



LCIE



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TEST REPORT

N°: 32397670-824251-A (FILE#14463016)

Version: 02

Subject

Electromagnetic compatibility tests according to the standards:
FCC CFR 47 Part 15, Subpart B
ANSI C63.4 / ANSI C63.4a
ICES-003

Issued to

THALES AVS FRANCE SAS
460, Rue Du Pommarin
38430 – MOIRANS
FRANCE

Apparatus under test

↗ Product

Portable X-ray detector for security and non destructive test applications

↗ Trade mark

THALES

↗ Manufacturer

THALES AVS FRANCE SAS

↗ Model under test

pixium 2430 EZ3 NDT

↗ Serial number

Q26091E

↗ FCCID

VPQ-EZ3NDTNFC

↗ IC

7392A-EZ3NDTNFC

Conclusion

See Test Program chapter

Test date

May 20, 2026 to May 21, 2026

Test location

LCIE Grenoble – Site de Moirans

FCC Test site

FR0008 - 918017 (MOI)

ISED Test site

6500A – FR0008 (MOI)

Sample receipt date

May 20, 2026

Composition of document

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PUBLICATION HISTORY

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01	July 23, 2026	Jonathan SARTO	Creation of the document
02	September 24, 2026	Marlon BOUBY	Add mention of the module and the module FCC ID and IC on §2.4

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

1.1. FCC PART15B

Standard:

- ✓ 47 CFR FCC Part 15, Subpart B (Digital Devices) (June 30, 2026) [P](#)
- ✓ ANSI C63.4 (2014) / ANSI C63.4a (2017)

1.1.1. Requirements for disturbance emissions – Class A

EMISSION TEST	LIMITS			RESULTS (Comments)
Conducted emission 150kHz-30MHz FCC §15.107 ANSI C63.4 (2014) / ANSI C63.4a (2017)	Access: AC power			PASS
	Frequency	Quasi-peak	Average	
	150-500kHz	79 dBµV	66 dBµV	
	0.5-30MHz	73 dBµV	60 dBµV	
Radiated emission 30MHz-1GHz FCC §15.109 ANSI C63.4 (2014) / ANSI C63.4a (2017)	Access: Enclosure port of ancillary equipment			PASS
	Frequency	Quasi-peak @10m		
	30MHz-88MHz	39.0 dBµV/m		
	88MHz-216MHz	43.5 dBµV/m		
	216MHz-960MHz	46.4 dBµV/m		
Above 960MHz	49.5 dBµV/m			
Radiated emission 1GHz-26GHz* FCC §15.109 ANSI C63.4 (2014) / ANSI C63.4a (2017)	Access: Enclosure port of ancillary equipment			PASS
	Frequency	Peak @3m	Average @3m	
	1- 26GHz	80.0 dBµV/m	60.0 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.



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 A

EMISSION TEST	LIMITS			RESULTS (Comments)
Conducted emission 150kHz-30MHz ICES-003 §3.2.1	Access: AC power			PASS
	Frequency	Quasi-peak	Average	
	150-500kHz	79 dBµV	66 dBµV	
	0.5-30MHz	73 dBµV	60 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	40.0 dBµV/m	50.0 dBµV/m	
	88MHz-216MHz	43.5 dBµV/m	54.0 dBµV/m	
	216MHz-230MHz	46.4 dBµV/m	56.9 dBµV/m	
	230MHz-960MHz	47.0 dBµV/m	57.0 dBµV/m	
Radiated emission 1GHz-26GHz* ICES-003 §3.2.2	Access: Enclosure port of ancillary equipment			PASS
	Frequency	Peak @3m	Average @3m	
	1- 26GHz	80.0 dBµV/m	60.0 dBµV/m	

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

⁰: 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 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).



1.2.2. 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 (A) / NMB-003 (A)	See label	PASS

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

2.1. INFORMATIONS

Pixium 2430 EZ3 NDT detector is a part of a digital image acquisition chain in an overall Radiological System. It features a portable equipment designed for mobile applications and for security and non destructive test applications. The detector consists of a complete carbon fibre housing. They integrate:

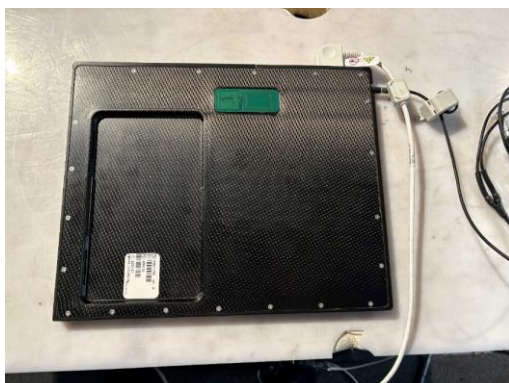
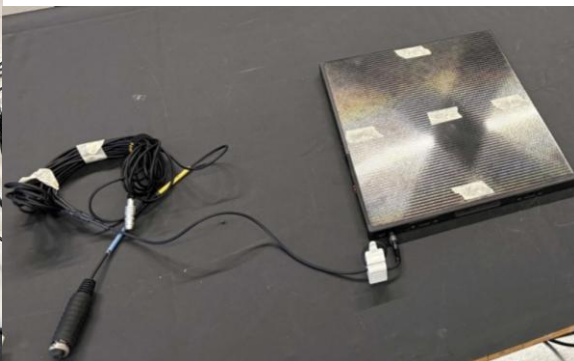
- LEDs indicators for internal status,
- NFC module for pairing with host system,
- ON / OFF button,
- Display,
- Connector for a dedicated cable,
- Specific connector for power supply / Ethernet link
- A removable battery,
- Identification, warning labels and RF certificate ID (refer to appendix A for label drawings).

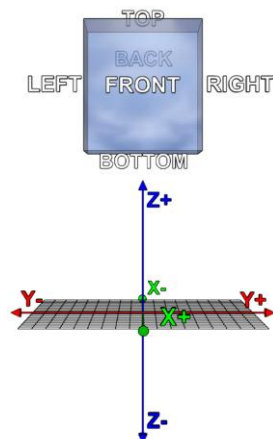
Two configurations are tested in this report:

- Wiring configuration with Back up cable (DC+Ethernet)
- Wireless configuration (battery + WIFI)

2.2. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES)

Equipment under test (EUT):

Model under test :	pixium 2430 EZ3 NDT		
Serial Number:	Q26091E		
			
Wiring configuration		Wireless configuration	
Dimensions:	27cm x 33cm x 1.5cm (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} : **12VDC**

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

Name	Type	Rating	Reference / Sn	Comments
Supply1	DC	12VDC	/	/
Supply2	Battery	7.4VDC	/	/

NC: Not communicated by provider

Earth:

Access	Type	Length (m)	Width (m)	Thickness (m)	Under test	Comments
None						

NC: Not communicated by provider

Inputs/outputs - Cable:

Access	Type	Length used (m)	Declared <3m	Shielded	Under test	Comments
Supply1	Back up cable (DC+Ethernet)	2	No	Yes	Yes	-
Supply2	Battery port	-	Yes	No	Yes	-
Access1	Back up cable (DC+Ethernet)	2	No	Yes	Yes	-
Access2	LEMO cable	10	No	No	Yes	-

NC: Not communicated by provider

Auxiliary equipment used during test:

Type	Reference	Sn	Comments
Laptop	ASUS	/	/
Wifi router	ASUS RT-AC68U	/	/
RFID TAG	/	/	/

NC: Not communicated by provider

2.3. EQUIPMENT LABELLING

Label	
<i>pixium</i> 2430 EZ3 NDT     IP67  12V 1A	THALES THALES AVS FRANCE SAS 75-77 Avenue Marcel Dassault 33700 MERIGNAC FRANCE Manufactured by THALES AVS FRANCE SAS 460 rue du Pommarin 38430 MOIRANS FRANCE  contains FCC ID : VPQ-WNFB265AXIBT FCC ID : VPQ-EZ3NDTNFC contains IC : 7392A-NFB265AXIBT IC : 7392A-EZ3NDTNFC  R 020-200125 5 GHz product for indoor use only



2.4. EUT CONFIGURATION

Hardware information			
Highest internal frequency (PLL, Quartz, Clock, Microprocessor...):	F_{Highest}:	33.333	MHz
Firmware (if applicable):	V. :	63671785AA	
Software (if applicable):	V. :	OT63676329A	
Time necessary for the EUT to be exercised and to respond:	Dwell:	7	s
Module information on EUT	WiFi 2.4GHz and WiFi 5GHz		
	Contains FCC ID: VPQ-WNFB265AXIBT		
	Contains IC: 7392A-WNFB265AXIBT		

NC: Not communicated by provider

Mode:	1
Operating mode: Wiring configuration (with Back up cable)	
Free reading – The XRD window is 500 ms. The detector mode/gain is m1g4 (overview binning 1x1). The acquisition frequency of detector is 0.14 fps.	

Mode:	2
Operating mode: Wireless configuration (without Back up cable and powered by battery)	
Free reading – The XRD window is 500 ms. The detector mode/gain is m1g4 (overview binning 1x1). The acquisition frequency of detector is 0.14 fps.	

