



LCIE

RFID 13,56MHz Template: Release January 26th, 2022

TEST REPORT

N°: 16136404-782249-A (FILE#4662257)

Version : 02

Subject

**Radio spectrum matters
tests according to standards:
47 CFR Part 15.225 & RSS 210 Issue 10 & RSS-Gen Issue 5**

Issued to

INGENICO
9 avenue de la gare – Rovaltain TGV
26958 – VALENCE Cedex 9
France

Apparatus under test

↪ Product **NFC card reader module**
↪ Trade mark **INGENICO**
↪ Manufacturer **INGENICO**
↪ Family range **OPEN/1500 CL V2 - OPEN/2500 CL V2**
↪ Model under test **OPEN2500 CL/POE**
↪ Serial number **212937313451270622240067**
↪ FCC ID **XKB-OPE15CLV2**
↪ IC **2586D-OPE15CLV2**

Conclusion

See Test Program chapter

Test date

October 19, 2022

Test location

Fontenay Aux Roses

FCC Test site

FR0010 - 166175

ISED Test site

FR0006 - 6230B

Sample receipt date

October 17, 2022

Composition of document

29 pages

Document issued on

October 27, 2022

Written by :
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Approved by :
Anthony MERLIN
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PUBLICATION HISTORY

Version	Date	Author	Modification
01	October 24 , 2022	Majid MOURZAGH	Creation of the document
02	October 27, 2022	Majid MOURZAGH	Correction Test site number on page 1

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



SUMMARY

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1. TEST PROGRAM

References

- 47 CFR Part 15.225 (2020)
- RSS 210 Issue 10
- RSS Gen Issue 5
- ANSI C63.10 (2013)

Radio requirement:

Clause (47CFR Part 15.225 & RSS-210 Issue 9 & RSS-Gen Issue 5) Test Description	Test result - Comments			
Occupied Bandwidth	<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input checked="" type="checkbox"/> NP(1)
20dB Bandwidth	<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input checked="" type="checkbox"/> NP(1)
AC Power Line Conducted Emission	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA(2)	<input checked="" type="checkbox"/> NP(1)
Frequency Tolerance	<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input checked="" type="checkbox"/> NP(1)
Field strength within the band 13.110-14.010MHz	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
Field strength outside of the bands 13.110-14.010 MHz	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
Receiver Radiated Emissions	<input type="checkbox"/> PASS (3)	<input type="checkbox"/> FAIL	<input checked="" type="checkbox"/> NA	<input type="checkbox"/> NP(1)
This table is a summary of test report, see conclusion of each clause of this test report for detail.				

(1): Limited program

(2): EUT not directly or indirectly connected to the AC Power Public Network

(3) Testing covered the receive mode, and receiver spurious emissions are considered to be the same as transmitter.

PASS: EUT complies with standard's requirement

FAIL: EUT does not comply with standard's requirement

NA: Not Applicable

NP: Test Not Performed

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

2.1. INFORMATIONS

All test are performed with 48VDC PoE (worst case).

AC power Line conducted Emissions and Field strength outside of the bands 13.110-14.010 MHz are also performed with 24VDC on DC connector

Open1500 and OPEN 2500 are same electronics, difference is plastic casing.

2.2. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES):

Equipment under test (EUT):

INGENICO OPEN2500 CL/POE

Serial Number: 212937313451270622240067



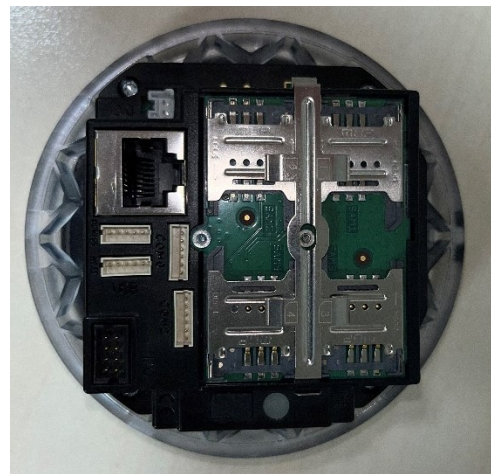
Open2500



Open1500



Powered by : 12-24Vdc



Powered by : POE 48VDC or 12-24Vdc

Equipment Under Test

Power supply:

Name	Type	Rating	Reference / Sn	Configuration	Comments
Supply1	<input checked="" type="checkbox"/> DC	12-24VDC	/	Configuration n°1	Power supply 24Vdc on DC connector
Supply2	<input checked="" type="checkbox"/> DC	48VDC	/	Configuration n°2	Power supply 48Vdc on POE (Power Over Eternet)

Inputs/outputs - Cable:

Access	Type	Length used (m)	Declared <3m	Shielded	Under test	Comments
Supply1	2wires	1.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	/
Ethernet cable	RJ45 (Ethernet)	1.8	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	/
COM0 cable	RS232	1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	/
USB Device cable	USB	0.9	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	/
Access4	microSD (MMC)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/
Access5	SAM1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/
Access6	SAM2		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/

Auxiliary equipment used during test:

Type	Reference	Sn	Comments
Contactless card	Type B	296113752	INGENICO
POE adapter	TP-LINK / TL-POE200A	2168528003068	48VDC
Power supply DC	METRIX	AX503	A7042307
Laptop	DELL	/	INGENICO

Equipment information (declaration of provider):

Type:	<input checked="" type="checkbox"/> RFID		
Frequency band:	[13.553 to 13.567] MHz		
Number of Channel:	1		
Antenna Type:	<input checked="" type="checkbox"/> Integral	<input type="checkbox"/> External	<input type="checkbox"/> Dedicated
Transmit chains:	1		
Receiver chains:	1		
Type of equipment:	<input checked="" type="checkbox"/> Stand-alone	<input type="checkbox"/> Plug-in	<input type="checkbox"/> Combined
Equipment arrangement:	<input checked="" type="checkbox"/> Tabletop	<input type="checkbox"/> Floor-standing	<input type="checkbox"/> Multiple orientations
Equipment type:	<input checked="" type="checkbox"/> Production model		<input type="checkbox"/> Pre-production model
Operating temperature range:	Tmin:	<input checked="" type="checkbox"/> -30°C	<input type="checkbox"/> X°C*
	Tnom:	20°C	
	Tmax:	<input type="checkbox"/> 50°C	<input checked="" type="checkbox"/> +70°C*
Operating voltage:	Vmin	<input checked="" type="checkbox"/> 10.2Vdc	<input checked="" type="checkbox"/> 40.8Vdc
	Vnom:	<input checked="" type="checkbox"/> 24 Vdc	<input checked="" type="checkbox"/> 48Vdc
	Vmax	<input checked="" type="checkbox"/> 27.6Vdc	<input checked="" type="checkbox"/> 55.2Vdc



L C I E

Hardware information

Terminal emulation

Terminal emulation window showing the following text:

```
OPEN2500 ingenico GROUP  
=> 1 OS VERSION: 050501  
2 OS CRC: 0xc417  
3 APPLI VERSION: 030400  
4 APPLI CRC: 0xCC85
```

Below the terminal is a virtual keyboard with the following keys highlighted:

- UP
- DOWN
- 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, .
- F
- X (red border)
- < (yellow border)
- 0 (green border)

Terminal info

SYS	050501
APP	HTB_TETRA.030400
HARD	PLATFORM_T3_UNATTEN
TYPE	OPEN2500
PID	34512706
PSN	22240067
MODE	Mockup Fab&Repair
SECURE_OS	300001011332
BOOTRAM	301000010910

Debug info

Port description	Ingenico Open 1200/1500 (COM2)
Connection	OK [Port COM2]
Last key pressed	S
Last mouse click	
Last test	
Last write	S

2.3. RUNNING MODE

Test mode	Description of test mode
Test mode 1	Permanent emission with modulation on a fixed channel in the data rate that produced the highest power
Test mode 2	Permanent reception

