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Registration number
Numéro d'accréditation
Akkreditierungsnummer

STS 024

Schweizerischer Prüfstellendienst
Service suisse d'essai
Swiss testing service



Report: Rapport: Bericht:	Electromagnetic compatibility			Report no: Rapport no: Bericht Nr:	15'494
Product name: Nom du produit: Produktname	Audéo WHS			Mandate no: Mandat no: Auftrag Nr:	20088413
Serial no: No de série: Seriennummer:	Nano 24998	Model number: Numéro de modèle: Modellnummer:	---		
Customer: Client: Kunde:	Phonak AG Laubisrütistrasse 28 CH 8712 Stäfa	Date of test: Date de l'essai: Prüfdatum:	September 19, 2008		

Standards / Normes / Normen	Result Résultat Ergebnis
CFR 47, Part 15, Subpart C, Intentional radiator, Paragraph 15.207 & 15.209	Pass

Test performed by
Essai effectué par :
Prüfer

Mr Emmanuel de Raemy

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

Mr Emmanuel de Raemy

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

Mr Erich Staub

Rossens, October 14, 2008.

(Issue Date / Date d'édition / Ausstelldatum)

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The present document results from tests on a specimen and does not prejudice 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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1. Summary of test results / Résumé des résultats d'essais / Zusammenfassung der Prüfergebnisse

✓ Pass / Réussi / Bestanden

✗ Fail / Echoué / Nicht bestanden

Ø 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	
----	Conducted emission Émission par conduction Geleitete Emission CFR 47 § 15.207 RSS-Gen § 7.2.2	Ø ¹
6.1	Radiated emission – H-field Émission par rayonnement – Champ H Gestahlte Emission – H-Feld CFR 47 § 15.209 RSS-310 Tables 3 and 4	✓
6.2	Radiated emission – EM-field Émission par rayonnement – Champ EM Gestahlte Emission – EM-Feld CFR 47 § 15.209 RSS-310 Tables 3 and 4	✓

1. Powered by battery

2. Applied standards / Normes appliquées / Verwendete Normen

47 CFR Part 15	Code of Federal Regulations - Telecommunication, FCC Part 15 - Radio frequency devices
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3. Client / Client / Kunde

Client name and address Nom et adresse du client Name und Adresse des Kunden	Phonak AG Laubisrütistrasse 28 CH 8712 Stäfa
Contact Person / Responsable / Kontaktperson	Mr Stefan Kniess
Telephone / Téléphone / Telefon	++41 58 928 85 19
Fax / Télécopieur / Telefax	++41 58 928 81 05
E-mail / Courrier électronique / E-mail	stefan.kniess@phonak.com
Mandate no / No. de mandat / Auftragsnr.	20088413

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 AG Laubisrütistrasse 28 CH 8712 Stäfa
Production country / Pays de fabrication / Ursprungsland	Switzerland
Brand name / nom de marque / Verkaufsmarke	Phonak
Product name / Nom du produit / Produktname	Audéo WHS
Product description / Description du produit / Produktbeschreibung	Hearing aid
Model number / Numéro de modèle / Modellnummer	---
Serial no / No. de série / Seriennummer	Nano 24998
Software version / Version du logiciel / Softwareversion	0.6.0.0
Highest frequency / Fréquence la plus élevée / Höchste Frequenz	11MHz
Supply / Alimentation / Speisung	1 x Zink – air 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

	Audéo WHS with loudspeaker cable. 70 mm
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Audéo WHS with open battery case

4.3 Classification / Classification / Klassierung

CFR 47 Part 15	☐ Unintentional radiator (Subpart B) ☒ Intentional radiator (Subpart C) ☐ Class A digital device ☐ Class B digital device
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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 [QFF]:	Rel. humidity / Humidité rel. / Rel. Luftfeuchtigkeit:
montena emc sa CH-1728 Rossens	September 19, 2008	20 - 22 °C	1020 – 1022 hPa	33 - 40 %

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).

