Independent Testing Laboratory
CMC Centro Misure Compatibilità S.r.l.
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LAB N° 0168

Accredited by ACCREDIA according to UNI CEI EN ISO/IEC 17025 cert. nr. 0168

TEST REPORT nr. R13037601

Federal Communication Commission (FCC)

Test item

Description.....: USB KEYBOARD
Trademark.....: VIDEOTEC
Model/Type .....: DCZ

Test Specification

Standard .....: FCC Rules & Regulations, Title 47 - Part 15.107 and Part 15.109:2012

Client's name.....: VIDEOTEC S.p.A.
Address.....: Via Friuli, 6 – 36015 Schio (VI) – ITALY

Manufacturer's name : Same as client
Address.....: --

Report

Tested by.....: G. Gandini – *Technician*

Approved by.....: R. Beghetto – *Laboratory Manager*
Date of issue.....: 12.07.13
Contents.....: 18 pages

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1. Summary

Emission Test:

FCC Rules & Regulations, Title 47

Test specifications	*Environmental Phenomena*	*Port*	*Tests sequence*	*Result*
Part 15.107 Class B	Continuous disturbance voltage	Mains terminal	1	Complies
Part 15.109 Class B	Radiated disturbance	Enclosure	2	Complies

The Test Report was given to the Client representatives for necessary documentation of ratification of the tested equipment and it is valid for the FCC certification.

2. Description of Equipment under test (EUT)

Power supply ..... : 5 Vdc from USB

Power cable ..... : Unshielded

Serial Number ..... : --

2.1 Test Site

Company ..... : CMC Centro Misure Compatibilità S.r.l.

Address ..... : Via dell'Elettronica, 12/C
36016 Thiene (VI) – ITALY

3. Testing and sampling

Date of receipt of test item ..... : 04.03.13

Testing start date ..... : 22.03.13

Testing end date ..... : 19.06.13

Samples tested nr. ..... : 1

Sampling procedure. ..... : Equipment used for testing was picked up by the manufacturer, at the end of the production process with random criterion

Internal identification ..... : adhesive label with the product number P130213

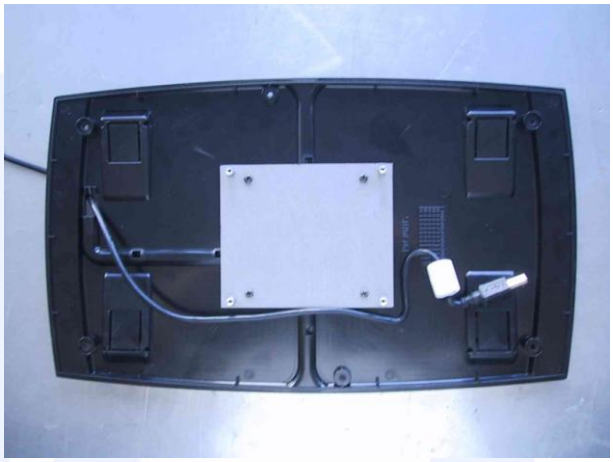
4. Operative conditions

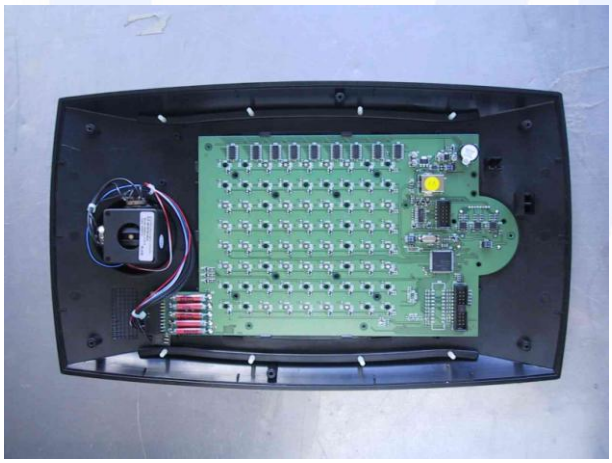
EUT exercising ..... : Steady condition, connected to PC by USB
Full data rate used set through Videotec's software.

