



LCIE



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TEST REPORT

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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 TRIXELL
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FRANCE

Apparatus under test

↗ Product	Portable flat panel X-ray detector
↗ Trade mark	THALES
↗ Manufacturer	THALES
↗ Family range	Pixium EZ3 NDT
↗ Model under test	pixium 3543 EZ3 NDT GMEDB
↗ Serial number	24341F
↗ FCCID	NC
↗ IC	NC

Conclusion See Test Program chapter

Test date	March 27, 2025 to April 02, 2025
Test location	LCIE Grenoble
FCC Test site	FR0008 - 197516 (MOI)
ISED Test site	6500A (MOI)
Sample receipt date	March 24, 2025
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01	July 22, 2025	Jonathan SARTO	Creation of the document

Each new edition of this test report replaces and cancels the previous edition. The control of the old editions of report is under responsibility of client.



SUMMARY

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1. TEST PROGRAM

1.1. FCC PART15B / ICES-003

Standard:

- ✓ FCC Part 15, Subpart B (Digital Devices)
- ✓ ANSI C63.4 (2014) / ANSI C63.4a (2017)
- ✓ ICES-003 (2020)

1.1.1. Requirements for disturbance emissions – Class A

EMISSION TEST	LIMITS			RESULTS (Comments)
Limits for conducted disturbance 150kHz-30MHz FCC §15.107 / ICES-003	Access: AC power			PASS
	Frequency	Quasi-peak	Average	
	150-500kHz	79 dBµV	66 dBµV	
	0.5-30MHz	73 dBµV	60 dBµV	
Radiated emissions 30MHz-1GHz FCC §15.109	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 emissions 30MHz-1GHz ICES-003	Access: Enclosure port of ancillary equipment			PASS
	Frequency	Quasi-peak @10m		
	30MHz-88MHz	40.0 dBµV/m		
	88MHz-216MHz	43.5 dBµV/m		
	216MHz-230MHz	46.4 dBµV/m		
	230MHz-960MHz	47.0 dBµV/m		
Above 960MHz	49.5 dBµV/m			
Radiated emissions 1GHz-26GHz* FCC §15.109 / ICES-003	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.

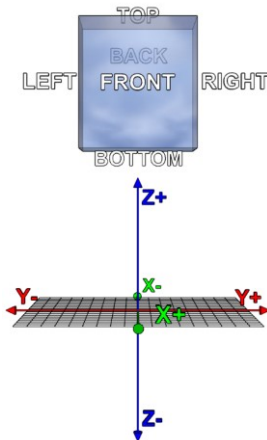
- If the highest frequency of the internal sources of the testing device ranges between 500 MHz and 1 GHz, measurement must be only performed until 5GHz.

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.

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

2.1. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES)

Equipment under test (EUT):

Model under test :	Pixium 3543 EZ3 NDT GMEDB		
Serial Number:	24341F 24341F		
			
Dimensions:	38cm x 46cm x 1.5cm (Length x Width x Height)		
Type :	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

2.2. EUT CONFIGURATION

Hardware information			
Highest internal frequency (PLL, Quartz, Clock, Microprocessor...):	F _{Highest} :	33.333	MHz
Firmware (if applicable):	V. :	63671763AA	
Software (if applicable):	V. :	SWSP1R5_NE	
Time necessary for the EUT to be exercised and to respond:	Dwell:	7	s

NC: Not communicated by provider

Running mode n°1: Wiring configuration (with Back up cable)

Setup:

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.

Running mode n°2: Wireless configuration (without Back up cable and powered by battery)

Setup:

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.

Type of equipment:	Stand-alone
Equipment intended for use as a:	Fixed use

RF module:	NC
Frequency band:	13.553MHz to 13.567MHz RFID
Frequency band under test:	13.56MHz
Antenna type:	External without connector
Operating modes:	TX/RX
Standby mode*:	No
Transmitter equipment:	Channelized
Communication link:	Continuous

RF module:	NC
Frequency band:	2400 MHz to 2483.5 MHz – 2.4GHz Band 5150MHz to 5250MHz – UNII 1 Wi-Fi 5GHz band 5250MHz to 5350MHz – UNII 2 Wi-Fi 5GHz band 5470MHz to 5725MHz – UNII 3 Wi-Fi 5GHz band
Antenna type:	Internal
Standby mode*:	No
Host and radio device testing together:	Yes
Mode under test:	Wifi - 802.11b



2.3. EQUIPMENT MODIFICATIONS DURING THE TESTS

Modification: Adding a ferrite WE 7427151 (2pass) on LEMO cable for pass radiated emission tests.

2.4. 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



2.5. 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

2.6. CALIBRATION DATE

The calibration intervals are extended at 12+2 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. MEASUREMENT OF CONDUCTED EMISSION

3.1. TEST CONDITIONS

Date of test : April 02, 2025
 Test performed by : Jonathan SARTO
 Atmospheric pressure (hPa) : 989
 Relative humidity (%) : 33
 Ambient temperature (°C) : 24

3.2. TEST SETUP

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

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)	☒ 120VAC/60Hz	☒ 240VAC/50Hz
☐ USB (Laptop auxiliary)	☐ 120VAC/60Hz (Laptop auxiliary)	☐ 240VAC/50Hz (Laptop auxiliary)

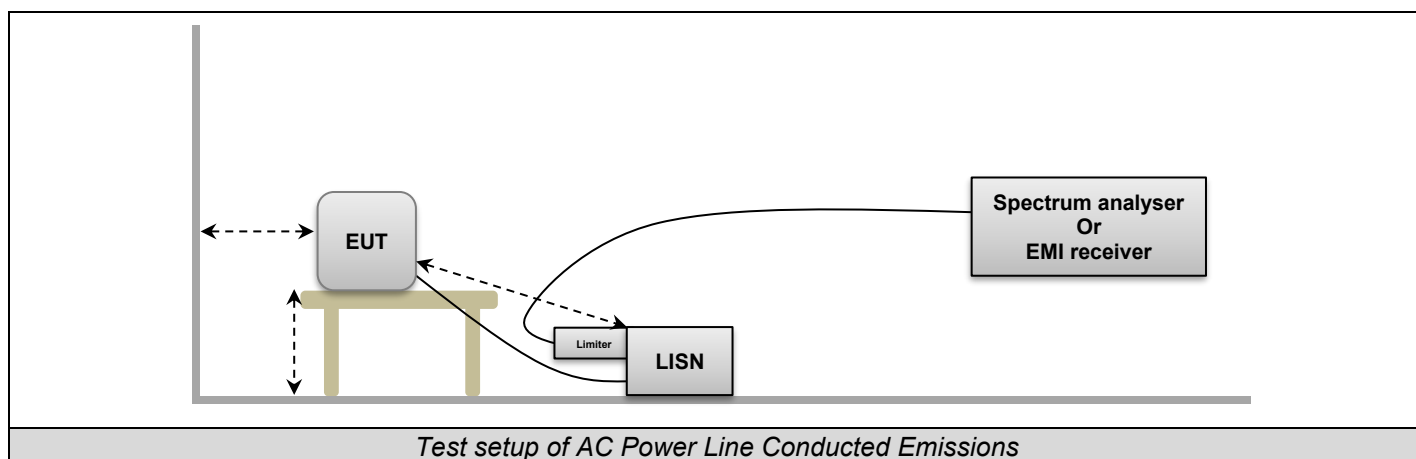




Photo of AC Power Line Conducted Emissions

3.3. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
BAT EMC	NEXIO	v3.21.0.32	L1000115	-/-	-/-
Cable + self	—	—	A5329578	05/24	09/25
EMC comb generator	LCIE SUD EST	—	A3169098	-/-	-/-
LISN	ROHDE & SCHWARZ	ESH3-Z5	C2320314	08/24	08/25
LISN	ROHDE & SCHWARZ	ENV216	C2320291	08/24	08/25
Receiver 20Hz – 8GHz	ROHDE & SCHWARZ	ESU8	A2642019	03/23	07/25
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	05/23	09/25
Transient limiter	ROHDE & SCHWARZ	ESH3-Z2	A7122204	07/24	07/26
Load 50Ω - BNC	AEROFLEX	—	A7152072	07/24	07/25

