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LAB N° 0168

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

TEST REPORT
Nr. R18203701

Federal Communication Commission (FCC)

Report Reference No. ..... :	R18203701
Date of issue: ..... :	28.11.18
Total number pages: ..... :	60
Applicant´s name ..... :	Caen RFID S.r.l.
Address ..... :	Via Vetraia, 11 – 55049 Viareggio (LU) – Italy
Test specification:	
Standards ..... :	FCC Rules & Regulations, Title 47:2017 Part 15 paragraph(s): 107 and 109
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	15-107_15-109CMC
Test Report Form(s) Originator .. :	CMC Centro Misure Compatibilità S.r.l.
Master TRF ..... :	2018-10

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description ..... :	Hex-Multipurpose RAIN RFID Reader with POE
Trademark ..... :	Caen RFID
Manufacturer ..... :	Caen RFID S.r.l.
Model / Type reference ..... :	R1290IU
FCC ID ..... :	UVECAENRFID025
Rating(s) ..... :	EUT supplied from PoE 100-240 V ~ 50/60 Hz single-phase

Report

Tested by (name + signature) ..... :	G. Gandini	.....
Approved by (name + signature) ..... :	R. Beghetto	.....

1 Summary

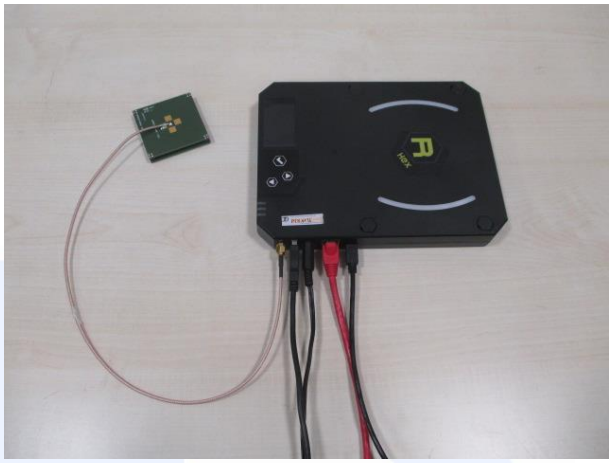
2 Reference standard	
FCC Rules and Regulation Title 47 part 15:2017	--
3 List of attachments	
Attachment 1: Instruments list, measurement uncertainty, judgement of compliance and quality manual references	
4 Deviation(s) from test specification	
None	
5 Testing location	
CMC Centro Misure Compatibilità S.r.l. Via della Fisica, 20 – 36016 Thiene (VI) – Italy Test site facility's FCC registration number: 182474	

Testing and sampling:	
Date of receipt of test item	19.09.18
Testing start date	23.10.18
Testing end date	27.11.18
General remarks:	
This report shall not be reproduced, except in full, without the written approval of CMC. The test results presented in this report relate only to the object tested. "(see appended table)": refers to a table appended to the report. Throughout this report a comma is used as the decimal separator. Tests reported in this test report marked by wording: "Test not accredited by ACCREDIA" are not part of the ACCREDIA accreditation of this laboratory.	
Possible test case verdicts:	
Test case does not apply to the test object:	N/A (Not Applicable)
Test object does meet the requirement:	P (Pass)
Test object does not meet the requirement:	F (Fail)
Test object does not performed:	N/E (Not Executed)
Definition of symbols used in this test report:	
☒ Indicates that the listed condition, standard or equipment is applicable for this report. ☐ Indicates that the listed condition, standard or equipment is not applicable for this report.	

6 General description of test item(s)

Description .....:	Hex-Multipurpose RAIN RFID Reader with POE						
Model Number .....:	R1290IU						
Serial Number.....:	0001000618020002						
Brand name .....:	Caen RFID						
Rated power supply.....:		Voltage and Frequency	Reference poles				
			N	L1	L2	L3	PE
	☒	AC: 120 V, 60 Hz	☒	☒	☐	☐	☐
	☐	AC:	☐	☐	☐	☐	☐
	☒	DC: EUT supplied from PoE					☐
Mounting position.....:	☒	Table top equipment					
	☐	Wall/Ceiling mounted equipment					
	☐	Floor standing equipment					
	☐	Hand-held equipment					
	☐	Other:					
Operating modes .....:	No.	Operating mode of test item					
	1	Steady condition					
Supplemental information to the operating modes.....:	Tests performed on both PoE and 120 V ~ 60 Hz power supply						

6.1 Photos of the test item



7 Verdict summary section

FCC Rules & Regulations, Title 47:2017 Part 15 paragraph(s): 107 and 109				
Clause	**Requirement – Test case**	**Basic standard**	**Test sequence**	**Verdict**
Part 15.107 Class B	Conducted emission	ANSI C63.4	2	**P**
Part 15.109 Class B	Radiated emission	ANSI C63.4	1	**P**

Normative references	
Reference no.	***Description***
FCC Rules and Regulation Title 47 part 15:2017	--
ANSI C63.4:2014	American National Standard for Methods of Measuring of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz – 40 GHz

8 Test conditions

8.1 General

Environmental reference conditions.....:	The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Temperature	Humidity	Atmospheric pressure
15 °C – 35 °C	30 % - 60 %	800 hPa – 1060 hPa
If explicitly required in the basic standard or applied product standard the climatic values are recorded and documented separately in this test report.		

Measurement uncertainties .....:	Attachment 1

9 Emission

9.1 Conducted emission

Tested by ..... :	G. Gandini	
Test date ..... :	27.11.18	
Test location (stand) ..... :	Shielded chamber (CMC A001)	
Reference standards ..... :	FCC Rules and Regulation; Titles 47 Part. 15.107 ANSI C63.4 cl. 7	
Test set-up description ..... :	☒	Table top equipment set-up (80 cm above the reference ground plane)
	☐	Floor standing equipment set-up (insulating material up to 12 mm thick)
	☐	False floor installation equipment set-up (insulating material up to 34 cm above the reference ground plane)
Supplementary Test set-up description ..... :	--	
Test method applied ..... :	☒	Artificial mains network, 50 µH/50 Ω LISN
	☐	Other:

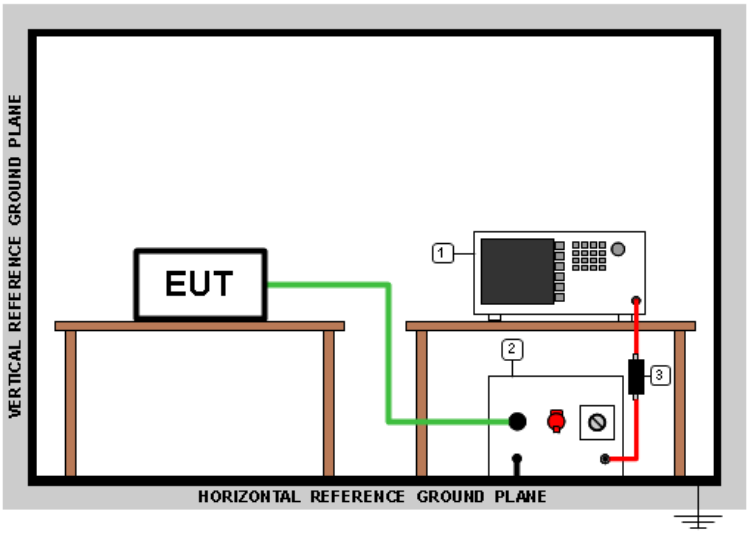
Acceptance limits

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

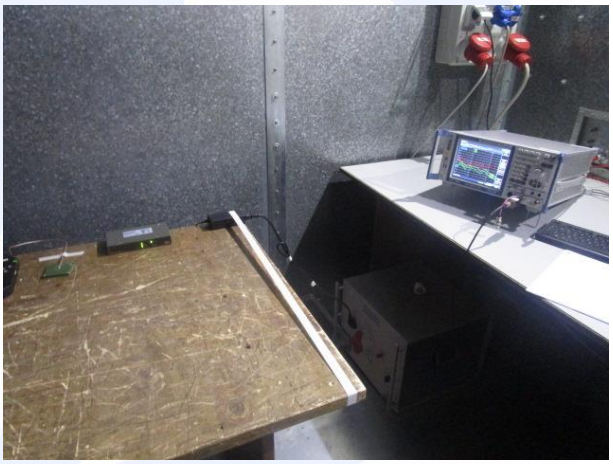
Test setup

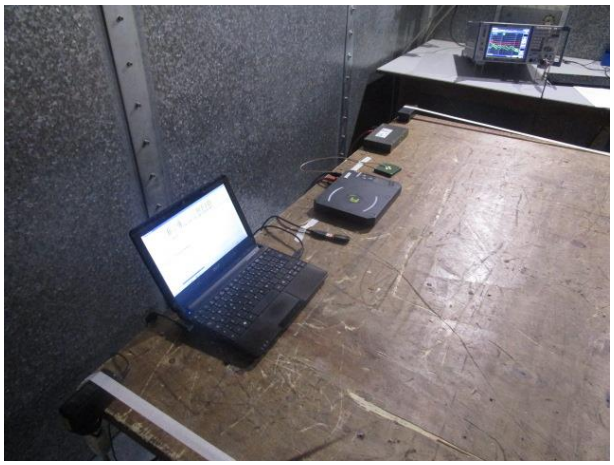
Mains terminal disturbance for table-top equipment

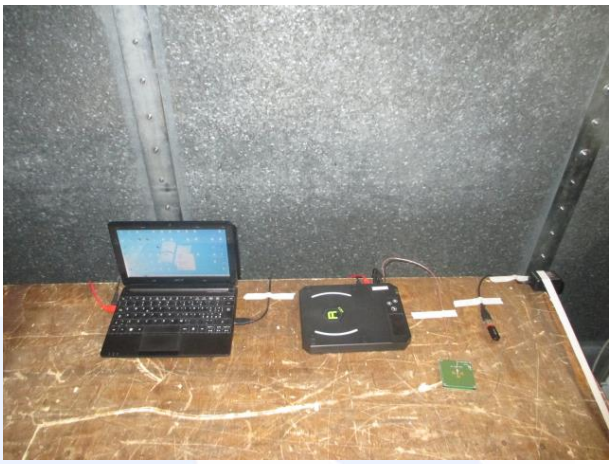


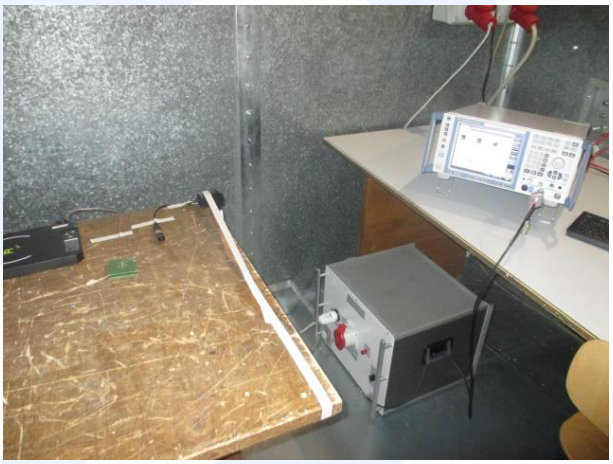
Test setup PE001_01				
Nr.	*Id. Number*	*Manufacturer*	*Model*	*Description*
3	CMC S010	Rohde & Schwarz	ESH3-Z2	Pulse limiter
2	CMC S200	Schwarzbeck	NSLK 8128	V-LISN
1	CMC S227	Rohde & Schwarz	ESR7	EMI Test Receiver 7GHz

Photograph(s) of setup







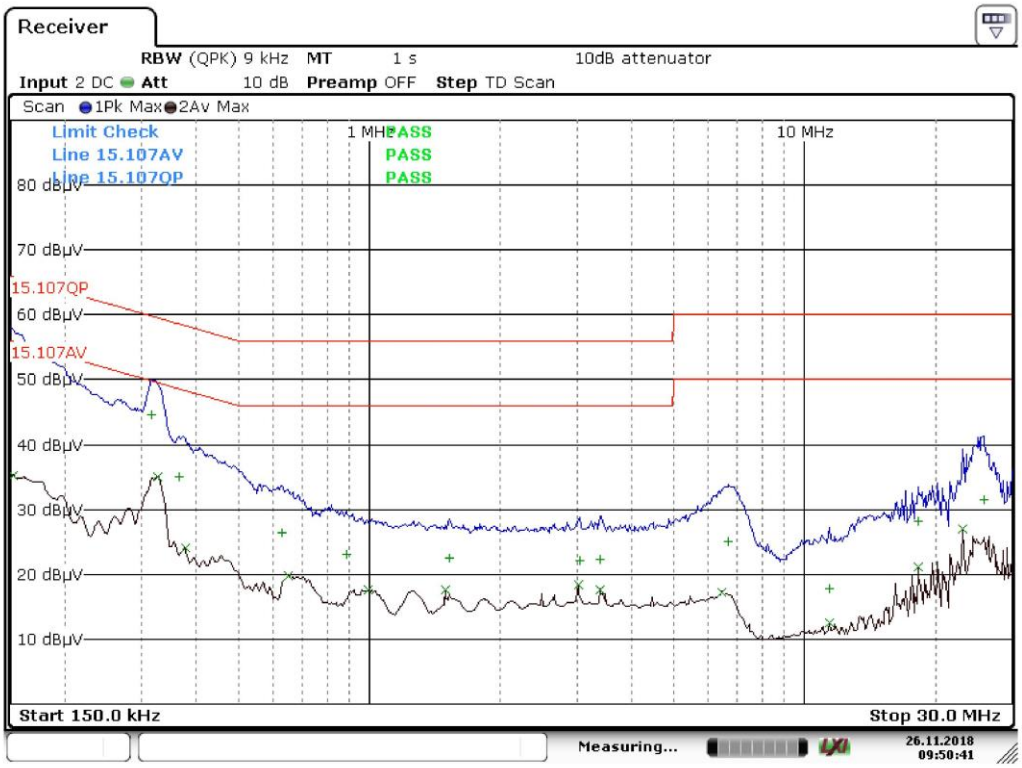


Result

Line	*Frequency Range (MHz)*	*Graphs*	*Remarks*	*Result*
N	0,15 – 30	G18203717	EUT supplied from 120 V ~ 60 Hz	P
L1	0,15 – 30	G18203718	EUT supplied from 120 V ~ 60 Hz	P
L1	0,15 – 30	G18203719	EUT supplied from USB, PC supply side	P
N	0,15 – 30	G18203720	EUT supplied from USB, PC supply side	P
N	0,15 – 30	G18203721	EUT supplied from PoE	P
L1	0,15 – 30	G18203722	EUT supplied from PoE	P

