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TEST REPORT

N°: 30751252-823244-A (FILE#15991038)

Version: 02

Subject

Radio spectrum tests according to the standards:
FCC CFR 47 Part 15.247
ANSI C63.10-2020 + Cor. 1-2023 + C63.10a-2024 + Errata to C63.10a-2024
RSS-247 & RSS-Gen

Issued to

VEGA GRIESHABER KG
Am Hohenstein 113
D-77761 – SCHILTACH
GERMANY

Apparatus under test

Product VEGAMET Air
Trade mark VEGA
Manufacturer VEGA Grieshaber KG
Family range VEGAMET Air 141 / VEGAMET Air 142
Model under test VEGAMET Air 142
Serial number 14200004
FCCID O6QMETA14X
IC 3892A-META14X

Conclusion

See Test Program chapter

Test date June 12, 2026 to June 24, 2026 and July 28, 2026
Test location LCIE Grenoble
FCC Test site FR0008 - 918017 (MOI)
ISED Test site 6500A – FR0008 (MOI)
Sample receipt date March 10, 2026
Composition of document 92 pages
Document issued on August 26, 2026

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Approved by :

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PUBLICATION HISTORY

Version	Date	Author	Modification
01	June 29, 2026	Majid MOURZAGH	Creation of the document
02	August 26, 2026	Marlon BOUBY	Add new antennas see p 8 and § 9

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 (May 04, 2026) [🔗](#)
- RSS 247 Issue 4
- RSS Gen Issue 5
- KDB 558074 D01 DTS Meas Guidance v05r02 [🔗](#)
- KDB 662911 D01 Multiple Transmitter Output v02r01 [🔗](#)
- ANSI C63.10-2020 + Cor. 1-2023 + C63.10a-2024 + Errata to 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)
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

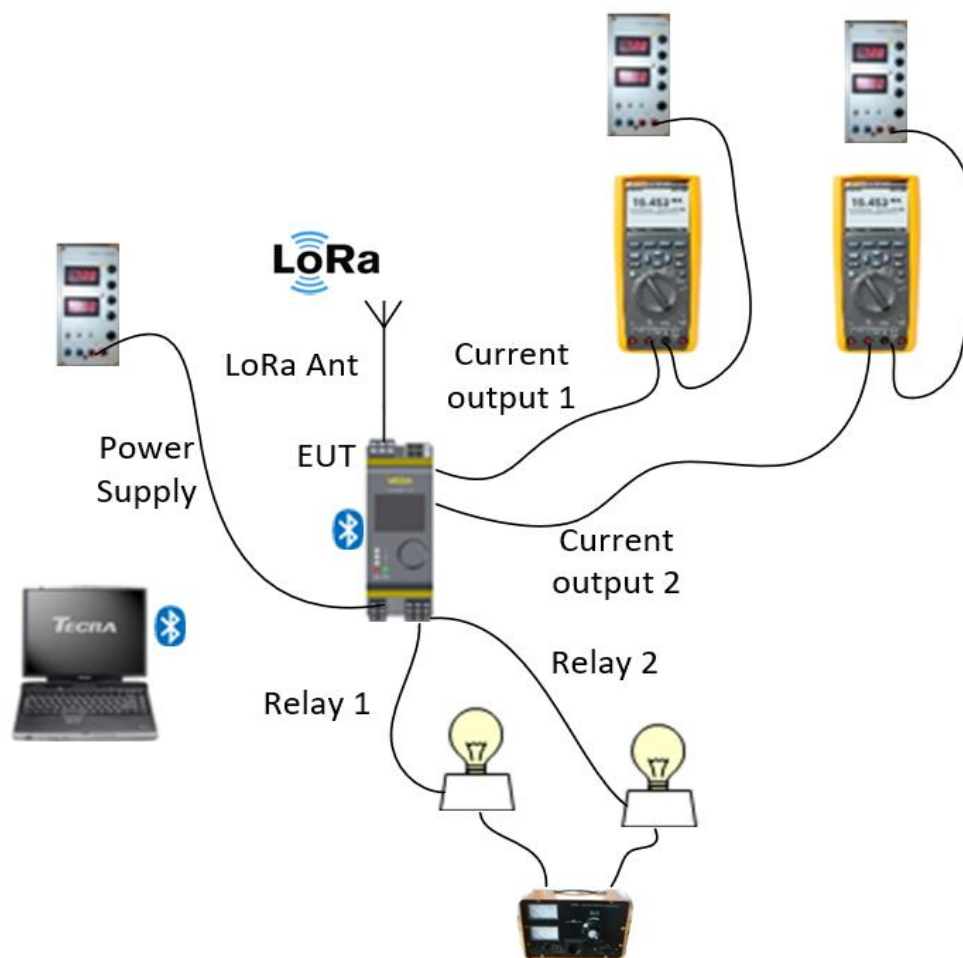
NA: Not Applicable

NP: Test Not Performed

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

2.1. INFORMATIONS

All tests are performed on the product VEGAMET Air 142 which is the full options product.



Family range : 141 / 142

2.2. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES):

Equipment under test (EUT):

Equipment under test: VEGAMET Air 142	
Model under test :	VEGAMET Air 142
Serial Number:	14200004
	
Dimensions:	4cm x 11cm x 12cm (Length x Width x Height)
Type :	DIN rail / Cabinet (considered like table-top)

Power supply:

Name	Type	Rating	Reference / Sn	Comments
Supply1	AC	100-240 VAC 50-60	/	/
Supply2	DC	24VDC	/	/

NC: Not communicated by provider

Inputs/outputs - Cable:

Access	Type	Length used (m)	Declared <3m	Shielded	Comments
Supply1	2 wires: L+N	3	No	No	/
Relay_cable 1	2 wires	3	No	No	/
Relay_cable 2	2 wires	3	No	No	/
4-20mA_cable 1	2 wires	3	No	No	/
4-20mA_cable 1	2 wires	3	No	No	/
External antenna	Coaxial	3	No	Yes	Ref:2J3915 M-915 P/N:SI304101790

NC: Not communicated by provider

Auxiliary equipment used during test:

Type	Reference	Sn	Comments
None			

NC: Not communicated by provider



Equipment information (declaration of provider):

DTS:	LoraWAN
Chipset / RF Module	LR1302-SPI-US915
Frequency band:	[902-928] MHz
Spectrum Modulation:	Chirp Spread Spectrum
Number of Channel:	8
Spacing channel:	600kHz (500kHz BW)
Channel bandwidth:	500kHz
Antenna Type:	External with connector
Antenna connector:	Permanent external
Antenna requirements §15.203	The transmitter uses an external antenna with a connector which is classified as a unique connector
Transmit chains:	1
Receiver chains	1

CHANNEL PLAN – 500kHz channels uplink	
Channel	Frequency (MHz)
0 = Cmin	923.3
1	923.9
2 = Cmid	924.5
3	925.1
4	925.7
5	926.3
6	926.9
7 =Cmax	927.5

Antenna 1 Characteristic			
Antenna reference	Gain (dBi)	Frequency Band (MHz)	Impedance(Ω)
2J Antennas : 2J7515M-915	2.3	902-928 MHZ	50

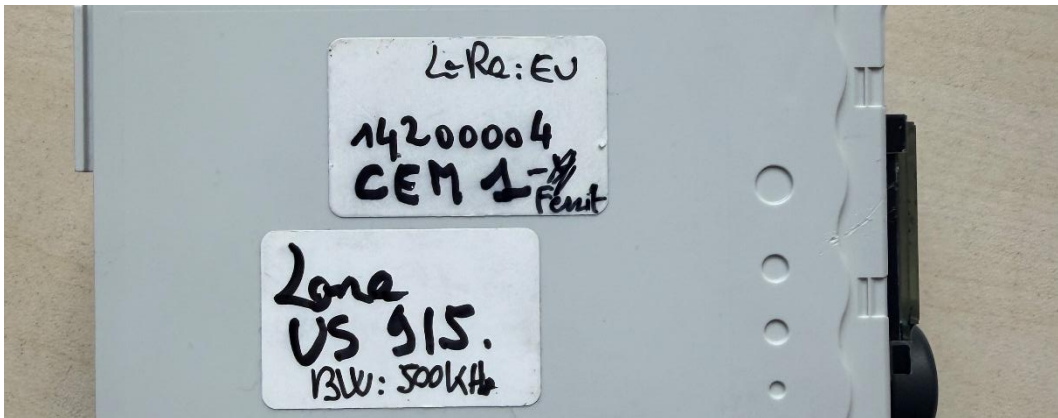
Antenna 2 Characteristic			
Antenna reference	Gain (dBi)	Frequency Band (MHz)	Impedance(Ω)
2J Antennas: 2j3915m-915	3	902-928 MHZ	50

Antenna 3 Characteristic			
Antenna reference	Gain (dBi)	Frequency Band (MHz)	Impedance(Ω)
2J Antennas: 2j2115B-B07h	2.9	902-928 MHZ	50

Hardware information			
Highest internal frequency (PLL, Quartz, Clock, Microprocessor...):		F _{Highest} :	1000 MHz
Firmware (if applicable):		V:	EMC_Tests_2026_CW08
Software (if applicable):		V:	N/A
Equipment intended:	Fixed		
Type of equipment:	Stand-alone		
Equipment sample:	Production model		
Duty cycle:	Continuous duty		
Operating temperature range:	T _{min} :	-40 °C	
	T _{nom} :	20°C	
	T _{max} :	+60 °C	
Operating voltage:	V _{min} (85% V _{nom}):	20VDC or 85VAC	
	V _{nom} :	24VDC or 230VAC	
	V _{max} (115% V _{nom}):	65VDC or 253VAC	

NC: Not communicated by provider

2.3. EQUIPMENT LABELLING

Label


2.4. 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.
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
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.

2.5. EQUIPMENT MODIFICATIONS DURING THE TESTS

None



3. LABORATORY EQUIPMENT AND METHODOLOGY

3.1. 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.

3.2. 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.

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

3.3. 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

3.4. TEST DISTANCE EXTRAPOLATION – ISED

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

4. OCCUPIED BANDWIDTH

4.1. TEST CONDITIONS

Date of test : June 23, 2026
Test performed by : Majid MOURZAGH
Relative humidity (%) : 35
Ambient temperature (°C) : 25

4.2. TEST SETUP

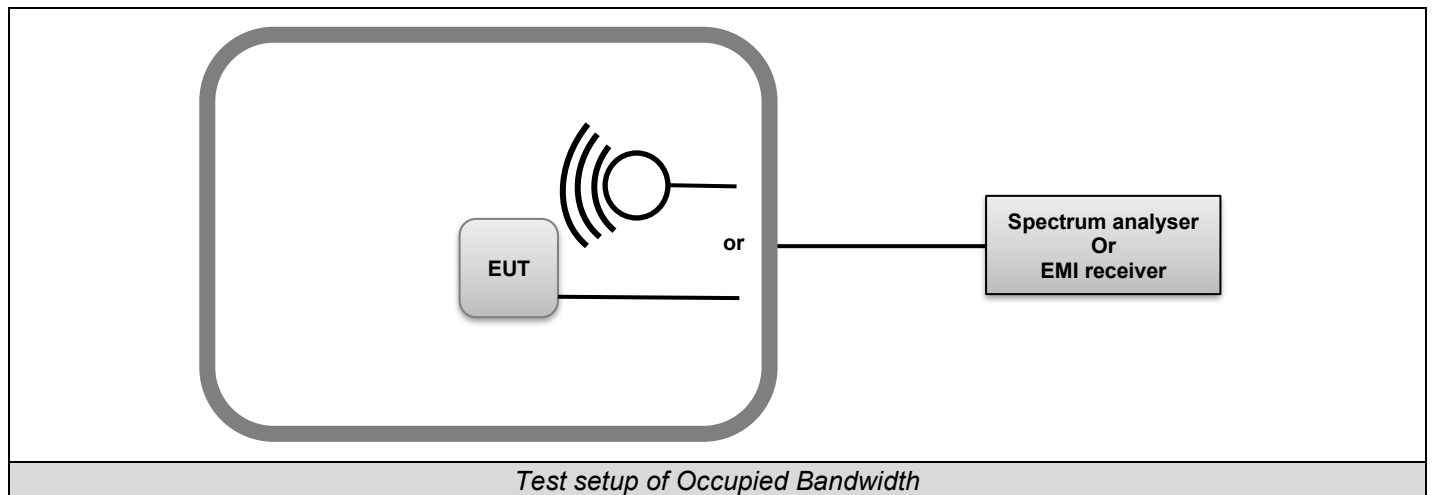
The Equipment Under Test is installed in an anechoic chamber.
Measurement is performed with a spectrum analyzer in conducted method.

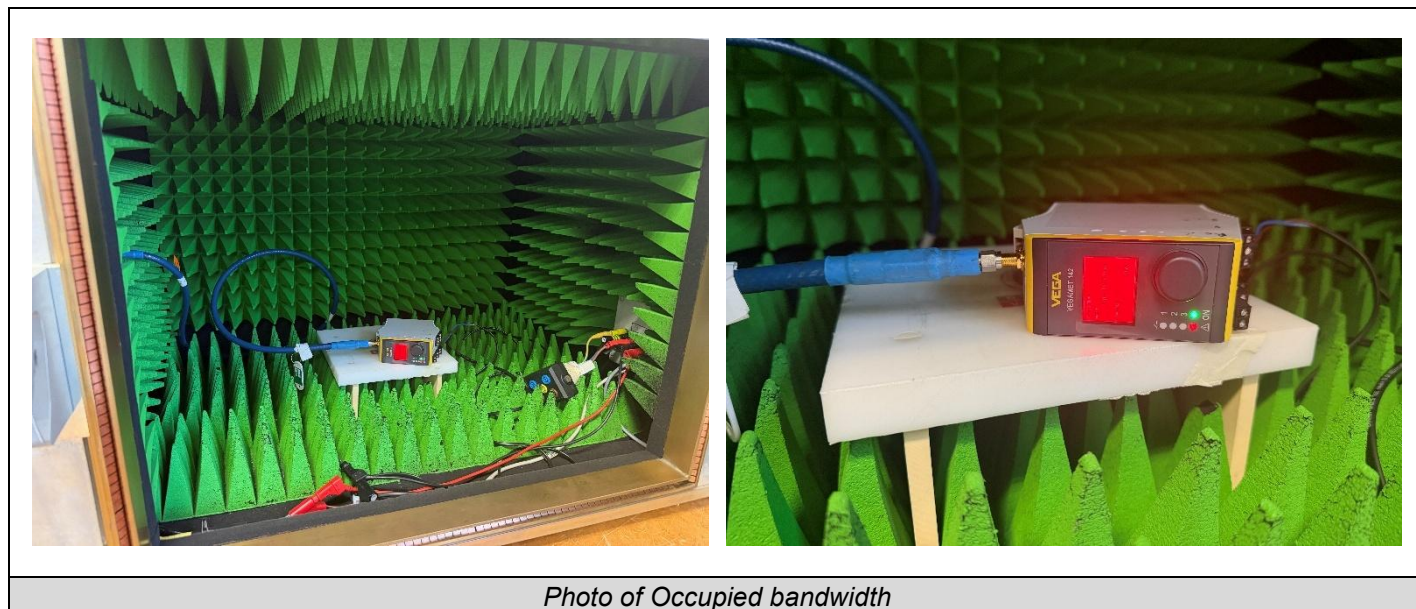
The EUT is turned ON, the center frequency of the spectrum analyzer is set to the fundamental frequency. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

Test Procedure:

