

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>	TRaC Telecoms & Radio Ltd	
	Issue No: 093	Issue date: 17 December 2010
Unit E South Orbital Trading Park Hedon Road Hull HU9 1NJ	Contact: Mr J Harros Tel: +44 (0)148 280 1801 Fax: +44 (0)148 280 1806 E-Mail: test@tracglobal.com Website: www.tracglobal.com	
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	
Address Unit E South Orbital Trading Park Hedon Road Hull HU9 1NJ	Local contact Mr J Harros Tel: +44 (0)1482 801801 Fax: +44 (0)1482 801806 Email: test@tracglobal.com Website: www.tracglobal.com	EMC Radio Telecoms	A
Address Unit 1 Pendle Place Skelmersdale West Lancashire WN8 9PN	Local contact Mr J Harros Tel: +44 (0)1482 801801 Fax: +44 (0)1482 801806 Email: test@tracglobal.com Website: www.tracglobal.com	Radio	C
Address 100 Frobisher Business Park Leigh Sinton Road Malvern Worcestershire WR14 1BX	Local contact Mr J Harros Tel: +44 (0)1482 801801 Fax: +44 (0)1482 801806 Email: test@tracglobal.com Website: www.tracglobal.com	Radio	D

Site activities performed away from the locations listed above:

Location details	Activity	Location code	
Address Any Customer Premises	Local contact Mr J Harros Tel: +44 (0)1482 801801 Fax: +44 (0)1482 801806 Email: test@tracglobal.com Website: www.tracglobal.com	Telecoms	B



0971

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DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Computers and Peripherals Electrical Cables Electrical and Electronic Components Electrical and Electronic Connectors Electrical and Electronic Products Electronic Products: Digital Enclosures for Electrical Equipment Fans Fire Fighting and Detection Equipment Generators: Electric Generators: Power Instruments: Indicating and Recording IT Equipment Measuring Equipment Medical/Dental Equipment Micro-Electronic Circuits and Components Motors: Electrical Office Equipment: Electrical Plugs and Sockets: Electrical Power Supplies: Electrical Printed Circuit Boards Radio and TV Equipment Safety Appliances/ Equipment Security Devices and Alarms Telecommunications Equipment Toys Video Equipment	1 EMC TESTING		
	1.1 Power Line Conducted Emissions 9 kHz to 30 MHz Continuous interference	EN 55011:1991 EN 55013:1990 EN 55013:2001 including Amendment A1:2003 & A2:2006 CISPR 13:2006 Edition 4.2 AS/NZS CISPR 13:2004 CISPR 13:2009 Edition 5.0 EN 55014:1993 EN 55014-1:1993 (incorporating Amendment A1:1997) EN 55022:1994 (incorporating Amendments A1:1995 and A2:1997) EN 55022:1998 EN 55022:2006 including Amendment A1:2007 CISPR 11:1990 CISPR 14:1993 CISPR 22:1997 CISPR 22:2006 Ed 5.2 CISPR 22:2008 Ed 6.0 CAN/CSA-CEI/ IEC CISPR 22:2002 ICES-003 Issue 4:2004 FCC CFR 47:Part 15B ANSI C63.4:2003 AS/NZS CISPR 22:2006 VCCI V-3	A
	1.2 Power Line Harmonics	IEC 61000-3-2:2005 Ed 3 EN 61000-3-2:2006	A
	1.3 Power Line Flicker	EN 61000-3-3:1995 including Amendment A1:2001 and A2:2005 IEC 61000-3-3:2005 Ed 1.2 EN 61000-3-3:2008 IEC 61000-3-3:2008 Ed 2.0	A



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As listed on Page 2	1 EMC TESTING (cont'd) 1.4 Signal Line Conducted Emissions 20 Hz to 30 MHz 30 MHz to 1 GHz Antenna port 30 MHz to 2.15 GHz	EN 55014-1:1993 (incorporating Amendment A1:1997) EN 55022:1998* AS/NZS CISPR 22:2006* EN 55022:2006 including Amendment A1:2007* CISPR 22:2006 Ed 5.2* CISPR 22:2008 Ed 6.0* VCCI V-3* *(limited to where standard ISN's and CDN's can be used) FCC CFR 47:Part 15B, Section 15.111, 15.115 subpart b(1), b(2), (c), (h) & (i) EN 55013:2001 including Amendment A1:2003 & A2:2006 CISPR 13:2006 Edition 4.2 AS/NZS CISPR 13:2004 CISPR 13:2009 Edition 5.0	A
	1.5 Radiated Electric Field Emissions 30 MHz to 26.5 GHz	EN 55011:1991 EN 55013:1990 EN 55013:2001 including Amendment A1:2003 & A2:2006 CISPR 13:2006 Edition 4.2 AS/NZS CISPR 13:2004 CISPR 13:2009 Edition 5.0 EN 55022:1994 (incorporating Amendments A1:1995 and A2:1997) EN 55022:1998 EN 55022:2006 including Amendment A1:2007 CISPR 11:1990 CISPR 22:1993 CISPR 22:1997 CISPR 22:2006 Ed 5.2 CISPR 22:2008 Ed 6.0 CAN/CSA-CEI/ IEC CISPR 22:2002 ICES-003 Issue 4:2004 FCC CFR 47:Part 15B	A



