TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: NTT docomo P-04A

To: FCC Part 15.225: 2008 (Subpart C)

Test Report Serial No:
RFI/RPT1/RP74358JD07A

This Test Report Is Issued Under The Authority Of Brian Watson, Operations Director: 	
Checked By: 	**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 Comms Dev of Europe Ltd
Address:	Panasonic House Willoughby Road Bracknell Berkshire RG12 8FP

2. Equipment Under Test (EUT)

2.1. Identification of Equipment Under Test (EUT)

Brand Name:	NTT docomo
Model Name or Number:	P-04A
IMEI Number:	353705020030067
Hardware Version Num:	Rev D
Software Version:	B-WN707F-03.01.006 08-2H_CPF_Cv031351E_deflate
FCC ID Number:	UCE208013A

Description:	128 MB Micro-SD Memory Card
Brand Name:	Not marked
Model Name or Number:	128MB MicroSD
Connected to Port:	Dedicated micro-SD card port

Description:	AC charger
Brand Name:	NTT docomo
Model Name or Number:	FOMA AC Adapter 01 for Global use / MAS-BH0008-A 002
Connected to Port:	Audio/Charge/Data port

Description:	DC charger
Brand Name:	NTT docomo
Model Name or Number:	FOMA DC Adapter 02
Connected to Port:	Audio/Charge/Data port

Description:	Personal Hands-Free
Brand Name:	NTT docomo
Model Name or Number:	Stereo Earphone Set 01
Connected to Port:	Audio/Charge/Data port

Description:	Charge/USB Data cable
Brand Name:	NTT docomo
Model Name or Number:	FOMA USB Cable with Charge Function 02
Connected to Port:	Audio/Charge/Data port

2.2. Description of EUT

The equipment under test was dual mode UMTS/GSM cellular handset with RFID

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:	Dummy battery
Model Name or Number:	Panasonic
Serial Number:	Dummy battery P-04A No.4
Cable Length and Type:	0.25 metre / 2 x single core
Connected to Port:	Battery

2.5. Additional Information Related to Testing

Power Supply Requirement:	V-Nom	3.7V	V-Min	3.4V	V-Max	4.2V
Tested Temperature Range:	T-Min	-20°C		T-Max	+55°C	
Channel Spacing:	Single channel device					
Tested Technology:	RFID					
Transmit Frequency:	13.56 MHz					
Receive Frequency:	13.56 MHz					

3. Test Specification, Methods and Procedures

3.1. Test Specifications

Reference:	FCC Part 15.225: 2008 Subpart C
Title:	Code of Federal Regulations, Part 15 (47CFR225)

Reference:	FCC Part 15.107 & FCC Part 15.109: 2008 Subpart B
Title:	Code of Federal Regulations (47CFR15) (Unintentional Radiators)

3.2. Methods and Procedures

The methods and procedures used were as detailed in:

ANSI/TIA-603-B-2003
Land Mobile Communications Equipment, Measurements and performance Standards

ANSI C63.2 (1987)
Title: American National Standard for Instrumentation - Electromagnetic noise and field strength.

ANSI C63.4 (2001)
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.

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 of the EUT During Testing

5.1. Operating Modes

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

- Receive/Idle Mode
- Constantly transmitting at full power with a modulated carrier

5.2. Configuration and Peripherals

The EUT was tested in the following configuration:

- A test USIM was fitted to the EUT for all tests. The test USIM was fitted in order to place the EUT into RFID test mode in accordance with the Client's instructions.
- The Micro SD card was present in the EUT during all tests.
- Receiver/idle radiated spurious emissions tests were performed with the mains charger connected to the EUT and 120VAC supply as this was found to be the worst case during prescans. All accessories were individually connected and measurements made during prescans 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.
- Transmitter radiated spurious emissions tests prescans were performed with and without the accessories. The highest emission levels were recorded without any accessories fitted to the accessory connector and the final measurements were performed in this configuration.

