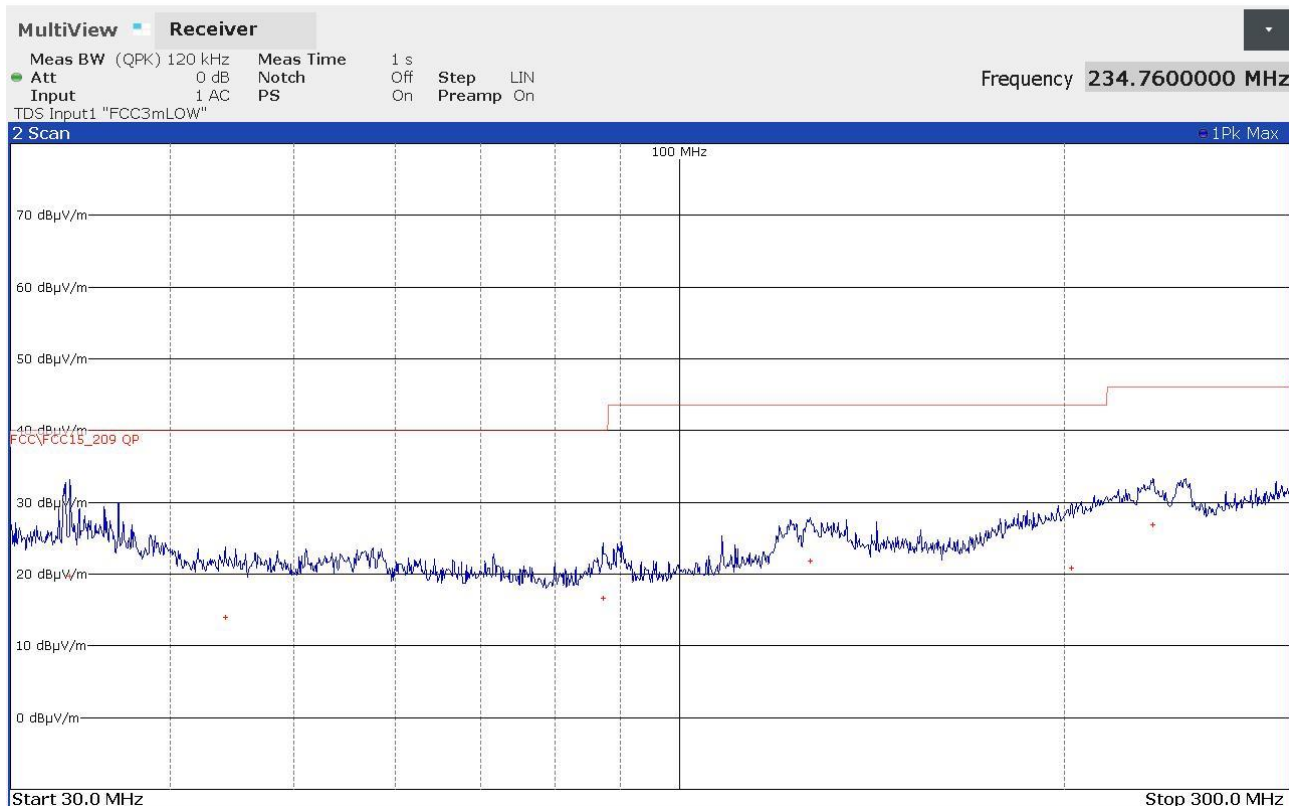


Panozzo 24028779



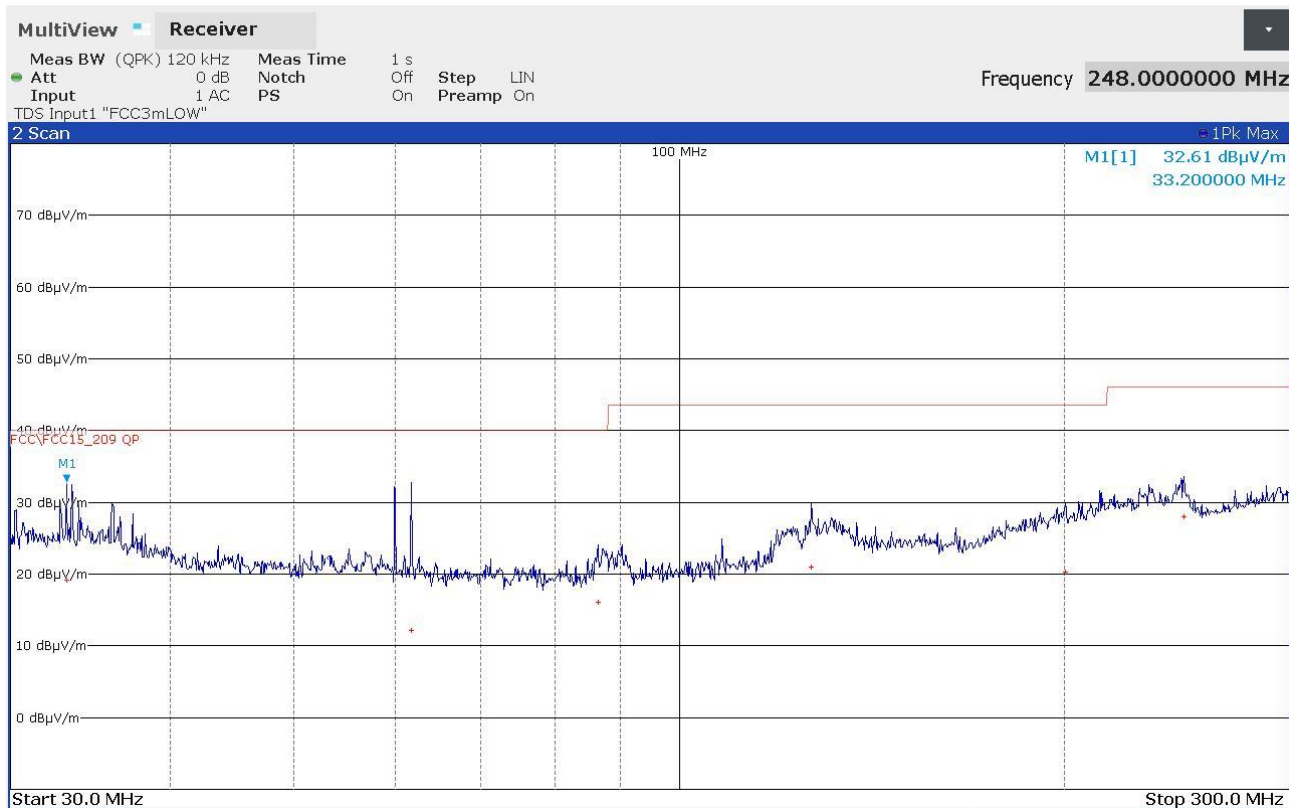
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
33400000	+19,72	-20,28
44160000	+14,03	-25,97
87160000	+16,57	-23,43
126560000	+21,81	-21,71
202520000	+20,81	-22,71
234760000	+26,82	-19,20

