



## TEST REPORT

### Nr. R22130001

### Federal Communication Commission (FCC)

<b>Report Reference No.</b> .....	R22130001
Date of issue: .....	11.10.2022
Total number pages: .....	33
<b>Customer name</b> .....	Teleco Automation S.r.l.
Address .....	Via Calmaggione, 10/4 – 31100 Treviso (TV) – Italy
<b>Test specification:</b>	
Standards .....	FCC Rules & Regulations, Title 47:2021 Part 15 paragraph(s): 203, 204, 205, 207, 209, 215 and 249
Non-standard test method .....	N/A
<b>Test Report Form No.</b> .....	15-249_DEKRA
Test Report Form(s) Originator ..	DEKRA Testing and Certification S.r.l.
Master TRF .....	2022-10
<b>General disclaimer:</b>	
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 DEKRA Testing and Certification S.r.l.	
<b>(*) Test item description</b> .....	Transmitter MIO
(*) Trademark .....	Teleco Automation
(*) Manufacturer .....	Teleco Automation S.r.l.
(*) Model / Type reference .....	TVMIO916
(*) FCC ID .....	P59TVMIO916
(*) Rating(s) .....	3 Vdc from battery
<b>Report</b>	
Tested by (name + signature) .....	M. Segalla 
Approved by (name + signature) .....	F. Marenda 

(\*) information provided by the customer

**1 Summary**

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<b>2 Reference standard</b>	
FCC Rules and Regulation Title 47 part 15:2021	--
<b>3 List of attachments</b>	
Attachment 1: Instruments list, measurement uncertainty, judgement of compliance and quality manual references	
<b>4 Deviation(s) from test specification</b>	
None	
<b>5 Testing location</b>	
DEKRA Testing and Certification S.r.l. Via della Fisica, 20 – 36016 Thiene (VI) – Italy Test site facility's FCC registration number: 182474	

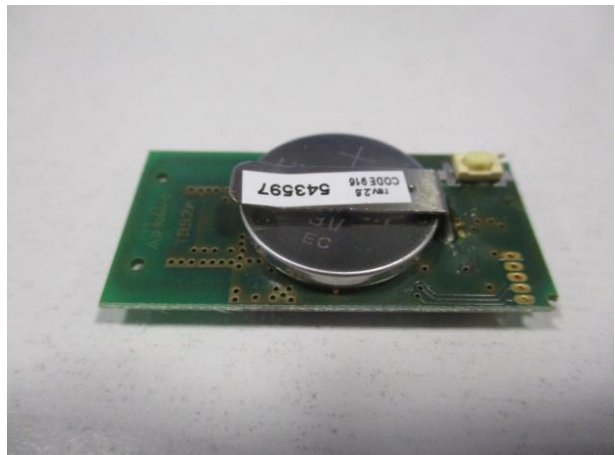
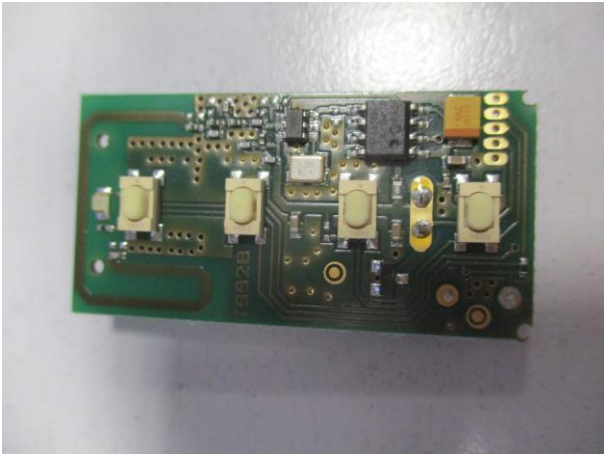
<i>Revision index</i>	<i>Date</i>	<i>Change history</i>
1.0	11.10.2022	--

<b>Testing and sampling:</b>	
Date of receipt of test item.....	10.06.2022
Testing start date .....	19.09.2022
Testing end date .....	19.09.2022
Sampling procedure.....	Equipment used for testing was picked up by the customer
Internal identification.....	Adhesive label with the product number P220607
<b>General remarks:</b>	
<p>This report shall not be reproduced, except in full, without the written approval of DEKRA Testing and Certification S.r.l.</p> <p>The test results presented in this report relate only to the object tested.</p> <p>“(see appended table)”: refers to a table appended to the report.</p> <p>Throughout this report a comma is used as the decimal separator.</p>	
<b>Possible test case verdicts:</b>	
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)
<b>Definition of symbols used in this test report:</b>	
<input checked="" type="checkbox"/> Indicates that the listed condition, standard or equipment is applicable for this report. <input type="checkbox"/> 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 .....	Transmitter unit						
Model Number .....	TVMIO916						
FCC ID .....	P59TVMIO916						
Serial Number .....	--						
Brand name .....	Teleco Automation						
Frequency band .....	902 – 928 MHz						
Nominal frequency .....	Fc: 916 MHz						
Test power supply .....		Voltage and Frequency	Reference poles				
			N	L1	L2	L3	PE
	<input type="checkbox"/>	AC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	AC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	DC: 3 V from battery					<input type="checkbox"/>
Software version .....	2.6						
Type of equipment .....	<input checked="" type="checkbox"/> Transmitter unit <input type="checkbox"/> Receiver unit						
Type of station .....	<input type="checkbox"/> Portable station <input checked="" type="checkbox"/> Mobile station						
Test arrangements of EUT .....	<i>Intended operational arrangement(s) of EUT</i>			<i>Test arrangement (see basic standard)</i>			
	<input type="checkbox"/>	Table-top only			Table-top		
	<input type="checkbox"/>	Floor-standing only			Floor-standing		
	<input type="checkbox"/>	Can be floor-standing or table-top			Table-top		
	<input type="checkbox"/>	Rack mounted			In rack or table-top		
	<input checked="" type="checkbox"/>	Other, for example wall mounted, ceiling mounted, handheld, body worn			Table-top		
Operating modes .....	No.	Operating mode of test item					
	1	EUT in continuous transmission at maximum power					
Declination of responsibility .....	Information relating to the description of the sample, components list and software/hardware version (if reported) are provided by the customer. DEKRA Testing and Certification S.r.l. cannot be considered responsible for these information, for any other document sent by the customer and for any difference between the software version present in the tested sample and that present in the object intended for final sale.  In some cases, the software in the tested sample is in a version dedicated exclusively to the test, and therefore does not represent the software installed in the final version of the product.						

6.1 Photos of the test item





**7 Verdict summary section**

<b>FCC Rules &amp; Regulations, Title 47:2020</b>			
<b>Part 15 paragraph(s): 203, 204, 205, 207, 209, 215 and 249</b>			
<b>Clause</b>	<b>Requirement – Test case</b>	<b>Basic standard</b>	<b>Verdict</b>
Part 15.203	Antenna requirements	ANSI C63.10	<b>P</b>
Part 15.207	Conducted emissions	ANSI C63.10	<b>N/A (+)</b>
Part 15.209	Radiated emissions and spurious emission	ANSI C63.10	<b>P</b>
Part 15.209 and 15.249	Peak Output Power	ANSI C63.10	<b>P</b>
Part 15.215	20 dB Bandwidth	ANSI C63.10	<b>P</b>
Part 15.249	Band edge	ANSI C63.10	<b>P</b>

(+) Devices which only employ battery power. See FCC Part 15.207 (c)



<b>Normative references</b>	
<b>Reference no.</b>	<b>Description</b>
FCC Rules and Regulation Title 47 part 15:2021	--
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:		
	<b>Temperature</b>	<b>Humidity</b>	<b>Atmospheric pressure</b>
	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 .....	M. Segalla	
Test date .....	19.09.2022	
Reference standards .....	FCC Rules and Regulation; Titles 47 Part. 15.203 and 15.204	
Test specification .....	<p>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</p>	
Antenna type.....	<input checked="" type="checkbox"/>	Integral antenna
	<input type="checkbox"/>	External antenna
Antenna gain.....	-5,20 dBi	
External R.F. power amplifier .....	Not Present	

## 9.2 Radiated emissions and spurious emission

Tested by .....	M. Segalla	
Test date .....	19.09.2022	
Test location (stand) .....	Semi-anechoic chamber (CMC A070)	
Reference standards .....	FCC Rules and Regulation; Titles 47 Part. 15.209 and 15.249 (a) and (d) ANSI C63.10 cl. 6.3, 6.4, 6.5 and 6.6	
Test set-up description .....	<input checked="" type="checkbox"/>	Table top equipment set-up (80 cm above the reference ground plane)
	<input type="checkbox"/>	Floor standing equipment set-up (insulating material up to 12 mm thick)
	<input type="checkbox"/>	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

<b>Acceptance limits for emissions in restricted frequency bands (<math>f &lt; 1000</math> MHz)</b>		
Frequency range (MHz)	Test distance (m)	Limits [dB( $\mu$ V/m)]
0,009 to 0,490	300	48,5 to 13,8
0,490 to 1,705	30	33,8 to 22,9
1,705 to 30	30	29,5
30 to 88	3	40
88 to 216	3	43,5
216 to 960	3	46,0
960 to 1000	3	54

