
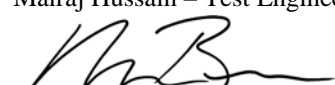


Report No	EH0266-1
Client	Whistler 168 Ayer Road Littleton, MA 01460
Phone	978-244-1400
Fax	978-244-1491
FRN	0007659246
Model	XTR140, XTR260, XTR330, XTR500
FCC ID	HSXWH21
Equipment Type Equipment Code	Radar Detector CRD
Results	As detailed within this report
Prepared by	 Mairaj Hussain – Test Engineer
Authorized by	 Michael Buchholz – EMC Manager
Issue Date	3/7/07
Conditions of issue	This Test Report is issued subject to the conditions stated in the 'Conditions of Testing' section on page 11 of this report.

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## Summary

This report is an application for Certification of radar detectors operating pursuant to 47 CFR 15.109(h). This report is designed to demonstrate the compliance of the XTR140, XTR260, XTR330, and XTR500 with the requirements outlined in Part 15 (using the methods outlined in Part 2) of 47 CFR.

## Product Tested - Configuration Documentation

<b>EUT Configuration</b>				
<b>Work Order:</b> H0266				
<b>Company:</b> Whistler				
<b>Company Address:</b> 168 Ayer Road Littleton, Ma 01460				
<b>Contact:</b> Craig Autio				
<b>Person Present:</b> Craig Autio				
<b>MN</b>		<b>SN</b>		
<b>EUT:</b>	XTR140	Test Sample 1		
	XTR260	Test Sample 1		
	XTR330	Test Sample 1		
	XTR500	Test Sample 1		
<b>EUT Description:</b> Radar Detector				
<b>Support Equipment:</b>		<b>MN</b>	<b>SN</b>	
	DC Supply	1635	161-09559	
<b>EUT Cables:</b>	<b>Qty</b>	<b>Shielded?</b>	<b>Length</b>	<b>Ferrites</b>
DC power	1	No	1.5 m	None
<b>Unpopulated EUT Ports:</b>		<b>Qty</b>	<b>Reason</b>	
None				
<b>Software / Operating Mode Description:</b>				
The detectors were powered and scanning for radar signals.				

## Statement of Conformity

47 CFR 15.109(h) states that "Radar detectors shall comply with the emissions limits...of [section 15.109(a)] over the frequency range of 11.7 – 12.2GHz." The applicable limit being 500µV/m measured at a distance of 3m. The XTR140, XTR260, XTR330, and XTR500 have been tested and found to comply with this requirement.

## Test Methodology

Radiated emission testing was performed according to the procedures in ANSI C63.4 (2003). The testing was performed at a distance of 1 meter. The device's performance was investigated in the range 11.7-12.2GHz. The XTR140, XTR260, XTR330, and XTR500 were powered by BK Precision variable DC power supply. Since the device is a hand-held unit, the emissions were maximized around the three orthogonal axes and the maximum reading was recorded. The integrated antenna cannot be maximized separately.

## Radiated Emissions Measurements

### LIMIT

Average: 500µV/m = 54dBµV/m @ 3m [15.109(a)]

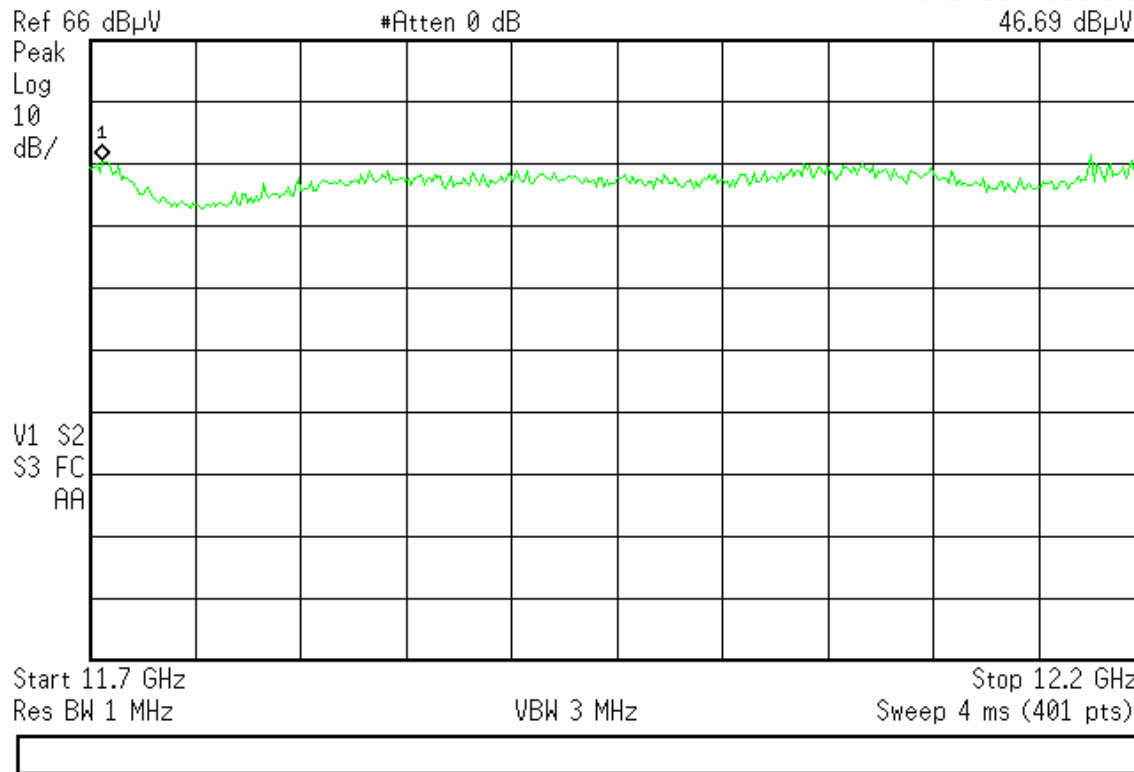
### MEASUREMENTS

Radiated Emissions Table							Curtis-Straus LLC					
Date: 05-Mar-07			Company: Whistler				Work Order:					
Engineer: Mairaj Hussain			EUT Desc: XTR140, XTR260, XTR330, XTR500									
Frequency Range: 11.7 - 12.2GHz							Measurement Distance: 1 m					
Notes:												
Antenna Polarization (H / V)	Frequency (MHz)	Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBµV/m)	---			FCC Class B		
							Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)
XTR140												
Hpk	11706.2	46.7	40.5	39.7	2.8	48.7				63.5	-14.8	Pass
XTR260												
Hpk	12180.0	52.2	39.7	40.1	2.9	55.5				83.5	-28.0	Pass
Hpk	12197.5	55.4	39.4	40.1	2.9	59.0				83.5	-24.5	Pass
Havg	12180.0	36.0	39.7	40.1	2.9	39.3				63.5	-24.2	Pass
Havg	12197.5	37.0	39.4	40.1	2.9	40.6				63.5	-22.9	Pass
XTR330												
Hpk	12190.0	56.2	39.6	40.1	2.9	59.6				83.5	-23.9	Pass
Havg	12190.0	37.8	39.6	40.1	2.9	41.2				63.5	-22.3	Pass
XTR500												
Hpk	12180.0	56.7	39.7	40.1	2.9	60.0				83.5	-23.5	Pass
Havg	12180.0	38.1	39.7	40.1	2.9	41.4				63.5	-22.1	Pass
Table Result: Pass by -14.8 dB Worst Freq: 11706.2 MHz												
Test Site: "F"			Pre-Amp: Red-Greer		Cable: EMIR-HIGH-21		Analyzer: E7405A		Antenna: Orange Horn			

