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TEST REPORT

N°: 28781452-817254-A_(FILE#12236198)

Version: 01

Subject

Radio spectrum tests according to the standards:
FCC CFR 47 Part 15.247 & ANSI C63.10/Cor1 + C63.10a
RSS-247 & RSS-Gen

Issued to

ENLAPS

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FRANCE

Apparatus under test

- Product
- Trade mark
- Manufacturer
- Model under test
- Serial number
- FCCID
- IC

Timelapse digital cameras

enlaps™

ENLAPS

Tikee sentinel

S-SEN-1A000071

2ASLI-SENTIN01

24785-SENTIN01

Conclusion

See Test Program chapter

Test date

November 03, 2025 to November 07, 2025

Test location

LCIE Grenoble

FCC Test site

FR0008 - 918017 (MOI)

ISED Test site

6500A (MOI)

Sample receipt date

November 03, 2025

Composition of document

88 pages

Document issued on

November 18, 2025

Written by :

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Approved by :

Anthony MERLIN

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PUBLICATION HISTORY

Version	Date	Author	Modification
01	November 18, 2025	Majid MOURZAGH	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 (September 26, 2025)[fb](#)
- RSS 247 Issue 4
- RSS Gen Issue 5
- KDB 558074 D01 DTS Meas Guidance v05r02[fb](#)
- KDB 662911 D01 Multiple Transmitter Output v02r01[fb](#)
- ANSI C63.10-2020/Cor1-2023 + ANSI C63.10a-2024

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)
AC Power Line Conducted Emission	<i>FCC & ISED</i>	PASS
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

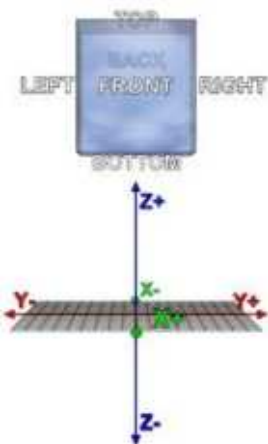
NA: Not Applicable

NP: Test Not Performed

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

2.1. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES):

Equipment under test (EUT):

Equipment under test: Tikee Sentinel		
Model under test:	Tikee sentinel	
Serial Number:	S-SEN-1A000071	
		
Dimensions:	6.3 cm x 8cm x 8.5cm (Length x Width x Height)	
Type:	Table-Top	

Power supply:

Name	Type	Rating	Reference / Sn	Comments
Supply1	Battery	3.6 Vdc	/	Internal battery charged by USB-C

NC: Not communicated by provider

**Inputs/outputs - Cable:**

Access	Type	Length used (m)	Declared <3m	Shielded	Comments
None					

NC: Not communicated by provider

Auxiliary equipment used during test:

Type	Reference	Sn	Comments
Laptop LENOVO	L460	/	/
AC/DC PSU LENOVO	/	/	/
Interface board for loading RFsettings	/	/	Provided by ENLAPS

NC: Not communicated by provider

Equipment information (declaration of provider):

Bluetooth Low Energy:	v4.2
Chipset / RF Module	STM32WB55RGV6
Frequency band:	[2400 – 2483.5] MHz
Spectrum Modulation:	DSSS (Tested like it – international agreements)
Number of Channel:	40
Spacing channel:	2MHz
Channel bandwidth:	1MHz / 2MHz
Antenna Type:	Internal
Antenna connector:	None
Antenna requirements §15.203	Conducted Method (welded connection, according to manufacturer's requirements)
Transmit chains:	1
Receiver chains	1



CHANNEL PLAN

Channel	Frequency (MHz)	Channel	Frequency (MHz)
Cmin: 0	2402	Cmid: 20	2442
1	2404	21	2444
2	2406	22	2446
3	2408	23	2448
4	2410	24	2450
5	2412	25	2452
6	2414	26	2454
7	2416	27	2456
8	2418	28	2458
9	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	Cmax: 39	2480

DATA RATE

Available	Data Rate (Mbps)	Modulation Type	Worst Case Modulation
☒	0.25	GFSK (1MHz)	☐
☒	1	GFSK (1MHz)	☒
☒	2	GFSK (2MHz)	☒



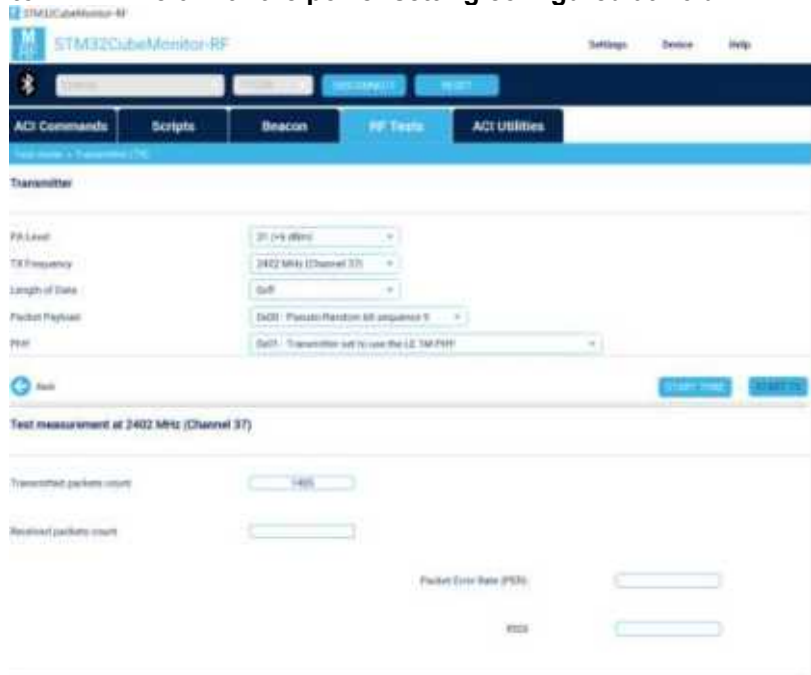
Antenna Characteristic			
Antenna reference	Gain (dBi)	Frequency Band (MHz)	Impedance(Ω)
PCB	-0.3	2.4GHz band	50

Hardware information				
Highest internal frequency (PLL, Quartz, Clock, Microprocessor...):		F _{Highest} :	NC	MHz
Firmware (if applicable):		V:	1.01	
Software (if applicable):		V:	N/A	
Equipment intended:	Portable			
Type of equipment:	Stand-alone			
Equipment sample:	Production model			
Duty cycle:	Continuous duty			
Operating temperature range:	T _{min} :		-10 °C	
	T _{nom} :		20°C	
	T _{max} :		+50 °C	
Operating voltage:	V _{nom} :		3.6 VDC	

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. STM32CubeMonitor-RF V2.18.0 with the power setting configured at +6 dBm 
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
AC Power Line Conducted Emission	Test mode 1
Unwanted Emissions in Non-Restricted Frequency Bands	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 LABELLING

Label	
enlapsTM SN:S-SEN-1A-000071 Tikee sentinel Montbonnot - FRANCE  IP66 IC UK CA 	FCC ID: 2ASLI-SENTIN01 IC: 24785-SENTIN01 Contains: FCC ID 2AJYU-8PYA007 / IC 23761-8PYA008 FCC ID S9NBNRGM2SA / IC 8976C-BNRGM2SA This device complies with Part15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2.4. EQUIPMENT MODIFICATIONS DURING THE TESTS

None



2.5. TEST DISTANCE EXTRAPOLATION – FCC

The field strength is extrapolated to the new measurement distance using formula from §6.4.4 de l'ANSI C63.10 and FCC Part15.31 (p), the choice of equation is made according to the distances of the limit and the measurement,

$$FS_{\text{limit}} = FS_{\text{max}} - 40 \log \left(\frac{d_{\text{near field}}}{d_{\text{measure}}} \right) - 20 \log \left(\frac{d_{\text{limit}}}{d_{\text{near field}}} \right) \quad (2)$$

$$FS_{\text{limit}} = FS_{\text{max}} - 20 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}} \right) \quad (3)$$

$$FS_{\text{limit}} = FS_{\text{max}} - 40 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}} \right) \quad (4)$$

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
$d_{\text{near field}}$	is the $\lambda/2\pi$ distance
d_{measure}	is the distance of the measurement point from the EUT
d_{limit}	is the reference limit distance

2.6. TEST DISTANCE EXTRAPOLATION – ISSED

The field strength is extrapolated to the new measurement distance using formula from §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



2.7. 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 52.5dB μ V 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 dB μ V/m.

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

The 32 dB μ V/m value can be mathematically converted to its corresponding level in μ V/m.

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

2.8. CALIBRATION DATE

The calibration intervals are extended at +4 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 06, 2025
Test performed by : Majid MOURZAGH
Relative humidity (%) : 40
Ambient temperature (°C) : 22

3.2. TEST SETUP

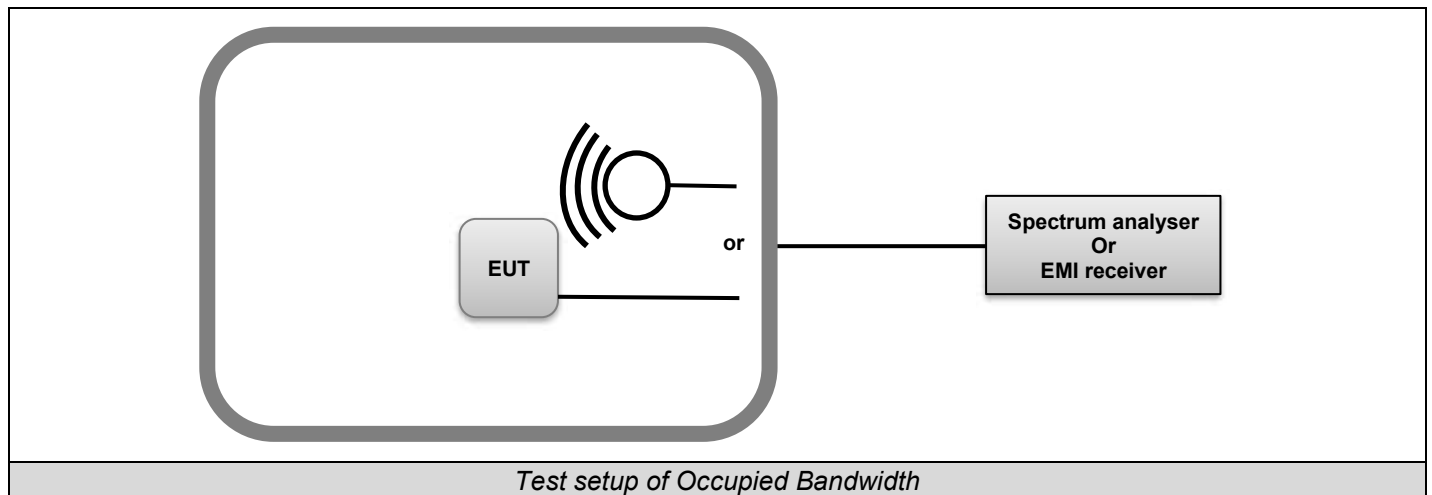
The Equipment Under Test is installed in an anechoic chamber.
Measurement is performed with a spectrum analyzer in conducted method.

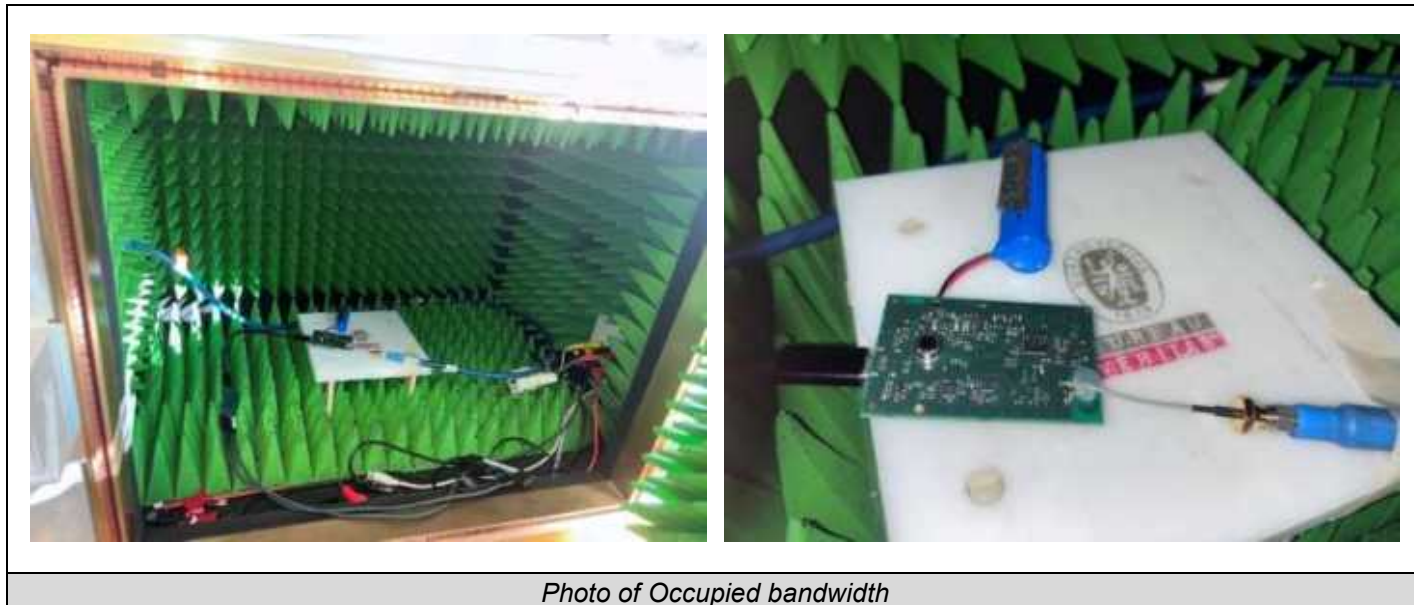
The EUT is turned ON, the center frequency of the spectrum analyzer is set to the fundamental frequency. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

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





3.3. LIMIT

None

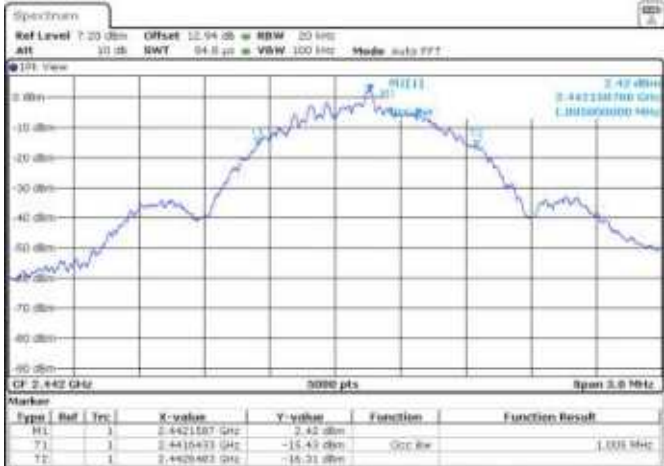
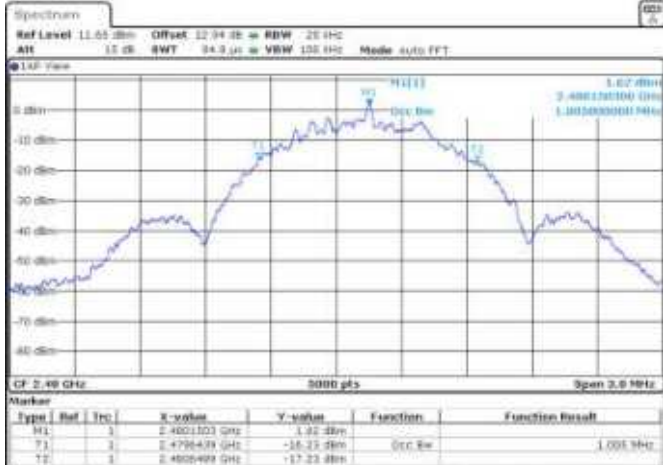
3.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Mesure_DTS_FCC-ISED	LCIE SUD EST	Mesure_DTS_FCC-ISED v1.4	L2000060	-/-	-/-
Attenuator 10dB	AEROFLEX	—	A7122268	08/25	08/27
Full Anechoic Room	SIEPEL	—	D3044024	-/-	-/-
SMA 1.5m	SUCOFLEX	18GHz	A5329864	01/25	01/26
SMA 1.5m	SUCOFLEX	18GHz	A5329863	08/25	08/26
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	04/24	04/26
Thermo-hygrometer	TESTO	608-H1	B4204120	05/25	05/27
Multimeter - CEM	FLUKE	87	A1240251	10/23	10/25

3.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

3.6. RESULTS

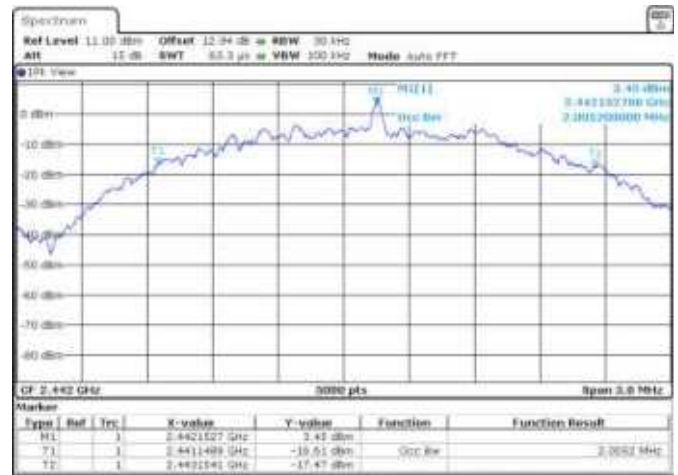
Occupied Bandwidth									
Cmin	Cmid								
									
Cmax	Configuration: BLE - 1Mbits/s								
	<table> <tr> <th>Channel</th><th>Occupied Bandwidth (MHz)</th></tr> <tr> <td>Cmin</td><td>1.014</td></tr> <tr> <td>Cmid</td><td>1.005</td></tr> <tr> <td>Cmax</td><td>1.005</td></tr> </table>	Channel	Occupied Bandwidth (MHz)	Cmin	1.014	Cmid	1.005	Cmax	1.005
Channel	Occupied Bandwidth (MHz)								
Cmin	1.014								
Cmid	1.005								
Cmax	1.005								

Occupied Bandwidth

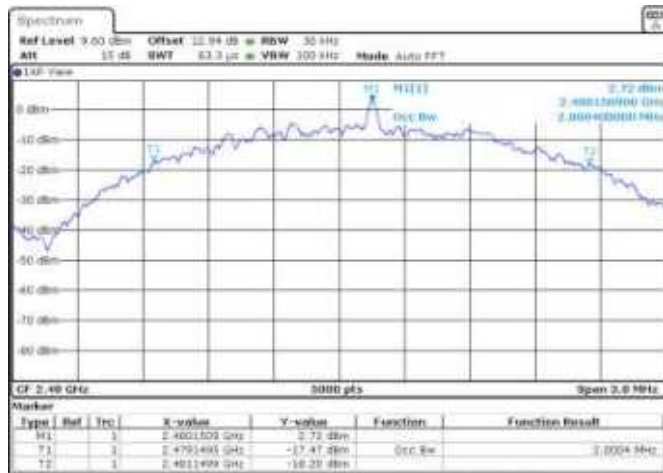
Cmin



Cmid



Cmax



Configuration: BLE - 2Mbits/s

Channel	Occupied Bandwidth (MHz)
Cmin	2.008
Cmid	2.005
Cmax	2.000

3.7. CONCLUSION

Occupied Channel Bandwidth measurement performed on the sample of the product **Tikee sentinel**, Sn: **S-SEN-1A000071**, 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 06, 2025
Test performed by : Majid MOURZAGH
Relative humidity (%) : 40
Ambient temperature (°C) : 22

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.

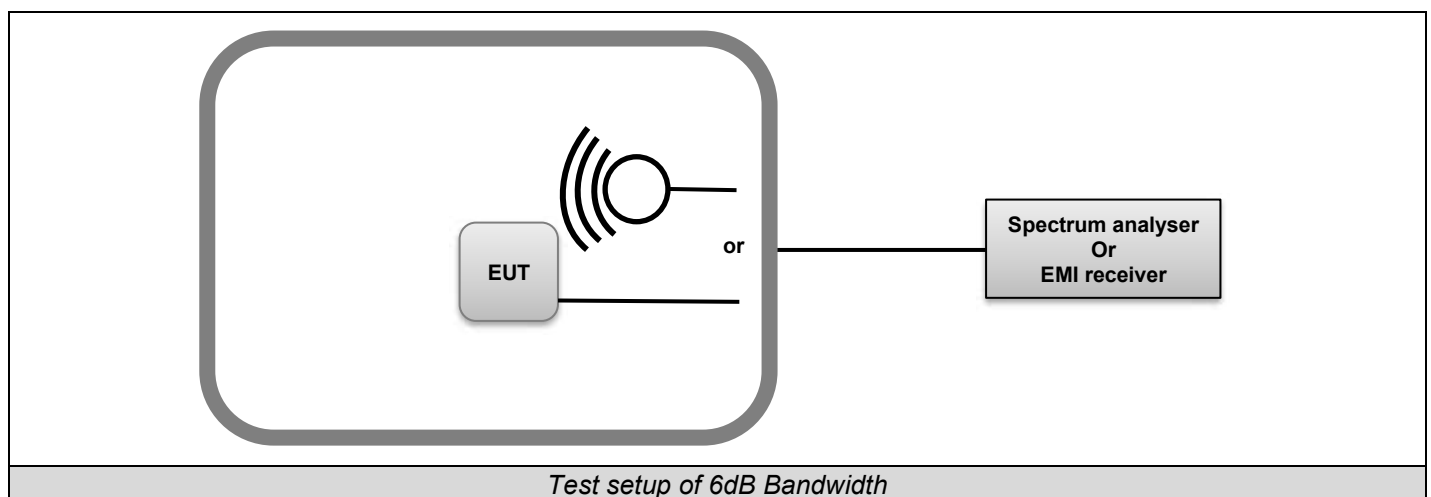




Photo of 6dB bandwidth

4.3. LIMIT

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

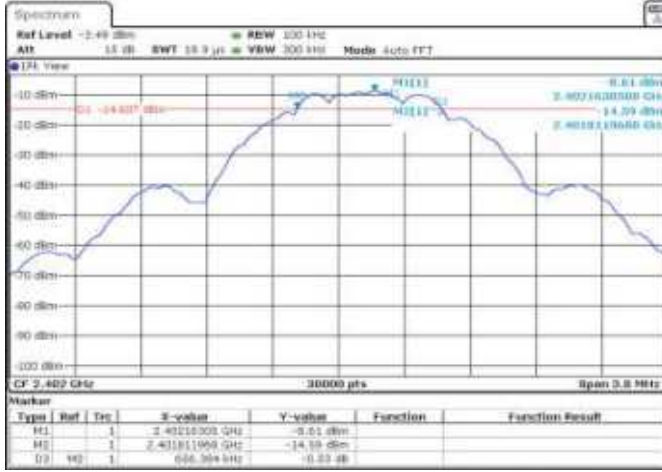
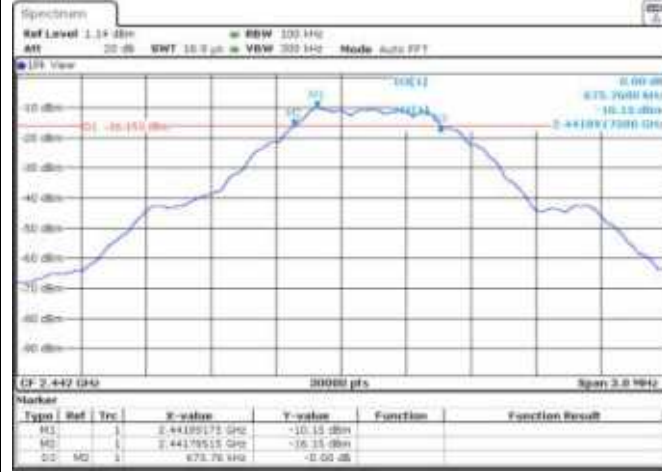
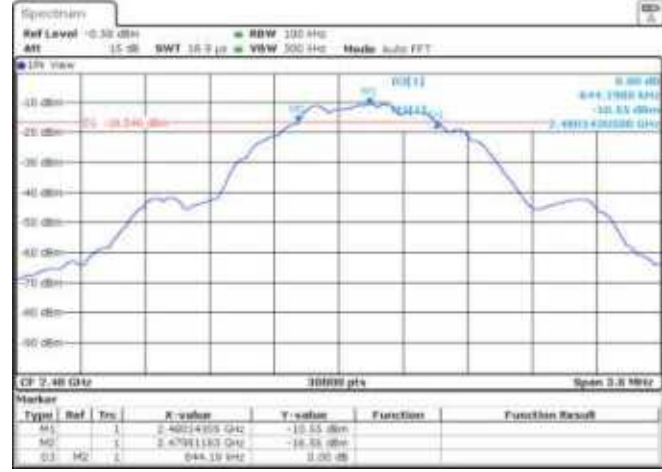
4.4. TEST EQUIPMENT LIST

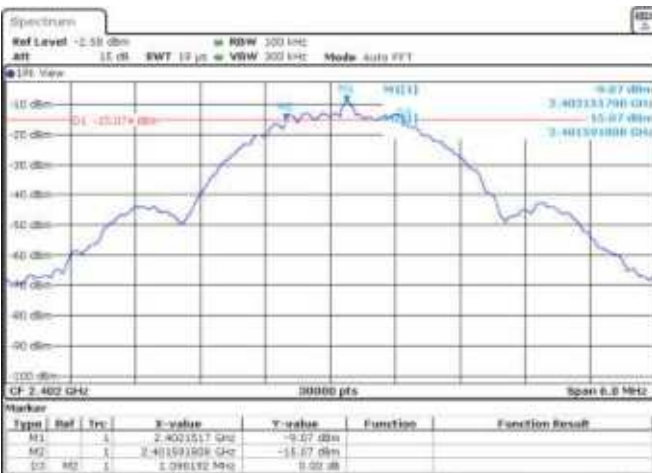
TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Mesure_DTS_FCC-ISED	LCIE SUD EST	Mesure_DTS_FCC-ISED v1.4	L2000060	-/-	-/-
Attenuator 10dB	AEROFLEX	—	A7122268	08/25	08/27
Full Anechoic Room	SIEPEL	—	D3044024	-/-	-/-
SMA 1.5m	SUCOFLEX	18GHz	A5329864	01/25	01/26
SMA 1.5m	SUCOFLEX	18GHz	A5329863	08/25	08/26
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	04/24	04/26
Thermo-hygrometer	TESTO	608-H1	B4204120	05/25	05/27
Multimeter - CEM	FLUKE	87	A1240251	10/23	10/25

4.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

4.6. RESULTS

6dB Bandwidth		
Cmin	Cmid	
		
Cmax	Configuration: BLE - 1Mbits/s	
	Channel	6dB Bandwidth (MHz)
	Cmin	0.656
	Cmid	0.676
	Cmax	0.644
	Limit (MHz)	> 0.5

6dB Bandwidth			
Cmin		Cmid	
			
Cmax		Configuration: BLE - 2Mbits/s	
Channel	6dB Bandwidth (MHz)	Limit (MHz)	
Cmin	1.096	> 0.5	
Cmid	1.097	> 0.5	
Cmax	1.224	> 0.5	

4.7. CONCLUSION

6dB Bandwidth measurement performed on the sample of the product **Tikee sentinel**, Sn: **S-SEN-1A000071**, 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 06, 2025
Test performed by : Majid MOURZAGH
Relative humidity (%) : 40
Ambient temperature (°C) : 22

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.

Test Procedure used: KDB 558074 D01 DTS Meas Guidance v05r02 § 8.3.1.2

KDB 558074 D01 DTS Meas Guidance v05r02 § 8.3.1.2

This procedure may be used when the maximum available RBW of the measurement instrument is less than the DTS bandwidth.