Test	Running mode	
Occupied Bandwidth	<input type="checkbox"/> Test mode 1 (1)	<input type="checkbox"/> Alternative test mode()
Frequency Tolerance	<input type="checkbox"/> Test mode 1 (1)	<input type="checkbox"/> Alternative test mode()
AC Power Line Conducted Emission	<input type="checkbox"/> Test mode 1 (1)	<input type="checkbox"/> Alternative test mode()
Field strength within the band 13.110-14.010MHz	<input checked="" type="checkbox"/> Test mode 1 (1)	<input type="checkbox"/> Alternative test mode()
Field strength outside of the bands 13.110-14.010 MHz	<input checked="" type="checkbox"/> Test mode 1 (1)	<input type="checkbox"/> Alternative test mode()
Receiver Radiated Emissions	<input checked="" type="checkbox"/> Test mode 2 (2)	<input type="checkbox"/> Alternative test mode()

(1) Following commands with the specific test software are used to set the product:

(2) Note: The test can't be performed because the transmitter and receiver are operating at the same frequency and the transmitter cannot be switched off as the carrier is used as receiver injection signal



L C I E

Remote Control for HardToolBoxT3

Edit Mode Syslogs Download Help

Outfile view

Terminal emulation

Terminal info

Debug info

Port description Ingenico Open 1200/1500 (COM2)
Connection OK [Port COM22]

Last key pressed
Last mouse click
Last test
Last write

Remote Control for HardToolBoxT3

Edit Mode Syslogs Download Help

Outfile view

Terminal emulation

Terminal info

Debug info

Port description Ingenico Open 1200/1500 (COM2)
Connection OK [Port COM22]

Last key pressed 1
Last mouse click
Last test
Last write 1

Remote Control for HardToolBoxT3

Edit Mode Syslogs Download Help

Outfile view

Terminal emulation

Terminal info

Debug info

Port description Ingenico Open 1200/1500 (COM2)
Connection OK [Port COM22]

Last key pressed 1
Last mouse click
Last test
Last write 1

```
< SYS= 080501 >  
< APP= HTB_TETRA.080400 >  
< HARD= PLATIFORH_T3_UNATTENDED >  
< TYPE= OPEN2500 >  
< PID= 34512706 >  
< PSN= 22240067 >  
< FCT= CLESS >  
< SFC= MIFARE >  
[[HTB= 080400_0x0C85 ]]  
[[CLESS= OFF ]]
```

MIFARE

Nb boucle=35
Nb detect=33
Nb OK=0



2.4. EQUIPMENT LABELLING

None

2.5. EQUIPMENT MODIFICATION

None Modification:

2.6. 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

Assume a receiver reading of 52.5dB μ V 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 dB μ V/m.

$$FS = 52.5 + 7.4 + 1.1 - 29 = 32 \text{ dB}\mu\text{V/m}$$

The 32 dB μ V/m value can be mathematically converted to its corresponding level in μ V/m.

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

2.7. 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 dB μ V/m

FS_{max} is the measured field strength, expressed in dB μ V/m

d_{measure} is the distance of the measurement point from the EUT

d_{limit} is the reference limit distance

2.8. 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

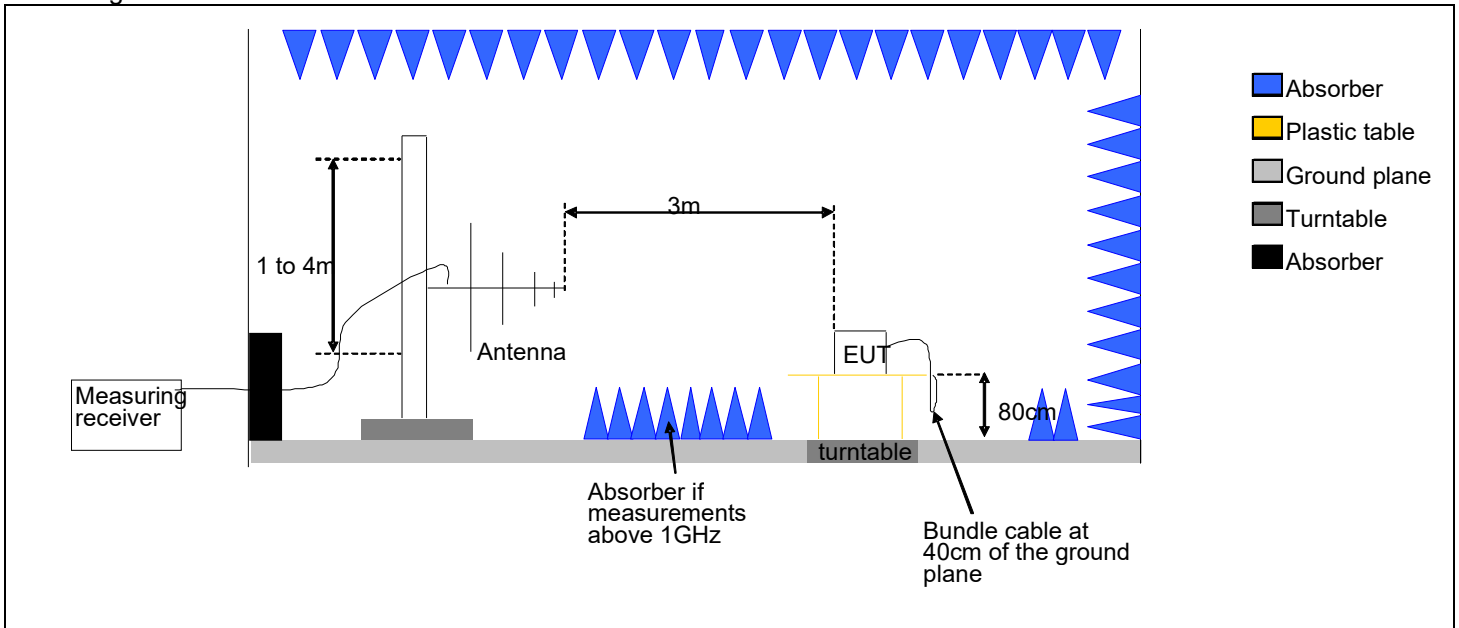
3. FIELD STRENGTH OUTSIDE OF THE BANDS 13.110-14.010 MHz

3.1. TEST CONDITIONS

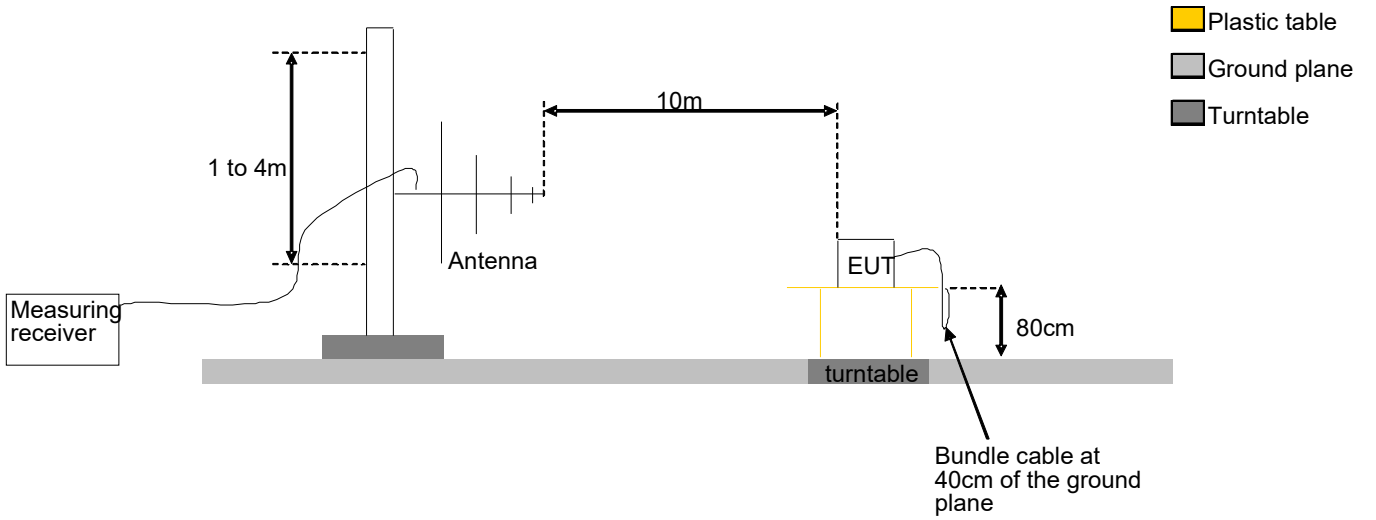
Test performed by : Majid MOURZAGH
 Date of test : October 19, 2022
 Ambient temperature : 21 °C
 Relative humidity : 37 %