3.4. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None



3.5. TEST RESULTS – RUNNING MODE N°1

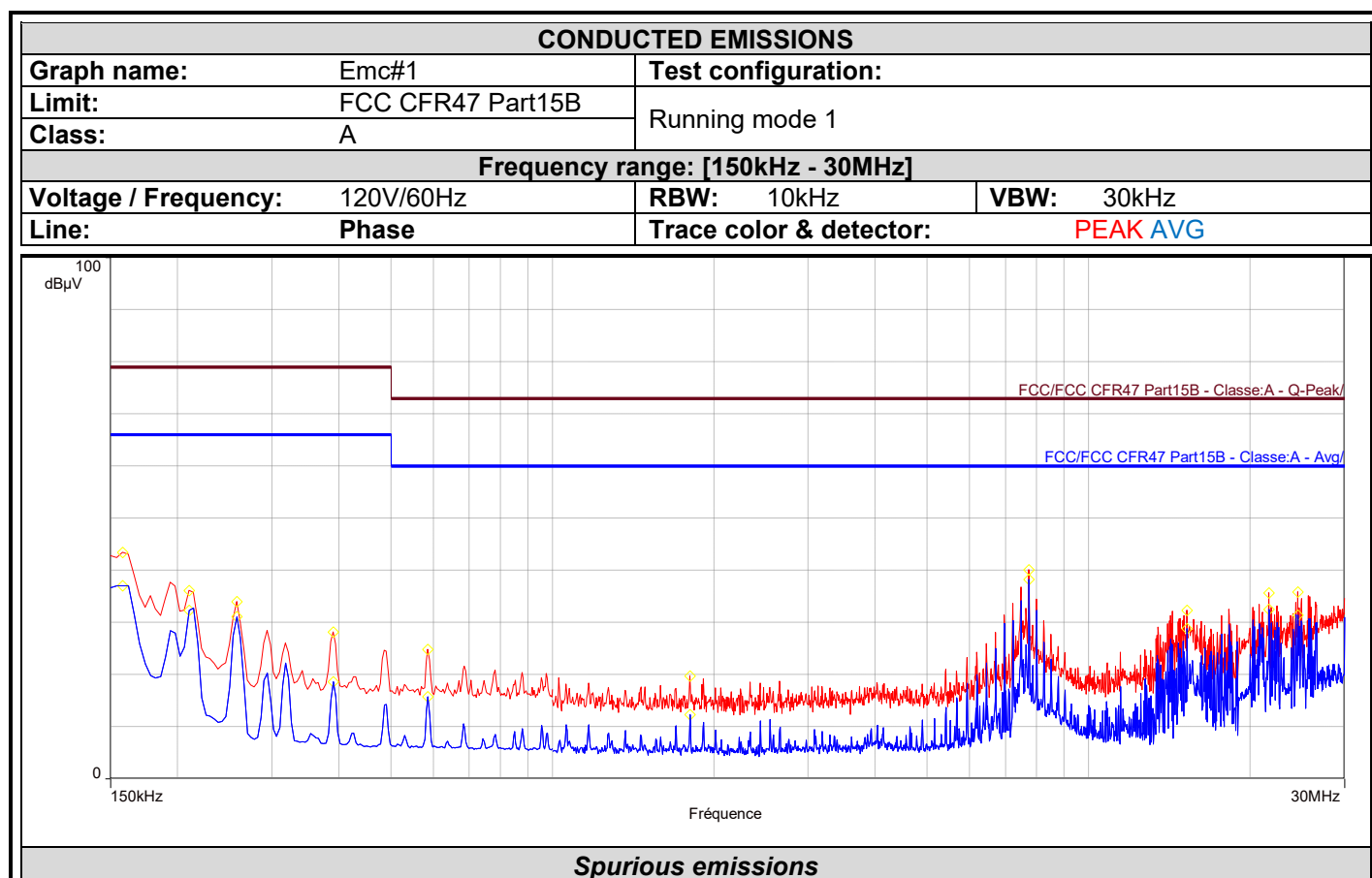
Mains terminals:

SUPPLY1

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

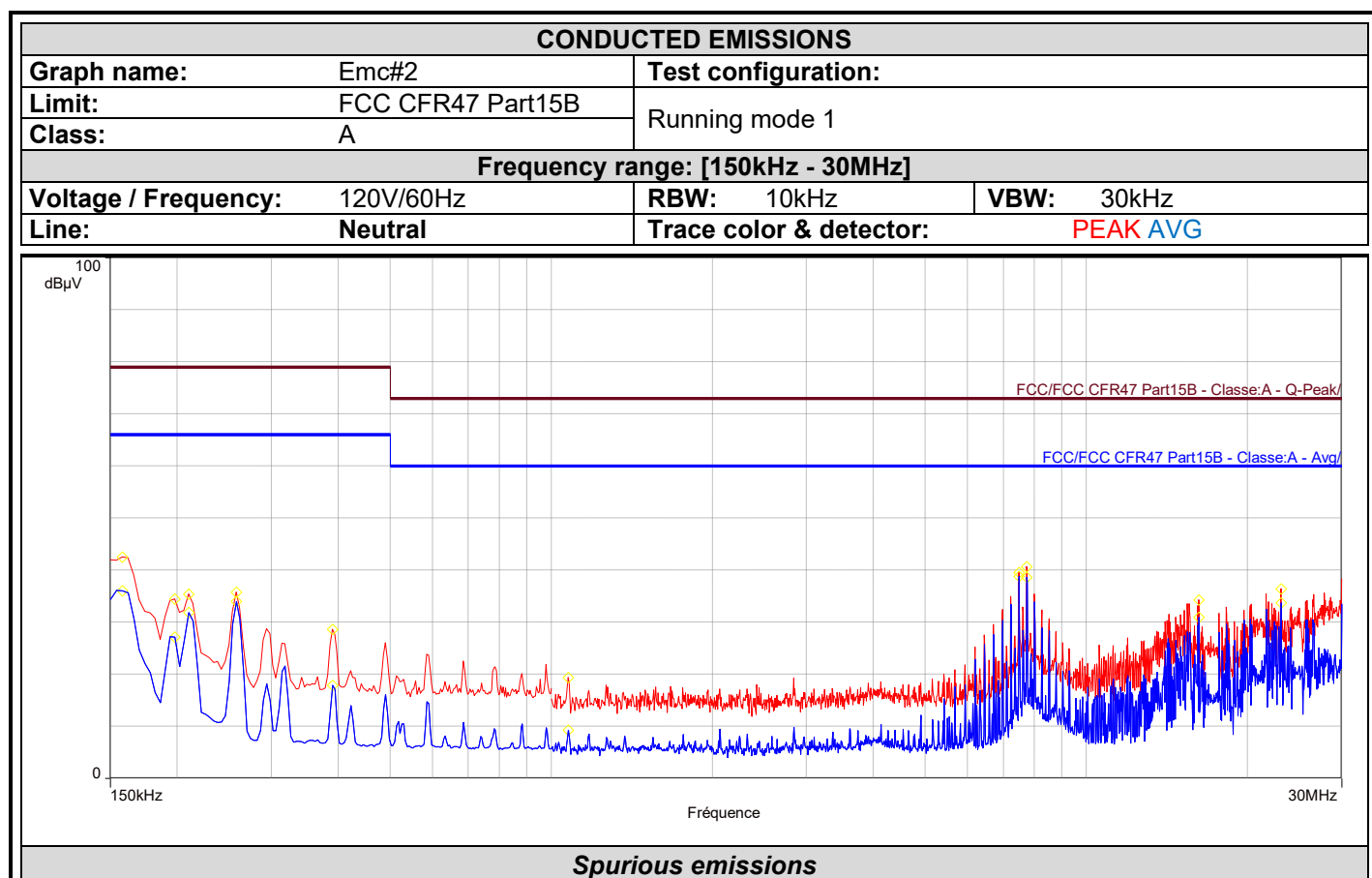
Results: (PEAK detection)

Graph identifier	Line	Comments
Emc# 1	Phase	120VAC/60Hz
Emc# 2	Neutral	120VAC/60Hz
Emc# 3	Phase	240VAC/50Hz
Emc# 4	Neutral	240VAC/50Hz



Frequency (MHz)	QPeak (dBμV)	Lim.QPeak (dBμV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBμV)	Lim.CISPR.AVG (dBμV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.158	41.21	79.00	-37.79	36.52	66.00	-29.48
0.210	33.89	79.00	-45.11	31.85	66.00	-34.15
0.258	33.95	79.00	-45.05	33.13	66.00	-32.87
0.390	25.79	79.00	-53.21	18.97	66.00	-47.03
0.586	21.15	73.00	-51.85	15.91	60.00	-44.09
1.804	16.72	73.00	-56.28	11.92	60.00	-48.08