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





4.3. LIMIT

None

4.4. TEST EQUIPMENT LIST

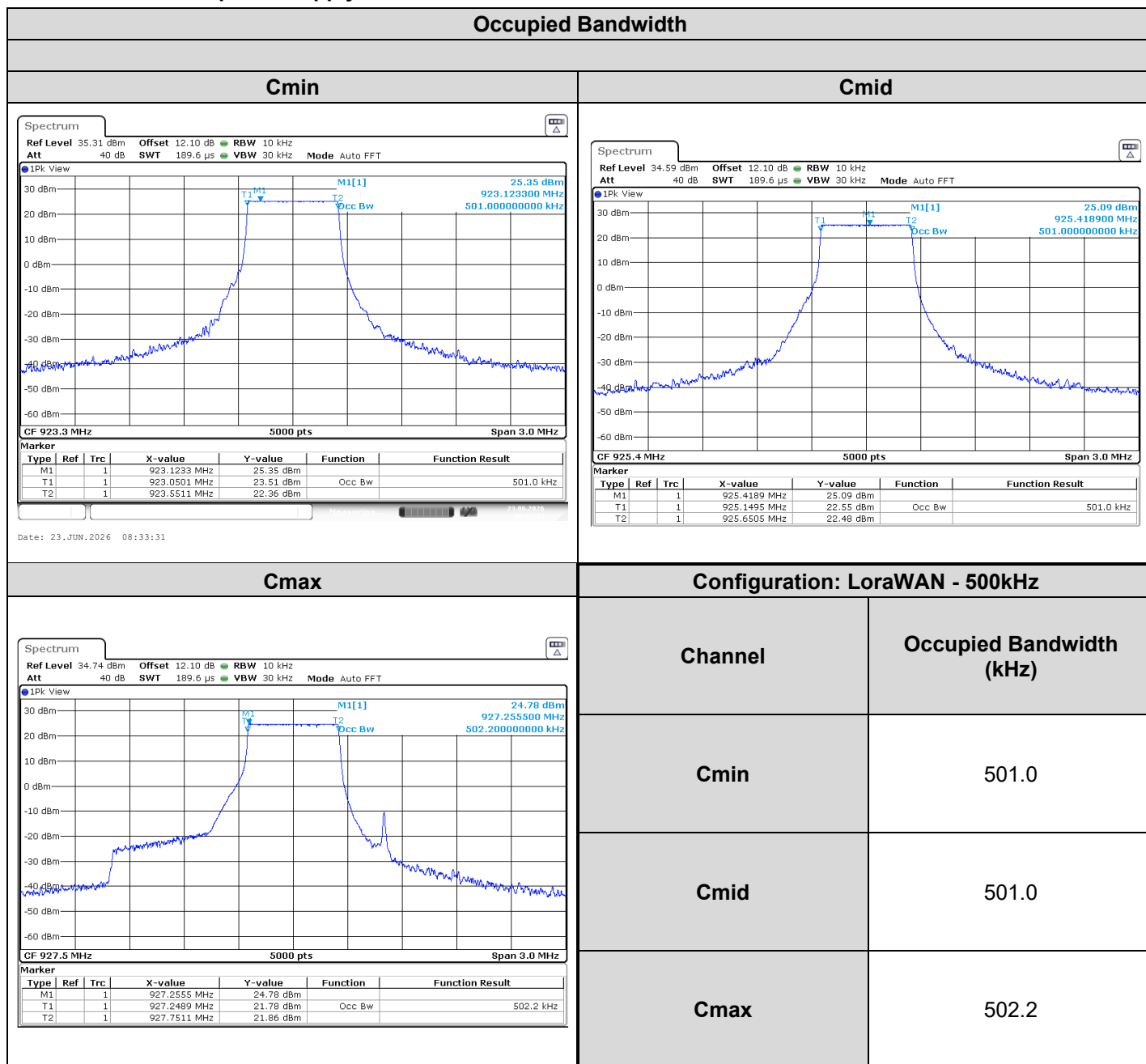
TEST EQUIPMENT USED						
Type	Manufacturer	Description	Model	Identifier	Cal_Date	Cal_Due
RECEIVER / ANALYSER	ROHDE & SCHWARZ	Spectrum analyzer	FSV 40	A4060059	04/2024	08/2026
CABLE	SUCOFLEX	SMA 1.5m	18GHz	A5329863	08/2025	08/2026
CABLE	HUBER-SUHNER	SMK 1.2m Emission Cable 0.5m (Ampl <->Chamber)	SUCOFLEX 102	A5330063	03/2026	03/2027
POWER SUPPLY	RS PRO	DC Power Supply	RS3005P	A7042314	-/-	-/-
ATTENUATOR	AEROFLEX	Attenuator 10dB	—	A7122268	08/2025	08/2027
ANECHOIC CHAMBER	SIEPEL	Full Anechoic Room	—	D3044024	-/-	-/-
SOFT	LCIE SUD EST	Mesure_DTS_FCC-ISED	v1.4	L2000060	NA	NA
CONTROL TOOLS	FLUKE	Multimeter	289	A1241119	05/2025	05/2027
FREQUENCY GENERATOR	ROHDE & SCHWARZ	Frequency Generator 100kHz-6GHz	SMJ100A	A5400043	09/2024	09/2026
THERMO HYGROMETER	TESTO	Thermo-hygrometer	608-H2	B4204121	05/2025	05/2027

4.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

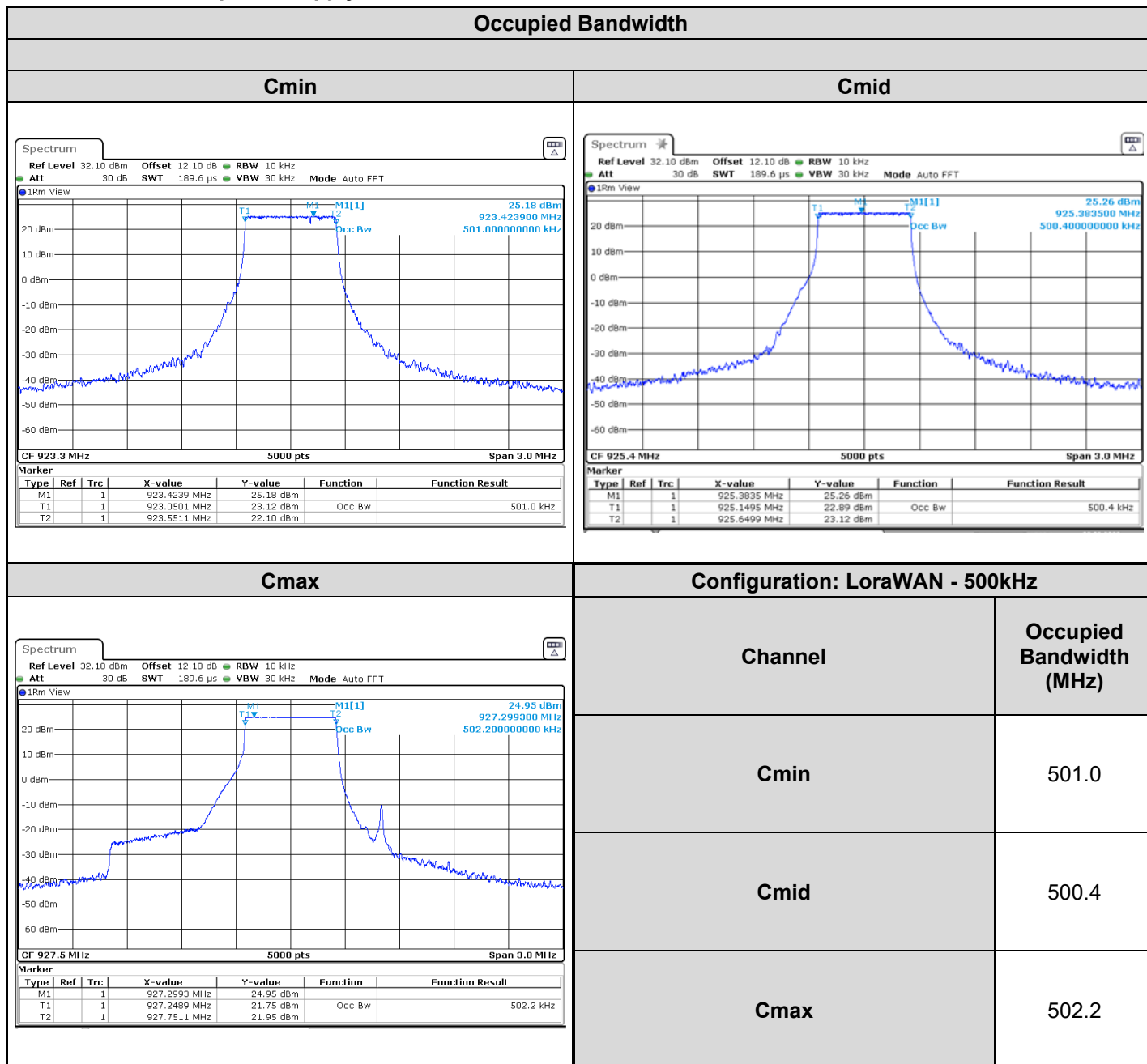
None

4.6. RESULTS

4.6.1. With DC power supply mode



4.6.2. With AC power supply mode



4.7. CONCLUSION

Occupied Channel Bandwidth measurement performed on the sample of the product **VEGAMET Air 142**, Sn: **14200004**, in configuration and description presented in this test report, show levels **compliant** to the **RSS-GEN** limits.

5. 6dB BANDWIDTH

5.1. TEST CONDITIONS

Date of test : June 23, 2026
Test performed by : Majid MOURZAGH
Relative humidity (%) : 35
Ambient temperature (°C) : 25

5.2. TEST SETUP

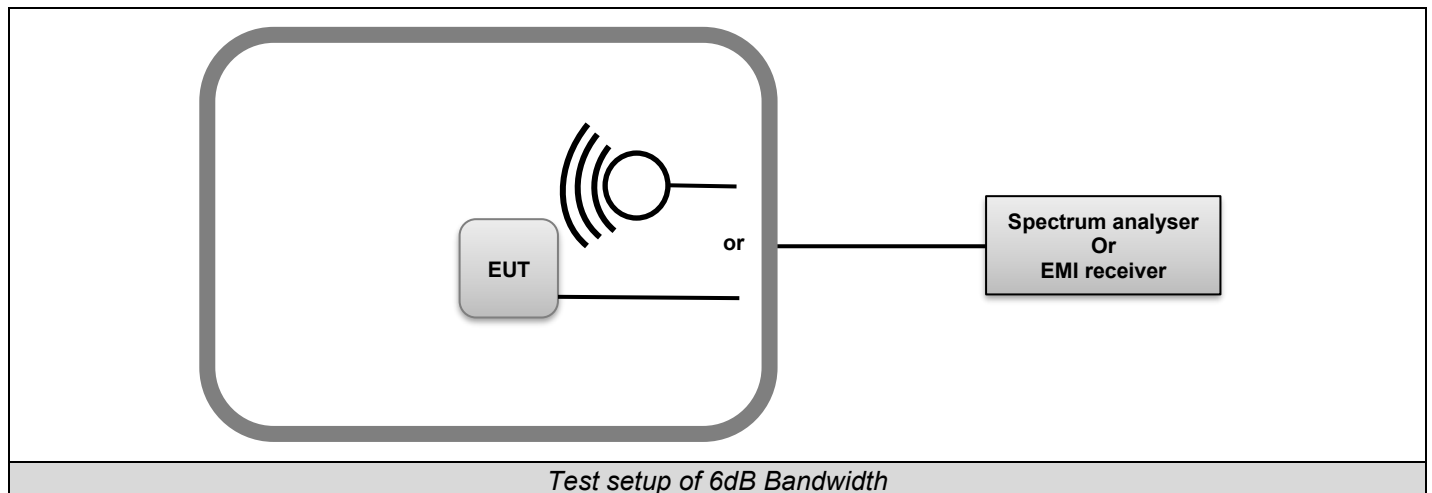
The Equipment Under Test is installed in an anechoic chamber.
Measurement is performed with a spectrum analyzer in conducted method.

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:

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.



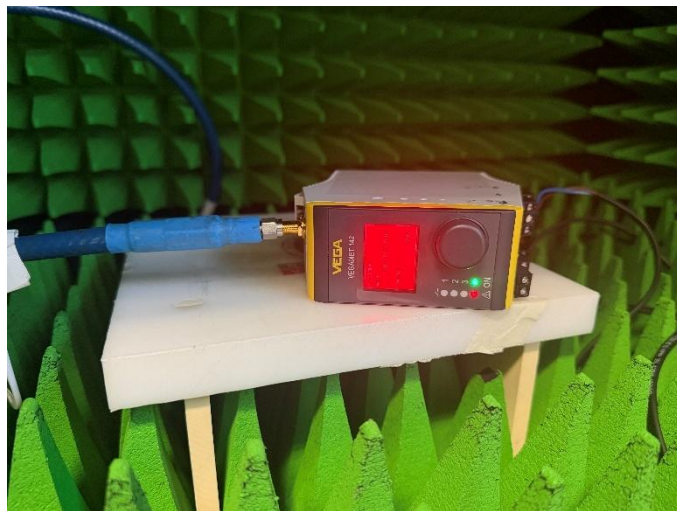
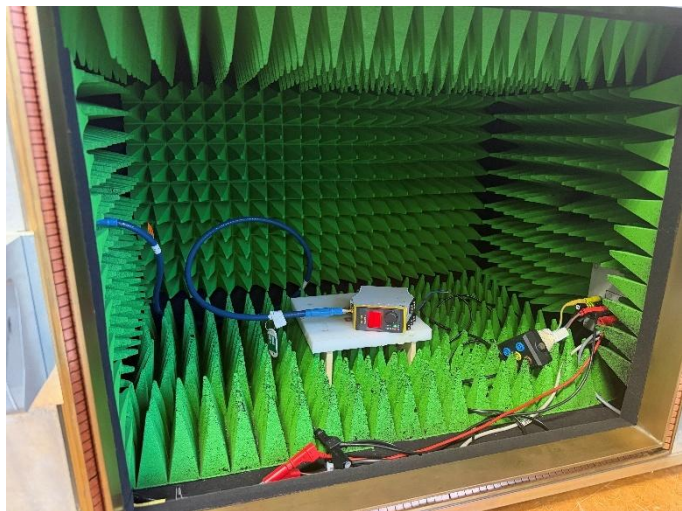


