

TEST REPORT

Nr. R22007701

Federal Communication Commission (FCC)

Report Reference No.	R22007701
Date of issue:	24.06.2022
Total number pages:	29
Customer name	Microgate S.r.l.
Address	Via Waltraud Gebert Deeg, 3e – 39100 Bolzano (BZ) – Italy
Test specification:	
Standards	FCC Rules & Regulations, Title 47:2020 Part 15 paragraph(s): 209 and 247 KDB 996369 D04 Module Integration Guide v01 Tests details at page 8
Non-standard test method	N/A
Test Report Form No.	15-247_HoppingCMC
Test Report Form(s) Originator ..	CMC Centro Misure Compatibilità S.r.l.
Master TRF	2022-06
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	WITTYPRO SEM – Traffic Light
(*) Trademark	Microgate
(*) Manufacturer	Microgate S.r.l.
(*) Model / Type reference	WIT205
(*) FCC ID of certified module	SQGBL652
(*) Rating(s)	3,7 Vdc from battery
Report	
Tested by (name + signature)	M. Segalla
Approved by (name + signature)	F. Marenda

(*) information provided by the customer

1 Summary

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2 Reference standard	
FCC Rules and Regulation Title 47 part 15:2020	Radio frequency devices
KDB 996369 D04 Module Integration Guide v01	Modular transmitter integration guide – Guidance for host product manufacturers
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	

<i>Revision index</i>	<i>Date</i>	<i>Change history</i>
1.0	24.06.2022	--

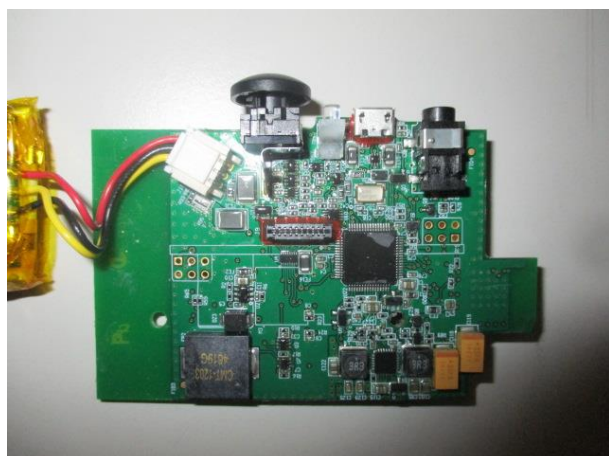
Testing and sampling:	
Date of receipt of test item	12.01.2022
Testing start date	06.06.2022
Testing end date	06.06.2022
Sampling procedure.....	Equipment used for testing was picked up by the customer
Internal identification	Adhesive label with the product number P220029
General remarks:	
This report 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 tested item and testing condition(s)

Description	WITTYPRO SEM – Traffic Light						
Model Number	WIT205						
FCC ID of certified module	SQGBL652						
Serial Number	000004						
Brand name	Microgate						
Test power supply.....		Voltage and Frequency	Reference poles				
			N	L1	L2	L3	PE
	☐	AC:	☐	☐	☐	☐	☐
	☐	AC:	☐	☐	☐	☐	☐
	☒	DC: 3,7 V from battery					☐
Type of equipment	☒ Transmitter unit ☒ Receiver unit						
Type of station	☐ Portable station ☒ Mobile station						
Software version	Bootloader Version 2.0.3 Application Version 2.1.14						
Test arrangements of EUT	<i>Intended operational arrangement(s) of EUT</i>		<i>Test arrangement (see basic standard)</i>				
	☒ Table-top only		Table-top				
	☐ Floor-standing only		Floor-standing				
	☐ Can be floor-standing or table-top		Table-top				
	☐ Rack mounted		In rack or table-top				
	☐ Other, for example wall mounted, ceiling mounted, handheld, body worn		Table-top				
Operating modes	No.	Operating mode of test item					
	1	EUT in operation, BLE link with auxiliary PC					
Accessories (not part of the test item)	Accessory		Type		Manufacturer		
	Notebook		--		--		
Declination of responsibility	Information relating to the description of the sample, components list and software/hardware version (if reported) are provided by the customer. CMC Centro Misura Compatibilità S.r.l. cannot be considered responsible for these information, for any other document sent by the customer and for any difference between the software version present in the tested sample and that present in the object intended for final sale. In some cases, the software in the tested sample is in a version dedicated exclusively to the test, and therefore does not represent the software installed in the final version of the product.						

6.1 Photos of the test item





7 Verdict summary section

FCC Rules & Regulations, Title 47:2020 Part 15 paragraph(s): 209 and 247			
Clause	Requirement – Test case	Basic standard	Verdict
Part 15.209	Radiated emissions and spurious emission	ANSI C63.10	P
Part 15.209 and 15.247	Peak Output Power	ANSI C63.10	Not required (+)

(+) It should not be necessary to re-test the transmitter output power of any modular transmitter which has been certified based on conducted power

Normative references	
Reference no.	Description
FCC Rules and Regulation Title 47 part 15:2020	--
KDB 558074 D01 15.247 Meas Guidance v05r02	Guidance for compliance measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices operating under section 15.247 of the FCC rules
KDB 996369 D04 Module Integration Guide v01	Modular transmitter integration guide – Guidance for host product manufacturers
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 Emissions in restricted frequency bands and in unrestricted frequency bands

Tested by	M. Segalla	
Test date	06.06.2022	
Test location (stand)	Semi-anechoic chamber (CMC A070)	
Reference standards	FCC Rules and Regulation; Titles 47 Part. 15.209 ANSI C63.10 cl. 6.3, 6.4, 6.5 and 6.6 KDB 996369 D04 Module Integration Guide v01	
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	
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

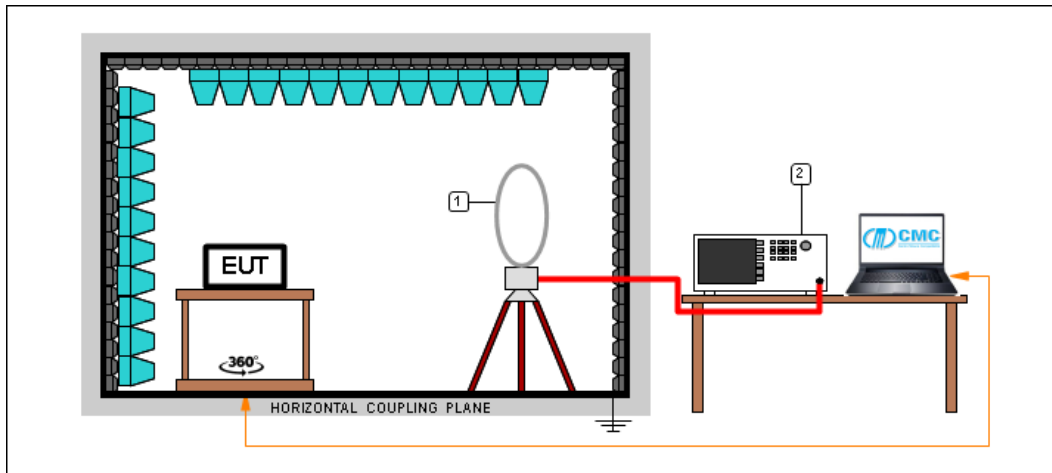
MHz	MHz	MHz	GHz
0,090 – 0,110	16,42 – 16,423	399,9 – 410	4,5 – 5,15
0,495 – 0,505	16,69475 – 16,69525	608 – 614	5,35 – 5,46
2,1735 – 2,1905	16,80425 – 16,80475	960 – 1240	7,25 – 7,75
4,125 – 4,128	25,5 – 25,67	1300 – 1427	8,025 – 8,5
4,17725 – 4,17775	37,5 – 38,25	1435 – 1626,5	9,0 – 9,2
4,20725 – 4,20775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

