

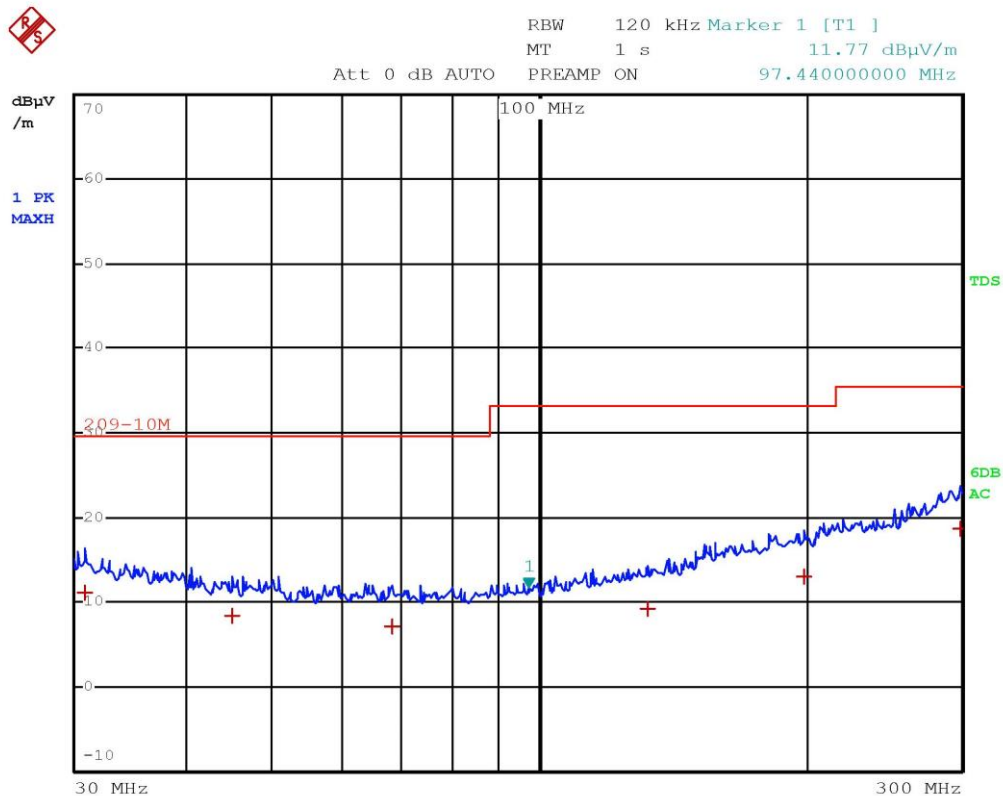


EDIT PEAK LIST (Final Measurement Results)			
Trace1:	209-10M		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Quasi Peak	359.72 MHz	13.83	-21.72
1 Quasi Peak	433.92 MHz	65.23	29.67
1 Quasi Peak	514.44 MHz	17.48	-18.07
1 Quasi Peak	638.24 MHz	21.08	-14.47
1 Quasi Peak	758.6 MHz	22.27	-13.28
1 Quasi Peak	805.16 MHz	22.81	-12.74
1 Quasi Peak	867.84 MHz	33.76	-1.80
1 Quasi Peak	935.4 MHz	24.40	-11.15

Bertezzolo 16268225 Horiz



G16268226

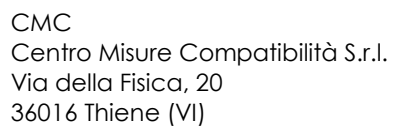


Bertezzo 16268226 Horiz



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	209-10M		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Quasi Peak	30.8 MHz	11.17	-18.36
1 Quasi Peak	45.12 MHz	8.30	-21.23
1 Quasi Peak	68.24 MHz	7.13	-22.40
1 Quasi Peak	132.52 MHz	9.17	-23.88
1 Quasi Peak	199.2 MHz	13.06	-19.99
1 Quasi Peak	298.04 MHz	18.69	-16.86

Bertezzolo 16268226 Horiz



LAB N° 0168

RBW 120 kHz Marker 1 [T1]
 MT 1 s 11.55 dBμV/m
 Att 0 dB AUTO PREAMP ON 97.44000000 MHz

dBμV /m

1 PK MAXH

209-10M

100 MHz

30 MHz 300 MHz

TDS

6DB AC

Bertezzo 16268227 Vert

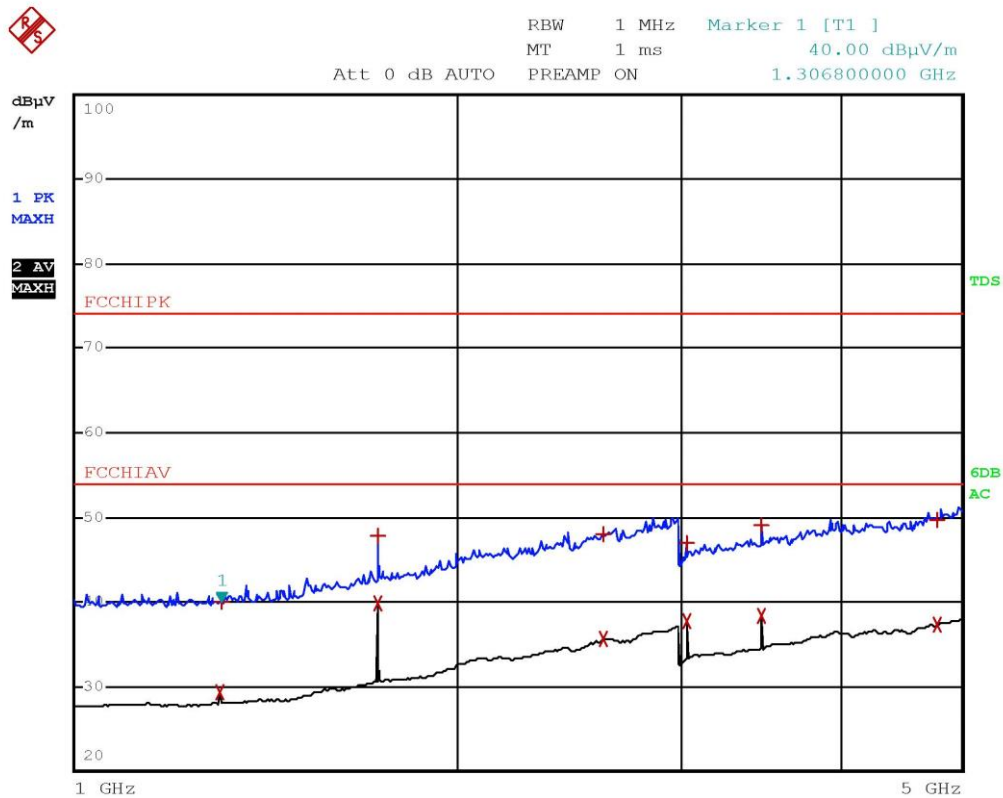


EDIT PEAK LIST (Final Measurement Results)			
Trace1:	209-10M		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Quasi Peak	31.2 MHz	11.03	-18.50
1 Quasi Peak	52.08 MHz	9.67	-19.86
1 Quasi Peak	87.72 MHz	6.98	-22.55
1 Quasi Peak	132.28 MHz	9.16	-23.89
1 Quasi Peak	190.96 MHz	12.82	-20.23
1 Quasi Peak	292.68 MHz	18.27	-17.28

