
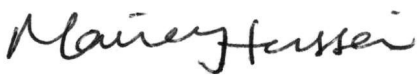




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# Test Report

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

Report No	EM0594-2
Client	Inncom Ryan Gardner
Address	277 West Main Street Niantic, CT 06357
Phone	860-739-4468
Items tested	Evora Light Controller
FCC ID	GTC202111TXR
IC ID	1609A-201217TXR
FRN	0017924150
Equipment Type	Low Power Communication Device
Equipment Code	DXX
Emission Designator	2M41F7D
Standards	47CFR 15.249, RSS 210 Issue 8 and RSS GEN Issue 3
Test Dates	March 26, 28 and April 27, 2012
Results	As detailed within this report
Prepared by	 John Cushing – Test Engineer
Authorized by	 Mairaj Hussain – EMC Supervisor
Issue Date	<u>May 7, 2012</u>
Conditions of Issue	This Test Report is issued subject to the conditions stated in the 'Conditions of Testing' section on page 19 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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Form Final Report REV 2-16-07 (DW)



**Product Tested - Configuration Documentation**

EUT Configuration										
<b>Work Order:</b> M0594 <b>Company:</b> Inncom <b>Company Address:</b> 277 West Main Street Niantic, CT 06357 <b>Contact:</b> Ryan Gardner <b>Person Present:</b> Ryan Gardner										
<b>MN</b>			<b>PN</b>			<b>SN</b>				
EUT: 201-217			---			Sample 1				
<b>EUT Description:</b> Evora Multibutton <b>EUT Max Frequency:</b> 32MHz <b>EUT Tx Frequency:</b> 2405-2480MHz										
<b>Support Equipment:</b>			<b>MN</b>			<b>SN</b>				
E527 Thermostat			201-527			Sample 1				
<b>EUT Ports:</b>										
Port Label	Port Type	No. of ports	No. Populated	Cable Type	Shielded	Ferrites	Length	Max Length	In/Out NEBS Type	Unpopulated Reason
AC mains	Power AC	1	1	3-wire AC	No	None	1m	N/A	indoor	
AC mains output	Power AC	1	1	2-wire AC	No	None	1m	N/A	indoor	
<b>Software / Operating Mode Description:</b>										
EUT is used as a light dimming switch, where it sends a wireless transmission indicating the status of the light. EUT was also tested in standby/receive mode.										



## Summary

This test report supports an application for certification of a transmitter operating pursuant to 47 CFR 15.249 and RSS-210. The product is the Evora Light Controller. It is a transmitter that operates in the range 2400 – 2483.5 MHz.

We found that the product met the above requirements with modification (see *Modifications Required for Compliance* section on page 5). The test sample was received in good condition.

## Test Methodology

Radiated emission and AC Line conducted testing was performed according to the procedures specified in ANSI C63.4 (2009) and RSS-GEN. Radiated Emissions were maximized by rotating the device around three orthogonal axes as well as varying the test antenna's height and polarity. The device antenna cannot be maximized separately.

The product was tested with modulation on and peak readings were compared against the average limit presented in section CFR 15.249.

The EUT operating voltage is 120V/60Hz.

The following bandwidths were used during radiated spurious and line conducted emissions.

Frequency	RBW	VBW
0.15-30MHz	9kHz	30kHz
30-1000MHz	120kHz	1MHz
1-25GHz	1MHz	3MHz



### Compliance Statement

The Evora Light Controller has been found to conform to the following parts of 47 CFR and RSS 210 as detailed below:

RSS-GEN	RSS 210	Part 15	Comments
5.4		15.15(b)	There are no controls accessible to the user that vary the output power.
5.2		15.19	The label is shown in the label exhibit.
7.1.3		15.21	Information to the user is shown in the instruction manual exhibit.
		15.27	No special accessories are required for compliance.
7.1.2		15.203	The antenna for this device is hardwired to the PCB.
	2.5	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.
7.2.4		15.207	Passes by 5.8dB at 0.15MHz
	A2.9(a)	15.249(a)	The fundamental and harmonics meet the limits in 15.249(a)
	A2.9(b)	15.249(d)	Spurious emissions meet the limits in 15.209.
4.6.1			99% emissions bandwidth plot is provided.

