



**TEST REPORT  
FROM  
RFI GLOBAL SERVICES LTD**

Test of: GN A/S  
Jabra OTE2

To: FCC Part 15.247: 2006 (Subpart C), RSS-210 Issue 7 June 2007  
& RSS-Gen Issue 2 June 2007

**Test Report Serial No:**  
RFI/RPTE2/RP49543JD09A  
**Supersedes Test Report Serial No:**  
RFI/RPTE1/RP49543JD09A

<b>This Test Report Is Issued Under The Authority Of Brian Watson, Operations Director:</b>		
<b>Checked By:</b> Tony Henriques		<b>Report Copy No: PDF01</b>
<b>Issue Date: 03 January 2008</b>	<b>Test Dates: 03 October 2007 to 04 October 2007</b>	

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This report may be copied in full. The results in this report apply only to the sample(s) tested.

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**RFI GLOBAL SERVICES LTD**

**Test Report**

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## 1. Client Information

<b>Company Name:</b>	GN A/S
<b>Address:</b>	Alfred Nobels Vej 21B Aalborg O DK-9220c Denmark
<b>Contact Name:</b>	Mr T Ringtved

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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 equipment under test is a *Bluetooth* headset.

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

<b>Description:</b>	<i>Bluetooth</i> Headset
<b>Brand Name:</b>	Jabra
<b>Model Name or Number:</b>	OTE2
<b>Serial Number:</b>	Not stated
<b>Hardware Version Number:</b>	2801228
<b>Software Version Number:</b>	Solaris
<b>FCC ID Number:</b>	BCE-OTE2
<b>Country of Manufacture:</b>	China
<b>Date of Receipt:</b>	03 October 2007

### **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>	Charger
<b>Brand Name:</b>	Sunfone
<b>Model Name or Number:</b>	ACW003B-OST
<b>Serial Number:</b>	Not stated
<b>Cable Length and Type:</b>	1 m Multicore
<b>Connected to Port</b>	Charger

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## 2.5. Additional Information Related to Testing

Intended Operating Environment:	Within GSM coverage		
Equipment Category:	<i>Bluetooth</i>		
Type of Unit:	Portable (Standalone battery powered device)		
Power Supply Requirement:	Internal battery supply of 3.7V (nominal)		
Maximum Power Output (ERP)	3.3 dBm (measured)		
Transmit Frequency Range:	2402 to 2480 MHz		
Transmit Channels Tested:	<b>Channel ID</b>	<b>Channel Number</b>	<b>Channel Frequency (MHz)</b>
	Bottom	0	2402
	Middle	39	2441
	Top	78	2480
Receive Frequency Range:	2402 to 2480 MHz		
Receive Channels Tested:	<b>Channel ID</b>	<b>Channel Number</b>	<b>Channel Frequency (MHz)</b>
	Bottom	0	2402
	Middle	39	2441
	Top	78	2480

## 2.6. Port Identification

Port	Description
1	Charger

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

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

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

<b>Reference:</b>	RSS-210 Issue 7 June 2007
<b>Title:</b>	Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment

<b>Reference:</b>	RSS-Gen Issue 2 June 2007
<b>Title:</b>	General Requirements and Information for the Certification of Radiocommunication Equipment

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

The methods and procedures used were as detailed in:

ANSI C63.2 (1987)

Title: American National Standard for Instrumentation - Electromagnetic noise and field strength.

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.

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#### **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* test mode connected to a *Bluetooth* tester.

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

The EUT was tested in the following configuration:

- *Bluetooth* test mode. Charger connected for AC Emissions testing.

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

Range of Measurements	FCC Part 15 Reference	IC RSS Reference	Port Type	Results
Idle Mode AC Conducted Emissions	15.107	RSS-Gen 6.0	AC Mains	Complied
Idle Mode Radiated Spurious Emissions	15.109	RSS-Gen 7.2.2	Antenna	Complied
Transmitter 20 dB Bandwidth	15.247(a)(1)	RSS-210 A8.1(a)	Antenna	Complied
Transmitter Carrier Frequency Separation	15.247(a)(1)	RSS-210 A8.1(b)	Antenna	Complied
Transmitter Average Time of Occupancy	15.247(a)(1)(iii)	RSS-210 A8.1(d)	Antenna	Complied
Transmitter Maximum Peak Output Power	15.247(b)(1)	RSS-210 A8.4(2)	Antenna	Complied
Transmitter Radiated Emissions	15.247(d) & 15.209(a)	RSS-210 A8.5	Antenna	Complied
Transmitter Band Edge Radiated Emissions	15.247(d) & 15.209(a)	RSS-210 A8.5	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.

- FCC Site Registration Number: 90895
- IC Site Registration Number: 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

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

#### Results:

#### Quasi-Peak Detector Measurements on Live and Neutral Lines

Frequency (MHz)	Line	Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Note(s)
0.289500	Neutral	19.4	60.5	41.1	-
0.298500	Neutral	17.8	60.3	42.5	-
0.325500	Neutral	16.1	59.6	43.5	-
0.501000	Live	10.9	56.0	45.1	-
0.879000	Neutral	9.1	56.0	46.9	-
0.937500	Neutral	8.0	56.0	48.0	-

#### Average Detector Measurements on Live and Neutral Lines

Frequency (MHz)	Line	Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Note(s)
0.298500	Neutral	10.2	50.3	40.1	-
0.303000	Live	9.7	50.2	40.5	-
0.325500	Live	8.7	49.6	40.9	-
0.460500	Neutral	6.0	46.7	40.7	-
0.492000	Neutral	5.3	46.1	40.8	-
0.622500	Neutral	4.5	46.0	41.5	-

#### Note(s):

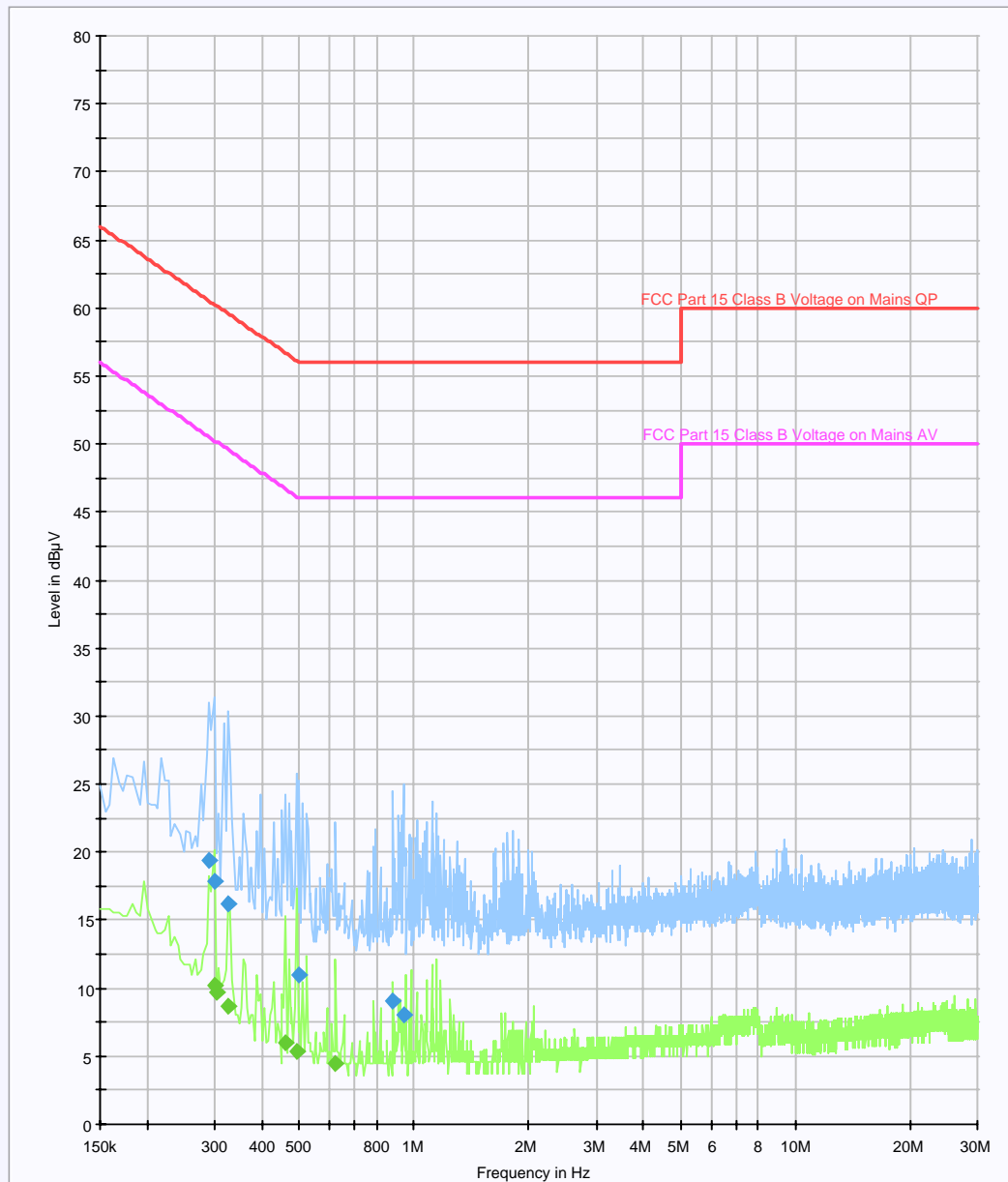
1. EUT transmitter turns off when charger is connected so test was only performed with EUT in standby mode.

