
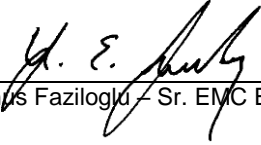




Test Report



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

Report No	EQ0116-1
Client	Ideal Industries, Inc.
Address	Becker Place Sycamore, IL 60178
Phone	815-895-1295
Items tested	VDT1300
FCC ID	2AAMXVDT1300
IC ID	11250A-VDT1300
FRN	0002862225
Equipment Type	Digital Transmission System
Equipment Code	DTS
Emission Designator	765KG1D
FCC/IC Rule Parts	47 CFR 15.247, RSS-247 Issue 1
Test Dates	January 20 to 22, 2016
Results	As detailed within this report
Prepared by	 Tuyen A. Tfuong – Test Engineer
Authorized by	 Yunus Faziloglu – Sr. EMC Engineer
Issue Date	2/25/16
Conditions of Issue	This Test Report is issued subject to the conditions stated in the 'Conditions of Testing' section on page 37 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 47 CFR 15.247 and RSS-247. The product is the VDT1300. It is a digitally modulated transmitter that operates within the 902.7 - 927.3 MHz frequency band. Product was tested with an on board PCB antenna with a gain of +2.3dBi.

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

Issue No.	Reason for change	Date Issued
1	Original Release	February 25, 2016



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 its axes (in its specific installation orientation) as well as varying the test antenna’s height and polarity. The device antenna could not be maximized separately. 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 and 3 channels were tested as follows:

Low: 902.7MHz

Middle: 915MHz

High: 927.3MHz

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

Issue No.	Reason for change	Date Issued
1	Original Release	February 25, 2016



Product Tested - Configuration Documentation

EUT Configuration										
Work Order:	Q0116									
Company:	Ideal Industries, Inc.									
Company Address:	Becker Place Sycamore, IL 60178									
Contact:	Tim Tunnell									
	MN			PN			SN			
EUT:	VDT1300			--			Sample 1 (used for conducted testing)			
	VDT1300			--			Sample 2 (used for radiated testing)			
EUT Description:	Dual Technology Motion Sensor									
EUT Max Frequency:	<108 MHz (associated circuitry)									
EUT TX Frequency:	902.7 to 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	2	in	yes	
Software Operating Mode Description:										
EUT is set to transmit on Low (902.7 MHz), Mid (915 MHz) and High (927.3 MHz) respectively. Power cycling allowed switching among the three channels.										

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Statement of Conformity

The VDT1300 has been found to conform to the following parts of 47 CFR and 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 permanently installed PCB antenna with a gain of 2.3dBi
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 to the product: None

Issue No.	Reason for change	Date Issued
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Test Results

Bandwidth

LIMIT

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

MEASUREMENTS / RESULTS

6dB BANDWIDTH				
Date: 20-Jan-16		Company: Ideal Industries, Inc.		Work Order: Q0116
Engineer: Tuyen Truong		EUT Desc: VDT1300		EUT Operating Voltage/Frequency: 120Vac/60Hz
Temp: 21°C		Humidity: 26%		Pressure: 1010mBar
Frequency Range: 902.7-927.3 MHz				
Notes:				
Frequency (MHz)	Reading (KHz)	6dB BW		
		Limit (KHz)	Margin (KHz)	Result (Pass/Fail)
902.7	644.124	≥500	+144.124	Pass
915	645.689	≥500	+145.689	Pass
927.3	645.687	≥500	+145.687	Pass
Test Site: Chamber 2		Attenuation: Asset#791		
Analyzer: SA#1328				

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Rev. 1/19/2016

Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA EMI Chamber (1328)	9kHz-13.2 GHz	E4405B	Agilent	MY44210241	1328	I	8/19/2016	8/19/2015
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range	Cat	Calibration Due	Calibrated on	
EMI Chamber 2	719150	2762A-7	A-0015	30-1000MHz	II	3/22/2017	3/22/2015	
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	Pastemack	1	791	II	7/31/2016	7/31/2015
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#2081	HTC-1	HDE		2081	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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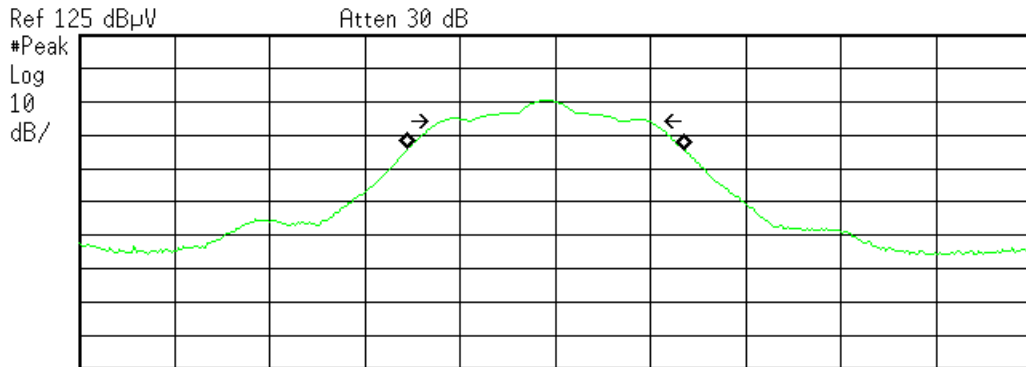
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PLOT(s)

Agilent 11:37:48 Jan 20, 2016

R T



Center 902.7 MHz Span 3 MHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

Occupied Bandwidth
870.8461 kHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -28.224 kHz
x dB Bandwidth 644.124 kHz



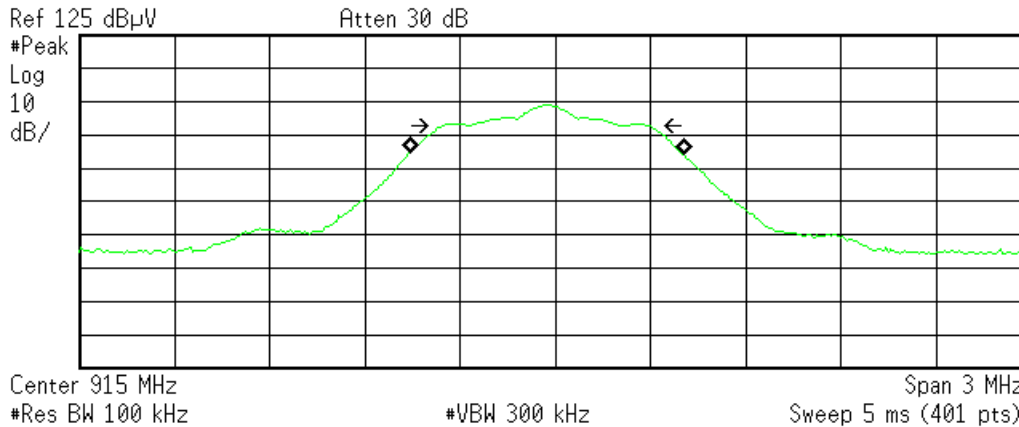
902.7 MHz – 6dB Bandwidth

Issue No.	Reason for change	Date Issued
1	Original Release	February 25, 2016



Agilent 11:57:44 Jan 20, 2016

R T



Occupied Bandwidth **865.3059 kHz** **Occ BW % Pwr** 99.00 %
x dB -6.00 dB

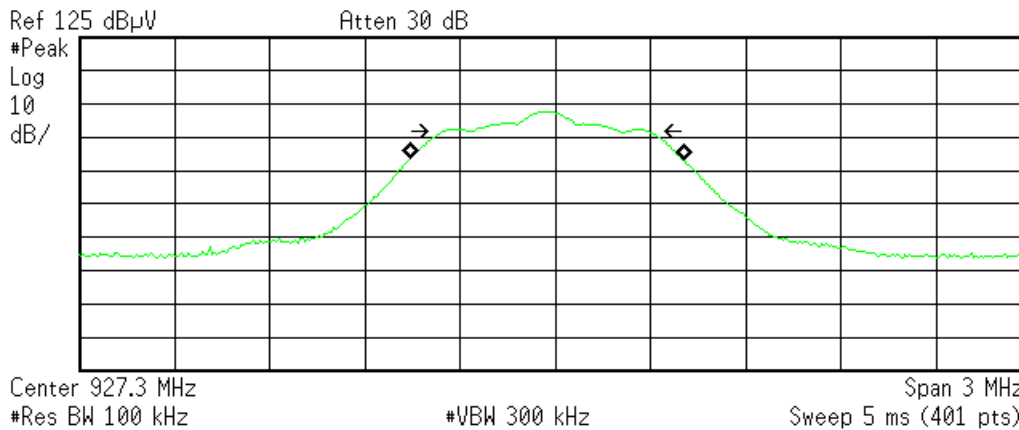
Transmit Freq Error -26.724 kHz
x dB Bandwidth 645.689 kHz