Agilent 09:24:08 Mar 5, 2007

R L

Mkr1 11.70625 GHz  
 46.69 dBμV



**XTR140**

Agilent 09:34:55 Mar 5, 2007

R L

Mkr1 12.19750 GHz  
55.4 dBμV

Ref 66 dBμV

#Atten 0 dB

Peak  
Log  
10  
dB/

M1 S2  
S3 FC  
AA

Start 11.7 GHz  
Res BW 1 MHz

VBW 3 MHz

Stop 12.2 GHz  
Sweep 4 ms (401 pts)

XTR260

Agilent 09:42:12 Mar 5, 2007

R L

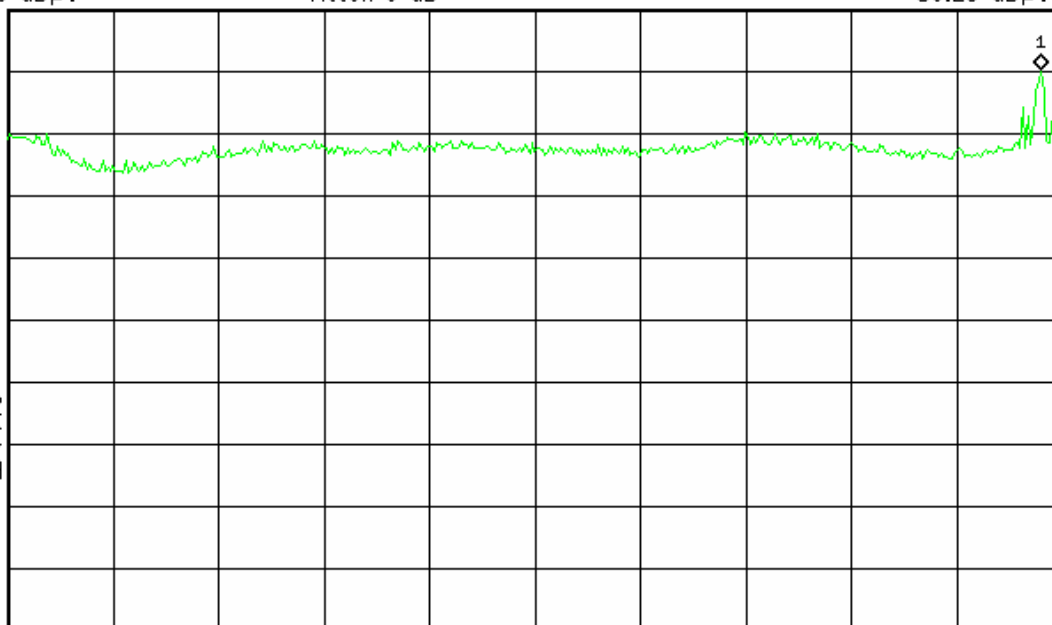
Mkr1 12.19000 GHz  
56.23 dBμV

Ref 66 dBμV

#Atten 0 dB

Peak  
Log  
10  
dB/

M1 S2  
S3 FC  
AA



Start 11.7 GHz

Res BW 1 MHz

VBW 3 MHz

Stop 12.2 GHz

Sweep 4 ms (401 pts)

XTR330

Agilent 09:46:32 Mar 5, 2007

R L

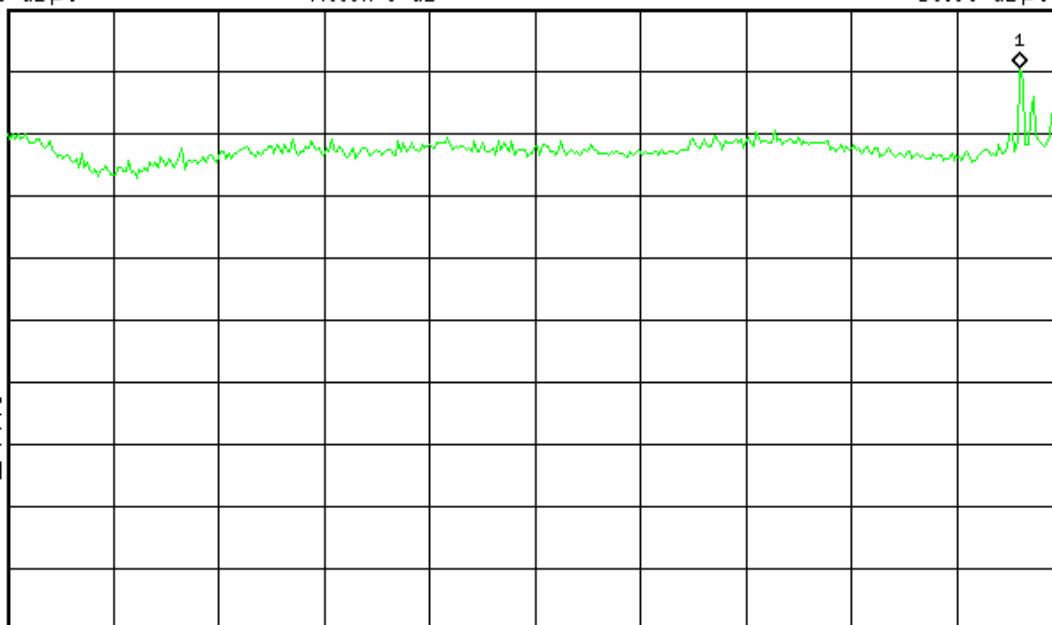
Mkr1 12.18000 GHz  
56.69 dBμV

Ref 66 dBμV

#Atten 0 dB

Peak  
Log  
10  
dB/

V1 S2  
S3 FC  
AA



Start 11.7 GHz

Res BW 1 MHz

VBW 3 MHz

Stop 12.2 GHz

Sweep 4 ms (401 pts)