**Remarks:** The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz and 110–490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector. The results have been extrapolated to the specified distance using an extrapolation factor

<b>Acceptance limits for emissions in restricted frequency bands (<math>f \geq 1000</math> MHz)</b>			
Frequency (MHz)	Test distance (m)	AV limits [dB( $\mu$ V/m)]	Peak limits [dB( $\mu$ V/m)]
> 1000	3	54	74

The restricted frequency bands are listed in the following table

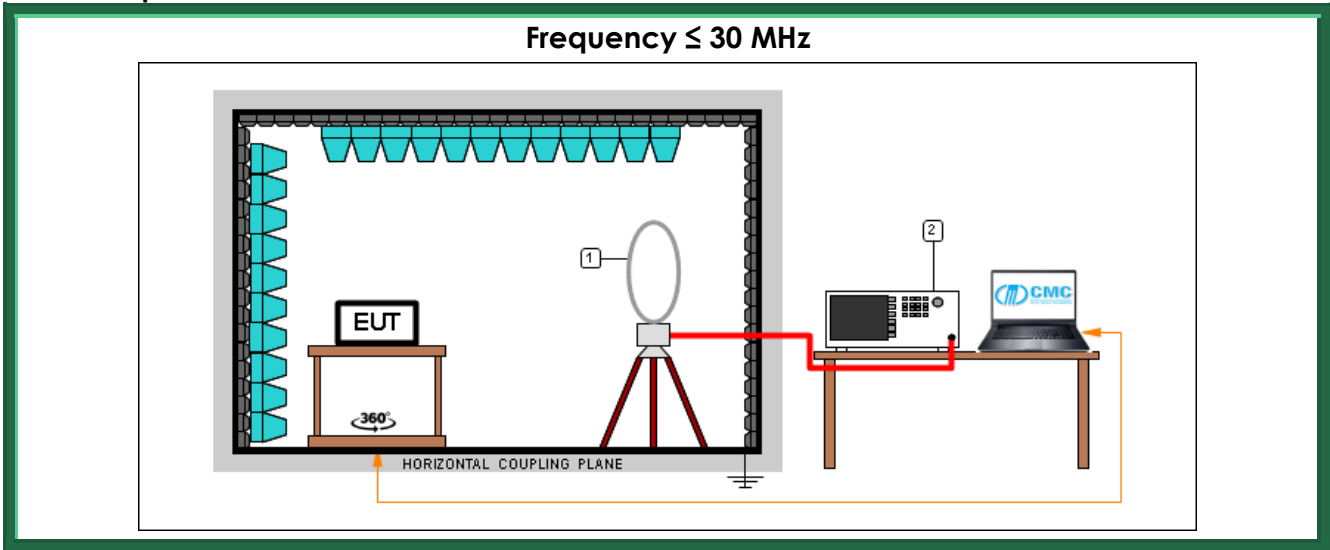
<i>MHz</i>	<i>MHz</i>	<i>MHz</i>	<i>GHz</i>
0,090 – 0,110	16,42 – 16,423	399,9 – 410	4,5 – 5,15
0,495 – 0,505	16,69475 – 16,69525	608 – 614	5,35 – 5,46
2,1735 – 2,1905	16,80425 – 16,80475	960 – 1240	7,25 – 7,75
4,125 – 4,128	25,5 – 25,67	1300 – 1427	8,025 – 8,5
4,17725 – 4,17775	37,5 – 38,25	1435 – 1626,5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

Field strength of harmonics: 500  $\mu\text{V/m}$  (54 dB( $\mu\text{V/m}$ )).

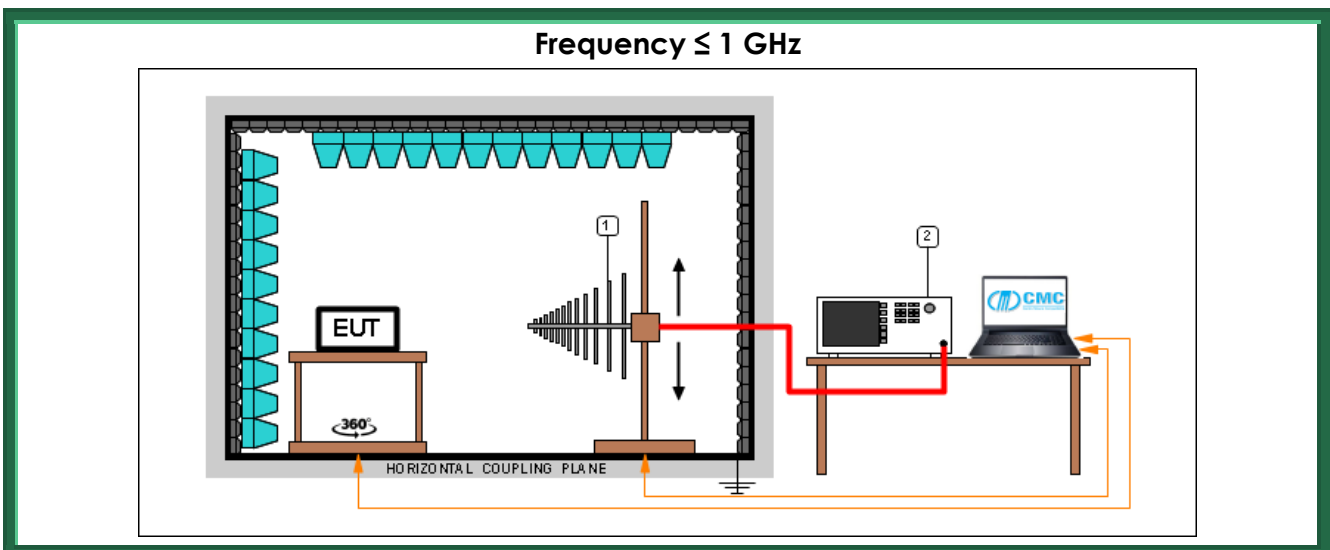
Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

Test setup



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

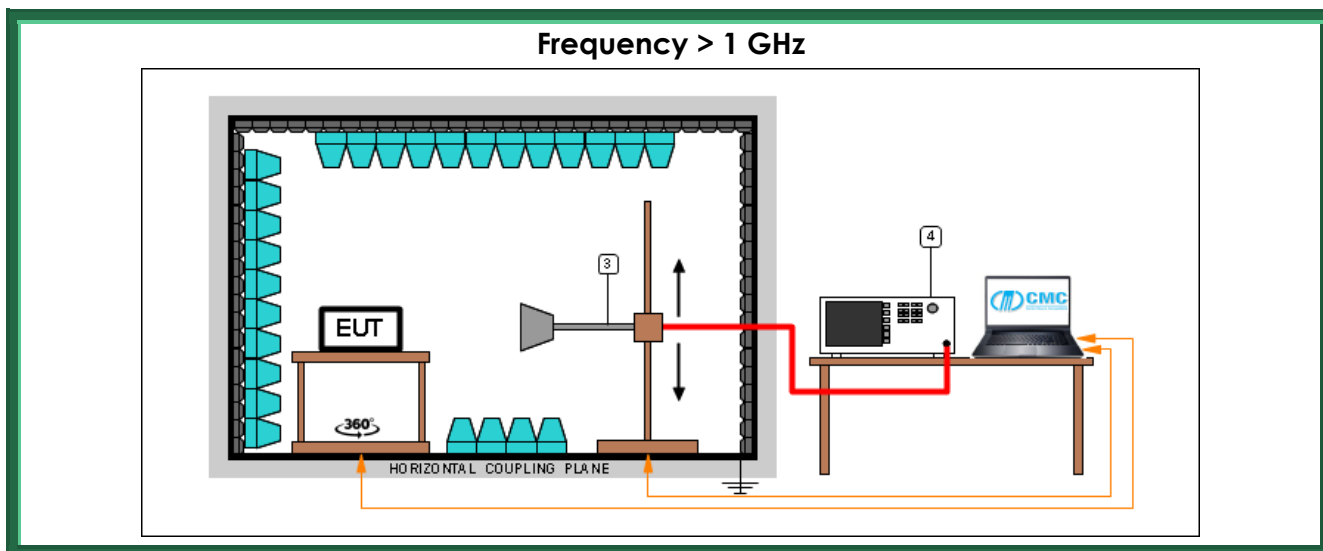


Test setup PE004\_02

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



*Test setup PE004\_04*

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

*Test setup PE004\_05*

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

### Result

Polarization	Frequency Range (MHz)	Graphs	Remarks	Result
V	30 – 300	G22130006	--	P
H	30 – 300	G22130007	--	P
H	300 – 1000	G22130008	--	P
V	300 – 1000	G22130009	--	P
V	1000 – 10000	G22130010	--	P
H	1000 – 10000	G22130011	--	P
Loop	0,009 – 30	G22130012	--	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  $40\log(\text{test distance}/10)$  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  $20\log(\text{test distance}/10)$  based on the measuring distance provided by the standard.