C:\temp.gif file saved

915 MHz – 6dB Bandwidth

Agilent 12:00:41 Jan 20, 2016

R T



Occupied Bandwidth **863.4109 kHz** **Occ BW % Pwr** 99.00 %
x dB -6.00 dB

Transmit Freq Error -26.215 kHz
x dB Bandwidth 645.687 kHz

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927.3 MHz – 6dB Bandwidth

Issue No.	Reason for change	Date Issued
1	Original Release	February 25, 2016



Issue No.	Reason for change	Date Issued
1	Original Release	February 25, 2016



Fundamental Emission Output Power

LIMIT

Conducted Output Power

1 Watt

[15.247(b) (3)]

Per 558074 D01 DTS Measurement Guidance v0304 Section 9.2.2.2 (AVGSA-1 Average Conducted Output Power)

MEASUREMENTS / RESULTS

Fundamental Emission Output Power						
Date: 20-Jan-16		Company: Ideal Industries, Inc.			Work Order: Q0116	
Engineer: Tuyen Truong		EUT Desc: VDT1300			EUT Operating Voltage/Frequency: 120Vac/60Hz	
Temp: 21°C		Humidity: 26%		Pressure: 1010mBar		
Frequency Range: 902.7-927.3 MHz						
Notes:						
Frequency (MHz)	Reading (dBm)	Attenuation (dB)	Final Conducted Reading (dBm)	FCC 15.247		
				Limit (dBm)	Margin (dB)	Result (Pass/Fail)
902.7	-3.45	19.55	16.10	30.0	-13.90	Pass
915	-4.77	19.55	14.78	30.0	-15.22	Pass
927.3	-5.83	19.55	13.72	30.0	-16.28	Pass
Table Result: Pass by -13.90 dB				Worst Freq: 902.7 MHz		
Test Site: Chamber 2		Attenuation: Asset#791				
Analyzer: SA#1328						

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Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA EMI Chamber (1328)	9kHz-13.2 GHz	E4405B	Agilent	MY44210241	1328	I	8/19/2016	8/19/2015
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on
EMI Chamber 2	719150	2762A-7	A-0015	30-1000MHz		II	3/22/2017	3/22/2015
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
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#2081		HTC-1	HDE		2081	II	4/2/2016	4/2/2015

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

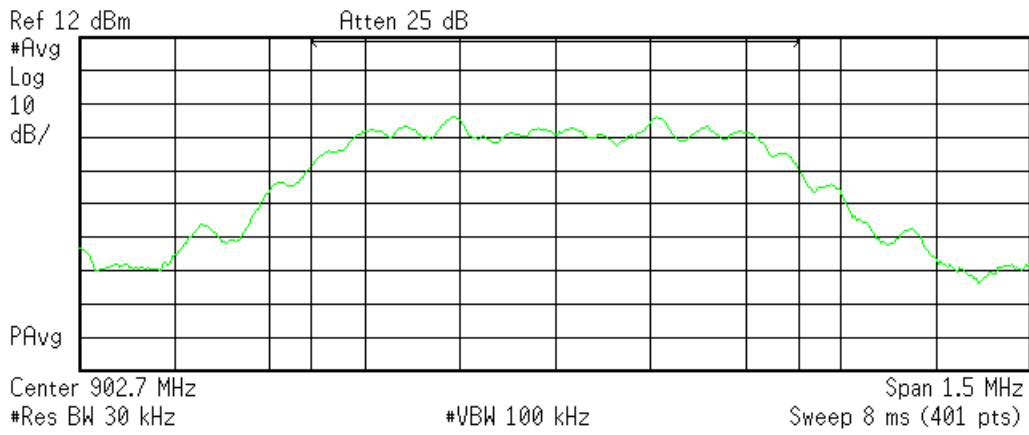
Issue No.	Reason for change	Date Issued
1	Original Release	February 25, 2016



PLOTS

Agilent 12:26:28 Jan 20, 2016

R T



Channel Power

-3.45 dBm /765.4485 kHz

Power Spectral Density

-62.29 dBm/Hz

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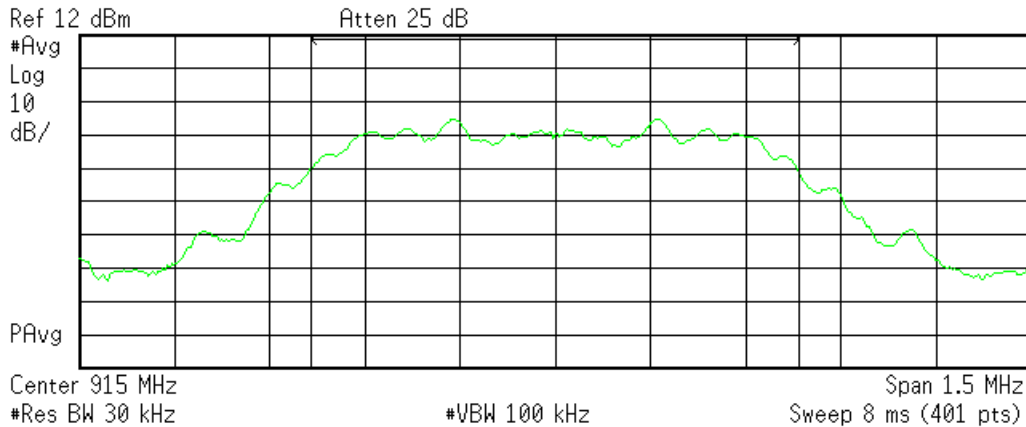
902.7 MHz – Channel Power

Issue No.	Reason for change	Date Issued
1	Original Release	February 25, 2016



Agilent 12:28:16 Jan 20, 2016

R T



Channel Power

-4.77 dBm /765.4485 kHz

Power Spectral Density

-63.61 dBm/Hz

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915 MHz – Channel Power

Agilent 12:20:53 Jan 20, 2016 R T

Ch Freq 927.3 MHz Trig Free

Channel Power Averages: 100

Ref 12 dBm Atten 25 dB

#Avg Log 10 dB/

Center 927.3 MHz Span 1.5 MHz

#Res BW 30 kHz #VBW 100 kHz Sweep 8 ms (401 pts)

Channel Power **Power Spectral Density**

-5.83 dBm /765.4485 kHz -64.67 dBm/Hz

Meas Setup

Avg Number 100

On Off

Avg Mode Exp Repeat

Integ BW 765.449 kHz

Chan Pwr Span 1.50000000 MHz

Optimize Ref Level

More 1 of 2

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Issue No.	Reason for change	Date Issued
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927.3 MHz – Channel Power

