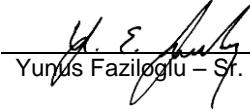




BUREAU
VERITAS

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Test Report

Report No	EP3128-1
Client	Ideal Industries, Inc. Tim Tunnell
Address	Becker Place Sycamore, IL 60178
Phone	815-895-1295
Items tested	SCLINE1000
FCC ID	2AAMXSCLINE1000
IC ID	11250A-SCLINE1000
FRN	0002862225
Equipment Type	Part 15.247 Digitally Modulated, Mobile
Equipment Code	DTS
Emission Designator	763KG1D
FCC/IC Rule Parts	47 CFR 15.247, RSS-247 Issue 1
Test Dates	October 26, 29 and November 2, 6 and 12, 2015
Results	As detailed within this report
Prepared by	 _____ Jason Haley - Test Engineer
Authorized by	 _____ Yunus Faziloglu - Sr. EMC Engineer
Issue Date	2/9/2016
Conditions of Issue	This Test Report is issued subject to the conditions stated in the 'Conditions of Testing' section on page 30 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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page 1 of 31

Contents

Contents.....	2
Summary.....	3
Test Methodology.....	4
Product Tested - Configuration Documentation	5
<i>Statement of Conformity</i>	6
Modifications Required for Compliance	6
Test Results	7
<i>Bandwidth</i>	7
<i>Fundamental Emission Output Power</i>	10
<i>Radiated Spurious Emissions</i>	13
<i>Conducted Spurious Emissions</i>	17
<i>Power Spectral Density</i>	21
<i>AC Line Conducted Emissions</i>	24
<i>Occupied Bandwidth</i>	26
Measurement Uncertainty.....	29
Conditions Of Testing	30

Form Final Report REV 12-07-15



Summary

This test report supports an application for certification of a transmitter operating pursuant to 47 CFR 15.247 and RSS-247. The product is the SCLINE1000. It is a transmitter that operates in the range 902-928MHz.

We found that the product met the above requirements without modifications. Nobody from Ideal Industries, Inc. was present during the testing. The test samples were received in good condition.

Release Control Record

Issue No. Reason for change
1 Original Release

Date Issued
February 9, 2016



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page 3 of 31



Test Methodology

All testing was performed according to the following rules/procedures/documents; CFR 47 Part 15.247, RSS-247 Issue 1, RSS-Gen Issue 4, FCC KDB 558074 D01 DTS Measurement Guidance v03r04 and ANSI C63.10-2013.

Radiated emissions were maximized by rotating the device around three orthogonal axes as well as varying the test antenna's height and polarity. AC line conducted emissions testing was performed with a 50Ω/50µH LISN. The EUT operating voltage was 120/277VAC at 60Hz. RF measurements were performed at the antenna port.

The environmental conditions were as shown below.

Date	Temperature	Humidity
10/26/15	21.9°C	35% RH
10/29/15	23°C	55% RH
11/02/15	21°C	38% RH
11/04/15	22.2°C	54% RH
11/12/15	22.2°C	31% RH
11/13/15	21.9°C	40% RH

Following bandwidths were used during radiated spurious and line conducted emissions tests.

Frequency	RBW	VBW
0.15-30MHz	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			SCLINE1000			Sample 1 (integrated antenna)												
	SCLINE1000			SCLINE1000			Sample 2 (modified with antenna port connector)												
EUT Description:	Smart Connector Lighting / Dimming Controller																		
EUT Tx Frequency:	902.7 – 927.3 MHz																		
Port Label	Port Type	# ports	# populated	cable type	shielded	ferrite	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 applied.																			



Statement of Conformity

The SCLINE1000 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.
	4		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			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 integrated wired to the PCB with a gain of 4.55 dBi
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



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page 6 of 31

Testing Cert. No. 1627-01

Test Results

Bandwidth

LIMIT

The minimum 6 dB bandwidth shall be at least 500 kHz. [15.247(a) (2)]

MEASUREMENTS / RESULTS

6dB BANDWIDTH			Work Order: P3128							
Date: 02-Nov-15	Company: Ideal Industries, Inc.		EUT Operating Voltage/Frequency: 120Vac/60Hz							
Engineer: Tuyen Truong	EUT Desc: SCLINE1000									
Temp: 21°C Humidity: 38% Pressure: 1008mbar										
Frequency Range: 902.7 - 927.3 MHz										
Notes:										
Frequency (MHz)	Reading (kHz)			6dB BW						
	Limit	Margin	Result	(kHz)						
902.7	≥500	+155.406	Pass							
915.0	≥500	+155.425	Pass							
927.3	≥500	+156.149	Pass							
Test Site: CEMI1	Attenuation: 791									
Analyzer: 1510										

Rev. 10/19/2015

Spectrum Analyzers / Receivers/Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Brown	9kHz-26.5GHz	E4407B	Agilent	SG44210511	1510	I	6/30/2016	6/30/2015
Preamps/Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
HF 20dB 50W Attenuator	0.009-18 GHz	PE 7019-20	Pastermack	1	791	II	7/31/2016	7/31/2015
Conducted Test Sites (Mains / Telco)	FCC Code		VCCI Code			Cat	Calibration Due	Calibrated on
CEMI 1	719150		A-0015			III	NA	N/A
Meteorological Meters	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only) TH A#2078	BA928 HTC-1	Oregon Scientific HDE	C3166-1	831 2078	I II	3/19/2016 4/2/2016	3/19/2014 4/2/2015	

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



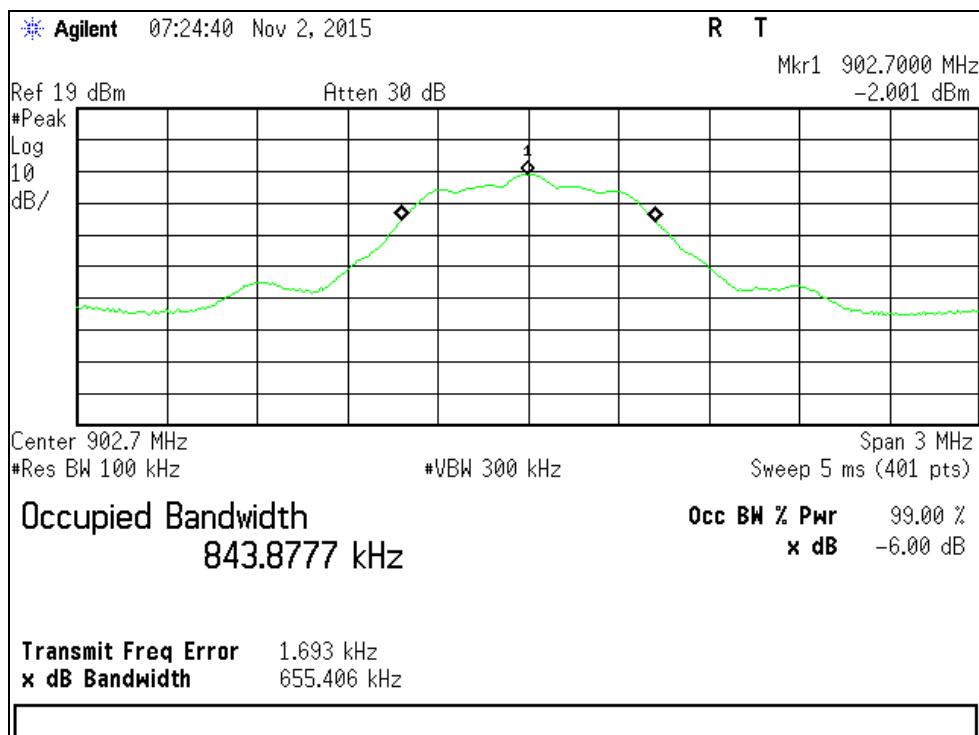
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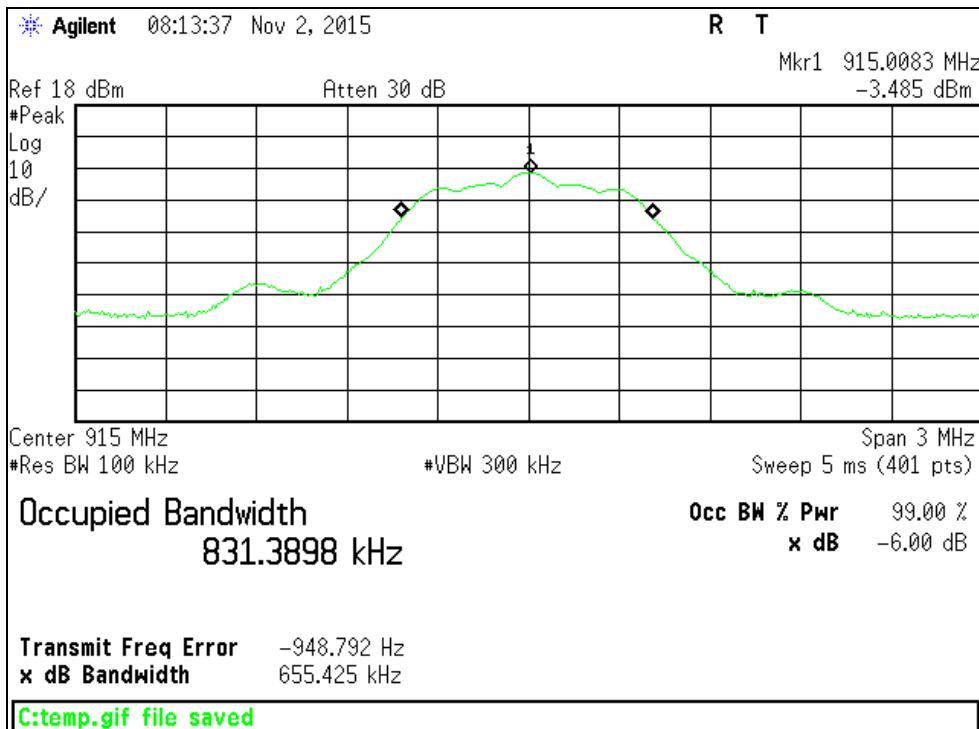
page 7 of 31

