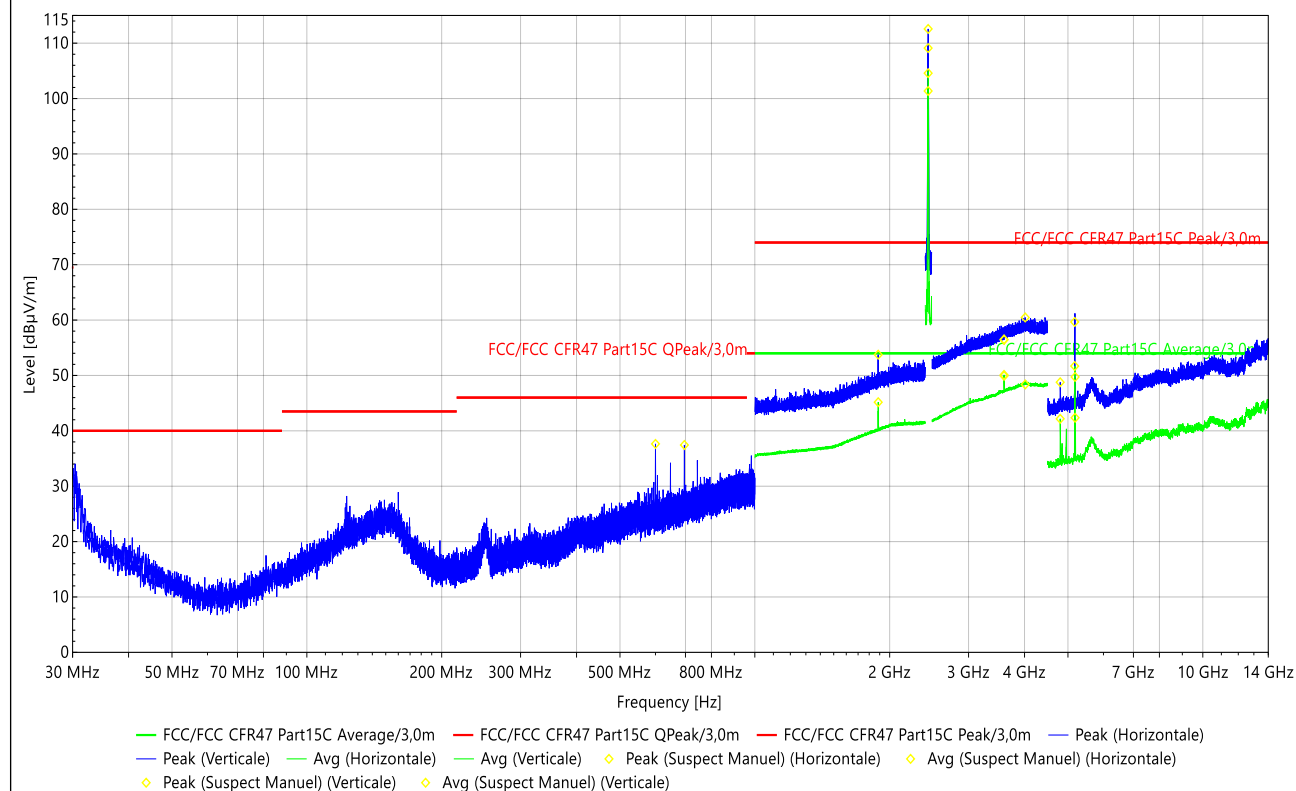
No significant frequency observed (30 MHz to 1GHz)

No significant frequency observed (1GHz to 12.75 GHz)

Radiated Emissions

Graph name: Emr#4
Frequency range: 30 MHz to 14 GHz

(H+V) - Cmid - TX mode - Automatic Axis



Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Lim.QP (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
600.1175 MHz	37.64	/	/	/	46.00	45	H	24.12
696.1475 MHz	37.44	/	/	/	46.00	108	H	26.14
1.8855 GHz	53.75	74.00	45.18	54.00	/	10	H	34.66
2.43703225 GHz*	109.11	/	101.36	/	/	337	H	35.77
3.599834399 GHz	56.42	74.00	49.91	54.00	/	250	H	40.39
4.0136202 GHz	60.47	74.00	48.37	54.00	/	77	H	41.72
4.804 GHz	48.77	74.00	42.17	54.00	/	350	H	-18.50
5.18685 GHz	49.73	74.00	42.36	54.00	/	235	H	-17.80
5.1764 GHz	59.66	74.00	51.69	54.00	/	350	V	-17.80
3.599834399 GHz	56.51	74.00	50.10	/	/	36	V	40.39
2.43719925 GHz*	112.58	/	104.58	54.00	/	281	V	35.77

