

**montena**

montena emc sa

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:	15'194A *
Product name: Nom du produit: Produktname	Inspiro (41 kHz 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 27, 2007	

* Replaces report 15'194 / Remplace rapport 15'194 / Ersetzt Bericht 15'194

Standards / Normes / Normen	Result Résultat Ergebnis
CFR 47, Part 15, Subpart C, Intentional radiator, Paragraph 15.207/209	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 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	Ø ¹
6.1	Radiated emission – H-field Émission par rayonnement – Champ H Gestahlte Emission – H-Feld CFR 47 § 15.209	✓

1. Powered with / Alimenté avec / Gespeist mit : Internal battery

2. Applied standards / Normes appliquées / Verwendete Normen

47 CFR Part 15 Subpart C	Code of Federal Regulations - Telecommunication, FCC Part 15, Subpart C: "Intentional Radiators"
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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	<i>Phonak Communications SA Länggasse 17 CH-3280 Murten</i>
Production country / Pays de fabrication / Ursprungsland	<i>Switzerland</i>
Brand name / nom de marque / Verkaufsmarke	<i>Phonak</i>
Product name / Nom du produit / Produktname	<i>Inspiro (41 kHz part)</i>
Product description / Description du produit / Produktbeschreibung	<i>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:</i> <i>• 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),</i> <i>• MultiTalker Network capability,</i> <i>• Data logging,</i> <i>• Monitoring of the corresponding receivers</i>
Model number / Numéro de modèle / Modellnummer	<i>- - -</i>
Serial no / No. de série / Seriennummer	<i>SATV2.2_100 to SATV2.2_103</i>
Software version / Version du logiciel / Softwareversion	<i>Pré-alpha V1</i>
Highest frequency / Fréquence la plus élevée / Höchste Frequenz	<i>Carrier at 41 kHz</i>
Supply / Alimentation / Speisung	<i>U = 3.7 VDC internal Lithium-Ion battery</i>
Technical documentation Documentation technique Technische Dokumentation	<i>None. The equipment is completely identified by its serial no. according to ISO 9001.</i>

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*

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

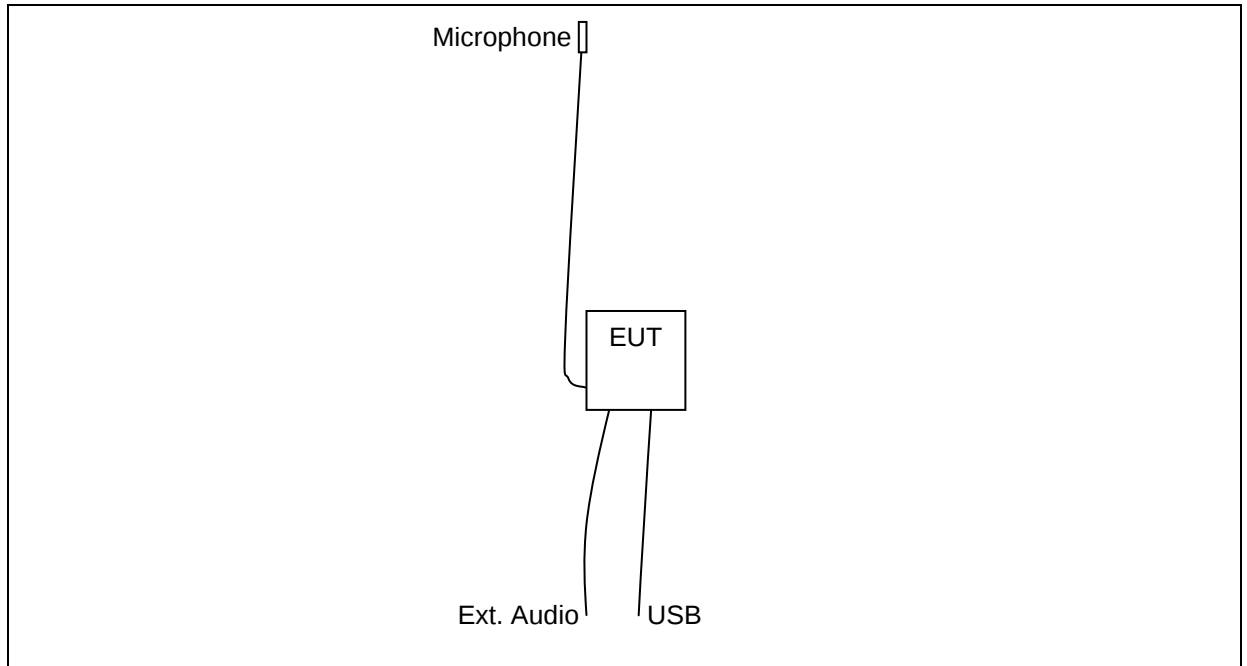
Location / Lieu / Ort:	Date / Date / Datum:	Temp. / Temp. / Temp.:	Pressure / Pression / Druck:	Rel. humidity / Humidité rel. / Rel. Luftfeuchtigkeit:
montena emc sa CH-1728 Rossens	July 27, 2007	20 – 25 °C	1030 hPa	43 %

