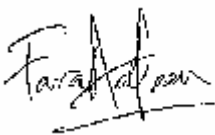


## TEST REPORT FROM RFI GLOBAL SERVICES LTD

Test of: Gizmondo Europe Limited  
GZ020

To: FCC Part 15.247: 2004 (Subpart C)

**Test Report Serial No:**  
RFI\MPTE1\RP46498JD07A

|                                                                                                                                                                                                 |                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>This Test Report Is Issued Under The Authority<br/>Of Andrew Brown, Operations Manager:</b><br><br><br>pp |                                                                                                                              |
| <b>Tested By: Fara Razally</b><br><br>                                                                       | <b>Checked By: Nigel Davison</b><br><br> |
| <b>Report Copy No: PDF01</b>                                                                                                                                                                    |                                                                                                                              |
| <b>Issue Date: 28 July 2005</b>                                                                                                                                                                 | <b>Test Dates: 24 March 2005 to 20 April 2005</b>                                                                            |

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

**RFI Global Services Ltd**

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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

**Test of:**        **Gizmondo Europe Limited**  
                  **GZ020**

**To:**             **FCC Part 15.247: 2004 (Subpart C)**

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Test of:       Gizmondo Europe Limited  
              GZ020  
To:            FCC Part 15.247: 2004 (Subpart C)

---

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Test of: Gizmondo Europe Limited  
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To: FCC Part 15.247: 2004 (Subpart C)

---

## **1. Client Information**

|                      |                                                                                           |
|----------------------|-------------------------------------------------------------------------------------------|
| <b>Company Name:</b> | Gizmondo Europe Limited                                                                   |
| <b>Address:</b>      | 1 Meadow Gate Avenue<br>Farnborough Business Park<br>Farnborough<br>Hampshire<br>GU14 6FG |
| <b>Contact Name:</b> | Mr John Mack                                                                              |

---

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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 client:

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

|                             |               |
|-----------------------------|---------------|
| Brand Name:                 | Gizmondo      |
| Model Name or Number:       | GZ021         |
| Unique Type Identification: | None Stated   |
| Serial Number:              | G1F050140007  |
| FCC ID Number:              | THGGIZMONDO   |
| Country of Manufacture:     | China         |
| Date of Receipt:            | 22 March 2005 |

### **2.2. Accessories**

The following accessories were supplied with the EUT:

|                        |                 |
|------------------------|-----------------|
| Description:           | AC Charger      |
| Brand Name:            | None Stated     |
| Model Name or Number:  | FW7650/151967   |
| Serial Number:         | None Stated     |
| Cable Length and Type: | 2m, 2 core      |
| Connected to Port:     | DC Input of EUT |

|                        |                 |
|------------------------|-----------------|
| Description:           | USB Cable       |
| Brand Name:            | None Stated     |
| Model Name or Number:  | AWM 2725        |
| Serial Number:         | E148114-D       |
| Cable Length and Type: | 1.8m, AWM       |
| Connected to Port:     | USB port of EUT |

|                        |                          |
|------------------------|--------------------------|
| Description:           | Earphones                |
| Brand Name:            | Gizmondo                 |
| Model Name or Number:  | None Stated              |
| Serial Number:         | None Stated              |
| Cable Length and Type: | 1m, 2 core               |
| Connected to Port:     | 3.5mm Stereo port of EUT |

---

Test of: Gizmondo Europe Limited  
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### **2.3. Description of EUT**

The equipment under test is a games console with GSM capabilities (No voice function), *Bluetooth*\* and GPS capabilities. The device is battery operated with connection for charging via an AC adapter. The antennas are internal to the unit.

\* The *Bluetooth*® word mark and logos are owned by the Bluetooth SIG, Inc. and any use of such marks by RFI Global Services Ltd. is under license. Other trademarks and trade names are those of their respective owners.

### **2.4. Modifications Incorporated in EUT**

During the course of testing the EUT was not modified.

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## 2.5. Additional Information Related to Testing

|                                              |                                                                       |                |                         |
|----------------------------------------------|-----------------------------------------------------------------------|----------------|-------------------------|
| Power Supply Requirement:                    | 3.7 V DC battery, with 115 V, 60 Hz, AC Mains Charger connected.      |                |                         |
| Intended Operating Environment:              | Residential, Commercial and Light Industry                            |                |                         |
| Equipment Category:                          | Short Range (Low Power), <i>Bluetooth</i>                             |                |                         |
| Type of Unit:                                | Portable (Standalone battery powered device)                          |                |                         |
| Interface Ports:                             | Battery charger port<br>USB port<br>3.5mm Stereo port<br>SD Card port |                |                         |
| Transmit Frequency Range:                    | 2402 MHz to 2480 MHz                                                  |                |                         |
| Transmit Channels Tested:                    | Channel ID                                                            | Channel Number | Channel Frequency (MHz) |
|                                              | Bottom                                                                | 1              | 2402                    |
|                                              | Middle                                                                | 40             | 2441                    |
|                                              | Top                                                                   | 79             | 2480                    |
| Receive Frequency Range:                     | 2402 MHz to 2480 MHz                                                  |                |                         |
| Highest Intentionally Generated Frequency:   | 2480 MHz                                                              |                |                         |
| Receive Channels Tested:                     | Channel ID                                                            | Channel Number | Channel Frequency (MHz) |
|                                              | Bottom                                                                | 1              | 2402                    |
|                                              | Middle                                                                | 40             | 2441                    |
|                                              | Top                                                                   | 79             | 2480                    |
| Highest Unintentionally Generated Frequency: | 2483.5 MHz                                                            |                |                         |
| Measured Occupied Bandwidth:                 | 791.111 kHz                                                           |                |                         |
| Measured Maximum Power Output (EIRP)         | -1.5 dBm                                                              |                |                         |

## 2.6. Port Identification

| Port | Description                  | Type/Length  | Applicable |
|------|------------------------------|--------------|------------|
| 1    | Enclosure                    | -            | Y          |
| 2    | USB                          | 1.8m, AWM    | Y          |
| 3    | 3.5 mm Stereo for headphones | 1.0m, 2 core | Y          |
| 4    | SD Card                      | -            | Y          |
| 5    | DC Input                     | 2.0m, 2 core | Y          |

Test of: Gizmondo Europe Limited  
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---

## **2.7. Support Equipment**

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

---

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GZ020  
To: FCC Part 15.247: 2004 (Subpart C)

---

### **3. Test Results**

|            |                                                                                                                                                         |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reference: | FCC Part 15.247: 2004 Subpart C                                                                                                                         |
| Title:     | Code of Federal Regulations, Part 15.247 (47CFR15)<br>(Intentional Radiators operating within the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz) |

#### **3.1. 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.

#### **3.2. 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**

None.

---

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---

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

### **5.1. Operating Modes**

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

For all transmit mode measurements the Bluetooth test mode was active and set to transmit on top, middle and bottom channels or hopping on all channels as necessary with the longest data packet size.

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

The EUT was tested in the following configuration:

Stand alone with AC charger connected.

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---

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

| Range of Measurements                                  | Specification Reference                                    | Port Type | Compliance Status |
|--------------------------------------------------------|------------------------------------------------------------|-----------|-------------------|
| Idle Mode AC Conducted Emissions (150 kHz to 30 MHz)   | C.F.R. 47 FCC Part 15: 2004 Section 15.107                 | AC Mains  | Complied          |
| Idle Mode Radiated Spurious Emissions                  | C.F.R. 47 FCC Part 15: 2004 Section 15.109                 | Antenna   | Complied          |
| Transmitter AC Conducted Emissions (150 kHz to 30 MHz) | C.F.R. 47 FCC Part 15: 2004 Section 15.207                 | AC Mains  | Complied          |
| Transmitter 20 dB Bandwidth                            | C.F.R. 47 FCC Part 15: 2004 Section 15.247(a)(1)           | Antenna   | Complied          |
| Transmitter Carrier Frequency Separation               | C.F.R. 47 FCC Part 15: 2004 Section 15.247(a)(1)           | Antenna   | Complied          |
| Transmitter Average Time of Occupancy                  | C.F.R. 47 FCC Part 15: 2004 Section 15.247(a)(1)(iii)      | Antenna   | Complied          |
| Transmitter Maximum Peak Output Power                  | C.F.R. 47 FCC Part 15: 2004 Section 15.247(b)(1)           | Antenna   | Complied          |
| Transmitter Radiated Emissions                         | C.F.R. 47 FCC Part 15: 2004 Sections 15.247(d) & 15.209(a) | Antenna   | Complied          |
| Transmitter Band Edge Radiated Emissions               | C.F.R. 47 FCC Part 15: 2004 Sections 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, England.

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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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Test of: Gizmondo Europe Limited  
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## **7.2. Test Results**

### **7.2.1. Idle Mode AC Conducted Spurious Emissions: Section 15.107**

The EUT was configured as for ac conducted emissions measurements as described in section 9 of this report.

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

#### **Results:**

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

| Frequency (MHz) | Line    | Level (dB $\mu$ V) | Limit (dB $\mu$ V) | Margin (dB) | Result   |
|-----------------|---------|--------------------|--------------------|-------------|----------|
| 0.42559         | Live    | 45.12              | 57.34              | 12.22       | Complied |
| 1.06271         | Live    | 42.25              | 56.00              | 13.75       | Complied |
| 2.23694         | Neutral | 34.73              | 56.00              | 21.27       | Complied |

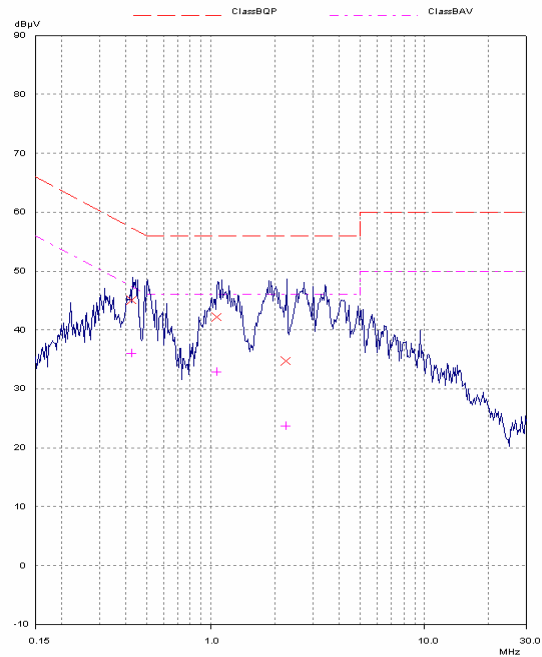
##### **Average Detector Measurements on Live and Neutral Lines**

| Frequency (MHz) | Line | Level (dB $\mu$ V) | Limit (dB $\mu$ V) | Margin (dB) | Result   |
|-----------------|------|--------------------|--------------------|-------------|----------|
| 0.42559         | Live | 35.97              | 47.34              | 11.37       | Complied |
| 1.06271         | Live | 32.83              | 46.00              | 13.17       | Complied |
| 2.23694         | Live | 23.68              | 46.00              | 22.32       | Complied |

---

Test of: Gizmondo Europe Limited  
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**Idle Mode AC Conducted Spurious Emissions: Section 15.107 (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: Section 15.109 - Electric Field Strength Measurements (Frequency Range: 30 to 1000 MHz)**

The EUT was configured as for radiated emission testing as described in section 9 of this report. Tests were performed to identify the maximum receiver or standby radiated emission levels.