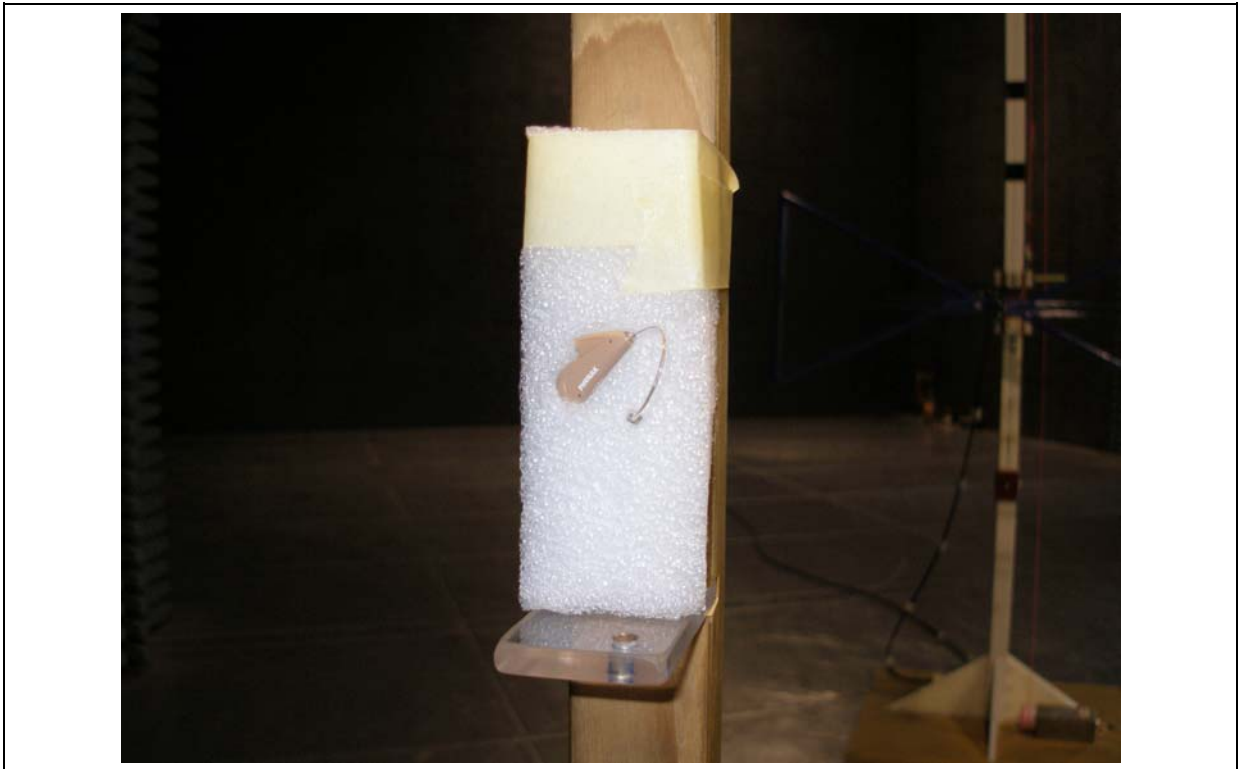
Conducted and radiated measurements are performed according to the ANSI C63.4 (2003) procedure.

5.3 Attendant persons / Personnes présentes / Anwesende Personen**Test Engineer(s) / Ingénieur(s) d'essai / Prüfsingenieur(e) :**

Mr Emmanuel de Raemy

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

Name / Nom / Name	Company / Société / Firma
<i>Mr Stefan Kniess</i>	<i>Phonak AG</i>

5.4 Test configuration / Configuration d'essai / Prüfkongfiguration**5.5 Operating conditions / Conditions de fonctionnement / Betriebszustand**

