TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: P-05B

To: FCC Part 15.225: 2009 Subpart C

Test Report Serial No:
RFI-RPT-RP77278JD03A_V2.0

Version 2.0 supersedes all previous versions

This Test Report Is Issued Under The Authority Of Brian Watson, COO Payments and Consultancy:	pp R. Graham
Checked By:	R. Graham
Signature:	R. Graham
Date of Issue:	10 May 2010

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1. Customer Information

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

2. Summary of Testing

2.1. General Information

Specification Reference:	47CFR15.225
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2009: Part 15 Subpart C (Radio Frequency Devices) - Section 15.225
Specification Reference:	47CFR15.107 and 47CFR15.109
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2009: Part 15 Subpart B (Radio Frequency Devices) - Sections 15.107 and 15.109
Site Registration:	FCC: 209735
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	14 April 2010 to 19 April 2010

2.2. Summary of Test Results

FCC Reference (47CFR)	Measurement	Result
Part 15.107	Receiver / Idle Mode AC Conducted Spurious Emissions	✓
Part 15.109(a), 15.225(d)	Receiver / Idle Mode Radiated Spurious Emissions	✓
Part 15.225(a)(b)(c)(d)	Transmitter Fundamental Field Strength	✓
Part 15.209(a), 15.225(d)	Transmitter Radiated Spurious Emissions	✓
Part 15.209(a), 15.225(c)(d)	Transmitter Band Edge Radiated Emissions	✓
Part 2.1049	Transmitter 20 dB Bandwidth	✓
Part 15.225(e)	Transmitter Frequency Stability (Temperature & Voltage Variation)	✓

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.
Reference:	ANSI C63.10 (2009)
Title:	American National Standard Methods for Testing Unlicensed Wireless Devices.

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)

Description:	UMTS Band V Handset with RFID
Brand Name:	NTT docomo
Model Name or Number:	P-05B
IMEI	358863030008097
Hardware Version Number:	Rev C
Software Version Number:	B-D01CS1-01.01.001 D01CS1_Cv58032203
FCC ID Number:	UCE210026A

Description:	Battery
Brand Name:	NTT
Model Name or Number:	P21

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

Description:	DC Charger
Brand Name:	NTT docomo
Model Name or Number:	FOMA DC Adapter 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 (EB-M70090)

3.2. Description of EUT

The equipment under test was a UMTS Band V handset with RFID.

3.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.4. Additional Information Related to Testing

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

3.5. Support Equipment

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

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

Description:	USB HUB
Brand Name:	Buffalo
Model Name or Number:	BSH3U01

Description:	RFID Test SIM #3 (W-CDMA/GSM)
Brand Name:	ANRITSU
Model Name or Number:	V300-00398

Description:	Dummy Battery
Brand Name:	Not Stated
Model Name or 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):

- Idle/Standby mode
- Transmitter mode: constantly transmitting at full power with a modulated carrier in RFID mode.

4.2. Configuration and Peripherals

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

- The RFID transmitter test mode was enabled by fitting a special test USIM into the EUT and selecting the test mode from a menu in the User Interface.
- Radiated spurious emissions tests were performed with the USB cable connected to the EUT as this was found to be the worst case during pre-scans. The USB cable was terminated into a USB hub supplied by the Client. All accessories were individually connected and measurements made during pre-scans to determine the worst case combination.
- The Client stated that the EUT is not able to transmit while charging. Therefore AC Mains Conducted emissions were performed in idle mode only.
- The dummy battery was fitted during frequency stability 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

5.2.1. Receiver/Idle Mode AC Conducted Spurious Emissions

Test Summary:

FCC Part:	15.107(a)
Test Method Used:	ANSI C63.10 Section 6.2

Environmental Conditions:

