

# DELTA Test Report



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## Emission tests to FCC requirements of Comfort Contego T900 and Comfort Contego R900

### Performed for Comfort Audio AB

DANAK-198626

Project no.: A504210-01

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11 January 2007

#### **DELTA**

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Title Emission tests to FCC requirements of Comfort Contego T900 and Comfort Contego R900

Test object Comfort Contego T900 and Comfort Contego R900

Report no. DANAK-198626

Project no. A504210-01

Test period 26 September 2006 to 22 December 2006

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Manufacturer Comfort Audio AB

Specifications T900: FCC CFR 47 Part 15, Subpart C  
R900: FCC CFR 47 Part 15, Subpart B

Results The objects tested were in compliance with the requirements

Test personnel Karsten Kruse Jensen  
Claus Momme Thomsen  
Claus Rømer Andersen

Date 11 January 2007

Responsible



Claus Rømer Andersen  
Team Leader, EMC  
DELTA

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## 1. Summary of tests

Tests	Reference	Test methods	Results
Conducted emission, AC mains	15.107 and 15.207	ANSI C63.4:2003	Passed
Restricted bands of operation	15.205	ANSI C63.4:2003	Passed
Radiated emission limits, general requirements	15.109 and 15.209	ANSI C63.4:2003	Passed
Occupied bandwidth	15.247(a)(2)	ANSI C63.4:2003	Passed
Peak output power	15.247(b)(3)	ANSI C63.4:2003	Passed
Frequency power outside band	15.247(d)	ANSI C63.4:2003	Passed
Spectral power density	15.247(e)	ANSI C63.4:2003	Passed
Public exposure to RF energy	15.247(i)	Calculation	Passed

The given result is based on a shared risk principle with respect to the measurement uncertainty.

### Conclusion

The test objects mentioned in this report meet the requirements of the specifications stated below.

- Transmitter T900:  
FCC CFR 47 Part 15, Subpart C - Intentional Radiators, Section 15.247  
"Operation within the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz"
- Receiver R900:  
FCC CFR 47 Part 15, Subpart B - Unintentional Radiators, Section 15.101  
"Equipment authorization of unintentional radiators".

The test results relate only to the objects tested.

## 2. Test objects and auxiliary equipment

### 2.1 Test objects

#### Test object 2.1.1

Name of test object	Comfort Contego T900
Model / type	T900
Part no.	CG0030
Serial no.	T7 (D8_Tx_R08)
FCC ID (intended)	UOJ-CG01T
Manufacturer	Comfort Audio AB
Supply voltage	5 VDC from AC/DC Adapter or internal battery
Comments	T900 transmitter to be paired with R900 receiver

#### Test object 2.1.2

Name of test object	Comfort Contego R900
Model / type	R900
Part no.	CG0040
Serial no.	R9 0630036
FCC ID (intended)	UOJ-CG01R
Manufacturer	Comfort Audio AB
Supply voltage	5 VDC from AC/DC Adapter or internal battery
Comments	R900 receiver to be paired with T900 transmitter

### 2.2 Auxiliary equipment

#### Auxiliary equipment 2.2.1

Name of auxiliary equipment	AC/DC Adapter
Model / type	15.1291
Part no.	-
Serial no.	Engineering Sample
FCC ID	-
Manufacturer	FRIWO Gerätebau GmbH
Supply voltage	120 VAC
Comments	None

## 2.3 Description of test objects

The system consists of a portable transmitter (T900) and a portable receiver (R900).

The system is used to transfer speech or audio from person to person or from an audio device to a person, using digital modulation.

The modulation scheme is binary (two-level) FSK with a 6 dB bandwidth greater than 500 kHz.

The transmitter and receiver can be tuned to one of 38 channels in the frequency range 904 MHz to 927 MHz.

The maximum transmitted power is 5 dBm EIRP.

The receiver is a receive-only device.

Both the transmitter and the receiver have internal antenna, and can be powered from their internal battery or from a 5 VDC AC/DC adapter.

### 3. General test conditions

#### 3.1 Test setup during test

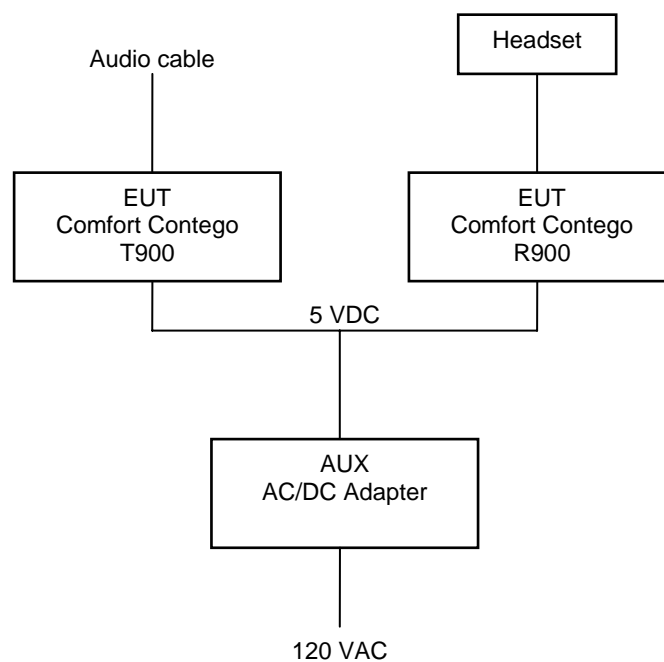


Figure 3.1.1 Block diagram of test object with cables and auxiliary equipment.

Some tests relating only to the transmitter were performed without the receiver present.

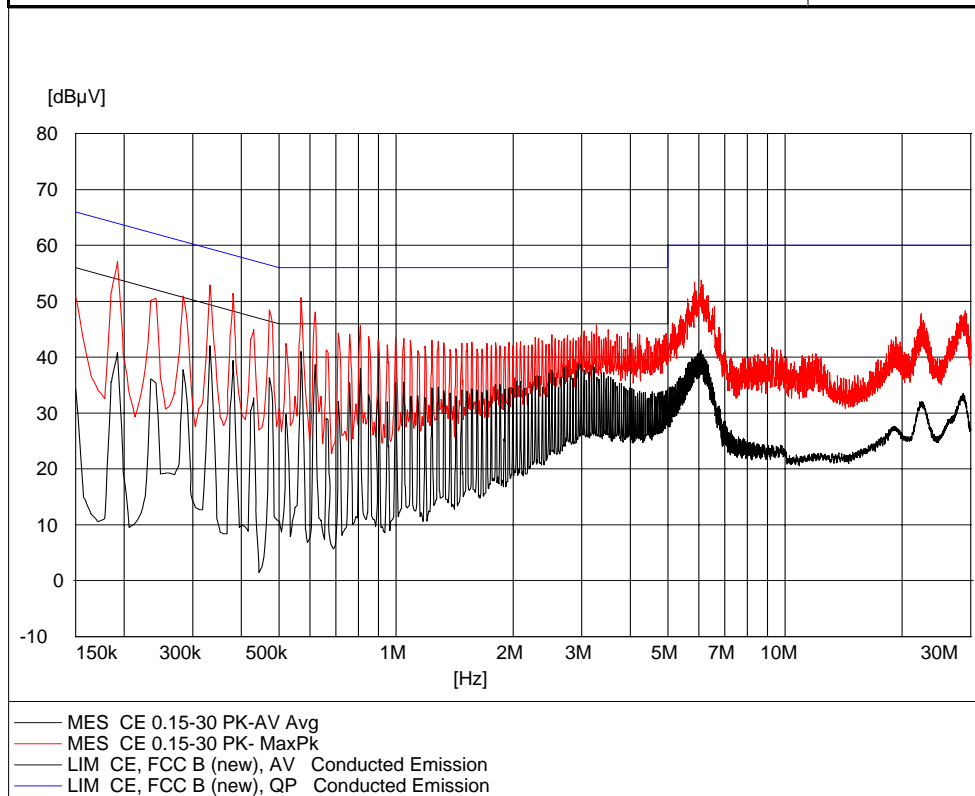
In general, tests were performed on channel 1 (904.65 MHz), channel 20 (916.05 MHz) and channel 38 (926.85 MHz).

