TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: NTT docomo P-01A

To: FCC Part 15.247: 2006 (Subpart C)

Test Report Serial No:
RFI/RPT1/RP73958JD05A

This Test Report Is Issued Under The Authority Of Steve Flooks, Service Leader: **pp** 	
Checked By: Nigel Davison 	**Report Copy No: PDF01**
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Registered in England and Wales. Company number:2117901

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1. Customer Information

Company Name:	Panasonic Mobile Communications Dev of Europe Ltd
Address:	Panasonic House Willoughby Road Bracknell Berkshire RG12 8FP United Kingdom
Contact Name:	Mr M Hargreaves

2. Equipment Under Test (EUT)

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

2.1. Identification of Equipment Under Test (EUT)

Description:	Dual mode (W-CDMA FDDI/FDDV/ GSM900/1800/1900MHz) Cellular Mobile Telephone with RFID and Bluetooth
Brand Name:	NTT docomo
Model Name or Number:	P-01A
Serial Number or Unique Product Identifier:	359946010018134
FCC ID Number:	UCE208009A

Description:	FOMA USB Cable with Charge Function 01
Model Name or Number:	NTT docomo
Serial Number:	Not marked or stated
Cable Length and Type:	1.1 metre
Connected to Port:	USB

Description:	FOMA AC Adapter 01
Brand Name:	NTT docomo
Model Name or Number:	MAS-BH0008-A 002
Serial Number:	AC Charger #01
Cable Length and Type:	2.23 metre / multicore
Connected to Port:	Charger

Description:	Battery
Brand Name:	NTT
Serial Number:	P19

Description:	Flat-plug Stereo Earphone Set P01
Brand Name:	NTT docomo
Model Name or Number:	P01
Cable Length and Type:	1.8m / multi-core
Connected to Port:	AV Out port

Description:	DC Charger Cable
Model Name or Number:	FOMA DC Adapter 02
Cable Length and Type:	>2m extended.
Connected to Port:	Charger

Description:	Micro-SD Memory Card
Brand Name:	Panasonic
Model Name or Number:	None Stated
Serial Number:	None Stated
Cable Length and Type:	None Stated
Connected to Port:	Dedicated micro-SD card port

2.2. Description of EUT

The equipment under test was a Dual mode (W-CDMA FDDI/FDDV/ GSM900/1800/1900MHz) Cellular Mobile Telephone with RFID and Bluetooth.

2.3. Modifications Incorporated in the EUT

During the course of testing the EUT was not modified.

2.4. Support Equipment

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

Description:	Laptop PC
Model Name or Number:	SONY Vaio PCG-VX7/BD
Serial Number:	Serial number has been partially erased and cannot be read
Cable Length and Type:	Not Applicable
Connected to Port:	USB

2.5. Additional Information Related to Testing

Power Supply Requirement:	Internal battery Supply of: 3.7V (nominal)		
Intended Operating Environment:	Within GSM Coverage UMTS coverage area		
Equipment Category:	Bluetooth, GSM/GPRS, Short Range Device, UMTS FDD I and UMTS band V		
Type of Unit:	Portable (Standalone battery powered device) Transceiver		
Channel Spacing:	1 MHz		
Modulation Type:	Basic Rate: GFSK and EDR: pi/4 DQPSK & 8DQPSK		
Data Rate:	Basic Rate: 1 Mbit/s and EDR: 2 Mbit/s & 3 Mbit/s		
Transmit Frequency Range:	2402 MHz to 2480 MHz		
Transmit Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	0	2402
	Middle	39	2441
	Top	78	2480
Receive Frequency Range:	2402 MHz to 2480 MHz		
Receive Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	0	2402
	Middle	39	2441
	Top	78	2480

2.6. Port Identification

Port	Description	Type/Length
1	Charge/Data	Not Applicable
2	AV	Not Applicable
3	USIM	Not Applicable
4	Micro-SD	Not Applicable

3. Test Specification, Methods and Procedures

3.1. Test Specification

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

3.2. Methods and Procedures

The methods and procedures used were as detailed in:

ANSI C63.2 (1996)
Title: American National Standard for Instrumentation - Electromagnetic Noise and Field Strength Instrumentation, 10 Hz to 40 GHz.

ANSI C63.4 (2003)
Title: American National Standard Methods of Measurement of Electromagnetic Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

ANSI C63.5 (1988)
Title: American National Standard for the Calibration of antennas used for Radiated Emission measurements in Electromagnetic Interference (EMI) control.

ANSI C63.7 (1988)
Title: American National Standard Guide for Construction of Open Area Test Sites for performing Radiated Emission Measurements.

CISPR 16-1: (1999)
Title: Specification For Radio Disturbance and Immunity Measuring Apparatus and Methods. Part 1: Radio Disturbance and Immunity Measuring Apparatus.

DA00-705 (2000)
Title: Filing and Frequency Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

3.3. Definition of Measurement Equipment

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

4. Deviations from the Test Specification

There were no deviations from the test specification.

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:

- Idle Mode
- Transmit Mode with Basic rate or EDR as required.
    - Static Mode
    - Hopping Mode

5.2. Configuration and Peripherals

The EUT was tested in the following configuration:

- For Transmit tests: Standalone, connected via an air link to a Bluetooth Tester to provide a test mode and normal mode of operation for the sample. The GSM and RFID modules were active but were not set into a test mode.
- For Idle mode tests: Standalone, with the Bluetooth mode active but not transmitting. The GSM and RFID modules were active and set into Rx test mode.
- Both EDR/Basic rate modes were compared and tests were performed with the mode that presented the worse case result. For bandwidth and channel separation, both modes were tested. The output power was the same for both modes therefore all power related tests were performed in the basic rate mode.

