





Test Report



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

Report No	ER1114-1
Client	Ideal Industries, Inc. Tim Tunnell
Address	Becker Place Sycamore, IL 60178
Phone	(815) 895-1295
Items tested	SCLINE1000-277 Line Dimming Luminaire Controller
FCC ID	2AAMXSCLINE1000
IC ID	11250A-SCDMET1000
FRN	0002862225
Equipment Type	Digital Transmission System
Equipment Code	DTS
Emission Designator	763KG1D
FCC/IC Rule Parts	CFR Title 47 FCC Part 15.247, ISED Canada RSS-247 Issue 1
Test Dates	4/20/2017 -5/8/2017
Results	As detailed within this report
Prepared by	 Zachary Johnson – Test Engineer
Authorized by	 Jason Haley – Sr. EMC Engineer
Issue Date	10/18/2017
Conditions of Issue	This Test Report is issued subject to the conditions stated in the 'Conditions of Testing' section on page 15 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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Contents

Contents.....2
Summary.....3
Test Methodology.....4
Product Tested - Configuration Documentation5
Statement of Conformity.....6
Modifications Required for Compliance6
Test Results7
 Radiated Spurious Emissions7
 AC Line Conducted Emissions.....10
 Measurement Uncertainty14
Conditions of Testing.....15

Form Final Report REV 12-07-15



Summary

This test report supports an application for certification of a transmitter operating pursuant to: CFR Title 47 FCC Part 15.247 and ISED Canada RSS-247 Issue 1.

SCLINE1000-277 operates in the 902MHz-928MHz frequency range and has an antenna with 3dBi peak gain. It is powered by AC input 120-277V.

We found that the product met the above requirements without modification. Test sample was received in good condition.

This report supports a prior report EP3128-1, which contains additional testing to meet CFR Title 47 FCC Part 15.247 and ISED Canada RSS-247 Issue 1 requirements.



Test Methodology

All testing was performed according to the following rules/procedures/documents;
CFR Title 47 FCC Part 15.247, RSS-247 Issue 1, RSS-Gen Issue 4, FCC KDB 558074 v04
DTS Measurement Guidance v03r05 and ANSI C63.10-2013.

Radiated emissions were maximized by rotating the device around 3 orthogonal planes (X, Y and Z) as well as varying the test antenna's height and polarity. Antenna of the EUT is swivel type and was therefore maximized in its 2 possible orientations (horizontal and vertical) and worst case results recorded.

RF measurements were performed at the antenna port on 3 channels as follows:

- 902MHz: Low Channel
- 914MHz: Mid Channel
- 928MHz: High Channel

AC line conducted emissions testing was performed with a 50 Ω /50 μ H LISN.

The following bandwidths were used during radiated spurious emissions testing.

Frequency	RBW	VBW
150kHz-30MHz	9kHz	30kHz
30-1000MHz	120kHz	1MHz
1-25GHz	1MHz	3MHz

Product Tested - Configuration Documentation

EUT Configuration											
Work Order:	P3128										
Company:	Ideal Industries, Inc.										
Company Address:	Becker Place Sycamore, IL 60178										
Contact:	Tim Tunnell										
	MN			PN			SN				
EUT:	SCLINE1000-277			--			Sample 1				
EUT Description:	SCLINE1000 Line Dimming Luminaire Controller										
EUT Max Frequency:	927 MHz										
EUT Min Frequency:	902 MHz										
EUT ISM Frequency:											
Port Label	Port Type	# ports	# populated	cable type	shielded	ferrite s	length (m)	max length (m)	in/out	under test	comment
Power	Power AC	1	1	Power AC	No	No	0.3		in	yes	
Software Operating Mode Description:											
EUT shall continuously transmit on a single channel from 902 to 928 MHz range when AC power is applied.											



