TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: NTT docomo P-08A

To: FCC Part 15.225: 2008 Subpart C

Test Report Serial No:
RFI/RPT1/RP74716JD03A

This Test Report Is Issued Under The Authority Of Brian Watson, Operations Director: 	
Checked By:	A.HENRIQUES
Signature: 	
Date of Issue:	20 March 2009

This report is issued in Adobe Acrobat portable document format (PDF). It is only a valid copy of the report if it is being viewed in PDF format with the following security options not allowed: Changing the document, Selecting text and graphics, Adding or changing notes and form fields.

RFI Global Services Ltd
Pavilion A, Ashwood Park, Ashwood Way, Basingstoke, Hampshire RG23 8BG
Telephone: +44 (0)1256 312000 Facsimile: +44 (0)1256 312001
Email: info@rfi-global.com Website: www.rfi-global.com

Registered in England and Wales. Company number:2117901

This page has been left intentionally blank.

Table of Contents

1. Customer Information

Company Name:	Panasonic Mobile Communications Development of Europe Ltd
Address:	Panasonic House Willoughby Road Bracknell Berkshire RG12 8FP

2. Summary of Testing

2.1. General Information

Specification Reference:	FCC Part 15.225: 2008 Subpart C
Specification Title:	Code of Federal Regulations, Part 15 (47CFR225) Radio Frequency Devices. Operation within the band 13.110-14.010 MHz
Specification Reference:	FCC Part 15.107 and FCC Part 15.109: 2008 Subpart B
Specification Title:	Code of Federal Regulations (47CFR15) Radio Frequency Devices. Unintentional Radiators
Site Registration:	FCC: 209735
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	26 February 2009 to 03 March 2009

2.2. Summary of Test Results

FCC Reference (CFR 47)	Measurement	Port Type	Result
FCC Part 15: Section 15.107(a)	Receiver AC Conducted Spurious Emissions	AC Mains	✓
FCC Part 15: Section 15.109(a)	Receiver Radiated Spurious Emissions	Enclosure	✓
FCC Part 15: Section 15.225(a)(b)(c)(d)	Transmitter Fundamental Field Strength	Antenna	✓
FCC Part 15: Section 15.209(a) 15.225(d)	Transmitter Radiated Spurious Emissions	Enclosure	✓
FCC Part 15: Section 15.209(a) 15.225(c)(d)	Transmitter Band Edge Radiated Emissions	Antenna	✓
FCC Part 2: Section 2.1049	Transmitter 20 dB Bandwidth	Antenna	✓
FCC Part 15: Section 15.225(e)	Transmitter Frequency Stability (Temperature & Voltage Variation)	Antenna	✓

Key to Results

✓ = Complied ✗ = Did not comply

2.3. Methods and Procedures

Reference:	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.

2.4. Deviations from the Test Specification

For the measurements contained within this test report, there were no deviations from, additions to, or exclusions from the test specification identified above.

3. Equipment Under Test (EUT)

3.1. Identification of Equipment Under Test (EUT)

Brand Name:	NTT docomo
Model Name or Number:	P-08A
IMEI Number:	356754020050086
Hardware Version Number:	Rev C
Software Version Number:	B-WN908D-01.03.001 08-2H_CPF_Cv0A1352A
FCC ID Number:	UCE208015A

Description:	Micro SD memory card
Brand Name:	Not stated
Model Name or Number:	Not stated

Description:	AC charger
Brand Name:	NTT docomo
Model Name or Number:	FOMA AC Adaptor 01 for Global use / MAS-BH0008-A 002

Description:	DC charger
Brand Name:	NTT docomo
Model Name or Number:	FOMA DC Adaptor 02

Description:	Charge/USB data cable
Brand Name:	NTT docomo
Model Name or Number:	FOMA USB Cable with Charge Function 02

Description:	Personal hands-free
Brand Name:	NTT docomo
Model Name or Number:	Stereo Earphone Set 01

Description:	Battery 3.7V 800 mAh
Brand Name:	NTT
Model Name or Number:	P19

3.2. Description of EUT

The equipment under test was a dual mode UMTS/GSM cellular handset with *Bluetooth* and RFID.

