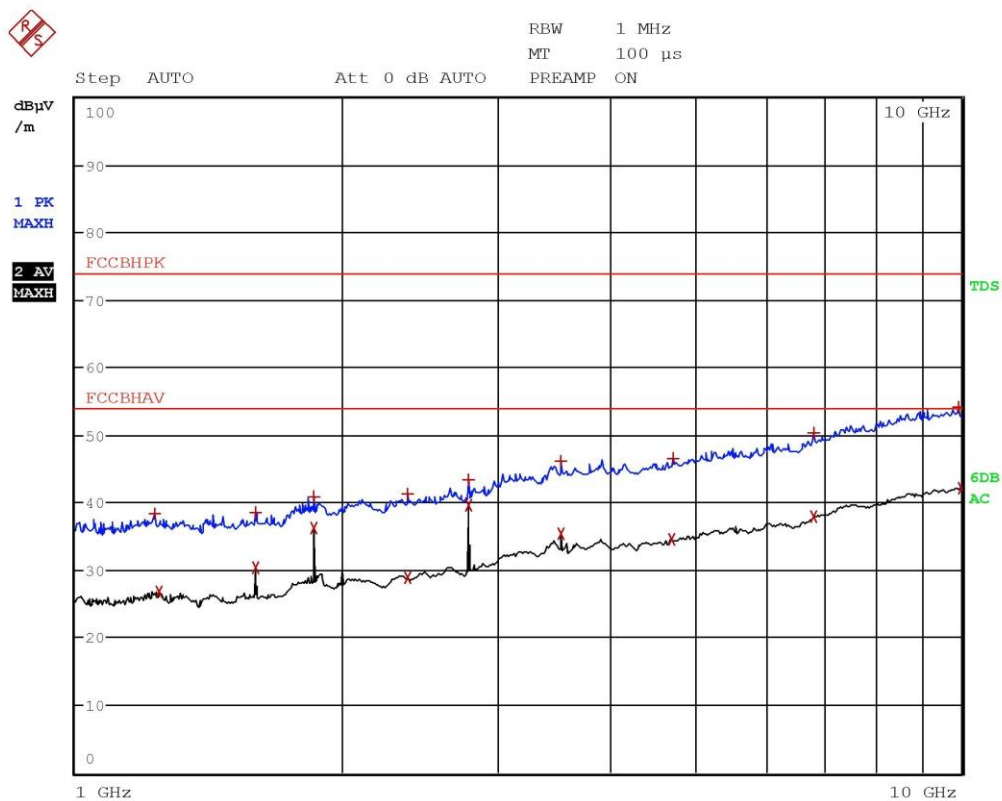


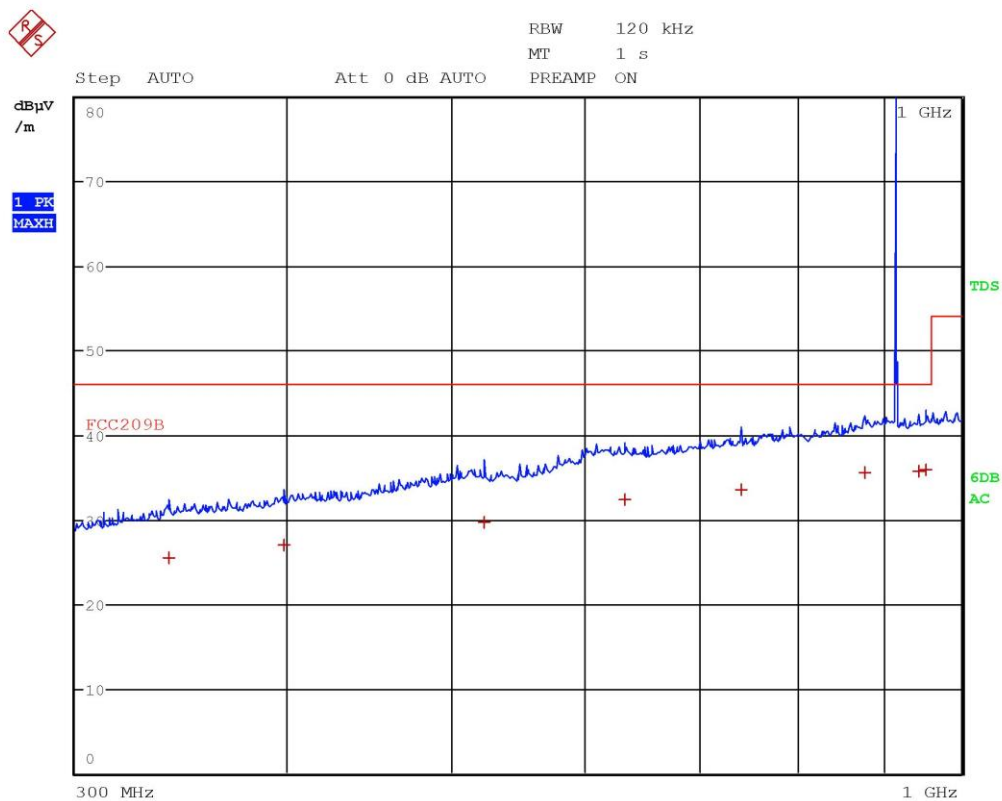


Gandini 20060112



EDIT PEAK LIST (Prescan Results)			
Trace1:	FCCBHPK		
Trace2:	FCCBHAV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Max Peak	1.2304 GHz	38.38	-35.59
2 Average	1.2444 GHz	26.86	-27.12
1 Max Peak	1.5988 GHz	38.64	-35.33
2 Average	1.5992 GHz	30.37	-23.60
2 Average	1.8556 GHz	36.33	-17.64
1 Max Peak	1.8556 GHz	40.95	-33.02
2 Average	2.374 GHz	28.90	-25.07
1 Max Peak	2.3748 GHz	41.20	-32.77
2 Average	2.7836 GHz	39.50	-14.47
1 Max Peak	2.7836 GHz	43.48	-30.49
1 Max Peak	3.5356 GHz	46.06	-27.91
2 Average	3.5356 GHz	35.43	-18.55
2 Average	4.71 GHz	34.58	-19.39
1 Max Peak	4.7328 GHz	46.49	-27.48
2 Average	6.8048 GHz	37.90	-16.08
1 Max Peak	6.8148 GHz	50.24	-23.73
1 Max Peak	9.9392 GHz	54.00	-19.97
2 Average	9.9988 GHz	42.18	-11.79

Gandini 20060112

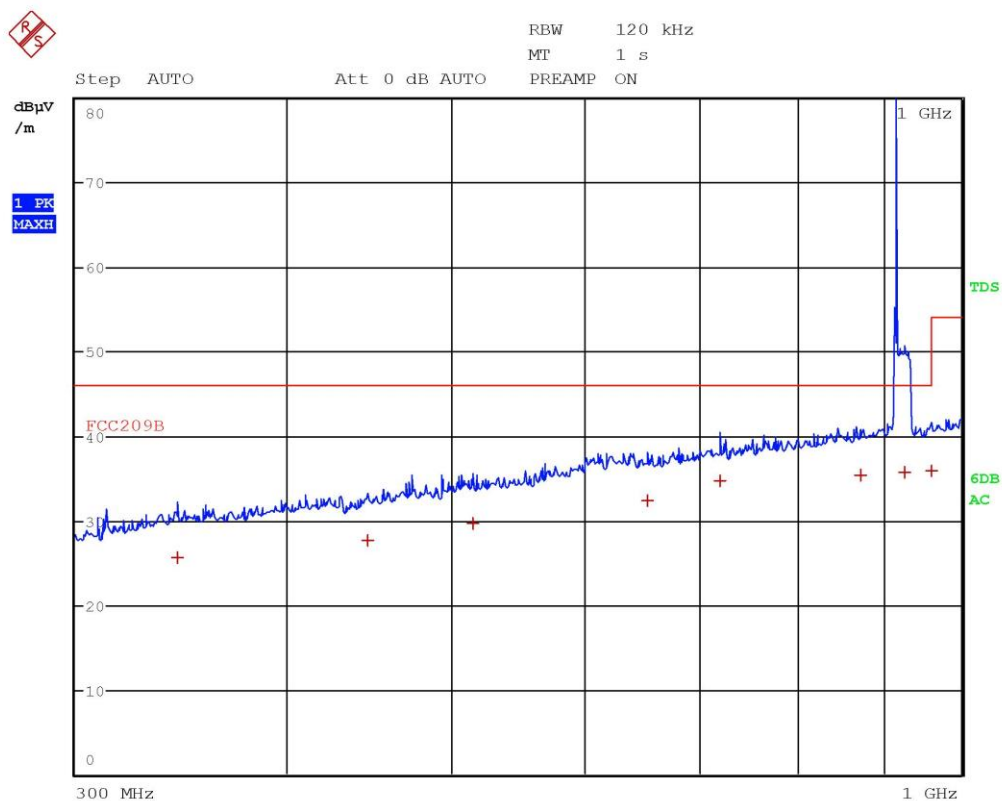


Gandini 20060113



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	FCC209B		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Quasi Peak	340.8 MHz	25.54	-20.48
1 Quasi Peak	398.44 MHz	26.97	-19.04
1 Quasi Peak	522.52 MHz	29.64	-16.37
1 Quasi Peak	633.2 MHz	32.41	-13.60
1 Quasi Peak	741.2 MHz	33.47	-12.54
1 Quasi Peak	877.6 MHz	35.48	-10.53
1 Quasi Peak	944.28 MHz	35.65	-10.36
1 Quasi Peak	952.64 MHz	35.83	-10.18

Gandini 20060113

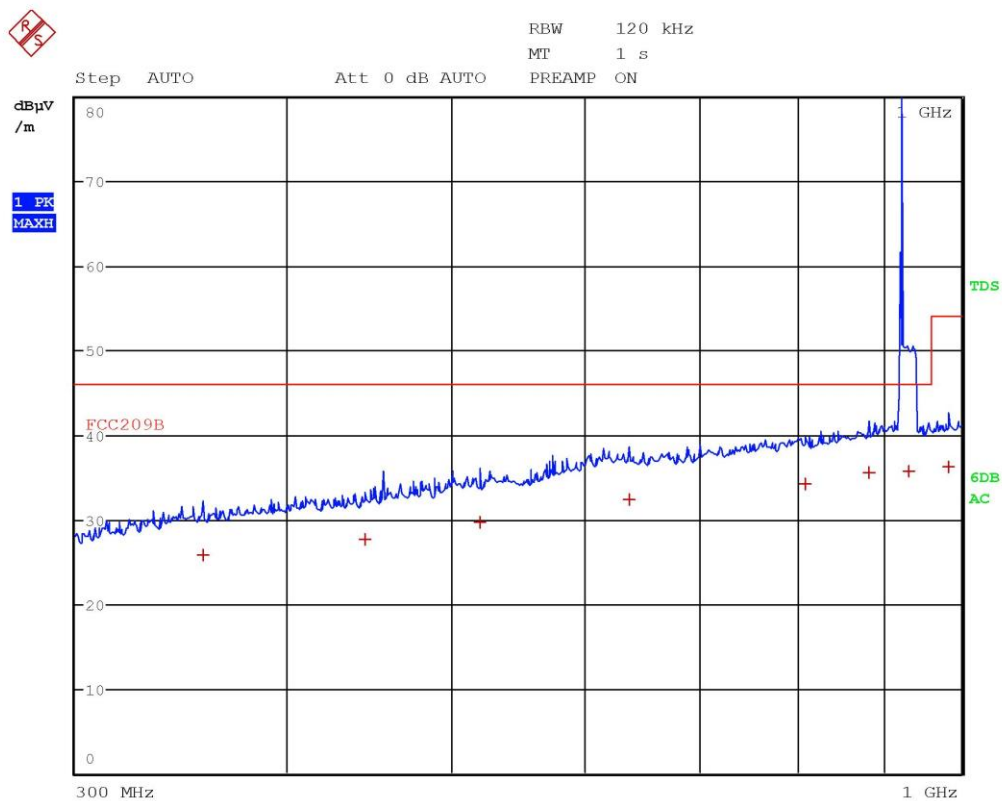


Gandini 20060114



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	FCC209B		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Quasi Peak	344.88 MHz	25.68	-20.34
1 Quasi Peak	446.08 MHz	27.61	-18.40
1 Quasi Peak	515.32 MHz	29.59	-16.42
1 Quasi Peak	652.84 MHz	32.27	-13.75
1 Quasi Peak	720 MHz	34.77	-11.24
1 Quasi Peak	871.12 MHz	35.29	-10.72
1 Quasi Peak	925.88 MHz	35.73	-10.28
1 Quasi Peak	960.52 MHz	35.94	-18.03

Gandini 20060114

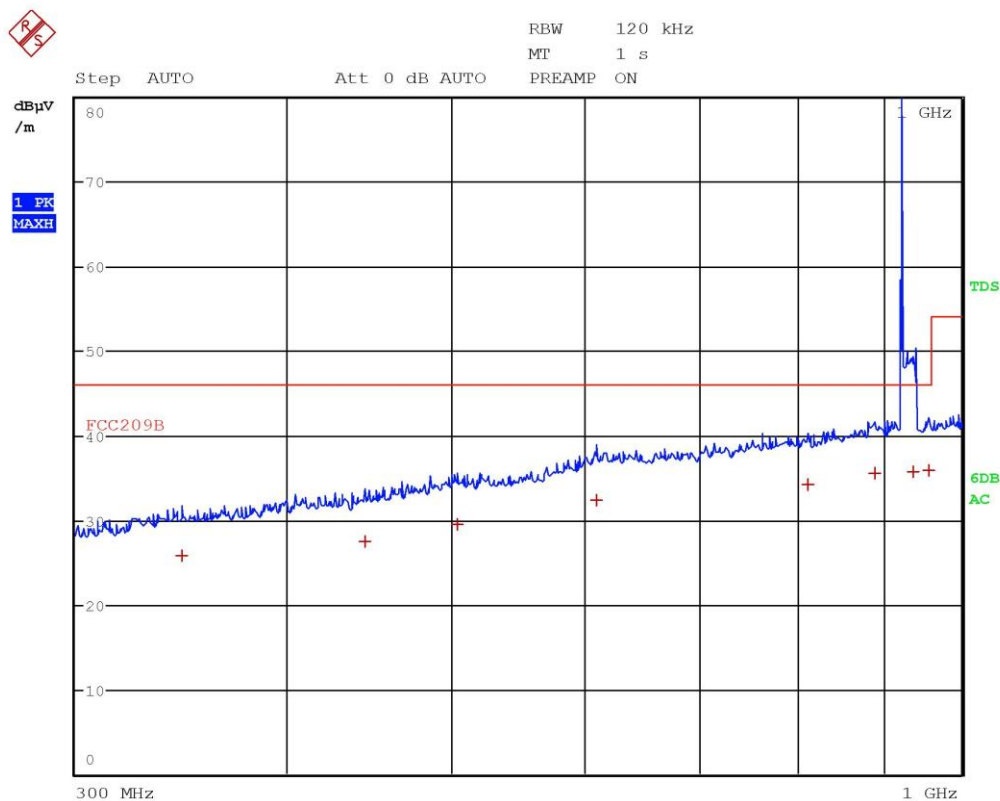


Gandini 20060115



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	FCC209B		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Quasi Peak	356.6 MHz	25.87	-20.14
1 Quasi Peak	445 MHz	27.57	-18.44
1 Quasi Peak	519.84 MHz	29.64	-16.37
1 Quasi Peak	637.04 MHz	32.40	-13.61
1 Quasi Peak	808 MHz	34.13	-11.88
1 Quasi Peak	881.56 MHz	35.57	-10.44
1 Quasi Peak	931.36 MHz	35.65	-10.36
1 Quasi Peak	982.12 MHz	36.23	-17.74

