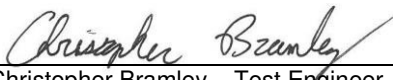
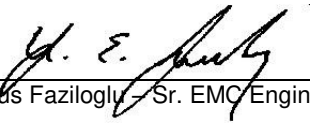




Test Report

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

Report No	ER0763-1
Client	Ideal Industries, Inc.
Address	Becker Place Sycamore, IL 60178
Phone	(815) 895-1295
Items tested	SCDMET1000
FCC ID	2AAMXSCDMET1000
IC	11250A-SCDMET1000
FRN	0002862225
Equipment Type	Digital Transmission System
Equipment Code	DTS
Emission Designator	755KG1D
FCC/IC Rule Parts	CFR Title 47 FCC Part 15.247, ISED Canada RSS-247 Issue 1
Test Dates	March 14-16 and 31, 2017
Results	As detailed within this report
Prepared by	 Christopher Bramley – Test Engineer
Authorized by	 Yunus Faziloglu – Sr. EMC Engineer
Issue Date	4/11/2017
Conditions of Issue	This Test Report is issued subject to the conditions stated in the 'Conditions of Testing' section on page 36 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 7-20-07 (DW)



Summary

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

The product is the SCDMET1000. It is a digitally modulated transmitter that operates in the 902-928MHz frequency range. The product was tested with a permanently installed wire antenna with 3dBi gain.

We found that the product met the above requirements without modification. The test samples were received in good condition.



Test Methodology

All testing was performed according to the following rules/procedures/documents;

CFR Title 47 FCC Part 15.247, ISED Canada RSS-247 Issue 1, ISED Canada RSS-Gen Issue 4, FCC KDB 558074 D01 DTS Measurement Guidance v03r05 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 50 Ω /50 μ H LISN. The EUT operating voltage was 120/277VAC at 60Hz.

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

Low channel = 902.7MHz

Mid channel = 915MHz

High channel = 927.3MHz

The following bandwidths were used during radiated spurious and AC line conducted emissions tests:

Frequency	RBW	VBW
0.15-30MHz	9kHz	30kHz
30-1000MHz	120kHz	1MHz
1-10GHz	1MHz	3MHz

Product Tested - Configuration Documentation

EUT Configuration										
Work Order:	R0763									
Company:	Ideal Industries									
Company Address:	Becker Place									
	Sycamore, IL 60178									
Contact:	Tim Tunnell									
	MN							SN		
EUT:	SCDMET1000							Sample 1		
EUT Description:	CFL Luminaire Controller - Metal Box									
EUT Tx Frequency:	902.7-927.3 MHz									
Port Label	Port Type	# ports	# populated	cable type	shielded	ferrites	length (m)	in/out	under test	comment
AC Mains	Power AC	1	1	Power AC	No	No	1.5	in	yes	
Antenna	other	1	1	other	No	No	0.1	in	yes	
Load	other	1	1	other	No	No	0.1	in	yes	Power output from Smart Connector
Dim	other	1	1	other	No	No	1	in	yes	0-10Vdc Dimming control
Software Operating Mode Description:										
The EUT provides AC power and a 0-10V dimming control to an electronic ballast. The EUT will be mounted to a light fixture during normal operation. The EUT was set to transmit at Low(902.7MHz), Mid(915MHz), and High(927.3MHz) channels.										

Statement of Conformity

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 a permanently installed wire antenna with 3dBi gain.
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.

Test Results

Bandwidth

LIMIT

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

MEASUREMENTS / RESULTS

DTS Bandwidth Table				
Date: 15-Mar-17		Company: Ideal Industries, Inc.		Work Order: R0763
Engineer: Chris Bramley		EUT Desc: Smart Connector - SCDMET1000		EUT Operating Voltage/Frequency: 120V/60Hz
Temp: 21.8°C		Humidity: 36%		Pressure: 988mBar
Frequency Range: Fundamental				
Notes: Tested IAW FCC OET 558074 D01 DTS Meas Guidance v03r05 Section 8.2.				
Channel	Frequency (MHz)	DTS Bandwidth (kHz)	DTS Bandwidth Limit (kHz)	Test Results (Pass/Fail)
Low	902.7	656.0	≥500	Pass
Middle	915	656.7	≥500	Pass
High	927.3	660.1	≥500	Pass

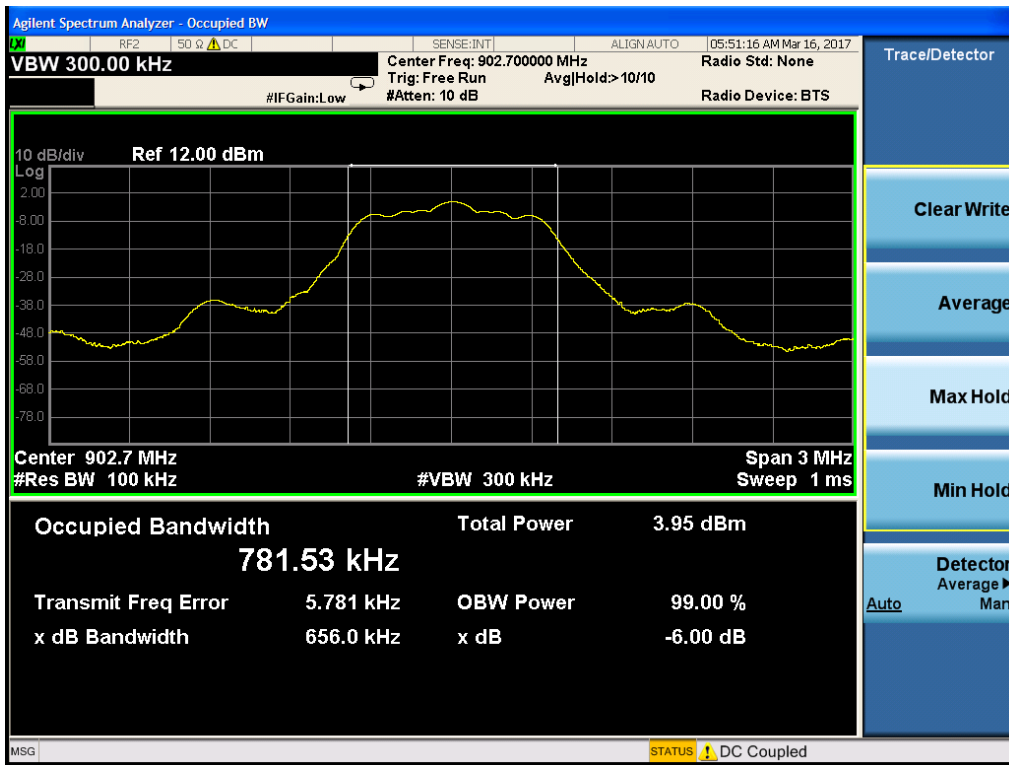
Rev. 3/12/2017

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
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	8/14/2017	8/14/2016
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#2082		HTC-1	HDE		2082	II	4/5/2017	4/5/2016

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



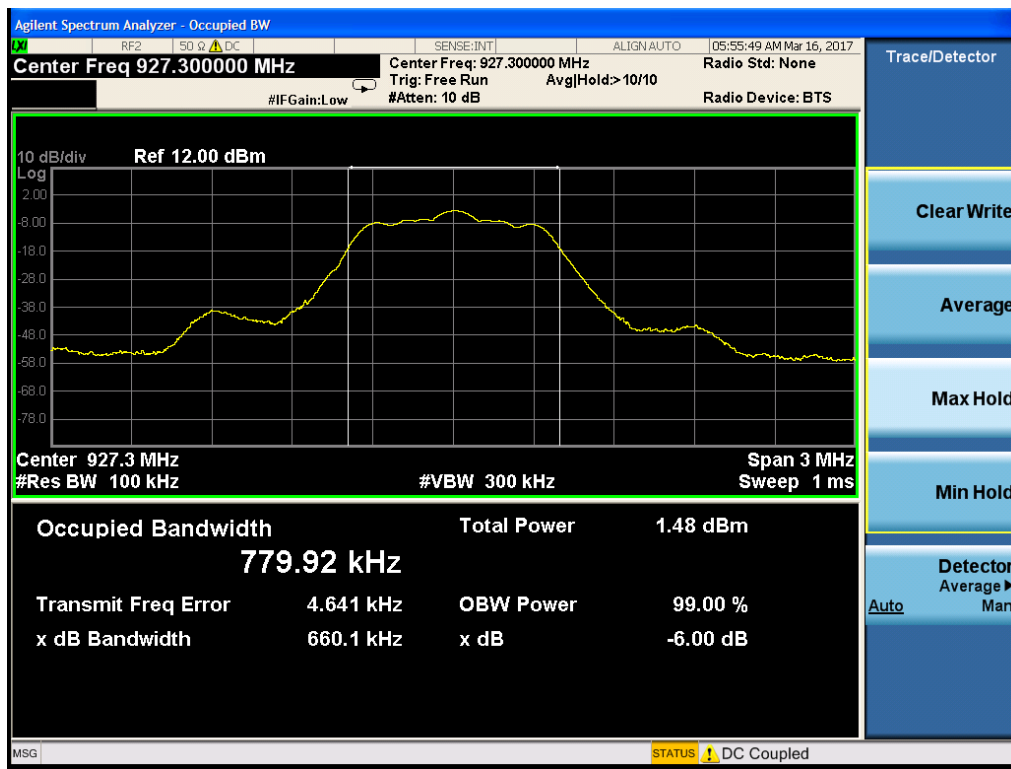
PLOT(S)



6dB Bandwidth – Low Channel



6dB Bandwidth – Mid Channel



6dB Bandwidth – High Channel

Fundamental Emission Output Power**LIMIT**

Conducted Output Power

1 Watt

[15.247(b) (3)]

Per 558074 D01 DTS Measurement Guidance v03r05 Section 9.2.2.2 (AVGSA-1 Average Conducted Output Power)

MEASUREMENTS / RESULTS

Fundamental Emission Output Power Table						
Date: 31-Mar-17		Company: Ideal Industries, Inc.			Work Order: R0763	
Engineer: Chris Bramley		EUT Desc: Smart Connector - SCDMET1000			EUT Operating Voltage/Frequency: 120V/60Hz	
Temp: 21.8°C		Humidity: 36% Pressure: 988mBar				
Frequency Range: Fundamental						
Notes: Tested IAW FCC OET 558074 D01 DTS Meas Guidance v03r05 Section 9.2.2.2, Method AVGSA-1						
Channel	Frequency (MHz)	Output Power (dBm)	Reference Level Offset (dB)	Output Power Limit (dBm)	Margin (dB)	Test Results (Pass/Fail)
Low	902.7	18.29	19.42	30	-11.71	Pass
Middle	915	16.72	19.42	30	-13.28	Pass
High	927.3	15.87	19.42	30	-14.13	Pass

Rev. 3/12/2017

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
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	8/14/2017	8/14/2016
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#2082		HTC-1	HDE		2082	II	4/5/2017	4/5/2016