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 / Prüflingenieur(e) :***Mr Erich Staub***Other(s) / Autre(s) / Andere :**

Name / Nom / Name	Company / Société / Firma
<i>Mr Sébastien Holzer</i>	<i>Phonak Communications SA</i>

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 Radiated emission - Magnetic field

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

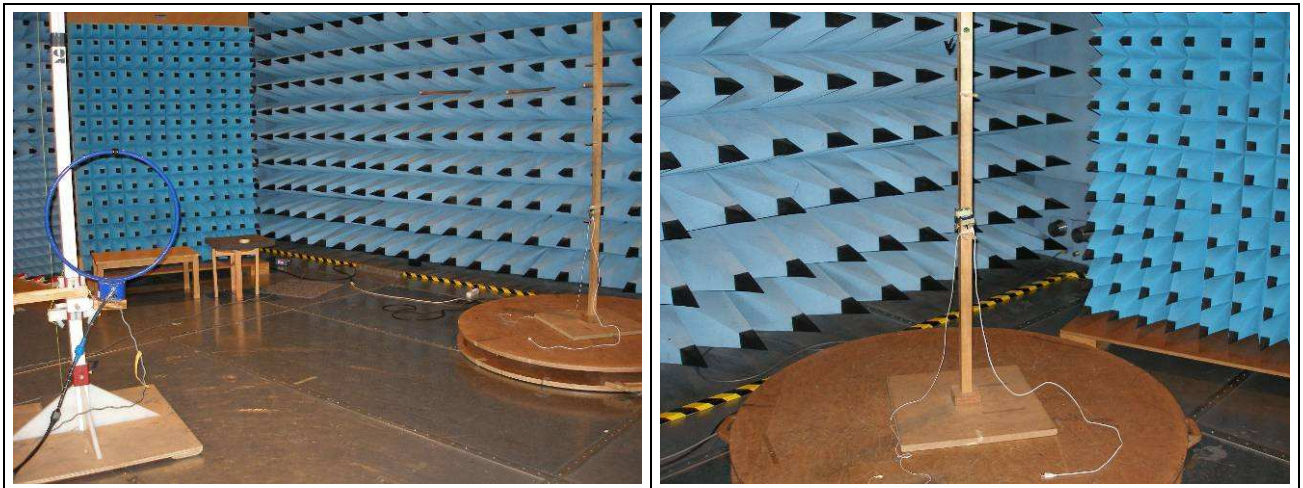
Meas. distance: ☒ 3 m ☐ 10 m ☐ 30 m ☐ m

Meas. uncertainty: ± 2.8 dB (10 m)