### Modifications Required for Compliance

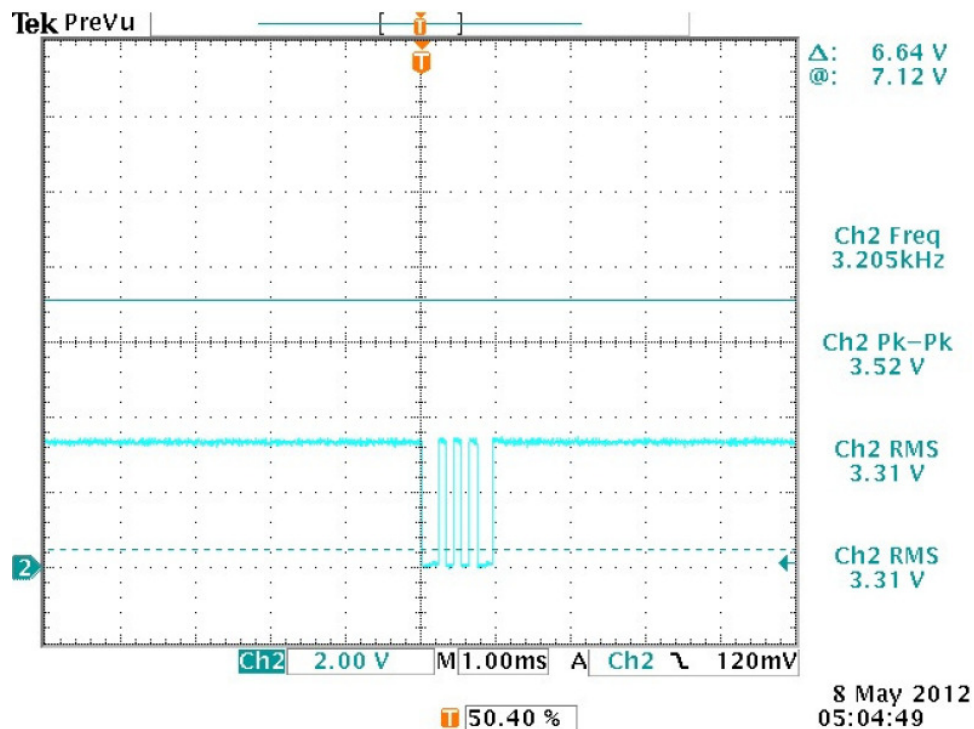
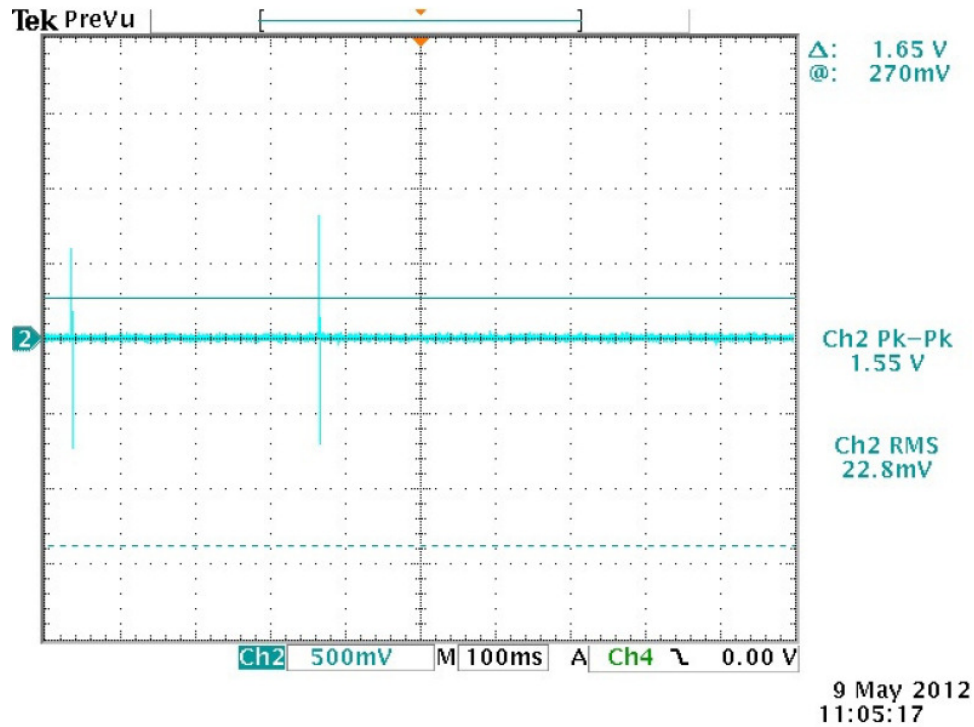
Modifications were required for the following tests:

- Conducted Emissions

Corcom (PN: 10VB3) EMI line filter added to AC mains, or by lifting ground connection

## Test Results

### Duty Cycle Correction Factor (DCCF)



In any 100ms time period, the product could be on for 1ms

$DCCF = 20 \times \log(1/100)$

$DCCF = -40.0\text{dB}$

A duty cycle correction factor of -40.0dB was applied

## Fundamental Measurements

### LIMITS

The field strength from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
902 - 928 MHz	50	500
2400 - 2483.5 MHz	50	500
5725 - 5875 MHz	50	500
24.0 - 24.25 GHz	250	2500

[15.249(a)]

### MEASUREMENTS / RESULTS

Fundamental													
Date: 26-Mar-12			Company: Inncom						Work Order: M0594				
Engineer: Matthew Burman			EUT Desc: Evora Light Controller						EUT Operating Voltage/Frequency: 120Vac 60Hz				
Temp: 21.9°C			Humidity: 22%						Pressure: 999mBar				
Frequency Range: 2400-2483.5MHz								Measurement Distance: 3 m					
Notes: RBW = 1MHz Peak Detector VBW = 3MHz DCCF = -40dB													
Antenna Polarization (H / V)	Frequency (MHz)	Reading (dBuV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Average Reading (dBuV/m)	Adjusted Peak Reading (dBuV/m)	47 CFR 15.249(a) - Average			47 CFR 15.249(a) - Peak		
								Limit (dBuV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBuV/m)	Margin (dB)	Result (Pass/Fail)
H	2405.0	81.1	21.7	28.2	3.3	50.9	90.9	94.0	-43.1	Pass	114.0	-23.1	Pass
H	2444.0	81.7	21.8	28.3	3.3	51.5	91.5	94.0	-42.4	Pass	114.0	-22.4	Pass
H	2480.0	81.7	21.8	28.4	3.3	51.6	91.6	94.0	-42.4	Pass	114.0	-22.4	Pass
Table Result: Pass by -22.4 dB										Worst Freq: 2480.0 MHz			
Test Site: 1DCC-OATS-3M-I				Cable 1: EMIR-HIGH-22									
Analyzer: Rental SA#1				Preamp: Asset #1517									
Antenna: Yellow Horn													