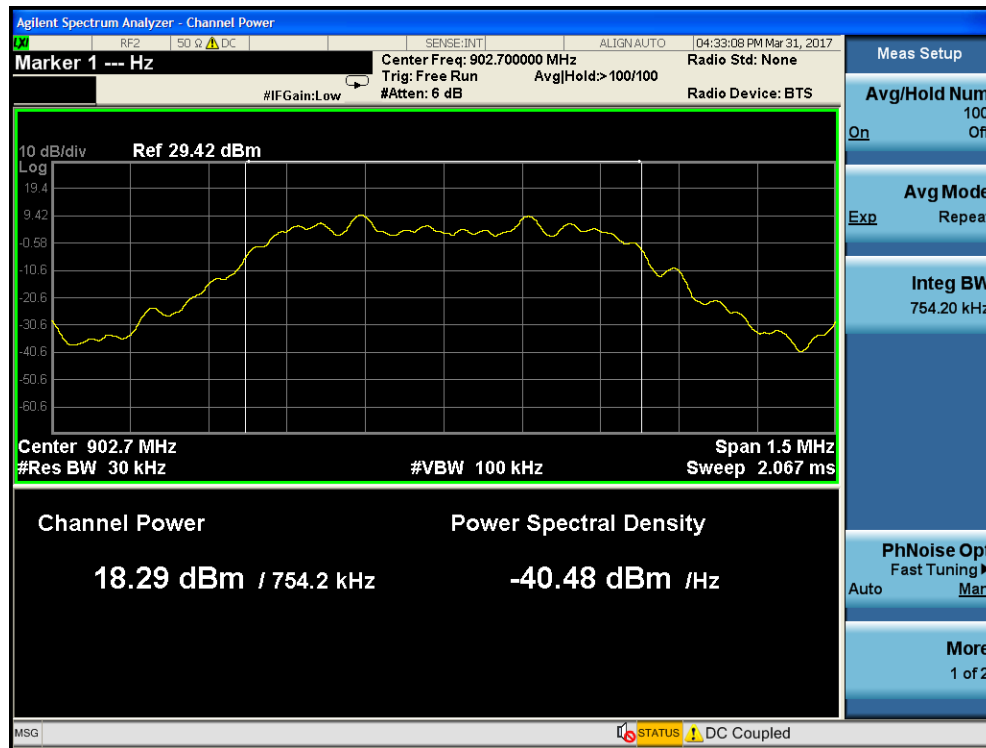
All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



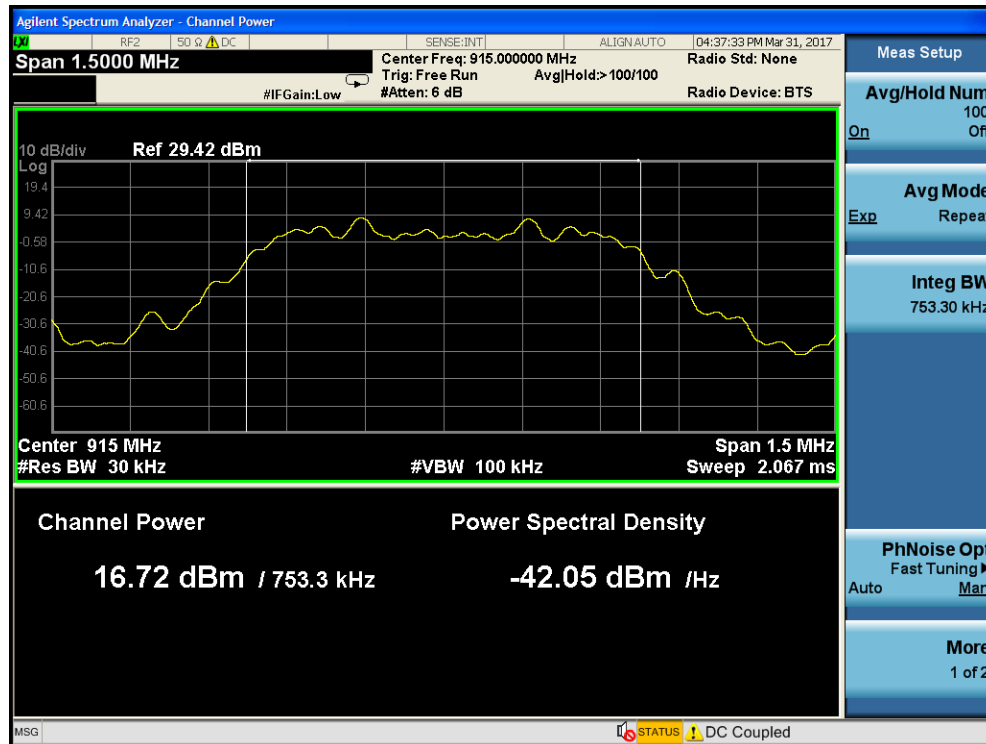
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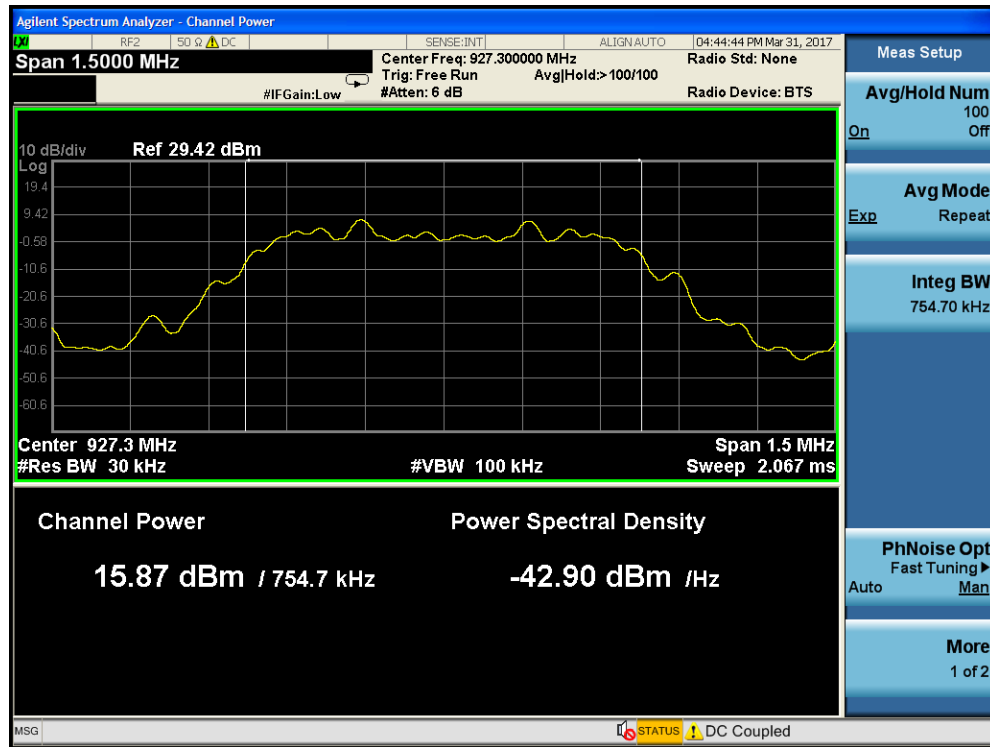
PLOTS



Channel Power – Low Channel



Channel Power – Mid Channel



Channel Power – High Channel

Radiated 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 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the 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. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)). [15.247(d)]

MEASUREMENTS / RESULTS

Radiated Emissions in Restricted Bands												
Date: 13-Mar-17		Company: Powercast				Work Order: R0763						
Engineer: Zack Johnson		EUT Desc: CFL Luminaire Controller - Matel Box				EUT Operating Voltage/Frequency: 120V/60Hz						
Temp: 22.1C		Humidity: 22%				Pressure: 1022mbar						
Frequency Range: 30MHz - 1GHz						Measurement Distance: 3 m						
Notes:						EUT Max Freq: 928MHz						
Antenna Polarization (H/V)	Frequency (MHz)	Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBμV/m)	---			FCC Class B		
							Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)
No emissions found in restricted bands							---	---	---	---	---	---
Table Result: --- by --- dB							Worst Freq: --- MHz					
Test Site: EMI Chamber 1		Cable 1: Asset #2051				Cable 2: Asset #2054			Cable 3: ---			
Analyzer: 1118470		Preamp: Red-White				Antenna: Red-White			Preselector: ---			
CSsoft Radiated Emissions Calculator v 1.017.168						Copyright Curtis-Straus LLC 2000						
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor												

Curtis Straus - a Bureau Veritas Company										EUT Description - CFL Luminaire Controller - Metal Box					
Radiated Emissions Electric Field 3m Distance										EUT Power Input - 120V / 60Hz					
1-6GHz Horizontal Tabular Data										Test Site - Chamber 2					
Operator: ZJ										Temperature; Humidity - 22.1°C; 22%RH					
Client Present: None										Barometric Pressure - 1022 mBar					
Company: Powercast										EUT Maximum Frequency - 928MHz					
										Work Order # - R0763					
Frequency	Raw Peak Reading	Raw Average Reading	Preamp Factor	Antenna Factor	Cable Factor	Adjusted Peak Amplitude	Adjusted Average Amplitude	Peak Limit	Peak Margin	Peak Results	Average Limit	Average Margin	Average Results	Worst Peak Margin	Worst Average Margin
MHz	dBμV	dBμV	dB	dB/m	dB	dBμV/m	dBμV/m	dBμV/m	dB	Pass/Fail	dBμV/m	dB	Pass/Fail	dB	dB
1805.4	46.1	40.5	19.7	27	2.8	56.6	50.9	74	-17.4	PASS	54	-3	PASS	-17.4	-3
1966.5	34.4	26.7	20	28.1	3	46	38.3	74	-28	PASS	54	-15.7	PASS		
2708.2	39.1	29.5	21.1	29.2	3.4	51.3	41.6	74	-22.7	PASS	54	-12.4	PASS		
5183.2	35.4	26.8	18.4	33.9	5.1	56.4	47.9	74	-17.5	PASS	54	-6.1	PASS		



BUREAU
VERITAS

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Curtis Straus - a Bureau Veritas Company						EUT Description - CFL Luminaire Controller - Metal Box									
Radiated Emissions Electric Field 3m Distance						EUT Power Input - 120V / 60Hz									
1-6GHz Vertical Tabular Data						Test Site - Chamber 2									
Operator: ZJ						Low Channel									
Client Present: None						Temperature; Humidity - 22.1°C; 22%RH									
Company: Powercast						Barometric Pressure - 1022 mBar									
						EUT Maximum Frequency - 928MHz									
						Work Order # - R0763									
Frequency	Raw Peak Reading	Raw Average Reading	Preamp Factor	Antenna Factor	Cable Factor	Adjusted Peak Amplitude	Adjusted Average Amplitude	Peak Limit	Peak Margin	Peak Results	Average Limit	Average Margin	Average Results	Worst Peak Margin	Worst Average Margin
MHz	dBμV	dBμV	dB	dB/m	dB	dBμV/m	dBμV/m	dBμV/m	dB	Pass/Fail	dBμV/m	dB	Pass/Fail	dB	dB
1805.6	41.1	33.3	19.7	27	2.8	51.5	43.7	74	-22.5	PASS	54	-10.3	PASS		
2707.7	37.2	29.8	21.1	29.2	3.4	49.3	41.9	74	-24.7	PASS	54	-12.1	PASS		
5994.7	35.5	27.1	18	34.6	5.9	58.5	50.1	74	-15.4	PASS	54	-3.9	PASS	-15.4	-3.9