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

Measuring method: The magnetic disturbance radiated by the equipment under test is measured using a spectrum analyser and a wide band magnetic antenna. The center of the antenna is placed at 1 m of height, first in the direction of the apparatus under test, then at 90° to the apparatus and if required also horizontally. If possible the turning table is operated through 360° during the measurement. 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 values expressed in dB μ A/m (factor used = 377Ω = -51.5 dB = free-space wave impedance) and transformed to a measuring distance of 3m (factor used = 40 dB/decade) if necessary
 e.g.: for $f = 9\text{kHz}$ the limit is $2400/f(\text{kHz})\mu\text{V/m}$ at 300 m;
 $20 \log_{10} (2400/9\mu\text{V/m}) - 20 \log_{10} (377 \Omega) + 40 \log_{10} (300\text{m}/3\text{m}) = 77 \text{ dB}\mu\text{A/m}$ at 3m

for $f = 30\text{MHz}$ the limit is $30\mu\text{V/m}$ at 30 m;
 $20 \log_{10} (30\mu\text{V/m}) - 20 \log_{10} (377 \Omega) + 40 \log_{10} (30\text{m}/3\text{m}) = 18 \text{ dB}\mu\text{A/m}$ at 3m

Test equipment:

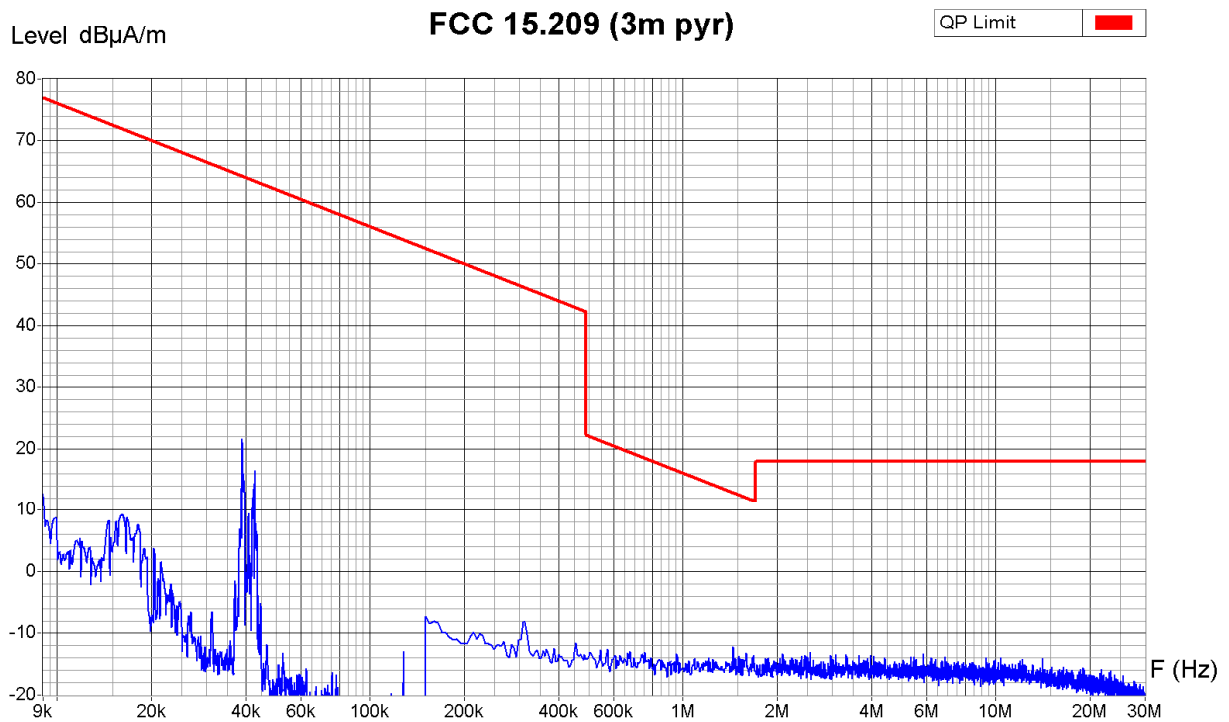
Spectrum analyser	☐ 88-14	☐ 90-26	☐ 94-24	☒ 02-06	☐ 03-45	☐ 03-57
Receiver	☐ 85-12	☐ 90-11	☐ 94-34	☐ 04-28	☐	
Preamplifier	☐ 90-01	☐ 95-86	☐ 05-56	☐ 05-59	☐ 05-62	☐ 05-87
Antenna (typ: magnetic)	☒ 90-25	☐ 90-28	☐ 99-32	☐		
Cables	☒ 06-00					