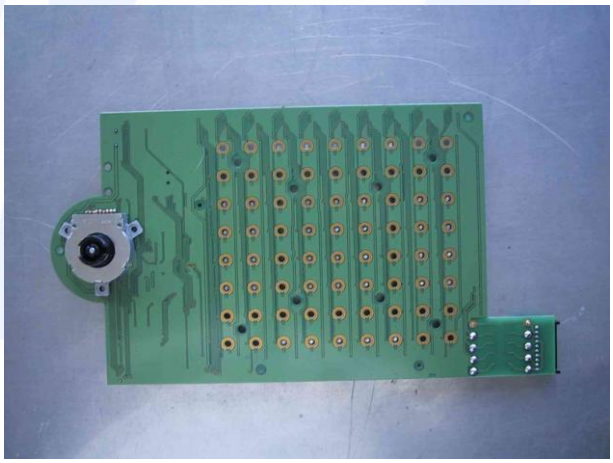
Auxiliary equipment ..... : None

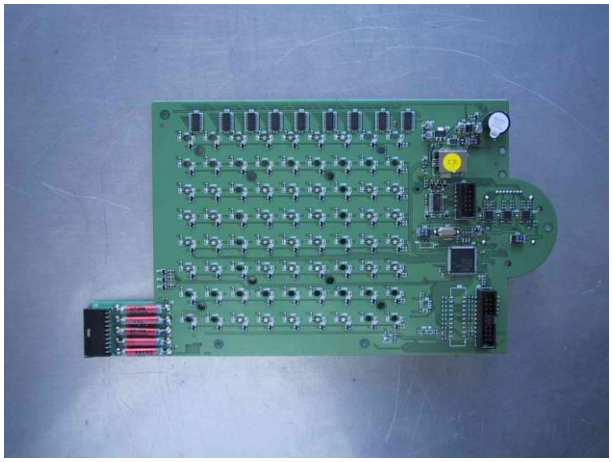
5. Photograph(s) of EUT

5.1 Photograph(s) of EUT









5.2 Photograph(s) of setup

Continuous disturbance voltage

Radiated disturbance

6. Equipment list

Id. number	*Manufacturer*	*Model*	*Description*	*Serial number*	*Last calibration*	*Due date calibration*
CMC S010	Rohde & Schwarz	ESH3-Z2	Impulses limiting device	- - -	January '13	January '14
CMC S108	Emco	3115	Horn antenna	9811-5622	June '13	June '14
CMC S136	Schwarzbeck	VULB 9136	Broadband Antenna	9136-205	April '11	April '14
CMC S164	Rohde & Schwarz	ESU26	EMC interference receiver	100052	January '13	January '14
CMC S200	Schwarzbeck	NSLK 8128	V-LISN	8128-273	January '13	January '14
CMC S206	Rohde & Schwarz	ESCI 7	EMC Receiver	100781	January '13	January '14
CMC A013	CMC	TR01	Rotary motorized table	- - -	- - -	- - -
CMC A014	CMC	PM01	Antenna positioning Mast	- - -	- - -	- - -