Curtis Straus - a Bureau Veritas Company						EUT Description - CFL Luminaire Controller - Metal Box									
Radiated Emissions Electric Field 3m Distance						EUT Power Input - 120V / 60Hz									
1-6GHz Horizontal Tabular Data						Test Site - Chamber 2									
Operator: ZJ						Center Channel									
Client Present: None						Temperature; Humidity - 22.1°C; 22%RH									
Company: Powercast						Barometric Pressure - 1022 mBar									
						EUT Maximum Frequency - 928MHz									
						Work Order # - R0763									
Frequency	Raw Peak Reading	Raw Average Reading	Preamp Factor	Antenna Factor	Cable Factor	Adjusted Peak Amplitude	Adjusted Average Amplitude	Peak Limit	Peak Margin	Peak Results	Average Limit	Average Margin	Average Results	Worst Peak Margin	Worst Average Margin
MHz	dBμV	dBμV	dB	dB/m	dB	dBμV/m	dBμV/m	dBμV/m	dB	Pass/Fail	dBμV/m	dB	Pass/Fail	dB	dB
1829.8	42.5	36.1	19.7	27.2	2.8	53.1	46.8	74	-20.8	PASS	54	-7.2	PASS		
2745	39	30	21	29.2	3.5	51.3	42.3	74	-22.6	PASS	54	-11.7	PASS		
5187.5	34.9	26.8	18.4	34	5.1	56	47.9	74	-18	PASS	54	-6.1	PASS	-18	-6.1

Curtis Straus - a Bureau Veritas Company						EUT Description - CFL Luminaire Controller - Metal Box									
Radiated Emissions Electric Field 3m Distance						EUT Power Input - 120V / 60Hz									
1-6GHz Vertical Tabular Data						Test Site - Chamber 2									
Operator: ZJ						Center Channel									
Client Present: None						Temperature; Humidity - 22.1°C; 22%RH									
Company: Powercast						Barometric Pressure - 1022 mBar									
						EUT Maximum Frequency - 928MHz									
						Work Order # - R0763									
Frequency	Raw Peak Reading	Raw Average Reading	Preamp Factor	Antenna Factor	Cable Factor	Adjusted Peak Amplitude	Adjusted Average Amplitude	Peak Limit	Peak Margin	Peak Results	Average Limit	Average Margin	Average Results	Worst Peak Margin	Worst Average Margin
MHz	dBμV	dBμV	dB	dB/m	dB	dBμV/m	dBμV/m	dBμV/m	dB	Pass/Fail	dBμV/m	dB	Pass/Fail	dB	dB
1122.7	35.4	26.2	21	25.8	2.3	43.2	34	74	-30.7	PASS	54	-20	PASS		
2433.1	35.7	27.2	20.9	28.5	3.4	47.3	38.8	74	-26.7	PASS	54	-15.2	PASS		
2943	36.6	26.9	20.8	30.1	3.7	50.3	40.6	74	-23.7	PASS	54	-13.3	PASS		
3392.7	36.2	27	20.4	31.2	3.9	51.3	42.1	74	-22.7	PASS	54	-11.9	PASS		
3804.7	37	27.3	19.7	32.5	4.1	54.5	44.7	74	-19.5	PASS	54	-9.2	PASS		
5992.4	35.6	27.2	18	34.6	5.9	58.5	50.2	74	-15.4	PASS	54	-3.8	PASS	-15.4	-3.8



Curtis Straus - a Bureau Veritas Company										EUT Description - CFL Luminaire Controller - Metal Box					
Radiated Emissions Electric Field 3m Distance										EUT Power Input - 120V / 60Hz					
1-6GHz Horizontal Tabular Data										Test Site - Chamber 2					
Operator: ZJ										Temperature; Humidity - 22.1°C; 22%RH					
Client Present: None										Barometric Pressure - 1022 mBar					
Company: Powercast										EUT Maximum Frequency - 928MHz					
										Work Order # - R0763					
Frequency	Raw Peak Reading	Raw Average Reading	Preamp Factor	Antenna Factor	Cable Factor	Adjusted Peak Amplitude	Adjusted Average Amplitude	Peak Limit	Peak Margin	Peak Results	Average Limit	Average Margin	Average Results	Worst Peak Margin	Worst Average Margin
MHz	dBμV	dBμV	dB	dB/m	dB	dBμV/m	dBμV/m	dBμV/m	dB	Pass/Fail	dBμV/m	dB	Pass/Fail	dB	dB
1080.4	43.1	30.7	21.2	25.5	2.2	50.6	38.1	74	-23.4	PASS	54	-15.8	PASS		
1854.4	42.7	37.4	19.7	27.3	2.8	53.6	48.3	74	-20.4	PASS	54	-5.6	PASS		
1971.8	34.9	26.7	20	28.2	3	46.5	38.4	74	-27.4	PASS	54	-15.6	PASS		
2781.6	38.5	30.1	21	29.2	3.5	51	42.5	74	-23	PASS	54	-11.5	PASS		
5985.4	35.9	27.2	18	34.6	5.8	58.8	50.1	74	-15.2	PASS	54	-3.9	PASS	-15.2	-3.9

Curtis Straus - a Bureau Veritas Company										EUT Description - CFL Luminaire Controller - Metal Box					
Radiated Emissions Electric Field 3m Distance										EUT Power Input - 120V / 60Hz					
1-6GHz Vertical Tabular Data										Test Site - Chamber 2					
Operator: ZJ										Temperature; Humidity - 22.1°C; 22%RH					
Client Present: None										Barometric Pressure - 1022 mBar					
Company: Powercast										EUT Maximum Frequency - 928MHz					
										Work Order # - R0763					
Frequency	Raw Peak Reading	Raw Average Reading	Preamp Factor	Antenna Factor	Cable Factor	Adjusted Peak Amplitude	Adjusted Average Amplitude	Peak Limit	Peak Margin	Peak Results	Average Limit	Average Margin	Average Results	Worst Peak Margin	Worst Average Margin
MHz	dBμV	dBμV	dB	dB/m	dB	dBμV/m	dBμV/m	dBμV/m	dB	Pass/Fail	dBμV/m	dB	Pass/Fail	dB	dB
1080.7	58.1	34.4	21.2	25.5	2.2	65.5	41.9	74	-8.4	PASS	54	-12.1	PASS	-8.4	
1485.1	36.7	26.5	19.9	26	2.6	45.9	35.7	74	-28.1	PASS	54	-18.3	PASS		
2441.8	34.8	27.2	20.9	28.5	3.4	46.4	38.7	74	-27.6	PASS	54	-15.3	PASS		
2912.9	36.3	26.9	20.9	29.8	3.6	49.6	40.2	74	-24.4	PASS	54	-13.8	PASS		
3606.4	35.9	27.6	20	31.5	3.9	51.7	43.4	74	-22.3	PASS	54	-10.5	PASS		
5751.7	36.8	27.2	18.4	34.2	5.6	58.7	49.1	74	-15.3	PASS	54	-4.9	PASS		-4.9

Radiated Emissions Table

Date: 13-Mar-17				Company: Powercast				Work Order: R0763															
Engineer: Zac Johnson				EUT Desc: CFL Luminaire Controller - Metal Box				EUT Operating Voltage/Frequency: 120V/60Hz															
Temp: 22.1°C				Humidity: 22%				Pressure: 1022mbar															
Frequency Range: 6-10GHz								Measurement Distance: 1 m															
Notes: Center Channel								EUT Max Freq: 928MHz															
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/V	No Emissions Found																						
Table Result:				Pass				by				--- dB				Worst Freq:				--- MHz			
Test Site: EMI Chamber 1				Cable 1: Asset #2051				Cable 2: Asset #2054															
Analyzer: Rental SA#4				Preamp: Asset #1517				Antenna: Black Horn															
CSsoft Radiated Emissions Calculator v 1.017.185																Copyright Curtis-Straus LLC 2000							
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor																							



Rev. 3/12/2017

Spectrum Analyzers / Receivers / Preselectors									
Rental EXA Signal Analyzer(1118470)	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
	9KHz-26.5GHz	N9010A-526;M	AT	MY51170093	1118470	I	1/3/2018	1/3/2017	
Radiated Emissions Sites									
EMI Chamber 1	FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on	
	719150	2762A-6	A-0015	30-1000MHz		II	12/21/2018	12/21/2016	
EMI Chamber 1	719150	2762A-6	A-0015	1-18GHz		I	12/21/2018	12/21/2016	
Preamps / Couplers Attenuators / Filters									
Red-White	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
	0.009-2000MHz	ZFL-1000-LN	CS	N/A	1258	II	10/30/2017	10/30/2016	
1517 HF Preamp	1-20GHz	CS	CS	N/A	1517	II	8/14/2017	8/14/2016	
2130 BRF	0.009-18000MHz	BRM18770	Micro-Tronics	1	2130	II	1/7/2018	1/7/2017	
Antennas									
Red-White Bilog	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
	30-2000MHz	JB1	Sunol	A091604-1	1105	I	8/12/2017	8/12/2015	
Black Horn	1-18GHz	3115	EMCO	9703-5148	56	I	8/29/2018	8/29/2016	
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	4/28/2018	4/28/2016	
		HTC-1	HDE		2081	II	4/5/2017	4/5/2016	
Cables									
Asset #2051	Range		Mfr			Cat	Calibration Due	Calibrated on	
	9kHz - 18GHz		Florida RF			II	3/5/2018	3/5/2017	
Asset #2054	9kHz - 18GHz		Florida RF			II	10/1/2017	10/30/2016	

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



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

Conducted Spurious Emissions Table				
Date: 16-Mar-17		Company: Ideal Industries, Inc.		Work Order: R0763
Engineer: Chris Bramley		EUT Desc: Smart Connector - SCDMET1000		EUT Operating Voltage/Frequency: 120V/60Hz
Temp: 22.2°C		Humidity: 32%		Pressure: 1001mBar
Frequency Range: Fundamental				
Notes: Tested IAW FCC OET 558074 D01 DTS Meas Guidance v03r05 Section 11				
Channel	Frequency (MHz)	Frequency Range Measured	Limit (dBm)	Test Results (Pass/Fail)
Low	902.7	9kHz to 10GHz	See Graphs	Pass
Middle	915	9kHz to 10GHz	See Graphs	Pass
High	927.3	9kHz to 10GHz	See Graphs	Pass

Rev. 3/12/2017

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
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	8/14/2017	8/14/2016
Conducted Test Sites (Mains / Telco)	FCC Code	VCCI Code				Cat	Calibration Due	Calibrated on
CEMI 3	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	4/28/2018	4/28/2016
TH A#2082		HTC-1	HDE		2082	II	4/5/2017	4/5/2016

