



## TEST REPORT FROM RFI GLOBAL SERVICES LTD

Test of: Stilo srl  
Stilo-Nolan Bluetooth System XCOM Model EI0003

To: FCC Part 15.247: 2006 (Subpart C)

**Test Report Serial No:**  
RFI/RPTE2/RP73110JD05A  
**Supersedes Test Report Serial No:**  
RFI/RPTE1/RP73110JD05A

<b>This Test Report Is Issued Under The Authority Of Steve Flocks, Radio Performance Group Service Leader:</b>		 pp Brian Watson
<b>Checked By:</b> Brian Watson		<b>Report Copy No: PDF01</b>
<b>Issue Date: 30 May 2008</b>		<b>Test Dates: 23 April 2008 to 25 April 2008</b>

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Registered in England and Wales. Company number:2117901

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## 1. Client Information

Company Name:	Stilo srl
Address:	Via Piave 41/3 Treviolo (Bg) 24048 Italy
Contact Name:	Mr F Corti

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## **2. Equipment Under Test (EUT)**

The following information (with the exception of the date of receipt) has been supplied by the customer:

### **2.1. Description of EUT**

The NCOM2 system configuration allows the connection to one's own wireless *Bluetooth* devices. With this system, normally fitted into a motorcycle helmet using a basic kit, it is possible to receive phone calls directly in the helmet and listen to music in MP3 format or be connected with a GPS navigator.

The system is upgradeable using a multimedia wire that permits a further audio input.

### **2.2. Identification of Equipment Under Test (EUT)**

<b>Description:</b>	Bluetooth Headset
<b>Brand Name:</b>	Stilo
<b>Model Name or Number:</b>	EI0003
<b>Serial Number:</b>	None Stated
<b>FCC ID Number:</b>	WAWXCOM1
<b>Country of Manufacture:</b>	Italy
<b>Date of Receipt:</b>	23 April 2008

### **2.3. Modifications Incorporated in the EUT**

During the course of testing the EUT was not modified.

### **2.4. Accessories**

The following accessories were supplied with the EUT during testing:

<b>Description:</b>	Battery
<b>Brand Name:</b>	Stilo
<b>Model Name or Number:</b>	None stated
<b>Serial Number:</b>	None stated
<b>Cable Length and Type:</b>	100mm / 2 core
<b>Connected to Port</b>	Power and charger

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**Accessories (Continued)**

<b>Description:</b>	Microphone
<b>Brand Name:</b>	Stilo
<b>Model Name or Number:</b>	None stated
<b>Serial Number:</b>	None stated
<b>Cable Length and Type:</b>	100mm / 2 core
<b>Connected to Port</b>	Audio

<b>Description:</b>	Loudspeakers
<b>Brand Name:</b>	Stilo
<b>Model Name or Number:</b>	None stated
<b>Serial Number:</b>	None stated
<b>Cable Length and Type:</b>	100mm / 2 core
<b>Connected to Port</b>	Audio

<b>Description:</b>	Serial interface cable
<b>Brand Name:</b>	Stilo
<b>Model Name or Number:</b>	None stated
<b>Serial Number:</b>	None stated
<b>Cable Length and Type:</b>	2 m, serial
<b>Connected to Port</b>	Serial port

<b>Description:</b>	On/off/audio switch
<b>Brand Name:</b>	Stilo
<b>Model Name or Number:</b>	None stated
<b>Serial Number:</b>	None stated
<b>Cable Length and Type:</b>	100mm / ribbon
<b>Connected to Port</b>	Power control

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**Accessories (Continued)**

<b>Description:</b>	Accessory 1 cable
<b>Brand Name:</b>	Stilo
<b>Model Name or Number:</b>	None stated
<b>Serial Number:</b>	None stated
<b>Cable Length and Type:</b>	100mm / multicore
<b>Connected to Port</b>	Accessory 1

<b>Description:</b>	Accessory 2 cable
<b>Brand Name:</b>	Stilo
<b>Model Name or Number:</b>	None stated
<b>Serial Number:</b>	None stated
<b>Cable Length and Type:</b>	100mm / multicore
<b>Connected to Port</b>	Accessory 2

<b>Description:</b>	Mains AC charger
<b>Brand Name:</b>	Stilo
<b>Model Name or Number:</b>	OH-1048A0500300U - VDE
<b>Serial Number:</b>	None stated
<b>Cable Length and Type:</b>	2 metre / multicore
<b>Connected to Port</b>	Accessory 2

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**2.5. Support Equipment**

The following support equipment was used to exercise the EUT during testing:

<b>Description:</b>	Serial interface cable
<b>Brand Name:</b>	None stated
<b>Model Name or Number:</b>	None stated
<b>Serial Number:</b>	None stated
<b>Cable Length and Type:</b>	2 metre / multicore
<b>Connected to Port:</b>	Serial I/O

<b>Description:</b>	Laptop computer
<b>Brand Name:</b>	None stated
<b>Model Name or Number:</b>	Dell Latitude D610
<b>Serial Number:</b>	RFI asset No PC370
<b>Cable Length and Type:</b>	Not Aplicable
<b>Connected to Port:</b>	Serial I/O



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**2.6. Additional Information Related to Testing**

Power Supply Requirement:	External DC Supply of 3.7 V		
Intended Operating Environment:	Commercial		
Equipment Category:	Bluetooth		
Type of Unit:	Transceiver		
Channel Spacing:	1000 (kHz)		
Modulation Type:	GFSK/PSK		
Transmit Frequency Range:	2.402 GHz to 2.480 GHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (GHz)
	Bottom	0	2.402
	Middle	38	2.441
	Top	78	2.480
Receive Frequency Range:	2.402 GHz to 2.480 GHz		
Receive Channels Tested:	Channel ID	Channel Number	Channel Frequency (GHz)
	Bottom	0	2.402
	Middle	38	2.441
	Top	78	2.480

**2.7. Port Identification**

Port	Description	Type/Length
1	Serial Communications	RS232, 2m

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### **3. Test Specification, Methods and Procedures**

#### **3.1. Test Specification**

Reference:	FCC Part 15.247: 2006 Subpart C
Title:	Code of Federal Regulations, Part 15.247 (47CFR15) (Intentional Radiators operating within the band 2400 MHz to 2483.5 MHz)

#### **3.2. Methods and Procedures**

The methods and procedures used were as detailed in:

ANSI C63.2 (1996)

Title: American National Standard for Instrumentation - Electromagnetic Noise and Field Strength Instrumentation, 10 Hz to 40 GHz.

ANSI C63.4 (2003)

Title: American National Standard Methods of Measurement of Electromagnetic Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

ANSI C63.5 (1988)

Title: American National Standard for the Calibration of antennas used for Radiated Emission measurements in Electromagnetic Interference (EMI) control.

ANSI C63.7 (1988)

Title: American National Standard Guide for Construction of Open Area Test Sites for performing Radiated Emission Measurements.

CISPR 16-1: (1999)

Title: Specification For Radio Disturbance and Immunity Measuring Apparatus and Methods. Part 1: Radio Disturbance and Immunity Measuring Apparatus.

DA00-705 (2000)

Title: Filing and Frequency Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

#### **3.3. Definition of Measurement Equipment**

The measurement equipment used complied with the requirements of the standards referenced in the methods & procedures section above. Appendix 1 contains a list of the test equipment used.

### **4. Deviations from the Test Specification**

There were no deviations from the test specification.

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## **5. Operation and Configuration of the EUT during Testing**

### **5.1. Operating Modes**

The EUT was tested in the following operating modes, unless otherwise stated:

- In Bluetooth basic rate mode, controlled by a laptop PC. Transmit tests performed with the EUT transmitting at full power.
- Standby mode tests performed with the transmitter turned off but with the EUT connected to a mains charger.

