Test report issued under the responsibility of:
EMITECH MONTPELLIER laboratory
MRA US-EU Designation Number: FR0006
Canadian CAB Identifier: FR0003

EMC TEST REPORT

FCC 47 CFR PART 15: 2024
ICES-003 / NMB-003 ed.7: 2020
ICES-Gen / NMB-Gen: 2024

Company ..... :	**VDB SA**
Address..... :	4 RUE DES IMMEUBLES INDUSTRIELS 75011 PARIS PROSPECT FRANCE

Test item description. ..... :	**Audio Mixer**
Trade Mark. ..... :	VDB
Manufacturer..... :	VDB SA
Model/Type reference..... :	FCS8 / FINGER CONTROL SURFACE 8
FCC ID..... :	2BLSAFCS8
Ratings..... :	4.4 - 5.5Vdc

Testing Laboratory ..... :	**EMITECH MONTPELLIER laboratory**
Address..... :	145 rue de Massacan 34740 VENDARGUES FRANCE

Report Reference No..... :	**RC-EVE-24F907-2A**
Test procedure. ..... :	FCC IC Certification
Diffusion..... :	M. LANCELIN
Applicant's name. ..... :	VDB SA
Date of issue..... :	December 20, 2024
Total number of pages..... :	17
Revision..... :	0
Compiled by..... :	Rémi BLANQUE
Approved by (+ signature). ..... :	David MONTAULON (Technical Manager)

Duplication of this test report is only permitted for an integral photographic facsimile. It includes the number of pages referenced here above. This document is the result of testing a specimen or a sample of the product submitted. It does not imply an assessment of the conformity of the whole manufactured products of the tested sample.

REPORT INDEX:

REVISION HISTORY:

Revision	Date	Modified pages	Modifications
0	December 20, 2024	/	Creation

1. GENERAL INFORMATIONS

This document submits the results of Electromagnetic Compatibility tests performed on the equipment **Audio Mixer FCS08** (denominated hereafter E.U.T.: equipment under test) according to document(s) listed in §2 of this test report.

TESTING PROCEDURE AND TESTING LOCATION:

Testing Location ..... :	EMITECH MONTPELLIER laboratory
Address. ..... :	145 rue de Massacan 34740 VENDARGUES FRANCE
Test procedure. ..... :	FCC IC Verification
Tested by ..... :	Rémi BLANQUE
Test supervisor ..... :	None
Date of receipt of test item ..... :	N/A
Date (s) of performance of tests ..... :	October, the 14th of 2024

APPLICANT'S GENERAL INFORMATIONS:

Company name ..... :	VDB SA
Company address. ..... :	4 RUE DES IMMEUBLES INDUSTRIELS 75011 PARIS PROSPECT FRANCE
Person(s) present during the tests. ..... :	No representative for company attended the tests.
Responsible. ..... :	M. LANCELIN

GENERAL REMARKS:

The information in italics is declared by the manufacturer and is under his responsibility
The test results presented in this report relate only to the object tested.
The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.
Throughout this report the decimal separator is point.

POSSIBLE TEST CASE VERDICTS:

Test case does not apply to the test object.:	N/A
Test case not performed ..... :	N/P
Test object does meet the requirement..... :	P (Pass)
Test object does not meet the requirement. ..... :	F (Fail)

DEFINITIONS AND ABBREVIATIONS:

E.U.T.	Equipment Under Test	AE	Ancillary Equipment	Pk	Peak detector
RBW	Resolution BandWidth	VBW	Video BandWidth	QP	Quasi-peak detector
FSOATS	Free Space Open Area Test Site	FAR	Full Anechoic Room	Av	Average detector
VP	Vertical Polarization	HP	Horizontal Polarization	RMS	Root Mean Square
RF	Radio Frequency	N.T.R	Nothing To Report	N/C	Not Communicated
SAC	Semi Anechoic Chamber				

2. REFERENCE DOCUMENT(S)

NORMATIVE REFERENCES:
The following referenced documents are necessary for the application of the present test report. **FCC 47 CFR PART 15: 2024** Code of Federal Regulations Title 47 – Telecommunications Chapter 1 – Federal Communications Commission Part 15 – Radio frequency devices Subpart B – Unintentional Radiators **ICES-003 / NMB-003 ed.7: 2020** Information Technology Equipment (including Digital Apparatus) **ICES-Gen / NMB-Gen: 2024** General Requirements for Compliance of Interference - Causing Equipment Although the product standard uses obsolete technical standards, the latest versions of standards achievable by the laboratory will be used for testing.
INFORMATIVE REFERENCES:
The following referenced documents are not necessary for the application of the present test report but they assist the user with regard to a particular subject area.

