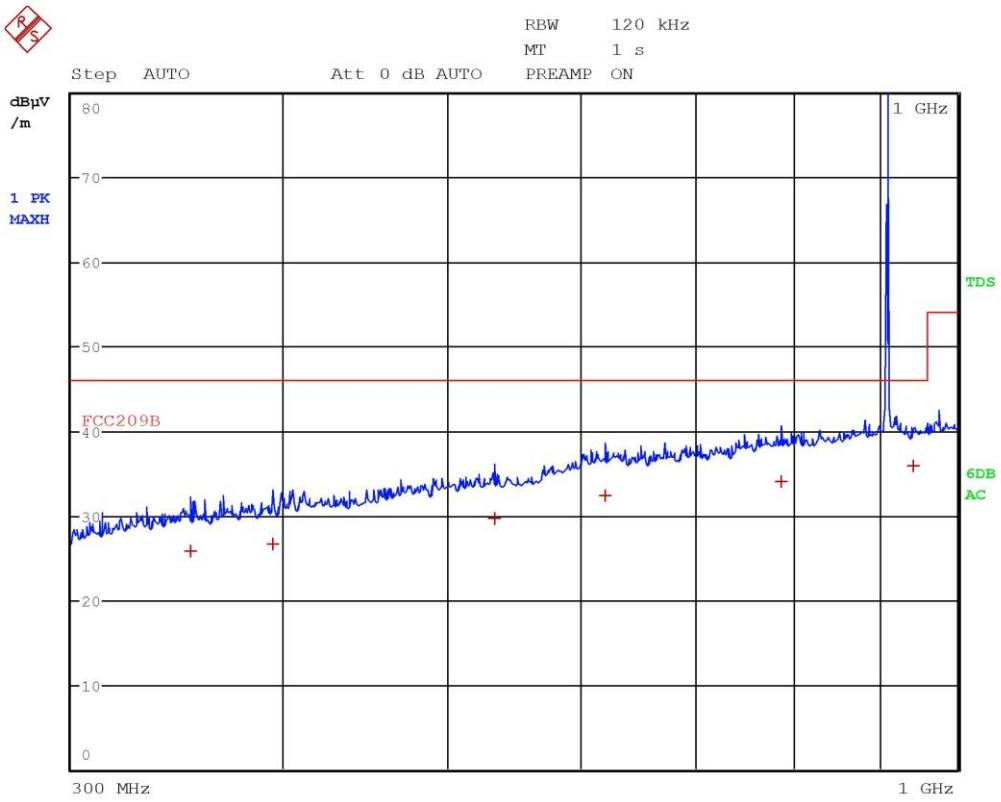


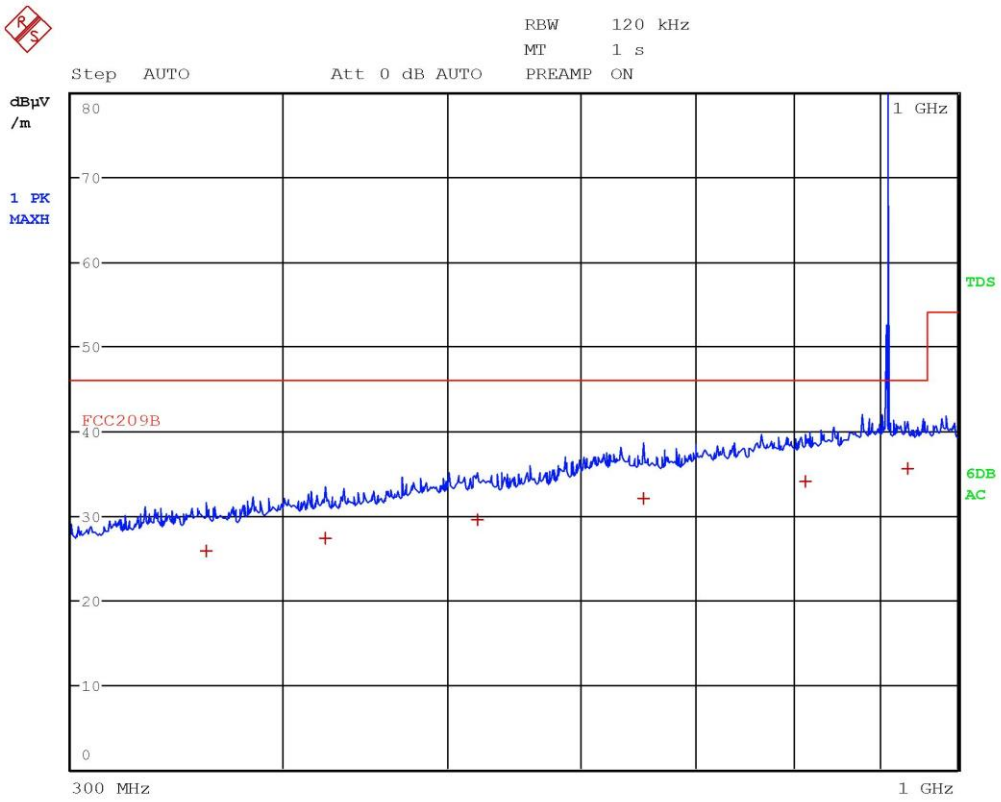
Segalla 20040060

EDIT PEAK LIST (Final Measurement Results)

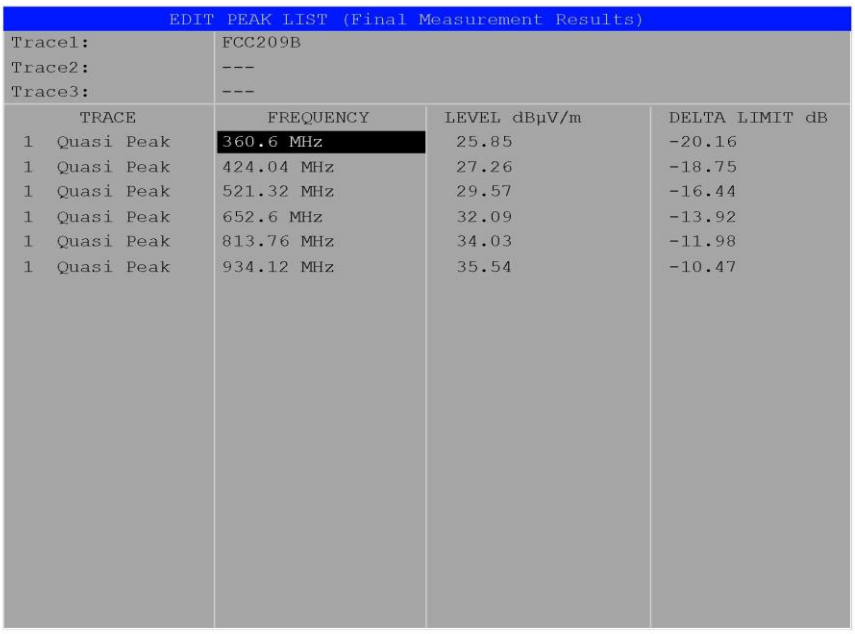
Trace1:	FCC209B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	352.76 MHz	25.75	-20.26
1 Quasi Peak	394.76 MHz	26.71	-19.30
1 Quasi Peak	532.68 MHz	29.62	-16.39
1 Quasi Peak	619.2 MHz	32.41	-13.60
1 Quasi Peak	787.92 MHz	34.00	-12.02
1 Quasi Peak	941.52 MHz	35.95	-10.07

