
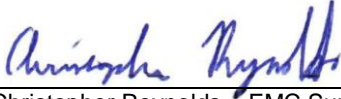




# Test Report



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

Report No	EO3616-4
Client	Ideal Industries, Inc. Tim Tunnell
Address	Becker Place Sycamore, 60178
Phone	(412) 436 - 4077
Items tested	SCC1000
FCC ID	2AAMXSCC1000
IC ID	11250A-SCC1000
FRN	0002862225
Equipment Type	Part 15.247 Digitally Modulated
Equipment Code	DTS
FCC/IC Rule Parts	47 CFR 15.247, RSS-247 Issue 1
Test Dates	April 23, 24, 29, May 26 and June 3, 2015
Results	As detailed within this report
Prepared by	 Tuyen A. Truong – Test Engineer
Authorized by	 Christopher Reynolds – EMC Supervisor
Issue Date	9/10/2015
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. The product is the SCC1000. It is a digitally modulated transmitter that operates in the range 902.7-927.3MHz. Product was tested with a wire antenna with a gain of 4.55dBi.

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	November 10, 2015

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**Test Methodology**

Radiated emission testing were performed according to DTS guidance document 558074D01 v03r03 specified in FCC Guidance for performing compliance measurement on DTS operating under section 15.247, April 19, 2013 and ANSI C63.10 (2009). Radiated Emissions were maximized by rotating the device around its axes as well as varying the test antenna’s height and polarity. The device antenna was maximized separately.

Conducted emissions at the antenna port were performed, as required by rule section.

AC Main conducted emission was performed with a 50Ω/50μH.

Low operating channel frequency = 902.7MHz

Mid operating channel frequency = 915MHz

High operating channel frequency = 927.3MHz

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

<b>Frequency</b>	<b>RBW</b>	<b>VBW</b>
0.15-30MHz	9kHz	30kHz
30-1000MHz	120kHz	1MHz
1-10GHz	1MHz	3MHz

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**Product Tested - Configuration Documentation**

EUT Configuration										
Work Order: O3616 Company: Ideal Industries, Inc. Company Address: Becker Place Sycamore, IL 60178 Contact: Tim Tunnell										
			<b>MN</b>				<b>SN</b>			<b>Comment</b>
<b>EUT:</b>		SCC1000		Sample 1		Sample 2		Conducted testing only		
		SCC1000						Radiated testing only		
<b>BIAS 100-375 VAC 50/60 Hz</b>		BPH 1-12-00		1567C CXXX00005 Rev X						
<b>Power Module</b>										
<b>EUT Description:</b> Smart Connector										
<b>EUT TX Frequency:</b> 902.7-927.3MHz										
<b>Support Equipment:</b>			<b>MN</b>				<b>SN</b>			
None										
<b>EUT Ports:</b>										
<b>Port Label</b>	<b>Port Type</b>	<b>No. of ports</b>	<b>No. Populated</b>	<b>Cable Type</b>	<b>Shielded</b>	<b>Ferrites</b>	<b>Length</b>	<b>Max Length</b>	<b>In/Out NEBS Type</b>	<b>Unpopulated Reason</b>
AC Mains	Power	1	1	2-wires	No	No	1.5m	N/A	Indoor	
Antenna	Antenna	1	1	1-wire	No	No	10cm	10cm	Indoor	
Low Voltage Dim	I/O	1	1	2-wires	No	No	1m	1m	Indoor	
High Voltage Load	I/O	1	1	2-wires	No	No	1m	1m	Indoor	
<b>Software / Operating Mode Description:</b>										
EUT is transmitting on one of three pre-programmed channels between 902.7-927.3MHz.										

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## Statement of Conformity

The SCC1000 has been found to conform to the following parts of 47 CFR and as detailed below:

RSS-GEN	RSS 247	Part 15	Comments
5.3		15.15(b)	There are no controls accessible to the user that varies the output power above specified limits.
5.2		15.19	The label is shown in the label exhibit.
8.4		15.21	Information to the user is shown in the instruction manual exhibit.
		15.27	No special accessories are required for compliance.
		15.31	The EUT was tested in accordance with the measurement standards in this section.
		15.33	Frequency range was investigated according to this section, unless noted in specific rule section under which the equipment operates.
		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.
6.7		15.203	EUT employs a permanently installed wire antenna with 4.55dBi gain.
	5.5	15.205 15.209	The fundamental is not in a Restricted band and the spurious and harmonic emissions in the Restricted bands comply with the general emission limits of 15.209.
8.8		15.207	EUT is AC Powered.
		15.247	The unit complies with the requirements of 15.247
	RSS-247		The unit complies with the requirements of RSS-247
6.6		15.247	Occupied Bandwidth measurements were made.

