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LAB N° 0168 L

Independent Testing Laboratory
Accredited by ACCREDIA according to UNI CEI EN ISO/IEC 17025 accreditation n. 0168 L

TEST REPORT
Nr. R21021001

Federal Communication Commission (FCC)

Report Reference No. ..... :	R21021001
Date of issue: ..... :	27.05.2021
Total number pages: ..... :	92
Applicant´s name ..... :	Imet S.r.l.
Address ..... :	Via Ronche, 93 – 33077 Sacile (PN) – Italy
Test specification:	
Standards ..... :	FCC Rules & Regulations, Title 47:2019 Part 15 paragraph(s): 203, 204, 205, 207, 209, 215 and 247
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	15-247_DTSCMC
Test Report Form(s) Originator .. :	CMC Centro Misure Compatibilità S.r.l.
Master TRF ..... :	2021-04

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description ..... :	2,4 GHz RF Transceiver module
Trademark ..... :	Imet
Manufacturer ..... :	Imet S.r.l.
Model / Type reference ..... :	B033
FCC ID ..... :	2AYRTB033
Rating(s) ..... :	3,7 Vdc from battery

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 15:2019	--
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	27.05.2021	--

Testing and sampling:	
Date of receipt of test item	02.02.2021
Testing start date	16.04.2021
Testing end date	26.05.2021
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 P210120
General remarks:	
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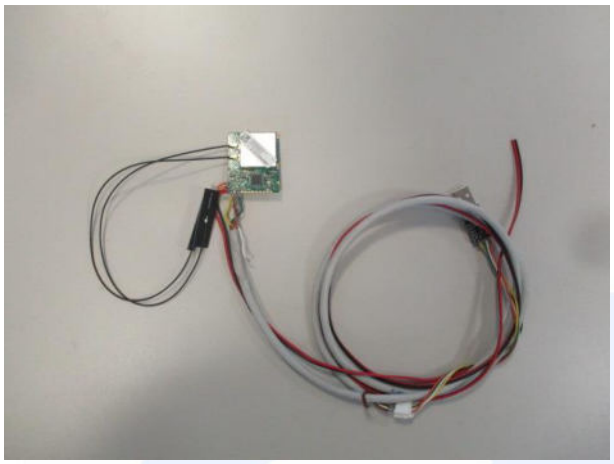
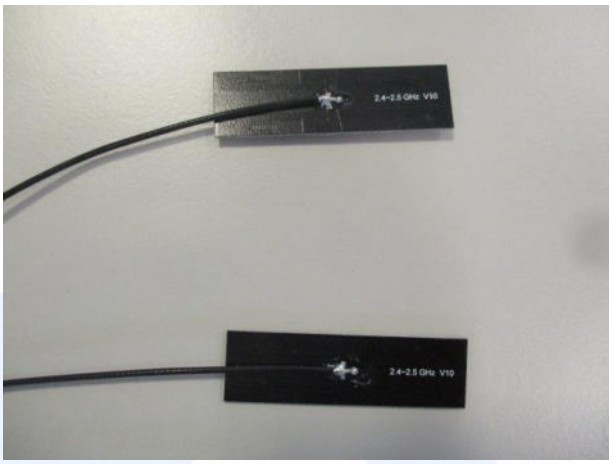
Possible test case verdicts:	
Test case does not apply to the test object:	N/A (Not Applicable)
Test object does meet the requirement:	P (Pass)
Test object does not meet the requirement:	F (Fail)
Test object does not performed:	N/E (Not Executed)
Definition of symbols used in this test report:	
☒ Indicates 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.	

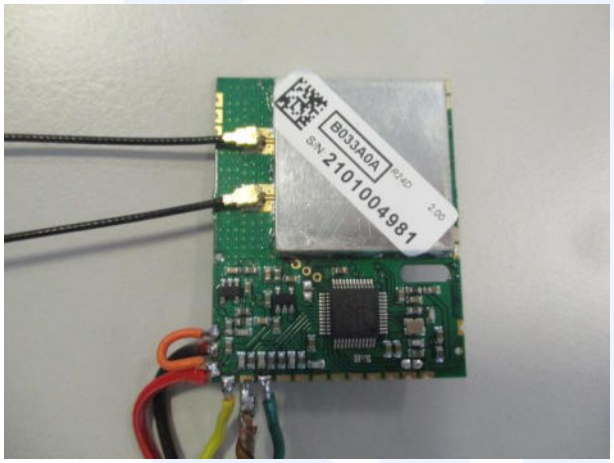
6 General description of tested item and testing condition(s)

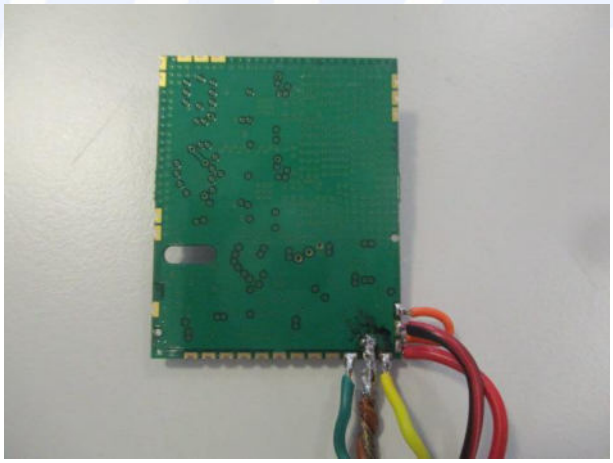
Description ..... :	2,4 GHz RF Transceiver module						
Model Number ..... :	B033						
FCC ID ..... :	2AYRTB033						
Serial Number ..... :	--						
Brand name ..... :	Imet						
Frequency band ..... :	2400 – 2483,5 MHz						
Nominal frequencies ..... :	F_L: 2404 MHz		F_M: 2440 MHz		F_H: 2479 MHz		
Test power supply ..... :		Voltage and Frequency	Reference poles				
			N	L1	L2	L3	PE
	☐	AC:	☐	☐	☐	☐	☐
	☐	AC:	☐	☐	☐	☐	☐
	☒	DC: 3,7 V from battery					☐
Test configuration ..... :	☐	Table top equipment					
	☐	Floor standing equipment					
	☐	Hand-held equipment					
	☒	Module					
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, 205, 207, 209, 215 and 247			
Clause	**Requirement – Test case**	**Basic standard**	**Verdict**
Part 15.203	Antenna requirements	--	**P**
Part 15.207	Conducted emissions	ANSI C63.10	**N/A (+)**
Part 15.209	Emissions in restricted frequency bands and in unrestricted frequency bands	ANSI C63.10	**P**
Part 15.247 (a) (2)	DTS bandwidth	ANSI C63.10	**P**
Part 15.215 (c)	20 dB bandwidth	ANSI C63.10	**P**
Part 15.247 (d)	Band edge	ANSI C63.10	**P**
Part 15.209 and 15.247	Fundamental emission output power	ANSI C63.10	**P**
Part 15.209 and 15.247	Maximum power spectral density level in the fundamental emission	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	--
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
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 ..... :	16.04.2021	
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
	☐	Dedicated antenna
Antenna gain ..... :	2 dBi	
External R.F. power amplifier ..... :	Not Present	

9.2 Emissions in restricted frequency bands and in unrestricted frequency bands

Tested by ..... :	G. Gandini	
Test date ..... :	16.04.2021	
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	
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(µV/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 ≥ 1000 MHz)			
Frequency (MHz)	*Test distance (m)*	*AV limits [dB(µV/m)]*	*Peak limits [dB(µV/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			

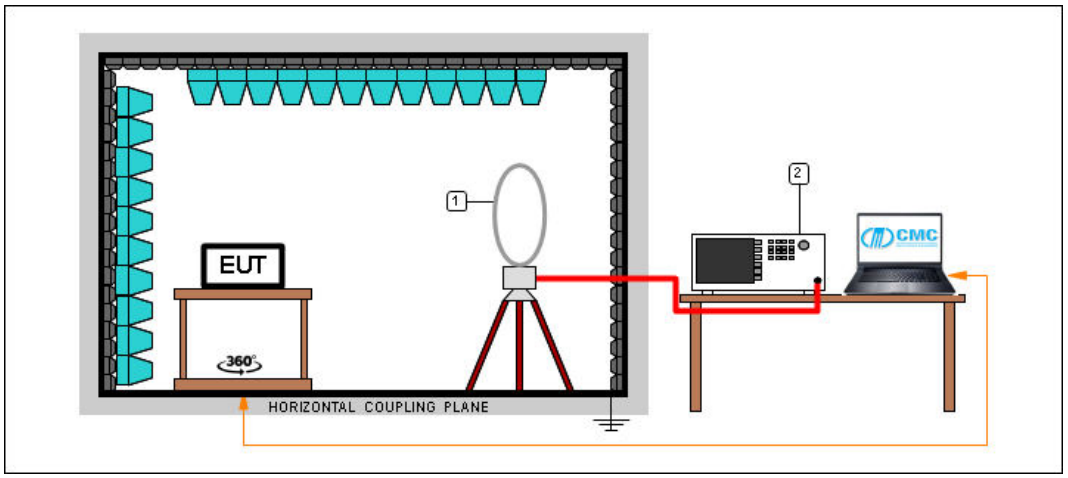
Acceptance limits for emissions in non-restricted frequency bands (according to ANSI C63.10 cl. 11.11.1)

The DTS rules specify that in any 100 kHz bandwidth outside of the authorized frequency band, the power shall be attenuated according to the following conditions:

a) If the maximum peak conducted output power procedure was used to demonstrate compliance as described in 9.1, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz
b) If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz.
c) In either case, attenuation to levels below the 15.209 general radiated emissions limits is not required

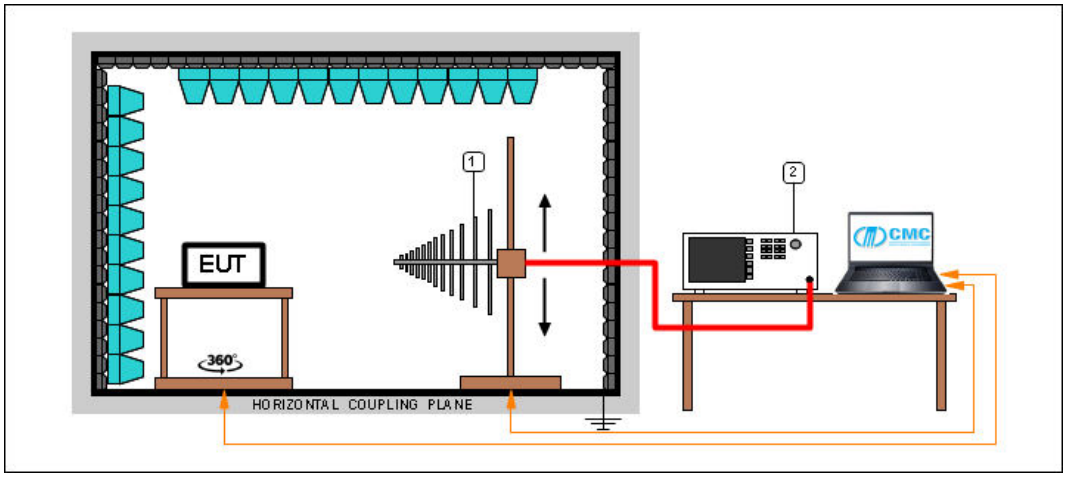
Test setup

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
2	CMC S164	Rohde & Schwarz	ESU26	EMC receiver
1	CMC S127	Schaffner	HLA6120	Loop Antenna 9kHz - 30MHz

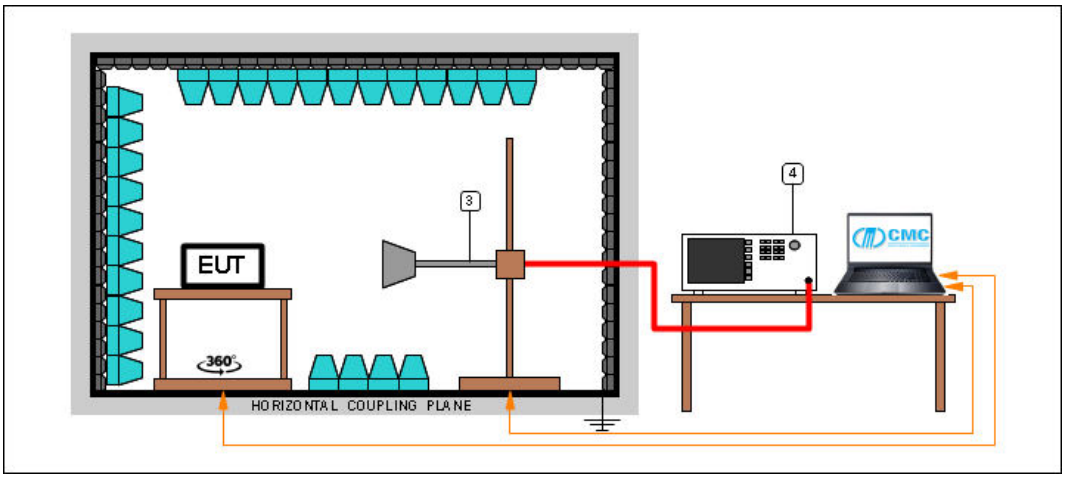
Frequency ≤ 1 GHz



Test setup PE004_02				
Nr.	*Id. Number*	*Manufacturer*	*Model*	*Description*
2	CMC S353	Rohde & Schwarz	ESW26	EMI Test Receiver 1 Hz - 26.5 GHz
2	CMC S164	Rohde & Schwarz	ESU26	EMC receiver
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
2	CMC S164	Rohde & Schwarz	ESU26	EMC receiver
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
4	CMC S164	Rohde & Schwarz	ESU26	EMC receiver
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
4	CMC S164	Rohde & Schwarz	ESU26	EMC receiver
3	CMC S290	Schwarzbeck	BBHA 9170	Horn Antenna (15-40 GHz)

Result

Chip A

Transmission frequency (MHz)	*Polarization*	*Frequency Range (MHz)*	*Graphs*	*Result*
2404	V	1000 – 3000	G21021001	P
2404	H	1000 – 3000	G21021002	P
2440	H	1000 – 3000	G21021003	P
2440	V	1000 – 3000	G21021004	P
2479	V	1000 – 3000	G21021005	P
2479	H	1000 – 3000	G21021006	P
Worst case	V	300 – 1000	G21021019	P
Worst case	H	300 – 1000	G21021020	P
Worst case	H	30 – 300	G21021025	P
Worst case	V	30 – 300	G21021026	P
Worst case	Loop	0,009 – 30	G21021027	P
2404	V	3000 – 18000	G21021067	P
2404	H	3000 – 18000	G21021068	P
2440	H	3000 – 18000	G21021069	P
2440	V	3000 – 18000	G21021070	P
2479	V	3000 – 18000	G21021071	P
2479	H	3000 – 18000	G21021072	P
2404	V	18000 – 26000	G21021085	P
2404	H	18000 – 26000	G21021086	P
2440	H	18000 – 26000	G21021087	P
2440	V	18000 – 26000	G21021088	P
2479	V	18000 – 26000	G21021089	P
2479	H	18000 – 26000	G21021090	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 40log(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 20log(test distance/10) based on the measuring distance provided by the standard.
Peaks above the limits are caused by the nominal transmitting frequencies

Chip B

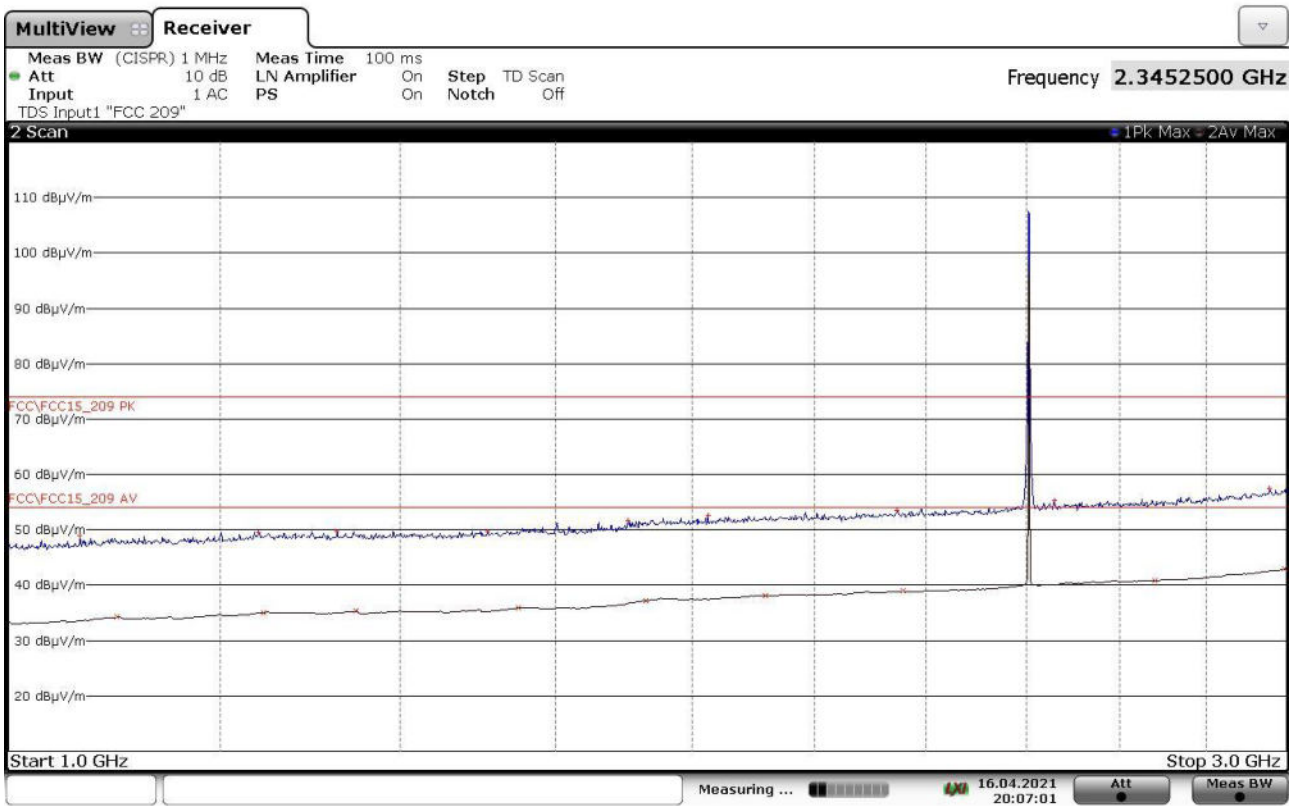
Transmission frequency (MHz)	*Polarization*	*Frequency Range (MHz)*	*Graphs*	*Result*
2479	V	1000 – 3000	G21021013	P
2479	H	1000 – 3000	G21021014	P
2440	H	1000 – 3000	G21021015	P
2440	V	1000 – 3000	G21021016	P
2404	V	1000 – 3000	G21021017	P
2404	H	1000 – 3000	G21021018	P
Worst case	H	300 – 1000	G21021021	P
Worst case	V	300 – 1000	G21021022	P
Worst case	V	30 – 300	G21021023	P
Worst case	H	30 – 300	G21021024	P
Worst case	Loop	0,009 – 30	G21021028	P
2404	H	3000 – 18000	G21021073	P
2404	V	3000 – 18000	G21021074	P
2440	V	3000 – 18000	G21021075	P
2440	H	3000 – 18000	G21021076	P
2479	H	3000 – 18000	G21021077	P
2479	V	3000 – 18000	G21021078	P
2404	V	18000 – 26000	G21021079	P
2404	H	18000 – 26000	G21021080	P
2440	H	18000 – 26000	G21021081	P
2440	V	18000 – 26000	G21021082	P
2479	V	18000 – 26000	G21021083	P
2479	H	18000 – 26000	G21021084	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 40log(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 20log(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 21021001

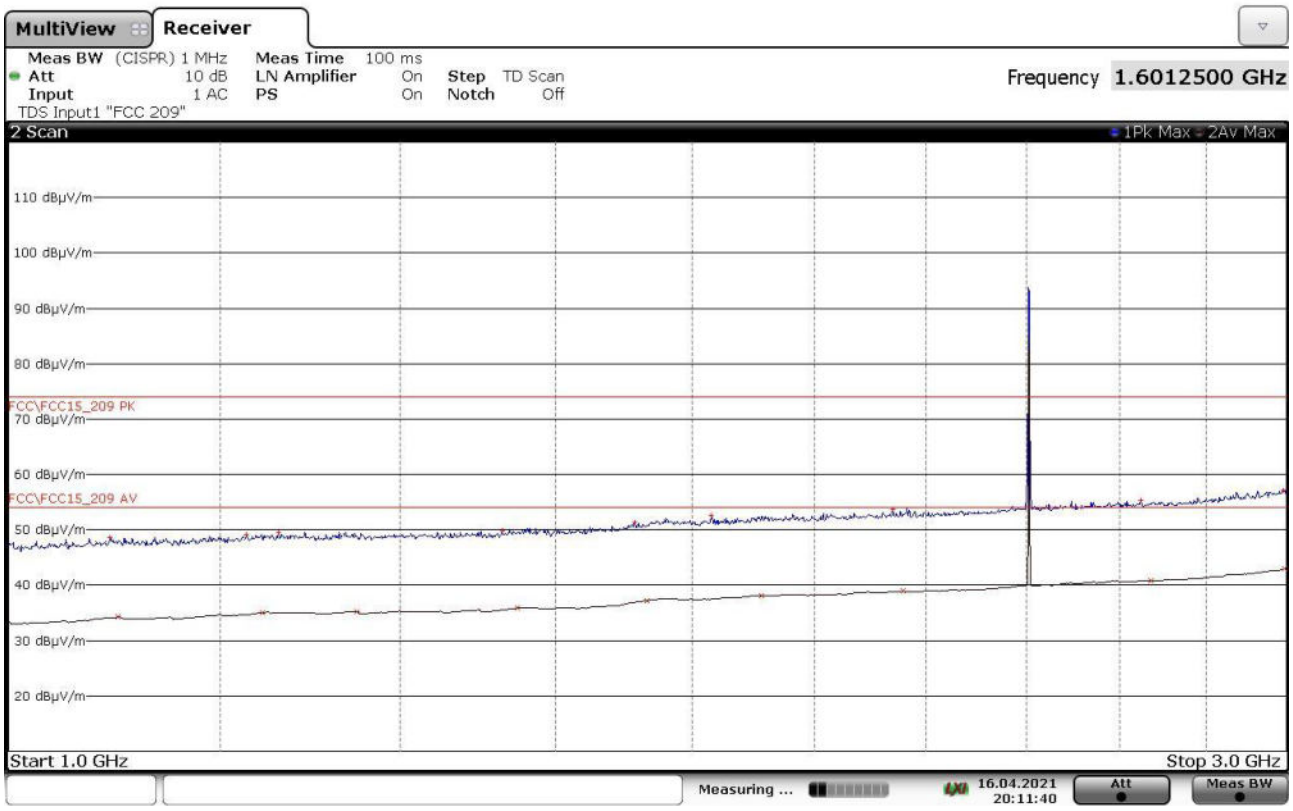


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1063250000	+48,91	-25,07	1098000000	+34,27	-19,71
1239750000	+49,45	-24,53	1245500000	+35,02	-18,96
1326500000	+49,73	-24,25	1348250000	+35,29	-18,69
1509250000	+49,76	-24,22	1549750000	+35,92	-18,06
1703500000	+51,68	-22,30	1729750000	+37,18	-16,80
1824250000	+52,55	-21,43	1917250000	+38,16	-15,82
2147000000	+53,44	-20,54	2157250000	+38,92	-15,06
2457250000	+55,39	-18,59	2679500000	+40,87	-13,11
2956500000	+57,43	-16,55	2995750000	+42,90	-11,08

21021001_2

Gandini 21021002

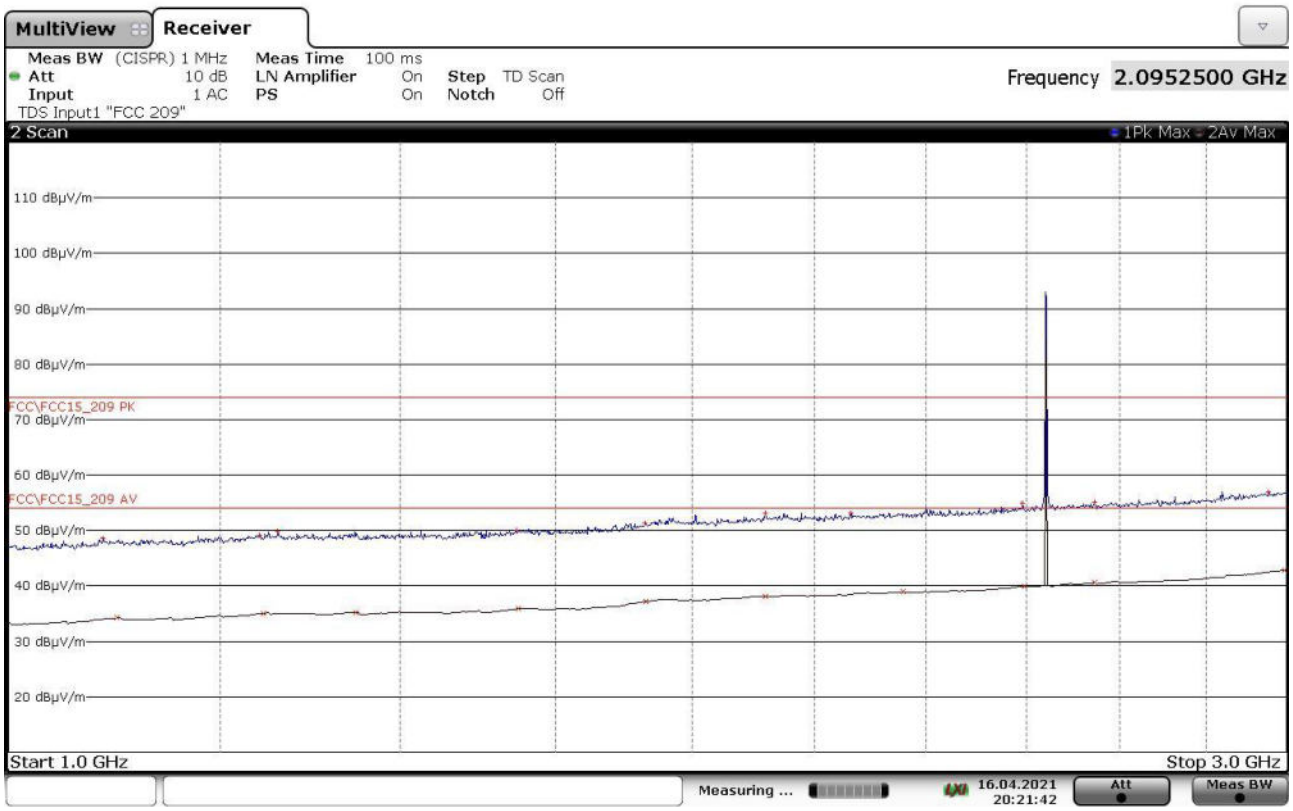


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1091500000	+48,52	-25,46	1098250000	+34,26	-19,72
1226750000	+49,14	-24,84	1244000000	+35,01	-18,97
1261500000	+49,57	-24,41	1348750000	+35,28	-18,70
1528750000	+49,95	-24,03	1548500000	+35,91	-18,07
1712750000	+51,24	-22,74	1731000000	+37,17	-16,81
1830000000	+52,58	-21,40	1910500000	+38,15	-15,83
2138250000	+53,63	-20,35	2157500000	+38,91	-15,07
2646250000	+55,35	-18,63	2669750000	+40,87	-13,11
2992500000	+57,20	-16,78	2995000000	+42,91	-11,07

21021002_2

Gandini 21021003

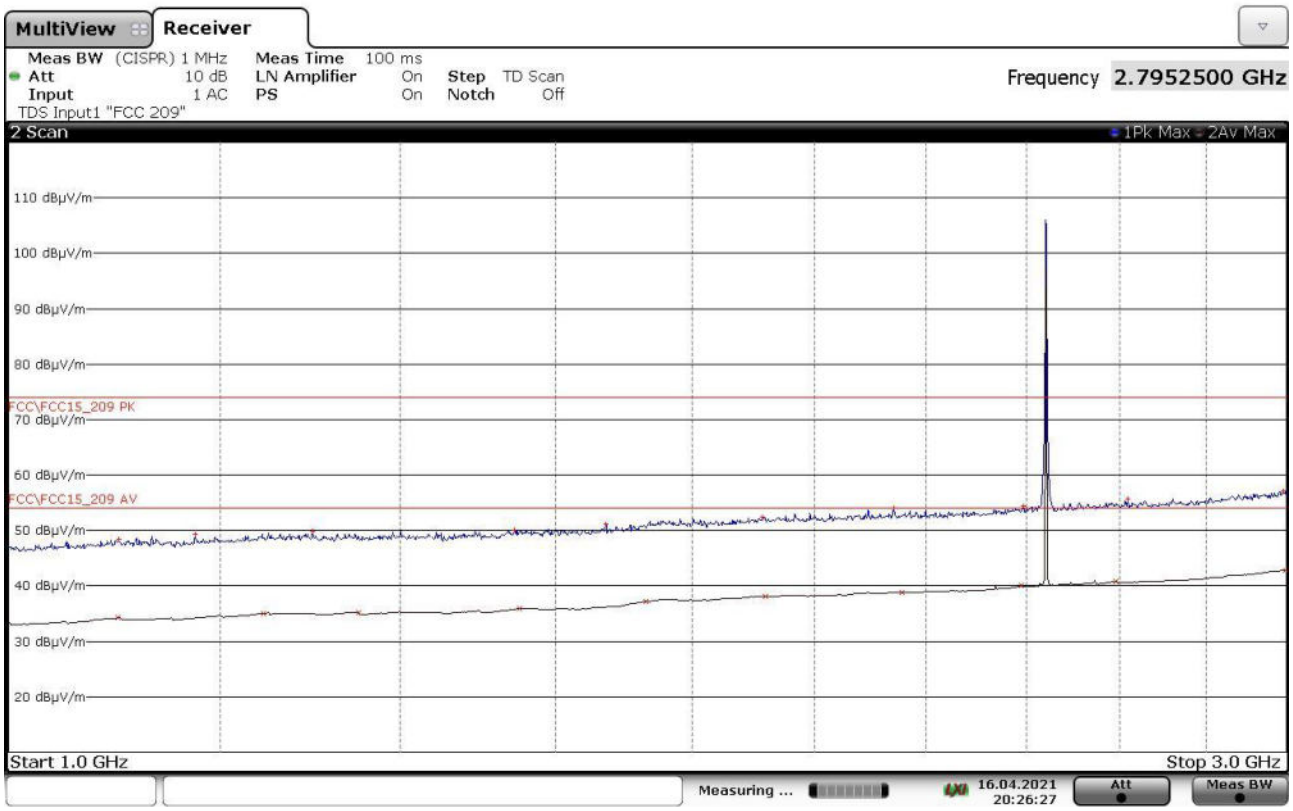


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1084750000	+48,64	-25,34	1098000000	+34,25	-19,73
1241250000	+49,08	-24,90	1245000000	+35,00	-18,98
1260250000	+49,89	-24,09	1348250000	+35,28	-18,70
1547250000	+50,09	-23,89	1550000000	+35,91	-18,07
1728750000	+51,28	-22,70	1730250000	+37,16	-16,82
1916750000	+53,12	-20,86	1916750000	+38,16	-15,82
2063500000	+53,17	-20,81	2157000000	+38,91	-15,07
2390750000	+54,91	-19,07	2394750000	+39,96	-14,02
2544250000	+55,19	-18,79	2543250000	+40,68	-13,30
2954750000	+56,98	-17,00	2995250000	+42,89	-11,09

21021003_2

Gandini 21021004

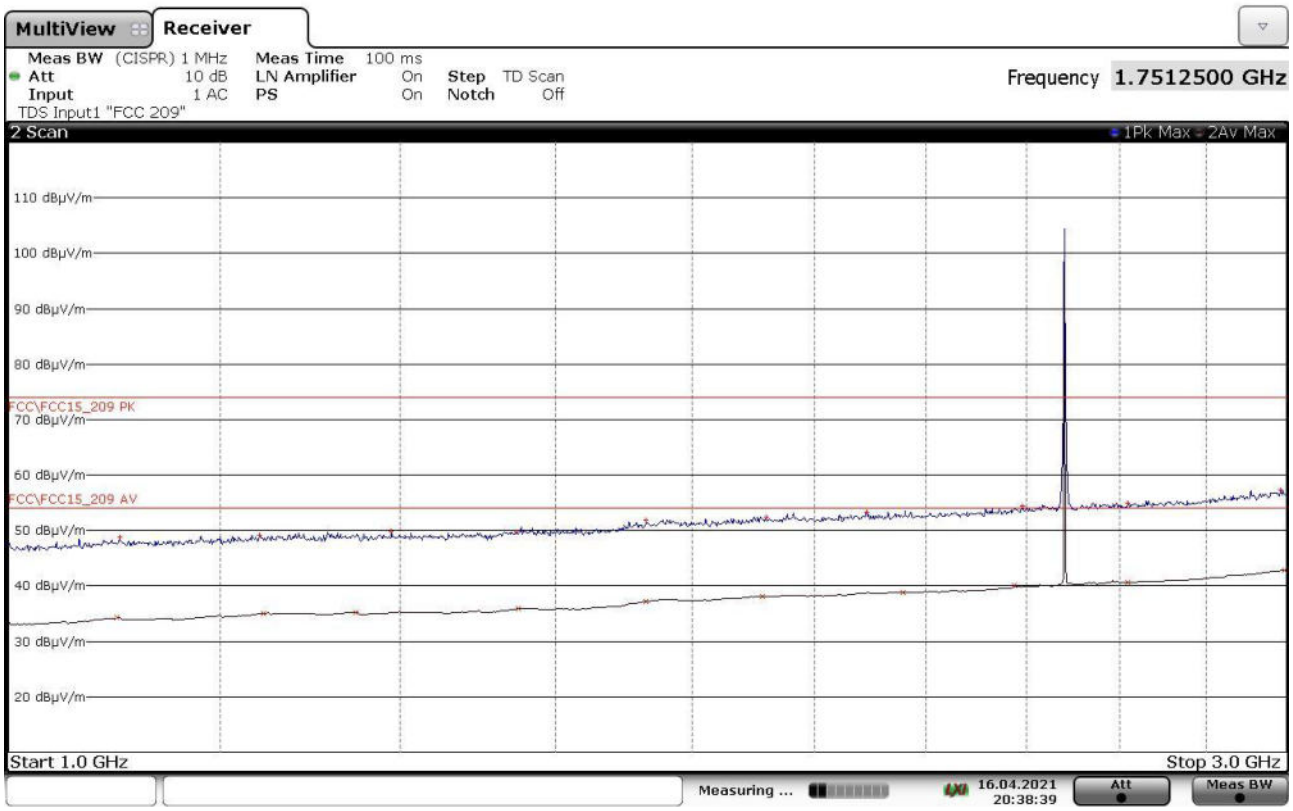


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1099750000	+48,37	-25,61	1098250000	+34,24	-19,74
1174250000	+49,34	-24,64	1245250000	+34,99	-18,99
1298750000	+49,83	-24,15	1351000000	+35,26	-18,72
1545250000	+50,02	-23,96	1551000000	+35,90	-18,08
1671750000	+51,18	-22,80	1730500000	+37,16	-16,82
1911500000	+52,32	-21,66	1917000000	+38,15	-15,83
2140500000	+54,09	-19,89	2156500000	+38,89	-15,09
2393500000	+54,31	-19,67	2388000000	+40,13	-13,85
2617000000	+55,69	-18,29	2591250000	+40,81	-13,17
2991250000	+57,03	-16,95	2996250000	+42,89	-11,09