Bertezzolo 16268227 Vert



G16268228



Bertezzo 16268228 Vert

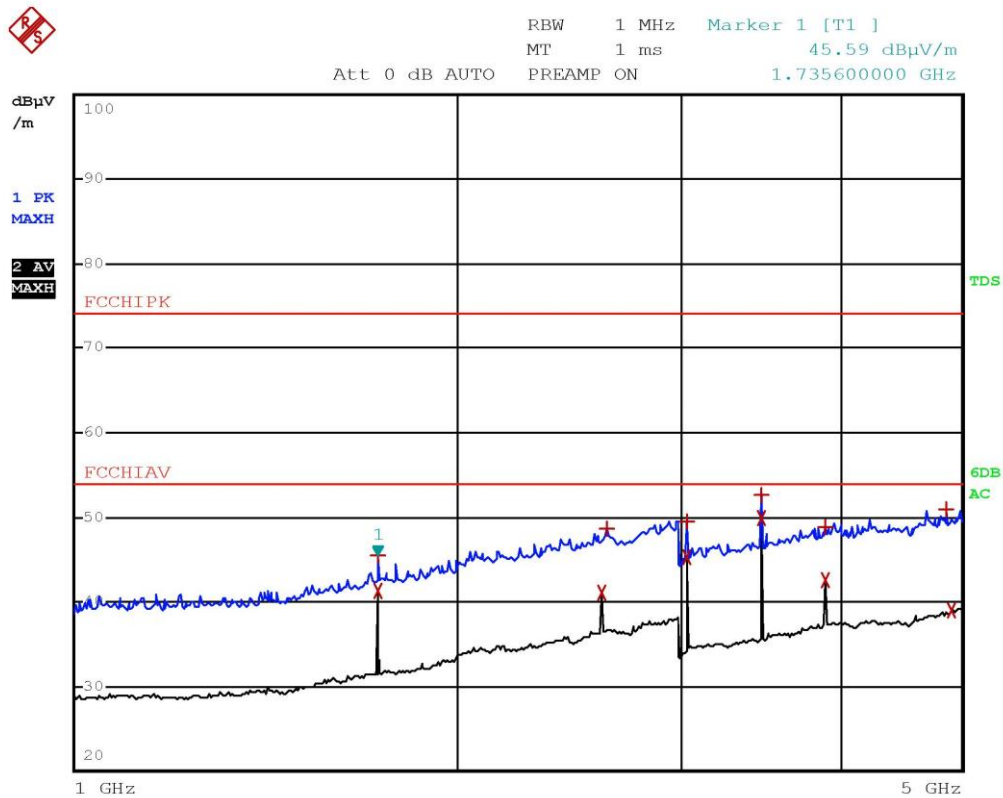


EDIT PEAK LIST (Prescan Results)			
Trace1:	FCCHIIV		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
2 Average	1.3016 GHz	29.38	
1 Max Peak	1.3068 GHz	40.00	-13.99
2 Average	1.7356 GHz	39.91	
1 Max Peak	1.7356 GHz	47.75	-6.24
2 Average	2.6076 GHz	35.56	
1 Max Peak	2.61 GHz	47.95	-6.04
1 Max Peak	3.0376 GHz	47.00	-6.99
2 Average	3.0376 GHz	37.69	
2 Average	3.4712 GHz	38.34	
1 Max Peak	3.4716 GHz	49.10	-4.89
2 Average	4.7848 GHz	37.25	
1 Max Peak	4.786 GHz	49.63	-4.36

Bertezzolo 16268228 Vert



G16268229



Bertezzo 16268229 Horiz

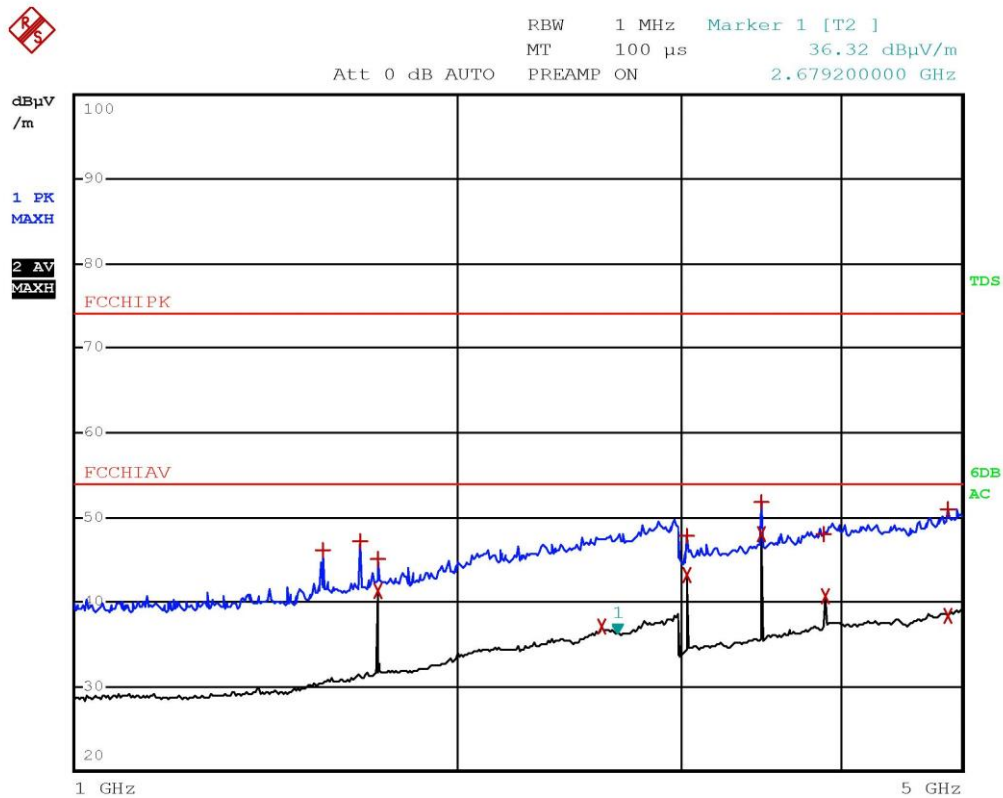


EDIT PEAK LIST (Prescan Results)			
Trace1:	FCCHIAV		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
2 Average	1.7356 GHz	41.36	
1 Max Peak	1.7356 GHz	45.58	-8.41
2 Average	2.6036 GHz	41.19	
1 Max Peak	2.6264 GHz	48.60	-5.39
2 Average	3.0376 GHz	45.37	
1 Max Peak	3.0376 GHz	49.41	-4.58
1 Max Peak	3.4712 GHz	52.64	-1.35
2 Average	3.4712 GHz	49.83	
1 Max Peak	3.9052 GHz	48.78	-5.21
2 Average	3.9052 GHz	42.55	
1 Max Peak	4.8532 GHz	50.88	-3.11
2 Average	4.8996 GHz	38.98	