Zoom control = continuous transmitting

5.6 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. Emission tests

6.1 Radiated emission - Magnetic field

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

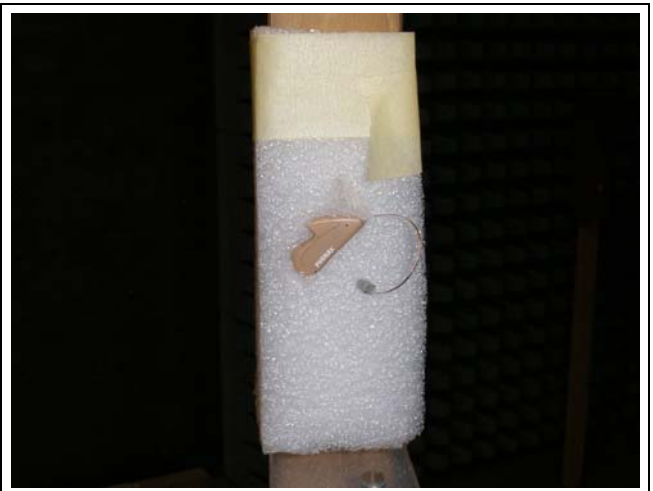
Meas. distance: ☐ 3 m ☒ 10 m ☐ 30 m ☐ m

Meas. uncertainty: ± 2.8 dB (10 m)

Position of EUT: 1.55 m (height of the equipment under test above floor)

Measuring method: The magnetic disturbance radiated by the equipment under test is measured using a spectrum analyser and a wide band magnetic antenna. The recording is carried out taking into account the maximum value of the disturbance appearing during the functioning of the apparatus under test. The peak values are recorded continuously on a graph. The values exceeding the limits are remeasured using a measuring receiver.

Test set-up:



Remarks:

- Limit correction of measuring distance with 40 dB /decade

Test equipment:

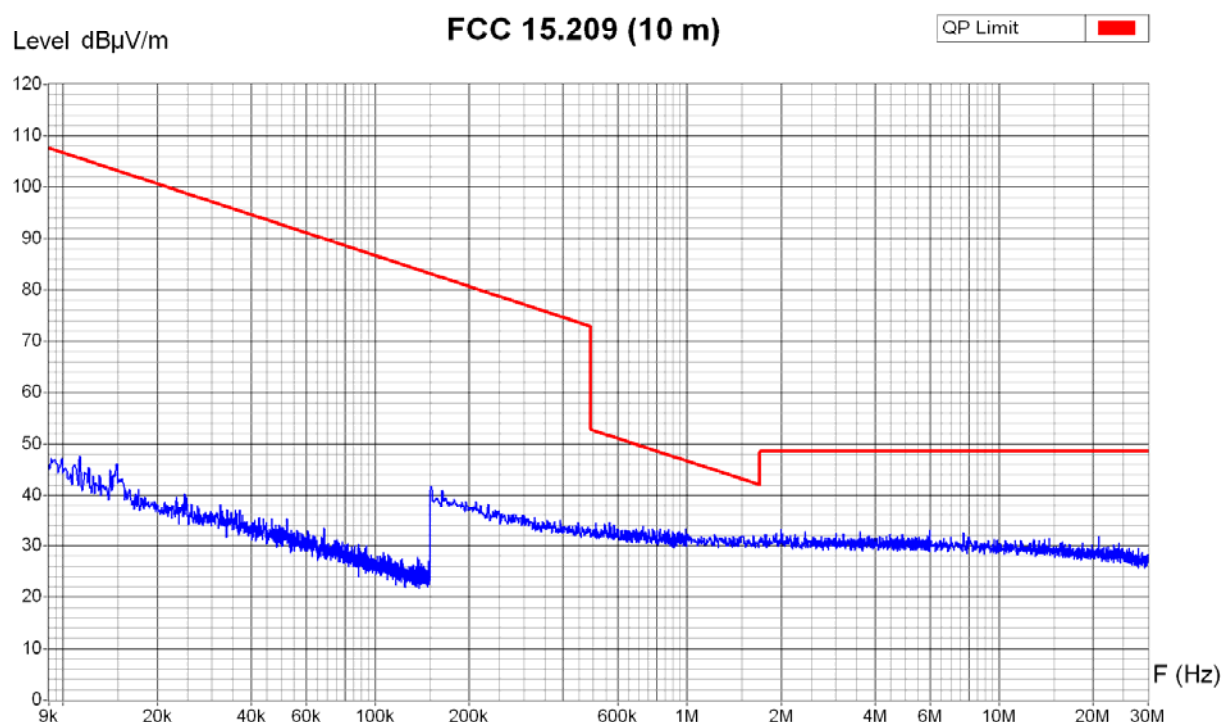
Spectrum analyser	☐ 88-14	☐ 90-26	☐ 94-24	☐ 02-06	☒ 03-45	☐ 03-57
Receiver	☐ 85-12	☐ 90-11	☒ 94-34	☐ 04-28	☐	
Antenna (typ: magnetic)	☐ 90-25	☒ 90-28	☐ 99-32	☐		
Cables	☒ 06-01					

