CMC Centro Misure Compatibilità S.r.l. Via della Fisica 20, 36016 Thiene (VI), Tel./Fax +39 0445 367702 - www.cmclab.it - info@cmclab.it
Accredited by ACCREDIA according to UNI CEI EN ISO/IEC 17025 accreditation n. 0168 L
Independent Testing Laboratory

TEST REPORT
Nr. R22023101

Federal Communication Commission (FCC)

Report Reference No. ..... :	R22023101
Date of issue: ..... :	15.02.2022
Total number pages: ..... :	90
Applicant´s name ..... :	Embit S.r.l.
Address ..... :	Via Emilia Est, 911 – 41122 Modena (MO) – Italy
Test specification:	
Standards ..... :	FCC Rules & Regulations, Title 47:2020 Part 15 paragraph(s): 203, 204, 205, 207, 209, 215 and 247
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 ..... :	2022-01

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 ..... :	EMB-LR1302-mPCIe LoRaWAN Gateway Module
(*) Trademark ..... :	Embit
(*) Manufacturer ..... :	Embit S.r.l.
(*) Model / Type reference ..... :	EMB-LR1302-mPCIe-SPI-915
(*) FCC ID ..... :	Z7HEMBLR1302
Rating(s) ..... :	120 V ~ 60 Hz single-phase

Report

Tested by (name + signature) ..... :	C. Panozzo	.....
Approved by (name + signature) ..... :	F. Marenda	.....

(*) information provided by the customer

1 Summary

2 Reference standard	
FCC Rules and Regulation Title 47 part 15:2020	--
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	15.02.2022	--

Testing and sampling:	
Date of receipt of test item	08.10.2021
Testing start date	11.02.2022
Testing end date	15.02.2022
Sampling procedure	Equipment used for testing was picked up by the customer
Internal identification	Adhesive label with the product number P211144
General remarks:	
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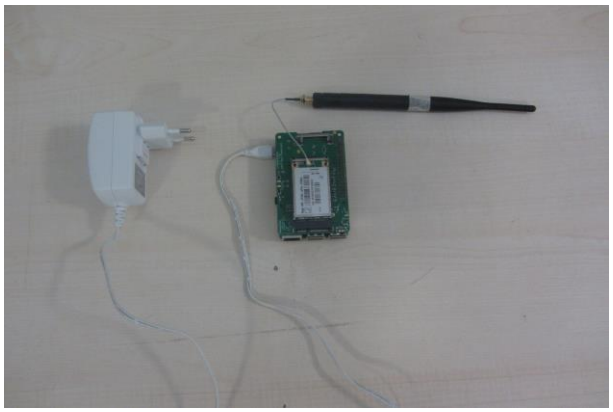
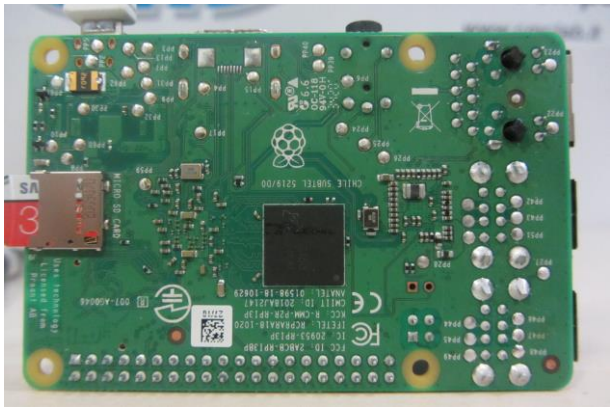
Possible test case verdicts:	
Test case does not apply to the test object:	N/A (Not Applicable)
Test object does meet the requirement:	P (Pass)
Test object does not meet the requirement:	F (Fail)
Test object does not performed:	N/E (Not Executed)
Definition of symbols used in this test report:	
☒ Indicates 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 ..... :	EMB-LR1302-mPCIe LoRaWAN Gateway Module						
Model Number ..... :	EMB-LR1302-mPCIe-SPI-915						
FCC ID ..... :	Z7HEMBLR1302						
Serial Number ..... :	--						
Brand name ..... :	Embit						
Frequency band ..... :	902 – 928 MHz						
Nominal frequencies ..... :	F_L: 902,30 MHz		F_M: 908,30 MHz		F_H: 914,90 MHz		
Test power supply ..... :		Voltage and Frequency	Reference poles				
			N	L1	L2	L3	PE
	☒	AC: 120 V, 60 Hz	☒	☒	☐	☐	☐
	☐	AC:	☐	☐	☐	☐	☐
	☐	DC:					☐
Software version ..... :	v2.0.0						
Test configuration ..... :	☒	Table top equipment					
	☐	Floor standing equipment					
	☐	Hand-held equipment					
Type of equipment ..... :	☒	Transmitter unit					
	☒	Receiver unit					
Type of station ..... :	☐	Portable station					
	☒	Mobile station					
Operating modes ..... :	No.	Operating mode of test item					
	1	EUT in continuous transmission, power set at 19 via software, to obtain 21 dB on output					

6.1 Photos of the test item






0519HB

7 Verdict summary section

FCC Rules & Regulations, Title 47:2020 Part 15 paragraph(s): 203, 204, 205, 207, 209, 215 and 247			
Clause	**Requirement – Test case**	**Basic standard**	**Verdict**
Part 15.247 (a) (1)	Pseudo randomly ordered list of hopping frequencies	--	**P**
Part 15.203	Antenna requirements	ANSI C63.10	**P**
Part 15.207	Conducted emissions	ANSI C63.10	**P**
Part 15.209	Emissions in restricted frequency bands and in unrestricted frequency bands	ANSI C63.10	**P**
Part 15.247	20 dB Bandwidth	ANSI C63.10	**P**
Part 15.247	Channel Separation	ANSI C63.10	**P**
Part 15.247	Number of Hopping Channel	ANSI C63.10	**P**
Part 15.247	Time of occupancy	ANSI C63.10	**P**
Part 15.247	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**

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
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

<table>
<tr><td>Environmental reference conditions.....:</td><td>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:
<table>
<tr><th>Temperature</th><th>Humidity</th><th>Atmospheric pressure</th></tr>
<tr><td>15 °C – 35 °C</td><td>30 % - 60 %</td><td>800 hPa – 1060 hPa</td></tr>
<tr><td colspan="3">If explicitly required in the basic standard or applied product standard the climatic values are recorded and documented separately in this test report.</td></tr>
</table></td></tr>
<tr><td>Measurement uncertainties .....:</td><td>Attachment 1</td></tr>
</table>

9 Test results

9.1 Antenna requirements

Tested by ..... :	C. Panozzo	
Test date ..... :	11.02.2022	
Reference standards ..... :	FCC Rules and Regulation; Titles 47 Part. 15.203 and 15.204	
Test specification ..... :	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§ 15.211, 15.213, 15.217, 15.219, 15.221, or § 15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded	
Antenna type..... :	☐	Integral antenna
	☒	External antenna
Antenna gain..... :	2 dBi	
External R.F. power amplifier ..... :	Not Present	