3.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.4. Additional Information Related to Testing

Technology Tested:	RFID	
Channel Spacing:	Single channel device	
Transmit Frequency:	13.56 MHz	
Receive Frequency:	13.56 MHz	
Power Supply Requirement(s):	Minimum	3.4 V
	Nominal	3.7 V
	Maximum	4.2 V
Tested Temperature Range (°C):	Minimum	-20
	Maximum	+50

3.5. Support Equipment

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

Description:	Dummy battery
Model Name or Number:	Not stated
Serial Number:	Not stated

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

The EUT was tested in the following operating mode(s):

- Receiver/Idle mode.
- Constantly transmitting at full power with a modulated carrier in RFID test mode.

4.2. Configuration and Peripherals

The EUT was tested in the following configuration(s):

- The RFID transmitter was enabled by fitting a specially configured test USIM into the EUT and using a test mode accessed through the user interface.
- The Micro SD card was installed during all tests.
- Radiated spurious emissions tests were performed with the personal hands-free (PHF) connected to the EUT as this was found to be the worst case during pre-scans. All accessories were individually connected and measurements made during pre-scans to determine the worst case combination.
- As the EUT is not capable of transmitting while charging, no AC Mains Conducted Emissions (150 kHz to 30 MHz) test was performed in transmit mode.
- The dummy battery was fitted during frequency measurement tests. This was connected to a bench power supply and the DC voltage level adjusted and monitored accordingly.

5. Measurements, Examinations and Derived Results

5.1. General Comments

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 6. Measurement Uncertainty* for details.

5.2. Test Results

5.3. Receiver AC Conducted Spurious Emissions

Test Summary:

FCC Part:	15.107(a)
Test Method Used:	As detailed in ANSI C63.4 Section 7 and relevant annexes

Environmental Conditions:

Temperature (°C):	18
Relative Humidity (%):	42

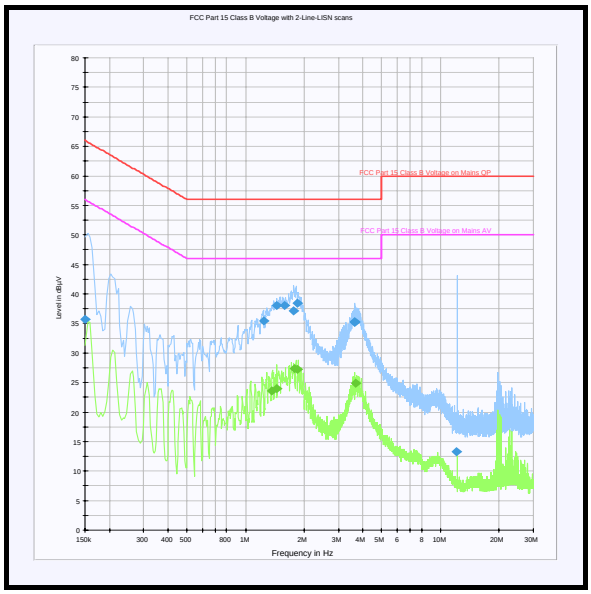
Results: Quasi-Peak Detector Measurements on Live and Neutral Lines

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.1500	Live	35.7	66.0	30.3	Complied
1.2435	Neutral	35.5	56.0	20.5	Complied
1.4370	Neutral	38.1	56.0	17.9	Complied
1.5765	Neutral	38.1	56.0	17.9	Complied
1.7655	Neutral	37.2	56.0	18.8	Complied
1.8375	Neutral	38.5	56.0	17.5	Complied
3.6240	Neutral	35.3	56.0	20.7	Complied
3.6330	Neutral	35.2	56.0	20.8	Complied
12.1155	Live	13.3	60.0	46.7	Complied

Results: Average Detector Measurements on Live and Neutral Lines

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
1.3605	Neutral	23.6	46.0	22.4	Complied
1.4370	Neutral	23.9	46.0	22.1	Complied
1.7745	Neutral	27.4	46.0	18.6	Complied
1.8420	Neutral	27.2	46.0	18.8	Complied
3.6870	Neutral	24.9	46.0	21.1	Complied