- Set the RBW = 1 MHz.
- Set the VBW $\geq 3 \times$ RBW
- Set the span $\geq 1.5 \times$ DTS bandwidth.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges

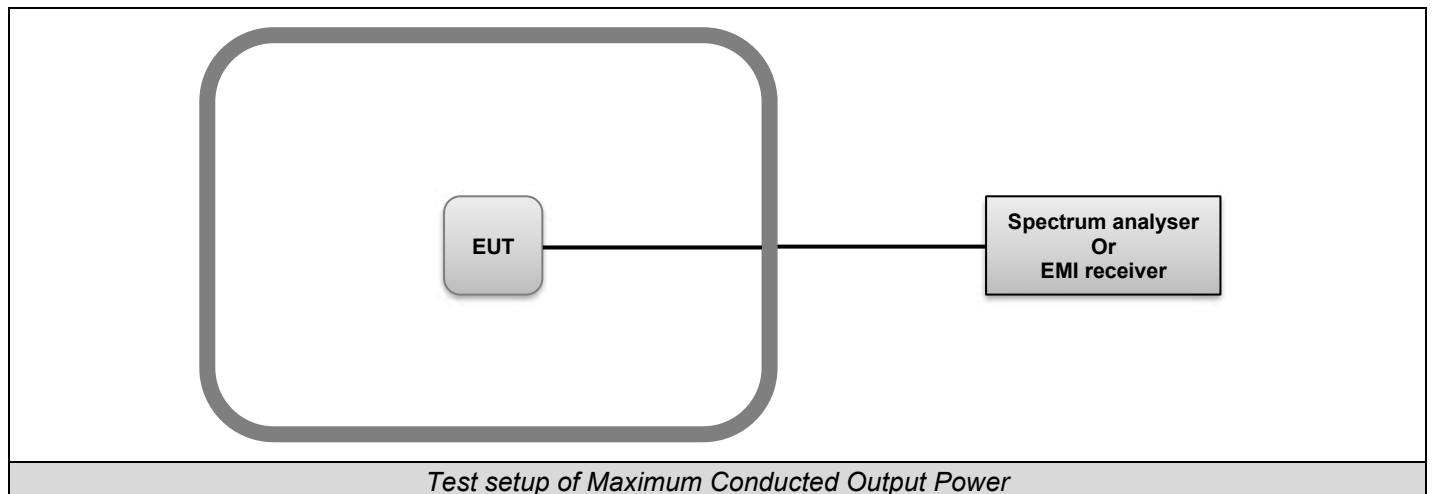




Photo of Maximum Conducted Output Power

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

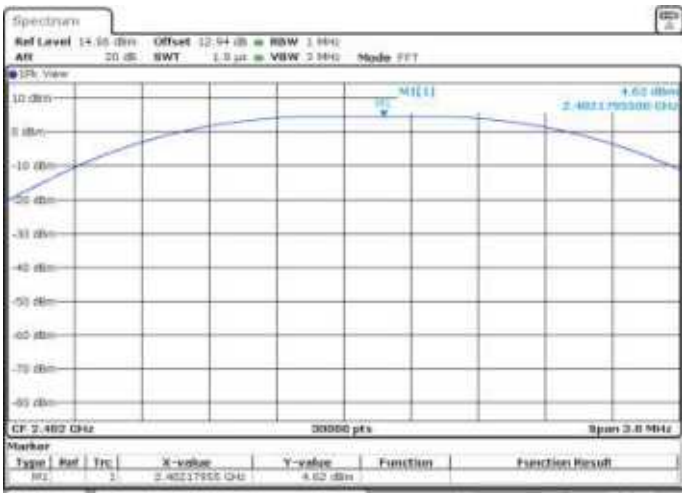
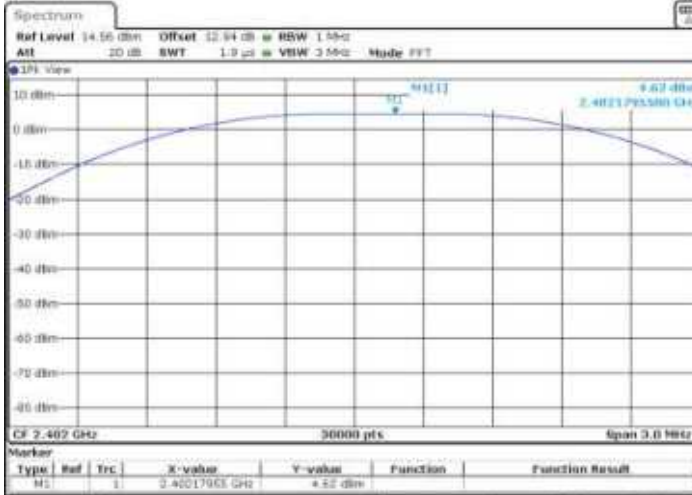
5.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Mesure_DTS_FCC-ISED	LCIE SUD EST	Mesure_DTS_FCC-ISED v1.4	L2000060	-/-	-/-
Attenuator 10dB	AEROFLEX	—	A7122268	08/25	08/27
Full Anechoic Room	SIEPEL	—	D3044024	-/-	-/-
SMA 1.5m	SUCOFLEX	18GHz	A5329864	01/25	01/26
SMA 1.5m	SUCOFLEX	18GHz	A5329863	08/25	08/26
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	04/24	04/26
Thermo-hygrometer	TESTO	608-H1	B4204120	05/25	05/27
Multimeter - CEM	FLUKE	87	A1240251	10/23	10/25

5.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

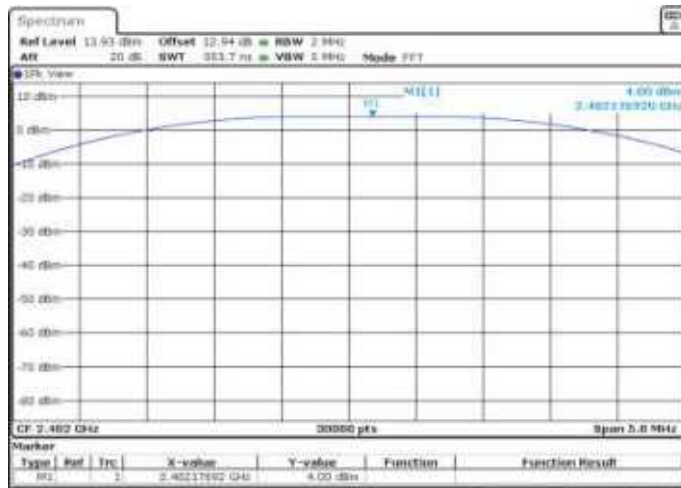
5.6. RESULTS

Maximum Conducted Output Power					
Cmin			Cmid		
					
Cmax			Configuration: BLE - 1Mbits/s		
Channel	Offset Cable+Att (dB)	Antenna Gain (dBi)	Conducted Power (dBm)	Limit (dBm)	
Cmin	12.94	-0.3	4.62	30	
Cmid	12.94	-0.3	4.44	30	
Cmax	12.94	-0.3	3.43	30	

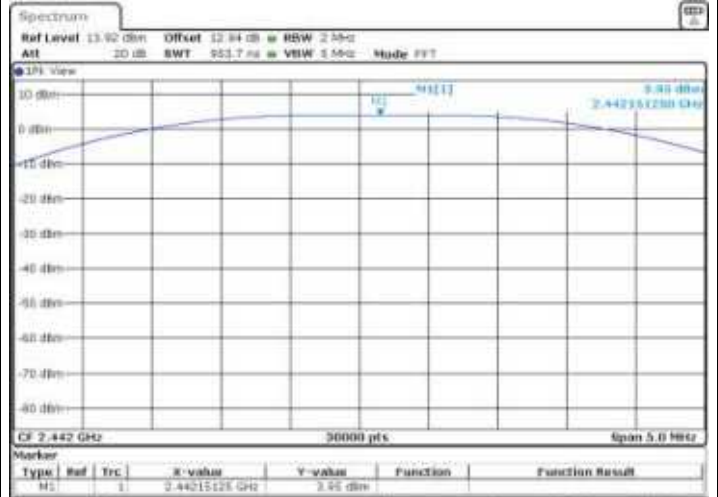


Maximum Conducted Output Power

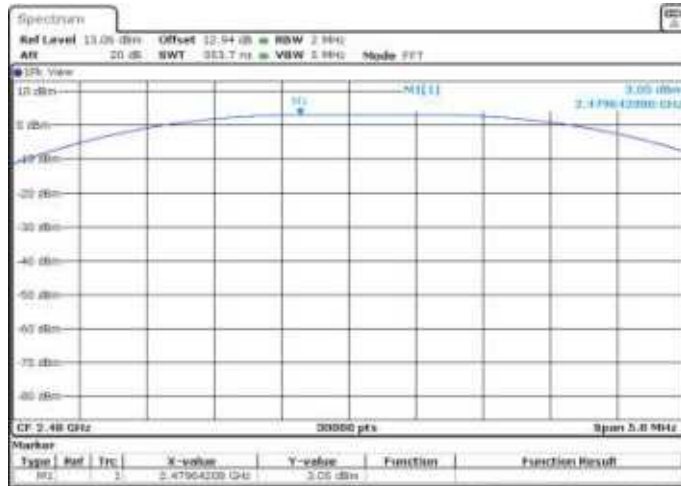
Cmin



Cmid



Cmax



Configuration: BLE - 2Mbits/s

Channel	Offset Cable+Ant (dB)	Antenna Gain (dBi)	Conducted Power (dBm)	Limit (dBm)
Cmin	12.94	-0.3	4.00	30
Cmid	12.94	-0.3	3.95	30
Cmax	12.94	-0.3	3.05	30

5.7. CONCLUSION

Maximum Output Conducted Power measurement performed on the sample of the product **Tikee sentinel**, Sn: **S-SEN-1A000071**, 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 06, 2025
Test performed by : Majid MOURZAGH
Relative humidity (%) : 40
Ambient temperature (°C) : 22

6.2. TEST SETUP

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

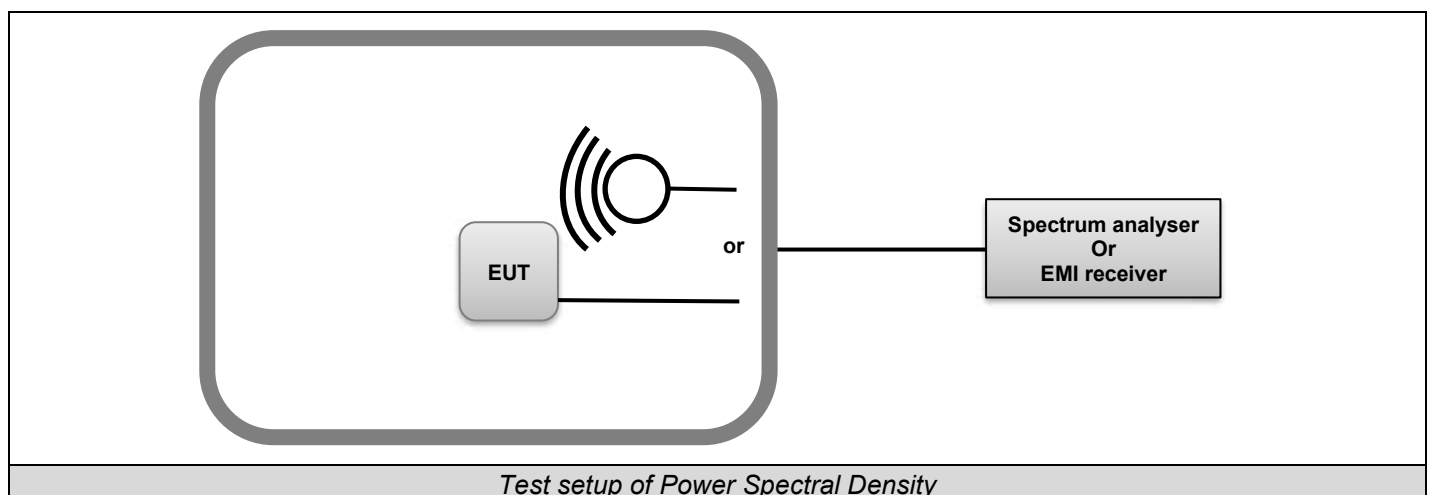
The EUT is turned ON, the center frequency of the spectrum analyzer is set to the fundamental frequency. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

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

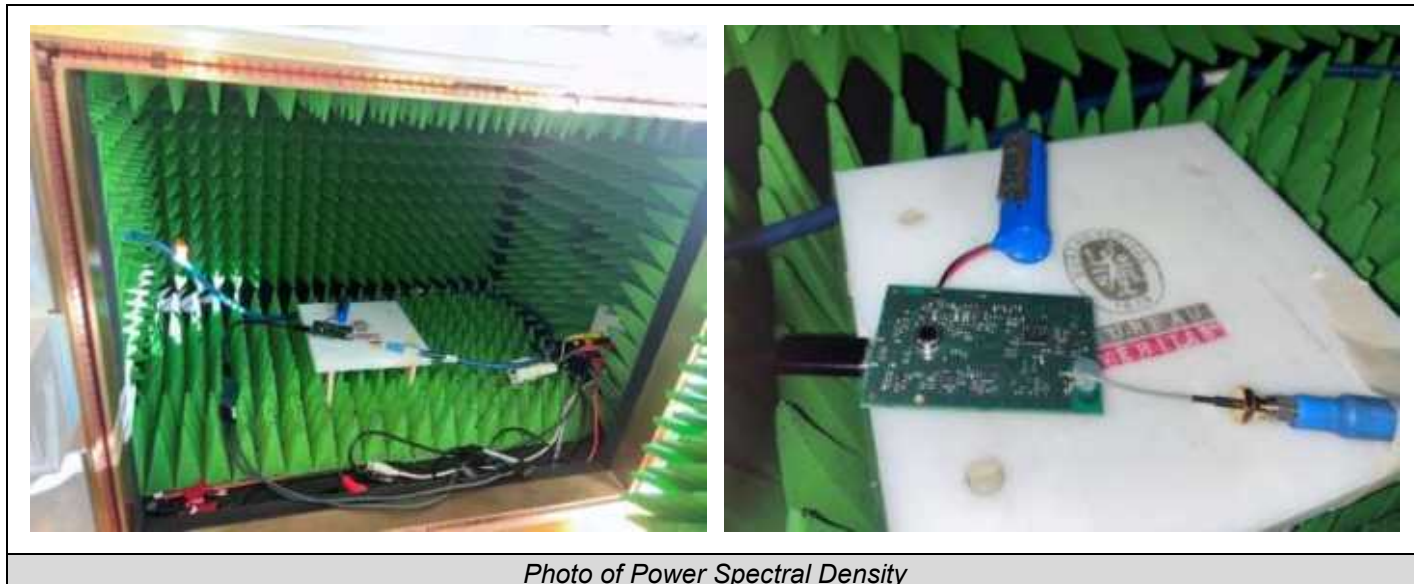
KDB 558074 D01 DTS Meas Guidance v05r02 § 8.4 (Method PKPSD)

Subclause 11.10 of ANSI C63.10 is applicable

- Set analyzer center frequency to DTS channel center frequency.
- Set the span > 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.



Test setup 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

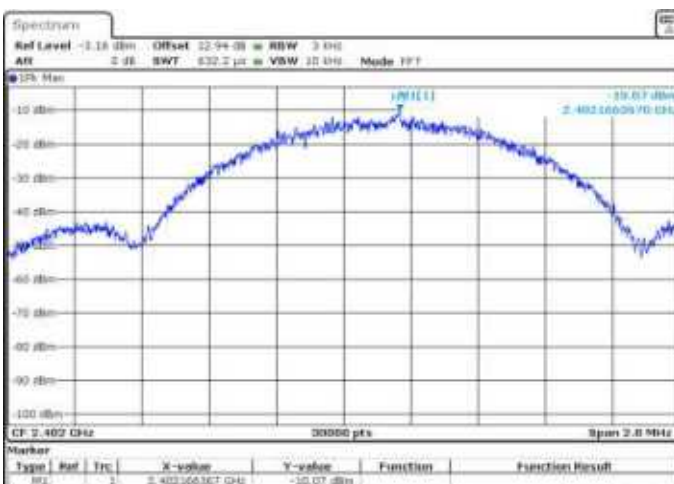
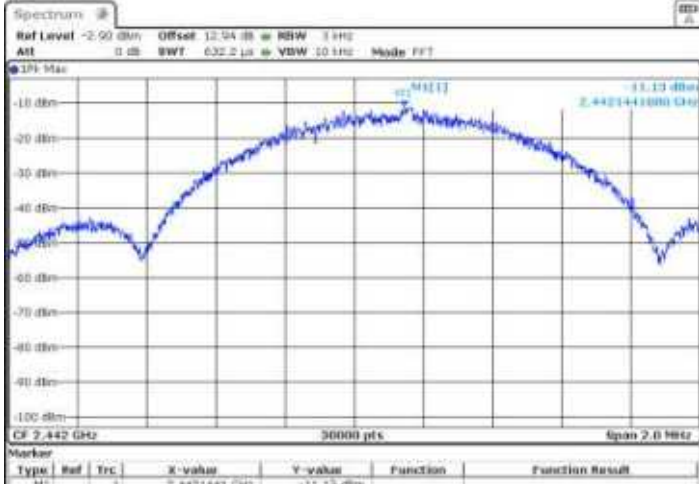
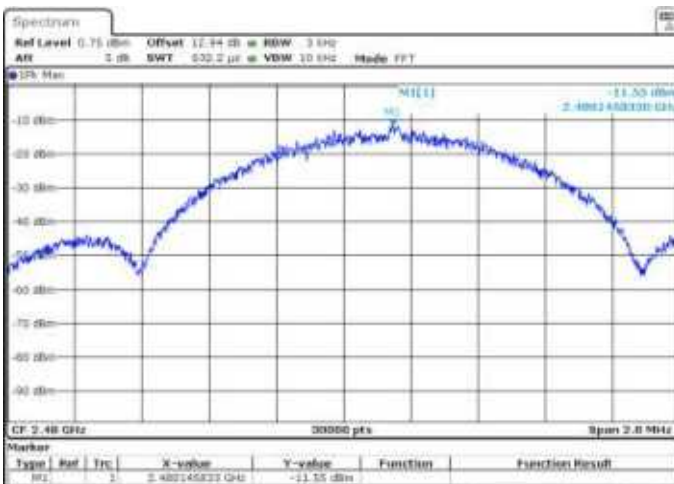
6.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Mesure_DTS_FCC-ISED	LCIE SUD EST	Mesure_DTS_FCC-ISED v1.4	L2000060	-/-	-/-
Attenuator 10dB	AEROFLEX	—	A7122268	08/25	08/27
Full Anechoic Room	SIEPEL	—	D3044024	-/-	-/-
SMA 1.5m	SUCOFLEX	18GHz	A5329864	01/25	01/26
SMA 1.5m	SUCOFLEX	18GHz	A5329863	08/25	08/26
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	04/24	04/26
Thermo-hygrometer	TESTO	608-H1	B4204120	05/25	05/27
Multimeter - CEM	FLUKE	87	A1240251	10/23	10/25

6.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

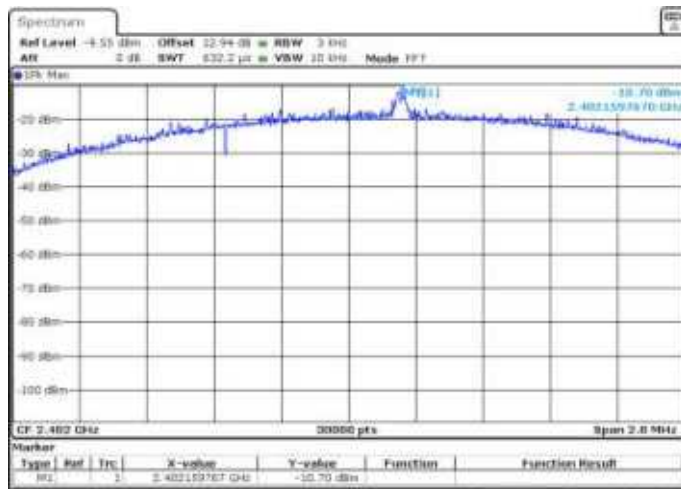
6.6. RESULTS

Power Spectral Density					
Cmin			Cmid		
					
Cmax					
			Configuration: BLE - 1Mbits/s		
Channel	Offset Cable+Att (dB)	Antenna Gain (dBi)	Power Spectral Density (dBm)	Limit (dBm)	
Cmin	12.94	-0.3	-10.07	≤ 8	
Cmid	12.94	-0.3	-11.13	≤ 8	
Cmax	12.94	-0.3	-11.55	≤ 8	

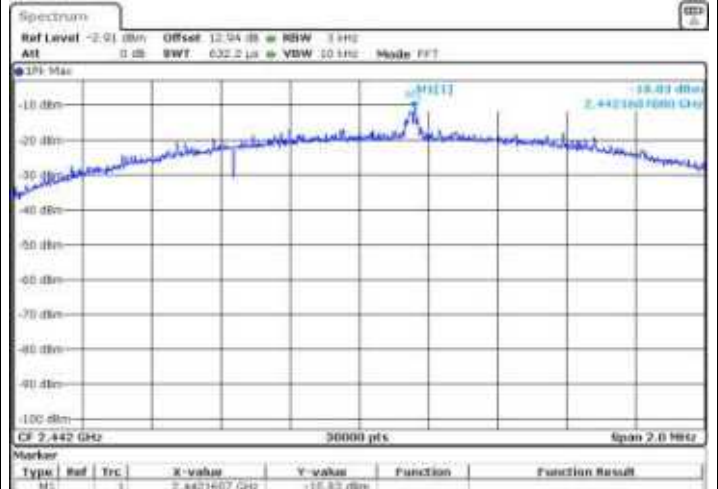


Power Spectral Density

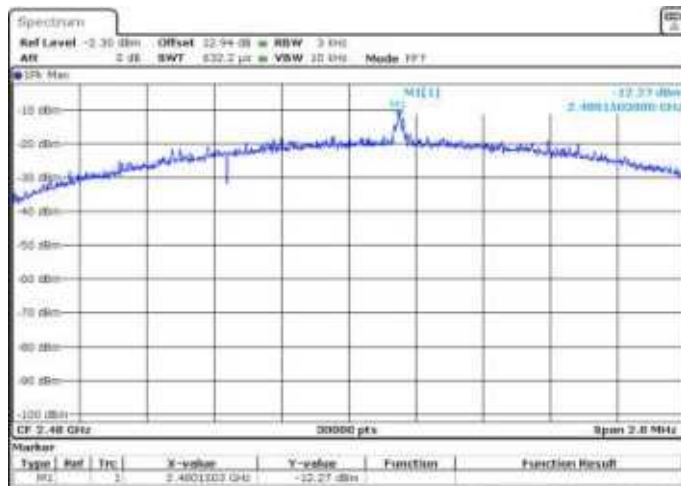
Cmin



Cmid



Cmax



Configuration: BLE - 1Mbits/s

Channel	Offset Cable+At t (dB)	Antenna Gain (dBi)	Power Spectral Density (dBm)	Limit (dBm)
Cmin	12.94	-0.3	-10.70	≤ 8
Cmid	12.94	-0.3	-10.83	≤ 8
Cmax	12.94	-0.3	-12.27	≤ 8

6.7. CONCLUSION

Power Spectral Density measurement performed on the sample of the product **Tikee sentinel**, Sn: **S-SEN-1A000071**, 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

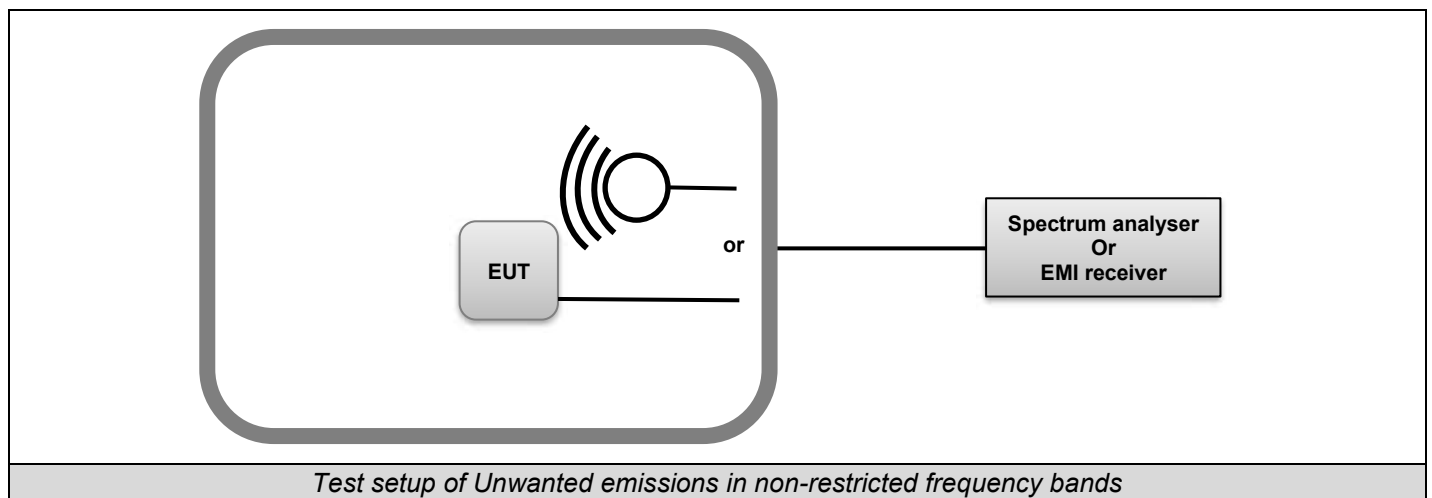
Date of test	: November 06, 2025	November 07, 2025
Test performed by	: Majid MOURZAGH	Majid MOURZAGH
Relative humidity (%)	: 40	38
Ambient temperature (°C)	: 22	23

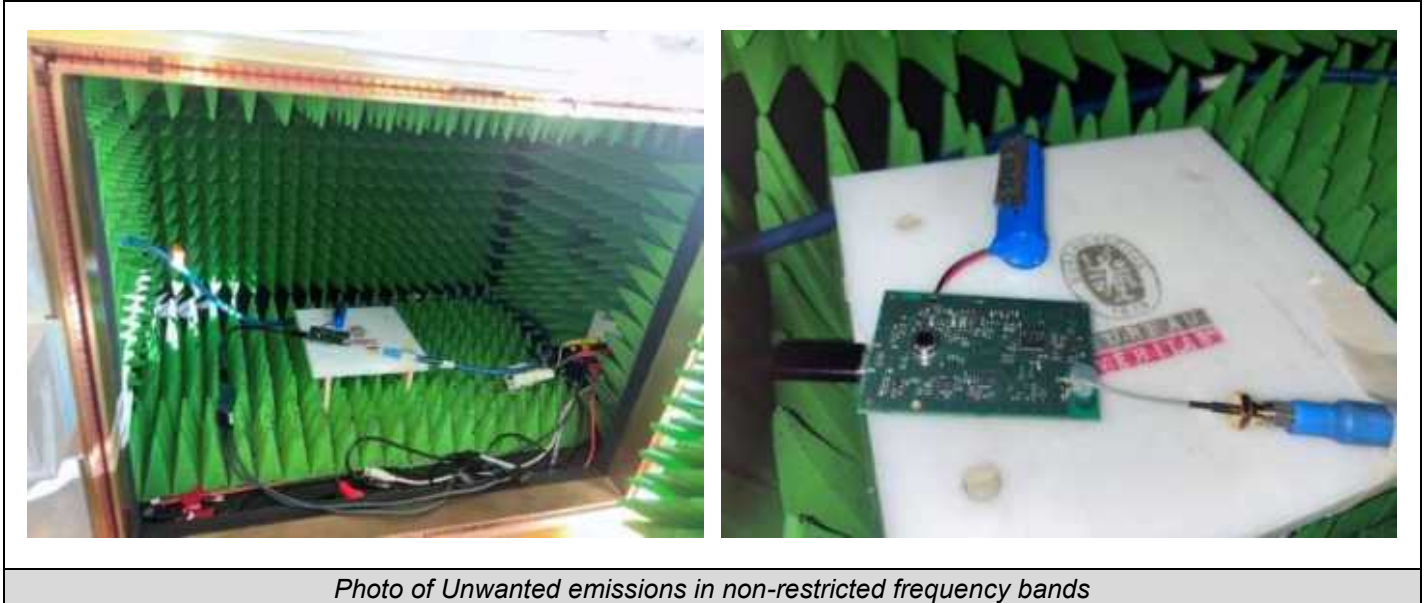
7.2. TEST SETUP

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





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
Mesure_DTS_FCC-ISED	LCIE SUD EST	Mesure_DTS_FCC-ISED v1.4	L2000060	-/-	-/-
Attenuator 10dB	AEROFLEX	—	A7122268	08/25	08/27
Full Anechoic Room	SIEPEL	—	D3044024	-/-	-/-
SMA 1.5m	SUCOFLEX	18GHz	A5329864	01/25	01/26
SMA 1.5m	SUCOFLEX	18GHz	A5329863	08/25	08/26
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	04/24	04/26
Thermo-hygrometer	TESTO	608-H1	B4204120	05/25	05/27
Multimeter - CEM	FLUKE	87	A1240251	10/23	10/25
SMK 1.2m (Ampl <-> chamber)	HUBER-SUHNER	SUCOFLEX 102	A5330062	04/23	04/26
Attenuator	Weinschel Associates	WA54-10-1314	A7122330	04/23	08/25