*Carrier frequency

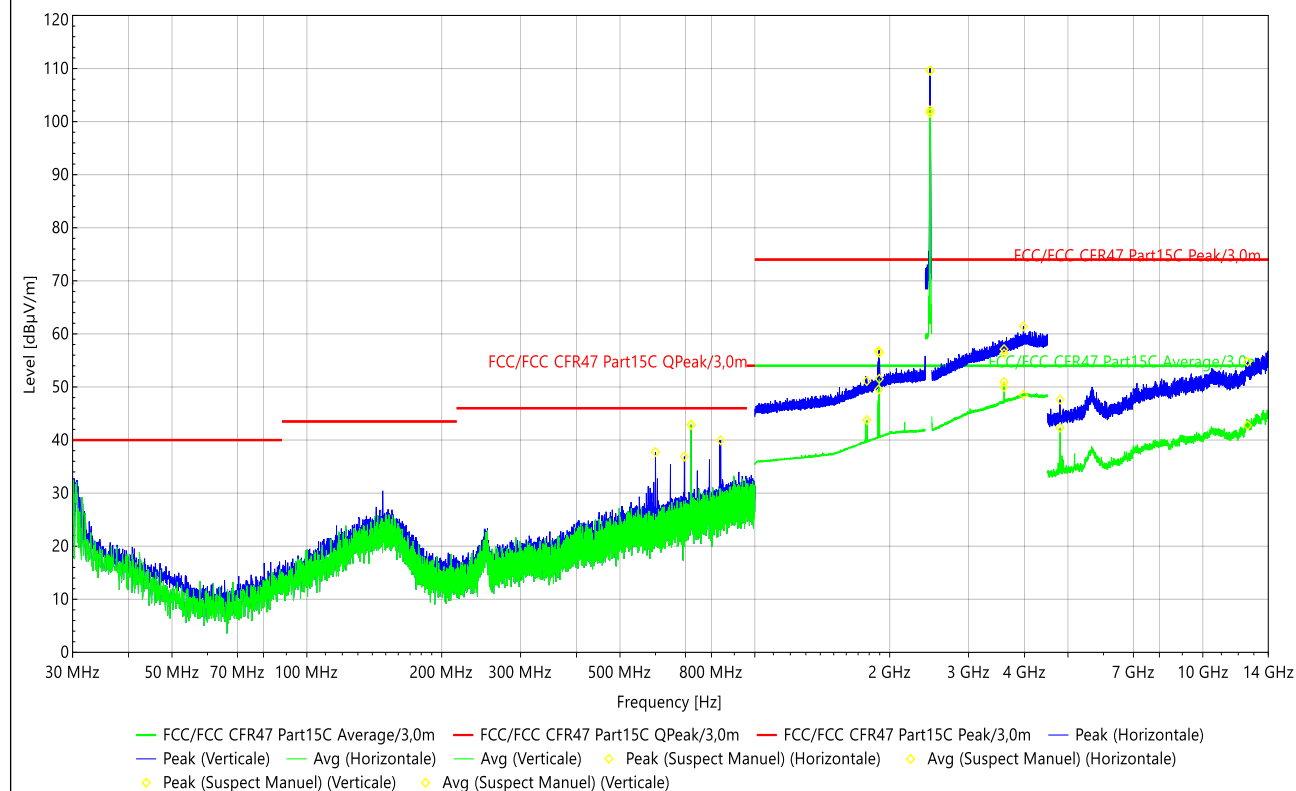
No significant frequency observed (30 MHz to 1GHz)

No significant frequency observed (1GHz to 12.75 GHz)

Radiated Emissions

Graph name: Emr#5
Frequency range: 30 MHz to 14 GHz

(H+V) - Cmax - TX mode - Automatic Axis



Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Lim.QP (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
2.46124725 GHz	109.66	/	102.13	/	/	67	H	35.78
600.1175 MHz	37.76	/	/	/	46.00	52	H	24.12
696.1475 MHz	36.91	/	/	/	46.00	128	H	26.14
839.1255 MHz	39.97	/	/	/	46.00	285	H	28.06
1.7784 GHz	51.13	74.00	43.78	54.00	/	139	H	33.95
1.8904 GHz	56.79	74.00	49.55	54.00	/	261	H	34.69
3.599834399 GHz	57.13	74.00	50.97	54.00	/	268	H	40.39
4.80115 GHz	47.63	74.00	42.33	54.00	/	0	H	-18.50
12.582599999 GHz	54.74	74.00	42.79	54.00	/	179	V	-8.74
3.599834399 GHz	56.31	74.00	49.98	54.00	/	18	V	40.39
3.9765166 GHz	61.42	74.00	48.53	54.00	/	201	V	41.61
2.4620405 GHz	109.58	/	101.64	/	/	288	V	35.78
1.89565 GHz	56.42	74.00	51.54	54.00	/	149	V	34.73
720.3975 MHz	42.88	/	42.88	/	46.00	46	V	26.49