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

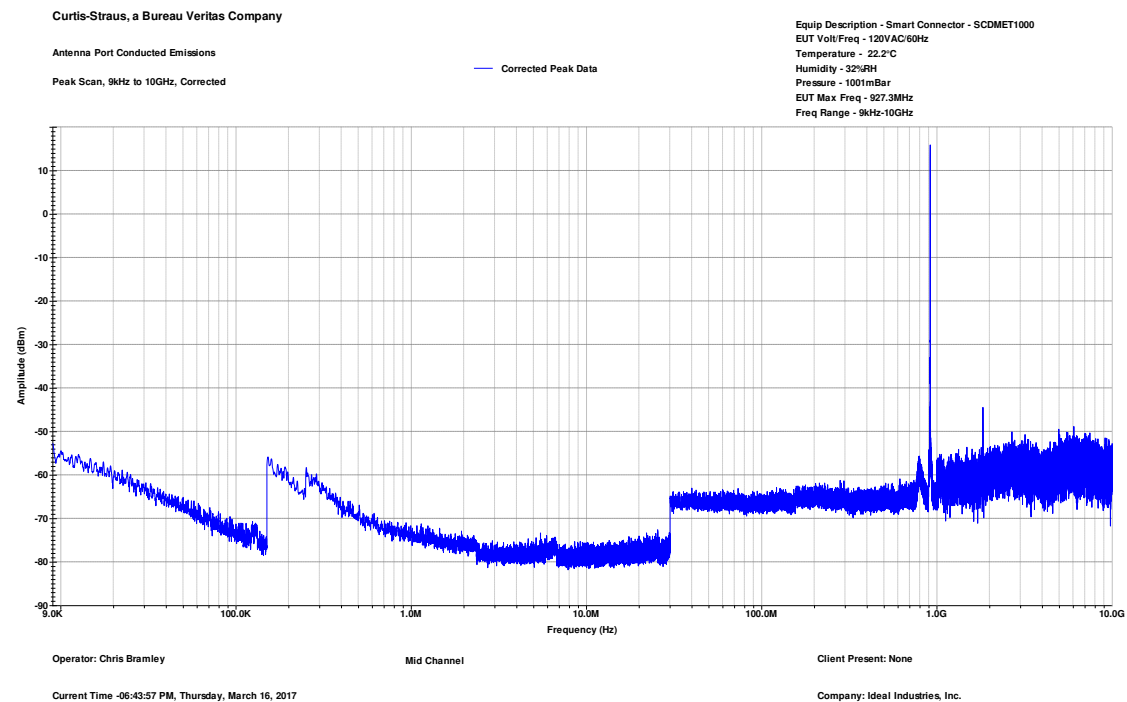
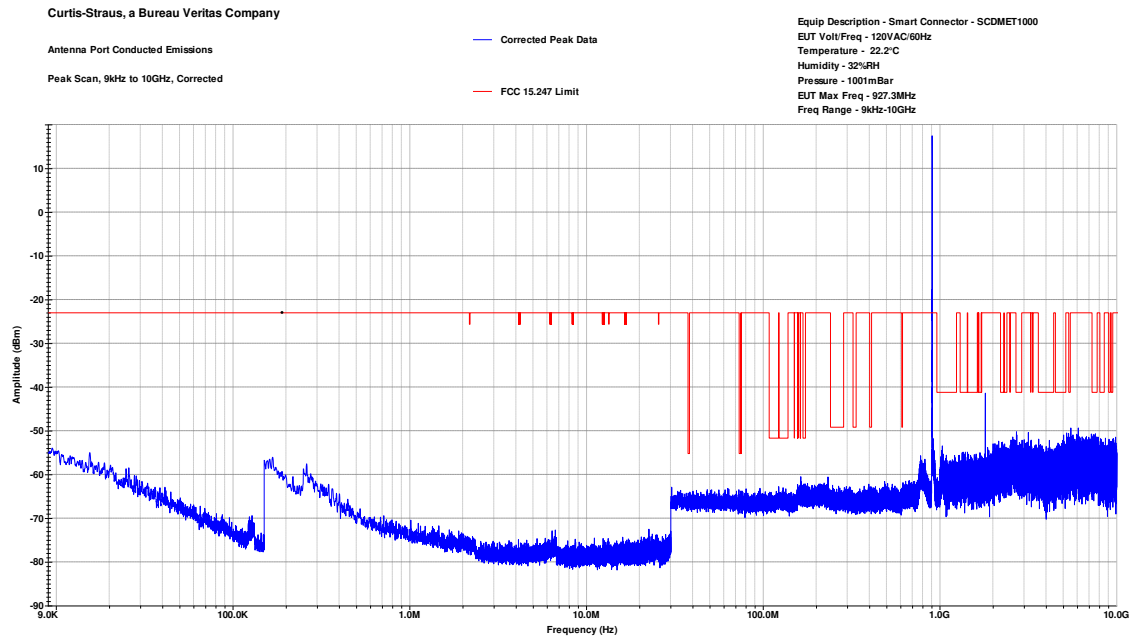
Conducted spurious emissions at the antenna port were measured in accordance with FCC KDB 558074 D01 DTS Measurement Guidance v03r05 Section 11.0.

Frequency range up to 10GHz was investigated for all 3 channels (low, middle and high) at the EUT antenna port. Plots below show that all emissions are more than 30dB below the fundamental. The limit lines for the low and high channels do not reflect the correct limit applicable, therefore they can be disregarded.



Plots

Conducted Spurious Emissions



Curtis-Straus, a Bureau Veritas Company

Antenna Port Conducted Emissions

Peak Scan, 9kHz to 10GHz, Corrected

Corrected Peak Data

FCC 15.247 Limit

Equip Description - Smart Connector - SCDMET1000

EUT Volt/Freq - 120VAC/60Hz

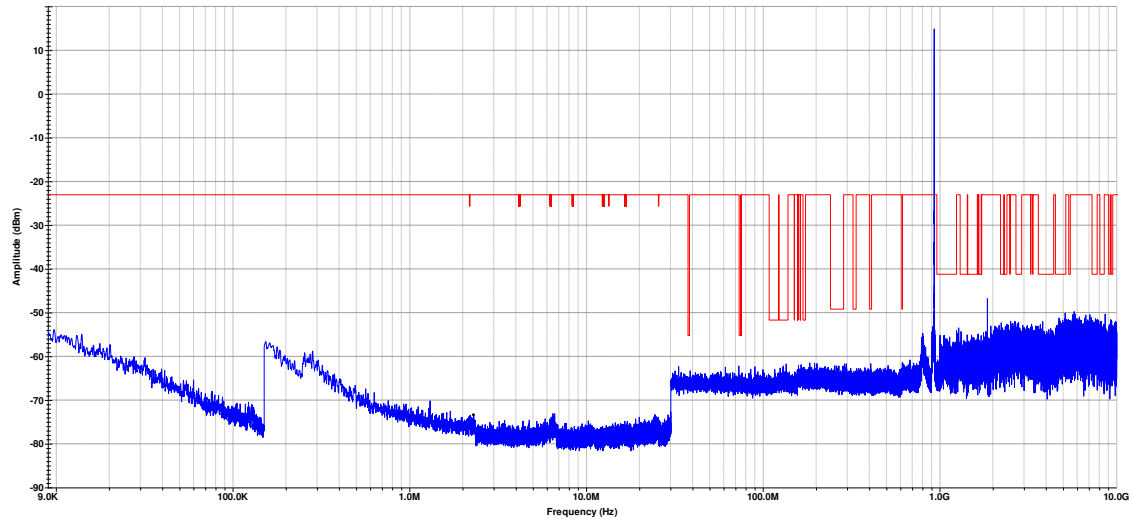
Temperature - 22.2°C

Humidity - 32%RH

Pressure - 1001mBar

EUT Max Freq - 927.3MHz

Freq Range - 9kHz-10GHz



Operator: Chris Bramley

High Channel

Client Present: None

Current Time -06:30:59 PM, Thursday, March 16, 2017

Company: Ideal Industries, Inc.

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)]

Per 558074 D01 DTS Measurement Guidance v03r05 DTS Method 10.3 AVGPS-1 (trace averaging with EUT transmitting at full power throughout each sweep)

MEASUREMENTS / RESULTS

Maximum Power Spectral Density Level in the Fundamental Emission Table					
Date: 15-Mar-17		Company: Ideal Industries, Inc.		Work Order: R0763	
Engineer: Chris Bramley		EUT Desc: Smart Connector - SCDMET1000		EUT Operating Voltage/Frequency: 120V/60Hz	
Temp: 21.8°C		Humidity: 36%		Pressure: 988mBar	
Frequency Range: Fundamental					
Notes: Tested IAW FCC OET 558074 D01 DTS Meas Guidance v03r05 Section 10.3, Method AVGPSD-1					
Channel	Frequency (MHz)	PSD Measured (dBm)	PSD Limit (dBm)	Margin (dB)	Test Results (Pass/Fail)
Low	902.7	5.91	8	-2.09	PASS
Middle	915	4.29	8	-3.71	PASS
High	927.3	3.67	8	-4.33	PASS

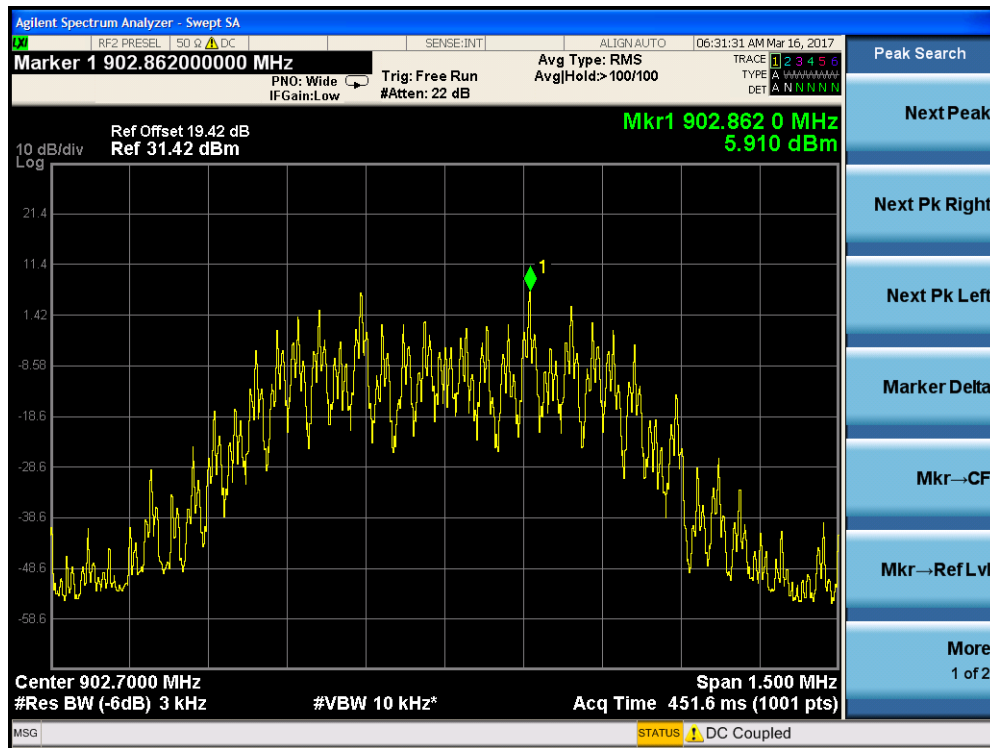
Rev. 3/12/2017

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
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	8/14/2017	8/14/2016
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#2082			HTC-1	HDE		2082	II	4/5/2017	4/5/2016