## 4. Test results

### 4.1 Measurement of radio frequency voltage on AC mains

Test object	Comfort Contego T900, Comfort Contego R900	Sheet	CE-1
Type	T900, R900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08), R9 0630036	Date	13 Oct. 2006
Client	Comfort Audio AB	Initials	KKJ
Specification	FCC CFR 47 Part 15, Class B	Frequency	0.15-30 MHz

Test method	ANSI 63.4 2003	Temperature	23°C
Characteristics	Artificial mains network: 50 $\Omega$ , 50 $\mu$ H	Humidity	48 % RH
Detector	Peak and average	Bandwidth	10 kHz
Test equipm.	EMI room Hørsholm, 29461, 49421, 29916, 29861	Uncertainty	2 dB



Line under test

Neutral

Test result

The measured voltages were below the limit

Compliant

Yes

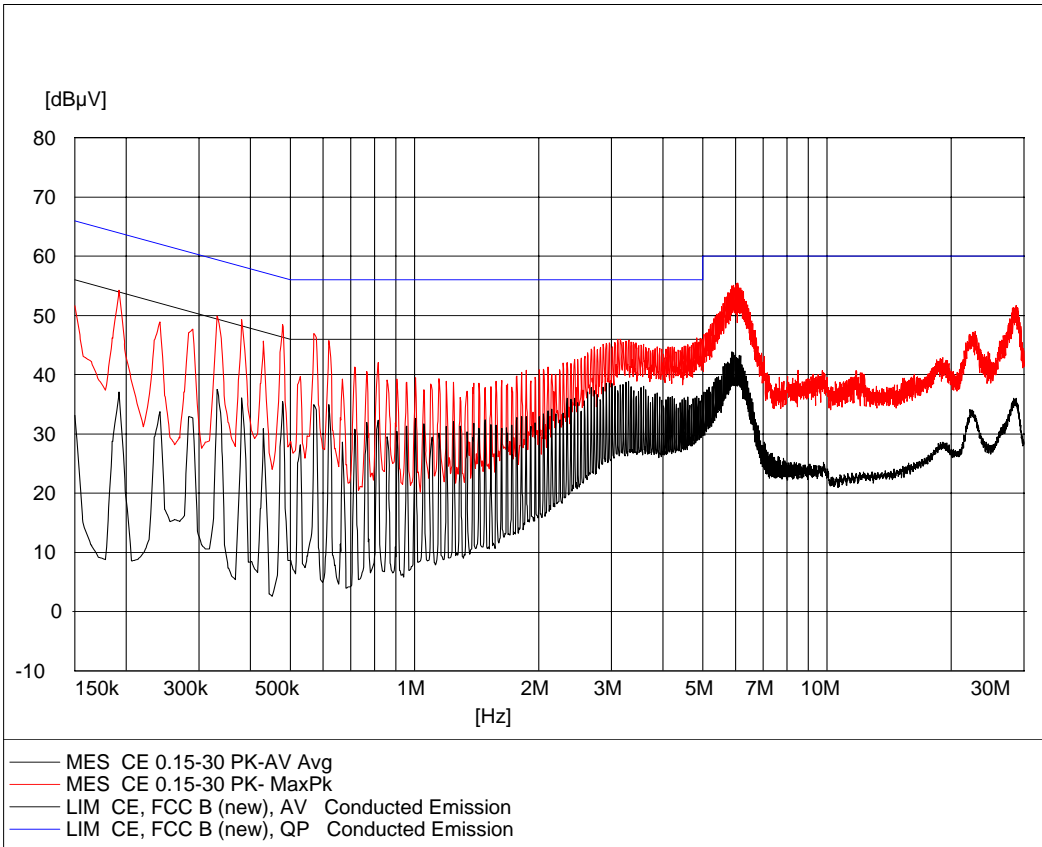
Comments

Mains voltage: 120 VAC



Test object	Comfort Contego T900, Comfort Contego R900	Sheet	CE-2
Type	T900, R900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08), R9 0630036	Date	13 Oct. 2006
Client	Comfort Audio AB	Initials	KKJ
Specification	FCC CFR 47 Part 15.107 and 15.207, Class B	Frequency	0.15-30 MHz

Test method	ANSI 63.4 2003	Temperature	23°C
Characteristics	Artificial mains network: 50 Ω, 50 μH	Humidity	48 % RH
Detector	Peak and average	Bandwidth	10 kHz
Test equipm.	EMI room Hørsholm, 29461, 49421, 29916, 29861	Uncertainty	2 dB



Line under test	Line
Test result	The measured voltages were below the limit
Compliant	Yes
Comments	Mains voltage: 120 VAC



Photo 4.1.1 Test setup regarding measurement of RF voltage on AC mains.



Photo 4.1.2 Test setup regarding measurement of RF voltage on AC mains.

## 4.2 Radiated emission and restricted bands, 30 MHz to 1000 MHz

Test object	Comfort Contego T900, Comfort Contego R900	Sheet	RE-1
Type	T900, R900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08), R9 0630036	Date	22 Dec. 2006
Client	Comfort Audio AB	Initials	CMT
Specification	FCC CFR 47 Part 15.109 Class B, 15.209, 15.205	Frequency	30-1000 MHz

Test method	ANSI 63.4 2003	Temperature	23°C
Characteristics	Spurious emission in tabular form	Humidity	40 % RH
Detector	Quasi peak	Bandwidth	120 MHz
Test equipm.	EMI room Hørsholm, 29461 ,49421, 29916, 29861, 29797	Uncertainty	2.6 dB

Spurious Freq. [MHz]	Pol.	Field strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Note
35.3	Vert.	25.4	40.0	14.6	-
80.0	Vert.	10.5	40.0	29.5	-
198.6	Vert.	11.9	43.5	31.6	-
226.8	Vert.	11.7	46.0	34.3	-
227.8	Vert.	11.8	46.0	34.2	-
1000.0	Hor.	27.6	53.9	26.3	(R)

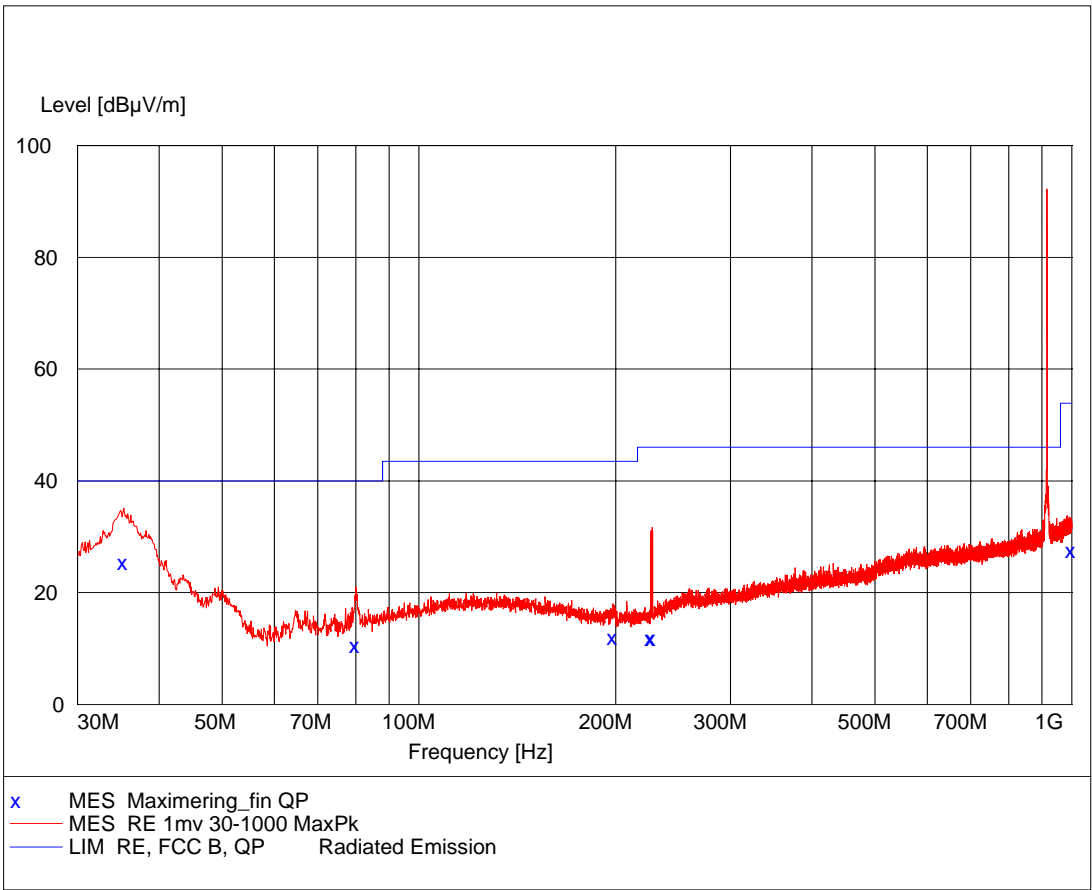
Test result The measured field strengths are below the limit

Compliant Yes

Comments: Tests were performed at channel 20. Only frequencies above the general spurious level have been reported.  
 The peak level was no higher than 20 dB above the QP limit.  
 Final maximal measurements by variation of turntable azimuth, antenna height and antenna polarisation.  
 (R): Restricted band, according to 15.205.

