Accreditation
N°1-7429
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Template : January 7th, 2026

TEST REPORT

N°: **30764414-821365-A (FILE#13851924)** Version: **01**

Subject	**Electromagnetic compatibility tests according to the standards:** **FCC CFR 47 Part 15, Subpart B** **ANSI C63.4 (2014) / ANSI C63.4a (2017)** **ICES-003 (2020)**
Issued to	**VEGA GRIESHABER KG** Am Hohenstein 113 D-77761 – SCHILTACH GERMANY
Apparatus under test	
Product	**VEGAMET-Air-841-842**
Trade mark	**VEGAMET Air**
Manufacturer	**Vega**
Family range	**VEGAMET Air 841 / VEGAMET Air 842**
Model under test	**VEGAMET Air 842**
Serial number	**84200011**
FCCID	**O6QMETA84X**
IC	**3892A-META84X**
Conclusion	See Test Program chapter
Test date	March 13, 2026 to March 16, 2026
Test location	LCIE Grenoble – Site de Moirans
FCC Test site	FR0008 - 197516 (MOI)
ISED Test site	6500A (MOI)
Sample receipt date	March 10, 2026
Composition of document	29 pages
Document issued on	April 23, 2026

Written by :
Majid MOURZAGH

Approved by :
Anthony MERLIN

PUBLICATION HISTORY

Version	Date	Author	Modification
01	April 23, 2026	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

1. TEST PROGRAM

1.1. FCC PART15B

Standard:

- ✓ **FCC Part 15, Subpart B (Digital Devices)**
- ✓ **ANSI C63.4 (2014) / ANSI C63.4a (2017)**

1.1.1. Requirements for disturbance emissions – Class B

EMISSION TEST	LIMITS			RESULTS (Comments)
Conducted emission 150kHz-30MHz **FCC §15.107**	**Access: AC power**			**PASS**
	Frequency	**Quasi-peak**	**Average**	
	150-500kHz	66 to 56 dBµV	56 to 46 dBµV	
	0.5-5MHz	56 dBµV	46 dBµV	
	5-30MHz	60 dBµV	50 dBµV	
Radiated emission 30MHz-1GHz **FCC §15.109**	**Access: Enclosure port of ancillary equipment**			**PASS**
	Frequency	**Quasi-peak @3m**		
	30MHz-88MHz	40.0 dBµV/m		
	88MHz-216MHz	43.5 dBµV/m		
	216MHz-960MHz	46.0 dBµV/m		
	Above 960MHz	54.0 dBµV/m		
Radiated emission 1GHz-12.75GHz* **FCC §15.109**	**Access: Enclosure port of ancillary equipment**			**PASS**
	Frequency	**Peak @3m**	**Average @3m**	
	1- 14GHz	74.0 dBµV/m	54.0 dBµV/m	

NA: Not Applicable / NP: Not Performed, not requested by the customer (It cannot be taken into account for the declaration of conformity)

[D]: Divergence, the last version is used to make it possible to test the product with the standard which describes the current state of the art and thus to answer as well as possible his environment of final use. If this test is covered by the COFRAC accreditation, the declaration of conformity for product standard only are carried out outside the framework of accreditation.

***§15.33:** The highest internal source of a testing device is defined like more the highest frequency generated or used in the testing device or on which the testing device works or agrees.

- If the highest frequency of the internal sources of the testing device is lower than 108 MHz, measurement must be only performed until 1GHz.
- If the highest frequency of the internal sources of the testing device ranges between 108 MHz and 500 MHz, measurement must be only performed until 2GHz.
- If the highest frequency of the internal sources of the testing device ranges between 500 MHz and 1 GHz, measurement must be only performed until 5GHz.

If the highest frequency of the internal sources of the testing device is above 1 GHz, measurement must be only performed until 5 times the highest frequency or 40 GHz, while taking smallest of both.

Special condition for intentional radiator:

- For a composite system comprised of a digital device using a clock frequency of 1 GHz as the highest frequency for the digital logic and an intentional radiator operating at 2.4 GHz, the composite is required to be investigated to the upper frequency of 24 GHz (in this case, 10 times the intentional radiator frequency is the higher frequency).

- For a composite system comprised of a digital device using a clock frequency of 2 GHz as the highest frequency for the digital logic and an intentional radiator operating at 913 MHz, the composite is required to be investigated to the upper frequency of 10 GHz (in this case, 5 times the unintentional radiator clock frequency is the higher frequency).

1.2. ICES-003 (2020)

Standard:

- ✓ **ANSI C63.4 (2014) / ANSI C63.4a (2017)**
- ✓ **ICES-003 (2020)**

1.2.1. Requirements for disturbance emissions – Class B

EMISSION TEST	LIMITS			RESULTS (Comments)
Conducted emission 150kHz-30MHz **ICES-003 §3.2.1**	**Access: AC power**			**PASS**
	Frequency	**Quasi-peak**	**Average**	
	150-500kHz	66 to 56 dBµV	56 to 46 dBµV	
	0.5-5MHz	56 dBµV	46 dBµV	
	5-30MHz	60 dBµV	50 dBµV	
Radiated emission 30MHz-1GHz **ICES-003 §3.2.2**	**Access: Enclosure port of ancillary equipment**			**PASS**
	Frequency	**Quasi-peak @10m**	**Quasi-peak @3m**	
	30MHz-88MHz	30.0 dBµV/m	40.0 dBµV/m	
	88MHz-216MHz	33.1 dBµV/m	43.5 dBµV/m	
	216MHz-230MHz	35.6 dBµV/m	46.0 dBµV/m	
	230MHz-960MHz	37.0 dBµV/m	47.0 dBµV/m	
	Above 960MHz	43.5 dBµV/m	54.0 dBµV/m	
Radiated emission 1GHz-14GHz* **ICES-003 §3.2.2**	**Access: Enclosure port of ancillary equipment**			**PASS**
	Frequency	**Peak @3m**	**Average @3m**	
	1- 14GHz	74.0 dBµV/m	54.0 dBµV/m	

NA: Not Applicable / NP: Not Performed, not requested by the customer (It cannot be taken into account for the declaration of conformity)

[D]: Divergence, the last version is used to make it possible to test the product with the standard which describes the current state of the art and thus to answer as well as possible his environment of final use. If this test is covered by the COFRAC accreditation, the declaration of conformity for product standard only are carried out outside the framework of accreditation.

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- If the highest frequency of the internal sources of the testing device ranges between 500 MHz and 1 GHz, measurement must be only performed until 5GHz.

If the highest frequency of the internal sources of the testing device is above 1 GHz, measurement must be only performed until 5 times the highest frequency or 40 GHz, while taking smallest of both.

Special condition for intentional radiator:

- For a composite system comprised of a digital device using a clock frequency of 1 GHz as the highest frequency for the digital logic and an intentional radiator operating at 2.4 GHz, the composite is required to be investigated to the upper frequency of 24 GHz (in this case, 10 times the intentional radiator frequency is the higher frequency).

- For a composite system comprised of a digital device using a clock frequency of 2 GHz as the highest frequency for the digital logic and an intentional radiator operating at 913 MHz, the composite is required to be investigated to the upper frequency of 10 GHz (in this case, 5 times the unintentional radiator clock frequency is the higher frequency).

