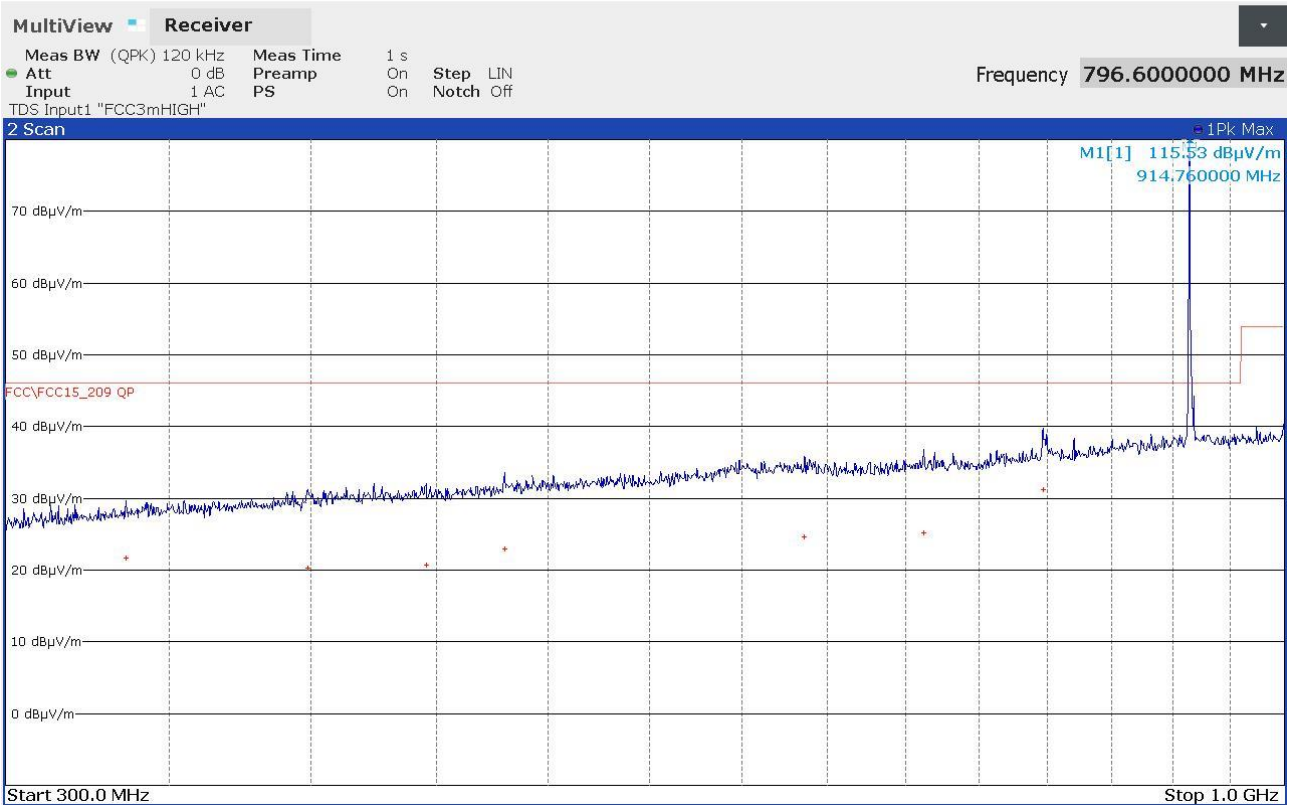


Panozzo 23079109

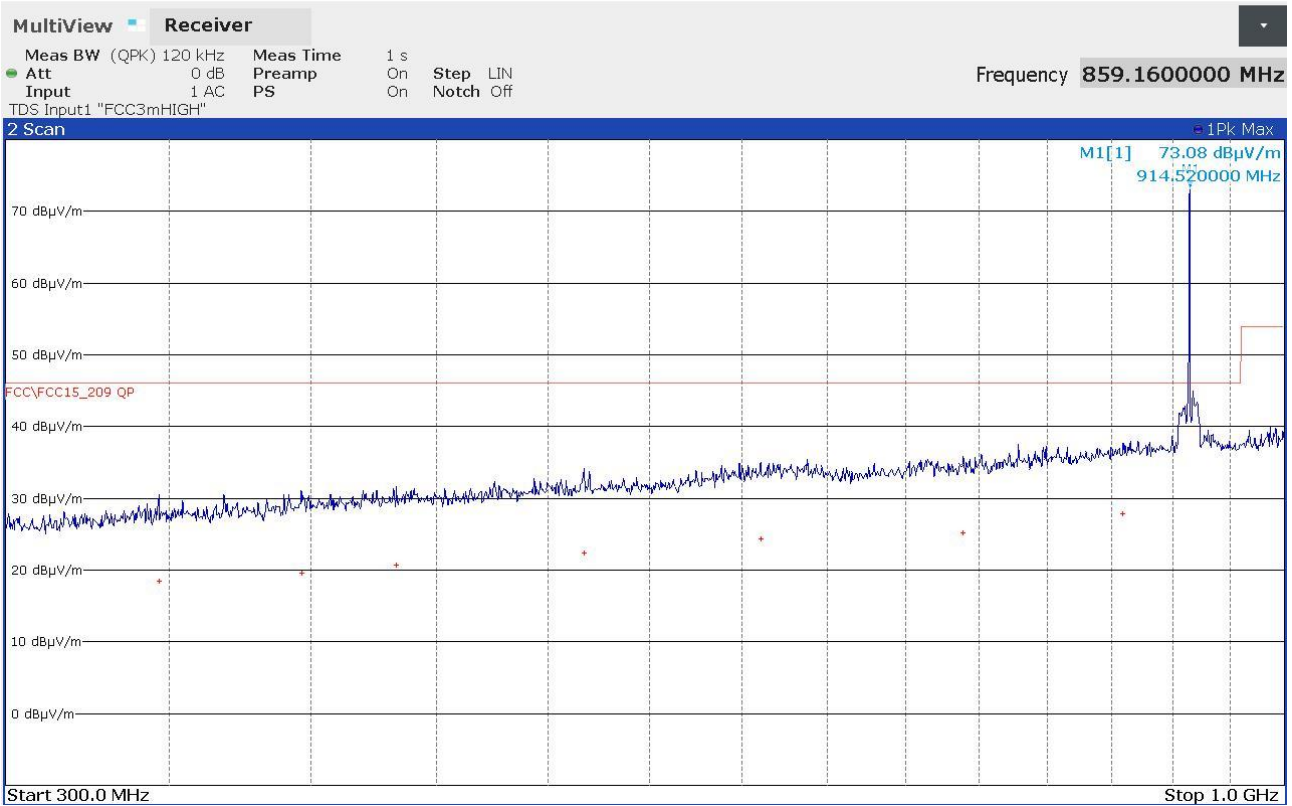


FINAL RESULT TABLE

QUASI PEAK		
Freq Hz	Lev dBuV/m	Margin dB
336040000	+21,72	-24,30
398880000	+20,25	-25,77
445840000	+20,69	-25,33
479960000	+22,99	-23,03
636600000	+24,66	-21,36
712080000	+25,15	-20,87
796600000	+31,24	-14,78

23079109_2

Panozzo 23079110

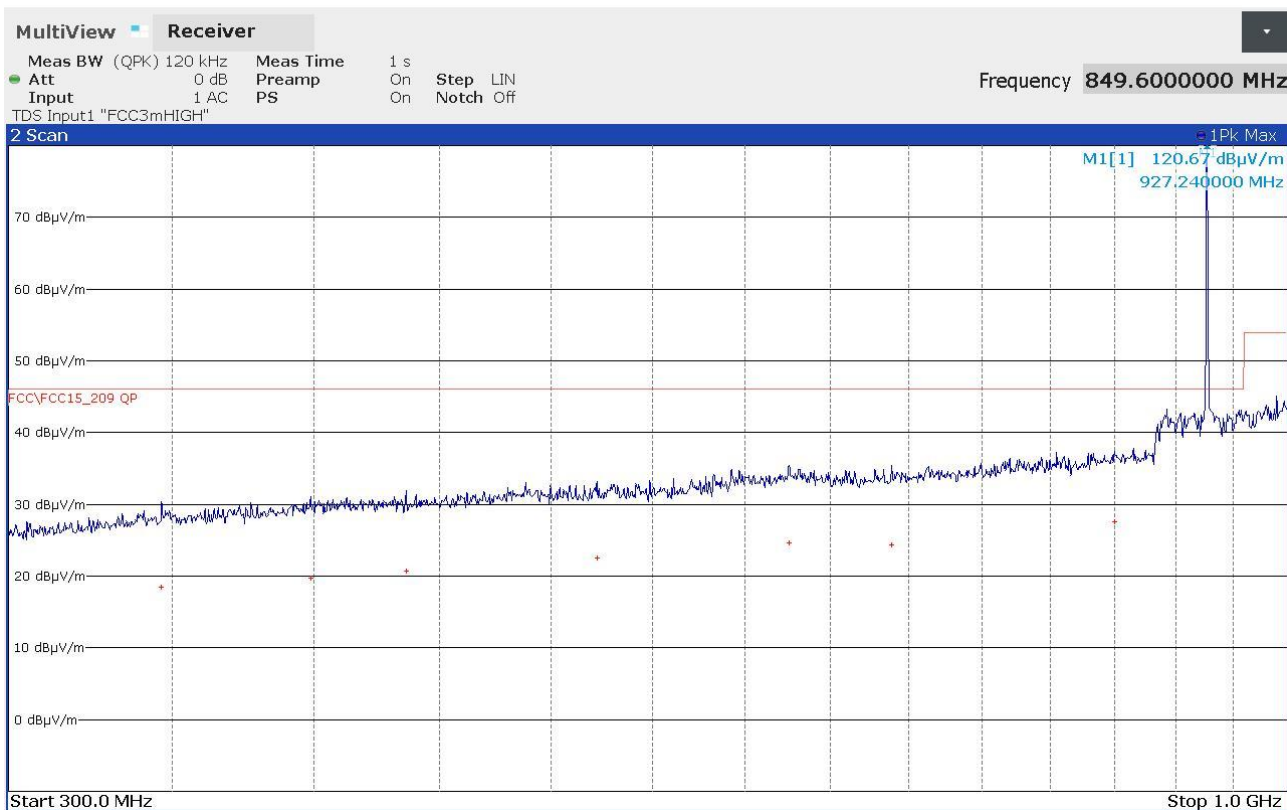


FINAL RESULT TABLE

QUASI PEAK		
Freq Hz	Lev dBuV/m	Margin dB
346680000	+18,51	-27,51
396360000	+19,51	-26,51
433520000	+20,73	-25,29
517240000	+22,35	-23,67
610680000	+24,32	-21,70
739160000	+25,16	-20,86
859160000	+27,82	-18,20