3. EQUIPMENT TECHNICAL DESCRIPTION

3.1. Test Conditions

Test item description. ..... :	Audio Mixer
Model/Type reference..... :	FCS8 / FINGER CONTROL SURFACE 8
Trade Mark. ..... :	VDB
Serial number (S/N). ..... :	Not communicated
Part number (P/N). ..... :	Not communicated
Software version. ..... :	*Not communicated*
Firmware version. ..... :	*1.0*
Type of sample. ..... :	Pre-serial
Function(s)..... :	Controlling levels and functions of an audio recorder via USB
Manufacturer name. ..... :	VDB SA
Address. ..... :	4 RUE DES IMMEUBLES INDUSTRIELS 75011 PARIS PROSPECT FRANCE

General product information:

N/A

3.2. E.U.T. Marking plate

The EUT didn't have marking plate during test

3.3. E.U.T. Modification(s)

None

3.4. E.U.T. General view

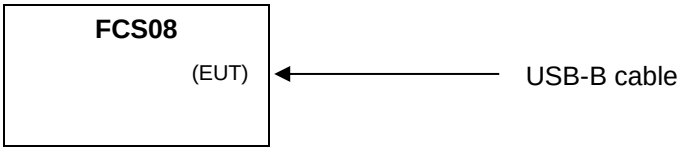
3.5. E.U.T. Mechanical and Electrical Design

Power supply.	:	*5Vdc*
Power supply range.	:	*4.4 - 5.5Vdc*
Power type.	:	*USB-B*
Power (W).	:	*0.7*
Nominal current (A).	:	*0.140*
Dimensions (L x W x H) (m).	:	*0.276 x 0.200 x 0.050*
Weight (kg).	:	*1.5*
Temperature range (°C).	:	*0 to +50*
Ground bounding strap.	:	*No*

Comments:

N/A

3.6. E.U.T. Input/Output ports



PORT	NAME	TYPE	LENGTH	CABLE TYPE	COMMENTS
0	Main frame	N/E	N/A	Plastic & Metallic	
1	USB-B cable	DC	1m	Shielded	5Vdc

AC/DC :	AC/DC Converter port	AC..... :	Alternative current port	DC..... :	Direct current port
I/O .....:	Input or Output port	TP ..... :	Telecommunication port	RF ..... :	Radio frequency port
N/E .....:	Non Electrical port				

3.7. Supporting Equipment Used During Test

Sample subject to the tests was tested with following equipment.

PRODUCT TYPE	MANUFACTURER	MODEL	N°EMITECH / COMMENTS
Recorder	SOUND DEVICES	888	Powered at 120Vac/60Hz

(EA)

3.8. EMC Environment and Performance Criteria

According to manufacturer's declarations :

Electromagnetic environment. ..... : *Residential*
Professional use ? ..... : *Yes*
Typical mounting ..... : *Table top equipment*
Internal frequencies ..... : *24MHz*
Configuration(s) ..... : *Ready to work*

Comments:
N/A

a) EUT OPERATION MODES:	
MODE #	**DESCRIPTION**
1	*Connected to recorder Sound Devices Serie-8*

4. EUT REQUIREMENTS FOR FCC RULES

4.1. Subpart A - General

This part sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of part 15 devices.

The user notice, shall include the following informations:

a) LABELING REQUIREMENTS (§15.19):

Equipment authorization: Supplier's Declaration of Conformity (SDoC) or Certification

List of different **type of devices** and associated "*statement on product*":

§15.19(a)(1) - Receivers associated with the operation of a licensed radio service:

"This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference."

§15.19(a)(2) - A stand-alone cable input selector switch:

"This device complies with part 15 of the FCC Rules for use with cable television service."

§15.19(a)(3) - All other devices:

"This device complies with part 15 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.

§15.19(a)(4) - Where a device is constructed in two or more sections connected by wires and marketed together:

The statement specified only to the main control unit:

"This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference."