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**Idle Mode 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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### **7.2.2. Idle Mode Radiated Spurious Emissions**

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

#### **Results:**

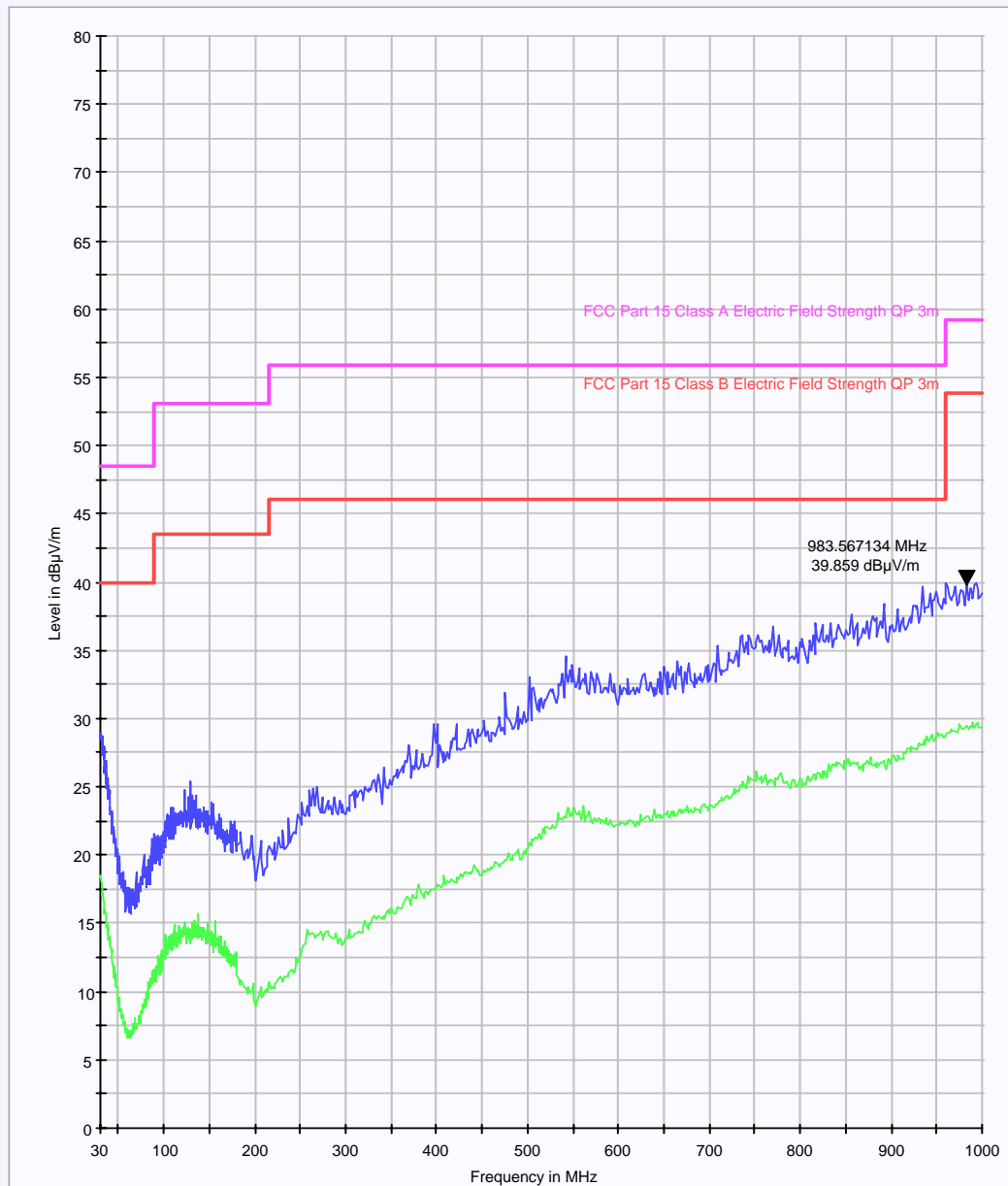
#### **Electric Field Strength Measurements (Frequency Range: 30 MHz to 1000 MHz)**

Frequency (MHz)	Antenna Polarity	Quasi-Peak Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Note(s)
983.567	Vertical	39.9	54.0	14.1	-

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

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

#### **Results:**

#### **Electric Field Strength Measurements (Frequency Range: 1 GHz to 12.5 GHz)**

##### **Highest Peak Level:**

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)	Note(s)
3.935871	Vertical	52.7	-6.1	46.6	54.0	7.4	1

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

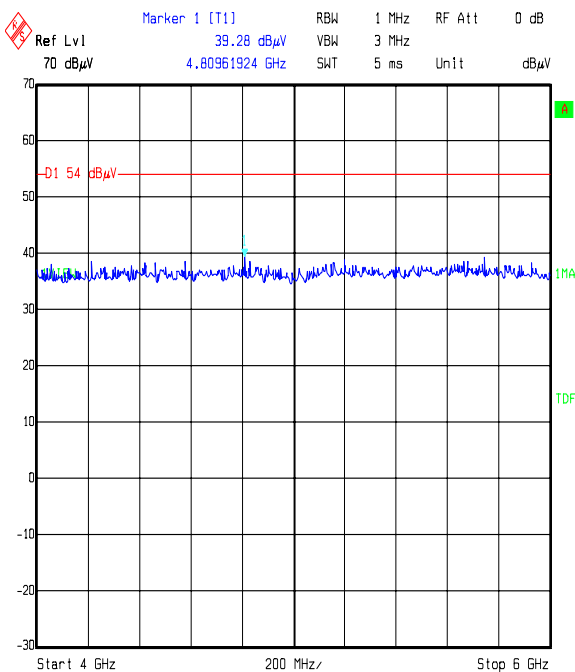
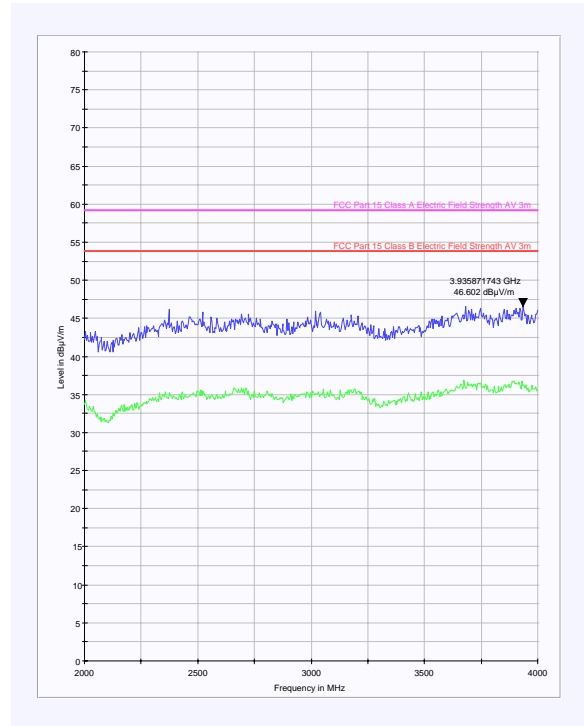
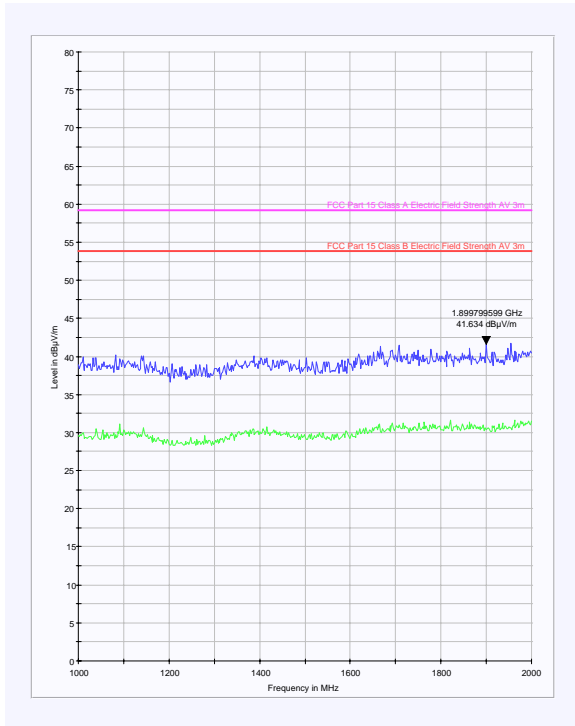
1. *The peak level was compared to the average limit as opposed to being compared to the peak limit because this is the more onerous limit.*



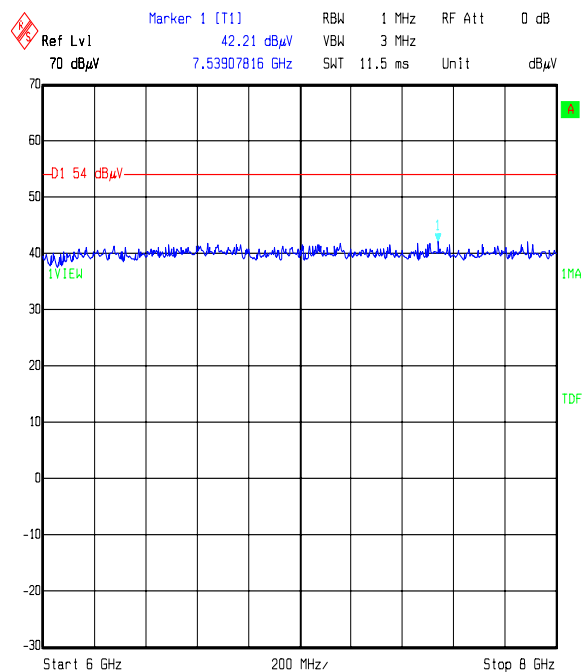
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**Idle Mode Radiated Spurious Emissions (Continued)**



Title: 49543JD09 FCC15.247  
Comment A: RX RADIATED EMISSIONS  
Date: 03.OCT.2007 15:33:39



