

**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:	15'618
Product name: Nom du produit: Produktname	Covert PTT AC	Mandate no: Mandat no: Auftrag Nr:	20088570
Serial no: No de série: Seriennummer:	---	Model number: Numéro de modèle: Modellnummer:	PCB Version: 2.0
Customer: Client: Kunde:	Phonak Communications SA Länggasse 17 CH-3280 Murten	Date of test: Date de l'essai: Prüfdatum:	January 21 to 26, 2009

Standards / Normes / Normen	Result Résultat Ergebnis
CFR 47, Part 15, Subpart C, Intentional radiator, Paragraph 15.207/249	Pass

Test performed by
 Essai effectué par :
 Prüfer

Mr Erich Staub

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

Mr Erich Staub

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

Mr Jacques Ding

Rossens, June 29, 2009

(Issue Date / Date d'édition / Ausstelldatum)

V2009Jan05

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.

q:\mandats\2008\20088570_phonak_autoconnect_group\rap_phonak communications sa_15618_fcc.doc

montena emc sa
 route de Montena 75
 CH-1728 Rossens
 Switzerland
 phone +41 26 411 93 33
 fax +41 26 411 93 30
 www.montena-emc.com
 office.emc@montena.com

montena emc ag
 Technopark Blumenegg
 Blumeneggstrasse 50
 CH-9403 Goldach
 Switzerland
 phone +41 71 278 41 92
 fax +41 71 278 41 93

montena emc ag
 EMV-Labor Turgi
 Postfach 48
 CH-5300 Turgi
 Switzerland
 phone +41 56 299 36 36
 fax +41 56 299 25 08

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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 § 15.107/207	Ø ¹
6.1	Radiated emission – Carrier Émission par rayonnement – Porteuse Gestahlte Emission – Träger CFR 47 § 15.249	✓
6.2	Radiated emission – transmitter Émission par rayonnement – émetteur Gestahlte Emission – Sender CFR 47 § 15.249	✓
6.2	Radiated emission – receiver Émission par rayonnement – récepteur Gestahlte Emission – Empfänger CFR 47 § 15.109	✓

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.	20088570

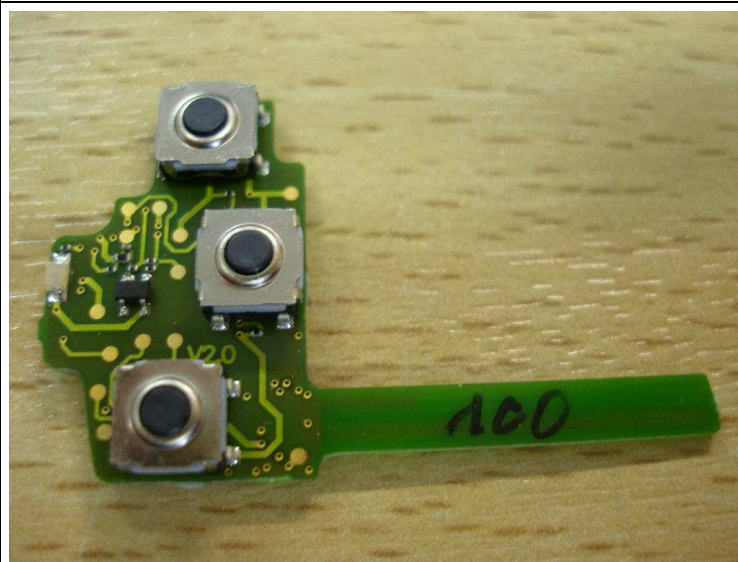
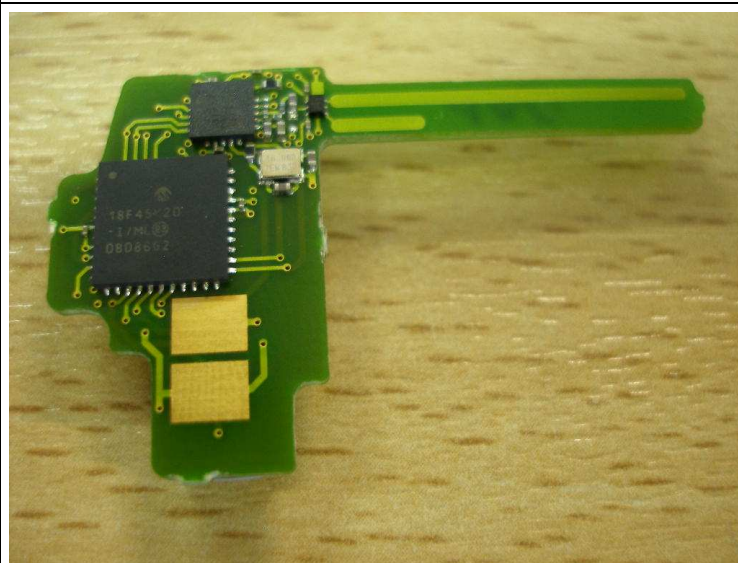
4. Equipment under test / Equipement à l'essai / Prüfling

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	<i>Switzerland</i>
Brand name / nom de marque / Verkaufsmarke	<i>Phonak</i>
Product name / Nom du produit / Produktname	<i>Covert PTT AC</i>
Product description / Description du produit / Produktbeschreibung	<i>The AutoConnect platform ("AC" marked) is based on a new RF link at 2.4GHz which replaces the actual inductive link at 41kHz.: Covert PTT is a remote controle with push to talk button.</i>
Model number / Numéro de modèle / Modellnummer	<i>PCB Version: 2.0</i>
Serial no / No. de série / Seriennummer	<i>- - -</i>
Software version / Version du logiciel / Softwareversion	<i>V1.0.0</i>
Highest frequency / Fréquence la plus élevée / Höchste Frequenz	<i>Carrier at 2.4 GHz</i>
Supply / Alimentation / Speisung	<i>U = 3 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*General view*

*Inside view**Top view**Bottom view*

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

4.4 Ports / Accès / Anschlüsse

None

4.5 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	January 21 to 26, 2009	20 - 22°C	980 - 1010 hPa	23 - 30 %

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

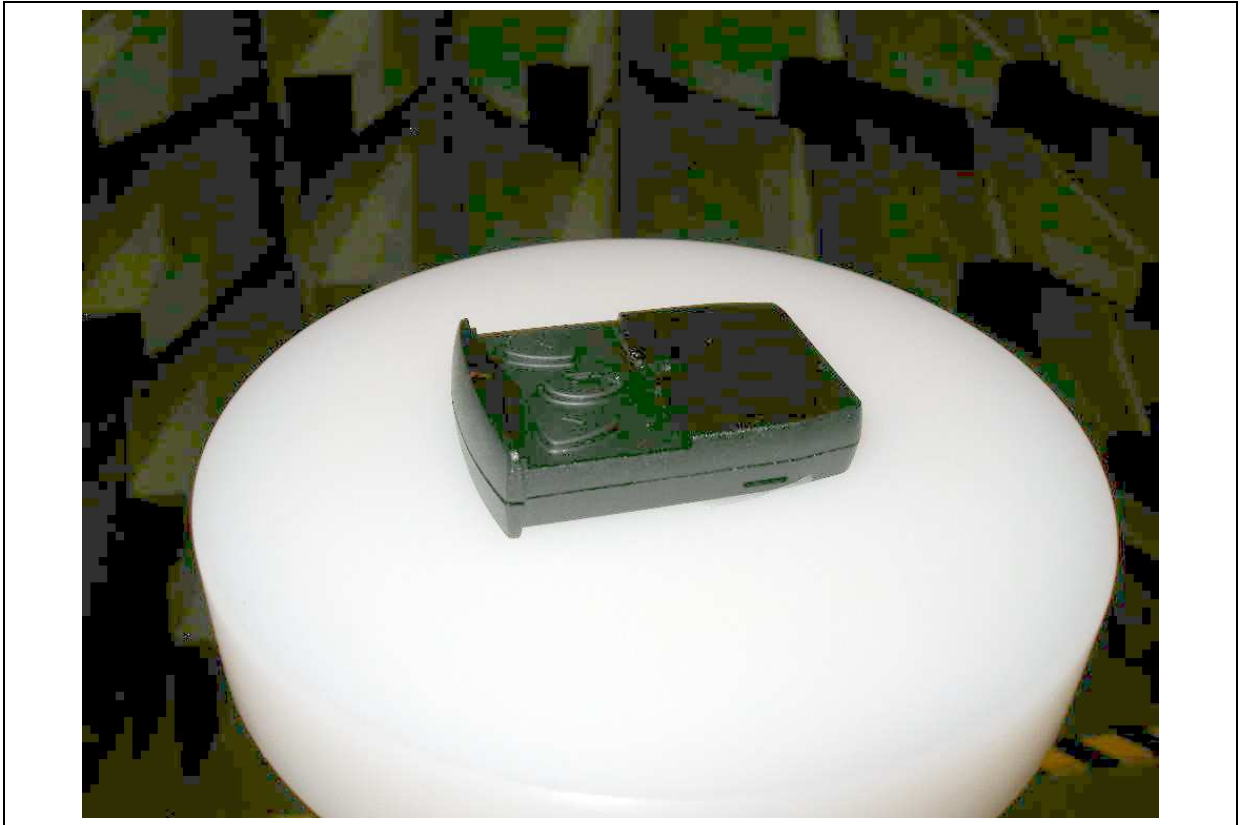
The alternate test site (ferrite chamber) is accepted by FCC (Reg. No. 0009508433). Conducted and radiated measurements are performed according to the ANSI C63.4 (2003) procedure.

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

Mr Erich Staub

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

Name / Nom / Name	Company / Société / Firma
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5.4 Test configuration / Configuration d'essai / Prüfkonfiguration**5.5 Operating conditions / Conditions de fonctionnement / Betriebszustand**

Special version with 100% TX, preprogrammed frequencies on all buttons (Left 2.481GHz, middle 2.442GHz, right 2.402GHz), with modulation "101010.."