Temperature Range (°C):	26
Relative Humidity Range (%):	25

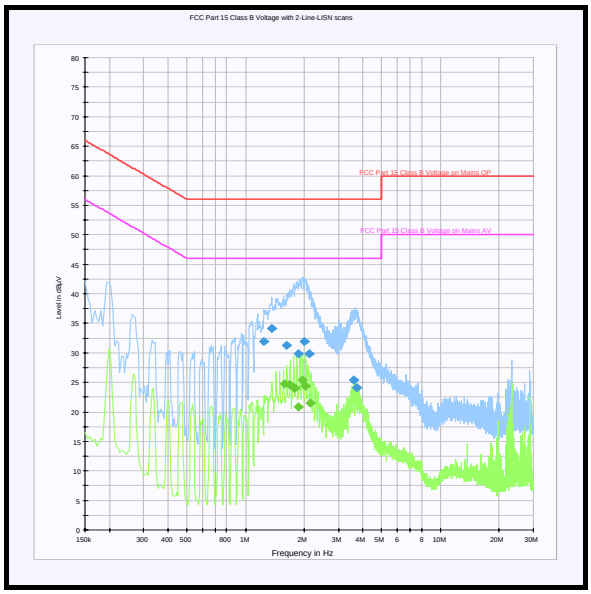
Results: Quasi Peak Detector Measurements

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
1.234500	Live 1	31.9	56.0	24.1	Complied
1.360500	Live 1	34.1	56.0	21.9	Complied
1.621500	Neutral	31.2	56.0	24.8	Complied
1.855500	Neutral	29.8	56.0	26.2	Complied
1.995000	Live 1	31.9	56.0	24.1	Complied
2.125500	Live 1	29.8	56.0	26.2	Complied
3.592500	Live 1	25.4	56.0	30.6	Complied
3.700500	Live 1	24.2	56.0	31.8	Complied

Results: Average Detector Measurements

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
1.581000	Neutral	24.8	46.0	21.2	Complied
1.675500	Neutral	24.6	46.0	21.4	Complied
1.783500	Neutral	24.1	46.0	21.9	Complied
1.788000	Neutral	23.9	46.0	22.1	Complied
1.873500	Neutral	20.8	46.0	25.2	Complied
1.954500	Live 1	25.5	46.0	20.5	Complied
2.022000	Live 1	24.4	46.0	21.6	Complied
2.157000	Live 1	21.5	46.0	24.5	Complied

Receiver/Idle Mode AC Conducted Spurious Emissions (continued)



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

5.2.2. Receiver/Idle Mode Radiated Spurious Emissions

Test Summary:

FCC Part:	15.109(a), 15.225(d)
Test Method Used:	ANSI C63.10 Section 6.4 and 6.5
Frequency Range:	9 KHz to 1000 MHz

Environmental Conditions:

Temperature Range (°C):	26
Relative Humidity Range (%):	20

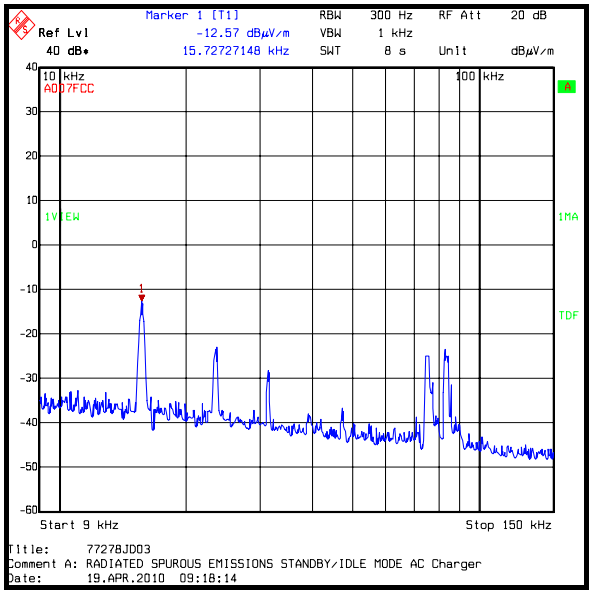
Results: Quasi Peak Detector Measurements