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/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 : May 21, 2026
 Test performed by : Jonathan SARTO
 Atmospheric pressure (hPa) : 1003
 Relative humidity (%) : 50
 Ambient temperature (°C) : 22

4.2. TEST SETUP

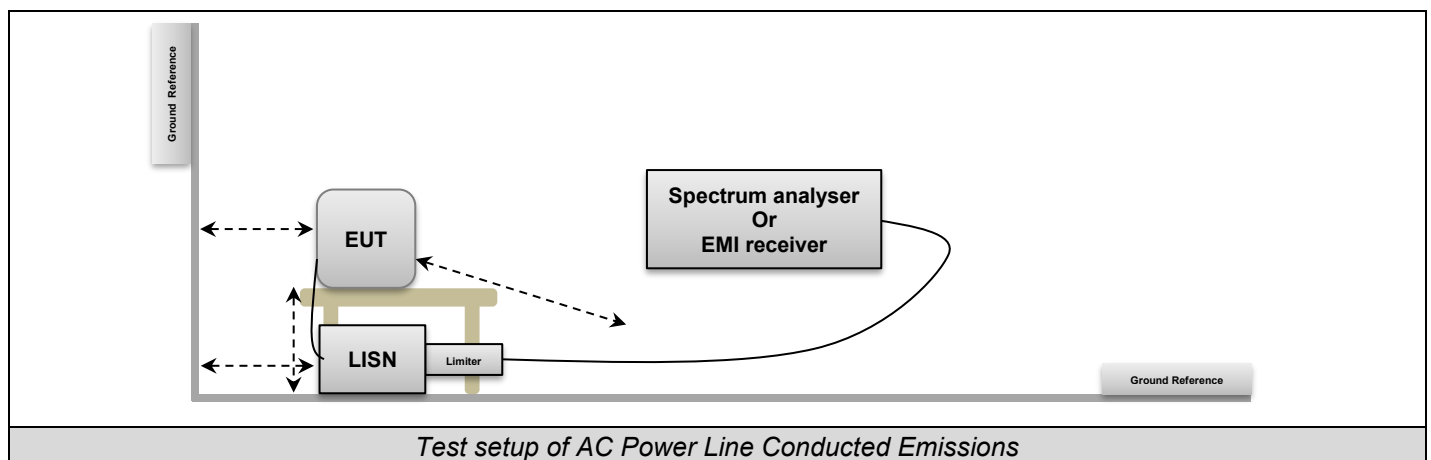
FCC - Test procedure: ANSI C63.4 & FCC Part 15 subpart B

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); if auxiliaries used, they 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)	☒ 120VAC/60Hz	☒ 240VAC/50Hz





Test setup

4.3. TEST EQUIPMENT LIST

Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Receiver 20Hz – 8GHz	ROHDE & SCHWARZ	ESU8	A2642019	11/2025	11/2027
EMC comb generator	LCIE SUD EST	—	A3169098	NA	NA
LISN	ROHDE & SCHWARZ	ENV216	C2320291	08/2025	08/2026
BAT EMC	NEXIO	v3.21.0.32	L1000115-MOI	-/-	-/-
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	12/2025	12/2027
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 – RUNNING MODE N°1

Mains terminals:

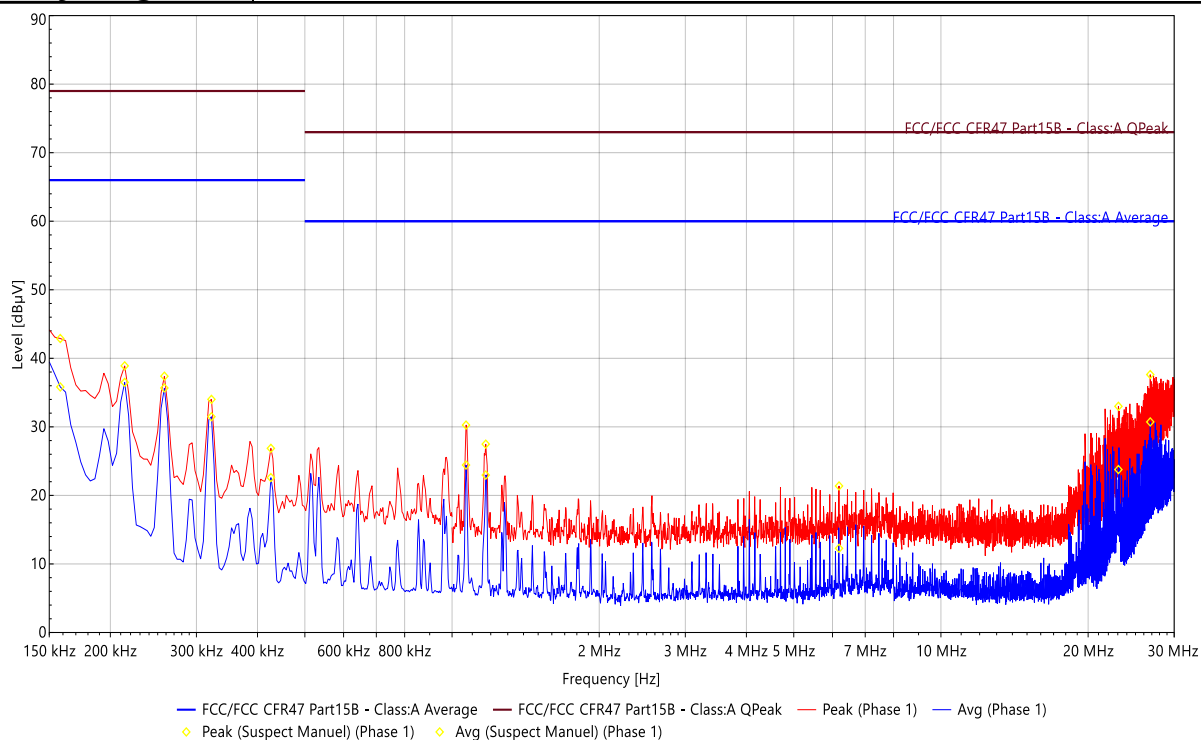
SUPPLY1

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

Conducted Emissions

Graph name: Emc#1
Frequency range: 150 kHz to 30 MHz

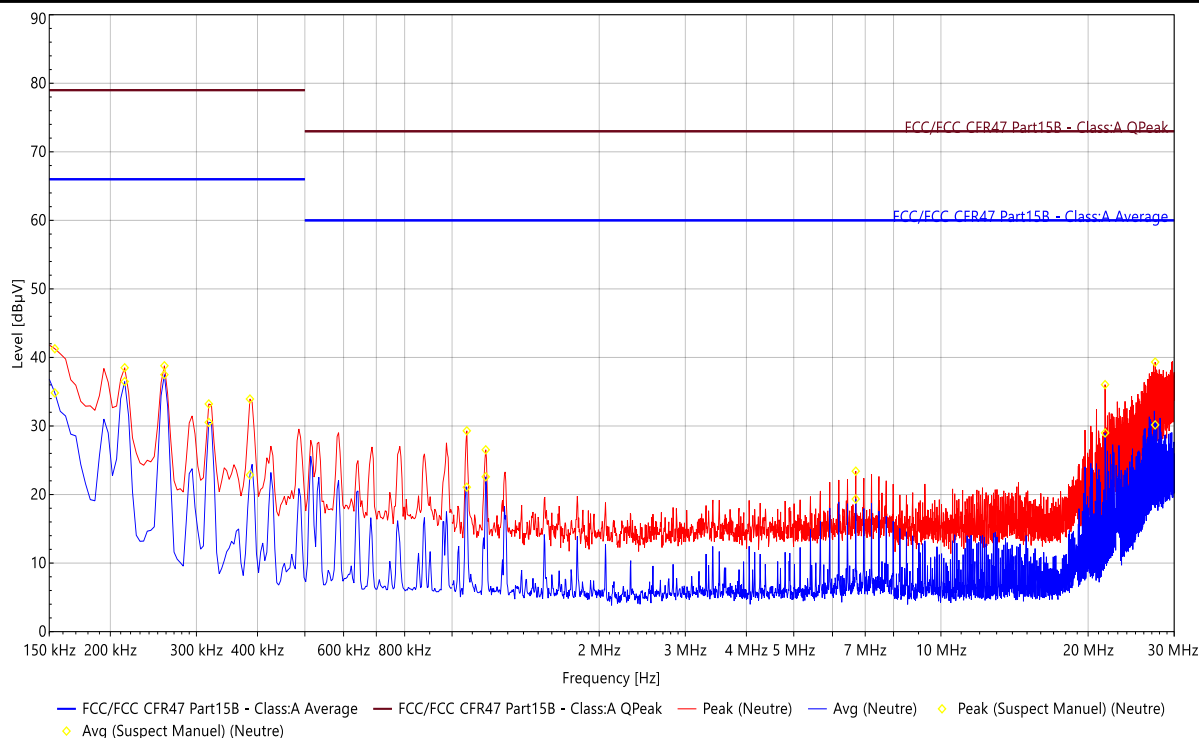


Qualification:

Frequency	QP Level (dBμV)	Lim.QP (dBμV)	QP-Lim.QP (dB)	CAVG Level (dBμV)	Lim.CAVG (dBμV)	CAVG-Lim.CAVG (dB)	Correction (dB)
158.000 kHz	39.76	79.00	-39.24	35.33	66.00	-30.67	19.44
214.000 kHz	37.41	79.00	-41.59	36.49	66.00	-29.51	19.43
258.000 kHz	36.29	79.00	-42.71	35.76	66.00	-30.24	19.42
322.000 kHz	32.23	79.00	-46.77	31.42	66.00	-34.58	19.43
426.000 kHz	24.17	79.00	-54.83	22.64	66.00	-43.36	19.43
1.068 MHz	28.78	73.00	-44.22	23.70	60.00	-36.30	19.49
1.172 MHz	24.04	73.00	-48.96	22.47	60.00	-37.53	19.48
6.188 MHz	14.63	73.00	-58.37	9.51	60.00	-50.49	19.93
23.068 MHz	32.56	73.00	-40.44	27.76	60.00	-32.24	20.78
26.800 MHz	33.41	73.00	-39.59	28.42	60.00	-31.58	20.96