Adjusted Peak Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor

Adjusted Average Reading = Adjusted Peak Reading – DCCF

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<b>Spectrum Analyzers / Receivers / Preselectors</b> Rental SA #1 (Brown)	<b>Range</b> 9kHz-26.5GHz	<b>MN</b> E4407B	<b>Mfr</b> Agilent	<b>SN</b> SG44210511	<b>Asset</b> 1510	<b>Cat</b> I	<b>Calibration Due</b> 2/14/2013
<b>Radiated Emissions Sites</b> 1DCC-OATS-3M-I	<b>FCC Code</b> 719150	<b>IC Code</b> 2762A-8	<b>VCCI Code</b> R-3109, G-494			<b>Cat</b> II	<b>Calibration Due</b> 4/7/2012
<b>Preamps / Couplers Attenuators / Filters</b> 1517 HF Preamp	<b>Range</b> 1-20GHz	<b>MN</b> CS	<b>Mfr</b> CS	<b>SN</b> N/A	<b>Asset</b> 1517	<b>Cat</b> II	<b>Calibration Due</b> 3/29/2012
<b>Antennas</b> Yellow Horn	<b>Range</b> 1-18GHz	<b>MN</b> 3115	<b>Mfr</b> EMCO	<b>SN</b> 9608-4898	<b>Asset</b> 37	<b>Cat</b> I	<b>Calibration Due</b> 6/17/2013
<b>Meteorological Meters</b> Temp./Humidity/Atm. Pressure Gauge 1DCC-OATS-3M-I Thermohygrometer		<b>MN</b> 7400 Perception II 35519-044	<b>Mfr</b> Davis Control Company	<b>SN</b> N/A 72457635	<b>Asset</b> 965 1334	<b>Cat</b> I II	<b>Calibration Due</b> 4/4/2013 8/19/2013
<b>Cables</b> REMI-High-22	<b>Range</b> 9kHz - 15GHz		<b>Mfr</b> C-S			<b>Cat</b> II	<b>Calibration Due</b> 1/31/2013

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



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## Band Edge Measurements

### LIMITS

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).  
[15.247(d)]

### MEASUREMENTS / RESULTS

Spurious Emissions														
Date: 26-Mar-12				Company: Inncom				Work Order: M0594						
Engineer: Matthew Burman				EUT Desc: Evora Light Controller				EUT Operating Voltage/Frequency: 120Vac 60Hz						
Temp: 21.9°C				Humidity: 22%				Pressure: 999mBar						
Frequency Range: 2390-2483.5MHz										Measurement Distance: 3 m				
Notes: Radiated Bandedge DCCF = -40dB				RBW = 1MHz VBW = 3MHz		Peak Detector								
Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBμV)	Average Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBμV/m)	Adjusted Avg Reading (dBμV/m)	FCC Class B High Frequency - Peak			FCC Class B High Frequency - Average		
									Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)
H	2390.0	31.62	-8.4	21.7	28.1	3.3	41.3	1.3	74.0	-32.7	Pass	54.0	-52.7	Pass
H	2483.5	54.1	14.1	21.8	28.4	3.3	64.0	24.0	74.0	-10.0	Pass	54.0	-30.0	Pass
Table Result:				Pass		by		-10.0 dB		Worst Freq: 2483.5 MHz				
Test Site: 1DCC-OATS-3M-I				Cable 1: EMIR-HIGH-22										
Analyzer: Rental SA#1				Preamp: Asset #1517										
Antenna: Yellow Horn														

Adjusted Peak Reading = Peak Reading - Preamp Factor + Antenna Factor + Cable Factor

Adjusted Average Reading = Adjusted Peak Reading - DCCF

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#### Spectrum Analyzers / Receivers / Preselectors

Rental SA #1 (Brown)

Range	MN	Mfr	SN	Asset	Cat	Calibration Due
9kHz-26.5GHz	E4407B	Agilent	SG44210511	1510	I	2/14/2013

#### Radiated Emissions Sites

1DCC-OATS-3M-I

FCC Code	IC Code	VCCI Code	Cat	Calibration Due
719150	2762A-8	R-3109, G-494	II	4/7/2012

#### Preamps / Couplers Attenuators / Filters

1517 HF Preamp

Range	MN	Mfr	SN	Asset	Cat	Calibration Due
1-20GHz	CS	CS	N/A	1517	II	3/29/2012

#### Antennas

Yellow Horn

Range	MN	Mfr	SN	Asset	Cat	Calibration Due
1-18GHz	3115	EMCO	9608-4898	37	I	6/17/2013

#### Meteorological Meters

Temp./Humidity/Atm. Pressure Gauge  
1DCC-OATS-3M-I Thermohygrometer

MN	Mfr	SN	Asset	Cat	Calibration Due
7400 Perception II	Davis	N/A	965	I	4/4/2013
35519-044	Control Company	72457635	1334	II	8/19/2013

#### Cables

REMI-High-22

Range	Mfr	Cat	Calibration Due
9kHz - 15GHz	C-S	II	1/31/2013

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



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## Radiated Spurious Emissions

### LIMITS

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

[15.247(d)]