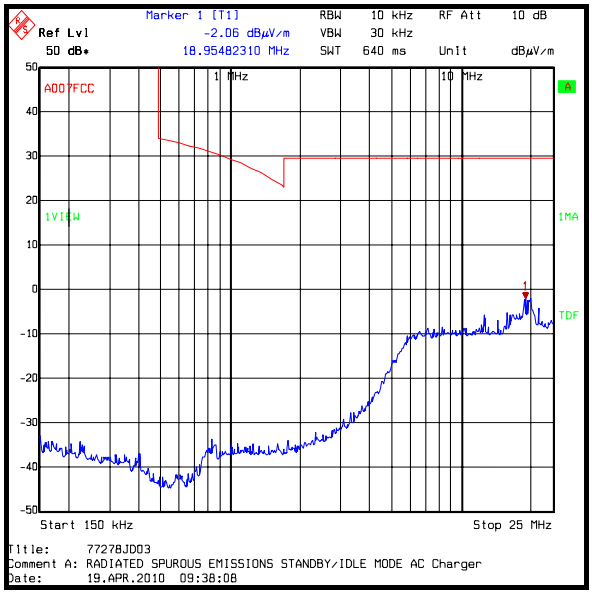
Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
128.547	Vertical	19.6	43.5	23.9	Complied
458.793	Vertical	23.4	46.0	22.6	Complied
639.208	Horizontal	30.3	46.0	15.7	Complied
663.230	Horizontal	31.9	46.0	14.1	Complied
947.434	Vertical	32.0	46.0	14.0	Complied
957.405	Vertical	34.0	46.0	12.0	Complied

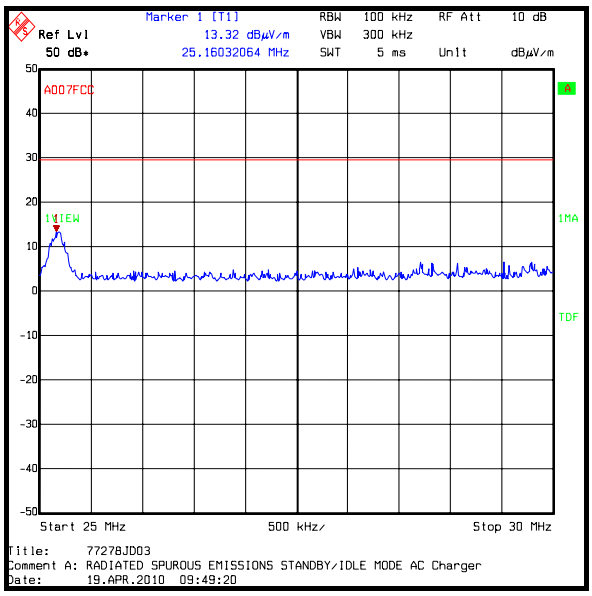
Note(s):

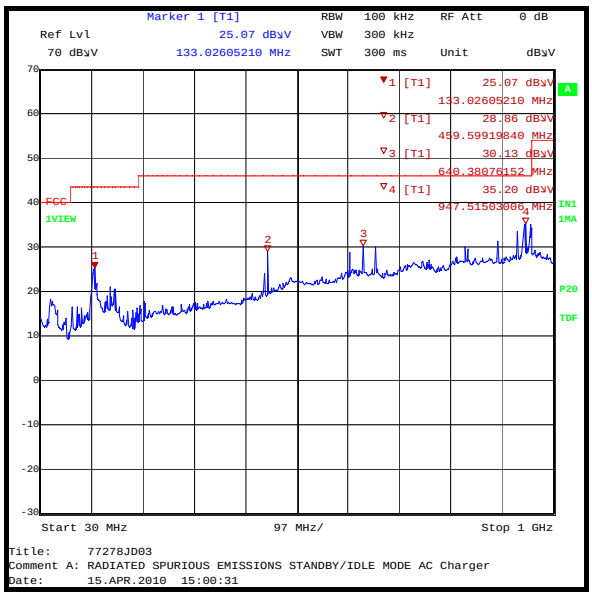
1. Limits below 30 MHz are specified at a test distance of 30 metres, whilst below 0.49 MHz they are specified at a test distance of 300 metres. However, as specified by FCC Section 15.31 (f)(2), measurements may be performed at a closer distance and the measured level corrected to the specified measurement 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 emissions shown on the 9 kHz to 150 kHz plot were investigated and found to be radiating from the turntable in the test site.