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

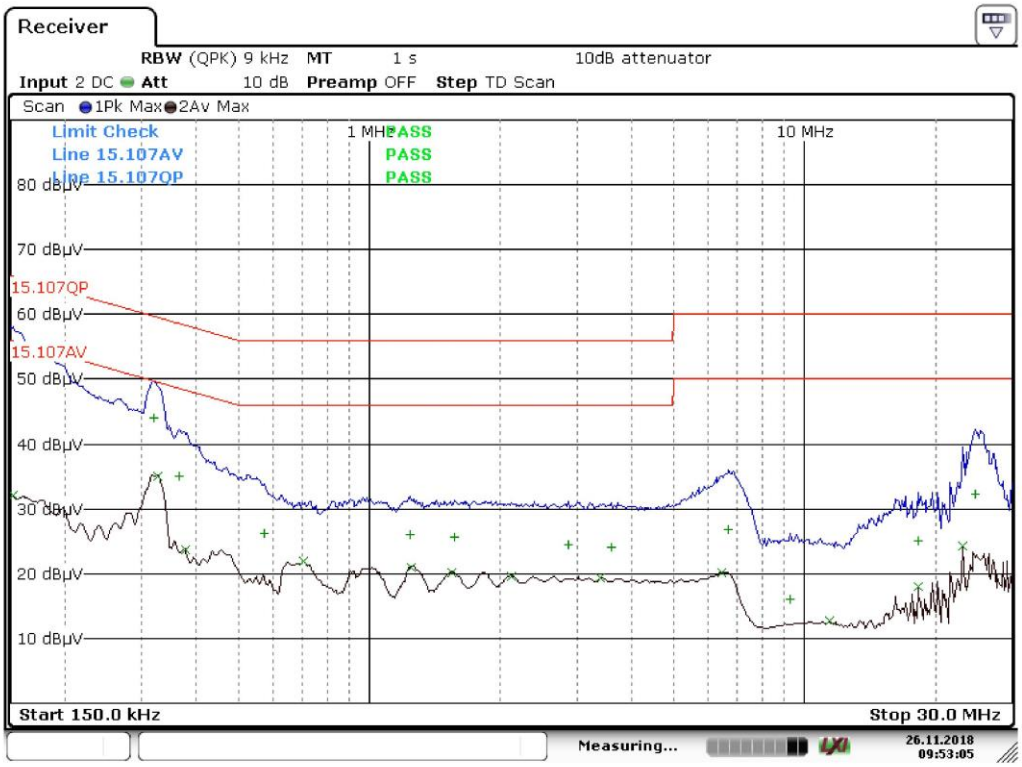
Graphs



Gandini 18203717

Trace/Detector	Frequency	Level dBµV	DeltaLimit
1 Quasi Peak	150.0000 kHz	53.66	-12.34 dB
2 Average	152.2500 kHz	35.17	-20.71 dB
1 Quasi Peak	316.5000 kHz	44.54	-15.26 dB
2 Average	325.5000 kHz	34.94	-14.63 dB
1 Quasi Peak	366.0000 kHz	35.01	-23.58 dB
2 Average	377.2500 kHz	24.04	-24.30 dB
1 Quasi Peak	629.2500 kHz	26.34	-29.66 dB
2 Average	649.5000 kHz	19.79	-26.21 dB
1 Quasi Peak	885.7500 kHz	23.18	-32.82 dB
2 Average	996.0000 kHz	17.53	-28.47 dB
2 Average	1.4933 MHz	17.64	-28.36 dB
1 Quasi Peak	1.5315 MHz	22.59	-33.41 dB
2 Average	3.0255 MHz	18.36	-27.64 dB
1 Quasi Peak	3.0390 MHz	22.08	-33.92 dB
2 Average	3.3945 MHz	17.69	-28.31 dB
1 Quasi Peak	3.3968 MHz	22.30	-33.70 dB

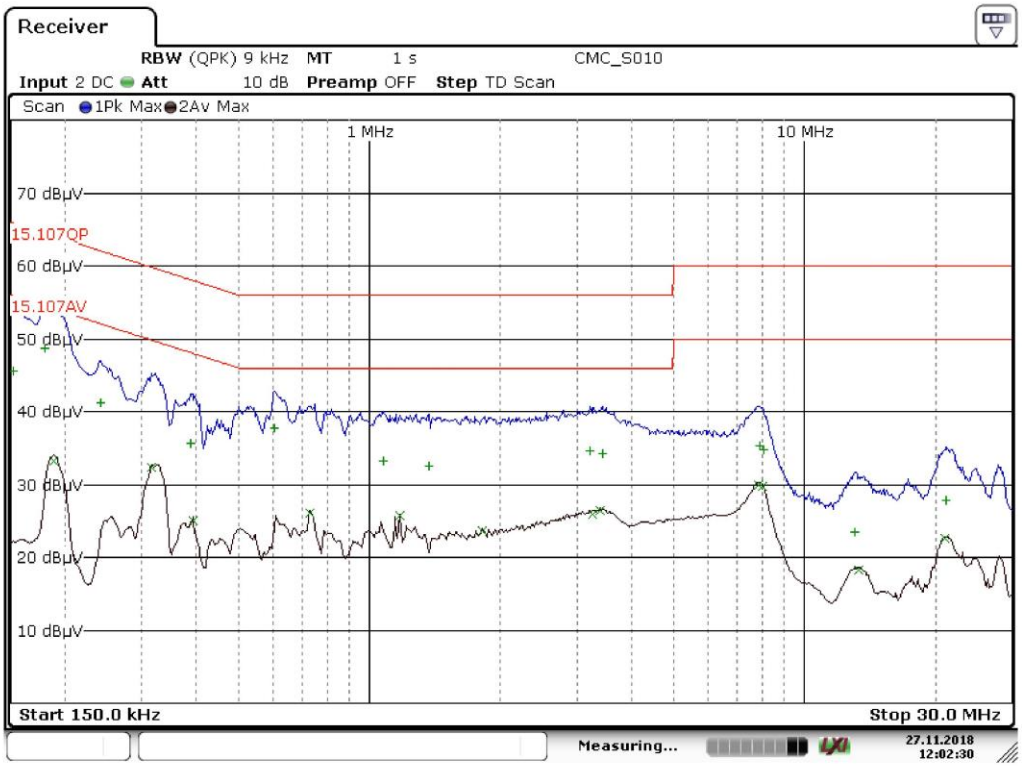
Trace/Detector	Frequency	Level dBµV	DeltaLimit
1 Quasi Peak	885.7500 kHz	23.18	-32.82 dB
2 Average	996.0000 kHz	17.53	-28.47 dB
2 Average	1.4933 MHz	17.64	-28.36 dB
1 Quasi Peak	1.5315 MHz	22.59	-33.41 dB
2 Average	3.0255 MHz	18.36	-27.64 dB
1 Quasi Peak	3.0390 MHz	22.08	-33.92 dB
2 Average	3.3945 MHz	17.69	-28.31 dB
1 Quasi Peak	3.3968 MHz	22.30	-33.70 dB
2 Average	6.4703 MHz	17.27	-32.73 dB
1 Quasi Peak	6.6908 MHz	25.12	-34.88 dB
1 Quasi Peak	11.3910 MHz	17.82	-42.18 dB
2 Average	11.3910 MHz	12.44	-37.56 dB
1 Quasi Peak	18.2423 MHz	28.20	-31.80 dB
2 Average	18.2423 MHz	21.08	-28.92 dB
2 Average	23.1293 MHz	26.96	-23.04 dB
1 Quasi Peak	25.8248 MHz	31.42	-28.58 dB



Gandini 18203718

Trace/Detector	Frequency	Level dBµV	DeltaLimit
1 Quasi Peak	1.2435 MHz	26.05	-29.95 dB
2 Average	1.2525 MHz	21.02	-24.98 dB
2 Average	1.5495 MHz	20.09	-25.91 dB
1 Quasi Peak	1.5675 MHz	25.55	-30.45 dB
2 Average	2.1233 MHz	19.59	-26.41 dB
1 Quasi Peak	2.8657 MHz	24.41	-31.59 dB
2 Average	3.3945 MHz	19.33	-26.67 dB
1 Quasi Peak	3.6083 MHz	23.98	-32.02 dB
2 Average	6.4433 MHz	20.12	-29.88 dB
1 Quasi Peak	6.6998 MHz	26.73	-33.27 dB
1 Quasi Peak	9.2535 MHz	16.08	-43.92 dB
2 Average	11.3910 MHz	12.62	-37.38 dB
2 Average	18.2423 MHz	17.97	-32.03 dB
1 Quasi Peak	18.2445 MHz	25.12	-34.88 dB
2 Average	23.1293 MHz	24.30	-25.70 dB
1 Quasi Peak	24.7763 MHz	32.22	-27.78 dB

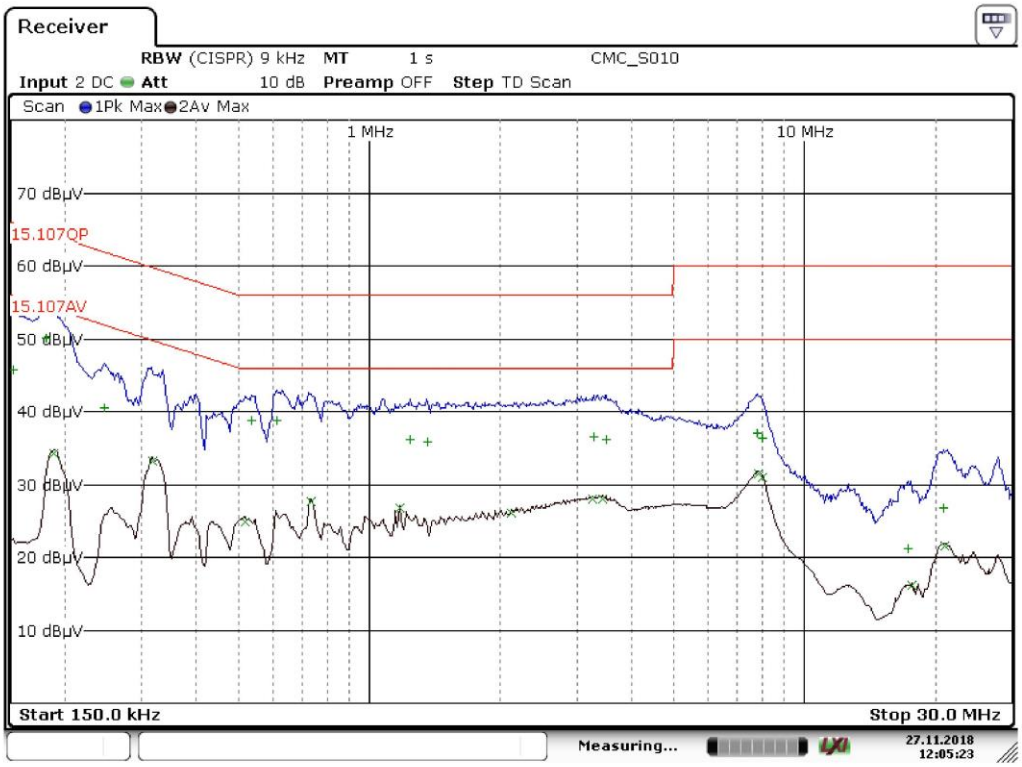
Trace/Detector	Frequency	Level dBµV	DeltaLimit
1 Quasi Peak	1.2435 MHz	26.05	-29.95 dB
2 Average	1.2525 MHz	21.02	-24.98 dB
2 Average	1.5495 MHz	20.09	-25.91 dB
1 Quasi Peak	1.5675 MHz	25.55	-30.45 dB
2 Average	2.1233 MHz	19.59	-26.41 dB
1 Quasi Peak	2.8657 MHz	24.41	-31.59 dB
2 Average	3.3945 MHz	19.33	-26.67 dB
1 Quasi Peak	3.6083 MHz	23.98	-32.02 dB
2 Average	6.4433 MHz	20.12	-29.88 dB
1 Quasi Peak	6.6998 MHz	26.73	-33.27 dB
1 Quasi Peak	9.2535 MHz	16.08	-43.92 dB
2 Average	11.3910 MHz	12.62	-37.38 dB
2 Average	18.2423 MHz	17.97	-32.03 dB
1 Quasi Peak	18.2445 MHz	25.12	-34.88 dB
2 Average	23.1293 MHz	24.30	-25.70 dB
1 Quasi Peak	24.7763 MHz	32.22	-27.78 dB