Result:	☒ pass	☐ fail	☐ not applicable	☐ not tested
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Measurement Type : Radiated Field
Polarisation : Horizontal
Table Angle : 0 - 360°
Antenna Height : 1m (centre part of loop)



Equipment Under Test : Master inspiro
Set-Up : hight = 0.9m; cables: microphone, ext. audio, USB
Operating Conditions : 41 kHz on; PA off;
Remarks :



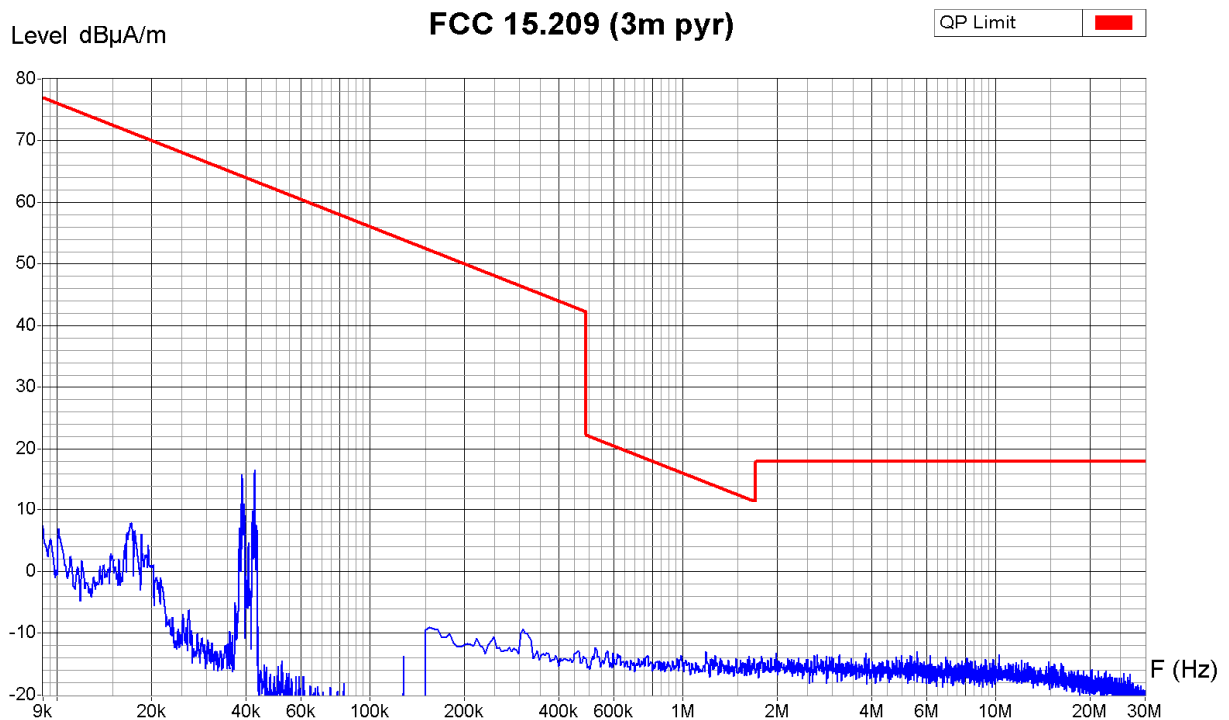
Zone	9 KHz - 37 KHz	37 KHz - 44 KHz	150 KHz - 10 MHz	10 MHz - 30 MHz	44 KHz - 150 KHz
Video Bandwidth	300 Hz	300 Hz	10 KHz	10 KHz	300 Hz
Resol Bandwidth	300 Hz	300 Hz	10 KHz	10 KHz	300 Hz