9.2 Conducted emission

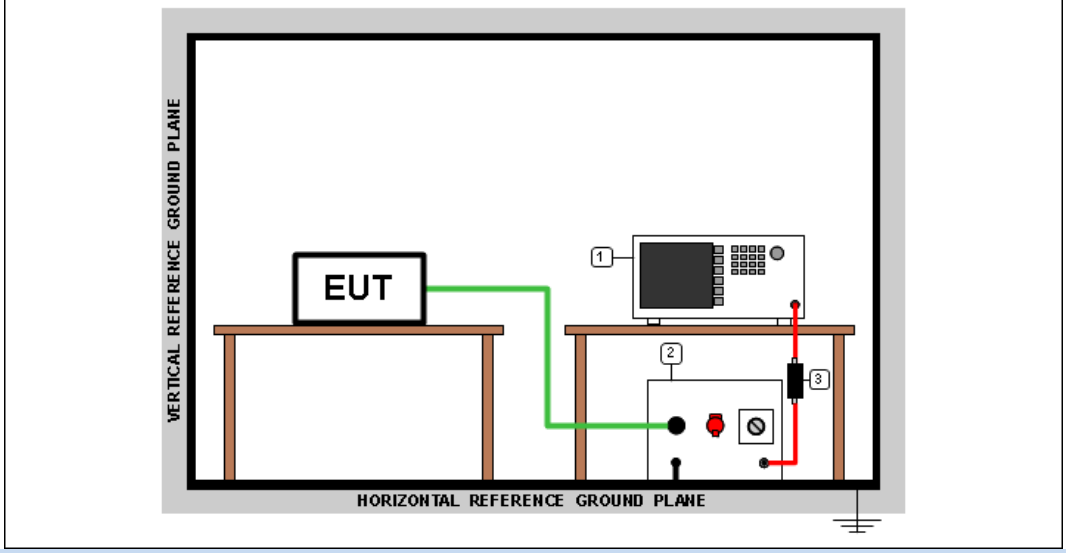
Tested by ..... :	C. Panozzo	
Test date ..... :	15.02.2022	
Test location (stand) ..... :	Shielded chamber (CMC A001)	
Reference standards ..... :	FCC Rules and Regulation; Titles 47 Part. 15.207 ANSI C63.10 cl. 6.2	
Test set-up description ..... :	☒	Table top equipment set-up (80 cm above the reference ground plane)
	☐	Floor standing equipment set-up (insulating material up to 12 mm thick)
	☐	False floor installation equipment set-up (insulating material up to 34 cm above the reference ground plane)
Supplementary Test set-up description ..... :	--	
Test method applied ..... :	☒	Artificial mains network, 50 µH/50 Ω LISN
	☐	Other:

Acceptance limits

Frequency range (MHz)	*dB(µV) Quasi-peak*	*dB(µV) Average*
0,15 to 0,50	66 to 56	56 to 46
0,5 to 5	56	46
5 to 30	60	50

Test setup

Mains terminal disturbance for table-top equipment



Test setup PE001_01				
Nr.	*Id. Number*	*Manufacturer*	*Model*	*Description*
3	CMC S010	Rohde & Schwarz	ESH3-Z2	Pulse limiter
2	CMC S200	Schwarzbeck	NSLK 8128	V-LISN
1	CMC S206	Rohde & Schwarz	ESCI 7	EMC Receiver 9KHz-7GHz

Result – spread factor 10

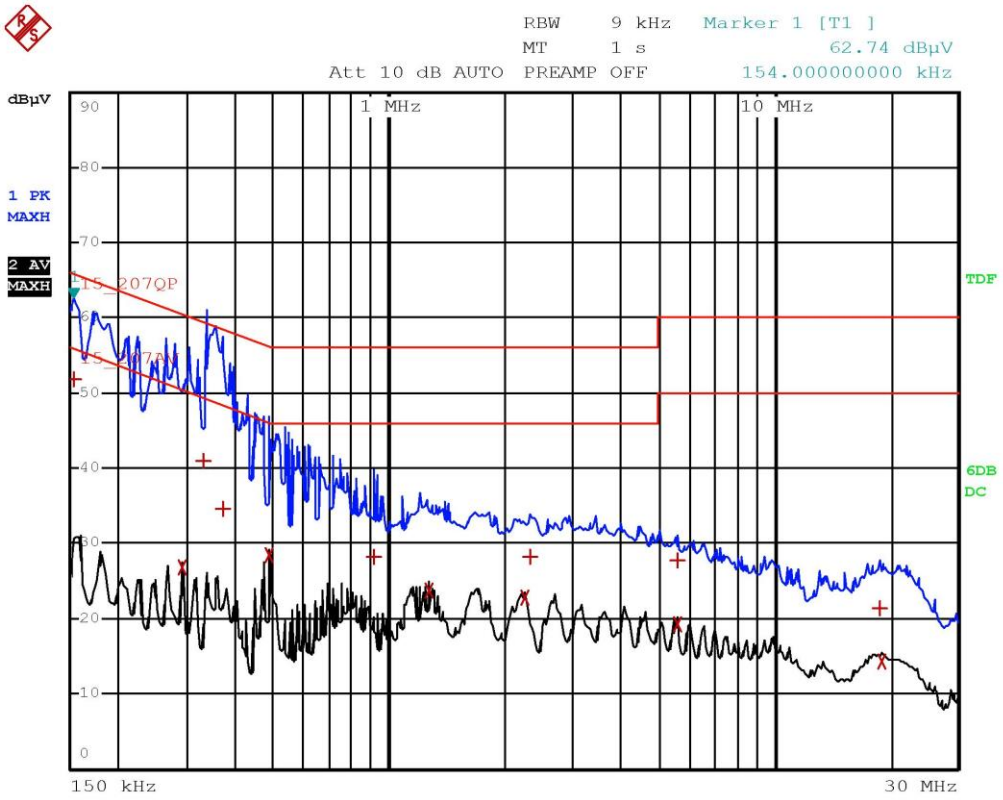
Line	*Frequency Range (MHz)*	*Graphs*	*Remarks*	*Result*
N	0,15 – 30	G22023172	--	P
L1	0,15 – 30	G22023173	--	P

Result – spread factor 7

Line	*Frequency Range (MHz)*	*Graphs*	*Remarks*	*Result*
N	0,15 – 30	G22023170	--	P
L1	0,15 – 30	G22023171	--	P

Graphs Legend
PK: Peak; QP [1s] (quasi-peak at 1 second) values are marked with a +
AV: Average; AV [1s] (average at 1 second) values are marked with a X

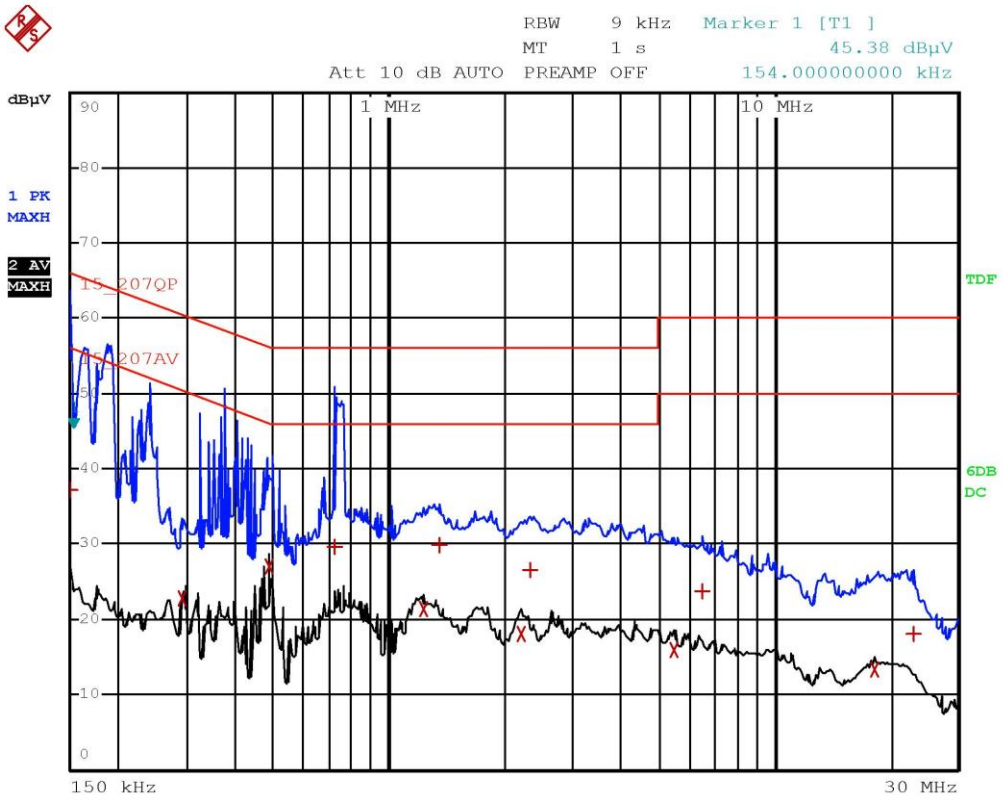
Graphs



Panozzo 22023170 Line N

EDIT PEAK LIST (Final Measurement Results)			
Trace1:	15_207QP		
Trace2:	15_207AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	154 kHz	51.87	-13.90
2 Average	290 kHz	26.85	-23.67
1 Quasi Peak	334 kHz	40.99	-18.35
1 Quasi Peak	370 kHz	34.64	-23.85
2 Average	490 kHz	28.58	-17.58
1 Quasi Peak	918 kHz	28.13	-27.86
2 Average	1.27 MHz	23.66	-22.33
2 Average	2.25 MHz	22.75	-23.24
1 Quasi Peak	2.326 MHz	28.29	-27.70
1 Quasi Peak	5.59 MHz	27.72	-32.27
2 Average	5.614 MHz	19.28	-30.71
1 Quasi Peak	18.738 MHz	21.43	-38.56
2 Average	19.11 MHz	14.27	-35.72