Testing Cert. No. 1627-01

PLOTS

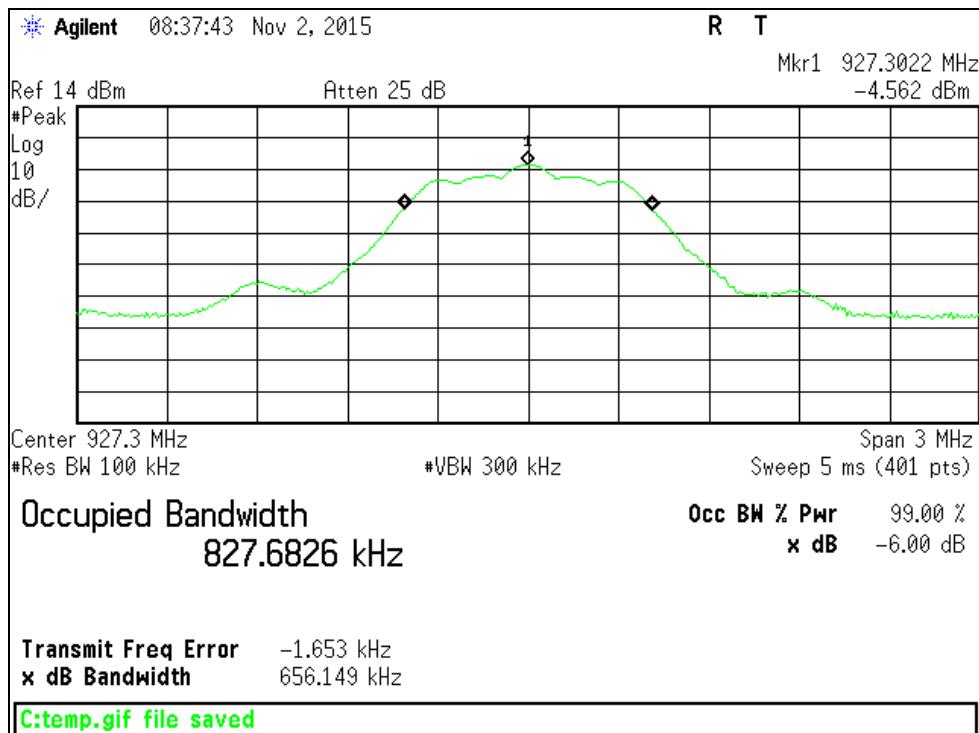


6dB Bandwidth Plot, Low Channel



6dB Bandwidth Plot, Middle Channel





6dB Bandwidth Plot, High Channel



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page 9 of 31

Fundamental Emission Output Power**LIMIT****Conducted Output Power**

1W = 30dBm

[15.247(b) (3)]

MEASUREMENTS / RESULTS

Fundamental Emission Output Power												
Date: 02-Nov-15	Company: Ideal Industries, Inc.			Work Order: P3128								
Engineer: Tuyen Truong	EUT Desc: SCLINE1000			EUT Operating Voltage/Frequency: 120Vac/60Hz								
Temp: 21°C Humidity: 38% Pressure: 1008mbar												
Frequency Range: 902.7 - 927.3 MHz												
Notes:												
Frequency (MHz)	Reading (dBm)	Attenuation (dB)	Adjusted Reading (dBm)		FCC 15.247							
902.7	-2.17	19.55	17.38		Limit (dBm)	Margin (dB)						
915.0	-3.58	19.55	15.97		30.0	-14.03						
927.3	-4.63	19.55	14.92		30.0	-15.08						
Table Result: Pass by -12.62 dB				Worst Freq: 902.7 MHz								
Test Site: CEMI1		Attenuation: 791										
Analyzer: 1510												

Rev. 10/19/2015

Spectrum Analyzers / Receivers/Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Brown	9kHz-26.5GHz	E4407B	Agilent	SG44210511	1510	I	6/30/2016	6/30/2015
Preamps/Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
HF 20dB 50W Attenuator	0.009-18 GHz	PE 7019-20	Pasternack	1	791	II	7/31/2016	7/31/2015
Conducted Test Sites (Mains / Telco)	FCC Code	VCCI Code				Cat	Calibration Due	Calibrated on
CEMI 1	719150	A-0015				III	NA	N/A
Meteorological Meters	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)	BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014	
TH A#2078	HTC-1	HDE		2078	II	4/2/2016	4/2/2015	

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



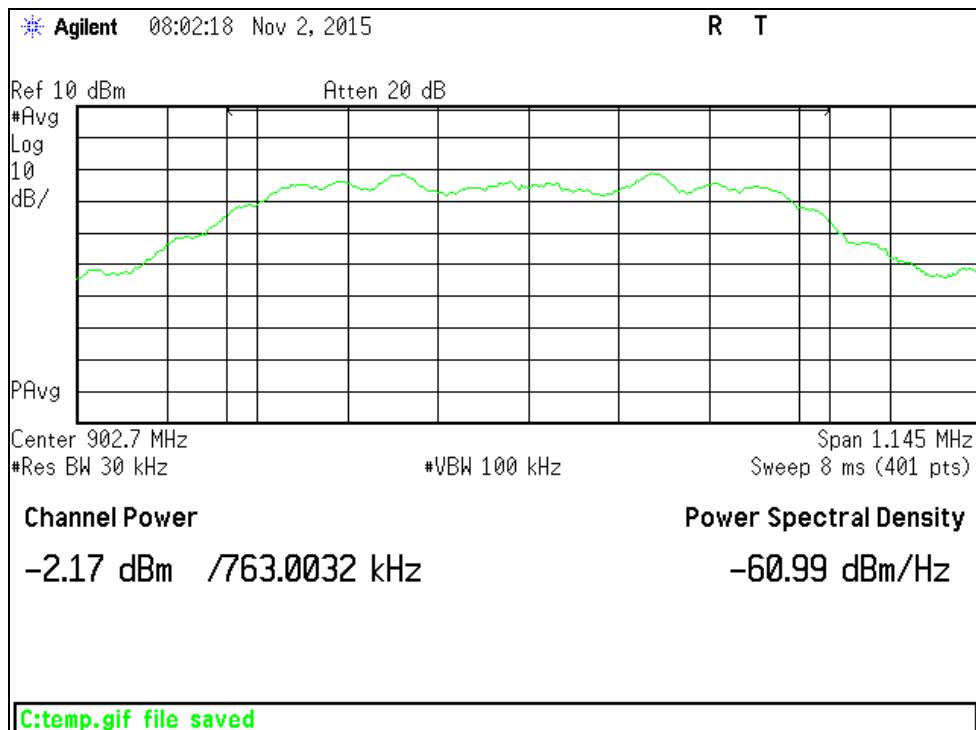
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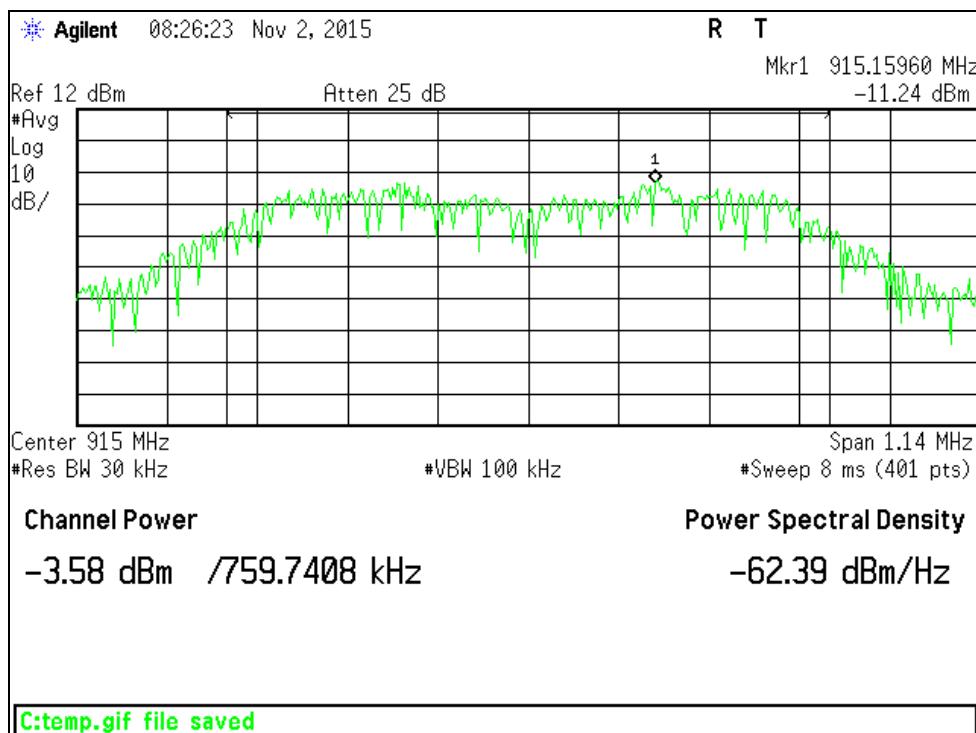
page 10 of 31