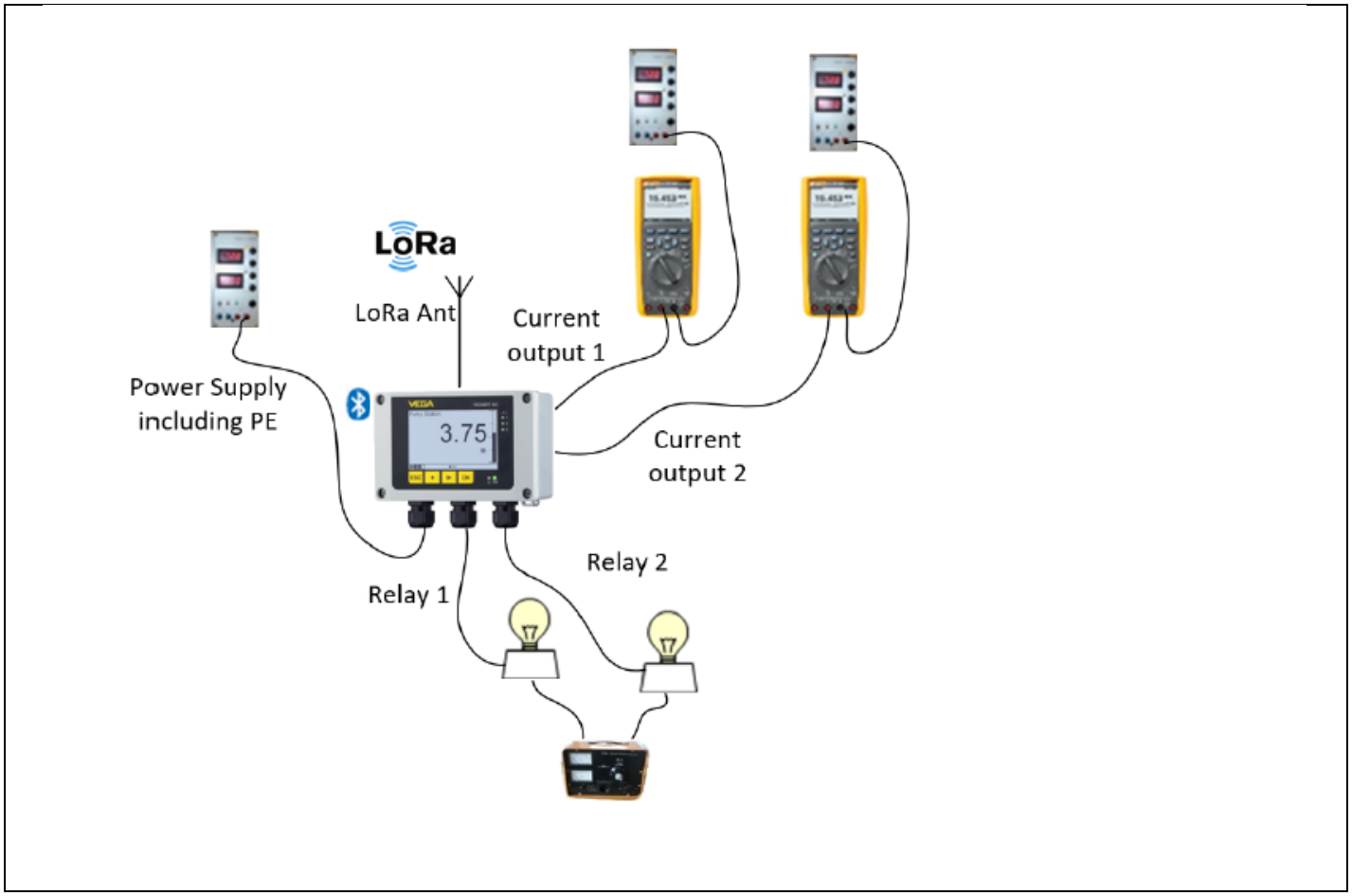
1.2.2. ISED Requirements for user manual/labelling

Labelling and user manual requirements			
Clause	**Requirement**	**Result – Remark**	**Verdict**
§4.2 ICES-003	The instruction for use or label shall include:		
	CAN ICES-003 (B) / NMB-003 (B)	1169825-UN-260408	**PASS**

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

2.1. INFORMATIONS

All tests are performed on the product VEGAMET Air 842 which is the full options product.



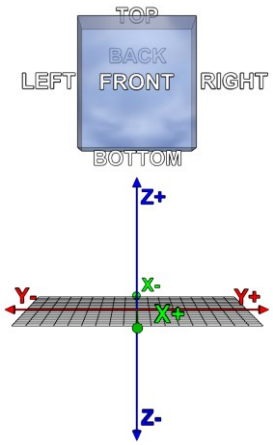
Family range : 841 / 842

Important :
No radio communication performances was requested in the test specification TP_2025-032-AIRBASE-analog-MET_Air_842-F1-Eng
As Lora communication doesn't allow transmitting continuous current measurements as inputs to the Vegamet Air, the current outputs have been simulated as 12mA per current output.
The Lora Radio interface of the Vegamet Air is continuously in reception mode.

2.2. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES)

Equipment under test (EUT):

Model under test:	**VEGAMET Air 842**
Serial Number:	**84200011**



Dimensions:	16 cm x 10.5 cm x 7.5 cm (Length x Width x Height)
Type:	Panel / Rack / Cabinet (considered like table-top)

Power supply:

During all the tests, EUT is supplied by V_{nom}: **240VAC**

For measurement with different voltage, it will be presented in test method.

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

NC: Not communicated by provider

Inputs/outputs - Cable:

Access	Type	Length used (m)	Declared <3m	Shielded	Comments
Supply1	3 wires: L+N+PE	3	No	No	/
Relay_cable 1	2 wires	5	No	No	/
Relay_cable 2	2 wires	5	No	No	/
4-20mA_cable 1	2 wires	5	No	No	/
4-20mA_cable 1	2 wires	5	No	No	/
External antenna	Coaxial	5	No	Yes	Ref: Taoglas TI.96.A153

NC: Not communicated by provider

2.3. EUT CONFIGURATION

Hardware information			
Highest internal frequency (PLL, Quartz, Clock, Microprocessor…):	**$F_{Highest}$:**	**1**	**GHz**
Firmware (if applicable):	**V. :**	EMC_Tests_2026_CW08	
Software (if applicable):	**V. :**	N/A	

NC: Not communicated by provider

Running mode n°1:

Setup:

All radio functions (BLE, LoRa, and NFC) are powered ON; BLE on advertising mode , LoRa on RX mode and the NFC part is continuously reading the tag.

2.4. 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 dBµV/m
The 32 dBµV/m value can be mathematically converted to its corresponding level in µV/m.
Level in µV/m = Common Antilogarithm [(32dBµV/m)/20] = 39.8 µV/m.

3.3. TEST DISTANCE EXTRAPOLATION – FCC/ISED

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

Below 30MHz,

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

Above 30MHz,

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

Where:
FS_{limit} is the calculation of field strength at the limit distance, expressed in dBµV/m
FS_{max} is the measured field strength, expressed in dBµV/m
$d_{measure}$ is the distance of the measurement point from the EUT
d_{limit} is the reference limit distance

4. MEASUREMENT OF CONDUCTED EMISSION

4.1. TEST CONDITIONS

Date of test	:	March 13, 2026
Test performed by	:	Majid MOURZAGH / Marlon BOUBY
Atmospheric pressure (hPa)	:	989
Relative humidity (%)	:	39
Ambient temperature (°C)	:	23

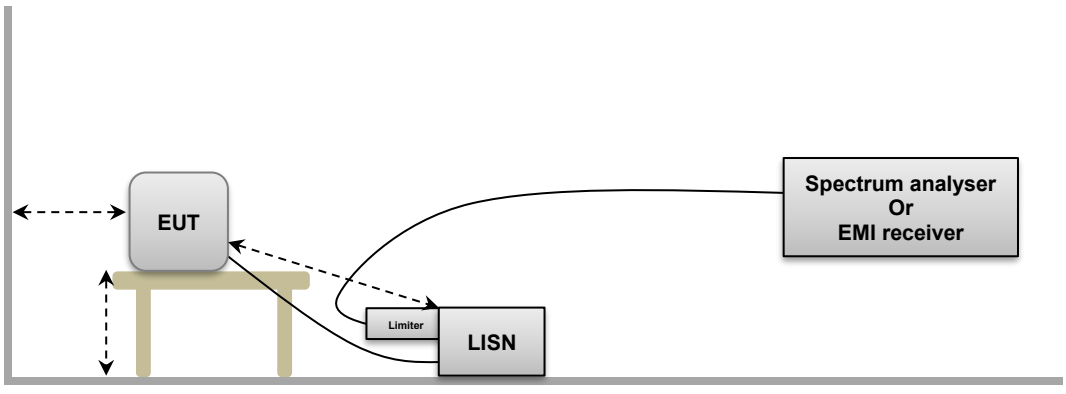
4.2. TEST SETUP

FCC - Test procedure: ANSI C63.10 / C63.4 & FCC Part 15 subpart B/C
ISED - Test procedure: ANSI C63.4 & ICES-003

The EUT and auxiliaries are set 80cm above the ground on the non-conducting table (Table-top equipment) at 80cm from the LISN, the cable has been shorted to 1meter length. The distance between the EUT and the vertical ground plane is 40cm. Measurement is made with a receiver in peak mode. This was followed by a Quasi-Peak, i.e. CISPR measurement for any strong signal. If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary. Interconnecting cables and equipment were moved to position that maximized emission. The EUT is powered like specified in following table, through a LISN (measure); auxiliaries are powered by another LISN.