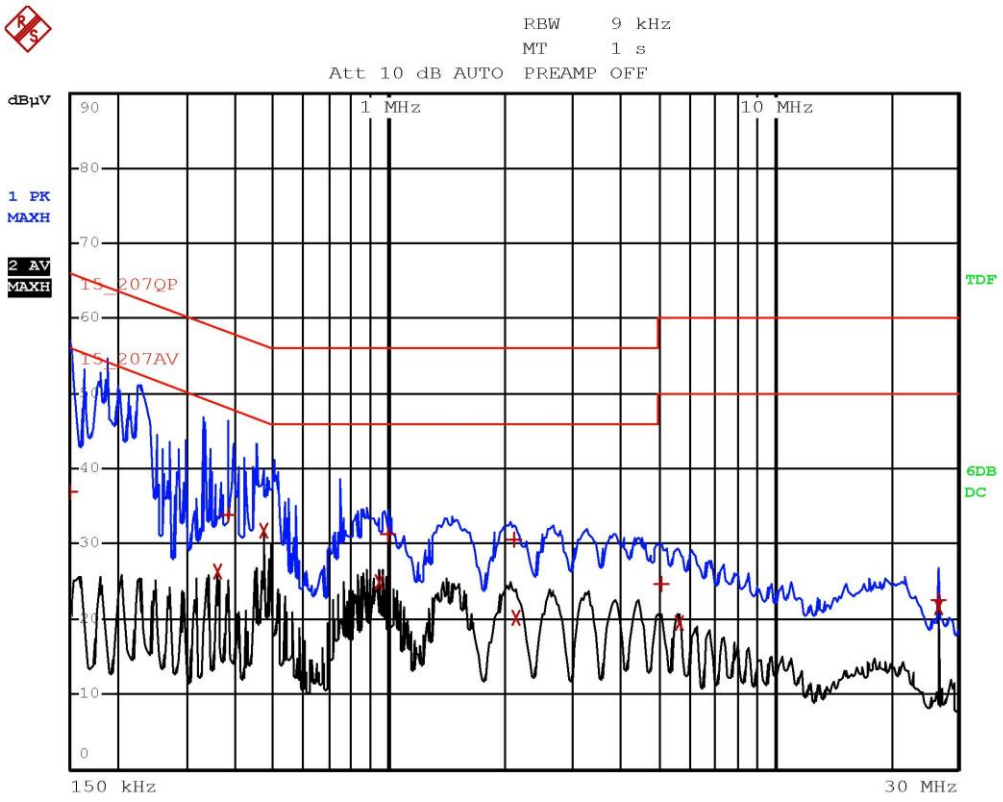
Panozzo 22023170 Line N



Panozzo 22023171 Line L

EDIT PEAK LIST (Final Measurement Results)			
Trace1:	15_207QP		
Trace2:	15_207AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	150 kHz	37.27	-28.72
2 Average	294 kHz	22.90	-27.50
2 Average	490 kHz	27.15	-19.01
1 Quasi Peak	722 kHz	29.67	-26.32
2 Average	1.238 MHz	21.35	-24.64
1 Quasi Peak	1.35 MHz	29.80	-26.19
2 Average	2.202 MHz	18.15	-27.84
1 Quasi Peak	2.326 MHz	26.68	-29.31
2 Average	5.498 MHz	15.96	-34.03
1 Quasi Peak	6.494 MHz	23.83	-36.16
2 Average	18.242 MHz	13.46	-36.53
1 Quasi Peak	23.078 MHz	18.10	-41.90

Panozzo 22023171 Line L



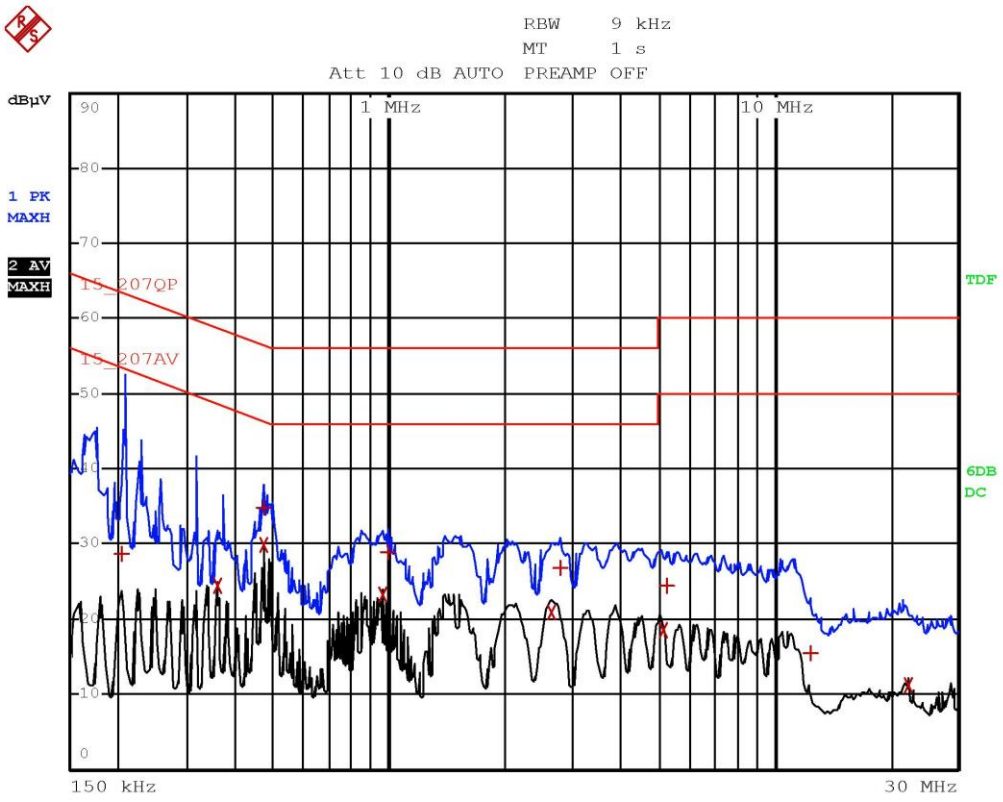
Panozzo 22023172 Line N

EDIT PEAK LIST (Final Measurement Results)

Trace1:	15_207QP
Trace2:	15_207AV
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	150 kHz	36.95	-29.04
2 Average	358 kHz	26.26	-22.51
1 Quasi Peak	382 kHz	34.00	-24.23
2 Average	470 kHz	31.66	-14.84
2 Average	942 kHz	24.84	-21.16
1 Quasi Peak	994 kHz	31.26	-24.73
1 Quasi Peak	2.126 MHz	30.65	-25.34
2 Average	2.13 MHz	20.25	-25.74
1 Quasi Peak	5.13 MHz	24.78	-35.21
2 Average	5.662 MHz	19.58	-30.42
2 Average	26.622 MHz	21.72	-28.27
1 Quasi Peak	26.626 MHz	22.66	-37.33