24028779_2

Panozzo 24028780



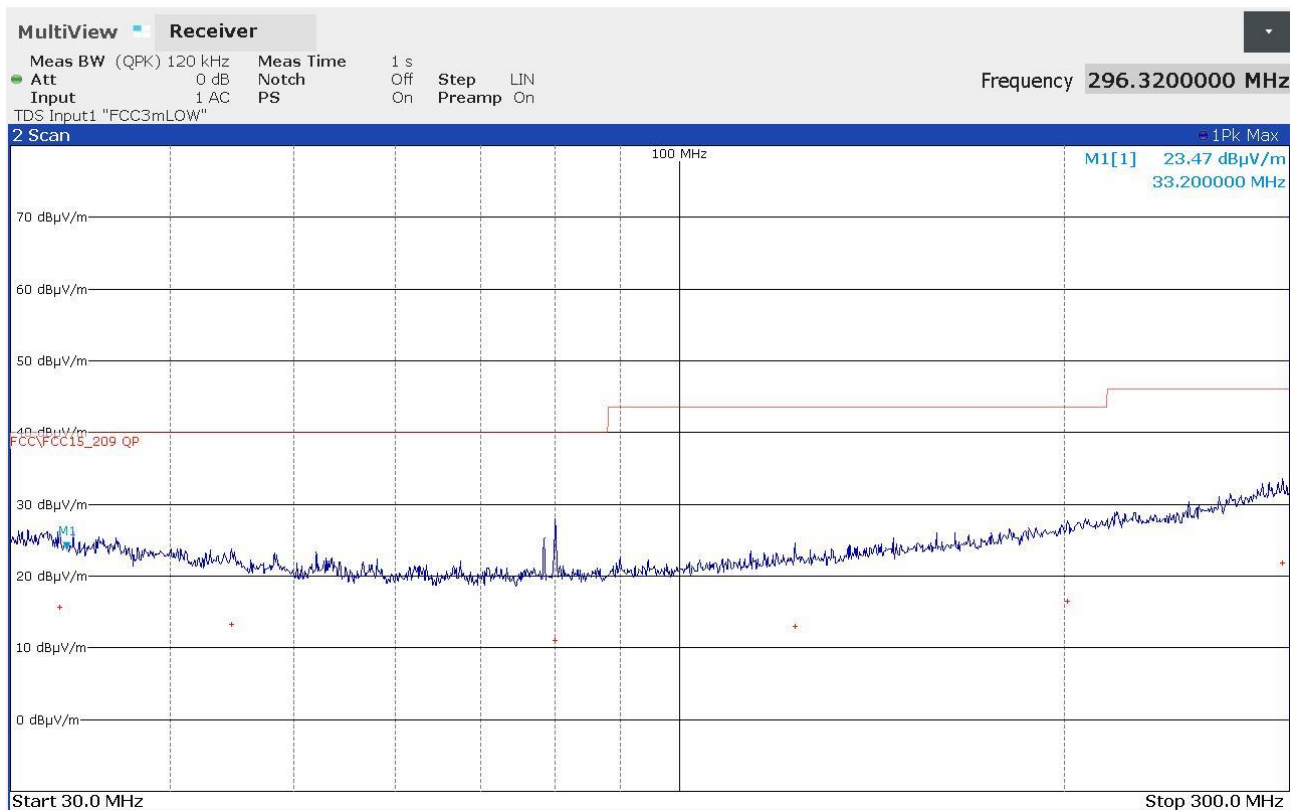
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
33200000	+19,09	-20,91
61720000	+12,13	-27,87
86400000	+16,07	-23,93
126880000	+21,01	-22,51
200520000	+20,32	-23,20
248000000	+28,00	-18,02

24028780_2

Panozzo 24028781



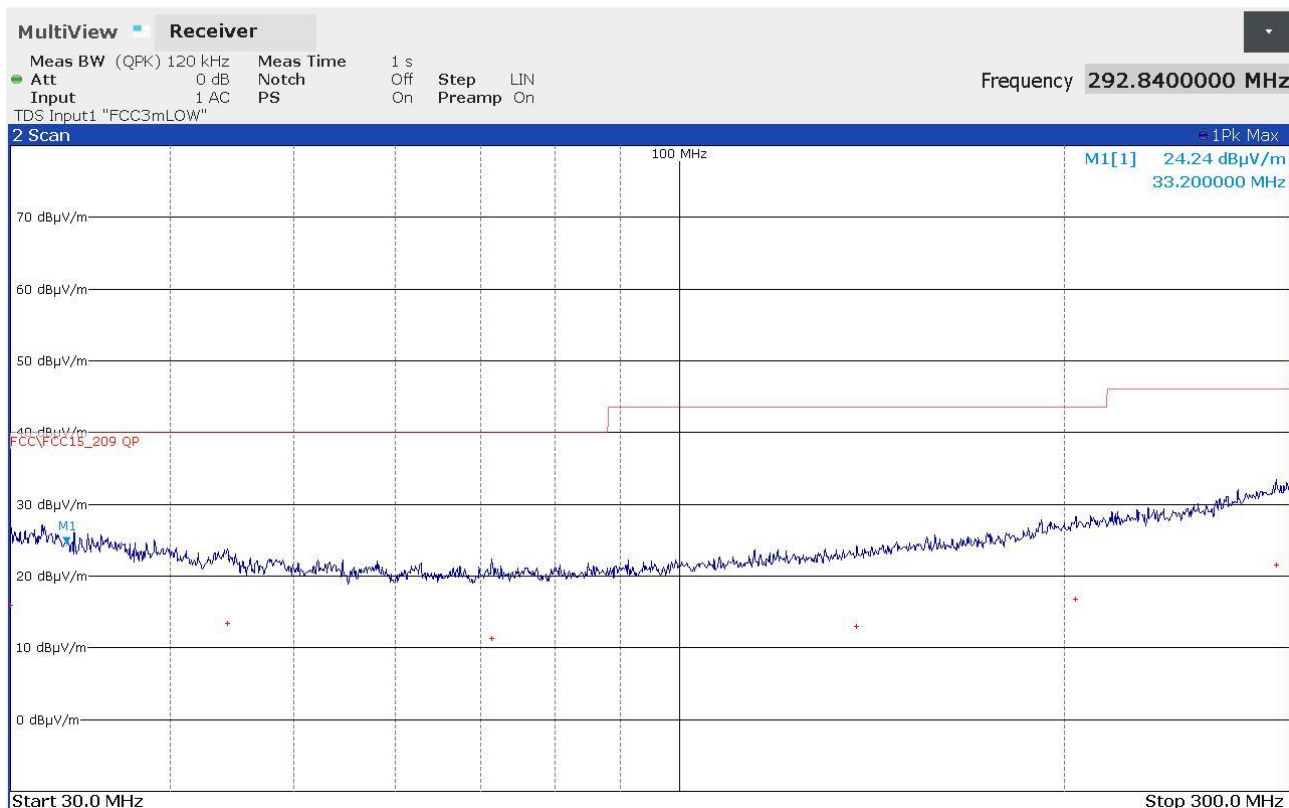
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
32800000	+15,61	-24,39
44640000	+13,23	-26,77
80000000	+11,06	-28,94
123160000	+13,06	-30,46
201080000	+16,46	-27,06
296320000	+21,79	-24,23

24028781_2

Panozzo 24028782



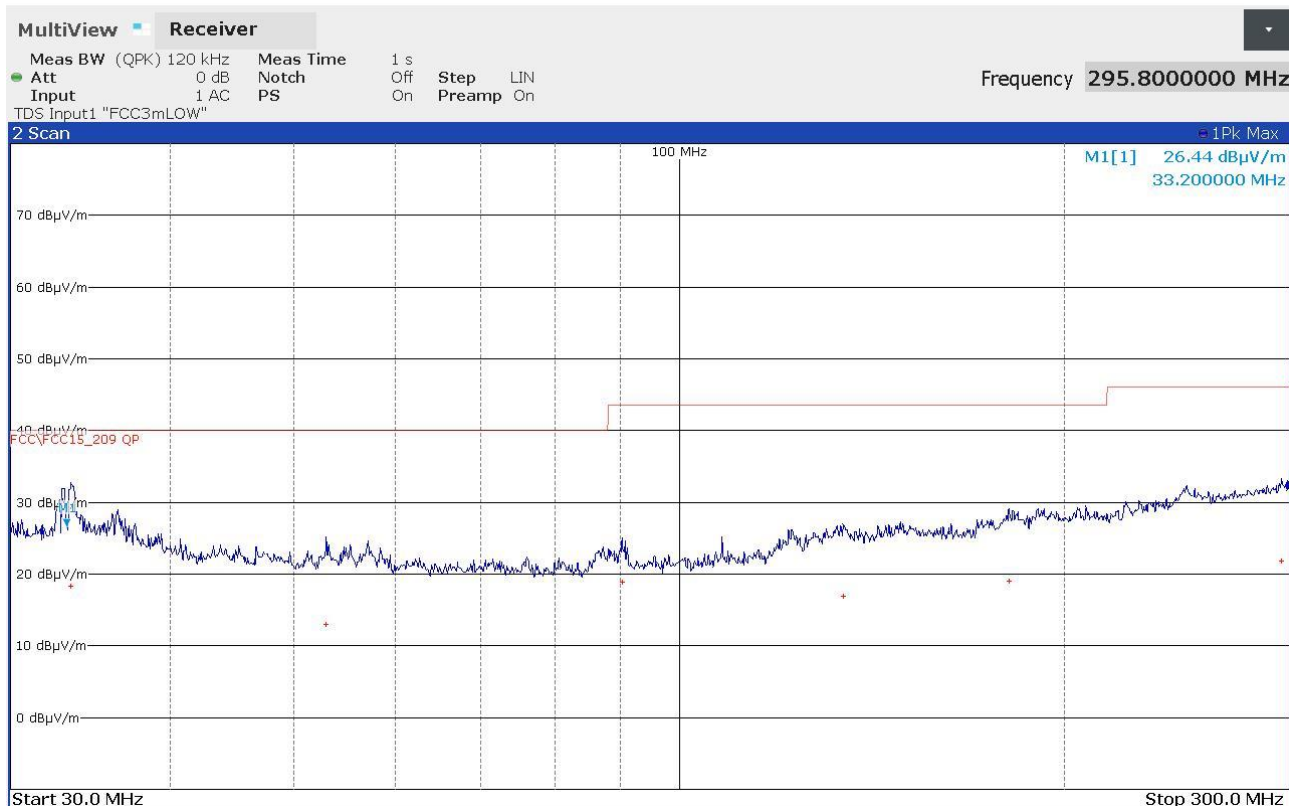
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
30000000	+15,93	-24,07
44360000	+13,48	-26,52
71320000	+11,32	-28,68
137680000	+13,06	-30,46
204240000	+16,72	-26,80
292840000	+21,60	-24,42