Testing Cert. No. 1627-01

PLOTS



Peak Output Power, Low Channel

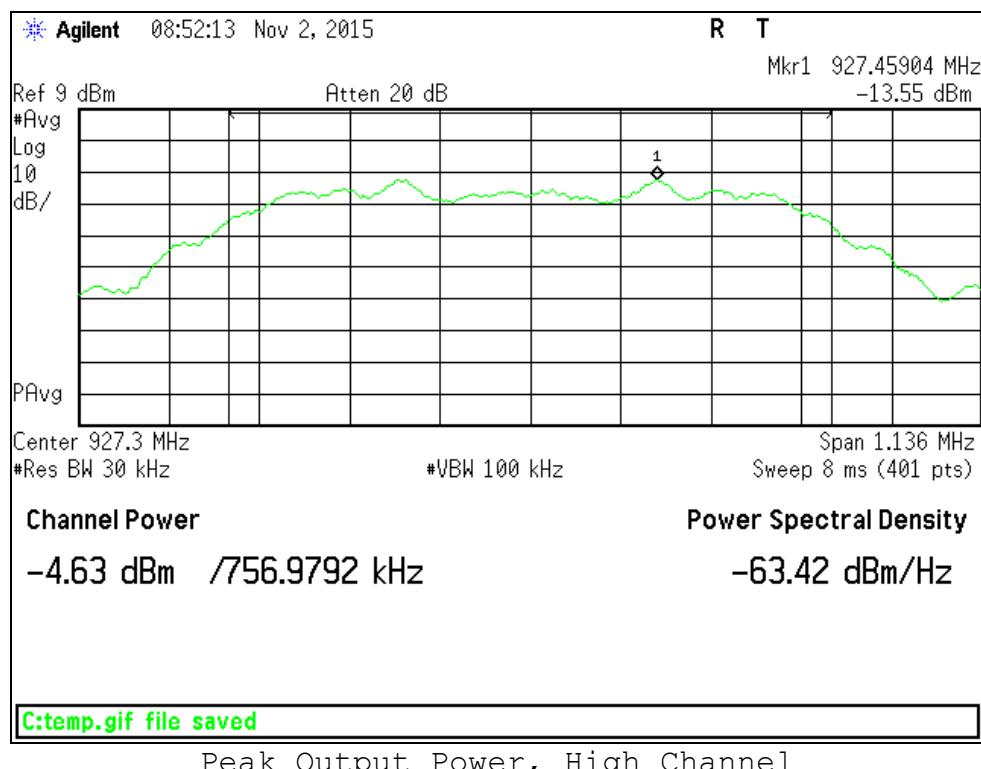


Peak Output Power, Middle Channel



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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: 06-Nov-15		Company: Ideal Industries, Inc.		Work Order: P3128											
Engineer: Jason Haley		EUT Desc: SCLINE1000		EUT Operating Voltage/Frequency: 120V/60Hz											
Temp: 22.2°C		Humidity: 54%		Pressure: 1006mBar											
Frequency Range: 30-1000MHz									Measurement Distance: 3 m						
Notes: Low Channel 902.7MHz, EUT in the Z-axis (Worst case)									EUT Max Freq: 928 MHz						
Antenna Polarization (H / V)	Frequency (MHz)	Reading (dB _μ V)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dB _μ V/m)									
							Limit (dB _μ V/m)	Margin (dB)	Result (Pass/Fail)						
Vertical	42.02	35.1	25.3	12.4	0.4	22.6	40.0	-17.4	Pass						
Vertical	66.65	37.7	25.4	8.0	0.5	20.8	40.0	-19.2	Pass						
Horizontal	117.34	41.5	25.3	13.7	0.6	30.5	43.5	-13.0	Pass						
Horizontal	189.63	39.7	24.4	11.3	0.8	27.4	43.5	-16.1	Pass						
Horizontal	243.81	41.0	25.3	11.7	0.9	28.3	46.0	-17.7	Pass						
Horizontal	564.62	29.8	25.0	18.6	1.4	24.8	46.0	-21.2	Pass						
Vertical	589.13	26.3	24.9	18.6	1.3	21.3	46.0	-24.7	Pass						
Vertical	845.81	27.1	25.6	21.8	1.8	25.1	46.0	-20.9	Pass						
Table Result: Pass by -13.0 dB							Worst Freq: 117.34 MHz								
Test Site: EMI Chamber 1			Cable 1: Asset #2051			Cable 2: Asset #2053			Cable 3: ---						
Analyzer: Gold			Preamp: Blue-Blk			Antenna: Red-Brown			Preselector: ---						
CSsoft Radiated Emissions Calculator v 1.017.148									Copyright Curtis-Straus LLC 2000						
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor															

Radiated Emissions Table															
Date: 06-Nov-15		Company: Ideal Industries, Inc.		Work Order: P3128											
Engineer: Jason Haley		EUT Desc: SCLINE1000		EUT Operating Voltage/Frequency: 120V/60Hz											
Temp: 22.2°C		Humidity: 54%		Pressure: 1006mBar											
Frequency Range: 30-1000MHz									Measurement Distance: 3 m						
Notes: Middle Channel 915MHz, EUT in the X-axis (worst case orientation)									EUT Max Freq: 928 MHz						
Antenna Polarization (H / V)	Frequency (MHz)	Reading (dB _μ V)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dB _μ V/m)									
							Limit (dB _μ V/m)	Margin (dB)	Result (Pass/Fail)						
Vertical	41.66	37.0	25.3	12.7	0.4	24.8	40.0	-15.2	Pass						
Vertical	65.41	36.7	25.4	7.9	0.5	19.7	40.0	-20.3	Pass						
Horizontal	114.61	40.6	25.3	13.4	0.6	29.3	43.5	-14.2	Pass						
Horizontal	185.55	37.6	24.3	11.0	0.8	25.1	43.5	-18.4	Pass						
Horizontal	188.09	37.5	24.4	11.2	0.8	25.1	43.5	-18.4	Pass						
Horizontal	248.73	37.5	25.2	11.7	0.9	24.9	46.0	-21.1	Pass						
Horizontal	344.71	37.5	25.2	14.1	1.1	27.5	46.0	-18.5	Pass						
Vertical	420.32	32.2	25.3	16.3	1.1	24.3	46.0	-21.7	Pass						
Horizontal	564.56	29.5	25.0	18.6	1.4	24.5	46.0	-21.5	Pass						
Vertical	589.07	26.3	24.9	18.6	1.3	21.3	46.0	-24.7	Pass						
Table Result: Pass by -14.2 dB							Worst Freq: 114.61 MHz								
Test Site: EMI Chamber 1			Cable 1: Asset #2051			Cable 2: Asset #2053			Cable 3: ---						
Analyzer: Gold			Preamp: Blue-Blk			Antenna: Red-Brown			Preselector: ---						
CSsoft Radiated Emissions Calculator v 1.017.148									Copyright Curtis-Straus LLC 2000						
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor															



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Radiated Emissions Table

Date: 06-Nov-15	Company: Ideal Industries, Inc.	Work Order: P3128										
Engineer: Jason Haley	EUT Desc: SCLINE1000	EUT Operating Voltage/Frequency: 120V/60Hz										
Temp: 22.2°C	Humidity: 54%	Pressure: 1006mBar										
Frequency Range: 30-1000MHz		Measurement Distance: 3 m										
Notes: High Channel 927.3MHz, EUT in the X-axis (worst case orientation)		EUT Max Freq: 928 MHz										
Antenna Polarization (H / V)	Frequency (MHz)	Reading (dB μ V)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dB μ V/m)	FCC 15.209					
										Limit (dB μ V/m)	Margin (dB)	Result (Pass/Fail)
vertical	34.97	30.5	25.3	17.7	0.3	23.2				40.0	-16.8	Pass
vertical	42.85	35.3	25.3	11.9	0.4	22.3				40.0	-17.7	Pass
vertical	54.22	37.0	25.4	7.3	0.5	19.4				40.0	-20.6	Pass
horizontal	115.21	40.0	25.3	13.5	0.6	28.8				43.5	-14.7	Pass
horizontal	187.86	34.7	24.4	11.2	0.8	22.3				43.5	-21.2	Pass
horizontal	249.44	35.9	25.2	11.7	0.9	23.3				46.0	-22.7	Pass
horizontal	347.91	35.3	25.1	14.2	1.1	25.5				46.0	-20.5	Pass
vertical	352.94	31.7	25.0	14.4	1.0	22.1				46.0	-23.9	Pass
horizontal	564.56	29.2	25.0	18.6	1.4	24.2				46.0	-21.8	Pass
vertical	839.24	35.1	25.6	21.7	1.8	33.0				46.0	-13.0	Pass
Table Result: Pass		by	-13.0 dB				Worst Freq: 839.24 MHz					
Test Site: EMI Chamber 1 Analyzer: Gold CSsoft Radiated Emissions Calculator	Cable 1: Asset #2051 Preamp: Blue-Blk v 1.017.148		Cable 2: Asset #2053 Antenna: Red-Brown		Cable 3: --- Preselector: ---					Copyright Curtis-Straus LLC 2000		
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor												

