

**TEST REPORT****Nr. R20158001****Federal Communication Commission (FCC)**

Report Reference No.	R20158001
Date of issue:	28.09.2020
Total number pages:	45
Applicant's name	Gaposa S.r.l.
Address	Contrada ETE, 90 – 63900 Fermo (FM) – Italy
Test specification:	
Standards	FCC Rules & Regulations, Title 47:2019 Part 15 paragraph(s): 203, 204, 207, 209 and 231
Non-standard test method	N/A
Test Report Form No.	15-231
Test Report Form(s) Originator ..	CMC Centro Misure Compatibilità S.r.l.
Master TRF	2020-09
General disclaimer:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of CMC Centro Misure Compatibilità S.r.l.	
Test item description	Remote Control Transmitter
Trademark	Gaposa
Manufacturer	Gaposa S.r.l.
Model / Type reference	QCTX02W
FCC ID	UVLQCTZ02
Rating(s)	3 Vdc from battery
Report	
Tested by (name + signature)	G. Gandini
Approved by (name + signature)	R. Beghetto



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2 Reference standard	
FCC Rules and Regulation Title 47 part 15:2019	--
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	

Revision index	Date	Change history
1.0	28.09.2020	--



Testing and sampling:	
Date of receipt of test item	24.07.2020
Testing start date	03.09.2020
Testing end date	10.09.2020
Sampling procedure.....	Equipment used for testing was picked up by the manufacturer, at the end of the production process with random criterion. The results relate to the sample as it has been received.
Internal identification	Adhesive label with the product number P200759
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.	
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.	

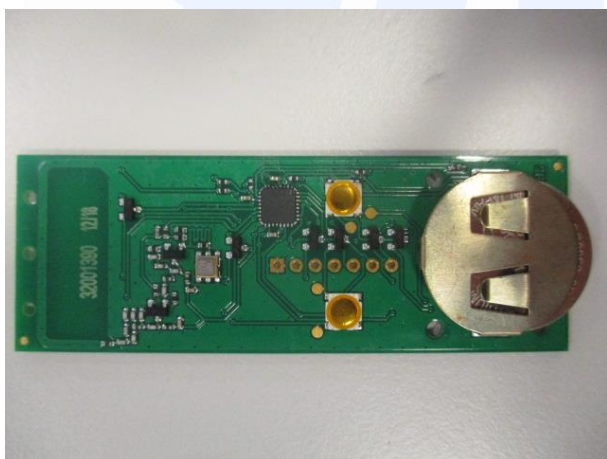
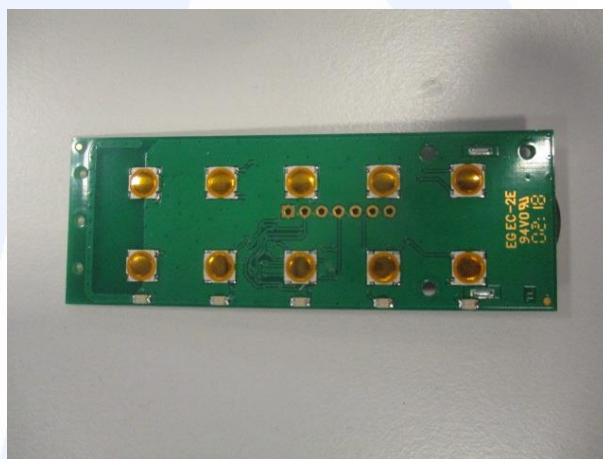


6 General description of test item(s)

Description	Remote Control Transmitter						
Model Number	QCTX02W						
FCC ID	UVLQCTZ02						
Serial Number	--						
Brand name	Gaposa						
Nominal frequency	434,15 MHz						
Duty cycle	47% (declared by the manufacturer)						
Rated power supply		Voltage and Frequency	Reference poles				
			N	L1	L2	L3	PE
	☐	AC:	☐	☐	☐	☐	☐
	☐	AC:	☐	☐	☐	☐	☐
	☒	DC: 3 V from battery					☐
Test configuration	☐	Table top equipment					
	☐	Floor standing equipment					
	☒	Hand-held equipment					
Type of equipment	☐	Transmitter unit					
	☐	Receiver unit					
Type of station	☒	Portable station					
	☐	Mobile station					
Operating modes	No.	Operating mode of test item					
	1	EUT in continuous transmission at maximum power					



6.1 Photos of the test item





7 Verdict summary section

FCC Rules & Regulations, Title 47:2019 Part 15 paragraph(s): 203, 204, 207, 209 and 231			
Clause	Requirement – Test case	Basic standard	Verdict
Part 15.203	Antenna requirements	ANSI C63.10	P
Part 15.207	Conducted emissions	ANSI C63.10	N/A (+)
Part 15.209	Radiated emissions	ANSI C63.10	P
Part 15.209 and 15.231(b) (e)	Fundamental and spurious emissions (≤ 1 GHz)	ANSI C63.10	P
Part 15.209 and 15.231	Spurious emissions (> 1 GHz)	ANSI C63.10	P
Part 15.231(c)	Occupied channel bandwidth	ANSI C63.10	P
Part 15.231(a) (e)	Periodic operation characteristics	ANSI C63.10	P

(+) Devices which only employ battery power. See FCC Part 15.207 (c)



Normative references	
Reference no.	Description
FCC Rules and Regulation Title 47 part 15:2019	--
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
ANSI C63.10:2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices





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 Test results

9.1 Antenna requirements

Tested by	G. Gandini	
Test date	03.09.2020	
Reference standards	FCC Rules and Regulation; Titles 47 Part. 15.203 and 15.204	
Test specification	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§ 15.211, 15.213, 15.217, 15.219, 15.221, or § 15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded	
Antenna type.....	☒	Integral antenna
	☐	External antenna
Antenna gain.....	0 dBi	
External R.F. power amplifier	Not Present	



9.2 Radiated emissions and spurious emissions (> 1 GHz)

Tested by	G. Gandini	
Test date	03.09.2020	
Test location (stand)	Semi-anechoic chamber (CMC A070)	
Reference standards	FCC Rules and Regulation; Titles 47 Part. 15.209 and 15.231 ANSI C63.10 cl. 6.3, 6.4, 6.5 and 6.6	
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	☒	SAC with measurement distance [m]: 10 or 3
Supplementary information.....	--	

Acceptance limits

Acceptance limits for emissions in restricted frequency bands ($f < 1000$ MHz)		
Frequency range (MHz)	Test distance (m)	Limits [dB(μ V/m)]
0,009 to 0,490	300	48,5 to 13,8
0,490 to 1,705	30	33,8 to 22,9
1,705 to 30	30	29,5
30 to 88	3	40
88 to 216	3	43,5
216 to 960	3	46,0
960 to 1000	3	54

Remarks: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz and 110–490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector. The results have been extrapolated to the specified distance using an extrapolation factor

Acceptance limits for emissions in restricted frequency bands ($f \geq 1000$ MHz)			
Frequency (MHz)	Test distance (m)	AV limits [dB(μ V/m)]	Peak limits [dB(μ V/m)]
> 1000	3	54	74