7. Measurement uncertainty

Test	Expanded Uncertainty	note
Conducted Emission		
(50Ω/50µH AMN) - (9 kHz – 150 kHz)	±3.9 dB	1
(50Ω/50µH AMN) - (150 kHz – 30 MHz)	±3.4 dB	1
(Voltage probe) - (150 kHz – 30 MHz)	±3.4 dB	1
(50Ω/5µH AMN) - (150 kHz – 108 MHz)	±2.8 dB	1
Discontinuous Conducted Emission		
Conducted Emission (50Ω/50µH AMN) - (150 kHz – 30 MHz)	±3.4 dB	1
Disturbance Power (30 MHz – 300 MHz)	±3.8 dB	1
Radiated Emission		
(0,150 MHz – 30 MHz)	±4.3 dB	1
(30 MHz – 1000 MHz)	±4.6 dB	1
(1 GHz – 6 GHz)	±4.7 dB	1
Electromagnetic field EMF	±15.0 %	1
Harmonic current emissions test	±2.7 %	1
Voltage fluctuation and flicker test	±2.9 %	1
Insertion loss test	±2.9 dB	1
Radiated electromagnetic disturbance test (loop antenna)	±2.8 dB	1
Radiated electromagnetic field immunity test	0.8 V/m at 3V/m	1
Pulse modulated radiated electromagnetic field immunity test	0.8 V/m at 3V/m	1
Injected currents immunity test	0.4 V at 3V	1
Bulk current	9.7 mA at 60 mA	1
Power frequency magnetic field immunity test	0.1 A/m at 10 A/m	1
Electrostatic discharge immunity test		2
Electrical fast transients / burst immunity test		2
Surge immunity test		2
Pulse magnetic field immunity test		2
Damped oscillatory magnetic field immunity test		2
Short interruption immunity test		2
Voltage transient emission test	±2.2 %	1
Transient immunity test		2

Notes

Note 1:
The expanded uncertainty reported according to EN55016-4-2:2011 is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of p = 95%

Note 2:

It has been demonstrated that the used test equipment meets the specified requirements in the standard with at least a 95% confidence, covering factor k = 2.

8. Reference documents

Reference no.	*Description*
FCC Rules and Regulation Title 47 part 15:2012	--
Internal Procedure PM001 rev. 2.0 (Quality Manual)	Measure procedure
Internal procedure INC_M rev. 8.1 (Quality Manual)	Measurement uncertainty calculation

9. Deviation from test specification

In agreement with the client, emission tests were performed with peak detector .

At the frequencies where the measures exceed the limit or within 6 dB from it, the test was repeated with quasi-peak detector and/or average detector.

10. Test case verdicts

Test case does not apply to the test object ..... : N.A.
Test item does meet the requirement ..... : Complies
Test item does not meet the requirement..... : Does not comply
Test not performed ..... : N.E.

11. Results

In this clause tests results are reported.

Measurement uncertainty is in accordance with document CMC INC_M rev. 8.1.

11.1 Continuous disturbance voltage test (150 kHz – 30 MHz)

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part. 15.107
- Internal procedure PM001
- See clause 4 of this test report

Test configuration and test method

Test site:
Shielded chamber

Auxiliary equipment:
See clause 4 of this test report

EUT exercising

See clause 4 of this test report

Test equipment used

CMC S010, CMC S200, CMC S206
Measurement uncertainty: See clause 7 of this test report

Test specification

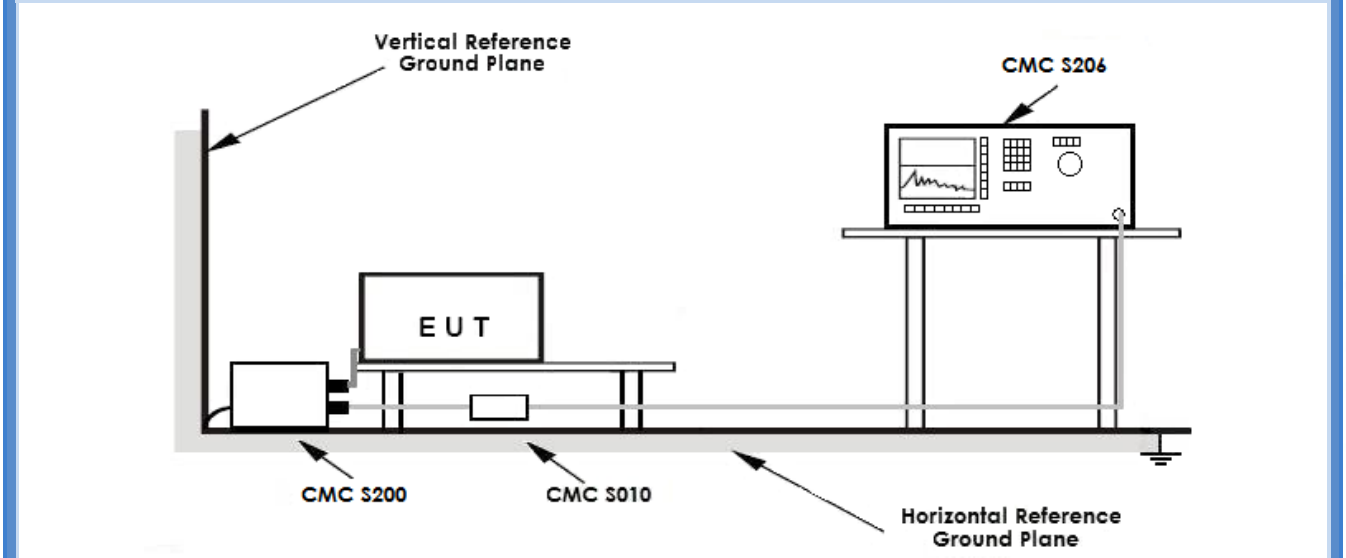
Port: Mains terminal
Frequency range: 150 kHz – 30 MHz