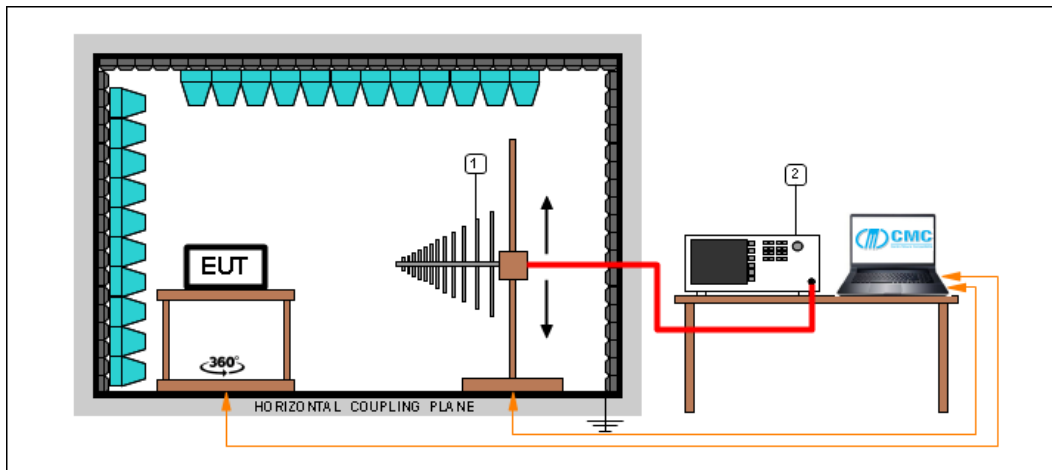
Frequency ≤ 30 MHz



Test setup PE004_01

Nr.	Id. Number	Manufacturer	Model	Description
2	CMC S353	Rohde & Schwarz	ESW26	EMI Test Receiver 1 Hz - 26.5 GHz
1	CMC S127	Schaffner	HLA6120	Loop Antenna 9kHz - 30MHz

Frequency ≤ 1 GHz



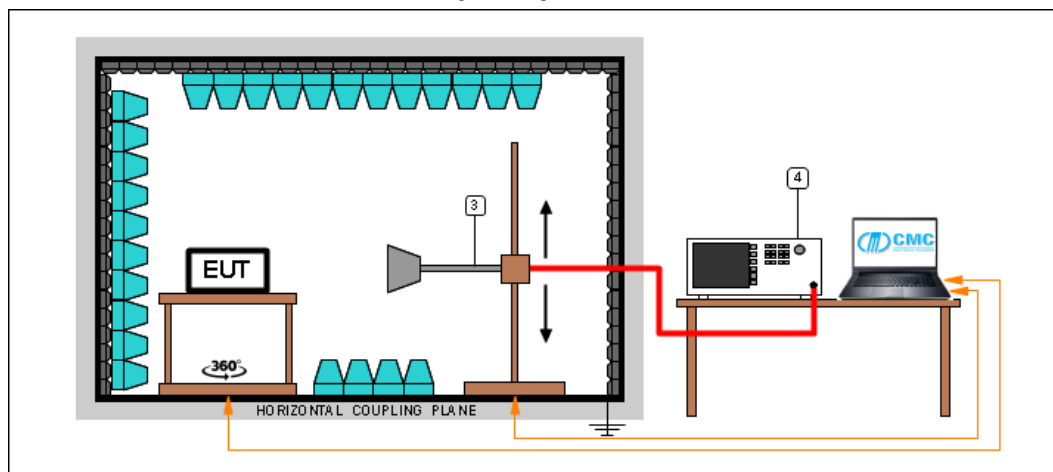
Test setup PE004_02

Nr.	Id. Number	Manufacturer	Model	Description
2	CMC S353	Rohde & Schwarz	ESW26	EMI Test Receiver 1 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 S353	Rohde & Schwarz	ESW26	EMI Test Receiver 1 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 S353	Rohde & Schwarz	ESW26	EMI Test Receiver 1 Hz - 26.5 GHz
3	CMC S108	Emco	3115	Waveguide antenna

Test setup PE004_05

Nr.	Id. Number	Manufacturer	Model	Description
4	CMC S353	Rohde & Schwarz	ESW26	EMI Test Receiver 1 Hz - 26.5 GHz
3	CMC S290	Schwarzbeck	BBHA 9170	Horn Antenna (15-40 GHz)

Result

Polarization	Frequency Range (MHz)	Graphs	Remarks	Result
H	300 – 1000	G22007701	--	P
V	300 – 1000	G22007702	--	P
V	30 – 300	G22007703	--	P
H	30 – 300	G22007704	--	P
Loop	0,009 – 30	G22007705	--	P
V	1000 – 3000	G22007706	--	P
H	1000 – 3000	G22007707	--	P
H	3000 – 18000	G22007708	--	P
V	3000 – 18000	G22007709	--	P
V	18000 – 26000	G22007710	--	P
H	18000 – 26000	G22007711	--	P

Remarks: EUT was tested in 3 orthogonal planes, graphs are related to the highest detected levels. Peaks above the limits are due to the main transmitting frequencies