The restricted frequency bands are listed in the following table

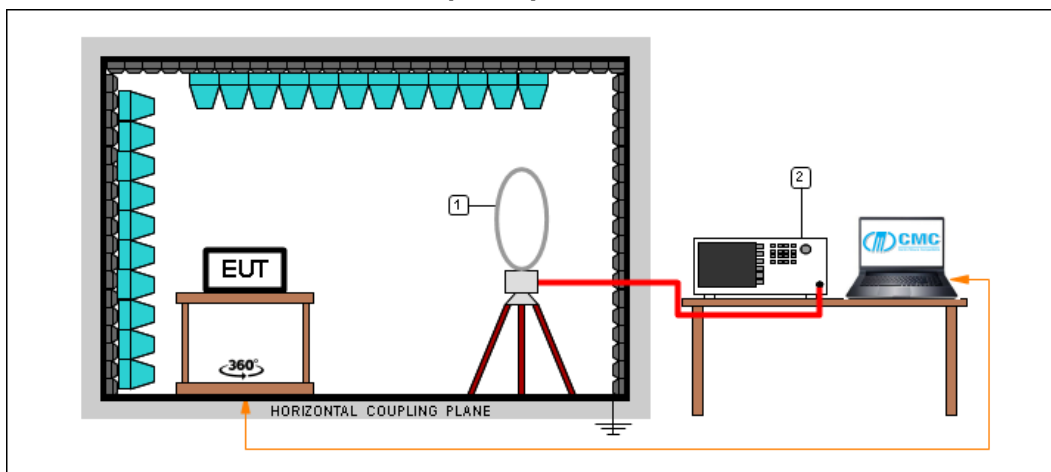
MHz	MHz	MHz	GHz
0,090 – 0,110	16,42 – 16,423	399,9 – 410	4,5 – 5,15
0,495 – 0,505	16,69475 – 16,69525	608 – 614	5,35 – 5,46
2,1735 – 2,1905	16,80425 – 16,80475	960 – 1240	7,25 – 7,75
4,125 – 4,128	25,5 – 25,67	1300 – 1427	8,025 – 8,5
4,17725 – 4,17775	37,5 – 38,25	1435 – 1626,5	9,0 – 9,2
4,20725 – 4,20775	73 – 74,6	1645,5 – 1646,5	9,3 – 9,5
6,215 – 6,218	74,8 – 75,2	1660 – 1710	10,6 – 12,7
6,26775 – 6,26825	108 – 121,94	1718,8 – 1722,2	13,25 – 13,4
6,31175 – 6,31225	123 – 138	2200 – 2300	14,47 – 14,5
8,291 – 8,294	149,9 – 150,05	2310 – 2390	15,35 – 16,2
8,362 – 8,366	156,52475 – 156,52525	2483,5 – 2500	17,7 – 21,4
8,37625 – 8,38675	156,7 – 156,9	2690 – 2900	22,01 – 23,12
8,41425 – 8,41475	162,0125 – 167,17	3260 – 3267	23,6 – 24,0
12,29 – 12,293	167,72 – 173,2	3332 – 3339	31,2 – 31,8
12,51975 – 12,52025	240 – 285	3345,8 – 3358	36,43 – 36,5
12,57675 – 12,57725	322 – 335,4	3600 – 4400	Above 38,6
13,36 – 13,41			

Acceptance limits for emissions in non-restricted frequency bands

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

Test setup

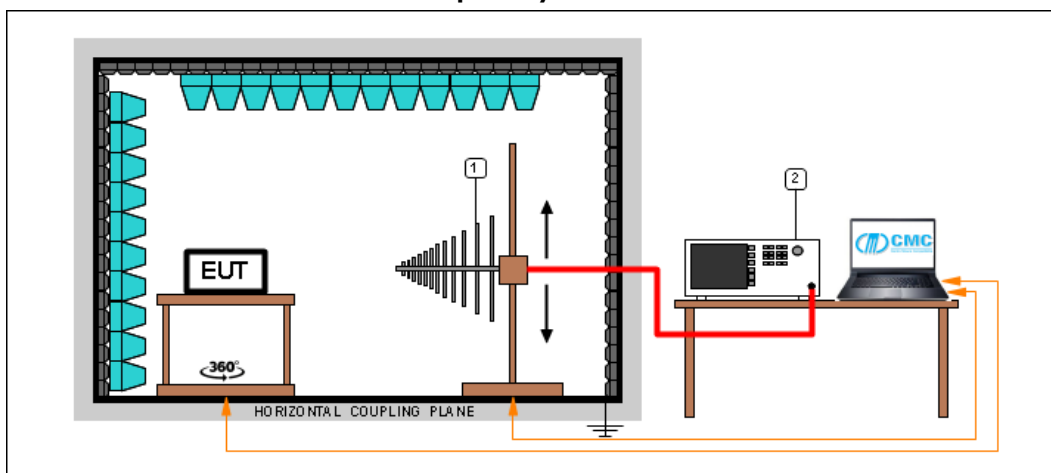
Frequency ≤ 30 MHz



Test setup PE004_01

Nr.	Id. Number	Manufacturer	Model	Description
2	CMC S164	Rohde & Schwarz	ESU26	Receiver 20 Hz - 26.5 GHz
1	CMC S127	Schaffner	HLA6120	Loop Antenna 9kHz - 30MHz

Frequency ≤ 1 GHz



Test setup PE004_02

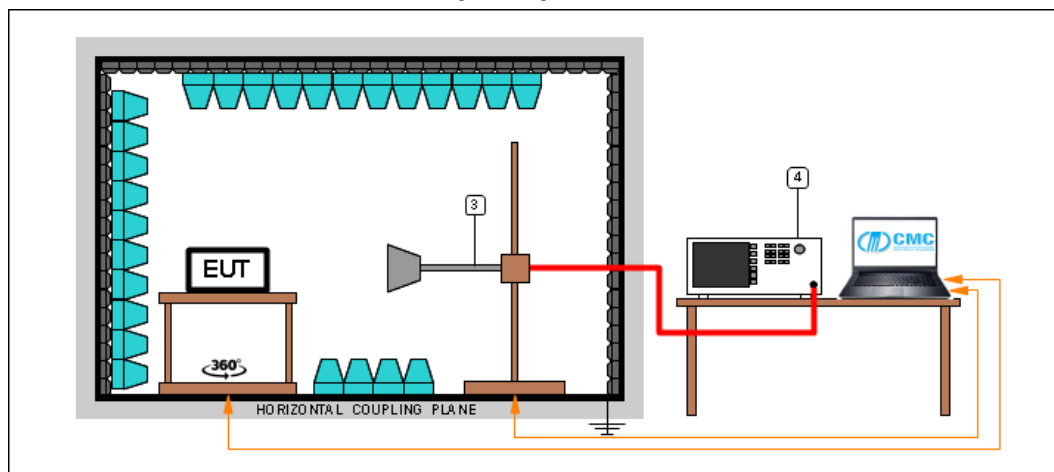
Nr.	Id. Number	Manufacturer	Model	Description
2	CMC S164	Rohde & Schwarz	ESU26	Receiver 20 Hz - 26.5 GHz
1	CMC S271	Schwarzbeck	BBA 9106 + VHBB 9124	Broadband Antenna

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
4	CMC S164	Rohde & Schwarz	ESU26	Receiver 20 Hz - 26.5 GHz
3	CMC S108	Emco	3115	Waveguide antenna



Result

Polarization	Frequency Range (MHz)	Graphs	Remarks	Result
V	30 – 300	G18251904	--	P
H	30 – 300	G18251905	--	P
H	300 – 1000	G18251906	--	P
V	300 – 1000	G18251907	--	P
Loop	0,009 – 30	G18251908	--	P
V	1000 – 6000	G18251909	--	P
H	1000 – 6000	G18251910	--	P

Remarks: EUT was tested in 3 orthogonal planes, graphs are related to the highest detected levels.

Measurements at frequencies lower than 30 MHz have been performed with an EUT – antenna distance of 10 m. Measured values have been corrected with conversion factor $40\log(\text{test distance}/10)$ based on the measuring distance provided by the standard.

Measurements at frequencies higher than 30 MHz and lower than 1000 MHz have been performed with an EUT – antenna distance of 10 m. Measured values have been corrected with conversion factor $20\log(\text{test distance}/10)$ based on the measuring distance provided by the standard.