**Results:**

| Frequency (MHz) | Antenna Polarity | Q-P Level (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Result   |
|-----------------|------------------|--------------------------|----------------------|-------------|----------|
| 88.975          | Vert.            | 15.2                     | 43.5                 | 28.3        | Complied |

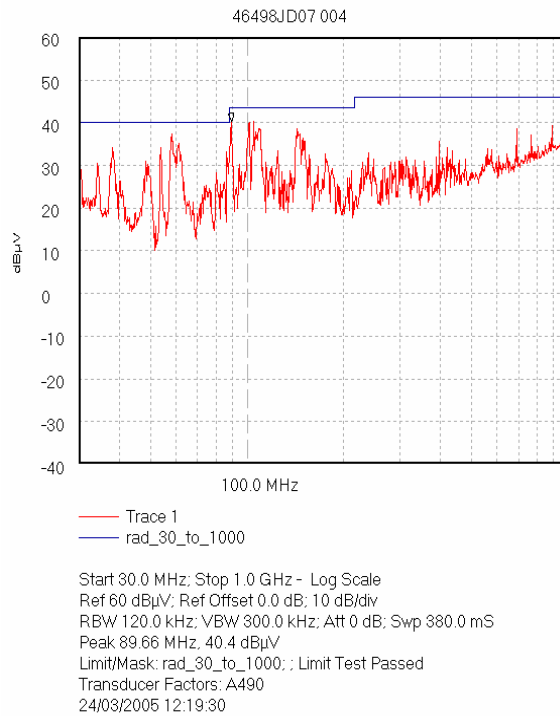
**Note(s):**

1. No spurious emissions were detected above the noise floor of the measuring receiver; the highest peak noise floor reading of the measuring receiver recorded was 15.2 dBmV/m at 88.975 MHz.
-

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GZ020  
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---

**Idle Mode Radiated Spurious Emissions: Section 15.109 - Electric Field Strength Measurements (Frequency Range: 30 to 1000 MHz) (Continued)**



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

---

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GZ020  
To: FCC Part 15.247: 2004 (Subpart C)

---

**7.2.3. Idle Mode Radiated Spurious Emissions: Section 15.109 - Electric Field Strength Measurements (Frequency Range: 1 to 12.5 GHz)**

**Results:**

**Highest Peak Level:**

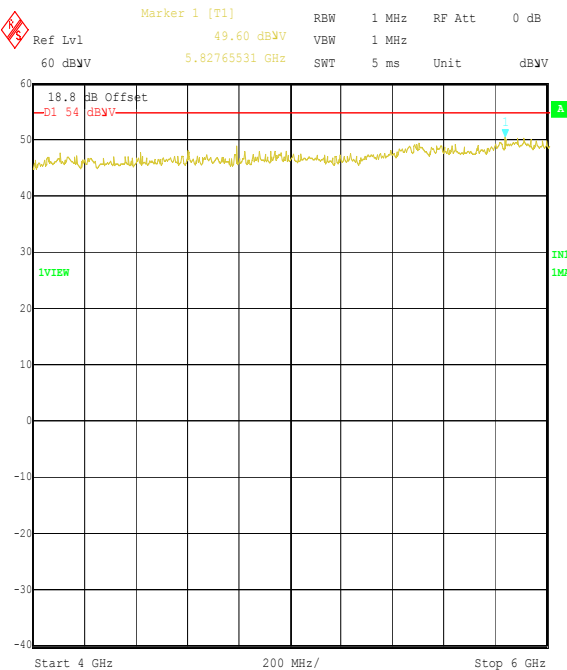
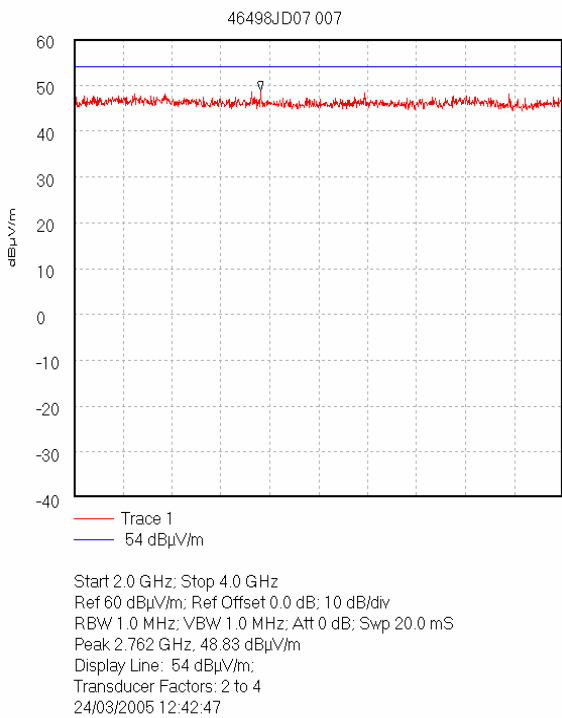
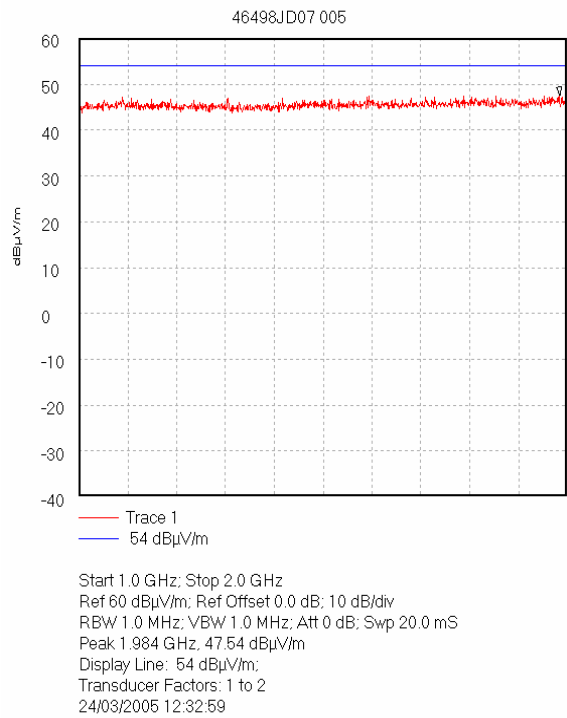
| Frequency (GHz) | Antenna Polarity | Detector Level (dB $\mu$ V) | Antenna Factor (dB) | Cable Loss (dB) | Actual Level (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Result   |
|-----------------|------------------|-----------------------------|---------------------|-----------------|-----------------------------|----------------------|-------------|----------|
| 12.376753       | Vert.            | 19.2                        | 30.7                | 3.0             | 52.9                        | 74.0                 | 21.1        | Complied |
| 12.376753       | Vert.            | 5.3                         | 30.7                | 3.0             | 39.0                        | 54.0                 | 15.0        | Complied |

**Note(s):**

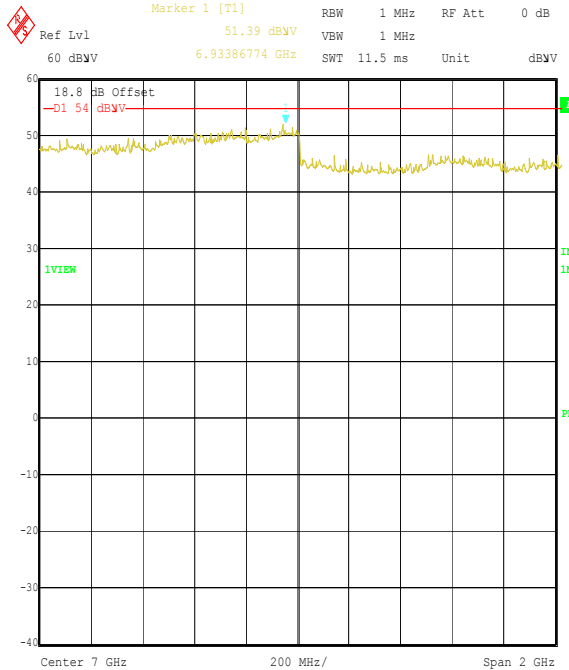
1. No spurious emissions were detected above the noise floor of the measuring receiver; the highest peak noise floor reading of the measuring receiver recorded was at 12.377 GHz.
-

Test of: Gizmondo Europe Limited  
GZ020  
To: FCC Part 15.247: 2004 (Subpart C)

Idle Mode Radiated Spurious Emissions: Section 15.109 - Electric Field Strength Measurements (Frequency Range: 1 to 12.5 GHz) (Continued)



Title: Gizmondo 46498JD07 FCC Part 15.247  
Comment A: Radiated Spurious Emissions RX Mode  
Date: 7.APR.2005 14:53:09

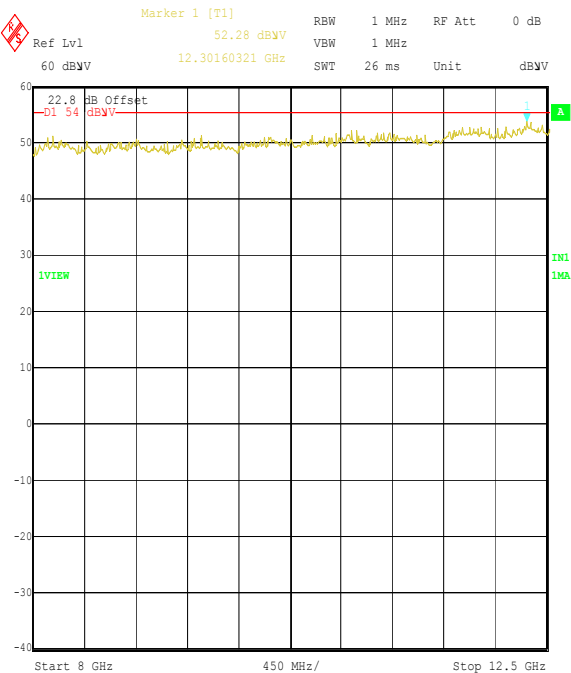


Title: Gizmondo 46498JD07 FCC Part 15.247  
Comment A: Radiated Spurious Emissions RX Mode  
Date: 7.APR.2005 13:10:33

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

Test of: Gizmondo Europe Limited  
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To: FCC Part 15.247: 2004 (Subpart C)

**Idle Mode Radiated Spurious Emissions: Section 15.109 - Electric Field Strength Measurements (Frequency Range: 1 to 12.5 GHz) (Continued)**



Title: Gizmondo 46498JD07 FCC Part 15.247  
Comment A: Radiated Spurious Emissions RX Mode  
Date: 7.APR.2005 13:12:55

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

Test of: Gizmondo Europe Limited  
GZ020  
To: FCC Part 15.247: 2004 (Subpart C)

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#### **7.2.4. Transmitter AC Conducted Spurious Emissions: Section 15.207**

The EUT was configured for ac conducted emissions measurements as described in section 9 of this report.