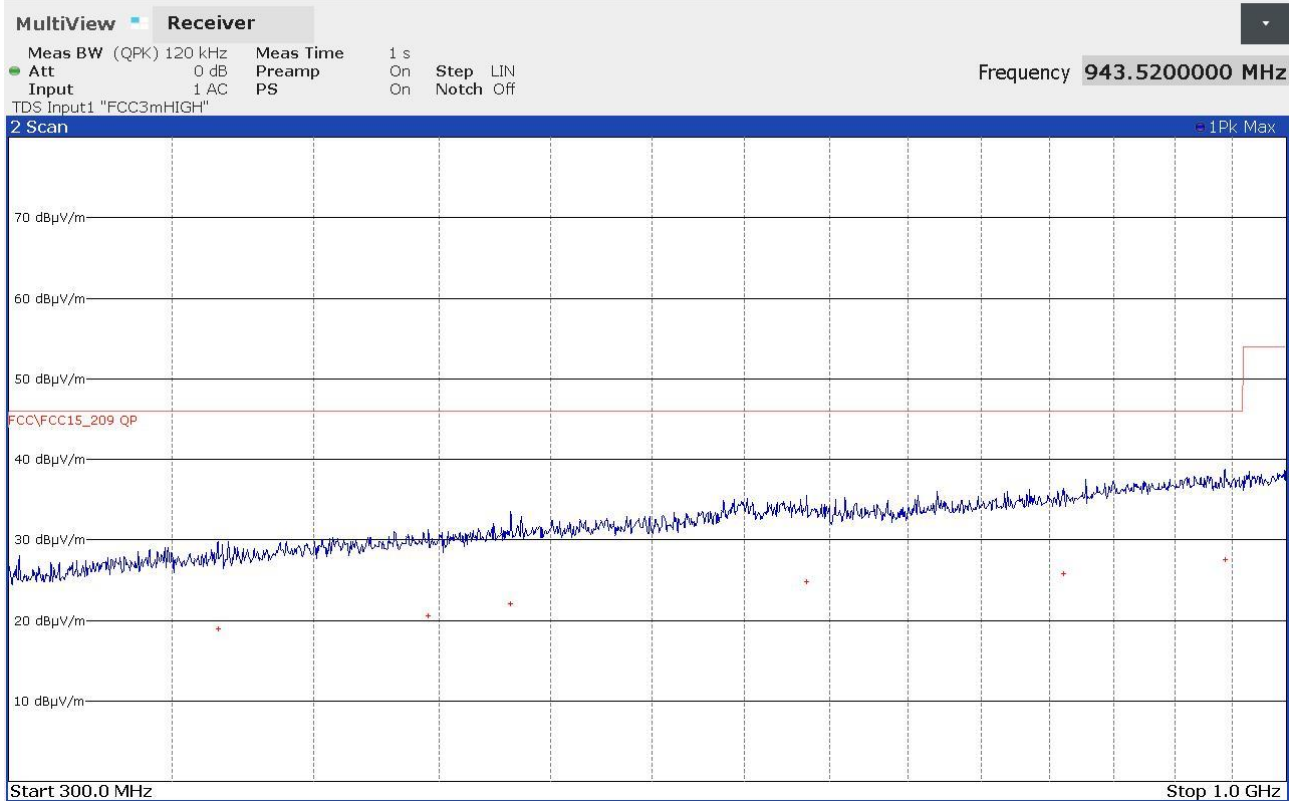
Graphs Legend

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

Segalla 22007701



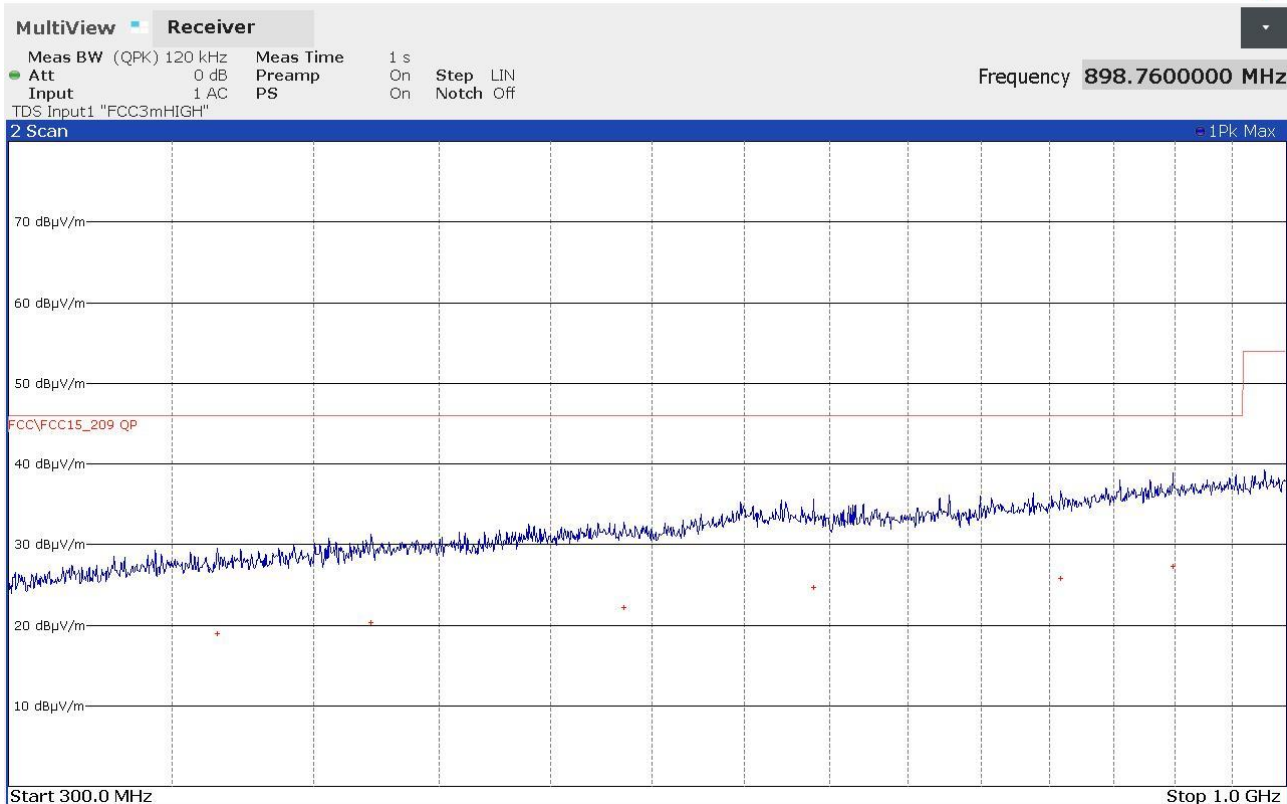
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
365400000	+18,94	-27,08
445600000	+20,62	-25,40
481560000	+22,06	-23,96
636360000	+24,76	-21,26
810280000	+25,79	-20,23
943520000	+27,49	-18,53

22007701_2

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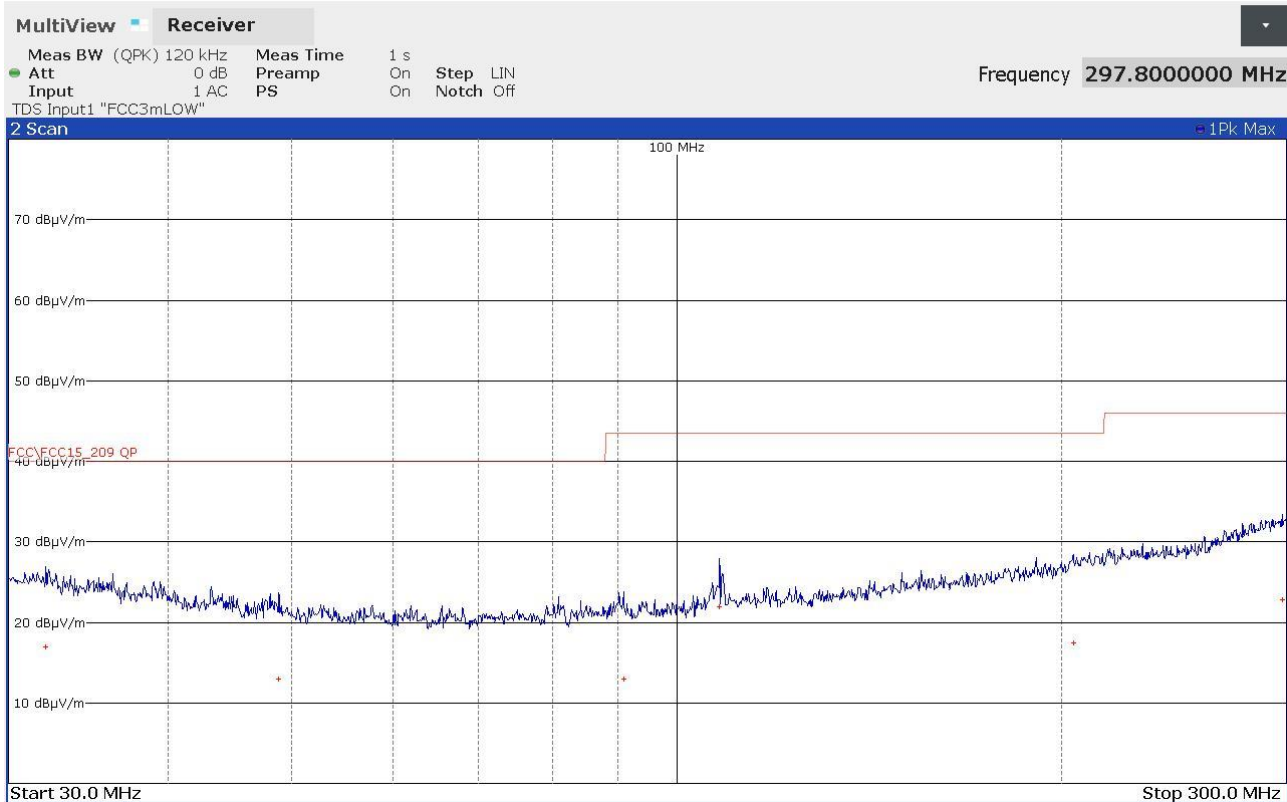
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
365160000	+18,96	-27,06
422080000	+20,32	-25,70
535880000	+22,23	-23,79
640560000	+24,67	-21,35
808400000	+25,85	-20,17
898760000	+27,23	-18,79