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1

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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

15:247(a)(2): Specifies that the minimum 6dB bandwidth shall be at least 500kHz.

Frequency (MHz)	Mode	6dB BW (MHz)	Limit (kHz)	Margin (MHz)
902.7	DMSS	0.650	>500	-0.150
915	DMSS	0.655	>500	-0.155
927.3	DMSS	0.650	>500	-0.150

**Tested by:** Chris Reynolds      **RBW =** 100KHz    **VBW =** 300KHz

**Date:** 6/3/2015      **Analyzer:** Gold SA

**Company:** Ideal Industries, Inc.      **Attenuator:** PE7019-20 #791

**EUT:** SCC1000      **Temp / Humidity / Pressure:** 23°C, 13% and 1015mBar

Rev. 4/27/2015

<b>Spectrum Analyzers / Receivers / Preselectors</b>	<b>Range</b>	<b>MN</b>	<b>Mfr</b>	<b>SN</b>	<b>Asset</b>	<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>
Gold	100Hz-26.5 GHz	E4407B	Agilent	MY45113816	1284	I	1/20/2016	1/20/2015
<b>Radiated Emissions Sites</b>	<b>FCC Code</b>	<b>IC Code</b>	<b>VCCI Code</b>	<b>Range</b>		<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>
1DCC-OATS-3M-I	719150	2762A-8	A-0015	30-1000MHz		II	6/17/2015	5/17/2013
<b>Preamps / Couplers Attenuators / Filters</b>	<b>Range</b>	<b>MN</b>	<b>Mfr</b>	<b>SN</b>	<b>Asset</b>	<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>
HF 20dB 50W Attenuator	0.009-18 GHz	PE 7019-20	Pasternack	1	791	II	7/14/2015	7/14/2014
<b>Meteorological Meters</b>		<b>MN</b>	<b>Mfr</b>	<b>SN</b>	<b>Asset</b>	<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>
Weather Clock (Pressure Only) TH A#1829		BA928 35519-044	Oregon Scientific Control Company	C3166-1 130320899	831 1829	I II	3/19/2016 6/13/2015	3/19/2014 6/13/2013

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

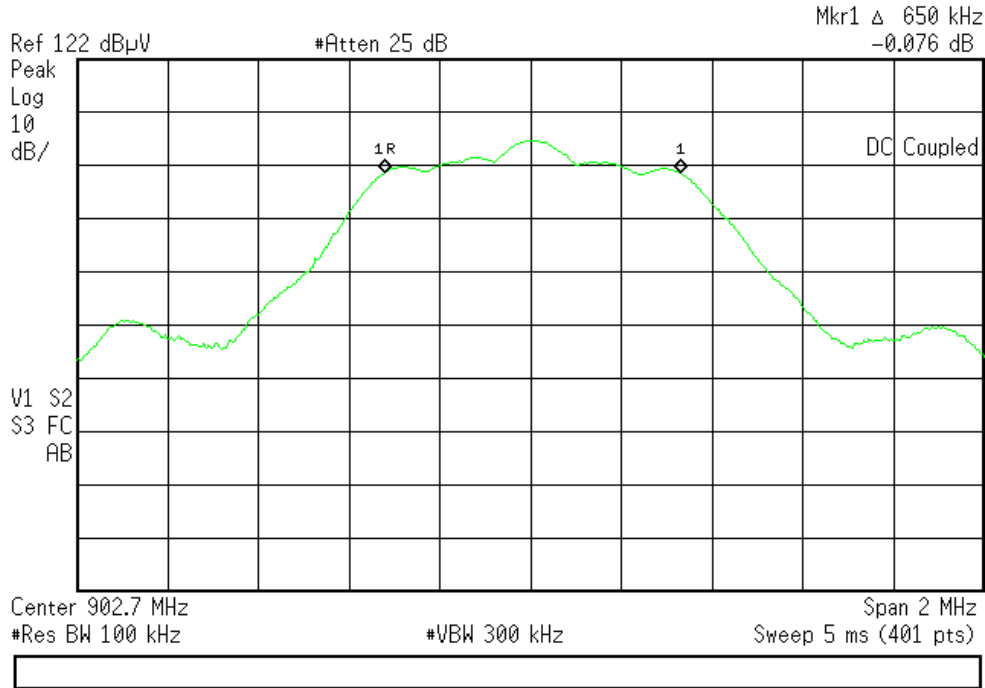
Issue No.	Reason for change	Date Issued
1	Original Release	November 10, 2015