Segalla 20040060



Segalla 20040061

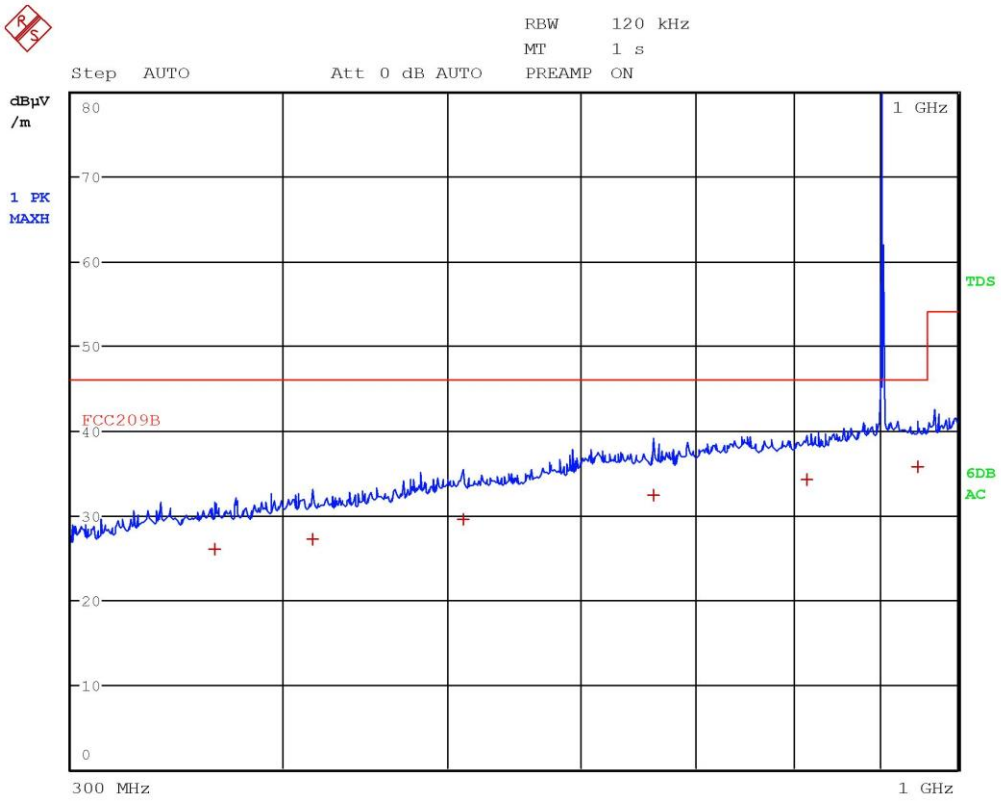


EDIT PEAK LIST (Final Measurement Results)

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

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	360.6 MHz	25.85	-20.16
1 Quasi Peak	424.04 MHz	27.26	-18.75
1 Quasi Peak	521.32 MHz	29.57	-16.44
1 Quasi Peak	652.6 MHz	32.09	-13.92
1 Quasi Peak	813.76 MHz	34.03	-11.98
1 Quasi Peak	934.12 MHz	35.54	-10.47

Segalla 20040061



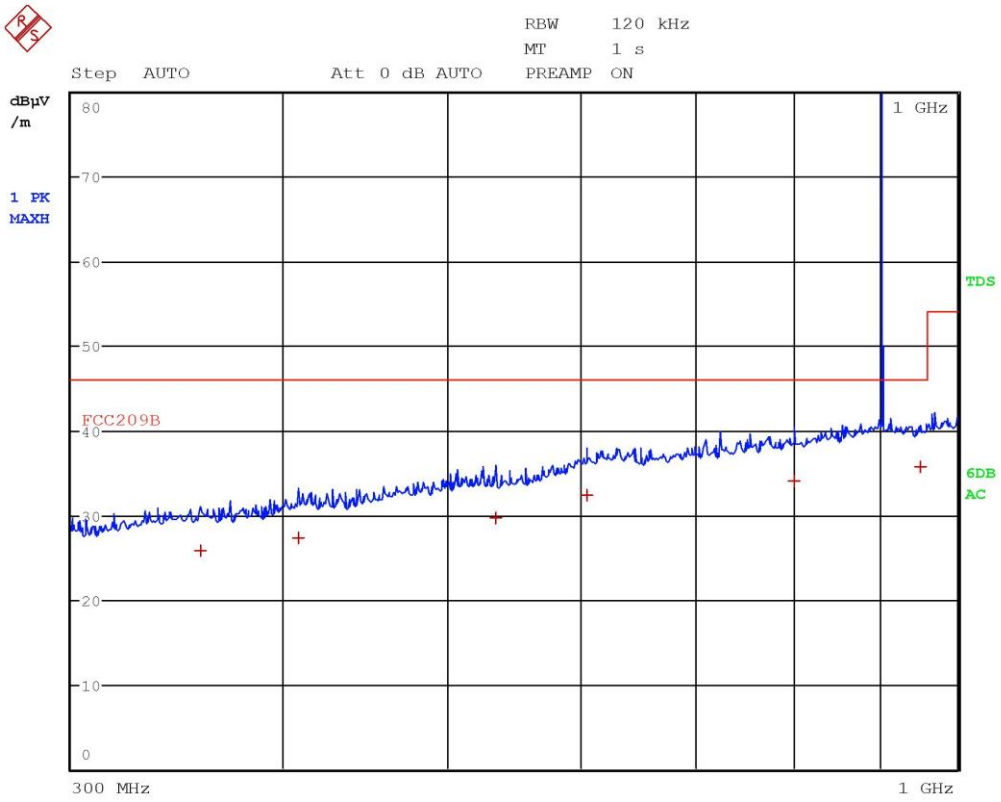
Segalla 20040063

EDIT PEAK LIST (Final Measurement Results)

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

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	364.76 MHz	25.90	-20.12
1 Quasi Peak	416.44 MHz	27.19	-18.82
1 Quasi Peak	510.8 MHz	29.49	-16.52
1 Quasi Peak	661.36 MHz	32.28	-13.73
1 Quasi Peak	815.44 MHz	34.15	-11.86
1 Quasi Peak	946.96 MHz	35.65	-10.36