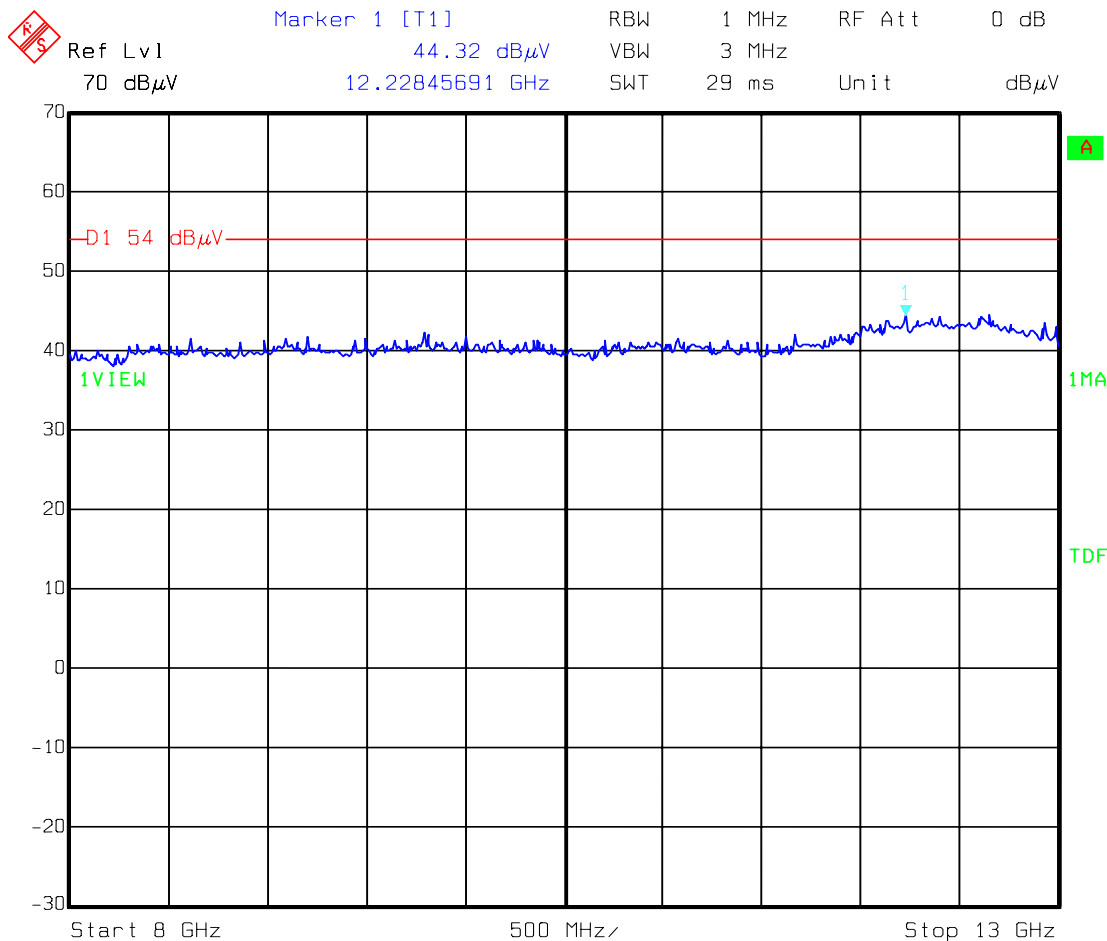
Title: 49543JD09 FCC15.247  
Comment A: RX RADIATED EMISSIONS  
Date: 03.OCT.2007 15:36:25

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: 49543JD09 FCC15.247  
Comment A: RX RADIATED EMISSIONS  
Date: 03.OCT.2007 15:49:49

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

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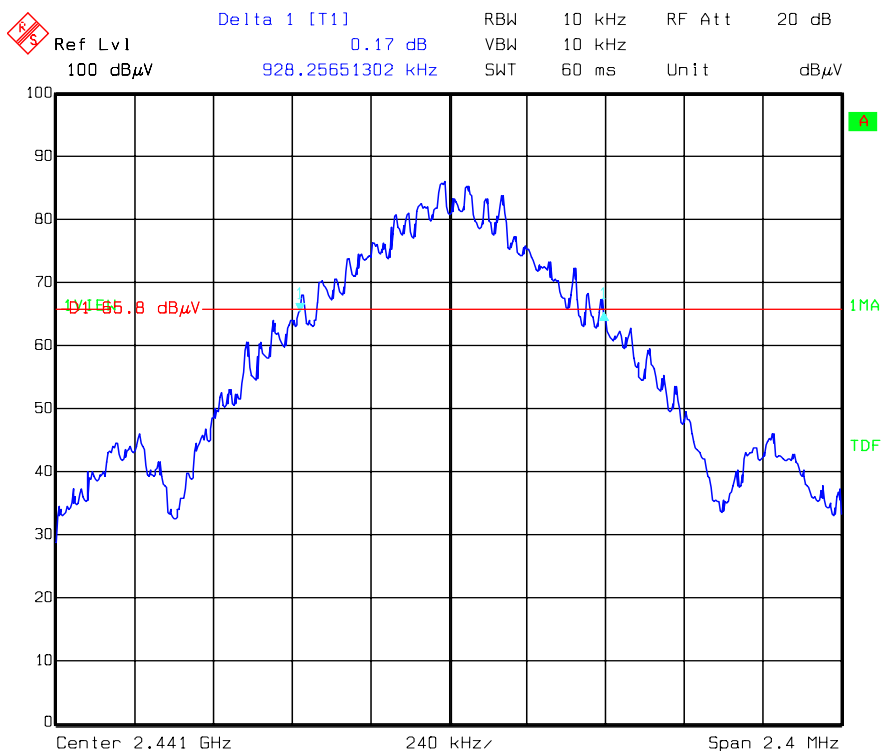
To: FCC Part 15.247: 2006 (Subpart C), RSS-210 Issue 7 June 2007  
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**7.2.4. Transmitter 20 dB Bandwidth**

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

**Results:**

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



Title: 49543JD09 FCC15.247  
 Comment A: TRANSMITTER 20dB BANDWIDTH  
 Date: 04.OCT.2007 15:29:47

Test of: GN A/S  
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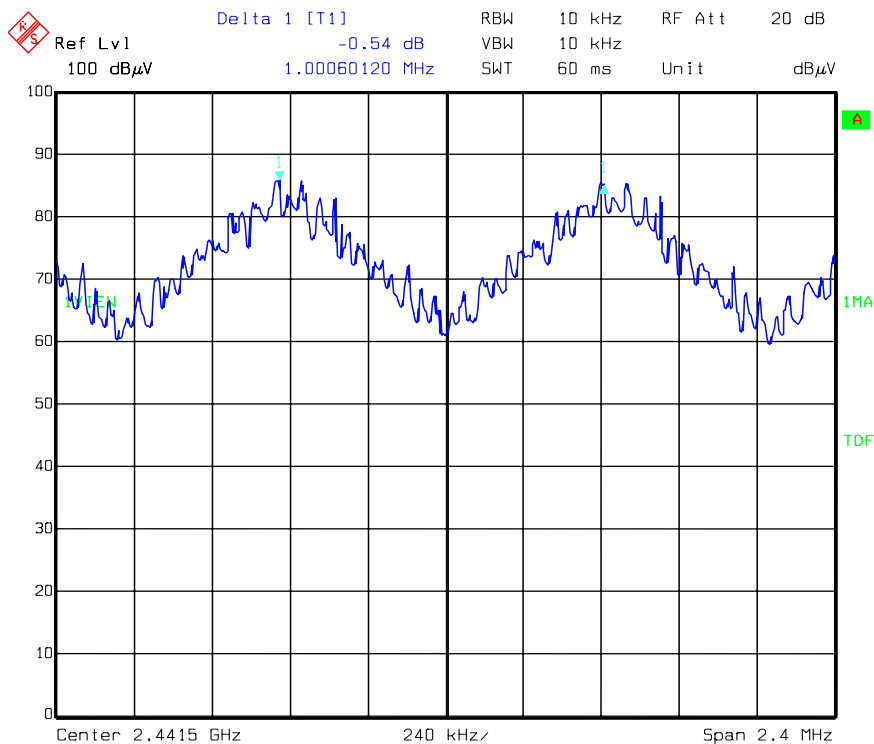
To: FCC Part 15.247: 2006 (Subpart C), RSS-210 Issue 7 June 2007  
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**7.2.5. Transmitter Carrier Frequency Separation**

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

**Results:**

Transmitter Carrier Frequency Separation (kHz)	Limit ( $2/3$ of 20 dB BW) (kHz)	Margin (kHz)	Note(s)
1000.601	618.837	381.764	-



Title: 49543JD09 FCC15.247  
 Comment A: TRANSMITTER CARRIER FREQUENCY SEPARATION  
 Date: 04.OCT.2007 15:37:49

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#### 7.2.6. Transmitter Average Time of Occupancy

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

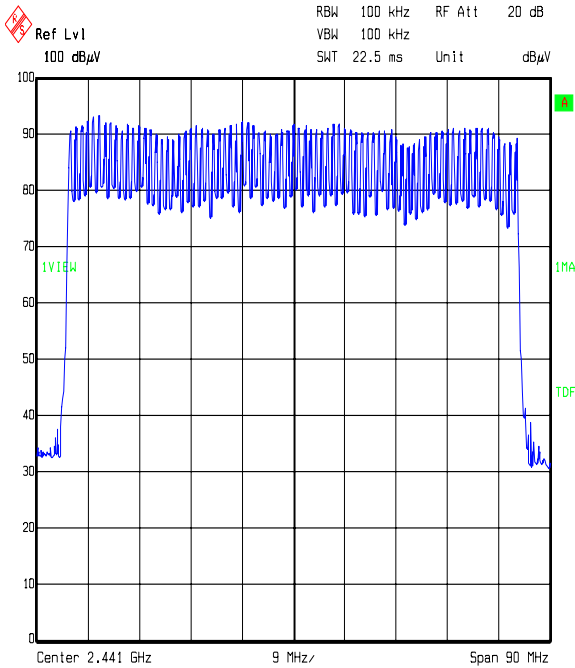
#### Results:

Emission Width ( $\mu$ s)	Number of Hops in 31.6 Seconds	Average Time of Occupancy (s)	Limit (s)	Margin (s)	Note(s)
2893.788	87	0.2518	0.4	0.1482	-

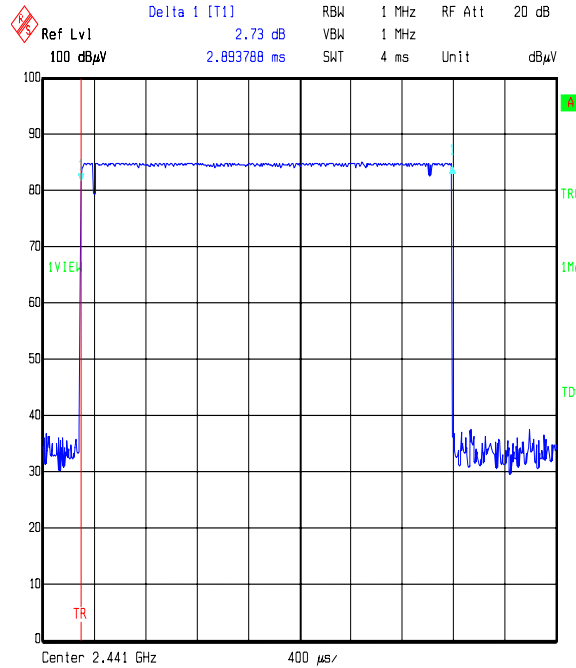
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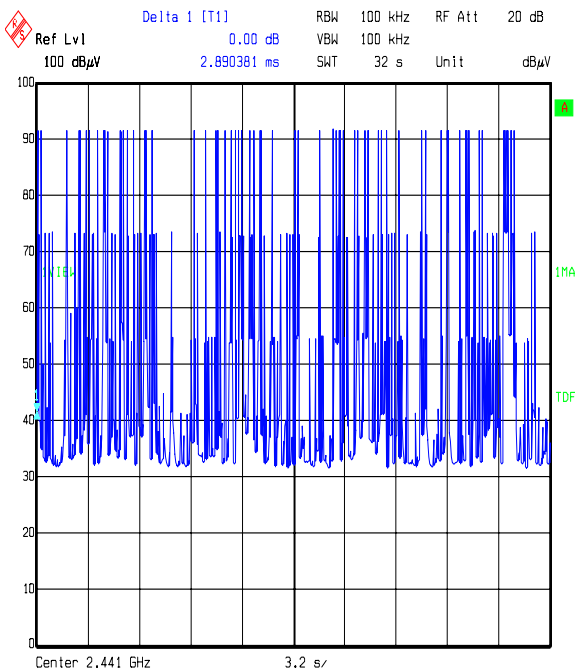
**Transmitter Average Time of Occupancy (Continued)**



