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LAB N° 0168 L

Independent Testing Laboratory
Accredited by ACCREDIA according to UNI CEI EN ISO/IEC 17025 cert. nr. 0168

TEST REPORT
Nr. R20012301

Federal Communication Commission (FCC)

Report Reference No. ..... :	R20012301
Date of issue: ..... :	16.09.2020
Total number pages: ..... :	132
Applicant´s name ..... :	Midatronics S.r.l.
Address ..... :	Via Bartolomeo Zucchi, 1 – 20052 Monza (MB) – Italy
Test specification:	
Standards ..... :	FCC Rules & Regulations, Title 47:2019 Part 15 paragraph(s): 203, 204, 205, 207, 209, 215 and 247
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	15-247_DTSCMC
Test Report Form(s) Originator .. :	CMC Centro Misure Compatibilità S.r.l.
Master TRF ..... :	2020-04

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description ..... :	2,4 GHz communication module with BLE, Thread, ZigBee, IEEE 802.15.4 transmission stacks
Trademark ..... :	Midatronics
Manufacturer ..... :	Midatronics S.r.l.
Model / Type reference ..... :	Sharky
FCC ID ..... :	2AVSQSHARKY
Rating(s) ..... :	3,3 Vdc

Report

Tested by (name + signature) ..... :	M. Segalla	.....
Approved by (name + signature) ..... :	R. Beghetto	.....

1 Summary

2 Reference standard	
FCC Rules and Regulation Title 47 part 15:2019	--
3 List of attachments	
Attachment 1: Instruments list, measurement uncertainty, judgement of compliance and quality manual references	
4 Deviation(s) from test specification	
None	
5 Testing location	
CMC Centro Misure Compatibilità S.r.l. Via della Fisica, 20 – 36016 Thiene (VI) – Italy Test site facility's FCC registration number: 182474	

Revision index	***Date***	***Change history***
1.0	16.09.2020	--

Testing and sampling:	
Date of receipt of test item	10.10.2019
Testing start date	06.02.2020
Testing end date	16.09.2020
Sampling procedure	Equipment used for testing was picked up by the manufacturer, at the end of the production process with random criterion. The results relate to the sample as it has been received.
Internal identification	Adhesive label with the product number P191215
General remarks:	
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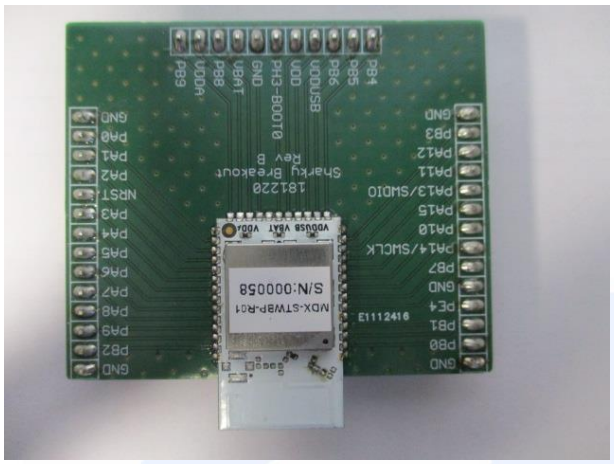
Possible test case verdicts:	
Test case does not apply to the test object:	N/A (Not Applicable)
Test object does meet the requirement:	P (Pass)
Test object does not meet the requirement:	F (Fail)
Test object does not performed:	N/E (Not Executed)
Definition of symbols used in this test report:	
☒ Indicates that the listed condition, standard or equipment is applicable for this report. ☐ Indicates that the listed condition, standard or equipment is not applicable for this report.	

6 General description of test item(s)

Description ..... :	2,4 GHz communication module with BLE, Thread, ZigBee, IEEE 802.15.4 transmission stacks						
Model Number ..... :	Sharky						
FCC ID ..... :	2AVSQSHARKY						
Serial Number ..... :	MDX-STWBP-R01						
Brand name ..... :	Midatronics						
Frequency band ..... :	2400 – 2483,5 MHz						
Nominal frequencies ..... :	F_L: 2402 MHz		F_M: 2440 MHz		F_H: 2480 MHz		
Rated power supply ..... :		Voltage and Frequency	Reference poles				
			N	L1	L2	L3	PE
	☐	AC:	☐	☐	☐	☐	☐
	☐	AC:	☐	☐	☐	☐	☐
	☒	DC: 3,3 V					☐
Test configuration ..... :	☒	Table top equipment					
	☐	Floor standing equipment					
	☐	Hand-held equipment					
Type of equipment ..... :	☒	Transmitter unit					
	☐	Receiver unit					
Type of station ..... :	☒	Fixed station					
	☐	Portable station					
	☐	Mobile station					
Operating modes ..... :	No.	Operating mode of test item					
	1	EUT in continuous transmission at maximum power					

6.1 Photos of the test item



7 Verdict summary section

FCC Rules & Regulations, Title 47:2019 Part 15 paragraph(s): 203, 204, 205, 207, 209, 215 and 247			
Clause	**Requirement – Test case**	**Basic standard**	**Verdict**
Part 15.203	Antenna requirements	--	**P**
Part 15.207	Conducted emissions	ANSI C63.10	**P (+)**
Part 15.209	Emissions in restricted frequency bands and in unrestricted frequency bands	ANSI C63.10	**P**
Part 15.247 (a) (2)	DTS bandwidth	ANSI C63.10	**P**
Part 15.215 (c)	20 dB bandwidth	ANSI C63.10	**P**
Part 15.247 (d)	Band edge	ANSI C63.10	**P**
Part 15.209 and 15.247	Fundamental emission output power	ANSI C63.10	**P**
Part 15.209 and 15.247	Maximum power spectral density level in the fundamental emission	ANSI C63.10	**P**

(+) Test performed on 120 Vac side of power unit

Normative references	
Reference no.	***Description***
FCC Rules and Regulation Title 47 part 15:2019	--
KDB 558074 D01 15.247 Meas Guidance v05r02	Guidance for compliance measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices operating under section 15.247 of the FCC rules
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:

Temperature	Humidity	Atmospheric pressure
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 ..... :	06.02.2020	
Reference standards ..... :	FCC Rules and Regulation; Titles 47 Part. 15.203 and 15.204	
Test specification ..... :	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	
Antenna type ..... :	☒	Internal antenna
	☒	External antenna
Antenna gain ..... :	3 dBi for internal antenna 3,2 dBi for external antenna	
External R.F. power amplifier ..... :	Not Present	

9.2 Conducted emission

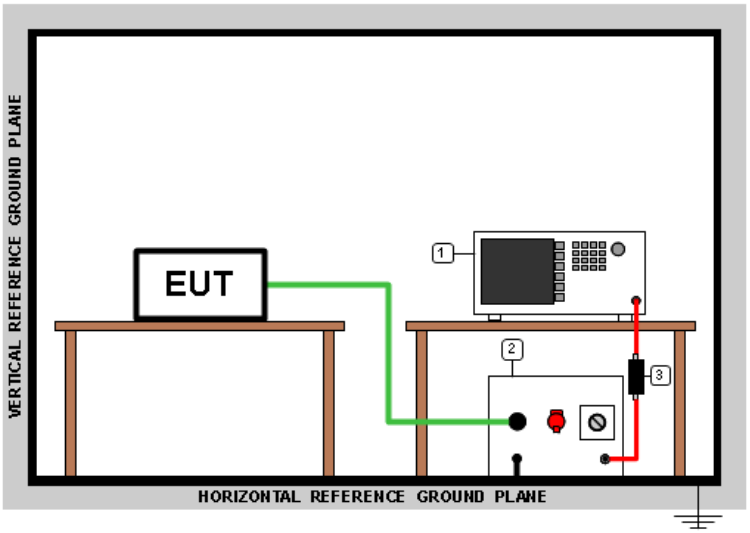
Tested by ..... :	M. Segalla	
Test date ..... :	16.09.2020	
Test location (stand) ..... :	Shielded chamber (CMC A001)	
Reference standards ..... :	FCC Rules and Regulation; Titles 47 Part. 15.207 ANSI C63.10 cl. 6.2	
Test set-up description ..... :	☒	Table top equipment set-up (80 cm above the reference ground plane)
	☐	Floor standing equipment set-up (insulating material up to 12 mm thick)
	☐	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 ..... :	☒	Artificial mains network, 50 µH/50 Ω LISN
	☐	Other:

Acceptance limits

Frequency range (MHz)	*dB(µV) Quasi-peak*	*dB(µV) Average*
0,15 to 0,50	66 to 56	56 to 46
0,5 to 5	56	46
5 to 30	60	50

Test setup

Mains terminal disturbance for table-top equipment



Test setup PE001_01				
Nr.	*Id. Number*	*Manufacturer*	*Model*	*Description*
3	CMC S010	Rohde & Schwarz	ESH3-Z2	Pulse limiter
2	CMC S200	Schwarzbeck	NSLK 8128	V-LISN
1	CMC S206	Rohde & Schwarz	ESCI 7	EMC Receiver 9KHz-7GHz

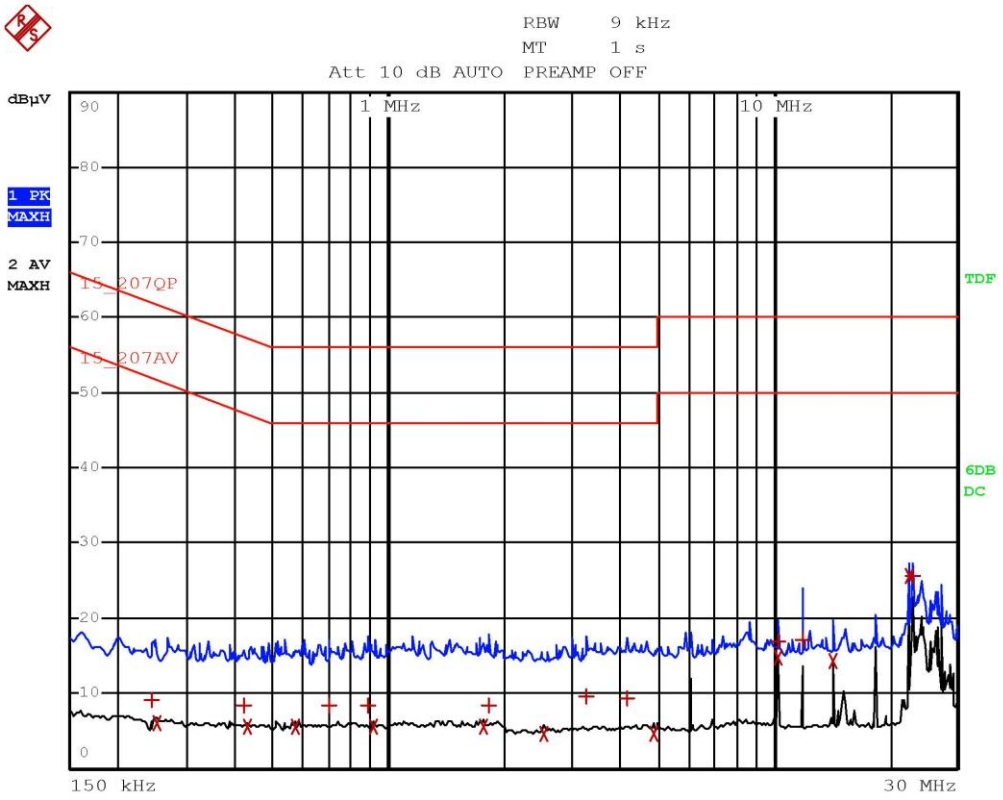
Result – internal antenna

Line	*Frequency Range (MHz)*	*Graphs*	*Remarks*	*Result*
L1	0,15 – 30	G20012446	--	P
N	0,15 – 30	G20012447	--	P

Remarks: tests performed on 120 Vac side of dedicated power unit

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



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EDIT PEAK LIST (Final Measurement Results)			
Trace1:	15_207QP		
Trace2:	15_207AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	246 kHz	9.08	-52.80
2 Average	250 kHz	6.01	-45.74
1 Quasi Peak	418 kHz	8.40	-49.08
2 Average	430 kHz	5.47	-41.77
2 Average	574 kHz	5.45	-40.54
1 Quasi Peak	702 kHz	8.49	-47.50
1 Quasi Peak	890 kHz	8.40	-47.59
2 Average	910 kHz	5.51	-40.48
2 Average	1.766 MHz	5.45	-40.54
1 Quasi Peak	1.83 MHz	8.49	-47.50
2 Average	2.53 MHz	4.52	-41.47
1 Quasi Peak	3.266 MHz	9.50	-46.49
1 Quasi Peak	4.17 MHz	9.43	-46.56
2 Average	4.894 MHz	4.70	-41.29
2 Average	10.238 MHz	14.86	-35.13
1 Quasi Peak	10.242 MHz	16.87	-43.12
1 Quasi Peak	11.942 MHz	17.09	-42.90
2 Average	14.334 MHz	14.29	-35.70
2 Average	22.526 MHz	25.64	-24.35
1 Quasi Peak	23.13 MHz	25.66	-34.33

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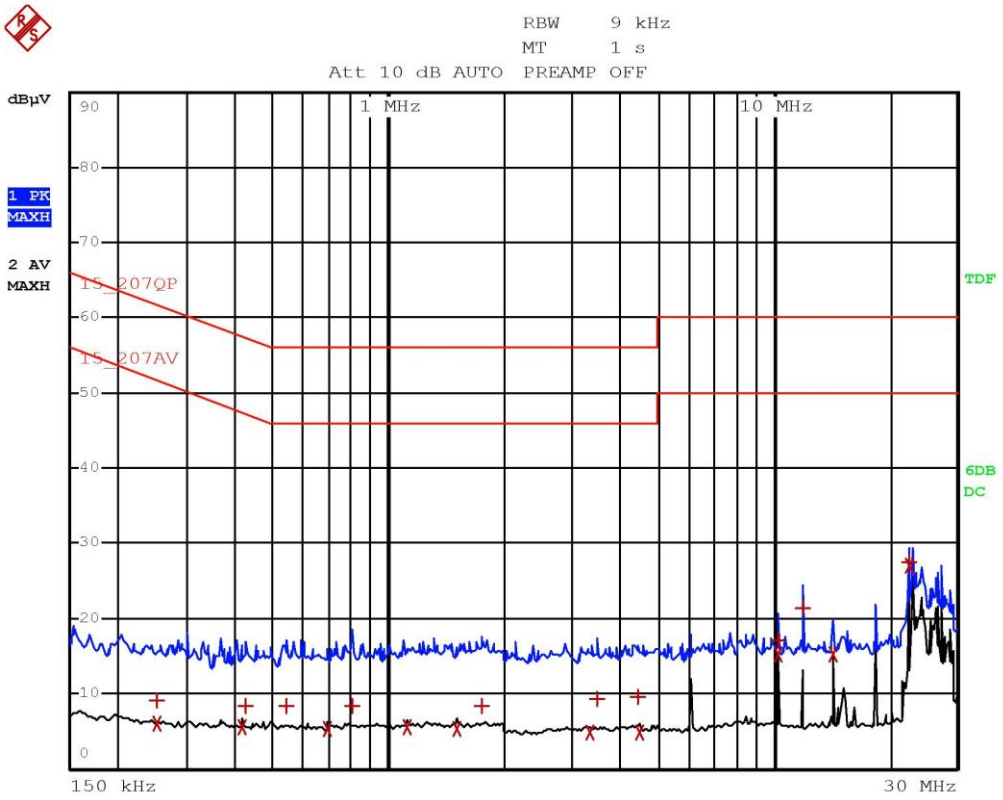