Rev.11/5/2015

Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Gold	100Hz-26.5 GHz	E4407B	Agilent	MY45113816	1284	I	4/22/2016	4/22/2015
Radiated Emissions Sites EMI Chamber 1	FCC Code 719150	IC Code 2762A-6	VCCI Code A-0015	Range 30-1000MHz		Cat II	Calibration Due 3/21/2017	Calibrated on 3/21/2015
Preamps /Couplers Attenuators / Filters Blue-Black	Range 0.009-2000MHz	MN ZFL-1000-LN	Mfr CS	SN N/A	Asset 800	Cat II	Calibration Due 12/26/2015	Calibrated on 12/26/2014
Antennas Red-Brown Biolog	Range 30-2000MHz	MN JB1	Mfr Sunol	SN A0032406	Asset 1218	Cat I	Calibration Due 12/4/2016	Calibrated on 12/4/2014
Cables Asset #2051 Asset #2053	Range 9kHz - 18GHz 9kHz - 18GHz		Mfr Florida RF Florida RF			Cat II	Calibration Due 3/8/2016 3/8/2016	Calibrated on 3/8/2015 3/8/2015
Meteorological Meters Weather Clock (Pressure Only) TH A#2080	MN BA928 HTC-1	Mfr Oregon Scientific HDE	SN C3166-1 2080	Asset 831 II	Cat I	Calibration Due 3/19/2016 4/2/2016	Calibrated on 3/19/2014 4/2/2015	

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



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page 14 of 31

Testing Cert. No. 1627-01

Radiated Emissions Table

Date: 12-Nov-15		Company: Ideal Industries, Inc.								Work Order: P3128																																																																																																																				
Engineer: Chris LoPiccolo		EUT Desc: SCLINE1000								EUT Operating Voltage/Frequency: 120V/60Hz																																																																																																																				
Temp: 22.2°C		Humidity: 31%								Pressure: 1006mBar																																																																																																																				
Frequency Range: 1-6 GHz														Measurement Distance: 3 m																																																																																																																
Notes: EUT oriented x-axis (worst case) Lo channel (902.7 MHz)														EUT Max Freq: 928 MHz																																																																																																																
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Radiated Emissions Table

Date: 12-Nov-15		Company: Ideal Industries, Inc.								Work Order: P3128																																																																																																																						
Engineer: Chris LoPiccolo		EUT Desc: SCLINE1000								EUT Operating Voltage/Frequency: 120V/60Hz																																																																																																																						
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One Distribution Center Circle, #1 • Littleton, MA • TEL (978) 486-8880 • FAX (978) 486-8828



Rev. 11/5/2015

Spectrum Analyzers / Receivers /Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Gold		100Hz-26.5 GHz	E4407B	Agilent	MY45113816	1284	I	4/22/2016	4/22/2015
Radiated Emissions Sites	EMI Chamber 2	FCC Code	719150	IC Code	2762A-7	VCCI Code	Range	Calibration Due	Calibrated on
						A-0015	1-18GHz		
Preamps /Couplers Attenuators / Filters	1517 HF Preamp	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
		1-20GHz	CS	CS	N/A	1517	II	8/6/2016	8/6/2015
Antennas	Black Horn	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
		1-18GHz	3115	EMCO	9703-5148	56	I	8/21/2016	8/21/2014
Meteorological Meters	Weather Clock (Pressure Only)	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
	TH A#2081	BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014	
		HTC-1	HDE	2081	II	II	4/2/2016	4/2/2015	
Cables	Asset #1784	Range	Mfr		Cat	Calibration Due	Calibrated on		
	Asset #2052	9kHz - 18GHz	Florida RF		II	3/20/2016	3/20/2015		
		9kHz - 18GHz	Florida RF		II	3/8/2016	3/8/2015		

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

Radiated Emissions Table

Date: 06-Nov-15		Company: Ideal Industries, Inc.		Work Order: P3128										
Engineer: Jason Haley		EUT Desc: SCLINE1000		EUT Operating Voltage/Frequency: 120V/60Hz										
Temp: 22.2°C		Humidity: 54%		Pressure: 1006mBar										
Frequency Range: 6-10GHz					Measurement Distance: 1 m									
Notes: EUT in the X-axis (worst case orientation). All Noise Floor readings.					EUT Max Freq:									
Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dB μ V)	Average Reading (dB μ V)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dB μ V/m)	Adjusted Avg Reading (dB μ V/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dB μ V/m)	Margin (dB)	Result (Pass/Fail)	Limit (dB μ V/m)	Margin (dB)	Result (Pass/Fail)
V Low Channel	6314.0	29.23	16.7	16.2	35.6	5.8	54.4	41.9	83.5	-29.1	Pass	63.5	-21.6	Pass
H Mid Channel	6405.0	27.3	16.6	16.0	35.5	5.9	52.7	42.0	83.5	-30.8	Pass	63.5	-21.5	Pass
Horz hi channel	6496.0	27.85	16.3	16.1	35.5	5.9	53.2	41.6	83.5	-30.3	Pass	63.5	-21.9	Pass
H Low Channel	7216.0	28.9	17.5	15.9	37.6	5.8	56.4	45.0	83.5	-27.1	Pass	63.5	-18.5	Pass
H Mid Channel	7320.0	27.6	17.2	15.9	37.9	5.8	55.4	45.0	83.5	-28.1	Pass	63.5	-18.5	Pass
Vert Hi channel	7424.0	28.7	16.7	15.9	37.9	5.7	56.4	44.4	83.5	-27.1	Pass	63.5	-19.1	Pass
H Low Channel	8118.0	28.65	16.3	15.9	37.7	5.8	56.3	43.9	83.5	-27.2	Pass	63.5	-19.6	Pass
V Mid Channel	8235.0	27.16	16.5	16.0	37.8	5.8	54.8	44.1	83.5	-28.7	Pass	63.5	-19.4	Pass
Horz hi channel	8352.0	28.56	16.2	16.0	37.9	5.9	56.4	44.0	83.5	-27.1	Pass	63.5	-19.5	Pass
V Low Channel	9020.0	30.08	16.6	15.8	38.5	6.0	58.8	45.3	83.5	-24.7	Pass	63.5	-18.2	Pass
H Mid Channel	9150.0	27.0	16.5	15.7	38.3	6.1	55.7	45.2	83.5	-27.8	Pass	63.5	-18.3	Pass
Vert Hi channel	9280.0	28.79	15.9	15.6	38.3	6.1	57.6	44.7	83.5	-25.9	Pass	63.5	-18.8	Pass
H Low Channel	9922.0	29.27	15.9	14.9	39.2	6.7	60.3	46.9	83.5	-23.2	Pass	63.5	-16.6	Pass
Table Result:		Pass	by	-16.6 dB						Worst Freq:	9922.0 MHz			
Test Site: EMI Chamber 1		Cable 1: Asset #2051		Cable 2: Asset #2053		Cable 3: ---								
Analyzer: Gold		Preamp: Brown		Antenna: Black Horn		Preselector: ---							Copyright Curtis-Straus LLC 2000	
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														

Rev.11/5/2015

Spectrum Analyzers / Receivers /Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Gold		100Hz-26.5 GHz	E4407B	Agilent	MY45113816	1284	I	4/22/2016	4/22/2015
Radiated Emissions Sites	EMI Chamber 1	FCC Code	719150	IC Code	2762A-6	VCCI Code	Range	Calibration Due	Calibrated on
					A-0015	30-1000MHz			
Preamps /Couplers Attenuators / Filters	Brown	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
		1-10GHz	CS	CS	N/A	1523	II	4/9/2016	10/8/2015
Antennas	Black Horn	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
		1-18GHz	3115	EMCO	9703-5148	56	I	8/21/2016	8/21/2014
Cables	Asset #2051	Range	Mfr		Cat	Calibration Due	Calibrated on		
	Asset #2053	9kHz - 18GHz	Florida RF		II	3/8/2016	3/8/2015		
		9kHz - 18GHz	Florida RF		II	3/8/2016	3/8/2015		
Meteorological Meters	Weather Clock (Pressure Only)	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
	TH A#2080	BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014	
		HTC-1	HDE	2080	II	II	4/2/2016	4/2/2015	

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



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Conducted Spurious Emissions

LIMITS

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth that contains the highest level of desired power based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB ...