Panozzo 22023172 Line N



Panozzo 22023173 Line L

EDIT PEAK LIST (Final Measurement Results)			
Trace1:	15_207QP		
Trace2:	15_207AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	206 kHz	28.78	-34.58
2 Average	358 kHz	24.54	-24.22
2 Average	470 kHz	29.81	-16.70
1 Quasi Peak	474 kHz	34.78	-21.65
2 Average	962 kHz	23.31	-22.68
1 Quasi Peak	994 kHz	29.05	-26.94
2 Average	2.638 MHz	20.87	-25.12
1 Quasi Peak	2.798 MHz	26.87	-29.12
2 Average	5.142 MHz	18.44	-31.56
1 Quasi Peak	5.254 MHz	24.55	-35.45
1 Quasi Peak	12.43 MHz	15.35	-44.64
2 Average	22.218 MHz	11.33	-38.66

Panozzo 22023173 Line L

9.3 Emissions in restricted frequency bands and in unrestricted frequency bands

Tested by ..... :	C. Panozzo	
Test date ..... :	11.02.2022	
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	
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 m for frequencies below 1 GHz 3 m for frequencies above 1 GHz	
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

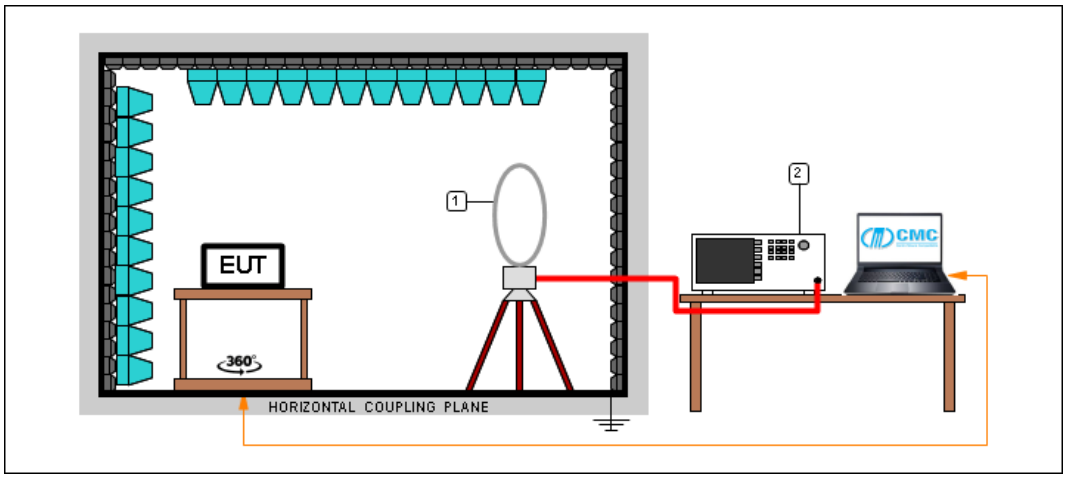
The restricted frequency bands are listed in the following table

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
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.

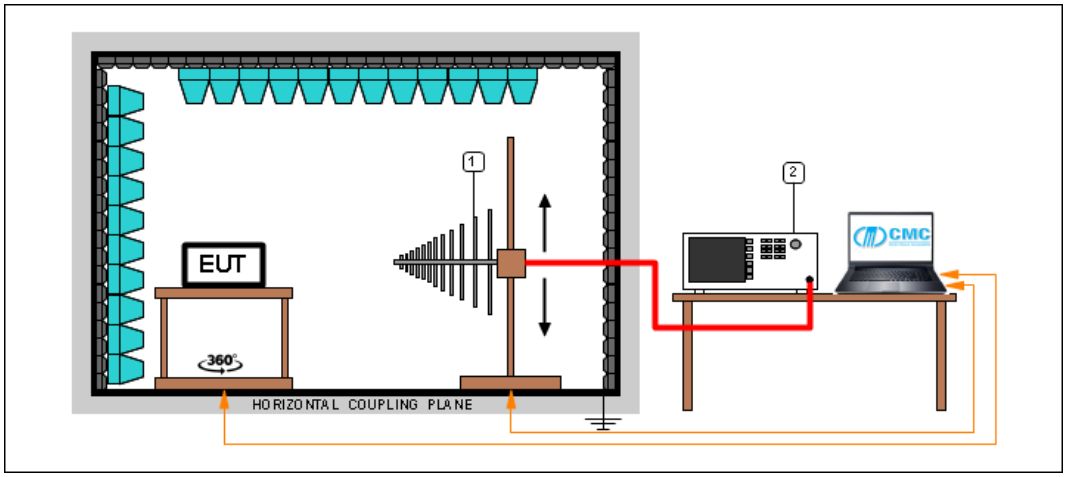
Test setup

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

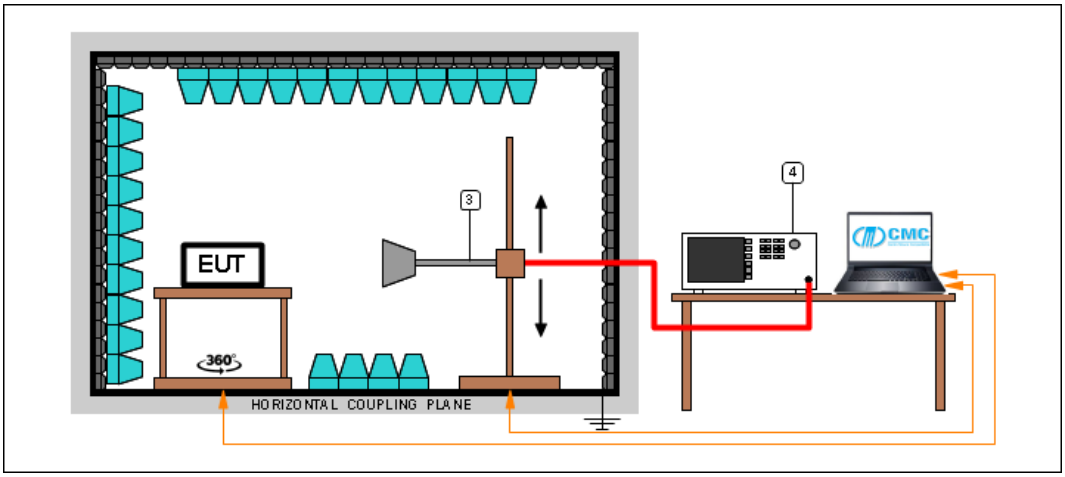
Frequency ≤ 1 GHz



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 – spread factor 10

Transmission channel (MHz)	*Polarization*	*Frequency Range (MHz)*	*Graphs*	*Result*
902,30	H	1000 – 9500	G22023107	P
902,30	V	1000 – 9500	G22023108	P
908,30	V	1000 – 9500	G22023109	P
908,30	H	1000 – 9500	G22023110	P
914,90	H	1000 – 9500	G22023111	P
914,90	V	1000 – 9500	G22023112	P
902,30	H	300 – 1000	G22023119	P
902,30	V	300 – 1000	G22023120	P
908,30	V	300 – 1000	G22023121	P
908,30	H	300 – 1000	G22023122	P
914,90	H	300 – 1000	G22023123	P
914,90	V	300 – 1000	G22023124	P
Worst case	V	30 – 300	G22023125	P
Worst case	H	30 – 300	G22023126	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