3.2. TEST SETUP

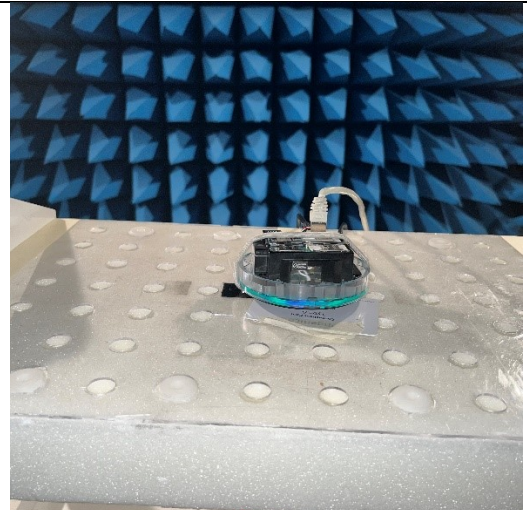
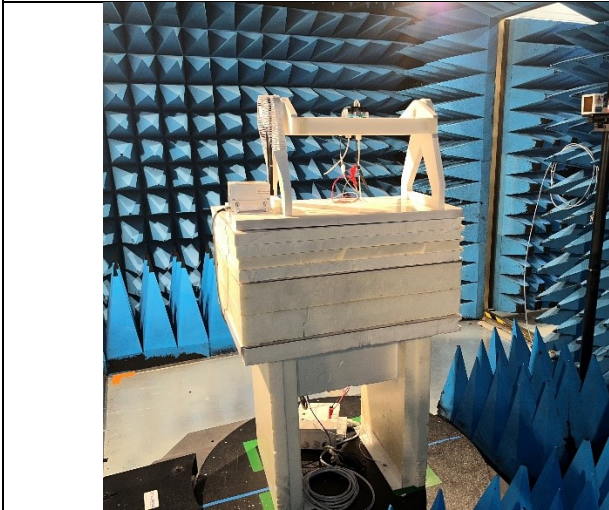
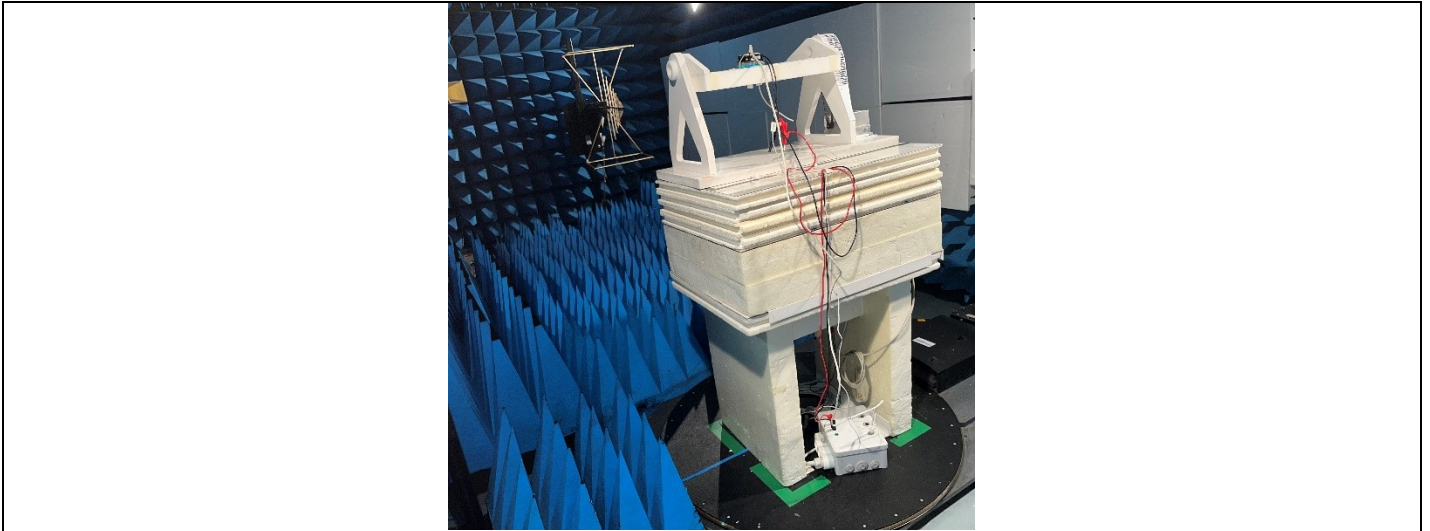
The product has been tested according to ANSI C63.10 and FCC part 15 subpart C. Test is performed in parallel, perpendicular and ground parallel axis with a loop antenna below 30MHz. Measurement bandwidth was 200Hz below 150kHz and 9kHz between 150kHz & 30MHz. The level has been maximised by the turntable rotation of 360 degrees range on all axis of EUT used in normal configuration. Antenna height was 1m. The EUT is placed **in a semi-anechoic chamber**. Distance between measuring antenna and the EUT is **3m**. Test is performed in horizontal (H) and vertical (V) polarization with **logperiodic** between 30MHz & 1GHz. Measurement bandwidth was 120kHz below 1GHz. The level has been maximised by the turntable rotation of 360 degrees range on all axis of EUT used in normal configuration. The EUT is placed at 0.8m high under 1GHz. The EUT is placed **on an open area test site** from 30MHz to 1GHz. Distance between measuring antenna and the EUT is **10m**. The height antenna is varied from 1m to 4m from 30MHz to 1GHz.



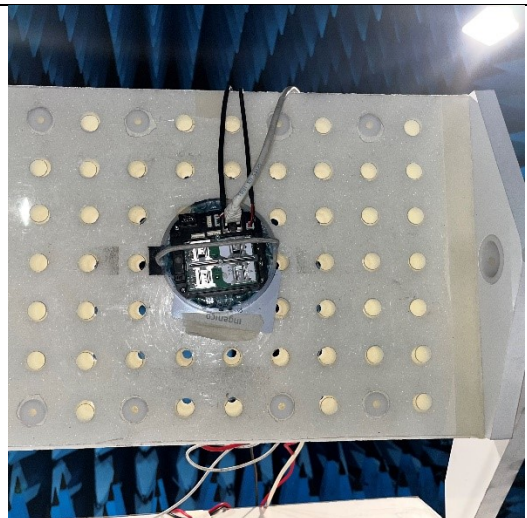
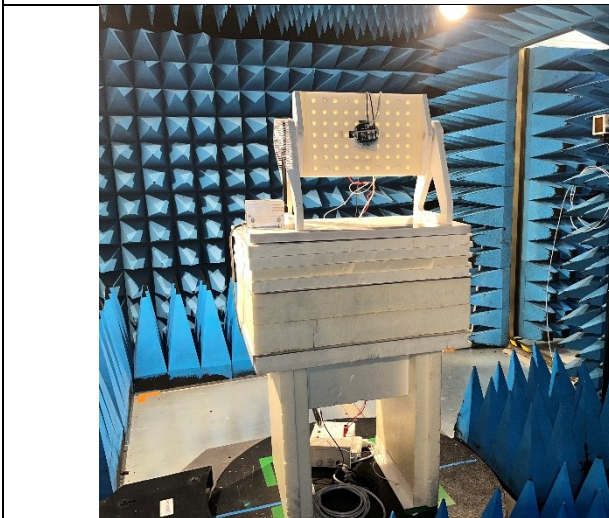
Test set up of Unwanted Emissions in Restricted Frequency Bands in semi anechoic chamber