Photo of 6dB bandwidth

5.3. ***LIMIT***

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



5.4. TEST EQUIPMENT LIST

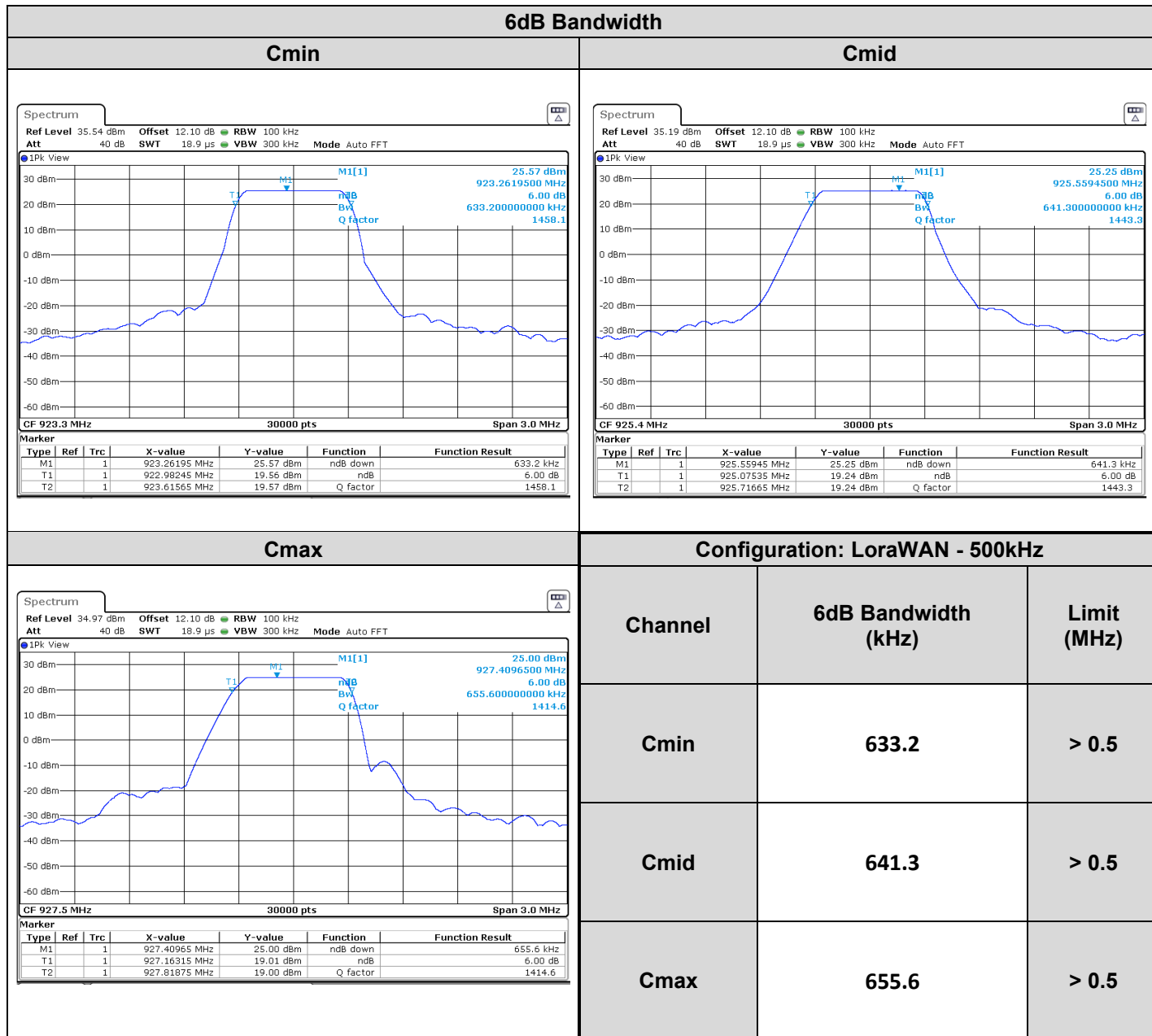
TEST EQUIPMENT USED						
Type	Manufacturer	Description	Model	Identifier	Cal_Date	Cal_Due
RECEIVER / ANALYSER	ROHDE & SCHWARZ	Spectrum analyzer	FSV 40	A4060059	04/2024	08/2026
CABLE	SUCOFLEX	SMA 1.5m	18GHz	A5329863	08/2025	08/2026
CABLE	HUBER-SUHNER	SMK 1.2m Emission Cable 0.5m (Ampl <->Chamber)	SUCOFLEX 102	A5330063	03/2026	03/2027
POWER SUPPLY	RS PRO	DC Power Supply	RS3005P	A7042314	-/-	-/-
ATTENUATOR	AEROFLEX	Attenuator 10dB	—	A7122268	08/2025	08/2027
ANECHOIC CHAMBER	SIEPEL	Full Anechoic Room	—	D3044024	-/-	-/-
SOFT	LCIE SUD EST	Mesure_DTS_FCC-ISED	v1.4	L2000060	NA	NA
CONTROL TOOLS	FLUKE	Multimeter	289	A1241119	05/2025	05/2027
FREQUENCY GENERATOR	ROHDE & SCHWARZ	Frequency Generator 100kHz-6GHz	SMJ100A	A5400043	09/2024	09/2026
THERMO HYGROMETER	TESTO	Thermo-hygrometer	608-H2	B4204121	05/2025	05/2027

5.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

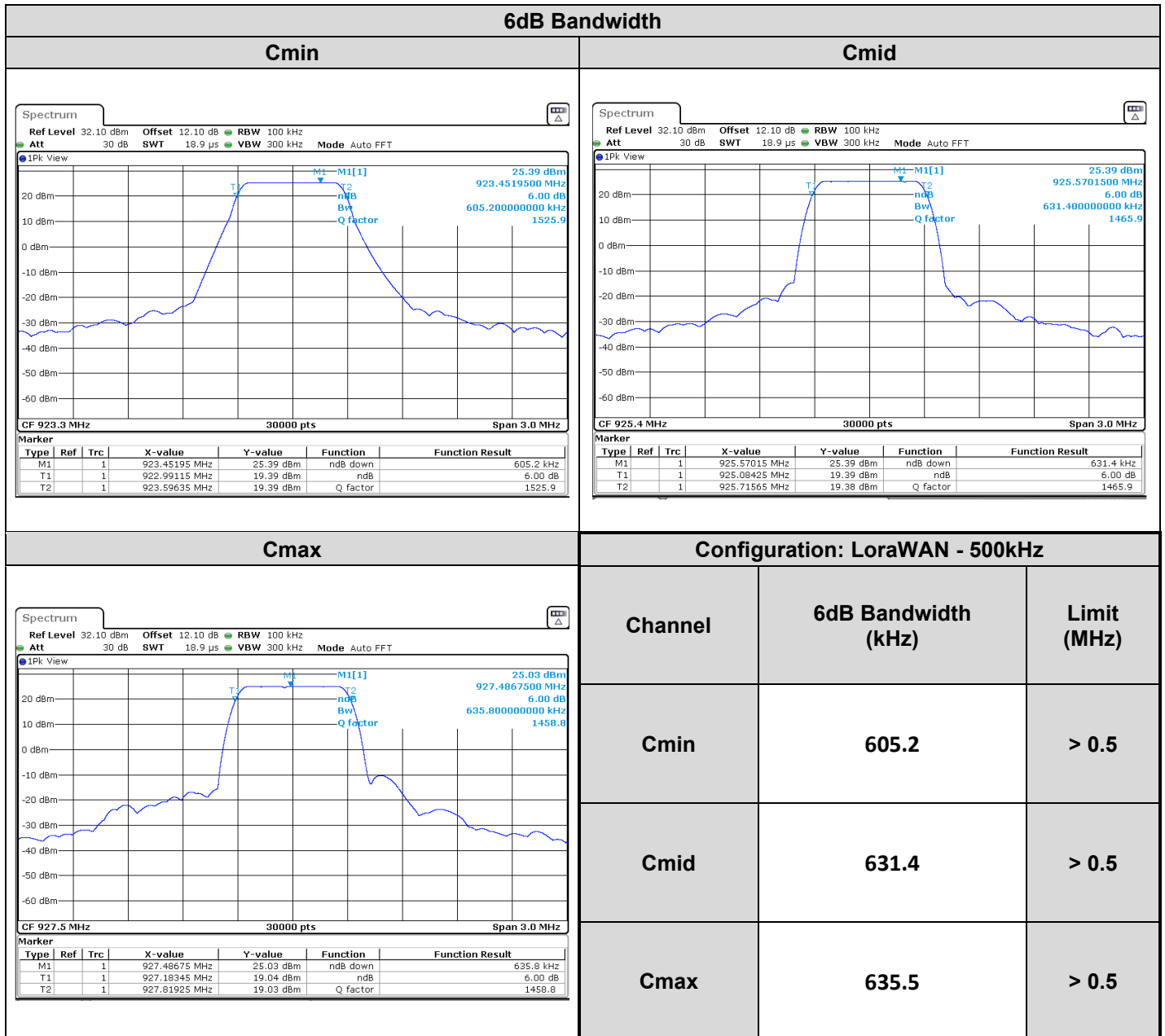
None

5.6. RESULTS

5.6.1. With DC power supply mode



5.6.2. With AC power supply mode



5.7. CONCLUSION

6dB Bandwidth measurement performed on the sample of the product **VEGAMET Air 142**, Sn: **14200004**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247** limits.



6. MAXIMUM CONDUCTED OUTPUT POWER

6.1. TEST CONDITIONS

Date of test : June 23, 2026
Test performed by : Majid MOURZAGH
Relative humidity (%) : 35
Ambient temperature (°C) : 25

6.2. TEST SETUP

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

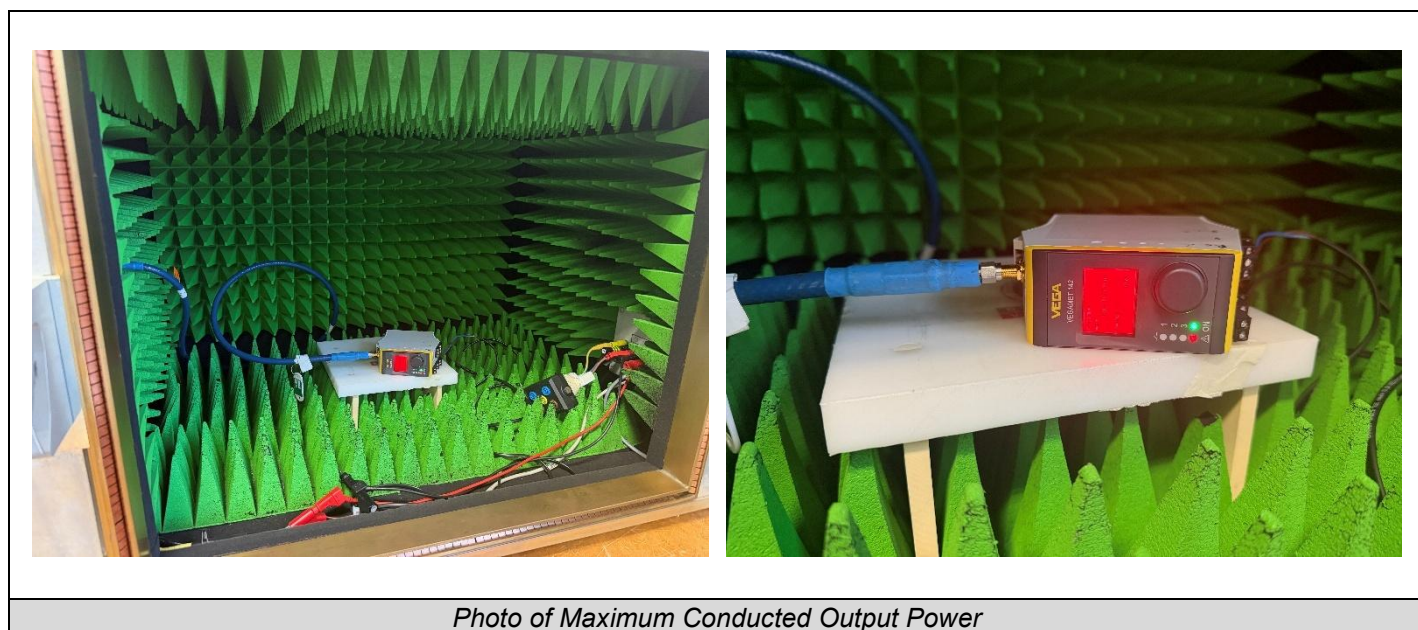
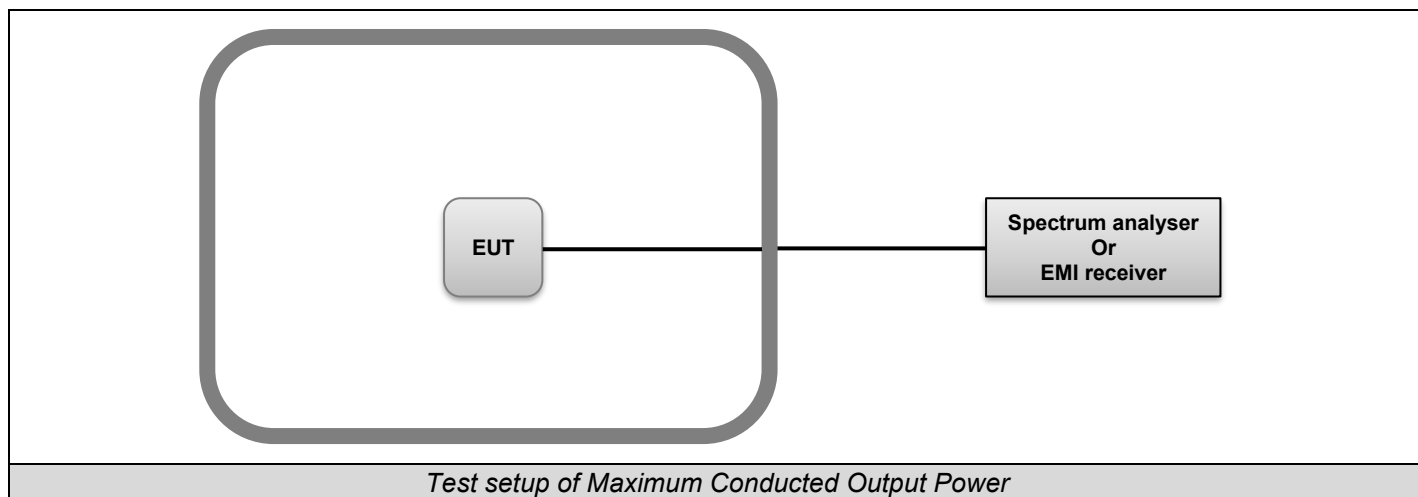
The EUT is turned ON, the center frequency of the spectrum analyzer is set to the fundamental frequency. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

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

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





6.3. 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

6.4. TEST EQUIPMENT LIST

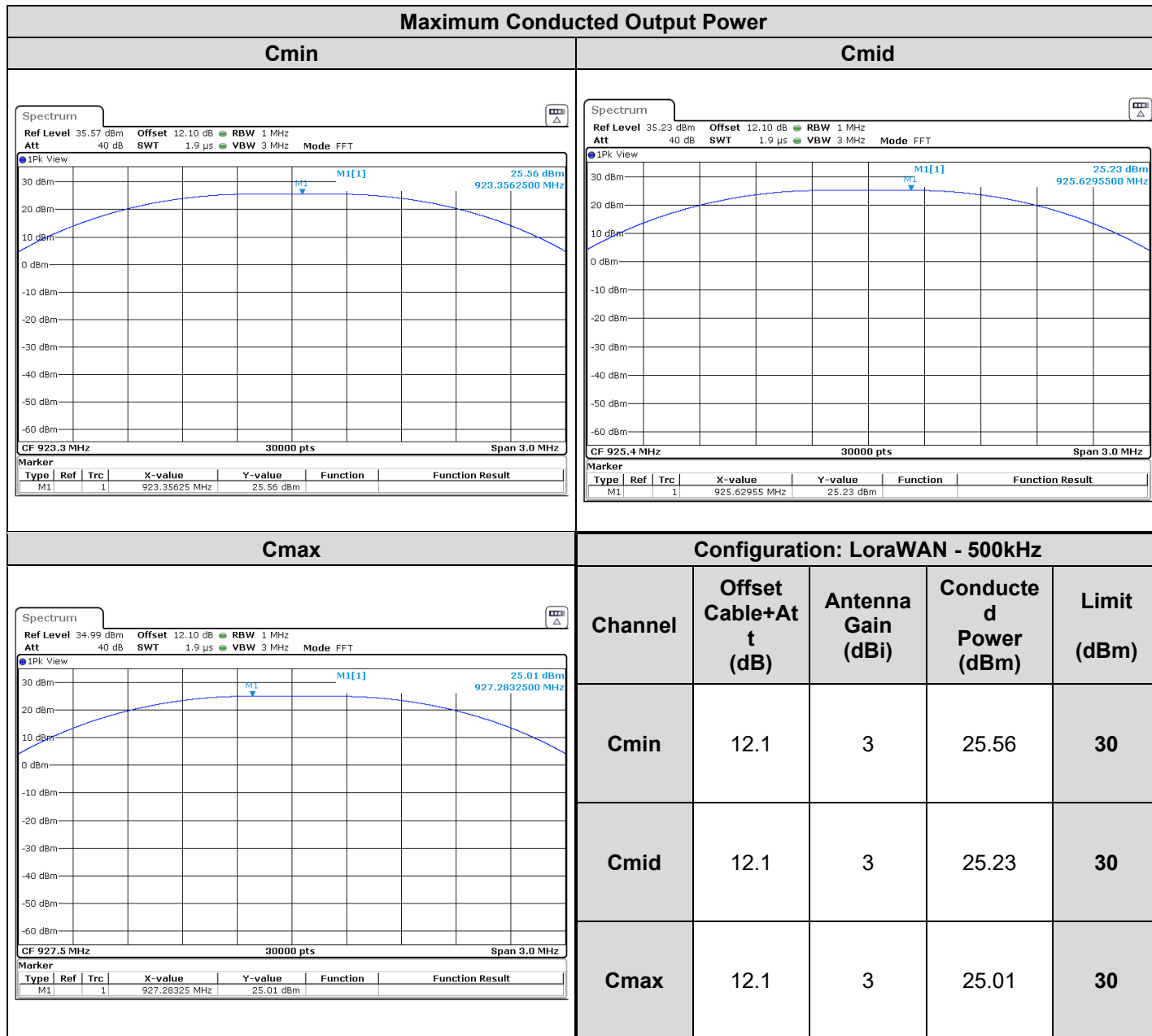
TEST EQUIPMENT USED						
Type	Manufacturer	Description	Model	Identifier	Cal_Date	Cal_Due
RECEIVER / ANALYSER	ROHDE & SCHWARZ	Spectrum analyzer	FSV 40	A4060059	04/2024	08/2026
CABLE	SUCOFLEX	SMA 1.5m	18GHz	A5329863	08/2025	08/2026
CABLE	HUBER-SUHNER	SMK 1.2m Emission Cable 0.5m (Ampl <->Chamber)	SUCOFLEX 102	A5330063	03/2026	03/2027
POWER SUPPLY	RS PRO	DC Power Supply	RS3005P	A7042314	-/-	-/-
ATTENUATOR	AEROFLEX	Attenuator 10dB	—	A7122268	08/2025	08/2027
ANECHOIC CHAMBER	SIEPEL	Full Anechoic Room	—	D3044024	-/-	-/-
SOFT	LCIE SUD EST	Mesure_DTS_FCC-ISED	v1.4	L2000060	NA	NA
CONTROL TOOLS	FLUKE	Multimeter	289	A1241119	05/2025	05/2027
FREQUENCY GENERATOR	ROHDE & SCHWARZ	Frequency Generator 100kHz-6GHz	SMJ100A	A5400043	09/2024	09/2026
THERMO HYGROMETER	TESTO	Thermo-hygrometer	608-H2	B4204121	05/2025	05/2027