**PLOT(s)**

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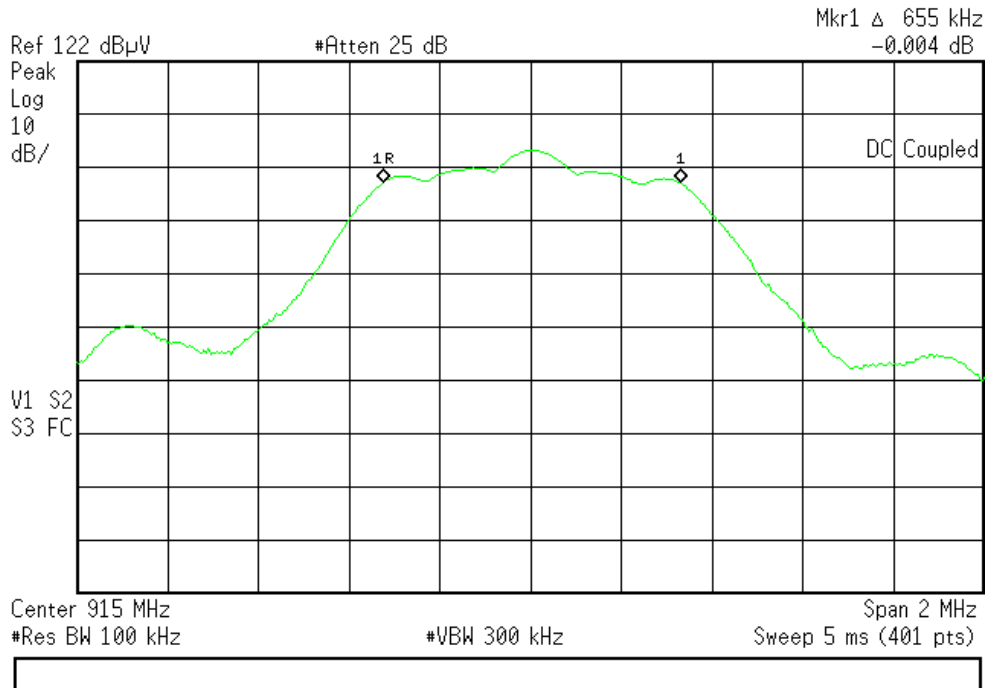
R T



Low Channel – 6dB Bandwidth

Agilent 11:11:05 Jun 3, 2015

R T



Mid Channel – 6dB Bandwidth

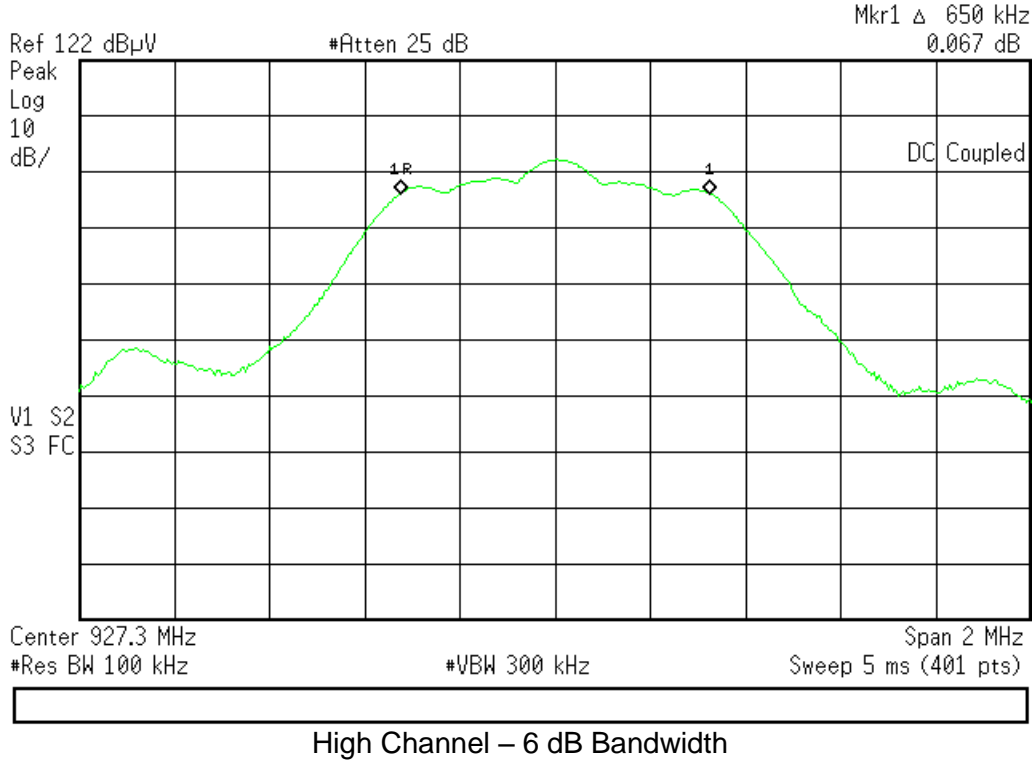
Issue No.	Reason for change	Date Issued
1	Original Release	November 10, 2015





