CMC Centro Misure Compatibilità S.r.l. Via della Fisica 20, 36016 Thiene (VI), Tel./Fax +39 0445 367702 - www.cmclab.it - info@cmclab.it
Accredited by ACCREDIA according to UNI CEI EN ISO/IEC 17025 accreditation n. 0168 L
Independent Testing Laboratory

TEST REPORT
Nr. R21184001

Federal Communication Commission (FCC)

Report Reference No. .....:	R21184001
Date of issue: .....:	16.09.2021
Total number pages: .....:	155
Applicant´s name .....:	Vimar S.p.A.
Address .....:	Viale Vicenza, 14 – 36063 Marostica (VI) – Italy
Test specification:	
Standards .....:	FCC Rules & Regulations, Title 47:2020 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 .....:	2021-07

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description .....:	Tab7S Up video entryphone 2F+ Wi-Fi white
Trademark .....:	Elvox
Manufacturer .....:	Vimar S.p.A.
Model / Type reference .....:	40517
FCC ID .....:	2AX78-40517
Rating(s) .....:	28 Vdc from BUS

Report

Tested by (name + signature).....:	F. De Rosso	.....
Approved by (name + signature) .....:	R. Beghetto	.....

1 Summary

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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	

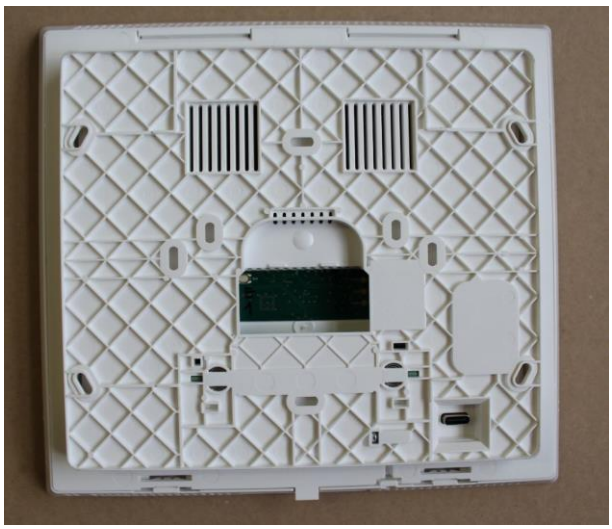
Revision index	***Date***	***Change history***
1.0	16.09.2021	--

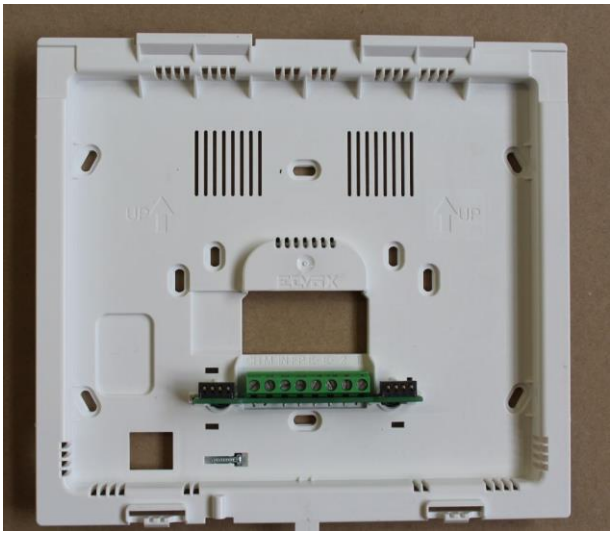
Testing and sampling:	
Date of receipt of test item	07.04.2021
Testing start date	03.08.2021
Testing end date	14.09.2021
Sampling procedure	Equipment used for testing was picked up by the manufacturer, at the end of the production process with random criterion. The results relate to the sample as it has been received.
Internal identification	Adhesive label with the product number P210428
General remarks:	
This report shall not be reproduced, except in full, without the written approval of CMC. The test results presented in this report relate only to the object tested. "(see appended table)": refers to a table appended to the report. Throughout this report a comma is used as the decimal separator.	
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.	

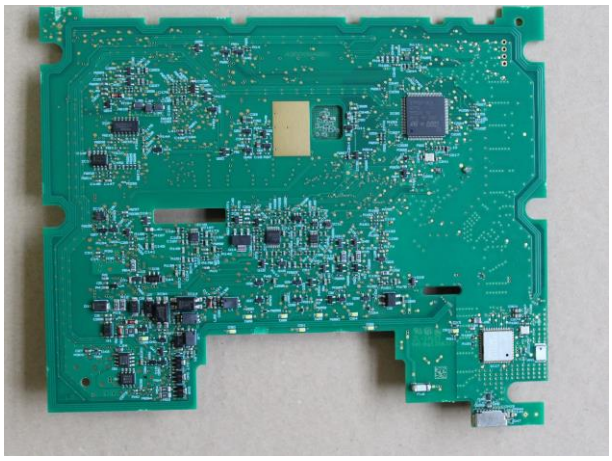
6 General description of tested item and testing condition(s)