6.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

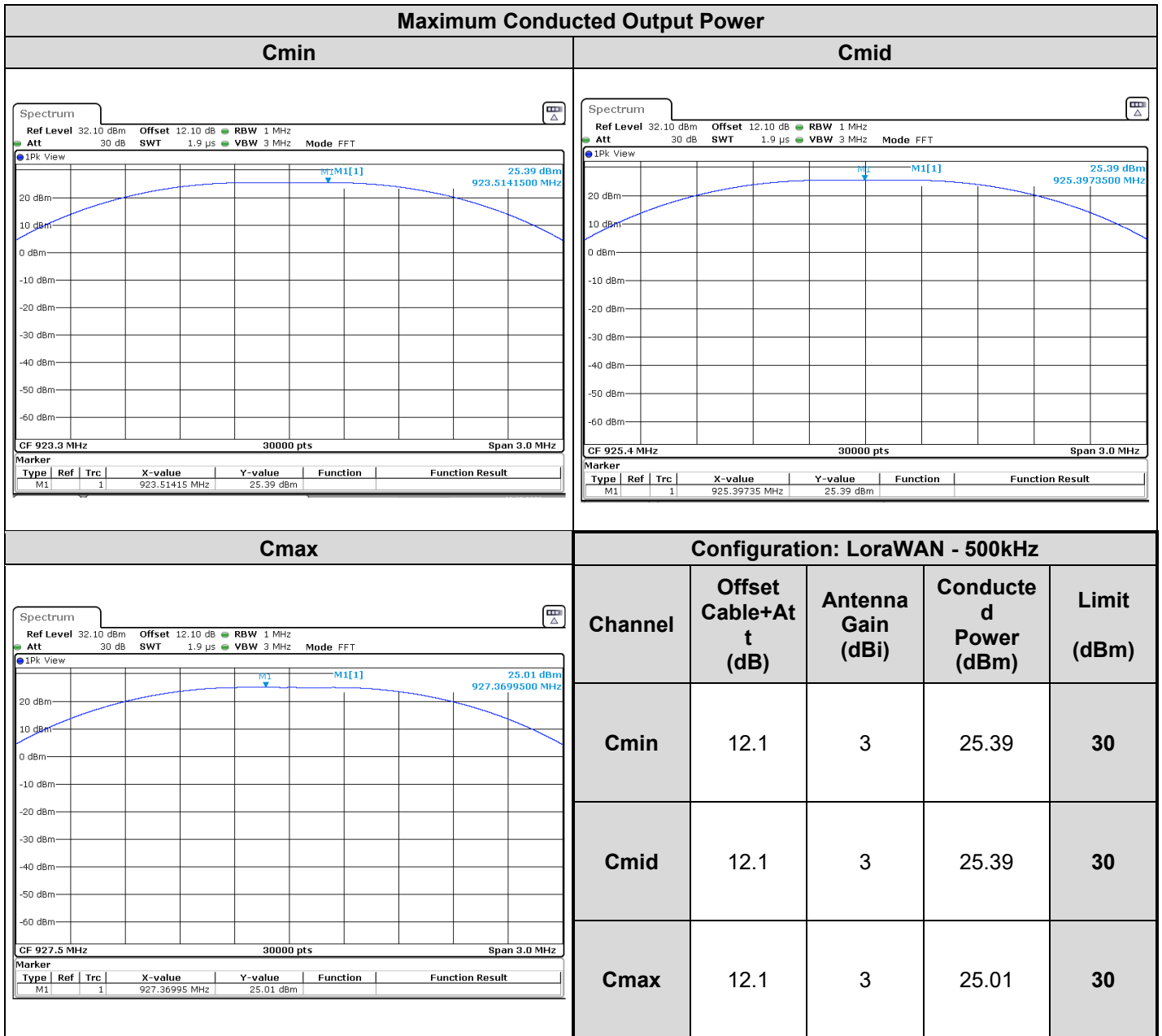
None

6.6. RESULTS

6.6.1. With DC power supply mode



6.6.2. With AC power supply mode



6.7. CONCLUSION

Maximum Output Conducted Power measurement performed on the sample of the product **VEGAMET Air 142**, Sn: **14200004**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247** limits.

7. POWER SPECTRAL DENSITY

7.1. TEST CONDITIONS

Date of test : June 23, 2026
Test performed by : Majid MOURZAGH
Relative humidity (%) : 35
Ambient temperature (°C) : 25

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 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.

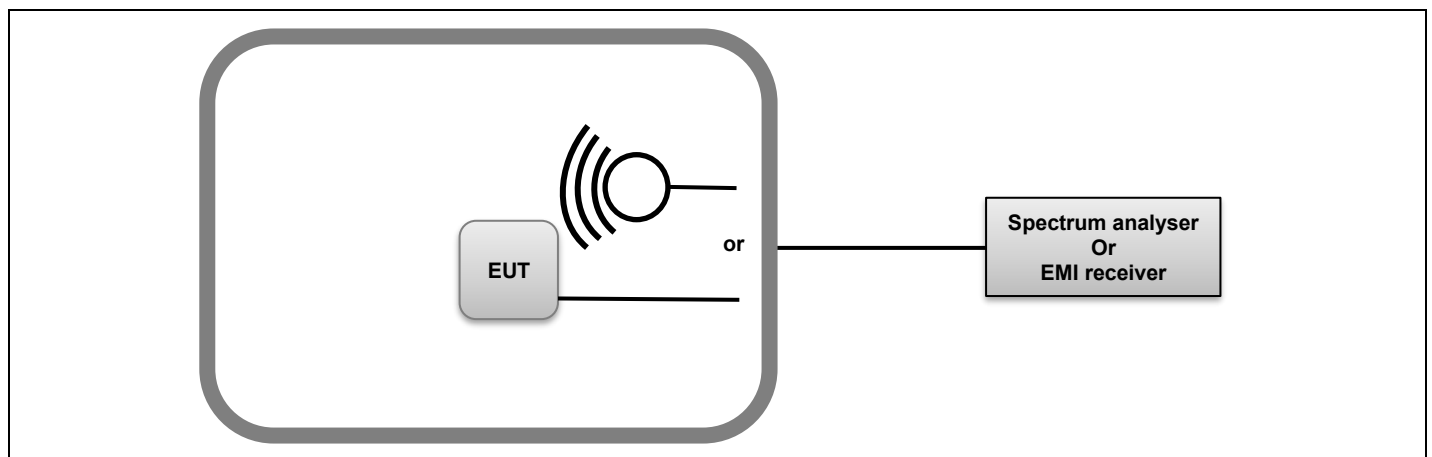
Test Procedure used: KDB 558074 D01 DTS Meas Guidance v05r02 § 8.4 (Method AVGPSD-1)

KDB 558074 D01 DTS Meas Guidance v05r02 § 8.4 (Method AVGPSD-1)

Subclause 11.10 of ANSI C63.10 is applicable

Method AVGPSD-1 uses trace averaging with EUT transmitting at full power throughout each sweep. The following procedure may be used when the maximum (average) conducted output power was used to determine compliance to the fundamental output power limit. This is the baseline method for determining the maximum (average) conducted PSD level. If the instrument has a power averaging (rms) detector, then it must be used; otherwise, use the sample detector. The EUT must be configured to transmit continuously ($D \geq 98\%$), or else sweep triggering/signal gating must be implemented to ensure that measurements are made only when the EUT is transmitting at its maximum power control level (no transmitter OFF time to be considered):

- o a) Set instrument center frequency to DTS channel center frequency.
- o b) Set span > 1.5 times the OBW.
- o c) Set RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- o d) Set VBW $\geq [3 \times \text{RBW}]$.
- o e) Detector = power averaging (rms) or sample detector (when rms not available).
- o f) Ensure that the number of measurement points in the sweep $\geq [2 \times \text{span} / \text{RBW}]$.
- o g) Sweep time = auto couple.
- o h) Employ trace averaging (rms) mode over a minimum of 100 traces.
- o i) Use the peak marker function to determine the maximum amplitude level.
- o j) If the measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced).



Test setup of Power Spectral Density

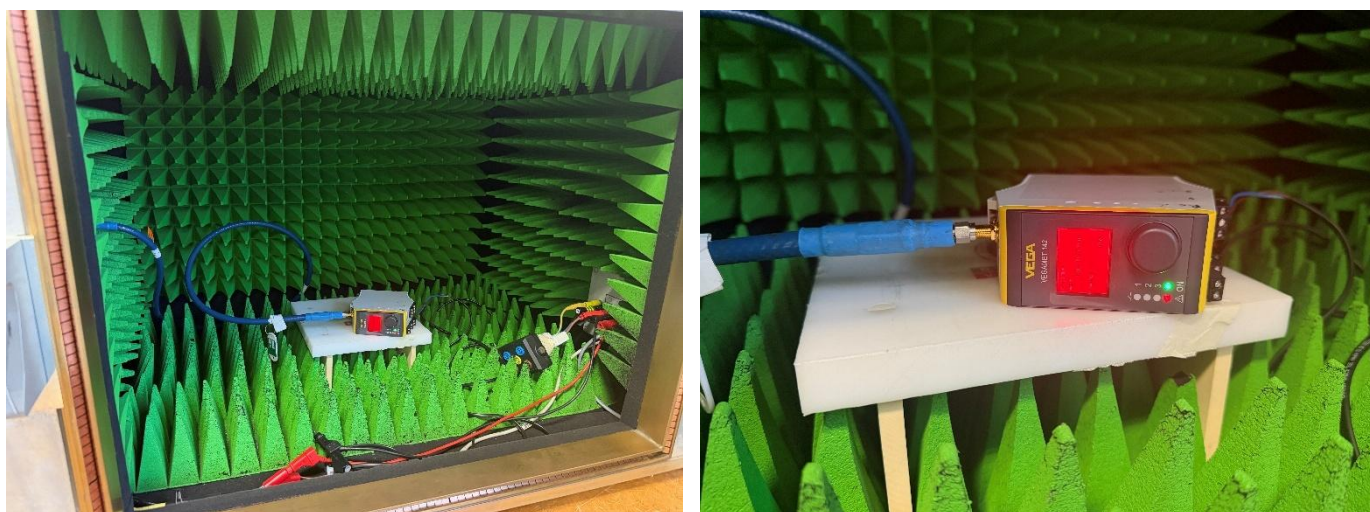


Photo of Power Spectral Density



7.3. LIMIT

Frequency range	Power Spectral Density
902-928MHz 2400MHz to 2483.5MHz 5725-5850 MHz	≤8dBm / 3kHz *

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

7.4. TEST EQUIPMENT LIST

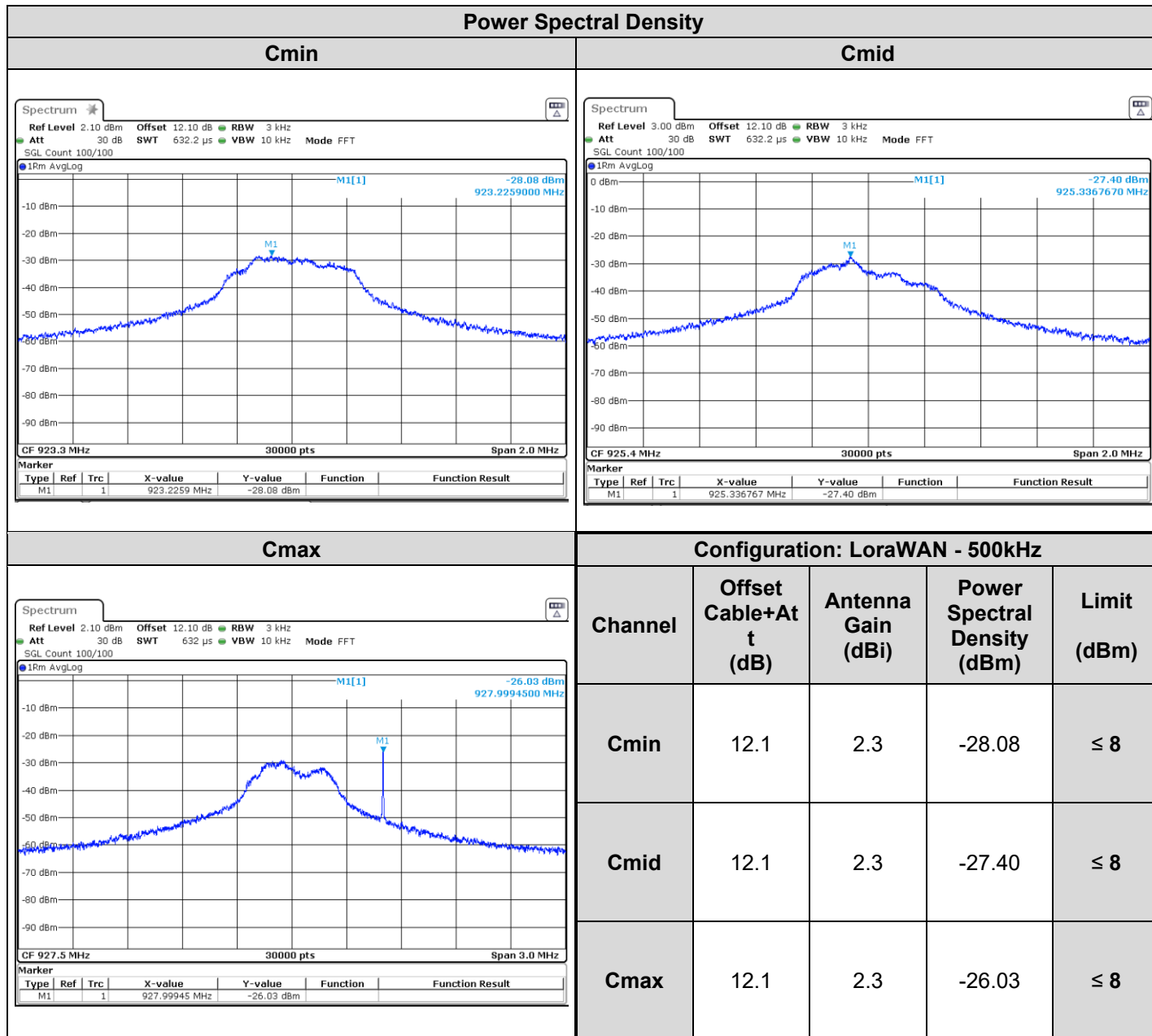
TEST EQUIPMENT USED						
Type	Manufacturer	Description	Model	Identifier	Cal_Date	Cal_Due
RECEIVER / ANALYSER	ROHDE & SCHWARZ	Spectrum analyzer	FSV 40	A4060059	04/2024	08/2026
CABLE	SUCOFLEX	SMA 1.5m	18GHz	A5329863	08/2025	08/2026
CABLE	HUBER-SUHNER	SMK 1.2m Emission Cable 0.5m (Ampl <->Chamber)	SUCOFLEX 102	A5330063	03/2026	03/2027
POWER SUPPLY	RS PRO	DC Power Supply	RS3005P	A7042314	-/-	-/-
ATTENUATOR	AEROFLEX	Attenuator 10dB	—	A7122268	08/2025	08/2027
ANECHOIC CHAMBER	SIEPEL	Full Anechoic Room	—	D3044024	-/-	-/-
SOFT	LCIE SUD EST	Mesure_DTS_FCC-ISED	v1.4	L2000060	NA	NA
CONTROL TOOLS	FLUKE	Multimeter	289	A1241119	05/2025	05/2027
FREQUENCY GENERATOR	ROHDE & SCHWARZ	Frequency Generator 100kHz-6GHz	SMJ100A	A5400043	09/2024	09/2026
THERMO HYGROMETER	TESTO	Thermo-hygrometer	608-H2	B4204121	05/2025	05/2027

