

## TEST REPORT FROM RFI GLOBAL SERVICES LTD

Test of: Panasonic Mobile Communications Development of Europe Ltd  
NTT DoCoMo P905i

To: FCC Part 15.247: 2006 (Subpart C)

**Test Report Serial No:**  
RFI/RPTE3/RP49463JD11A

**Supersedes Test Report Serial No:**  
RFI/RPTE2/RP49463JD11A

This Test Report Is Issued Under The Authority  
Of Brian Watson, Operations Director:

A handwritten signature in black ink, appearing to read 'Brian Watson'.

Checked By: Steven Wong

Report Copy No: PDF01

A handwritten signature in black ink, appearing to read 'Steven Wong'.

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Issue Date: 18 October 2007

Test Dates: 17 September 2007 to 27 September 2007

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**RFI Global Services Ltd**

Pavilion A, Ashwood Park, Ashwood Way, Basingstoke, Hampshire RG23 8BG

Telephone: +44 (0)1256 312000 Facsimile: +44 (0)1256 312001

Email: [info@rfi-global.com](mailto:info@rfi-global.com) Website: [www.rfi-global.com](http://www.rfi-global.com)

Registered in England and Wales. Company number: 2117901

**RFI GLOBAL SERVICES LTD**

**Test Report**

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## **1. Client Information**

<b>Company Name:</b>	Panasonic Mobile Comms Dev of Europe Ltd
<b>Address:</b>	2 Gables Way Colthrop Thatcham Berkshire RG19 4ZB UK
<b>Contact Name:</b>	Mr M Hargreaves

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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 dual mode (W-CDMA/GSM) cellular mobile telephone with Bluetooth and RFID technology.

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

<b>Description:</b>	Mobile Handset
<b>Brand Name:</b>	NTT DoCoMo
<b>Model Name or Number:</b>	P905i
<b>Serial Number:</b>	None stated
<b>IMEI Number:</b>	355282010026081
<b>Hardware Version Number:</b>	Rev C
<b>Software Version Number:</b>	APCU: B-WN905A-01.05.002 CCPU: P7Cv01.01.06.00
<b>FCC ID Number:</b>	UCE207002A
<b>Country of Manufacture:</b>	Japan
<b>Date of Receipt:</b>	17 September 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>	AC Charger
<b>Brand Name:</b>	JET Kyushu Mitsumi
<b>Model Name or Number:</b>	MAS-BH0008-A-001
<b>Serial Number:</b>	Not Supplied
<b>Cable Length and Type:</b>	1.5 m, twin core
<b>Connected to Port</b>	Charge/Data port

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**Accessories (Continued)**

<b>Description:</b>	DC Charger
<b>Brand Name:</b>	NTT DoCoMo
<b>Model Name or Number:</b>	FOMA DC Adapter 01
<b>Serial Number:</b>	Not applicable
<b>Cable Length:</b>	80 cm
<b>Connected to Port</b>	Charge/Data port

<b>Description:</b>	Personal Hands Free (Stereo)
<b>Brand Name:</b>	NTT DoCoMo
<b>Model Name or Number:</b>	Stereo Earphone Set P001
<b>Serial Number:</b>	Not applicable
<b>Cable Length:</b>	80 cm
<b>Connected to Port</b>	Audio PHF

<b>Description:</b>	USB Charge Data Cable
<b>Brand Name:</b>	NTT DoCoMo
<b>Model Name or Number:</b>	FOMA USB cable with charge function 01
<b>Serial Number:</b>	Not applicable
<b>Cable Length:</b>	50 cm
<b>Connected to Port</b>	Charge/Data port

<b>Description:</b>	Micro SD Memory Card
<b>Brand Name:</b>	None stated
<b>Model Name or Number:</b>	Not applicable
<b>Serial Number:</b>	Not applicable
<b>Cable Length and Type:</b>	Not applicable
<b>Connected to Port:</b>	Dedicated micro-SD

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## **2.5. Support Equipment**

No support equipment was used to exercise the EUT during testing.

## **2.6. Additional Information Related to Testing**

Intended Operating Environment:	Within GSM coverage		
Equipment Category:	Bluetooth, GSM/GPRS, Short Range Device and UMTS FDD I		
Type of Unit:	Portable (standalone battery powered transceiver)		
Power Supply Requirement:	Nominal 110 V, 60 Hz AC Mains Supply DC Supply of 12/24V Internal Battery Supply of 3.7V (nominal)		
Maximum Power Output (ERP)	0.8 dBm (measured)		
Transmit Frequency Range:	922.244 kHz (measured)		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	0	2402
	Middle	39	2441
	Top	78	2480
Receive Frequency Range:	2402 to 2480 MHz		
Receive Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	0	2402
	Middle	39	2441
	Top	78	2480

## **2.7. Port Identification**

Port	Description
1	Charge/Data
2	Audio PHF
3	USIM
4	Micro-SD

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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)

#### **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.

The EUT was set to transmit in *Bluetooth* mode, on the bottom, middle or top channels, or hopping over all channels, as requested for each test case.

The EUT was set into a *Bluetooth* receiver mode.

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

The EUT was tested in the following configuration:

Pre-scans were performed with each accessory connected to investigate the worst case condition. The investigation showed little variation in emissions per accessory.

The EUT was connected to the AC charger during the final measurements and a wireless link to a Bluetooth test set was established.

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

<b>Range of Measurements</b>	<b>Specification Section Reference</b>	<b>Port Type</b>	<b>Compliance Status</b>
Idle Mode AC Conducted Emissions (150 kHz to 30 MHz)	Section 15.107(a)	AC Mains	Complied
Idle Mode Radiated Emissions	Section 15.109(a)	Enclosure	Complied
Transmitter AC Conducted Emissions	Section 15.207	AC Mains	Complied
20 dB Bandwidth	DA 00-705	Antenna	Complied
Carrier Frequency Separation	Section 15.247(a)(1)	Antenna	Complied
Average Time of Occupancy	Section 15.247(a)(1)(iii)	Antenna	Complied
Maximum Peak Output Power	Section 15.247(b)(3)	Antenna	Complied
Transmitter Radiated Emissions	Sections 15.247(d) & 15.209(a)	Enclosure	Complied
Transmitter Band Edge Radiated Emissions	Sections 15.247(d) & 15.209(a)	Enclosure	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

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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)
1.297500	Live	38.6	56.0	17.4	-
1.342500	Live	38.8	56.0	17.2	-
1.567500	Live	33.3	56.0	22.7	-
1.626000	Neutral	28.7	56.0	27.3	-
1.765500	Live	41.5	56.0	14.5	-
1.842000	Live	43.1	56.0	12.9	-
1.990500	Live	44.6	56.0	11.4	-
2.130000	Live	42.3	56.0	13.7	-
2.449500	Live	35.3	56.0	20.7	-
3.831000	Live	25.3	56.0	30.7	-