*Carrier frequency

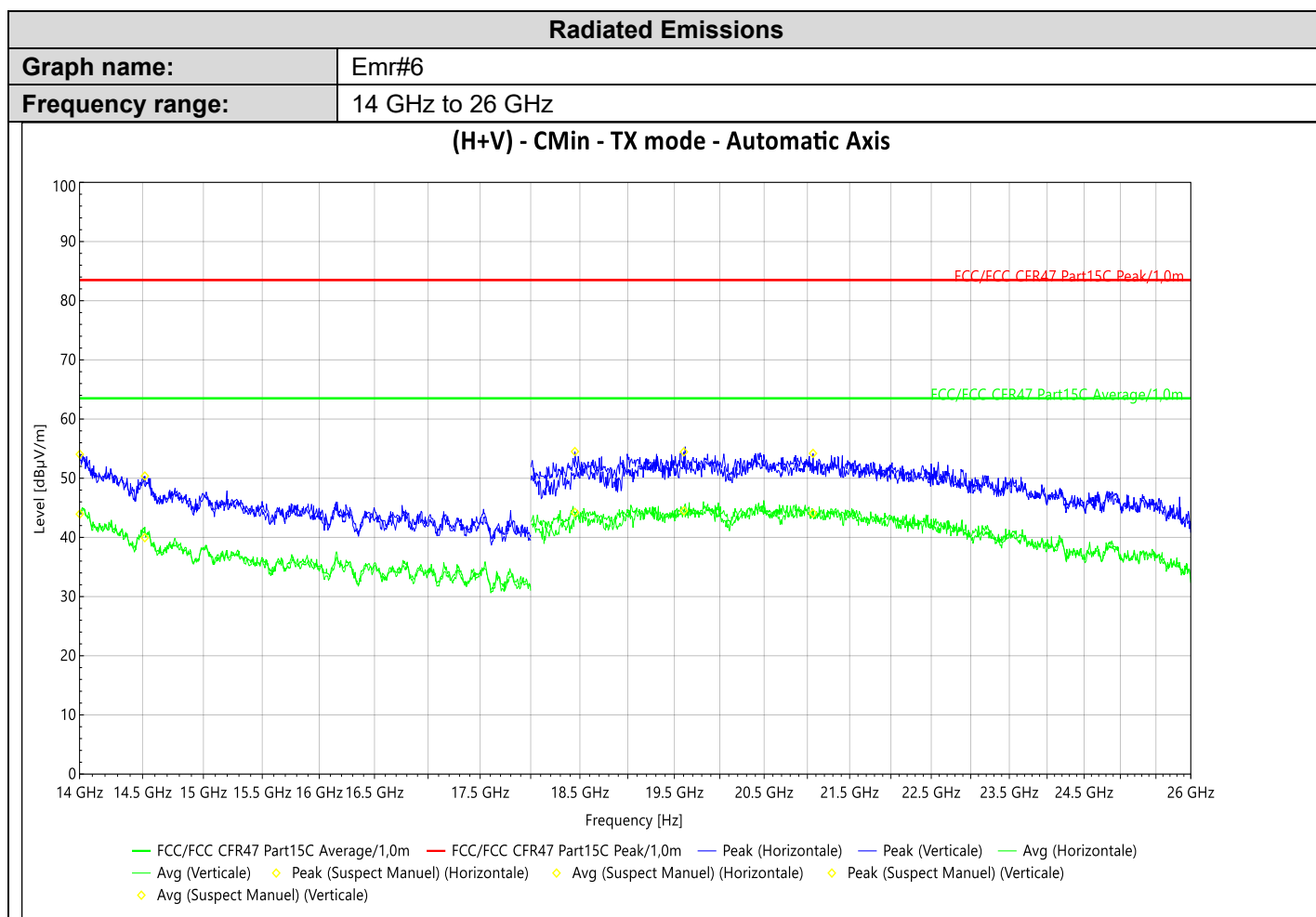
No significant frequency observed (30 MHz to 1GHz)