### MEASUREMENTS / RESULTS

Radiated Emissions Table									
Date: 28-Mar-12			Company: Inncom				Work Order: M0594		
Engineer: John Cushing			EUT Desc: Evora Light Controller			EUT Operating Voltage/Frequency: 120V/60Hz			
Temp: 24.7°C			Humidity: 13%			Pressure: 1009mBar			
Frequency Range: 30-1000MHz						Measurement Distance: 3 m			
Notes: No Emissions Found Readings are Noise Floor									
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)
V	32.15	18.1	22.8	20.0	0.5	15.8	40.0	-24.2	Pass
V	56.3	31.9	22.8	7.2	0.6	16.9	40.0	-23.1	Pass
V	191.2	33.5	22.9	11.6	1.1	23.3	43.5	-20.2	Pass
H	233.7	31.6	22.9	11.3	1.4	21.4	46.0	-24.6	Pass
H	306.5	28.8	22.8	13.5	1.4	20.9	46.0	-25.1	Pass
H	466.5	28.7	22.6	17.2	2.0	25.3	46.0	-20.7	Pass
Table Result:    Pass            by            -20.2 dB            Worst Freq:            191.2 MHz									
Test Site: EMI Chamber 2			Cable 1: Asset #1506				Cable 2: Asset #1507		
Analyzer: Gold			Preamp: Blue				Antenna: Red-White		

Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor

Radiated Emissions Table									
Date: 28-Mar-12			Company: Inncom				Work Order: M0594		
Engineer: John Cushing			EUT Desc: Evora Light Controller			EUT Operating Voltage/Frequency: 120V/60Hz			
Temp: 24.7°C			Humidity: 13%			Pressure: 1009mBar			
Frequency Range: 30-1000MHz						Measurement Distance: 3 m			
Notes: Receive Mode									
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)
							NO EMISSIONS FOUND		
Table Result: Pass									
Test Site: EMI Chamber 2			Cable 1: Asset #1506				Cable 2: Asset #1507		
Analyzer: Gold			Preamp: Blue				Antenna: Red-White		



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**Spectrum Analyzers / Receivers / Preselectors**  
Gold**Range**  
100Hz-26.5 GHz**MN**  
E4407B**Mfr**  
Agilent**SN**  
MY45113816**Asset**  
1284**Cat**  
I**Calibration Due**  
2/3/2013**Radiated Emissions Sites**  
EMI Chamber 2**FCC Code**  
719150**IC Code**  
2762A-7**VCCI Code**  
R-3033, G-107**Cat**  
I**Calibration Due**  
2/15/2014**Preamps / Couplers Attenuators / Filters**  
Blue**Range**  
0.009-2000MHz**MN**  
ZFL-1000-LN**Mfr**  
CS**SN**  
N/A**Asset**  
759**Cat**  
II**Calibration Due**  
6/1/2012**Antennas**  
Red-White Bilog**Range**  
30-2000MHz**MN**  
JB1**Mfr**  
Sunol**SN**  
A091604-1**Asset**  
1105**Cat**  
I**Calibration Due**  
1/28/2013**Meteorological Meters**  
Temp./Humidity/Atm. Pressure Gauge  
CHAMBER2 Thermohygrometer**MN**  
7400 Perception II  
35519-044**Mfr**  
Davis  
Control Company**SN**  
N/A  
72457639**Asset**  
965  
1347**Cat**  
I  
II**Calibration Due**  
4/4/2013  
8/19/2013**Cables**  
Asset #1506  
Asset #1507**Range**  
9kHz - 18GHz  
9kHz - 26.5GHz**Mfr**  
Florida RF  
Florida RF**Cat**  
II  
II**Calibration Due**  
2/2/2013  
1/31/2013

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

**Spurious Emissions**

Date: 26-Mar-12		Company: Inncom						Work Order: M0594						
Engineer: Matthew Burman		EUT Desc: Evora Light Controller						EUT Operating Voltage/Frequency: 120Vac 60Hz						
Temp: 21.9°C		Humidity: 22%						Pressure: 999mBar						
Frequency Range: 1-6GHz									Measurement Distance: 3 m					
Notes: Harmonics of Fundamental DCCF = -40dB			RBW = 1MHz VBW = 3MHz			Peak Detector								
Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBμV)	Average Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBμV/m)	Adjusted Avg Reading (dBμV/m)	FCC Class B High Frequency - Peak			FCC Class B High Frequency - Average		
									Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)
H	4960.0	34.85	-5.2	20.4	33.2	5.1	52.8	12.8	74.0	-21.2	Pass	54.0	-41.2	Pass
Table Result:		Pass		by		-21.2 dB						Worst Freq:		4960.0 MHz
Test Site: 1DCC-OATS-3M-I				Cable 1: EMIR-HIGH-22										
Analyzer: Rental SA#1				Preamp: Asset #1517				Antenna: Yellow Horn						

**Spurious Emissions**

Date: 26-Mar-12				Company: Inncom				Work Order: M0594																																							
Engineer: Matthew Burman				EUT Desc: Evora Light Controller				EUT Operating Voltage/Frequency: 120Vac 60Hz																																							
Temp: 21.9°C				Humidity: 22%				Pressure: 999mBar																																							
Frequency Range: 1-6GHz								Measurement Distance: 3 m																																							
Notes: Receive Mode				RBW = 1MHz    Peak Detector VBW = 3MHz																																											
Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBμV)	Average Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBμV/m)	Adjusted Avg Reading (dBμV/m)	FCC Class B High Frequency - Peak			FCC Class B High Frequency - Average																																			
									Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)																																	
No emissions found																																															
Table Result:				---				by				---				dB				Worst Freq:				---				MHz																			
Test Site: 1DCC-OATS-3M-I																Cable 1: EMIR-HIGH-22																															
Analyzer: Rental SA#1																Preamp: Asset #1517																Antenna: Yellow Horn															

