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Test laboratory accredited according to ISO 17025 by the Swiss Accreditation Service SAS
Laboratoire d'essai accrédité selon ISO 17025 par le Service d'accréditation suisse SAS
Prüflabor akkreditiert nach ISO 17025 durch die Schweizerische Akkreditierungsstelle SAS

Registration number
Numéro d'accréditation
Akkreditierungsnummer **STS 024**

Schweizerischer Prüfstellendienst
Service suisse d'essai
Swiss testing service

Report: Rapport: Bericht:	***Radiocom***	Report no: Rapport no: Bericht Nr:	***15'193B ****
Product name: Nom du produit: Produktname	***Inspiro (FM part)***	Mandate no: Mandat no: Auftrag Nr:	***20077676***
Serial no: No de série: Seriennummer:	***SATV2.2_100 to SATV2.2_103***	Model number: Numéro de modèle: Modellnummer:	**- - -**
Customer: Client: Kunde:	***Phonak Communications SA*** ***Länggasse 17*** ***CH-3280 Murten***	Date of test: Date de l'essai: Prüfdatum:	***July 25 to 30, 2007*** ***August 2 and 14, 2007***

** Replaces report 15'193A. / Remplace rapport 15'193A. / Ersetzt Bericht 15'193A.*

Standards / Normes / Normen	Result Résultat Ergebnis
CFR 47, Part 95 LPRS transmitters	***Pass***

Test performed by
Essai effectué par :
Prüfer

Mr Erich Staub

Test report prepared by
Rapport d'essai préparé par :
Berichterstatter

Mr Erich Staub

Test report controlled and approved by
Rapport d'essai contrôlé et approuvé par :
Prüfbericht kontrolliert und genehmigt durch

Mr Emmanuel de Raemy
p.o. Werner Hirschi

Rossens, October 20, 2011 (Issue Date / Date d'édition / Ausstelldatum) V2007Jun26

Main language / Langue principale / Hauptsprache : *english* / *français* / *deutsch*

The present document results from tests on a specimen and does not prejudge to the conformity of all the manufactured products. - Le présent document résulte d'essais sur un spécimen. Il ne préjuge pas de la conformité de l'ensemble des produits fabriqués à l'objet essayé. - Dieser Bericht beinhaltet die Prüfergebnisse eines Mustergerätes. Es kann daraus nicht auf die Übereinstimmung der Seriegeräte mit dem Mustergerät geschlossen werden.

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Contents / Table des matières / Inhaltsverzeichnis

Page/Page/Seite

1. Summary of test results / Résumé des résultats d'essais / Zusammenfassung der Prüfergebnisse

✓ Pass / Réussi / Bestanden

✖ Fail / Echoué / Nicht bestanden

∅ Not applicable to this product / Pas applicable à ce produit / Nicht anwendbar für dieses Produkt

— Not tested / Pas testé / Nicht geprüft

No requirements / Pas d'exigence / Keine Anforderung

§	Test Type / Type d'essai / Art der Prüfung		Result / Résultat / Ergebnis
6	***Emission / Emission / Störaussendung***		
6.1	Designation of emission Désignation d'emission Bezeichnung der Emission	FCC 47 §2.201 FCC 47 §2.202	✓
6.2	RF power output Puissance RF HF Leistung	FCC 47 §2.1046 FCC 47 §95.639 (e)	✓
6.3	Modulation characteristics Caractéristiques de la modulation Modulationscharakteristiken	FCC 47 §2.1047	✓
6.4	Occupied bandwidth Bande passante Bandbreite	FCC 47 §2.1049 FCC 47 §95.635 (c)(1)	✓
6.5	Field strength of spurious radiation Champ émis Feldstärke der Nebenaussendung	FCC 47 §2.1053 FCC 47 §95.635 (c)(1)	✓
6.6	Frequency stability Stabilité de fréquence Frequenzstabilität	FCC 47 §2.1055 FCC 47 §95.629 (b)(2)	✓

2. Applied standards / Normes appliquées / Verwendete Normen

47 CFR Part 95	Code of Federal Regulations - Telecommunication, FCC Part 95 - Personal Radio Sevices

3. Client / Client / Kunde

Client name and address Nom et adresse du client Name und Adresse des Kunden	*Phonak Communications SA* *Länggasse 17* *CH-3280 Murten*
Contact Person / Responsable / Kontaktperson	*Mrs Neviana Nikoloski*
Telephone / Téléphone / Telefon	*+41 26 672 96 72*
Fax / Télécopieur / Telefax	*+41 26 672 96 77*
E-mail / Courrier électronique / E-mail	*info@phonak-communications.com*
Mandate no / No. de mandat / Auftragsnr.	*20077676*

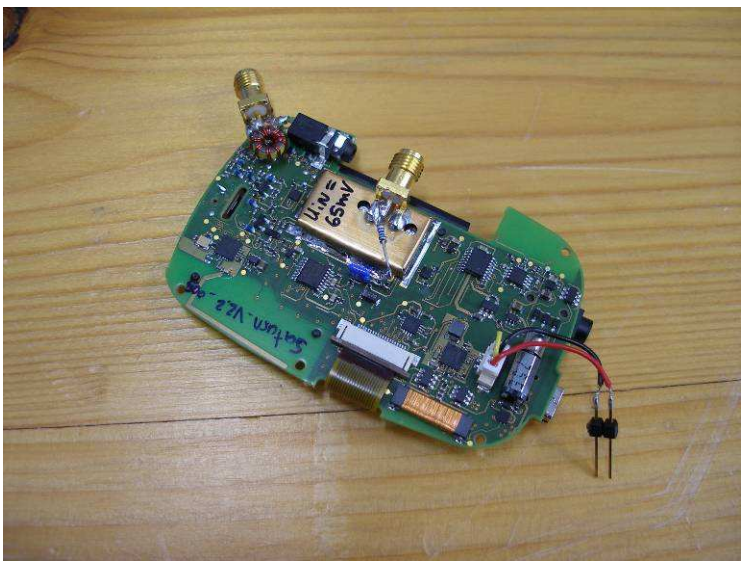
4. Equipment under test / Equipement à l'essai / Prüfling

4.1 Identification / Identification / Identifikation

Manufacturer name and address Nom et adresse du fabricant Name und Adresse des Herstellers	*Phonak Communications SA* *Länggasse 17* *CH-3280 Murten*
Production country / Pays de fabrication / Ursprungsland	*Switzerland*
Brand name / nom de marque / Verkaufsmarke	*Phonak*
Product name / Nom du produit / Produktname	*Inspiro (FM part)*
Product description / Description du produit / Produktbeschreibung	*inspiro is an FM transmitter for applications in schools. It consists of a new transmitter itself, a new lavalier microphone and a slightly modified boom microphone. The essential new features of the system, compared to existing transmitters are:* • *Adaptive FM Advantage (Mixing between FM signal and HI Mic signal is dynamically adapted as a function of the speech environment and the surrounding noise),* • *MultiTalker Network capability,* • *Data logging,* • *Monitoring of the correnspondingreceivers*
Model number / Numéro de modèle / Modellnummer	- - -
Serial no / No. de série / Seriennummer	*SATV2.2_100 to SATV2.2_103*
Software version / Version du logiciel / Softwareversion	*Pré-alpha V1*
Highest frequency / Fréquence la plus élevée / Höchste Frequenz	*Max FM carrier at 220 MHz*
Supply / Alimentation / Speisung	*U = 3.7 VDC internal Lithium-Ion battery*
Technical documentation Documentation technique Technische Dokumentation	*None. The equipment is completely identified by its serial no. according to ISO 9001.*

4.2 Pictures of the EUT / Photos de l'EST / Fotos des Prüflings

	*Inspiro with enclosure*
	*Connectors*
	*Inspiro for radiated measurements*

	*Inspiro for radiated measurements*
	*Inspiro for conducted measurements*
	*Inspiro for conducted measurements*

4.3 Ports / Accès / Anschlüsse

Port / Accès / Anschluss	Cable / Câble / Kabel			Remark / Remarque / Bemerkung
	Max. length / Longueur max. / Max. Länge	Type / Type / Typ	Screen / Blindage / Schirm	
Microphone	*70 cm*	*3 wires*	*Yes*	*Standard microphone cable*
Ext. Audio	*1.5 m*	*3 wires*	*Yes*	*- - -*
USB	*1 m*	*- - -*	*Yes*	*- - -*

4.4 Modifications / Modifications / Angebrachte Änderungen

None

5. Test conditions / Conditions d'essai / Testbedingungen

5.1 Climatic conditions, location and date / conditions climatiques, lieu et date / klimatische Bedingungen, Ort und Datum

Location / Lieu / Ort:	Date / Date / Datum:	Temp. / Temp. / Temp.:	Pressure / Pression / Druck:	Rel. humidity / Humidité rel. / Rel. Luftfeuchtigkeit:
montena emc sa CH-1728 Rossens	*July 25 to 30, 2007*	*20 – 25 °C*	*1000 – 1050 hPa*	*40 – 50 %*
montena emc sa CH-1728 Rossens	*August 2, 2007*	*20 – 25 °C*	*1030 hPa*	*45 %*
montena emc sa CH-1728 Rossens	*August 14, 2007*	*20 – 25 °C*	*1020 hPa*	*47 %*

5.2 Test facility and methodology / Lieu d'essai et méthodologie / Prüfort und Methodik

The alternate test site (ferrite chamber) is accepted by FCC (Reg. No. 0009508433).

Conducted and radiated measurements are performed according to the ANSI C63.4 (2003) procedure.

5.3 Present persons / Personnes présentes / Anwesende Personen

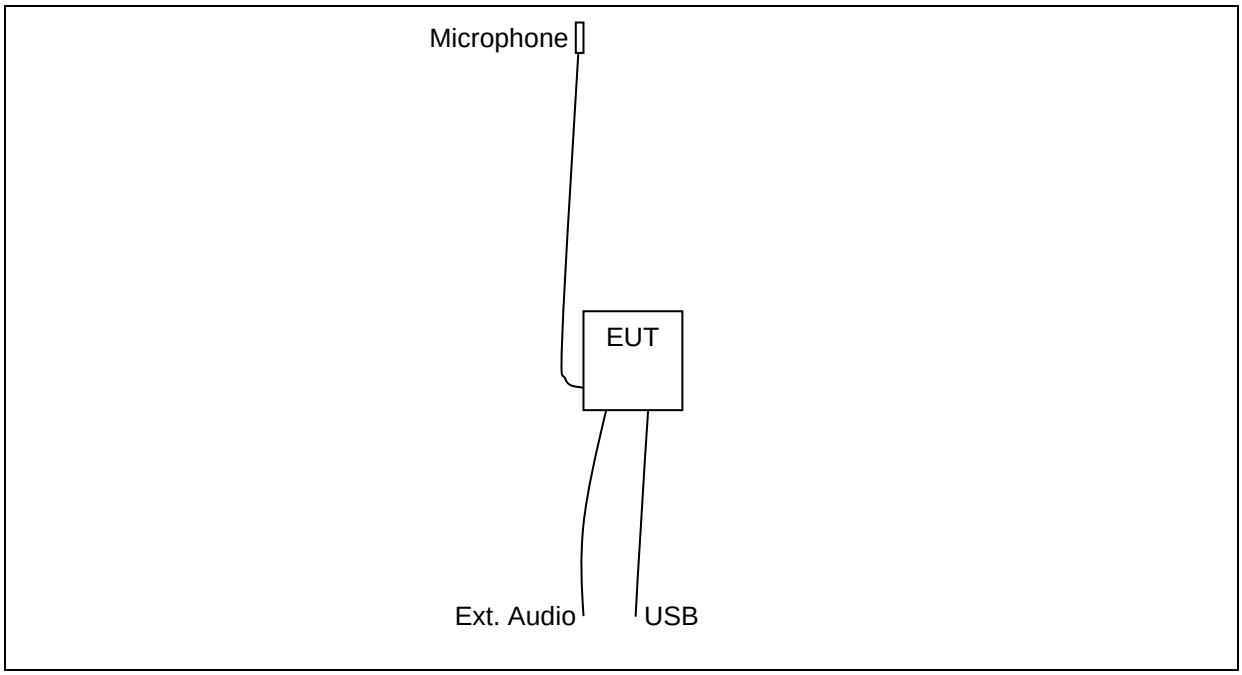
Test Engineer(s) / Ingénieur(s) d'essai / Prüfingenieur(e) :

Mr Erich Staub

Other(s) / Autre(s) / Andere :

Name / Nom / Name	Company / Société / Firma
Mr Sébastien Holzer	*Phonak Communications SA*

5.4 Test configuration / Configuration d'essai / Prüfkonfiguration



5.5 Auxiliary equipment / Matériel auxiliaire / Zusatzgeräte

The following pieces of equipment are used for the monitoring of the EUT or are necessary for the EUT but they are not tested with the EUT / Les équipements suivants servent à la surveillance de l'EST ou sont indispensables au fonctionnement de celui-ci mais ne font pas partie de l'essai / Folgende Geräte werden für die Überwachung des Prüflings gebraucht oder sind notwendig für die korrekte Funktion. Sie gehören jedoch nicht zum Prüfling.