23079110_2

Panozzo 23079111

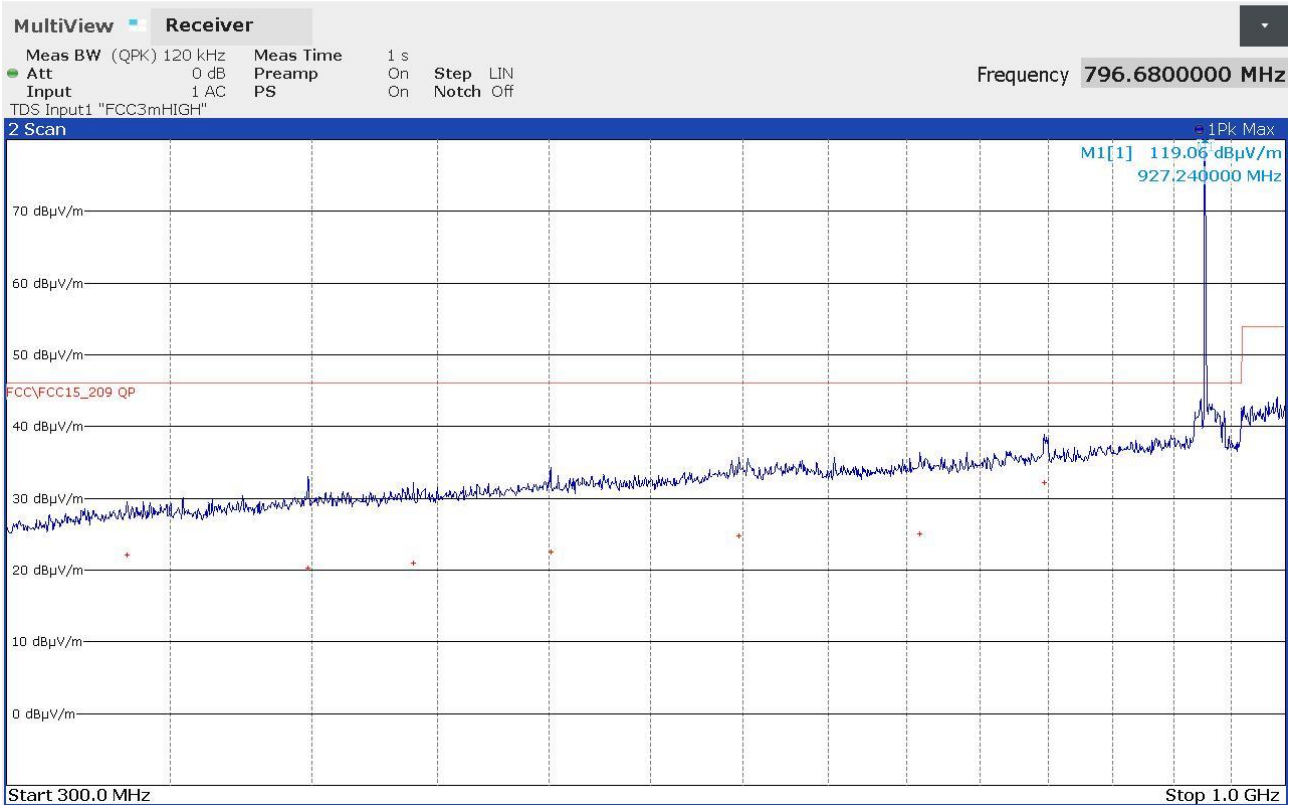


FINAL RESULT TABLE

QUASI PEAK		
Freq Hz	Lev dBuV/m	Margin dB
346520000	+18,45	-27,57
398720000	+19,68	-26,34
436240000	+20,71	-25,31
521960000	+22,52	-23,50
625320000	+24,69	-21,33
688960000	+24,38	-21,64
849600000	+27,59	-18,43

23079111_2

Panozzo 23079112

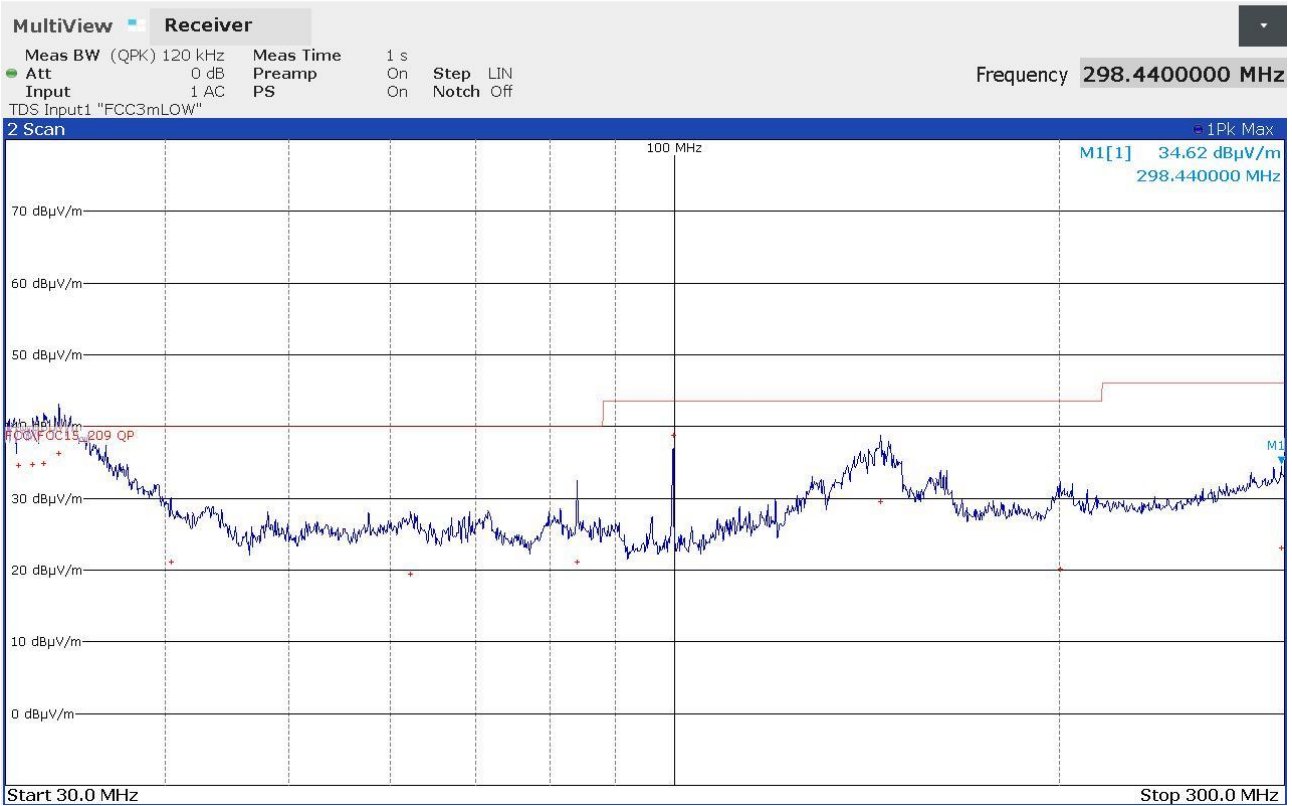


FINAL RESULT TABLE

QUASI PEAK		
Freq Hz	Lev dBuV/m	Margin dB
336040000	+22,08	-23,94
398560000	+20,22	-25,80
439920000	+20,93	-25,09
500720000	+22,47	-23,55
597840000	+24,79	-21,23
708800000	+25,03	-20,99
796680000	+32,20	-13,82

23079112_2

Panozzo 23079113

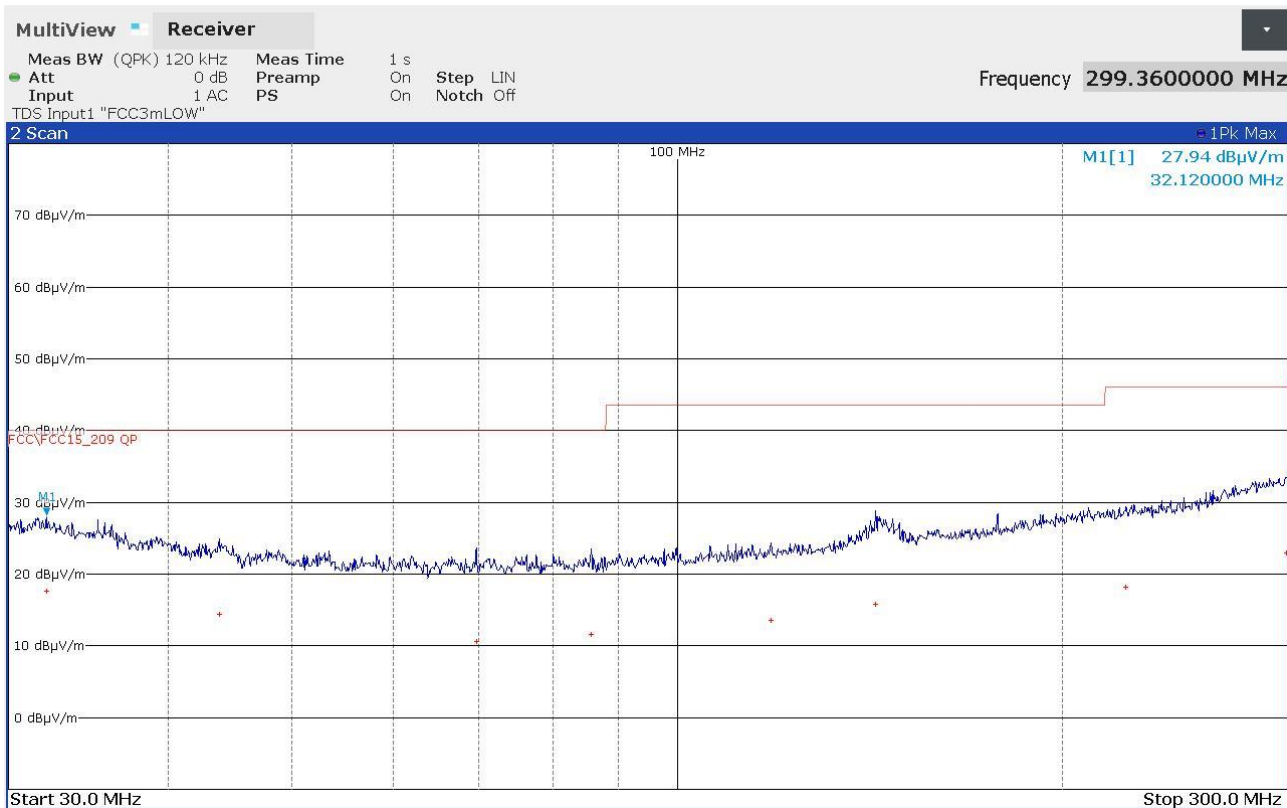


FINAL RESULT TABLE

QUASI PEAK		
Freq Hz	Lev dBuV/m	Margin dB
30720000	+34,53	-5,47
31520000	+34,72	-5,28
32160000	+34,86	-5,14
33040000	+36,25	-3,75
40400000	+21,10	-18,90
62200000	+19,50	-20,50
84000000	+21,17	-18,83
99800000	+38,83	-4,69
145080000	+29,56	-13,96
200320000	+20,21	-23,31
298440000	+23,04	-22,98