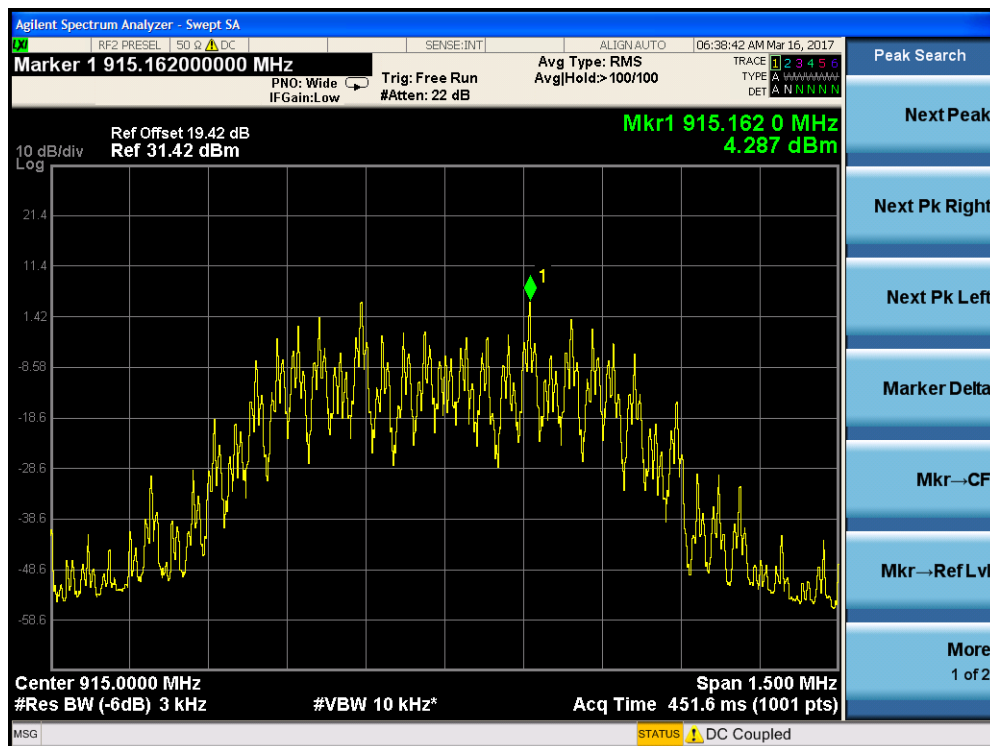
All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



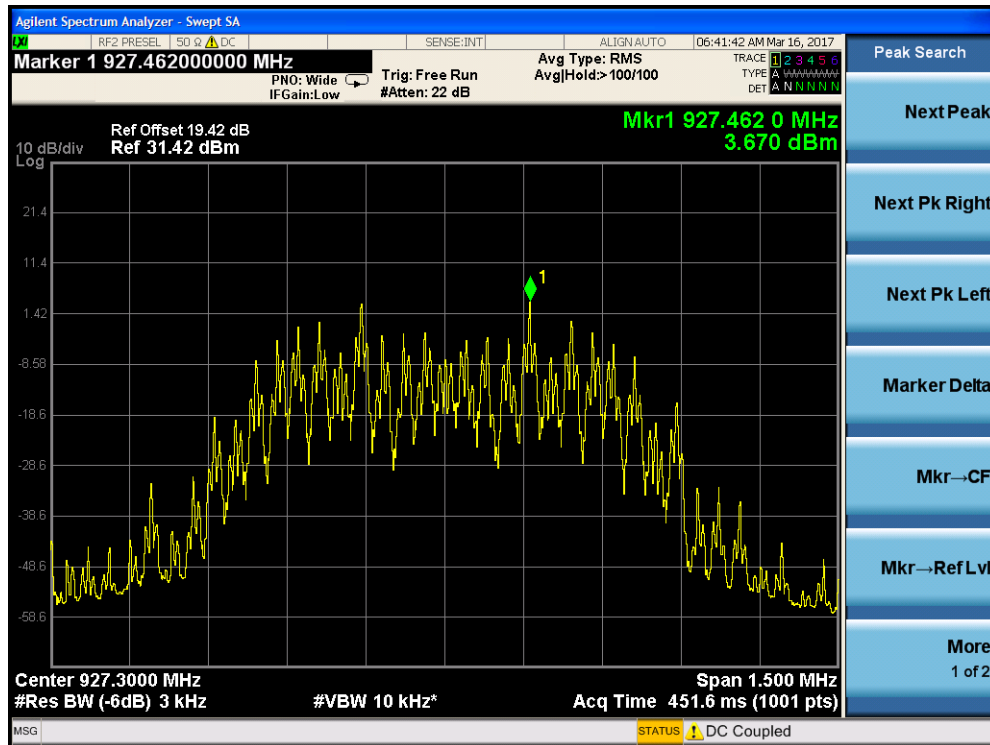
PLOTS



PSD – Low Channel



PSD – Mid Channel



PSD – High Channel

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

Curtis Straus - a Bureau Veritas Company						Work Order # - R0763		
Conducted Emissions per CISPR 16-2-1						Product - SCDMET1000 - Smart Connector		
Peak Detector Tabular Data - Voltage Measurement						EUT Max Freq - 927.3MHz		
Operator: Chris Bramley						EUT Power - 120VAC/ 60Hz		
Company: Ideal Industries						Test Site - CEMI-5		
Client Present: None		EUT Line tested: Line				Env Cond - 21.8°C; 36%RH; 988mBar		
		EUT Mode of Operation: Tx Mode				Requirement - FCC 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	
0.166	31.5	20.7	52.2	65.1	-13	PASS		
0.193	30.8	20.7	51.5	63.9	-12.4	PASS		
0.256	29.7	20.7	50.4	61.6	-11.2	PASS	-11.2	
0.297	26	20.7	46.6	60.3	-13.7	PASS		
0.359	25.5	20.7	46.1	58.8	-12.6	PASS		
0.385	23.3	20.7	44	58.2	-14.2	PASS		

Curtis Straus - a Bureau Veritas Company					Work Order # - R0763		
Conducted Emissions per CISPR 16-2-1					Product - SCDMET1000 - Smart Connector		
Quick Average Detector Tabular Data - Voltage Measurement					EUT Max Freq - 927.3MHz		
Operator: Chris Bramley					EUT Power - 120VAC/ 60Hz		
Company: Ideal Industries					Test Site - CEMI-5		
Client Present: None		EUT Line tested: Line			Env Cond - 21.8°C; 36%RH; 988mBar		
		EUT Mode of Operation: Tx Mode			Requirement - FCC 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
0.15	26.8	20.7	47.5	56	-8.5	PASS	
0.25	22.7	20.7	43.4	51.8	-8.4	PASS	-8.4
0.295	20.9	20.7	41.6	50.4	-8.8	PASS	
0.353	19.6	20.7	40.2	48.9	-8.7	PASS	
0.391	16.4	20.7	37	48	-11	PASS	
18.141	19.5	20.9	40.5	50	-9.5	PASS	

Curtis Straus - a Bureau Veritas Company					Work Order # - R0763		
Conducted Emissions per CISPR 16-2-1					Product - SCDMET1000 - Smart Connector		
Peak Detector Tabular Data - Voltage Measurement					EUT Max Freq - 927.3MHz		
Operator: Chris Bramley					EUT Power - 120VAC/ 60Hz		
Company: Ideal Industries					Test Site - CEMI-5		
Client Present: None		EUT Line tested: Neutral			Env Cond - 21.8°C; 36%RH; 988mBar		
		EUT Mode of Operation: Tx Mode			Requirement - FCC 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
0.153	37.5	20.7	58.2	65.8	-7.7	PASS	-7.7
0.183	32.2	20.7	52.8	64.4	-11.5	PASS	
0.219	29.2	20.7	49.9	62.8	-13	PASS	
0.266	30.1	20.7	50.7	61.3	-10.5	PASS	
0.3	27.3	20.7	47.9	60.2	-12.3	PASS	
0.351	25.2	20.7	45.8	58.9	-13.1	PASS	

Curtis Straus - a Bureau Veritas Company				Work Order # - R0763			
Conducted Emissions per CISPR 16-2-1				Product - SCDMET1000 - Smart Connector			
Quick Average Detector Tabular Data - Voltage Measurement				EUT Max Freq - 927.3MHz			
Operator: Chris Bramley				EUT Power - 120VAC/ 60Hz			
Company: Ideal Industries				Test Site - CEMI-5			
Client Present: None		EUT Line tested: Neutral		Env Cond - 21.8°C; 36%RH; 988mBar			
		EUT Mode of Operation: Tx Mode		Requirement - FCC 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
0.153	31.9	20.7	52.6	55.8	-3.2	PASS	-3.2
0.203	25.3	20.7	46	53.5	-7.5	PASS	
0.26	23	20.7	43.6	51.4	-7.8	PASS	
0.319	18.8	20.7	39.5	49.7	-10.3	PASS	
0.359	17.8	20.7	38.5	48.8	-10.3	PASS	
18.129	20	20.9	41	50	-9	PASS	

Curtis Straus - a Bureau Veritas Company				Work Order # - R0763			
Conducted Emissions per CISPR 16-2-1				Product - SCDMET1000 - Smart Connector			
Peak Detector Tabular Data - Voltage Measurement				EUT Max Freq - 927.3MHz			
Operator: Chris Bramley				EUT Power - 277VAC/ 60Hz			
Company: Ideal Industries				Test Site - CEMI-5			
Client Present: None		EUT Line tested: Line		Env Cond - 21.8°C; 36%RH; 988mBar			
		EUT Mode of Operation: Tx Mode		Requirement - FCC 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
0.179	32.4	20.7	53.1	64.5	-11.5	PASS	
0.287	30.4	20.7	51	60.6	-9.6	PASS	-9.6
0.313	27.6	20.6	48.2	59.9	-11.6	PASS	
0.353	24.8	20.7	45.4	58.9	-13.5	PASS	
0.397	24.6	20.7	45.2	57.9	-12.7	PASS	
0.513	20.6	20.7	41.3	56	-14.7	PASS	

Curtis Straus - a Bureau Veritas Company				Work Order # - R0763			
Conducted Emissions per CISPR 16-2-1				Product - SCDMET1000 - Smart Connector			
Quick Average Detector Tabular Data - Voltage Measurement				EUT Max Freq - 927.3MHz			
Operator: Chris Bramley				EUT Power - 277VAC/ 60Hz			
Company: Ideal Industries				Test Site - CEMI-5			
Client Present: None		EUT Line tested: Line		Env Cond - 21.8°C; 36%RH; 988mBar			
		EUT Mode of Operation: Tx Mode		Requirement - FCC 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
0.151	28.6	20.7	49.3	56	-6.7	PASS	-6.7
0.261	22.8	20.7	43.4	51.4	-8	PASS	
0.293	20.7	20.7	41.4	50.4	-9.1	PASS	
0.346	18.7	20.7	39.4	49.1	-9.7	PASS	
0.383	17.1	20.7	37.8	48.2	-10.4	PASS	
18.147	19.1	20.9	40	50	-10	PASS	