24028782_2

Panozzo 24028783



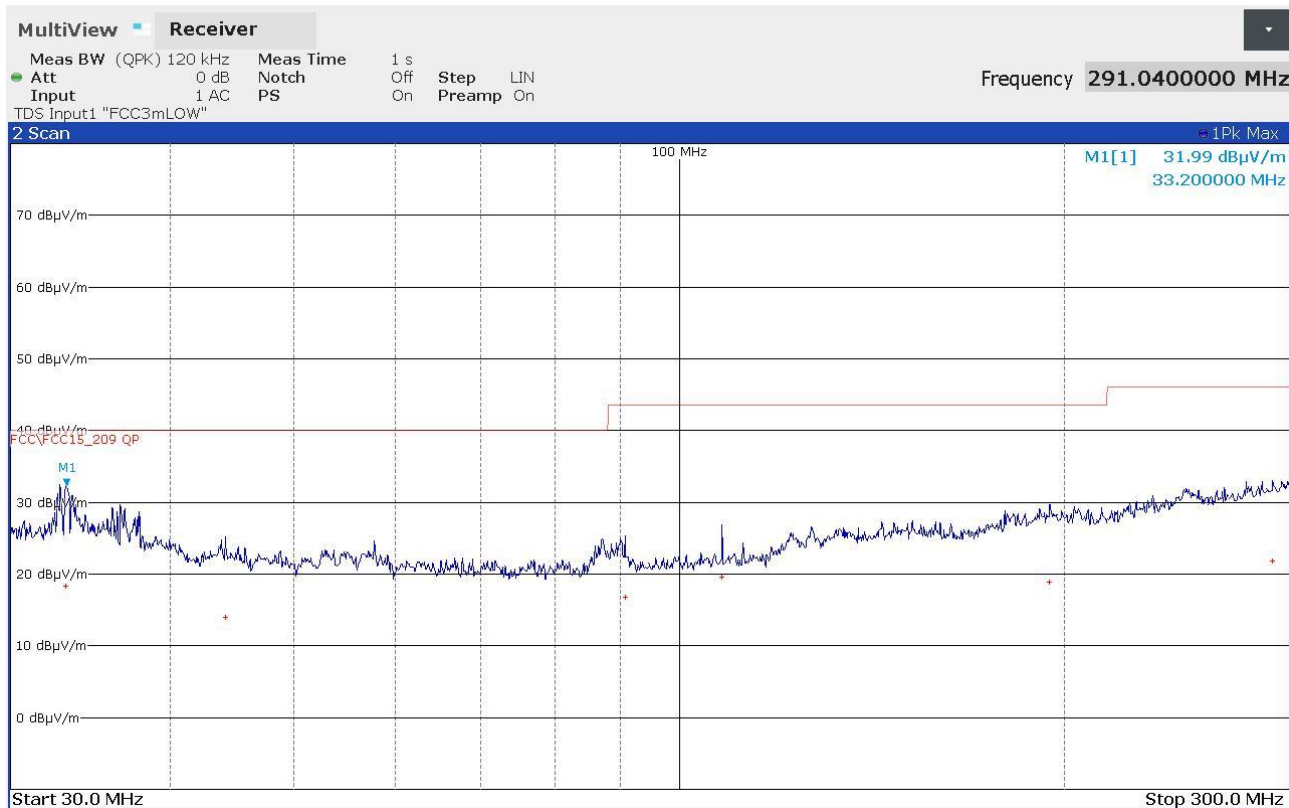
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
33440000	+18,29	-21,71
52960000	+13,05	-26,95
90200000	+18,93	-24,59
134320000	+16,98	-26,54
180960000	+19,00	-24,52
295800000	+21,83	-24,19

24028783_2

Panozzo 24028784



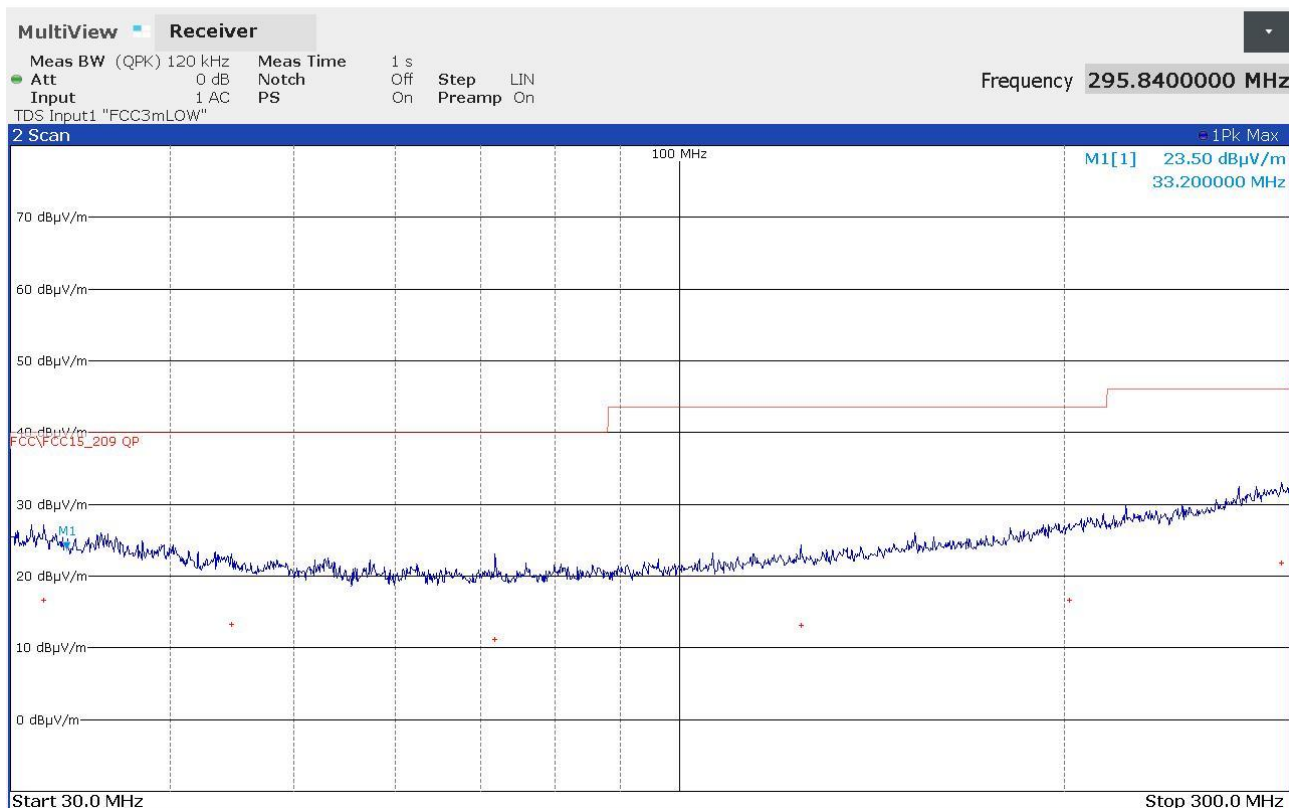
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
33120000	+18,32	-21,68
44160000	+13,96	-26,04
90760000	+16,79	-26,73
108000000	+19,57	-23,95
194880000	+18,90	-24,62
291040000	+21,76	-24,26