§15.19(a)(5) - When the device is so small:

The statement of §15.19(a) shall be placed in the user manual and must also either be placed on the device packaging or on a removable label attached to the device.

Compliance information (§2.1077):

The identification, by name, address and telephone number or internet contact information, of the responsible party, as defined in § 2.909 of the standard. The responsible party for Supplier's Declaration of Conformity must be located within the United States.

Identification (§2.1074):

(a) Devices subject only to Supplier's Declaration of Conformity shall be uniquely identified by the party responsible for marketing or importing the equipment within the United States.

(b) Devices subject to authorization under Supplier's Declaration of Conformity may be labeled with the following logo on a voluntary basis as a visual indication that the product complies with the applicable FCC requirements.

(image size: 6.7 x 2.8" ;3.5 x 1.4" ;1.6 x .7")

The label shall be located in a conspicuous location on the device.
The label shall not be a stick-on, paper label. The label on these products shall be permanently affixed to the product and shall be readily visible (font of at least 4-point or larger) to the purchaser at the time of purchase.

b) DEVICES INCLUDING MODULAR TRANSMITTER(S) (§15.212):
If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: *"Contains Transmitter Module FCC ID: XYZMODEL1" or "Contains FCC ID: XYZMODEL1."* Device under test includes single modular transmitter(s): ***FCC ID: N/A*** ***IC: N/A***

c) INFORMATION TO USER (§15.21):
The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that: *"The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment"*

4.2. Subpart B - Unintentional Radiators

In addition to Subpart A, the user notice, shall include the following informations:

a) INFORMATION TO USER (§15.105):
Equipment authorization: Supplier's Declaration of Conformity (SDoC) or Certification **§15.105(a) - For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:** *"NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense."* **§15.105(b) - For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:** *"NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:* *—Reorient or relocate the receiving antenna.* *—Increase the separation between the equipment and receiver.* *—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.* *—Consult the dealer or an experienced radio/TV technician for help."*

5. RESULT SUMMARY

TEST DESIGNATION	SEVERITY	VERDICT	BASIC STANDARDS / COMMENTS
Conducted emission (measurement)			**ANSI C63.4: 2014**
- 120Vac/60Hz power supply / FCS08	Class B	**PASS**	
Measurement of radiated disturbances			**ANSI C63.4: 2014**
- 120Vac/60Hz power supply / FCS08	Class B	**PASS**	

Sample subject to the test complies for tests done with the requirements of the reference document(s) listed in §2 of this test report and, where applicable, with deviation(s) specified in this document.

To declare, or not, the compliance with the specifications, it was not explicitly taken into account of uncertainty associated with the results with the exception of emission tests based on CISPR standards.

TEST(S) PERFORMED	MODIFICATION(S)
ANSI C63.4: 2014	N/A

6. MEASUREMENT UNCERTAINTY

Uncertainties values presented below are required by standards:

PARAMETER	MAXIMAL EMITECH UNCERTAINTY	STANDARD UNCERTAINTY
Conducted emission		
(Artificial Mains Network) 150kHz – 30MHz	± 3.4 dB	± 3.4 dB
Radiated magnetic field emission		
9kHz – 30MHz	± 2.7 dB	/
Radiated electric field emission		
(FSOATS/SAC) HP-VP 30MHz – 200MHz	± 4.8 - 5.0 dB	± 5.1 - 5.2 dB
(FSOATS/SAC) HP-VP 200MHz – 1GHz	± 5.0 - 5.0 dB	± 5.3 - 6.3 dB
(FSOATS/SAC) HP-VP with bilog. 30MHz – 1GHz	± 5.1 - 5.2 dB	± 5.3 - 6.3 dB
(FSOATS/FAR) 1GHz - 6GHz	± 5.0 / 5.2 dB	± 5.2 dB
(FSOATS/FAR) 6GHz - 18GHz	± 5.3 / 5.4 dB	± 5.5 dB
18GHz - 40GHz	± 6.1 dB	/
40GHz - 140GHz	± 5.7 dB	/

For the calculation of expanded uncertainty, the confidence interval is 95 % (k=2).