Test object	Comfort Contego T900, Comfort Contego R900	Sheet	RE-2
Type	T900, R900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08), R9 0630036	Date	22 Dec. 2006
Client	Comfort Audio AB	Initials	CMT
Specification	FCC CFR 47 Part 15.109 Class B, 15.209, 15.205	Frequency	30-1000 MHz

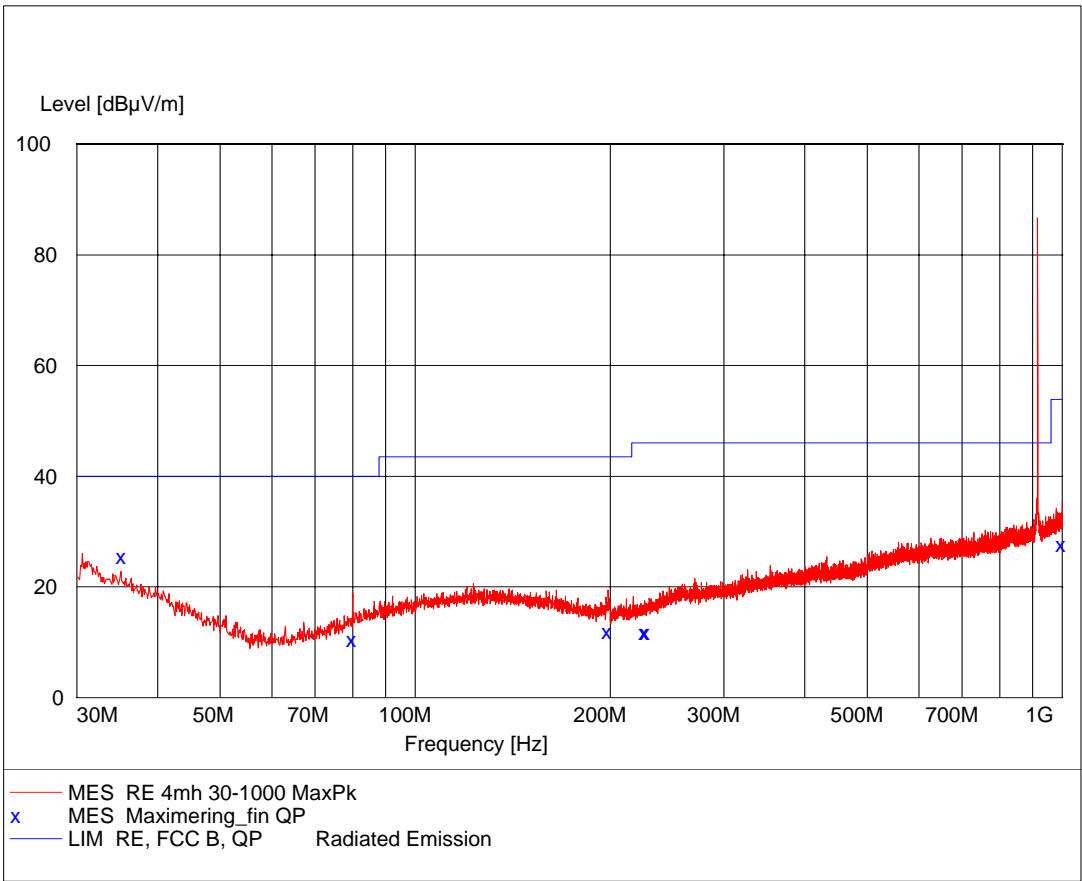
Test method	ANSI 63.4 2003	Temperature	23°C
Characteristics	Pre-scan, Antenna at 3 m, 1 m height, vert. pol.	Humidity	40 % RH
Detector	Peak and quasi peak	Bandwidth	120 MHz
Test equipm.	EMI room Hørsholm, 29461, 49421, 29916, 29861, 29797	Uncertainty	2.6 dB



Comments: Channel: 20

Test object	Comfort Contego T900, Comfort Contego R900	Sheet	RE-3
Type	T900, R900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08), R9 0630036	Date	22 Dec. 2006
Client	Comfort Audio AB	Initials	CMT
Specification	FCC CFR 47 Part 15.109 Class B, 15.209, 15.205	Frequency	30-1000 MHz

Test method	ANSI 63.4 2003	Temperature	23°C
Characteristics	Pre-scan, Antenna at 10 m, 4 m height, hor. pol.	Humidity	40 % RH
Detector	Peak and quasi peak	Bandwidth	120 MHz
Test equipm.	EMI room Hørsholm, 29461, 49421, 29916, 29861, 29797	Uncertainty	2.6 dB



Comments: Channel: 20



Photo 4.2.1 Test setup regarding radiated emission.

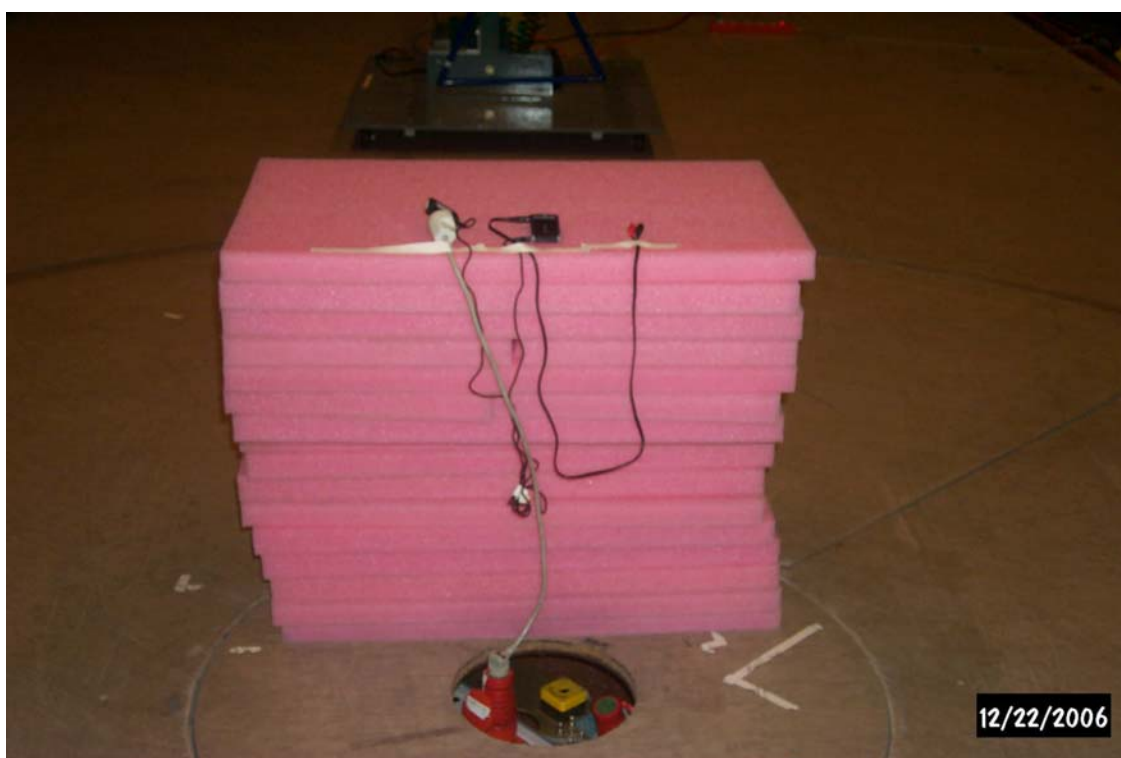


Photo 4.2.2 Test setup regarding radiated emission.