7.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None



7.6. RESULTS

7.6.1. Operational frequency band

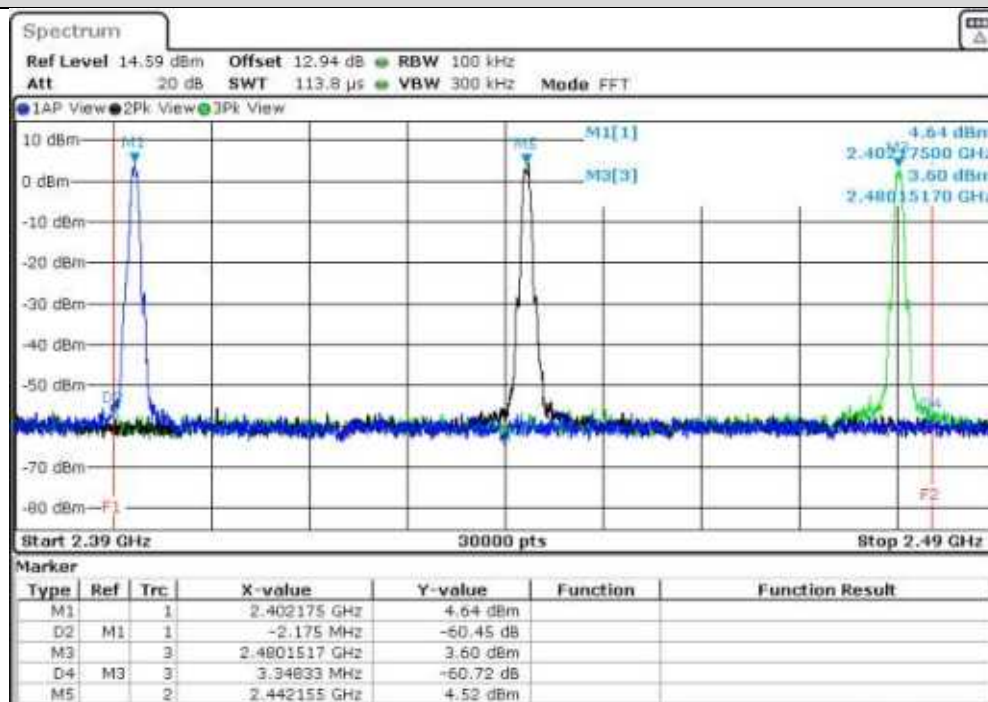
Unwanted emissions in non-restricted bands at the band edge

Configuration: BLE - 1Mbits/s

Cmin / Cmid / Cmax

Delta limit (dBc) determination

Tx1



Frequency (MHz)	Level (dBc)	Limit (dBc)
C _{min}	-60.45	20
C _{max}	-60.72	20



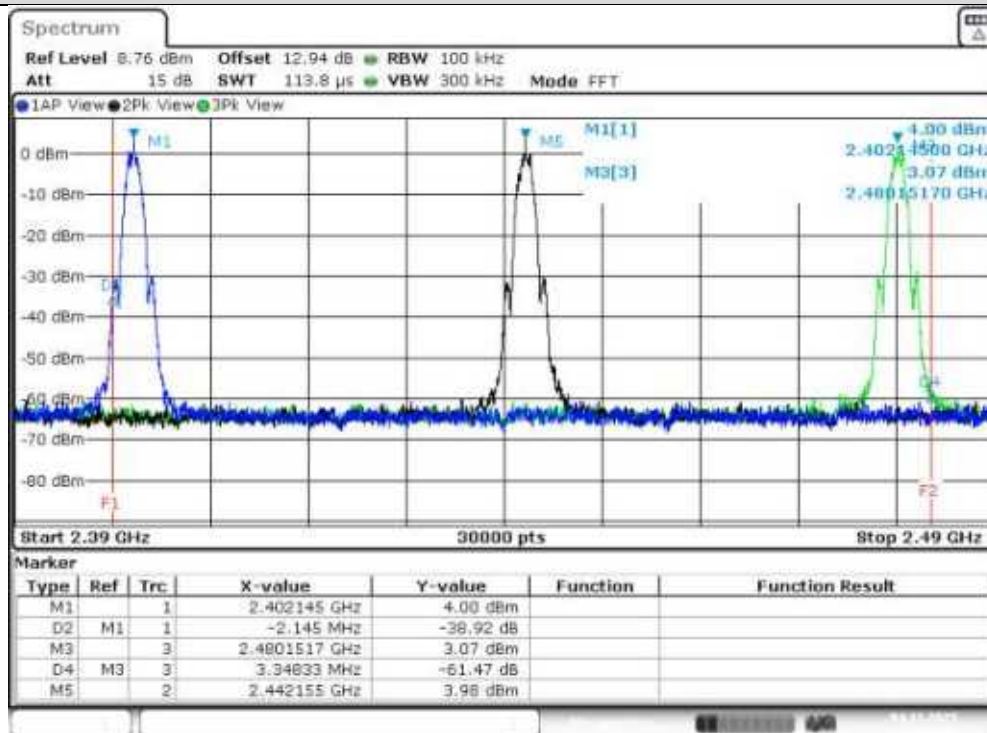
Unwanted emissions in non-restricted bands at the band edge

Configuration: BLE - 2Mbits/s

Cmin / Cmid / Cmax

Delta limit (dBc) determination

Tx1

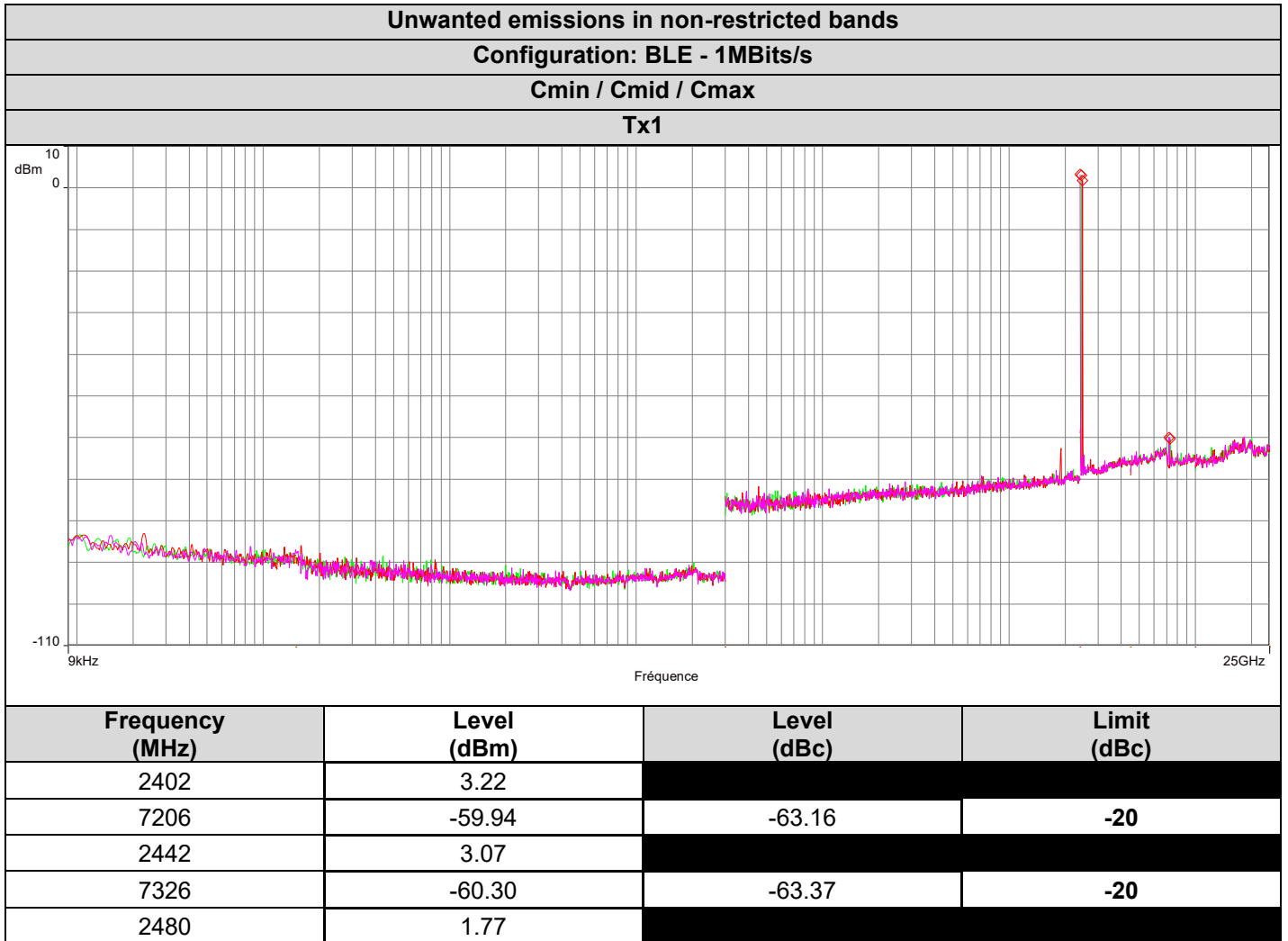


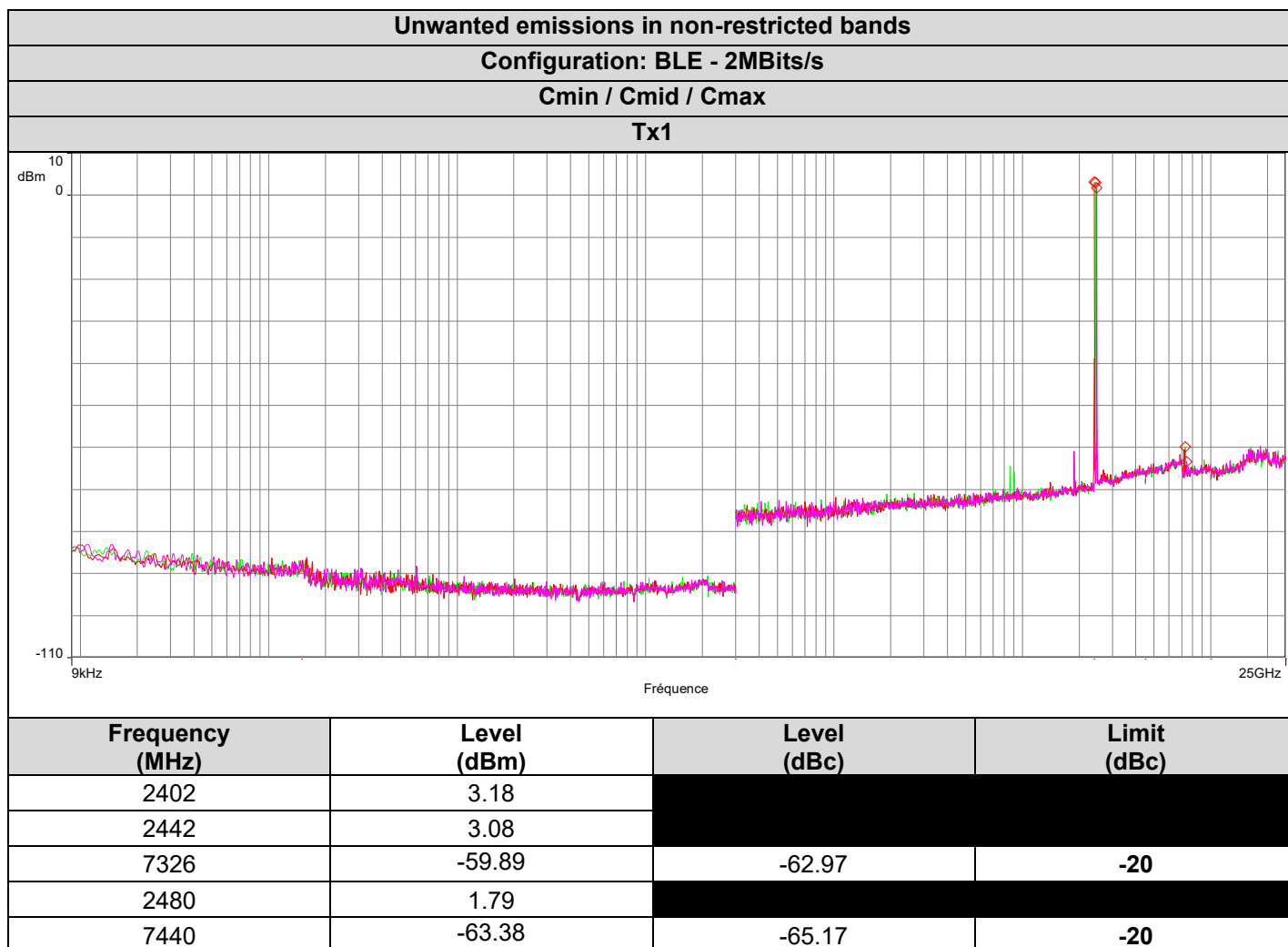
Date: 4.NOV.2025 14:33:16

Frequency (MHz)	Level (dBc)	Limit (dBc)
Cmin	-38.92	20
Cmax	-61.47	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 sentinel**, Sn: **S-SEN-1A000071**, 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 03, 2025	November 04, 2025
Test performed by	: Majid MOURZAGH	Majid MOURZAGH
Relative humidity (%)	: 45	40
Ambient temperature (°C)	: 23	22

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:

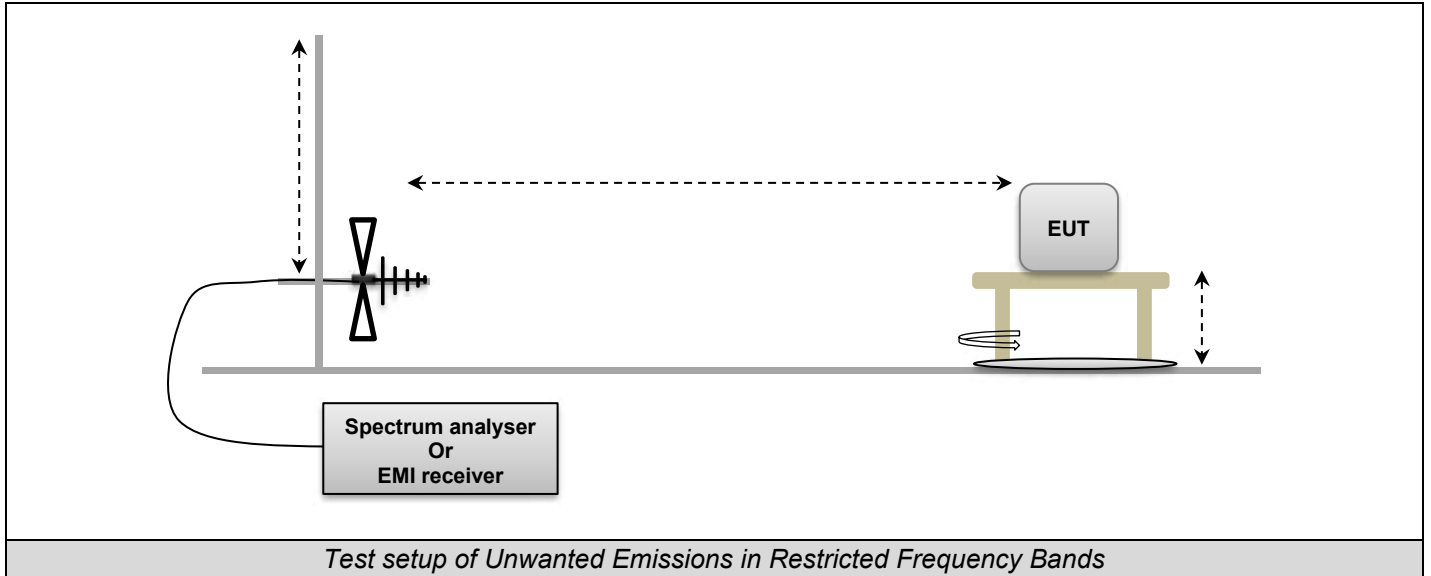
Frequency range:	9kHz to 30MHz	
Test:	Pre-Characterization	Qualification
Antenna Polarization:	Parallel, Perpendicular and Ground parallel	
Antenna Height:	Centered on EUT (§6.6.5 ANSI C63-10)	1m
Antenna Type:	Loop	
RBW Filter:	200Hz below 150kHz / 9kHz above 150kHz	
Maximization:	Turntable rotation of 360 degrees range and all axis of EUT used in normal configuration	
EUT height:	1.5m	1.5m
Test site:	Full Anechoic Chamber	Open Aera Test Site
Distance EUT - Antenna:	3m	10m
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:	1.5m	1.5m
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	3m
Detector:	Peak	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	Peak & Average



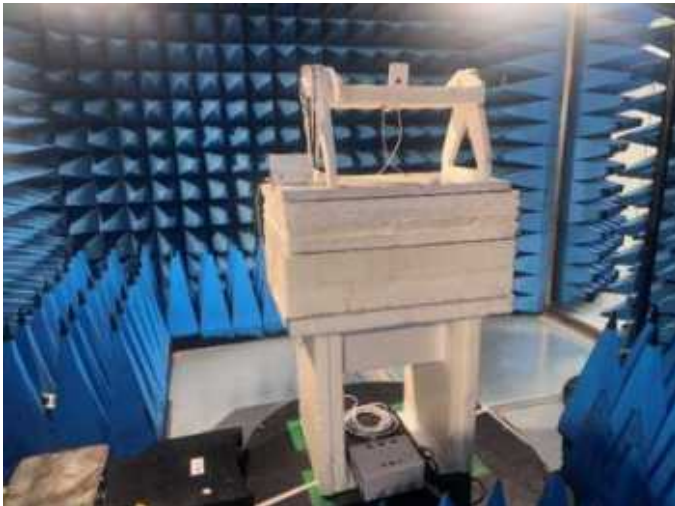


Photo of Unwanted Emissions in Restricted Frequency Bands on FAR



Photo of Unwanted Emissions in Restricted Frequency Bands on OATS



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	35.5B 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
Multimeter - CEM	FLUKE	87	A1240251	10/23	10/25
Antenna Bi-log	CHASE	CBL6111A	C2040051	09/22	09/26
Antenna horn 18GHz	AINFO	LB	C2042055	11/24	11/27
BAT EMC	NEXIO	v3.21.0.32	L1000115	-/-	-/-
Cable 0.75m	-	18GHz	A5329900	08/24	08/25
CONTROLLER	INNCO	CO3000	D3044034	-/-	-/-
Filter Matrice	LCIE SUD EST	Combined filters	A7484078	08/25	08/27
HF Radiated emission comb generator	LCIE SUD EST	_	A3169088	-/-	-/-
Rehausse Table C3	LCIE	_	F2000507	-/-	-/-
Rehausse Table C3	LCIE	_	F2000511	-/-	-/-
Semi-Anechoic chamber #3 (BF)	SIEPEL	_	D3044017_BF	09/25	09/28
Semi-Anechoic chamber #3 (VSWR)	SIEPEL	_	D3044017_VSWR	08/25	08/28
SMA Cable 18GHz 0.5m	TELEDYNE	18GHz	A5330059	01/25	01/26
SMA Cable 18GHz 0.5m	TELEDYNE	18GHz	A5330060	01/25	01/26
SMA Cable 18GHz 0.6m	TELEDYNE	18GHz	A5330055	08/25	08/26
SMA Cable 18GHz 3.5m	TELEDYNE	18GHz	A5330058	08/25	08/26
SMA Cable 18GHz 6m	TELEDYNE	18GHz	A5330057	01/25	01/26
Spectrum analyzer	ROHDE & SCHWARZ	FSU 26	A4060058	09/23	09/25
Table C3	LCIE	_	F2000461	-/-	-/-
Thermo-hygrometer	TESTO	608-H1	B4204120	05/25	05/27
TILT	INNCO	TILT	D3044033	-/-	-/-
Turntable chamber (Cage#3)	ETS Lingren	Model 2165	F2000371	-/-	-/-
Turntable controller (Cage#3)	ETS Lingren	Model 2090	F2000444	-/-	-/-

8.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None



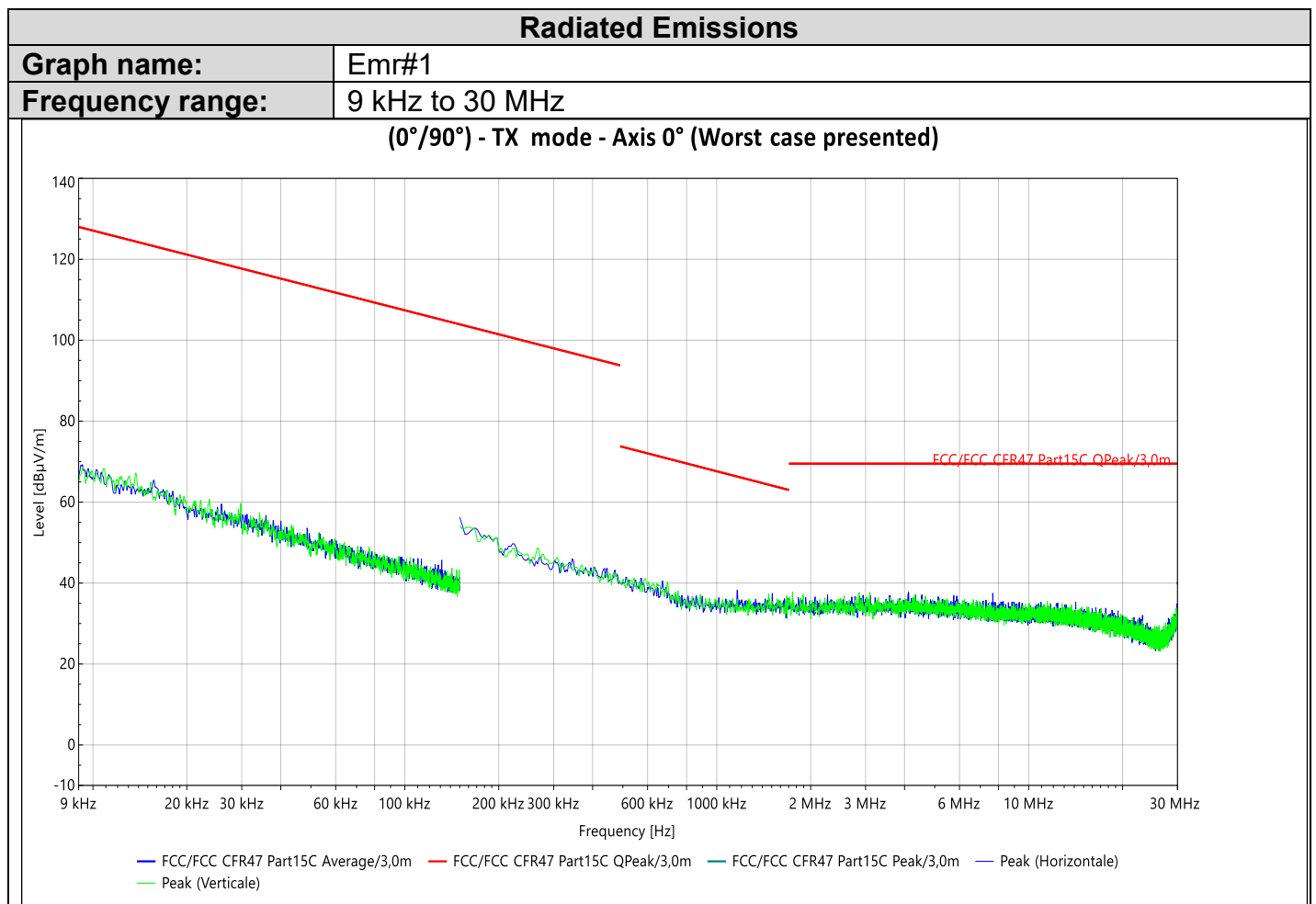
8.6. RESULTS

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

8.6.1. 9kHz to 30MHz

Graphs – Pre characterization: (worst case presented)

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



Pre-Characterization:

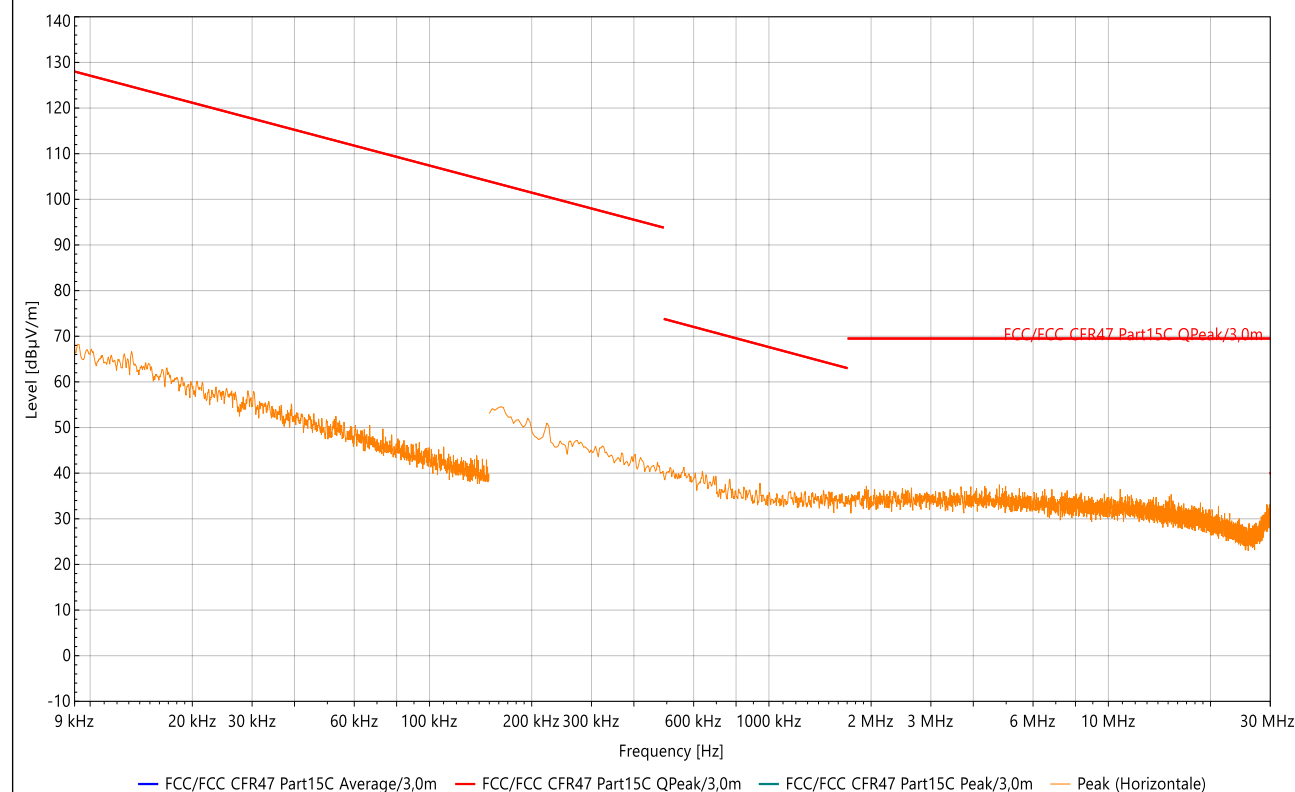
Frequency



Radiated Emissions

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

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



Pre-Characterization:

Frequency

Final measurement:

No significant frequency observed

8.6.2. 30MHz to 1GHz

Graphs – Pre characterization:

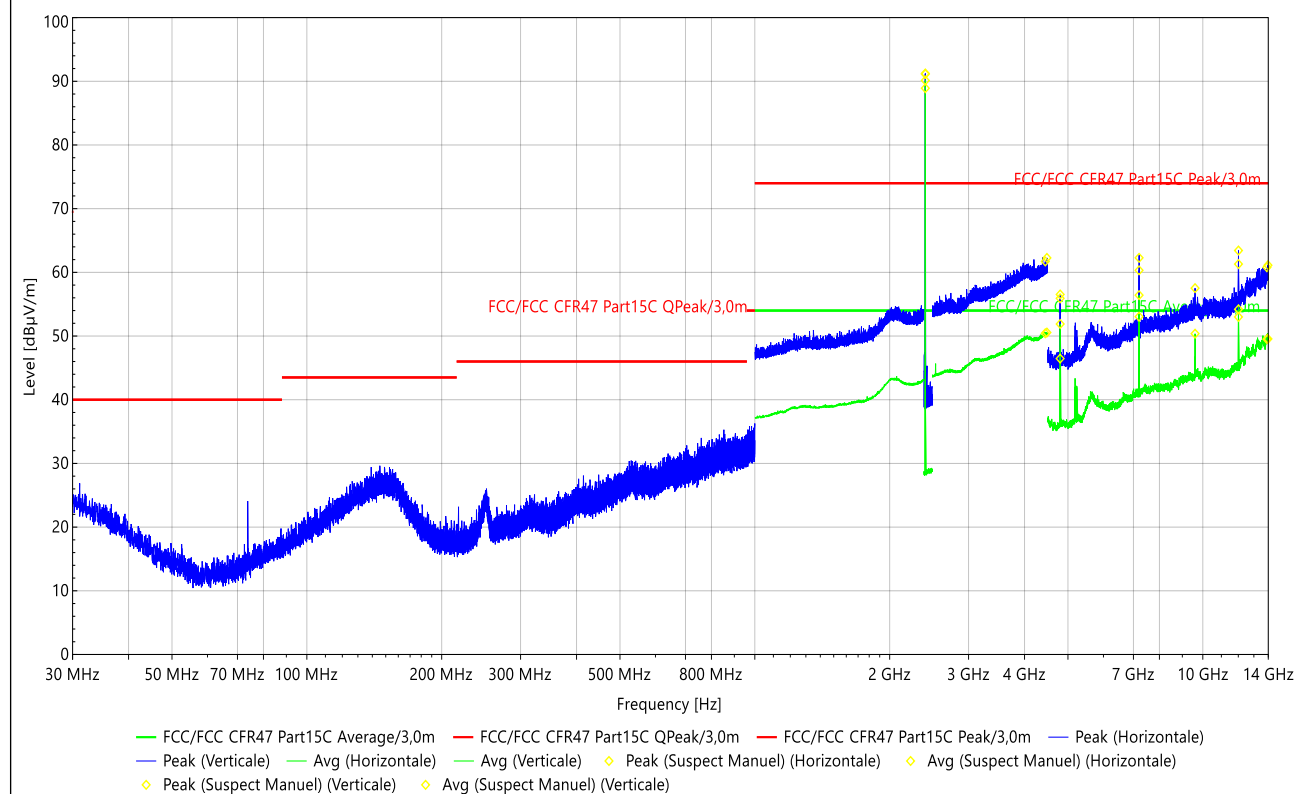
Graph identifier	Polarization	Mode	Channel	EUT position	Comments
Emr# 3	H/V	TX	Cmin	Axis XY/Z	BW 1MHz: See the following results
Emr# 4	H/V	TX	Cmid	Axis XY/Z	BW 1MHz: See the following results
Emr# 5	H/V	TX	Cmax	Axis XY/Z	BW 1MHz: See the following results
Emr# 6	H/V	TX	Cmin	Axis XY/Z	BW 2MHz: See the following results
Emr# 7	H/V	TX	Cmid	Axis XY/Z	BW 2MHz: See the following results
Emr# 8	H/V	TX	Cmax	Axis XY/Z	BW 2MHz: See the following results