[15.247(d)]

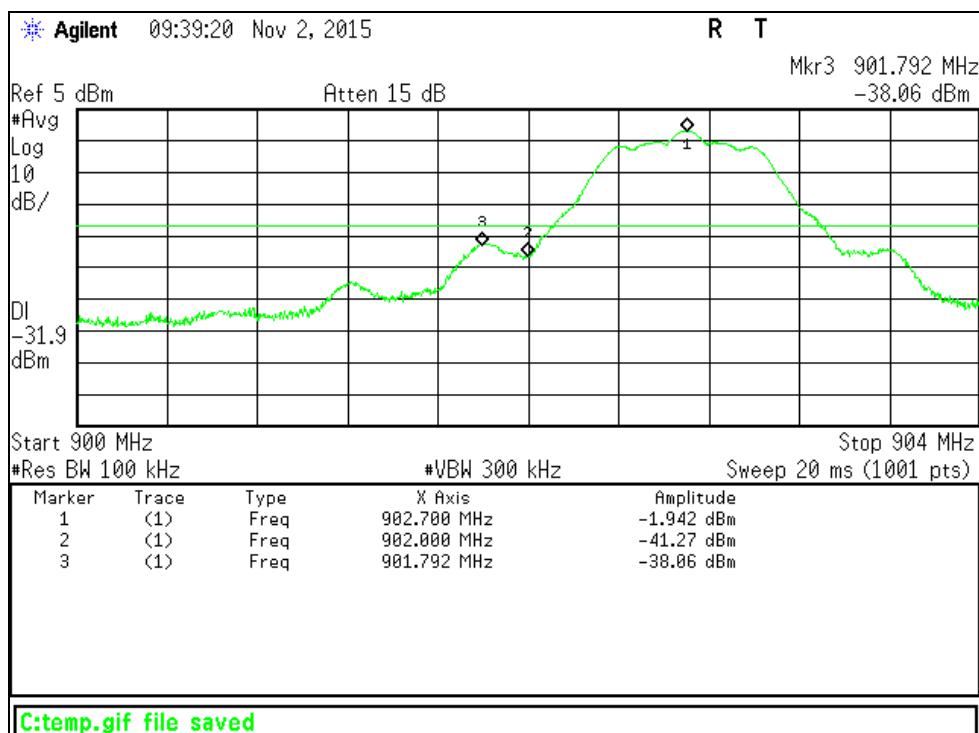
MEASUREMENTS / RESULTS

Band Edge Measurements

Conducted Band Edge

Date: 02-Nov-15	Company: Ideal Industries, Inc.	Work Order: P3128
Engineer: Tuyen Truong	EUT Desc: SCLINE1000	EUT Operating Voltage/Frequency: 120Vac/60Hz
Temp: 21°C	Humidity: 38%	Pressure: 1008mbar
Frequency Range: 902-928 MHz		
Test Site: CEM1	Attenuation: 791	
Analyzer: 1510		

PLOTS

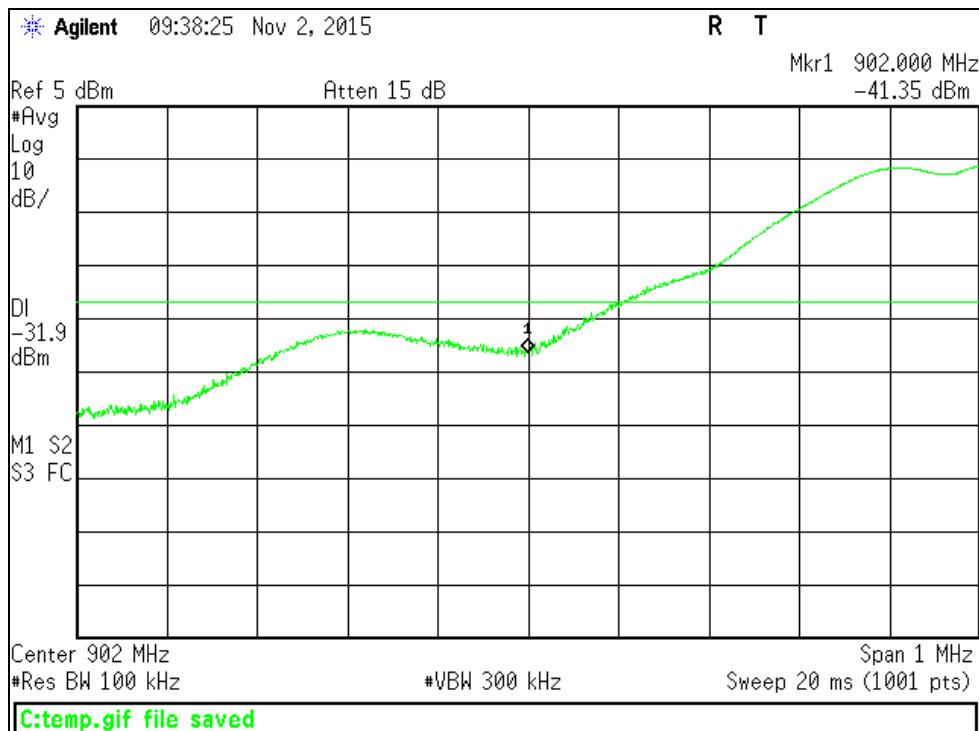


Band Edge, Lower Channel Overview

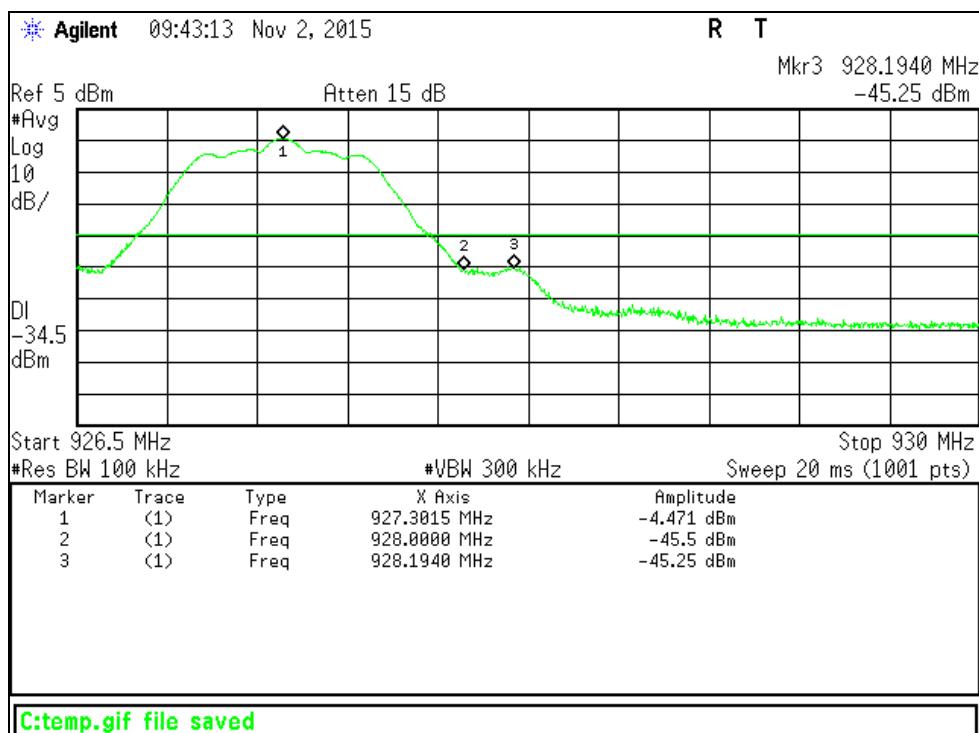


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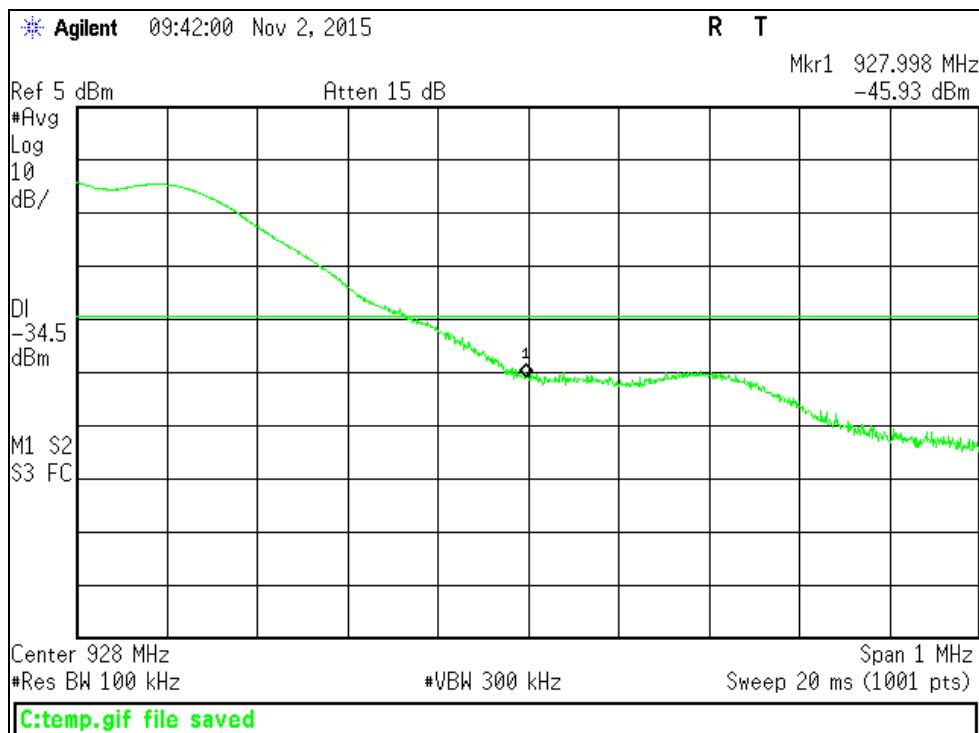