Result – spread factor 7

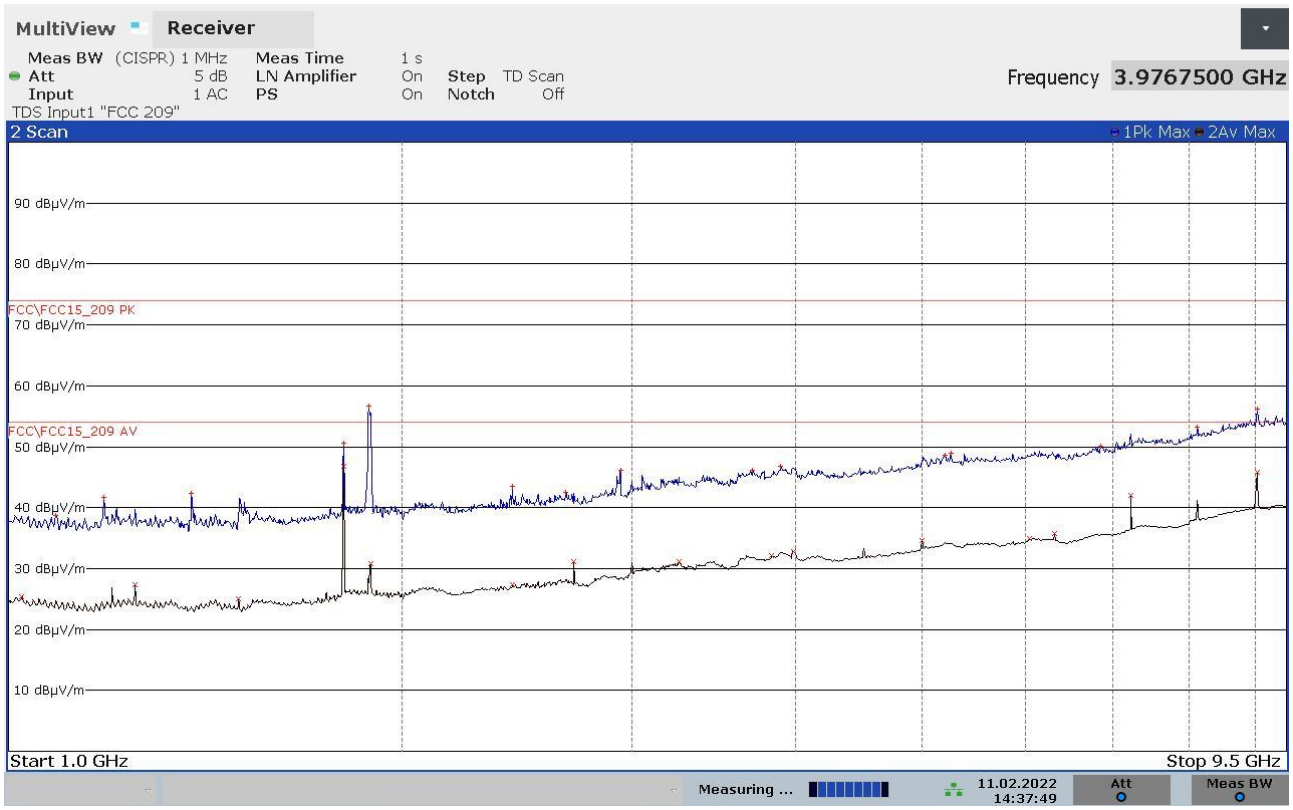
Transmission channel (MHz)	*Polarization*	*Frequency Range (MHz)*	*Graphs*	*Result*
902,30	V	1000 – 9500	G22023101	P
902,30	H	1000 – 9500	G22023102	P
908,30	H	1000 – 9500	G22023103	P
908,30	V	1000 – 9500	G22023104	P
914,90	V	1000 – 9500	G22023105	P
914,90	H	1000 – 9500	G22023106	P
902,30	V	300 – 1000	G22023113	P
902,30	H	300 – 1000	G22023114	P
908,30	H	300 – 1000	G22023115	P
908,30	V	300 – 1000	G22023116	P
914,90	V	300 – 1000	G22023117	P
914,90	H	300 – 1000	G22023118	P
Worst case	H	30 – 300	G22023127	P
Worst case	V	30 – 300	G22023128	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

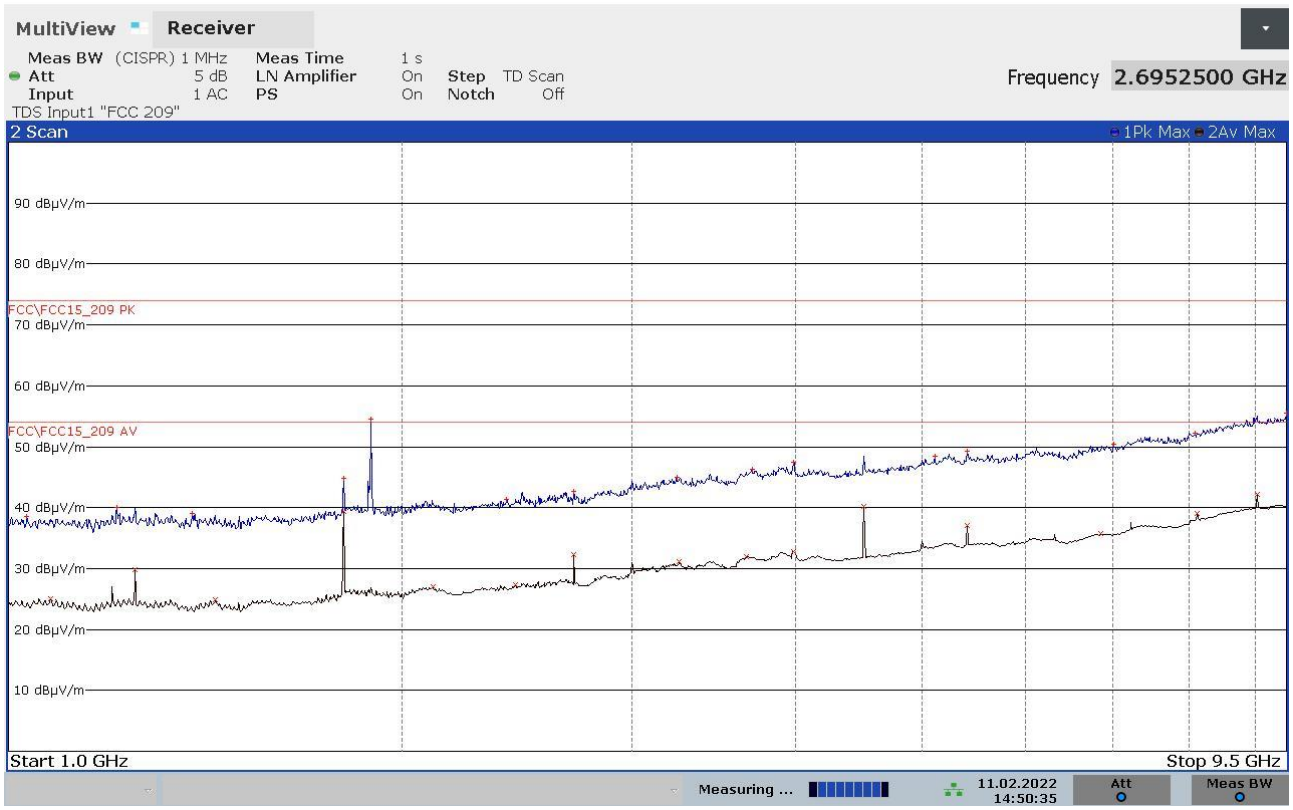
Panozzo 22023101



FINAL RESULT TABLE					
MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1087000000	+38,76	-35,22	1024000000	+25,41	-28,57
1183250000	+41,73	-32,25	1250250000	+27,27	-26,71
1380250000	+42,40	-31,58	1500250000	+24,98	-29,00
1804500000	+50,62	-23,36	1804500000	+46,74	-7,24
1885500000	+56,70	-17,28	1892250000	+30,84	-23,14
2428750000	+43,56	-30,42	2429500000	+27,42	-26,56
2670000000	+42,56	-31,42	2707000000	+31,18	-22,80
2938750000	+46,21	-27,77	3259000000	+31,10	-22,88
3707250000	+46,21	-27,77	3836250000	+32,05	-21,93
3899250000	+46,80	-27,18	3988500000	+32,74	-21,24
5210250000	+48,54	-25,44	4999750000	+34,52	-19,46
5259250000	+48,89	-25,09	6045000000	+34,88	-19,10
6852250000	+50,11	-23,87	6316000000	+35,82	-18,16
8120500000	+53,20	-20,78	7218500000	+42,00	-11,98
9023250000	+56,15	-17,83	9023000000	+45,78	-8,20