None

6. Tests

6.1 Designiation of emission

Standard:	United States: 47 CFR "Code of Federal Regulations" – Telecommunication ☒ FCC Part 2, Subpart C: Emission: §2.201 and §2.202
Introduction:	A system of designating emission, modulation and transmission characteristics shall be employed. (a) Emissions are designated according to their classification and their necessary bandwidth. (b) A minimum of three symbols are used to describe the basic characteristics of radio waves. (c) Four symbols are used to describe the necessary bandwidth.
Necessary bandwidth:	For a given class of emission, the minimum value of the occupied bandwidth sufficient to ensure the transmission of information at the rate and with the quality required for the system employed, under specified conditions.
	$B_n = 2M + 2D$ B_n = necessary bandwidth M = maximum modulation frequency in hertz = 6 kHz D = Peak frequency deviation = 5.8 kHz
	B_n = *24 kHz*
Basic characteristics:	*F3E* *F* : frequency modulation *3* : a single channel containing analogue information *E* : telephony (including sound broadcasting)
Designation of emission:	*24K0F3E*

6.2 RF power output

Standard: United States: 47 CFR "Code of Federal Regulations" – Telecommunication
☒ FCC Part 2, Subpart J: Certification: §2.1046
☒ FCC Part 95, Subpart E: Technical regulations: §95.639(e)
Limit for LPRS = 100 mW = 20 dBm

Distance: ☐ 30 m ☒ 10 m ☐ 3 m ☐ .....

Test site: ☐ anechoic chamber (foam) ☐ shielded room
☒ anechoic chamber (ferrites) ☐ laboratory
☐ open test site ☐ .....

Position of EUT: *1.4 m, antenna stretched vertically* (height of the equipment under test above floor)

Meas. uncertainty: ± 1.34 dB (f < 300 MHz) / ± 1.61 dB (f > 300 MHz)

Test method: The antenna is moved from 1 to 4 m in height. The turning table is operated through 360° during the measurements. The recordings are ca rried out taking into account the maximum value of all the disturbances appearing while the apparatus is under test. The device under test has specific type of antenna and, therefore, the effective radiated power (ERP) was measured instead of the output power. The ERP is defined as the equivalent radiated power of a dipole.

Test set-up:

EUT

Substitution antenna

Remarks: - - -

Test equipment:

Spectrum analyser	☐ 88-14	☐ 90-26	☐ 94-24	☐ 02-06	☒ 03-45	☐ 03-57
Receiver	☐ 85-04	☐ 90-43	☐ 94-35			
Preamplifier	☐ 90-01	☐ 95-86	☐ 05-56	☐ 05-59	☐ 05-62	☐ 05-87
Antenna (bilog)	☒ 94-03	☐ 05-38	☐			
Antenna (horn)	☐ 90-24	☐ 90-29	☐ 98-12	☐ 98-13	☐	
HF-wattmeter	☐ 95-97	☐ 01-15	☐ 01-17	☐ 03-12	☒ 04-96	☐ 05-20
Thermocouple detector	☐ 92-03	☐ 04-01	☒ 05-74	☐ 05-88	☐ 07-03	☐ .....
Frequency generator	☐ 88-23	☐ 00-42	☐ 03-39	☐ 04-03	☒ 05-78	☐ 07-02

Result: **☒ pass** **☐ fail** **☐ not applicable** **☐ not tested**

Results of the test

Client: *Phonak Communications SA*

Apparatus: *Inspiro (FM part)*

Operating mode: • *unmodulated*

Cables connected to the EUT: • *microphone*

Remarks: *Centre of Tx antenna at 1.6m*

	EUT		P at Tx ant.		Rx ant	Tx antenna		Result			Remarks
f [MHz]	P [dBm]	preamp [dB]	P [dBm]	facteur [dB]	P [dBm]	gain [dB]	att. Cable [dB]	correc. [dB]	P ERP [dBm]	P ERP	
214.000	*-23.8*	*0.0*	*11.74*	*0*	*-27.9*	*-10*	*0*	*29.64*	*5.84*	*3.84 mW*	*without attenuator*
216.388	*-24.1*	*0.0*	*11.72*	*0*	*-28.4*	*-10*	*0*	*30.12*	*6.02*	*4.00 mW*	*without attenuator*
220.000	*-25.0*	*0.0*	*11.71*	*0*	*-28.5*	*-10*	*0*	*30.21*	*5.21*	*3.32 mW*	*without attenuator*

Date of test: *July 25, 2007*
Operator: *Erich Staub*

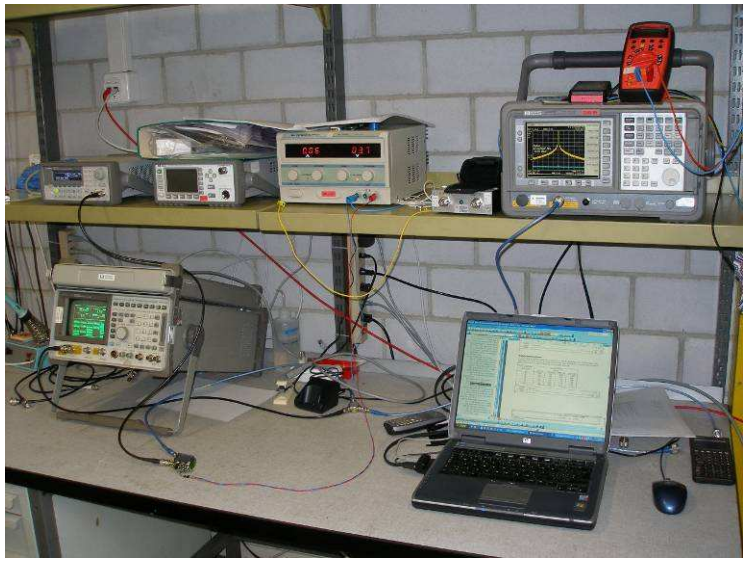
6.3 Modulation characteristics

Standard: United States: 47 CFR "Code of Federal Regulations" - Telecommunication
☒ FCC Part 2, Subpart J: Certification: §2.1047

Test site: ☐ anechoic chamber (foam) ☐ open test site
☐ anechoic chamber (ferrite) ☒ laboratory

Test method: Measurement of the frequency at the antenna connector or a test fixture.

Test set-up:



Remarks: - - -

Test equipment:

RF communication test set	☐ 88-23	☐ 94-06	☐ 00-42	☐ 03-39	☒ HP8920B (Phonak)	
Générateur LF	☒ 07-25 (UPL)					
Oscilloscope numérique	☐ 90-14	☐ 93-85	☐ 93-86	☐ 01-20	☐ 04-06	☐ 04-50
	☐ 05-22	☐ 05-28				
FM discriminator	☐ …….					
Power supply	☒ 04-31					

Result: ☒ **pass** ☐ **fail** ☐ **not applicable** ☐ **not tested**

Results of the test

Client: *Phonak Communications SA*

Apparatus: *Inspiro (FM part) (EUT1)*

Remarks: - - -

Frequency response of audio circuit:

An audio signal at 1 kHz is adjusted for a 100 % rated FM deviation (= 39.8 mV rms). While maintaining the same amplitude, the frequency is varied. The FM deviation is measured and recorded at several frequencies in order to determine the frequency response.

Audio [kHz]	Dev. [kHz]	Audio [kHz]	Dev. [kHz]	Audio [kHz]	Dev. [kHz]	Audio [kHz]	Dev. [kHz]
0.2	*5.8*	*1.0*	*5.6*	*4.5*	*5.0*	*9.0*	*0.9*
0.3	*5.7*	*1.2*	*5.5*	*5.0*	*5.0*	-	-
0.4	*5.7*	*1.5*	*5.4*	*5.5*	*4.9*	-	-
0.5	*5.7*	*2.0*	*5.3*	*6.0*	*1.3*	-	-
0.6	*5.7*	*2.5*	*5.3*	*6.5*	*0.9*	-	-
0.7	*5.6*	*3.0*	*5.2*	*7.0*	*1.0*	-	-
0.8	*5.6*	*3.5*	*5.2*	*7.5*	*0.9*	-	-
0.9	*5.6*	*4.0*	*5.1*	*8.0*	*0.9*	-	-

Limit [kHz]	Remarks:	Pass Yes	Pass No
±75	- - -	☒	☐

Modulation limiting of audio input:

An audio signal at different frequencies is adjusted for a 100 % rated FM deviation (= 39.8 mV rms). While maintaining the same frequency, the audio level is varied. The FM deviation s measured and recorded at different audio levels in order to determine the modulation limiting.

Audio signal level [mV rms]	FM Deviation [kHz]			
	200 Hz	1000 Hz	3500 Hz	8000 Hz
4	*5.3*	*5.2*	*4.8*	*1.0*
5	*5.5*	*5.3*	*4.9*	*1.0*
10	*5.5*	*5.4*	*4.9*	*1.0*
20	*5.6*	*5.5*	*5.0*	*1.0*
50	*5.7*	*5.6*	*5.1*	*1.0*
100	*5.8*	*5.6*	*5.2*	*1.0*

Limit [kHz]	Remarks:	Pass Yes	Pass No
±75	- - -	☒	☐

Date of test: *August 14, 2007*
Operator: *E. Staub*

6.4 Occupied bandwidth

Standard: United States: 47 CFR "Code of Federal Regulations" – Telecommunication
☒ FCC Part 2, Subpart J: Certification: §2.1049
☒ FCC Part 95, Subpart E: Technical regulations: §95.635(c)(1)

Test site:
☐ anechoic chamber (foam) ☐ shielded room
☐ anechoic chamber (ferrites) ☒ laboratory
☐ open test site ☐ .....

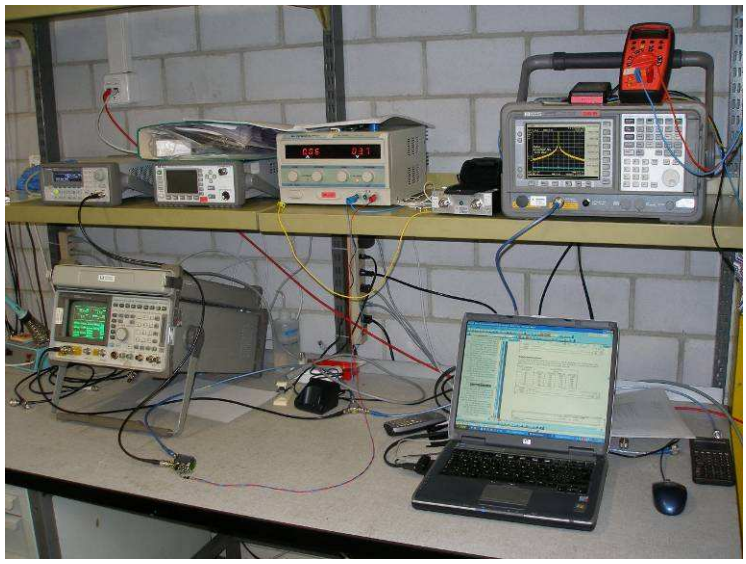
Test precision: ± 1.5 dB

Test requirements: Emissions for transmitters operating on standard band channels (25 kHz) shall be attenuated below the unmodulated carrier in accordance with the following:

- Emissions 12.5 kHz to 22.5 kHz away from the channel center frequency: at least 30 dB
- Emissions more than 22.5 kHz away from the channel center frequency: at least 43 + 10 log (carrier power in watts) dB

Test method: The audio signal input was set to 50 mV rms (= FM deviation max). For different input frequencies the fundamental frequency was plotted.