AC Conducted Spurious Emissions (continued)



5.4. Receiver Radiated Spurious Emissions

Test Summary:

FCC Part:	15.109(a), 15.225(d)
Test Method Used:	As detailed in ANSI C63.4 Section 8 and relevant annexes
Frequency Range:	9 kHz to 1000 MHz

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	29

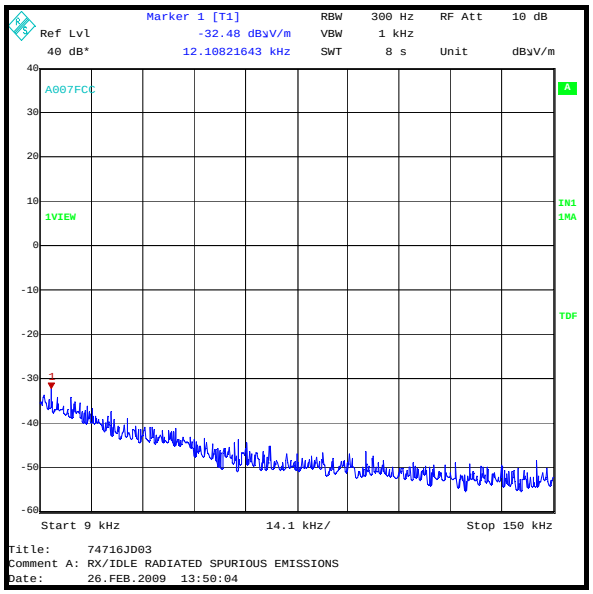
Results:

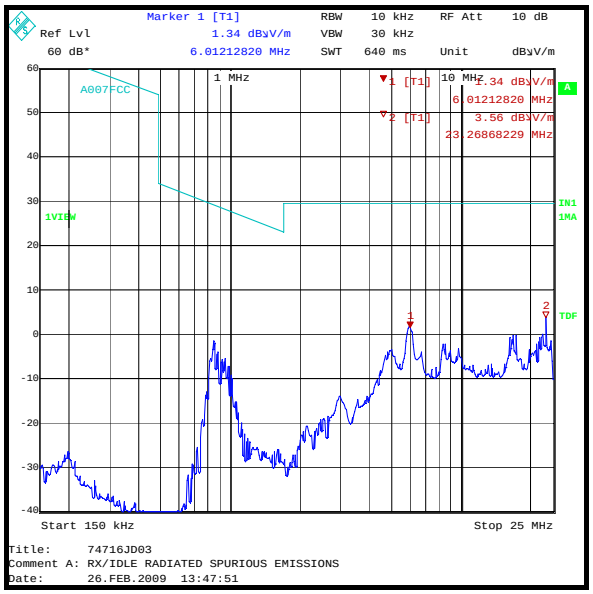
Frequency (MHz)	Antenna Polarity	Peak Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
970.841	Vertical	30.0	54.0	24.0	Complied

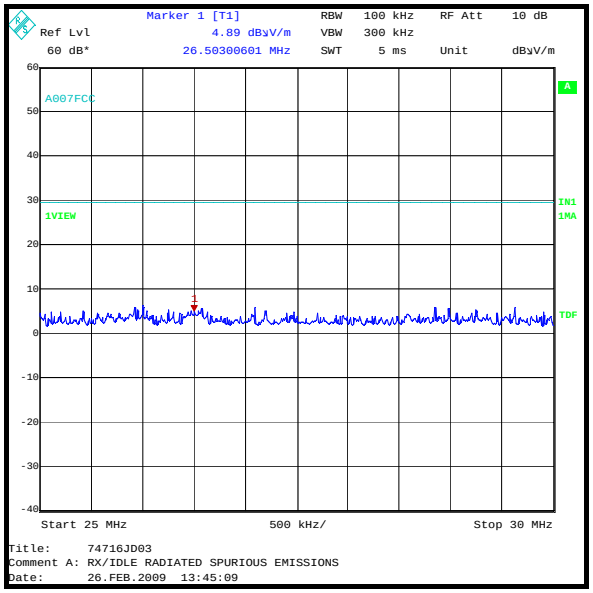
Note(s):