23079113_2

Panozzo 23079114

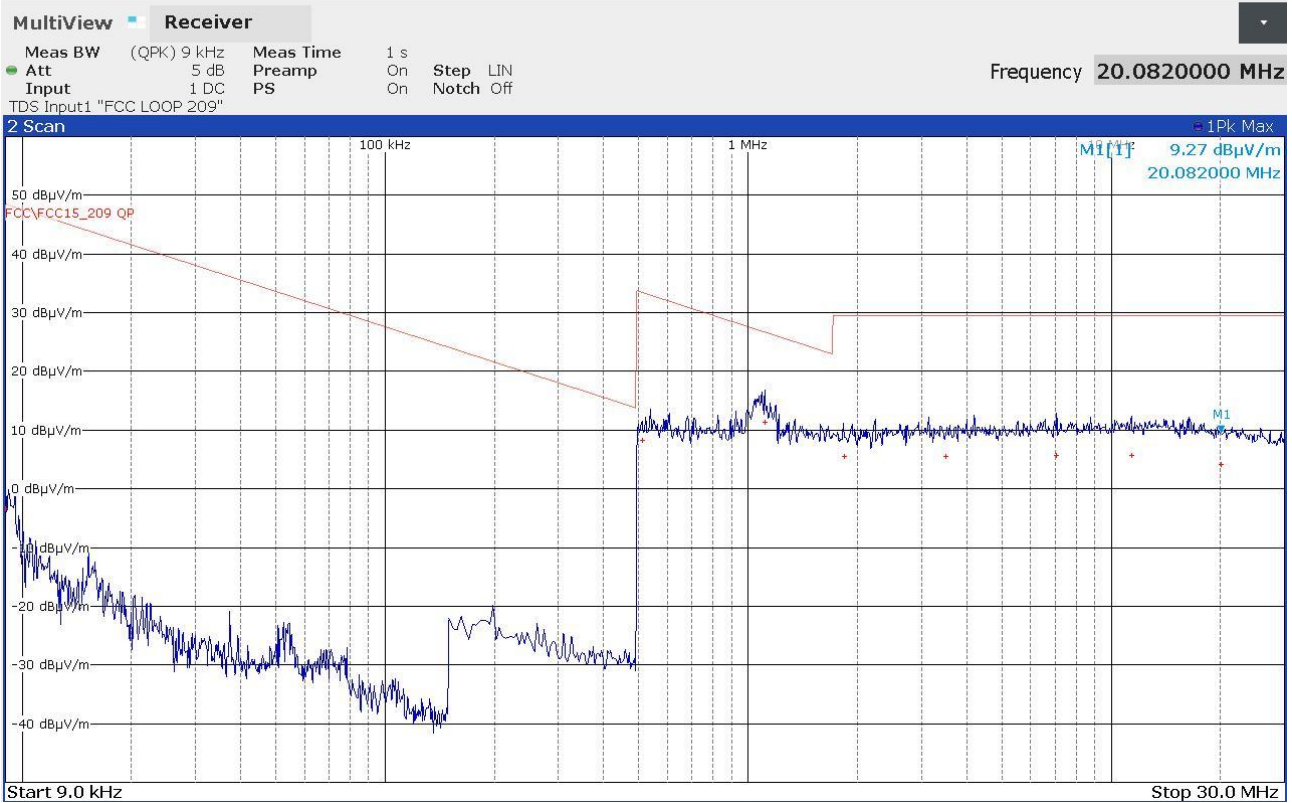


FINAL RESULT TABLE

QUASI PEAK		
Freq Hz	Lev dBuV/m	Margin dB
32120000	+17,67	-22,33
43840000	+14,46	-25,54
69640000	+10,66	-29,34
85680000	+11,58	-28,42
118400000	+13,52	-30,00
142920000	+15,78	-27,74
224400000	+18,23	-27,79
299360000	+22,89	-23,13

23079114_2

Panozzo 23079115



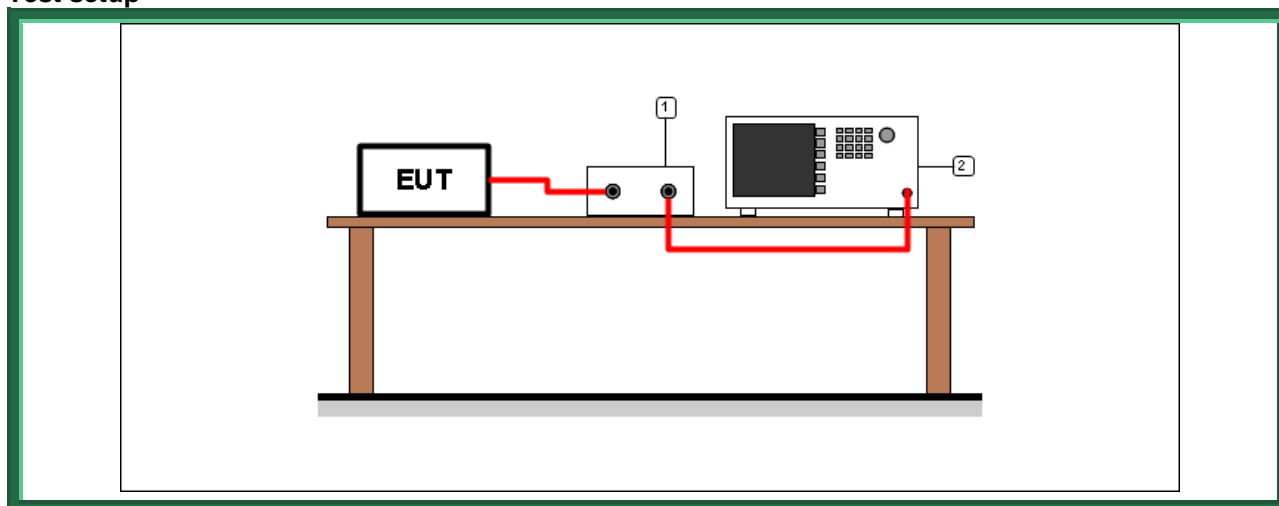
FINAL RESULT TABLE

QUASI PEAK		
Freq Hz	Lev dBuV/m	Margin dB
9000	-3,45	-51,97
510000	+8,17	-25,28
1110000	+11,41	-15,29
1846000	+5,54	-24,00
3510000	+5,43	-24,11
7074000	+5,64	-23,90
11370000	+5,73	-23,81
20082000	+4,14	-25,40

23079115_2

9.4 20 dB bandwidth

Tested by	C. Panozzo
Test date	23.06.2023
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	--

Test setup


Test setup PR002_01

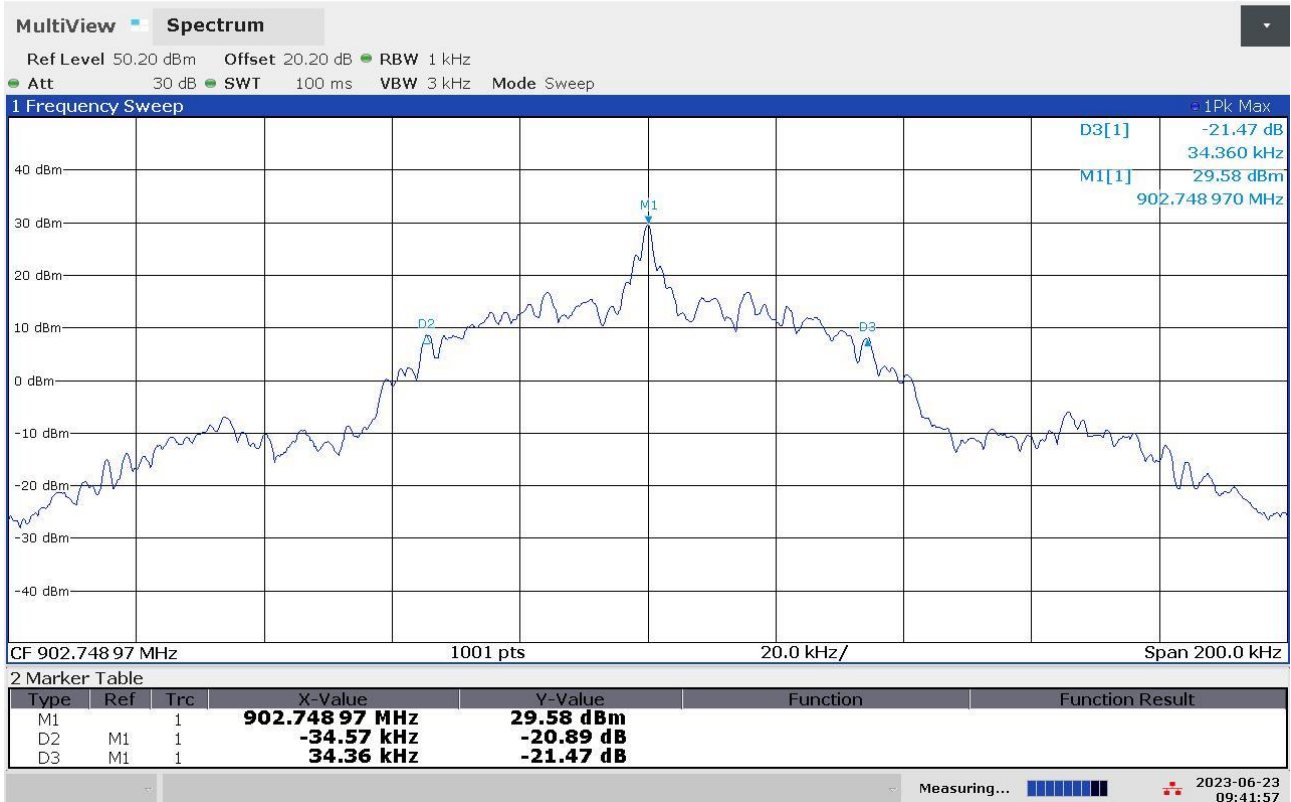
Nr.	Id. Number	Manufacturer	Model	Serial number	Description
2	CMC S295	Rohde & Schwarz	FSW43	104059	Spectrum Analyzer 43GHz
1	--	--	--	--	Cable + attenuator (calibrated before the test)

Result

Transmission channel (MHz)	Graphs	20 dB bandwidth (kHz)
902,75	G23079120	68,93
914,75	G23079123	68,94
927,25	G23079124	68,94