XTR500



**Test Equipment Used**

REV. 14-FEB-2007

<b>SPECTRUM ANALYZERS / RECEIVERS</b>	<b>RANGE</b>	<b>MN</b>	<b>MFR</b>	<b>SN</b>	<b>ASSET</b>	<b>CAT</b>	<b>CALIBRATION DUE</b>
RED	9kHz-1.8GHz	8591E	Agilent	3441A03559	00024	I	08-JAN-2008
WHITE	9kHz-22GHz	8593E	Agilent	3547U01252	00022	I	06-OCT-2007
BLUE	9kHz-1.8GHz	8591E	Agilent	3223A00227	00070	I	18-DEC-2007
YELLOW	9kHz-2.9GHz	8594E	Agilent	3523A01958	00100	I	05-JUN-2007
GREEN	9kHz-26.5GHz	8593E	Agilent	3829A03618	00143	I	05-SEP-2007
BLACK	9kHz-12.8GHz	8596E	Agilent	3710A00944	00337	I	08-DEC-2007
TELECOM 3585A	20Hz-40.0MHz	3585A	Agilent	2504A05219	00030	I	07-FEB-2007
TELECOM 3585A	20Hz-40.0MHz	3585A	Agilent	1750A03418	00558	I	23-MAY-2007
TELECOM 3585A	20Hz-40.0MHz	3585A	Agilent	1750A02762	01067	I	01-MAR-2007
ORANGE	9kHz-26.5GHz	E4407B	Agilent	US39440975	00394	I	18-DEC-2007
BROWN (RENTAL)	9kHz-26.5GHz	E4407B	Agilent	SG44210511	Rental	I	01-FEB-2008
EMI TEST RECEIVER	20-1000MHz	ESVS30	R&S	827957/001	01098	I	27-OCT-2008
RENTAL 7405A	100Hz-26.5 GHz	E7405A	Agilent	MY44212795	Rental	I	28-DEC-2007

<b>OPEN AREA TEST SITES (OATS)</b>	<b>FCC CODE</b>	<b>IC CODE</b>	<b>VCCI CODE</b>	<b>CAT</b>	<b>CALIBRATION DUE</b>
SITE F	93448	IC 2762A-1	R-1688	II	04-APR-2007
SITE T	93448	IC 2762A-2	R-905	II	14-AUG-2007
SITE A	93448	IC 2762-A	R-903	II	13-AUG-2007
SITE M	93448	IC 2762-M	R-904	II	19-MAR-2007
SITE J	93448	IC 2762A-3	R-2377	II	11-APR-2008

<b>PREAMPS / ATTENUATORS / FILTERS</b>	<b>RANGE</b>	<b>MN</b>	<b>MFR</b>	<b>SN</b>	<b>ASSET</b>	<b>CAT</b>	<b>CALIBRATION DUE</b>
RED	0.10-2000MHz	ZFL-1000-LN	C-S	N/A	00798	II	28-JUL-2007
BLUE	0.01-2000MHz	ZFL-1000-LN	C-S	N/A	00759	II	20-JUL-2007
BLUE-BLACK	0.01-2000MHz	ZFL-1000-LN	C-S	N/A	00800	II	18-JAN-2008
GREEN	0.01-2000MHz	ZFL-1000-LN	C-S	N/A	00802	II	23-JAN-2008
BLACK	0.01-2000MHz	ZFL-1000-LN	C-S	N/A	00799	II	20-JUL-2007
ORANGE	0.01-2000MHz	ZFL-1000-LN	C-S	N/A	00765	II	21-DEC-2007
WHITE	1-20GHz	SMC-12A	C-S	426643	00760	II	22-JUL-2007
BROWN	1-20GHz	PM2-38-218-4R5-17-15-SFF	C-S	PL1655	1132	II	14-APR-2007
YELLOW-BLACK	1-20GHz	SMC-12A	C-S	535055	00801	II	22-JUL-2007
RED-GREEN	1-20GHz	PM2-38-218-4R5-17-15-SFF	C-S			II	14-AUG-2007
HF (YELLOW)	18-26.5GHz	AFS4-18002650-60-8P-4	C-S	467559	00758	II	23-AUG-2007
HIGH PASS FILTER	1-18 GHz	SPA-F-55204	K&L	36	00817	II	05-JAN-2008
LOW PASS FILTER	1-9 GHz	11SL10-4100/X4400-O/O	K&L	4	00816	II	05-JAN-2008
HF 20dB 50W ATTENUATOR	0.03-20 GHz	PE 7019-20	PASTERNAK	01	00791	II	10-MAY-2007
HF 30dB 50W ATTENUATOR	0.03-20 GHz	PE 7019-30	PASTERNAK	02	1168	II	10-MAY-2007
40dB 100W ATTENUATOR	0.09-4000MHz	BW-40N100W+	MINI-CIRCUITS	V N014900638	1231	II	08-NOV-2007
LOW FREQ LPF	10-100kHz	L200K1G1	MICROWAVE CIRCUITS	4460-01 DC0432	1019	II	OUT OF SERVICE
LOW FREQ LPF	10-100kHz	L200K1G1	MICROWAVE CIRCUITS	4777-01 DC0434	1088	II	OUT OF SERVICE

ANTENNAS	RANGE	MN	MFR	SN	ASSET	CAT	CALIBRATION DUE
GREEN BILOG	30-2000MHz	CBL6112B	CHASE	2742	00620	II	13-JAN-2008
GREEN-BLACK BILOG	30-2000MHz	CBL6112B	CHASE	2412	00127	II	13-JAN-2008
GREEN-RED BILOG	30-2000MHz	CBL6112B	CHASE	2435	00990	I	12-APR-2008
BLUE BILOG	30-1000MHz	3143	EMCO	1271	00803	II	06-MAY-2007
GRAY BILOG	20-2000MHz	3141	EMCO	9703-1038	00066	II	06-MAY-2007(EMI) / 30-JUN-2007(RFI2)
YELLOW-BLACK BILOG	20-2000MHz	CBL6140A	CHASE	1112	00126	II	06-MAY-2007(EMI) / 01-MAY-2007(RFI)
RED-WHITE BILOG	30-2000MHz	JB1	SUNOL	A091604-1	01105	I	07-NOV-2008
RED-BLACK BILOG	30-2000MHz	JB1	SUNOL	A091604-2	01106	I	20-OCT-2008
RED-BROWN BILOG	30-2000MHz	JB1	SUNOL	A0032406	1218	I	04-AUG-2008
YELLOW HORN	1-18GHz	3115	EMCO	9608-4898	00037	I	27-MAY-2007(EMI) / 18-MAY-2007 (RFI)
BLACK HORN	1-18GHz	3115	EMCO	9703-5148	00056	I	17-JUN-2007
ORANGE HORN	1-18GHz	3115	EMCO	0004-6123	00390	I	09-JUN-2007
HF (WHITE) HORN	18-26.5GHz	801-WLM	WAVELINE	00758	00758	I	26-AUG-2007
SMALL LOOP	10kHz-30MHz	PLA-130/A	ARA	1024	00755	I	22-FEB-2008
LARGE LOOP	20Hz-5MHz	6511	EMCO	9704-1154	00067	I	23-JAN-2008
ACTIVE MONOPOLE	30Hz-30MHz	3301B	EMCO	3824	00068	II	06-DEC-2007
INDUCTION COIL	50-60Hz	1000-4-8	C-S	N/A	00778	II	26-SEP-2007
ADJUSTABLE DIPOLE	30-1000MHz	3121C	EMCO	1370	00757	I	26-OCT-2008
ADJUSTABLE DIPOLE	30-1000MHz	3121C	EMCO	1371	00756	I	09-NOV-2008
RE101 LOOP SENSOR	30Hz-100kHz	RE101-13.3cm	C-S	N/A	00818	II	13-MAR-2007
RS101 RADIATING LOOP	30Hz-100kHz	RS101-12cm	C-S	N/A	00819	II	13-MAR-2007
RS101 LOOP SENSOR	30Hz-100kHz	RS101-4cm	C-S	N/A	00820	II	13-MAR-2007