Test set-up:



Remarks: - - -

Test equipment:

Spectrum analyser	☐ 88-14	☐ 90-26	☐ 94-24	☒ 02-06	☐ 03-45	☐ 03-57
RF communication test set	☒ HP8920B (Phonak)					
Oscilloscope numérique	☐ 90-14 ☐ 05-22	☐ 93-85 ☐ 05-28	☐ 93-86	☐ 01-20	☐ 04-06	☐ 04-50
Signal generator	☒ 07-25 (UPL)					
Power supply	☒ 04-31					

Result: **☒ pass** **☐ fail** **☐ not applicable** **☐ not tested**

Measurement Type : Power Interference
Port : Temporary antenna connector
Clamp position :

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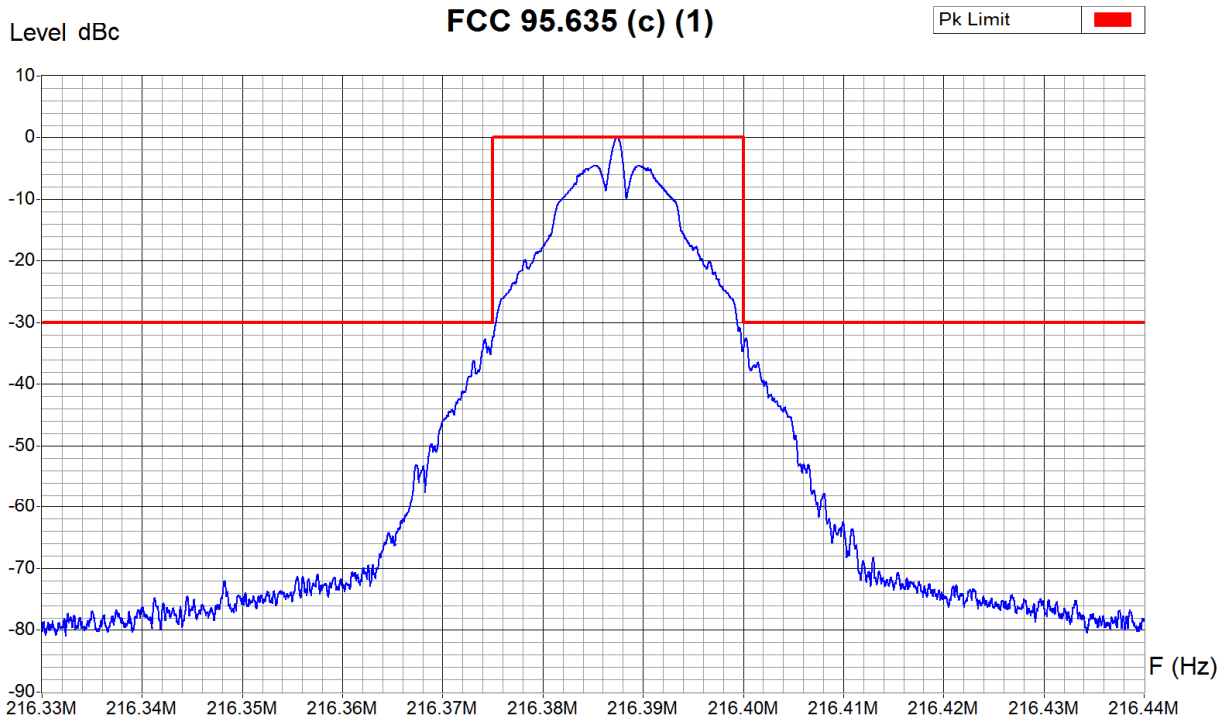
Equipment Under Test : Master inspiro
Set-Up :
Operating Conditions : Audio frequency sweep = 1kHz - 8kHz; Spacing = log; nb points = 100;
Remarks : Audio level = 39.8 mV rms;



Operator: E. Staub
Date/Time: 14.08.2007 17:07
Filename: 20077676_bandwidth_014.png/.txt

6.5 Field strength of spurious radiation

6.5.1 Spurious emissions (radiated – 25 MHz to 1000 MHz)

Standard: United States: 47 CFR "Code of Federal Regulations" – Telecommunication
☒ FCC Part 2, Subpart J: Certification: §2.1053
☒ FCC Part 2: §2.1047 (Frequency range: up to tenth harmonic or 40 GHz)
☒ FCC Part 95, Subpart E: Technical regulations: §95.635(c)(1)

Distance: ☐ 30 m ☐ 10 m ☒ 3 m ☐ .....

Test site: ☐ anechoic chamber (foam) ☐ shielded room
☒ anechoic chamber (ferrites) ☐ laboratory
☐ open test site ☐ .....

Position of EUT: *0.9 m, antenna stretched vertically* (height of the equipment under test above floor)

Meas. uncertainty: ± 4.6 dB (30 - 300 MHz) / ± 3.7 dB (300 - 1000 MHz)

Test method: The antenna is moved from 1 to 4 m in height. The turning table is operated through 360° during the measurements. The recordings are ca rried out taking into account the maximum value of all the disturbances appearing while the apparatus is under test.

Test set-up:

Test equipment:

Spectrum analyser	☐ 88-14	☐ 90-26	☐ 94-24	☐ 02-06	☒ 03-45	☐ 03-57
Receiver	☐ 85-04	☐ 90-43	☐ 94-35			
Preamplifier	☐ 90-01	☐ 95-86	☐ 05-56	☒ 05-59	☐ 05-62	☐ 05-87
Antenna (bilog)	☒ 94-03	☐ 05-38	☐			
Cables	☒ 06-01					
Filter	☒ Notch filter and additional 10dB attenuator (Phonak) for Tx mode					

Except the carrier frequencies, the emissions are < –30 dBc.

Result:	**☒ pass**	**☐ fail**	**☐ not applicable**	**☐ not tested**

Measurement Type :	Radiated Field
Polarisation :	Horizontal
Table Angle :	0 - 360°
Antenna Height :	1 - 4m

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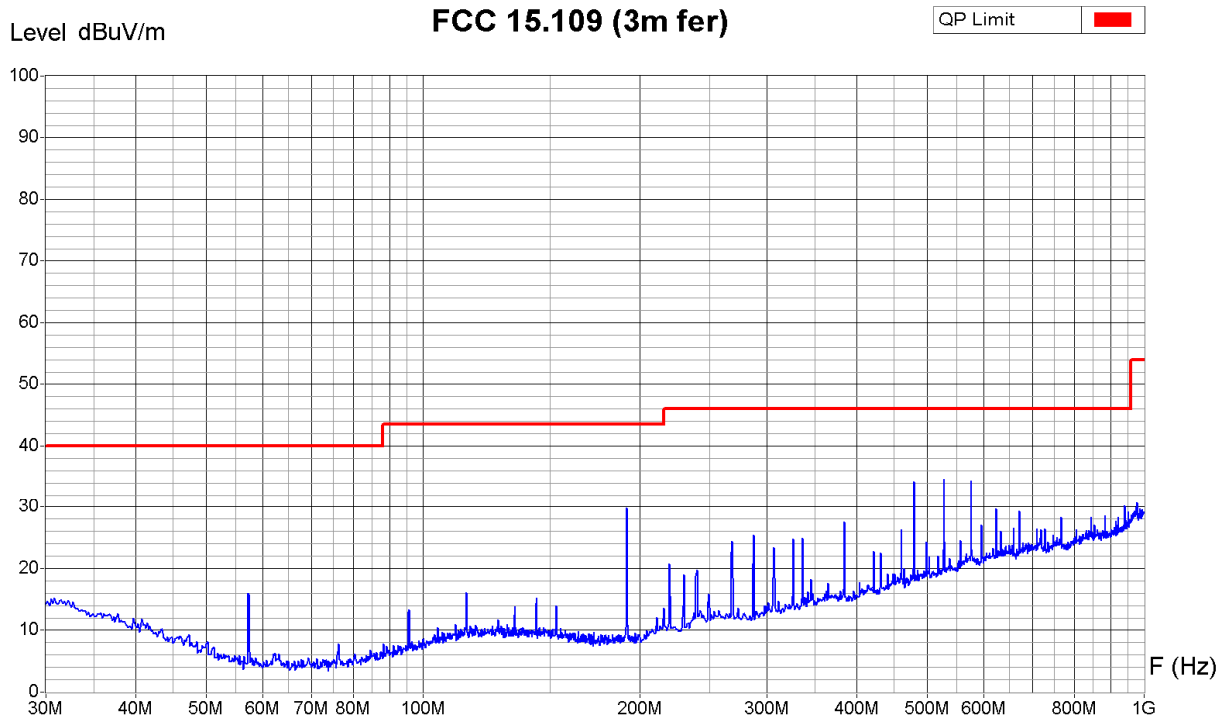
Equipment Under Test :	Master inspiro
Set-Up :	hight = 0.9m; cables: microphone, ext. audio, USB
Operating Conditions :	Standby; backlight off; PA off
Remarks :	



Zone	30 MHz - 199 MHz	199 MHz - 1 GHz
Video Bandwidth	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 26.07.07 11:41
Filename: 20077676_FCC95_er_000h.png/.txt

Measurement Type :	Radiated Field
Polarisation :	Vertical
Table Angle :	0 - 360°
Antenna Height :	1 - 4m

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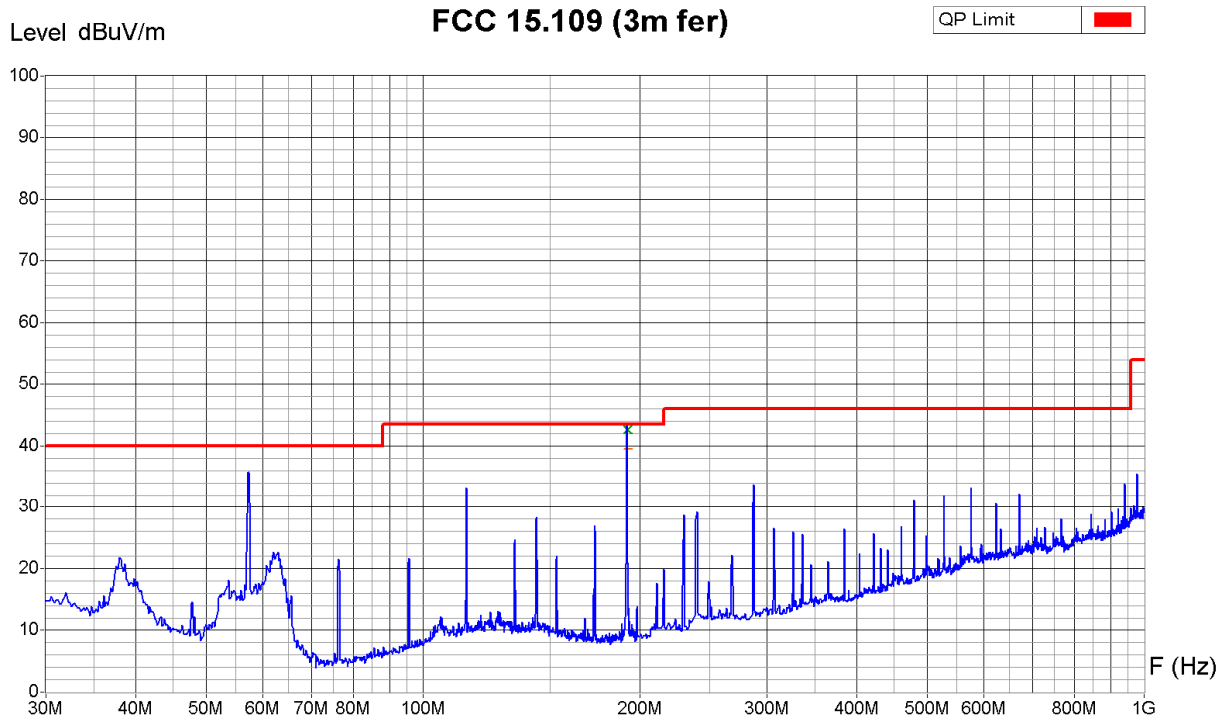
Equipment Under Test :	Master inspiro
Set-Up :	hight = 0.9m; cables: microphone, ext. audio, USB
Operating Conditions :	Standby; backlight off; PA off
Remarks :	