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Segalla 22007703



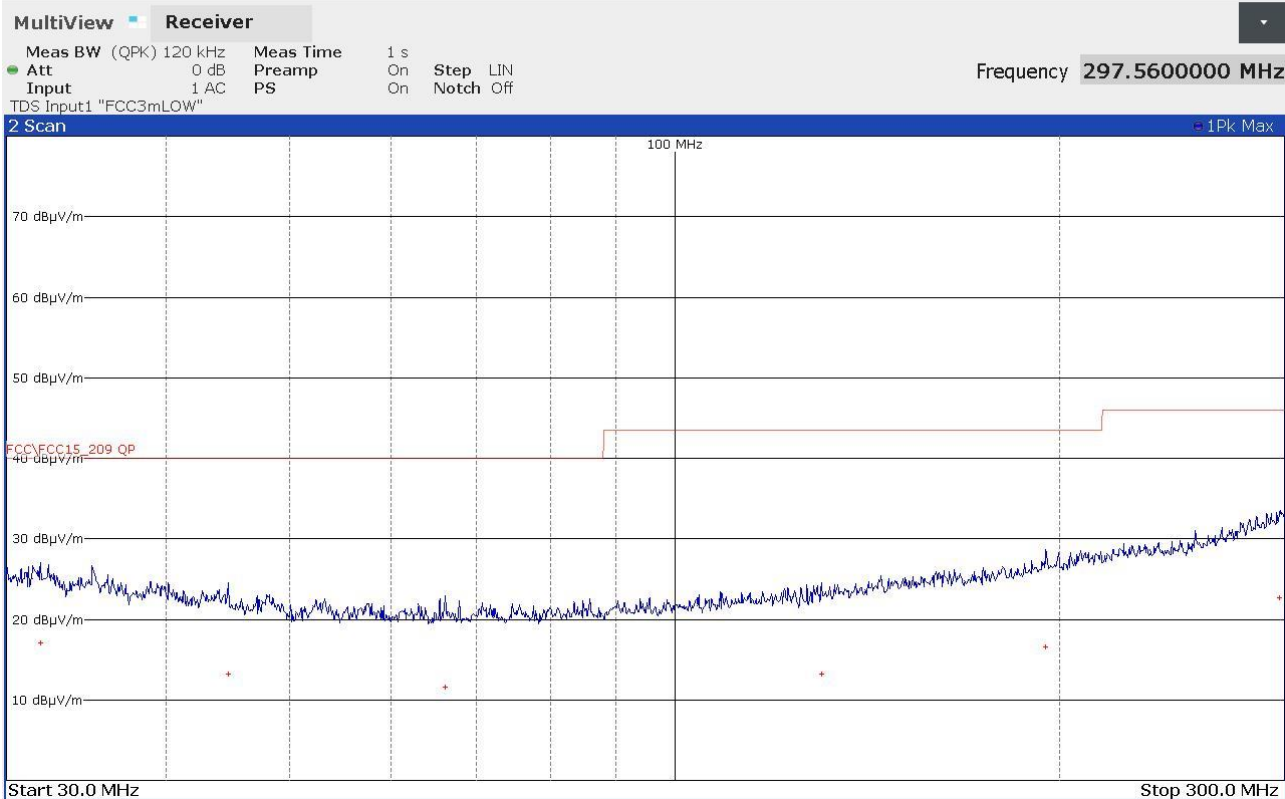
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
32080000	+16,91	-23,09
48840000	+12,92	-27,08
90920000	+12,98	-30,54
108040000	+21,99	-21,53
204280000	+17,42	-26,10
297800000	+22,77	-23,25

22007703_2

Segalla 22007704



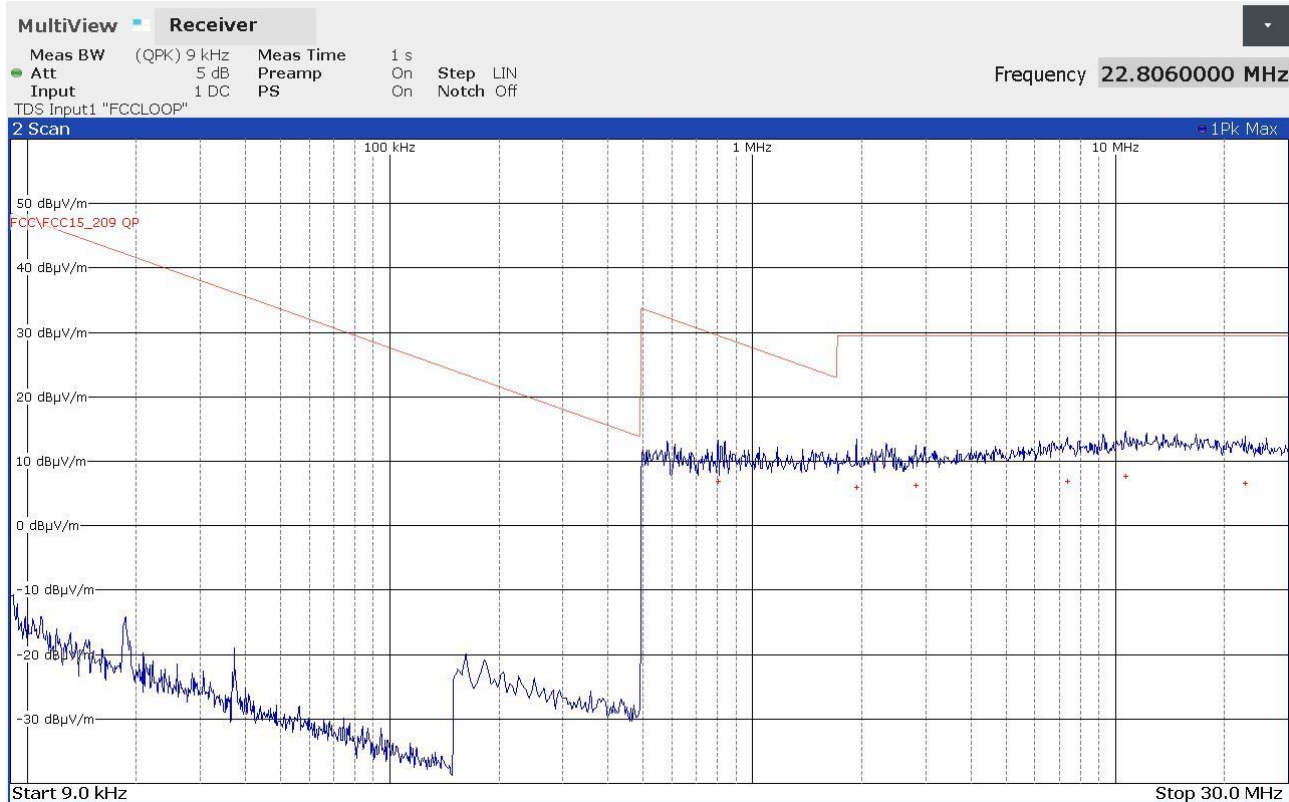
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
31960000	+7,44	-22,56
48760000	+3,60	-26,40
76360000	+1,94	-28,06
135080000	+4,08	-25,92
189400000	+6,80	-23,20
296680000	+13,04	-23,96