Band Edge, Lower Channel Zoomed in



Band Edge, Upper Channel Overview





Band Edge, Upper Channel Zoomed in

Rev. 10/19/2015

Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Brown	9kHz-26.5GHz	E4407B	Agilent	SG44210511	1510	I	6/30/2016	6/30/2015
Preamps / Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
HF 20dB 50W Attenuator	0.009-18 GHz	PE 7019-20	Pasterнак	1	791	II	7/31/2016	7/31/2015
Conducted Test Sites (Mains / Telco)	FCC Code	VCCI Code				Cat	Calibration Due	Calibrated on
CEMI 1	719150	A-0015				III	NA	N/A
Meteorological Meters	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)	BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014	
TH A#2078	HTC-1	HDE	2078	2078	II	4/2/2016	4/2/2015	

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Conducted Spurious Emission

Conducted Spurious Emission at The Antenna Port							
Date: 29-Oct-15	Company: Ideal Industries, Inc.						Work Order: P3128
Engineer: Jason Haley	EUT Desc: SCLINE1000						EUT Operating Voltage/Frequency: 120Vac/60Hz
Temp: 22°C	Humidity: 56%						Pressure: 991mBar
Frequency Range: 9 KHz to 10000 MHz							
Test Site: CEMI1	Cable: 1522						
Analyzer: Brown							

9kHz-10GHz frequency range was investigated for all 3 channels (low, middle and high) at the EUT antenna port. Except for the fundamental, all emissions were at instrument noise floor. Highest noise floor level was less than -35dBm for the entire frequency range, which is more than 30dB below the fundamental.

Rev. 10/19/2015

Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Brown	9kHz-26.5GHz	E4407B	Agilent	SG44210511	1510	I	6/30/2016	6/30/2015
Conducted Test Sites (Mains / Telco)	FCC Code		VCCI Code					
CEMI 1	719150		A-0015			III	NA	N/A
Cables	Range		Mfr					
Asset #1522	9kHz - 18GHz		Florida RF			II	2/15/2016	2/15/2015
Meteorological Meters	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)	BA928	Egon Scienti	C3166-1	831	I	3/19/2016	3/19/2014	
TH A#2078	HTC-1	HDE		2078	II	4/2/2016	4/2/2015	

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page 20 of 31

Testing Cert. No. 1627-01

Power Spectral Density

LIMIT

...the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.
[15.247(e)]

MEASUREMENTS / RESULTS

Power Spectral Density													
Date: 02-Nov-15		Company: Ideal Industries, Inc.		Work Order: P3128									
Engineer: Tuyen Truong		EUT Desc: SCLINE1000		EUT Operating Voltage/Frequency: 120Vac/60Hz									
Temp: 21°C		Humidity: 38%		Pressure: 1008mbar									
Frequency Range: 902.7 - 927.3 MHz													
Notes:													
Frequency (MHz)	Reading (dBm)	Attenuation (dB)		Adjusted Reading (dBm)	FCC 15.247								
					Limit (dBm)	Margin (dB)	Result (Pass/Fail)						
902.7	-15.56	19.55		3.99	8.0	-4.01	Pass						
915.0	-16.53	19.55		3.02	8.0	-4.98	Pass						
927.3	-18.23	19.55		1.32	8.0	-6.68	Pass						
Table Result: Pass by -4.01 dB				Worst Freq: 902.7 MHz									
Test Site: CEMI1		Attenuation: 791											
Analyzer: 1510													

Rev. 10/19/2015

Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Brown	9kHz-26.5GHz	E4407B	Agilent	SG44210511	1510	I	6/30/2016	6/30/2015
Preamps/Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
HF 20dB 50W Attenuator	0.009-18 GHz	PE 7019-20	Pastermack	1	791	II	7/31/2016	7/31/2015
Conducted Test Sites (Mains / Telco)	FCC Code	VCCI Code				Cat	Calibration Due	Calibrated on
CEMI 1	719150	A-0015				III	NA	N/A
Meteorological Meters	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)	BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014	
TH A#2078	HTC-1	HDE		2078	II	4/2/2016	4/2/2015	

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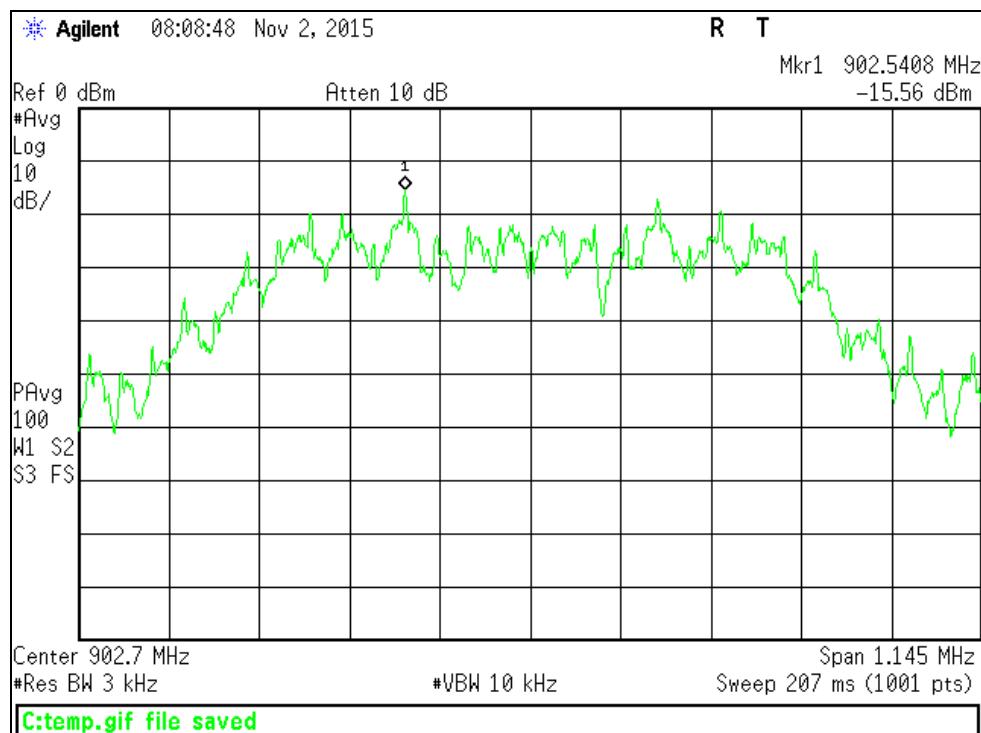
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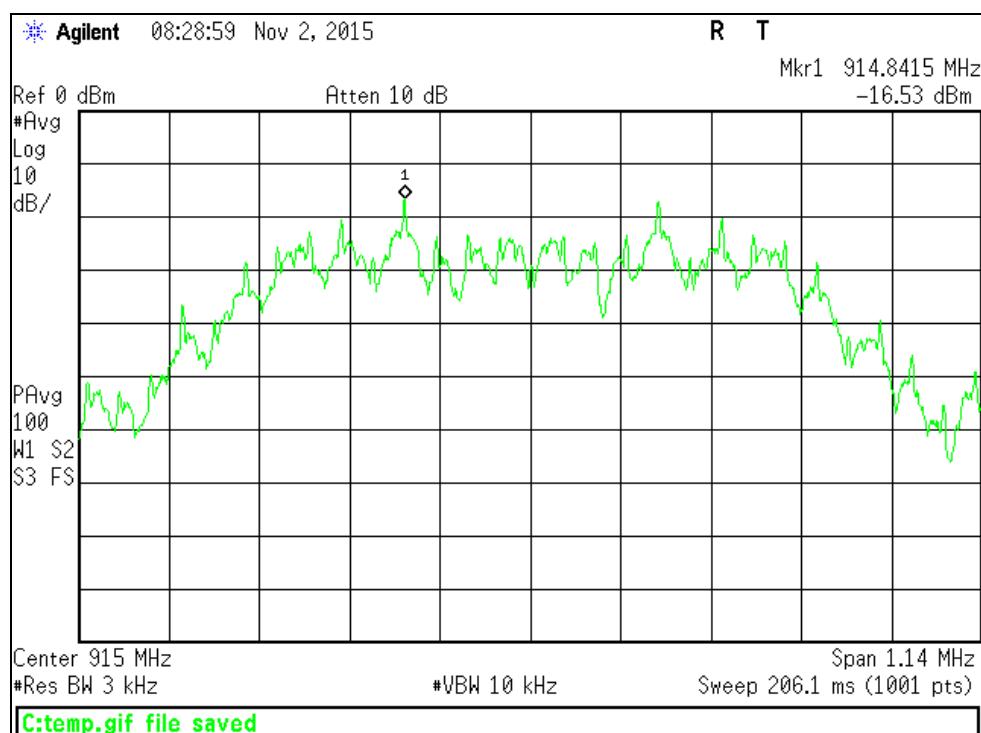
page 21 of 31