Test Set up for radiated measurement in open area test site



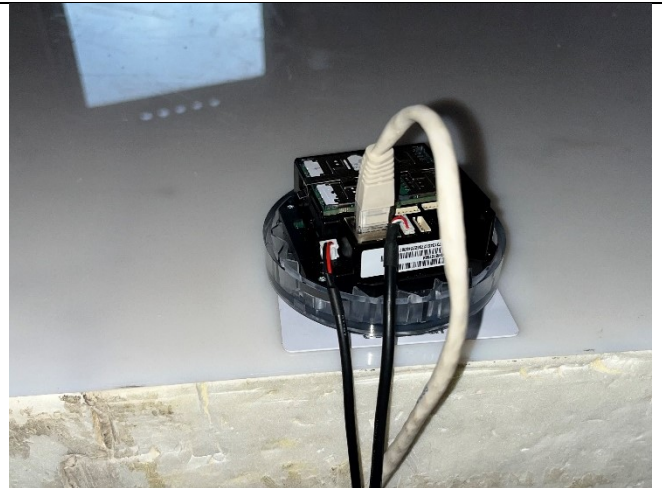
Axis XY on FAR



Axis Z on FAR



OATS Setup



Axis XY on OATS



Axis Z on OATS

Photograph for Field strength outside of the bands 13.110-14.010 MHz



L C I E

3.3. LIMIT

Measure at 300m		
Frequency range	Level	Detector
9kHz-490kHz	67.6dB μ V/m /F(kHz)	QPeak
Measure at 30m		
Frequency range	Level	Detector
490kHz-1.705MHz	87.6dB μ V/m /F(kHz)	QPeak
1.705MHz-30MHz	29.5dB μ V/m	QPeak
Measure at 10m		
Frequency range	Level	Detector
30MHz to 88MHz	29.5dB μ V/m	QPeak
88MHz to 216MHz	33dB μ V/m	QPeak
216MHz to 960MHz	35.5B μ V/m	QPeak
960MHz to 1000MHz	43.5dB μ V/m	QPeak
Above 1000MHz	63.5dB μ V/m	Peak
	43.5dB μ V/m	Average
Measure at 3m		
Frequency range	Level	Detector
30MHz to 88MHz	40dB μ V/m	QPeak
88MHz to 216MHz	43.5dB μ V/m	QPeak
216MHz to 960MHz	46B μ V/m	QPeak
960MHz to 1000MHz	54dB μ V/m	QPeak
Above 1000MHz	74dB μ V/m	Peak
	54dB μ V/m	Average

3.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Amplifier 9kHz - 40GHz	LCIE SUD EST	–	A7102082	05/22	05/24
Antenna Bi-log	AH System	SAS-521-7	C2040180	02/21	02/23
Antenna horn 18GHz	EMCO	3115	C2042029	03/22	03/25
BAT EMC	NEXIO	v3.21.0.32	L1000115		
CABLE	TELEDYNE	R82-0404-8M	A5330008	02/22	02/24
Cable 0.75m	-	18GHz	A5329900	08/22	08/24
Cable 1m	HUBER & SUHNER	18GHz	A5329705	08/21	08/23
Cable 1m	HUBER & SUHNER	18GHz	A5329706	08/21	08/23
Cable SMA 40GHz 40cm	WITHWAVE	W101-SM1-0.4M	A5329979	04/21	04/23
Comb EMR HF	YORK	CGE01	A3169114		
CONTROLLER	INNCO	CO3000	D3044034		
Emission Cable (SMA 1m)	TELEDYNE	26GHz	A5329874	08/22	08/23
Emission Cable (SMA 3.3m)	TELEDYNE	26GHz	A5329875	08/22	08/23
Filter Matrice	LCIE SUD EST	Combined filters	A7484078	09/20	09/22
Multimeter - CEM	FLUKE	189	A1240171	09/21	09/23
Rehausse Table C3	LCIE	–	F2000507		
Rehausse Table C3	LCIE	–	F2000511		
Semi-Anechoic chamber #3 (BF)	SIEPEL	–	D3044017_BF	04/22	04/25
Semi-Anechoic chamber #3 (VSWR)	SIEPEL	–	D3044017_VSWR	04/22	04/25
Spectrum analyzer	ROHDE & SCHWARZ	FSU 26	A4060058	09/21	09/23
Table C3	LCIE	–	F2000461		
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	01/21	01/23
TILT	INNCO	TILT	D3044033		
Turntable chamber (Cage#3)	ETS Lingren	Model 2165	F2000371		
Turntable controller (Cage#3)	ETS Lingren	Model 2090	F2000444		
Antenna loop	ELECTRO-METRICS	EM-6879	C2040294	08/22	08/24



LCIE

TEST EQUIPMENT USED on OATS					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Antenna Bi-log	CHASE	CBL6111A	C2040172	04/22	04/24
Biconic Antenna	EATON	94455-1	C2040234	03/21	03/23
Multimeter - CEM	FLUKE	87	A1240251	03/21	03/23
Power supply DC	METRIX	AX503	A7042308		
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	01/21	01/23
Antenna Mat (OATS)	ETS Lingren	2071-2	F2000392		
Cable (OATS)	—	1GHz	A5329623	08/21	08/22
CALCUL_FACTEURS	LCIE SUD EST	V4	L2000035		
Emission Cable	SUCOFLEX	6GHz	A5329061	08/21	08/22
Emission Cable	MICRO-COAX	1GHz	A5329656	08/21	08/22
OATS	—	—	F2000409	04/21	08/22
Rehausse Table C1/OATS	LCIE	—	F2000512		
Table C1/OATS	LCIE	—	F2000445		
Turntable (OATS)	ETS Lingren	Model 2187	F2000403		
Turntable / Mast controller (OATS)	ETS Lingren	Model 2066	F2000372		