Acceptance limits

Limits for class A equipment		
Frequency range (MHz)	*dB(µV) Quasi-peak*	*dB(µV) Average*
0,15 to 0,50	79	66
0,5 to 5	73	60
5 to 30	73	60

Limits for class B equipment		
Frequency range (MHz)	*dB(µV) Quasi-peak*	*dB(µV) Average*
0,15 to 0,50	66 to 56	56 to 46
0,5 to 5	56	46
5 to 30	60	50

Setup

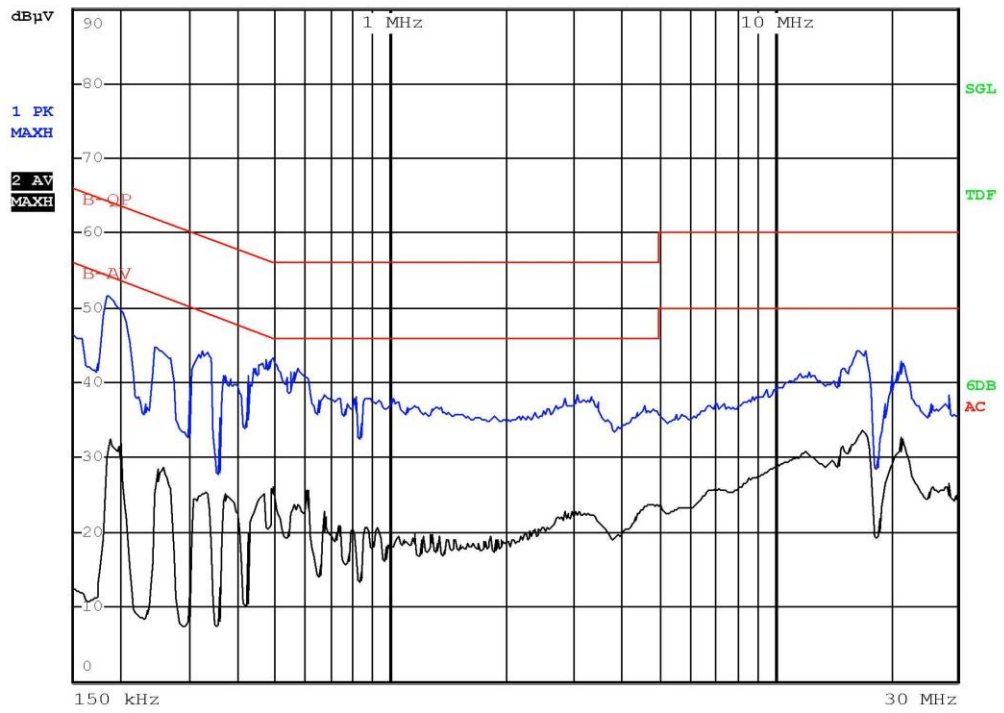


Result

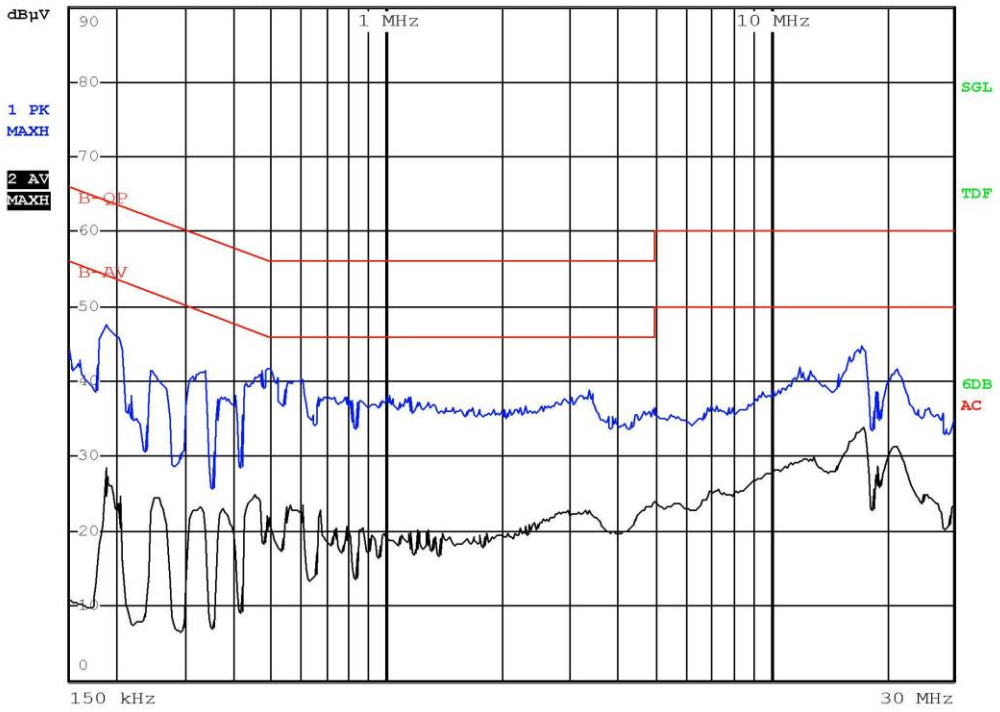
Line	*Graphs*	*Remarks*	*Result*
-5 Vdc	G13037601	--	Complies
+5 Vdc	G13037602	--	Complies
Remarks: --			

Graphs Legend
PK: Peak; QP [1s] (quasi-peak at 1 second) values are marked with a +
AV: Average; AV [1s] (average at 1 second) values are marked with a X

Graphs



Gandini 13037601-Line L-In funzione con comunicazione USB



Gandini 13037602-Line N-In funzione con comunicazione USB

Result: The requirements are met

11.2 Radiated disturbance test (30 – 1000 MHz)

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part. 15.109
- Internal procedure PM001
- See clause 4 of this test report

Test configuration and test method

Test site:
Semi-anechoic chamber

Auxiliary equipment:
See clause 4 of this test report

EUT exercising

See clause 4 of this test report

Test equipment used

CMC S108, CMC S136, CMC S164, CMC A013, CMC A014
Measurement uncertainty: See clause 7 of this test report