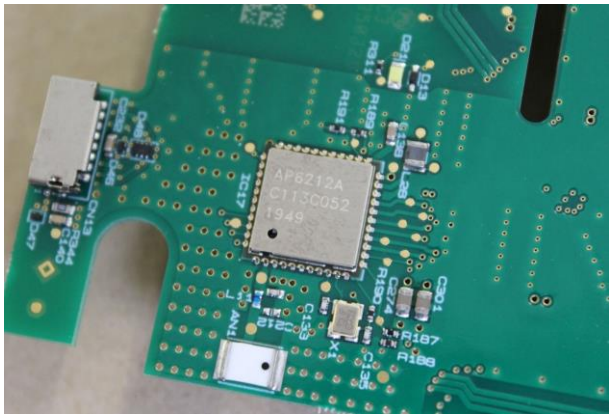
Description .....:	Tab7S Up video entryphone 2F+ Wi-Fi white						
Model Number .....:	40517						
FCC ID .....:	2AX78-40517						
Serial Number.....:	--						
Brand name .....:	Elvox						
Frequency band.....:	2400 – 2483,5 MHz						
Nominal frequencies.....:	F_L: 2412 MHz	F_M: 2442 MHz	F_H: 2462 MHz				
Test power supply.....:		Voltage and Frequency	Reference poles				
			N	L1	L2	L3	PE
	☐	AC:	☐	☐	☐	☐	☐
	☐	AC:	☐	☐	☐	☐	☐
	☒	DC: 28 V from BUS					☐
Test configuration .....:	☒	Table top equipment					
	☐	Floor standing equipment					
	☐	Hand-held equipment					
Type of equipment.....:	☒	Transmitter unit					
	☒	Receiver unit					
Type of station .....:	☐	Portable station					
	☒	Mobile station					
Operating modes .....:	No.	Operating mode of test item					
	1	EUT in continuous conversation with WiFi enabled					
Accessories (not part of the test item).....:	Accessory	Type	Manufacturer				
	Due Fili power supply unit 110-240V	6922.1	Vimar S.p.A.				
	Due Fili add. power supply unit 120V	6923/120	Vimar S.p.A.				
	2F+ A/V wide-angle teleloop unit	41005	Vimar S.p.A.				

6.1 Photos of the test item








AP6212A
CTT3C052
1949

7 Verdict summary section

FCC Rules & Regulations, Title 47:2020 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**

Normative references	
Reference no.	***Description***
FCC Rules and Regulation Title 47 part 15:2020	--
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

<table>
<tr><td rowspan="4">Environmental reference conditions.....:</td><td colspan="3">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:</td></tr>
<tr><td>Temperature</td><td>Humidity</td><td>Atmospheric pressure</td></tr>
<tr><td>15 °C – 35 °C</td><td>30 % - 60 %</td><td>800 hPa – 1060 hPa</td></tr>
<tr><td colspan="3">If explicitly required in the basic standard or applied product standard the climatic values are recorded and documented separately in this test report.</td></tr>
<tr><td>Measurement uncertainties .....:</td><td colspan="3">Attachment 1</td></tr>
</table>

9 Test results

9.1 Antenna requirements

Tested by .....:	F. De Rosso	
Test date .....:	03.08.2021	
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.....:	☒	Integral antenna
	☐	External antenna
Antenna gain.....:	3 dBi	
External R.F. power amplifier .....:	Not Present	

9.2 Conducted emission

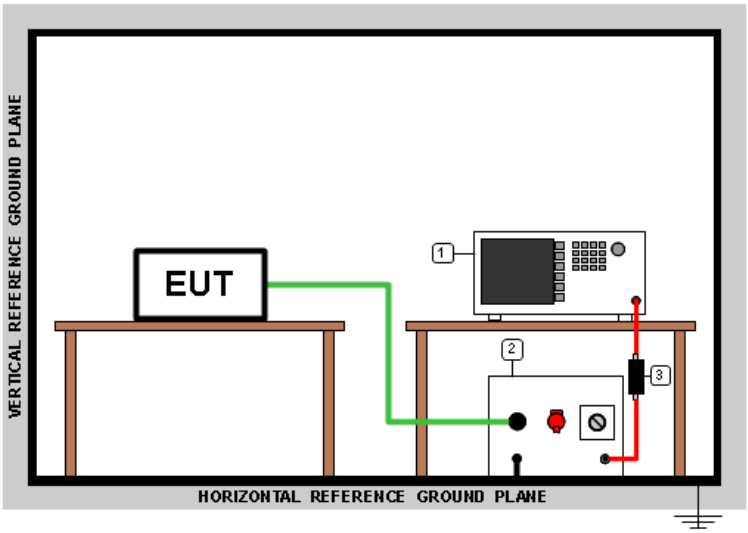
Tested by .....:	F. De Rosso	
Test date .....:	02.09.2021	
Test location (stand) .....:	Shielded chamber (CMC A001)	
Reference standards .....:	FCC Rules and Regulation; Titles 47 Part. 15.207 ANSI C63.10 cl. 6.2	
Test set-up description .....:	☒	Table top equipment set-up (80 cm above the reference 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 – WiFi mode B