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. Tests

6.1 Carrier - Radiated emission

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

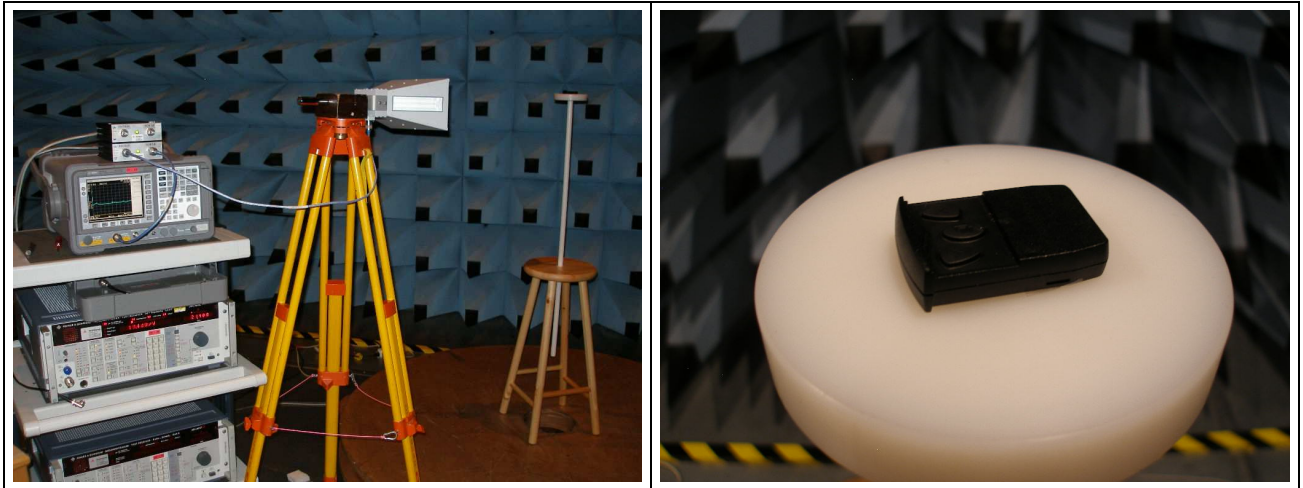
Meas. distance: ☐ 3 m ☐ 10 m ☐ 30 m ☒ 1 m

Meas. uncertainty: ± 4.7 dB

Position of EUT: 1.5 m (height above floor of equipment under test)

Measuring method: The carrier radiated by the equipment is measured using a spectrum analyser and a wide band antenna. The antenna is placed at the same height 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. 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 dBμV/m and transformed to a measuring distance of 1m
(factor used = 20 dB/decade) if necessary
e.g.: for $f = 2.43\text{GHz}$ the limit is 50mV/m at 3m;

$$20 \log \left(\frac{50 \frac{\text{mV}}{\text{m}}}{1 \frac{\mu\text{V}}{\text{m}}} \right) + 20 \log \left(\frac{3\text{m}}{1\text{m}} \right) = 103.5 \frac{\text{dB}\mu\text{V}}{\text{m}} \text{ at } 1\text{m}$$

Test equipment:

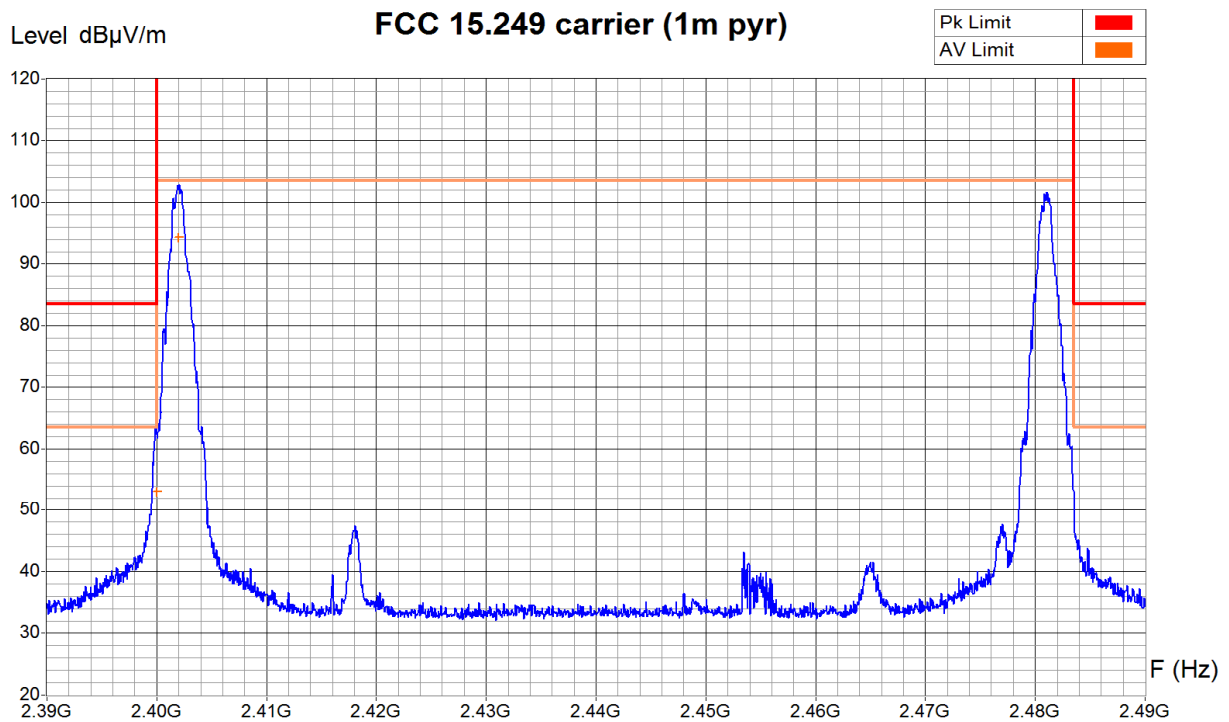
Spectrum analyser	☐ 88-14	☐ 90-26	☐ 94-24	☒ 02-06	☐ 03-45	☐ 03-57
Receiver	☐ 85-04	☐ 90-43	☒ 04-29			
Preamplifier	☐ 90-01	☐ 95-86	☐ 05-56	☐ 05-59	☐ 05-62	☒ 05-87
Antenna (horn)	☐ 90-24	☐ 90-29	☐ 98-12	☐ 98-13	☒ 07-31	
Cables	☒ Succoflex 1m (8416/4)					

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

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Continuous emission; modulated; f = 2.402 GHz and f = 2.481 GHz
Remarks :



Zone	2.39 GHz - 2.49
Video Bandwidth	100 KHz
Resol Bandwidth	100 KHz

Receiver Measures

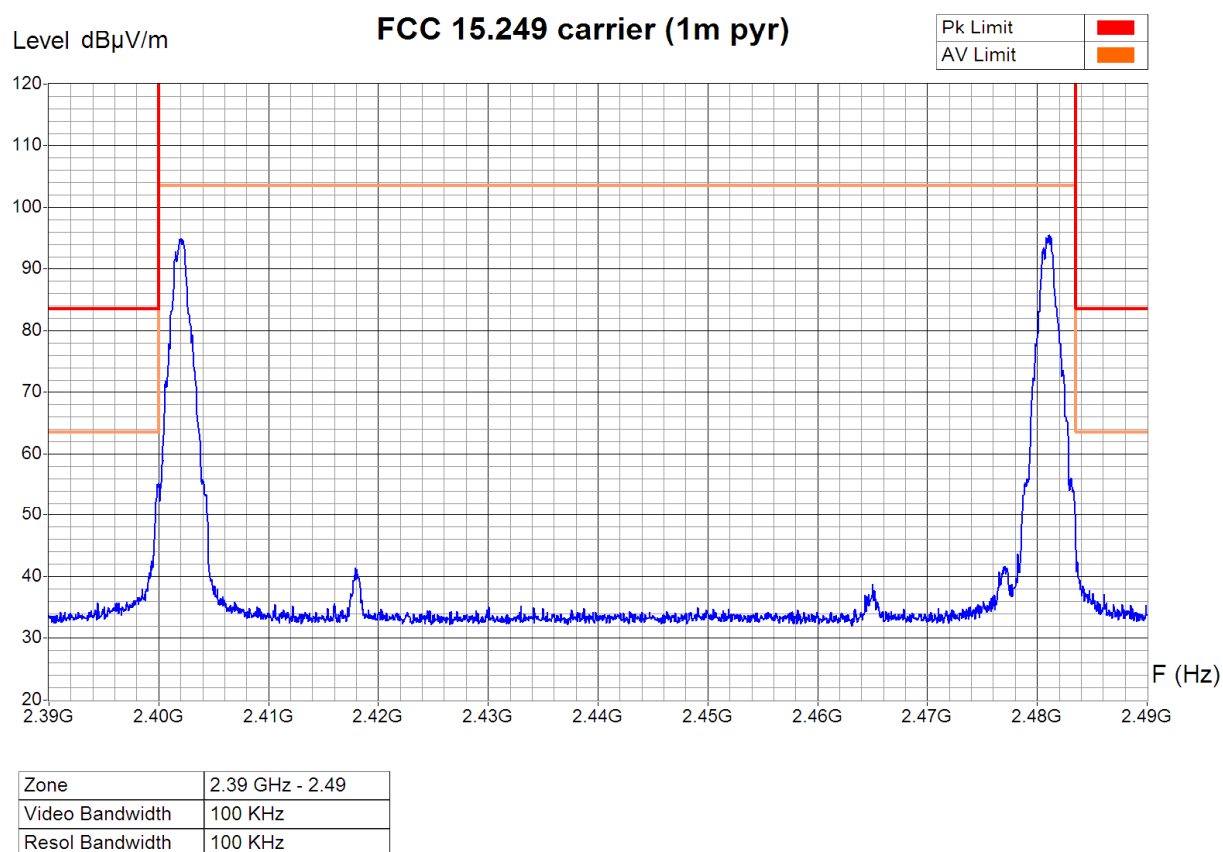
Frequency	Peak	Average (+)
2.400 GHz	63.5 dB μ V/m	53.1 dB μ V/m
2.402 GHz	102.9 dB μ V/m	94.4 dB μ V/m

Operator: E. Staub
Date/Time: 21.01.2009 10:53
Filename:
20088570_15-249_carrier_rem_00
0h.png/.txt

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Continuous emission; modulated; f = 2.402 GHz and f = 2.481 GHz
Remarks :



Operator: E. Staub
Date/Time: 21.01.2009 13:46
Filename:
20088570_15-249_carrier_rem_00
0v.png/.txt

