


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

 <p>Accredited to ISO/IEC 17025:2005</p>	<b>QinetiQ Ltd</b>	
	<b>Issue No:</b> 021	<b>Issue date:</b> 12 November 2009
	<b>Electromagnetic and Environmental Services</b> Cody Technology Park A5 Building, Room 1005 Ively Road Farnborough Hampshire GU14 0LX	<b>Contact: Mr D Bright</b> <b>Tel: +44 (0)1252 397265</b> <b>Fax: +44 (0)1252 397058</b> <b>E-Mail: dbright@qinetiq.com</b> <b>Website: www.qinetiq.com</b>

Testing performed by the Organisation at the locations specified below

### Locations covered by the organisation and their relevant activities

#### Laboratory locations:

Location details	Activity	Location code
<p><b>Address</b>                      Electromagnetic and Environmental Services                      Cody Technology Park                      A5 Building, Room 1005                      Ively Road                      Farnborough                      Hampshire, GU14 0LX</p> <p><b>Local contact</b>                      Mr D Bright                      Tel: +44 (0)1252 393241                      Fax: +44 (0)1252 397058                      Email: dbright@qinetiq.com                      Website: www.qinetiq.com</p>	<p><u>Testing:</u>                      Military EMC Tests                      Civil EMC Tests                      Environmental Tests                      Safety Tests</p>	A
<p><b>Address</b>                      Electromagnetic and Environmental Services                      QinetiQ MOD Shoeburyness                      Q7 Building                      Shoeburyness                      Southend-on-Sea                      Essex, SS3 9SR</p> <p>(All correspondence to Farnborough address)</p>	<p><u>Performance Tests:</u>                      Marine Navigation Equipment                      Shipborne Radar                      Automatic Radar Plotting Aid                      Automatic Tracking Aid                      Speed and distance Measuring Equipment</p>	B
<p><b>Address</b>                      QinetiQ Chertsey                      Building 125                      Chobham Lane                      Chertsey                      Surrey, KT16 0EE</p> <p>(All correspondence to Farnborough address)</p>	<p><u>Testing:</u>                      Military EMC Tests for Large Platforms and Systems</p>	C



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**Site activities performed away from the locations listed above:**

Location details	Activity	Location code
Any	<u>Testing:</u> Military EMC Tests  Note: Where applicable these tests must be carried out in a screened enclosure or other arrangements made to prevent contravention of the Wireless Communications Act.	D





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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Continued from Page 1  Missiles: Guided and Unguided Motor Vehicle Accessories and Components Motors: Electrical Navigation Equipment Office Equipment: Electrical Optical and Photometric Equipment Plugs and Sockets: Electrical Power Electronics Equipment Power Supplies: Electrical Pumps Radar Equipment Radio and TV Equipment Rescue Appliances and Equipment Safety Appliances and Equipment Satellites and Sub-Assemblies Security Equipment Sensors Smoke Detectors Sonar Equipment Switchboards: Electrical Telecommunications Equipment Tools: Machine Transformers: Electrical Video Equipment Weapons Systems and Sub-Assemblies	<b>1 MILITARY EMC TESTS</b> (cont'd)		
	1.1 Conducted Emissions (cont'd)		
	1.1.1 Conducted Current Emissions (cont'd)	RTCA/DO-160D:1999 Section 21.3  RTCA/DO-160E:Dec 2004 Section 21.4 RTCA/DO-160F:Dec 2007 Section 21.4	A, D  A, D
	1.1.2 Conducted Voltage Emissions Power Lines 15 kHz to 100 MHz	DG Ships 250B:June 1981 (Change No 1:August 1984 Section 7)  MIL STD 461D and 461E CE 102	A, C, D  A, C
	20 Hz to 10 MHz Power Lines	DEF STAN 59-41:Part 4: Issue 2:June 1988 Issue 3:January 1996 DCE01	D
	1.1.3 Measurement of RF interference on Ships Receivers Antenna Feeders 9 kHz to 400 MHz	DEF STAN 59-411 Part 3 Issue 1 Including Amdt 1 31 Jan 2008 DCE 01.B  BS 1597:June 1985 Section 4	A, C  D



