

TEST REPORT FROM RFI GLOBAL SERVICES LTD

Test of: Datalogic S.p.A
KYMAN-Net

To: FCC Part 15.225

Test Report Serial No:
RFI/MPTE2/RP48332JD04A

Superseded Test Report Serial No:
RFI/MPTE1/RP48332JD04A

This Test Report Is Issued Under The Authority Of Andrew Brown, Operations Manager: 	
Tested By: Steven Wong 	Checked By: Michael Derby 
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1. Client Information

Company Name:	Datalogic S.p.A
Address:	Via Candini, 2 Lippo di Calderara di Reno Bologna Italy 40012
Contact Name:	Mr P Guerzoni

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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)

Brand Name:	KYMAN-Net (Datalogic)
Model Name or Number:	Kyman-Net
Unique Type Identification:	944501012
Serial Number:	D05N01104
Hardware Revision:	511-102
Software Version:	MS Windows CE.NET
Software Version Number:	4.2
FCC ID:	0MJ0016
Country of Manufacture:	UK
Date of Receipt:	21 June 2006

2.2. Description of EUT

The equipment under test is a portable data assistant with inductive card reader capabilities.

2.3. Modifications Incorporated in the EUT

During the course of testing the EUT was not modified.

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2.4. Additional Information Related to Testing

Power Supply Requirement:	Nominal 115 V 60 Hz AC Mains supply via AC Charger and Internal battery supply of 3.7 V		
Intended Operating Environment:	Commercial		
Equipment Category:	Short Range (Low Power)		
Type of Unit:	Portable (Standalone battery powered device)		
Interface Ports:	I/O-Power Charger Port		
Transmit Frequency Range:	13.553 to 13.567 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Single Channel	-	13.56
Receive Frequency Range:	13.553 to 13.567 MHz		
Receive Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Single Channel	-	13.56
Highest Unintentionally Generated Frequency:	923.992 MHz		
Highest Fundamental Frequency:	13.56 MHz		
Occupied Bandwidth:	6.37 Hz		

2.5. Support Equipment

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

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3. Test Specification, Methods and Procedures

3.1. Test Specifications

Reference:	FCC Part 15 Subpart B: 2004 (Sections 15.225).
Title:	Code of Federal Regulations, Part 15 (47CFR215) 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.

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4. Deviations from the Test Specification

There were no deviations from the test specification.

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5. Operation of the EUT During Testing

5.1. Operating Modes

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

For all transmit tests, the EUT was set to transmit at full power in continuous wave mode.

For the receiver tests, the EUT was set to a non transmitting state, in a receive mode only.

5.2. Configuration and Peripherals

The EUT was tested in the following configuration:

The AC / DC adaptor was connected to the EUT I/O Power charger port via a RS232 serial com connector.

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6. Summary of Test Results

Range of Measurements	Specification Reference	Port Type	Compliance Status
Receiver AC Conducted Emissions test	C.F.R. 47 FCC Part 15: 2004 Section 15.107	Enclosure	Complied
Receiver Radiated Spurious Emissions	C.F.R. 47 FCC Part 15: 2004 Section 15.109	Enclosure	Complied
Transmitter AC Mains Conducted Emissions (150 kHz to 30 MHz)	C.F.R. 47 FCC Part 15: 2004 Section 15.207	AC Mains	Complied
Transmitter Fundamental Fieldstrength	C.F.R. 47 FCC Part 15: 2004 Section 15.225(a)	Antenna	Complied
Transmitter Radiated Spurious Emissions	C.F.R. 47 FCC Part 15: 2004 Section 15.209	Enclosure	Complied
Transmitter Band Edge Radiated Emissions	C.F.R. 47 FCC Part 15: 2004 Section 15.209	Antenna	Complied
Transmitter 20 dB Bandwidth	C.F.R. 47 FCC Part 2: 2004 Section 2.1049	Antenna	Complied
Transmitter Frequency Stability (Temperature & Voltage Variation)	C.F.R. 47 FCC Part 15: 2004 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.

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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.

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7.2. Receiver AC Mains Conducted Emissions: Section 15.107

7.2.1. The EUT was configured for AC conducted emissions measurements as described in Section 9 of this report.

7.2.2. 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

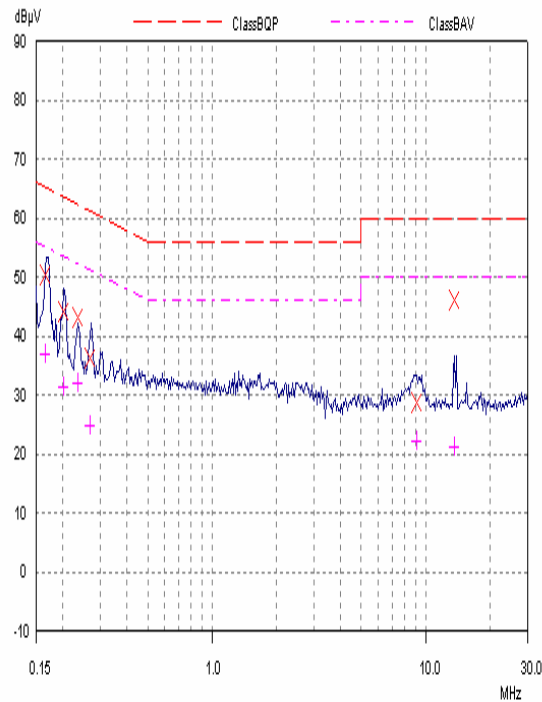
Frequency (MHz)	Line	Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
0.16651	Neutral	50.27	65.13	14.86	Complied
0.20223	Neutral	44.10	63.52	19.42	Complied
0.23651	Neutral	43.06	62.22	19.16	Complied
0.26713	Live	36.38	61.21	24.83	Complied
9.01927	Neutral	28.74	60.00	31.26	Complied
13.56100	Neutral	46.01	60.00	13.99	Complied