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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: 21-Jan-16			Company: Ideal Industries, Inc.				Work Order: Q0116					
Engineer: Tuyen Truong			EUT Desc: VDT1300				EUT Operating Voltage/Frequency: 120Vac/60Hz					
Temp: 22.8°C			Humidity: 24%				Pressure: 1009mBar					
Frequency Range: 30 - 1000 MHz						Measurement Distance: 3 m						
Notes: TX on Low channel						EUT Max Freq: <108 MHz						
						EUT TX Freq: 902.7 - 927.3 MHz						
Antenna Polarization (H/V)	Frequency (MHz)	Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBµV/m)	---			FCC 15.209		
							Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)
v	37.74	40.2	25.4	15.6	0.4	30.8	---	---	---	40.0	-9.2	Pass
v	42.1	43.6	25.4	12.2	0.4	30.8	---	---	---	40.0	-9.2	Pass
v	134.3	35.7	25.5	13.9	0.7	24.8	---	---	---	43.5	-18.7	Pass
v	466.5	29.3	25.5	17.3	1.4	22.5	---	---	---	46.0	-23.5	Pass
v	820.6	30.8	25.5	21.7	1.7	28.7	---	---	---	46.0	-17.3	Pass
v	859.4	30.9	25.6	21.8	1.8	28.9	---	---	---	46.0	-17.1	Pass
v	861.8	30.8	25.5	21.8	1.8	28.9	---	---	---	46.0	-17.1	Pass
v	968.5	26.2	25.3	23.1	1.8	25.8	---	---	---	54.0	-28.2	Pass
Table Result: Pass by -9.2 dB						Worst Freq: 37.74 MHz						
Test Site: EMI Chamber 2			Cable 1: Asset #2052				Cable 2: Asset #2053			Cable 3: ---		
Analyzer: Asset #1327			Preamp: Red-White				Antenna: Red-White			Preselector: ---		
CSsoft Radiated Emissions Calculator v 1.017.154						Copyright Curtis-Straus LLC 2000						
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor												

Radiated Emissions Table												
Date: 21-Jan-16			Company: Ideal Industries, Inc.				Work Order: Q0116					
Engineer: Tuyen Truong			EUT Desc: VDT1300				EUT Operating Voltage/Frequency: 120Vac/60Hz					
Temp: 22.8°C			Humidity: 24%				Pressure: 1009mBar					
Frequency Range: 30 - 1000 MHz						Measurement Distance: 3 m						
Notes: Mid channel TX						EUT Max Freq: <108 MHz						
						EUT TX Freq: 902.7 - 927.3 MHz						
Antenna Polarization (H/V)	Frequency (MHz)	Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBµV/m)	---			FCC 15.209		
							Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)
v	42.1	42.8	25.4	12.2	0.4	30.0	---	---	---	40.0	-10.0	Pass
v	66.4	31.6	25.4	8.2	0.5	14.9	---	---	---	40.0	-25.1	Pass
v	95.5	33.8	25.5	9.2	0.6	18.1	---	---	---	43.5	-25.4	Pass
v	139.1	34.1	25.5	13.5	0.6	22.7	---	---	---	43.5	-20.8	Pass
v	177.9	34.7	25.9	11.4	0.8	21.0	---	---	---	43.5	-22.5	Pass
h	185.2	32.0	25.8	11.3	0.8	18.3	---	---	---	43.5	-25.2	Pass
v	466.5	34.3	25.5	17.3	1.4	27.5	---	---	---	46.0	-18.5	Pass
h	466.5	31.5	25.5	17.3	1.4	24.7	---	---	---	46.0	-21.3	Pass
h	815.7	33.9	25.5	21.7	1.7	31.8	---	---	---	46.0	-14.2	Pass
v	871.5	31.6	25.5	21.9	1.8	29.8	---	---	---	46.0	-16.2	Pass
v	956.4	30.9	25.4	22.8	1.7	30.0	---	---	---	46.0	-16.0	Pass
Table Result: Pass by -10.0 dB						Worst Freq: 42.1 MHz						
Test Site: EMI Chamber 2			Cable 1: Asset #2052				Cable 2: Asset #2053			Cable 3: ---		
Analyzer: Asset #1327			Preamp: Red-White				Antenna: Red-White			Preselector: ---		
CSsoft Radiated Emissions Calculator v 1.017.154						Copyright Curtis-Straus LLC 2000						
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor												

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1 Original Release February 25, 2016



Radiated Emissions Table												
Date: 21-Jan-16			Company: Ideal Industries, Inc.				Work Order: Q0116					
Engineer: Tuyen Truong			EUT Desc: VDT1300				EUT Operating Voltage/Frequency: 120Vac/60Hz					
Temp: 22.8°C			Humidity: 24%		Pressure: 1009mBar							
Frequency Range: 30 - 1000 MHz							Measurement Distance: 3 m					
Notes: TX on High channel							EUT Max Freq: <108 MHz EUT TX Freq: 902.7 - 927.3 MHz					
Antenna Polarization (H/V)	Frequency (MHz)	Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBµV/m)	---			FCC 15.209		
							Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)
h	42.1	28.9	25.4	12.2	0.4	16.1	---	---	---	40.0	-23.9	Pass
v	42.15	43.4	25.4	12.2	0.4	30.6	---	---	---	40.0	-9.4	Pass
v	59.1	33.8	25.5	7.5	0.5	16.3	---	---	---	40.0	-23.7	Pass
v	161.0	35.2	25.9	12.4	0.8	22.5	---	---	---	43.5	-21.0	Pass
h	185.2	30.1	25.8	11.3	0.8	16.4	---	---	---	43.5	-27.1	Pass
h	466.5	30.6	25.5	17.3	1.4	23.8	---	---	---	46.0	-22.2	Pass
v	791.5	31.1	25.6	21.1	1.8	28.4	---	---	---	46.0	-17.6	Pass
h	793.9	35.9	25.6	21.2	1.8	33.3	---	---	---	46.0	-12.7	Pass
v	968.5	31.5	25.3	23.1	1.8	31.1	---	---	---	54.0	-22.9	Pass
Table Result: Pass by -9.4 dB							Worst Freq: 42.15 MHz					
Test Site: EMI Chamber 2			Cable 1: Asset #2052				Cable 2: Asset #2053			Cable 3: ---		
Analyzer: Asset #1327			Preamp: Red-White				Antenna: Red-White			Preselector: ---		
CSsoft Radiated Emissions Calculator v 1.017.154 Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor												

Rev. 1/19/2016

Spectrum Analyzers / Receivers/Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA EMI Chamber (1327)	9kHz-13.2 GHz	E4405B	Agilent	MY45103416	1327	I	7/10/2016	7/10/2015
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on
EMI Chamber 2	719150	2762A-7	A-0015	30-1000MHz		II	3/22/2017	3/22/2015
Preamps/Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Red-White	0.009-2000MHz	ZFL-1000-LN	CS	N/A	1258	II	12/27/2016	12/27/2015
Antennas	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Red-White Bilog	30-2000MHz	JB1	Sunol	A091604-1	1105	I	8/12/2017	8/12/2015
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#2081		HTC-1	HDE		2081	II	4/2/2016	4/2/2015
Cables	Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #2052	9kHz - 18GHz		Florida RF			II	3/8/2016	3/8/2015
Asset #2053	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: 21-Jan-16			Company: Ideal Industries, Inc.				Work Order: Q0116							
Engineer: Tuyen Truong			EUT Desc: VDT1300				EUT Operating Voltage/Frequency: 120Vac/60Hz							
Temp: 22.8°C			Humidity: 24%		Pressure: 1009mBar									
Frequency Range: 1 to 6 GHz							Measurement Distance: 3 m							
Notes:							EUT Max Freq: <108 MHz EUT TX Freq: 902.7 - 927.3 MHz							
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 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)
v	1805.4	40.18	31.5	18.8	30.6	2.6	54.6	45.9	74.0	-19.4	Pass	54.0	-8.1	Pass
h	1805.4	40.51	32.4	18.8	30.6	2.6	54.9	46.8	74.0	-19.1	Pass	54.0	-7.2	Pass
v	1830.0	35.89	25.8	18.8	30.7	2.7	50.5	40.4	74.0	-23.5	Pass	54.0	-13.6	Pass
h	1830.0	36.63	27.8	18.8	30.7	2.7	51.2	42.4	74.0	-22.8	Pass	54.0	-11.6	Pass
v	1854.6	35.06	24.0	18.8	30.9	2.7	49.9	38.8	74.0	-24.1	Pass	54.0	-15.2	Pass
h	1854.6	37.67	27.3	18.8	30.9	2.7	52.5	42.1	74.0	-21.5	Pass	54.0	-11.9	Pass
Table Result: Pass by -7.2 dB							Worst Freq: 1805.4 MHz							
Test Site: EMI Chamber 2			Cable 1: Asset #2052				Cable 2: Asset #2053			Cable 3: ---				
Analyzer: Asset #1327			Preamp: Asset #1517				Antenna: Blue Horn			Preselector: ---				
CSsoft Radiated Emissions Calculator v 1.017.154 Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														