Peaks above the limits are caused by the nominal transmitting frequencies

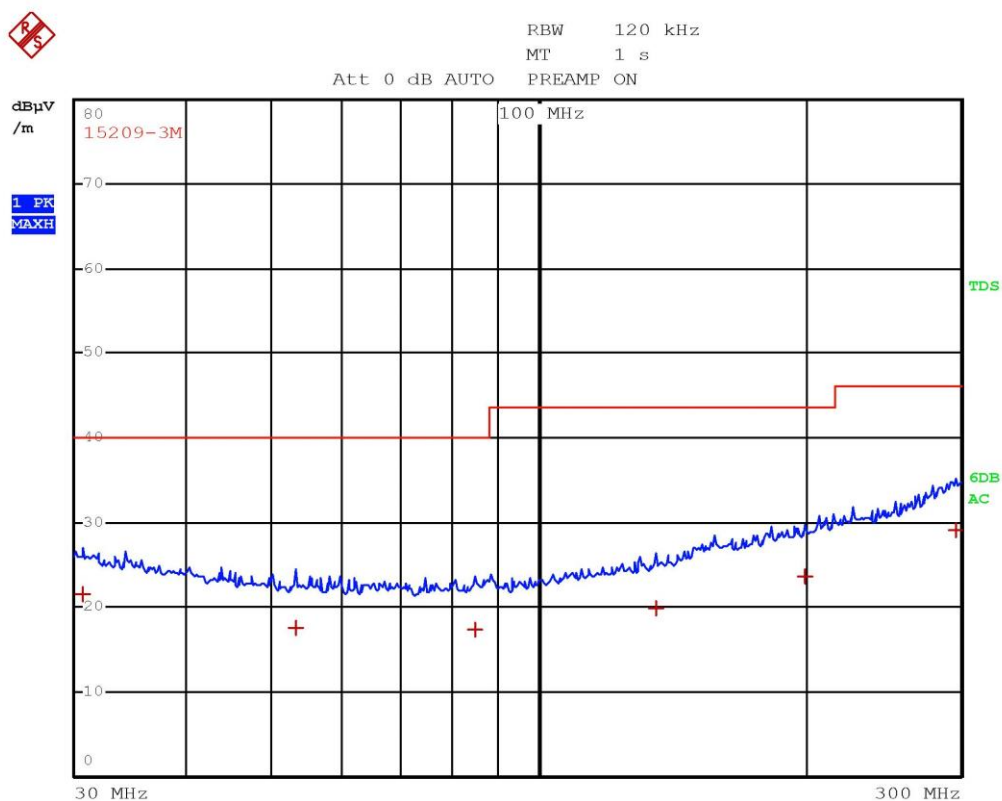
Graphs Legend

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

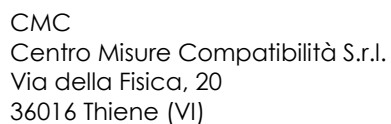


Gandini 18251904

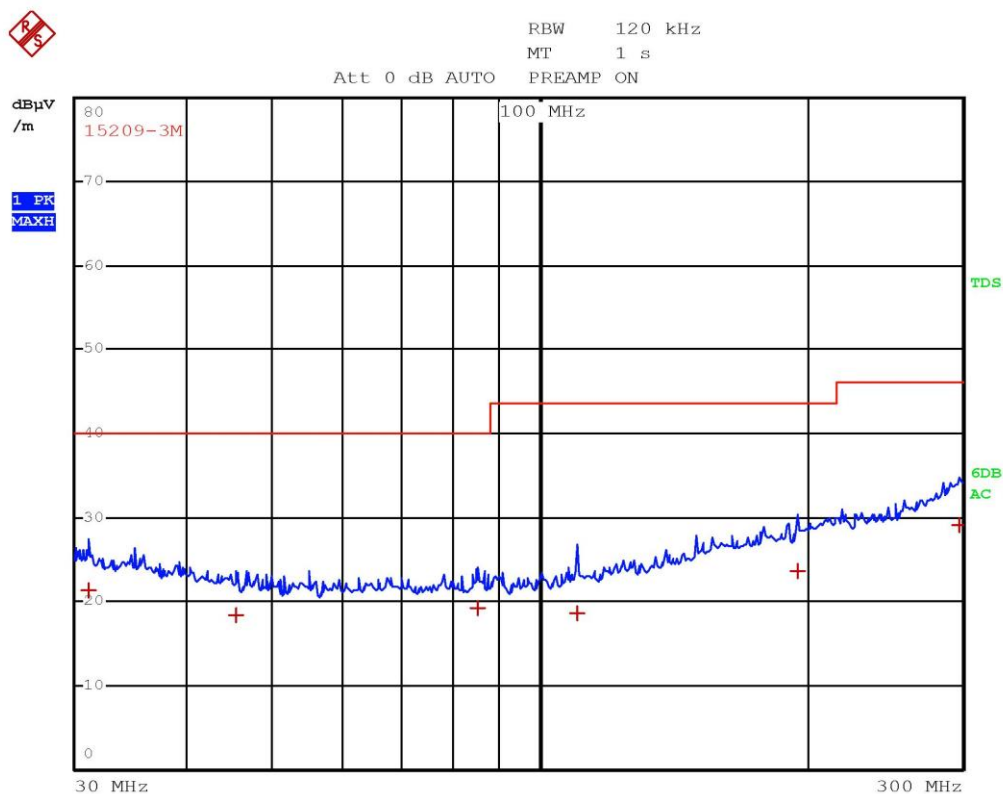


EDIT PEAK LIST (Final Measurement Results)			
Trace1:	15209-3M		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dB μ V/m	DELTA LIMIT dB
1 Quasi Peak	30.68 MHz	21.51	-18.48
1 Quasi Peak	53.32 MHz	17.49	-22.50
1 Quasi Peak	84.92 MHz	17.30	-22.69
1 Quasi Peak	136.08 MHz	19.81	-23.71
1 Quasi Peak	199.92 MHz	23.70	-19.81
1 Quasi Peak	295.4 MHz	29.04	-16.97

Gandini 18251904



LAB N° 0168 L

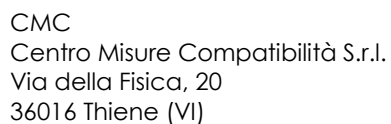


Gandini 18251905

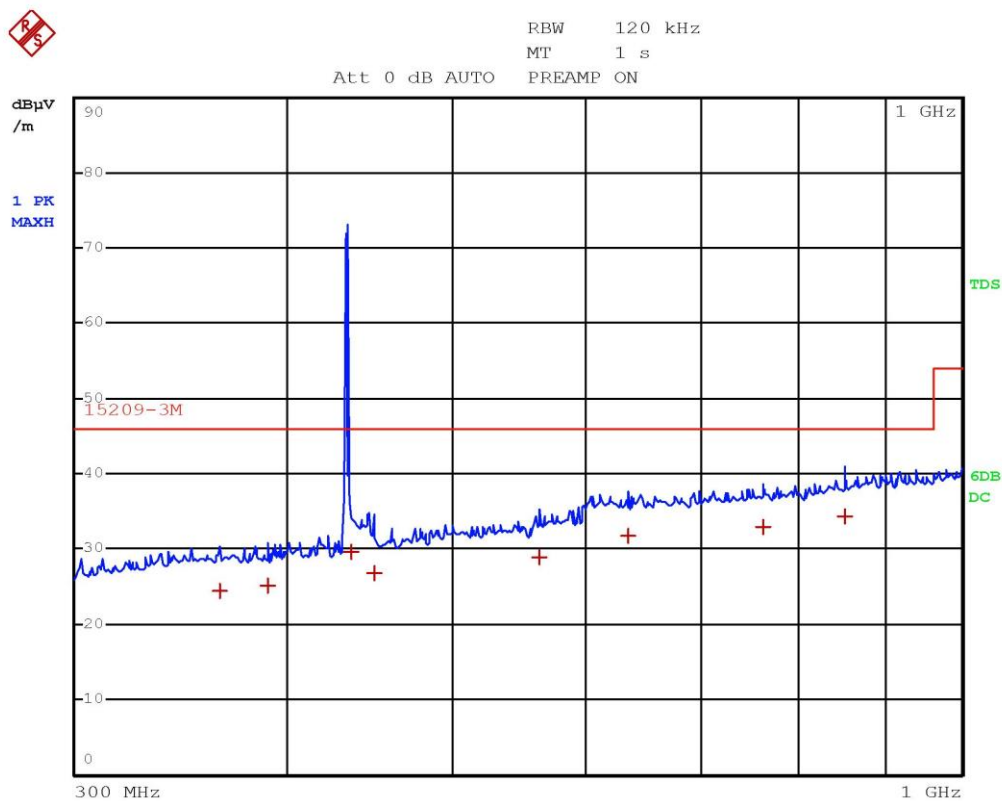


EDIT PEAK LIST (Final Measurement Results)			
Trace1:	15209-3M		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dB μ V/m	DELTA LIMIT dB
1 Quasi Peak	31.04 MHz	21.34	-18.66
1 Quasi Peak	45.48 MHz	18.45	-21.54
1 Quasi Peak	85.24 MHz	19.12	-20.87
1 Quasi Peak	110.44 MHz	18.56	-24.95
1 Quasi Peak	195.68 MHz	23.58	-19.94
1 Quasi Peak	296.6 MHz	29.12	-16.89