Radiated Emissions

Graph name: Emr#3
Frequency range: 30 MHz to 14 GHz

(H+V) - Cmin - TX mode - Automatic Axis BW:1MHz



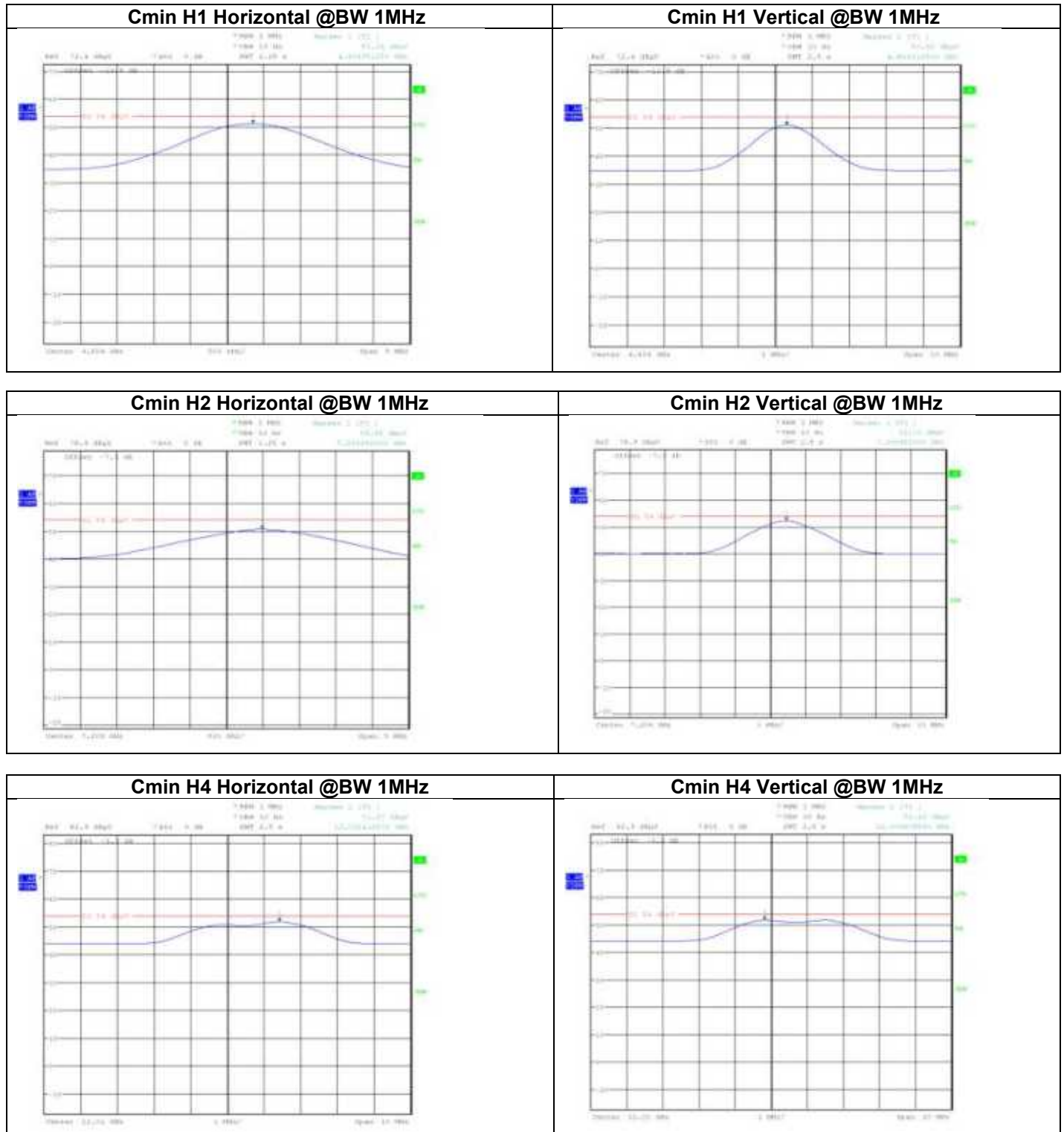
Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
2.402 GHz	91.23	/	90.13	/	131	H	-23.16
4.450 GHz	61.71	74.00	50.43	54.00	75	H	43.42
4.803 GHz*	55.92	74.00	46.46	54.00	245	H	-13.75
7.206 GHz*	60.32	74.00	53.04	54.00	98	H	-7.34
12.012 GHz*	61.30	74.00	53.00	54.00	40	H	-3.31
13.978 GHz	61.12	74.00	49.55	54.00	161	H	4.10
4.804 GHz	56.53	74.00	51.89	54.00	348	V	-13.75
7.207 GHz*	62.28	74.00	56.42	54.00	357	V	-7.34
9.609 GHz*	57.52	74.00	50.37	54.00	172	V	-4.81
12.012 GHz*	63.43	74.00	54.20	54.00	152	V	-3.31
13.903 GHz	60.79	74.00	49.51	54.00	13	V	3.65
4.488 GHz*	62.27	74.00	50.55	54.00	295	V	43.43
2.402 GHz	91.14	/	88.91	/	243	V	-23.16

* : See final measurement: C63.10, § 4.1.5.2.3

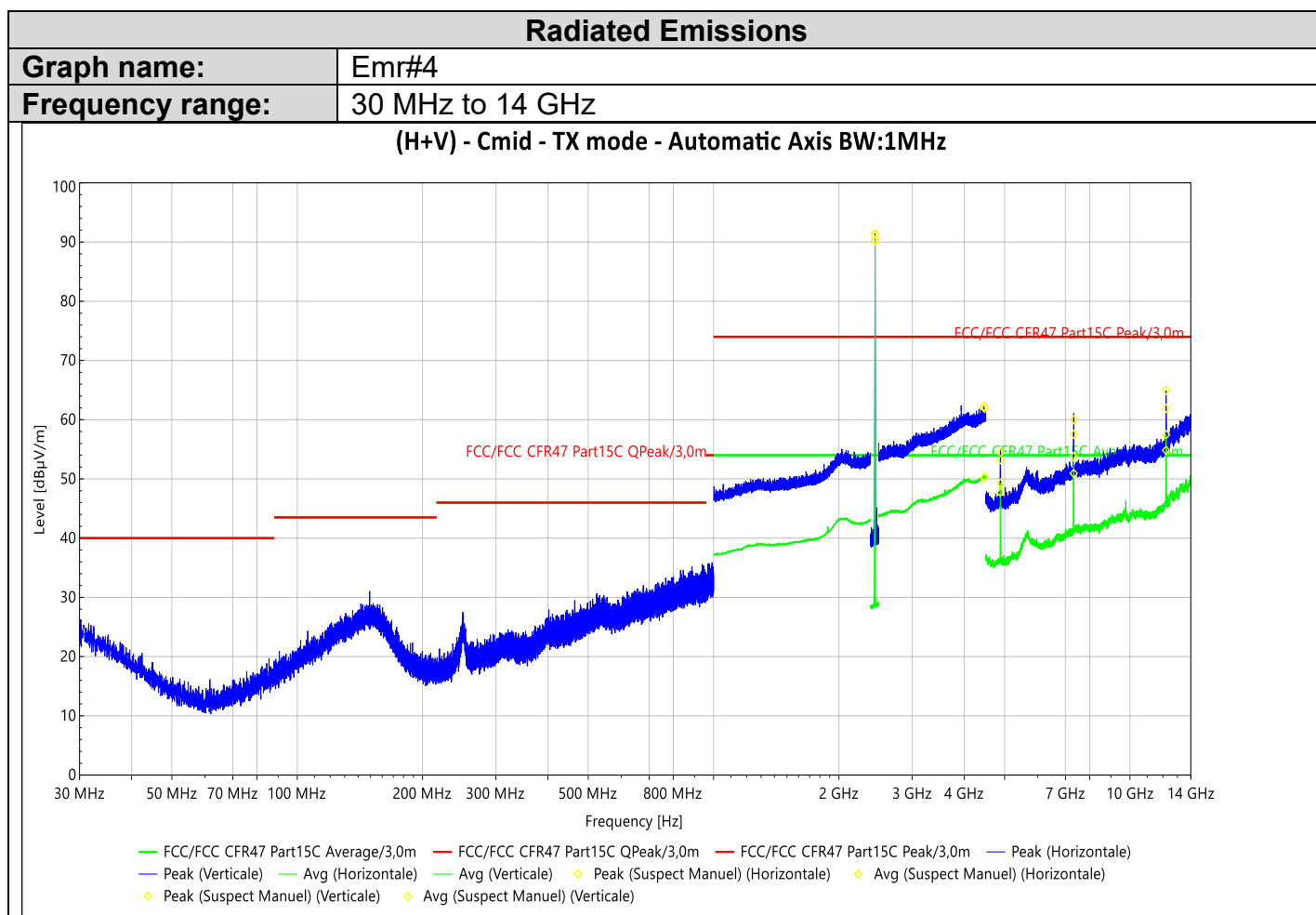


Final measurement Cmin @BW 1MHz : C63.10 ,§ 4.1.5.2.3





Test Frequency (MHz)	Detector (Pk/QP/Av)	Polarity (V/H)	TILT (Degrees)	Antenna Height (cm)	Transducer Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark
4804	Pk	H	0°-150°/30°	165	-13.8	51.14	54	-2.86	Max Power
7206	Pk	H	0°-150°/30°	165	-7.3	50.58	54	-3.42	Max Power
12010	Pk	H	0°-150°/30°	165	-3.3	51.67	54	-2.33	Max Power
4804	Pk	V	0°-150°/30°	165	-13.8	50.93	54	-3.07	Max Power
7206	Pk	V	0°-150°/30°	165	-7.3	52.23	54	-1.77	Max Power
12010	Pk	V	0°-150°/30°	165	-3.3	51.63	54	-2.37	Max Power

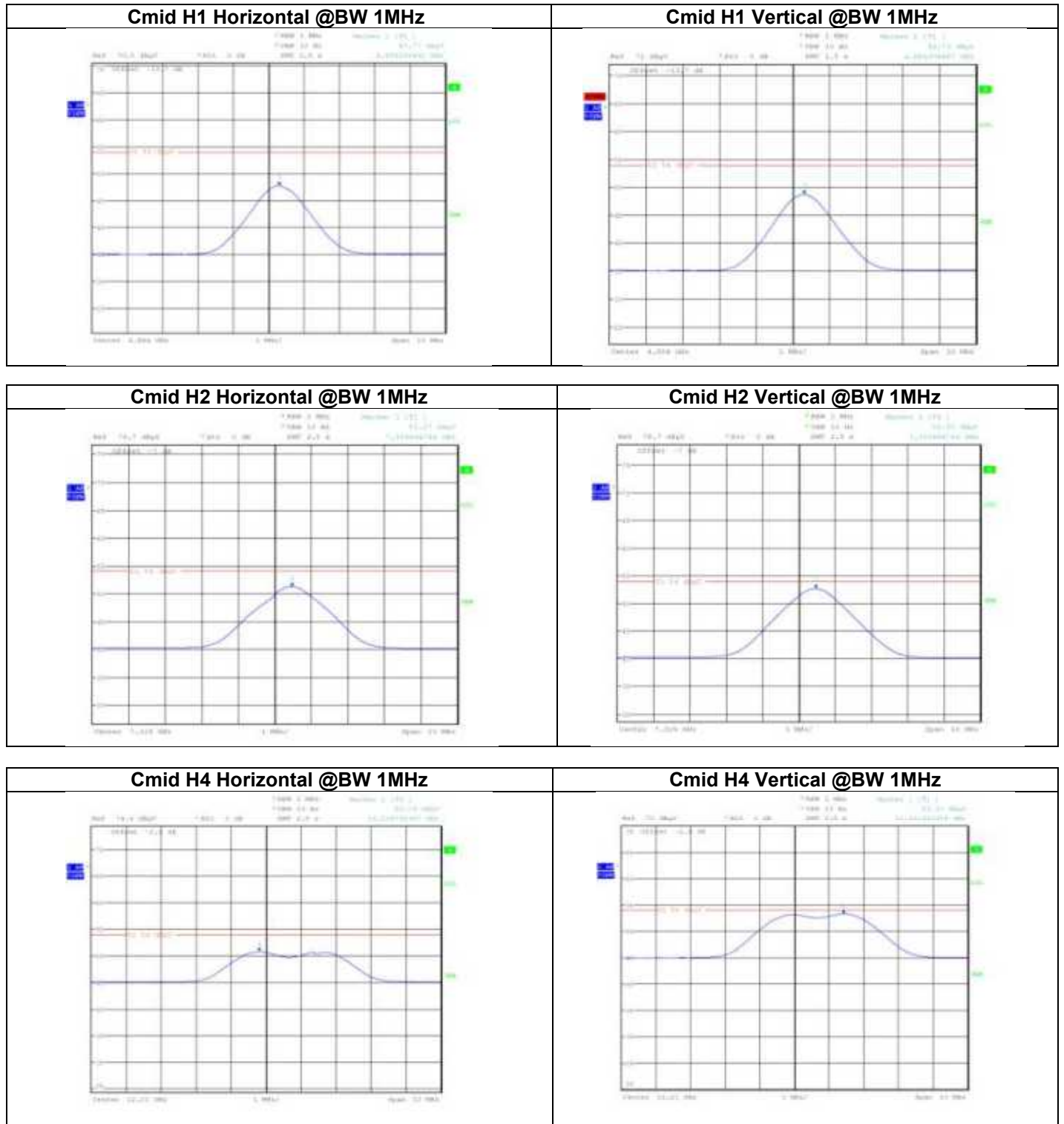


Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
2.442 GHz	91.43	/	90.33	/	150	H	-22.96
4.458 GHz	62.21	74.00	50.24	54.00	0	H	43.42
4.884 GHz*	53.24	74.00	47.75	54.00	249	H	-13.70
7.326 GHz*	57.52	74.00	50.93	54.00	291	H	-7.02
12.210 GHz*	61.91	74.00	54.83	54.00	281	H	-2.59
4.884 GHz*	54.43	74.00	49.29	54.00	338	V	-13.70
7.326 GHz*	59.99	74.00	53.75	54.00	353	V	-7.02
12.212 GHz*	64.94	74.00	57.47	54.00	344	V	-2.59
4.472 GHz	61.91	74.00	50.31	54.00	44	V	43.42
2.442 GHz	91.28	/	90.23	/	248	V	-22.96

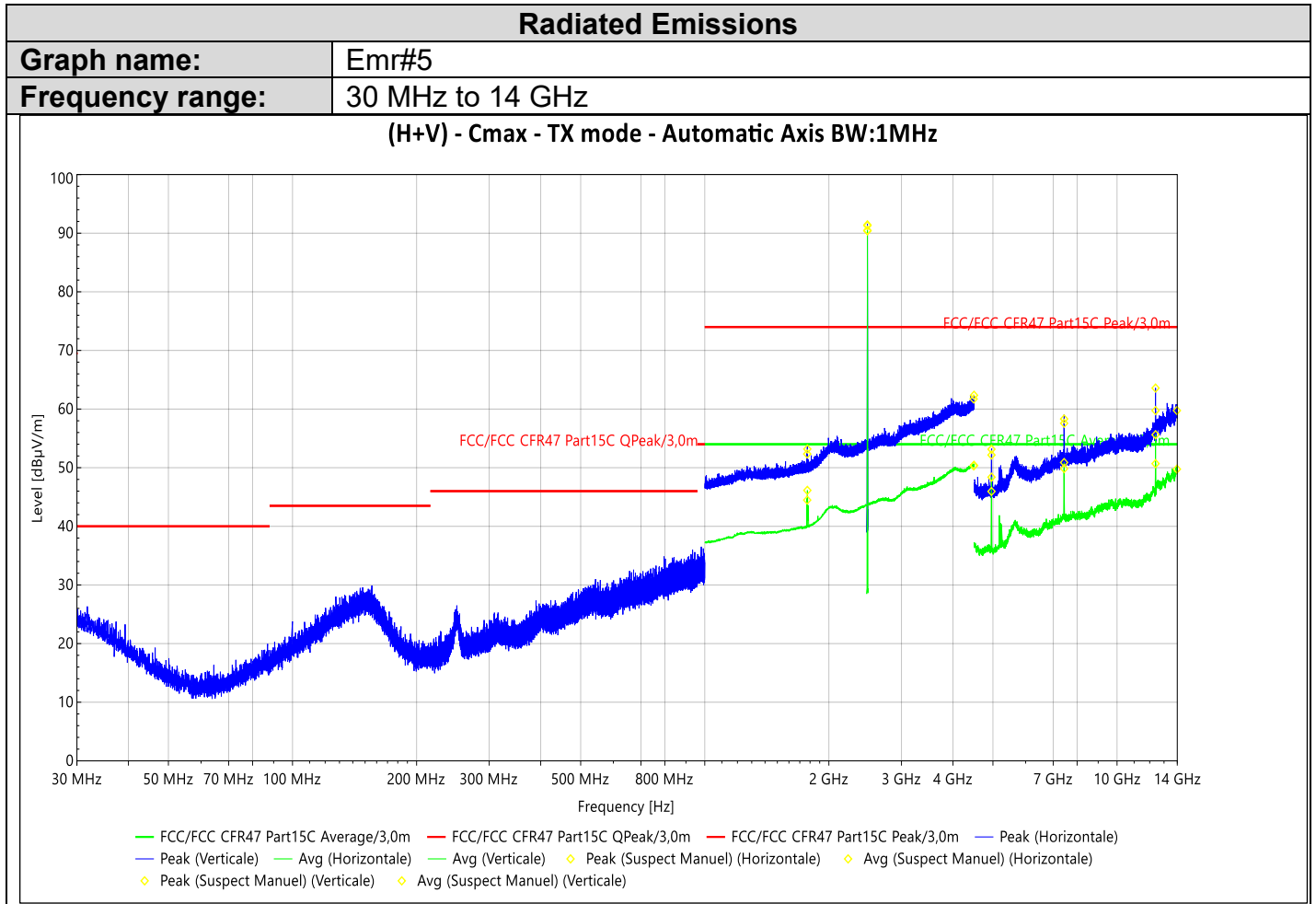
: See final measurement: C63.10 , § 4.1.5.2.3

Final measurement Cmid @BW 1MHz : C63.10 ,§ 4.1.5.2.3





Test Frequency (MHz)	Detector (Pk/QP/Av)	Polarity (V/H)	TILT (Degrees)	Antenna Height (cm)	Transducer Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark
4884	Pk	H	0°-150°/30°	165	-13.7	47.77	54	-6.23	Max Power
7326	Pk	H	0°-150°/30°	165	-7	51.27	54	-2.73	Max Power
12210	Pk	H	0°-150°/30°	165	-2.6	50.79	54	-3.21	Max Power
4884	Pk	V	0°-150°/30°	165	-13.7	48.73	54	-5.27	Max Power
7326	Pk	V	0°-150°/30°	165	-7	52.67	54	-1.33	Max Power
12210	Pk	V	0°-150°/30°	165	-2.6	53.3	54	-0.7	Max Power

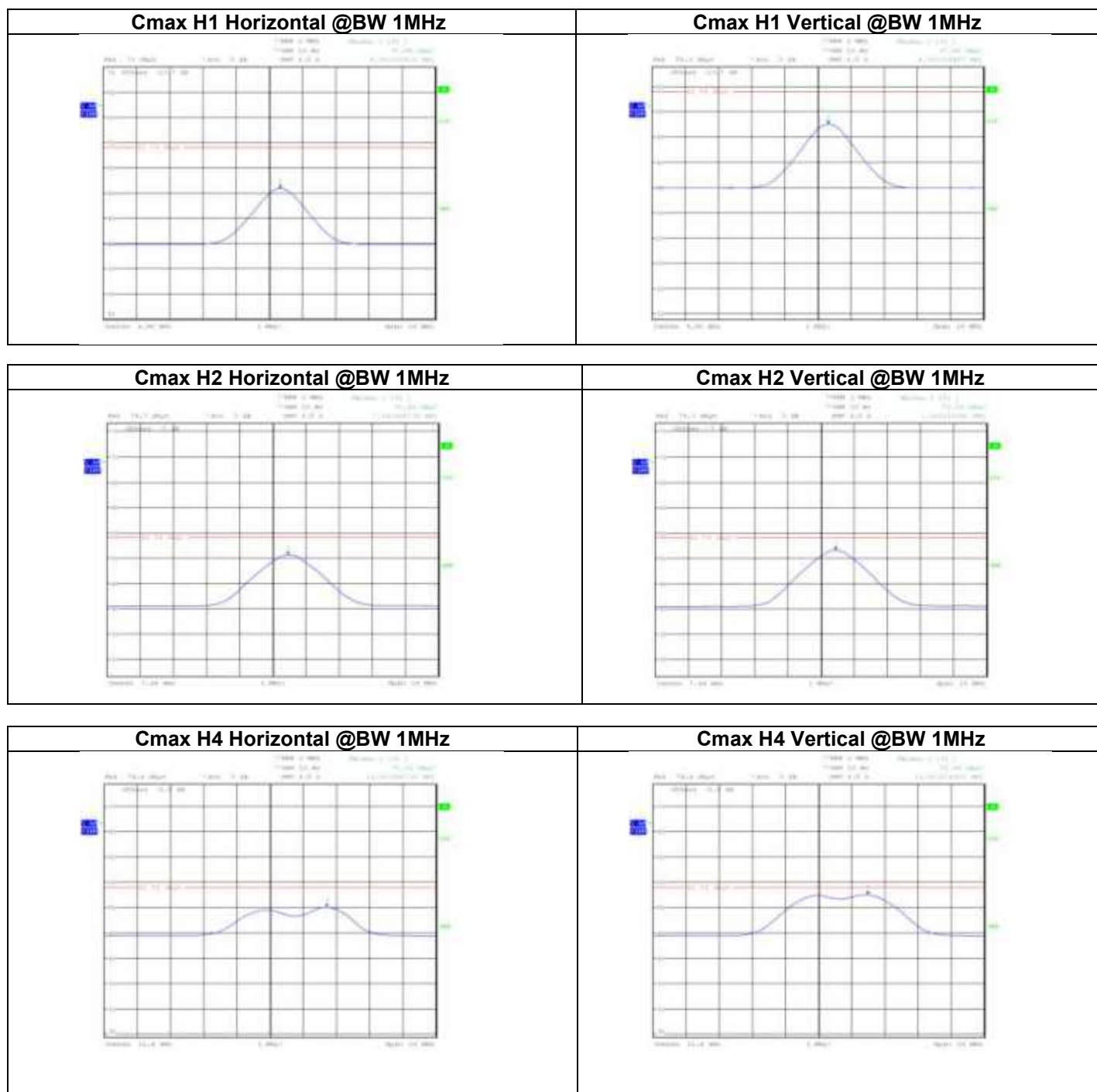


Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
1.773 GHz	53.18	74.00	46.13	54.00	220	H	34.07
2.480 GHz	91.42	/	90.47	/	328	H	-22.74
4.489 GHz	61.72	74.00	50.32	54.00	333	H	43.43
4.960 GHz*	52.16	74.00	45.95	54.00	142	H	-13.65
7.440 GHz*	57.57	74.00	49.85	54.00	0	H	-7.02
12.400 GHz*	59.74	74.00	50.69	54.00	160	H	-2.06
4.960 GHz*	53.16	74.00	48.38	54.00	190	V	-13.65
7.440 GHz*	58.31	74.00	50.88	54.00	329	V	-7.02
12.400 GHz*	63.58	74.00	55.62	54.00	357	V	-2.06
13.972 GHz	59.75	74.00	49.75	54.00	125	V	4.07
4.499 GHz	62.35	74.00	50.40	54.00	192	V	43.43
2.480 GHz	91.29	/	90.40	/	249	V	-22.74
1.772 GHz	52.34	74.00	44.48	54.00	0	V	34.06

: See final measurement: C63.10 , § 4.1.5.2.3

Final measurement Cmax @BW 1MHz : C63.10 ,§ 4.1.5.2.3





L C I E

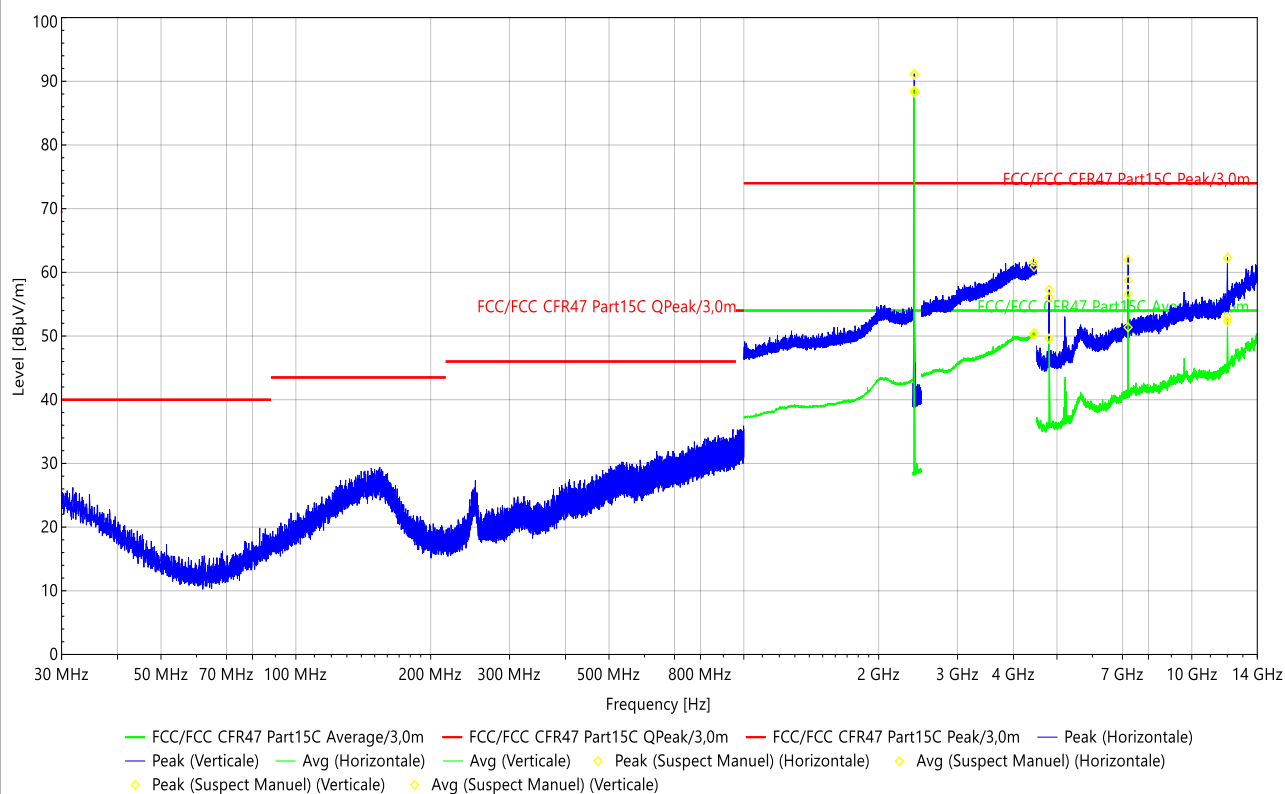
Test Frequency (MHz)	Detector (Pk/QP/Av)	Polarity (V/H)	TILT (Degrees)	Antenna Height (cm)	Transducer Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
4960	Pk	H	0°-150°/30°	165	-13.7	45.88	54	-8.12	Max Power
7440	Pk	H	0°-150°/30°	165	-7	50.64	54	-3.36	Max Power
12400	Pk	H	0°-150°/30°	165	-2.6	50.02	54	-3.98	Max Power
4960	Pk	V	0°-150°/30°	165	-13.7	47.48	54	-6.52	Max Power
7440	Pk	V	0°-150°/30°	165	-7	51.58	54	-2.42	Max Power
12400	Pk	V	0°-150°/30°	165	-2.6	52.46	54	-1.54	Max Power



