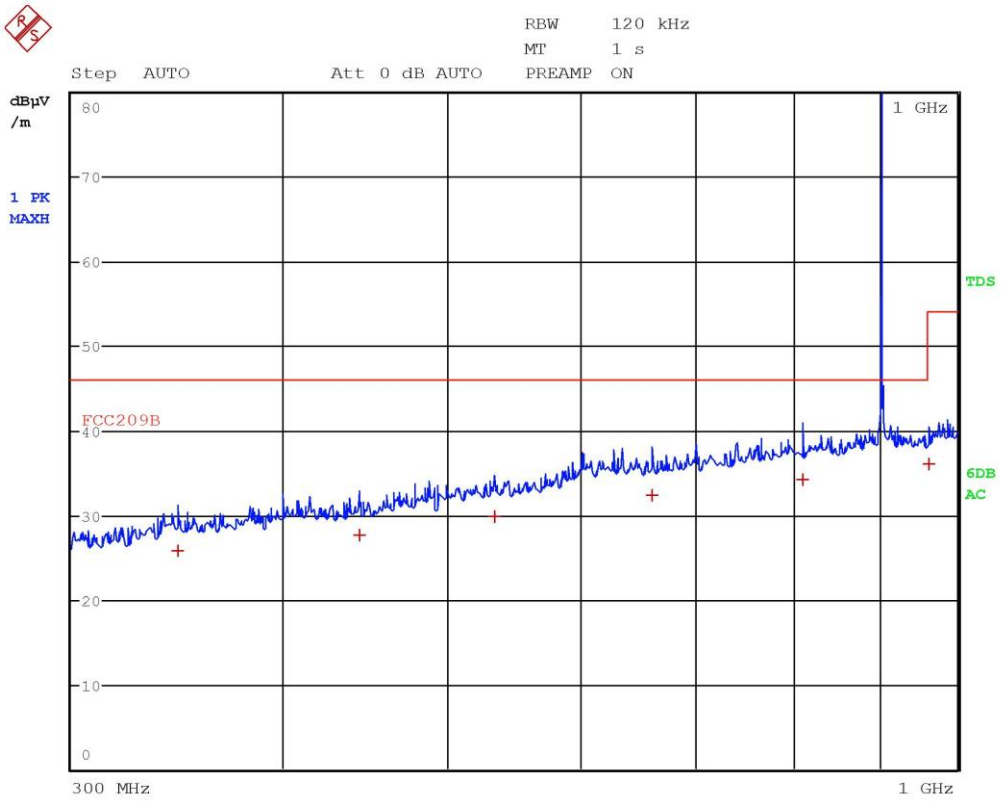


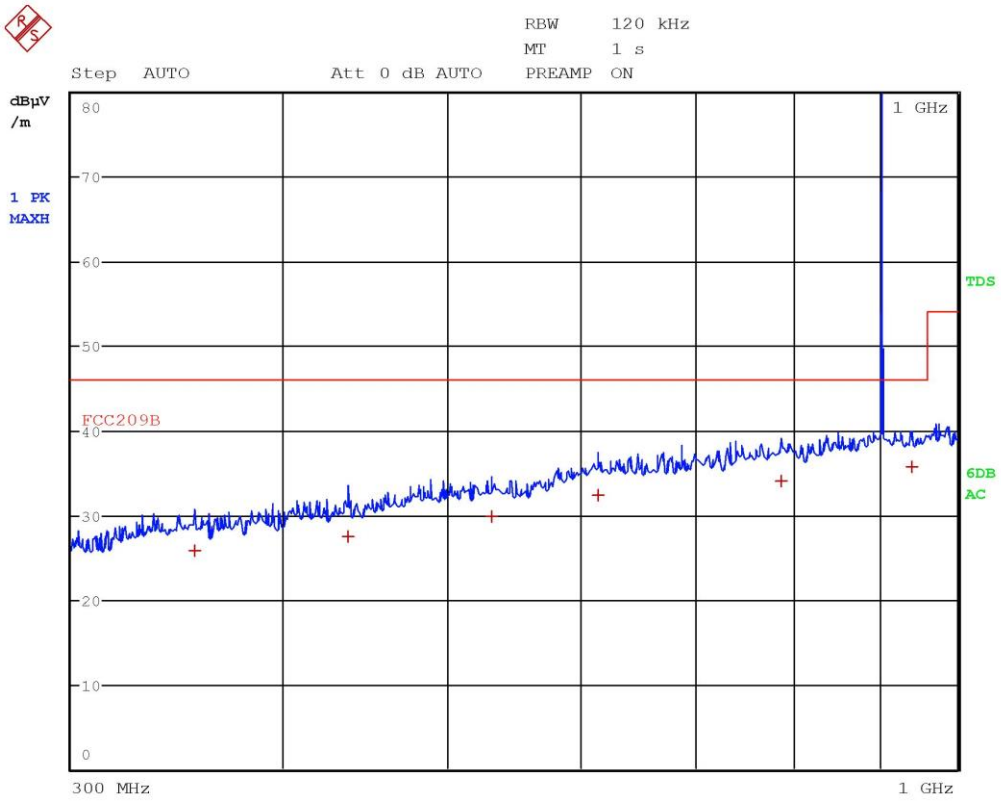
Segalla 200400B56

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC209B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	346.88 MHz	25.80	-20.21
1 Quasi Peak	444.12 MHz	27.59	-18.42
1 Quasi Peak	532.84 MHz	29.83	-16.18
1 Quasi Peak	660.44 MHz	32.41	-13.60
1 Quasi Peak	810.68 MHz	34.13	-11.88
1 Quasi Peak	962.52 MHz	36.08	-17.90

Segalla 200400B56



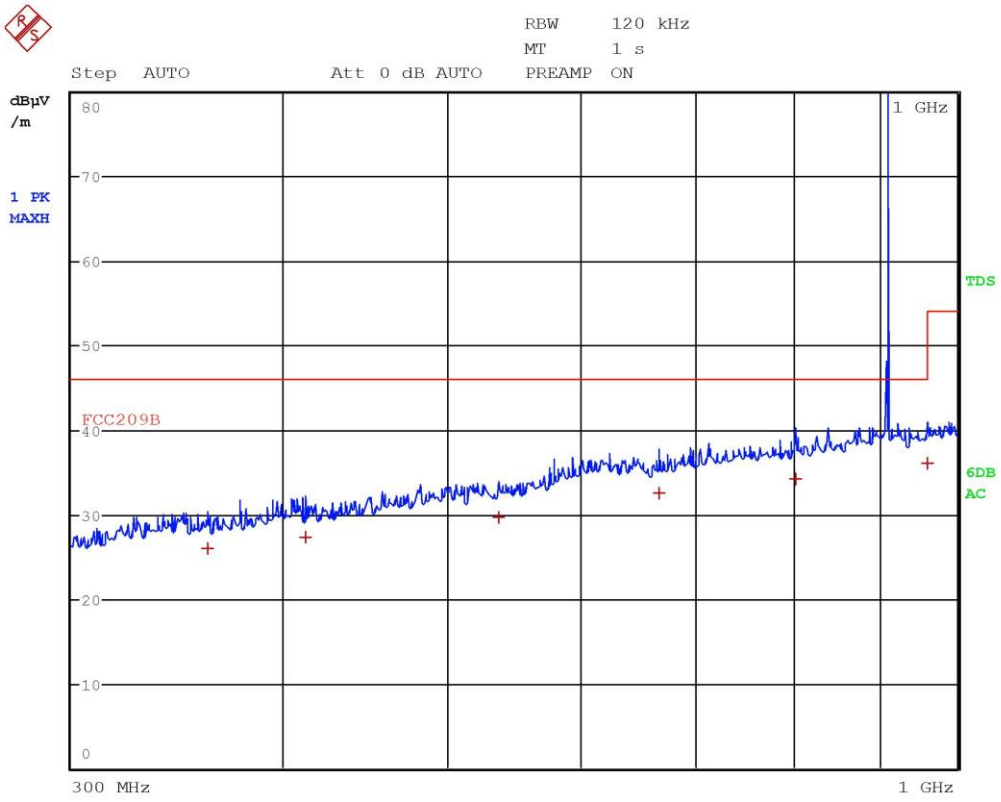
Segalla 200400B57

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC209B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	354.92 MHz	25.82	-20.20
1 Quasi Peak	437.28 MHz	27.43	-18.59
1 Quasi Peak	530.6 MHz	29.76	-16.25
1 Quasi Peak	613.76 MHz	32.39	-13.63
1 Quasi Peak	787.28 MHz	34.07	-11.94
1 Quasi Peak	939.4 MHz	35.71	-10.30