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

#### **Results: Top Channel**

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

| Frequency (MHz) | Line | Level (dB $\mu$ V) | Limit (dB $\mu$ V) | Margin (dB) | Result   |
|-----------------|------|--------------------|--------------------|-------------|----------|
| 0.42419         | Live | 49.38              | 57.37              | 7.99        | Complied |
| 0.53460         | Live | 46.46              | 56.00              | 9.54        | Complied |
| 1.06575         | Live | 43.08              | 56.00              | 12.92       | Complied |
| 1.27967         | Live | 42.65              | 56.00              | 13.35       | Complied |
| 2.02186         | Live | 42.14              | 56.00              | 13.86       | Complied |

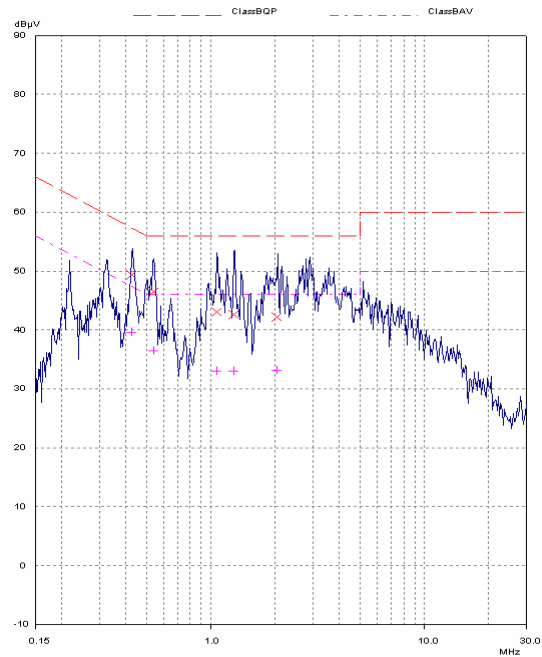
##### **Average Detector Measurements on Live and Neutral Lines**

| Frequency (MHz) | Line | Level (dB $\mu$ V) | Limit (dB $\mu$ V) | Margin (dB) | Result   |
|-----------------|------|--------------------|--------------------|-------------|----------|
| 0.42419         | Live | 39.63              | 47.37              | 7.74        | Complied |
| 0.53460         | Live | 36.43              | 46.00              | 9.57        | Complied |
| 1.06575         | Live | 33.08              | 46.00              | 12.92       | Complied |
| 1.27967         | Live | 32.95              | 46.00              | 13.05       | Complied |
| 2.02186         | Live | 33.13              | 46.00              | 12.87       | Complied |

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**Transmitter AC Conducted Spurious Emissions: Section 15.207 (Continued)**



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

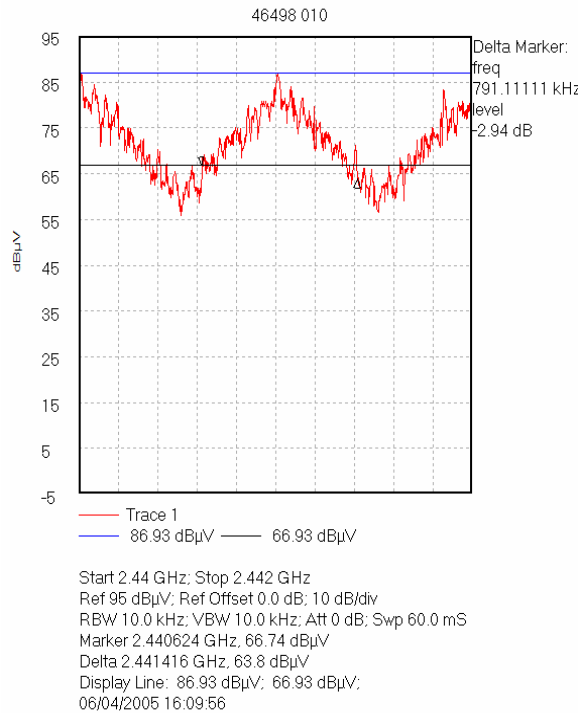
Test of: Gizmondo Europe Limited  
GZ020  
To: FCC Part 15.247: 2004 (Subpart C)

### **7.2.5. Transmitter 20 dB Bandwidth: Section 15.247(a)(1)**

The EUT was configured for 20 dB bandwidth measurements as described in section 9 of this report. Tests were performed to identify the 20 dB bandwidth.

### **Results:**

| Transmitter 20 dB Bandwidth (kHz) | Limit (kHz)    |
|-----------------------------------|----------------|
| 791.111                           | None specified |



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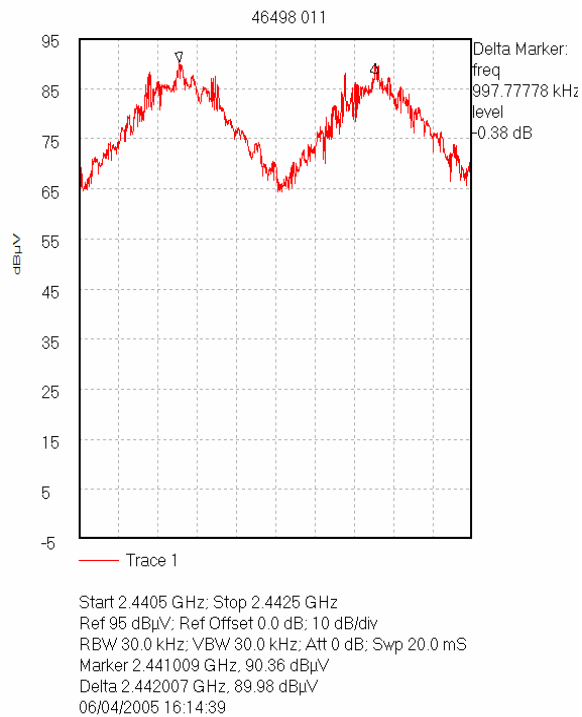
### 7.2.6. Transmitter Carrier Frequency Separation: Section 15.247(a)(1)

The EUT was configured for carrier frequency separation measurements as described in section 9 of this report.

Tests were performed to identify the carrier frequency separation.

### Results:

| Transmitter Carrier Frequency Separation (kHz) | Limit (> 20 dB BW) (kHz) | Margin (kHz) | Result   |
|------------------------------------------------|--------------------------|--------------|----------|
| 997.778                                        | 791.111                  | 206.667      | Complied |



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**7.2.7. Transmitter Average Time of Occupancy: Section 15.247(a)(1)(iii)**

The EUT was configured for average time of occupancy measurements as described in section 9 of this report.

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:**

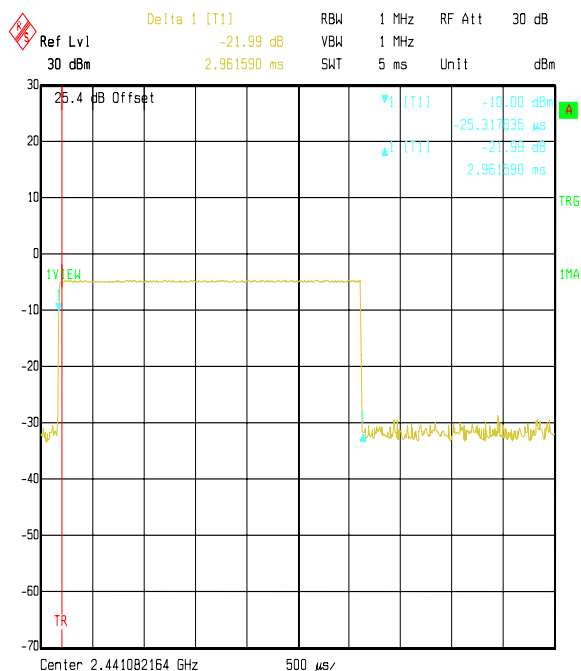
| Emission Width (µs) | Number of Hops in 31.6 Seconds | Average Time of Occupancy (s) | Limit (s) | Margin (s) | Result   |
|---------------------|--------------------------------|-------------------------------|-----------|------------|----------|
| 2961.590            | 57                             | 0.169                         | 0.4       | 0.231      | Complied |

---

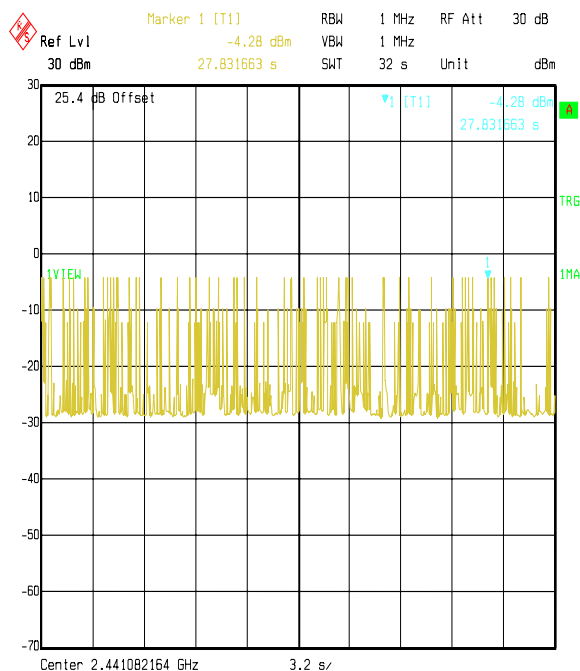
**Test of:** Gizmondo Europe Limited  
GZ020

**To:** FCC Part 15.247: 2004 (Subpart C)

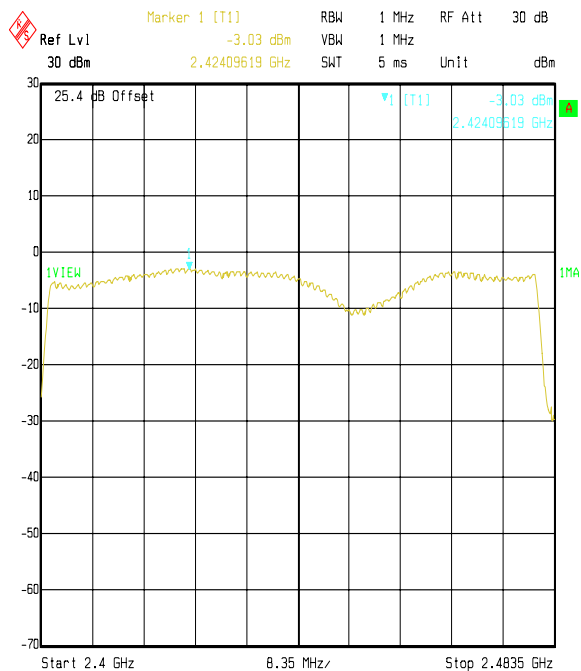
**Transmitter Average Time of Occupancy: Section 15.247(a)(1)(iii) (Continued)**



Title: Gizmondo 46498JD01 FCC Part 15.247  
Comment A: Emission Width. Centre of Hopping Channel  
Date: 20.APR.2005 15:53:02



Title: Gizmondo 46498JD01 FCC Part 15.247  
Comment A: 31.6s hops. Centre of Hopping Channel  
Date: 20.APR.2005 16:08:29



Title: Gizmondo 46498JD01 FCC Part 15.247  
Comment A: No of hops. Hopping on all channels.  
Date: 20.APR.2005 16:12:08

Test of: Gizmondo Europe Limited  
GZ020  
To: FCC Part 15.247: 2004 (Subpart C)

---

**7.2.8. Transmitter Maximum Peak Output Power: (EIRP) Section 15.247(b)(1)**

The EUT was configured for transmitter peak output power measurements as described in Section 9 of this report.