6.2 Field strength of spurious radiation

6.2.1 Radiated emission - Electromagnetic field (30 MHz – 1 GHz)

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

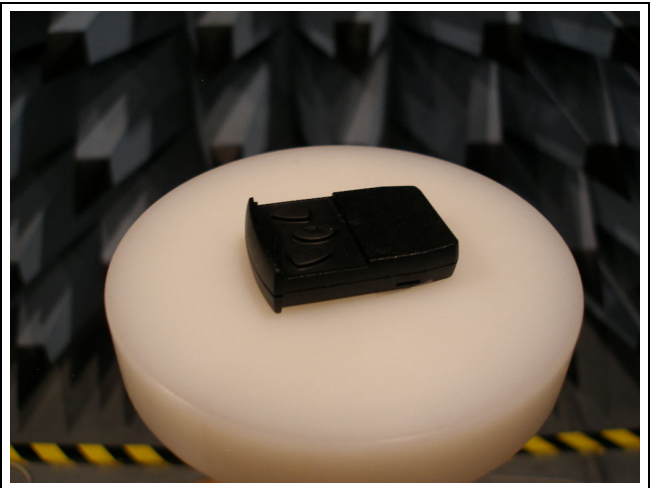
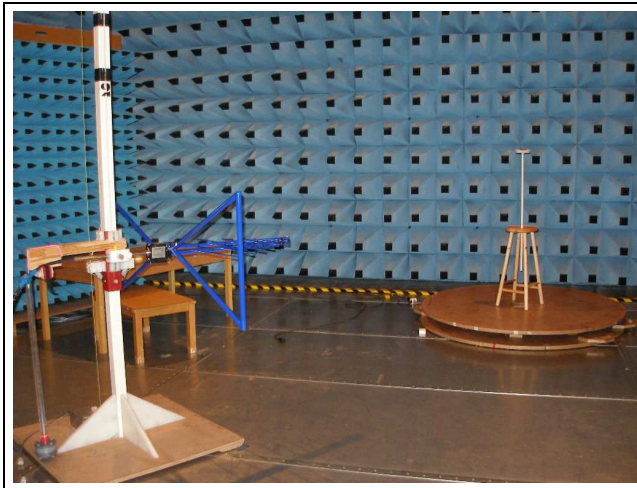
Distance: ☐ 30 m ☐ 10 m ☒ 3 m ☐

Position of EUT: 1.5 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 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 dBμV/m and transformed to a measuring distance of 3m
(factor used = 20 dB/decade) if necessary
e.g.: for f = 40MHz the limit is 100μV/m at 3m;

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

Test equipment:

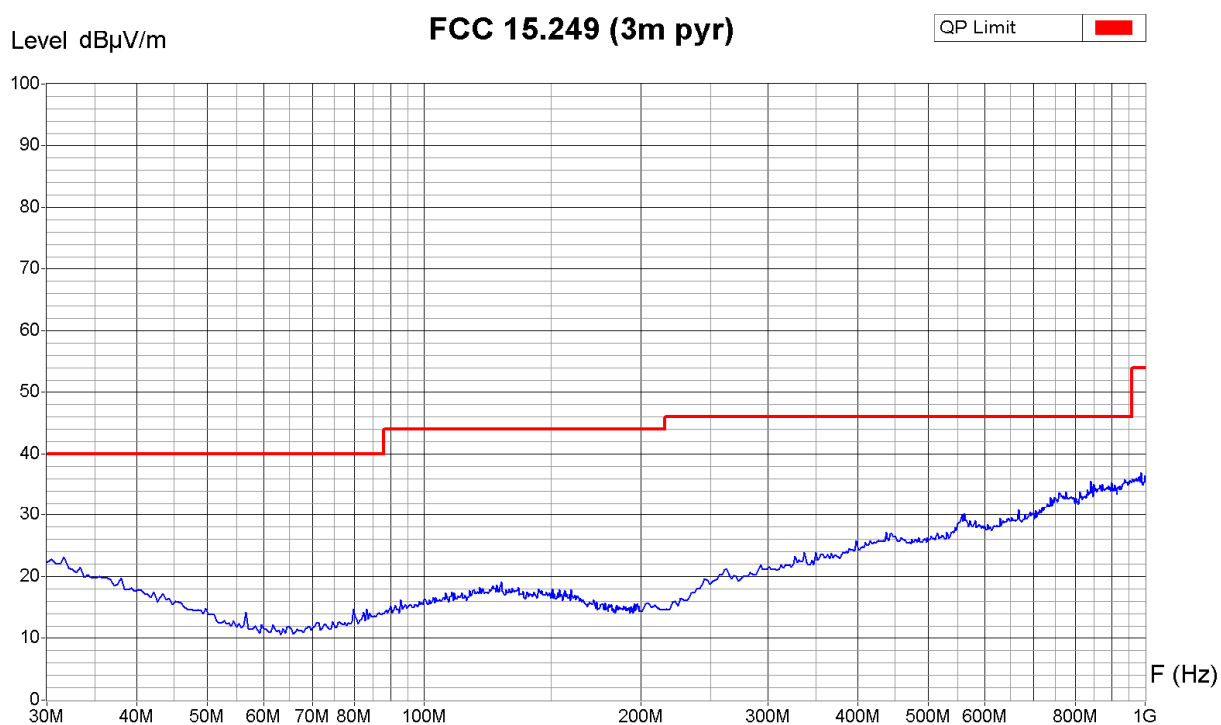
Spectrum analyser	☐ 88-14	☐ 90-26	☒ 94-24	☐ 02-06	☐ 03-45	☐ 03-57
Receiver	☐ 85-04	☐ 90-43	☐ 94-35			
Preamplifier	☐ 90-01	☐ 95-86	☐ 05-56	☐ 05-59	☒ 05-62	☐ 05-87
Antenna (bilog)	☐ 94-03	☒ 05-38	☐			
Cables	☒ 06-00					
Filter	☐					

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

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Continuous emission; modulated; f = 2.402 GHz and f = 2.481 GHz
Remarks :



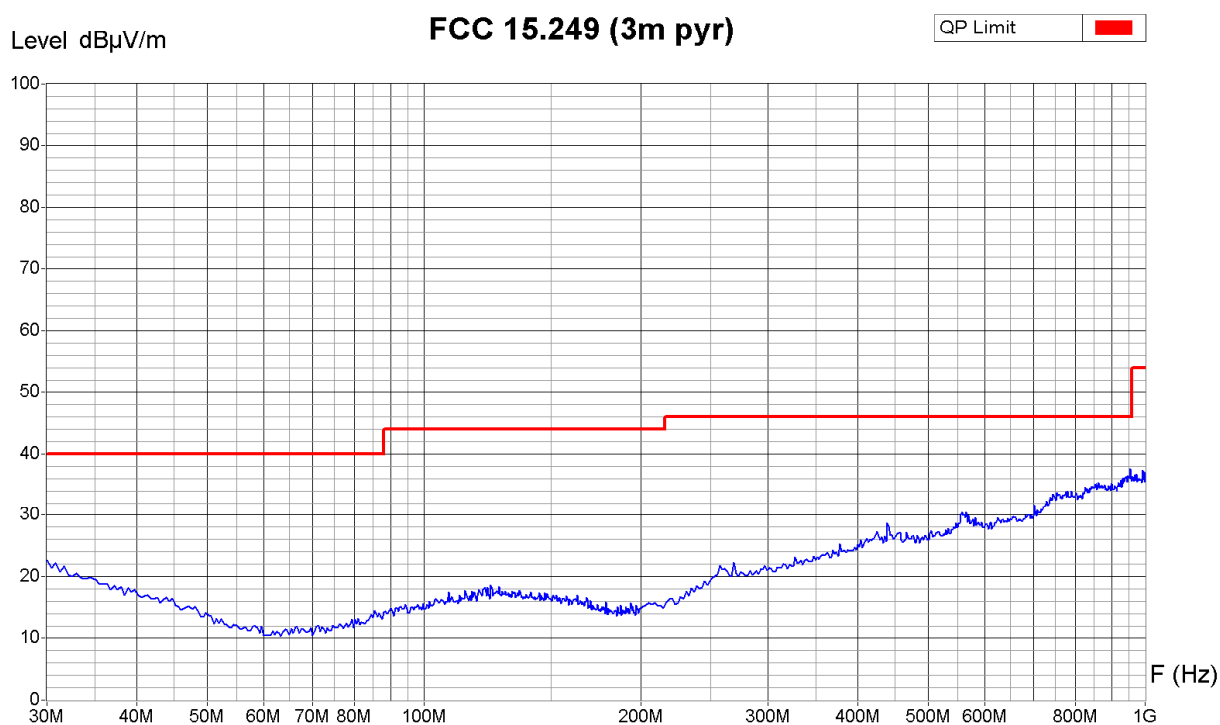
Zone	30 MHz - 199 MHz	199 MHz - 1 GHz
Video Bandwidth	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 26.01.09 14:36
Filename:
20088570_15-249_er_rem_004h.png/.txt

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Continuous emission; modulated; f = 2.402 GHz and f = 2.481 GHz
Remarks :