**Spurious Emissions**

Date: 26-Mar-12		Company: Inncom				Work Order: M0594								
Engineer: Matthew Burman		EUT Desc: Evora Light Controller				EUT Operating Voltage/Frequency: 120Vac 60Hz								
Temp: 21.9°C		Humidity: 22%				Pressure: 999mBar								
Frequency Range: 6-18GHz						Measurement Distance: 1 m								
Notes: Harmonics of Fundamental DCCF = -40dB		RBW = 1MHz VBW = 3MHz		Peak Detector										
Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBμV)	Average Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBμV/m)	Adjusted Avg Reading (dBμV/m)	FCC Class B High Frequency - Peak			FCC Class B High Frequency - Average		
									Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)
H - NF	7440.0	31.9	-8.1	20.4	37.8	6.5	55.8	15.8	83.5	-27.7	Pass	63.5	-47.7	Pass
H - NF	9920.0	30.2	-9.8	19.6	38.8	7.6	57.0	17.0	83.5	-26.5	Pass	63.5	-46.5	Pass
H - NF	12400.0	32.9	-7.1	19.5	38.8	9.7	61.9	21.9	83.5	-21.6	Pass	63.5	-41.6	Pass
H - NF	14880.0	32.1	-7.9	19.5	39.5	10.6	62.7	22.7	83.5	-20.8	Pass	63.5	-40.8	Pass
H - NF	17360.0	31.76	-8.2	19.5	42.8	11.5	66.6	26.6	83.5	-16.9	Pass	63.5	-36.9	Pass
Table Result:		Pass		by		-16.9 dB				Worst Freq:		17360.0 MHz		
Test Site: 1DCC-OATS-3M-I				Cable 1: EMIR-HIGH-22										
Analyzer: Rental SA#1				Preamp: Asset #1517								Antenna: Yellow Horn		

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**Spurious Emissions**

Date: 26-Mar-12				Company: Inncom					Work Order: M0594						
Engineer: Matthew Burman				EUT Desc: Evora Light Controller					EUT Operating Voltage/Frequency: 120Vac 60Hz						
Temp: 21.9°C				Humidity: 22%					Pressure: 999mBar						
Frequency Range: 6-18GHz									Measurement Distance: 1 m						
Notes: Receive Mode				RBW = 1MHz Peak Detector					VBW = 3MHz						
Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBμV)	Average Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBμV/m)	Adjusted Avg Reading (dBμV/m)	FCC Class B High Frequency - Peak			FCC Class B High Frequency - Average			
									Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	
no emissions found				---	---	---	---	---	---	---	---	---	---	---	---
Table Result:				---		by		---		dB		Worst Freq: --- MHz			
Test Site: 1DCC-OATS-3M-I				Cable 1: EMIR-HIGH-22											
Analyzer: Rental SA#1				Preamp: Asset #1517					Antenna: Yellow Horn						

Rev. 3/17/2012

<b>Spectrum Analyzers / Receivers / Preselectors</b>		<b>Range</b>	<b>MN</b>	<b>Mfr</b>	<b>SN</b>	<b>Asset</b>	<b>Cat</b>	<b>Calibration Due</b>
Rental SA #1 (Brown)		9kHz-26.5GHz	E4407B	Agilent	SG44210511	1510	I	2/14/2013
<b>Radiated Emissions Sites</b>		<b>FCC Code</b>	<b>IC Code</b>	<b>VCCI Code</b>			<b>Cat</b>	<b>Calibration Due</b>
1DCC-OATS-3M-I		719150	2762A-8	R-3109, G-494			II	4/7/2012
<b>Preamps / Couplers / 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>
1517 HF Preamp		1-20GHz	CS	CS	N/A	1517	II	3/29/2012
<b>Antennas</b>		<b>Range</b>	<b>MN</b>	<b>Mfr</b>	<b>SN</b>	<b>Asset</b>	<b>Cat</b>	<b>Calibration Due</b>
Yellow Horn		1-18GHz	3115	EMCO	9608-4898	37	I	6/17/2013
<b>Meteorological Meters</b>			<b>MN</b>	<b>Mfr</b>	<b>SN</b>	<b>Asset</b>	<b>Cat</b>	<b>Calibration Due</b>
Temp./Humidity/Atm. Pressure Gauge			7400 Perception II	Davis	N/A	965	I	4/4/2013
1DCC-OATS-3M-I Thermohygrometer			35519-044	Control Company	72457635	1334	II	8/19/2013
<b>Cables</b>		<b>Range</b>		<b>Mfr</b>			<b>Cat</b>	<b>Calibration Due</b>
REMI-High-22		9kHz - 15GHz		C-S			II	1/31/2013

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

**Spurious Emissions**

Date: 26-Mar-12		Company: Inncom						Work Order: M0594							
Engineer: Matthew Burman		EUT Desc: Evora Light Controller						EUT Operating Voltage/Frequency: 120Vac 60Hz							
Temp: 21.9°C		Humidity: 22%						Pressure: 999mBar							
Frequency Range: 18-25GHz								Measurement Distance: 1 m							
Notes: Harmonics of Fundamental DCCF = -40dB		RBW = 1MHz Peak Detector VBW = 3MHz													
Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBμV)	Average Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBμV/m)	Adjusted Avg Reading (dBμV/m)	FCC Class B High Frequency - Peak			FCC Class B High Frequency - Average			
									Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	
No emissions found					---	---	---	---	---	---	---	---	---	---	---
Table Result:		---		by		---		dB		Worst Freq: --- MHz					
Test Site: 1DCC-OATS-3M-I				Cable 1: EMIR-HIGH-22											
Analyzer: Rental SA#1				Preamp: 18-26.5GHz						Antenna: 18-26.5GHz Horn					