6. Summary of Test Results

Range of Measurements	FCC Part 15 Reference	Port Type	Result
Idle Mode AC Conducted Emissions	C.F.R. 47 FCC Part 15: 2005 Section 15.107	AC Mains	Complied
Idle Mode Radiated Spurious Emissions	C.F.R. 47 FCC Part 15: 2005 Section 15.109	Antenna	Complied
Transmitter AC Conducted Emissions	C.F.R. 47 FCC Part 15: 2005 Section 15.207	AC Mains	Complied
Transmitter 20 dB Bandwidth	C.F.R. 47 FCC Part 15: 2005 Section 15.247(a)(1)	Antenna	Complied
Transmitter Carrier Frequency Separation	C.F.R. 47 FCC Part 15: 2005 Section 15.247(a)(1)	Antenna	Complied
Transmitter Average Time of Occupancy	C.F.R. 47 FCC Part 15: 2005 Section 15.247(a)(1)(iii)	Antenna	Complied
Transmitter Maximum Peak Output Power	C.F.R. 47 FCC Part 15: 2005 Section 15.247(b)(1)	Antenna	Complied
Transmitter Radiated Emissions	C.F.R. 47 FCC Part 15: 2005 Sections 15.247(d) & 15.209(a)	Antenna	Complied
Transmitter Band Edge Conducted Emissions	C.F.R. 47 FCC Part 15: 2005 Sections 15.247(d) & 15.209(a)	Antenna	Complied
Transmitter Band Edge Radiated Emissions	C.F.R. 47 FCC Part 15: 2005 Section 15.107	Antenna	Complied

6.1. Location of Tests

All the measurements described in this report were performed at the premises of RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.

6.2. Site Registration Number

FCC: 209735

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.

7.2. Test Results

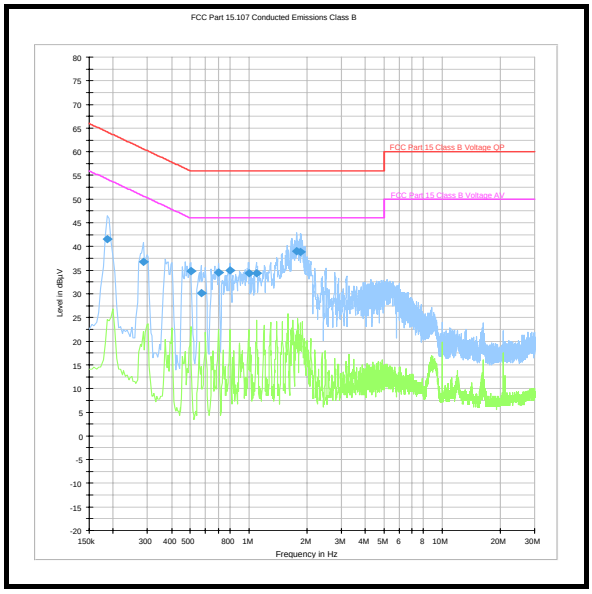
7.2.1. Idle Mode Conducted Emissions - Quasi-Peak Detector Measurements: Section 15.107

Ambient Temperature: 26ºC Relative Humidity: 42%

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

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.186000	Live	41.5	64.2	22.7	Complied
0.285000	Live	36.8	60.7	23.9	Complied
0.501000	Live	34.8	56.0	21.2	Complied
0.568500	Live	30.2	56.0	25.8	Complied
0.699000	Live	34.6	56.0	21.4	Complied
0.798000	Live	35.0	56.0	21.0	Complied
1.000500	Live	34.3	56.0	21.7	Complied
1.099500	Live	34.4	56.0	21.6	Complied
1.761000	Live	39.0	56.0	17.0	Complied
1.851000	Live	38.8	56.0	17.2	Complied

Idle Mode Conducted Emissions (Continued)



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

7.2.2. Idle Mode Radiated Spurious Emissions: Section 15.109

Ambient Temperature: 23ºC Relative Humidity: 48%

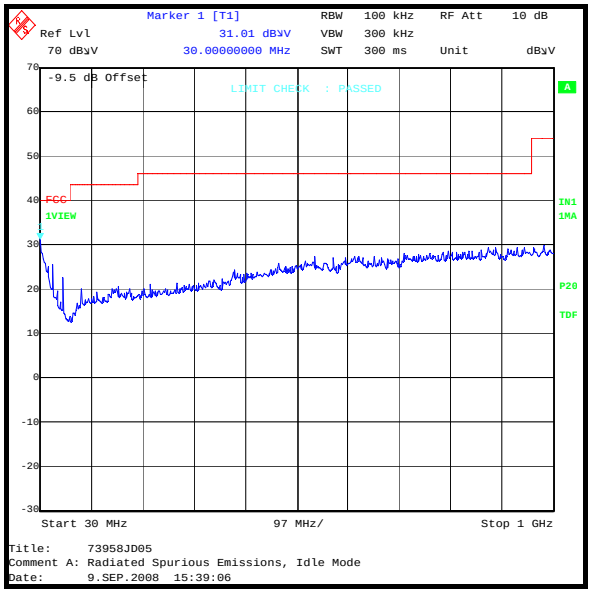
Tests were performed using the test methods detailed in ANSI C63.4 Section 8.