Graphs

23079120



23079123



23079124



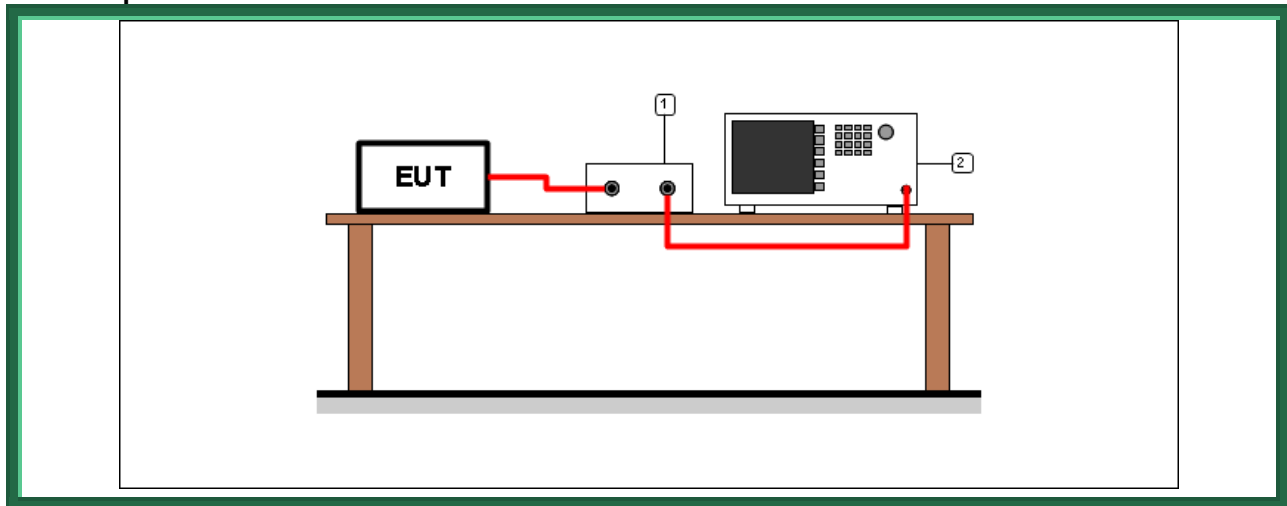
9.5 Channel separation

Tested by	C. Panozzo
Test date	23.06.2023
Test location (stand)	Laboratory
Reference standards.....	FCC Rules and Regulation; Titles 47 Part. 15.247 KDB 558074 D01 15.247 Meas Guidance v05r02 cl. 9 b) ANSI C63.10 cl. 7.8.2
Supplementary test set-up description.....	--
Supplementary information	--

Acceptance limits

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Test setup



Test setup PR002_01					
Nr.	Id. Number	Manufacturer	Model	Serial number	Description
2	CMC S295	Rohde & Schwarz	FSW43	104059	Spectrum Analyzer 43GHz
1	--	--	--	--	Cable + attenuator (calibrated before the test)

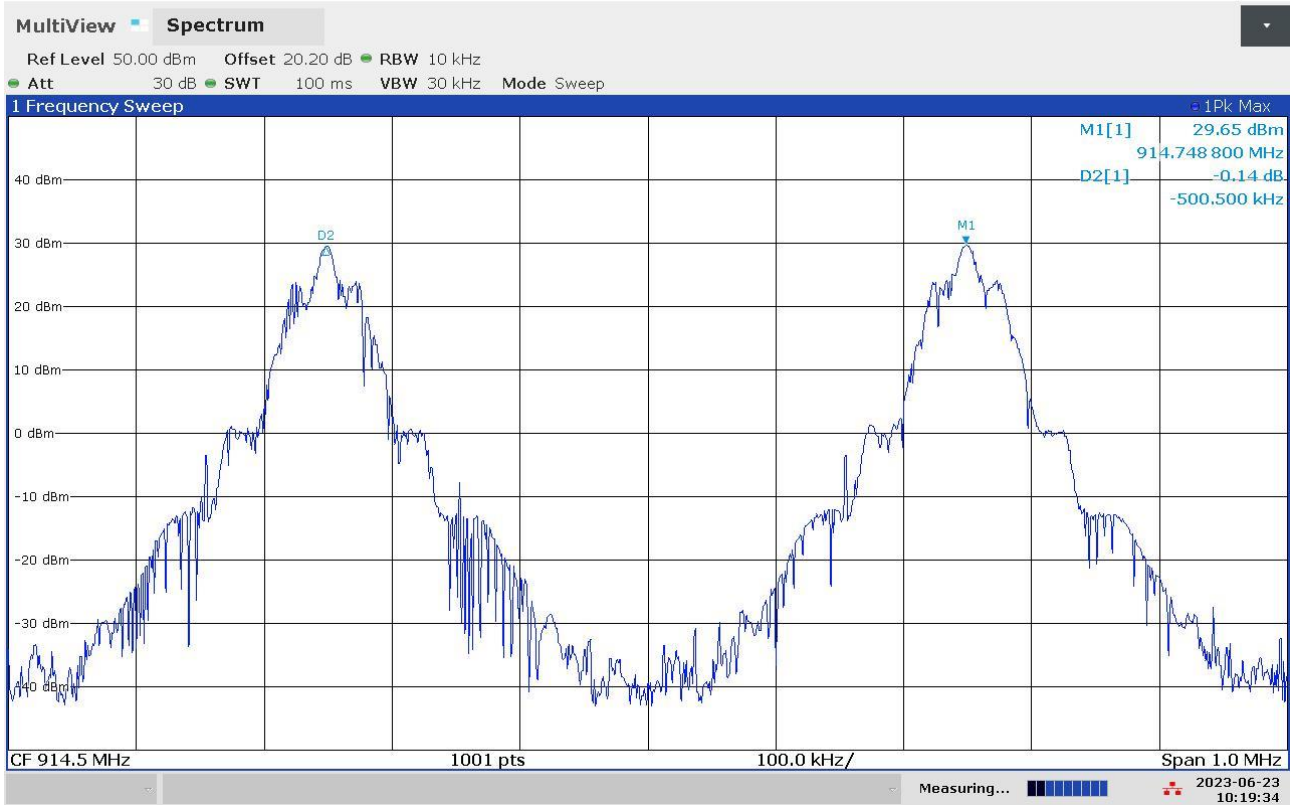
Result

<i>Frequency band (MHz)</i>	<i>Graphs</i>	<i>Channel separation (kHz)</i>	<i>Minimum channel separation required (kHz)</i>	<i>Results</i>
902 – 928	G23079133	500,5	68,94 *	Complies

*: greater value between 25 kHz and 20 dB bandwidth

Graphs

23079133



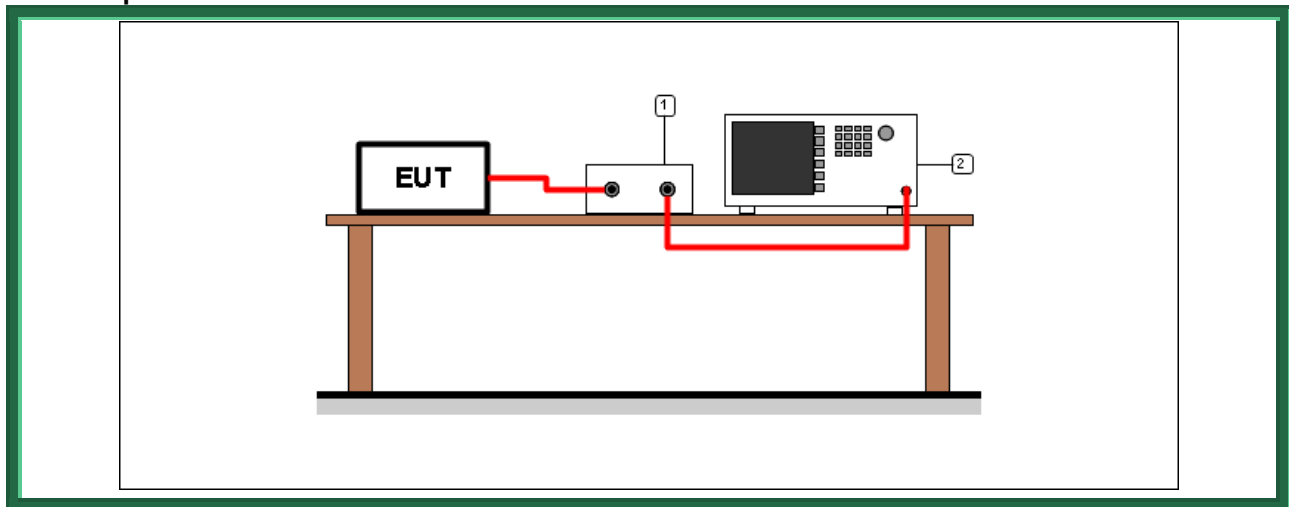
9.6 Number of hopping channels

Tested by	C. Panozzo
Test date	23.06.2023
Test location (stand)	Laboratory
Reference standards.....	FCC Rules and Regulation; Titles 47 Part. 15.247 KDB 558074 D01 15.247 Meas Guidance v05r02 cl. 9 b) ANSI C63.10 cl. 7.8.3
Supplementary test set-up description.....	--
Supplementary information	--

Acceptance limits

For frequency hopping systems operating in the 902 – 928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0,4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0,4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

Test setup



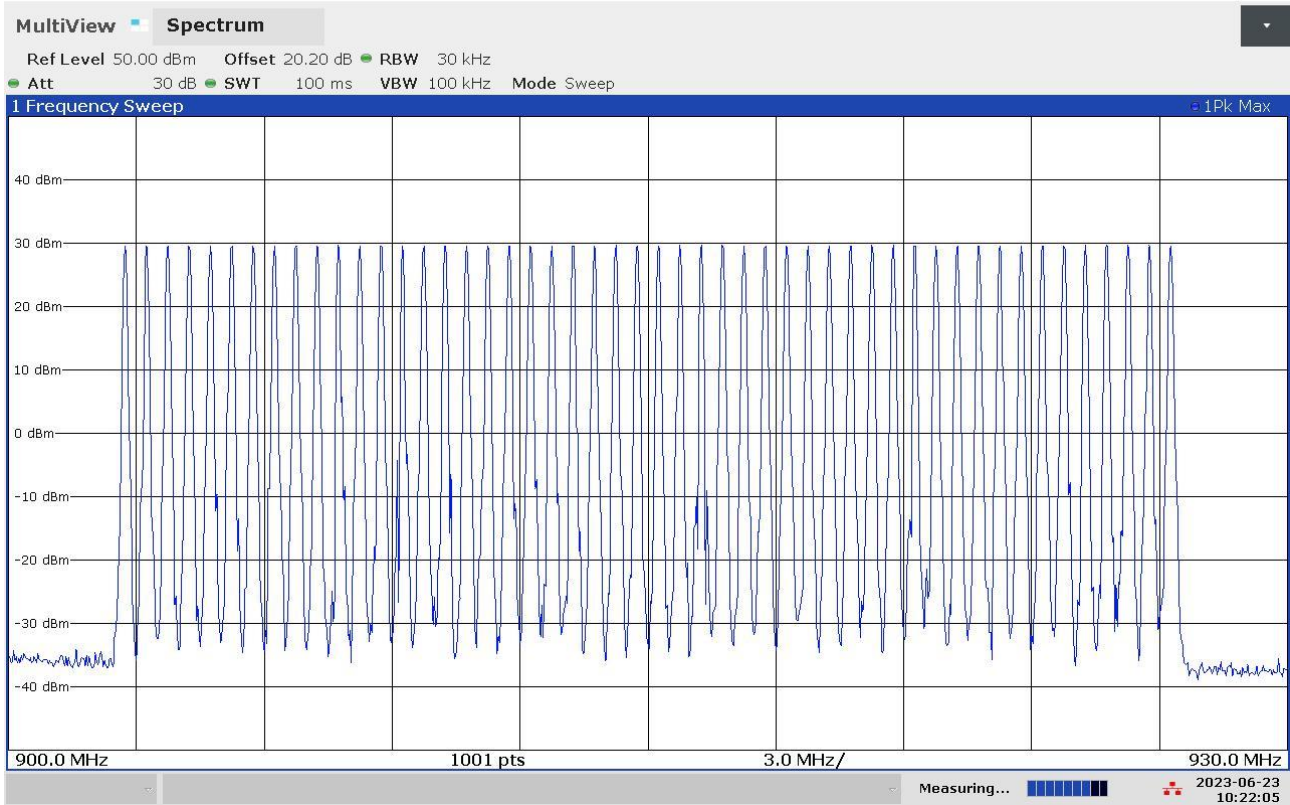
Test setup PR002_01					
Nr.	Id. Number	Manufacturer	Model	Serial number	Description
2	CMC S295	Rohde & Schwarz	FSW43	104059	Spectrum Analyzer 43GHz
1	--	--	--	--	Cable + attenuator (calibrated before the test)