Test specification

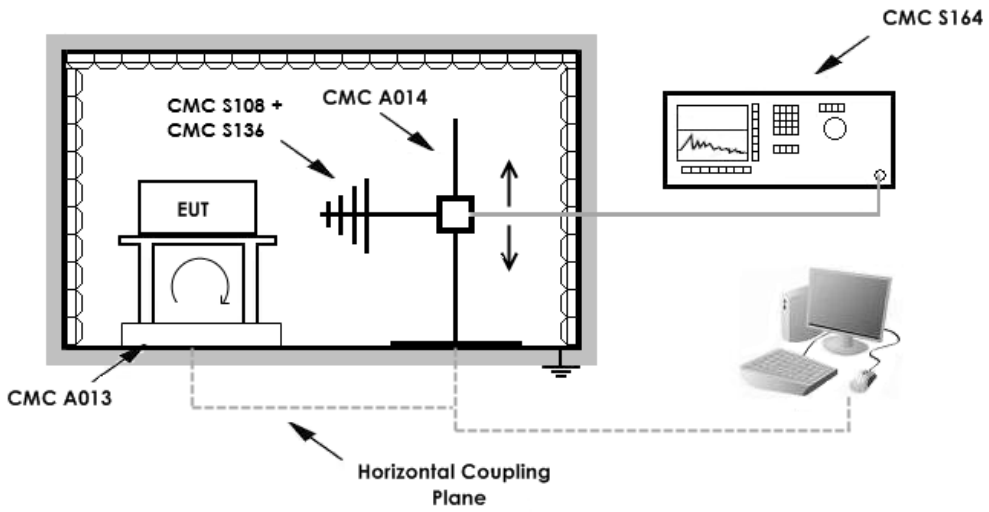
Port: Enclosure
Frequency range: 30 MHz – 1000 MHz
Antenna polarization: Horizontal (H) – Vertical (V)
EUT – Antenna distance: 3 m

Acceptance limits

Limits for class A equipment	
Frequency range (MHz)	*Limits [dB(µV/m)]*
30 to 88	49,08
88 to 216	53,52
216 to 960	56,44
960 to 1000	59,54

Limits for class B equipment	
Frequency range (MHz)	*Limits [dB(µV/m)]*
30 to 88	40
88 to 216	43,52
216 to 960	46,02
960 to 1000	53,98

Setup



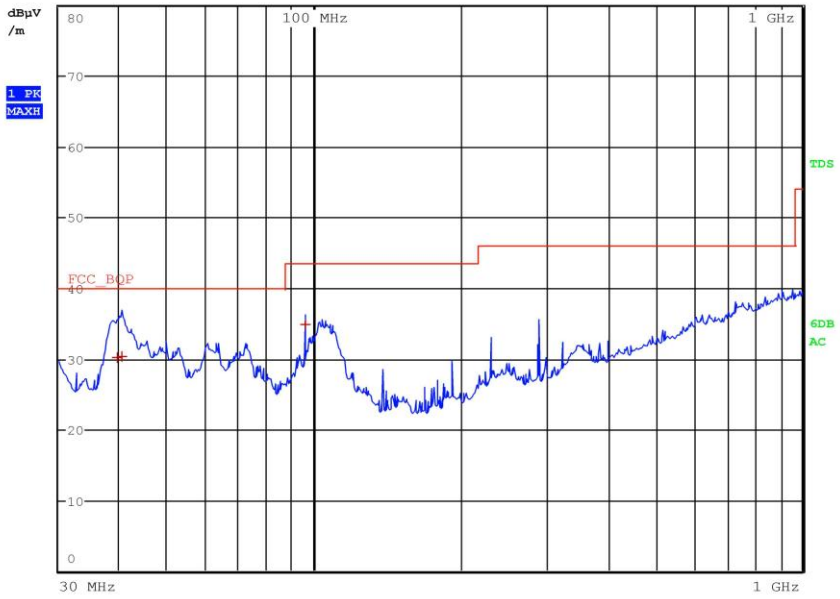
Result

Polarization	*Frequency Range (MHz)*	*Graphs*	*Remarks*	*Result*
V	30 – 1000	G13037606	--	Complies
H	30 – 1000	G13037607	--	Complies
Remarks: --				

Graphs Legend
PK: Peak; QP [1s] (quasi-peak at 1 second) values are marked with a +
AV: Average; AV [1s] (average at 1 second) values are marked with a x

Graphs

Meas Type Emission 30-1000MHz
Equipment under Test
Manufacturer
OP Condition PC+DCZ
Operator Gandini 13037606
Test Spec
Vert