6. Summary of Test Results

Range of Measurements	Specification Reference	Port Type	Compliancy Status
Receiver/Idle Mode AC Conducted Emissions (150 kHz to 30 MHz)	C.F.R. 47 FCC Part 15: Section 15.107(a)	AC Mains	Complied
Receiver/Idle Mode Radiated Spurious Emissions	C.F.R. 47 FCC Part 15: Section 15.109 (a), 15.225(d)	Enclosure	Complied
Transmitter Fundamental Field Strength	C.F.R. 47 FCC Part 15: Section 15.225(a)(b)(c)(d)	Antenna	Complied
Transmitter Radiated Spurious Emissions	C.F.R. 47 FCC Part 15: Section 15.209(a), 15.225(d)	Enclosure	Complied
Transmitter Band Edge Radiated Emissions	C.F.R. 47 FCC Part 15: Section 15.209(a) 15.225(c)(d)	Antenna	Complied
Transmitter 20 dB Bandwidth	C.F.R. 47 FCC Part 2: Section 2.1049	Antenna	Complied
Transmitter Frequency Stability (Temperature & Voltage Variation)	C.F.R. 47 FCC Part 15: Section 15.225(e)	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 Numbers

FCC: 209735
IC: 3245C-1

7. Measurements, Examinations and Derived Results

7.1. General Comments

7.1.1. This section contains test results only.

7.1.2. 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. Receiver/Idle Mode AC Mains Conducted Emissions: Section 15.107(a)

Ambient Temperature: 22 ºC Relative Humidity: 37 %

Results:

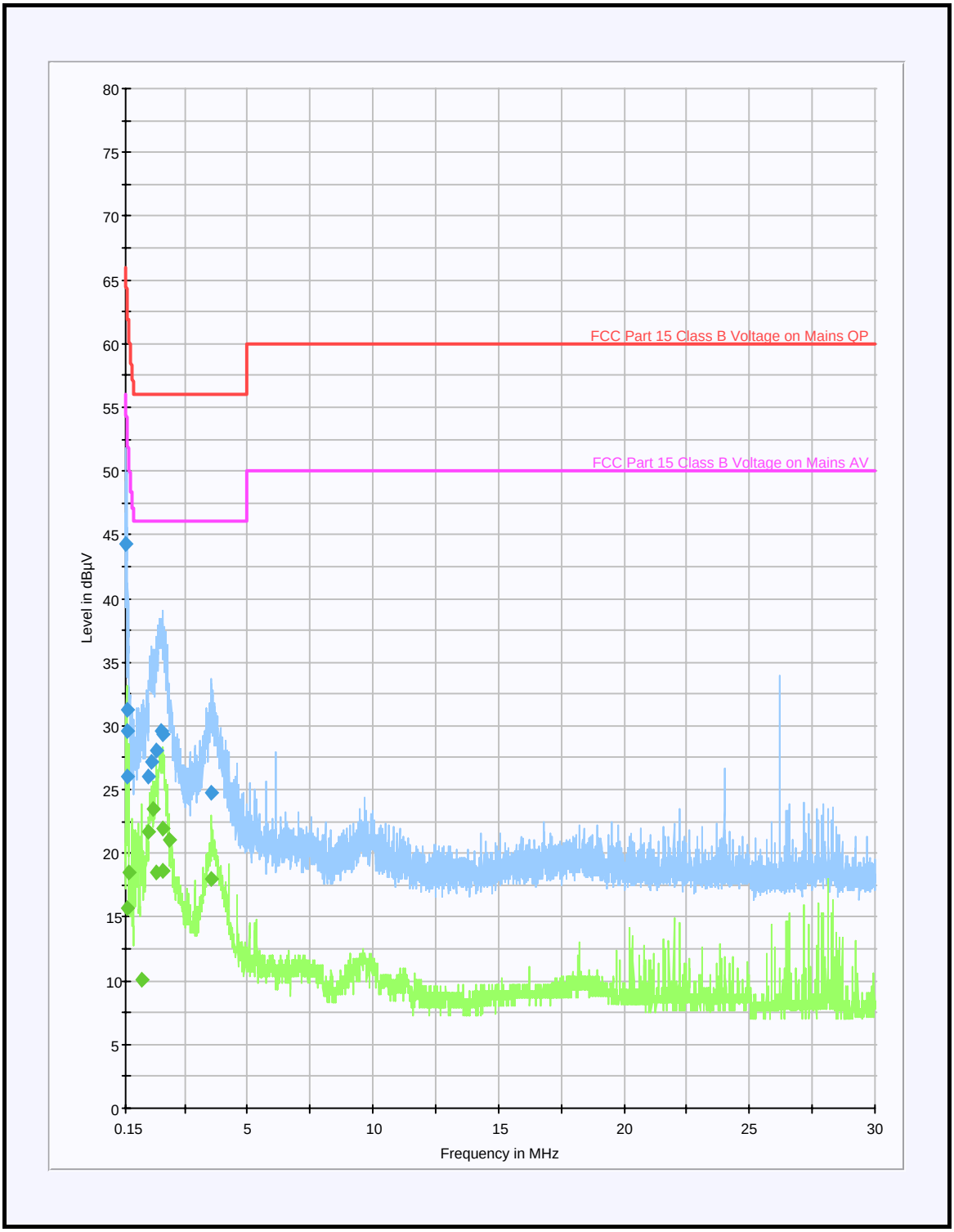
Quasi-Peak Detector Measurements on Live and Neutral Lines