Gandini 19203719

Trace/Detector	Frequency	Level dBµV	DeltaLimit
1 Quasi Peak	152.2500 kHz	45.58	-20.30 dB
1 Quasi Peak	179.2500 kHz	48.76	-15.76 dB
2 Average	188.2500 kHz	33.29	-20.82 dB
1 Quasi Peak	242.2500 kHz	41.17	-20.85 dB
2 Average	316.5000 kHz	32.31	-17.49 dB
1 Quasi Peak	388.5000 kHz	35.62	-22.48 dB
2 Average	393.0000 kHz	25.09	-22.91 dB
1 Quasi Peak	604.5000 kHz	37.68	-18.32 dB
2 Average	730.5000 kHz	26.06	-19.94 dB
1 Quasi Peak	1.0793 MHz	33.29	-22.71 dB
2 Average	1.1760 MHz	25.72	-20.28 dB
1 Quasi Peak	1.3695 MHz	32.54	-23.46 dB
2 Average	1.8195 MHz	23.68	-22.32 dB
1 Quasi Peak	3.2055 MHz	34.61	-21.39 dB
2 Average	3.2527 MHz	25.94	-20.06 dB
2 Average	3.3945 MHz	26.35	-19.65 dB

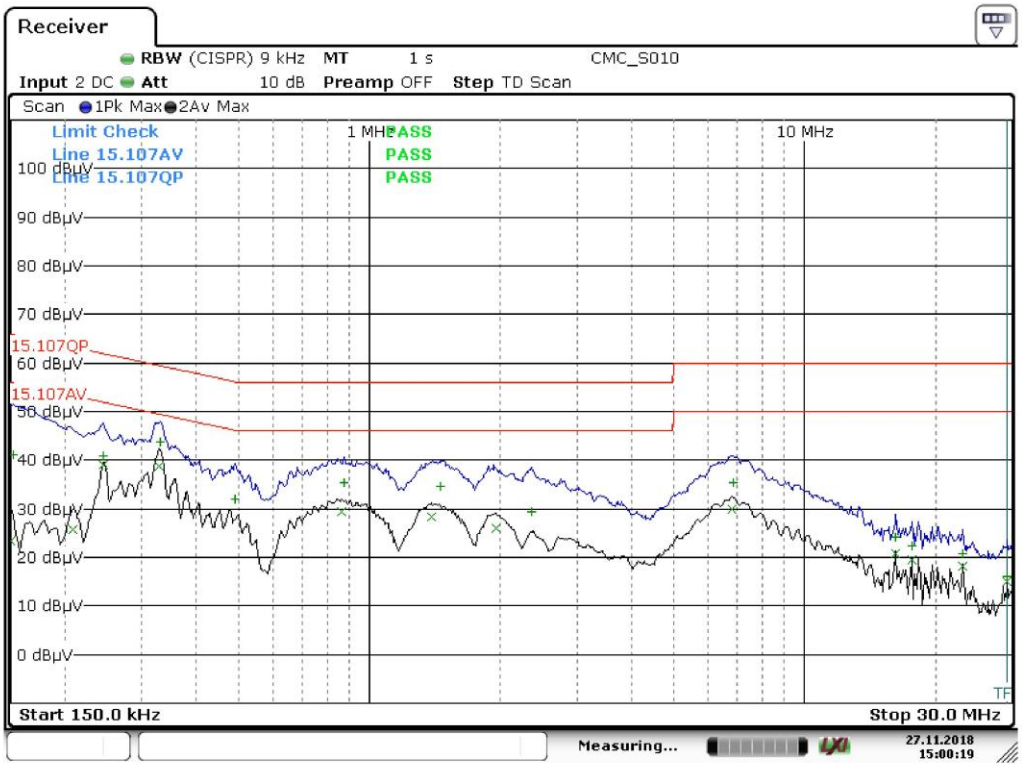
Trace/Detector	Frequency	Level dBµV	DeltaLimit
1 Quasi Peak	1.0793 MHz	33.29	-22.71 dB
2 Average	1.1760 MHz	25.72	-20.28 dB
1 Quasi Peak	1.3695 MHz	32.54	-23.46 dB
2 Average	1.8195 MHz	23.68	-22.32 dB
1 Quasi Peak	3.2055 MHz	34.61	-21.39 dB
2 Average	3.2527 MHz	25.94	-20.06 dB
2 Average	3.3945 MHz	26.35	-19.65 dB
1 Quasi Peak	3.4485 MHz	34.32	-21.68 dB
2 Average	7.8405 MHz	29.86	-20.14 dB
1 Quasi Peak	7.8788 MHz	35.37	-24.63 dB
2 Average	7.9823 MHz	29.77	-20.23 dB
1 Quasi Peak	8.0340 MHz	34.80	-25.20 dB
1 Quasi Peak	13.1010 MHz	23.52	-36.48 dB
2 Average	13.3575 MHz	18.32	-31.68 dB
2 Average	21.0525 MHz	22.53	-27.47 dB
1 Quasi Peak	21.2370 MHz	27.76	-32.24 dB



Gandini 19203720

Trace/Detector	Frequency	Level dBµV	DeltaLimit
1 Quasi Peak	152.2500 kHz	45.66	-20.22 dB
1 Quasi Peak	181.5000 kHz	50.13	-14.29 dB
2 Average	188.2500 kHz	34.32	-19.79 dB
1 Quasi Peak	246.7500 kHz	40.48	-21.39 dB
2 Average	318.7500 kHz	33.25	-16.49 dB
2 Average	519.0000 kHz	24.95	-21.05 dB
1 Quasi Peak	537.0000 kHz	38.84	-17.16 dB
1 Quasi Peak	613.5000 kHz	38.80	-17.20 dB
2 Average	732.7500 kHz	27.73	-18.27 dB
2 Average	1.1760 MHz	26.79	-19.21 dB
1 Quasi Peak	1.2390 MHz	36.10	-19.90 dB
1 Quasi Peak	1.3650 MHz	35.91	-20.09 dB
2 Average	2.1210 MHz	26.09	-19.91 dB
2 Average	3.2685 MHz	28.08	-17.92 dB
1 Quasi Peak	3.2798 MHz	36.46	-19.54 dB
2 Average	3.4485 MHz	28.06	-17.94 dB

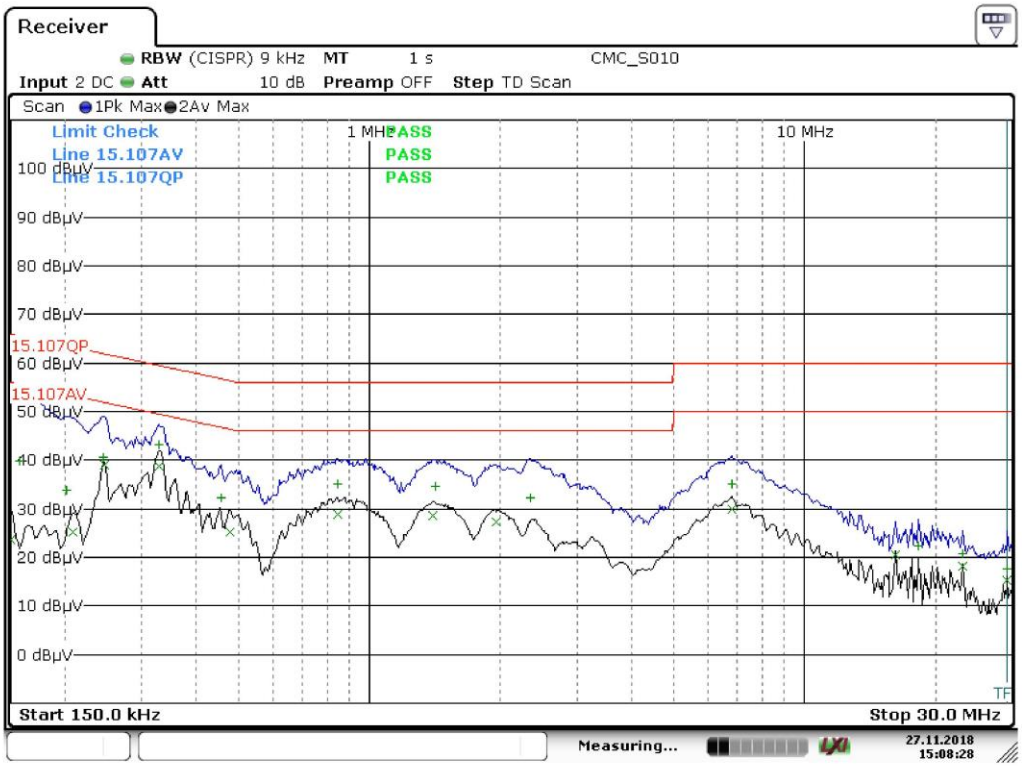
Trace/Detector	Frequency	Level dBµV	DeltaLimit
2 Average	1.1760 MHz	26.79	-19.21 dB
1 Quasi Peak	1.2390 MHz	36.10	-19.90 dB
1 Quasi Peak	1.3650 MHz	35.91	-20.09 dB
2 Average	2.1210 MHz	26.09	-19.91 dB
2 Average	3.2685 MHz	28.08	-17.92 dB
1 Quasi Peak	3.2798 MHz	36.46	-19.54 dB
2 Average	3.4485 MHz	28.06	-17.94 dB
1 Quasi Peak	3.5115 MHz	36.13	-19.87 dB
1 Quasi Peak	7.8090 MHz	37.00	-23.00 dB
2 Average	7.8203 MHz	31.42	-18.58 dB
1 Quasi Peak	7.9778 MHz	36.37	-23.63 dB
2 Average	7.9980 MHz	30.99	-19.01 dB
1 Quasi Peak	17.2680 MHz	21.24	-38.76 dB
2 Average	17.6933 MHz	16.25	-33.75 dB
1 Quasi Peak	20.8905 MHz	26.82	-33.18 dB
2 Average	20.9918 MHz	21.56	-28.44 dB



M18203721

Trace/Detector	Frequency	Level dBµV	DeltaLimit
2 Average	150.0000 kHz	23.44	-32.56 dB
1 Quasi Peak	152.2500 kHz	41.26	-24.62 dB
2 Average	208.5000 kHz	25.72	-27.54 dB
1 Quasi Peak	244.5000 kHz	40.77	-21.17 dB
2 Average	244.5000 kHz	39.04	-12.90 dB
2 Average	327.7500 kHz	38.70	-10.81 dB
1 Quasi Peak	330.0000 kHz	43.63	-15.82 dB
1 Quasi Peak	492.0000 kHz	31.87	-24.26 dB
2 Average	865.5000 kHz	29.45	-16.55 dB
1 Quasi Peak	874.5000 kHz	35.43	-20.57 dB
2 Average	1.3920 MHz	28.24	-17.76 dB
1 Quasi Peak	1.4618 MHz	34.61	-21.39 dB
2 Average	1.9545 MHz	26.07	-19.93 dB
1 Quasi Peak	2.3640 MHz	29.31	-26.69 dB
2 Average	6.8348 MHz	29.99	-20.01 dB
1 Quasi Peak	6.8505 MHz	35.40	-24.60 dB

Trace/Detector	Frequency	Level dBµV	DeltaLimit
2 Average	865.5000 kHz	29.45	-16.55 dB
1 Quasi Peak	874.5000 kHz	35.43	-20.57 dB
2 Average	1.3920 MHz	28.24	-17.76 dB
1 Quasi Peak	1.4618 MHz	34.61	-21.39 dB
2 Average	1.9545 MHz	26.07	-19.93 dB
1 Quasi Peak	2.3640 MHz	29.31	-26.69 dB
2 Average	6.8348 MHz	29.99	-20.01 dB
1 Quasi Peak	6.8505 MHz	35.40	-24.60 dB
1 Quasi Peak	16.2285 MHz	24.07	-35.93 dB
2 Average	16.2285 MHz	20.72	-29.28 dB
1 Quasi Peak	17.6933 MHz	22.45	-37.55 dB
2 Average	17.6933 MHz	19.36	-30.64 dB
1 Quasi Peak	23.1293 MHz	20.86	-39.14 dB
2 Average	23.1293 MHz	18.15	-31.85 dB
1 Quasi Peak	29.2335 MHz	16.18	-43.82 dB
2 Average	29.2358 MHz	14.94	-35.06 dB