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

Measurement Type : Radiated Field
Polarisation : Perpendicular
Table Angle : 0 - 360°
Antenna Height : 1 m (center)



Equipment Under Test : Audéo WHS
Set-Up : Original
Operating Conditions : Zoom control (continuous transmitting)
Remarks : Limit correction of measuring distance with 40 dB /dec



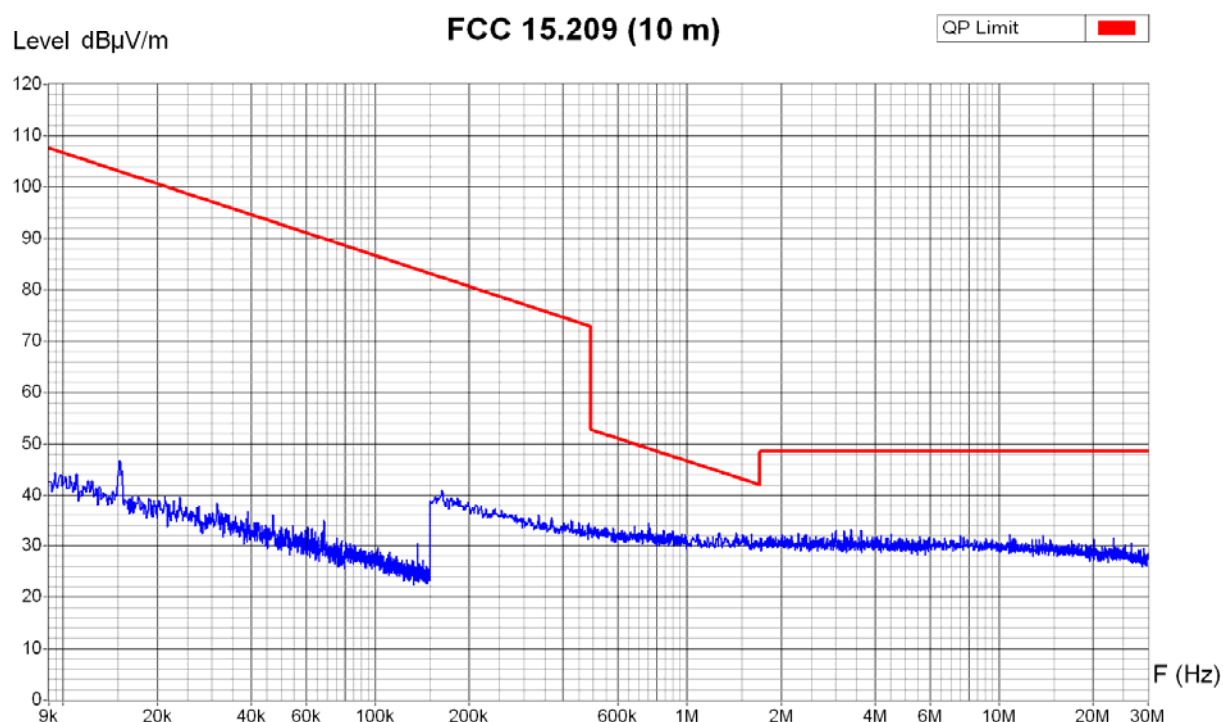
Zone	9 KHz - 80 KHz	150 KHz - 1 MHz	1 MHz - 6 MHz	6 MHz - 30 MHz	80 KHz - 150 KHz
Video Bandwidth	300 Hz	10 KHz	10 KHz	10 KHz	300 Hz
Resol Bandwidth	300 Hz	10 KHz	10 KHz	10 KHz	300 Hz