Conducted Emissions

Graph name: Emc#2
Frequency range: 150 kHz to 30 MHz

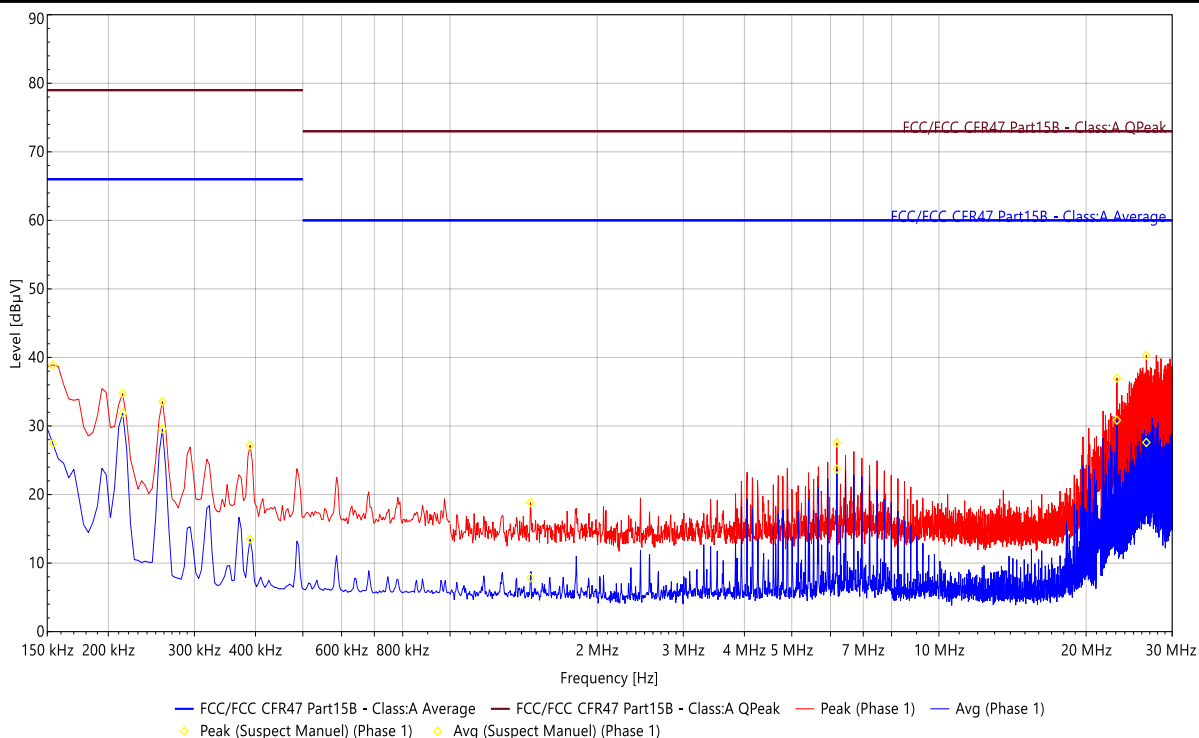


Qualification:

Frequency	QP Level (dBμV)	Lim.QP (dBμV)	QP-Lim.QP (dB)	CAVG Level (dBμV)	Lim.CAVG (dBμV)	CAVG-Lim.CAVG (dB)	Correction (dB)
154.000 kHz	37.12	79.00	-41.88	34.76	66.00	-31.24	19.45
214.000 kHz	37.57	79.00	-41.43	36.64	66.00	-29.36	19.44
258.000 kHz	37.86	79.00	-41.14	37.49	66.00	-28.51	19.42
318.000 kHz	30.99	79.00	-48.01	30.28	66.00	-35.72	19.45
386.000 kHz	29.46	79.00	-49.54	22.60	66.00	-43.40	19.45
1.072 MHz	26.09	73.00	-46.91	20.29	60.00	-39.71	19.49
1.172 MHz	24.46	73.00	-48.54	22.35	60.00	-37.65	19.48
6.696 MHz	21.12	73.00	-51.88	19.16	60.00	-40.84	19.93
21.664 MHz	32.68	73.00	-40.32	28.65	60.00	-31.35	20.76
27.428 MHz	36.02	73.00	-36.98	31.11	60.00	-28.89	21.06

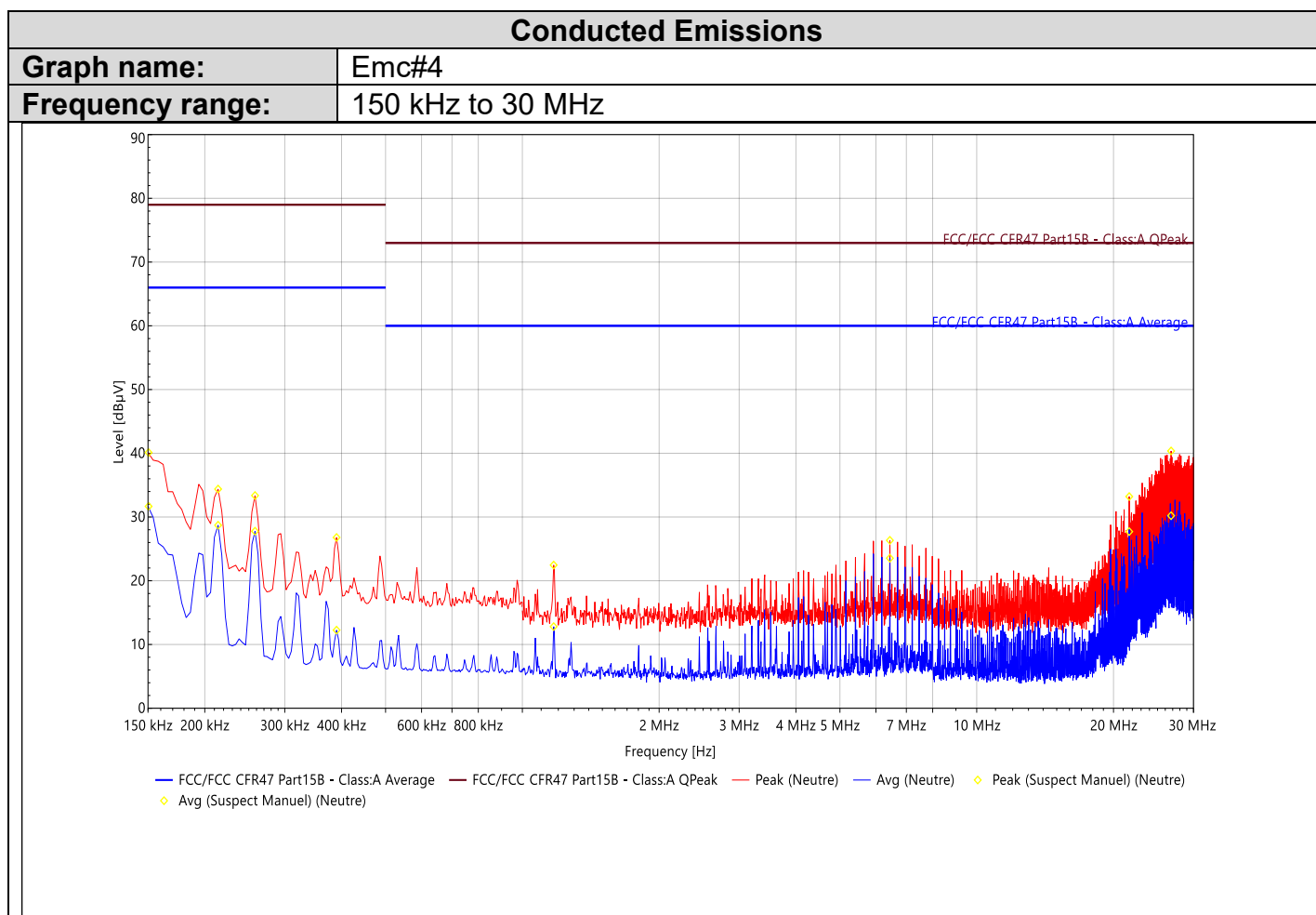
Conducted Emissions

Graph name: Emc#3
Frequency range: 150 kHz to 30 MHz



Qualification:

Frequency	QP Level (dBμV)	Lim.QP (dBμV)	QP-Lim.QP (dB)	CAVG Level (dBμV)	Lim.CAVG (dBμV)	CAVG-Lim.CAVG (dB)	Correction (dB)
154.000 kHz	34.26	79.00	-44.74	28.73	66.00	-37.27	19.44
214.000 kHz	33.51	79.00	-45.50	29.48	66.00	-36.52	19.43
258.000 kHz	31.80	79.00	-47.20	27.74	66.00	-38.26	19.42
390.000 kHz	23.13	79.00	-55.87	12.79	66.00	-53.21	19.43
1.460 MHz	12.26	73.00	-60.74	6.15	60.00	-53.85	19.52
6.184 MHz	25.14	73.00	-47.86	22.71	60.00	-37.29	19.93
23.128 MHz	34.00	73.00	-39.00	30.43	60.00	-29.57	20.78
26.556 MHz	30.37	73.00	-42.63	24.19	60.00	-35.81	20.95



Qualification:

Frequency	QP Level (dBµV)	Lim.QP (dBµV)	QP-Lim.QP (dB)	CAVG Level (dBµV)	Lim.CAVG (dBµV)	CAVG-Lim.CAVG (dB)	Correction (dB)
150.000 kHz	37.04	79.00	-41.96	31.74	66.00	-34.26	19.43
214.000 kHz	32.92	79.00	-46.08	28.52	66.00	-37.48	19.44
258.000 kHz	31.70	79.00	-47.30	27.74	66.00	-38.26	19.42
390.000 kHz	23.03	79.00	-55.97	11.96	66.00	-54.04	19.44
1.172 MHz	17.98	73.00	-55.02	12.96	60.00	-47.04	19.48
6.440 MHz	24.65	73.00	-48.35	23.53	60.00	-36.47	19.93
21.660 MHz	31.42	73.00	-41.58	26.90	60.00	-33.10	20.76
26.780 MHz	36.33	73.00	-36.67	29.76	60.00	-30.24	21.03