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

## Conditions Of Testing

[Bureau Veritas Consumer Products Services, Inc., a Massachusetts corporation], and/or its affiliates (collectively, the "Company") will conduct, at the request of the Submitter ("Client"), the tests specified on the submitted Test Request Form or equivalent in accordance with, and subject to, the following terms and conditions (collectively, "Conditions"):

1. All orders for tests are subject to acceptance by the Company, and no order will constitute a binding commitment of the Company unless and until such order is accepted by it, as evidenced by the issuance of a written report ("Test Report") by the Company. The Test Report is issued solely by the Company, is intended for the exclusive use of Client and shall not be published, used for advertising purposes, copied or replicated for distribution to any other person or entity or otherwise publicly disclosed without the prior written consent of the Company. By submitting a request for services to the Company, Client consents to the disclosure to accreditation bodies of those records of Client relevant to the accreditation body's assessment of the Company's competence and compliance with relevant accreditation criteria. The Company shall not be liable for any loss or damage whatsoever resulting from the failure of the Company to provide its services within any time period for completion estimated by the Company. If Client anticipates using the Test Report in any legal proceeding, arbitration, dispute resolution forum or other proceeding, it shall so notify the Company prior to submitting the Test Report in such proceeding. The Company has no obligation to provide a fact or expert witness at such proceeding unless the Company agrees in advance to do so for a separate and additional fee.
2. The Test Report will set forth the findings of the Company solely with respect to the test samples identified therein. Unless specifically and expressly indicated in the Test Report, the results set forth in such Test Report are not intended to be indicative or representative of the quality or characteristics of the lot from which a test sample is taken, and Client shall not rely upon the Test Report as being so indicative or representative of the lot or of the tested product in general. The Test Report will reflect the findings of the Company at the time of testing only, and the Company shall have no obligation to update the Test Report after its issuance. The Test Report will set forth the results of the tests performed by the Company based upon the written information provided to the Company. The Test Report will be based solely on the samples and written information submitted to the Company by Client, and the Company shall not be obligated to conduct any independent investigation or inquiry with respect thereto.
3. The Company may, in its sole discretion, destroy samples which have been furnished to the Company for testing and which have not been destroyed in the course of testing. The Company may delegate the performance of all or a portion of the services contemplated hereunder to an affiliate, agent or subcontractor of the Company, and Client consents to such delegation.
4. These Conditions and the Test Report represent the entire understanding of the parties hereto with respect to the subject matter hereof and of the Test Report, and no modification, variance or extrapolation with respect thereto shall be permitted without the prior written consent of the Company.
5. The names, service marks, trademarks and copyrights of the Company and its affiliates, including the names "BUREAU VERITAS," "BUREAU VERITAS CONSUMER PRODUCTS SERVICES," "BVCPS," "MTL," "ACTS," "MTL-ACTS" and "CURTIS-STRAUS" (collectively, the "Marks") are and shall remain the sole property of the Company or its affiliates and shall not be used by Client except solely to the extent that Client obtains the prior written approval of the Company and then only in the manner prescribed by the Company. Client shall not contest the validity of the Marks or take any action that might impair the value or goodwill associated with the Marks or the image or reputation of the Company or its affiliates.
6. Payment in full shall be due 30 days after the date of invoice. Interest shall be due on overdue amounts from the due date until paid at an interest rate of 1.5% per month or, if less, the maximum rate permitted by law. The Company reserves the right, at any time and from time to time, to revoke any credit extended to Client. Client shall reimburse the Company for any costs it incurs in collecting past due amounts, including court costs and fees and expenses of attorneys and collection agencies. The Test Report may not be used or relied upon by Client if and for so long as Client fails to pay when due any invoice issued by the Company or any affiliate of it to Client or any affiliate or subsidiary of Client together with interest and penalties, if any, accrued thereon.
7. The Company disclaims any and all responsibility or liability arising out of or in connection with e-mail transmissions of such information.
8. Client understands and agrees that the Company is neither an insurer nor a guarantor, that the Company does not take the place of Client or any designer, manufacturer, agent, buyer, distributor or transportation or shipping company, and that the Company disclaims all liability in such capacities. Client further understands that if it seeks assurance against loss or damage, it should obtain appropriate insurance.
9. Client agrees that the Company, by providing the services, does not take the place of Client nor any third party, nor does the Company release them from any of their obligations, nor does the Company otherwise assume, abridge, abrogate or undertake to discharge any duty of any third party to Client or any duty of Client or any third party to any other third party, and Client will not release any third party from its obligations and duties with respect to the tested goods.
10. Client shall, on a timely basis, (a) provide adequate instructions to the Company in order to enable the Company to perform properly its services, (b) provide, or cause Client's suppliers and contractors to provide, the Company with all documents necessary to enable the Company to perform its services, (c) furnish the Company with all relevant information regarding Client's intended use and purposes of the tested goods, (d) advise the Company of essential dates and deadlines relevant to the tested goods and (e) fully exercise all rights and remedies available to Client against third parties in respect of the tested goods.
11. The Company shall undertake due care and ordinary skill in the performance of its services to Client, and the Company shall accept responsibility only where such skill has not been exercised and, even in such event, only to the extent of the limitation of liability set forth herein.
12. If Client desires to assert a claim arising from or relating to (i) the performance, purported performance or non-performance of any services by the Company or (ii) the sale, resale, manufacture, distribution or use of any tested goods, it must submit that claim to the Company in a writing that sets forth with particularity the basis for such claim within 60 days from discovery of the potential claim and not more than six months after the date of issuance of the Test Report to Client. Client waives any and all such claims including, without limitation, claims that the Test Report is inaccurate, incomplete or misleading or that additional or different testing is required, unless and then only to the extent that Client submits a written claim to the Company within both such time periods.
13. CLIENT SHALL, EXCEPT TO THE EXTENT OF COMPANY'S LIABILITY TO CLIENT HEREUNDER (WHICH IN NO EVENT SHALL EXCEED THE LIMITATION OF LIABILITY HEREIN), HOLD HARMLESS AND INDEMNIFY THE COMPANY, ITS

AFFILIATES AND THEIR RESPECTIVE DIRECTORS, OFFICERS, EMPLOYEES, AGENTS AND SUBCONTRACTORS AGAINST ALL ACTUAL OR ALLEGED THIRD PARTY CLAIMS FOR LOSS, DAMAGE OR EXPENSE OF WHATSOEVER NATURE AND HOWSOEVER ARISING FROM OR RELATING TO (i) THE PERFORMANCE, PURPORTED PERFORMANCE OR NON-PERFORMANCE OF ANY SERVICES BY THE COMPANY OR (ii) THE SALE, RESALE, MANUFACTURE, DISTRIBUTION OR USE OF ANY TESTED GOODS.