Gandini 20060115

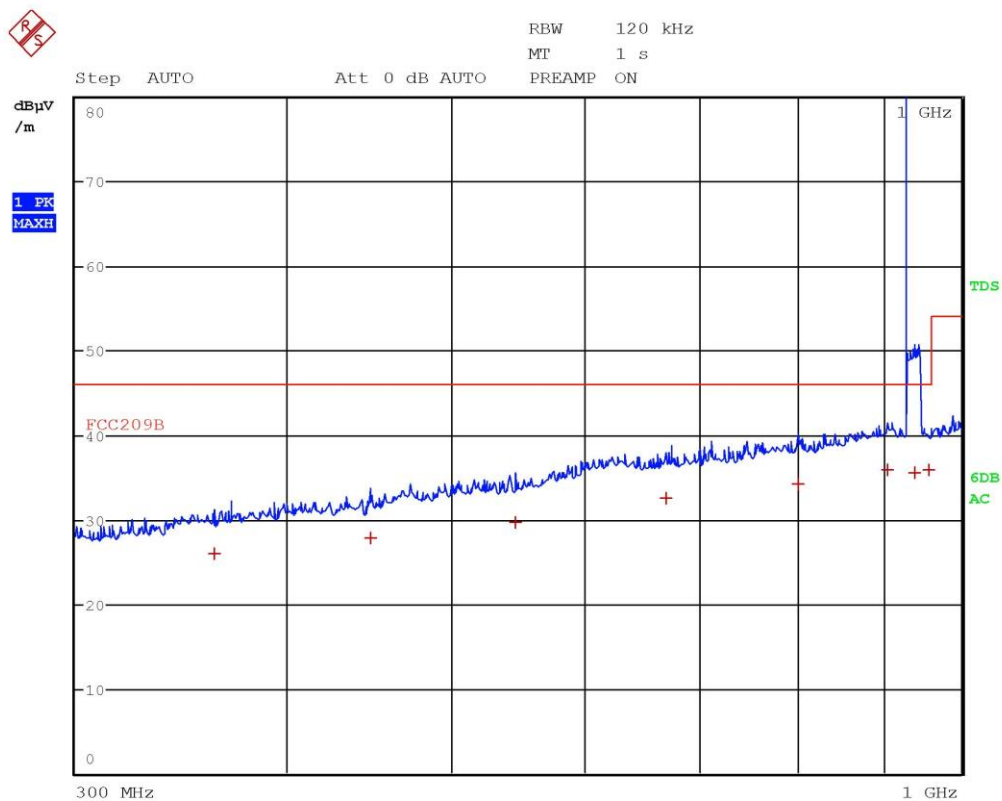


Gandini 20060116



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	FCC209B		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Quasi Peak	346.68 MHz	25.79	-20.22
1 Quasi Peak	444.96 MHz	27.53	-18.48
1 Quasi Peak	503.92 MHz	29.43	-16.58
1 Quasi Peak	609.28 MHz	32.36	-13.65
1 Quasi Peak	812.16 MHz	34.20	-11.81
1 Quasi Peak	888.8 MHz	35.62	-10.40
1 Quasi Peak	936.12 MHz	35.72	-10.29
1 Quasi Peak	957.24 MHz	35.91	-10.10

Gandini 20060116

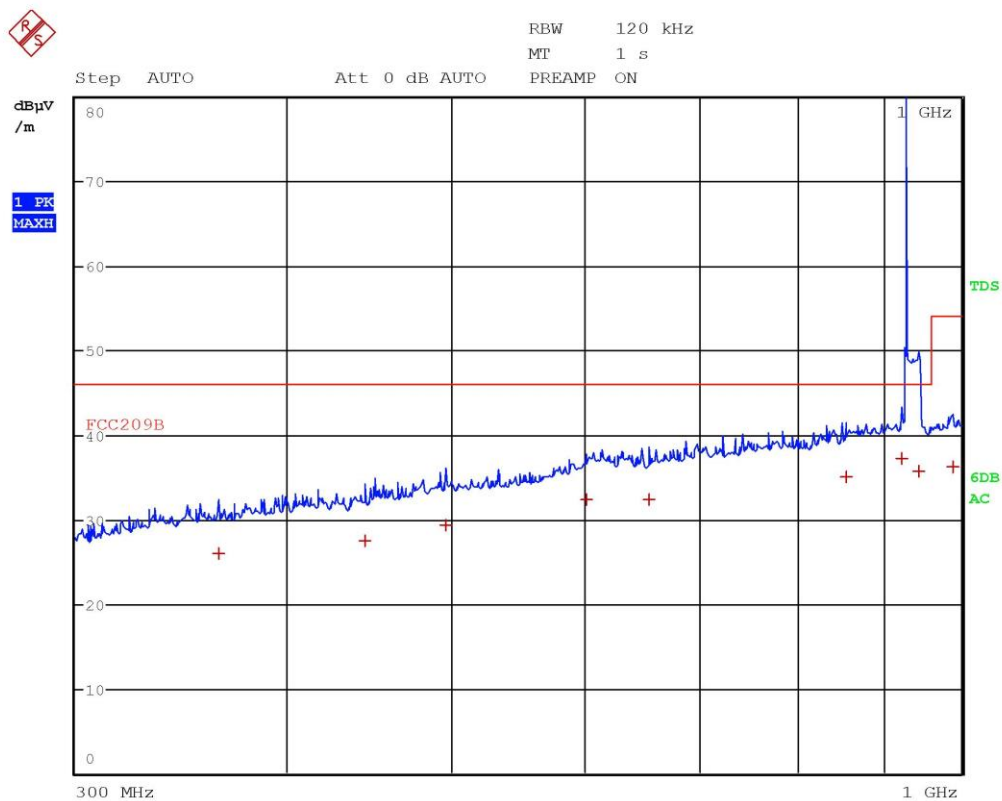


Gandini 20060117



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	FCC209B		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Quasi Peak	362.28 MHz	25.92	-20.09
1 Quasi Peak	447.8 MHz	27.73	-18.28
1 Quasi Peak	545.36 MHz	29.67	-16.34
1 Quasi Peak	668.88 MHz	32.49	-13.52
1 Quasi Peak	801.4 MHz	34.13	-11.89
1 Quasi Peak	904.72 MHz	35.82	-10.20
1 Quasi Peak	939.04 MHz	35.61	-10.40
1 Quasi Peak	956.48 MHz	35.80	-10.21

Gandini 20060117

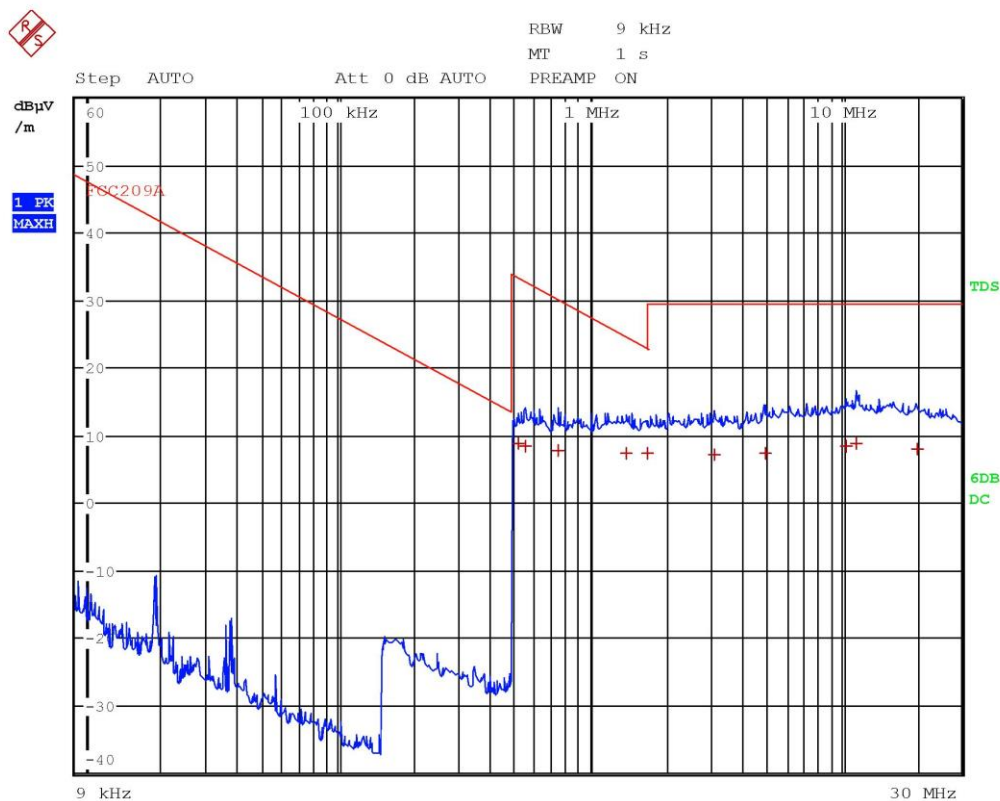


Gandini 20060118



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	FCC209B		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Quasi Peak	364.24 MHz	25.93	-20.08
1 Quasi Peak	444.24 MHz	27.55	-18.46
1 Quasi Peak	495.92 MHz	29.26	-16.75
1 Quasi Peak	601.08 MHz	32.32	-13.69
1 Quasi Peak	654.44 MHz	32.28	-13.73
1 Quasi Peak	855.56 MHz	35.04	-10.97
1 Quasi Peak	922.24 MHz	37.22	-8.79
1 Quasi Peak	943.32 MHz	35.70	-10.31
1 Quasi Peak	987.8 MHz	36.24	-17.73

Gandini 20060118



Gandini 20060119



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	FCC209A		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV/m	DELTA LIMIT dB
1 Quasi Peak	518 kHz	8.82	-24.49
1 Quasi Peak	550 kHz	8.47	-24.32
1 Quasi Peak	742 kHz	7.82	-22.36
1 Quasi Peak	1.386 MHz	7.29	-17.47
1 Quasi Peak	1.682 MHz	7.28	-15.80
1 Quasi Peak	3.126 MHz	7.21	-22.32
1 Quasi Peak	4.998 MHz	7.43	-22.10
1 Quasi Peak	10.514 MHz	8.50	-21.03
1 Quasi Peak	11.478 MHz	8.78	-20.75
1 Quasi Peak	20.034 MHz	8.01	-21.52

Gandini 20060119



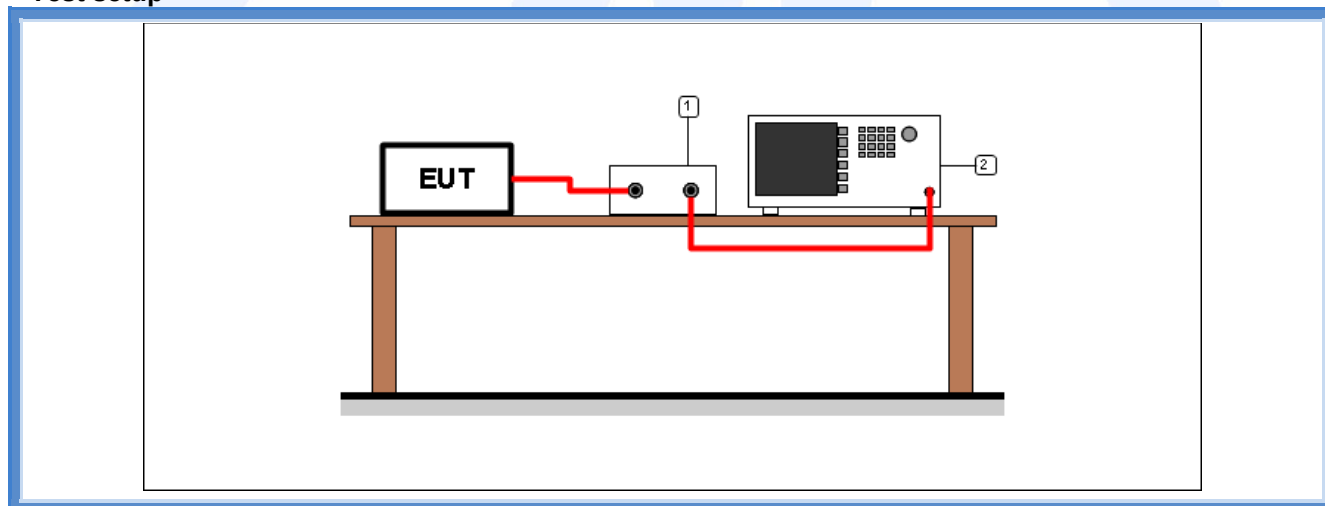
9.3 20 dB bandwidth

Tested by	G. Gandini
Test date	22.06.2020
Test location (stand)	Laboratory
Reference standards	FCC Rules and Regulation; Titles 47 Part. 15.247 ANSI C63.10 cl. 7.8.7
Supplementary test set-up description	--
Supplementary information.....	--