Gandini 18251905



LAB N° 0168 L

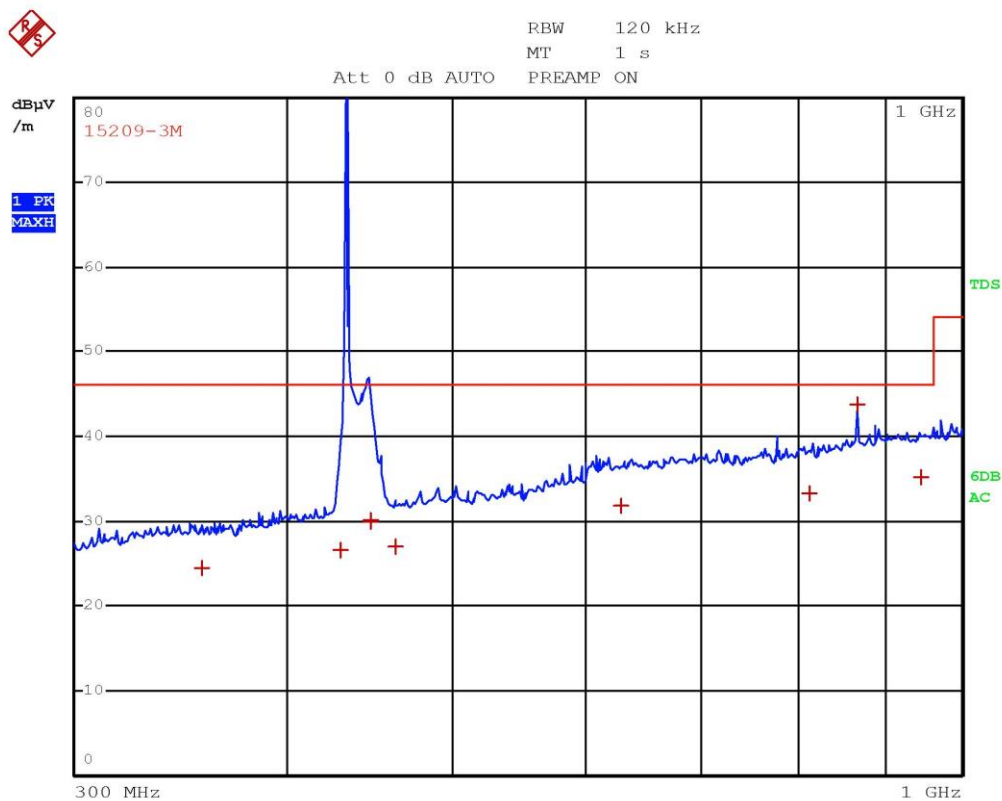


Gandini 18251906



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	15209-3M		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dB μ V/m	DELTA LIMIT dB
1 Quasi Peak	365.4 MHz	24.54	-21.47
1 Quasi Peak	389.88 MHz	25.20	-20.81
1 Quasi Peak	436.24 MHz	29.75	-16.26
1 Quasi Peak	450.12 MHz	26.73	-19.28
1 Quasi Peak	564.28 MHz	28.92	-17.09
1 Quasi Peak	636.56 MHz	31.82	-14.19
1 Quasi Peak	764 MHz	32.89	-13.12
1 Quasi Peak	852.72 MHz	34.26	-11.75

Gandini 18251906

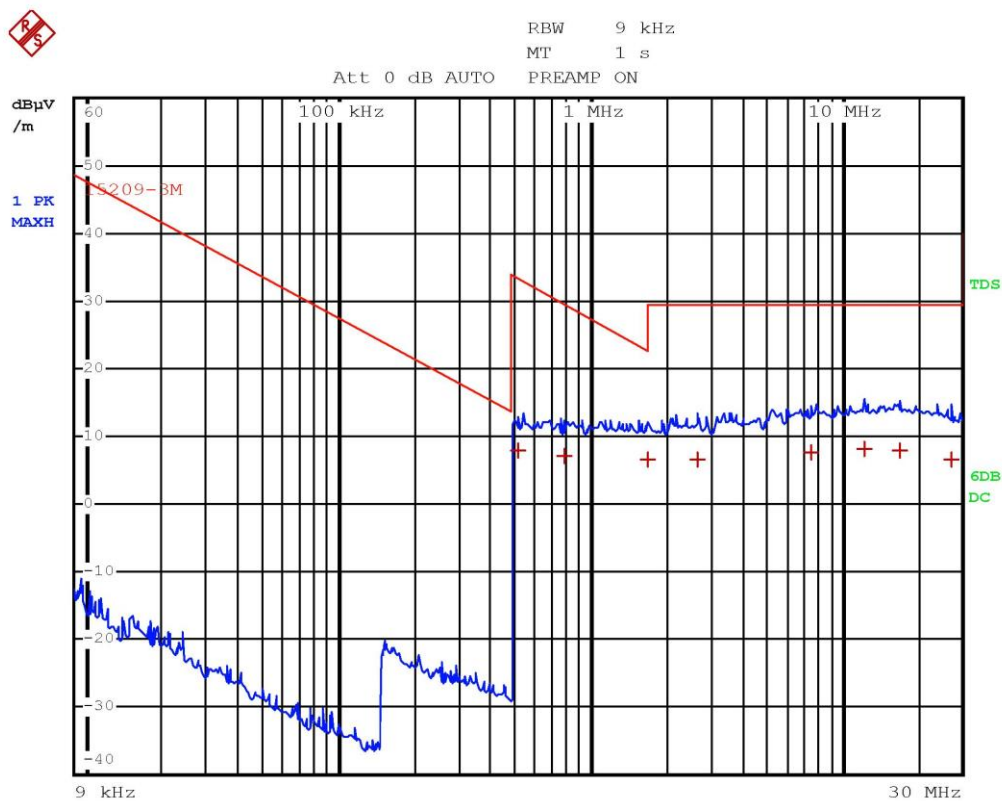


Gandini 18251907



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	15209-3M		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Quasi Peak	356.64 MHz	24.46	-21.55
1 Quasi Peak	430.84 MHz	26.63	-19.38
1 Quasi Peak	448.04 MHz	30.19	-15.83
1 Quasi Peak	448.28 MHz	29.93	-16.08
1 Quasi Peak	463.88 MHz	27.04	-18.97
1 Quasi Peak	629.36 MHz	31.78	-14.23
1 Quasi Peak	813.72 MHz	33.29	-12.72
1 Quasi Peak	868.24 MHz	43.71	-2.30
1 Quasi Peak	947.72 MHz	35.08	-10.93

Gandini 18251907

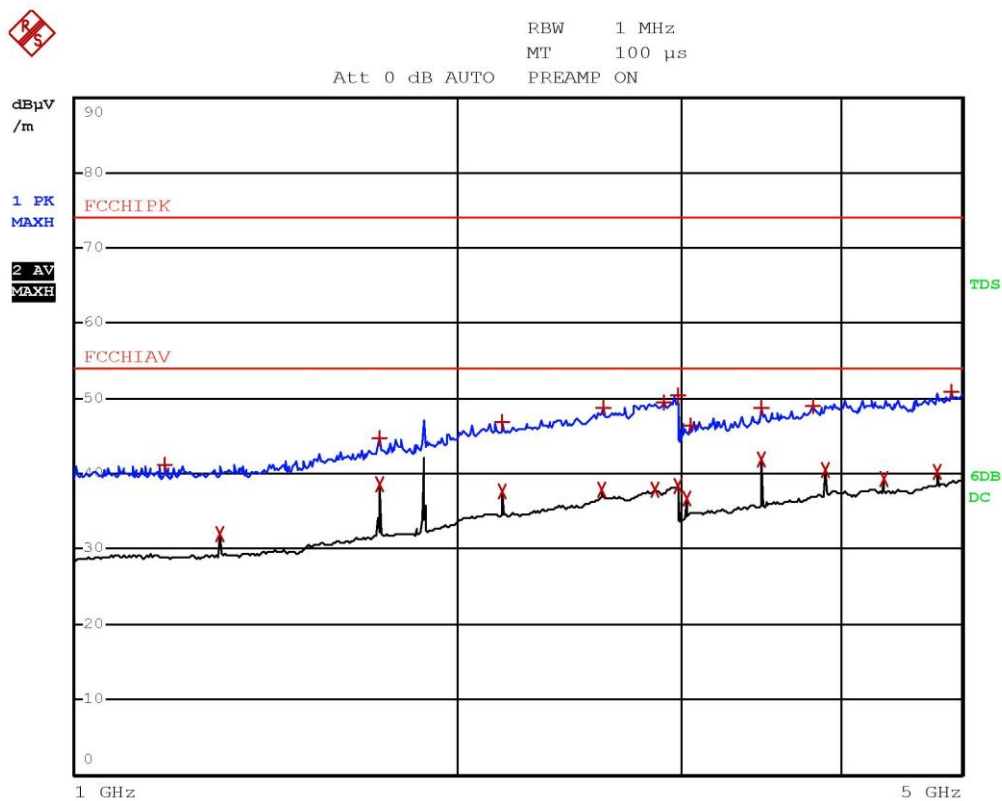


Gandini 18251908



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	15209-3M		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dB μ V/m	DELTA LIMIT dB
1 Quasi Peak	518 kHz	8.01	-25.28
1 Quasi Peak	782 kHz	7.00	-22.59
1 Quasi Peak	1.686 MHz	6.48	-16.20
1 Quasi Peak	2.662 MHz	6.63	-22.91
1 Quasi Peak	7.598 MHz	7.64	-21.89
1 Quasi Peak	12.298 MHz	8.28	-21.25
1 Quasi Peak	16.922 MHz	7.86	-21.67
1 Quasi Peak	27.398 MHz	6.70	-22.83