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Radiated Emissions Table														
Date: 21-Jan-16				Company: Ideal Industries, Inc.				Work Order: Q0116						
Engineer: Tuyen Truong				EUT Desc: VDT1300				EUT Operating Voltage/Frequency: 120Vac/60Hz						
Temp: 22.8°C				Humidity: 24%				Pressure: 1009mBar						
Frequency Range: 6-10 GHz							Measurement Distance: 1 m							
Notes: EUT Max Freq: <108 MHz														
EUT TX Freq: 902.7 - 927.3 MHz														
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 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)
NO EMISSIONS FOUND WITHIN 10dB OF THE LIMIT														
Table Result: --- by --- dB Worst Freq: --- MHz														
Test Site: EMI Chamber 2				Cable 1: Asset #2052				Cable 2: Asset #2053				Cable 3: ---		
Analyzer: Asset #1327				Preamp: Asset #1517				Antenna: Blue Horn				Preselector: ---		
CSsoft Radiated Emissions Calculator v 1.017.154 Copyright Curtis-Straus LLC 2000														
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														

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Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA EMI Chamber (1327)	9kHz-13.2 GHz	E4405B	Agilent	MY45103416	1327	I	7/10/2016	7/10/2015
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range	Cat	Calibration Due	Calibrated on	
EMI Chamber 2	719150	2762A-7	A-0015	1-18GHz	I	4/29/2017	4/29/2015	
Preamps / Couplers / Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
1517 HF Preamp	1-20GHz	CS	CS	N/A	1517	II	8/6/2016	8/6/2015
High Pass Filter	0.03-9 GHz	VHP-16	Mini-Circuits	NA	1288	II	1/7/2017	1/7/2016
Antennas	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Blue Horn	1-18Ghz	3117	ETS	157647	1861	I	2/8/2017	2/8/2015
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#2081	HTC-1	HDE		2081	II	4/2/2016	4/2/2015	
Cables	Range	Mfr	Cat	Calibration Due	Calibrated on			
Asset #2052	9kHz - 18GHz	Florida RF	II	3/8/2016	3/8/2015			
Asset #2053	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.

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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

Spurious Conducted Emissions - Maximum Peak PSD in 100 KHz RBW			
Date: 20-Jan-16	Company: Ideal Industries, Inc.	Work Order: Q0116	
Engineer: Tuyen Truong	EUT Desc: VDT1300	EUT Operating Voltage/Frequency: 120Vac/60Hz	
Temp: 21°C	Humidity: 26%	Pressure: 1010mBar	
Frequency Range: 902-928MHz			
Notes: Maximum Peak PSD in 100 KHz RBW			
Frequency (MHz)	Reading (dBm)	Attenuation (dB)	Adjusted Reading (dBm)
902.7	-1.745	19.55	17.8
Test Site: Chamber 2		Attenuation: Asset#791	
Analyzer: SA#1328		Copyright Curtis-Straus LLC 2000	

Band Edge						
Date: 20-Jan-16	Company: Ideal Industries, Inc.	Work Order: Q0116				
Engineer: Tuyen Truong	EUT Desc: VDT1300	EUT Operating Voltage/Frequency: 120Vac/60Hz				
Temp: 21°C	Humidity: 26%	Pressure: 1010mBar				
Frequency Range: 902-928 MHz						
Notes: The Limit here is set to -30dB from the max in-band peak PSD level in 100kHz RBW (Attenuation factor included or 19.55dB)						
Frequency (MHz)	Reading (dBm)	Attenuation (dB)	Final Conducted Reading (dBm)	FCC 15.247		
				Limit (dBm)	Margin (dB)	Result (Pass/Fail)
902.0	-37.57	19.55	-18.02	-12.20	-5.83	Pass
928.0	-42.63	19.55	-23.08	-12.20	-10.89	Pass
Table Result: Pass by -5.83 dB			Worst Freq: 902.0 MHz			
Test Site: Chamber 2		Attenuation: Asset#791				
Analyzer: SA#1328		Copyright Curtis-Straus LLC 2000				

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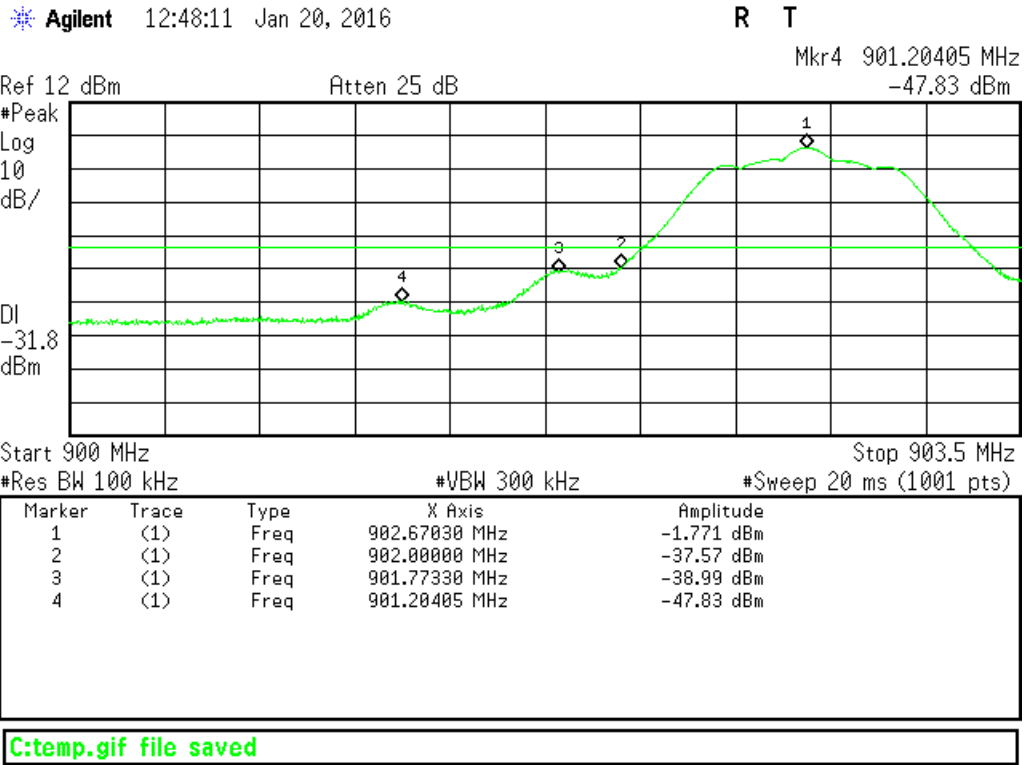
Spectrum Analyzers / Receivers / Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA EMI Chamber (1328)		9kHz-13.2 GHz	E4405B	Agilent	MY44210241	1328	I	8/19/2016	8/19/2015
Radiated Emissions Sites		FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on
EMI Chamber 2		719150	2762A-7	A-0015	30-1000MHz		II	3/22/2017	3/22/2015
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
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#2081			HTC-1	HDE		2081	II	4/2/2016	4/2/2015