Acceptance limits

The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz

Test setup



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

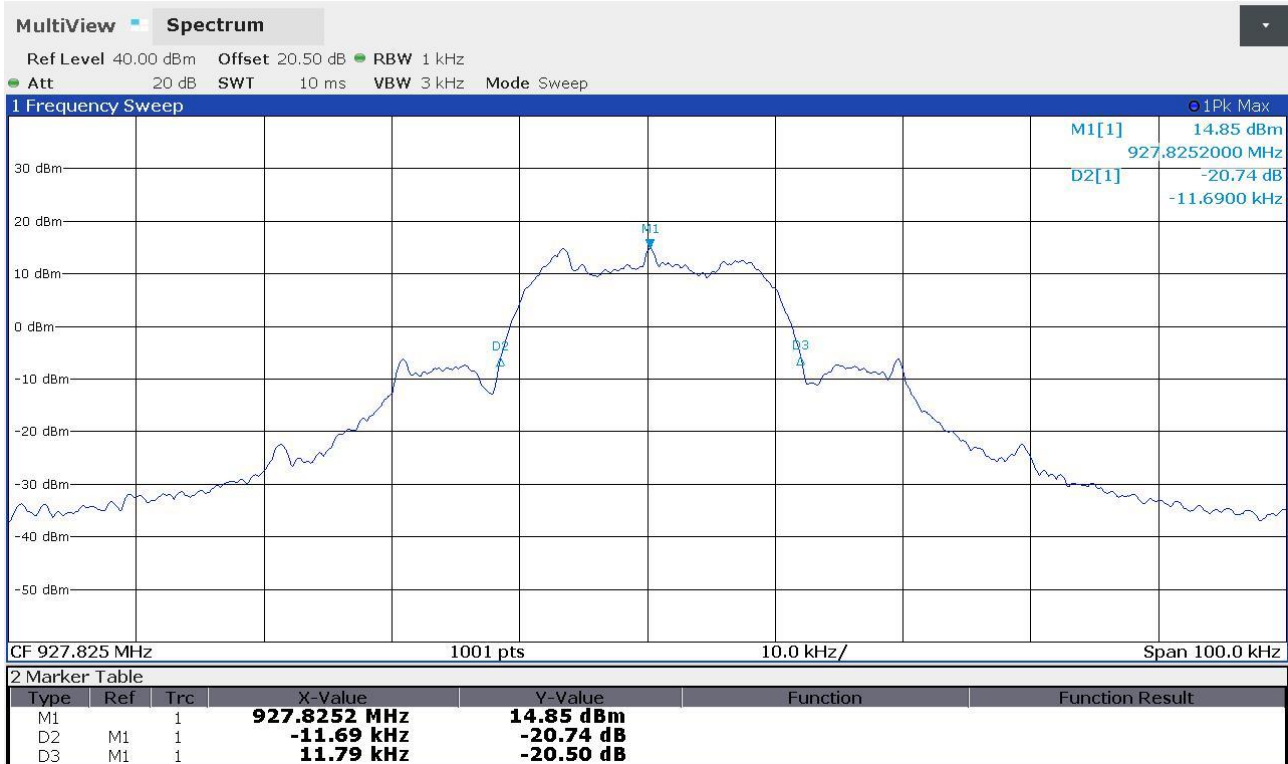
Result

Frequency (MHz)	Graphs	20 dB bandwidth (kHz)	Maximum 20 dB bandwidth allowed (kHz)	Results
915,075	G20060140	23,38	500	Complies
921,425	G20060137	23,38	500	Complies
927,825	G20060132	23,48	500	Complies

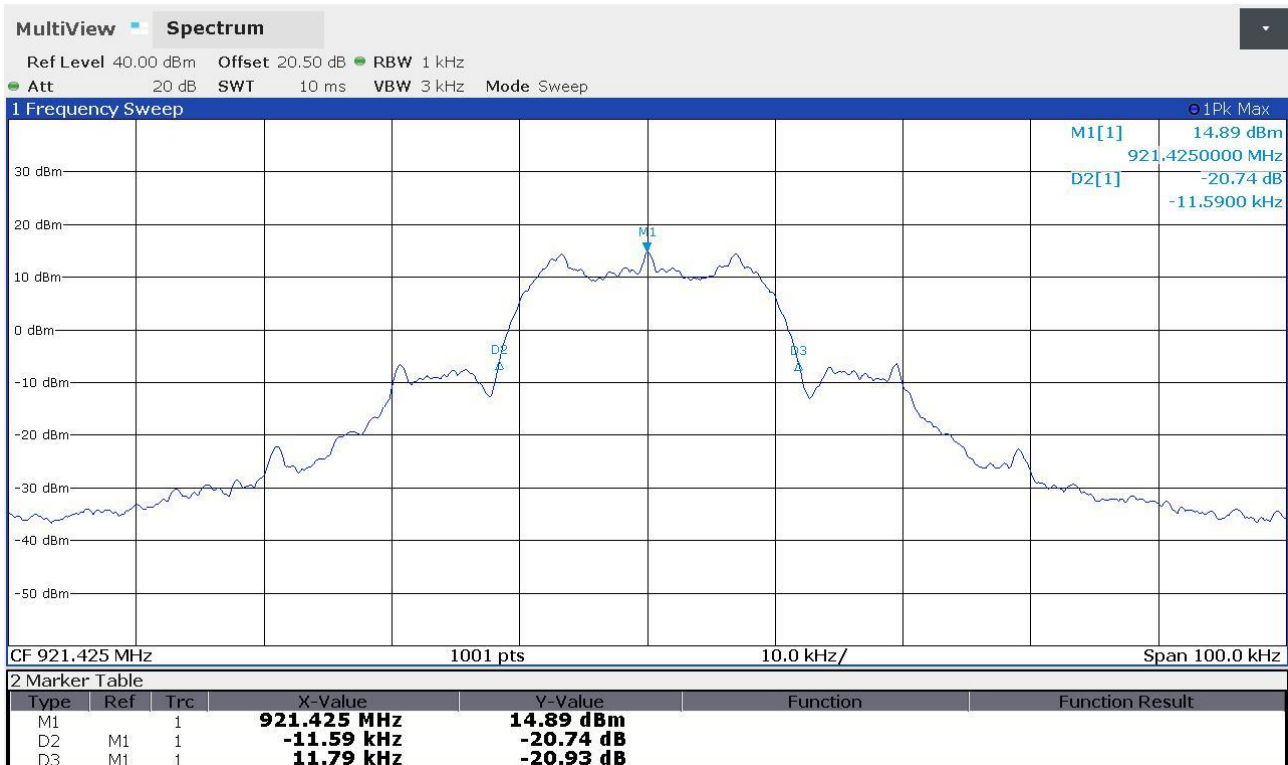


Graphs

Gandini 20060132

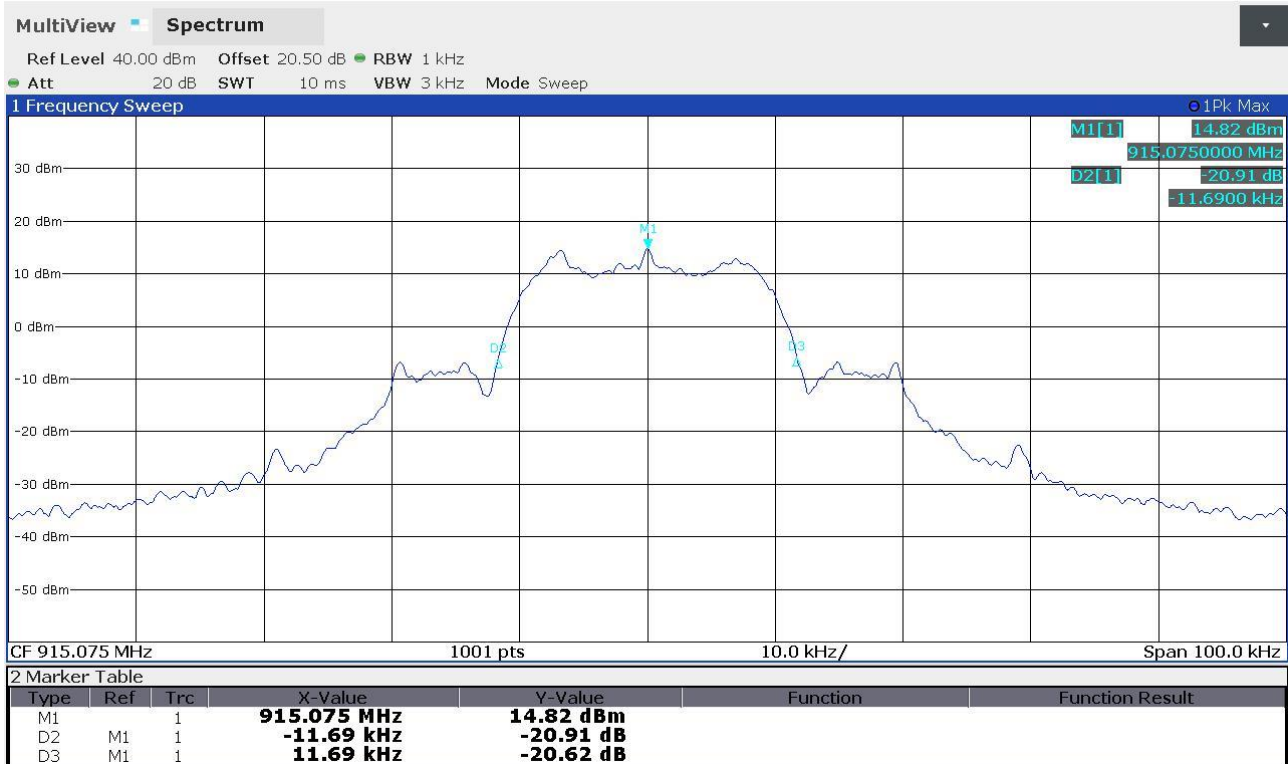


Gandini 20060137





Gandini 20060140





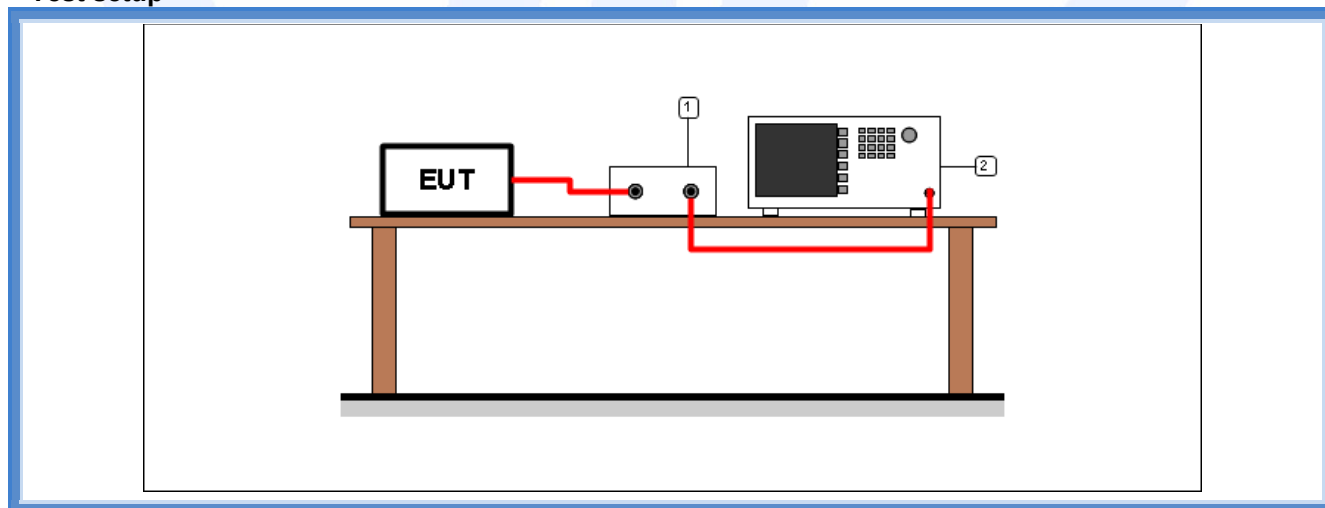
9.4 Channel separation

Tested by	G. Gandini
Test date	22.06.2020
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	Description
2	CMC S295	Rohde & Schwarz	FSW43	Spectrum Analyzer 43GHz
1	--	--	--	Cable + attenuator (calibrated before the test)



Result

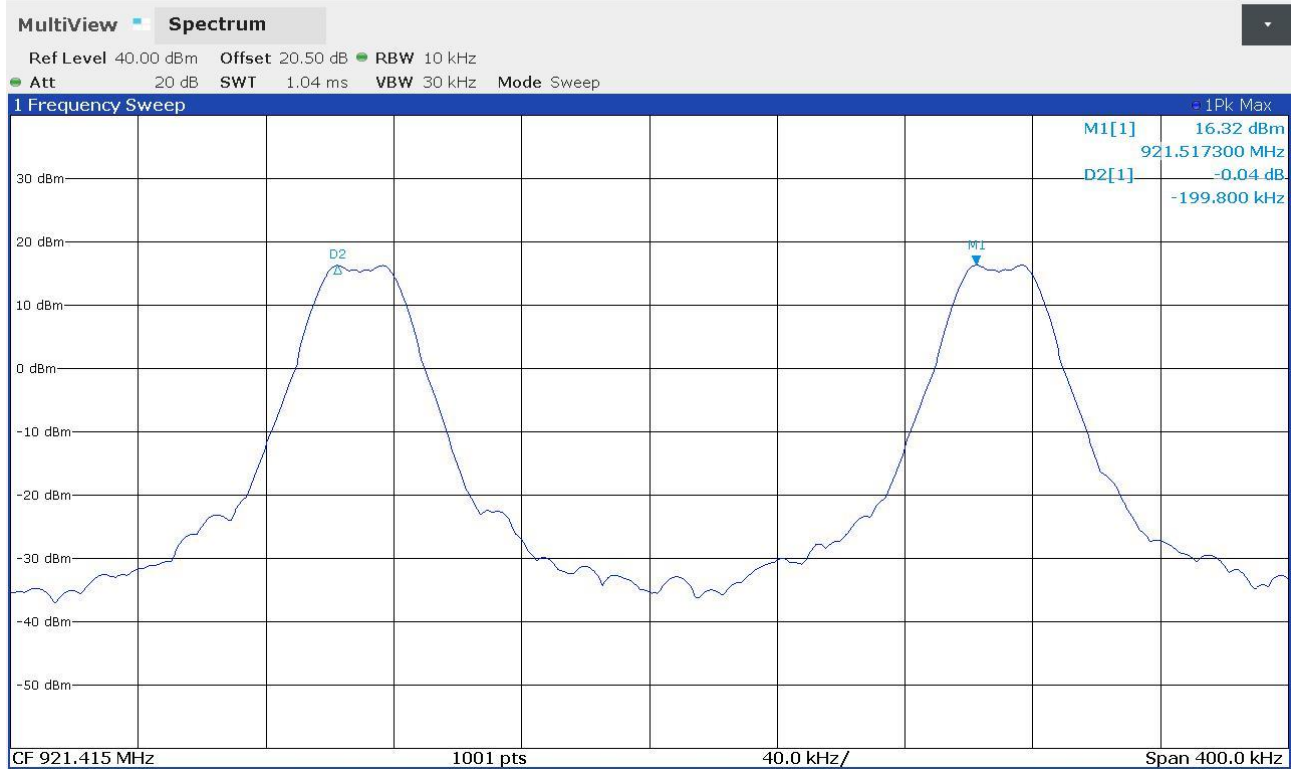
Frequency band (MHz)	Graphs	Channel separation (kHz)	Minimum channel separation required (kHz)	Results
902 – 928	G20060122	199,8	25	Complies