Gandini 18251908

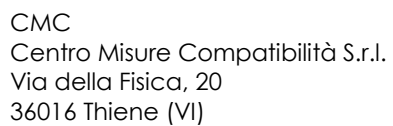


Gandini 18251909

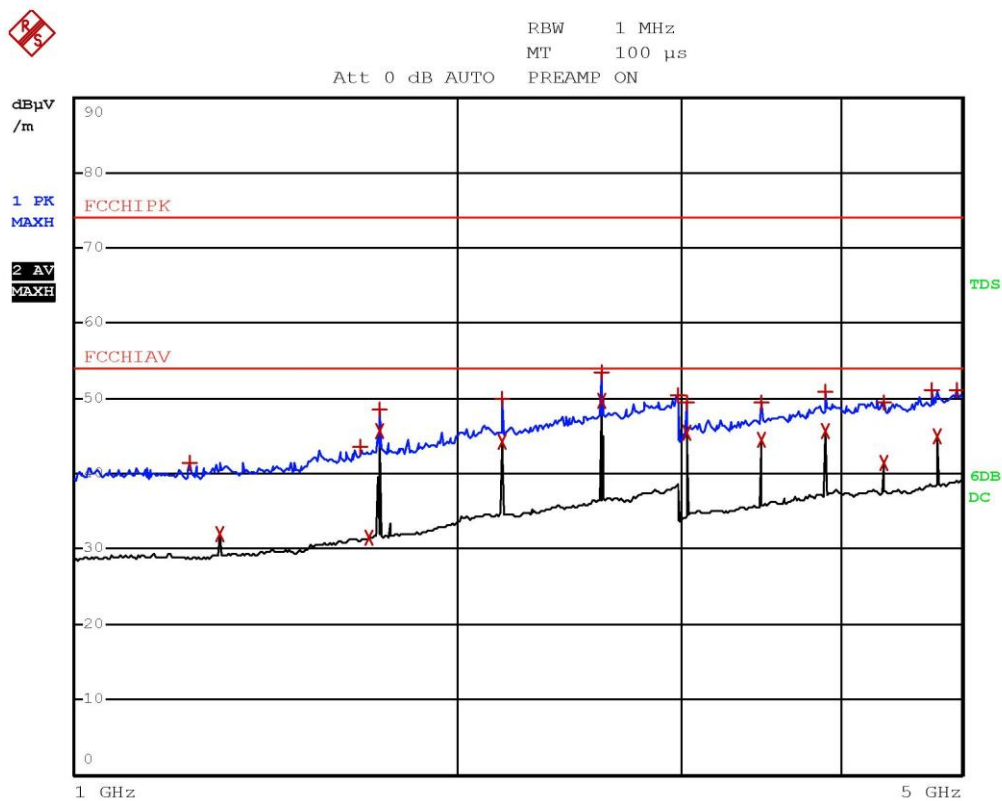


EDIT PEAK LIST (Prescan Results)				
Trace1:		FCCHIPK		
Trace2:		FCCHIAV		
Trace3:		---		
TRACE		FREQUENCY	LEVEL dB μ V/m	DELTA LIMIT dB
1	Max Peak	1.178 GHz	41.17	-32.82
2	Average	1.3024 GHz	32.00	-21.99
2	Average	1.7364 GHz	38.54	-15.46
1	Max Peak	1.7364 GHz	44.67	-29.32
1	Max Peak	2.1704 GHz	46.78	-27.21
2	Average	2.1704 GHz	37.65	-16.34
2	Average	2.6048 GHz	37.88	-16.11
1	Max Peak	2.6112 GHz	48.83	-25.16
2	Average	2.8664 GHz	37.89	-16.11
1	Max Peak	2.912 GHz	49.51	-24.48
1	Max Peak	2.984 GHz	50.40	-23.59
2	Average	2.986 GHz	38.48	-15.51
2	Average	3.0388 GHz	36.69	-17.30
1	Max Peak	3.0576 GHz	46.30	-27.69
1	Max Peak	3.4728 GHz	48.74	-25.25
2	Average	3.4728 GHz	42.00	-11.99
1	Max Peak	3.8092 GHz	48.99	-25.01
2	Average	3.9072 GHz	40.58	-13.41
2	Average	4.3412 GHz	39.33	-14.66
2	Average	4.7752 GHz	40.22	-13.77

Gandini 18251909



LAB N° 0168 L



Gandini 18251910



EDIT PEAK LIST (Prescan Results)			
Trace1:	FCCHIPK		
Trace2:	FCCHIAV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dB μ V/m	DELTA LIMIT dB
1 Max Peak	1.2316 GHz	41.39	-32.60
2 Average	1.3024 GHz	32.07	-21.92
1 Max Peak	1.6784 GHz	43.59	-30.40
2 Average	1.7036 GHz	31.56	-22.43
2 Average	1.7364 GHz	45.60	-8.39
1 Max Peak	1.7364 GHz	48.52	-25.47
2 Average	2.1704 GHz	44.20	-9.79
1 Max Peak	2.1704 GHz	49.93	-24.07
1 Max Peak	2.6048 GHz	53.43	-20.56
2 Average	2.6048 GHz	49.68	-4.31
1 Max Peak	2.9884 GHz	50.37	-23.62
1 Max Peak	3.0388 GHz	49.56	-24.43
2 Average	3.0388 GHz	45.44	-8.55
1 Max Peak	3.4728 GHz	49.59	-24.40
2 Average	3.4728 GHz	44.47	-9.52
1 Max Peak	3.9072 GHz	50.98	-23.01
2 Average	3.9072 GHz	45.59	-8.40
1 Max Peak	4.3412 GHz	49.43	-24.56
2 Average	4.3412 GHz	41.38	-12.61
1 Max Peak	4.736 GHz	51.05	-22.94

Gandini 18251910



EDIT PEAK LIST (Prescan Results)			
Trace1:	FCCHIPK		
Trace2:	FCCHIAV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dB μ V/m	DELTA LIMIT dB
2 Average	4.7752 GHz	44.89	-9.10
1 Max Peak	4.944 GHz	51.08	-22.91

