TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: MaxID Ltd
iDL3ID

To: FCC Part 15 Subpart B: 2007 (Sections 15.225)

Test Report Serial No:
RFI/RPTE2/RP73125JD07A

Supersedes Test Report Serial No:
RFI/RPTE1/RP73125JD07A

This Test Report Is Issued Under The Authority Of Steve Flooks, Radio Performance Group Service Leader:  **pp Brian Watson**	
Checked By: Brian Watson 	**Report Copy No: PDF01**
Issue Date: 06 June 2008	**Test Dates: 05 March 2008 to 11 March 2008**

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1. Client Information

Company Name:	MaxID Ltd
Address:	Hillswood Business Park 3000 Hillswood Drive Chertsey Surrey KT16 ORS
Contact Name:	Mr R Biggs

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)

Description:	Rugged Mobile Computer
Brand Name:	iDL
Model Name or Number:	iDL3ID FCC test unit 1
Serial Number:	505159
IMEI Number:	359811000479573
Hardware Version Number:	VER 1.0
Software Version Number:	03.0006.13
FCC ID Number:	TFTIDL3ID01
Country of Manufacture:	United States of America
Date of Receipt:	05 March 2008

Description:	Docking station for Mobile computer
Brand Name:	iDL
Model Name or Number:	iDL doc
Serial Number:	CHN00002
IMEI Number:	Not Applicable
Hardware Version Number:	VER1.0
Software Version Number:	Not Applicable
FCC ID Number:	TFTIDL3ID01
Country of Manufacture:	United States of America
Date of Receipt:	05 March 2008

Description:	AC-DC Adaptor
Brand Name:	Netgear
Model Name or Number:	DV-1280-3UK
Serial Number:	330-10102-01
Country of Manufacture:	United States of America
Date of Receipt:	05 March 2008

2.2. Description of EUT

The equipment under test is a Rugged Multifunctional Mobile Computer with HF RFID, GSM/GPRS, Wireless LAN, GPS, finger sensor and barcode/imager functionality.

2.3. Modifications Incorporated in the EUT

During the course of testing the EUT was not modified.

2.4. Additional Information Related to Testing

Power Supply Requirement:	Nominal 110 V, 60 Hz AC Mains Supply Internal battery supply of 3.4 V
Intended Operating Environment:	Commercial, Light Industry, Heavy Industry, Within GSM Coverage
Temperature Range:	Operating: -20°C to 50°C Storage: -30°C to 70°C
Equipment Category:	802.11 (x), GSM/GPRS/EGPRS, HF RFID, GPS
Type of Unit:	Portable (Standalone battery powered device) Transceiver
Transmitter Output Power:	RFID:+22dBuA/m maximum @ 3m
Transmit Frequency:	13.56 MHz (Single Channel)

2.5. Port Identification

Port	Description	Type/Length
1	Serial (RS-232) interface	9 way d-type female/100mm
2	USB	Type A connector/50mm
3	SIM	Standard GSM SIM

2.6. Support Equipment

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

3. Test Specification, Methods and Procedures

3.1. Test Specifications

Reference:	FCC Part 15 Subpart B: 2007 (Sections 15.225).
Title:	Code of Federal Regulations, Part 15 (47CFR225) Radio Frequency Devices.

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.

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 of the EUT During Testing

5.1. Operating Modes

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

- In continuous scan mode. ASK modulation running and tested.

5.2. Configuration and Peripherals

The EUT was tested in the following configuration:

- HF RFID set up using custom software installed in the EUT using the normal user interface and operating system.
- The EUT placed on the mains charger for radiated emissions tests and the charged connected to a 110V 60 Hz mains supply.