Segalla 20040063



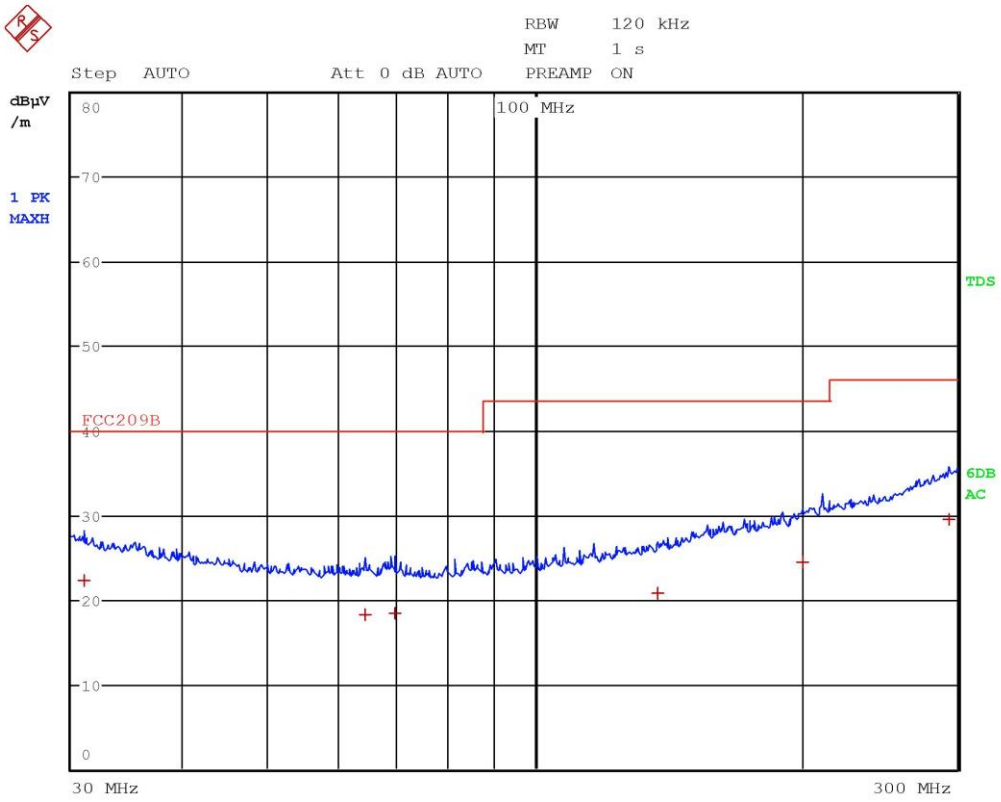
Segalla 20040064

EDIT PEAK LIST (Final Measurement Results)

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

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	357.68 MHz	25.72	-20.29
1 Quasi Peak	408.28 MHz	27.27	-18.74
1 Quasi Peak	534.32 MHz	29.63	-16.39
1 Quasi Peak	603.84 MHz	32.30	-13.71
1 Quasi Peak	800.44 MHz	34.07	-11.94
1 Quasi Peak	951.44 MHz	35.71	-10.30

Segalla 20040064



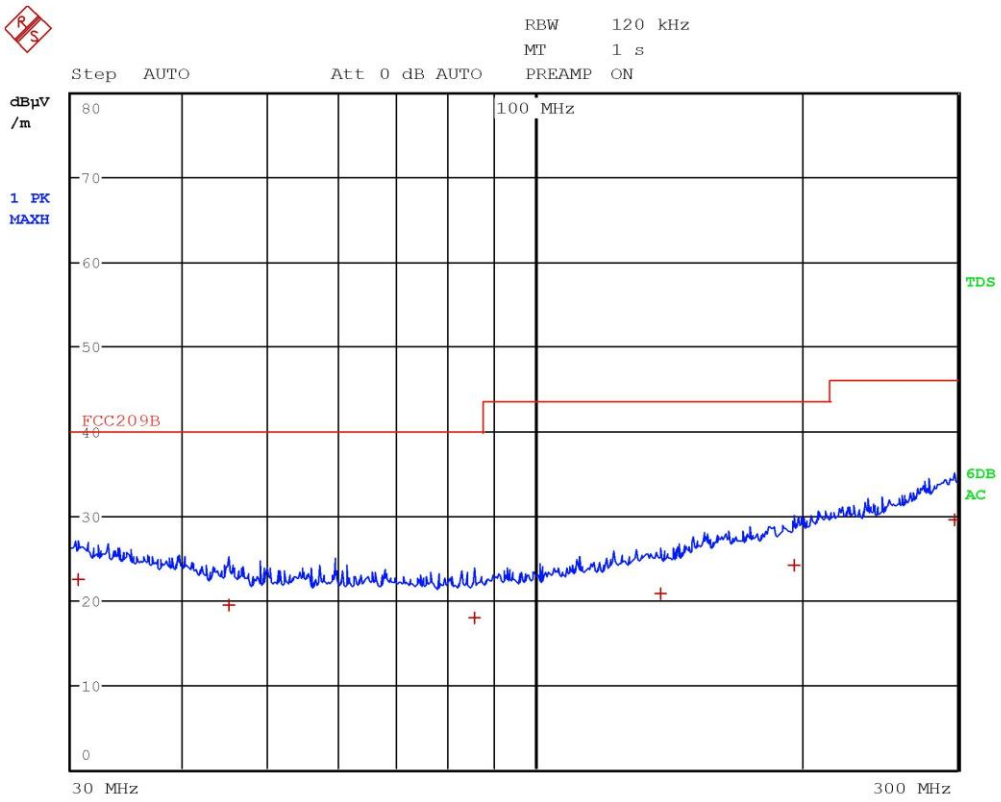
Segalla 20040065

EDIT PEAK LIST (Final Measurement Results)

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

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	31 MHz	22.28	-17.71
1 Quasi Peak	64.44 MHz	18.23	-21.76
1 Quasi Peak	69.64 MHz	18.34	-21.65
1 Quasi Peak	137.6 MHz	20.73	-22.78
1 Quasi Peak	200.92 MHz	24.44	-19.07
1 Quasi Peak	293.48 MHz	29.41	-16.60

Segalla 20040065



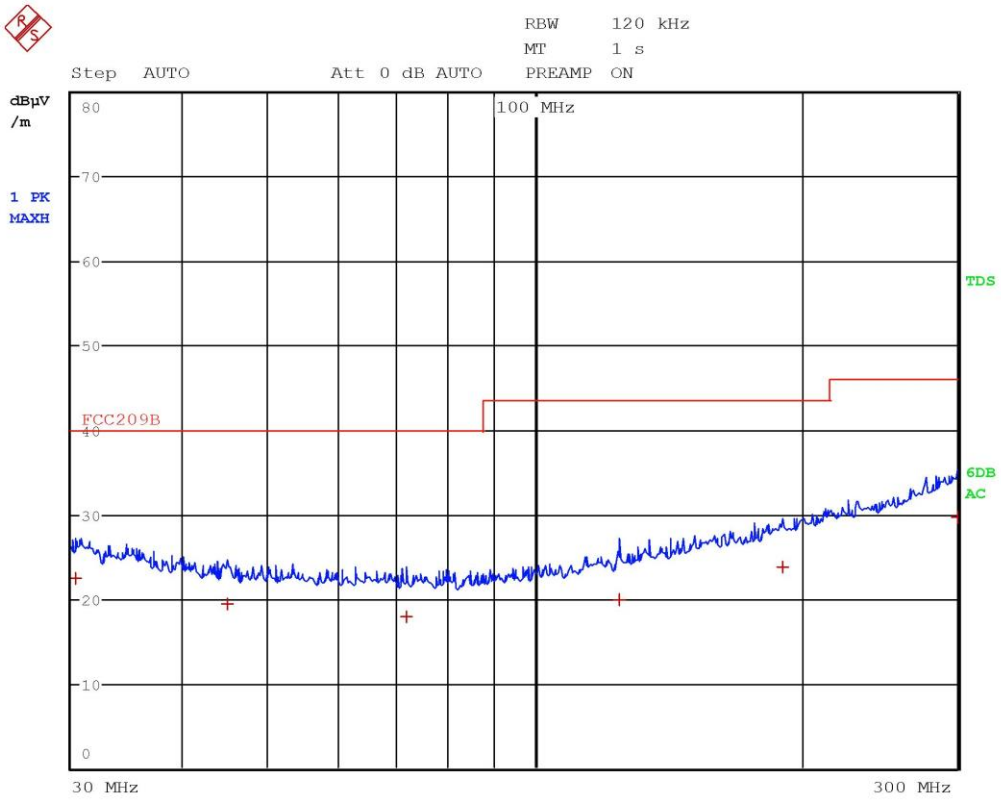
Segalla 20040066

EDIT PEAK LIST (Final Measurement Results)