Segalla 20012447

EDIT PEAK LIST (Final Measurement Results)			
Trace1:	15_207QP		
Trace2:	15_207AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	250 kHz	6.06	-45.69
1 Quasi Peak	254 kHz	9.16	-52.45
2 Average	414 kHz	5.63	-41.93
1 Quasi Peak	426 kHz	8.49	-48.83
1 Quasi Peak	542 kHz	8.31	-47.68
2 Average	690 kHz	5.41	-40.58
1 Quasi Peak	802 kHz	8.31	-47.68
2 Average	1.118 MHz	5.46	-40.53
2 Average	1.514 MHz	5.35	-40.64
1 Quasi Peak	1.758 MHz	8.49	-47.50
2 Average	3.354 MHz	4.86	-41.13
1 Quasi Peak	3.47 MHz	9.35	-46.64
1 Quasi Peak	4.434 MHz	9.58	-46.41
2 Average	4.498 MHz	4.92	-41.07
1 Quasi Peak	10.238 MHz	17.06	-42.93
2 Average	10.238 MHz	15.14	-34.85
1 Quasi Peak	11.946 MHz	21.37	-38.62
2 Average	14.334 MHz	15.32	-34.67
1 Quasi Peak	22.526 MHz	27.40	-32.59
2 Average	22.526 MHz	27.03	-22.96

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9.3 Emissions in restricted frequency bands and in unrestricted frequency bands

Tested by ..... :	M. Segalla	
Test date ..... :	06.02.2020	
Test location (stand) ..... :	Semi-anechoic chamber (CMC A070)	
Reference standards ..... :	FCC Rules and Regulation; Titles 47 Part. 15.209 ANSI C63.10 cl. 6.3, 6.4, 6.5 and 6.6	
Test set-up description ..... :	☒	Table top equipment set-up (80 cm above the reference ground plane)
	☐	Floor standing equipment set-up (insulating material up to 12 mm thick)
	☐	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

Acceptance limits for emissions in restricted frequency bands (f < 1000 MHz)		
Frequency range (MHz)	*Test distance (m)*	*Limits [dB(µV/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

Acceptance limits for emissions in restricted frequency bands (f ≥ 1000 MHz)			
Frequency (MHz)	*Test distance (m)*	*AV limits [dB(µV/m)]*	*Peak limits [dB(µV/m)]*
> 1000	3	54	74

The restricted frequency bands are listed in the following table

MHz	*MHz*	*MHz*	*GHz*
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			

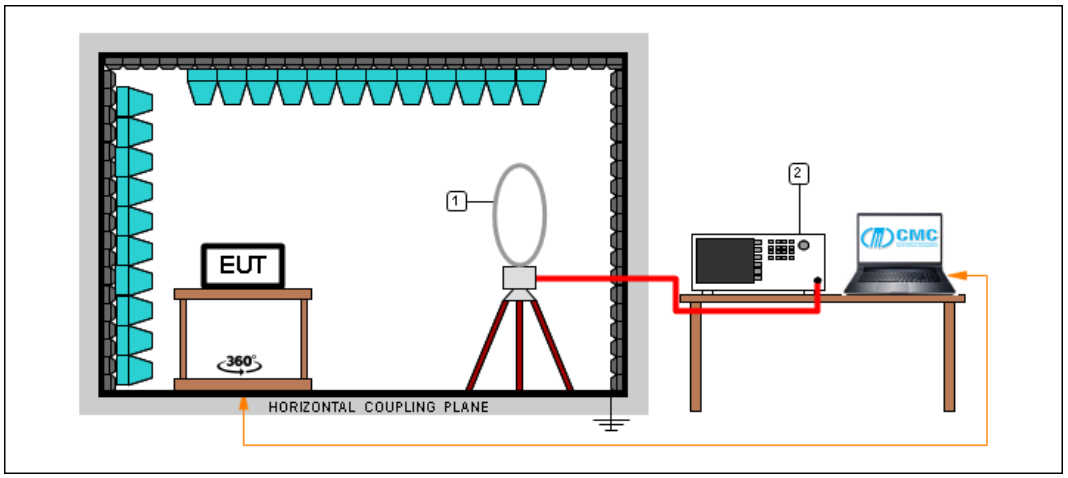
Acceptance limits for emissions in non-restricted frequency bands (according to ANSI C63.10 cl. 11.11.1)

The DTS rules specify that in any 100 kHz bandwidth outside of the authorized frequency band, the power shall be attenuated according to the following conditions:

a) If the maximum peak conducted output power procedure was used to demonstrate compliance as described in 9.1, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz
b) If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz.
c) In either case, attenuation to levels below the 15.209 general radiated emissions limits is not required

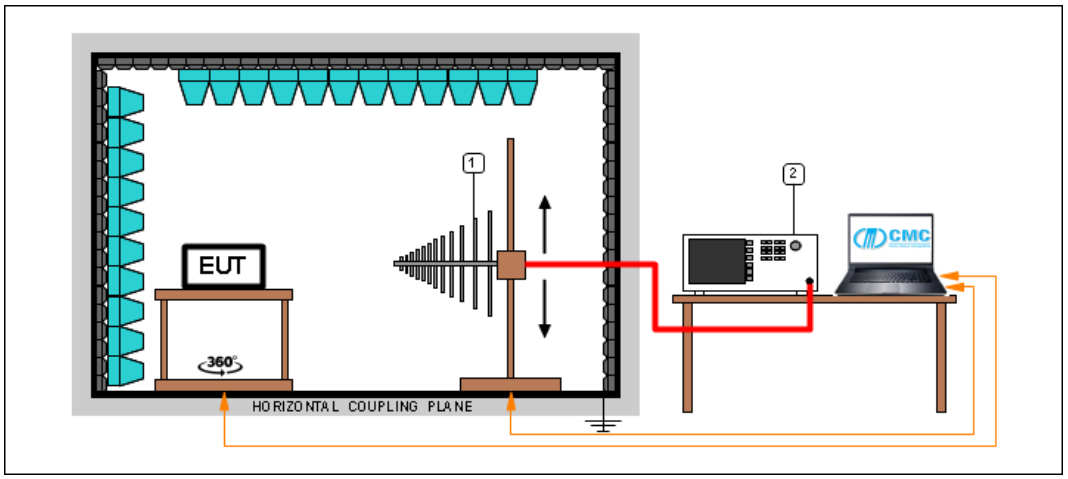
Test setup

Frequency ≤ 30 MHz



Test setup PE004_01				
Nr.	*Id. Number*	*Manufacturer*	*Model*	*Description*
2	CMC S164	Rohde & Schwarz	ESU26	Receiver 20 Hz - 26.5 GHz
1	CMC S127	Schaffner	HLA6120	Loop Antenna 9kHz - 30MHz

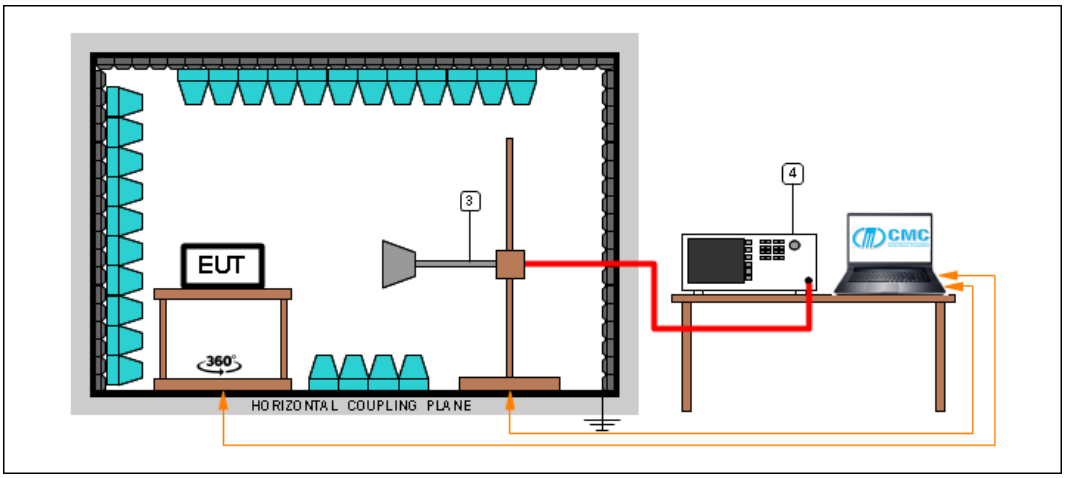
Frequency ≤ 1 GHz



Test setup PE004_02				
Nr.	*Id. Number*	*Manufacturer*	*Model*	*Description*
2	CMC S164	Rohde & Schwarz	ESU26	Receiver 20 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 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 – internal antenna