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As listed on Page 2	1 EMC TESTING (cont'd)		
	1.5 Radiated Electric Field Emissions (cont'd)	ANSI C63.4:2003 AS/NZS CISPR 22:2006 VCCI V-3	A
	1.6 Interference Power Measurements 30 MHz to 2.15 GHz	CISPR 14:1993 EN 55013:2001 including Amendment A1:2003 & A2:2006 CISPR 13:2006 Edition 4.2 AS/NZS CISPR 13:2004 CISPR 13:2009 Edition 5.0 EN 55014:1993 EN 55014-1:1993 (incorporating Amendments A1:1995 and A2:1997)	A
	1.7 Magnetic field emissions 10 kHz to 400 kHz	EN 50366:2003 + A1:2006 Time Domain Evaluation Method EN 62233:2008	A
	1.8 Electrostatic Discharge Air and Contact Discharge Positive and Negative Polarity up to 25 kV	IEC 61000-4-2:1995 including Amendment A1:1998 & A2:2000 IEC 61000-4-2:2001 Ed 1.2 EN 61000-4-2:1995 including Amendment A1:1998 & A2:2001 EN 61000-4-2:2009 IEC 61000-4-2:2008 Ed 2.0 ITU-T K21:2000 ITU-T K21:2003 ITU-T K44:2000 EN 55020:2002	A



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As listed on Page 2	1 EMC TESTING (cont'd) 1.9 Radiated Electric Field Immunity 10 kHz to 3 GHz Field uniformity: 0 to +6 dB for 1.5 m x 1.5 m plane using 75 % rule (26 MHz to 3 GHz) up to 20 V/m at 3 m Stripline 150 kHz to 150 MHz up to 10 V/m	IEC 801-3:1984 IEC 61000-4-3:2002 including Amendment A1:2002 IEC 61000-4-3:2006 Ed 3.0 EN 61000-4-3:1996 EN 61000-4-3:2002 including Amendment A1:2002 EN 61000-4-3:2006 EN 61000-4-3:2006 +A1:2008 IEC 61000-4-3:2008 Ed 3.1	A
	1.10 Electrical Burst/Fast Transients up to 4 kV	IEC 61000-4-4:1995 including Amendment 1:2001 and A2:2001 IEC 61000-4-4:2004 Ed 2.0 EN 61000-4-4:1995 including Amendment 1:2001 and A2:2001 EN 61000-4-4:2004 EN 61000-4-4:2004 +A1:2010 EN 55020:2002	A
	1.11 Lightning Surges Waveform characteristics: 1.2/50 μs (open circuit) 8/20 μs (short circuit) (up to 6 kV/3 kA) 10/700 μs (up to 7 kV)	IEC 61000-4-5:1995 including Amendment A1:2000 IEC 61000-4-5:2005 Ed 2.0 EN 61000-4-5:1995 including Amendment A1:2001 EN 61000-4-5:2006 ITU-T K20:2003 ITU-T K21:2000 ITU-T K21:2003 ITU-T K44:2000 ITU-T K44:2003	A