Frequency range:	**150kHz to 30MHz**	
Test:	**Pre-Characterization**	**Qualification**
RBW Filter:	10kHz	9kHz
Detector:	Peak & Average	QPeak & Cispr Average
Mode:	Linear Scan	

Type	**Measurement performed:**		
☑ AC / ☑ DC (Auxiliary used)	☑ 24VDC/50Hz	☑ 120VAC/60Hz	☑ 240VAC/50Hz



Test setup of AC Power Line Conducted Emissions

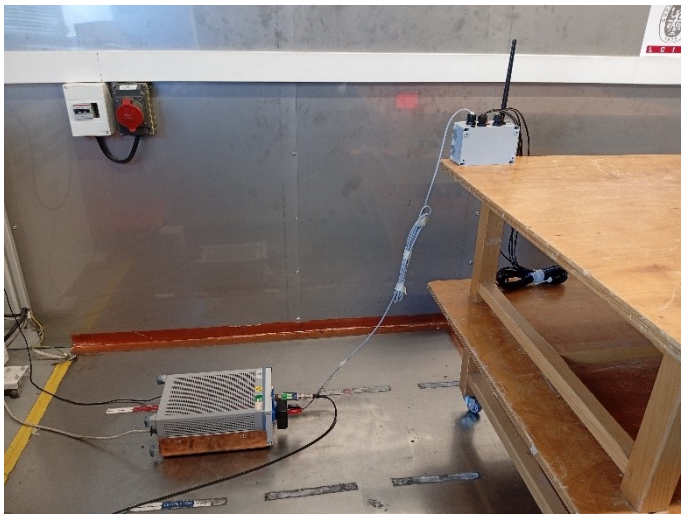
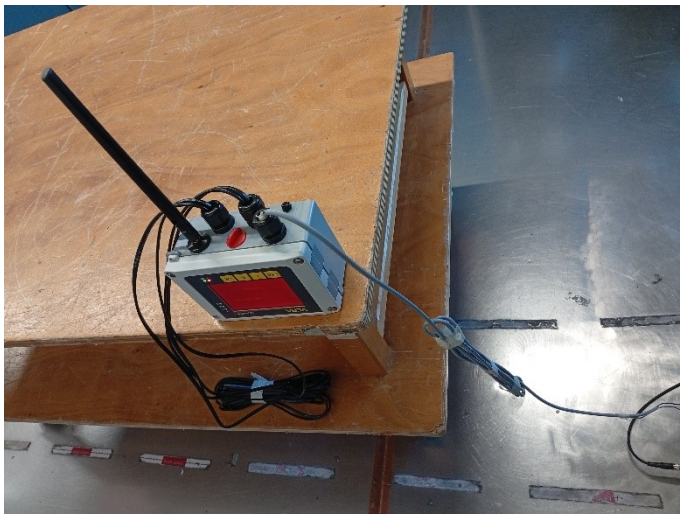



Photo of AC Power Line Conducted Emissions (direct AC power)

Photo of AC Power Line Conducted Emissions with Power supply for DC supply mode

4.3. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	**Manufacturer**	**Model**	**Identifier**	**Cal_Date**	**Cal_Due**
EMC comb generator	LCIE SUD EST	_	A3169098	NA	NA
Receiver 20Hz – 8GHz	ROHDE & SCHWARZ	ESU8	A2642019	11/2025	11/2027
Transient limiter	HEWLETT PACKARD	11947A	A4049061	07/2024	07/2026
Probe - Voltage	LCIE SUD EST	_	A4089117	12/2024	12/2026
LISN	ROHDE & SCHWARZ	ENV216	C2320291	08/2025	08/2026
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	12/2025	12/2027
BAT EMC	NEXIO	v3.21.0.32	L1000115-MOI	-/-	-/-
Cable + self	_	_	A5329585	05/2024	05/2026
Transient limiter	ROHDE & SCHWARZ	ESH3-Z2	A7122204	07/2024	07/2026

4.4. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

4.5. TEST RESULTS –

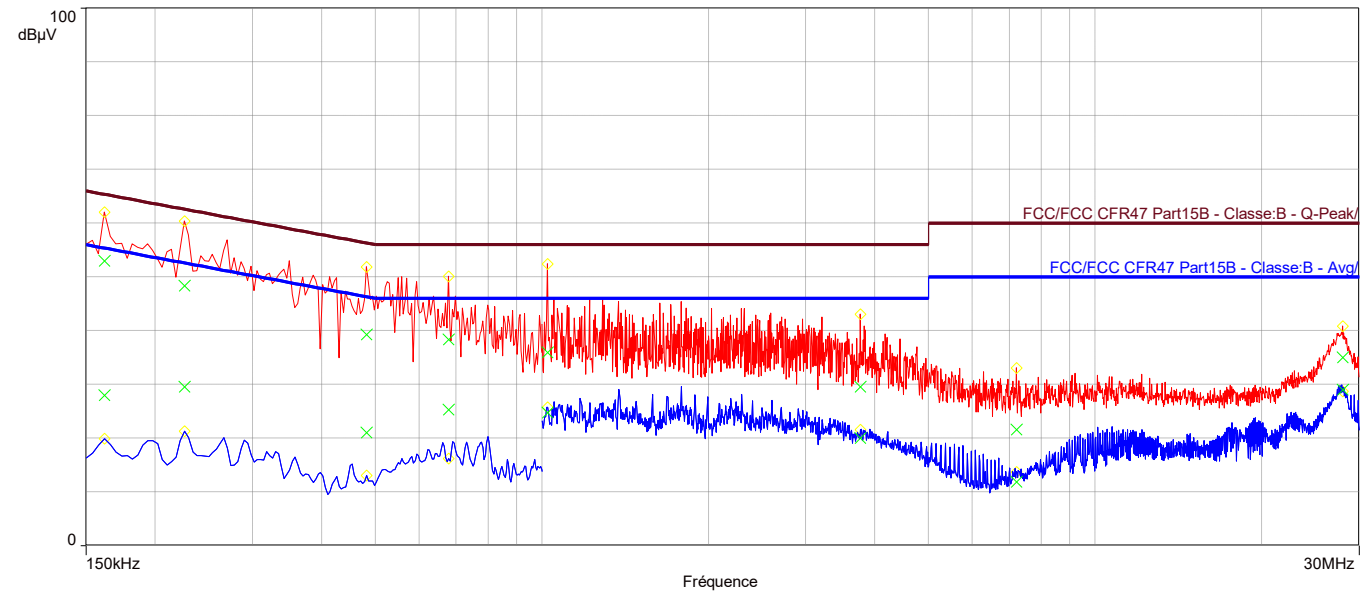
Mains terminals:

SUPPLY1

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

Graph identifier		Line	Comments	
Emc#	1	Neutral	240VAC/50Hz	See below
Emc#	2	Phase	240VAC/50Hz	See below
Emc#	3	Neutral	120VAC/60Hz	See below
Emc#	4	Phase	120VAC/60Hz	See below
Emc#	5	Neutral	120VAC/60Hz *(With 24VDC output)*	See below
Emc#	6	Phase	120VAC/60Hz *(With 24VDC output)*	See below

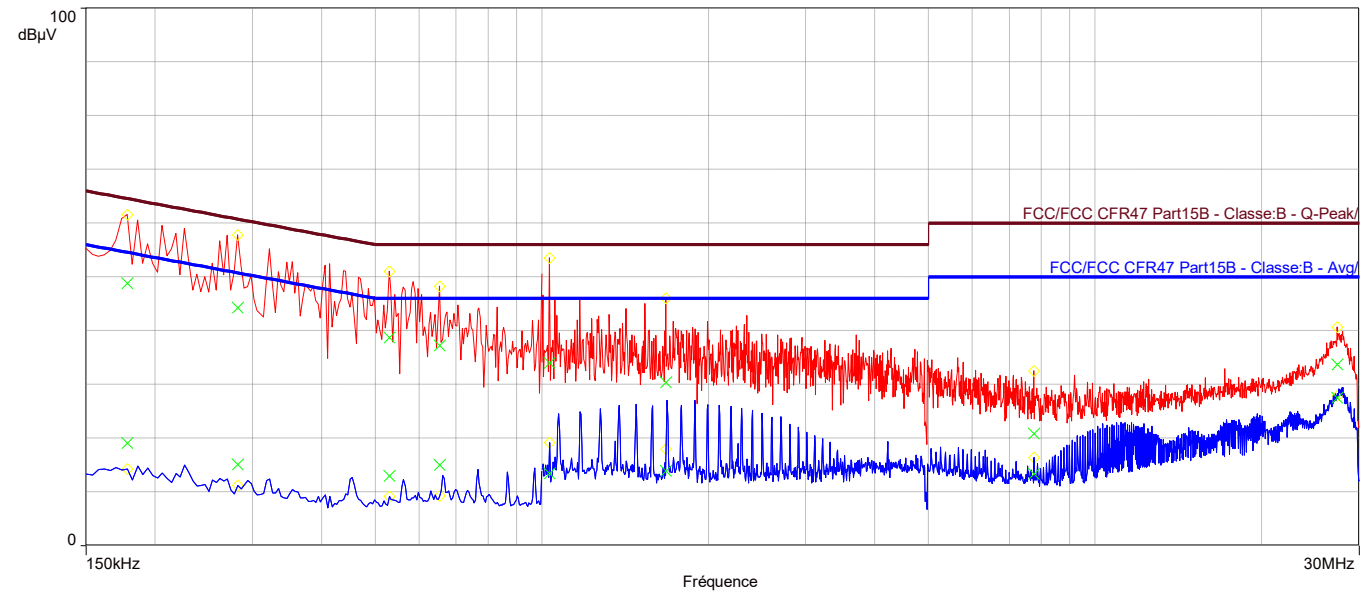
CONDUCTED EMISSIONS			
Graph name:	Emc#1	**Test configuration:**	
Limit:	FCC CFR47 Part15B	ESU8 - (RSIL) [150k-30M]Hz - Neutral_240VAC 50Hz	
Class:	B		
Frequency range: [150kHz - 30MHz]			
Voltage / Frequency:		**RBW:** 10kHz	**VBW:** 30kHz
Line:		**Trace color & detector:**	PEAK AVG