Bertezzolo 16268229 Horiz



G16268230



Bertezzo 16268230 Horiz

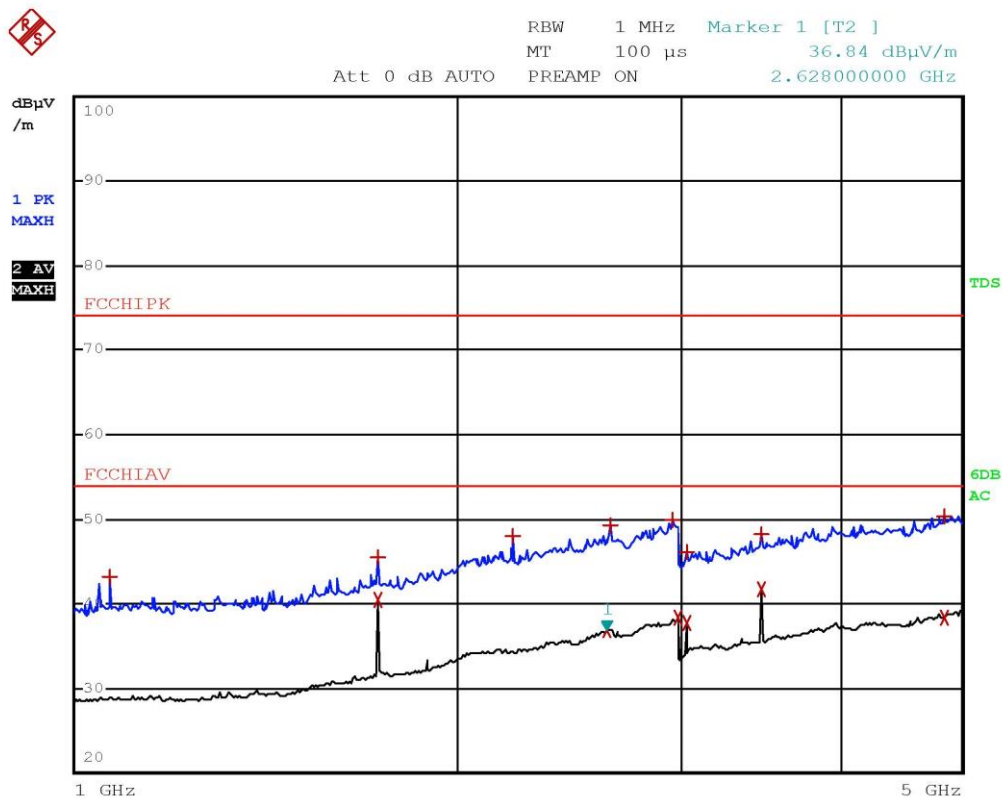


EDIT PEAK LIST (Prescan Results)			
Trace1:	FCCHIIV		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Max Peak	1.5672 GHz	46.21	-7.78
1 Max Peak	1.6764 GHz	47.13	-6.86
1 Max Peak	1.7356 GHz	45.16	-8.83
2 Average	1.7356 GHz	41.24	
2 Average	2.6036 GHz	37.03	
2 Average	3.0376 GHz	43.26	
1 Max Peak	3.0376 GHz	47.76	-6.23
2 Average	3.4712 GHz	48.12	
1 Max Peak	3.4712 GHz	51.73	-2.26
1 Max Peak	3.8868 GHz	48.04	-5.95
2 Average	3.9052 GHz	40.65	
1 Max Peak	4.874 GHz	51.02	-2.97
2 Average	4.88 GHz	38.42	

Bertezzolo 16268230 Horiz



G16268231



Bertezzolo 16268231 Vert

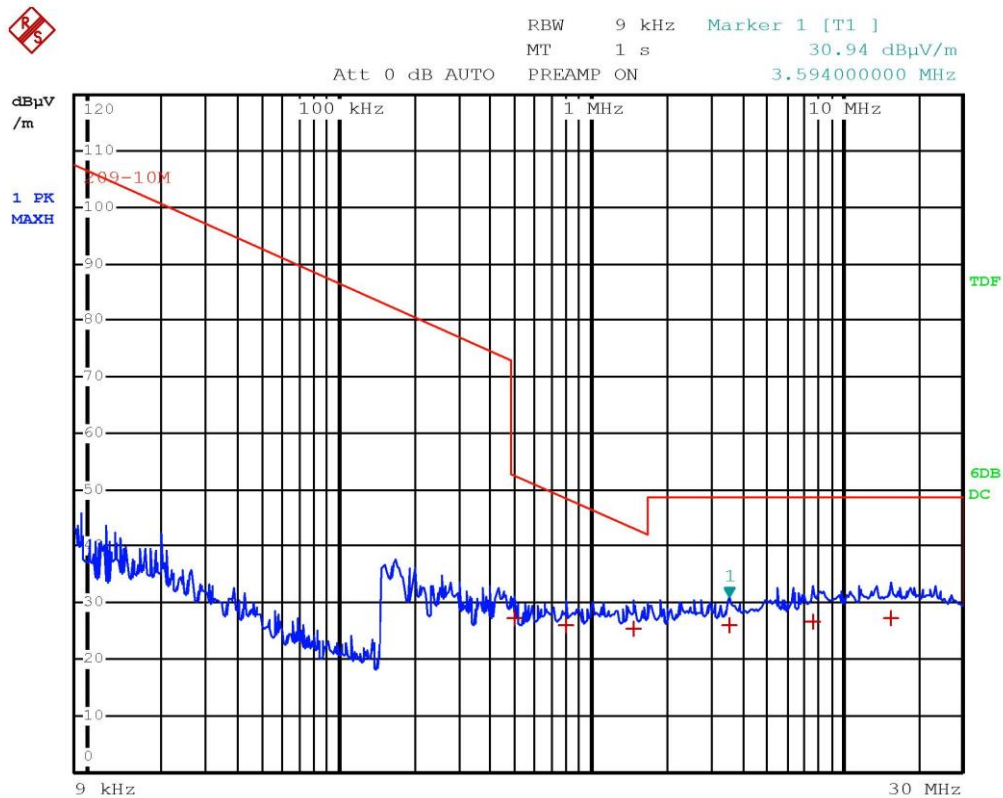


EDIT PEAK LIST (Prescan Results)			
Trace1:	FCCHIAV		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Max Peak	1.0652 GHz	43.25	-10.74
2 Average	1.7356 GHz	40.41	
1 Max Peak	1.7356 GHz	45.55	-8.44
1 Max Peak	2.2148 GHz	48.03	-5.96
2 Average	2.628 GHz	36.84	
1 Max Peak	2.6472 GHz	49.20	-4.79
1 Max Peak	2.958 GHz	49.83	-4.16
2 Average	2.9968 GHz	38.36	
1 Max Peak	3.0376 GHz	46.21	-7.78
2 Average	3.0376 GHz	37.84	
1 Max Peak	3.4712 GHz	48.16	-5.83
2 Average	3.4712 GHz	41.79	
1 Max Peak	4.84 GHz	50.31	-3.68
2 Average	4.8444 GHz	38.35	