Average Detector Measurements on Live and Neutral Lines

Frequency (MHz)	Line	Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
0.16651	Neutral	36.92	55.13	18.21	Complied
0.20223	Live	31.23	53.52	22.29	Complied
0.23651	Neutral	31.99	52.22	20.23	Complied
0.26713	Neutral	24.75	51.21	26.46	Complied
9.01927	Neutral	21.99	50.00	28.01	Complied
13.56100	Neutral	21.07	50.00	28.93	Complied

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Receiver AC Mains Conducted Emissions: Section 15.107 (Continued)



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

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7.3. Receiver Radiated Spurious Emissions: Section 15.109

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

7.3.1.1. The EUT was configured for radiated emissions testing as described in Section 9 of this report.

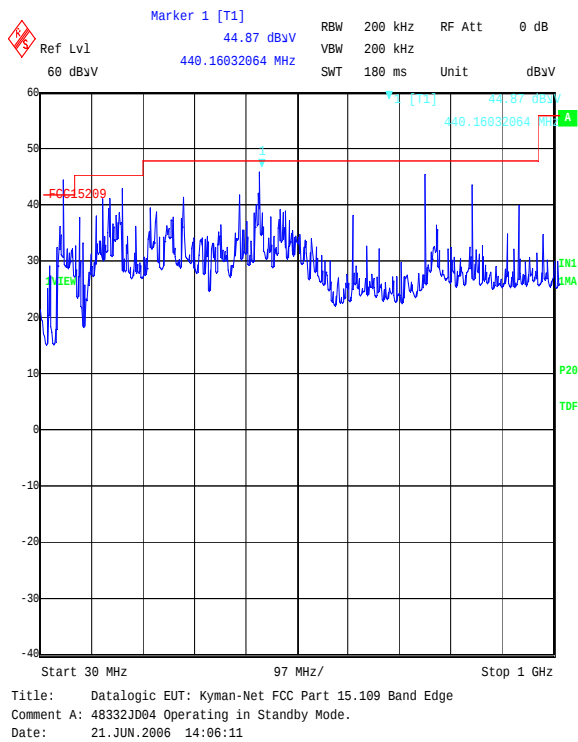
7.3.1.2. Tests were performed to identify the maximum receiver or standby radiated emission levels.

Results:

Frequency (MHz)	Antenna Polarity	Q-P Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
73.729	Horizontal	35.0	40.0	5.0	Complied
147.485	Vertical	29.0	43.5	14.5	Complied
271.283	Vertical	16.5	46.0	29.5	Complied
439.997	Horizontal	41.5	46.0	4.5	Complied
747.994	Horizontal	35.6	46.0	10.4	Complied
836.022	Vertical	37.0	46.0	9.0	Complied
923.992	Vertical	40.6	46.0	5.4	Complied

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Receiver Radiated Spurious Emissions: Section 15.109 (Continued)



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

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7.4. Transmitter AC Mains Conducted Emissions: Section 15.207

7.4.1. The EUT was configured for AC conducted emissions measurements as described in Section 9 of this report.

7.4.2. 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

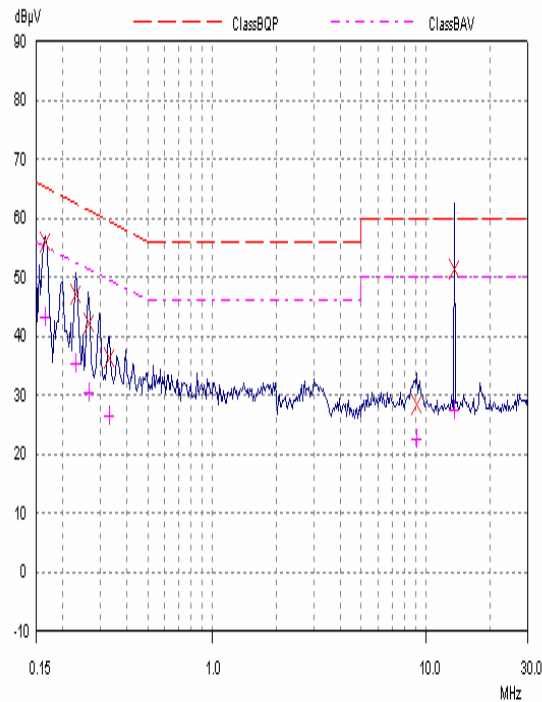
Frequency (MHz)	Line	Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
0.16544	Neutral	55.96	65.19	9.23	Complied
0.23134	Neutral	46.95	62.40	15.45	Complied
0.26517	Neutral	42.07	61.27	19.20	Complied
0.33233	Live	36.26	59.39	23.13	Complied
9.03741	Neutral	28.28	60.00	31.72	Complied
13.56030	Neutral	51.37	60.00	8.63	Complied