14. EXCEPT AS MAY OTHERWISE BE EXPRESSLY AGREED TO IN WRITING BY THE COMPANY AND NOTWITHSTANDING ANY PROVISION TO THE CONTRARY CONTAINED HEREIN OR IN ANY TEST REPORT, NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, IS MADE.

15. (A) IN NO EVENT WHATSOEVER SHALL THE COMPANY BE LIABLE FOR ANY CONSEQUENTIAL, SPECIAL, INCIDENTAL, EXEMPLARY OR PUNITIVE DAMAGES IN CONNECTION WITH, RELATING TO OR ARISING OUT OF THE TEST REPORT OR THE SERVICES PROVIDED BY THE COMPANY HEREUNDER, INCLUDING WITHOUT LIMITATION LOSS OF OR DAMAGE TO PROPERTY; LOSS OF INCOME, PROFIT OR USE; OR ANY CLAIMS OR DEMANDS MADE AGAINST CLIENT OR ANY OTHER PERSON BY ANY THIRD PARTY IN CONNECTION WITH, RELATING TO OR ARISING OUT OF THE SERVICES PROVIDED BY THE COMPANY HEREUNDER.

(B) NOTWITHSTANDING ANY PROVISION TO THE CONTRARY CONTAINED HEREIN, AND IN RECOGNITION OF THE RELATIVE RISKS AND BENEFITS TO CLIENT AND THE COMPANY ASSOCIATED WITH THE TESTING SERVICES CONTEMPLATED HEREBY, THE RISKS HAVE BEEN ALLOCATED SUCH THAT UNDER NO CIRCUMSTANCES WHATSOEVER SHALL THE LIABILITY OF THE COMPANY TO CLIENT OR ANY THIRD PARTY IN RESPECT OF ANY CLAIM FOR LOSS, DAMAGE OR EXPENSE, OF WHATSOEVER NATURE OR MAGNITUDE, AND HOWSOEVER ARISING, EXCEED AN AMOUNT EQUAL TO FIVE (5) TIMES THE AMOUNT OF THE FEES PAID TO THE COMPANY FOR THE SPECIFIC SERVICES WHICH GAVE RISE TO SUCH CLAIM OR U.S.\$10,000, WHICHEVER IS THE LESSER AMOUNT.

16. The Company shall not be liable for any loss or damage resulting from any delay or failure in performance of its obligations hereunder resulting directly or indirectly from any event of force majeure or any event outside the control of the Company. If any such event occurs, the Company may immediately cancel or suspend its performance hereunder without incurring any liability whatsoever to Client.

17. Company's services, including these Conditions, shall be governed by, and construed in accordance with, the local laws of the country where the Company performs the tests or, in the case of tests performed in the United States of America, the laws of Massachusetts without regard to conflicts of laws principles. If any aspect(s) of these Conditions is found to be illegal or unenforceable, the validity, legality and enforceability of all remaining aspects of these Conditions shall not in any way be affected or impaired thereby. Any proceeding related to the subject matter hereof shall be brought, if at all, in the courts of the country where the Company performs the tests or, in the case of tests performed in the United States of America, in the courts of Massachusetts. Client waives the right to interpose any counterclaim or setoffs of any nature in any litigation arising hereunder.

Rev.160009121(2)\_#684340 v13CS

# A2LA Accreditation

## SCOPE OF ACCREDITATION TO ISO/IEC 17025:1999

CURTIS-STAUS<sup>1</sup>  
527 Great Road  
Littleton, MA 01460  
Barry Quinlan Phone: 978-486-8880  
ELECTRICAL

Valid until: July 31, 2007

Certificate Number: 1627.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following Electromagnetic Compatibility (EMC), Telecommunications, and Product Safety tests:

### Electromagnetic Compatibility (EMC)

Radiated emissions testing (electric and magnetic fields)\*; Conducted emissions testing (voltage and current)\*; Electrostatic Discharge testing\*; Electrical Fast Transient testing\*; Radiated Immunity testing\*; Conducted Immunity testing\*; Lightning Immunity testing\*; Voltage Dips\*, Interrupts and Voltage Variations testing\*; Magnetic Immunity testing\*; RF Power measurements\*; Frequency Stability Measurements\*; Longitudinal Induction measurements\*; Harmonic emissions testing\*; Light flicker testing\*; Low frequency disturbance voltage testing\*; Disturbance Power measurements\*; Power Cross Overvoltage testing\*;

Test Type	Test Method(s)
<b>Emissions</b>	
Radiated and Conducted Emissions	FCC 47 CFR Parts 15 & 18; C63.4; CISPR 22; EN55022; SABS CISPR 22; AS/NZS CISPR 22; AS/NZS 3548; Canada ICES-003; CNS13438; KN 22 (RRL No. 2005-82, September 29, 2005); CISPR 11; EN 55011; SABS CISPR 11; AS/NZS CISPR 11; AS/NZS 2064; Canada ICES-001; CNS13803; CISPR 13; EN 55013; SABS CISPR 13; AS/NZS CISPR 13; AS/NZS 1053; CISPR 14-1; EN 55014-1; SABS CISPR 14; AS/NZS CISPR 14; AS/NZS 1044; CNS 13439; CISPR 15; EN 55015; GR-1089-CORE; CSA C108.8-M1983;
Harmonics	EN 61000-3-2; AS/NZS 61000.3.2
Flicker	EN 61000-3-3; AS/NZS 61000.3.3

1 Note: This accreditation covers testing performed at the laboratory listed above and the satellite facility located at 168 Ayer Rd, Littleton, MA 01460 and, for test types marked with an asterisk, at other sites as defined in "A2LA specific criteria for the accreditation of site testing and site calibration laboratories."

(A2LA Cert. No. 1627.01) 3/27/06

Page 1 of 10

<b>Other Radio Standards</b>		RTTE 01 (DGT-Taiwan);
<b>FCC Standards and Test methods Support TCB Status--</b>		
<b>FCC Scope A -- Unlicensed Radio Frequency Devices</b>		
A1	1. 47 CFR Parts 11, 15 and 18 2. FCC MP-5, 3. ANSI C63.4-2003,	
A2	1. 47 CFR Part 15, 2. ANSI C63.4-2003,	
A3	1. 47 CFR Part 15, 2. ANSI C63.17-1998, 3. ANSI C63.4-2003,	
A4	1. 47 CFR Part 15, 2. ANSI C63.4-2003,	
<b>FCC Scope B -- Licensed Radio Service Equipment</b>		
B1	1. 47 CFR Parts 2, 22, 24, 25, and 27 2. ANSI/TIA-603-C (2004)	
B2	1. 47 CFR Parts 2, 22, 74, 90, 95, and 97 2. ANSI/TIA-603-C (2004)	
B3	1. 47 CFR Parts 2, 80, and 87 2. ANSI/TIA-603-C (2004)	
B4	1. 47 CFR Parts 2, 21, 74, and 101 2. ANSI/TIA-603-C (2004)	
<b>Country Specific Standards and Other</b>		
<b>ITU EMC Standards</b>		K.20; K.21; K.41; K.44
<b>Swedish EMC Standards</b>		BAKOM 3336.3
<b>South African EMC Standards other than CISPR equivalents</b>		SABS 1718-1; SANS 211/SABS CISPR 11; SANS 224/SABS CISPR 24; SANS 213/SABS CISPR 13; SANS 2200; SANS214-1/SABS CISPR 14-1; SANS214-2/SABS CISPR 14-2; SANS 215/SABS CISPR 15; SANS 222/SABS CISPR 22
<b>Hong Kong EMC Standards</b>		HKTA 1006; HKTA 1007; HKTA 1008; HKTA 1010; HKTA 1015; HKTA 1026; HKTA 1035; HKTA 1039; HKTA 1041; HKTA 1042; HKTA 1045
<b>Singapore EMC Standards</b>		IDA TS SRD; IDA TS EMC
<b>Japanese VCCI Standards</b>		VCCI V-3, VCCI V-4