Receiver/Idle Mode Radiated Spurious Emissions (continued)









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

5.2.3. Transmitter Fundamental Field Strength

Test Summary:

FCC Part:	15.225 (a)(b)(c)(d)
Test Method Used:	ANSI C63.10 Section 6.4

Environmental Conditions:

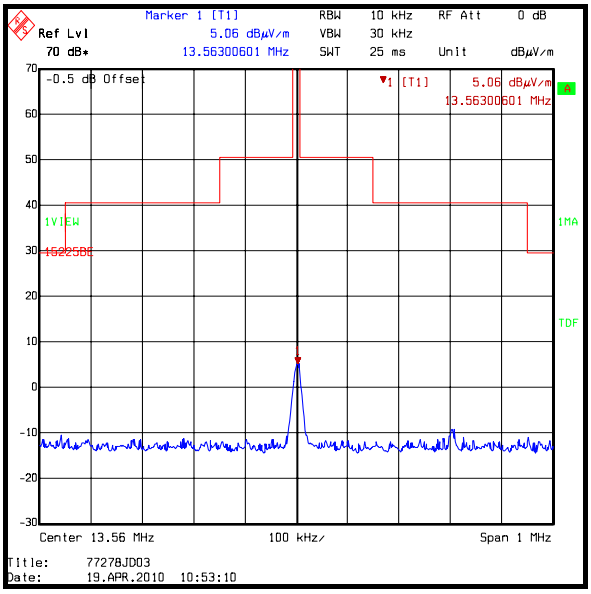
Temperature Range (°C):	27
Relative Humidity Range (%):	20

Results: Quasi Peak Detector Measurements

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit at 30 m (dBµV/m)	Margin (dB)	Result
13.561	90° to the EUT	5.1	84.0	78.9	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.



5.2.4. Transmitter Radiated Spurious Emissions

Test Summary:

FCC Part:	15.209 (a), 15.225(d)
Test Method Used:	As detailed in ANSI C63.10 Section 6.4 and 6.5
Frequency Range:	9 KHz to 1000 MHz

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	22

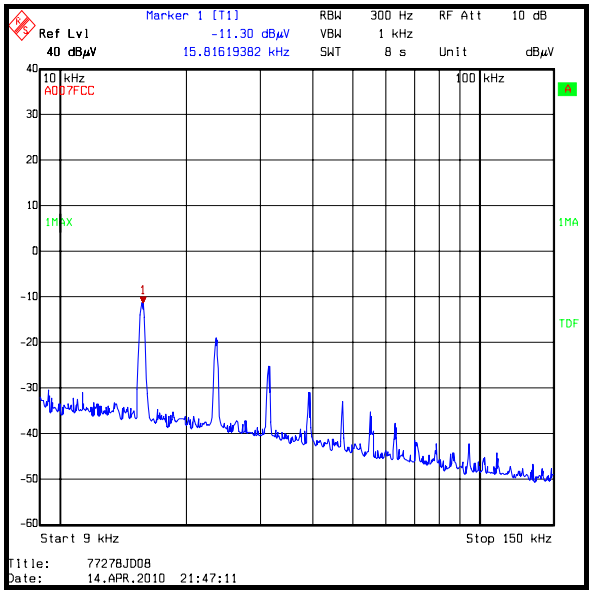
Results: Quasi Peak Detector Measurements