7.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

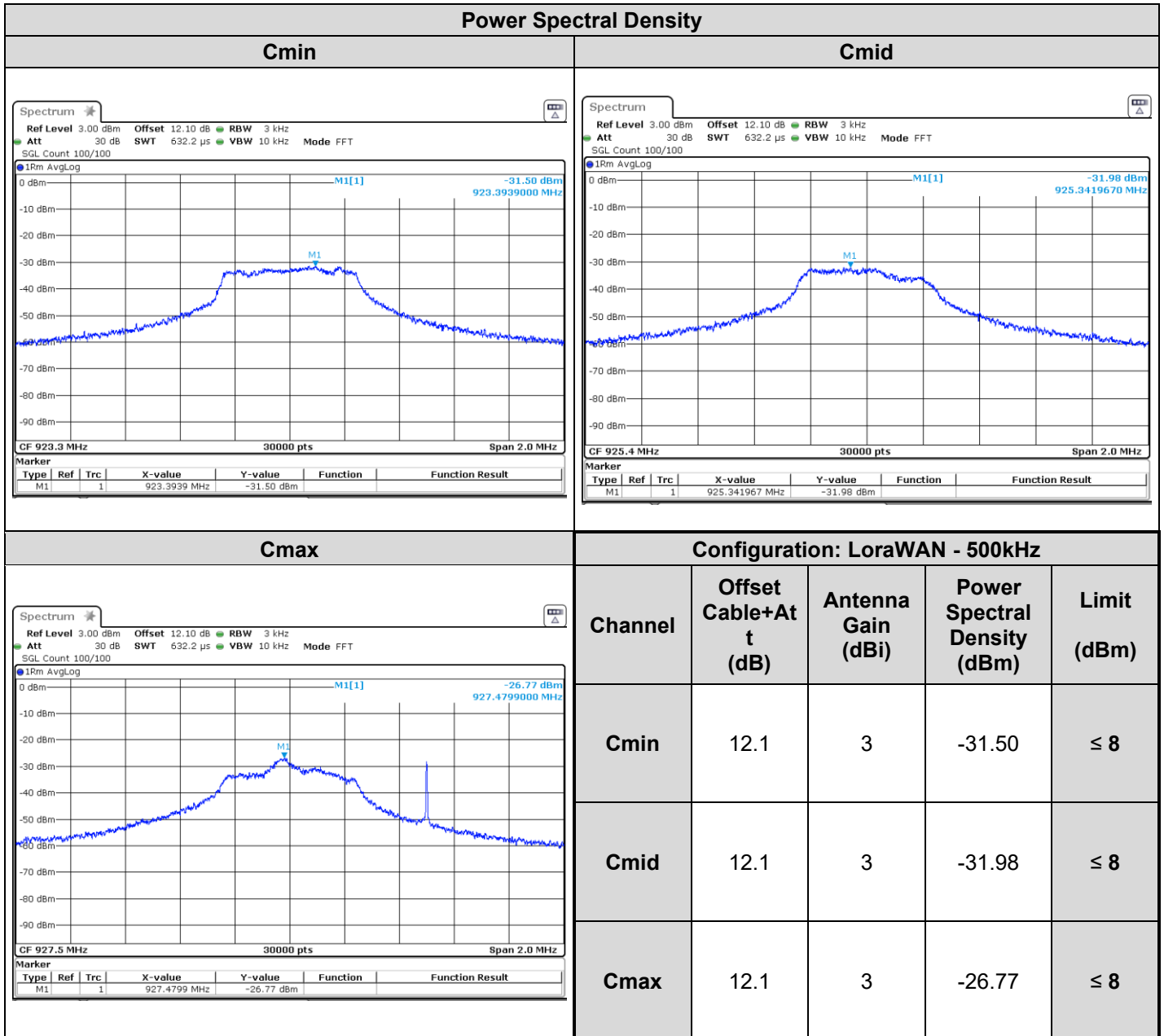
None

7.6. RESULTS

7.6.1. With DC power supply mode



7.6.2. With AC power supply mode



7.7. CONCLUSION

Power Spectral Density measurement performed on the sample of the product **VEGAMET Air 142**, Sn: **14200004**, 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 NON-RESTRICTED FREQUENCY BANDS

8.1. TEST CONDITIONS

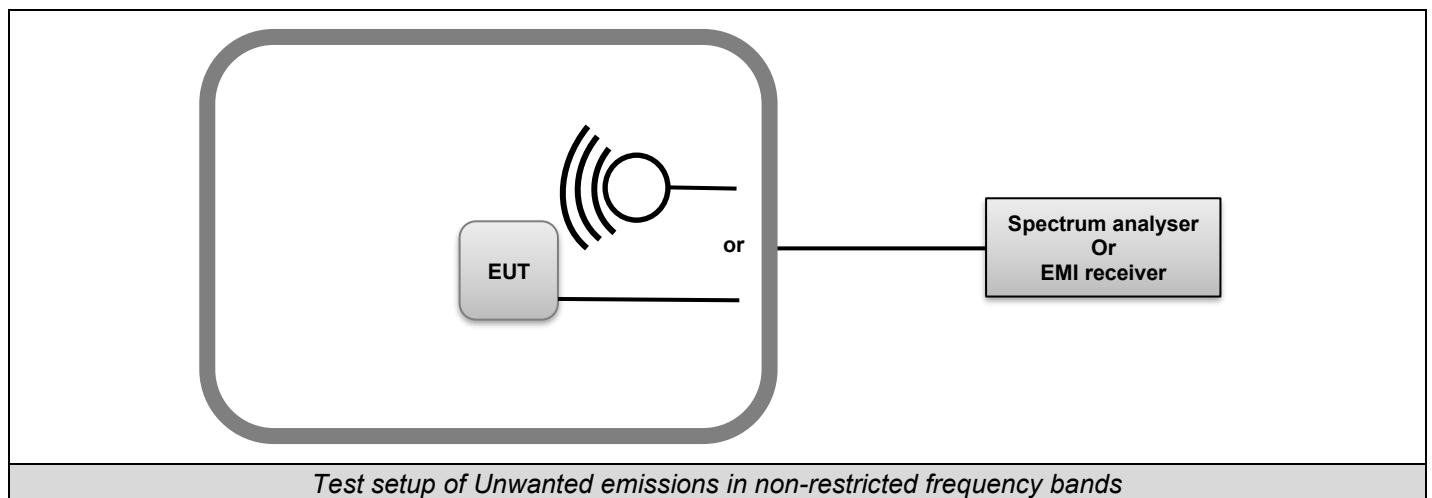
Date of test : June 24, 2026
Test performed by : Majid MOURZAGH
Relative humidity (%) : 37
Ambient temperature (°C) : 25

8.2. 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



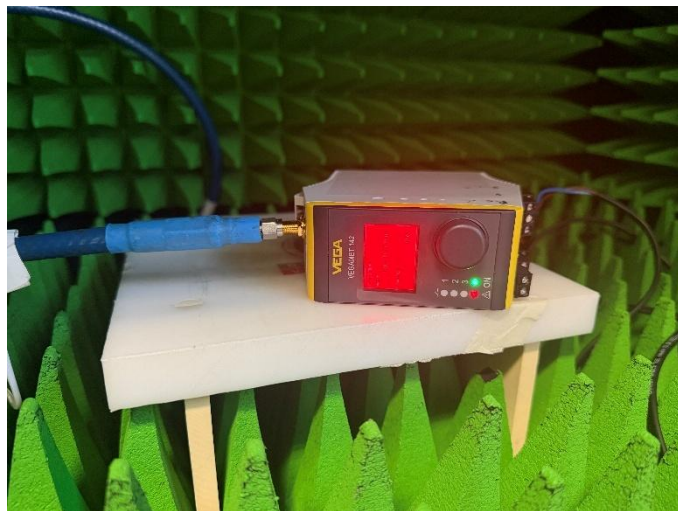
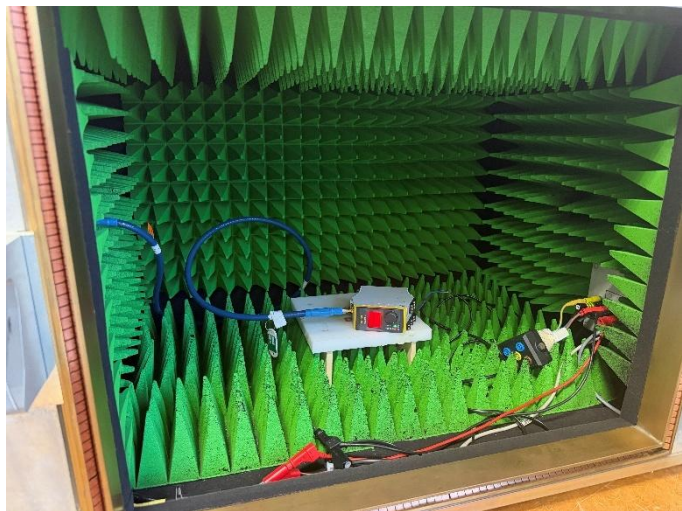


Photo of Unwanted emissions in non-restricted frequency bands



8.3. 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.

8.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED						
Type	Manufacturer	Description	Model	Identifier	Cal_Date	Cal_Due
RECEIVER / ANALYSER	ROHDE & SCHWARZ	Spectrum analyzer	FSV 40	A4060059	04/2024	04/2026
CABLE	SUCOFLEX	SMA 1.5m	18GHz	A5329863	08/2025	08/2026
CABLE	SUCOFLEX	SMA 1.5m	18GHz	A5329864	01/2025	01/2026
POWER SUPPLY	RS PRO	DC Power Supply	RS3005P	A7042314	-/-	-/-
ATTENUATOR	AEROFLEX	Attenuator 10dB	—	A7122268	08/2025	08/2027
ANECHOIC CHAMBER	SIEPEL	Full Anechoic Room	—	D3044024	-/-	-/-
SOFT	LCIE SUD EST	CALCUL_300 328	LCIE Receiver Template v1.6	L2000059-MOI	NA	NA
SOFT	LCIE SUD EST	CALCUL_300 220	v1.1	L2000053-MOI	NA	NA
SOFT	LCIE SUD EST	Mesure_DTS_FCC-ISED	v1.4	L2000060	NA	NA
CONTROL TOOLS	FLUKE	Multimeter	289	A1241119	05/2025	05/2027
FREQUENCY GENERATOR	ROHDE & SCHWARZ	Frequency Generator 100kHz-6GHz	SMJ100A	A5400043	09/2024	09/2026
THERMO HYGROMETER	TESTO	Thermo-hygrometer	608-H2	B4204121	05/2025	05/2027

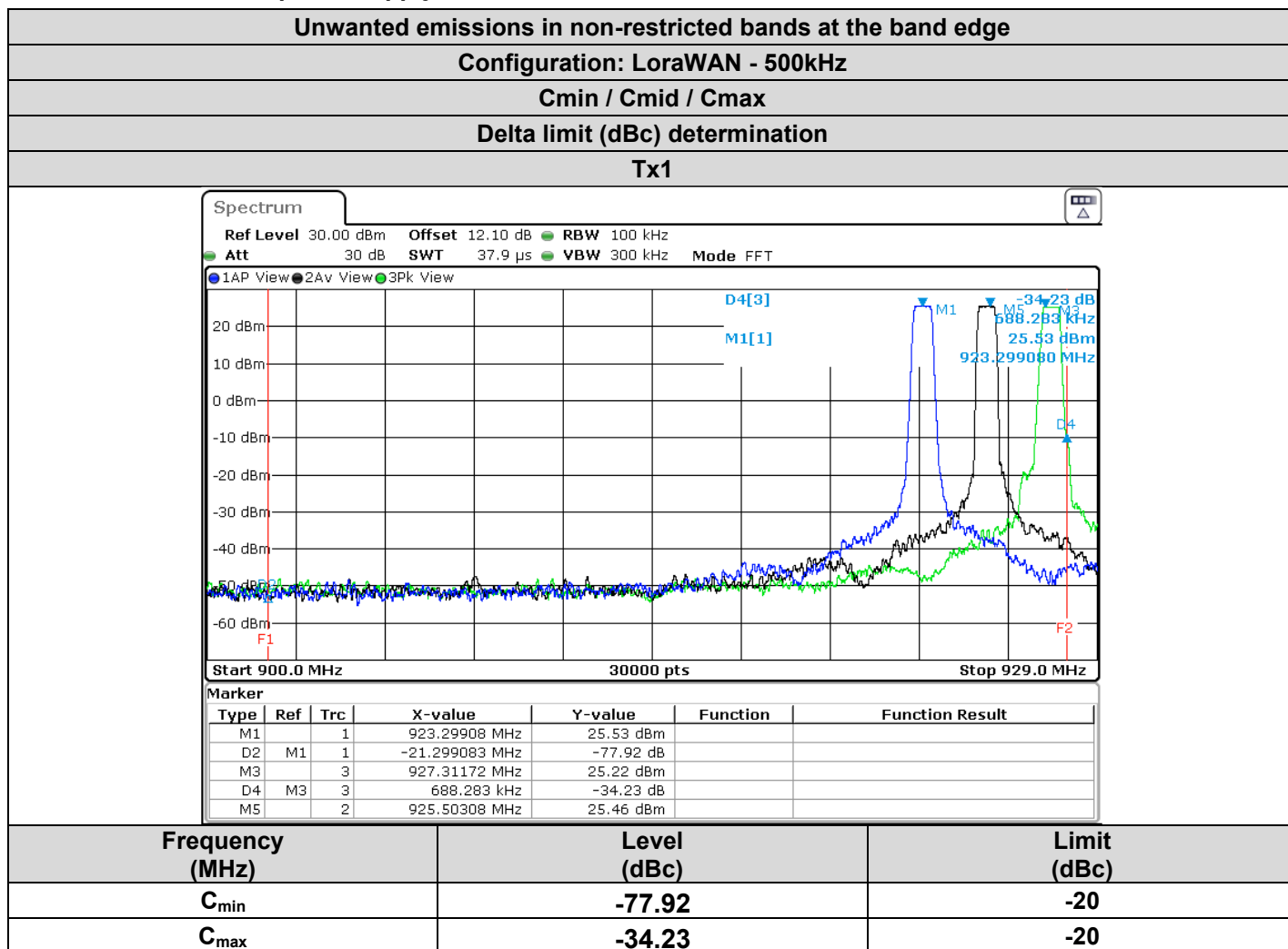
8.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