M18203722

Trace/Detector	Frequency	Level dBµV	DeltaLimit
2 Average	150.0000 kHz	23.53	-32.47 dB
1 Quasi Peak	156.7500 kHz	39.79	-25.84 dB
1 Quasi Peak	201.7500 kHz	33.88	-29.66 dB
2 Average	208.5000 kHz	25.31	-27.95 dB
1 Quasi Peak	244.5000 kHz	40.66	-21.28 dB
2 Average	246.7500 kHz	39.04	-12.83 dB
1 Quasi Peak	327.7500 kHz	43.33	-16.18 dB
2 Average	327.7500 kHz	38.79	-10.72 dB
1 Quasi Peak	456.0000 kHz	32.26	-24.51 dB
2 Average	478.5000 kHz	25.31	-21.06 dB
1 Quasi Peak	845.2500 kHz	35.09	-20.91 dB
2 Average	845.2500 kHz	28.89	-17.11 dB
2 Average	1.3965 MHz	28.49	-17.51 dB
1 Quasi Peak	1.4168 MHz	34.50	-21.50 dB
2 Average	1.9545 MHz	27.24	-18.76 dB
1 Quasi Peak	2.3505 MHz	32.15	-23.85 dB

Trace/Detector	Frequency	Level dBµV	DeltaLimit
1 Quasi Peak	456.0000 kHz	32.26	-24.51 dB
2 Average	478.5000 kHz	25.31	-21.06 dB
1 Quasi Peak	845.2500 kHz	35.09	-20.91 dB
2 Average	845.2500 kHz	28.89	-17.11 dB
2 Average	1.3965 MHz	28.49	-17.51 dB
1 Quasi Peak	1.4168 MHz	34.50	-21.50 dB
2 Average	1.9545 MHz	27.24	-18.76 dB
1 Quasi Peak	2.3505 MHz	32.15	-23.85 dB
1 Quasi Peak	6.8010 MHz	35.23	-24.77 dB
2 Average	6.8100 MHz	29.81	-20.19 dB
2 Average	16.2285 MHz	20.63	-29.37 dB
1 Quasi Peak	18.2423 MHz	22.24	-37.76 dB
1 Quasi Peak	23.1293 MHz	20.90	-39.10 dB
2 Average	23.1293 MHz	18.20	-31.80 dB
1 Quasi Peak	29.2358 MHz	17.63	-42.37 dB
2 Average	29.2358 MHz	15.38	-34.62 dB

9.2 Radiated emission

Tested by ..... :	G. Gandini	
Test date ..... :	18.10.18	
Test location (stand) ..... :	Semi-anechoic chamber (CMC A070)	
Reference standards ..... :	FCC Rules and Regulation; Titles 47 Part. 15.109 ANSI C63.4 cl. 8	
Test set-up description ..... :	☒	Table top equipment set-up (80 cm above the reference ground plane)
	☐	Floor standing equipment set-up (insulating material up to 12 mm thick)
	☐	False floor installation equipment set-up (insulating material up to 34 cm above the reference ground plane)
Supplementary test set-up description ..... :	--	
Test method applied ..... :	☒	OATS or SAC with measurement distance [m]: 10
Supplementary information..... :	--	

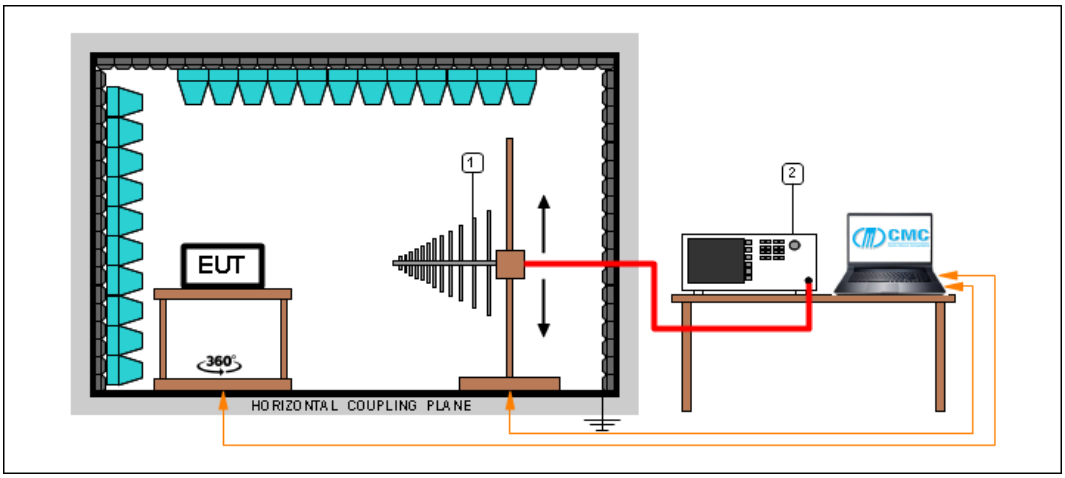
Acceptance limits

Class A radiated limits		
Frequency range (MHz)	*Limits [dB(µV/m)]*	*Measurement distance (m)*
30 to 88	39,08	10
88 to 216	43,52	10
216 to 960	46,44	10
Above 960	49,54	10

Class B radiated limits		
Frequency range (MHz)	*Limits [dB(µV/m)]*	*Measurement distance (m)*
30 to 88	40	3
88 to 216	43,52	3
216 to 960	46,02	3
Above 960	53,98	3

Test setup

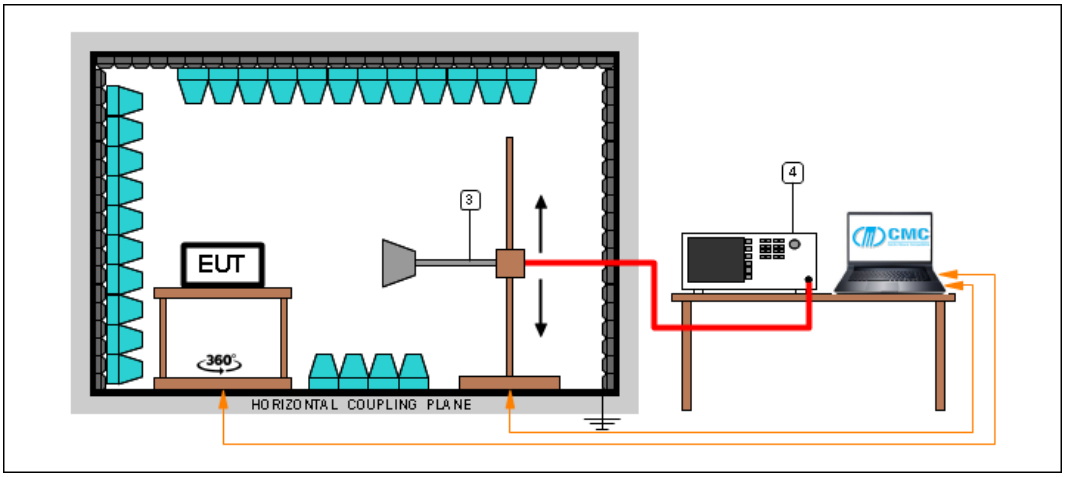
Frequency ≤ 1 GHz



Test setup PE004_02				
Nr.	*Id. Number*	*Manufacturer*	*Model*	*Description*
2	CMC S164	Rohde & Schwarz	ESU26	Receiver 20 Hz - 26.5 GHz
1	CMC S271	Schwarzbeck	BBA 9106 + VHBB 9124	Broadband Antenna

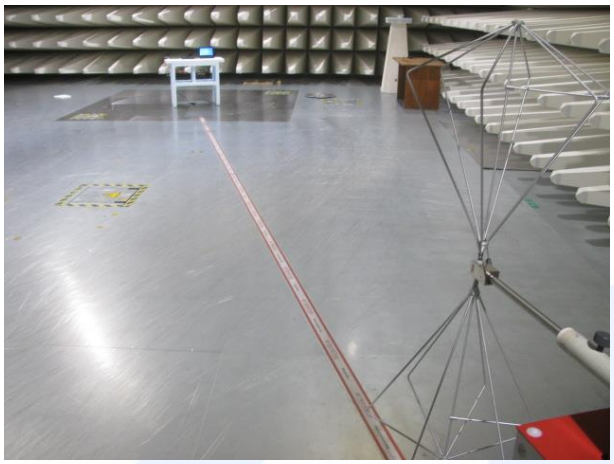
Test setup PE004_03				
Nr.	*Id. Number*	*Manufacturer*	*Model*	*Description*
2	CMC S164	Rohde & Schwarz	ESU26	Receiver 20 Hz - 26.5 GHz
1	CMC S287	Schwarzbeck	VUSLP 9111B	Broadband Antenna

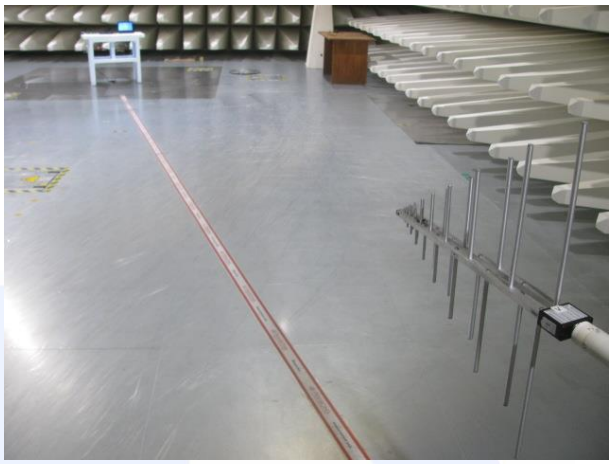
Frequency > 1 GHz

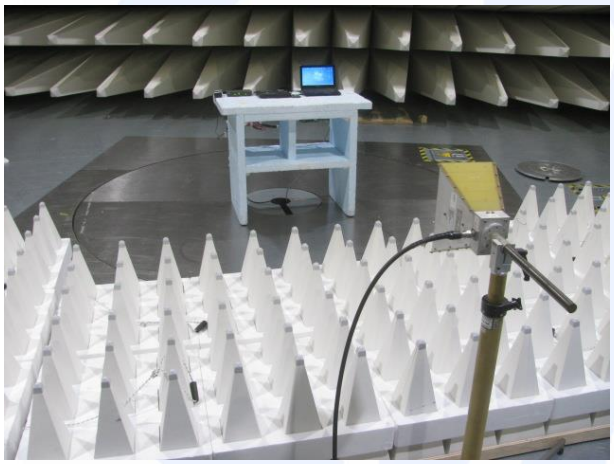


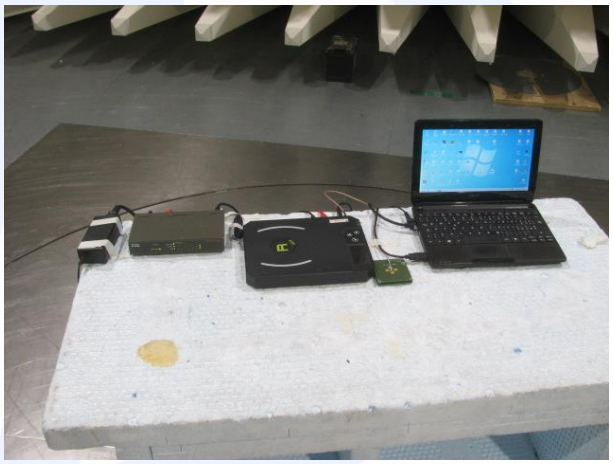
Test setup PE004_04				
Nr.	*Id. Number*	*Manufacturer*	*Model*	*Description*
2	CMC S164	Rohde & Schwarz	ESU26	Receiver 20 Hz - 26.5 GHz
1	CMC S108	Emco	3115	Waveguide antenna