Peaks above the limits are caused by the nominal transmitting frequencies

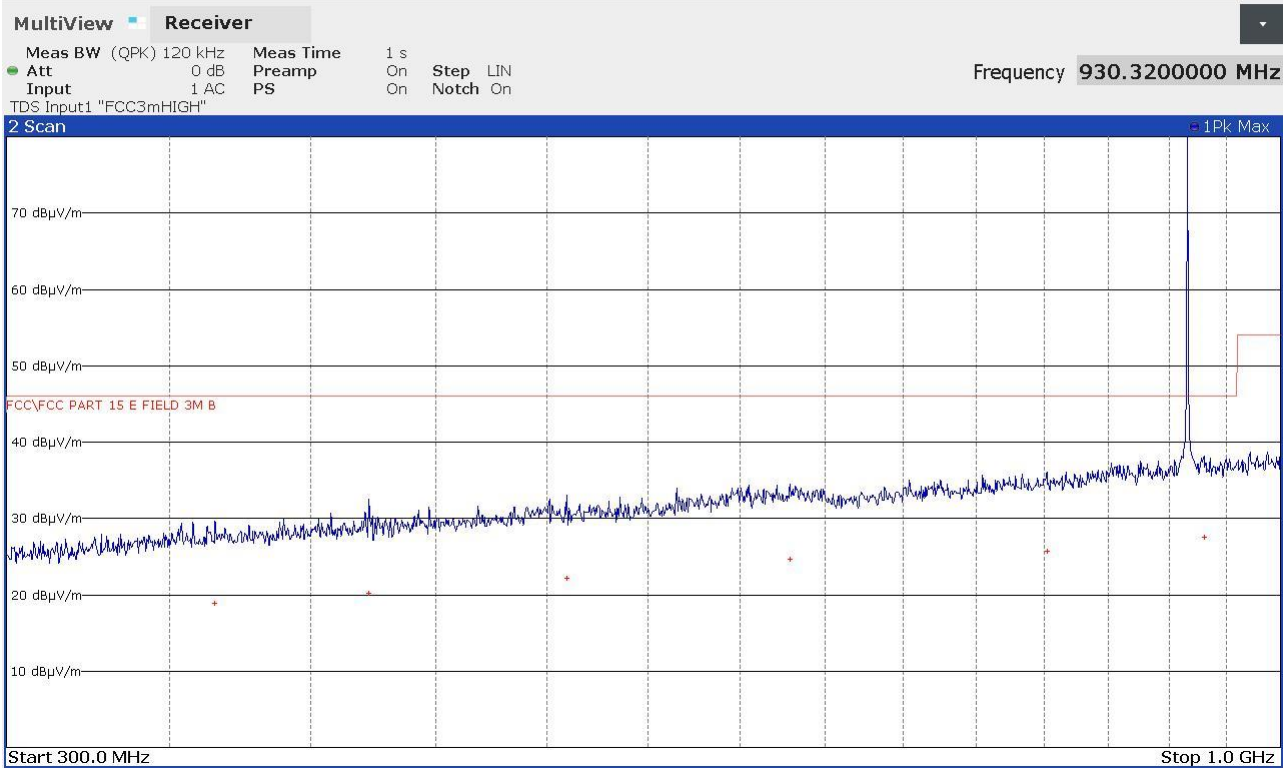
### Graphs Legend

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

Segalla 22130006



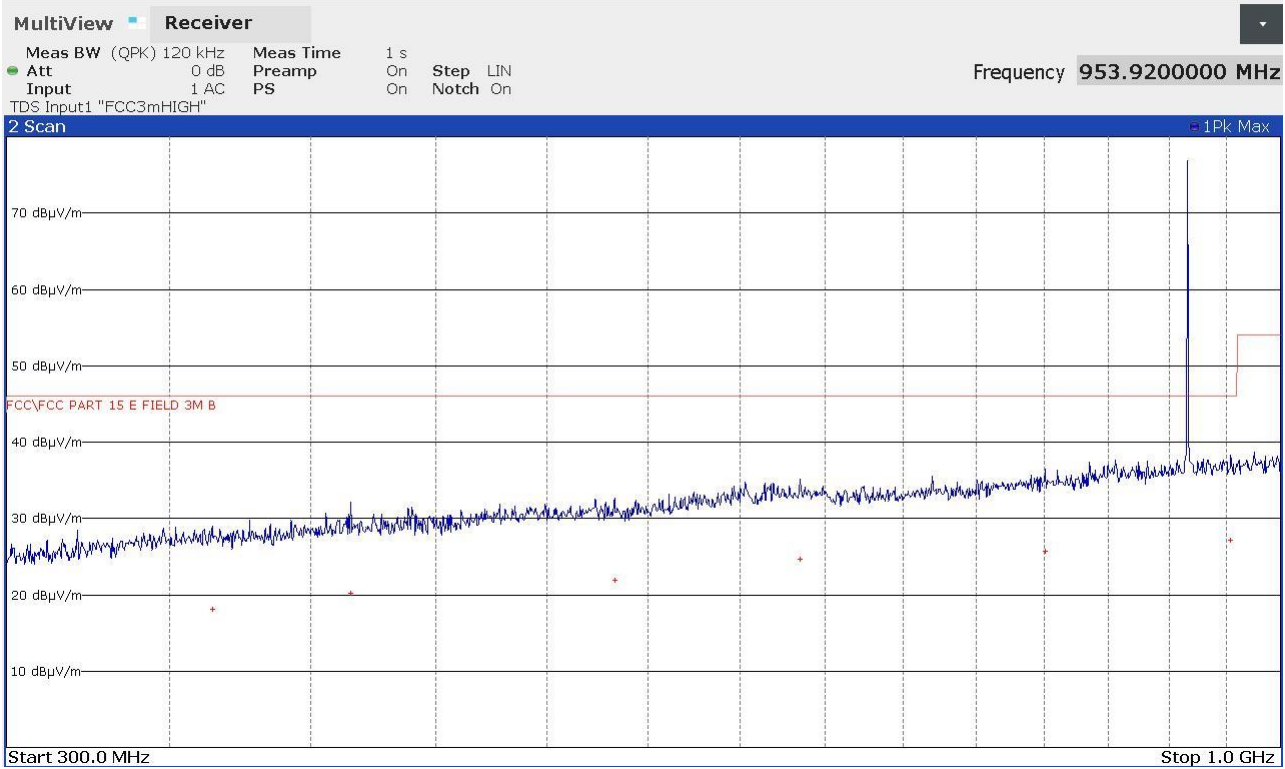
### FINAL RESULT TABLE

QUASI PEAK		
Freq Hz	Lev dBuV/m	Margin dB
365360000	+18,93	-27,09
422520000	+20,15	-25,87
509400000	+22,21	-23,81
628920000	+24,66	-21,36
801880000	+25,73	-20,29
930320000	+27,52	-18,50

22130006\_2



Segalla 22130007

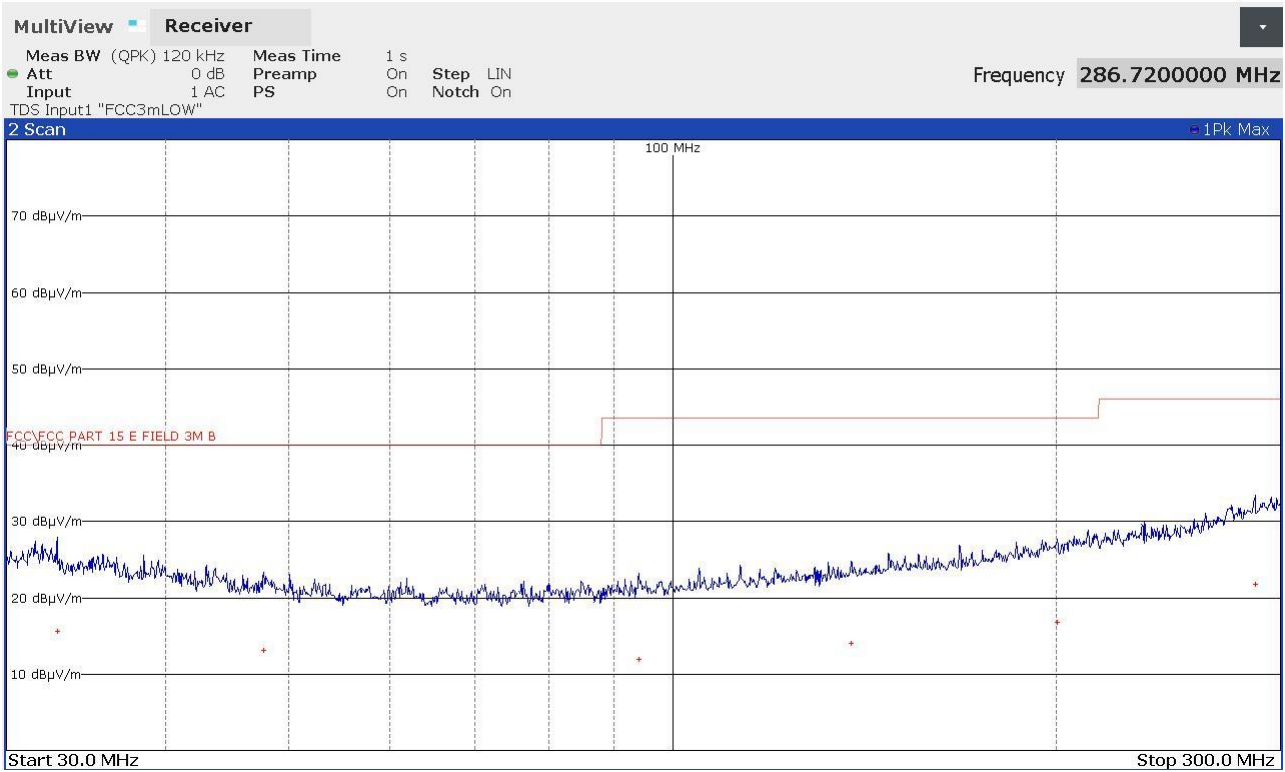


FINAL RESULT TABLE

QUASI PEAK		
Freq Hz	Lev dBuV/m	Margin dB
364400000	+18,08	-27,94
415360000	+20,16	-25,86
532960000	+21,87	-24,15
635080000	+24,60	-21,42
800920000	+25,72	-20,30
953920000	+27,21	-18,81

