



L C I E

TEST REPORT

Number
Composition of document

FCC Registration Number
Industry Canada Number

Standards

Issued to

Apparatus under test

Trade mark
Manufacturer
Type
Serial number
IC
FCC ID

Test date

Tests performed by

Test site

Date of issue

RADIO

126335-653105B
30 pages

166175 (FAR)
6230B

47 CFR Part 15.225
RSS-210, Issue 8
RSS-Gen, Issue 3

INGENICO
28-32 boulevard de Grenelle
75015 PARIS

Payment terminal
INGENICO
INGENICO
ISC250-V4
13345SC00000215
2586D-ISC250V4CL
XKB-ISC250V4CL

February 2014

Armand MAHOUNGOU & Christophe FERREIRA

Fontenay aux Roses

2014/03/11

Written by :
Christophe FERREIRA
Tests operator

Approved by :
Stéphane PHOUDIAH
Technical manager



This document shall not be reproduced, except in full, without the written approval of the LCIE. This document contains results related only to the item tested. It does not imply the conformity of the whole production to the items tested. Unless otherwise specified, the decision of conformity takes into account the uncertainty of measures. This document doesn't anticipate any certification decision.



SUMMARY

1. TEST PROGRAM 3

2. EQUIPMENT DESCRIPTION..... 4

3. OCCUPIED BANDWIDTH..... 6

4. FREQUENCY TOLERANCE 8

5. AC POWER LINE CONDUCTED EMISSIONS..... 10

6. FIELD STRENGTH WITHIN THE BAND 13.110-14.010MHZ..... 13

7. FIELD STRENGTH OUTSIDE OF THE BANDS 13.110-14.010 MHZ 15

8. TEST EQUIPMENT LIST 18

9. UNCERTAINTIES CHART 19

10. ANNEX (GRAPHS) 20



1. TEST PROGRAM

- **References**

Standards:

- 47 CFR Part 15C
- RSS-210
- RSS-Gen
- CISPR 16-4-2
- ANSI C63.4

Standard Section	Test Description	TEST RESULT - Comments
RSS-Gen § 4.6.1	Occupied Bandwidth	PASS (No Limit applicable)
CFR 47 § 15.225 (e) RSS-210 § A2.6	Frequency tolerance	PASS
CFR 47 § 15.207 RSS-210 § 2.5.1 RSS Gen § 7.2.4	AC Power Line Conducted Emissions	PASS
CFR 47 § 15.225 (a) (b) (c) RSS-210 § A2.6 (a) (b) (c)	Field strength within the band 13.110-14.010 MHz	PASS
CFR 47 § 15.209 (a) CFR 47 § 15.225 (d) RSS-210 § A2.6 (d)	Field strength outside of the bands 13.110-14.010 MHz	PASS
RSS-Gen § 4.10	Receiver Radiated emissions	NA (Transceiver equipment. Include in Field strength test)

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 DESCRIPTION

2.1. HARDWARE & SOFTWARE IDENTIFICATION

- Equipment under test (EUT):



Front face



Rear face



Power supply FRIWO



RFID card

Photograph of EUT

- Input/output:
 - Input Power
 - Usb



• **Equipment information:**

- External antenna connector: No
- Frequency band allocated: 13.553MHz to 13.567MHz
- Frequency band used: 13.56MHz
- Modulation: Permanent emission-reception
- Number of channel: 1
- Antenna type: Integral
- Stand By mode: No
- Type of power source: External power supply
- Power supply: Vmin : 102 V / 60 Hz
Vnom: 120 V / 60 Hz
Vmax : 138 V / 60 Hz
- Temperature range: Tmin: -30°C (IC) & -20°C (FCC)
Tnom: 20°C
Tmax: +50°C

2.2. EUT INTERNAL OPERATING FREQUENCIES

Frequency (MHz)	Description	Frequency (MHz)	Description
12	Thunder3 quartz	25	Ethernet PoE Quartz
0.032768 + 18.432	Booster3 processor quartz	27.12	Contactless microcontroller quartz
24	Video oscillator, RS485 quartz & Hub USB quartz		

2.3. RUNNING MODE

The EUT is set in the following modes during tests:
-Permanent emission-reception with modulation

2.4. EQUIPEMENT LABELLING

Labelling of Payment Terminal	Labelling of Power Supply FRIWO

2.5. EQUIPMENT MODIFICATIONS

No equipment modification has been necessary during testing.



3. OCCUPIED BANDWIDTH

3.1. TEST CONDITIONS

Test performed by : Armand MAHOUNGOU
Date of test : 21/02/2014
Ambient temperature : 21°C
Relative humidity : 33%

3.2. TEST SETUP

The Equipment Under Test is installed on a table and set in permanent emission with modulation. Measurement is performed with a spectrum analyzer on the EUT with a test fixture. The product has been tested according to the RSS-GEN § 4.6.1 reference method.

Spectrum Analyzer Setting:

Center frequency= 13.56MHz
Span= At least twice the emission spectrum
Amplitude= Sufficient to observe the signal amplitude
RBW= 1% of span
VBW= 3*RBW
Sweep= Auto
Trace= Max Hold
Detector= Peak
Occupied Bandwidth 99% activated



Photograph for Occupied Bandwidth



Photograph for Occupied Bandwidth

3.3. RESULTS

Temperature	Tnom
Voltage	Vnom
Frequency (MHz)	13.56
Occupied Bandwidth (MHz)	1.706

See graphics in annex

Result: **PASS**

Limit: → None



4. FREQUENCY TOLERANCE

4.1. TEST CONDITIONS

Test performed by : Armand MAHOUNGOU
Date of test : 21/02/2014
Ambient temperature : 21°C
Relative humidity : 34%

4.2. TEST SETUP

The Equipment Under Test is installed on a table and set in permanent emission with modulation. Measurement is performed with a spectrum analyzer on the EUT with a test fixture.

Spectrum Analyzer Setting:

Center frequency= 13.56MHz
Span= At least twice the emission spectrum
Amplitude= Sufficient to observe the signal amplitude
RBW= 1% of span
VBW= 3*RBW
Sweep= Auto
Trace= Max Hold
Detector= Peak



Photograph for Frequency tolerance



Photograph for Frequency tolerance

4.3. RESULTS

Temperature	Tmin (IC)	Tmin (FCC)	Tnom	Tmax
Voltage:	Vmin			
Frequency (MHz)	13,5595535	13,559555	13,5595554	13,5595553
Frequency Drift (%)	0,0004	0,0004	0,0004	0,0004
Voltage:	Vnom			
Frequency (MHz)	13,5595625	13,55956	13,5595051	13,559555
Frequency Drift (%)	0,0004	0,0004	0	0,0004
Voltage:	Vmax			
Frequency (MHz)	13,5595566	13,5595556	13,5595556	13,5595556
Frequency Drift (%)	0,0004	0,0004	0,0004	0,0004

Result: **PASS**

Limit: → +/- 0.01%



5. AC POWER LINE CONDUCTED EMISSIONS

5.1. TEST CONDITIONS

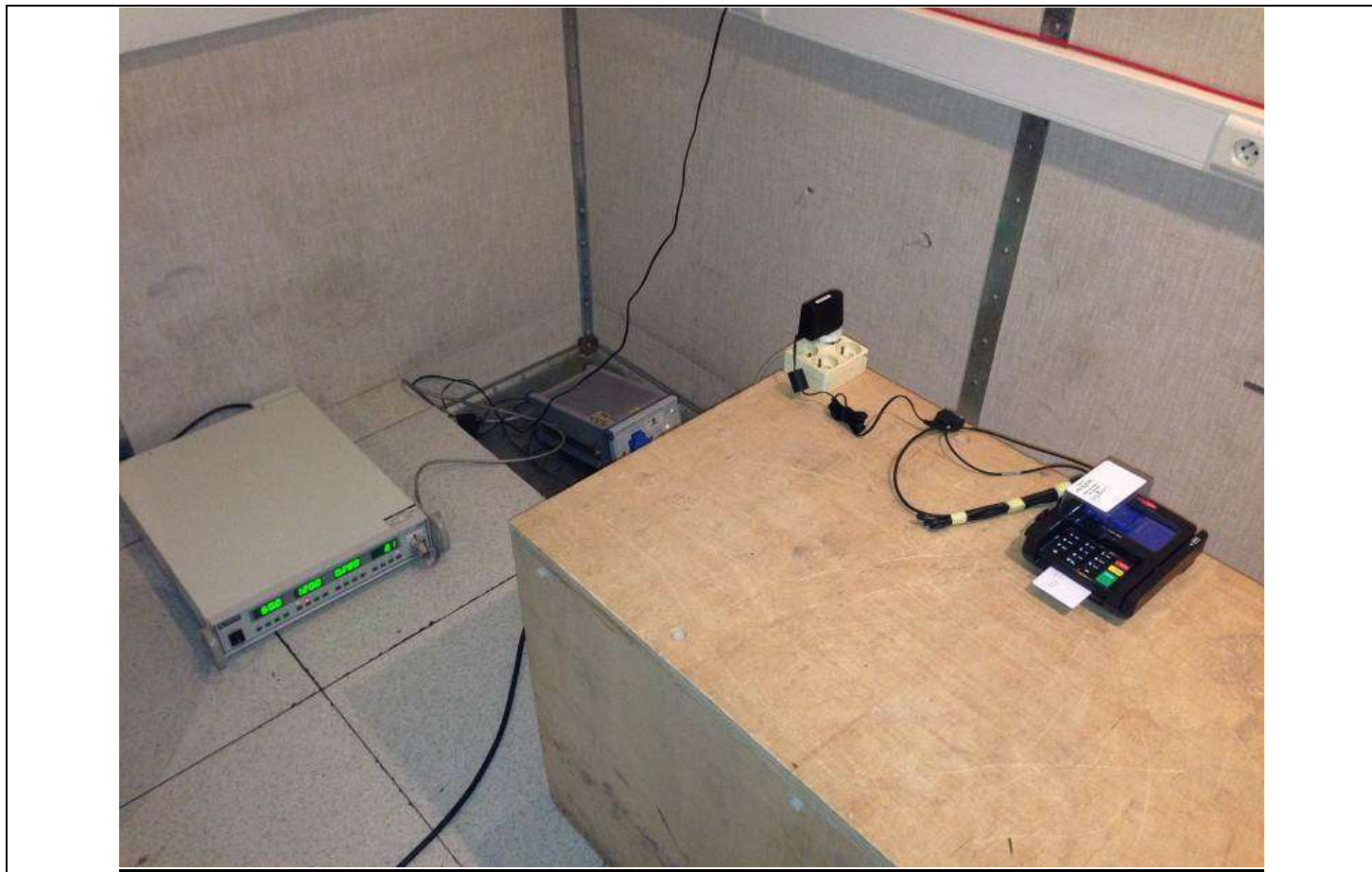
Test performed by : Christophe Ferreira
Date of test : 2014/02/12
Ambient temperature : 19°C
Relative humidity : 46%