22007704_2

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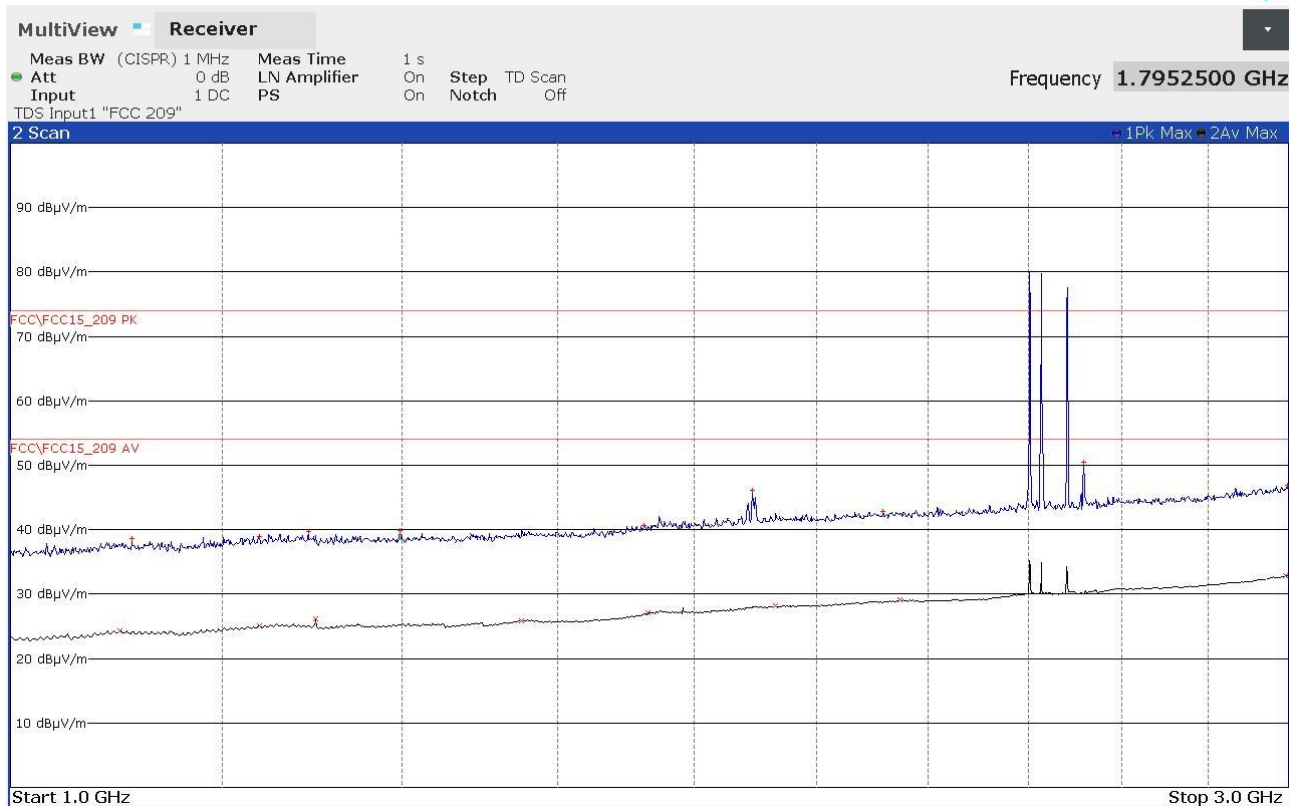
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
802000	+6,88	-22,64
1934000	+6,02	-23,52
2822000	+6,27	-23,27
7366000	+6,95	-22,59
10658000	+7,61	-21,93
22806000	+6,60	-22,94

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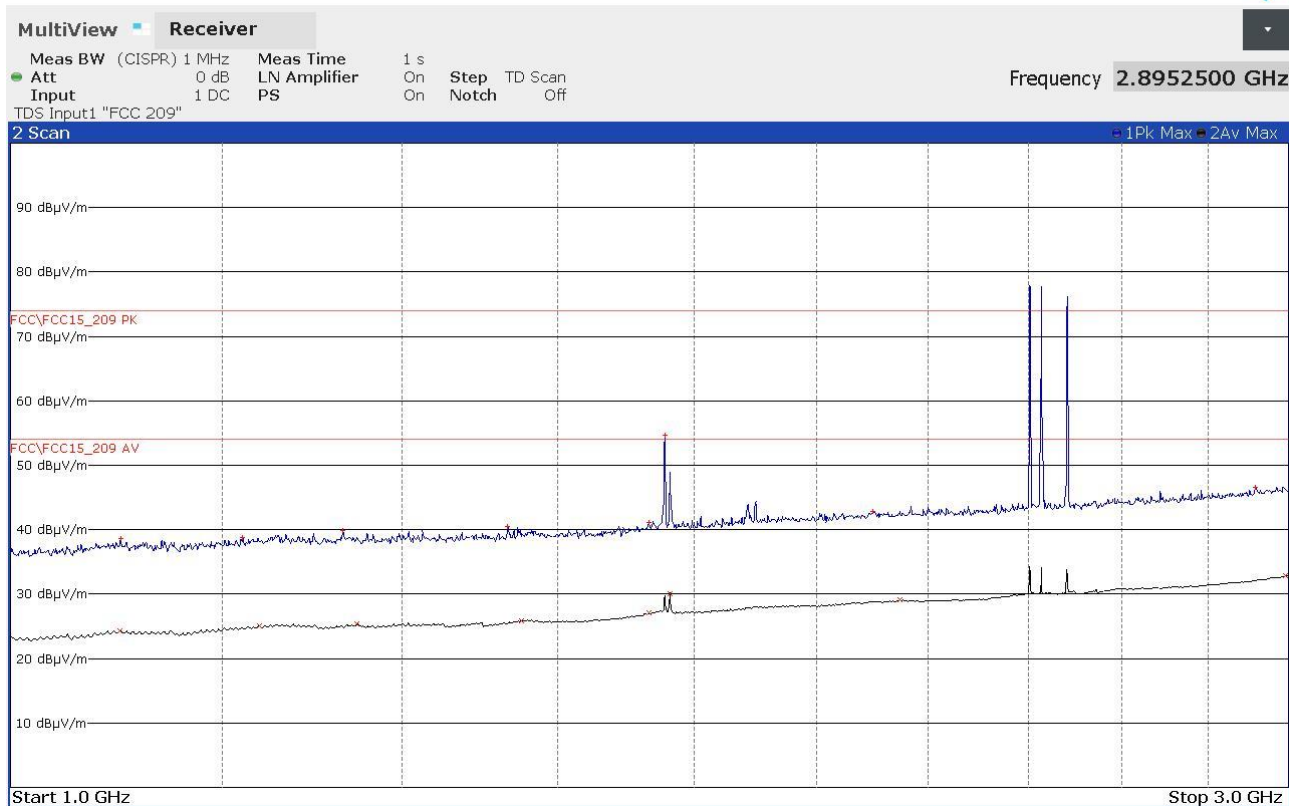