Spurious emissions

Frequency (MHz)	QPeak (dBµV)	Lim.QPeak (dBµV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBµV)	Lim.CISPR.AVG (dBµV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.162	53.00	65.36	-12.36	27.98	55.36	-27.38
0.226	48.36	62.60	-14.23	29.56	52.60	-23.03
0.482	39.25	56.30	-17.06	20.99	46.30	-25.32
0.678	38.30	56.00	-17.70	25.25	46.00	-20.75
1.024	35.94	56.00	-20.06	24.73	46.00	-21.27
3.764	29.54	56.00	-26.46	20.05	46.00	-25.95
7.212	21.56	60.00	-38.44	11.87	50.00	-38.13
28.040	34.96	60.00	-25.04	28.95	50.00	-21.05

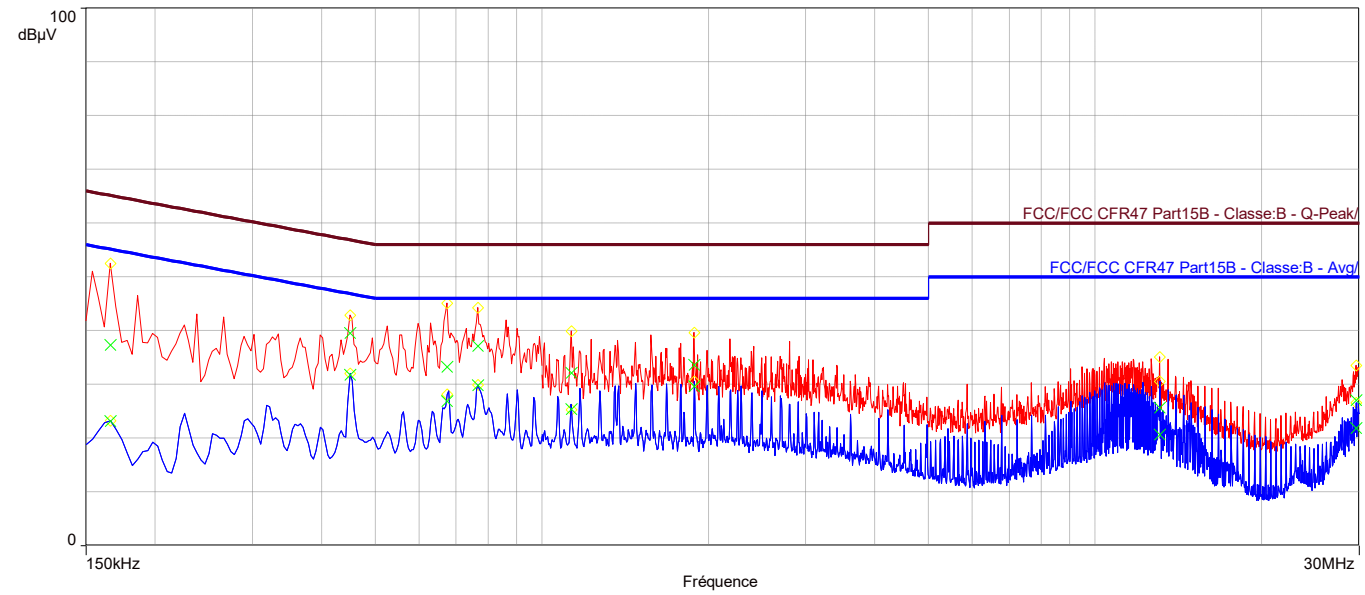
CONDUCTED EMISSIONS			
Graph name:	Emc#2	**Test configuration:**	
Limit:	FCC CFR47 Part15B	ESU8 - (RSIL) [150k-30M]Hz - Phase_240VAC 50Hz	
Class:	B		
Frequency range: [150kHz - 30MHz]			
Voltage / Frequency:		**RBW:** 10kHz	**VBW:** 30kHz
Line:		**Trace color & detector:**	PEAK AVG



Spurious emissions

Frequency (MHz)	QPeak (dBµV)	Lim.QPeak (dBµV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBµV)	Lim.CISPR.AVG (dBµV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.178	48.83	64.58	-15.75	19.12	54.58	-35.46
0.282	44.27	60.76	-16.48	15.13	50.76	-35.62
0.530	38.75	56.00	-17.25	12.97	46.00	-33.03
0.654	37.24	56.00	-18.76	15.01	46.00	-30.99
1.032	34.00	56.00	-22.00	13.46	46.00	-32.54
1.676	30.34	56.00	-25.66	13.89	46.00	-32.11
7.756	20.84	60.00	-39.16	13.37	50.00	-36.63
27.368	33.72	60.00	-26.28	27.47	50.00	-22.53

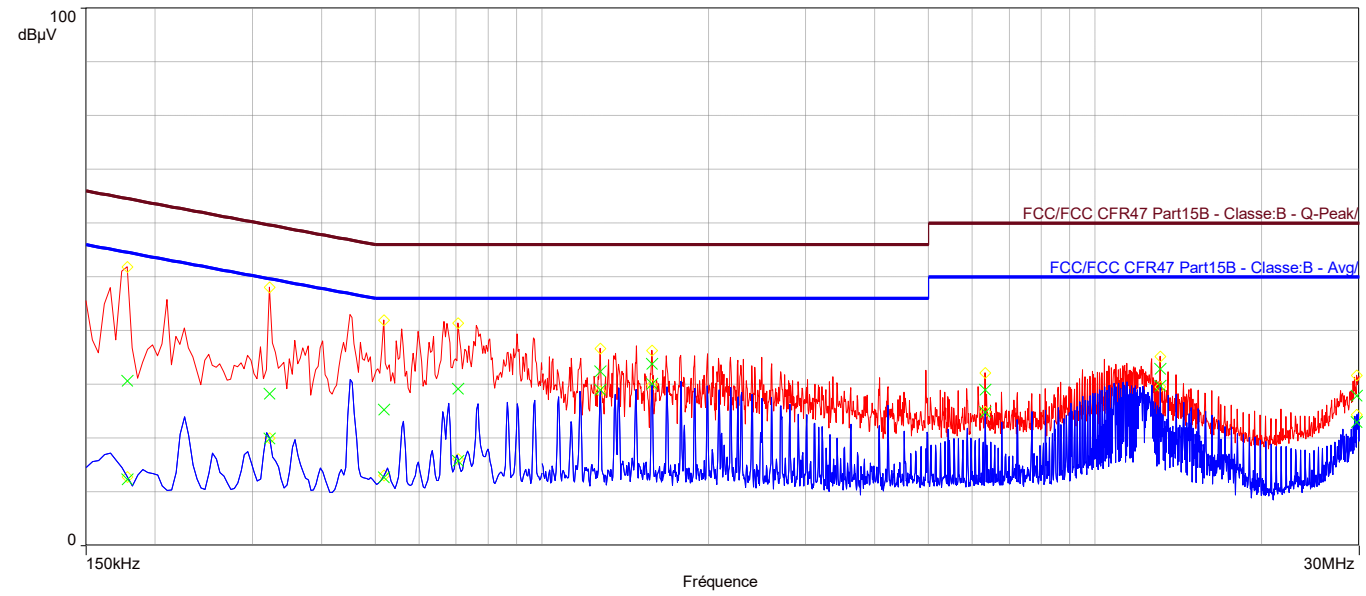
CONDUCTED EMISSIONS			
Graph name:	Emc#3	**Test configuration:**	
Limit:	FCC CFR47 Part15B	ESU8 - (RSIL) [150k-30M]Hz - Neutral_120VAC 60Hz	
Class:	B		
Frequency range: [150kHz - 30MHz]			
Voltage / Frequency:		**RBW:** 10kHz	**VBW:** 30kHz
Line:		**Trace color & detector:**	PEAK AVG