Operator: E. de Raemy
Date/Time: 19.09.08 13:55
Filename:
FCC_RE_PER02.png/.txt

Measurement Type : Radiated Field
Polarisation : Parallel
Table Angle : 0 - 360°
Antenna Height : 1 m (center)



Equipment Under Test : Audéo WHS
Set-Up : Original
Operating Conditions : Zoom control (continuous transmitting)
Remarks : Limit correction of measuring distance with 40 dB /dec



Zone	9 KHz - 80 KHz	150 KHz - 1 MHz	1 MHz - 6 MHz	6 MHz - 30 MHz	80 KHz - 150 KHz
Video Bandwidth	300 Hz	10 KHz	10 KHz	10 KHz	300 Hz
Resol Bandwidth	300 Hz	10 KHz	10 KHz	10 KHz	300 Hz

Operator: E. de Raemy
Date/Time: 19.09.08 14:05
Filename:
FCC_RE_PAR02.png/.txt

6.2 Radiated emission - Electromagnetic field ($f \leq 1$ GHz)

Test site: ☒ anechoic chamber (ferrites) ☐

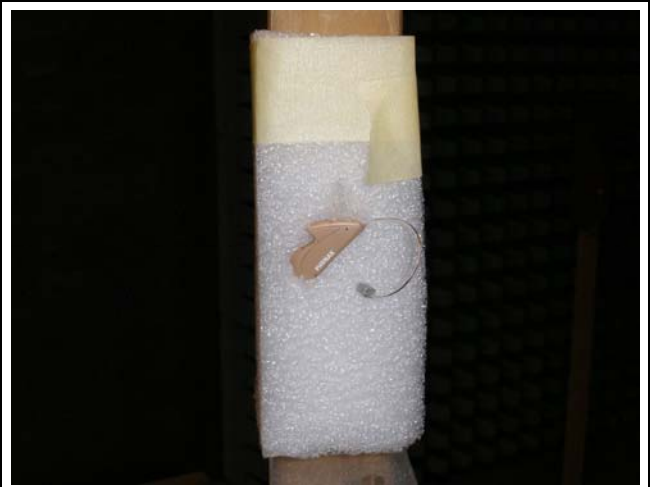
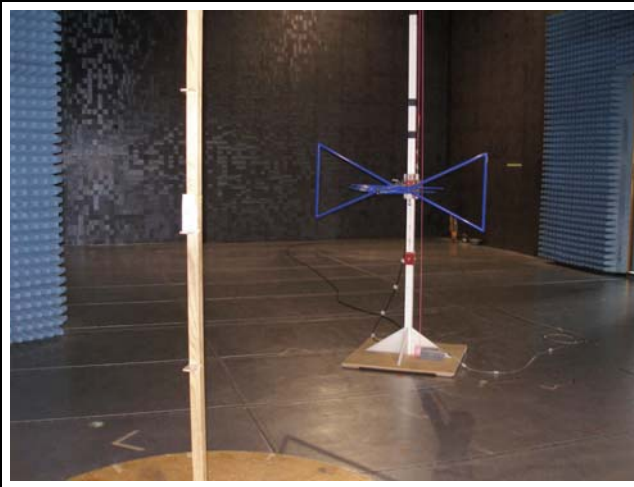
Distance: ☐ 30 m ☐ 10 m ☒ 3 m ☐

Position of EUT: 1.55 m (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 electromagnetic disturbance radiated by the equipment is measured using a spectrum analyser and a wide band antenna. The antenna is moved from 1 to 4 m in height 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. The peak values are recorded continuously on the graph. The values exceeding a limit are remeasured manually using a receiver.