5.2. TEST SETUP

The product has been tested according to ANSI C63.4-(2003) method. The EUT is placed on the ground reference plane, at 80cm from the LISN. The distance between the EUT and the vertical ground plane is 40cm. Auxiliaries are powered by another LISN. The cable has been shorted to 1meter length. The EUT is powered through the LISN. 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. The LISN (measure) is $50\Omega / 50\mu\text{H}$. Interconnecting cables and equipment's were moved to position that maximized emission.



Photograph for AC Power Line Conducted Emissions (Rear view)



Photograph for AC Power Line Conducted Emissions (Global view)



5.3. RESULTS

Phase Line

Frequency (MHz)	Peak Level (dB μ V/m)	Quasi-Peak Level (dB μ V/m)	Quasi-Peak Limit (dB μ V/m)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)
0.420	33.8	-	47.5	21.3	57.5
13.42	57.2	-	60	23.2	50
13.69	53.2	-	60	20.9	50
27.1	52	-	60	28.4	50

Neutral Line

Frequency (MHz)	Peak Level (dB μ V/m)	Quasi-Peak Level (dB μ V/m)	Quasi-Peak Limit (dB μ V/m)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)
0.420	33.1	-	47.5	23.4	57.5
13.51	51.3	-	60	22.4	50
13.69	52.5	-	60	20.7	50
27	30.8	-	60	11.4	50

See annex for graphics

Result: **PASS**

Limit: → **Quasi-Peak**
 0,15kHz to 0,5MHz: 66dB μ V/m to 56dB μ V/m*
 0,5MHz to 5MHz: 56dB μ V/m
 5MHz to 30MHz: 60dB μ V/m

Average
 0,15kHz to 0,5MHz: 56dB μ V/m to 46dB μ V/m*
 0,5MHz to 5MHz: 46dB μ V/m
 5MHz to 30MHz: 50dB μ V/m

*Decreases with the logarithm of the frequency



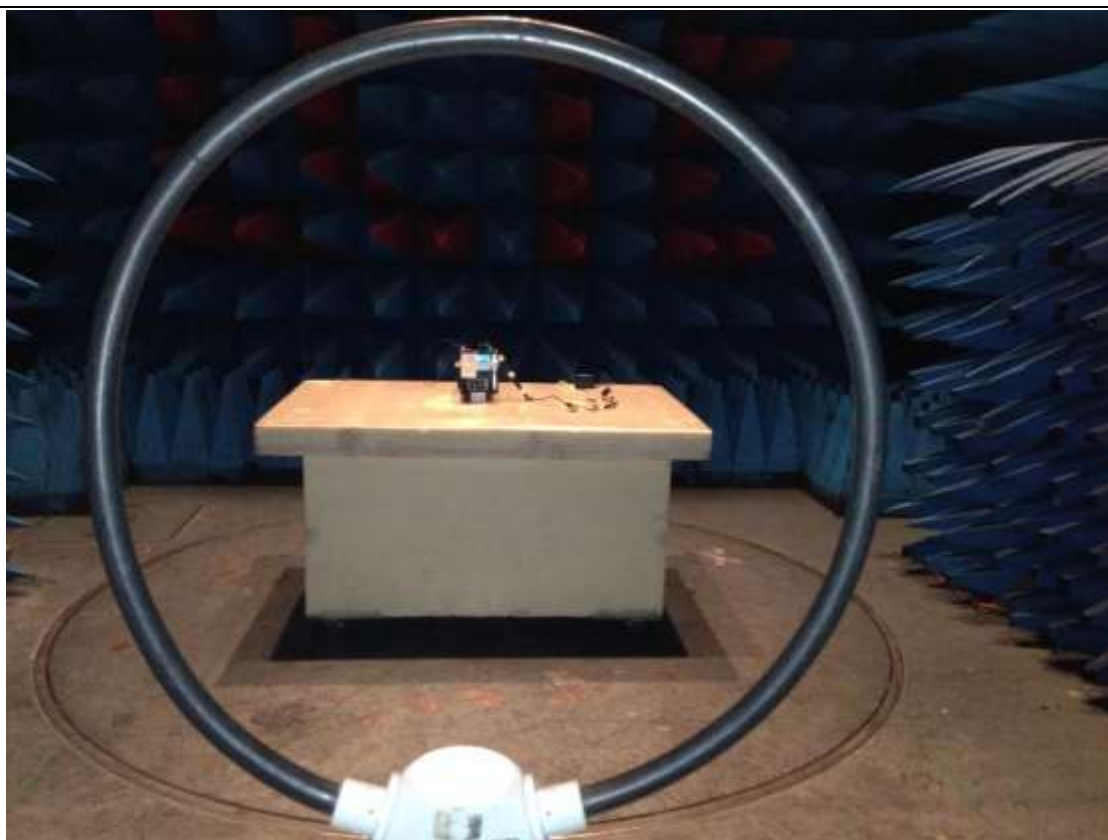
6. FIELD STRENGTH WITHIN THE BAND 13.110-14.010MHZ

6.1. TEST CONDITIONS

Test performed by : Christophe Ferreira
Date of test : 2014/02/12
Ambient temperature : 19°C
Relative humidity : 46%

6.2. TEST SETUP

The product has been tested according to ANSI C63.4 (2003). The EUT is placed in a semi-anechoic chamber. Distance between measuring antenna and the EUT is 3m. Test is performed in parallel and perpendicular axis with a loop antenna. Measurement bandwidth was 9kHz. The level has been maximised by the turntable rotation of 360 degrees range on the 3 axis of EUT. Antenna height was 1m.



Photograph for Field strength within the band 13.110-14.010MHz



6.3. RESULTS

- Characterization in a semi anechoic chamber:**

Parallel Axis

Frequency (MHz)	Peak Level (dB μ V/m) (3m)	QPeak Level (dB μ V/m) (3m)	Limit (dB μ V/m) (3m)
Below 13.110	46.6	-	69.5
13.110 to 13.410	63.5	47.9	80.5
13.410 to 13.553	64.1	45.7	90.5
13.553 to 13.567	-	72.2	124
13.567 to 13.710	60.9	44.1	90.5
13.710 to 14.010	57.4	-	80.5
Above 14.010	47.7	-	69.5

Perpendicular Axis

Frequency (MHz)	Peak Level (dB μ V/m) (3m)	QPeak Level (dB μ V/m) (3m)	Limit (dB μ V/m) (3m)
Below 13.110	35.1	-	69.5
13.110 to 13.410	34.3	-	80.5
13.410 to 13.553	43.9	-	90.5
13.553 to 13.567	60.1	51.9	124
13.567 to 13.710	41.9	-	90.5
13.710 to 14.010	35.5	-	80.5
Above 14.010	34.3	-	69.5

See annex for graphics

Result: **PASS**

Limit: → Below 13.110MHz: 69.5dB μ V/m (3m) or 29.5dB μ V/m (30m)
 13.110MHz to 13.410MHz: 106 μ V/m (30m) or 80.5dB μ V/m (3m)
 13.410MHz to 13.553MHz: 334 μ V/m (30m) or 90.5dB μ V/m (3m)
 13.553MHz to 13.567MHz: 15848 μ V/m (30m) or 124dB μ V/m (3m)
 13.567MHz to 13.710MHz: 334 μ V/m (30m) or 90.5dB μ V/m (3m)
 13.710MHz to 14.010MHz: 106 μ V/m (30m) or 80.5dB μ V/m (3m)
 Above 14.010MHz: 69.5dB μ V/m (3m) or 29.5dB μ V/m (30m)