24028784_2

Panozzo 24028785



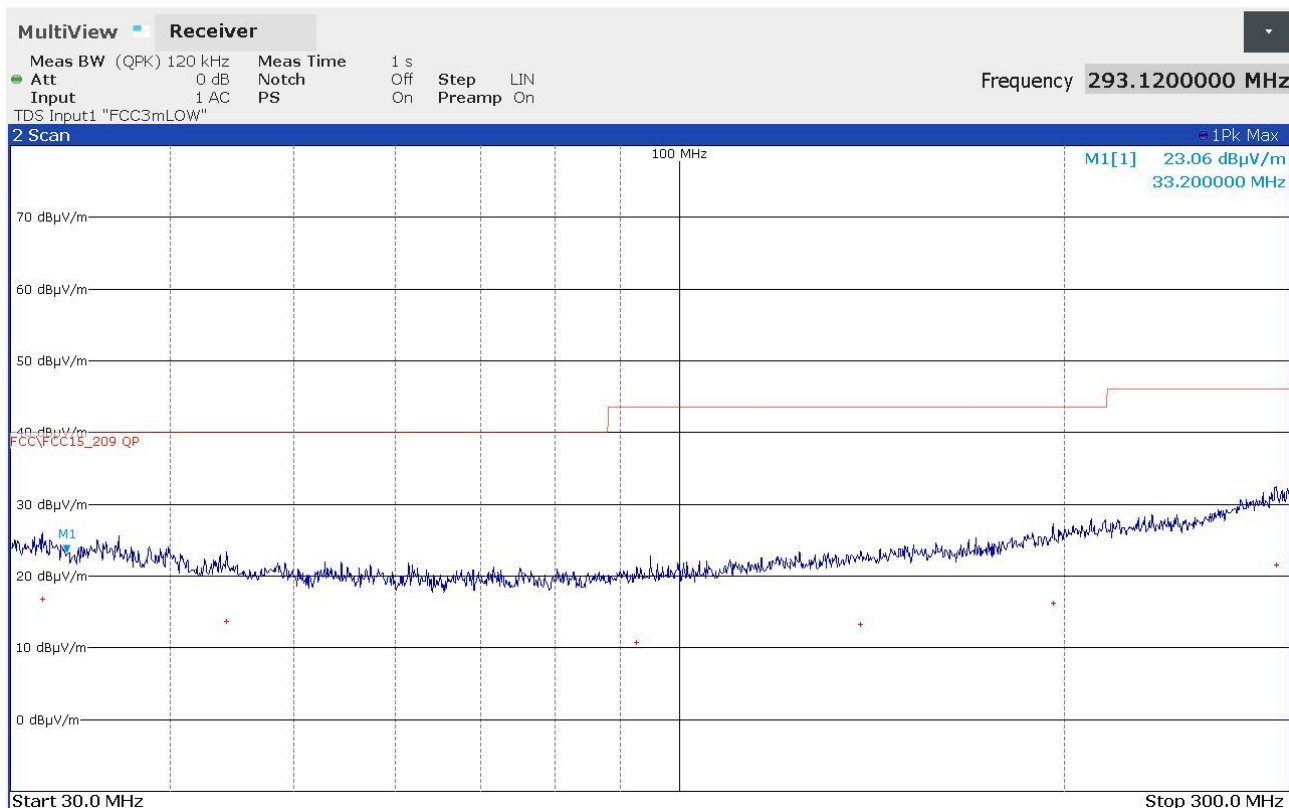
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
31840000	+16,63	-23,37
44640000	+13,23	-26,77
71760000	+11,10	-28,90
124480000	+13,08	-30,44
201760000	+16,58	-26,94
295840000	+21,87	-24,15

24028785_2

Panozzo 24028786



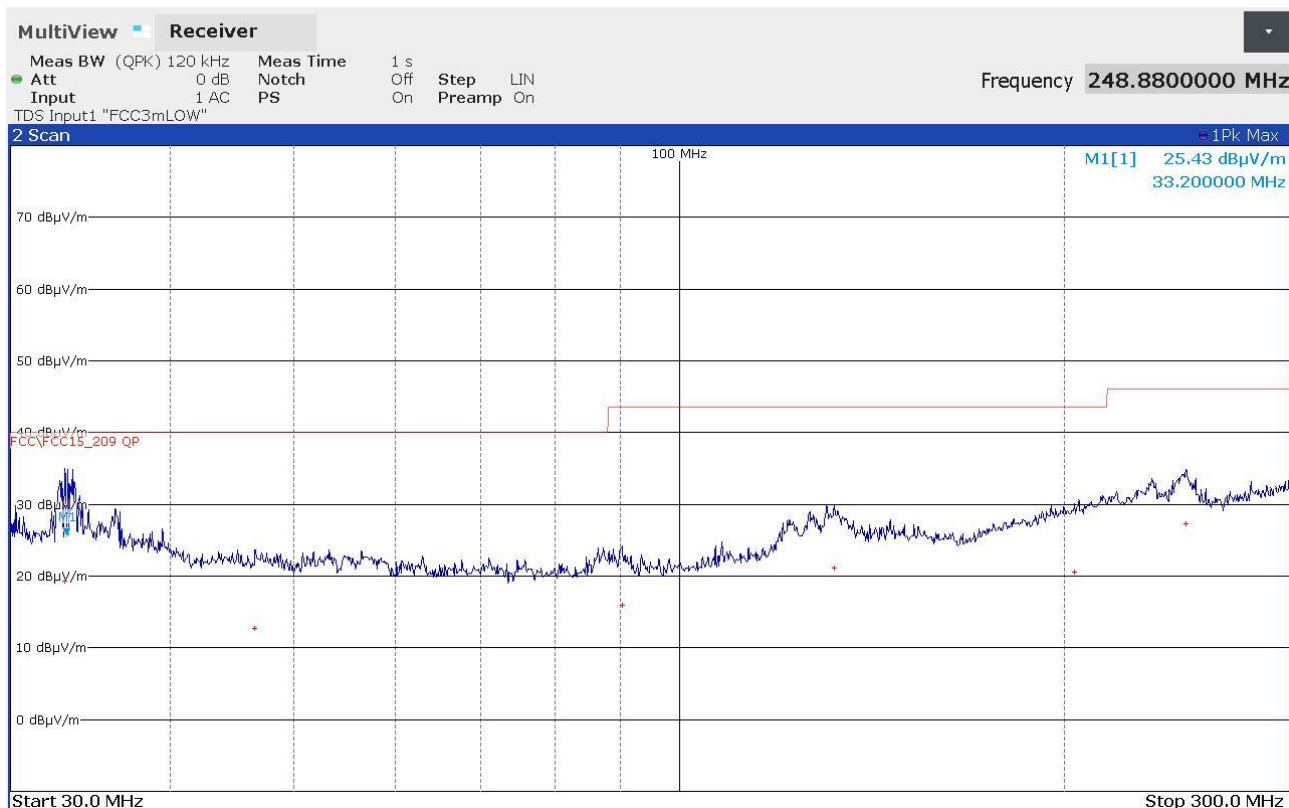
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
31760000	+16,75	-23,25
44280000	+13,63	-26,37
92640000	+10,68	-32,84
138680000	+13,27	-30,25
196000000	+16,20	-27,32
293120000	+21,50	-24,52

24028786_2

Panozzo 24028787



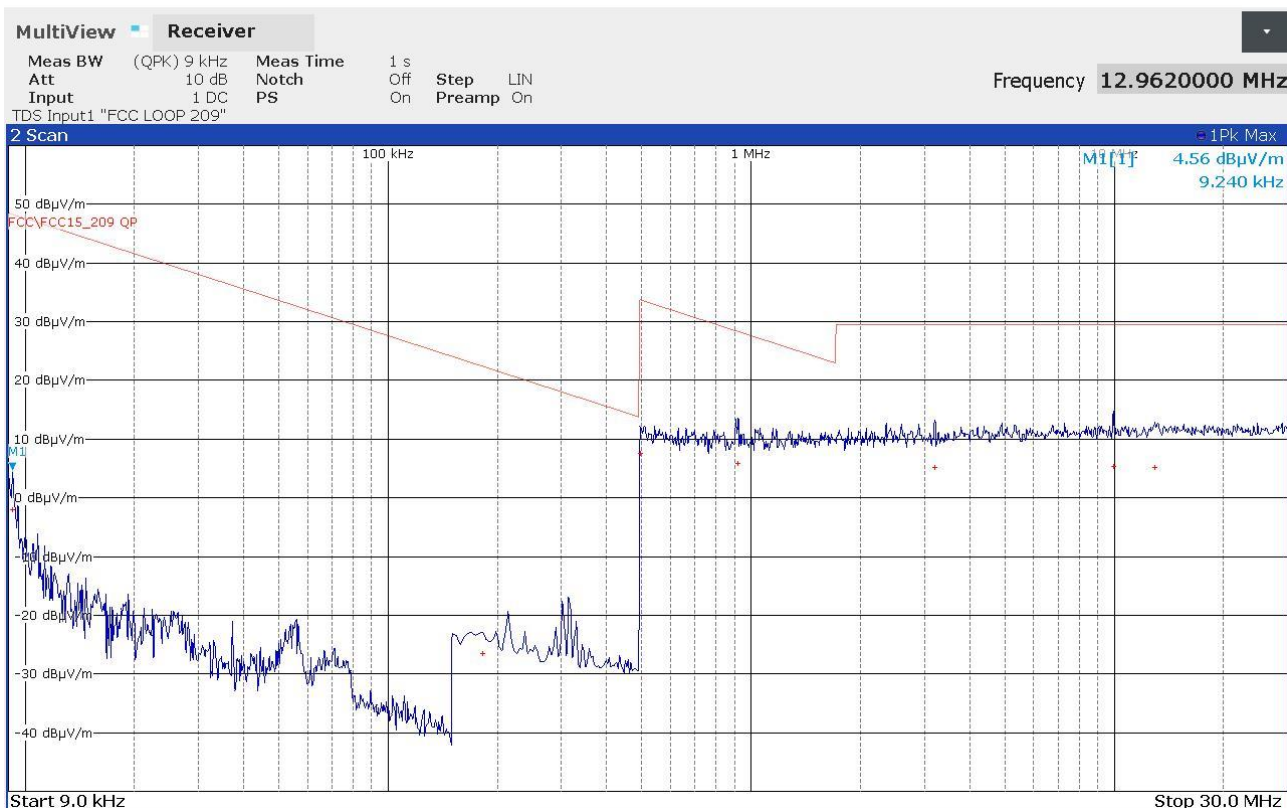
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
33080000	+19,26	-20,74
46600000	+12,75	-27,25
90240000	+15,97	-27,55
132160000	+21,09	-22,43
203760000	+20,60	-22,92
248880000	+27,28	-18,74