Operator: E. Staub
Date/Time: 27.07.07 10:25
Filename:
20077676_FCC15_erh_000ho.pn
gl.txt

Measurement Type : Radiated Field
Polarisation : Parallel
Table Angle : 0 - 360°
Antenna Height : 1m (centre part of loop)



Equipment Under Test : Master inspiro
Set-Up : hight = 0.9m; cables: microphone, ext. audio, USB
Operating Conditions : 41kHz on; PA off;
Remarks :



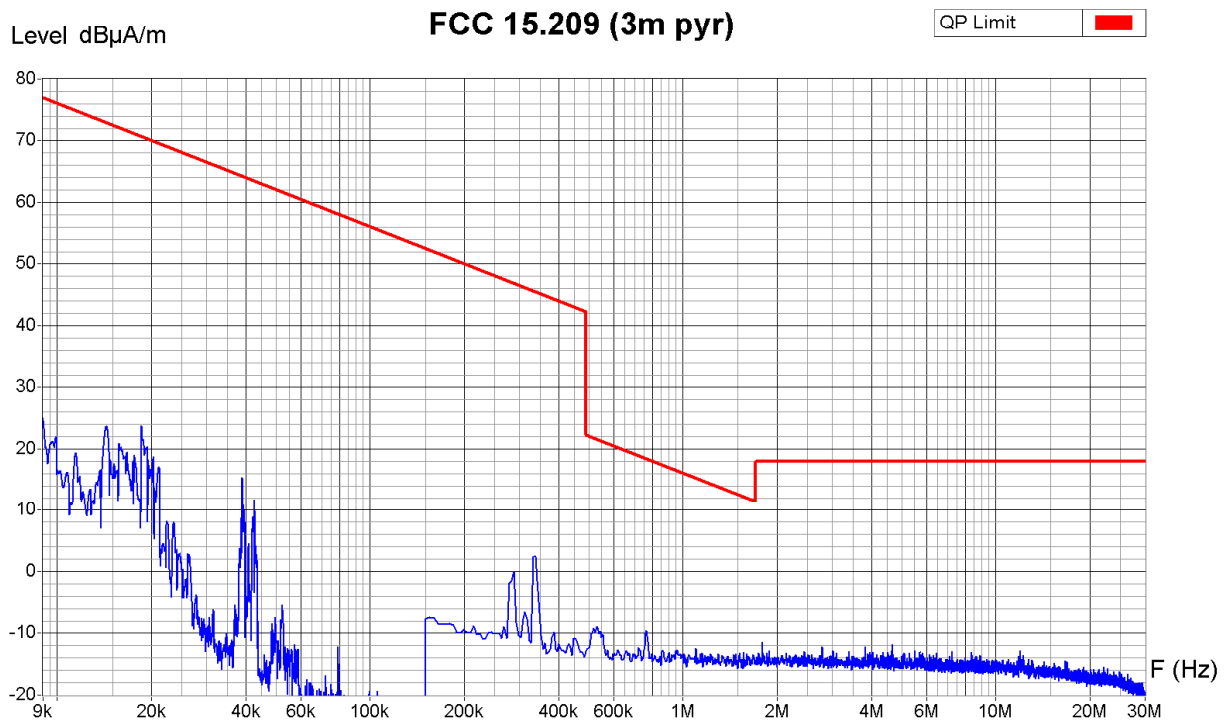
Zone	9 KHz - 37 KHz	37 KHz - 44 KHz	150 KHz - 10 MHz	10 MHz - 30 MHz	44 KHz - 150 KHz
Video Bandwidth	300 Hz	300 Hz	10 KHz	10 KHz	300 Hz
Resol Bandwidth	300 Hz	300 Hz	10 KHz	10 KHz	300 Hz