Segalla 200400B57



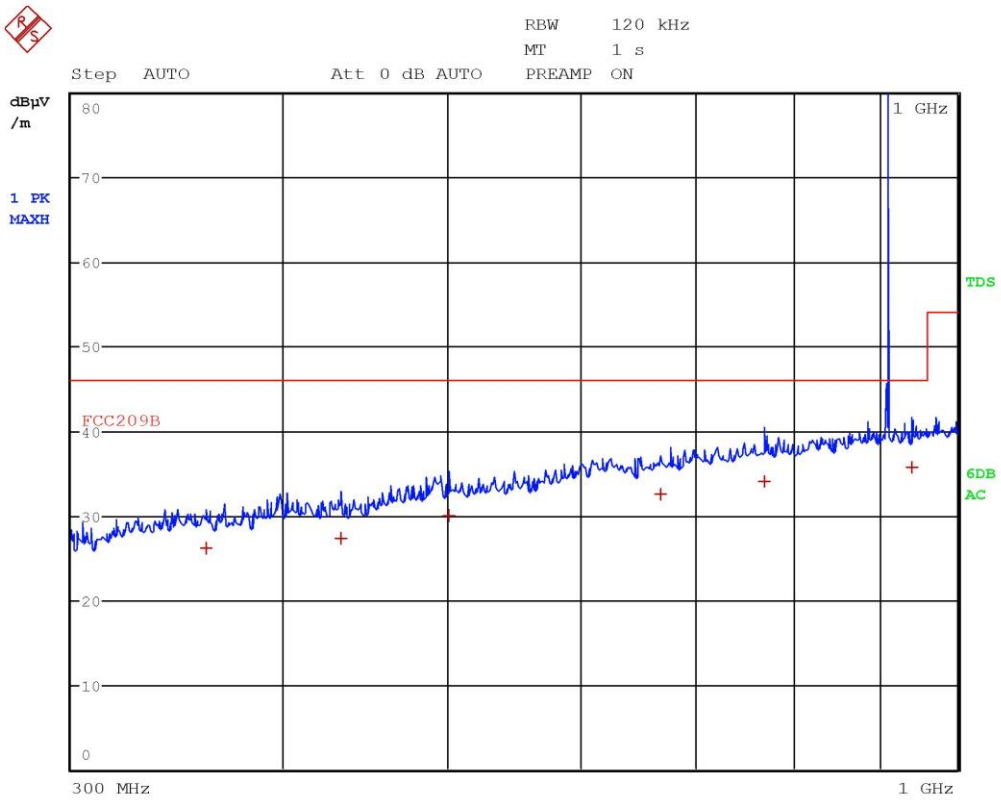
Segalla 200400B58

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC209B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	360.92 MHz	25.98	-20.03
1 Quasi Peak	412.76 MHz	27.34	-18.67
1 Quasi Peak	535.96 MHz	29.68	-16.33
1 Quasi Peak	667.12 MHz	32.53	-13.48
1 Quasi Peak	802.16 MHz	34.17	-11.85
1 Quasi Peak	959.56 MHz	36.01	-10.00

Segalla 200400B58



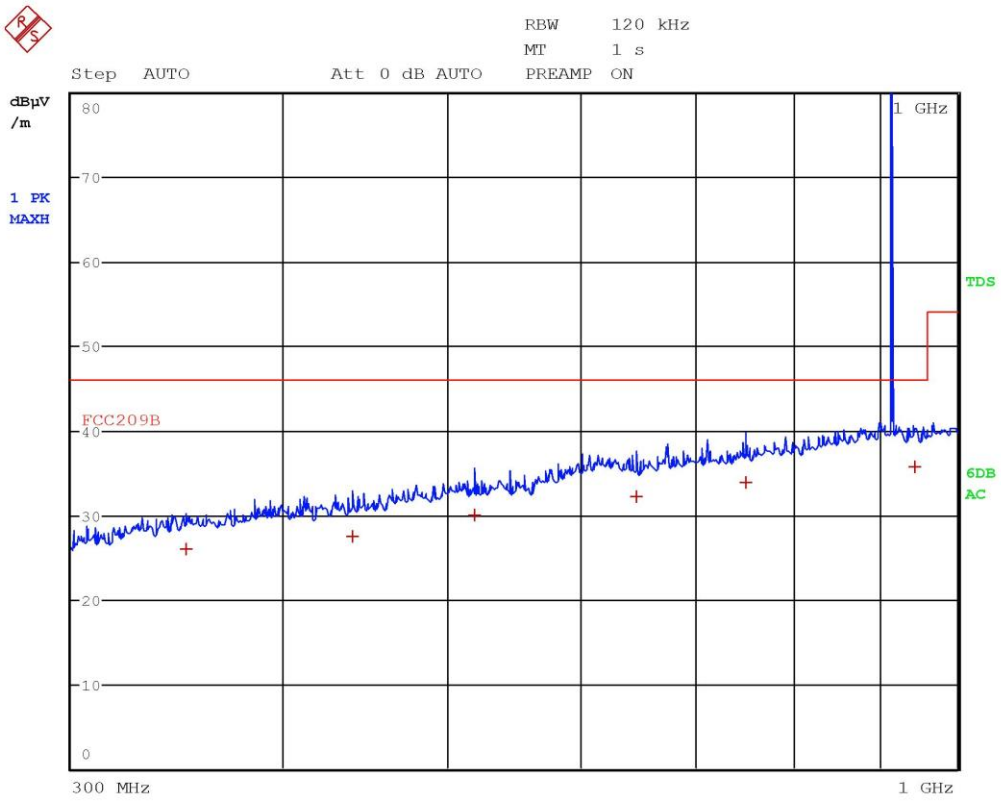
Segalla 200400B59

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC209B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	360.56 MHz	26.10	-19.91
1 Quasi Peak	432.56 MHz	27.37	-18.64
1 Quasi Peak	501.56 MHz	29.91	-16.10
1 Quasi Peak	668.32 MHz	32.52	-13.49
1 Quasi Peak	768.52 MHz	33.98	-12.03
1 Quasi Peak	940.72 MHz	35.69	-10.32

