

RC-030-PTE-16-100317-2-A

"This report cancels and replaces the test report N° RC-030-PTE-16-100317-2-A Edition 0"

E.M.C. TESTS REPORT

According to the standard:
FCC 47 CFR part 15 : 2015 (§15.225)

Equipment under test:
Test card
TWR-POSCARD-5180 Rev2
(FCC ID: OWROM25180TWR)

Company:
NXP Semiconductors

FCC accredited: FR0004

Distribution: Mr LOMBARDO

(Company: NXP Semiconductors)

Number of pages: 51 with 3 annexes

Ed.	Date	Modified page	Written by		Technical Verification and Quality	
			Name	Visa	Name	Visa
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NAME OF THE EQUIPMENT UNDER TEST (E.U.T.) : Test card TWR-POSCARD-5180 Rev2

Serial number : BSX0484-2

Part number : -

Software Version : -

MANUFACTURER'S NAME : NXP Semiconductors

APPLICANT'S ADDRESS:

Company : NXP Semiconductors

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Person present during the tests : -

Responsible : Mr LOMBARDO

DATES OF TESTS : 19/02/2016 and 22/02/2016

TESTS LOCATION : Emitech laboratory in Montigny le Bretonneux
(78) - FRANCE

TESTS OPERATOR : F. LHEUREUX

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1. INTRODUCTION

This document submits the results of Electromagnetic Compatibility tests performed on the equipment «Test card TWR-POSCARD-5180 Rev2» (denominated hereafter E.U.T.: equipment under test) according to documents listed below.

2. REFERENCE DOCUMENTS

FCC 47 CFR Part 15: 2015

Code of Federal Regulations

Title 47- Telecommunication

Chapter 1- Federal Communication Commission

Part 15- Radio frequency devices

ANSI C63.4: 2014

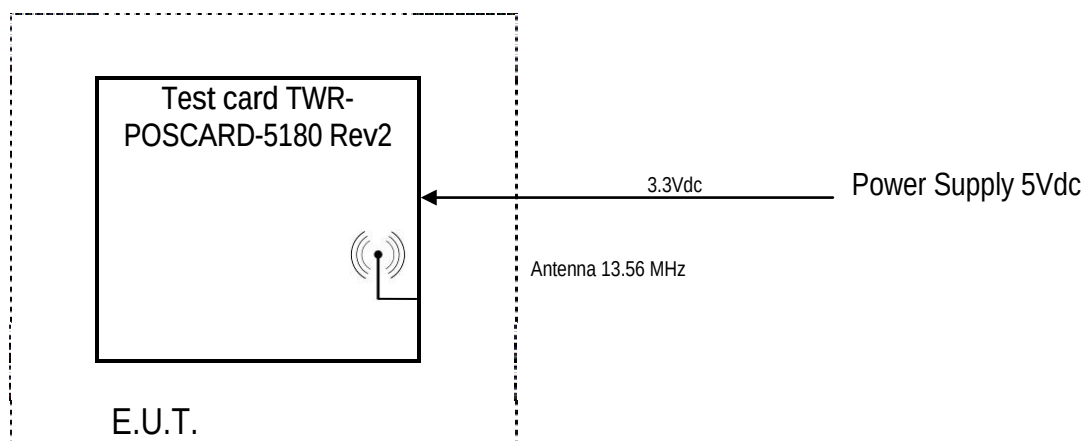
Methods of Measurement of Radio-Noise Emissions from Low Voltage Electrical and Electronics Equipment in the range of 9 kHz to 40 GHz.

3. EQUIPMENT UNDER TEST CONFIGURATION

Equipment under test (E.U.T.) description:

Class: B (residential environment)

Utilization: Electronic card 13.56 MHz radio for the demonstration, it includes a 13.56 MHz radio module. It is powered by a 3.3 Vdc via a card μ control itself supplied with 5 Vdc via the USB port of a PC.



Antenna type and gain: internal antenna: Not communicated

Operating frequency range: from 13.553 MHz to 13.567 MHz

Number of channels: 1

Power source: 3.3 Vdc

Modification of the equipment during the tests: No.

Cycle and operating mode during emission tests:

Test contact / Contact less mode: This configures the equipment under test in a mode where it generates RF modulated field regularly (about every 4 s) for a short period (about 100 ms).

RF ON mode: To set the equipment under test in a constant unmodulated RF emission mode.

4. SUMMARY OF TESTS RESULTS

The following table summarizes test results of the EUT.

Subpart B of the standard FCC part 15 – Unintentional radiators

Test procedure	Designation of test	Test results				Comments
		Pass	Fail	N.A.	N.P.	
15.107	Measurement of conducted emission on AC mains ports	X				
15.109	Radiated emission limits	X				

Subpart C of the standard FCC part 15 – Intentional radiators

Test procedure	Designation of test	Test results				Comments
		Pass	Fail	N.A.	N.P.	
15.205	Restricted bands of operation	X				
15.207	Measurement of conducted emission on AC mains ports	X				
15.209	Radiated emission limits; general requirements	X				
15.215	Additional provisions to the general radiated emission limitations					
	(a) Alternative to general radiated emission limits	X				
	(b) Unwanted emissions outside of § 15.247 frequency bands			X		
	(c) 20 dB bandwidth and band-edge compliance	X				
15.225	intentional radiated emissions in the band 13.110 MHz – 14.010 MHz					
	a) 13.553 MHz - 13.567 MHz	X				
	b) 13.410-13.553 MHz and 13.567-13.710 MHz	X				
	c) 13.110-13.410 MHz and 13.710-14.010 MHz	X				
	d) outside 13.110 MHz and 14.010 MHz	X				
	e) Frequency drift	X				
	f) Tag			X		

N.A.: Not Applicable

N.P.: Not Performed

Conclusion:

The tested sample "Test card TWR-POSCARD-5180 Rev2" submitted to the tests complies with the requirements of the standard:

- FCC 47 CFR PART 15: 2015

According to the limits specified in this report.

To declare or not compliance with the specification, it has not been given explicit account of the uncertainty associated with result(s).

5. INTENTIONAL RADIATED EMISSIONS IN THE BAND 13.553 MHz – 13.567 MHz

Standard: FCC 47 CFR PART 15 : 2015

Section: 15.225 (a)

Test configuration:

The system is tested in normalized test site.

The equipment under test (EUT) is placed on a non-conductive test table at 0.8 m above the horizontal reference ground plane.

Antenna height is 1 m above the ground plane.

For each frequency corresponding to an emission, EUT carried out a rotation through 360° with the aid of the turntable, with the aim to find the maximum of signal.

The test antenna is oriented in all orientations. Only the highest level is recorded.

Frequency range: 13.553 MHz – 13.567 MHz

Detection mode: Quasi-peak

Resolution bandwidth: 9 kHz

Measurement distance: 3 meters

Limit:

Frequency range (MHz)	Frequency field strength		Frequency measurement distance (meters)
	μV/m	dBμV/m	
13.553 – 13.567	15.848	84.0	30
	-	124.0 ①	3

①: $84 \text{ dB}\mu\text{V/m} + 20 \log(30/3)^2$

Operating mode during the test:

Test contact / Contact less mode and RF ON mode.

Instrumentation test list:

CATEGORY	BRAND	TYPE	NR EMITECH
Antenna	Emco	6502	9579
Cable	C&C	N-2m	11181
Cable	C&C	N-10m	11136
Cable	C&C	N-6m	11172
Receiver	Rohde & Schwarz	ESRP7	10517
Shielded enclosure	SIDT	C.4	0549

Results:

Ambient temperature (°C): 20

Relative humidity (%): 40

Power source: 5 Vdc by USB port PC

MODE	FREQUENCY (MHz)	ANTENNA ORIENTATION	AZIMUTH (degrees)	MEASUREMENT (dBμV/m)	LIMIT (dBμV/m)	MARGIN (dB)
Test contact / Contact less	13.5600	45°	60	57.6	124.0	66.4
RF ON	13.5600	45°	60	70.4	124.0	53.6

Test conclusion: Complies with the requirements of the standard.

6. INTENTIONAL RADIATED EMISSIONS IN THE BAND 13.110 MHz – 14.010 MHz

Standard: FCC 47 CFR PART 15 : 2015

Section: 15.225 (d)

Test configuration:

The measure is realized in near field and the results are correlated with the intentional radiated emission at 3 meters.

Test contact / Contact less mode: Field at 3 m = 57.6 dB μ V/m $\rightarrow$ field at 30 m = 17.6 dB μ V/m

RF ON mode: Field at 3 m = 70.4 dB μ V/m $\rightarrow$ field at 30 m = 30.4 dB μ V/m

Frequency range: 13.110 MHz – 14.010 MHz

Detection mode: Peak

Resolution bandwidth: 10 kHz

Limit:

Frequencies range (MHz)	Frequency field strength		Frequency measurement distance (meters)
	μ V/m	dB μ V/m	
13.110 – 13.410 and 13.710 – 14.010	106.0	40.5	30
13.410 – 13.553 and 13.567 – 13.710	334.0	50.5	30
13.110 – 13.410 and 13.710 – 14.010	-	80.5①	3
13.410 – 13.553 and 13.567 – 13.710	-	90.5①	3

①: $E \text{ (dB}\mu\text{V/m)} + 20\log(30/3)^2$

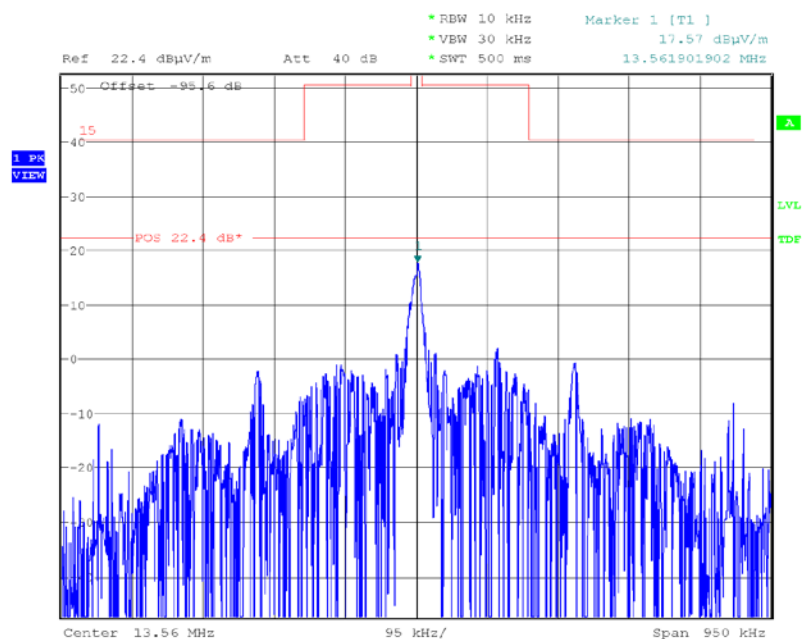
Results:

Ambient temperature (°C): 20

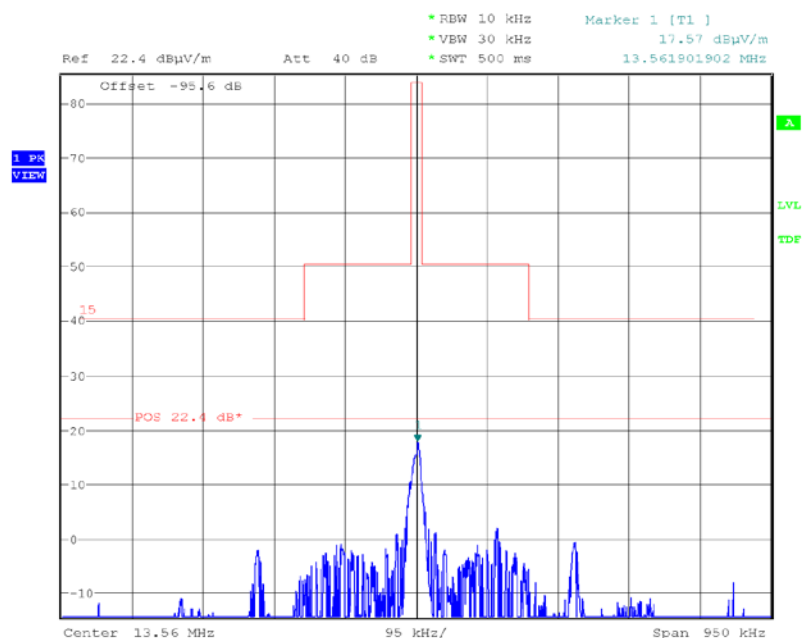
Relative humidity (%): 40

Power source: 5 Vdc by USB port PC

Test contact / Contact less mode

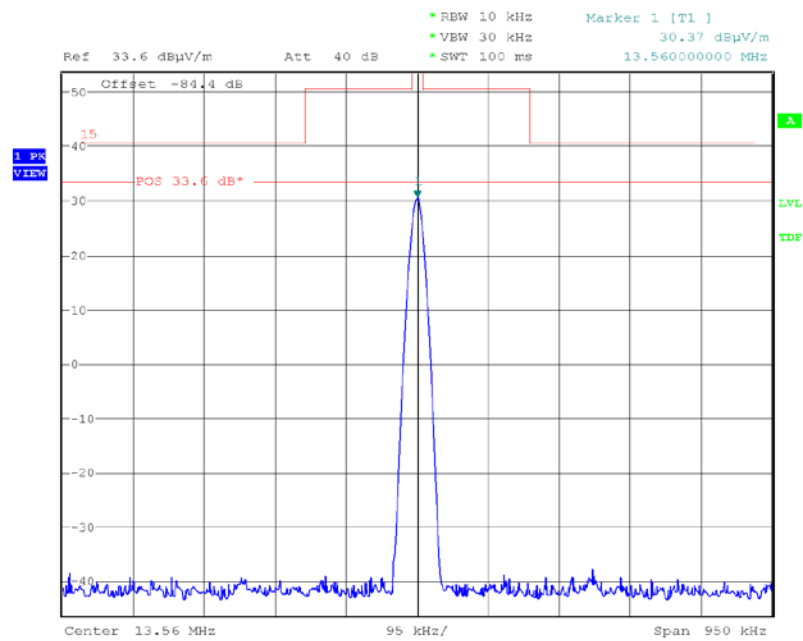


Date: 19.FEB.2016 13:47:01

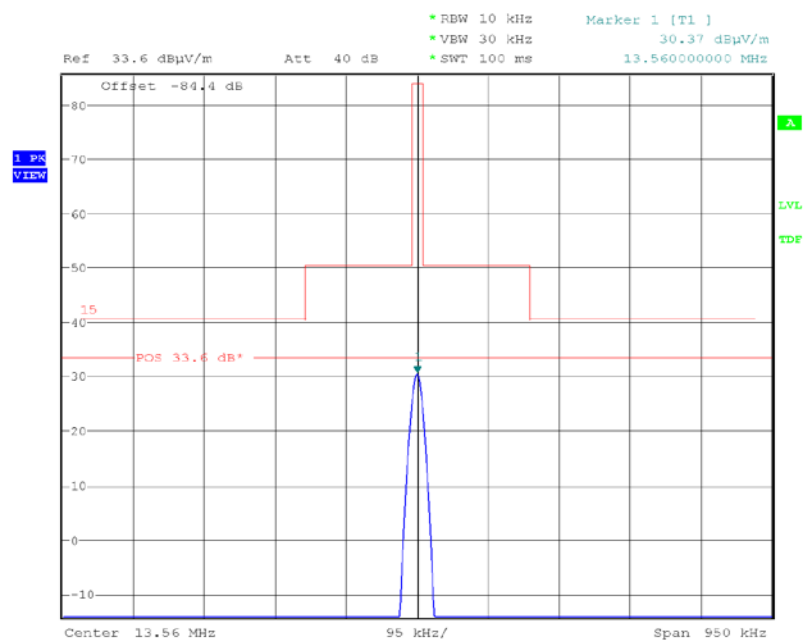


Date: 19.FEB.2016 13:48:47

RF ON mode



Date: 19.FEB.2016 13:36:13



Date: 19.FEB.2016 13:38:07

Test conclusion: Complies with the requirements of the standard.

7. UNINTENTIONAL RADIATED EMISSIONS IN THE BAND 9 KHz – 30 MHz

Standard: FCC 47 CFR PART 15 : 2015

Sections: 15.109 and 15.209

Equipment under test arrangement

The system is tested in normalized test site.

The equipment under test (EUT) is placed on a non-conductive test table at 0.8 m above the horizontal reference ground plane.

Antenna height is 1 m.

For each frequency corresponding to an emission, EUT carried out a rotation through 360° with the aid of the turntable, with the aim to find the maximum of signal.

The test antenna is oriented in all orientations. Only the highest level is recorded.

Frequency range: 9 kHz - 30 MHz.

Detection mode: Quasi-peak except frequency bands 9-90 kHz and 110-490 kHz (average).

Resolution bandwidth: 200 Hz from 9 kHz to 150 kHz.
9 kHz from 150 kHz to 30 MHz

Measurement distance: 3 meters.

Limit:

Frequency range (MHz)	Frequency field strength (μV/m)	Frequency measurement distance (meters)
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30.0	30	30

Limits in dBμV/m can be extrapolated to 30 m using 40 dB / decade.

Instrumentation test list:

CATEGORY	BRAND	TYPE	NR EMITECH
Antenna	Emco	6502	9579
Cable	C&C	N-2m	11181
Cable	C&C	N-10m	11136
Cable	C&C	N-6m	11172
Receiver	Rohde & Schwarz	ESRP7	10517
Shielded enclosure	SIDT	C.4	0549

Results:

Ambient temperature (°C): 20
 Relative humidity (%): 40
 Power source: 5 Vdc by USB port PC

Test contact / Contact less mode

FREQUENCY (MHz)	ANTENNA ORIENTATION	AZIMUTH (degrees)	MEASUREMENT (dBμV/m)	LIMIT (dBμV/m)	MARGIN (dB)
27.1200	45°	120	15.6	69.5	53.9

RF ON mode

FREQUENCY (MHz)	ANTENNA ORIENTATION	AZIMUTH (degrees)	MEASUREMENT (dBμV/m)	LIMIT (dBμV/m)	MARGIN (dB)
27.1200	45°	120	17.1	69.5	52.4

Test conclusion: Complies with the requirements of the standard.

8. UNINTENTIONAL RADIATED EMISSIONS IN THE BAND 30 MHz – 1 GHz

Standard: FCC 47 CFR PART 15 : 2015

Sections: 15.109 and 15.209

Equipment under test arrangement:

The system is tested in normalized test site.

The equipment under test (EUT) is placed on a non-conductive test table at 0.8 m above the horizontal reference ground plane.

For maximum meter reading at each frequency, the antenna height is adjusted between 1 m and 4 m above the ground plane. A 360 degrees rotation of the EUT is performed in vertical and horizontal polarization. The frequency azimuth and antenna height are presented in the tables on the next pages.

Frequency range: 30 MHz - 1 GHz

Detection mode: Quasi-peak

Resolution bandwidth: 120 kHz

Measurement distance: 3 meters

Limit: The EUT must satisfy requirements of the section 15.109 and 15.209 as shown in table below.

Frequency range (MHz)	Limit (dB μ V/m)
30 to 88	40.0
88 to 216	43.5
216 to 960	46.0
960 to 1000	54.0

Instrumentation test list:

CATEGORY	BRAND	TYPE	N° EMITECH
Antenna	Schaffner	Bilog CBL6143A	5647
Antenna mast	Maturo	MCU	8410
Antenna mast	Maturo	AM 4.0-O	8411
Cable	C&C	N-10m	11136
Cable	C&C	N-6m	11172
Cable	C&C	N-2m	11181
Cable	C&C	N-2m	11182
Preamplifier	Mini-circuit	RF	6367
Receiver	Rohde & Schwarz	R&S ESRP7	10517
Shielded enclosure	SIDT	C.4	0549

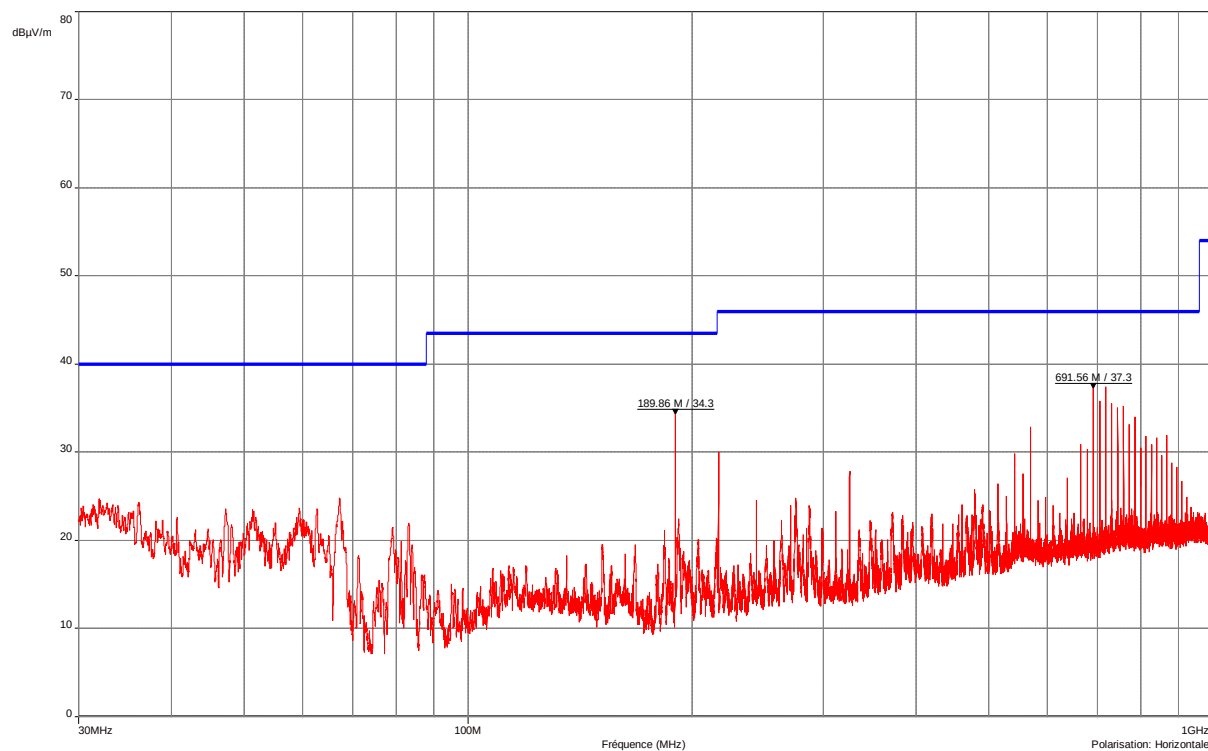
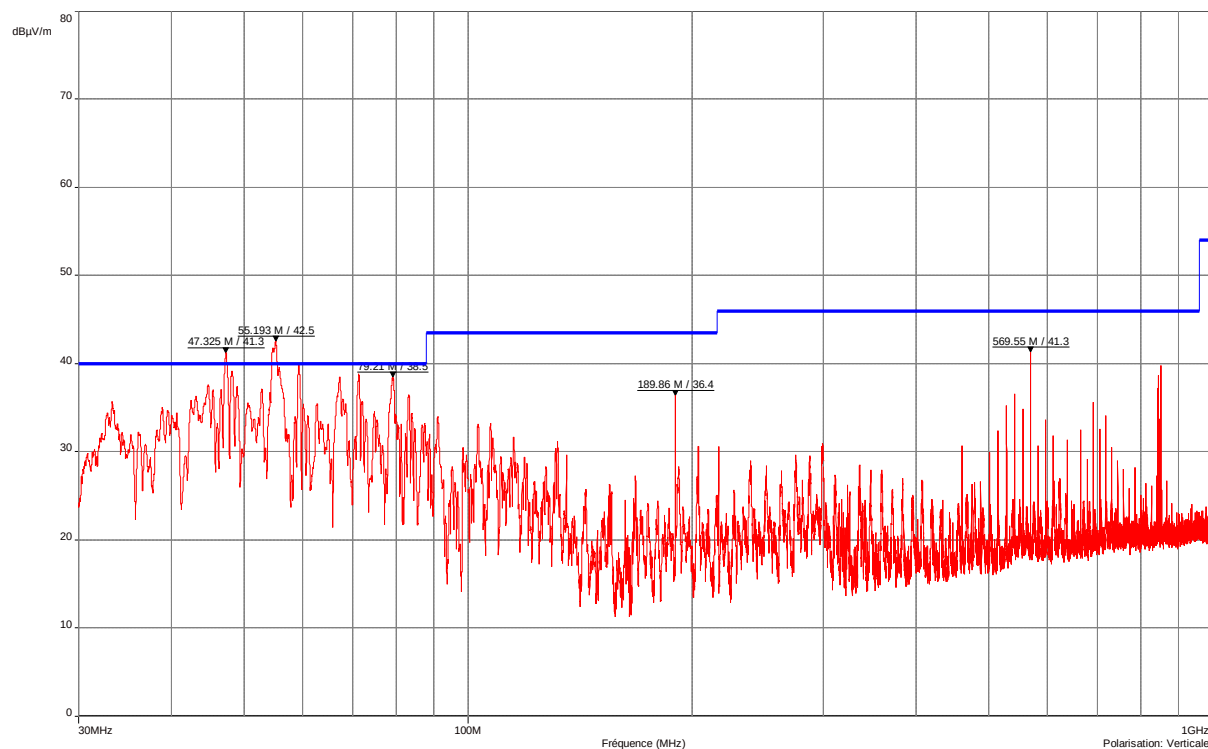
Results:

Ambient temperature (°C): 20
Relative humidity (%): 40
Power source: 5 Vdc by USB port PC

See curves hereafter. Limit on the curves is quasi-peak limit (blue) with Max Hold peak detection (red).