Polarization	*Frequency Range (MHz)*	*Graphs*	*Transmission frequency (MHz)*	*Result*
V	3000 – 18000	G20012401	2402	P
H	3000 – 18000	G20012402	2402	P
V	3000 – 18000	G20012405	2440	P
H	3000 – 18000	G20012406	2440	P
V	1000 – 3000	G20012409	2480	P
H	1000 – 3000	G20012410	2480	P
H	1000 – 3000	G20012411	2440	P
V	1000 – 3000	G20012412	2440	P
V	1000 – 3000	G20012413	2402	P
H	1000 – 3000	G20012414	2402	P
H	18000 – 26000	G20012415	Worst case	P
V	18000 – 26000	G20012416	Worst case	P
H	3000 – 18000	G20012433	2480	P
V	3000 – 18000	G20012434	2480	P
H	30 – 300	G20012441	Worst case	P
V	30 – 300	G20012442	Worst case	P
V	300 – 1000	G20012443	Worst case	P
H	300 – 1000	G20012444	Worst case	P
Loop	0,009 – 30	G20012445	Worst case	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 40log(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 20log(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

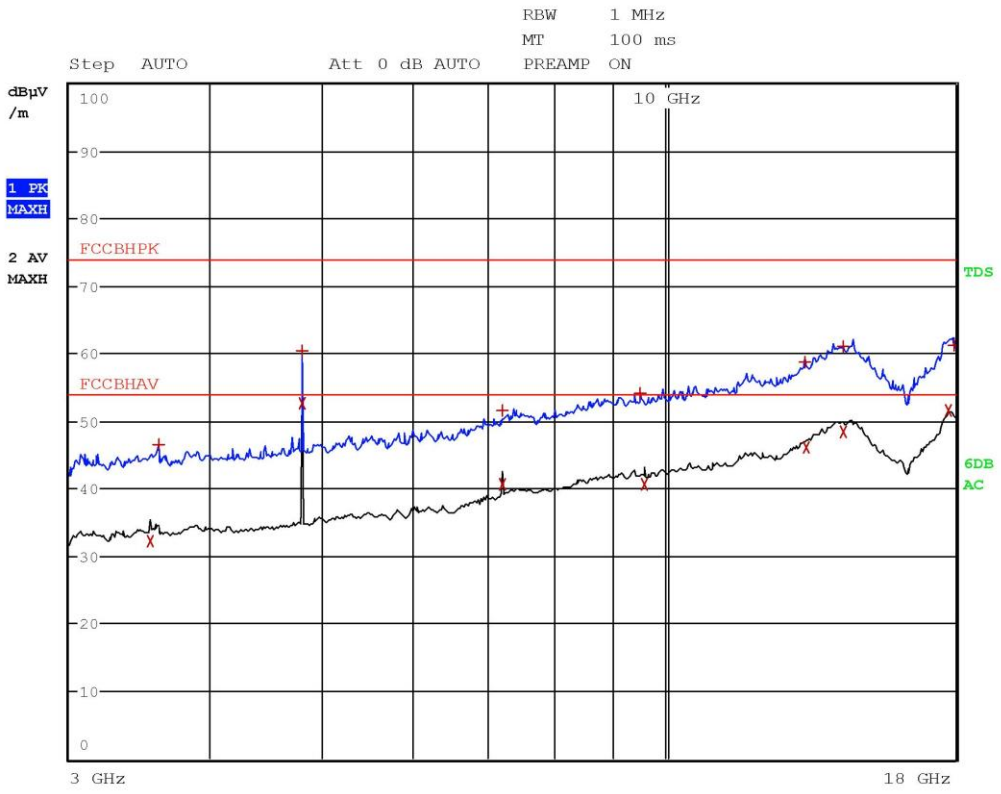
Result – external antenna

Polarization	*Frequency Range (MHz)*	*Graphs*	*Transmission frequency (MHz)*	*Result*
H	1000 – 3000	G20012450	2402	P
V	1000 – 3000	G20012451	2402	P
V	1000 – 3000	G20012452	2440	P
H	1000 – 3000	G20012453	2440	P
H	1000 – 3000	G20012454	2480	P
V	1000 – 3000	G20012455	2480	P
V	3000 – 18000	G20012456	2480	P
H	3000 – 18000	G20012457	2480	P
H	3000 – 18000	G20012458	2440	P
V	3000 – 18000	G20012459	2440	P
V	3000 – 18000	G20012460	2402	P
H	3000 – 18000	G20012461	2402	P
H	18000 – 26000	G20012462	Worst case	P
V	18000 – 26000	G20012463	Worst case	P
V	30 – 300	G20012468	Worst case	P
H	30 – 300	G20012469	Worst case	P
H	300 – 1000	G20012470	Worst case	P
V	300 – 1000	G20012471	Worst case	P
Loop	0,009 – 30	G20012472	Worst case	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 40log(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 20log(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



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EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCCBHPK
Trace2:	FCCBHAV
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
2 Average	3.5356 GHz	32.29	-21.68
1 Max Peak	3.5952 GHz	46.45	-27.52
1 Max Peak	4.8036 GHz	60.40	-13.57
2 Average	4.8044 GHz	52.58	-1.39
2 Average	7.2056 GHz	40.73	-13.24
1 Max Peak	7.2056 GHz	51.67	-22.30
1 Max Peak	9.5152 GHz	54.15	-19.82
2 Average	9.6076 GHz	40.66	-13.31
1 Max Peak	13.2624 GHz	58.62	-15.35
2 Average	13.3184 GHz	46.16	-7.81
2 Average	14.356 GHz	48.45	-5.52
1 Max Peak	14.3608 GHz	60.98	-12.99
2 Average	17.7496 GHz	51.48	-2.49
1 Max Peak	17.9256 GHz	61.18	-12.79

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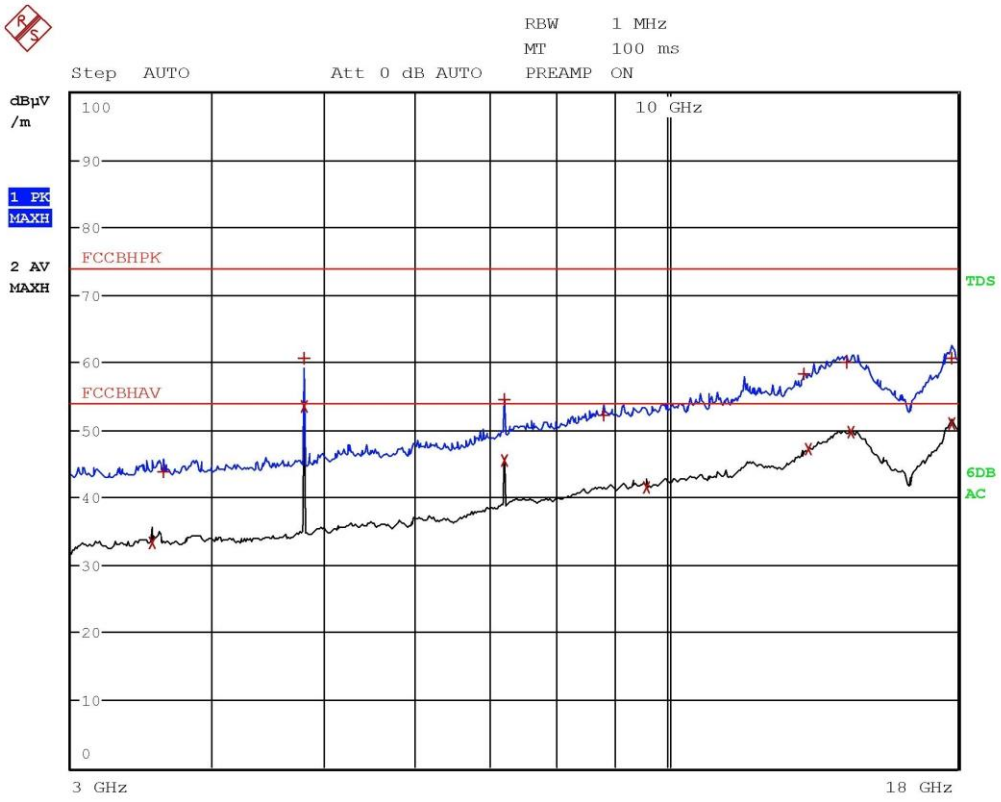