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1110250000	+38,63	-35,35	1098750000	+24,35	-29,63
1238250000	+38,96	-35,02	1238250000	+25,13	-28,85
1292000000	+39,66	-34,32	1300000000	+26,20	-27,78
1397750000	+39,87	-34,11	1551750000	+25,90	-28,08
1724000000	+40,63	-33,35	1730500000	+27,04	-26,94
1891750000	+46,07	-27,91	1929750000	+28,18	-25,80
2117250000	+42,85	-31,13	2148250000	+29,16	-24,82
2515500000	+50,50	-23,48	2992750000	+32,88	-21,10
2998000000	+46,96	-27,02			

22007706_2

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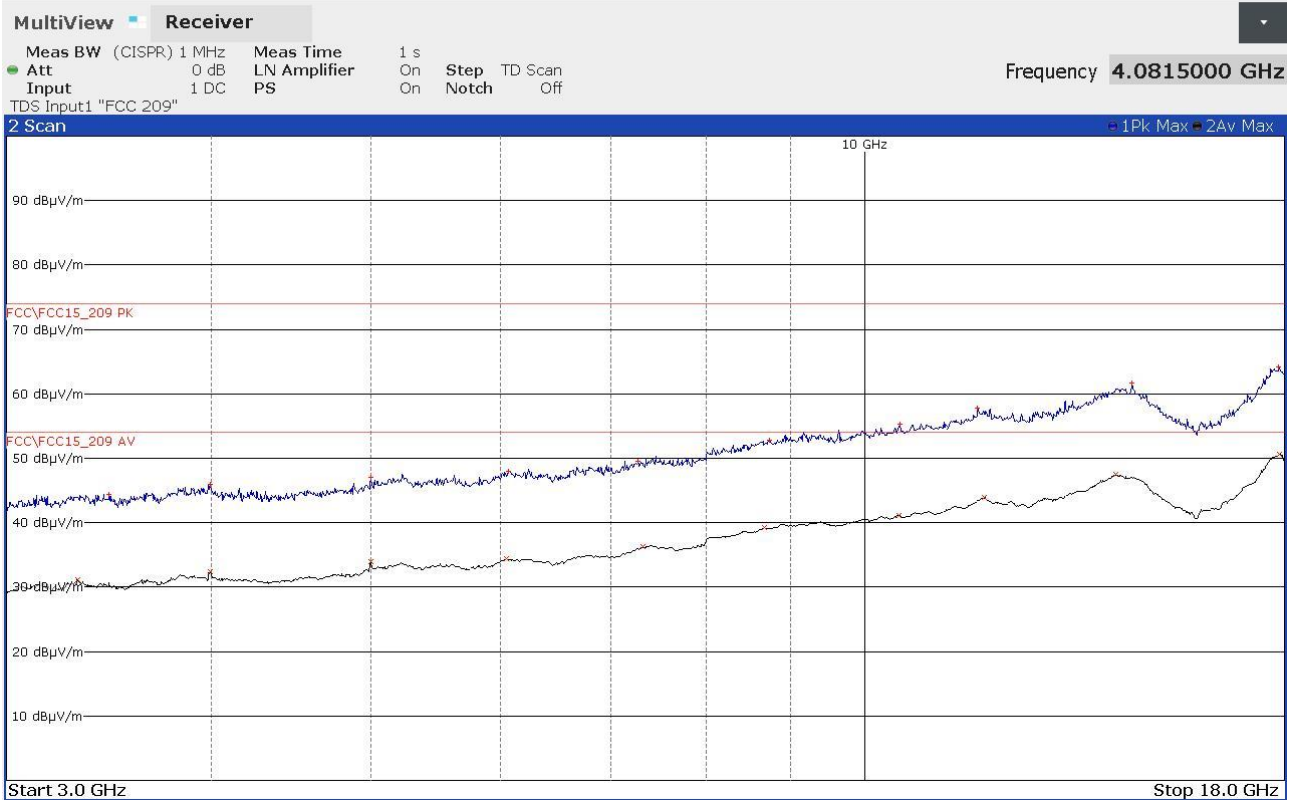


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1099250000	+38,58	-35,40	1098750000	+24,35	-29,63
1221000000	+38,74	-35,24	1238250000	+25,12	-28,86
1331000000	+39,85	-34,13	1347250000	+25,37	-28,61
1533500000	+40,44	-33,54	1551750000	+25,90	-28,08
1731250000	+41,17	-32,81	1730750000	+27,04	-26,94
1754750000	+54,65	-19,33	1763250000	+30,14	-23,84
2099250000	+42,84	-31,14	2147750000	+29,16	-24,82
2916250000	+46,62	-27,36	2993000000	+32,88	-21,10