6. Summary of Test Results

Range of Measurements	Section Reference	Port Type	Compliancy Status
Receiver AC Conducted Emissions (150 kHz to 30 MHz)	C.F.R. 47 FCC Part 15: 2005	AC Mains	Complied
Receiver Radiated Spurious Emissions	C.F.R. 47 FCC Part 15: 2007	Enclosure	Complied
Transmitter AC Conducted Emissions (150 kHz to 30 MHz)	C.F.R. 47 FCC Part 15: 2005	AC Mains	Complied
Transmitter Fundamental Field Strength	C.F.R. 47 FCC Part 15: 2007	Antenna	Complied
Transmitter Radiated Spurious Emissions	C.F.R. 47 FCC Part 15: 2007	Enclosure	Complied
Transmitter Band Edge Radiated Emissions	C.F.R. 47 FCC Part 15: 2007	Antenna	Complied
Transmitter 20 dB Bandwidth	C.F.R. 47 FCC Part 2: 2007 Section 2.1049	Antenna	Complied
Transmitter Frequency Stability (Temperature & Voltage Variation)	C.F.R. 47 FCC Part 15: 2007 Section 15.225(c)	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.

- FCC Site Registration Number: 90895

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 AC Mains Conducted Emissions

7.2.1.1. Tests were performed in accordance with C63.4 Section 7 and relevant annexes.

7.2.1.2. 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 (dBμV)	Limit (dBμV)	Margin (dB)	Result
See Note 1					

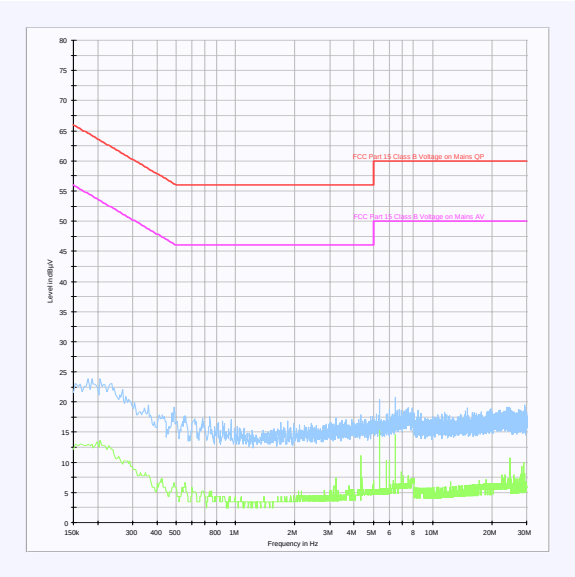
Average Detector Measurements on Live and Neutral Lines

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
See Note 1					

Note(s):

1. *All emissions were >20 dB below the applicable limits.*

Receiver AC Mains Conducted Emissions (Continued)



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

7.2.2. Receiver Radiated Spurious Emissions

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

7.2.3.1. Tests were performed in accordance with C63.4 Section 8 and relevant annexes.

7.2.3.2. Tests were performed to identify the maximum receiver or standby radiated emission levels.

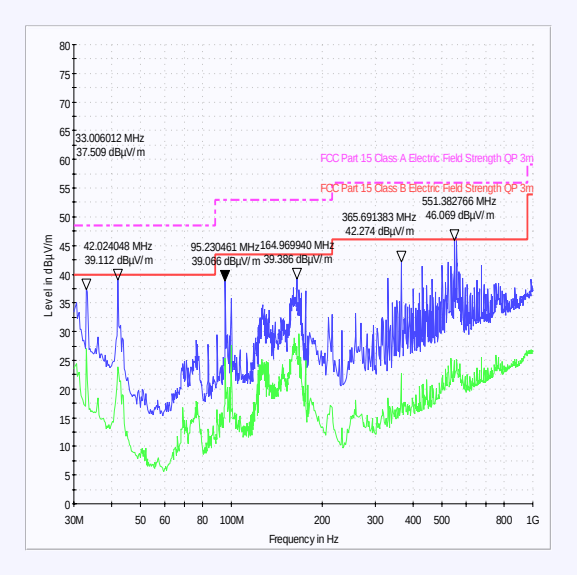
Results:

Frequency (MHz)	Antenna Polarity	Q-P Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
365.480	Vertical	34.1	46.0	11.9	Complied
551.798	Vertical	45.6	46.0	0.4	Complied

Note(s):

1. *All other emissions shown on the plot were investigated and were found to be noise floor or ambience.*

Receiver Radiated Spurious Emissions (Continued)