**Spurious Emissions**

<b>Date:</b> 26-Mar-12				<b>Company:</b> Inncom					<b>Work Order:</b> M0594						
<b>Engineer:</b> Matthew Burman				<b>EUT Desc:</b> Evora Light Controller					<b>EUT Operating Voltage/Frequency:</b> 120Vac 60Hz						
<b>Temp:</b> 21.9°C				<b>Humidity:</b> 22%					<b>Pressure:</b> 999mBar						
<b>Frequency Range:</b> 18-25GHz									<b>Measurement Distance:</b> 1 m						
<b>Notes:</b> Receive Mode				RBW = 1MHz    Peak Detector					VBW = 3MHz						
Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBμV)	Average Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBμV/m)	Adjusted Avg Reading (dBμV/m)	FCC Class B High Frequency - Peak			FCC Class B High Frequency - Average			
									Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	
No emissions found				---	---	---	---	---	---	---	---	---	---	---	---
<b>Table Result:</b>				---		by		---		dB		<b>Worst Freq:</b> --- MHz			
<b>Test Site:</b> 1DCC-OATS-3M-I				<b>Cable 1:</b> EMIR-HIGH-22											
<b>Analyzer:</b> Rental SA#1				<b>Preamp:</b> 18-26.5GHz											
												<b>Antenna:</b> 18-26.5GHz Horn			

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Rev. 3/17/2012

**Spectrum Analyzers / Receivers / Preselectors**  
Rental SA #1 (Brown)**Range**  
9kHz-26.5GHz**MN**  
E4407B**Mfr**  
Agilent**SN**  
SG44210511**Asset**  
1510**Cat**  
I**Calibration Due**  
2/14/2013**Radiated Emissions Sites**  
1DCC-OATS-3M-I**FCC Code**  
719150**IC Code**  
2762A-8**VCCI Code**  
R-3109, G-494**Cat**  
II**Calibration Due**  
4/7/2012**Preamps / Couplers Attenuators / Filters**  
HF (Yellow)**Range**  
18-26.5GHz**MN**  
AFS4-18002650-60-8P-4**Mfr**  
CS**SN**  
467559**Asset**  
1266**Cat**  
I**Calibration Due**  
10/6/2012**Antennas**  
HF (White) Horn**Range**  
18-26.5GHz**MN**  
801-WLM**Mfr**  
Waveline**SN**  
758**Asset**  
758**Cat**  
I**Calibration Due**  
Verify before Use**Meteorological Meters**  
Temp./Humidity/Atm. Pressure Gauge  
1DCC-OATS-3M-I Thermohygrometer**MN**  
7400 Perception II  
35519-044**Mfr**  
Davis  
Control Company**SN**  
N/A  
72457635**Asset**  
965  
1334**Cat**  
I  
II**Calibration Due**  
4/4/2013  
8/19/2013**Cables**  
REMI-High-22**Range**  
9kHz - 15GHz**Mfr**  
C-S**Cat**  
II**Calibration Due**  
1/31/2013

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## AC Line Conducted Emissions LIMITS

Frequency of emission (MHz)	Quasi-peak limit (dB $\mu$ V)	Average limit (dB $\mu$ V)
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\*Decreases with the logarithm of the frequency.

[47 CFR 15.207(a)]

## MEASUREMENTS / RESULTS

### AC Mains Conducted Emissions

Date: 26-Mar-12					Company: Inncom				Work Order: M0594			
Engineer: Matthew Burman					EUT Desc: Evora Light Controller				Test Site: CEMI2			
Temp: 21.0°C					Humidity: 22%				Pressure: 999mBar			
Notes: EMI Line filter (Corcom PN:10VB3)												
Measurement Device: Asset #1494 LISN						EUT Operating Voltage/Frequency: 120Vac 60Hz						
Range: 0.15-30MHz						Spectrum Analyzer: Black						
Frequency (MHz)	Q.P. Readings		Ave. Readings		Impedance Factor  (dB)	FCC/CISPR B		FCC/CISPR B		Overall Result  (Pass/Fail)		
	QP1 (dBμV)	QP2 (dBμV)	AV1 (dBμV)	AV2 (dBμV)		qp Limit (dBμV)	qp Margin dB	AVE Limit (dBμV)	AVE Margin dB			
0.15	40.1	30.6	10.6	12.1	20.1	66.0	-5.8	56.0	-23.8	Pass		
0.26	32.0	31.2	16.1	15.7	20.1	61.4	-9.3	51.4	-15.2	Pass		
0.53	16.0	17.2	8.5	8.0	20.1	56.0	-18.7	46.0	-17.4	Pass		
1.00	3.7	3.6	-4.3	-3.7	20.1	56.0	-32.2	46.0	-29.6	Pass		
5.00	2.0	2.1	-5.6	-6.2	20.1	56.0	-33.8	46.0	-31.5	Pass		
15.00	-2.2	-2.2	-12.0	-11.9	20.2	60.0	-42.0	50.0	-41.7	Pass		
Table Result:		Pass	by	-5.80 dB		Worst Freq:		0.15 MHz				