No significant frequency observed (1GHz to 12.75 GHz)

8.6.3. 14GHz to 25GHz

Graphs – Pre characterization:

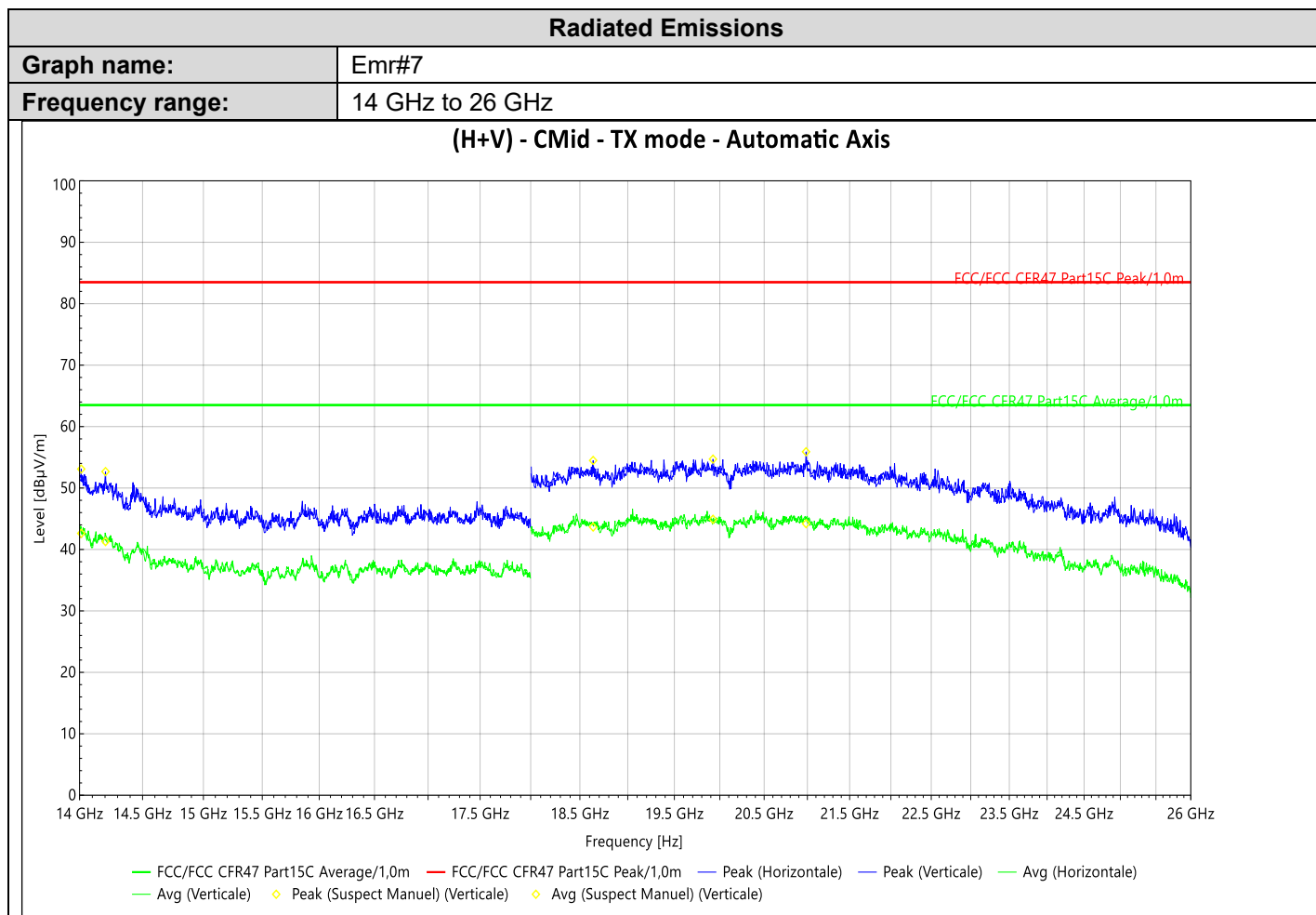
Graph identifier	Polarization	Mode	Channel	EUT position	Comments
Emr# 6	H/V	TX	Cmin	Axis XY/Z	See the following results
Emr# 7	H/V	TX	Cmid	Axis XY/Z	See the following results
Emr# 8	H/V	TX	Cmax	Axis XY/Z	See the following results



Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
14.002 GHz	54.05	83.50	43.95	63.50	184	H	1.76
14.5185 GHz	50.37	83.50	39.95	63.50	281	H	-2.23
19.604 GHz	54.45	83.50	44.48	63.50	62	H	1.50
21.066 GHz	54.20	83.50	44.07	63.50	69	H	0.55
18.449 GHz	54.51	83.50	44.23	63.50	173	V	1.23

No significant frequency observed



Pre-Characterization:

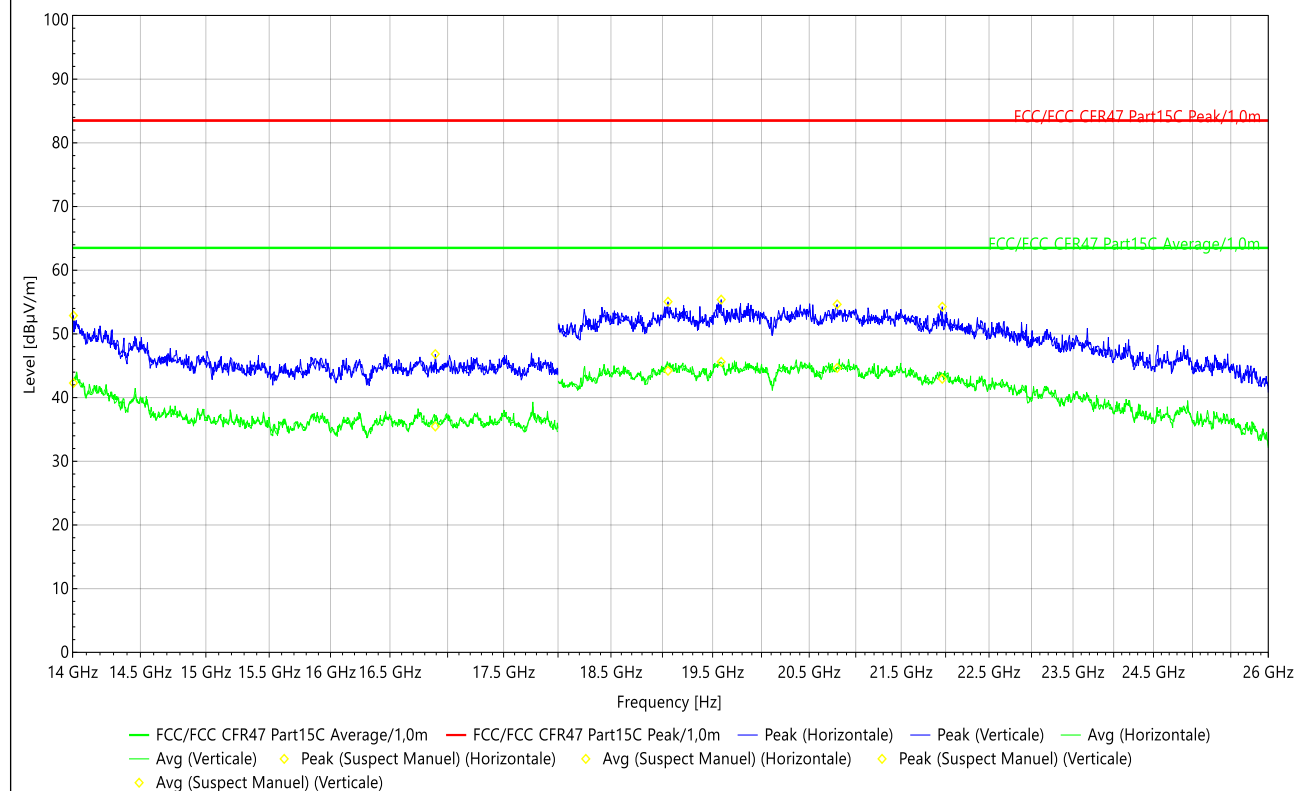
Frequency	PK Level (dBµV/m)	Lim.PK (dBµV/m)	Avg (dBµV/m)	Lim.Avg (dBµV/m)	Angle (°)	Polar.	Correct. (dB)
14.013 GHz	53.09	83.50	42.62	63.50	8	V	1.69
14.204 GHz	52.67	83.50	41.29	63.50	32	V	0.13
18.637 GHz	54.48	83.50	43.64	63.50	64	V	0.23
19.924 GHz	54.71	83.50	44.91	63.50	2	V	1.04
20.984 GHz	55.90	83.50	44.20	63.50	43	V	0.76