Statement of Conformity

The SCLINE1000-277 has been found to conform to the following parts of 47 CFR and RSS 247 as detailed below:

RSS-GEN	RSP-100	RSS 247	Part 15	Comments
6.3			15.15(b)	There are no controls accessible to the user that varies the output power to operate in violation of the regulatory requirements.
	3.1		15.19	The label is shown in the label exhibit.
	3.2		15.21	Information to the user is shown in the instruction manual exhibit.
			15.27	No special accessories are required for compliance.
3, 6.1, 6.5			15.31	The EUT was tested in accordance with the measurement standards in this section.
6.13			15.33	Frequency range was investigated according to this section, unless noted in specific rule section under which the equipment operates.
8.1			15.35	The EUT emissions were measured using the measurement detector and bandwidth specified in this section, unless noted in specific rule section under which the equipment operates.
8.3			15.203	The antenna for this device is a permanently installed PCB antenna.
8.10			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 or RSS-Gen as applicable
8.8			15.207	EUT meets the AC Line conducted emissions requirements of this section.
			15.247	The unit complies with the requirements of 15.247
		RSS 247		The unit complies with the requirements of RSS-247
6.6				Occupied Bandwidth measurements were made.

Modifications Required for Compliance

None



Test Results

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

Curtis Straus - a Bureau Veritas Company										Work Order - R1114			
Radiated Emissions Electric Field 3m Distance										EUT Power: 60Hz			
Top Peaks Horizontal 30-1000MHz										Test Site - Chamber#2			
Operator: Nirak So										Temp; Humid; Pres - 25°C; 29%RH; 1011mBar			
Client Present:													
Company:													
Req. 1: FCC Part 15.247													
Frequency	Delta to Marginal Level	Peak Reading	Preamp Factor	Antenna Factor	Cable Factor	Adjusted Peak Level	Requirement 1	Requirement 1 Margin	Requirement 1 Results	Antenna Height	EUT Azimuth	Worst Margin Limit 1	
MHz	dB	dBµV	dB	dB/m	dB	dBµV/m	dBµV/m	dB	Pass/Fail	centimeter	degrees	dB	
342.243	-10.1	39.1	24.5	14.1	1.3	29.9	46	-16.1	PASS	100	135		
343.94	-9.9	39.4	24.5	14	1.3	30.2	46	-15.9	PASS	100	135		
818.319	-7.9	34	25.3	21.6	1.9	32.1	46	-13.9	PASS	100	270	-13.9	
827.534	-8.5	33.5	25.4	21.6	1.9	31.5	46	-14.5	PASS	150	225		
EUT in Y Orientation. 902MHz TX channel is used.													

Curtis Straus - a Bureau Veritas Company										Work Order - R1114			
Radiated Emissions Electric Field 3m Distance										EUT Power: 60Hz			
Top Peaks Vertical 30-1000MHz										Test Site - Chamber#2			
Operator: Nirak So										Temp; Humid; Pres - 25°C; 29%RH; 1011mBar			
Client Present:													
Company:													
Req. 1: FCC Part 15.247													
Frequency	Delta to Marginal Level	Peak Reading	Preamp Factor	Antenna Factor	Cable Factor	Adjusted Peak Reading	Requirement 1 Limit	Requirement 1 Margin	Requirement 1 Results	Antenna Height	Turntable Azimuth	Worst Margin Limit 1	
MHz	dB	dBµV	dB	dB/m	dB	dBµV/m	dBµV/m	dB	Pass/Fail	centimeter	degrees	dB	
36.766	-4.2	38.5	25.2	16.1	0.4	29.8	40	-10.2	PASS	100	315	-10.2	
338.678	-6.3	42.9	24.5	14.1	1.3	33.8	46	-12.3	PASS	150	45		
341.322	-5.1	44.1	24.5	14.1	1.3	34.9	46	-11.1	PASS	150	180		
343.019	-5.2	44	24.5	14	1.3	34.8	46	-11.2	PASS	100	180		
353.228	-6.2	42.9	24.6	14.3	1.2	33.8	46	-12.2	PASS	150	45		
EUT in Y Orientation. 902MHz TX channel is used.													