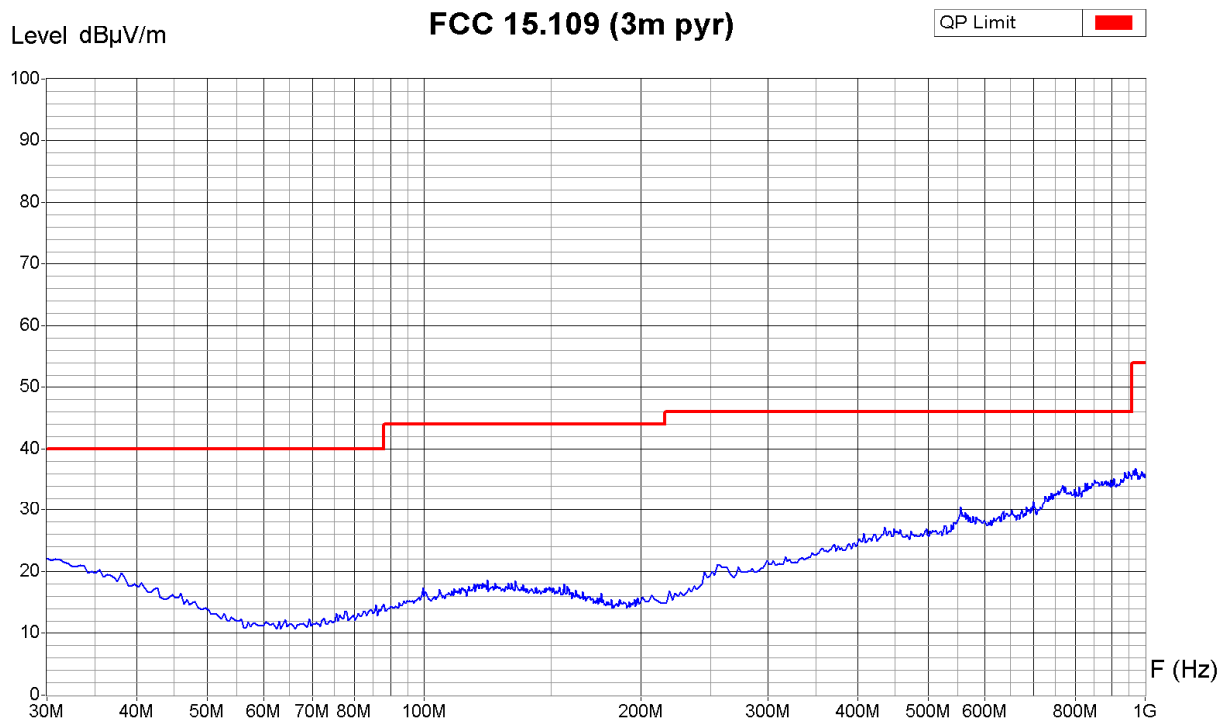
Zone	30 MHz - 199 MHz	199 MHz - 1 GHz
Video Bandwidth	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 26.01.09 14:18
Filename:
20088570_15-249_er_rem_004v.p
ng/.txt

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Rx mode; f = 2.402 GHz and f = 2.481 GHz
Remarks :



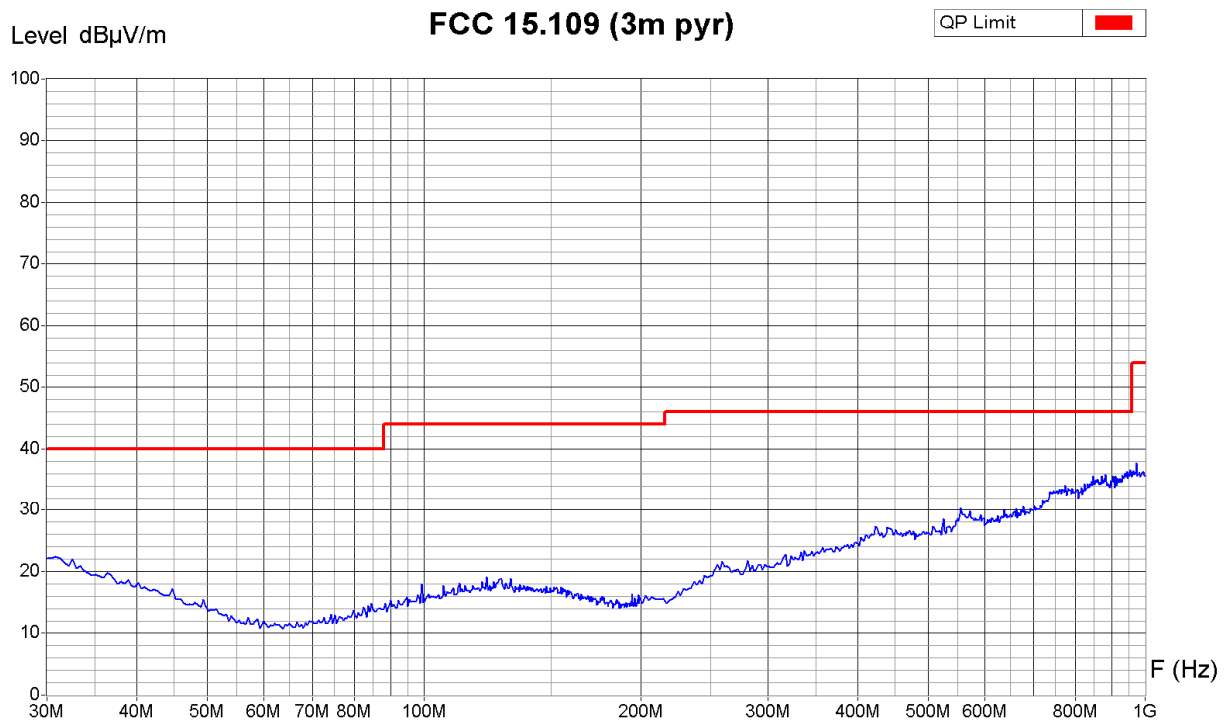
Zone	30 MHz - 199 MHz	199 MHz - 1 GHz
Video Bandwidth	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 26.01.09 14:51
Filename:
20088570_15-109_er_rem
Rx_002h.png/.txt

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Rx mode; f = 2.402 GHz and f = 2.481 GHz
Remarks :



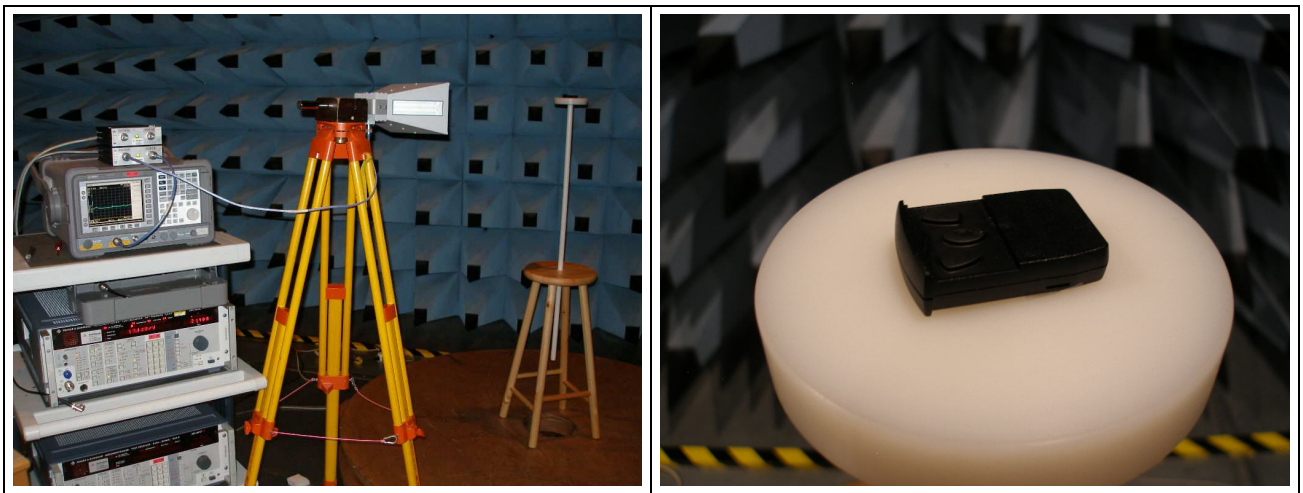
Operator: E. Staub
Date/Time: 26.01.09 15:01
Filename:
20088570_15-109_er_rem
Rx_002v.png/.txt

6.2.2 Radiated emission - Electromagnetic field (1 GHz – 18 GHz)

Test site: ☒ anechoic chamber (foam) ☐ open test site
☐ anechoic chamber (ferrites) ☐
 Distance: ☐ 30 m ☐ 10 m ☐ 3 m ☒ 1 m
 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 electromagnetic disturbance radiated by the equipment is measured using a spectrum analyser and a wide band antenna. The antenna is placed at the same height 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. 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 1m
 (factor used = 20 dB/decade) if necessary
 e.g.: for $f = 1\text{GHz}$ the limit is 500 μ V/m at 3m;

$$20 \log \left(\frac{500 \frac{\mu V}{m}}{1 \frac{\mu V}{m}} \right) + 20 \log \left(\frac{3m}{1m} \right) = 63.5 \frac{dB\mu V}{m} \text{ at } 1m$$

Test equipment:

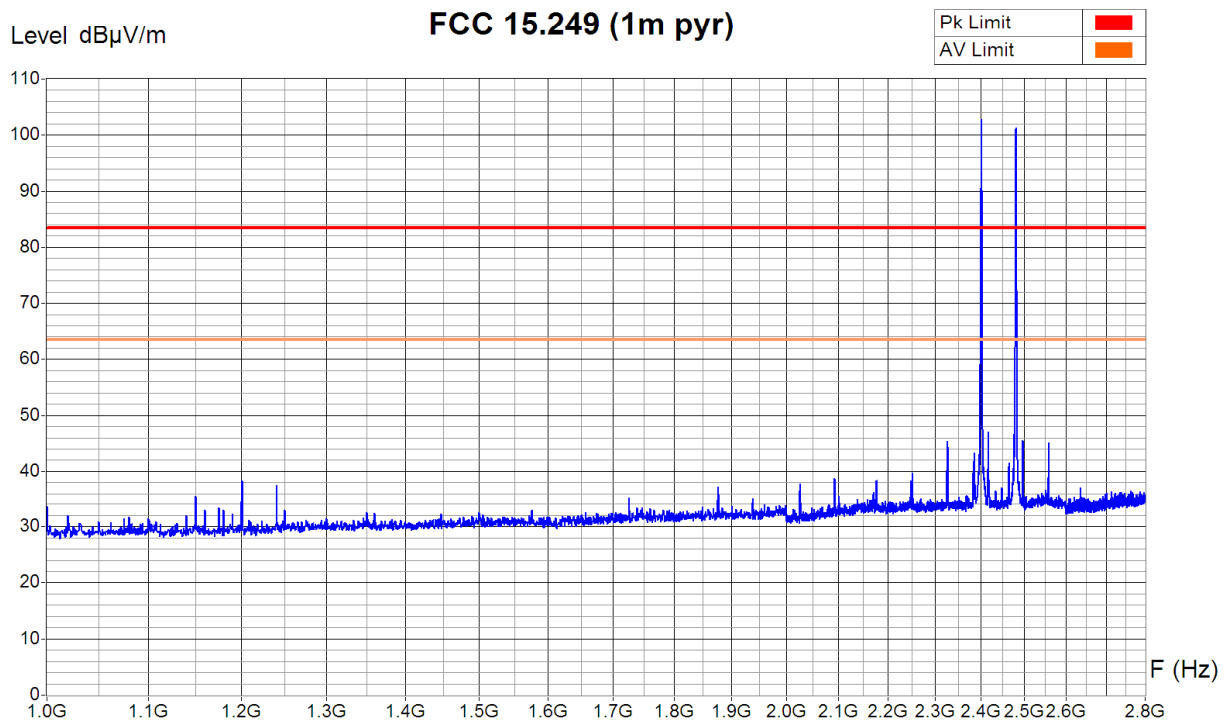
Spectrum analyser	☐ 88-14	☐ 90-26	☐ 94-24	☐ 02-06	☐ 03-45	☒ 07-53
Receiver	☐ 85-04	☐ 90-43	☐ 04-29			
Preamplifier	☐ 90-01	☐ 95-86	☒ 05-56	☐ 05-59	☐ 05-62	☒ 05-87
Antenna (horn)	☐ 90-24	☐ 90-29	☐ 98-12	☐ 98-13	☒ 07-31	
Cables	☒ Succoflex 1m (8416/4)					