Result

<i>Frequency band (MHz)</i>	<i>Graphs</i>	<i>Number of hopping channels</i>	<i>Minimum number of hopping channels required</i>	<i>Results</i>
902 – 928	G23079134	50	50	Complies

Graphs

23079134



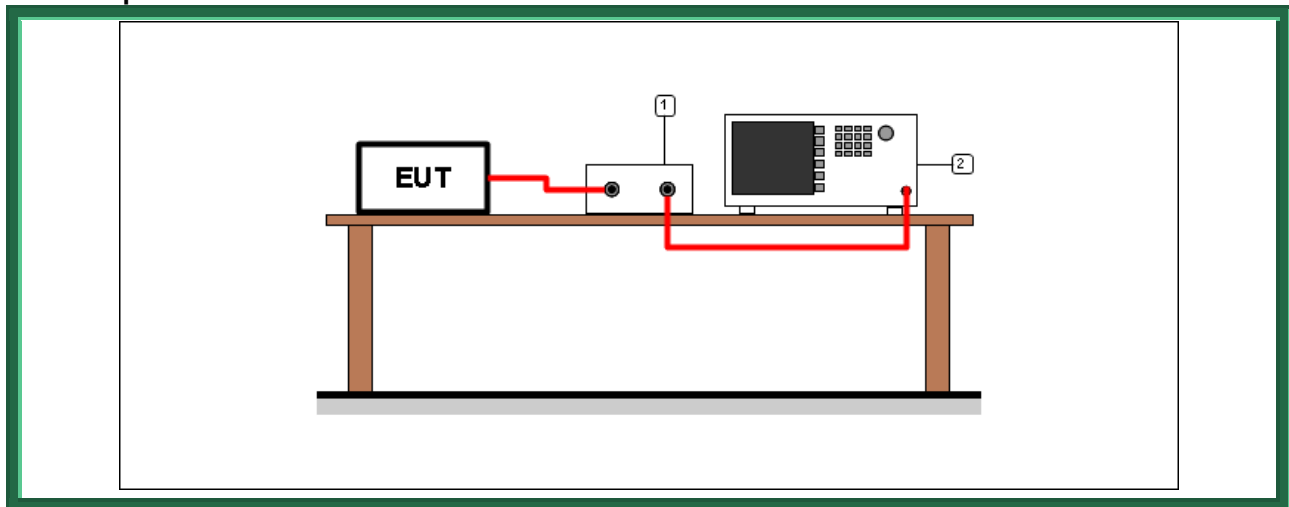
9.7 Time of occupancy

Tested by	C. Panozzo
Test date	23.06.2023
Test location (stand)	Laboratory
Reference standards.....	FCC Rules and Regulation; Titles 47 Part. 15.247 KDB 558074 D01 15.247 Meas Guidance v05r02 cl. 9 b) ANSI C63.10 cl. 7.8.4
Supplementary test set-up description.....	--
Supplementary information	--

Acceptance limits

For frequency hopping systems operating in the 902 – 928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0,4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0,4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

Test setup



Test setup PR002_01					
Nr.	Id. Number	Manufacturer	Model	Serial number	Description
2	CMC S295	Rohde & Schwarz	FSW43	104059	Spectrum Analyzer 43GHz
1	--	--	--	--	Cable + attenuator (calibrated before the test)

Result

<i>Transmission channel (MHz)</i>	<i>Graphs</i>	<i>Dwell time (ms)</i>
914,75	G23079137	25,10

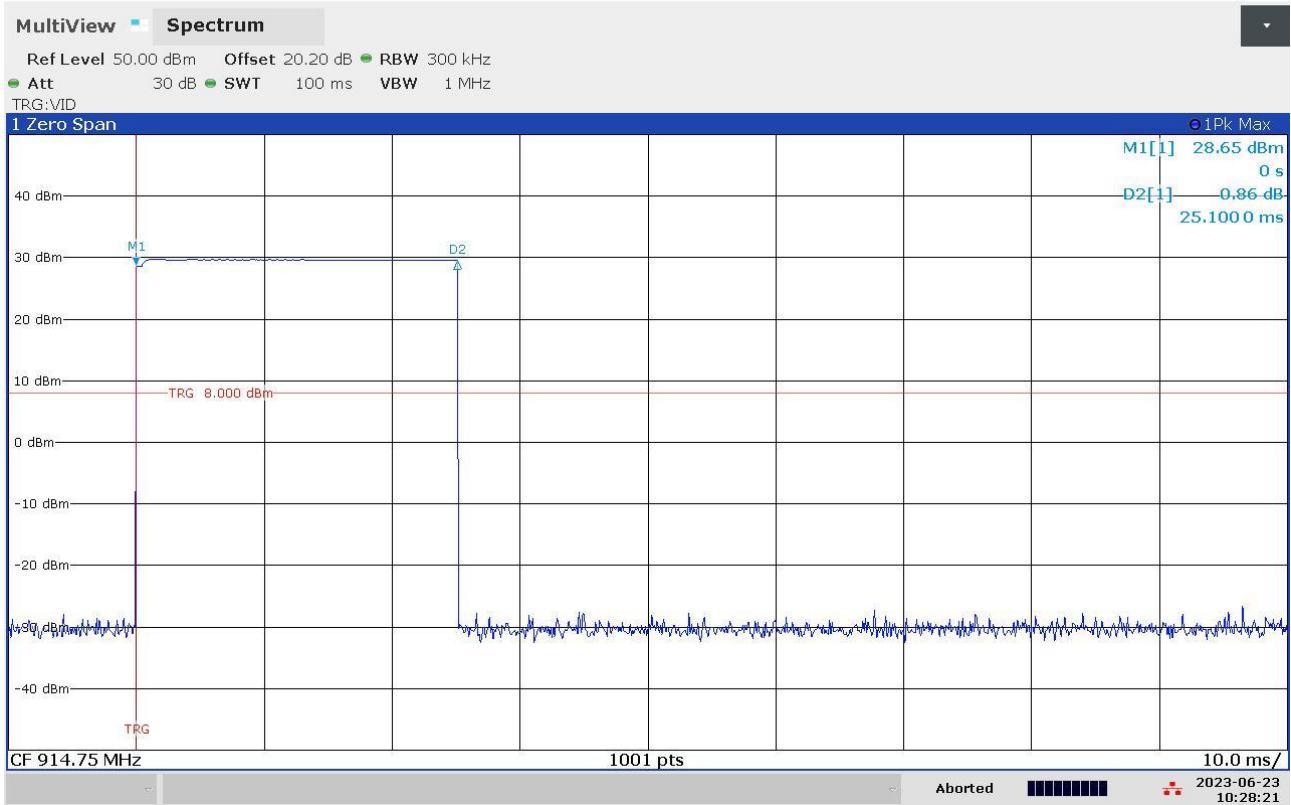
<i>Transmission channel (MHz)</i>	<i>Graphs</i>	<i>Number of transmissions</i>	<i>Period</i>
914,75	G23079138	8	20 s

Remarks: only the highest peaks have been considered. The lowest peaks are due to the auxiliary receiver unit

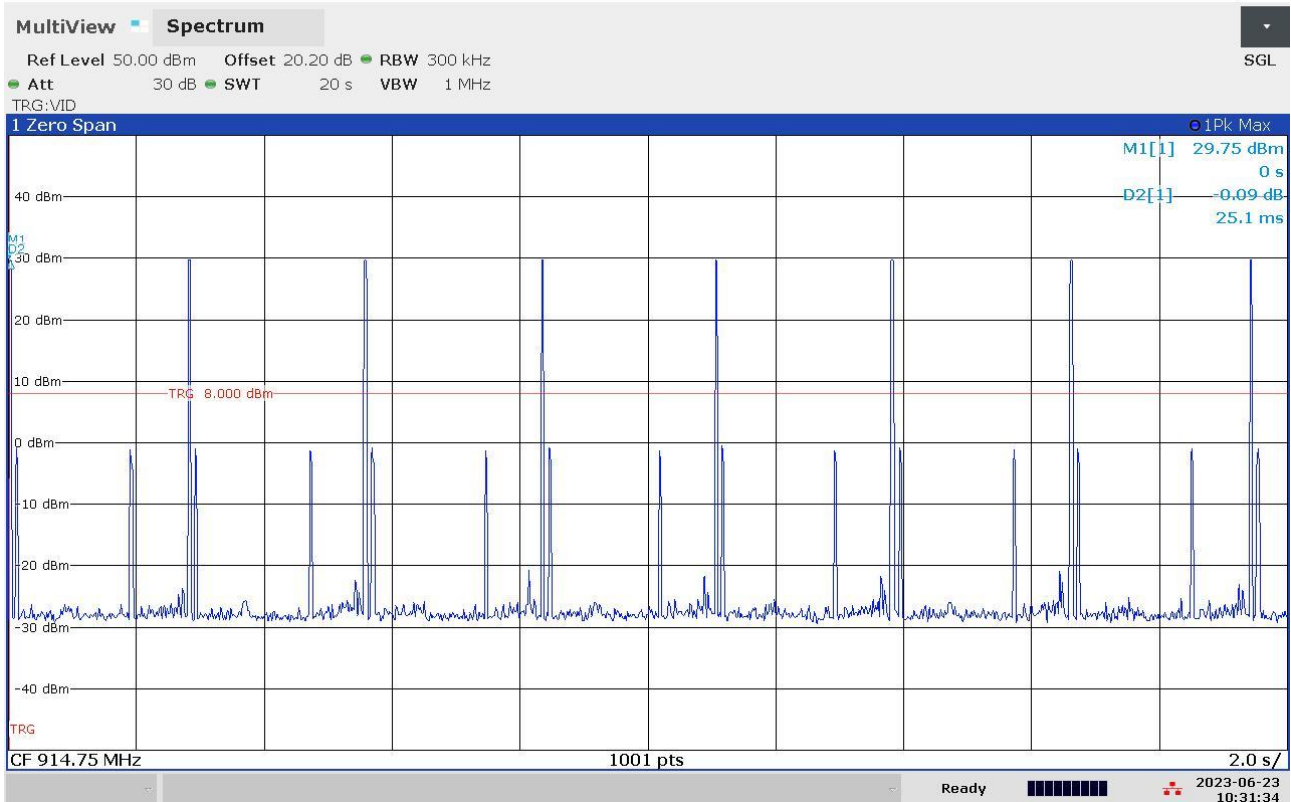
<i>Time of occupancy (Dwell time x Nr. transmissions)</i>	<i>Maximum allowed time of occupancy</i>	<i>Results</i>
200,8 ms	400 ms	Complies