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

7.2.4. Transmitter AC Mains Conducted Emissions

7.2.4.1. Tests were performed in accordance with C63.4 Section 7 and relevant annexes.

7.2.4.2. 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 (dBμV)	Limit (dBμV)	Margin (dB)	Result
See Note 1					

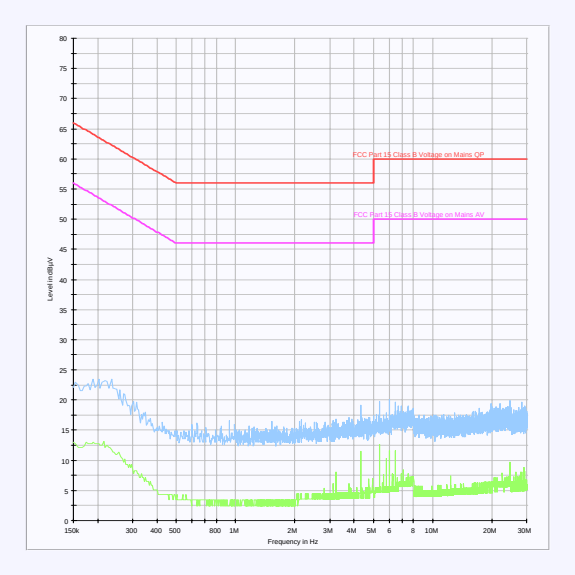
Average Detector Measurements on Live and Neutral Lines

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
See Note 1					

Note(s):

1. *All emissions were >20 dB below the applicable limits.*

Transmitter AC Mains Conducted Emissions (Continued)



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

7.2.5. Transmitter Fundamental Fieldstrength

7.2.5.1. Tests were performed in accordance with C63.4 Section 8 and relevant annexes.

7.2.5.2. Tests were performed to identify the maximum fieldstrength of the fundamental frequency.

7.2.5.3. The limit is specified at a test distance of 30 metres. However as specified by section 15.31 (f(2)), measurements may be performed at a closer distance, and the measured level corrected to the specified measurement distance by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Results:

Frequency (MHz)	Q-P Level (dBμV/m)	Limit at 30 metres (dBμV/m)	Margin (dB)
13.56	28.6	84.0	55.4

7.2.6. Transmitter Radiated Spurious Emissions

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

7.2.7.1. Tests were performed in accordance with C63.4 Section 8 and relevant annexes.

7.2.7.2. Tests were performed to identify the maximum radiated spurious emission levels.

7.2.7.3. Limits below 30 MHz are specified at test distance of 30 metres, whilst below 0.49 MHz they are specified at a test distance of 300 metres. However as specified by section 15.31 (f)(2), measurements may be performed at a closer distance, and the measured level corrected to the specified measurement distance by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Results:

Frequency (MHz)	Antenna Polarity / Orientation	Q-P Level (dBµV/m)	Limit (dBµV/m)	Measurement Distance (m)	Margin (dB)
0.201937	Side On (90º)	49.2	80.6*	10	31.4
21.217702	Side On (90º)	43.1	48.6	10	5.5
27.474949	Side On (90º)	41.2	48.6	10	7.4
106.903	Horizontal	27.6	43.5	3	15.9
136.582	Vertical	33.5	43.5	3	10.0
148.666	Horizontal	30.1	43.5	3	13.4
378.466	Horizontal	43.8	46.0	3	2.2

**Limit extrapolated to 10 metre test distance, limit at 30 metres is 29.5 dBµV/m*

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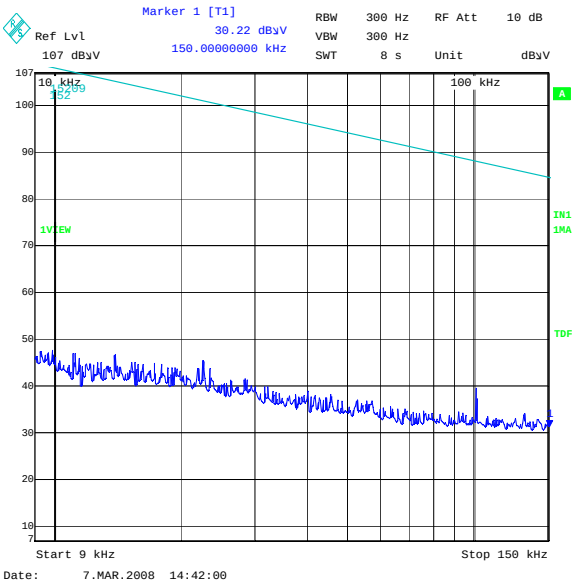
Transmitter Radiated Spurious Emissions (Continued)