Title: 49543JD09 FCC15.247  
Comment A: AVERAGE TIME OF OCCUPANCY, NUMBER OF CHANNELS  
Date: 04.OCT.2007 14:52:00



Title: 49543JD09 FCC15.247  
Comment A: AVERAGE TIME OF OCCUPANCY, PULSE LENGTH  
Date: 04.OCT.2007 15:01:12



Title: 49543JD09 FCC15.247  
Comment A: AVERAGE TIME OF OCCUPANCY, NUMBER OF HOPS  
Date: 04.OCT.2007 15:04:10

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### **7.2.7. Transmitter Maximum Peak Output Power: (EIRP)**

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.

#### **Results:**

##### **Battery Powered Devices – Normal Mode**

Channel	EIRP (dBm)	Limit (dBm)	Margin (dB)	Note(s)
Bottom	1.5	30.0	28.5	-
Middle	1.9	30.0	28.1	-
Top	1.1	30.0	28.9	-

##### **Battery Powered Devices – EDR Mode**

Channel	EIRP (dBm)	Limit (dBm)	Margin (dB)	Note(s)
Bottom	3.3	30.0	26.7	-
Middle	3.3	30.0	26.7	-
Top	2.3	30.0	27.7	-

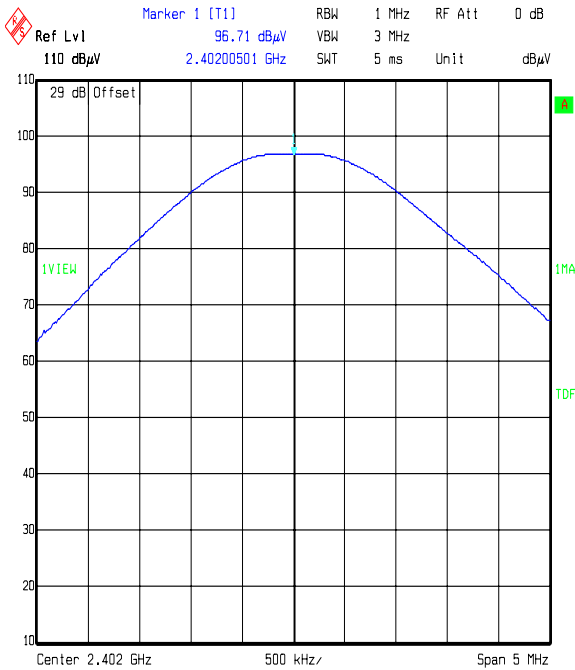
#### **Note(s):**

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

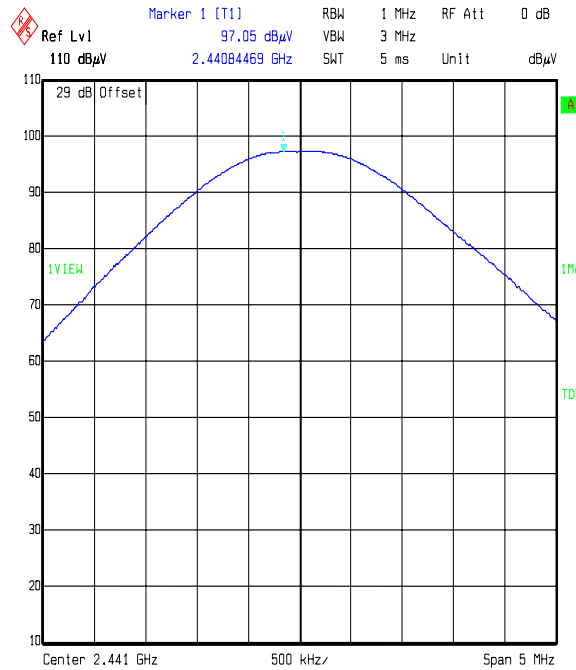
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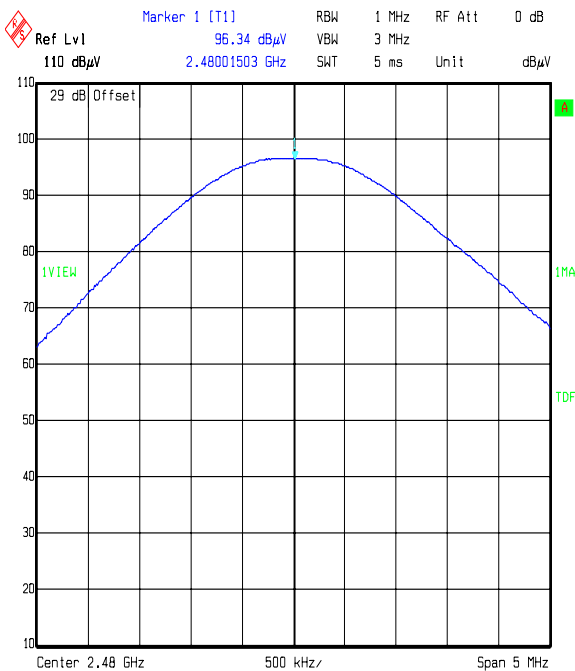
**Transmitter Maximum Peak Output Power: (EIRP) - Normal Mode (Continued)**



Title: 49543JD09 FCC15.247  
Comment A: MAXIMUM PEAK OUTPUT POWER BOTTOM CHANNEL  
Date: 03.OCT.2007 14:06:23



Title: 49543JD09 FCC15.247  
Comment A: MAXIMUM PEAK OUTPUT POWER CENTRE CHANNEL  
Date: 03.OCT.2007 14:16:37



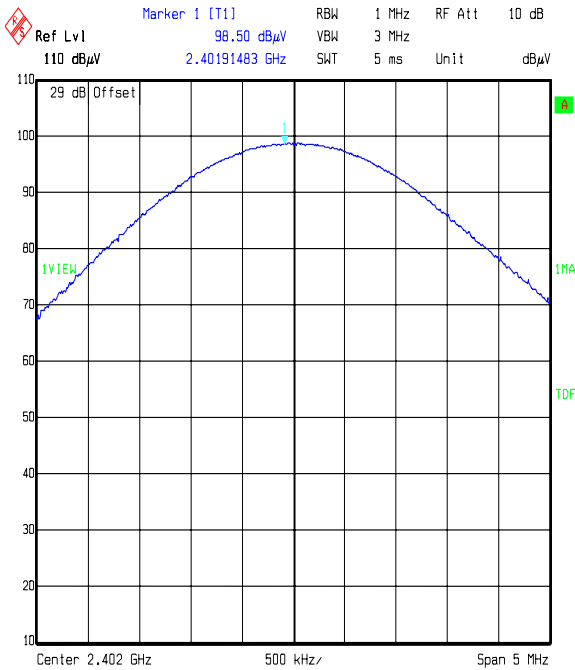
Title: 49543JD09 FCC15.247  
Comment A: MAXIMUM PEAK OUTPUT POWER TOP CHANNEL  
Date: 03.OCT.2007 14:04:03



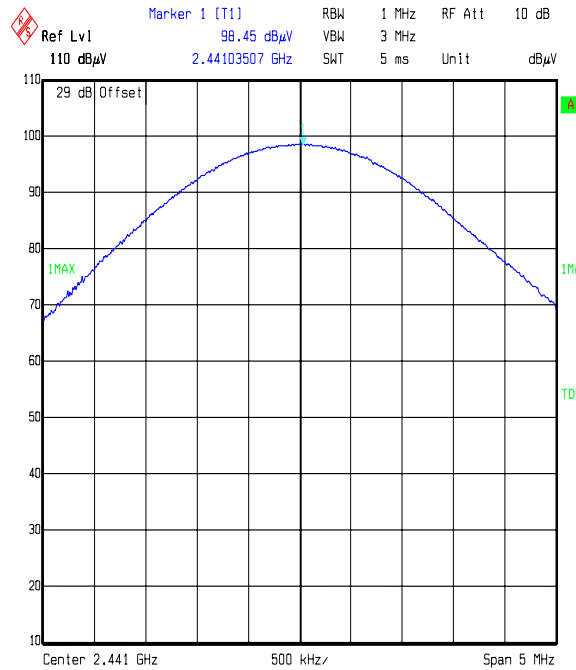
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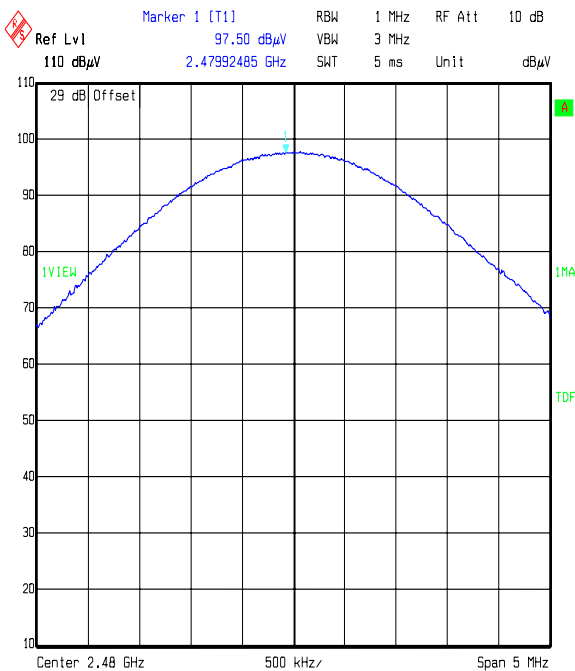
**Transmitter Maximum Peak Output Power: (EIRP) - EDR Mode (Continued)**