### **5.2. Configuration and Peripherals**

The EUT was tested in the following configuration:

- All accessories connected to all available ports. Loudspeakers and batteries mounted into foam from a crash helmet as supplied by the Client.

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## **6. Summary of Test Results**

<b>Range of Measurements</b>	<b>FCC Part 15 Reference</b>	<b>Port Type</b>	<b>Compliance Status</b>
Idle Mode AC Conducted Emissions	15.107	AC Mains	Complied
Idle Mode Radiated Spurious Emissions	15.109	Antenna	Complied
Transmitter AC Conducted Emissions	15.207	AC Mains	Complied
Transmitter 20 dB Bandwidth	15.247(a)(1)	Antenna	Complied
Transmitter Carrier Frequency Separation	15.247(a)(1)	Antenna	Complied
Transmitter Average Time of Occupancy	15.247(a)(1)(iii)	Antenna	Complied
Transmitter Maximum Peak Output Power	15.247(b)(1)	Antenna	Complied
Transmitter Radiated Emissions	15.247(d) & 15.209(a)	Antenna	Complied
Transmitter Band Edge Radiated Emissions	15.247(d) & 15.209(a)	Antenna	Complied

### **6.1. Location of Tests**

All the measurements described in this report were performed at the premises of  
RFI Global Services Ltd, Ewhurst Park, Ramsdell, Basingstoke, Hampshire, RG26 5RQ

### **6.2. Site Registration Numbers**

- FCC: 90895
- IC: 3485

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## **7. Measurements, Examinations and Derived Results**

### **7.1. General Comments**

This section contains test results only.

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to section 8 for details of measurement uncertainties.

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## 7.2. Test Results

### 7.2.1. Idle Mode AC Conducted Spurious Emissions - Quasi-Peak Detector Measurements

Ambient Temperature: 15°C

Relative Humidity: 58 %

7.2.1.1. Tests were performed using the test methods detailed in ANSI C63.4 Section 7.

7.2.1.2. Tests were performed to identify the maximum emission levels present on the ac mains line of the EUT.

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.418000	Neutral	43.0	57.5	14.5	Complied
0.478000	Neutral	35.6	56.4	20.8	Complied
0.538000	Neutral	33.4	56.0	22.6	Complied
0.598000	Neutral	34.3	56.0	21.7	Complied
1.134000	Neutral	32.2	56.0	23.8	Complied
1.194000	Neutral	33.3	56.0	22.7	Complied
1.254000	Neutral	33.5	56.0	22.5	Complied
1.314000	Neutral	32.7	56.0	23.3	Complied
2.034000	Live	31.7	56.0	24.3	Complied
2.090000	Neutral	31.3	56.0	24.7	Complied

### 7.2.2. Idle Mode AC Conducted Spurious Emissions - Average Detector Measurements

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.358000	Live	24.4	48.8	24.4	Complied
0.418000	Live	32.1	47.5	15.4	Complied
0.478000	Live	23.2	46.4	23.2	Complied
0.538000	Live	23.3	46.0	22.7	Complied
0.598000	Live	23.8	46.0	22.2	Complied
1.138000	Live	21.5	46.0	24.5	Complied
1.194000	Live	22.8	46.0	23.2	Complied
1.258000	Live	21.8	46.0	24.2	Complied
1.314000	Live	22.2	46.0	23.8	Complied
2.034000	Live	21.2	46.0	24.8	Complied

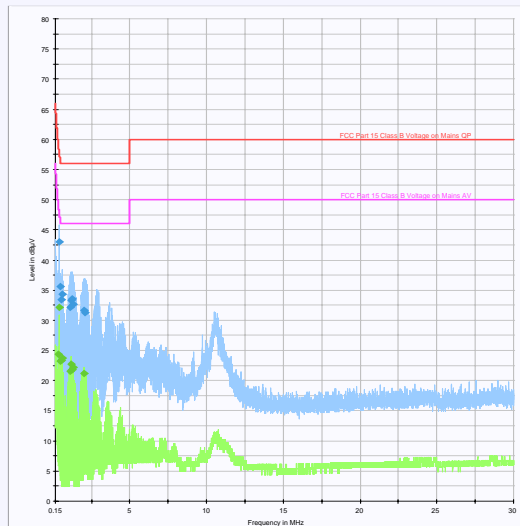
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**Idle Mode AC Conducted Spurious Emissions (Continued)**



*Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.*

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### **7.2.3. Idle Mode Radiated Spurious Emissions**

Ambient Temperature: 15°C

Relative Humidity: 58 %

7.2.3.1. Tests were performed using the test methods detailed in ANSI C63.4 Section 8.

7.2.3.2. Tests were performed to identify the maximum receiver or standby radiated emission levels.

### **Results:**

#### **Electric Field Strength Measurements (Frequency Range: 30 MHz to 1000 MHz)**

Frequency (MHz)	Antenna Polarity	Quasi-Peak Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
991.783	Horizontal	40.4	54.0	13.6	Complied

### **Note(s):**

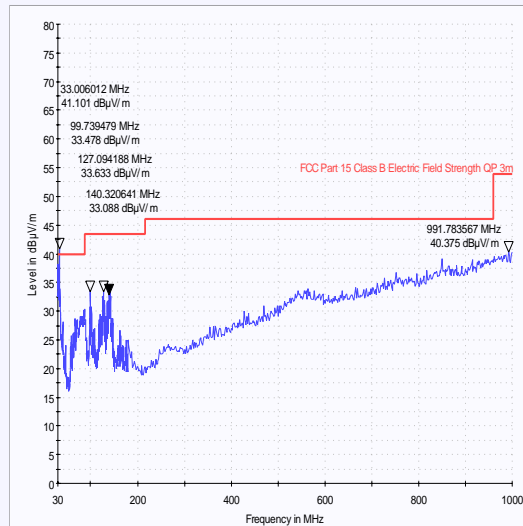
- The preliminary scans showed similar emission levels for each mode below 1 GHz, therefore final radiated emissions measurements were performed with the EUT set to the top channel only.*
- No spurious emissions were detected above the noise floor of the measuring receiver; therefore, the highest peak noise floor reading of the measuring receiver was recorded as shown in the table above. The peak level was compared to the average limit as opposed to being compared to the peak limit because this is the more onerous limit.*
- All emissions shown on the above plot were investigated and were found to be noise floor or ambience.*



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**Idle Mode Radiated Spurious Emissions (Continued)**

*Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.*

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**7.2.4. Idle Mode Radiated Spurious Emissions (Continued)**