Gandini 18251910



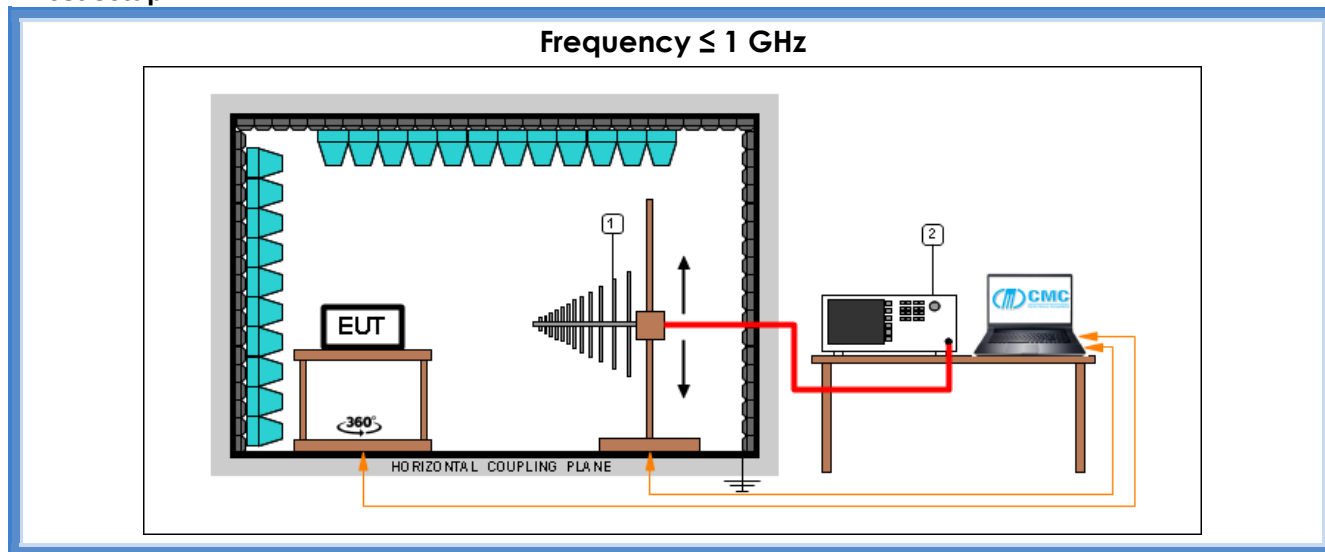
9.3 Fundamental and spurious emission (≤ 1 GHz)

Tested by	G. Gandini
Test date	03.09.2020
Test location (stand)	Semi-anechoic chamber (CMC A070)
Reference standards	FCC Rules and Regulation; Titles 47 Part. 15.209 and 15.231 (b)
Supplementary test set-up description	EUT – antenna distance: 10 m
Supplementary information.....	--

Acceptance limits

FCC Part 15.231 (b)		
<i>Fundamental frequency (MHz)</i>	<i>Field strength of fundamental [dB(μV/m)]</i>	<i>Field strength of spurious emissions [dB(μV/m)]</i>
40,66 to 40,70	67,04	47,04
70 to 130	61,94	41,94
130 to 174	61,94 to 71,48	41,94 to 51,48
174 to 260	71,48	51,48
260 to 470	71,48 to 81,94	51,48 to 61,94
Above 470	81,94	61,94

Test setup



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

Result – Field strength of fundamental

Frequency (MHz)	Graph(s)	Peak level (dB μ V/m)	Duty cycle correction (dB)	Level (dB μ V/m)	Level (W)	Limits (dB μ V/m)
434,11	G20158001	86,66	-6,56	80,10	0,000341	80,83

Remarks: EUT was tested in 3 orthogonal planes. The results in this table show the highest value.

Duty cycle value has been obtained using the following formula:

Duty cycle = $20\log 0,47 = -6,56$ dB where 0,47 is the duty cycle declared by the manufacturer.

$$P = (E \times d)^2 / (30 \times G)$$

Where:

E = the measured maximum fundamental field strength in V/m

G = the numeric gain of the transmitting antenna: 1 (0 dBi)

d = the distance in meters from which the field strength was measured (10 m)

P = the power in watts

Result – Field strength of spurious emissions

Frequency (MHz)	Graph(s)	Peak level (dB μ V/m)	Duty cycle correction (dB)	Level (dB μ V/m)	Limits (dB μ V/m)
868,2256	G20158001	45,36	-6,56	38,80	60,83

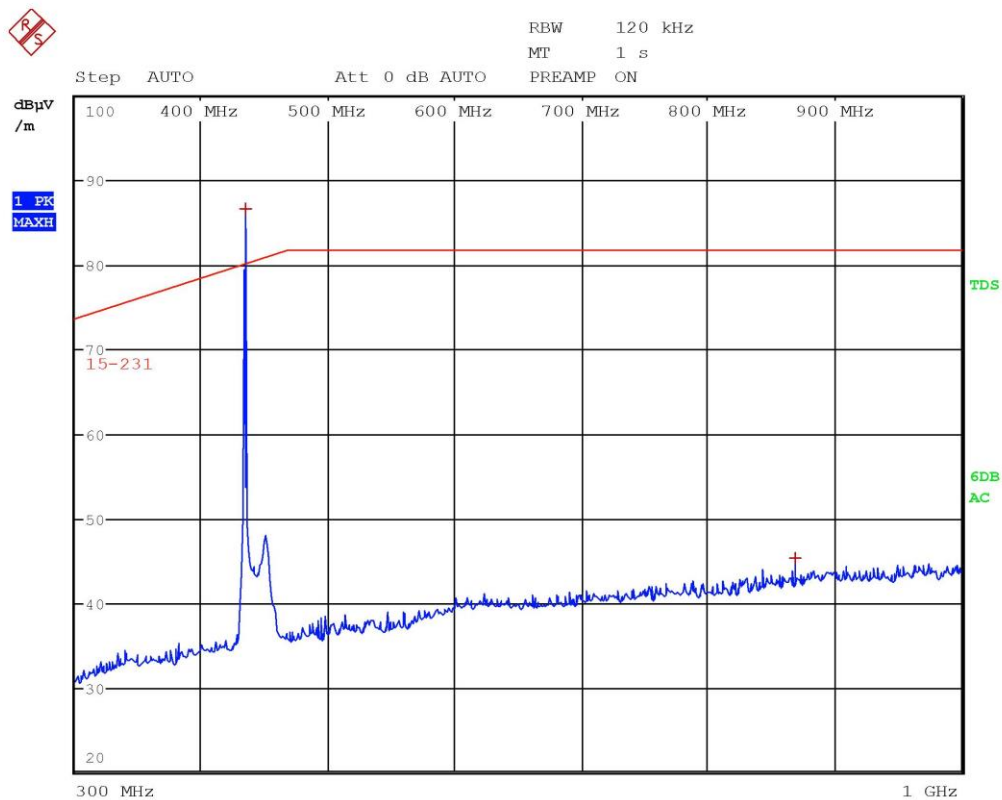
Remarks: EUT was tested in 3 orthogonal planes. The results in this table show the highest value.

Duty cycle value has been obtained using the following formula:

Duty cycle = $20\log 0,47 = -6,56$ dB where 0,47 is the duty cycle declared by the manufacturer



Graphs



Gandini 20158001



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	15-231		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL, dBµV/m	DELTA LIMIT dB
1 Quasi Peak	434.111987179 MHz	86.66	6.51
1 Quasi Peak	868.225641026 MHz	45.36	-36.57

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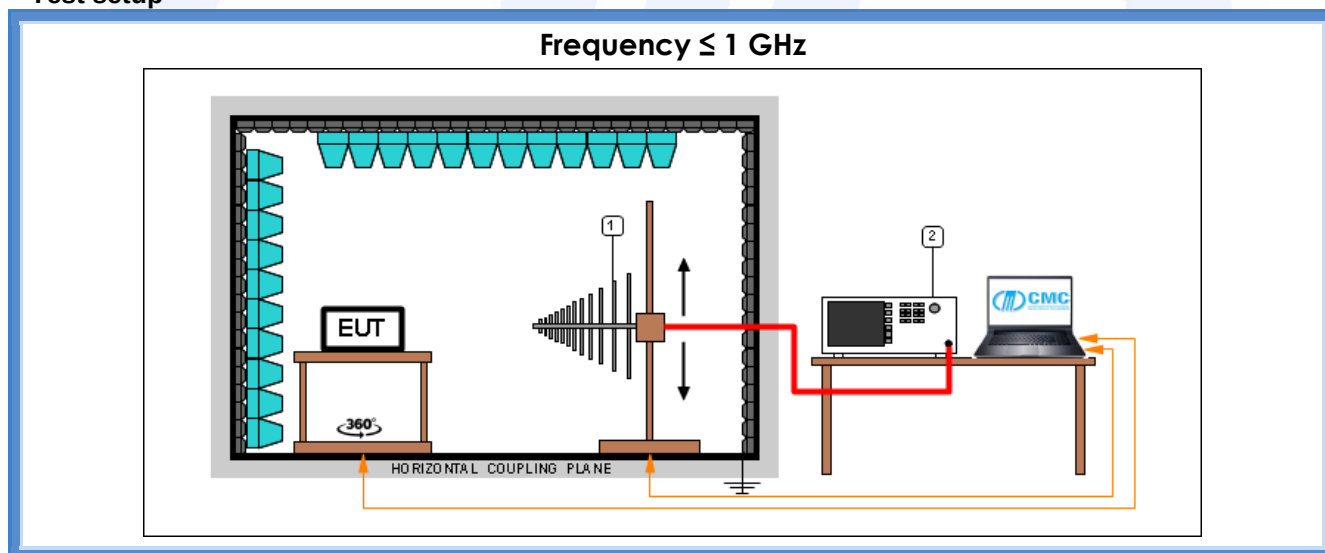
9.4 Occupied channel bandwidth