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.150000	Neutral	44.3	66.0	21.7	Complied
0.186000	Neutral	29.5	64.2	34.7	Complied
0.208500	Neutral	26.0	63.3	37.3	Complied
0.244500	Neutral	31.2	61.9	30.7	Complied
1.081500	Live	26.0	56.0	30.0	Complied
1.167000	Live	27.2	56.0	28.8	Complied
1.369500	Live	28.1	56.0	27.9	Complied
1.554000	Live	29.7	56.0	26.3	Complied
1.648500	Live	29.3	56.0	26.7	Complied
3.574500	Neutral	24.8	56.0	31.2	Complied

Average Detector Measurements on Live and Neutral Lines

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.186000	Neutral	15.7	54.2	38.5	Complied
0.271500	Neutral	18.5	51.1	32.6	Complied
0.811500	Live	10.0	46.0	36.0	Complied
1.081500	Live	21.7	46.0	24.3	Complied
1.216500	Live	23.5	46.0	22.5	Complied
1.351500	Neutral	18.4	46.0	27.6	Complied
1.599000	Live	18.7	46.0	27.3	Complied
1.648500	Neutral	22.0	46.0	24.0	Complied
1.860000	Live	21.0	46.0	25.0	Complied
3.579000	Neutral	18.0	46.0	28.0	Complied

Receiver/Idle Mode AC Mains Conducted Emissions (Continued)



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

7.3. Receiver/Idle Mode Radiated Emissions: Section 15.109(a), 15.225(d)

Ambient Temperature: 29 ºC to 21 ºC Relative Humidity: 23 % to 32 %

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

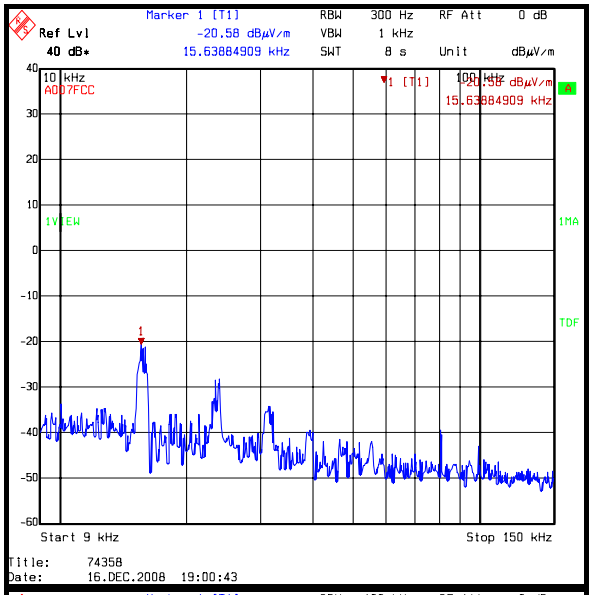
Results:

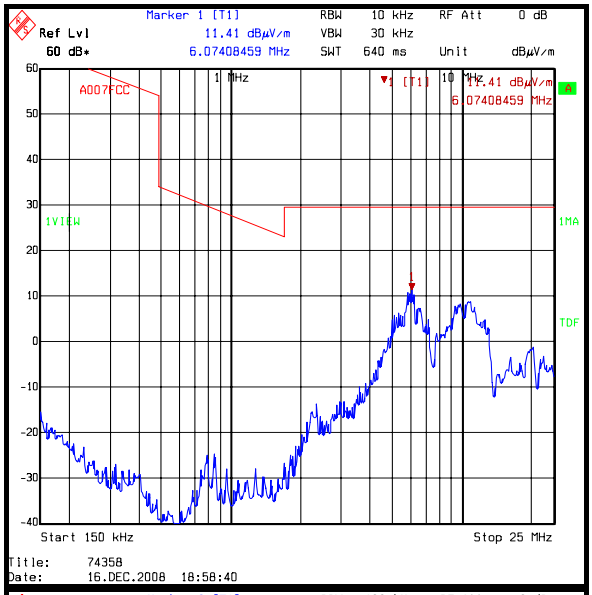
Frequency (MHz)	Antenna Polarity	Q-P Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
943.627	Horizontal	30.6	46.0	15.4	Complied

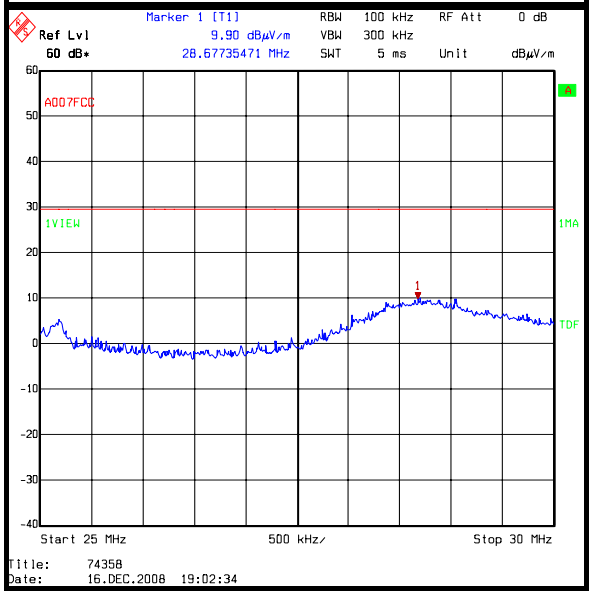
Note(s):

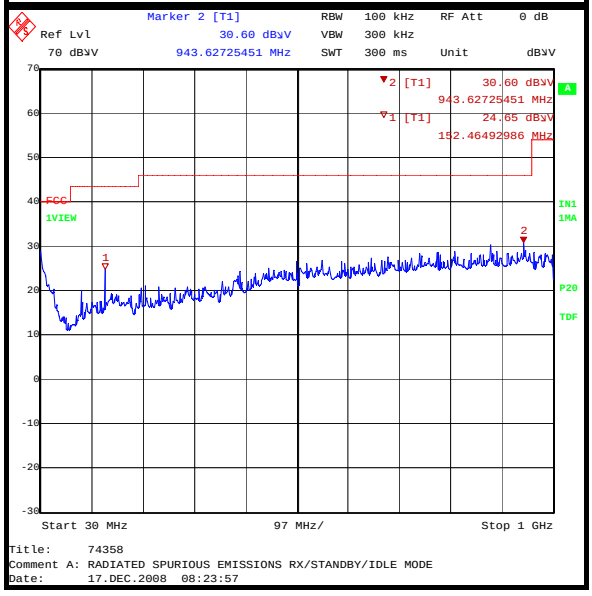
1. A transducer factor on the measuring instrument was used to extrapolate the results at 3 metres to a distance of 30 metres where required.
2. All emissions shown on the 30 MHz to 1000 MHz plots were investigated and found to be ambient emissions. The highest level of the noise floor was recorded.