Results:

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

Frequency (MHz)	Antenna Polarity	Quasi-Peak Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
30.00000	Horizontal	31.0	40.0	9.0	Complied

Idle Mode Radiated Spurious Emissions (Continued)



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

7.2.3. Idle Mode Radiated Spurious Emissions: Section 15.109 (Continued)

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

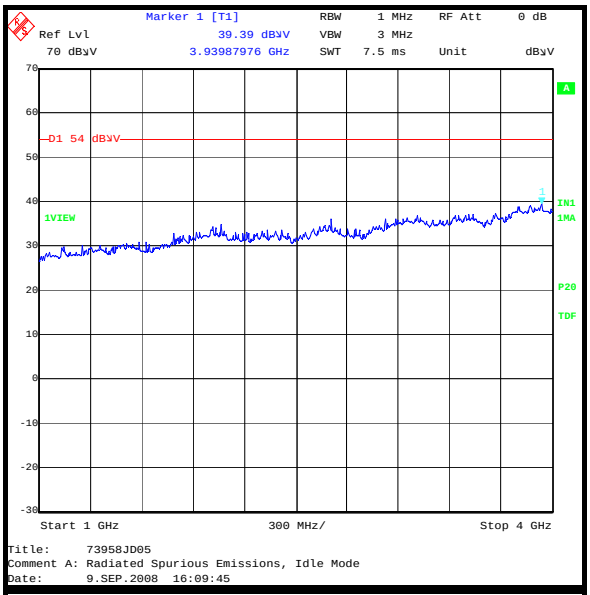
Highest Peak Level:

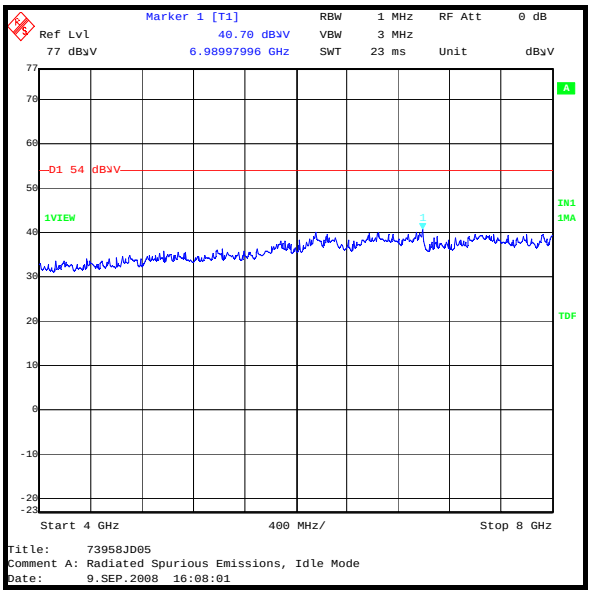
Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
11.369739	Horizontal	16.3	25.6	41.9	*54.0	12.1	Complied

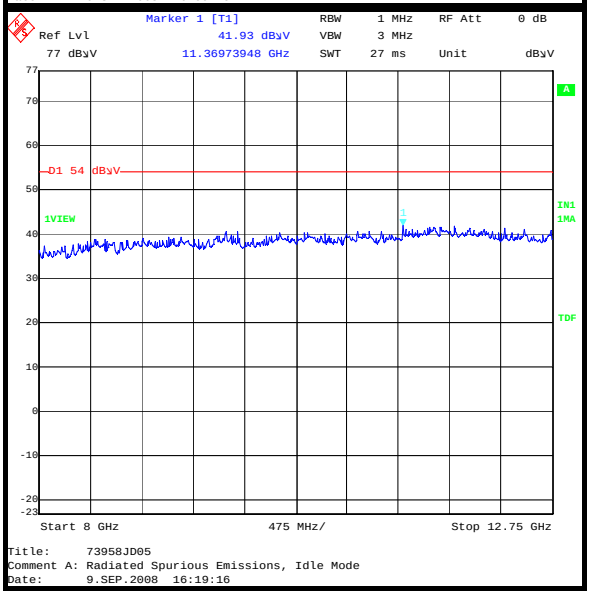
Note(s):

1. **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.*

Idle Mode Radiated Spurious Emissions (Continued)







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

7.2.4. Transmitter AC Conducted Spurious Emissions: Section 15.207

Ambient Temperature: 26ºC Relative Humidity: 42%

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

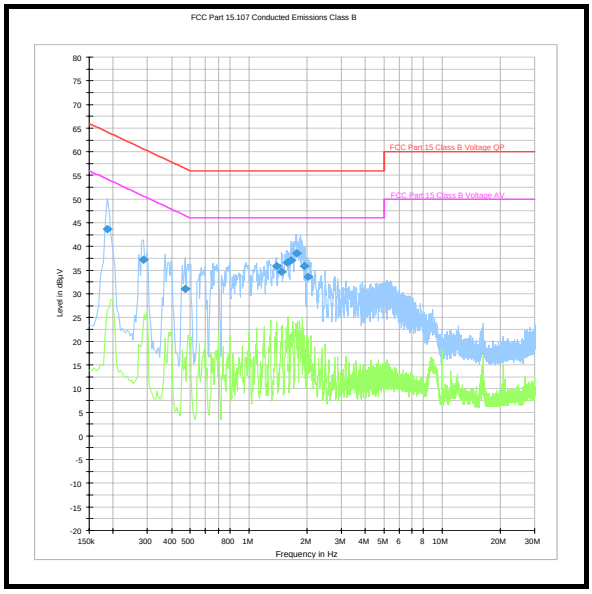
Results:

Quasi-Peak Detector Measurements on Live and Neutral Lines

Top Channel

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.186000	Live	43.6	64.2	20.6	Complied
0.285000	Live	37.2	60.7	23.5	Complied
0.469500	Live	31.0	56.5	25.5	Complied
1.396500	Live	35.9	56.0	20.1	Complied
1.477500	Live	34.7	56.0	21.3	Complied
1.581000	Live	36.5	56.0	19.5	Complied
1.662000	Live	37.1	56.0	18.9	Complied
1.761000	Live	38.5	56.0	17.5	Complied
1.936500	Live	35.9	56.0	20.1	Complied
2.017500	Neutral	33.5	56.0	22.5	Complied

Transmitter AC Conducted Spurious Emissions (Continued)



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

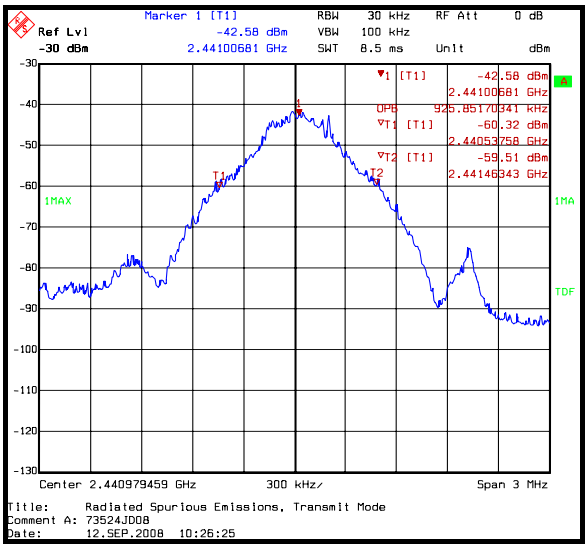
7.2.5. Transmitter 20 dB Bandwidth

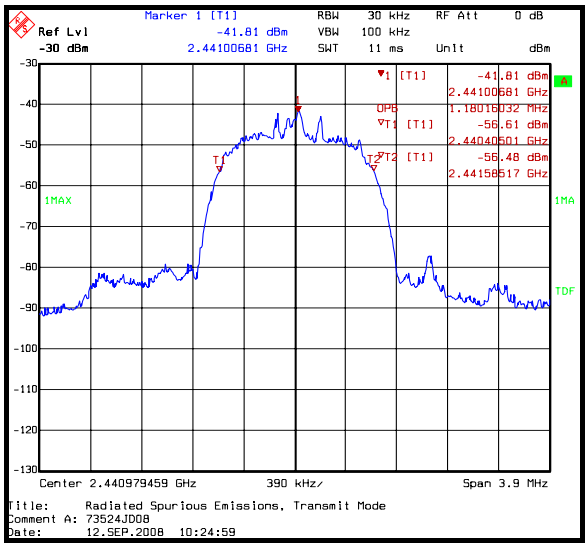
Ambient Temperature: 26ºC Relative Humidity: 40%

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)
Basic Rate	956.914	None specified
EDR	1180.160	None specified





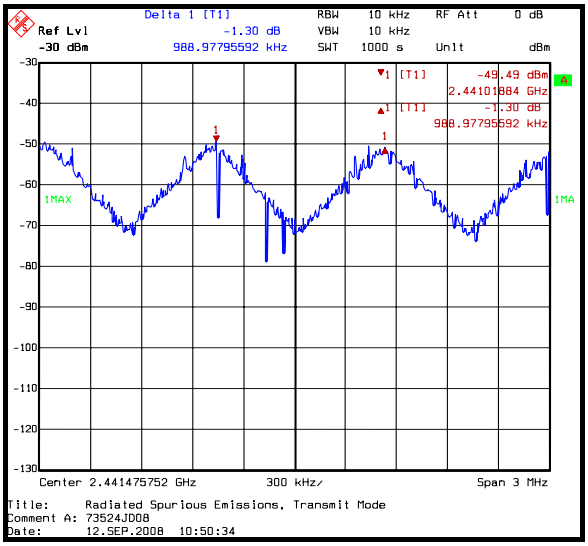
7.2.6. Transmitter Carrier Frequency Separation: Section 15.247 (a)(1)

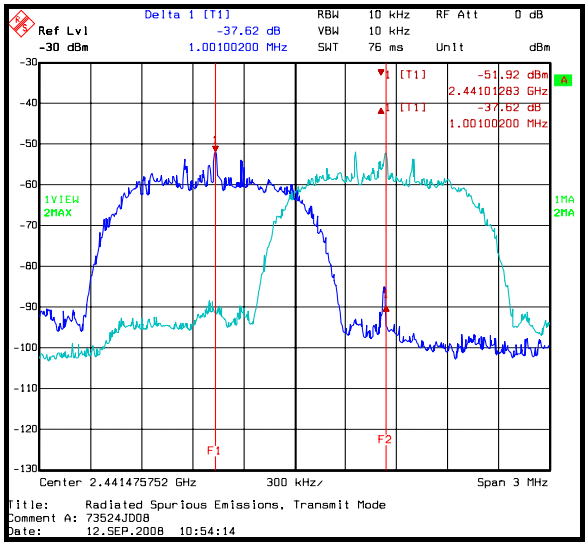
Ambient Temperature: 26ºC Relative Humidity: 42%

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

Results:

Transmitter Carrier Frequency Separation (kHz)	Limit ($^2/_3$ of 20 dB BW) (kHz)	Margin (kHz)	Result
988.978	637.943	351.035	Complied
1001.002	786.773	214.229	Complied





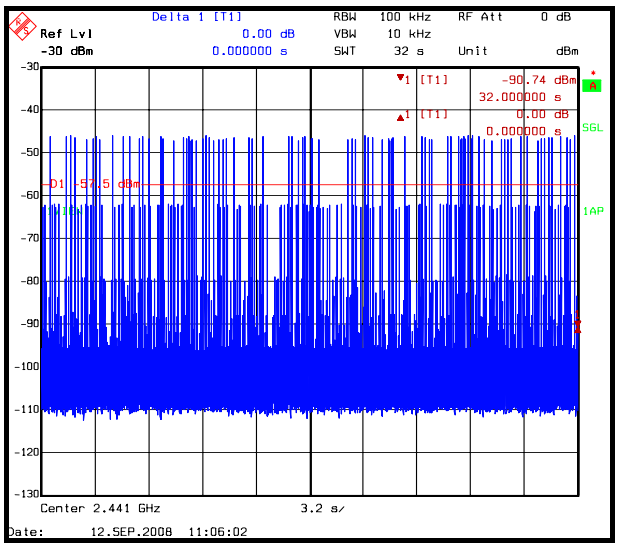
7.2.7. Transmitter Average Time of Occupancy: Section 15.247(a)(1)(iii)

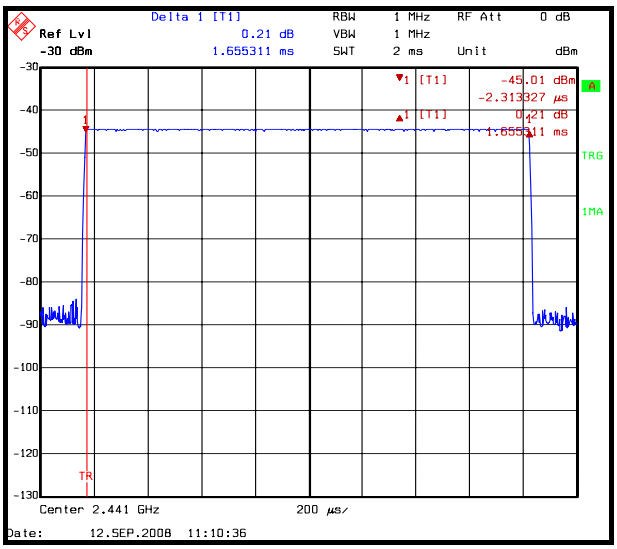
Ambient Temperature: 26ºC Relative Humidity: 42%

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

Results:

Emission Width (μs)	Number of Hops in 31.6 Seconds	Average Time of Occupancy (s)	Limit (s)	Margin (s)	Result
1655	79	0.130745	0.4	269.255	Complied





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

Ambient Temperature: 23ºC Relative Humidity: 48%

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)	Result
Bottom	+1.0	30.0	29.0	Complied
Middle	+1.9	30.0	28.1	Complied
Top	-0.2	30.0	30.2	Complied

Note(s):

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

7.2.9. Transmitter Radiated Emissions: Section 15.247(d) and 15.209(a)

Ambient Temperature: 24ºC Relative Humidity: 48%

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 (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
No emissions were found occurring in the restricted bands.					

Note(s):

1. The preliminary scans showed similar emission levels below 1 GHz, for each channel of operation. Therefore final radiated emissions measurements were performed with the EUT set to the top channel only.

Transmitter Radiated Emissions: Section 15.247(d) and 15.209(a) (Continued)

Results:

Electric Field Strength Measurements: 30 MHz to 26.5 GHz
(Emissions Outside the Restricted Bands)

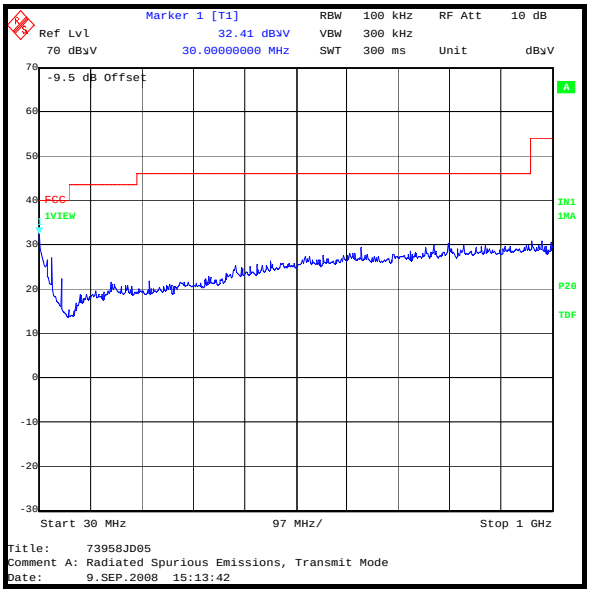
Top Channel

Frequency (MHz)	Antenna Polarity	Peak Level (dBμV/m)	-20 dBc Limit (dBμV/m)	Margin (dB)	Result
30.000	Horizontal	32.4	77.2	44.8	Complied

Note(s):

1. The preliminary scans showed similar emission levels below 1 GHz, for each channel of operation. Therefore final radiated emissions measurements were performed with the EUT set to the top channel only.