Tested by	G. Gandini
Test date	14.09.2020
Test location (stand)	Semi-anechoic chamber (CMC A070)
Reference standards	FCC Rules and Regulation; Titles 47 Part. 15.231 (c)
Supplementary test set-up description	--
Supplementary information	--

Acceptance limits

Limits	
Devices operating above 70 MHz and below 900 MHz	Devices operating above 900 MHz
0,25% of the center frequency	0,5% of the center frequency

Test setup



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

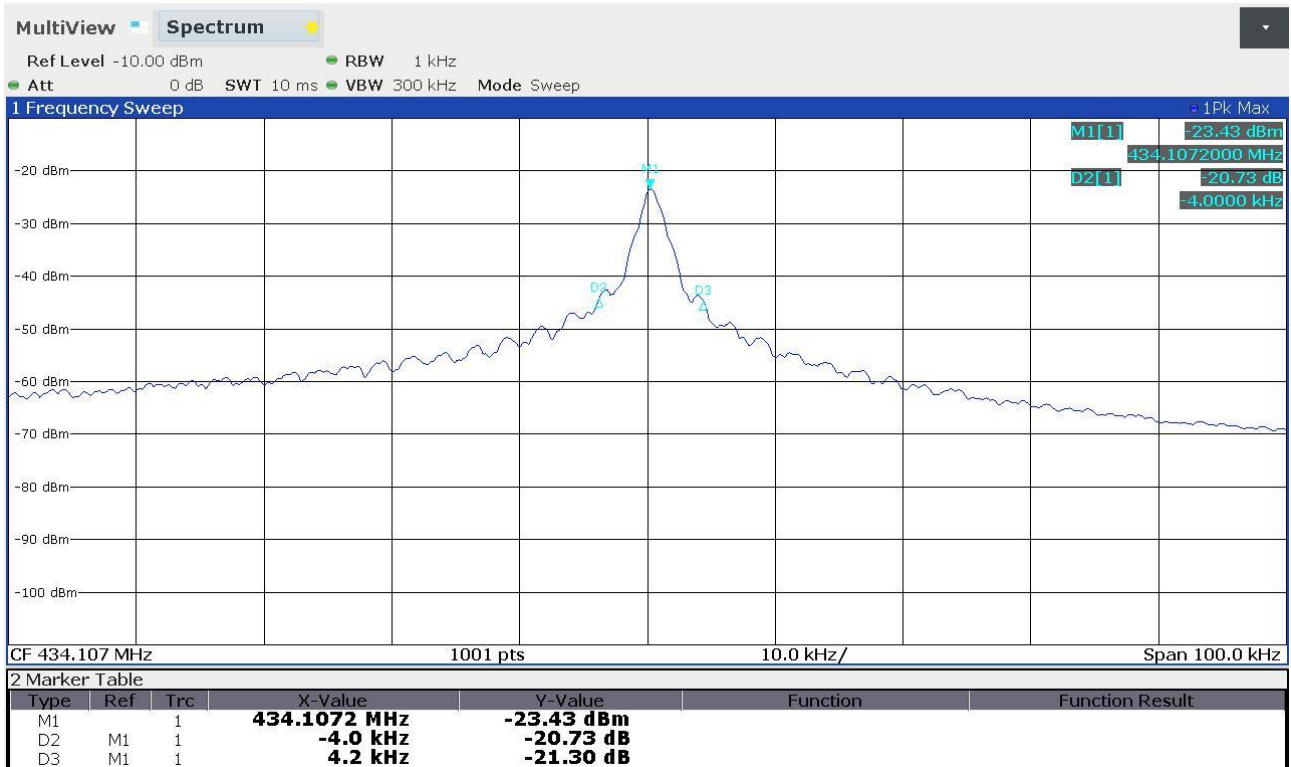
Result

Frequency (MHz)	Graphs	20 dB bandwidth (kHz)	Limit (kHz)
434,1174	G20158005	8,20	500



Graphs

Gandini 20158005





9.5 Periodic operation characteristics

Tested by	G. Gandini	
Test date	10.09.2020	
Test location (stand)	Laboratory	
Reference standards	FCC Rules and Regulation; Titles 47 Part. 15.231 (a) (e)	
Type of transmission.....	☒	Manually operated transmitter
	☐	Transmitter activated automatically

Acceptance limits

The provisions of this section are restricted to periodic operation within the band 40,66 – 40,70 MHz and above 70 MHz. Except as shown in paragraph (e) of this section, the intentional radiator is restricted to the transmission of a control signal such as those used with alarm systems, door openers, remote switches, etc. Continuous transmissions, voice, video and the radio control of toys are not permitted. Data is permitted to be sent with a control signal. The following conditions shall be met to comply with the provisions for this periodic operation



15.231(a1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

See graphs G20158001, G20158002 and G20158003

15.231(a2) A transmitter activated automatically shall cease transmission within 5 seconds after activation

Result: N.A.

15.231(a3) Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour

Result: The EUT does not employ periodic transmission.

15.231(a4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm condition.

Result: N.A.

15.231(a5) Transmission of set-up information for security systems may exceed the transmission duration limits in paragraphs (a)(1) and (a)(2) of this section, provided such transmissions are under the control of a professional installer and do not exceed ten seconds after a manually operated switch is released or a transmitter is activated automatically. Such set-up information may include data

Result: N.A.