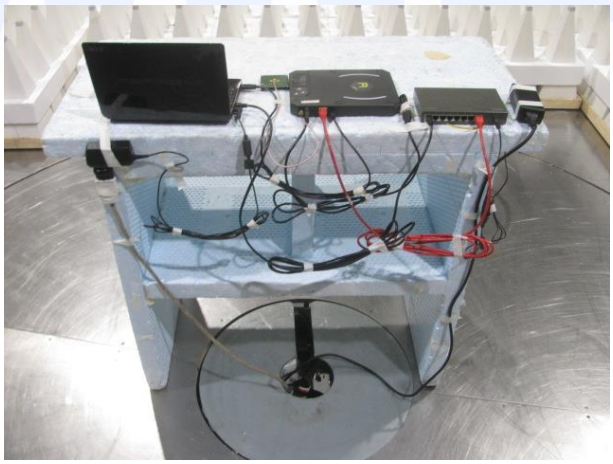
Photograph(s) of setup

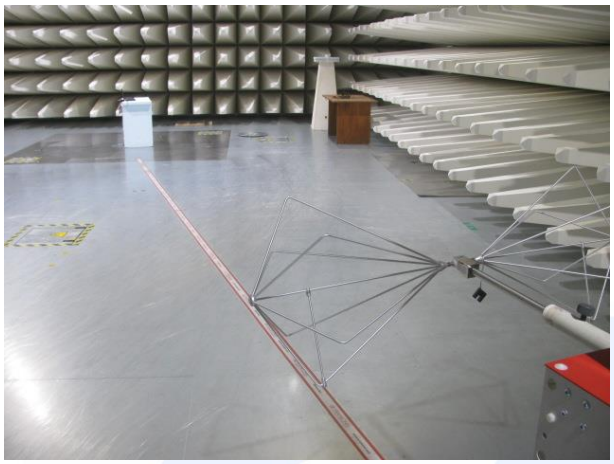


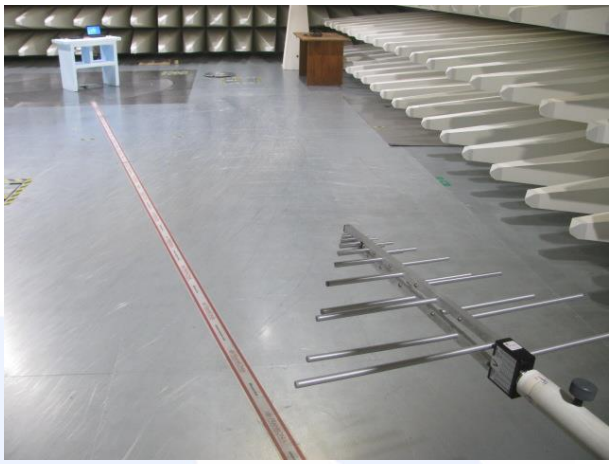


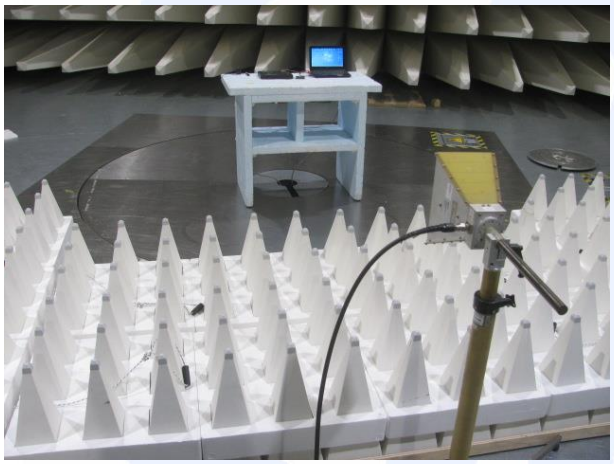


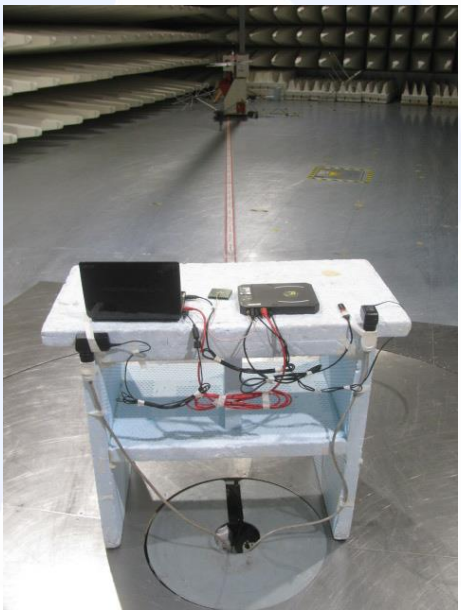


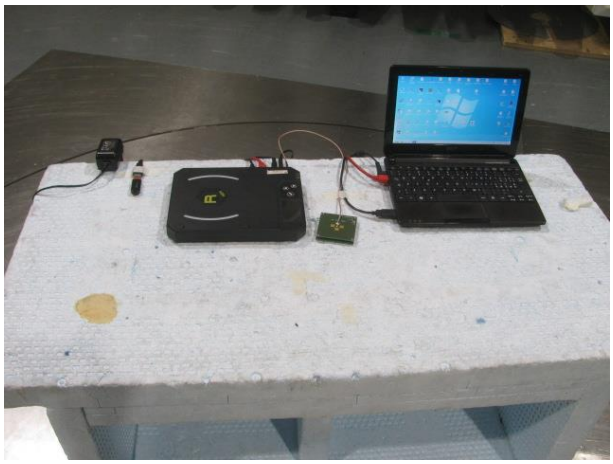










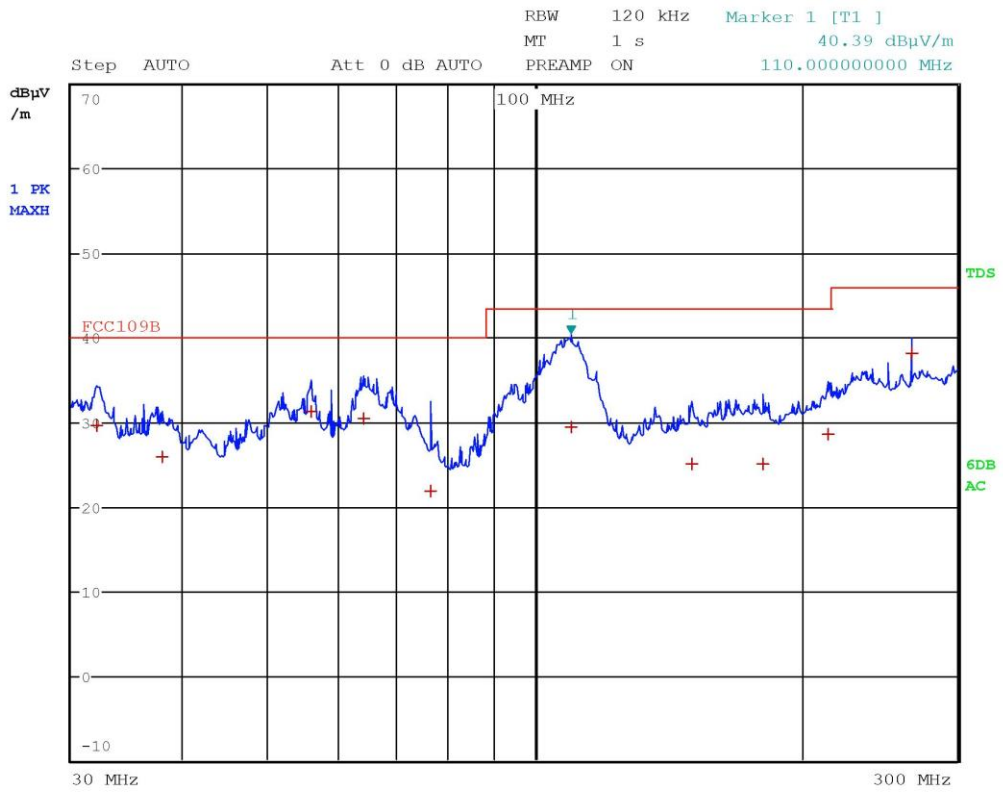


Result

Polarization	*Frequency Range (MHz)*	*Graphs*	*Remarks*	*Result*
V	30 – 300	G18203701	EUT supplied from 120 V ~ 60 Hz	P
H	30 – 300	G18203702	EUT supplied from 120 V ~ 60 Hz	P
H	300 – 1000	G18203703	EUT supplied from 120 V ~ 60 Hz	P
V	300 – 1000	G18203704	EUT supplied from 120 V ~ 60 Hz	P
V	1000 – 6000	G18203705	EUT supplied from 120 V ~ 60 Hz	P
H	1000 – 6000	G18203706	EUT supplied from 120 V ~ 60 Hz	P
H	1000 – 6000	G18203707	EUT supplied from PoE	P
V	1000 – 6000	G18203708	EUT supplied from PoE	P
V	30 – 300	G18203709	EUT supplied from PoE	P
H	30 – 300	G18203710	EUT supplied from PoE	P
H	300 – 1000	G18203711	EUT supplied from PoE	P
V	300 – 1000	G18203712	EUT supplied from PoE	P

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



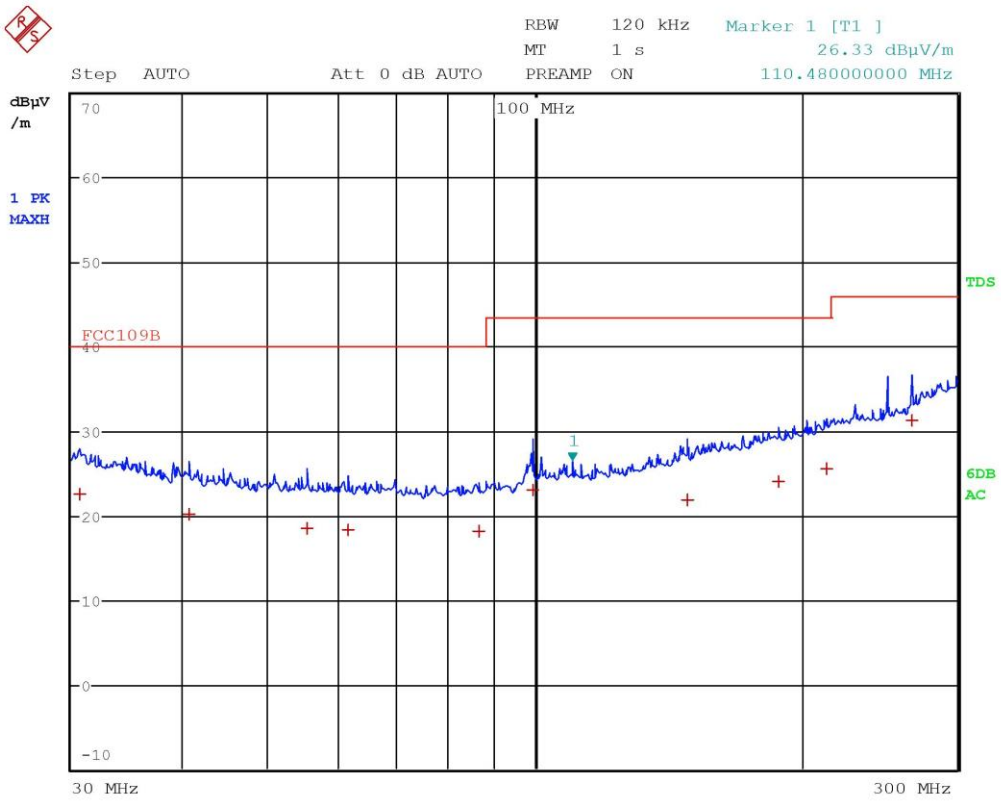
Panozzo 18203701 Vert In funzione alim SW

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC109B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	32.04 MHz	29.49	-10.50
1 Quasi Peak	38 MHz	25.80	-14.20
1 Quasi Peak	56 MHz	31.29	-8.70
1 Quasi Peak	64.16 MHz	30.47	-9.52
1 Quasi Peak	76.24 MHz	21.77	-18.22
1 Quasi Peak	110 MHz	29.44	-14.08
1 Quasi Peak	150.24 MHz	25.03	-18.48
1 Quasi Peak	181.04 MHz	25.00	-18.51
1 Quasi Peak	214.52 MHz	28.60	-14.92
1 Quasi Peak	266.68 MHz	38.09	-7.92

Panozzo 18203701 Vert In funzione alim SW



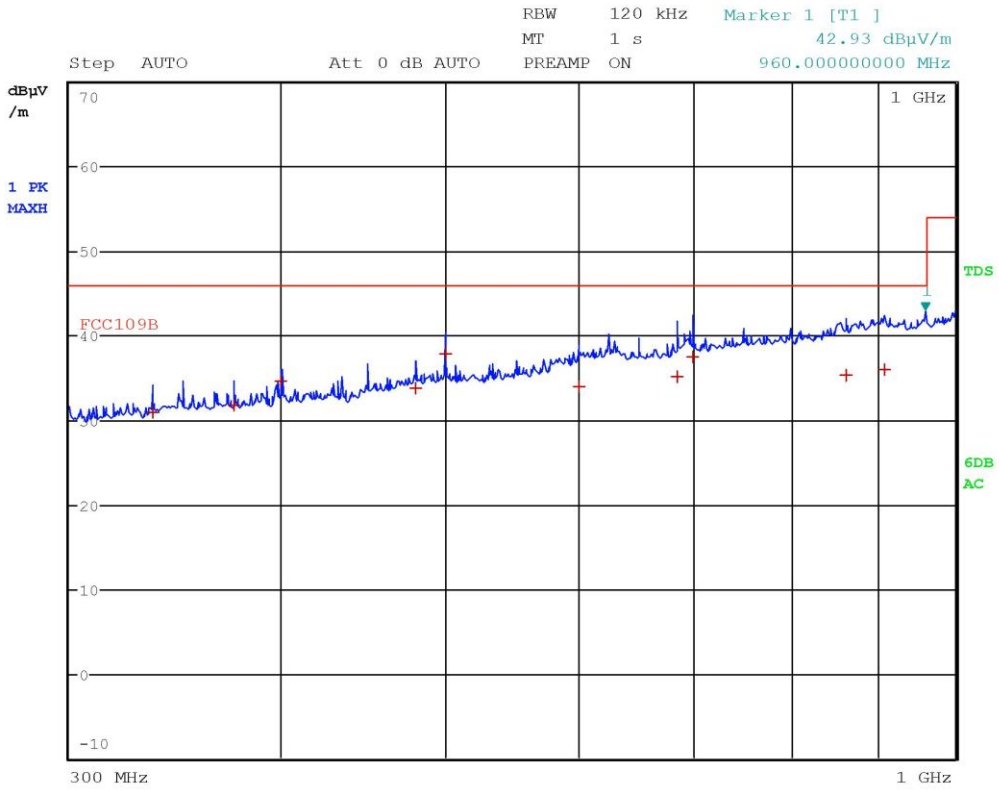
Panozzo 18203702 Horiz. In funzione alim SW