Spurious emissions

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	37.32	65.16	-27.84	23.20	55.16	-31.96
0.450	39.58	56.88	-17.29	31.80	46.88	-15.08
0.674	33.22	56.00	-22.78	26.85	46.00	-19.15
0.766	37.16	56.00	-18.84	29.85	46.00	-16.15
1.132	32.11	56.00	-23.89	25.36	46.00	-20.64
1.884	33.58	56.00	-22.42	29.62	46.00	-16.38
13.092	25.68	60.00	-34.32	20.67	50.00	-29.33
29.660	27.02	60.00	-32.98	21.90	50.00	-28.10

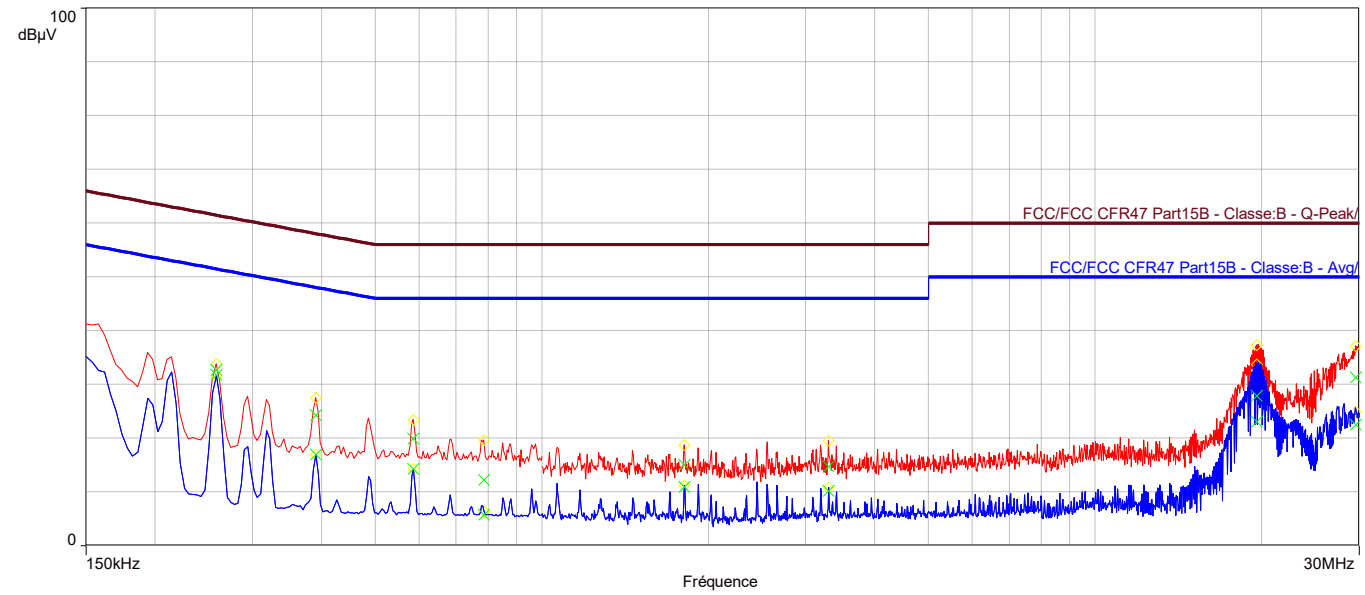
CONDUCTED EMISSIONS			
Graph name:	Emc#4	**Test configuration:**	
Limit:	FCC CFR47 Part15B	ESU8 - (RSIL) [150k-30M]Hz - Phase_120VAC 60Hz	
Class:	B		
Frequency range: [150kHz - 30MHz]			
Voltage / Frequency:		**RBW:** 10kHz	**VBW:** 30kHz
Line:		**Trace color & detector:**	PEAK AVG



Spurious emissions

Frequency (MHz)	QPeak (dBµV)	Lim.QPeak (dBµV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBµV)	Lim.CISPR.AVG (dBµV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.178	30.66	64.58	-33.92	12.28	54.58	-42.30
0.322	28.26	59.66	-31.39	19.95	49.66	-29.70
0.518	25.27	56.00	-30.73	12.71	46.00	-33.29
0.706	29.19	56.00	-26.81	15.71	46.00	-30.29
1.276	32.44	56.00	-23.56	28.95	46.00	-17.05
1.580	33.77	56.00	-22.23	30.07	46.00	-15.93
6.328	29.02	60.00	-30.98	24.80	50.00	-25.20
13.104	32.84	60.00	-27.16	29.69	50.00	-20.31
29.680	27.89	60.00	-32.11	22.98	50.00	-27.02

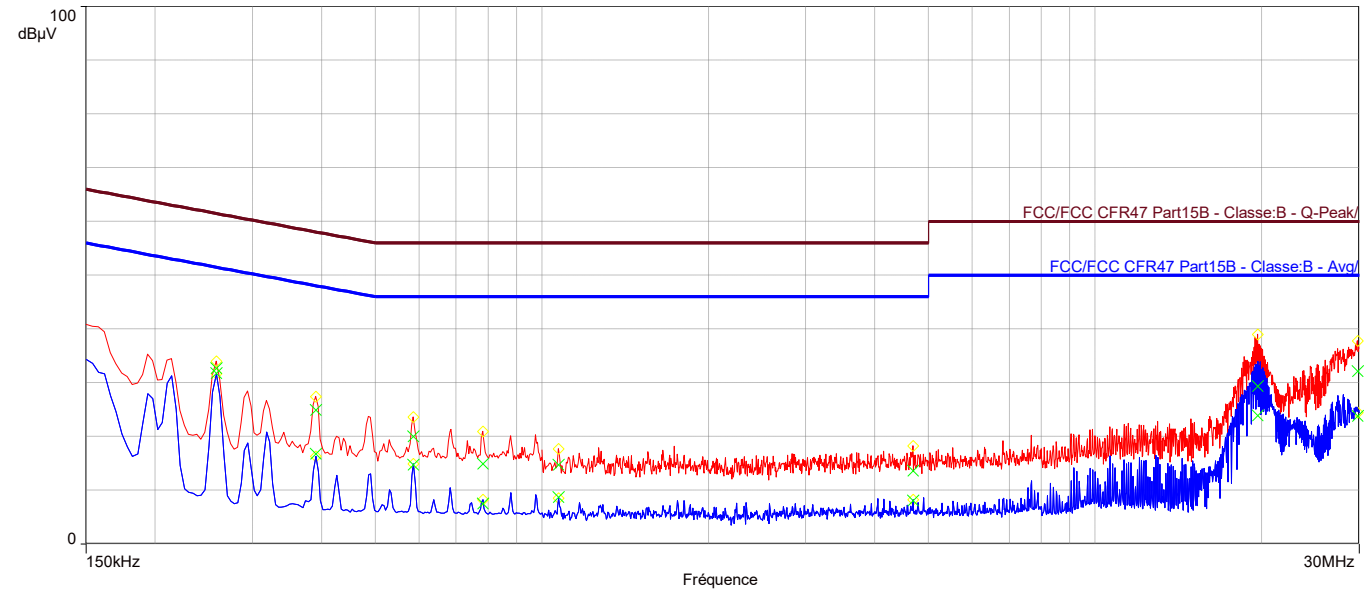
CONDUCTED EMISSIONS			
Graph name:	Emc#5	**Test configuration:**	
Limit:	FCC CFR47 Part15B	ESU8 - (RSIL) [150k-30M]Hz - Neutral_120VAC 60Hz output 24VDC	
Class:	B		
Frequency range: [150kHz - 30MHz]			
Voltage / Frequency:		**RBW:** 10kHz	**VBW:** 30kHz
Line:		**Trace color & detector:**	PEAK AVG



Spurious emissions

Frequency (MHz)	QPeak (dBµV)	Lim.QPeak (dBµV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBµV)	Lim.CISPR.AVG (dBµV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.258	32.69	61.50	-28.80	31.77	51.50	-19.73
0.390	24.25	58.06	-33.81	16.95	48.06	-31.12
0.586	19.88	56.00	-36.12	14.29	46.00	-31.71
0.786	12.26	56.00	-43.74	5.76	46.00	-40.24
1.808	15.04	56.00	-40.96	10.94	46.00	-35.06
3.300	14.72	56.00	-41.28	10.20	46.00	-35.80
19.600	27.90	60.00	-32.10	23.05	50.00	-26.95
29.584	31.31	60.00	-28.69	22.54	50.00	-27.46

CONDUCTED EMISSIONS			
Graph name:	Emc#6	**Test configuration:**	
Limit:	FCC CFR47 Part15B	ESU8 - (RSIL) [150k-30M]Hz - Phase_120VAC 60Hz output 24VDC	
Class:	B		
Frequency range: [150kHz - 30MHz]			
Voltage / Frequency:		**RBW:** 10kHz	**VBW:** 30kHz
Line:		**Trace color & detector:**	PEAK AVG



Spurious emissions

Frequency (MHz)	QPeak (dBµV)	Lim.QPeak (dBµV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBµV)	Lim.CISPR.AVG (dBµV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.258	32.68	61.50	-28.82	31.75	51.50	-19.75
0.390	24.89	58.06	-33.18	16.74	48.06	-31.32
0.586	20.01	56.00	-35.99	14.77	46.00	-31.23
0.782	14.91	56.00	-41.09	7.52	46.00	-38.48
1.072	14.70	56.00	-41.30	8.70	46.00	-37.30
4.684	13.57	56.00	-42.43	8.04	46.00	-37.96
19.688	29.35	60.00	-30.65	23.87	50.00	-26.13
29.792	32.12	60.00	-27.88	23.82	50.00	-26.18

4.6. CONCLUSION

The sample of the equipment **VEGAMET Air 842**, Sn : **84200011**, tested in the configuration presented in this test report **satisfies** to requirements of the product family standard applied (See §Test Program) for conducted emissions.