Curtis Straus - a Bureau Veritas Company				Work Order # - R0763			
Conducted Emissions per CISPR 16-2-1				Product - SCDMET1000 - Smart Connector			
Peak Detector Tabular Data - Voltage Measurement				EUT Max Freq - 927.3MHz			
Operator: Chris Bramley				EUT Power - 277VAC/ 60Hz			
Company: Ideal Industries				Test Site - CEMI-5			
Client Present: None		EUT Line tested: Neutral		Env Cond - 21.8°C; 36%RH; 988mBar			
		EUT Mode of Operation: Tx Mode		Requirement - FCC 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	38.1	20.7	58.8	65.8	-6.9	PASS	-6.9
0.197	30.8	20.7	51.5	63.7	-12.2	PASS	
0.25	30.6	20.7	51.3	61.8	-10.4	PASS	
0.304	26.3	20.7	47	60.1	-13.2	PASS	
0.341	26.5	20.7	47.2	59.2	-12	PASS	
0.397	24.4	20.7	45.1	57.9	-12.8	PASS	

Curtis Straus - a Bureau Veritas Company						Work Order # - R0763		
Conducted Emissions per CISPR 16-2-1						Product - SCDMET1000 - Smart Connector		
Quick Average Detector Tabular Data - Voltage Measurement						EUT Max Freq - 927.3MHz		
Operator: Chris Bramley					EUT Power - 277VAC/ 60Hz			
Company: Ideal Industries					Test Site - CEMI-5			
Client Present: None		EUT Line tested: Neutral			Env Cond - 21.8°C; 36%RH; 988mBar			
		EUT Mode of Operation: Tx Mode			Requirement - FCC 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	
0.151	30.1	20.7	50.8	55.9	-5.1	PASS	-5.1	
0.205	25.5	20.7	46.1	53.4	-7.3	PASS		
0.258	22.6	20.7	43.3	51.5	-8.2	PASS		
0.304	20	20.7	40.7	50.1	-9.4	PASS		
0.349	18	20.7	38.7	49	-10.3	PASS		
18.154	19.2	20.9	40.2	50	-9.8	PASS		

Rev. 3/12/2017

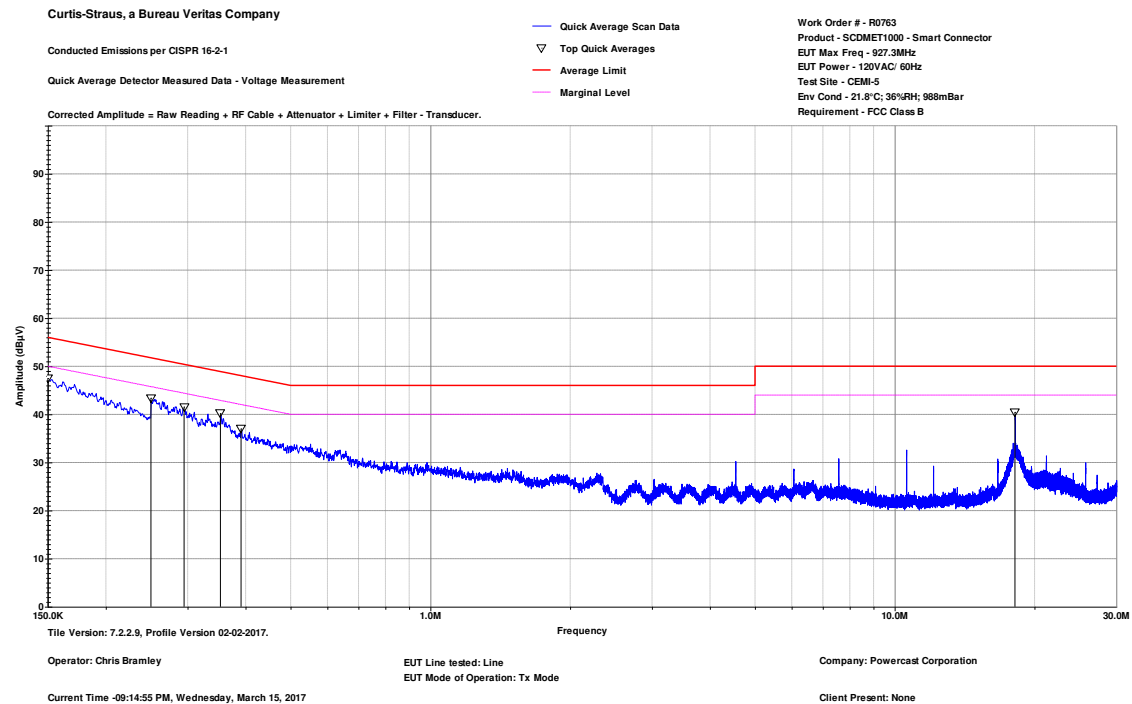
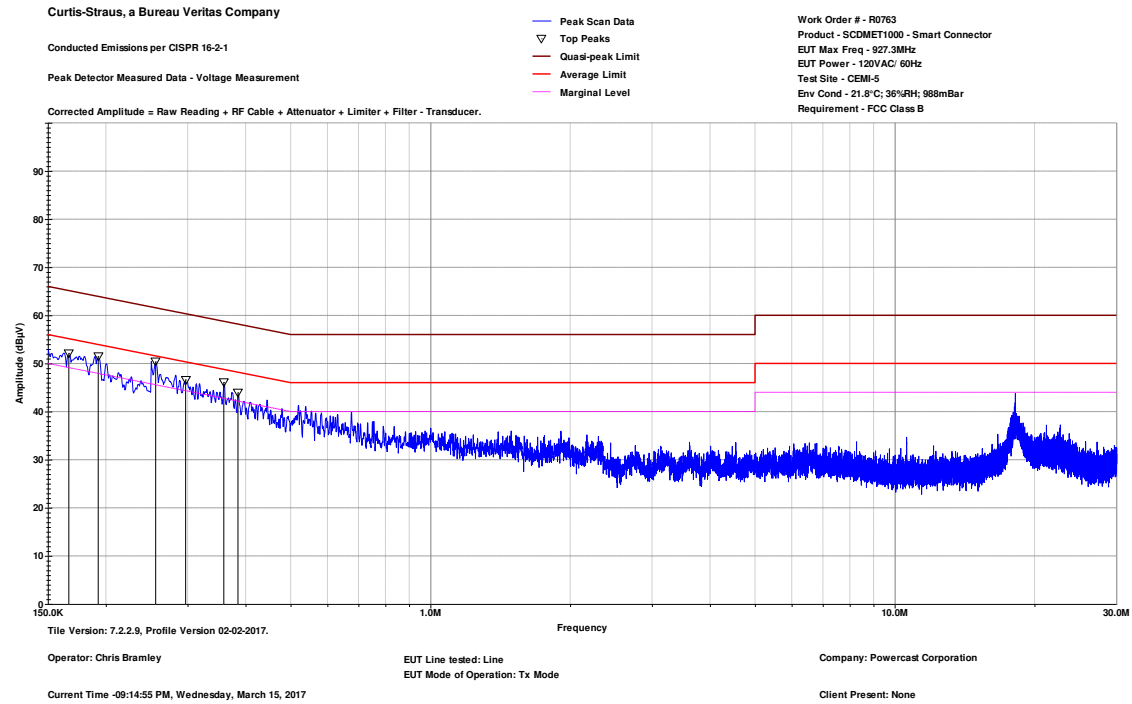
Spectrum Analyzers / Receivers / Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Rental MXE EMI Receiver(1168255)		20Hz-8.4GHz	N9038A	Agilent	MY53290009	1168255	I	7/14/2017	7/14/2016
LISNs/Measurement Probes		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
LISN Asset 1791		9KHz-30MHz	NNLK 8121	Schwarzbeck	NNLK 8121-603	1791	I	6/23/2017	6/23/2016
Conducted Test Sites (Mains / Telco)		FCC Code	VCCI Code				Cat	Calibration Due	Calibrated on
CEMI 5		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	4/28/2018	4/28/2016
TH A#2082			HTC-1	HDE		2082	II	4/5/2017	4/5/2016
Cables		Range		Mfr			Cat	Calibration Due	Calibrated on
CEMI-14		9kHz - 2GHz		C-S			II	10/2/2017	1/2/2016
Attenuators		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
20dB Attenuator-64		9kHz-2GHz			N/A		II	11/5/2017	11/5/2016

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

Plots

AC Line Conducted Emissions

120V/60Hz



Curtis-Straus, a Bureau Veritas Company

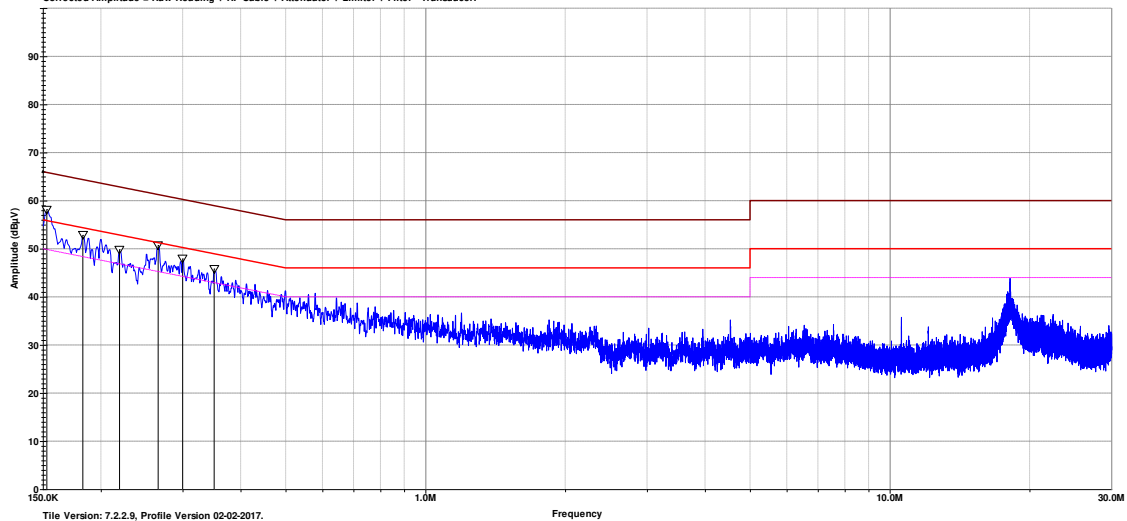
Conducted Emissions per CISPR 16-2-1

Peak Detector Measured Data - Voltage Measurement

Corrected Amplitude = Raw Reading + RF Cable + Attenuator + Limiter + Filter - Transducer.

— Peak Scan Data
▽ Top Peaks
— Quasi-peak Limit
— Average Limit
— Marginal Level

Work Order # - R0763
Product - SCDMET1000 - Smart Connector
EUT Max Freq - 927.3MHz
EUT Power - 120VAC/ 60Hz
Test Site - CEMI-5
Env Cond - 21.8°C; 36%RH; 988mBar
Requirement - FCC Class A



Title Version: 7.2.2.9, Profile Version 02-02-2017.