Graphs

Gandini 20060122





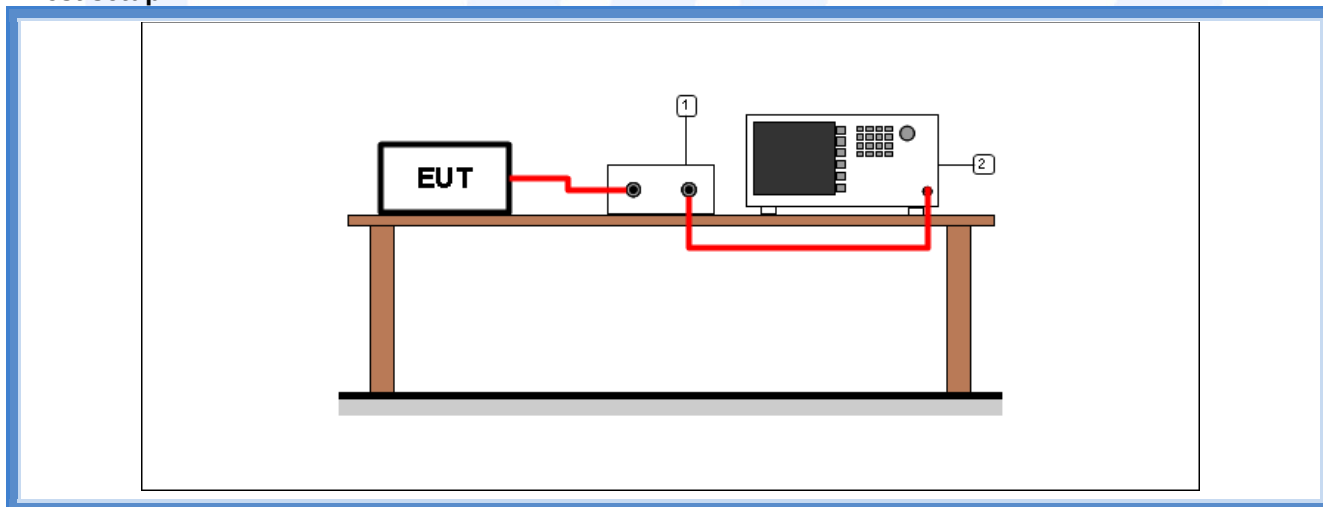
9.5 Number of hopping channels

Tested by	G. Gandini
Test date	22.06.2020
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	Description
2	CMC S295	Rohde & Schwarz	FSW43	Spectrum Analyzer 43GHz
1	--	--	--	Cable + attenuator (calibrated before the test)



Result

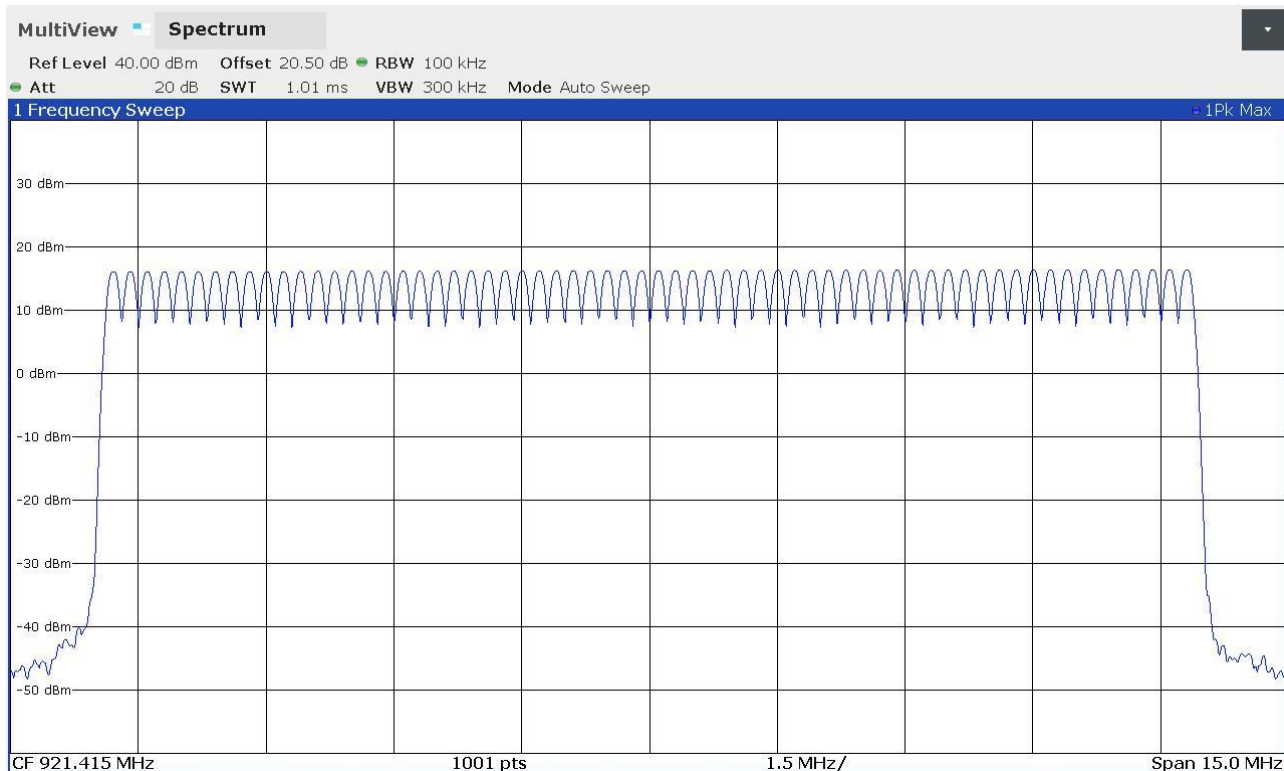
Frequency band (MHz)	Graphs	Number of hopping channels	Minimum number of hopping channels required	Results
902 – 928	G20060120 G20060121	64	50	Complies



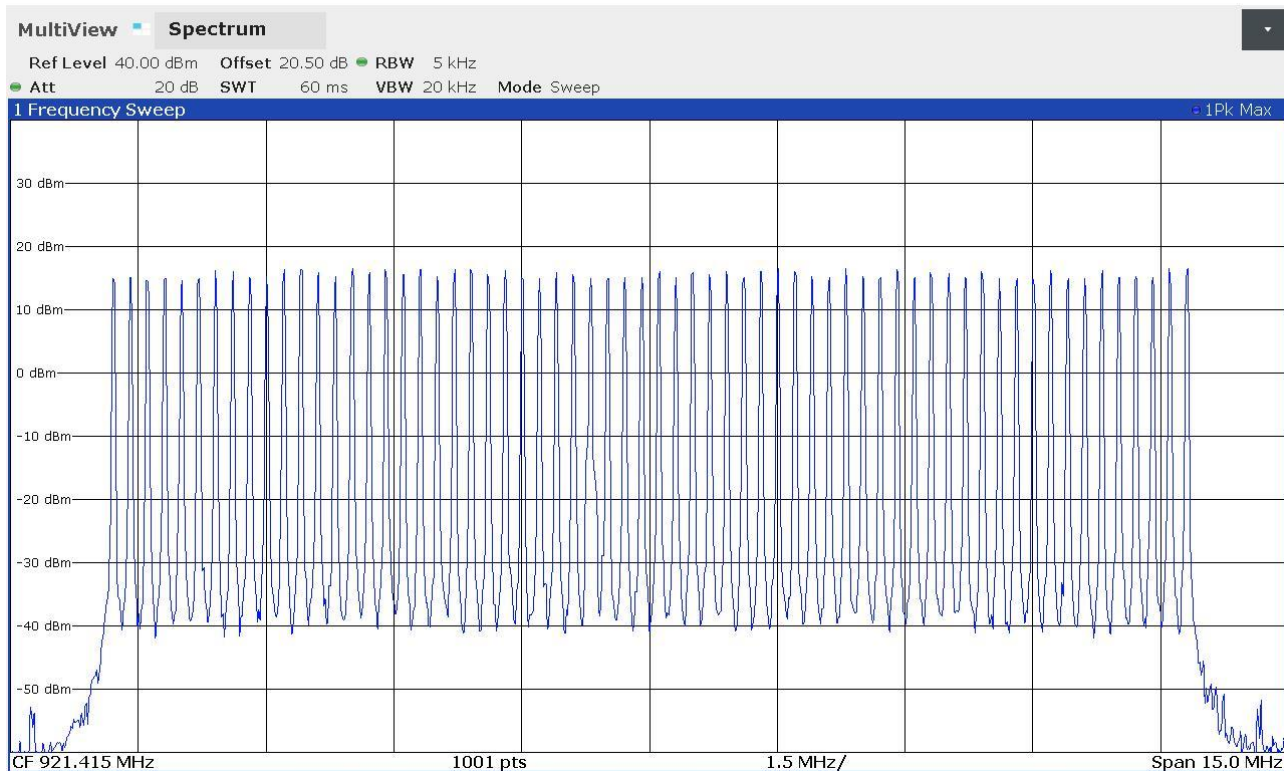


Graphs

Gandini 20060120



Gandini 20060121





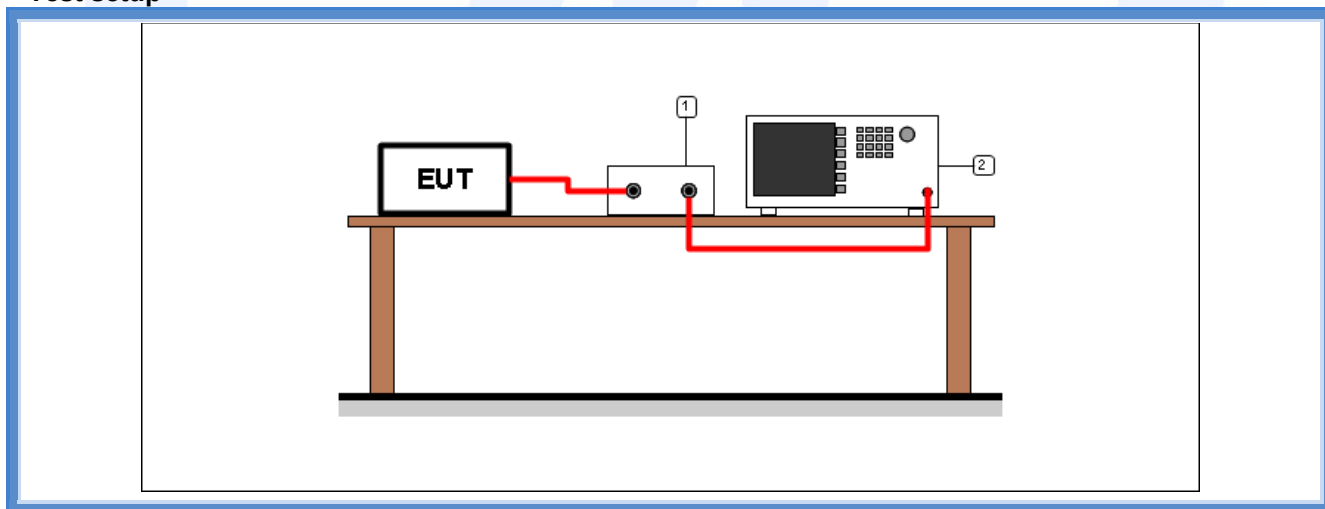
9.6 Time of occupancy

Tested by	G. Gandini
Test date	22.06.2020
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	Description
2	CMC S295	Rohde & Schwarz	FSW43	Spectrum Analyzer 43GHz
1	--	--	--	Cable + attenuator (calibrated before the test)



Result

<i>Frequency (MHz)</i>	<i>Graphs</i>	<i>Dwell time (ms)</i>
923,025	G20060127	20,90

<i>Frequency (MHz)</i>	<i>Graphs</i>	<i>Number of transmissions</i>	<i>Period</i>
923,025	G20060128 G20060129 G20060130	9	20 s