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

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

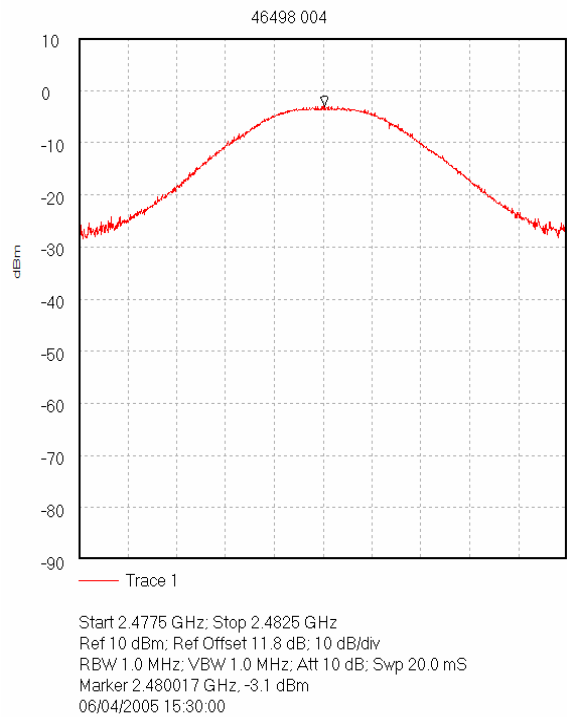
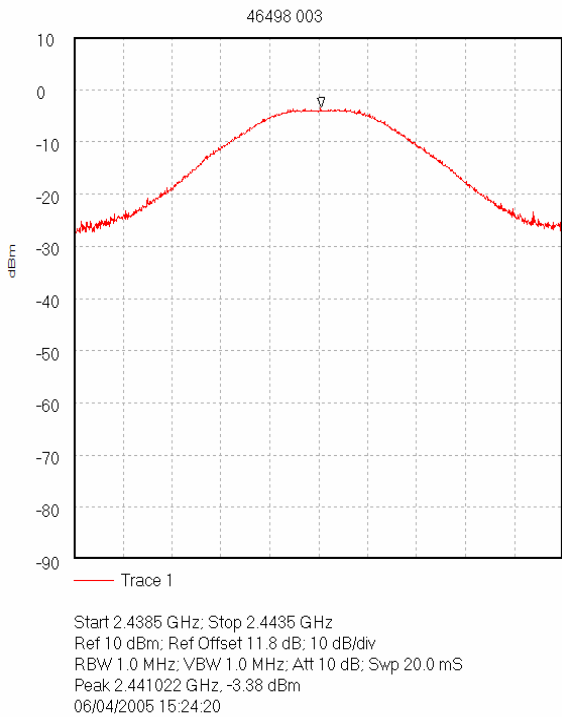
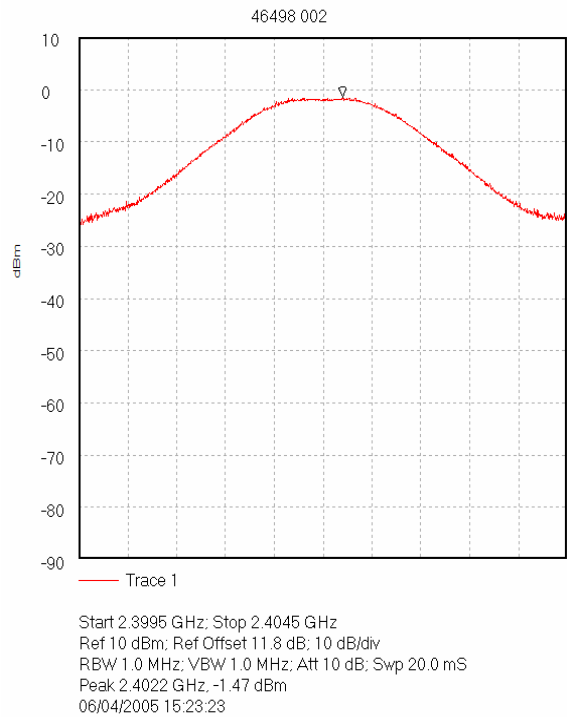
| Channel | EIRP<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Result   |
|---------|---------------|----------------|----------------|----------|
| Bottom  | -1.5          | 30.0           | 31.5           | Complied |
| Middle  | -3.4          | 30.0           | 33.4           | Complied |
| Top     | -3.1          | 30.0           | 33.1           | Complied |

**Note(s):**

1. These tests were performed radiated; therefore the EUT antenna gain is encompassed in the final result.
-

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**Transmitter Maximum Peak Output Power: (EIRP) Section 15.247(b)(1) (Continued)**



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To: FCC Part 15.247: 2004 (Subpart C)

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**7.2.9. Transmitter Radiated Emissions: Section 15.247(d) and 15.209(a) - Electric Field Strength Measurements: 30 to 1000 MHz**

The EUT was configured for radiated emission testing as described in section 9 of this report. Tests were performed to identify the maximum transmitter radiated emission levels.

**Results:**

**Top Channel**

| Frequency (MHz) | Antenna Polarity | Q-P Level (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Result   |
|-----------------|------------------|--------------------------|----------------------|-------------|----------|
| 60.761          | Horiz.           | 12.5                     | 40.0                 | 27.5        | Complied |

**Note(s):**

1. The preliminary scans showed similar emission levels below 1 GHz, irrespective of EUT channel selection, therefore final radiated emissions measurements were performed with the EUT set to the top channel only.
-

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To: FCC Part 15.247: 2004 (Subpart C)

**7.2.10. Transmitter Radiated Emissions: Section 15.247(d) and 15.209(a) - Electric Field Strength Measurements (Frequency Range: 1 to 25 GHz)**

The EUT was configured for radiated emission testing as described in section 9 of this report.

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

**Results:**

**Highest Peak Level: Bottom Channel**

| Frequency (GHz) | Antenna Polarity | Detector Level (dB $\mu$ V) | Antenna Factor (dB) | Cable Loss (dB) | Actual Level (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Result   |
|-----------------|------------------|-----------------------------|---------------------|-----------------|-----------------------------|----------------------|-------------|----------|
| 12.033066       | Vert.            | 17.9                        | 30.8                | 3.0             | 51.7                        | 74.0                 | 22.3        | Complied |

**Highest Average Level: Bottom Channel**

| Frequency (GHz) | Antenna Polarity | Detector Level (dB $\mu$ V) | Antenna Factor (dB) | Cable Loss (dB) | Actual Level (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Result   |
|-----------------|------------------|-----------------------------|---------------------|-----------------|-----------------------------|----------------------|-------------|----------|
| 12.033066       | Vert.            | 3.6                         | 30.8                | 3.0             | 37.4                        | 54.0                 | 16.6        | Complied |

**Highest Peak Level: Middle Channel**

| Frequency (GHz) | Antenna Polarity | Detector Level (dB $\mu$ V) | Antenna Factor (dB) | Cable Loss (dB) | Actual Level (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Result   |
|-----------------|------------------|-----------------------------|---------------------|-----------------|-----------------------------|----------------------|-------------|----------|
| 12.361393       | Vert.            | 18.5                        | 30.7                | 3.0             | 52.2                        | 74.0                 | 21.8        | Complied |

**Highest Average Level: Middle Channel**

| Frequency (GHz) | Antenna Polarity | Detector Level (dB $\mu$ V) | Antenna Factor (dB) | Cable Loss (dB) | Actual Level (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Result   |
|-----------------|------------------|-----------------------------|---------------------|-----------------|-----------------------------|----------------------|-------------|----------|
| 12.361393       | Vert.            | 4.8                         | 30.7                | 3.0             | 38.5                        | 54.0                 | 15.5        | Complied |

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**Transmitter Radiated Emissions: Section 15.247(d) and 15.209(a) - Electric Field Strength Measurements (Frequency Range: 1 to 25Hz) (Continued)**

**Highest Peak Level: Top Channel**

| Frequency (GHz) | Antenna Polarity | Detector Level (dBµV) | Antenna Factor (dB) | Cable Loss (dB) | Actual Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Result   |
|-----------------|------------------|-----------------------|---------------------|-----------------|-----------------------|----------------|-------------|----------|
| 12.423848       | Vert.            | 19.3                  | 30.8                | 3.0             | 53.1                  | 74.0           | 20.9        | Complied |

**Highest Average Level: Top Channel**

| Frequency (GHz) | Antenna Polarity | Detector Level (dBµV) | Antenna Factor (dB) | Cable Loss (dB) | Actual Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Result   |
|-----------------|------------------|-----------------------|---------------------|-----------------|-----------------------|----------------|-------------|----------|
| 12.423848       | Vert.            | 4.5                   | 30.8                | 3.0             | 38.3                  | 54.0           | 15.7        | Complied |

**Highest Peak Level: Hopping Mode**

| Frequency (GHz) | Antenna Polarity | Detector Level (dBµV) | Antenna Factor (dB) | Cable Loss (dB) | Actual Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Result   |
|-----------------|------------------|-----------------------|---------------------|-----------------|-----------------------|----------------|-------------|----------|
| 12.419008       | Vert.            | 22.5                  | 30.8                | 3.0             | 56.3                  | 74.0           | 17.7        | Complied |