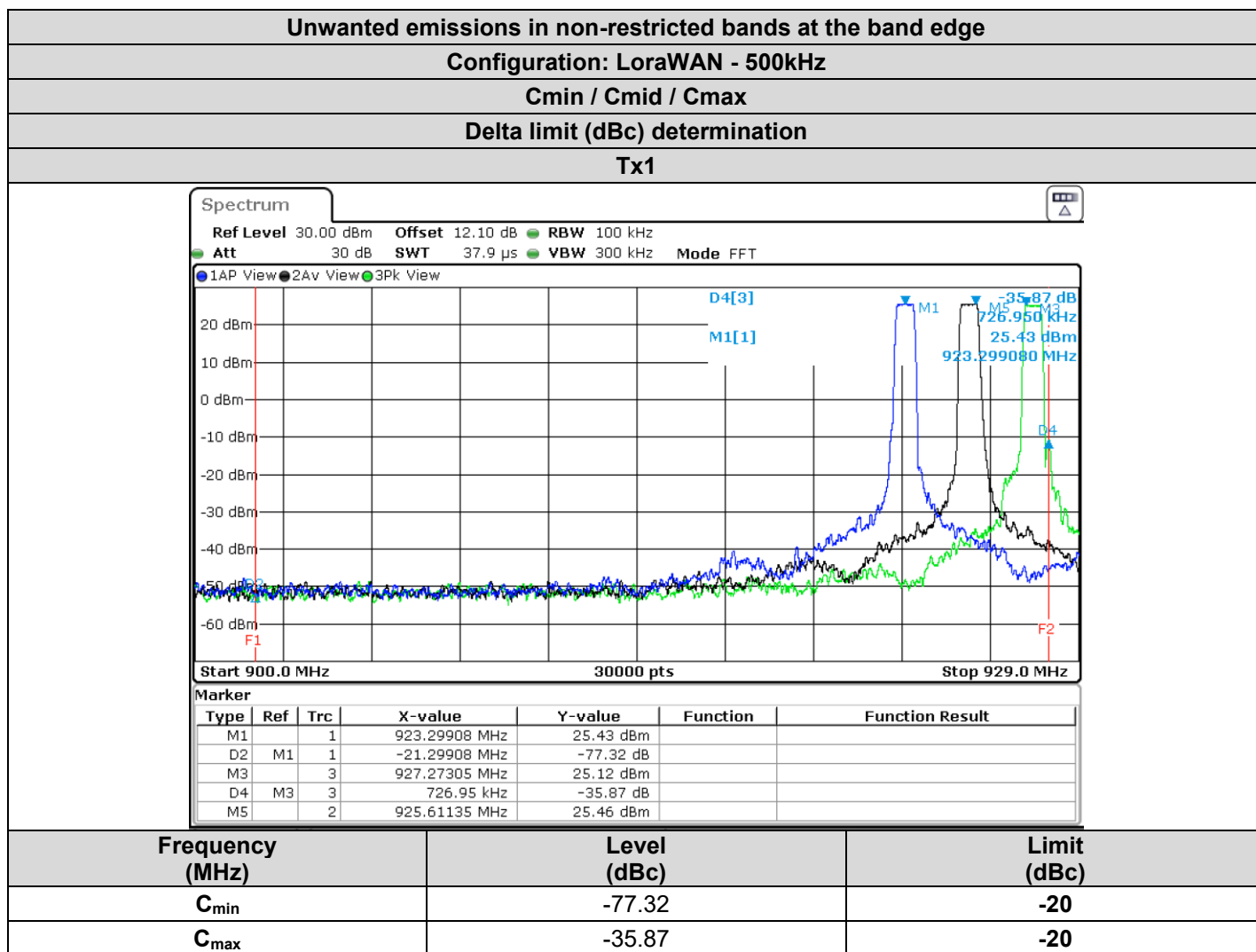
8.6. RESULTS

8.6.1. Operational frequency band

8.6.1.1. With DC power supply mode

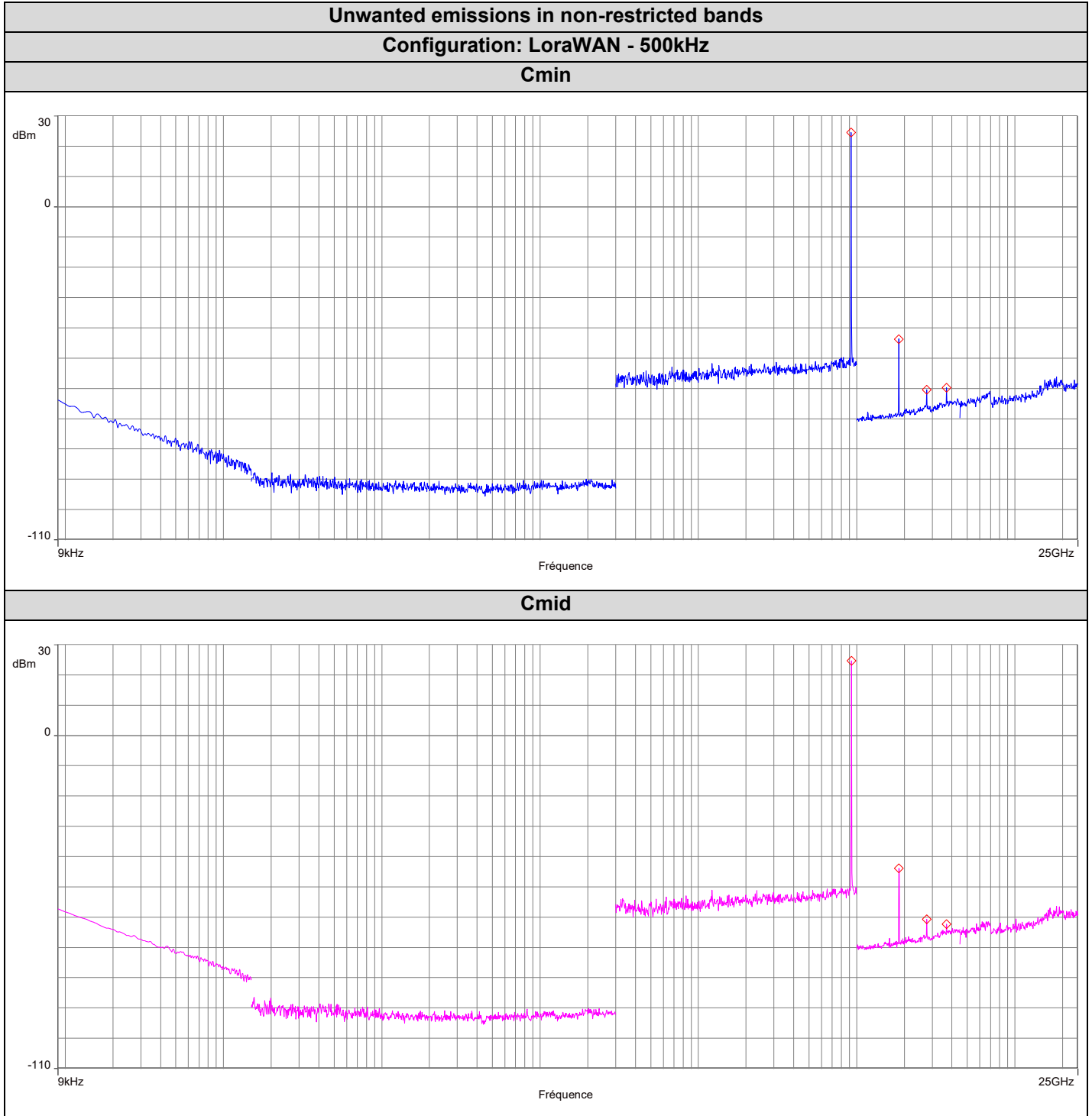


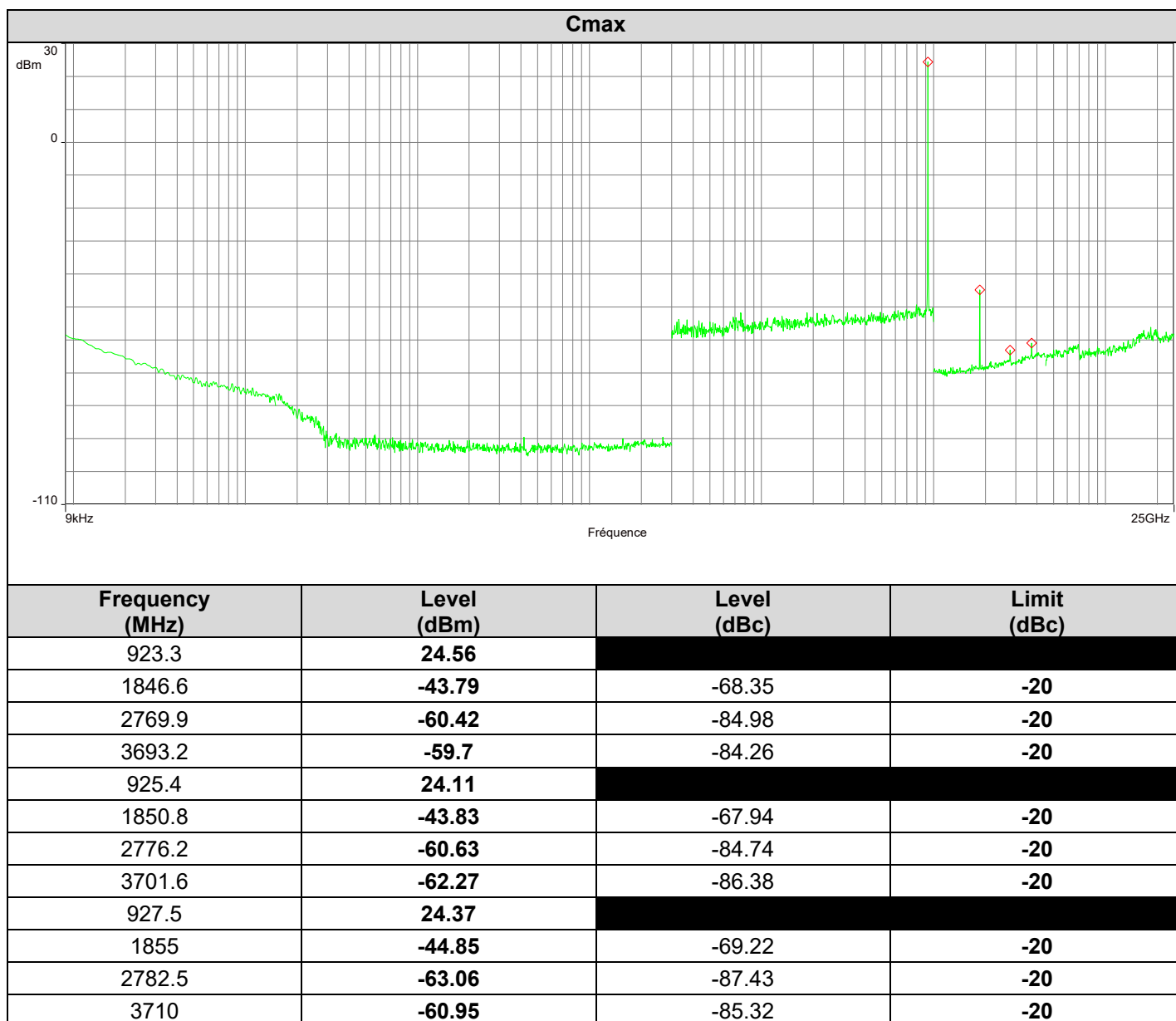
8.6.1.2. With AC power supply mode



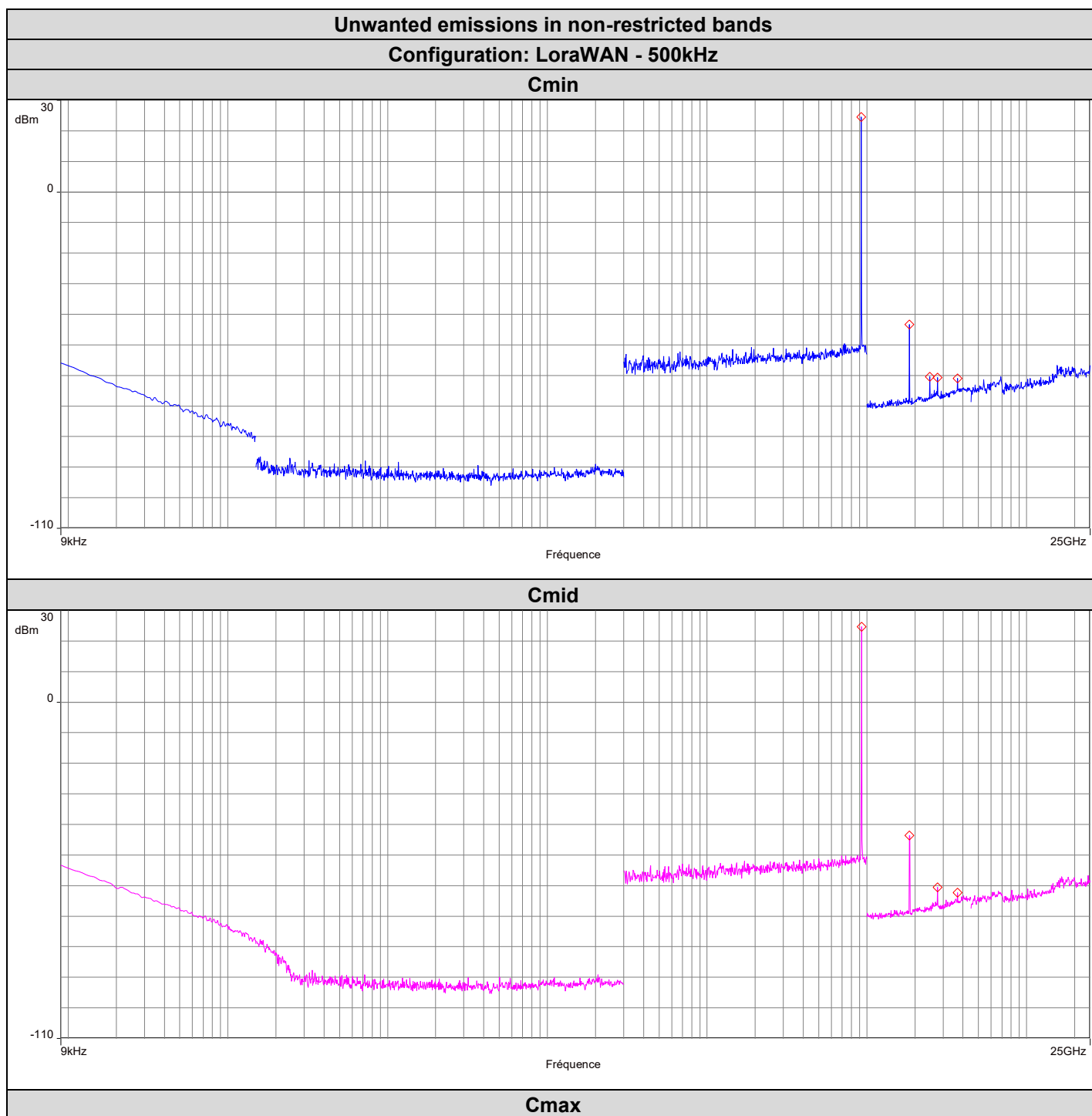
8.6.2. Non restricted frequency bands

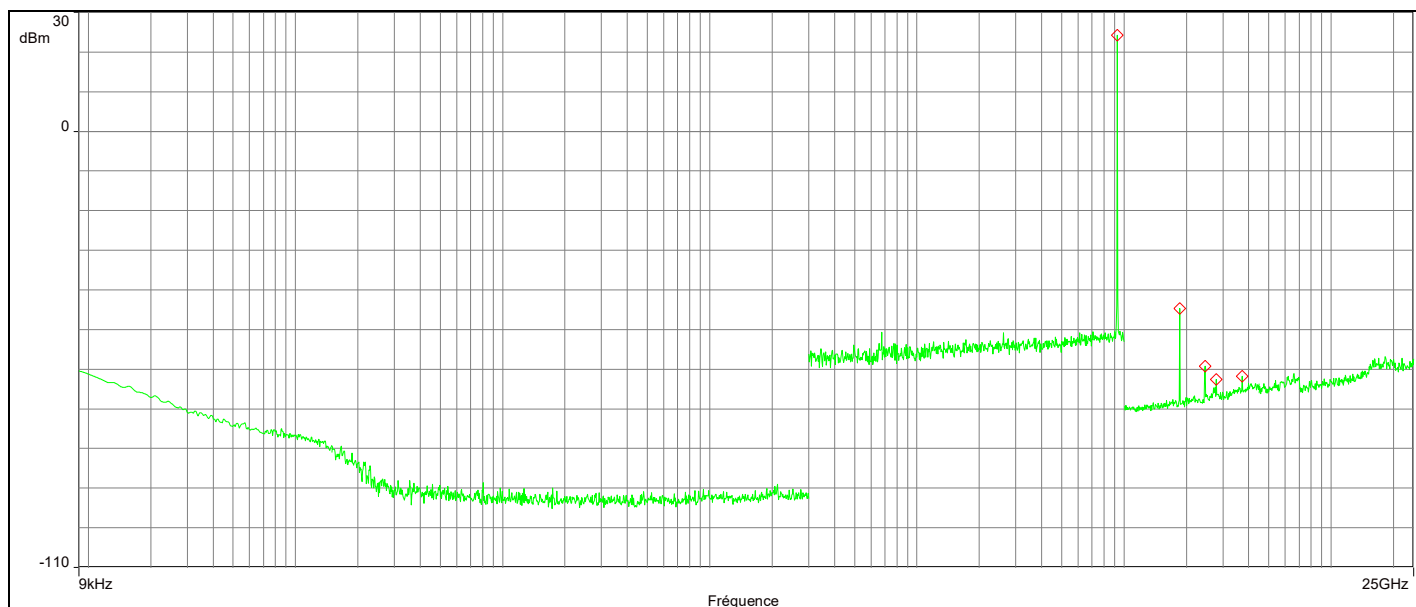
8.6.2.1. With DC power supply mode





8.6.2.2. With AC power supply mode





Frequency (MHz)	Level (dBm)	Level (dBc)	Limit (dBc)
923.3	24.6		
1846.6	-43.39	-67.99	-20
2480	-60.38	-84.98	-20
2769.9	-60.38	-84.98	-20
3693.2	-60.63	-85.23	-20
925.4	24.67		
1850.8	-43.66	-68.33	-20
2776.2	-60.55	-85.22	-20
3701.6	-62.23	-86.9	-20
927.5	24.27		
1855	-43.63	-67.9	-20
2457	-59.29	-83.56	-20
2782.5	-62.57	-86.84	-20
3710	-61.72	-85.99	-20

8.7. CONCLUSION

Unwanted emissions in non-restricted bands and at the band edge measurement performed on the sample of the product **VEGAMET Air 142**, Sn: **14200004**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247** limits.



