

## Test Report

VERITAS Curtis-Straus LLC, a wholly owned subsidiary of BV CPS

Report No EJ1561-3 Client Wavemark Rich Leitermann Address 1 Monarch Drive Littleton, MA 01460 Phone (978) 431-1633 Item tested Prox 1 FCC Part 15 Section 15.225 Standards FCC ID **UQY-PROX1 FRN** 0013630066 **Test Dates** November 17, 2009 Results As detailed within this report Prepared by Évan Gould– Compliance Engineer Authorized by Issue Date 12/29/09 This Test Report is issued subject to the conditions stated in the 'Conditions of Testing' Conditions of Issue section on page 13 of this report.

Curtis-Straus LLC is accredited by the American Association for Laboratory Accreditation for the specific scope of accreditation under Certificate Number 1627-01. This report may contain data which is not covered by the A2LA accreditation.





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## Summary

On November 16 and 17, 2009 we tested the Prox 1 module for compliance with the following requirements:

#### **EMC Emissions:**

- FCC 47 CFR Part 15 for following tests:
  - Section 15.225
  - Section 15.207 AC Mains Conducted Emission
  - Section 15.209 Spurious Radiated Emission

Registration numbers for all open area test sites can be found in the *Test Equipment Used* Section starting on page 12.

The purpose of this test report is to support an application for Limited Modular Approval.

Wavemark intends to add the radio module with limited modular approval to the following host chasses:

HF1500D HFH1500D

The HF1500D was tested as representative of the two host cabinets.

Release Control Record Issue No. Reason for change

Original Release

Date Issued

November 20, 2008



## Test Methodology

Radiated emission testing was performed according to the procedures specified in ANSI C63.4 (2003). Emissions were maximized by rotating the system around its vertical axis as well as varying the test antenna's height and polarity. The EUT was tested in a representative host device HF1500D. A separate test report has been issued to cover the verification requirement of the digital portion of the product.

Frequency range investigated: 0.009MHz - 1000MHz

Measurement distance: 0.15 - 30MHz Conducted

> 0.009 - 30MHz3m (loop antenna)

30MHz - 1000MHz

AC Line conducted emissions testing was performed with a  $50\Omega/50\mu H$  LISN.

The EUT was tested while installed in the HF1500D host product. The EUT was only tested in floor standing orientation on a rotating turn table.

The testing performed in the HF1500D host is representative of the EUT being installed in the other possible host product as well (HFH1500D). This is the case because both of these products use the same material and construction for their sidewalls. The two configurations also do not differ as far as their electrical and/or digital components either.

All readings are peak unless otherwise specified on the respective table.

Rich Leitermann from Wavemark was present during the testing. The test sample was received in good condition.

Release Control Record

1

Reason for change Issue No.

> Original Release November 20, 2008

Date Issued

Product Tested - Configuration Documentation

				EUT Confi	guration					
Work Ord	er: J1561									
Compa	ny: Wavemark									
Company Addres	s: 1 Monarch [	Drive, Suite 104								
	Littleton, MA	01460								
Conta	ct: Rich Leitern	nann								
Person Prese	nt: Rich Leitern	nann								
		MN			PN			SN		-
El	IT:	Prox 1						1		
EUT Description	n: RFID reade	r module								
EUT TX Frequence										
Support Equipment:		MN						SN		
None										
EUT Ports:										
P. H. L.	D. 17	N	No.	0.11. 7			1 11	Max	In/Out	
Port Label	Port Type	No. of ports	Populated	Cable Type	Shielded	Ferrites	Length	Length	NEBS Type	Unpopulated Reaso
None										
ftware / Operating Mode Descrip	tion:									
T is transmitting										

Statement of Conformity

The Prox 1 module has been found to conform to the following parts of 47 CFR as detailed below:

Part 2	Part 15	Comments
	15.15(b)	There are no controls accessible to the user that vary the output
		power.
2.925	15.19	The label is shown in the label exhibit.
	15.21	Information to the user is shown in the instruction manual exhibit.
	15.27	No special accessories are required for compliance.
	15.203	This product is professionally installed.
	15.205 15.209	The fundamental is not in a Restricted band and the spurious and harmonic emissions in the Restricted bands comply with the general emission limits of 15.209.
	15.207	The unit meets the AC conducted emissions requirements of 15.207.
	15.225(a-d)	The unit complies with these requirements as shown in this test report.
	15.225(e)	The module complies with the frequency stability requirements.