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Plot(s)



Lower Channel - Band Edge (<-20dBm)

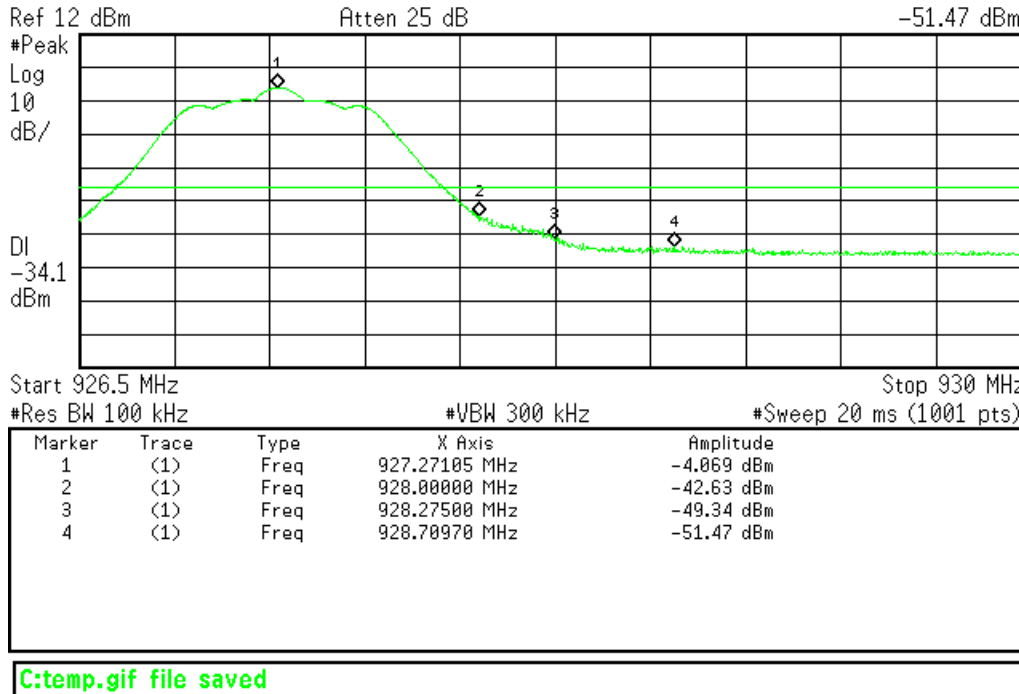
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Agilent 12:53:39 Jan 20, 2016

R T

Mkr4 928.70970 MHz
-51.47 dBm



Upper Channel - Band Edge (<-20dBm)

Conducted Spurious Emission

Conducted spurious emissions at the antenna port were measured in accordance with FCC KDB 558074 D01 DTS Measurement Guidance v03r04 Section 11.0.

Frequency range up to 10GHz 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 -33dBm for the entire frequency range, which is more than 30dB below the fundamental.

Spurious Conducted Emissions - Maximum Peak PSD in 100 KHz RBW			
Date: 20-Jan-16	Company: Ideal Industries, Inc.	Work Order: Q0116	
Engineer: Tuyen Truong	EUT Desc: VDT1300	EUT Operating Voltage/Frequency: 120Vac/60Hz	
Temp: 21°C	Humidity: 26%	Pressure: 1010mBar	
Frequency Range: 30-10000 MHz			
Notes: Maximum Peak PSD in 100 KHz RBW			
Frequency (MHz)	Reading (dBm)	Attenuation (dB)	Adjusted Reading (dBm)
902.7	-1.745	19.55	17.8
Test Site: Chamber 2		Attenuation: Asset#791	
Analyzer: SA#1328			

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Spectrum Analyzers / Receivers/Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA EMI Chamber (1328)		9kHz-13.2 GHz	E4405B	Agilent	MY44210241	1328	I	8/19/2016	8/19/2015
Radiated Emissions Sites		FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on
EMI Chamber 2		719150	2762A-7	A-0015	30-1000MHz		II	3/22/2017	3/22/2015
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
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#2081			HTC-1	HDE		2081	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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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 v03r04 Section 10.3 Method AVGPSD-1 (Average PSD)

MEASUREMENTS / RESULTS

Power Spectral Density						
Date: 20-Jan-16		Company: Ideal Industries, Inc.			Work Order: Q0116	
Engineer: Tuyen Truong		EUT Desc: VDT1300		EUT Operating Voltage/Frequency: 120Vac/60Hz		
Temp: 21°C		Humidity: 26%		Pressure: 1010mBar		
Frequency Range: 902.7-927.3 MHz						
Notes:						
Frequency (MHz)	Reading (dBm)	Attenuation (dB)	Final Conducted Reading (dBm)	FCC 15.247		
				Limit (dBm)	Margin (dB)	Result (Pass/Fail)
902.7	-15.15	19.55	4.40	8.0	-3.60	Pass
915	-16.89	19.55	2.66	8.0	-5.34	Pass
927.3	-16.93	19.55	2.62	8.0	-5.38	Pass
Table Result: Pass by -3.60 dB				Worst Freq: 902.7 MHz		
Test Site: Chamber 2		Attenuation: Asset#791				
Analyzer: SA#1328						

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Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA EMI Chamber (1328)	9kHz-13.2 GHz	E4405B	Agilent	MY44210241	1328	I	8/19/2016	8/19/2015
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on
EMI Chamber 2	719150	2762A-7	A-0015	30-1000MHz		II	3/22/2017	3/22/2015
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
Meteorological Meters		MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Weather Clock (Pressure Only) TH A#2081		BA928 HTC-1	Oregon Scientific HDE	C3166-1	831 2081	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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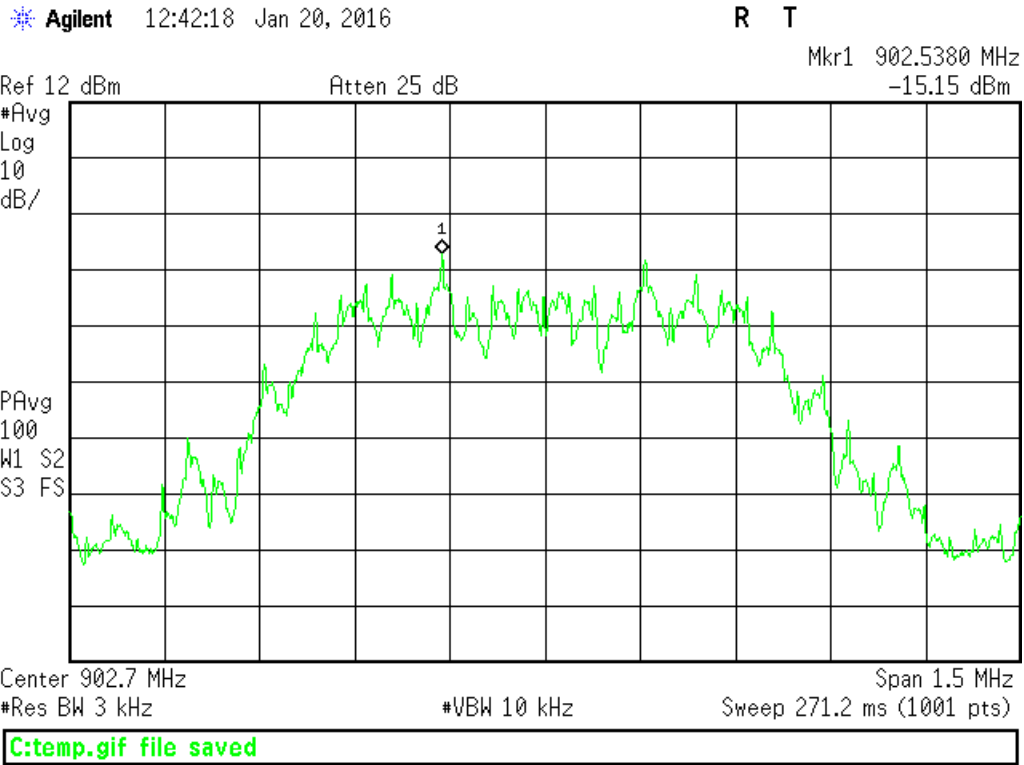
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PLOTS