### 4.3 Radiated emission and restricted bands, 1 to 10 GHz

Test object	Comfort Contego T900, Comfort Contego R900	Sheet	RE-4
Type	T900, R900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08), R9 0630036	Date	21 Dec. 2006
Client	Comfort Audio AB	Initials	CMT
Specification	FCC CFR 47 Part 15.109 Class B, 15.209, 15.205	Frequency	1-10 GHz

Test method	ANSI 63.4 2003	Temperature	23°C
Characteristics	Spurious emission in tabular form	Humidity	40 % RH
Detector	Peak	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm, 29461, 29861, 49086, 49037, 49321, 29876	Uncertainty	4.9 dB

Spurious Freq. [MHz]	Pol.	Field strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Note
1809.3	Hor./Ver.	36.0	53.9	17.9	Channel 1, 2 <sup>nd</sup> . harm.
2714.0	Hor./Ver.	38.7	53.9	15.2	Channel 1, 3 <sup>rd</sup> . harm. (R)
3618.6	Hor./Ver.	42.5	53.9	11.4	Channel 1, 4 <sup>th</sup> . Harm. (R)
4523.3	Hor./Ver.	44.4	53.9	9.5	Channel 1, 5 <sup>th</sup> . harm. (R)
5427.9	Hor./Ver.	44.2	53.9	9.7	Channel 1, 6 <sup>th</sup> . harm. (R)
6332.6	Hor./Ver.	48.3	53.9	5.6	Channel 1, 7 <sup>th</sup> . harm.
7237.2	Hor./Ver.	50.7	53.9	3.2	Channel 1, 8 <sup>th</sup> . harm.
8141.9	Hor./Ver.	51.3	53.9	2.6	Channel 1, 9 <sup>th</sup> . harm. (R)
9046.5	Hor./Ver.	53.3	53.9	0.6	Channel 1, 10 <sup>th</sup> . harm. (R)
1832.1	Hor./Ver.	36.0	53.9	17.9	Channel 20, 2 <sup>nd</sup> . harm.
2748.2	Hor./Ver.	39.0	53.9	14.9	Channel 20, 3 <sup>rd</sup> . harm. (R)
3664.2	Hor./Ver.	42.6	53.9	11.3	Channel 20, 4 <sup>th</sup> . harm. (R)
4580.3	Hor./Ver.	44.6	53.9	9.3	Channel 20, 5 <sup>th</sup> . harm. (R)
5496.3	Hor./Ver.	47.4	53.9	6.5	Channel 20, 6 <sup>th</sup> . harm.
6412.4	Hor./Ver.	47.8	53.9	6.1	Channel 20, 7 <sup>th</sup> . harm.
7328.4	Hor./Ver.	50.7	53.9	3.2	Channel 20, 8 <sup>th</sup> . harm. (R)
8244.5	Hor./Ver.	50.7	53.9	3.2	Channel 20, 9 <sup>th</sup> . harm. (R)
9160.5	Hor./Ver.	53.3	53.9	0.6	Channel 20, 10 <sup>th</sup> . harm. (R)

Test result The measured field strengths are below the limit

Compliant Yes

Comments: Tests were performed at channel 1, 20 and 38. Only frequencies above the general spurious level have been reported.  
Tests by variation of turntable azimuth, antenna height and antenna polarisation.  
(R): Restricted band, according to 15.205.

Test object	Comfort Contego T900, Comfort Contego R900	Sheet	RE-5
Type	T900, R900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08), R9 0630036	Date	21 Dec. 2006
Client	Comfort Audio AB	Initials	CMT
Specification	FCC CFR 47 Part 15.109 Class B, 15.209, 15.205	Frequency	1-10 GHz

Test method	ANSI 63.4 2003	Temperature	23°C
Characteristics	Spurious emission in tabular form	Humidity	40 % RH
Detector	Peak	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm, 29461, 29861, 49086, 49037, 49321, 29876	Uncertainty	4.9 dB

Spurious Freq. [MHz]	Pol.	Field strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Note
1853.7	Hor./Ver.	36.0	53.9	17.9	Channel 38, 2 <sup>nd</sup> . harm.
2780.6	Hor./Ver.	39.2	53.9	14.7	Channel 38, 3 <sup>rd</sup> . harm. (R)
3707.4	Hor./Ver.	42.8	53.9	11.1	Channel 38, 4 <sup>th</sup> . harm. (R)
4634.3	Hor./Ver.	44.8	53.9	9.1	Channel 38, 5 <sup>th</sup> . harm. (R)
5561.1	Hor./Ver.	47.4	53.9	6.5	Channel 38, 6 <sup>th</sup> . harm.
6488.0	Hor./Ver.	48.5	53.9	5.4	Channel 38, 7 <sup>th</sup> . harm.
7414.8	Hor./Ver.	50.9	53.9	3	Channel 38, 8 <sup>th</sup> . harm. (R)
8341.7	Hor./Ver.	50.7	53.9	3.2	Channel 38, 9 <sup>th</sup> . harm. (R)
9268.5	Hor./Ver.	53.4	53.9	0.5	Channel 38, 10 <sup>th</sup> . harm.

Test result The measured field strengths are below the limit

Compliant Yes

Comments: Tests were performed at channel 1, 20 and 38. Only frequencies above the general spurious level have been reported.

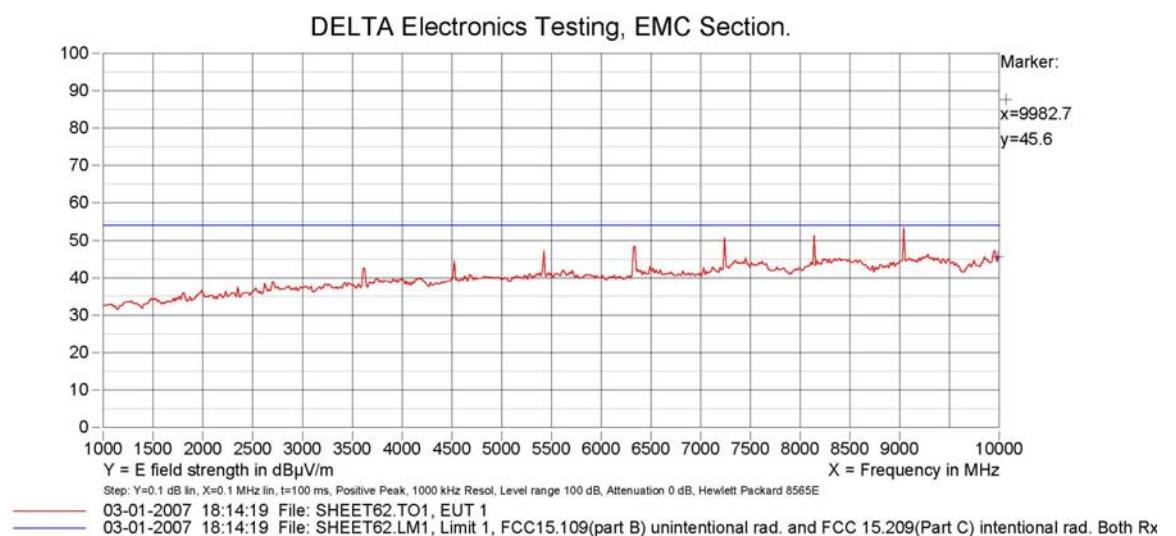
Tests by variation of turntable azimuth, antenna height and antenna polarisation.

(R): Restricted band, according to 15.205.