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As listed on Page 2	1 EMC TESTING (cont'd)		
	1.12 Conducted RF Immunity 9 kHz to 250 MHz	EN 61000-4-6:1996 including Amendment A1:2000 EN 61000-4-6:2007 IEC 61000-4-6:1996 including Amendment A1:2001 IEC 61000-4-6:2006 Ed 2.2 EN 61000-4-6:2009 IEC 61000-4-6:2008 Ed 3.0	A
	1.13 Radiated Magnetic Field Immunity Frequency Range: 50-60 Hz	EN 61000-4-8:1993 IEC 61000-4-8:1993 Ed 1.1 EN 61000-4-8:1993 + A1:2001 EN 61000-4-8:2010 IEC 61000-4-8:2009 Ed 2.0 EN 61000-4-9:1993 EN 61000-4-9:1993 + A1:2001 IEC 61000-4-9:2001 Ed 1.1	A
	1.14 Mains Supply Voltage Variations, Dips, Shorts and Interruptions	IEC 61000-4-11:1994 EN 61000-4-11:1994 IEC 61000-4-11:2004 Ed 2.0 EN 61000-4-11:2004	A
1.15 EMC Tests These Generic and Product specific tests are included in this schedule, but limited to those referred basic standards that are explicitly listed in Sections 1.1 to 1.14. Note: International Standards, EN, ENV and IEC, listed in this Schedule, that have been adopted nationally as BS EN DD ENV and BS IEC and are technically identical, can be considered as being included in this Schedule.	EN 61000-6-1:2007 EN 61000-6-2:2005 EN 61000-6-3:2007 EN 61000-6-4:2007 IEC 61000-6-1:2005 IEC 61000-6-2:2005 IEC 61000-6-3:2006 IEC 61000-6-4:2006 EN 55014-2:1997 TRG 1068:1991 EN 60601-1-2:1993 EN 60601-1-2:2001 EN 60601-1-2:2007 IEC 601-1-2:1993 IEC 60601-1-2:2007 Ed 3.0 BS 5724:1.2:1993 EN 50091-2:1995	A	



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As listed on Page 2	<p>1 EMC TESTING (cont'd)</p> <p>1.15 EMC Tests (cont'd)</p>	<p>EN 50130-4:1995 including Amendment A1:1998 & A2:2003 EN 50121-1:2006 EN 50121-4:2006 EN 50293:2000 BS EN 50293:2001 EN 61326:1997 EN 61326-1:2006 EN 55024:1998 including Amendment A1:2001 & A2:2003 CISPR 24:1997 including Amendment A1:2001 and A2:2002 ENV 55102-2:1995 EN 55103-1:1996 EN 55103-2:1996 EN 61204-3:2001 EN 300 386:V1.2.1:2000 EN 300 386:V1.3.1:2001 EN 300 386:V1.3.3:2005 EN 300 386:V1.4.1:2008 EN 300 386-2:1997 EN 301 489-1 V1.2.1:2000 EN 301 489-1 V1.3.1:2001 EN 301 489-1 V1.4.1:2002 EN 301 489-1 V1.5.1:2004 EN 301 489-1 V1.6.1:2005 EN 301 489-1 V1.7.1:2007 EN 301 489-1:V1.8.1:2008 EN 301 489-2 V1.3.1:2002 EN 301 489-3 V1.4.1:2002 EN 301 489-4 V1.3.1:2003 EN 301 489-4 V1.4.1:2009 EN 301 489-5 V1.3.1:2002 EN 301 489-6 V1.2.1:2002 EN 301 489-6 V1.3.1:2008 EN 301 489-7 V1.3.1:2005 EN 301 489-8 V1.2.1:2002 EN 301 489-9 V1.3.1:2002 EN 301 489-9 V1.4.1:2007 EN 301 489-10 V1.3.1:2002 EN 301 489-11 V1.2.1:2002 EN 301 489-11 V1.3.1:2006 EN 301 489-12 V1.2.1:2003 EN 301 489-12 V2.2.2:2008</p>	A



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As listed on Page 2	1 EMC TESTING (cont'd) 1.15 EMC Tests (cont'd)	EN 301 489-13 V1.2.1:2002 EN 301 489-14 V1.2.1:2003 EN 301 489-15 V1.2.1:2002 EN 301 489-16 V1.2.1:2002 EN 301 489-17 V1.2.1:2002 EN 301 489-17 V1.3.2:2008 EN 301 489-17 V2.1.1:2009 EN 301 489-18 V1.3.1:2002 EN 301 489-19 V1.2.1:2002 EN 301 489-20 V1.2.1:2002 EN 301 489-24 V1.4.1:2007 EN 301 489-28 V1.1.1:2004	A
	EMC Facilities: Open Field Site: 3 m and 10 m Screened Rooms (h x w x l) a) 3.66 m x 4.28 m x 6.7 m 2 ft absorbers on all walls: 3 ft absorber on ceiling b) 2.4 m x 2.4 m x 3.66 m c) 2.4 m x 2.4 m x 3.66 m d) 5.8 m x 6.3 m x 9.2 m Ferrite tiles on walls and ceiling (3 m alternative emissions test site) Power supplies: DC and 50/60 Hz		