Average Detector Measurements on Live and Neutral Lines

Frequency (MHz)	Line	Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
0.16544	Neutral	43.26	55.19	11.93	Complied
0.23134	Neutral	35.27	52.40	17.13	Complied
0.26517	Neutral	30.24	51.27	21.03	Complied
0.33233	Neutral	26.38	49.39	23.01	Complied
9.03741	Neutral	22.34	50.00	27.66	Complied
13.56030	Live	27.24	50.00	22.76	Complied

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Transmitter AC Mains Conducted Emissions: Section 15.207 (Continued)



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

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7.5. Transmitter Fundamental Fieldstrength Section 15.225 (a)

7.5.1. The EUT was configured for transmitter radiated emissions testing as described in Section 9 of this report.

7.5.2. Tests were performed to identify the maximum field strength of the fundamental frequency.

7.5.3. 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). *In this case the measurement was obtained using a peak detector during the pre-scan at a distance of 3 metres during which the antenna was orientated for maximum. A known correlation factor between the pre-scan environment and the OATS was used to extrapolate the result to a 10 metres distance and thereafter the inverse linear distance extrapolation factor was applied to 30 metres.*

Results:

(Primary Supply)

Frequency (MHz)	Antenna Polarity	Q-P Level (dB μ V/m)	Limit at 30 metres (dB μ V/m)	Margin (dB)	Result
13.56	90	19.1	80.0	73.3	Complied

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7.6. Transmitter Radiated Spurious Emissions: Section 15.209

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

7.6.1.1. The EUT was configured for radiated emissions testing as described in Section 9 of this report.

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

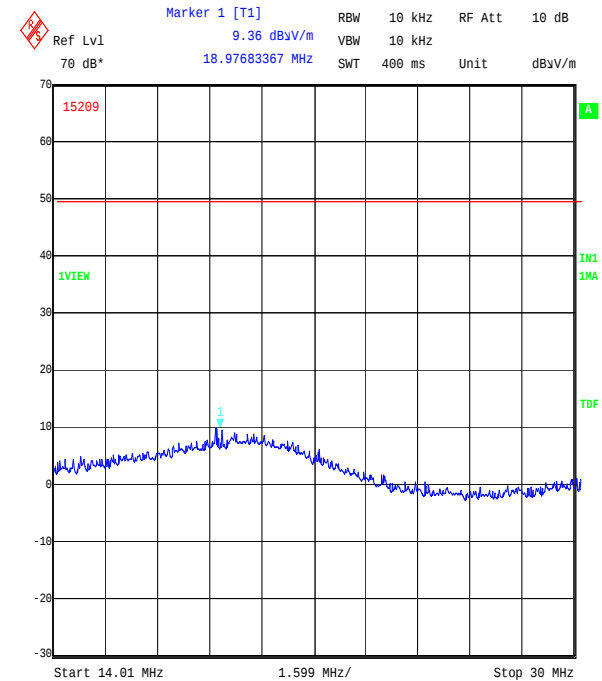
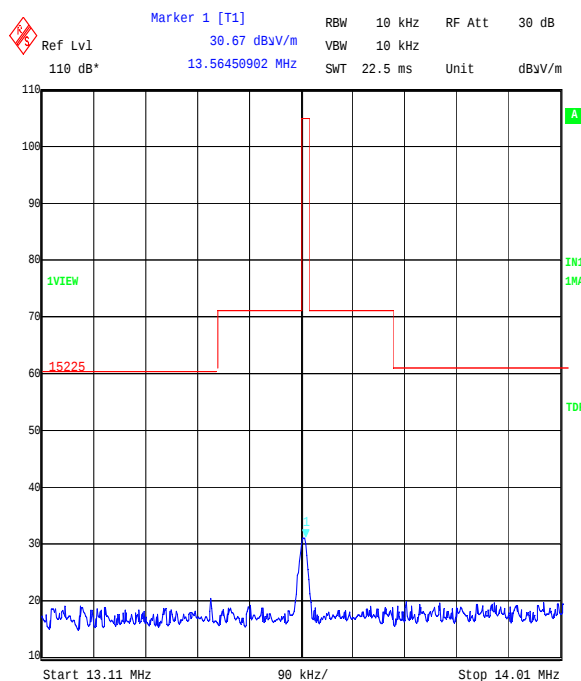
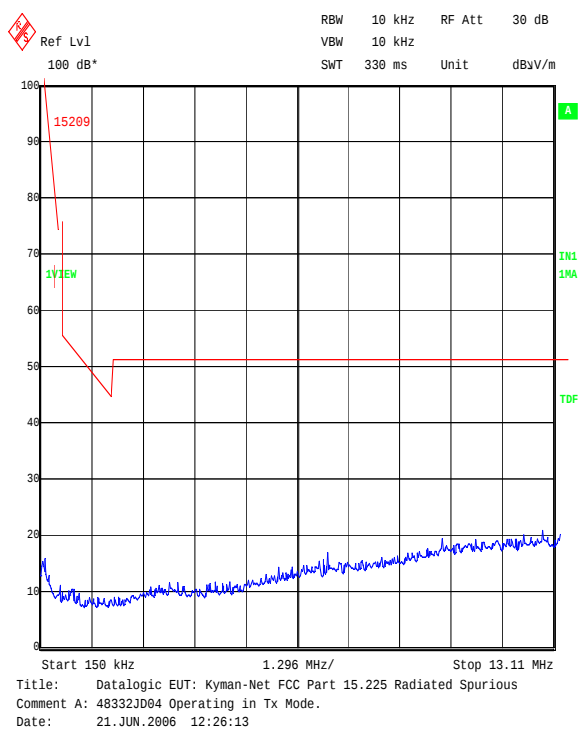
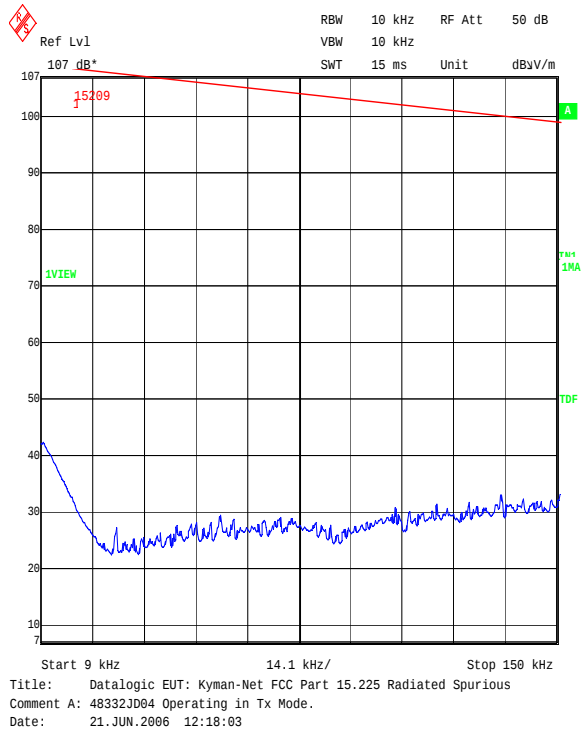
7.6.1.3. Limits below 30 MHz are specified at test distance of 30 metres, whilst below 0.49 MHz they are specified at a test distance of 300 metres. However as specified by section 15.31 (f)(2), measurements may be performed at a closer distance, and the measured level corrected to the specified measurement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