Agilent 11:14:28 Jun 3, 2015

R T



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## Fundamental Emission Output Power

### LIMIT

Conducted Output Power

1 Watt

[15.247(b) (3)]

## MEASUREMENTS / RESULTS

Maximum Conducted (average) Output Power						
Tested by: Tuyen Truong			WO: O3616			
Date: 5/26/2015		Analyzer: Brown SA				
Company: Ideal Industries, Inc.		Attenuator: 1840 (30dBm)				
EUT: SCC1000		Operating Voltage: 120Vac/60Hz				
TX Mode: DMSS			Note: 9.2.2.2 (AVGSA-1)			
Channel (MHz)	Measured power (dBm)	Attenuator factor (dB)	Adjusted power measurement (dBm)	Limit (dBm)	Margin (dB)	Result
902.7	-10.91	29.65	18.74	30	-11.26	Pass
915	-12.24	29.65	17.41	30	-12.59	Pass
927.3	-13.24	29.65	16.41	30	-13.59	Pass

Rev. 5/31/2015

Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Gold	100Hz-26.5 GHz	E4407B	Agilent	MY45113816	1284	I	4/22/2016	4/22/2015	
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) TH A#2082	BA928 HTC-1	Oregon Scientific HDE	C3166-1	831 2082	I II	3/19/2016 4/2/2016	3/19/2014 4/2/2015		
Preamps/Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
HF 30dB 50W Attenuator	0.009-18 GHz	PE 7322-30	Pasternack	1	1840	II	9/16/2015	9/16/2014	

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

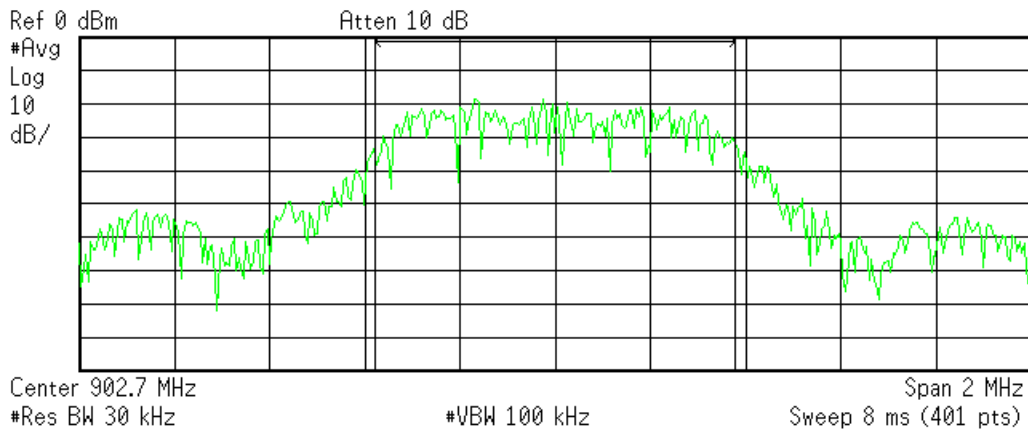
Issue No.	Reason for change	Date Issued
1	Original Release	November 10, 2015