Bertezzolo 16268231 Vert



G16268232



Bertezzolo 16268232 Loop

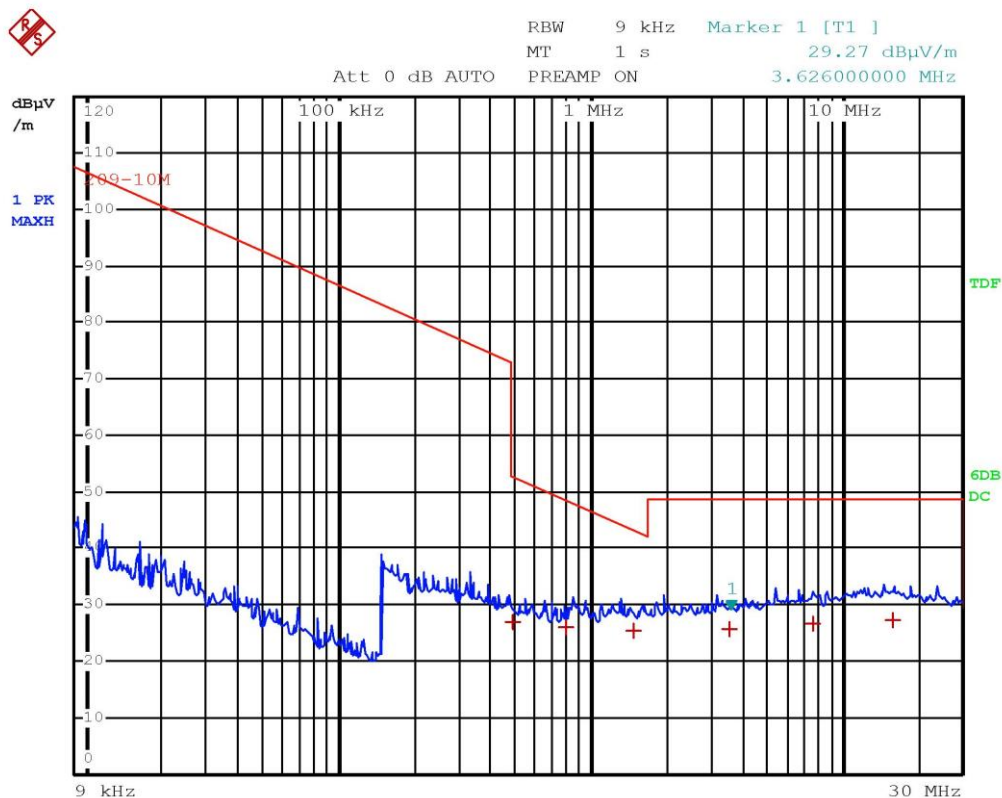


EDIT PEAK LIST (Final Measurement Results)			
Trace1:	209-10M		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Quasi Peak	498 kHz	27.11	-25.63
1 Quasi Peak	798 kHz	25.94	-22.70
1 Quasi Peak	1.49 MHz	25.48	-17.73
1 Quasi Peak	3.594 MHz	25.85	-22.77
1 Quasi Peak	7.73 MHz	26.65	-21.97
1 Quasi Peak	15.794 MHz	27.09	-21.53

Bertezzolo 16268232 Loop



G16268233



Bertezzolo 16268233 Loop



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	209-10M		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Quasi Peak	498 kHz	27.07	-25.67
1 Quasi Peak	798 kHz	26.03	-22.61
1 Quasi Peak	1.49 MHz	25.35	-17.86
1 Quasi Peak	3.594 MHz	25.81	-22.81
1 Quasi Peak	7.73 MHz	26.75	-21.87
1 Quasi Peak	15.794 MHz	27.20	-21.42

Bertezzolo 16268233 Loop

Result: The requirements are met



11.4 Fundamental and Spurious Emission (≤ 1 GHz)

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.209 and Part 15.231 (b)
- 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 S136, CMC S164
Measurement uncertainty: See clause 7 of this test report

Test specification

Port: Enclosure
Antenna polarization: Horizontal (H) – Vertical (V)
EUT – Antenna distance: 10 m
Detector CISPR quasi-peak

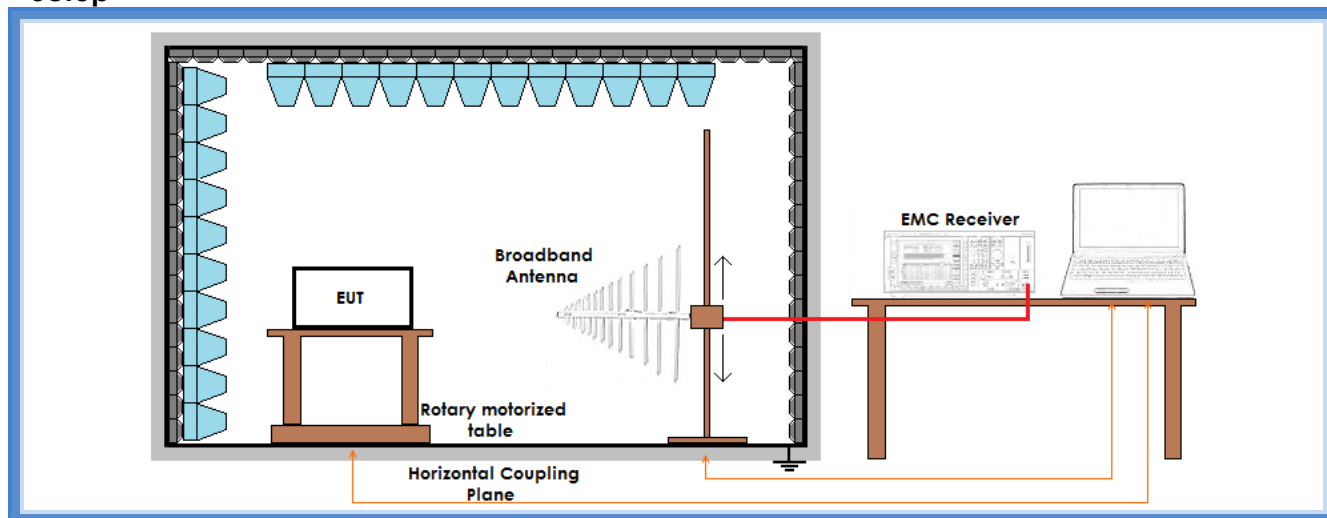
Environmental conditions

Temperature (°C)	Atmospheric pressure (kPa)	Relative humidity (%)
23	100	45

Acceptance limits

FCC Part 15.231 (b)		
Fundamental frequency (MHz)	Field strength of fundamental [dB(μ V/m)]	Field strength of spurious emissions [dB(μ V/m)]
40,66 to 40,70	56,58	36,58
70 to 130	51,48	31,48
130 to 174	51,48 to 61,02	31,48 to 41,02
174 to 260	61,02	41,02
260 to 470	61,02 to 71,48	41,02 to 51,48
Above 470	71,48	51,48

Setup



Graphs:

G16268242, G16268243

Result – Field strength of fundamental

Frequency (MHz)	Limits (dBμV/m)	Measured level (dBμV/m)	Duty cycle correction (dB)	Level (dBμV/m)	Remarks	Results
433,92	70,37	62,56	-11,37	51,19	Recharging mode	Complies
433,92	70,37	75,10	-11,37	63,73	Battery mode	Complies

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 = $20\log 0,27 = -11,37$ dB where 0,27 is the highest percentage of duty cycle

Result – Field strength of spurious emissions

Frequency (MHz)	Limits (dBμV/m)	Measured level (dBμV/m)	Duty cycle correction (dB)	Level (dBμV/m)	Remarks	Results
867,8	50,37	39,40	-11,37	28,03	Battery mode	Complies
867,8	50,37	36,99	-11,37	25,62	Recharging mode	Complies

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:

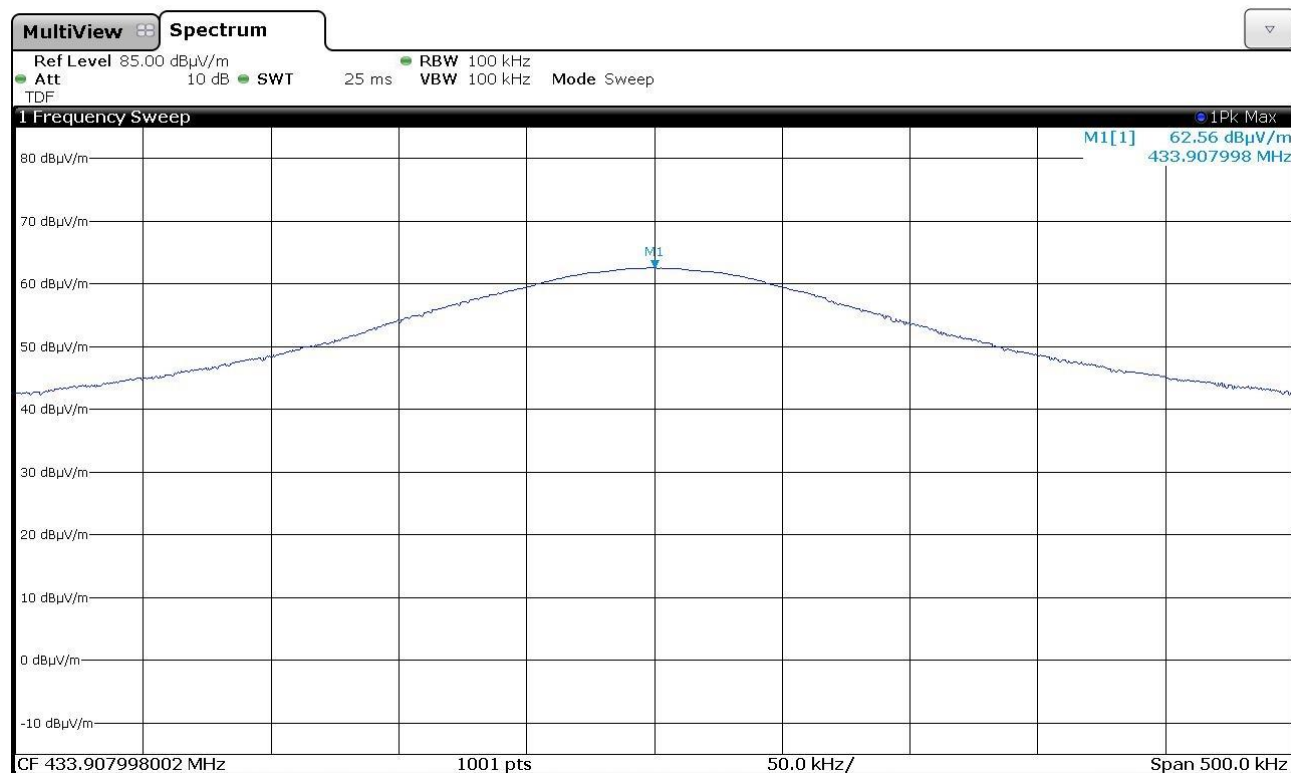
Duty cycle = $20\log 0,27 = -11,37$ dB where 0,27 is the highest percentage of duty cycle



Graphs

G16268242

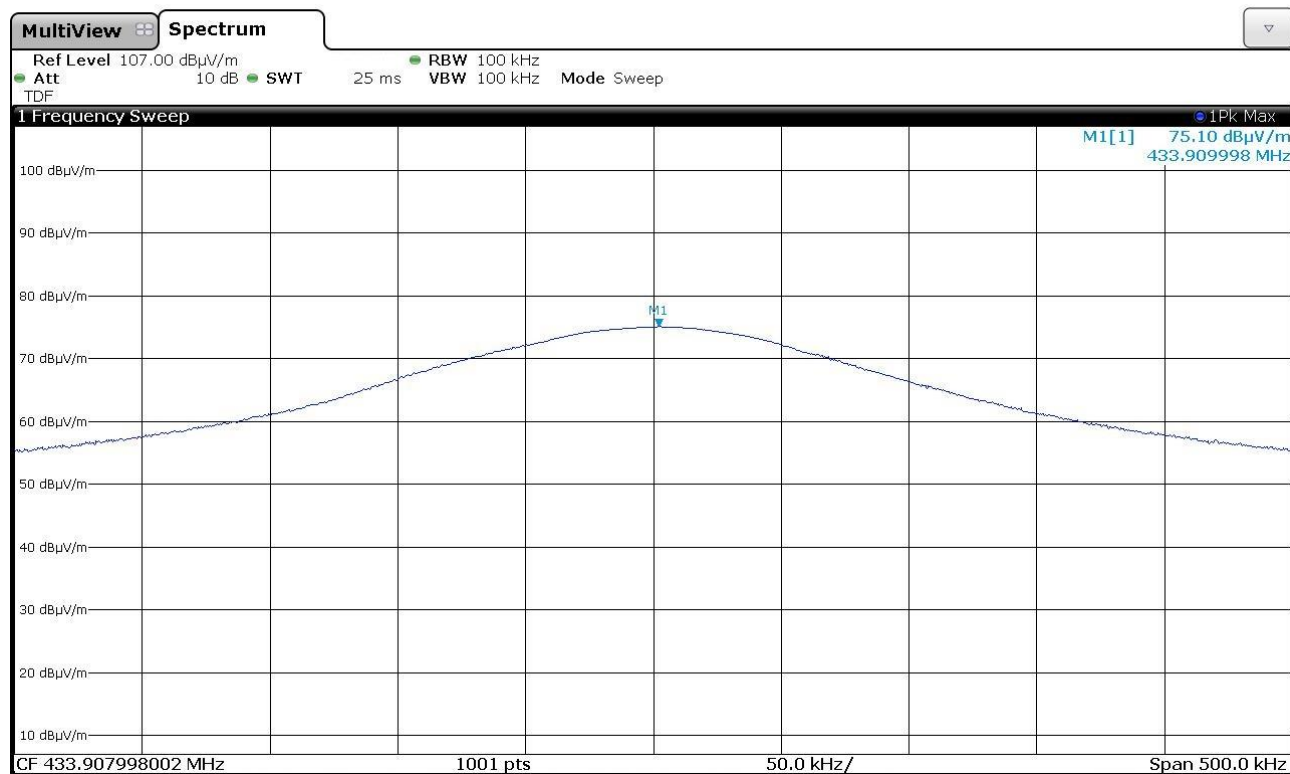
Bertezzo 16268242





G16268243

Bertezzo 16268243



Result: The requirements are met



11.5 Spurious Emission (> 1 GHz)

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.209 and Part 15.231
- 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 S164
Measurement uncertainty: See clause 7 of this test report

Test specification

Port: Enclosure
Antenna polarization: Horizontal (H) – Vertical (V)
EUT – Antenna distance: 3 m
Detector AV + Peak

Environmental conditions

Temperature (°C)	Atmospheric pressure (kPa)	Relative humidity (%)
23	100	45

Acceptance limits

Acceptance limits for emissions in restricted frequency bands		
Frequency (MHz)	AV limits [dB(μV/m)]	Peak limits [dB(μV/m)]
> 1000	54	74