## Test Results

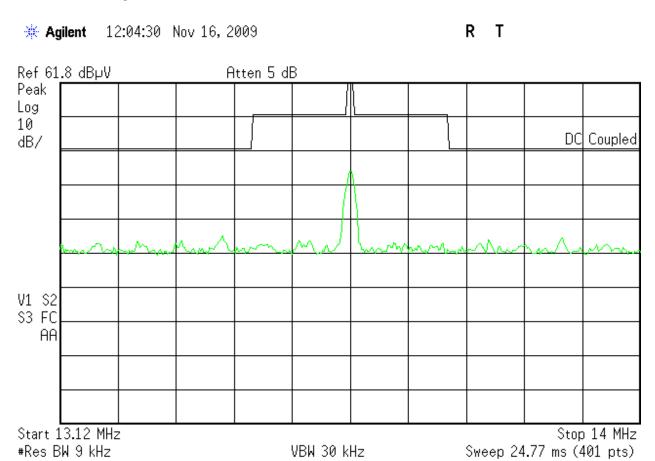
# Fundamental Measurement LIMITS

Frequency Range	Limit @ 30m	Limit @ 30m
(MHz)	(μV/m)	(dBµV/m)
13.553-13.567	15,848	83.9
13.410-13.553	334	50.4
13.567-13.710		
13.110-13.410	106	40.5
13.710-14.010		

[15.225(a-c)]

Date:	16-Nov-09		Company:	Wavemark					Work Order:	: J1561		
Engineer:	Evan Gould EUT Desc: Prox 1 EUT Operating Voltage/Frequency:							EUT Operating Voltage/Frequency: 120V / 60Hz				
Temp:	23.3℃		<b>Humidity:</b>	39%			Pressure: 1007mBar					
	Freque	ncy Range:	13.56MHz			Measurement Distance: 1 m						
Notes:												
							Advisor d	47 CFR 15.225(a)				
Antenna			Preamp	Antenna	Cable	Distance	Adjusted	4	17 GFR 13.223(a)			
	Frequency	Reading	Preamp Factor	Antenna Factor	Cable Factor	Factor	Reading	Limit	Margin	Result		
	Frequency (MHz)	Reading (dBµV)					· II-		(- /	Result (Pass/Fail)		
Polarization		•	Factor	Factor	Factor	Factor	Reading	Limit	Margin			
Polarization (0° - 90°)	(MHz)	(dBµV)	Factor (dB)	Factor (dB/m)	Factor (dB)	Factor (dB)	Reading (dBμV/m)	<b>Limit</b> (dBμV/m)	Margin (dB)	(Pass/Fail) Pass		
Polarization (0° - 90°) 0	(MHz) 13.56	(dBμV) 35.8 Pass	Factor (dB) 25.4 by	Factor (dB/m) 38.0	Factor (dB) 0.2 dB	Factor (dB)	Reading (dBµV/m) -10.5	<b>Limit</b> (dBμV/m) 83.9	Margin (dB) -94.4	(Pass/Fail) Pass MHz		

## **ANALYZER PLOT**



C:temp.gif file saved

## Radiated Spurious Emissions

### **LIMITS**

"The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209" [15.225(d)]

VILAGOII	LIVILIAIO	,														
Radiated	<b>Emissio</b>	ns Table	е													
Date:	16-Nov-09		Company:	Wavemark	(			Work Order	: J1561							
Engineer:	Evan Gould		EUT Desc:	Prox 1			EUT Operating Voltage/Frequency: 120V / 60Hz						EUT Operating Voltage/Frequency: 120V / 60Hz			
Temp:	Temp: 23.3 ℃ Humidity: 39%						Pressure: 1007mBar									
	Freque	ency Range:	9kHz - 30M	ИHz			Meas	urement Distance	: 3 m							
Notes:	Installed in HF	1500D						RBW	: 9kHz							
								VBW	: 30kHz							
Antenna			Preamp	Antenna	Cable	Adjusted										
Polarization	Frequency	Reading	Factor	Factor	Factor	Reading	Limit	Margin	Result							
(0°-90°)	(MHz)	(dBµV)	(dB)	(dBS/m)	(dB)	(dBµA/m)	(dBµA/m)	(dB)	(Pass/Fail)							
lo spurious emis	ssions were dete	cted														
Test Site:	EMI Chamber	2	Cable 1:	Asset #150	06	Cable 2:	Asset #1508									
Analyzer:	Gold		Preamp:	none		Antenna:	Sm Loop									