Operator: Chris Bramley

EUT Line tested: Neutral
EUT Mode of Operation: Tx Mode

Company: Powercast Corporation

Current Time -08:44:10 PM, Wednesday, March 15, 2017

Client Present: None

Curtis-Straus, a Bureau Veritas Company

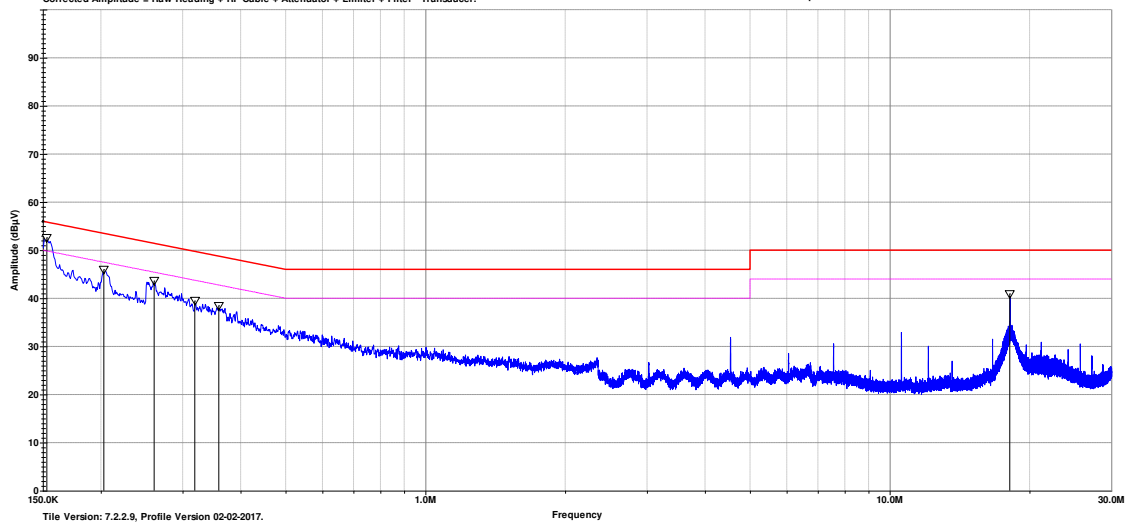
Conducted Emissions per CISPR 16-2-1

Quick Average Detector Measured Data - Voltage Measurement

Corrected Amplitude = Raw Reading + RF Cable + Attenuator + Limiter + Filter - Transducer.

— Quick Average Scan Data
▽ Top Quick Averages
— Average Limit
— Marginal Level

Work Order # - R0763
Product - SCDMET1000 - Smart Connector
EUT Max Freq - 927.3MHz
EUT Power - 120VAC/ 60Hz
Test Site - CEMI-5
Env Cond - 21.8°C; 36%RH; 988mBar
Requirement - FCC Class A



Title Version: 7.2.2.9, Profile Version 02-02-2017.

Operator: Chris Bramley

EUT Line tested: Neutral
EUT Mode of Operation: Tx Mode

Company: Powercast Corporation

Current Time -08:44:10 PM, Wednesday, March 15, 2017

Client Present: None



277V/60Hz

Curtis-Straus, a Bureau Veritas Company

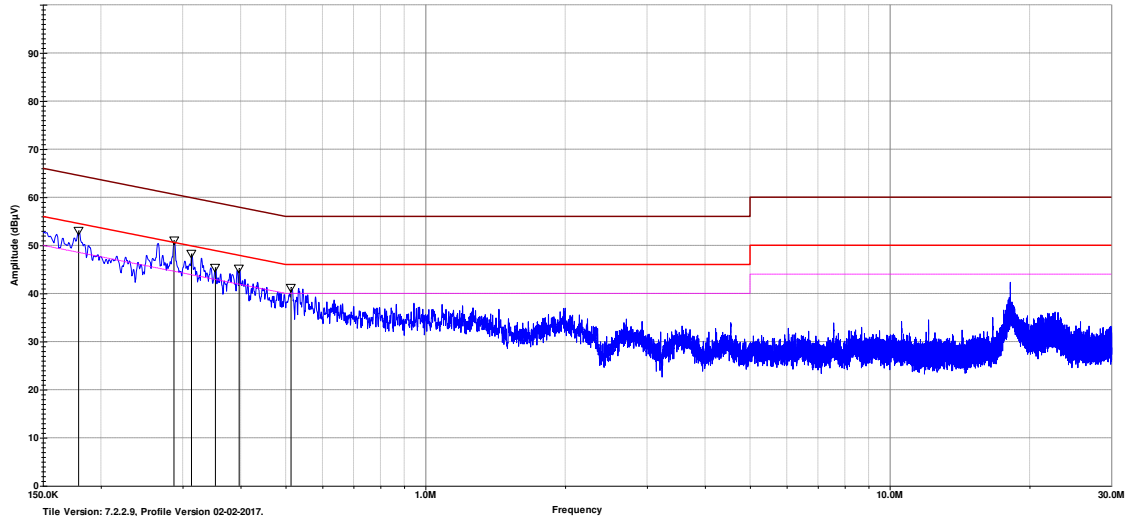
Conducted Emissions per CISPR 16-2-1

Peak Detector Measured Data - Voltage Measurement

Corrected Amplitude = Raw Reading + RF Cable + Attenuator + Limiter + Filter - Transducer.

— Peak Scan Data
▽ Top Peaks
— Quasi-peak Limit
— Average Limit
— Marginal Level

Work Order # - R0763
Product - SCDMET1000 - Smart Connector
EUT Max Freq - 927.3MHz
EUT Power - 277VAC/ 60Hz
Test Site - CEMI-5
Env Cond - 21.8°C; 36%RH; 988mBar
Requirement - FCC Class B



Operator: Chris Bramley

EUT Line tested: Line
EUT Mode of Operation: Tx Mode

Company: Powercast Corporation

Current Time -09:00:17 PM, Wednesday, March 15, 2017

Client Present: None

Curtis-Straus, a Bureau Veritas Company

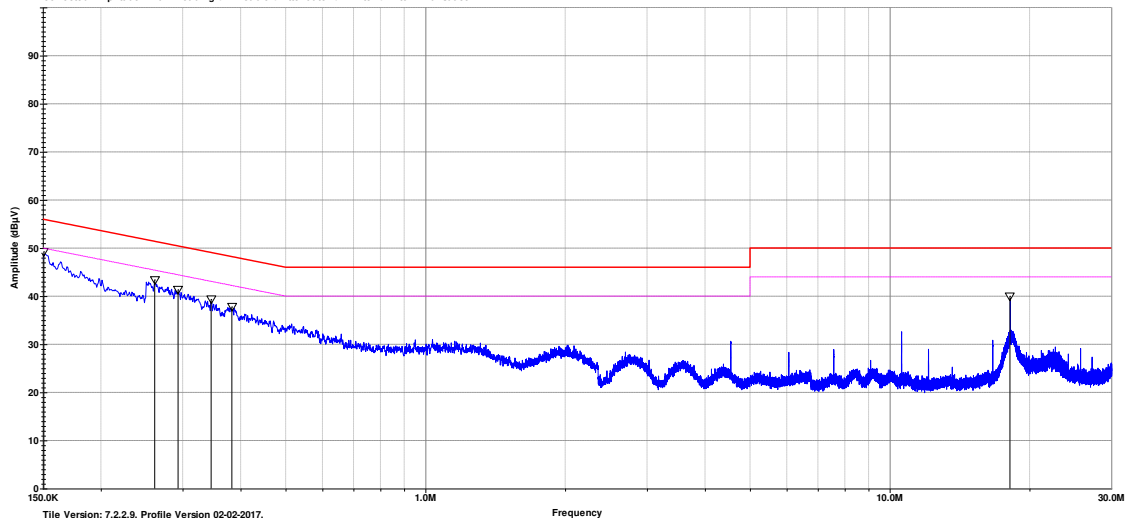
Conducted Emissions per CISPR 16-2-1

Quick Average Detector Measured Data - Voltage Measurement

Corrected Amplitude = Raw Reading + RF Cable + Attenuator + Limiter + Filter - Transducer.

— Quick Average Scan Data
▽ Top Quick Averages
— Average Limit
— Marginal Level

Work Order # - R0763
Product - SCDMET1000 - Smart Connector
EUT Max Freq - 927.3MHz
EUT Power - 277VAC/ 60Hz
Test Site - CEMI-5
Env Cond - 21.8°C; 36%RH; 988mBar
Requirement - FCC Class B



Operator: Chris Bramley

EUT Line tested: Line
EUT Mode of Operation: Tx Mode

Company: Powercast Corporation

Current Time -09:00:17 PM, Wednesday, March 15, 2017

Client Present: None



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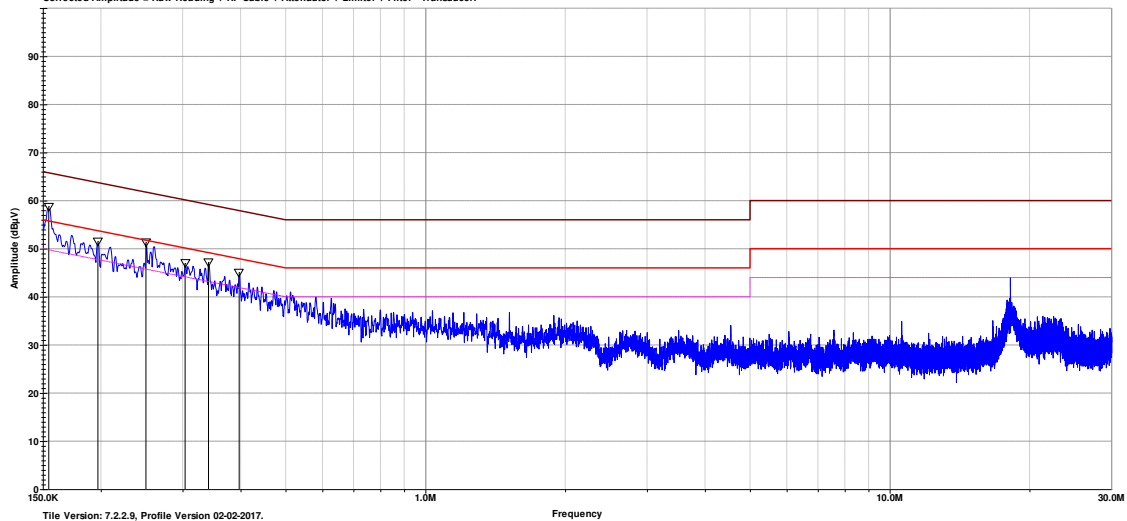
Conducted Emissions per CISPR 16-2-1

Peak Detector Measured Data - Voltage Measurement

Corrected Amplitude = Raw Reading + RF Cable + Attenuator + Limiter + Filter - Transducer.