Test set-up:



Remarks: Limit values expressed in dB μ V/m and transformed to a measuring distance of 3 m (factor used = 20 dB/decade) if necessary
e.g.: for $f = 40$ MHz the limit is 100 μ V/m at 3m;

$$20 \log \left(\frac{100_{[\mu V / m]}}{1_{[\mu V / m]}} \right) = 40 \text{ dB} \mu V / m \text{ at } 3m$$

Test equipment:

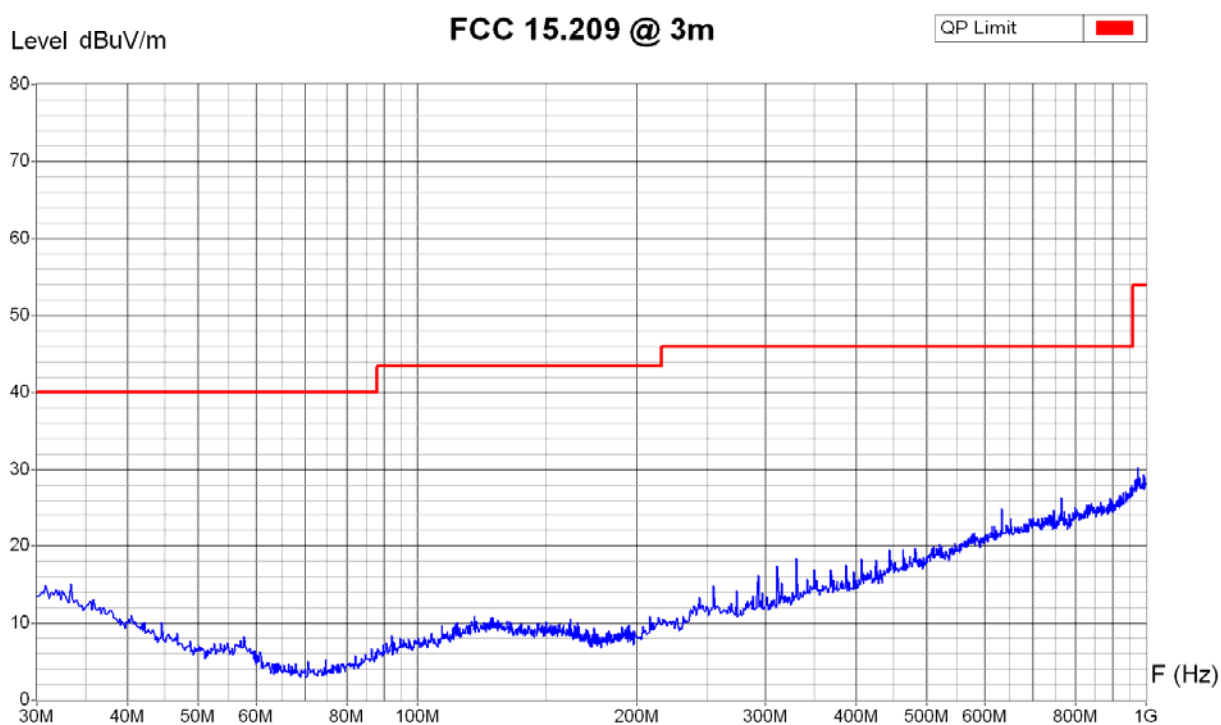
Spectrum analyser	☐ 88-14	☐ 90-26	☐ 94-24	☐ 02-06	☒ 03-45	☐ 03-57
Receiver	☐ 85-04	☐ 90-43	☒ 94-35			
Preamplifier	☐ 90-01	☐ 95-86	☐ 05-56	☒ 05-59	☐ 05-62	☐
Antenna (bilog)	☒ 94-03	☐ 05-38	☐			
Cables	☒ 06-01					