22130007\_2

Segalla 22130008

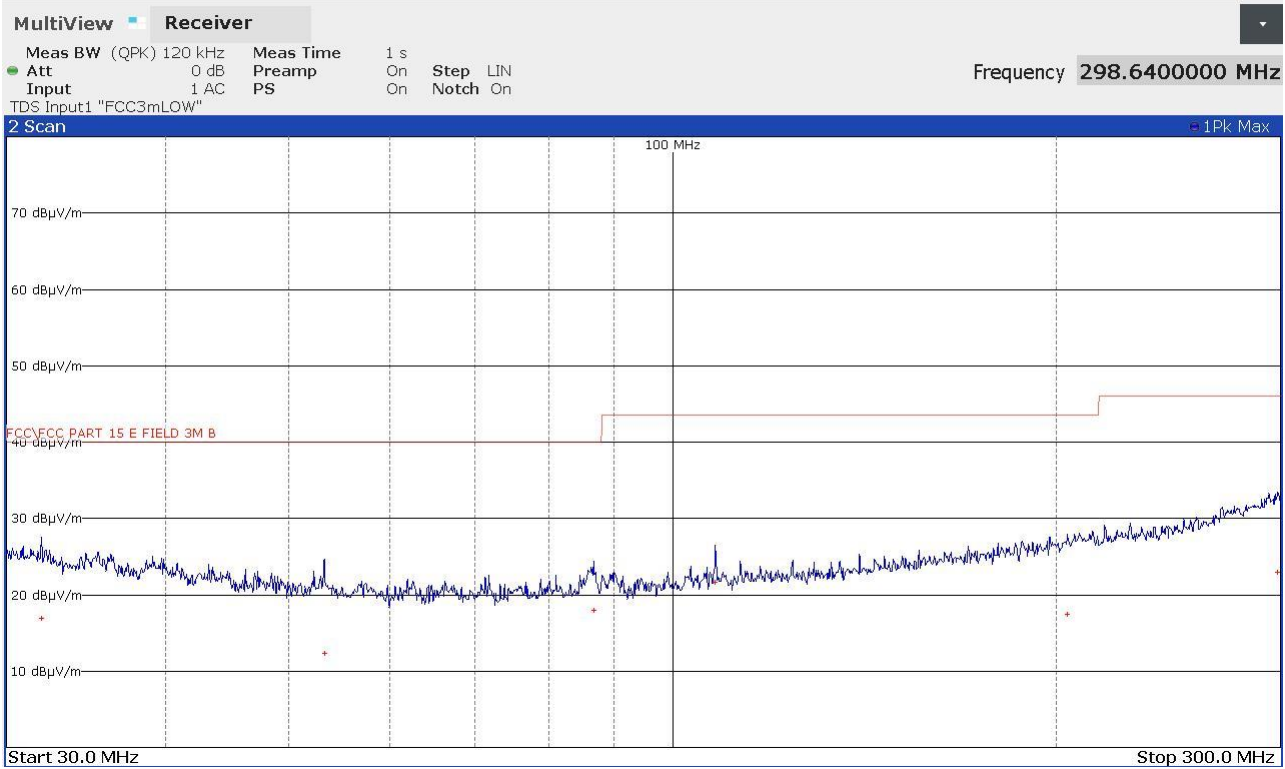


**FINAL RESULT TABLE**

QUASI PEAK		
Freq Hz	Lev dBuV/m	Margin dB
32880000	+15,56	-24,44
47720000	+13,11	-26,89
94040000	+11,98	-31,54
138200000	+13,98	-29,54
200520000	+16,82	-26,70
286720000	+21,80	-24,22

22130008\_2

Segalla 22130009

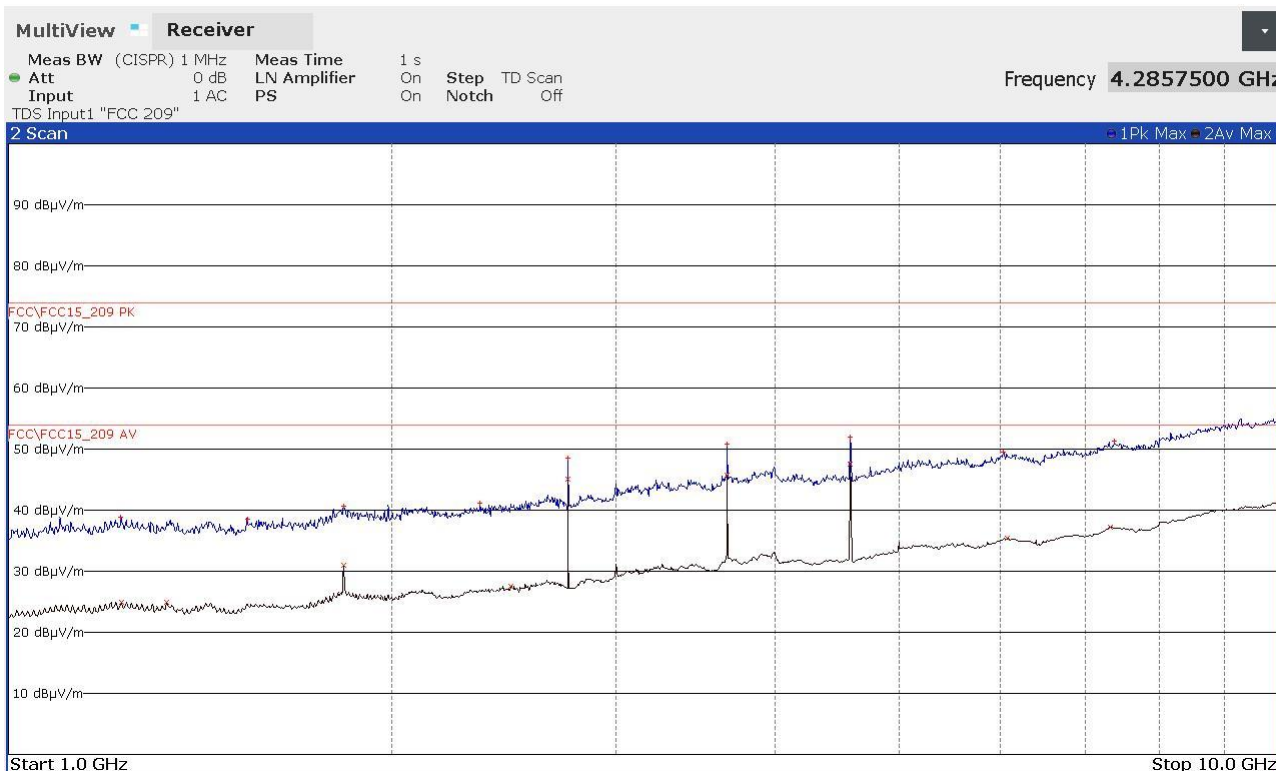


FINAL RESULT TABLE

QUASI PEAK		
Freq Hz	Lev dBuV/m	Margin dB
31960000	+16,93	-23,07
53280000	+12,31	-27,69
86720000	+17,99	-22,01
108000000	+21,64	-21,88
204160000	+17,40	-26,12
298640000	+22,92	-23,10