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As listed on Pages 3 and 4	<b>1 MILITARY EMC TESTS</b> (cont'd)  1.2 Exported Transients Power Lines 2000 V peak	DEF STAN 59-41:1993, Issue 4 DCE 03  DEF STAN 59-41:1995, Issue 5 DCE 03  DEF STAN 59-41:2003, Part 3, Section 3, Issue 1 DCE 03.3  DEF STAN 59-411 Part 3, Issue 1, Amdt 1, January 2008 DCE 03.B  SPE-J-000-E-1000, Feb 1991, Issue 1 CE-EFA-3	A, C, D  A, C, D  A, C  A, C  A, C
	1.3 Radiated Emissions  1.3.1 E Field: 14 kHz to 18 GHz Installed Antenna: 1.6 MHz to 76 MHz	DEF STAN 59-41:1988, Issue 3 DRE 01 and DRE 03  DEF STAN 59-41:1993, Issue 4 DRE 01 and DRE 03  DEF STAN 59-41:1995, Issue 5 DRE 01 and DRE 03  DEF STAN 59-41:1999, Part 3, Section 1, Issue 2 DRE 01.1 and DRE 03.1  DEF STAN 59-41:1999, Part 3, Section 2, Issue 2 DRE 01.2	A, C D DRE01 14 kHz to 1 GHz only  A, C D DRE01 14 kHz to 1 GHz only  A, C D DRE01 14 kHz to 1 GHz only  A, C  A, C



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As listed on Pages 3 and 4	<b>1 MILITARY EMC TESTS</b> (cont'd)		
	1.3 Radiated Emissions (cont'd)		
	1.3.1 E Field: 14 kHz to 18 GHz (cont'd)	DEF STAN 59-41:2003, Part 3, Section 3, Issue 1 DRE 01.3 and DRE 03.3	A, C
	E Field 10 kHz to 18 GHz	DEF STAN 59-411 Part 3 Issue 1 Including Amdt 1 31 Jan 2008 DRE 01.B, DRE 03.B	A, C
		DG Ships 250B:June 1981 (Change No 1: August 1984), Section 8	A, C, D
		SPE-J-000-E-1000 Feb 1991, Issue 1 RE-EFA-1	A, C
		RTCA/DO-160D:1999 Section 21.4	A, C
		RTCA/DO-160E:Dec 2004 Section 21.5	A, C
		RTCA/DO-160F:Dec 2007 Section 21.5	A, C
		MIL STD 461D and 461E RE 102 10 kHz to 18 GHz	A, C A, C
1.3.2 H Field: 20 Hz to 30 MHz	DEF STAN 59-41:1988, Issue 3 DRE 02	A, C, D	
	DEF STAN 59-41:1993, Issue 4 DRE 02	A, C, D	
	DEF STAN 59-41:1995, Issue 5 DRE 02	A, C, D	



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As listed on Pages 3 and 4	<p><b>1 MILITARY EMC TESTS</b> (cont'd)</p> <p>1.3 Radiated Emissions (cont'd)</p> <p>1.3.2 H Field: 20 Hz to 30 MHz (cont'd)</p> <p>H Field: 20 Hz to 100kHz</p>	<p>DEF STAN 59-41:1999, Part 3, Section 1, Issue 2 DRE 02.1</p> <p>DEF STAN 59-41:2003, Part 3, Section 3, Issue 1 DRE 02.3</p> <p>DEF STAN 59-411 Part 3 Issue 1 Including Amdt 1 31 Jan 2008 DRE 02.B</p> <p>DG Ships 250B:June 1981 (Change No 1: August 1984) Sections 14 and 16</p> <p>MIL STD 461D and 461E RE 101 30Hz to 100kHz</p>	<p>A, C</p> <p>A, C</p> <p>A, C</p> <p>A, C, D</p> <p>A, C</p>
	<p>1.4 Conducted Susceptibility</p> <p>1.4.1 Power Lines, Differential Mode 20 Hz to 400 MHz</p>	<p>DEF STAN 59-41:1988, Issue 3 DCS 01 and DCS 02</p> <p>DEF STAN 59-41:1993, Issue 4 DCS 01 and DCS 02</p> <p>DEF STAN 59-41:1995, Issue 5 DCS 01 and DCS 02</p> <p>DEF STAN 59-41:1999, Part 3, Section 1, Issue 2 DCS 02.1</p>	<p>A, C, D</p> <p>A, C, D</p> <p>A, C, D</p> <p>A, C</p>