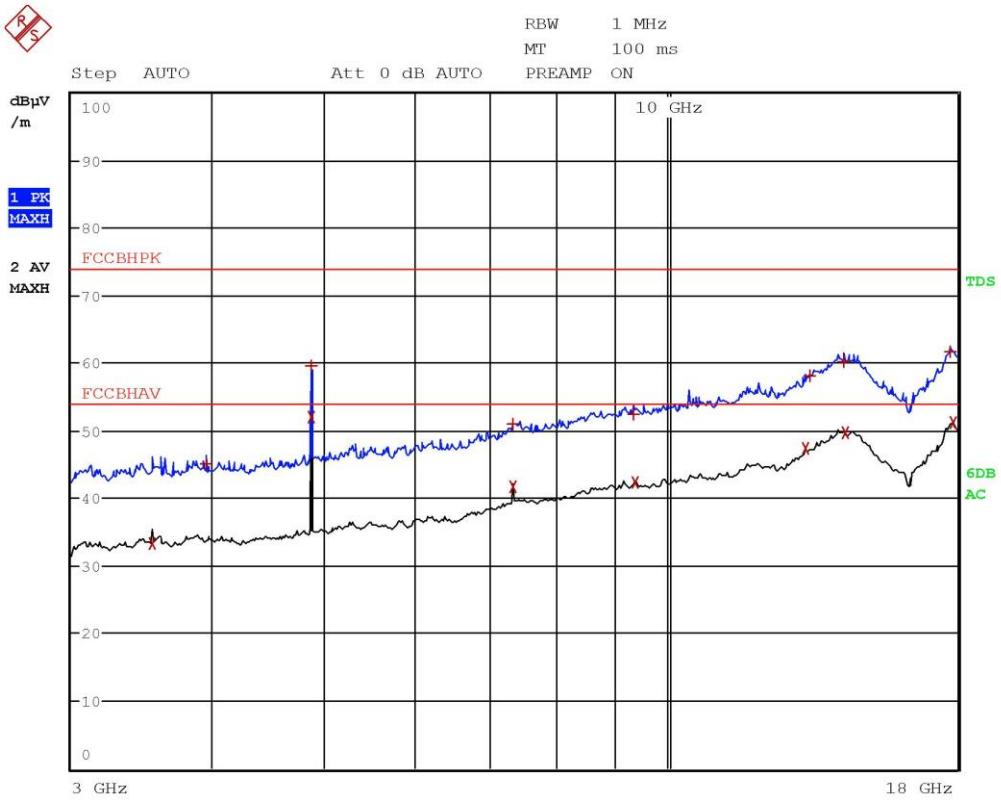
Segalla 20012402

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCCBHPK
Trace2:	FCCBHAV
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
2 Average	3.5356 GHz	33.34	-20.63
1 Max Peak	3.6132 GHz	43.78	-30.19
2 Average	4.804 GHz	53.41	-0.56
1 Max Peak	4.8048 GHz	60.70	-13.28
1 Max Peak	7.2056 GHz	54.43	-19.54
2 Average	7.2064 GHz	45.52	-8.45
1 Max Peak	8.8004 GHz	52.23	-21.75
2 Average	9.6076 GHz	41.54	-12.43
1 Max Peak	13.1888 GHz	58.36	-15.61
2 Average	13.308 GHz	47.16	-6.81
1 Max Peak	14.4056 GHz	59.89	-14.08
2 Average	14.5168 GHz	49.62	-4.35
2 Average	17.778 GHz	51.00	-2.97
1 Max Peak	17.7996 GHz	60.69	-13.28

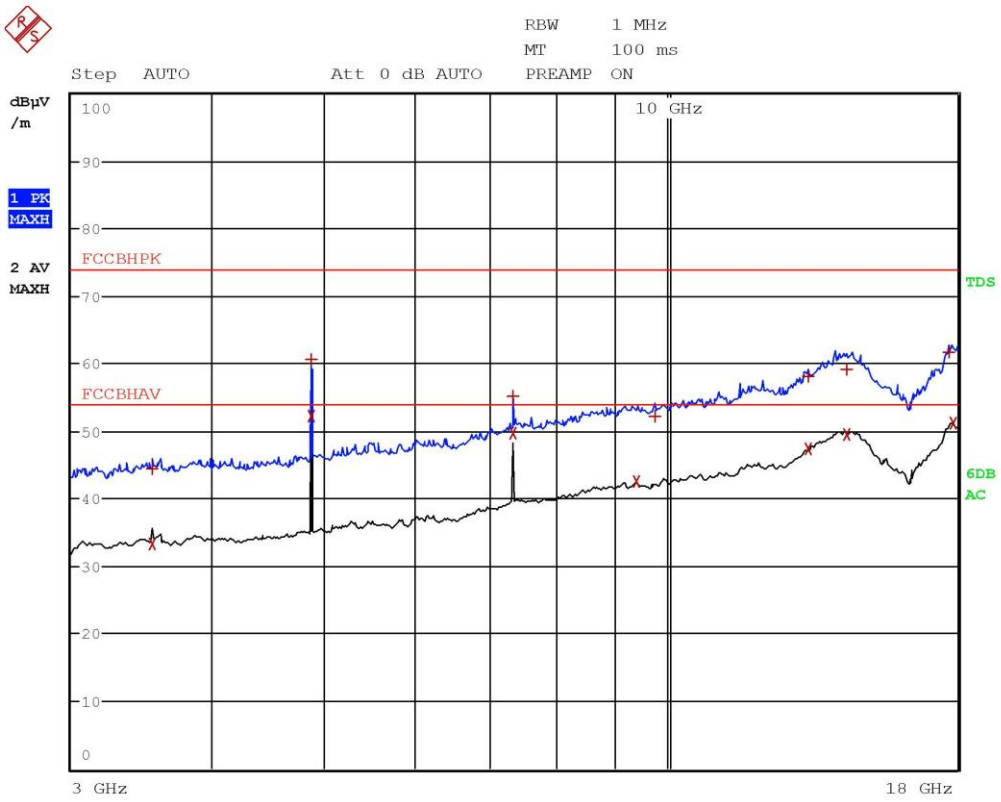
Segalla 20012402



Segalla 20012405

EDIT PEAK LIST (Final Measurement Results)			
Trace1:	FCCBHPK		
Trace2:	FCCBHAV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
2 Average	3.5356 GHz	33.28	-20.69
1 Max Peak	3.9416 GHz	45.00	-28.97
1 Max Peak	4.8796 GHz	59.52	-14.45
2 Average	4.88 GHz	52.02	-1.95
1 Max Peak	7.3196 GHz	50.96	-23.01
2 Average	7.3196 GHz	41.67	-12.30
1 Max Peak	9.36 GHz	52.40	-21.57
2 Average	9.3756 GHz	42.32	-11.65
2 Average	13.2264 GHz	47.44	-6.53
1 Max Peak	13.3444 GHz	58.05	-15.92
1 Max Peak	14.2948 GHz	60.22	-13.75
2 Average	14.334 GHz	49.66	-4.31
1 Max Peak	17.7388 GHz	61.56	-12.41
2 Average	17.8256 GHz	51.15	-2.82