Graphs

23079 137



23079 138



9.8 Band edge

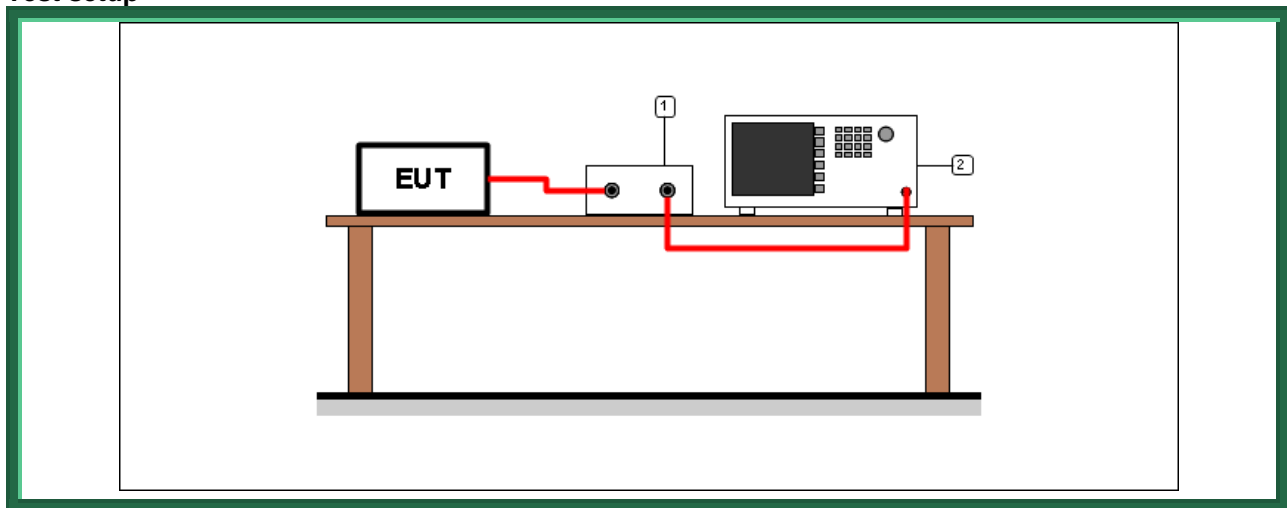
Tested by	C. Panozzo
Test date	23.06.2023
Test location (stand)	Laboratory
Reference standards.....	FCC Rules and Regulation; Titles 47 Part. 15.247 ANSI C63.10 cl. 7.8.6
Supplementary test set-up description.....	--
Supplementary information	--

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 902 – 928 MHz

Test setup



Test setup PR002_01					
Nr.	Id. Number	Manufacturer	Model	Serial number	Description
2	CMC S295	Rohde & Schwarz	FSW43	104059	Spectrum Analyzer 43GHz
1	--	--	--	--	Cable + attenuator (calibrated before the test)

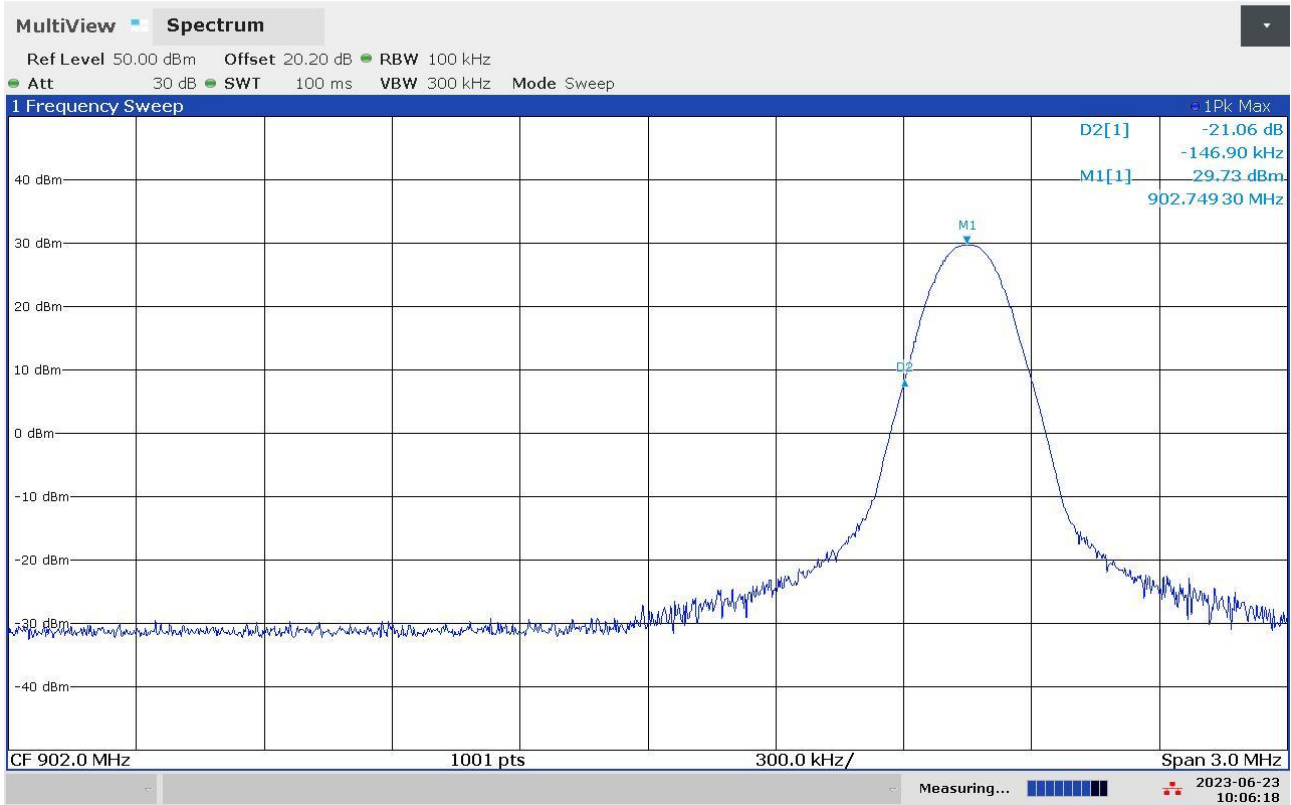
Result

<i>Transmission channel (MHz)</i>	<i>Bandwidth</i>	<i>Graph(s) – Hopping</i>	<i>Results</i>	
902,75	100 kHz	G23079132	F _L : 902,6044 MHz	Complies
927,25	100 kHz	G23079131	F _H : 927,3956 MHz	Complies

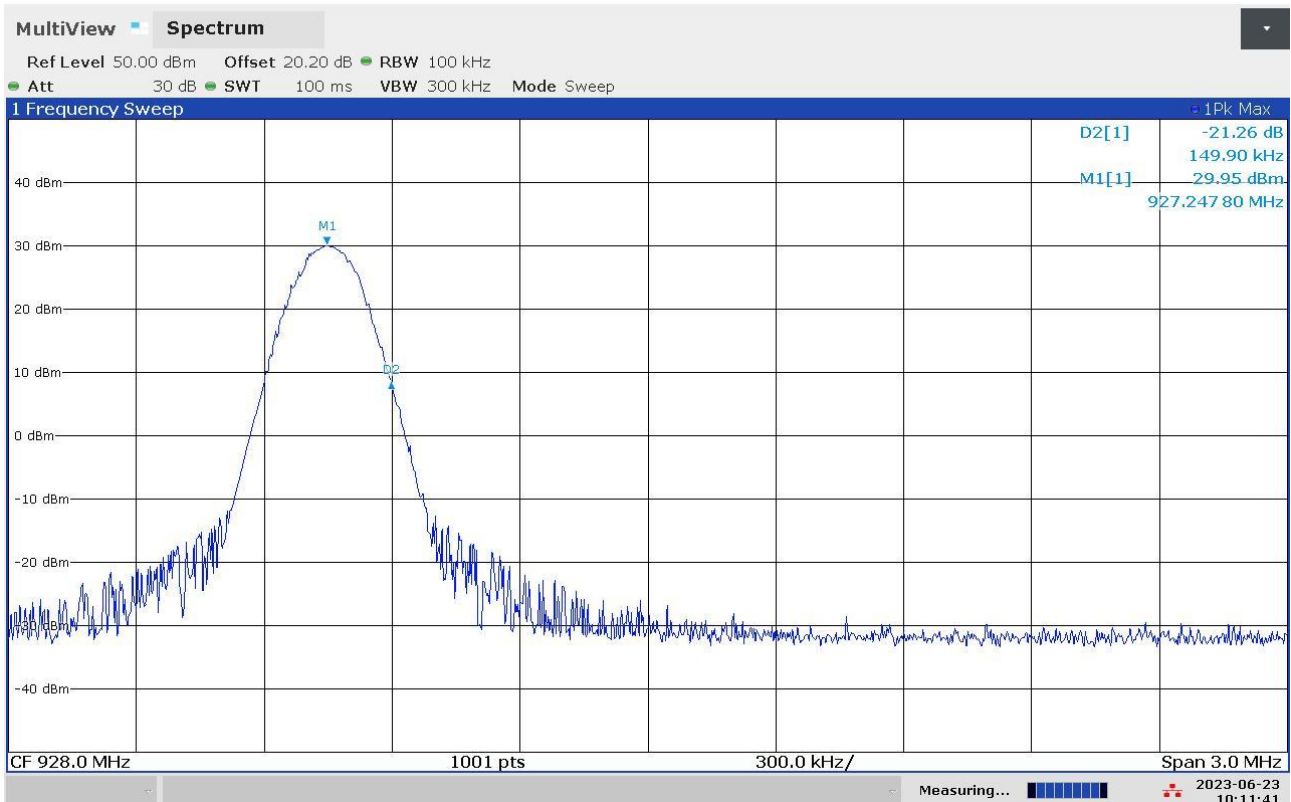
<i>Transmission channel (MHz)</i>	<i>Bandwidth</i>	<i>Graph(s) – No hopping</i>	<i>Results</i>	
902,75	100 kHz	G23079129	F _L : 902,6024 MHz	Complies
927,25	100 kHz	G23079130	F _H : 927,3977 MHz	Complies