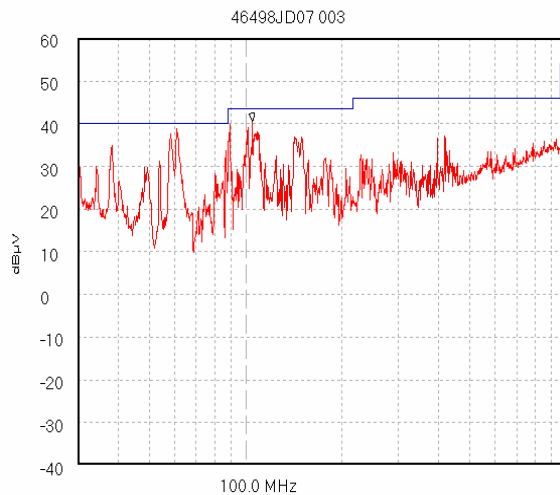
**Highest Average Level: Hopping Mode**

| Frequency (GHz) | Antenna Polarity | Detector Level (dBµV) | Antenna Factor (dB) | Cable Loss (dB) | Actual Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Result   |
|-----------------|------------------|-----------------------|---------------------|-----------------|-----------------------|----------------|-------------|----------|
| 12.419008       | Vert.            | 4.5                   | 30.8                | 3.0             | 38.3                  | 54.0           | 15.7        | Complied |

---

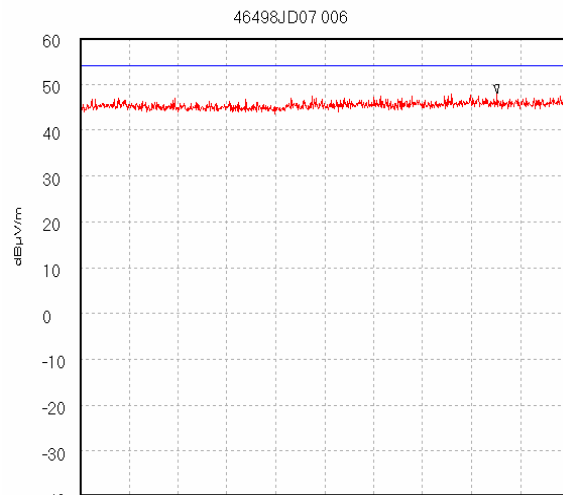
Test of: Gizmondo Europe Limited  
GZ020  
To: FCC Part 15.247: 2004 (Subpart C)

**Transmitter Radiated Emissions: Section 15.247(d) and 15.209(a) - Electric Field Strength Measurements (Frequency Range: 1 to 25 GHz) (Continued)**



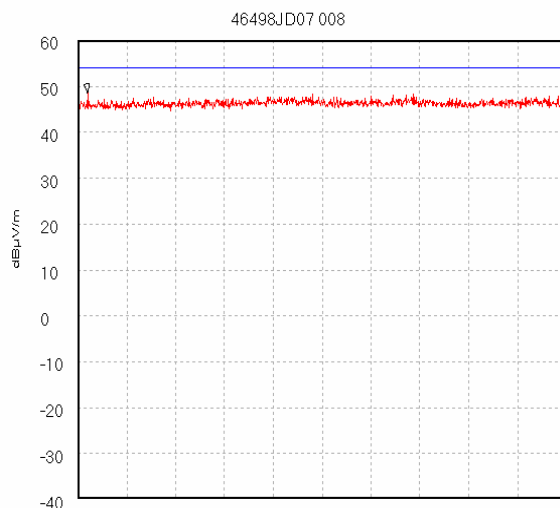
Trace 1  
rad\_30\_to\_1000

Start 30.0 MHz; Stop 1.0 GHz - Log Scale  
Ref 60 dBμV; Ref Offset 0.0 dB; 10 dB/div  
RBW 120.0 kHz; VBW 300.0 kHz; Att 0 dB; Swp 380.0 mS  
Peak 105.19 MHz, 40.55 dBμV  
Limit/Mask: rad\_30\_to\_1000; ; Limit Test Passed  
Transducer Factors: A490  
24/03/2005 12:17:35



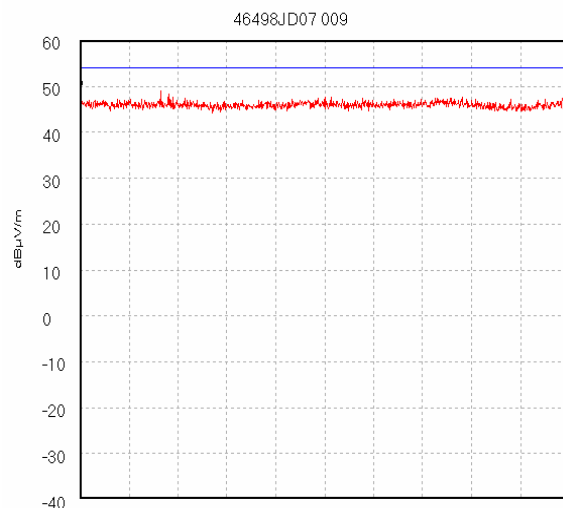
Trace 1  
54 dBμV/m

Start 1.0 GHz; Stop 2.0 GHz  
Ref 60 dBμV/m; Ref Offset 0.0 dB; 10 dB/div  
RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS  
Peak 1.853 GHz, 48.02 dBμV/m  
Display Line: 54 dBμV/m;  
Transducer Factors: 1 to 2  
24/03/2005 12:36:02



Trace 1  
54 dBμV/m

Start 2.0 GHz; Stop 2.4 GHz  
Ref 60 dBμV/m; Ref Offset 0.0 dB; 10 dB/div  
RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS  
Peak 2.008 GHz, 48.53 dBμV/m  
Display Line: 54 dBμV/m;  
Transducer Factors: 2 to 4  
24/03/2005 12:44:25

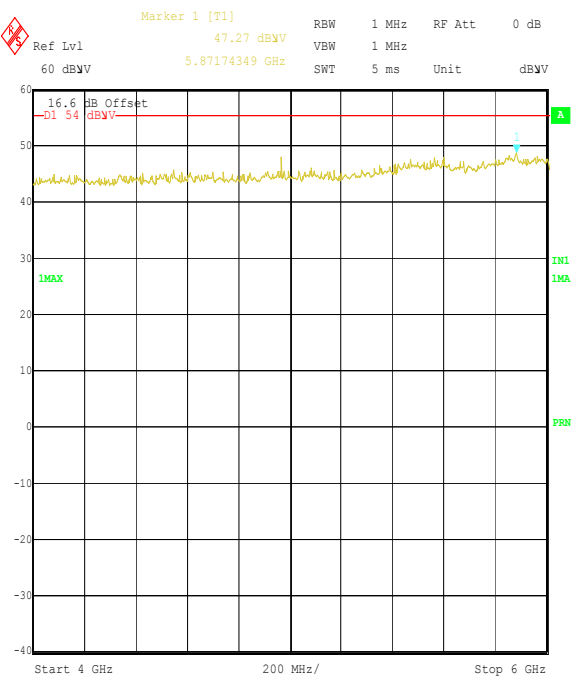


Trace 1  
54 dBμV/m

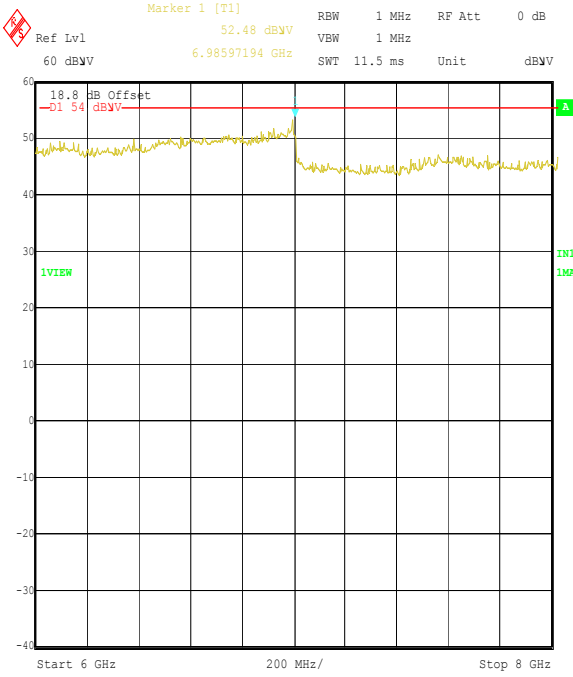
Start 2.484 GHz; Stop 4.0 GHz  
Ref 60 dBμV/m; Ref Offset 0.0 dB; 10 dB/div  
RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS  
Peak 2.484 GHz, 49.11 dBμV/m  
Display Line: 54 dBμV/m;  
Transducer Factors: 2 to 4  
24/03/2005 12:45:18

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Transmitter Radiated Emissions: Section 15.247(d) and 15.209(a) - Electric Field Strength Measurements (Frequency Range: 1 to 25 GHz) (Continued)



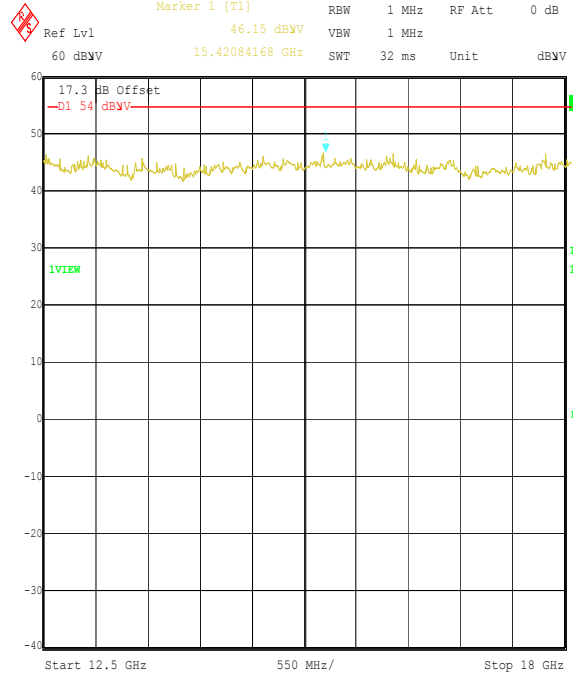
Title: Gizmondo 46498JD07 FCC Part 15.247  
Comment A: Radiated Spurious Emissions TX Mode  
Date: 7.APR.2005 13:05:07



Title: Gizmondo 46498JD07 FCC Part 15.247  
Comment A: Radiated Spurious Emissions TX Mode  
Date: 7.APR.2005 15:23:28



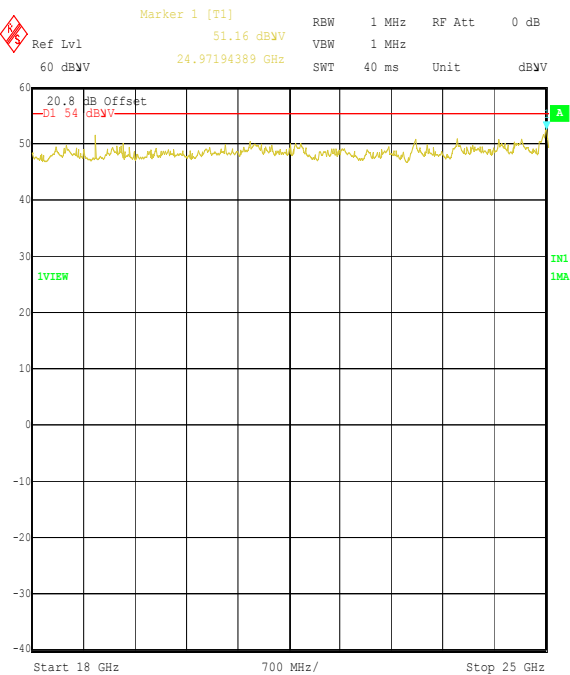
Title: Gizmondo 46498JD07 FCC Part 15.247  
Comment A: Radiated Spurious Emissions TX Mode  
Date: 7.APR.2005 14:46:31



Title: Gizmondo 46498JD07 FCC Part 15.247  
Comment A: Radiated Spurious Emissions TX Mode  
Date: 7.APR.2005 13:37:19

Test of: Gizmondo Europe Limited  
GZ020  
To: FCC Part 15.247: 2004 (Subpart C)

**Transmitter Radiated Emissions: Section 15.247(d) and 15.209(a) - Electric Field Strength Measurements (Frequency Range: 1 to 25 GHz) (Continued)**



Title: Gizmondo 46498JD07 FCC Part 15.247  
Comment A: Radiated Spurious Emissions TX Mode  
Date: 7.APR.2005 13:40:59

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

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#### **7.2.11. Transmitter Band Edge Radiated Emissions: Section 15.247(d) & 15.209(a) - Electric Field Strength Measurements**

The EUT was configured for band edge compliance of radiated emission measurements as described in section 9 of this report.