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<b>Immunity</b>	RRL No. 2005-130 (December 27, 2005)
Electrostatic Discharge (ESD)	EN 61000-4-2; AS/NZS 61000.4.2; KN61000-4-2
Radiated Immunity (RFI)	EN 61000-4-3; AS/NZS 61000.4.3; KN61000-4-3
Electrical Fast Transient Bursts (EFT)	EN 61000-4-4; AS/NZS 61000.4.4; KN61000-4-4
Surge	EN 61000-4-5; AS/NZS 61000.4.5; KN61000-4-5
Conducted Immunity	EN 61000-4-6; AS/NZS 61000.4.6; KN61000-4-6
Magnetic Immunity	EN 61000-4-8; AS/NZS 61000.4.8; KN61000-4-8
Voltage Dips and Interrupts	EN 61000-4-11; KN61000-4-11
Low Frequency Conducted Disturbances	EN 61000-2-2
<b>Family Product or Industry Specific Specifications including emissions and/or immunity</b>	
GR-1089-CORE; GR-78-CORE (ESD) EN50081-1; EN50081-2; EN50082-2; EN50082-1; EN 61000-6-1; EN 61000-6-2; EN 61000-6-3; EN 61000-6-4; EN 50091-2; EN 55024; CISPR 24 EN 55103-1; EN 55103-2; EN 61326; EN 61547; EN 50130-4; EN 50083-2; EN 60601-1-2; EN 60601-2-2; EN 60601-2-24; EN 60601-2-32; EN 60601-2-38; EN 60601-2-47; IEC 1800-3; EN 61800-3; EN 55020; CISPR 20; EN 60555 Part 2; EN 60555 Part 3; ETS 300 386-1; EN 300 386-2; EN 300 386, ETS 300 132-1; ETS 300 132-2; EN 60669-2-1; AS/NZS 3200.1.2; CNS 13783-1; ETR 283; C62.41	
<b>Radiocommunications</b>	
<b>EU R&amp;TTE Radio Standards;</b>	EN 300 220-1; EN 300 220-3; EN 300 330-1; EN 300 330-2; EN 300 440-1; EN 300 440-2; EN 300 328; EN 300 385; EN 301 893
<b>EU R&amp;TTE EMC Standards</b>	EN 300 339; EN 301 489-01; EN 301 489-03; EN 301 489-17
<b>Canada Radio Standards</b>	RSS-102; RSS-117; RSS-118; RSS-119; RSS-123; RSS-125; RSS-128; RSS-129; RSS-130; RSS-131; RSS-132; RSS-133; RSS-134; RSS-135; RSS-136; RSS-137; RSS-138; RSS-141; RSS-142; RSS-170; RSS-181; RSS-182; RSS-187; RSS-188; RSS-191; RSS-192; RSS-193; RSS-195; RSS-210; RSS-212; RSS-213; RSS-215; RSS-243; RSS-GEN; RSS-310; GL-36;
<b>Australia/New Zealand Radio Standards</b>	AS/NZS 4268; AS/NZS 4771; RFS29; Radiocommunications (Data Transmission Equipment Using Spread Spectrum Modulation Techniques); Radiocommunications (Spread Spectrum Devices); Radiocommunications (Short Range Devices); Radiocommunications (Low Interference Potential Devices);

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<b>Telecommunications</b>	
Telecommunications Registration; General test methods; Lightning surge*; Drop testing*; Balance testing*; Signal power (metallic and longitudinal)*; Frequency measurements*; Pulse templates*; Leakage testing*; Impedance testing*; Hearing Aid Compatibility testing (excluding volume control)*; Protocol analysis* and Jitter testing*.	
<b>Telecom Standards</b>	<b>Title</b>
<b>North American standards</b>	
FCC 47 CFR Part 68 Telephone Terminal Equipment CS-03 Issue 9	Connection of terminal equipment to the telephone network. Analog and Digital Equipment. TCB Scope C1. Specification for terminal equipment, terminal systems, Network protection devices, connection arrangements and hearing aids compatibility.
TIA/EIA TSB31-B 1998	Bulletin Part 68 Rationale and Measurement Guidelines (Feb 1998)
TIA-968-A, A1, A2, A3	Telecommunications Telephone Terminal Equipment Technical Requirements for Connection of Terminal Equipment to the Telephone Network
T1.TRQ.6-2001	Technical Requirements for SHDSL, HDSL2, HDSL4 Digital Subscriber Line Terminal Equipment to Prevent Harm to the Telephone Network Industry
<b>Australia standards</b>	
AS/ACIF S002-2001	Analogue interworking and non-interference requirements for Customer Equipment for connection to the Public Switched Telephone Network.
AS/ACIF S016-2001	Requirements for Customer Equipment for connection to hierarchical digital interfaces
AS/ACIF S031-2001	Requirements for ISDN Basic Access Interface
AS/ACIF S038-2001	Requirements for ISDN Primary Rate Access Interface
AS/ACIF S043-2001	Requirements for Customer Equipment for Connection to a Metallic Local Loop Interface of a Telecommunications Network — Part 1: General Part 2: Broadband Part 3: DC, Low Frequency AC and Voice band
<b>International standards</b>	
ITU-T G.703	Physical/electrical characteristics of hierarchical Digital interfaces
<b>Hong Kong standards</b>	
HKTA 2011	Network Connection Specification for Connection of Customer Premises Equipment (CPE) to Direct Exchange Lines (DEL) of the Public Switched Telephone Network (PSTN) in Hong Kong
HKTA 2014	Network Connection Specification for Connection of Customer Premises Equipment (CPE) to the Public Telecommunications Network (PTN) in Hong Kong using ISDN Basic Rate Access (BRA) based on ITU-T Recommendations