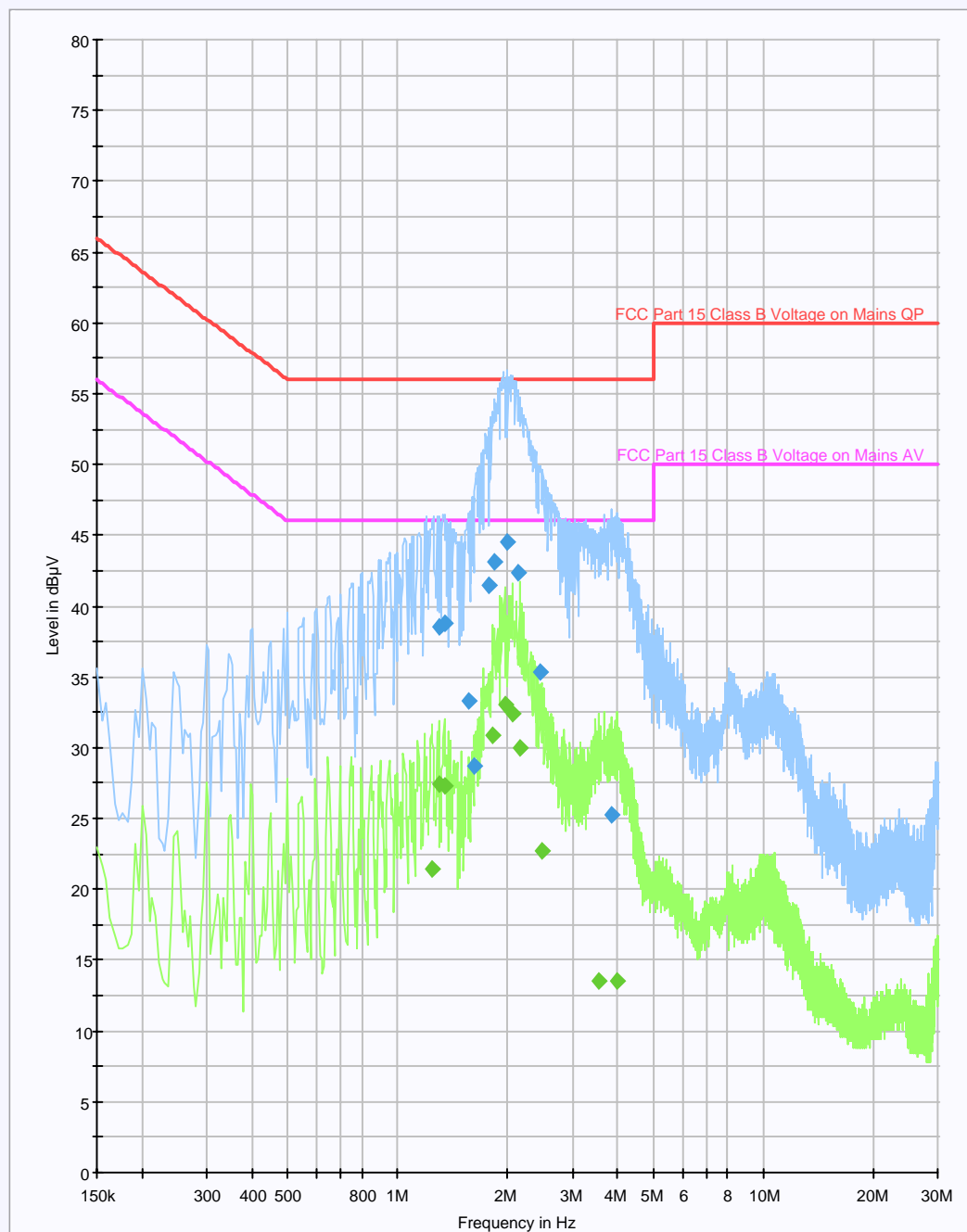
##### **Average Detector Measurements on Live and Neutral Lines**

Frequency (MHz)	Line	Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Note(s)
1.239000	Neutral	21.5	46.0	24.5	-
1.293000	Live	27.5	46.0	18.5	-
1.338000	Live	27.3	46.0	18.7	-
1.819500	Live	30.8	46.0	15.2	-
1.959000	Live	33.0	46.0	13.0	-
2.058000	Live	32.4	46.0	13.6	-
2.161500	Live	30.0	46.0	16.0	-
2.467500	Live	22.7	46.0	23.3	-
3.534000	Live	13.5	46.0	32.5	-
3.993000	Live	13.5	46.0	32.5	-

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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:**

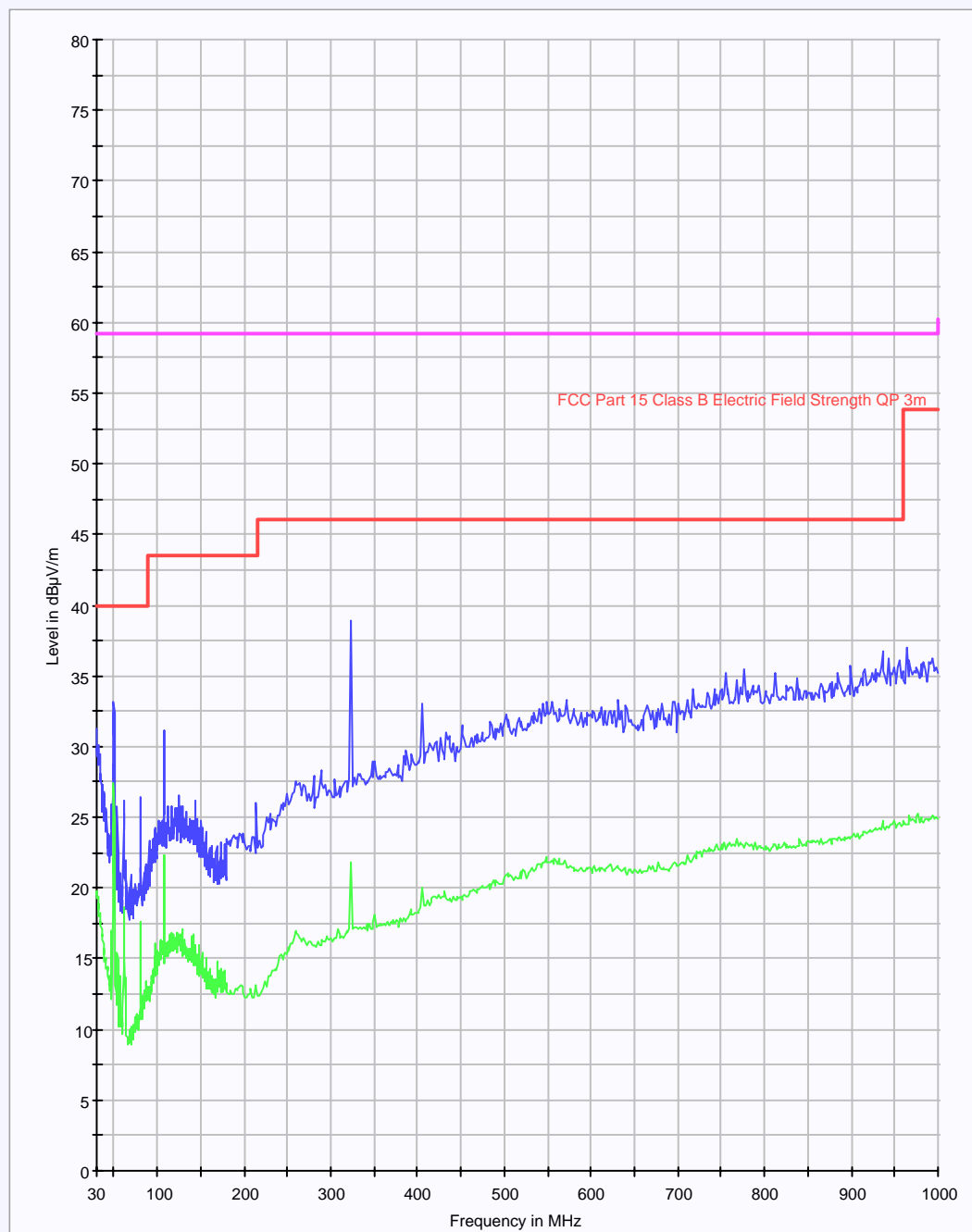
#### **Electric Field Strength Measurements (Frequency Range: 30 MHz to 1000 MHz)**

Frequency (MHz)	Antenna Polarity	Quasi-Peak Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Note(s)
49.839	Horizontal	16.4	40.0	23.6	-
108.156	Horizontal	13.5	43.5	30.0	-
522.965	Horizontal	16.4	46.0	29.6	-

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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 26 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)
12.39780*	Vertical	36.7	8.6	45.3**	54.0	28.7	-