21021004_2

Gandini 21021005

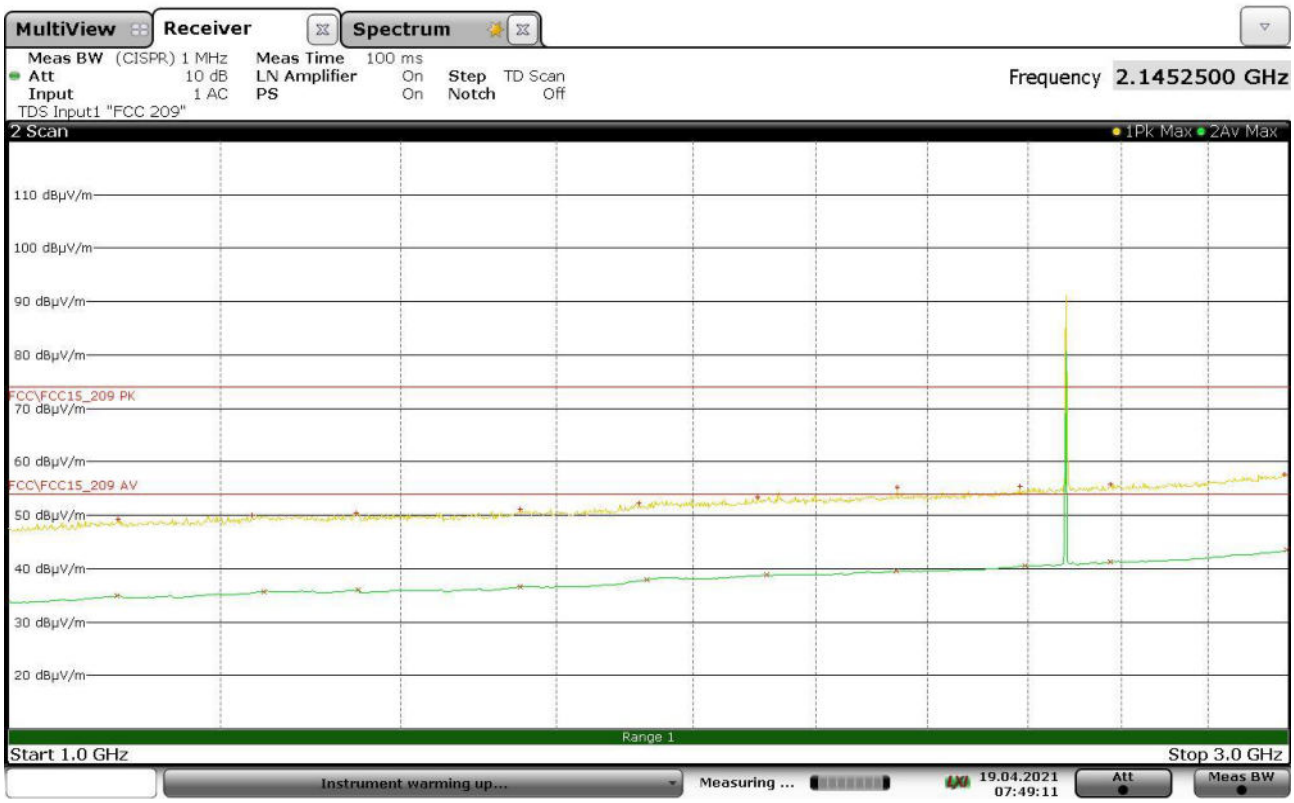


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1100750000	+48,77	-25,21	1098000000	+34,26	-19,72
1241000000	+49,15	-24,83	1245250000	+34,99	-18,99
1389750000	+49,87	-24,11	1347750000	+35,26	-18,72
1547250000	+49,70	-24,28	1550000000	+35,89	-18,09
1730250000	+51,86	-22,12	1730000000	+37,15	-16,83
1918250000	+52,43	-21,55	1911250000	+38,13	-15,85
2090750000	+53,36	-20,62	2157500000	+38,90	-15,08
2391250000	+54,38	-19,60	2375000000	+40,13	-13,85
2617500000	+54,99	-18,99	2618250000	+40,65	-13,33
2985000000	+57,36	-16,62	2995250000	+42,88	-11,10

21021005_2

Gandini 21021006

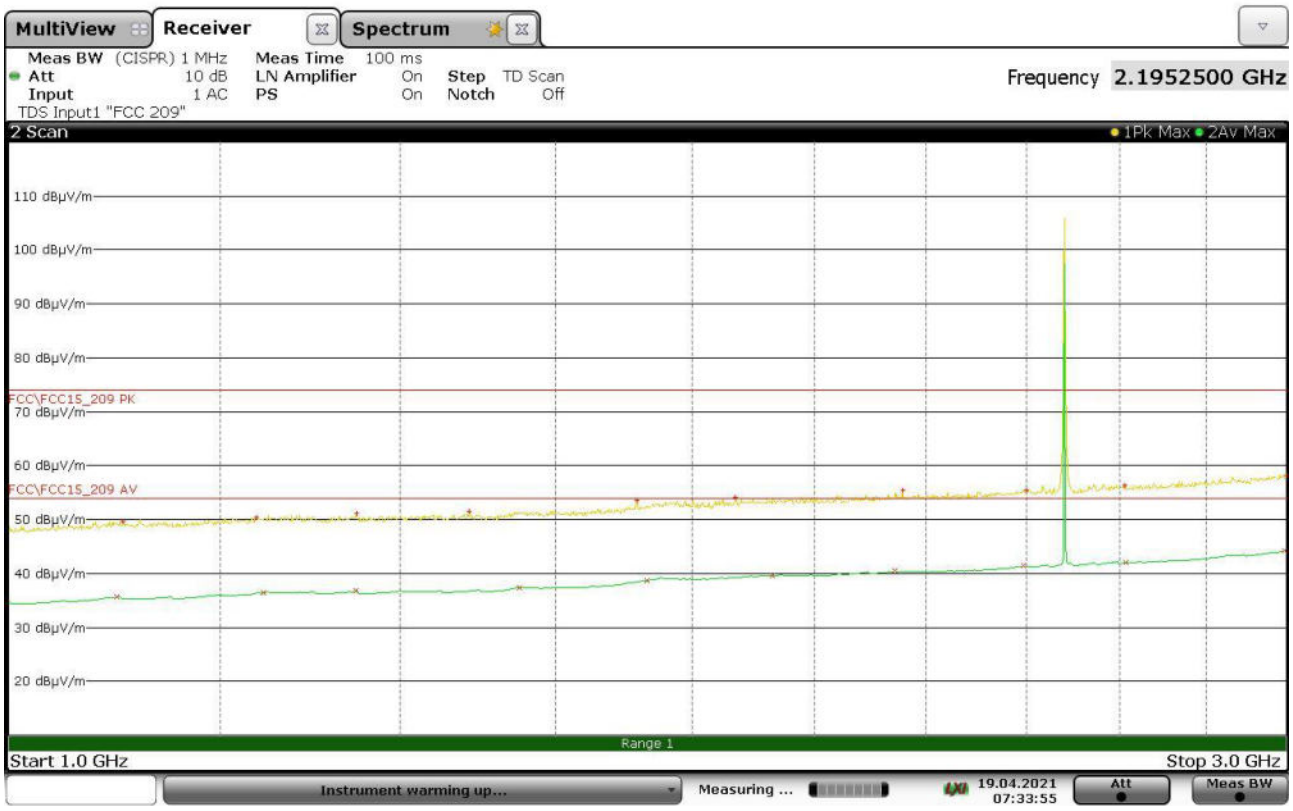


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1098500000	+49,30	-24,68	1097500000	+34,97	-19,01
1232250000	+49,98	-24,00	1245500000	+35,69	-18,29
1348500000	+50,45	-23,53	1350250000	+35,98	-18,00
1551000000	+51,11	-22,87	1551500000	+36,65	-17,33
1717500000	+52,26	-21,72	1730500000	+37,93	-16,05
1902500000	+53,39	-20,59	1916250000	+38,80	-15,18
2144500000	+55,19	-18,79	2142000000	+39,58	-14,40
2382750000	+55,47	-18,51	2393250000	+40,60	-13,38
2575250000	+55,70	-18,28	2575500000	+41,24	-12,74
2990500000	+57,66	-16,32	2995750000	+43,44	-10,54

21021006_2

Gandini 21021013

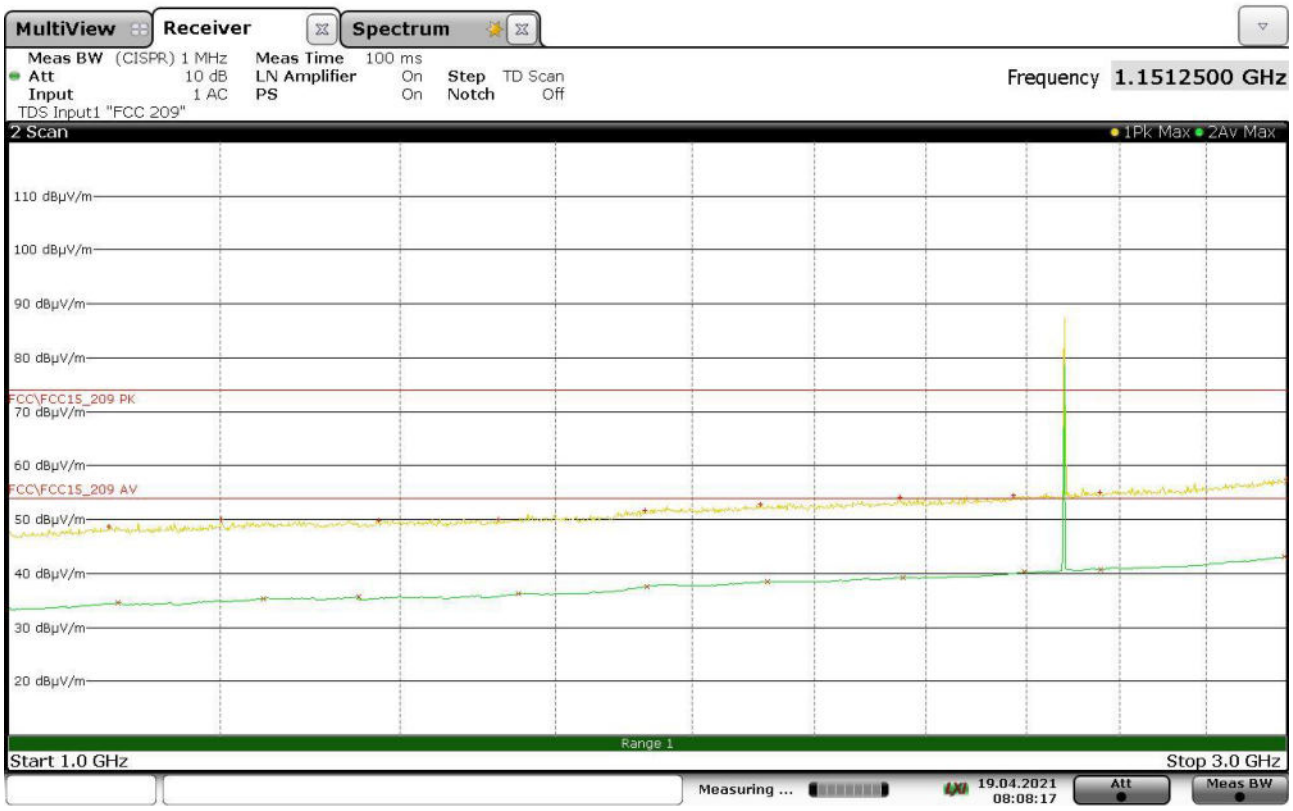


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1103500000	+49,65	-24,33	1097750000	+35,70	-18,28
1237250000	+50,47	-23,51	1245500000	+36,46	-17,52
1348750000	+51,07	-22,91	1348500000	+36,73	-17,25
1486500000	+51,55	-22,43	1551750000	+37,42	-16,56
1717000000	+53,57	-20,41	1731500000	+38,69	-15,29
1868500000	+54,03	-19,95	1928250000	+39,62	-14,36
2157500000	+55,40	-18,58	2142500000	+40,44	-13,54
2399000000	+55,47	-18,51	2392000000	+41,39	-12,59
2611250000	+56,32	-17,66	2612250000	+42,01	-11,97
2999500000	+58,27	-15,71	2995500000	+44,17	-9,81

21021013_2

Gandini 21021014



FINAL RESULT TABLE

MAX PEAK

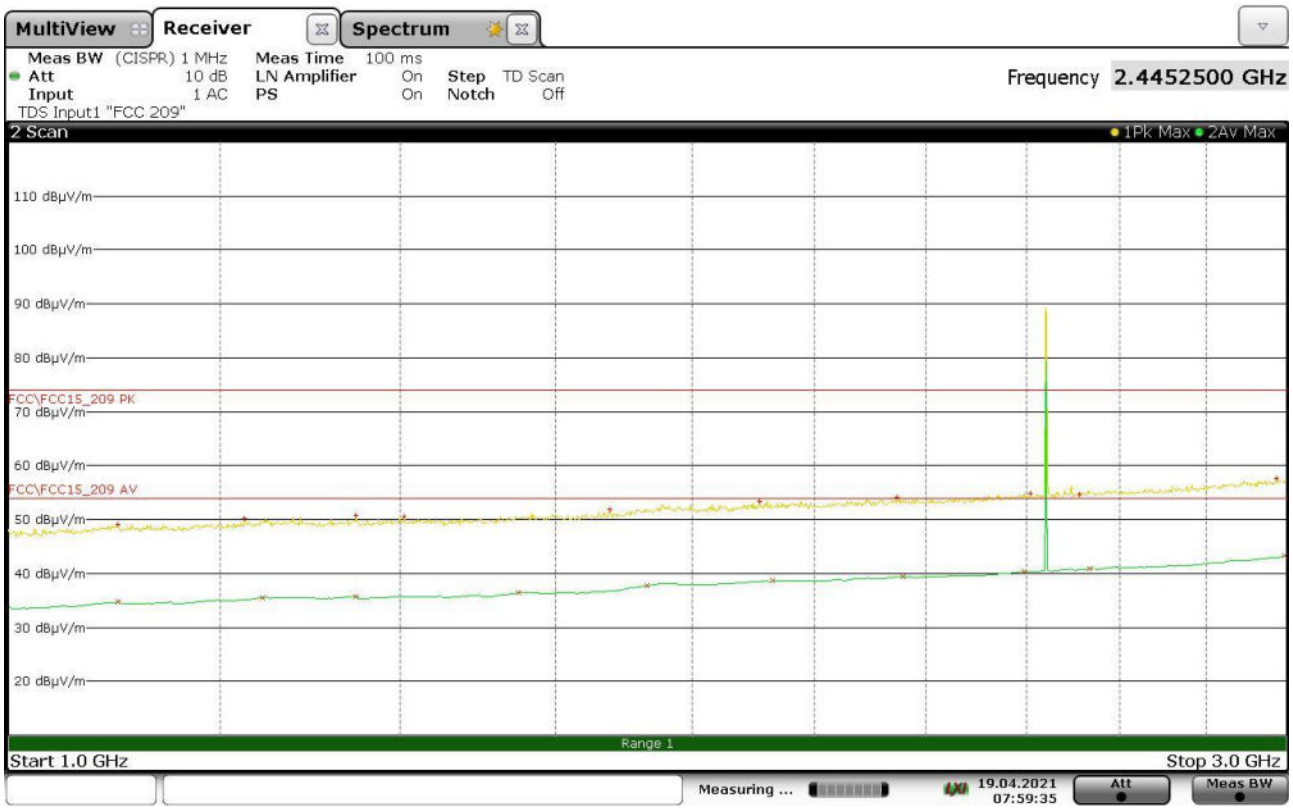
Freq Hz	Lev dBuV/m	Margin dB
1090500000	+48,79	-25,19
1200750000	+49,93	-24,05
1374750000	+49,79	-24,19
1523500000	+50,06	-23,92
1727750000	+51,74	-22,24
1908250000	+52,81	-21,17
2151250000	+54,17	-19,81
2373250000	+54,50	-19,48
2554750000	+54,98	-19,00
2999750000	+57,42	-16,56

AVERAGE

Freq Hz	Lev dBuV/m	Margin dB
1098250000	+34,62	-19,36
1245500000	+35,34	-18,64
1351000000	+35,62	-18,36
1550000000	+36,29	-17,69
1732000000	+37,55	-16,43
1919750000	+38,45	-15,53
2157500000	+39,22	-14,76
2394500000	+40,26	-13,72
2557000000	+40,72	-13,26
2995500000	+43,13	-10,85

21021014_2

Gandini 21021015

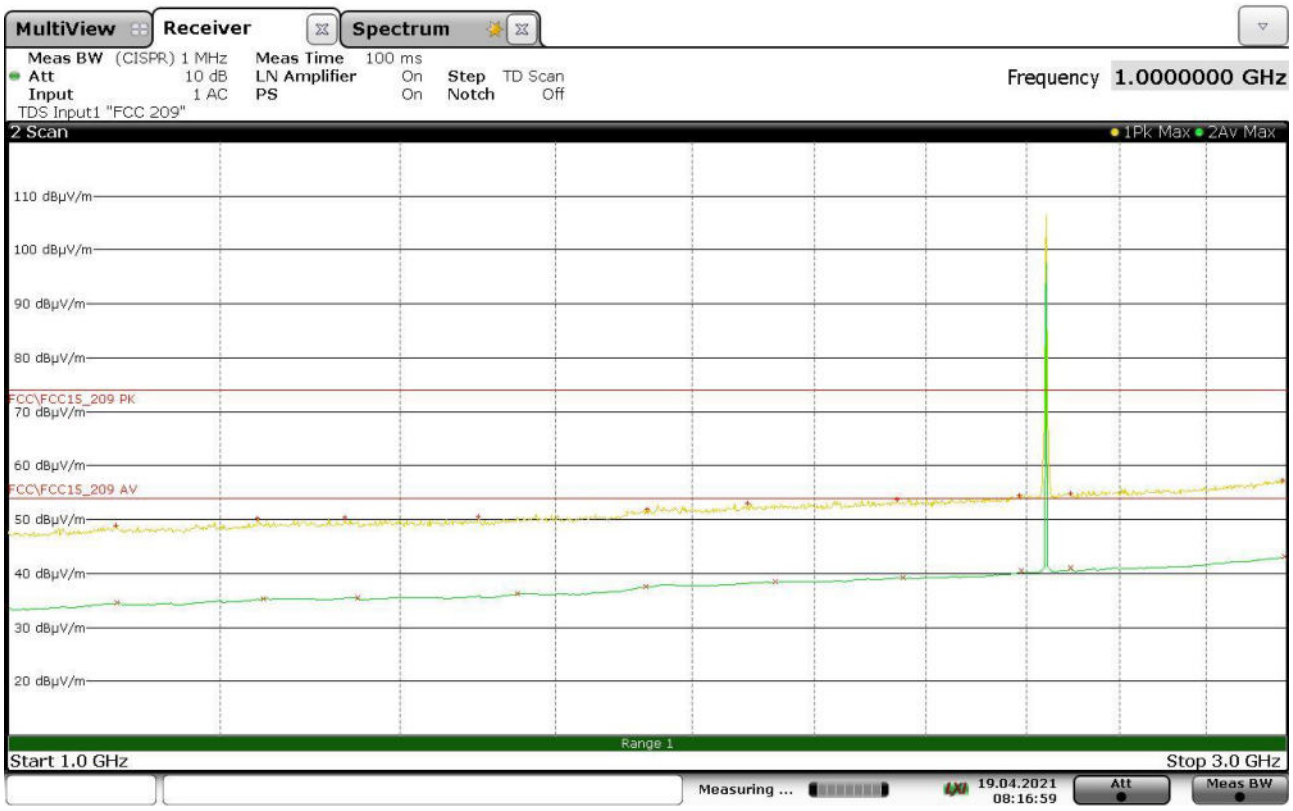


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1098250000	+49,07	-24,91	1098250000	+34,74	-19,24
1225000000	+50,12	-23,86	1243500000	+35,47	-18,51
1348500000	+50,79	-23,19	1347500000	+35,76	-18,22
1405000000	+50,64	-23,34	1549750000	+36,45	-17,53
1676750000	+51,92	-22,06	1731250000	+37,70	-16,28
1907750000	+53,44	-20,54	1928250000	+38,60	-15,38
2146250000	+54,16	-19,82	2156750000	+39,37	-14,61
2407250000	+54,84	-19,14	2394500000	+40,39	-13,59
2511500000	+54,66	-19,32	2533500000	+40,91	-13,07
2975500000	+57,56	-16,42	2995750000	+43,26	-10,72

21021015_2

Gandini 21021016

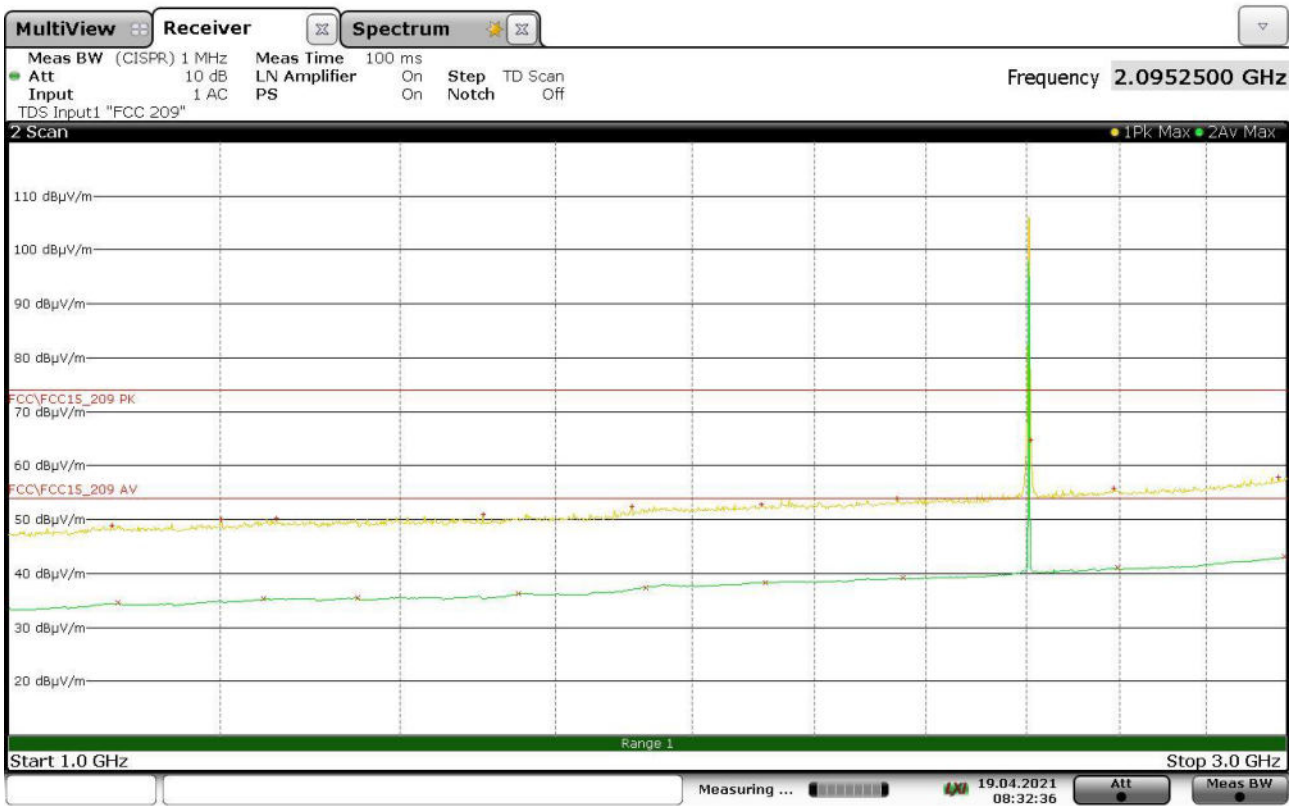


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1096750000	+48,86	-25,12	1098000000	+34,56	-19,42
1239000000	+50,29	-23,69	1245000000	+35,27	-18,71
1335250000	+50,30	-23,68	1350000000	+35,56	-18,42
1497250000	+50,52	-23,46	1549500000	+36,22	-17,76
1731250000	+51,95	-22,03	1729500000	+37,49	-16,49
1887000000	+53,03	-20,95	1933000000	+38,40	-15,58
2147250000	+53,76	-20,22	2157500000	+39,17	-14,81
2384750000	+54,57	-19,41	2388000000	+40,50	-13,48
2492250000	+54,86	-19,12	2492000000	+41,09	-12,89
2990000000	+57,25	-16,73	2995750000	+43,08	-10,90

21021016_2

Gandini 21021017



FINAL RESULT TABLE

MAX PEAK

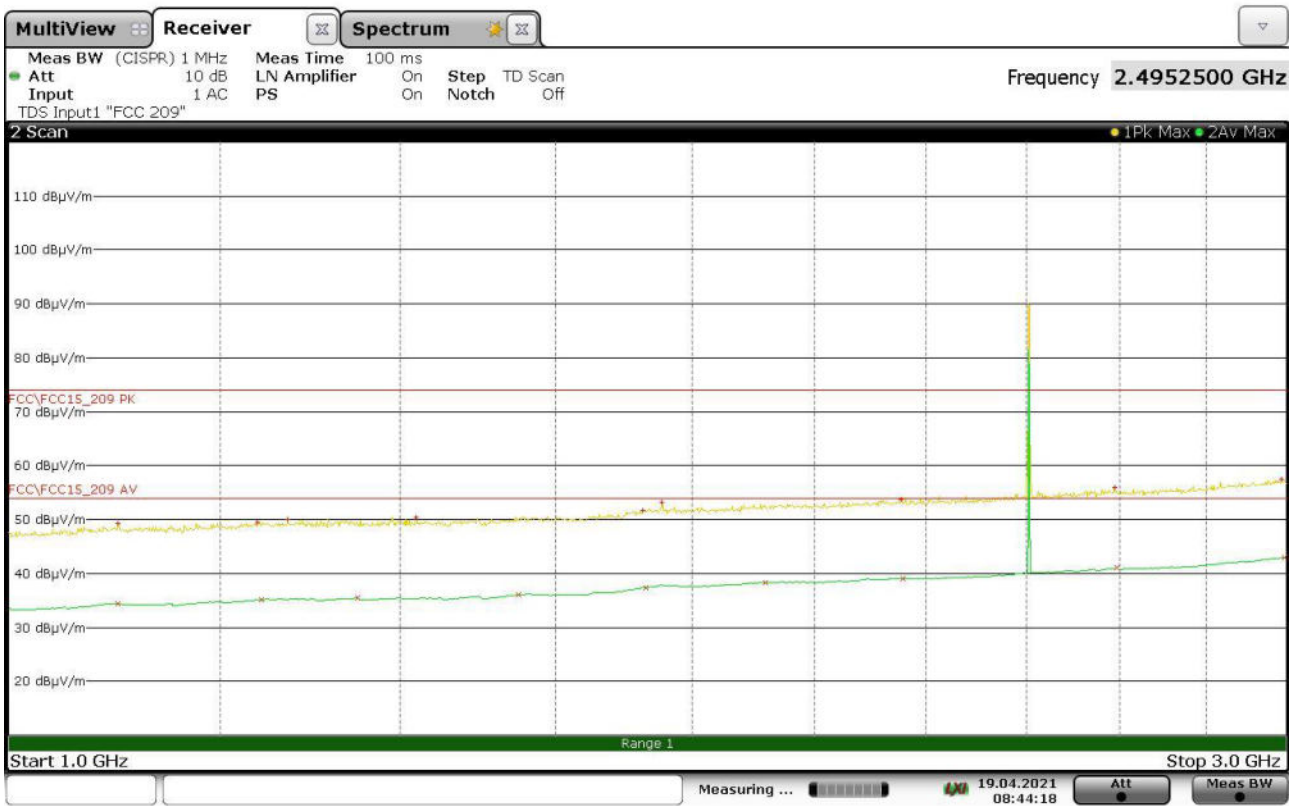
Freq Hz	Lev dBuV/m	Margin dB
1093250000	+48,96	-25,02
1201000000	+49,98	-24,00
1258750000	+50,15	-23,83
1503500000	+51,00	-22,98
1708750000	+52,52	-21,46
1911000000	+52,72	-21,26
2147250000	+53,84	-20,14
2408250000	+64,66	-9,32
2585250000	+55,73	-18,25
2978750000	+57,86	-16,12

AVERAGE

Freq Hz	Lev dBuV/m	Margin dB
1099000000	+34,51	-19,47
1245500000	+35,22	-18,76
1350000000	+35,52	-18,46
1550250000	+36,17	-17,81
1730250000	+37,45	-16,53
1916500000	+38,36	-15,62
2157500000	+39,13	-14,85
2594250000	+41,07	-12,91
2996000000	+43,04	-10,94

21021017_2

Gandini 21021018

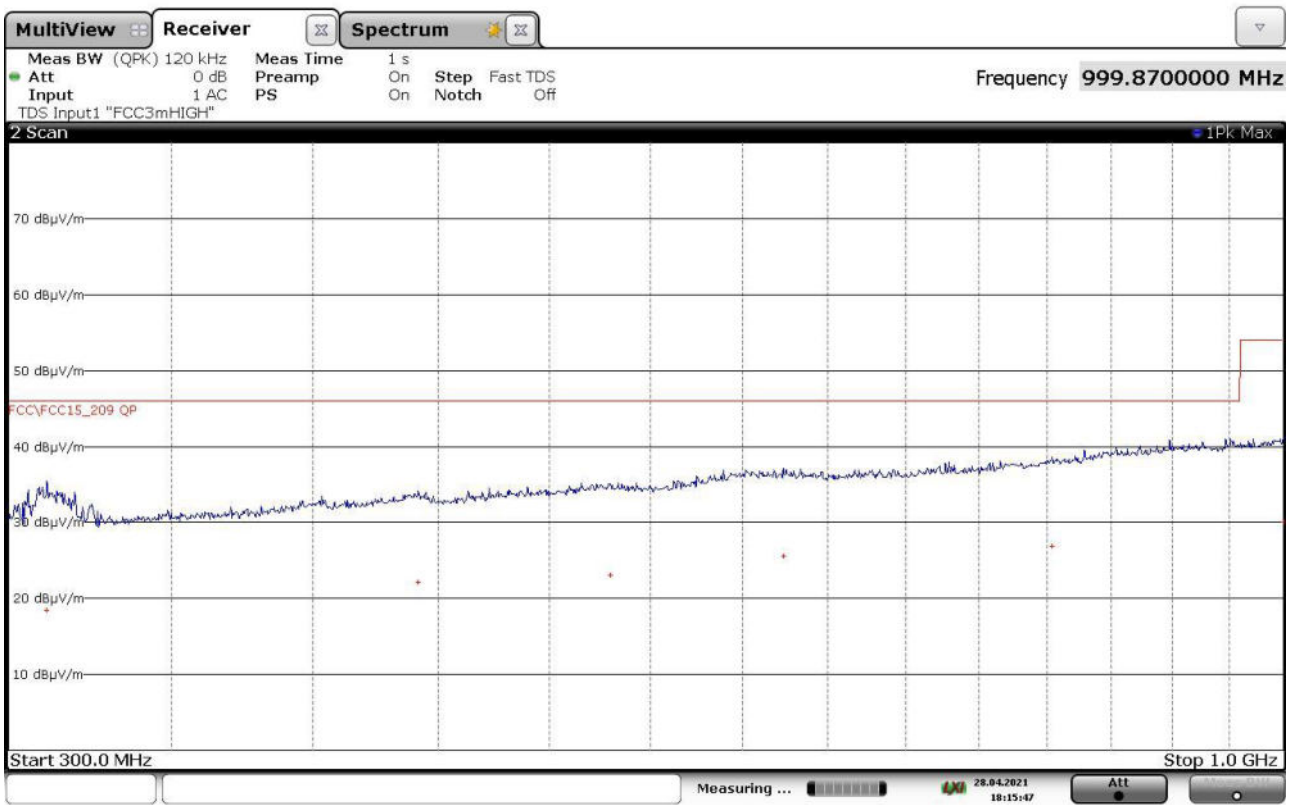


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1099000000	+49,25	-24,73	1098750000	+34,47	-19,51
1239000000	+49,47	-24,51	1243250000	+35,19	-18,79
1271500000	+49,95	-24,03	1350750000	+35,49	-18,49
1419750000	+50,46	-23,52	1550000000	+36,15	-17,83
1726000000	+51,72	-22,26	1730000000	+37,40	-16,58
1754000000	+53,12	-20,86	1916500000	+38,33	-15,65
2154500000	+53,82	-20,16	2157500000	+39,09	-14,89
2587750000	+56,02	-17,96	2593750000	+41,03	-12,95
2987000000	+57,40	-16,58	2996000000	+43,03	-10,95

21021018_2

Gandini 21021019



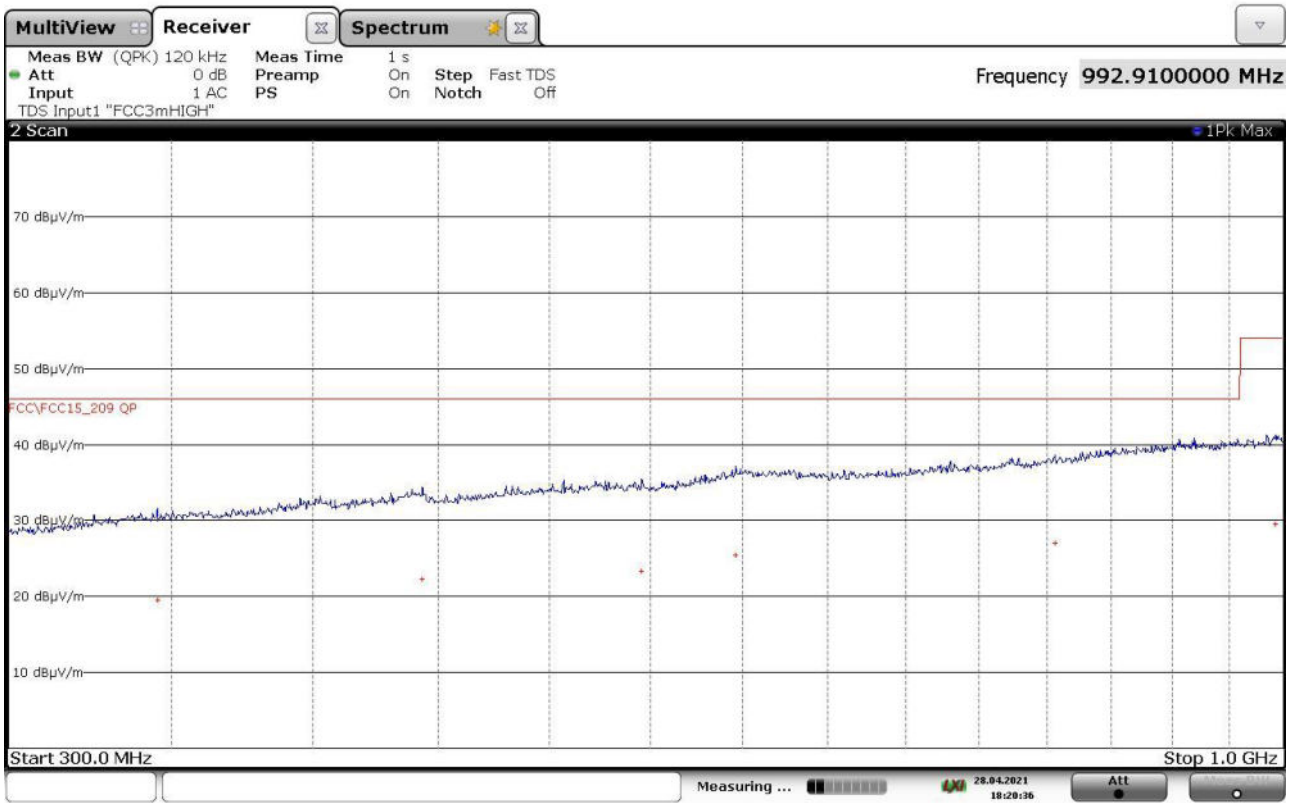
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
311100000	+18,49	-27,53
441750000	+22,19	-23,83
529620000	+23,12	-22,90
623580000	+25,58	-20,44
803670000	+26,87	-19,15
999870000	+30,07	-23,91