— Peak Scan Data
▽ Top Peaks
— Quasi-peak Limit
— Average Limit
— Marginal Level

Work Order # - R0763
Product - SCDMET1000 - Smart Connector
EUT Max Freq - 927.3MHz
EUT Power - 277VAC/ 60Hz
Test Site - CEMI-5
Env Cond - 21.8°C; 36%RH; 988mBar
Requirement - FCC Class B



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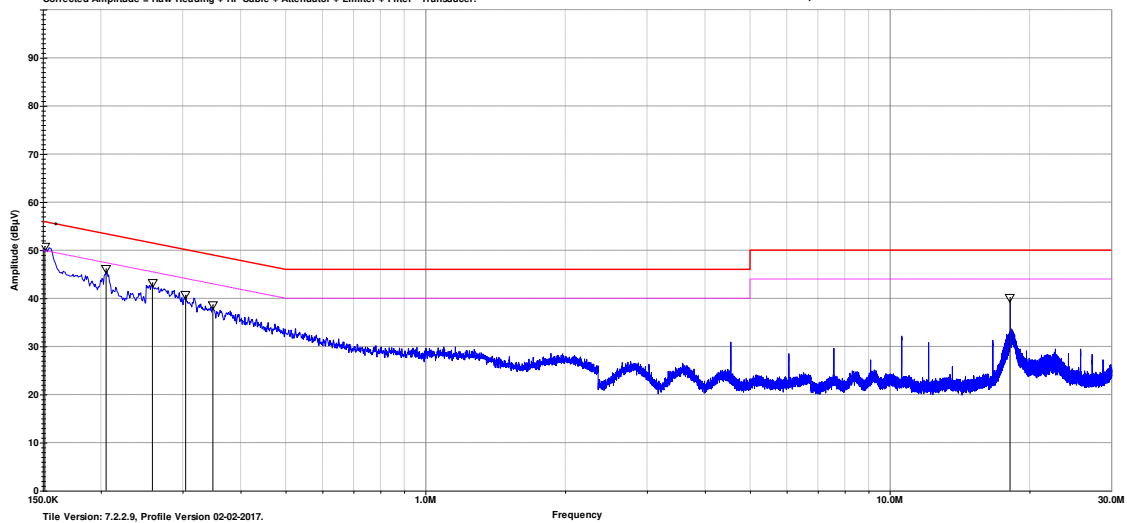
Conducted Emissions per CISPR 16-2-1

Quick Average Detector Measured Data - Voltage Measurement

Corrected Amplitude = Raw Reading + RF Cable + Attenuator + Limiter + Filter - Transducer.

— Quick Average Scan Data
▽ Top Quick Averages
— Average Limit
— Marginal Level

Work Order # - R0763
Product - SCDMET1000 - Smart Connector
EUT Max Freq - 927.3MHz
EUT Power - 277VAC/ 60Hz
Test Site - CEMI-5
Env Cond - 21.8°C; 36%RH; 988mBar
Requirement - FCC Class B



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Occupied Bandwidth

REQUIREMENT

When an occupied bandwidth is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is its 99% emission bandwidth, as calculated or measured.

[RSS-GEN 4.6.1]

MEASUREMENTS / RESULTS

Occupied Bandwidth Table			
Date: 15-Mar-17		Company: Ideal Industries, Inc.	Work Order: R0763
Engineer: Chris Bramley		EUT Desc: Smart Connector - SCDMET1000	EUT Operating Voltage/Frequency: 120V/60Hz
Temp: 21.8°C		Humidity: 36%	Pressure: 988mBar
Frequency Range: Fundamental			
Notes:			
Channel	Frequency (MHz)	Occupied Bandwidth (kHz)	
Low	902.7	754.19	
Middle	915.0	753.31	
High	927.3	754.67	

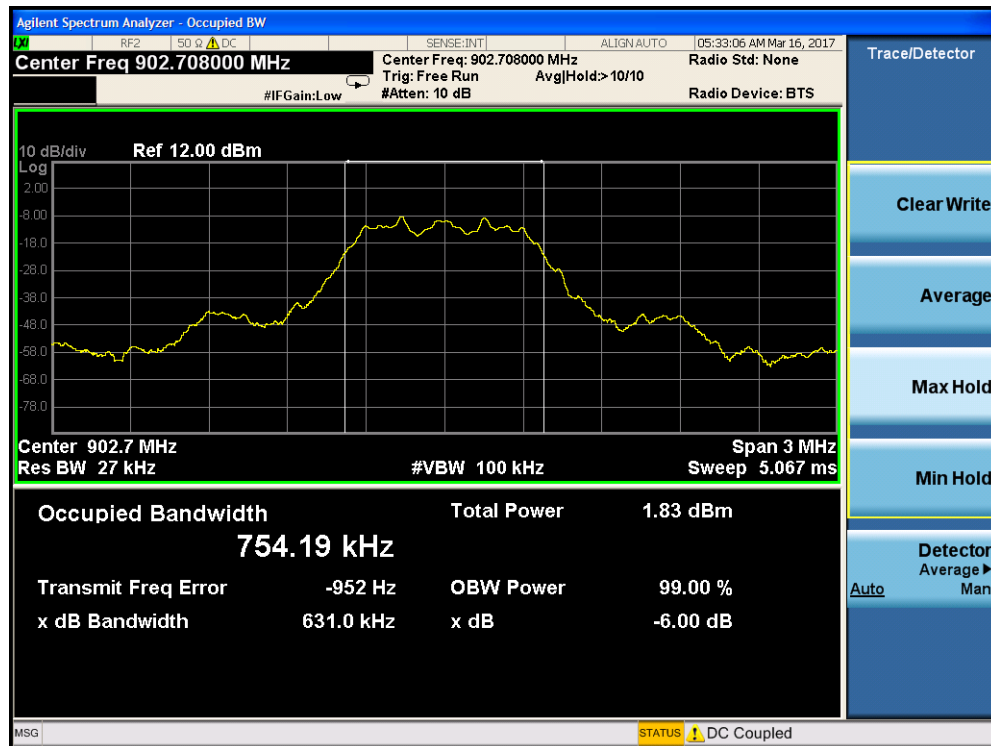
Rev. 3/12/2017

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
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	8/14/2017	8/14/2016
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#2082		HTC-1	HDE		2082	II	4/5/2017	4/5/2016

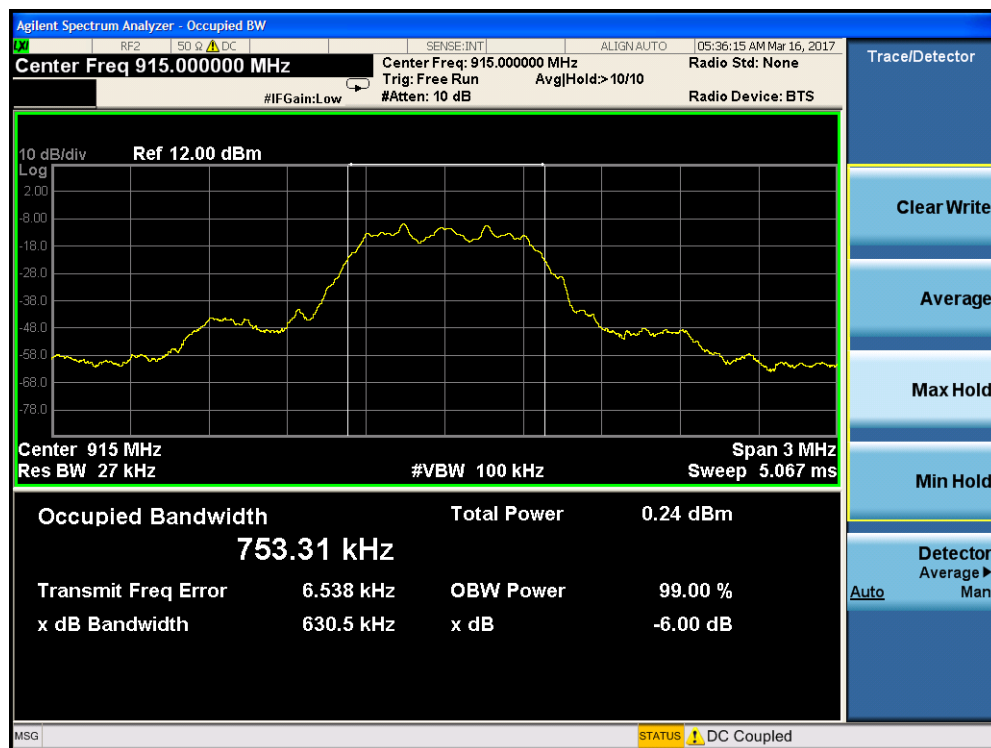
All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



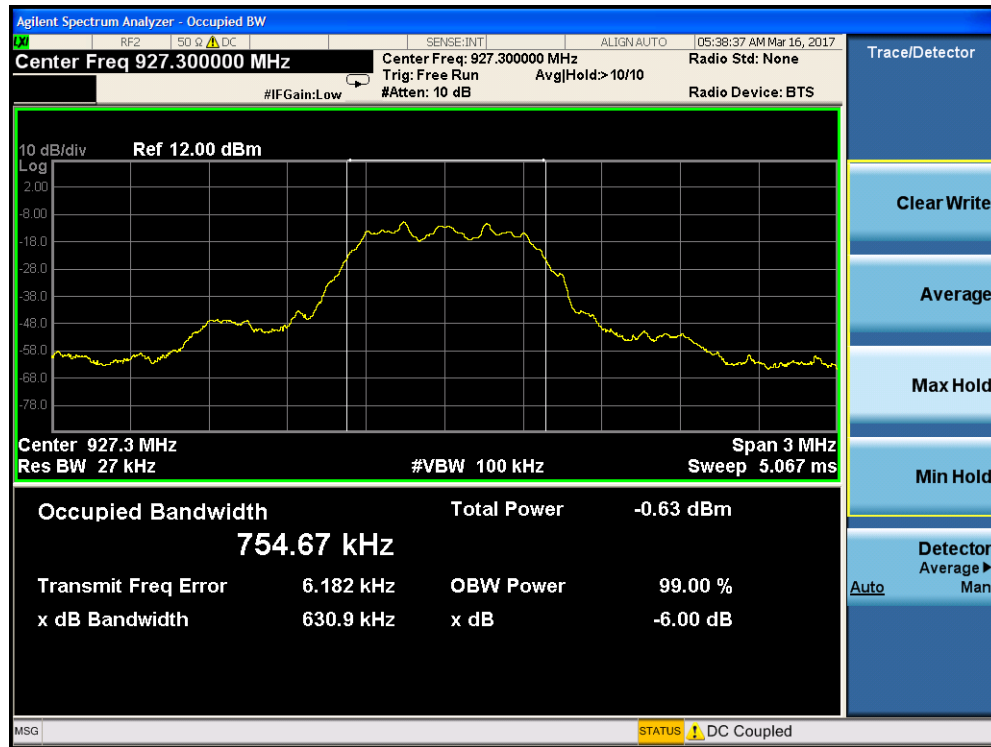
Plot(s)



Occupied Bandwidth – Low Channel



Occupied Bandwidth – Middle Channel



Occupied Bandwidth – 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)	5.6dB	N/A
NIST	4.6dB	5.2dB (Ucisprr)
CISPR		
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%
	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



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such claims including, without limitation, claims that the Test Report is inaccurate, incomplete or misleading or that additional or different testing is required, unless and then only to the extent that Client submits a written claim to the Company within both such time periods.

13. CLIENT SHALL, EXCEPT TO THE EXTENT OF COMPANY'S LIABILITY TO CLIENT HEREUNDER (WHICH IN NO EVENT SHALL EXCEED THE LIMITATION OF LIABILITY HEREIN), HOLD HARMLESS AND INDEMNIFY THE COMPANY, ITS AFFILIATES AND THEIR RESPECTIVE DIRECTORS, OFFICERS, EMPLOYEES, AGENTS AND SUBCONTRACTORS AGAINST ALL ACTUAL OR ALLEGED THIRD PARTY CLAIMS FOR LOSS, DAMAGE OR EXPENSE OF WHATSOEVER NATURE AND HOWSOEVER ARISING FROM OR RELATING TO (i) THE PERFORMANCE, PURPORTED PERFORMANCE OR NON-PERFORMANCE OF ANY SERVICES BY THE COMPANY OR (ii) THE SALE, RESALE, MANUFACTURE, DISTRIBUTION OR USE OF ANY TESTED GOODS.

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

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

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

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

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.