No significant frequency observed

Radiated Emissions

Graph name: Emr#8
Frequency range: 14 GHz to 26 GHz

(H+V) - CMax - TX mode - Automatic Axis



Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
21.962 GHz	54.27	83.50	42.95	63.50	18	H	-0.19
14.006 GHz	52.88	83.50	42.30	63.50	0	V	1.73
16.892 GHz	46.83	83.50	35.46	63.50	53	V	-7.40
19.055 GHz	55.06	83.50	44.21	63.50	53	V	1.90
19.587 GHz	55.39	83.50	45.62	63.50	33	V	1.41
20.799 GHz	54.64	83.50	44.65	63.50	33	V	0.27

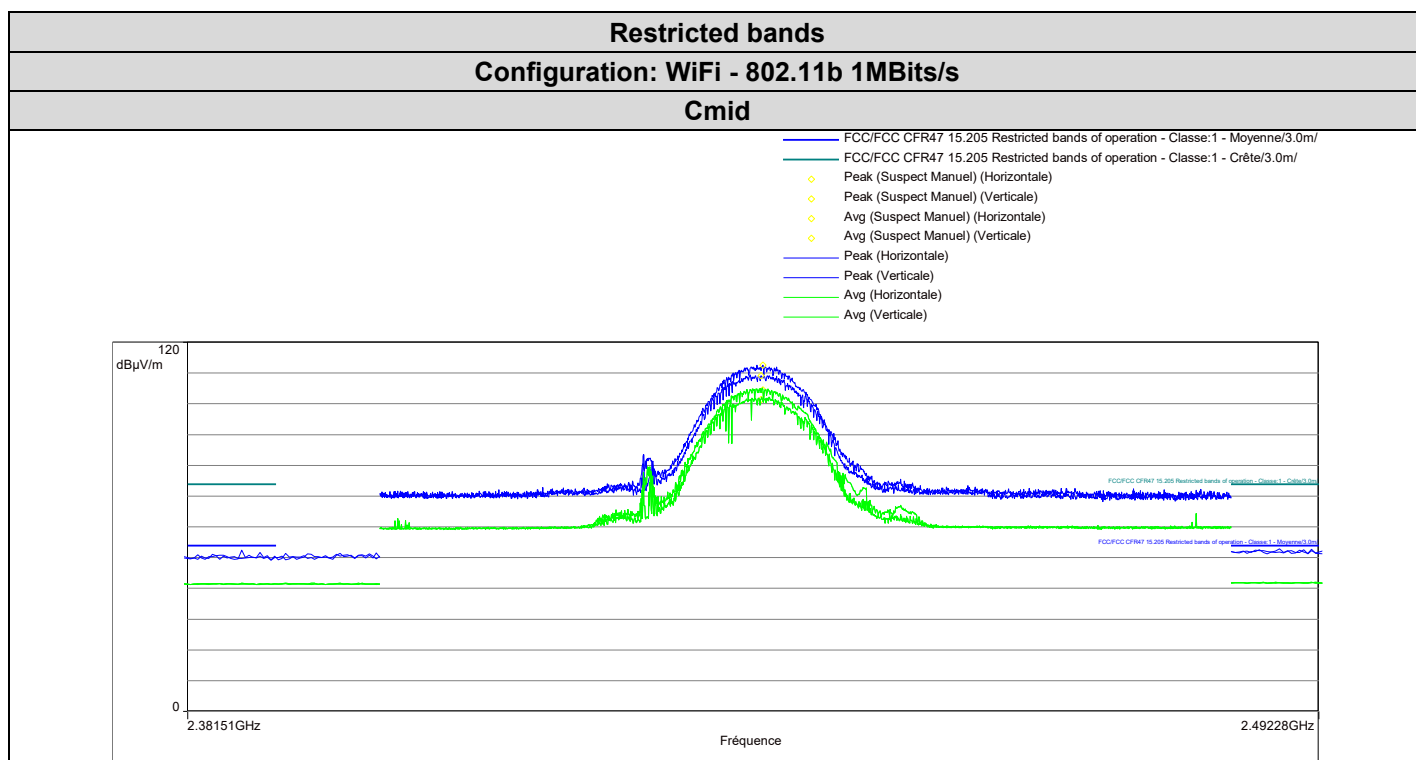
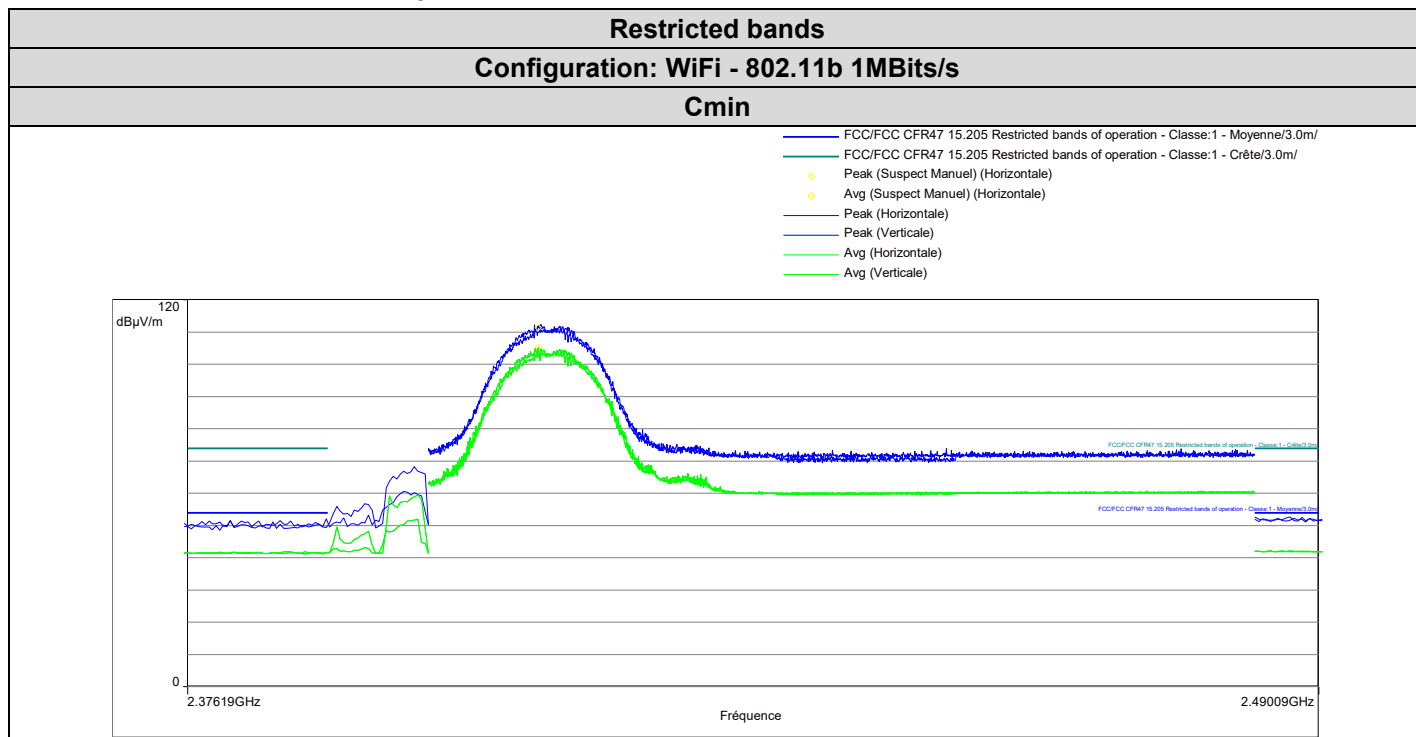
No significant frequency observed