21021019_2

Gandini 21021020



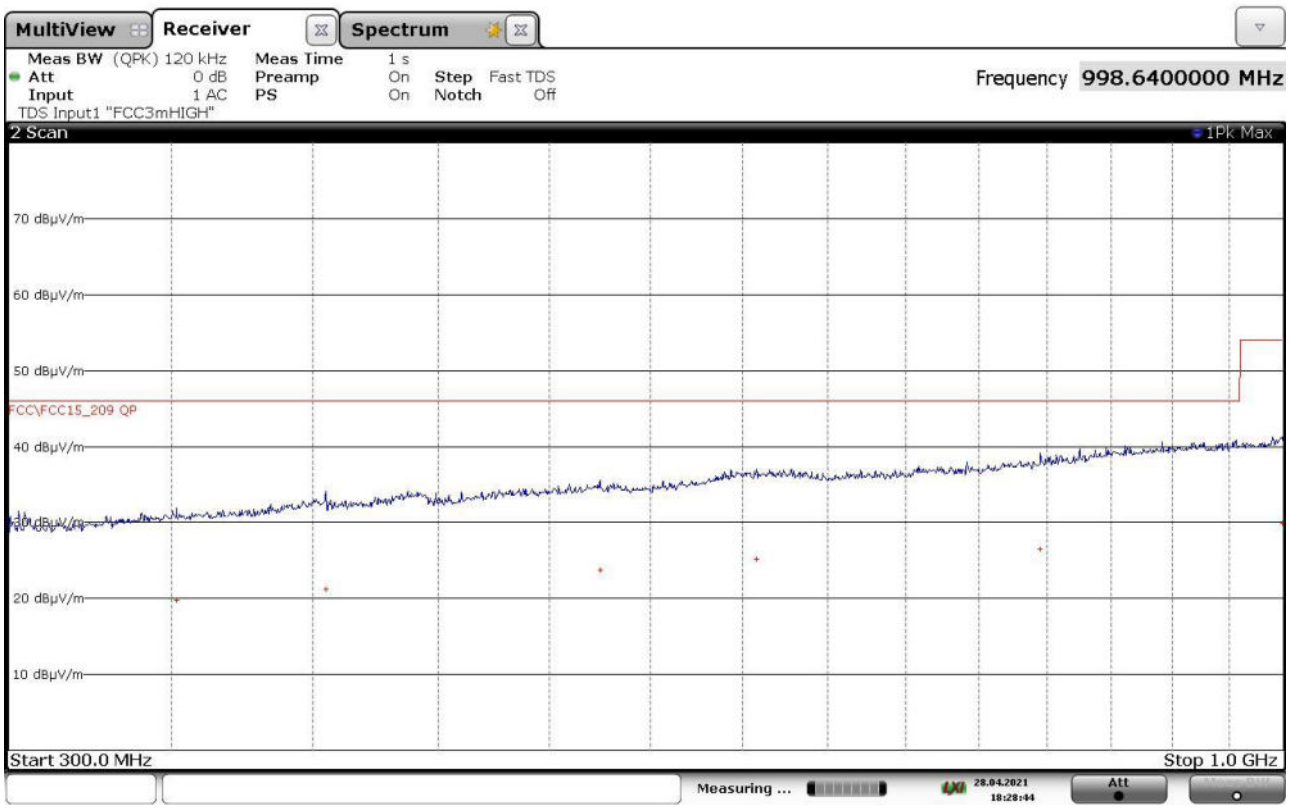
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
345300000	+19,46	-26,56
443550000	+22,31	-23,71
545550000	+23,29	-22,73
596310000	+25,39	-20,63
805860000	+26,96	-19,06
992910000	+29,53	-24,45

21021020_2

Gandini 21021021



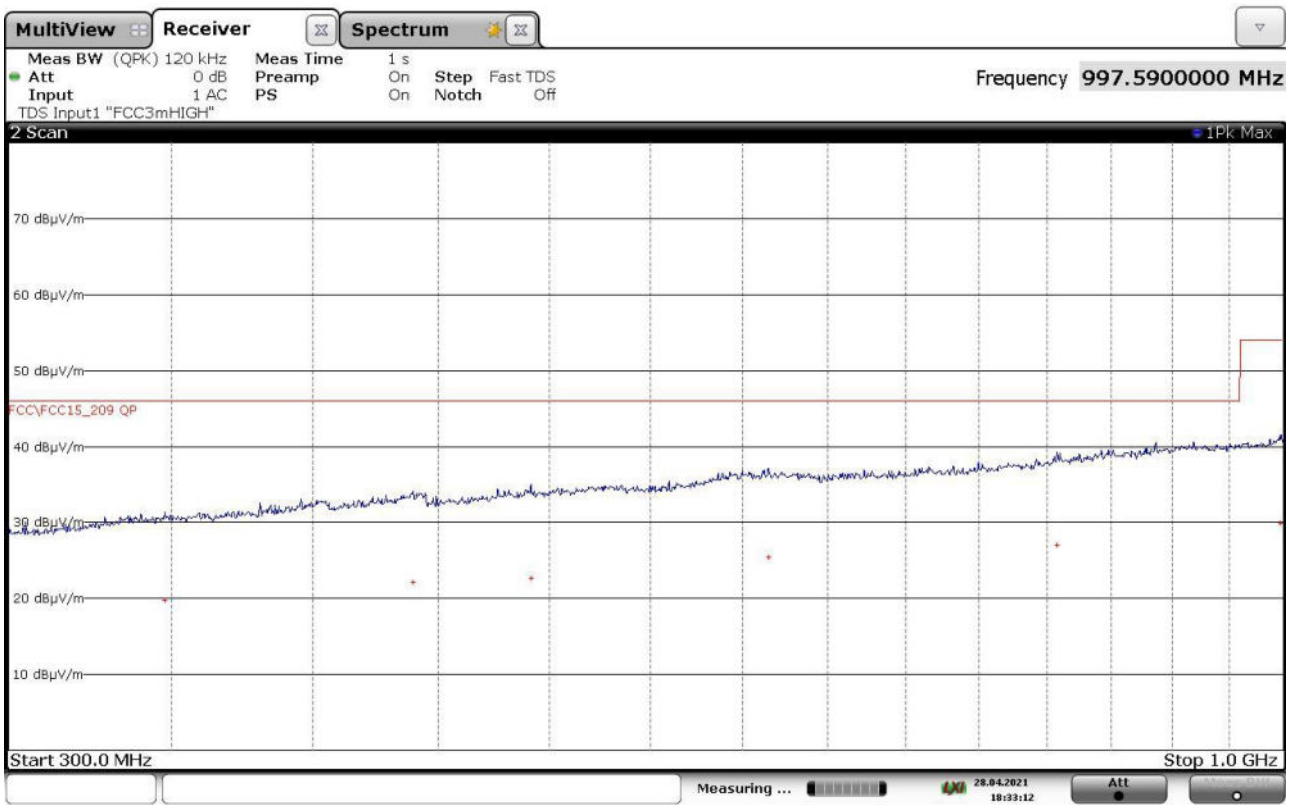
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
351600000	+19,72	-26,30
404760000	+21,25	-24,77
524460000	+23,66	-22,36
608190000	+25,21	-20,81
794730000	+26,55	-19,47
998640000	+29,95	-24,03

21021021_2

Gandini 21021022



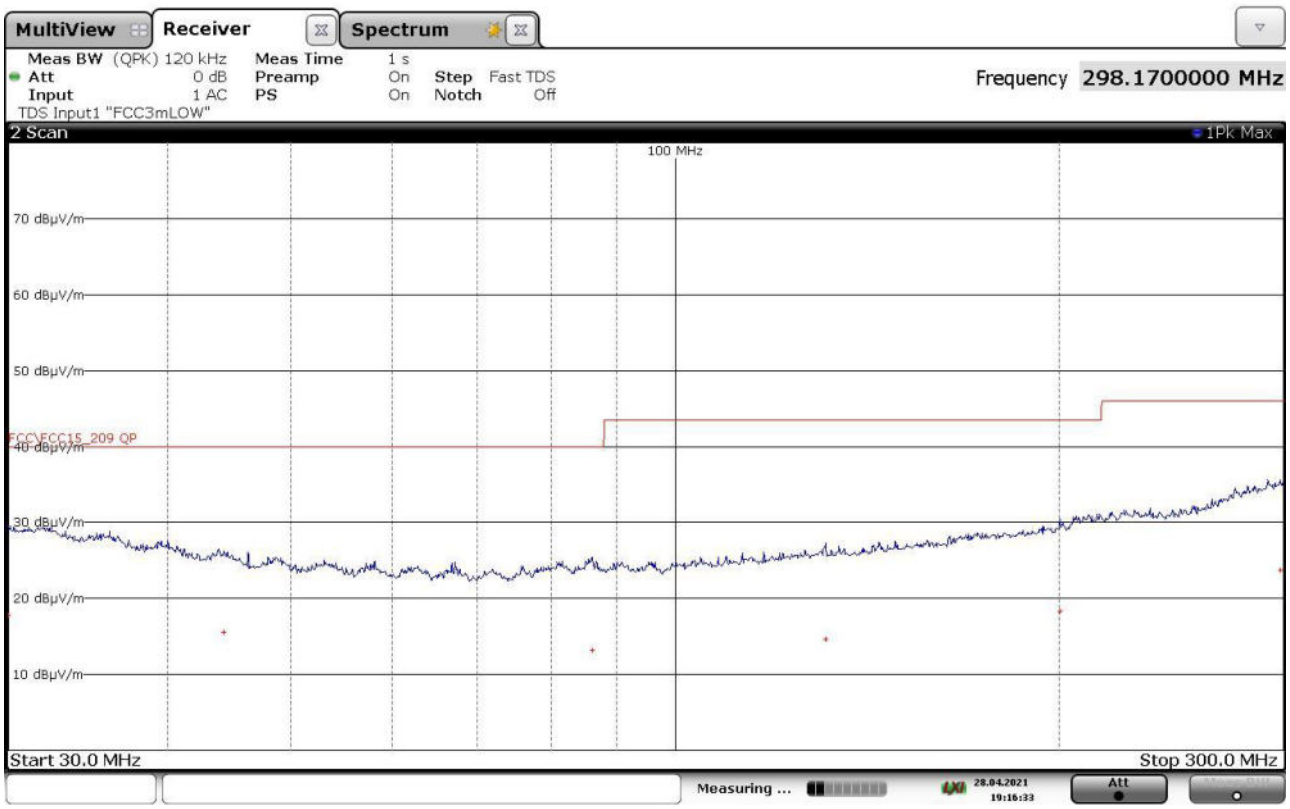
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
347730000	+19,78	-26,24
439530000	+22,14	-23,88
491310000	+22,73	-23,29
614760000	+25,47	-20,55
807360000	+26,99	-19,03
997590000	+29,97	-24,01

21021022_2

Gandini 21021023



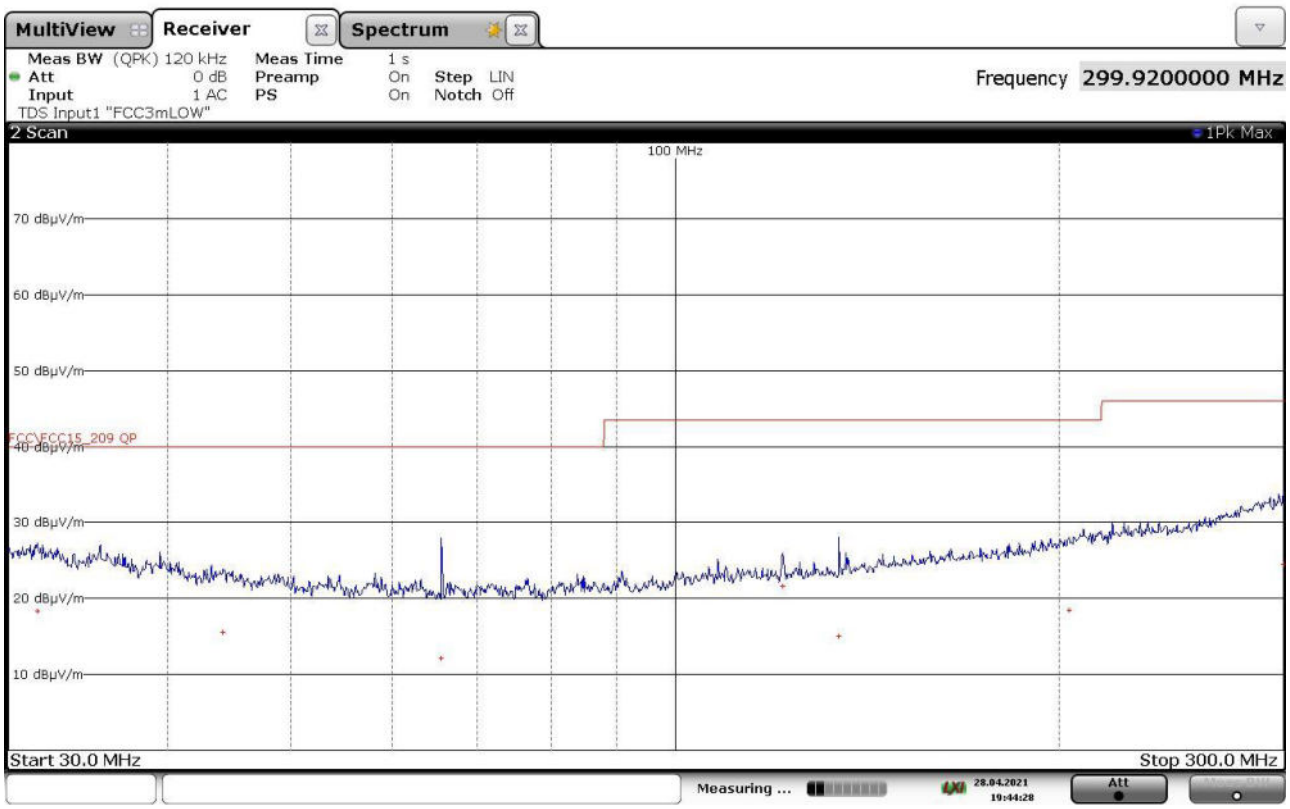
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
30000000	+17,81	-22,19
44250000	+15,61	-24,39
86100000	+13,20	-26,80
131160000	+14,58	-28,94
200280000	+18,30	-25,22
298170000	+23,74	-22,28

21021023_2

Gandini 21021024



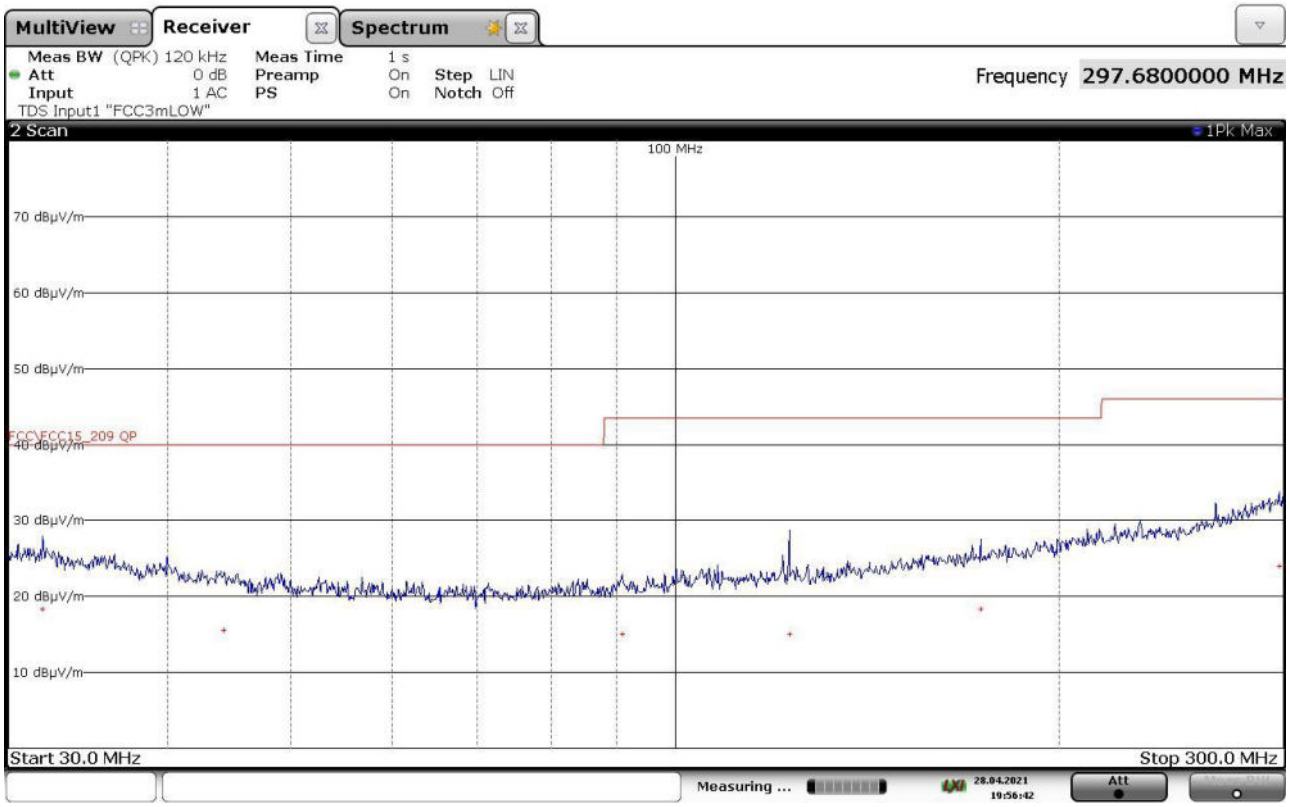
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
31600000	+18,28	-21,72
44200000	+15,55	-24,45
65560000	+12,13	-27,87
121440000	+21,57	-21,95
134320000	+15,06	-28,46
203760000	+18,44	-25,08
299920000	+24,55	-21,47

21021024_2

Gandini 21021025



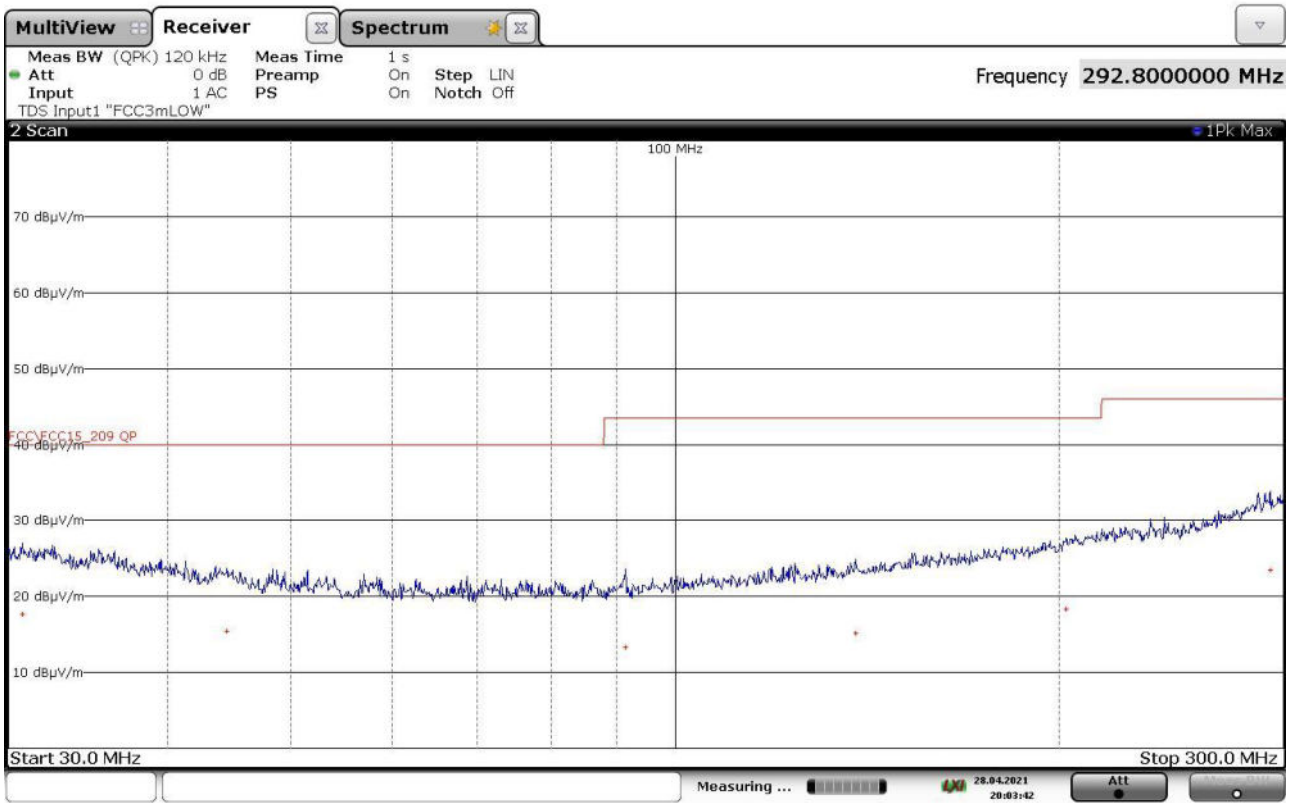
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
31920000	+18,35	-21,65
44280000	+15,57	-24,43
90920000	+15,01	-28,51
122960000	+14,97	-28,55
173600000	+18,37	-25,15
297680000	+23,93	-22,09

21021025_2

Gandini 21021026



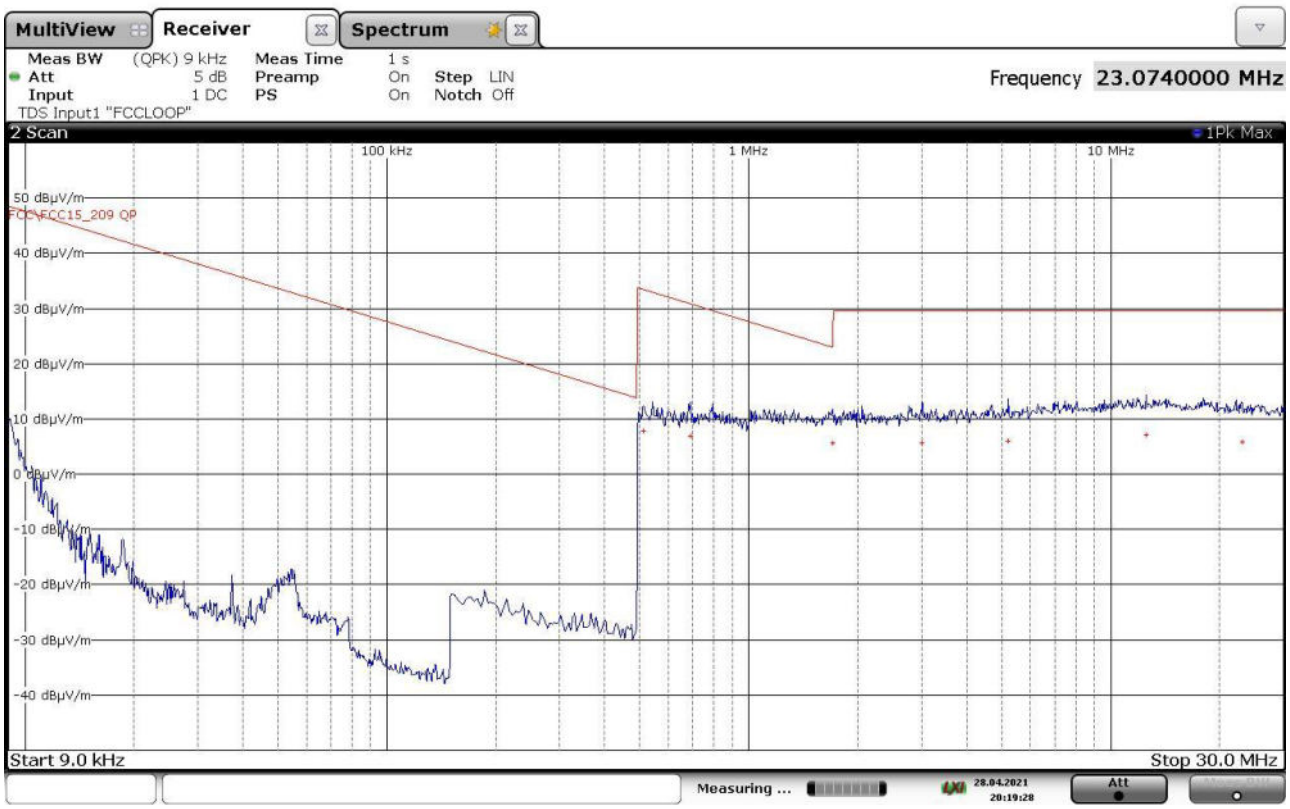
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
30760000	+17,66	-22,34
44520000	+15,44	-24,56
91440000	+13,31	-30,21
138520000	+15,19	-28,33
202760000	+18,28	-25,24
292800000	+23,50	-22,52

21021026_2

Gandini 21021027



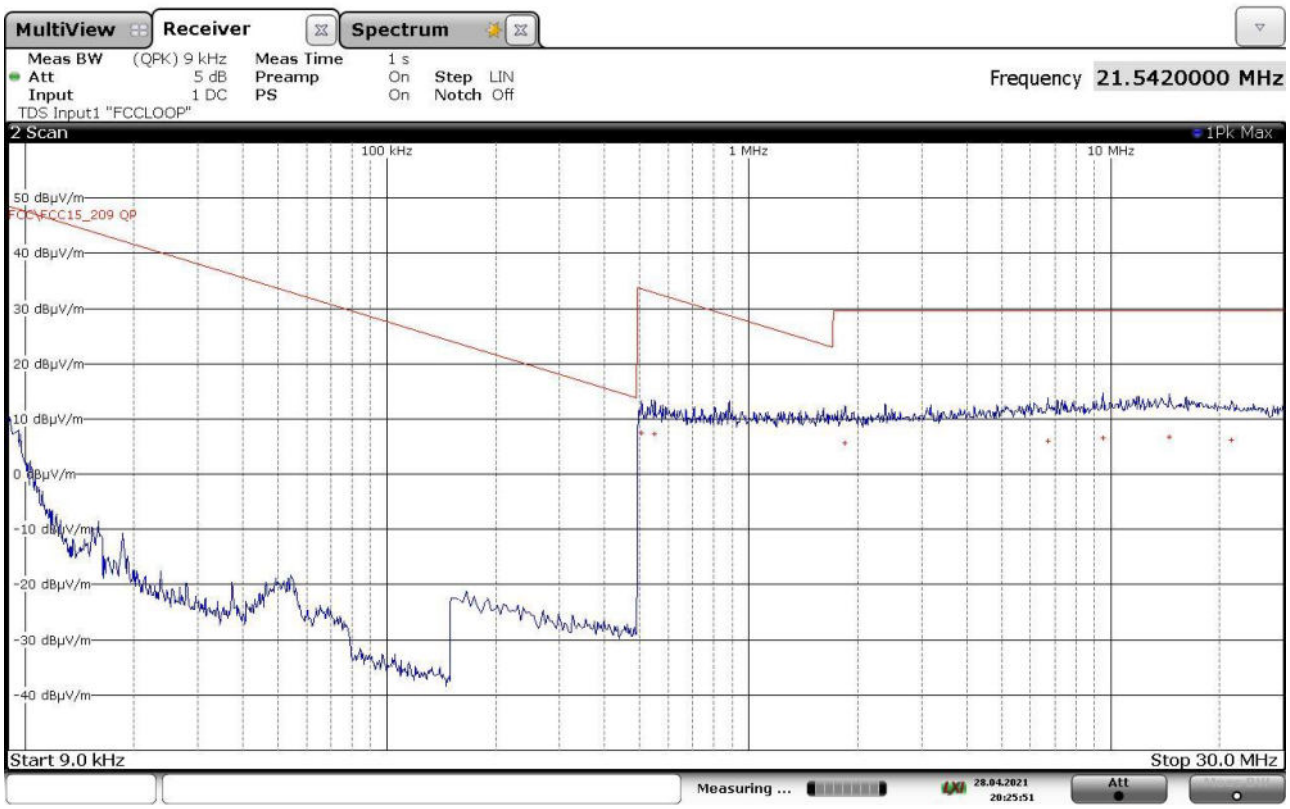
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
510000	+7,76	-25,69
690000	+6,92	-23,91
1706000	+5,65	-23,89
3014000	+5,59	-23,95
5198000	+5,94	-23,60
12514000	+7,16	-22,38
23074000	+5,76	-23,78

21021027_2

Gandini 21021028



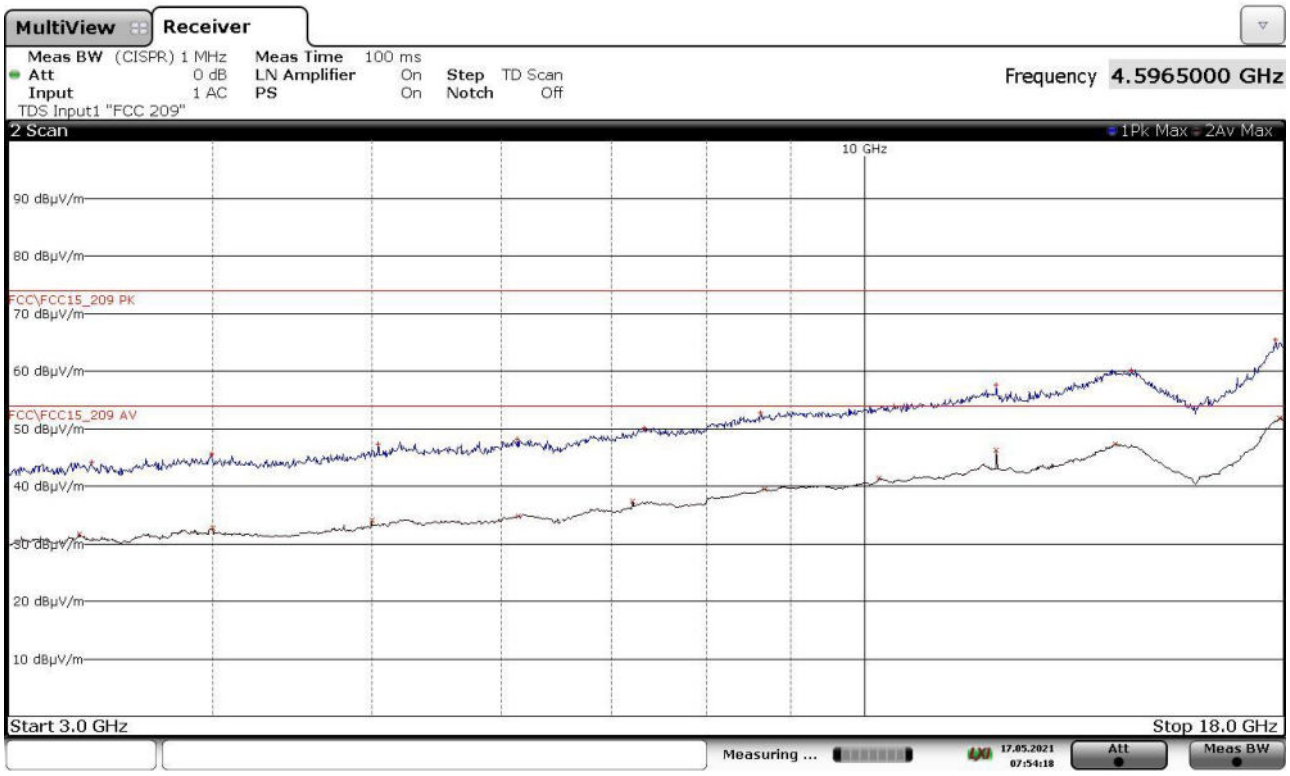
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
506000	+7,49	-26,03
550000	+7,24	-25,56
1846000	+5,56	-23,98
6698000	+6,02	-23,52
9506000	+6,48	-23,06
14518000	+6,79	-22,75
21542000	+6,26	-23,28

21021028_2

Gandini 21021067



FINAL RESULT TABLE

MAX PEAK

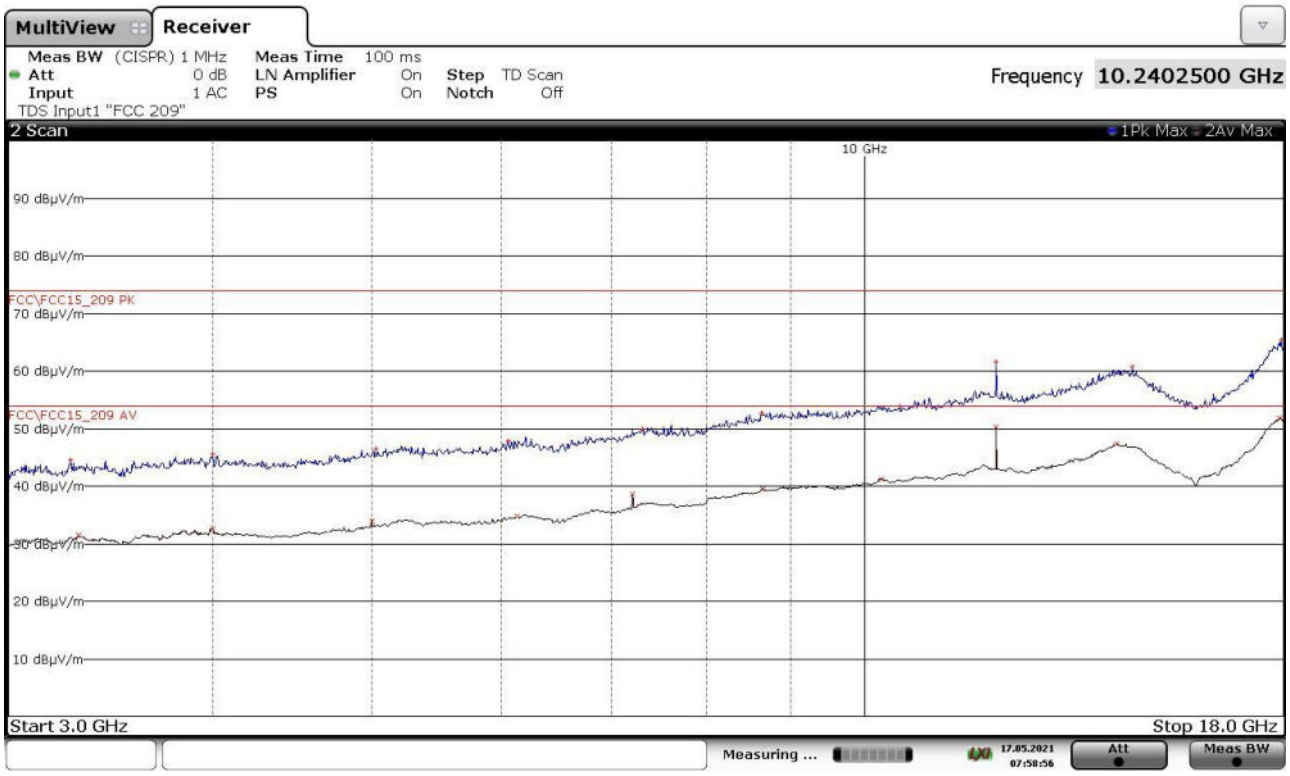
Freq Hz	Lev dBuV/m	Margin dB
3313250000	+45,40	-28,58
3836750000	+46,46	-27,52
5084500000	+47,62	-26,36
5973000000	+48,94	-25,04
7211000000	+51,04	-22,94
8667250000	+53,30	-20,68
10259500000	+55,15	-18,83
12019000000	+59,68	-14,30
14395000000	+61,24	-12,74
17910000000	+65,57	-8,41

AVERAGE

Freq Hz	Lev dBuV/m	Margin dB
3312000000	+31,82	-22,16
3978500000	+32,79	-21,19
4999250000	+34,38	-19,60
6132000000	+35,18	-18,80
7212000000	+38,21	-15,77
8680000000	+39,64	-14,34
10240000000	+41,50	-12,48
12020000000	+47,07	-6,91
14279500000	+47,42	-6,56
17919750000	+52,14	-1,84