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

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 1 / 1.5 / 2 / 2.5 m



Equipment Under Test : Audéo WHS
 Set-Up : Original
 Operating Conditions : Zoom control (continuous transmitting)
 Remarks :



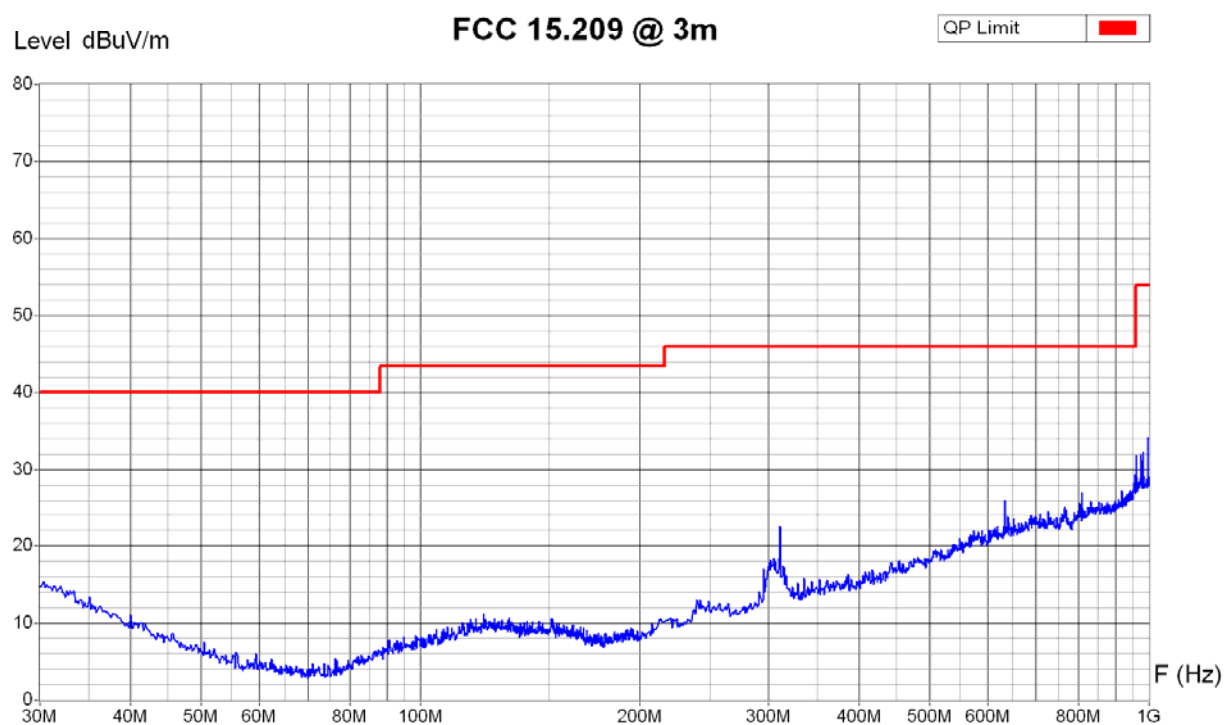
Zone	30 MHz - 199 MHz	199 MHz - 1 GHz
Video Bandwidth	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz

Operator: E. de Raemy
 Date/Time: 19.09.08 18:10
 Filename:
 FCC_RE_v02.png/.txt

Measurement Type : Radiated Field
Polarisation : Horizontal
Table Angle : 0 - 360°
Antenna Height : 1 / 1.5 / 2 / 2.5 m



Equipment Under Test : Audéo WHS
Set-Up : Original
Operating Conditions : Zoom control (continuous transmitting)
Remarks :



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

Operator: E. de Raemy
Date/Time: 19.09.08 18:24
Filename:
FCC_RE_h02.png/.txt