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

7.1. TEST CONDITIONS

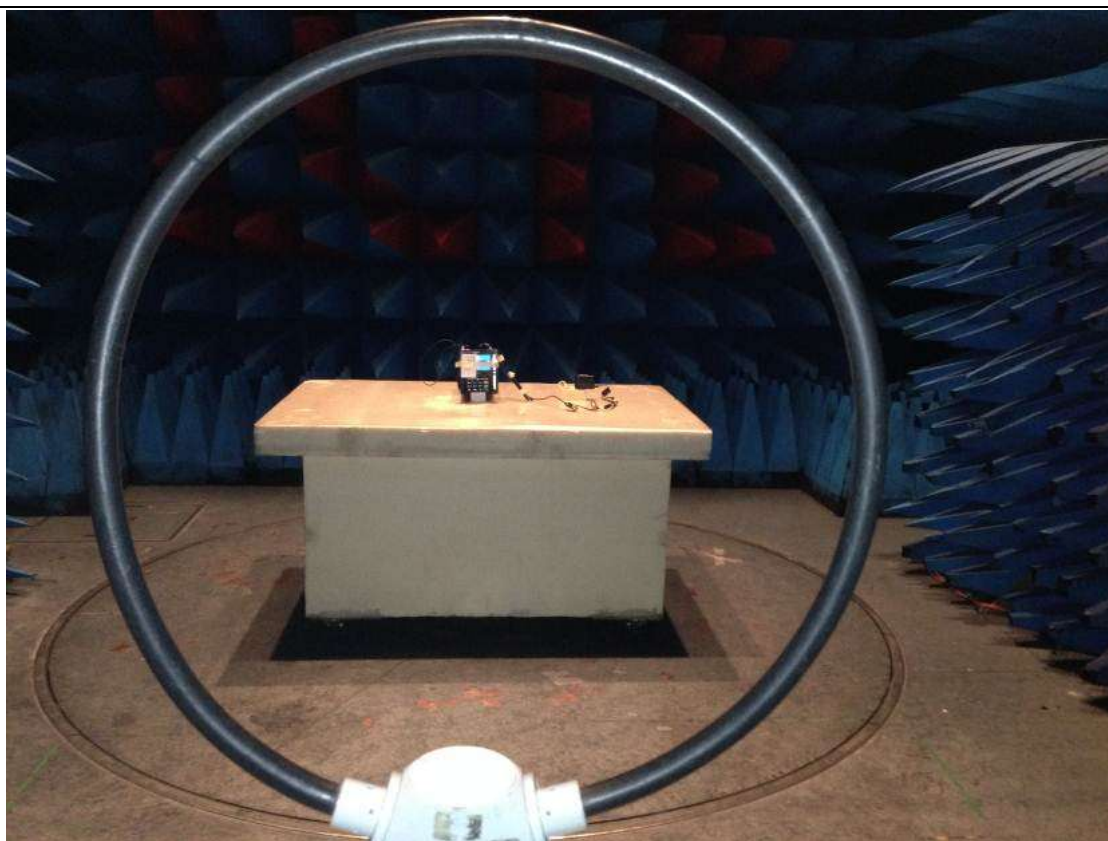
Test performed by : Christophe Ferreira
Date of test : 2014/02/12
Ambient temperature : 19°C
Relative humidity : 46%

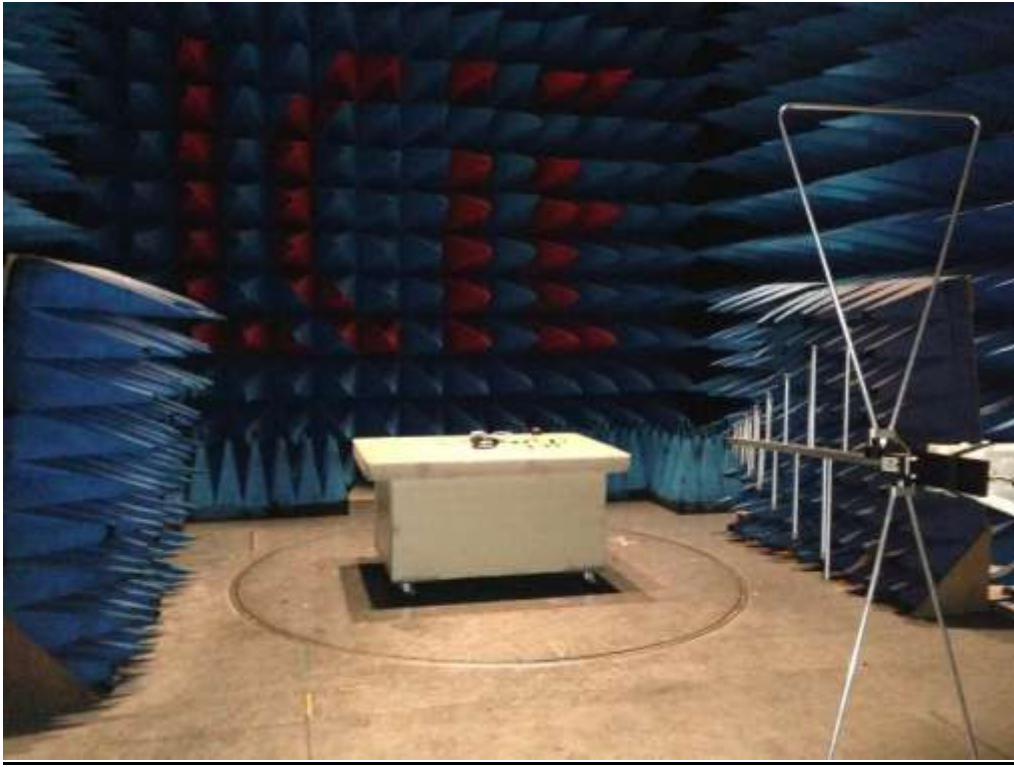
7.2. TEST SETUP

The product has been tested according to ANSI C63.4 (2003). The EUT is placed in a semi-anechoic chamber. Distance between measuring antenna and the EUT is 3m.

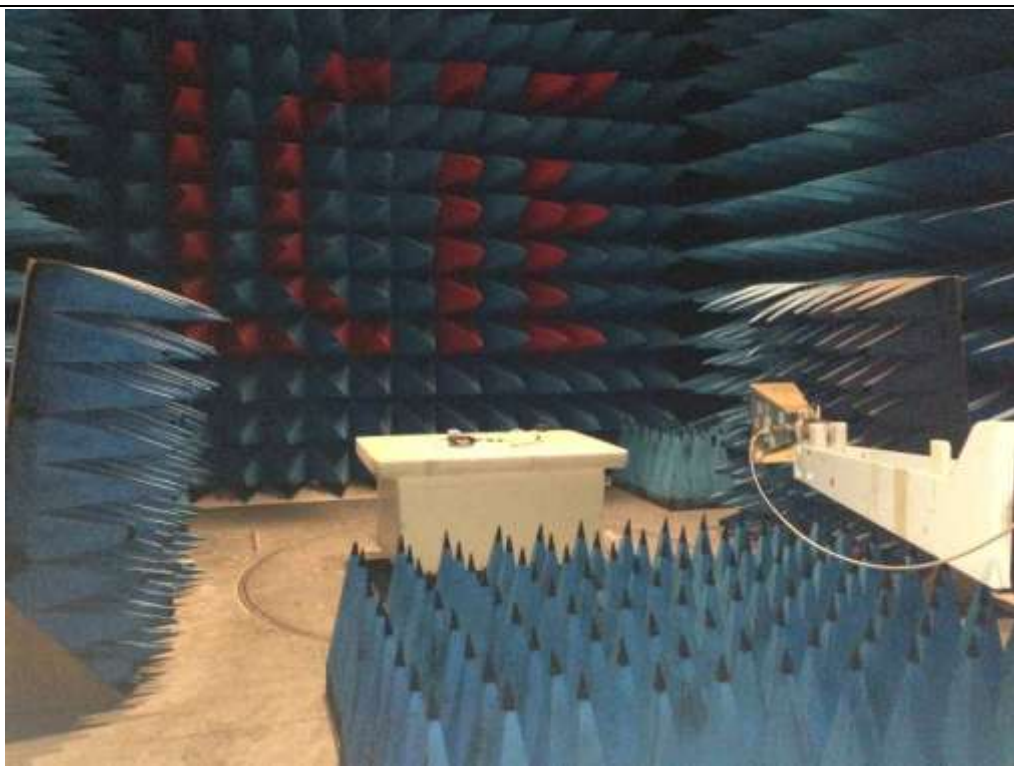
Test is performed in parallel and perpendicular axis with a loop antenna below 30MHz. Measurement bandwidth was 200Hz below 150kHz and 9kHz between 150kHz & 30MHz. The level has been maximised by the turntable rotation of 360 degrees range on the 3 axis of EUT. Antenna height was 1m.

Test is performed in horizontal (H) and vertical (V) polarization with bilog antenna between 30MHz & 1GHz and with a horn antenna above 1GHz. Measurement bandwidth was 120kHz below 1GHz and 1MHz above 1GHz. The level has been maximised by the turntable rotation of 360 degrees range on the 3 axis of EUT. Antenna height search was performed from 1 to 4m.





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



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



7.3. RESULTS

- **Characterization in a semi anechoic chamber (9kHz to 10GHz):**

Vertical Polarization

Below 1GHz

Frequency (MHz)	Peak Level (dB μ V/m)	QPeak Level (dB μ V/m)	Limit (dB μ V/m)
91	30	-	43.5
152.8	34.1	31.8	43.5
231.3	31.9	-	46
616.7	33.8	-	46

Above 1GHz

Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)
1065	31.9	53.9	41.8	73.9
1200	39.8	53.9	39.9	73.9

Horizontal Polarization

Below 1GHz

Frequency (MHz)	Peak Level (dB μ V/m)	QPeak Level (dB μ V/m)	Limit (dB μ V/m)
116.7	40.6	39.2	43.5
250	41.3	42.2	43.5
716.2	34	-	46
750	36.4	-	46

Above 1GHz

Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)
1200	28.1	53.9	41.2	73.9
2415	32.4	53.9	45.4	73.9