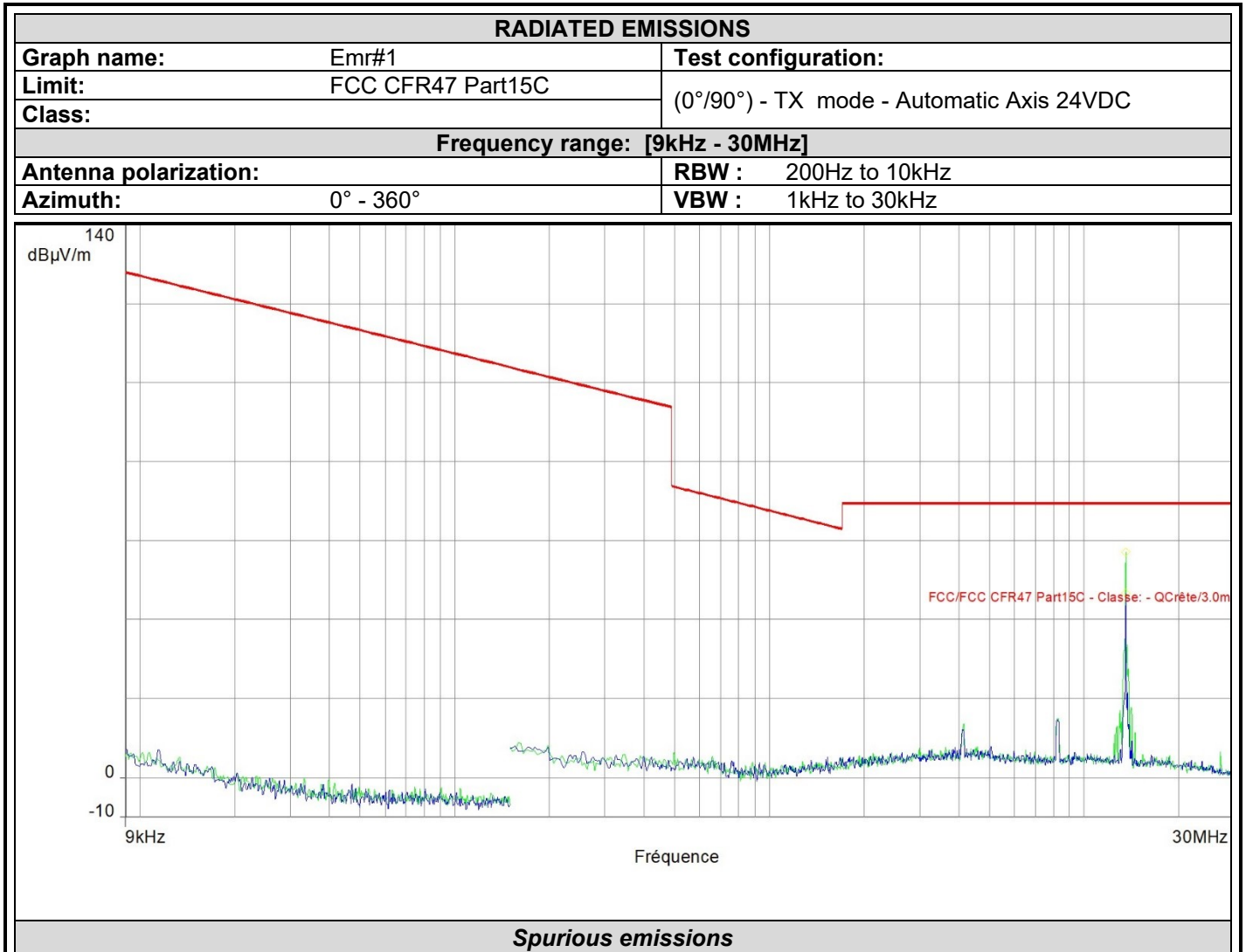
3.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None Divergence:



L C I E

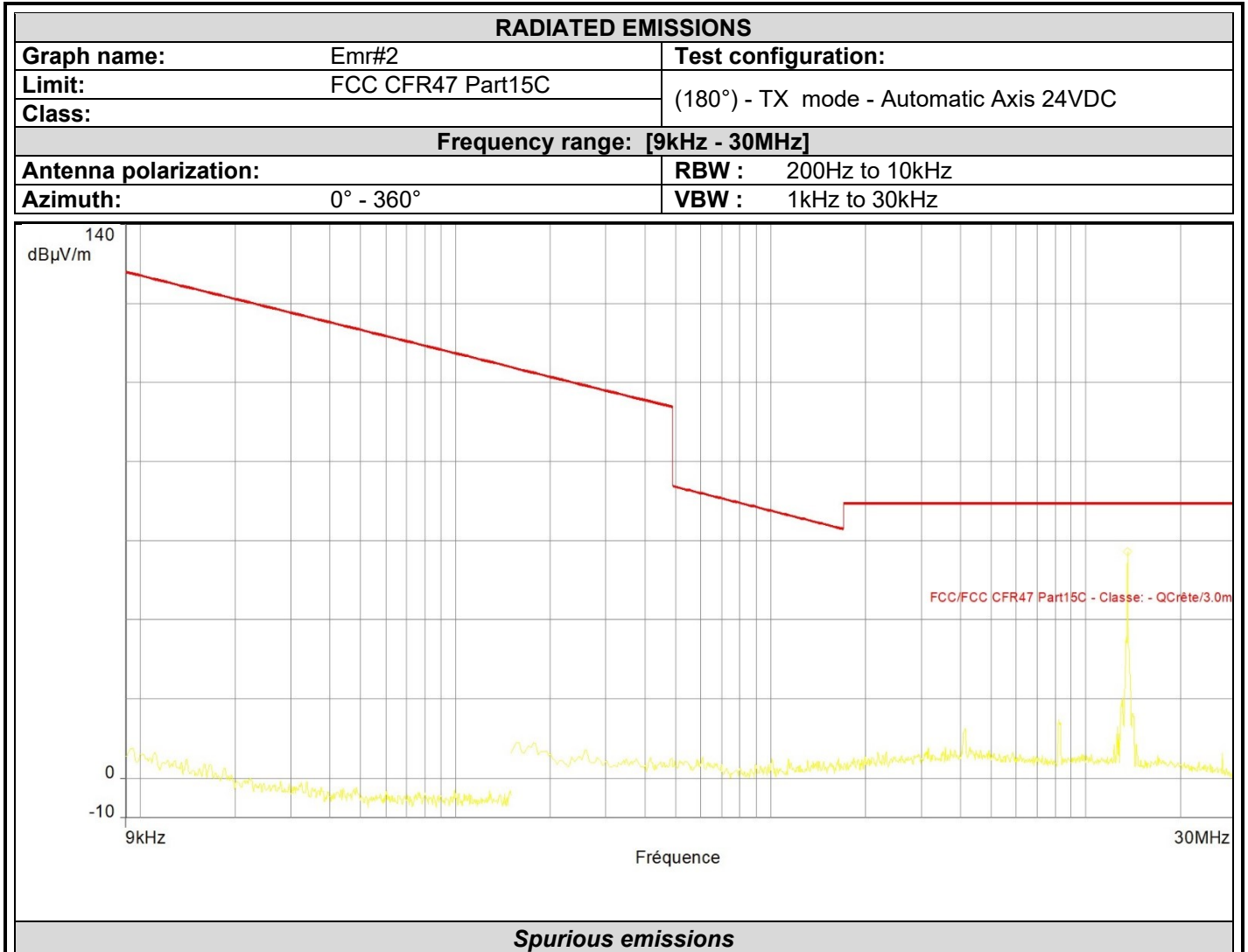
3.6. RESULTS



Frequency (MHz)	Peak (dBµV/m)	Lim.Q-Peak (dBµV/m)	Polarization	Correction (dB)
13.562	46.7	69.5	Horizontal	12.8
13.562	57.0	69.5	Vertical	12.8