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As listed on Pages 3 and 4	<b>1 MILITARY EMC TESTS</b> (cont'd)		
	1.4 Conducted Susceptibility		
	1.4.1 Power Lines, Differential Mode 20 Hz to 400 MHz (cont'd)	DEF STAN 59-41:1999, Part 3, Section 2, Issue 2 DCS 01.2 and DCS 02.2	A, C
		DEF STAN 59-41:2003, Part 3, Section 3, Issue 1 DCS 01.3 and DCS 02.3	A, C
		DEF STAN 59-411 Part 3, Issue 1, Amdt 1, January 2008 DCS 01.B	A, C
		DG Ships 250B:June 1981 (Change No 1: August 1984), Section 10	A, C, D
		SPE-J-000-E-1000 Feb 1991, Issue 1 CS-EFA-1	A, C
		MIL STD 461D and 461E CS 101 and CS 114	A, C
		RTCA/DO-160D:1999 Section 18.3.1 Section 18.3.2	A, C
		RTCA/DO-160E:Dec 2004 Section 18.3.1 Section 18.3.2	A, C
	RTCA/DO-160F:Dec 2007 Section 18.3.1 Section 18.3.2	A, C	



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As listed on Pages 3 and 4	<b>1 MILITARY EMC TESTS</b> (cont'd)		
	1.4 Conducted Susceptibility (cont'd)		
	1.4.2 Power, Control and Signal Lines Common Mode 10 kHz to 400 MHz	DEF STAN 59-41:1988, Issue 3 DCS 02	A, C (D Land & Sea Systems only)
		DEF STAN 59-41:1993, Issue 4 DCS 02	A, C (D Land & Sea Systems only)
		DEF STAN 59-41:1999, Part 3, Section 1, Issue 2 DCS 02.1	A, C
		DEF STAN 59-41:1999, Part 3, Section 2, Issue 2 DCS 02.2	A, C
		DEF STAN 59-41:2003, Part 3, Section 3, Issue 1 DCS 02.3	A, C
	50 kHz to 400 MHz	DEF STAN 59-411 Part 3 Issue 1 Including Amdt 1 31 Jan 2008 DCS 02 A and B	A, C
		DG Ships 250B:June 1981 (Change No 1: August 1984), Section 10	A, C, D
		SPE-J-000-E-1000 Feb 1991, Issue 1 CS-EFA-2	A, C
	MIL STD461D and 461E CS 114	A, C	
	MIL STD461D and 461E CS 115	A, C	
	RTCA/DO-160D:1999 Section 20.4	A, C	



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As listed on Pages 3 and 4	<b>1 MILITARY EMC TESTS</b> (cont'd)		
	1.4 Conducted Susceptibility (cont'd)		
	1.4.2 Power, Control and Signal Lines Common Mode 50 kHz to 400 MHz (cont'd)	RTCA/DO-160E:Dec 2004 Section 20.4	A, C
		RTCA/DO-160F:Dec 2007 Section 20.4	A, C
	1.4.3 Control and Signal Lines 20 Hz to 50 kHz	DEF STAN 59-41:1988, Issue 3 DCS 03	A, C, D
		DEF STAN 59-41:1993, Issue 4 DCS 03	A, C, D
		DEF STAN 59-41:1995, Issue 5 DCS 03	A, C, D
		DEF STAN 59-41:1999, Part 3, Section 1, Issue 2 DCS 03.1	A, C
		DEF STAN 59-41:1999, Part 3, Section 2, Issue 2 DCS 03.2	A, C
		DEF STAN 59-41:2003, Part 3, Section 3, Issue 1 DCS 03.3	A, C
	DEF STAN 59-411 Part 3, Issue 1, Amdt 1, January 2008 DCS 03.B	A, C	
	SPE-J-000-E-1000 Feb 1991, Issue 1 RS-EFA-2	A, C	
	RTCA/DO-160D:1999 Section 19.3.3	A, C	