See annex for graphics

Result: **PASS**

Limit: → 9kHz to 0,490MHz: 2400/F(kHz) μ V/m (300m) or (20log(2400/F(kHz))+80)dB μ V/m (3m) QPeak
 0,490MHz to 1.705MHz: 240000/F(kHz) μ V/m (30m) or (20log(240000/F(kHz))+40)dB μ V/m (3m) QPeak
 1.705MHz to 30MHz: 30 μ V/m (30m) or 69.54dB μ V/m (3m) QPeak
 30MHz to 88MHz: 100 μ V/m (3m) or 40dB μ V/m (3m) or 29.5dB μ V/m (10m) QPeak
 88MHz to 216MHz: 150 μ V/m (3m) or 43,5dB μ V/m (3m) or 33dB μ V/m (10m) QPeak
 216MHz to 960MHz: 200 μ V/m (3m) or 46dB μ V/m (3m) or 35.5dB μ V/m (10m) QPeak
 960MHz to 1000MHz: 500 μ V/m (3m) or 54dB μ V/m (3m) or 43.5dB μ V/m (10m) QPeak
 Above 1000MHz: 5012 μ V/m (3m) or 74dB μ V/m or 63.5dB μ V/m (10m) Peak
 500 μ V/m (3m) or 54dB μ V/m (3m) or 43.5dB μ V/m (10m) Average



8. TEST EQUIPMENT LIST

Frequency Tolerance & Occupied Bandwidth					
Apparatus	Trade Mark	Type	Registration number	Calibration date	Calibration due
RF Cable	-	CS3D 04	A5329422	-	-
Spectrum Analyser	ROHDE & SCHWARZ	FSL6	A4060032	2012/11	2014/11
Multimeter	ISO-TECH	IDM 91E	A1240253	2013/03	2014/03
Programmable AC/DC power supply	KIKUSUI	PCR500M	A7040079	2013/04	2014/04
Field strength outside of the bands 13.110-14.010 MHz					
Apparatus	Trade Mark	Type	Registration number	Calibration date	Calibration due
Semi anechoic chamber 11,8x8,1x9,5m	SIEPEL	C01	D3044008	2011/04	2014/04
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2013/03	2014/03
Cable	-	RF Cable	A5329261	2013/03	2014/03
Cable	CABLES	3.5MD/CSU528AA/3.5MD/4000	A5329374	2013/03	2014/03
Cable	CABLES	3.5MD/CSU528AA-TDINOX/3.5MD/7000	A5329459	2013/03	2014/03
Loop antenna	ROHDE & SCHWARZ	HFH2-Z2	C2040007	2013/12	2014/12
Bilog antenna	SCHWARZBECK	VULB 9160	C2040150	2013/03	2014/03
Preamplifier	LCIE		A7086012	2013/03	2014/03
Horn antenna	EMCO	3115	C2042018	2013/05	2014/05
Field strength within the band 13.110-14.010MHz					
Apparatus	Trade Mark	Type	Registration number	Calibration date	Calibration due
Semi anechoic chamber 11,8x8,1x9,5m	SIEPEL	C01	D3044008	2011/04	2014/04
Loop antenna	RHODE & SCHWARZ	HFH2-Z2	C2040007	2013/12	2014/12
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2013/03	2014/03
Cable	-	RF Cable	A5329261	2013/03	2014/03
Cable	CABLES	3.5MD/CSU528AA/3.5MD/4000	A5329374	2013/03	2014/03
Cable	CABLES	3.5MD/CSU528AA-TDINOX/3.5MD/7000	A5329459	2013/03	2014/03
AC Power Line Conducted Emissions					
Apparatus	Trade Mark	Type	Registration number	Calibration date	Calibration due
Semi anechoic chamber 11,8x8,1x9,5m	SIEPEL	C01	D3044008	2011/04	2014/04
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642010	2013/03	2014/03
V LISN	RHODE & SCHWARZ	ENV216	C2320162	2013/12	2014/12
Cable	-	RF Cable	A5329261	2013/03	2014/03
Cable	CABLES	3.5MD/CSU528AA/3.5MD/4000	A5329374	2013/03	2014/03
Cable	CABLES	3.5MD/CSU528AA-TDINOX/3.5MD/7000	A5329459	2013/03	2014/03



9. UNCERTAINTIES CHART

Kind of test	Measurement uncertainties (k=2) $\pm x(\text{dB}) / (\text{Hz})$	Limit for uncertainties $\pm y(\text{dB})$
TRANSMITTER REQUIREMENTS		
Radio frequency	$\pm 2 \cdot 10^{-8}$ Hz	$\pm 1 \cdot 10^{-7}$ Hz
RF Conducted power	± 0.6 dB	± 1.5 dB
Spurious emissions <ul style="list-style-type: none"> • Frequency < 1000 MHz • Frequency > 1000 MHz 	± 3.9 dB ± 3.1 dB	± 6 dB
Spurious in conduction	± 1.6 dB	± 3 dB
Temperature	$\pm 0.5^{\circ}\text{C}$	$\pm 1^{\circ}\text{C}$
Humidity	± 2.5 %	± 10 %



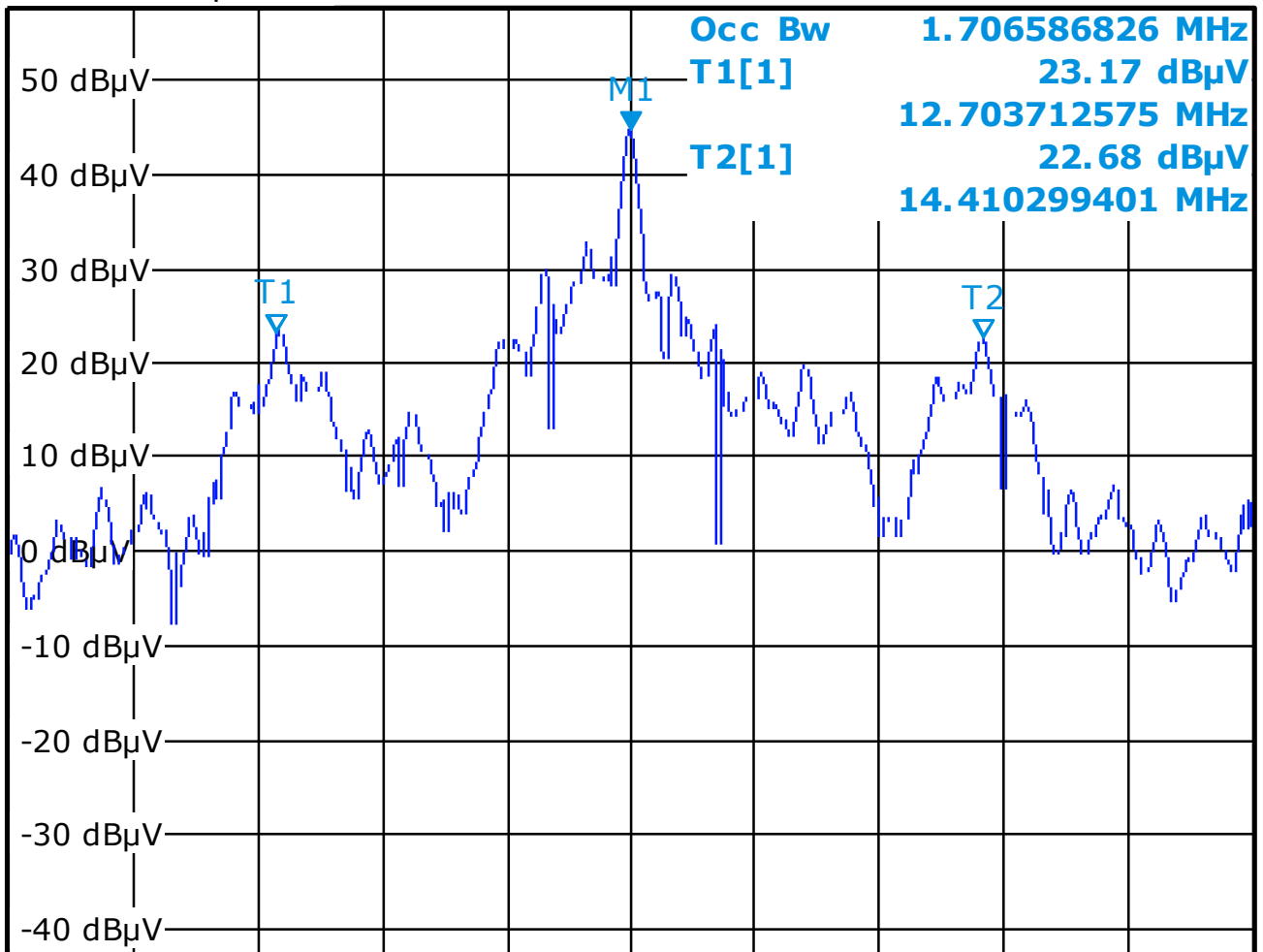
10. ANNEX (GRAPHS)

Occupied Bandwidth
Temperature: Tnom
Voltage: Vnom



Offs -67.6 dB * RBW 30 kHz
* Att 30 dB VBW 100 kHz **M1[1]** **44.82 dBμV**
Ref 57.4 dBμV * SWT 430ms **13.56050000 MHz**

1Pk
View



Occ Bw **1.706586826 MHz**
T1[1] **23.17 dBμV**
12.703712575 MHz
T2[1] **22.68 dBμV**
14.410299401 MHz

CF 13.56 MHz

Span 3.0 MHz



AC power line conducted emissions
Frequency: F_{nom}
Temperature: T_{nom}
Voltage: V_{nom}
Phase Line