Title: 49543JD09 FCC15.247  
Comment A: MAXIMUM PEAK OUTPUT POWER EDR BOTTOM CHANNEL  
Date: 03.OCT.2007 14:44:43



Title: 49543JD09 FCC15.247  
Comment A: MAXIMUM PEAK OUTPUT POWER EDR CENTRE CHANNEL  
Date: 03.OCT.2007 14:41:12



Title: 49543JD09 FCC15.247  
Comment A: MAXIMUM PEAK OUTPUT POWER EDR TOP CHANNEL  
Date: 03.OCT.2007 14:37:58

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### **7.2.8. Transmitter Radiated Emissions:**

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

#### **Results:**

#### **Electric Field Strength Measurements: 30 MHz to 1000 MHz (Emissions Occurring in the Restricted Bands)**

##### **Top Channel**

Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Note(s)
967.134	Vertical	40.6	54.0	13.4	-

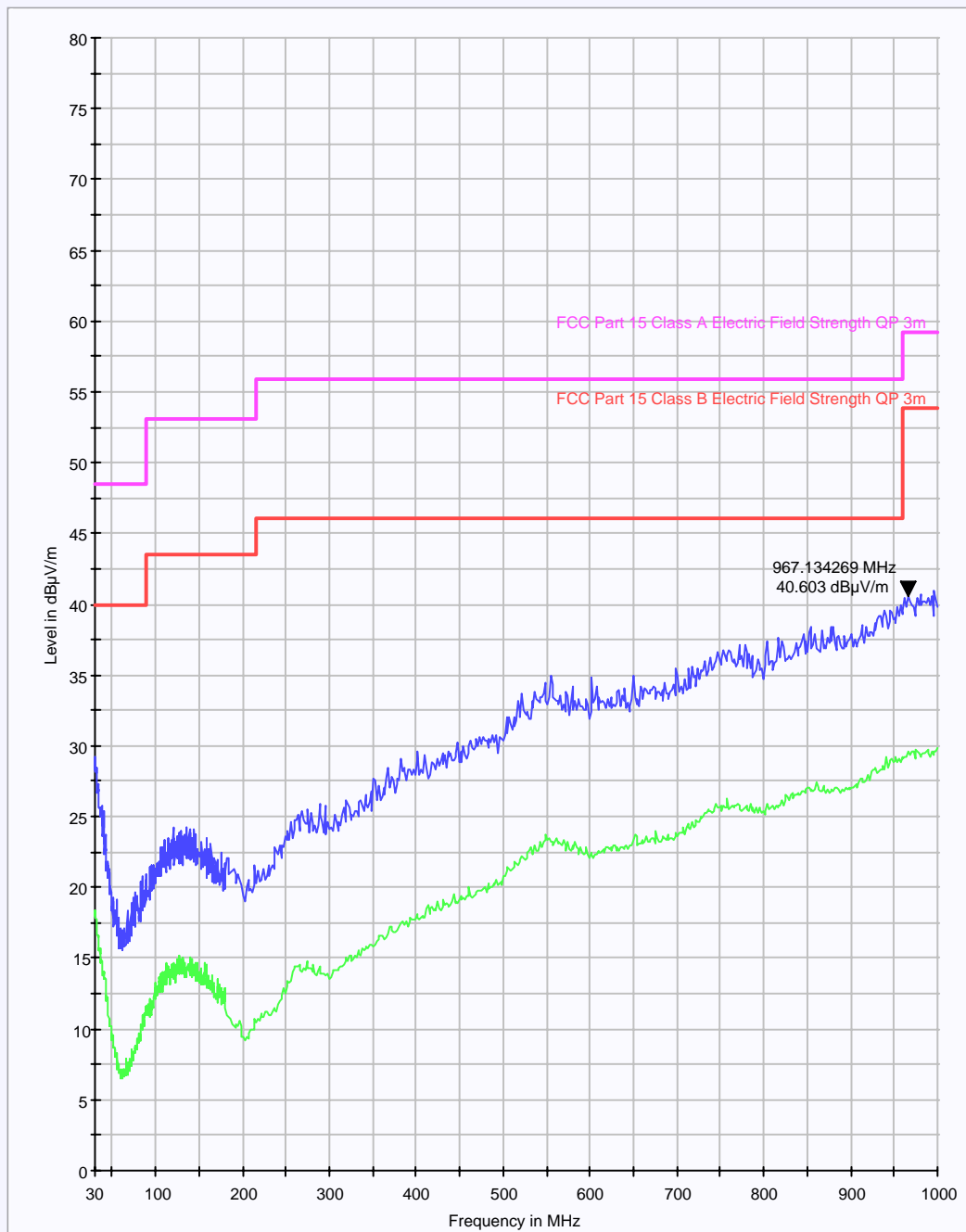
#### **Note(s):**

1. *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.*

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**Transmitter Radiated Emissions (Continued)**



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

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

#### Results:

#### Electric Field Strength Measurements (Frequency Range: 1 GHz to 25 GHz) (Emissions Occurring in 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)	Limit (dB $\mu$ V/m)	Margin (dB)	Note(s)
4.03993	Vertical	53.9	-3.3	50.6	74.0	23.4	-
4.58056	Vertical	51.1	-3.6	47.5	74.0	26.5	-

##### Highest Average Level: Bottom Channel

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)	Note(s)
4.803993	Vertical	44.0	-3.3	40.7	54.0	13.3	-
4.958056	Vertical	43.1	-3.6	39.5	54.0	14.5	-

##### Highest Peak Level: Middle Channel

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)	Note(s)
4.802075	Vertical	50.1	-3.3	46.8	74.0	27.2	-
4.882019	Vertical	53.3	-3.5	49.8	74.0	24.2	-

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### Transmitter Radiated Emissions (Continued)

#### Highest Average Level: Middle Channel

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)	Note(s)
4.802075	Vertical	41.8	-3.3	38.5	54.0	15.5	-
4.882019	Vertical	42.8	-3.5	39.3	54.0	14.7	-

#### Highest Peak Level: Top Channel

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)	Note(s)
4.802075	Vertical	50.1	-3.3	46.8	74.0	27.2	-
4.960056	Vertical	53.5	-3.7	50.2	74.0	23.8	-

#### Highest Average Level: Top Channel

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)	Note(s)
4.802075	Vertical	41.8	-3.3	38.5	54.0	15.5	-
4.960056	Vertical	43.5	-3.7	40.2	54.0	13.8	-

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**Transmitter Radiated Emissions (Continued)**

**Highest Peak Level: Hopping 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)	Note(s)
4.807710	Vertical	54.0	-3.3	50.7	74.0	23.3	-

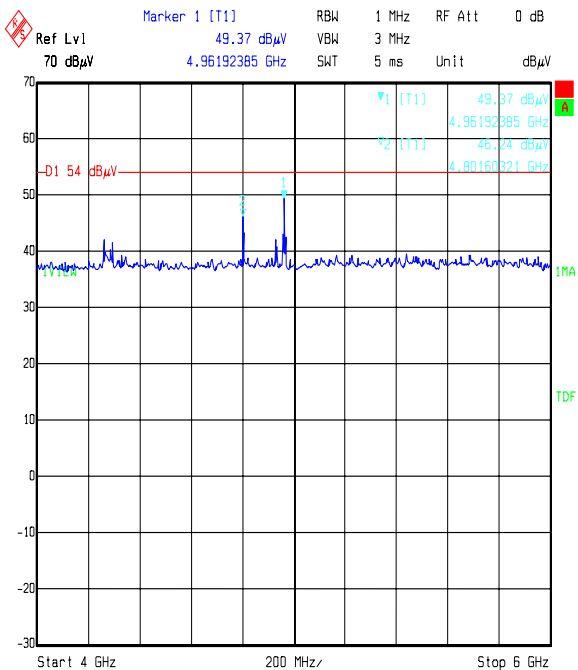
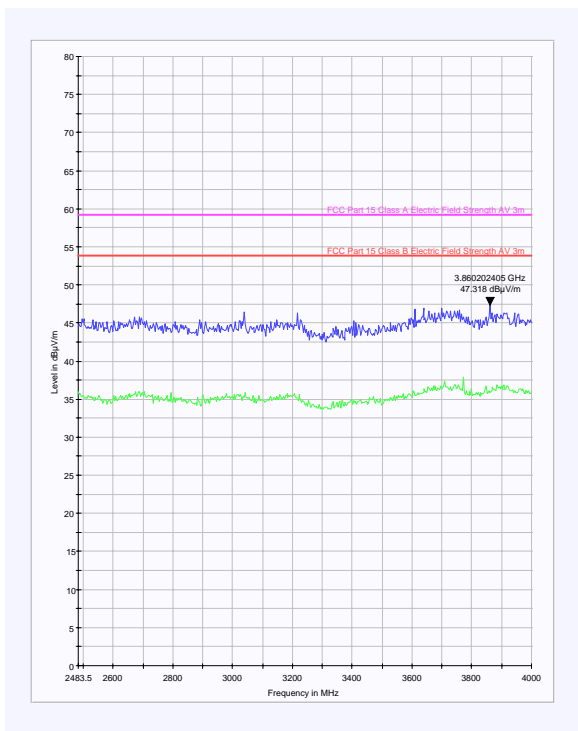
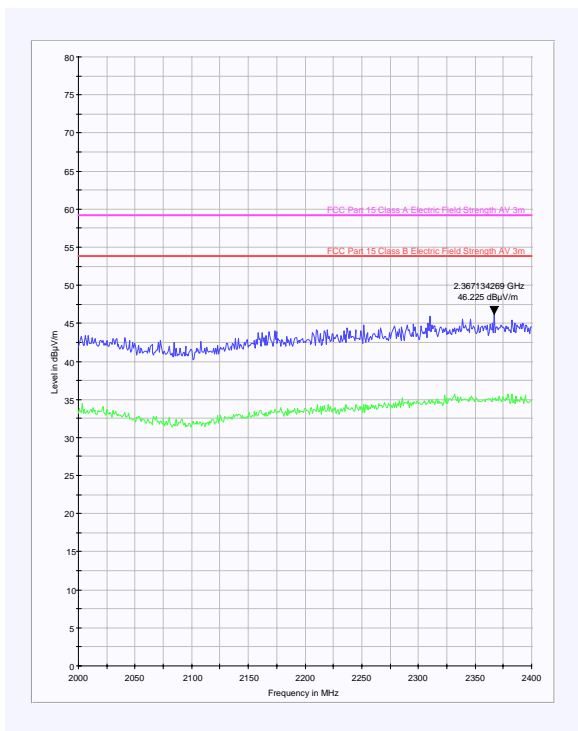
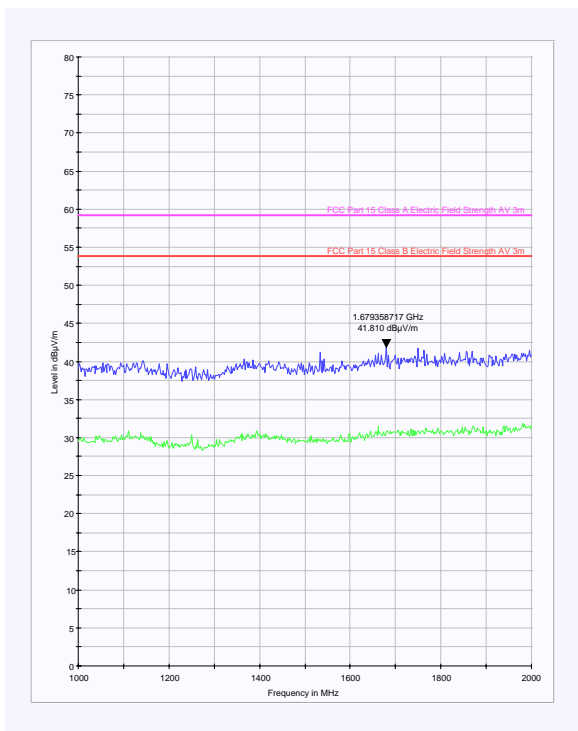
**Highest Average Level: Hopping Mode**