Zone	30 MHz - 199 MHz	199 MHz - 1 GHz
Video Bandwidth	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz

Receiver Measures

Frequency	Peak	QuasiPeak (x)	Average (+)	QP Margin
192 MHz	43.4 dBuV/m	42.6 dBuV/m	39.4 dBuV/m	0.9 dB

Operator: E. Staub
Date/Time: 26.07.07 13:12
Filename: 20077676_FCC95_er_000v.png/.txt

Measurement Type :	Radiated Field
Polarisation :	Horizontal
Table Angle :	0 - 360°
Antenna Height :	1 - 4m

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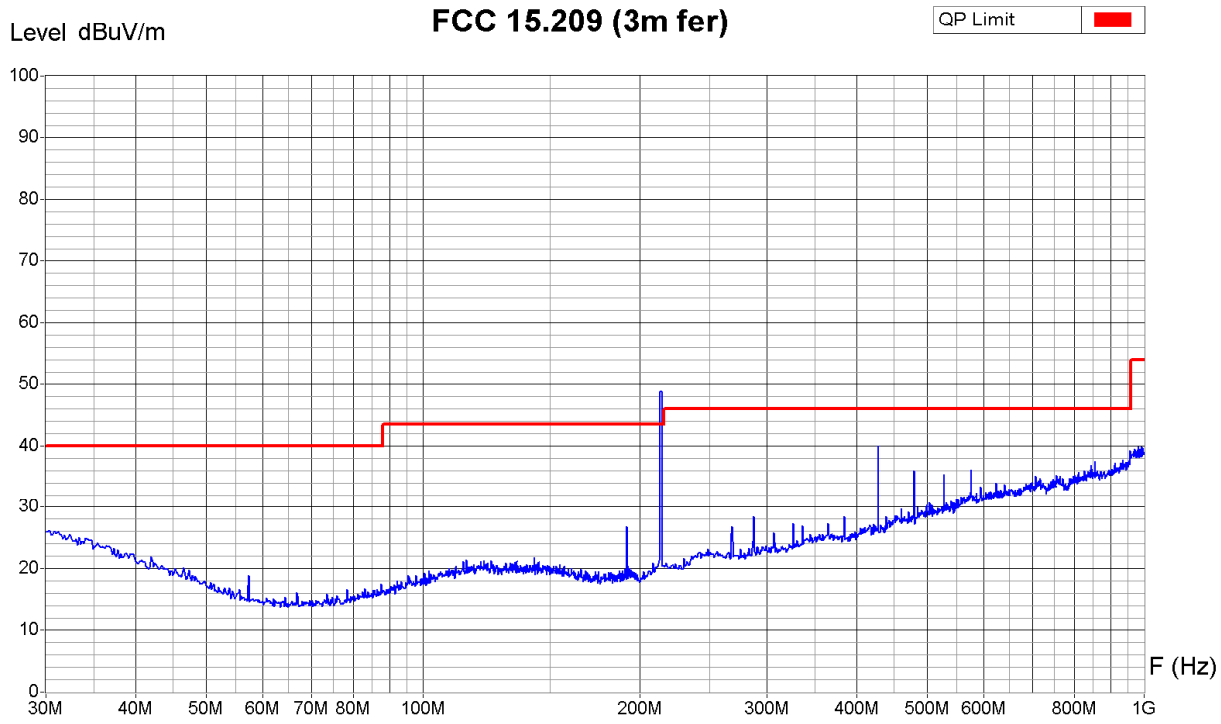
Equipment Under Test :	Master inspiro
Set-Up :	hight = 0.9m; cables: microphone, ext. audio, USB
Operating Conditions :	f = 214MHz; without attenuator; unmodulated
Remarks :	



Zone	30 MHz - 199 MHz	199 MHz - 1 GHz
Video Bandwidth	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 26.07.07 10:47
Filename: 20077676_FCC95_er_001h.png/.txt

Measurement Type :	Radiated Field
Polarisation :	Vertical
Table Angle :	0 - 360°
Antenna Height :	1 - 4m

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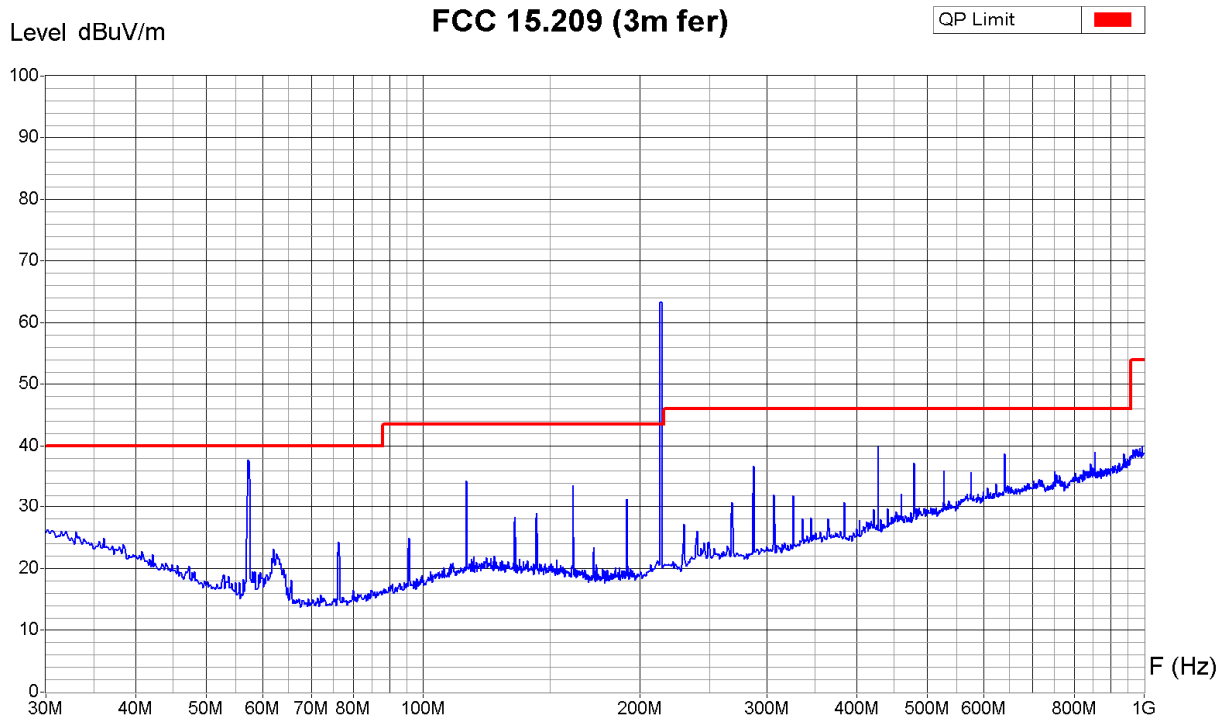
Equipment Under Test :	Master inspiro
Set-Up :	hight = 0.9m; cables: microphone, ext. audio, USB
Operating Conditions :	f = 214MHz; without attenuator; unmodulated
Remarks :	



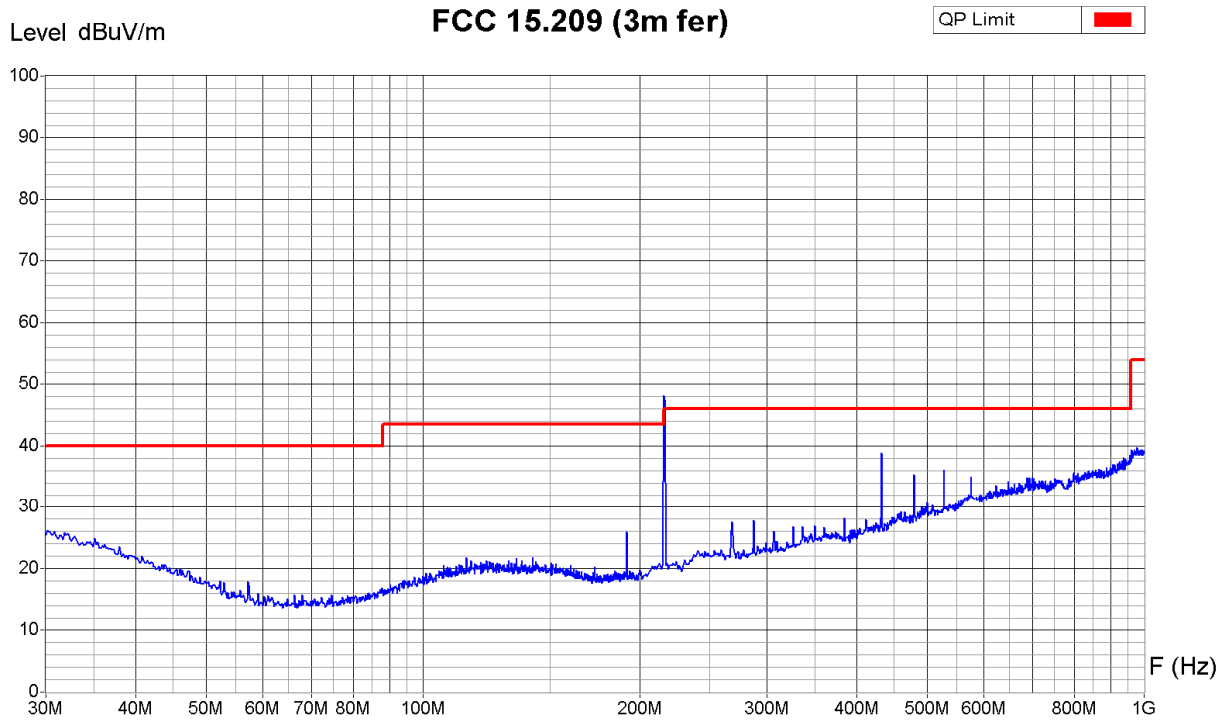
Zone	30 MHz - 199 MHz	199 MHz - 1 GHz
Video Bandwidth	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 26.07.07 10:34
Filename:
20077676_FCC95_er_001v.png/.txt

Measurement Type :	Radiated Field
Polarisation :	Horizontal
Table Angle :	0 - 360°
Antenna Height :	1 - 4m

montena
montena emc sa

Equipment Under Test :	Master inspiro
Set-Up :	hight = 0.9m; cables: microphone, ext. audio, USB
Operating Conditions :	f = 216.3875MHz; without attenuator; unmodulated
Remarks :	