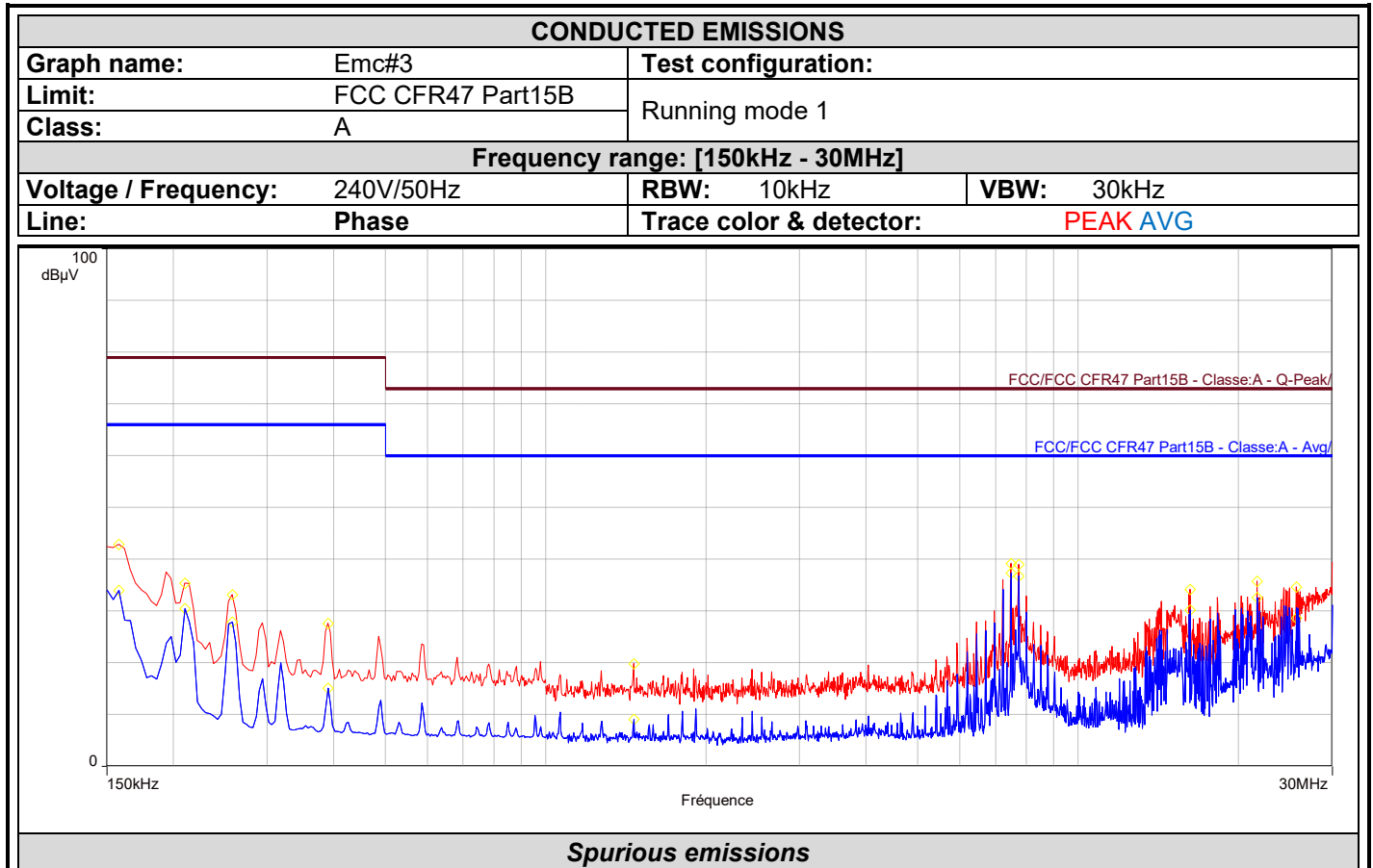
Frequency (MHz)	QPeak (dBμV)	Lim.QPeak (dBμV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBμV)	Lim.CISPR.AVG (dBμV)	CISPR.AVG-Lim.CISPR.AVG (dB)
7.736	39.16	73.00	-33.84	38.14	60.00	-21.86
15.252	30.99	73.00	-42.01	28.24	60.00	-31.76
21.664	34.18	73.00	-38.82	32.43	60.00	-27.57
24.532	32.37	73.00	-40.63	30.17	60.00	-29.83



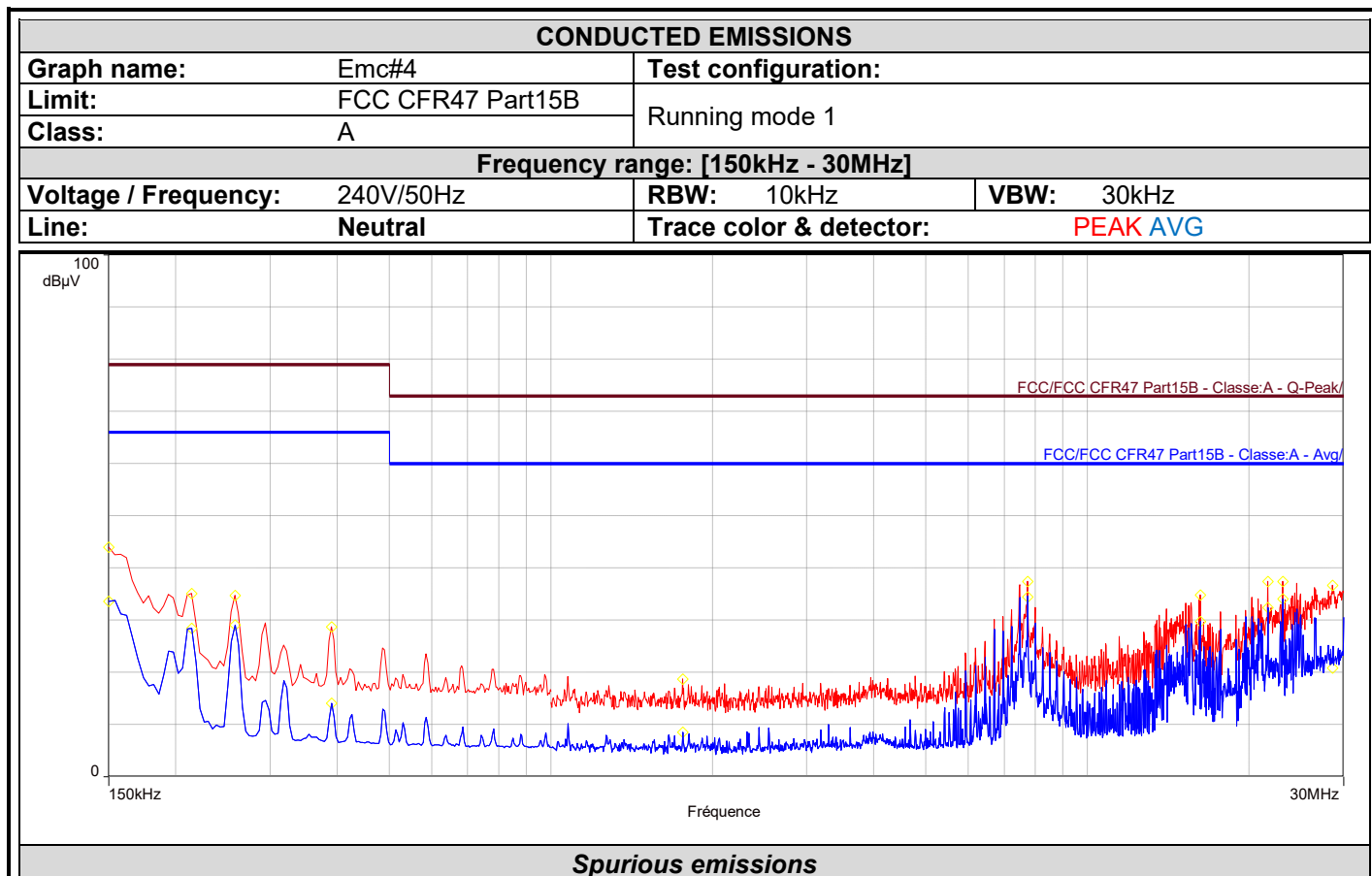
Frequency (MHz)	QPeak (dBμV)	Lim.QPeak (dBμV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBμV)	Lim.CISPR.AVG (dBμV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.158	41.24	79.00	-37.76	36.65	66.00	-29.35
0.198	32.75	79.00	-46.25	27.96	66.00	-38.04
0.210	33.76	79.00	-45.24	31.63	66.00	-34.37
0.258	31.77	79.00	-47.23	30.50	66.00	-35.50
0.390	26.28	79.00	-52.72	18.48	66.00	-47.52
1.076	15.59	73.00	-57.41	9.46	60.00	-50.54
7.484	35.07	73.00	-37.93	32.17	60.00	-27.83
7.740	34.70	73.00	-38.30	32.02	60.00	-27.98
16.228	29.43	73.00	-43.57	26.61	60.00	-33.39
23.128	36.06	73.00	-36.94	33.93	60.00	-26.07



L C I E



Frequency (MHz)	QPeak (dBµV)	Lim.QPeak (dBµV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBµV)	Lim.CISPR.AVG (dBµV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.158	40.29	79.00	-38.71	31.55	66.00	-34.45
0.210	33.36	79.00	-45.64	28.75	66.00	-37.25
0.258	33.36	79.00	-45.64	29.76	66.00	-36.24
0.390	24.03	79.00	-54.97	13.47	66.00	-52.53
1.464	14.75	73.00	-58.25	7.61	60.00	-52.39
7.476	37.24	73.00	-35.76	36.01	60.00	-23.99
7.736	38.71	73.00	-34.29	37.67	60.00	-22.33
16.228	33.73	73.00	-39.27	30.55	60.00	-29.45
21.664	34.49	73.00	-38.51	32.48	60.00	-27.52
25.696	30.85	73.00	-42.15	28.10	60.00	-31.90



Frequency (MHz)	QPeak (dBμV)	Lim.QPeak (dBμV)	QPeak-Lim.QPeak (dB)	CISPR.AVG (dBμV)	Lim.CISPR.AVG (dBμV)	CISPR.AVG-Lim.CISPR.AVG (dB)
0.150	39.48	79.00	-39.52	33.16	66.00	-32.84
0.214	32.97	79.00	-46.03	27.99	66.00	-38.01
0.258	30.89	79.00	-48.11	26.57	66.00	-39.43
0.390	24.57	79.00	-54.43	13.17	66.00	-52.83
1.760	12.78	73.00	-60.22	6.40	60.00	-53.60
7.736	35.44	73.00	-37.56	33.81	60.00	-26.19
16.228	31.98	73.00	-41.02	31.09	60.00	-28.91
21.664	36.76	73.00	-36.24	34.20	60.00	-25.80
23.128	37.11	73.00	-35.89	35.24	60.00	-24.76
28.584	29.56	73.00	-43.44	19.91	60.00	-40.09

3.6. CONCLUSION

The sample of the equipment **pixium 3543 EZ3 NDT GMEDB**, Sn : **24341F**, tested in the configuration presented in this test report **satisfies** to requirements of the product family standard applied (See §Test Program) for conducted emissions.