5. MEASUREMENT OF RADIATED EMISSION

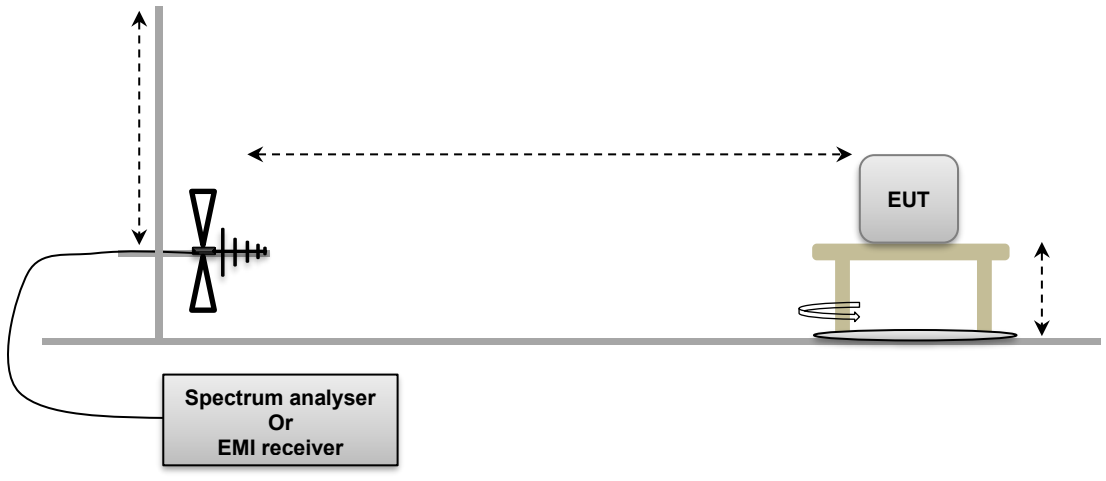
5.1. TEST CONDITIONS

Date of test	:	March 13, 2026
Test performed by	:	Majid MOURZAGH / Marlon BOUBY
Atmospheric pressure (hPa)	:	989
Relative humidity (%)	:	39
Ambient temperature (°C)	:	23

5.2. TEST SETUP

FCC - Test procedure: ANSI C63.10 / C63.4 & FCC Part 15 subpart B/C
ISED - Test procedure: ANSI C63.4 & ICES-003

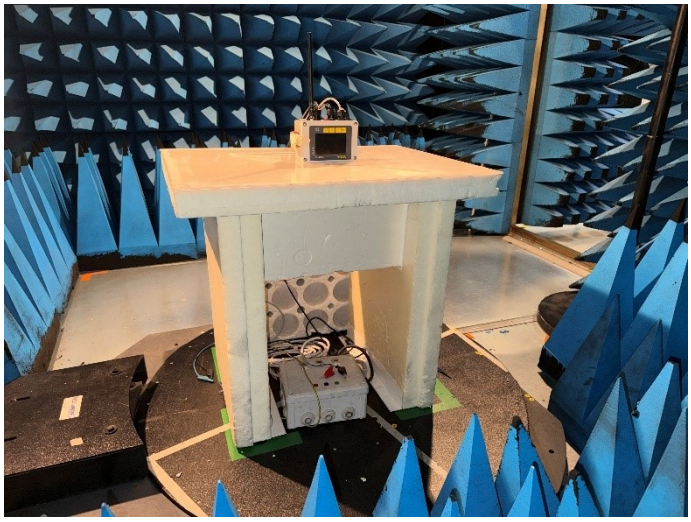
The EUT and auxiliaries are set 80cm above the ground on the non-conducting table (Table-top equipment).
The EUT is powered by V_{nom}.



Test setup of Radiated Emission

Same setup is used in semi anechoic chamber during pre-characterization, with a distance of 3m between EUT and antenna.

5.2.1. FCC – Photo of the test setup



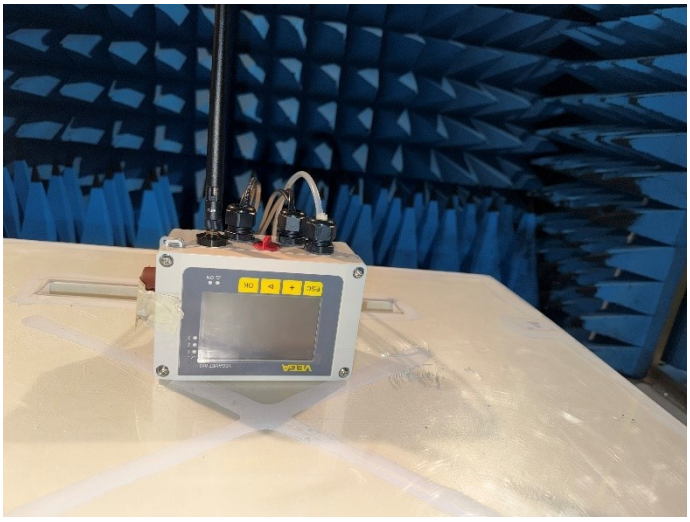
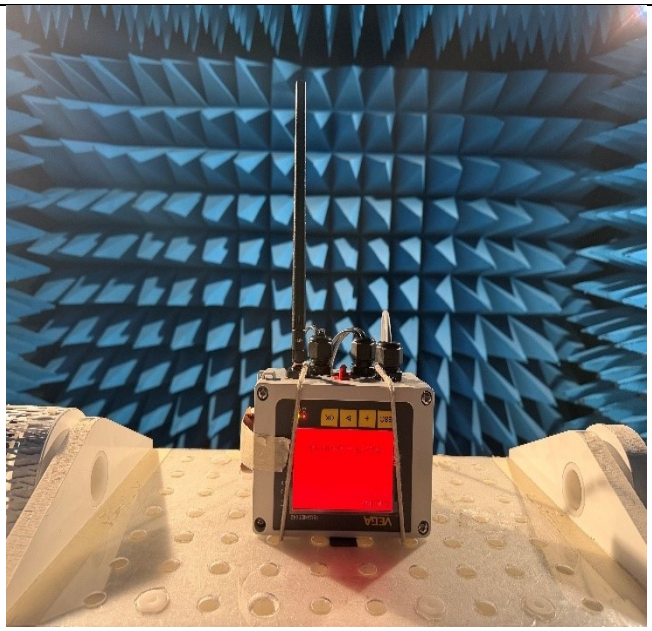


Photo in anechoic chamber – Frequency <1GHz

Photo on OATS



Axis XY

Photo in anechoic chamber – Frequency >1GHz

5.3. TEST METHOD

During pre-characterization, a pre-scan of all the setup has been performed on all axis of EUT used in normal configuration. The pre-characterization graphs are obtained in PEAK detection, and AVERAGE detection for frequencies above 1GHz. A summary of the worst case emissions found in all test configurations and modes is shown. Spurious or frequency band are measured with qualification detectors to show compliance with limits.
Following frequency ranges, test setup parameters are different and specified in tables below.