Segalla 20012405



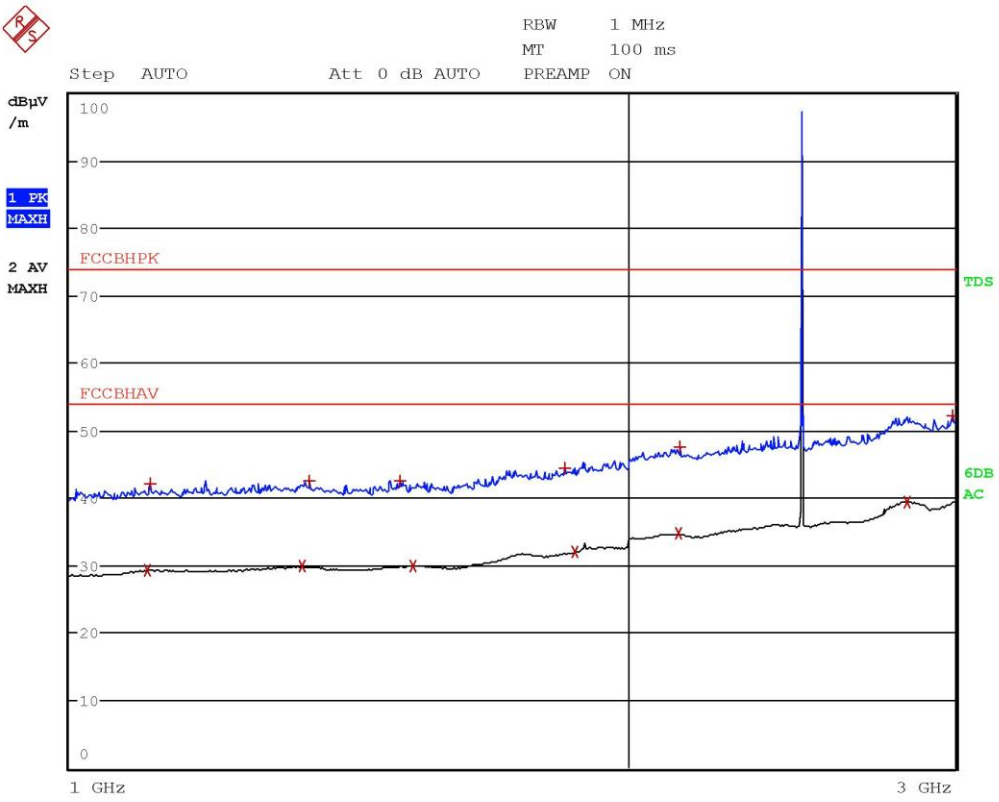
Segalla 20012406

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCCBHPK
Trace2:	FCCBHAV
Trace3:	---

	TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1	Max Peak	3.5356 GHz	44.45	-29.52
2	Average	3.5356 GHz	33.38	-20.59
1	Max Peak	4.8796 GHz	60.68	-13.29
2	Average	4.8804 GHz	52.19	-1.78
1	Max Peak	7.3196 GHz	55.22	-18.75
2	Average	7.3196 GHz	49.69	-4.28
2	Average	9.396 GHz	42.60	-11.37
1	Max Peak	9.7568 GHz	52.23	-21.74
1	Max Peak	13.3188 GHz	57.98	-15.99
2	Average	13.3232 GHz	47.43	-6.54
2	Average	14.3704 GHz	49.40	-4.57
1	Max Peak	14.3836 GHz	59.09	-14.88
1	Max Peak	17.6976 GHz	61.56	-12.41
2	Average	17.8332 GHz	51.10	-2.87

Segalla 20012406



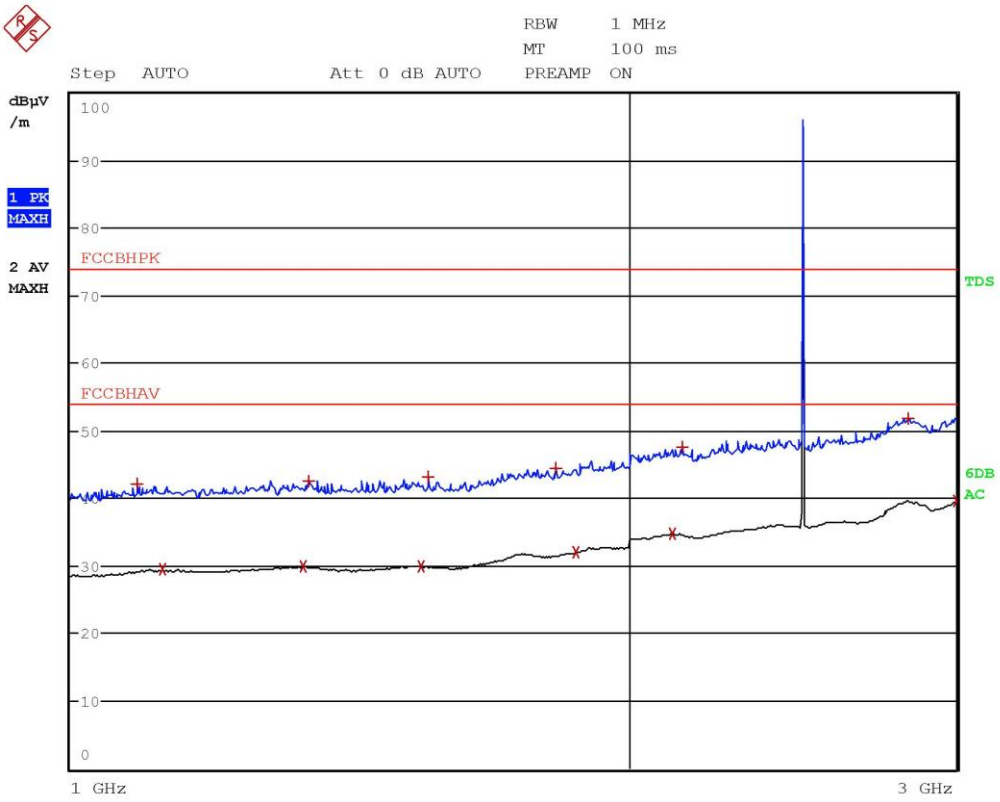
Segalla 20012409

EDIT PEAK LIST (Prescan Results)

Trace1:	FCCBHPK
Trace2:	FCCBHAV
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
2 Average	1.102 GHz	29.36	-24.61
1 Max Peak	1.106 GHz	42.12	-31.85
2 Average	1.3352 GHz	29.96	-24.01
1 Max Peak	1.3472 GHz	42.55	-31.42
1 Max Peak	1.5076 GHz	42.63	-31.34
2 Average	1.5308 GHz	30.04	-23.93
1 Max Peak	1.8488 GHz	44.38	-29.59
2 Average	1.8716 GHz	31.98	-21.99
2 Average	2.1276 GHz	34.67	-19.30
1 Max Peak	2.1316 GHz	47.59	-26.38
2 Average	2.8248 GHz	39.48	-14.49
1 Max Peak	2.9908 GHz	52.11	-21.86

Segalla 20012409



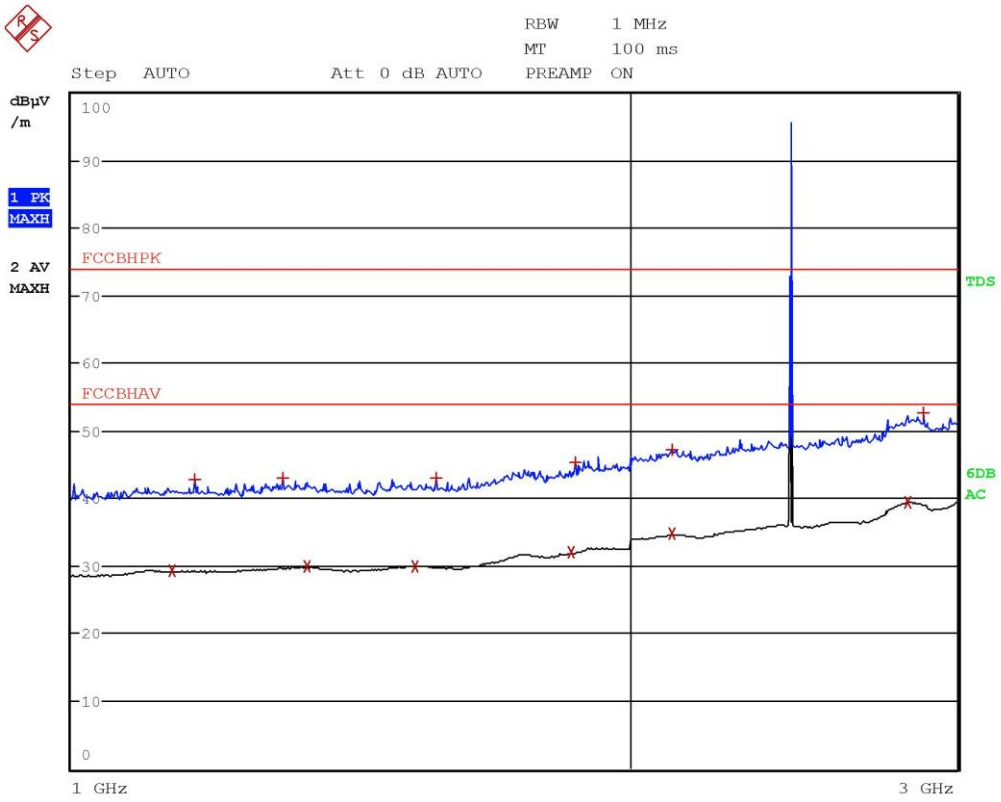
Segalla 20012410

EDIT PEAK LIST (Prescan Results)