### AC Mains Conducted Emissions

Date: 26-Mar-12					Company: Inncom					Work Order: M0594				
Engineer: Matthew Burman					EUT Desc: Evora Light Controller					Test Site: CEMI2				
Temp: 21.0 °C					Humidity: 22%					Pressure: 999mBar				
Notes: No ground connection														
Measurement Device: Asset #1494 LISN							EUT Operating Voltage/Frequency: 120Vac 60Hz							
Range: 0.15-30MHz							Spectrum Analyzer: Black							
Frequency (MHz)	Q.P. Readings		Ave. Readings		Impedance Factor  (dB)	FCC/CISPR B		FCC/CISPR B		Overall Result  (Pass/Fail)				
	QP1 (dBµV)	QP2 (dBµV)	AV1 (dBµV)	AV2 (dBµV)		qp Limit (dBµV)	qp Margin dB	AVE Limit (dBµV)	AVE Margin dB					
0.15	39.4	30.3	11.5	11.0	20.1	66.0	-6.5	56.0	-24.4	Pass				
0.26	25.4	31.6	18.5	17.9	20.1	61.4	-9.7	51.4	-12.8	Pass				
0.53	29.9	25.5	14.1	13.7	20.1	56.0	-6.0	46.0	-11.8	Pass				
1.00	12.9	11.8	0.2	-0.6	20.1	56.0	-23.0	46.0	-25.7	Pass				
5.00	7.4	8.9	-3.0	-3.5	20.1	56.0	-27.0	46.0	-28.9	Pass				
15.00	-2.0	-1.9	-12.4	-13.4	20.2	60.0	-41.7	50.0	-42.2	Pass				
Table Result:		Pass	by	-6.00 dB			Worst Freq:		0.53 MHz					



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**Spectrum Analyzers / Receivers / Preselectors**  
Black

Range	MN	Mfr	SN	Asset	Cat	Calibration Due
9kHz-12.8GHz	8596E	Agilent	3710A00944	337	I	12/2/2012

**LISNs/Measurement Probes**

230VAC LISN Asset 1494

Range	MN	Mfr	SN	Asset	Cat	Calibration Due
10kHz-50MHz	9252-50-R-24-BNC	Solar	84715	1494	I	5/26/2012

**Conducted Test Sites (Mains / Telco)**

CEMI 2

**FCC Code**

719150

**VCCI Code**

C-3361, T-1576

Cat	Calibration Due
III	NA

**Meteorological Meters**Temp./Humidity/Atm. Pressure Gauge  
CEMI2 Thermohygrometer

MN
7400 Perception II 35519-044

Mfr
Davis Control Company

SN
N/A 72436083

Asset	Cat	Calibration Due
965	I	4/4/2013
1336	II	8/19/2013

Cables
CEMI-03

Range
9kHz - 2GHz

Mfr
C-S

Cat	Calibration Due
II	9/16/2012

Attenuators
20dB Atten-4

Range
9kHz-2GHz

MN
----

Mfr
-----

SN
N/A

Asset	Cat	Calibration Due
	II	6/11/2012

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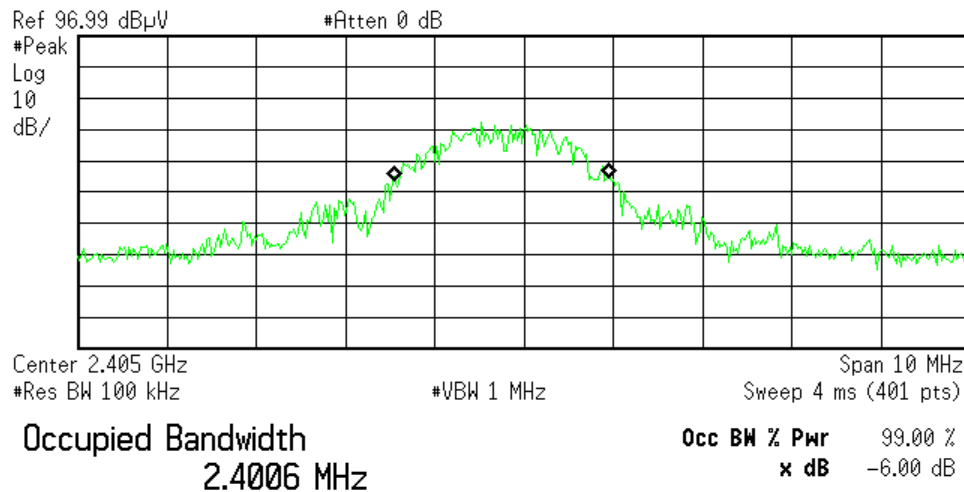
## Occupied Bandwidth

### REQUIREMENT

When an occupied bandwidth is no specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured. [RSS-GEN 4.6.1]