902.7 MHz – PSD

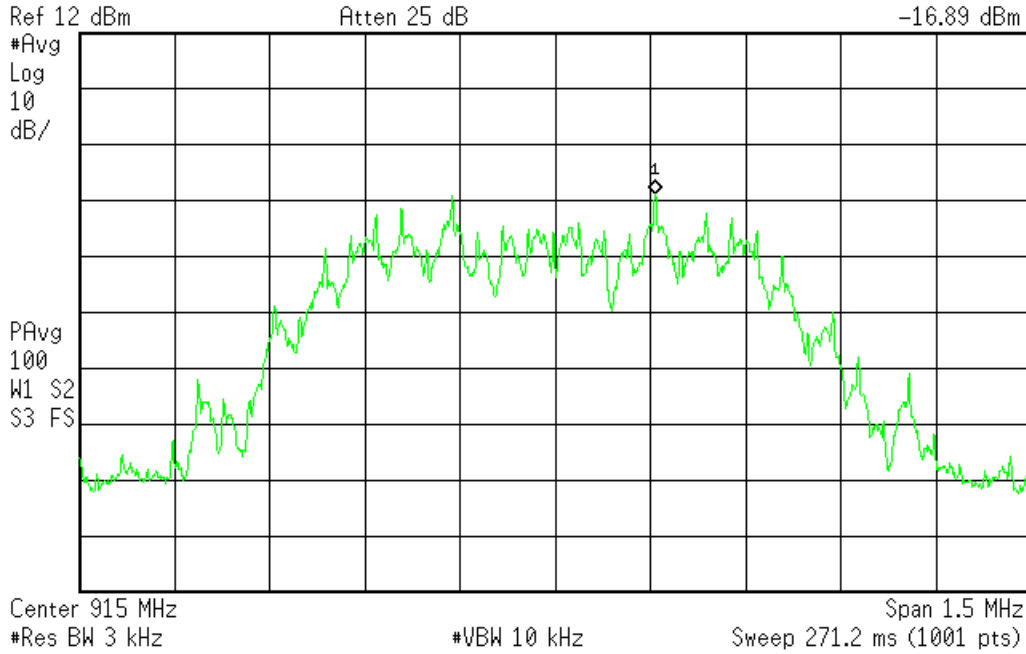
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Agilent 12:36:43 Jan 20, 2016

R T

Mkr1 915.1575 MHz
-16.89 dBm



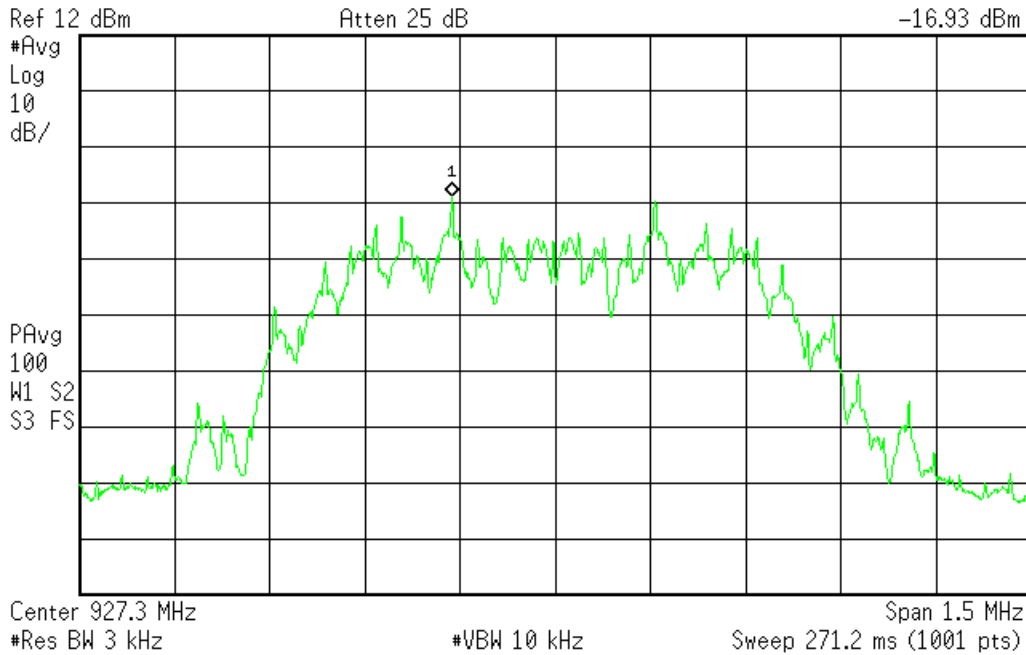
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915 MHz – PSD

Agilent 12:39:24 Jan 20, 2016

R T

Mkr1 927.1380 MHz
-16.93 dBm



C:\temp.gif file saved

927.3 MHz – PSD

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AC Line Conducted Emissions LIMITS

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

*Decreases with the logarithm of the frequency.

[47 CFR 15.207(a)]

MEASUREMENTS / RESULTS

AC Conducted Emissions Data Table														
Date: 22-Jan-16 Engineer: Tuyen Truong Temp: 19.0 °C				Company: Ideal Industries, Inc EUT Desc: VDT1300 Humidity: 35%				Work Order: Q0116 Pressure: 1015 mBar						
Notes:														
Frequency Range: 0.15 - 30 MHz								EUT Input Voltage/Frequency: 120Vac/60Hz						
Frequency (MHz)	Quasi-Peak Readings		Average Readings		LISN Factors		Cable Factor (dB)	ATTN Factor (dB)	FCC 15.207			FCC 15.207		
	QP1 (dBµV)	QP2 (dBµV)	AVG1 (dBµV)	AVG2 (dBµV)	L1 (dB)	L2 (dB)			QP Limit (dBµV)	Margin (dB)	Result (Pass/Fail)	AVG Limit (dBµV)	Margin (dB)	Result (Pass/Fail)
0.16	18.9	18.4	12.5	10.6	-0.1	-0.1	-0.1	-19.0	65.6	-27.6	Pass	55.6	-24.0	Pass
0.55	22.3	15.6	15.4	14.9	0.0	0.0	-0.1	-19.0	56.0	-14.6	Pass	46.0	-11.5	Pass
4.34	21.1	19.7	5.4	4.7	0.0	-0.1	-0.1	-19.0	56.0	-15.8	Pass	46.0	-21.5	Pass
8.70	19.6	11.9	3.5	2.1	-0.1	-0.1	-0.2	-19.0	60.0	-21.3	Pass	50.0	-27.3	Pass
16.50	10.5	12.1	1.8	1.7	-0.1	-0.1	-0.3	-19.0	60.0	-28.6	Pass	50.0	-28.8	Pass
22.09	16.4	12.5	5.7	4.4	-0.1	-0.1	-0.3	-19.0	60.0	-24.2	Pass	50.0	-24.9	Pass
Result: Pass				Worst Margin: -11.5 dB				Frequency: 0.550 MHz						
Measurement Device: LISN ASSET 1732(Line 1) LISN ASSET 1733(Line 2)							Cable: CEMI-09		Spectrum Analyzer: Black					
							Attenuator: 20dB Attenuator-06		Site: CEMI 6					