Trace1:	FCCBHPK
Trace2:	FCCBHAV
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Max Peak	1.0852 GHz	42.18	-31.79
2 Average	1.12 GHz	29.44	-24.53
2 Average	1.3348 GHz	29.86	-24.11
1 Max Peak	1.3444 GHz	42.59	-31.38
2 Average	1.5432 GHz	30.00	-23.97
1 Max Peak	1.5584 GHz	43.20	-30.77
1 Max Peak	1.8248 GHz	44.37	-29.60
2 Average	1.8716 GHz	31.98	-21.99
2 Average	2.1088 GHz	34.77	-19.21
1 Max Peak	2.1364 GHz	47.60	-26.37
1 Max Peak	2.8272 GHz	51.84	-22.13
2 Average	2.998 GHz	39.54	-14.43

Segalla 20012410



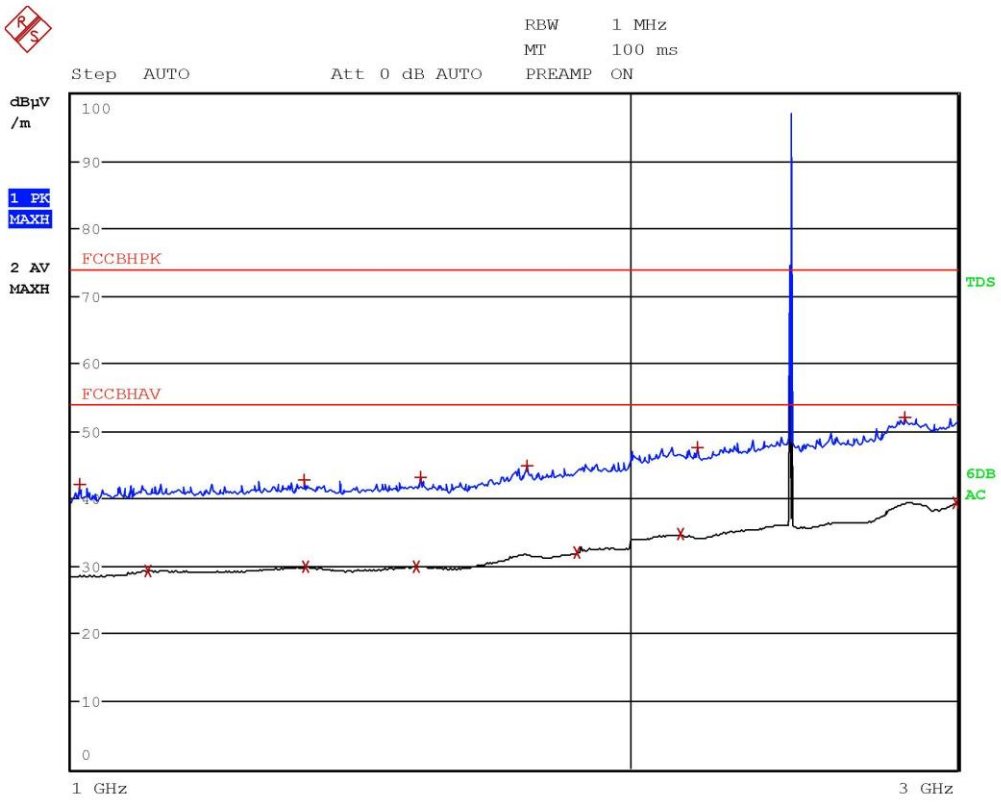
Segalla 20012411

EDIT PEAK LIST (Prescan Results)

Trace1:	FCCBHPK
Trace2:	FCCBHAV
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
2 Average	1.1336 GHz	29.33	-24.64
1 Max Peak	1.1652 GHz	42.66	-31.31
1 Max Peak	1.3 GHz	42.90	-31.07
2 Average	1.34 GHz	29.92	-24.05
2 Average	1.5308 GHz	29.99	-23.98
1 Max Peak	1.5716 GHz	42.98	-30.99
2 Average	1.8576 GHz	31.94	-22.03
1 Max Peak	1.8664 GHz	45.29	-28.68
1 Max Peak	2.1052 GHz	47.21	-26.76
2 Average	2.1072 GHz	34.67	-19.30
2 Average	2.8192 GHz	39.46	-14.51
1 Max Peak	2.874 GHz	52.59	-21.38

Segalla 20012411



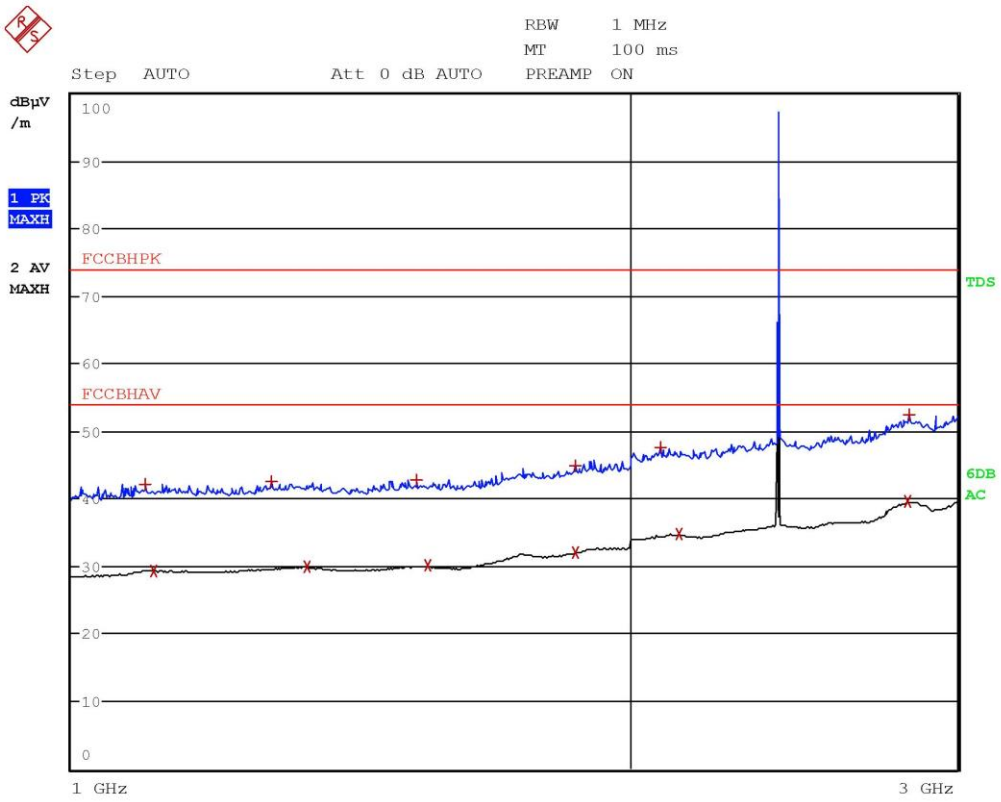
Segalla 20012412

EDIT PEAK LIST (Prescan Results)

Trace1:	FCCBHPK
Trace2:	FCCBHAV
Trace3:	---

	TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1	Max Peak	1.0108 GHz	42.13	-31.84
2	Average	1.1 GHz	29.38	-24.59
1	Max Peak	1.3348 GHz	42.68	-31.29
2	Average	1.3376 GHz	29.85	-24.12
2	Average	1.5348 GHz	30.03	-23.94
1	Max Peak	1.5404 GHz	43.07	-30.90
1	Max Peak	1.7608 GHz	44.90	-29.08
2	Average	1.8732 GHz	31.95	-22.02
2	Average	2.1272 GHz	34.69	-19.28
1	Max Peak	2.1732 GHz	47.59	-26.38
1	Max Peak	2.8108 GHz	51.89	-22.08
2	Average	2.9932 GHz	39.49	-14.48