22023101_2

Panozzo 22023102

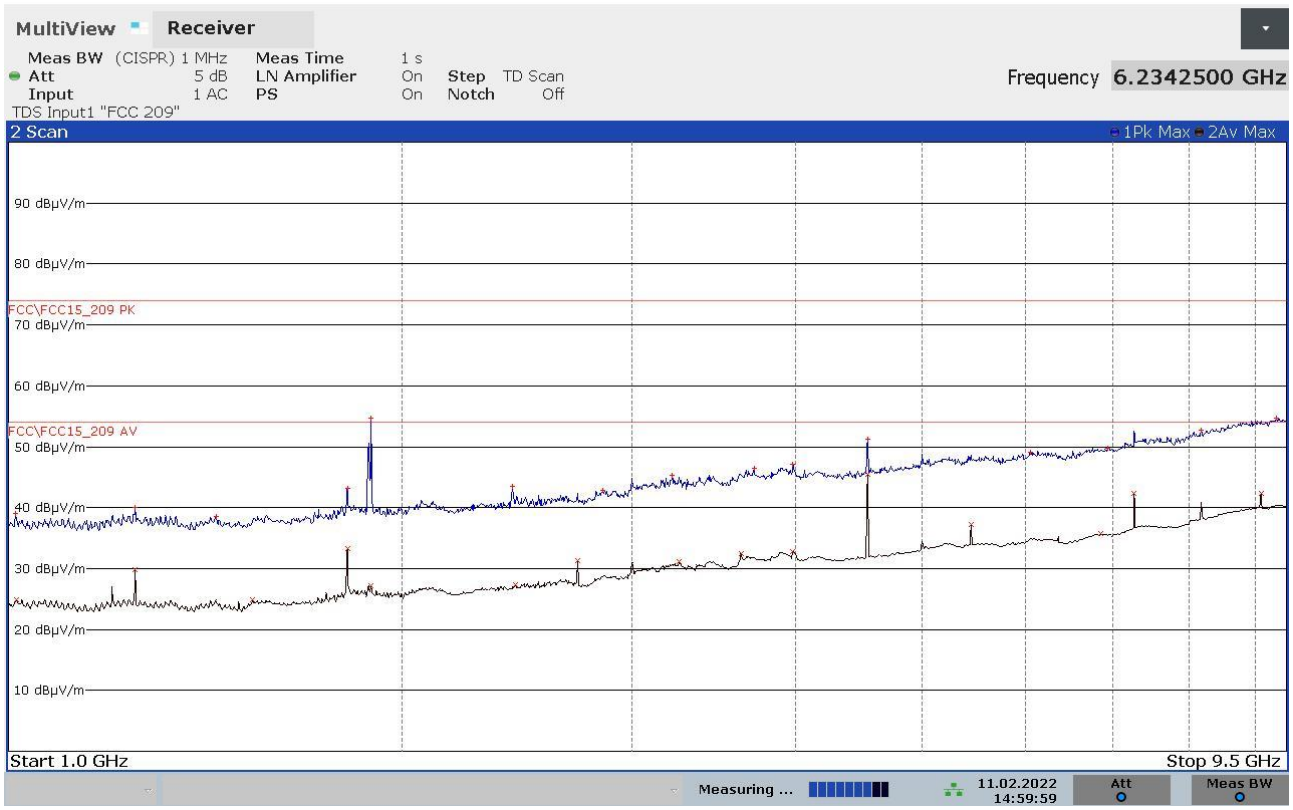


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1032750000	+38,48	-35,50	1077500000	+25,03	-28,95
1209500000	+40,01	-33,97	1250250000	+29,75	-24,23
1382500000	+38,98	-35,00	1440000000	+24,85	-29,13
1804500000	+44,86	-29,12	1804500000	+39,31	-14,67
1893500000	+54,59	-19,39	2111500000	+27,02	-26,96
2404000000	+41,43	-32,55	2444500000	+27,40	-26,58
2707000000	+42,75	-31,23	2707000000	+32,37	-21,61
3245500000	+45,04	-28,94	3259250000	+31,07	-22,91
3706750000	+46,33	-27,65	3669250000	+32,03	-21,95
3989500000	+47,49	-26,49	3989000000	+32,76	-21,22
5115250000	+48,42	-25,56	4511500000	+40,26	-13,72
5413750000	+49,22	-24,76	5413750000	+37,07	-16,91
7007500000	+50,35	-23,63	6851250000	+35,71	-18,27
8090000000	+52,20	-21,78	8120750000	+38,97	-15,01
9495000000	+55,47	-18,51	9023000000	+42,12	-11,86

22023102_2

Panozzo 22023103

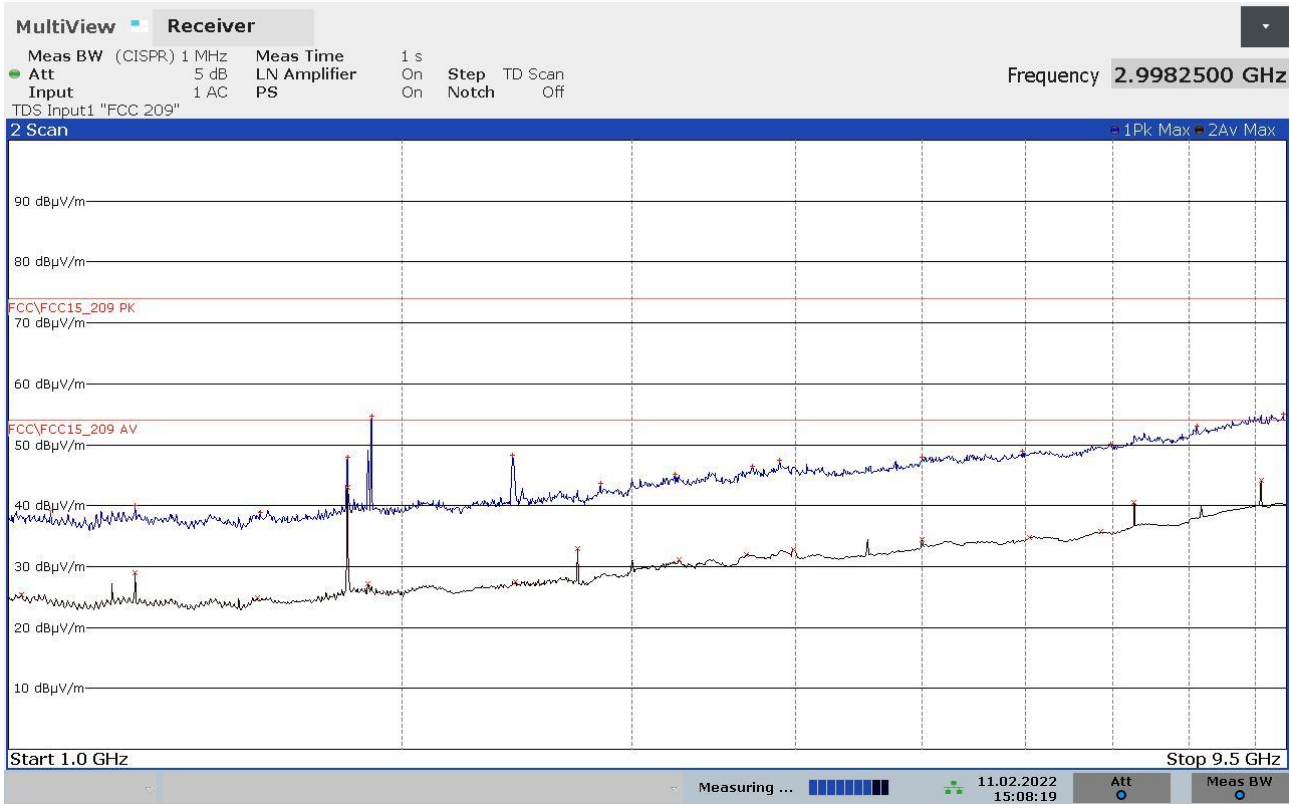


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1012500000	+39,08	-34,90	1013750000	+24,90	-29,08
1250250000	+39,97	-34,01	1250250000	+29,90	-24,08
1441000000	+38,57	-35,41	1538000000	+24,83	-29,15
1816500000	+43,24	-30,74	1816500000	+33,31	-20,67
1894250000	+54,70	-19,28	1893750000	+27,21	-26,77
2429000000	+43,51	-30,47	2443250000	+27,38	-26,60
2851250000	+42,83	-31,15	2725000000	+31,32	-22,66
3220500000	+45,26	-28,72	3259250000	+31,06	-22,92
3720000000	+46,48	-27,50	3633250000	+32,38	-21,60
3982750000	+47,11	-26,87	3977000000	+32,75	-21,23
4541250000	+51,23	-22,75	4541500000	+45,45	-8,53
6048750000	+49,17	-24,81	5449750000	+37,19	-16,79
6931500000	+49,74	-24,24	6850250000	+35,69	-18,29
8174500000	+52,70	-21,28	7266500000	+42,27	-11,71
9333500000	+54,64	-19,34	9083000000	+42,31	-11,67