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<i>Bluetooth Devices</i>	<p>2 Bluetooth Tests</p> <p>2.1 RF Transmitter, Transceiver and Receiver Tests</p>	<p><i>BLUETOOTH CORE SPECIFICATION Version 1.2 Volume 2 Part A Radio Specification</i></p> <p><i>BLUETOOTH CORE SPECIFICATION Version 2.0+EDR Volume 2 Part A Radio Specification</i></p> <p><i>BLUETOOTH CORE SPECIFICATION Version 2.1+ EDR Volume 2 Part A Radio Specification</i></p> <p>Radio Frequency Test Suite Structure (TSS) and Test Purposes (TP) System Specification 1.2/2.0/2.0 + EDR/2.1/2.1 + EDR</p>	A
Telecommunications Equipment IT Equipment Electronic Products, Digital	<p>3 TELECOMMUNICATIONS TESTING</p> <p>3.1 Analogue attachments for connection to the PSTN</p>	<p>BS 6305:1982 (Amd 1 and 2) BS 6317:1982 (Amd 1 to 3) ETS 300-001:1997 (NET 4) UK National Part and Common Test only NTR 3:Issue 2 AS/ACIF S002:2005 AS/ACIF S006:2001 AS/ACIF S006:2008 TBR 38:1998 (CTR 38) TBR 21:1998 (CTR 21) Including ATAAB Notes 1 to 7 and 9 to 15 TBR 10:1999 (3rd Edition)</p>	A, B



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Short Range Radios DECT Telephones CT1 & CT1+ Telephones Land Mobile Radio (PMR)	4 RADIO TESTING Analogue measurements 9 kHz to 1000 MHz Digital measurements 9 kHz to 2500 MHz DECT test cases 1 to 26 as stated in EN 301 406 4.1 Frequency Error 0.5 MHz to 2.6 GHz 4.2 Transmitter Carrier Power 5 mW to 50 W 4.3 Adjacent Channel Power 4 MHz to 1000 MHz 5 mW to 50 W 4.4 Adjacent Channel Selectivity 0.5 MHz to 1000 MHz 4.5 Co-Channel Rejection 0.5 MHz to 1000 MHz 4.6 Conducted Spurious Emissions 9 kHz to 21 GHz 4.7 Radiated Spurious Emissions 9 kHz to 18 GHz 4.8 Transient Power 4.9 Modulation Bandwidth 4.10 Frequency Stability 4.11 Receiver Sensitivity 4.12 Channel Characteristics 4.13 Intermodulation	EN 300 086-1:V1.2.1:2001 EN 300 086-1:V1.3.1:2008 EN 300 086-2:V1.1.1:2001 EN 300 113-1:V1.5.1:2003 EN 300 113-2:V1.3.1:2003 EN 300 220-1:V1.2.1:1997 EN 300 220-1:V1.3.1:2000 EN 300 220-1:V2.1.1:2006 EN 300 220-2:V1.2.1:1997 EN 300 220-2:V2.1.1:2006 EN 300 220-2:V2.1.2:2007 EN 300 220-3:V1.1.1:2000 Draft EN 300 220-1:V2.2.1:2008 Draft EN 300 220-2:V2.2.1:2008 EN 300 220-3:V1.1.1:2000 ETS 300 224-1:V1.3.1:2001 EN 300 224-2:V1.1.1:2001 EN 300 296-1:V1.1.1:2001 EN 300 296-1:V1.2.1:2009 EN 300 296-2:V1.1.1:2001 ETS 300 328:V1.2.2:2000 EN 300 328-1:V1.3.1:2001 EN 300 328-2:V1.2.1:2001 EN 300 328:V1.4.1:2003 EN 300 328:V1.5.1:2004 EN 300 328:V1.6.1:2004 EN 300 328:V1.7.1:2006 I-ETS 300 330-1:V1.3.2:2002 EN 300 330-1:V1.5.1:2006 EN 300 330-2:V1.3.1:2006 EN 301 406:V1.5.1:2003 EN 302 291-1 V1.1.1:2005 EN 300 440-1:V1.3.1:2001 EN 300 440-1:V1.5.1:2009 EN 300 440-2:V1.1.1:2001 EN 300 440-2:V1.2.1:2007 EN 300 422-1:V1.2.2:2000 EN 300 422-2:V1.1.1:2000 EN 302 208-1:V1.1.1:2004 AS 4268.1:1996 AS 4268.2:1995 AS/NZS 4268:2003 + A1 AS/NZS 4268:2008 AS/NZ 4295:2004 AS NZS 4415:1996 FCC CFR 47:Part 15C FCC CFR 47:Part 18:2003	A, C, D



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	4 RADIO TESTING (cont'd) 4.14 Distortion 4.15 SINAD and S/N Ratio 4.16 Selectivity		
END			