Receiver/Idle Mode Radiated Emissions (Continued)









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

7.3.2. Transmitter Fundamental Field Strength: Section 15.225 (a)(b)(c)(d)

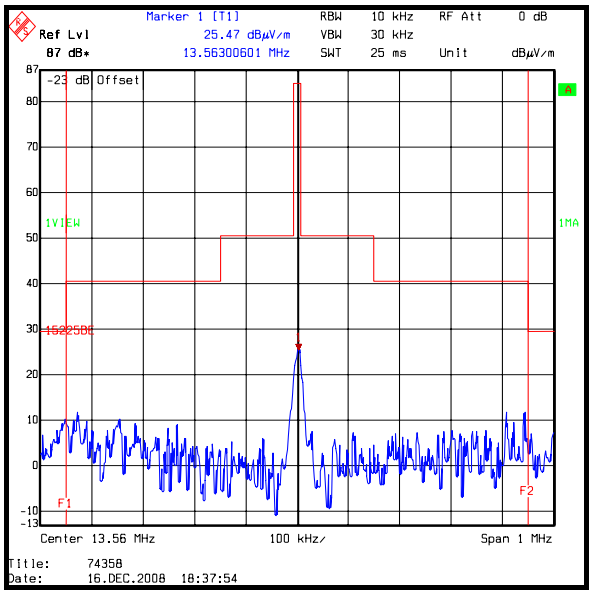
Ambient Temperature: 30 ºC Relative Humidity: 24 %

Results:

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. An offset of -23 dB was set on the measurement equipment to compensate for a previously measured extrapolation factor between 30 metres and 3 metres.

Battery Powered Devices

Frequency (MHz)	Antenna Polarity	Q-P Level (dBµV/m)	Limit at 30 metres (dBµV/m)	Margin (dB)	Result
13.56	90˚ to EUT	25.5	84.0	58.5	Complied



7.3.3. Transmitter Radiated Spurious Emissions: Section 15.209 (a), 15.225(d)

Ambient Temperature: 29 ºC to 21 ºC Relative Humidity: 23 % to 32 %

7.3.4. Electric Field Strength Measurements (Frequency Range: 9 kHz to 1000 MHz)

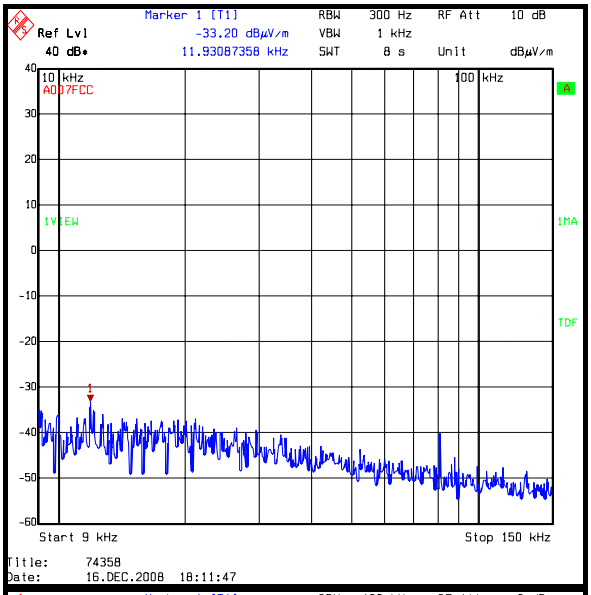
Results:

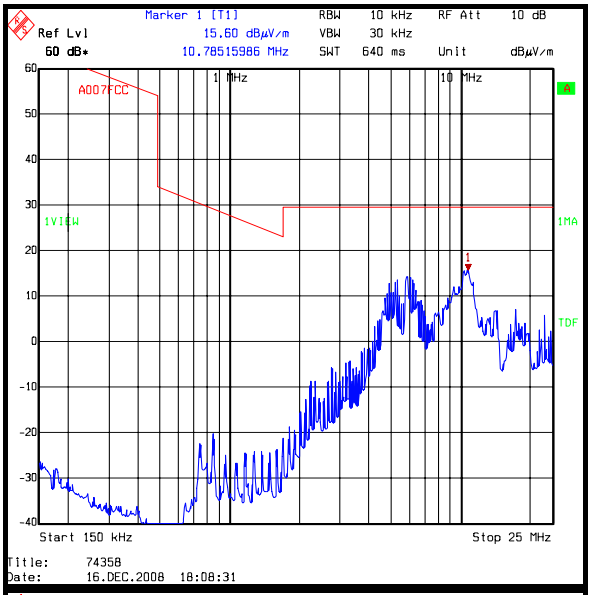
Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
447.470	Horizontal	38.9	46.0	7.1	Complied
488.138	Horizontal	39.8	46.0	6.2	Complied