Auxiliary power unit	*Line*	*Frequency Range (MHz)*	*Graphs*	*Result*
6922.1	N	0,15 – 30	G21184024B	P
6922.1	L1	0,15 – 30	G21184025B	P
6923/120	N	0,15 – 30	G21184026B	P
6923/120	L1	0,15 – 30	G21184027B	P

Remarks: tests performed on 120 Vac side of the indicated auxiliary power unit

Result – WiFi mode G

Auxiliary power unit	*Line*	*Frequency Range (MHz)*	*Graphs*	*Result*
6922.1	N	0,15 – 30	G21184024G	P
6922.1	L1	0,15 – 30	G21184025G	P
6923/120	N	0,15 – 30	G21184026G	P
6923/120	L1	0,15 – 30	G21184027G	P

Remarks: tests performed on 120 Vac side of the indicated auxiliary power unit

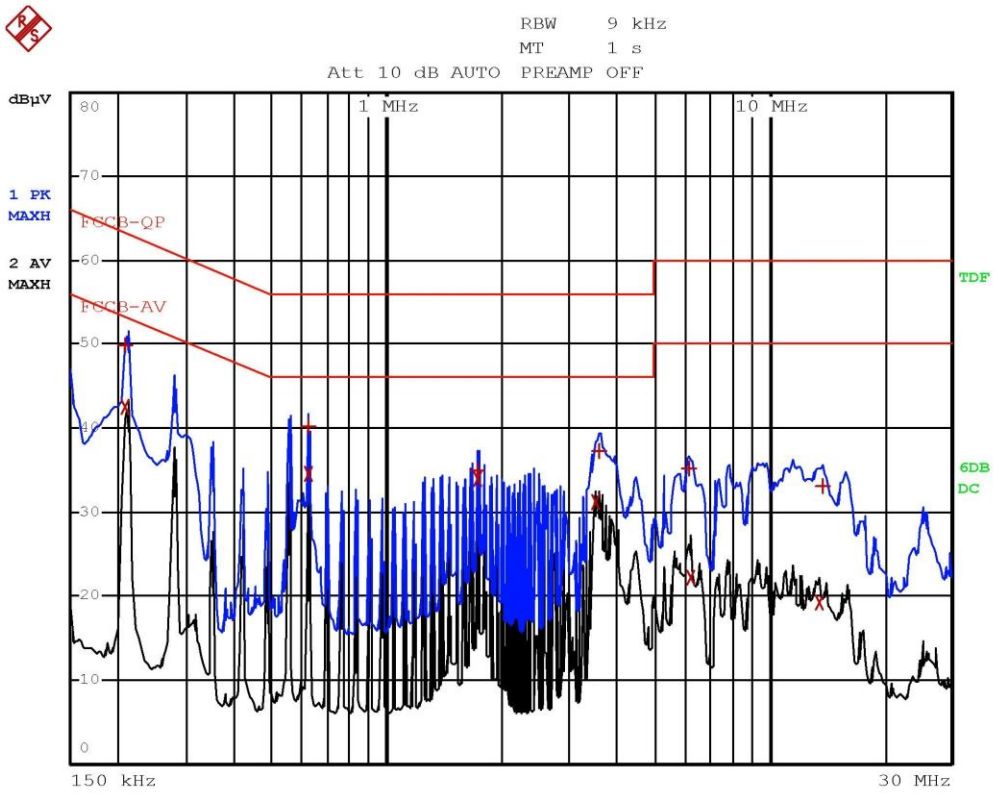
Result – WiFi mode N

Auxiliary power unit	*Line*	*Frequency Range (MHz)*	*Graphs*	*Result*
6922.1	N	0,15 – 30	G21184024N	P
6922.1	L1	0,15 – 30	G21184025N	P
6923/120	N	0,15 – 30	G21184026N	P
6923/120	L1	0,15 – 30	G21184027N	P

Remarks: tests performed on 120 Vac side of the indicated auxiliary 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