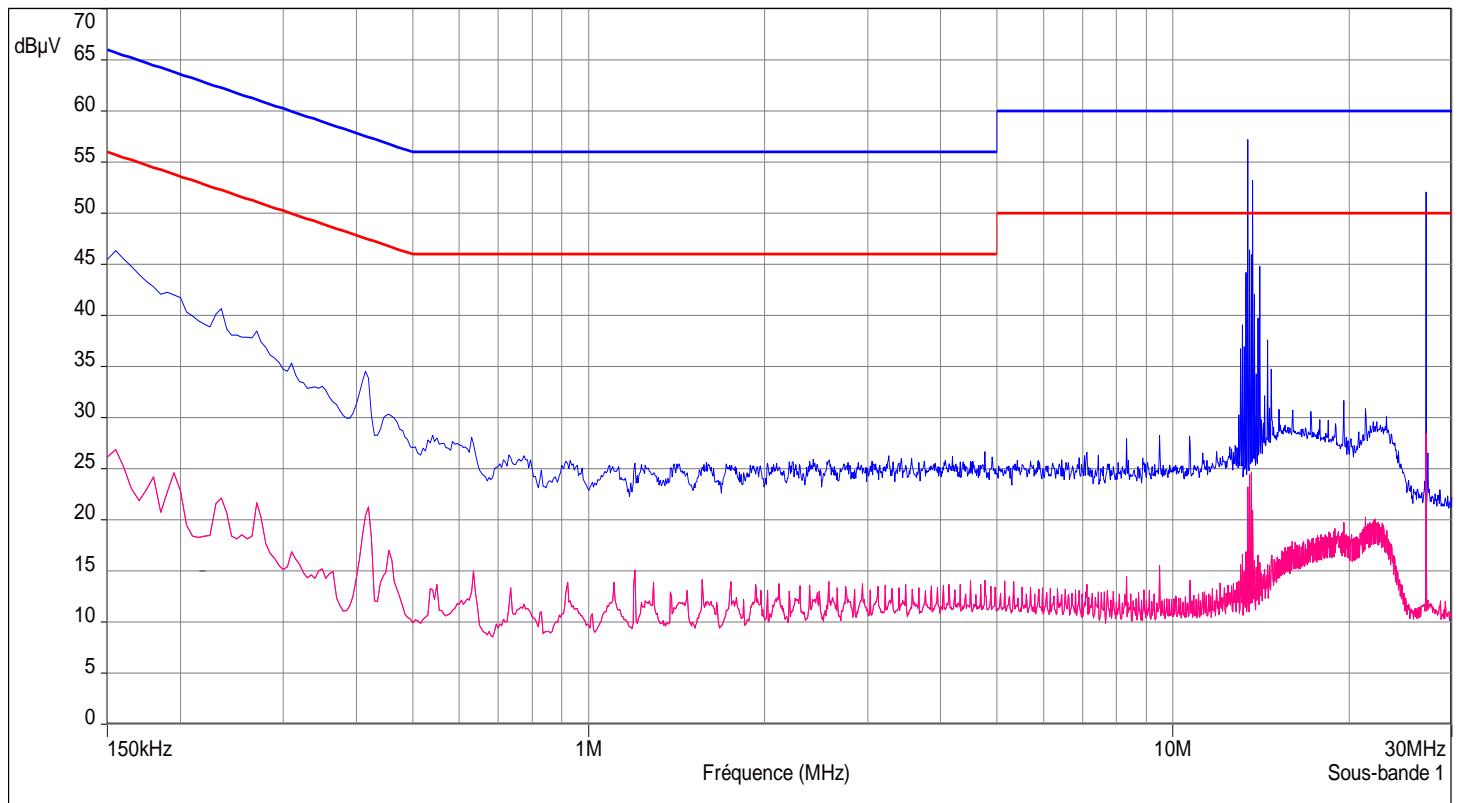
Description Sous-bande 1

Fréquences: 150 kHz - 30 MHz (Mode: Lin, Pas: 5 kHz)

Réglages: RBW: 9 kHz, VBW: Auto, Temps de mesure : 50 ms/Pts, Nombre de Balayages : 1, Preamp : Off, LN Preamp : Off, Preselecteur: On

Ligne:Phase 1

- FCC/FCC 15.109 - Classe:B - Moyenne/
- FCC/FCC 15.109 - Classe:B - QCrête/
- Mes.Peak (Phase 1)
- Mes.Avg (Phase 1)





AC power line conducted emissions
Frequency: F_{nom}
Temperature: T_{nom}
Voltage: V_{nom}
Neutral Line

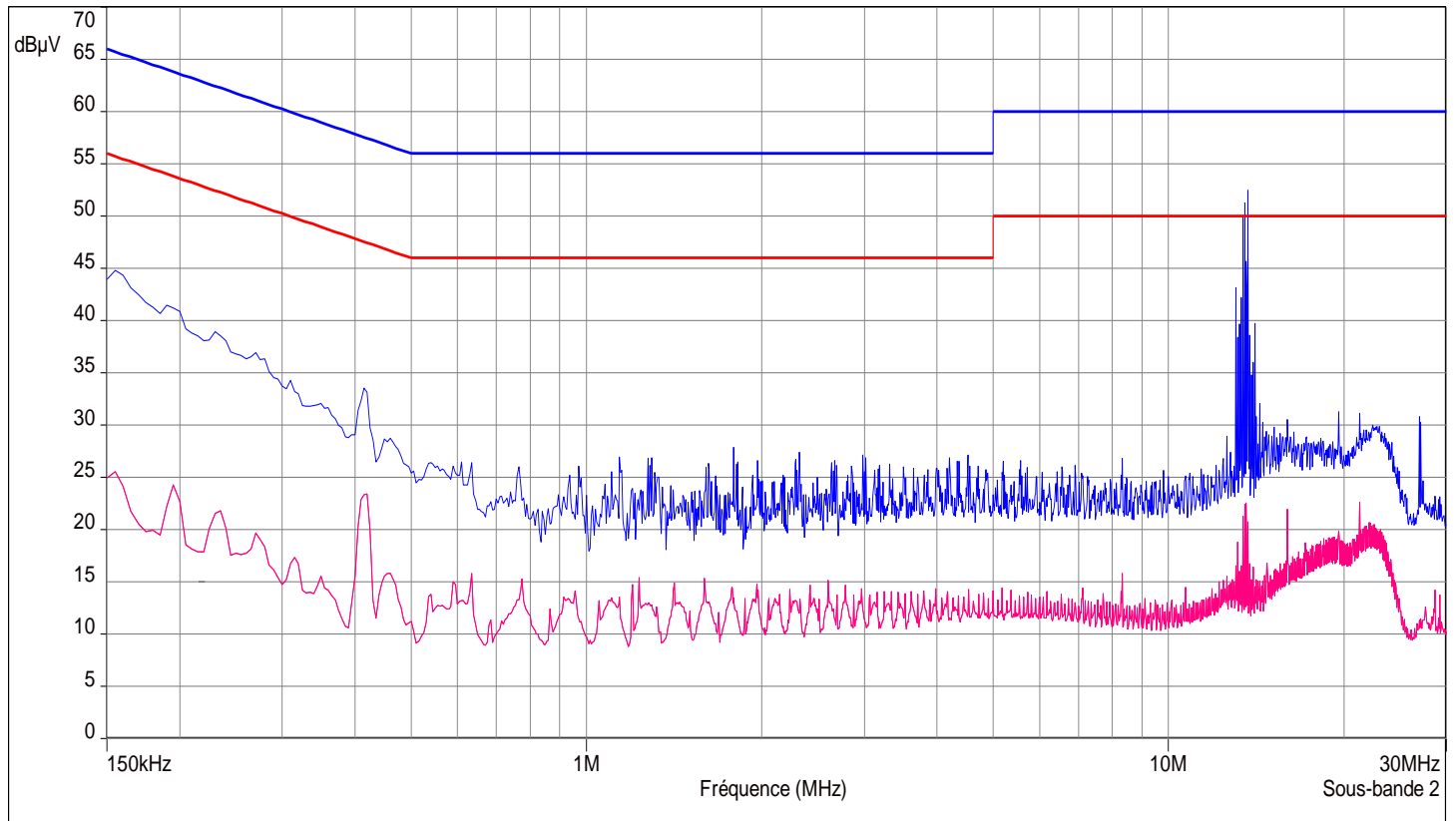
Description Sous-bande 2

Fréquences: 150 kHz - 30 MHz (Mode: Lin, Pas: 5 kHz)

Réglages: RBW: 9 kHz, VBW: Auto, Temps de mesure : 50 ms/Pts, Nombre de Balayages : 1, Preamp : Off, LN Preamp : Off, Preselecteur: On

Ligne: Neutre

- FCC/FCC 15.109 - Classe: B - Moyenne/
- FCC/FCC 15.109 - Classe: B - QCrête/
- Mes. Peak (Neutre)
- Mes. Avg (Neutre)