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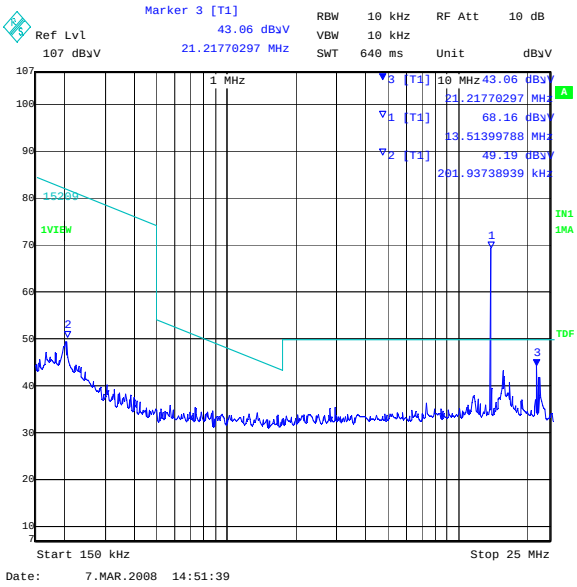
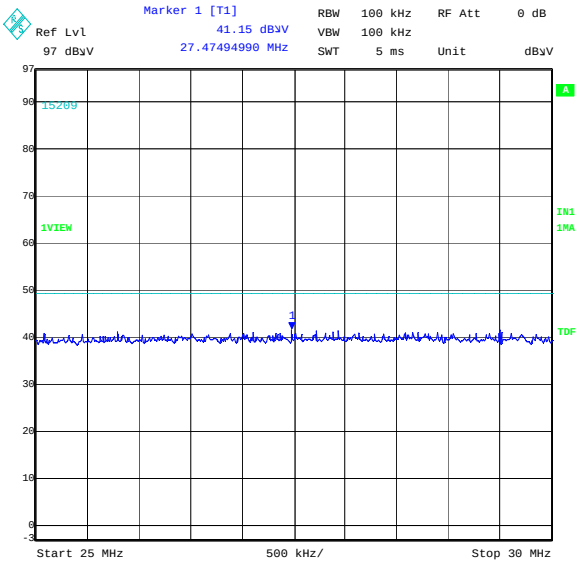


Date: 7.MAR.2008 14:51:39

The carrier is shown on the above plot at 13.513MHz



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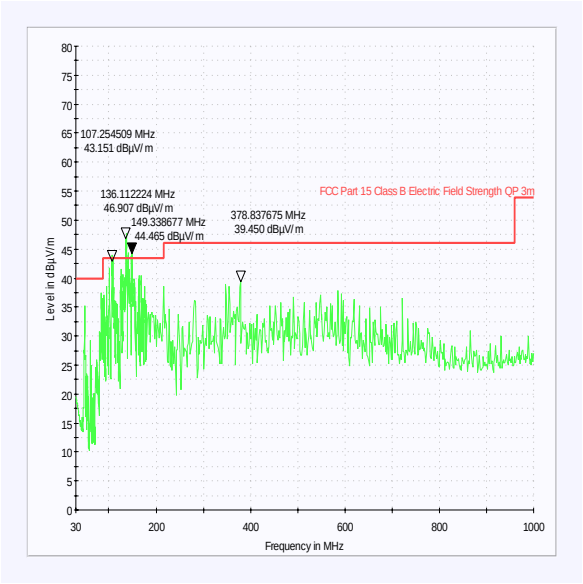

Note: This plot is a pre-scan and for indication purposes only. For final measurements, see accompanying tables.