Curves 1 and 2

RF ON mode



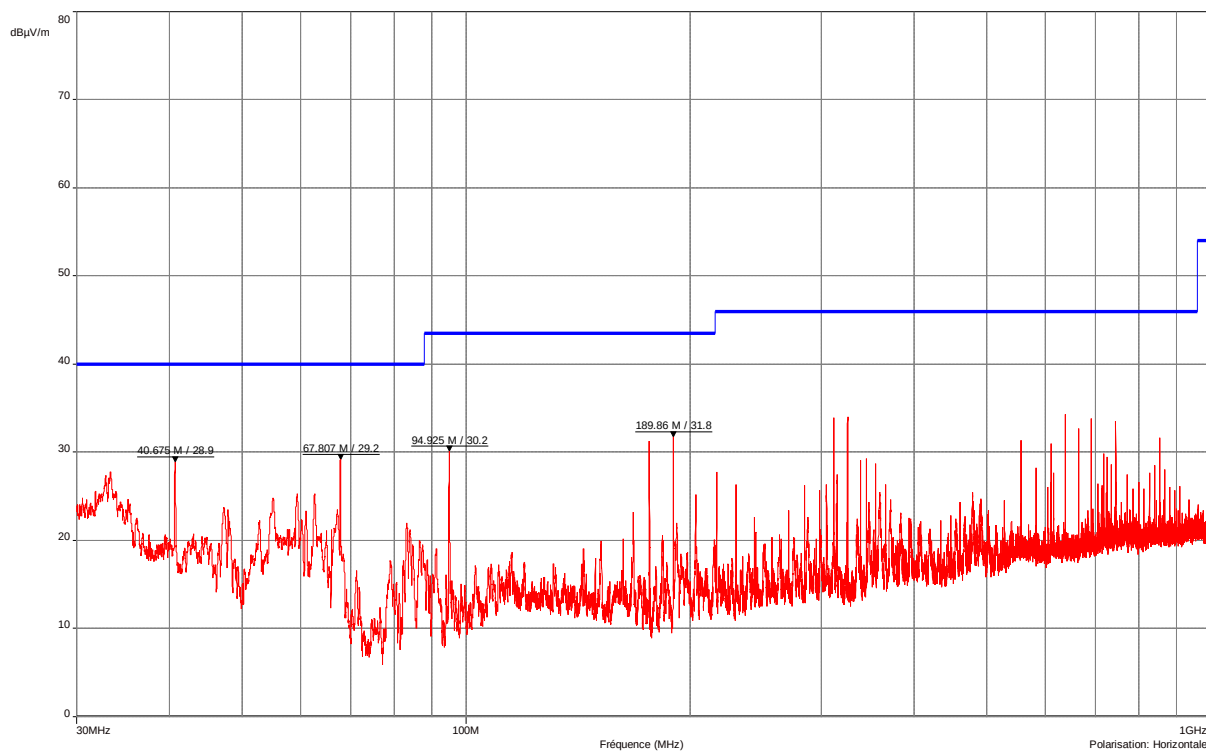
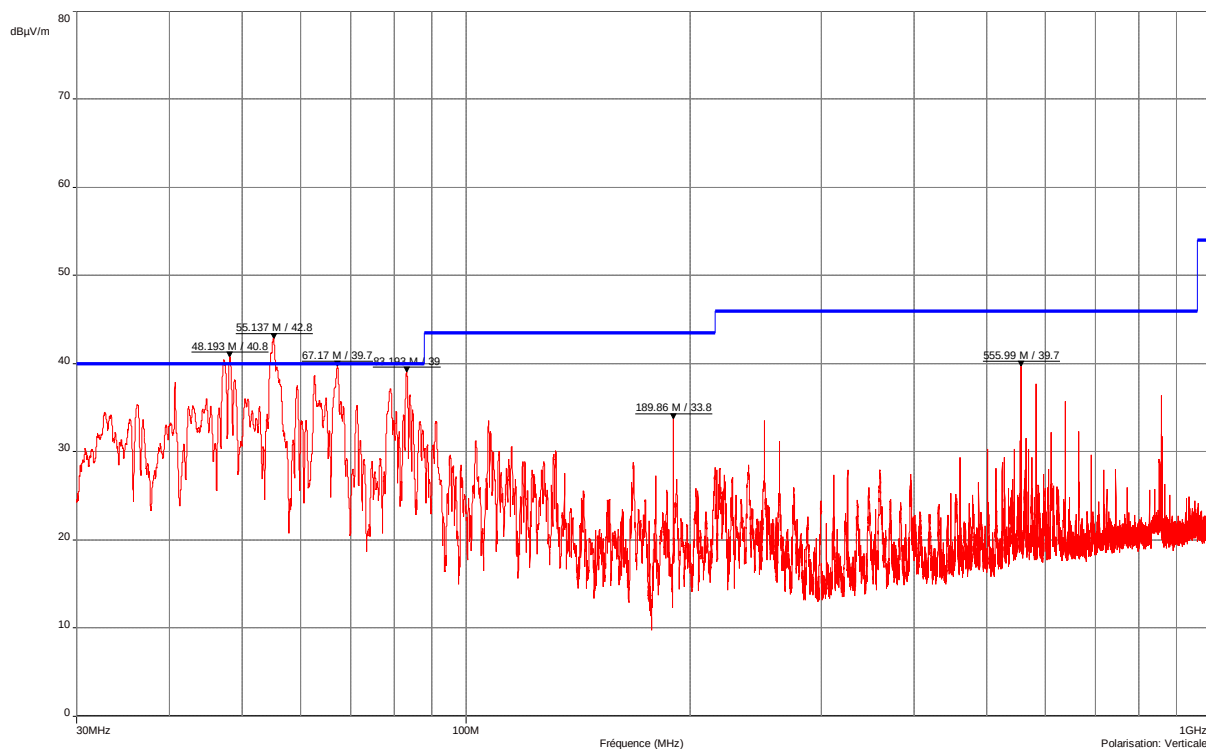
Maximization in RF On mode

Frequency (MHz)	Polarization	Antenna Height (cm)	Azimuth (degrees)	Q-Peak Measure (dBμV/m)	Limit (dBμV/m)	Margin
47.325	V	100	0	33.2	40.0	6.8
55.190	V	100	0	39.4	40.0	0.6
79.210	V	100	280	30.0	40.0	10.0
189.843	V	100	50	35.7	43.5	7.8
569.522	V	100	0	40.7	46.0	5.3
189.843	H	170	70	35.3	43.5	8.2
691.560	H	100	100	37.7	46.0	8.3

V = Vertical; H = Horizontal

Curves 3 and 4

Test contact / Contact less mode



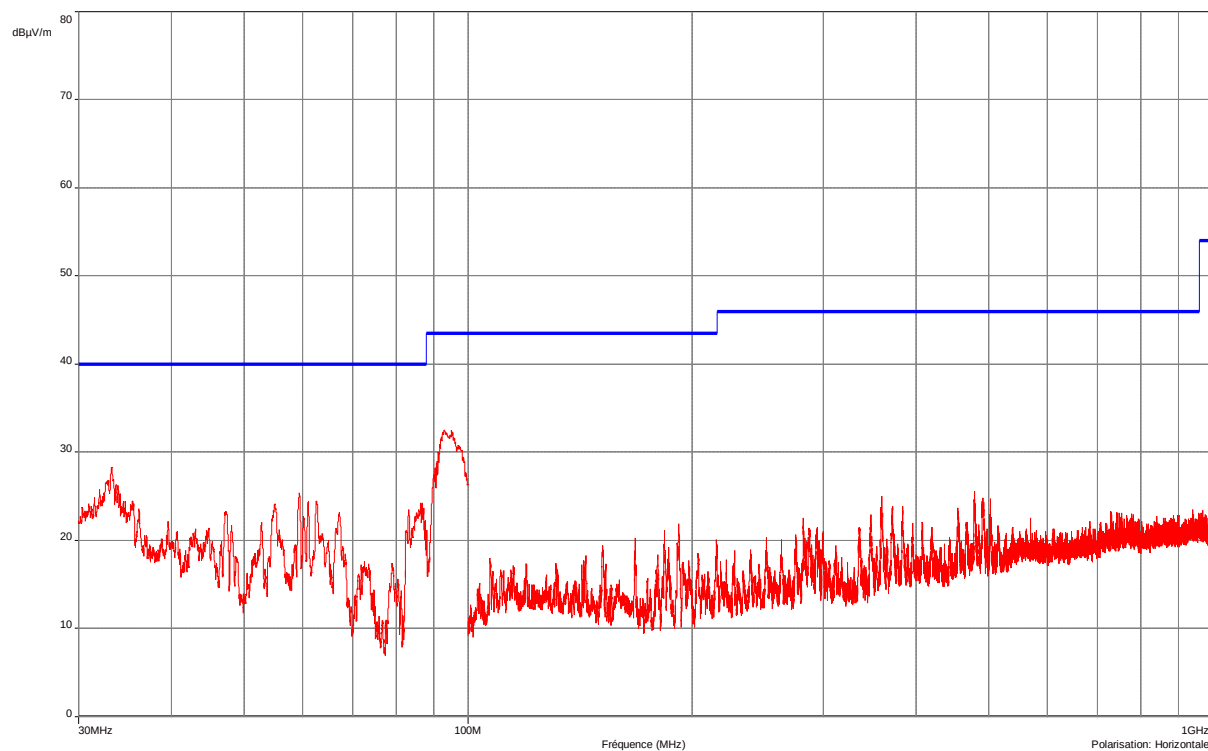
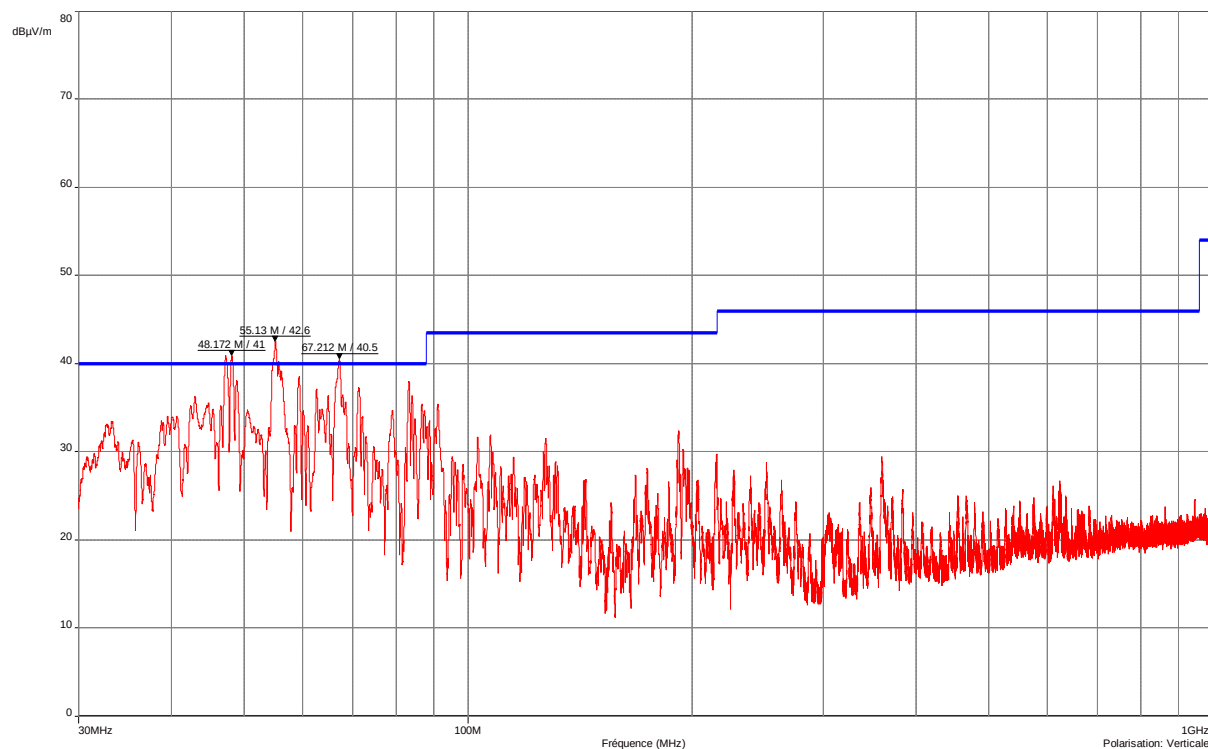
Maximization in Test contact / Contact less mode

Frequency (MHz)	Polarization	Antenna Height (cm)	Azimuth (degrees)	Q-Peak Measure (dBμV/m)	Limit (dBμV/m)	Margin
48.190	V	100	0	32.9	40.0	7.1
55.137	V	100	0	39.6	40.0	0.4
67.170	V	200	0	29.5	40.0	10.5
83.244	V	100	0	32.2	40.0	7.8
189.841	V	100	40	31.3	43.5	12.2
555.961	V	100	200	38.3	46.0	7.7
189.841	H	230	80	28.2	43.5	15.3

V = Vertical; H = Horizontal

Curves 5 and 6

Standby mode



Maximization in Standby mode

Frequency (MHz)	Polarization	Antenna Height (cm)	Azimuth (degrees)	Q-Peak Measure (dB μ V/m)	Limit (dB μ V/m)	Margin
48.180	V	100	0	34.2	40.0	5.8
55.130	V	100	0	39.1	40.0	0.9
67.212	V	200	0	35.1	40.0	4.9

V = Vertical; H = Horizontal

Test conclusion: Complies with the requirements of the standard.

9. CONDUCTED EMISSION

Standard: FCC 47 CFR PART 15 : 2015

Test method: Part 15.107 and 15.207

Test configuration:

Tested cable	Measure with	E.U.T. height
Power supply 120 Vac / 60 Hz (Test contact / Contact less mode)	L.I.S.N.	80 cm
Power supply 120 Vac / 60 Hz (RF ON)	L.I.S.N.	80 cm
Power supply 120 Vac / 60 Hz (standby mode)	L.I.S.N.	80 cm

Frequencies band	Tested cable	Resolution bandwidth	Video bandwidth
150 kHz - 30 MHz	Power supply 120 Vac / 60 Hz (Test contact / Contact less mode)	10 kHz	30 kHz
150 kHz - 30 MHz	Power supply 120 Vac / 60 Hz (Test contact / Contact less mode)	9 kHz	Auto (*)
150 kHz - 30 MHz	Power supply 120 Vac / 60 Hz (RF ON)	10 kHz	30 kHz
150 kHz - 30 MHz	Power supply 120 Vac / 60 Hz (RF ON)	9 kHz	Auto (*)
150 kHz - 30 MHz	Power supply 120 Vac / 60 Hz (standby mode)	10 kHz	30 kHz
150 kHz - 30 MHz	Power supply 120 Vac / 60 Hz (standby mode)	9 kHz	Auto (*)

(*) for measurement in average detection.