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)	Note(s)
4.807710	Vertical	35.5	-3.3	32.2	54.0	21.8	-

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**Transmitter Radiated Emissions (Continued)**



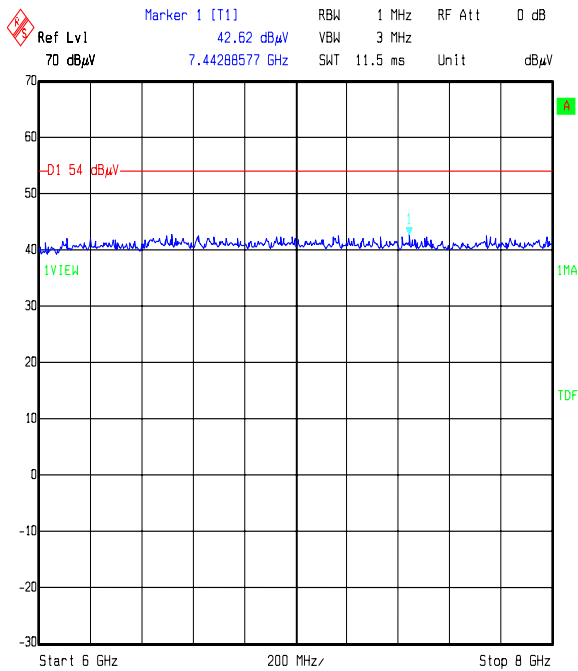
Title: 49543JD09 FCC15.247  
Comment A: RADIATED SPURIOUS EMISSIONS, TRANSMIT MODE  
Date: 03.OCT.2007 15:02:32

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

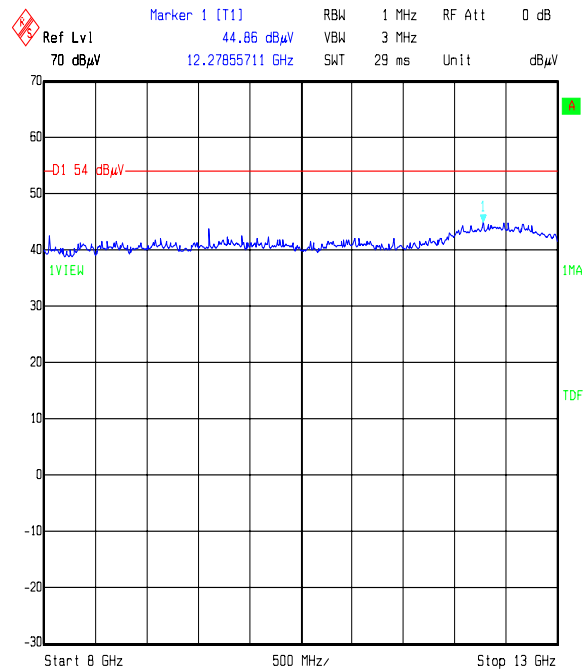
Test of: GN A/S  
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To: FCC Part 15.247: 2006 (Subpart C), RSS-210 Issue 7 June 2007  
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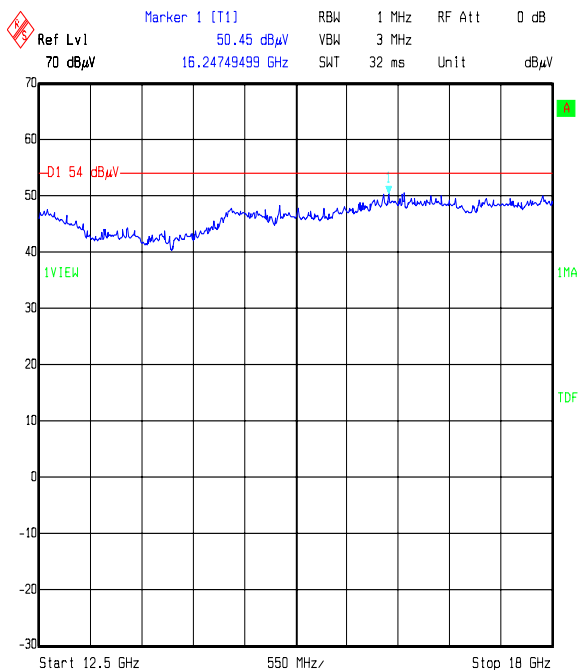
**Transmitter Radiated Emissions (Continued)**



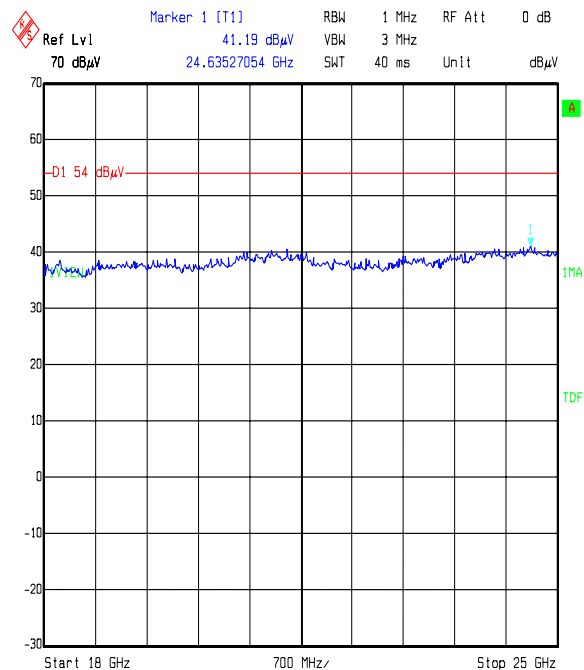
Title: 49543JD09 FCC15.247  
Comment A: RADIATED SPURIOUS EMISSIONS, TRANSMIT MODE  
Date: 03.OCT.2007 15:40:11



Title: 49543JD09 FCC15.247  
Comment A: RADIATED SPURIOUS EMISSIONS, TRANSMIT MODE  
Date: 03.OCT.2007 15:47:38



Title: 49543JD09 FCC15.247  
Comment A: RADIATED SPURIOUS EMISSIONS, TRANSMIT MODE  
Date: 03.OCT.2007 15:58:48



Title: 49543JD09 FCC15.247  
Comment A: RADIATED SPURIOUS EMISSIONS, TRANSMIT MODE  
Date: 03.OCT.2007 16:03:02

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



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### 7.2.9. Transmitter Band Edge Radiated Emissions

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

#### Results:

#### Electric Field Strength Measurements

##### Peak Power Level Hopping Mode: Normal Mode

Frequency (MHz)	Antenna Polarity	Detector Level (dB $\mu$ V)	Transducer Factor (dB)	Actual Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Note(s)
2400.0	Vertical	46.4	-6.5	39.9	74.7*	34.8	-
2483.5	Vertical	54.4	-8.0	46.4	74.0	27.6	-

##### Average Power Level Hopping Mode: Normal Mode

Frequency (MHz)	Antenna Polarity	Detector Level (dB $\mu$ V)	Transducer Factor (dB)	Actual Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Note(s)
2483.5	Vertical	43.5	-8.0	35.5	54.0	18.5	-

##### Peak Power Level Hopping Mode: EDR Mode

Frequency (MHz)	Antenna Polarity	Detector Level (dB $\mu$ V)	Transducer Factor (dB)	Actual Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Note(s)
2400.0	Vertical	47.1	-6.5	40.6	74.6*	34.0	-
2483.5	Vertical	57.3	-8.0	49.3	74.0	24.7	-

##### Average Power Level Hopping Mode: EDR Mode

Frequency (MHz)	Antenna Polarity	Detector Level (dB $\mu$ V)	Transducer Factor (dB)	Actual Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Note(s)
2483.5	Vertical	43.5	-8.0	35.5	54.0	18.5	-

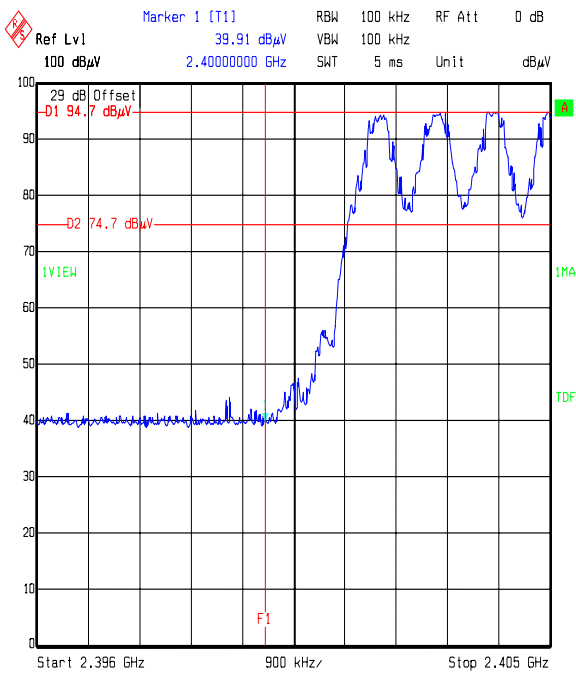
#### Note(s):