Ambient Temperature: 15°C

Relative Humidity: 58 %

**Electric Field Strength Measurements (Frequency Range: 1 GHz to 12.5 GHz)****Highest Peak Level:**

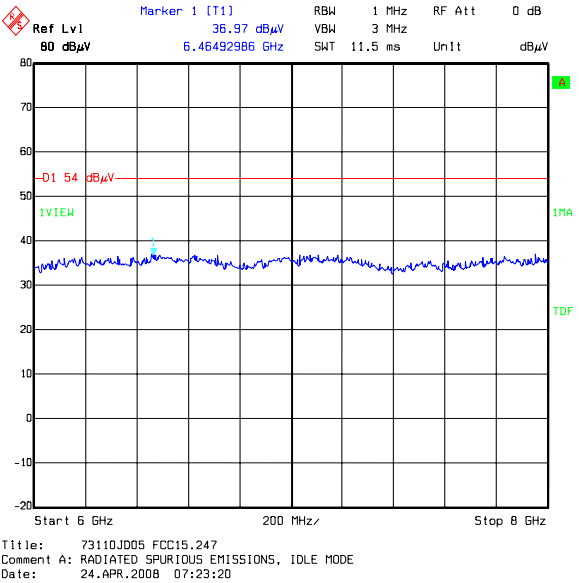
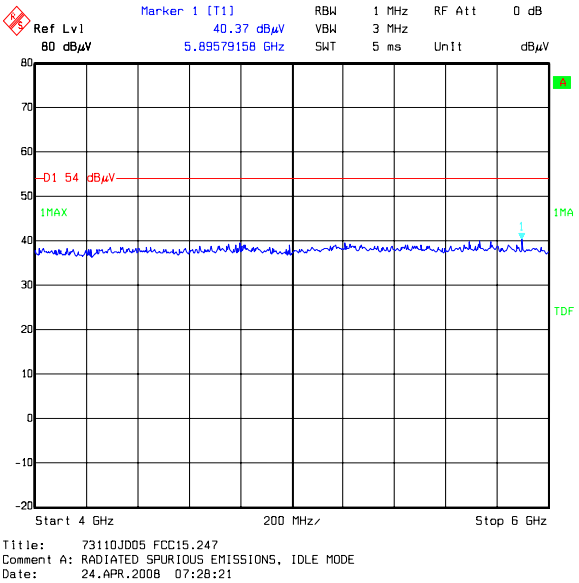
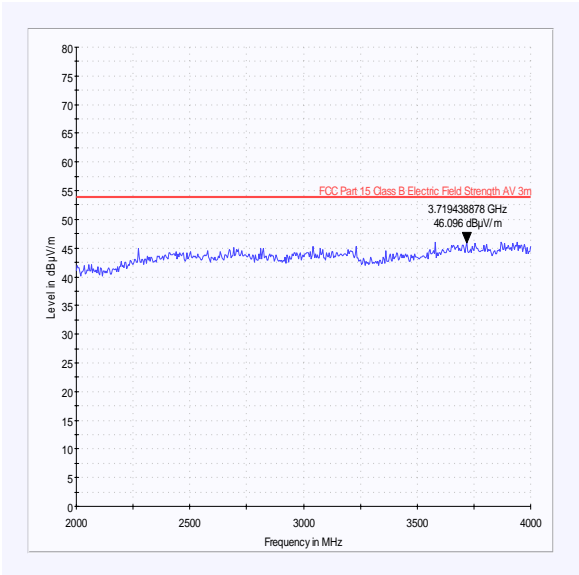
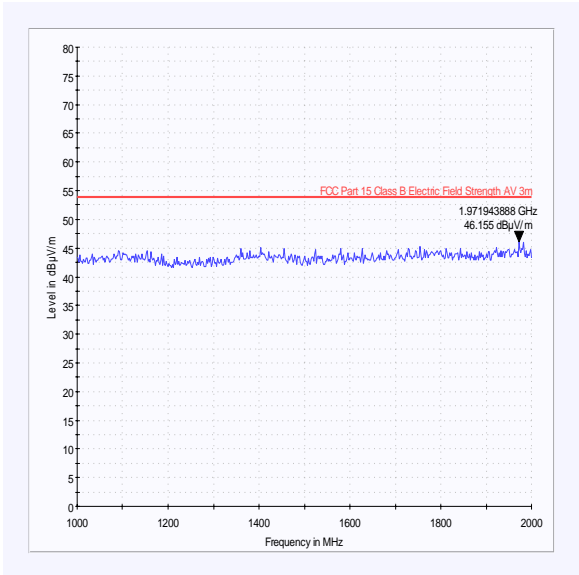
Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
1.971943	Vertical	54.2	-8.0	46.2	54.0	7.8	Complied

**Note(s):**

- No spurious emissions were detected above the noise floor of the measuring receiver; therefore, the highest peak noise floor reading of the measuring receiver was recorded as shown in the table above. The peak level was compared to the average limit as opposed to being compared to the peak limit because this is the more onerous limit.*

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Idle Mode Radiated Spurious Emissions (Continued)

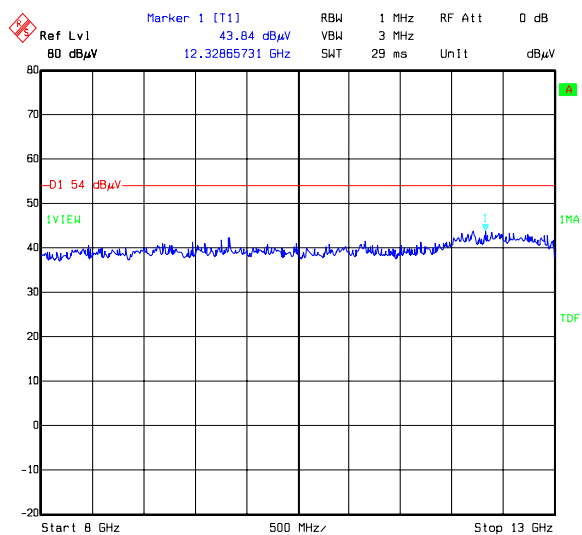


Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

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**Idle Mode Radiated Spurious Emissions (Continued)**

Title: 73110JD05 FCC15.247  
Comment A: RADIATED SPURIOUS EMISSIONS, IDLE MODE  
Date: 24.APR.2008 07:13:06

*Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.*

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**7.2.5. Transmitter AC Conducted Spurious Emissions**

Ambient Temperature: 15°C

Relative Humidity: 58 %

Tests were performed using the test methods detailed in ANSI C63.4 Section 7.

Tests were performed to identify the maximum emission levels present on the ac mains line of the EUT.

**Results:****Quasi-Peak Detector Measurements on Live and Neutral Lines****Top Channel**

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.418000	Neutral	42.2	57.5	15.3	Complied
0.446000	Live	26.6	56.9	30.3	Complied
0.478000	Neutral	39.9	56.4	16.5	Complied
0.538000	Neutral	32.6	56.0	23.4	Complied
0.598000	Neutral	33.0	56.0	23.0	Complied
1.078000	Live	31.9	56.0	24.1	Complied
1.490000	Live	32.5	56.0	23.5	Complied
1.550000	Live	31.6	56.0	24.4	Complied
2.150000	Live	30.7	56.0	25.3	Complied
2.814000	Live	27.2	56.0	28.8	Complied

**Average Detector Measurements on Live and Neutral Lines****Top Channel**

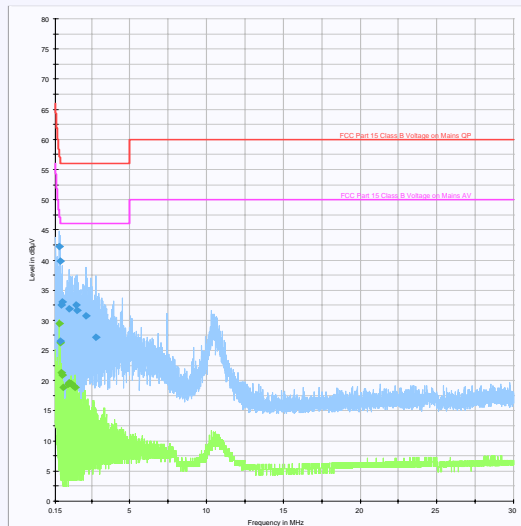
Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.418000	Live	29.5	47.5	18.0	Complied
0.478000	Live	26.2	46.4	20.2	Complied
0.538000	Live	21.3	46.0	24.7	Complied
0.598000	Live	21.0	46.0	25.0	Complied
0.658000	Live	18.8	46.0	27.2	Complied
0.958000	Live	19.4	46.0	26.6	Complied
1.074000	Live	19.7	46.0	26.3	Complied
1.194000	Live	19.5	46.0	26.5	Complied
1.314000	Live	19.2	46.0	26.8	Complied
1.434000	Live	18.9	46.0	27.1	Complied

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### Transmitter AC Conducted Spurious Emissions (Continued)