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

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	30.48 MHz	22.44	-17.55
1 Quasi Peak	45.2 MHz	19.35	-20.64
1 Quasi Peak	85.64 MHz	17.85	-22.14
1 Quasi Peak	138.6 MHz	20.72	-22.79
1 Quasi Peak	196.04 MHz	24.11	-19.40
1 Quasi Peak	297.6 MHz	29.44	-16.57

Segalla 20040066



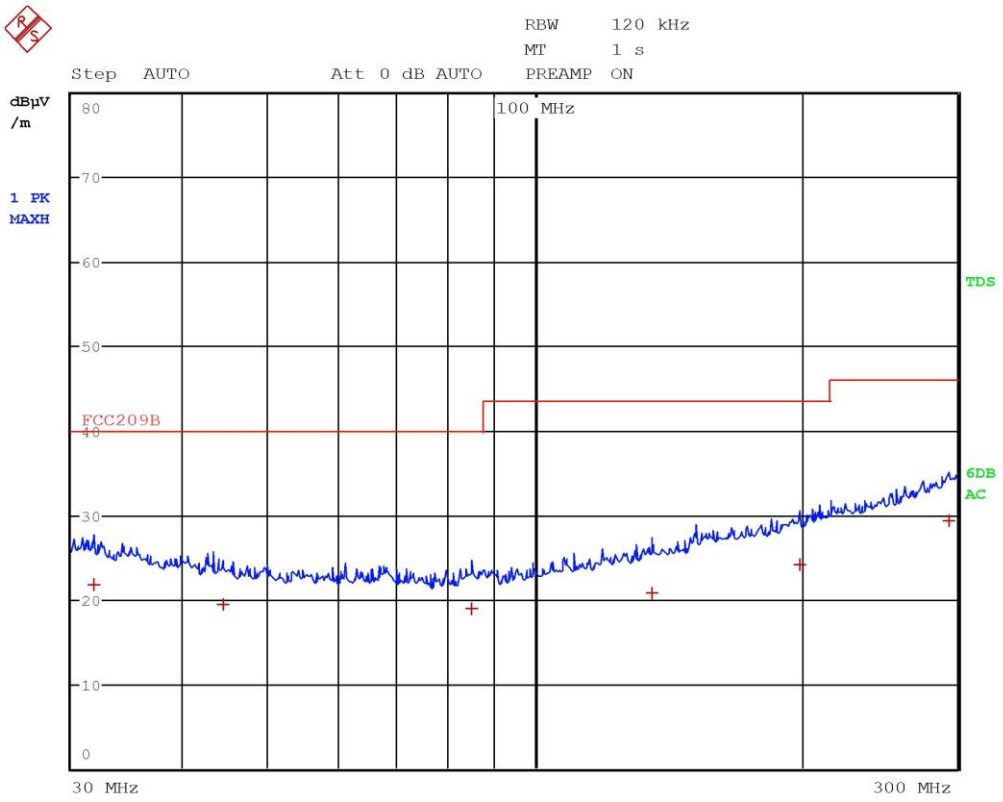
Segalla 20040067

EDIT PEAK LIST (Final Measurement Results)

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

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	30.32 MHz	22.48	-17.51
1 Quasi Peak	45 MHz	19.33	-20.66
1 Quasi Peak	71.6 MHz	17.84	-22.16
1 Quasi Peak	124.44 MHz	19.94	-23.57
1 Quasi Peak	190.4 MHz	23.78	-19.73
1 Quasi Peak	299.8 MHz	29.65	-16.36

Segalla 20040067



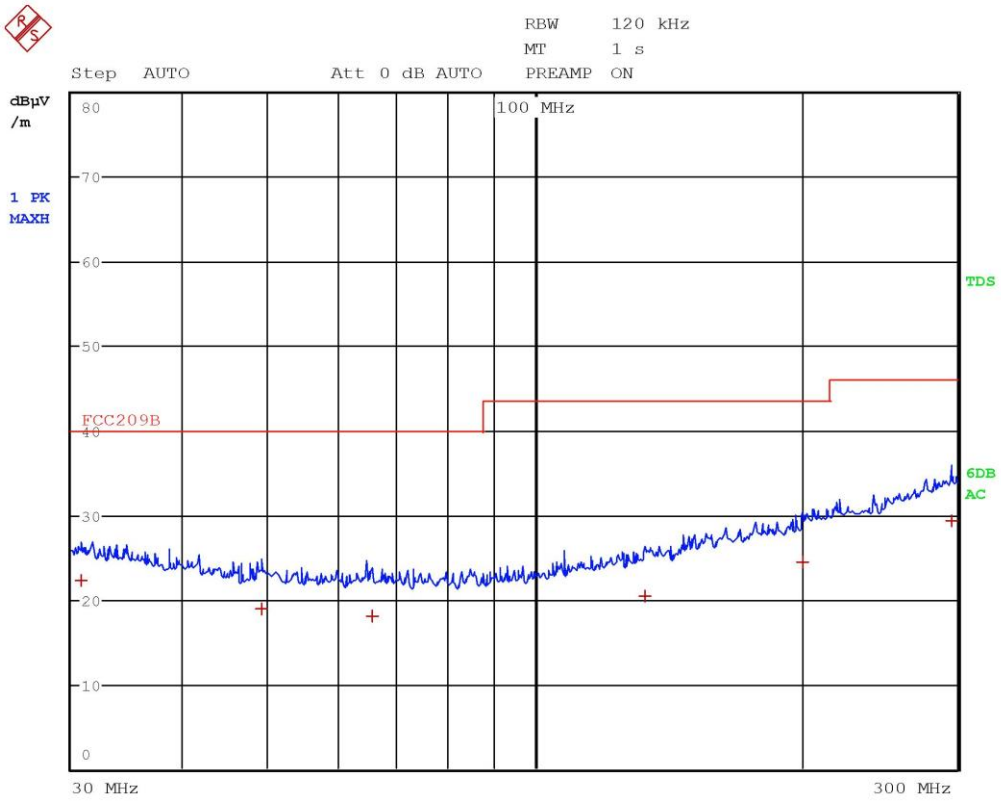
Segalla 20040068

EDIT PEAK LIST (Final Measurement Results)

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

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	31.84 MHz	21.78	-18.21
1 Quasi Peak	44.52 MHz	19.38	-20.61
1 Quasi Peak	84.92 MHz	18.97	-21.02
1 Quasi Peak	135.68 MHz	20.78	-22.73
1 Quasi Peak	199.24 MHz	24.18	-19.33
1 Quasi Peak	293.44 MHz	29.38	-16.63