- \* -20 dBc limit

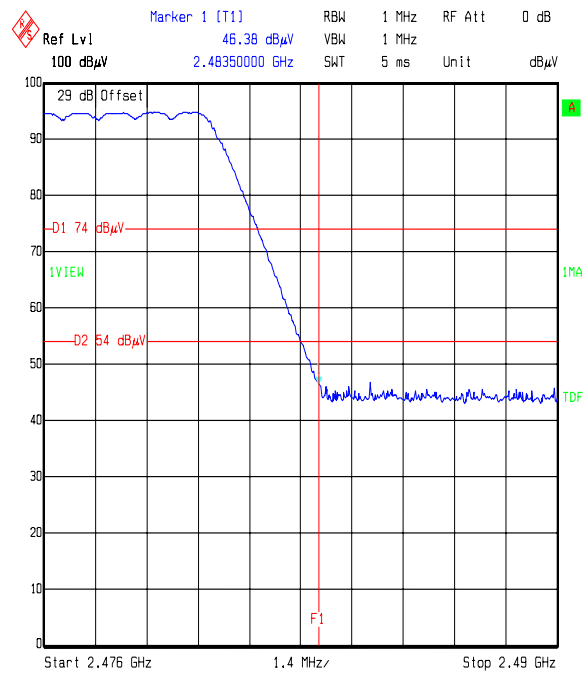
Test of: GN A/S  
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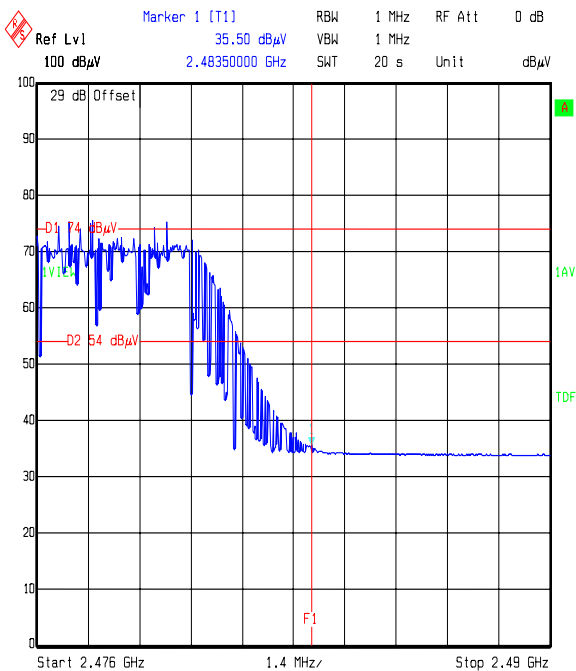
**Transmitter Band Edge Radiated Emissions Normal Mode (Continued)**



Title: 49543JD09 FCC15.247  
Comment A: TX BAND EDGE, HOPPING, BOTTOM CHANNEL, PEAK  
Date: 04.OCT.2007 10:27:00



Title: 49543JD09 FCC15.247  
Comment A: TX BAND EDGE, HOPPING, TOP CHANNEL, PEAK  
Date: 04.OCT.2007 10:20:55

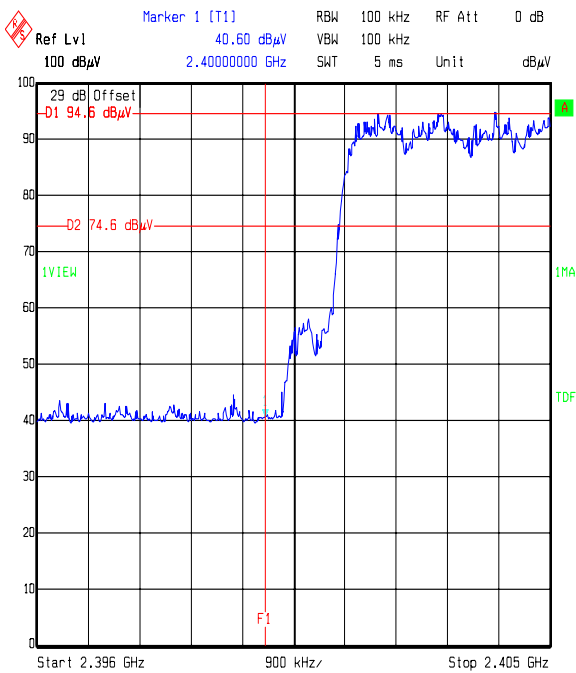


Title: 49543JD09 FCC15.247  
Comment A: TX BAND EDGE, HOPPING, TOP CHANNEL, AVERAGE  
Date: 04.OCT.2007 10:18:47

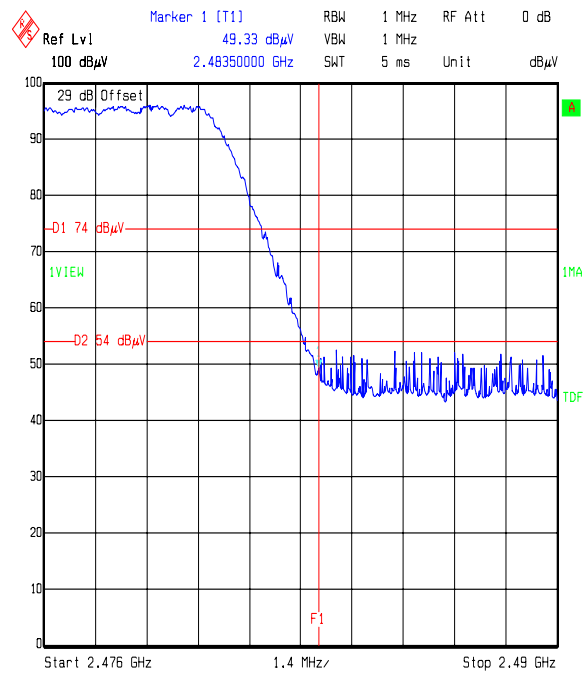
Test of: GN A/S  
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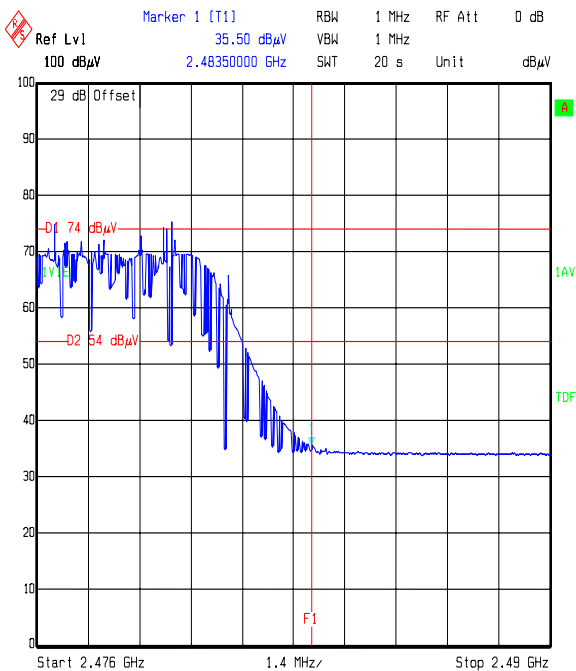
**Transmitter Band Edge Radiated Emissions EDR Mode (Continued)**



Title: 49543JD09 FCC15.247  
Comment A: TX BAND EDGE, HOPPING, BOTTOM CHANNEL, PEAK EDR  
Date: 04.OCT.2007 11:00:26



Title: 49543JD09 FCC15.247  
Comment A: TX BAND EDGE, HOPPING, TOP CHANNEL, PEAK EDR  
Date: 04.OCT.2007 11:09:57



Title: 49543JD09 FCC15.247  
Comment A: TX BAND EDGE, HOPPING, TOP CHANNEL, AVERAGE EDR  
Date: 04.OCT.2007 11:17:40

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### Transmitter Band Edge Radiated Emissions (Continued)

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

#### Results:

##### Peak Power Level Static Mode: Normal Mode

Frequency (MHz)	Antenna Polarity	Detector Level (dB $\mu$ V)	Transducer Factor (dB)	Actual Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Note(s)
2400.0	Vertical	44.7	-6.5	38.2	74.7*	36.5	-
2483.5	Vertical	58.2	-8.0	50.2	74.0	23.8	-

##### Average Power Level Static Mode: Normal Mode

Frequency (MHz)	Antenna Polarity	Detector Level (dB $\mu$ V)	Transducer Factor (dB)	Actual Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Note(s)
2843.5	Vertical	47.1	-8.0	39.1	54.0	14.9	-

##### Peak Power Level Static Mode: EDR Mode

Frequency (MHz)	Antenna Polarity	Detector Level (dB $\mu$ V)	Transducer Factor (dB)	Actual Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Note(s)
2400.0	Vertical	48.5	-6.5	42.0	75.5*	33.5	-
2483.5	Vertical	57.9	-8.0	49.9	74.0	24.1	-

##### Average Power Level Static Mode: EDR Mode

Frequency (MHz)	Antenna Polarity	Detector Level (dB $\mu$ V)	Transducer Factor (dB)	Actual Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Note(s)
2843.5	Vertical	48.9	-8.0	40.1	54.0	13.9	-

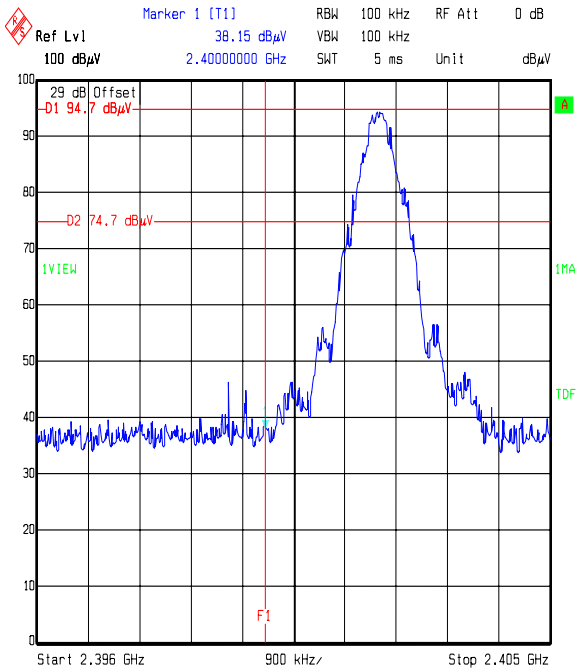
#### Note(s):