24028787_2

Panozzo 24028788



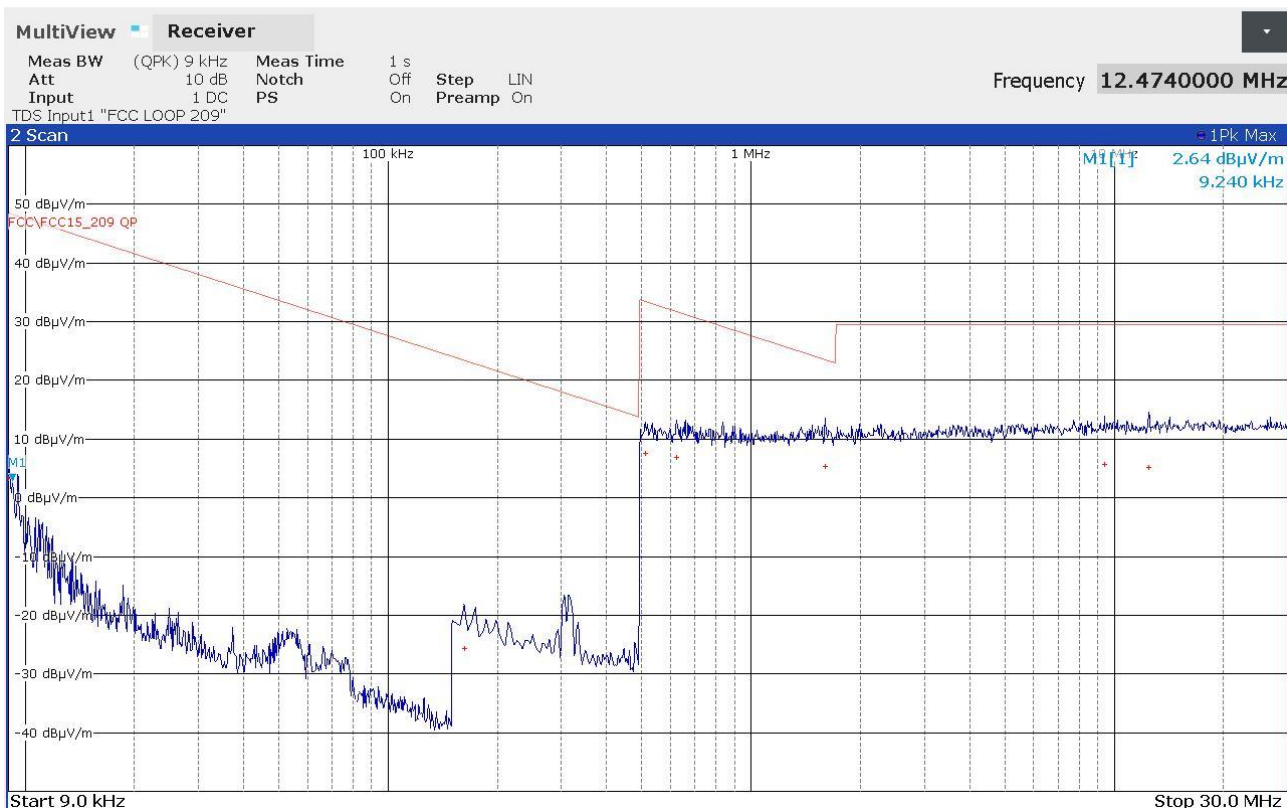
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
9240	-2,09	-50,38
18200	-26,53	-48,93
49400	+7,55	-26,18
92200	+5,81	-22,50
321400	+5,21	-24,33
993400	+5,37	-24,17
1296200	+5,16	-24,38

24028788_2

Panozzo 24028789



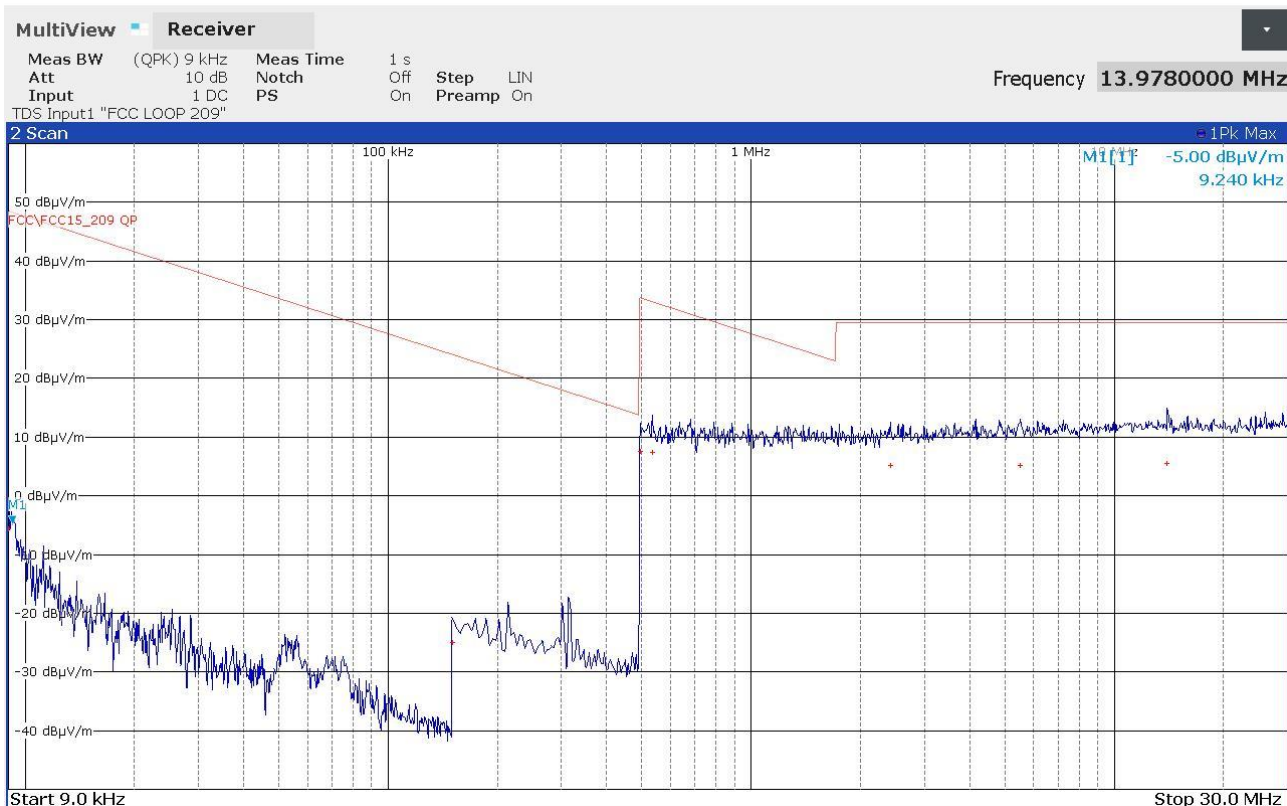
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
9000	+3,31	-45,21
162000	-25,62	-49,03
510000	+7,55	-25,90
622000	+6,97	-24,76
1598000	+5,40	-18,13
9410000	+5,64	-23,90
12474000	+5,22	-24,32