7. TEST CONDITIONS AND RESULTS

7.1. Conducted emission (measurement)

Reference standard:	FCC 47 CFR PART 15: 2024 ICES-003 / NMB-003 ed. 7: 2020 ICES-Gen / NMB-Gen: 2024
Test method:	ANSI C63.4: 2014
General test setup: EUT is set on an insulating support at 40cm from the ground reference plane. All power was connected to the system through Artificial Mains Network (AMN). The AMN is placed at 80cm from the boundary of the EUT and bonded to a ground reference plane. All tested telecommunications lines (if applicable) were connected to an Asymmetric Artificial Network (AAN) and conducted voltage measurements on telecommunications lines were made at the output of the AAN. Where an AAN was not appropriate or available, measurements were made using a Capacitive Voltage Probe and/or a Current probe. Additionnal ground terminals (if any) are connected to earth terminal of the AMN.	

TESTED CABLE	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
120Vac/60Hz power supply / FCS08	150kHz-30MHz	Class B	EMI4561	**PASS**

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	*See Graph(s)*
Relative Humidity	30 to 60 %	*See Graph(s)*
Atmospheric pressure	N/A	*See Graph(s)*
Test method deviation: N/A		
Supplementary information: N/A		

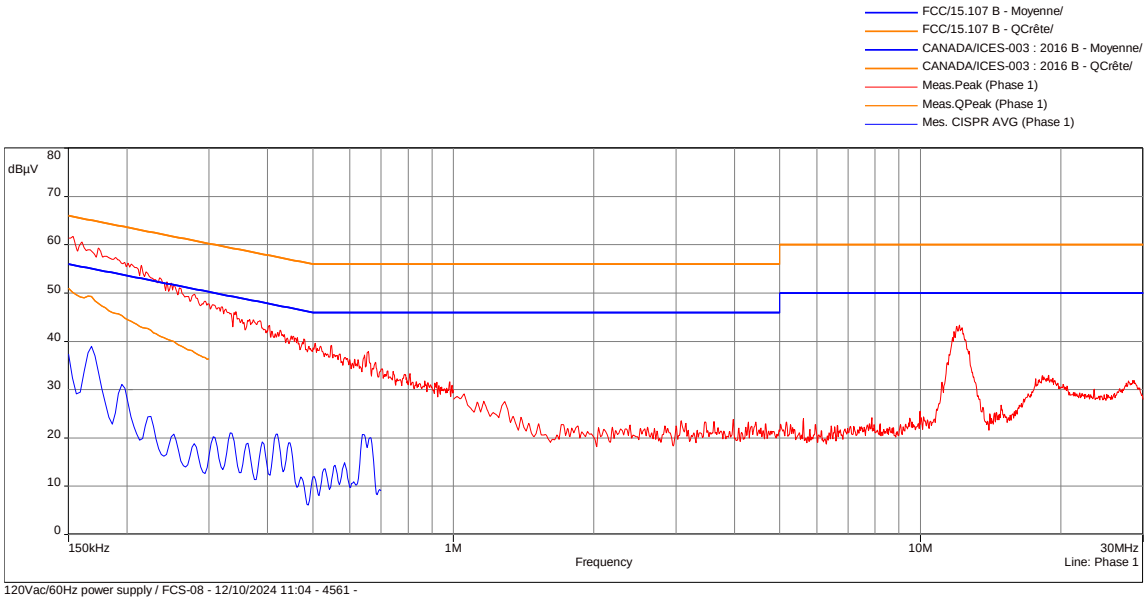
TEST EQUIPMENT USED					
CATEGORY	**BRAND**	**TYPE**	**IDENTIFIER**	**CAL. DATE**	**CAL. DUE**
AC power source	KIKUSUI	PCR 4000L	15322	20/02/2024	20/04/2026
Artificial hand	EMITECH	Artificial hand	18773	09/11/2022	09/01/2025
Cable	N	3m	16413	16/08/2023	16/10/2025
Cable	EMITECH	Current absorber sheath	18366	17/08/2023	17/10/2025
LISN	Rohde & Schwarz	ENV216	17925	06/12/2023	06/02/2026
PE choke	EMITECH	CISPR 16-2-1	10071		
Receiver	Rohde & Schwarz	ESI	9704	15/01/2024	15/03/2025
Software	Nexio	BAT EMC	0000		
Thermo-Hygromètre	Testo	608-H1	19386	08/03/2024	08/05/2026
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025