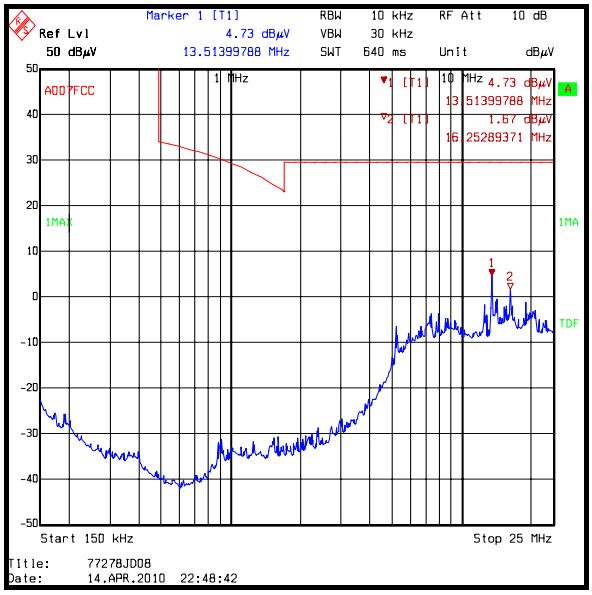
Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
139.997	Vertical	23.0	43.5	20.5	Complied
146.371	Vertical	22.5	43.5	21.0	Complied
147.964	Vertical	26.0	43.5	17.5	Complied
149.141	Vertical	25.4	43.5	18.1	Complied
311.882	Vertical	25.9	46.0	20.1	Complied
610.216	Vertical	31.5	46.0	14.5	Complied
637.344	Vertical	31.5	46.0	14.5	Complied
691.570	Vertical	32.0	46.0	14.0	Complied
718.677	Vertical	33.6	46.0	12.4	Complied
745.827	Vertical	32.5	46.0	13.5	Complied
945.645	Vertical	34.9	46.0	11.1	Complied

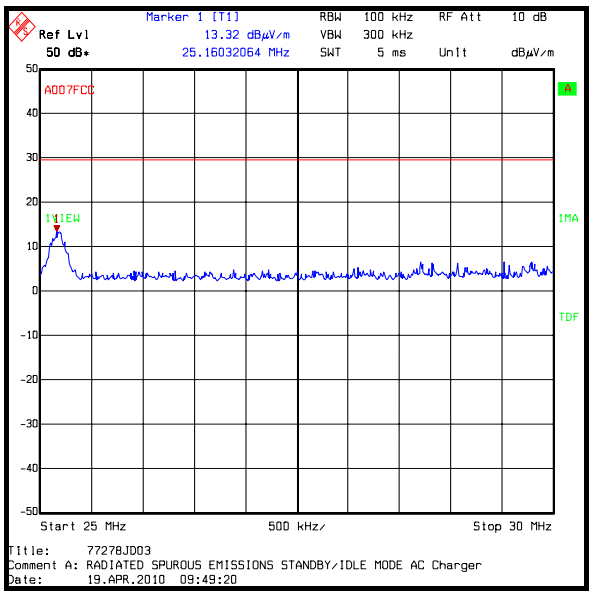
Note(s):