24028789_2

Panozzo 24028790



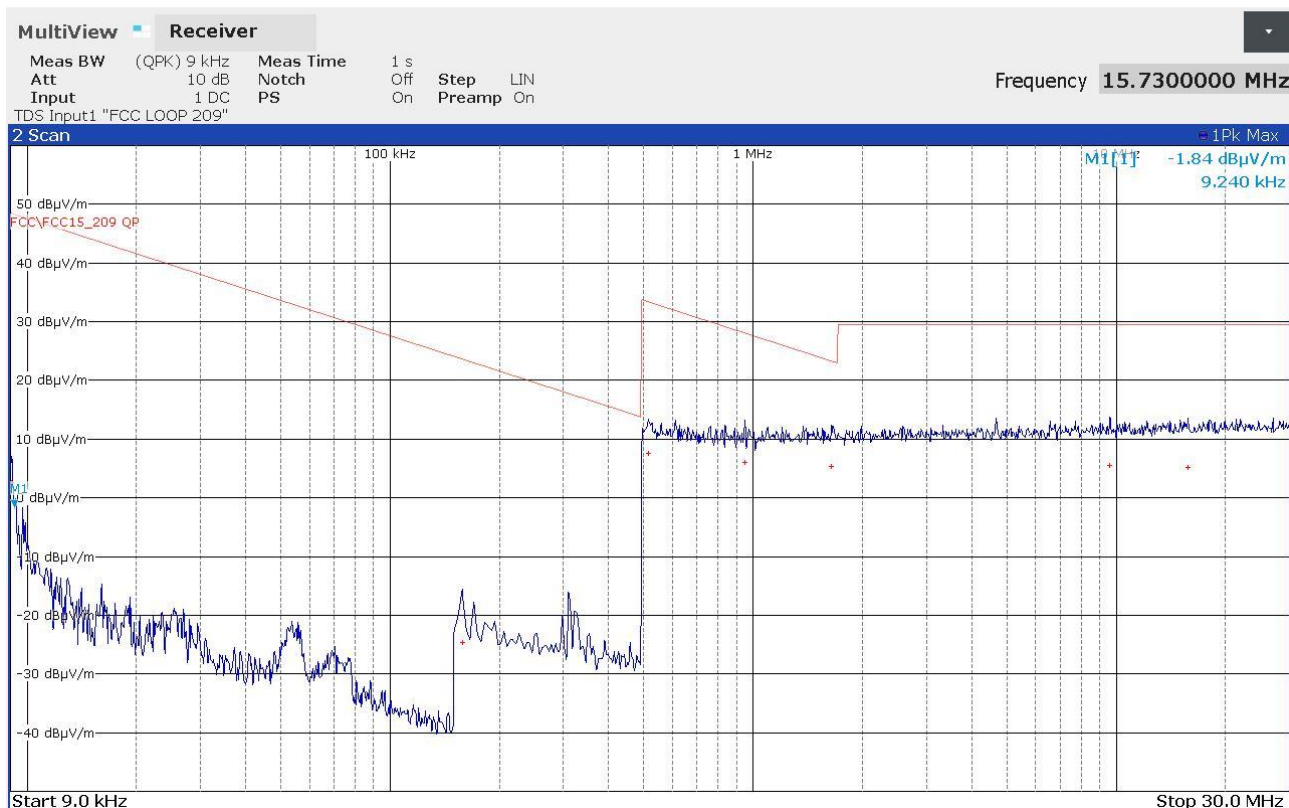
FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
9000	-5,55	-54,07
150000	-24,91	-48,99
494000	+7,64	-26,09
534000	+7,38	-25,67
2422000	+5,15	-24,39
5510000	+5,15	-24,39
13978000	+5,50	-24,04

24028790_2

Panozzo 24028791



FINAL RESULT TABLE

QUASI PEAK

Freq Hz	Lev dBuV/m	Margin dB
9080	+2,67	-45,77
158000	-24,62	-48,25
514000	+7,57	-25,81
950000	+5,98	-22,07
1646000	+5,42	-17,86
9614000	+5,59	-23,95
15730000	+5,22	-24,32

24028791_2

9.4 Peak Output Power

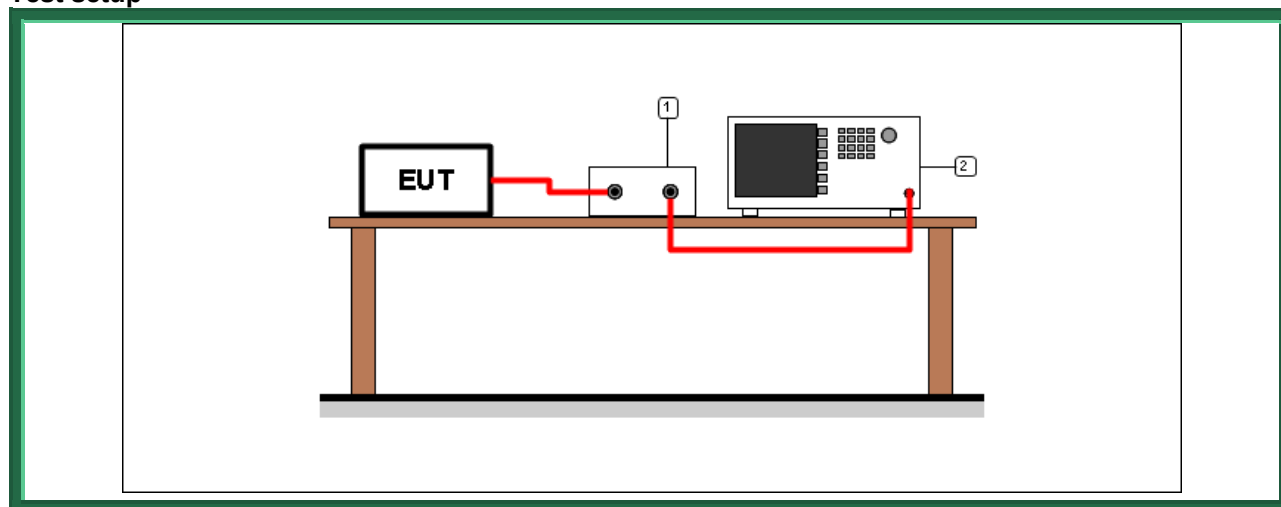
Tested by	C. Panozzo
Test date	02.05.2024
Test location (stand)	Laboratory
Basic standard(s)	ANSI C63.10 cl. 7.8.5 and 11.9.1.1 KDB 558074 D01 15.247 Meas Guidance v05r02 cl. 10 b) 6) i)
Product standard(s)	FCC Rules and Regulation; Titles 47 Part 15.247 (b) (3)
Supplementary test set-up description	--
Supplementary information	--

Acceptance limits

For frequency hopping systems operating in the 2400–2483,5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483,5 MHz band: 0,125 watts.

For frequency hopping systems operating in the 902–928 MHz band: 1 watt for systems employing at least 50 hopping channels; and 0,25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels.

Test setup



Test setup PR002_01							
Nr.	Id. Number	Manufacturer	Model	Serial number	Description	Last calibration date	Calibration expiration
2	CMC S295	Rohde & Schwarz	FSW43	104059	Spectrum Analyzer 43GHz	January 2023	January 2026
1	--	--	--	--	Cable + attenuator	Calibrated before the test	Calibrated before the test

Result – LoRa 125 kHz, spread factor 7

<i>Transmission channel (MHz)</i>	<i>Graphs</i>	<i>Peak Output Power (dBm)</i>	<i>Peak Output Power (mW)</i>	<i>Limit (mW)</i>
904,50	G240287B01	21,17	130,92	1000

Result – LoRa 125 kHz, spread factor 10

<i>Transmission channel (MHz)</i>	<i>Graphs</i>	<i>Peak Output Power (dBm)</i>	<i>Peak Output Power (mW)</i>	<i>Limit (mW)</i>
903,90	G240287B02	21,34	136,14	1000