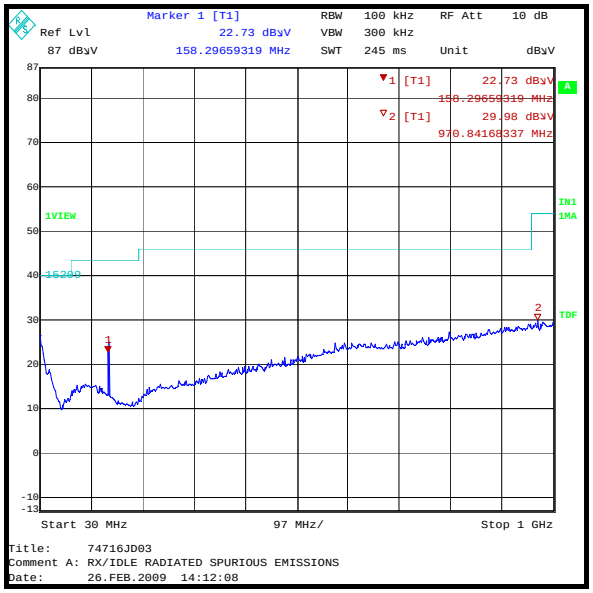
1. Limits below 30 MHz are specified at a test distance of 30 metres, whilst below 0.49 MHz they are specified at a test distance of 300 metres. However, as specified by FCC Section 15.31 (f)(2), measurements may be performed at a closer distance and the measured level corrected to the specified measurement distance by making the measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor.
2. A transducer factor on the measuring instrument was used to extrapolate the results at 3 metres to a distance of 30 metres where required.
3. The emission at approximately 158.2 MHz was investigated and found to be ambient and still present with the EUT removed from the test chamber. No other emissions were observed, therefore the highest level of the noise floor was recorded.

Radiated Spurious Emissions (continued)









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

5.5. Transmitter Fundamental Field Strength

Test Summary:

FCC Part:	15.225(a)(b)(c)(d)
Test Method Used:	As detailed in ANSI C63.4 Section 8 and relevant annexes

Environmental Conditions:

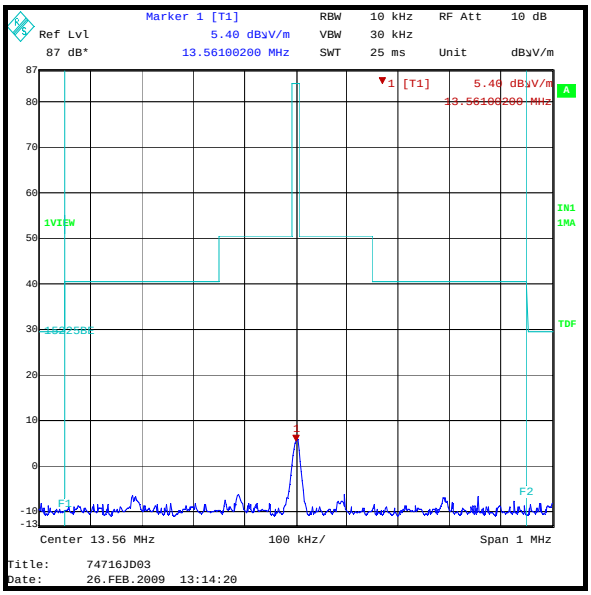
Temperature (°C):	24
Relative Humidity (%):	29

Results: Battery Powered Devices

Frequency (MHz)	Antenna Polarity	Quasi Peak Level (dBµV/m)	Limit at 30 m (dBµV/m)	Margin (dBm)	Result
13.56	90˚ to EUT	5.4	84.0	78.6	Complied

Note(s):

1. Measurements were performed at 3 metres and results extrapolated to 30 metres.
2. The limit is specified at a test distance of 30 metres. However, as specified by FCC Section 15.31 (f)(2), measurements may be performed at a closer distance and the measured level corrected to the specified measurement distance by making the measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor.