PLOTS

Agilent 17:36:28 May 26, 2015

R T

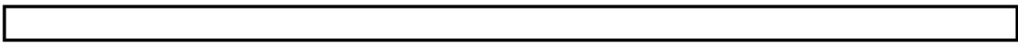


Channel Power

-10.91 dBm /752.0000 kHz

Power Spectral Density

-69.68 dBm/Hz



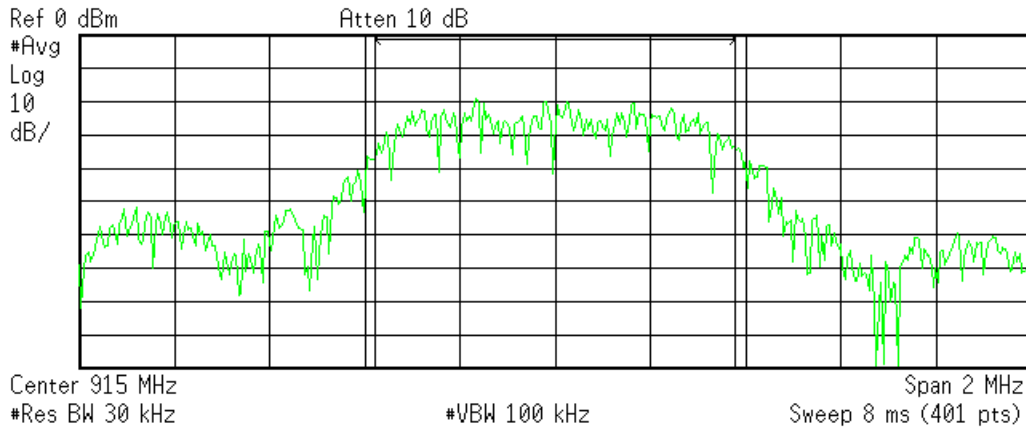
Low Channel – Channel Power

Issue No.	Reason for change	Date Issued
1	Original Release	November 10, 2015



Agilent 17:38:04 May 26, 2015

R T



**Channel Power**  
-12.24 dBm /752.0000 kHz

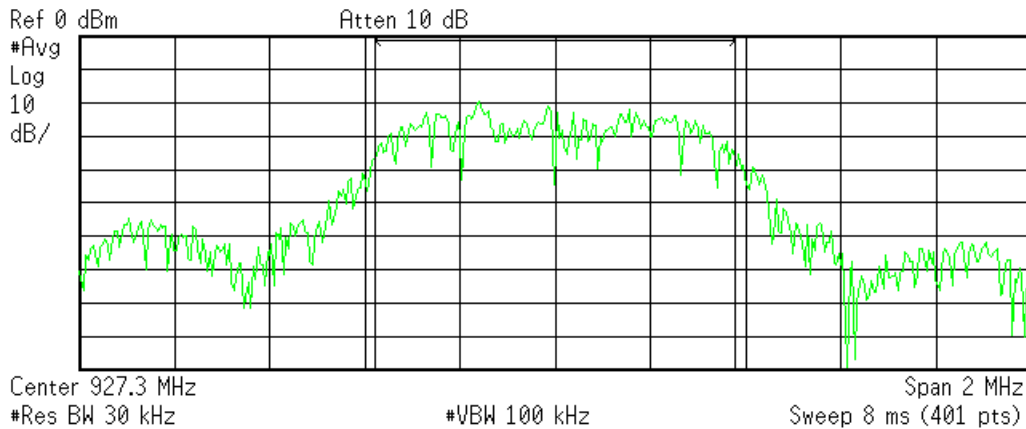
**Power Spectral Density**  
-71.00 dBm/Hz