*Note: This plot is a pre-scan and for indication purposes only. For final measurements, see accompanying tables.*

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**7.2.6. Transmitter 20 dB Bandwidth**

Ambient Temperature: 11°C

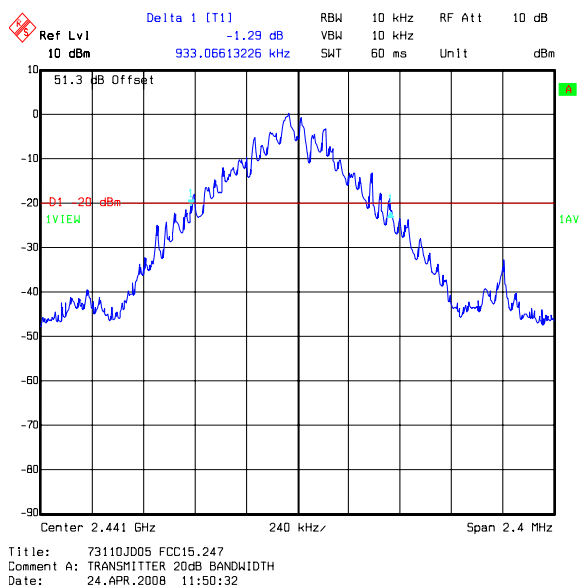
Relative Humidity: 80 %

Tests were performed using the test methods detailed in Public Notice DA 00-705 (March 30, 2000).

Tests were performed to identify the 20 dB bandwidth.

**Results:**

Transmitter 20 dB Bandwidth (kHz)	Limit (kHz)
933.066	None specified



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**7.2.7. Transmitter Carrier Frequency Separation**

Ambient Temperature: 11°C

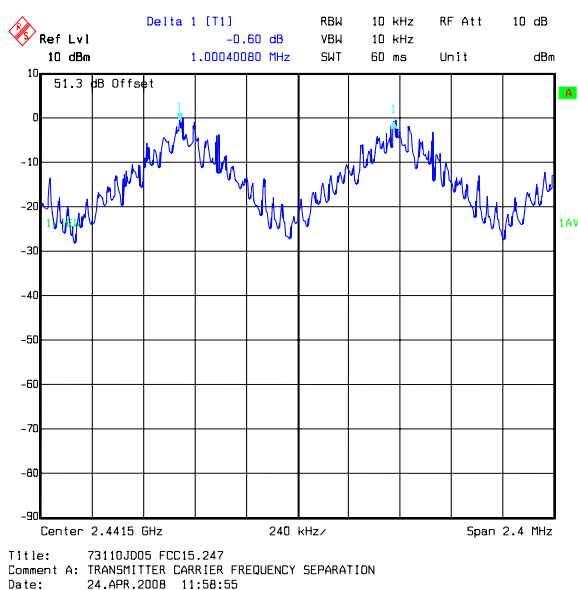
Relative Humidity: 80 %

Tests were performed using the test methods detailed in Public Notice DA 00-705 (March 30, 2000).

Tests were performed to identify the carrier frequency separation.

**Results:**

Transmitter Carrier Frequency Separation (kHz)	Limit ( $2/3$ of 20 dB BW) (kHz)	Margin (kHz)	Result
1000.400	622.044	378.356	Complied



Title: 73110JD05 FCC15.247  
Comment A: TRANSMITTER CARRIER FREQUENCY SEPARATION  
Date: 24.APR.2008 11:58:55



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**7.2.8. Transmitter Average Time of Occupancy**

Ambient Temperature: 11°C

Relative Humidity: 80 %

Tests were performed using the test methods detailed in Public Notice DA 00-705 (March 30, 2000).

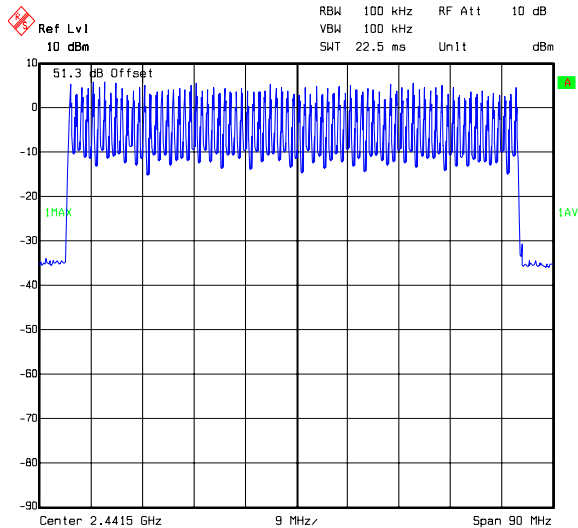
Tests were performed to identify the average time of occupancy in number of channels (79) x 0.4 seconds.  
The calculated period is 31.6 seconds.

**Results:**

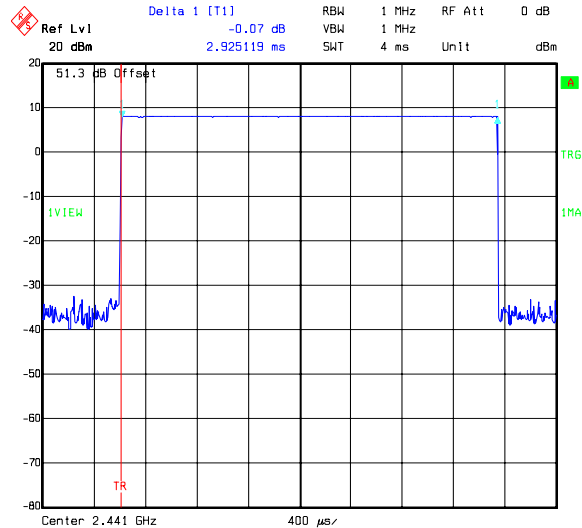
Emission Width (μs)	Number of Hops in 31.6 Seconds	Average Time of Occupancy (s)	Limit (s)	Margin (s)	Result
2925.119	112	0.3276	0.4	0.0724	Complied

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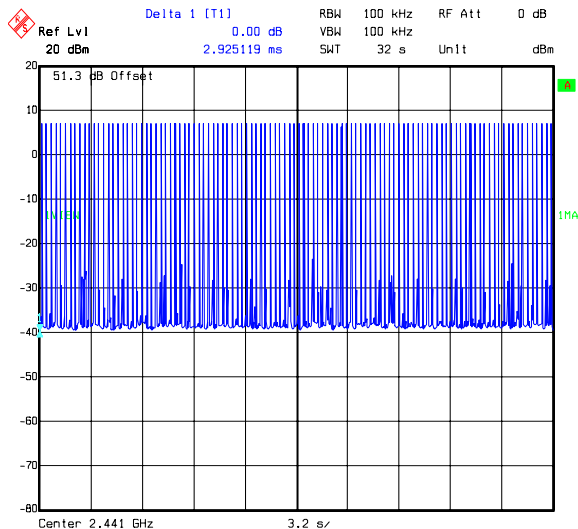
Transmitter Average Time of Occupancy (Continued)



Title: 73110JD05 FCC15.247  
Comment A: AVERAGE TIME OF OCCUPANCY, NUMBER OF CHANNELS  
Date: 24.APR.2008 12:03:03



Title: 73110JD05 FCC15.247  
Comment A: AVERAGE TIME OF OCCUPANCY, PULSE LENGTH  
Date: 24.APR.2008 12:11:09



Title: 73110JD05 FCC15.247  
Comment A: AVERAGE TIME OF OCCUPANCY, NUMBER OF HOPS  
Date: 24.APR.2008 12:17:17

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**7.2.9. Transmitter Maximum Peak Output Power: (EIRP)**

Ambient Temperature: 11°C

Relative Humidity: 80 %

Tests were performed using the test methods detailed in Public Notice DA 00-705 (March 30, 2000), ANSI TIA-603-C-2004 and FCC CFR Part 2.