Transmitter Radiated Emissions (Continued)



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

Transmitter Radiated Emissions: Section 15.247(d) and 15.209(a) (Continued)

Results:

Electric Field Strength Measurements (Frequency Range: 1 GHz to 26.5 GHz)
(Emissions Occurring in the Restricted Bands)

Highest Peak Level

Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
3921.844	Horizontal	40.5	9.6	50.1	*54.0	3.9	Complied

Note(s):

1. *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.*

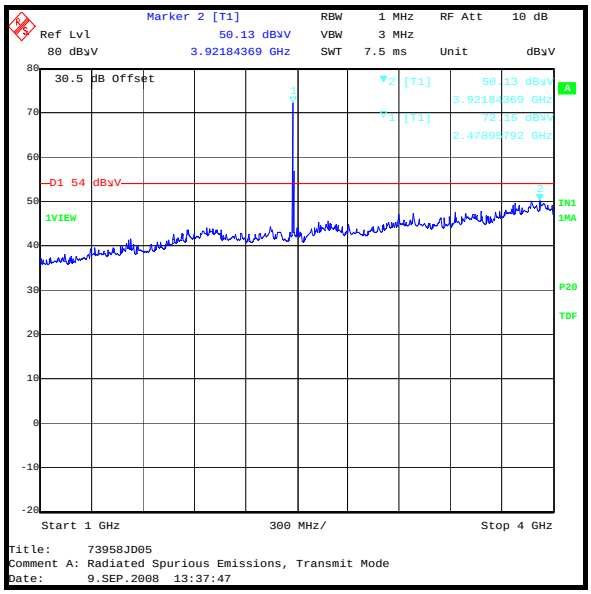
Transmitter Radiated Emissions (Continued)

Results:

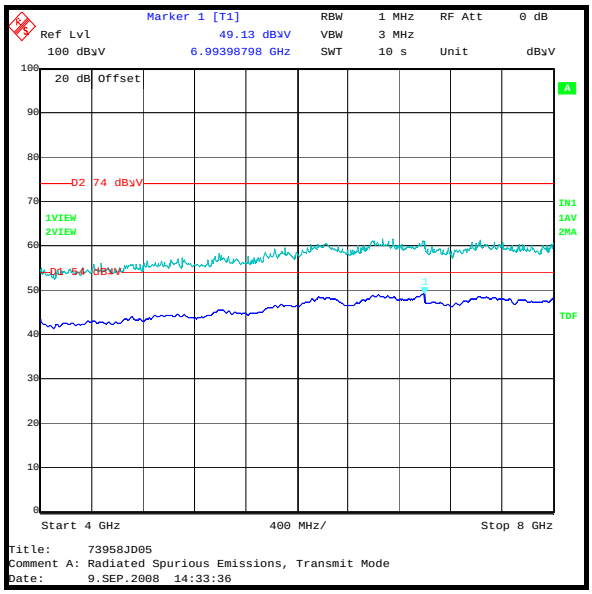
Electric Field Strength Measurements (Frequency Range: 1 GHz to 26.5 GHz)
(Emissions Outside the Restricted Bands)

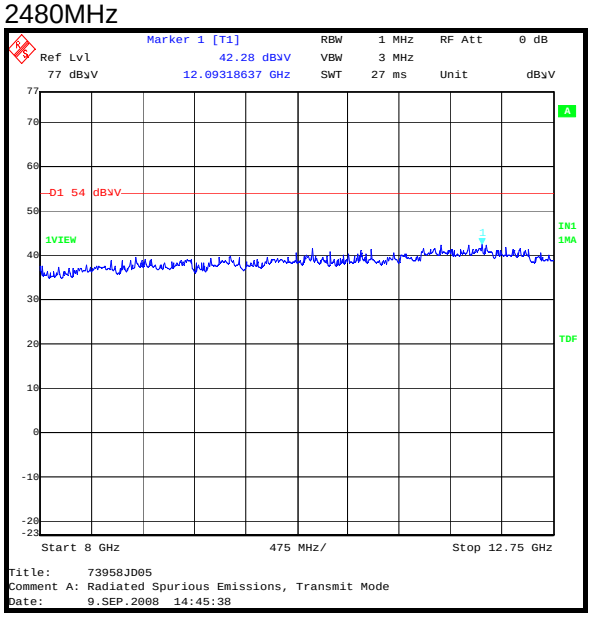
Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	-20 dBc Limit (dBμV/m)	Margin (dB)	Result
No emissions were detected above the noise floor							

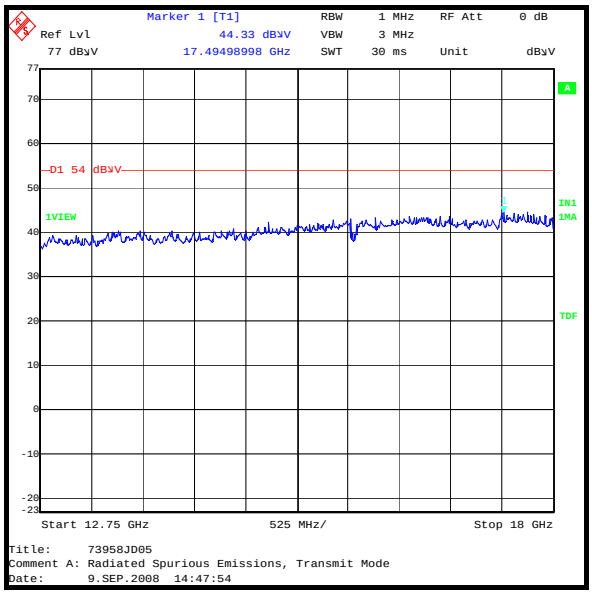
Transmitter Radiated Emissions (Continued)