Segalla 20040068



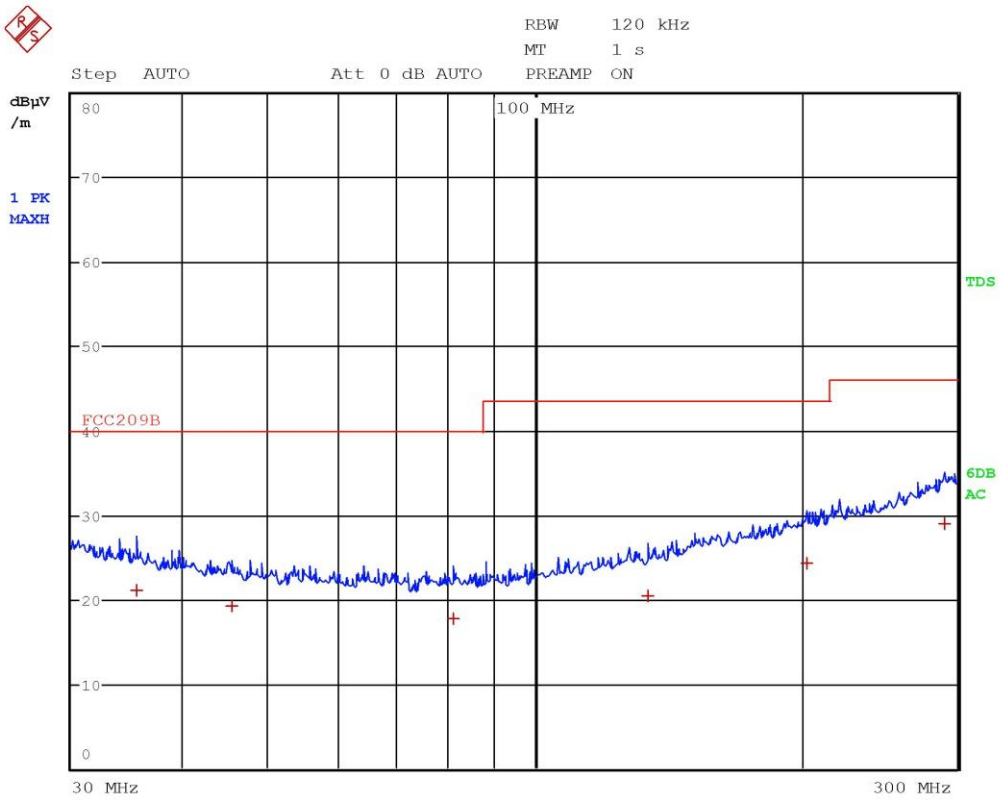
Segalla 20040069

EDIT PEAK LIST (Final Measurement Results)

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

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	30.76 MHz	22.31	-17.68
1 Quasi Peak	49.16 MHz	18.82	-21.17
1 Quasi Peak	65.56 MHz	18.10	-21.89
1 Quasi Peak	133.2 MHz	20.44	-23.07
1 Quasi Peak	200.4 MHz	24.39	-19.12
1 Quasi Peak	295.28 MHz	29.27	-16.74

Segalla 20040069



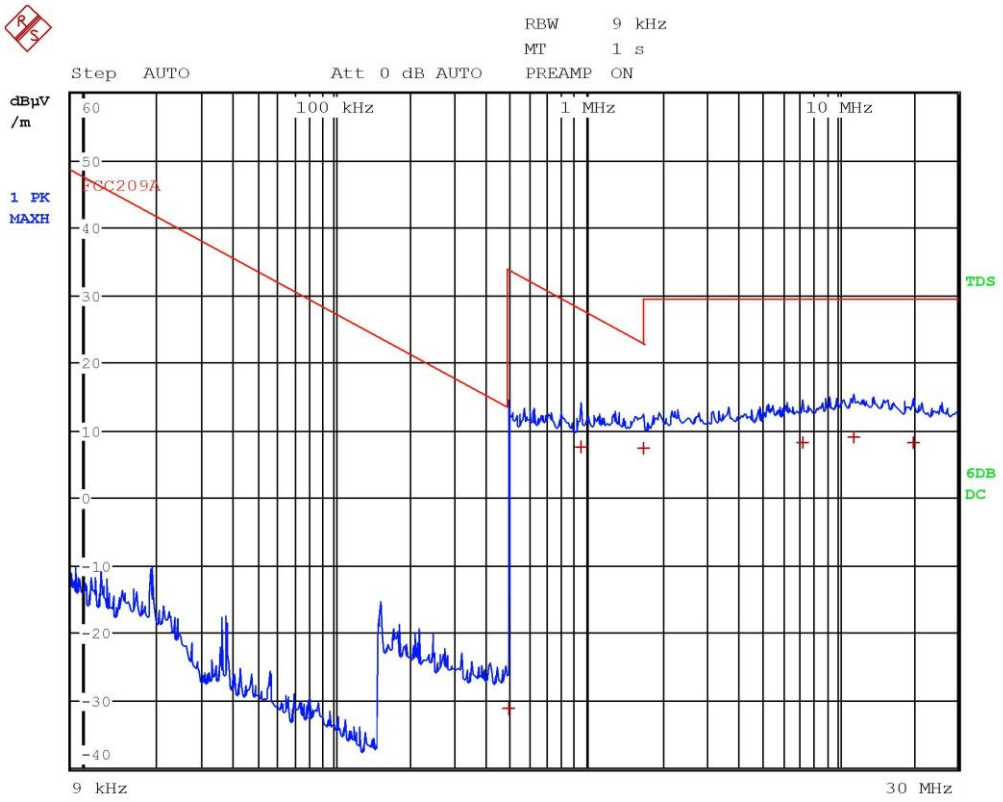
Segalla 20040070

EDIT PEAK LIST (Final Measurement Results)

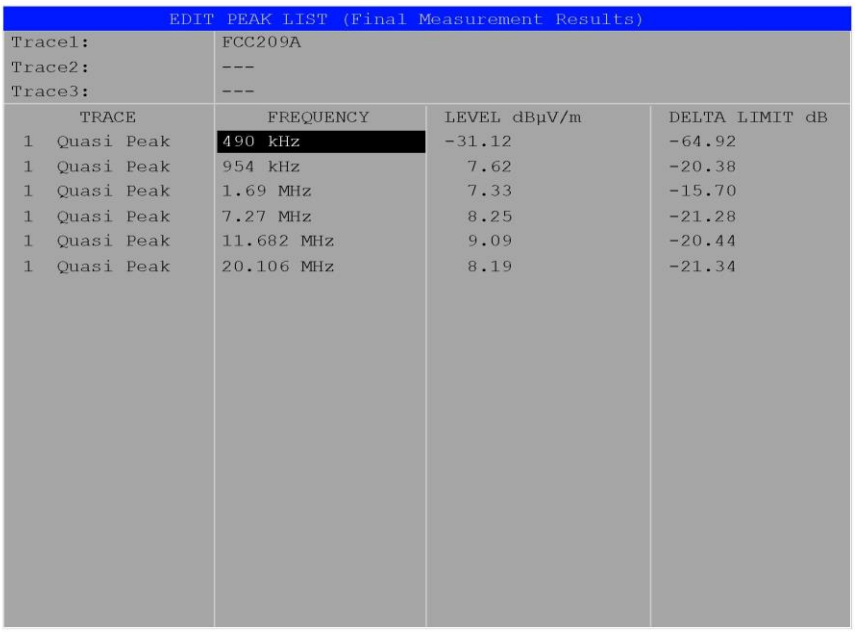
Trace1:	FCC209B
Trace2:	---
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	35.56 MHz	21.17	-18.82
1 Quasi Peak	45.4 MHz	19.25	-20.74
1 Quasi Peak	80.96 MHz	17.76	-22.23
1 Quasi Peak	134.28 MHz	20.45	-23.06
1 Quasi Peak	203.12 MHz	24.35	-19.16
1 Quasi Peak	290.12 MHz	29.04	-16.97