Tests were performed to identify the transmitter maximum peak output power (EIRP) of the EUT.

**Results:****Battery Powered Devices**

Channel	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	-2.6	30.0	32.6	Complied
Middle	-2.0	30.0	32.0	Complied
Top	-3.3	30.0	33.3	Complied

**Note(s):**

1. *These tests were performed radiated; therefore the EUT antenna gain is encompassed in the final result and not measurable.*

Test of: Stilo srl

Stilo-Nolan Bluetooth System XCOM Model EI0003

To: FCC Part 15.247: 2006 (Subpart C)

**7.2.10. Transmitter Radiated Emissions**

Ambient Temperature: 15°C

Relative Humidity: 58 %

Tests were performed using the test methods detailed in ANSI C63.4 Section 8 and Public Notice DA 00-705 (March 30, 2000).

Tests were performed to identify the maximum transmitter radiated emission levels.

**Results:****Electric Field Strength Measurements: 30 MHz to 1000 MHz****Top Channel**

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
970.420	Horizontal	40.3	54.0	13.7	Complied

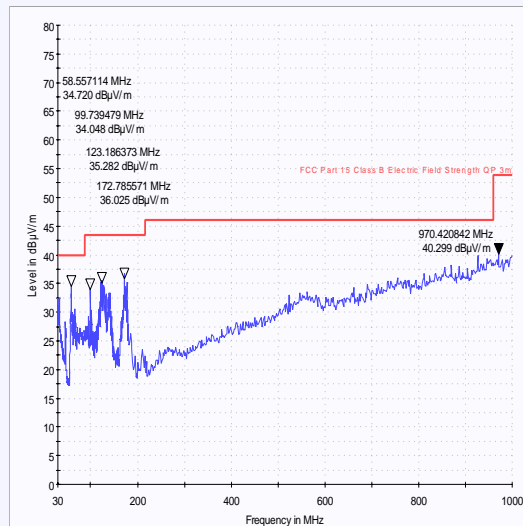
**Note(s):**

- The preliminary scans showed similar emission levels below 1 GHz, for each channel of operation. Therefore final radiated emissions measurements were performed with the EUT set to the top channel only.*
- No spurious emissions were detected above the noise floor of the measuring receiver; therefore, the highest peak noise floor reading of the measuring receiver was recorded as shown in the table above. The peak level was compared to the average limit as opposed to being compared to the peak limit because this is the more onerous limit.*
- All emissions shown on the above plot were investigated and were found to be noise floor or ambience.*

Test of: Stilo srl

Stilo-Nolan Bluetooth System XCOM Model EI0003

To: FCC Part 15.247: 2006 (Subpart C)

**Transmitter Radiated Emissions (Continued)**

*Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.*

Test of: Stilo srl

Stilo-Nolan Bluetooth System XCOM Model EI0003

To: FCC Part 15.247: 2006 (Subpart C)

**Transmitter Radiated Emissions (Continued)****Results:****Electric Field Strength Measurements (Frequency Range: 1 to 26 GHz - emissions occurring in the restricted bands)****Highest Peak Level: Bottom Channel**

Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
4.803994	Horizontal	62.5	-3.3	59.2	74.0	14.8	Complied

**Highest Average Level: Bottom Channel**

Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
4.803994	Horizontal	51.8	-3.3	48.5	54.0	5.5	Complied

**Highest Peak Level: Middle Channel**

Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
4.881994	Horizontal	60.0	-3.5	56.5	74.0	17.5	Complied
7.322909	Horizontal	47.0	-0.4	46.6	74.0	27.4	Complied

**Highest Average Level: Middle Channel**

Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
4.881994	Horizontal	50.0	-3.5	46.5	54.0	7.5	Complied
7.322909	Horizontal	34.9	-0.4	34.5	54.0	19.5	Complied

Test of: Stilo srl

Stilo-Nolan Bluetooth System XCOM Model EI0003

To: FCC Part 15.247: 2006 (Subpart C)

**Transmitter Radiated Emissions (Continued)****Results:****Highest Peak Level: Top Channel**

Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
4.960015	Horizontal	56.9	-3.7	53.2	74.0	20.8	Complied
7.439949	Horizontal	49.6	-0.5	49.1	74.0	24.9	Complied

**Highest Average Level: Top Channel**

Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
4.960015	Horizontal	52.6	-3.7	48.9	54.0	5.1	Complied
7.439949	Horizontal	38.6	-0.5	38.1	54.0	15.9	Complied

**Highest Peak Level: Hopping Mode**

Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
4.811842	Horizontal	61.7	-3.3	58.4	74.0	15.6	Complied
7.316733	Horizontal	45.7	-0.4	45.3	74.0	28.7	Complied

**Highest Average Level: Hopping Mode**

Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
4.811842	Horizontal	33.2	-3.3	29.7	54.0	24.3	Complied
7.316733	Horizontal	31.2	-0.4	30.8	54.0	23.2	Complied

Test of: Stilo srl

Stilo-Nolan Bluetooth System XCOM Model EI0003

To: FCC Part 15.247: 2006 (Subpart C)

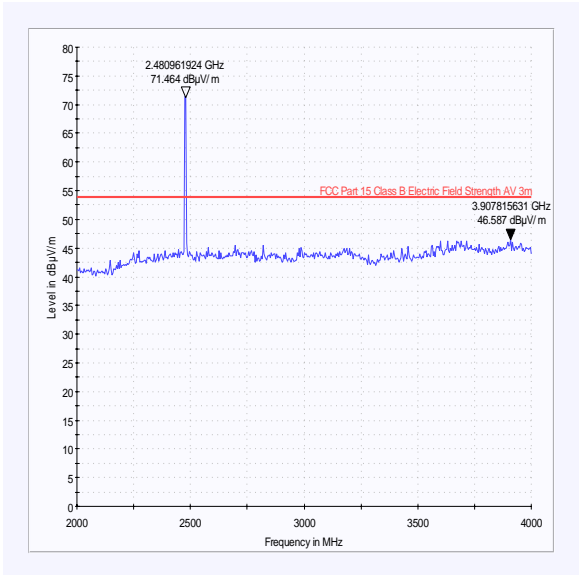
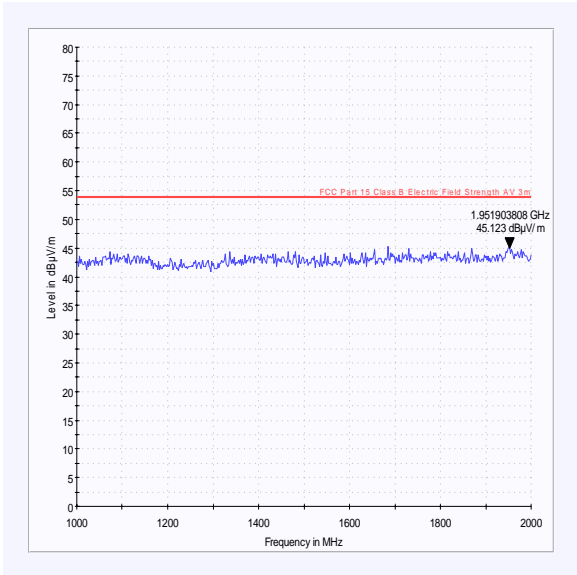
**Transmitter Radiated Emissions (Continued)****Results:****Electric Field Strength Measurements (Frequency Range: 1 to 26 GHz - emissions outside the restricted bands)****Highest Peak Level: Bottom Channel**