Test object	Comfort Contego T900, Comfort Contego R900	Sheet	RE-6
Type	T900, R900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08), R9 0630036	Date	21 Dec. 2006
Client	Comfort Audio AB	Initials	CMT
Specification	FCC CFR 47 Part 15.109 Class B, 15.209, 15.205	Frequency	1-10 GHz

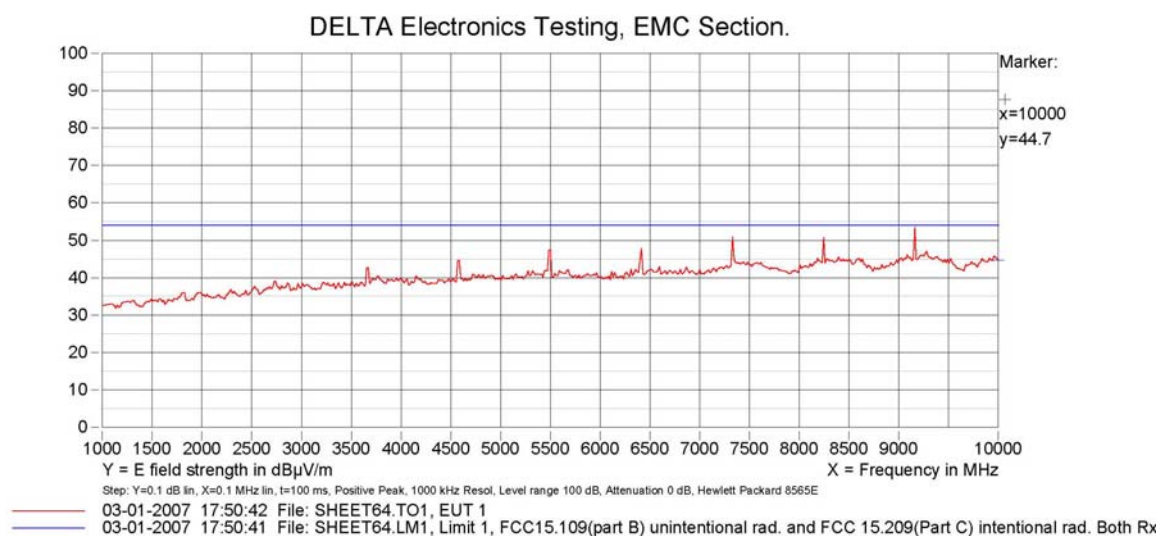
Test method	ANSI 63.4 2003	Temperature	23°C
Characteristics	Final maximal measurements	Humidity	40 % RH
Detector	Peak	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm, 29461, 29861, 49086, 49037, 49321, 29876	Uncertainty	4.9 dB



Comments: Channel: 1  
Final maximal measurements by variation of turntable azimuth, antenna height and antenna polarisation

Test object	Comfort Contego T900, Comfort Contego R900	Sheet	RE-7
Type	T900, R900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08), R9 0630036	Date	21 Dec. 2006
Client	Comfort Audio AB	Initials	CMT
Specification	FCC CFR 47 Part 15.109 Class B, 15.209, 15.205	Frequency	1-10 GHz

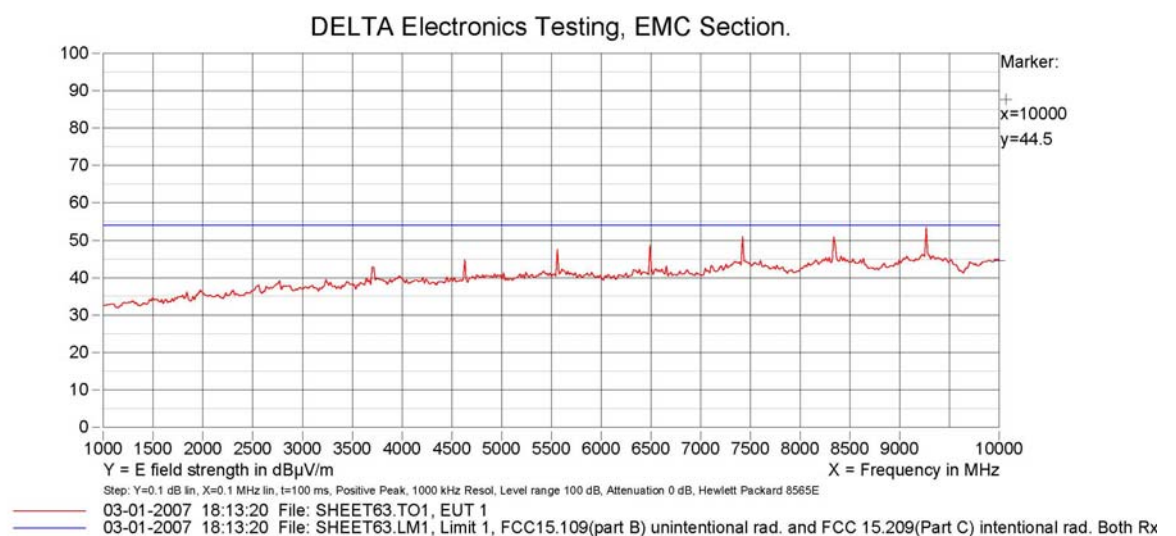
Test method	ANSI 63.4 2003	Temperature	23°C
Characteristics	Final maximal measurements	Humidity	40 % RH
Detector	Peak	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm, 29461, 29861, 49086, 49037, 49321, 29876	Uncertainty	4.9 dB



Comments: Channel: 20  
Final maximal measurements by variation of turntable azimuth, antenna height and antenna polarisation

Test object	Comfort Contego T900, Comfort Contego R900	Sheet	RE-8
Type	T900, R900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08), R9 0630036	Date	21 Dec. 2006
Client	Comfort Audio AB	Initials	CMT
Specification	FCC CFR 47 Part 15.109 Class B, 15.209, 15.205	Frequency	1-10 GHz

Test method	ANSI 63.4 2003	Temperature	23°C
Characteristics	Final maximal measurements	Humidity	40 % RH
Detector	Peak	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm, 29461, 29861, 49086, 49037, 49321, 29876	Uncertainty	4.9 dB



Comments: Channel: 38  
 Final maximal measurements by variation of turntable azimuth, antenna height and antenna polarisation

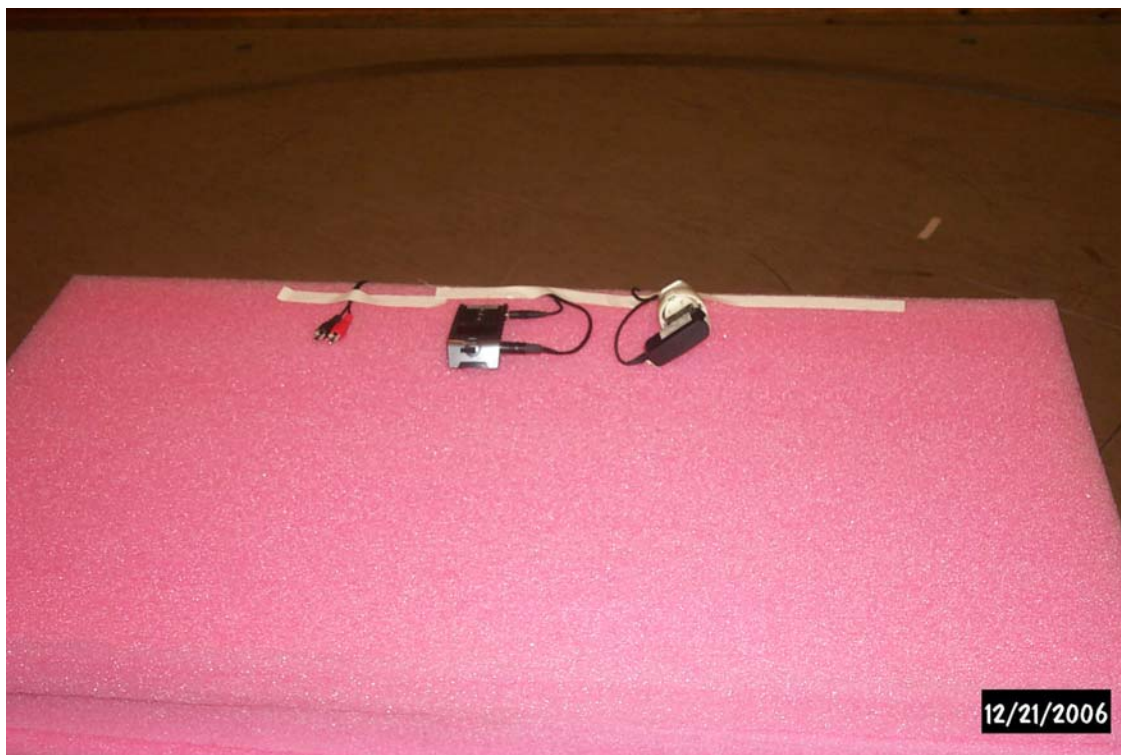


Photo 4.3.1 Test setup regarding radiated emission.