5.3.1. 30MHz –1GHz

Frequency range:	**30MHz to 1GHz**	
Test:	**Pre-Characterization**	**Qualification**
Antenna Polarization:	Horizontal and Vertical	
Antenna Height:	Centered on EUT	Varied by step from 1m to 4m
Antenna Type:	Bi-Log	Biconical & Bi-Log
Min. Antenna Beamwidth:	A.H.Systems SAS-521-7 / w@3m - 3.5m<1GHz	Eaton 94455 / w@10m - 2.6m<200MHz
RBW Filter:	100kHz	120kHz
Maximization:	Turntable rotation of 360 degrees range	
Test site:	Full Anechoic Chamber	Open Aera Test Site
Distance EUT - Antenna:	3m	10m
Detector:	Peak	QPeak
Mode:	Linear Scan	Linear Scan

5.3.2. 1GHz – 14GHz:

Frequency range:	**1GHz to 14GHz**	
Test:	**Pre-Characterization**	**Qualification**
Antenna Polarization:	Horizontal and Vertical	
Antenna Height:	Centered on EUT	Varied continously from 1m to 4m
Antenna Type:	Bi-Log	Biconical & Bi-Log
Min. Antenna Beamwidth:	A-INFO LB-10180 / w@3m - 2.0m<14GHz / 0.7m<18GHz	EM 6969 / w@3m - 0.7m<14GHz/0.6m<18GHz
RBW Filter:	1MHz	1MHz
Maximization:	Turntable rotation of 360 degrees range	
Test site:	Full Anechoic Chamber	Open Aera Test Site
Distance EUT - Antenna:	3m	3m
Detector:	QPeak & Average	QPeak & Average
Mode:	Linear Scan	Linear Scan

5.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	**Manufacturer**	**Model**	**Identifier**	**Cal_Date**	**Cal_Due**
Multimeter	FLUKE	289	A1241119	05/2025	05/2027
EMR comb generator	BARDET	_	A3169050	NA	NA
HF EMR comb generator	LCIE SUD EST	_	A3169088	NA	NA
Spectrum analyzer	ROHDE & SCHWARZ	FSU 26	A4060058	01/2026	01/2028
Cable 0.75m	-	18GHz	A5329900	08/2025	08/2026
SMA Cable 18GHz 0.6m	TELEDYNE	18GHz	A5330055	08/2025	08/2026
SMA Cable 18GHz 3.5m	TELEDYNE	18GHz	A5330058	08/2025	08/2026
SMA Cable 18GHz 0.5m	TELEDYNE	18GHz	A5330059	01/2025	01/2026
Pre-Amplifier	LCIE SUD EST	1-13GHz	A7085029	08/2025	08/2027
Amplifier 10MHz - 18GHz	LCIE SUD EST	_	A7102082	03/2025	03/2027
Filter Matrice	LCIE SUD EST	Combined filters	A7484078	08/2025	08/2027
Thermo-hygrometer	TESTO	608-H1	B4204120	05/2025	05/2027
Horn Antenna	ELECTRO-METRICS	EM-6969	C2040286	06/2025	06/2028
Antenna horn 18GHz	AINFO	LB	C2042055	11/2024	11/2027
Semi-Anechoic chamber #3 (BF)	SIEPEL	_	D3044017_BF	09/2025	09/2026
Semi-Anechoic chamber #3 (VSWR)	SIEPEL	_	D3044017_VSWR	09/2025	09/2028
TILT	INNCO	TILT	D3044033	-/-	-/-
Turntable chamber (Cage#3)	ETS Lingren	Model 2165	F2000371	-/-	-/-
Turntable controller (Cage#3)	ETS Lingren	Model 2090	F2000444	-/-	-/-
Table C3	LCIE	_	F2000461	-/-	-/-
Rehausse Table C3	LCIE	_	F2000507	-/-	-/-
Rehausse Table C3	LCIE	_	F2000511	-/-	-/-
Mat Controler	LCIE	MAT Controler	F2000523	-/-	-/-
TILT Controller	INNCO	CO3000	D3044034	NA	NA
Cable SMA 40cm	WITHWAVE	W101-SM1-0.4M	A5329979	03/2025	03/2026
SMA Cable 18GHz 6m	TELEDYNE	18GHz	A5330057	01/2025	01/2026
BAT EMC	NEXIO	v3.21.0.32	L1000115-MOI	-/-	-/-
Antenna Bi-log	AH System	SAS-521-7	C2040180	11/2025	11/2027

5.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

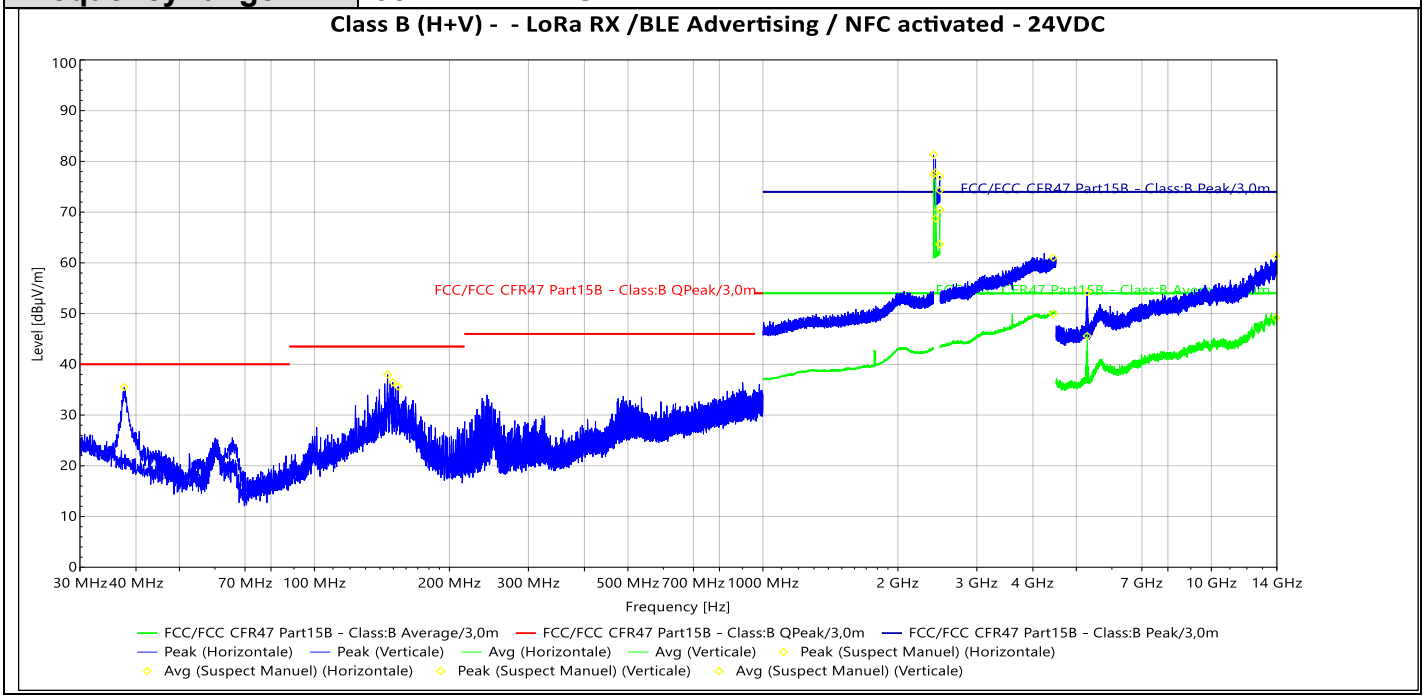
5.6. TEST RESULTS – FCC – RUNNING MODE N°1

5.6.1. 30MHz –14GHz

Pre-qualification measurement

Graph identifier		Polarization	EUT position	Comments	
Emr#	1	Horizontal/Vertical	Axis XY		See below
Emr#	2	Horizontal/Vertical	Axis XY		See below