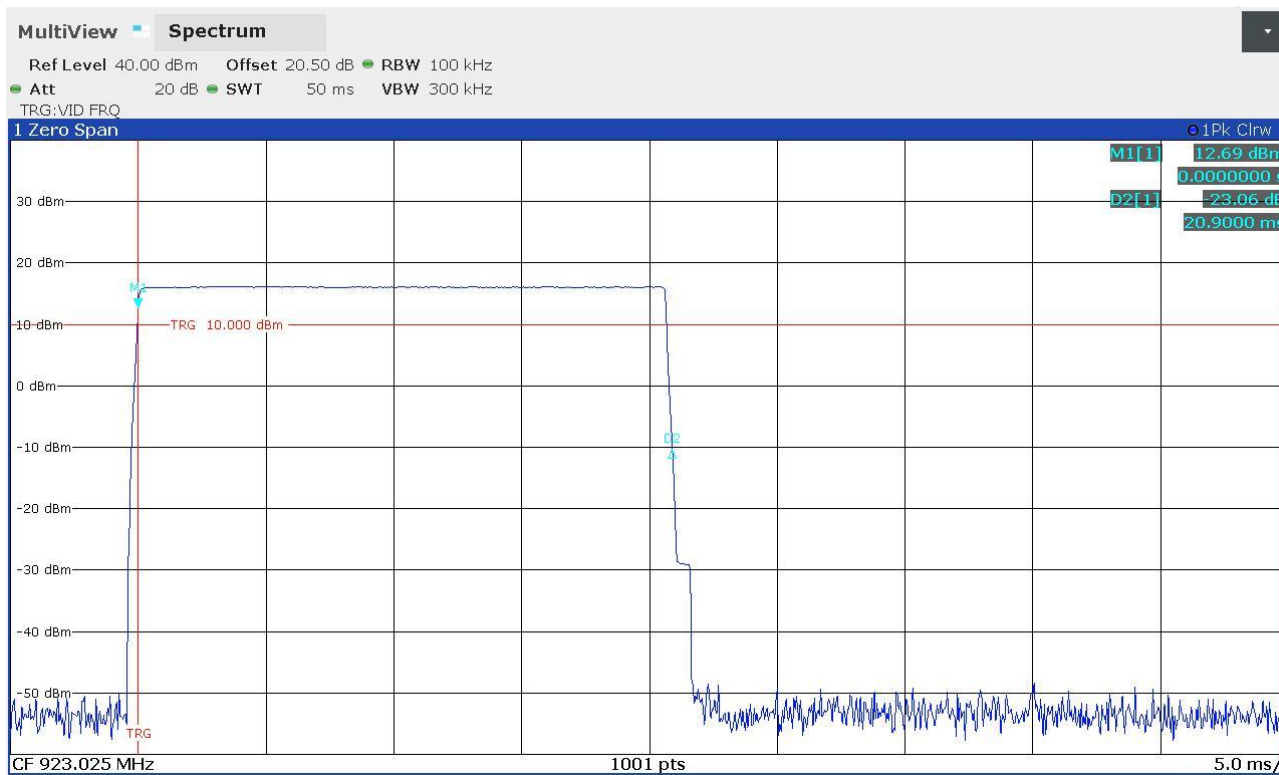
Remarks: only the highest peaks have been considered. The lowest peaks are due to the auxiliary receiver unit

<i>Time of occupancy (Dwell time x Nr. transmissions)</i>	<i>Maximum allowed time of occupancy</i>	<i>Results</i>
188,10 ms	400 ms	Complies

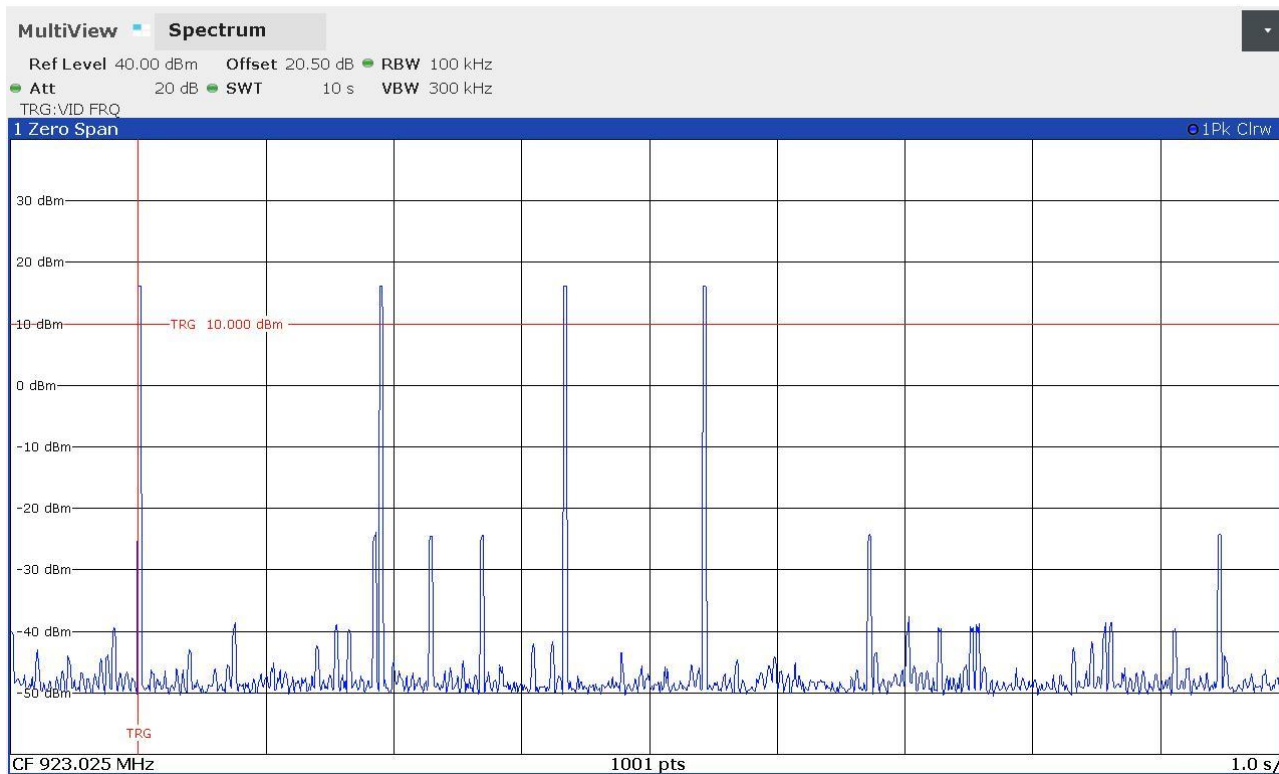


Graphs

Gandini 20060127

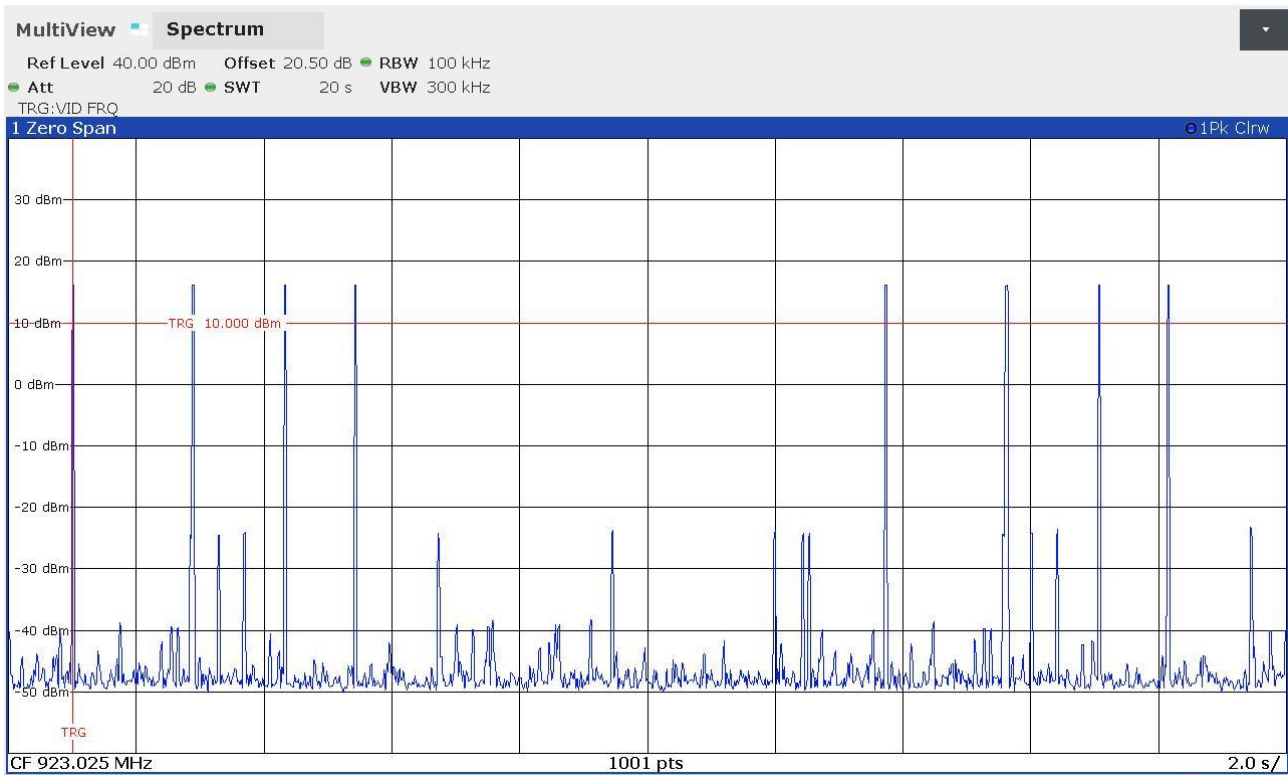


Gandini 20060128

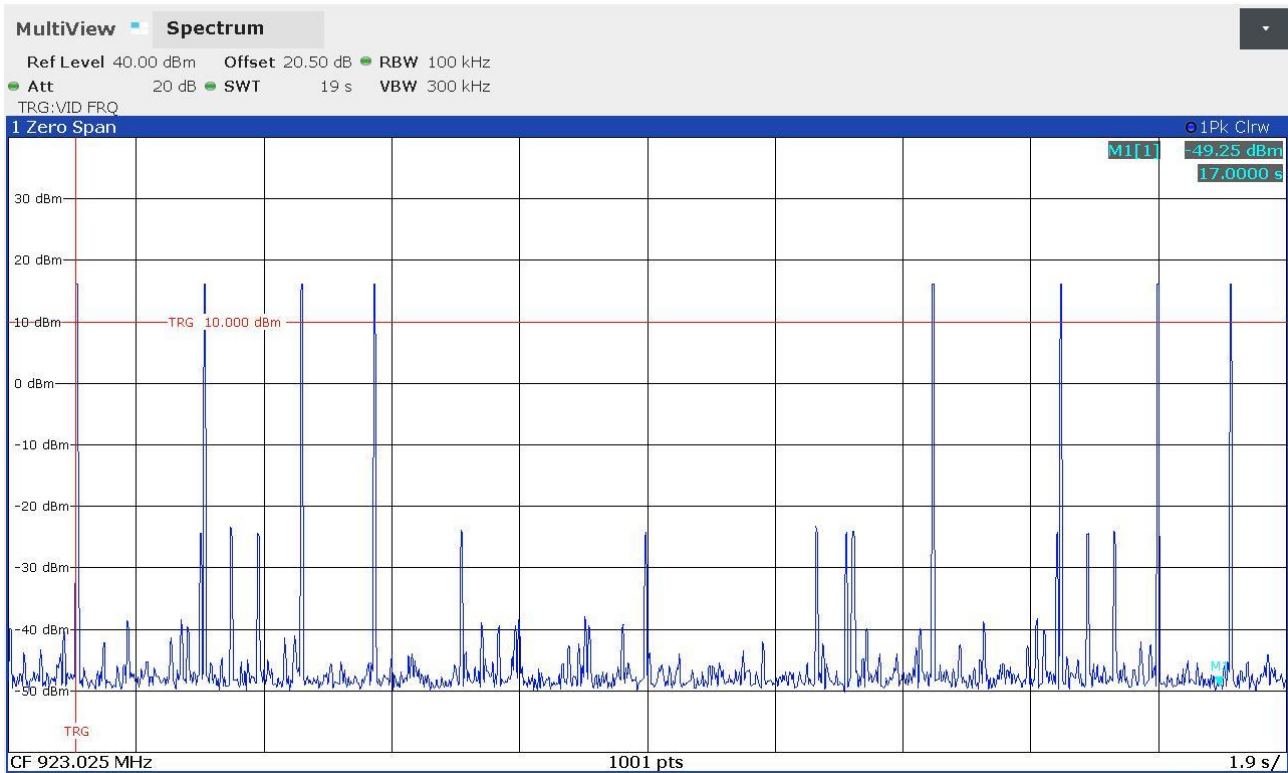




Gandini 20060129



Gandini 20060130



9.7 Band edge

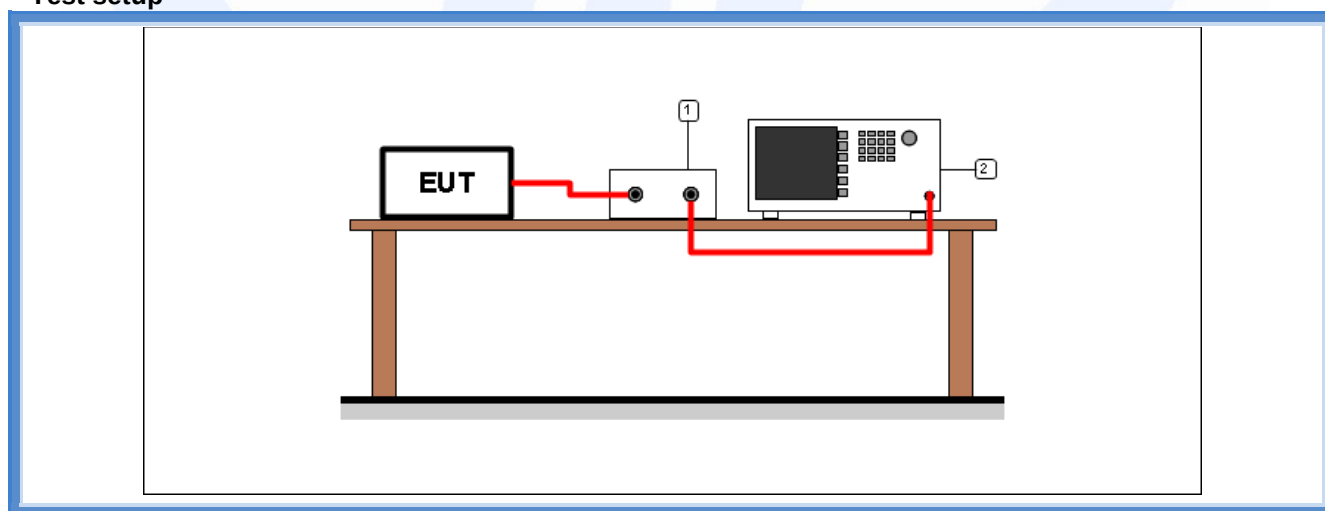
Tested by	G. Gandini
Test date	22.06.2020
Test location (stand)	Laboratory
Reference standards	FCC Rules and Regulation; Titles 47 Part. 15.247 ANSI C63.10 cl. 7.8.6
Supplementary test set-up description	--
Supplementary information.....	--