Note: The carrier can be seen on this plot at 2480MHz

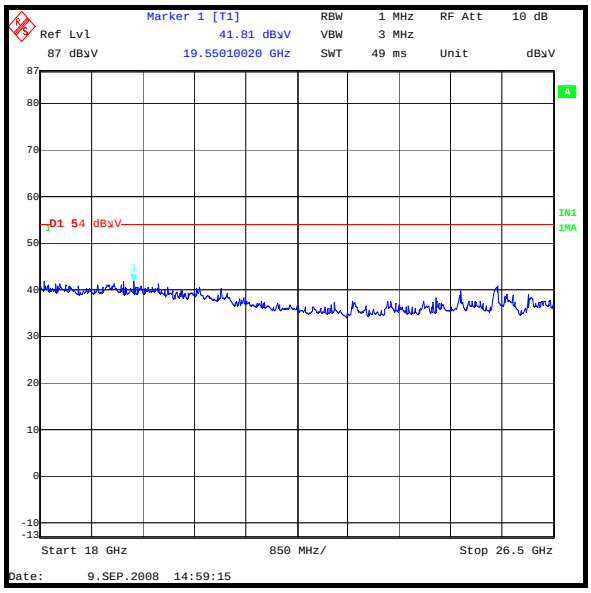






Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Transmitter Radiated Emissions (Continued)



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

7.2.10. Transmitter Band Edge Radiated Emissions

Ambient Temperature: 23ºC Relative Humidity: 48%

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 (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2.4000	Horizontal	53.4	4.1	57.5	*73.6	16.1	Complied
2.4835	Horizontal	59.7	3.6	63.3	74.0	10.7	Complied

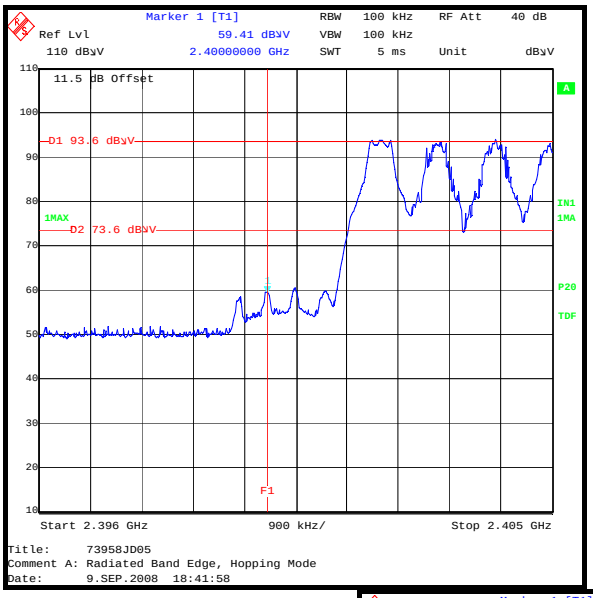
Average Power Level Hopping Mode:

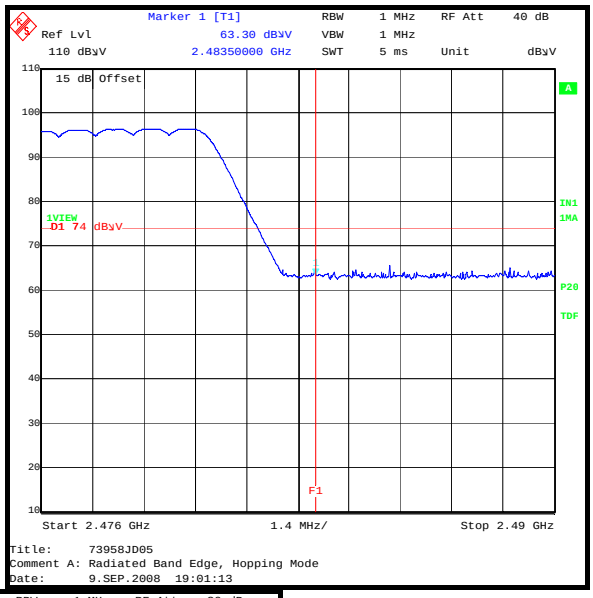
Frequency (MHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2.4835	Horizontal	45.5	3.6	49.1	54.0	4.9	Complied

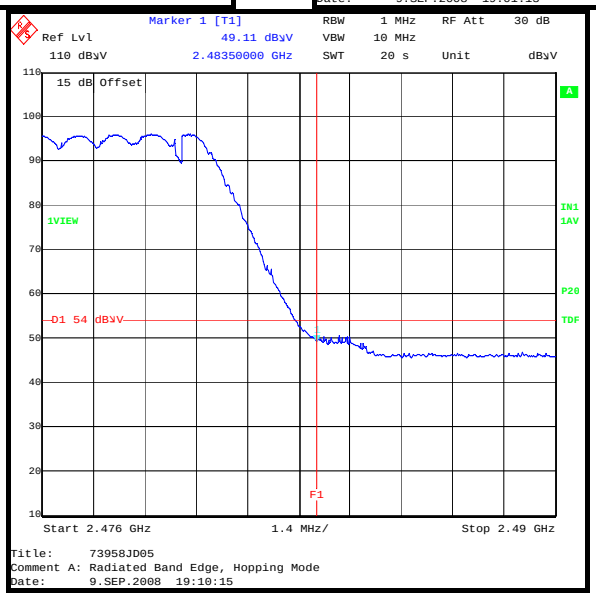
Note(s):