Results:

Frequency (MHz)	Antenna Polarity	Q-P Level (dB μ V/m)	Limit (dB μ V/m)	Measurement Distance (m)	Margin (dB)	Result
72.729	Vertical	25.4	40.0	3.0	14.6	Complied
135.600	Vertical	15.0	43.5	3.0	28.5	Complied
298.319	Vertical	30.3	46.0	3.0	15.7	Complied
325.437	Vertical	33.0	46.0	3.0	13.0	Complied
352.558	Vertical	28.8	46.0	3.0	17.2	Complied
747.994	Vertical and Horizontal	28.0	46.0	3.0	18.0	Complied
923.992	Vertical and Horizontal	28.8	46.0	3.0	17.2	Complied

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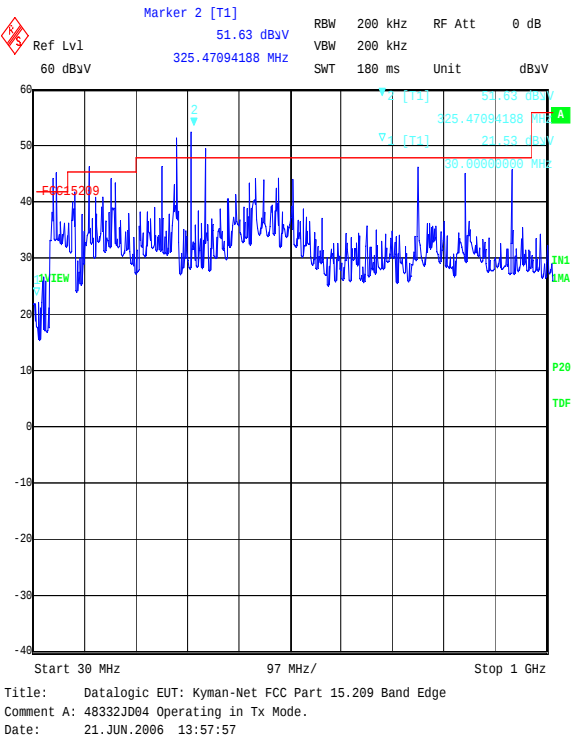
Transmitter Radiated Spurious Emissions: Section 15.209 (Continued)



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

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Transmitter Radiated Spurious Emissions: Section 15.209 (Continued)



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

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7.7. Transmitter Radiated Emissions at Band Edges: Section 15.209

7.7.1. The EUT was configured for transmitter radiated emissions testing described in Section 9 of this report.

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

Results:

Bottom Band Edge

Frequency (MHz)	Q-P Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
13.553	-8.0	59.6	67.6	Complied

Top Band Edge

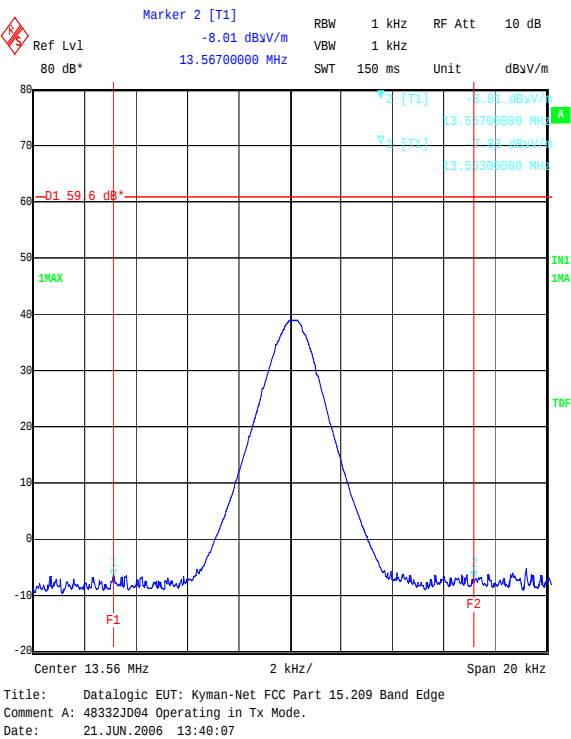
Frequency (MHz)	Q-P Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
13.567	-7.8	59.6	67.4	Complied