4. MEASUREMENT OF RADIATED EMISSION

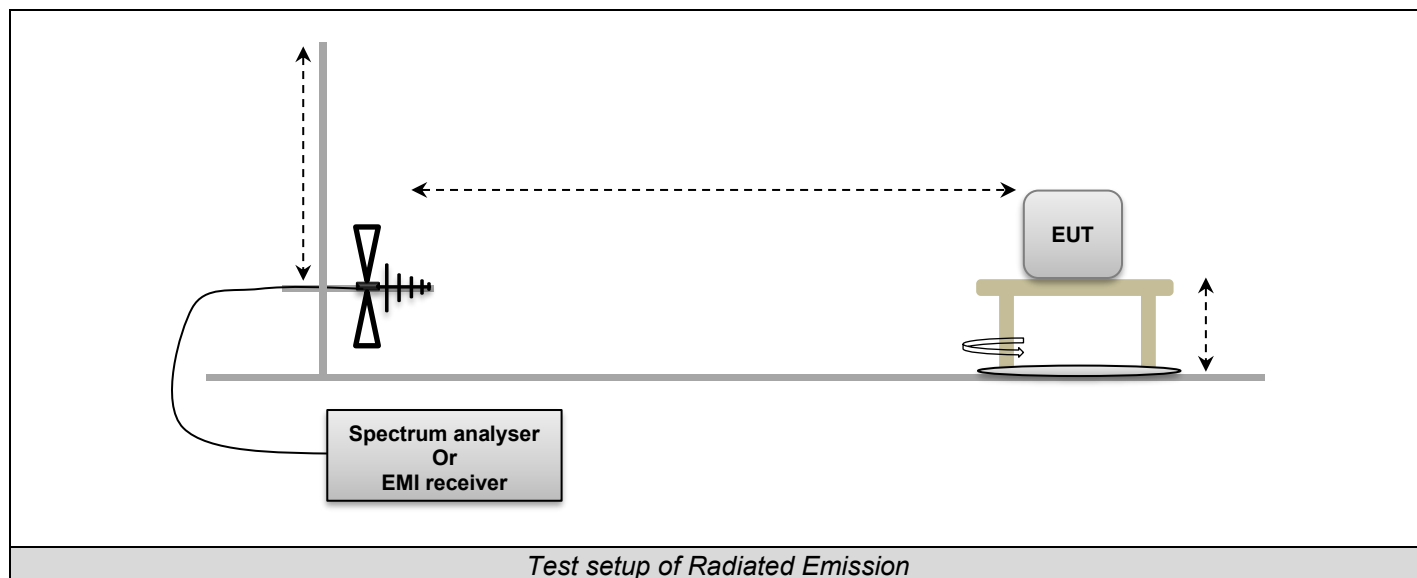
4.1. TEST CONDITIONS

Date of test : March 27, 2025
 Test performed by : Jonathan SARTO
 Atmospheric pressure (hPa) : 992
 Relative humidity (%) : 40
 Ambient temperature (°C) : 23

4.2. TEST SETUP

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

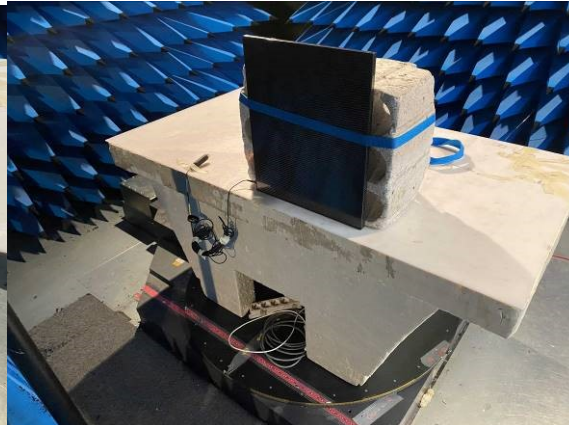
The EUT and auxiliaries are set 80cm above the ground on the non-conducting table (Table-top equipment).
 The EUT is powered by V_{nom} .



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



Back up mode on axis XY



Battery mode on axis Z



Photo in anechoic chamber – Frequency <1GHz



Photo on OATS

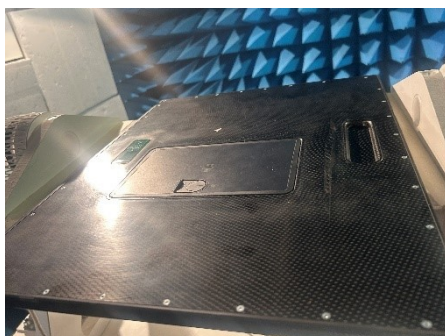


Photo in anechoic chamber – Frequency >1GHz



4.3. 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 method to show compliance with limits.

Following frequency ranges, test setup parameters are different and specified in tables below.

4.3.1. 30MHz –1GHz

Frequency range:	30MHz to 1GHz	
Test:	Pre-Characterization	Qualification
Antenna Polarization:	Horizontal and Vertical	
Antenna Height:	Centered on EUT	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
RBW Filter:	100kHz	120kHz
Maximization:	Turntable rotation of 360 degrees range	
Test site:	Semi-Anechoic Chamber	Open Aera Test Site
Distance EUT - Antenna:	3m	3m
Detector:	Peak	QPeak
Mode:	Linear Scan	Linear Scan

4.3.2. 1GHz – 26GHz:

Frequency range:	1GHz to 14GHz	
Test:	Pre-Characterization	Qualification
Antenna Polarization:	Horizontal and Vertical	
Antenna Height:	Centered on EUT, EUT smaller than the beamwidth of antenna	Centered on EUT, EUT smaller than the beamwidth of antenna
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 & Average
Mode:	Linear Scan	Linear Scan

Frequency range:	14GHz to 26GHz	
Test:	Pre-Characterization	Qualification
Antenna Polarization:	Horizontal and Vertical	
Antenna Height:	Centered on EUT (§6.6.5 ANSI C63-10)	Centered on EUT (§6.6.5 ANSI C63-10)
Antenna Type:	Horn	Horn
RBW Filter:	1MHz	1MHz



Maximization:	Turntable rotation of 360 degrees range and all axis of EUT used in normal configuration	
Test site:	Full Anechoic Chamber	Full Anechoic Chamber
EUT Height	1.5m	1.5m
Distance EUT - Antenna:	1m	1m
Detector:	Peak & Average	Peak & Average

4.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Amplifier 10kHz - 13.5GHz	LCIE SUD EST	—	A7085028	04/23	08/25
Antenna Bi-Log XWing	TESEQ	CBL6144	C2040146	-/-	-/-
Antenna horn 18GHz	AINFO	LB	C2042078	07/24	07/27
BAT EMC	NEXIO	v3.21.0.32	L1000115	-/-	-/-
Cable 0.75m	SUCOFLEX	18GHz	A5329919	08/24	08/25
Cable 2.2m N	SUCOFLEX	SF118A/2x11N/2.2M	A5329990	08/24	08/25
Cable 5m	SUCOFLEX	18GHz	A5329918	08/24	08/25
Cable Substitution	-	18GHz	A5329562	05/23	05/25
Diameter 1.2m / Height 1.5m	LCIE	VSWR 1GHz - 13GHz	D3044015_VSWR	01/25	01/28
Radiated emission comb generator	BARDET	—	A3169050	-/-	-/-
RECEIVER	KEYSIGHT	E4440A	A4060035	06/24	06/27
Semi-Anechoic chamber #2	SIEPEL	—	D3044015	12/24	12/25
Table C2	LCIE	—	F2000438	-/-	-/-
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	05/23	09/25
Turntable chamber (Cage#2)	ETS Lingren	Model 2165	F2000404	-/-	-/-
Turntable controller (Cage#2)	ETS Lingren	Model 2066	F2000393	-/-	-/-
Antenna Bi-log	CHASE	CBL6111A	C2040172	07/24	07/26
Antenna Mat (OATS)	ETS Lingren	2071-2	F2000392	-/-	-/-
Biconic Antenna	EATON	94455-1	C2040234	05/23	09/25
Cable (OATS)	—	1GHz	A5329623	09/24	09/25
CALCUL_FACTEURS	LCIE SUD EST	V4	L2000035	-/-	-/-
Emission Cable	MICRO-COAX	1GHz	A5329656	09/24	09/25
Emission Cable	RADIALEX	-/-	A5329061	01/25	01/26
OATS	—	—	F2000409	07/24	07/25
Receiver 20-1000MHz	ROHDE & SCHWARZ	ESVS30	A2642006	10/24	10/26
Table C1/OATS	LCIE	—	F2000445	-/-	-/-
Turntable (OATS)	ETS Lingren	Model 2187	F2000403	-/-	-/-
Turntable / Mast controller (OATS)	ETS Lingren	Model 2066	F2000372	-/-	-/-