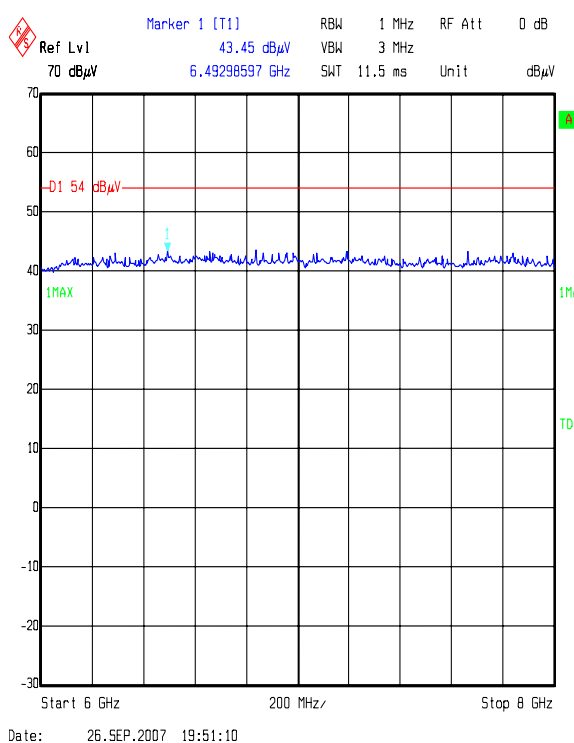
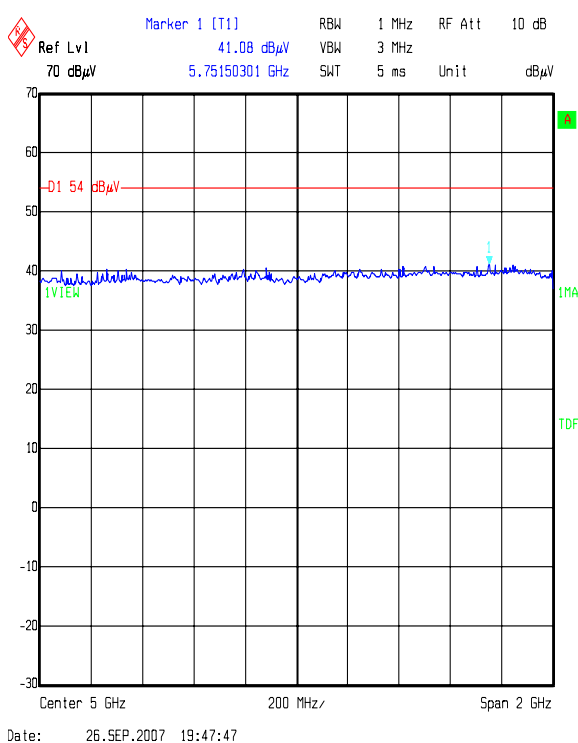
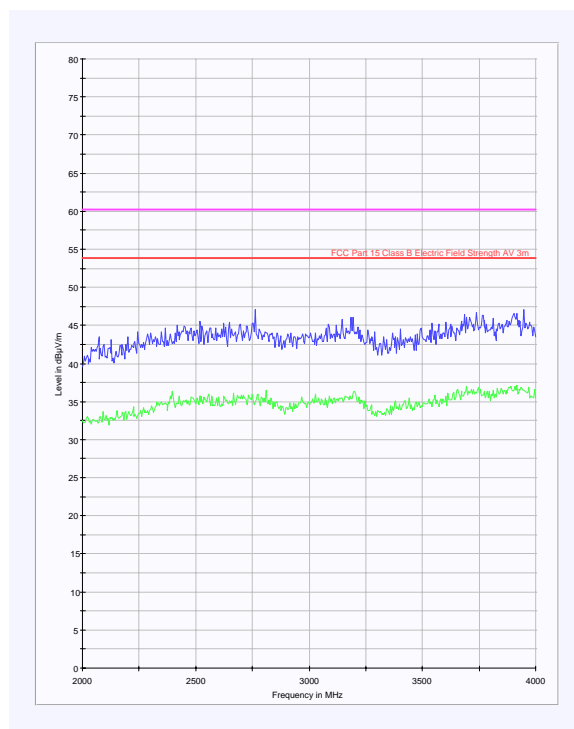
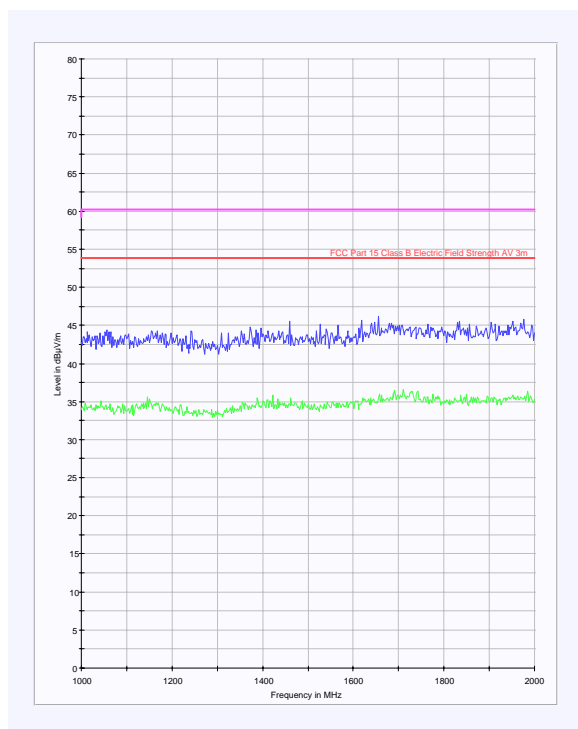
#### **Note(s):**

- \*Note: 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.  
\*\*Note: 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.*
- The emission detected at 10.6 GHz was proven as an ambient, therefore no further measurements were performed.*

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### Idle Mode Radiated Spurious Emissions (Continued)

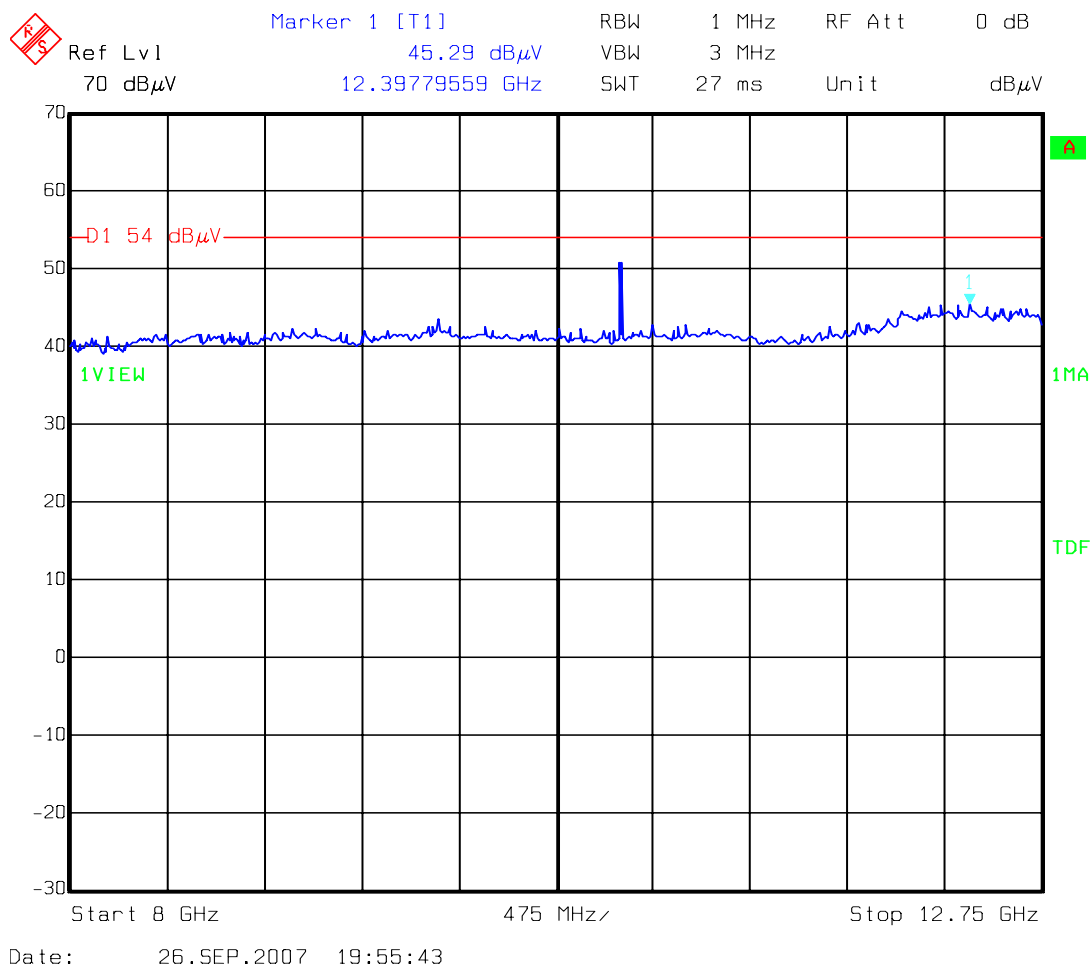


Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

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### Idle Mode Radiated Spurious Emissions (Continued)



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

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#### **7.2.4. Transmitter 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**

##### **Top Channel**

Frequency (MHz)	Line	Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Note(s)
1.330000	Neutral	38.8	56.0	17.2	-
1.626000	Neutral	38.1	56.0	17.9	-
1.834000	Neutral	45.1	56.0	10.9	-
1.854000	Neutral	45.3	56.0	10.7	-
1.970000	Neutral	46.6	56.0	9.4	-
2.122000	Live	41.0	56.0	15.0	-
2.426000	Neutral	39.2	56.0	16.8	-
3.066000	Neutral	33.4	56.0	22.6	-
3.918000	Neutral	34.0	56.0	22.0	-
4.126000	Neutral	32.0	56.0	24.0	-