Notes:

1. The limit is specified as for a 10 metres measurement distance, this level is derived from applying the square of inverse linear distance extrapolation factor (40 dB/Code) minus the 10 dB correction factor for using a 1 kHz resolution bandwidth instead of the 9 kHz resolution bandwidth.
2. The measured level was performed using a resolution bandwidth of 1 kHz instead of 9 kHz resolution bandwidth. This is performed in order to avoid measurements being made on the power envelope of the receiver bandwidth filter. The measurements were also performed at a closer distance of 3 meters with correction factor applied to extrapolate the results from 3 metres pre-scan environment to a 10 metres OATS environment.

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Transmitter Radiated Emissions at Band Edges: Section 15.209 (Continued)



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7.8.Transmitter 20 dB Bandwidth: Section 2.1049

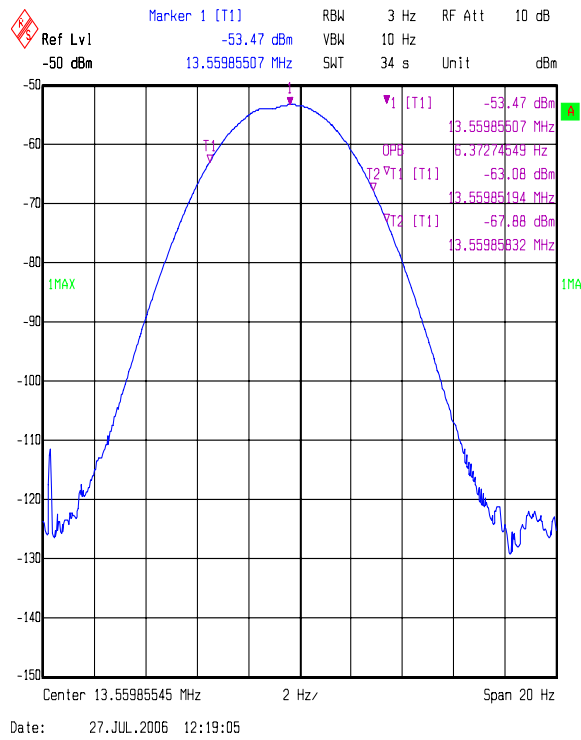
7.8.1. The EUT was configured for 20 dB bandwidth measurements as described in Section 9 of this report.

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

Transmitter 20 dB Bandwidth (Hz)
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Transmitter 20 dB Bandwidth: Section 2.1049 (Continued)



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7.9. Transmitter Frequency Stability (Temperature & Voltage Variation):

Section 15.225 (c)

7.9.1. The EUT was configured for frequency stability measurements as described in Section 9 of this report.

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

7.9.3. 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:

Temp (°C)	Nominal Frequency	Measured Frequency	Frequency Error (Hz)	Frequency Error (%)	Limit (%)	Margin (%)	Result
-20	13.56	13.559918	82	0.00060	0.01	0.00940	Complied
-10	13.56	13.559923	77	0.00057	0.01	0.00943	Complied
0	13.56	13.559917	83	0.00061	0.01	0.00939	Complied
10	13.56	13.559905	95	0.00070	0.01	0.00930	Complied
20	13.56	13.559884	116	0.00086	0.01	0.00914	Complied
30	13.56	13.559866	134	0.00099	0.01	0.00901	Complied
40	13.56	13.559865	135	0.0010	0.01	0.00900	Complied
50	13.56	13.559886	114	0.0084	0.01	0.00916	Complied

Supply Voltage (V)	Nominal Frequency	Measured Frequency	Frequency Error (Hz)	Frequency Error (%)	Limit (%)	Margin (%)	Result
93.5	13.56	13.559882	118	0.00087	0.01	0.00913	Complied
110.0	13.56	13.559887	113	0.00083	0.01	0.00917	Complied
126.5	13.56	13.559880	120	0.00088	0.01	0.00912	Complied

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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
Radiated Spurious Emissions	30 MHz to 1000 MHz	95%	+/- 5.26 dB
Radiated Spurious Emissions	1 GHz to 18 GHz	95%	+/- 4.18 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.

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9. Measurement Methods

9.1. AC Mains Conducted Emissions

AC mains conducted emissions measurements were performed in accordance with the standard, against appropriate limits for each detector function.

The test was performed in a shielded enclosure with the equipment arranged as detailed in the standard on a wooden bench using the floor of the screened enclosure as the ground reference plane. The EUT was powered with 110V 60 Hz AC mains supplied via a Line Impedance Stabilisation Network (LISN).

Initial measurements in the form of swept scans covering the entire measurement band were performed in order to identify frequencies on which the EUT was generating interference. In order to minimise the time taken for these swept measurements, a Peak detector was used in conjunction with the appropriate detector IF measuring bandwidths (see table below). Repetitive scans were performed to allow for emissions with low repetition rates, and the duty cycle of the EUT. The test configuration was the same for the initial scans as for the final measurements.