22130009\_2

Segalla 22130010

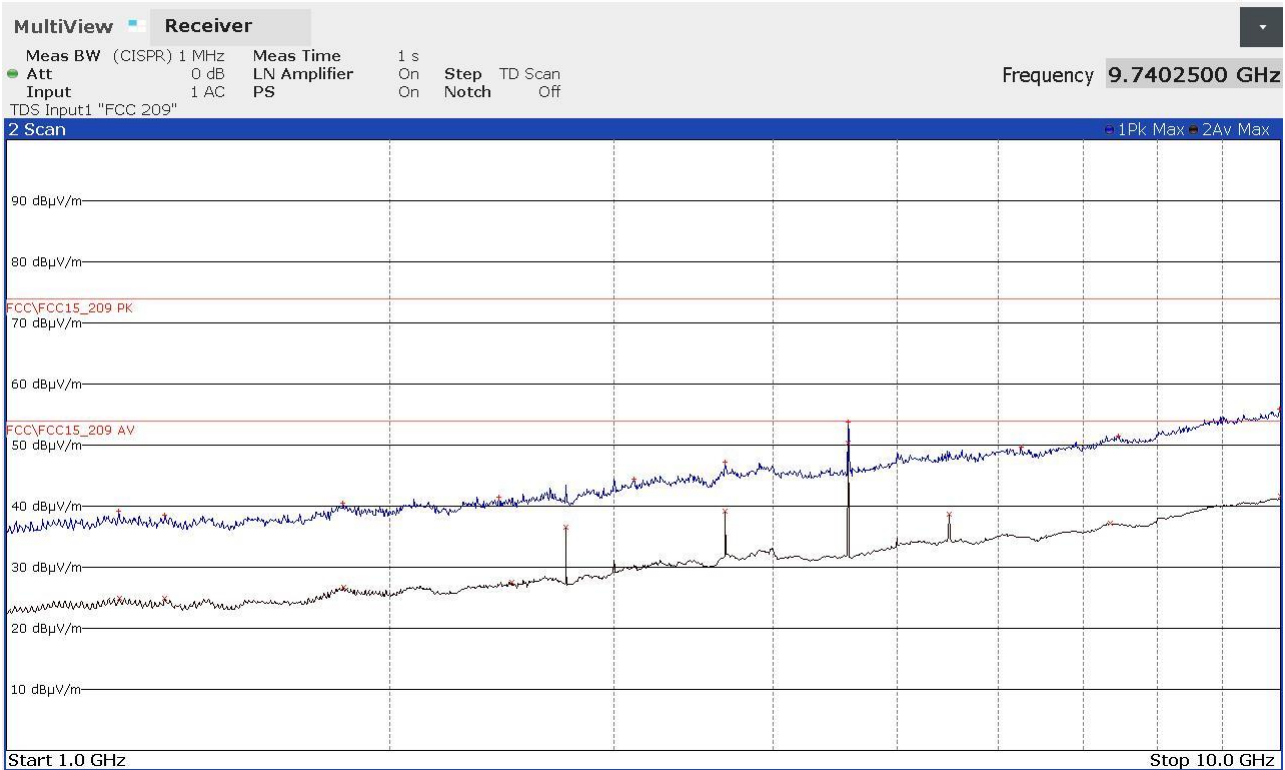


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1225500000	+38,91	-35,07	1225750000	+24,95	-29,03
1539500000	+38,50	-35,48	1331750000	+24,87	-29,11
1832000000	+40,72	-33,26	1832000000	+30,96	-23,02
2344750000	+41,16	-32,82	2481250000	+27,57	-26,41
2748250000	+48,51	-25,47	2748000000	+45,11	-8,87
3664000000	+50,83	-23,15	3664000000	+45,72	-8,26
4580000000	+52,04	-21,94	4580000000	+47,62	-6,36
6037000000	+49,43	-24,55	6084250000	+35,39	-18,59
7384000000	+51,23	-22,75	7328000000	+37,27	-16,71
9996500000	+55,01	-18,97	9999750000	+41,69	-12,29

22130010\_2

Segalla 22130011

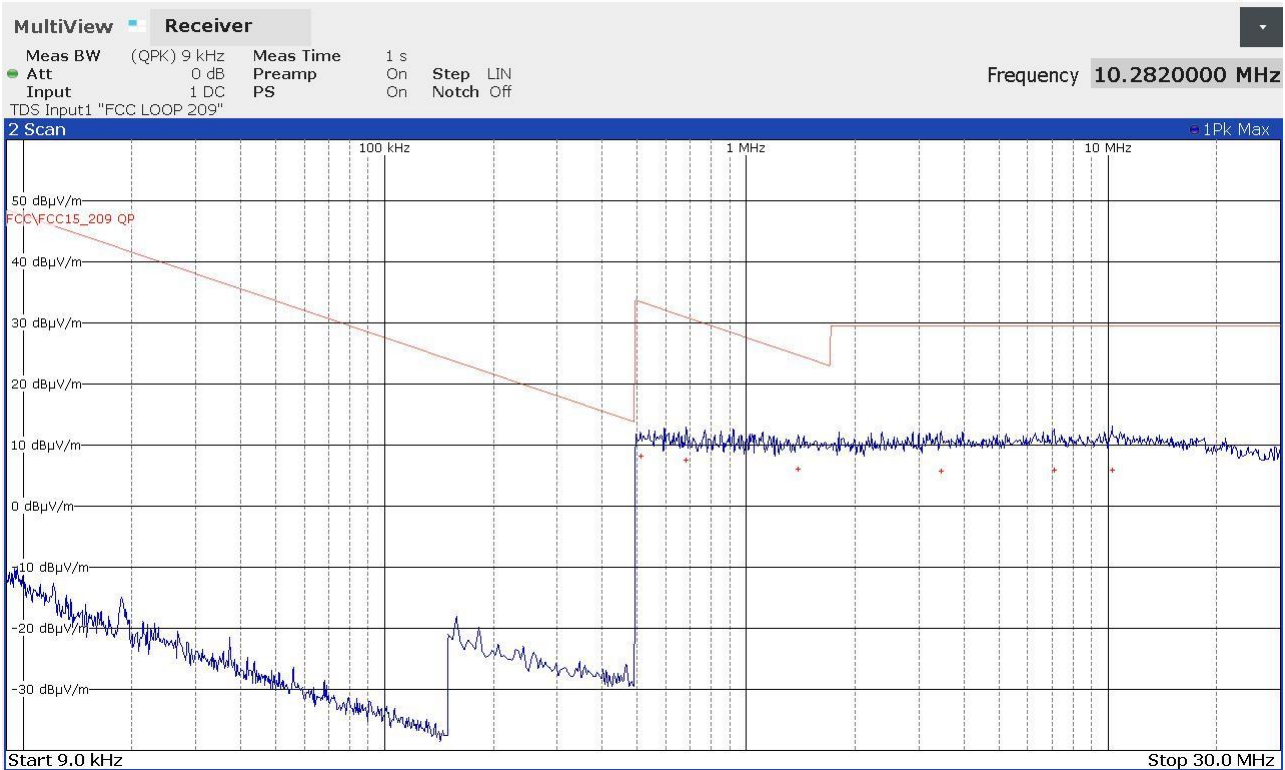


FINAL RESULT TABLE

MAX PEAK			AVERAGE		
Freq Hz	Lev dBuV/m	Margin dB	Freq Hz	Lev dBuV/m	Margin dB
1225250000	+39,26	-34,72	1225750000	+24,94	-29,04
1331500000	+38,55	-35,43	1331500000	+24,86	-29,12
1837500000	+40,41	-33,57	1838000000	+26,72	-27,26
2434000000	+41,48	-32,50	2494000000	+27,55	-26,43
3110250000	+44,39	-29,59	2748000000	+36,57	-17,41
3663750000	+47,20	-26,78	3664000000	+39,20	-14,78
4580250000	+53,74	-20,24	4580000000	+50,39	-3,59
6255750000	+49,74	-24,24	5496000000	+38,62	-15,36
7466500000	+51,52	-22,46	7350250000	+37,17	-16,81
9985750000	+55,95	-18,03	9999750000	+41,69	-12,29

22130011\_2

Segalla 22130012



**FINAL RESULT TABLE**

QUASI PEAK		
Freq Hz	Lev dBuV/m	Margin dB
510000	+8,21	-25,24
682000	+7,47	-23,46
1394000	+6,07	-18,65
3450000	+5,78	-23,76
7102000	+5,85	-23,69
10282000	+5,91	-23,63

22130012\_2

### 9.3 Peak Output Power

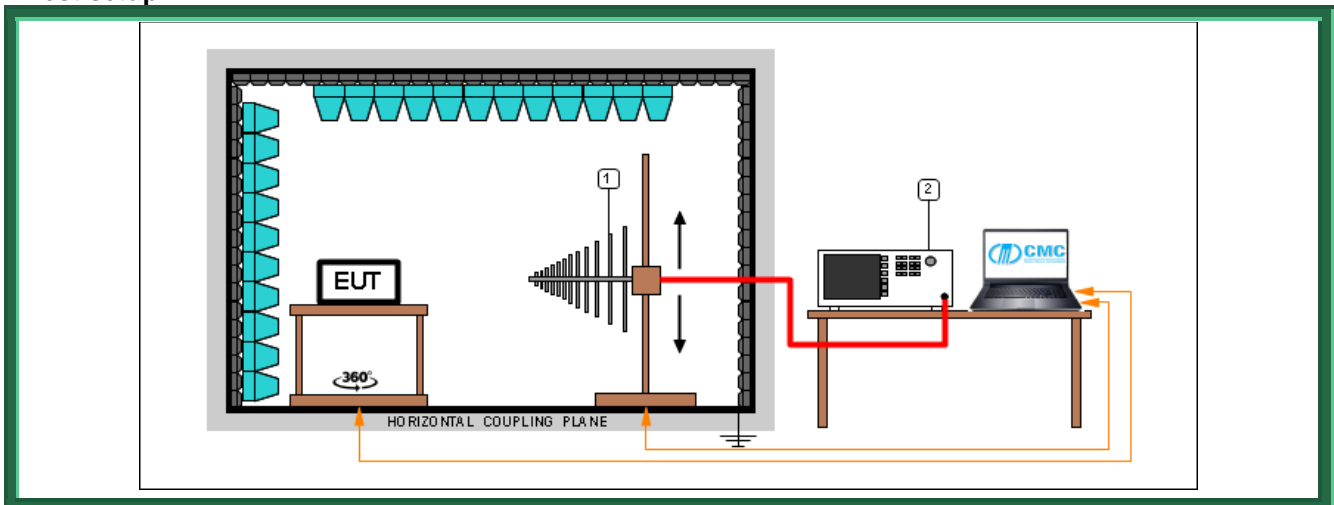
Tested by .....	M. Segalla
Test date .....	19.09.2022
Test location (stand) .....	Semi-anechoic chamber (CMC A070)
Reference standards .....	FCC Rules and Regulation; Titles 47 Part. 15.209 and 249
Supplementary test set-up description .....	EUT – antenna distance: 3 m
Supplementary information.....	--