4.6. CONCLUSION

The sample of the equipment **pixium 2430 EZ3 NDT**, Sn : **Q26091E**, 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

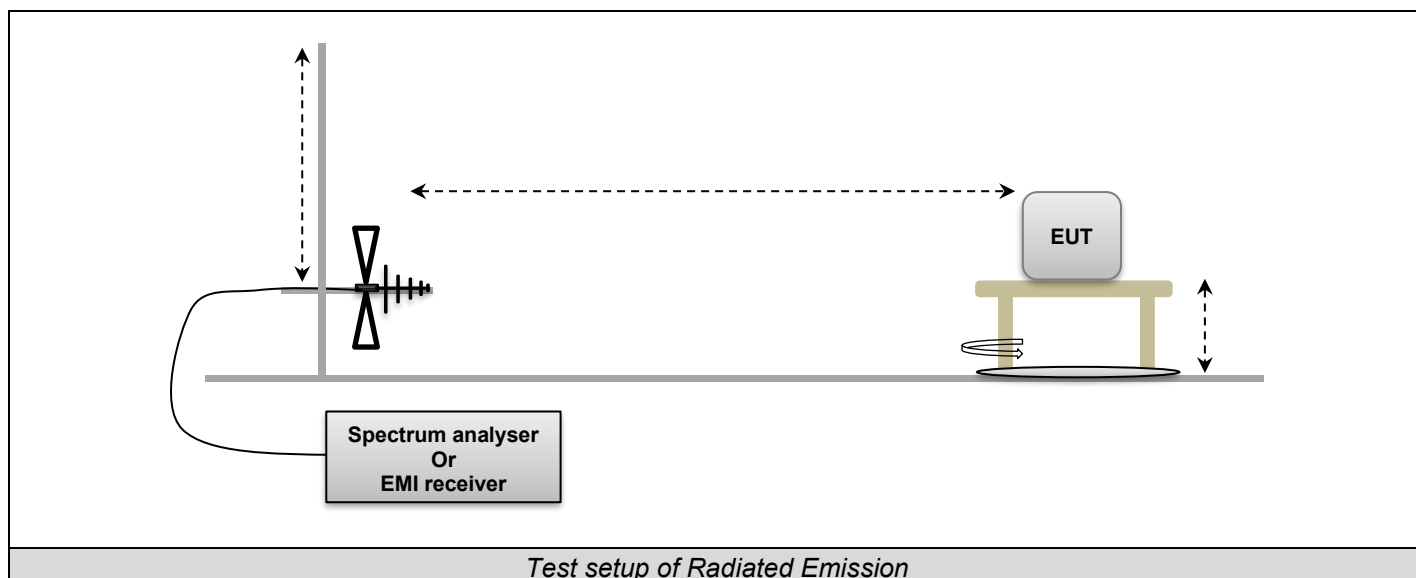
Date of test	: May 20, 2026	May 21, 2026
Test performed by	: Jonathan SARTO	Jonathan SARTO
Atmospheric pressure (hPa)	: 1002	1003
Relative humidity (%)	: 48	50
Ambient temperature (°C)	: 22	22

5.2. TEST SETUP

FCC - Test procedure: ANSI C63.4 & FCC Part 15 subpart B

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} .



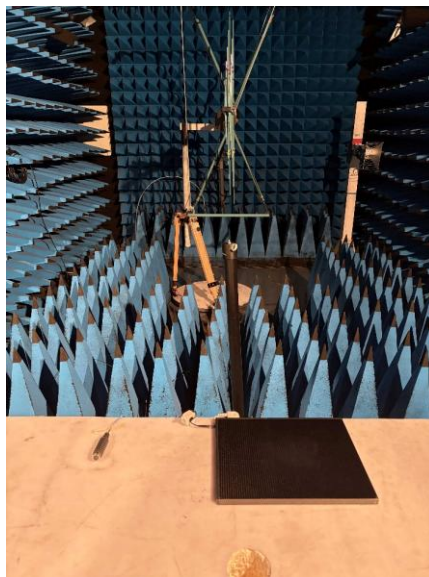
Same setup is used in semi anechoic chamber during pre-characterization, with a distance of 3m between EUT and antenna.

5.2.1. FCC & ISED – Photo of the test setup



Back up mode on axis XY

Battery mode on axis Z



Test setup in anechoic chamber – Frequency <1GHz



Back up mode



Battery mode

Test setup on OATS



Back up mode



Battery mode



Test setup 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:	1.55m	Varied continuously from 1m to 4m
Antenna Type:	Bi-Log	Biconical & Bi-Log
Min. Antenna Beamwidth:	Teseq CBL 6144 / w@3m - 3.5m<1GHz	Eaton 94455 / w@10m - 2.6m<200MHz Teseq CBL 6111 / w@10m - 14m<1GHz
RBW Filter:	100kHz	120kHz
Maximization:	Turntable rotation of 360 degrees range	
Test site:	Semi-Anechoic Chamber	Open Area Test Site
Distance EUT - Antenna:	3m	10m
Detector:	Peak	QPeak
Mode:	Linear Scan	Linear Scan



5.3.2. 1GHz – 26GHz:

Frequency range:	1GHz to 14GHz	
Test:	Pre-Characterization	Qualification
Antenna Polarization:	Horizontal and Vertical	
Antenna Height:	1m	1m
Antenna Type:	Horn	Horn
Min. Antenna Beamwidth:	A-INFO LB-10180 / w@3m - 2.0m<14GHz / 0.7m<18GHz	A-INFO LB-10180 / w@3m - 2.0m<14GHz / 0.7m<18GHz
RBW Filter:	1MHz	1MHz
Maximization:	Turntable rotation of 360 degrees range	
Test site:	Full Anechoic Chamber	Full Anechoic Chamber
Distance EUT - Antenna:	3m	3m
Detector:	Peak & Average	Peak & Cspr Average
Mode:	Linear Scan	Linear Scan

Frequency range:	14GHz to 18GHz	
Test:	Pre-Characterization	Qualification
Antenna Polarization:	Horizontal and Vertical	
Antenna Height:	1m	1m
Antenna Type:	Horn	Horn
Min. Antenna Beamwidth:	EM 6969 / w@3m - 0.7m<14GHz/0.6m<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	Full Anechoic Chamber
Distance EUT - Antenna:	3m	3m
Detector:	Peak & Average	Peak & Cspr Average
Mode:	Linear Scan	Linear Scan

Frequency range:	18GHz to 26GHz	
Test:	Pre-Characterization	Qualification
Antenna Polarization:	Horizontal and Vertical	
Antenna Height:	1.5m	1.5m
Antenna Type:	Horn	Horn
Min. Antenna Beamwidth:	Schwarzbeck BBHA 9170 / w@1m - 0.3m<18GHz / 0.3m<26GHz / 0.2m<40GHz	Schwarzbeck BBHA 9170 / w@1m - 0.3m<18GHz / 0.3m<26GHz / 0.2m<40GHz
RBW Filter:	1MHz	1MHz
Maximization:	Turntable rotation of 360 degrees range	
Test site:	Full Anechoic Chamber	Full Anechoic Chamber
Distance EUT - Antenna:	1m	1m
Detector:	Peak & Average	Peak & Cspr Average
Mode:	Linear Scan	Linear Scan



5.4. TEST EQUIPMENT LIST

Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
RECEIVER	KEYSIGHT	E4440A	A4060035	06/2024	06/2027
Cable 5m	SUCOFLEX	18GHz	A5329918	08/2025	08/2026
Cable 0.75m	SUCOFLEX	18GHz	A5329919	08/2025	08/2026
Cable 2.2m N	SUCOFLEX	SF118A/2x11N/2.2M	A5329990	08/2025	08/2026
Amplifier 10kHz - 13.5GHz	LCIE SUD EST	—	A7085028	08/2025	08/2027
Antenna Bi-Log XWing	TESEQ	CBL6144	C2040146	-/-	-/-
Antenna horn 18GHz	AINFO	LB	C2042078	07/2024	07/2027
Semi-Anechoic chamber #2	SIEPEL	—	D3044015	12/2024	05/2026
Diameter 1.2m / Height 1.5m	LCIE	VSWR 1GHz - 13GHz	D3044015_VSWR	01/2025	01/2028
Turntable controller (Cage#2)	ETS Lingren	Model 2066	F2000393	-/-	-/-
Turntable chamber (Cage#2)	ETS Lingren	Model 2165	F2000404	-/-	-/-
Table C2	LCIE	—	F2000438	-/-	-/-
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	12/2025	12/2027
BAT EMC	NEXIO	v3.21.0.32	L1000115-MOI	-/-	-/-
EMR comb generator	BARDET	—	A3169050	NA	NA
HF EMR comb generator	YORK	CGE01	A3169114	NA	NA
Receiver 20-1000MHz	ROHDE & SCHWARZ	ESVS30	A2642006	10/2024	10/2026
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
CABLE	TELEDYNE	R82-0404-0.5M	A5330010	08/2025	08/2028
Multimeter	FLUKE	289	A1241119	05/2025	05/2027
HF EMR comb generator	LCIE SUD EST	—	A3169088	NA	NA
Spectrum analyzer	ROHDE & SCHWARZ	FSU 26	A4060058	01/2026	01/2028



Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
SMK 1.2m (Ampl <-> chamber)	HUBER-SUHNER	SUCOFLEX 102	A5330062	04/2023	05/2026
SMK 2.2m	SUCOFLEX	SF102/11SK/11SK/2200	A5330075	08/2024	08/2027
Cable 0.75m	-	18GHz	A5329900	08/2025	08/2026
Emission Cable 0.5m (Ampl <-> receptor)	INTELLICONNECT	C-KPKP-1503-500MM	A5329988	04/2023	05/2026
SMA Cable 18GHz 0.6m	TELEDYNE	18GHz	A5330055	08/2025	08/2026
SMA Cable 18GHz 3.5m	TELEDYNE	18GHz	A5330058	08/2025	08/2026
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 40GHz	SCHWARZBECK	BBHA 9170	C2042053	11/2025	11/2028
Antenna horn 18GHz	AINFO	LB	C2042055	11/2024	11/2027
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	-/-	-/-
Mat Controler	LCIE	MAT Controler	F2000523	-/-	-/-
TILT Controller	INNCO	CO3000	D3044034	NA	NA
Cable SMA 40cm	WITHWAVE	W101-SM1-0.4M	A5329979	03/2025	07/2026
BAT EMC	NEXIO	v3.21.0.32	L1000115-MOI	-/-	-/-
SMK 6.50m	TELEDYNE	A90-010-6.50MTR	A5330061	08/2025	08/2026

5.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None



5.6. TEST RESULTS – RUNNING MODE N°1 & 2

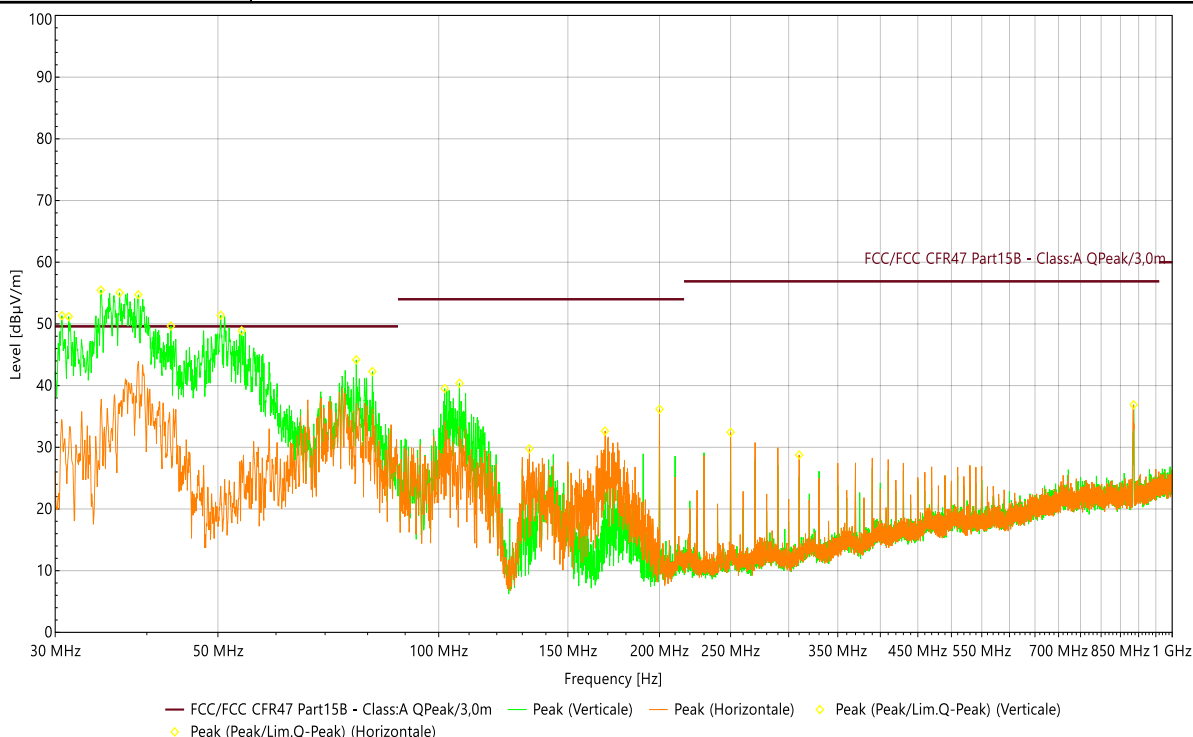
5.6.1. 30MHz –1GHz

Pre-qualification measurement

Graph identifier		Polarization	EUT position	Comments	
Emr#	1	Horizontal & Vertical	Axis XY	Running mode 1	See below
Emr#	2	Horizontal & Vertical	Axis Z	Running mode 1	See below
Emr#	3	Horizontal & Vertical	Axis XY	Running mode 2	See below
Emr#	4	Horizontal & Vertical	Axis Z	Running mode 2	See below

Radiated Emissions

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

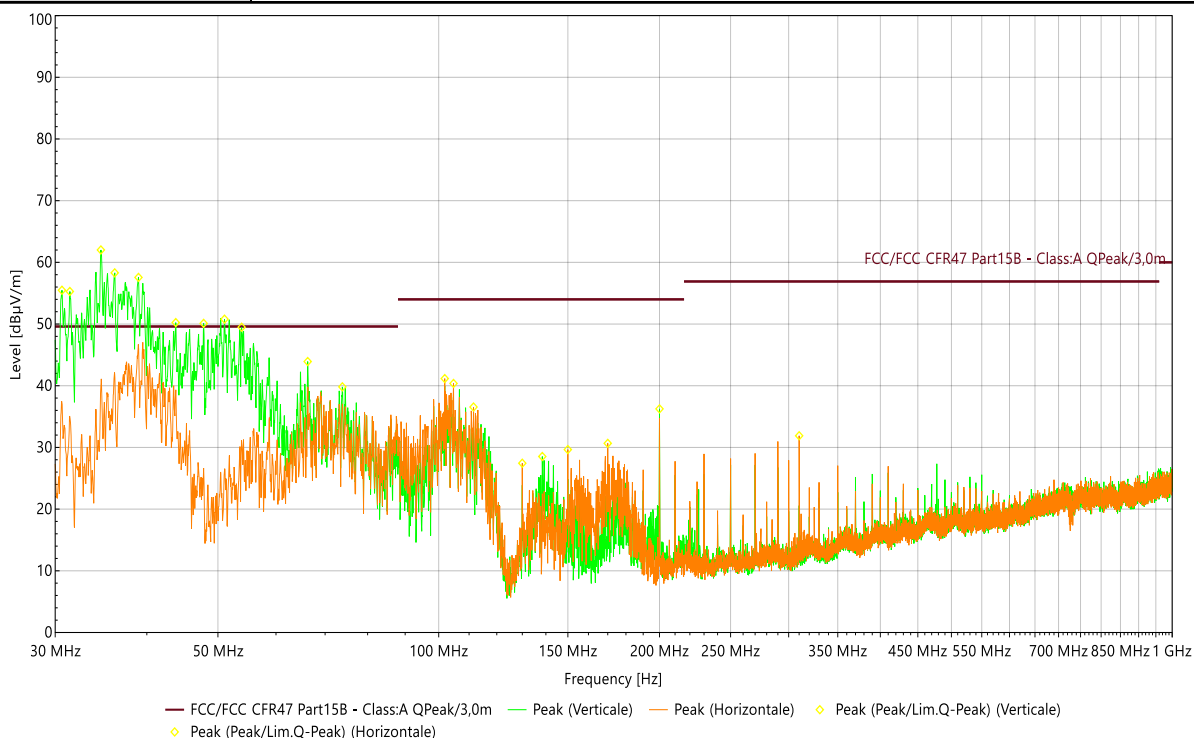


Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.QP (dBμV/m)	PK-Lim.QP (dB)	Angle (°)	Polar.
30.643 MHz	51.33	49.60	1.73	252	V
31.308 MHz	51.19	49.60	1.59	313	V
34.628 MHz	55.48	49.60	5.88	239	V
36.724 MHz	55.06	49.60	5.46	307	V
38.945 MHz	54.73	49.60	5.13	337	V
43.138 MHz	49.66	49.60	0.06	307	V
50.443 MHz	51.41	49.60	1.81	154	V
53.868 MHz	48.89	49.60	-0.71	175	V
77.196 MHz	44.18	49.60	-5.42	197	V
81.201 MHz	42.28	49.60	-7.32	223	V
101.894 MHz	39.53	54.00	-14.47	39	V
106.750 MHz	40.38	54.00	-13.62	221	V
885.972 MHz	36.90	56.90	-20.00	251	V
132.921 MHz	29.77	54.00	-24.23	351	H
168.495 MHz	32.63	54.00	-21.37	351	H
200.000 MHz	36.17	54.00	-17.83	147	H
250.006 MHz	32.44	56.90	-24.46	151	H
310.023 MHz	28.76	56.90	-28.14	170	H