Agilent 15:34:36 Sep 13, 2012

R T



Transmit Freq Error -239.305 kHz  
x dB Bandwidth 1.312 MHz\*

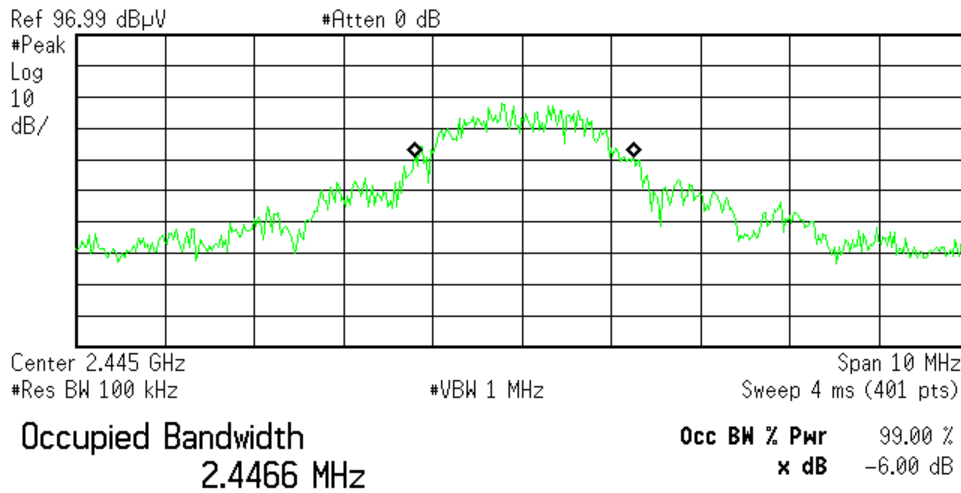
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Low Channel



\* Agilent 15:37:34 Sep 13, 2012

R T



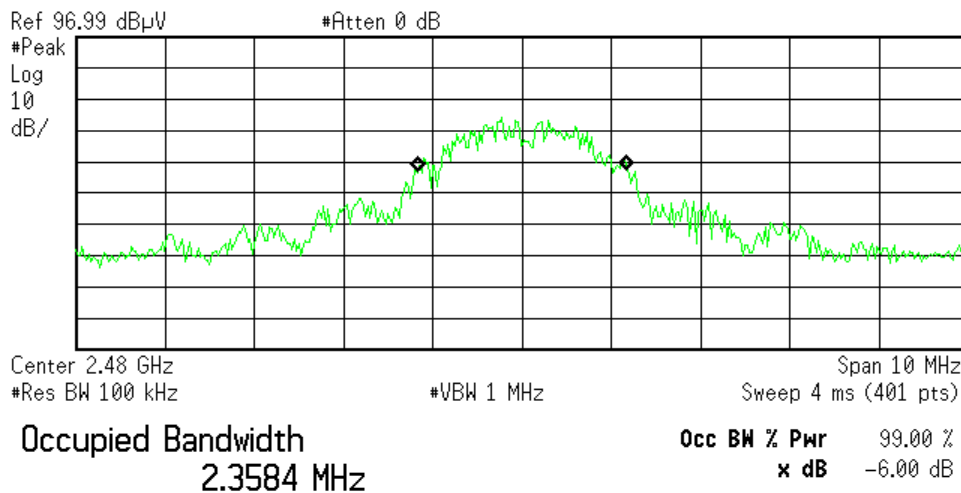
**Transmit Freq Error** 30.359 kHz  
**x dB Bandwidth** 1.485 MHz\*

C:\temp.gif file saved

Middle Channel

\* Agilent 15:40:05 Sep 13, 2012

R T



**Transmit Freq Error** 7.853 kHz  
**x dB Bandwidth** 1.466 MHz\*

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High Channel

## Measurement Uncertainty

The listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

Measurement	Expanded Uncertainty k=2	Maximum allowable uncertainty
Radiated Emissions (30-1000MHz)		
NIST	5.6dB	N/A
CISPR	4.6dB	5.2dB (Ucisp)
Radiated Emissions (1-26.5GHz)	4.6dB	N/A
Radiated Emissions (above 26.5GHz)	4.9dB	N/A
Magnetic Radiated Emissions	5.6dB	N/A
Conducted Emissions		
NIST	3.9dB	N/A
CISPR	3.6dB	3.6dB (Ucisp)
Telco Conducted Emissions (Current)	2.9dB	N/A
Telco Conducted Emissions (Voltage)	4.4dB	N/A
Electrostatic Discharge	11.5%	N/A
Radiated RF Immunity (Uniform Field)	1.6dB	N/A
Electrical Fast Transients	23.1%	N/A
Surge	23.1%	N/A
Conducted RF Immunity	3dB	N/A
Magnetic Immunity	12.8%	N/A
Dips and Interrupts	2.3V	N/A
Harmonics	3.5%	N/A
Flicker	3.5%	N/A
Radio frequency (@ 2.4GHz)	$3.23 \times 10^{-8}$	$1 \times 10^{-7}$
RF power, conducted	0.40dB	0.75dB
Maximum frequency deviation:		
• Within 300Hz and 6kHz of audio frequency / Within 6kHz and 25kHz of audio frequency	3.4% 0.3dB	5% 3dB
Adjacent channel power	1.9dB	3dB
Conducted spurious emission of transmitter, valid up to 12.75GHz	2.39dB	3dB
Conducted emission of receivers	1.3dB	3dB
Radiated emission of transmitter, valid up to 26.5GHz	3.9dB	6dB
Radiated emission of transmitter, valid up to 80GHz	3.3dB	6dB
Radiated emission of receiver, valid up to 26.5GHz	3.9dB	6dB
Radiated emission of receiver, valid up to 80GHz	3.3dB	6dB
Humidity	2.37%	5%
Temperature	0.7°C	1.0°C
Time	4.1%	10%
RF Power Density, Conducted	0.4dB	3dB
DC and low frequency voltages	1.3%	3%
Voltage (AC, <10kHz)	1.3%	2%
Voltage (DC)	0.62%	1%
The above reflects a 95% confidence level		



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## 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.



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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