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<p><u>Telecom Standards</u></p> <p>HKTA 2028</p> <p>HKTA 2029</p> <p>HKTA 2030</p> <p>HKTA 2031</p> <p>HKTA 2032</p> <p>HKTA 2033</p> <p><u>European standards</u></p> <p>TBR 1: 1995</p> <p>TBR 2: 1997</p> <p>TBR 3: 1995 + Amdt : 1997</p> <p>TBR 4: 1995 + Amdt : 1997</p> <p>TBR 012: 1993 + Amdt : 1996</p> <p>TBR 013: 1996</p> <p>(A2LA Cert. No. 1627.01) 3/27/06</p>	<p><u>Title</u></p> <p>Network connection specification for connection of CPE to the PTNs in Hong Kong using digital leased circuits at data rate of 1544 kbit/s</p> <p>Network connection specification for connection of CPE to the PTNs in Hong Kong using digital leased circuits at data rate of 2048 kbit/s</p> <p>Network Connection Specification for Connection of Customer Premises Equipment (CPE) to the Public Telecommunications Network (PTN) in Hong Kong using Digital Leased Circuits at 1544 kbit/s</p> <p>Network Connection Specification for Connection of Customer Premises Equipment (CPE) to the Public Telecommunications Network (PTN) in Hong Kong using Digital Leased Circuits below 64 kbit/s</p> <p>Network Connection Specification for Connection of Customer Premises Equipment (CPE) to the Public Telecommunications Networks in Hong Kong using Asymmetric Digital Subscriber Lines (ADSL) based on ITU-T Recommendation G.992.1</p> <p>Network Connection Specification for Connection of Customer Premises Equipment (CPE) to Fixed Telecommunications Networks in Hong Kong using Splitterless Asymmetric Digital Subscriber Lines (ADSL) based on ITU-T Recommendation G.992.2</p> <p>Attachment requirements for terminal equipment to be connected to circuit switched data networks and Leased circuits using a CCITT Recommendation X.21 interface, or at an interface physically, functionally and electrically compatible with CCITT Recommendation X.21 but operating at any data signaling rate up to, and including, 1 984 kbit/s</p> <p>Attachment requirements for Data Terminal Equipment (DTE) to connect to Packet Switched Public Data Networks (PSPDNs) for CCITT Recommendation X.25 interfaces at data signaling rates up to 1 920 kbit/s utilizing interfaces derived from CCITT Recommendations X.21 and X.21 bit Integrated Services Digital Network (ISDN); Attachment requirements for terminal equipment to connect to an ISDN using ISDN basic access</p> <p>Integrated Services Digital Network (ISDN); Attachment requirements for terminal equipment to connect to an ISDN using ISDN primary rate access</p> <p>Business Telecommunications (BT); Open Network Provision (ONP) technical requirements; 2 048 kbit/s digital unstructured leased line (D2048U) Attachment requirements for terminal equipment</p> <p>Business Telecommunications (BTC); 2 048 kbit/s digital structured leased lines (D2048S); Attachment requirements for terminal equipment interface</p> <p>Page 5 of 10</p>	<p><u>European standards (cont'd)</u></p> <p>TBR 21: 1998</p> <p>TBR 24: 1997</p> <p><u>Taiwan standards (DGT)</u></p> <p>ADSL01</p> <p>ID0002</p> <p>IS6100</p> <p>PSTN01 (non-voice only)</p> <p><u>New Zealand standards</u></p> <p>PTC 200 (non-voice only)</p> <p>PTC 217</p> <p>TNA 117</p> <p>PTC 270</p> <p><u>Singapore Standards</u></p> <p>IDA TS ADSL</p> <p>IDA TS ADSL 2</p> <p>IDA TS DLCN 1</p> <p>IDA TS ISDN 1</p> <p>IDA TS ISDN 2</p> <p>IDA TS PSTN (non-voice only)</p> <p><u>South Africa standards</u></p> <p>TE-001 (non-voice only)</p> <p>(A2LA Cert. No. 1627.01) 3/27/06</p>	<p>Terminal Equipment (TE); Attachment requirements For pan-European approval for connection to the Analogue Public Switched Telephone Networks (PSTNs) of TE (excluding TE supporting the voice telephony service) in which network addressing, if provided, is by means of Dual Tone Multi Frequency (DTMF) signaling</p> <p>Business Telecommunications (BTC); 34 Mbit/s Digital Unstructured and structured leased lines (D34U and D34S); Attachment requirements for Terminal equipment interface</p> <p>Asymmetric Digital Subscriber Line Terminal Equipment and POTS Splitter Technical Specifications</p> <p>DS1 Equipment Type Approval Guidelines</p> <p>ISDN Terminal Equipment Technical Specifications</p> <p>Technical Specifications for Terminal Equipment for Connection to Public Switched Telephone Network</p> <p>Requirements for Connection of Customer Equipment to Analogue Lines</p> <p>Requirements for Bandwidth Management Devices</p> <p>Telecom 2048 kbit/s Standard Network Interface</p> <p>Interim arrangements for ADSL CPE</p> <p>Type Approval Specification for Asymmetric Digital Subscriber Line (Full-rate ADSL) Modems</p> <p>Type Approval Specification for Asymmetric Digital Subscriber Line Splitterless (G-Lite) Modems</p> <p>Type Approval Specification for Digital Interfaces based on hierarchical bit rates of 2048 kbit/s, 34 368 kbit/s and 139 264 kbit/s</p> <p>Type Approval Specification for connection of Terminal Equipment to Integrated Services Digital Network (ISDN) Basic Access</p> <p>Type Approval Specification for connection of Terminal Equipment to Integrated Services Digital Network (ISDN) Primary Rate Access (PRA)</p> <p>Type Approval Specification for connection of Terminal Equipment to Public Switched Telephone Network (PSTN)</p> <p>Standard for Telecommunication Line Terminal Equipment (TLTE) for Connection to the Public Switched Telephone Network (PSTN)</p> <p>Page 6 of 10</p>
<p><u>Product Safety</u></p> <p>General test methods:</p> <p>Power input*, Permanence of marking*, Accessibility*, Permissibly limits*, Energy hazard measurement*, SELV circuits*, TNV limits*, Limited current*, Capacitor Discharge / voltage limitation*, Ring signal*, Humidity conditioning*, Creepage / Clearance / Distance thru Insulation (excluding CTT)*, Limited power measurement*, Ground Bond/Earthing*, Ground continuity*, Temperature*, Stability*, Applied force*, Steel sphere impact*, Mold stress*, Battery reverse current*, Ball pressure*, Leakage current*, Component abnormal*, Electric strength*, Impulse*, Overvoltage*, Acoustic sound pressure*, 130mm/ 20mm flame*, Needle flame*, Hot flaming oil*, Locked rotor/motor armature*, Vibration, Bump, Drop*, Strain relief*, Torque*, Insulation resistance*, Sound level*, Handle loading*, Liquid overflow*, Spillage*, Liquid leakage*, Transformer shorts/overloads*, Rain test*, Wall mount*, Laser radiation (excluding x-ray)*, Voltage surge*, Functionality*, Protective impedance abnormal*, Capacitor short circuit abnormal*, Output abnormal*, Multi-supply abnormal*, Cooling abnormal*, Heating device abnormal*, Interlock abnormal*, Rigidity*, Cleaning*</p> <p><u>Product Safety Standards</u></p> <p><u>Specific Product Safety Standards</u></p> <p>UL 60950 2000</p> <p>IEC 60950 1999</p> <p>EN 60950 2000</p> <p>IEC 60950-1 2001</p> <p>UL 60950-1 2003</p> <p>CSA C22.2 No. 60950-00</p> <p>CSA C22.2 No. 60950-1 03</p> <p>IEC 61010-1 1993</p> <p>EN 61010-1 1993, 2001</p> <p>IEC 61010-1 2001</p> <p>UL 61010B-1 2003</p> <p>CAN/CSA 1010-1 1999 (Including AM 2)</p> <p>IEC 60601-1 1995</p> <p>EN 60601-1 1995 (Including AM 2)</p> <p>UL 2601-1 1997</p> <p>IEC 60065 1998, 2000</p> <p>ANSI/UL 6500: 1998</p> <p>CAN/CSA 60065-00</p> <p>AS/NZS 60065 2000</p> <p>Canadian C22.2 No. 1-94 (1-98)</p> <p>1994, 1998</p> <p>EN 60065 1994</p> <p>IEC 60825 1990</p> <p>EN 60825-1 1994</p> <p>(A2LA Cert. No. 1627.01) 3/27/06</p>	<p><u>Title</u></p> <p>Classification, requirements and user's guide.</p> <p>Safety of laser products – Part 2: Safety of optical communication systems</p> <p>Safety of laser products – Part 4: Laser guards</p> <p>Performance standard for laser products</p> <p>Safety of household and similar electrical appliances</p> <p>Part 1: General requirements</p> <p>Electrical equipment for laboratory use; part 1: General requirements</p> <p>Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements</p> <p>Safety information technology equipment</p> <p>Information Technology Equipment – Safety – Part 1: General Requirements</p> <p>Information Technology Equipment – Safety – General requirements</p> <p>Electrical Equipment for Measurement, Control and Laboratory Use; Part 1: General Requirements</p> <p>Medical Electrical Equipment, Part 1: General Requirements for Safety</p> <p>Medical Electrical Equipment - Part 1: General Requirements For Safety 1: Collateral Standard: Safety Requirements For Medical Electrical Systems</p> <p>Medical Electrical Equipment - Part 1: General Requirements for Safety – Section 1-1. Collateral Standard: Safety Requirements For Medical Electrical Systems</p> <p>Audio, Video and Similar Electronic Apparatus – Safety Requirements</p> <p>Audio, Video and Similar Electronic Apparatus – Safety Requirements</p> <p>Audio, Video and Similar Electronic Apparatus – Safety Requirements</p> <p>Audio, Video and Similar Electronic Apparatus – Safety Requirements</p> <p>Safety of Machinery – Electrical Equipment of Machines – Part 1: Specification for General Requirements</p> <p>Compliance Test Specification – Safety and Electrical Protection Requirements for Subscriber Equipment Connected to the Public Telecommunications Networks In Hong Kong</p> <p>Page 7 of 10</p>	<p><u>Product Safety Standards</u></p> <p>IEC 60825-1 2001</p> <p>IEC 60825-2 2000-5</p> <p>IEC 60825-4 1997-11</p> <p>21 CFR 1040.10</p> <p>IEC 60335-1 1995</p> <p>(Including AM2 – 1997 &amp; AM 12 – 1997)</p> <p>EN 60335-1 2001</p> <p>UL 60335-1 1998</p> <p>CAN/CSA E335-1 1994</p> <p>UL 61010A-1: 2002</p> <p>EN 61010-1: 2001</p> <p>AS/NZS 60950: 2000</p> <p>EN 60950-1: 2001</p> <p>AS/NZS 60950.1: 2003</p> <p>UL 61010 -1: 2004</p> <p>UL 60601-1: 2003</p> <p>IEC 60601-1-1: 2000</p> <p>EN 60601-1-1: 2001</p> <p>UL 60065: 2003</p> <p>CSA 60065: 2003</p> <p>IEC 60065: 2001</p> <p>EN 60065: 2002</p> <p>EN 60204 -1: 1998</p> <p>HKTA 2001</p> <p>(A2LA Cert. No. 1627.01) 3/27/06</p>	<p>Page 8 of 10</p>