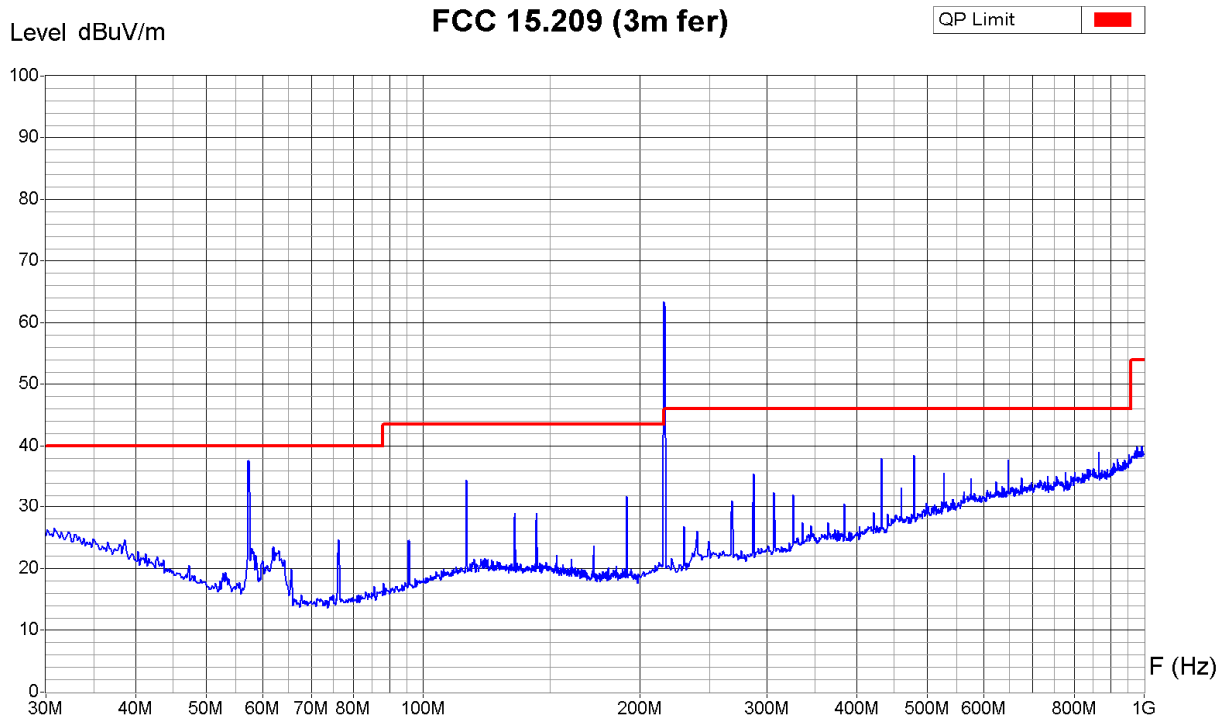
Zone	30 MHz - 199 MHz	199 MHz - 1 GHz
Video Bandwidth	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 26.07.07 11:00
Filename: 20077676_FCC95_er_002h.png/.txt

Measurement Type :	Radiated Field
Polarisation :	Vertical
Table Angle :	0 - 360°
Antenna Height :	1 - 4m

montena
montena emc sa

Equipment Under Test :	Master inspiro
Set-Up :	hight = 0.9m; cables: microphone, ext. audio, USB
Operating Conditions :	f = 216.3875MHz; without attenuator; unmodulated
Remarks :	



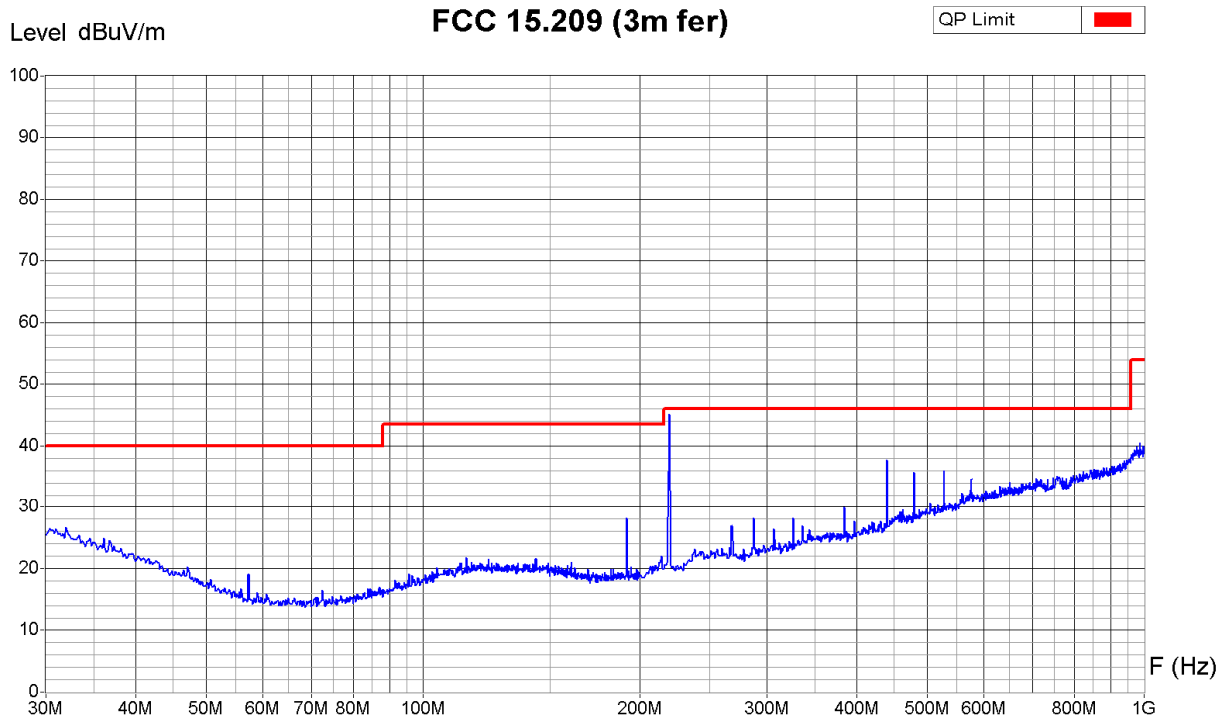
Zone	30 MHz - 199 MHz	199 MHz - 1 GHz
Video Bandwidth	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 26.07.07 11:08
Filename: 20077676_FCC95_er_002v.png/.txt

Measurement Type :	Radiated Field
Polarisation :	Horizontal
Table Angle :	0 - 360°
Antenna Height :	1 - 4m

montena
montena emc sa

Equipment Under Test :	Master inspiro
Set-Up :	hight = 0.9m; cables: microphone, ext. audio, USB
Operating Conditions :	f = 220MHz; without attenuator; unmodulated
Remarks :	



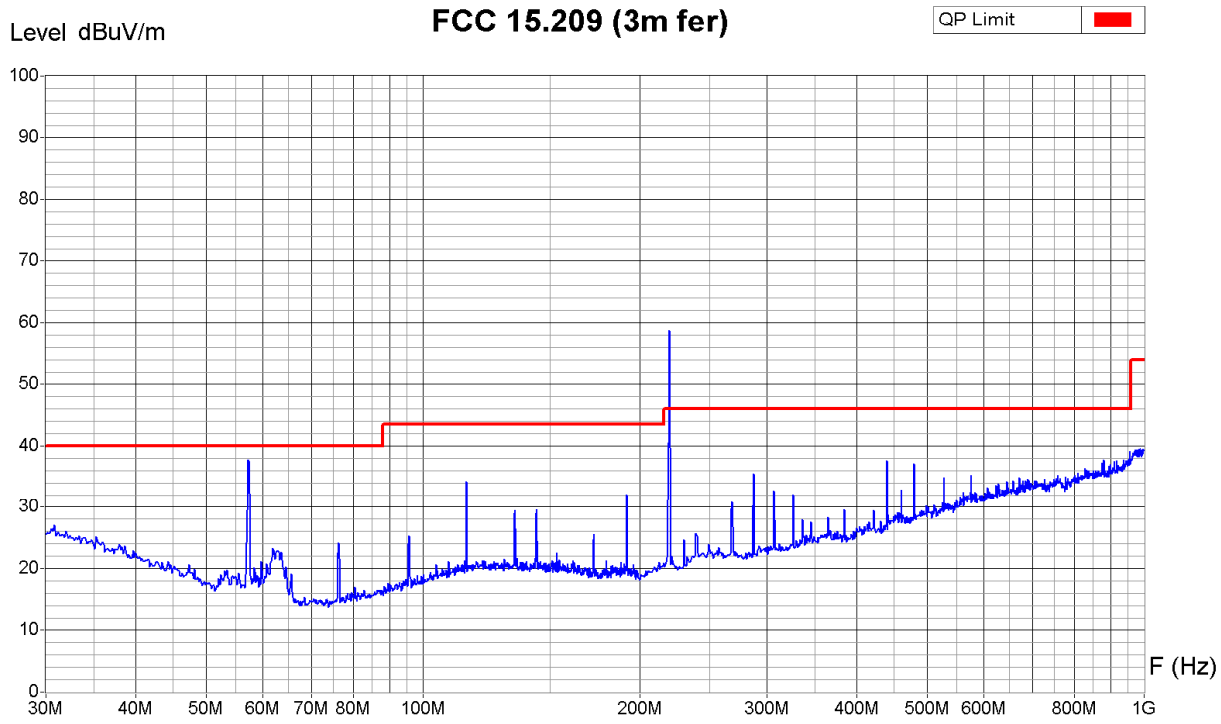
Zone	30 MHz - 199 MHz	199 MHz - 1 GHz
Video Bandwidth	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 26.07.07 11:30
Filename: 20077676_FCC95_er_003h.png/.txt

Measurement Type :	Radiated Field
Polarisation :	Vertical
Table Angle :	0 - 360°
Antenna Height :	1 - 4m

montena
montena emc sa

Equipment Under Test :	Master inspiro
Set-Up :	hight = 0.9m; cables: microphone, ext. audio, USB
Operating Conditions :	f = 220MHz; without attenuator; unmodulated
Remarks :	



Zone	30 MHz - 199 MHz	199 MHz - 1 GHz
Video Bandwidth	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 26.07.07 11:21
Filename: 20077676_FCC95_er_003v.png/.txt

6.5.2 Spurious emissions (radiated – 1 GHz to 2.6 GHz)

Standard: United States: 47 CFR "Code of Federal Regulations" – Telecommunication
☒ FCC Part 2, Subpart J: Certification: §2.1053
☒ FCC Part 2: §2.1047 (Frequency range: up to tenth harmonic or 40 GHz)
☒ FCC Part 95, Subpart E: Technical regulations: §95.635(c)(1)

Distance: ☐ 30 m ☐ 10 m ☒ 3 m ☐ .....

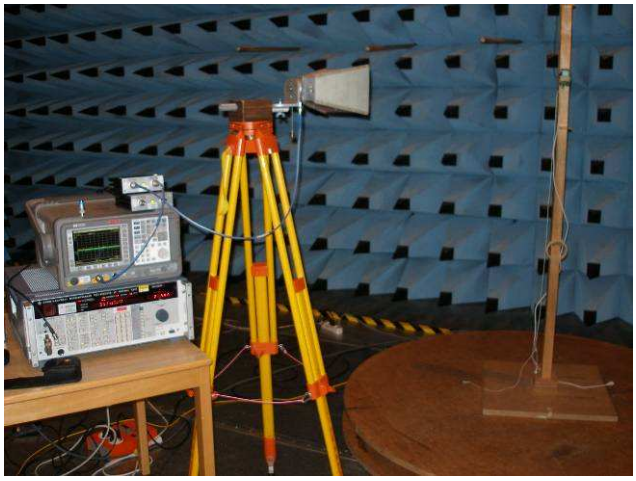
Test site: ☒ anechoic chamber (foam) ☐ shielded room
☐ anechoic chamber (ferrites) ☐ laboratory
☐ open test site ☐ .....