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

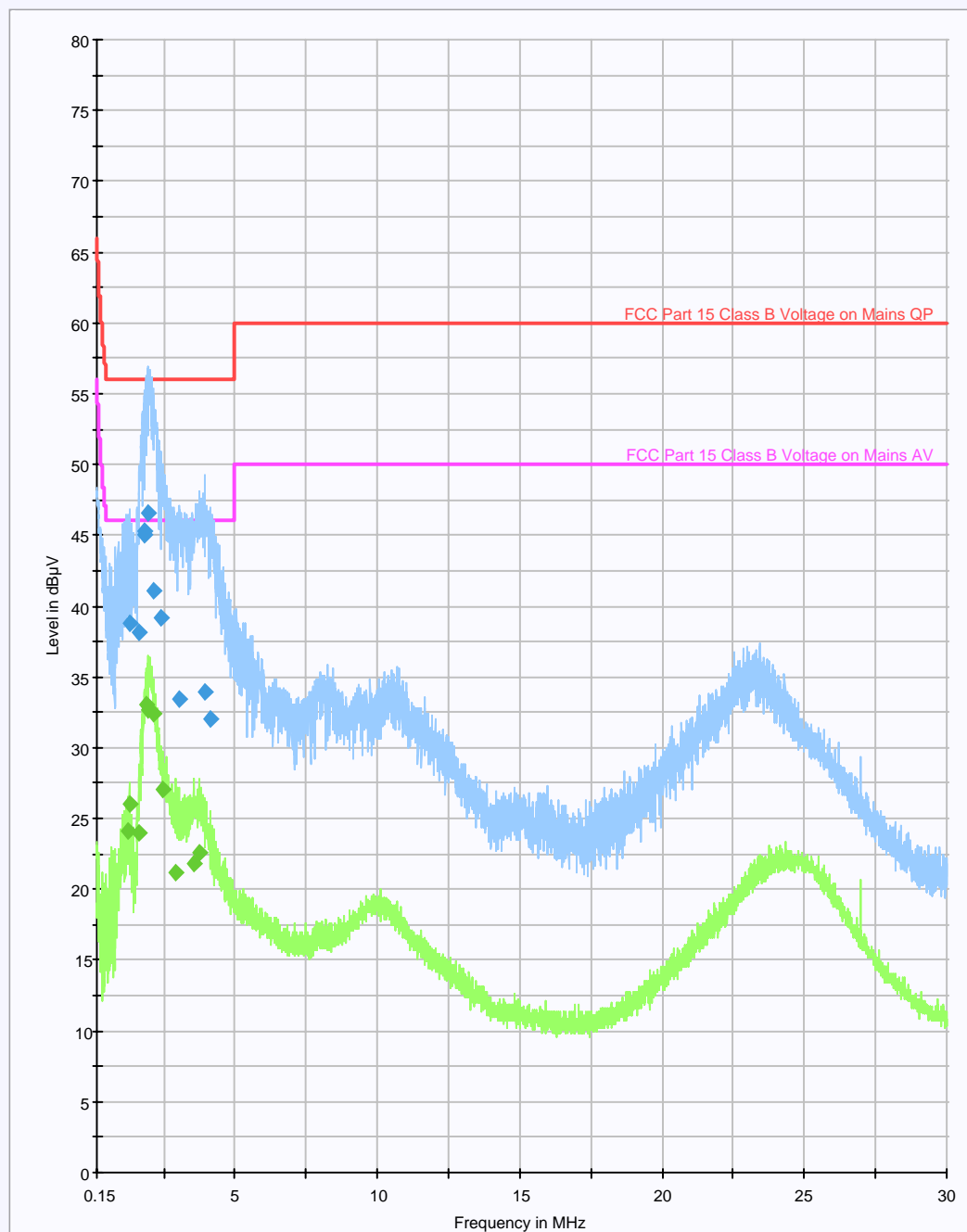
##### **Top Channel**

Frequency (MHz)	Line	Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Note(s)
1.222000	Live	24.1	46.0	21.9	-
1.278000	Live	26.0	46.0	20.0	-
1.610000	Live	24.0	46.0	22.0	-
1.858000	Live	33.1	46.0	12.9	-
1.970000	Neutral	32.7	46.0	13.3	-
2.146000	Live	32.4	46.0	13.6	-
2.458000	Live	27.0	46.0	19.0	-
2.918000	Neutral	21.2	46.0	24.8	-
3.546000	Neutral	21.9	46.0	24.1	-
3.722000	Neutral	22.6	46.0	23.4	-

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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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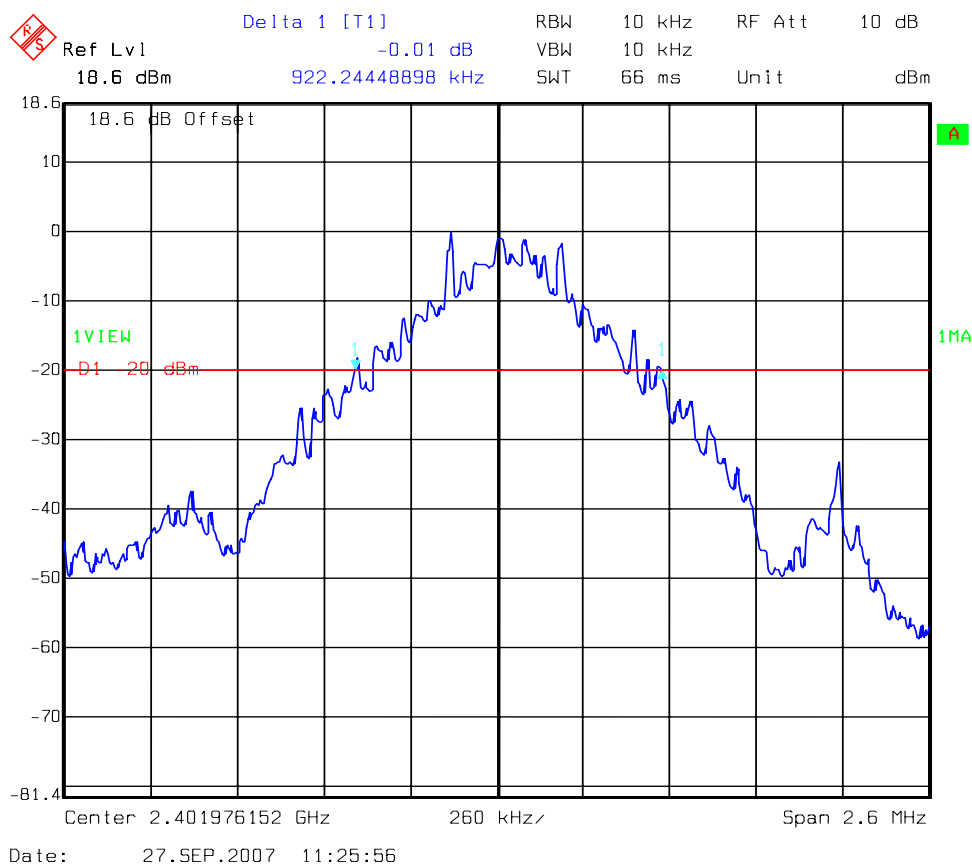
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### 7.2.5. Transmitter 20 dB Bandwidth