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

5.6. Transmitter Radiated Spurious Emissions

Test Summary:

FCC Part:	15.209(a), 15.225(d)
Test Method Used:	As detailed in ANSI C63.4 Section 8 and relevant annexes
Frequency Range:	9 kHz to 1000 MHz

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	29

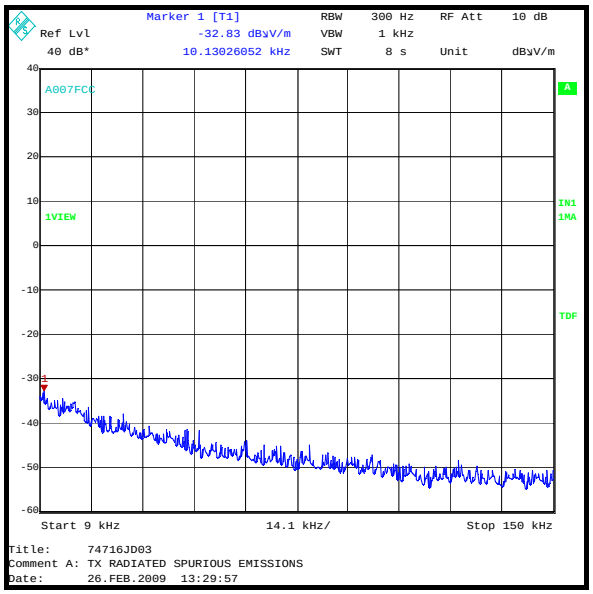
Results:

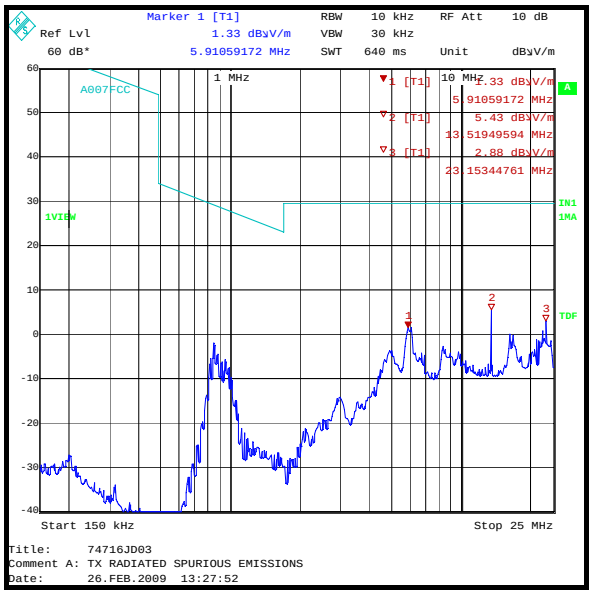
Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
176.288	Horizontal	32.3	43.5	11.2	Complied
238.546	Horizontal	16.3	46.0	29.7	Complied
501.753	Vertical	23.8	46.0	22.2	Complied

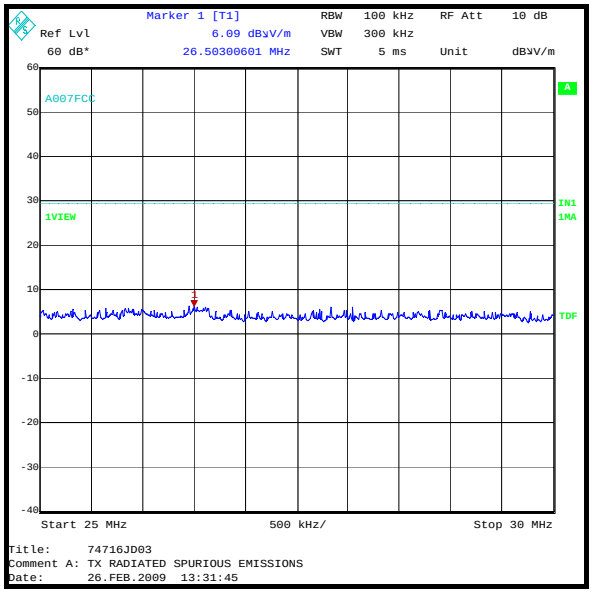
Note(s):