1. * -20 dBc limit

Transmitter Band Edge Radiated Emissions (Continued)







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

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

Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
A1299	Antenna	Schaffner	CBL6143	5094	28 Jul 2008	12
A1818	Antenna	EMCO	3115	00075692	-	12
A436	Antenna	Flann	20240-20	330	24 Apr 2006	36
M1068	Thermometer	Iso-Tech	RS55	93102884	09 Jul 2008	12
M1124	Spectrum Analyser	Rohde & Schwarz	ESIB26	100046K	19 Feb 2008	12
M1149	Bluetooth Test Set	Anritsu	MT8852A	6K00001529	Calibration not required	12
M1229	Digital Multimeter	Fluke	179	87640015	09 May 2008	12
M1242	Spectrum Analyser	Rohde & Schwarz, Inc.	FSEM30	845986/022	29 Nov 2007	12
M1447	CBT	Rohde and Schwarz	1153.9000.35	100329	24 Jan 2008	12
K0002	3m RSE Chamber	Not Applicable	Not Applicable	Not Applicable	26 Aug 2008	12

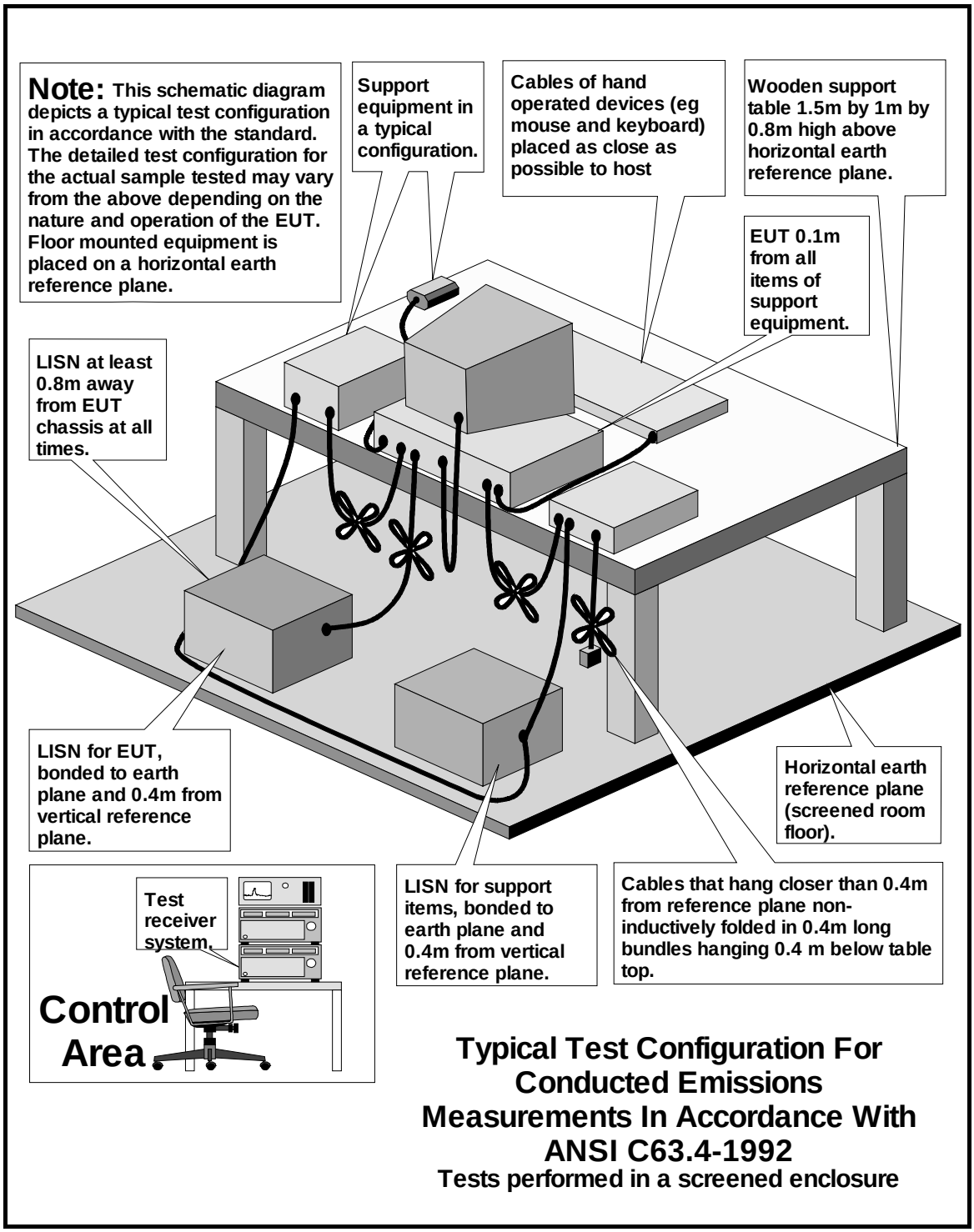
NB In accordance with UKAS requirements, all the measurement equipment is on a calibration schedule.

Appendix 2. Test Configuration Drawings

This appendix contains the following drawings:

Drawing Reference Number	Title
DRG\73958JD05\EMICON	Test configuration for measurement of conducted emissions.
DRG\73958JD05\EMIRAD	Test configuration for measurement of radiated emissions.

DRG\73958JD05\EMICON



DRG\73958JD05\EMIRAD