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As listed on Pages 3 and 4	<b>1 MILITARY EMC TESTS</b> (cont'd)		
	1.4 Conducted Susceptibility (cont'd)		
	1.4.3 Control and Signal Lines 20 Hz to 50 kHz (cont'd)	RTCA/DO-160E:Dec 2004 Section 19.3.3	A, C
		RTCA/DO-160F:Dec 2007 Section 19.3.3	A, C
		RTCA/DO-160E:Dec 2004 Section 19.3.2	??
		RTCA/DO-160F:Dec 2007 Section 19.3.2	??
	1.4.4 Structure Current 60Hz to 100kHz	MIL STD461D and 461E CS 109	A, C
1.4.5 Low Level Swept Current (LLSC) 200KHz to 450 MHz	DEF STAN 59-411 Part 4 Issue 1 including Amdt 1 Jan 2008 Annex A and B	D	
1.4.6 Bulk Current Injection (BCI) 200KHz to 450 MHz	DEF STAN 59-411 Part 4 Issue 1 including Amdt 1 Jan 2008 Annex A and B	D	



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Pages 3 and 4	<b>1 MILITARY EMC TESTS</b> (cont'd)		
	1.5 Transient Susceptibility Power, Control and Signal Lines		
	1.5.1 Imported Long Transient Susceptibility 700V 30A peak	DEF STAN 59-41:1988, Issue 3 DCS 04	A, C
		DEF STAN 59-41:1993, Issue 4 DCS 04	A, C
		DEF STAN 59-41:1995, Issue 5 DCS 04	A, C
		DEF STAN 59-41:2003, Part 3, Section 3, Issue 1 DCS 04.3	A, C
		DEF STAN 59-411 Part 3, Issue 1, Amdt 1, January 2008 DCS 04.B	A,C
	1.5.2 Externally Generated Transients (Switching and NEMP) 100A peak	DEF STAN 59-41:1988, Issue 3 DCS 05	A, C, D
		DEF STAN 59-41:1993, Issue 4 DCS 05	A, C, D
		DEF STAN 59-41:1995, Issue 5 DCS 05	A, C, D
	DEF STAN 59-41:1999, Part 3, Section 2, Issue 2 DCS 05.2	A, C	
	DEF STAN 59-41:2003, Part 3, Section 3, Issue 1 DCS 05.3	A, C	



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As listed on Pages 3 and 4	<b>1 MILITARY EMC TESTS</b> (cont'd)		
	1.5 Transient Susceptibility Power, Control and Signal Lines (cont'd)		
	1.5.2 Externally Generated Transients (Switching and NEMP) 100A peak (cont'd)	DEFSTAN 59-411 Part 3, Issue 1, Amdt 1, January 2008 DCS 05.B	A, C
		DG Ships 250B:June 1981 (Change No 1: August 1984), Section 17	A, C, D
	1.5.3 Imported Long Transient Susceptibility 2350V 100A peak	DEF STAN 59-41:1988, Issue 3 DCS 06	A, C, D
		DEF STAN 59-41:1993, Issue 4 DCS 06	A, C, D
		DEF STAN 59-41:1995, Issue 5 DCS 06	A, C, D
		DEF STAN 59-411 Part 3 Issue 1, Amdt 1, January 2008 DCS 06.B	A, C
	1.5.4 Externally Generated Transients (Nuclear Electromagnetic Pulse Tests) 4 kV 40A peak	DEF STAN 59-41:1988, Issue 3 DCS 08	A, C
		DEF STAN 59-41:1993, Issue 4 DCS 08	A, C
	DEF STAN 59-411 Part 3, Issue 1, Amdt 1, January 2008 DCS 08.B	A, C	