Date:	: 17-Nov-09		Company:	Wavemark							Work Order:	J1561	
Engineer:	Evan Gould		EUT Desc:	Prox 1			EUT Operating V	ng Voltage/Frequency: 5VDC					
Temp:	: 23.2℃		Humidity:	30%		Pressure:							
	Freque	ency Range:	30-1000MH	łz					Mea	surement Distance: 3	3 m		
Notes:	No harmonics	or spurious e	missions we	ere detected	I. The follo	owing noise floo	r measurements we	re taken instead.					
			ır _				ı —				500 Ol B		
Antenna Polarization	Frequency	Reading	Preamp Factor	Antenna Factor	Cable Factor	Adjusted Reading	Limit	Margin	FCC Class B  Result Limit Margin Re				
(H / V)	(MHz)	(dBµV)	(dB)	(dB/m)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Result (Pass/Fail)	LIMIτ (dBμV/m)	Margin (dB)	Result (Pass/Fail)	
noise floor	342.6	20.5	24.6	14.7	0.9	11.5	(0.0 μ ν/////		(1 door dir)	46.0	-34.5	Pass	
noise floor	496.1	19.2	25.0	18.1	1.3	13.6				46.0	-32.4	Pass	
noise floor	563.4	19.6	24.2	18.8	1.4	15.6				46.0	-30.4	Pass	
noise floor	710.1	19.0	23.8	20.5	1.5	17.2				46.0	-28.8	Pass	
noise floor	823.3	18.9	24.7	22.0	1.7	17.9				46.0	-28.1	Pass	
oise floor	918.3	18.7	24.3	22.9	1.7	19.0				46.0	-27.0	Pass	
	le Result:	Pass	by	-27.0	-ID				Worst Freq: 918.3 MHz				

# AC Line Conducted Emission Measurements LIMITS

Frequency of emission (MHz)	Quasi-peak limit (dBµV)	Average limit (dBµV)
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

<sup>\*</sup>Decreases with the logarithm of the frequency.

[47 CFR 15.207(a)]

Date:	17-Nov-09		-	Company:	Wavemark				Work Order:	J1561		
Engineer:	Evan Gould		E	UT Desc:	Prox 1	Test Site: CE						
	19.5℃			Humidity:	33%	Pressure: 101						
	installed HF15			ply								
Measure	ement Device:	Green LISN				EUT O	perating Voltag	e/Frequency:	5VDC			
Range:	0.15-30MHz						Specti	um Analyzer:	Black			
					Impedance	FCC/	CISPR B	FCC/0	CISPR B			
	Q.P. Rea	adings	Ave. Re	eadings	Factor					Overall		
Frequency	QP1	QP2	AV1	AV2		qp Limit	qp Margin	AVE Limit	AVE Margin	Result		
(MHz)	(dBµV)	(dBµV)	(dBµV)	(dBµV)	(dB)	(dBµV)	dB	(dBµV)	dB	(Pass/Fail)		
0.30	23.2	22.1	19.9	20.9	20.1	60.2	-16.9	50.2	-9.2	Pass		
8.00	21.3	20.7	18.4	18.0	20.2	60.0	-18.5	50.0	-11.4	Pass		
11.30	25.4	24.6	20.5	21.0	20.2	60.0	-14.4	50.0	-8.8	Pass		
16.00	18.7	20.1	11.0	14.0	20.4	60.0	-19.5	50.0	-15.6	Pass		
	16.8	18.7	11.7	14.1	20.8	60.0	-20.5	50.0	-15.1	Pass		
24.50	10.0											
24.50 25.80	18.0	19.4	9.9	13.2	20.8	60.0 -20.5 50.0 -15.1 60.0 -19.8 50.0 -16.0						

Date:	17-Nov-09				y: Wavemark Work Order:						
Engineer:	Evan Gould		E	UT Desc:	Prox 1	Test Site: CE					
Temp:	19.5℃			lumidity:	33%	Pressure: 10					
	installed in HF			1							
Measure	ment Device:	Green LISN				EUT O	perating Voltag	e/Frequency:	5VDC		
Range:	0.15-30MHz						Spectr	um Analyzer:	Black		
					Impedance	FCC/0	CISPR B	FCC/0	CISPR B		
	Q.P. Rea	idings	Ave. Re	eadings	Factor					Overall	
Frequency	QP1	QP2	AV1	AV2		qp Limit	qp Margin	AVE Limit	AVE Margin	Result	
(MHz)	(dBμV)	(dBµV)	(dBµV)	(dBµV)	(dB)	(dBµV)	dB	(dBµV)	dB	(Pass/Fail	
0.23	27.5	19.2	11.6	15.8	20.2	62.4	-14.7	52.4	-16.4	Pass	
0.30	23.9	22.0	23.3	20.1	20.1	60.2	-16.2	50.2	-6.8	Pass	
0.78	18.9	19.2	13.9	15.8	20.1	56.0	-16.7	46.0	-10.1	Pass	
13.60	12.8	14.5	4.3	4.8	20.3	60.0	-25.2	50.0	-24.9	Pass	
21.00	33.8	33.8	27.1	25.4	20.6	60.0	-5.6	50.0	-2.3	Pass	
24.70	24.6	24.1	23.0	16.8	20.8	60.0	-14.6	50.0	-6.2	Pass	
26.90	21.9	21.4	12.0	13.0	20.9	60.0	-17.2	50.0	-16.1	Pass	