Graphs

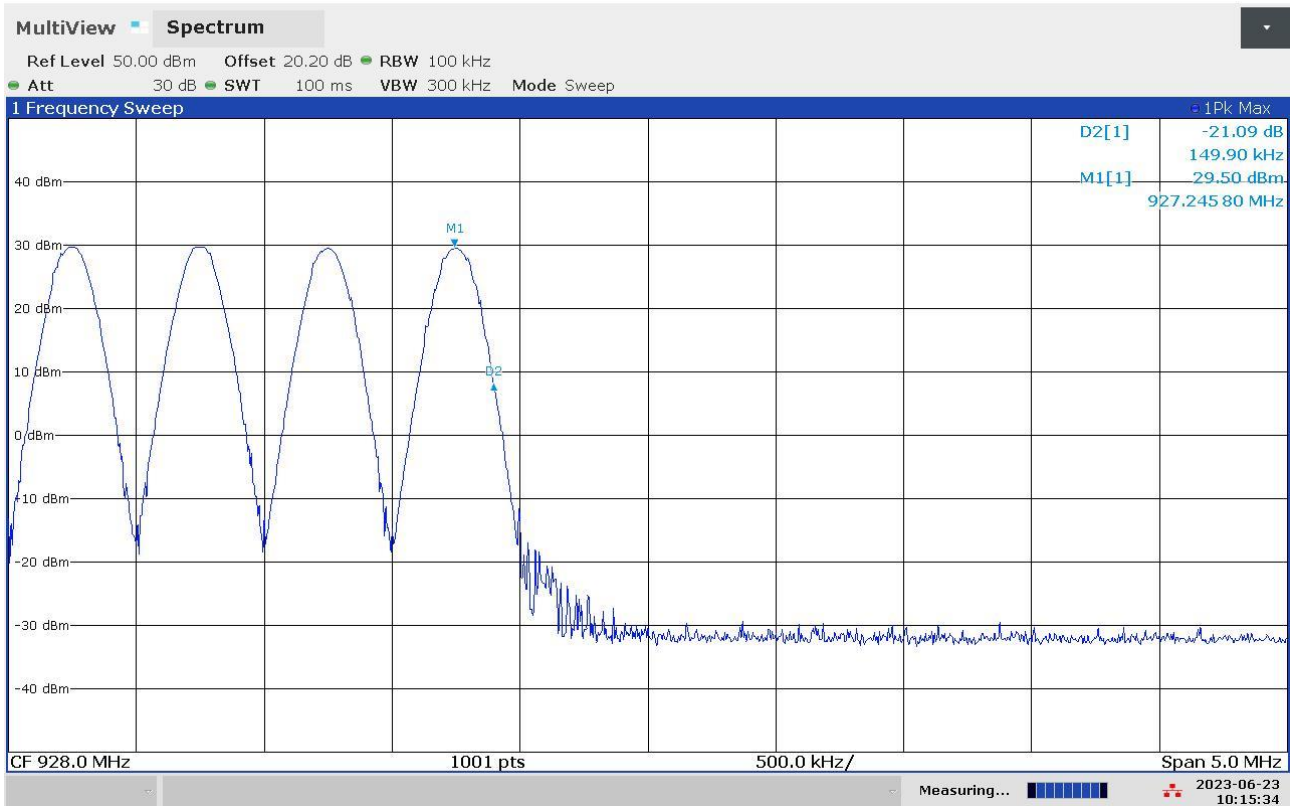
23079 129



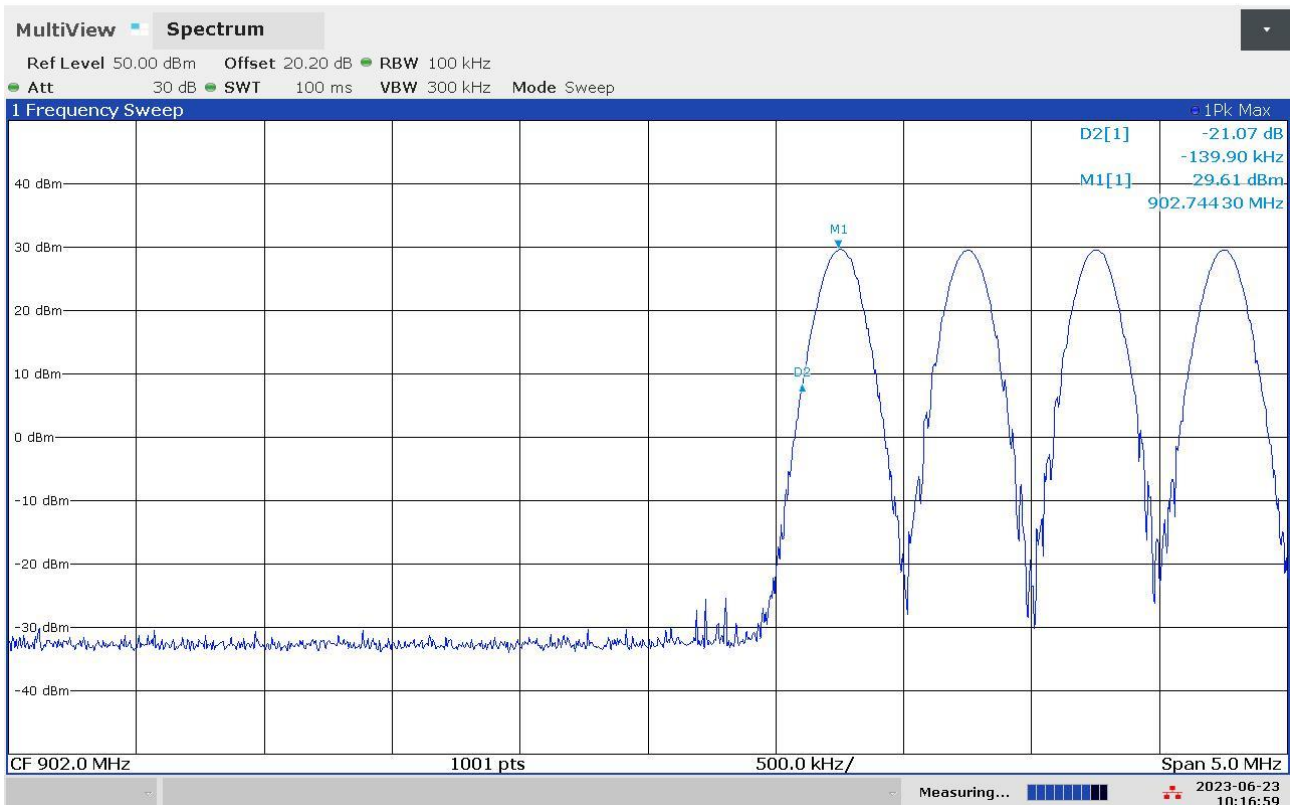
23079 130



23079 131



23079 132



9.9 Peak Output Power

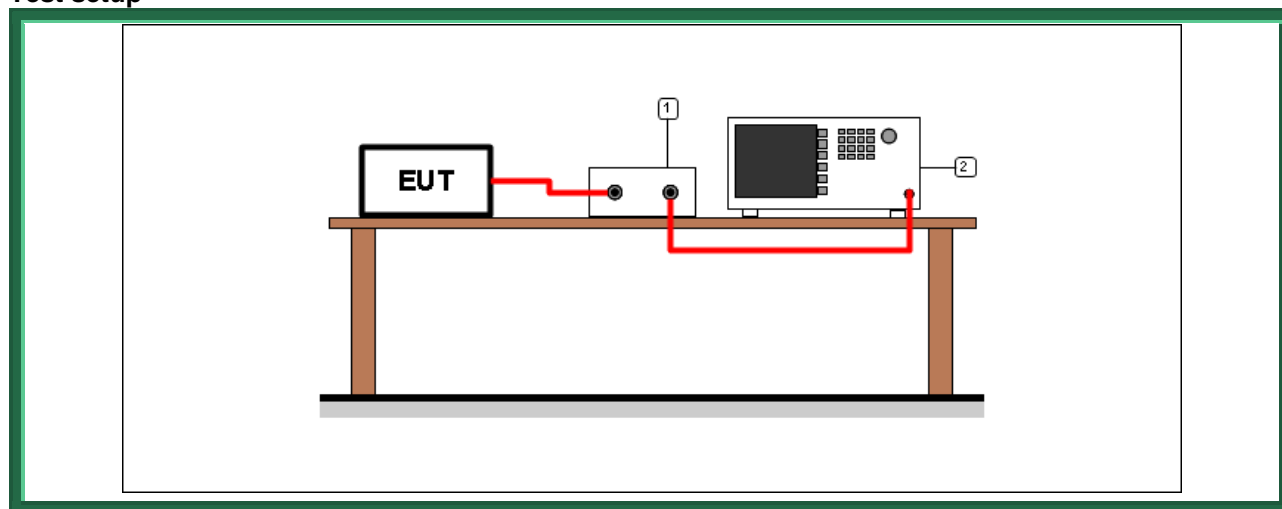
Tested by	C. Panozzo
Test date	23.06.2023
Test location (stand)	Laboratory
Reference standards.....	FCC Rules and Regulation; Titles 47 Part. 15.247 KDB 558074 D01 15.247 Meas Guidance v05r02 cl. 2.2 ANSI C63.10 cl. 7.8.5
Supplementary test set-up description.....	--
Supplementary information	--