7.2.8. Transmitter Radiated Emissions at Band Edges

7.2.8.1. Tests were performed in accordance with C63.4 Section 8 and relevant annexes.

7.2.8.2. Tests were performed to identify the maximum emissions level at the band edges of the frequency band that the EUT will operate over.

7.2.8.3. Limits below 30 MHz are specified at test distance of 30 metres, whilst below 0.49 MHz they are specified at a test distance of 300 metres. However as specified by section 15.31 (f)(2), measurements may be performed at a closer distance, and the measured level corrected to the specified measurement distance by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

7.2.8.4. Tests were performed at a distance of 3 metres and an offset applied to the spectrum analyser to correct to the required distance of 30 metres.

Results:

Tests were performed at 3m.

Bottom Band Edge

Frequency (MHz)	Q-P Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)
13.553000	-6.8	50.5	57.3

Top Band Edge

Frequency (MHz)	Q-P Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)
13.567000	-4.3	50.5	54.9

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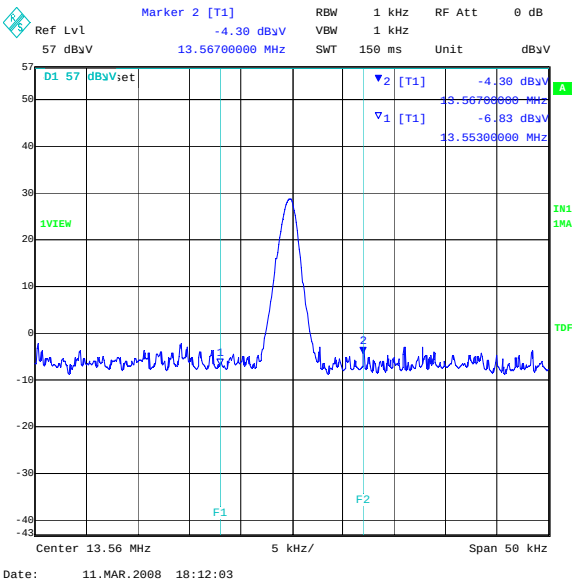
Transmitter Radiated Emissions at Band Edges (Continued)



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

7.2.9.Transmitter 20 dB Bandwidth

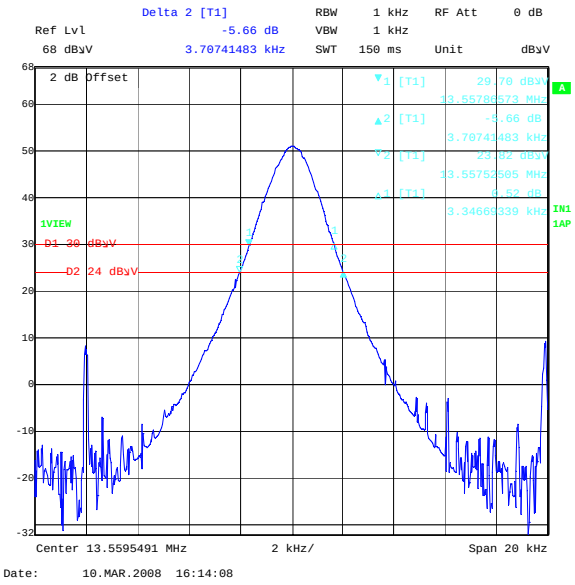
7.2.9.1. Tests were performed in accordance with C63.4 Section 10.1.8.8 and 13.1.7 and relevant annexes with the only deviation being that the 99% bandwidth (-20 dBc) bandwidth was recorded.

7.2.9.2. Tests were performed to identify the 20 dB bandwidth.

7.2.9.3. This test is not required to show compliance to 15.225 but has been included for information sake to aid Industry Canada (IC) applications.

Transmitter 20 dB Bandwidth (kHz)	Transmitter 26 dB Bandwidth (kHz)
3.346	3.707

Transmitter 20 dB Bandwidth (Continued)



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

7.2.10. Transmitter Frequency Stability (Temperature & Voltage Variation)

7.2.10.1. Tests were performed in accordance with C63.4 Section 10.1.8.7 and 13.1.6 and relevant annexes

7.2.10.2. Tests were performed to identify the maximum frequency error of the EUT with variations in ambient temperature.