Radiated Emissions

Graph name: Emr#6
Frequency range: 30 MHz to 14 GHz

(H+V) - Cmin - TX mode - Automatic Axis BW:2MHz

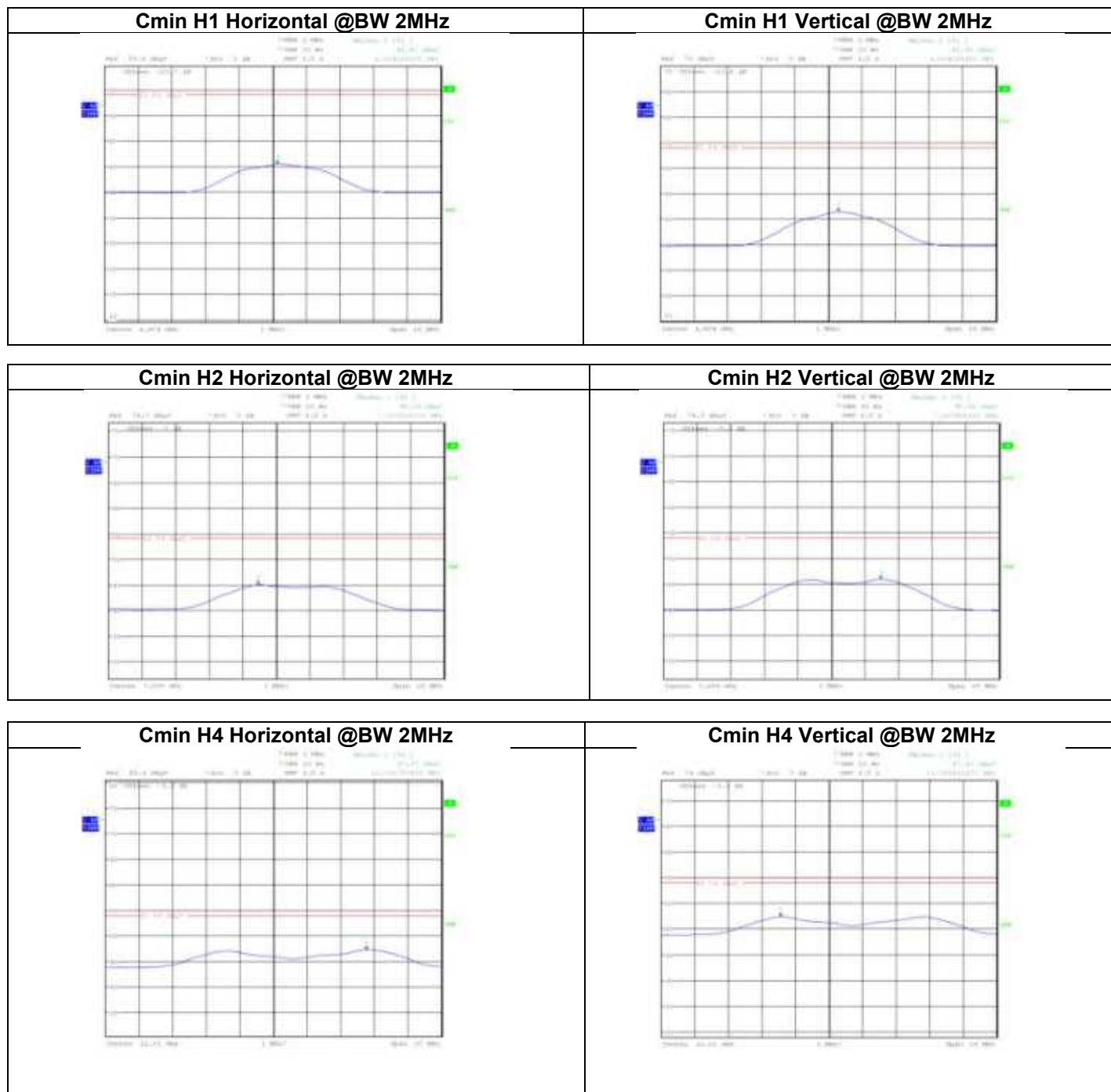


Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
2.402 GHz	91.18	/	88.49	/	131	H	-23.16
4.433 GHz	61.60	74.00	50.13	54.00	103	H	43.38
4.805 GHz*	57.28	74.00	49.56	54.00	255	H	-13.75
7.208 GHz*	58.77	74.00	51.36	54.00	124	H	-7.33
12.011 GHz*	62.25	74.00	52.28	54.00	208	H	-3.31
4.803 GHz*	56.07	74.00	49.63	54.00	319	V	-13.75
7.207 GHz*	61.98	74.00	56.60	54.00	0	V	-7.34
12.011 GHz*	62.33	74.00	53.01	54.00	328	V	-3.31
4.444 GHz	60.86	74.00	50.49	54.00	160	V	43.40
2.402 GHz	90.99	/	88.22	/	231	V	-23.16

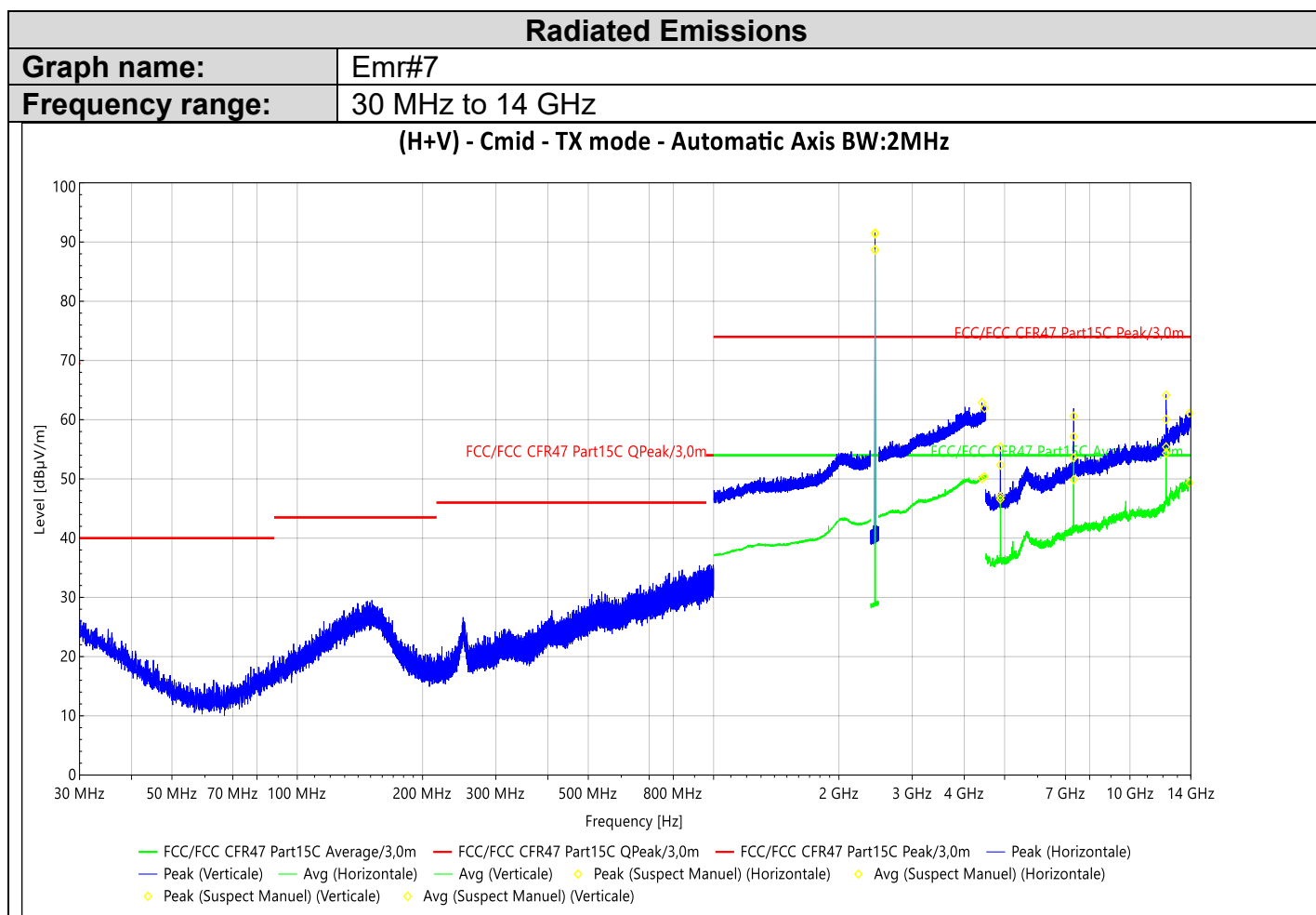
: See final measurement: C63.10 , § 4.1.5.2.3

Final measurement Cmin @BW 2MHz : C63.10 ,§ 4.1.5.2.3





Test Frequency (MHz)	Detector (Pk/QP/Av)	Polarity (V/H)	TILT (Degrees)	Antenna Height (cm)	Transducer Factor (dB)	Level (dBµV/m)	Limit AV (dBµV/m)	Margin (dB)	Remark
4804	Pk	H	0°-150°/30°	165	-13.7	40.41	54	-13.59	Max Power
7206	Pk	H	0°-150°/30°	165	-7.3	45.04	54	-8.96	Max Power
12010	Pk	H	0°-150°/30°	165	-3.3	47.27	54	-6.73	Max Power
4804	Pk	V	0°-150°/30°	165	-13.7	41.45	54	-12.55	Max Power
7206	Pk	V	0°-150°/30°	165	-7.3	45.91	54	-8.09	Max Power
12010	Pk	V	0°-150°/30°	165	-3.3	47.41	54	-6.59	Max Power

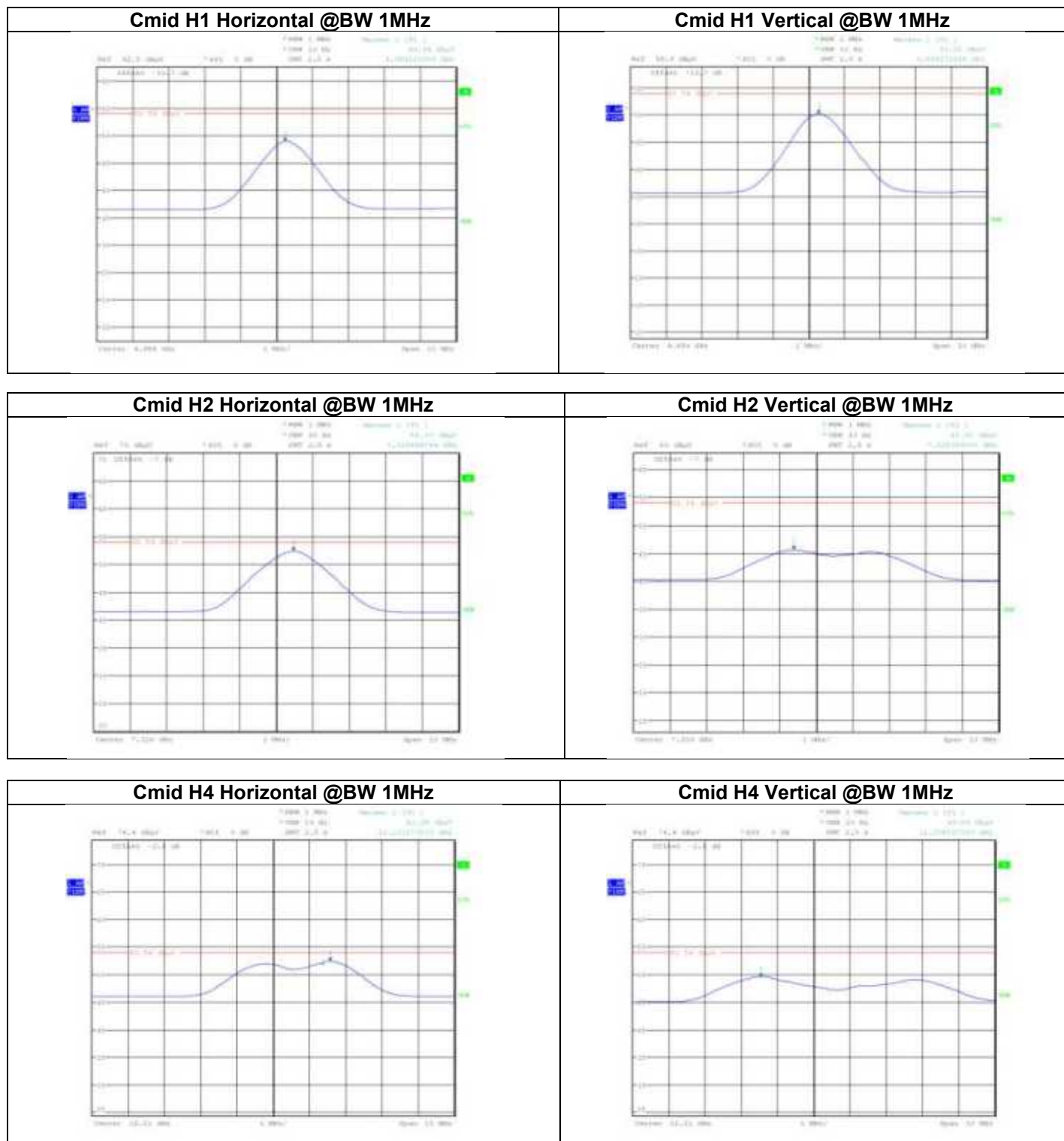


Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
2.442 GHz	91.54	/	88.68	/	165	H	-22.96
2.442 GHz	91.39	/	88.66	/	250	V	-22.96
4.472 GHz	61.93	74.00	50.35	54.00	111	H	43.42
4.884 GHz*	52.34	74.00	46.56	54.00	145	H	-13.70
7.325 GHz*	57.13	74.00	49.90	54.00	22	H	-7.02
12.211 GHz*	60.05	74.00	54.35	54.00	300	H	-2.59
13.901 GHz	61.11	74.00	49.33	54.00	125	H	3.64
4.884 GHz*	55.40	74.00	47.02	54.00	214	V	-13.70
7.325 GHz*	60.60	74.00	53.57	54.00	0	V	-7.02
12.213 GHz*	64.14	74.00	55.40	54.00	319	V	-2.58
4.410 GHz	62.90	74.00	50.05	54.00	262	V	43.35

* : See final measurement: C63.10 , § 4.1.5.2.3

Final measurement Cmid @BW 2MHz : C63.10 ,§ 4.1.5.2.3





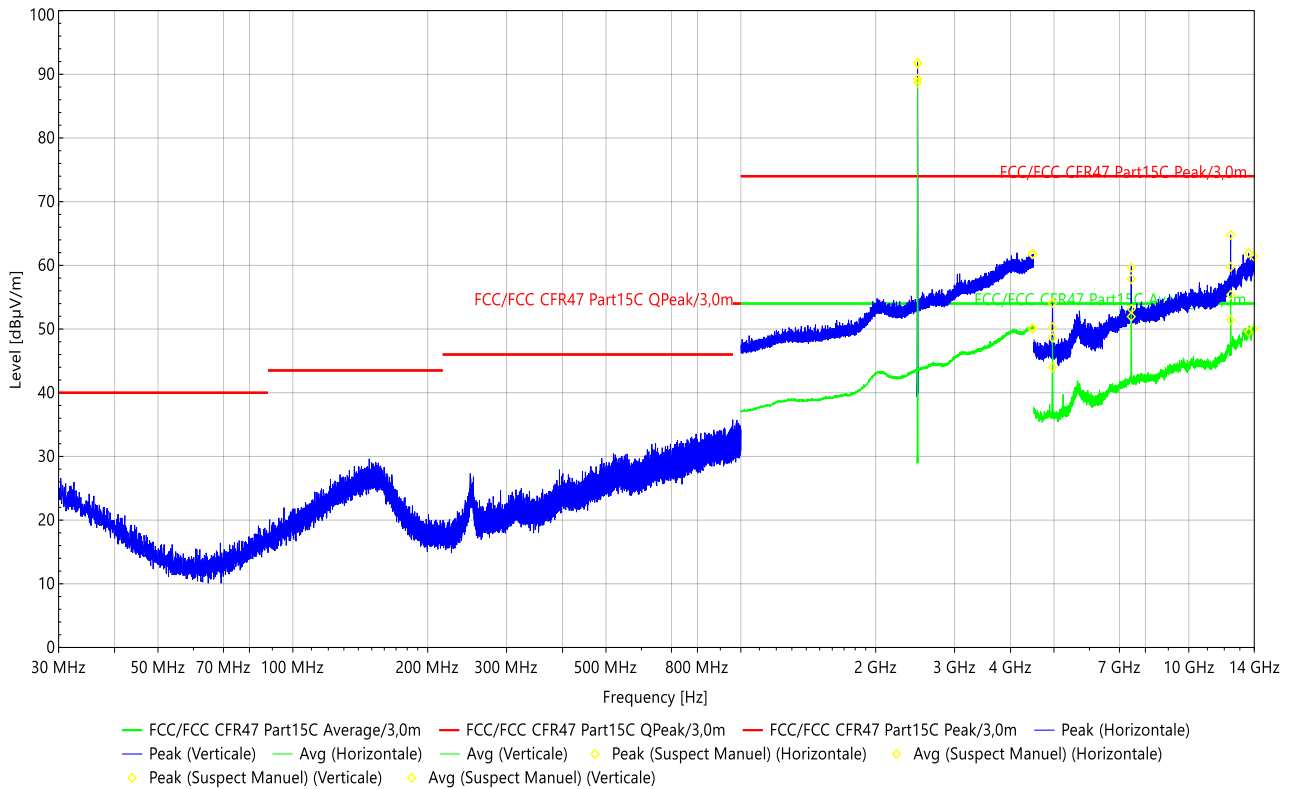
Test Frequency (MHz)	Detector (Pk/QP/Av)	Polarity (V/H)	TILT (Degrees)	Antenna Height (cm)	Transducer Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark
4884	Av	H	0°-150°/30°	165	-13.7	48.94	54	-5.06	Max Power
7326	Av	H	0°-150°/30°	165	-7	52.37	54	-1.63	Max Power
12210	Av	H	0°-150°/30°	165	-2.6	52.38	54	-1.62	Max Power
4884	Av	V	0°-150°/30°	165	-13.7	50.25	54	-3.75	Max Power
7326	Av	V	0°-150°/30°	165	-7	45.6	54	-8.4	Max Power
12210	Av	V	0°-150°/30°	165	-2.6	49.59	54	-4.41	Max Power



Radiated Emissions

Graph name: Emr#8
Frequency range: 30 MHz to 14 GHz

(H+V) - Cmax - TX mode - Automatic Axis BW:2MHz

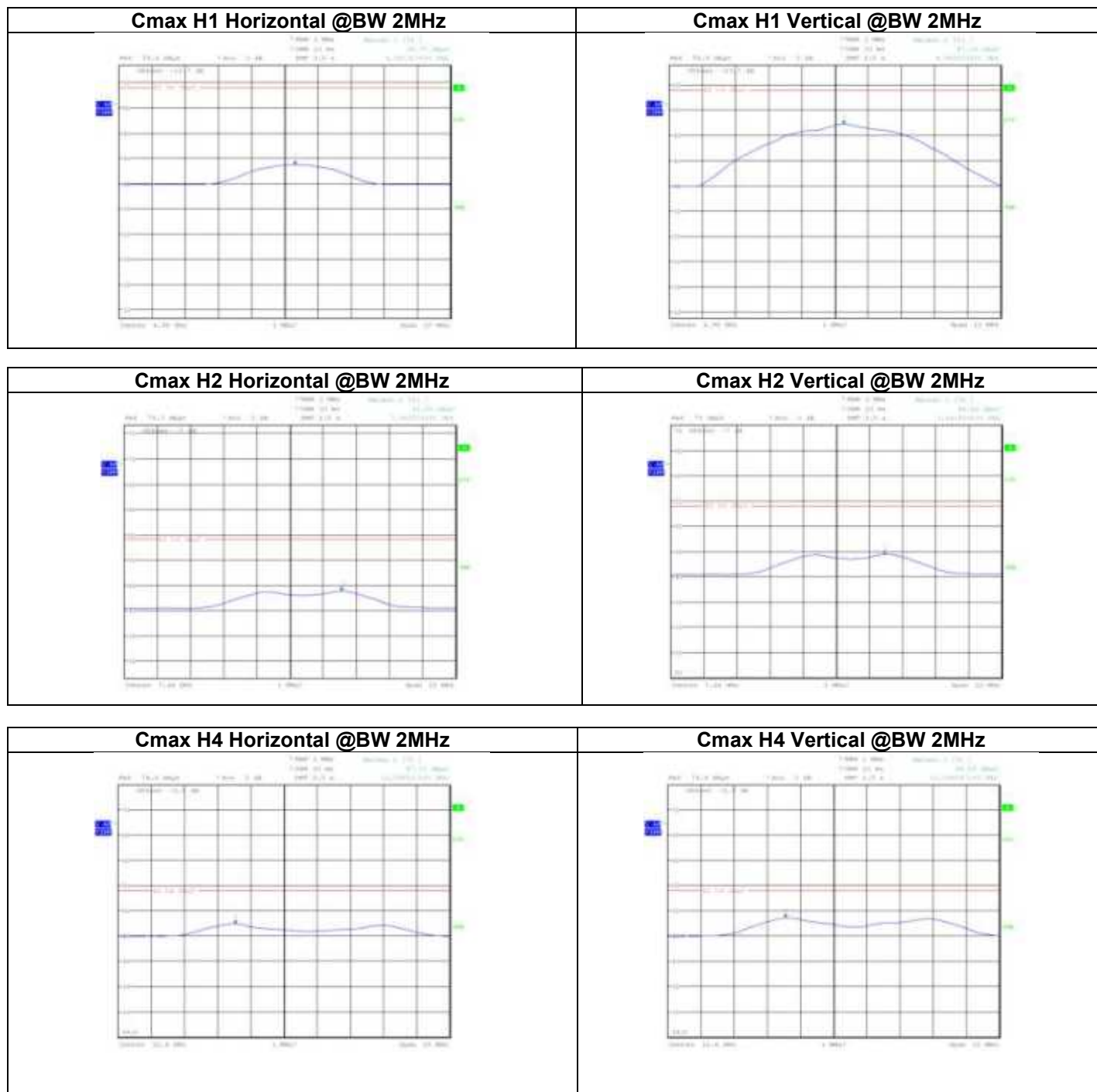


Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
2.480 GHz	91.82	/	89.27	/	171	H	-22.74
4.488 GHz	61.79	74.00	50.08	54.00	70	H	43.43
4.960 GHz*	50.27	74.00	43.98	54.00	307	H	-13.65
7.440 GHz*	57.84	74.00	51.95	54.00	0	H	-7.02
12.403 GHz*	59.78	74.00	51.42	54.00	310	H	-2.05
13.972 GHz	61.41	74.00	49.98	54.00	288	H	4.07
4.960 GHz*	54.12	74.00	48.63	54.00	203	V	-13.65
7.440 GHz*	59.67	74.00	53.17	54.00	337	V	-7.02
12.403 GHz*	64.80	74.00	55.38	54.00	0	V	-2.05
13.596 GHz	61.95	74.00	49.54	54.00	0	V	1.95
4.469 GHz	61.74	74.00	50.10	54.00	296	V	43.42
2.480 GHz	91.65	/	88.71	/	243	V	-22.74

* : See final measurement: C63.10, § 4.1.5.2.3

Final measurement Cmax @BW 2MHz : C63.10 ,§ 4.1.5.2.3





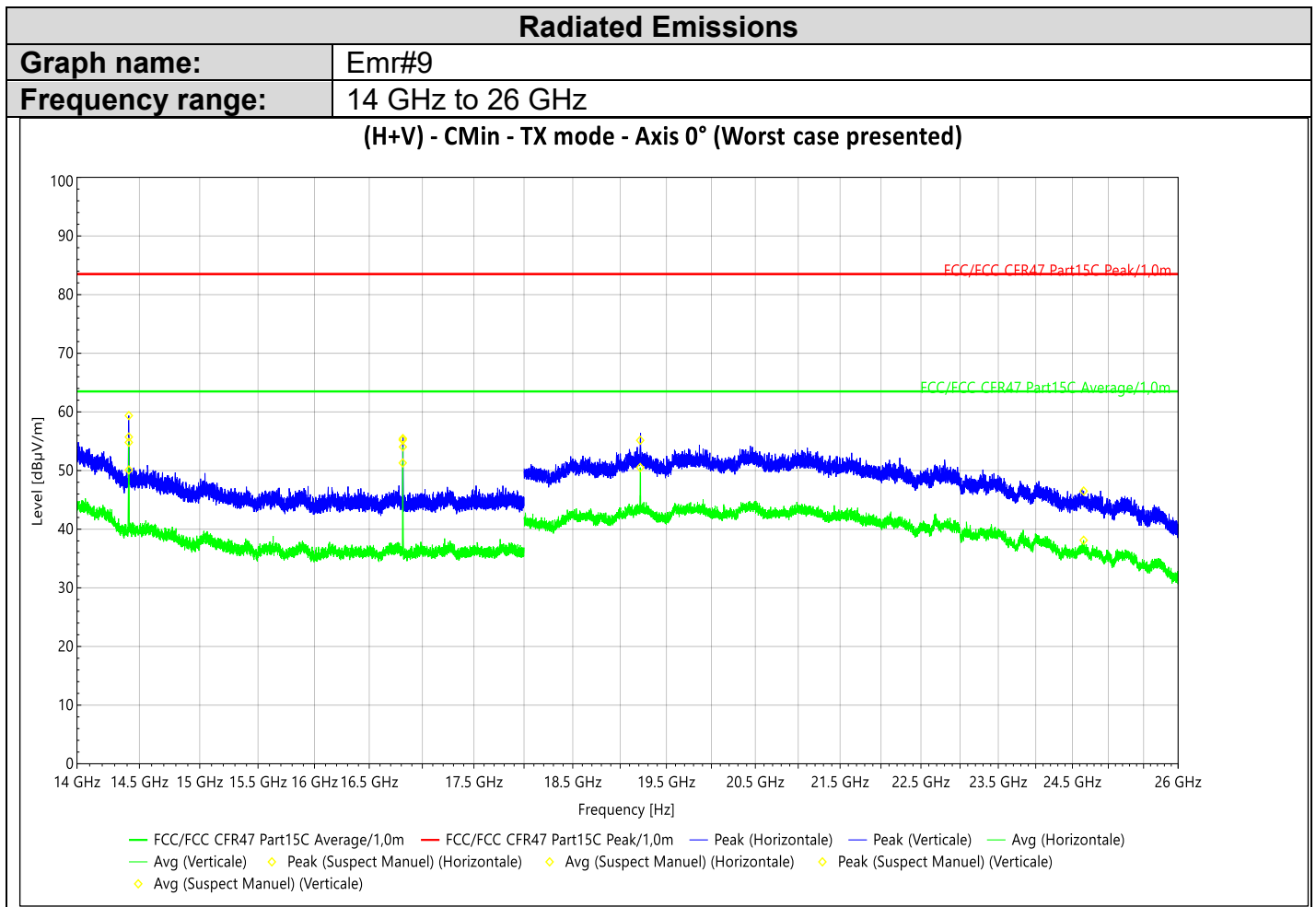
Test Frequency (MHz)	Detector (Pk/QP/Av)	Polarity (V/H)	TILT (Degrees)	Antenna Height (cm)	Transducer Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
4960	Pk	H	0°-150°/30°	165	-13.7	38.75	54	-15.25	Max Power
7440	Pk	H	0°-150°/30°	165	-7	43.85	54	-10.15	Max Power
12400	Pk	H	0°-150°/30°	165	-2.1	44.33	54	-9.67	Max Power
4960	Pk	V	0°-150°/30°	165	-13.7	47.24	54	-6.76	Max Power
7440	Pk	V	0°-150°/30°	165	-7	44.44	54	-9.56	Max Power
12400	Pk	V	0°-150°/30°	165	-2.1	48.55	54	-5.45	Max Power