Testing Cert. No. 1627-01

PLOTS

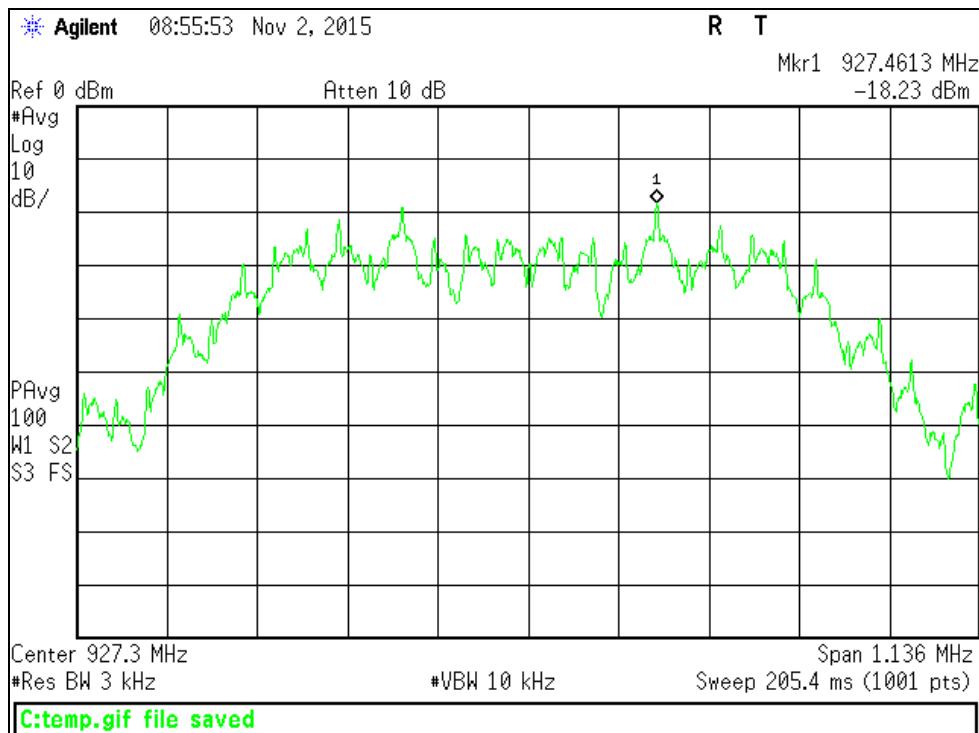


Power Spectral Density, Low Channel



Power Spectral Density, Middle Channel





Power Spectral Density, High Channel



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page 23 of 31

AC Line Conducted Emissions

LIMITS

Frequency of emission (MHz)	Quasi-peak limit (dB μ V)	Average limit (dB μ 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 Conducted Emissions Data Table

AC Conducted Emissions Data Table																	
Date: 26-Oct-15		Company: Ideal Industries, Inc.		Work Order: P3128													
Engineer: Tuyen Truong		EUT Desc: SCLINE1000															
Temp: 21.9 °C		Humidity: 35%															
Notes:																	
Frequency Range: 0.15 - 30 MHz																	
Frequency (MHz)	Quasi-Peak Readings		Average Readings		LISN Factors		FCC 15.207		FCC 15.207								
	QP1 (dB μ V)	QP2 (dB μ V)	AVG1 (dB μ V)	AVG2 (dB μ V)	L1 (dB)	L2 (dB)	Cable Factor (dB)	ATTN Factor (dB)	QP Limit (dB μ V)	Margin (dB)	Result (Pass/Fail)	Avg Limit (dB μ V)	Margin (dB)	Result (Pass/Fail)			
0.37	18.9	15.4	18.9	15.4	0.0	0.0	-0.1	-20.3	58.4	-19.1	Pass	48.4	-9.2	Pass			
0.77	16.8	13.5	16.8	13.5	0.0	0.0	-0.1	-20.3	56.0	-18.7	Pass	46.0	-8.8	Pass			
1.14	19.4	15.5	14.1	15.5	-0.1	-0.1	-0.1	-20.3	56.0	-16.2	Pass	46.0	-10.0	Pass			
7.50	12.7	13.0	12.7	13.0	-0.1	-0.1	-0.2	-20.3	60.0	-26.4	Pass	50.0	-16.4	Pass			
18.61	16.5	16.0	16.5	16.0	-0.2	-0.2	-0.3	-20.3	60.0	-22.8	Pass	50.0	-12.7	Pass			
21.44	12.9	11.7	12.9	11.7	-0.2	-0.2	-0.3	-20.3	60.0	-26.4	Pass	50.0	-16.4	Pass			
Result: Pass										Worst Margin: -8.8 dB		Frequency: 0.766 MHz					
Measurement Device: LISN Asset 2092					Cable: CEMI-01			Spectrum Analyzer: Rental SA #5									
					Attenuator: 20dB Atten-4			Site: CEMI 6									

Rev.10/19/2015

Spectrum Analyzers / Receivers/Preselectors SA #2 (1860)	Range 9kHz-26.5 GHz	MN E7405A	Mfr Agilent	SN MY45104916	Asset 1860	Cat I	Calibration Due 7/30/2016	Calibrated on 7/30/2015
LISNs/Measurement Probes LISN Asset 2092	Range 9kHz-30MHz	MN NNLK 8121	Mfr Schwarzbeck	SN NNLK 8121-662	Asset 2092	Cat I	Calibration Due 6/30/2016	Calibrated on 6/30/2015
Conducted Test Sites (Mains / Telco) CEMI 6	FCC Code 719150	VCCI Code A-0015			Cat III	Calibration Due NA	Calibrated on N/A	
Cables CEMI-01	Range 9kHz - 2GHz	Mfr C-S			Cat II	Calibration Due 9/11/2016	Calibrated on 9/11/2015	
Attenuators 20dB Attenuator-04	Range 9kHz-2GHz	MN	Mfr	SN N/A	Asset	Cat II	Calibration Due 7/2/2016	Calibrated on 7/2/2015
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 3/19/2016 4/2/2016	Calibrated on 3/19/2014 4/2/2015	

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



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page 24 of 31



Testing Cert. No. 1627-01

AC Conducted Emissions Data Table

Date: 26-Oct-15 Engineer: Tuyen Truong Temp: 21.9 °C		Company: Ideal Industries, Inc EUT Desc: SCLINE1000 Humidity: 35%		Work Order: P3128 Pressure: 1021 mBar									
Notes:													
Frequency Range: 0.15 - 30 MHz EUT Input Voltage/Frequency: 277 Vac / 60Hz													
Frequency (MHz)	Quasi-Peak Readings		Average Readings		LISN Factors	Cable Factor	ATTN Factor						
	QP1 (dB μ V)	QP2 (dB μ V)	AVG1 (dB μ V)	AVG2 (dB μ V)	L1 (dB)	L2 (dB)	(dB)						
0.40	23.9	17.4	16.5	17.3	0.0	0.0	-0.1						
0.78	14.1	8.9	14.1	8.9	0.0	0.0	-0.1						
1.15	17.9	13.5	10.6	13.4	-0.1	-0.1	-0.1						
5.24	14.2	15.2	14.2	15.2	-0.1	-0.1	-0.2						
17.45	16.1	15.4	16.1	15.4	-0.2	-0.2	-0.2						
21.30	13.8	12.1	13.8	12.1	-0.2	-0.2	-0.3						

Result: Pass**Worst Margin:** -10.9 dB**Frequency:** 0.402 MHz

Measurement Device: LISN Asset 2092

Cable: CEMI-01
Attenuator: 20dB Atten-4Spectrum Analyzer: Rental SA #5
Site: CEMI 6

Rev.10/19/2015

Spectrum Analyzers / Receivers /Preselectors SA #2 (1860)	Range 9kHz-26.5 GHz	MN E7405A	Mfr Agilent	SN MY45104916	Asset 1860	Cat I	Calibration Due 7/30/2016	Calibrated on 7/30/2015
LISNs/Measurement Probes LISN Asset 2092	Range 9kHz-30MHz	MN NNLK 8121	Mfr Schwarzbeck	SN NNLK 8121-662	Asset 2092	Cat I	Calibration Due 6/30/2016	Calibrated on 6/30/2015
Conducted Test Sites (Mains / Telco) CEMI 6	FCC Code 719150	VCCI Code A-0015			Cat III	Calibration Due NA	Calibrated on N/A	
Cables CEMI-01	Range 9kHz - 2GHz	Mfr C-S			Cat II	Calibration Due 9/11/2016	Calibrated on 9/11/2015	
Attenuators 20dB Attenuator-04	Range 9kHz-2GHz	MN	Mfr	SN N/A	Asset	Cat II	Calibration Due 7/2/2016	Calibrated on 7/2/2015
Meteorological Meters Weather Clock (Pressure Only) TH A#2078	MN BA928 HTC-1	Mfr Oregon Scientific HDE	SN C3166-1 831 2078	Asset I II	Cat I II	Calibration Due 3/19/2016 4/2/2016	Calibrated on 3/19/2014 4/2/2015	