Antenna horn 18GHz	AINFO	LB	C2042055	11/24	11/27
Antenna horn 40GHz	SCHWARZBECK	BBHA 9170	C2042028	06/22	06/25
BAT EMC	NEXIO	v3.21.0.32	L1000115	-/-	-/-
Cable 1m 40GHz	INTELLICONNECT	C-KPKP-1503-1M	A5329987	01/25	01/28
CONTROLLER	INNCO	CO3000	D3044034	-/-	-/-
Emission Cable 0.5m (Ampl <-> receptor)	INTELLICONNECT	C-KPKP-1503-500MM	A5329988	04/23	04/26
HF Radiated emission comb generator	LCIE SUD EST	—	A3169088	-/-	-/-
Horn Antenna	ELECTRO-METRICS	EM-6969	C2040286	06/25	06/28
Pre-Amplifier	LCIE SUD EST	1GHz - 18GHz	A7085029	02/23	06/25
Rehausse Table C3	LCIE	—	F2000507	-/-	-/-
Rehausse Table C3	LCIE	—	F2000511	-/-	-/-
Semi-Anechoic chamber #3 (VSWR)	SIEPEL	—	D3044017_VSWR	04/22	08/25
SMK 1.2m Emission Cable 0.5m (Ampl <-> Chamber)	HUBER-SUHNER	SUCOFLEX 102	A5330063	08/24	08/25
Spectrum analyzer	ROHDE & SCHWARZ	FSU 26	A4060058	09/23	09/25
Table C3	LCIE	—	F2000461	-/-	-/-
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	05/23	09/25
TILT	INNCO	TILT	D3044033	-/-	-/-
Turntable chamber (Cage#3)	ETS Lingren	Model 2165	F2000371	-/-	-/-
Turntable controller (Cage#3)	ETS Lingren	Model 2090	F2000444	-/-	-/-
PRE-AMPLIFIER (40GHz)	LCIE SUD EST	10GHz - 40GHz	A7080078	12/22	03/25