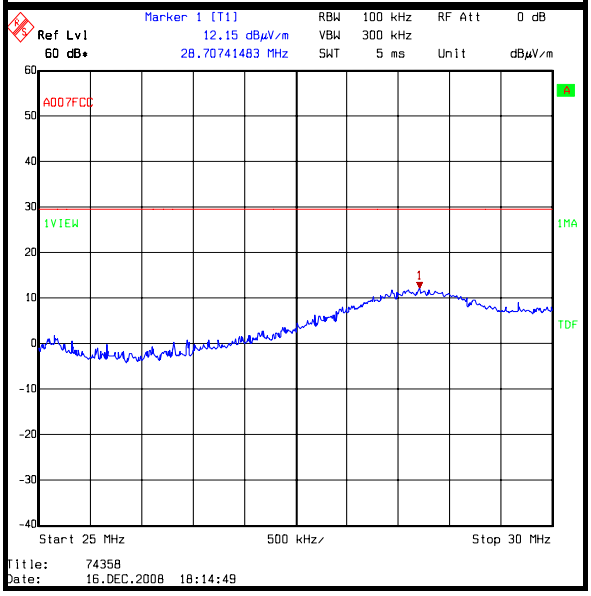
Note(s):

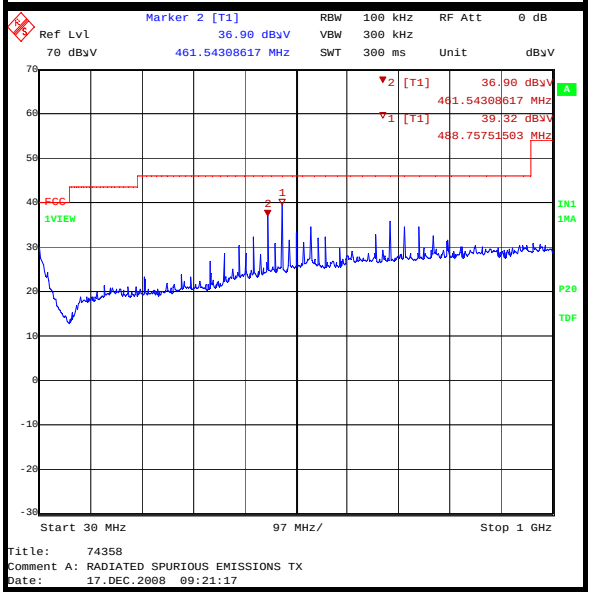
1. A transducer factor on the measuring instrument was used to extrapolate the results at 3 metres to a distance of 30 metres where required.
2. All other emissions were investigated and found to be at least 20 dB below the specified limit.

Transmitter Radiated Spurious Emissions (Continued)









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

7.3.5. Transmitter Radiated Emissions at Band Edges: Section 15.209(a) 15.225(c)(d)

Ambient Temperature: 30 ºC Relative Humidity: 24 %

Results:

Lower Band Edge

Frequency (MHz)	Q-P Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
13.11	9.2	40.5	31.3	Complied

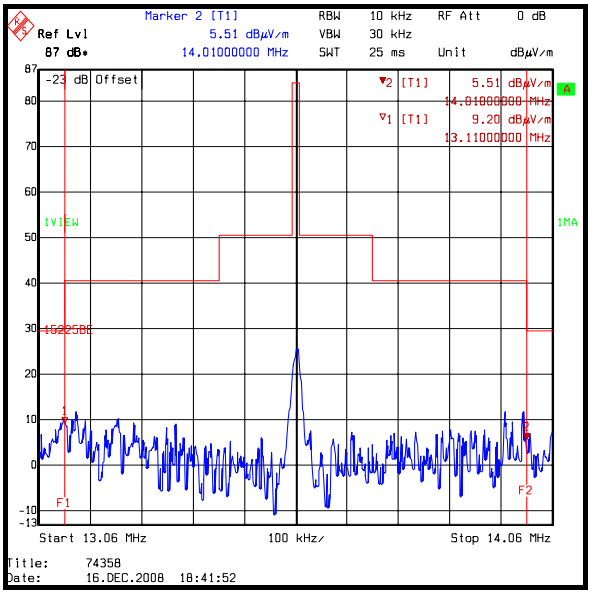
Uppper Band Edge

Frequency (MHz)	Q-P Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
14.01	5.5	40.5	35.0	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.