Operator: E. Staub
Date/Time: 27.07.07 09:32
Filename:
20077676_FCC15_erh_000pa.pn
g/.txt

Measurement Type : Radiated Field
Polarisation : Perpendicular
Table Angle : 0 - 360°
Antenna Height : 1m (centre part of loop)



Equipment Under Test : Master inspiro
Set-Up : hight = 0.9m; cables: microphone, ext. audio, USB
Operating Conditions : 41kHz on; PA off;
Remarks :



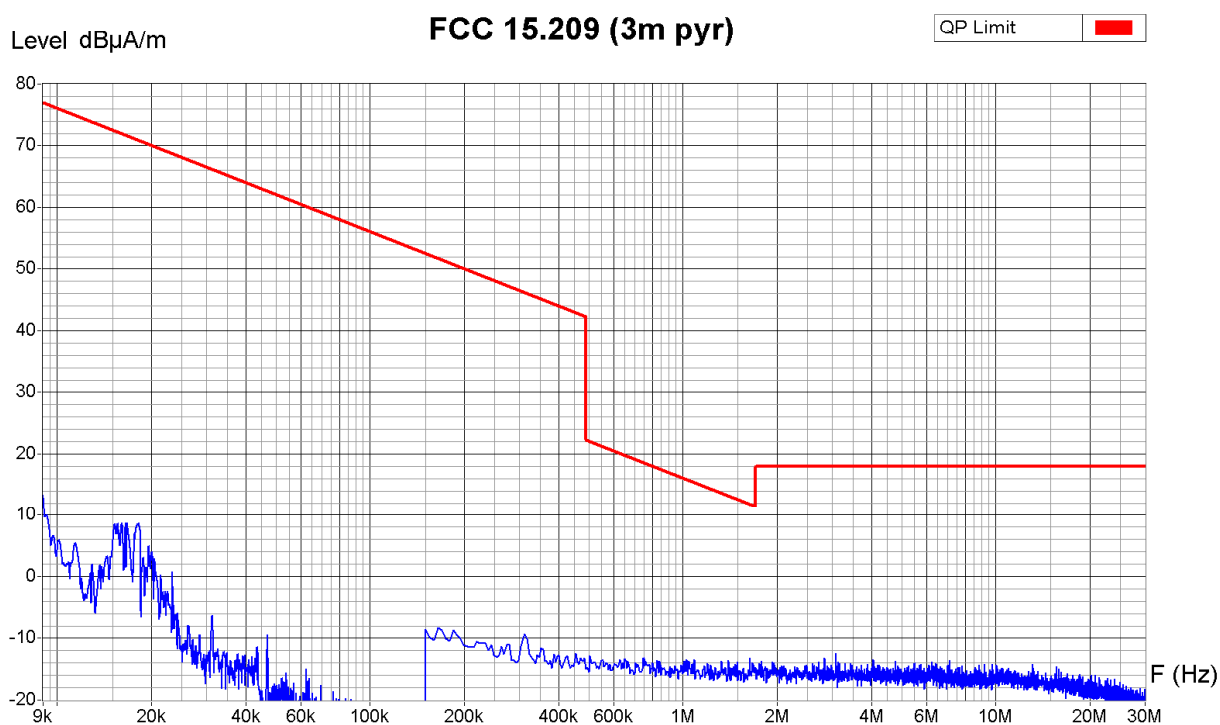
Zone	9 KHz - 37 KHz	37 KHz - 44 KHz	150 KHz - 10 MHz	10 MHz - 30 MHz	44 KHz - 150 KHz
Video Bandwidth	300 Hz	300 Hz	10 KHz	10 KHz	300 Hz
Resol Bandwidth	300 Hz	300 Hz	10 KHz	10 KHz	300 Hz

Operator: E. Staub
Date/Time: 27.07.07 09:14
Filename:
20077676_FCC15_erh_000pe.pn
g/.txt