Radiated Emissions

Graph name: Emr#2
Frequency range: 30 MHz to 1 GHz

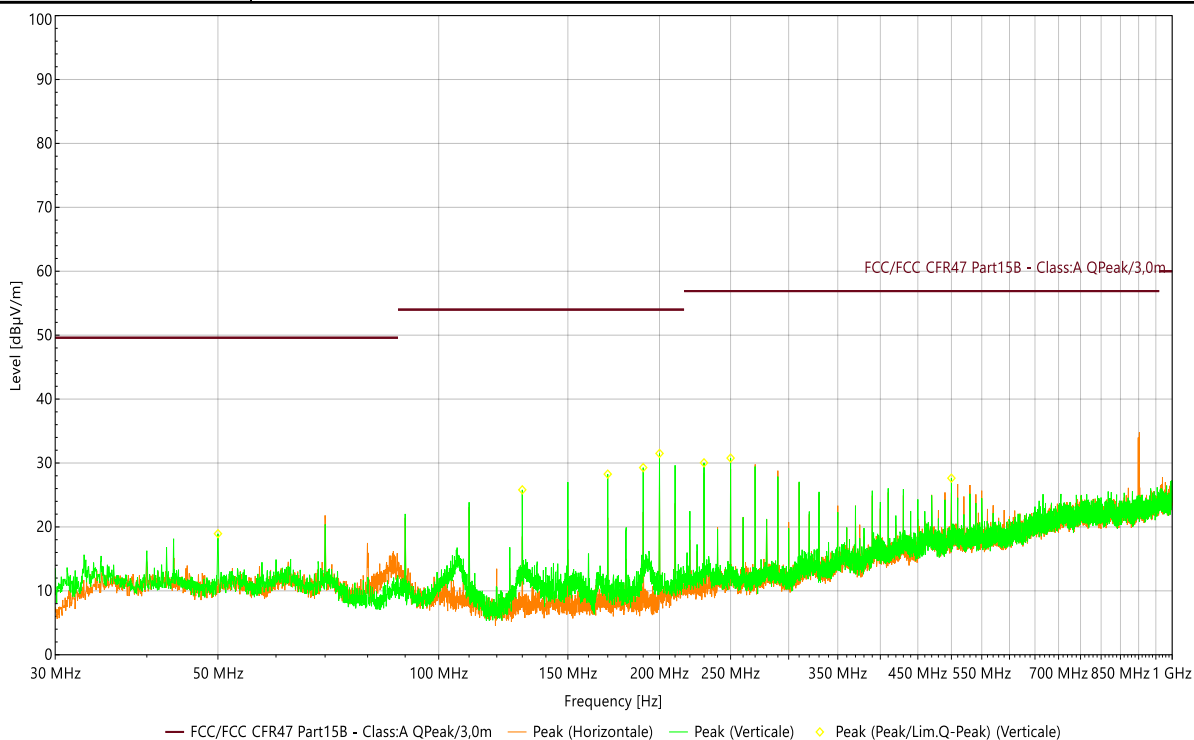


Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.QP (dBμV/m)	PK-Lim.QP (dB)	Angle (°)	Polar.
30.643 MHz	55.48	49.60	5.88	111	V
31.411 MHz	55.28	49.60	5.68	272	V
34.628 MHz	62.01	49.60	12.41	232	V
36.164 MHz	58.30	49.60	8.70	44	V
38.966 MHz	57.56	49.60	7.96	237	V
43.802 MHz	50.24	49.60	0.64	245	V
47.807 MHz	50.11	49.60	0.51	182	V
51.045 MHz	50.79	49.60	1.19	184	V
53.868 MHz	49.48	49.60	-0.12	163	V
66.279 MHz	43.92	49.60	-5.68	197	V
73.896 MHz	39.82	49.60	-9.78	210	V
138.421 MHz	28.52	54.00	-25.48	290	V
200.000 MHz	36.25	54.00	-17.75	28	V
101.914 MHz	41.16	54.00	-12.84	359	H
104.758 MHz	40.37	54.00	-13.63	359	H
111.544 MHz	36.55	54.00	-17.45	0	H
129.995 MHz	27.44	54.00	-26.56	163	H
149.982 MHz	29.65	54.00	-24.35	138	H
170.010 MHz	30.66	54.00	-23.34	140	H
310.023 MHz	31.89	56.90	-25.01	158	H

Radiated Emissions

Graph name: Emr#3
Frequency range: 30 MHz to 1 GHz

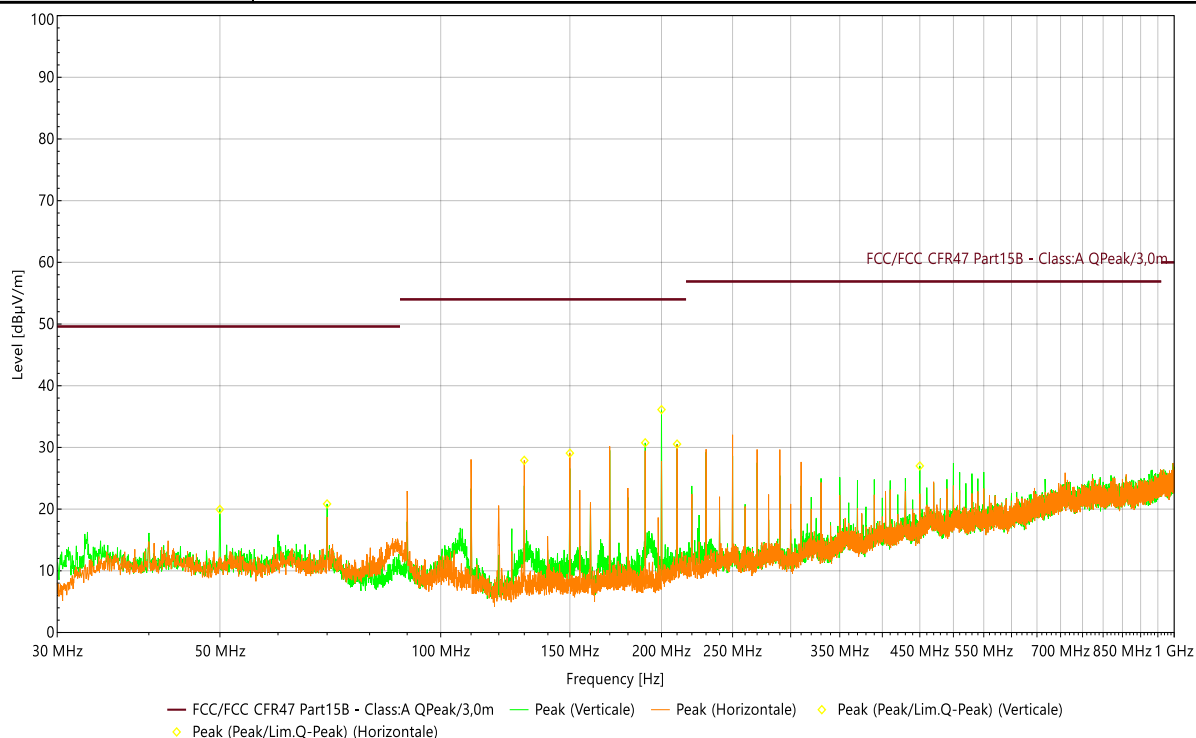


Pre-Characterization:

Frequency	PK Level (dBµV/m)	Lim.QP (dBµV/m)	PK-Lim.QP (dB)	Angle (°)	Polar.
50.007 MHz	18.94	49.60	-30.66	14	V
129.995 MHz	25.80	54.00	-28.20	63	V
170.010 MHz	28.26	54.00	-25.74	41	V
189.996 MHz	29.28	54.00	-24.72	43	V
200.000 MHz	31.50	54.00	-22.50	354	V
229.984 MHz	30.03	56.90	-26.87	271	V
250.006 MHz	30.77	56.90	-26.13	261	V
499.988 MHz	27.63	56.90	-29.27	359	V

Radiated Emissions

Graph name: Emr#4
Frequency range: 30 MHz to 1 GHz



Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.QP (dBμV/m)	PK-Lim.QP (dB)	Angle (°)	Polar.
49.987 MHz	19.95	49.60	-29.65	45	V
69.994 MHz	20.84	49.60	-28.76	231	V
190.017 MHz	30.75	54.00	-23.25	351	V
200.000 MHz	36.13	54.00	-17.87	0	V
210.011 MHz	30.54	54.00	-23.46	165	V
449.982 MHz	27.00	56.90	-29.90	235	V
129.995 MHz	27.90	54.00	-26.10	195	H
150.002 MHz	29.07	54.00	-24.93	69	H