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC109B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	30.64 MHz	22.57	-17.42
1 Quasi Peak	40.64 MHz	20.16	-19.83
1 Quasi Peak	55.4 MHz	18.52	-21.47
1 Quasi Peak	61.48 MHz	18.25	-21.74
1 Quasi Peak	86.44 MHz	18.21	-21.78
1 Quasi Peak	99.52 MHz	23.00	-20.52
1 Quasi Peak	148.52 MHz	21.77	-21.74
1 Quasi Peak	188.68 MHz	24.06	-19.45
1 Quasi Peak	213.8 MHz	25.52	-17.99
1 Quasi Peak	266.68 MHz	31.24	-14.77

Panozzo 18203702 Horiz. In funzione alim SW



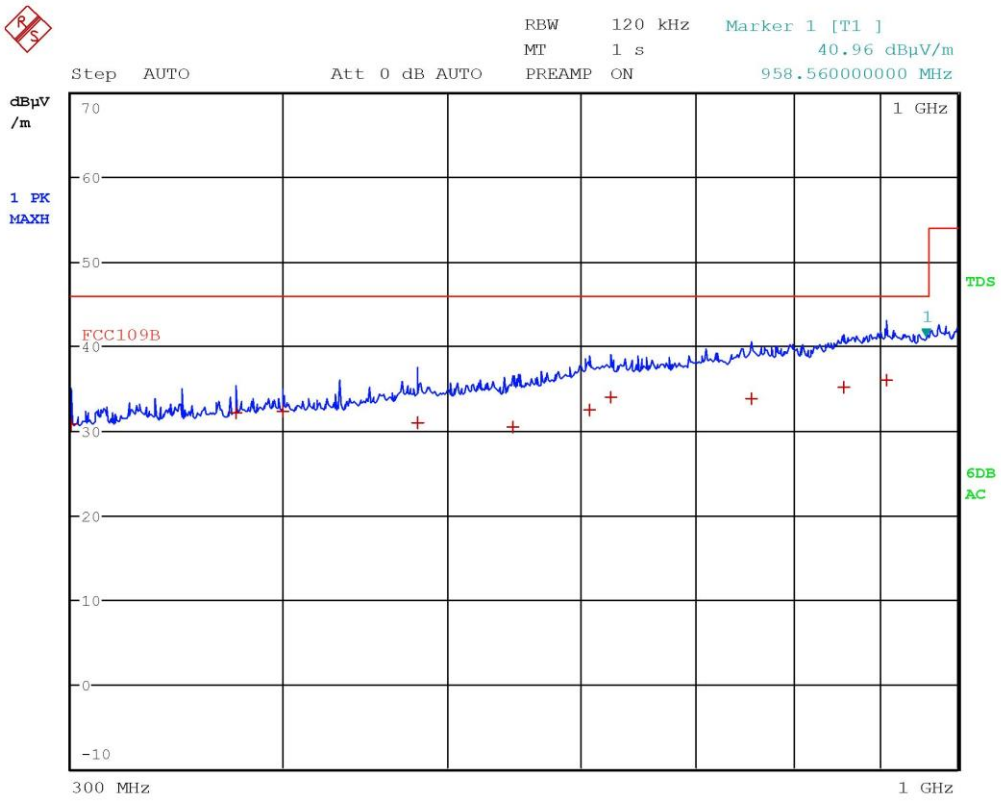
Panozzo 18203703 Horiz. In funzione alim. SW

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC109B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	336 MHz	30.93	-15.08
1 Quasi Peak	375 MHz	31.83	-14.18
1 Quasi Peak	400 MHz	34.60	-11.41
1 Quasi Peak	480 MHz	33.76	-12.25
1 Quasi Peak	500 MHz	37.87	-8.14
1 Quasi Peak	600.04 MHz	33.94	-12.07
1 Quasi Peak	685.04 MHz	35.11	-10.90
1 Quasi Peak	700 MHz	37.47	-8.54
1 Quasi Peak	861.96 MHz	35.23	-10.78
1 Quasi Peak	908.24 MHz	36.01	-10.00

Panozzo 18203703 Horiz. In funzione alim. SW



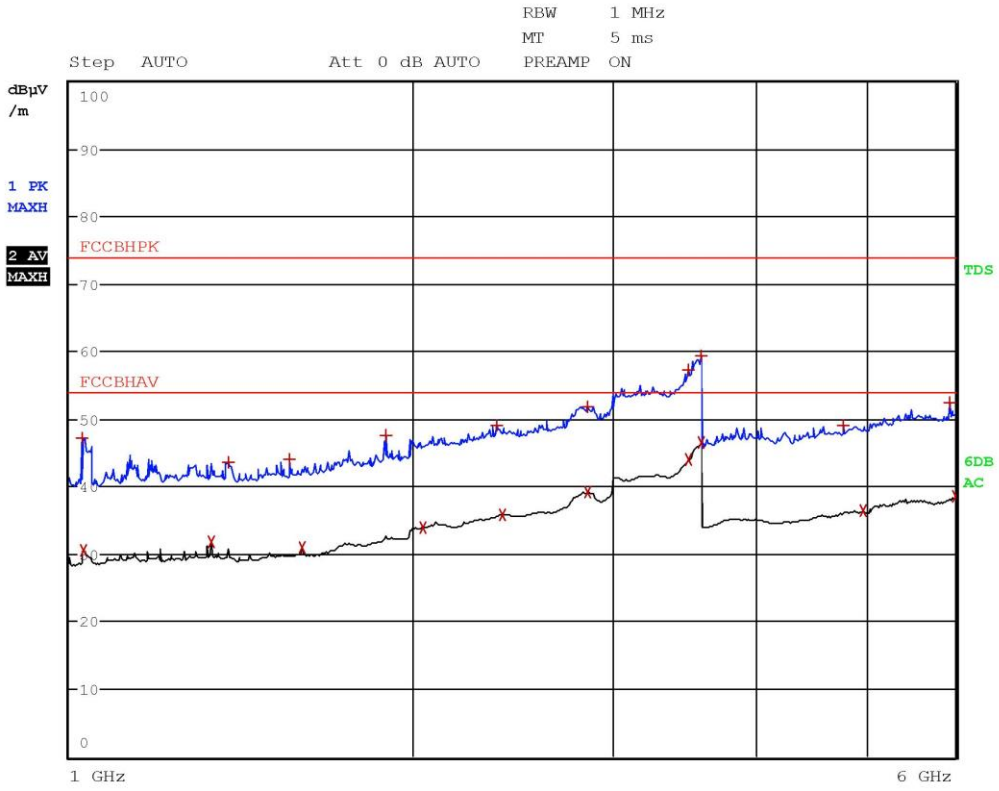
Panozzo 18203704 Vert . In funzione alim. SW

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC109B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	300 MHz	30.69	-15.32
1 Quasi Peak	375 MHz	32.15	-13.86
1 Quasi Peak	400 MHz	32.23	-13.78
1 Quasi Peak	480 MHz	30.88	-15.13
1 Quasi Peak	546.84 MHz	30.35	-15.67
1 Quasi Peak	607.16 MHz	32.41	-13.60
1 Quasi Peak	624.96 MHz	34.03	-11.98
1 Quasi Peak	755.28 MHz	33.81	-12.20
1 Quasi Peak	856.2 MHz	35.06	-10.95
1 Quasi Peak	908.12 MHz	35.96	-10.05

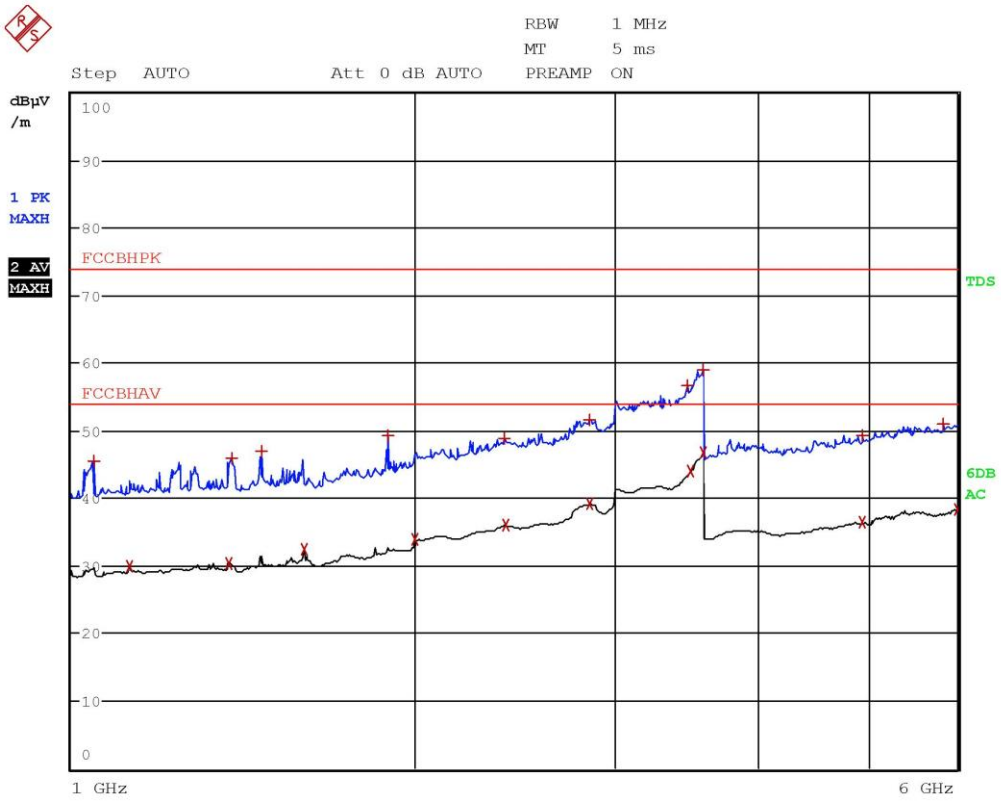
Panozzo 18203704 Vert . In funzione alim. SW



Panozzo 18203705 Vert. In funzione alim. SW

EDIT PEAK LIST (Prescan Results)			
Trace1:	FCCBHPK		
Trace2:	FCCBHAV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Max Peak	1.0272 GHz	47.24	-26.73
2 Average	1.0276 GHz	30.51	-23.46
2 Average	1.3332 GHz	31.89	-22.09
1 Max Peak	1.3804 GHz	43.58	-30.39
1 Max Peak	1.5596 GHz	44.10	-29.87
2 Average	1.6 GHz	31.00	-22.97
1 Max Peak	1.894 GHz	47.59	-26.38
2 Average	2.0436 GHz	33.88	-20.09
1 Max Peak	2.3704 GHz	48.96	-25.01
2 Average	2.3996 GHz	35.90	-18.07
1 Max Peak	2.8516 GHz	51.82	-22.15
2 Average	2.8516 GHz	39.28	-14.70
1 Max Peak	3.4956 GHz	57.23	-16.74
2 Average	3.5032 GHz	43.97	-10.00
1 Max Peak	3.5884 GHz	59.26	-14.71
2 Average	3.6 GHz	46.62	-7.35
1 Max Peak	4.7784 GHz	49.04	-24.93
2 Average	4.984 GHz	36.48	-17.49
1 Max Peak	5.9372 GHz	52.39	-21.58
2 Average	5.9976 GHz	38.55	-15.42

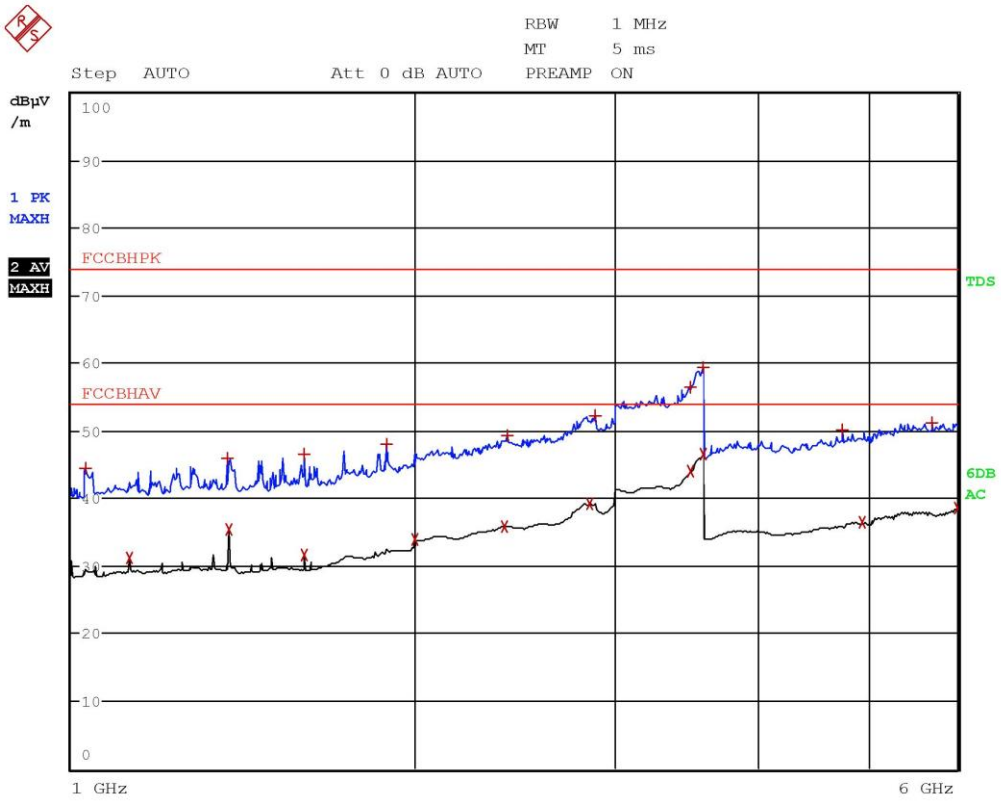
Panozzo 18203705 Vert. In funzione alim. SW