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As listed on Pages 3 and 4	<b>1 MILITARY EMC TESTS</b> (cont'd)		
	1.5 Transient Susceptibility Power, Control and Signal Lines (cont'd)		
	1.5.4 Externally Generated Transients (Nuclear Electromagnetic Pulse Tests) 4 kV 40A peak (cont'd)	DEF STAN 59-41:1995, Issue 5 DCS 08	A, C
		DEF STAN 59-41:2003, Part 3, Section 3, Issue 1 DCS 08.3	A, C
		SPE-J-000-E-1000 Feb 1991, Issue 1 NEMP-EFA-1	A, C
	1.5.5 Imported Long Transients 2000V 100A peak	DEF STAN 59-41:1996, Issue 5 DCS 11	A, C & D
	1.5.6 Imported Low Frequency Transients 2500V peak	DEF STAN 59-41:1995, Issue 5 DCS 12 (issue 5, 1995)	A, C, D
		DEF STAN 59-41:1995, Issue 5 DCS 12 (issue 6, 1998)	A, C, D
		DEF STAN 59-41:2003, Part 3, Section 3, Issue 1 DCS 12.3	A, C
		DEF STAN 59-411 Part 3, Issue 1, Amdt 1, January 2008 DCS 12.B	A, C
	RTCA/DO-160E:Dec 2004 Section 17	A, C	
	RTCA/DO-160F:Dec 2007 Section 17	A, C	



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As listed on Pages 3 and 4	<b>1 MILITARY EMC TESTS</b> (cont'd)		
	1.5 Transient Susceptibility Power, Control and Signal Lines (cont'd)		
	1.5.7 Imported Short Transient Susceptibility	DEF STAN 59-41:1988, Issue 3 DCS 07	A, C, D
		DEF STAN 59-41:1993, Issue 4 DCS 07	A, C, D
		RTCA/DO-160E:Dec 2004 Section 19.3.4	??
		RTCA/DO-160F:Dec 2007 Section 19.3.4	??
		DEF STAN 59-41:1995, Issue 5 DCS 07	A, C, D
	1.5.8 Damped Sinusoidal Transients Cables and Power leads 10 kHz to 100 MHz	MIL STD461D and 461E CS116	A, C
	1.6 ESD Up to 15 kV	DEF STAN 59-41:1988, Issue 3 DCS 10	A, C
		DEF STAN 59-41:1993, Issue 4 DCS 10	A, C
	DEF STAN 59-41:1995, Issue 5 DCS 10	A, C	
	DEF STAN 59-41:1999, Part 3, Section 1, Issue 2 DCS 10.1	A, C	



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As listed on Pages 3 and 4	<b>1 MILITARY EMC TESTS</b> (cont'd)		
	1.6 ESD Up to 15 kV (cont'd)	DEF STAN 59-41:1999, Part 3, Section 2, Issue 2 DCS 10.2	A, C
		DEF STAN 59-41:2003, Part 3, Section 3, Issue 1 DCS 10.3	A, C
		DEF STAN 59-411 Part 3, Issue 1, Amdt 1, January 2008 DCS 10.B	A, C
		RTCA-DO-160D:1999 Section 25	A, C
		RTCA-DO-160E:Dec 2004 Section 25	A, C
		RTCA-DO-160F:Dec 2007 Section 25	A, C
	1.7 Radiated Susceptibility		
	1.7.1 Magnetic Field 20 Hz to 50 kHz	DEF STAN 59-41:1988, Issue 3 DRS 01	A, C D
		DEF STAN 59-41:1993, Issue 4 DRS 01	A, C, D
	DEF STAN 59-41:1995, Issue 5 DRS 01	A, C, D	
	DEF STAN 59-41:1999, Part 3, Section 1, Issue 2 DRS 01.1	A, C	