Frequency (GHz)	Antenna Polarity	Detector Level (dB $\mu$ V)	Transducer Factor (dB)	Actual Level (dB $\mu$ V/m)	-20 dBc Limit (dB $\mu$ V/m)	Margin (dB)	Result
7.205739	Horizontal	45.7	0.2	45.5	72.6	27.1	Complied

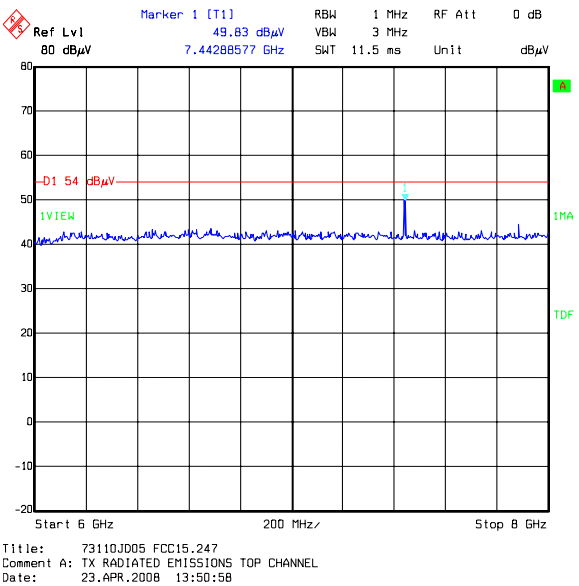
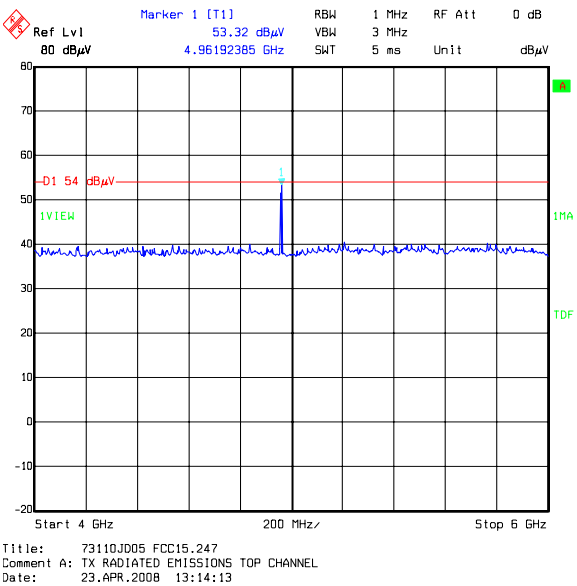


Test of: Stilo srl  
Stilo-Nolan Bluetooth System XCOM Model EI0003  
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Transmitter Radiated Emissions (Continued)



NOTE: The carrier is shown on the above plot at 2480.961 MHz

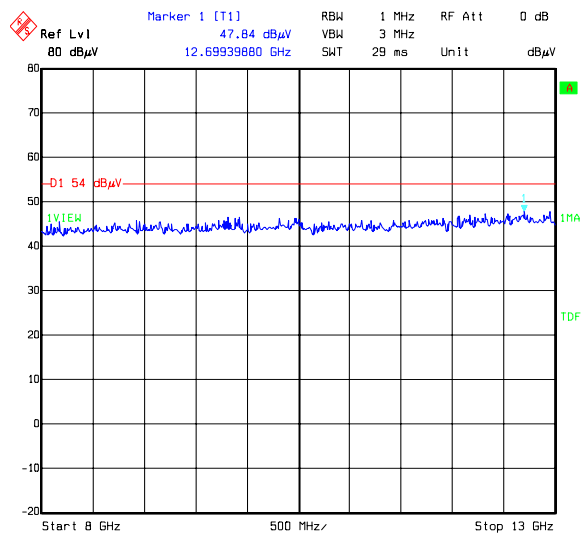


Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

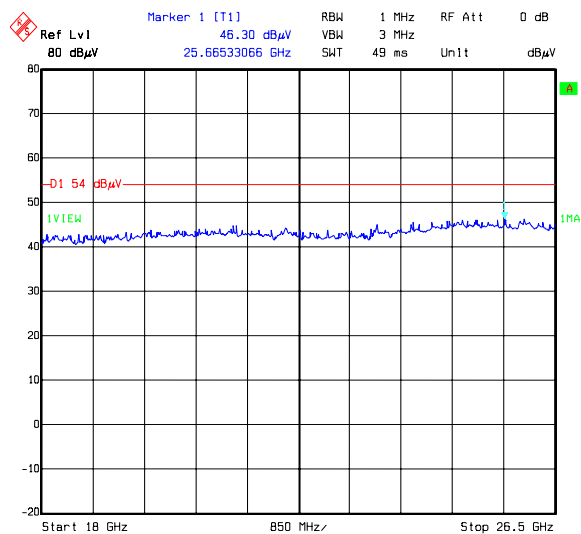
Test of: Stilo srl

Stilo-Nolan Bluetooth System XCOM Model EI0003

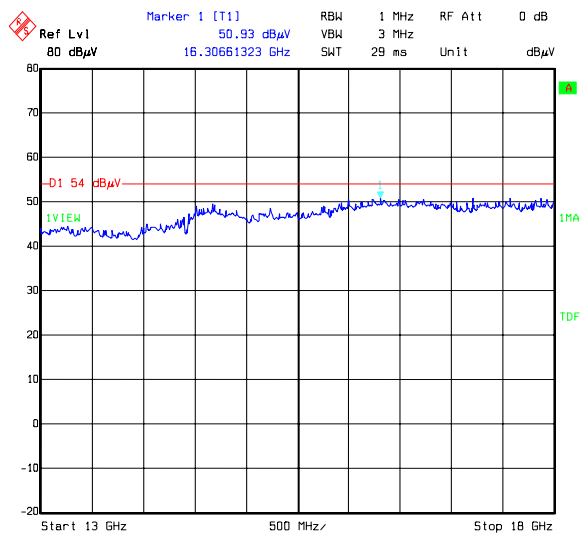
To: FCC Part 15.247: 2006 (Subpart C)

**Transmitter Radiated Emissions (Continued)**

Title: 73110JD05 FCC15.247  
Comment A: TX RADIATED EMISSIONS TOP CHANNEL  
Date: 23.APR.2008 14:16:57



Title: 73110JD05 FCC15.247  
Comment A: TX RADIATED EMISSIONS TOP CHANNEL  
Date: 23.APR.2008 14:23:45



Title: 73110JD05 FCC15.247  
Comment A: TX RADIATED EMISSIONS TOP CHANNEL  
Date: 23.APR.2008 14:20:33

Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Test of: Stilo srl

Stilo-Nolan Bluetooth System XCOM Model EI0003

To: FCC Part 15.247: 2006 (Subpart C)

**7.2.11. Transmitter Band Edge Radiated Emissions**

Ambient Temperature: 11°C

Relative Humidity: 80 %

Tests were performed using the test methods detailed in ANSI C63.4 Section 8 and Public Notice DA 00-705 (March 30, 2000).

Tests were performed to identify the maximum radiated band edge emissions.