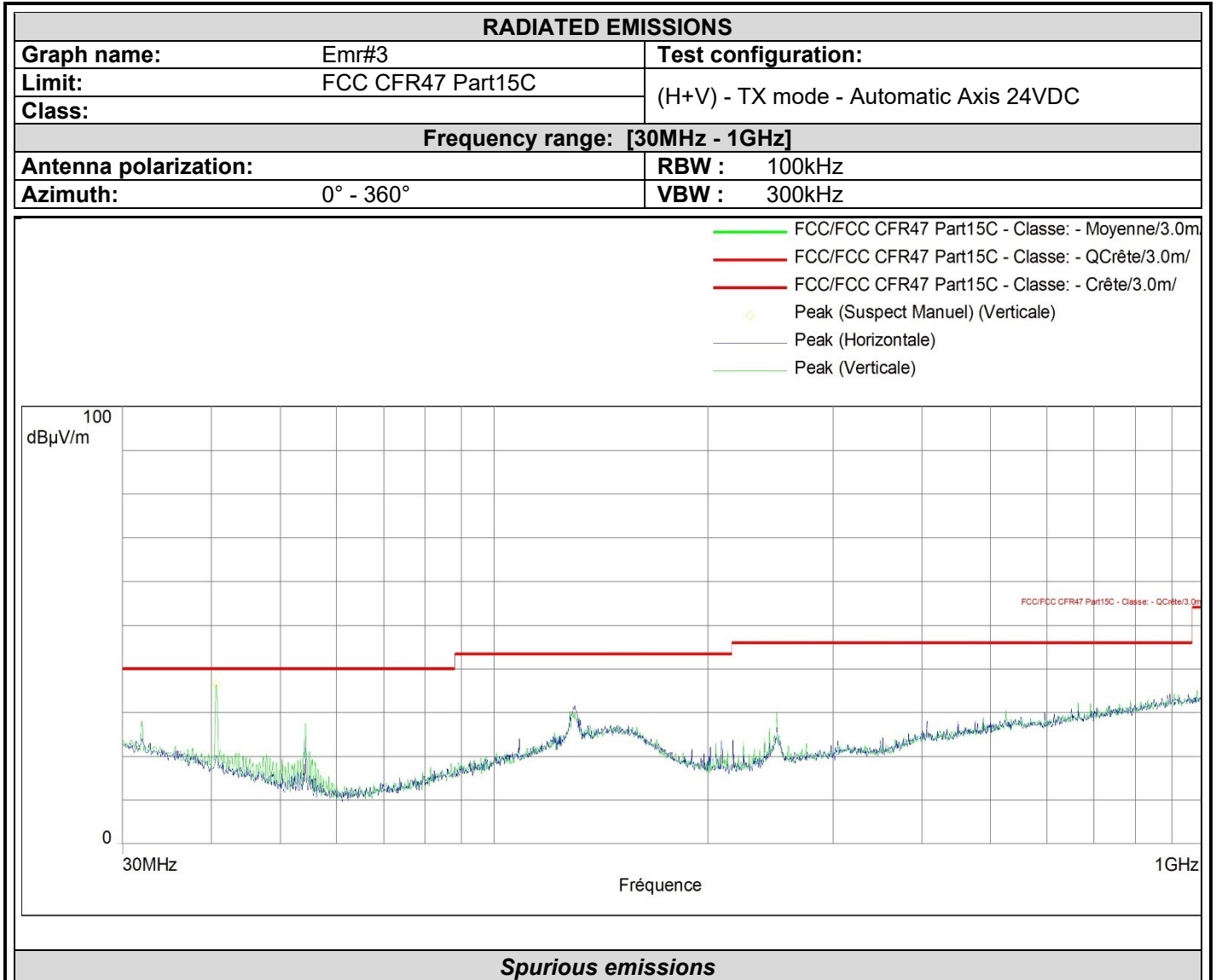
L C I E



Frequency (MHz)	Peak (dBµV/m)	Lim.Q-Peak (dBµV/m)	Polarization	Correction (dB)
13.562	57.3	69.5	Horizontal	12.8



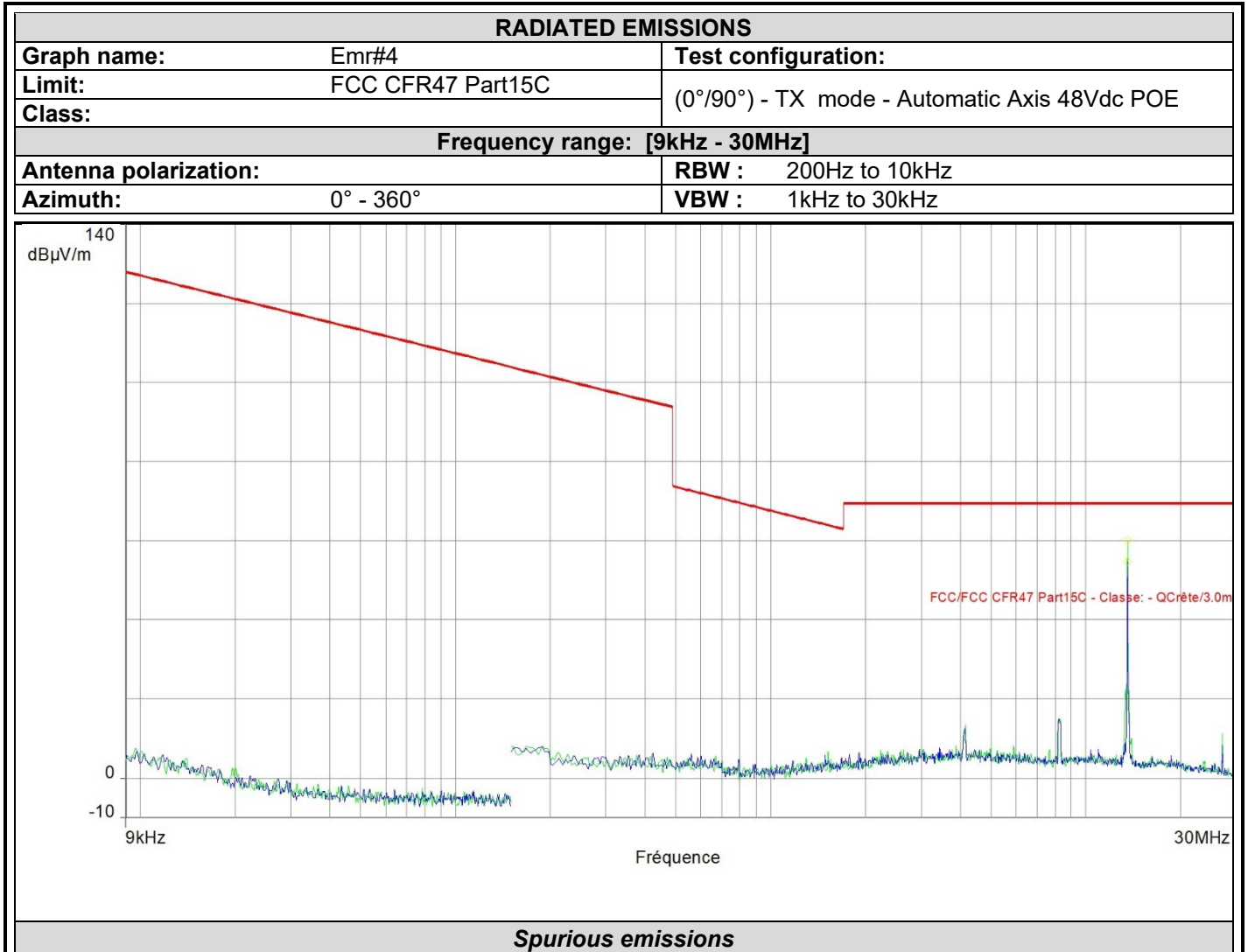
L C I E



Frequency (MHz)	Peak (dBµV/m)	Lim.Q-Peak (dBµV/m)	Polarization	Correction (dB)
40.670	36.5	40.0	Vertical	16.6