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As listed on Pages 3 and 4	<b>1 MILITARY EMC TESTS</b> (cont'd)		
	1.7 Radiated Susceptibility (cont'd)		
	1.7.1 Magnetic Field 20 Hz to 50 kHz (cont'd)	DEF STAN 59-41:2003, Part 3, Section 3, Issue 1 DRS 01.3	A, C
		DEF STAN 59-411 Part 3, Issue 1, Amdt 1, January 2008 DRS 01.B, DRS 03.B	A, C
		DG Ships 250B:June 1981 (Change No 1: August 1984), Section 15	A, C, D
		RTCA/DO-160D:1999 Section 19.3.1	A, C
		RTCA/DO-160E:Dec 2004 Section 19.3.1	A, C
		RTCA/DO-160F:Dec 2007 Section 19.3.1	A, C
	1.7.2 Electric Field 14 kHz to 40 GHz	DEF STAN 59-41:1988, Issue 3 DRS 02	A, C, D
	Field Strength Dependent on EUT Size and Frequency Range: 10 kHz - 100 MHz up to 400 V/m 100 MHz - 18 GHz up to 200 V/m 18 GHz - 40 GHz up to 100 V/m	DEF STAN 59-41:1993, Issue 4 DRS 02	A, C, D
	DEF STAN 59-41:1995, Issue 5 DRS 02	A, C, D	
	DEF STAN 59-41:1999, Part 3, Section 1, Issue 2 DRS 02.1	A, C	
	DEF STAN 59-41:1999, Part 3, Section 2, Issue 2 DRS 02.2	A, C	



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As listed on Pages 3 and 4	<b>1 MILITARY EMC TESTS</b> (cont'd)		
	1.7 Radiated Susceptibility (cont'd)		
	1.7.2 Electric Field 14 kHz to 40 GHz (cont'd)	DEF STAN 59-41:2003, Part 3, Section 3, Issue 1 DRS 02.3	A, C
	E Field 10 kHz to 18 GHz	DEF STAN 59-411 Part 3 Issue 1 Including Amdt 1 31 Jan 2008 DRS 02.B	A, C
		DG Ships 250B:June 1981 (Change No 1: August 1984), Section 11	A, C, D
		SPE-J-000-E-1000 Feb 1991, Issue 1 RS-EFA-3	A, C
		MIL STD 461D and MIL STD 461E RS 103	A, C
		RTCA/DO-160D:1997 Section 20.5	A, C
		RTCA/DO-160D:2000 Change No 1, Section 20.5	A, C
	RTCA/DO-160E:Dec 2004 Section 20.5	A, C	
	RTCA/DO-160F:Dec 2007 Section 20.5	A, C	



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**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Pages 3 and 4	<b>1 MILITARY EMC TESTS</b> (cont'd)		
	1.7 Radiated Susceptibility (cont'd)		
	1.7.3 Alternative Method Mode Stir Reverberation Chamber Mode Stir 100 MHz to 18 GHz Maximum Field Strength: Up to 5000 V/m at certain frequencies	ED14D, Section 20:1997 RTCA DO-160D:1997 Section 20.5  RTCA/DO-160E:Dec 2004 Section 20.5  RTCA/DO-160F:Dec 2007 Section 20.5	A  A  A
	1.7.4 Alternative Method Reverberation Chamber Mode Tune 100 MHz to 18 GHz Maximum Field Strength: Up to 3000 V/m at certain frequencies	DEF STAN 59-41:2003, Part 3, Section 3, Issue 1 DRS 02.3  ED14D change No 1, Section 20:2000 RTCA/DO-160D:2000 Change No 1, Section 20.6	A  A
	1.8 Current Injection	DG Ships 250B:June 1981 (Change No 1: August 1984), Section 13	A, C, D
1.9 Magnetostatic Field Susceptibility Max EUT size: 1.1 m x 1.1 m x 1.1 m Field strength up to 5400 A/m (6.75 mT) Other EUT sizes and field strengths accommodated on request	DEF STAN 59-41:1988, Issue 3 DMFS 01	A, C, D	
	DEF STAN 59-41:1993, Issue 4 DMFS 01	A, C, D	
	DEF STAN 59-41:1995, Issue 5 DMFS 01	A, C, D	