Segalla 20040070



Segalla 20040071



EDIT PEAK LIST (Final Measurement Results)

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

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Quasi Peak	490 kHz	-31.12	-64.92
1 Quasi Peak	954 kHz	7.62	-20.38
1 Quasi Peak	1.69 MHz	7.33	-15.70
1 Quasi Peak	7.27 MHz	8.25	-21.28
1 Quasi Peak	11.682 MHz	9.09	-20.44
1 Quasi Peak	20.106 MHz	8.19	-21.34

Segalla 20040071

9.3 Peak Output Power

Tested by ..... :	M. Segalla
Test date ..... :	27.04.2020
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..... :	--

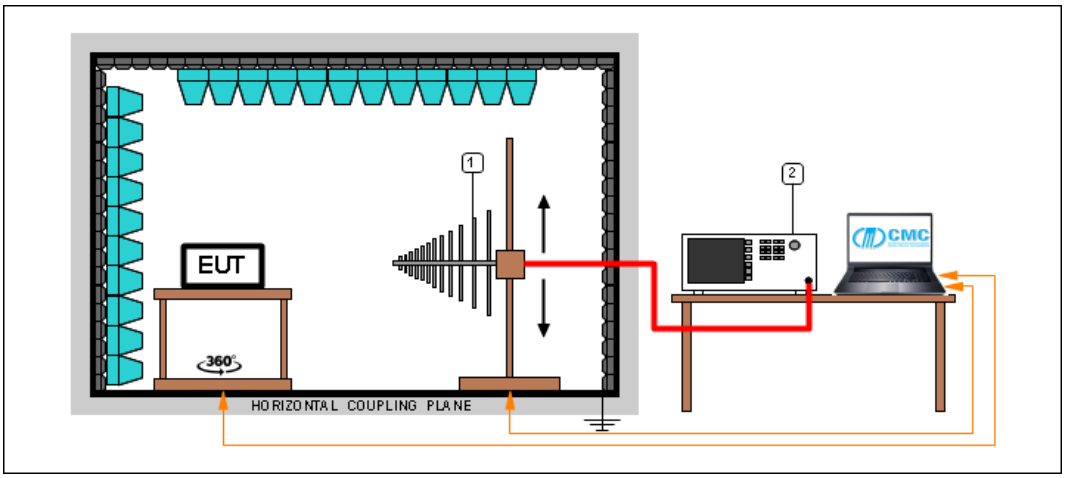
Acceptance limits

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

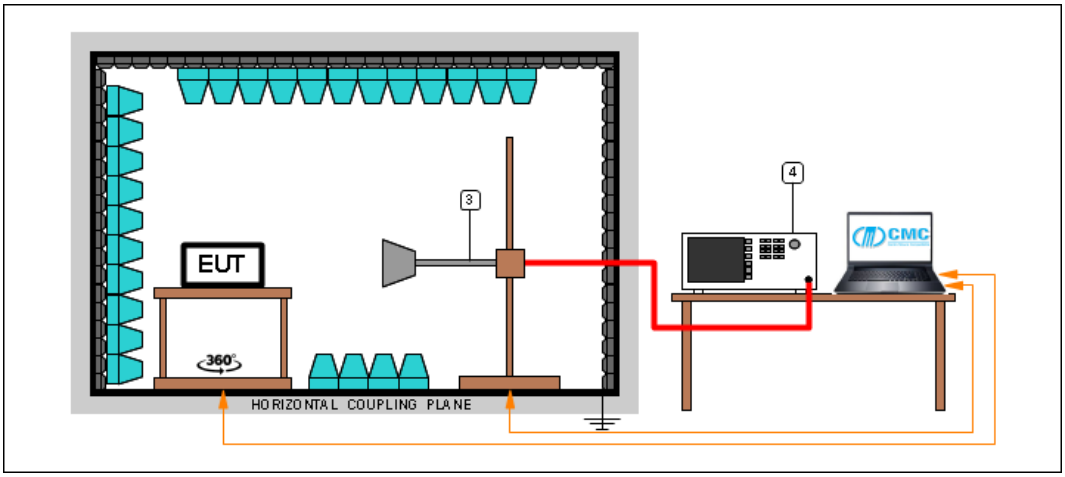
Test setup

Frequency ≤ 1 GHz



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

Frequency > 1 GHz



Test setup PE004_04				
Nr.	*Id. Number*	*Manufacturer*	*Model*	*Description*
4	CMC S164	Rohde & Schwarz	ESU26	Receiver 20 Hz - 26.5 GHz
3	CMC S108	Emco	3115	Waveguide antenna

Result – LoRa 125 kHz modulation

Frequency (MHz)	*Polarization*	*Graphs*	*Measured level (dBµV/m)*	*Peak Output Power (mW)*	*Limit (mW)*
902,30	Worst case	G20040013	109,94	17,026	1000
908,70	Worst case	G20040010	111,20	22,757	1000
914,90	Worst case	G20040007	111,63	25,126	1000

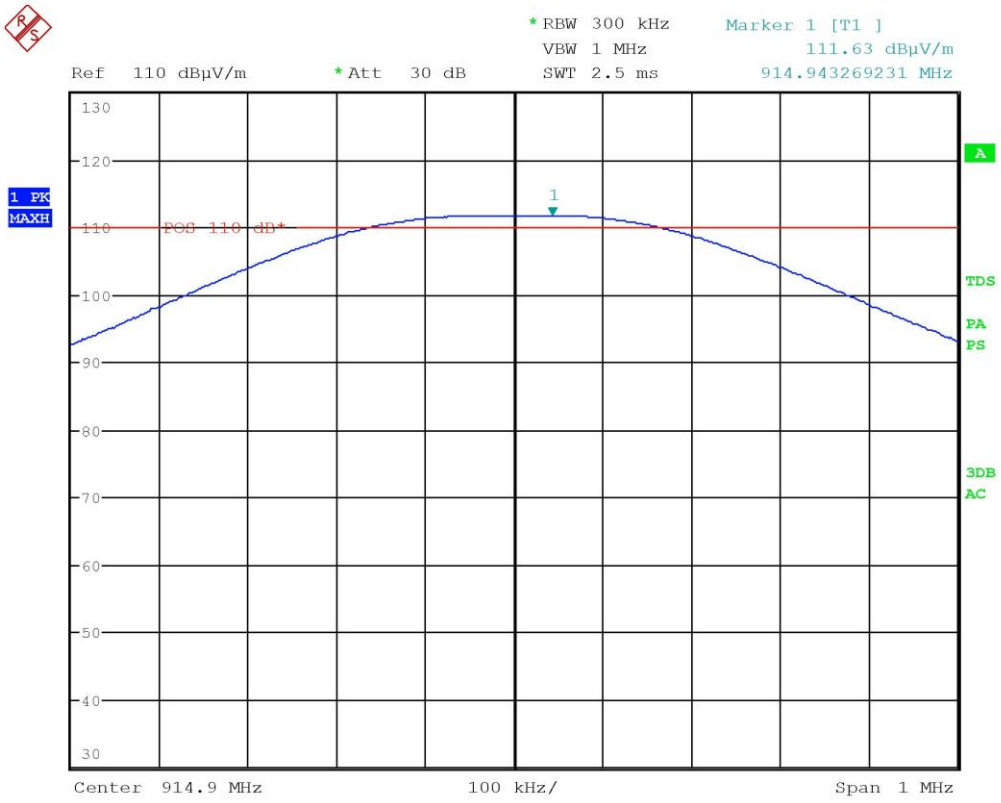
Remarks
$P = (E \times d)^2 / (30 \times G)$
Where:
E = the measured maximum fundamental field strength in V/m
G = the numeric gain of the transmitting antenna: 1,738 (2,4 dBi)
d = the distance in meters from which the field strength was measured (3 m)
P = the power in watts