Segalla 200400B59



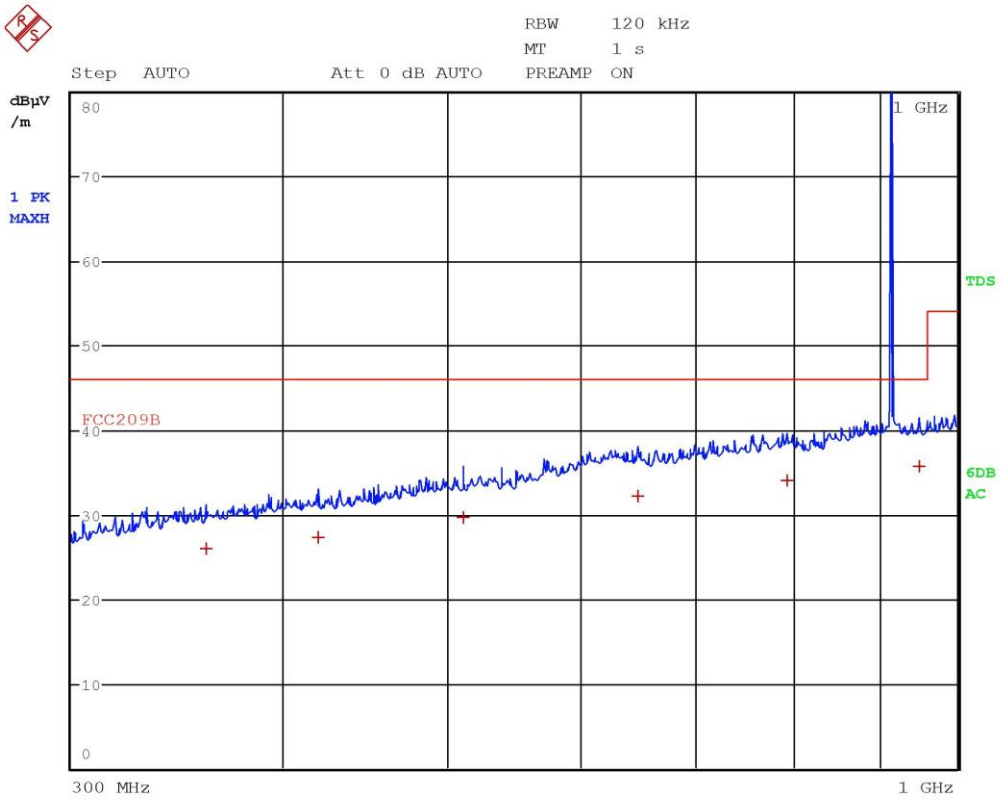
Segalla 200400B60

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC209B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	350.76 MHz	26.03	-19.99
1 Quasi Peak	439.2 MHz	27.47	-18.54
1 Quasi Peak	519.04 MHz	30.00	-16.01
1 Quasi Peak	646.8 MHz	32.20	-13.81
1 Quasi Peak	750.48 MHz	33.80	-12.21
1 Quasi Peak	943.36 MHz	35.69	-10.32

Segalla 200400B60



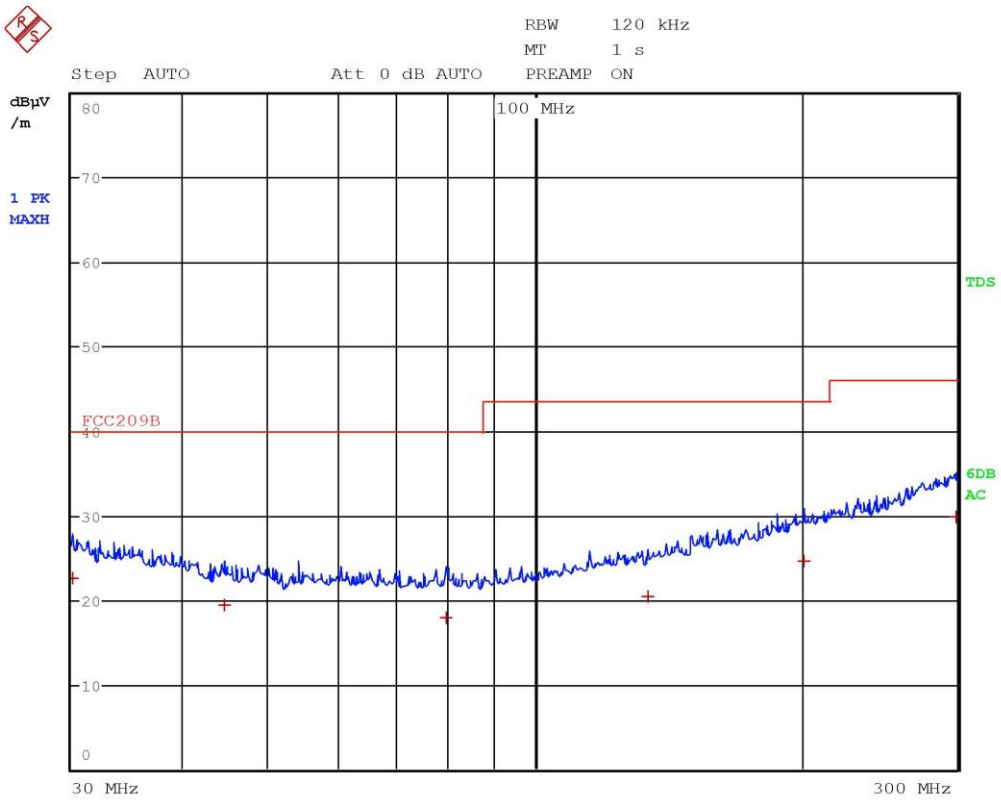
Segalla 200400B61

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC209B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	360.2 MHz	25.90	-20.11
1 Quasi Peak	420 MHz	27.30	-18.71
1 Quasi Peak	511.08 MHz	29.68	-16.33
1 Quasi Peak	648.08 MHz	32.16	-13.85
1 Quasi Peak	793.4 MHz	34.04	-11.97
1 Quasi Peak	948.48 MHz	35.67	-10.34

Segalla 200400B61



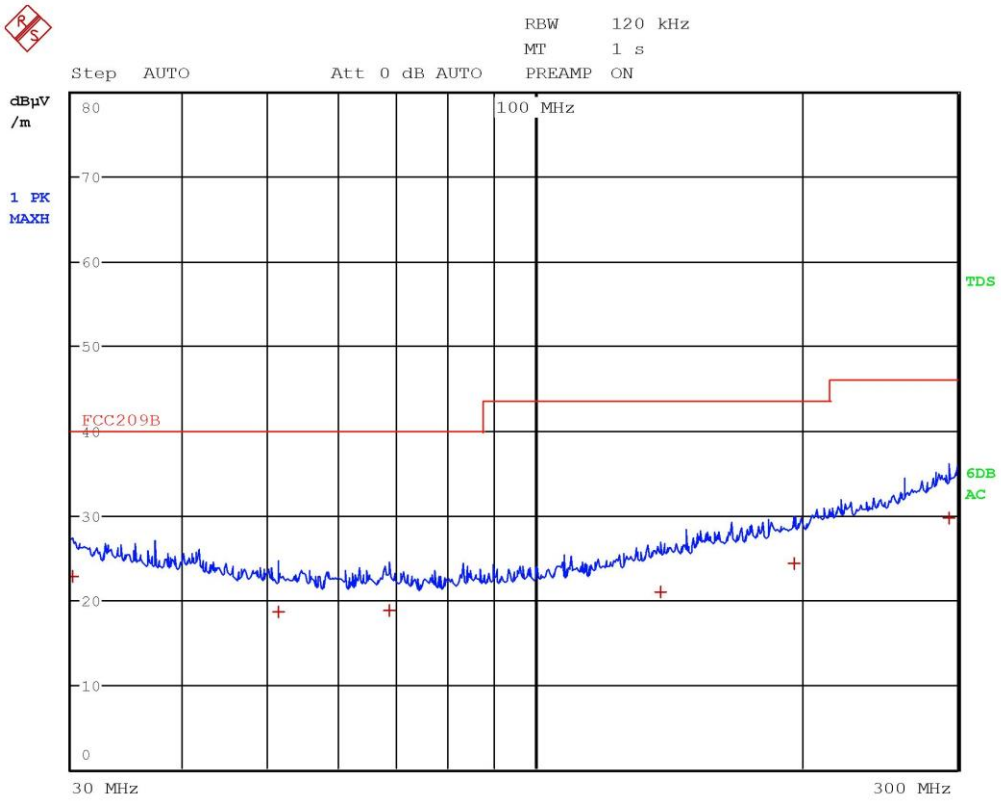
Segalla 200400B62

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC209B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	30.08 MHz	22.59	-17.40
1 Quasi Peak	44.68 MHz	19.48	-20.51
1 Quasi Peak	79.4 MHz	17.91	-22.08
1 Quasi Peak	134.08 MHz	20.48	-23.03
1 Quasi Peak	201.6 MHz	24.63	-18.88
1 Quasi Peak	298.8 MHz	29.75	-16.26