7.2.10.3. Tests were performed to identify the maximum frequency error of the EUT with variations in nominal operating voltage at an ambient temperature of 20°C.

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 (%)
-20	13.56	13.559749	-251	0.0018	0.01	0.0082
-10	13.56	13.559699	-301	0.0022	0.01	0.0078
0	13.56	13.559659	-341	0.0025	0.01	0.0075
10	13.56	13.559659	-341	0.0025	0.01	0.0075
20	13.56	13.559749	-251	0.0018	0.01	0.0082
30	13.56	13.559619	-319	0.0028	0.01	0.0072
40	13.56	13.559579	-421	0.0031	0.01	0.0069
50	13.56	13.559579	-421	0.0031	0.01	0.0069

Maximum frequency error of the EUT with variations in supply voltage

Tests were performed in accordance with FCC Part 2.1055. The upper voltage is set to 115% of the nominal voltage. The lower voltage is set to 85% of the nominal voltage, or the EUT cut-off voltage (3.4V stated by the manufacturer).

Results:

Voltage (V)	Nominal Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (Hz)	Frequency Error (%)	Limit (%)	Margin (%)
3.4	13.56	13.559619	-319	0.0028	0.01	0.0072
3.7	13.56	13.559749	-251	0.0018	0.01	0.0082
4.1	13.56	13.559579	-421	0.0031	0.01	0.0069

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 Emissions	9 kHz to 30 MHz	95%	±3.53 dB
Radiated 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 (Months)
A007	Antenna	Rohde & Schwarz	HFH2-Z2	880 458/020	28 Feb 2008	12
A028	Antenna	Eaton	91888-2	304	08 Jun 2006	36
A031	Antenna	Eaton	91889-2	557	08 Jun 2006	36
A037	Low Power Filter	RFI Ltd Basingstoke	004	A037	12 Feb 2008	12
A067	Line Impedance Stabilization Network	Rohde & Schwarz	ESH3-Z5	890603/002	23 Apr 2007	12
A1829	Pulse Limiter	Rhode & Schwarz	ESH3-Z2	100671	16 Jan 2008	12
A259	Antenna	Chase	CBL6111	1513	13 Mar 2007	12
C1262	Cable	Rosenberger	FA210A0075008080	49356-2	Calibrated before use	-
C1265	Cable	Rosenberger	FA210A1020007070	49317-01	Calibrated before use	-
C341	Cable	Andrews	None	None	Calibrated before use	-
C363	Cable	Rosenberger	RG142	None	Calibrated before use	-
C454	Cable	Rosenberger	RG142XX-001-RFIB	C454-10081998	Calibrated before use	-
C461	Cable	Rosenberger	UFA210A-1-1182-704704	98H0305	Calibrated before use	-
C468	Cable	Rosenberger	UFA210A-1-3937-504504	98L0440	Calibrated before use	-
M023	Test Receiver	Rohde & Schwarz	ESVP	872 991/027	24 Apr 2007	12
M024	Spectrum Monitor	Rohde & Schwarz	EZM	873 952/006	Calibrated before use	-

Test Equipment Used (Continued)

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
M1068	Thermometer	Iso-Tech	RS55	93102884	26 Jun 2007	12
M1124	Spectrum Analyser	Rohde & Schwarz	ESIB26	100046K	18 Feb 2008	12
M1229	Digital Multimeter	Fluke	179	87640015	19 Apr 2007	12
M1263	Test Receiver	Rohde & Schwarz	ESIB7	100265	05 Feb 2008	12
M1379	Test Receiver	Rohde and Schwarz	ESIB7	100330	02 Aug 2007	12
S0529	DC Power Supply Unit	ISO-Tech	IPS2302A	504E005G2	Calibrated before use	-
S201	Open Area Test Site	RFI	1	None	25 May 2007	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\73125JD07\EMICON	Test configuration for measurement of conducted emissions.
DRG\73125JD07\EMIRAD	Test configuration for measurement of radiated emissions.