21021067_2

Gandini 21021068



FINAL RESULT TABLE

MAX PEAK

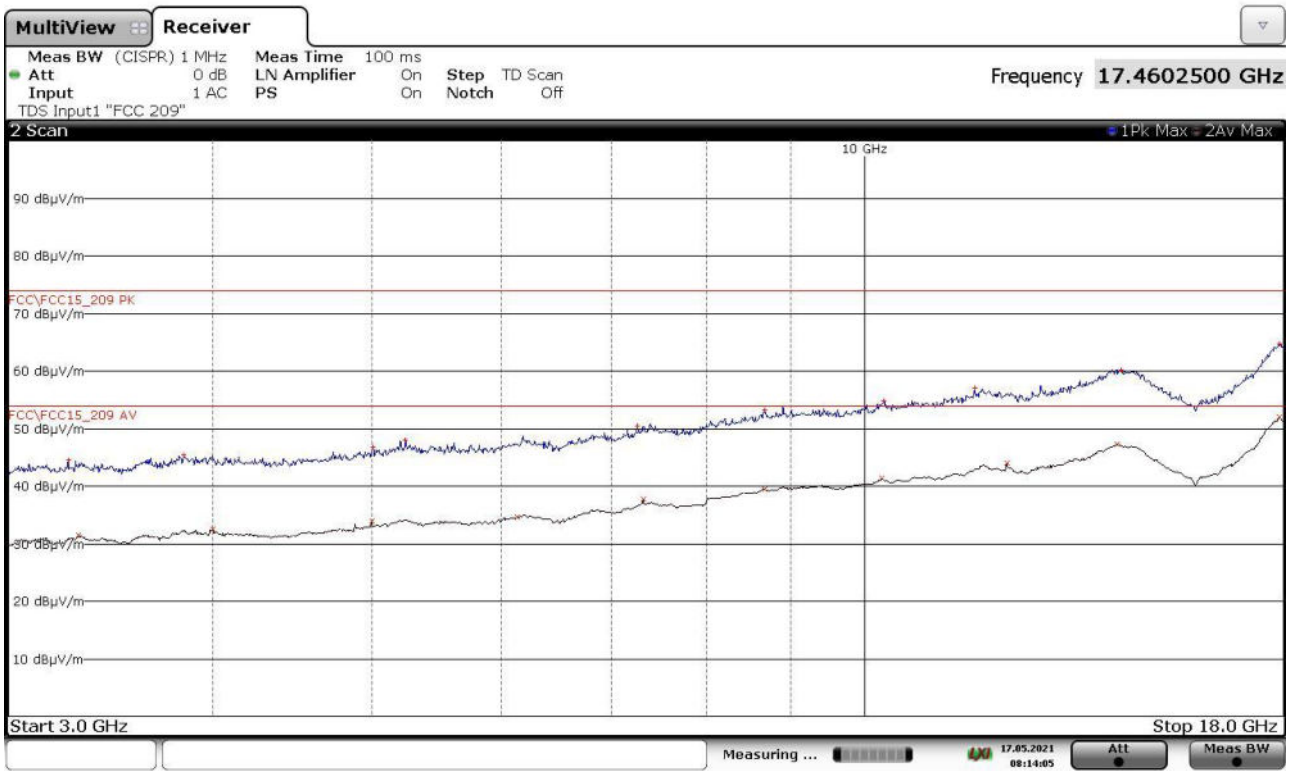
Freq Hz	Lev dBuV/m	Margin dB
3273000000	+44,45	-29,53
3996500000	+45,54	-28,44
5029250000	+46,44	-27,54
6051500000	+47,91	-26,07
7308000000	+49,84	-24,14
8642500000	+52,69	-21,29
10501750000	+53,91	-20,07
12020000000	+61,51	-12,47
14557750000	+60,77	-13,21
17939750000	+65,34	-8,64

AVERAGE

Freq Hz	Lev dBuV/m	Margin dB
3311250000	+31,49	-22,49
3999750000	+32,55	-21,43
4999750000	+34,00	-19,98
6131500000	+34,73	-19,25
7212500000	+38,59	-15,39
8659500000	+39,43	-14,55
10240000000	+41,26	-12,72
12019000000	+50,25	-3,73
14239250000	+47,34	-6,64
17909000000	+51,84	-2,14

21021068_2

Gandini 21021069



FINAL RESULT TABLE

MAX PEAK

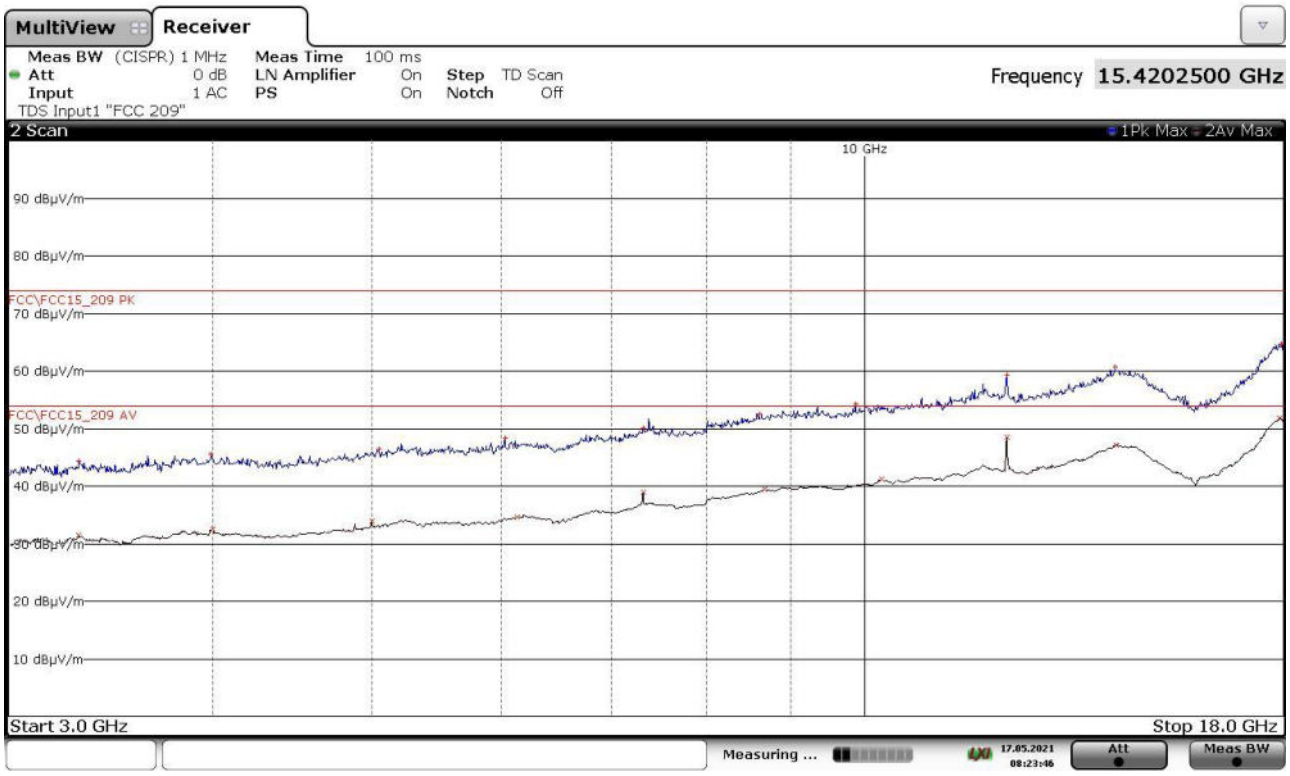
Freq Hz	Lev dBuV/m	Margin dB
3262250000	+44,44	-29,54
3838750000	+45,37	-28,61
5006000000	+46,73	-27,25
5240750000	+48,06	-25,92
7259750000	+50,49	-23,49
8678250000	+53,15	-20,83
10271500000	+54,72	-19,26
11663500000	+56,96	-17,02
14329750000	+60,26	-13,72
17891250000	+64,78	-9,20

AVERAGE

Freq Hz	Lev dBuV/m	Margin dB
3311750000	+31,51	-22,47
3999250000	+32,45	-21,53
4999750000	+33,95	-20,03
6132500000	+34,68	-19,30
7320250000	+37,78	-16,20
8679750000	+39,56	-14,42
10240000000	+41,33	-12,65
12198750000	+43,94	-10,04
14249750000	+47,27	-6,71
17910500000	+51,95	-2,03

21021069_2

Gandini 21021070



FINAL RESULT TABLE

MAX PEAK

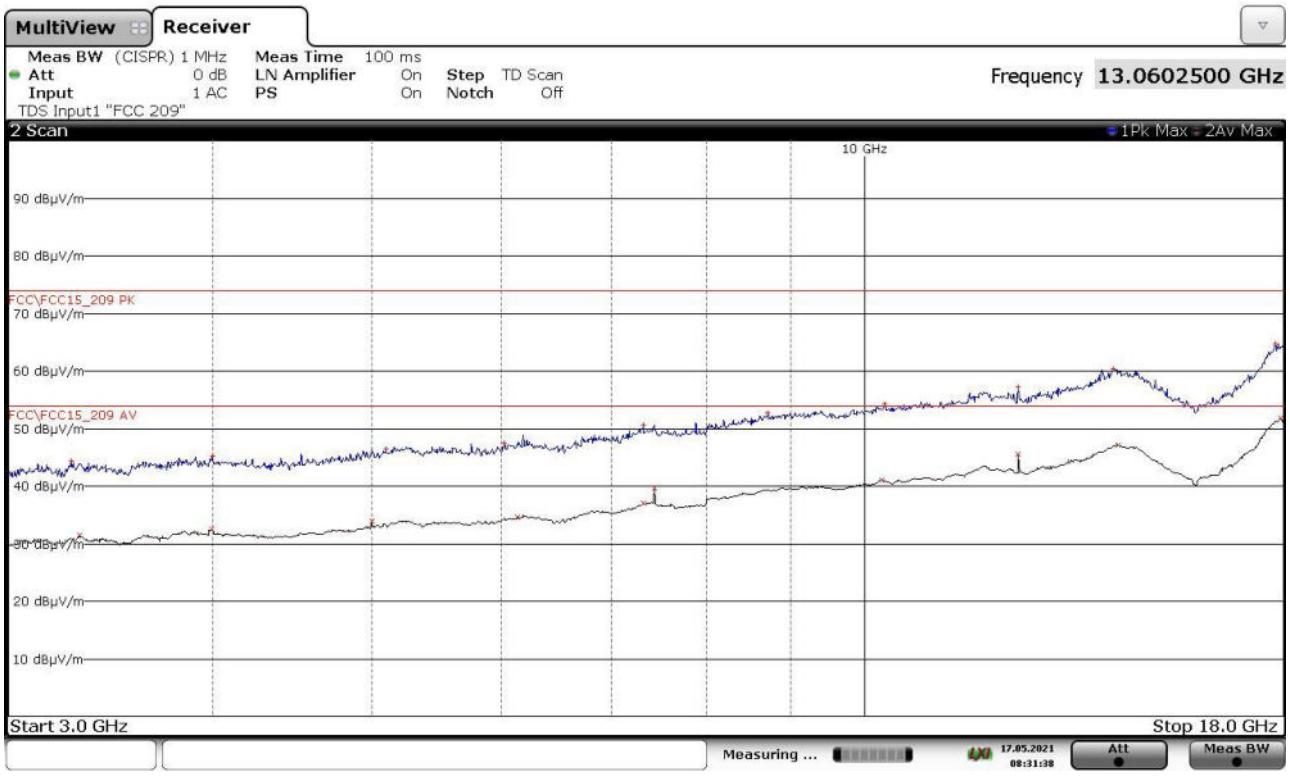
Freq Hz	Lev dBuV/m	Margin dB
3312250000	+44,40	-29,58
3986500000	+45,49	-28,49
5048500000	+46,52	-27,46
6027000000	+48,32	-25,66
7320750000	+50,11	-23,87
8621500000	+52,57	-21,41
9865250000	+54,34	-19,64
12199500000	+59,25	-14,73
14219250000	+60,73	-13,25
17959250000	+64,78	-9,20

AVERAGE

Freq Hz	Lev dBuV/m	Margin dB
3312500000	+31,46	-22,52
3999750000	+32,52	-21,46
4999500000	+33,91	-20,07
6132000000	+34,64	-19,34
7320000000	+39,04	-14,94
8679500000	+39,47	-14,51
10240000000	+41,25	-12,73
12199250000	+48,47	-5,51
14233000000	+47,14	-6,84
17910750000	+51,82	-2,16

21021070_2

Gandini 21021071



FINAL RESULT TABLE

MAX PEAK

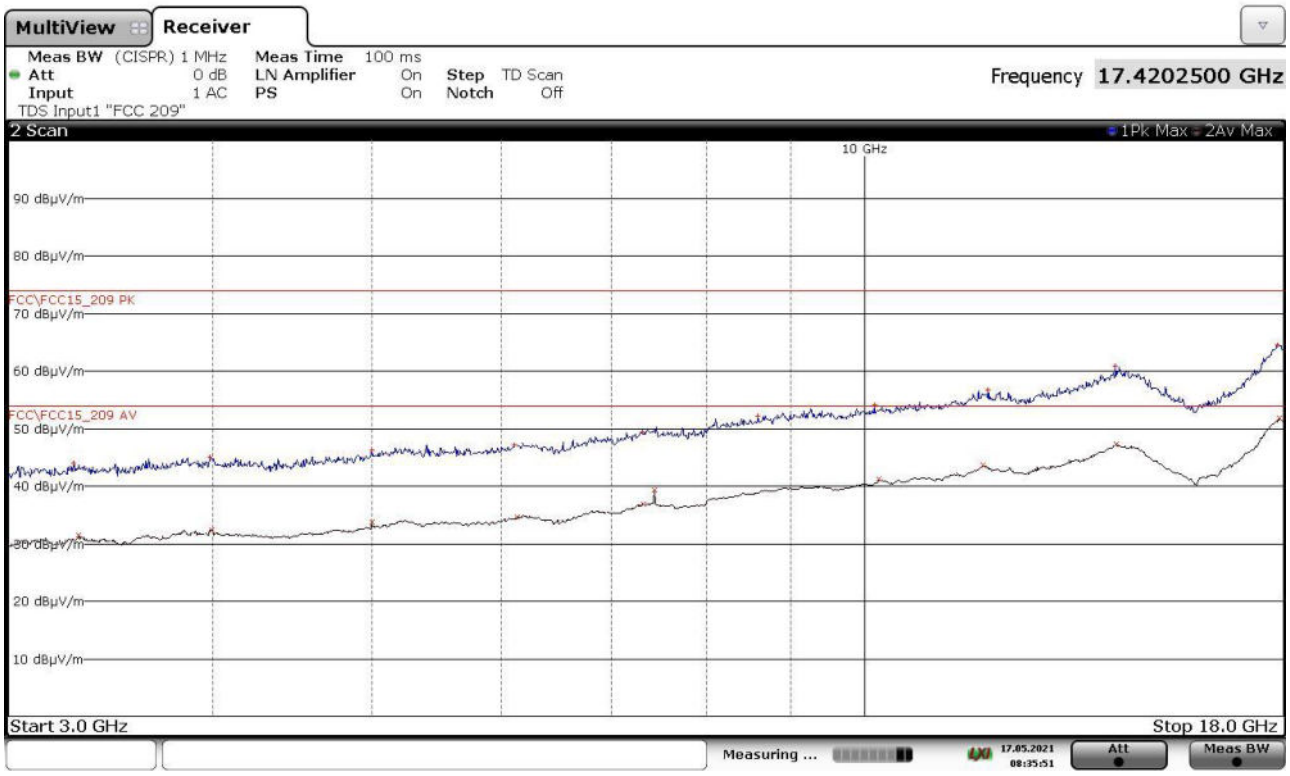
Freq Hz	Lev dBuV/m	Margin dB
3276750000	+44,31	-29,67
3995250000	+45,24	-28,74
5098500000	+46,36	-27,62
6024250000	+47,44	-26,54
7324500000	+50,57	-23,41
8723750000	+52,75	-21,23
10278500000	+54,33	-19,65
12393750000	+57,23	-16,75
14177500000	+60,40	-13,58
17806500000	+64,77	-9,21

AVERAGE

Freq Hz	Lev dBuV/m	Margin dB
3313500000	+31,50	-22,48
3992750000	+32,45	-21,53
4999750000	+33,85	-20,13
6132500000	+34,60	-19,38
7321750000	+36,96	-17,02
7437000000	+39,68	-14,30
10239750000	+41,13	-12,85
12394500000	+45,52	-8,46
14271500000	+47,21	-6,77
17911750000	+51,76	-2,22

21021071_2

Gandini 21021072



FINAL RESULT TABLE

MAX PEAK

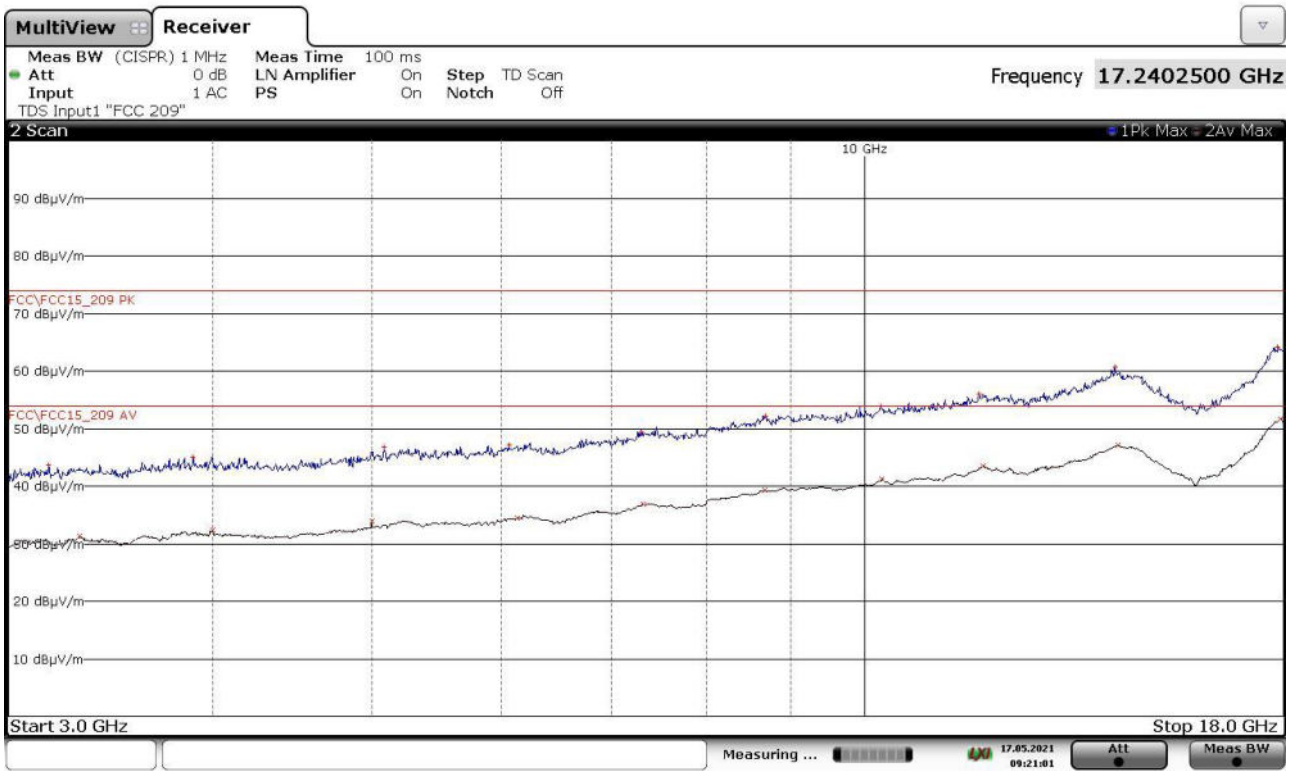
Freq Hz	Lev dBuV/m	Margin dB
3289000000	+43,95	-30,03
3981750000	+45,06	-28,92
4999500000	+46,34	-27,64
6104750000	+47,21	-26,77
7307250000	+49,39	-24,59
8596500000	+52,26	-21,72
10134750000	+54,01	-19,97
11887000000	+56,66	-17,32
14210750000	+60,80	-13,18
17860000000	+64,53	-9,45

AVERAGE

Freq Hz	Lev dBuV/m	Margin dB
3312000000	+31,45	-22,53
3992000000	+32,42	-21,56
4999500000	+33,80	-20,18
6132000000	+34,60	-19,38
7323000000	+36,93	-17,05
7437250000	+39,37	-14,61
10200000000	+41,18	-12,80
11799750000	+43,65	-10,33
14239500000	+47,24	-6,74
17909250000	+51,76	-2,22

21021072_2

Gandini 2102173



FINAL RESULT TABLE

MAX PEAK

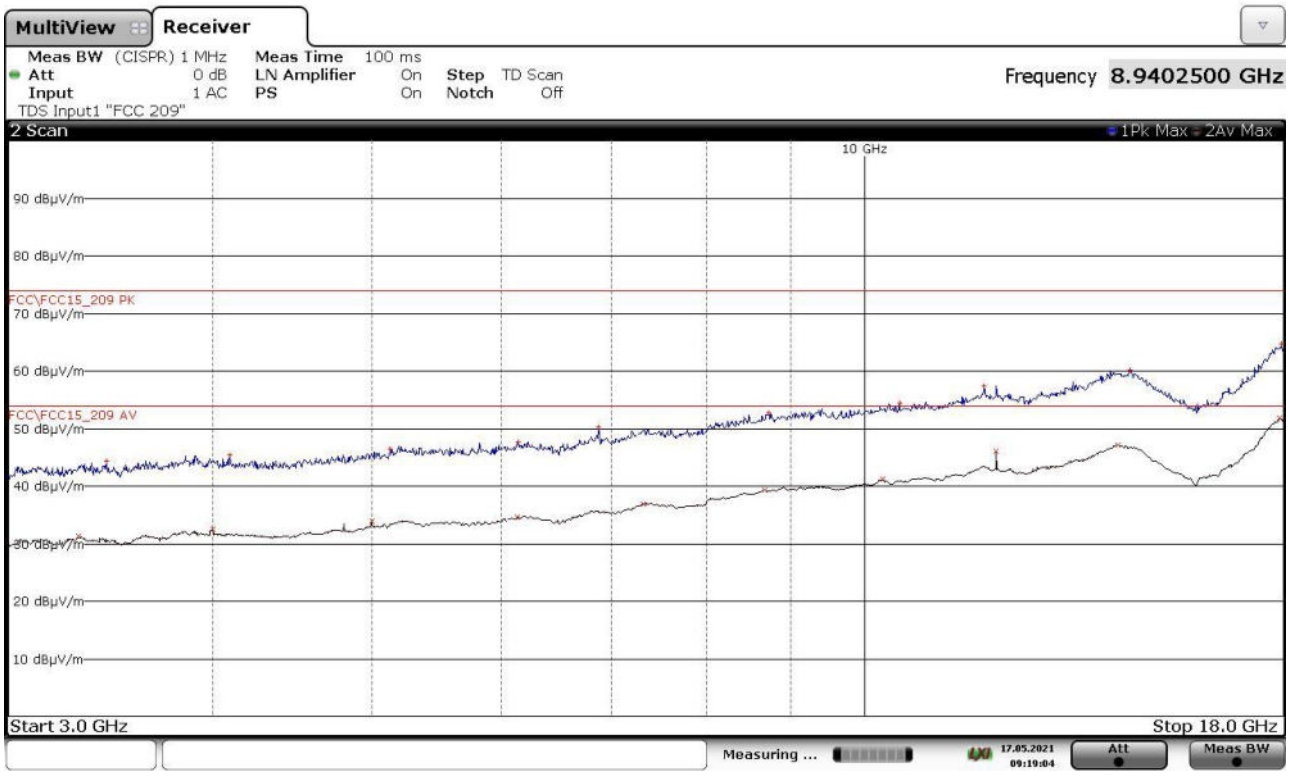
Freq Hz	Lev dBuV/m	Margin dB
3175250000	+43,61	-30,37
3888750000	+45,08	-28,90
5086250000	+46,80	-27,18
6066250000	+47,13	-26,85
7305250000	+49,42	-24,56
8690250000	+52,19	-21,79
10220000000	+53,87	-20,11
11732000000	+56,06	-17,92
14199500000	+60,72	-13,26
17856000000	+64,14	-9,84

AVERAGE

Freq Hz	Lev dBuV/m	Margin dB
3313000000	+31,32	-22,66
3997250000	+32,28	-21,70
4999250000	+33,94	-20,04
6132500000	+34,52	-19,46
7321000000	+36,86	-17,12
8687500000	+39,24	-14,74
10240000000	+41,22	-12,76
11800000000	+43,55	-10,43
14273000000	+47,13	-6,85
17911750000	+51,67	-2,31

21021073_2

Gandini 2102174



FINAL RESULT TABLE

MAX PEAK

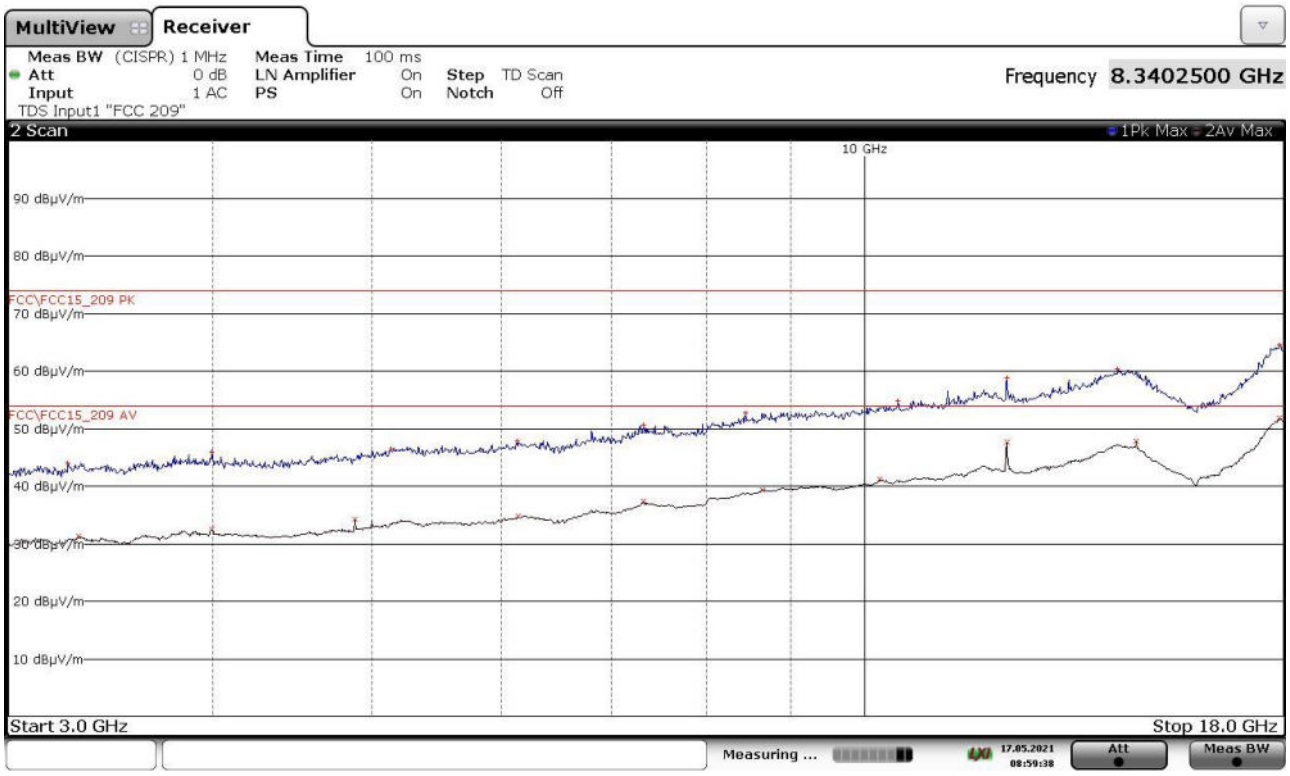
Freq Hz	Lev dBuV/m	Margin dB
3443500000	+44,31	-29,67
4092500000	+45,34	-28,64
5131500000	+46,46	-27,52
6140750000	+47,65	-26,33
6875000000	+50,27	-23,71
8733250000	+52,77	-21,21
10495000000	+54,44	-19,54
11816000000	+57,44	-16,54
14519750000	+60,21	-13,77
17950250000	+64,63	-9,35

AVERAGE

Freq Hz	Lev dBuV/m	Margin dB
3310750000	+31,39	-22,59
3999500000	+32,47	-21,51
4999750000	+33,90	-20,08
6131750000	+34,62	-19,36
7322750000	+36,93	-17,05
8680000000	+39,30	-14,68
10251750000	+41,14	-12,84
12018750000	+46,13	-7,85
14278500000	+47,07	-6,91
17909250000	+51,76	-2,22

21021074_2

Gandini 21021075



FINAL RESULT TABLE

MAX PEAK

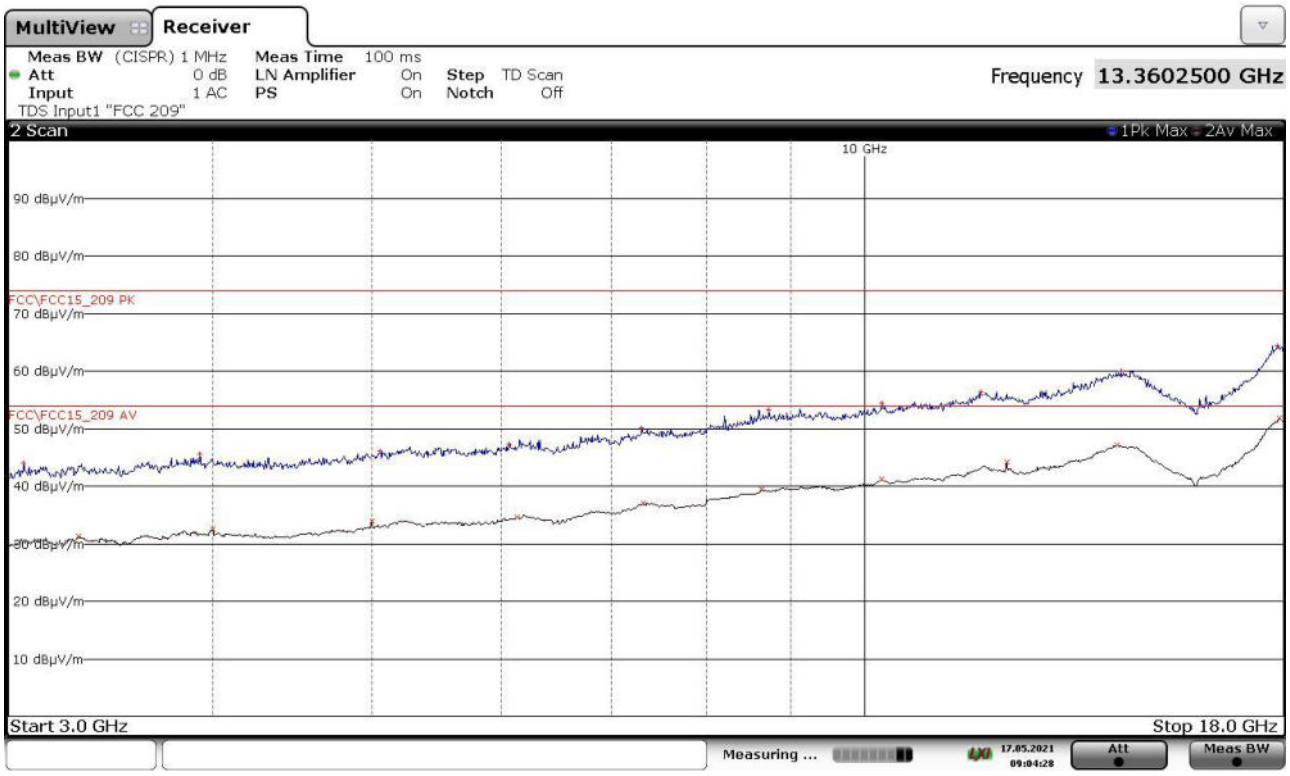
Freq Hz	Lev dBuV/m	Margin dB
3260500000	+44,06	-29,92
3993000000	+45,85	-28,13
5135000000	+46,37	-27,61
6131750000	+47,89	-26,09
7323500000	+50,66	-23,32
8451250000	+52,75	-21,23
10470750000	+54,73	-19,25
12199000000	+58,79	-15,19
14253750000	+60,32	-13,66
17909250000	+64,47	-9,51

AVERAGE

Freq Hz	Lev dBuV/m	Margin dB
3310250000	+31,38	-22,60
3993500000	+32,47	-21,51
4880000000	+34,19	-19,79
6143000000	+34,75	-19,23
7320500000	+37,31	-16,67
8659250000	+39,34	-14,64
10213500000	+41,14	-12,84
12201250000	+47,60	-6,38
14639000000	+47,79	-6,19
17909000000	+51,80	-2,18

21021075_2

Gandini 2102176

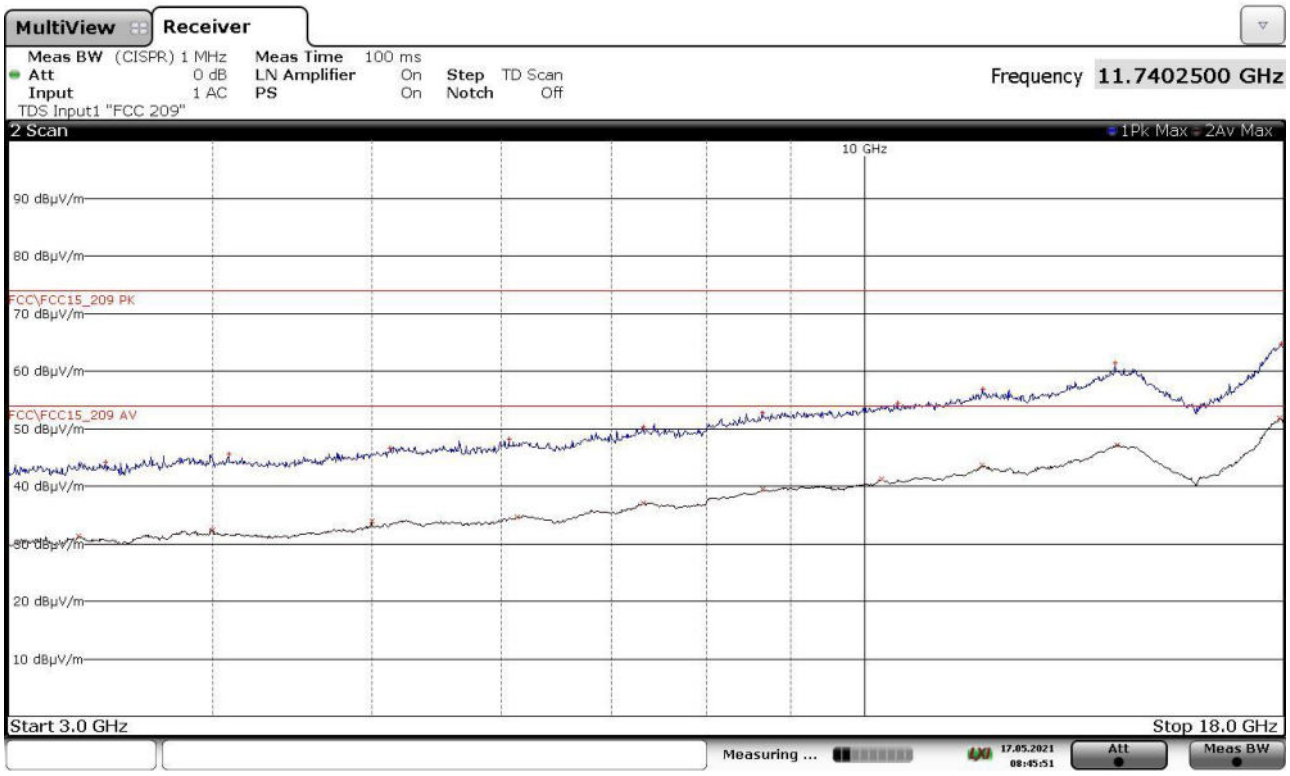


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
3065250000	+44,04	-29,94	3311000000	+31,37	-22,61
3927500000	+45,48	-28,50	3999750000	+32,49	-21,49
5058000000	+46,11	-27,87	4998500000	+33,88	-20,10
6062000000	+47,33	-26,65	6131750000	+34,56	-19,42
7307000000	+50,10	-23,88	7320250000	+37,02	-16,96
8728250000	+53,29	-20,69	8649500000	+39,40	-14,58
10240750000	+54,36	-19,62	10239250000	+41,14	-12,84
11759250000	+56,40	-17,58	12198500000	+44,12	-9,86
14328750000	+59,93	-14,05	14250000000	+47,07	-6,91
17852500000	+64,27	-9,71	17910750000	+51,79	-2,19