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)
922.244	None specified



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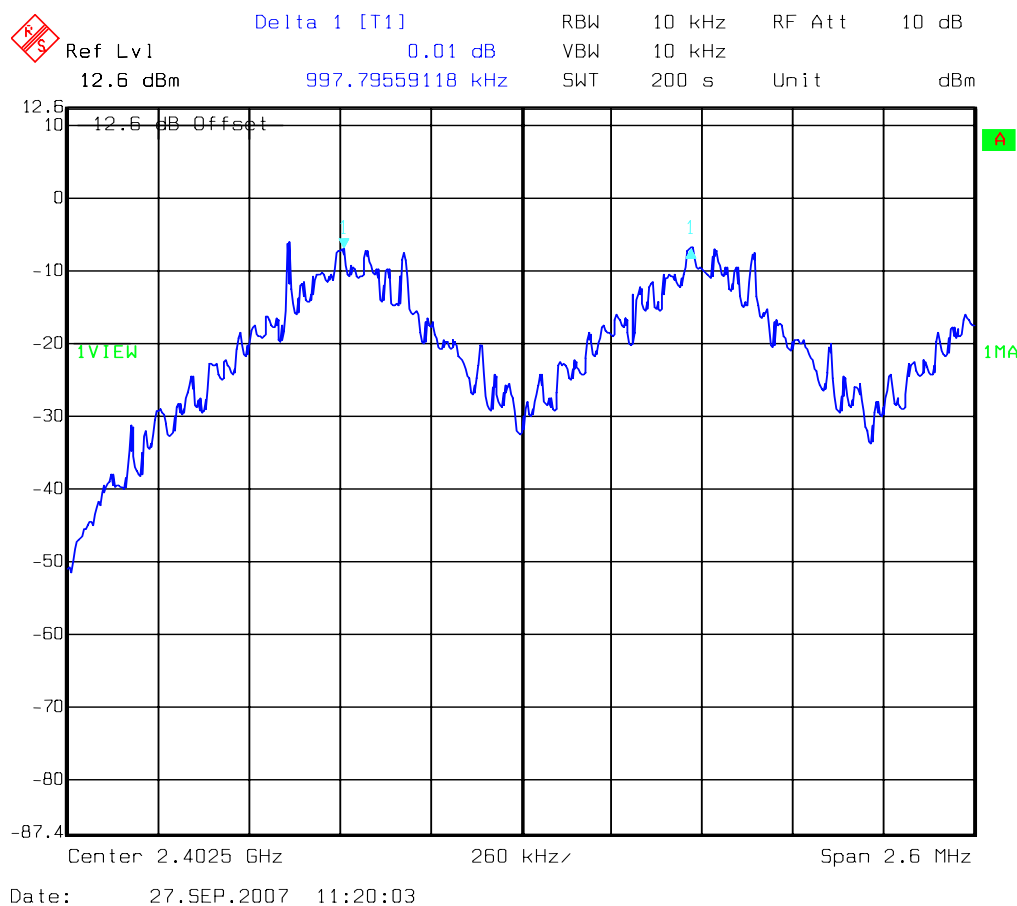
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### 7.2.6. Transmitter Carrier Frequency Separation

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

### Results:

Transmitter Carrier Frequency Separation (kHz)	Limit ( $\frac{2}{3}$ of 20 dB BW) (kHz)	Margin (kHz)	Note(s)
997.796	922.244	75.552	-



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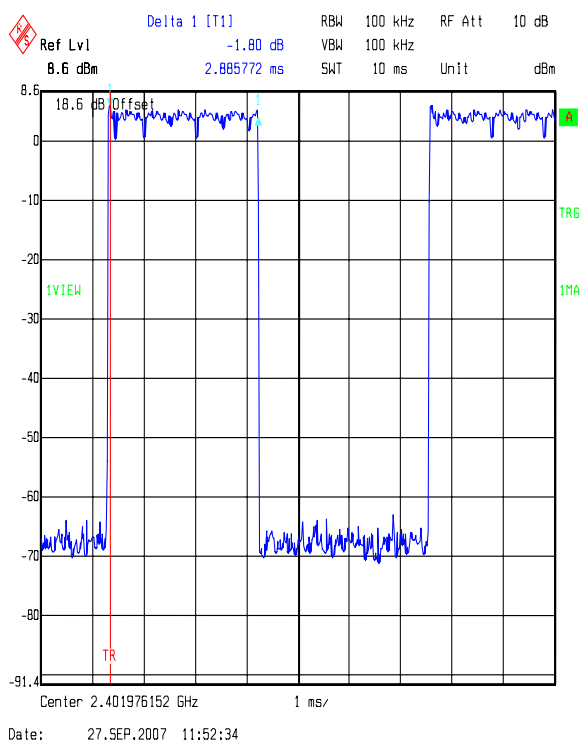
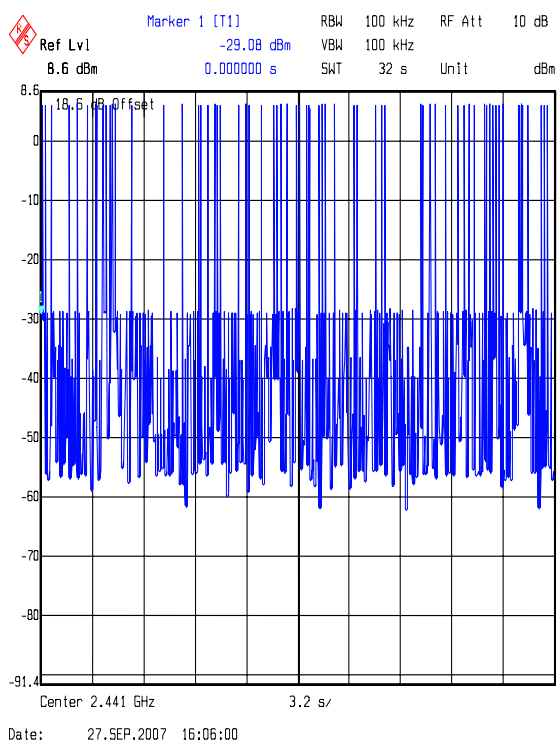
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### 7.2.7. Transmitter Average Time of Occupancy

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)
2885.772	60	0.173	0.4	0.227	-





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#### **7.2.8. Transmitter Maximum Peak Output Power**

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**

Channel	EIRP (dBm)	Limit (dBm)	Margin (dB)	Note(s)
Bottom	0.8	30.0	29.2	-
Middle	-0.1	30.0	30.1	-
Top	-2.0	30.0	32.0	-

#### **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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### **7.2.9. 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)	Result
Note 1					

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

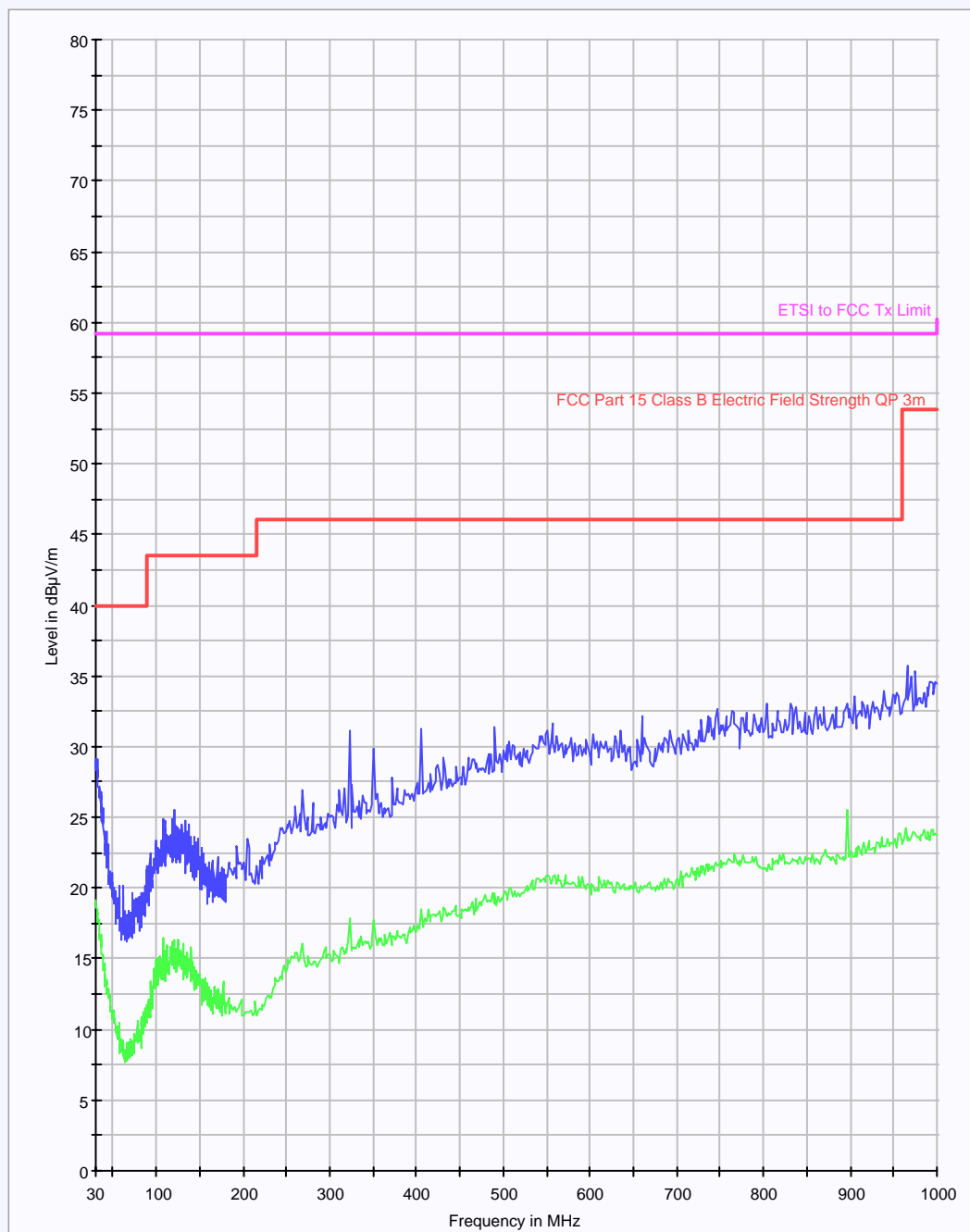
- The preliminary scans showed similar emission levels below 1 GHz for each channel of operation. Therefore final radiated emissions measurements were performed with the EUT set to the top channel only.*
- All emissions detected were at least 20 dB below the limit.*