4.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

4.6. TEST RESULTS – RUNNING MODE N°1

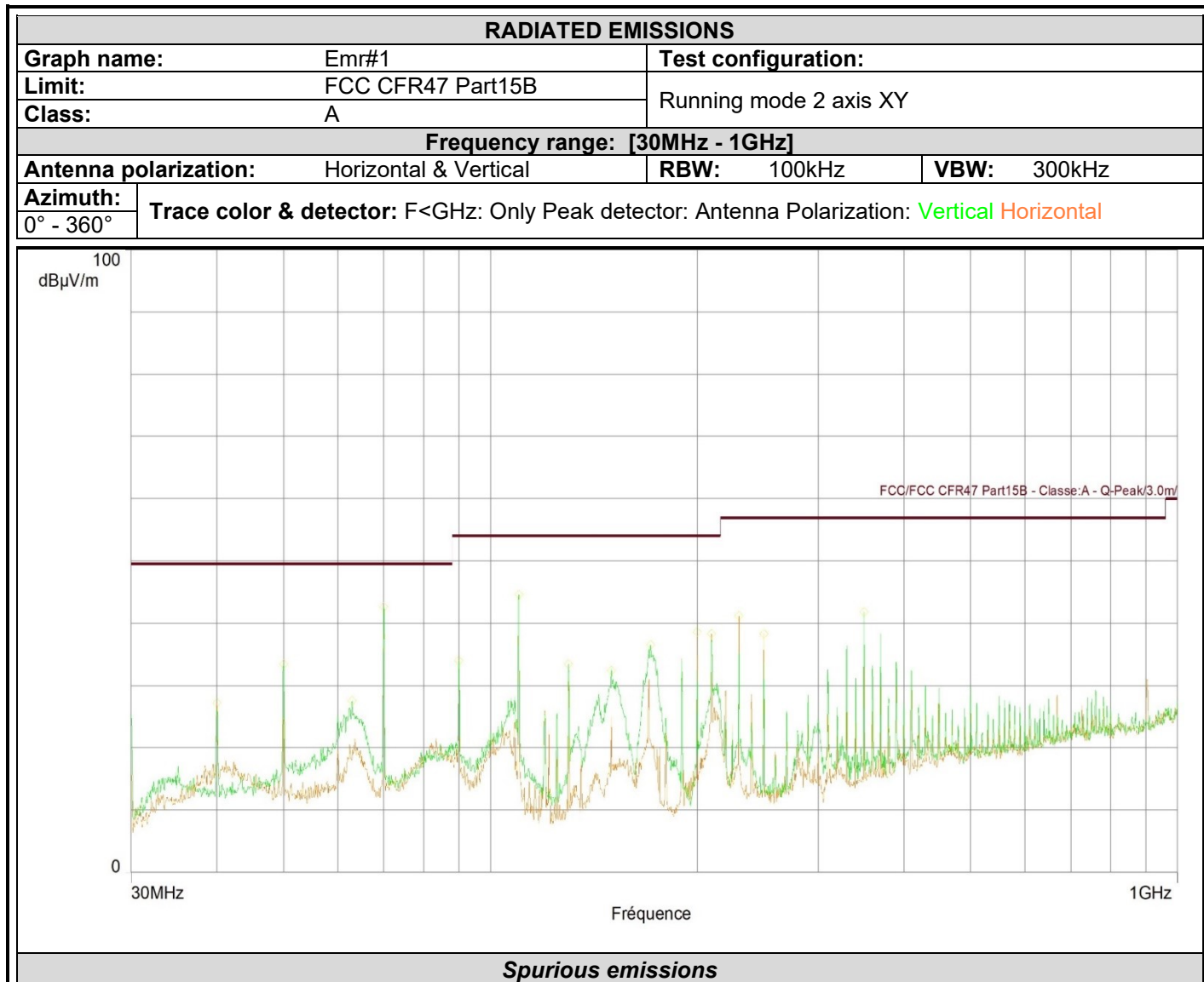
4.6.1. 30MHz –1GHz

Pre-qualification measurement

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

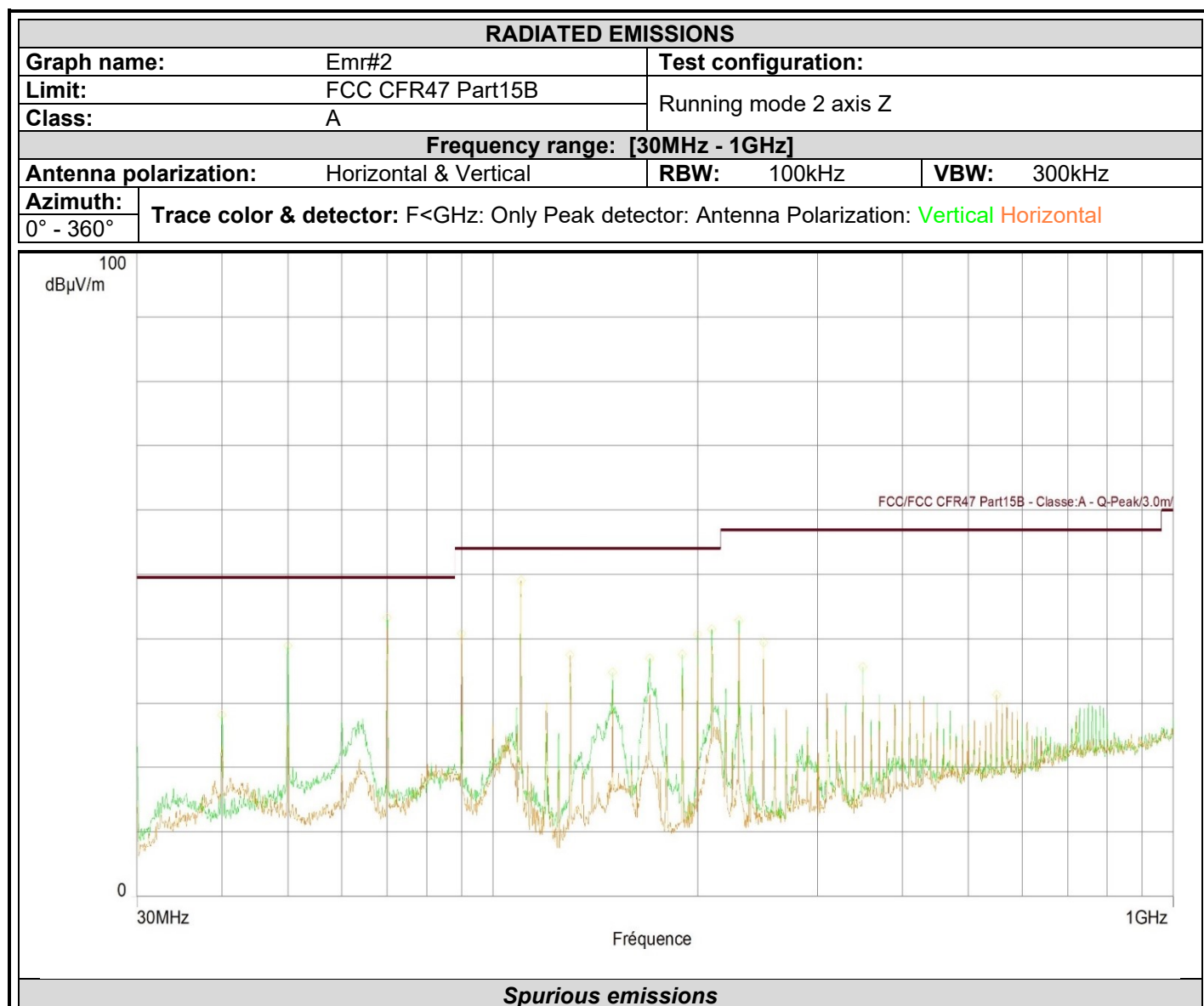


L C I E



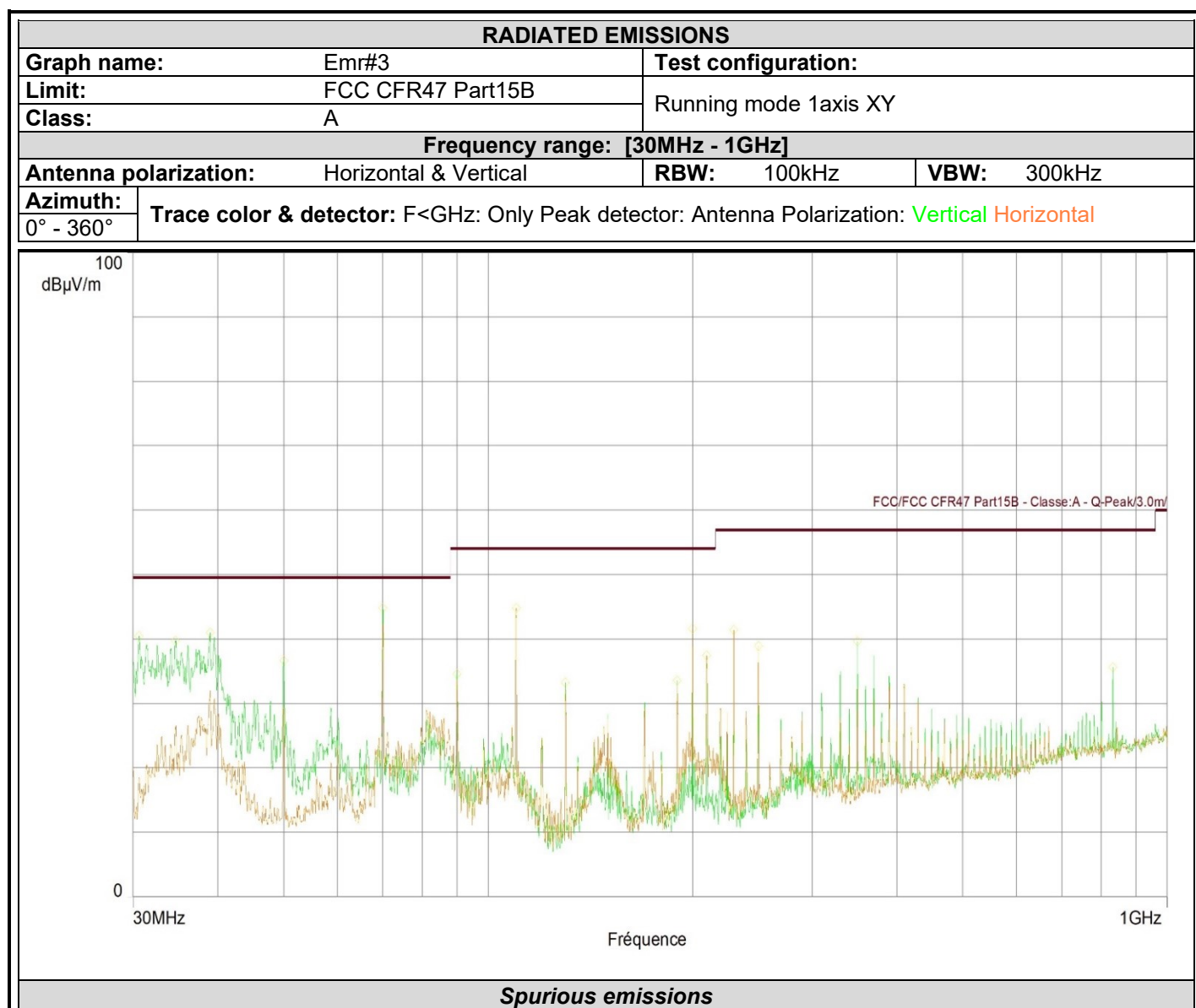
Frequency (MHz)	Peak (dBμV/m)	Lim.Q-Peak (dBμV/m)	Peak-Lim.Q-Peak (dB)	Polarization
50.007	33.47	49.60	-16.13	Vertical
62.917	27.62	49.60	-21.98	Vertical
69.994	42.63	49.60	-6.97	Vertical
90.001	34.05	54.00	-19.95	Vertical
109.988	44.61	54.00	-9.39	Vertical
130.016	33.50	54.00	-20.50	Vertical
149.961	32.40	54.00	-21.60	Vertical
171.255	36.62	54.00	-17.38	Vertical
350.018	41.82	56.90	-15.08	Vertical
40.004	27.26	49.60	-22.34	Horizontal
200.000	38.62	54.00	-15.38	Horizontal
210.011	38.30	54.00	-15.70	Horizontal

Frequency (MHz)	Peak (dBµV/m)	Lim.Q-Peak (dBµV/m)	Peak-Lim.Q-Peak (dB)	Polarization
229.984	41.23	56.90	-15.67	Horizontal
250.006	38.37	56.90	-18.53	Horizontal



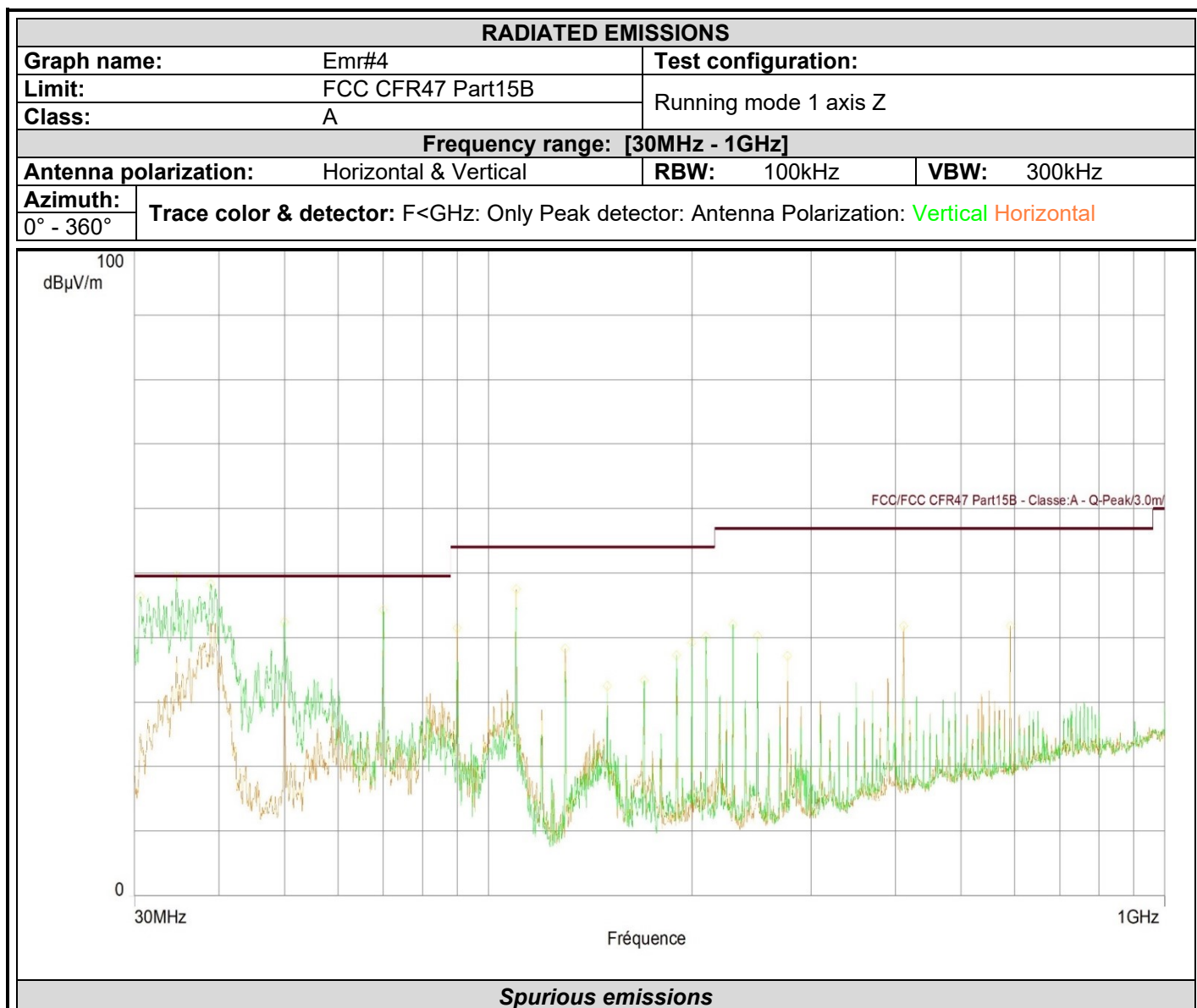
Frequency (MHz)	Peak (dBµV/m)	Lim.Q-Peak (dBµV/m)	Peak-Lim.Q-Peak (dB)	Polarization
90.001	40.86	54.00	-13.14	Horizontal
110.009	49.13	54.00	-4.87	Horizontal
129.995	37.46	54.00	-16.54	Horizontal
549.994	31.30	56.90	-25.60	Horizontal
40.004	28.17	49.60	-21.43	Vertical
50.007	38.93	49.60	-10.67	Vertical