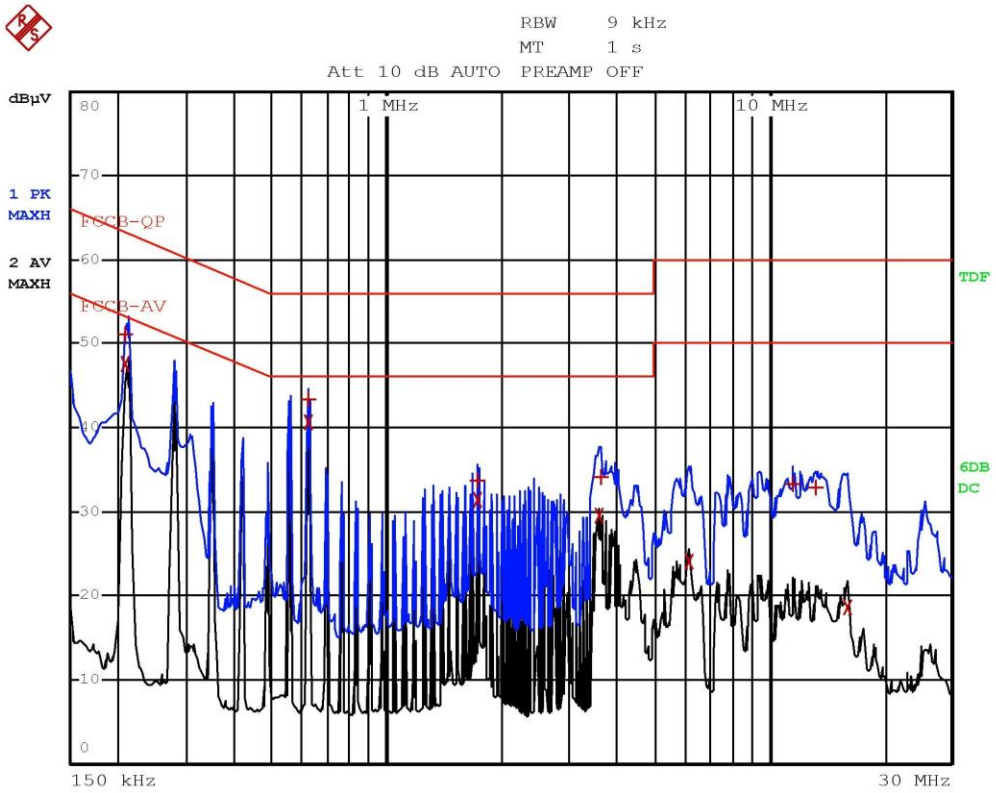
De Rosso 21184024B Line N mod B ch1

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCCB-QP
Trace2:	FCCB-AV
Trace3:	---

TRACE		FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	210 kHz	49.78	-13.42
2	Average	210 kHz	42.42	-10.77
1	Quasi Peak	626 kHz	40.10	-15.89
2	Average	626 kHz	34.64	-11.35
1	Quasi Peak	1.734 MHz	34.97	-21.02
2	Average	1.738 MHz	33.88	-12.11
2	Average	3.542 MHz	31.17	-14.82
1	Quasi Peak	3.61 MHz	37.34	-18.66
1	Quasi Peak	6.174 MHz	35.24	-24.75
2	Average	6.246 MHz	22.22	-27.77
2	Average	13.606 MHz	19.30	-30.69
1	Quasi Peak	13.866 MHz	33.05	-26.95

De Rosso 21184024_2B Line N mod B ch1



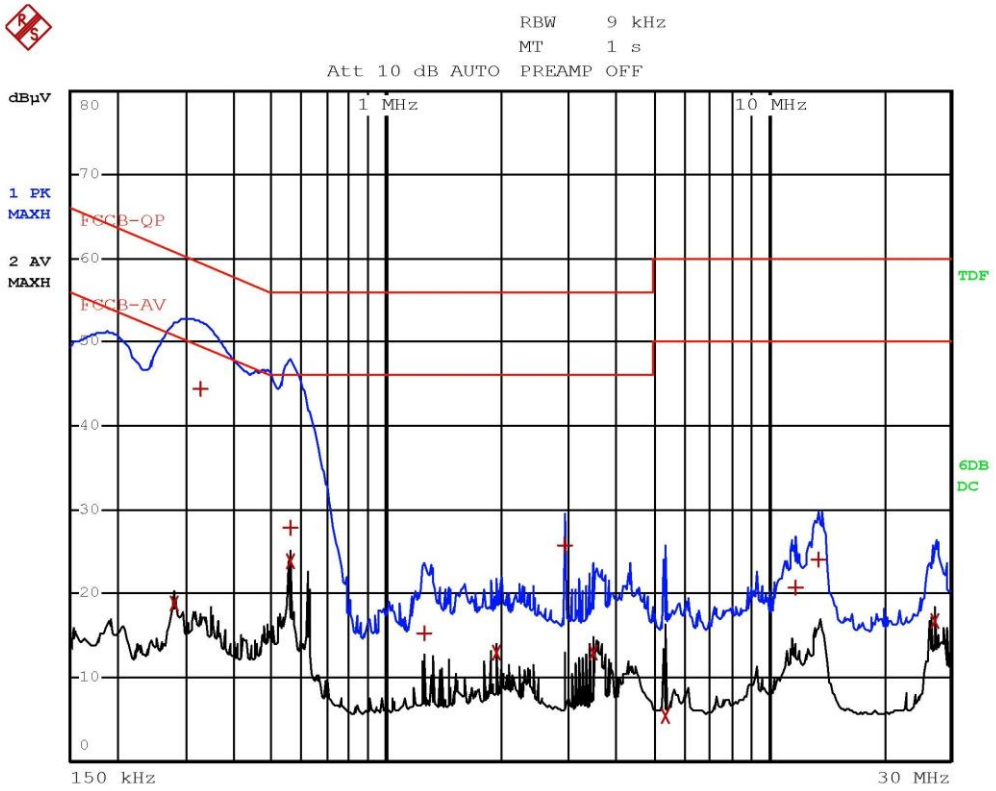
De Rosso 21184025B Line L mod B ch1

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCCB-QP
Trace2:	FCCB-AV
Trace3:	---