Test method deviation: No

Test equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH
Cable	-	N-2m	2812
Cable	-	N-2m	2813
Cable	-	BNC-0.5m	4310
LISN	Rohde & Schwarz	ESH2-Z5	0326
Multimeter	Emitech	Absorbeur courant de gaine	12366
Receiver	Rohde & Schwarz	FSU8	9129
Receiver	Rohde & Schwarz	ESH3 (V 335.8017.52)	6569
Surges Suppressor	Hewlett Packard	11947A	0237
Test enclosure	Emitech	JD1	1804

Results:

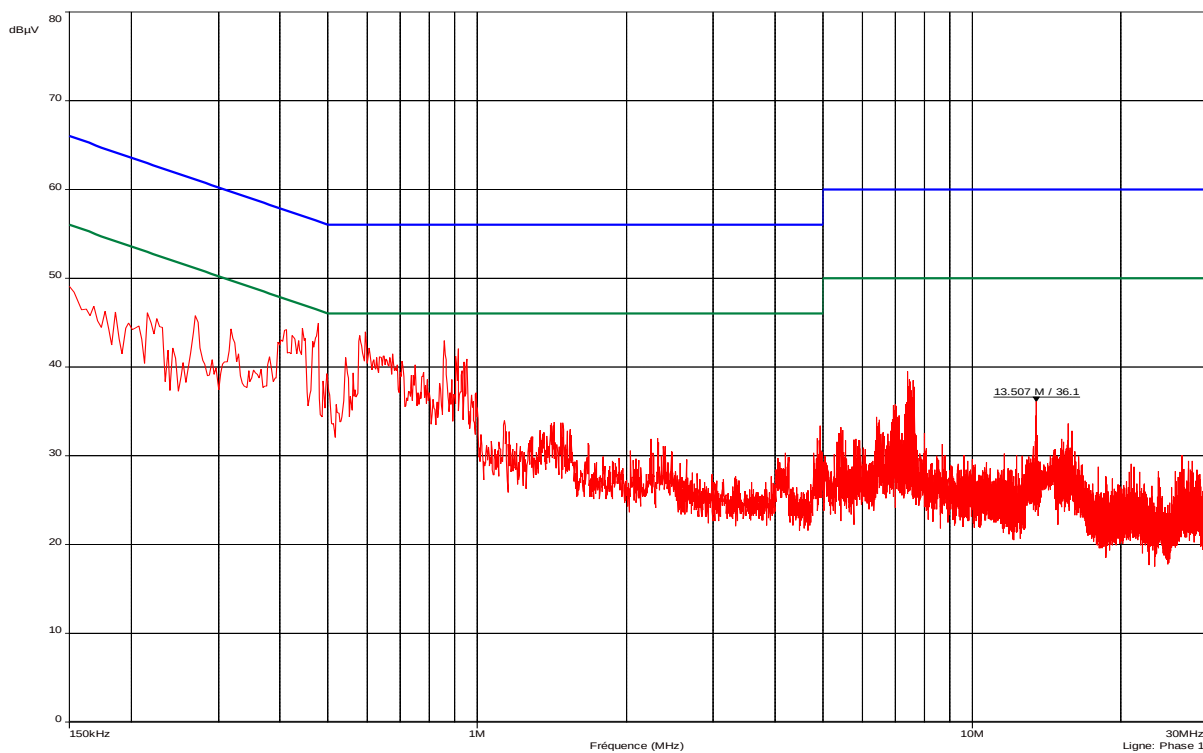
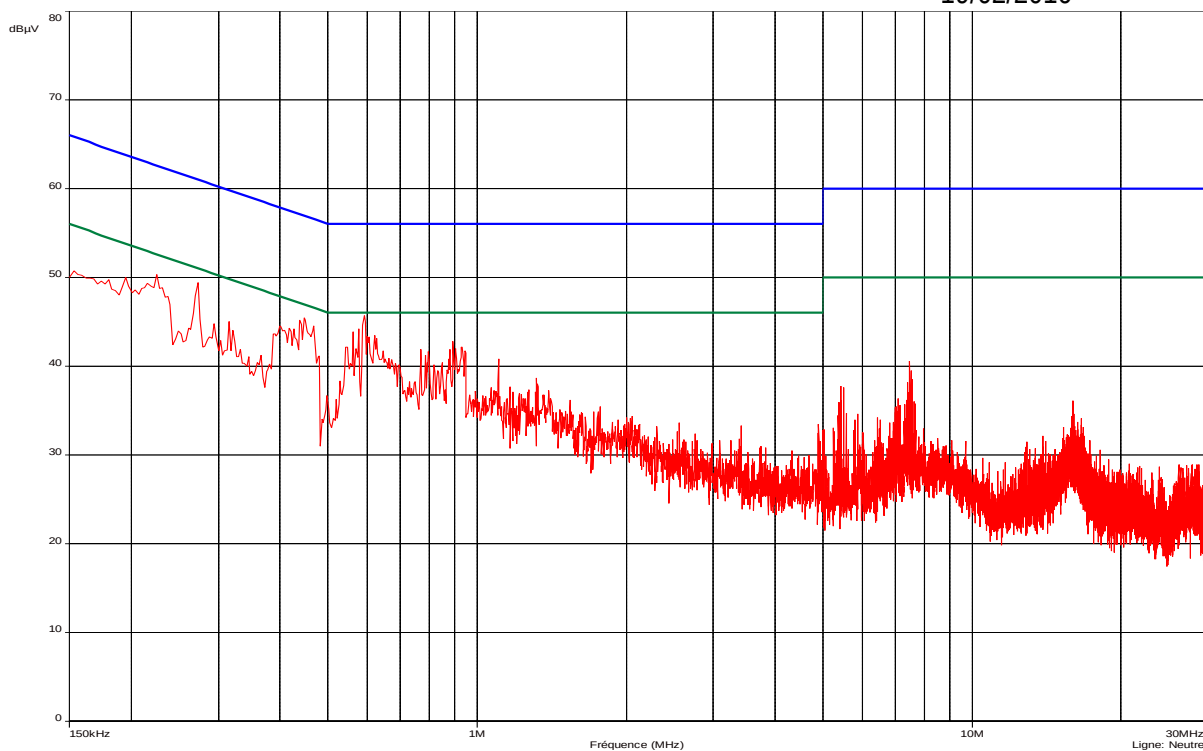
See curves below including detections and limits in peak (red), average (green) and quasi-peak (blue).

Curves 7 and 8

Test card TWR-POSCARD-5180 Rev2

Conducted voltage emission (measurement): Power supply 120 Vac / 60 Hz
(Test contact / Contact less mode) in peak detection

19/02/2016



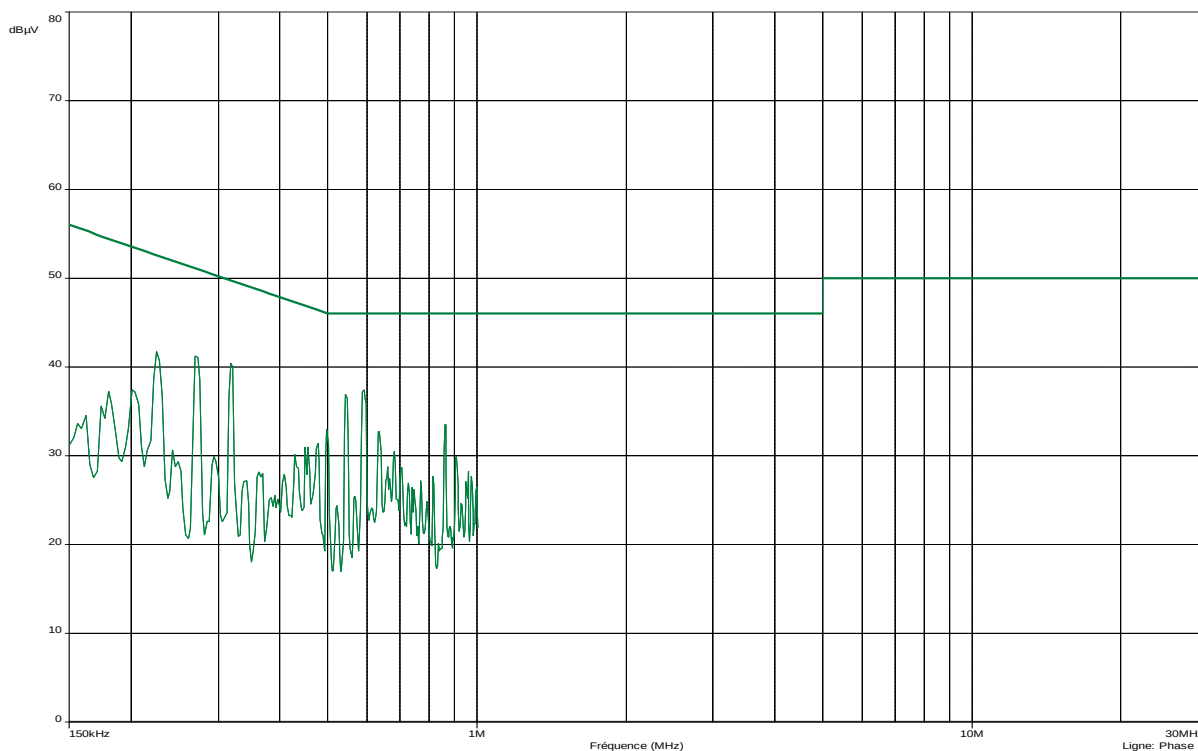
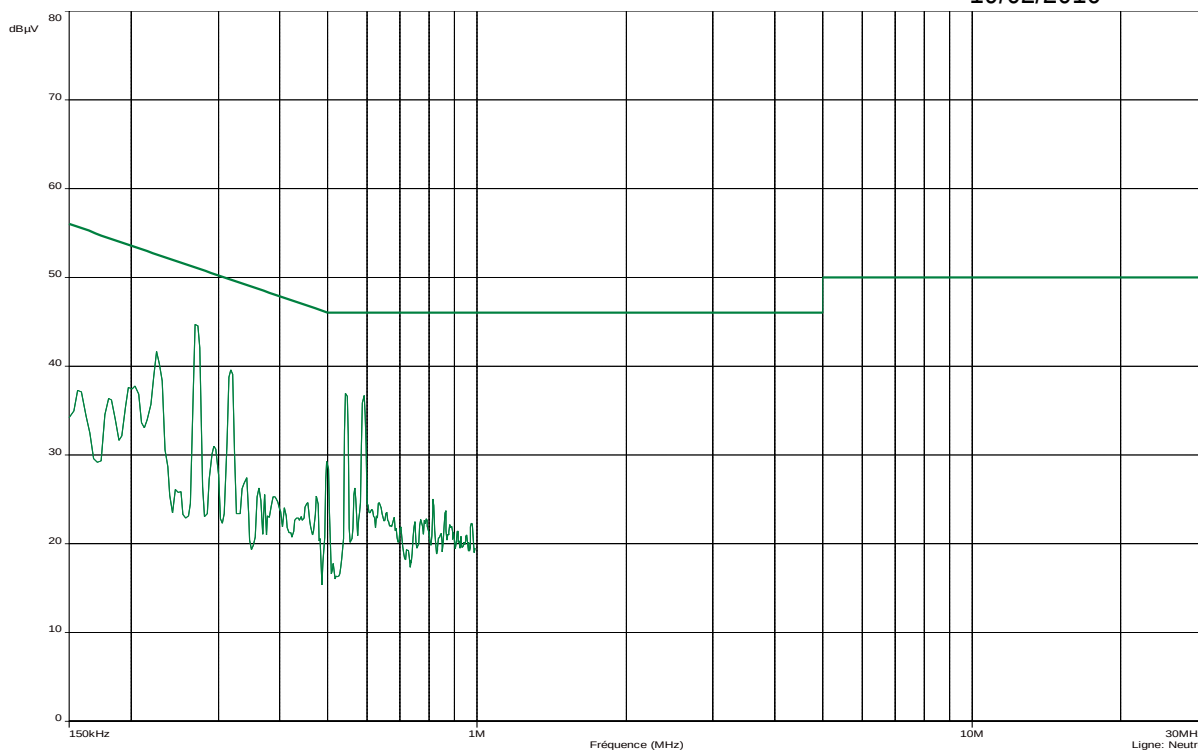
Class: B of the standard

Curves 9 and 10

Test card TWR-POSCARD-5180 Rev2

Conducted voltage emission (measurement): Power supply 120 Vac / 60 Hz
 (Test contact / Contact less mode) in average value detection