The restricted frequency bands are listed in the following table

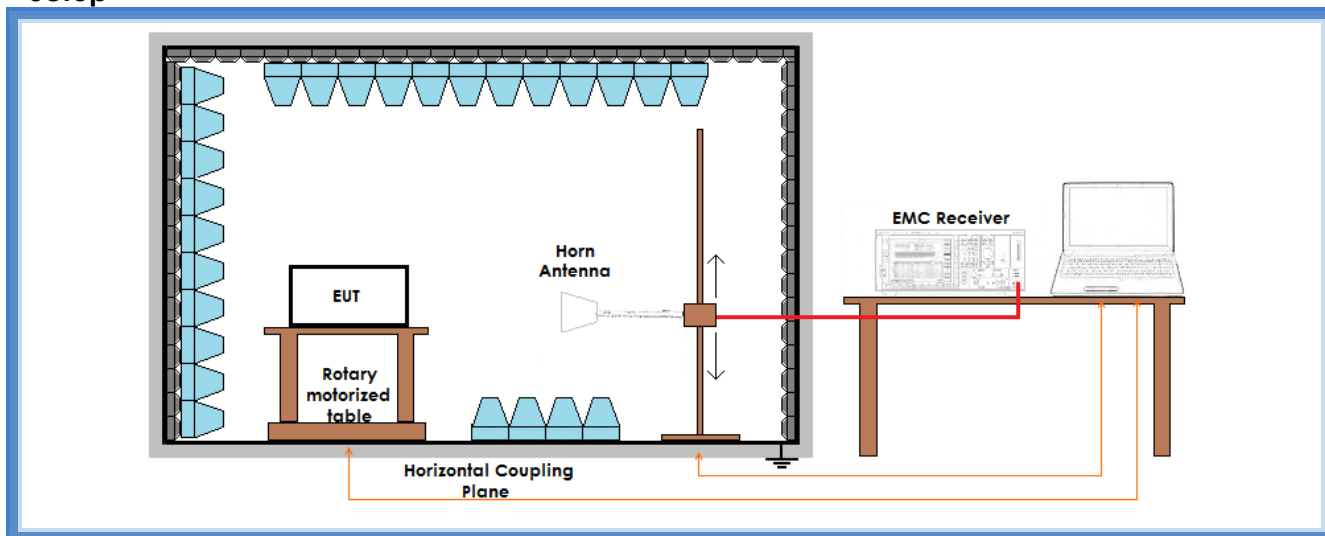
MHz	MHz	MHz	GHz
0,090 – 0,110	16,42 – 16,423	399,9 – 410	4,5 – 5,15
0,495 – 0,505	16,69475 – 16,69525	608 – 614	5,35 – 5,46
2,1735 – 2,1905	16,80425 – 16,80475	960 – 1240	7,25 – 7,75
4,125 – 4,128	25,5 – 25,67	1300 – 1427	8,025 – 8,5
4,17725 – 4,17775	37,5 – 38,25	1435 – 1626,5	9,0 – 9,2
4,20725 – 4,20775	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.



Setup



Result – AV detector

Frequency (MHz)	Measured Level (dBμV/m)	Duty cycle correction (dB)	Level (dBμV/m)	Limits (dBμV/m)	Remarks	Results
1306,0	29,38*	-11,37	18,01	60,83	Recharging mode	Complies
1735,0	41,36*	-11,37	29,99	60,83	Recharging mode	Complies
2606,0	41,20*	-11,37	29,83	60,83	Recharging mode	Complies
3037,0	45,37*	-11,37	34,00	60,83	Recharging mode	Complies
3471,0	49,83*	-11,37	38,46	60,83	Recharging mode	Complies
3905,0	42,55	-11,37	31,18	54,00	Recharging mode	Complies

Remarks: EUT was tested in 3 orthogonal planes. The results in this table show the highest value. The emission values marked with * have been detected in non-restricted frequency bands

Duty cycle value has been obtained using the following formula:

Duty cycle = $20\log 0,27 = -11,37$ dB where 0,27 is the highest percentage of duty cycle



Frequency (MHz)	Measured Level (dBμV/m)	Duty cycle correction (dB)	Level (dBμV/m)	Limits (dBμV/m)	Remarks	Results
1735,0	41,24*	-11,37	29,87	60,83	Battery mode	Complies
2606,0	37,03*	-11,37	25,66	60,83	Battery mode	Complies
3037,0	43,26*	-11,37	31,89	60,83	Battery mode	Complies
3471,0	48,12*	-11,37	36,75	60,83	Battery mode	Complies
3905,0	40,65	-11,37	29,28	54,00	Battery mode	Complies

Remarks: EUT was tested in 3 orthogonal planes. The results in this table show the highest value. The emission values marked with * have been detected in non-restricted frequency bands

Duty cycle value has been obtained using the following formula:

Duty cycle = $20\log 0,27 = -11,37$ dB where 0,27 is the highest percentage of duty cycle



Result – PK detector

Frequency (MHz)	Measured Level (dBμV/m)	Duty cycle correction (dB)	Level (dBμV/m)	Limits (dBμV/m)	Remarks	Results
1306,0	40,00*	-11,37	28,63	80,83	Recharging mode	Complies
1735,0	45,60*	-11,37	34,23	80,83	Recharging mode	Complies
2606,0	48,60*	-11,37	37,23	80,83	Recharging mode	Complies
3037,0	49,41*	-11,37	38,04	80,83	Recharging mode	Complies
3471,0	52,64*	-11,37	41,27	80,83	Recharging mode	Complies
3905,0	48,78	-11,37	37,41	74,00	Recharging mode	Complies

Remarks: EUT was tested in 3 orthogonal planes. The results in this table show the highest value. The emission values marked with * have been detected in non-restricted frequency bands

Duty cycle value has been obtained using the following formula:

Duty cycle = $20\log 0,27 = -11,37$ dB where 0,27 is the highest percentage of duty cycle

Frequency (MHz)	Measured Level (dBμV/m)	Duty cycle correction (dB)	Level (dBμV/m)	Limits (dBμV/m)	Remarks	Results
1735,0	45,16*	-11,37	33,79	80,83	Battery mode	Complies
2606,0	47,00*	-11,37	35,63	80,83	Battery mode	Complies
3037,0	47,76*	-11,37	36,39	80,83	Battery mode	Complies
3471,0	51,73*	-11,37	40,36	80,83	Battery mode	Complies
3905,0	48,04	-11,37	36,67	74,00	Battery mode	Complies

Remarks: EUT was tested in 3 orthogonal planes. The results in this table show the highest value. The emission values marked with * have been detected in non-restricted frequency bands

Duty cycle value has been obtained using the following formula:

Duty cycle = $20\log 0,27 = -11,37$ dB where 0,27 is the highest percentage of duty cycle

Result: The requirements are met



11.6 Occupied channel bandwidth

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.231 (c)
- Internal procedure PM001
- See clause 4 of this test report

Test configuration and test method

Test site:
Laboratory

Auxiliary equipment:
See clause 4 of this test report

EUT exercising

See clause 4 of this test report

Test equipment used

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

Test specification

The bandwidth of the emission shall be no wider than 0,25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0,5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier

Environmental conditions

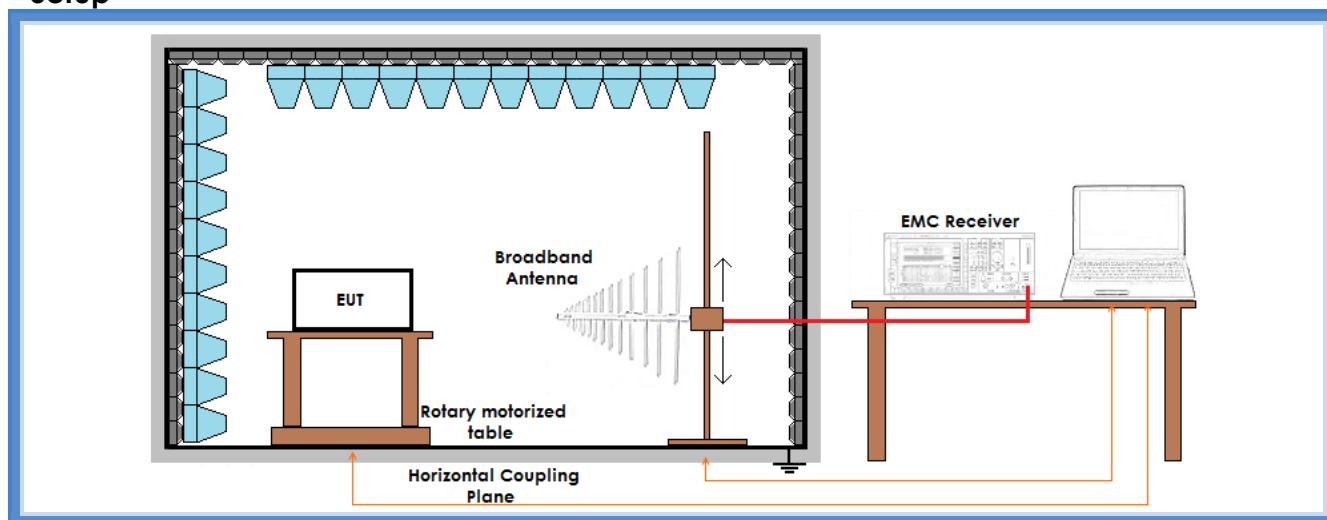
Temperature (°C)	Atmospheric pressure (kPa)	Relative humidity (%)
23	100	45

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



Setup



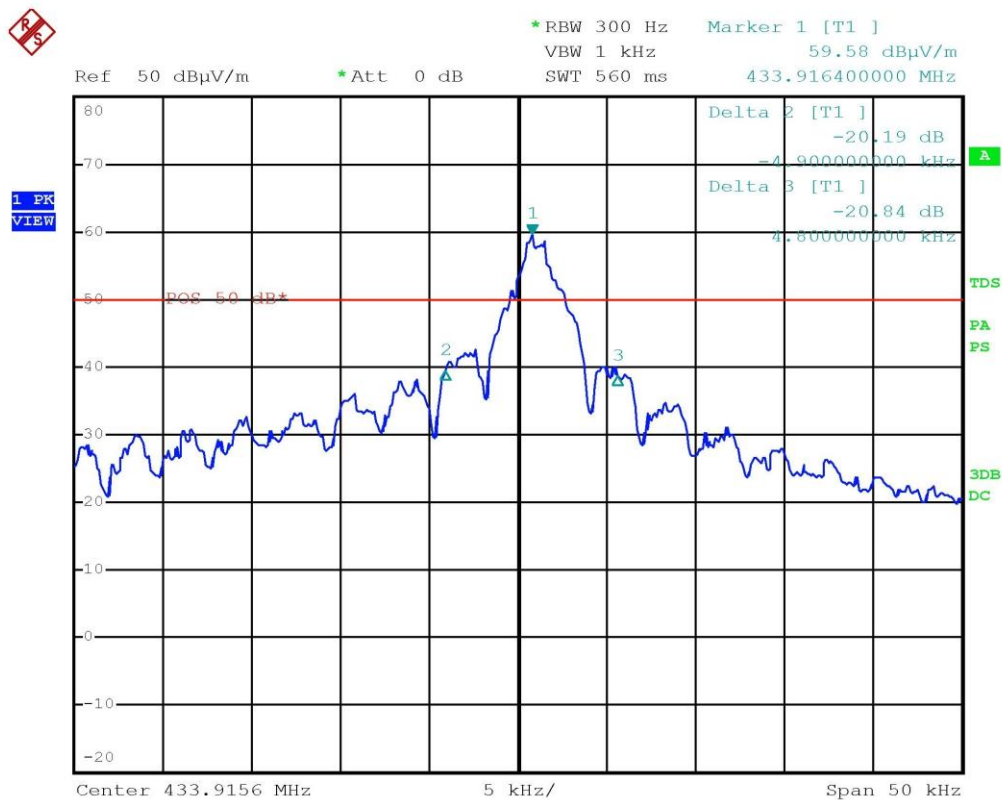
Result

Frequency (MHz)	Limit (kHz)	20 dB bandwidth (kHz)	Graphs	Results
433,9156	1084,8	9,700	G16268237	Complies



Graphs

G16268237



Bertezzo 16268237

Result: The requirements are met



11.7 Periodic Operation Characteristics

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.231 (a) (e)
- Internal procedure PM001
- See clause 4 of this test report

Test configuration and test method

Test site:
Laboratory

Auxiliary equipment:
See clause 4 of this test report

EUT exercising

See clause 4 of this test report

Test equipment used

CMC S164
Measurement uncertainty: See clause 7 of this test report

Test specification

- ☒ Manually operated transmitter
- ☐ Transmitter activated automatically

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

Environmental conditions

Temperature (°C)	Atmospheric pressure (kPa)	Relative humidity (%)
23	100	45



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

Frequency (MHz)	Transmitter deactivation time	Graphs
433,92	≤ 160 ms	G16268238

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

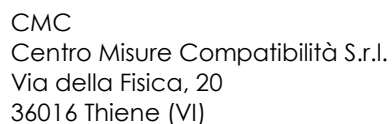
Result: The EUT does not employ periodic transmission.

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

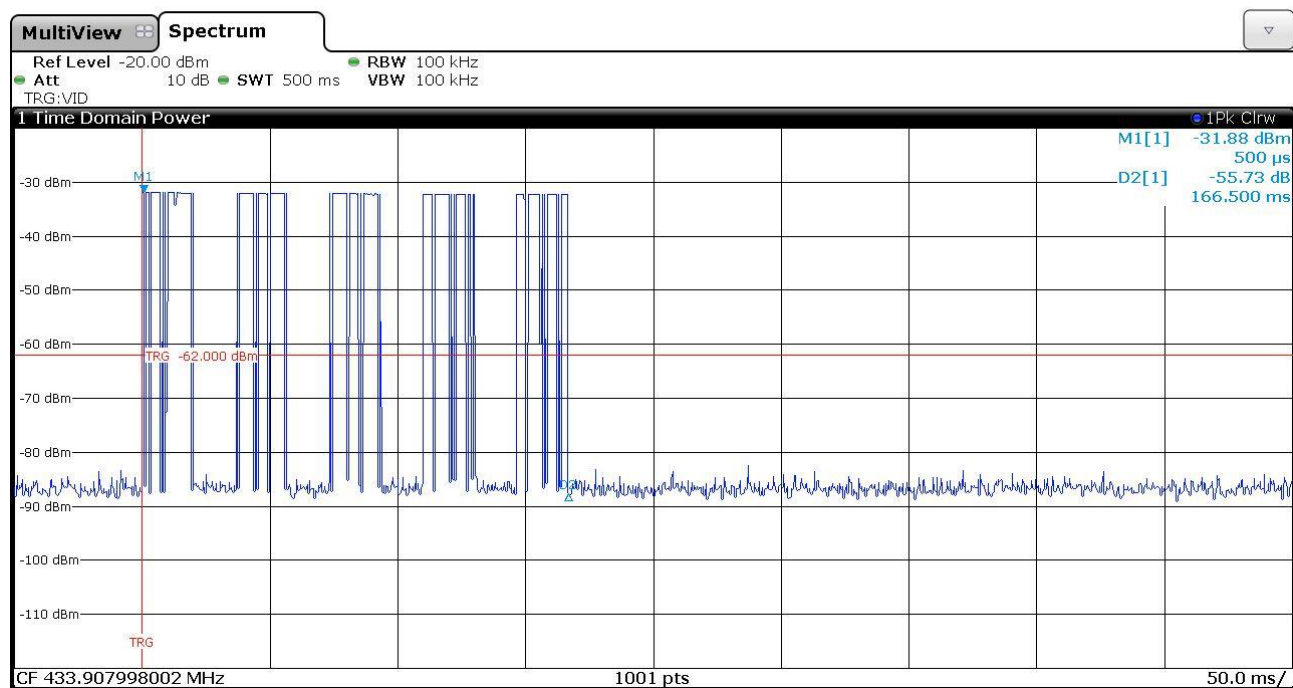
Result: N.A.