21021076_2

Gandini 21021077



FINAL RESULT TABLE

MAX PEAK

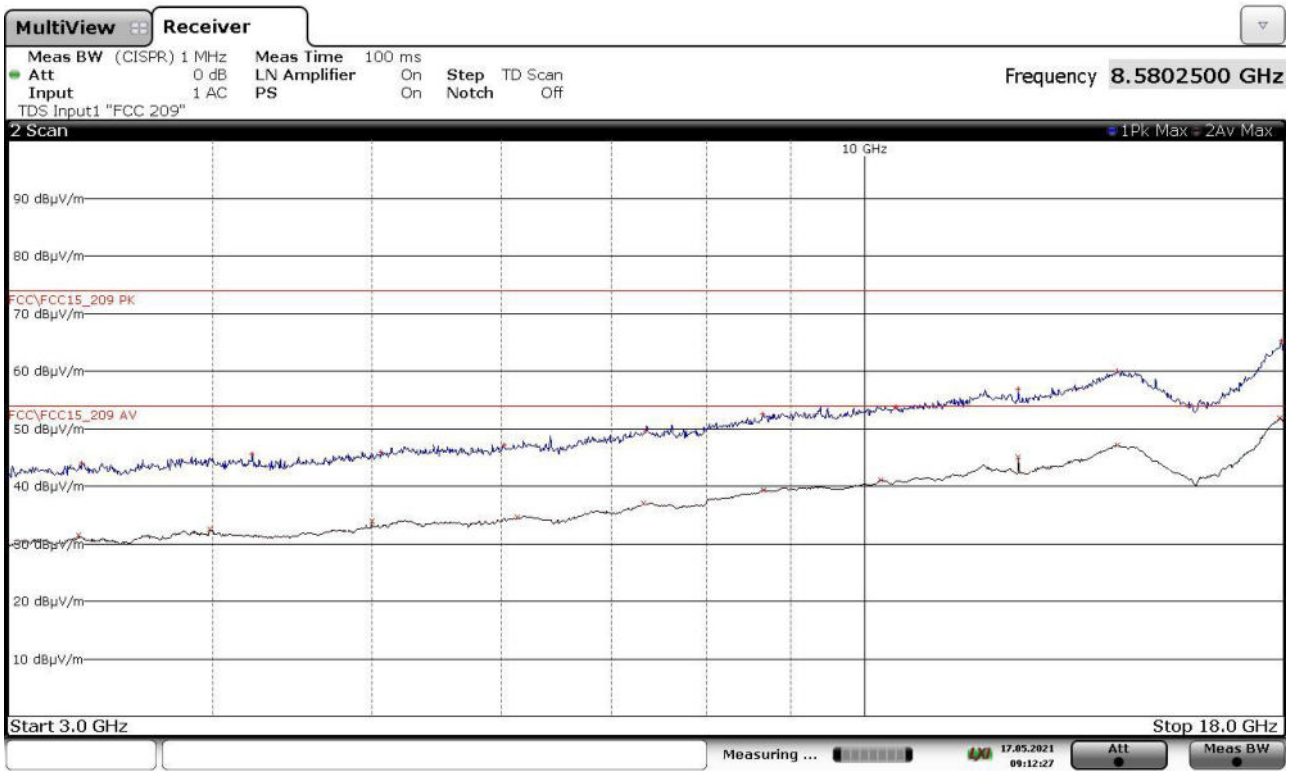
Freq Hz	Lev dBuV/m	Margin dB
3438500000	+44,16	-29,82
4089250000	+45,50	-28,48
5131750000	+46,56	-27,42
6065250000	+48,25	-25,73
7321000000	+50,34	-23,64
8652250000	+52,61	-21,37
10466250000	+54,46	-19,52
11794250000	+56,93	-17,05
14207500000	+61,41	-12,57
17955250000	+64,64	-9,34

AVERAGE

Freq Hz	Lev dBuV/m	Margin dB
3311500000	+31,37	-22,61
3999000000	+32,41	-21,57
4999750000	+33,98	-20,00
6131500000	+34,61	-19,37
7321500000	+36,97	-17,01
8659000000	+39,42	-14,56
10239750000	+41,25	-12,73
11778750000	+43,61	-10,37
14239750000	+47,20	-6,78
17911000000	+51,79	-2,19

21021077_2

Gandini 2102178



FINAL RESULT TABLE

MAX PEAK

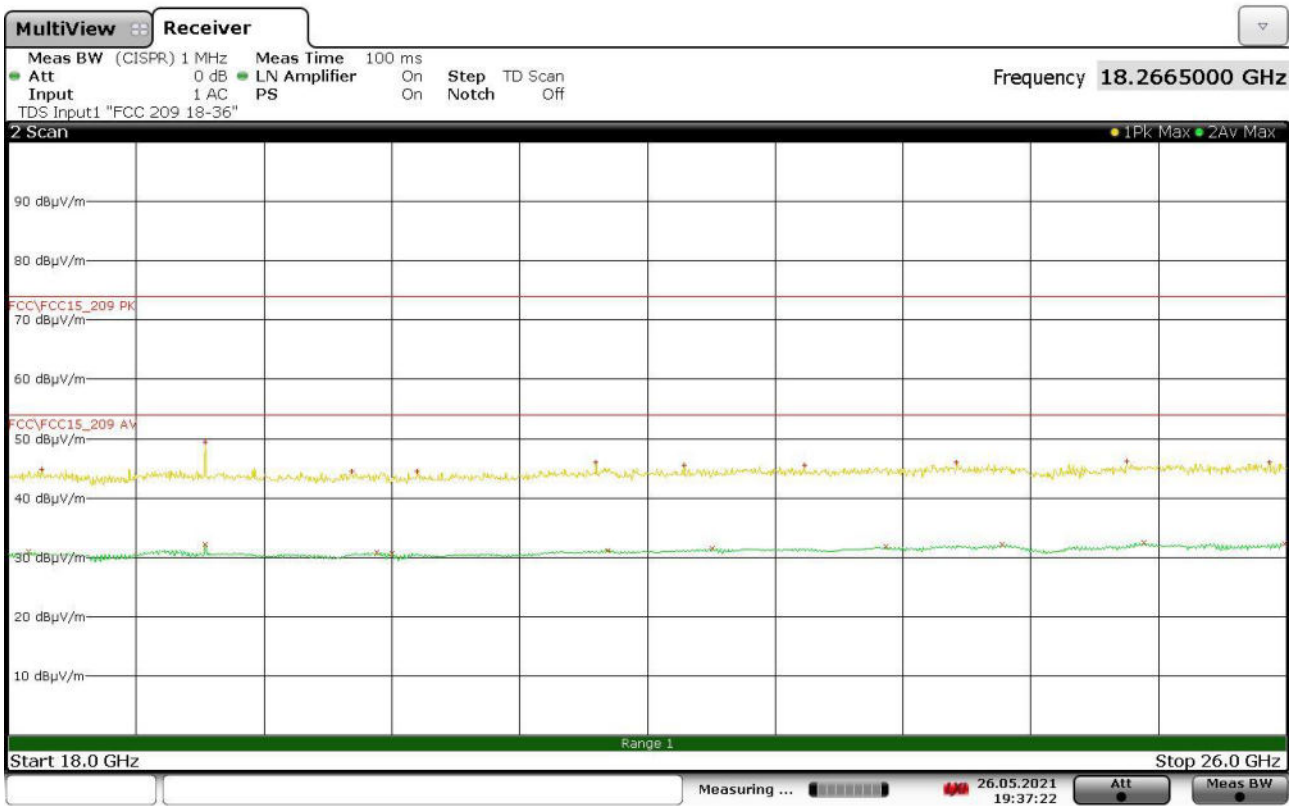
Freq Hz	Lev dBuV/m	Margin dB
3326750000	+43,94	-30,04
4226250000	+45,63	-28,35
5066750000	+45,95	-28,03
6020500000	+47,08	-26,90
7346000000	+49,57	-24,41
8661500000	+52,54	-21,44
10433750000	+53,75	-20,23
12393250000	+56,91	-17,07
14254250000	+59,99	-13,99
17938750000	+65,23	-8,75

AVERAGE

Freq Hz	Lev dBuV/m	Margin dB
3312000000	+31,44	-22,54
3979500000	+32,46	-21,52
4999750000	+33,87	-20,11
6132500000	+34,62	-19,36
7322750000	+36,98	-17,00
8667750000	+39,35	-14,63
10219000000	+41,10	-12,88
12394000000	+45,03	-8,95
14239750000	+47,15	-6,83
17909000000	+51,82	-2,16

21021078_2

Gandini 21021079

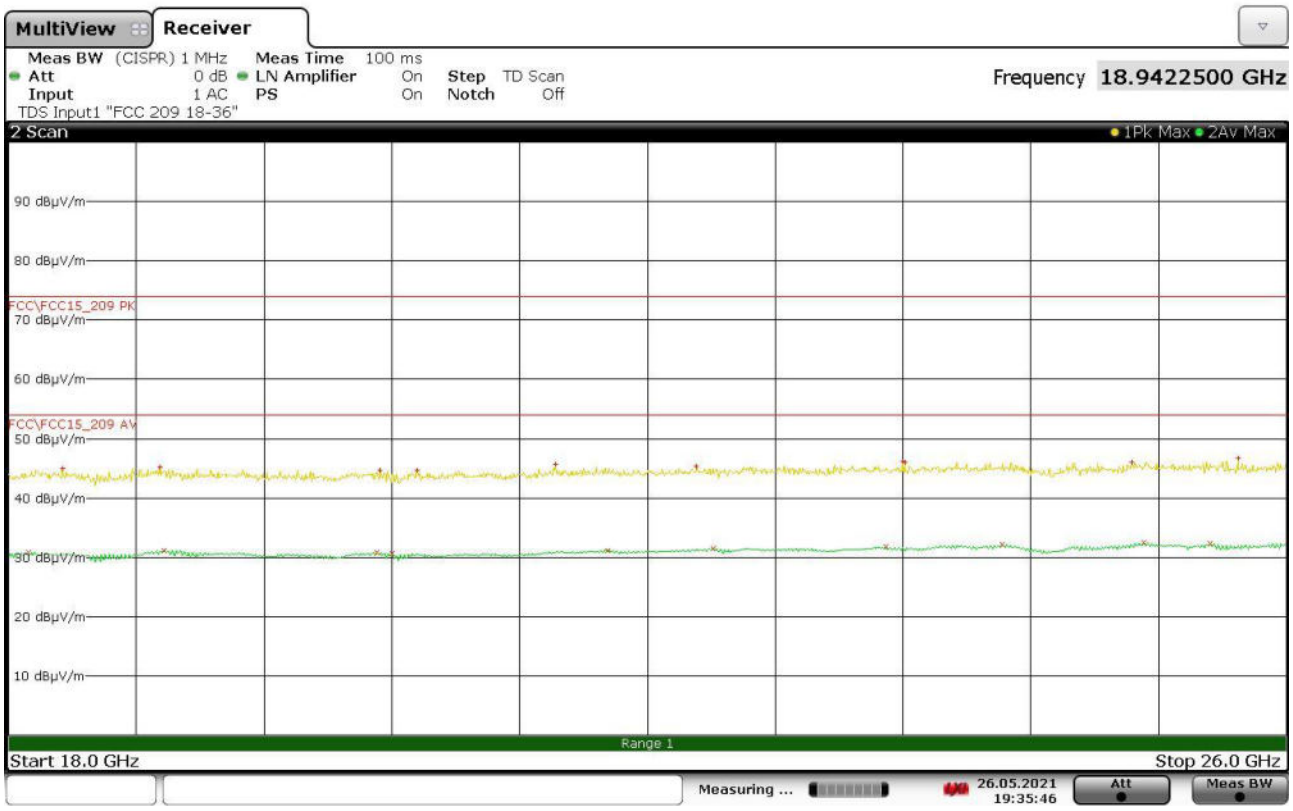


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
18209500000	+44,82	-29,16	18123000000	+30,88	-23,10
19233500000	+49,35	-24,63	19229750000	+32,07	-21,91
20149000000	+44,49	-29,49	20304500000	+30,84	-23,14
20560500000	+44,46	-29,52	20402750000	+30,65	-23,33
21678500000	+45,94	-28,04	21753500000	+31,14	-22,84
22230750000	+45,47	-28,51	22408250000	+31,49	-22,49
22984500000	+45,57	-28,41	23493250000	+31,76	-22,22
23935000000	+46,04	-27,94	24221500000	+32,11	-21,87
25001250000	+46,27	-27,71	25105750000	+32,44	-21,54
25895000000	+46,02	-27,96	25989250000	+32,31	-21,67

21021079_2

Gandini 21021080

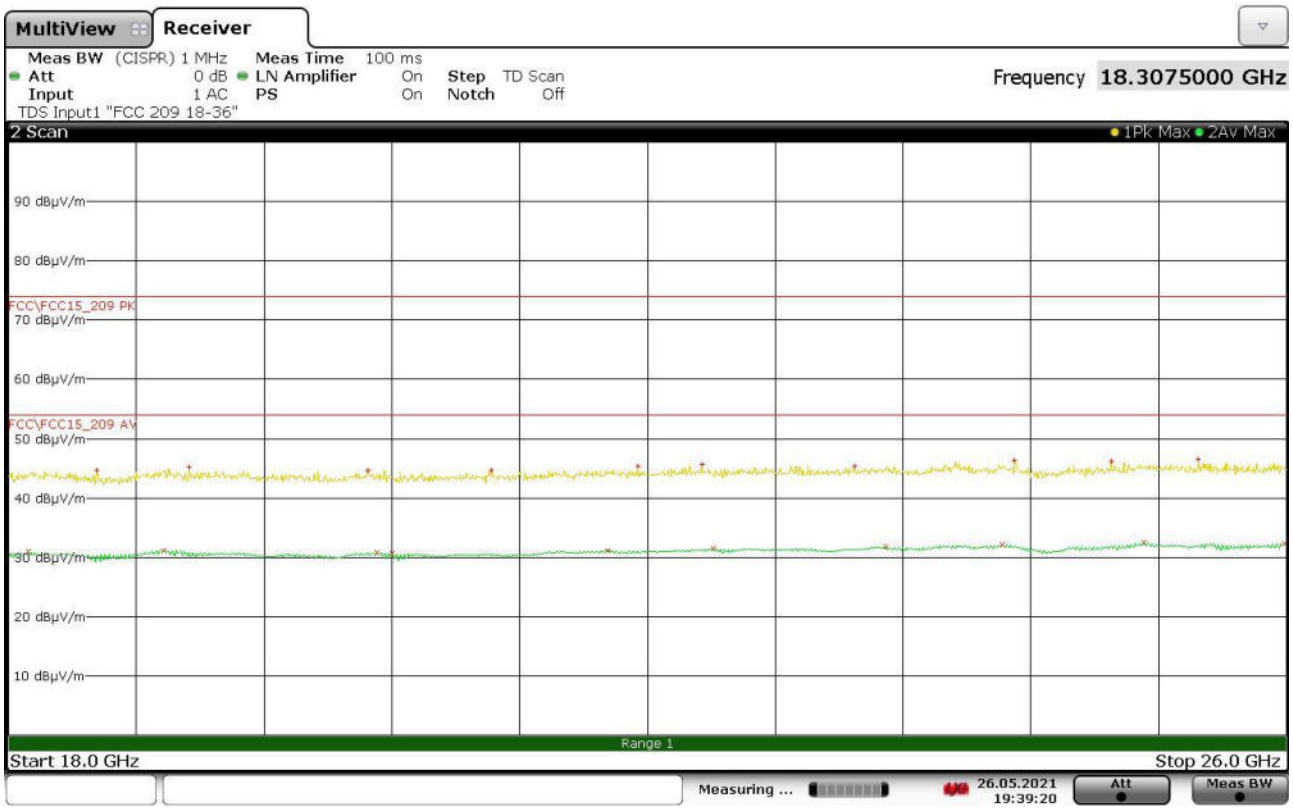


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
18336500000	+45,07	-28,91	18123000000	+30,87	-23,11
18946000000	+45,20	-28,78	18976250000	+31,18	-22,80
20326500000	+44,71	-29,27	20305000000	+30,84	-23,14
20555250000	+44,61	-29,37	20402250000	+30,67	-23,31
21425250000	+45,62	-28,36	21754500000	+31,17	-22,81
22306750000	+45,38	-28,60	22409750000	+31,50	-22,48
23597500000	+46,26	-27,72	23493500000	+31,78	-22,20
23612250000	+45,98	-28,00	24221250000	+32,12	-21,86
25030250000	+46,01	-27,97	25105750000	+32,47	-21,51
25698500000	+46,69	-27,29	25523250000	+32,32	-21,66

21021080_2

Gandini 21021081

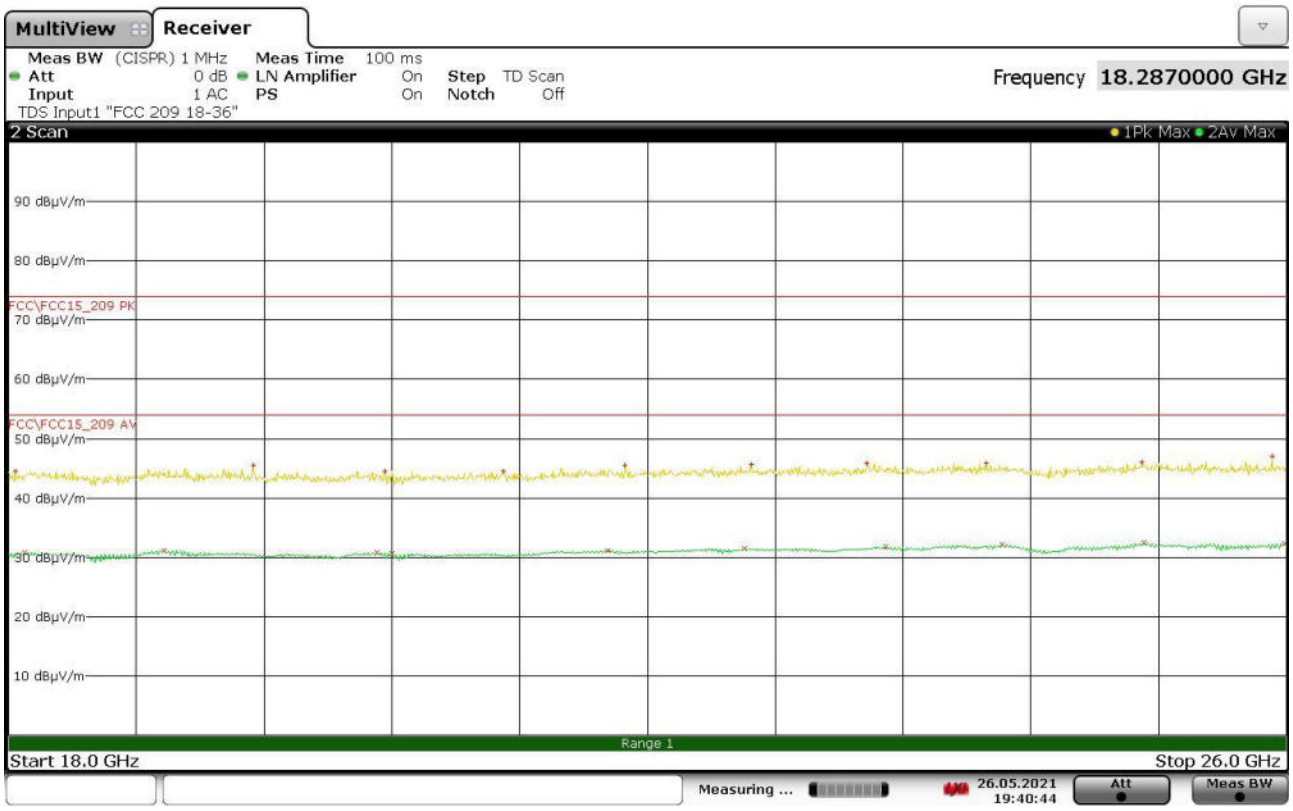


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
18554000000	+44,60	-29,38	18123000000	+30,90	-23,08
19129250000	+45,18	-28,80	18973250000	+31,17	-22,81
20251750000	+44,59	-29,39	20306000000	+30,84	-23,14
21024250000	+44,65	-29,33	20402500000	+30,69	-23,29
21940250000	+45,41	-28,57	21754500000	+31,17	-22,81
22341000000	+45,62	-28,36	22408500000	+31,51	-22,47
23296750000	+45,40	-28,58	23493000000	+31,79	-22,19
24299500000	+46,30	-27,68	24221750000	+32,12	-21,86
24903500000	+46,21	-27,77	25105750000	+32,46	-21,52
25445500000	+46,45	-27,53	25988750000	+32,32	-21,66

21021081_2

Gandini 21021082

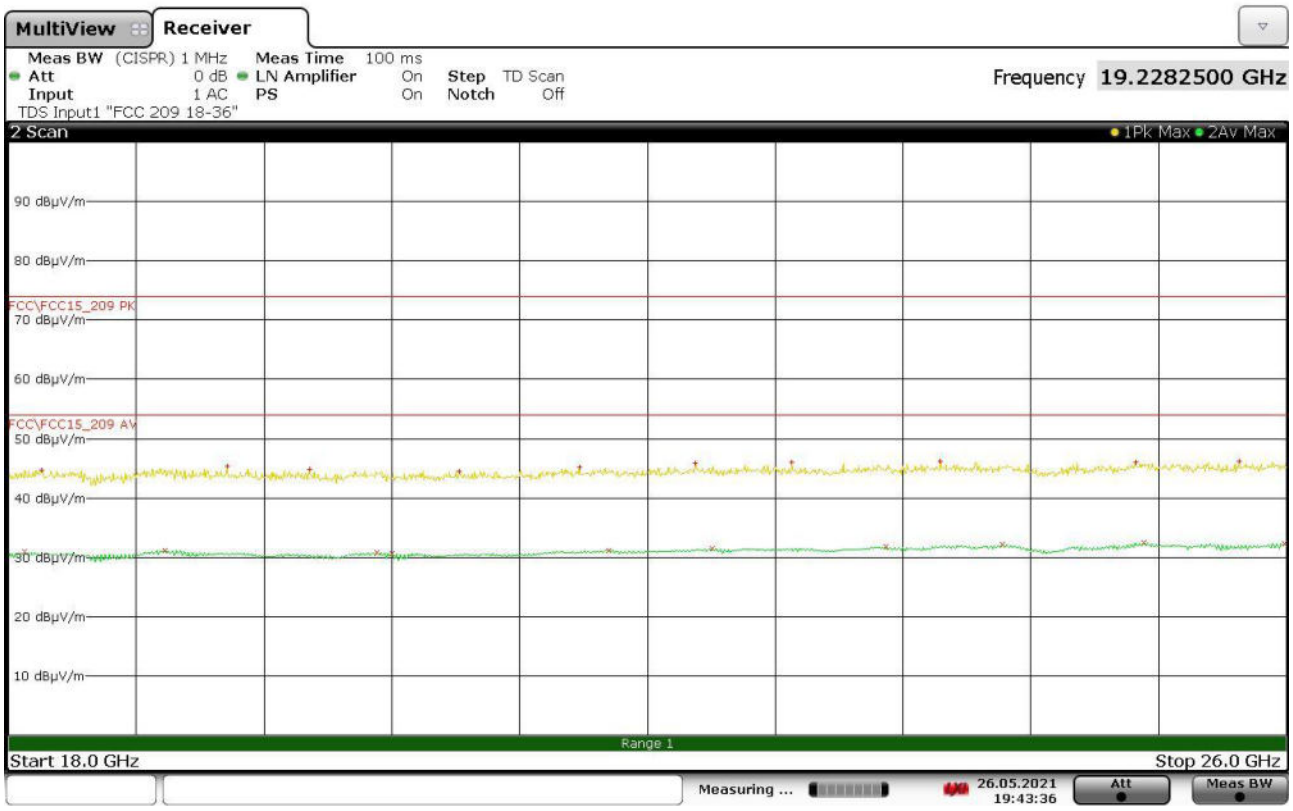


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
18042250000	+44,55	-29,43	18102500000	+30,87	-23,11
19533500000	+45,57	-28,41	18973500000	+31,21	-22,77
20354250000	+44,53	-29,45	20305000000	+30,84	-23,14
21098750000	+44,47	-29,51	20402250000	+30,65	-23,33
21859500000	+45,49	-28,49	21754250000	+31,17	-22,81
22648000000	+45,70	-28,28	22604750000	+31,51	-22,47
23374750000	+45,87	-28,11	23493000000	+31,77	-22,21
24121000000	+45,89	-28,09	24221750000	+32,11	-21,87
25093250000	+46,01	-27,97	25105750000	+32,45	-21,53
25911750000	+47,06	-26,92	25990000000	+32,32	-21,66

21021082_2

Gandini 21021083

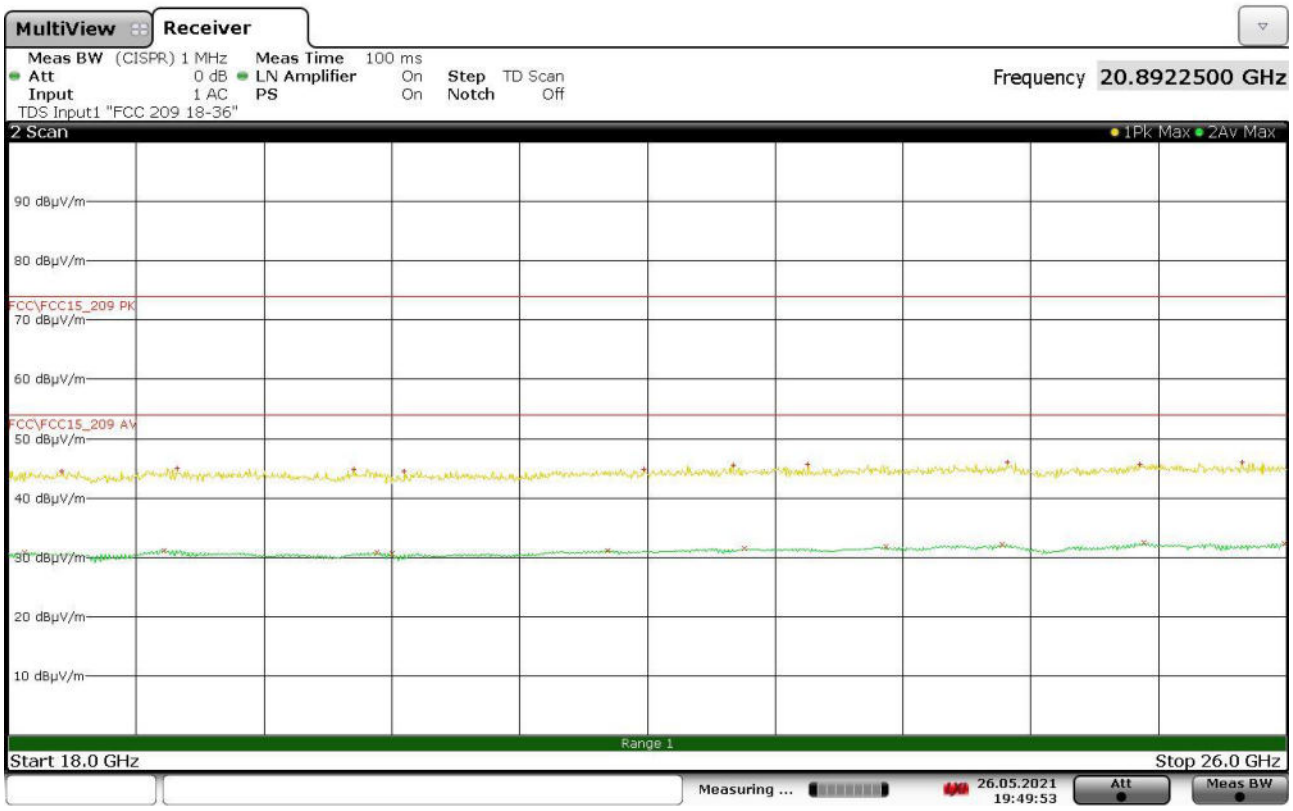


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
18208000000	+44,73	-29,25	18102500000	+30,88	-23,10
19370000000	+45,36	-28,62	18977250000	+31,17	-22,81
19885250000	+44,88	-29,10	20305750000	+30,85	-23,13
20824000000	+44,56	-29,42	20402750000	+30,67	-23,31
21572750000	+45,11	-28,87	21755250000	+31,17	-22,81
22301250000	+45,85	-28,13	22408250000	+31,51	-22,47
22901500000	+46,03	-27,95	23493750000	+31,79	-22,19
23834250000	+46,21	-27,77	24222250000	+32,11	-21,87
25054250000	+46,09	-27,89	25105500000	+32,46	-21,52
25702500000	+46,11	-27,87	25988500000	+32,32	-21,66

21021083_2

Gandini 21021084

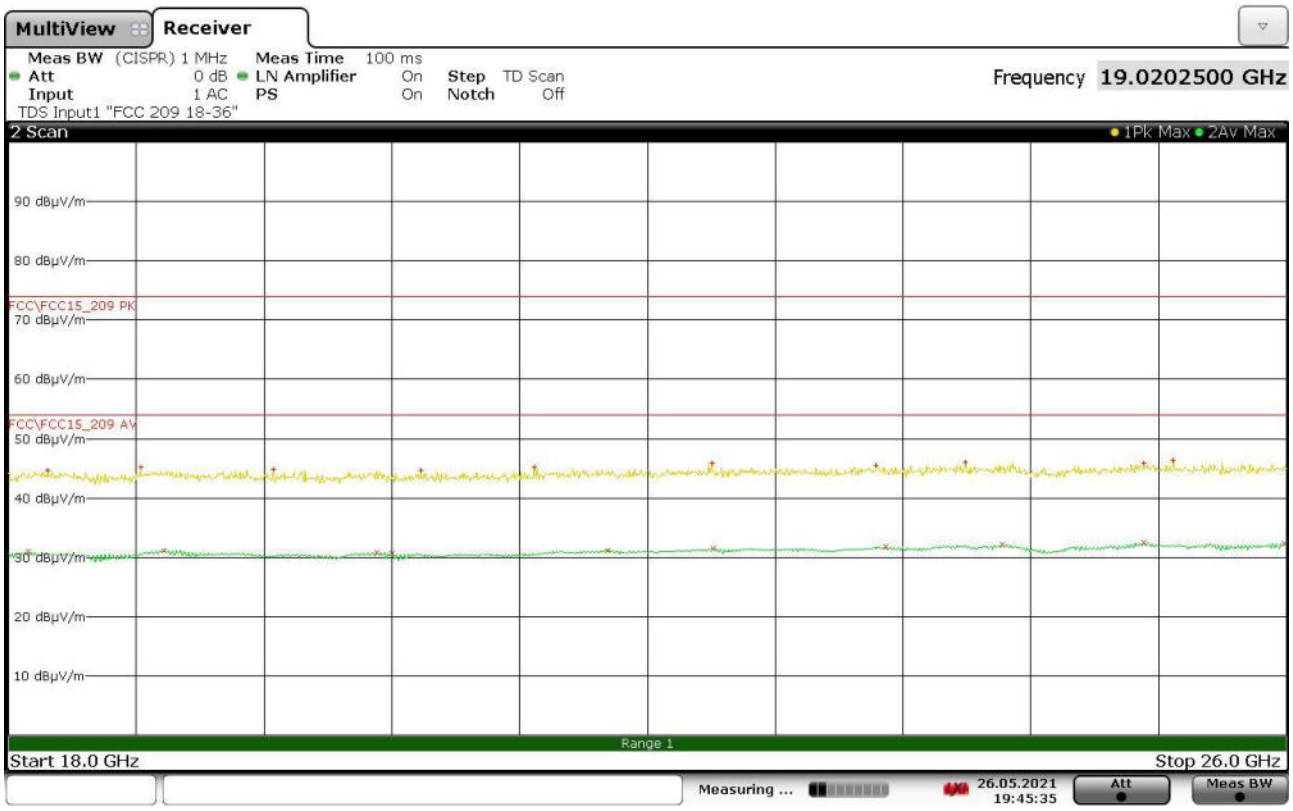


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
18334250000	+44,56	-29,42	18102500000	+30,85	-23,13
19053750000	+45,01	-28,97	18972250000	+31,18	-22,80
20160500000	+44,89	-29,09	20306000000	+30,83	-23,15
20477250000	+44,52	-29,46	20402500000	+30,65	-23,33
21980250000	+44,92	-29,06	21754250000	+31,17	-22,81
22535000000	+45,49	-28,49	22605000000	+31,48	-22,50
23002750000	+45,62	-28,36	23493000000	+31,78	-22,20
24251500000	+45,97	-28,01	24221500000	+32,12	-21,86
25079750000	+45,65	-28,33	25106000000	+32,45	-21,53
25721000000	+46,01	-27,97	25989250000	+32,32	-21,66

21021084_2

Gandini 21021085

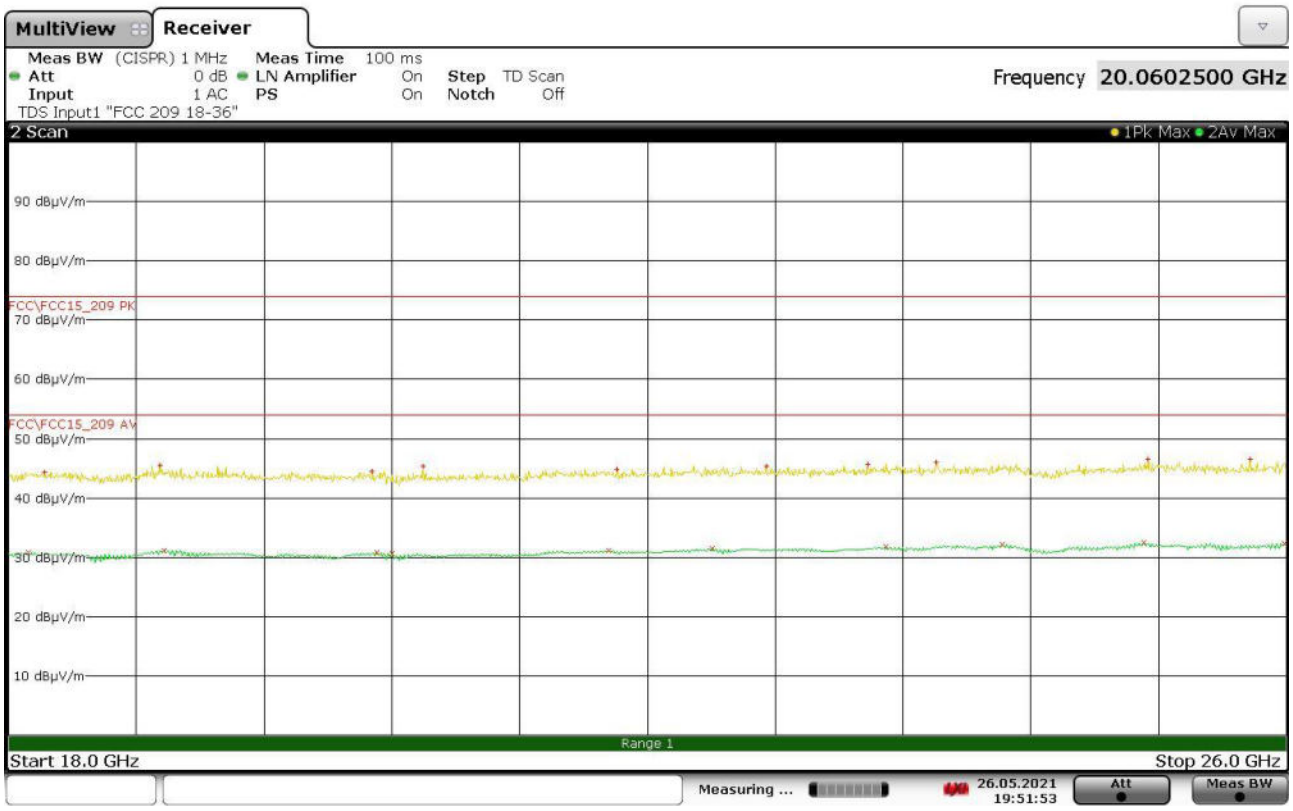


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
18245750000	+44,64	-29,34	18123000000	+30,91	-23,07
18827500000	+45,16	-28,82	18973250000	+31,17	-22,81
19659500000	+44,87	-29,11	20305000000	+30,85	-23,13
20584500000	+44,59	-29,39	20403500000	+30,65	-23,33
21290000000	+45,18	-28,80	21753750000	+31,16	-22,82
22403750000	+45,93	-28,05	22409750000	+31,50	-22,48
23432250000	+45,46	-28,52	23493750000	+31,77	-22,21
23991250000	+46,09	-27,89	24220750000	+32,11	-21,87
25106500000	+45,78	-28,20	25106000000	+32,48	-21,50
25292500000	+46,41	-27,57	25988750000	+32,29	-21,69