19/02/2016



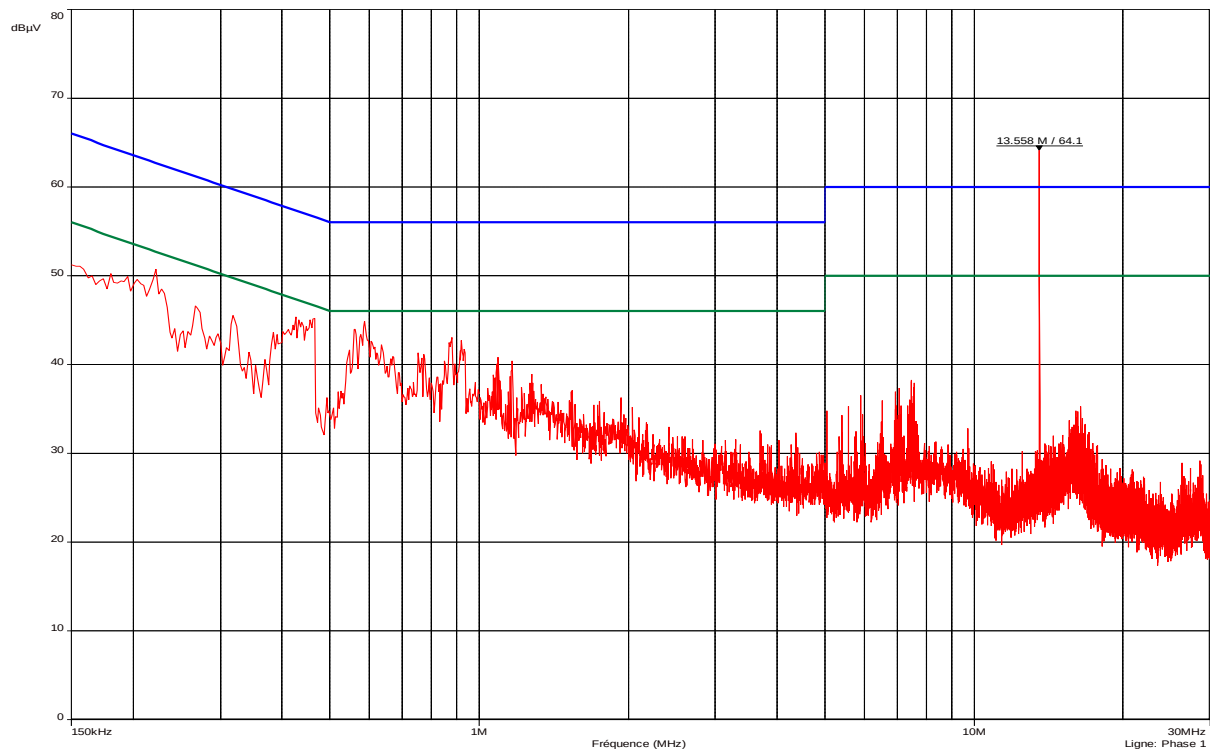
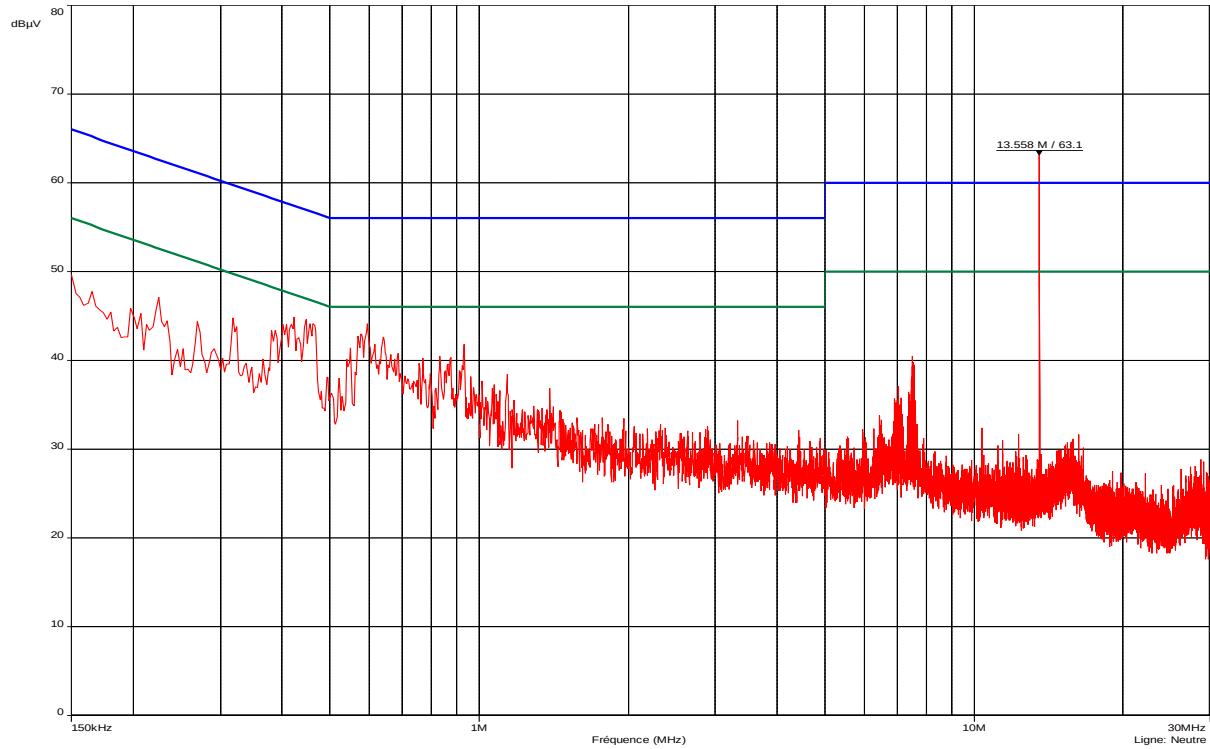
Class: B of the standard

Curves 11 and 12

Test card TWR-POSCARD-5180 Rev2

Conducted voltage emission (measurement): Power supply 120 Vac / 60 Hz (RF ON) in peak detection

19/02/2016



The line at 13.56 MHz corresponds to the carrier frequency of the equipment under test.

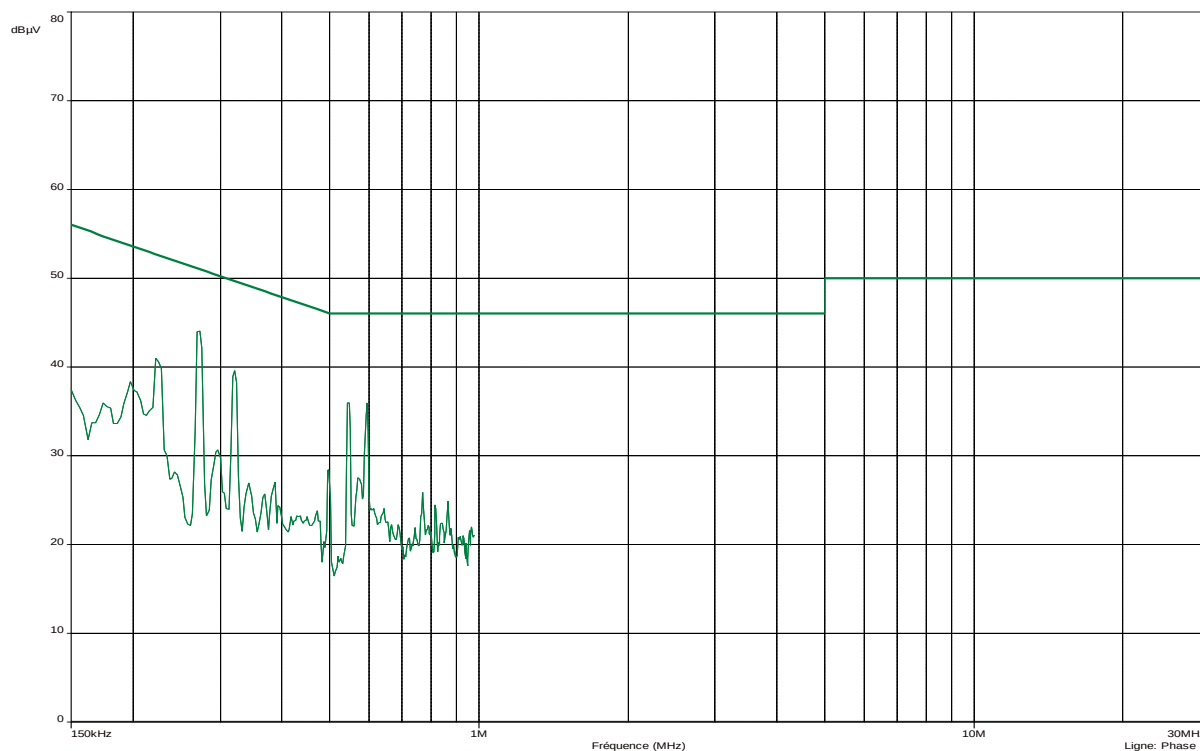
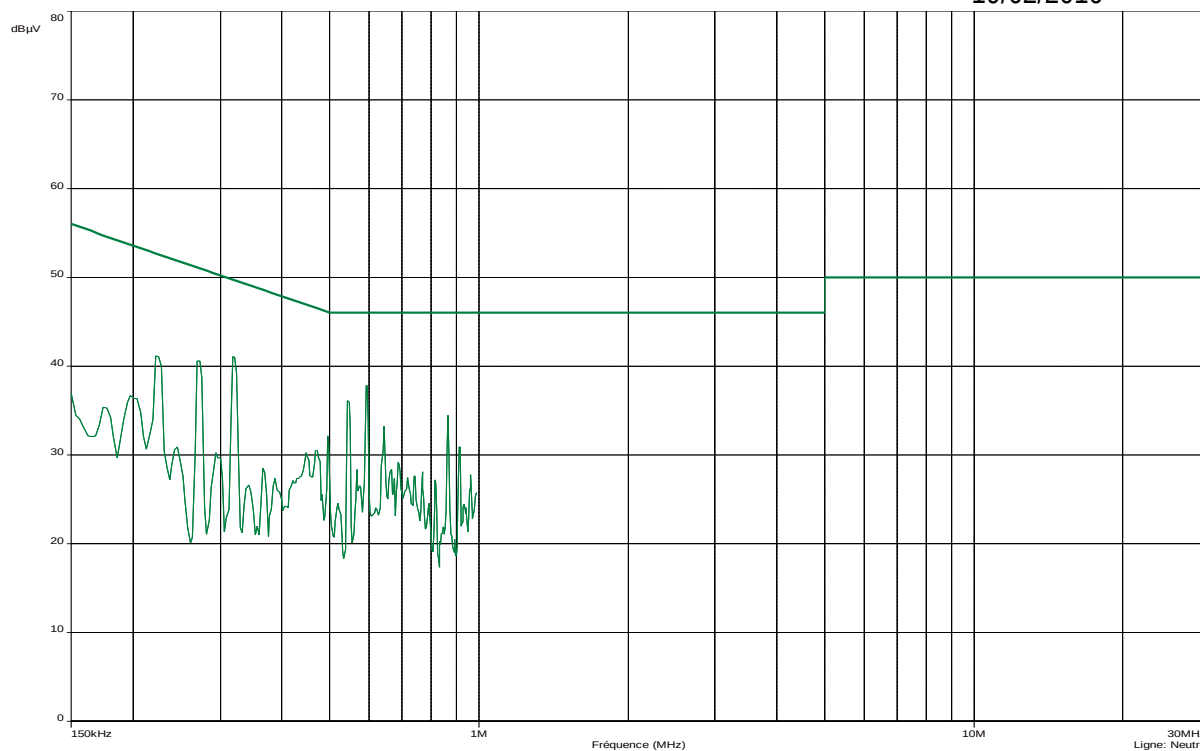
Class: B of the standard

Curves 13 and 14

Test card TWR-POSCARD-5180 Rev2

Conducted voltage emission (measurement): Power supply 120 Vac / 60 Hz (RF ON)
in average value detection

19/02/2016



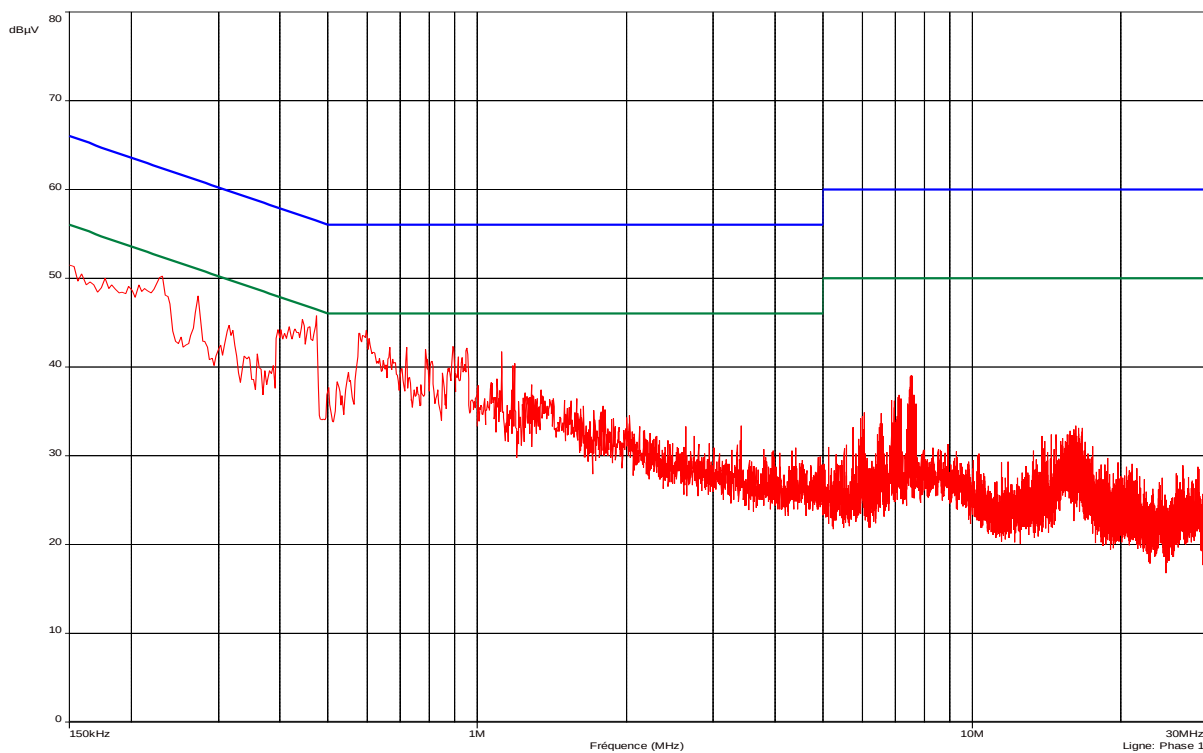
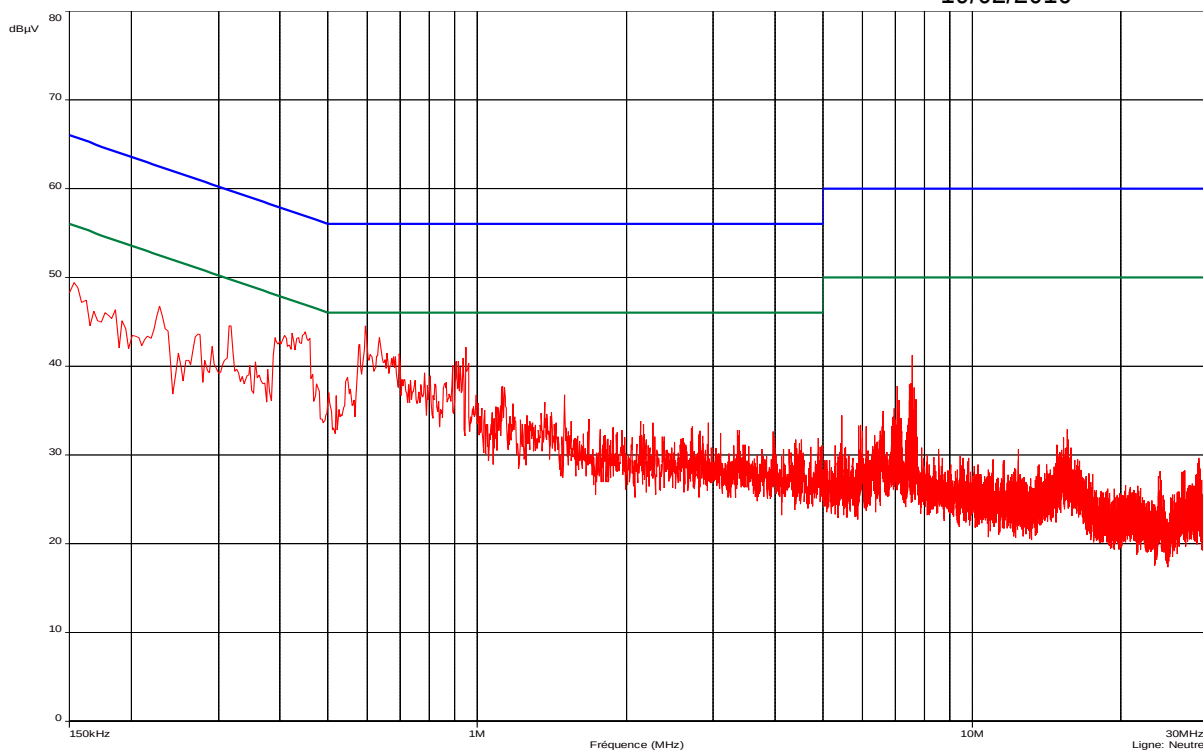
Class: B of the standard