Photo 4.3.2 Test setup regarding radiated emission.

#### 4.4 Occupied bandwidth

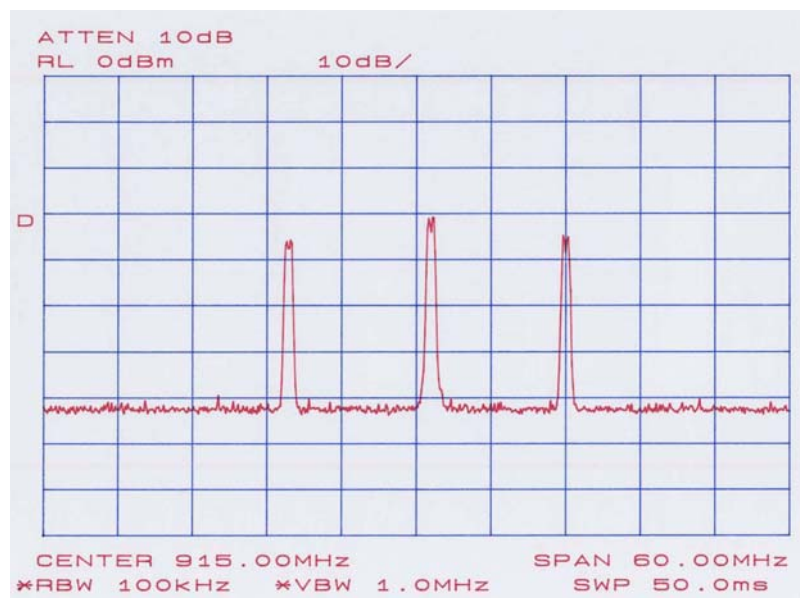
Test object	Comfort Contego T900	Sheet	BW-1
Type	T900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08)	Date	22 Dec. 2006
Client	Comfort Audio AB	Initials	CRA
Specification	FCC CFR 47 Part 15.219 and 15.247		

15.247(a)(2) specifies a 6 dB bandwidth of at least 500 kHz.

The bandwidth of the emission was measured using a receiving antenna and a spectrum analyzer (RBW: 100 kHz, VBW: 1 MHz).

The 6 dB bandwidth was measured at channel 1, 20 and 38:

Channel	Low frq. [MHz]	High frq. [MHz]	BW [kHz]	Note
1	904.382	904.893	511	-
20	915.780	916.300	520	-
38	926.558	927.107	549	-



Test result	The measured 6 dB bandwidths were at least 500 kHz. The 6 dB bandwidth of the emission is within the designated frequency band (902-928 MHz).
Compliant	Yes
Comments	The plot was recorded by changing channel with the spectrum analyzer in max-hold





Photo 4.4.1 Test setup regarding occupied bandwidth.



Photo 4.4.2 Test setup regarding occupied bandwidth.

#### 4.5 Peak output power

Test object	Comfort Contego T900	Sheet	PWR-1
Type	T900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08)	Date	21 Dec. 2006
Client	Comfort Audio AB	Initials	CMT
Specification	FCC CFR 47 Part 15.247		

15.247(b)(3) specifies that the peak conducted output power shall be below 1 W.  
The test object has no external antenna connector. The output power has been measured as peak output power (EIRP) using the substitution method.

The peak output power was measured at channel 1, 20 and 38:

Channel	Frequency [MHz]	Output power [dBm (EIRP)]	Limit [dBm (EIRP)]	Margin [dB]
1	904.490	2.9	30.0	27.1
20	915.900	4.8	30.0	25.2
38	926.67	0.0	30.0	30.0

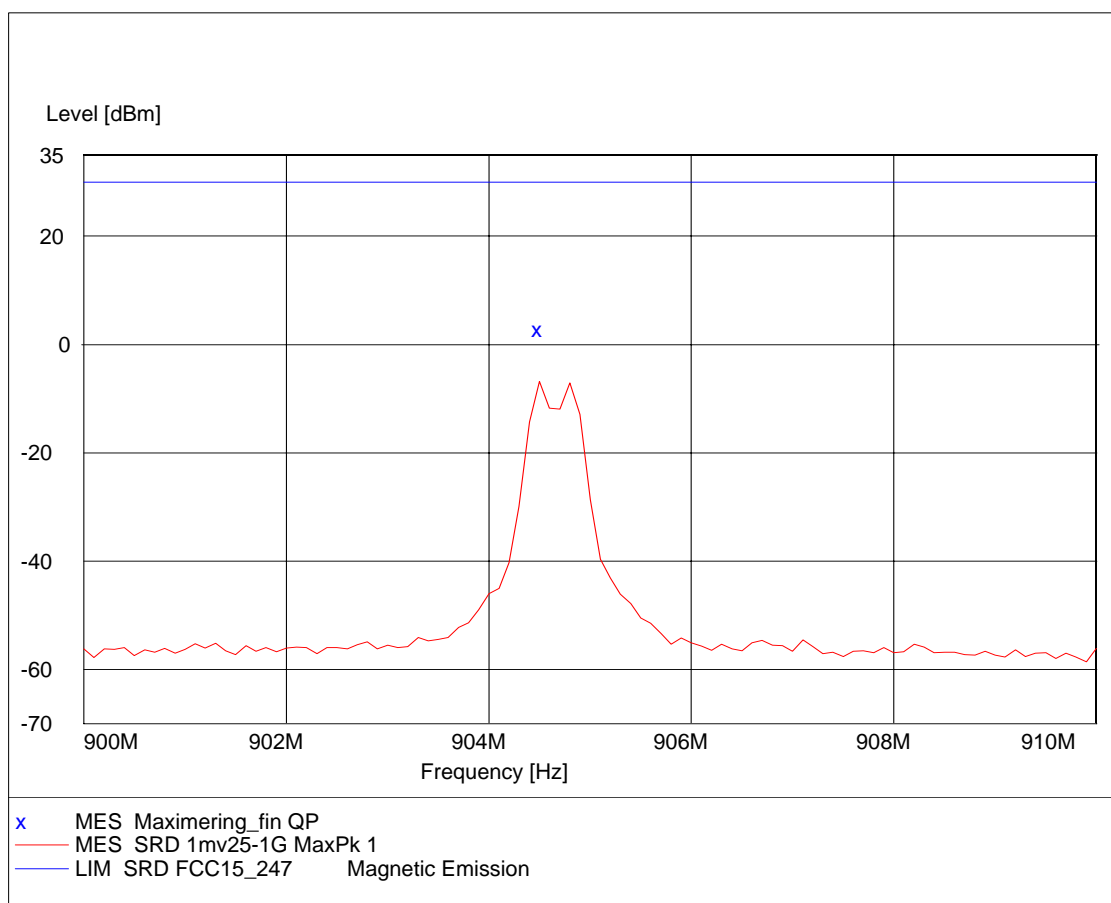
Test result                      The peak output power is below 1 W (30 dBm)

Compliant                      Yes

Comments                      None

Test object	Comfort Contego T900	Sheet	PWR-2
Type	T900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08)	Date	21 Dec. 2006
Client	Comfort Audio AB	Initials	CMT
Specification	FCC CFR 47 Part 15.247	Channel	1

Test method	ANSI 63.4 2003	Temperature	23°C
Characteristics	Final maximal measurements	Humidity	40 % RH
Detector	Peak and quasi peak	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm, 29461, 29861, 29876, 49037, 49321	Uncertainty	4.9 dB