21021085_2

Gandini 21021086

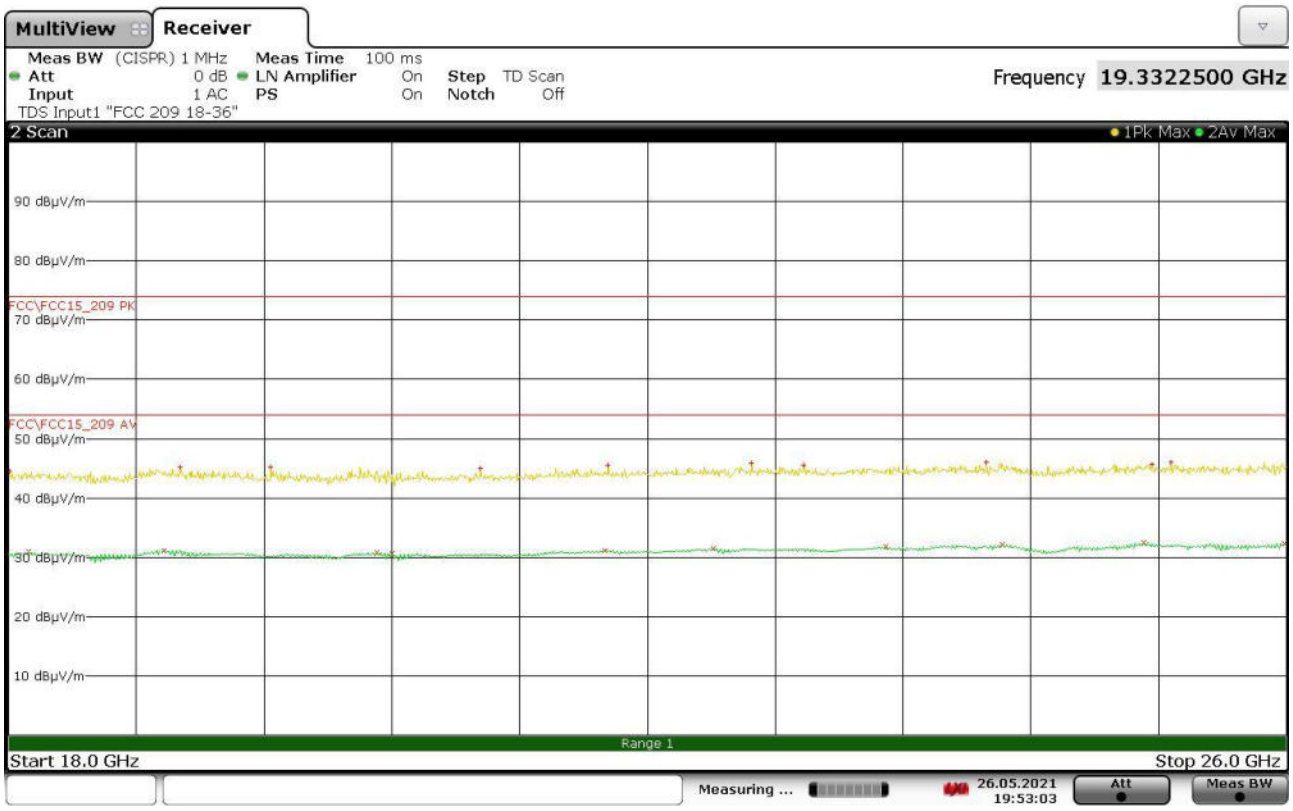


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
18225750000	+44,31	-29,67	18123000000	+30,87	-23,11
18948250000	+45,53	-28,45	18973000000	+31,17	-22,81
20277000000	+44,46	-29,52	20304750000	+30,81	-23,17
20594500000	+45,29	-28,69	20402250000	+30,64	-23,34
21811000000	+44,89	-29,09	21755250000	+31,13	-22,85
22741750000	+45,42	-28,56	22407500000	+31,48	-22,50
23377750000	+45,67	-28,31	23493500000	+31,75	-22,23
23808250000	+46,02	-27,96	24221250000	+32,12	-21,86
25134750000	+46,45	-27,53	25105750000	+32,47	-21,51
25772000000	+46,45	-27,53	25989000000	+32,31	-21,67

21021086_2

Gandini 21021087

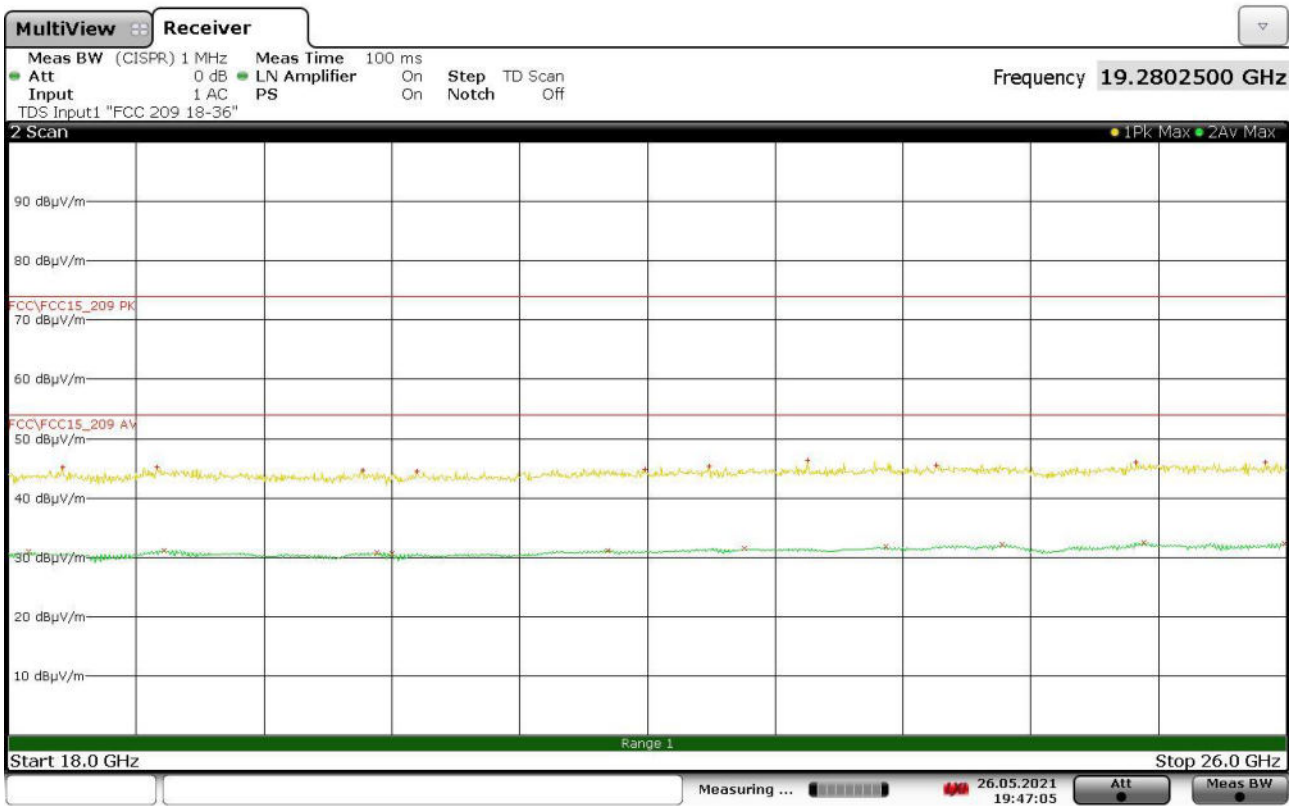


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
18007750000	+44,47	-29,51	18123000000	+30,88	-23,10
19076000000	+45,11	-28,87	18972750000	+31,17	-22,81
19641000000	+45,25	-28,73	20305000000	+30,81	-23,17
20953750000	+45,00	-28,98	20402750000	+30,65	-23,33
21753000000	+45,47	-28,51	21735000000	+31,13	-22,85
22651250000	+45,77	-28,21	22409250000	+31,48	-22,50
22980250000	+45,45	-28,53	23492750000	+31,77	-22,21
24120500000	+45,99	-27,99	24220750000	+32,10	-21,88
25160500000	+45,73	-28,25	25105750000	+32,45	-21,53
25277500000	+46,03	-27,95	25988250000	+32,31	-21,67

21021087_2

Gandini 21021088

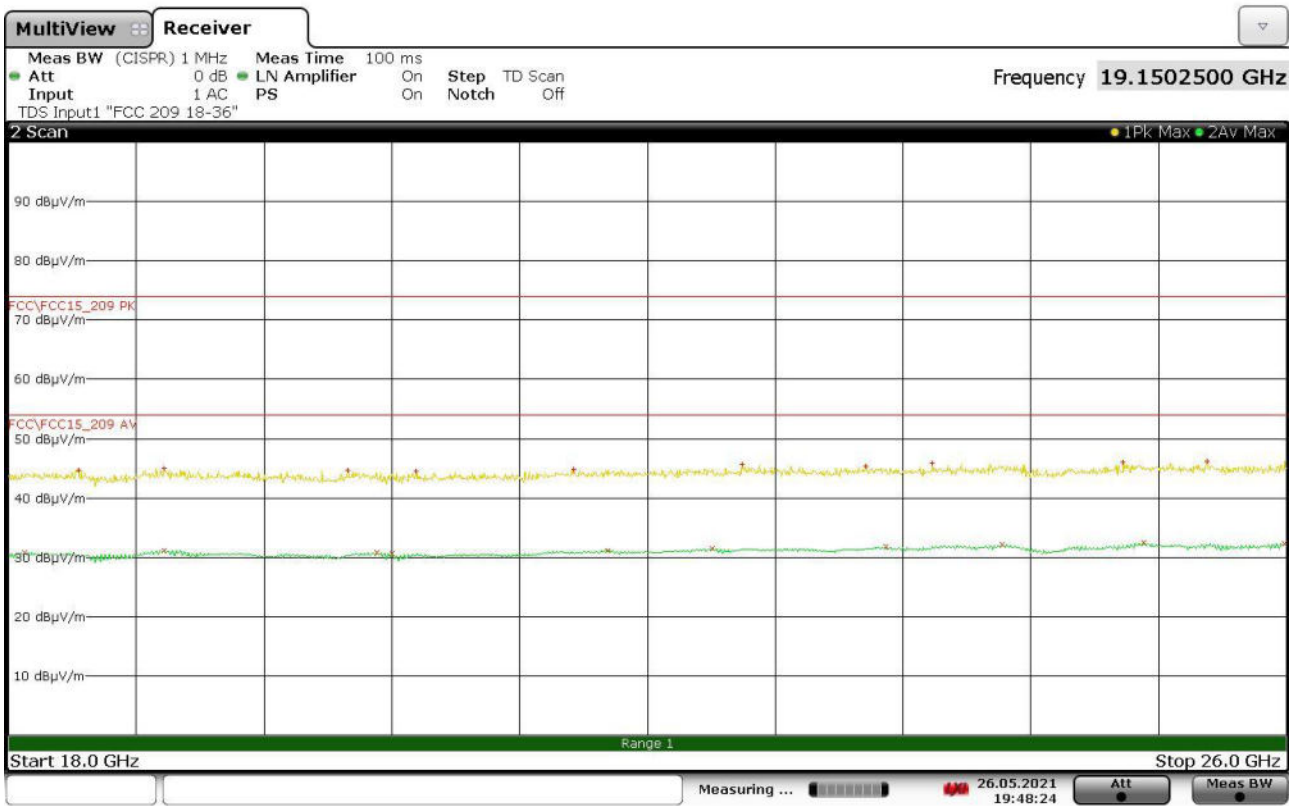


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
18336250000	+45,16	-28,82	18123250000	+30,88	-23,10
18929750000	+45,19	-28,79	18973750000	+31,18	-22,80
20217500000	+44,71	-29,27	20305500000	+30,83	-23,15
20555250000	+44,50	-29,48	20402250000	+30,66	-23,32
21981250000	+44,90	-29,08	21753750000	+31,16	-22,82
22384750000	+45,32	-28,66	22605000000	+31,47	-22,51
23001000000	+46,28	-27,70	23493000000	+31,77	-22,21
23807500000	+45,59	-28,39	24222000000	+32,12	-21,86
25059250000	+46,10	-27,88	25105750000	+32,43	-21,55
25867500000	+45,94	-28,04	25990250000	+32,32	-21,66

21021088_2

Gandini 21021089

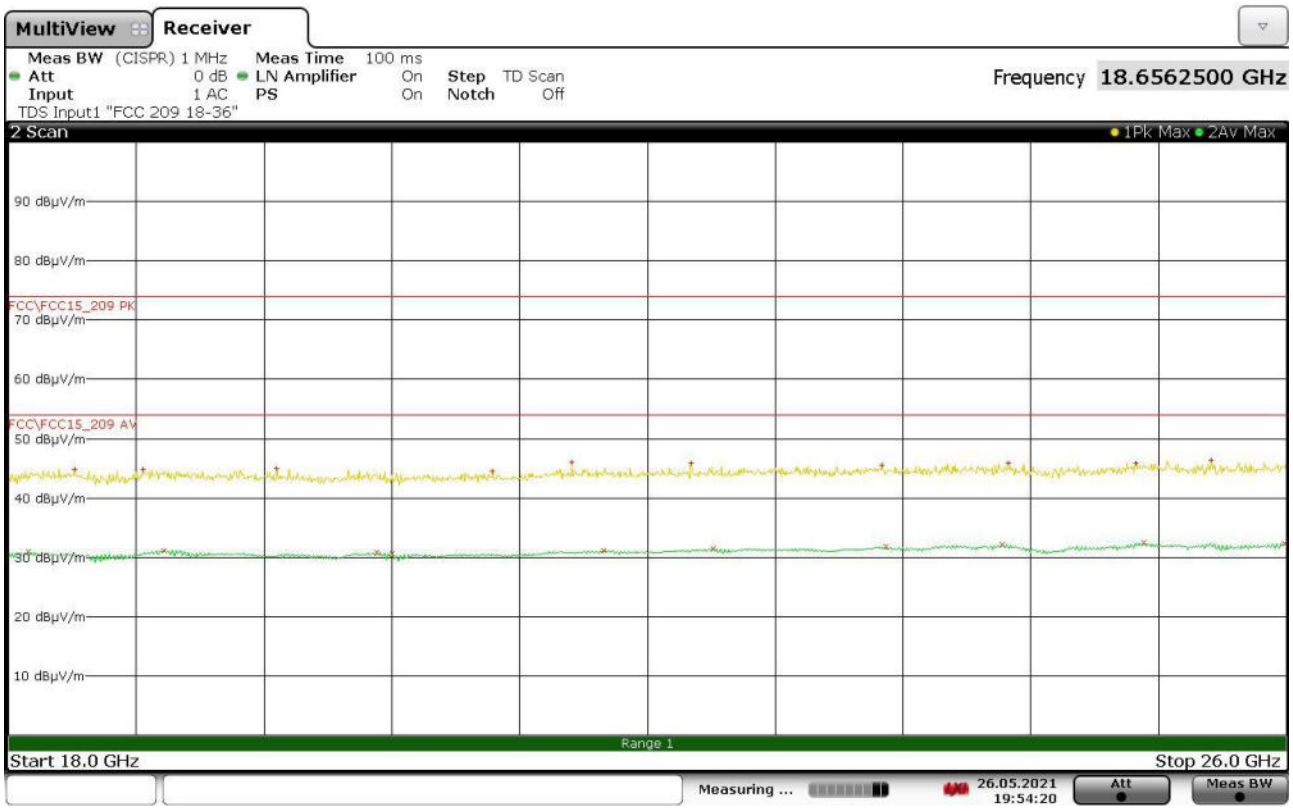


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
18437250000	+44,60	-29,38	18102500000	+30,86	-23,12
18971750000	+45,07	-28,91	18972750000	+31,17	-22,81
20124750000	+44,73	-29,25	20303250000	+30,82	-23,16
20554000000	+44,51	-29,47	20402000000	+30,64	-23,34
21539250000	+44,86	-29,12	21754250000	+31,15	-22,83
22594000000	+45,73	-28,25	22408250000	+31,48	-22,50
23369000000	+45,39	-28,59	23493750000	+31,77	-22,21
23781250000	+45,82	-28,16	24221000000	+32,13	-21,85
24977500000	+45,96	-28,02	25105500000	+32,43	-21,55
25505750000	+46,21	-27,77	25988750000	+32,29	-21,69

21021089_2

Gandini 21021090



FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
18413000000	+44,90	-29,08	18123000000	+30,89	-23,09
18841000000	+44,77	-29,21	18973250000	+31,18	-22,80
19681000000	+44,97	-29,01	20306000000	+30,83	-23,15
21030750000	+44,56	-29,42	20402750000	+30,64	-23,34
21527000000	+45,96	-28,02	21727750000	+31,16	-22,82
22270750000	+45,84	-28,14	22409000000	+31,47	-22,51
23468500000	+45,44	-28,54	23493500000	+31,76	-22,22
24258500000	+45,83	-28,15	24222000000	+32,10	-21,88
25055000000	+45,84	-28,14	25105750000	+32,44	-21,54
25528500000	+46,30	-27,68	25989000000	+32,30	-21,68

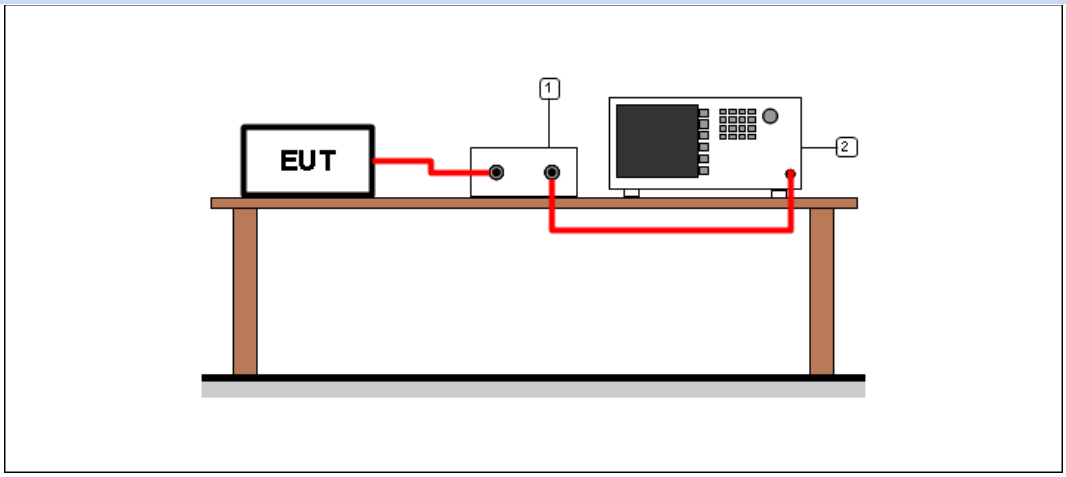
21021090_2

9.3 DTS bandwidth

Tested by ..... :	G. Gandini
Test date ..... :	05.05.2021
Test location (stand) ..... :	Laboratory
Reference standards ..... :	FCC Rules and Regulation; Titles 47 Part 15.247 (a) (2) ANSI C63.10 cl. 11.8 KDB 558074 D01 DTS Meas Guidance v05r02 cl. 8.2
Supplementary test set-up description ..... :	--
Supplementary information..... :	--

Acceptance limits
Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz

Test setup



Test setup PR002_01				
Nr.	*Id. Number*	*Manufacturer*	*Model*	*Description*
2	CMC S295	Rohde & Schwarz	FSW43	Spectrum Analyzer 43GHz
1	--	--	--	Cable + attenuator (calibrated before the test)

Result

Chip A

Frequency (MHz)	*Graphs*	*6 dB bandwidth (kHz)*	*Minimum 6 dB bandwidth allowed (kHz)*	*Results*
2404	G21021029	983,00	500	Complies
2440	G21021030	980,10	500	Complies
2479	G21021031	989,00	500	Complies

Chip B

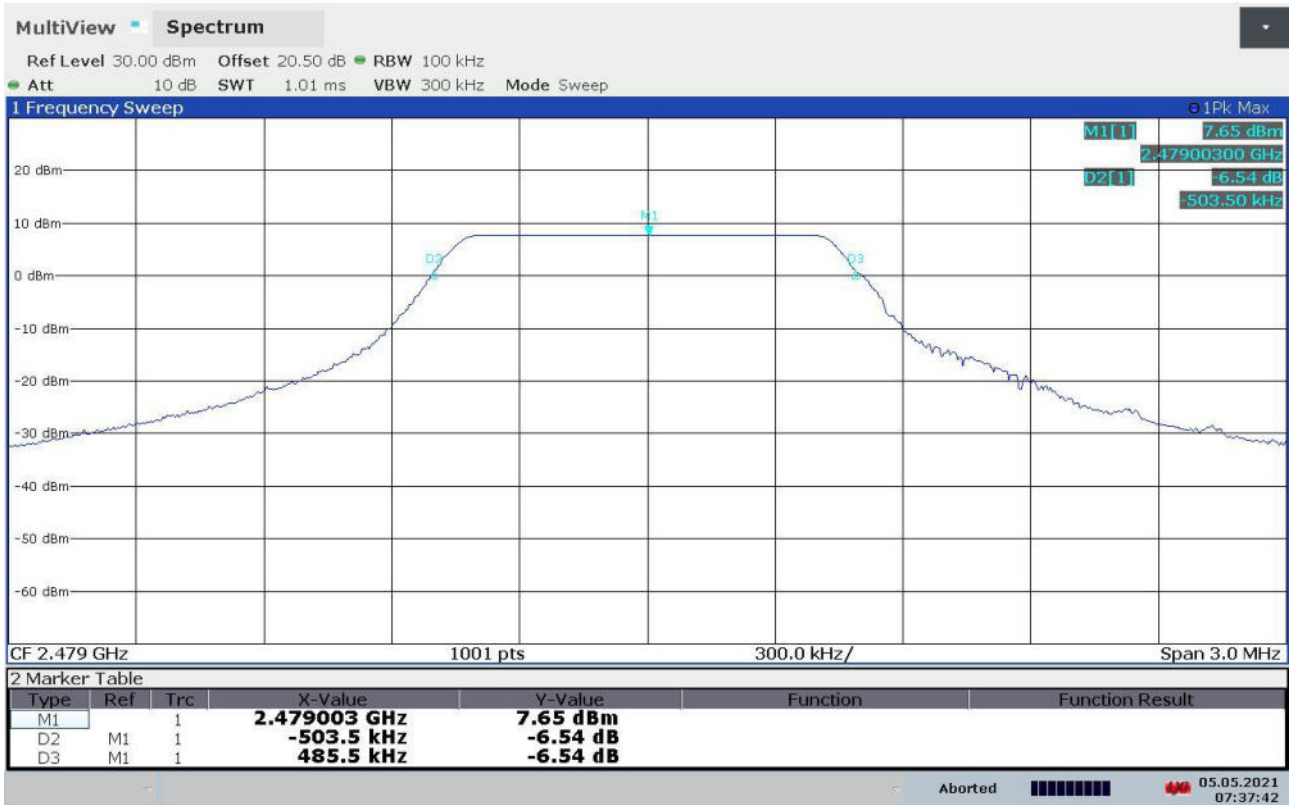
Frequency (MHz)	*Graphs*	*6 dB bandwidth (kHz)*	*Minimum 6 dB bandwidth allowed (kHz)*	*Results*
2404	G21021049	985,00	500	Complies
2440	G21021050	986,00	500	Complies
2479	G21021051	992,00	500	Complies

Graphs

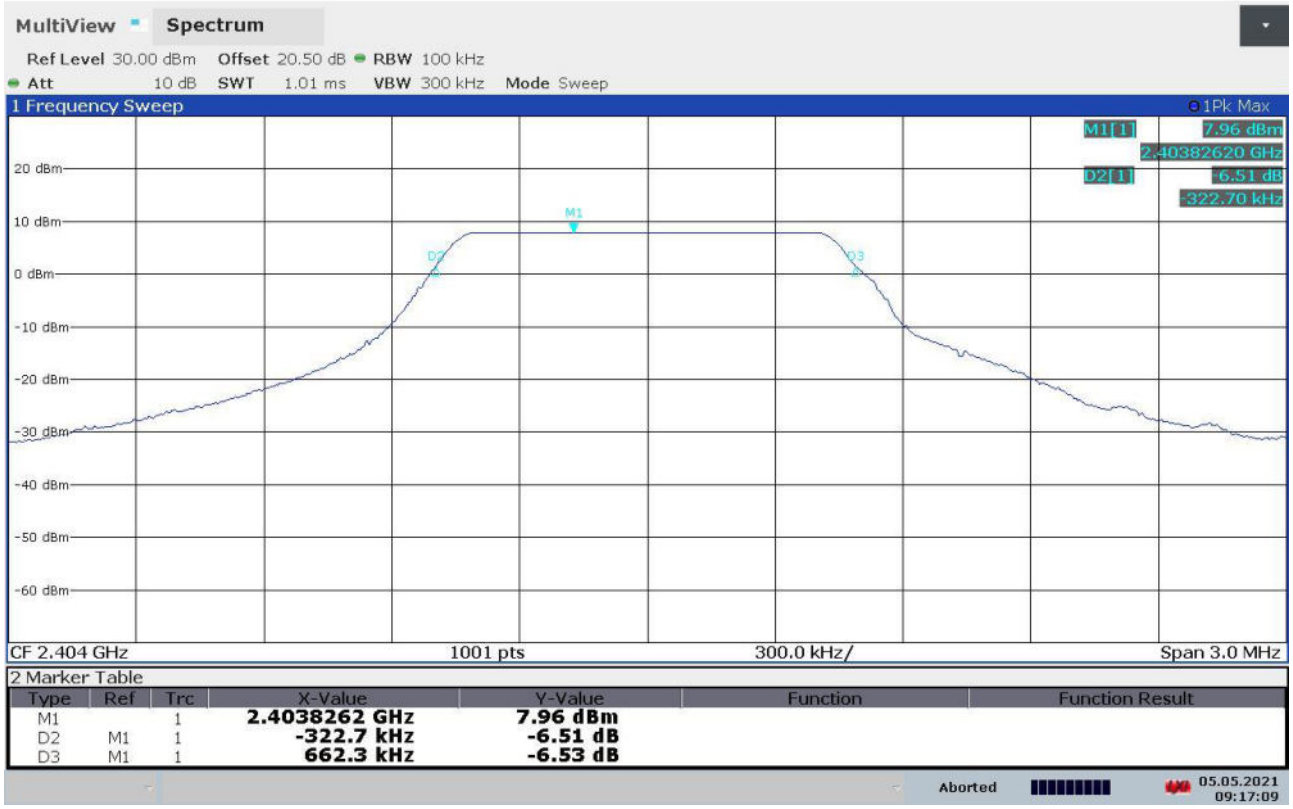
Gandini 21021029

Gandini 21021030

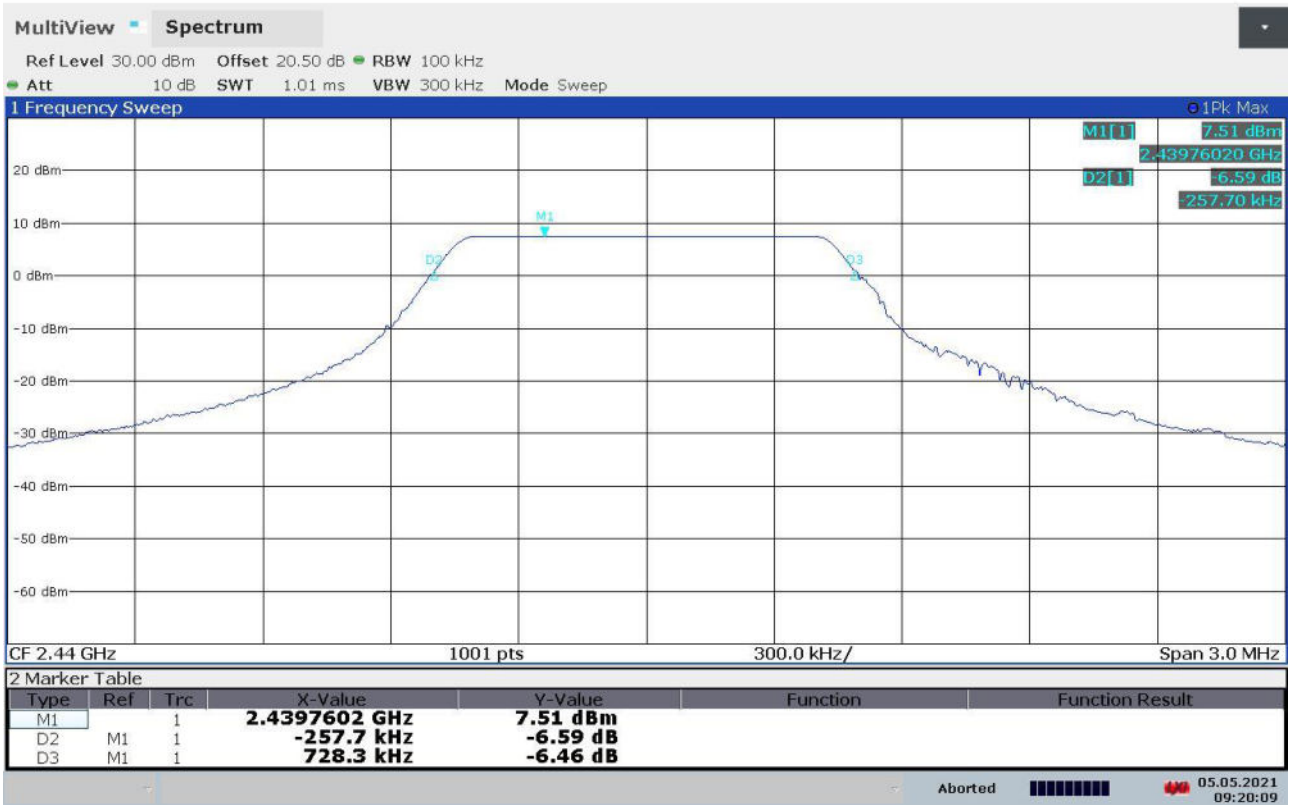
Gandini 21021031



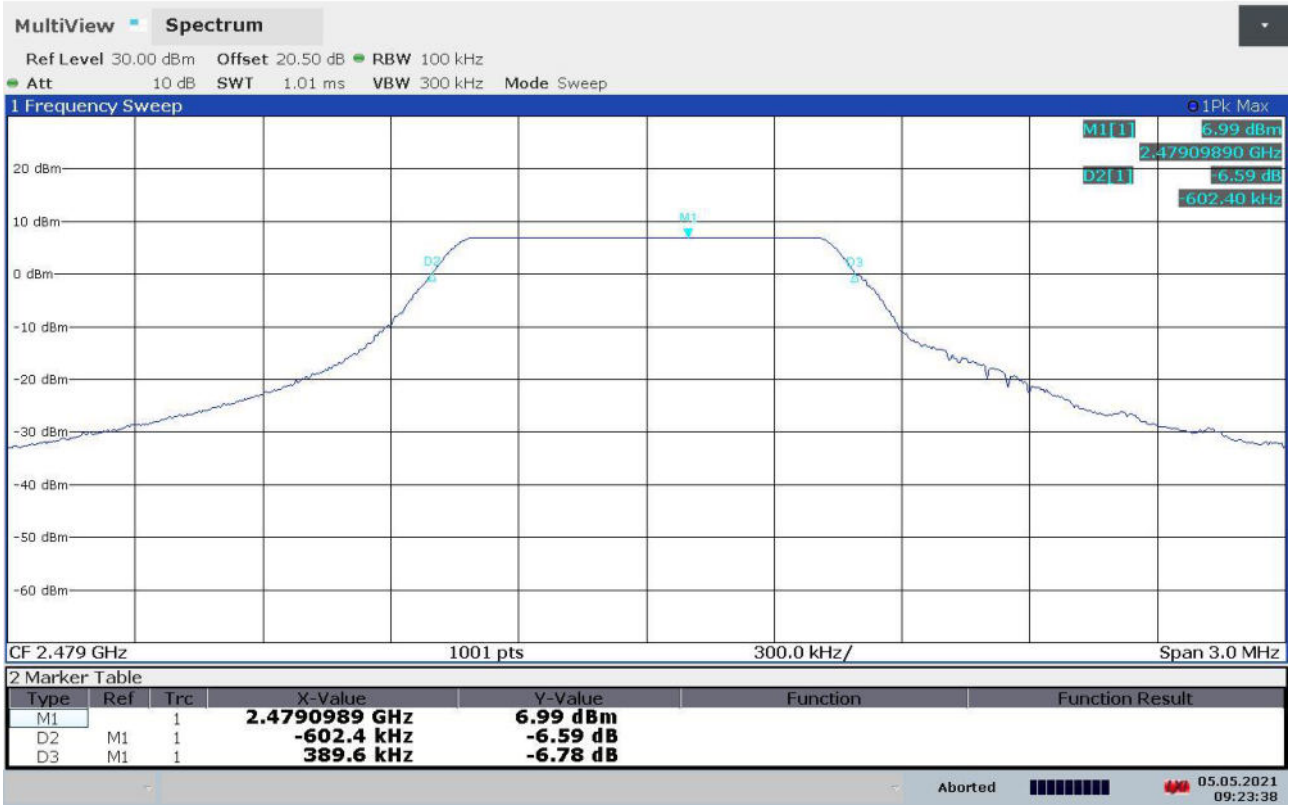
Gandini 21021049



Gandini 21021050



Gandini 21021051



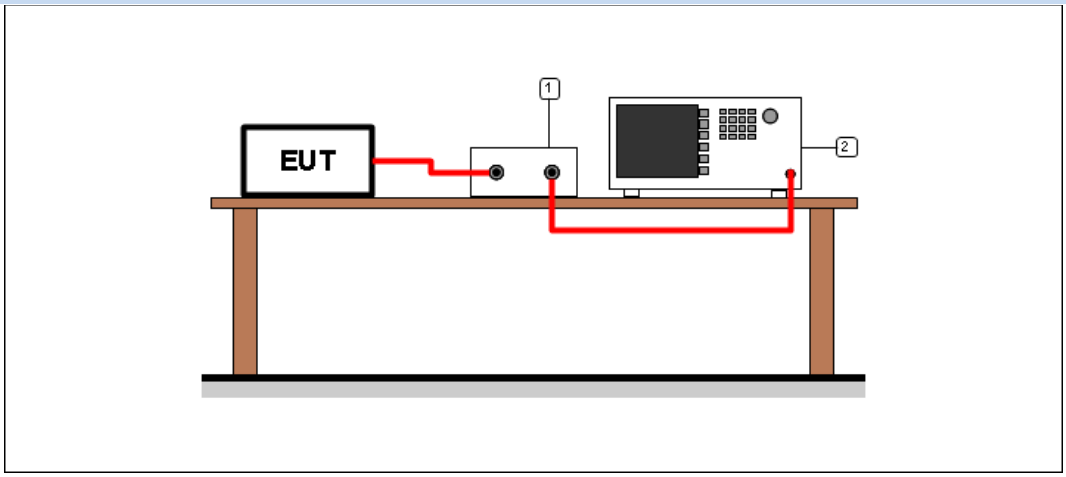
9.4 20 dB bandwidth

Tested by ..... :	G. Gandini
Test date ..... :	05.05.2021
Test location (stand) ..... :	Laboratory
Reference standards ..... :	FCC Rules and Regulation; Titles 47 Part. 15.215 (c) ANSI C63.10 cl. 7.8.7
Supplementary test set-up description ..... :	--
Supplementary information..... :	--