Following the initial scans, a graph was produced giving an overview of the emissions from the EUT plotted against the appropriate specification limit. A tolerance line was set 6 dB below the specification limit and levels above the tolerance line were re-tested (at individual frequencies) using the appropriate detector function.

The test equipment settings for conducted emissions measurements were as follows:

Receiver Function	Initial Scan	Final Measurements
Detector Type:	Peak	Quasi-Peak (CISPR)/Average
Mode:	Max Hold	Not applicable
Bandwidth:	10 kHz	9 kHz
Amplitude Range:	60 dB	20 dB
Measurement Time:	Not applicable	> 1 s
Observation Time:	Not applicable	> 15 s
Step Size:	Continuous sweep	Not applicable
Sweep Time:	Coupled	Not applicable

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9.2. Receiver Radiated Emissions

Radiated emissions measurements were performed in accordance with the standard, against appropriate limits for each detector function.

Initial pre-scans covering the entire measurement band from the lowest generated frequency declared up to the upper frequency detailed in Section 15.33 were performed within a screened chamber in order to identify frequencies on which the EUT was generating interference. This determined the frequencies on which the EUT should be re-measured in full on the open area test site. In order to minimise the time taken for the swept measurements, a Peak detector was used in conjunction with the appropriate detector IF measuring bandwidth (see table below). Repetitive scans were performed to allow for emissions with low repetition rates, and for the duty cycle of the EUT. The test configuration was the same for the initial scans as for the final measurements.

The initial scans were performed using an antenna height of 1.5 m and a measurement distance of 3 m. Following the initial scans, graphs were produced giving an overview of the emissions from the EUT plotted against the appropriate specification limit. A tolerance line was set 6 dB below the specification limit and levels above the tolerance line were re-tested on the open area test site, at the appropriate distance, using a measuring receivers with a Quasi-Peak (or Average) detector (below 1000 MHz), where applicable, for measurements above 1000 MHz average and peak detectors were used.

For the main (final) measurements the EUT was arranged on a non-conducting table on an open area test site, as detailed in the specification.

All measurements on the open area test site were performed using broadband antennas.

On the open area test site, at each frequency where a signal was found, the levels were maximised by initially rotating the turntable through 360° and then varying the antenna height between 1 m and 4 m. At this point, any signals found to be between the limit and a level 6 dB below it were further maximised by changing the configuration of the EUT, e.g. re-routing cables to peripherals and moving peripherals with respect to the EUT.

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Radiated Emissions (Continued)

The test equipment settings for radiated emissions measurements were as follows:

Receiver Function	Initial Scan (Below 30 MHz)	Final Measurements (Below 30 MHz)
Detector Type:	Peak	Quasi-Peak (CISPR) or Average
Mode:	Max Hold	Not applicable
Bandwidth:	9 kHz	9 kHz
Amplitude Range:	60 dB	20 dB
Measurement Time:	Not applicable	> 1 s
Observation Time:	Not applicable	> 15 s
Step Size:	Continuous sweep	Not applicable
Sweep Time:	Coupled	Not applicable

Receiver Function	Initial Scan (30 to 1000 MHz)	Final Measurements (30 to 1000 MHz)
Detector Type:	Peak	Quasi-Peak (CISPR)
Mode:	Max Hold	Not applicable
Bandwidth:	100 kHz	120 kHz
Amplitude Range:	60 dB	20 dB
Measurement Time:	Not applicable	> 1 s
Observation Time:	Not applicable	> 15 s
Step Size:	Continuous sweep	Not applicable
Sweep Time:	Coupled	Not applicable

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Transmitter 20 dB Bandwidth

The EUT was connected to a spectrum analyser enabled with an occupied bandwidth function via an antenna test fixture.

Measurements were performed to determine the Occupied Bandwidth in accordance with FCC Part 2.1049. The Occupied Bandwidth was measured from the fundamental emission at the bottom and top channels. The Occupied Bandwidth was measured in line with the requirements of 2.1049 i.e. with the EUT modulated with a signal representing the maximum rated conditions under which it will operate (worst case)

The Occupied Bandwidth was measured using the built in occupied bandwidth function of the Rohde and Schwarz FSEB spectrum analyser. It was set to measure the bandwidth where 99% of the signal power was contained. The analyser settings were set as per those outlined in the FSEB user manual for this measurement, i.e. RBW $\leq$ 1% of occupied bandwidth. A value of 1kHz was used. *To determine the occupied bandwidth, A resolution bandwidth of 3 kHz was used, which is greater than 1% of the 20 dB bandwidth. A video bandwidth of a least the same value was used. The analyser was set for a maximum hold scan to capture the profile of the signal. The peak level was then determined, and a reference line was drawn 20 dB below the peak level. The bandwidth was determined at the points where the 20 dB reference crossed the profile of the emission.*

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FCC Part 2.1055: Frequency Stability

The EUT was situated within an environmental test chamber and monitored on the test equipment via an antenna test fixture.

Measurements were performed with the EUT operating under extremes of temperature in 10 degree increments within the range -20°C to 50°C.

Measurements were also performed at voltage extremes between the declared nominal supply voltage and at the declared endpoint voltage (for hand carried battery operated equipment) or by varying the primary supply voltage from 85% to 115% of the nominal value for all other equipment types.