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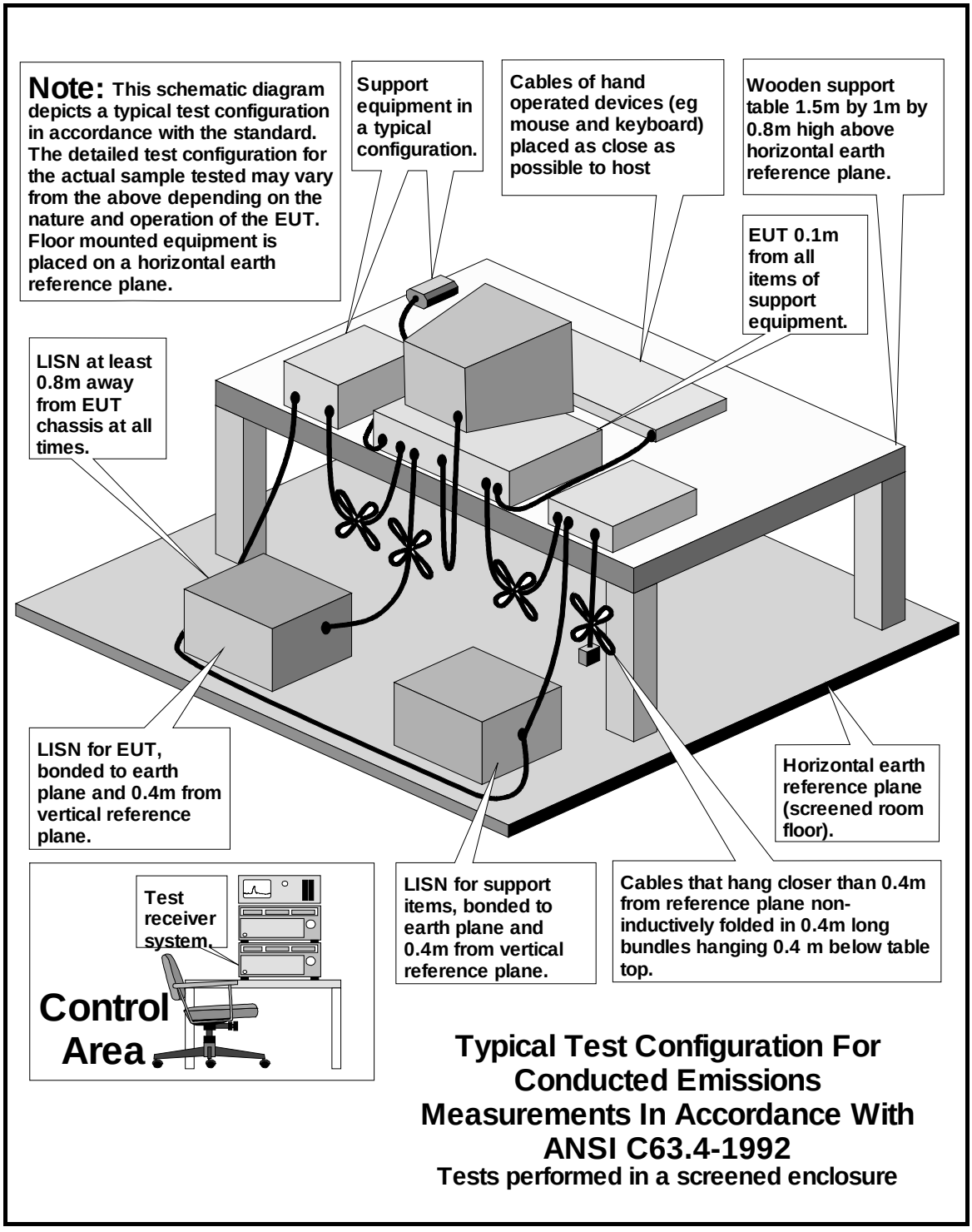
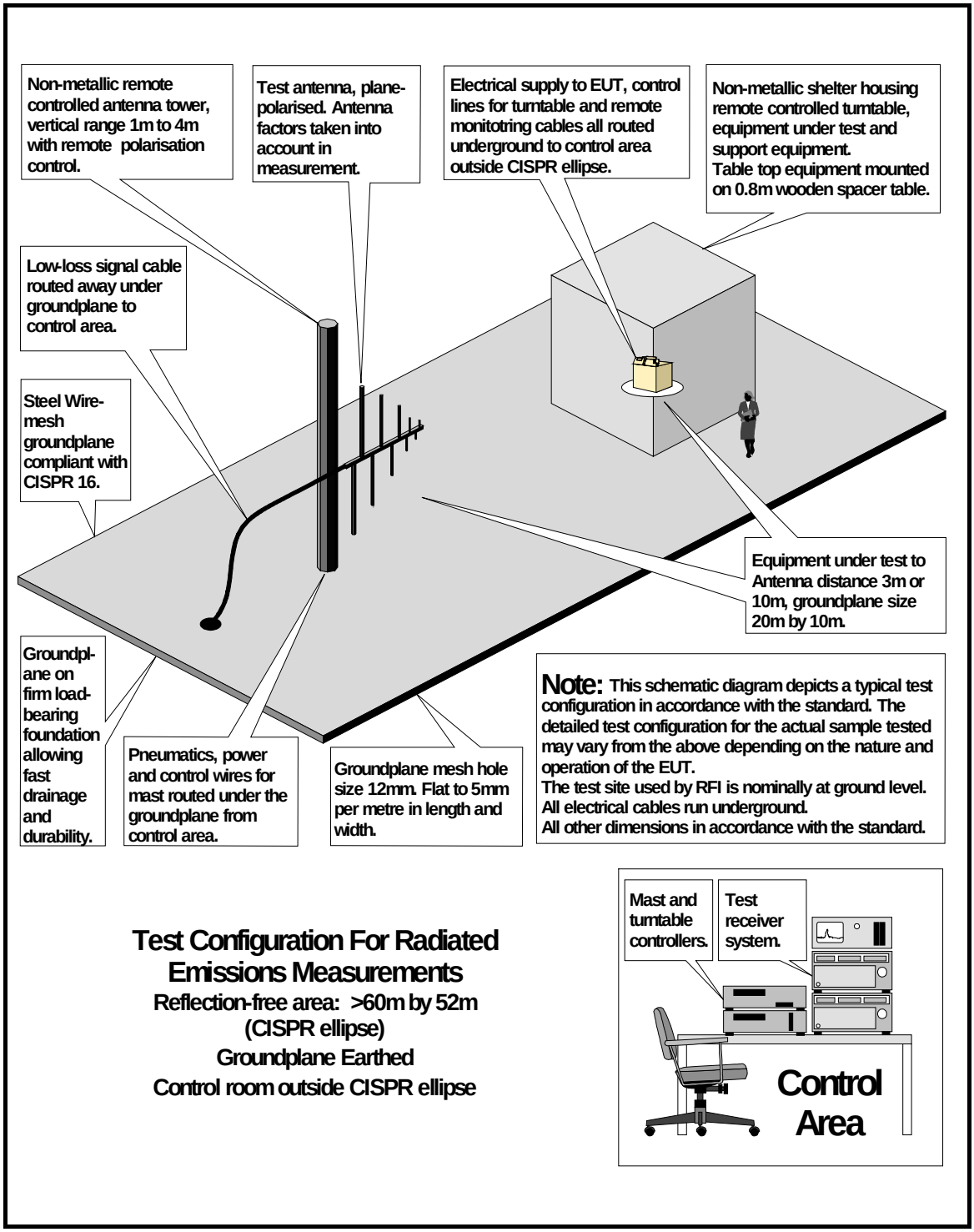
iDL3ID
To: FCC Part 15 Subpart B: 2007 (Sections 15.225)

DRG\73125JD07\EMICON



DRG\73125JD07\EMIRAD



Test Configuration For Radiated Emissions Measurements
Reflection-free area: >60m by 52m (CISPR ellipse)
Groundplane Earthed
Control room outside CISPR ellipse