Radiated Emissions	
Graph name:	Emr#1
Frequency range:	30 MHz to 14 GHz

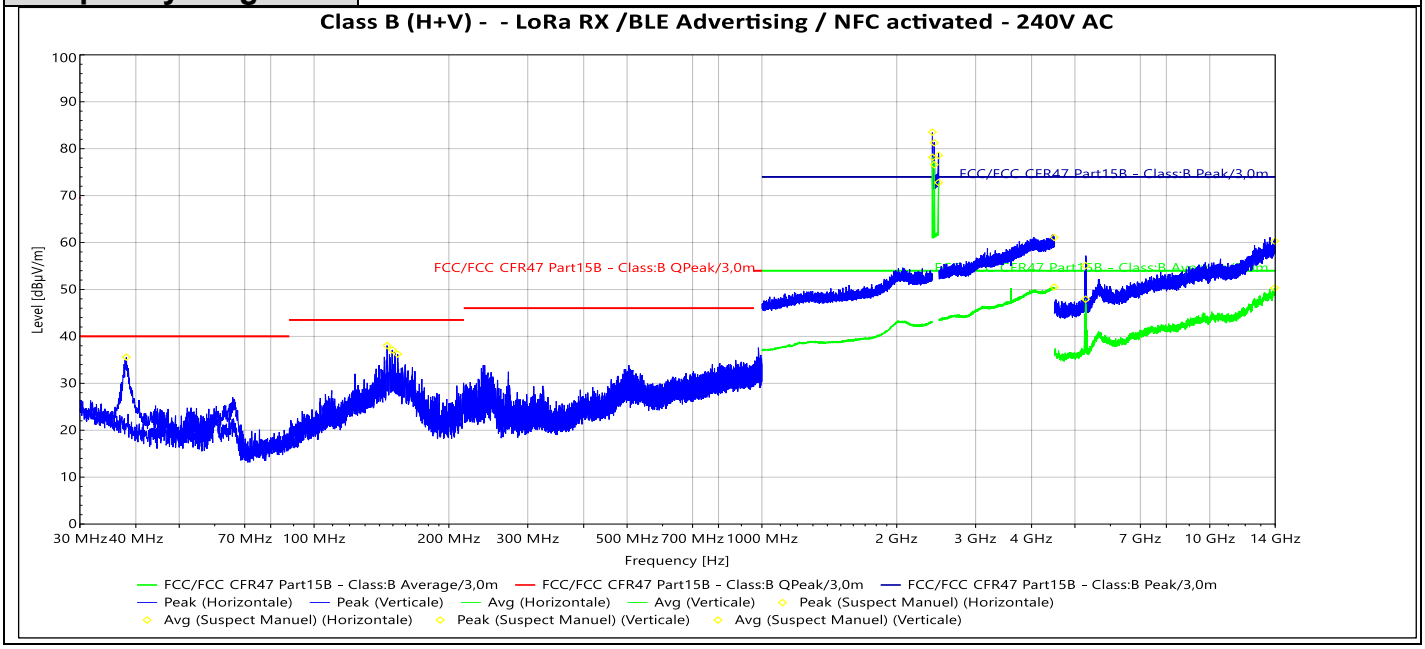


Pre-Characterization:

Frequency	PK Level (dBµV/m)	Lim.PK (dBµV/m)	Avg (dBµV/m)	Lim.Avg (dBµV/m)	Lim.QP (dBµV/m)	Angle (°)	Polar.	Correct. (dB)
2.402 GHz*	81.32	/	77.43	/	/	330	H	37.10
2.426 GHz*	77.80	/	68.75	/	/	306	H	37.19
2.480 GHz*	74.28	/	63.64	/	/	120	H	37.45
4.439 GHz	61.02	74.00	49.96	54.00	/	0	H	43.40
5.285 GHz	54.24	74.00	45.58	54.00	/	30	H	-12.53
13.938 GHz	61.38	74.00	49.18	54.00	/	326	H	3.87
2.480 GHz	77.09	74.00	70.51	54.00	/	350	V	37.46
37.663 MHz	35.52	/	/	/	40.00	200	V	20.62
145.624 MHz	38.01	/	/	/	43.50	147	V	26.15
149.504 MHz	36.47	/	/	/	43.50	91	V	26.25
153.626 MHz	35.64	/	/	/	43.50	121	V	26.29

*: Advertising BLE channel

Radiated Emissions	
Graph name:	Emr#2
Frequency range:	30 MHz to 14 GHz



Pre-Characterization:

Frequency	PK Level (dBµV/m)	Lim.PK (dBµV/m)	Avg (dBµV/m)	Lim.Avg (dBµV/m)	Lim.QP (dBµV/m)	Angle (°)	Polar.	Correct. (dB)
2.402 GHz*	83.54	/	78.18	/	/	184	H	37.09
2.426 GHz*	81.25	/	76.59	/	/	2	H	37.19
2.480 GHz*	78.58	/	72.77	/	/	199	H	37.46
5.281 GHz	55.08	74.00	47.91	54.00	/	286	V	-12.56
13.967 GHz	60.30	74.00	50.33	54.00	/	162	V	4.05
4.494 GHz	61.09	74.00	50.51	54.00	/	42	V	43.43
38.099 MHz	35.58	/	/	/	40.00	225	V	20.39
145.576 MHz	38.05	/	/	/	43.50	53	V	26.14
149.504 MHz	37.11	/	/	/	43.50	145	V	26.25
153.675 MHz	36.22	/	/	/	43.50	129	V	26.29

*: Advertising BLE channel

Qualification

The frequency list is created from the results obtained during the pre-qualification.

No significant frequency

5.7. CONCLUSION

The sample of the equipment **VEGAMET Air 842**, Sn : **84200011**, tested in the configuration presented in this test report **satisfies** to requirements of the product family standard applied (See §Test Program) for radiated emissions.

6. UNCERTAINTIES CHART

Type de mesure / *Kind of measurement*	Incertitude élargie laboratoire / *Wide uncertainty laboratory* (k=2) ±x	Incertitude limite du CISPR / *CISPR uncertainty limit* ±y
Mesure des perturbations conduites en tension sur le réseau d'énergie ***Measurement of conducted disturbances in voltage on the power port*** **RSIL / *LISN* - 50Ω/50µH**		
9kHz - 150kHz	3.64 dB	3.8 dB
150kHz - 30MHz	3.21 dB	3.4 dB
Mesure des perturbations conduites en tension sur le réseau d'énergie ***Measurement of conducted disturbances in voltage on the power port*** **Sonde de tension / *Voltage Probe***		
9kHz - 30MHz	2.61 dB	2.9 dB
Mesure des perturbations conduites en tension sur le réseau de télécommunication ***Measurement of conducted disturbances in voltage on the telecommunication port*** **RSI / *AAN***		
150kHz - 30MHz - aLCL = 55 … 40 dBc	4.07 dB	5.0 dB
150kHz - 30MHz - aLCL = 65 … 50 dBc	4.47 dB	5.0 dB
150kHz - 30MHz - aLCL = 75 … 60 dBc	4.91 dB	5.0 dB
Mesure des perturbations conduites en tension sur le réseau de télécommunication ***Measurement of conducted disturbances in voltage on the telecommunication port*** **Sonde de tension / *Capacitive Voltage Probe***		
150kHz - 30MHz	3.53 dB	3.9 dB
Mesure des perturbations conduites en courant sur le réseau de télécommunication ***Measurement of conducted disturbances in current on the telecommunication port*** **Sonde de courant / *Current Probe***		
9kHz - 30MHz	2.41 dB	2.9 dB
Mesure des perturbations discontinues conduites en tension ***Measurement of discontinuous conducted disturbances in voltage*** **Récépteur / *Receiver***		
150kHz - 30MHz	3.21 dB	3.4 dB
Mesure des harmoniques de courant ***Measurement of current harmonics***		
I_{harm} ±5% du calibre / *range*	0.93 A	-
I_{harm} ±0.15% du calibre / range	0.03 A	-
Mesure du flicker ***Flicker measurement***		
Mesure du P_{ST} / Measurement of P_{ST}	6.0 %	-
Mesure des perturbations rayonnées ***Measurement of radiated disturbances*** **OATS & SAC @3m**		
9kHz - 30MHz, Antenne boucle / *Loop antenna*	4.90 dB	-
30MHz - 200MHz, Antenne biconique / *Biconical antenna*	5.74 dB	6.3 dB
30MHz - 1GHz, Antenne hybride / *Hybrid antenna*	5.65 dB	6.3 dB
Mesure des perturbations rayonnées ***Measurement of radiated disturbances*** **OATS @10m**		
9kHz - 30MHz, Antenne boucle / *Loop antenna*	4.90 dB	-
30MHz - 200MHz, Antenne biconique / *Biconical antenna*	5.72 dB	6.3 dB
30MHz - 1GHz, Antenne hybride / *Hybrid antenna*	5.91 dB	6.3 dB
Mesure des perturbations rayonnées ***Measurement of radiated disturbances*** **FAR @3m**		
1GHz - 6GHz, Antenne cornet ou hybride / *Horn or hybrid antenna*	4.77 dB	5.2 dB
1GHz - 6GHz, Antenne cornet ou hybride et préamplificateur / *Horn or hybrid antenna and preamplifier*	5.02 dB	5.2 dB
6GHz - 18GHz, Antenne cornet et préamplificateur / *Horn antenna and preamplifier*	5.41 dB	5.5 dB
18GHz - 40GHz, Antenne cornet et préamplificateur / *Horn antenna and preamplifier*	7.81 dB	-

Les valeurs d'incertitudes calculées du laboratoire étant inférieures aux valeurs d'incertitudes limites établies par le CISPR, la conformité de l'échantillon est établie directement par les niveaux limites applicables. Ce tableau regroupe l'ensemble des incertitudes maximales pour les essais réalisables dans le laboratoire, qu'ils aient été ou non réalisés dans le cadre du présent rapport. */ The uncertainty values calculated by the laboratory are lower than limit uncertainty values defined by the CISPR. The conformity of the sample is directly established by the applicable limits values. This table includes all uncertainties maximum feasible for testing in the laboratory, whether or not made in this report.*

Note - L'incertitude de mesure instrumentale est déterminée selon la CISPR 16-4-2. / *The instrumentation measurement uncertainty is determined according to CISPR16-4-2.*

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