9. UNWANTED EMISSIONS IN RESTRICTED FREQUENCY BANDS

9.1. TEST CONDITIONS

Date of test	: June 12, 2026	July 28, 2026
Test performed by	: Majid MOURZAGH / Marlon BOUBY	Marlon BOUBY
Relative humidity (%)	: 36	46
Ambient temperature (°C)	: 23	24

9.2. TEST SETUP

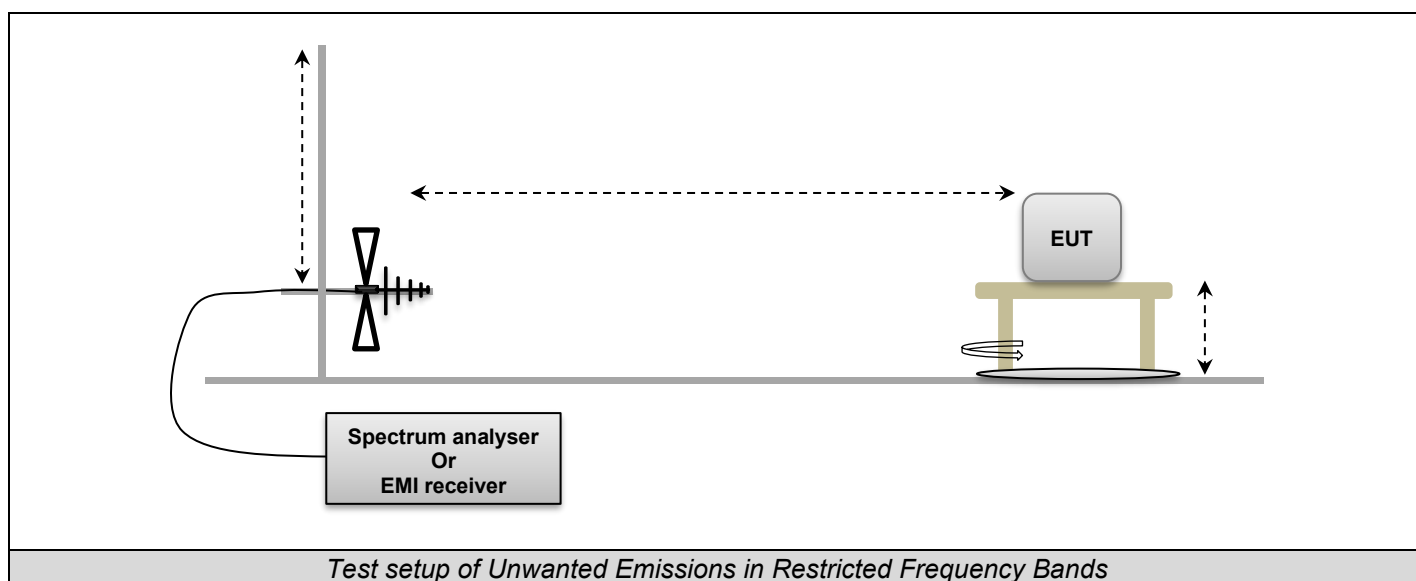
Test procedure:
ANSI C63.10 & FCC Part 15 subpart C

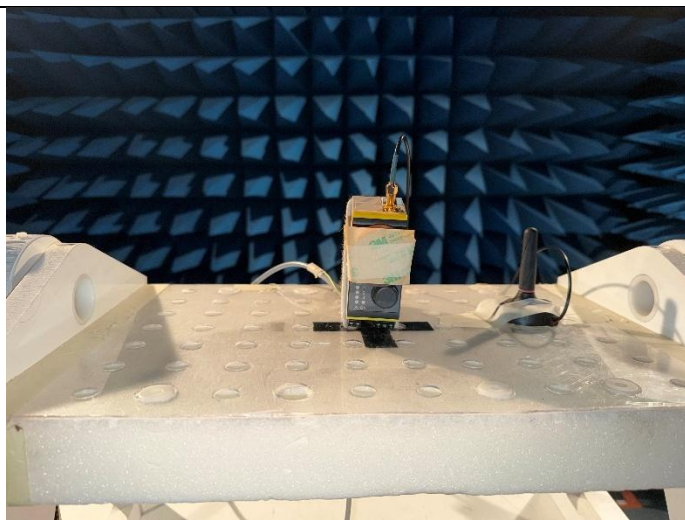
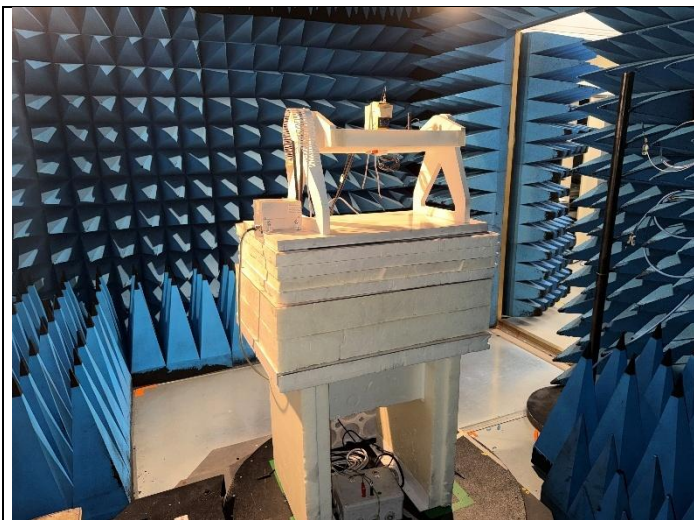
Following frequency ranges, test setup parameters are different and specified in this table:

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 Area Test Site
Distance EUT - Antenna:	3m	10m
Detector:	Peak	QPeak

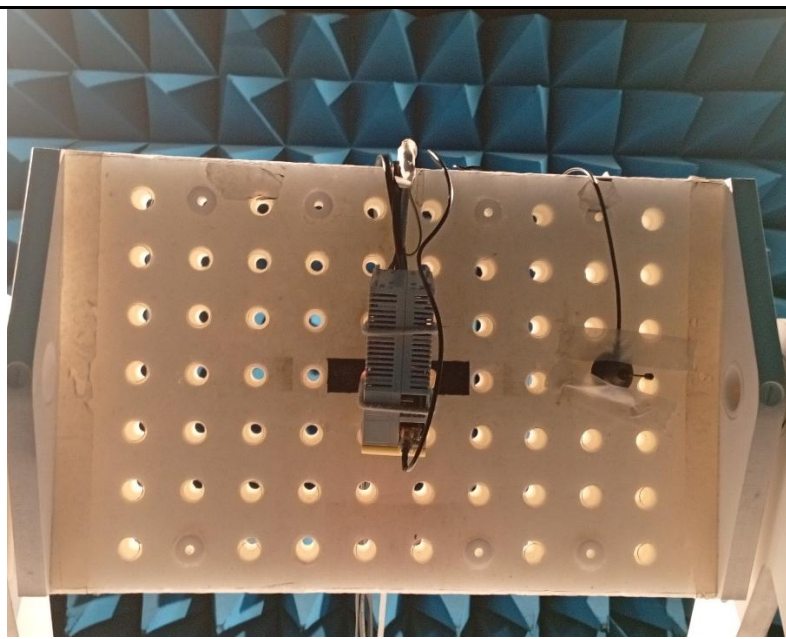
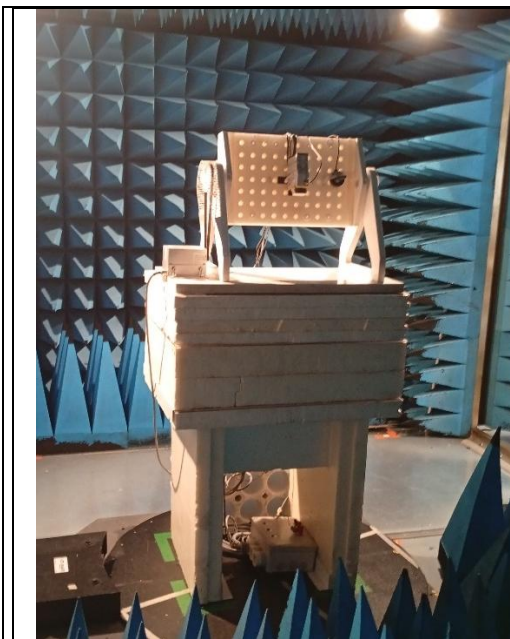
Frequency range:	30MHz to 1GHz	
Test:	Pre-Characterization	Qualification
Antenna Polarization:	Horizontal and Vertical	
Antenna Height:	Centered on EUT (§6.6.5 ANSI C63-10)	Varied from 1m to 4m
Antenna Type:	Bi-Log	
RBW Filter:	120kHz	
Maximization:	Turntable rotation of 360 degrees range and all axis of EUT used in normal configuration	
EUT height:	1.5m	1.5m
Test site:	Full Anechoic Chamber	Open Area Test Site
Distance EUT - Antenna:	3m	10m
Detector:	Peak	QPeak

Frequency range:	1GHz to 9.5GHz	
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





Axis XY



Axis Z

Photo of Unwanted Emissions in Restricted Frequency Bands

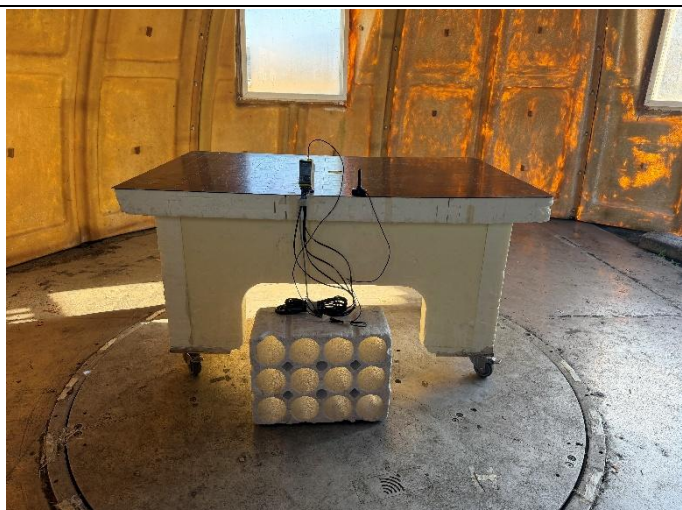


Photo on OATS

9.3. 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

9.4. 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	05/26
SMA Cable 18GHz 0.5m	TELEDYNE	18GHz	A5330060	01/25	05/26
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	-/-	-/-

TEST EQUIPMENT USED ON OATS					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Receiver 20Hz – 8GHz	ROHDE & SCHWARZ	ESU8	A2642019	11/2025	11/2027
EMR comb generator	BARDET	—	A3169050	NA	NA
Cable (OATS)	—	1GHz	A5329623	08/2025	08/2026
Emission Cable	MICRO-COAX	1GHz	A5329656	08/2025	08/2026
Antenna Bi-log	CHASE	CBL6111A	C2040172	07/2024	07/2026
Biconic Antenna	EATON	94455-1	C2040234	11/2025	11/2027
Turntable / Mast controller (OATS)	ETS Lingren	Model 2066	F2000372	-/-	-/-
Antenna Mat (OATS)	ETS Lingren	2071-2	F2000392	-/-	-/-
Turntable (OATS)	ETS Lingren	Model 2187	F2000403	-/-	-/-
OATS	—	—	F2000409	10/2025	10/2026
Table C1/OATS	LCIE	—	F2000445	-/-	-/-
CALCUL_FACTEURS	LCIE SUD EST	v4	L2000035	NA	NA
Emission Cable	CABELTEL	6GHz	A5329069	08/2025	08/2026