22007707_2

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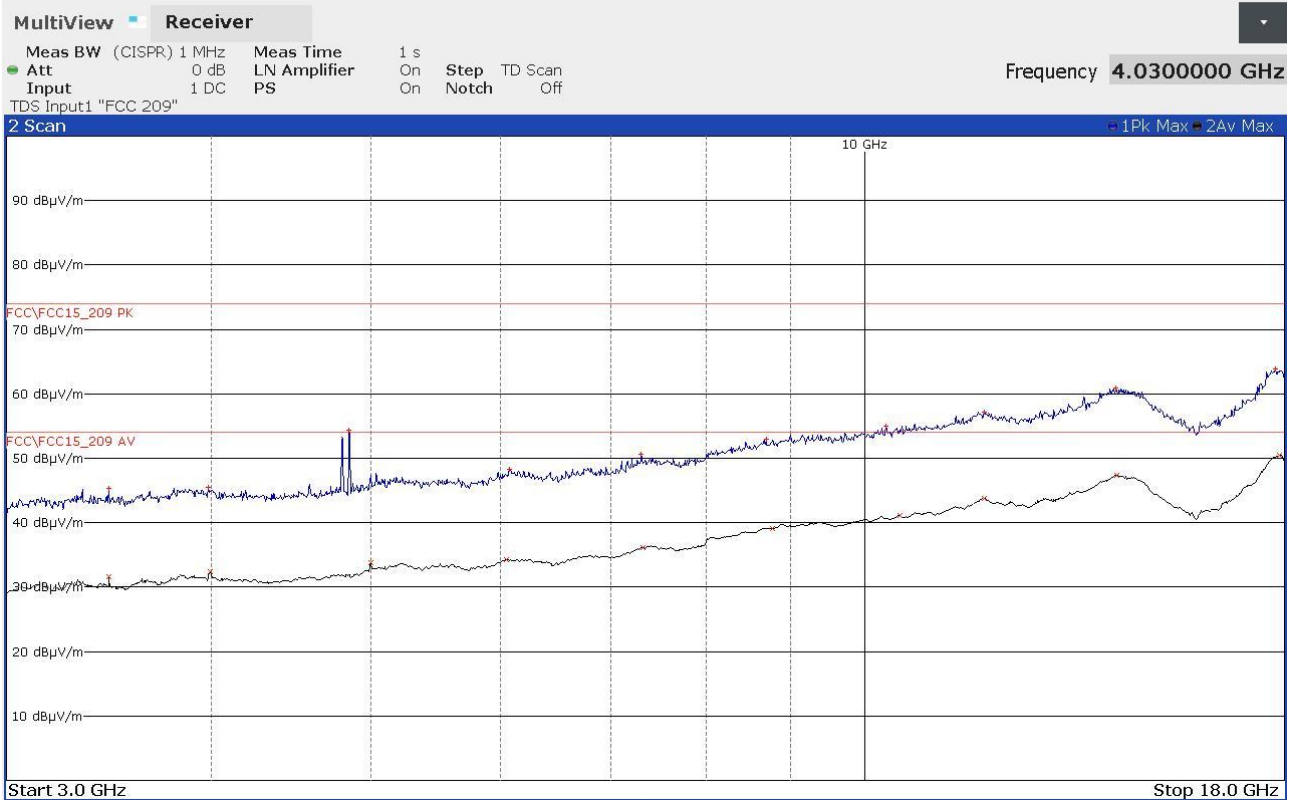


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
3464500000	+44,39	-29,59	3313000000	+31,15	-22,83
3991250000	+45,95	-28,03	3993500000	+32,39	-21,59
4999000000	+46,98	-27,00	4998500000	+33,96	-20,02
6068000000	+48,04	-25,94	6048250000	+34,38	-19,60
7274750000	+49,47	-24,51	7324000000	+36,22	-17,76
8744500000	+52,76	-21,22	8680000000	+39,21	-14,77
10502000000	+55,37	-18,61	10479500000	+41,16	-12,82
11707500000	+57,75	-16,23	11819500000	+43,87	-10,11
14536500000	+61,65	-12,33	14219250000	+47,43	-6,55
17856250000	+64,24	-9,74	17871000000	+50,60	-3,38

22007708_2

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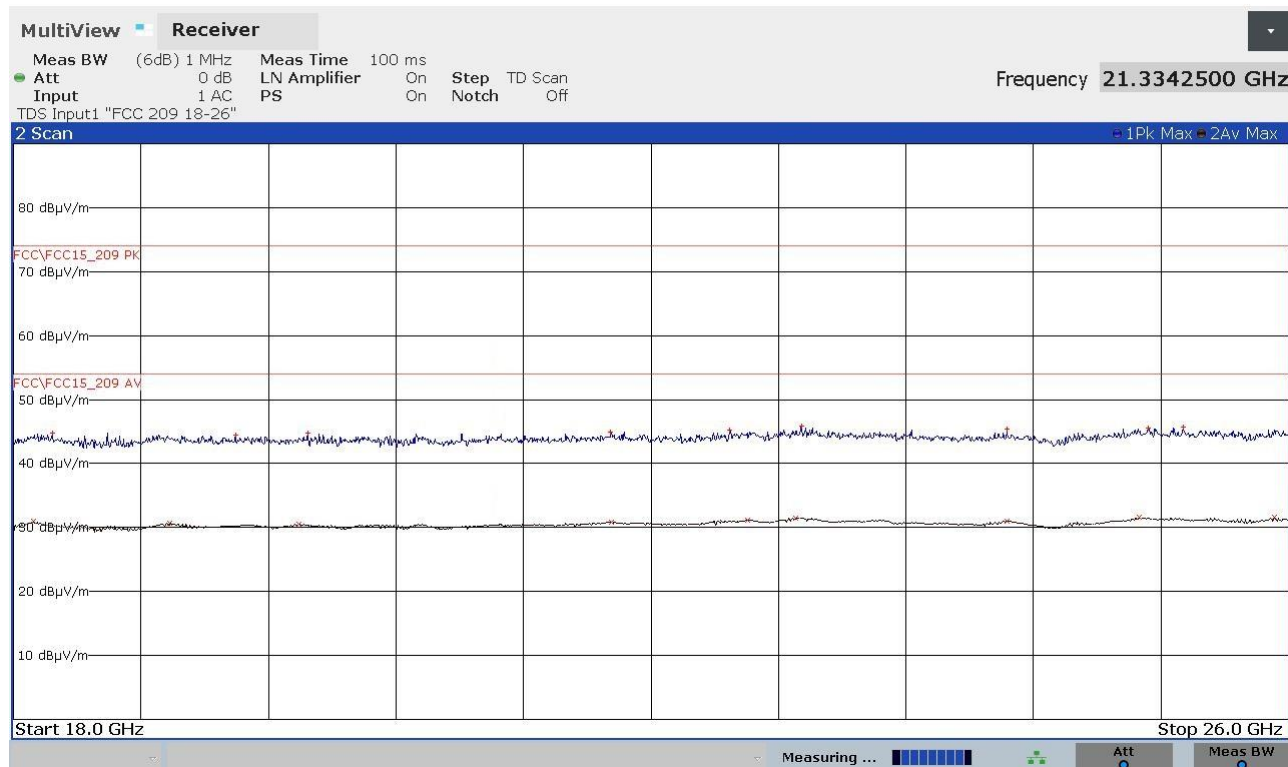


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
3463750000	+45,38	-28,60	3463500000	+31,68	-22,30
3980250000	+45,56	-28,42	3993000000	+32,33	-21,65
4851250000	+54,38	-19,60	4998250000	+33,86	-20,12
6071250000	+48,33	-25,65	6049250000	+34,33	-19,65
7303500000	+50,67	-23,31	7323250000	+36,19	-17,79
8709750000	+52,92	-21,06	8780000000	+39,14	-14,84
10299250000	+54,91	-19,07	10500000000	+41,09	-12,89
11818750000	+57,15	-16,83	11818000000	+43,83	-10,15
14214750000	+60,83	-13,15	14219750000	+47,36	-6,62
17766500000	+63,79	-10,19	17870250000	+50,51	-3,47