8.6.3. 1GHz to 25GHz

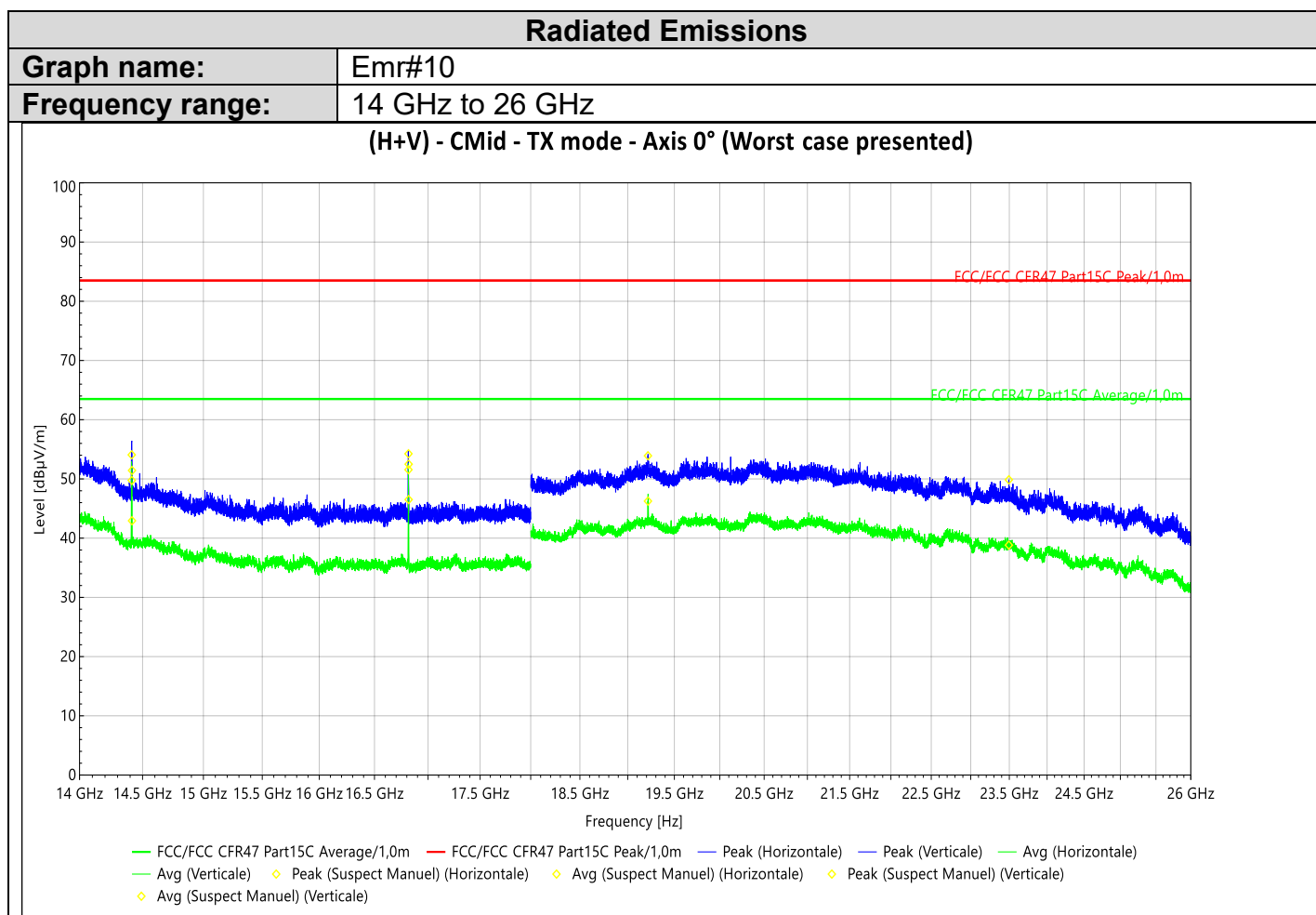
Graphs – Pre characterization:

Graph identifier	Polarization	Mode	Channel	EUT position	Comments
Emr# 9	H/V	TX	Cmin	Axis XY/Z	BW 1MHz: See the following results
Emr# 10	H/V	TX	Cmid	Axis XY/Z	BW 1MHz: See the following results
Emr# 11	H/V	TX	Cmax	Axis XY/Z	BW 1MHz: See the following results
Emr# 12	H/V	TX	Cmin	Axis XY/Z	BW 2MHz: See the following results
Emr# 13	H/V	TX	Cmid	Axis XY/Z	BW 2MHz: See the following results
Emr# 4	H/V	TX	Cmax	Axis XY/Z	BW 2MHz: See the following results



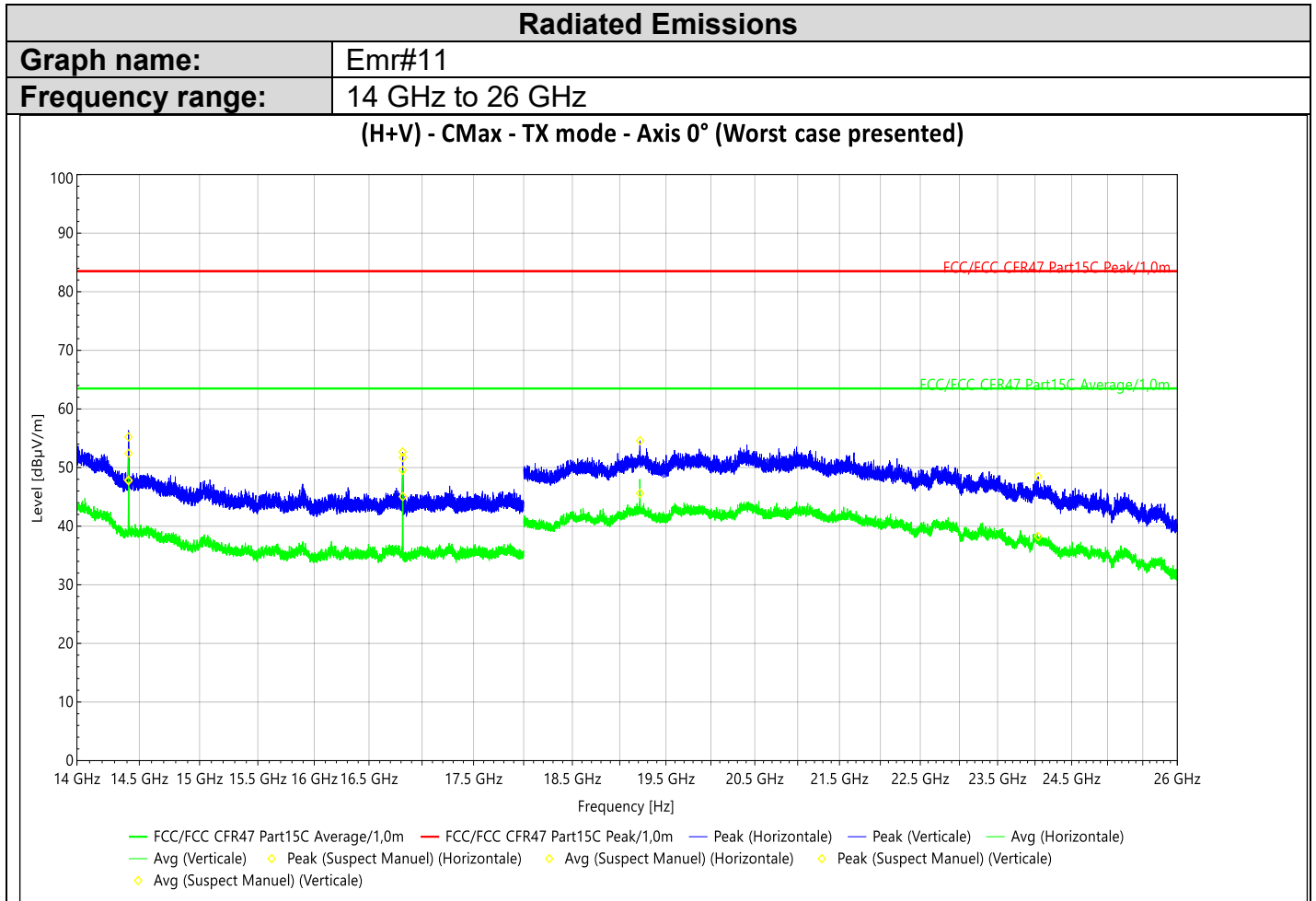
Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
14.414 GHz	55.72	83.50	50.10	63.50	344	H	-0.33
16.814 GHz	55.21	83.50	51.30	63.50	337	H	-4.86
14.414 GHz	59.37	83.50	54.80	63.50	334	V	-0.33
16.815 GHz	55.46	83.50	54.04	63.50	297	V	-4.87
19.215 GHz	55.16	83.50	50.52	63.50	48	V	1.11
24.655 GHz	46.50	83.50	38.11	63.50	118	V	1.60



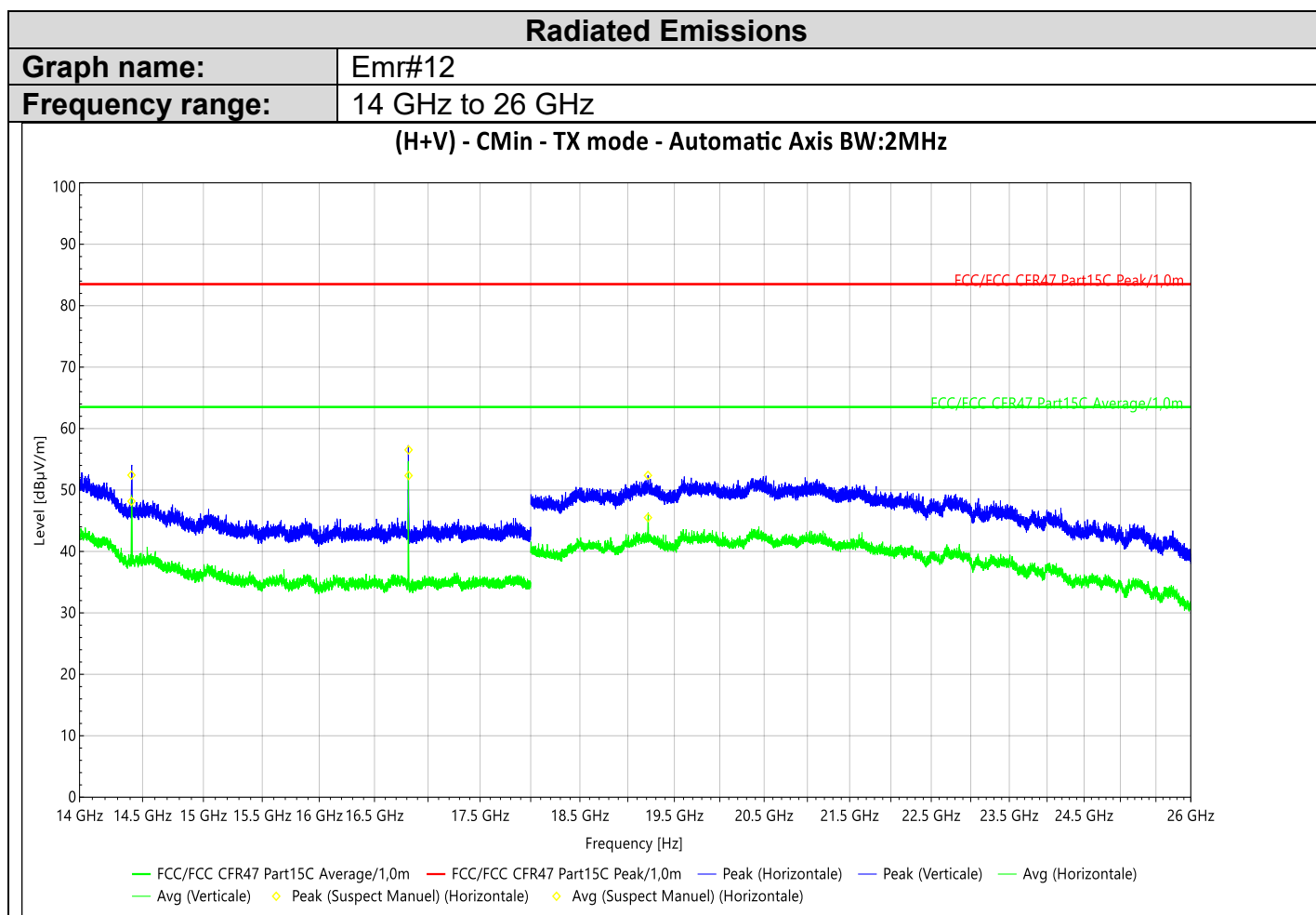
Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
14.413 GHz	54.07	83.50	49.76	63.50	347	H	-0.33
16.816 GHz	54.24	83.50	51.56	63.50	0	H	-4.88
19.215 GHz	53.91	83.50	46.25	63.50	0	H	1.11
14.415 GHz	51.43	83.50	42.94	63.50	334	V	-0.33
16.817 GHz	52.49	83.50	46.51	63.50	290	V	-4.89
23.494 GHz	49.86	83.50	38.82	63.50	29	V	1.22



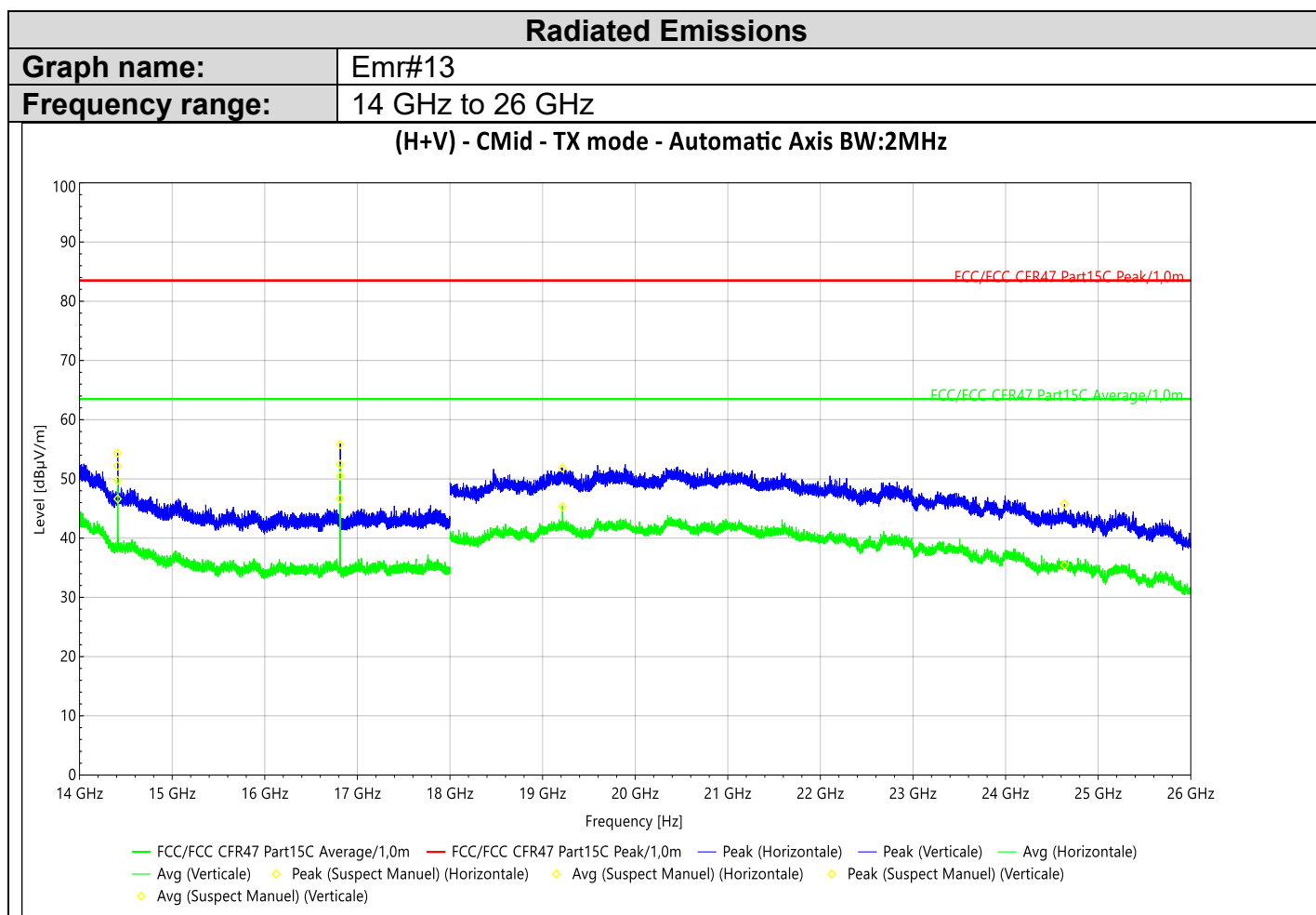
Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
14.412 GHz	52.42	83.50	47.73	63.50	341	H	-0.33
16.815 GHz	52.68	83.50	49.54	63.50	9	H	-4.87
14.412 GHz	55.24	83.50	47.88	63.50	351	V	-0.33
16.817 GHz	51.70	83.50	45.05	63.50	292	V	-4.89
19.218 GHz	54.59	83.50	45.60	63.50	59	V	1.10
24.043 GHz	48.46	83.50	38.24	63.50	151	V	1.36



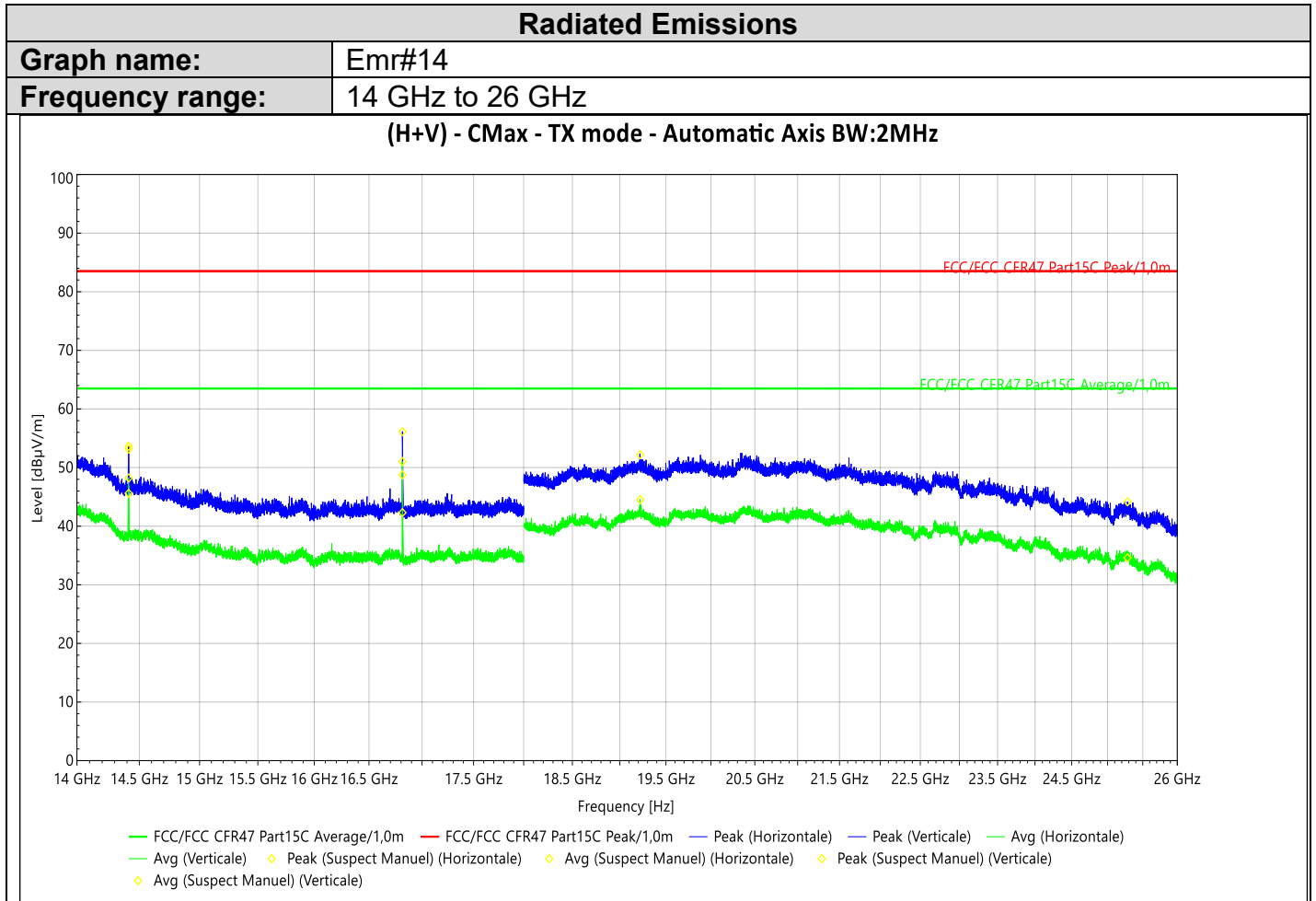
Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
14.411 GHz	52.42	83.50	48.16	63.50	45	H	-0.33
16.816 GHz	56.53	83.50	52.35	63.50	347	H	-4.89
19.215 GHz	52.38	83.50	45.51	63.50	0	H	1.11



Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
14.412 GHz	52.20	83.50	46.62	63.50	57	H	-0.33
16.814 GHz	55.81	83.50	52.48	63.50	352	H	-4.86
19.215 GHz	51.83	83.50	45.30	63.50	0	H	1.11
14.411 GHz	54.36	83.50	49.74	63.50	8	V	-0.33
16.815 GHz	50.51	83.50	46.68	63.50	296	V	-4.87
24.636 GHz	45.77	83.50	35.43	63.50	257	V	1.55



Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
14.414 GHz	53.14	83.50	48.23	63.50	52	H	-0.33
16.814 GHz	56.13	83.50	51.02	63.50	346	H	-4.86
19.219 GHz	52.19	83.50	44.53	63.50	10	H	1.10
14.414 GHz	53.60	83.50	45.60	63.50	0	V	-0.33
16.814 GHz	48.76	83.50	42.31	63.50	346	V	-4.86
25.282 GHz	44.17	83.50	34.60	63.50	134	V	2.30

Final measurement:

No significant frequency observed



8.6.4. At the band edge

Unwanted emissions at the band edge

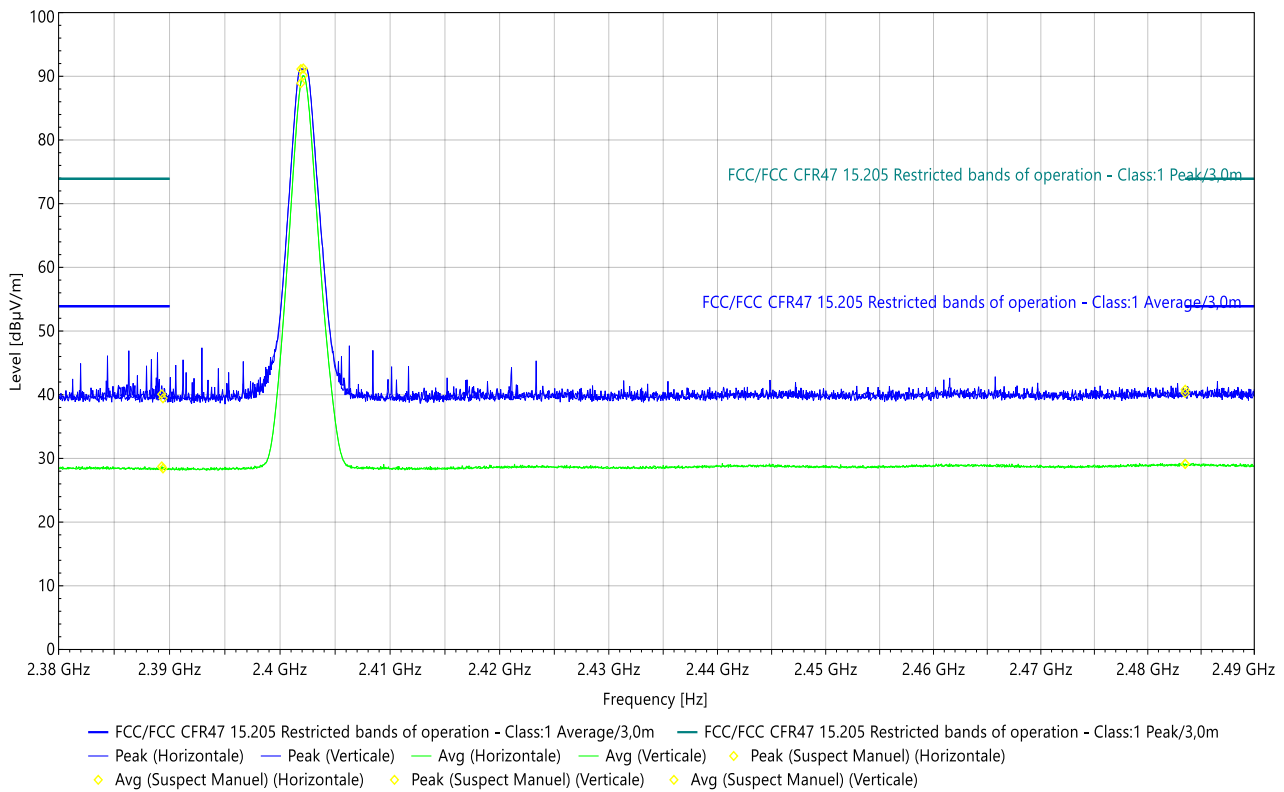
Configuration: BLE - 1Mbits/s

Radiated Emissions

Graph name: Emr#15

Frequency range: 2.38 GHz to 2.49 GHz

Band Edge BW 1MHz : (H+V) - Cmin - TX mode - Automatic Axis BW:1MHz



Pre-Characterization:

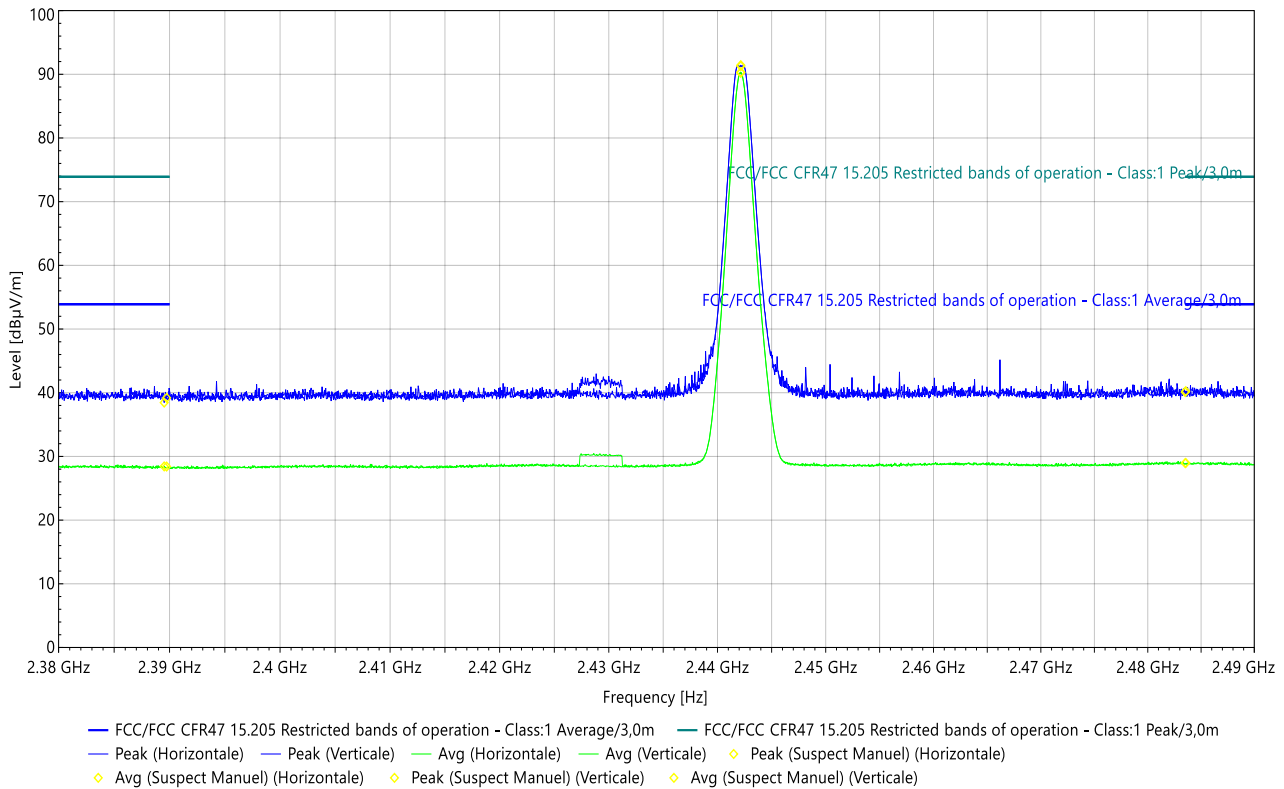
Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
2.389 GHz	40.07	74	28.75	54	173	H	-23.22
2.402 GHz	91.23		90.13		131	H	-23.16
2.484 GHz	40.79	74	29.14	54	220	H	-22.72
2.389 GHz	39.43	74	28.42	54	27	V	-23.22
2.402 GHz	91.14		88.91		243	V	-23.16
2.484 GHz	40.26	74	29.12	54	166	V	-22.72