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BUREAU
VERITAS



page 25 of 31

Testing Cert. No. 1627-01

Occupied Bandwidth

REQUIREMENT

When an occupied bandwidth is not 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]

MEASUREMENTS / RESULTS

99% OCCUPIED BANDWIDTH	
Date: 02-Nov-15	Company: Ideal Industries, Inc.
Engineer: Tuyen Truong	EUT Desc: SCLINE1000
Temp: 21°C	Humidity: 38%
Pressure: 1008mbar	
EUT Operating Voltage/Frequency: 120Vac/60Hz	
Frequency Range: 902.7 - 927.3 MHz	
Notes:	
Frequency (MHz)	Occupied Bandwidth Reading (KHz)
902.7	763.0032
915.0	759.7408
927.3	756.9792
Test Site: CEMI1	Attenuation: 791
Analyzer: 1510	

Rev. 10/19/2015

Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Brown	9kHz-26.5GHz	E4407B	Agilent	SG44210511	1510	I	6/30/2016	6/30/2015
Preamps /Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
HF 20dB 50W Attenuator	0.009-18 GHz	PE 7019-20	Pastermack	1	791	II	7/31/2016	7/31/2015
Conducted Test Sites (Mains / Telco)	FCC Code	VCCI Code				Cat	Calibration Due	Calibrated on
CEMI 1	719150	A-0015				III	NA	N/A
Meteorological Meters	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)	BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014	
TH A#2078	HTC-1	HDE	2078	2078	II	4/2/2016	4/2/2015	

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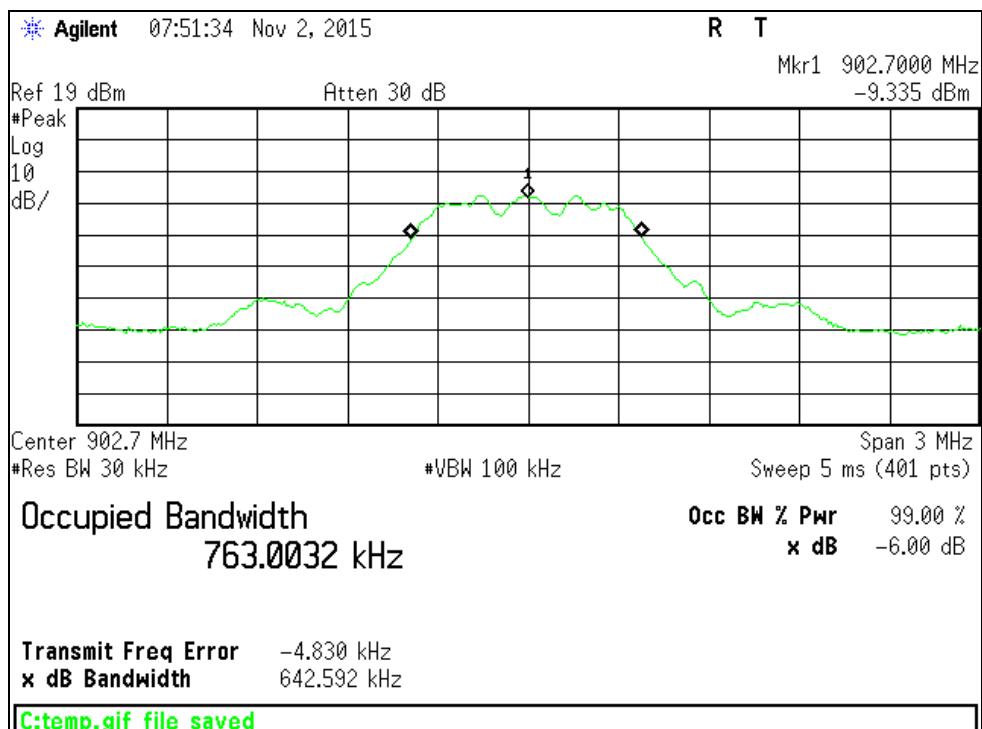
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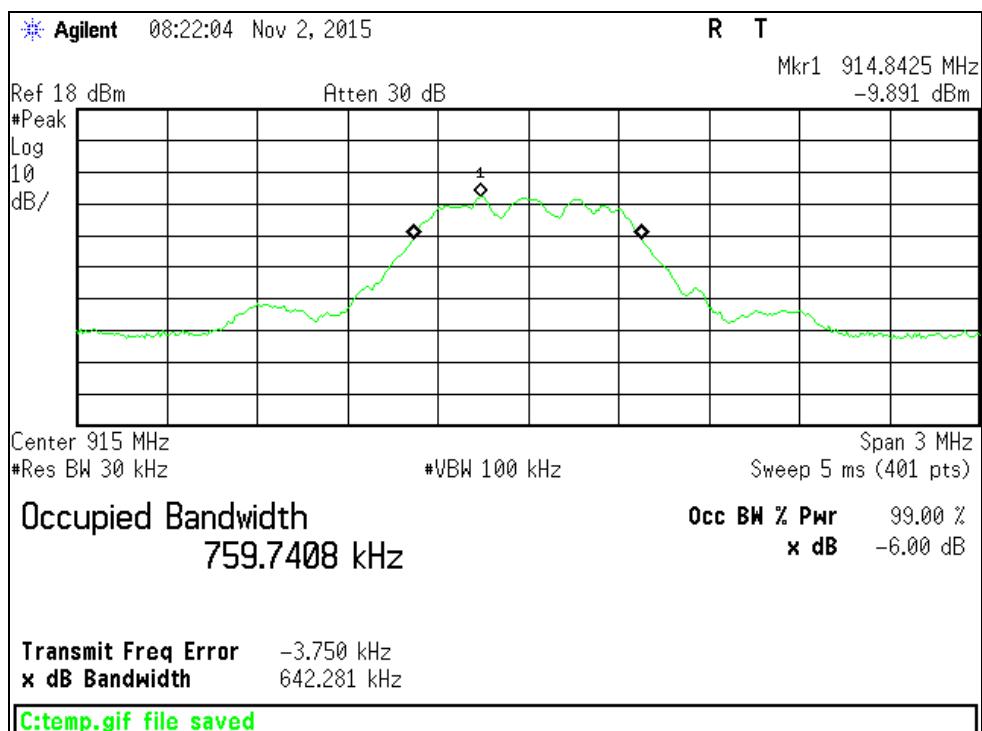
page 26 of 31

Testing Cert. No. 1627-01

PLOTS



Occupied Bandwidth, Low Channel

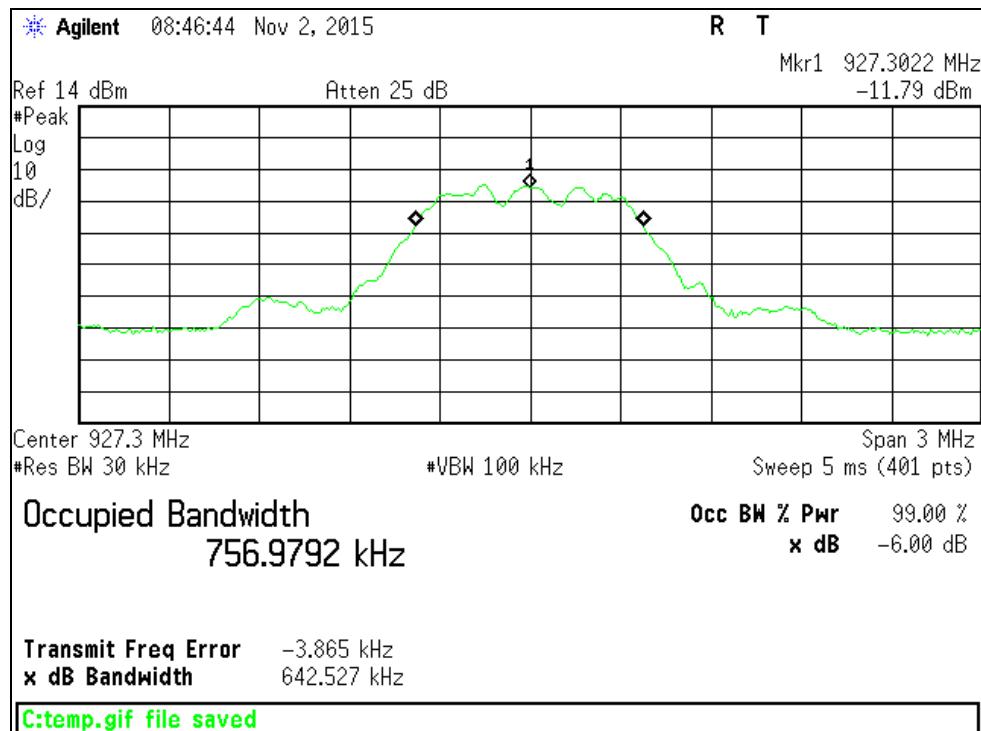


Occupied Bandwidth, Middle Channel



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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)		N/A
NIST	5.6dB	5.2dB (Ucispqr)
CISPR	4.6dB	
Radiated Emissions (1-26.5GHz)	4.6dB	N/A
Radiated Emissions (above 26.5GHz)	4.9dB	N/A
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		



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**," "**BVCP**," "**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.



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page 30 of 31

Testing Cert. No. 1627-01

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.

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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page 31 of 31