Frequency (MHz)	Peak (dB μ V/m)	Lim.Q-Peak (dB μ V/m)	Peak-Lim.Q-Peak (dB)	Polarization
69.994	43.25	49.60	-6.35	Vertical
150.002	34.83	54.00	-19.17	Vertical
169.989	36.98	54.00	-17.02	Vertical
189.996	37.60	54.00	-16.40	Vertical
200.000	40.74	54.00	-13.26	Vertical
210.011	41.51	54.00	-12.49	Vertical
229.984	42.87	56.90	-14.03	Vertical
250.006	39.50	56.90	-17.40	Vertical
350.018	35.68	56.90	-21.22	Vertical





Frequency (MHz)	Peak (dB μ V/m)	Lim.Q-Peak (dB μ V/m)	Peak-Lim.Q-Peak (dB)	Polarization
110.009	44.87	54.00	-9.13	Horizontal
200.000	41.64	54.00	-12.36	Horizontal
210.011	37.50	54.00	-16.50	Horizontal
229.984	41.47	56.90	-15.43	Horizontal
250.006	38.92	56.90	-17.98	Horizontal
30.623	40.55	49.60	-9.05	Vertical
34.649	39.81	49.60	-9.79	Vertical
38.966	41.04	49.60	-8.56	Vertical
50.007	36.70	49.60	-12.90	Vertical
69.994	44.85	49.60	-4.75	Vertical
90.001	34.66	54.00	-19.34	Vertical
129.995	33.30	54.00	-20.70	Vertical
189.996	33.59	54.00	-20.41	Vertical
350.018	39.68	56.90	-17.22	Vertical
832.841	35.61	56.90	-21.29	Vertical



Frequency (MHz)	Peak (dBµV/m)	Lim.Q-Peak (dBµV/m)	Peak-Lim.Q-Peak (dB)	Polarization
30.623	46.34	49.60	-3.26	Vertical
34.628	49.64	49.60	0.04	Vertical
38.904	48.40	49.60	-1.20	Vertical
50.007	42.52	49.60	-7.08	Vertical
69.994	44.38	49.60	-5.22	Vertical
170.010	33.41	54.00	-20.59	Vertical
189.996	37.29	54.00	-16.71	Vertical
200.000	39.23	54.00	-14.77	Vertical
210.011	40.18	54.00	-13.82	Vertical



Frequency (MHz)	Peak (dB μ V/m)	Lim.Q-Peak (dB μ V/m)	Peak-Lim.Q-Peak (dB)	Polarization
229.984	42.05	56.90	-14.85	Vertical
90.001	41.59	54.00	-12.41	Horizontal
110.009	47.55	54.00	-6.45	Horizontal
129.995	38.38	54.00	-15.62	Horizontal
150.002	32.51	54.00	-21.49	Horizontal
250.006	40.27	56.90	-16.63	Horizontal
276.914	37.20	56.90	-19.70	Horizontal
411.598	41.88	56.90	-15.02	Horizontal
591.845	41.89	56.90	-15.01	Horizontal

Qualification

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

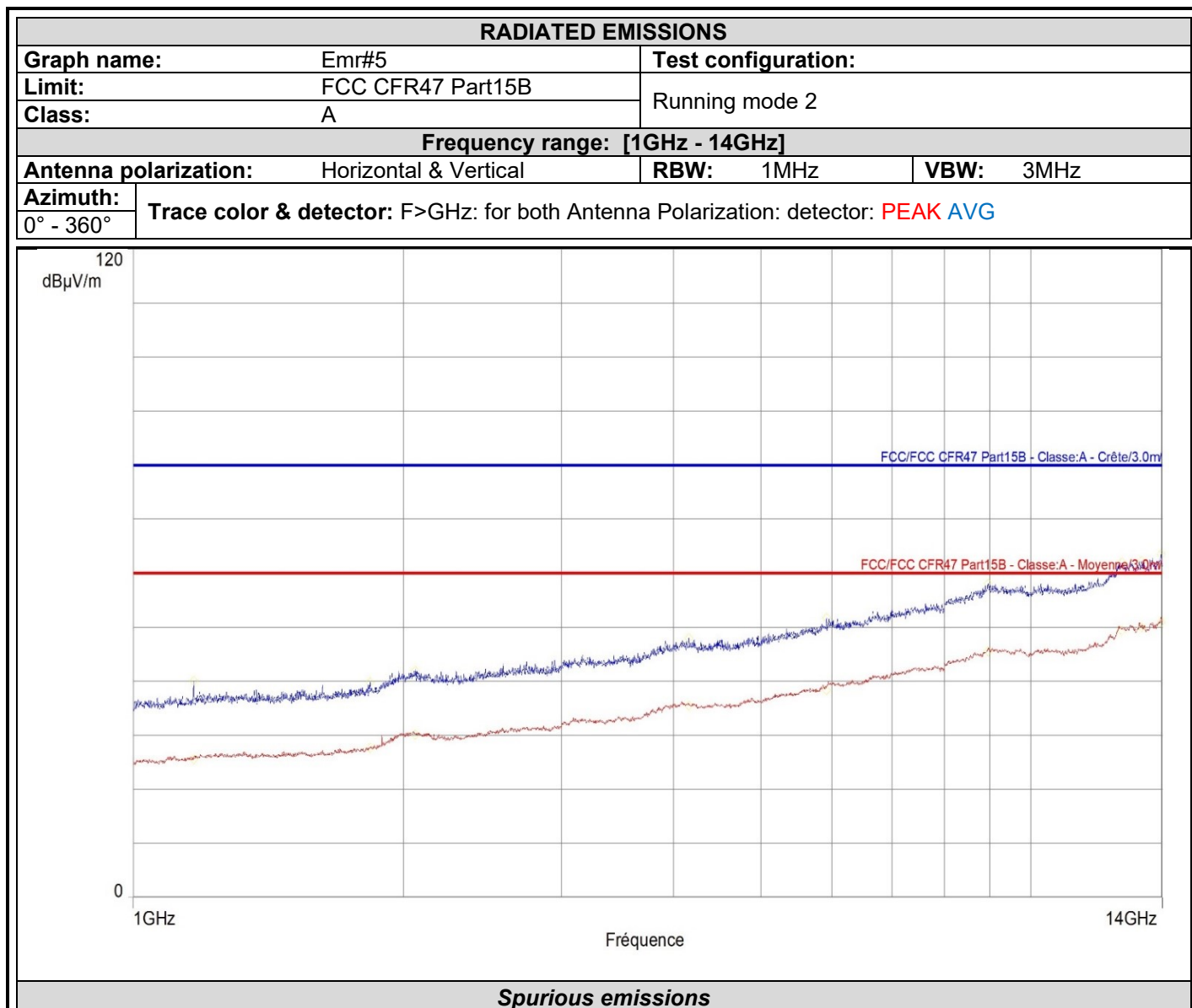
Running mode 2									
Test Frequency (MHz)	Meter Reading dB(μ V)	Detector (Pk/QP/Av)	Polarity (V/H)	Azimuth (Degrees)	Antenna Height (cm)	Transducer Factor (dB)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
50.0000	26.8	QP	V	338	100	12.7	39.5	49.6	-10.1
70.0000	31	QP	V	0	205	7.9	38.9	49.6	-10.7
90.0000	28.2	QP	H	0	150	12.7	40.9	54.0	-13.1
110.0000	28.3	QP	V	0	100	13.4	41.7	54.0	-12.3
130.0000	26.6	QP	V	214	100	15.5	42.1	54.0	-11.9
170.0000	22.0	QP	V	0	100	19.8	41.8	54.0	-12.2
190.0000	20.6	QP	V	0	100	17.0	37.6	54.0	-16.4
200.1000	29.5	QP	V	26	100	12.5	42.0	54.0	-12.0
210.0000	32.0	QP	V	212	100	12.9	44.9	54.0	-9.1
229.9000	29.7	QP	V	0	100	14.1	43.8	56.9	-13.1