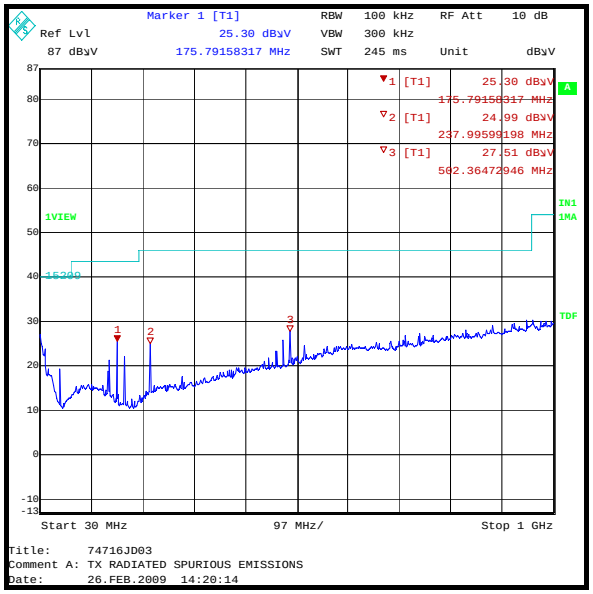
1. Limits below 30 MHz are specified at a test distance of 30 metres, whilst below 0.49 MHz they are specified at a test distance of 300 metres. However, as specified by FCC Section 15.31 (f)(2), measurements may be performed at a closer distance and the measured level corrected to the specified measurement distance by making the measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor.
2. A transducer factor on the measuring instrument was used to extrapolate the results at 3 metres to a distance of 30 metres where required.
3. The emission shown at approximately 13.5 MHz is the fundamental.

Radiated Spurious Emissions (continued)









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

5.7. Transmitter Radiated Emissions at Band Edges

Test Summary:

FCC Part:	15.209(a), 15.225(c)(d)
Test Method Used:	As detailed in ANSI C63.4 Section 8 and relevant annexes

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	29

Results: Lower Band Edge

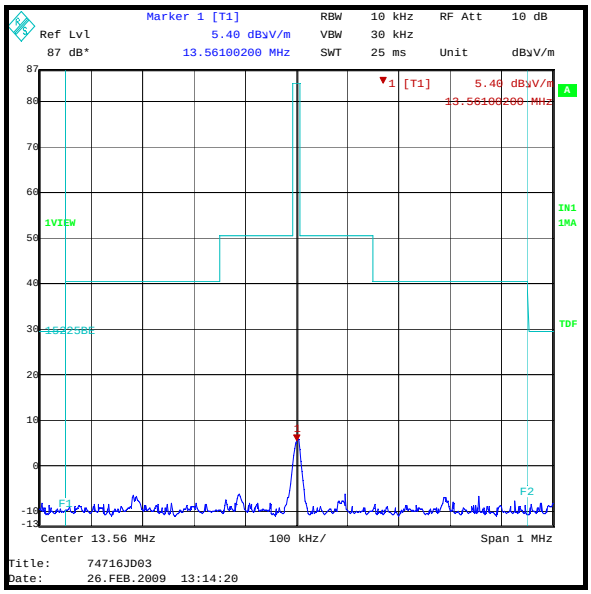
Frequency (MHz)	Quasi Peak Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
13.11	-10.0	40.5	50.5	Complied

Results: Upper Band Edge

Frequency (MHz)	Quasi Peak Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
14.01	-10.8	40.5	51.3	Complied

Note(s):

1. Measurements were performed at 3 metres and results extrapolated to 30 metres.
2. A transducer factor on the measuring instrument was used to extrapolate the results at 3 metres to a distance of 30 metres where required.