Qualification

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

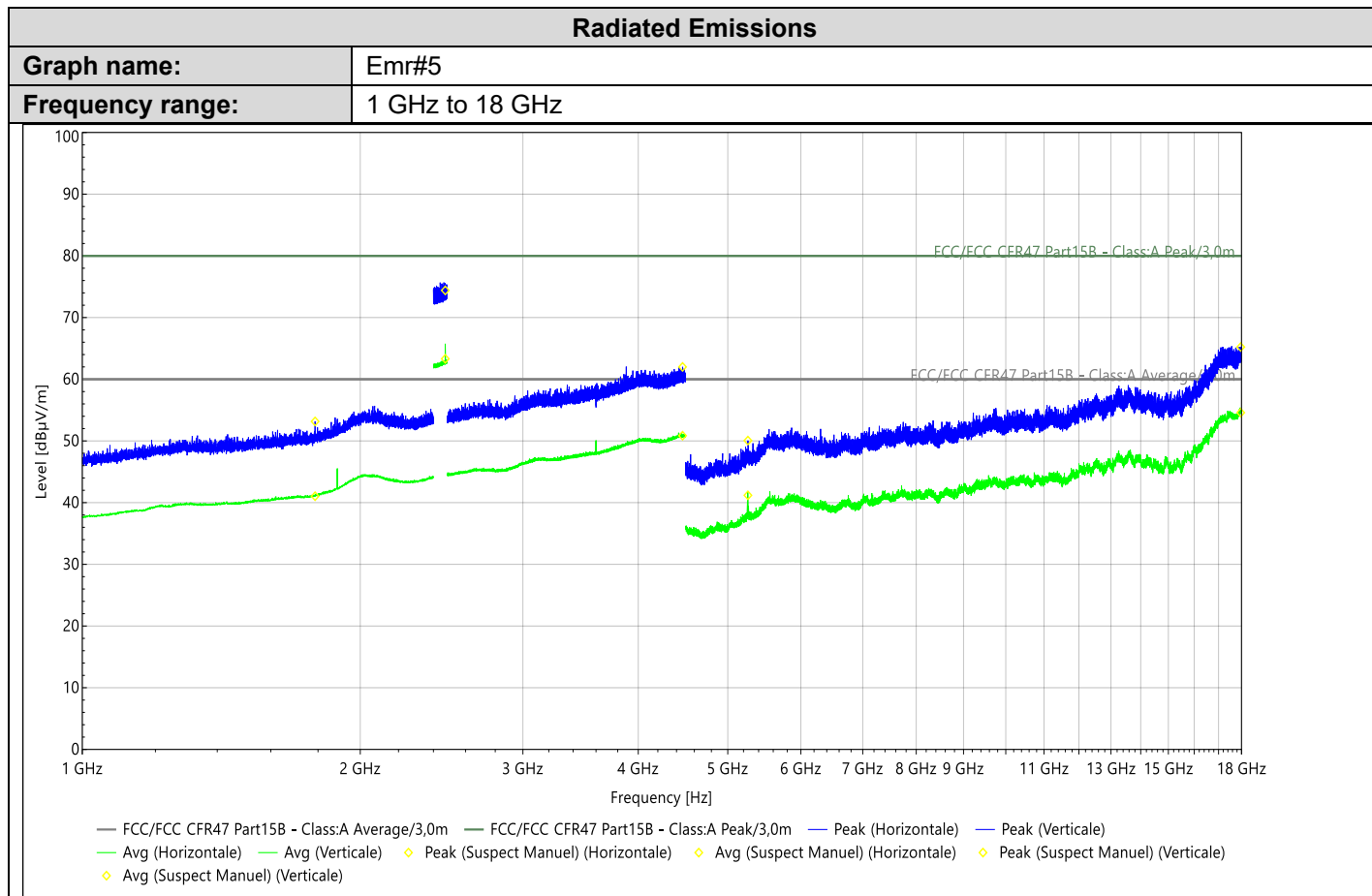
Running mode 1										
Test Frequency (MHz)	Meter Reading dB(μV)	Detector (Pk/QP/Av)	Polarity (V/H)	Azimuth (Degrees)	Antenna Height (cm)	Transducer Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
30.6000	32.6	QP	V	0	100	14.1	46.7	49.6	-2.9	Axis Z
31.4000	33.9	QP	V	300	100	14.2	48.1	49.6	-1.5	Axis Z
34.6000	32.5	QP	V	360	100	14.4	46.9	49.6	-2.7	Axis Z
36.2000	30.1	QP	V	0	100	14.4	44.5	49.6	-5.1	Axis Z
39.0000	33.7	QP	V	90	100	14.3	48.0	49.6	-1.6	Axis Z
43.8000	28.5	QP	V	21	195	13.7	42.2	49.6	-7.4	Axis Z
47.8000	32.7	QP	V	329	100	12.9	45.6	49.6	-4.0	Axis Z
50.4000	21.0	QP	V	188	119	12.3	33.3	49.6	-16.3	Axis XY
66.3000	32.8	QP	V	250	221	7.8	40.6	49.6	-9.0	Axis Z
77.2000	21.3	QP	V	0	179	8.8	30.1	49.6	-19.5	Axis XY
81.2000	19.4	QP	V	214	100	10.0	29.4	49.6	-20.2	Axis XY
101.9000	21.3	QP	H	0	150	13.2	34.5	54.0	-19.5	Axis Z
104.6000	20.8	QP	H	7	150	13.1	33.9	54.0	-20.1	Axis Z
111.5000	21.3	QP	V	322	100	12.8	34.1	54.0	-19.9	Axis Z
199.9000	25.0	QP	V	239	284	20.4	45.4	54.0	-8.6	Axis Z

Running mode 2										
Test Frequency (MHz)	Meter Reading dB(μV)	Detector (Pk/QP/Av)	Polarity (V/H)	Azimuth (Degrees)	Antenna Height (cm)	Transducer Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
199.9000	27.0	QP	V	303	214	20.4	47.4	54.0	-6.6	Axis Z

5.6.2. 1GHz - 26GHz

Pre-qualification measurement

Graph identifier	Polarization	EUT position	Comments
Emr# 5	Horizontal & Vertical	Axis XY & Z	Running mode 1 (1-18GHz)
Emr# 6	Horizontal & Vertical	Axis XY & Z	Running mode 1(18-26GHz)
Emr# 7	Horizontal & Vertical	Axis XY & Z	Running mode 2 (1-18GHz)
Emr# 8	Horizontal & Vertical	Axis XY & Z	Running mode 2 (18-26GHz)



Pre-Characterization:

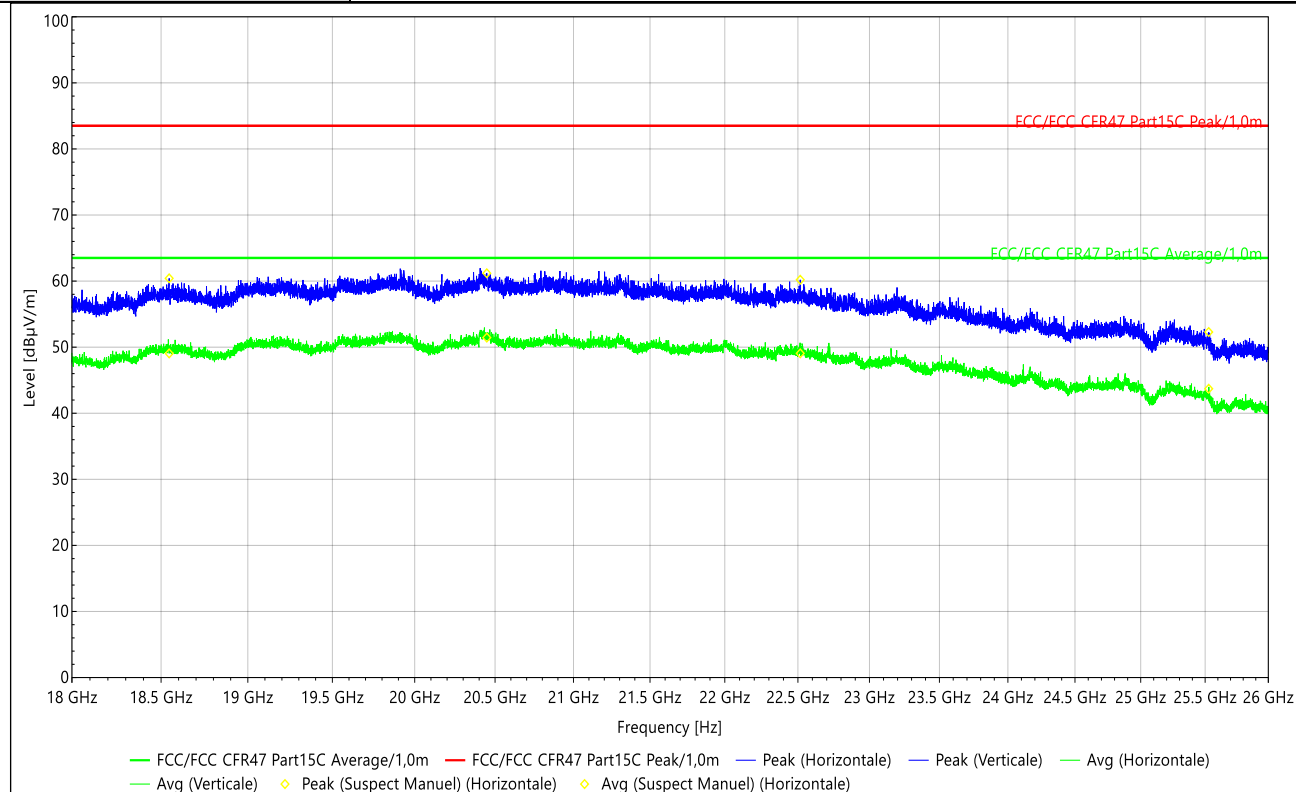
Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Margin	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Margin	Angle (°)	Polar.	Correct. (dB)
1.787 GHz**	53.16	80.00	-26.84	41.04	60.00	-18.96	42	H	35.09
2.472 GHz*	74.41	80.00	-5.59	63.31	60.00	3.31	213	H	38.06
5.258 GHz*	50.06	80.00	-29.94	41.19	60.00	-18.81	41	V	-11.31
17.967 GHz	65.22	80.00	-14.78	54.58	60.00	-5.42	23	V	27.58
4.467 GHz	62.00	80.00	-18	50.85	60.00	-9.15	332	V	43.87