Segalla 200400B62



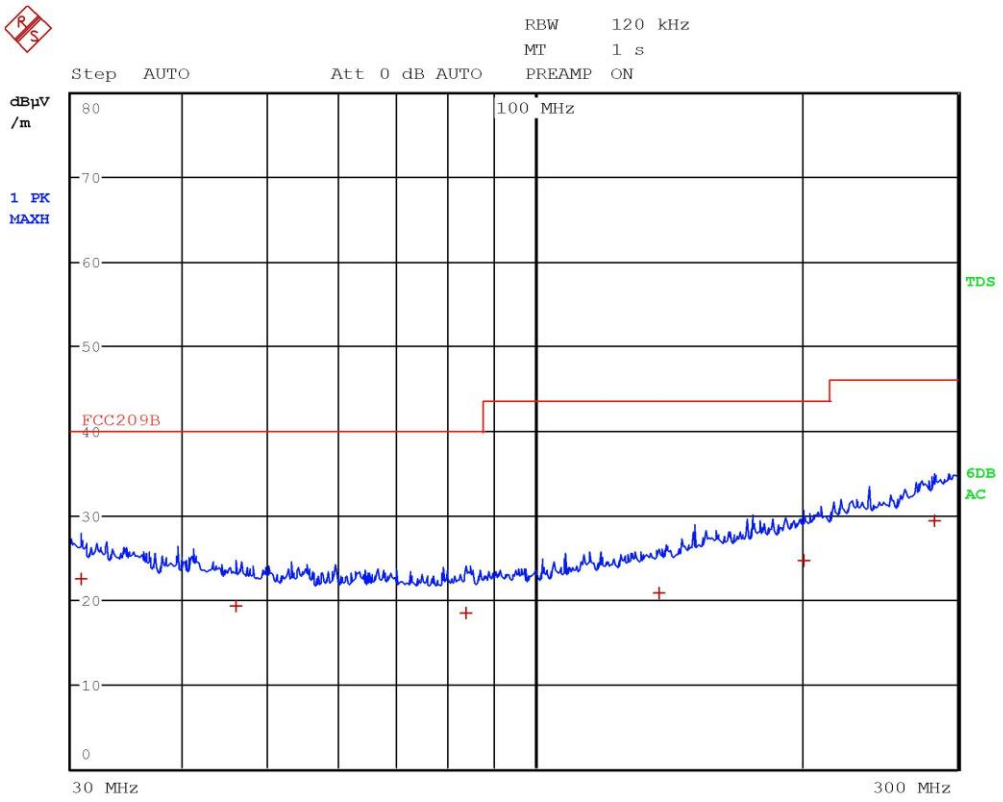
Segalla 200400B63

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC209B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	30.12 MHz	22.69	-17.30
1 Quasi Peak	51.36 MHz	18.55	-21.44
1 Quasi Peak	68.6 MHz	18.82	-21.18
1 Quasi Peak	138.76 MHz	20.87	-22.64
1 Quasi Peak	195.96 MHz	24.25	-19.26
1 Quasi Peak	293.84 MHz	29.62	-16.39

Segalla 200400B63



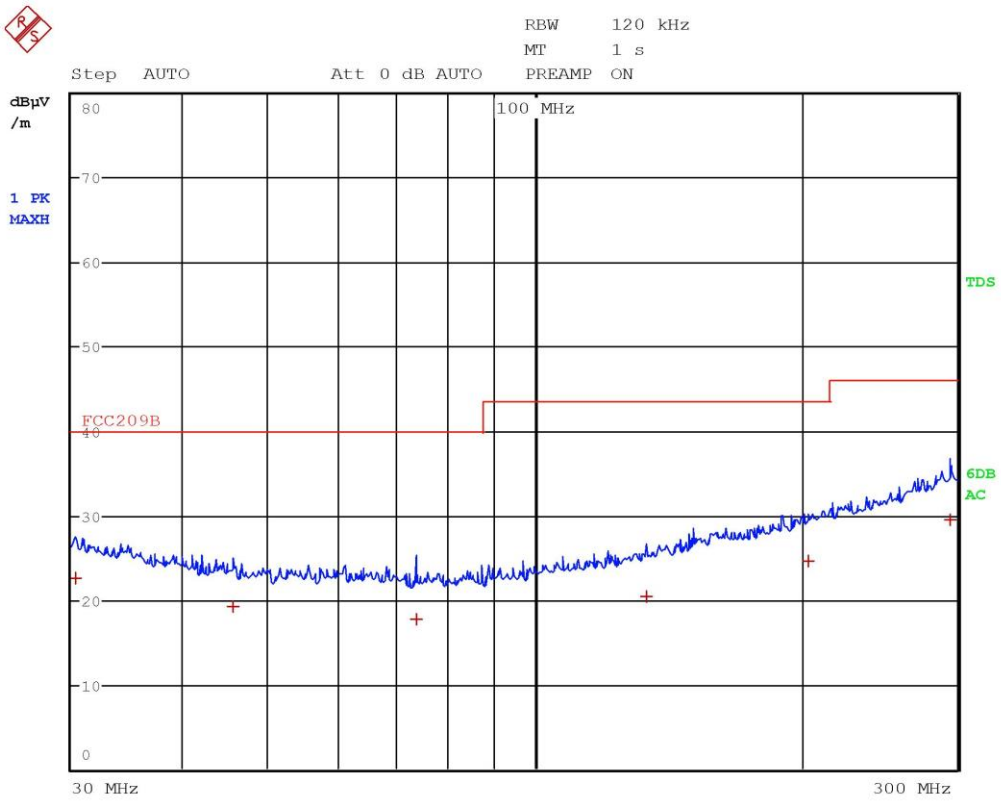
Segalla 200400B64

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC209B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	30.72 MHz	22.49	-17.50
1 Quasi Peak	46 MHz	19.18	-20.81
1 Quasi Peak	83.76 MHz	18.35	-21.64
1 Quasi Peak	138.04 MHz	20.77	-22.74
1 Quasi Peak	201.28 MHz	24.58	-18.93
1 Quasi Peak	282.8 MHz	29.38	-16.64