Acceptance limits

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated

Test setup



Test setup PR002_01				
Nr.	*Id. Number*	*Manufacturer*	*Model*	*Description*
2	CMC S295	Rohde & Schwarz	FSW43	Spectrum Analyzer 43GHz
1	--	--	--	Cable + attenuator (calibrated before the test)

Result

Chip A

Frequency (MHz)	*Graphs*	*20 dB bandwidth (kHz)*	*Results*
2404	G21021035	944,10	Complies
2440	G21021036	941,10	Complies
2479	G21021037	929,10	Complies

Chip B

Frequency (MHz)	*Graphs*	*20 dB bandwidth (kHz)*	*Results*
2404	G21021055	947,10	Complies
2440	G21021056	947,10	Complies
2479	G21021057	950,10	Complies

Graphs

Gandini 21021035

Gandini 21021036

Gandini 21021037

Gandini 21021055

Gandini 21021056

Gandini 21021057

9.5 Band edge

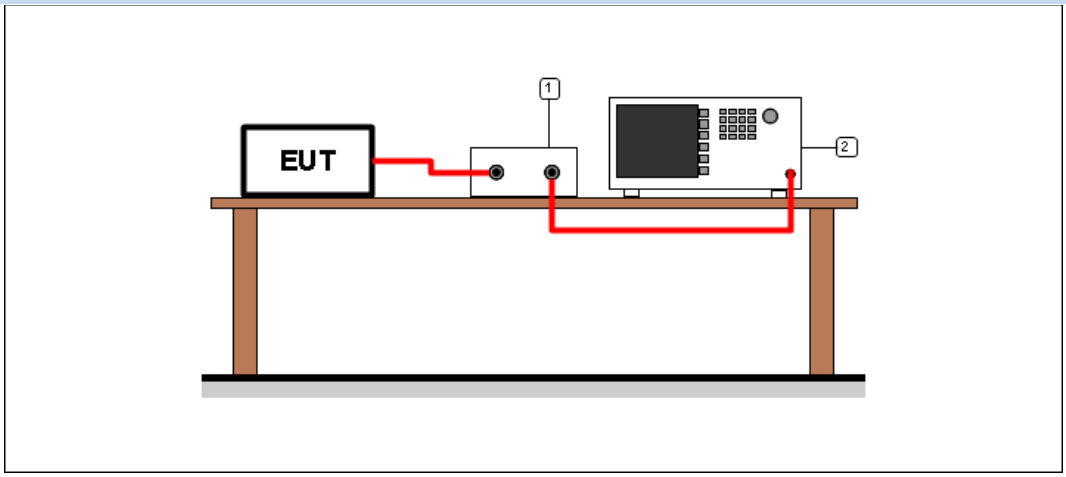
Tested by ..... :	G. Gandini
Test date ..... :	05.05.2021
Test location (stand) ..... :	Laboratory
Reference standards ..... :	FCC Rules and Regulation; Titles 47 Part 15.205, 15.209, 15.247 (d) ANSI C63.10 cl. 11.11.1 and 11.12.1 KDB 558074 D01 DTS Meas Guidance v05r02 cl. 8.7
Supplementary test set-up description ..... :	--
Supplementary information..... :	--

Acceptance limits

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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Operation within the band 2400 – 2483,5 MHz

Test setup



Test setup PR002_01				
Nr.	*Id. Number*	*Manufacturer*	*Model*	*Description*
2	CMC S295	Rohde & Schwarz	FSW43	Spectrum Analyzer 43GHz
1	--	--	--	Cable + attenuator (calibrated before the test)

Result

Chip A

Frequency (MHz)	*Bandwidth*	*Graph(s)*	*Results*	
2404	1 MHz	G21021009	--	*
2404	100 kHz	G21021047	2403,151 MHz	Complies
2479	1 MHz	G21021007	2481,482 MHz	Complies
2479	1 MHz	G21021008	--	**

*: this graph shows the emissions in 2310 – 2390 MHz restricted band
**: this graph shows the emissions in 2483,5 – 2500 MHz restricted band

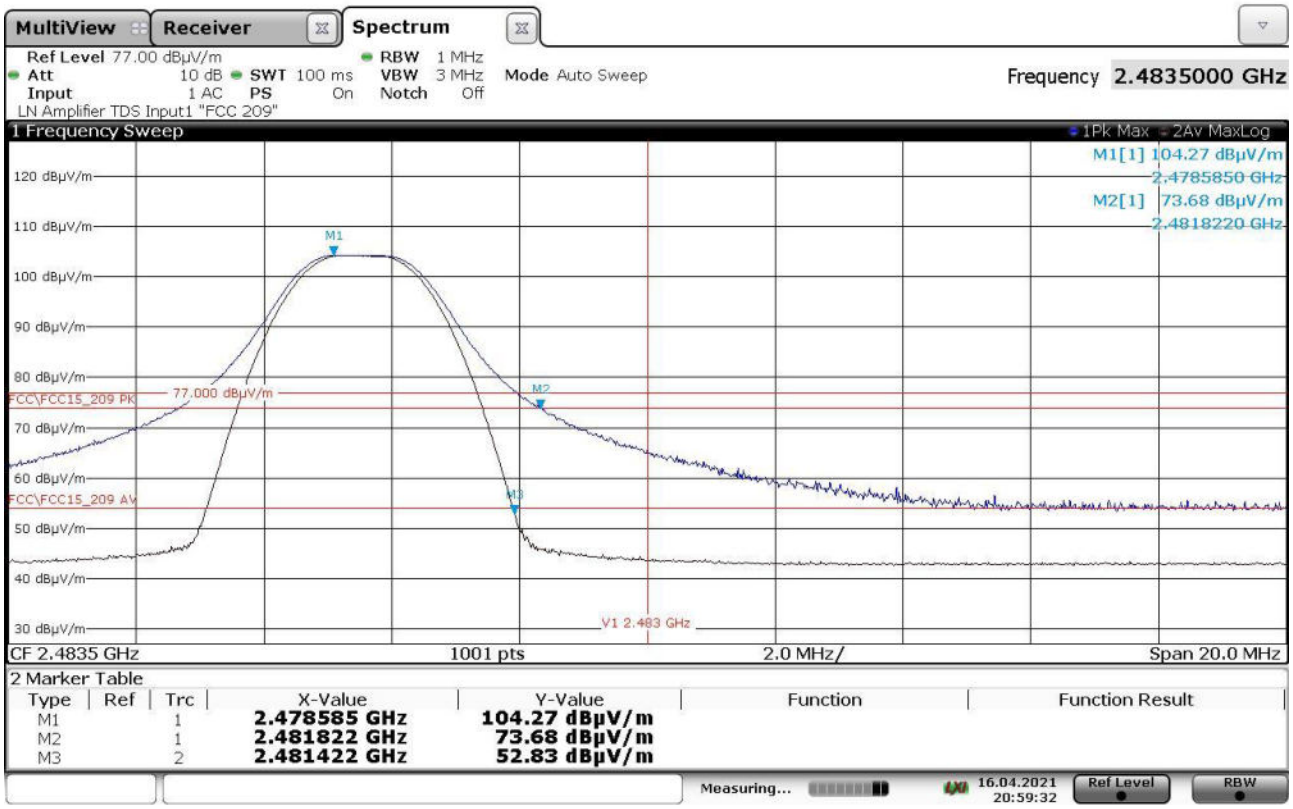
Chip B

Frequency (MHz)	*Bandwidth*	*Graph(s)*	*Results*	
2404	1 MHz	G21021010	--	*
2404	100 kHz	G21021048	2403,131 MHz	Complies
2479	1 MHz	G21021011	2481,861 MHz	Complies
2479	1 MHz	G21021012	--	**

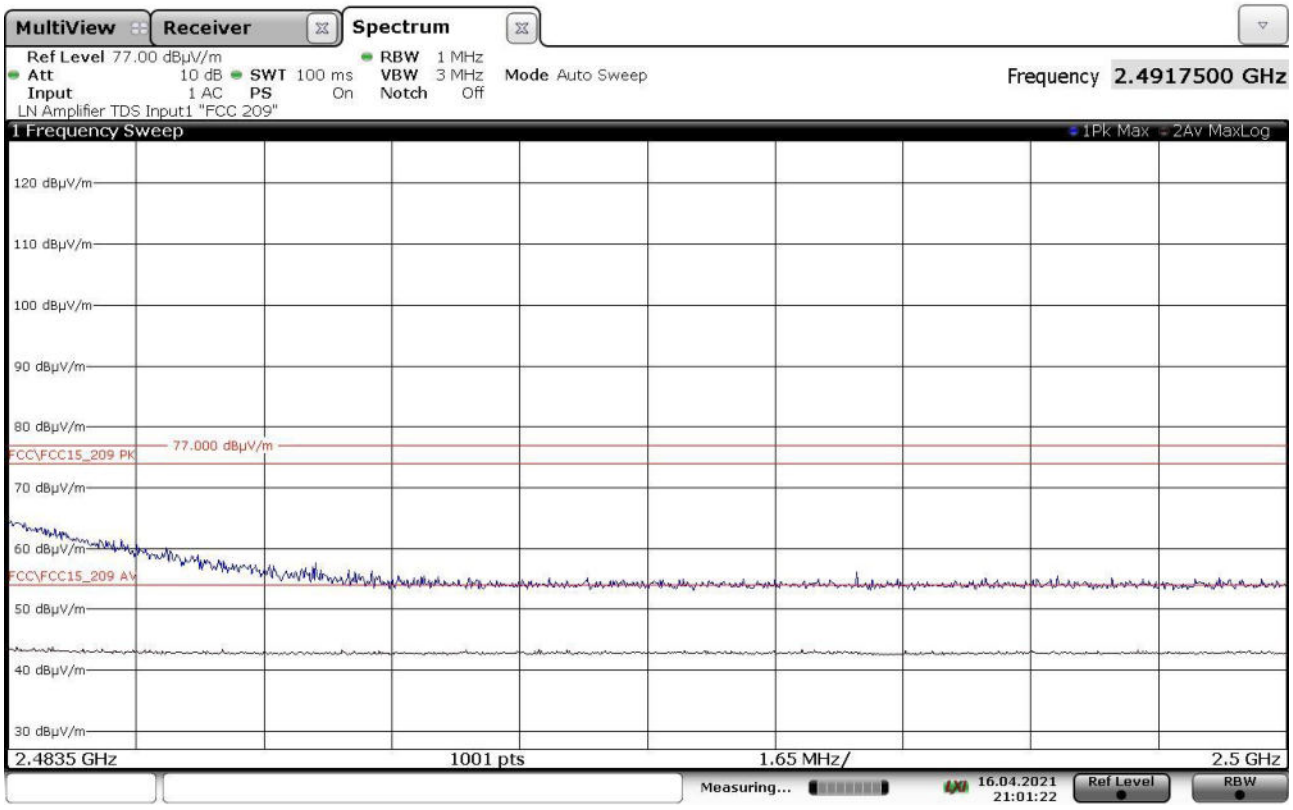
*: this graph shows the emissions in 2310 – 2390 MHz restricted band
**: this graph shows the emissions in 2483,5 – 2500 MHz restricted band

Graphs

Gandini 21021007



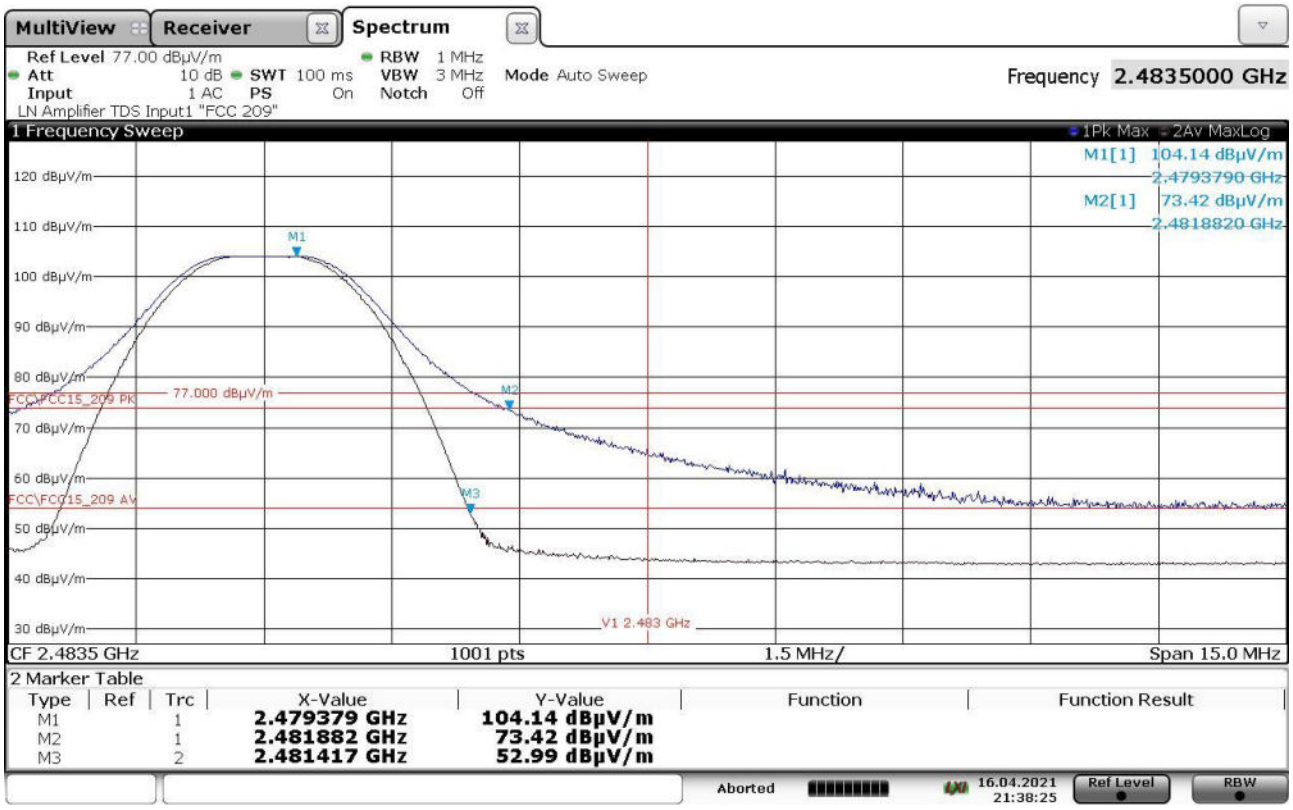
Gandini 21021008



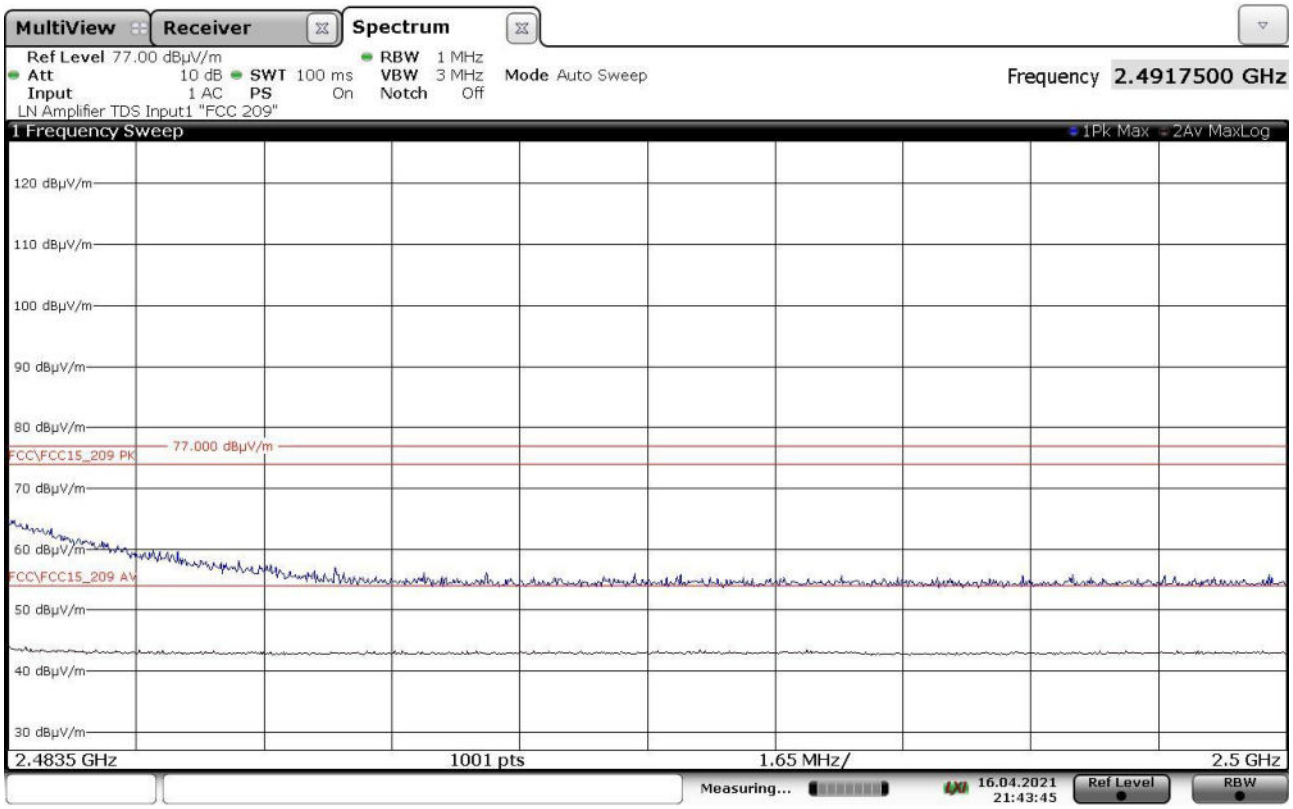
Gandini 21021009

Gandini 21021010

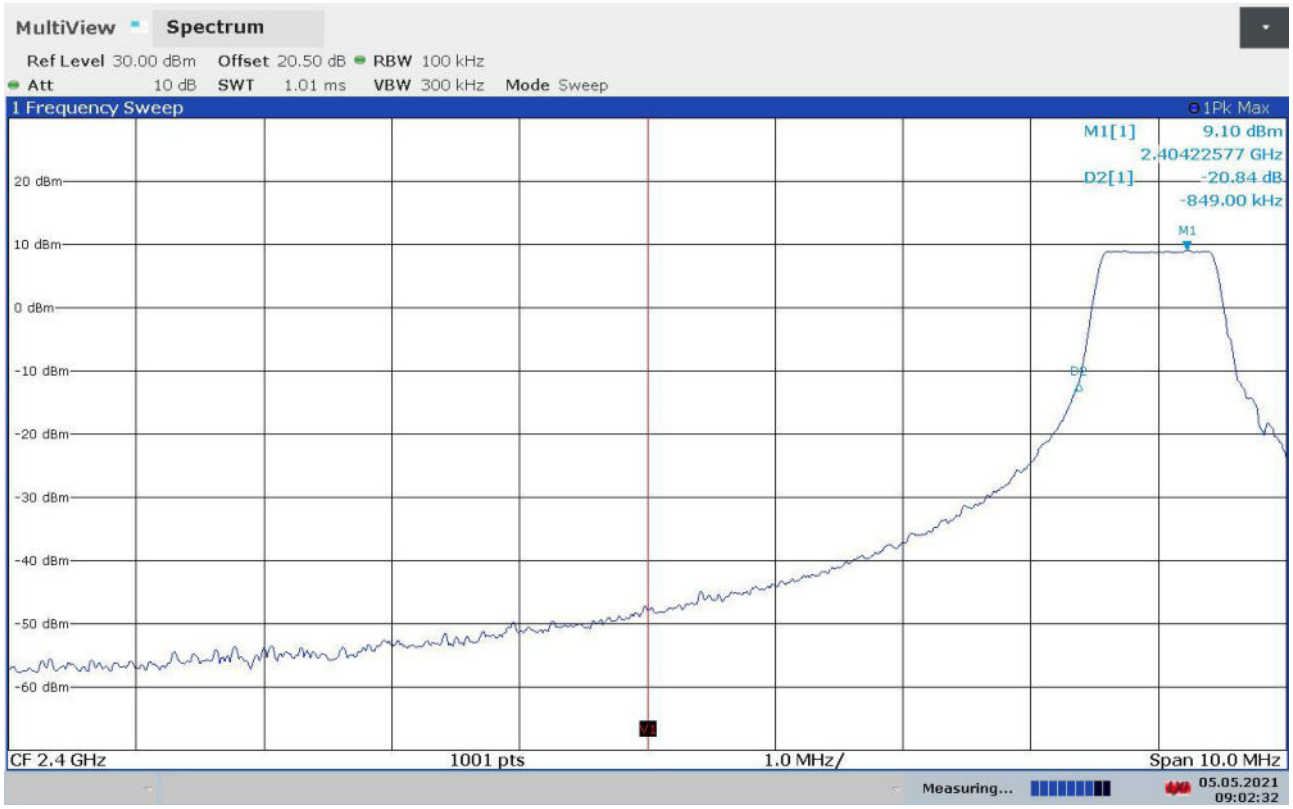
Gandini 21021011



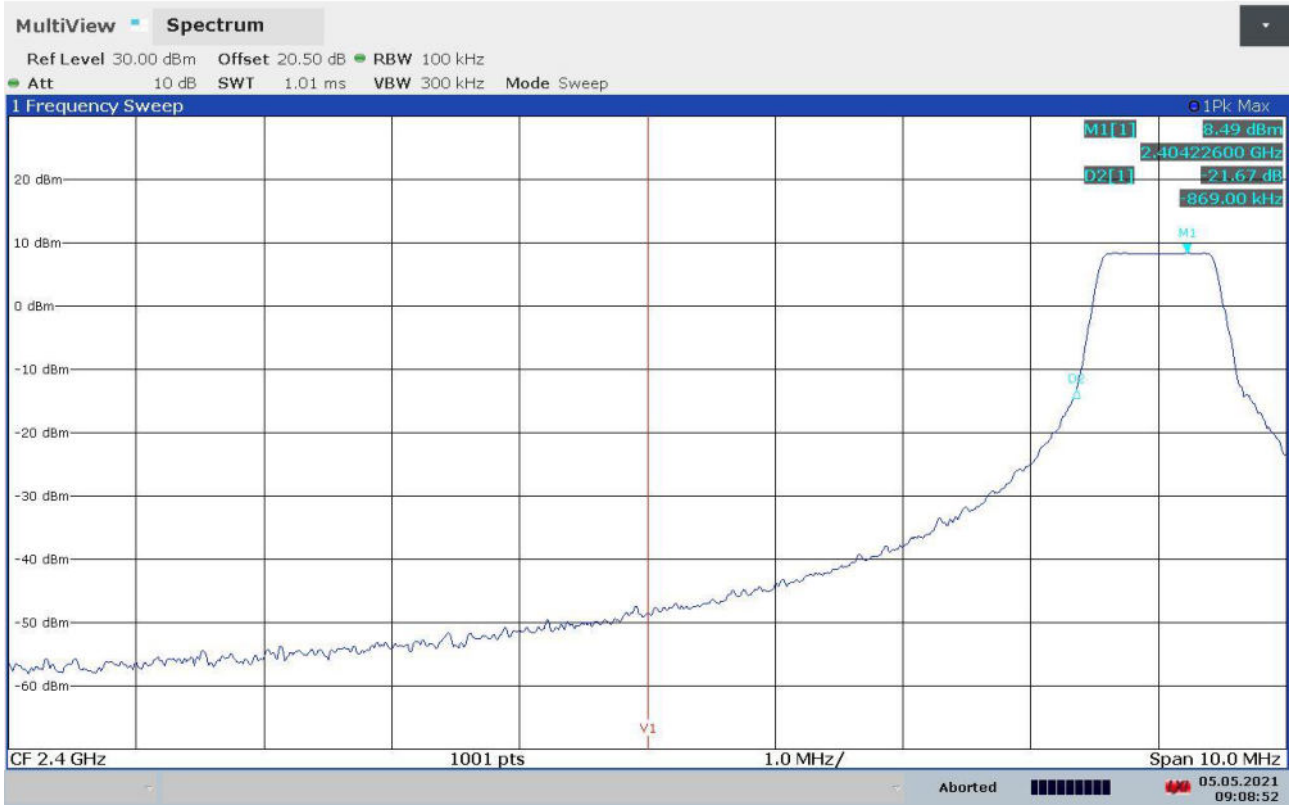
Gandini 21021012



Gandini 21021047



Gandini 21021048

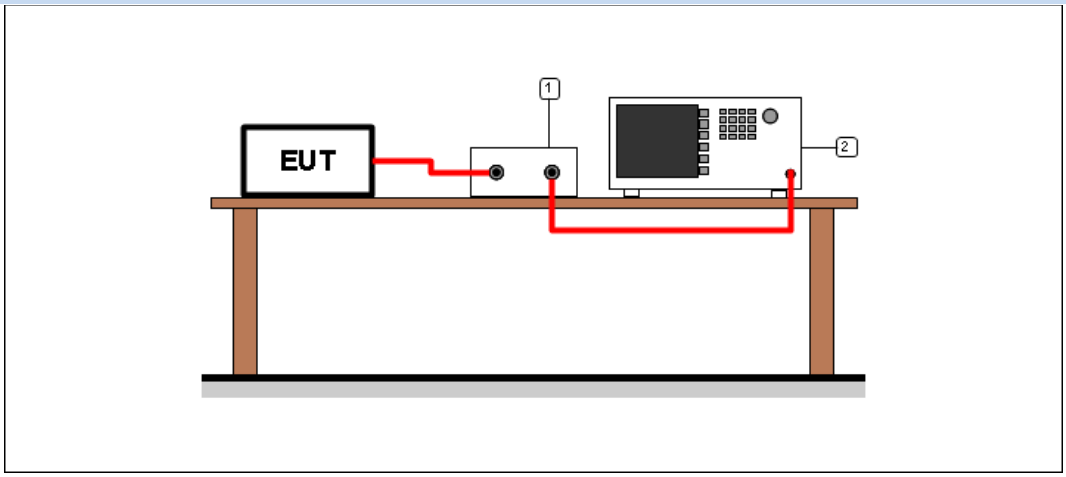


9.6 Fundamental emission output power

Tested by ..... :	G. Gandini
Test date ..... :	05.05.2021
Test location (stand) ..... :	Laboratory
Reference standards ..... :	FCC Rules and Regulation; Titles 47 Part 15.247 (b) (3) ANSI C63.10 cl. 11.9.1.1 KDB 558074 D01 DTS Meas Guidance v05r02 cl. 8.3.1.1
Supplementary test set-up description ..... :	--

Acceptance limits
For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt

Test setup



Test setup PR002_01				
Nr.	*Id. Number*	*Manufacturer*	*Model*	*Description*
2	CMC S295	Rohde & Schwarz	FSW43	Spectrum Analyzer 43GHz
1	--	--	--	Cable + attenuator (calibrated before the test)

Result

Chip A

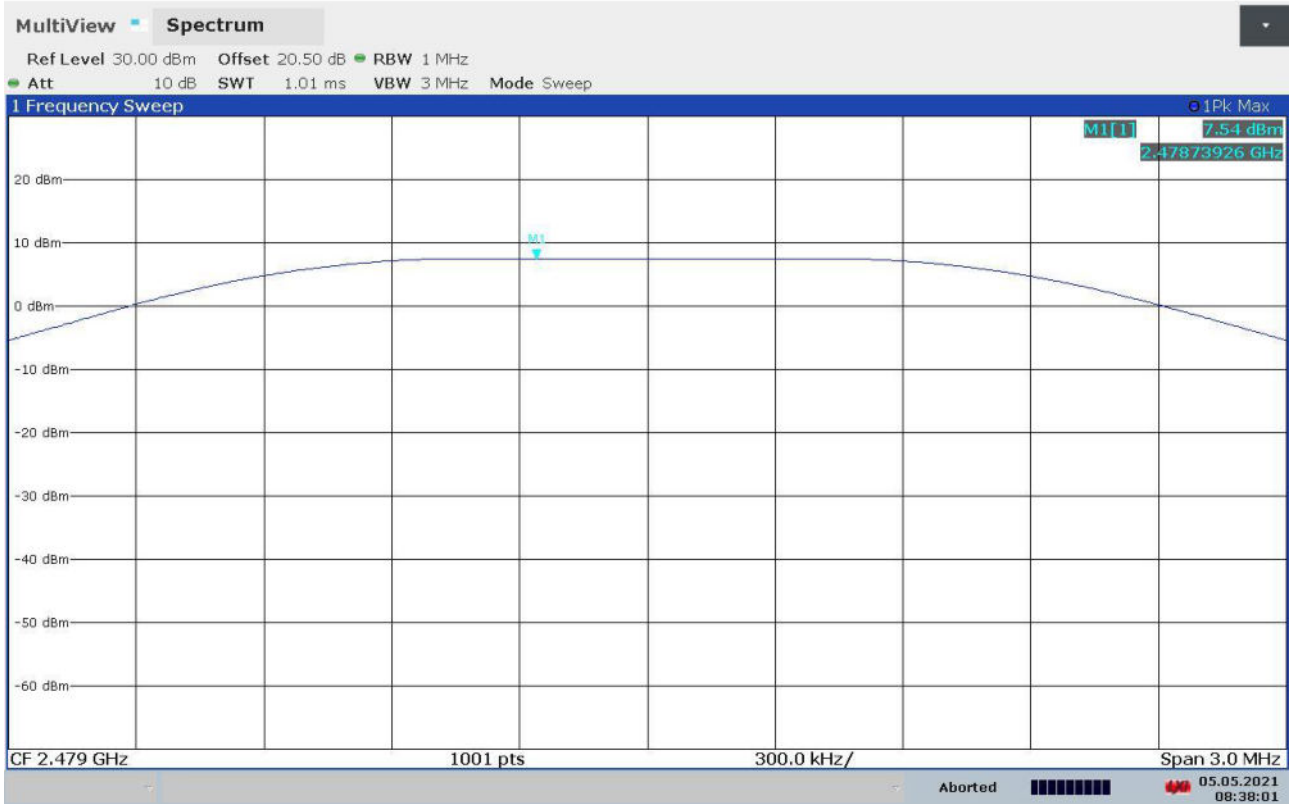
Frequency (MHz)	*Graphs*	*Peak Output Power (dBm)*	*Peak Output Power (mW)*	*Limit (mW)*
2404	G21021040	8,56	7,18	1000
2440	G21021039	8,06	6,40	1000
2479	G21021038	7,54	5,68	1000

Chip B

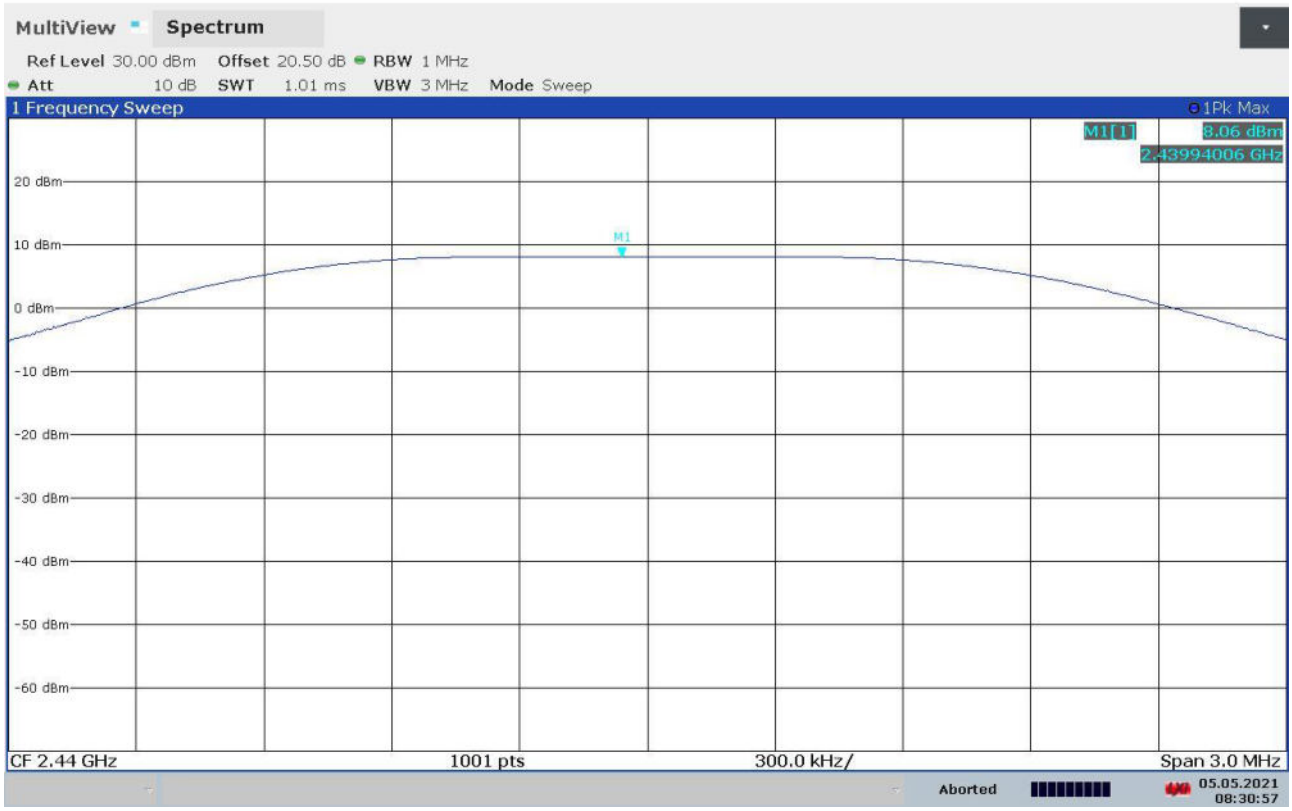
Frequency (MHz)	*Graphs*	*Peak Output Power (dBm)*	*Peak Output Power (mW)*	*Limit (mW)*
2404	G21021060	7,94	6,22	1000
2440	G21021059	7,44	5,55	1000
2479	G21021058	6,92	4,92	1000