	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	210 kHz	51.19	-12.00
2	Average	210 kHz	47.54	-5.65
1	Quasi Peak	626 kHz	43.41	-12.58
2	Average	626 kHz	40.55	-5.44
1	Quasi Peak	1.738 MHz	33.60	-22.39
2	Average	1.738 MHz	31.39	-14.60
2	Average	3.614 MHz	29.49	-16.50
1	Quasi Peak	3.626 MHz	34.18	-21.81
2	Average	6.182 MHz	23.99	-26.00
1	Quasi Peak	11.594 MHz	33.29	-26.70
1	Quasi Peak	13.278 MHz	32.86	-27.13
2	Average	16.038 MHz	18.54	-31.45

De Rosso 21184025_2B Line L mod B ch1



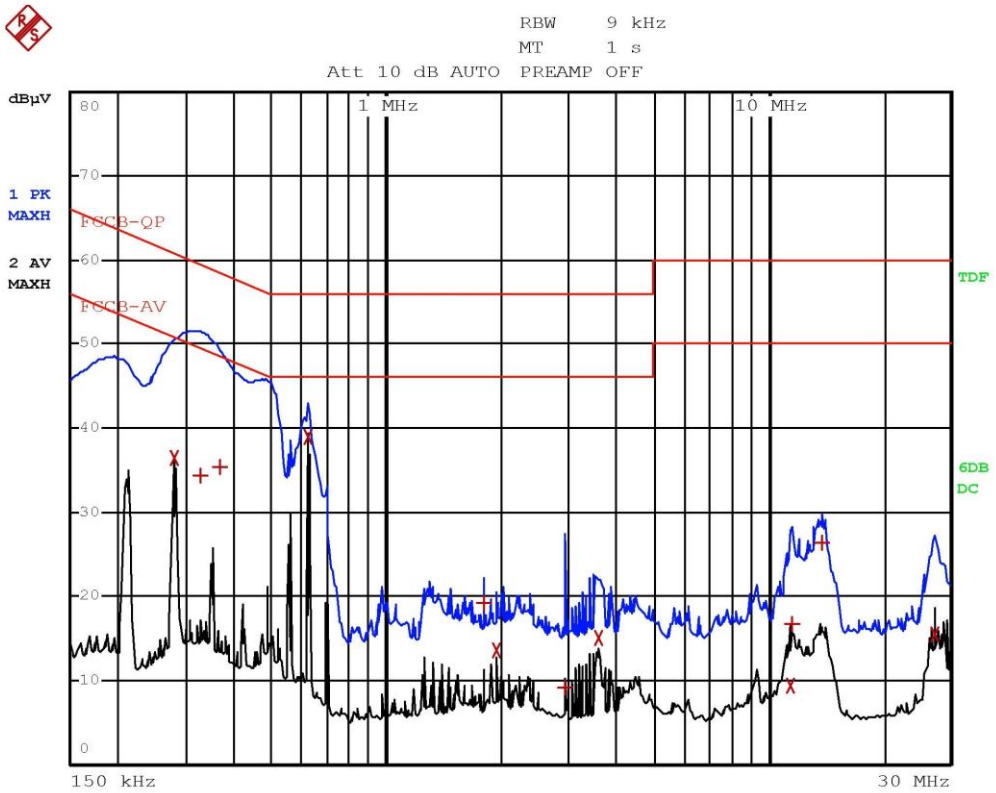
De Rosso 21184026B Line N mod B ch1

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCCB-QP
Trace2:	FCCB-AV
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	278 kHz	18.83	-32.03
1 Quasi Peak	326 kHz	44.51	-15.04
2 Average	558 kHz	23.80	-22.20
1 Quasi Peak	562 kHz	27.83	-28.16
1 Quasi Peak	1.254 MHz	15.31	-40.68
2 Average	1.946 MHz	12.82	-33.17
1 Quasi Peak	2.942 MHz	25.80	-30.20
2 Average	3.474 MHz	12.92	-33.07
2 Average	5.358 MHz	5.44	-44.55
1 Quasi Peak	11.786 MHz	20.78	-39.21
1 Quasi Peak	13.61 MHz	23.96	-36.03
2 Average	27.158 MHz	16.69	-33.30