30-1000MHz



Rev. 4/17/2017

Spectrum Analyzers / Receivers / Preselectors Rental MXE EMI Receiver(1170725)	Range 20Hz-26.5GHz	MN N9038A	Mfr Agilent	SN MY51210151	Asset 1170725	Cat I	Calibration Due 12/22/2017	Calibrated on 12/22/2016
Radiated Emissions Sites EMI Chamber 2	FCC Code 719150	IC Code 2762A-7	VCCI Code A-0015	Range 1-18GHz	Asset 1686	Cat I	Calibration Due 12/21/2018	Calibrated on 12/21/2016
Preamps / Couplers Attenuators / Filters Red	Range 0.009-2000MHz	MN ZFL-1000-LN	Mfr CS	SN N/A	Asset 798	Cat II	Calibration Due 1/28/2018	Calibrated on 1/28/2017
Antennas Red-Brown Bilog	Range 30-2000MHz	MN JB1	Mfr Sunol	SN A0032406	Asset 1218	Cat I	Calibration Due 1/13/2019	Calibrated on 1/13/2017
Meteorological Meters Weather Clock (Pressure Only) TH A#2078		MN BA928 HTC-1	Mfr Oregon Scientific HDE	SN C3166-1	Asset 831 2078	Cat I II	Calibration Due 4/28/2018 3/23/2018	Calibrated on 4/28/2016 3/23/2017
Cables Asset #2052 Asset #2053	Range 9kHz - 18GHz 9kHz - 18GHz		Mfr Florida RF Florida RF			Cat II II	Calibration Due 3/5/2018 10/1/3017	Calibrated on 3/5/2017 10/30/2016

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

Radiated Emissions Table		Date: 23-Apr-17		Company: Ideal Industries Inc.		Work Order: R1114									
Engineer: Nirak So		EUT Desc: SCLINE1000-277		EUT Operating Voltage/Frequency: 120Vac, 60Hz											
Temp: 25C		Humidity: 26%		Pressure: 1009mBar											
Frequency Range: 1 to 6GHz				Measurement Distance: 3 m											
Notes: EUT is Y position with 902MHz channel.				EUT Max Freq:											
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)	
v	1035.0	39.9	30.2	19.5	24.4	2.1	46.9	37.2	74.0	-27.1	Pass	54.0	-16.8	Pass	
h	1800.0	38.6	34.4	17.8	27.4	3.3	51.5	47.3	74.0	-21.0	Pass	54.0	-5.2	Pass	
h	2700.0	29.9	20.1	19.2	28.8	3.7	43.2	33.4	74.0	-30.8	Pass	54.0	-20.6	Pass	
h	3400.0	31.014	22.1	19.2	31.1	4.3	47.2	38.3	74.0	-26.8	Pass	54.0	-15.7	Pass	
v	1800.0	38.44	34.1	17.8	27.4	3.3	51.3	47.0	74.0	-21.2	Pass	54.0	-5.5	Pass	
Table Result:		Pass		by		-5.2 dB		Worst Freq: 1800.0 MHz							
Test Site: EMI Chamber 1		Cable 1: Asset #2052		Cable 2: Asset #2054		Cable 3: ---									
Analyzer: Rental SA#5		Preamp: Brown		Antenna: Orange Horn		Preselector: ---									
CSsoft Radiated Emissions Calculator v 1.017.186								Copyright Curtis-Straus LLC 2000							
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor															