The requirement was to determine the frequency stability of the device under specified environmental operating conditions.

The EUT was switched off for a minimum of 30 minutes between each stage of testing while the environmental chamber stabilised at the next temperature within the stated temperature range.

The frequency error measured was converted to an error in % using the following formula as defined by TIA-603-B :-

$$\% \text{ error} = \left(\frac{MCF_{MHz}}{ACF_{MHz}} - 1 \right) * 10^2$$

where MCF_{MHz} is the measured carrier frequency in MHz
 ACF_{MHz} is the assigned carrier frequency in MHz

The measured % had to be less then the relevant limits in order to comply.

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Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval Months
A007	HFH2-Z2 Loop Antenna	Rohde & Schwarz	HFH2-Z2	880 458/020	06 Feb 2006	12
A008	HFH2-Z2 Metal Tripod	Rohde & Schwarz	HFU-Z	None	N/A	N/A
A1037	Chase Bilog Antenna	Chase EMC Ltd	CBL6112B	2413	03 Oct 2005	12
A259	Bilog Antenna	Chase	CBL6111	1513	03 Mar 2006	12
A392	3 dB attenuator (9)	Suhner	6803.17.B	None	Calibrated at time of test	N/A
C1162	1m N-Type Cable	Rosenberger Micro-Coax Limited	FA210A101 0007070	43187-2	Calibrated at time of test	N/A
C363	BNC Cable	Rosenberger	RG142	None	Calibrated at time of test	N/A
C364	BNC Cable	Rosenberger	RG142	None	Calibrated at time of test	N/A
C468	N-Type Coaxial Cable	Rosenberger	UFA210A-1- 3937- 504504	98L0440	Calibrated at time of test	N/A
L0816	Unitemp Environmental Chamber	Unitemp	None	None	Not Applicable	N/A
M003	Spectrum Monitor	Rohde & Schwarz	EZM	883 580/008	Not Applicable	N/A
M023	ESVP Receiver	Rohde & Schwarz	ESVP	872 991/027	10 Apr 2006	12

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Test Equipment Used (Continued)

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval Months
M1068	Thermometer Digital	Iso-Tech	RS55	93102884	09 Jun 2006	12
M1124	ESIB Spectrum Analyser	Rohde & Schwarz	ESIB26	100046K	23 Nov 2005	12
M1260	SCAT 5020	Setcom	SCAT 5520	CZC50405 CD	Not Applicable	N/A
M1263	ESIB	Rohde & Schwarz	ESIB7	100265	06 Jan 2006	12
M1266	Thermo Hygro	RS	212-124	0	18 Jul 2006	12
S201	Site 1	RFI	1	-	12 July 2006	12
S212	Site 12	RFI	12	-	Not Applicable	N/A

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

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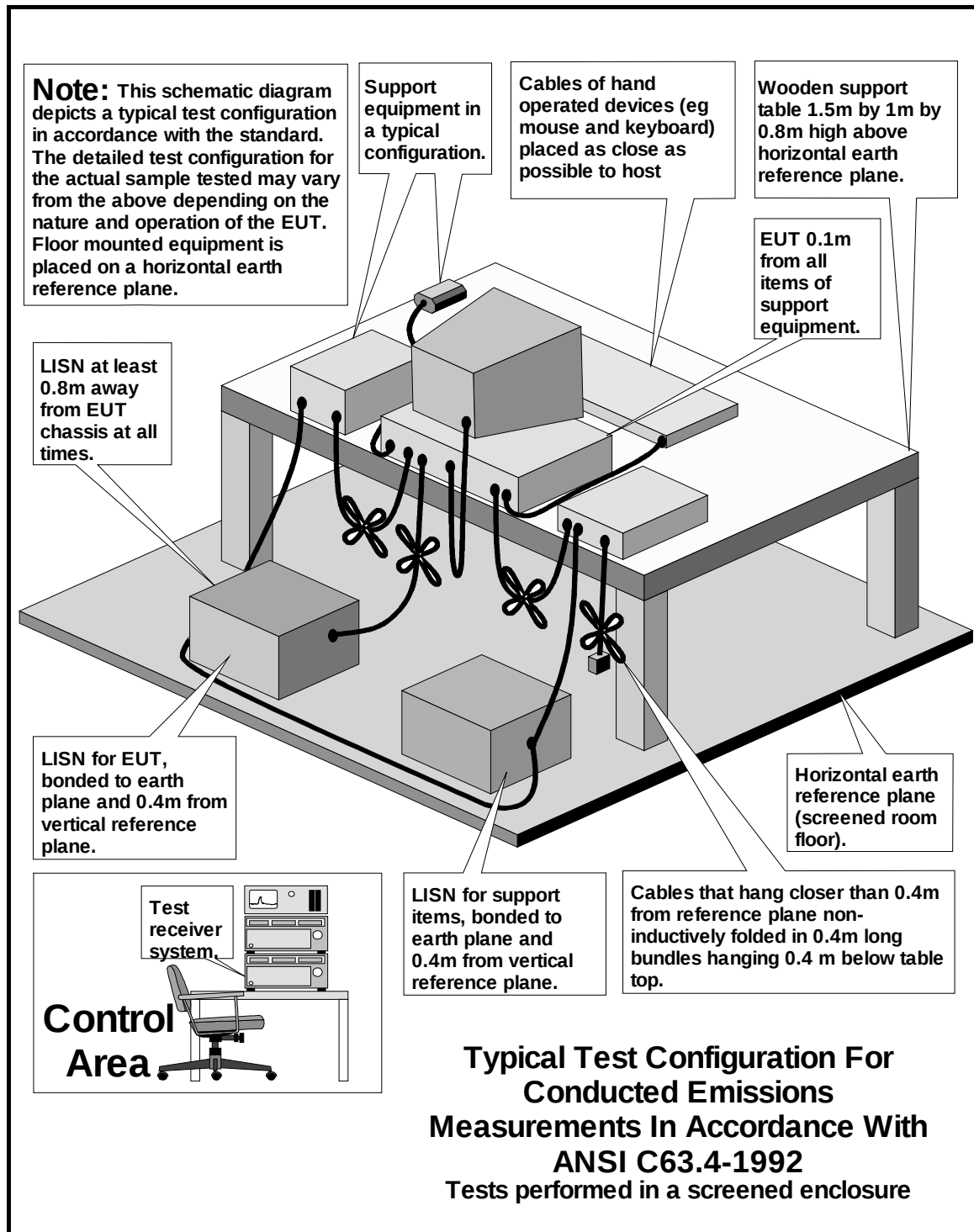
Appendix 2. Test Configuration Drawings