LAB N° 0168

G16268238

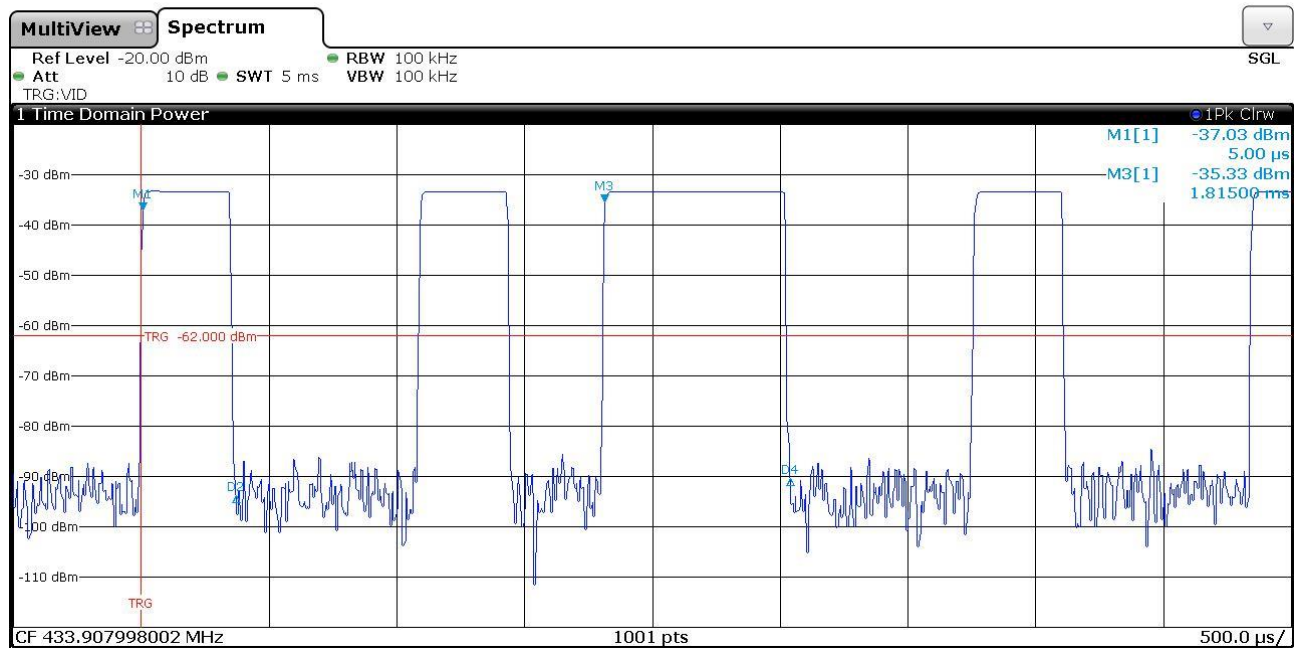
Bertezzo 16268238





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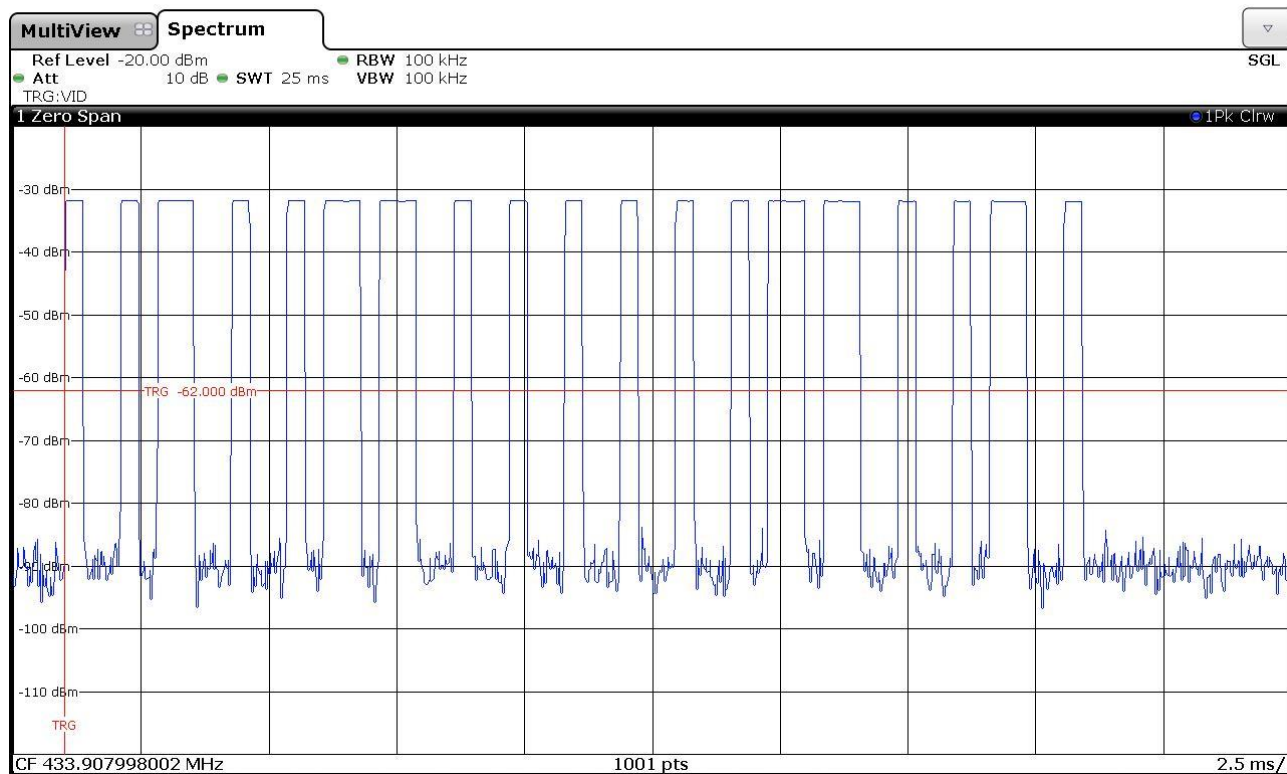
Bertezzo 16268240





G16268241

Bertezzo 16268241



Result: The requirements are met