1GHz-6GHz

Radiated Emissions Table		Date: 23-Apr-17		Company: Ideal Industries, Inc.		Work Order: R1114								
Engineer: Nirak So		EUT Desc: SCLINE1000-277		EUT Operating Voltage/Frequency: 120Vac, 60Hz										
Temp: 25C		Humidity: 26%		Pressure: 1009mBar										
Frequency Range: 6 to 10GHz				Measurement Distance: 1 m										
Notes: EUT is Y position with 902MHz channel.				EUT Max Freq:										
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 Emission was found.														
Table Result:		by		dB		Worst Freq: MHz								
Test Site: EMI Chamber 1		Cable 1: Asset #2052		Cable 2: Asset #2054		Cable 3: ---								
Analyzer: Rental SA#5		Preamp: Brown		Antenna: Orange Horn		Preselector: ---								
CSsoft Radiated Emissions Calculator v 1.017.186								Copyright Curtis-Straus LLC 2000						
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														

6GHz-10GHz



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Rev. 4/17/2017

Spectrum Analyzers / Receivers/Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
2093 MXE EMI Receiver		20Hz-26.5GHz	N9038A	Agilent	MY51210181	2093	I	8/9/2017	8/9/2016
Radiated Emissions Sites		FCC Code	IC Code	VCCI Code	Range	Asset	Cat	Calibration Due	Calibrated on
EMI Chamber 1		719150	2762A-6	A-0015	30-1000MHz	1685	II	12/21/2018	12/21/2016
Preamps/Couplers Attenuators / Filters		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Brown		1-10GHz	CS	CS	N/A	1523	II	9/25/2017	9/25/2016
High Pass Filter		0.03-9 GHz	VHP-16	Mini-Circuits	NA	1288	II	1/7/2018	1/7/2017
Antennas		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Orange Horn		1-18GHz	3115	EMCO	0004-6123	390	I	10/13/2018	10/13/2016
Meteorological Meters			MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Weather Clock (Pressure Only)			BA928	Oregon Scientific	C3166-1	831	I	4/28/2018	4/28/2016
TH A#2080			HTC-1	HDE		2080	II	3/23/2018	3/23/2017
Cables		Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #2052		9kHz - 18GHz		Florida RF			II	3/5/2018	3/5/2017
Asset #2054		9kHz - 18GHz		Florida RF			II	10/1/3017	10/30/2016

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



AC Line Conducted Emissions

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

*Decreases with the logarithm of the frequency.

[47 CFR 15.207(a)]

MEASUREMENTS / RESULTS

Curtis Straus - a Bureau Veritas Company	Work Order # - R1114
Conducted Emissions per CISPR 16-2-1	EUT Power Input - 120VAC/60 Hz
Peak Detector Tabular Data - Voltage Measurement	Test Site - CEMI-3
Operator: Fatou Faye ☒	Temp; Humid; Pres - 27.2°C;31 %RH; 1006r
EUT Line tested:120 VAC/60Hz; Neutral	Witnessed by - none
Sample with Black antenna	EUT Maximum Freq - MHz
	Requirement - FCC/CISPR Class B

Frequency	Raw Peak Reading	Correction Factor	Adjusted Peak Amplitude	Quasi-peak Limit	Margin to the QP Limit	Peak to QP Limit Results	Worst Margin
MHz	dBµV	dB	dBµV	dBµV	dB	Pass/Fail	dB
0.185	34.6	20.8	55.4	64.3	-8.9	PASS	-8.9
0.243	27.1	20.7	47.9	62	-14.1	PASS	
0.291	25.3	20.7	46	60.5	-14.5	PASS	
0.319	22.3	20.7	43.1	59.7	-16.7	PASS	
21.243	22	20.9	42.9	60	-17.1	PASS	
22.208	23.7	20.9	44.6	60	-15.4	PASS	

120V Neutral Peak



Curtis Straus - a Bureau Veritas Company				Work Order # - R1114			
Conducted CISPR Average Detector				EUT Power Input - 120VAC/60 Hz			
Quick Average Detector Tabular Data - Voltage Measurement				Test Site - CEMI-3			
Operator: Fatou Faye ☒				Temp; Humid; Pres - 27.2°C;31 %RH; 1006r			
EUT Line tested:120 VAC/60Hz; Neutral				Witnessed by - none			
Sample with Black antenna				EUT Maximum Freq - MHz			
				Requirement - FCC/CISPR Class B			