This appendix contains the following drawings:

Drawing Reference Number	Title
DRG\48332JD04\EMICON	Test configuration for measurement of conducted emissions.
DRG\48332JD04\EMIRAD	Test configuration for measurement of radiated emissions.

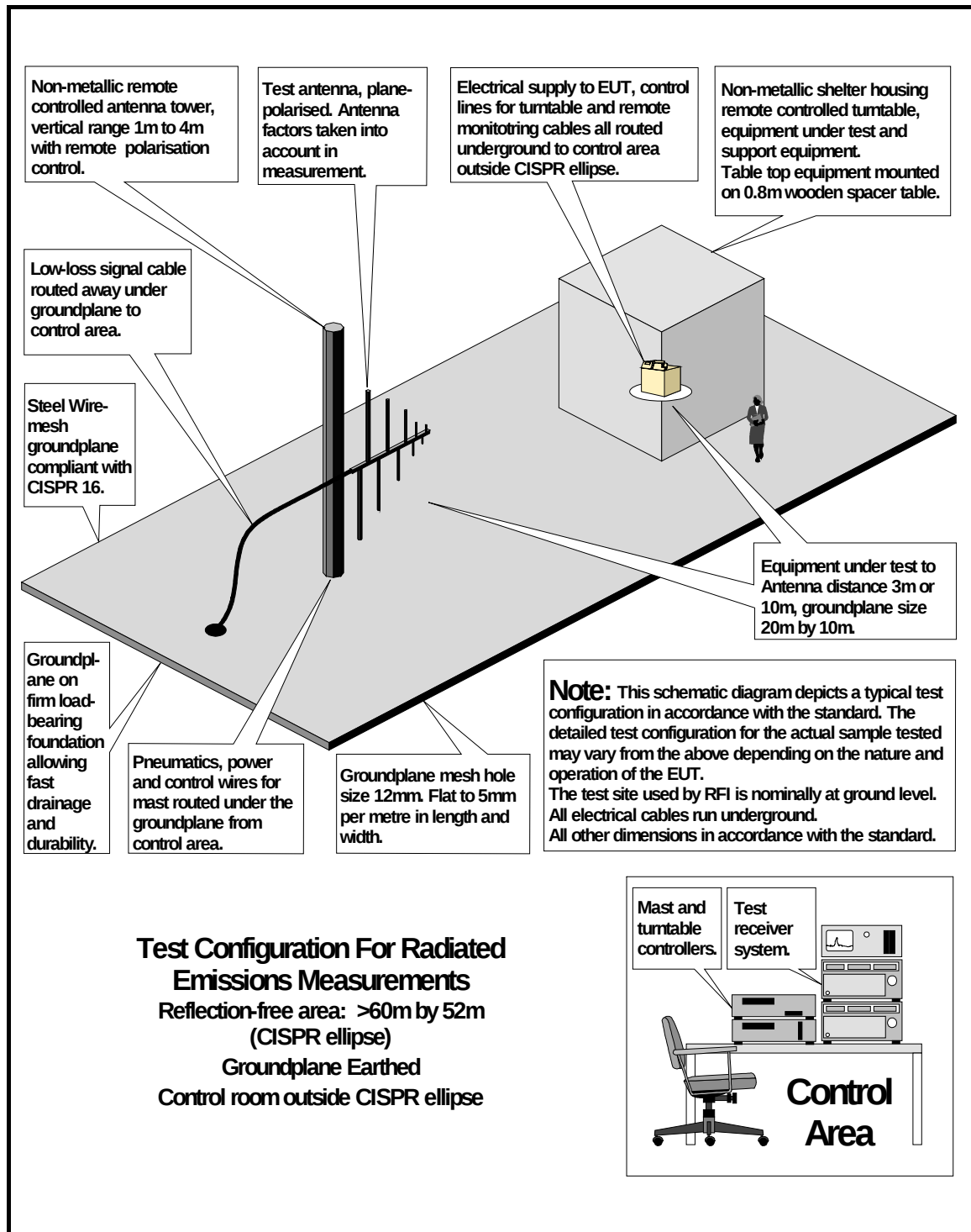
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