#### Acceptance limits

Frequency range (MHz)	RF Power Output (mV/m)	RF Power Output dB( $\mu$ V/m)
902 – 928	50	94

Frequency range (MHz)	RF Power Output (mV/m)	RF Power Output dB( $\mu$ V/m)
2400 – 2483,5	50	94

#### Test setup



#### Test setup PE004\_03

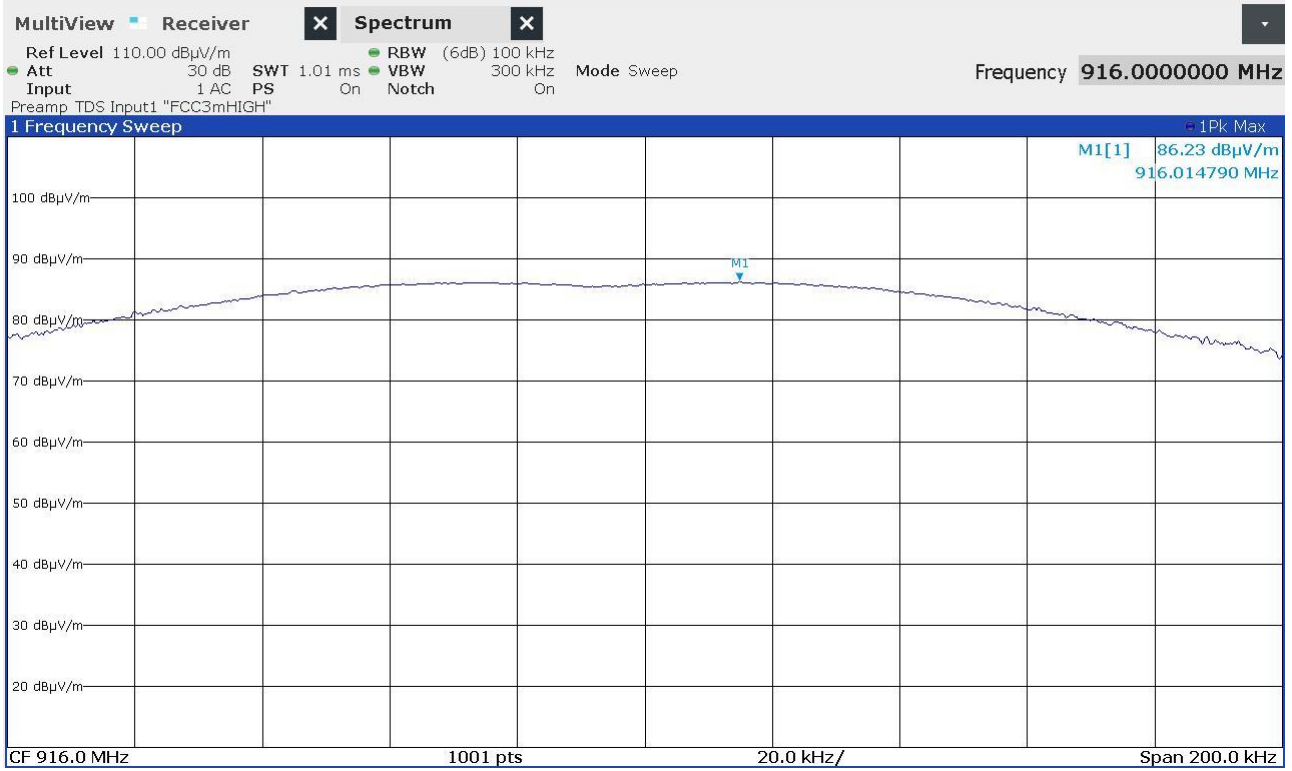
Nr.	Id. Number	Manufacturer	Model	Description
2	CMC S353	Rohde & Schwarz	ESW26	EMI Test Receiver 1 Hz - 26.5 GHz
1	CMC S287	Schwarzbeck	VUSLP 911B	Broadband Antenna

#### Result

Channel (MHz)	Polarization	Graphs	Measured level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)
916,00	Worst case	G22130003	86,23	94,00

## Graphs

Sega11a 22130003

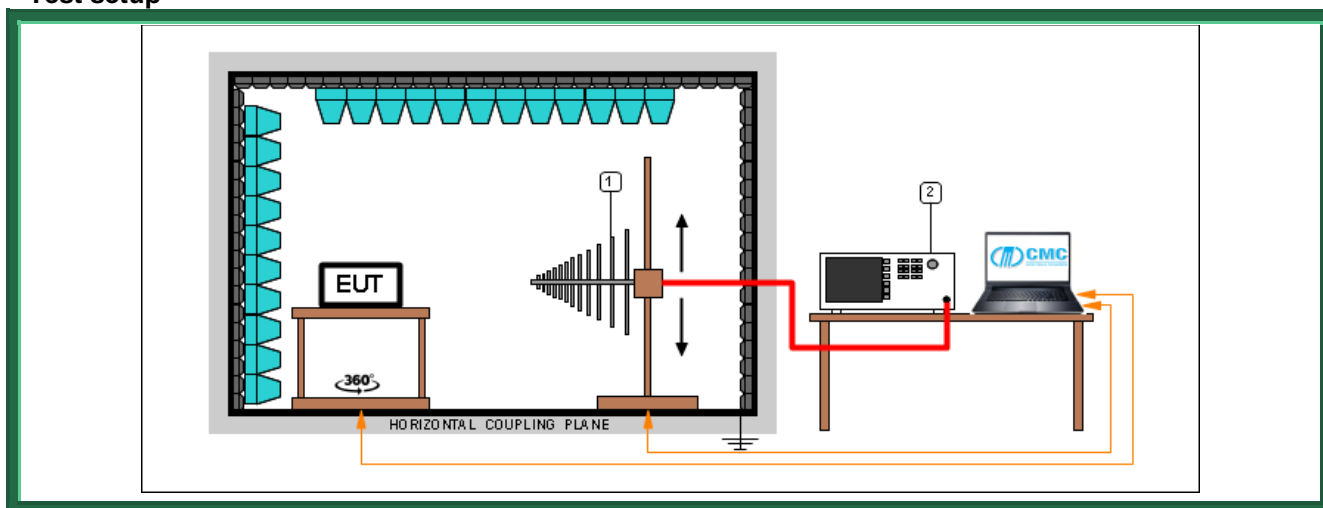




**9.4 20 dB bandwidth**

Tested by .....	M. Segalla
Test date .....	19.09.2022
Test location (stand) .....	Semi-anechoic chamber (CMC A070)
Reference standards .....	FCC Rules and Regulation; Titles 47 Part. 15.215 (c) ANSI C63.10 cl. 7.8.7
Test specification .....	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. In the case of intentional radiators operating under the provisions of subpart E, the emission bandwidth may span across multiple contiguous frequency bands identified in that subpart. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation

**Test setup**



*Test setup PE004\_03*

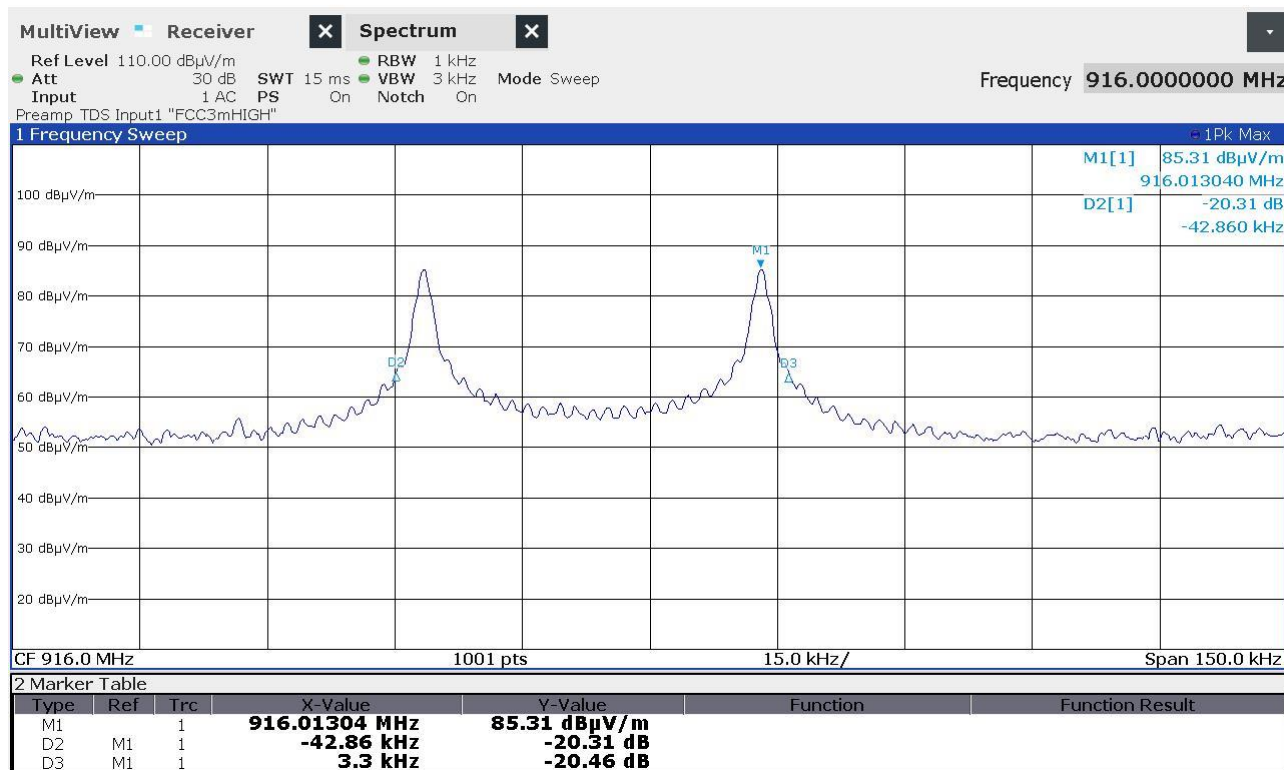
Nr.	Id. Number	Manufacturer	Model	Description
2	CMC S164	Rohde & Schwarz	ESU26	Receiver 20 Hz - 26.5 GHz
1	CMC S287	Schwarzbeck	VUSLP 9111B	Broadband Antenna

**Result**

<i>Channel (MHz)</i>	<i>Graphs</i>	<i>20 dB bandwidth (MHz)</i>	<i>Limits (MHz)</i>	<i>Results</i>
916,00	G22130001	915,970 – 916,016	902 – 928	Complies

## Graphs

Sega11a 22130001



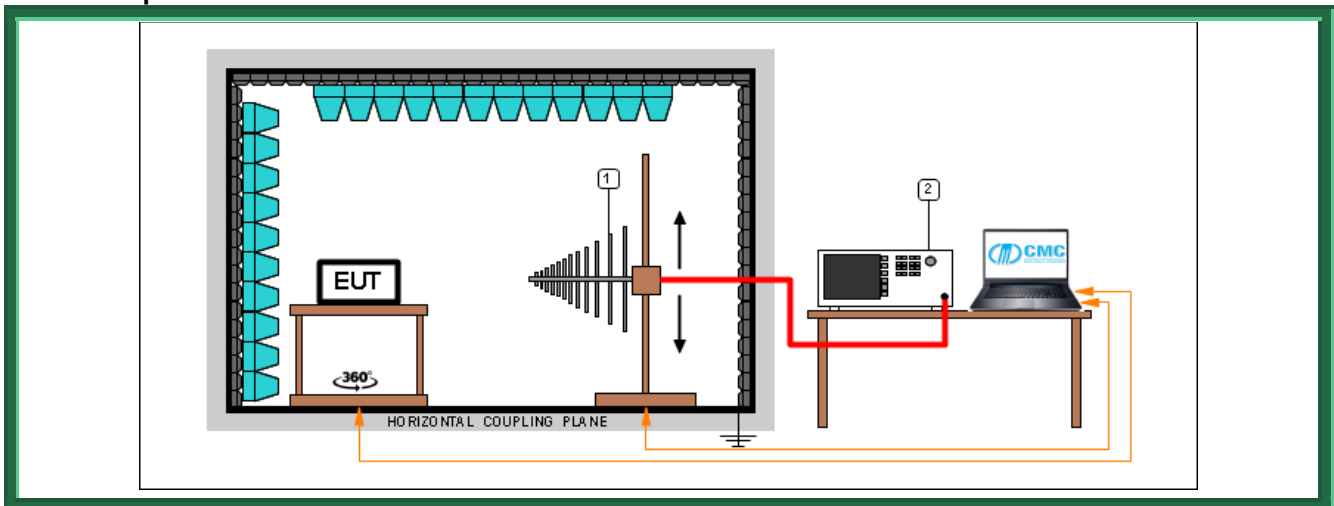
### 9.5 Band edge

Tested by .....	M. Segalla
Test date .....	19.09.2022
Test location (stand) .....	Semi-anechoic chamber (CMC A070)
Reference standards .....	FCC Rules and Regulation; Titles 47 Part. 15.249 (d)
Test specification .....	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation
Supplementary information.....	--

#### Acceptance limits

Operation within the band 902 – 928 MHz

#### Test setup



Test setup PE004\_03

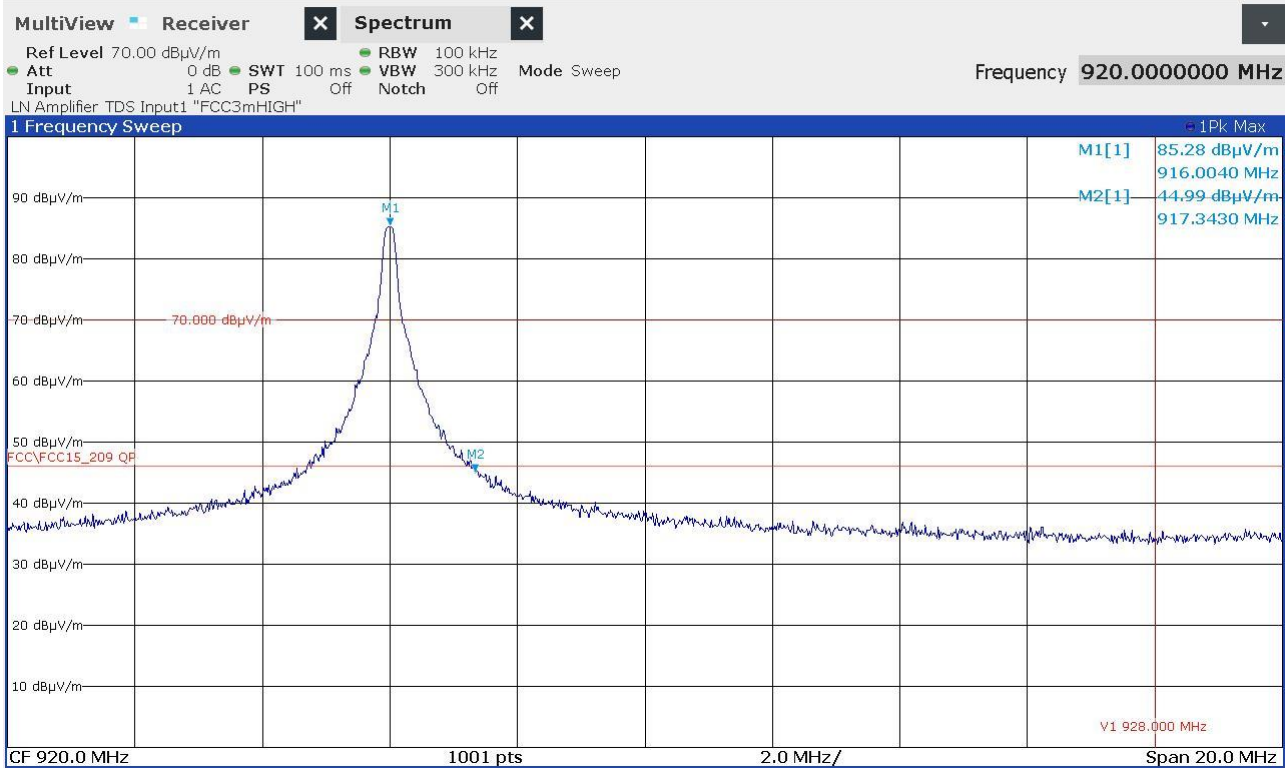
Nr.	Id. Number	Manufacturer	Model	Description
2	CMC S353	Rohde & Schwarz	ESW26	EMI Test Receiver 1 Hz - 26.5 GHz
1	CMC S287	Schwarzbeck	VUSLP 9111B	Broadband Antenna