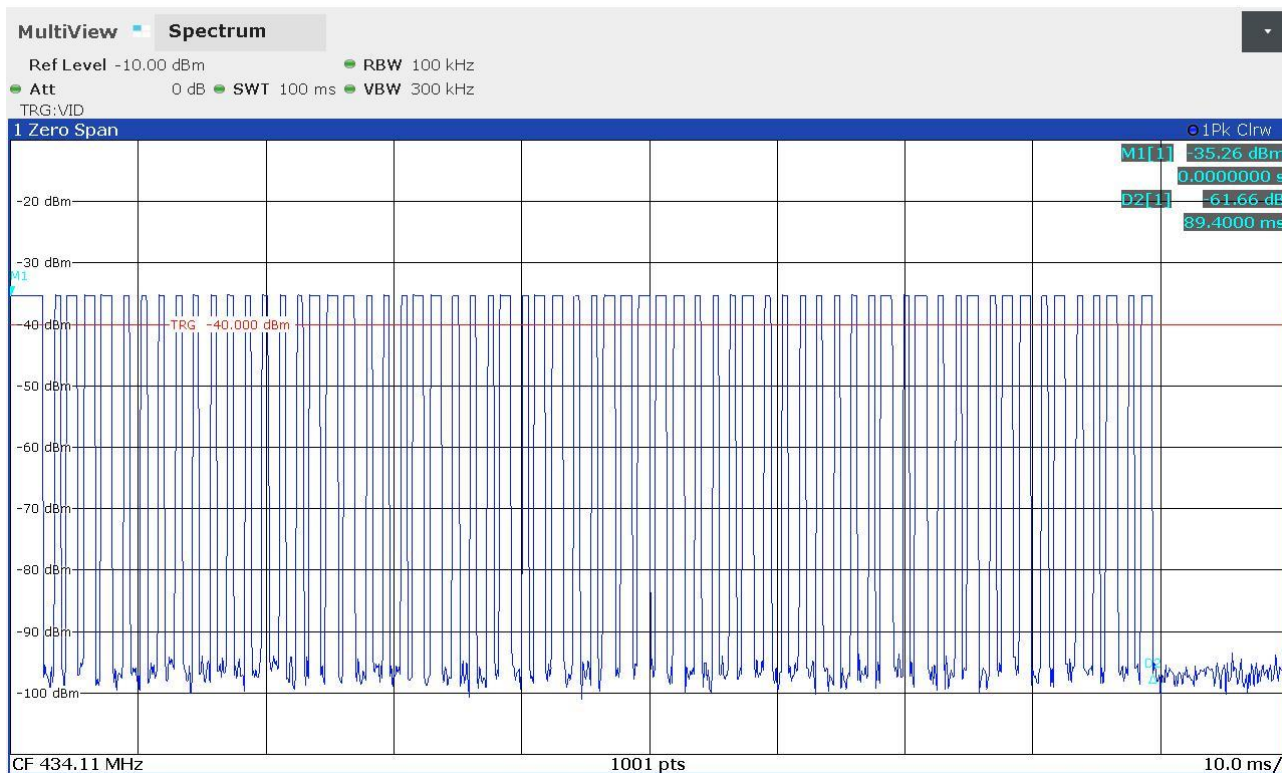


Graphs

Gandini 20158001

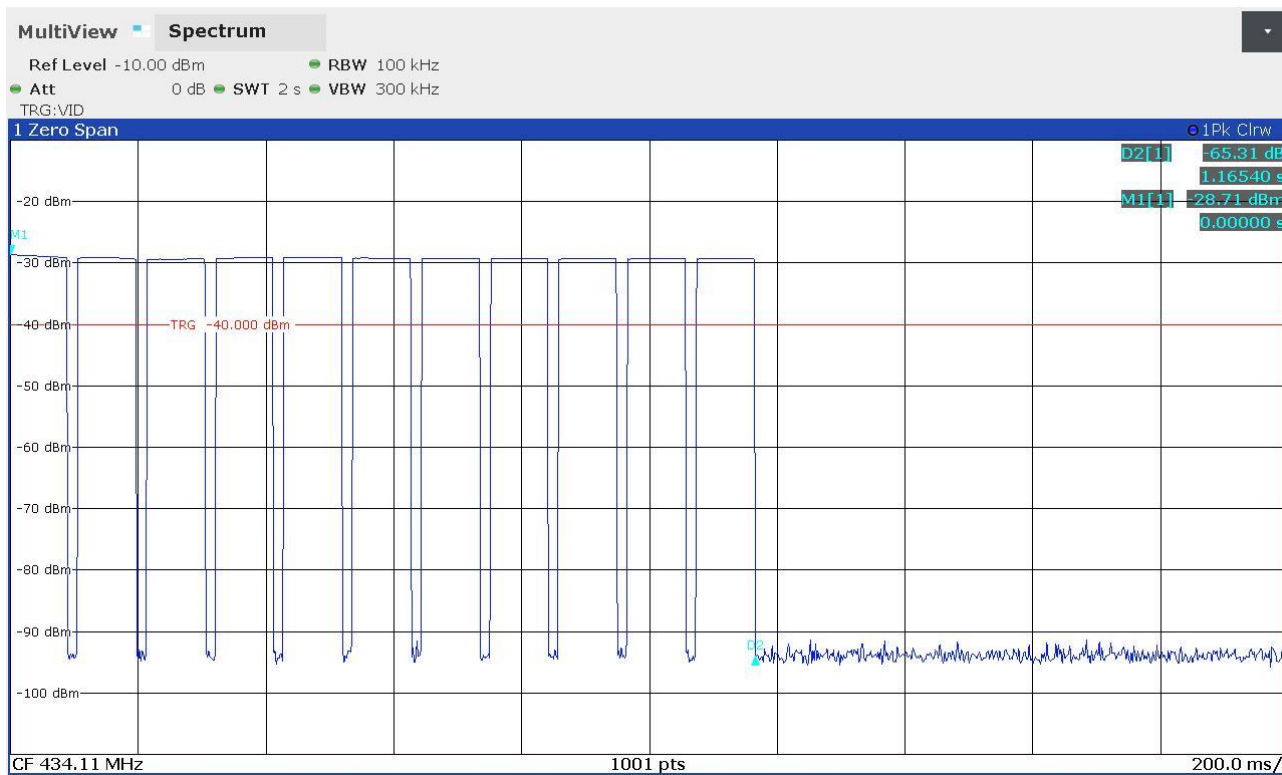


Gandini 20158002





Gandini 20158003





Attachment 1

Instruments list

<i>Id. number</i>	<i>Manufacturer</i>	<i>Model</i>	<i>Description</i>	<i>Serial number</i>	<i>Last calibration</i>	<i>Due date calibration</i>
CMC S010	Rohde & Schwarz	ESH3-Z2	Impulses Limiting Device	- - -	January '20	January '21
CMC S108	EMCO	3115	Horn Antenna	9811-5622	June '19	June '22
CMC S127	Schaffner	HLA6120	Loop Antenna	1191	November '18	November '23
CMC S164	Rohde & Schwarz	ESU26	EMC interference receiver	100052	January '20	January '21
CMC S200	Schwarzbeck	NSLK 8128	V-LISN	8128-273	January '20	January '21
CMC S206	Rohde & Schwarz	ESCI 7	EMC Receiver 9KHz-7GHz	100781	January '20	January '21
CMC S260	CMC	Wfr_N	Shielded Cable	Wfr_ant10-1	November '19	November '20
CMC S261	CMC	Wfr_N	Shielded Cable	Wfr_ant20-1	November '19	November '20
CMC S262	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix32-1	November '19	November '20
CMC S263	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix31-1	November '19	November '20
CMC S264	CMC	Wfr_N	Shielded Cable	Wfr_ext03-1	November '19	November '20
CMC S271	Schwarzbeck	BBA 9106 + VHBB 9124	Biconical Antenna (30-300MHz)	831	June '19	June '22
CMC S287	Schwarzbeck	VUSLP 9111B	Log-periodic Antenna (200 MHz-3GHz)	9111B-203	June '19	June '22
CMC S288	CMC	W_sma_white	Joint Shielded Cable	W_001	November '19	November '20
CMC S295	Rohde & Schwarz	FSW43	Spectrum Analyzer 43GHz	104059	November '19	November '22



Attachment 1

Measurement uncertainty

Test	Test Setup	Expanded uncertainty	Note
Conducted emission CISPR 16 LISN 50uH 0,009-0,0150 MHz	PE001_01	3,4 dB	1
Conducted emission CISPR 16 LISN 50uH 0,150-30,0 MHz	PE001_01	3,0 dB	1
Conducted emission CISPR 16 Voltage Probe 0,15-30 MHz	PE001_02	2,9 dB	1
Conducted emission CISPR 16 Current Probe 0,15-30 MHz	PE001_03	2,6 dB	1
Conducted emission CISPR 16 ISN 0,15-30 MHz	PE001_04	4,7 dB	1
Clic CISPR 16 LISN 50uH 0,150-30,0 MHz	PE001_05	2,9 dB	1
Radiated Emission CDNE 30-300 MHz	PE001_06	3,3 dB	1
Disturbance Power 30-300 MHz	PE002_01	3,6 dB	1
Radiated Emission LAS 0,15-30 MHz	PE003_01	2,0 dB	1
Radiated Emission CISPR 16 Loop Ant. 0,15-30 MHz	PE004_01	4,0 dB	1
Radiated Emission CISPR 16 Bicon. Ant. 30-300 MHz	PE004_02	3,9 dB	1
Radiated Emission CISPR 16 LogP. Ant. 300-1000 MHz	PE004_03	3,8 dB	1
Radiated Emission CISPR 16 Horn Ant. 1-18 GHz	PE004_04	4,2 dB	1
Human Exposure to electromagnetic fields	PE005_01	23,6 %	1
Harmonics	PE006_01	10 mA + 2,6 %	1
Flicker	PE007_01	4,79 %	1
Radiated Immunity 80 MHz - 6 GHz	PE102_XX	1,95 dB 0,75 V/m a 3V/m	1
Conducted Immunity 0,15 - 230 MHz	PE105_XX	1,20 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	6,25 % 18,7 A/m a 300A/m	1
Dumped Magnetic field	PE108_01	6,25 % 1,87 A/m a 30A/m	1
Common mode conducted immunity	PE112_01	2,21 % 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+05	4,7 dB	1
Misura della potenza EIRP 18-40GHz d=3m	PR001_06	5,4 dB	1
Frequency error	PR002_01+02	$< 1 \times 10^{-7}$	1
Timing zero span (1001pts.)	PR002_01+02	0,2 % SWT	1
Modulation bandwidth	PR002_01+02	$< 1 \times 10^{-7}$	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
Ring Wave immunity test	PE110_01		2
Low frequency immunity test	PE111_01		2
Dumped Oscillatory immunity test	PE113_01		2
Rev_20_02 date 24/02/2020			

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