Radiated Emissions

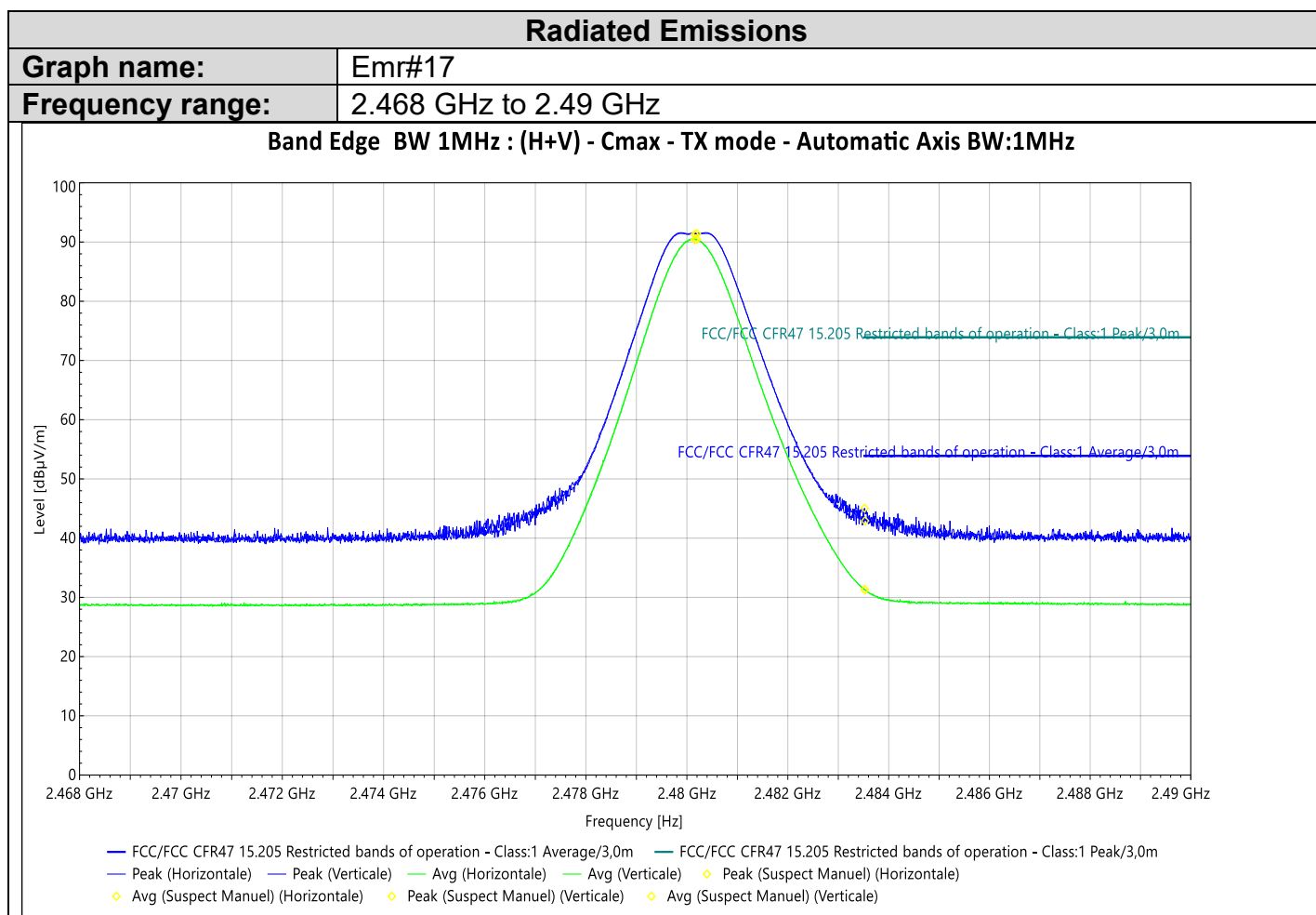
Graph name: Emr#16
Frequency range: 2.38 GHz to 2.49 GHz

Band Edge BW 1MHz : (H+V) - Cmid - TX mode - Automatic Axis BW:1MHz



Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
2.390 GHz	39.20	74	28.41	54	219	H	-23.21
2.442 GHz	91.43		90.33		150	H	-22.96
2.484 GHz	40.09	74	28.95	54	63	H	-22.72
2.390 GHz	38.45	74	28.43	54	57	V	-23.22
2.442 GHz	91.28		90.23		248	V	-22.96
2.484 GHz	40.26	74	28.97	54	50	V	-22.72



Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
2.480 GHz	91.42		90.47		328	H	-22.74
2.484 GHz	45.07	74	31.30	54	335	H	-22.72
2.480 GHz	91.29		90.40		249	V	-22.74
2.484 GHz	42.93	74	31.30	54	264	V	-22.72



Unwanted emissions at the band edge

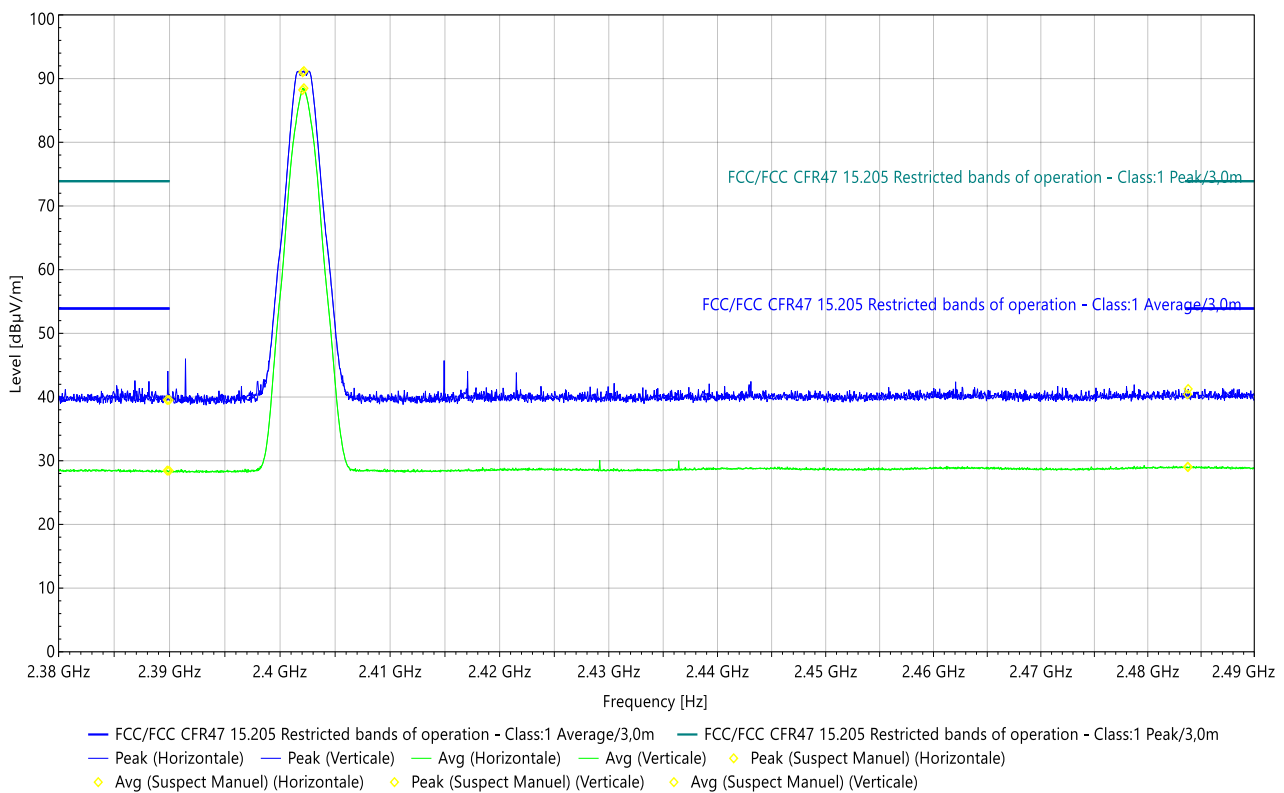
Configuration: BLE - 2Mbits/s

Radiated Emissions

Graph name: Emr#18

Frequency range: 2.38 GHz to 2.49 GHz

Band Edge BW 2MHz : (H+V) - Cmin - TX mode - Automatic Axis BW:2MHz



Pre-Characterization:

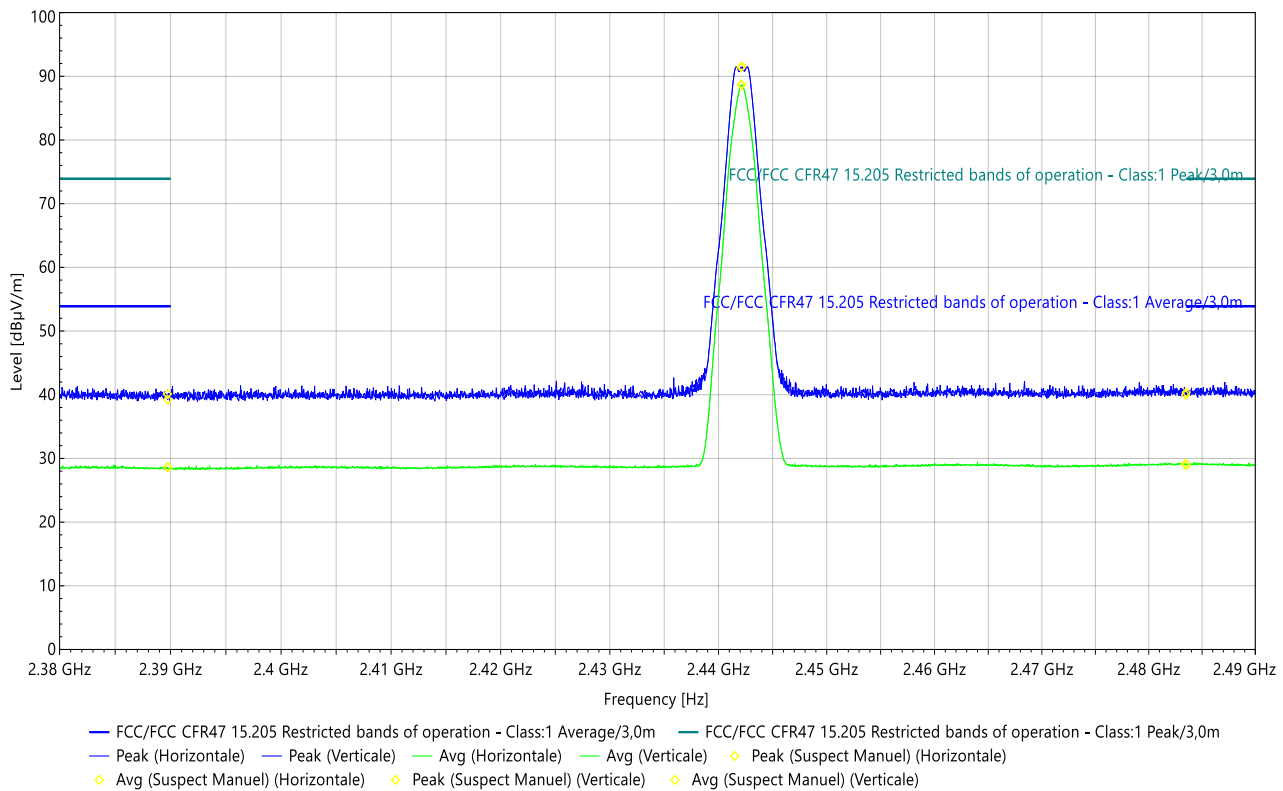
Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
2.390 GHz	39.54	74	28.43	54	71	H	-23.21
2.402 GHz	91.18		88.49		131	H	-23.16
2.484 GHz	41.27	74	29.02	54	276	H	-22.72
2.390 GHz	39.55	74	28.45	54	128	V	-23.21
2.402 GHz	90.99		88.22		231	V	-23.16
2.484 GHz	40.42	74	29.04	54	2	V	-22.72



Radiated Emissions

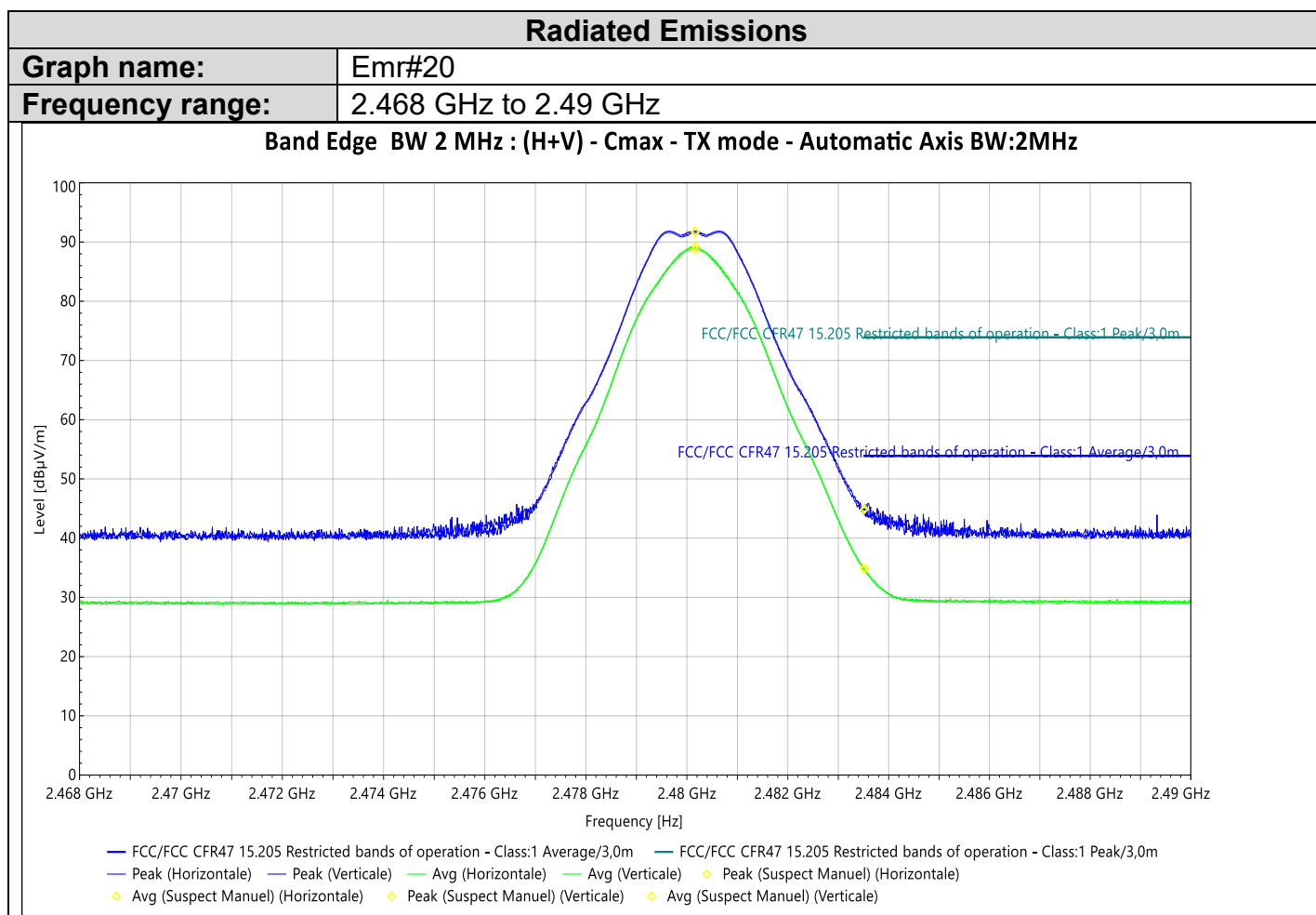
Graph name: Emr#19
Frequency range: 2.38 GHz to 2.49 GHz

Band Edge BW 2MHz : (H+V) - Cmid - TX mode - Automatic Axis BW:2MHz



Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
2.390 GHz	40.12	74	28.65	54	101	H	-23.21
2.442 GHz	91.54	74	88.68	54	165	H	-22.96
2.484 GHz	39.98	74	29.19	54	165	H	-22.72
2.390 GHz	39.24	74	28.62	54	333	V	-23.21
2.442 GHz	91.39	74	88.66	54	250	V	-22.96
2.484 GHz	40.37	74	28.94	54	24	V	-22.72



Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Angle (°)	Polar.	Correct. (dB)
2.480 GHz	91.82		89.27		171	H	-22.74
2.484 GHz	44.75	74	34.96	54	0	H	-22.72
2.484 GHz	44.99	74	34.75	54	264	H	-22.72
2.480 GHz	91.65		88.71		243	V	-22.74

8.7. CONCLUSION

Unwanted emissions in non-restricted bands measurement performed on the sample of the product **Tikee sentinel**, Sn: **S-SEN-1A000071**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247** limits.

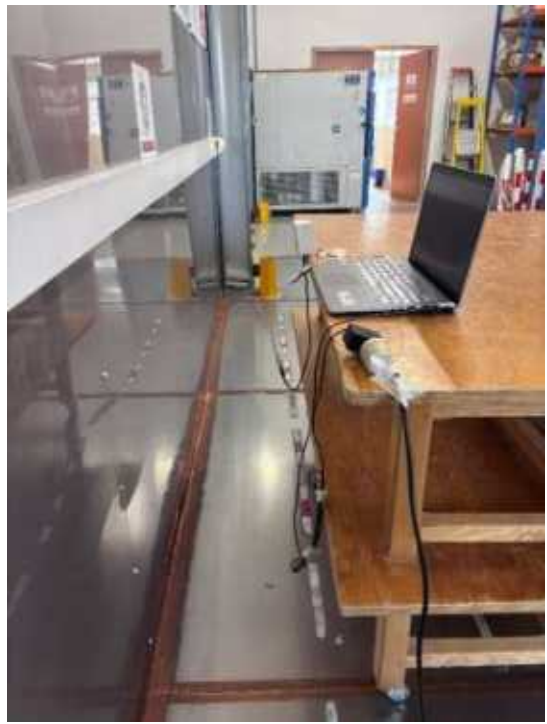


Photo of AC Power Line Conducted Emissions ((Laptop auxiliary)

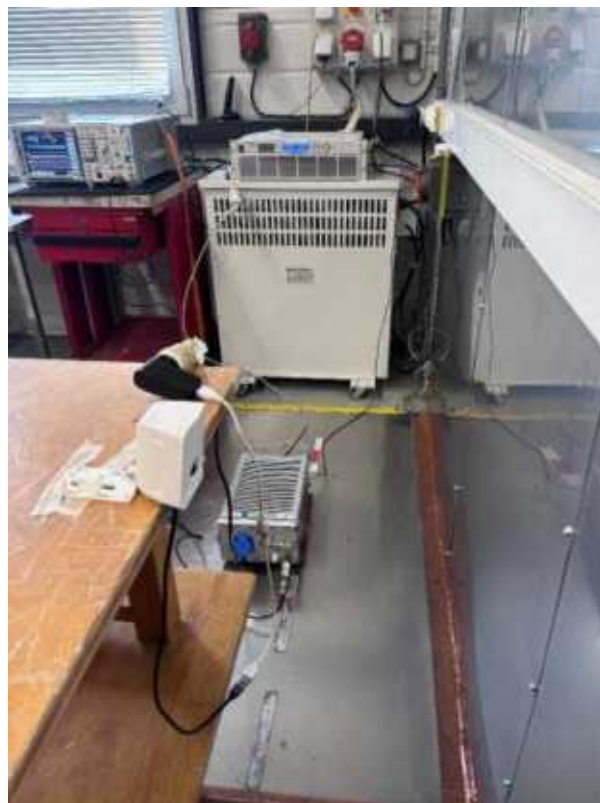
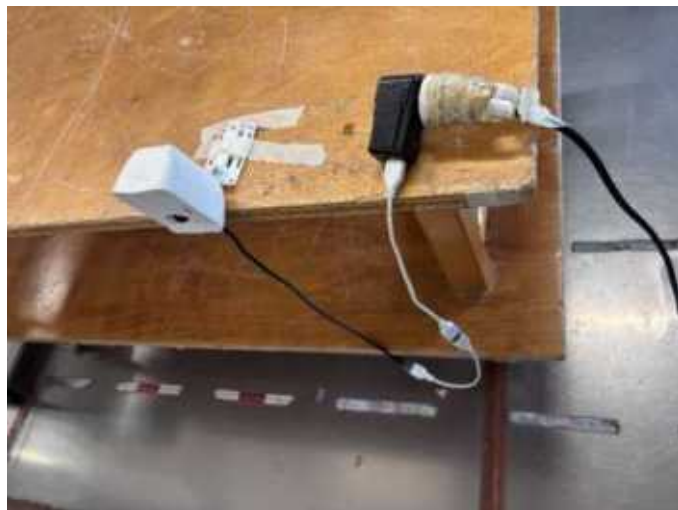


Photo of AC Power Line Conducted Emissions (Auxiliary used)



9.3. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
BAT EMC	NEXIO	v3.21.0.32	L1000115		
Cable + self	—	—	A5329578	05/24	05/26
EMC comb generator	LCIE SUD EST	—	A3169098		
LISN	ROHDE & SCHWARZ	ENV216	C2320291	08/25	08/26
EMI TEST RECEIVER	ROHDE & SCHWARZ	ESU26	A2642035	10/25	10/27
Thermo-hygrometer	TESTO	608-H1	B4204120	05/25	05/27
Transient limiter	ROHDE & SCHWARZ	ESH3-Z2	A7122204	07/24	07/26

9.4. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None



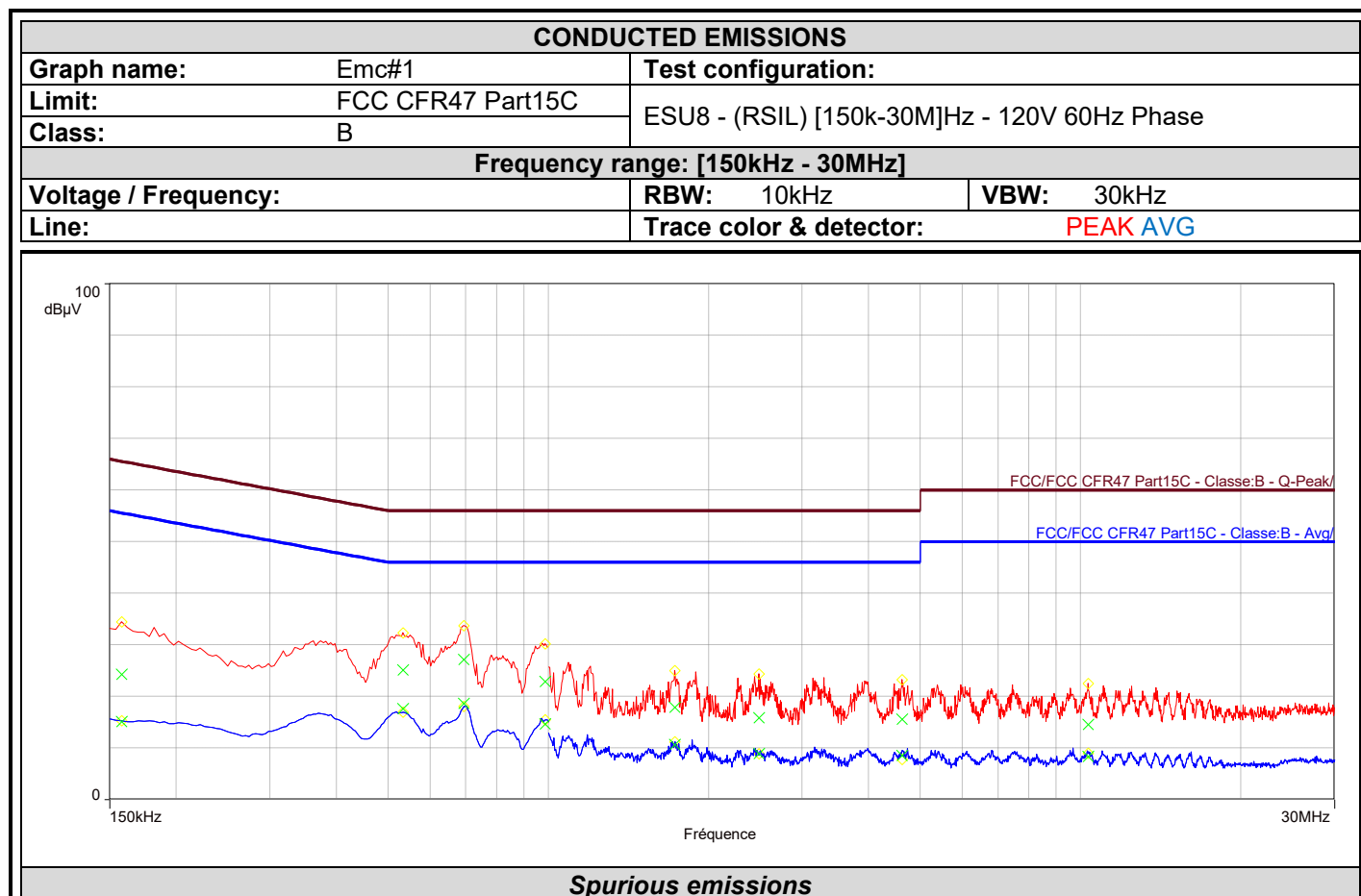
9.5. TEST RESULTS – RUNNING MODE N°1

Mains terminals:

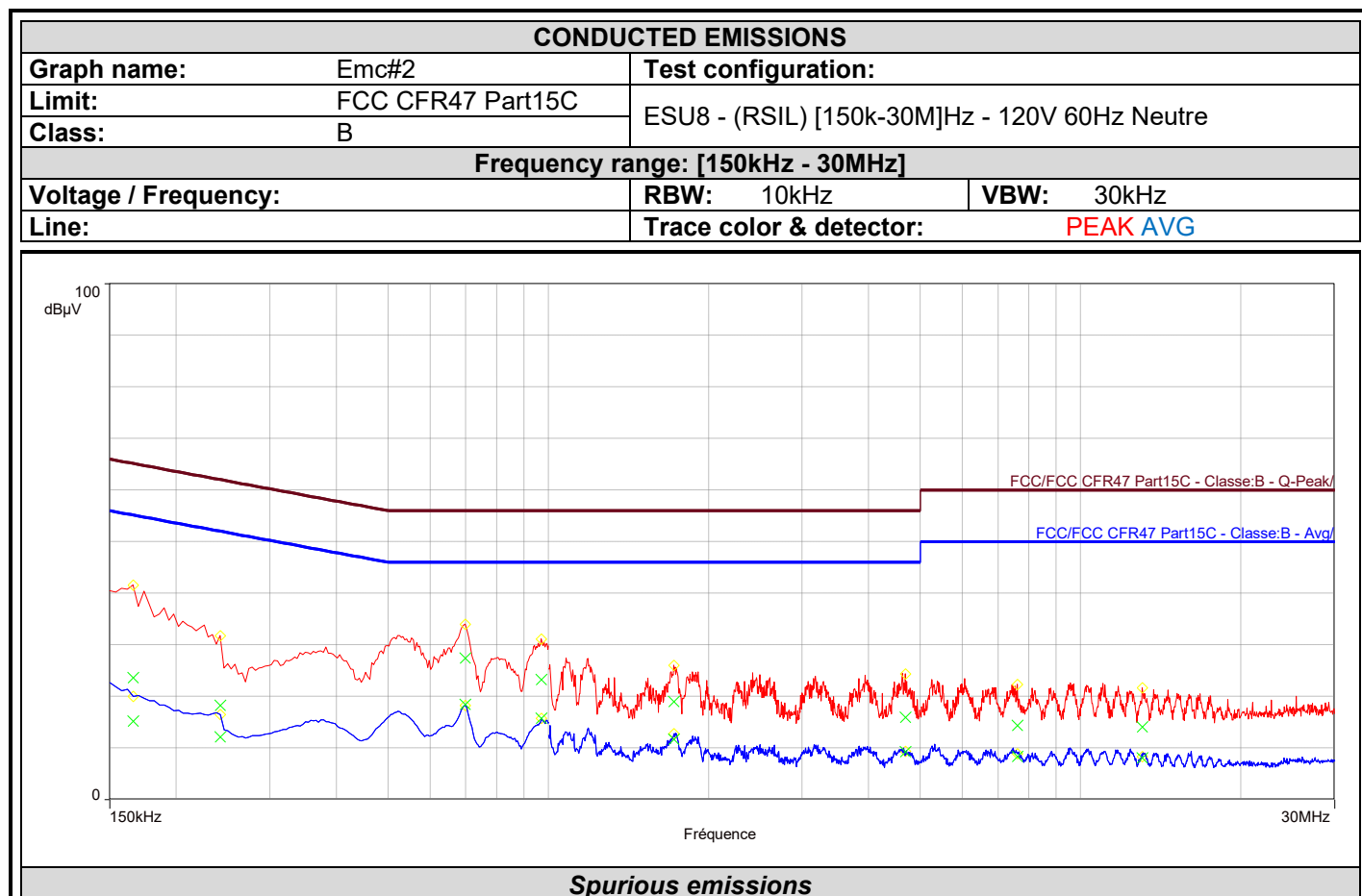
SUPPLY1

Measurements are performed on the phase (L1) and neutral (N) of the power line.