BAT-EMC software version: V3.18.0.26 Blank cells = Permanent validity

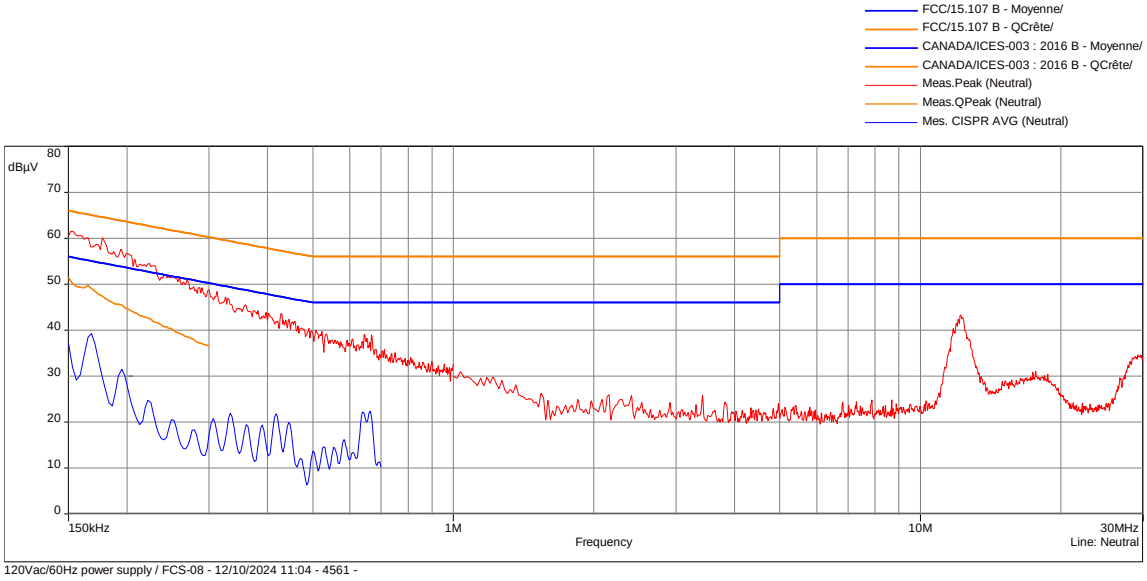
TEST SETUP PHOTO(S) - FCS08


CONDUCTED EMISSION (MEASUREMENT) - TABULATED RESULTS						
120VAC/60HZ POWER SUPPLY / FCS08						EMI4561
Terminal	**Test Frequency (MHz)**	**Detector (Pk/QP/Av)**	**Gain/Loss Factor (dB)**	**Level dB (µV)**	**Limit dB (µV)**	**Margin (dB)**
Neutral	0.15	Av	9.6	37.1	56	-18.9
Line	0.15	Av	9.6	37.35	56	-18.65
Neutral	0.168	Av	9.6	39.24	55.06	-15.82
Line	0.168	Av	9.6	39.01	55.06	-16.05
Neutral	0.195	Av	9.6	31.54	53.82	-22.28
Line	0.195	Av	9.6	31.11	53.82	-22.71
Neutral	0.15	QP	9.6	51.41	66	-14.59
Line	0.15	QP	9.6	51	66	-15
Line	12.12	Pk	9.87	43.43	50	-6.57
Neutral	12.20	Pk	9.87	43.27	50	-6.73
Supplementary information: Margin between peak measurements and average/quasi-peak limit(s) is > 6dB, so no average/quasi-peak measurements were performed						

CONDUCTED EMISSION (MEASUREMENT) - GRAPH			
120VAC/60HZ POWER SUPPLY / FCS08		**EMI4561**	
EUT mode:	#1	**T (°C):**	24.3
Test Date:	14/10/2024	**H (%):**	56
Test Operator:	RBL	**P (hPa):**	999



120Vac/60Hz power supply / FCS-08 - 12/10/2024 11:04 - 4561 -



120Vac/60Hz power supply / FCS-08 - 12/10/2024 11:04 - 4561 -

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Neutral	150kHz-30MHz	10kHz	30kHz	Peak
Line 1	150kHz-30MHz	10kHz	30kHz	Peak
Line 1	150kHz-300kHz	9kHz	-	Quasi-Peak
Line 1	150kHz-700kHz	9kHz	-	CISPR AVG
Neutral	150kHz-300kHz	9kHz	-	Quasi-Peak
Neutral	150kHz-700kHz	9kHz	-	CISPR AVG
Measure with:	A.M.N.			
Comments:	N/A			
EUT modification(s): N/A				