<i>Environmental Simulation</i>			<p>Note 1. For standards or methods listed on the scope of accreditation without a revision date, laboratories are expected to be competent in the use of the current version within one year of the date of publication of the standard test method or upon the date specified by the standard test method originator when the originator has implementation authority. When a superseded standard or method is required for an accredited test, the scope will include the superseded date/version. For those that support the TCB/CB status of the organization acting as a certifier on behalf of the FCC or IC the expectation is currency within 30 days of Federal Register publication of changes for FCC and 30 days after IC website update. This note shall not be construed as an Accreditation Body implication to adopt a more current standard than is required in a regulation or code (i.e. the legal requirement) which is adopted by the lab under their responsibility.</p> <p><b>* On-site test service is available for this technology, test, or method.</b></p>
<u>Test Technology</u>	<u>Test Standard</u>	<u>Supporting Standards</u>	
Accessibility*	IEC 60529	IP-0x thru IP-6x	<p>IEC 60068-2-1 IEC 60068-2-2 IEC 60068-2-14 IEC 60068-2-56</p>
Acoustic Noise*	GR-63-CORE Sec 4.6		
Airborne Contaminants	GR-63-CORE Sec 4.5	MFG & Hygroscopic Dust	
Altitude	GR-63-CORE Sec 4.1.3		
Cold Start*	ETS 300 019		
Drip	IEC 60529		
Drops*	ETS 300 019		
Dust	GR-63-CORE Sec 4.3	IP-5x & IP-6x	
Firearms Resistance Testing	IEC 60529		
Fire Resistance	GR-487 ANSI/T1.319	Fire & Needle Flame	
Heat Dissipation*	GR-63-CORE Sec 4.2		<p>IEC 60068-2-1 IEC 60068-2-2 IEC 60068-2-14 IEC 60068-2-56</p>
Illumination	GR-63-CORE Sec 4.1.4		
Operational Temperature & Humidity (OpTH)*	GR-63-CORE Sec 4.7		
	ETS 300 019		
Salt Fog & Spray	GR-63-CORE Sec 4.1.2		
Spatial*	ASTM B117		
Spraying-Splashing	GR-63-CORE Sec 2.0 & 3.0	IP-x3 & IP-x4	
Storage (Temperature & Humidity)*	IEC 60529	IEC 60068-2-1 IEC 60068-2-2 IEC 60068-2-14 IEC 60068-2-30 IEC 60068-2-56	
	ETS 300 019		<p>IEC 60068-2-6 IEC 60068-2-27 IEC 60068-2-29 IEC 60068-2-32 IEC 60068-2-57 IEC 60068-2-64 Earthquake, Office &amp; Transportation IP-x7 &amp; IP-x8 IP-x5 &amp; IP-x6</p>
Vibration	GR-63-CORE Sec 4.1.1		
	ETS 300 019		
Water Immersion	GR-63-CORE Sec 4.4		
Water Jet	IEC 60529		
	IEC 60529		
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