Frequency	Raw Average Reading	Correction Factor	Adjusted Average Amplitude	Average Limit	Average Margin	Average Results	Worst Average Margin
MHz	dBµV	dB	dBµV	dBµV	dB	Pass/Fail	dB
0.152	27.1	20.8	47.9	55.9	-7.9	PASS	-7.9
0.182	24.6	20.8	45.4	54.4	-9	PASS	
0.213	22.5	20.8	43.2	53.1	-9.8	PASS	
0.242	21	20.7	41.7	52	-10.3	PASS	
0.278	17	20.7	37.7	50.9	-13.2	PASS	
20.104	15.3	20.9	36.2	50	-13.8	PASS	

120V Neutral Average

Curtis Straus - a Bureau Veritas Company				Work Order # - R1114			
Conducted Emissions per CISPR 16-2-1				EUT Power Input - 120VAC/60 Hz			
Peak Detector Tabular Data - Voltage Measurement				Test Site - CEMI-3			
Operator: Fatou Faye ☒				Temp; Humid; Pres - 27.2°C;31 %RH; 1006mBar			
EUT Line tested:120 VAC/60Hz; Phase				Witnessed by - none			
Sample with Black antenna				EUT Maximum Freq - MHz			
				Requirement - FCC/CISPR Class B			

Frequency	Raw Peak Reading	Correction Factor	Adjusted Peak Amplitude	Quasi-peak Limit	Margin to the QP Limit	Peak to QP Limit Results	Worst Margin	Average Limit	Margin to Average Limit	Peak to Avg Limit Results	Worst Margin
MHz	dBµV	dB	dBµV	dBµV	dB	Pass/Fail	dB	dBµV	dB	Pass/Fail	dB
17.743	22.2	20.8	43	60	-17	PASS		50	-7	PASS	
18.423	21.9	20.8	42.7	60	-17.3	PASS		50	-7.3	PASS	
19.117	22.5	20.8	43.3	60	-16.7	PASS	-16.7	50	-6.7	PASS	-6.7
19.677	21.9	20.8	42.7	60	-17.3	PASS		50	-7.3	PASS	
20.443	22.4	20.8	43.3	60	-16.7	PASS		50	-6.7	PASS	
20.699	22.4	20.8	43.2	60	-16.8	PASS		50	-6.8	PASS	

120V Hot Peak and Average



Curtis Straus - a Bureau Veritas Company				Work Order # - R1114			
Conducted Emissions per CISPR 16-2-1				EUT Power Input - 277VAC/50 Hz			
Peak Detector Tabular Data - Voltage Measurement				Test Site - CEMI-5			
Operator: Michael Mehrmann				Temp; Humid; Pres - 21.4°C;32 %RH; 999mBar			
EUT Line tested:277VAC/50Hz; Neutral				EUT Maximum Freq - MHz			
				Requirement - FCC/CISPR Class B			
Frequency	Raw Peak Reading	Correction Factor	Adjusted Peak Amplitude	Quasi-peak Limit	Margin to the QP Limit	Peak to QP Limit Results	Worst Margin
MHz	dBµV	dB	dBµV	dBµV	dB	Pass/Fail	dB
0.154	31.5	20.7	52.2	65.8	-13.6	PASS	-13.6
0.205	28.6	20.7	49.3	63.4	-14.1	PASS	
0.427	18.6	20.7	39.2	57.3	-18.1	PASS	
3.756	15.4	20.7	36.1	56	-19.9	PASS	
4.4	15.2	20.7	35.9	56	-20.1	PASS	
19.07	18.9	21	39.9	60	-20.1	PASS	