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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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### **Transmitter 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:**

### **Electric Field Strength Measurements (Frequency Range: 1 GHz to 26 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)
4.804	Horizontal	43.2	4.8	47.0	74.0	27.0	-

#### **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)
4.804	Horizontal	31.9	4.8	36.7	54.0	17.3	-

#### **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)
4.882	Horizontal	40.6	4.8	45.4	74.0	28.6	-

#### **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)
4.882	Horizontal	31.5	4.8	36.3	54.0	17.7	-

#### **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)
4.960	Horizontal	41.6	4.8	46.4	74.0	27.6	-

#### **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)
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4.960	Horizontal	32.4	4.8	37.2	54.0	16.8	-
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**Transmitter Radiated Emissions (Continued)****Results:****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)
4.882445	Horizontal	40.7	4.8	45.5	74.0	28.5	-

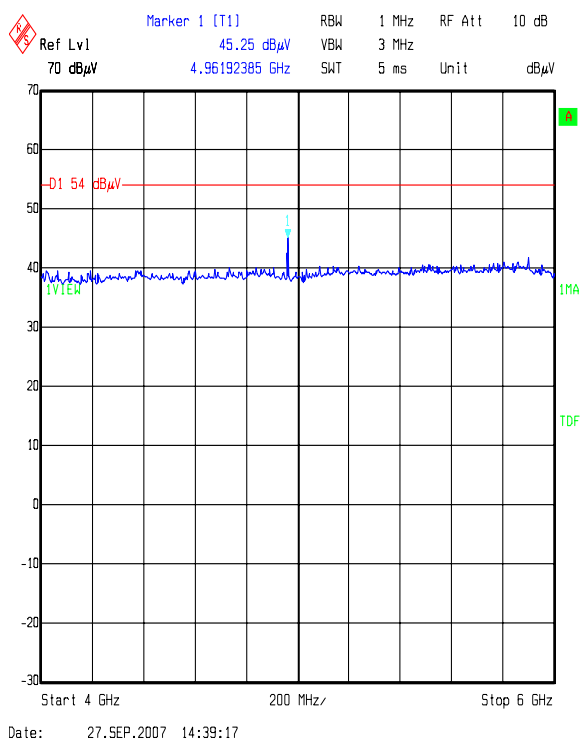
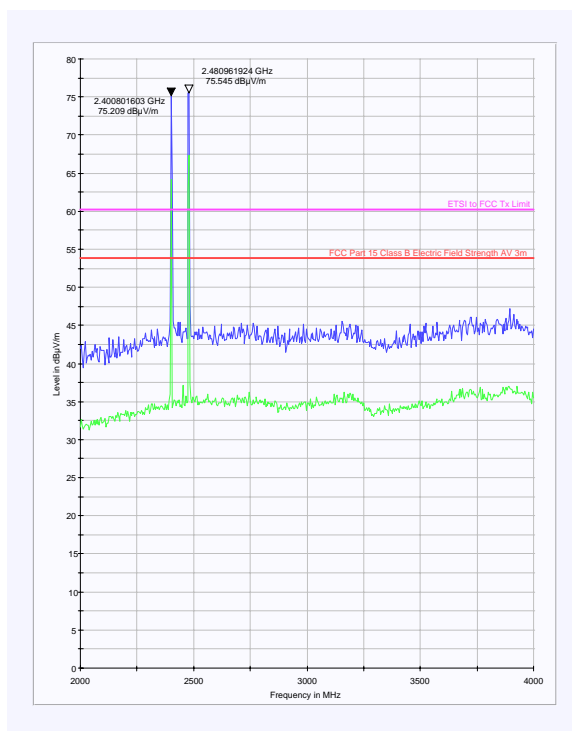
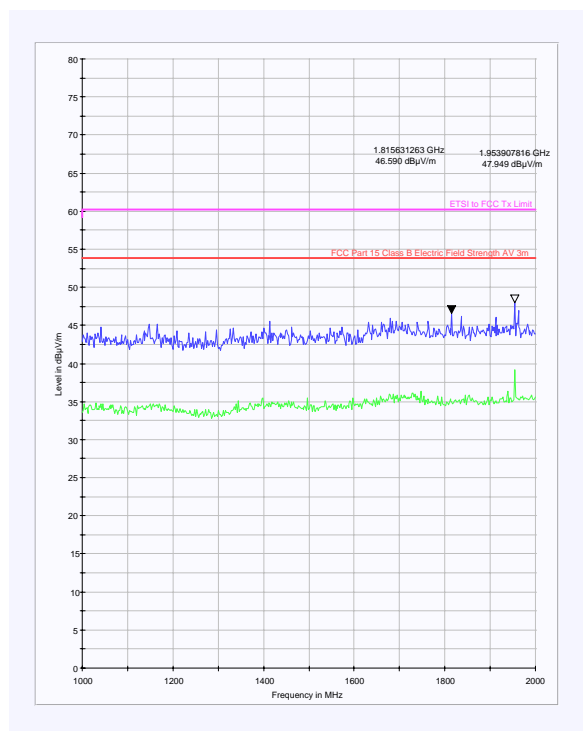
**Highest Average Level: Hopping Mode**

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)
4.882445	Horizontal	24.5	4.8	29.3	54.0	24.7	-

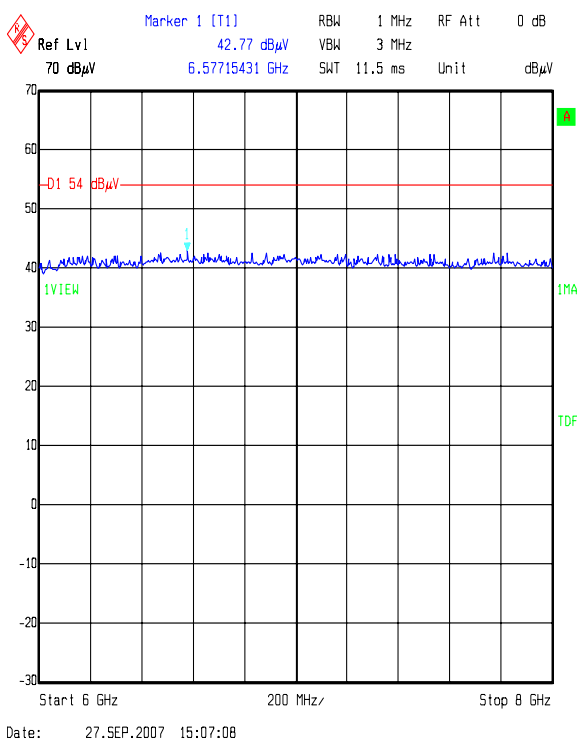
Test of: **Panasonic Mobile Communications Development of Europe Ltd**  
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### Transmitter Radiated Emissions (Continued)