Measurement Type : Radiated Field
Polarisation : Horizontal
Table Angle : 0 - 360°
Antenna Height : 1m (centre part of loop)



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



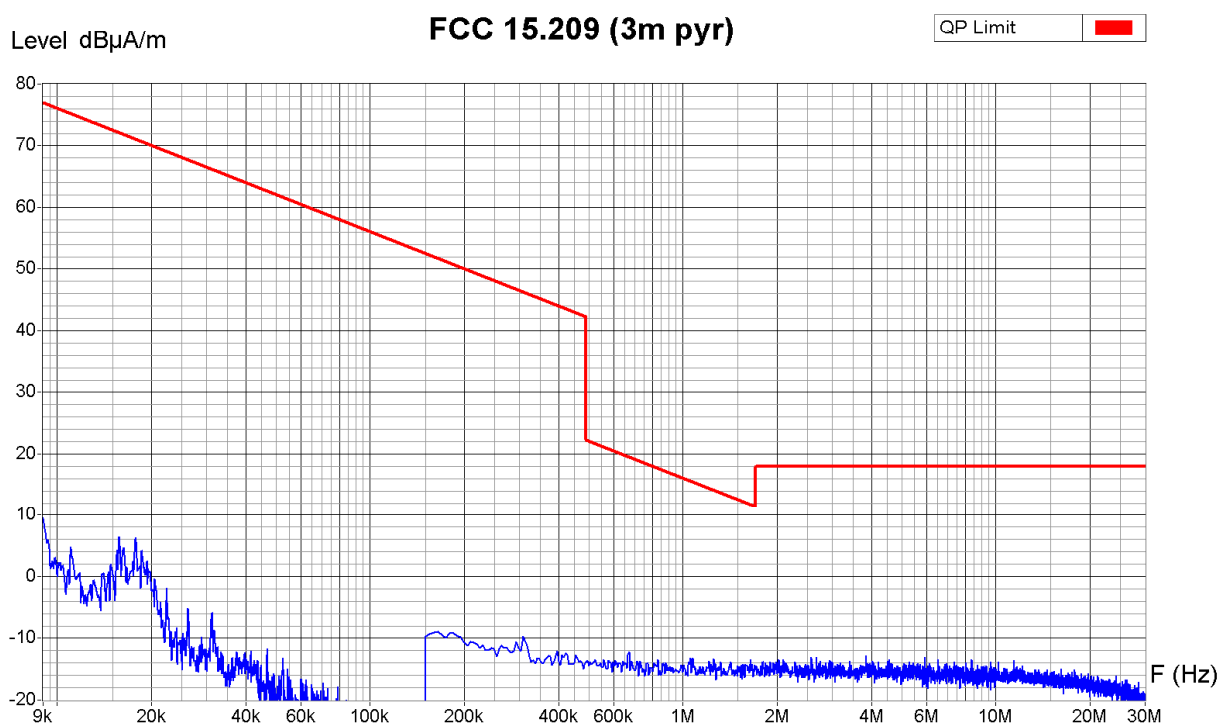
Zone	9 KHz - 37 KHz	37 KHz - 44 KHz	150 KHz - 10 MHz	10 MHz - 30 MHz	44 KHz - 150 KHz
Video Bandwidth	300 Hz	300 Hz	10 KHz	10 KHz	300 Hz
Resol Bandwidth	300 Hz	300 Hz	10 KHz	10 KHz	300 Hz

Operator: E. Staub
Date/Time: 27.07.07 10:14
Filename:
20077676_FCC15_erh_001ho.pn
gl.txt

Measurement Type : Radiated Field
Polarisation : Parallel
Table Angle : 0 - 360°
Antenna Height : 1m (centre part of loop)