277V Neutral Peak

Curtis Straus - a Bureau Veritas Company				Work Order # - R1114			
Conducted CISPR Average Detector				EUT Power Input - 277VAC/50 Hz			
Quick Average Detector Tabular Data - Voltage Measurement				Test Site - CEMI-5			
Operator: Michael Mehrmann				Temp; Humid; Pres - 21.4°C;32 %RH; 999mBar			
EUT Line tested:277VAC/50Hz; Neutral				EUT Maximum Freq - MHz			
				Requirement - FCC/CISPR Class B			
Frequency	Raw Average Reading	Correction Factor	Adjusted Average Amplitude	Average Limit	Average Margin	Average Results	Worst Average Margin
MHz	dBµV	dB	dBµV	dBµV	dB	Pass/Fail	dB
0.154	28.7	20.7	49.4	55.8	-6.4	PASS	-6.4
0.205	26.3	20.7	47	53.4	-6.4	PASS	
0.427	11.5	20.7	32.2	47.3	-15.1	PASS	
4.854	8.7	20.8	29.4	46	-16.6	PASS	
4.889	8.4	20.8	29.2	46	-16.8	PASS	
19.077	12.9	21	33.8	50	-16.2	PASS	

277V Neutral Average



Curtis Straus - a Bureau Veritas Company				Work Order # - R1114			
Conducted Emissions per CISPR 16-2-1				EUT Power Input - 277VAC/50 Hz			
Peak Detector Tabular Data - Voltage Measurement				Test Site - CEMI-5			
Operator: Michael Mehrmann				Temp; Humid; Pres - 21.4°C;32 %RH; 999mBar			
EUT Line tested:277VAC/50Hz; Phase				EUT Maximum Freq - MHz			
				Requirement - FCC/CISPR Class B			
Frequency	Raw Peak Reading	Correction Factor	Adjusted Peak Amplitude	Quasi-peak Limit	Margin to the QP Limit	Peak to QP Limit Results	Worst Margin
MHz	dBµV	dB	dBµV	dBµV	dB	Pass/Fail	dB
4.545	16.9	20.8	37.7	56	-18.3	PASS	
4.711	17.2	20.8	37.9	56	-18.1	PASS	
11.425	20.6	20.9	41.5	60	-18.5	PASS	
12.963	20.4	20.9	41.3	60	-18.7	PASS	
17.342	21.2	21	42.1	60	-17.9	PASS	
22.819	31.9	21	52.9	60	-7.1	PASS	-7.1

277V Hot Peak

Curtis Straus - a Bureau Veritas Company				Work Order # - R1114			
Conductor: CISPR Average Detector				EUT Power Input - 277VAC/50 Hz			
Quick Average Detector Tabular Data - Voltage Measurement				Test Site - CEMI-5			
Operator: Michael Mehrmann				Temp; Humid; Pres - 21.4°C;32 %RH; 999mBar			
EUT Line tested:277VAC/50Hz; Phase				EUT Maximum Freq - MHz			
				Requirement - FCC/CISPR Class B			
Frequency	Raw Average	Correction	Adjusted Average	Average L	Average M	Average R	Worst Average Margin
MHz	dBµV	dB	dBµV	dBµV	dB	Pass/Fail	dB
4.735	8.7	20.8	29.5	46	-16.5	PASS	
4.938	8.4	20.8	29.1	46	-16.9	PASS	
13.066	12.1	20.9	33	50	-17	PASS	
17.36	13	21	34	50	-16	PASS	
17.404	12.3	21	33.3	50	-16.7	PASS	
18.959	13.5	21	34.5	50	-15.5	PASS	-15.5

277V Hot Average



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 (Ucisprr)
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 (Ucisprr)
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)	3.23×10^{-8}	1×10^{-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%	5%
Adjacent channel power	0.3dB	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		



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.



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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.

The complete list of the Approved Subcontractors Curtis-Straus may use to delegate the performance of work can be provided upon request.
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