Graphs

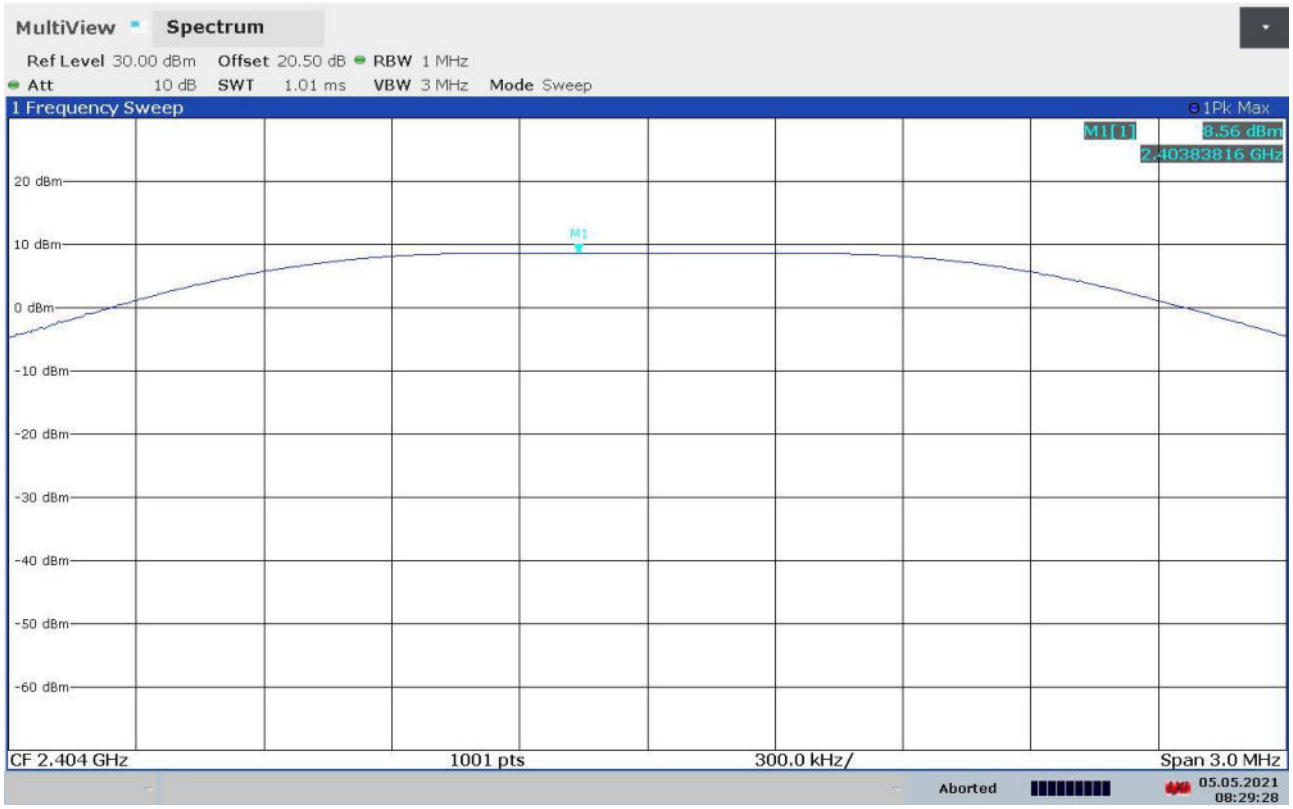
Gandini 21021038



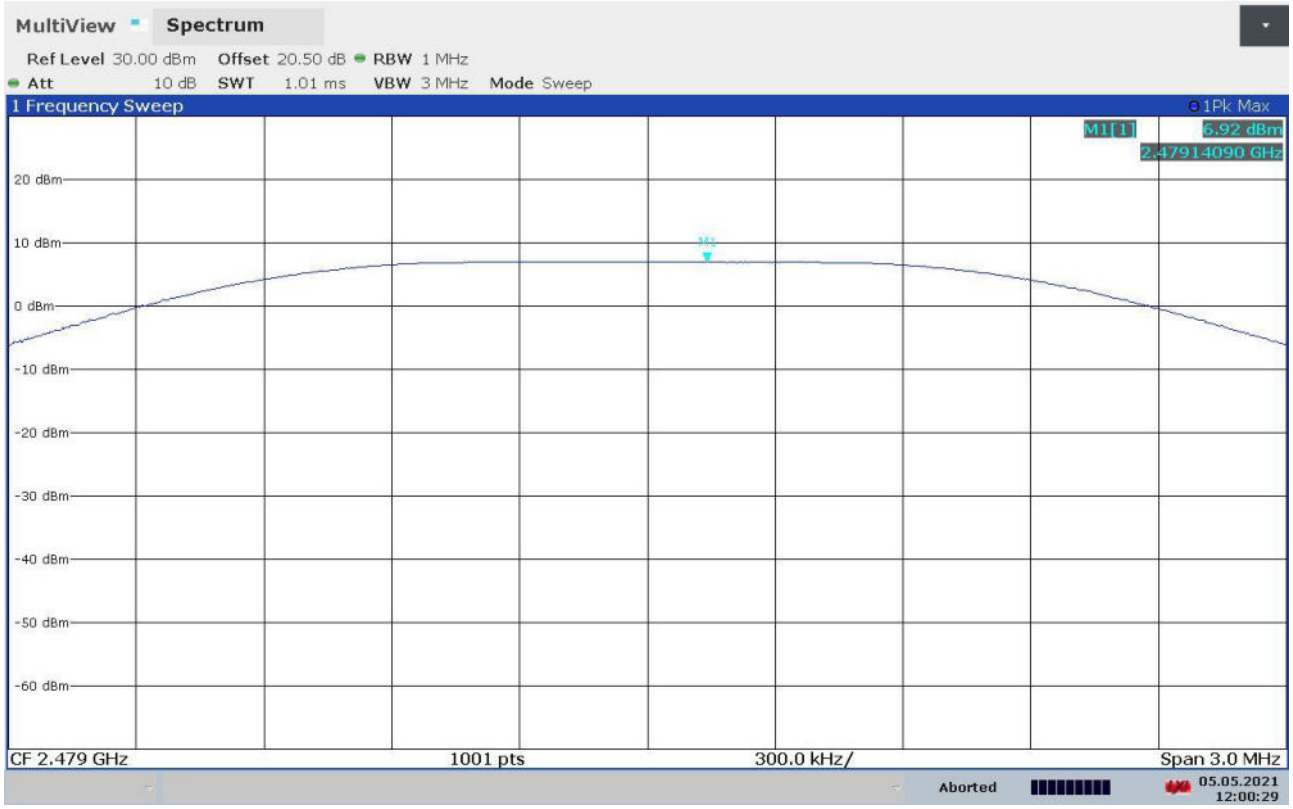
Gandini 21021039



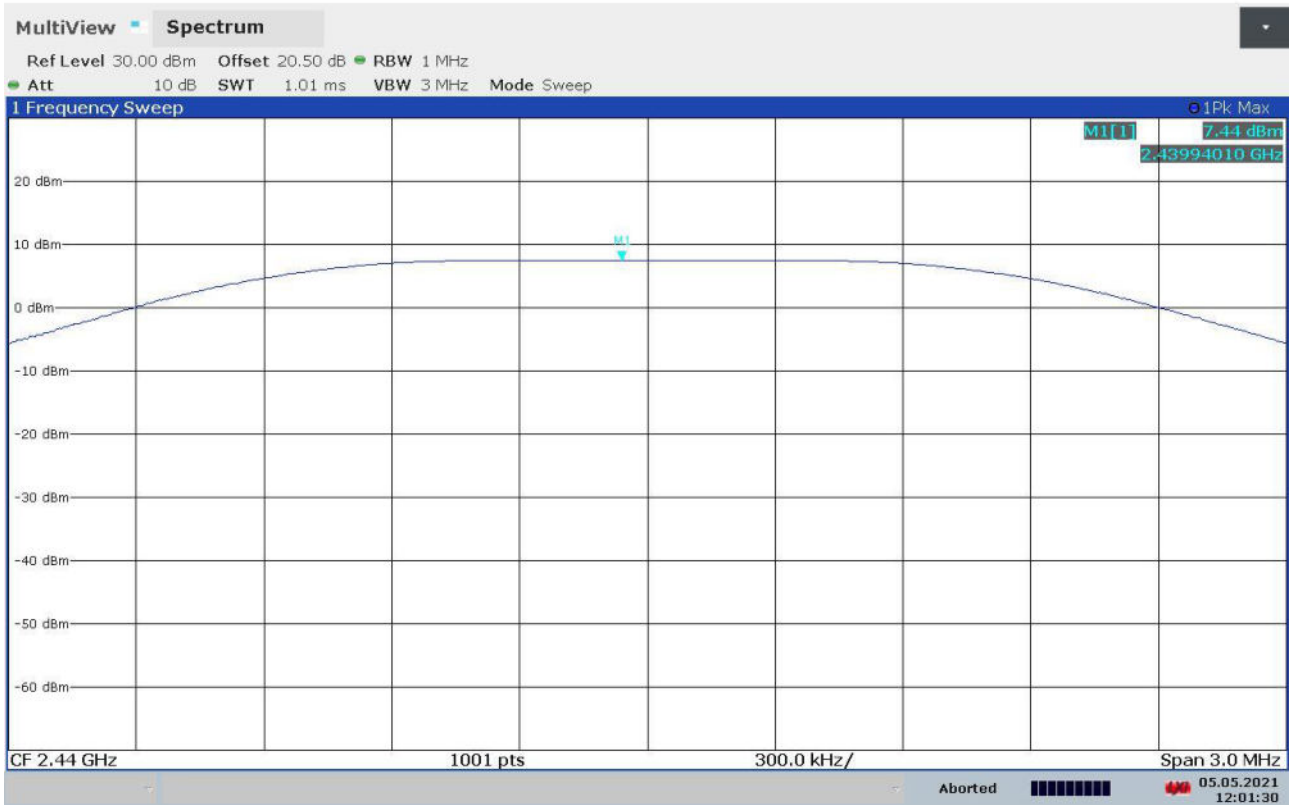
Gandini 21021040



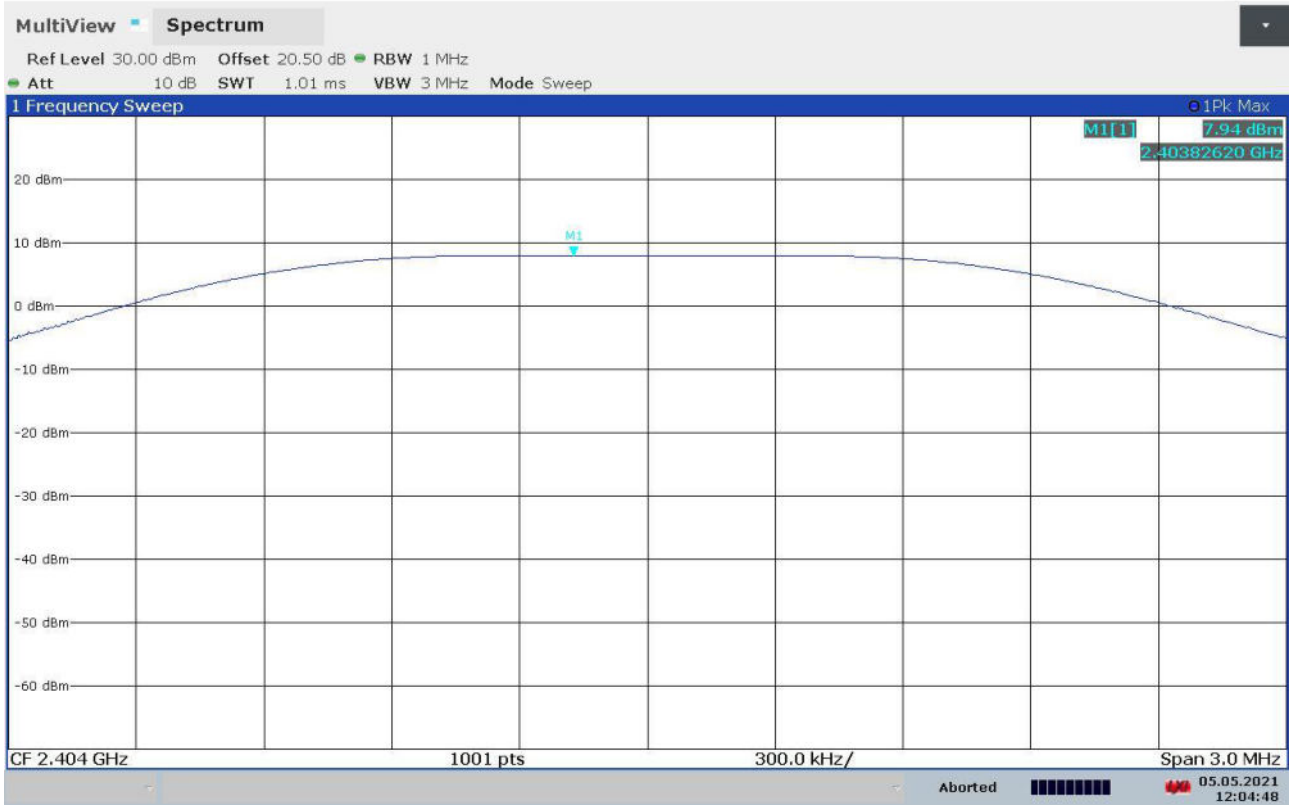
Gandini 21021058



Gandini 21021059



Gandini 21021060



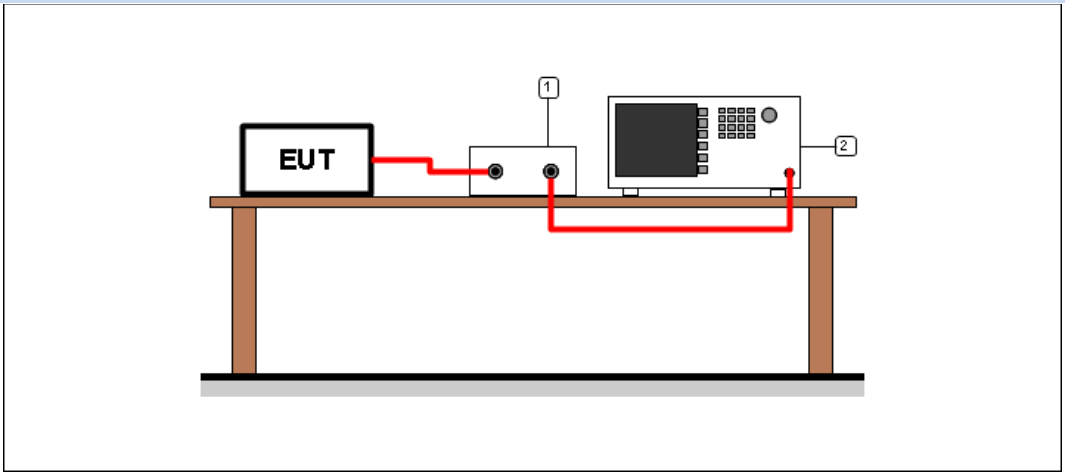
9.7 Maximum power spectral density level in the fundamental emission

Tested by ..... :	G. Gandini
Test date ..... :	05.05.2021
Test location (stand) ..... :	Laboratory
Reference standards ..... :	FCC Rules and Regulation; Titles 47 Part 15.247 (e) ANSI C63.10 cl. 11.10.2 KDB 558074 D01 DTS Meas Guidance v05r02 cl. 8.4
Supplementary test set-up description ..... :	--

Acceptance limits

Frequency Range	*Power Spectral Density*
2400 – 2483,5 MHz	8 dBm/3 kHz 6,31 mW/3 kHz

Test setup



Test setup PR002_01				
Nr.	*Id. Number*	*Manufacturer*	*Model*	*Description*
2	CMC S295	Rohde & Schwarz	FSW43	Spectrum Analyzer 43GHz
1	--	--	--	Cable + attenuator (calibrated before the test)

Result

Chip A

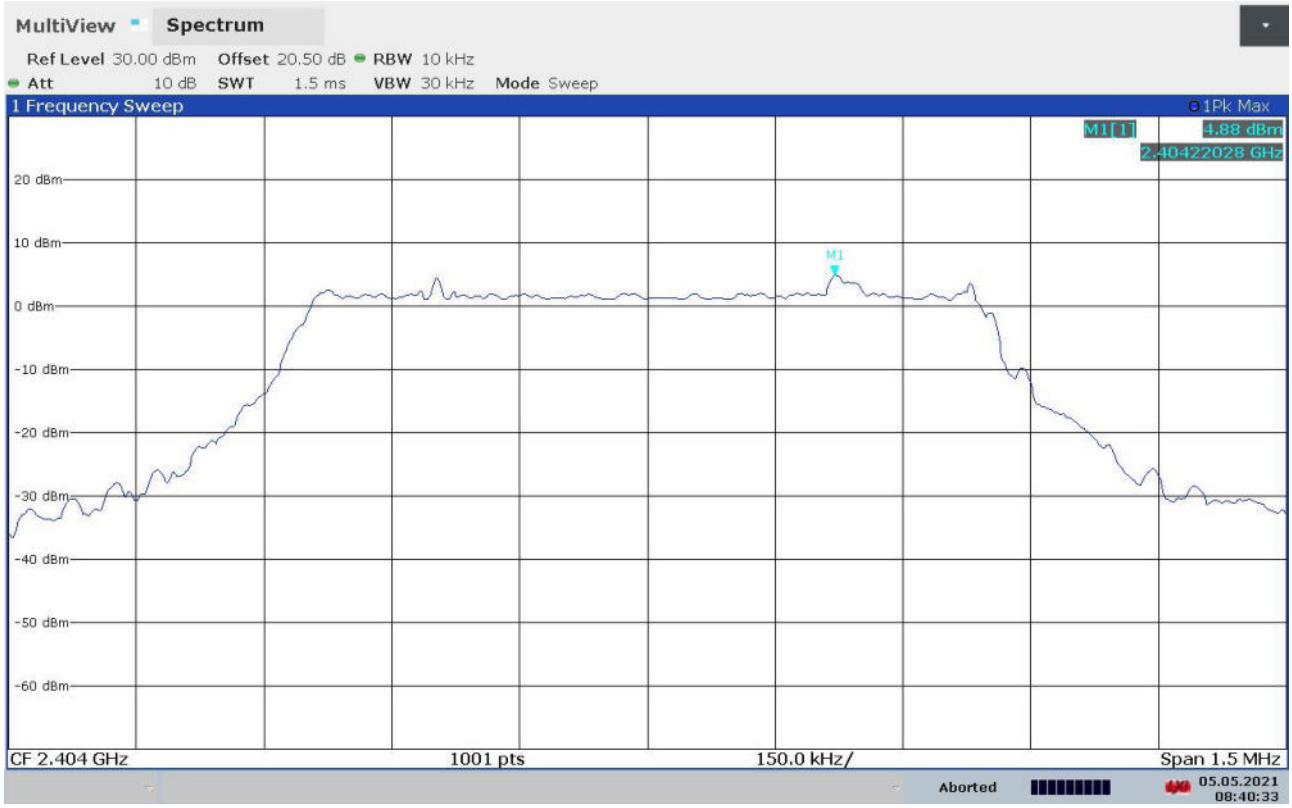
Frequency (MHz)	*Graphs*	*Measured level (dBm/3 kHz)*	*Limits (dBm/3 kHz)*
2404	G21021042	4,88	8,00
2440	G21021043	4,40	8,00
2479	G21021046	4,00	8,00

Chip B

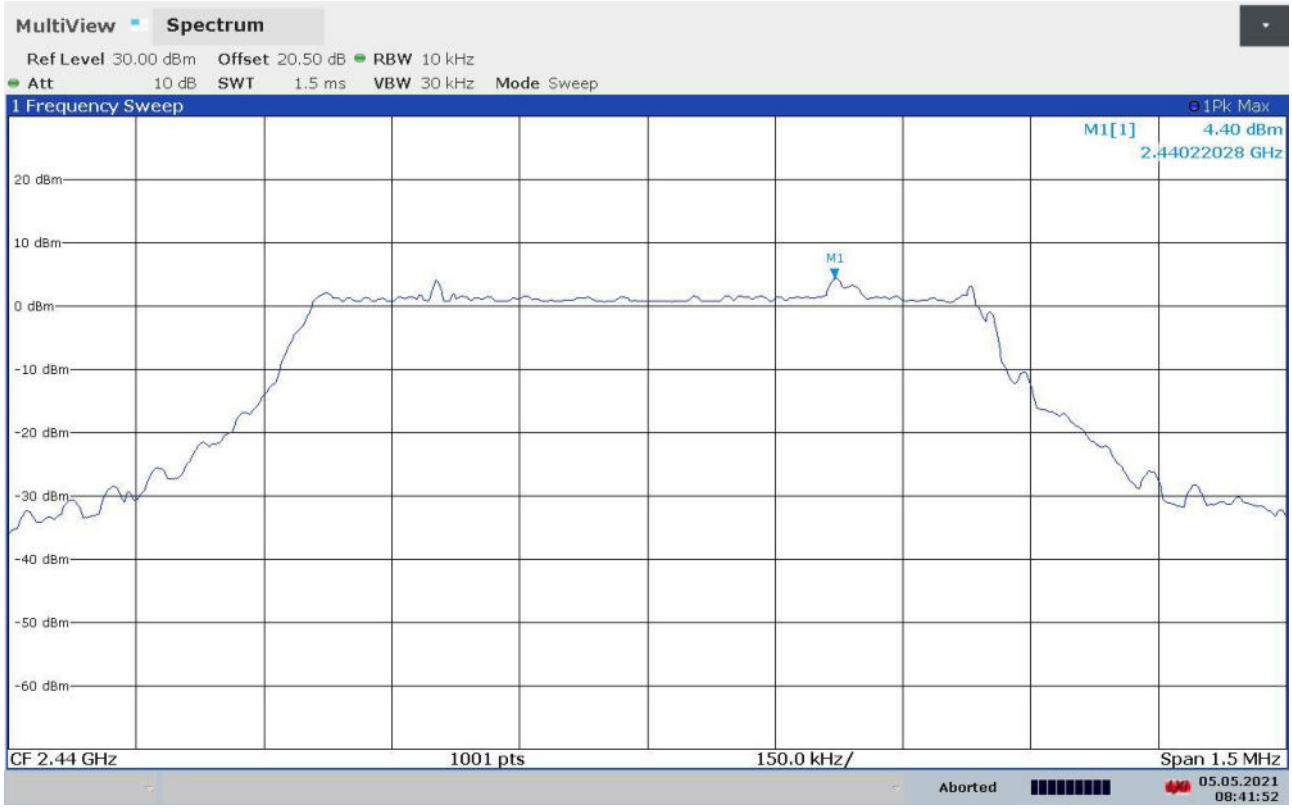
Frequency (MHz)	*Graphs*	*Measured level (dBm/3 kHz)*	*Limits (dBm/3 kHz)*
2404	G21021061	7,93	8,00
2440	G21021064	6,95	8,00
2479	G21021065	6,95	8,00

Graphs

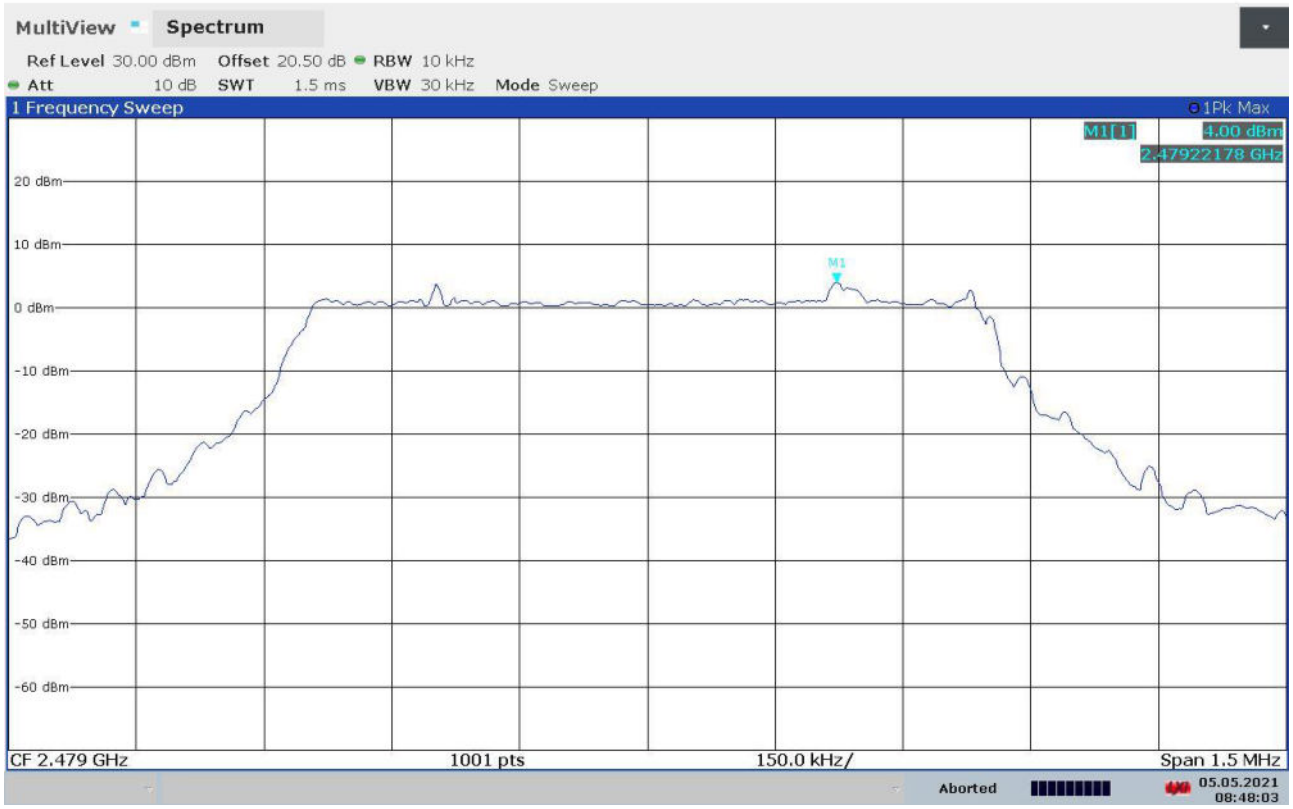
Gandini 21021042



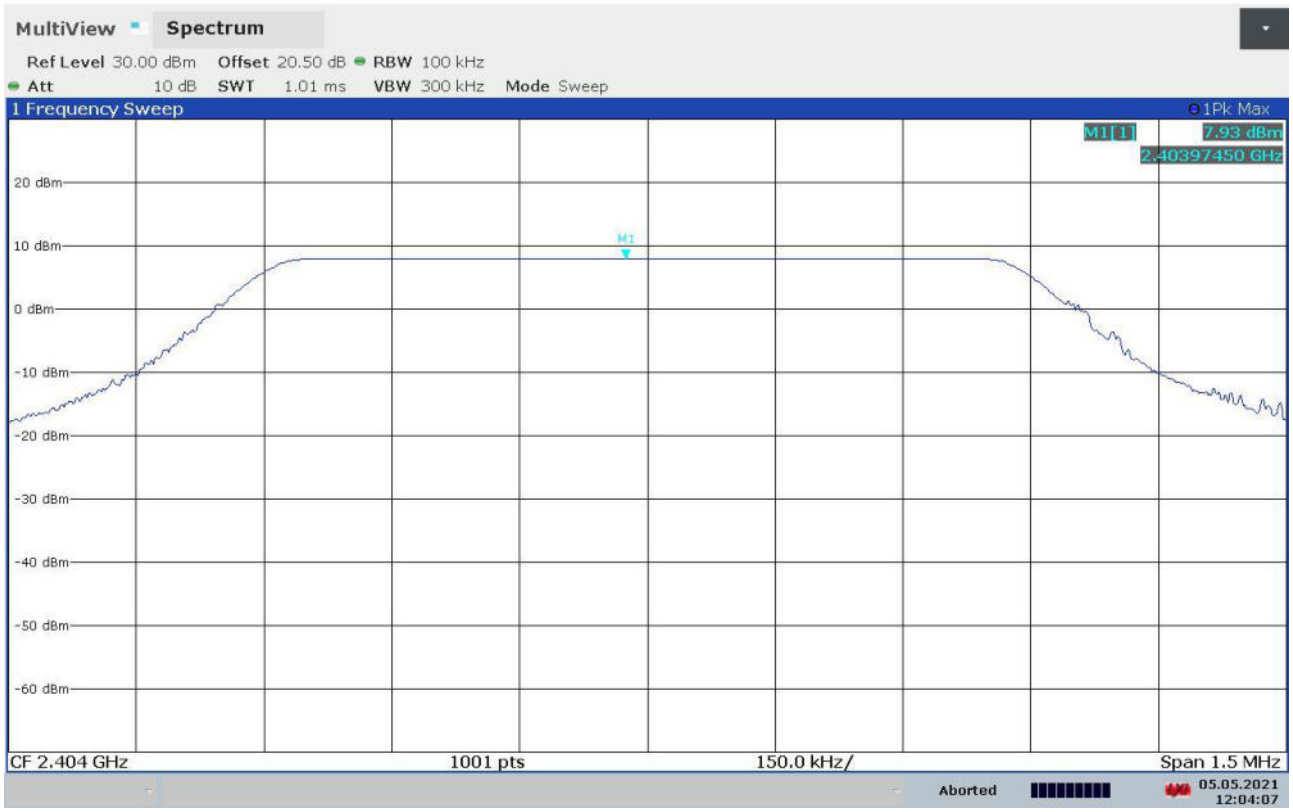
Gandini 21021043



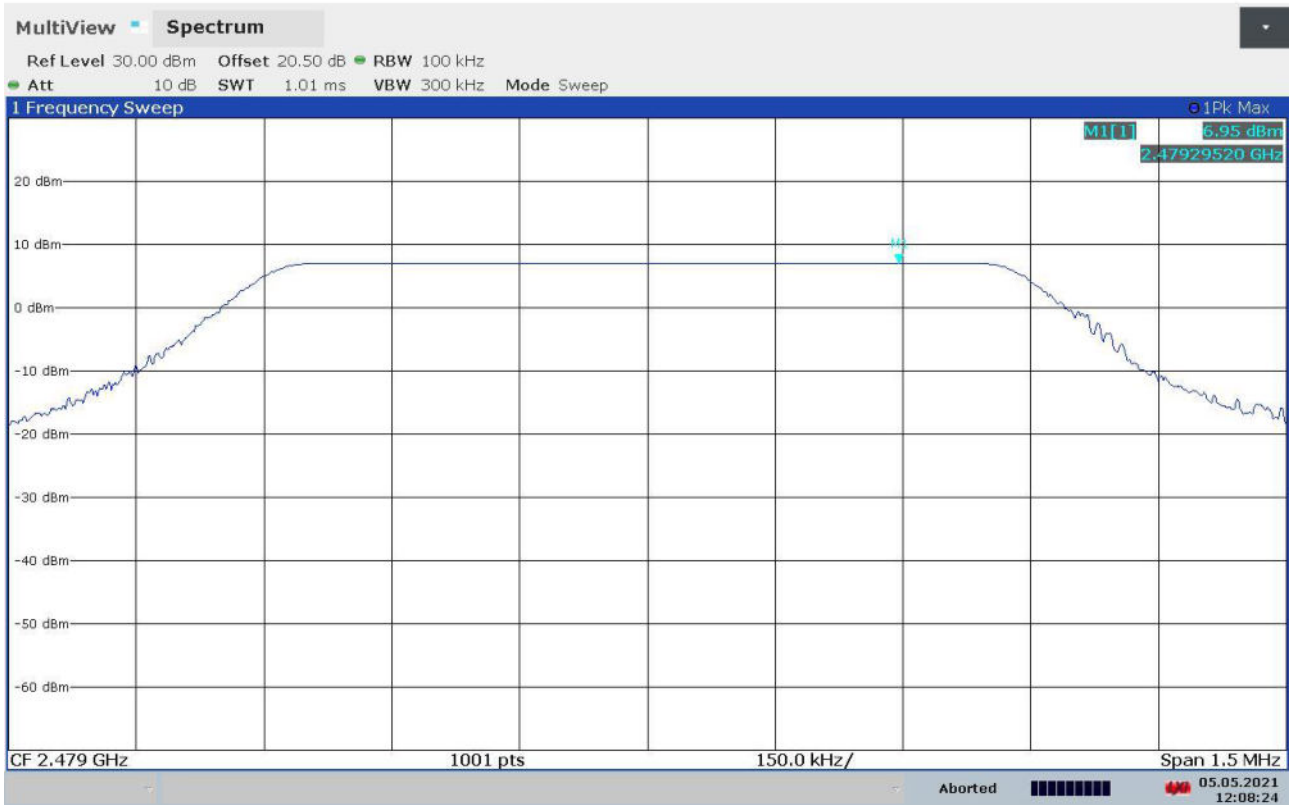
Gandini 21021046



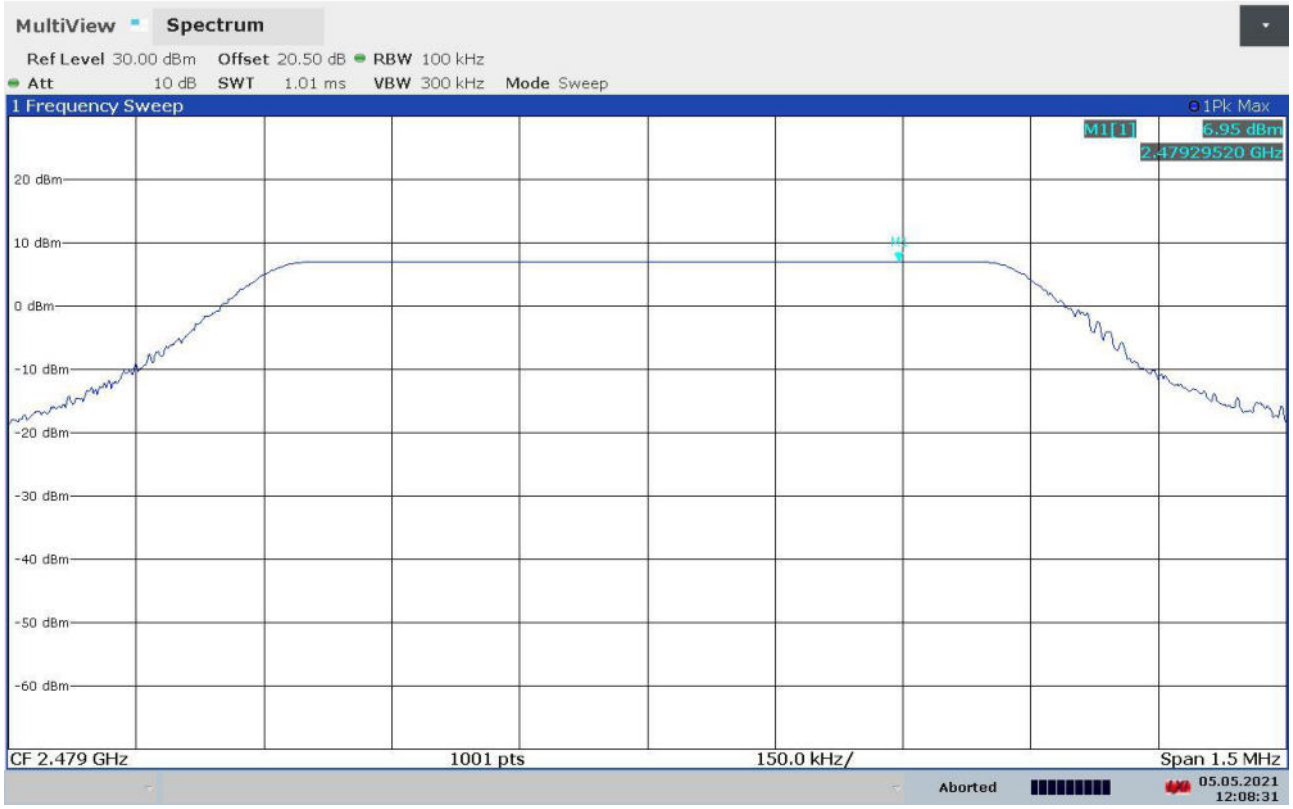
Gandini 21021061



Gandini 21021064



Gandini 21021065



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 '21	January '22
CMC S108	EMCO	3115	Horn Antenna	9811-5622	June '19	June '22
CMC S127	Schaffner	HLA6120	Loop Antenna	1191	November '18	November '23
CMC S200	Schwarzbeck	NSLK 8128	V-LISN	8128-273	January '21	January '22
CMC S206	Rohde & Schwarz	ESCI 7	EMC Receiver 9KHz-7GHz	100781	January '21	January '22
CMC S260	CMC	Wfr_N	Shielded Cable	Wfr_ant10-1	November '20	November '21
CMC S261	CMC	Wfr_N	Shielded Cable	Wfr_ant20-1	November '20	November '21
CMC S262	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix32-1	November '20	November '21
CMC S263	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix31-1	November '20	November '21
CMC S264	CMC	Wfr_N	Shielded Cable	Wfr_ext03-1	November '20	November '21
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 '20	November '21
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	4,2 dB	1
Radiated Emission CISPR 16 Bicon. Ant. 30-300 MHz	PE004_02	4,1 dB	1
Radiated Emission CISPR 16 LogP. Ant. 300-1000 MHz	PE004_03	3,9 dB	1
Radiated Emission CISPR 16 Horn Ant. 1-18 GHz	PE004_04	4,1 dB	1
Human Exposure to electromagnetic fields	PE005_01	16,7 %	1
Harmonics	PE006_01	10 mA + 2,9 %	1
Flicker	PE007_01	4,36 %	1
Radiated Immunity 80 MHz - 6 GHz	PE102_XX	2,20 dB 0,87 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	4,2 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	< 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
Ring Wave immunity test	PE110_01		2
Low frequency immunity test	PE111_01		2
Dumped Oscillotary immunity test	PE113_01		2
Rev_21_01 date 23/02/2021			

Note 1:

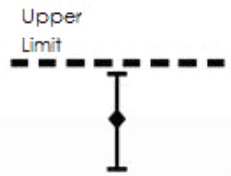
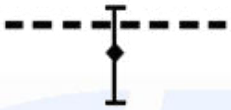
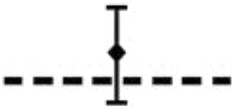
The expanded uncertainty reported according to the document EA-4-02 is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of p = 95%

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-G8:09/2019 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. 9.5 (Quality Manual)	Measurement uncertainty calculation