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

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Continuous emission; modulated; f = 2.402 GHz and f = 2.481 GHz
Remarks :



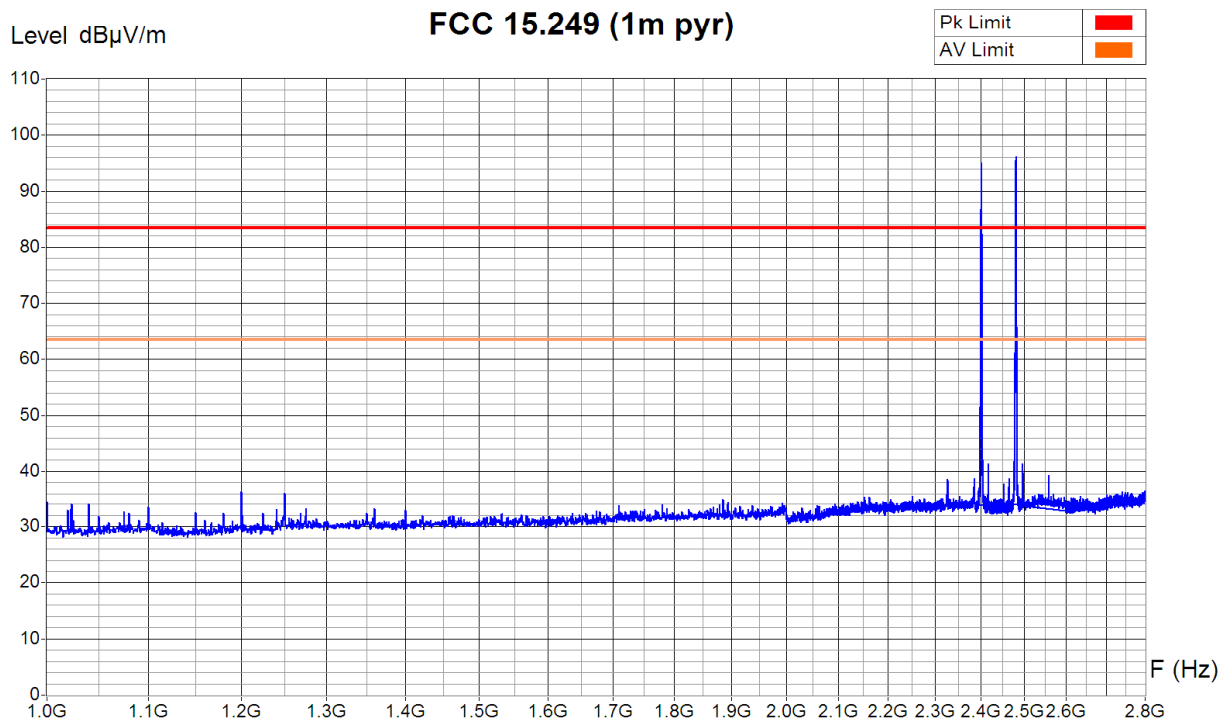
Zone	1 GHz - 2 GHz	2 GHz - 2.60 GHz	2.60 GHz - 2.80
Video Bandwidth	100 KHz	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 21.01.2009 14:09
Filename:
20088570_15-249_er_rem_000h.p
ng/.txt

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Continuous emission; modulated; f = 2.402 GHz and f = 2.481 GHz
Remarks :



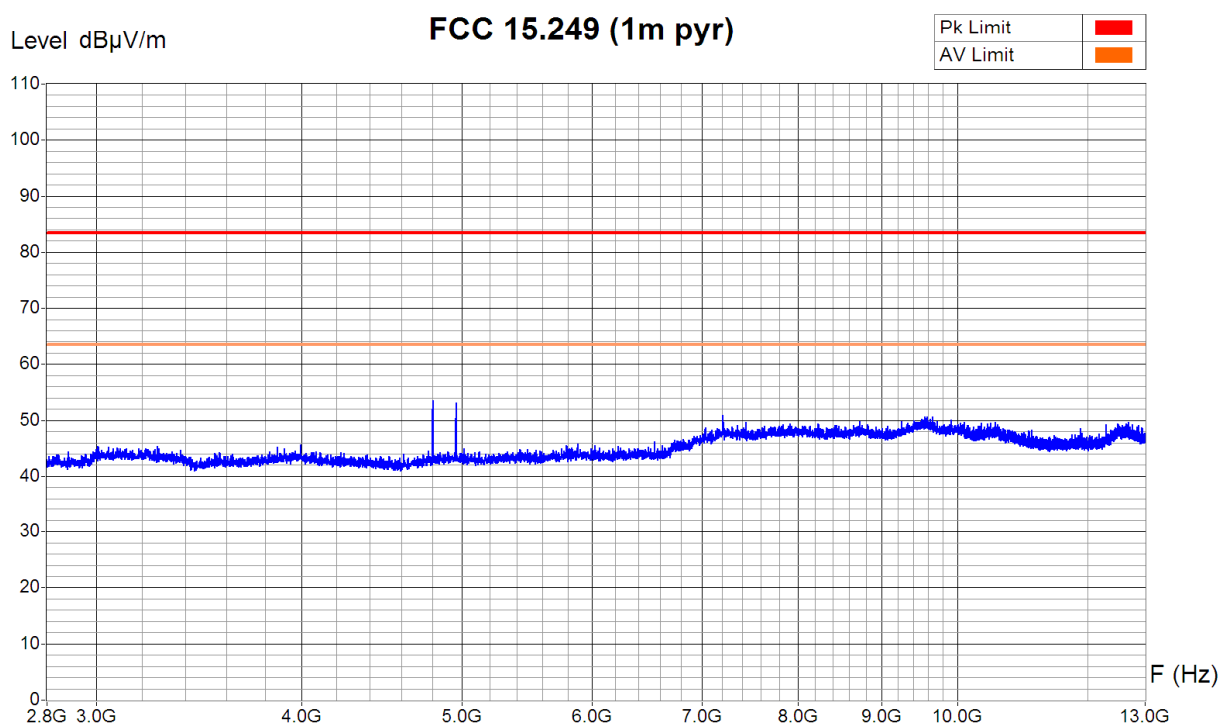
Zone	1 GHz - 2 GHz	2 GHz - 2.60 GHz	2.60 GHz - 2.80
Video Bandwidth	100 KHz	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 21.01.2009 14:03
Filename:
20088570_15-249_er_rem_000v.p
ng/.txt

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Continuous emission; modulated; f = 2.402 GHz and f = 2.481 GHz
Remarks :



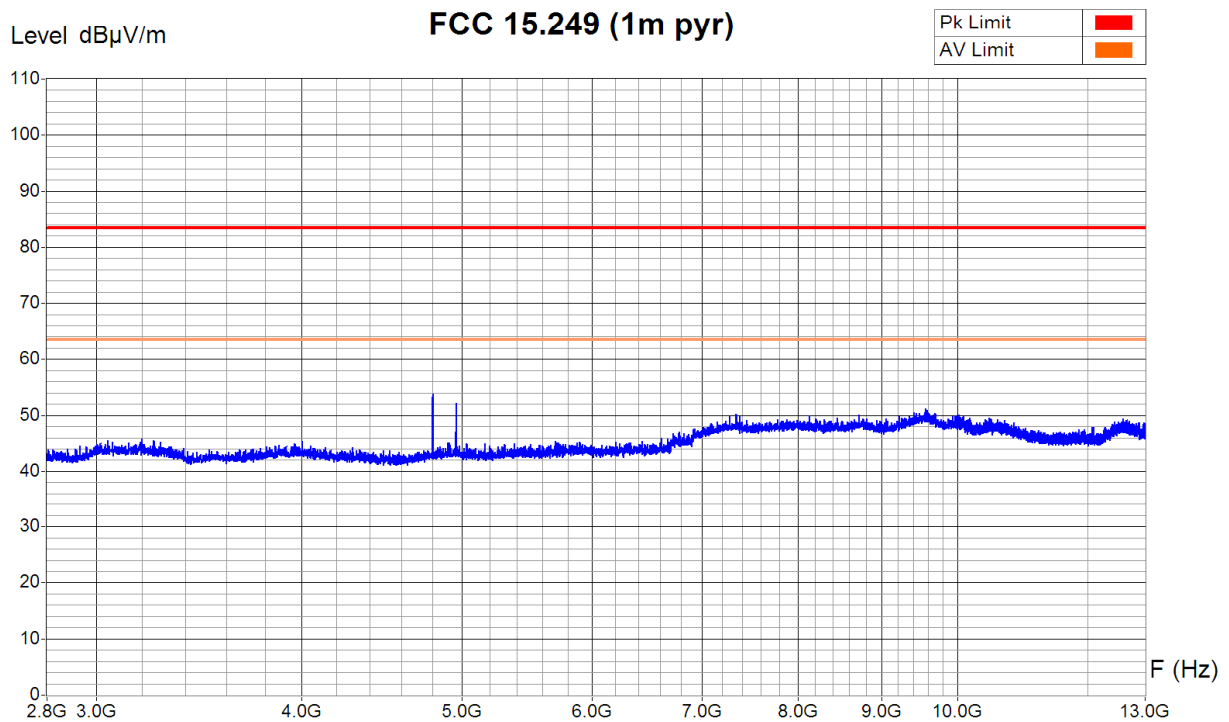
Zone	2.80 GHz - 4.60	4.60 GHz - 6.90	6.90 GHz - 10 GHz	10 GHz - 11.50 GHz	11.50 GHz - 13 GHz
Video Bandwidth	100 KHz	100 KHz	100 KHz	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz	100 KHz	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 21.01.2009 14:23
Filename:
20088570_15-249_er_rem_001h.png/.txt