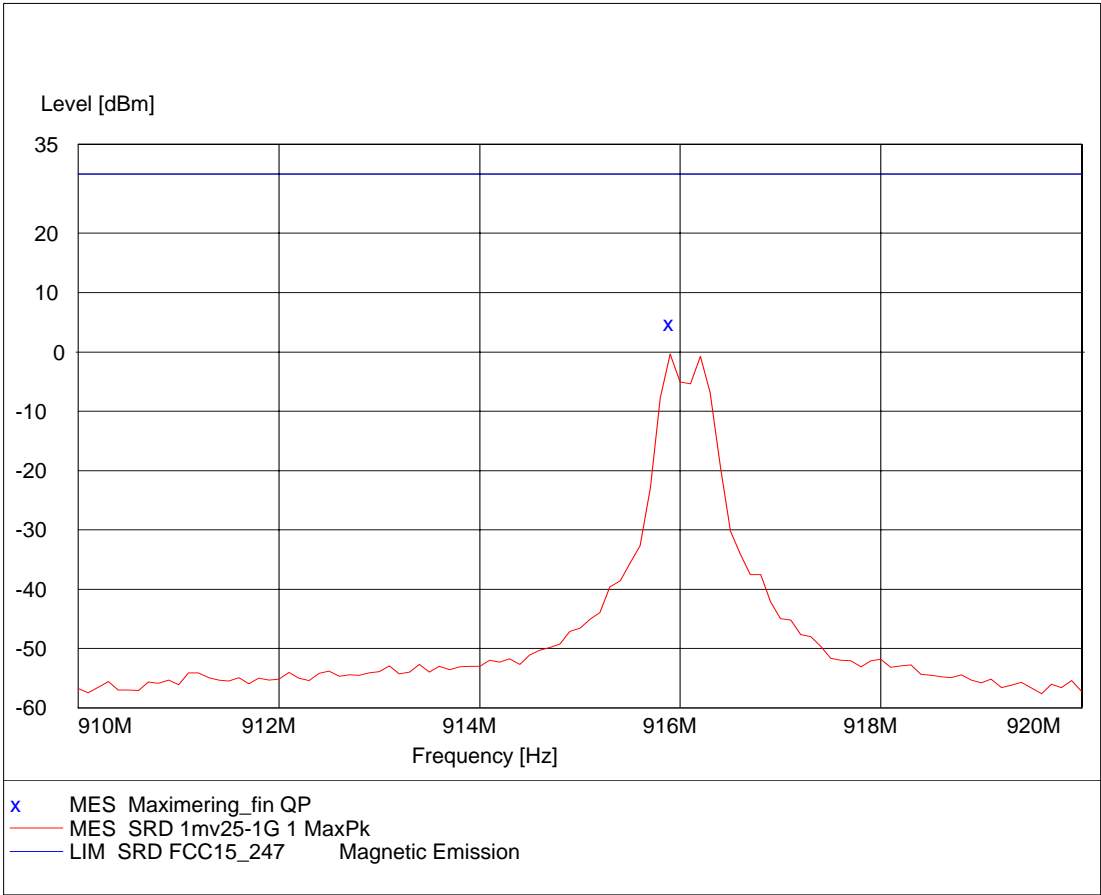


Comments None



Test object	Comfort Contego T900	Sheet	PWR-3
Type	T900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08)	Date	21 Dec. 2006
Client	Comfort Audio AB	Initials	CMT
Specification	FCC CFR 47 Part 15.247	Channel	20

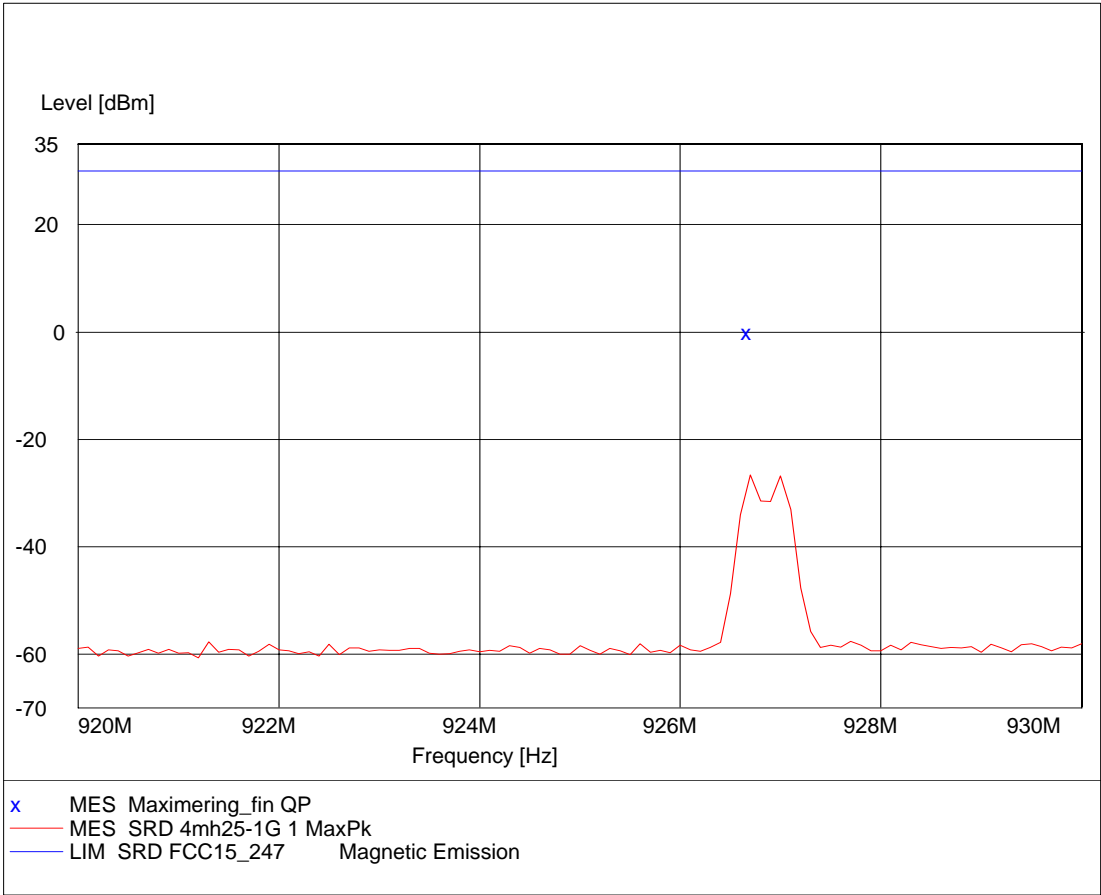
Test method	ANSI 63.4 2003	Temperature	23°C
Characteristics	Final maximal measurements	Humidity	40 % RH
Detector	Peak and quasi peak	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm, 29461, 29861, 29876, 49037, 49321	Uncertainty	4.9 dB



Comments None

Test object	Comfort Contego T900	Sheet	PWR-4
Type	T900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08)	Date	21 Dec. 2006
Client	Comfort Audio AB	Initials	CMT
Specification	FCC CFR 47 Part 15.247	Channel	38

Test method	ANSI 63.4 2003	Temperature	23°C
Characteristics	Final maximal measurements	Humidity	40 % RH
Detector	Peak and quasi peak	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm, 29461, 29861, 29876, 49037, 49321	Uncertainty	4.9 dB



CommentsNone



Photo 4.5.1 Test setup regarding peak output power.



Photo 4.5.2 Test setup regarding peak output power.

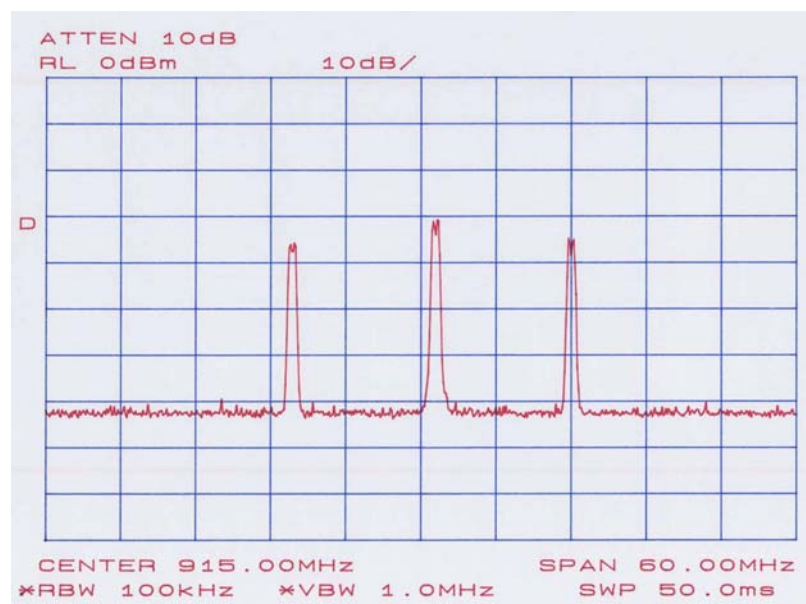
#### 4.6 Frequency power outside band

Test object	Comfort Contego T900	Sheet	OB-1
Type	T900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08)	Date	22 Dec. 2006
Client	Comfort Audio AB	Initials	CRA
Specification	FCC CFR 47 Part 15.247		

15.247(d) specifies that the radio frequency power in any 100 kHz bandwidth outside shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

During measurement of radiated emission (see Section 4.3) it was verified, that the wanted emission was at least 20 dB above the general emission.