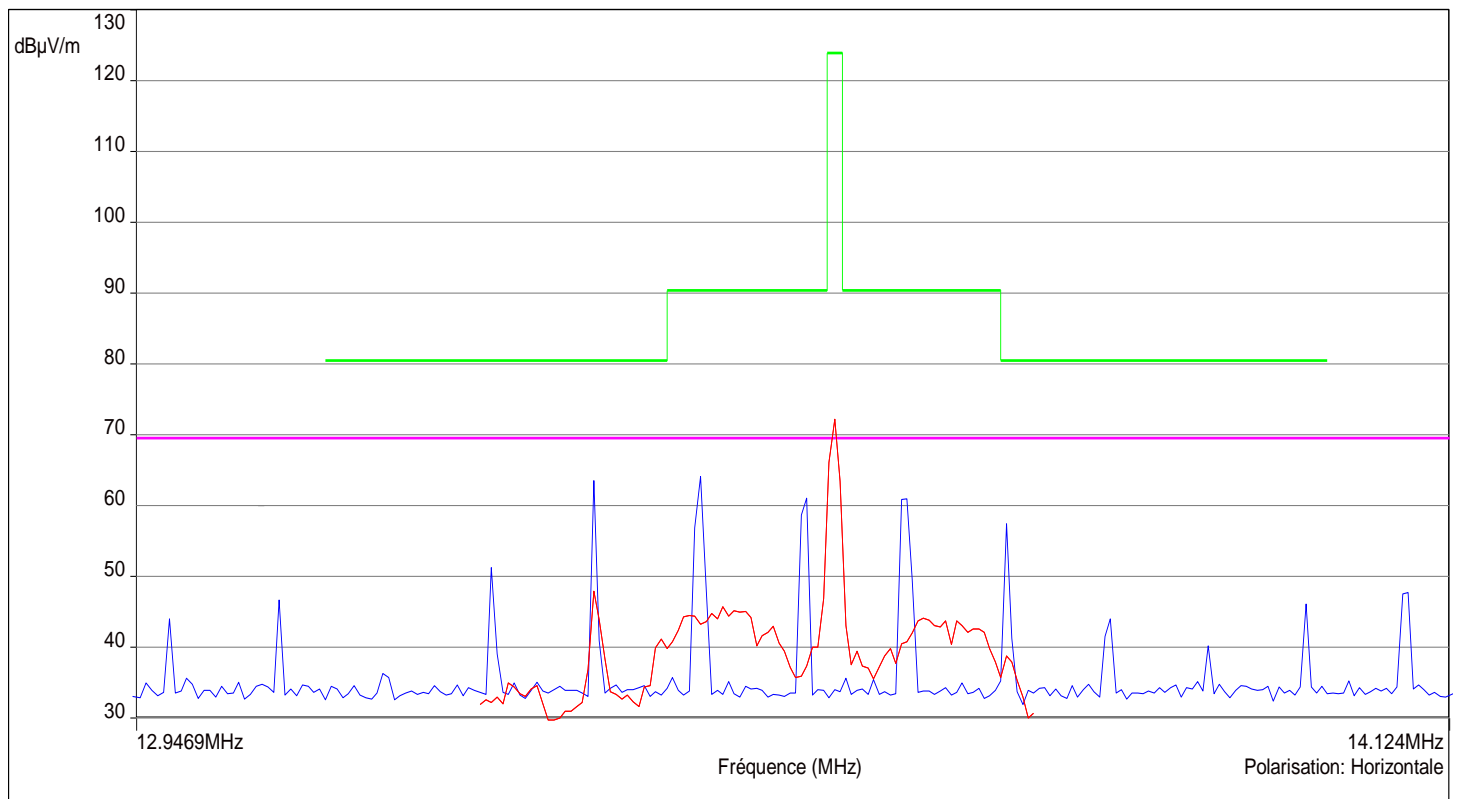




Field strength within the band 13.110-14.010MHz

Frequency: F_{nom}
Temperature: T_{nom}
Voltage: V_{nom}
Parallel axis

- FCC/FCC 15.225 Emetteur 13.56MHz - Classe:1 - QCrête/3.0m/
- FCC/FCC 15.209 Antenne boucle - Classe:1 - QCrête/3.0m/
- Mes.Peak (Horizontale)
- Mes.QPeak (Horizontale)

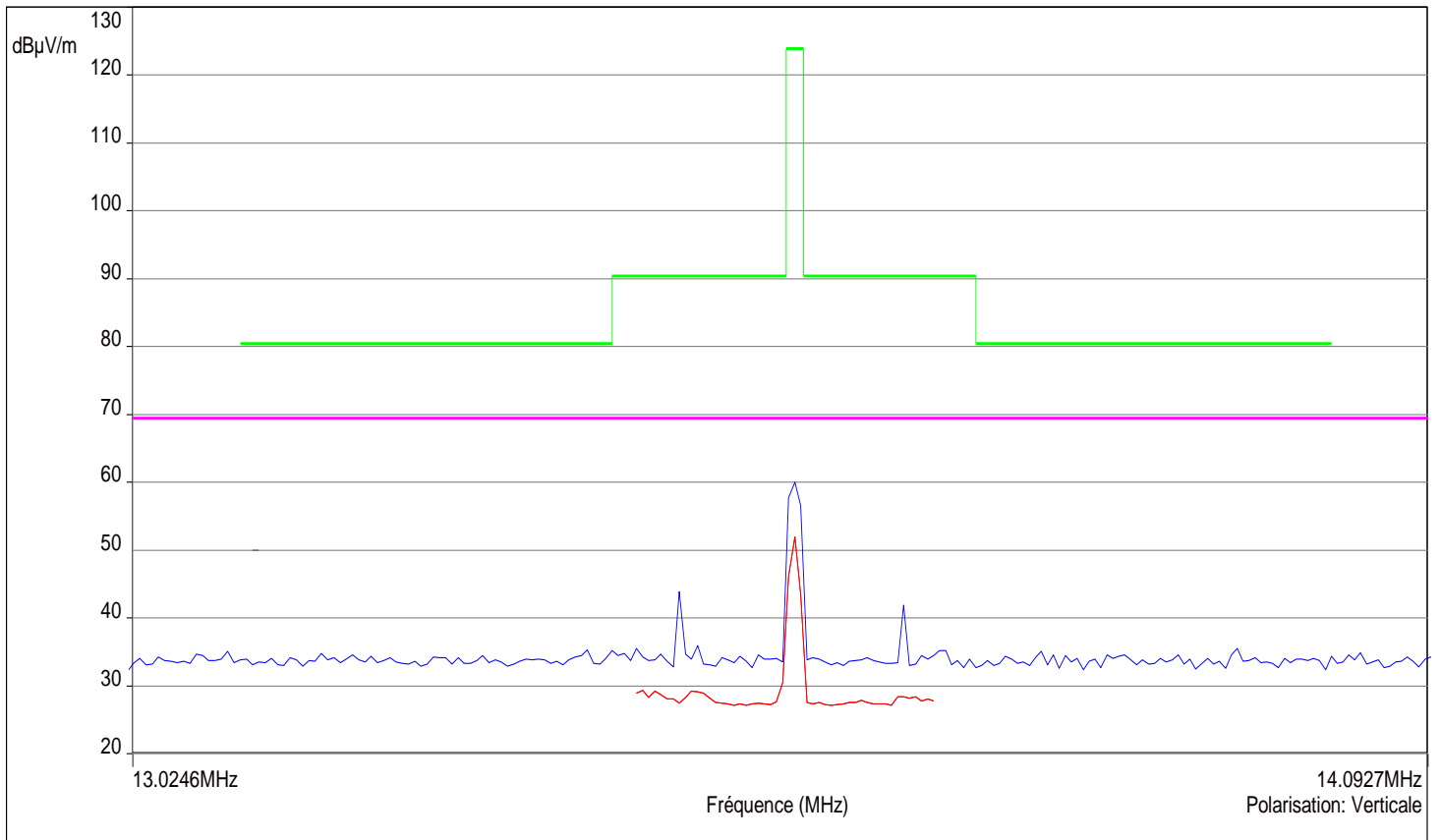




Field strength within the band 13.110-14.010MHz

Frequency: F_{nom}
Temperature: T_{nom}
Voltage: V_{nom}
Perpendicular axis

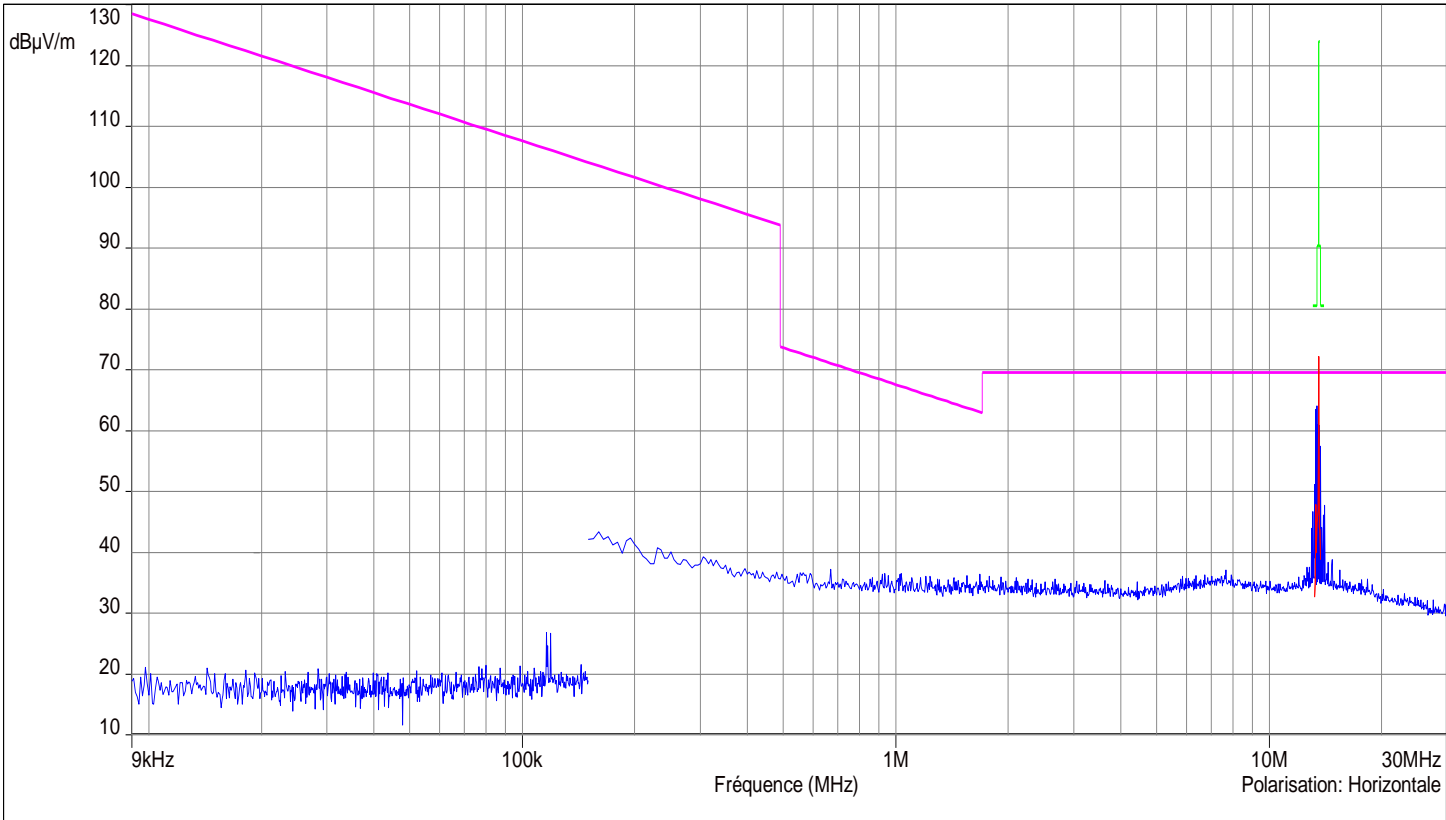
- FCC/FCC 15.225 Emetteur 13.56MHz - Classe:1 - QCrête/3.0m/
- FCC/FCC 15.209 Antenne boucle - Classe:1 - QCrête/3.0m/
- Mes.Peak (Verticale)
- Mes.QPeak (Verticale)