Curves 15 and 16

Test card TWR-POSCARD-5180 Rev2

Conducted voltage emission (measurement): Power supply 120 Vac / 60 Hz (standby mode)
in peak detection

19/02/2016



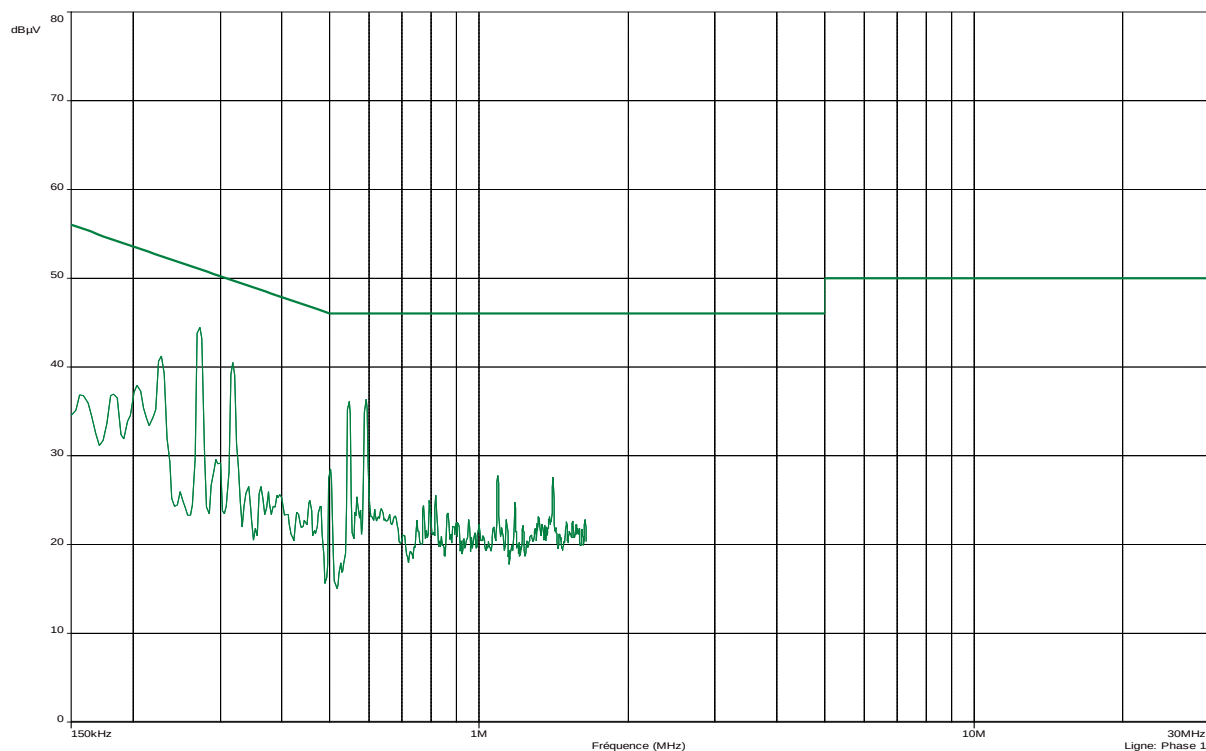
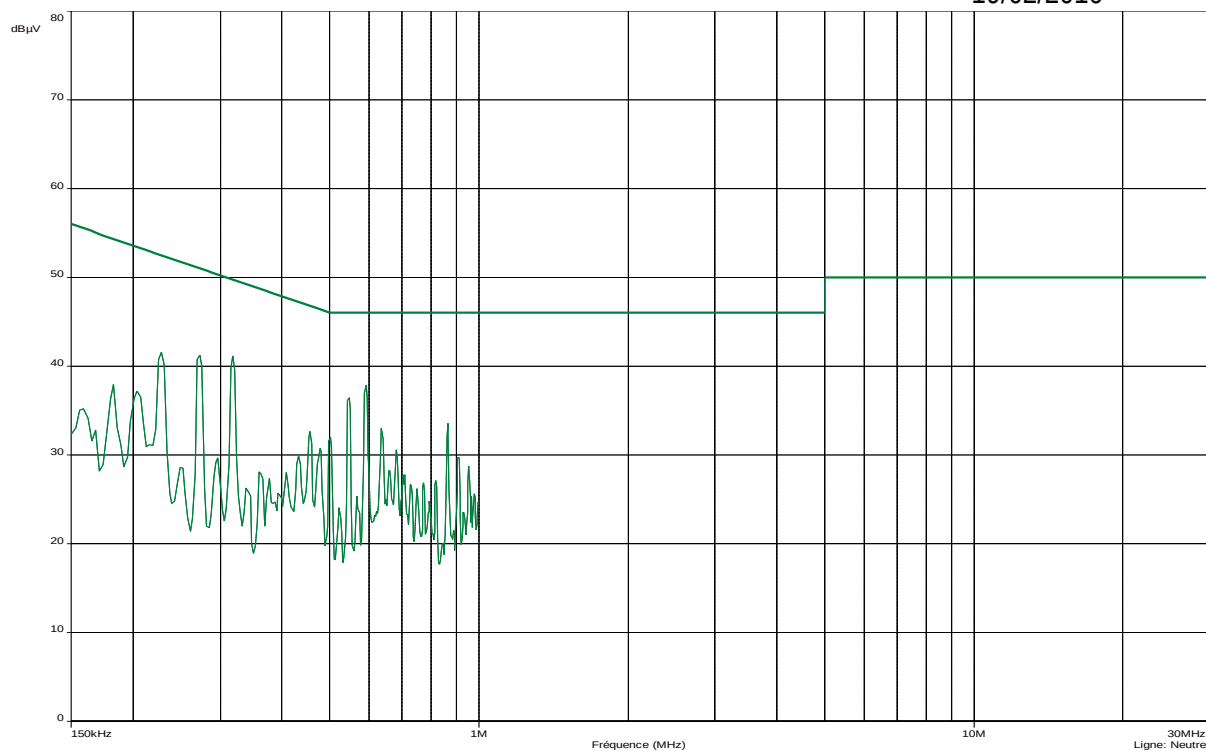
Class: B of the standard

Curves 17 and 18

Test card TWR-POSCARD-5180 Rev2

Conducted voltage emission (measurement): Power supply 120 Vac / 60 Hz (standby mode)
in average value detection

19/02/2016



Class: B of the standard

10. FREQUENCY DRIFT

Standard: FCC 47 CFR Part 15 : 2015

Section: 15.225 (e)

Test configuration:

The measure is realized in near field and the results are correlated with the intentional radiated emission at 3 meters.

Test contact / Contact less mode: Field at 3 m = 57.6 dB μ V/m $\rightarrow$ field at 30 m = 17.6 dB μ V/m

RF ON mode: Field at 3 m = 70.4 dB μ V/m $\rightarrow$ field at 30 m = 30.4 dB μ V/m

Test equipment used:

CATEGORY	BRAND	TYPE	N° EMITECH
Climatic enclosure	Flonic Schlumberger	200P	2694
Receiver	Rohde & Schwarz	FSU8	9129
Tests enclosure	Emitech	LER	12079

Measurement conditions:

Resolution bandwidth: 10 kHz

Video bandwidth: 30 kHz

Test operating conditions of the equipment:

The transmitter is in Test contact / Contact less mode and RF ON mode.

Results:

Test contact / Contact less mode

			F (MHz)	Deviation (kHz)	Curve	Limit (1)
Normal test conditions	Temperature (+ 20°C) Humidity (40%)	Nominal power source (5.0 V)	13.560701	+ 0.701	19	± 1.356 kHz
			N.A.	N.A.	N.A.	
			N.A.	N.A.	N.A.	
Extreme test conditions	Minimal temperature (- 20°C)	Nominal power source (5.0 V)	13.560050	+ 0.050	20	
	Maximal temperature (+ 50°C)		13.560100	+ 0.100	21	

RF ON mode

			F (MHz)	Deviation (kHz)	Curve	Limit (1)
Normal test conditions	Temperature (+20°C) Humidity (40%)	Nominal power source (5.0 V)	13.560000	0.000	22	± 1.356 kHz
			N.A.	N.A.	N.A.	
			N.A.	N.A.	N.A.	
Extreme test conditions	Minimal temperature (- 20°C)	Nominal power source (5.0 V)	13.560250	+ 0.250	23	
	Maximal temperature (+ 50°C)		13.560000	0.000	24	

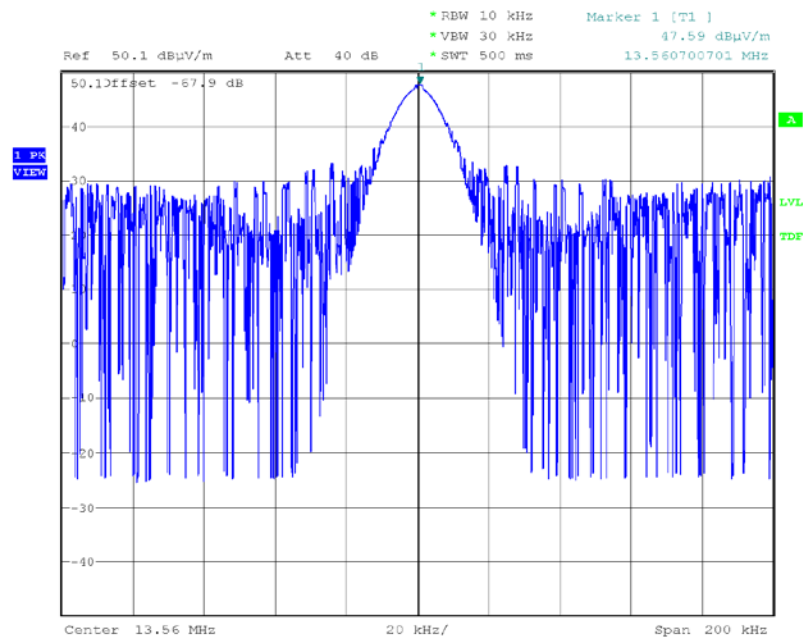
(1) ± 0.01 % of the operating frequency.

N.A. : Not Applicable

Measurement uncertainty: ± 1 x 10⁻⁷

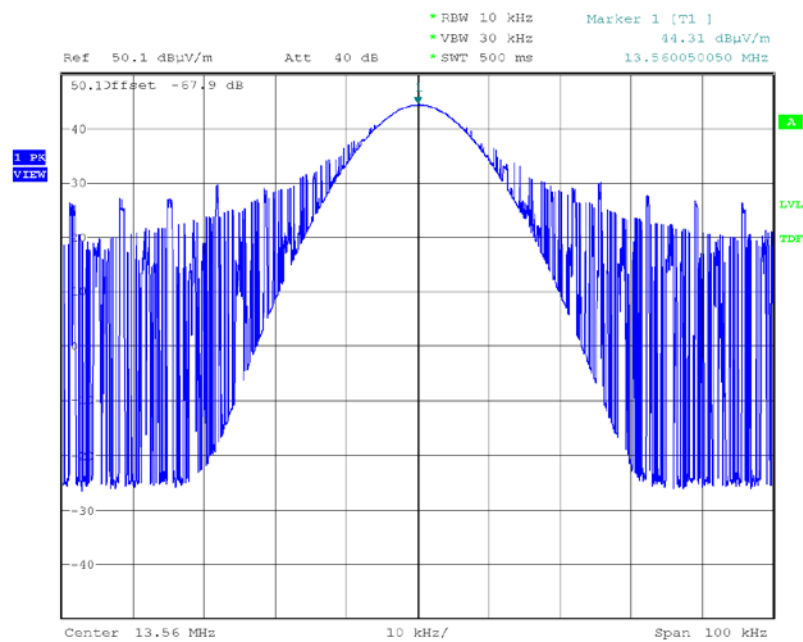
Test conclusion: Complies with the requirements of the standard.