Panozzo 18203706 Horiz . In funzione alim. SW

EDIT PEAK LIST (Prescan Results)			
Trace1:	FCCBHPK		
Trace2:	FCCBHAV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Max Peak	1.0452 GHz	45.43	-28.54
2 Average	1.1252 GHz	29.96	-24.01
2 Average	1.3748 GHz	30.46	-23.52
1 Max Peak	1.3832 GHz	45.91	-28.06
1 Max Peak	1.4668 GHz	46.94	-27.03
2 Average	1.6 GHz	32.52	-21.45
1 Max Peak	1.894 GHz	49.30	-24.67
2 Average	2.0004 GHz	34.00	-19.97
1 Max Peak	2.3972 GHz	48.83	-25.14
2 Average	2.4092 GHz	35.98	-18.00
2 Average	2.8516 GHz	39.21	-14.76
1 Max Peak	2.852 GHz	51.58	-22.40
1 Max Peak	3.4772 GHz	56.59	-17.38
2 Average	3.5036 GHz	43.95	-10.03
1 Max Peak	3.5988 GHz	58.86	-15.12
2 Average	3.6 GHz	46.66	-7.31
1 Max Peak	4.9536 GHz	49.22	-24.76
2 Average	4.9536 GHz	36.46	-17.51
1 Max Peak	5.8296 GHz	50.93	-23.05
2 Average	5.9976 GHz	38.41	-15.57

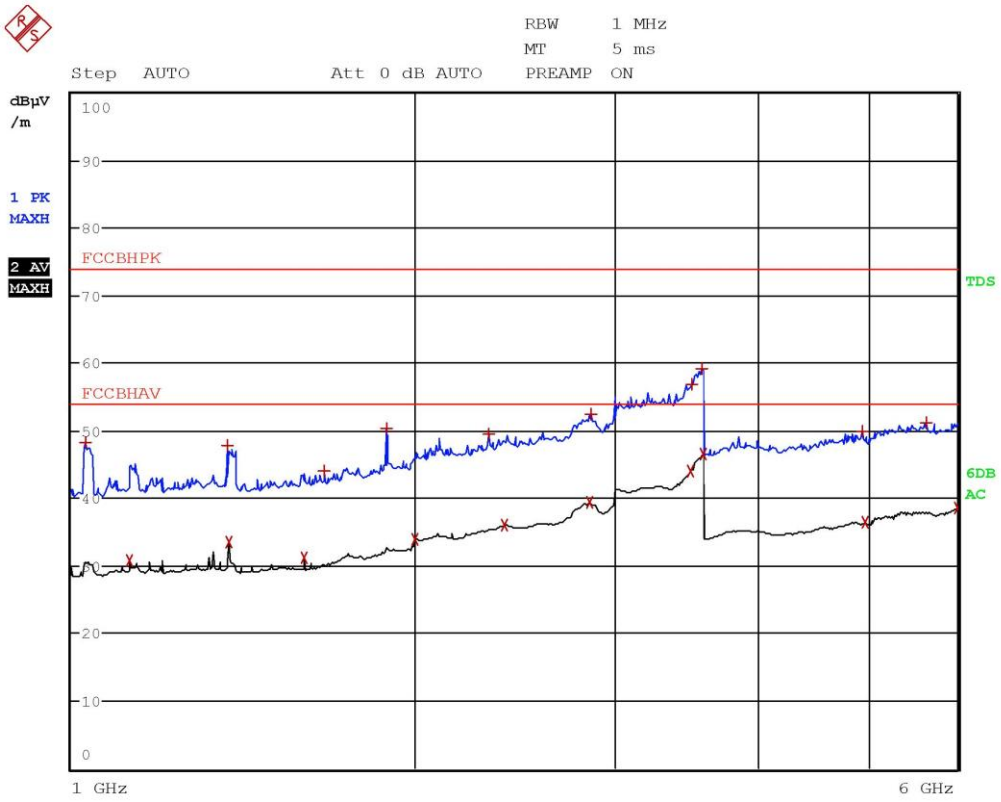
Panozzo 18203706 Horiz . In funzione alim. SW



Panozzo 18203707 Horiz . In funzione alim. POE

EDIT PEAK LIST (Prescan Results)			
Trace1:	FCCBHPK		
Trace2:	FCCBHAV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Max Peak	1.0276 GHz	44.50	-29.47
2 Average	1.1252 GHz	31.12	-22.85
1 Max Peak	1.3712 GHz	45.93	-28.04
2 Average	1.3752 GHz	35.32	-18.65
1 Max Peak	1.6 GHz	46.62	-27.35
2 Average	1.6 GHz	31.64	-22.33
1 Max Peak	1.8936 GHz	48.08	-25.89
2 Average	2.0004 GHz	33.88	-20.09
2 Average	2.3996 GHz	35.91	-18.06
1 Max Peak	2.4144 GHz	49.22	-24.75
2 Average	2.8512 GHz	39.25	-14.72
1 Max Peak	2.8876 GHz	52.14	-21.83
1 Max Peak	3.5028 GHz	56.47	-17.50
2 Average	3.504 GHz	44.02	-9.95
1 Max Peak	3.5952 GHz	59.44	-14.53
2 Average	3.5984 GHz	46.63	-7.34
1 Max Peak	4.7532 GHz	50.07	-23.90
2 Average	4.952 GHz	36.51	-17.47
1 Max Peak	5.6984 GHz	51.07	-22.90
2 Average	5.9976 GHz	38.49	-15.48

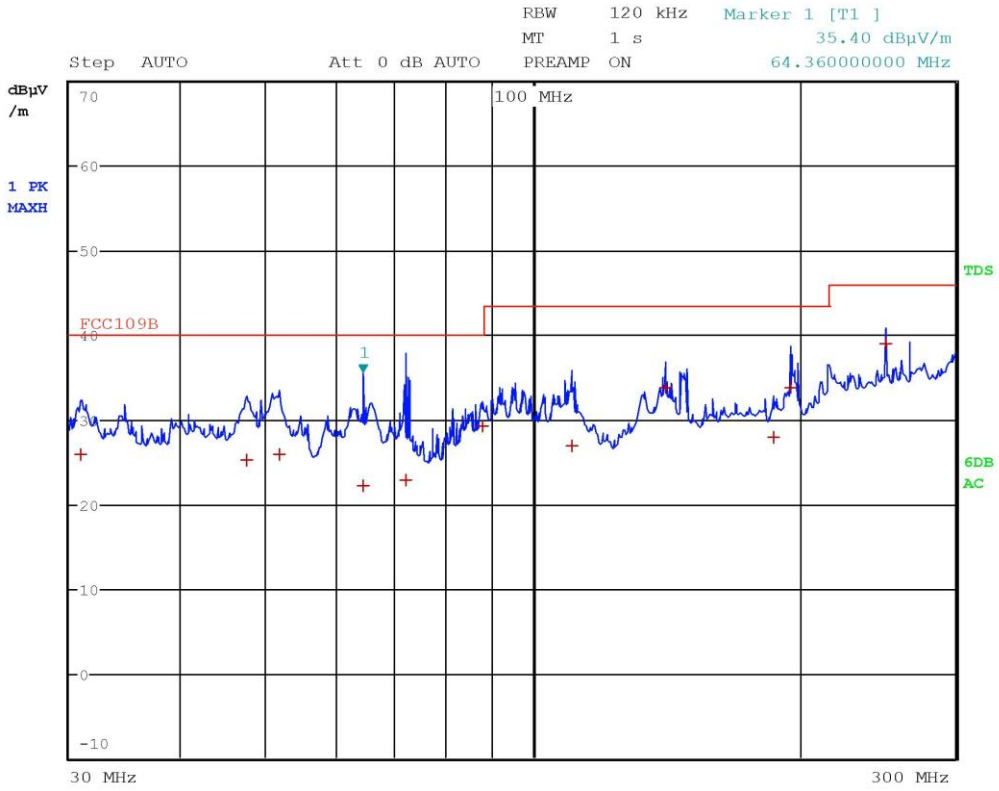
Panozzo 18203707 Horiz . In funzione alim. POE



Panozzo 18203708 Vert . In funzione alim. POE

EDIT PEAK LIST (Prescan Results)			
Trace1:	FCCBHPK		
Trace2:	FCCBHAV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Max Peak	1.0276 GHz	48.13	-25.84
2 Average	1.1252 GHz	30.81	-23.16
1 Max Peak	1.3696 GHz	47.76	-26.21
2 Average	1.3752 GHz	33.50	-20.47
2 Average	1.6 GHz	31.15	-22.82
1 Max Peak	1.666 GHz	43.96	-30.01
1 Max Peak	1.8936 GHz	50.25	-23.72
2 Average	2.0004 GHz	33.96	-20.01
1 Max Peak	2.3288 GHz	49.56	-24.41
2 Average	2.4 GHz	35.96	-18.01
2 Average	2.8524 GHz	39.28	-14.69
1 Max Peak	2.862 GHz	52.49	-21.48
1 Max Peak	3.502 GHz	56.88	-17.09
2 Average	3.5048 GHz	44.01	-9.96
1 Max Peak	3.5792 GHz	59.08	-14.89
2 Average	3.5996 GHz	46.63	-7.34
1 Max Peak	4.9488 GHz	49.91	-24.06
2 Average	4.9832 GHz	36.47	-17.50
1 Max Peak	5.6332 GHz	51.07	-22.90
2 Average	5.9976 GHz	38.50	-15.47

Panozzo 18203708 Vert . In funzione alim. POE



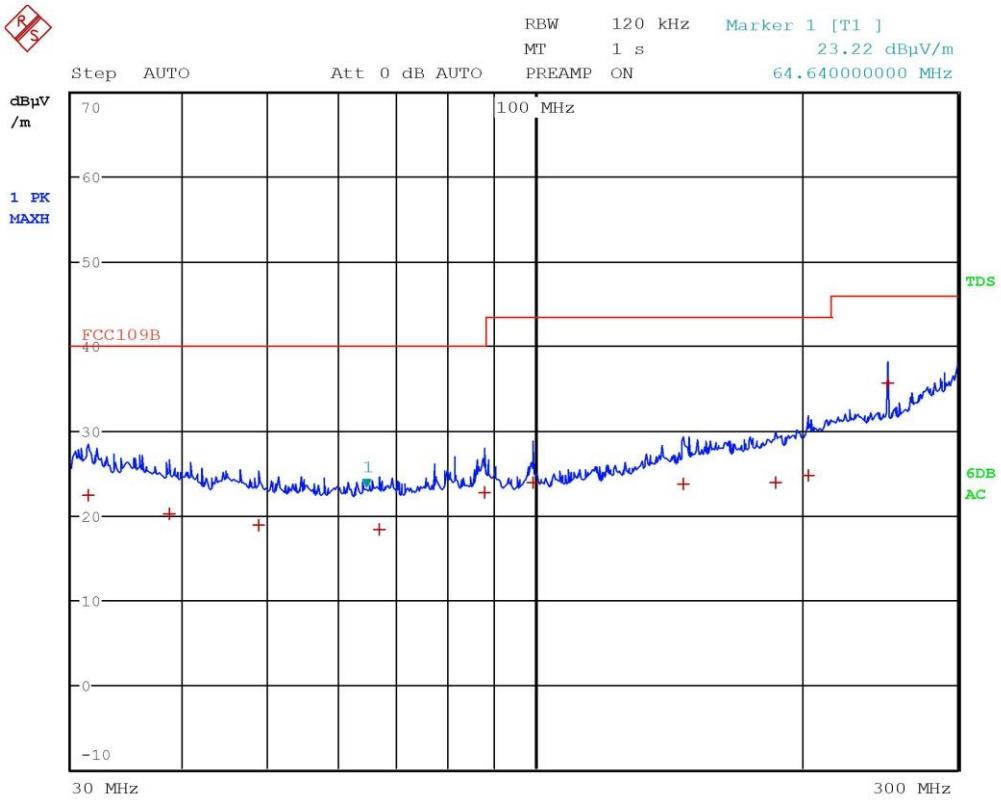
Panozzo 18203709 Vert . In funzione alim. POE

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC109B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	30.88 MHz	25.90	-14.09
1 Quasi Peak	47.48 MHz	25.21	-14.78
1 Quasi Peak	51.72 MHz	25.93	-14.06
1 Quasi Peak	64.36 MHz	22.23	-17.76
1 Quasi Peak	71.8 MHz	22.92	-17.07
1 Quasi Peak	87.64 MHz	29.21	-10.78
1 Quasi Peak	110.8 MHz	26.89	-16.63
1 Quasi Peak	141.2 MHz	33.85	-9.66
1 Quasi Peak	187.12 MHz	27.81	-15.70
1 Quasi Peak	195.76 MHz	33.84	-9.67
1 Quasi Peak	250 MHz	39.06	-6.95