De Rosso 21184026_2B Line N mod B ch1



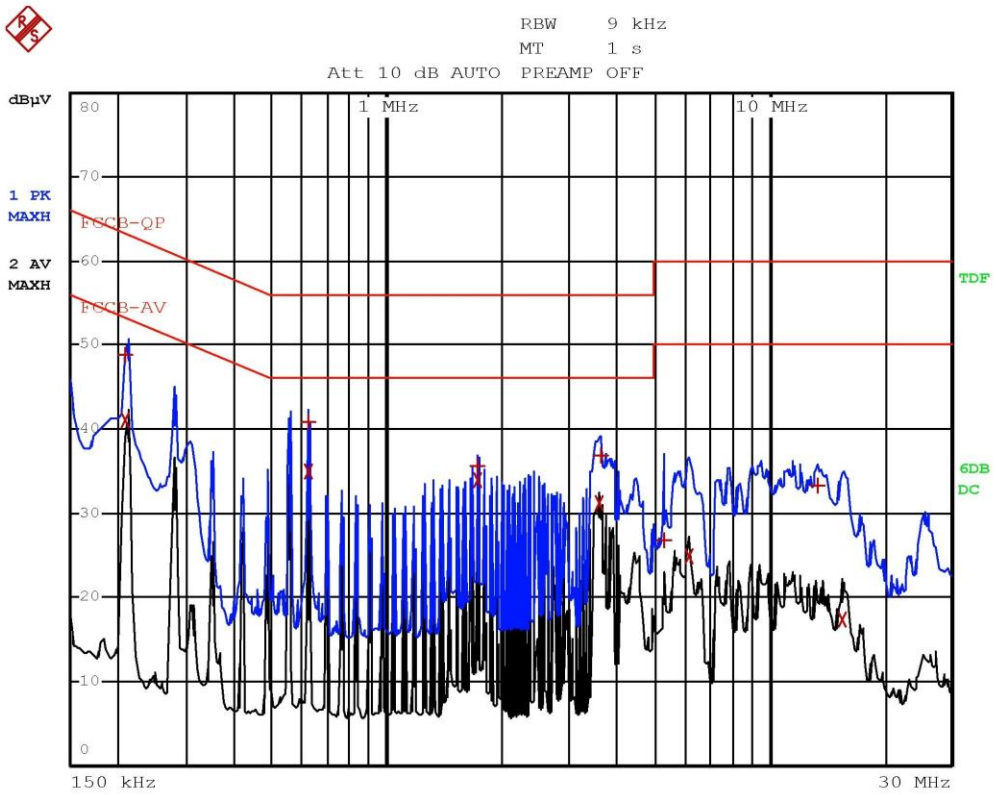
De Rosso 21184027B Line L mod B ch1

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCCB-QP
Trace2:	FCCB-AV
Trace3:	---

TRACE		FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2	Average	278 kHz	36.51	-14.35
1	Quasi Peak	326 kHz	34.38	-25.17
1	Quasi Peak	366 kHz	35.34	-23.24
2	Average	626 kHz	38.95	-7.04
1	Quasi Peak	1.814 MHz	19.21	-36.78
2	Average	1.95 MHz	13.48	-32.51
1	Quasi Peak	2.942 MHz	9.21	-46.79
2	Average	3.618 MHz	14.98	-31.02
2	Average	11.466 MHz	9.38	-40.61
1	Quasi Peak	11.53 MHz	16.76	-43.23
1	Quasi Peak	13.89 MHz	26.27	-33.72
2	Average	27.158 MHz	15.32	-34.67