Running mode 1									
Test Frequency (MHz)	Meter Reading dB(μ V)	Detector (Pk/QP/Av)	Polarity (V/H)	Azimuth (Degrees)	Antenna Height (cm)	Transducer Factor (dB)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
30.6000	29.5	QP	V	0	100	14.4	43.9	49.6	-5.7
34.6000	30.9	QP	V	146	100	14.7	45.6	49.6	-4.0
38.9000	23.1	QP	V	166	100	14.6	37.7	49.6	-11.9
50.0000	32.0	QP	V	0	100	12.7	44.7	49.6	-4.9
70.0000	30.7	QP	V	360	152	7.9	38.6	49.6	-11.0
90.0000	28.9	QP	H	0	100	12.7	41.6	54.0	-12.4
110.0000	33.2	QP	V	218	111	13.4	46.6	54.0	-7.4
130.0000	27.6	QP	V	136	100	15.5	43.1	54.0	-10.9
190.0000	20.3	QP	V	0	100	17.0	37.3	54.0	-16.7
200.1000	27.9	QP	V	23	100	12.5	40.4	54.0	-13.6
210.0000	31.9	QP	V	176	100	12.9	44.8	54.0	-9.2
229.9000	30.2	QP	V	213	100	14.1	44.3	56.9	-12.6

4.6.2. 1GHz - 26GHz

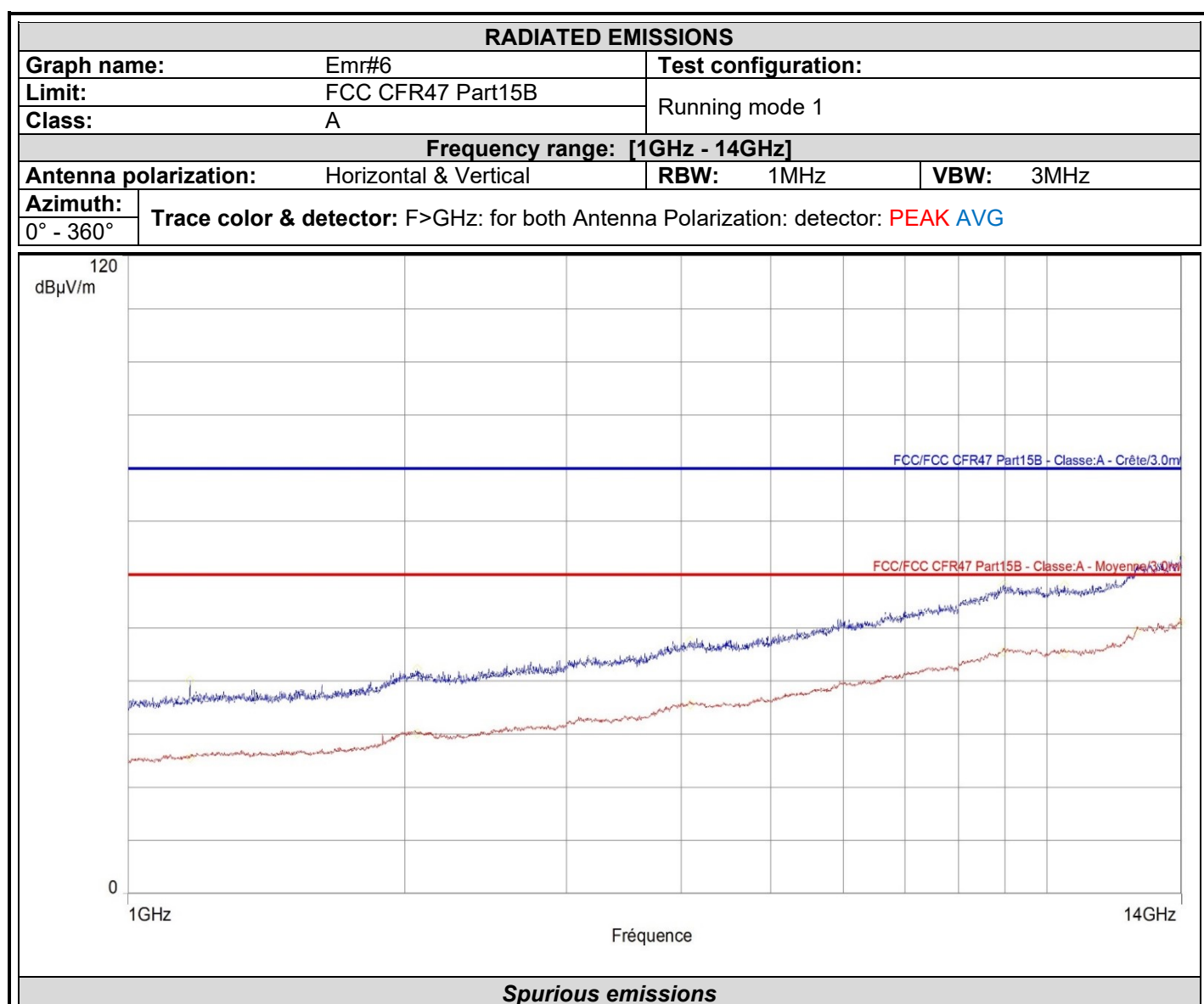
Pre-qualification measurement

Graph identifier	Polarization	EUT position	Comments	
Emr# 5	Horizontal & Vertical	Axis XYZ	Running mode 2	See below
Emr# 6	Horizontal & Vertical	Axis XYZ	Running mode 1	See below



Frequency (MHz)	Peak (dBµV/m)	Lim.Peak (dBµV/m)	Peak-Lim.Peak (dB)	Average (dBµV/m)	Lim.Average (dBµV/m)	Average-Lim.Average (dB)	Polarization	Polarization
1834.400	39.80	80.00	-40.20	27.66	60.00	-32.34	89.00	Horizontal
2061.200	41.96	80.00	-38.04	30.08	60.00	-29.92	89.00	Horizontal
4159.800	47.99	80.00	-32.01	35.52	60.00	-24.48	0.30	Horizontal

Frequency (MHz)	Peak (dBμV/m)	Lim.Peak (dBμV/m)	Peak-Lim.Peak (dB)	Average (dBμV/m)	Lim.Average (dBμV/m)	Average-Lim.Average (dB)	Polarization	Polarization
5918.200	51.65	80.00	-28.35	38.32	60.00	-21.68	0.30	Horizontal
8955.800	58.01	80.00	-21.99	45.55	60.00	-14.45	60.90	Horizontal
12620.600	61.93	80.00	-18.07	49.32	60.00	-10.68	30.70	Horizontal
13292.600	62.26	80.00	-17.74	49.98	60.00	-10.02	0.90	Horizontal
13954.400	63.44	80.00	-16.56	50.94	60.00	-9.06	30.70	Horizontal
1166.600	40.03	80.00	-39.97	25.54	60.00	-34.46	90.00	Vertical





Frequency (MHz)	Peak (dBμV/m)	Lim.Peak (dBμV/m)	Peak-Lim.Peak (dB)	Average (dBμV/m)	Lim.Average (dBμV/m)	Average-Lim.Average (dB)	Polarization	Polarization
8963.600	58.05	80.00	-21.95	45.50	60.00	-14.50	29.00	Vertical
10447.400	57.98	80.00	-22.02	45.14	60.00	-14.86	0.90	Vertical
12534.200	61.71	80.00	-18.29	49.46	60.00	-10.54	59.00	Vertical
13959.200	63.11	80.00	-16.89	51.04	60.00	-8.96	89.10	Vertical
1166.600	40.03	80.00	-39.97	25.54	60.00	-34.46	90.00	Vertical
2064.000	42.27	80.00	-37.73	30.10	60.00	-29.90	90.00	Vertical
4089.100	47.45	80.00	-32.55	35.56	60.00	-24.44	0.00	Vertical

No significant frequency observed over 14GHz.

Qualification

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

All frequency have margin >20dB in peak and >9db in average

4.7. CONCLUSION

The sample of the equipment **pixium 3543 EZ3 NDT GMEDB**, Sn : **24341F**, tested in the configuration presented in this test report **satisfies** to requirements of the product family standard applied (See §Test Program) for radiated emissions.

5. 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 conduites en tension sur le réseau d'énergie		
Mesure des perturbations rayonnées <i>Measurement of radiated disturbances</i> OATS & SAC @3m		
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		
30MHz - 200MHz, Antenne biconique / Biconical antenna	5.72 dB	6.3 dB
30MHz - 1GHz, Antenne hybride / Hybrid antenna	6.18 dB	6.3 dB
Mesure des perturbations rayonnées <i>Measurement of radiated disturbances</i> FAR @3m		
1GHz - 6GHz, Antenne cornet ou hybride / Horn or hybride antenna	4.77 dB	5.2 dB
1GHz - 6GHz, Antenne cornet ou hybride et préamplificateur / Horn or hybride 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

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