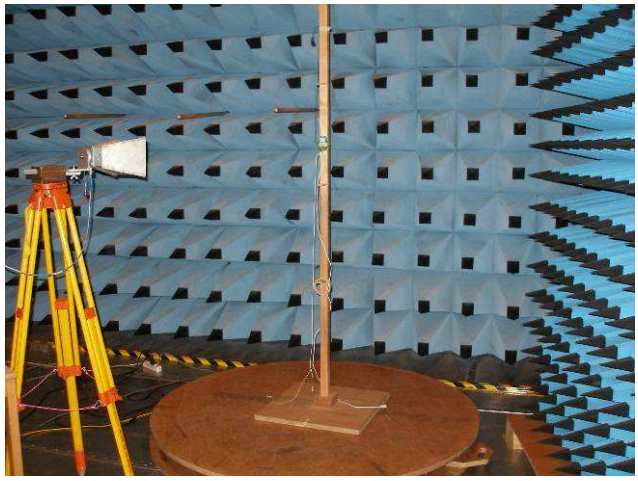
Position of EUT: *1.5 m, antenna stretched vertically* (height of the equipment under test above floor)

Meas. uncertainty: ± 4.7 dB

Test method: The antenna is placed at the same hight as the EUT successively with horizontal and vertical polarisations. The turning table is operated through 360° during the measurements. The recordings are carried out taking into account the maximum value of all the disturbances appearing while the apparatus is under test.

Test set-up:





Test equipment:

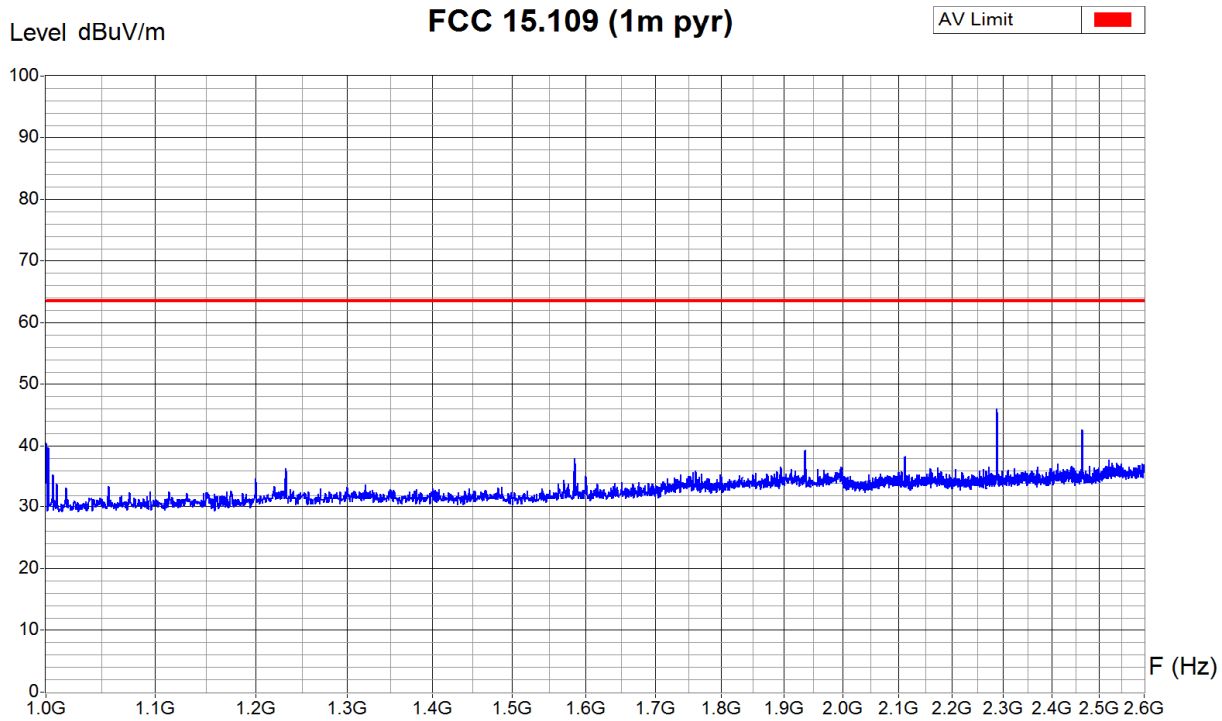
Spectrum analyser	☐ 88-14	☐ 90-26	☐ 94-24	☒ 02-06	☐ 03-45	☐ 03-57
Receiver	☐ 85-04	☐ 90-43	☐ 94-35			
Preamplifier	☐ 92-39	☐ 95-86	☐ 97-08	☐ 05-56	☒ 05-87	
Antenna (horn)	☒ 90-24	☐ 90-29	☐ 98-12	☐ 98-13	☐ 98-12	☐ 3160-09
Cables	☒ Succoflex 1m (8416/4)					

Result:	**☒ pass**	**☐ fail**	**☐ not applicable**	**☐ not tested**

Measurement Type :	Radiated Field
Polarisation :	Horizontal
Table Angle :	0 - 360°
Antenna Height :	1.5m

montena
montena emc sa

Equipment Under Test :	Master inspiro
Set-Up :	cables: microphone, ext. audio, USB
Operating Conditions :	Standby; backlight off; PA off
Remarks :	



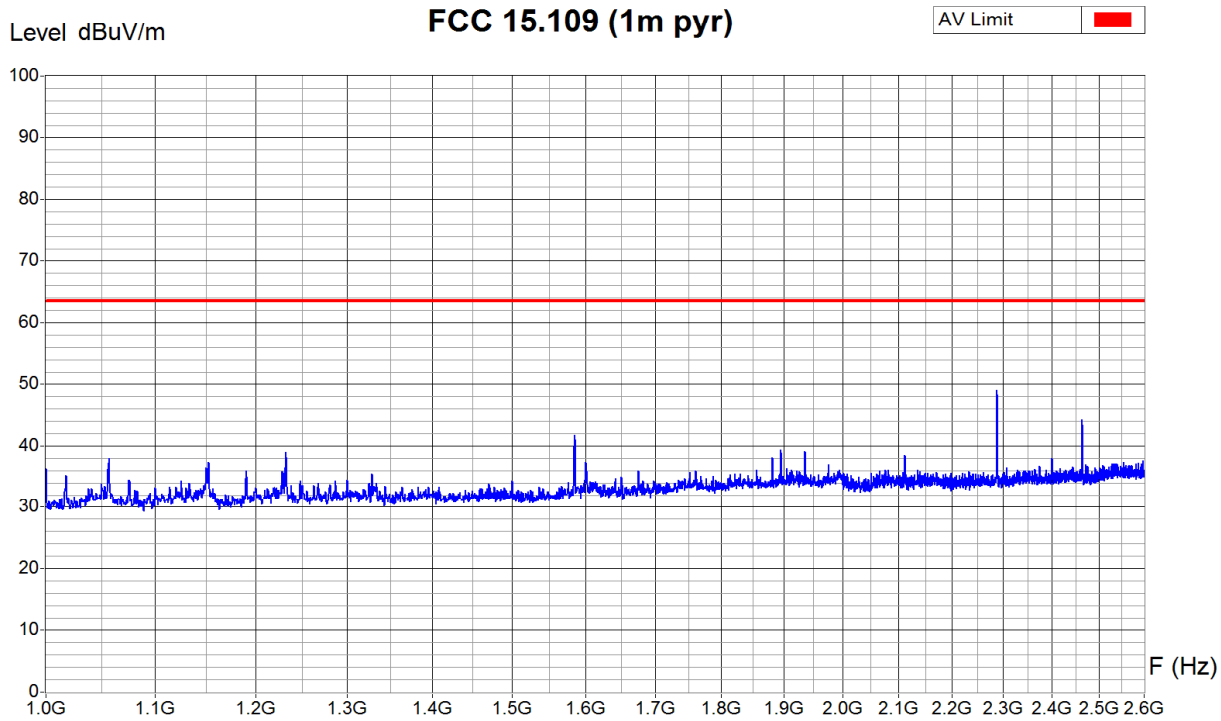
Zone	1 GHz - 2 GHz	2 GHz - 2.60 GHz
Video Bandwidth	1 MHz	1 MHz
Resol Bandwidth	1 MHz	1 MHz

Operator: E. Staub
Date/Time: 30.07.2007 14:43
Filename: 20077676_FCC95_er_009h.png/.txt

Measurement Type :	Radiated Field
Polarisation :	Vertical
Table Angle :	0 - 360°
Antenna Height :	1.5m

montena
montena emc sa

Equipment Under Test :	Master inspiro
Set-Up :	cables: microphone, ext. audio, USB
Operating Conditions :	Standby; backlight off; PA off
Remarks :	



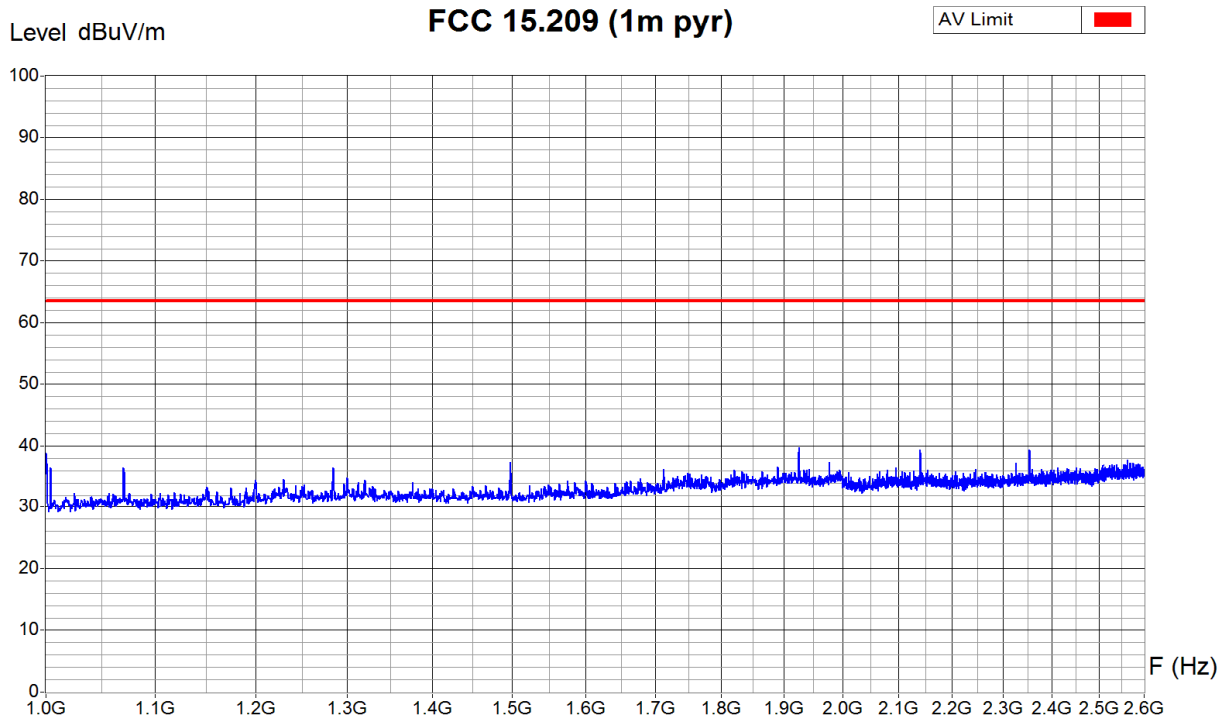
Zone	1 GHz - 2 GHz	2 GHz - 2.60 GHz
Video Bandwidth	1 MHz	1 MHz
Resol Bandwidth	1 MHz	1 MHz

Operator: E. Staub
Date/Time: 30.07.2007 14:41
Filename: 20077676_FCC95_er_009v.png/.txt

Measurement Type :	Radiated Field
Polarisation :	Horizontal
Table Angle :	0 - 360°
Antenna Height :	1.5m

montena
montena emc sa

Equipment Under Test :	Master inspiro
Set-Up :	cables: microphone, ext. audio, USB
Operating Conditions :	f = 214MHz; without attenuator; unmodulated
Remarks :	