Curve 19



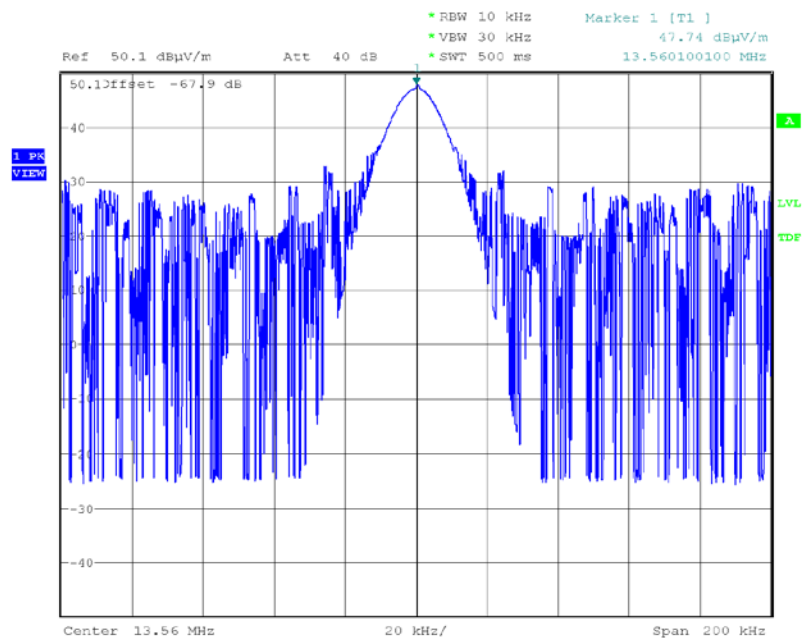
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Curve 20



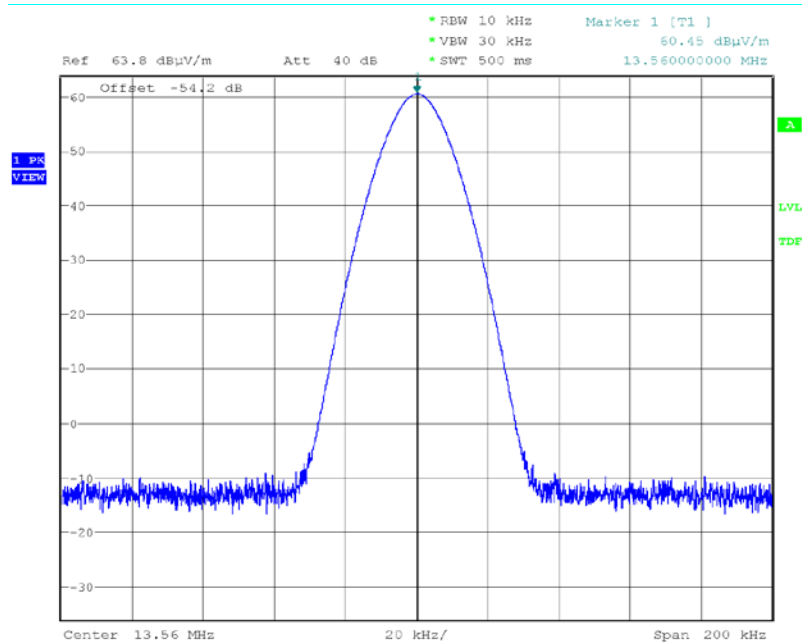
Date: 22.FEB.2016 10:38:17

Curve 21



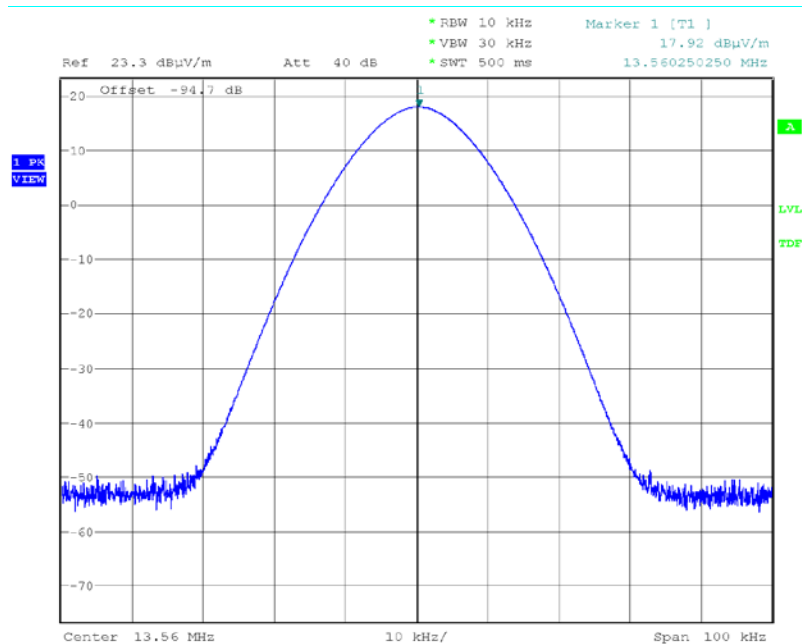
Date: 22.FEB.2016 08:45:18

Curve 22



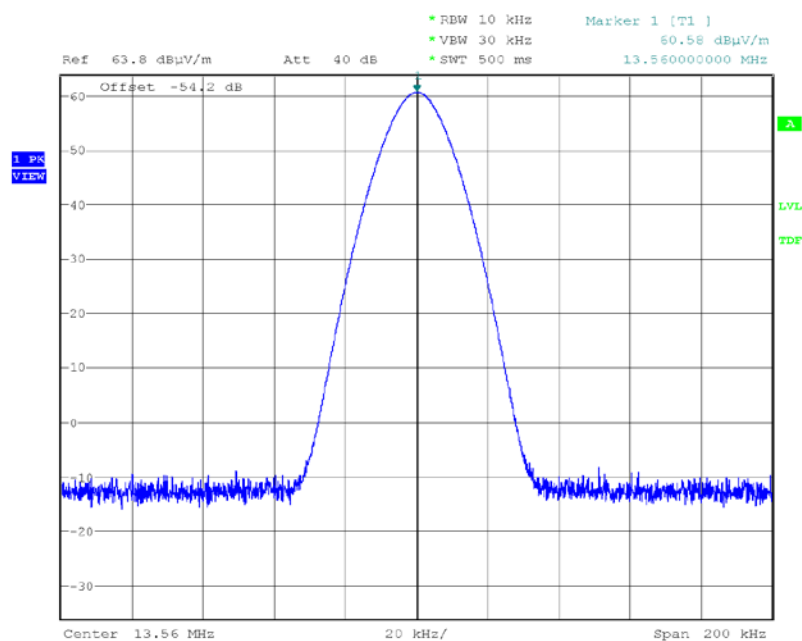
Date: 22.FEB.2016 07:53:52

Curve 23



Date: 22.FEB.2016 10:40:01

Curve 24



Date: 22.FEB.2016 08:40:30

11. 20 dB BANDWIDTH

Standard: FCC 47 CFR Part 15 : 2015

Section: 15.215 (c)

Test configuration:

The measure is realized in near field and the results are correlated with the intentional radiated emission at 3 meters.

Test contact / Contact less mode: Field at 3 m = 57.6 dB μ V/m $\rightarrow$ field at 30 m = 17.6 dB μ V/m

RF ON mode: Field at 3 m = 70.4 dB μ V/m $\rightarrow$ field at 30 m = 30.4 dB μ V/m

Test equipment used:

CATEGORY	BRAND	TYPE	N° EMITECH
Climatic enclosure	Flonic Schlumberger	200P	2694
Receiver	Rohde & Schwarz	FSU8	9129
Tests enclosure	Emitech	LER	12079

Measurement conditions:

Resolution bandwidth: 1 kHz

Video bandwidth: 3 kHz

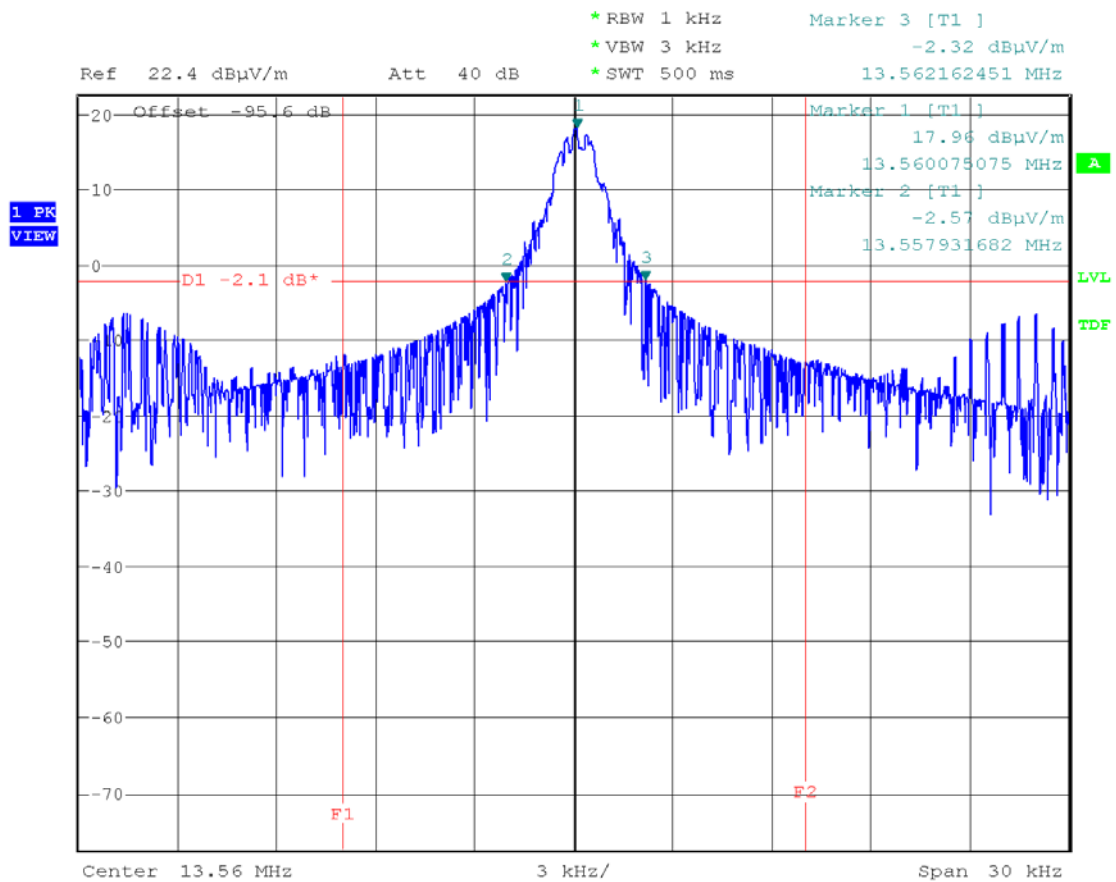
Test operating conditions of the equipment:

The transmitter is in Test contact / Contact less mode and RF ON mode.

Results:

Test contact / Contact less mode

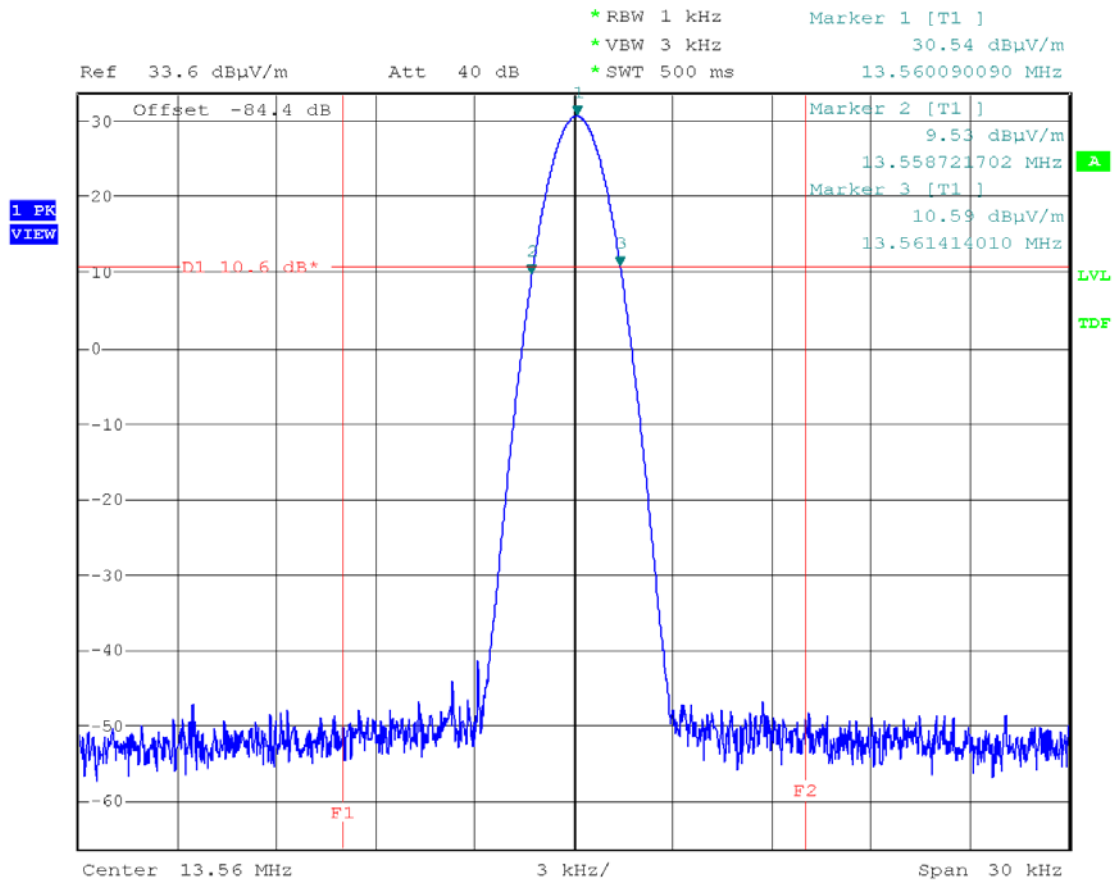
20 dBc point (Low)	20 dBc point (High)	Operating frequency band (MHz)
13.557932 MHz	13.562162 MHz	13.553 to 13.567



Date: 19.FEB.2016 14:17:16

RF ON mode

20 dBc point (Low)	20 dBc point (High)	Operating frequency band (MHz)
13.558722 MHz	13.561414 MHz	13.553 to 13.567



Date: 19.FEB.2016 14:21:25

□□□ End of report - 3 annexes to be forwarded □□□

ANNEX 1:

ANTENNA FACTORS, INSERTION LOSSES AND AMPLIFIER VALUES

BILL OF MATERIAL

The test antenna used for the radiated emission between 9 kHz and 30 MHz is the active loop antenna n°9579. Antenna factors are given in table 1.