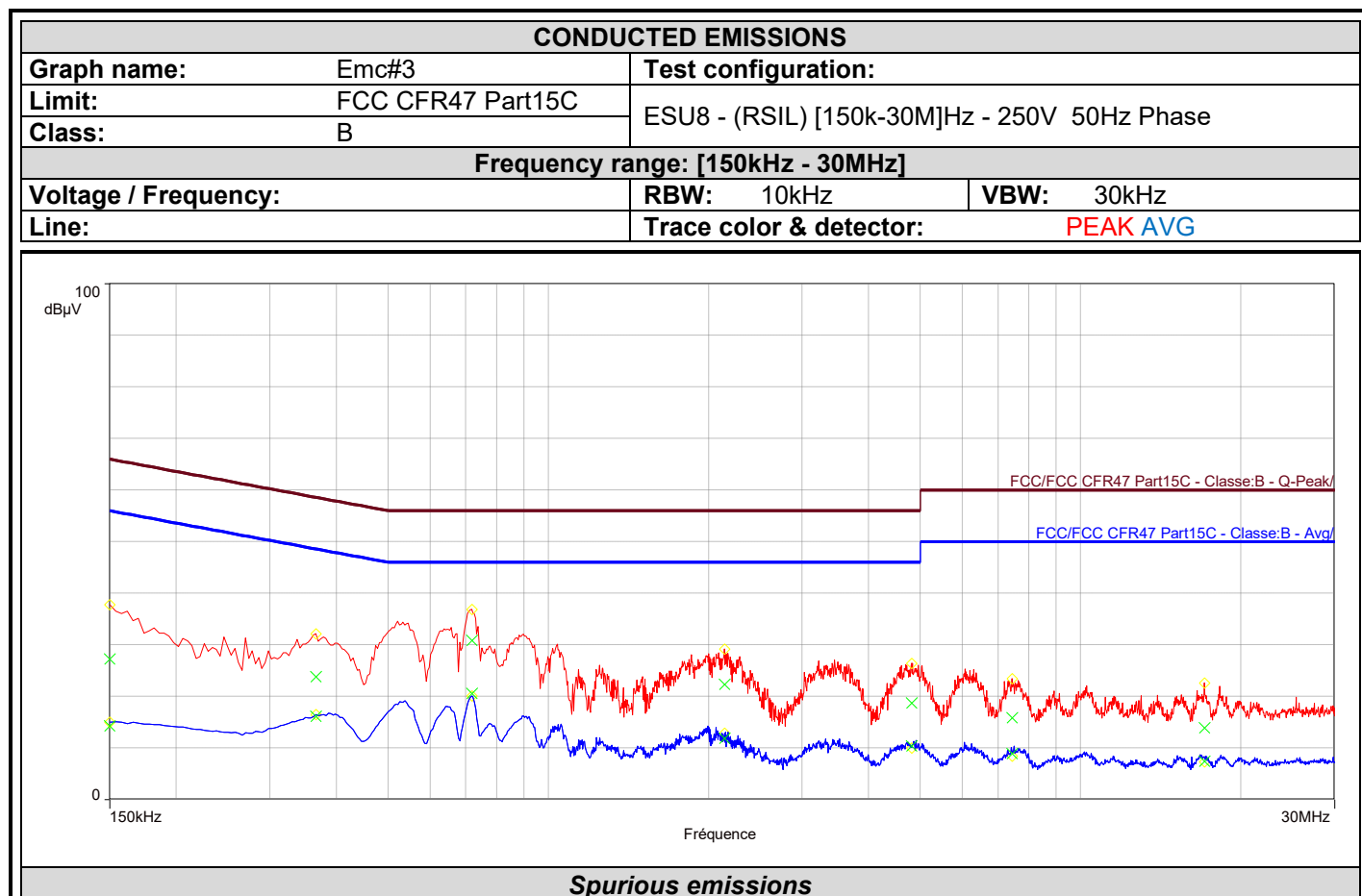
Graph identifier	Line	Comments	
Emc# 1	Phase	120VAC/60Hz	See below
Emc# 2	Neutral	120VAC/60Hz	See below
Emc# 3	Phase	240VAC/50Hz	See below
Emc# 4	Neutral	240VAC/50Hz	See below
Emc# 5	Phase	120VAC/60Hz (<i>Laptop auxiliary</i>)	See below
Emc# 6	Neutral	120VAC/60Hz (<i>Laptop auxiliary</i>)	See below
Emc# 7	Phase	240VAC/50Hz (<i>Laptop auxiliary</i>)	See below
Emc# 8	Neutral	240VAC/50Hz (<i>Laptop auxiliary</i>)	See below



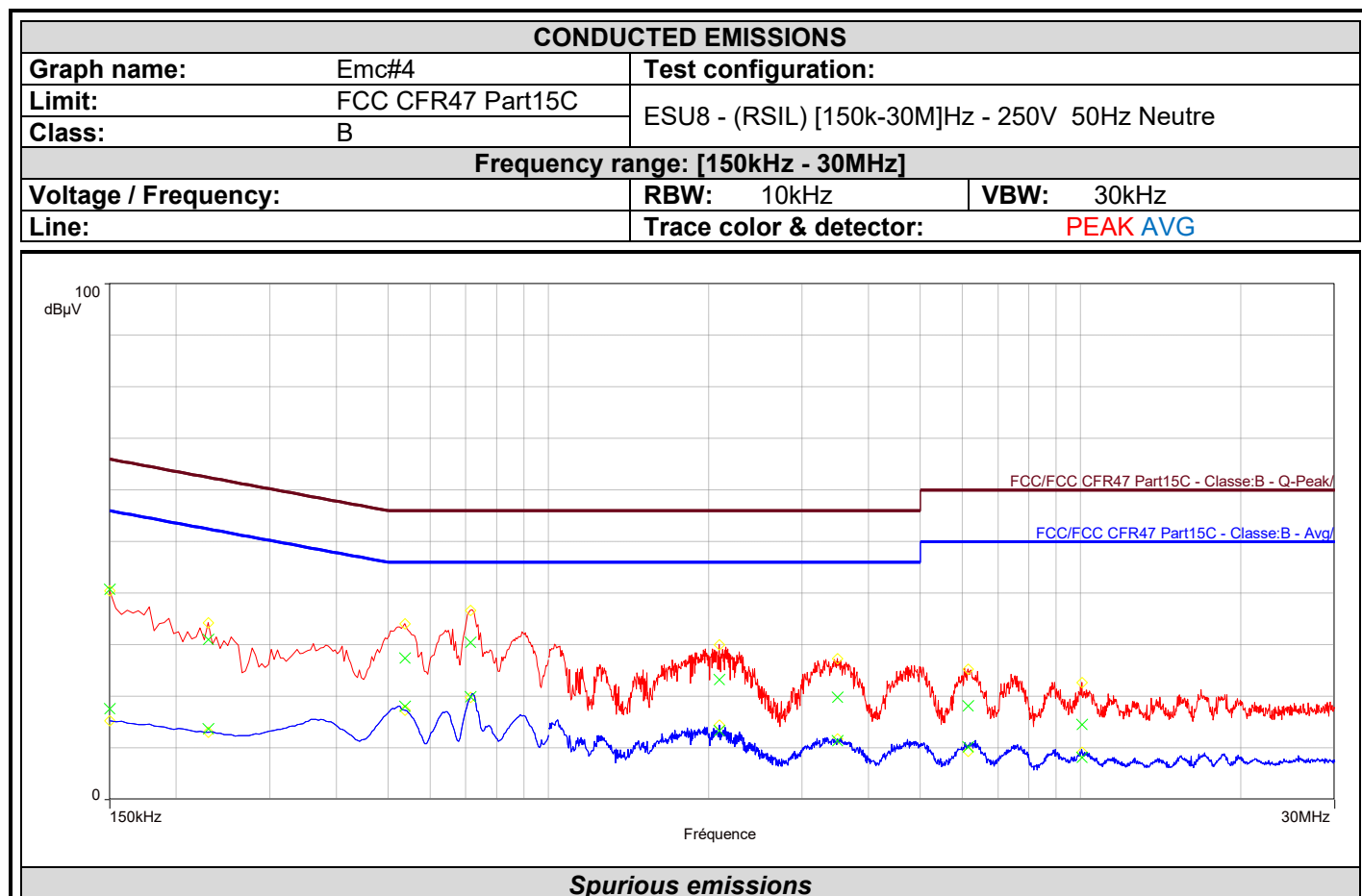
Frequency (MHz)	QPeak (dBµV)	Lim.QPeak (dBµV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBµV)	Lim.CISPR.AVG (dBµV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.158	24.22	65.57	-41.35	15.11	55.57	-40.46
0.534	25.11	56.00	-30.89	17.55	46.00	-28.45
0.694	27.13	56.00	-28.87	18.59	46.00	-27.41
0.986	22.86	56.00	-33.14	14.66	46.00	-31.34
1.728	17.92	56.00	-38.08	10.64	46.00	-35.36
2.488	15.86	56.00	-40.14	8.87	46.00	-37.13
4.620	15.57	56.00	-40.43	8.53	46.00	-37.47
10.328	14.56	60.00	-45.44	8.32	50.00	-41.68



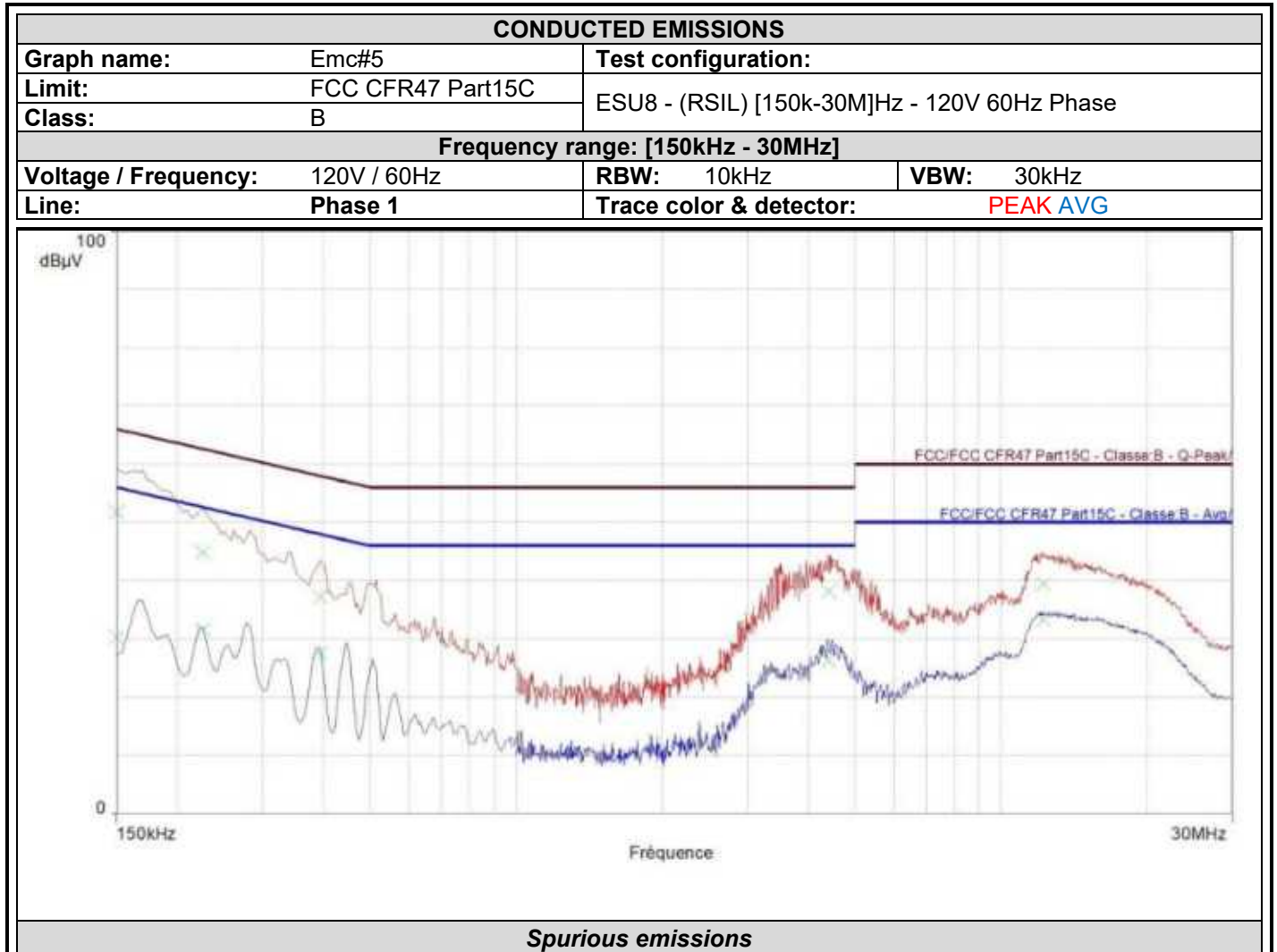
Frequency (MHz)	QPeak (dBµV)	Lim.QPeak (dBµV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBµV)	Lim.CISPR.AVG (dBµV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.166	23.57	65.16	-41.59	15.19	55.16	-39.97
0.242	18.22	62.03	-43.81	12.12	52.03	-39.91
0.698	27.41	56.00	-28.59	18.41	46.00	-27.59
0.970	23.25	56.00	-32.75	15.78	46.00	-30.22
1.720	18.95	56.00	-37.05	11.65	46.00	-34.35
4.684	15.93	56.00	-40.07	9.28	46.00	-36.72
7.600	14.33	60.00	-45.67	8.37	50.00	-41.63
13.056	14.04	60.00	-45.96	8.04	50.00	-41.96



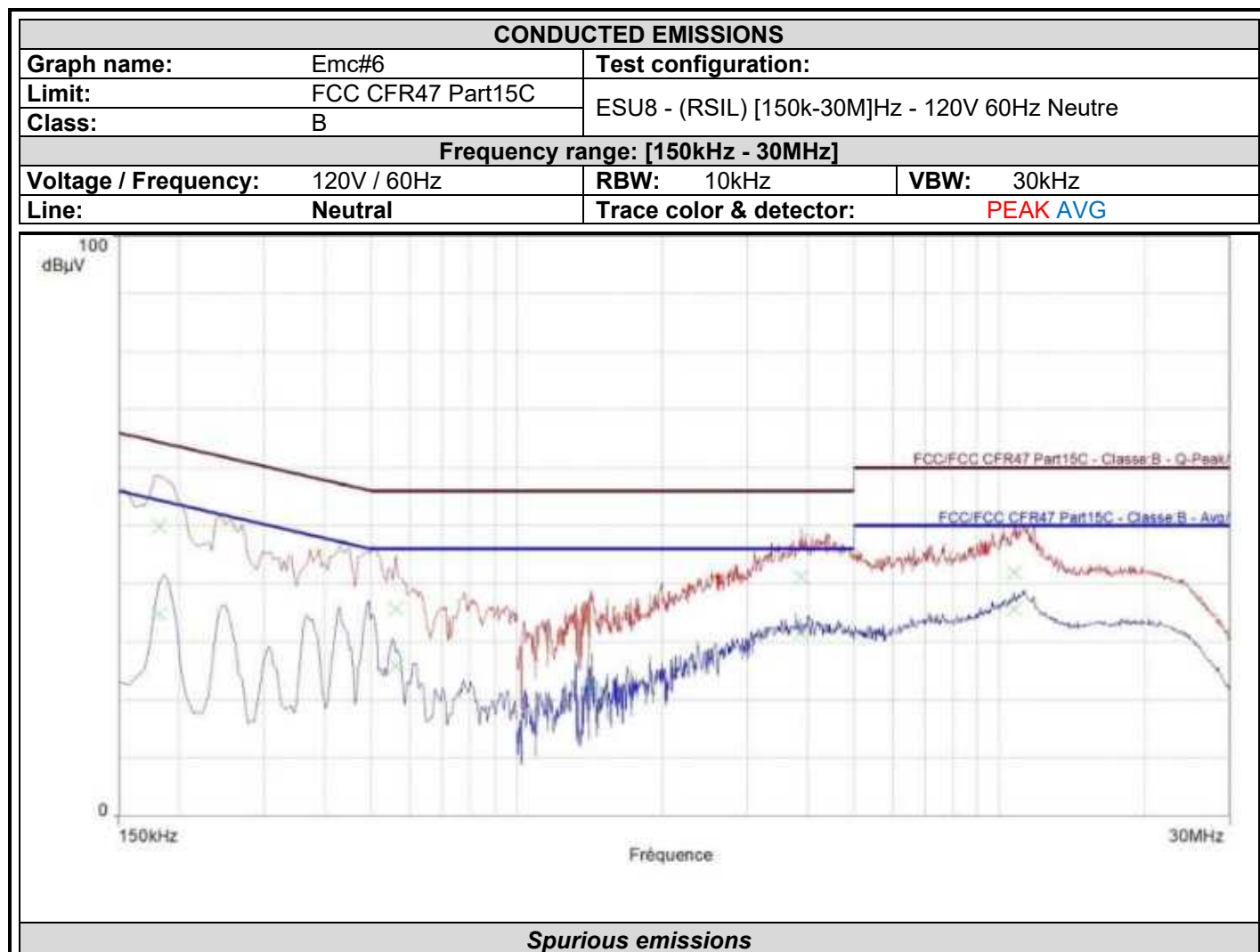
Frequency (MHz)	QPeak (dBμV)	Lim.QPeak (dBμV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBμV)	Lim.CISPR.AVG (dBμV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.150	27.22	66.00	-38.78	14.26	56.00	-41.74
0.366	23.84	58.59	-34.75	16.12	48.59	-32.47
0.718	30.88	56.00	-25.12	20.60	46.00	-25.40
2.144	22.34	56.00	-33.66	11.84	46.00	-34.16
4.820	18.73	56.00	-37.27	10.35	46.00	-35.65
7.432	15.82	60.00	-44.18	8.87	50.00	-41.13
17.088	13.93	60.00	-46.07	7.45	50.00	-42.55



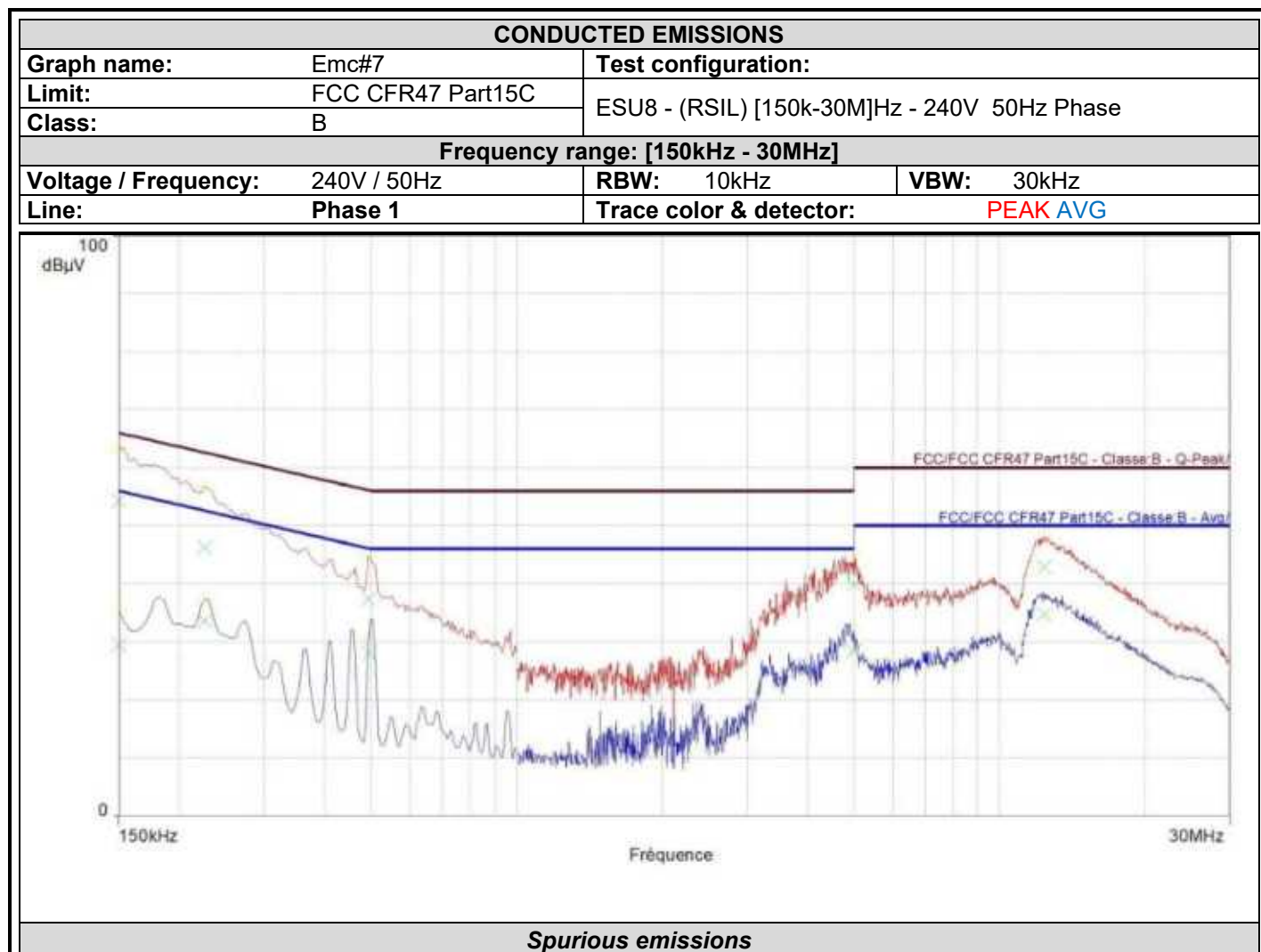
Frequency (MHz)	QPeak (dBµV)	Lim.QPeak (dBµV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBµV)	Lim.CISPR.AVG (dBµV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.150	40.73	66.00	-25.27	17.56	56.00	-38.44
0.230	31.04	62.45	-31.41	13.69	52.45	-38.76
0.538	27.42	56.00	-28.58	18.06	46.00	-27.94
0.714	30.47	56.00	-25.53	19.89	46.00	-26.11
2.096	23.22	56.00	-32.78	13.34	46.00	-32.66
3.496	19.83	56.00	-36.17	11.43	46.00	-34.57
6.148	18.15	60.00	-41.85	10.20	50.00	-39.80
10.064	14.58	60.00	-45.42	8.16	50.00	-41.84



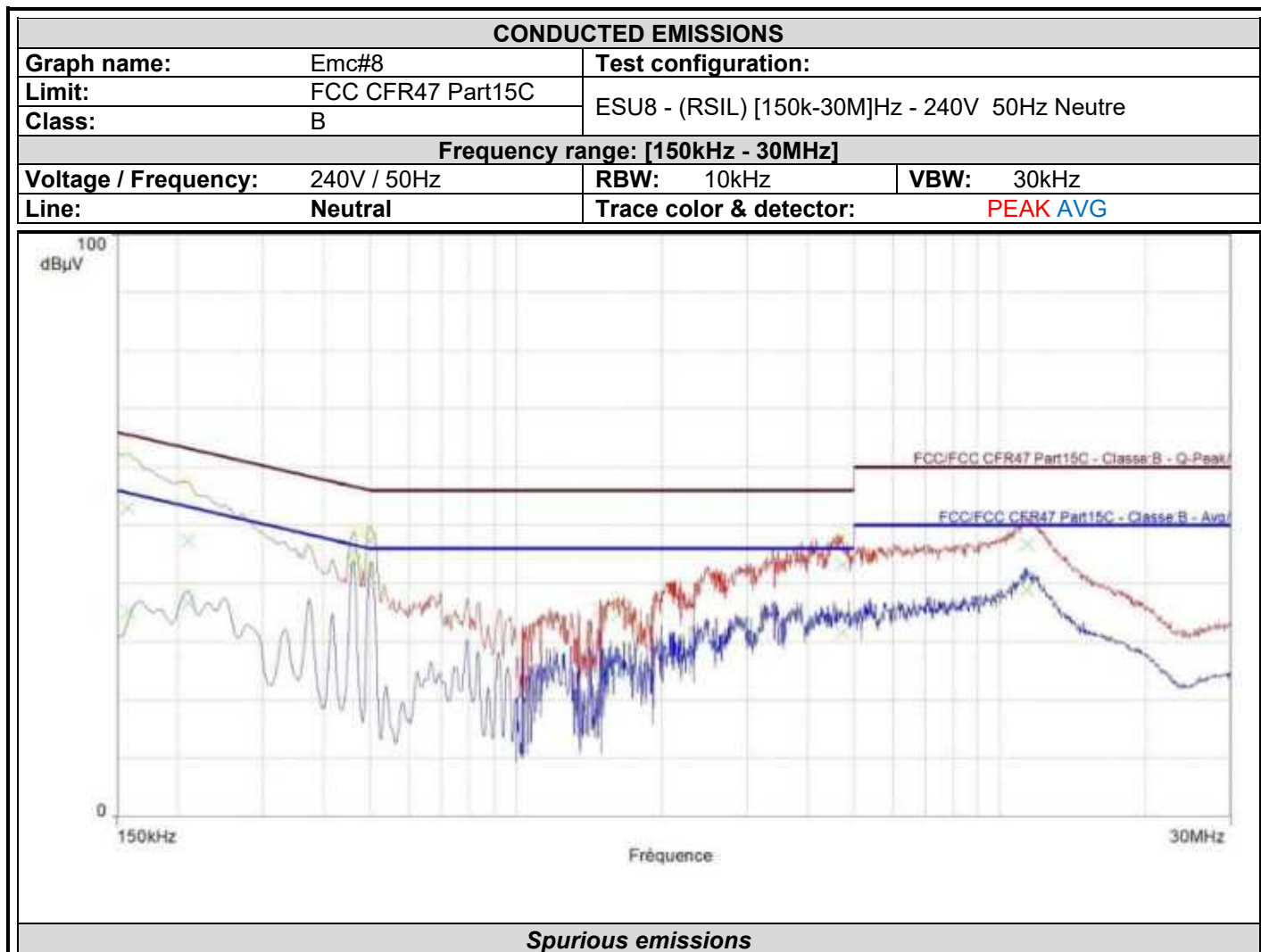
Frequency (MHz)	QPeak (dBµV)	Lim.QPeak (dBµV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBµV)	Lim.CISPR.AVG (dBµV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.150	51.78	66.00	-14.22	30.23	56.00	-25.77
0.226	44.88	62.60	-17.72	31.53	52.60	-21.06
0.394	37.20	57.98	-20.78	27.44	47.98	-20.53
4.416	38.17	56.00	-17.83	26.23	46.00	-19.77
12.212	39.43	60.00	-20.57	33.26	50.00	-16.74



Frequency (MHz)	QPeak (dBμV)	Lim.QPeak (dBμV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBμV)	Lim.CISPR.AVG (dBμV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.182	49.90	64.39	-14.50	34.84	54.39	-19.55
0.562	35.70	56.00	-20.30	25.86	46.00	-20.14
1.420	34.24	56.00	-21.76	22.05	46.00	-23.95
3.888	41.20	56.00	-14.80	31.64	46.00	-14.36
10.740	41.94	60.00	-18.06	35.62	50.00	-14.38



Frequency (MHz)	QPeak (dBμV)	Lim.QPeak (dBμV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBμV)	Lim.CISPR.AVG (dBμV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.150	54.27	66.00	-11.73	29.49	56.00	-26.51
0.226	46.28	62.60	-16.32	33.54	52.60	-19.06
0.494	37.40	56.10	-18.70	27.99	46.10	-18.11
4.992	39.97	56.00	-16.03	28.41	46.00	-17.59
12.356	42.91	60.00	-17.09	34.67	50.00	-15.33



Frequency (MHz)	QPeak (dBμV)	Lim.QPeak (dBμV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBμV)	Lim.CISPR.AVG (dBμV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.158	53.01	65.57	-12.56	35.21	55.57	-20.36
0.210	47.37	63.21	-15.84	36.70	53.21	-16.50
0.462	45.43	56.66	-11.22	43.96	46.66	-2.69
0.498	47.36	56.03	-8.67	41.30	46.03	-4.73
1.492	35.59	56.00	-20.41	24.73	46.00	-21.27
1.624	34.75	56.00	-21.25	24.50	46.00	-21.50
4.720	43.26	56.00	-12.74	31.66	46.00	-14.34
11.400	46.72	60.00	-13.28	38.93	50.00	-11.07

9.6. CONCLUSION

The sample of the equipment **Tikee sentinel**, Sn : **S-SEN-1A000071**, tested in the configuration presented in this test report **satisfies** to requirements of the product family standard applied (See §Test Program) for conducted emissions.



10. 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.



----- END OF REPORT -----