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

#### **Results:**

##### **Peak Power Level Hopping Mode:**

| Frequency (GHz) | Antenna Polarity | Detector Level (dBμV) | Antenna Factor (dB) | Cable Loss (dB) | Actual Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Result   |
|-----------------|------------------|-----------------------|---------------------|-----------------|-----------------------|----------------|-------------|----------|
| 2.4000          | Horiz.           | 41.5                  | 21.5                | 1.4             | 64.4                  | 73.1*          | 8.7         | Complied |
| 2.4835          | Horiz.           | 38.1                  | 21.1                | 1.4             | 60.6                  | 74.0           | 13.4        | Complied |

##### **Average Power Level Hopping Mode:**

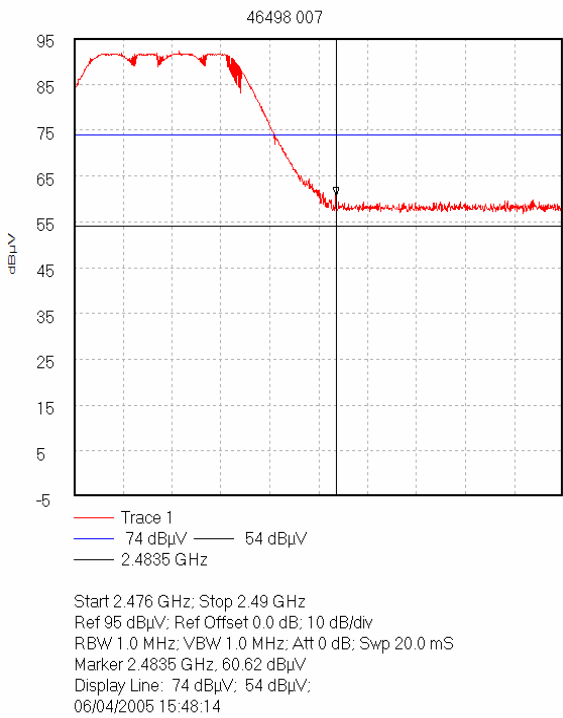
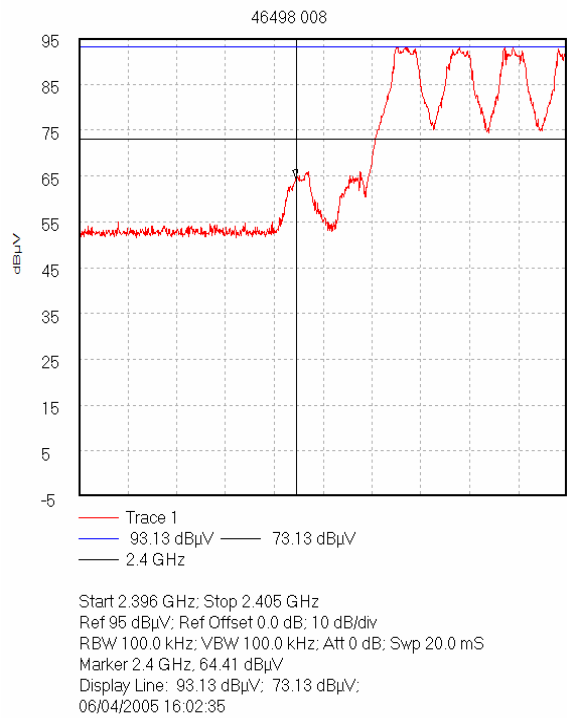
| Frequency (GHz) | Antenna Polarity | Detector Level (dBμV) | Antenna Factor (dB) | Cable Loss (dB) | Actual Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Result   |
|-----------------|------------------|-----------------------|---------------------|-----------------|-----------------------|----------------|-------------|----------|
| 2.4835          | Horiz.           | 25.6                  | 21.1                | 1.4             | 48.1                  | 54.0           | 5.9         | Complied |

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

1. \*-20 dBc limit
-

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**Transmitter Band Edge Radiated Emissions: Section 15.247(d) & 15.209(a) - Electric Field Strength Measurements (Continued)**



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GZ020  
To: FCC Part 15.247: 2004 (Subpart C)

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**7.2.12. Transmitter Band Edge Radiated Emissions: Section 15.247(d) & 15.209(a)**

The EUT was configured for band edge compliance of radiated emission measurements as described in section 9 of this report.

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

**Results:****Peak Power Level Static Mode:**

| Frequency (GHz) | Antenna Polarity | Detector Level (dB $\mu$ V) | Antenna Factor (dB) | Cable Loss (dB) | Actual Level (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Result   |
|-----------------|------------------|-----------------------------|---------------------|-----------------|-----------------------------|----------------------|-------------|----------|
| 2.4000          | Horiz.           | 41.3                        | 21.5                | 1.4             | 64.2                        | 73.1*                | 8.9         | Complied |
| 2.4835          | Horiz.           | 35.3                        | 21.1                | 1.4             | 57.8                        | 74.0                 | 16.2        | Complied |

**Average Power Level Static Mode:**

| Frequency (GHz) | Antenna Polarity | Detector Level (dB $\mu$ V) | Antenna Factor (dB) | Cable Loss (dB) | Actual Level (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Result   |
|-----------------|------------------|-----------------------------|---------------------|-----------------|-----------------------------|----------------------|-------------|----------|
| 2.4835          | Horiz.           | 25.5                        | 21.1                | 1.4             | 48.0                        | 54.0                 | 6.0         | Complied |

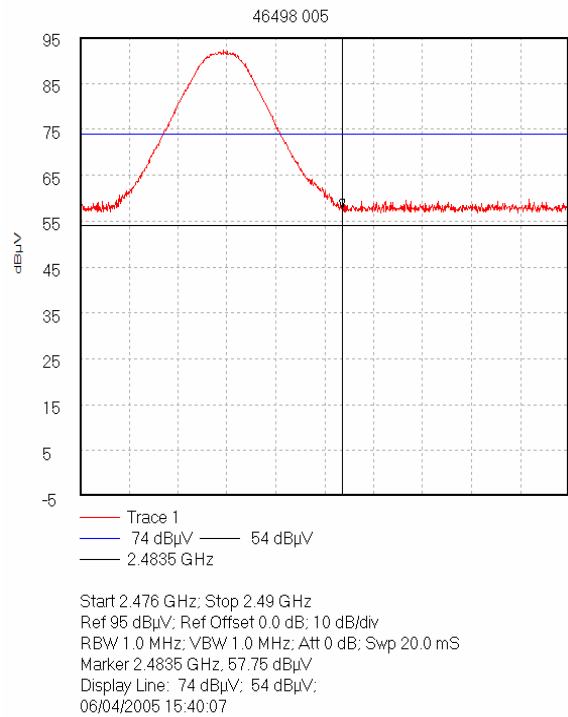
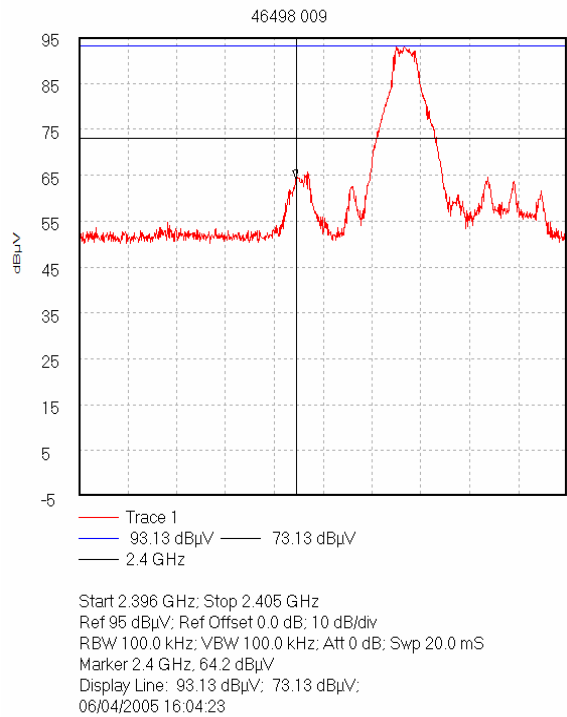
**Note(s):**

1. \*-20 dBc limit

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**Transmitter Band Edge Radiated Emissions: Section 15.247(d) & 15.209(a) (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%                  | ± 3.25 dB              |
| Transmitter Maximum Peak Output Power    | Not applicable     | 95%                  | ± 1.78 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 40 GHz    | 95%                  | ± 3.03 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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## **9. Measurement Methods**

### **9.1. AC Mains Conducted Emissions**

AC mains conducted emissions measurements were performed in accordance with the standard, against appropriate limits for each detector function.

The test was performed in a shielded enclosure with the equipment arranged as detailed in the standard on a wooden bench using the floor of the screened enclosure as the ground reference plane. The EUT was powered with 110V 60 Hz ac mains supplied via a line impedance stabilisation network (LISN).

Initial measurements in the form of swept scans covering the entire measurement band were performed in order to identify frequencies on which the EUT was generating interference. In order to minimise the time taken for these swept measurements, a peak detector was used in conjunction with the appropriate detector IF measuring bandwidths (see table below). Repetitive scans were performed to allow for emissions with low repetition rates, and the duty cycle of the EUT. The test configuration was the same for the initial scans as for the final measurements.

Following the initial scans, a graph was produced giving an overview of the emissions from the EUT plotted against the appropriate specification limit. A tolerance line was set 6 dB below the specification limit and levels above the tolerance line were re-tested (at individual frequencies) using the appropriate detector function.