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Continuous emission; modulated; f = 2.402 GHz and f = 2.481 GHz
Remarks :



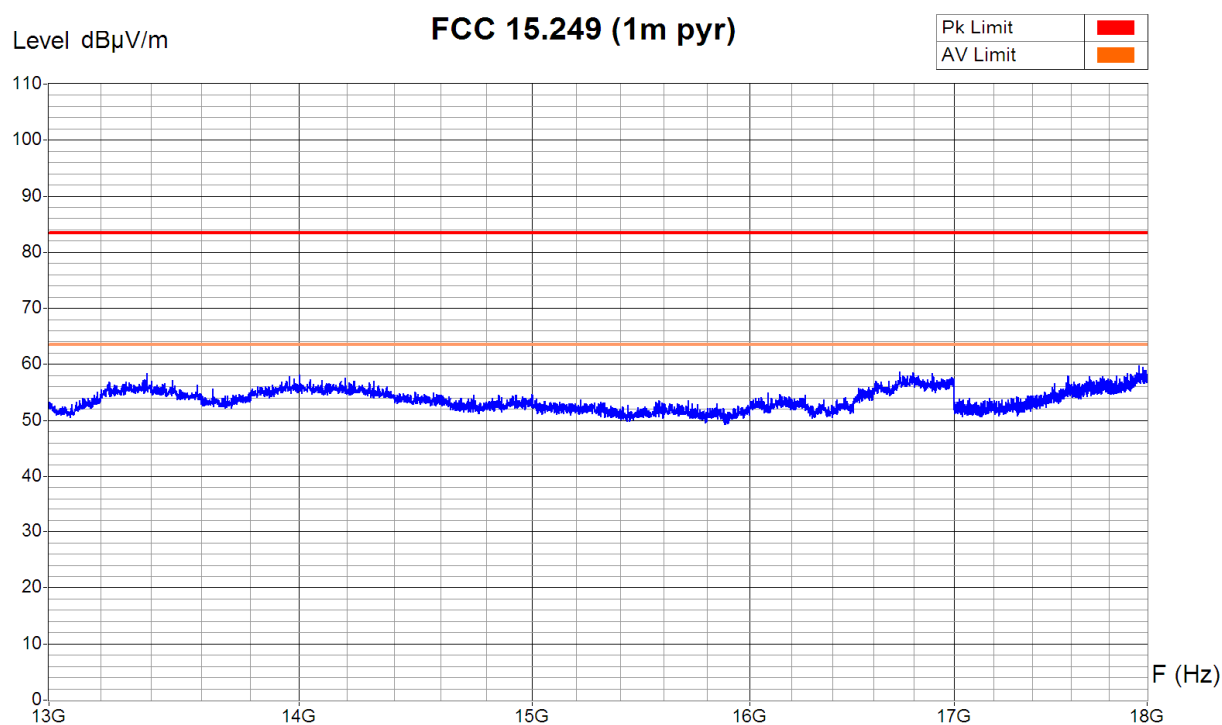
Zone	2.80 GHz - 4.60	4.60 GHz - 6.90	6.90 GHz - 10 GHz	10 GHz - 11.50 GHz	11.50 GHz - 13 GHz
Video Bandwidth	100 KHz	100 KHz	100 KHz	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz	100 KHz	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 21.01.2009 14:39
Filename:
20088570_15-249_er_rem_001v.png/.txt

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Continuous emission; modulated; f = 2.402 GHz and f = 2.481 GHz
Remarks :



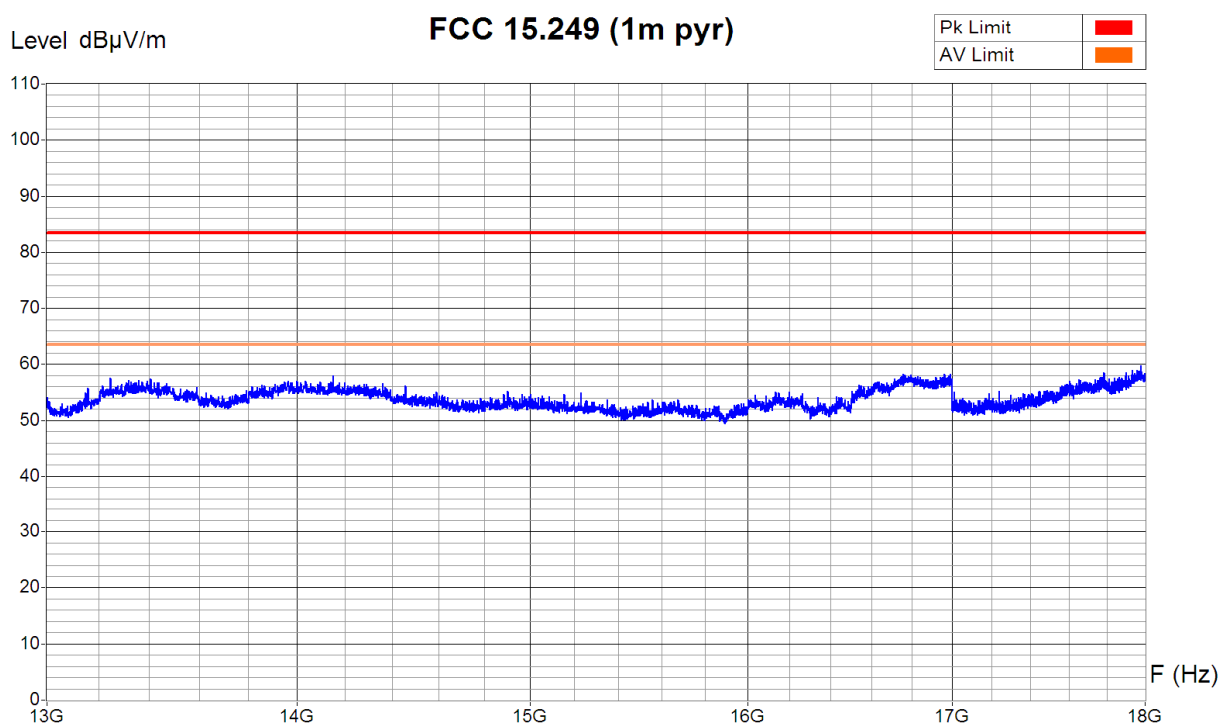
Zone	13 GHz - 15 GHz	15 GHz - 17 GHz	17 GHz - 18 GHz
Video Bandwidth	1 MHz	1 MHz	300 KHz
Resol Bandwidth	1 MHz	1 MHz	300 KHz

Operator: E. Staub
Date/Time: 21.01.2009 16:53
Filename:
20088570_15-249_er_rem_002h.png/.txt

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



Equipment Under Test : Covert PTT AC
 Set-Up : cables: none
 Operating Conditions : Continuous emission; modulated; f = 2.402 GHz and f = 2.481 GHz
 Remarks :



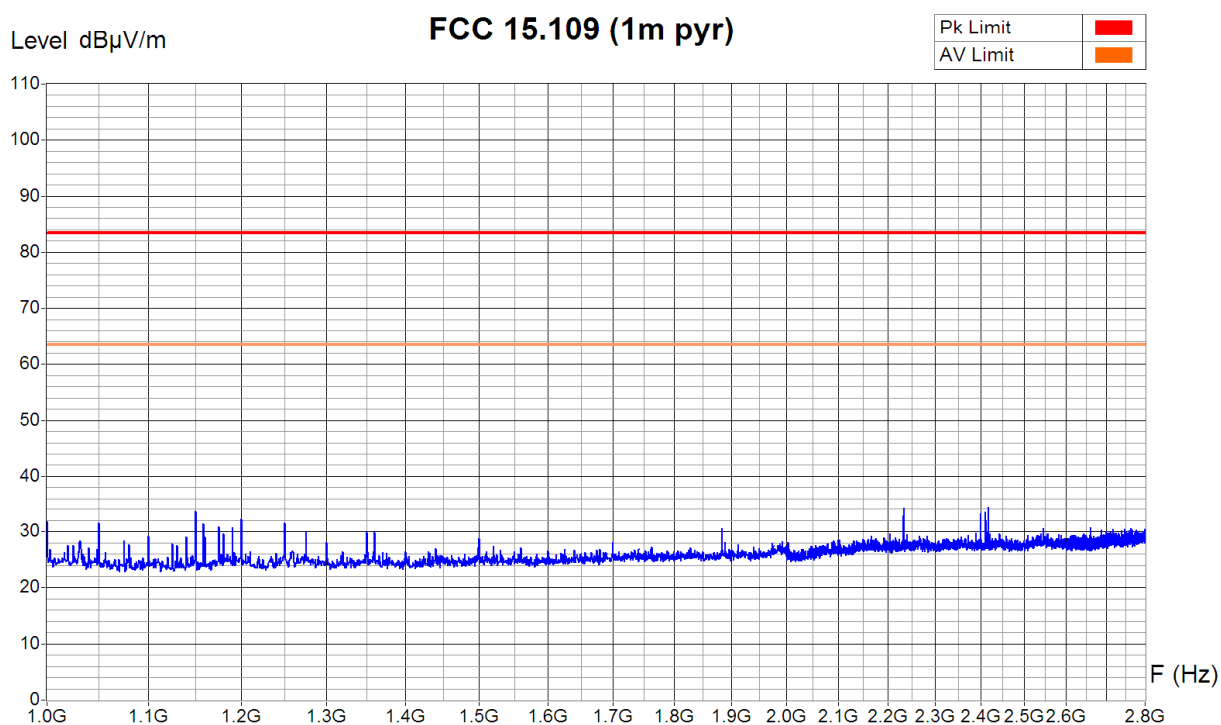
Zone	13 GHz - 15 GHz	15 GHz - 17 GHz	17 GHz - 18 GHz
Video Bandwidth	1 MHz	1 MHz	300 KHz
Resol Bandwidth	1 MHz	1 MHz	300 KHz

Operator: E. Staub
 Date/Time: 21.01.2009 16:58
 Filename:
 20088570_15-249_er_rem_002v.png/.txt