1. \* -20 dBc limit

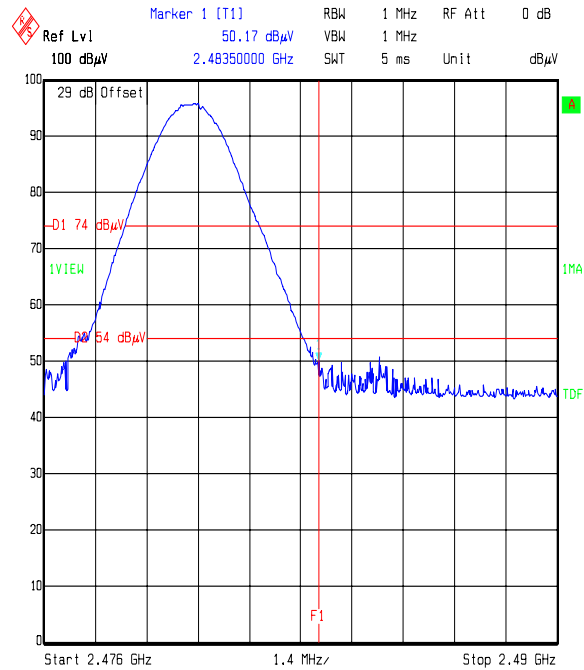
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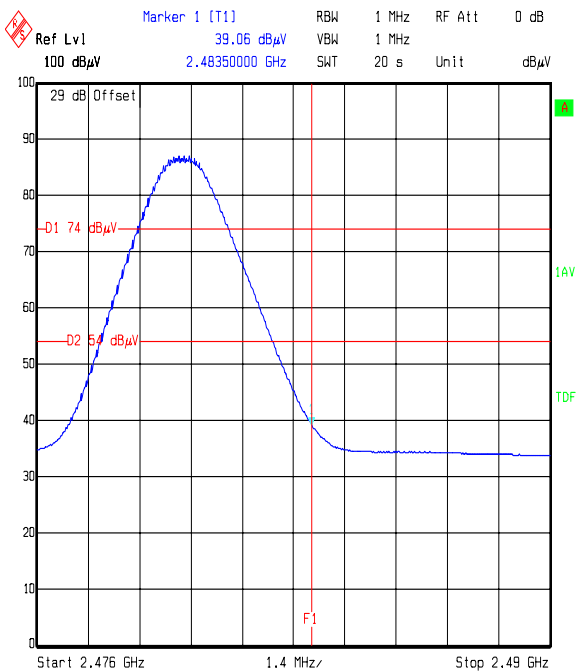
**Transmitter Band Edge Radiated Emissions Normal Mode (Continued)**



Title: 49543JD09 FCC15.247  
 Comment A: TX BAND EDGE, STATIC, BOTTOM CHANNEL, PEAK  
 Date: 04.OCT.2007 10:29:55



Title: 49543JD09 FCC15.247  
 Comment A: TX BAND EDGE, STATIC, TOP CHANNEL, PEAK  
 Date: 04.OCT.2007 10:07:55

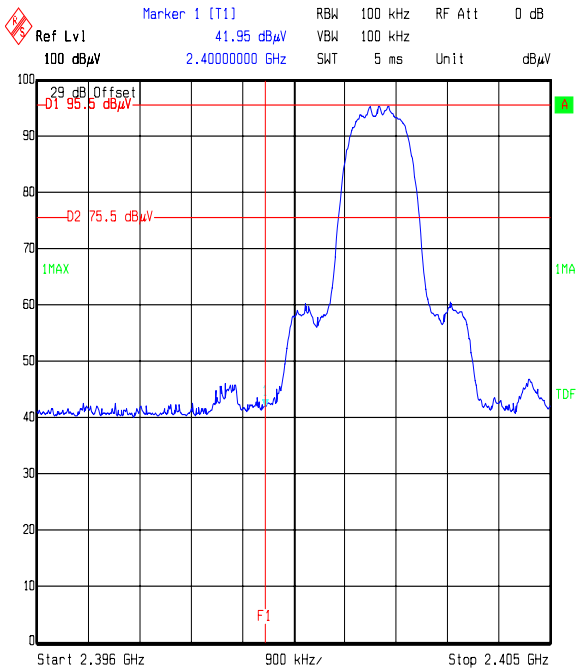


Title: 49543JD09 FCC15.247  
 Comment A: TX BAND EDGE, STATIC, TOP CHANNEL, AVERAGE  
 Date: 04.OCT.2007 10:11:53

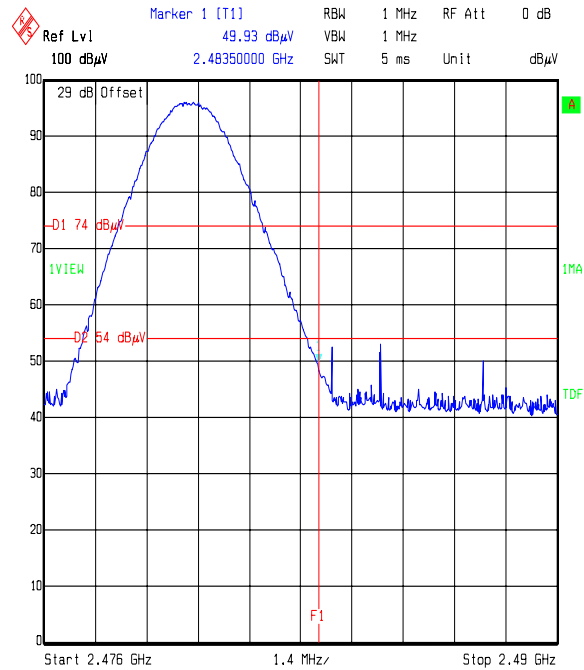
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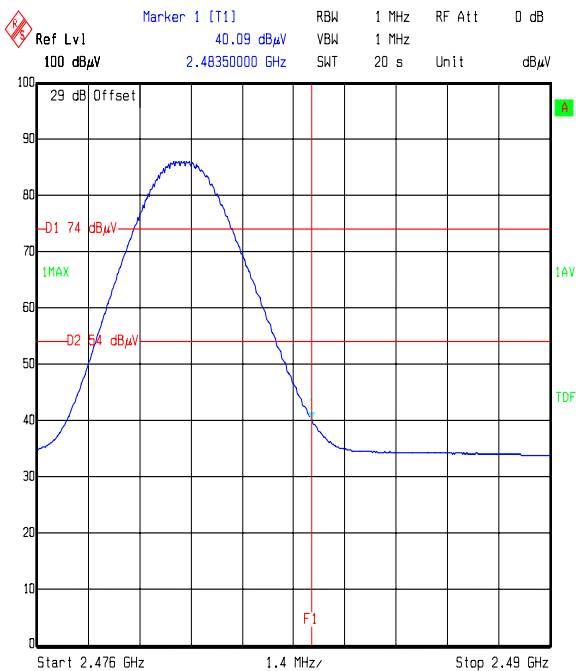
**Transmitter Band Edge Radiated Emissions EDR Mode (Continued)**



Title: 49543JD09 FCC15.247  
Comment A: TX BAND EDGE, STATIC, BOTTOM CHANNEL, PEAK EDR  
Date: 04.OCT.2007 10:54:19



Title: 49543JD09 FCC15.247  
Comment A: TX BAND EDGE, STATIC, TOP CHANNEL, PEAK EDR  
Date: 04.OCT.2007 11:21:01



Title: 49543JD09 FCC15.247  
Comment A: TX BAND EDGE, STATIC, TOP CHANNEL, AVERAGE EDR  
Date: 04.OCT.2007 11:19:32

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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
Transmitter Maximum Peak Output Power	Not Applicable	95%	±2.94 dB
Conducted Emissions Antenna Port	30 MHz to 40 GHz	95%	±0.28 dB
Transmitter Carrier Frequency Separation	Not Applicable	95%	±11.4 ppm
Transmitter Average Time of Occupancy	Not Applicable	95%	±0.3 ns
20 dB Bandwidth	Not Applicable	95%	± 11.4 ppm
Radiated Spurious Emissions	30 MHz to 1000 MHz	95%	±4.64 dB
Radiated Spurious Emissions	1 GHz to 40 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.



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### Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
A027	Horn Antenna	Eaton	9188-2	301	08 Jun 2006	36
A031	Horn Antenna	Eaton	91889-2	557	08 Jun 2006	36
A1069	Single Phase LISN	Rohde & Schwarz	ESH3-Z5	837469/012	09 Feb 2007	12
A1534	Preamplifier	Hewlett Packard	8449B OPT H02	3008A00405	Calibrated before use	12
A1830	Pulse Limiter	Rhode & Schwarz	ESH3-Z2	100668	08 Jan 2007	12
A253	Horn Antenna	Flann Microwave	12240-20	128	17 Nov 2006	36
A254	Horn Antenna	Flann Microwave	14240-20	139	17 Nov 2006	36
A255	Horn Antenna	Flann Microwave	16240-20	519	17 Nov 2006	36
A256	Horn Antenna	Flann Microwave	18240-20	400	17 Nov 2006	36
A436	Horn Antenna	Flann	20240-20	330	24 Apr 2006	36
A553	Bi-log Antenna	Chase	CBL6111A	1593	01 Nov 2006	12
C1083	Cable	Rosenberger	001	2799	Calibrated before use	-
C1165	Cable	Rosenberger Micro-Coax	FA210A1020007070	43189-1	Calibrated before use	-
C1167	Cable	Rosenberger Micro-Coax	FA210A1030007070	43190-01	Calibrated before use	-
C1265	Cable	Rosenberger	FA210A1020007070	49317-01	Calibrated before use	-
C1268	Cable	Rosenberger	FA210A0075008080	49356-1	Calibrated before use	-
C172	Cable	Rosenberger	UFA210A-1-1181-70x70	None	Calibrated before use	-
C363	Cable	Rosenberger	RG142	None	Calibrated before use	-
M1124	Spectrum Analyser	Rohde & Schwarz	ESIB26	100046K	20 Dec 2006	12

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**Test Equipment Used (Continued)**

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
M1242	Spectrum Analyser	Rohde & Schwarz	FSEM30	845986/022	08 Sep 2006	13
M1263	Test Receiver	Rohde & Schwarz	ESIB7	100265	25 Jan 2007	12
S202	Open Area Test Site	RFI	2	S202-15011990	17 Nov 2006	12
S209	Screened Room	RFI	9	None	Calibrated before use	-

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

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