7.2. Measurement of radiated disturbances

Reference standard:	FCC 47 CFR PART 15: 2024 ICES-003 / NMB-003 ed. 7: 2020 ICES-Gen / NMB-Gen: 2024
Test method:	ANSI C63.4: 2014

General test setup: EUT is set on an insulating support at 80cm above the ground reference plane.

First (peak) measurements were performed at an antenna to EUT separation distance of 3-meter. The EUT was rotated 360° about its azimuth with the receive antenna located in horizontal and vertical polarities and, for SAC method, at various heights.

Final measurements (quasi-peak) were then performed in a reference test site that complies to CISPR 16-1-4. The EUT was rotated 360° about its azimuth and, for SAC method, adjusting the receive antenna height from 1 to 4 m.

All frequencies were investigated in both horizontal and vertical antenna polarization, where applicable.

TESTED CONFIGURATION	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
120Vac/60Hz power supply / FCS08	30MHz-1GHz	Class B	EMI4559	**PASS**

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	10 to 40 °C	*See Graph(s)*
Relative Humidity	10 to 90 %	*See Graph(s)*
Atmospheric pressure	N/A	*See Graph(s)*
Test method deviation: N/A		
Supplementary information: N/A		

TEST EQUIPMENT USED

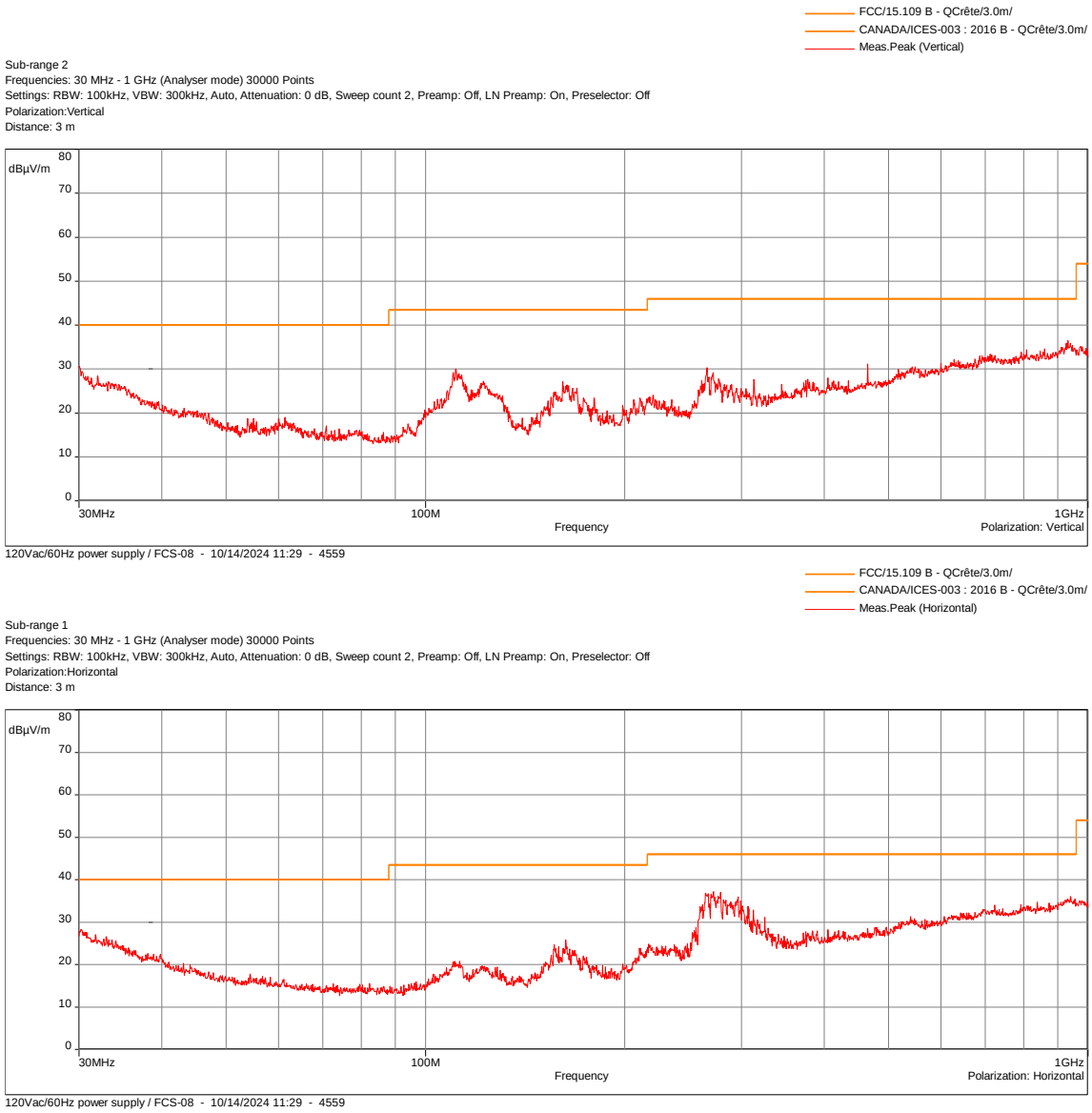
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
AC power source	KIKUSUI	PCR4000L	3074	16/04/2024	16/06/2026
Antenna	ETS lindgren	3142E	14523	27/01/2022	27/03/2025
Cable	SUCOFLEX	N-3m	14378	17/08/2023	17/10/2025
Cable	SUCOFLEX	N-6,5m	14380	17/08/2023	17/10/2025
Cable	Techniwave	N-8m	18349	17/08/2023	17/10/2025
Receiver	Rohde & Schwarz	ESW8	19536	02/05/2024	02/07/2025
Shielded enclosure	COMTEST	SAC 3m	14494	08/08/2023	08/10/2026
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Testo	608-H2	12268	24/10/2022	24/12/2024
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025