22023103_2

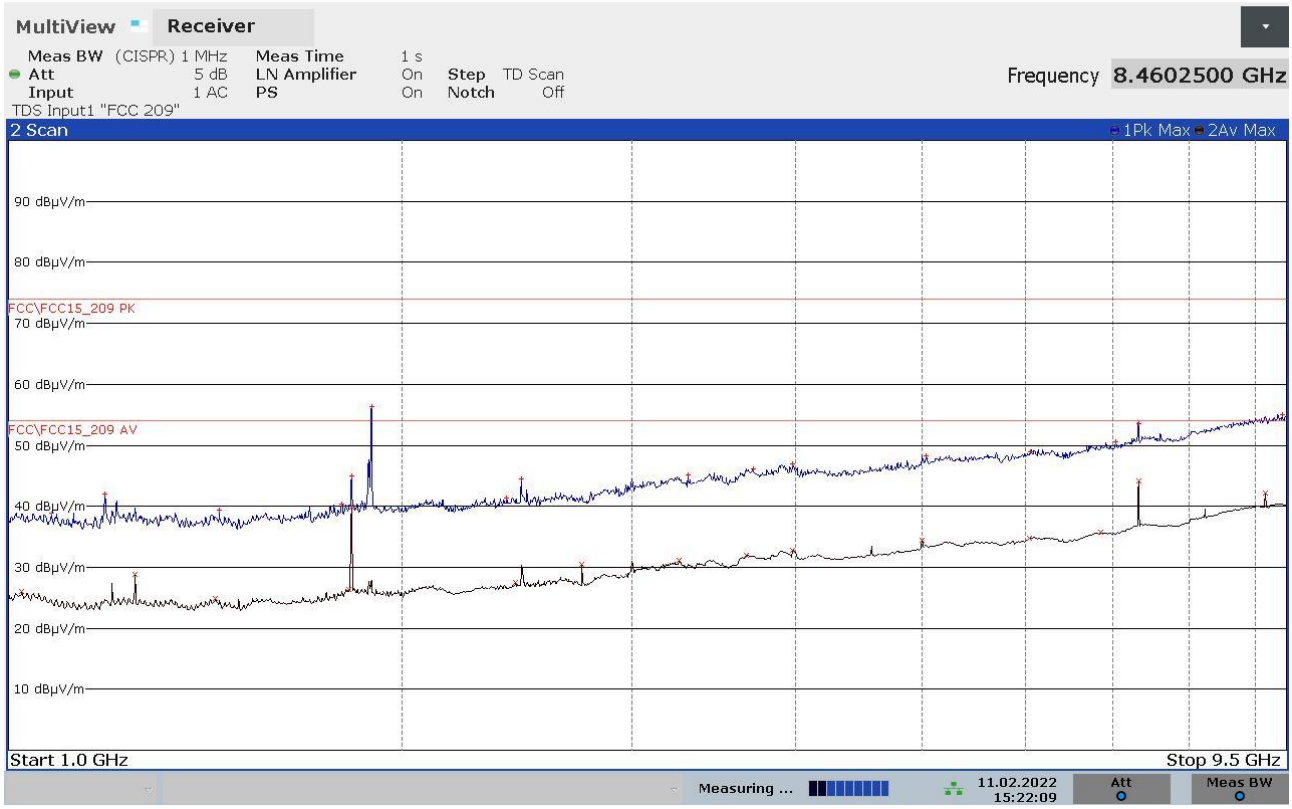
Panozzo 22023104



FINAL RESULT TABLE					
MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1076750000	+39,29	-34,69	1024000000	+25,45	-28,53
1250250000	+39,98	-34,00	1250250000	+28,97	-25,01
1557500000	+38,83	-35,15	1550250000	+24,89	-29,09
1816500000	+47,86	-26,12	1816500000	+43,07	-10,91
1895250000	+54,63	-19,35	1883500000	+27,19	-26,79
2429000000	+48,30	-25,68	2444750000	+27,48	-26,50
2837750000	+43,65	-30,33	2725000000	+32,88	-21,10
3233500000	+45,06	-28,92	3259000000	+31,07	-22,91
3707750000	+46,54	-27,44	3669250000	+32,02	-21,96
3888500000	+47,48	-26,50	3989000000	+32,74	-21,24
4999500000	+48,01	-25,97	4999750000	+34,50	-19,48
5966500000	+48,97	-25,01	6045500000	+34,83	-19,15
6970000000	+50,13	-23,85	6851500000	+35,67	-18,31
8109500000	+52,97	-21,01	7266500000	+40,59	-13,39
9450000000	+55,06	-18,92	9083000000	+44,09	-9,89

22023104_2

Panozzo 22023105



FINAL RESULT TABLE

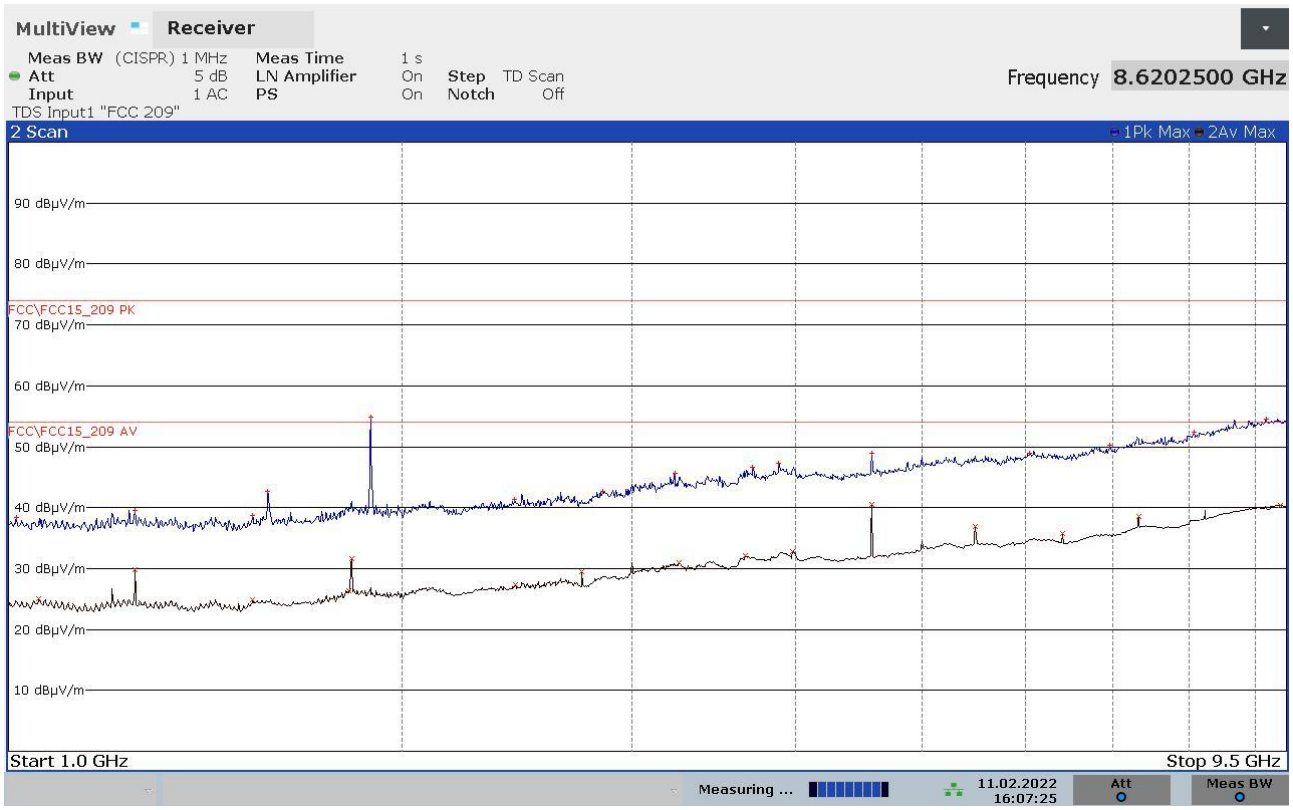
MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1078750000	+38,87	-35,11	1024000000	+25,98	-28,00
1185500000	+41,96	-32,02	1250250000	+28,80	-25,18
1450250000	+39,32	-34,66	1440000000	+24,86	-29,12
1800250000	+40,43	-33,55	1822500000	+26,36	-27,62
1829750000	+45,00	-28,98	1829750000	+39,88	-14,10
1895250000	+56,38	-17,60	2444500000	+27,49	-26,49
2404750000	+41,43	-32,55	2744750000	+30,55	-23,43
2468500000	+44,50	-29,48	3259500000	+31,07	-22,91
3310500000	+45,15	-28,83	3668750000	+32,02	-21,96
3711250000	+46,19	-27,79	3976750000	+32,74	-21,24
3979250000	+47,02	-26,96	4999750000	+34,50	-19,48
5037250000	+48,22	-25,76	6046000000	+34,84	-19,14
6049250000	+48,88	-25,10	6850250000	+35,68	-18,30