5.8. Transmitter 20 dB Bandwidth

Test Summary:

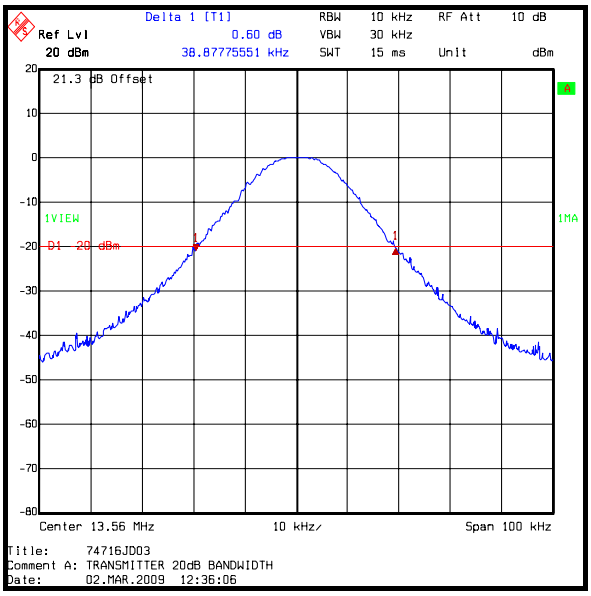
FCC Part:	2.1049
Test Method Used:	As detailed in ANSI C63.4 Section 13.1.7 and relevant annexes

Environmental Conditions:

Temperature (°C):	21
Relative Humidity (%):	29

Results:

Transmitter 20 dB Bandwidth (kHz)
38.88



5.9. Transmitter Frequency Stability (Temperature & Voltage Variation)

Test Summary:

FCC Part:	15.225(e)
Test Method Used:	As detailed in ANSI C63.4 Section 13.1.6 and relevant annexes

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	27

Results: Maximum frequency error of the EUT with variations in ambient temperature

Temp (°C)	Nominal Frequency	Measured Frequency	Frequency Error (Hz)	Frequency Error (%)	Limit (%)	Margin (%)	Result
-20	13.56	13.559980	20	0.000147	0.01	0.009853	Complied
20	13.56	13.559979	21	0.000155	0.01	0.009845	Complied
50	13.56	13.559945	55	0.000406	0.01	0.009594	Complied

Results: Maximum frequency error of the EUT with variations in nominal operating voltage at an ambient temperature of 20°C

Supply Voltage (V)	Nominal Frequency	Measured Frequency	Frequency Error (Hz)	Frequency Error (%)	Limit (%)	Margin (%)	Result
3.4	13.56	13.559985	15	0.000110	0.01	0.009889	Complied
3.7	13.56	13.559979	21	0.000155	0.01	0.009845	Complied
4.2	13.56	13.560005	5	0.000037	0.01	0.009963	Complied

6. 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
Occupied Bandwidth	13 MHz to 14 MHz	95%	±0.12 %
Frequency Stability	13 MHz to 14 MHz	95%	±11.37 ppm
Radiated Spurious Emissions	9 kHz to 30 MHz	95%	±3.53 dB
Radiated Spurious Emissions	30 MHz to 1000 MHz	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)
A004	LISN	Rohde & Schwarz	ESH3-Z5	890604/027	19 May 2008	12
A007	Antenna	Rohde & Schwarz	HFH2-Z2	880 458/020	28 Mar 2008	12
A1830	Pulse Limiter	Rhode & Schwarz	ESH3-Z2	100668	05 Jan 2009	12
A259	Antenna	Chase	CBL6111	1513	25 Jul 2008	12
E013	Environmental Chamber	Sanyo	ATMOS chamber	None	Calibrated before use	-
K0001	5m SA Chamber	Rainford EMC	N/A	N/A	13 Aug 2008	12
M1068	Thermometer	Iso-Tech	RS55	93102884	09 Jul 2008	12
M1269	Multimeter	Fluke	179	90250210	09 Apr 2008	12
M127	Spectrum Analyser	Rohde & Schwarz	FSEB30	842 659/016	21 Aug 2008	12
M1273	Test Receiver	Rhode & Schwarz	ESIB26	100275	26 Mar 2008	12
M1379	Test Receiver	Rohde & Schwarz	ESIB7	100330	14 Aug 2008	12
S0520	DC Power Supply Unit	GW instek	GPC-3030	E835141	Calibrated before use	-

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