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As listed on Pages 3 and 4	<b>1 MILITARY EMC TESTS</b> (cont'd)		
	1.9 Magnetostatic Field Susceptibility (cont'd)	DEF STAN 59-41:2003, Part 3, Section 3, Issue 1 DRS 03.3  NES 1004, Data Sheet 38, Issues 1 and 2	A, C  A, C, D
	<b>2 CIVIL EMC TESTS</b>		
	2.1 Radio Frequency Interference Conducted: 10 kHz to 30 MHz	BS EN 60945:2002, Clause 9.2 IEC 945:2002, Clause 9.2	A
	2.2 Conducted Emissions 150 kHz to 30 MHz	BS EN 55022:1998 Including Amd 2 Excluding Telecommunication Ports	A
	2.3 R F Radiated Emissions 30 MHz to 2 GHz	BS EN 60945:2002, Clause 9.3 IEC 945:2002, Clause 9.3 Excluding LF magnetic field 150 kHz - 30 MHz	A
	2.4 Radiated Emissions 30 MHz to 1 GHz	BS EN 55022:1998 Including Amd 2	A
	2.5 Electrostatic Discharge Up to 15 kV	BS EN 60945:2002, Clause 10.9 IEC 945:2002, Clause 10.9 EN 61000-4-2:1995	A
	2.6 Radiated RF Immunity 80 MHz to 2 GHz 1 to 10 V/m	EN 61000-4-3:1997 BS EN 60945:2002, Clause 10.4 IEC 945:2002, Clause 10.4	A
	2.7 Fast Transient/Burst Immunity	EN 61000-4-4:1995 BS EN 60945:2002, Clause 10.5 IEC 945:2002, Clause 10.5	A



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	<b>2 CIVIL EMC TESTS</b> (cont'd)		
	2.8 Surges (Power Lines)	EN 61000-4-5:1995 BS EN 60945:2002, Clause 10.6 IEC 945:2002, Clause 10.6	A
	2.9 Conducted Immunity (RF) 150 kHz to 80 MHz 1 to 10 V emf	EN 61000-4-6:1996 BS EN 60945:2002, Clause 10.3 IEC 945:2002, Clause 10.3	A
	2.10 Power Supply Short Term Variations	EN 61000-4-11:1994 BS EN 60945:2002, Clause 10.7 IEC 945:2002, Clause 10.7	A
	2.11 RF Radiation 300 MHz - 40 GHz	BS EN 60945:2002, Clause 12.2 IEC 945:2002, Clause 12.2	A
	2.12 X Radiation	BS EN 60945:2002, Clause 12.4 IEC 945:2002, Clause 12.4	A
	<b>3 ENVIRONMENTAL TESTS</b>		
	3.1 Dry Heat Steady State and Cyclic Ambient to +70°C 1 Chamber Max size: 3.7 x 3.7 x 2.4 m	BS EN 60945:2002, Clause 8.2 IEC 945:2002, Clause 8.2 BS EN 60068-2-2:1993, Tests Ba and Bb NES 1004:1987 (Data Sheet 7)	A
	3.2 Damp Heat Steady State and Cyclic +20°C to +55°C 20% to 100% RH 1 Chamber Max size: 3.7 x 3.7 x 2.4 m	BS EN 60945:2002, Clause 8.3 IEC 945:2002, Clause 8.3 BS 2011:1990 (2.1 Ca, Cb, Db) RTCM:1997 (A4.0) NES 1004:1987 (Data Sheet 9) BS EN 60068-2-30:1999 BS EN 60068-2-56:1990	A



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	<p><b>3 ENVIRONMENTAL TESTS</b> (cont'd)</p> <p>3.3 Low Temperature 0°C to - 30°C 2 Chambers Max size: 3.7 x 3.7 x 2.4 m</p> <p>3.4 Change of Temperature Max Temperature: 70°C Min Temperature: -30°C Max size: 3.7 x 3.7 x 2.4 m</p> <p>3.5 Vibration (Sine) Loading to 0.5 tonne Frequency Range: 2 Hz to 500 Hz Dynamic Thrust: 20 kN</p> <p>3.6 Acoustic Noise</p>	<p>BS EN 60945:2002, Clause 8.4 IEC 945:2002, Clause 8.4 BS EN 60068-2-1:1993, Tests Aa and Ab NES 1004:1987 (Data Sheet 8)</p> <p>BS EN 60068-2-14:2000</p> <p>BS EN 60945:2002, Clause 8.7 IEC 945:2002, Clause 8.7 NES 1004:1987 (Data Sheet 25)</p> <p>BS EN 60945:2002, Clause 11.1 IEC 945:2002, Clause 11.1 NES 1004:1987 (Data Sheet 26)</p>	<p>A</p> <p>A</p> <p>A</p> <p>A</p>
<p>Shipborne Radar Shipborne Radar, High Speed Craft</p>	<p><b>4 PERFORMANCE TESTS</b></p> <p>Operation and Performance 2.5 to 18 GHz 1 kW to 150 kW Peak Power Range Accuracy Bearing Accuracy Discrimination</p>	<p>BS EN 60936-1:2000 Excluding Clauses 4.9.3, 4.10, 4.11 and 4.28 IEC 60936-1:1999 BS EN 60936-2:1999 IEC 60936-2:1998</p>	<p>B</p>