Segalla 20012412



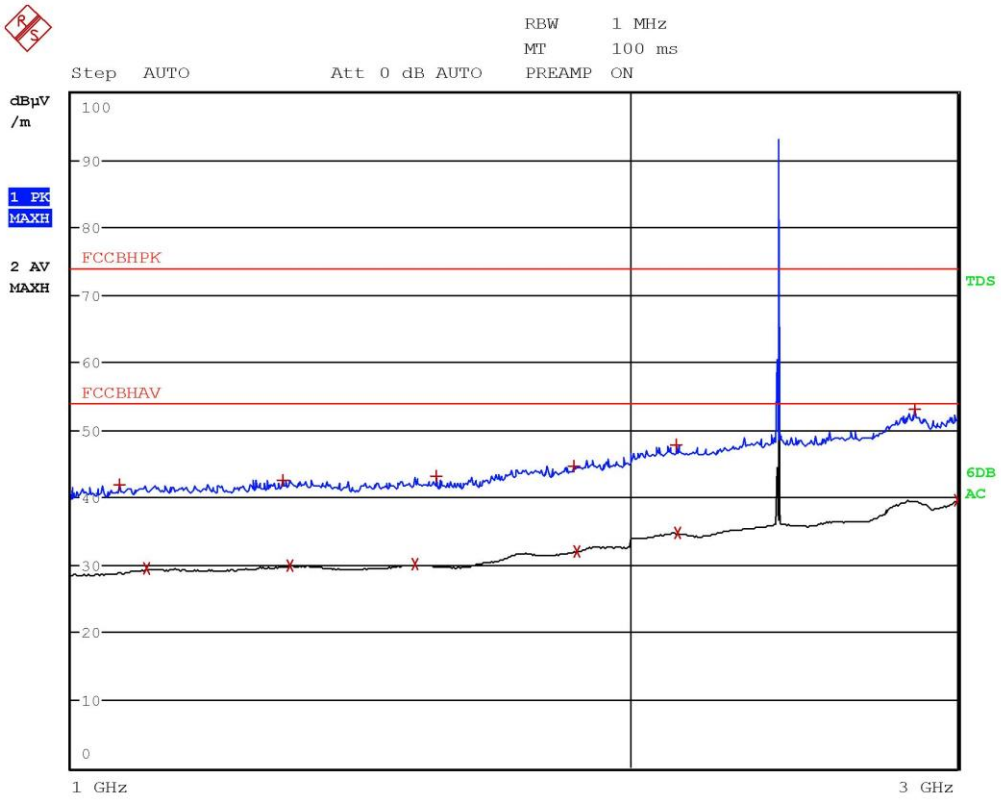
Segalla 20012413

EDIT PEAK LIST (Prescan Results)

Trace1:	FCCBHPK
Trace2:	FCCBHAV
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Max Peak	1.0952 GHz	42.13	-31.84
2 Average	1.1064 GHz	29.34	-24.63
1 Max Peak	1.2808 GHz	42.58	-31.39
2 Average	1.338 GHz	29.89	-24.08
1 Max Peak	1.5348 GHz	42.82	-31.15
2 Average	1.5548 GHz	30.06	-23.92
2 Average	1.8672 GHz	31.99	-21.98
1 Max Peak	1.868 GHz	44.86	-29.11
1 Max Peak	2.0752 GHz	47.67	-26.30
2 Average	2.1248 GHz	34.69	-19.28
2 Average	2.8188 GHz	39.52	-14.45
1 Max Peak	2.8248 GHz	52.48	-21.49

Segalla 20012413



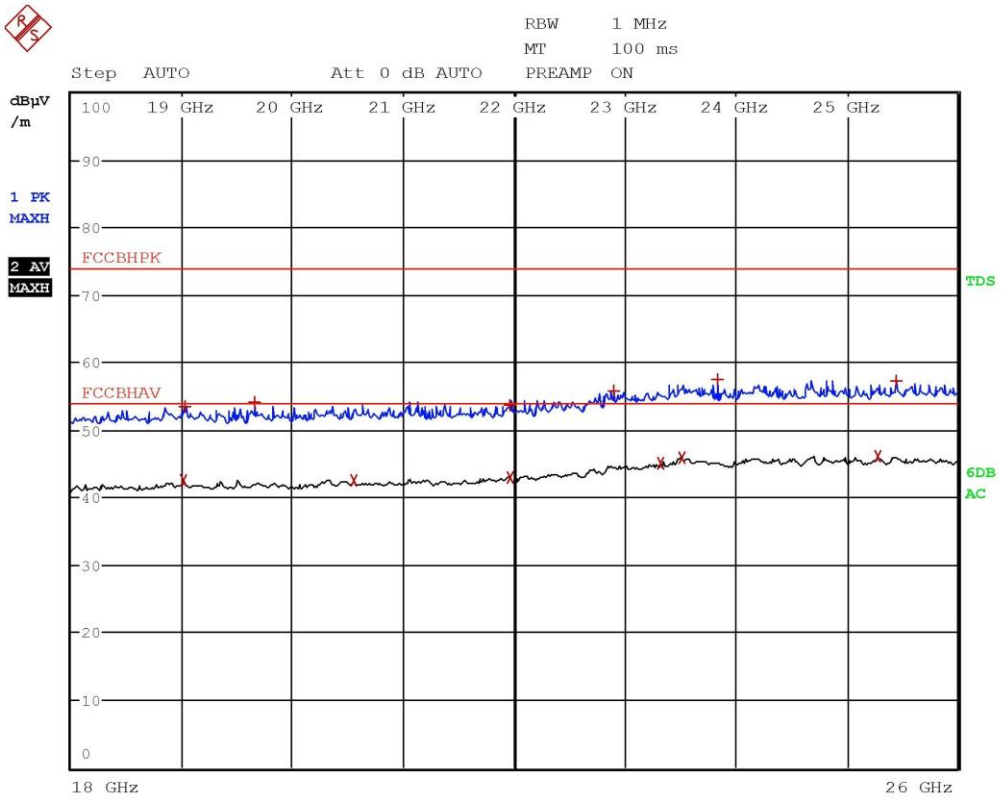
Segalla 20012414

EDIT PEAK LIST (Prescan Results)

Trace1:	FCCBHPK
Trace2:	FCCBHAV
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Max Peak	1.0612 GHz	41.81	-32.16
2 Average	1.0968 GHz	29.43	-24.54
1 Max Peak	1.2992 GHz	42.56	-31.41
2 Average	1.3108 GHz	29.92	-24.05
2 Average	1.5316 GHz	30.05	-23.92
1 Max Peak	1.5724 GHz	43.09	-30.88
1 Max Peak	1.8632 GHz	44.68	-29.29
2 Average	1.8724 GHz	32.12	-21.85
1 Max Peak	2.1168 GHz	47.75	-26.22
2 Average	2.1196 GHz	34.70	-19.27
1 Max Peak	2.8444 GHz	53.02	-20.95
2 Average	2.998 GHz	39.53	-14.44

Segalla 20012414



Segalla 20012415

EDIT PEAK LIST (Prescan Results)

Trace1:	FCCBHPK
Trace2:	FCCBHAV
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
2 Average	19.0188 GHz	42.44	-11.53
1 Max Peak	19.0192 GHz	53.49	-20.48
1 Max Peak	19.6548 GHz	54.03	-19.94
2 Average	20.5456 GHz	42.59	-11.39
2 Average	21.9604 GHz	42.86	-11.11
1 Max Peak	21.9656 GHz	53.65	-20.32
1 Max Peak	22.9 GHz	55.81	-18.16
2 Average	23.3184 GHz	45.00	-8.97
2 Average	23.5176 GHz	45.97	-8.01
1 Max Peak	23.8312 GHz	57.38	-16.59
2 Average	25.2824 GHz	46.11	-7.86
1 Max Peak	25.448 GHz	57.30	-16.67

Segalla 20012415