De Rosso 21184027_2B Line L mod B ch1



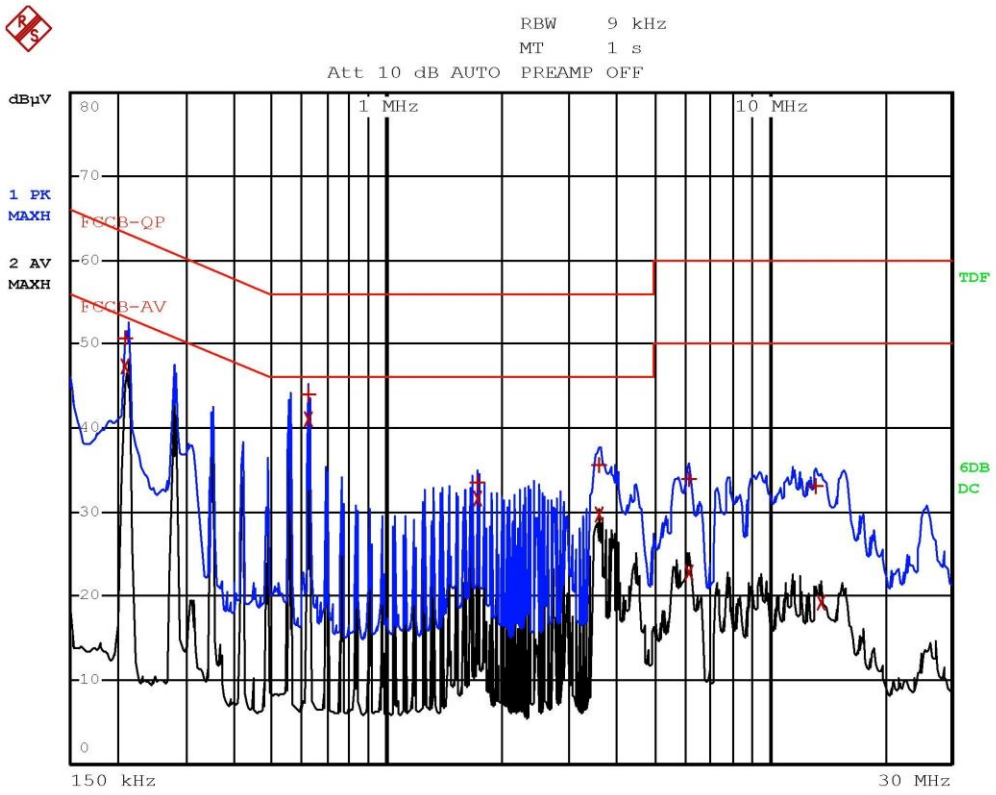
De Rosso 21184024G Line N mod G ch1

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCCB-QP
Trace2:	FCCB-AV
Trace3:	---

TRACE		FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	210 kHz	48.74	-14.46
2	Average	210 kHz	41.00	-12.20
1	Quasi Peak	626 kHz	40.89	-15.10
2	Average	626 kHz	35.01	-10.98
1	Quasi Peak	1.738 MHz	35.54	-20.45
2	Average	1.738 MHz	33.85	-12.14
2	Average	3.618 MHz	31.16	-14.83
1	Quasi Peak	3.622 MHz	36.77	-19.22
1	Quasi Peak	5.35 MHz	26.79	-33.21
2	Average	6.19 MHz	24.89	-25.11
1	Quasi Peak	13.386 MHz	33.21	-26.78
2	Average	15.538 MHz	17.28	-32.71

De Rosso 21184024_2G Line N mod G ch1



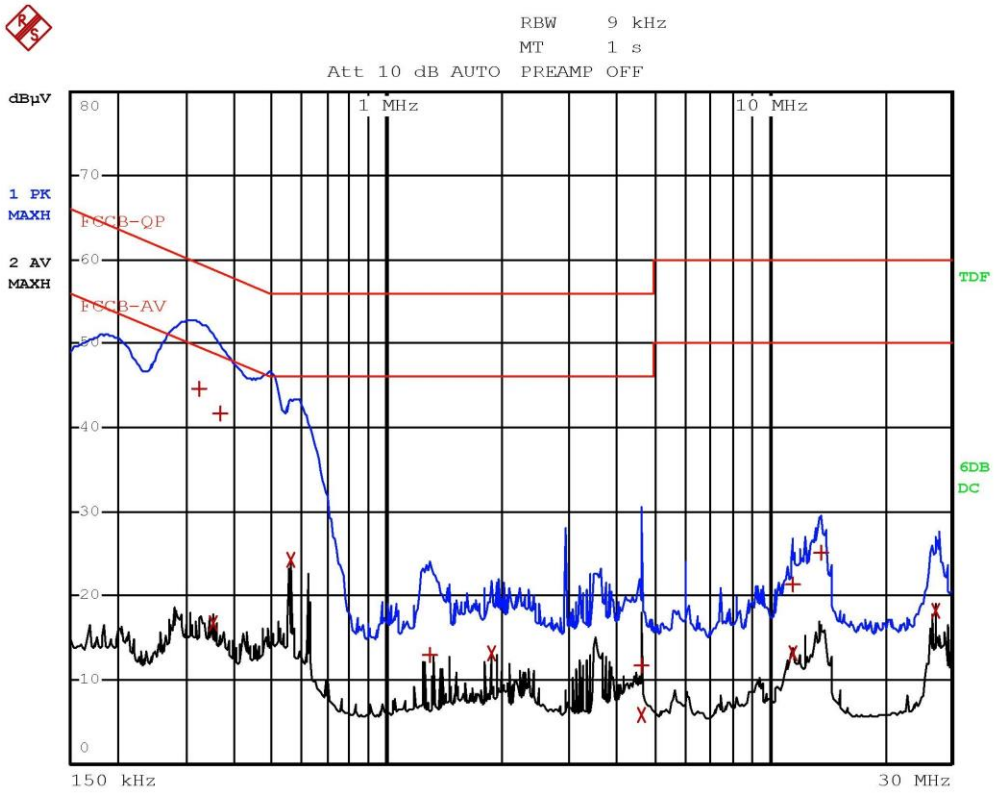
De Rosso 21184025G Line L mod G ch1

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCCB-QP
Trace2:	FCCB-AV
Trace3:	---