The frequency power outside band was verified, using a receiving antenna and a spectrum analyzer (RBW: 100 kHz, VBW: 1 MHz) (see Section 4.4).



Test result	Frequency power (100 kHz) outside band is at least 20 dB below the highest level of the desired power
Compliant	Yes
Comments	The plot was recorded by changing channel with the spectrum analyzer in max-hold

#### 4.7 Spectral power density

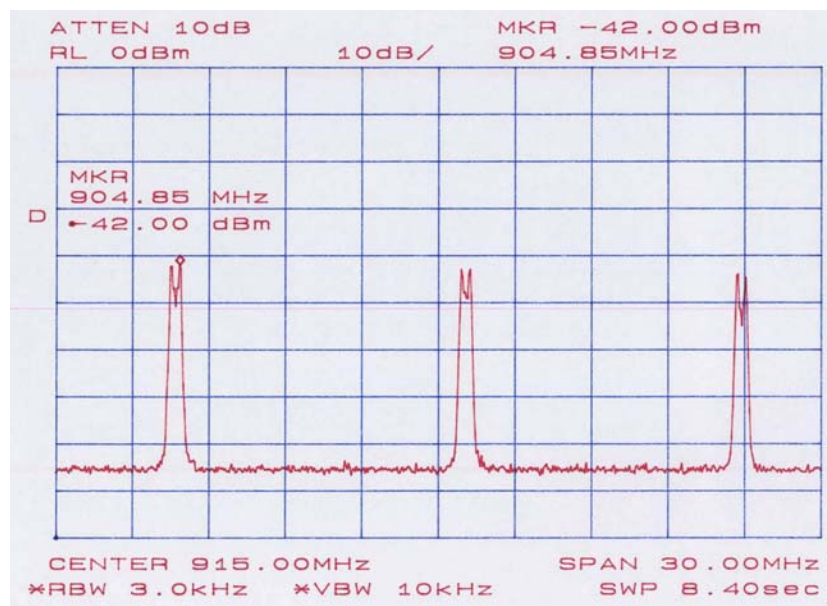
Test object	Comfort Contego T900	Sheet	SPD-1
Type	T900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08)	Date	22 Dec. 2006
Client	Comfort Audio AB	Initials	CRA
Specification	FCC CFR 47 Part 15.247		

15.247(b)(3) specifies that the peak conducted output power shall be below 8 dBm in any 3 kHz band.

The test object has no external antenna connector. The output power has been measured as peak output power (EIRP), using the substitution method.

The peak output power in 3 kHz bandwidth was measured using a receiving antenna and a spectrum analyzer (RBW: 3 kHz, VBW: 10 kHz).

The marker is at channel 1, -42.0 dBm corresponds to 2.9 dBm EIRP (see Section 4.5).



Test result Frequency power (3 kHz) outside band is below 8 dBm

Compliant Yes

Comments The plot was recorded by changing channel with the spectrum analyzer in max-hold





Photo 4.7.1 Test setup regarding spectral power density.



Photo 4.7.2 Test setup regarding spectral power density.

#### 4.8 Public exposure to RF energy

Test object	Comfort Contego T900	Sheet	SPD-1
Type	T900	Project no.	A504210-01
Serial no.	T7 (D8_Tx_R08)	Date	22 Dec. 2006
Client	Comfort Audio AB	Initials	CRA
Specification	FCC CFR 47 Part 15.247		

The peak output power (EIRP) radiated from the transmitter is below 5 mW (see Section 4.5).

According to OET Bulletin No 65, Supplement C, Annex A the MPE (maximum permissible exposure) limit for general public/uncontrolled exposure at 902 MHz is:

$$S = f/1500 \text{ [mW/cm}^2\text{]}, f: \text{[MHz]}$$

$$S = 902/1500 = 0.601 \text{ mW/cm}^2.$$

The minimum safe distance can be calculated using the prediction method of OET Bulletin No 65, Section 2:

$$R_{\min} = \sqrt{\frac{EIRP}{4 \cdot \pi \cdot S}} = \sqrt{\frac{5 \text{ mW}}{4 \cdot \pi \cdot 0.601 \text{ mW/cm}^2}} = 0.02 \text{ cm}$$

Due to the construction of the transmitter, all radiating elements will be at a distance greater than 0.02 cm from the human body.

The transmitter is in compliance with the reference level of Section 1.1310 Table 1.B, as specified in 1.1307(b)(1) referenced in 15.247(i).

Therefore the transmitter is deemed to comply with the exposure requirements, without performing a complete SAR measurement.

Result	The transmitter is in compliance with 15.247(i)
Compliant	Yes
Comments	The result is based on verification by calculation

## 5. National registrations and accreditations

### 5.1 FCC registrations

**Organization:** Federal Communications Commission, USA

**Registration Number:** 90529

**Facilities:** EMI room Hørsholm (EMC-5)

OATS Hørsholm (EMC-0)

### 5.2 VCCI registrations

**Organization:** Voluntary Control Council for Interference by Information Technology, Japan

**Member Number:** 910

**Facilities:**

OATS Hørsholm (EMC-0):	R-691
EMC room 2 Hørsholm (EMC-2):	C-707 and T-246
EMC room 3 Hørsholm (EMC-3):	C-2532 and T-247
EMC room 4 Hørsholm (EMC-4):	C-2533 and T-248
EMI room Hørsholm (EMC-5):	R-1180, C-706 and T-249

### 5.3 IC registrations

**Organization:** Industry Canada, Certification and Engineering Bureau

**Registration Number:** IC4187-5

**Facilities:** EMI room Hørsholm (EMC-5)

### 5.4 DANAK Accreditation

**Organization:** Danish Accreditation and Metrology Fund - DANAK, see [www.danak.dk](http://www.danak.dk) and [www.ilac.org](http://www.ilac.org)

**Registration Number:** 19

DANAK is part of ILAC (International Laboratory Accreditation Cooperation) including its MRA (Mutual Recognition Arrangement). The MRA includes the Australian NATA and Canadian SCC.



CISPR 22 is equivalent to AS/NZS CISPR 22, and therefore this report can be used for applying the **Australian C-Tick mark** for IT equipment, when this test has been passed.

CISPR 22:2002 is equivalent to ICES-003:2004, and therefore this report can be used for approval in Canada for IT equipment, when this test has been passed.

## 6. List of instruments

<b>Instru- ment no.</b>	<b>DESCRIPTION</b>	<b>MANUFACTURER</b>	<b>TYPE NO.</b>
29461	ARTIFICIAL MAINS NETWORK	ROHDE & SCHWARZ	ESH2-Z5
29797	BILOG ANTENNA, 30-2000 MHz	CHASE ELECTRICS LTD	CBL 6111A
29861	EMI-SOFTWARE Ver. 1.60	ROHDE & SCHWARZ	ES-K1, PART: 1026.6790.02
29876	RIDGED GUIDE HORN AN- TENNA, 1-12.75 (18) GHz	EMCO	3115
29916	AUTOMATIC TEST RECEIVER, 9 kHz - 2.75 GHz	ROHDE & SCHWARZ	ESCS 30 1102.4500.30
49037	BROADBAND MICROWAVE PREAMPLIFIER, 1-12.8 GHz	MITEQ / DELTA	AMF-5D-001128-35-11P
49086	REMI EMISSION SOFTWARE PACKAGE v. 2.133, ROOM 5	NeWeTec	REMI
49321	SPECTRUM ANALYZER, 50 GHz WITH OPTION 006	HEWLETT-PACKARD	8565E
49421	IMPULSE VOLTAGE LIMITER	ROHDE & SCHWARZ	ESH3/Z2