The test antenna used for the radiated emission between 30 MHz and 1000 MHz is the bilog antenna n°5647. Antenna factors are given in table 2.

The measuring receiver n°10517 used in the frequency range 30 MHz to 1 GHz has an integrated preamplifier.

The test cable used between 9 kHz and 30 MHz to connect the antennas to the receiver for measurements at a distance of 3 meters has losses given in table 3.

The test cable used between 30 MHz and 1 GHz to connect the antennas to the receiver for measurements at a distance of 3 meters has losses given in table 4.

Frequency (MHz)	Antenna factor (dB/m)	Frequency (MHz)	Antenna factor (dB/m)
0.009	20.9	0.8	11.2
0.01	20.2	1	11.2
0.015	16.6	1.5	11.1
0.02	15.1	2	11.0
0.03	13.8	3	10.9
0.05	12.4	5	10.7
0.08	11.9	8	10.3
0.1	11.8	10	10.0
0.15	11.7	15	9.3
0.2	11.6	20	8.4
0.3	11.5	25	6.3
0.5	11.4	30	5.7

TABLE 1 : ACTIVE LOOP ANTENNA

Frequency (MHz)	Antenna factor (dB/m)	Frequency (MHz)	Antenna factor (dB/m)
30	23.5	160	10.8
35	20.5	180	10.3
40	17.9	200	11.6
45	15.4	250	13.4
50	13.0	300	14.1
60	10.7	400	16.4
70	8.9	500	17.2
80	7.4	600	18.5
90	8.3	700	19.1
100	10.9	800	19.9
120	13.8	900	20.1
140	12.7	1000	20.6

TABLE 2 : BILOG ANTENNA

Frequency (MHz)	Loss (dB)	Frequency (MHz)	Loss (dB)
0.009	0.0	6.000	0.5
0.020	0.0	7.000	0.5
0.050	0.0	8.000	0.5
0.100	0.1	9.000	0.6
0.500	0.1	10.00	0.6
1.000	0.2	15.00	0.8
2.000	0.3	20.00	0.9
3.000	0.3	25.00	1.0
4.000	0.4	30.00	1.1
5.000	0.4	-	-

TABLE 3 : TEST CABLE FOR 3M MEASUREMENT INTO 9 kHz
AND 30 MHz

Frequency (MHz)	Loss (dB)	Frequency (MHz)	Loss (dB)
30	0.7	250	1.8
40	0.7	300	2.1
50	0.9	400	2.3
60	0.9	500	2.5
70	0.9	600	3.0
80	0.9	700	3.4
90	1.1	800	3.6
100	1.1	900	3.9
150	1.4	1000	4.1
200	1.6	-	-

TABLE 4 : TEST CABLE FOR 3M MEASUREMENT INTO 30 MHz
AND 1 GHz

ANNEX 2:

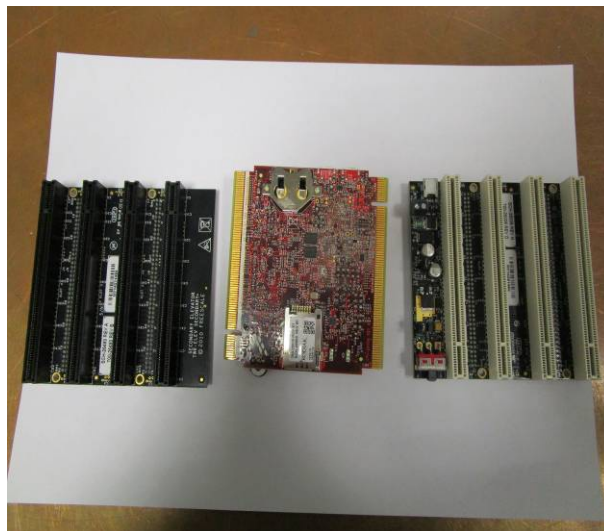
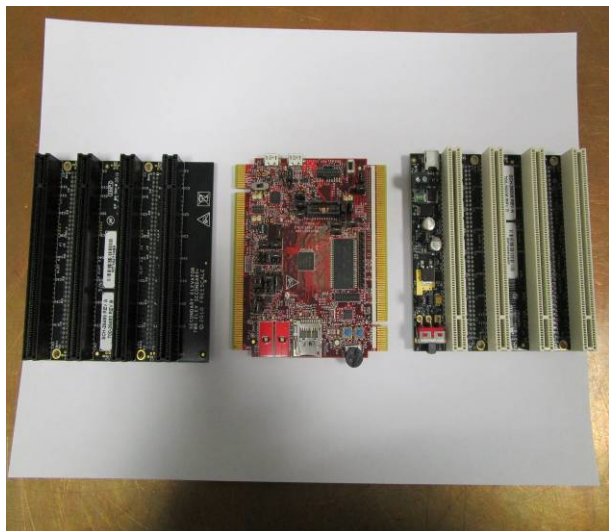
PHOTOGRAPHIES

EQUIPMENT UNDER TEST (E.U.T.) PHOTOGRAPHIES

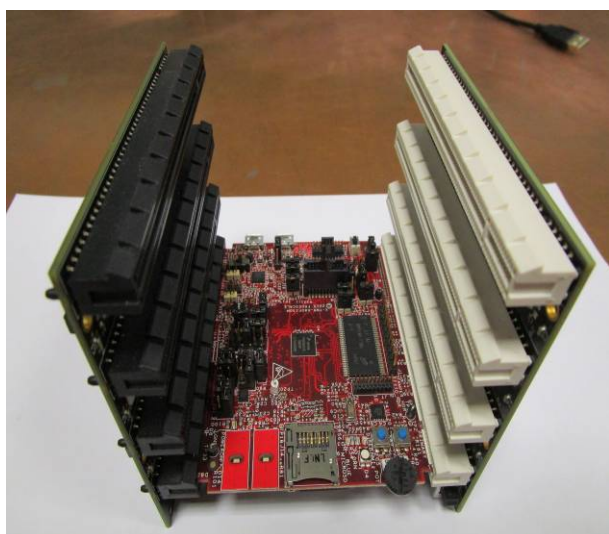




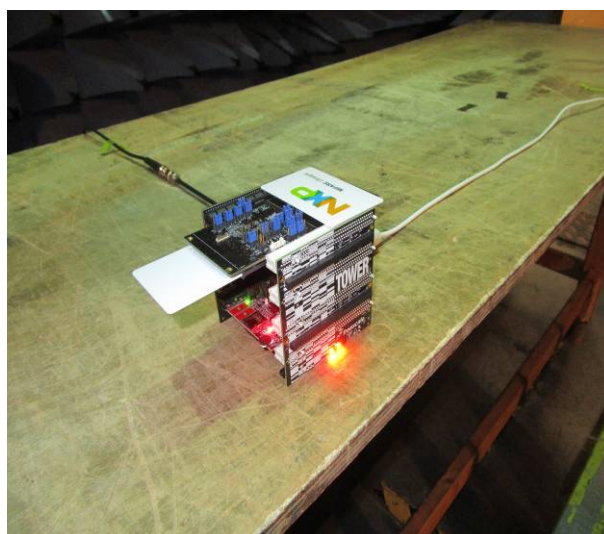
E.U.T.



Auxiliary cards

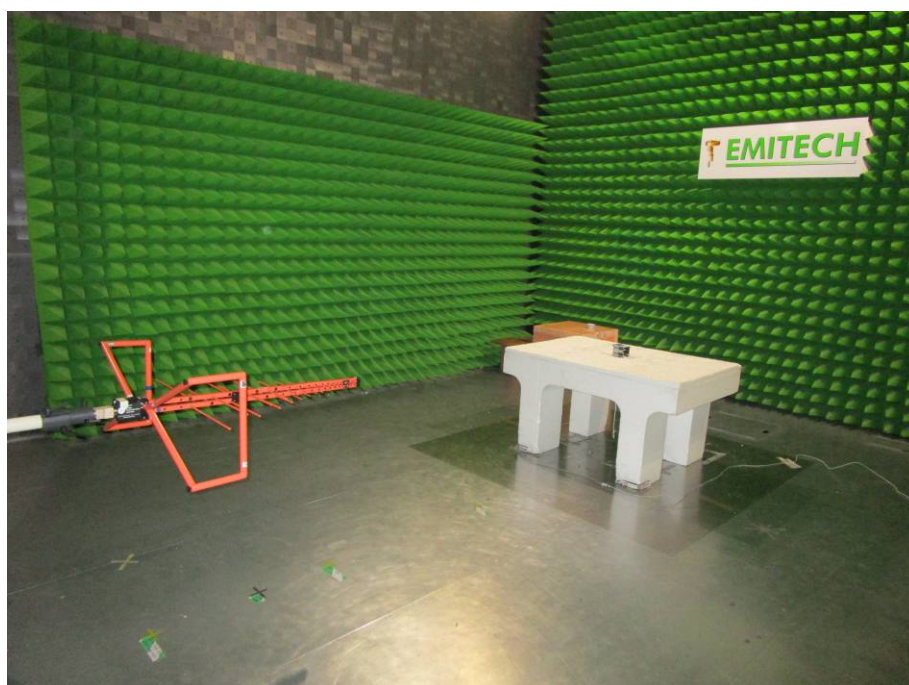
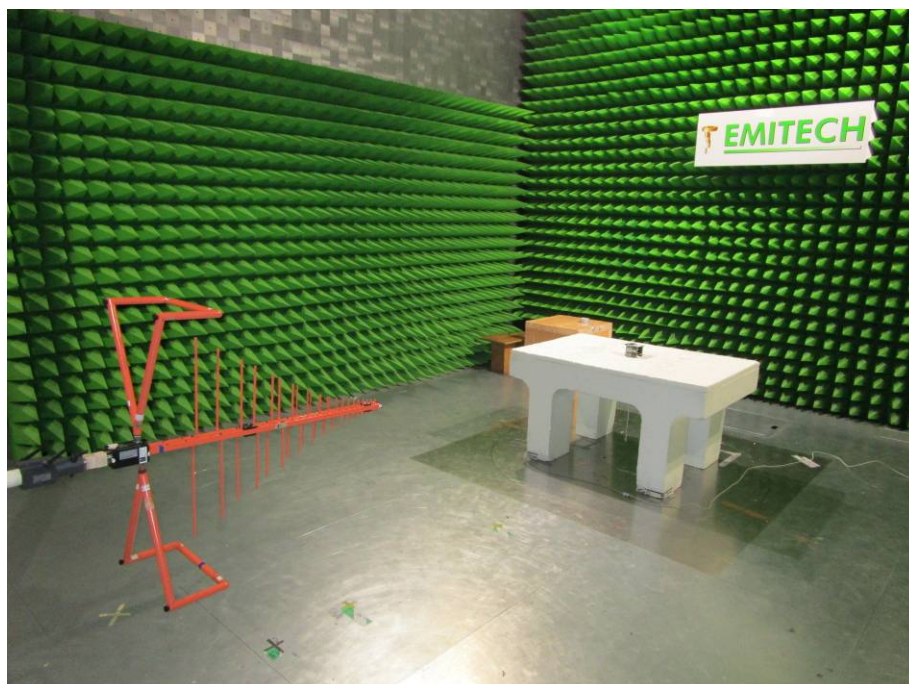


Auxiliary boards assembled



E.U.T. assembled on auxiliary boards

Set up





Radiated emission



Conducted emission

ANNEX 3:

CALIBRATION DATES

N° EMITECH	LAST CALIBRATION	CALIBRATION DUE DATE
10517	18/09/2014	18/09/2016
0549	16/02/2015	16/02/2018
5647	25/02/2013	25/02/2017
11181	28/03/2014	28/03/2016
11136	10/03/2014	10/03/2016
11172	28/03/2014	28/03/2016
6569	19/03/2014	19/03/2016
9579	21/08/2015	21/08/2017