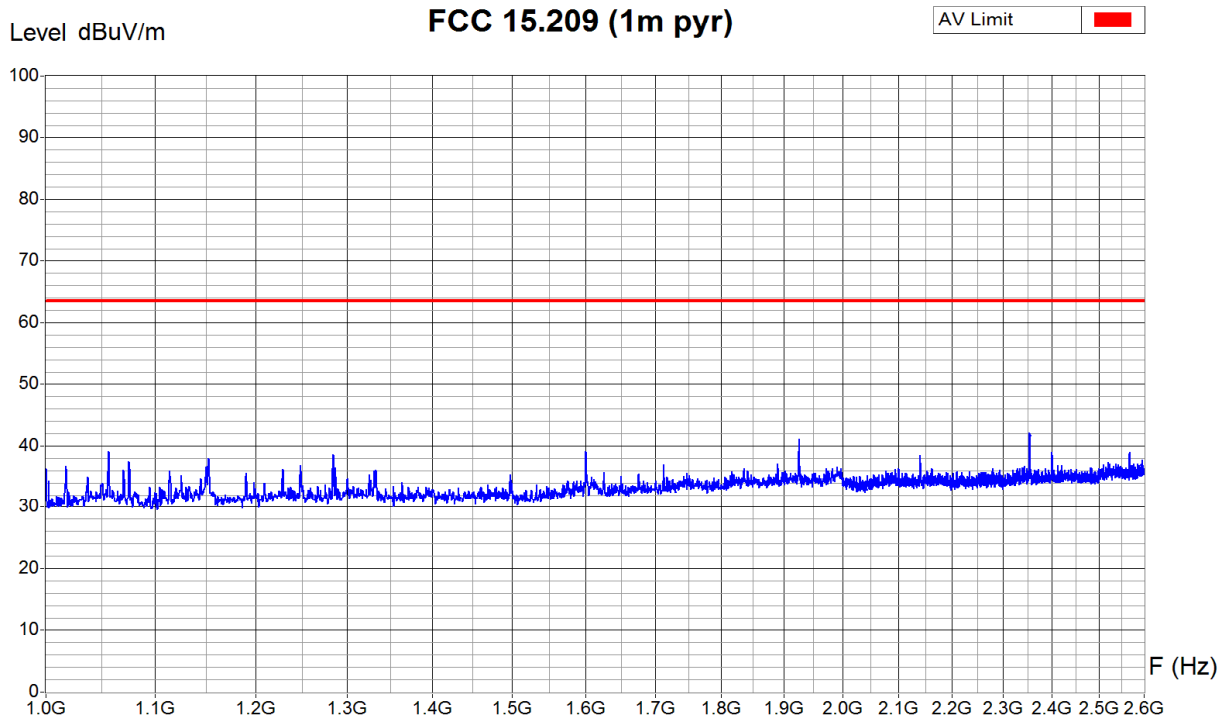
Zone	1 GHz - 2 GHz	2 GHz - 2.60 GHz
Video Bandwidth	1 MHz	1 MHz
Resol Bandwidth	1 MHz	1 MHz

Operator: E. Staub
Date/Time: 30.07.2007 14:01
Filename: 20077676_FCC95_er_010h.png/.txt

Measurement Type :	Radiated Field
Polarisation :	Vertical
Table Angle :	0 - 360°
Antenna Height :	1.5m

montena
montena emc sa

Equipment Under Test :	Master inspiro
Set-Up :	cables: microphone, ext. audio, USB
Operating Conditions :	f = 214MHz; without attenuator; unmodulated
Remarks :	



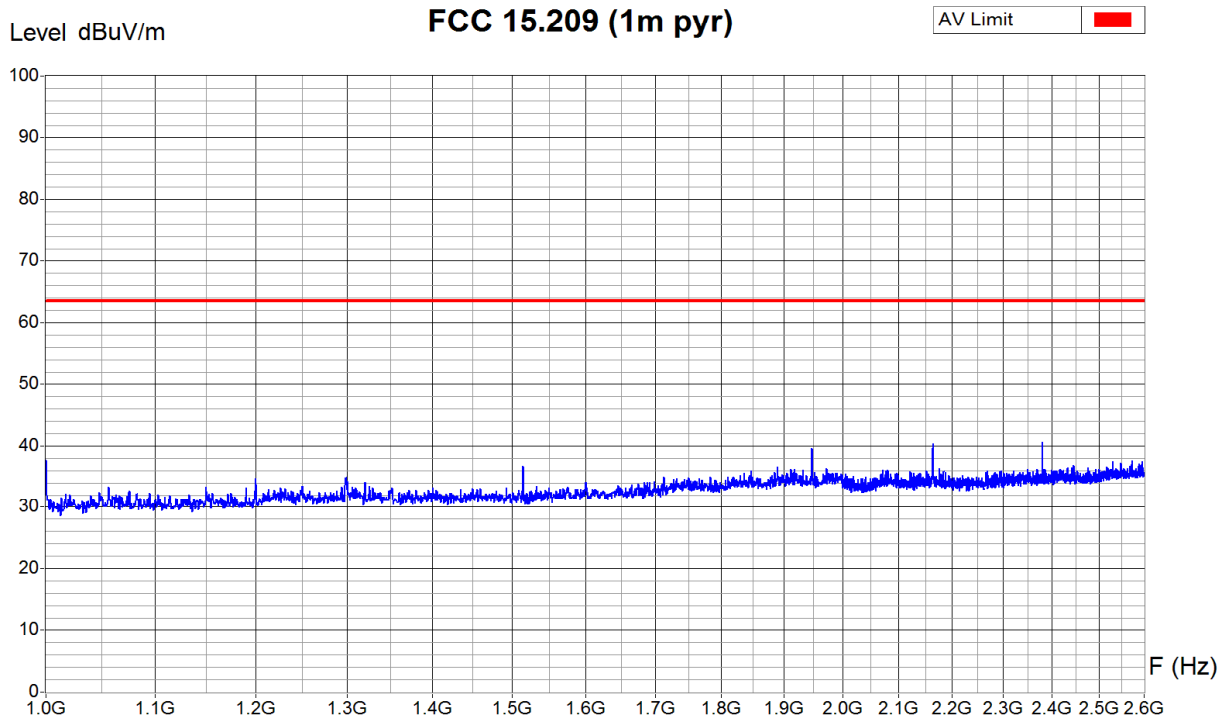
Zone	1 GHz - 2 GHz	2 GHz - 2.60 GHz
Video Bandwidth	1 MHz	1 MHz
Resol Bandwidth	1 MHz	1 MHz

Operator: E. Staub
Date/Time: 30.07.2007 13:59
Filename: 20077676_FCC95_er_010v.png/.txt

Measurement Type :	Radiated Field
Polarisation :	Horizontal
Table Angle :	0 - 360°
Antenna Height :	1.5m

montena
montena emc sa

Equipment Under Test :	Master inspiro
Set-Up :	cables: microphone, ext. audio, USB
Operating Conditions :	f = 216.3875MHz; without attenuator; unmodulated
Remarks :	



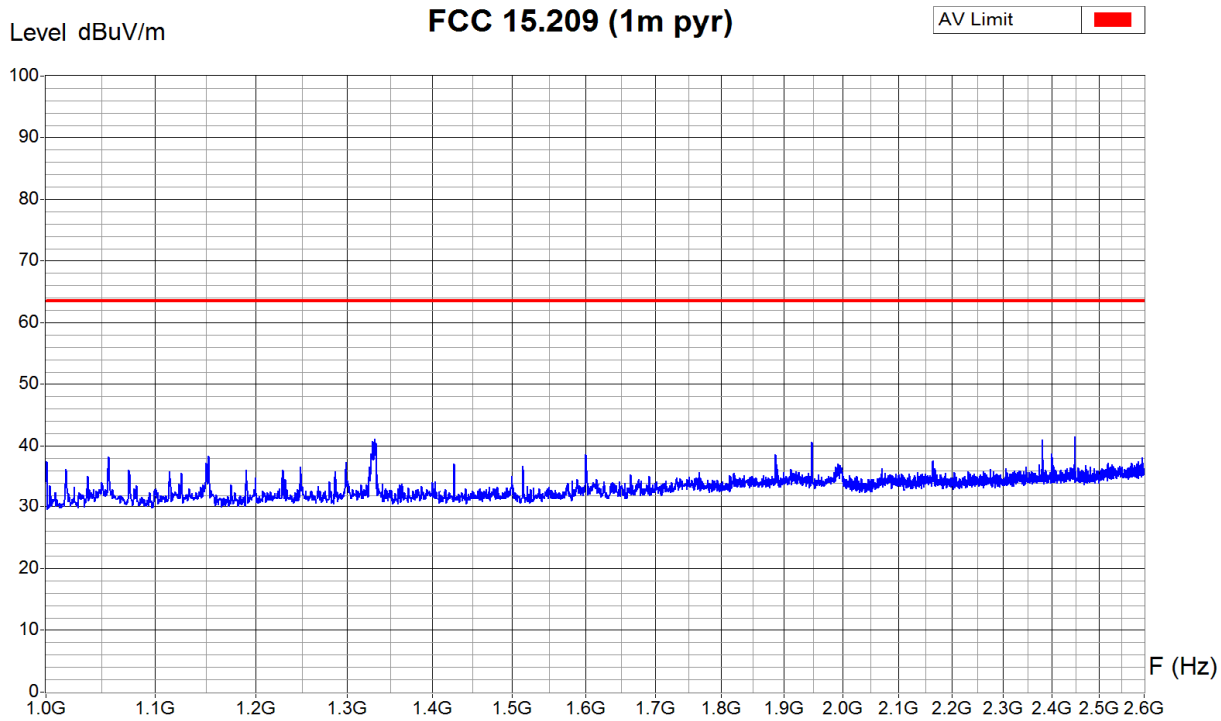
Zone	1 GHz - 2 GHz	2 GHz - 2.60 GHz
Video Bandwidth	1 MHz	1 MHz
Resol Bandwidth	1 MHz	1 MHz

Operator: E. Staub
Date/Time: 30.07.2007 14:03
Filename: 20077676_FCC95_er_011h.png/.txt

Measurement Type :	Radiated Field
Polarisation :	Vertical
Table Angle :	0 - 360°
Antenna Height :	1.5m

montena
montena emc sa

Equipment Under Test :	Master inspiro
Set-Up :	cables: microphone, ext. audio, USB
Operating Conditions :	f = 216.3875MHz; without attenuator; unmodulated
Remarks :	



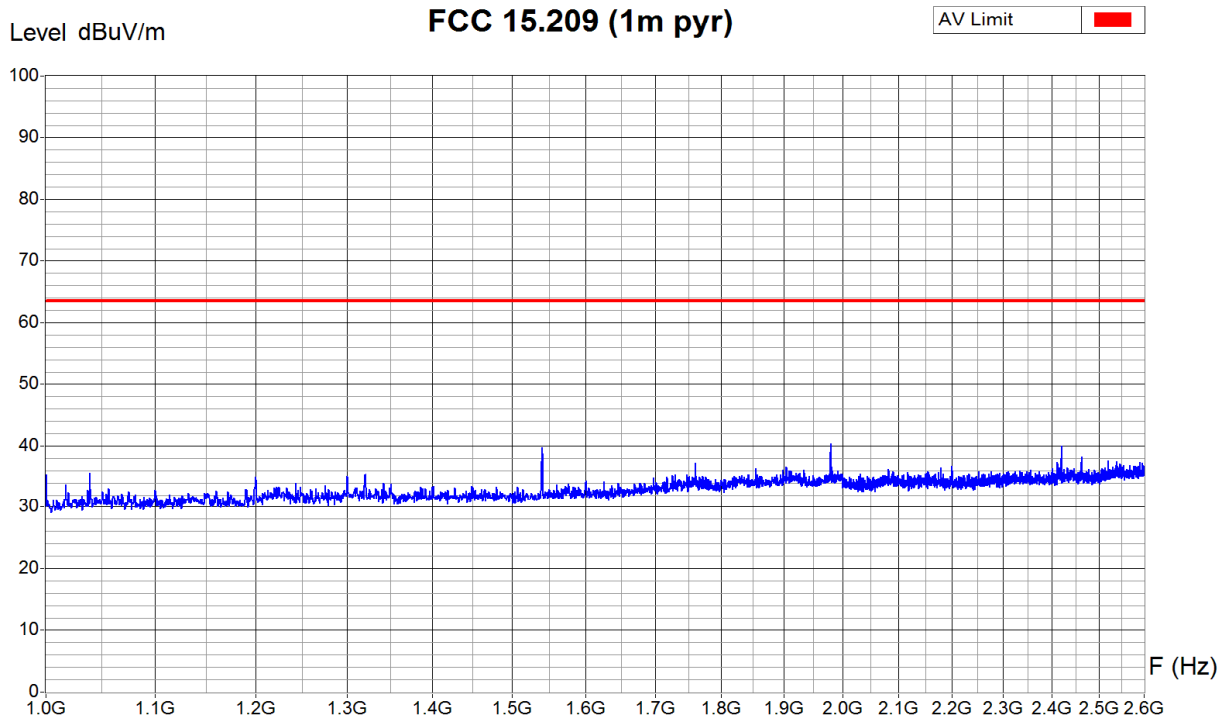
Zone	1 GHz - 2 GHz	2 GHz - 2.60 GHz
Video Bandwidth	1 MHz	1 MHz
Resol Bandwidth	1 MHz	1 MHz