Result – LoRa 500 kHz modulation

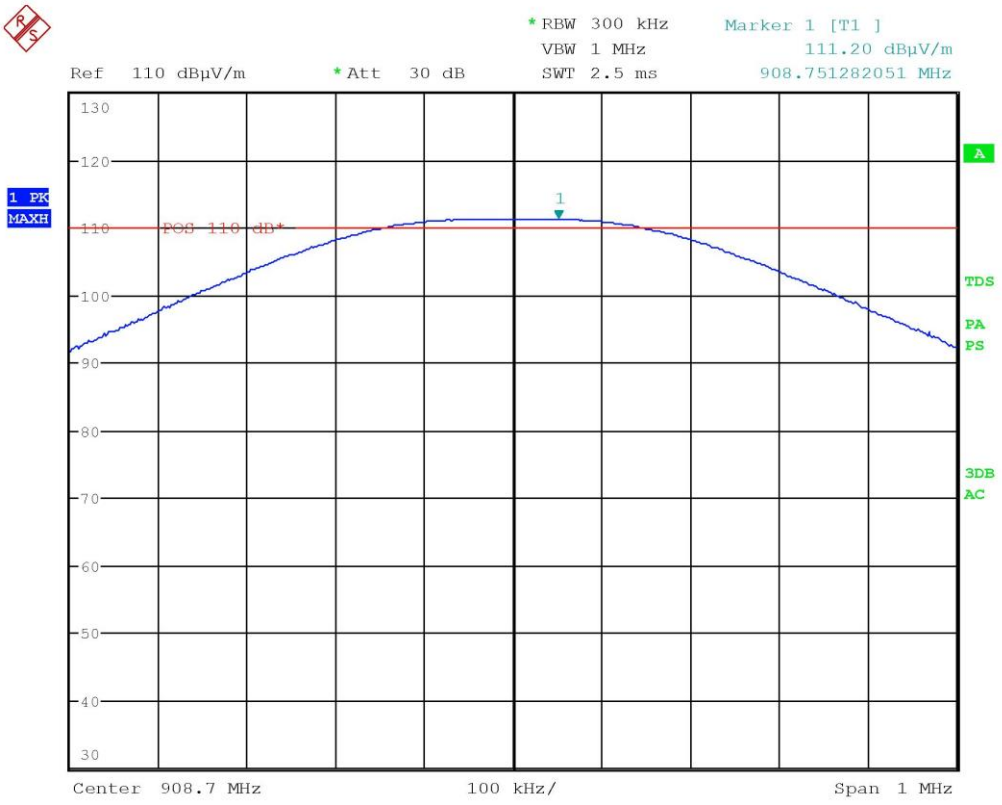
Frequency (MHz)	*Polarization*	*Graphs*	*Measured level (dBµV/m)*	*Peak Output Power (mW)*	*Limit (mW)*
903,00	Worst case	G20040062	110,62	19,912	1000
909,40	Worst case	G20040059	111,18	22,653	1000
914,20	Worst case	G20040056	112,86	33,352	1000

Remarks
$P = (E \times d)^2 / (30 \times G)$
Where:
E = the measured maximum fundamental field strength in V/m
G = the numeric gain of the transmitting antenna: 1,738 (2,4 dBi)
d = the distance in meters from which the field strength was measured (3 m)
P = the power in watts