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

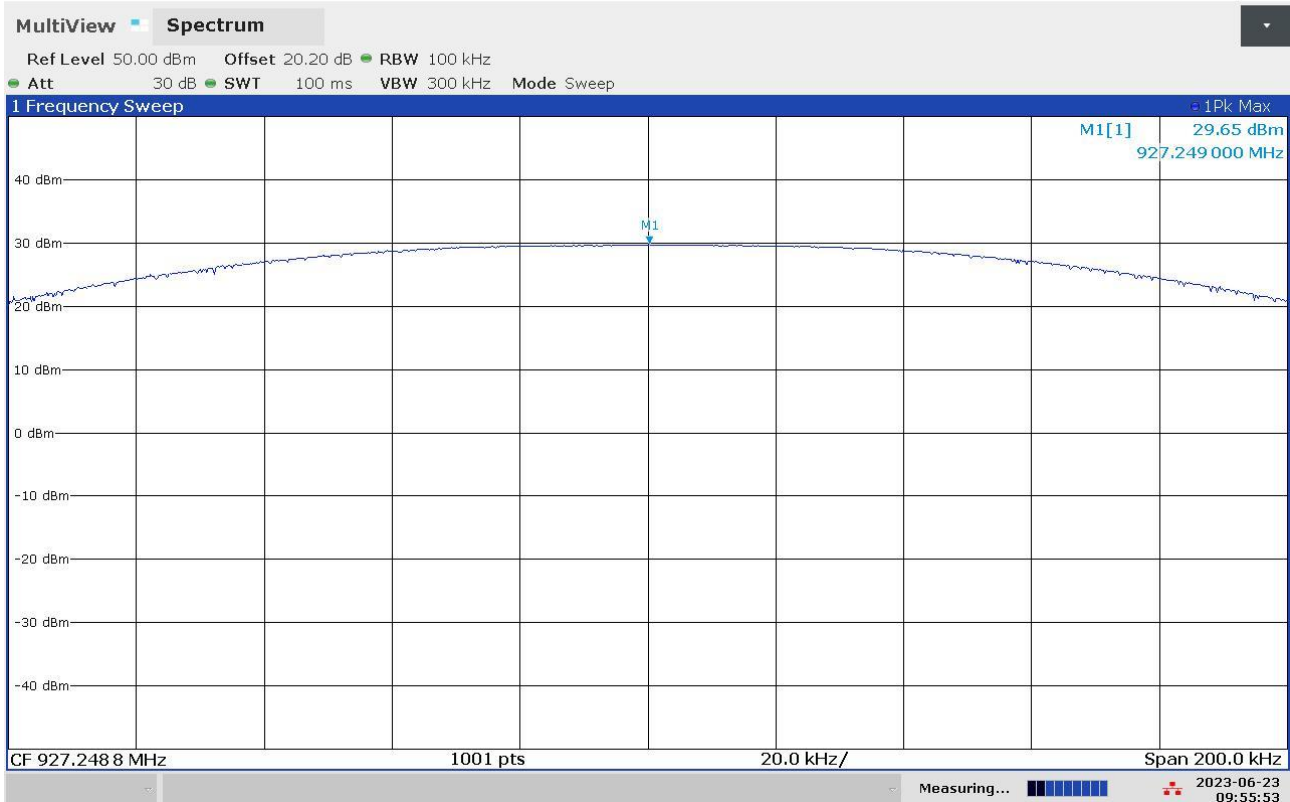
Nr.	Id. Number	Manufacturer	Model	Serial number	Description
2	CMC S295	Rohde & Schwarz	FSW43	104059	Spectrum Analyzer 43GHz
1	--	--	--	--	Cable + attenuator (calibrated before the test)

Result

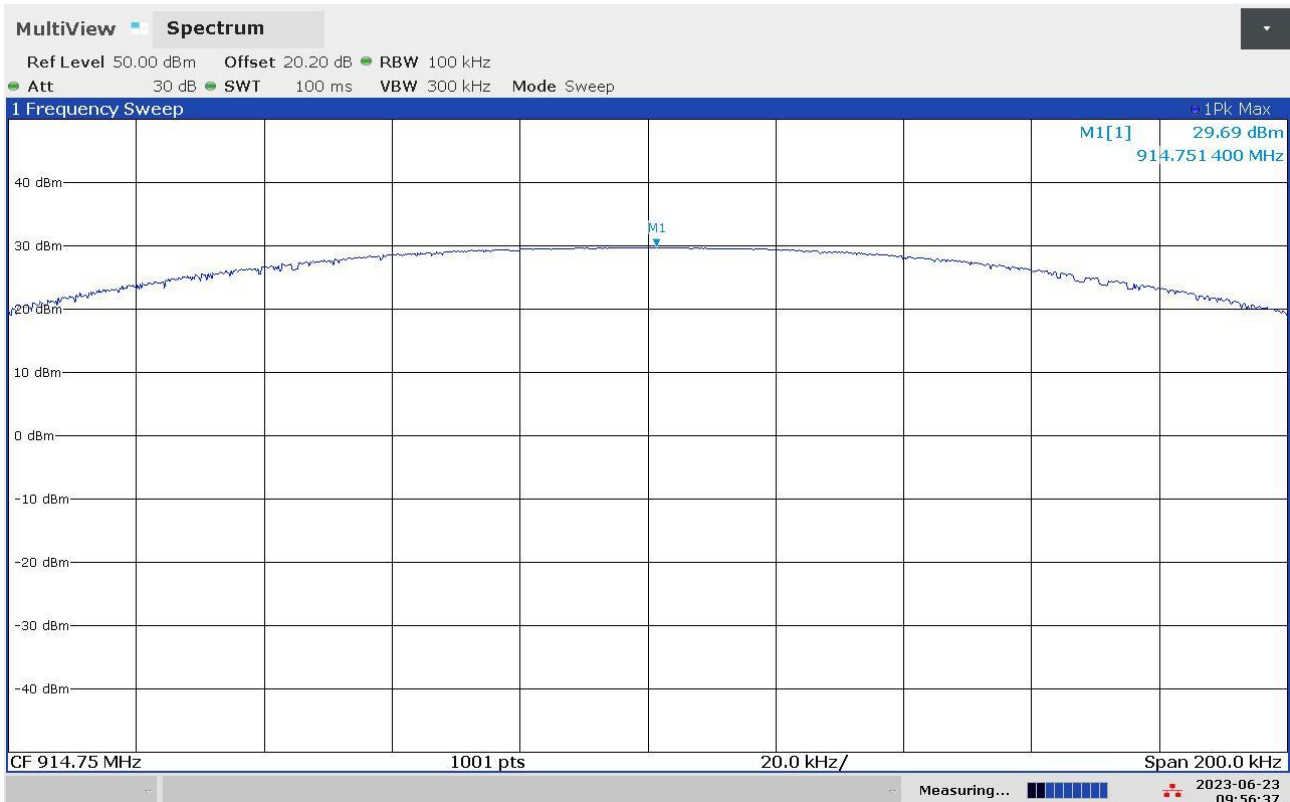
<i>Transmission channel (MHz)</i>	<i>Graphs</i>	<i>Peak Output Power (dBm)</i>	<i>Peak Output Power (mW)</i>	<i>Limit (mW)</i>
902,75	G23079190	29,20	831,76	1000
914,75	G23079191	29,22	835,60	1000
927,25	G23079192	29,28	847,23	1000

Graphs

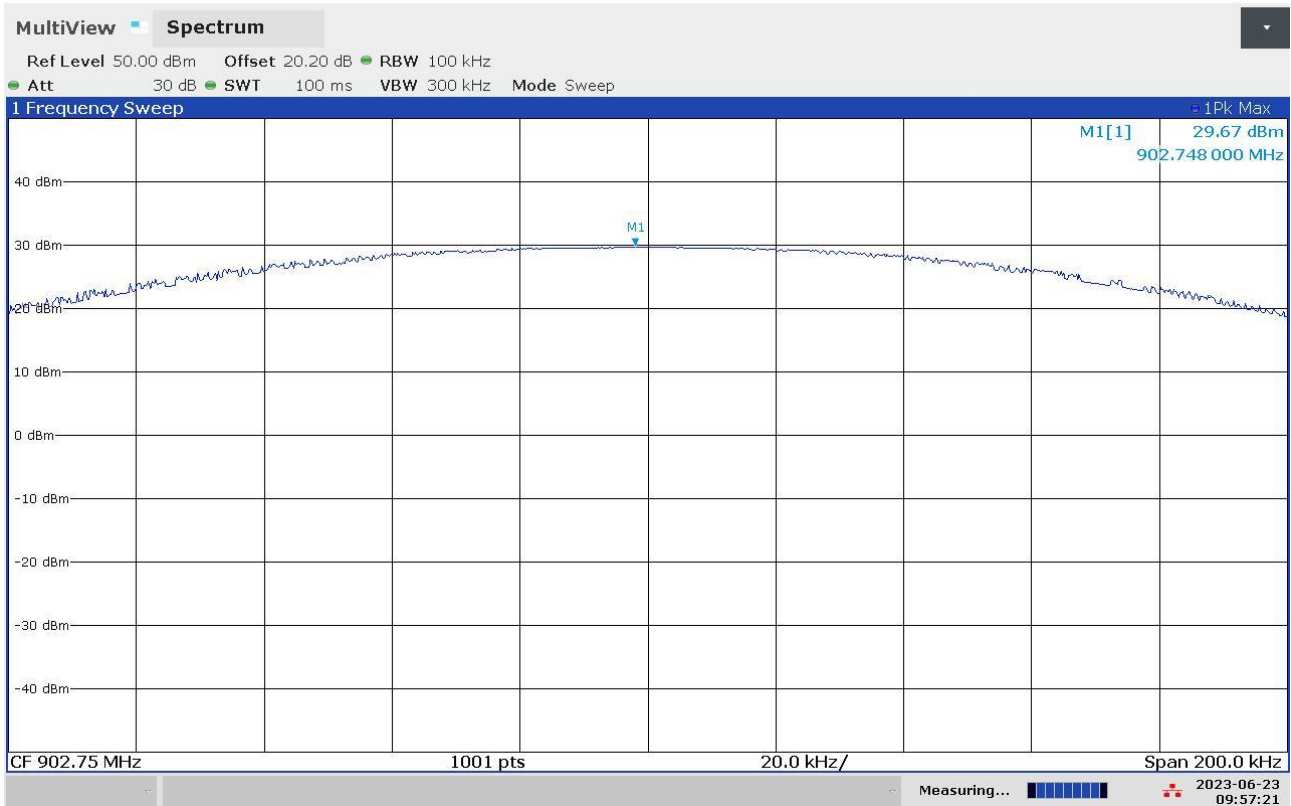
23079 126



23079 127



23079 128



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	2,9 dB	1
Conducted emission CISPR 16 Voltage Probe 0,15-30 MHz	PE001_02	2,1 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_01	3,7 dB	1
Radiated Emission LAS 0,15-30 MHz	PE003_01	1,9 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	4,6 dB	1
Radiated Emission CISPR 16 LogP. Ant. 300-1000 MHz	PE004_03	4,5 dB	1
Radiated Emission CISPR 16 Horn Ant. 1-18 GHz	PE004_04	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	4,20 %	1
Radiated Immunity 80 MHz - 6 GHz	PE102_XX	2,25 dB 0,89 V/m a 3V/m	1
Conducted Immunity 0,15 - 230 MHz	PE105_XX	1,19 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	6,25 % 18,8 A/m a 300A/m	1
Dumped Magnetic field	PE108_01	6,25 % 1,88 A/m a 30A/m	1
Common mode conducted immunity	PE112_01	2,22 % 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	5,1 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_23_01 date 20/03/2023			

Note 1:

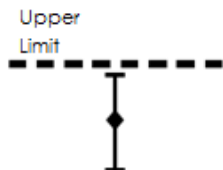
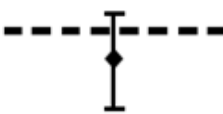

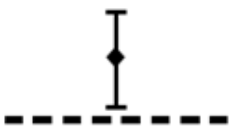
The expanded uncertainty reported according to the document EA-4-02 is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of $p = 95\%$

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