C:\temp.gif file saved

Mid Channel – Channel Power

Agilent 17:31:59 May 26, 2015

R T



**Channel Power**  
-13.24 dBm /752.0000 kHz

**Power Spectral Density**  
-72.00 dBm/Hz

C:\temp.gif file saved

High Channel – Channel Power

Issue No.	Reason for change	Date Issued
1	Original Release	November 10, 2015



# 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: 24-Apr-15			Company: Ideal Industries, Inc.				Work Order: O3616					
Engineer: Chris LoPiccolo			EUT Desc: Smart Connector - SCC1000				EUT Operating Voltage/Frequency: 120V/60Hz					
Temp: 23.2°C			Humidity: 21%				Pressure: 998mBar					
Frequency Range: 30-1000 MHz						Measurement Distance: 3 m						
Notes:						EUT Max Freq: Tx 902-928MHz						
Antenna Polarization (H/V)	Frequency (MHz)	Reading (dBuV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBuV/m)	---			FCC 15.209		
							Limit (dBuV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBuV/m)	Margin (dB)	Result (Pass/Fail)
V	47.48	45.5	25.5	9.3	0.4	29.7	---	---	---	40.0	-10.3	Pass
H	47.76	33.9	25.5	9.1	0.4	17.9	---	---	---	40.0	-22.1	Pass
H	61.9	43.0	25.5	7.6	0.5	25.6	---	---	---	40.0	-14.4	Pass
V	61.9	37.6	25.5	7.6	0.5	20.2	---	---	---	40.0	-19.8	Pass
H	111.65	37.8	25.5	12.9	0.6	25.8	---	---	---	43.5	-17.7	Pass
V	111.87	37.0	25.5	12.9	0.6	25.0	---	---	---	43.5	-18.5	Pass
HQP	207.4	48.7	25.6	10.7	0.8	34.6	---	---	---	43.5	-8.9	Pass
VQP	208.1	53.3	25.6	10.6	0.8	39.1	---	---	---	43.5	-4.4	Pass
H	244.0	44.3	25.6	11.7	0.9	31.3	---	---	---	46.0	-14.7	Pass
V	285.0	36.7	25.7	13.4	0.9	25.3	---	---	---	46.0	-20.7	Pass
H	302.5	44.5	25.7	13.5	1.0	33.3	---	---	---	46.0	-12.7	Pass
V	373.0	42.7	25.7	15.1	1.1	33.2	---	---	---	46.0	-12.8	Pass
V	401.5	39.8	25.9	15.7	1.1	30.7	---	---	---	46.0	-15.3	Pass
H	442.3	38.2	25.8	16.7	1.2	30.3	---	---	---	46.0	-15.7	Pass
H	544.5	36.5	25.7	18.2	1.5	30.5	---	---	---	46.0	-15.5	Pass
<b>Table Result:</b> Pass by -4.4 dB						<b>Worst Freq:</b> 208.1 MHz						
Test Site: EMI Chamber 1			Cable 1: Asset #2051			Cable 2: Asset #2053			Cable 3: ---			
Analyzer: 1860			Preamp: Green			Antenna: Red-Brown			Preselector: ---			

Rev. 4/17/2015

Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA #2 (1860)	9kHz-26.5 GHz	E7405A	Agilent	MY45104916	1860	I	6/4/2015	6/4/2014
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range	Cat	Calibration Due	Calibrated on	
EMI Chamber 1	719150	2762A-6	A-0015	30-1000MHz	II	3/21/2017	3/21/2015	
Preamps / Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Green	0.009-2000MHz	ZFL-1000-LN	CS	N/A	802	II	9/14/2015	9/14/2014
Antennas	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Red-Brown Bilog	30-2000MHz	JB1	Sunol	A0032406	1218	I	12/4/2016	12/4/2014
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#2080	HTC-1	HDE		2080	II	4/2/2016	4/2/2015	
Cables	Range	Mfr	Cat	Calibration Due	Calibrated on			
Asset #2051	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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 1 Original Release November 10, 2015



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Radiated Emissions Table														
Date: 24-Apr-15			Company: Ideal Industries, Inc.				Work Order: O3616							
Engineer: Chris LoPiccolo			EUT Desc: Smart Connector - SCC1000				EUT Operating Voltage/Frequency: 120V/60Hz							
Temp: 23.2°C			Humidity: 21%				Pressure: 998mBar							
Frequency Range: 1-6 GHz						Measurement Distance: 3 m								
Notes:						EUT Max Freq: Tx 902-928MHz								
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 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	1805.0	43.04	38.6	20.6	26.8	2.6	51.8	47.4	74.0	-22.2	Pass	54.0	-6.6	Pass
V	1000.0	31.96	19.9	22.9	23.9	2.0	35.0	22.9	74.0	-39.0	Pass	54.0	-31.1	Pass
H	1000.0	31.95	19.7	22.9	23.9	2.0	35.0	22.7	74.0	-39.0	Pass	54.0	-31.3	Pass
H	1805.0	45.16	41.9	20.6	26.8	2.6	54.0	50.7	74.0	-20.0	Pass	54.0	-3.3	Pass
V	3000.0	32.08	18.5	21.4	30.2	3.7	44.6	31.0	74.0	-29.4	Pass	54.0	-23.0	Pass
H	3000.0	31.65	18.7	21.4	30.2	3.7	44.2	31.2	74.0	-29.8	Pass	54.0	-22.8	Pass
H	3465.0	33.33	19.5	21.0	31.3	4.1	47.7	33.9	74.0	-26.3	Pass	54.0	-20.1	Pass
V	3757.0	34.09	19.6	20.7	32.4	4.1	49.9	35.4	74.0	-24.1	Pass	54.0	-18.6	Pass
H	6000.0	27.77	16.0	19.3	34.7	5.6	48.8	37.0	74.0	-25.2	Pass	54.0	-17.0	Pass
<b>Table Result:</b>		Pass by -3.3 dB						<b>Worst Freq:</b>			1805.0 MHz			
Test Site: EMI Chamber 1			Cable 1: Asset #2051				Cable 2: Asset #2053			Cable 3: ---				
Analyzer: 1860			Preamp: Asset #1517				Antenna: Yellow Horn			Preselector: ---				