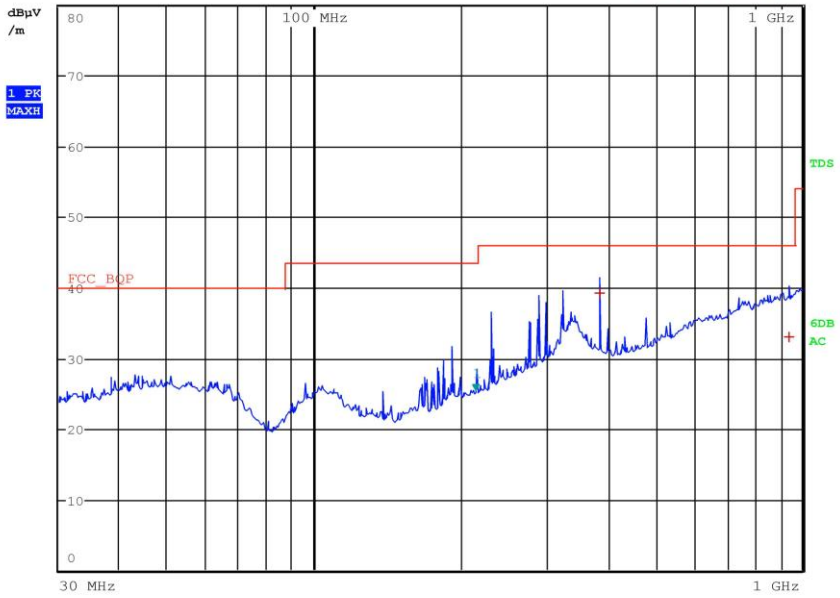
Final Measurement

Meas Time: 1 s
Margin: 6 dB
Subranges: 3

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	39.480000000 MHz	30.09	Quasi Peak	-9.91
1	40.320000000 MHz	30.31	Quasi Peak	-9.69
1	96.000000000 MHz	34.90	Quasi Peak	-8.62

Meas Type	Emission 30-1000MHz
Equipment under Test	
Manufacturer	
OP Condition	PC+DCZ
Operator	Gandini 13037607
Test Spec	

Horiz



Final Measurement

Meas Time:	1 s
Margin:	6 dB
Subranges:	2

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	384.040000000 MHz	39.22	Quasi Peak	-6.80
1	942.160000000 MHz	33.11	Quasi Peak	-12.91

Result: The requirements are met

ANNEX 1 of document nr. R13037601

Numero articolo	Quantità	Nome articolo
SCA-MTC	1.00	SCATOLA AMERICANA BIANCA 42x26x17,5
CABLJOY3AXB	1.00	CABLAGGIO JOYSTICK R300A-J1
SNYDCZGS07	1.00	GUSCIO SUP DCZ ABS NERO
SNYDCZGI07	1.00	GUSCIO INFERIORE DCZ ABS NERO
SNYDCZSH07	1.00	MANOPOLA SHUTTLE DCZ ABS NERO
SNYDCZGH07	1.00	GHIERA SHUTTLE DCZ ABS NERO
SNYDCZPI07	4.00	PIEDINO DCZ ABS NERO
PADCZON1GO	2.00	ONDA DCZ GOMMA GIALLA
CRP1DCZ	1.00	PIASTRA ZAVORRA DCZ
V1TCR3.5*8PT	10.00	VITE AUTOF. 3.5X8 TCTCR PT
V1TCR2.9*6.5	5.00	VITE AUTOF.2.9x6.5 TCTCR NICH.
PADCZPO38B	1.00	PANNELLO GRAFICA DCZ POL. 38 TASTI
CAVOUSB3.0N	1.00	CAVO USB TIPO A-B 3m NERO
TBDCZ	1.00	SCHEDA TESTATA TASTIERA DCZ
IMB-GPRJ	1.00	IMB. GOMMA PIUMA RIP. JOYSTICK
GOMRBS	4.00	GOMMINO RICHCO RBS-20-BK 10x10
MNVCDCZ	1.00	MANUALE DCZ
MNVCDCZQ	1.00	QUICK START DCZ
FIADCZ	2.00	IMB FUST DCZ STRATOC 25.8*16*4
PADCZKIT38	1.00	BUSTA PANN.TRA.DCZ + FOGLI FUS
IMB22*45HD	1.00	SACCHETTI POLIETILENE 22*45 HD