The test equipment settings for conducted emissions measurements were as follows:

| Receiver Function | Initial Scan     | Final Measurements         |
|-------------------|------------------|----------------------------|
| Detector Type:    | Peak             | Quasi-Peak (CISPR)/Average |
| Mode:             | Max Hold         | Not applicable             |
| Bandwidth:        | 10 kHz           | 9 kHz                      |
| Amplitude Range:  | 60 dB            | 20 dB                      |
| Measurement Time: | Not applicable   | >1 s                       |
| Observation Time: | Not applicable   | >15 s                      |
| Step Size:        | Continuous sweep | Not applicable             |
| Sweep Time:       | Coupled          | Not applicable             |

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## **9.2. Radiated Emissions**

Radiated emissions measurements were performed in accordance with the standard, against appropriate limits for each detector function.

Initial measurements covering the entire measurement band in the form of swept scans in a shielded enclosure were performed in order to identify frequencies on which the EUT was generating interference. This determined the frequencies on which the EUT should be re-measured in full on the open area test site. In order to minimise the time taken for the swept measurements, a peak detector was used in conjunction with the appropriate detector IF measuring bandwidth (see table below). Repetitive scans were performed to allow for emissions with low repetition rates.

The initial scans were performed using an antenna height of 1.5 m and a measurement distance of 3 m. Following the initial scans, graphs were produced giving an overview of the emissions from the EUT plotted against the appropriate specification limit. Any emission within 20 dB of the limit were then measured on the open area test site, except in cases where the noise floor was within 20 dB of the limit, in these cases the highest point of the noise floor was measured.

Where an emission fell inside a restricted band, measurements were made at the appropriate test distance using a measuring receiver with a quasi peak detector for measurements below 1000 MHz and an average and peak detector for measurements above 1000 MHz. A peak detector was used for all other measurements.

For the final measurements the EUT was arranged on a non-conducting turn table on a standard test site compliant with ANSI C63.4 – 2003 Clause 5.4.

All measurements on the open area test site were performed using broadband antennas in both vertical and horizontal polarisations.

On the open area test site, at each frequency where a signal was to be measured, the trace was maximised by rotating a turntable through 360°. The angle at which the maximum signal was observed was locked out. For frequencies below 1000 MHz the test antenna was varied in height between 1 m and 4 m in order to further maximise the target emission.

For frequencies above 1000 MHz where a horn antenna was used, height searching was performed to locate the optimal height of the horn with respect to the EUT. At this point the horn was locked off and the turntable was again rotated through 360° to maximise the target signal. It should be noted that the received signal from the EUT would diminish very quickly after it exits the beam width of the horn antenna, for this reason it may not be necessary to fully height search with the horns.

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**Radiated Emissions (Continued)**

At this point, any signals found to be between the limit and a level 6 dB below it were further maximised by changing the configuration of the EUT, e.g. re-routing cables to peripherals and moving peripherals with respect to the EUT.

Scans were performed to the upper frequency limits as stated in section 15.33

The final field strength was determined as the indicated level in dB $\mu$ V plus cable loss and antenna factor.

The test equipment settings for radiated emissions measurements were as follows:

| Receiver Function | Initial Scan                       | Final Measurements<br><1 GHz | Final Measurements<br>≥1 GHz |
|-------------------|------------------------------------|------------------------------|------------------------------|
| Detector Type:    | Peak                               | Quasi-Peak (CISPR)           | Peak / Average               |
| Mode:             | Max Hold                           | Not applicable               | Max Hold                     |
| Bandwidth:        | (120 kHz <1 GHz)<br>(1 MHz ≥1 GHz) | 120 kHz                      | 1 MHz                        |
| Amplitude Range:  | 100 dB                             | 100 dB                       | 100 dB                       |
| Step Size:        | Continuous sweep                   | Not applicable               | Not applicable               |
| Sweep Time:       | Coupled                            | Not applicable               | Not applicable               |

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### **9.3. Conducted Antenna Port Emissions**

Conducted antenna port emissions measurements were performed using a 100 kHz bandwidth in accordance with the standard against the appropriate limits.

Prior to testing being performed a suitable RF attenuator and cable, were calibrated for the required frequency range. For each measurement range the calibrated level of the attenuator and cable were entered as an offset into the spectrum analyser to compensate for the losses in the measurement set up.

Initial measurements covering the entire measurement band in the form of swept scans were performed in order to identify frequencies on which the EUT was generating interference. This determined the frequencies on which final measurements were necessary. To make the final measurements a peak detector was used in conjunction with the appropriate detector IF measuring bandwidth.

Repetitive scans were performed to allow for emissions with low repetition rates.

Scans were performed to the upper frequency limits as stated in 15.33(a)(1)

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#### **9.4. Carrier Frequency Separation / 20 dB Bandwidth**

The EUT and spectrum analyser was configured as for conducted antenna port / radiated measurements, and as per FCC Public Notice DA 00-705, Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

To determine the bandwidth and separation of each transmission channel the measurement analyser was configured to measure two adjacent channels whilst the EUT was in hopping mode. The spectrum analyser was configured with a resolution bandwidth and video bandwidth greater than 1% of the frequency span.

The analyser was set for a maximum hold scan to capture the profile of the signal. The peak points on the two adjacent channels were noted and the separation between them recorded.

To determine the occupied bandwidth, a resolution bandwidth of 10 kHz was used, which is greater than 1% of the 20 dB bandwidth. A video bandwidth of, at least, the same value was used.

The analyser was set for a maximum hold scan to capture the profile of the signal. The peak level was then determined, and a reference line was drawn 20 dB below the peak level.

The bandwidth was determined at the points where the 20 dB reference line intercepted the power envelope of the emission.

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### **9.5. Average Time of Occupancy**

The EUT and spectrum analyser was configured as for conducted antenna port / radiated measurements, and as per FCC Public Notice DA 00-705, Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

First the maximum packet length was determined on the centre channel.

The measurement analyser was configured to the time domain mode by setting the span to zero with a sweep time sufficiently wide enough to measure one pulse.

The EUT was configured to operate in normal mode of operation. The pulse width of one transmission was then recorded. The measurement analyser was then configured in zero span i.e. in the time domain and the sweep time was set to 32 seconds (the closest allowable setting to 31.6 seconds). This 31.6 second period was determined by multiplying the number of channels the device operates over (79) by 0.4 seconds.

The number of transmissions within this period was noted and multiplied by the pulse width recorded earlier. This gives the maximum occupancy over 31.6 seconds.

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### **9.6. Peak Output Power**

The EUT and spectrum analyser were configured as for conducted antenna port measurements and as per FCC Public Notice DA 00-705, Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

Prior to testing being performed, a suitable RF attenuator and cable were calibrated for the required frequencies. For each frequency to be measured, the calibrated level of the attenuator and cable were entered as an offset into a spectrum analyser to compensate for the measurement set up.

To determine the transmitter output power, the EUT was operated at maximum power and a result was obtained from the spectrum analyser the channel power function set up according the defined bandwidth and channel spacing of the EUT.

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### **9.7. Effective Isotropic Radiated Power (EIRP)**

EIRP measurements were performed in accordance with the standard, against appropriate limits.

The EIRP was measured with the EUT arranged on a non-conducting turn table on a standard test site compliant with ANSI C63.4 – 2003 Clause 5.4. The transmitter was fitted with an integral antenna; therefore all radiated tests were performed with the unit operating into the integral antenna.

The level of the EIRP was measured using a spectrum analyser.

The test antenna was positioned in the horizontal plane. The EUT was oriented in the X plane. The test antenna was then raised and lowered until a maximum peak was observed. The turntable was then rotated through 360 degrees and the maximum peak reading obtained. The height search was then repeated to take into consideration the new angular position of the turntable. The maximum reading observed was then recorded. This procedure was then repeated with the EUT oriented in the Y and Z planes. The highest reading taken in all 3 planes was recorded. The entire procedure was then repeated with the test antenna set in the vertical polarity.

Once the final amplitude (maximised) had been obtained, the EUT was substituted with a horn antenna. The centre of the substitution antenna was set to approximately the same centre location as the EUT. The substitution antenna was set to the horizontal polarity. The substitution antenna was matched into a signal generator using a 6 dB or greater attenuator. The signal generator was tuned to the EUT's frequency under test.

The test antenna was then raised and lowered to obtain a maximum reading on the spectrum analyser. The level of the signal generator output was then adjusted until the maximum recorded EUT level was observed. The signal generator level was noted. This procedure was repeated with both test antenna and substitution antenna vertically polarised. The EIRP was calculated as:-

$$\text{EIRP} = \text{Signal Generator Level} - \text{Cable Loss} + \text{Antenna Gain}$$

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**Effective Isotropic Radiated Power (EIRP) (Continued)**

Circumstances where the signal generator could not produce the desired a power substitution was performed with the signal generator set to 0 dBm. The radiated signal was maximised as previously described. The level indicated on the measuring receiver was noted. The delta between this level and the maximum level for the EUT was calculated and also noted. The EIRP of the signal generator was calculated using the above formulae. The recorded delta was added to the calculated EIRP to obtain the substituted EUT EIRP.

$$\text{Delta (dB)} = \text{EUT} - \text{SG}$$

where :

EUT = spectrum analyser indicated EUT raw level

SG = spectrum analyser indicated signal generator raw level

The signal generator actual EIRP is calculated as:

$$\text{EIRP SG} = \text{Signal Generator Level} - \text{Cable Loss} + \text{Antenna Gain}$$

The EUT EIRP is calculated as:

$$\text{EIRP EUT} = \text{EIRP SG} + \text{Delta.}$$

The test equipment settings for EIRP measurements were as follows:

| Receiver Function | Setting        |
|-------------------|----------------|
| Detector Type:    | Peak           |
| Mode:             | Not applicable |
| Bandwidth:        | 1 MHz          |
| Amplitude Range:  | 100 dB         |
| Sweep Time:       | Coupled        |

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### **9.8. Band Edge Compliance of RF Radiated Emissions**

The EUT and spectrum analyser were configured as for radiated measurements and as per FCC Public Notice DA 00-705, Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

To determine band edge compliance, the analyser resolution bandwidth was set to  $\geq 1\%$  of the analyser span. The video bandwidth was set to be  $\geq$  to the resolution bandwidth. The sweep was set to auto and the detector to peak. The trace was set to max hold and a trace was produced.

A plot of the lower band edge of the allocated frequency band was produced. A marker was set to the level of the highest in band emission with a limit line set to 20 dB below this. The marker was then placed on the highest out of band emission (the specification states that either the band edge level must be measured or the highest out of band emission, whichever is the greater). The plots show that the highest out of band emission complies with the -20 dBc limit.

The above procedure was then repeated for the upper band edge except that, as the upper band edge fell on a restricted band edge (as defined in section 15.205(a)), the limit for the restricted band was applied instead of the -20 dBc limit i.e. the general limits defined in section 15.209(a).

Final measurements were performed on the worst-case configuration as described in Part 15.31(i).