Result – LoRa 500 kHz, spread factor 7

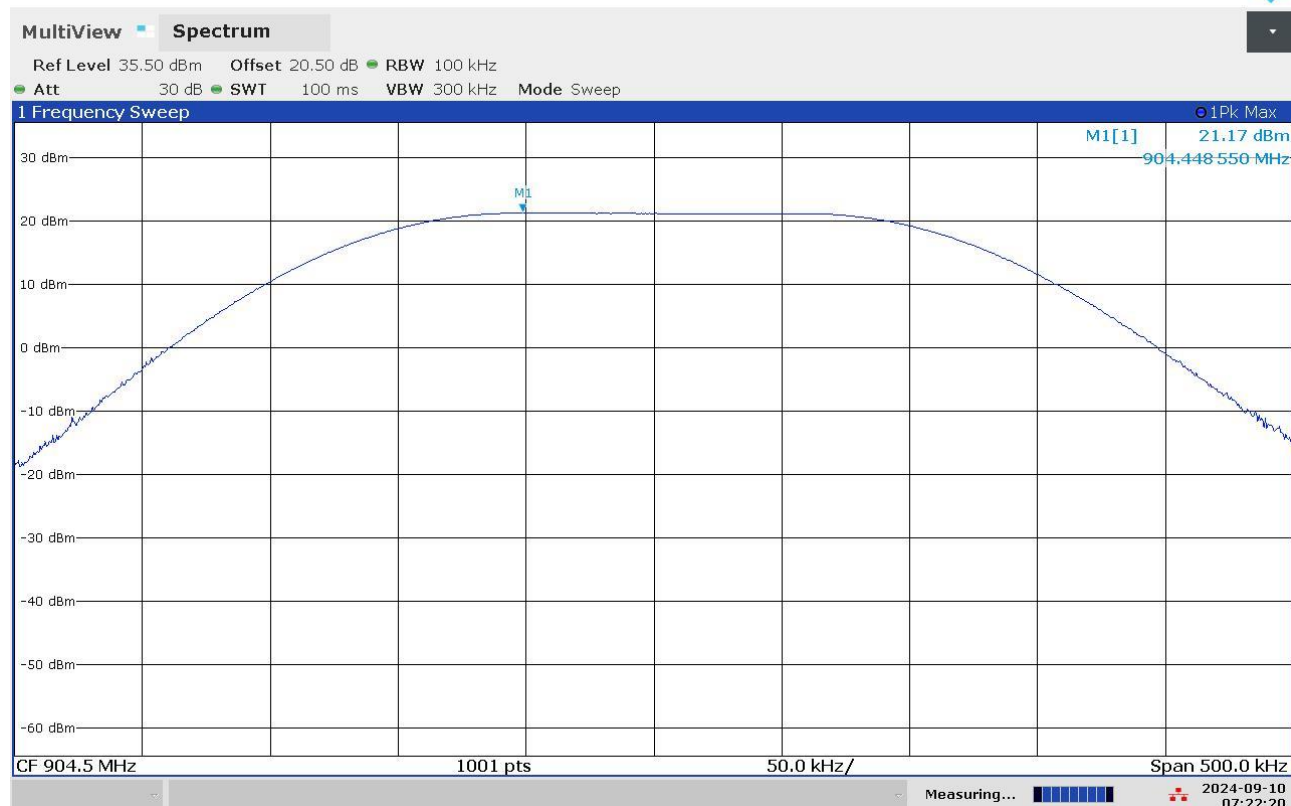
<i>Transmission channel (MHz)</i>	<i>Graphs</i>	<i>Peak Output Power (dBm)</i>	<i>Peak Output Power (mW)</i>	<i>Limit (mW)</i>
927,50	G240287A02	26,76	474,24	1000

Result – LoRa 500 kHz, spread factor 12

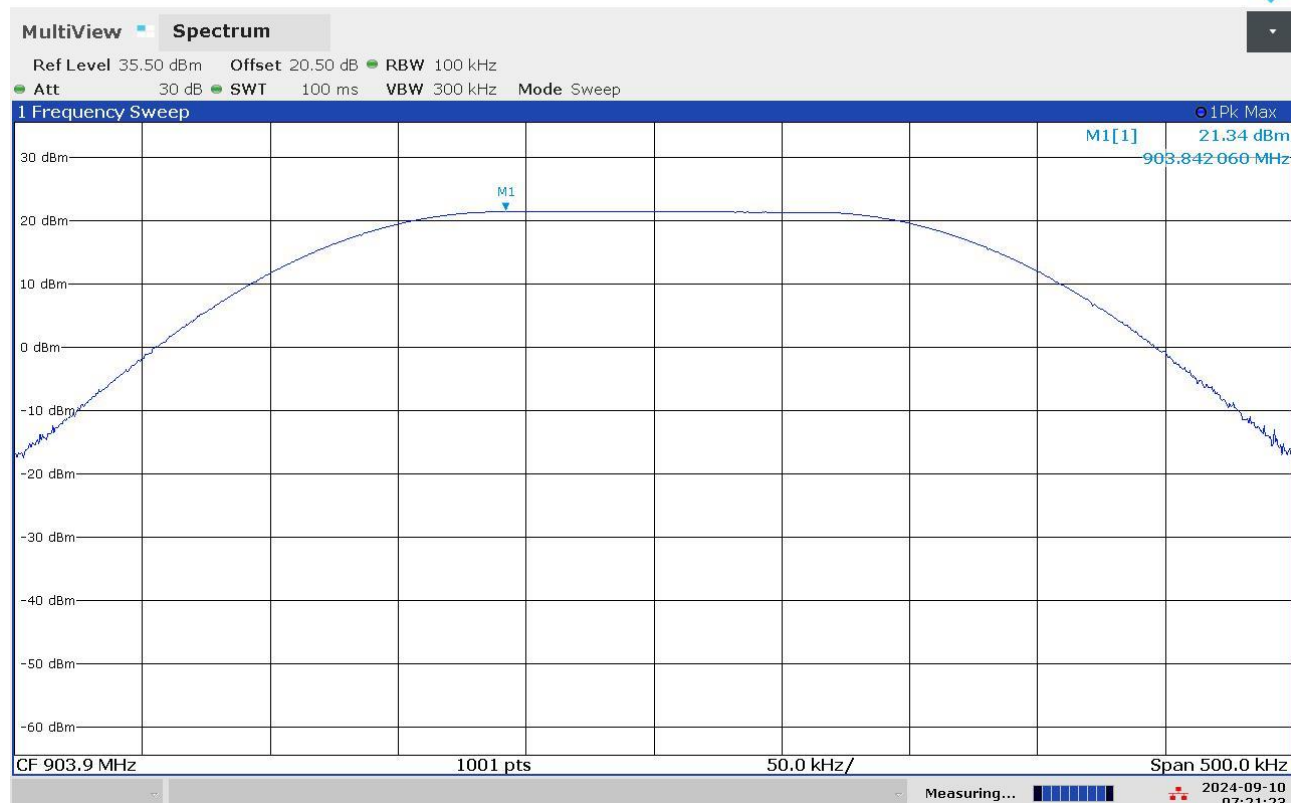
<i>Transmission channel (MHz)</i>	<i>Graphs</i>	<i>Peak Output Power (dBm)</i>	<i>Peak Output Power (mW)</i>	<i>Limit (mW)</i>
927,50	G240287A03	26,76	474,24	1000