Rev. 4/17/2015

Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA #2 (1860)	9kHz-26.5 GHz	E7405A	Agilent	MY45104916	1860	I	6/4/2015	6/4/2014
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range	Cat	Calibration Due	Calibrated on	
EMI Chamber 1	719150	2762A-6	A-0015	30-1000MHz	II	3/21/2017	3/21/2015	
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	9/9/2015	9/9/2014
Antennas	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Yellow Horn	1-18GHz	3115	EMCO	9608-4898	37	I	7/28/2015	7/28/2014
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#2080	HTC-1	HDE		2080	II	4/2/2016	4/2/2015	
Cables	Range	Mfr	Cat	Calibration Due	Calibrated on			
Asset #2051	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: 24-Apr-15			Company: Ideal Industries, Inc.				Work Order: O3616							
Engineer: Chris LoPiccolo			EUT Desc: Smart Connector - SCC1000				EUT Operating Voltage/Frequency: 120V/60Hz							
Temp: 23.2°C			Humidity: 21%				Pressure: 998mBar							
Frequency Range: 6-10 GHz						Measurement Distance: 1 m								
Notes:						EUT Max Freq: Tx 902-928MHz								
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 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 detected														
<b>Table Result:</b>		--- by --- dB						<b>Worst Freq:</b>			--- MHz			
Test Site: EMI Chamber 1			Cable 1: Asset #2051				Cable 2: Asset #2053			Cable 3: ---				
Analyzer: Rental SA#2			Preamp: Asset #1517				Antenna: Yellow Horn			Preselector: ---				

Issue No. Reason for change Date Issued  
 1 Original Release November 10, 2015



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Rev. 4/17/2015

Spectrum Analyzers / Receivers/Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA #2 (1860)		9kHz-26.5 GHz	E7405A	Agilent	MY45104916	1860	I	6/4/2015	6/4/2014
Radiated Emissions Sites		FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on
EMI Chamber 1		719150	2762A-6	A-0015	30-1000MHz		II	3/21/2017	3/21/2015
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	9/9/2015	9/9/2014
Antennas		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Yellow Horn		1-18GHz	3115	EMCO	9608-4898	37	I	7/28/2015	7/28/2014
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#2080			HTC-1	HDE		2080	II	4/2/2016	4/2/2015
Cables		Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #2051		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.

Note: Evaluation showed that the worst-case emissions were with EUT set to the low channel (902.7MHz) and the EUT lying flat with its antenna pointed towards the test antenna. The above data is in this condition.

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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

Engineer	Ryan Brown, Chris Reynolds
Date	May 26 and June 3, 2015
Site	3MIndoor,
Environmental Conditions	24.8°C, 42%, 1010 (May 26) 23.3°C, 37%, 1015 (June 3)

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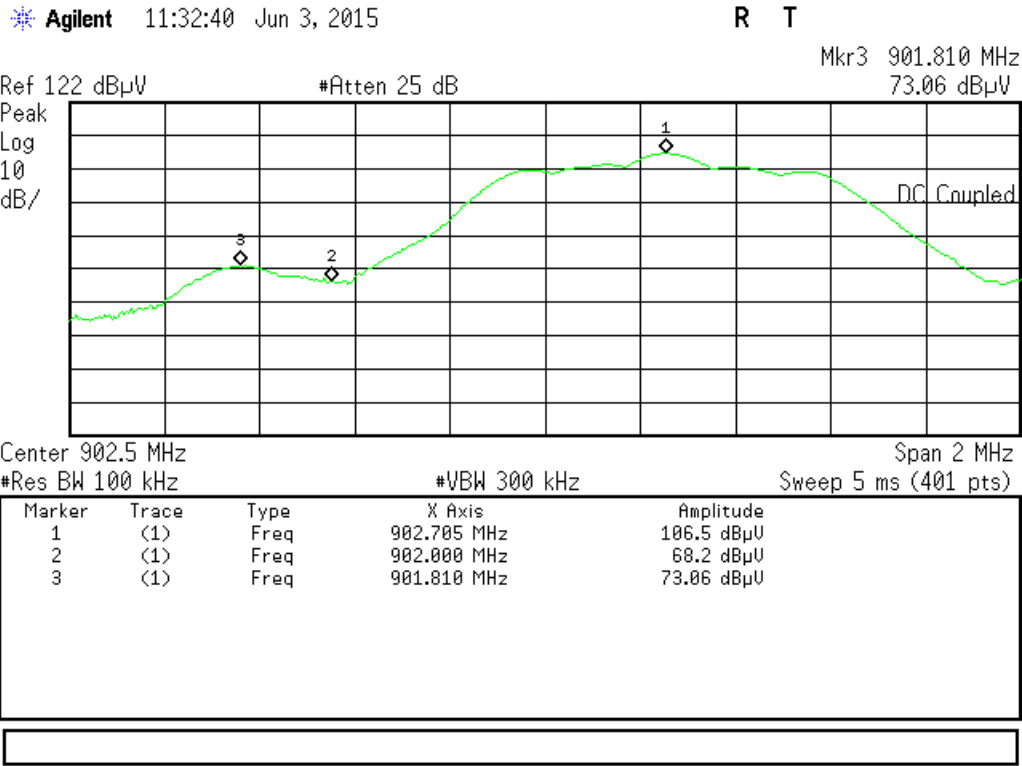