**Results:****Electric Field Strength Measurements****Peak Power Level Hopping Mode:**

Frequency (GHz)	Antenna Polarity	Detector Level (dBµV)	Transducer Factor (dB)	Actual Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2.4000	Horizontal	48.7	-6.5	42.2	*72.6	30.4	Complied
2.4835	Vertical	52.9	-8.0	44.9	74.0	29.1	Complied

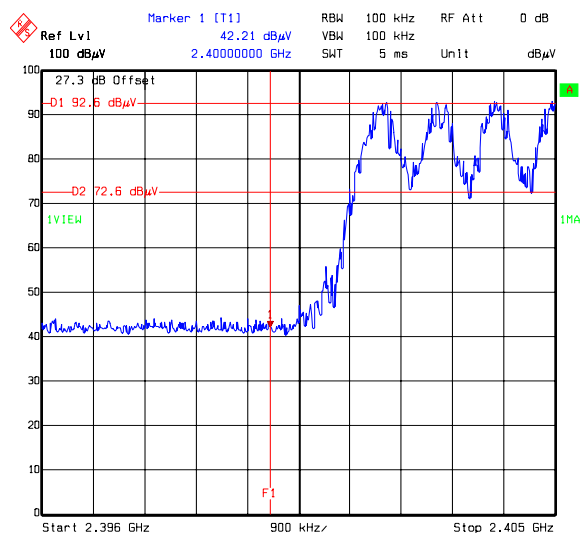
**Average Power Level Hopping Mode:**

Frequency (GHz)	Antenna Polarity	Detector Level (dBµV)	Transducer Factor (dB)	Actual Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2.4835	Vertical	37.0	-8.0	29.0	54.0	25.0	Complied

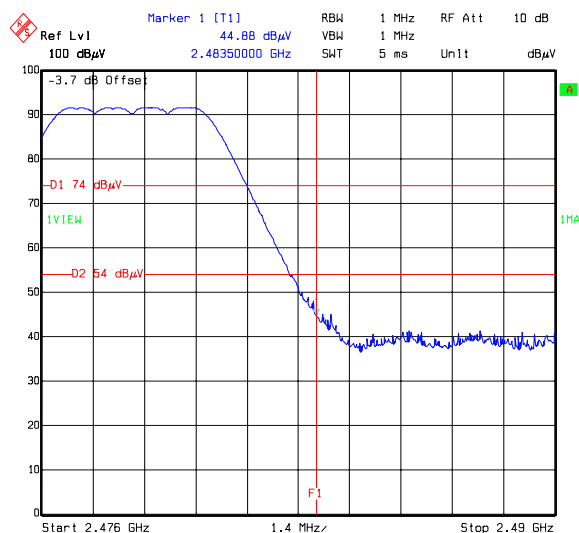
Test of: Stilo srl

Stilo-Nolan Bluetooth System XCOM Model EI0003

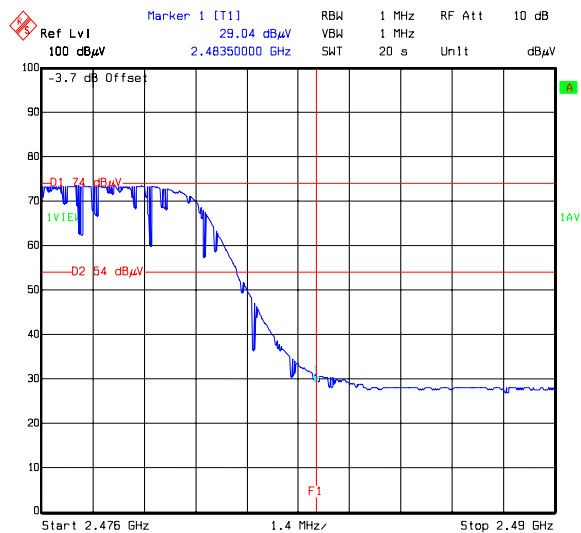
To: FCC Part 15.247: 2006 (Subpart C)

**Transmitter Band Edge Radiated Emissions (Continued)**

Title: 73110JD05 FCC15.247  
Comment A: TX BAND EDGE, HOPPING, BOTTOM CHANNEL, PEAK  
Date: 24.APR.2008 11:28:51



Title: 73110JD05 FCC15.247  
Comment A: TX BAND EDGE, HOPPING, TOP CHANNEL, PEAK  
Date: 24.APR.2008 11:05:13



Title: 73110JD05 FCC15.247  
Comment A: TX BAND EDGE, HOPPING, TOP CHANNEL, AVERAGE  
Date: 24.APR.2008 11:02:10

Test of: Stilo srl

Stilo-Nolan Bluetooth System XCOM Model EI0003

To: FCC Part 15.247: 2006 (Subpart C)

**Transmitter Band Edge Radiated Emissions (Continued)****Results:****Peak Power Level Static Mode:**

Frequency (GHz)	Antenna Polarity	Detector Level (dB $\mu$ V)	Transducer Factor (dB)	Actual Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
2.4000	Horizontal	50.7	-6.5	44.7	*72.6	27.9	Complied
2.4835	Vertical	58.9	-8.0	50.1	74.0	23.9	Complied

**Average Power Level Static Mode:**

Frequency (GHz)	Antenna Polarity	Detector Level (dB $\mu$ V)	Transducer Factor (dB)	Actual Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
2.4835	Vertical	48.8	-8.0	40.8	54.0	13.2	Complied

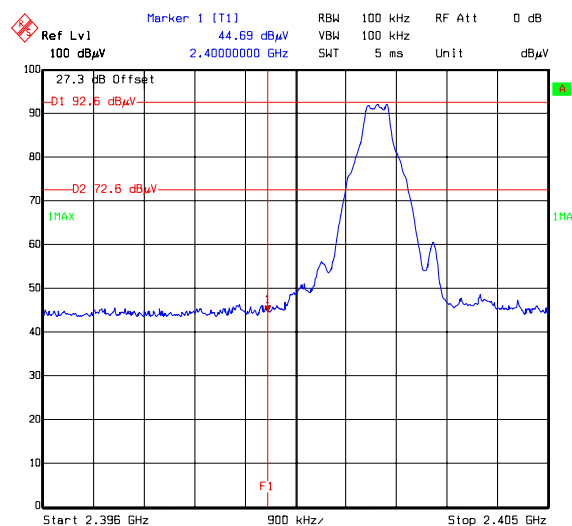
**Note(s):**

1. \* -20 dBc limit

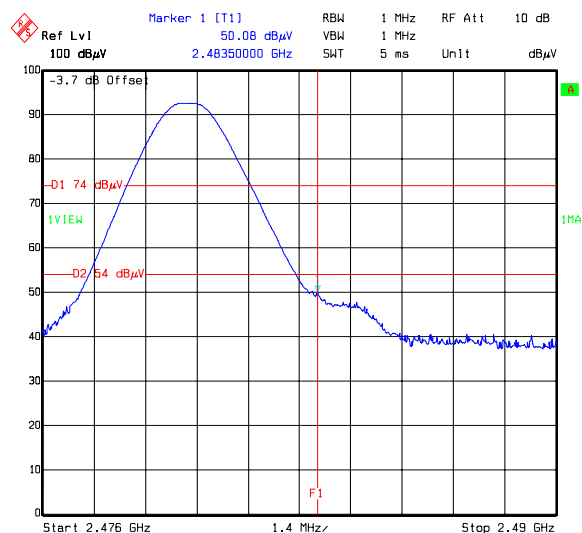
Test of: Stilo srl

Stilo-Nolan Bluetooth System XCOM Model EI0003

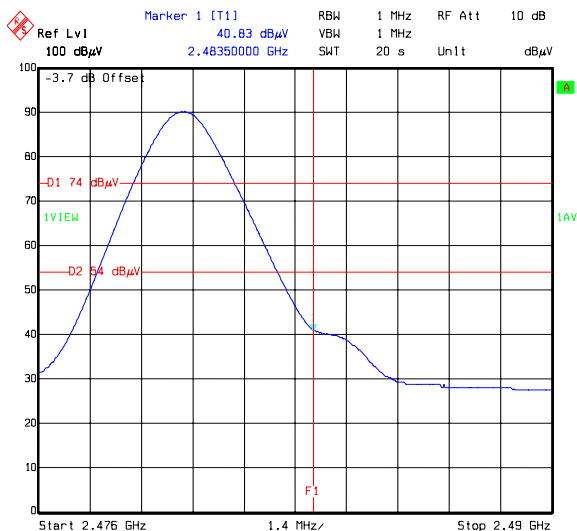
To: FCC Part 15.247: 2006 (Subpart C)