Graphs

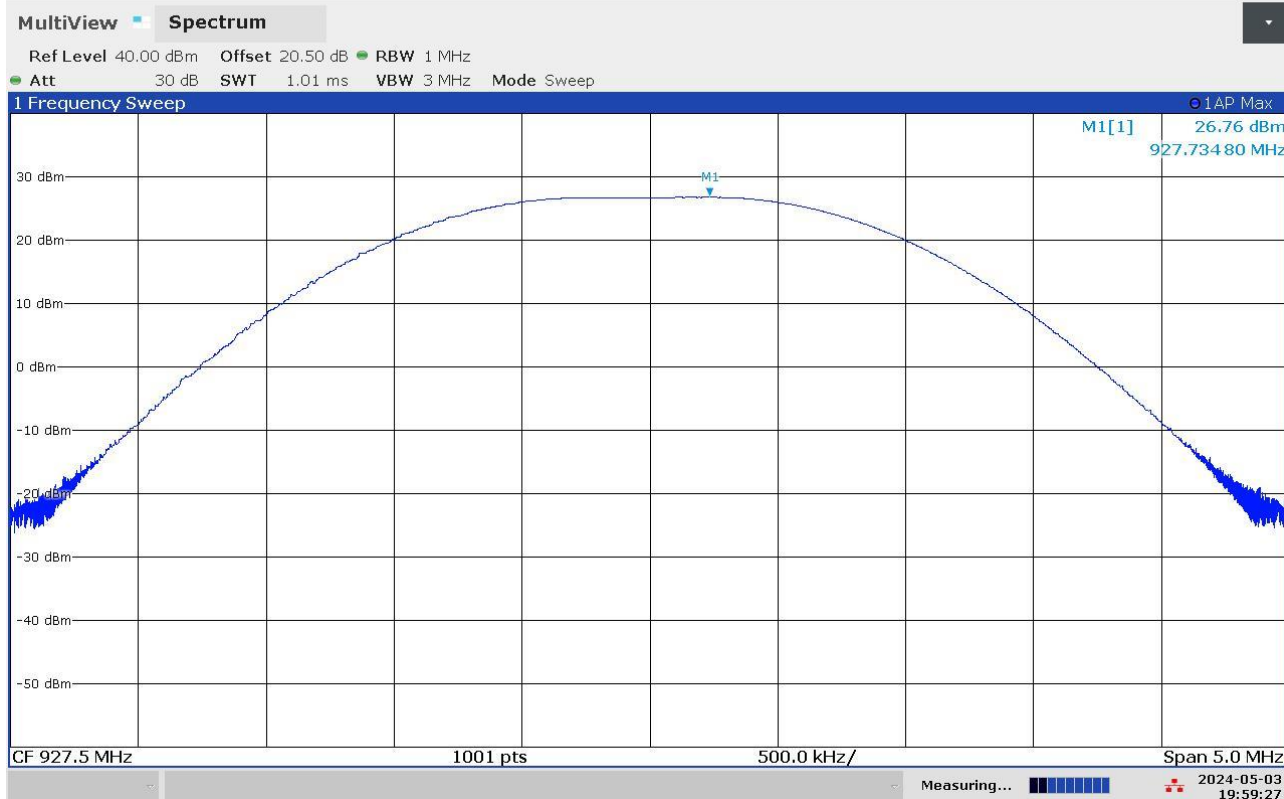
Panozzo 240287B01



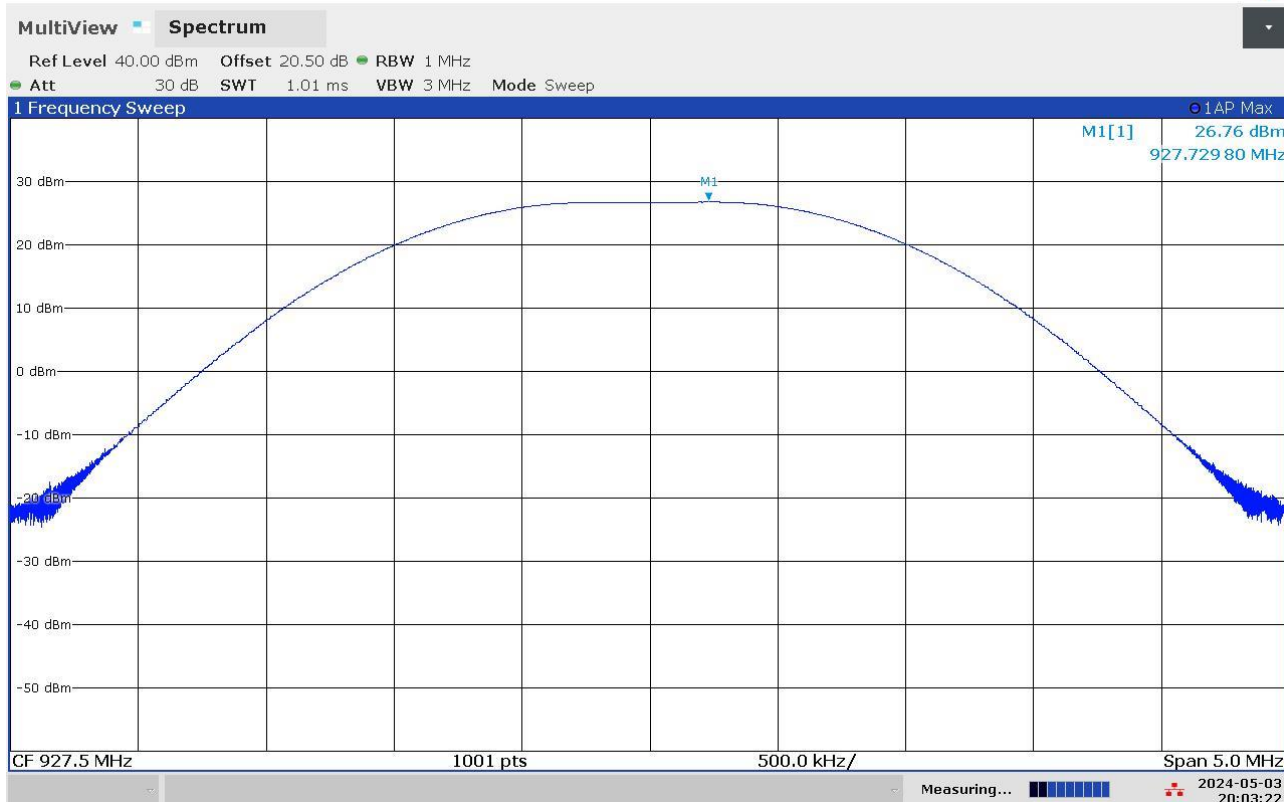
Panozzo 240287B02



Panozzo 240287A02



Panozzo 240287A03



Attachment 1

Measurement uncertainty

Test	Test Setup	Expanded uncertainty			Note
Conducted emission CISPR 16 LISN 50uH 0,009-0,0150 MHz	PE001_01			3,6 dB	1
Conducted emission CISPR 16 LISN 50uH 0,150-30,0 MHz	PE001_01			2,9 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			2,5 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_X1			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_X1			4,1 dB	1
Radiated Emission CISPR 16 Bicon. Ant. 30-300 MHz	PE004_X2			4,7 dB	1
Radiated Emission CISPR 16 LogP. Ant. 300-1000 MHz	PE004_X3			4,6 dB	1
Radiated Emission CISPR 16 Horn Ant. 1-18 GHz	PE004_X4			4,7 dB	1
Human Exposure to electromagnetic fields	PE005_01			14,2 %	1
Harmonics	PE006_01	10 mA	+	2,9 %	1
Flicker	PE007_01			3,40 %	1
Radiated Immunity 80 MHz - 6 GHz	PE102_XX	2,26 dB		0,89 V/m a 3V/m	1
Conducted Immunity 0,15 - 230 MHz	PE105_XX	1,26 dB		0,47 V a 3V	1
AC Magnetic field	PE106_01	1,55 %		0,15 A/m a 10A/m	1
Pulse Magnetic field	PE107_01	6,21 %		18,6 A/m a 300A/m	1
Dumped Magnetic field	PE108_01	6,21 %		1,86 A/m a 30A/m	1
Common mode conducted immunity	PE112_01	2,11 %		0,21 V a 10V	1

Attachment 1

Test	Test Setup	Expanded uncertainty	Note
Power/Spurious 9kHz-30MHz	PR001_X1	4,1 dB	1
Power/Spurious ERP 30-1000MHz d=10m/3m	PR001_X2+X3	4,8 dB	1
Misura della potenza EIRP 1-18GHz d=3m	PR001_X4+X5	4,7 dB	1
Misura della potenza EIRP 18-40GHz d=3m	PR001_X6	5,1 dB	1
Frequency error	PR002_01+02	$< 1 \times 10^{-7}$	1
Timing zero span (1001pts.)	PR002_01+02	0,2 % SWT	1
Modulation bandwidth	PR002_01+02	$< 1 \times 10^{-7}$	1
Conducted RF power and spurious emission	PR002_01+02	1,1 dB	1
Adjacent channel power	PR002_01+02	1,1 dB	1
Blocking	PR002_01+02	1,1 dB	1

Test	Test Setup	Expanded uncertainty	Note
Electrostatic discharge immunity test	PE101_0X		2
Electrical fast transients / burst immunity test	PE103_0X		2
Surge immunity test	PE104_0X		2
Short interruption immunity test	PE109_01		2
Ring Wave immunity test	PE110_01		2
Low frequency immunity test	PE111_01		2
Dumped Oscillatory immunity test	PE113_01		2
Rev_24_01 date 03/02/2024			

Note 1:

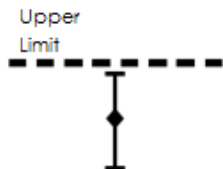
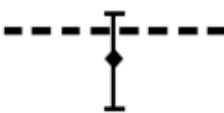
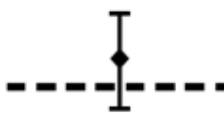
The expanded uncertainty reported according to the document EA-4-02 is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of $p = 95\%$

Note 2:

It has been demonstrated that the used test equipment meets the specified requirements in the standard with at least a 95% confidence, covering factor $k=2$

Attachment 1

Judgement of compliance

Case 1	Case 2	Case 3	Case 4
 The sample complies with the requirements. The measurement results is within the specification limit when the measurement uncertainty is taken into account.	 The sample complies with the requirements. It is not possible to state compliance using a 95% coverage probability for the expanded uncertainty although the measurement result is below the limit.	 The sample does not comply with the requirements. It is not possible to state compliance using a 95% coverage probability for the expanded uncertainty also the measurement result is upper the limit.	 The sample does not comply with the requirements. The measurement results is outside the specification limit when the measurement uncertainty is taken into account.

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

Quality manual references – Internal procedure

Internal Procedure PM001 rev. 4.0 (Quality Manual)	Measure procedure
Internal Procedure INC_M rev. 10.0 (Quality Manual)	Measurement uncertainty calculation