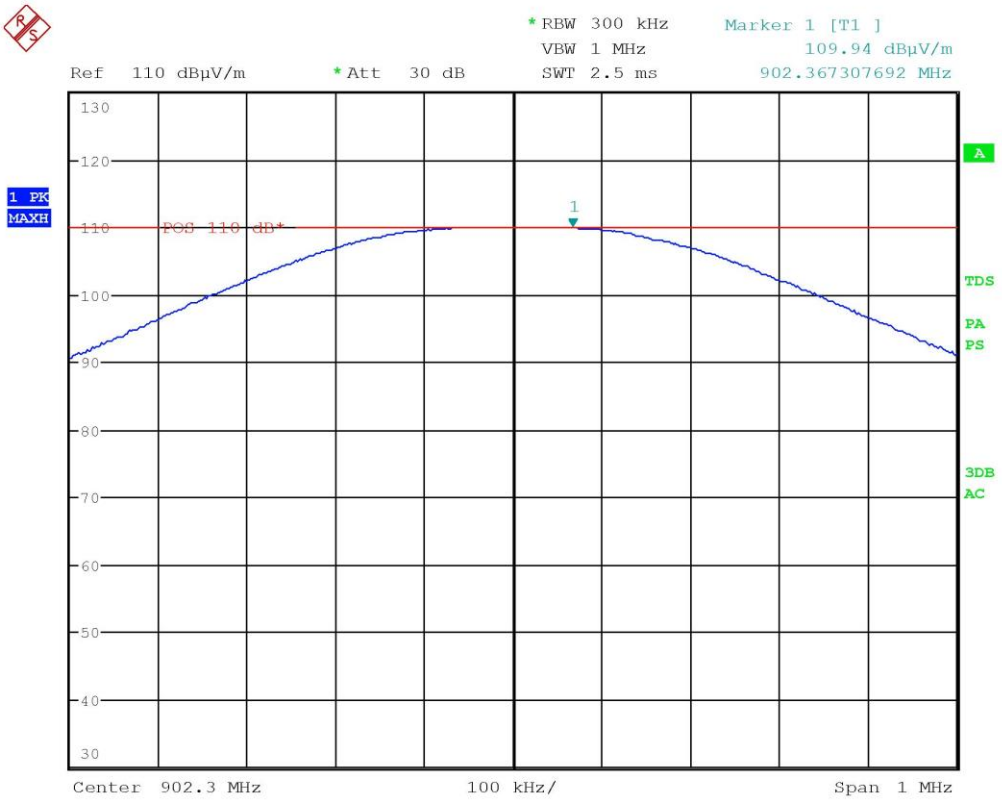
Graphs



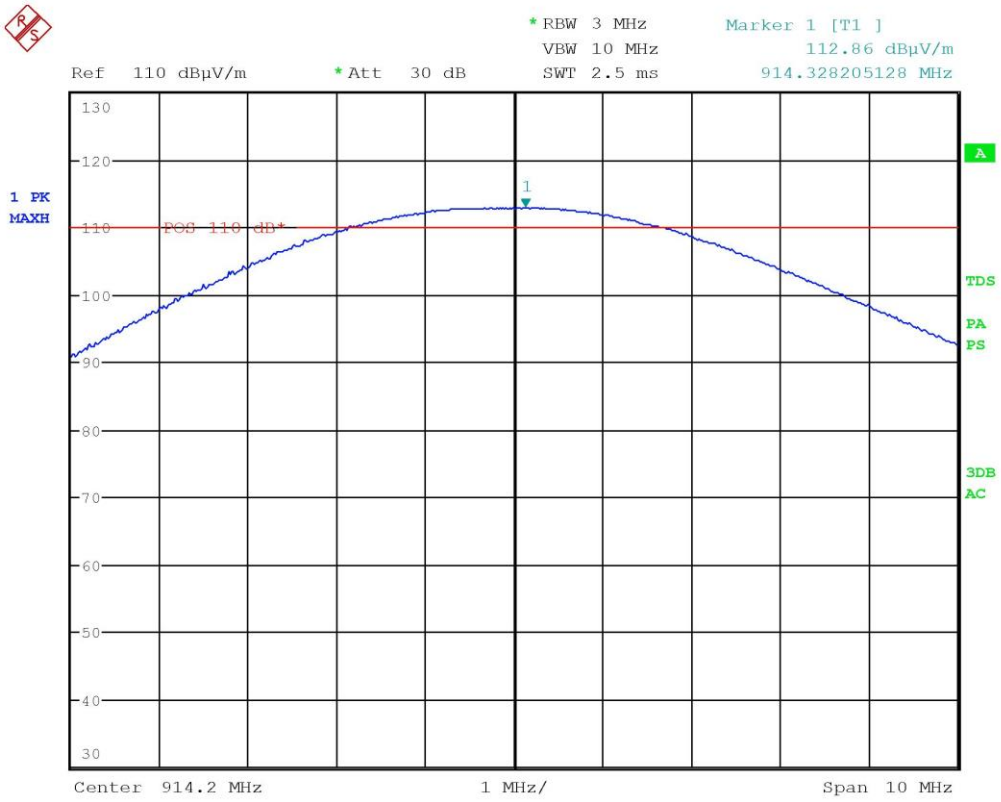
Segalla 20040007



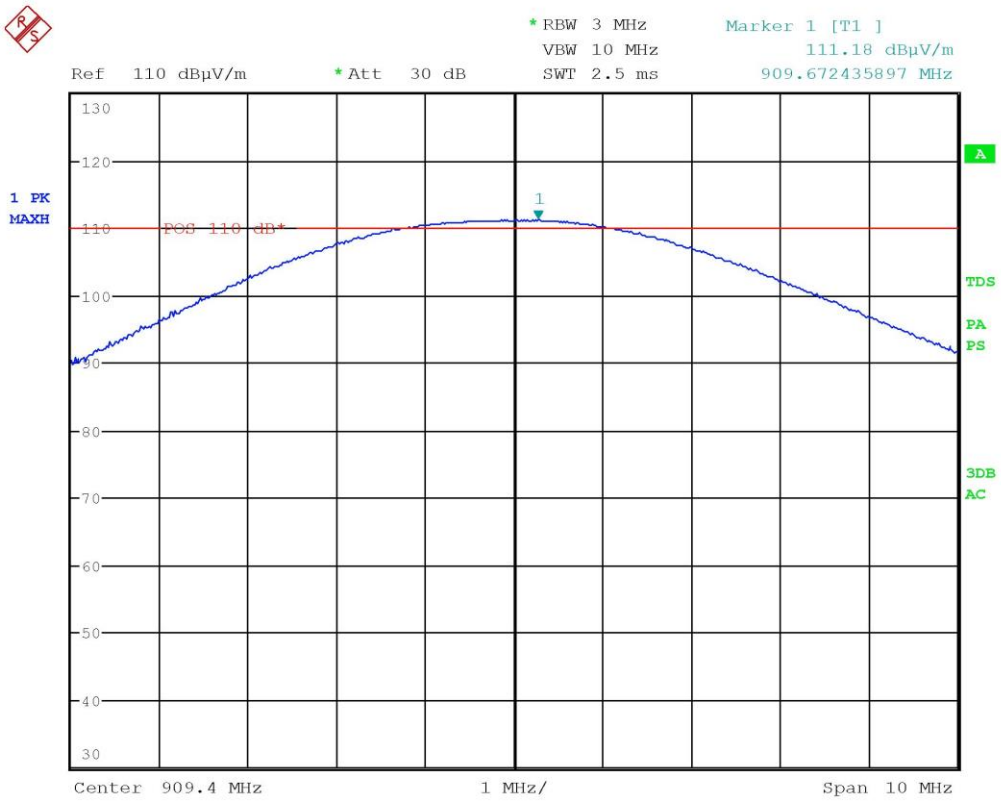
Segalla 20040010



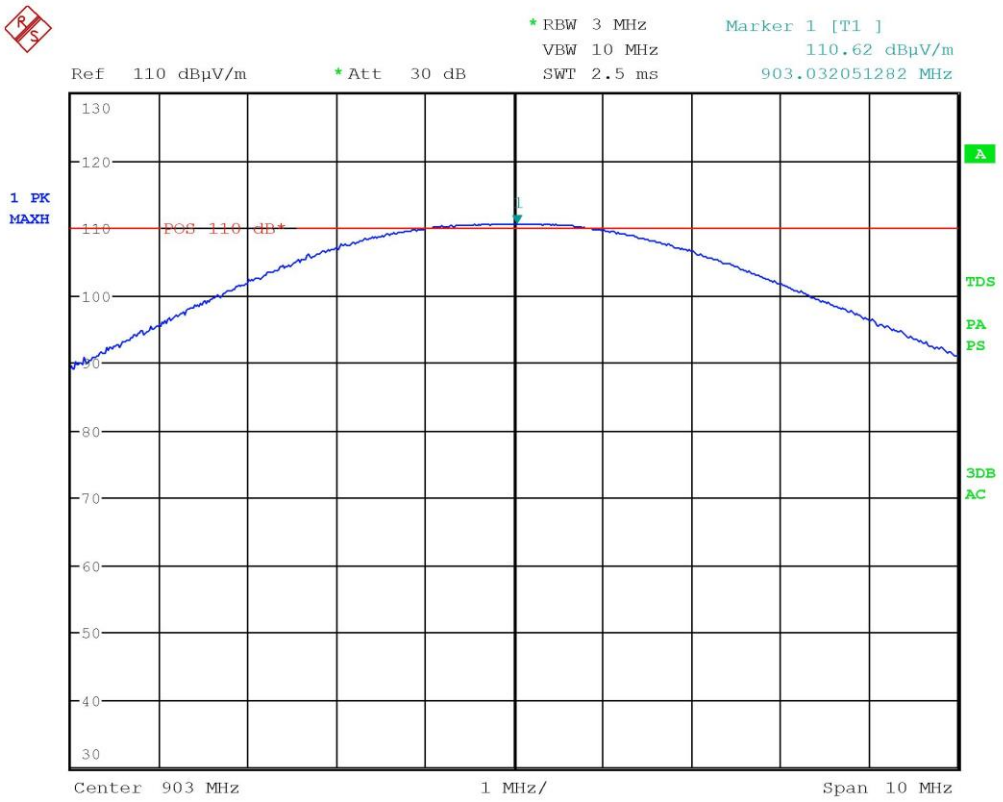
Segalla 20040013



Segalla 20040056



Segalla 20040059



Segalla 20040062

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:

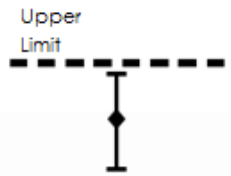
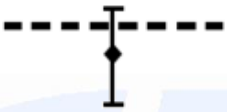
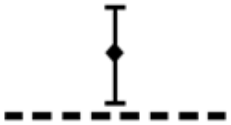
The expanded uncertainty reported according to the document EA-4-02 is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of p = 95%

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