*Carrier frequency due to access point WIFI

** Not due to product but to External GSM

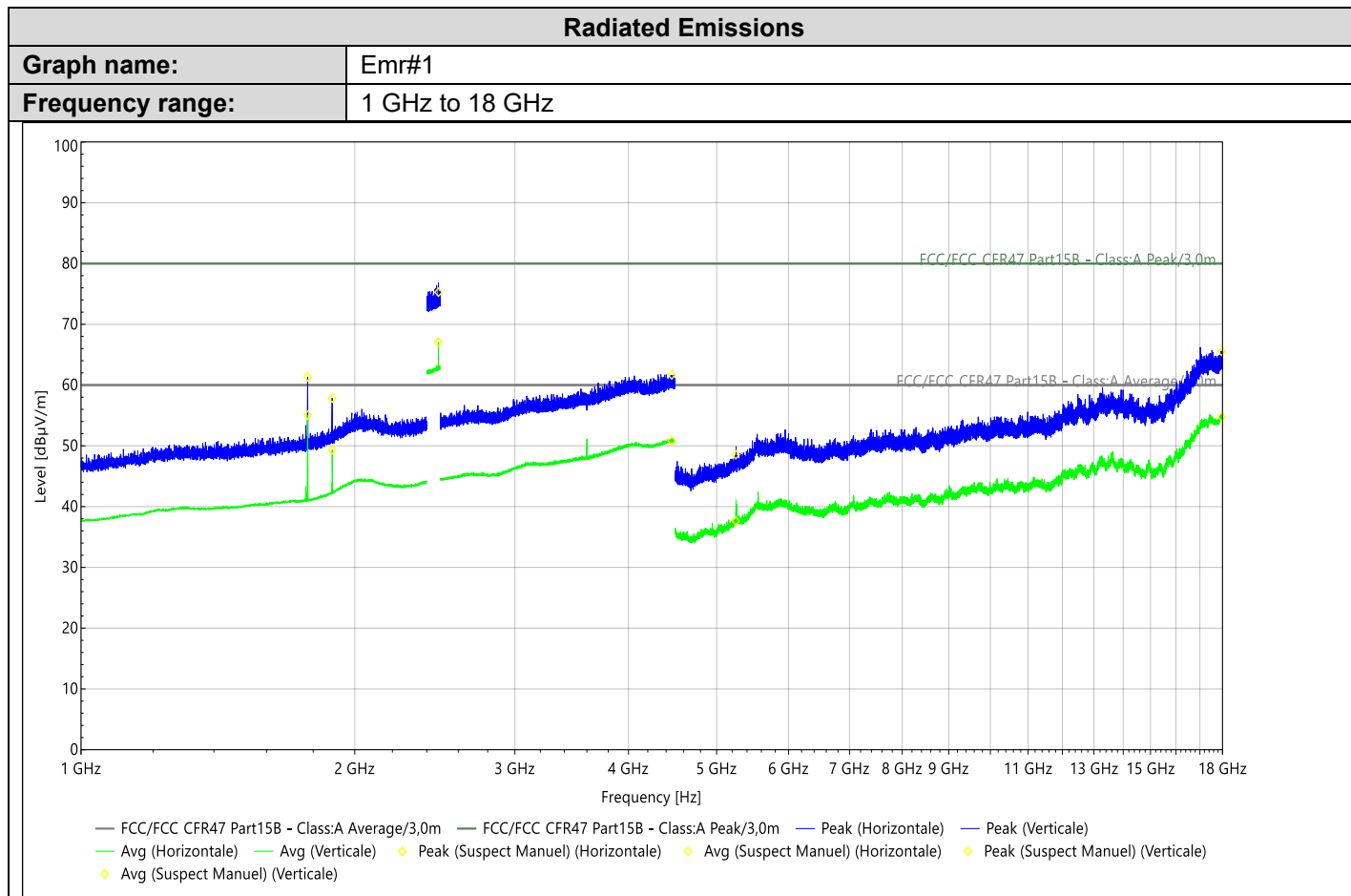
Radiated Emissions

Graph name: Emr#6
Frequency range: 18 GHz to 26 GHz



Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Margin	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Margin	Angle (°)	Polar.	Correct. (dB)
18.546 GHz	60.42	83.50	-23.08	49.05	63.50	-14.45	143	H	7.55
20.448 GHz	61.18	83.50	-22.32	51.45	63.50	-12.05	291	H	8.54
22.516 GHz	60.20	83.50	-23.3	49.06	63.50	-14.44	172	H	7.57
25.528 GHz	52.30	83.50	-31.2	43.72	63.50	-19.78	294	H	11.08

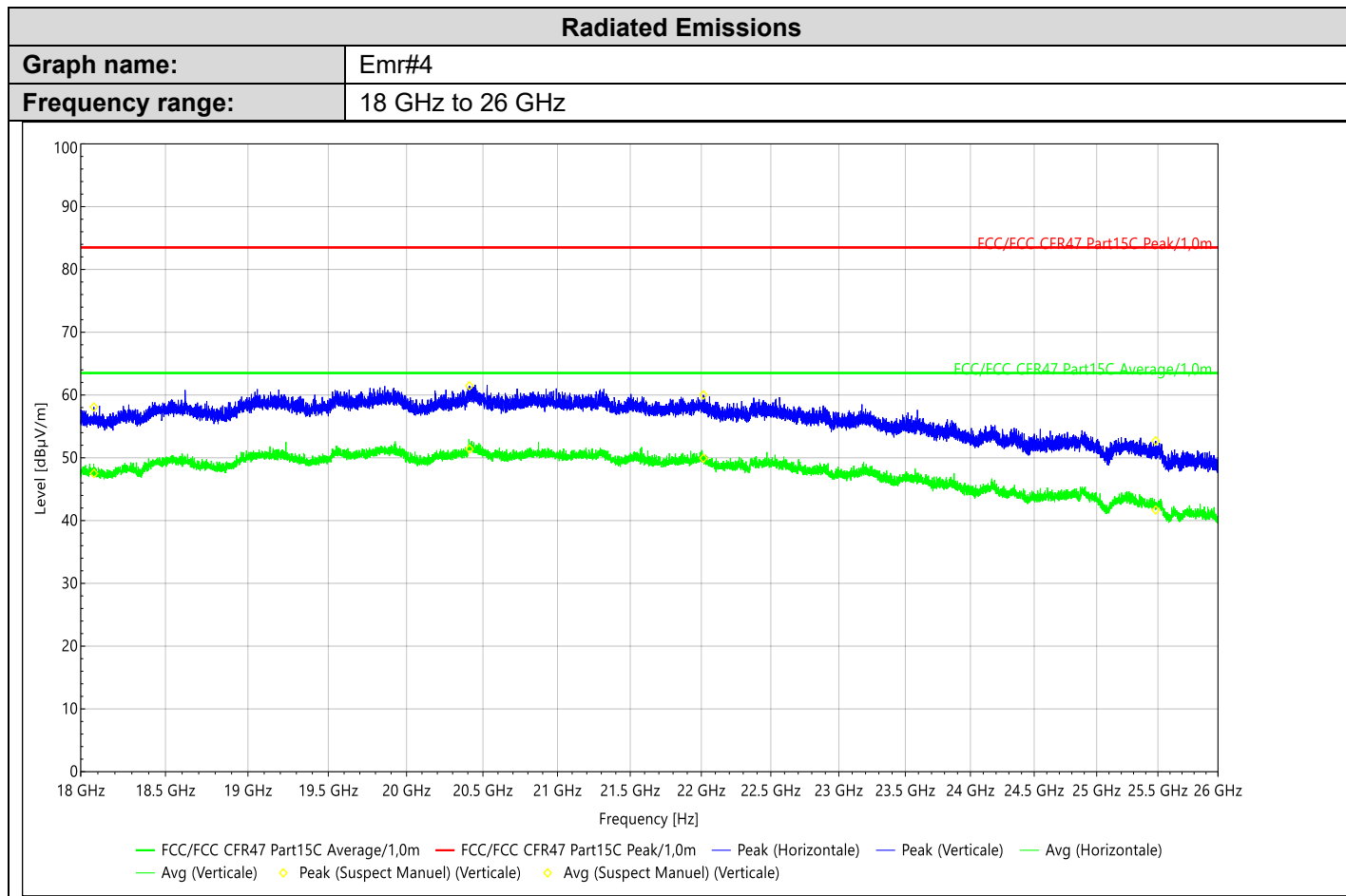


Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Margin	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Margin	Angle (°)	Polar.	Correct. (dB)
1.889 GHz**	57.84	80.00	-22.16	49.34	60.00	-10.66	217	H	36.15
4.463 GHz	61.66	80.00	-18.34	50.84	60.00	-9.16	280	H	43.88
5.248 GHz*	48.53	80.00	-31.47	37.63	60.00	-22.37	340	V	-11.40
17.958 GHz	65.53	80.00	-14.47	54.76	60.00	-5.24	56	V	27.52
2.472 GHz*	75.27	80.00	-4.73	67.06	60.00	7.06	118	V	38.06
1.775 GHz**	61.35	80.00	-18.65	55.04	60.00	-4.96	272	V	35.01

*Carrier frequency due to access point WIFI

** Not due to product but to External GSM



Pre-Characterization:

Frequency	PK Level (dBμV/m)	Lim.PK (dBμV/m)	Margin	Avg (dBμV/m)	Lim.Avg (dBμV/m)	Margin	Angle (°)	Polar.	Correct. (dB)
18.077 GHz	58.09	83.50	-25.41	47.50	63.50	-16	302	V	5.67
20.411 GHz	61.47	83.50	-22.03	51.40	63.50	-12.1	302	V	8.74
22.015 GHz	60.01	83.50	-23.49	49.92	63.50	-13.58	206	V	7.56
25.482 GHz	52.70	83.50	-30.8	41.68	63.50	-21.82	317	V	11.10

Qualification

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

No significant frequency observed

5.7. CONCLUSION

The sample of the equipment **pixium 2430 EZ3 NDT**, Sn : **Q26091E**, 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) $\pm x$	Incertitude limite du CISPR / CISPR uncertainty limit $\pm y$
Mesure des perturbations conduites en tension sur le réseau d'énergie <i>Measurement of conducted disturbances in voltage on the power port</i> RSIL / LISN - 50Ω/50μH		
9kHz - 150kHz	3.64 dB	3.8 dB
150kHz - 30MHz	3.21 dB	3.4 dB
Mesure des perturbations rayonnées <i>Measurement of radiated disturbances</i> 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 <i>Measurement of radiated disturbances</i> 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 <i>Measurement of radiated disturbances</i> 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** -----