AC Conducted Emissions Data Table														
Date: 22-Jan-16 Engineer: Tuyen Truong Temp: 19.0 °C				Company: Ideal Industries, Inc EUT Desc: VDT1300 Humidity: 35%				Work Order: Q0116 Pressure: 1015 mBar						
Notes:														
Frequency Range: 0.15 - 30 MHz								EUT Input Voltage/Frequency: 277Vac/60Hz						
Frequency (MHz)	Quasi-Peak Readings		Average Readings		LISN Factors		Cable Factor (dB)	ATTN Factor (dB)	FCC 15.207			FCC 15.207		
	QP1 (dBµV)	QP2 (dBµV)	AVG1 (dBµV)	AVG2 (dBµV)	L1 (dB)	L2 (dB)			QP Limit (dBµV)	Margin (dB)	Result (Pass/Fail)	AVG Limit (dBµV)	Margin (dB)	Result (Pass/Fail)
0.23	18.9	16.0	10.7	10.2	0.0	0.0	-0.1	-19.0	62.4	-24.5	Pass	52.4	-22.6	Pass
0.50	24.1	28.7	17.9	15.8	0.0	0.0	-0.1	-19.0	56.0	-8.2	Pass	46.0	-9.0	Pass
1.78	19.4	17.4	9.0	7.3	-0.1	-0.1	-0.1	-19.0	56.0	-17.5	Pass	46.0	-17.9	Pass
9.14	19.0	15.7	6.5	7.2	-0.1	-0.1	-0.2	-19.0	60.0	-21.7	Pass	50.0	-23.6	Pass
18.64	13.5	14.3	0.5	1.6	-0.2	-0.2	-0.3	-19.0	60.0	-26.2	Pass	50.0	-28.9	Pass
27.46	15.1	14.4	1.3	1.4	-0.2	-0.2	-0.3	-19.0	60.0	-25.5	Pass	50.0	-29.1	Pass
Result: Pass				Worst Margin: -8.2 dB				Frequency: 0.504 MHz						
Measurement Device: LISN Asset 1791							Cable: CEMI-09		Spectrum Analyzer: Black					
							Attenuator: 20dB Attenuator-06		Site: CEMI 6					

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Equipment Category	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Spectrum Analyzers / Receivers / Preselectors Black	9kHz-12.8GHz	8596E	Agilent	3710A00944	337	I	2/12/2016	2/12/2015
LISNs/Measurement Probes LISN Asset 1791	9KHz-30MHz	NNLK 8121	Schwarzbeck	NNLK 8121-603	1791	I	5/26/2016	5/26/2015
Conducted Test Sites (Mains / Telco) CEMI 6	FCC Code 719150		VCCI Code A-0015			III	NA	N/A
Meteorological Meters Weather Clock (Pressure Only) TH A#2085		MN BA928 HTC-1	Mfr Oregon Scientific HDE	SN C3166-1	Asset 831 2085	Cat I II	Calibration Due 3/19/2016 4/2/2016	Calibrated on 3/19/2014 4/2/2015
Cables CEMI-09	Range 9kHz - 2GHz		Mfr C-S			Cat II	Calibration Due 5/3/2016	Calibrated on 5/3/2015
Attenuators 20dB Attenuator-06	Range 9kHz-2GHz	MN PE7000-20	Mfr Pasternack	SN N/A	Asset	Cat II	Calibration Due 7/29/2016	Calibrated on 7/29/2015

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

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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 to be its 99% emission bandwidth, as calculated or measured. [RSS-GEN 6.6]

MEASUREMENTS / RESULTS

99% OCCUPIED BANDWIDTH			
Date: 20-Jan-16	Company: Ideal Industries, Inc.	Work Order: Q0116	
Engineer: Tuyen Truong	EUT Desc: VDT1300	EUT Operating Voltage/Frequency: 120Vac/60Hz	
Temp: 21°C	Humidity: 26%	Pressure: 1010mBar	
Frequency Range: 902.7-927.3 MHz			
Notes:			
Frequency (MHz)	Occupied Bandwidth Reading (KHz)		
902.7	763.4902		
915	763.1230		
927.3	765.4485		
Test Site: Chamber 2		Attenuation: Asset#791	
Analyzer: SA#1328			

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Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA EMI Chamber (1328)	9kHz-13.2 GHz	E4405B	Agilent	MY44210241	1328	I	8/19/2016	8/19/2015
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on
EMI Chamber 2	719150	2762A-7	A-0015	30-1000MHz		II	3/22/2017	3/22/2015
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
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#2081		HTC-1	HDE		2081	II	4/2/2016	4/2/2015

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

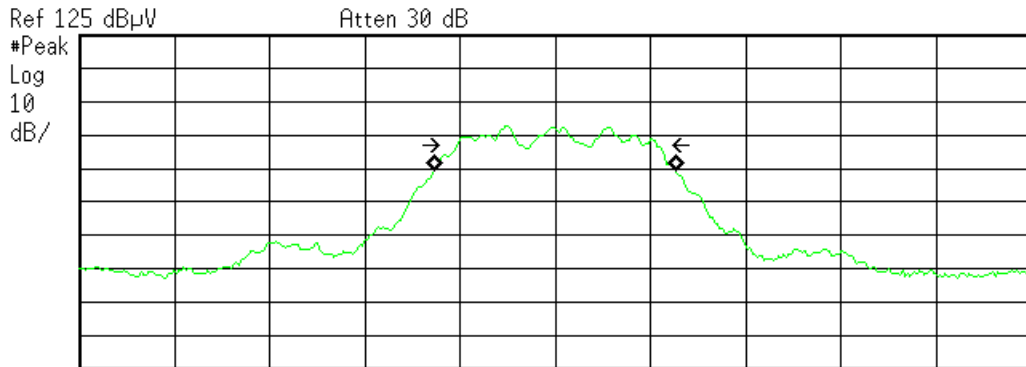
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Plot(s)

Agilent 11:44:15 Jan 20, 2016

R T



Center 902.7 MHz Span 3 MHz
 #Res BW 30 kHz #VBW 100 kHz Sweep 5 ms (401 pts)

Occupied Bandwidth
 763.4902 kHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -1.123 kHz
x dB Bandwidth 634.406 kHz

C:\temp.gif file saved

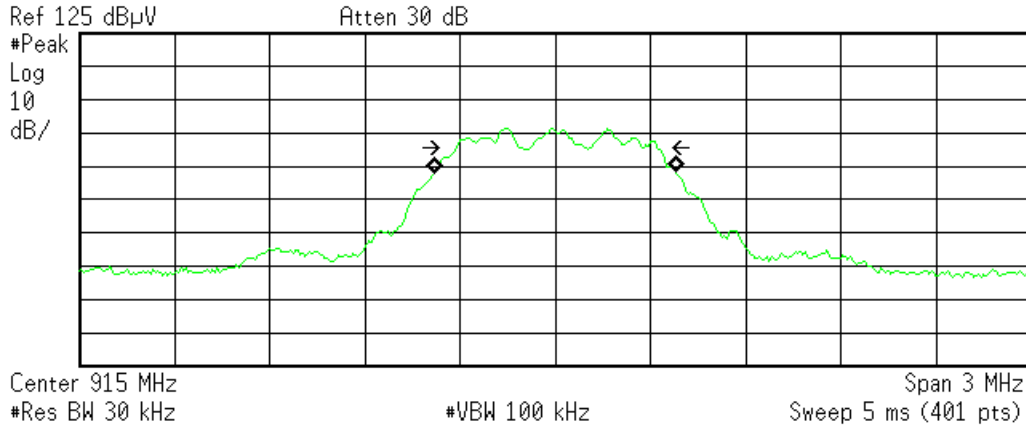
902.7 MHz – Occupied Bandwidth

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Agilent 11:53:34 Jan 20, 2016