Date: 27.SEP.2007 14:39:17



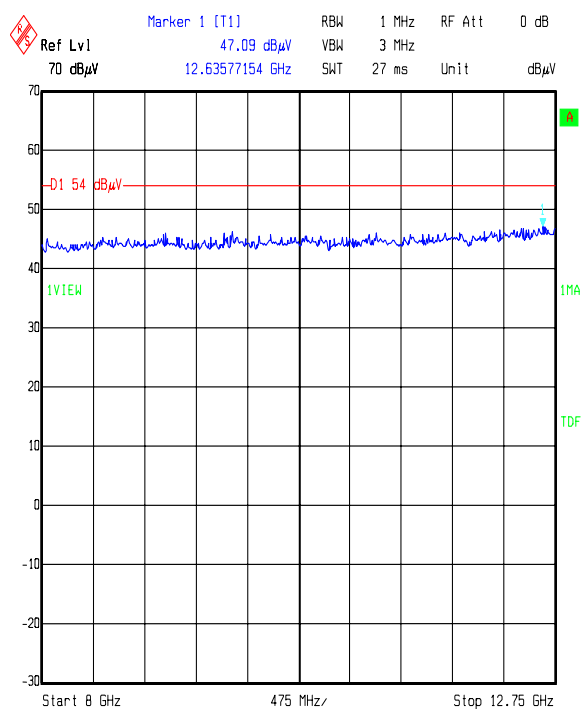
Date: 27.SEP.2007 15:07:08

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

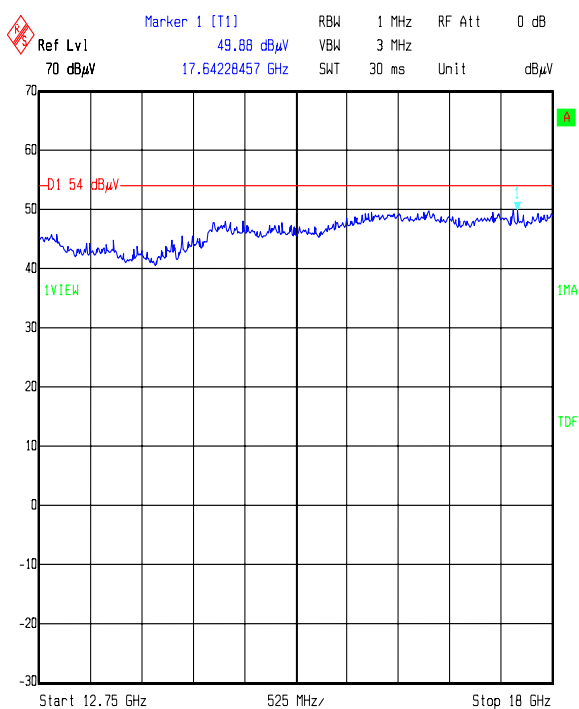
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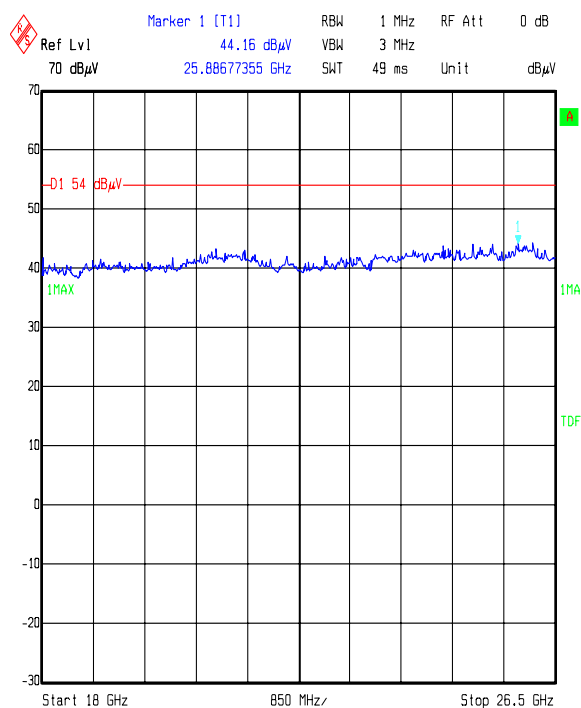
### Transmitter Radiated Emissions (Continued)



Date: 27.SEP.2007 15:15:50



Date: 27.SEP.2007 15:20:17



Date: 27.SEP.2007 16:01:39

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



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#### **7.2.10. 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:**

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)	Result
2.4000	Horizontal	27.5	26.9	54.4	74.3	19.9	-
2.4835	Horizontal	28.5	26.9	55.4	74.0	18.6	-

##### **Average Power Level Hopping 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)	Result
2.4835	Horizontal	13.3	26.9	40.2	54.0	13.8	-

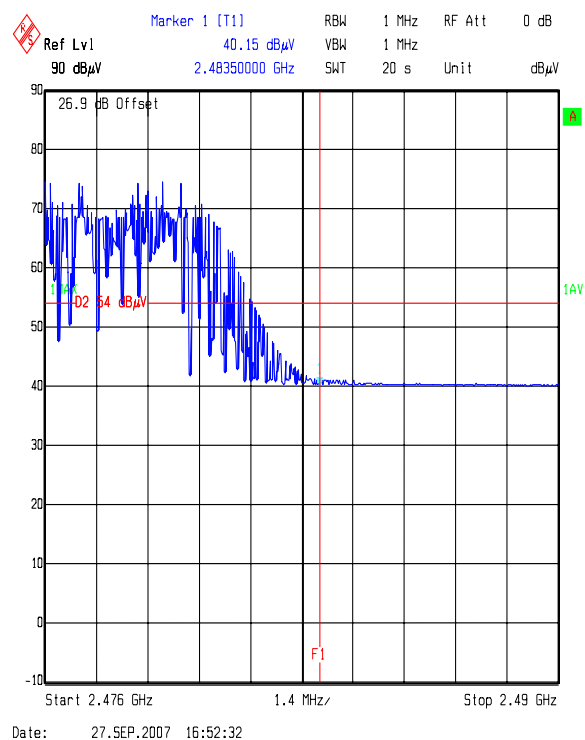
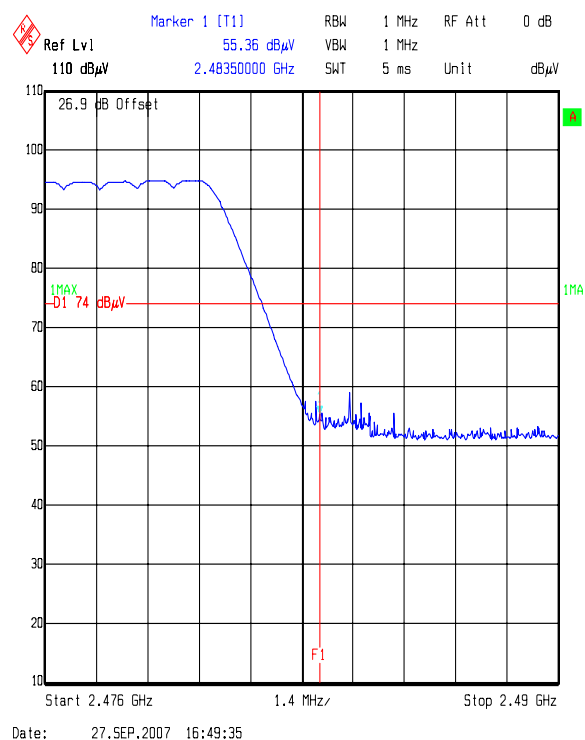
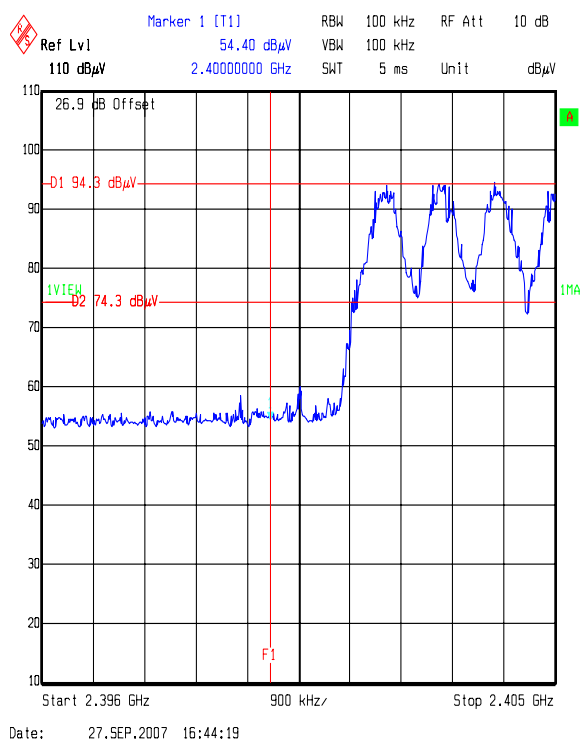
#### **Note(s):**

1. The band edge at 2.400 GHz is not within a restricted band; therefore the limit is -20 dBc.
2. The band edge at 2.4835 GHz is within a restricted band; therefore the limit is FCC part 15.209.