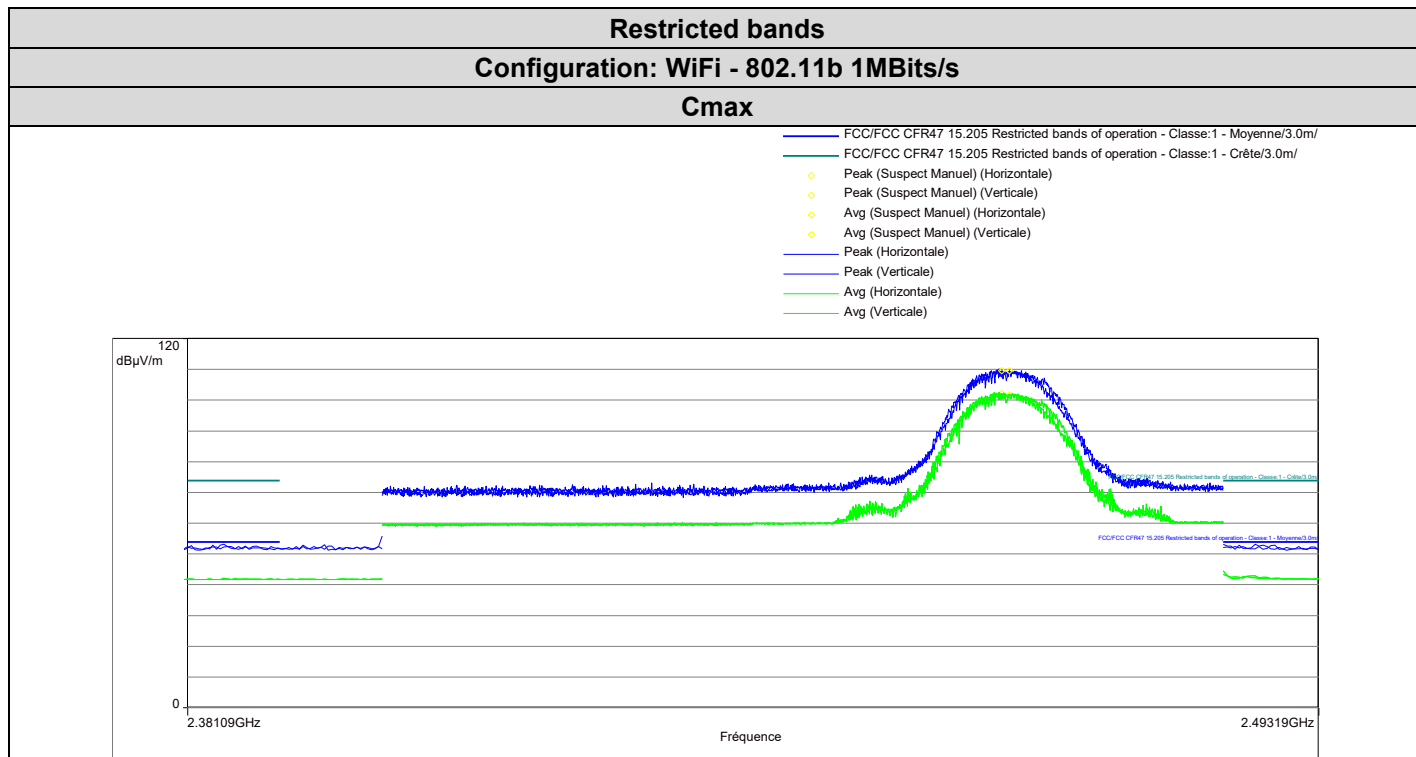


Final measurement:

Test Frequency (MHz)	Meter Reading dB(μ V)	Detector (Pk/QP/Av)	Polarity (V/H)	Transducer Factor (dB)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
648.1200	13.2	QP	V	27.7	40.9	47.0	-6.1
672.1200	12.9	QP	V	27.9	40.8	47.0	-6.2
696.1200	9.8	QP	V	28.2	38.0	47.0	-9.0
744.1200	10.1	QP	V	30.1	40.2	47.0	-6.8
792.1600	8.5	QP	V	30.5	39.0	47.0	-8.0
600.5200	1.2	QP	H	26.6	27.8	47.0	-19.2
600.0800	13.0	QP	V	26.6	39.6	47.0	-7.4
721.5615	9.8	QP	V	29.2	39.0	47.0	-8.0
839.1200	7.6	QP	V	32.2	39.8	47.0	-7.2

8.6.4. Restricted band of operation





8.7. CONCLUSION

Unwanted emissions in non-restricted bands measurement performed on the sample of the product **Tikee 4**, Sn: **T-4TK-4Q-E01492**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247** limits.

9. UNCERTAINTIES CHART

<i>Kind of measurement</i>	<i>Wide uncertainty laboratory</i>
Occupied Channel Bandwidth	±2.8 %
Humidity	±3.2 %
Power Spectral Density, Conducted	±1.7 dB
Radio frequency	±0.3 ppm
RF power, conducted	±1.2 dB
RF power, radiated (Full anechoic chamber above 1GHz)	±3.7 dB
RF power, radiated (Semi anechoic chamber & open test site)	±5.6 dB
Spurious emission, conducted	±2.3 dB
Spurious emission, radiated (Full anechoic chamber above 1GHz)	±3.8 dB
Spurious emission, radiated (Semi anechoic chamber & open test site)	±5.7 dB
Temperature	±0.75 °C
Time	±2.3 %
Voltage	±1.7 %

The uncertainty values calculated by the laboratory are lower than limit uncertainty values defined by the standard. The conformity of the sample is directly established by the applicable limit values. This table includes all uncertainties maximum feasible for testing in the laboratory, whether or not made in this report.