TRACE		FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	210 kHz	50.62	-12.57
2	Average	210 kHz	47.40	-5.79
1	Quasi Peak	626 kHz	43.95	-12.04
2	Average	626 kHz	41.11	-4.88
1	Quasi Peak	1.738 MHz	33.51	-22.48
2	Average	1.738 MHz	31.57	-14.42
1	Quasi Peak	3.614 MHz	35.64	-20.36
2	Average	3.614 MHz	29.74	-16.25
1	Quasi Peak	6.178 MHz	33.95	-26.04
2	Average	6.19 MHz	22.73	-27.26
1	Quasi Peak	13.202 MHz	33.03	-26.97
2	Average	13.762 MHz	19.26	-30.73

De Rosso 21184025_2G Line L mod G ch1



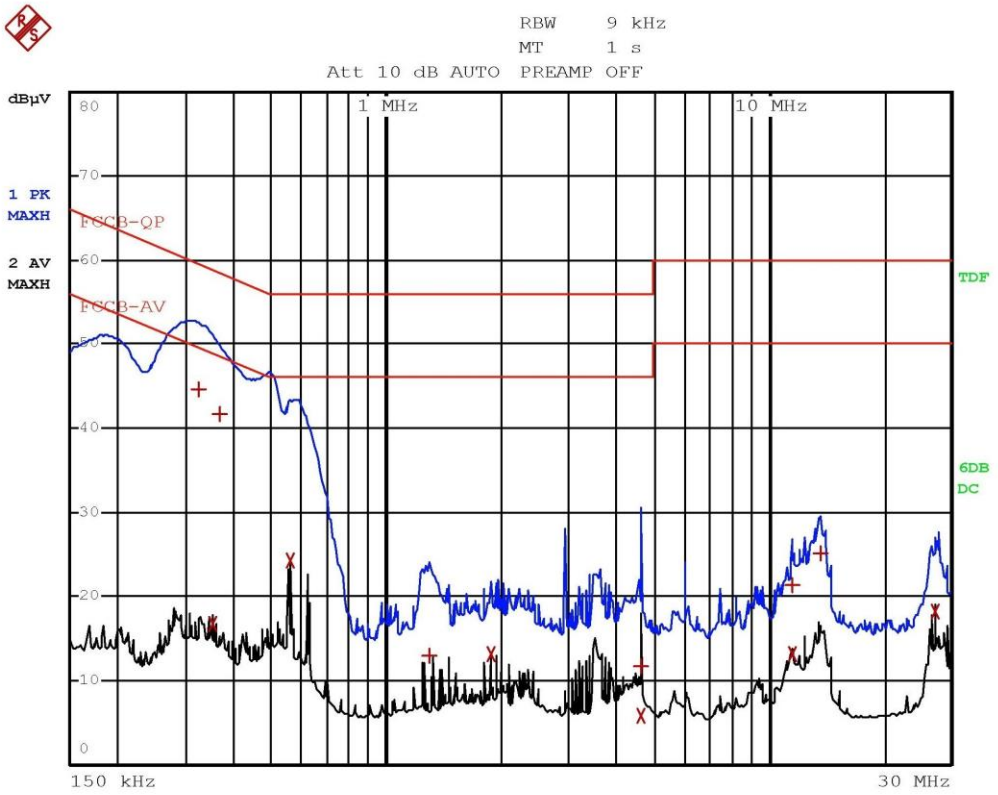
De Rosso 21184026G Line N mod G ch1

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCCB-QP
Trace2:	FCCB-AV
Trace3:	---

	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	322 kHz	44.60	-15.05
2	Average	350 kHz	16.62	-32.33
1	Quasi Peak	366 kHz	41.68	-16.90
2	Average	558 kHz	24.31	-21.68
1	Quasi Peak	1.302 MHz	12.82	-43.17
2	Average	1.878 MHz	13.03	-32.96
2	Average	4.642 MHz	5.87	-40.12
1	Quasi Peak	4.646 MHz	11.66	-44.33
2	Average	11.526 MHz	13.09	-36.91
1	Quasi Peak	11.53 MHz	21.37	-38.62
1	Quasi Peak	13.678 MHz	25.11	-34.88
2	Average	27.158 MHz	18.12	-31.87

De Rosso 21184026_2G Line N mod G ch1



De Rosso 21184027G Line L mod G ch1

EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCCB-QP
Trace2:	FCCB-AV
Trace3:	---

	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	318 kHz	44.08	-15.67
2	Average	350 kHz	16.44	-32.52
1	Quasi Peak	366 kHz	40.95	-17.64
2	Average	558 kHz	23.84	-22.15
1	Quasi Peak	1.258 MHz	13.92	-42.07
2	Average	1.946 MHz	13.22	-32.77
1	Quasi Peak	2.942 MHz	25.89	-30.10
2	Average	3.474 MHz	13.87	-32.12
1	Quasi Peak	11.53 MHz	21.49	-38.50
2	Average	11.53 MHz	13.71	-36.28
1	Quasi Peak	26.762 MHz	16.44	-43.55
2	Average	26.762 MHz	10.26	-39.74

De Rosso 21184027_2G Line L mod G ch1