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



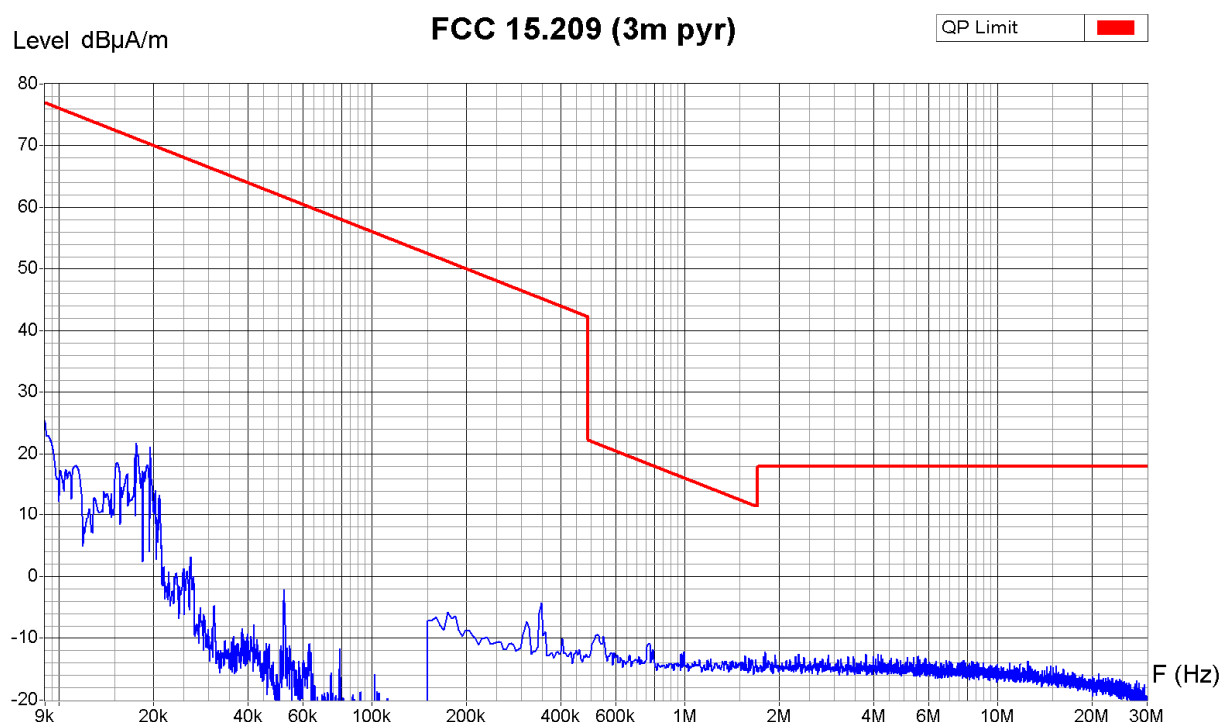
Zone	9 KHz - 37 KHz	37 KHz - 44 KHz	150 KHz - 10 MHz	10 MHz - 30 MHz	44 KHz - 150 KHz
Video Bandwidth	300 Hz	300 Hz	10 KHz	10 KHz	300 Hz
Resol Bandwidth	300 Hz	300 Hz	10 KHz	10 KHz	300 Hz

Operator: E. Staub
Date/Time: 27.07.07 09:45
Filename:
20077676_FCC15_erh_001pa.pn
g/.txt

Measurement Type : Radiated Field
Polarisation : Parallel
Table Angle : 0 - 360°
Antenna Height : 1m (centre part of loop)



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



Zone	9 KHz - 37 KHz	37 KHz - 44 KHz	150 KHz - 10 MHz	10 MHz - 30 MHz	44 KHz - 150 KHz
Video Bandwidth	300 Hz	300 Hz	10 KHz	10 KHz	300 Hz
Resol Bandwidth	300 Hz	300 Hz	10 KHz	10 KHz	300 Hz

Operator: E. Staub
Date/Time: 27.07.07 09:58
Filename:
20077676_FCC15_erh_001pe.pn
g/.txt

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 Mlder, '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



Naida 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:

Further information

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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.