R T



Occupied Bandwidth 763.1230 kHz **Occ BW % Pwr** 99.00 %
x dB -6.00 dB

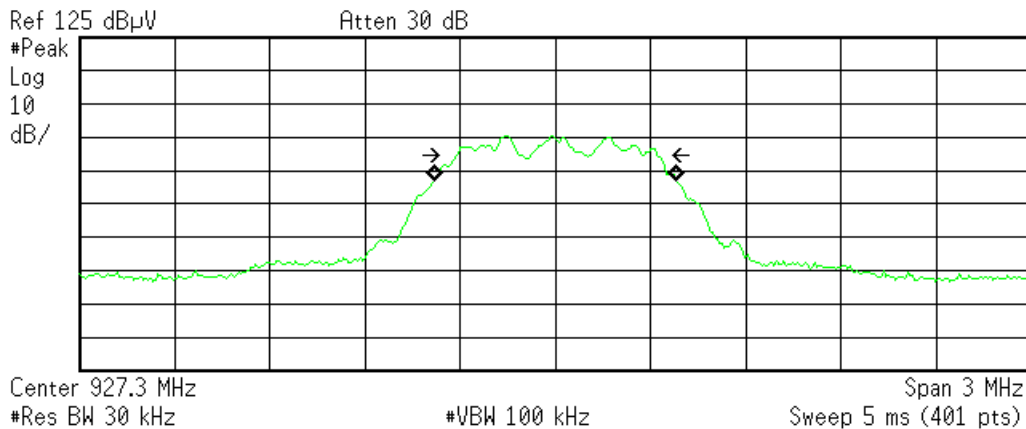
Transmit Freq Error -1.476 kHz
x dB Bandwidth 634.746 kHz

C:\temp.gif file saved

915 MHz – Occupied Bandwidth

Agilent 12:10:41 Jan 20, 2016

R T



Occupied Bandwidth 765.4485 kHz **Occ BW % Pwr** 99.00 %
x dB -6.00 dB

Transmit Freq Error -271.295 Hz
x dB Bandwidth 636.302 kHz

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927.3 MHz – Occupied Bandwidth

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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.

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

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Conditions Of Testing

[Bureau Veritas Consumer Products Services, Inc., a Massachusetts corporation], and/or its affiliates (collectively, the "Company") will conduct, at the request of the Submitter ("Client"), the tests specified on the submitted Test Request Form or equivalent in accordance with, and subject to, the following terms and conditions (collectively, "Conditions"):

1. All orders for tests are subject to acceptance by the Company, and no order will constitute a binding commitment of the Company unless and until such order is accepted by it, as evidenced by the issuance of a written report ("Test Report") by the Company. The Test Report is issued solely by the Company, is intended for the exclusive use of Client and shall not be published, used for advertising purposes, copied or replicated for distribution to any other person or entity or otherwise publicly disclosed without the prior written consent of the Company. By submitting a request for services to the Company, Client consents to the disclosure to accreditation bodies of those records of Client relevant to the accreditation body's assessment of the Company's competence and compliance with relevant accreditation criteria. The Company shall not be liable for any loss or damage whatsoever resulting from the failure of the Company to provide its services within any time period for completion estimated by the Company. If Client anticipates using the Test Report in any legal proceeding, arbitration, dispute resolution forum or other proceeding, it shall so notify the Company prior to submitting the Test Report in such proceeding. The Company has no obligation to provide a fact or expert witness at such proceeding unless the Company agrees in advance to do so for a separate and additional fee.
2. The Test Report will set forth the findings of the Company solely with respect to the test samples identified therein. Unless specifically and expressly indicated in the Test Report, the results set forth in such Test Report are not intended to be indicative or representative of the quality or characteristics of the lot from which a test sample is taken, and Client shall not rely upon the Test Report as being so indicative or representative of the lot or of the tested product in general. The Test Report will reflect the findings of the Company at the time of testing only, and the Company shall have no obligation to update the Test Report after its issuance. The Test Report will set forth the results of the tests performed by the Company based upon the written information provided to the Company. The Test Report will be based solely on the samples and written information submitted to the Company by Client, and the Company shall not be obligated to conduct any independent investigation or inquiry with respect thereto.
3. The Company may, in its sole discretion, destroy samples which have been furnished to the Company for testing and which have not been destroyed in the course of testing. The Company may delegate the performance of all or a portion of the services contemplated hereunder to an affiliate, agent or subcontractor of the Company, and Client consents to such delegation.
4. These Conditions and the Test Report represent the entire understanding of the parties hereto with respect to the subject matter hereof and of the Test Report, and no modification, variance or extrapolation with respect thereto shall be permitted without the prior written consent of the Company.
5. The names, service marks, trademarks and copyrights of the Company and its affiliates, including the names "BUREAU VERITAS," "BUREAU VERITAS CONSUMER PRODUCTS SERVICES," "BVCPS," "MTL," "ACTS," "MTL-ACTS" and CURTIS-STRAUS (collectively, the "Marks") are and shall remain the sole property of the Company or its affiliates and shall not be used by Client except solely to the extent that Client obtains the prior written approval of the Company and then only in the manner prescribed by the Company. Client shall not contest the validity of the Marks or take any action that might impair the value or goodwill associated with the Marks or the image or reputation of the Company or its affiliates.
6. Payment in full shall be due 30 days after the date of invoice. Interest shall be due on overdue amounts from the due date until paid at an interest rate of 1.5% per month or, if less, the maximum rate permitted by law. The Company reserves the right, at any time and from time to time, to revoke any credit extended to Client. Client shall reimburse the Company for any costs it incurs in collecting past due amounts, including court costs and fees and expenses of attorneys and collection agencies. The Test Report may not be used or relied upon by Client if and for so long as Client fails to pay when due any invoice issued by the Company or any affiliate of it to Client or any affiliate or subsidiary of Client together with interest and penalties, if any, accrued thereon.
7. The Company disclaims any and all responsibility or liability arising out of or in connection with e-mail transmissions of such information.
8. Client understands and agrees that the Company is neither an insurer nor a guarantor, that the Company does not take the place of Client or any designer, manufacturer, agent, buyer, distributor or transportation or shipping company, and that the Company disclaims all liability in such capacities. Client further understands that if it seeks assurance against loss or damage, it should obtain appropriate insurance.
9. Client agrees that the Company, by providing the services, does not take the place of Client nor any third party, nor does the Company release them from any of their obligations, nor does the Company otherwise assume, abridge, abrogate or undertake to discharge any duty of any third party to Client or any duty of Client or any third party to any other third party, and Client will not release any third party from its obligations and duties with respect to the tested goods.
10. Client shall, on a timely basis, (a) provide adequate instructions to the Company in order to enable the Company to perform properly its services, (b) provide, or cause Client's suppliers and contractors to provide, the Company with all documents necessary to enable the Company to perform its services, (c) furnish the Company with all relevant information regarding Client's intended use and purposes of the tested goods, (d) advise the Company of essential dates and deadlines relevant to the tested goods and (e) fully exercise all rights and remedies available to Client against third parties in respect of the tested goods.
11. The Company shall undertake due care and ordinary skill in the performance of its services to Client, and the Company shall accept responsibility only 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

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RELATING TO (i) THE PERFORMANCE, PURPORTED PERFORMANCE OR NON-PERFORMANCE OF ANY SERVICES BY THE COMPANY OR (ii) THE SALE, RESALE, MANUFACTURE, DISTRIBUTION OR USE OF ANY TESTED GOODS.

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

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

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

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

17. Company's services, including these Conditions, shall be governed by, and construed in accordance with, the local laws of the country where the Company performs the tests or, in the case of tests performed in the United States of America, the laws of Massachusetts without regard to conflicts of laws principles. If any aspect(s) of these Conditions is found to be illegal or unenforceable, the validity, legality and enforceability of all remaining aspects of these Conditions shall not in any way be affected or impaired thereby. Any proceeding related to the subject matter hereof shall be brought, if at all, in the courts of the country where the Company performs the tests or, in the case of tests performed in the United States of America, in the courts of Massachusetts. Client waives the right to interpose any counterclaim or setoffs of any nature in any litigation arising hereunder.

The complete list of the Approved Subcontractors Curtis-Straus may use to delegate the performance of work can be provided upon request. Rev.160009121(2) #684340 v14CS

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