Field strength outside of the bands 13.110-14.010 MHz
Frequency: F_{nom}
Temperature: T_{nom}
Voltage: V_{nom}
Parallel axis

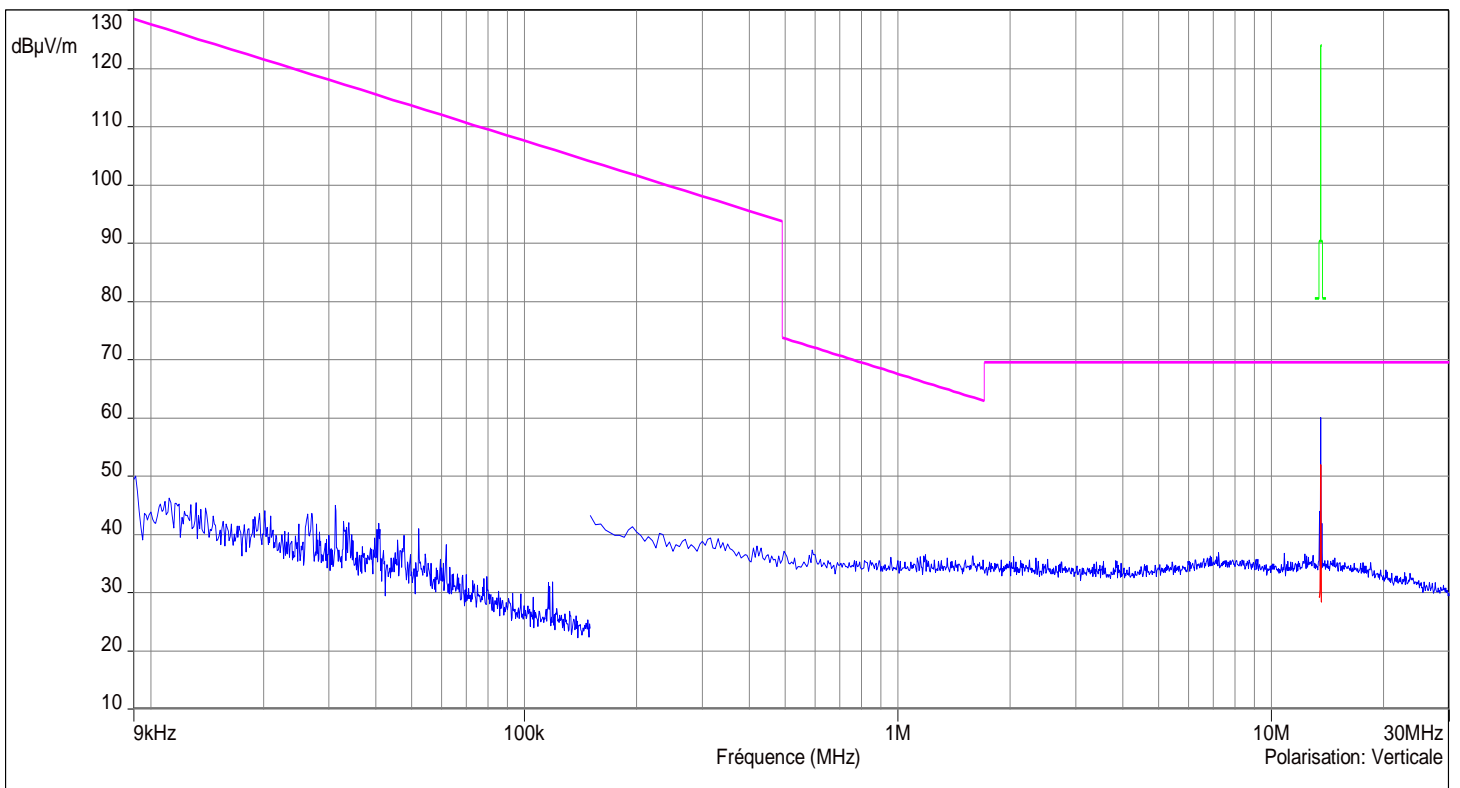
- FCC/FCC 15.225 Emetteur 13.56MHz - Classe:1 - QCrête/3.0m/
- FCC/FCC 15.209 Antenne boucle - Classe:1 - QCrête/3.0m/
- Mes.Peak (Horizontale)
- Mes.QPeak (Horizontale)





Field strength outside of the bands 13.110-14.010 MHz
Frequency: F_{nom}
Temperature: T_{nom}
Voltage: V_{nom}
Perpendicular axis

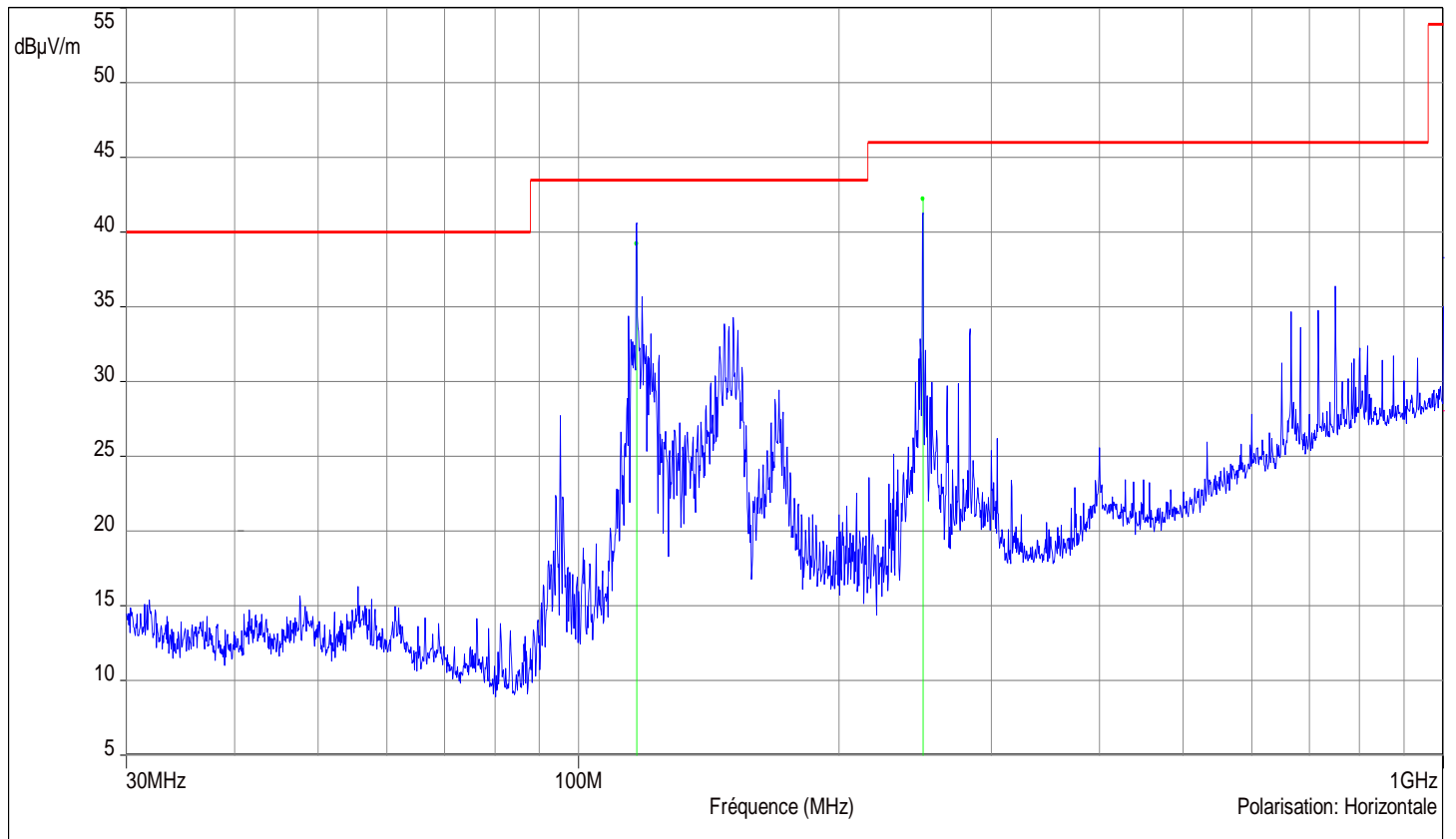
- FCC/FCC 15.225 Emetteur 13.56MHz - Classe:1 - QCrête/3.0m/
- FCC/FCC 15.209 Antenne boucle - Classe:1 - QCrête/3.0m/
- Mes.Peak (Verticale)
- Mes.QPeak (Verticale)