Frequency Stability Measurements LIMITS

"The frequency tolerance of the carrier signal shall be maintained within  $\pm 0.01\%$  of the operating frequency over a temperature variation of -20 °C to +50 °C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 °C." [15.225(e)]

<b>Frequency Drift</b>			
Work Order: J156	1	Company:	Wavemark
<b>Date:</b> 18-N	ov-09		
Engineer: Evan	Gould		
<b>EUT:</b> Prox	1		
The reference point was	chosen to be the pea	ık of the fund	lamental
Frequency drift equals the	ne difference between	the reference	ce point at normal conditions
and the reference point	at extreme conditions		
Ref. point (MHz)	temp (℃)	DC voltage	Freq. Drift (kHz)
13.559784	20	12	N/A
13.559783	20	10.2	-0.001
13.559781	20	13.8	-0.003
13.559692	-20	12	-0.092
13.559731	50	12	-0.053
Result: Pass	<b>Limit:</b> ± 1.3559784	kHz	
Analyzer: Brown			

## Test Equipment Used

								R	EV. 11-NOV	-2009	
SPECTRUM ANALYZE		RANGE	MN		MFR		SN	Α	SSET	Сат	CALIBRATION DUE
BLACK	9kHz	z-12.8GHz	8596	E	Agilent	371	0A00944	00	0337	1	18-SEP-2010
GOLD	100H	z-26.5 GHz	E4407	7B	Agilent	MY	45113816	6 1	284	1	14-AUG-2010
RENTAL SA #1 (BROV	VN) 9kHz	z-26.5GHz	E4407	7B	Agilent	SG	44210511	1	510	1	10-FEB-2010
LISNS/MEASUREMENT	r Ran	GE	N	ЛN	MFR		SN		ASSET	Сат	CALIBRATION DUE
GREEN LISN	9ĸHz-5	0MHz	8012-50-	R-24-BNC	SOLAR	ł	041165	8	00987	I	11-FEB-2010
RADIATED EMISS	IONS SITES		FCC Cc	DDE	IC Cod	E	VCCI	CODE	Сат	C	ALIBRATION DUE
EMI CHAMB			71915		2762A-		R-3		I		15-FEB-2011
											_
CONDUCTED TEST SITES	(MAINS / TELC	:0)	FCC Cc	DDE	VCCI Co	DE	Сат		CALIBRAT	TION DUE	
CEMI 4			71915	0	C-3363, T-	1578	III		N	A	
CHAMBERS AND STRIPLINE		MN		MFF	?	SN	Asse	T	Сат	CALIBRA	ATION DUE
ENVIRONMENTAL (SAFETY)	Е	CL5		B-M-A	Inc.	2041	0002	9	ı	23-AF	PR-2010
ENVIRONMENTAL (SAFETY)	SGT	H-31S		B-M-A	Inc.	2245	0032	1	I	23-AF	PR-2010
PREAMPS / COUPLERS ATTENUATORS / FILTERS	Range		MN		MFR		SN	l	ASSET	Сат	CALIBRATION DUE
BLACK	0.009-2000MHz		ZFL-1000	0-LN	CS		N/A	4	00799	) II	06-NOV-2010
ANTENNAS	RANGE	MN		MFR	SN	Α	ASSET	Сат		CALIBR	ATION DUE
RED-WHITE BILOG	30-2000MHz	JB1		SUNOL	A091604-	1 C	1105	ı		17 DI	EC-2010
SMALL LOOP	10kHz-30MHz	PLA-130		ARA	1024	-	0755	I			AR-2010
	1/		N AN I		14		ON	^ ^		0	O
METEOROLOGICAL			MN		MFR		SN		SET	Сат	CALIBRATION DUE
WEATHER CLOCK (PRE			3A928		ON SCIENTIFIC	_	3166-1		831	1	17-MAR-2011
CEMI4 THERMOHYG			519-044		ROL COMPANY		457728		339	II	18-AUG-2011
CHAMBER2 THERMOR	HYGROMETER	35	519-044	Cont	ROL COMPANY	72	457639	13	347	II	18-AUG-2011

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 were 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