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Shipborne Radar	<p><b>4 PERFORMANCE TESTS</b> (cont'd)</p> <p>Performance requirements, methods of testing and required test results</p>	<p>BS EN 62388:2008            Clause 4 General (excluding 4.3.1)            Clause 5 Radar performance (excluding 5.2.1)            Clause 6 Display presentation (excluding 6.4.1.2, 6.11.3 and 6.15)            Clause 7 CCRP and own ship            Clause 8 Navigation tools            Clause 9 Orientation, motion and stabilisation            Clause 10 Aids for collision avoidance (excluding 10.3.14.3, 10.5.5.2 l)            Clause 11 Chart radar (optional classification) (excluding 11.1.6.2)            Clause 12 - Ergonomic criteria (control functions and display)            Clause 13 - Interfacing            Clause 14 - Design, servicing and installation (excluding 14.3.2 a)            Clause 15 - Alarms and failures            Clause 17 - Equipment familiarisation and documentation</p>	B
Automatic Radar Plotting Aid (ARPA) Automatic Tracking Aid (ATA)	<p>Operation and Performance            20 Target Free Simulation            Speed 0.01 to 100 knots            Rate of Turn 0.1 to 720°/sec            Own Ship Manoeuvres            IMO Accuracy Scenarios</p>	<p>BS EN 60872-1:1999            IEC 60872-1:1998            BS EN 60872-2:1999            IEC 60872-2:1999</p>	B



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Speed and Distance Measuring Equipment	<b>4 PERFORMANCE TESTS</b> (cont'd)  Operation and Performance 0 to 100 knots Electromagnetic Logs Doppler Logs Correlation Logs	BS EN 61023:2000 excluding Clause 4.4 IEC 61023:1999 excluding Clause 4.4	A, B

**Facilities for EMC Testing:**

Screened Enclosures (dimensions l x b x h in metres)

- a) 10 x 8 x 7 (large reverberation chamber)
- b) 8 x 5 x 3 (small reverberation chamber)
- c) 3 x 2.2 x 2.2 (mini reverberation chamber)
- d) 8 x 5 x 3 (semi-anechoic)
- e) 8 x 5 x 3 (semi-anechoic)
- f) 16 x 16 x 8 (vehicle chamber)
- g) 10 x 6 x 7 (ferrite lined semi-anechoic Tempest/EMC)
- h) 8 x 5 x 6 (ferrite lined semi-anechoic)
- i) 6.25 x 3.75 x 3 (semi-anechoic Man Worn/Portable)

Maximum EUT size: Note: The access doors restrict the size of EUT

Chambers a, b, d and e: Door size 2 m x 2 m

Chambers c and i: Door size 1 m x 2 m

Chamber f: Door size 5 m x 5 m with a threshold guard

Chamber g: Door size 3 m x 3 m

Chamber h: Door size 1.5 m x 2.5 m

Power Supplies available:

Three phase: 200V 400 Hz A/C Supply  
415V 100A 50 Hz  
200V 32A 400 Hz (Rotary Generator)  
440V 60A 60 Hz (Rotary Generator)

Single phase: 230V 100A 50 Hz  
115V 1 kVa 400 Hz  
115V 50A 60 Hz (Rotary Generator)

DC: 28V 75A  
Other specialist supplies available on request

Compressed air up to 5 bar

Water services available



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<b>Facilities for Environmental (Climatic) testing:</b>			
Chamber 1: 3.7 x 3.7 x 2.4m Chamber 3: 0.7 x 0.48 x 0.74m			
END			