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	Description
2	CMC S295	Rohde & Schwarz	FSW43	Spectrum Analyzer 43GHz
1	--	--	--	Cable + attenuator (calibrated before the test)



Result

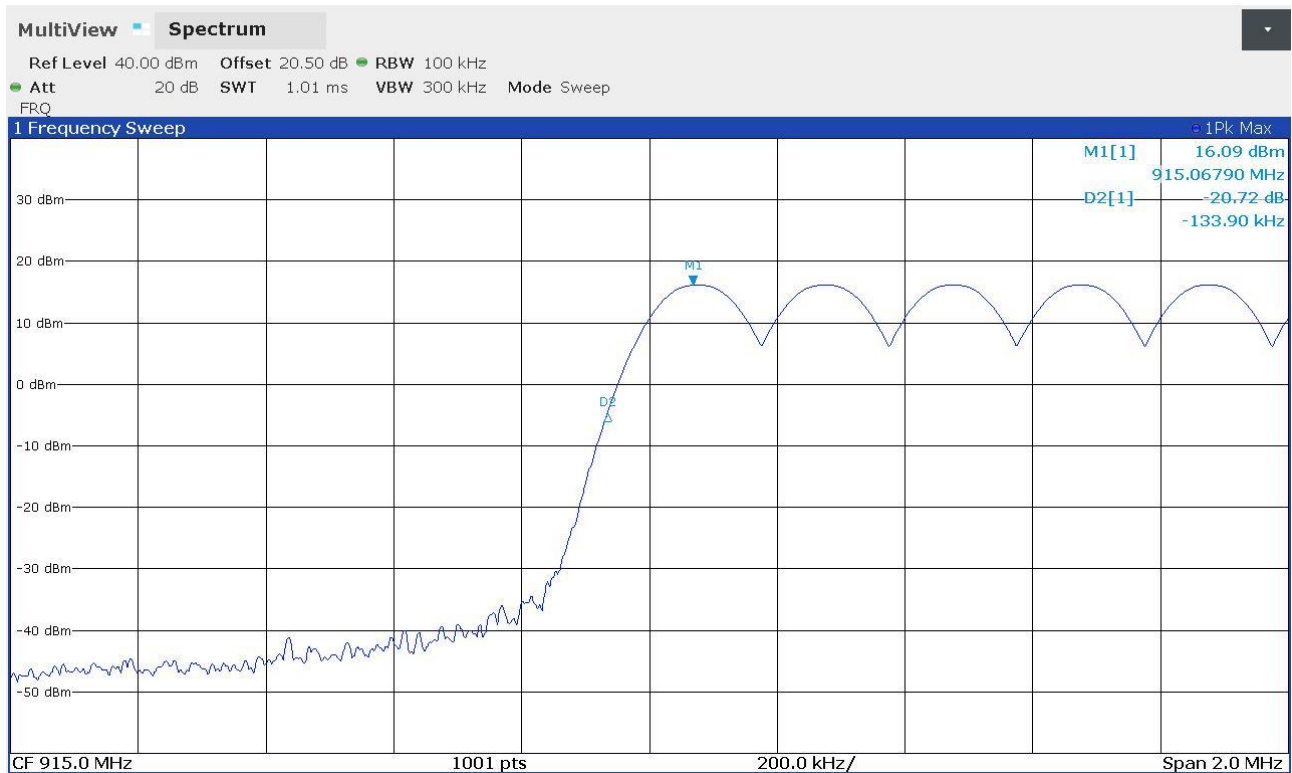
Frequency (MHz)	Bandwidth	Graph(s) – Hopping	Results	
915,075	100 kHz	G20060123	F _L : 914,9340 MHz	Complies
915,075	100 kHz	G20060124		
927,825	100 kHz	G20060125	F _H : 927,9659 MHz	Complies
927,825	100 kHz	G20060126		

Frequency (MHz)	Bandwidth	Graph(s) – No hopping	Results	
915,075	100 kHz	G20060142	F _L : 914,9344 MHz	Complies
915,075	100 kHz	G20060143		
927,825	100 kHz	G20060134	F _H : 927,8322 MHz	Complies
927,825	100 kHz	G20060135		