#### Result

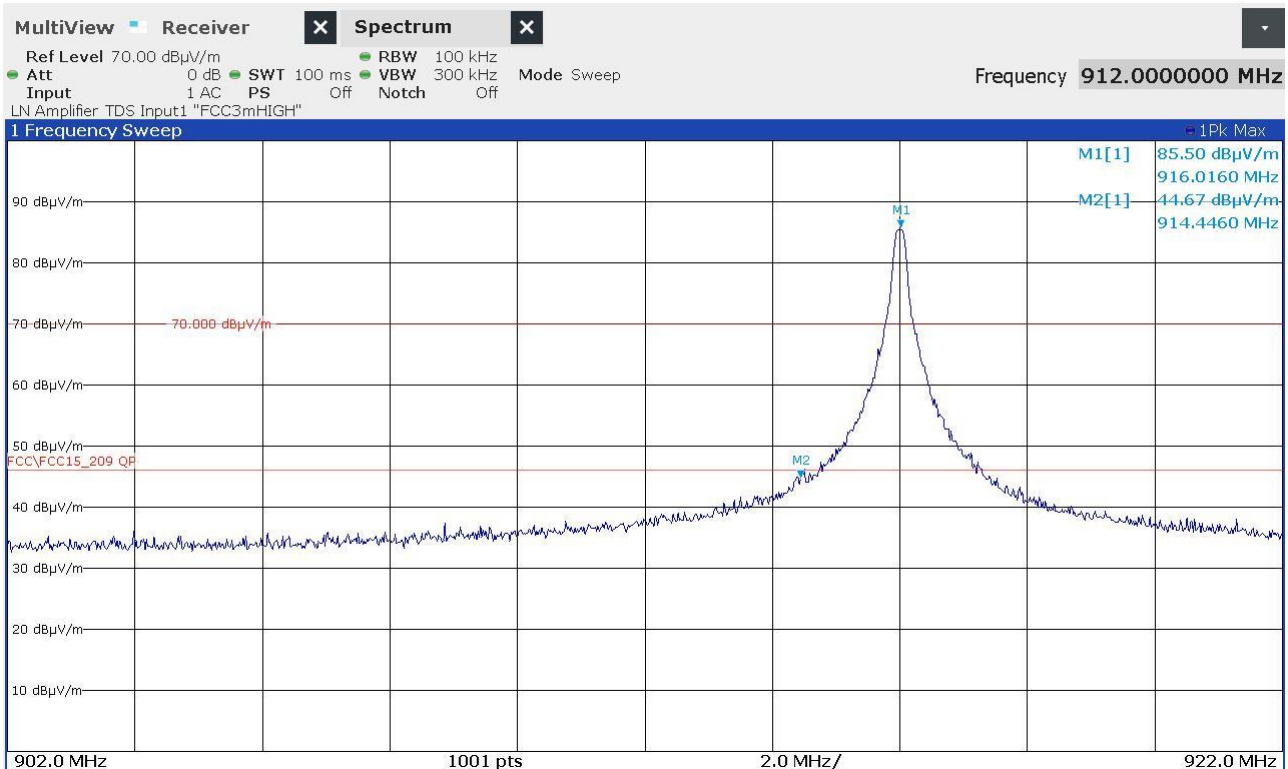
Channel (MHz)	Graph(s)	Results	
916,00	G22130005	F <sub>L</sub> : 914,446 MHz	Complies
916,00	G22130004	F <sub>H</sub> : 917,343 MHz	Complies

## Graphs

Sega11a 22130004



Sega11a 22130005



**Attachment 1**
**Instruments list**

<i><b>Id. number</b></i>	<i><b>Manufacturer</b></i>	<i><b>Model</b></i>	<i><b>Description</b></i>	<i><b>Serial number</b></i>	<i><b>Last calibration</b></i>	<i><b>Due date calibration</b></i>
CMC S010	Rohde & Schwarz	ESH3-Z2	Impulses Limiting Device	- - -	January '22	January '23
CMC S108	EMCO	3115	Horn Antenna	9811-5622	June '22	June '25
CMC S127	Schaffner	HLA6120	Loop Antenna	1191	November '18	November '23
CMC S200	Schwarzbeck	NSLK 8128	V-LISN	8128-273	January '22	January '23
CMC S206	Rohde & Schwarz	ESCI 7	EMC Receiver 9KHz-7GHz	100781	January '22	January '23
CMC S260	CMC	Wfr_N	Shielded Cable	Wfr_ant10-1	November '21	November '22
CMC S261	CMC	Wfr_N	Shielded Cable	Wfr_ant20-1	November '21	November '22
CMC S262	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix32-1	November '21	November '22
CMC S263	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix31-1	November '21	November '22
CMC S264	CMC	Wfr_N	Shielded Cable	Wfr_ext03-1	November '21	November '22
CMC S271	Schwarzbeck	BBA 9106 + VHBB 9124	Biconical Antenna (30-300MHz)	831	June '22	June '25
CMC S287	Schwarzbeck	VUSLP 9111B	Log-periodic Antenna (200 MHz-3GHz)	9111B-203	June '22	June '25
CMC S288	CMC	W_sma_white	Joint Shielded Cable	W_001	November '20	November '23
CMC S295	Rohde & Schwarz	FSW43	Spectrum Analyzer 43GHz	104059	November '20	November '23
CMC S334	Wainwright Instruments	WHKX12-935-1000-15000-40SS	High Pass Filter 1000MHz	46	December '21	December '22
CMC S353	Rohde & Schwarz	ESW26	Emi Test Receiver 1 Hz - 26.5 GHz	101492	September '22	September '24

**Attachment 1**
**Measurement uncertainty**

<i>Test</i>	<i>Test Setup</i>	<i>Expanded uncertainty</i>	<i>Note</i>
Conducted emission CISPR 16 LISN 50uH 0,009-0,0150 MHz	PE001_01	3,4 dB	1
Conducted emission CISPR 16 LISN 50uH 0,150-30,0 MHz	PE001_01	3,0 dB	1
Conducted emission CISPR 16 Voltage Probe 0,15-30 MHz	PE001_02	2,3 dB	1
Conducted emission CISPR 16 Current Probe 0,15-30 MHz	PE001_03	2,6 dB	1
Conducted emission CISPR 16 ISN 0,15-30 MHz	PE001_04	4,7 dB	1
Clic CISPR 16 LISN 50uH 0,150-30,0 MHz	PE001_05	2,9 dB	1
Radiated Emission CDNE 30-300 MHz	PE001_06	3,3 dB	1
Disturbance Power 30-300 MHz	PE002_01	3,8 dB	1
Radiated Emission LAS 0,15-30 MHz	PE003_01	2,0 dB	1
Radiated Emission CISPR 16 Loop Ant. 0,15-30 MHz	PE004_01	4,1 dB	1
Radiated Emission CISPR 16 Bicon. Ant. 30-300 MHz	PE004_02	4,7 dB	1
Radiated Emission CISPR 16 LogP. Ant. 300-1000 MHz	PE004_03	4,6 dB	1
Radiated Emission CISPR 16 Horn Ant. 1-18 GHz	PE004_04	4,7 dB	1
Human Exposure to electromagnetic fields	PE005_01	16,7 %	1
Harmonics	PE006_01	10 mA + 2,9 %	1
Flicker	PE007_01	4,15 %	1
Radiated Immunity 80 MHz - 6 GHz	PE102_XX	2,20 dB 0,86 V/m a 3V/m	1
Conducted Immunity 0,15 - 230 MHz	PE105_XX	1,20 dB 0,44 V a 3V	1
AC Magnetic field	PE106_01	1,55 % 0,15 A/m a 10A/m	1
Pulse Magnetic field	PE107_01	6,23 % 18,7 A/m a 300A/m	1
Dumped Magnetic field	PE108_01	6,23 % 1,87 A/m a 30A/m	1
Common mode conducted immunity	PE112_01	2,16 % 0,22 V a 10V	1

## Attachment 1

Test	Test Setup	Expanded uncertainty	Note
Power/Spurious 9kHz-30MHz	PR001_01	4,1 dB	1
Power/Spurious ERP 30-1000MHz d=10m	PR001_02+03	4,7 dB	1
Misura della potenza EIRP 1-18GHz d=3m	PR001_04+05	4,7 dB	1
Misura della potenza EIRP 18-40GHz d=3m	PR001_06	5,4 dB	1
Frequency error	PR002_01+02	$< 1 \times 10^{-7}$	1
Timing zero span (1001pts.)	PR002_01+02	0,2 % SWT	1
Modulation bandwidth	PR002_01+02	$< 1 \times 10^{-7}$	1
Conducted RF power and spurious emission	PR002_01+02	1,1 dB	1
Adjacent channel power	PR002_01+02	1,1 dB	1
Blocking	PR002_01+02	1,1 dB	1

Test	Test Setup	Expanded uncertainty	Note
Electrostatic discharge immunity test	PE101_0X		2
Electrical fast transients / burst immunity test	PE103_0X		2
Surge immunity test	PE104_0X		2
Short interruption immunity test	PE109_01		2
Ring Wave immunity test	PE110_01		2
Low frequency immunity test	PE111_01		2
Dumped Oscillatory immunity test	PE113_01		2
Rev_22_01 date 31/01/2022			

**Note 1:**

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

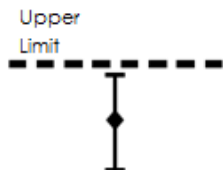
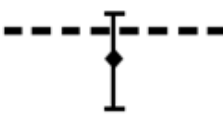

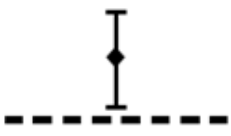
**Note 2:**

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



### Attachment 1

#### Judgement of compliance

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

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