9.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

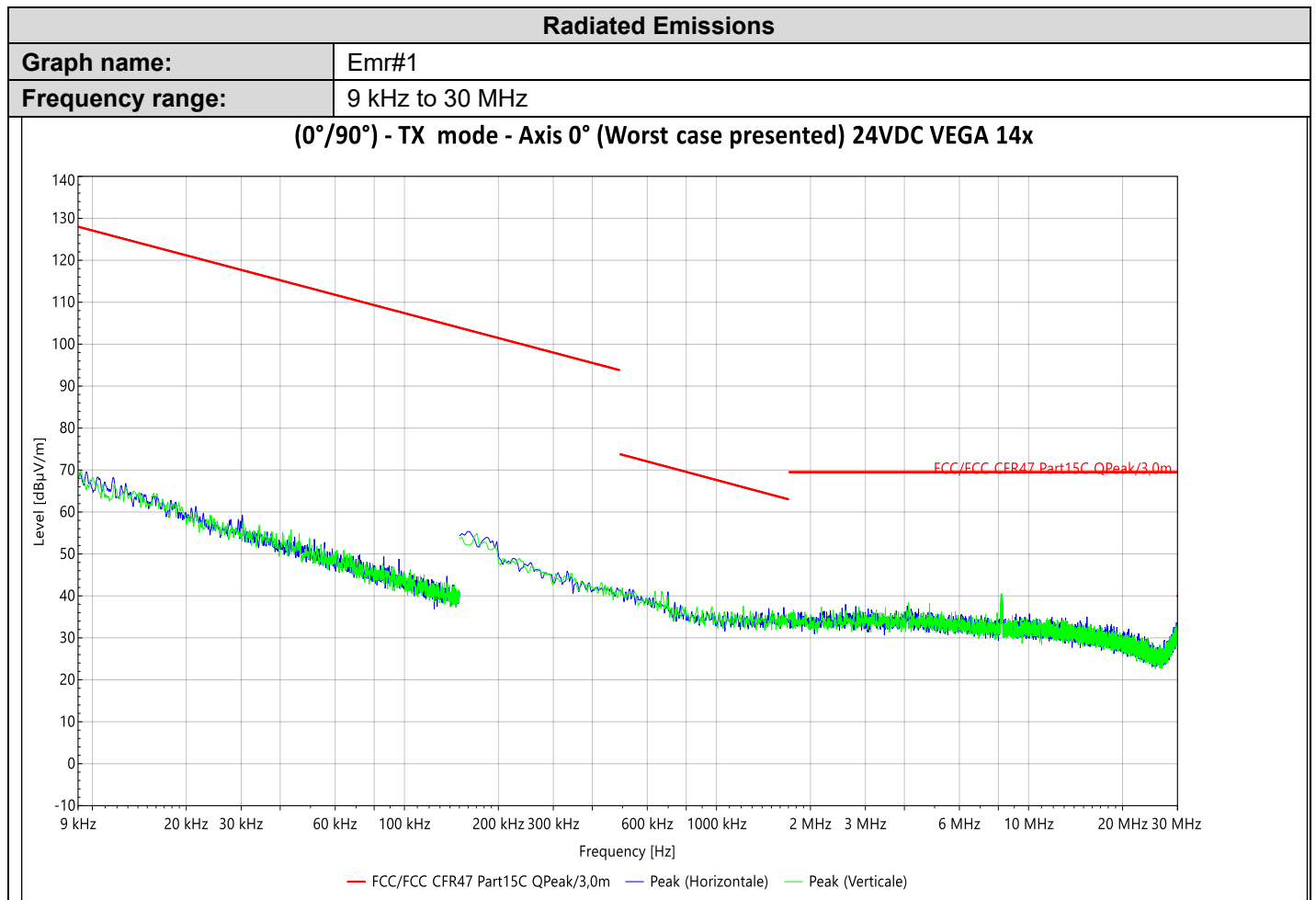
9.6. RESULTS

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

9.6.1. 9kHz to 30MHz

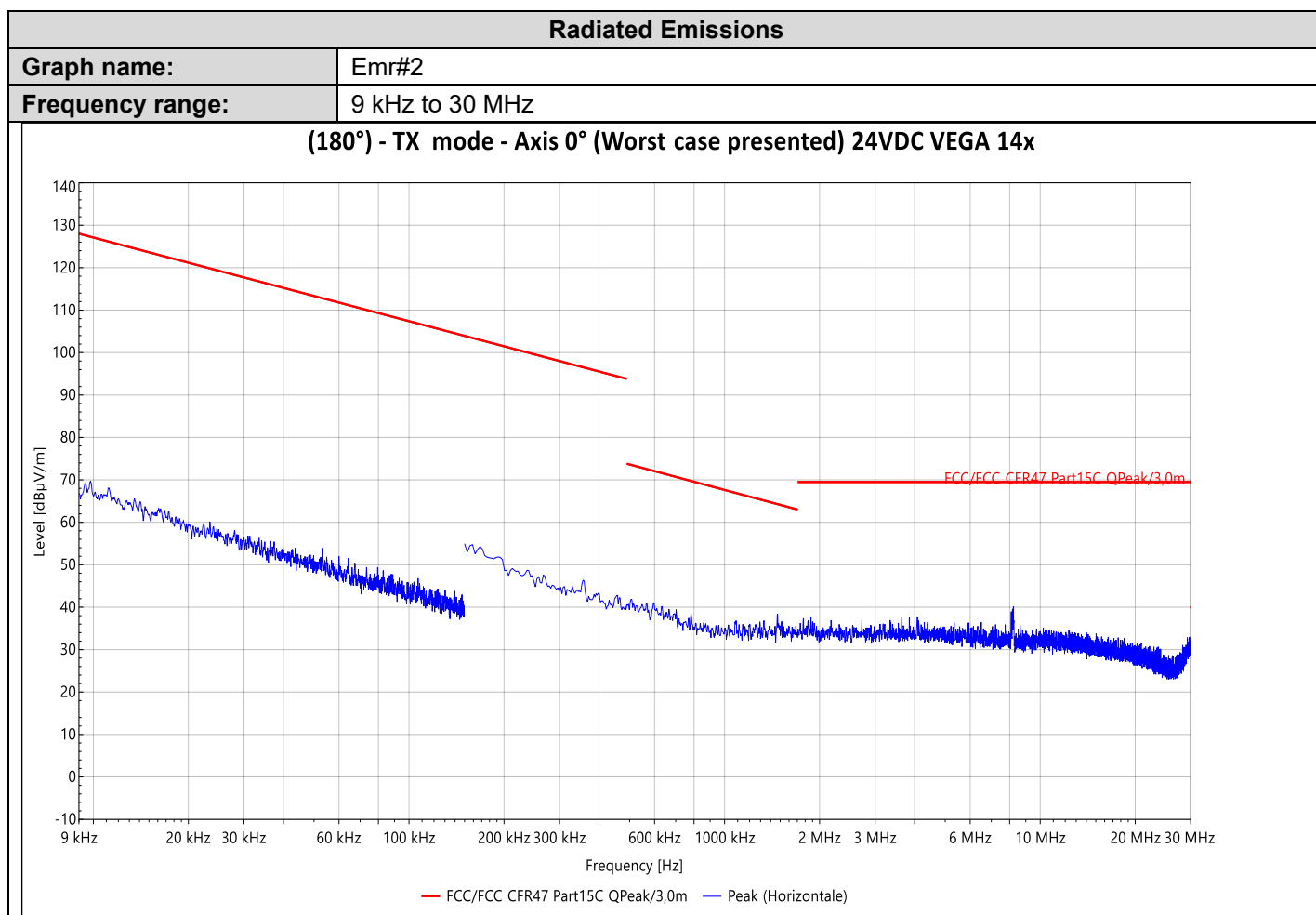
Graphs – Pre characterization: (worst case presented)

Graph identifier	Polarization	Mode	Channel	EUT position	Comments
Emr# 1	0°/90°	TX	Cmin	Axis XY/Z	Antenna 1
Emr# 2	180°	TX	Cmin	Axis XY/Z	Antenna 1
Emr# 3	0°/90°	TX	Cmin	Axis XY/Z	Antenna 2
Emr# 4	180°	TX	Cmin	Axis XY/Z	Antenna 2
Emr# 5	0°/90°	TX	Cmin	Axis XY/Z	Antenna 3
Emr# 6	180°	TX	Cmin	Axis XY/Z	Antenna 3



Pre-Characterization:

No significant frequency observed



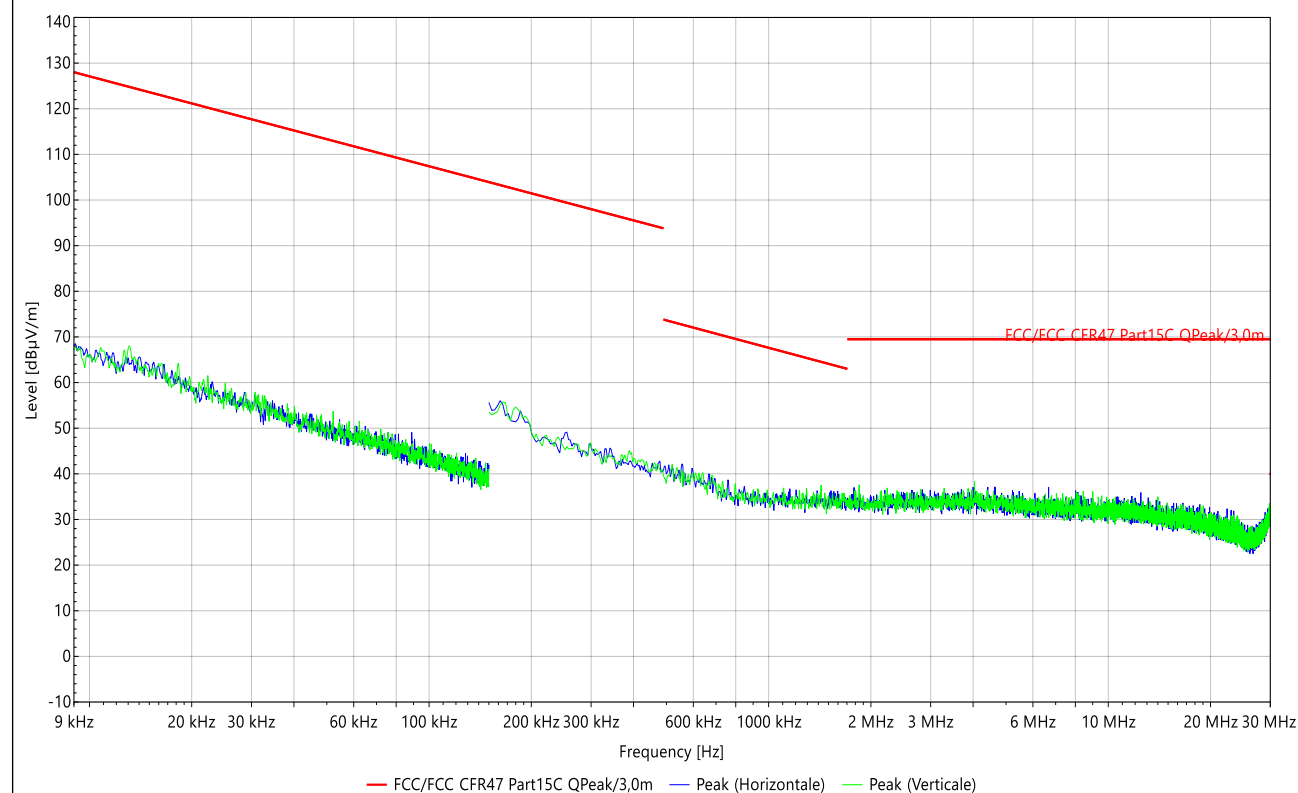
Pre-Characterization:

No significant frequency observed

Radiated Emissions

Graph name: Emr#3
Frequency range: 9 kHz to 30 MHz

(0°/90°) - TX mode - Axis 0° (Worst case presented) 24VDC VEGA 14x



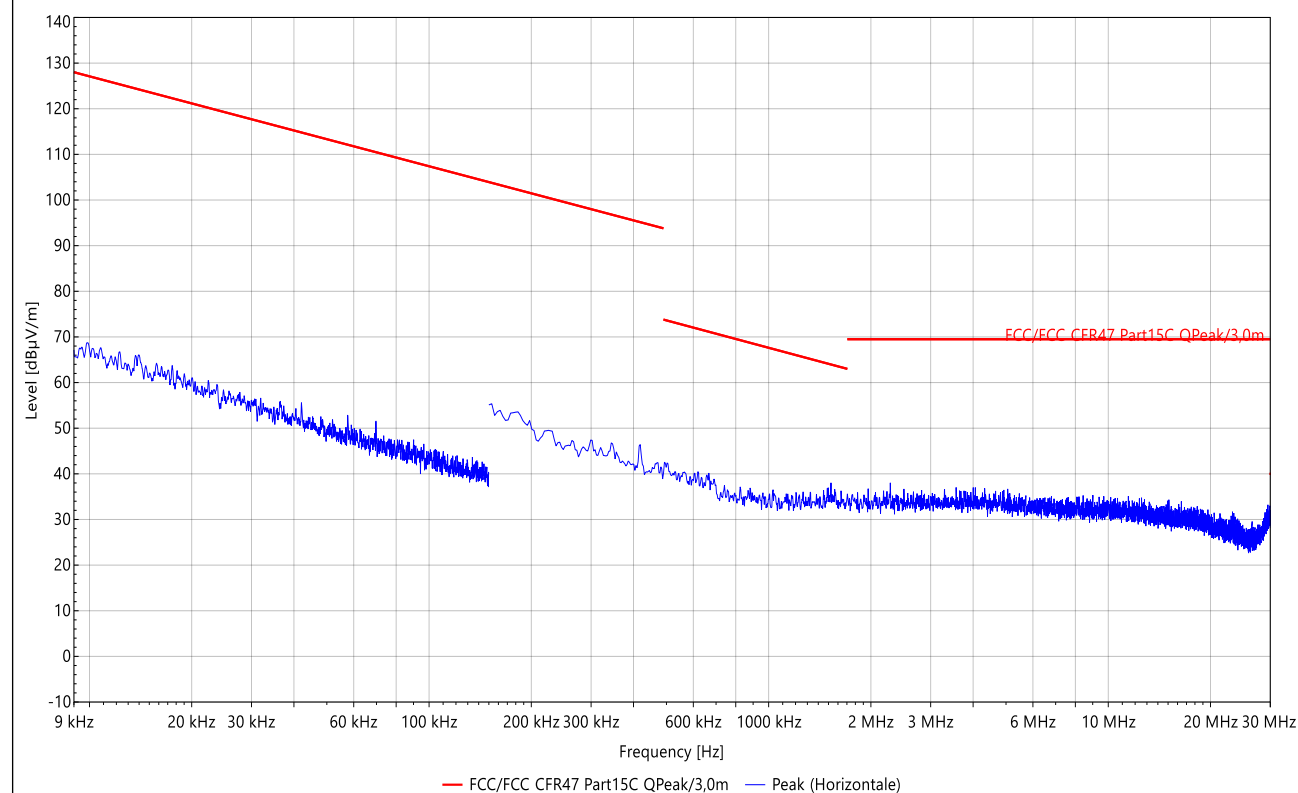
Pre-Characterization:

Frequency

Radiated Emissions

Graph name: Emr#4
Frequency range: 9 kHz to 30 MHz

(180°) - TX mode - Axis 0° (Worst case presented) 24VDC VEGA 14x



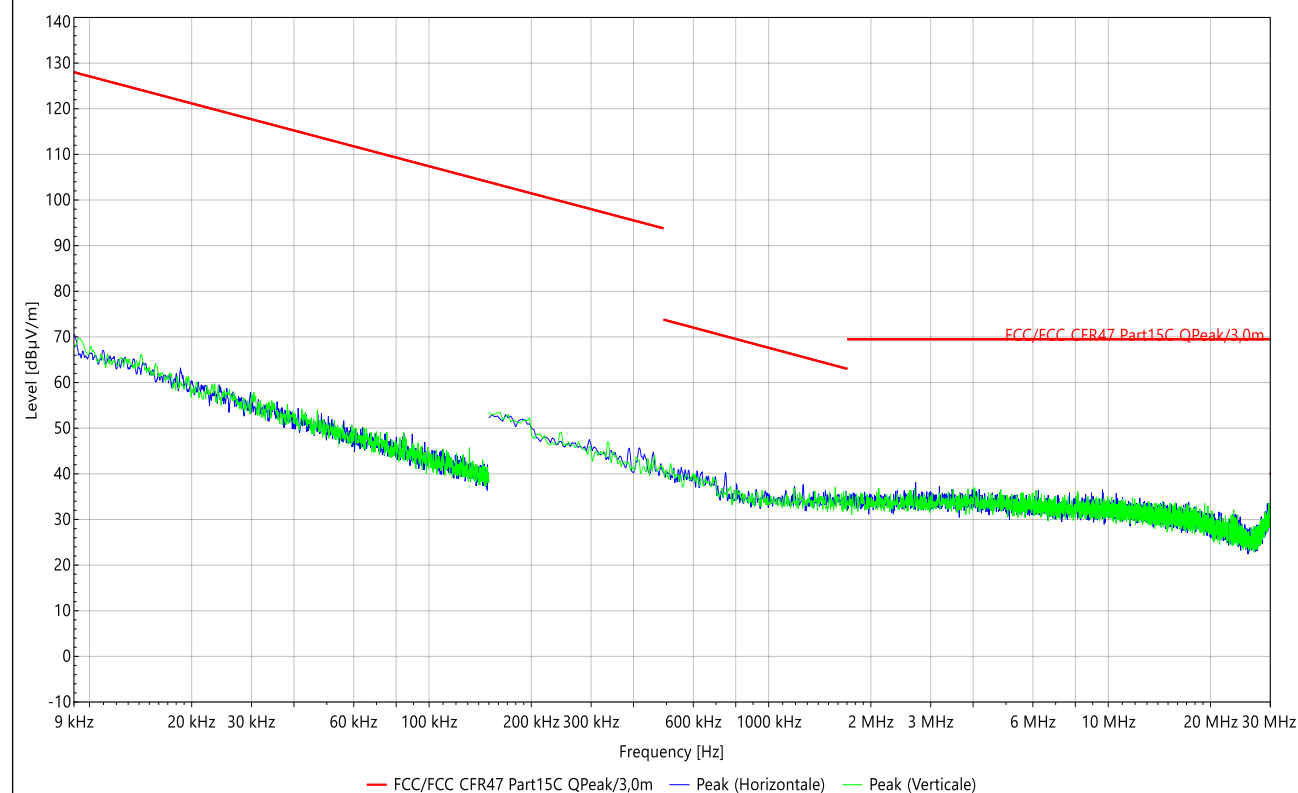
Pre-Characterization:

Frequency

Radiated Emissions

Graph name: Emr#5
Frequency range: 9 kHz to 30 MHz

(0°/90°) - TX mode - Axis 0° (Worst case presented) 24VDC VEGA 14x



Pre-Characterization:

Frequency