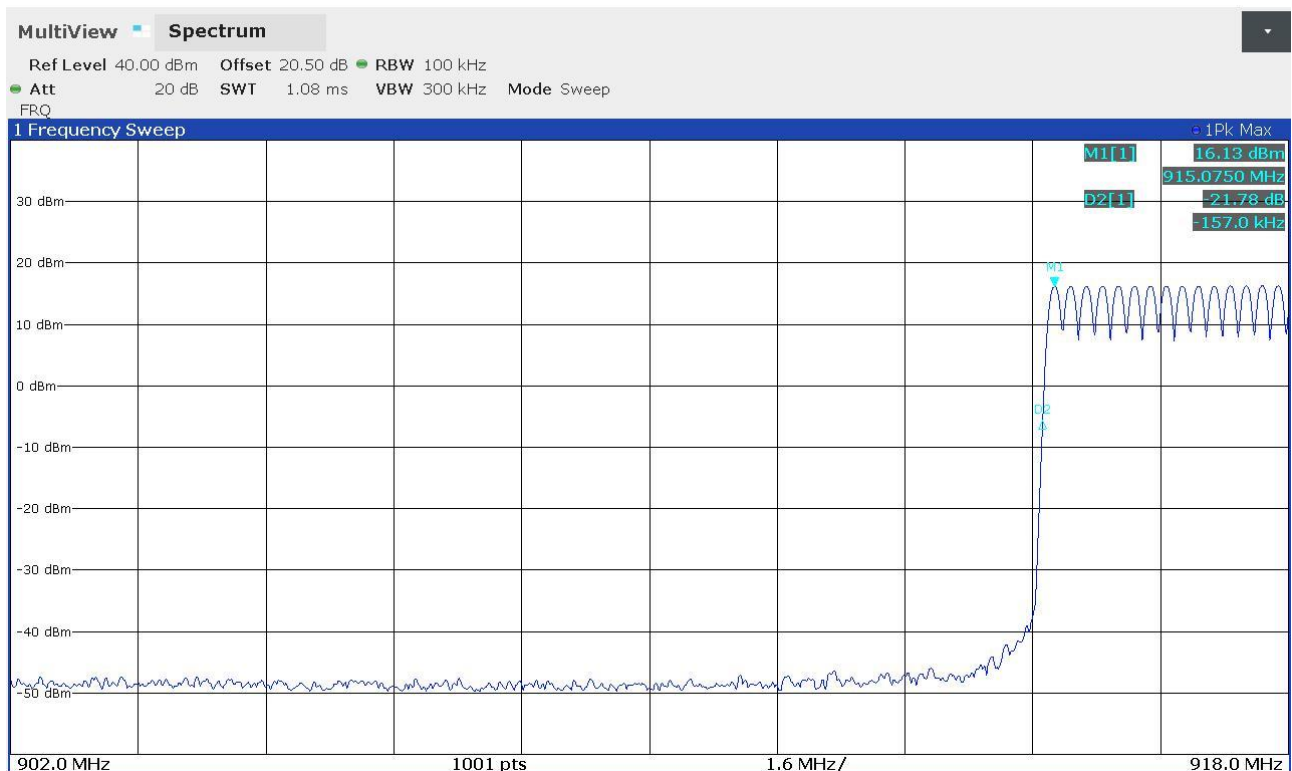


Graphs

Gandini 20060123

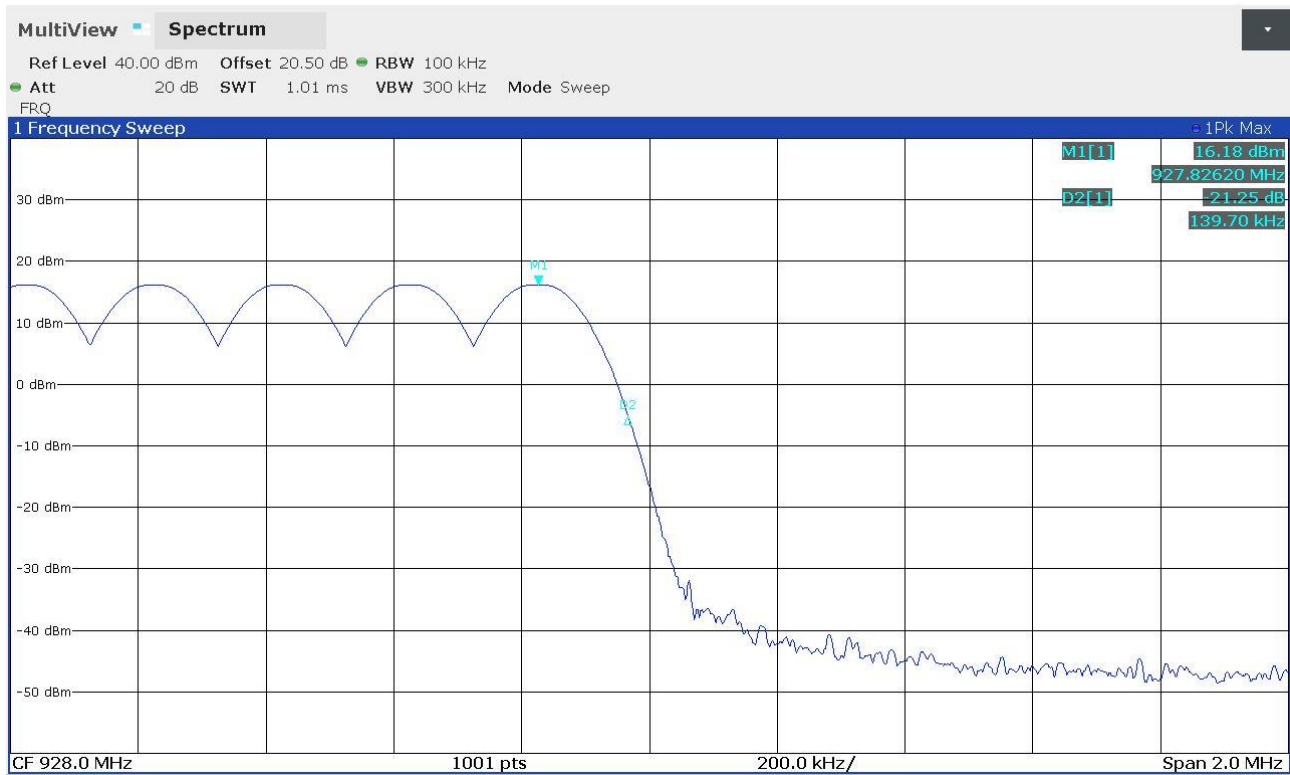


Gandini 20060124

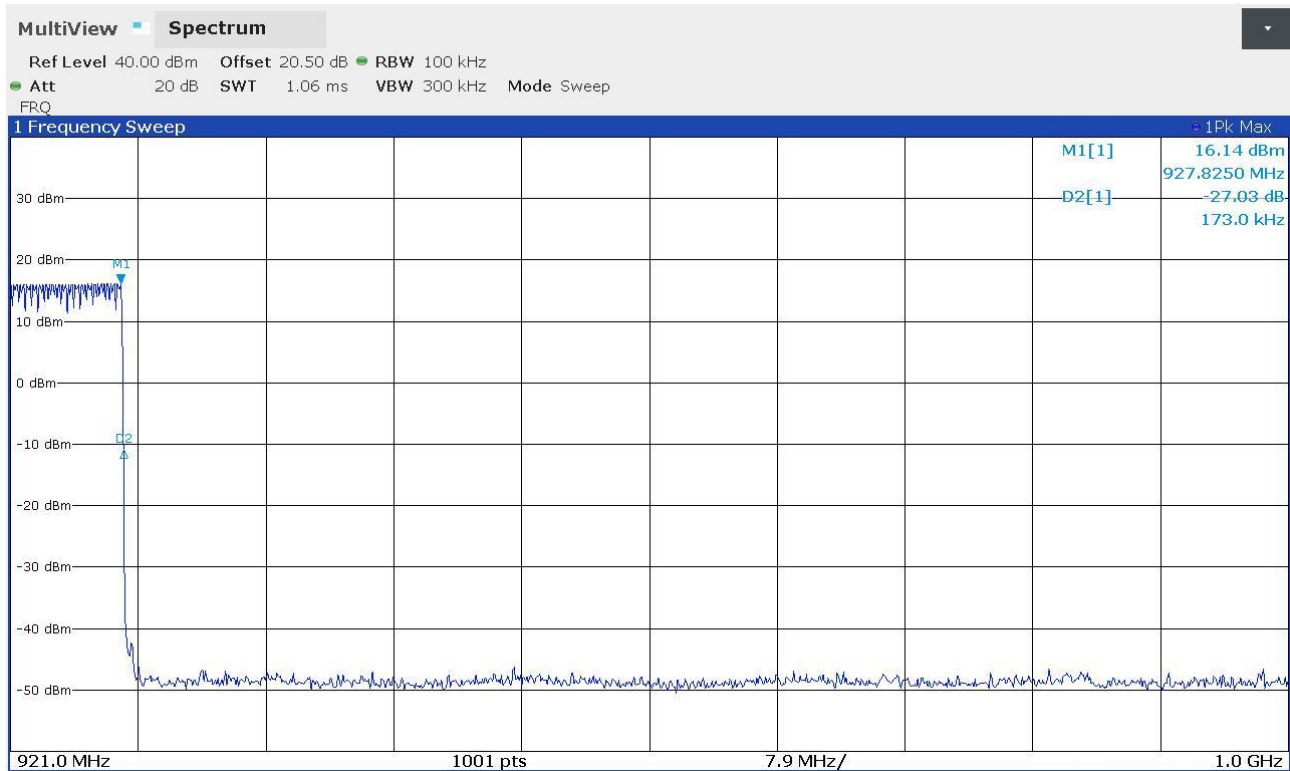




Gandini 20060125

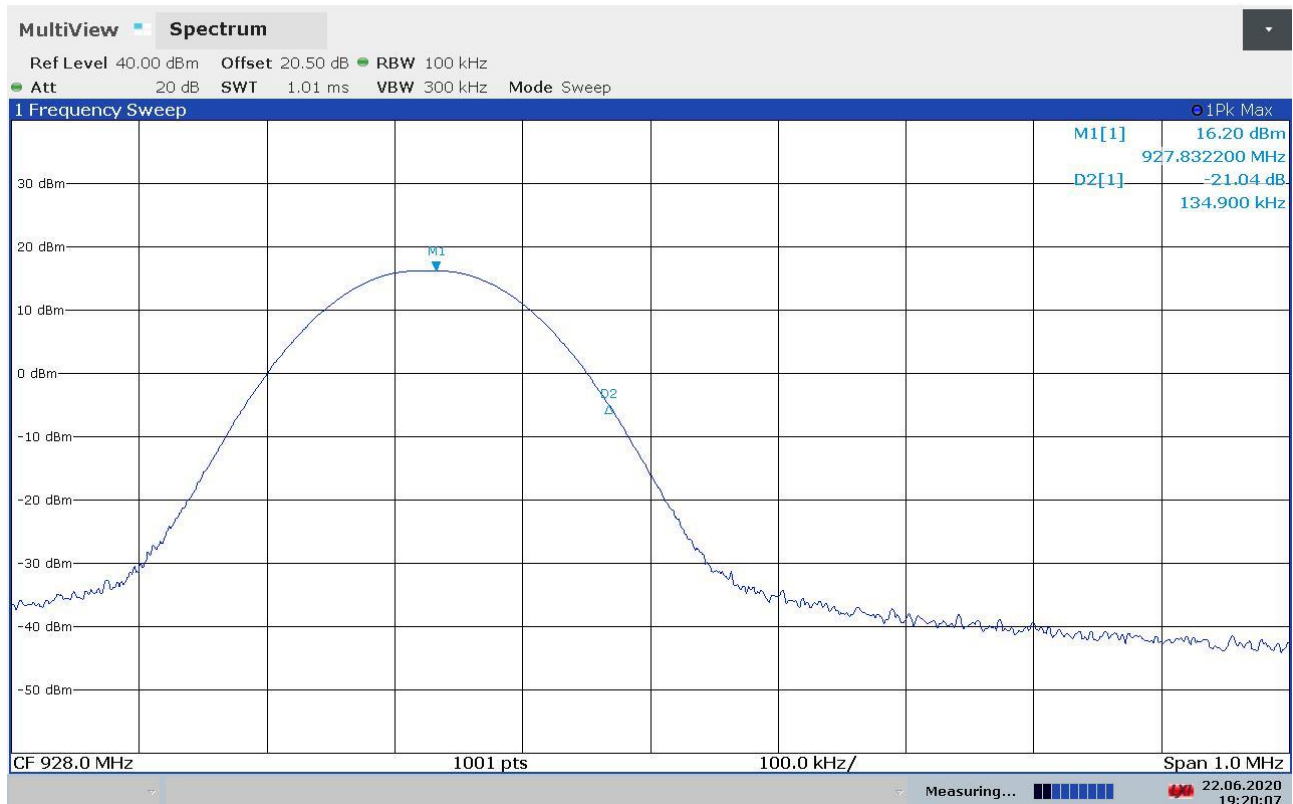


Gandini 20060126

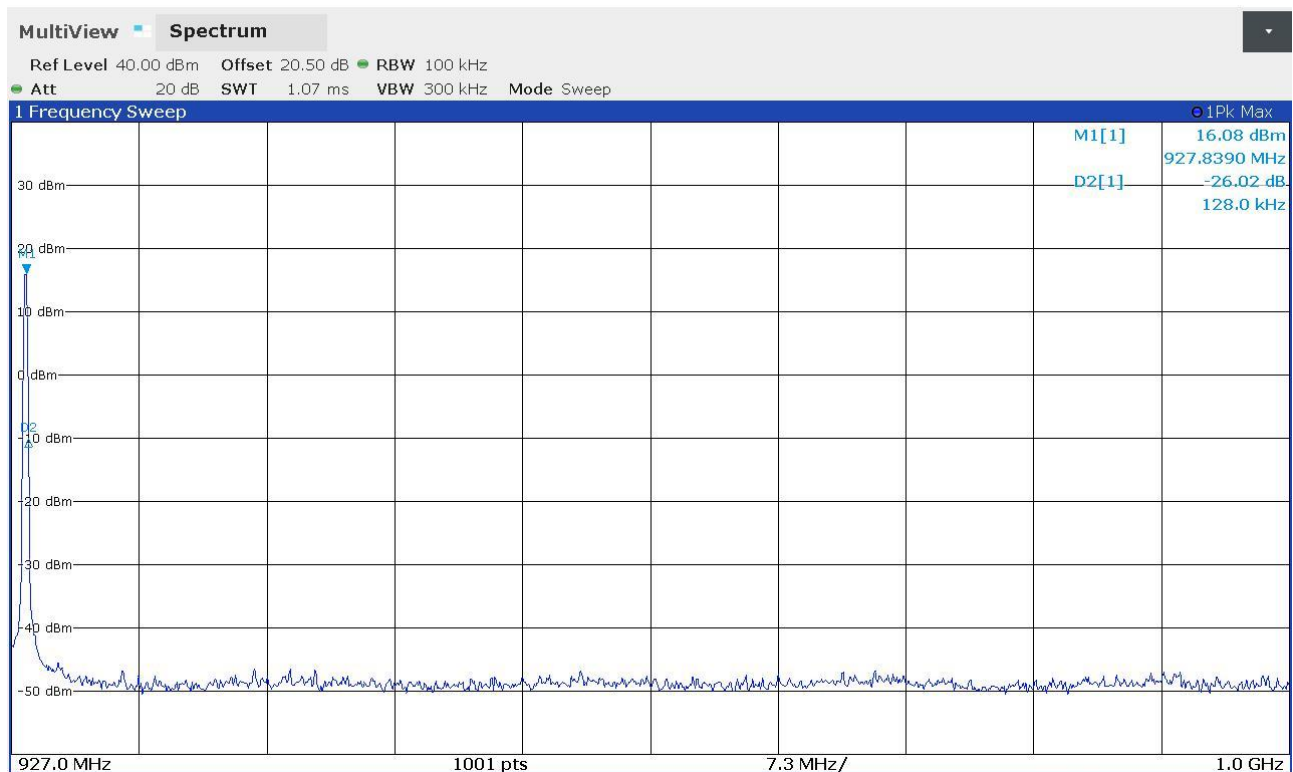




Gandini 20060134

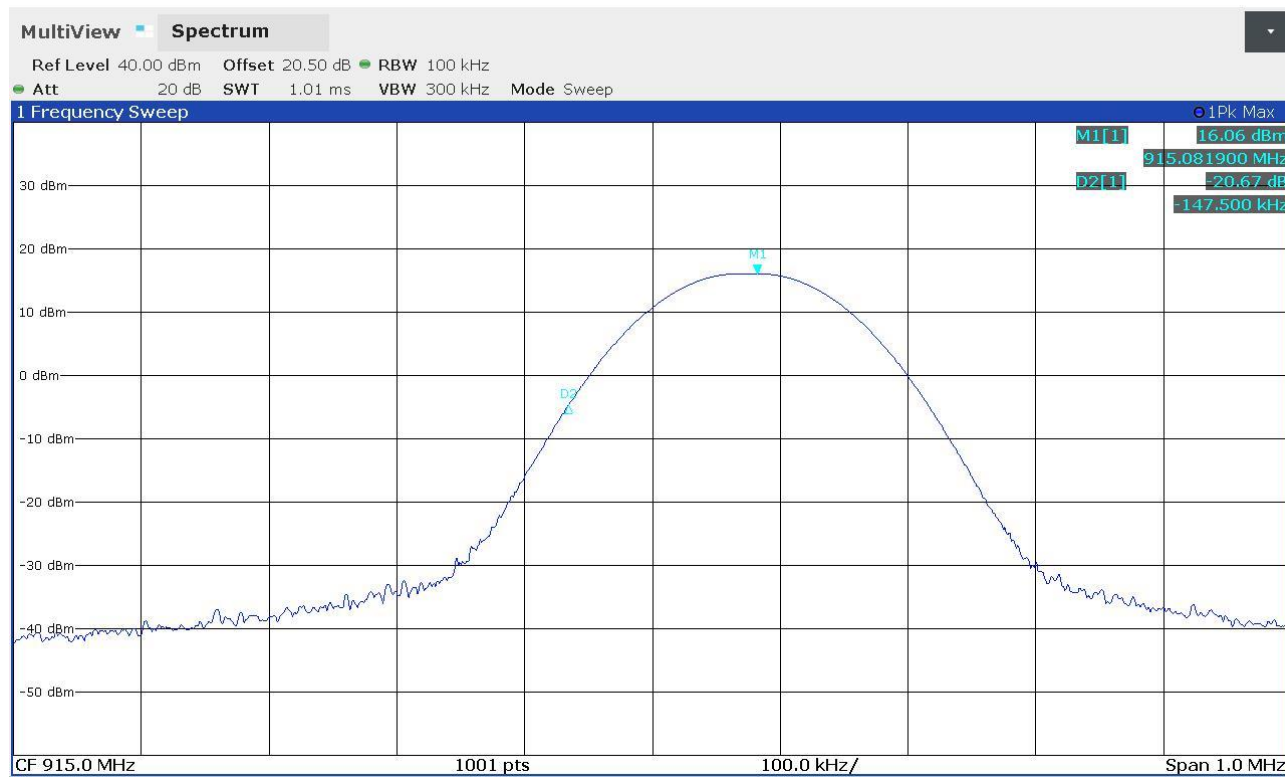


Gandini 20060135

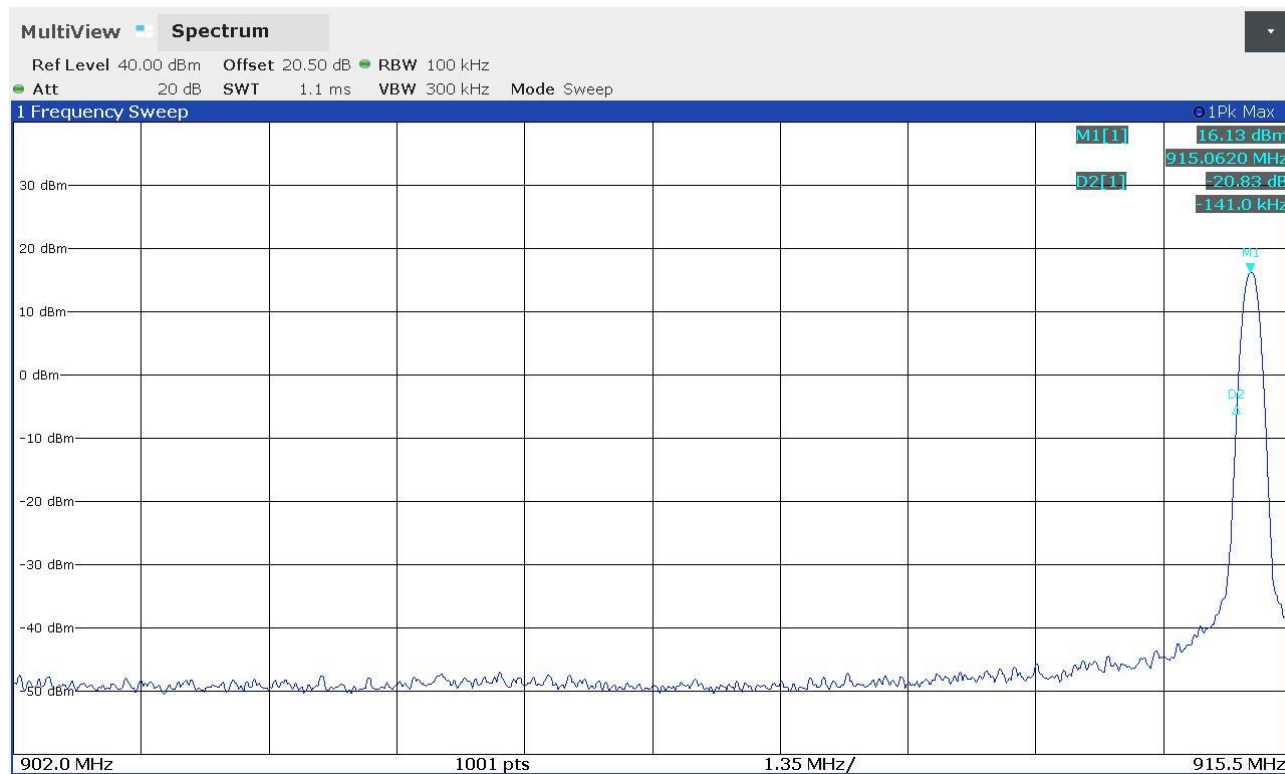




Gandini 20060142



Gandini 20060143





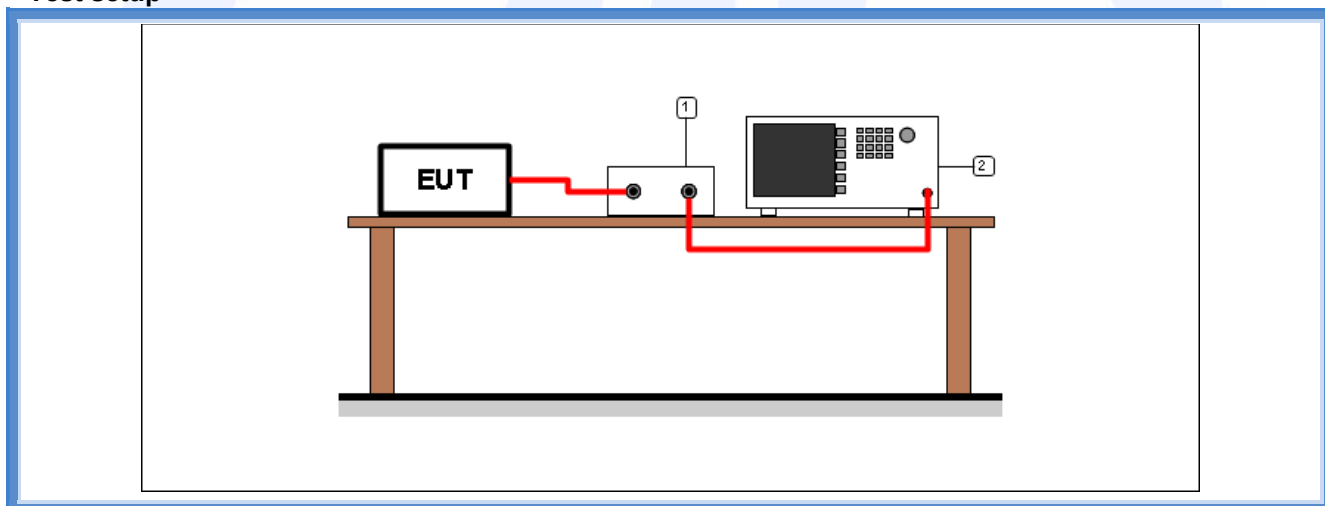
9.8 Peak Output Power

Tested by	G. Gandini
Test date	22.06.2020
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 information.....	--