22007709_2

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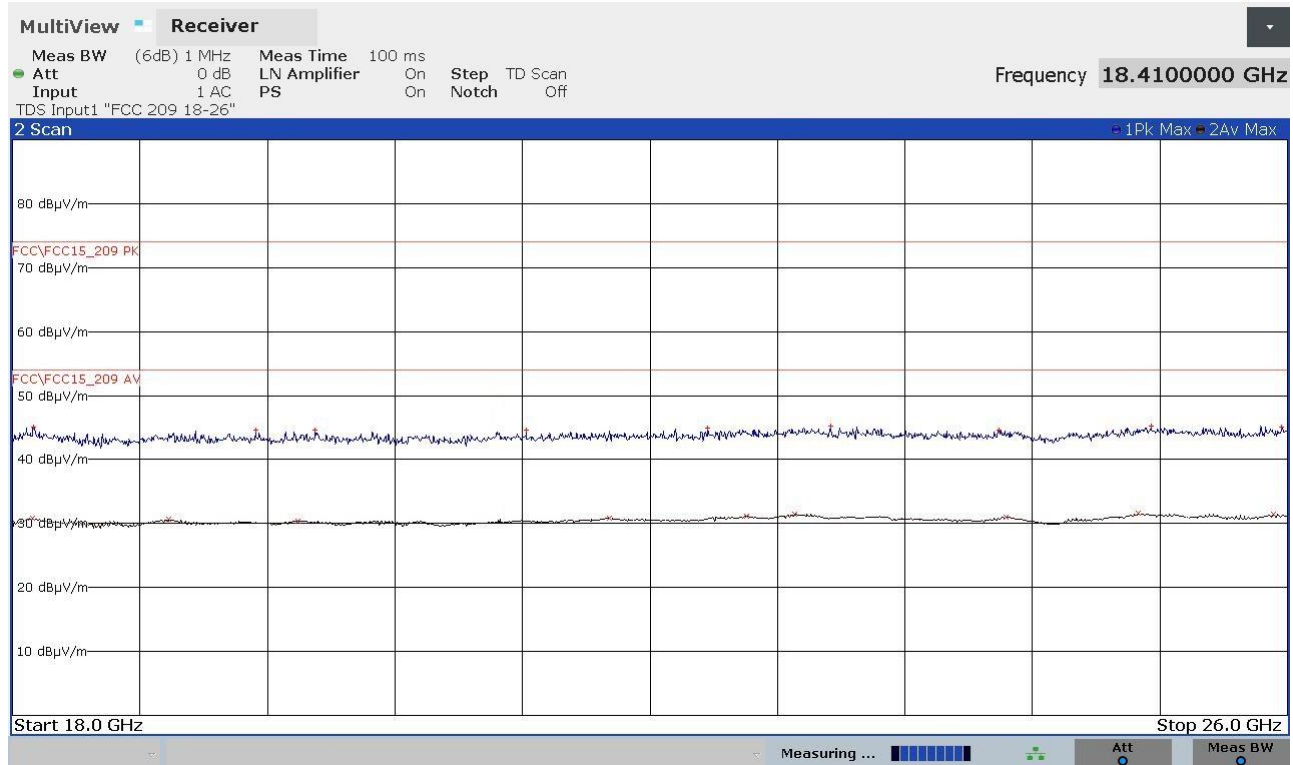


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
18244500000	+44,71	-29,27	18128750000	+30,92	-23,06
19392750000	+44,47	-29,51	18981750000	+30,70	-23,28
19846000000	+44,69	-29,29	19788250000	+30,51	-23,47
21746250000	+45,00	-28,98	21749250000	+30,91	-23,07
22493500000	+45,25	-28,73	22607250000	+31,16	-22,82
22942750000	+45,88	-28,10	22908500000	+31,46	-22,52
24235250000	+45,37	-28,61	24234250000	+31,04	-22,94
25123000000	+45,61	-28,37	25065250000	+31,57	-22,41
25340000000	+45,74	-28,24	25910750000	+31,54	-22,44

22007710_2

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FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
18129000000	+45,04	-28,94	18128500000	+30,82	-23,16
19526500000	+44,65	-29,33	18983000000	+30,65	-23,33
19899500000	+44,61	-29,37	19788000000	+30,43	-23,55
21225750000	+44,63	-29,35	21748250000	+30,81	-23,17
22361750000	+44,91	-29,07	22607750000	+31,12	-22,86
23132250000	+45,16	-28,82	22908500000	+31,44	-22,54
24192000000	+44,58	-29,40	24233750000	+30,99	-22,99
25145500000	+45,18	-28,80	25065000000	+31,57	-22,41
25964000000	+45,09	-28,89	25910750000	+31,48	-22,50

22007711_2

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 '22	January '23
CMC S108	EMCO	3115	Horn Antenna	9811-5622	June '22	June '25
CMC S127	Schaffner	HLA6120	Loop Antenna	1191	November '18	November '23
CMC S200	Schwarzbeck	NSLK 8128	V-LISN	8128-273	January '22	January '23
CMC S206	Rohde & Schwarz	ESCI 7	EMC Receiver 9KHz-7GHz	100781	January '22	January '23
CMC S260	CMC	Wfr_N	Shielded Cable	Wfr_ant10-1	November '21	November '22
CMC S261	CMC	Wfr_N	Shielded Cable	Wfr_ant20-1	November '21	November '22
CMC S262	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix32-1	November '21	November '22
CMC S263	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix31-1	November '21	November '22
CMC S264	CMC	Wfr_N	Shielded Cable	Wfr_ext03-1	November '21	November '22
CMC S271	Schwarzbeck	BBA 9106 + VHBB 9124	Biconical Antenna (30-300MHz)	831	June '22	June '25
CMC S287	Schwarzbeck	VUSLP 9111B	Log-periodic Antenna (200 MHz-3Ghz)	9111B-203	June '22	June '25
CMC S288	CMC	W_sma_white	Joint Shielded Cable	W_001	November '21	November '22
CMC S295	Rohde & Schwarz	FSW43	Spectrum Analyzer 43GHz	104059	November '19	November '22
CMC S353	Rohde & Schwarz	ESW26	Emi Test Receiver 1 Hz - 26.5 GHz	101492	September '20	September '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	2,3 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	3,8 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	4,1 dB		1
Radiated Emission CISPR 16 Bicon. Ant. 30-300 MHz	PE004_02	4,7 dB		1
Radiated Emission CISPR 16 LogP. Ant. 300-1000 MHz	PE004_03	4,6 dB		1
Radiated Emission CISPR 16 Horn Ant. 1-18 GHz	PE004_04	4,7 dB		1
Human Exposure to electromagnetic fields	PE005_01	16,7 %		1
Harmonics	PE006_01	10 mA +	2,9 %	1
Flicker	PE007_01	4,15 %		1
Radiated Immunity 80 MHz - 6 GHz	PE102_XX	2,20 dB	0,86 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	6,23 %	18,7 A/m a 300A/m	1
Dumped Magnetic field	PE108_01	6,23 %	1,87 A/m a 30A/m	1
Common mode conducted immunity	PE112_01	2,16 %	0,22 V a 10V	1

Attachment 1

Test	Test Setup	Expanded uncertainty	Note
Power/Spurious 9kHz-30MHz	PR001_01	4,1 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. 22_01 date 31/01/2022			

Note 1:

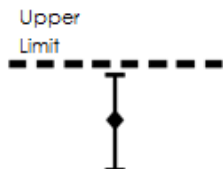
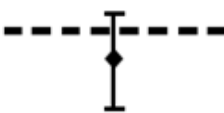
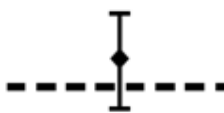
The expanded uncertainty reported according to the document EA-4-02 is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of $p = 95\%$

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

In agreement with ILAC-G8:09/2019 cl.4.2.1 Guidelines on Decision Rules and Statements of Conformity

Quality manual references – Internal procedure

Internal Procedure PM001 rev. 3.1 (Quality Manual)	Measure procedure
Internal Procedure INC_M rev. 9.7 (Quality Manual)	Measurement uncertainty calculation