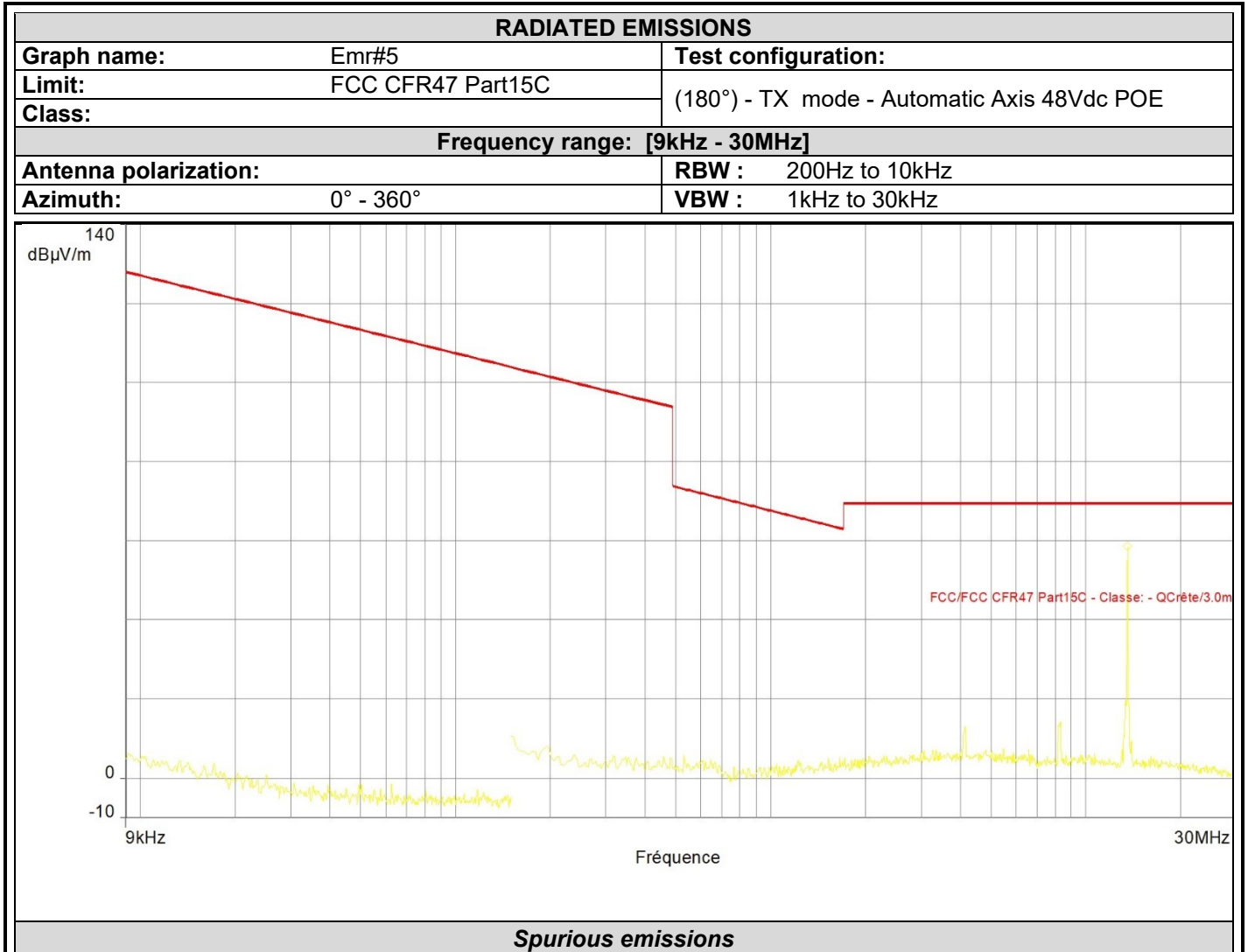
L C I E



Frequency (MHz)	Peak (dBµV/m)	Lim.Q-Peak (dBµV/m)	Polarization	Correction (dB)
13.562	54.8	69.5	Horizontal	12.8
13.562	60.1	69.5	Vertical	12.8



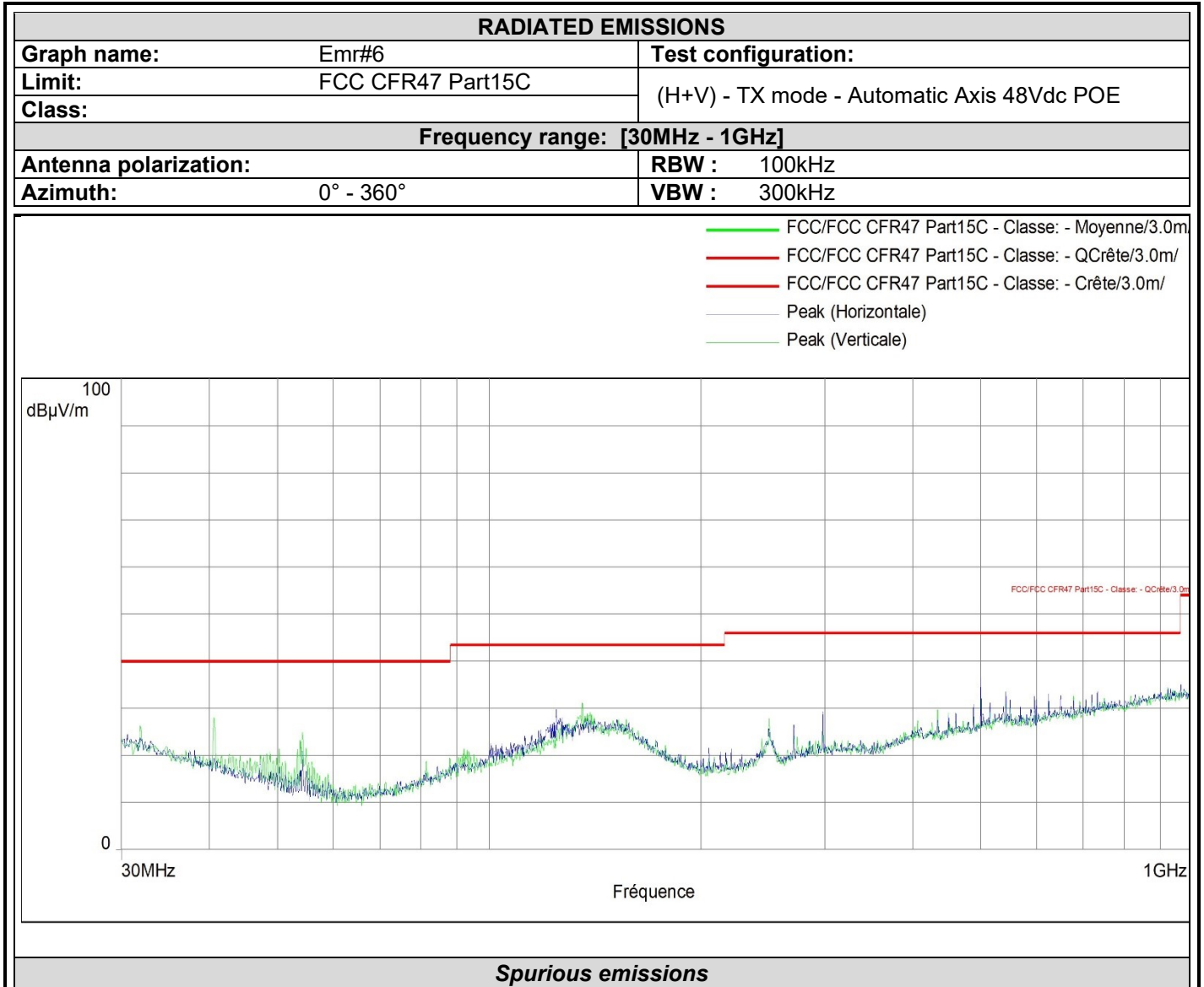
L C I E



Frequency (MHz)	Peak (dBµV/m)	Lim.Q-Peak (dBµV/m)	Polarization	Correction (dB)
13.562	58.6	69.5	Horizontal	12.8



L C I E



Spurious emissions

No significant frequency observed



Final measurement:

9kHz to 30MHz					
Polarization	Frequency (MHz)	Peak Level (dB μ V/m)	QPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin QPeak (dB μ V/m)
all emissions were greater than 20 dB below the limit					

Final measurement:

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)
40.6800	21.6	QP	V	30	100	-	14.4	36.0	40.0

3.7. CONCLUSION

Field strength outside of the bands 13.110-14.010 MHz measurement performed on the sample of the product **INGENICO OPEN2500 CL/POE** SN: **212937313451270622240067**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.225 & RSS-Gen limits.