Acceptance limits

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	Description
2	CMC S295	Rohde & Schwarz	FSW43	Spectrum Analyzer 43GHz
1	--	--	--	Cable + attenuator (calibrated before the test)

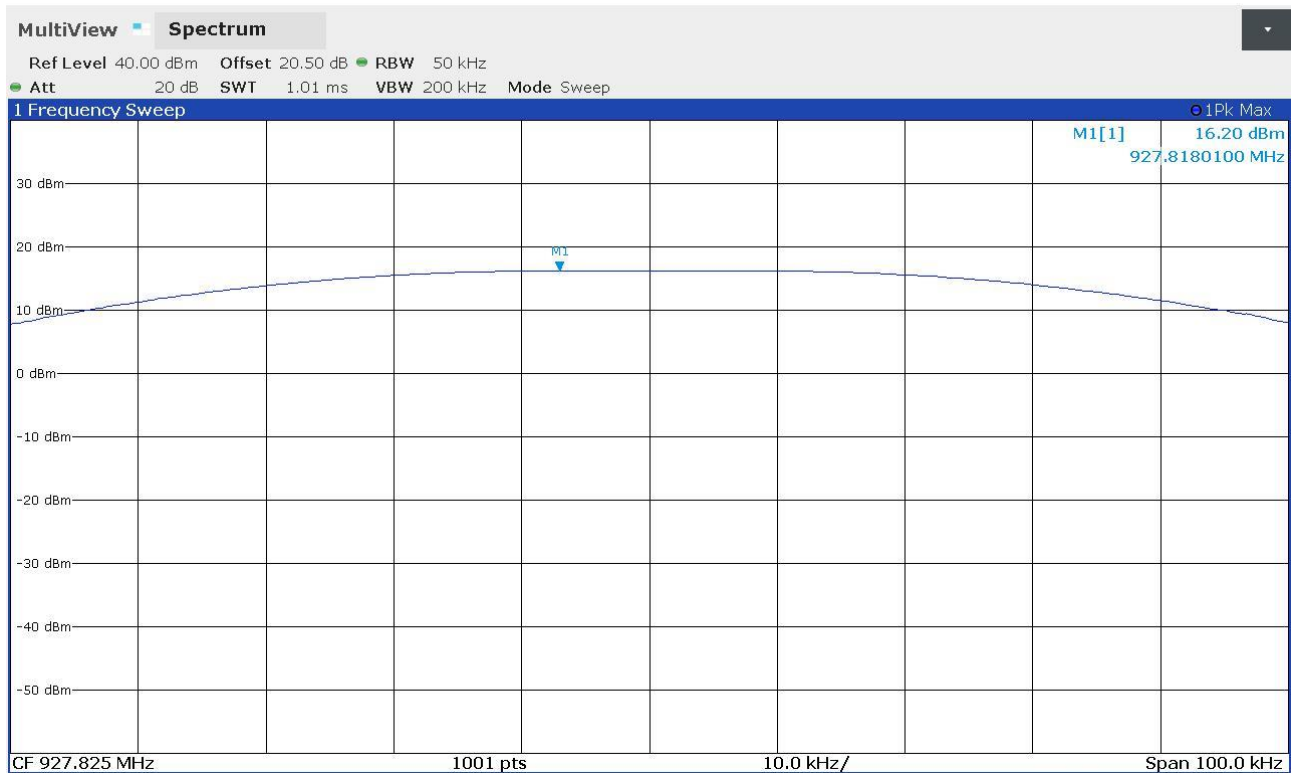
Result

Frequency (MHz)	Graphs	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (mW)
915,075	G20060141	16,06	40,36	1000
921,425	G20060138	16,12	40,93	1000
927,825	G20060133	16,20	41,69	1000

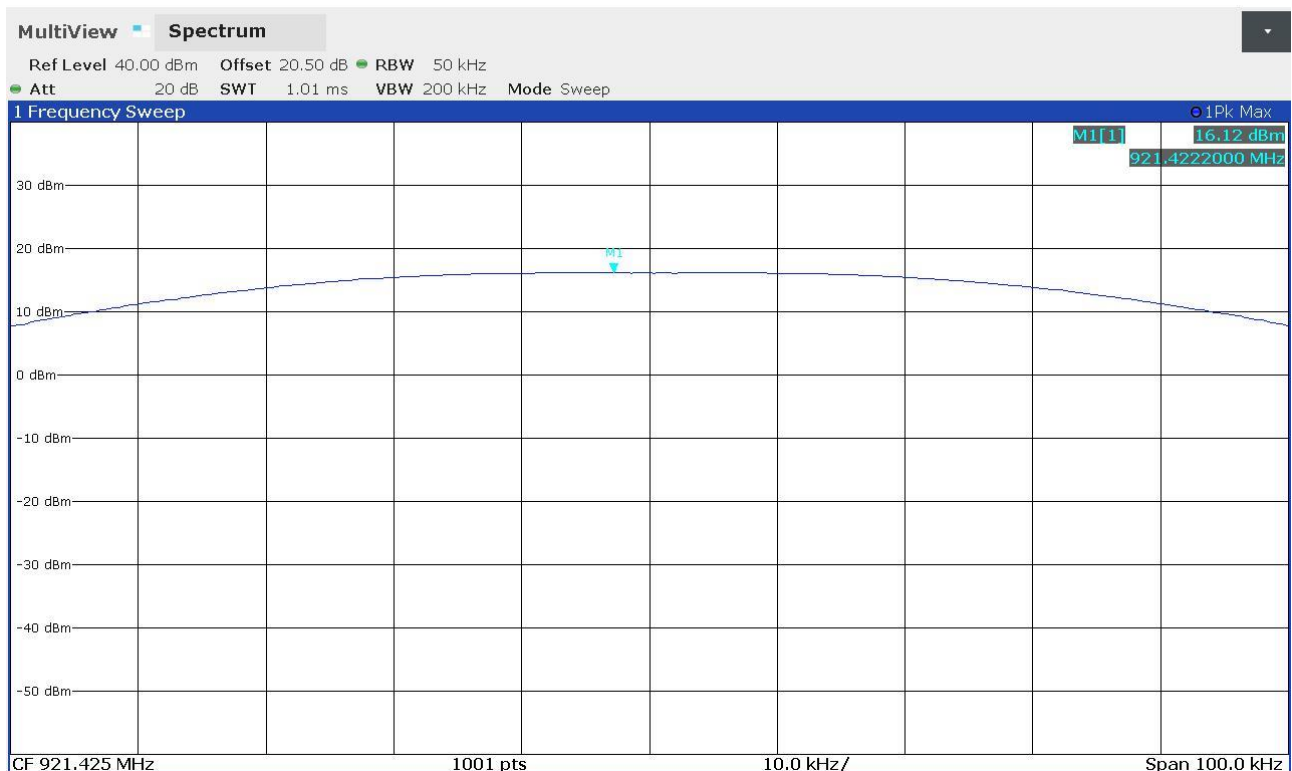


Graphs

Gandini 20060133

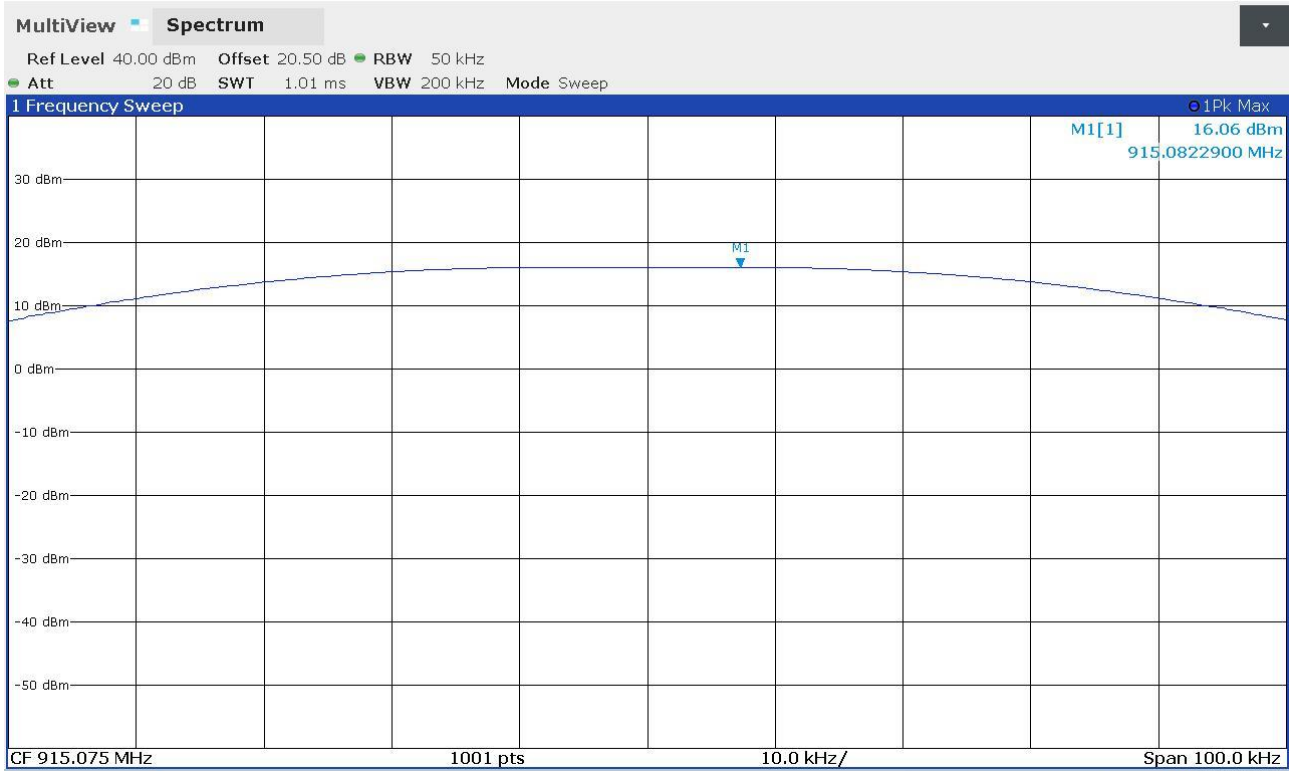


Gandini 20060138





Gandini 20060141





Attachment 1

<i>Id. number</i>	<i>Manufacturer</i>	<i>Model</i>	<i>Description</i>	<i>Serial number</i>	<i>Last calibration</i>	<i>Due date calibration</i>
CMC S010	Rohde & Schwarz	ESH3-Z2	Impulses Limiting Device	- - -	January '20	January '21
CMC S108	EMCO	3115	Horn Antenna	9811-5622	June '19	June '22
CMC S127	Schaffner	HLA6120	Loop Antenna	1191	November '18	November '23
CMC S164	Rohde & Schwarz	ESU26	EMC interference receiver	100052	January '20	January '21
CMC S200	Schwarzbeck	NSLK 8128	V-LISN	8128-273	January '20	January '21
CMC S206	Rohde & Schwarz	ESCI 7	EMC Receiver 9KHz-7GHz	100781	January '20	January '21
CMC S260	CMC	Wfr_N	Shielded Cable	Wfr_ant10-1	November '19	November '20
CMC S261	CMC	Wfr_N	Shielded Cable	Wfr_ant20-1	November '19	November '20
CMC S262	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix32-1	November '19	November '20
CMC S263	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix31-1	November '19	November '20
CMC S264	CMC	Wfr_N	Shielded Cable	Wfr_ext03-1	November '19	November '20
CMC S271	Schwarzbeck	BBA 9106 + VHBB 9124	Biconical Antenna (30-300MHz)	831	June '19	June '22
CMC S287	Schwarzbeck	VUSLP 9111B	Log-periodic Antenna (200 MHz-3Ghz)	9111B-203	June '19	June '22
CMC S288	CMC	W_sma_white	Joint Shielded Cable	W_001	November '19	November '20
CMC S295	Rohde & Schwarz	FSW43	Spectrum Analyzer 43GHz	104059	November '19	November '22



Attachment 1

Measurement uncertainty

Test	Test Setup	Expanded uncertainty	Note
Conducted emission CISPR 16 LISN 50uH 0,009-0,0150 MHz	PE001_01	3,4 dB	1
Conducted emission CISPR 16 LISN 50uH 0,150-30,0 MHz	PE001_01	3,0 dB	1
Conducted emission CISPR 16 Voltage Probe 0,15-30 MHz	PE001_02	2,9 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	3,6 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	4,0 dB	1
Radiated Emission CISPR 16 Bicon. Ant. 30-300 MHz	PE004_02	3,9 dB	1
Radiated Emission CISPR 16 LogP. Ant. 300-1000 MHz	PE004_03	3,8 dB	1
Radiated Emission CISPR 16 Horn Ant. 1-18 GHz	PE004_04	4,2 dB	1
Human Exposure to electromagnetic fields	PE005_01	23,6 %	1
Harmonics	PE006_01	10 mA + 2,6 %	1
Flicker	PE007_01	4,79 %	1
Radiated Immunity 80 MHz - 6 GHz	PE102_XX	1,95 dB 0,75 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	6,25 % 18,7 A/m a 300A/m	1
Dumped Magnetic field	PE108_01	6,25 % 1,87 A/m a 30A/m	1
Common mode conducted immunity	PE112_01	2,21 % 0,22 V a 10V	1



Attachment 1

Test	Test Setup	Expanded uncertainty	Note
Power/Spurious 9kHz-30MHz	PR001_01	4,0 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. 20_02 date 24/02/2020			

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: 03/2009 Guidelines on the Reporting of Compliance with Specification

Quality manual references – Internal procedure

Internal Procedure PM001 rev. 3.0 (Quality Manual)	Measure procedure
Internal Procedure INC_M rev. 9.1 (Quality Manual)	Measurement uncertainty calculation