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Rx mode; f = 2.402 GHz and f = 2.481 GHz
Remarks :



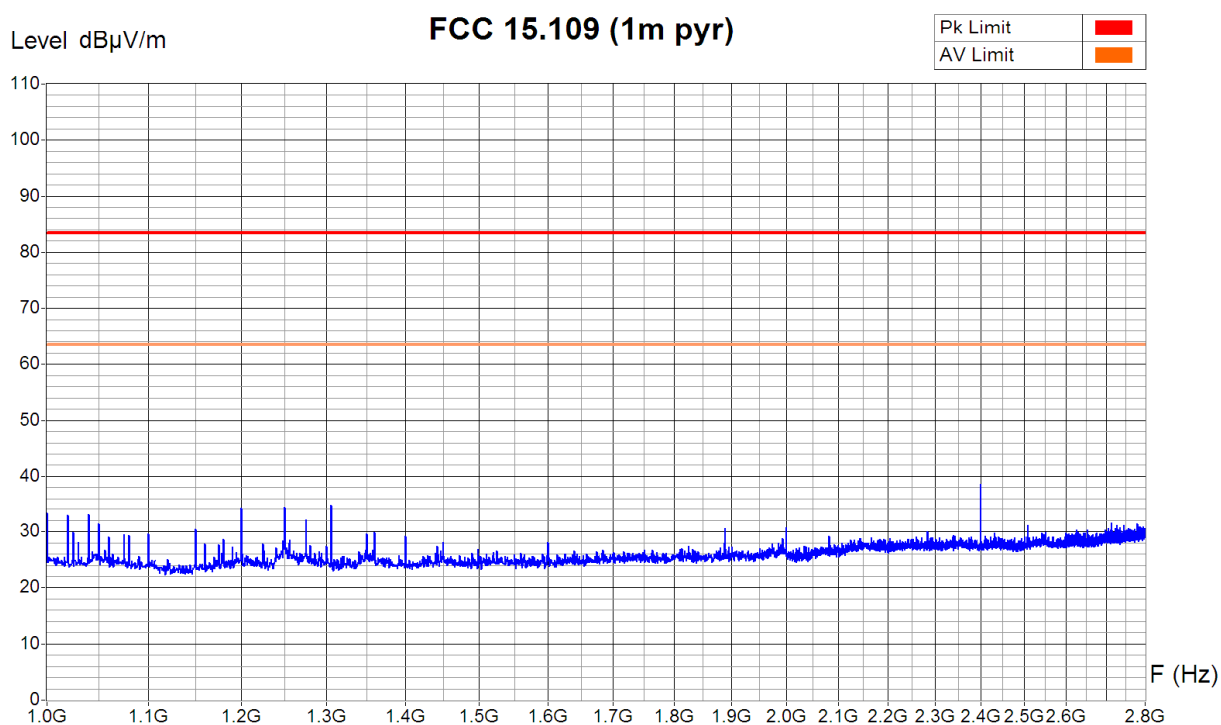
Zone	1 GHz - 2 GHz	2 GHz - 2.60 GHz	2.60 GHz - 2.80
Video Bandwidth	100 KHz	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 21.01.2009 16:11
Filename:
20088570_15-109_er_rem
Rx_000h.png/.txt

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Rx mode; f = 2.402 GHz and f = 2.481 GHz
Remarks :



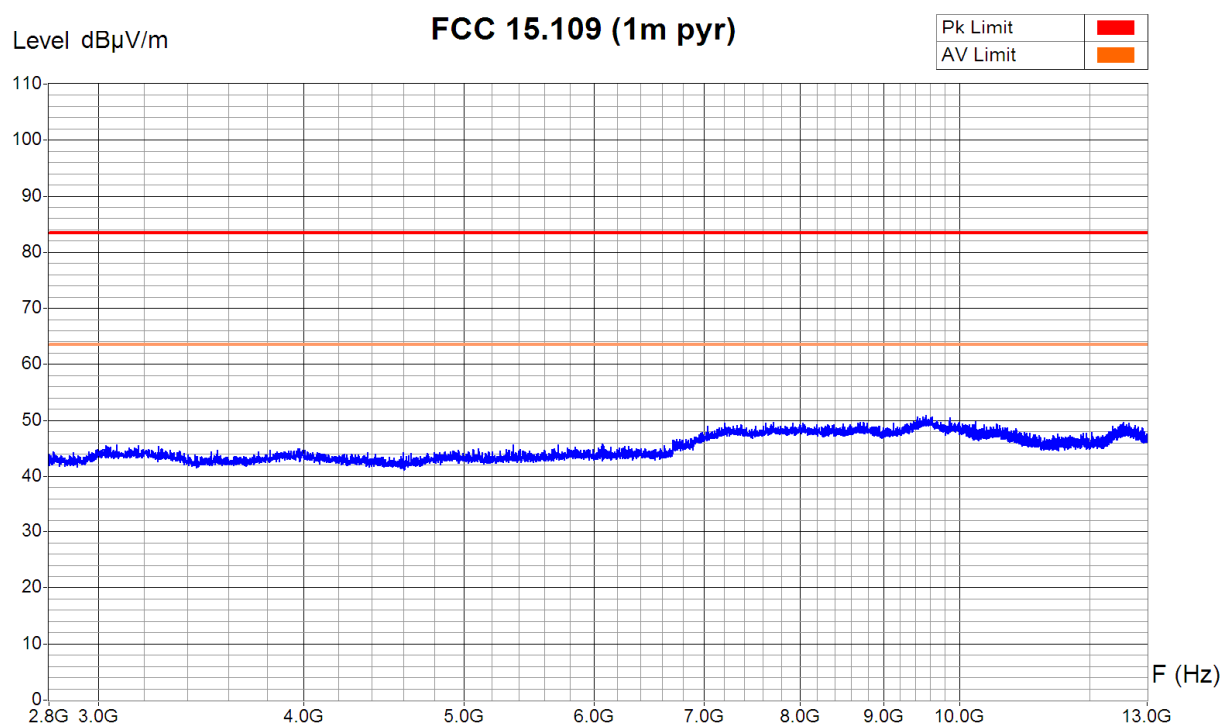
Zone	1 GHz - 2 GHz	2 GHz - 2.60 GHz	2.60 GHz - 2.80
Video Bandwidth	100 KHz	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 21.01.2009 16:17
Filename:
20088570_15-109_er_rem
Rx_000v.png/.txt

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Rx mode; f = 2.402 GHz and f = 2.481 GHz
Remarks :



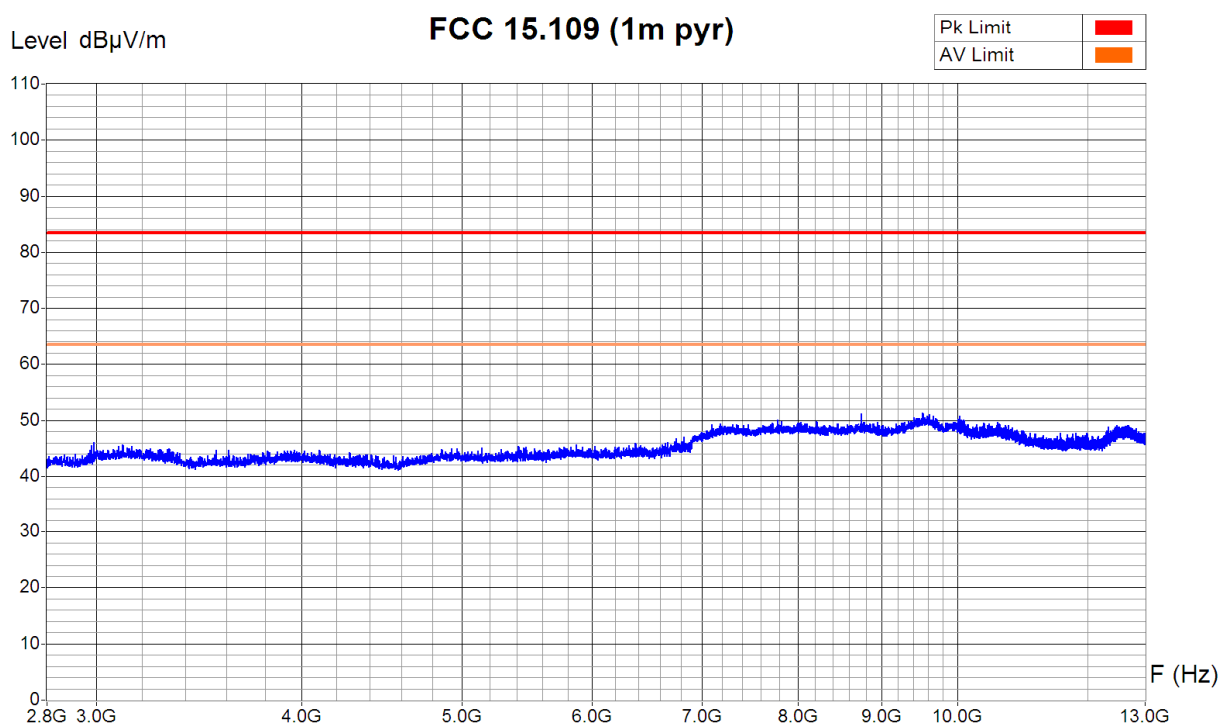
Zone	2.80 GHz - 4.60	4.60 GHz - 6.90	6.90 GHz - 10 GHz	10 GHz - 11.50 GHz	11.50 GHz - 13 GHz
Video Bandwidth	100 KHz	100 KHz	100 KHz	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz	100 KHz	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 21.01.2009 15:45
Filename:
20088570_15-109_er_rem
Rx_001h.png/.txt

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Rx mode; f = 2.402 GHz and f = 2.481 GHz
Remarks :



Zone	2.80 GHz - 4.60	4.60 GHz - 6.90	6.90 GHz - 10 GHz	10 GHz - 11.50 GHz	11.50 GHz - 13 GHz
Video Bandwidth	100 KHz	100 KHz	100 KHz	100 KHz	100 KHz
Resol Bandwidth	100 KHz	100 KHz	100 KHz	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 21.01.2009 15:32
Filename:
20088570_15-109_er_rem
Rx_001v.png/.txt