Segalla 200400B64



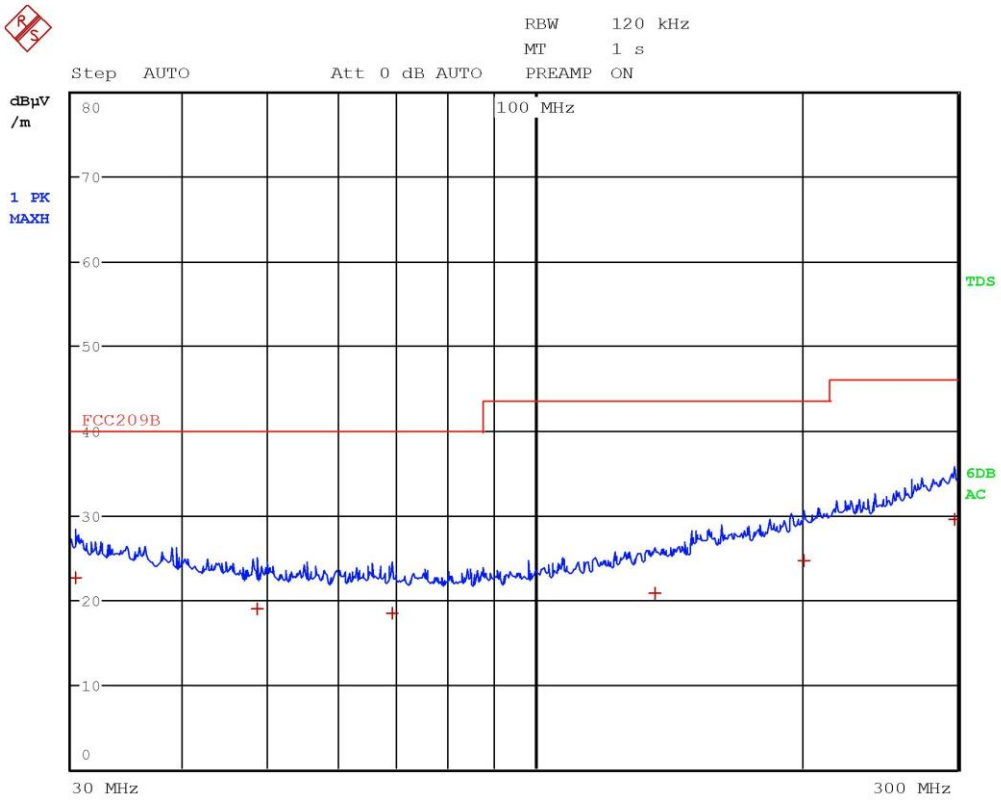
Segalla 200400B65

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC209B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	30.32 MHz	22.60	-17.39
1 Quasi Peak	45.6 MHz	19.31	-20.69
1 Quasi Peak	73.52 MHz	17.78	-22.21
1 Quasi Peak	133.68 MHz	20.46	-23.06
1 Quasi Peak	203.64 MHz	24.54	-18.97
1 Quasi Peak	294.52 MHz	29.42	-16.59

Segalla 200400B65



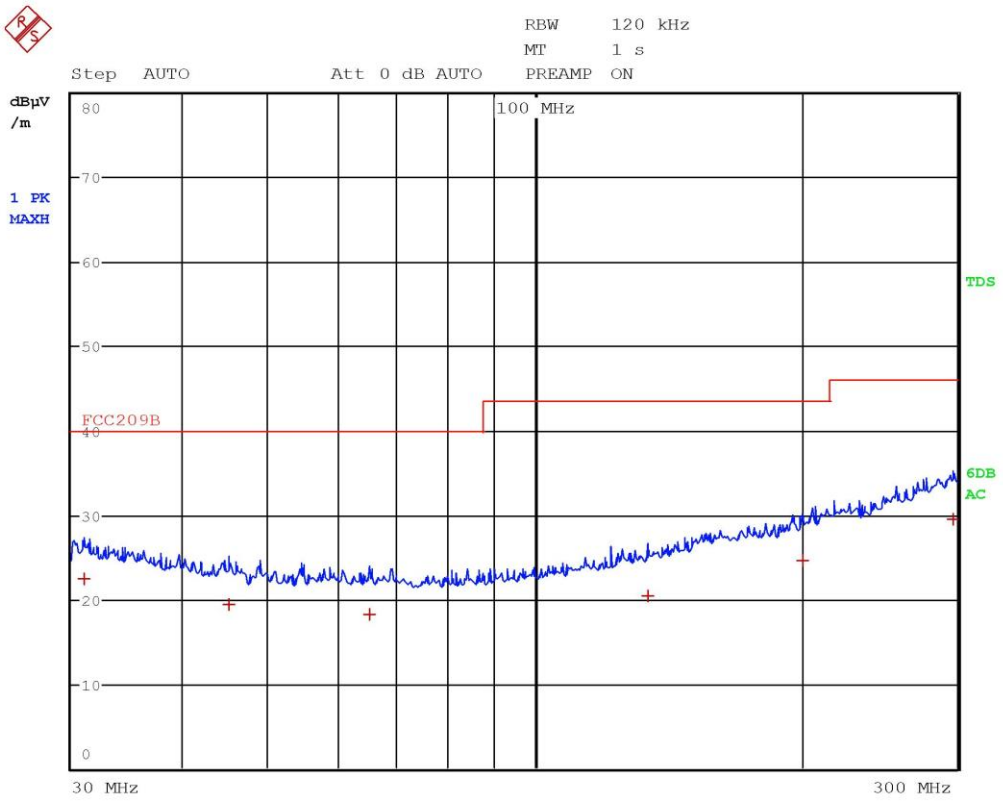
Segalla 200400B66

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC209B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	30.28 MHz	22.53	-17.46
1 Quasi Peak	48.64 MHz	18.84	-21.15
1 Quasi Peak	68.92 MHz	18.36	-21.63
1 Quasi Peak	136.76 MHz	20.67	-22.84
1 Quasi Peak	201.68 MHz	24.61	-18.90
1 Quasi Peak	297.64 MHz	29.53	-16.49

Segalla 200400B66



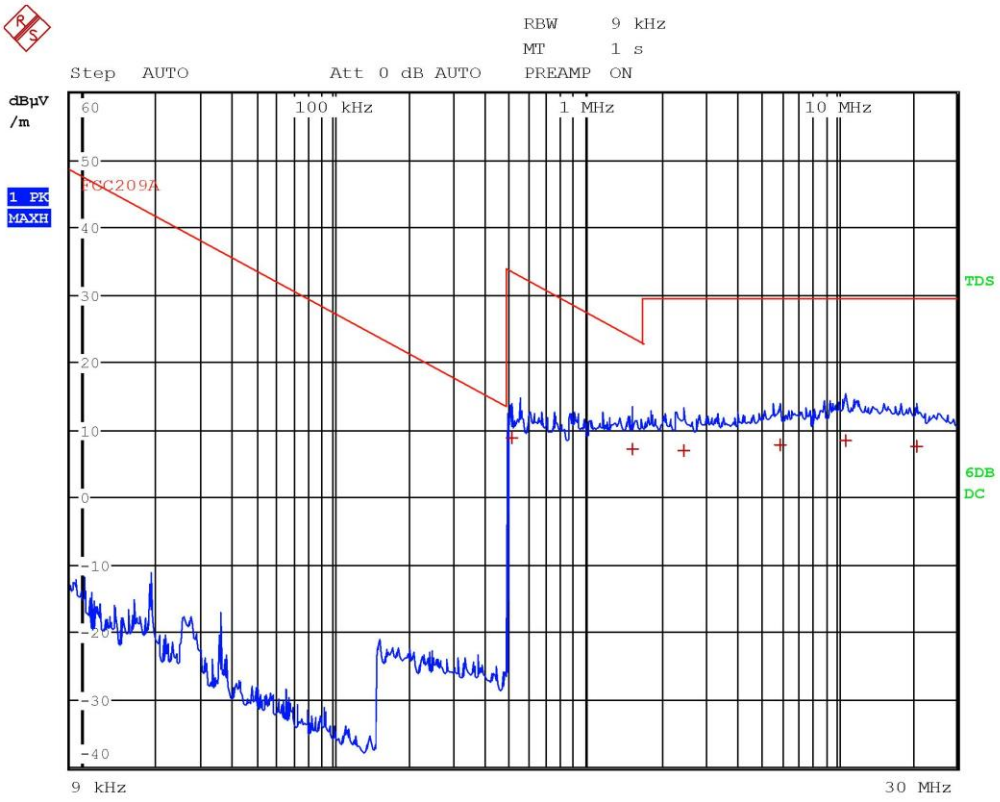
Segalla 200400B67

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC209B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	31 MHz	22.43	-17.57
1 Quasi Peak	45.08 MHz	19.42	-20.57
1 Quasi Peak	65.12 MHz	18.19	-21.80
1 Quasi Peak	133.92 MHz	20.48	-23.03
1 Quasi Peak	200.92 MHz	24.63	-18.88
1 Quasi Peak	296.76 MHz	29.42	-16.60

Segalla 200400B67



Segalla 200400B68

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC209A
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	510 kHz	8.78	-24.66
1 Quasi Peak	1.554 MHz	7.25	-16.52
1 Quasi Peak	2.466 MHz	7.00	-22.53
1 Quasi Peak	5.966 MHz	7.78	-21.75
1 Quasi Peak	10.85 MHz	8.38	-21.15
1 Quasi Peak	20.842 MHz	7.59	-21.94