4. FIELD STRENGTH WITHIN THE BAND 13.110-14.010MHZ

4.1. TEST CONDITIONS

Test performed by : Majid MOURZAGH
 Date of test : October 19, 2022
 Ambient temperature : 21 °C
 Relative humidity : 37 %

4.2. TEST SETUP

Measurement procedure:

- Open Area Test Site
- Open Area Test Site + Test fixture in climatic chamber (for normal condition measurement)

Ambient temperature: 20 °C
 Relative humidity: 36 %

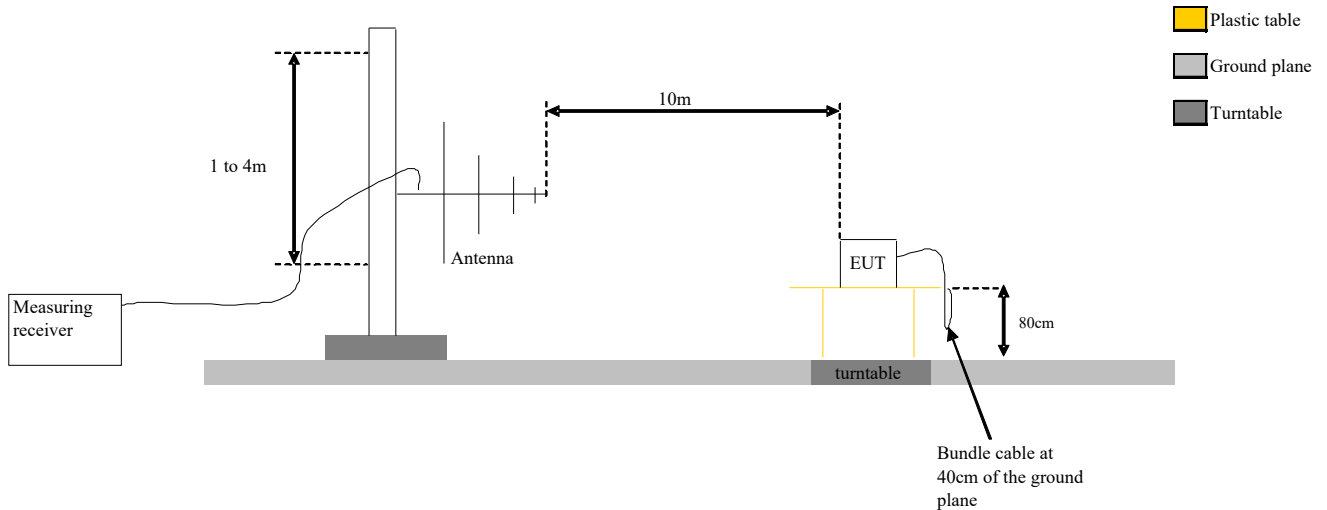
Note: It is impracticable to carry out tests under normal condition as specified in standard.

The product has been tested according to ANSI C63.10.

The EUT is placed **on an open area test site**. Distance between measuring antenna and the EUT is **10m**.

Test is performed in parallel, perpendicular and ground parallel axis with a loop antenna below 30MHz.

Measurement bandwidth was 9kHz between 150kHz & 30MHz. The level has been maximised by the turntable rotation of 360 degrees range on all axis of EUT used in normal configuration. Antenna height search was performed from 1 to 4m. The EUT is placed at 0.8m.



Test Set up for radiated measurement in open area test site

For measurement with test fixture is used, the power level calibration of the spectrum analyzer shall then be related to the power level or field strength measured with temperature during OATS measure taking in consideration in climatic chamber. The calculation will be used to calculate the absolute level of the sideband power.

Frequency band 13.110-14.010MHz

Following plots show radiated emission level in the frequency band 13.110-14.010MHz with a RBW of 9kHz and a quasi-peak detector. The graphs are obtained with a measuring receiver.



OATS Setup



Axis XY on OATS



Axis Z on OATS

Photograph for Field strength within the band 13.110-14.010MHz in OATS



LCIE

4.3. LIMIT

Frequency (MHz)	Field strength ($\mu\text{V/m}$) @30m	Field strength ($\text{dB}\mu\text{V/m}$) @30m	Field strength ($\text{dB}\mu\text{V/m}$) @3m
13.553-13.567	15 848	84.0	124.0
13.410-13.553 13.567-13.710	334.0	50.5	90.5
13.110-13.410 13.710-14.010	106.0	40.5	80.5
Below 13.110MHz Above 14.010MHz	30.0	29.5	69.5

4.4. TEST EQUIPMENT LIST

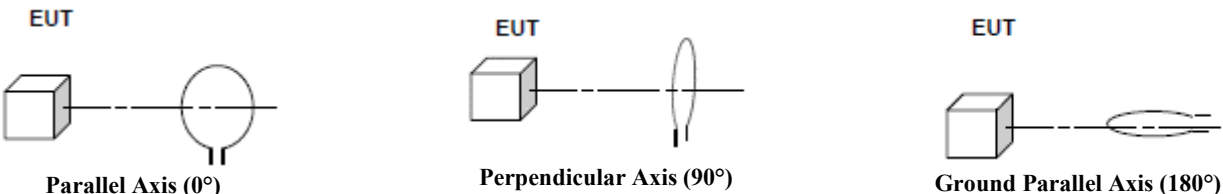
TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Antenna Mat (OATS)	ETS Lingren	2071-2	F2000392		
BAT EMC	NEXIO	v3.21.0.32	L1000115		
Biconic Antenna	EATON	94455-1	C2040234	03/21	03/23
Cable (OATS)	_	1GHz	A5329623	09/22	09/23
Comb EMR HF	YORK	CGE01	A3169114		
Emission Cable	CABELTEL	6GHz	A5329069	05/22	05/23
Emission Cable	MICRO-COAX	1GHz	A5329656	08/22	08/23
Emission Cable	RADIALEX		A5329061	08/22	08/23
OATS	_	_	F2000409	07/22	07/23
Rehausse Table C1/OATS	LCIE	_	F2000512		
Table C1/OATS	LCIE	_	F2000445		
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	01/21	01/23
Turntable (OATS)	ETS Lingren	Model 2187	F2000403		
Turntable / Mast controller (OATS)	ETS Lingren	Model 2066	F2000372		
Antenna loop	ELECTRO-METRICS	EM-6879	C2040294	08/22	08/24

4.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None Divergence:

4.6. RESULTS

Results on OATS test conditions:

Frequency (MHz)	QPeak Limit (dB μ V/m) @ 30m	Qpeak (dB μ V/m) @ 30m	Margin (Mes-Lim) (dB)	Angle Table (deg)	Pol Ant.	Ht Ant. (cm)	Correc. Factor (dB)	Comments
13.56	84	38.2	-45.8	0	V	150	35.6	Axis 0°
								

Note: Measure have been done at 10m distance and corrected according to requirements of 15.209.e) ($M@30m = M@10m - 19.1dB$)

4.7. CONCLUSION

Field strength within the band 13.110-14.010MHz measurement performed on the sample of the product **INGENICO OPEN2500 CL/POE** SN: **212937313451270622240067**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.225 & RSS 210 limits.

5. UNCERTAINTIES CHART

47 CFR Part 15.209 & 15.207 Kind of test	Wide uncertainty laboratory (k=2) ±x(dB) / (Hz)/ ms	Uncertainty limit
Measurement of conducted disturbances in voltage on the AC power port (9 kHz – 150 kHz)	2,67	3.8
Measurement of conducted disturbances in voltage on the AC power port (150 kHz – 30 MHz)	2,67	3.4
Measurement of conducted disturbances in voltage on the telecommunication port. (AAN)	3,67	5.0
Measurement of conducted disturbances in current (current clamp)	2,73	2.9
Measurement of disturbance power	2,67	4.5
Measurement of radiated magnetic field from 10kHz to 30MHz in SAC V01	4,48	/
Measurement of radiated magnetic field from 10kHz to 30MHz in SAC C01	4,48	/
Measurement of radiated electric field from 30 to 1000MHz in horizontal position on the OATS (Ecuellas)	4,88	6.3
Measurement of radiated electric field from 1 to 18GHz on the Ecuellas site	5.16	/
Measurement of radiated electric field from 30 to 1000MHz in vertical position on the OATS (Ecuellas)	4,99	6.3
Measurement of radiated electric field from 30 to 1000MHz in horizontal position in SAC C01	5,08	6.3
Measurement of radiated electric field from 30 to 1000MHz in vertical position in SAC C01	5,16	6.3
Measurement of radiated electric field from 30 to 1000MHz in horizontal position in SAC V01	5,08	6.3
Measurement of radiated electric field from 30 to 1000MHz in vertical position in SAC V01	5,15	6.3
Measurement of radiated electric field from 1 to 6 GHz C01	5,1	5.2
Measurement of radiated electric field from 1 to 6 GHz V01	4,85	5.2
Measurement of radiated magnetic field from 10kHz to 30MHz on the OATS (Ecuellas)	4,48	/

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