6.2.3 Radiated emission - Electromagnetic field (18 GHz – 26.5 GHz)

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

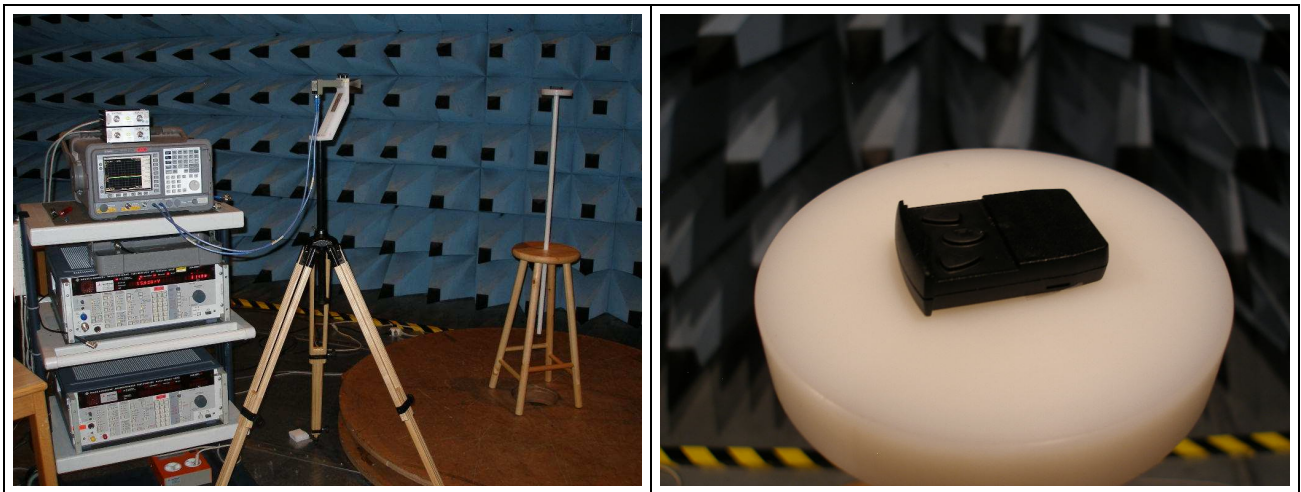
Distance: ☐ 30 m ☐ 10 m ☐ 3 m ☒ 1 m

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

Meas. uncertainty: ± 5.4 dB

Test method: The electromagnetic disturbance radiated by the equipment is measured using a spectrum analyser and a wide band antenna. The antenna is placed at the same height 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:



Remarks: Limit values expressed in dB μ V/m and transformed to a measuring distance of 1m
(factor used = 20 dB/decade) if necessary
e.g.: for $f = 18$ GHz the limit is 500 μ V/m at 3m;

$$20 \log \left(\frac{500 \frac{\mu V}{m}}{1 \frac{\mu V}{m}} \right) + 20 \log \left(\frac{3m}{1m} \right) = 63.5 \frac{dB\mu V}{m} \text{ at } 1m$$

Test equipment:

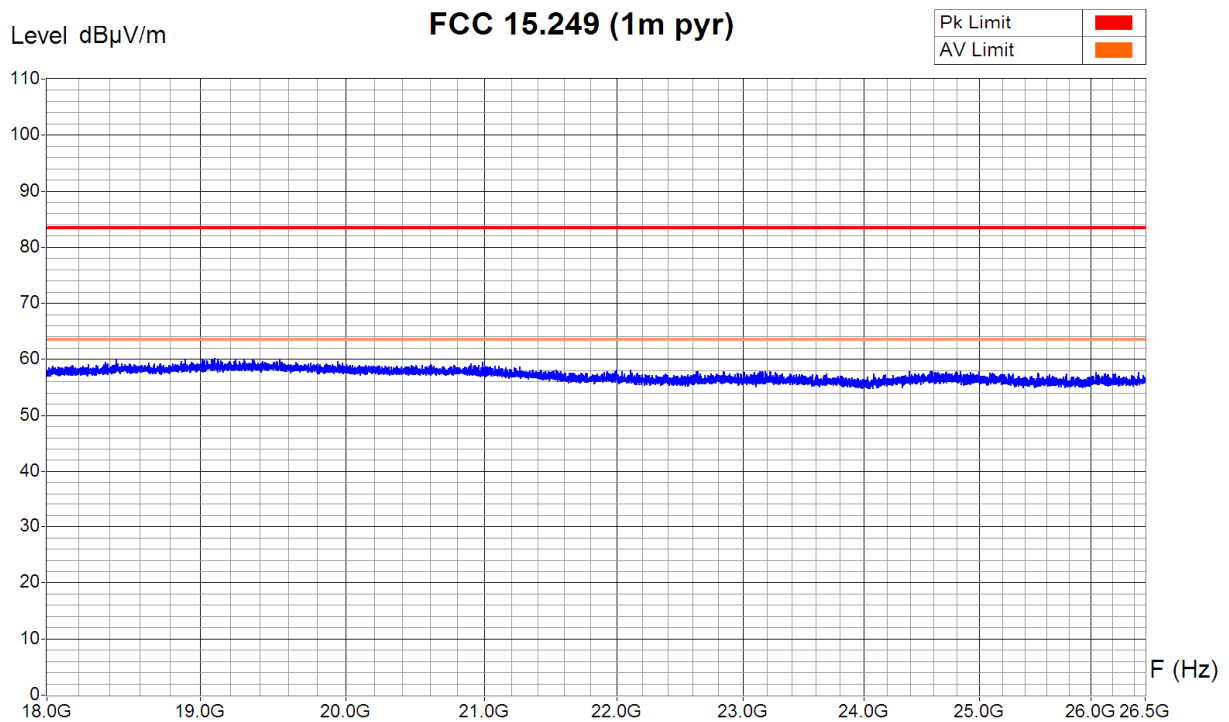
Spectrum analyser	☐ 88-14	☐ 90-26	☐ 94-24	☐ 02-06	☐ 03-45	☒ 07-53
Receiver	☐ 85-04	☐ 90-43	☐ 04-29			
Preamplifier	☐ 90-01	☐ 95-86	☐ 05-56	☐ 05-59	☐ 05-62	☐ 05-87
Antenna (horn)	☐ 90-24	☐ 90-29	☐ 98-12	☐ 98-13	☒ 98-12	
External mixers	☒ 11970K					

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

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Continuous emission; modulated; f = 2.402 GHz and f = 2.481 GHz
Remarks : Det = Avg (rms)



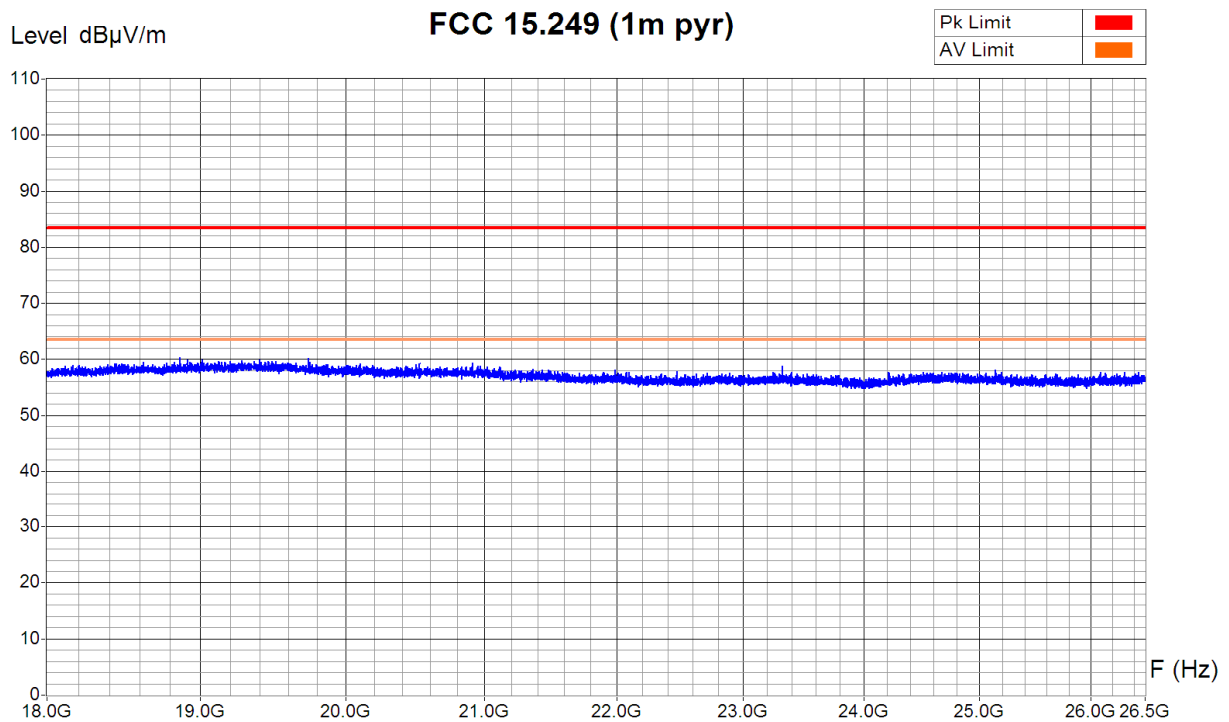
Zone	18 GHz - 19.70 GHz	19.70 GHz - 21.40	21.40 GHz - 23.10	23.10 GHz - 24.80	24.80 GHz - 26.50
Video Bandwidth	1 MHz	1 MHz	1 MHz	1 MHz	1 MHz
Resol Bandwidth	100 KHz	100 KHz	100 KHz	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 23.01.2009 14:29
Filename:
20088570_15-249_er_rem_003h.png/.txt

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



Equipment Under Test : Covert PTT AC
Set-Up : cables: none
Operating Conditions : Continuous emission; modulated; f = 2.402 GHz and f = 2.481 GHz
Remarks : Det = Avg (rms)



Zone	18 GHz - 19.70 GHz	19.70 GHz - 21.40	21.40 GHz - 23.10	23.10 GHz - 24.80	24.80 GHz - 26.50
Video Bandwidth	1 MHz	1 MHz	1 MHz	1 MHz	1 MHz
Resol Bandwidth	100 KHz	100 KHz	100 KHz	100 KHz	100 KHz

Operator: E. Staub
Date/Time: 23.01.2009 14:07
Filename:
20088570_15-249_er_rem_003v.png/.txt