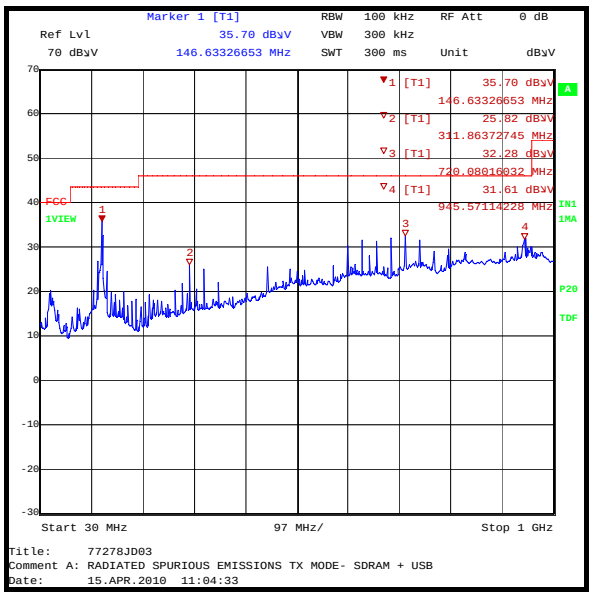
1. Limits below 30 MHz are specified at a test distance of 30 metres, whilst below 0.49 MHz they are specified at a test distance of 300 metres. However, as specified by FCC Section 15.31 (f)(2), measurements may be performed at a closer distance and the measured level corrected to the specified measurement 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 emissions shown on the 9 kHz to 150 kHz plot were investigated and found to be radiating from the turntable in the test site.
4. The emission shown on the 25 MHz to 30 MHz plot at approximately 25.166 MHz was investigated and found to be ambient.
5. The emission at approximately 13.56 MHz on the 150 kHz to 25 MHz plot is the carrier.

Transmitter Radiated Spurious Emissions (continued)









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

5.2.5. Transmitter Radiated Emissions at Band Edges

Test Summary:

FCC Part:	15.209(a), 15.225(c)(d)
Test Method Used:	ANSI C63.10 Section 6.4 and 6.9

Environmental Conditions:

Temperature (°C):	28
Relative Humidity (%):	26

Results: Lower Band Edge

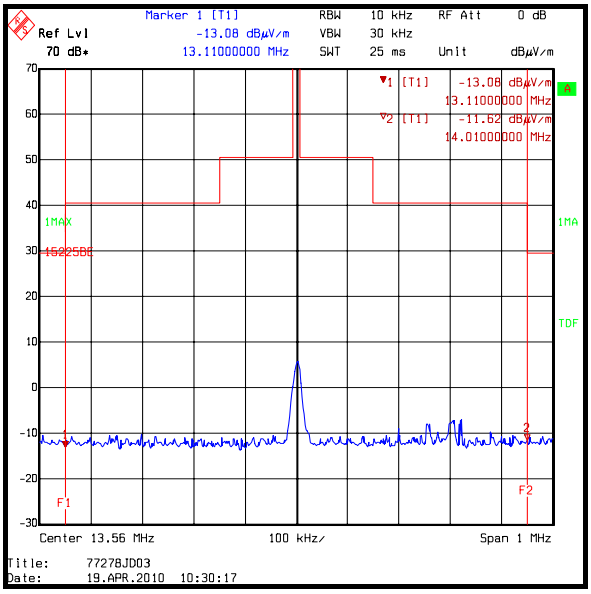
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
13.11	-13.1	40.5	53.6	Complied

Results: Upper Band Edge

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
14.01	-11.6	40.5	52.1	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.



5.2.6. Transmitter 20 dB Bandwidth

Test Summary:

FCC Part:	2.1049
Test Method Used:	ANSI C63.10 Section 6.9.1

Environmental Conditions:

Temperature (°C):	27
Relative Humidity (%):	25

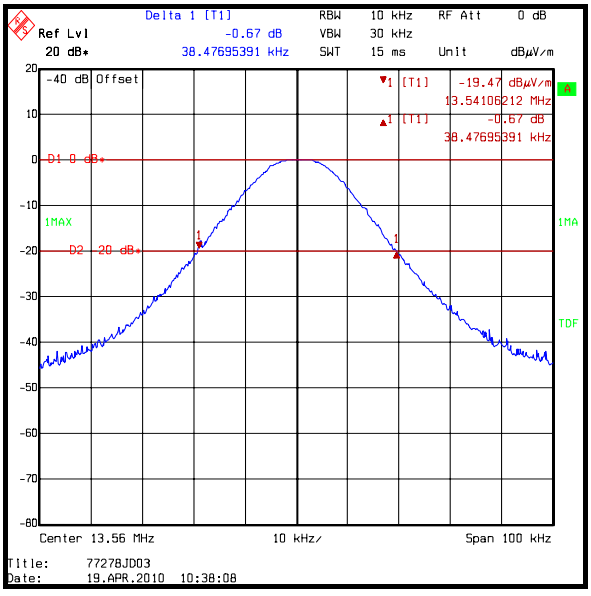
Results:

Transmitter 20 dB Bandwidth (KHz)
38.477

Designated Frequency Band	
Band (MHz)	**Bandwidth (MHz)**
13.110 to 14.010	0.9

Note(s):

1. In lieu of the test method detailed in ANSI C63.4 Section13.1.7 the 20 dB bandwidth was measured using the Occupied Bandwidth function of the spectrum analyser.



5.2.7. Transmitter Frequency Stability (Temperature & Voltage Variation)

Test Summary:

FCC Part:	15.225 (e)
Test Method Used:	ANSI C63.10 Section 6.8.1 and 6.8.2

Environmental Conditions:

Ambient Temperature (°C):	29
Ambient Relative Humidity (%):	26

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

Temp' (°C)	Nominal Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (Hz)	Frequency Error (%)	Limit (%)	Margin (%)	Result
-20	13.56	13.559982	18	0.000013	0.01	0.009987	Complied
20	13.56	13.559990	10	0.000010	0.01	0.009990	Complied
50	13.56	13.559950	50	0.000050	0.01	0.00995	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 (MHz)	Measured Frequency (MHz)	Frequency Error (Hz)	Frequency Error (%)	Limit (%)	Margin (%)	Result
3.4	13.56	13.559971	29	0.000021	0.01	0.009979	Complied
3.7	13.56	13.559979	21	0.000015	0.01	0.009985	Complied
4.2	13.56	13.559970	30	0.000022	0.01	0.009978	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 %
20 dB Bandwidth	13 MHz to 14 MHz	95%	±0.92 ppm
Frequency Stability	13 MHz to 14 MHz	95%	±0.92 ppm
Radiated Spurious Emissions	9 kHz to 1000 MHz	95%	±3.53 dB
Transmitter Fundamental Field Strength	30 MHz to 1000 MHz	95%	±4.64 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)
A007	Antenna	Rohde & Schwarz	HFH2-Z2	880 458/020	13 Apr 2010	12
A067	LISN	Rohde & Schwarz	ESH3-Z5	890603/002	03 Jun 2009	12
A1830	Pulse Limiter	Rhode & Schwarz	ESH3-Z2	100668	01 Mar 2010	12
A288	Antenna	Chase	CBL6111A	1589	16 Mar 2010	12
E013	Environmental Chamber	Sanyo	ATMOS chamber	None	Calibrated before use	-
K0001	5m Semi-Anechoic Chamber	Rainford EMC	N/A	N/A	04 May 2009	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	01 Sep 2009	12
M1068	Thermometer	Iso-Tech	RS55	93102884	01 Oct 2009	12
M1124	Spectrum Analyser	Rohde & Schwarz	ESIB26	100046K	09 Mar 2009	14
M1242	Spectrum Analyser	Rohde & Schwarz	FSEM30	845986/022	18 Mar 2010	12
M127	Spectrum Analyser	Rohde & Schwarz	FSEB 30	842 659/016	10 Jul 2009	12
M1346	Digital Multimeter	Fluke	73III	90770264	17 Jul 2009	12
M1379	Spectrum Analyser	Rohde & Schwarz	ESIB7	100330	20 Aug 2009	12
M1538	Wireless Comms Test Set	Agilent	E5515C	GB47070375	18 Jan 2010	12
S0537	EL302D Dual Power Supply	TTI	EL302D	249928	Calibrated before use	-

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