BAT-EMC software version: V3.18.0.26 Blank cells = Permanent validity

TEST SETUP PHOTO(S) - FCS08


MEASUREMENT OF RADIATED DISTURBANCES - TABULATED RESULTS								
120VAC/60HZ POWER SUPPLY / FCS08								EMI4559
Test Freq. (MHz)	Detector (Pk/QP/ Av)	Ant. position	Azimuth (°)	Ant. Height (cm)	Cor. Factor (dB)	Level dB (µV/m)	Limit dB (µV/m)	Margin (dB)
30.22	Pk	Horizontal	-	-	25.04	28.35	40	-11.65
110.64	Pk	Horizontal	-	-	15.61	20.80	43.50	-22.7
162.89	Pk	Horizontal	-	-	17.62	25.82	43.50	-17.68
272.21	Pk	Horizontal	-	-	22.01	37.19	46	-8.81
296.56	Pk	Horizontal	-	-	21.48	35.97	46	-10.03
539.49	Pk	Horizontal	-	-	30.75	31.31	46	-14.69
30.03	Pk	Vertical	-	-	25.15	30.58	40	-9.42
111.09	Pk	Vertical	-	-	15.58	30.03	43.50	-13.47
161.14	Pk	Vertical	-	-	17.96	27.11	43.50	-16.39
265.97	Pk	Vertical	-	-	22.81	30.29	46	-15.71
464.99	Pk	Vertical	-	-	27.44	31.17	46	-14.83
932.71	Pk	Vertical	-	-	35.66	36.44	46	-9.56
Supplementary information: Margin between peak measurements and average/quasi-peak limit(s) is > 6dB, so no average/quasi-peak measurements were performed								

MEASUREMENT OF RADIATED DISTURBANCES - GRAPH			
120VAC/60HZ POWER SUPPLY / FCS08		**EMI4559**	
EUT mode:	#1	**T (°C):**	20.9
Test Date:	14/10/2024	**H (%):**	66.2
Test Operator:	RBL	**P (hPa):**	999



POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Horizontal	30MHz-1GHz	100kHz	300kHz	Peak
Vertical	30MHz-1GHz	100kHz	300kHz	Peak

Configuration:	N/A
Comments:	N/A

EUT modification(s): N/A

End of test report