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## Appendix 1. Test Equipment Used

| RFI No. | Instrument                          | Manufacturer    | Type No.         | Serial No.                                    |
|---------|-------------------------------------|-----------------|------------------|-----------------------------------------------|
| A004    | ESH3-Z5 LISN                        | Rohde & Schwarz | ESH3-Z5          | 890 604/027                                   |
| A027    | Horn Antenna                        | Eaton           | 9188-2           | 301                                           |
| A031    | 2 to 4 GHz Eaton Horn Antenna       | Eaton           | 91889-2          | 557                                           |
| A059    | 3146 Log Periodic Antenna           | EMCO            | 3146             | 8902-2378                                     |
| A091    | EMCO 3110 Biconical Antenna         | EMCO            | 3110             | 9008-1182                                     |
| A1360   | ESH3-Z2 Pulse Limiter               | Rohde & Schwarz | ESH3-Z2          | A1360-20112003                                |
| A253    | WG 12 Microwave Horn                | Flann Microwave | 12240-20         | 128                                           |
| A427    | WG 14 horn                          | Flann           | 14240-20         | 150                                           |
| A428    | WG 12 horn                          | Flann           | 12240-20         | 134                                           |
| A429    | WG 16 horn                          | Flann           | 16240-20         | 561                                           |
| A430    | WG 18 horn                          | Flann           | 18240-20         | 425                                           |
| A436    | WG 20 horn                          | Flann           | 20240-20         | 330                                           |
| A451    | Log Spiral Antenna                  | EMCO            | 3101             | 3751                                          |
| A553    | Bi-log Antenna                      | Chase           | CBL6111A         | 1593                                          |
| C1023   | Rosenberger Cable                   | Rosenberger     | FA210A-1-020m    | FA00B 7567                                    |
| C1065   | Rosenberger                         | Rosenberger     | UFA210-1-7872    | 0985                                          |
| C453    | Cable                               | Rosenberger     | RG142XX-001-RFIB | C453-10081998                                 |
| E013    | PCN Environmental Chamber           | Sanyo           | ATMOS chamber    | None                                          |
| M028    | FSB Spectrum Analyser               | Rohde & Schwarz | FSB              | 860 001/009 (RF),<br>860 161/007<br>(Display) |
| M088    | Receiver / Spectrum Analyser System | Rohde & Schwarz | ESBI             | DU:835862/018<br>RU:835387/006                |
| M1149   | Anritsu                             | Anritsu         | MT8852A          | 6K00001529                                    |
| M127    | Spectrum Analyser                   | Rohde & Schwarz | FSEB 30          | 842 659/016                                   |
| M128    | Fluke 76 DVM                        | Fluke           | 76               | 65340273                                      |
| S201    | Site 1                              | RFI             | 1                | None                                          |
| S202    | Site 2                              | RFI             | 2                | S202-15011990                                 |
| S212    | Site 12                             | RFI             | 12               |                                               |

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

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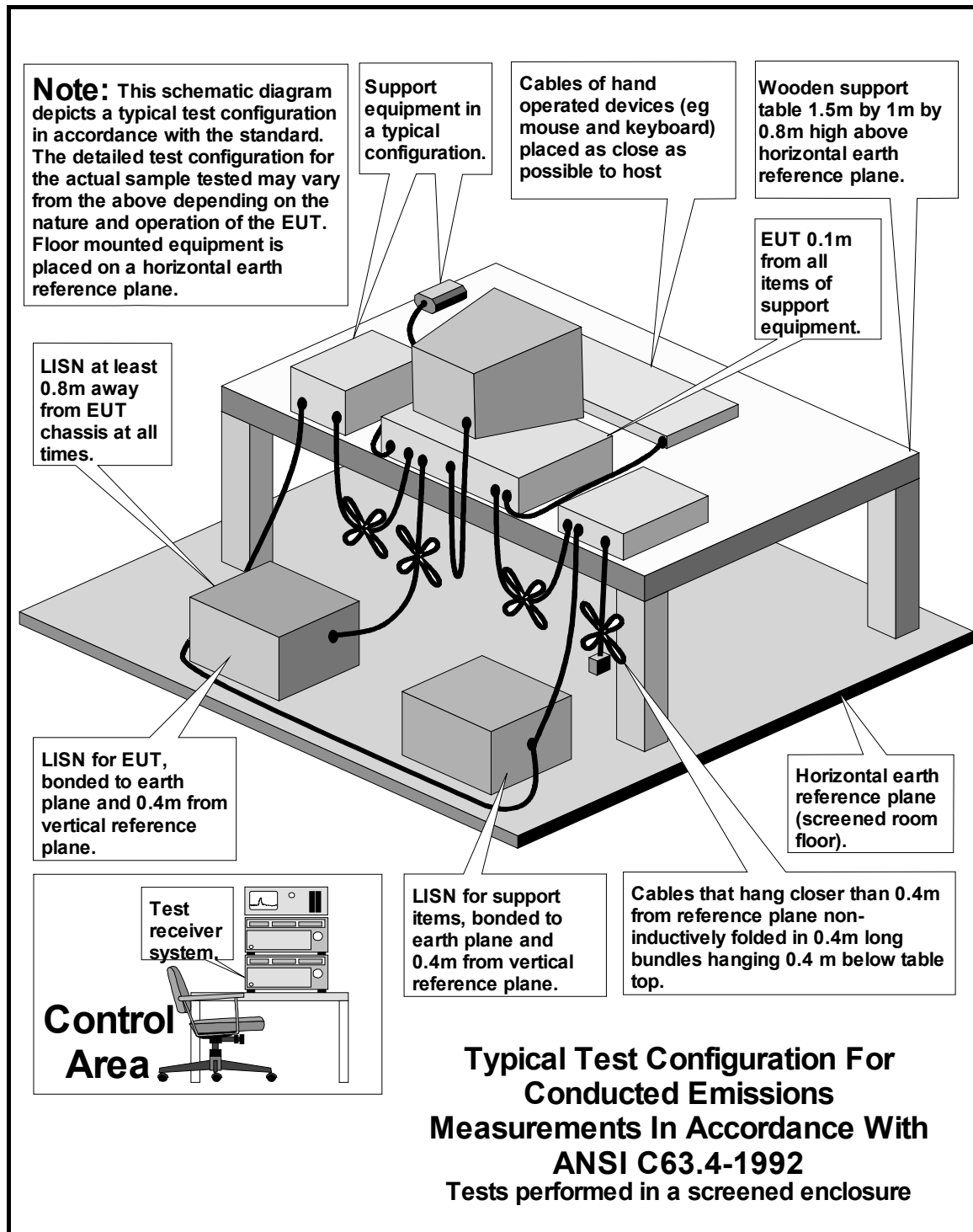
## **Appendix 2. Test Configuration Drawings**

This appendix contains the following drawings:

| Drawing Reference Number | Title                                                      |
|--------------------------|------------------------------------------------------------|
| DRG\46498JD07\EMICON     | Test configuration for measurement of conducted emissions. |
| DRG\46498JD07\EMIRAD     | Test configuration for measurement of radiated emissions.  |

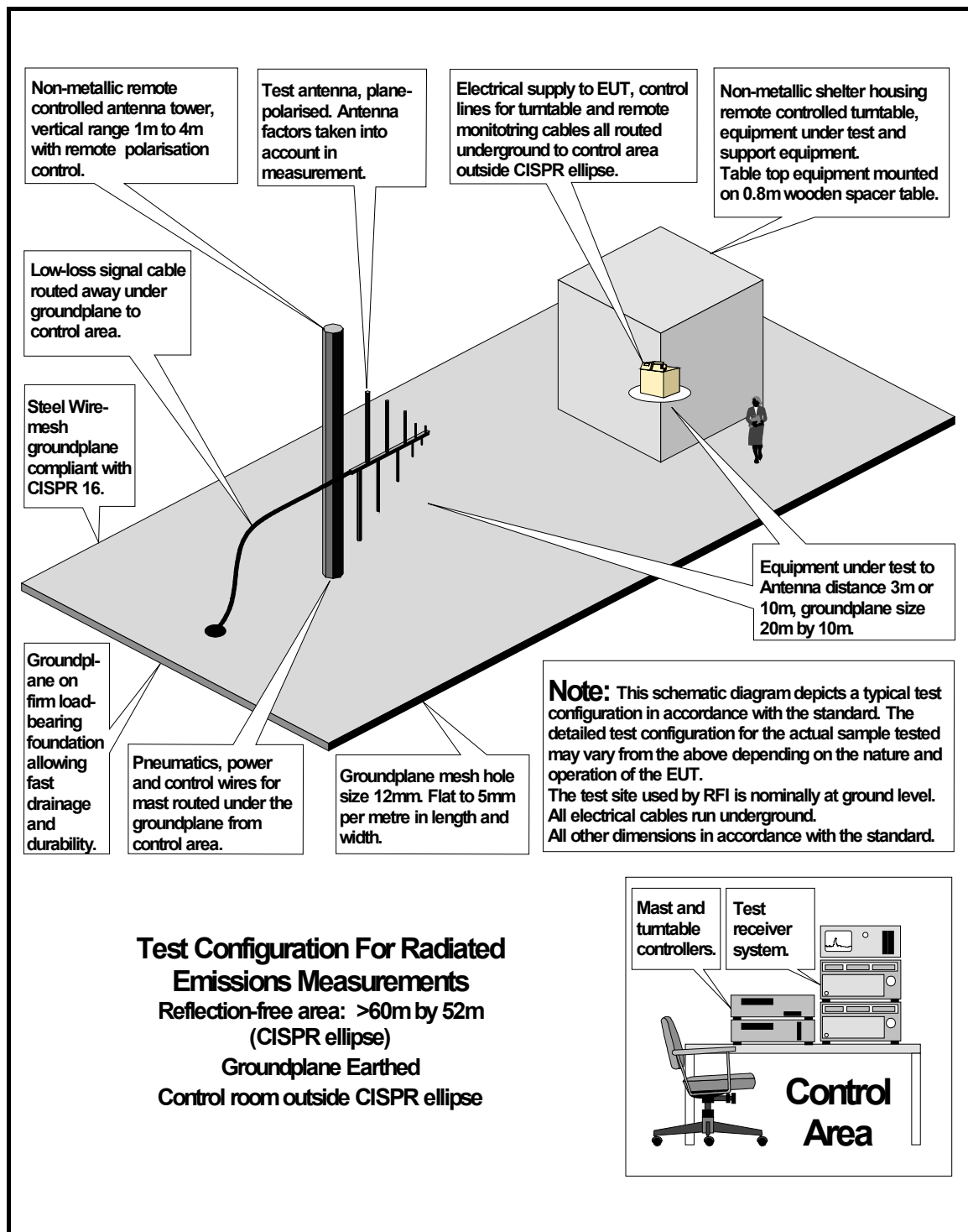
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DRG\46498JD07\EMICON



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DRG\46498JD07\EMIRAD



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