Field strength outside of the bands 13.110-14.010 MHz
Frequency: F_{nom}
Temperature: T_{nom}
Voltage: V_{nom}
Horizontal polarisation

- FCC/FCC 15.109 - Classe: - Moyenne/3.0m/
- FCC/FCC 15.109 - Classe: - QCrête/3.0m/
- FCC/FCC 15.109 - Classe: - Crête/3.0m/
- Mes.Peak (Horizontale)
- Mes.Avg (Horizontale)
- Mes.Q-Peak (Mes. manuelle) (Horizontale)

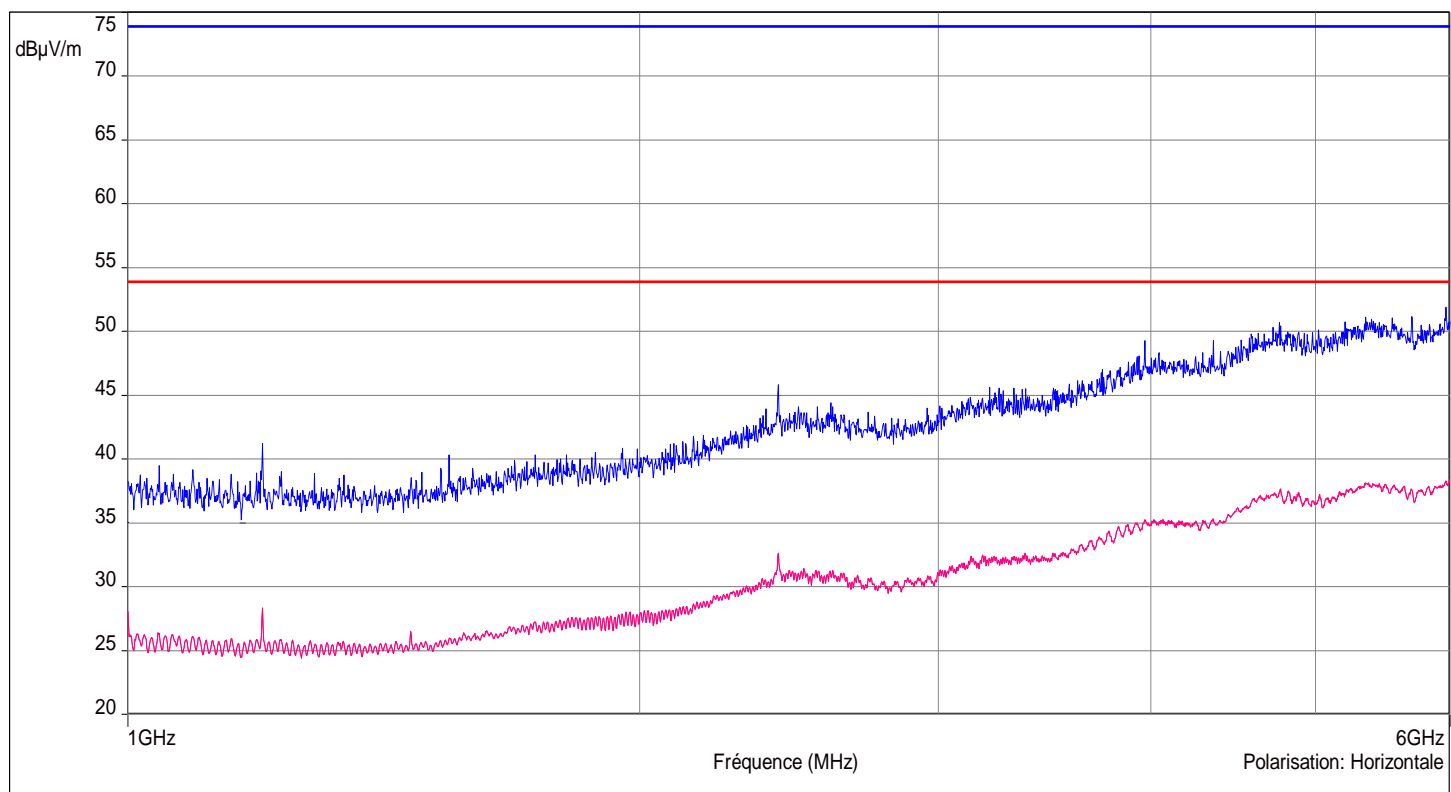




Field strength outside of the bands 13.110-14.010 MHz

Frequency: F_{nom}
Temperature: T_{nom}
Voltage: V_{nom}
Horizontal polarisation

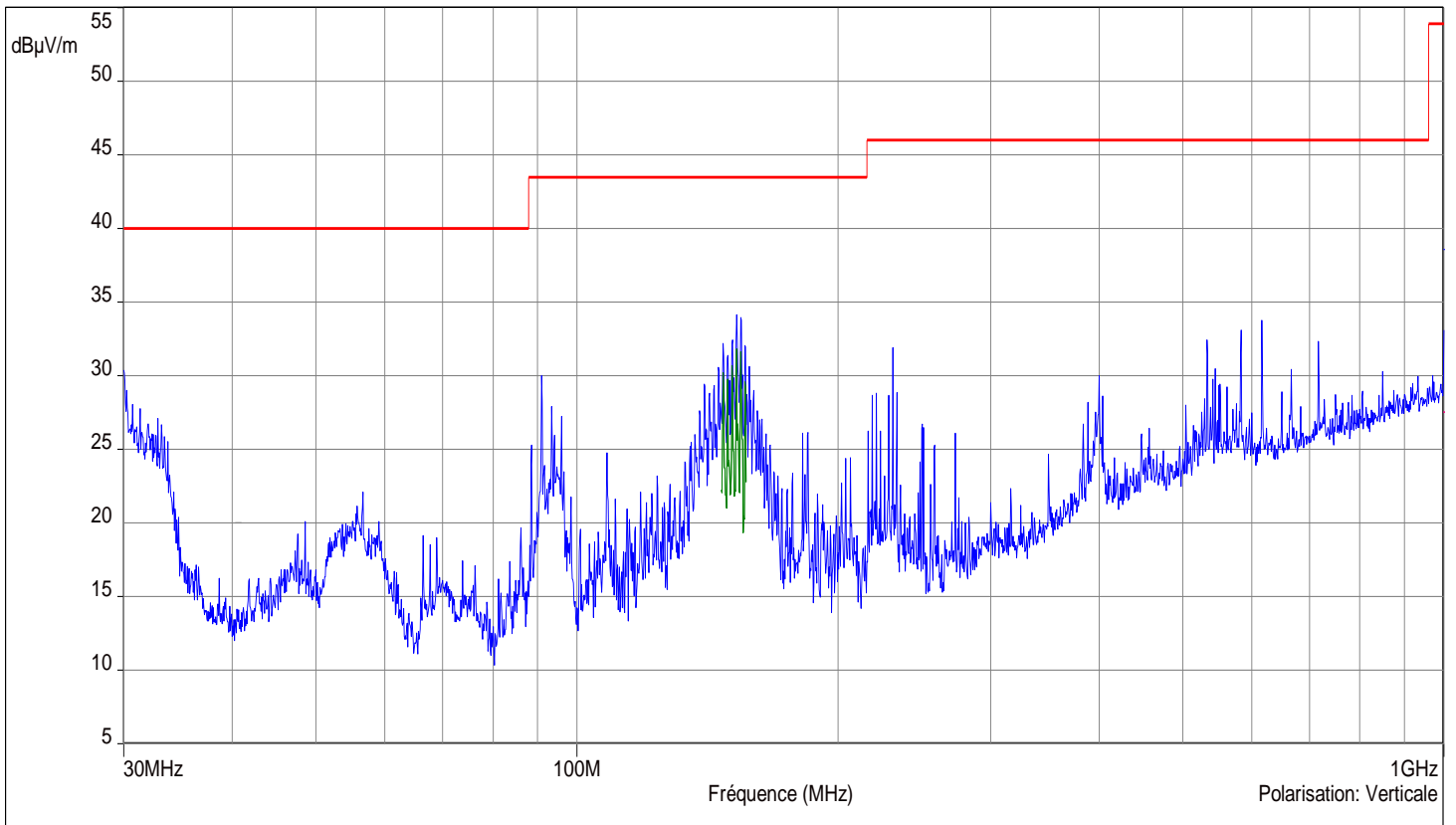
- FCC/FCC 15.109 - Classe: - Moyenne/3.0m/
- FCC/FCC 15.109 - Classe: - QCrête/3.0m/
- FCC/FCC 15.109 - Classe: - Crête/3.0m/
- Mes.Peak (Horizontale)
- Mes.Avg (Horizontale)
- Mes.Q-Peak (Mes. manuelle) (Horizontale)





Field strength outside of the bands 13.110-14.010 MHz
Frequency: F_{nom}
Temperature: T_{nom}
Voltage: V_{nom}
Vertical polarisation

- FCC/FCC 15.109 - Classe: - Moyenne/3.0m/
- FCC/FCC 15.109 - Classe: - QCrête/3.0m/
- FCC/FCC 15.109 - Classe: - Crête/3.0m/
- Mes.Peak (Verticale)
- Mes.QPeak (Verticale)
- Mes.Avg (Verticale)





Field strength outside of the bands 13.110-14.010 MHz
Frequency: Fnom
Temperature: Tnom
Voltage: Vnom
Vertical polarisation

- FCC/FCC 15.109 - Classe: - Moyenne/3.0m/
- FCC/FCC 15.109 - Classe: - QCrête/3.0m/
- FCC/FCC 15.109 - Classe: - Crête/3.0m/
- Mes.Peak (Verticale)
- Mes.QPeak (Verticale)
- Mes.Avg (Verticale)