Segalla 200400B68

9.3 Peak Output Power

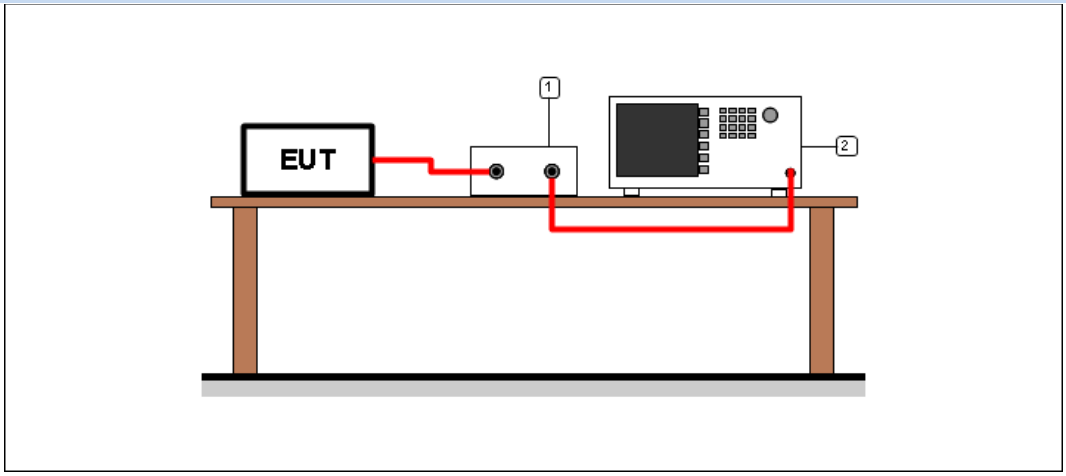
Tested by ..... :	M. Segalla
Test date ..... :	03.06.2020
Test location (stand) ..... :	Laboratory
Reference standards ..... :	FCC Rules and Regulation; Titles 47 Part. 15.247 KDB 558074 D01 15.247 Meas Guidance v05r02 cl. 2.2 ANSI C63.10 cl. 7.8.5
Supplementary information..... :	--

Acceptance limits

For frequency hopping systems operating in the 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*	*Description*
2	CMC S295	Rohde & Schwarz	FSW43	Spectrum Analyzer 43GHz
1	--	--	--	Cable + attenuator (calibrated before the test)

Result – LoRa 125 kHz modulation

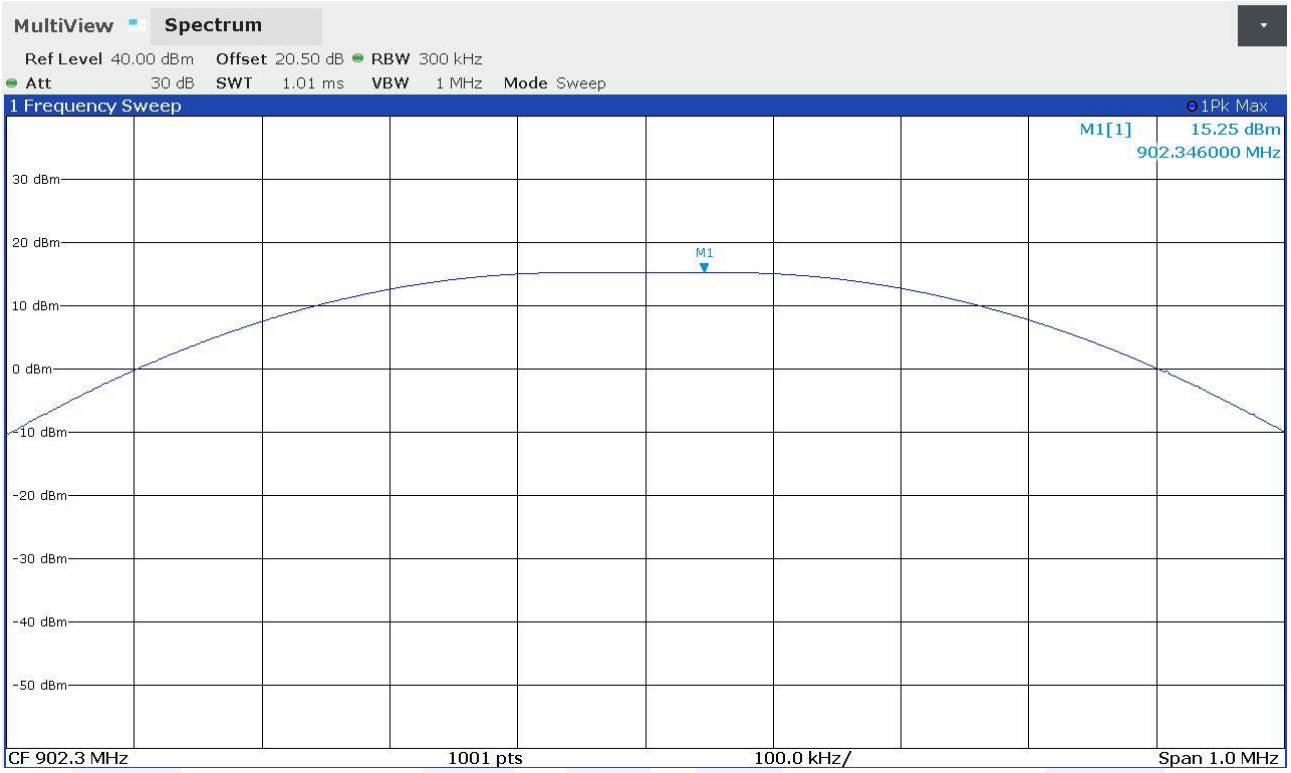
Frequency (MHz)	*Graphs*	*Peak Output Power (dBm)*	*Peak Output Power (mW)*	*Limit (mW)*
902,30	G200400B20	15,25	33,50	1000
908,70	G200400B21	15,33	34,12	1000
914,90	G200400B22	15,40	34,67	1000

Result – LoRa 500 kHz modulation

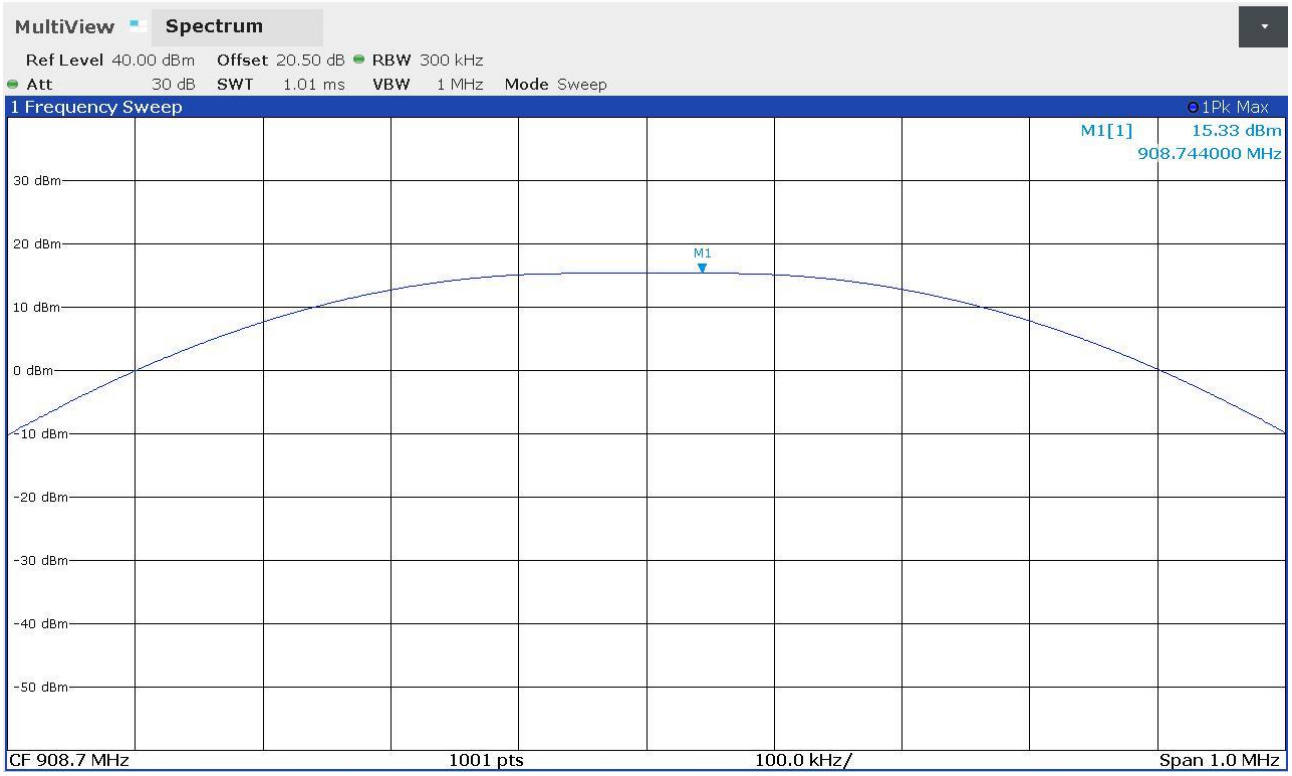
Frequency (MHz)	*Graphs*	*Peak Output Power (dBm)*	*Peak Output Power (mW)*	*Limit (mW)*
903,00	G200400B69	15,27	33,65	1000
909,40	G200400B70	15,30	33,88	1000
914,20	G200400B71	15,39	34,59	1000