Panozzo 18203709 Vert . In funzione alim. POE



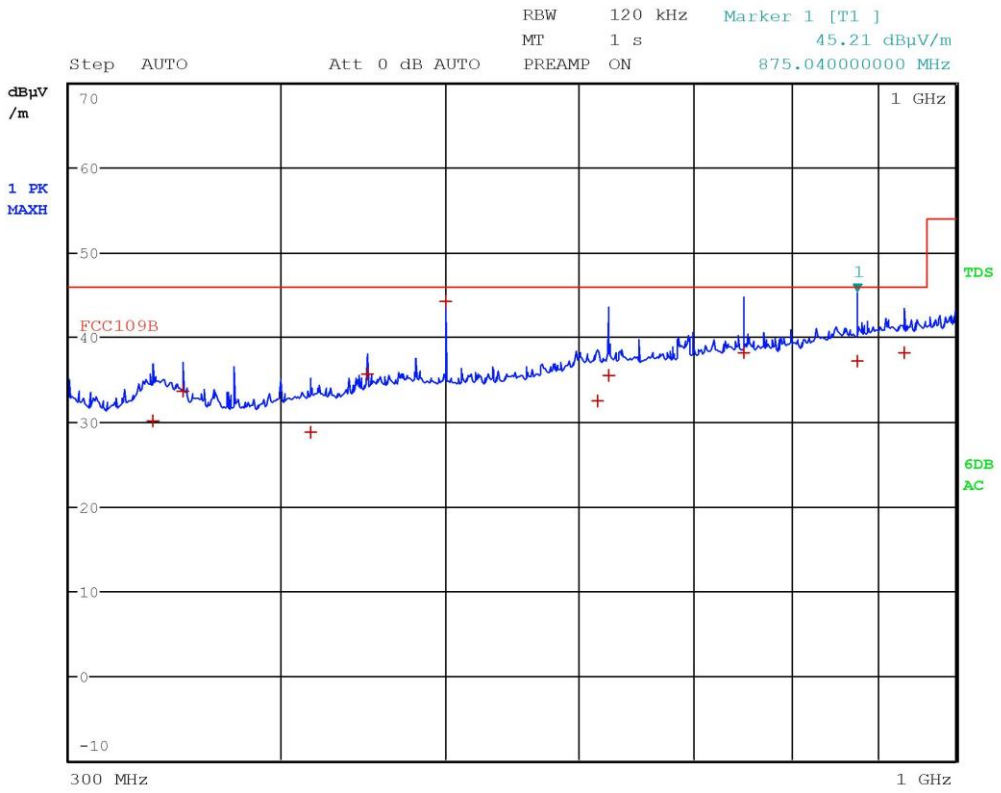
Panozzo 18203710 Horiz. In funzione alim. POE

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC109B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	31.28 MHz	22.40	-17.60
1 Quasi Peak	38.64 MHz	20.21	-19.78
1 Quasi Peak	48.8 MHz	18.77	-21.22
1 Quasi Peak	66.76 MHz	18.27	-21.72
1 Quasi Peak	87.64 MHz	22.77	-17.23
1 Quasi Peak	99.52 MHz	23.88	-19.63
1 Quasi Peak	146.88 MHz	23.74	-19.77
1 Quasi Peak	187.16 MHz	23.82	-19.69
1 Quasi Peak	203.28 MHz	24.73	-18.78
1 Quasi Peak	250 MHz	35.70	-10.31

Panozzo 18203710 Horiz. In funzione alim. POE



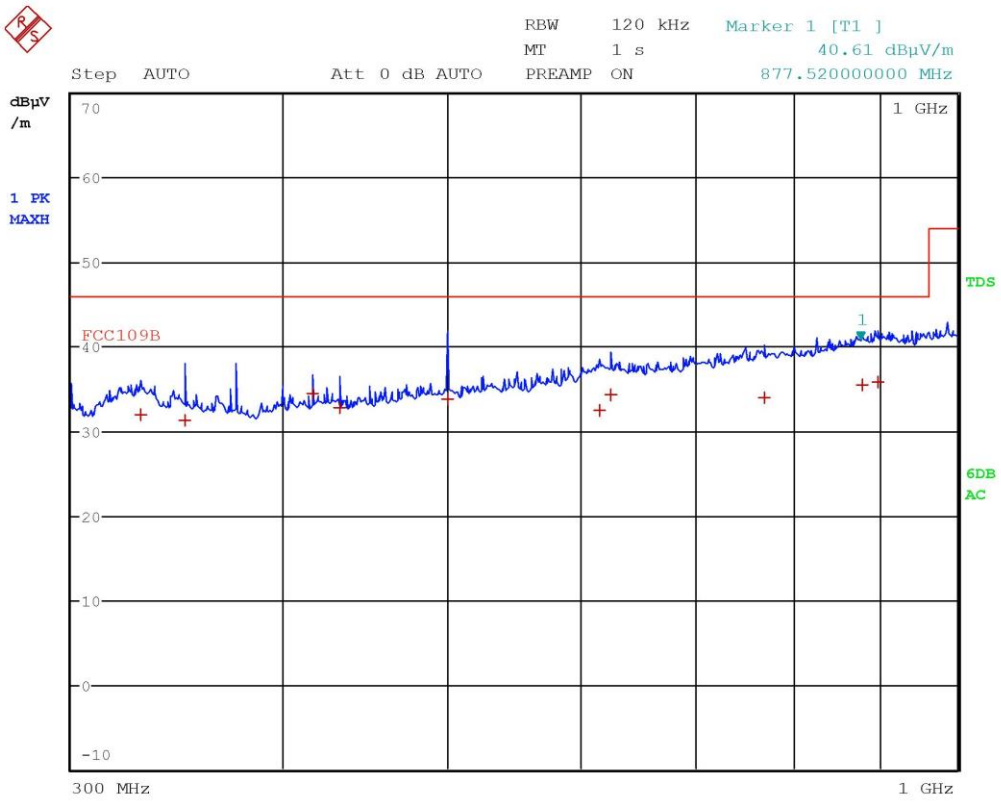
Panozzo 18203711 Horiz . In funzione alim. POE

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC109B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	336 MHz	30.15	-15.86
1 Quasi Peak	350 MHz	33.60	-12.41
1 Quasi Peak	416.68 MHz	28.76	-17.25
1 Quasi Peak	450 MHz	35.64	-10.37
1 Quasi Peak	500 MHz	44.20	-1.81
1 Quasi Peak	614.8 MHz	32.47	-13.54
1 Quasi Peak	625.04 MHz	35.40	-10.61
1 Quasi Peak	750 MHz	38.07	-7.94
1 Quasi Peak	875.04 MHz	37.08	-8.93
1 Quasi Peak	933.48 MHz	38.10	-7.91

Panozzo 18203711 Horiz . In funzione alim. POE



Panozzo 18203712 Vert. In funzione alim. POE

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC109B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	329.44 MHz	31.97	-14.04
1 Quasi Peak	350 MHz	31.24	-14.77
1 Quasi Peak	416.68 MHz	34.37	-11.64
1 Quasi Peak	431.96 MHz	32.82	-13.19
1 Quasi Peak	500 MHz	33.71	-12.30
1 Quasi Peak	614.96 MHz	32.50	-13.51
1 Quasi Peak	625 MHz	34.28	-11.73
1 Quasi Peak	769.4 MHz	33.96	-12.05
1 Quasi Peak	878.12 MHz	35.50	-10.51
1 Quasi Peak	898.24 MHz	35.86	-10.15

Panozzo 18203712 Vert. In funzione alim. POE

Attachment 1

Instruments list

Id. number	*Manufacturer*	*Model*	*Description*	*Serial number*	*Last calibration*	*Due date calibration*
CMC S010	Rohde & Schwarz	ESH3-Z2	Impulses Limiting Device	- - -	January 2018	January 2019
CMC S108	Emco	3115	Horn Antenna	9811-5622	June 2016	June 2019
CMC S164	Rohde & Schwarz	ESU26	EMC receiver	100052	January 2018	January 2019
CMC S200	Schwarzbeck	NSLK 8128	V-LISN	8128-273	January 2018	January 2019
CMC S227	Rohde & Schwarz	ESR7	EMI Test Receiver 7GHz	101121	January 2018	January 2019
CMC S271	Schwarzbeck	BBA 9106 + VHBB 9124	Broadband Antenna	831	June 2016	June 2019
CMC S287	Schwarzbeck	VUSLP 9111B	Broadband Antenna	9111B-203	June 2016	June 2019

Attachment 1

Measurement uncertainty

Test	*Test Setup*	*Expanded uncertainty*	*Note*
Conducted emission CISPR 16 LISN 50uH 0,009-0,0150MHz	PE001_01	3,4 dB	1
Conducted emission CISPR 16 LISN 50uH 0,150-30,0MHz	PE001_01	2,9 dB	1
Conducted emission CISPR 16 Voltage Probe 0,15-30MHz	PE001_02	2,9 dB	1
Conducted emission CISPR 16 Current Probe 0,15-30MHz	PE001_03	2,5 dB	1
Conducted emission CISPR 16 ISN 0,15-30MHz	PE001_04	4,7 dB	1
Clic CISPR 16 LISN 50uH 0,150-30,0MHz	PE001_05	3,3 dB	1
Disturbance Power 30-300 MHz	PE002_01	3,6 dB	1
Radiated Emission LAS 0,15-30MHz	PE003_01	2,0 dB	1
Radiated Emission CISPR 16 Loop Ant. 0,15-30MHz	PE004_01	4,0 dB	1
Radiated Emission CISPR 16 Bicon. Ant. 30-300MHz	PE004_02	3,9 dB	1
Radiated Emission CISPR 16 LogP. Ant. 300-1000MHz	PE004_03	3,8 dB	1
Radiated Emission CISPR 16 Horn Ant. 1-18GHz	PE004_04	4,2 dB	1
Human Exposure to electromagnetic fields	PE005_01	23,6 %	1
Harmonic current emissions test	PE006_01	10 mA + 2,6 %	1
Voltage fluctuation and flicker test	PE007_01	4,8 %	1
Radiated Immunity 80MHz-6GHz	PE102_XX	2,1 dB 0,82 V/m a 3V/m	1
Conducted Immunity 0,15-230MHz	PE105_XX	1,2 dB 0,44 V a 3V	1
AC Magnetic field	PE106_01	1,55 % 0,15 A/m a 10A/m	1
Pulse Magnetic field	PE107_01	6,24 % 18,7 A/m a 300A/m	1
Dumped Magnetic field	PE108_01	6,24 % 1,87 A/m a 30A/m	1
Common mode conducted immunity	PE112_01	2,20 % 0,22 V a 10V	1

Attachment 1

Test	Test Setup	Expanded uncertainty	Note
Power/Spurious 9kHz-30MHz	PR001_01	4,0 dB	1
Power/Spurious ERP 30-1000MHz d=10m	PR001_02+03	4,7 dB	1
Misura della potenza EiRP 1-18GHz d=3m	PR001_04	4,7 dB	1
Misura della potenza EiRP 18-40GHz d=3m	PR001_05	5,4 dB	1
Frequency error	PR002_01+02	< 1x10-7	1
Timing zero span (1001pts.)	PR002_01+02	0,2 % SWT	1
Modulation bandwidth	PR002_01+02	< 1x10-7	1
Conducted RF power and spurious emission	PR002_01+02	1,1 dB	1
Adjacent channel power	PR002_01+02	1,1 dB	1
Blocking	PR002_01+02	1,1 dB	1

Test	Test Setup	Expanded uncertainty	Note
Electrostatic discharge immunity test	PE101_0X		2
Electrical fast transients / burst immunity test	PE103_0X		2
Surge immunity test	PE104_0X		2
Short interruption immunity test	PE109_01		2
Rev_18_02 date 31/10/2018			

Note 1:

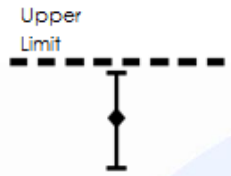
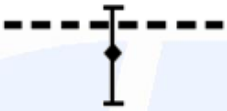
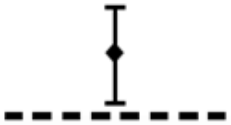
The expanded uncertainty reported according to the document EA-4-02 is based on a standard uncertainty multiplied by a coverage factor of K=2, providing a level of confidence of p = 95%

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

Attachment 1

Judgement of compliance

Case 1	Case 2	Case 3	Case 4
			
The sample complies with the requirements.	The sample complies with the requirements.	The sample does not comply with the requirements.	The sample does not comply with the requirements.
The measurement results is within the specification limit when the measurement uncertainty is taken into account.	It is not possible to state compliance using a 95% coverage probability for the expanded uncertainty although the measurement result is below the limit.	It is not possible to state compliance using a 95% coverage probability for the expanded uncertainty also the measurement result is upper the limit.	The measurement results is outside the specification limit when the measurement uncertainty is taken into account.

In agreement with ILAC-G8: 03/2009 Guidelines on the Reporting of Compliance with Specification

Quality manual references – Internal procedure

Internal Procedure PM001 rev. 3.0 (Quality Manual)	Measure procedure
Internal Procedure INC_M rev. 9.1 (Quality Manual)	Measurement uncertainty calculation