Operator: E. Staub
Date/Time: 30.07.2007 14:05
Filename: 20077676_FCC95_er_011v.png/.txt

Measurement Type :	Radiated Field
Polarisation :	Horizontal
Table Angle :	0 - 360°
Antenna Height :	1.5m

montena
montena emc sa

Equipment Under Test :	Master inspiro
Set-Up :	cables: microphone, ext. audio, USB
Operating Conditions :	f = 220MHz; without attenuator; unmodulated
Remarks :	



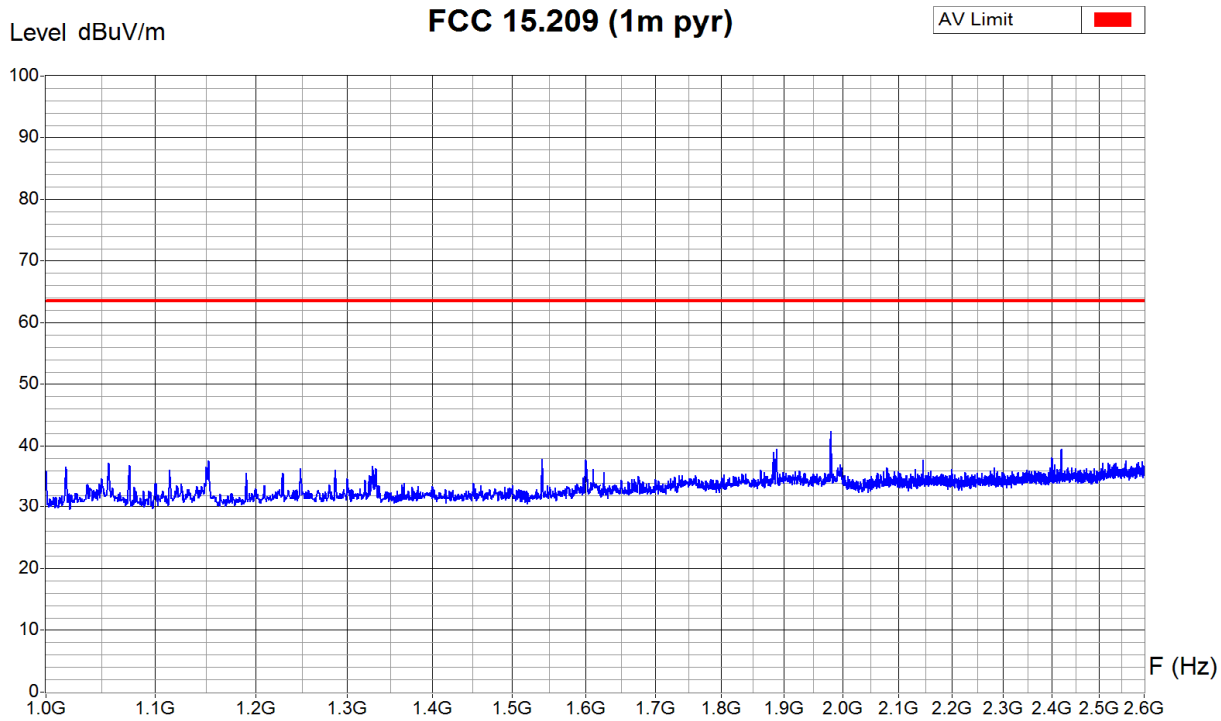
Zone	1 GHz - 2 GHz	2 GHz - 2.60 GHz
Video Bandwidth	1 MHz	1 MHz
Resol Bandwidth	1 MHz	1 MHz

Operator: E. Staub
Date/Time: 30.07.2007 14:11
Filename: 20077676_FCC95_er_012h.png/.txt

Measurement Type :	Radiated Field
Polarisation :	Vertical
Table Angle :	0 - 360°
Antenna Height :	1.5m

montena
montena emc sa

Equipment Under Test :	Master inspiro
Set-Up :	cables: microphone, ext. audio, USB
Operating Conditions :	f = 220MHz; without attenuator; unmodulated
Remarks :	



Zone	1 GHz - 2 GHz	2 GHz - 2.60 GHz
Video Bandwidth	1 MHz	1 MHz
Resol Bandwidth	1 MHz	1 MHz

Operator: E. Staub
Date/Time: 30.07.2007 14:07
Filename: 20077676_FCC95_er_012v.png/.txt

6.6 Frequency and power level stability

Standard: United States: 47 CFR "Code of Federal Regulations" – Telecommunication
☒ FCC Part 2, Subpart J: Certification: §2.1055
☒ FCC Part 95, Subpart E: Technical regulations: §95.629(b)(2)
☒ FCC Part 95, Subpart E: Technical regulations: §95.639(e)
Limit for LPRS = 100 mW = 20 dBm

Test site:

☐ anechoic chamber (foam)	☐ shielded room
☐ anechoic chamber (ferrites)	☒ laboratory
☐ open test site	☐ .....

Test method: Measurement of the frequency and the power level at the antenna connector or at the test fixture.

Test set-up:

Remarks: - - -

Test equipment:

Spectrum analyser	☐ 88-14	☐ 90-26	☐ 94-24	☒ 02-06	☐ 03-45	☐ 03-57
Receiver	☐ 85-12	☐ 90-11	☐ 94-34	☐ 04-28	☐	
Temperature chamber	☒ 06-66					
Temperature probe	☒ 91-11	☐ 03-05	☐ 05-34			
Variable transformer	☐ 75-04	☐ …….				
Power supply	☐ 99-04	☒ 04-31				
Multimeter	☒ 05-47	☐ 06-51	☐ …….			
Cables	☒ Succoflex 1m (8416/4)					

Result: ☒ **pass** ☐ **fail** ☐ **not applicable** ☐ **not tested**

Results of the test

Client: *Phonak Communications SA*

Apparatus: *Inspiro (FM part)*

Operating mode: *Normal operation without audio input signal*

Remarks: - - -

Variation of the temperature

Requirement:
∆f < 50 ppm and P < 100 mW (20 dBm) with temperature varied from –30° to + 50° in steps of 10 degrees.

Temp [°C]	f [MHz]	Error [ppm]	Limit [ppm]	P [dBm]	P ERP [dbm]	Limit [dBm]	Remarks	Pass Yes	Pass No
-30	*216.387319*	*0.5*	*50*	*9.73*	*4.55*	*20*	*- - -*	☒	☐
-20	*216.387441*	*0.0*	*50*	*10.11*	*4.93*	*20*	*- - -*	☒	☐
-10	*216.387404*	*0.2*	*50*	*10.67*	*5.49*	*20*	*- - -*	☒	☐
0	*216.387465*	*-0.1*	*50*	*10.81*	*5.63*	*20*	*- - -*	☒	☐
10	*216.387441*	*0.0*	*50*	*11.03*	*5.85*	*20*	*- - -*	☒	☐
23.8	*216.387437*	*ref*	*ref*	*11.2*	*6.02*	*20*	*- - -*	☒	☐
30	*216.387392*	*0.2*	*50*	*11.36*	*6.18*	*20*	*- - -*	☒	☐
40	*216.387453*	*-0.1*	*50*	*11.39*	*6.21*	*20*	*- - -*	☒	☐
50	*216.387367*	*0.3*	*50*	*11.32*	*6.14*	*20*	*- - -*	☒	☐

Variation of the supply voltage

Requirement:
∆f < 50 ppm and P < 100 mW (20 dBm) with supply voltage varied from 85% to 115%

Volt [%]	Volt [V]	Frequency [MHz]	Difference [ppm]	Limit [ppm]	P ERP [dBm]	Limit [dBm]	Remarks	Pass Yes	Pass No
85	*3.15*	*216.387437*	*0*	*50*	*6.02*	*20*	*- - -*	☒	☐
100	*3.7*	*216.387437*	*ref*	*ref*	*6.02*	*20*	*- - -*	☒	☐
115	*4.26*	*216.387437*	*0*	*50*	*6.02*	*20*	*- - -*	☒	☐

Date of test: *August 2, 2007*
Operator: *E. Staub*

7. Prospectus of the product / Prospectus du produit / Produktprospekt

Press Release – For immediate release

Phonak launches inspiro and first MicroLink receivers with Dynamic FM technology

Nuremberg, Germany, October 2007 — At the EUHA 2007 Conference in Nuremberg, Phonak unveils a once-in-a-decade breakthrough in hearing technology. The company's new Dynamic FM platform enhances speech understanding in noisy situations to a degree previously thought impossible.

During clinical testing with a group of hearing impaired persons in the USA, the Dynamic FM platform boosted speech scores by a staggering 80% in loud ambient noise. The benchmark for the test was a conventional FM system, the current leading technology when it comes to optimal understanding of speech in noise.

The new technology is the outcome of four years' intensive development by a large, dedicated group of engineers in the Phonak laboratories. The first products based on the new Dynamic FM platform are inspiro (a new FM transmitter), MLxi and ML10i (both new FM receivers). All three products feature a new chip, new algorithms, new software and new mechanics. The new receivers adjust automatically to hearing instruments, which means the time-consuming job of programming receiver parameters to the various types of audio input wiring in hearing instruments is well and truly a thing of the past.

According to Phonak audiologist Hans Mülder, 'This will totally reshape the face of FM systems and is exceptionally good news for hearing impaired children around the world.'

Along with its suite of trailblazing new products, Phonak also heralds the first-time appearance of DataLogging FM in the FM arena. This invaluable feature will help audiologists to optimize the use of FM systems in everyday situations. Apart from this, the new platform comes with a SoundCheck system to help teachers optimize their microphone position and indicate how much noise is present in the classroom. Receiver status can be monitored wirelessly simply by pushing a button on the transmitter, giving teachers daily reassurance that the system is working perfectly and that pupils are not missing a thing.

The new Dynamic FM products are designed for use by hearing impaired children at home and at kindergarten as well as in regular and special schools.

Phonak expects Dynamic FM to replace multifrequency systems soon as the new global standard in FM technology. Dynamic FM encompasses all the features and benefits of multifrequency systems, and Dynamic FM has full backwards compatibility.

The new, tiny MLxi Dynamic FM receiver

Naída hearing instruments with the universal (left) and design integrated (right) Dynamic FM receivers

The new inspiro transmitter for schools

About Phonak

Headquartered near Zurich, Switzerland, Phonak has developed, produced and globally distributed state-of-the-art hearing systems and wireless devices for over 50 years. The combination of expertise in hearing technology, mastery in acoustics and strong cooperation with hearing care professionals allows Phonak to significantly improve people's hearing ability and speech understanding and therefore their quality of life.

Phonak offers a complete range of digital hearing instruments, along with complementary wireless communication systems. With 2'500 employees worldwide, Phonak drives innovation and sets new industry benchmarks regarding miniaturization and performance.

For more information, please visit www.phonak.com or contact:

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Phonak – Life is on
We are sensitive to the needs of everyone who depends on our knowledge, ideas and care. And by creatively challenging the limits of technology, we develop innovations that help people hear, understand and experience more of life's rich soundscapes.

Interact freely. Communicate with confidence. Live without limit. Life is on.