Graphs

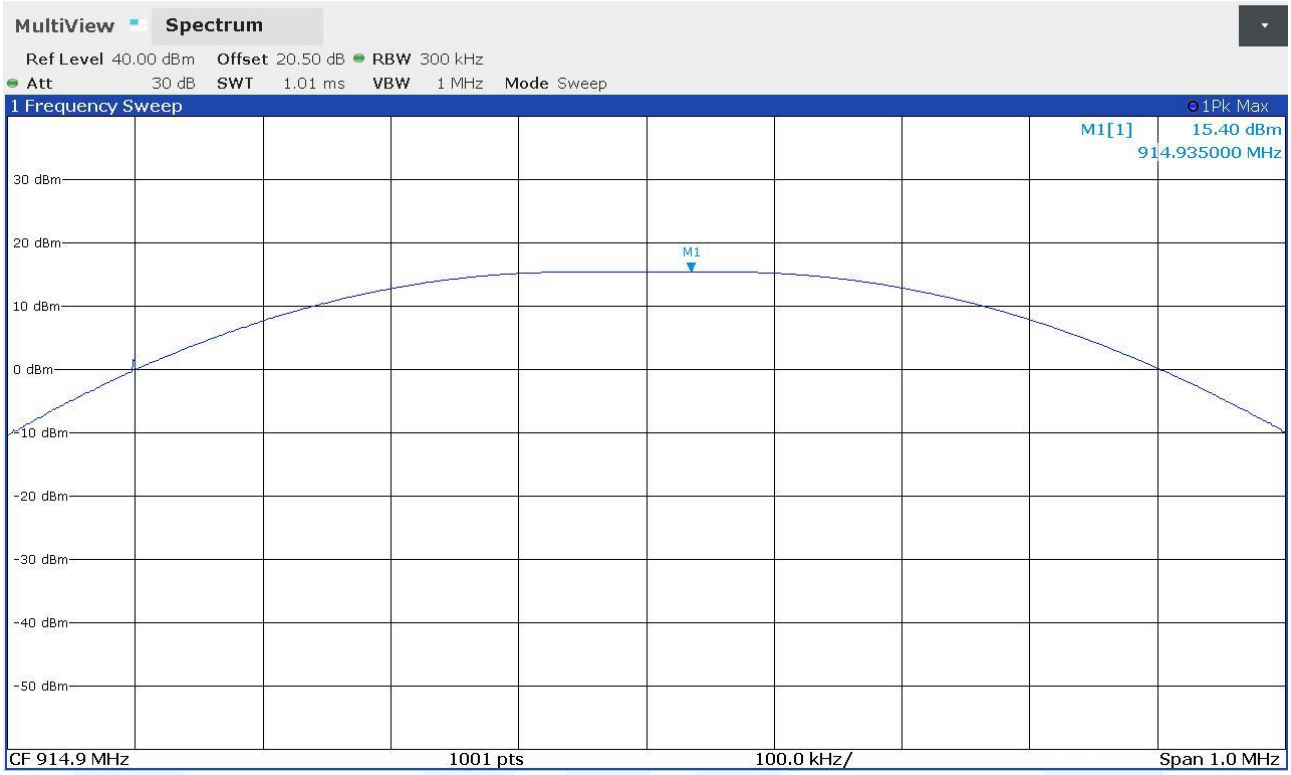
Segalla 200400B20



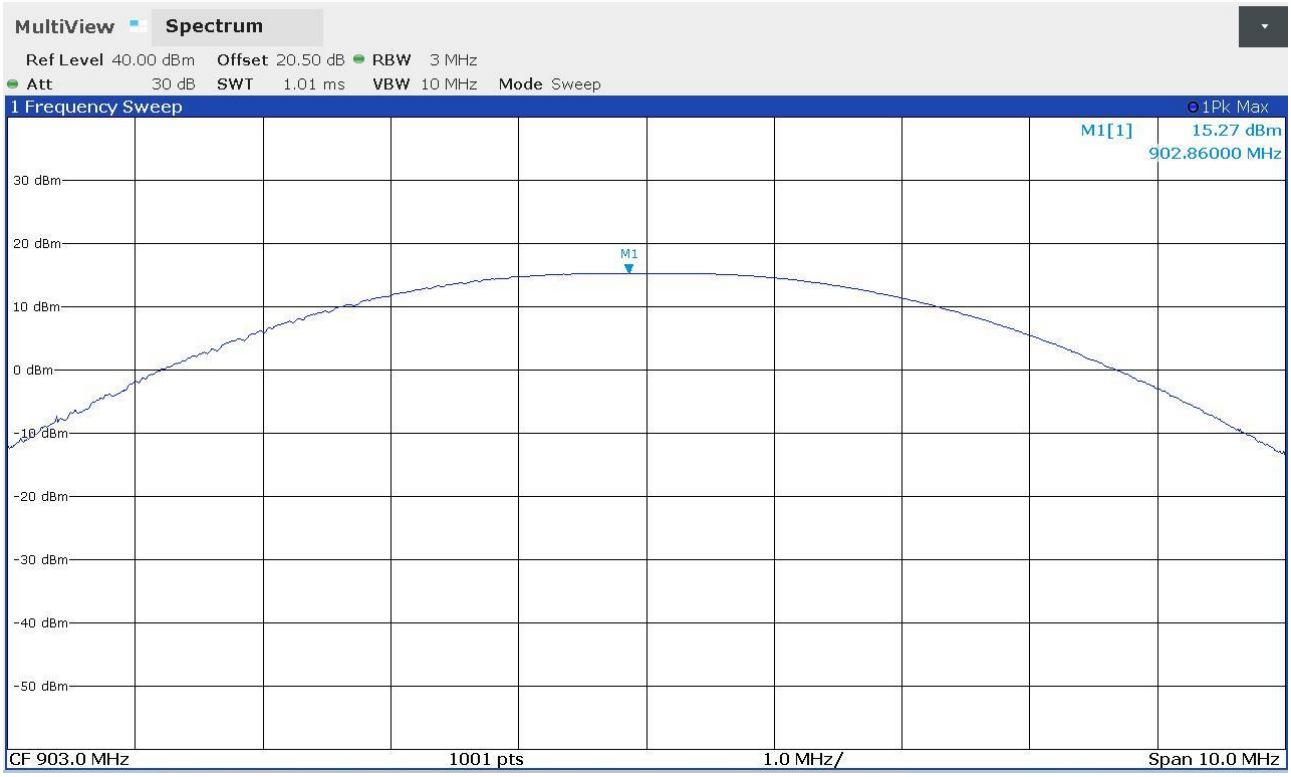
Segalla 200400B21



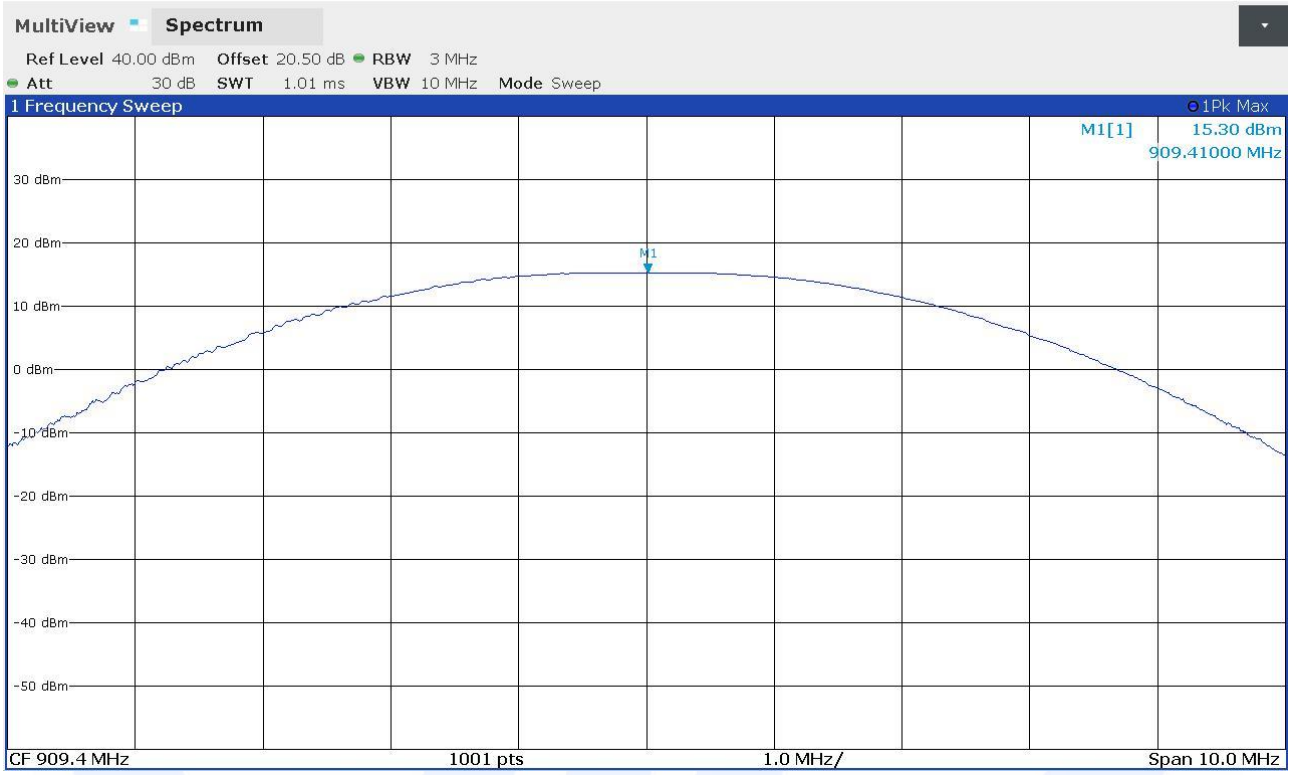
Segalla 200400B22



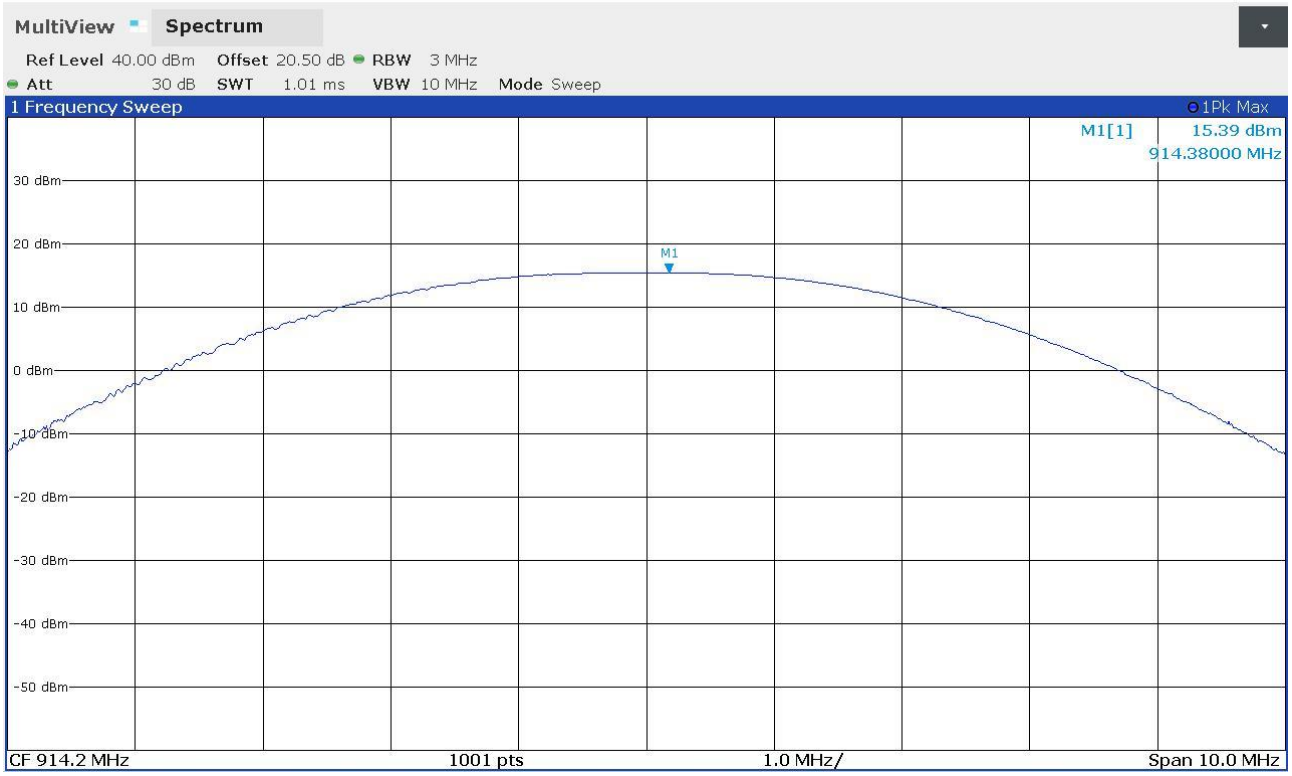
Segalla 200400B69



Segalla 200400B70



Segalla 200400B71



Attachment 1

Id. number	*Manufacturer*	*Model*	*Description*	*Serial number*	*Last calibration*	*Due date calibration*
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	< 1x10-7	1
Timing zero span (1001pts.)	PR002_01+02	0,2 % SWT	1
Modulation bandwidth	PR002_01+02	< 1x10-7	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 Oscillotary immunity test	PE113_01		2
Rev_20_02 date 24/02/2020			

Note 1:

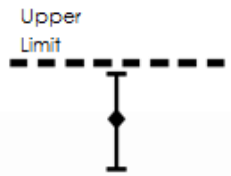
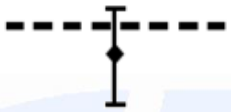
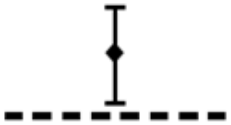
The expanded uncertainty reported according to the document EA-4-02 is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of p = 95%

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