22023105_2

FINAL RESULT TABLE					
MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
7032000000	+50,53	-23,45	7319250000	+44,20	-9,78
7319000000	+53,52	-20,46	9149000000	+42,10	-11,88
9431250000	+55,08	-18,90			

22023105_3

Panozzo 22023106

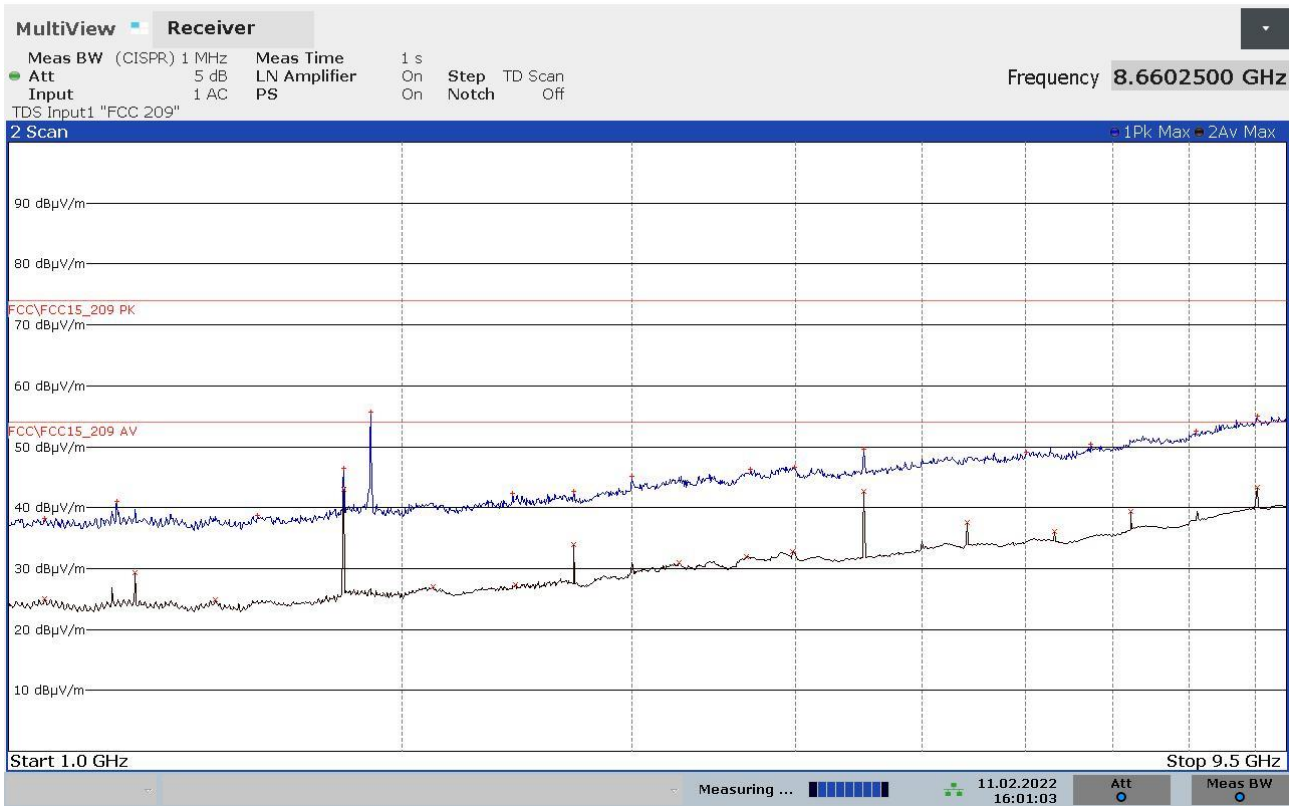


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1013750000	+38,40	-35,58	1054750000	+25,10	-28,88
1250000000	+39,49	-34,49	1250250000	+29,80	-24,18
1537500000	+38,75	-35,23	1538000000	+24,82	-29,16
1579250000	+42,65	-31,33	1822500000	+26,32	-27,66
1892500000	+54,84	-19,14	1829750000	+31,62	-22,36
2439500000	+41,27	-32,71	2443750000	+27,34	-26,64
2850250000	+42,71	-31,27	2744750000	+29,50	-24,48
3233250000	+45,60	-28,38	3259500000	+31,02	-22,96
3709000000	+46,64	-27,34	3659500000	+32,12	-21,86
3885250000	+47,33	-26,65	3976750000	+32,73	-21,25
4574750000	+48,96	-25,02	4574500000	+40,56	-13,42
6043750000	+48,98	-25,00	5489500000	+36,98	-17,00
6962750000	+50,22	-23,76	6404250000	+35,82	-18,16
8071750000	+52,31	-21,67	7319250000	+38,60	-15,38
9163500000	+54,51	-19,47	9396750000	+40,38	-13,60

22023106_2

Panozzo 22023107



FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1065000000	+38,17	-35,81	1065750000	+24,97	-29,01
1209500000	+41,06	-32,92	1250250000	+29,31	-24,67
1549750000	+38,78	-35,20	1440000000	+24,86	-29,12
1804500000	+46,51	-27,47	1804500000	+43,02	-10,96
1892500000	+55,70	-18,28	2111250000	+26,95	-27,03
2431250000	+42,40	-31,58	2444500000	+27,37	-26,61
2707000000	+42,69	-31,29	2707000000	+33,90	-20,08
2999000000	+45,19	-28,79	3259500000	+31,03	-22,95
3696250000	+46,34	-27,64	3669500000	+32,00	-21,98
3991000000	+46,63	-27,35	3977000000	+32,74	-21,24
4511500000	+49,58	-24,40	4511500000	+42,60	-11,38
6008000000	+49,12	-24,86	5413750000	+37,60	-16,38
6731500000	+50,41	-23,57	6316000000	+36,09	-17,89
8095500000	+52,51	-21,47	7218250000	+39,36	-14,62
9022500000	+55,06	-18,92	9023250000	+43,35	-10,63

22023107_2