Transmitter Radiated Emissions at Band Edges (Continued)

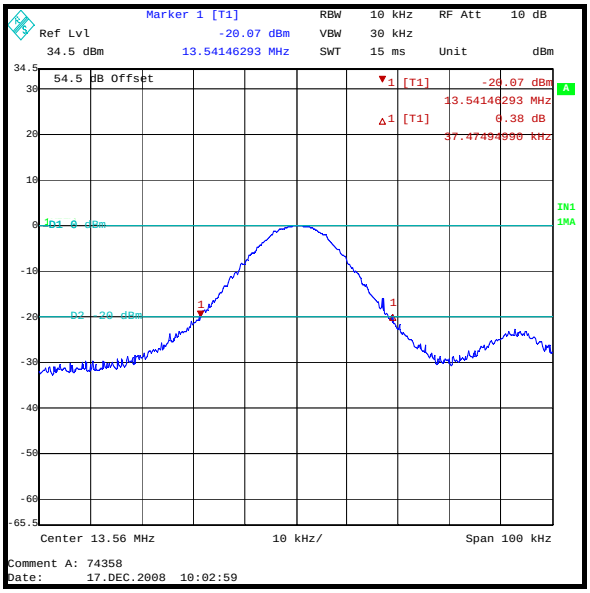


Note: This plot is a pre-scan and for indication purposes only. For final measurements, see accompanying tables.

7.3.6.Transmitter 20 dB Bandwidth: Section 2.1049

Ambient Temperature: 23 ºC Relative Humidity: 25 %

Transmitter 20 dB Bandwidth (kHz)
37.47



7.3.7. Transmitter Frequency Stability (Temperature & Voltage Variation): Section 15.225 (e)

Ambient Temperature: 23 ºC Relative Humidity: 25 %

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	13.560010	10	0.000074	0.01	0.009926	Complied
20	13.56	13.560030	30	0.000221	0.01	0.009779	Complied
50	13.56	13.559990	10	0.000074	0.01	0.009926	Complied

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	13.560010	10	0.000074	0.01	0.009926	Complied
3.7	13.56	13.560030	30	0.000221	0.01	0.009779	Complied
4.2	13.56	13.559969	31	0.000229	0.01	0.009771	Complied

8. Measurement Uncertainty

8.1. 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.

8.2. The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

8.3. The uncertainty of the result may need to be taken into account when interpreting the measurement results.

8.4. 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	N/A	95%	±0.12 %
Frequency Stability	N/A	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%	±5.26 dB

8.5. 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
A004	Line Impedance Stabilization Network	Rohde & Schwarz	ESH3-Z5	890604/027	19 May 2008	12
A007	Antenna	Rohde & Schwarz	HFH2-Z2	880 458/020	28 Feb 2008	12
A1299	Antenna	Schaffner	CBL6143	5094	28 Jul 2008	12
A1792	Pre Amplifier	A.H.Systems Inc	PAM-0118	182	28 Nov 2008	12
E013	Environmental Chamber	Sanyo	ATMOS chamber	None	Calibration before use	12
K0001	Site Reference 4420	Rainford EMC	N/A	N/A	13 Aug 2008	12
K0002	Site Reference 4421	Rainford EMC	N/A	N/A	26 Aug 2008	12
M1068	Thermometer	Iso-Tech	RS55	93102884	09 Jul 2008	12
M1124	Spectrum Analyser	Rohde & Schwarz	ESIB26	100046K	19 Feb 2008	12
M1229	Digital Multimeter	Fluke	179	87640015	09 May 2008	12
M1263	Test Receiver	Rohde & Schwarz	ESIB7	100265	06 Feb 2008	12
M127	Spectrum Analyser	Rohde & Schwarz	FSEB 30	842 659/016	21 Aug 2008	12
M1379	Test Receiver	Rohde and Schwarz	ESIB7	100330	14 Aug 2008	12
S0520	DC Power Supply Unit	GW instek	GPC-3030	E835141	Calibrated before use	12

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