**Transmitter Band Edge Radiated Emissions (Continued)**

Title: 73110JD05 FCC15.247  
Comment A: TX BAND EDGE, STATIC, BOTTOM CHANNEL, PEAK  
Date: 24.APR.2008 11:23:36



Title: 73110JD05 FCC15.247  
Comment A: TX BAND EDGE, STATIC, TOP CHANNEL, PEAK  
Date: 24.APR.2008 11:11:21



Title: 73110JD05 FCC15.247  
Comment A: TX BAND EDGE, STATIC, TOP CHANNEL, AVERAGE  
Date: 24.APR.2008 11:13:22

Test of: Stilo srl

Stilo-Nolan Bluetooth System XCOM Model EI0003

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## 8. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently, the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor, such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
AC Conducted Spurious Emissions	0.15 MHz to 30 MHz	95%	+/- 3.25 dB
Transmitter Maximum Peak Output Power	Not applicable	95%	+/- 2.94 dB
Transmitter Carrier Frequency Separation	Not applicable	95%	+/- 0.01 ppm
Transmitter Average Time of Occupancy	Not applicable	95%	+/- 10 %
20 dB Bandwidth	Not applicable	95%	+/- 0.12 %
Radiated Spurious Emissions	30 MHz to 1000 MHz	95%	+/- 5.26 dB
Radiated Spurious Emissions	1 GHz to 26.5 GHz	95%	+/- 2.94 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty, the published guidance of the appropriate accreditation body is followed.

Test of: Stilo srl

Stilo-Nolan Bluetooth System XCOM Model EI0003

To: FCC Part 15.247: 2006 (Subpart C)

**Appendix 1. Test Equipment Used**

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
A028	Antenna	Eaton	91888-2	304	08 Jun 2006	36
A031	Antenna	Eaton	91889-2	557	08 Jun 2006	36
A067	Line Impedance Stabilization Network	Rohde & Schwarz	ESH3-Z5	890603/002	19 May 2008	12
A1534	Pre Amplifier	Hewlett Packard	8449B OPT H02	3008A00405	Calibrated before use	-
A1829	Pulse Limiter	Rhode & Schwarz	ESH3-Z2	100671	16 Jan 2008	12
A253	Antenna	Flann Microwave	12240-20	128	17 Nov 2006	36
A254	Antenna	Flann Microwave	14240-20	139	17 Nov 2006	36
A255	Antenna	Flann Microwave	16240-20	519	17 Nov 2006	36
A436	Antenna	Flann	20240-20	330	24 Apr 2006	36
A490	Antenna	Chase	CBL6111A	1590	07 Feb 2008	12
C1065	Cable	Rosenberger	UFA210-1-7872	0985	Calibrated before use	-
C1167	Cable	Rosenberger Micro-Coax	FA210A1030007 070	43190-01	Calibrated before use	-
M1242	Spectrum Analyser	Rohde & Schwarz, Inc.	FSEM30	845986/022	29 Nov 2007	12
M1273	Test Receiver	Rhode & Schwarz	ESIB 26	100275	26 Feb 2008	12
S202	Site 2	RFI	2	S202-15011990	28 Jan 2008	12
S209	Anechoic Chamber	RFI	9	None	Verified before use	-

**NB** In accordance with UKAS requirements, all the measurement equipment is on a calibration schedule.



Test of: Stilo srl

Stilo-Nolan Bluetooth System XCOM Model EI0003

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## **Appendix 2. Test Configuration Drawings**

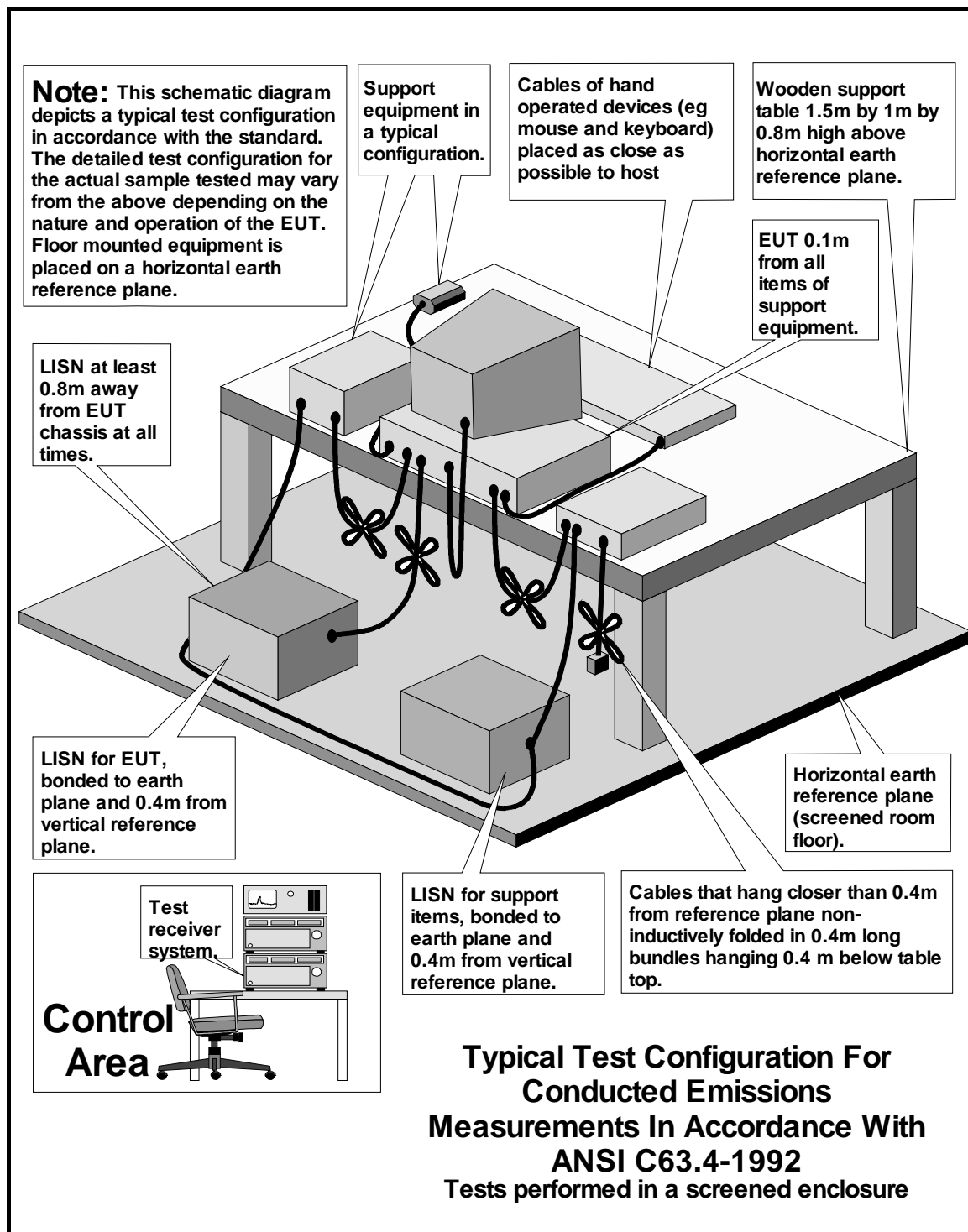
This appendix contains the following drawings:

Drawing Reference Number	Title
DRG\73110JD05\EMICON	Test configuration for measurement of conducted emissions.
DRG\73110JD05\EMIRAD	Test configuration for measurement of radiated emissions.

Test of: Stilo srl

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DRG\73110JD05\EMICON

Test of: Stilo srl

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DRG\73110JD05\EMIRAD