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### Transmitter Band Edge Radiated Emissions (Continued)



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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:**

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)	Result
2.4000	Horizontal	33.3	26.9	60.2	74.5	14.3	-
2.4835	Horizontal	28.3	26.9	55.5	74.0	18.5	-

#### **Average Power Level Static 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)	Result
2.4835	Horizontal	17.9	26.9	44.8	54.0	9.2	-

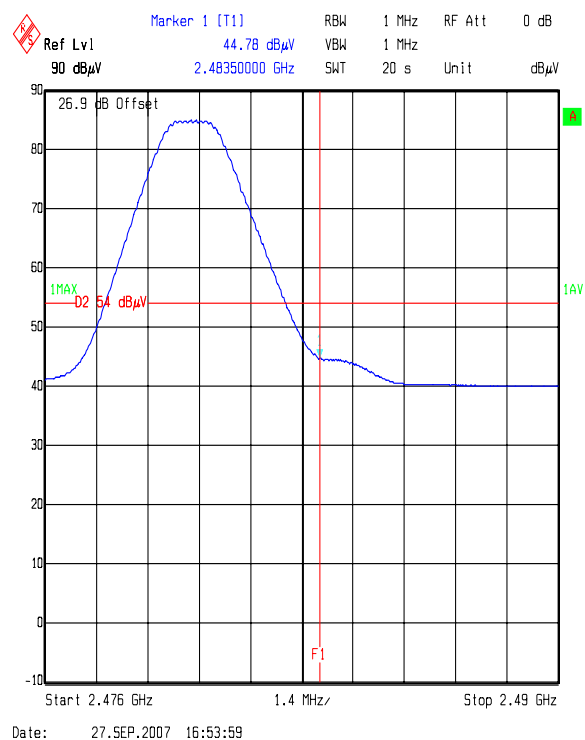
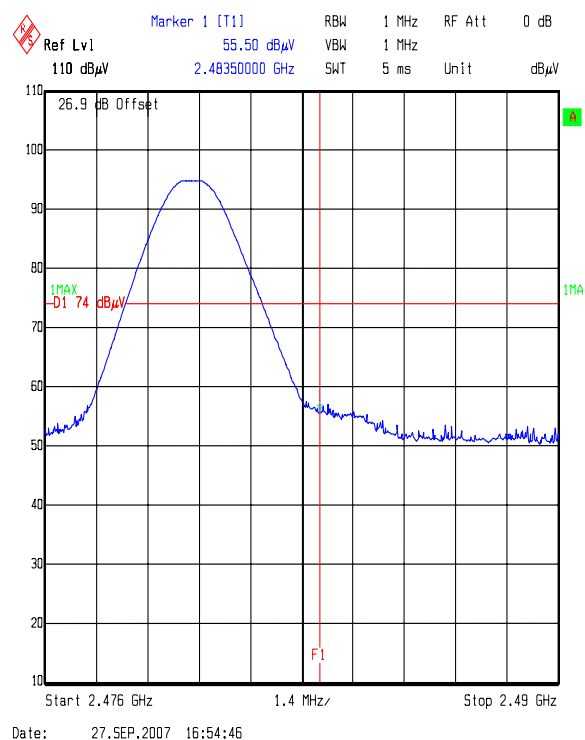
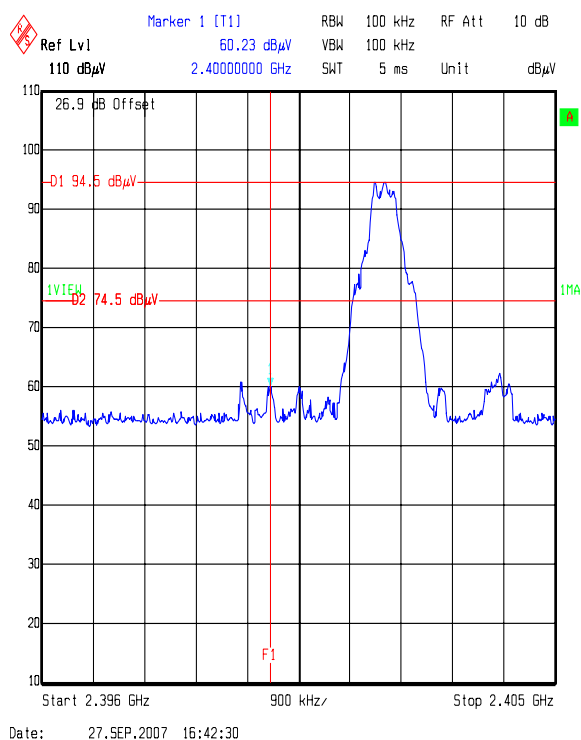
### **Note(s):**

1. The band edge at 2.400 GHz is not within a restricted band; therefore the limit is -20 dBc.
2. The band edge at 2.4835 GHz is within a restricted band; therefore the limit is FCC part 15.209.

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### Transmitter Band Edge Radiated Emissions (Continued)



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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%	±3.72 dB
Transmitter Maximum Peak Output Power	Not Applicable	95%	±2.94 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)
A028	Horn Antenna	Eaton	91888-2	304	08 Jun 2006	36
A031	Horn Antenna	Eaton	91889-2	557	08 Jun 2006	36
A032	1 to 18 GHz	EMCO	3115	2874	15 Dec 2006	36
A1037	Antenna	Chase EMC Ltd	CBL6112B	2413	20 Sep 2006	12 (Note 1)
A1368	Directional Coupler	Pasternack Enterprises.	PE2214-10	None	Calibrated before use	-
A1534	Preamplifier	Hewlett Packard	8449B OPT H02	3008A00405	Calibrated before use	-
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
A259	Bilog Antenna	Chase	CBL6111	1513	13 Mar 2007	12
A276	OATS Positioning Controller	Rohde & Schwarz	HCC	None	Calibration not required	-
A436	Horn Antenna	Flann	20240-20	330	24 Apr 2006	36
C1025	Cable	Rosenberger	FA210A-1-020m	FA00B 7564	Calibrated before use	-
C1065	Cable	Rosenberger	UFA210-1-7872	0985	Calibrated before use	-
C1165	Cable	Rosenberger	FA210A102000 7070	43189-1	Calibrated before use	-
C1167	Cable	Rosenberger	FA210A103000 7070	43190-01	Calibrated before use	-
C151	Cable	Rosenberger	UFA210A-1-1181-70x70	None	Calibrated before use	-
C160	Cable	Rosenberger	UFA210A-1-1181-70x70	None	Calibrated before use	-
C340	Cable	Andrews	None	None	Calibrated before use	-
C348	Cable	Rosenberger	UFA210A-1-1181-70x70	2993	Calibrated before use	-
C460	Cable	Rosenberger	UFA210A-1-1182-704704	98H0304	Calibrated before use	-

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**Test Equipment Used (Continued)**

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
C468	Cable	Rosenberger	UFA210A-1-3937-504504	98L0440	Calibrated before use	-
M024	Spectrum Monitor	Rohde & Schwarz	EZM	873 952/006	Calibrated before use	-
M044	Receiver	Rohde & Schwarz	ESVP	891 845/026	06 Mar 2007	12
M1239	Wireless Connectivity Test Set	Agilent	N4010A	GB45140361	Calibration not required	-
M1263	Test Receiver	Rohde & Schwarz	ESIB7	100265	25 Jan 2007	12
M127	Temperature Chamber	Rohde & Schwarz	FSEB 30	842 659/016	15 Aug 2007	12
M166	Temperature, humidity and pressure	EuroCom	None	None	20 Sep 2007	12
M173	Controller for site 1	R.H.Electrical Services	RH351	3510020	Calibration not required	-
S021	Power Supply	Thurlby Thandar Instruments	CPX200	061034	Calibration not required	-
S201	Open Area Test Site	RFI	1		25 May 2007	12
S202	Open Area Test Site	RFI	2	S202-15011990	17 Nov 2006	12
S207	Bench Site	RFI	7	None	Calibration not required	-
S212	Screened Room	RFI	12	None	Calibrated before use	-

Note 1: This item was used only before calibration expired.

**NB** In accordance with UKAS requirements, all the measurement equipment is on a calibration schedule. All equipment was within calibration at the time of the test.

**RFI GLOBAL SERVICES LTD**

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