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**Conducted Band Edge**  
**Plot(s)**



Lower Channel – Band-edge (<-30dBm)

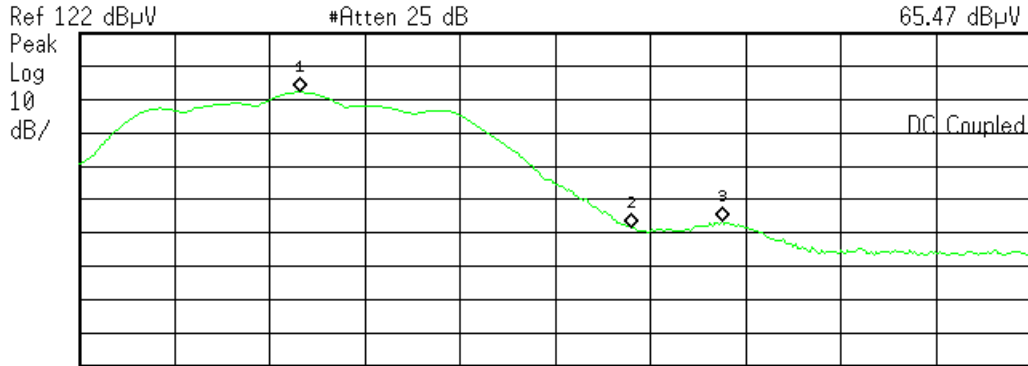
Issue No.	Reason for change	Date Issued
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Agilent 11:30:21 Jun 3, 2015

R T

Mkr3 928.190 MHz  
65.47 dBµV



Center 927.8 MHz #Res BW 100 kHz #VBW 300 kHz Span 2 MHz Sweep 5 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	927.305 MHz	104.1 dBµV
2	(1)	Freq	928.000 MHz	63.53 dBµV
3	(1)	Freq	928.190 MHz	65.47 dBµV

C:temp.gif file saved

Upper Channel – Band-edge (<-30dBm)

Rev. 4/27/2015

Category	Item	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Spectrum Analyzers / Receivers / Preselectors	Gold	100Hz-26.5 GHz	E4407B	Agilent	MY45113816	1284	I	1/20/2016	1/20/2015
	Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range	Cat	Calibration Due	Calibrated on	
	1DCC-OATS-3M-I	719150	2762A-8	A-0015	30-1000MHz	II	6/17/2015	5/17/2013	
Preamps/Couplers Attenuators / Filters	HF 20dB 50W Attenuator	0.009-18 GHz	PE 7019-20	Pasternack	1	791	II	7/14/2015	7/14/2014
	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#1829	35519-044	Control Company	130320899	1829	II	6/13/2015	6/13/2013	

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

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### Conducted Spurious Emission Plot(s)

Conducted Spurious Emissions Table												
Date: 26-May-15			Company: Ideal Industries Inc.				Work Order: O3616					
Engineer: Ryan Brown			EUT Desc: SCC1000				EUT Operating Voltage/Frequency: 927.3MHz					
Temp: 24.8°C			Humidity: 42%				Pressure: 1010mBar					
Frequency Range: 25MHz-10GHz												
Notes: NF - Noise Floor												
	Frequency (MHz)	Reading (dBuV)	Attn Factor (dB)			Adjusted Reading (dBuV/m)	---			---		
							Limit (dBuV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBuV/m)	Margin (dB)	Result (Pass/Fail)
<b>Fundamental</b>	927.3	123.0	19.7	---	---	142.7	---	---	---	N/A	N/A	N/A
Worst Case NF	7270.0	86.0	20.2	---	---	106.2	---	---	---	112.7	-6.5	Pass
<b>Table Result:</b> Pass						by --- dB			<b>Worst Freq:</b> --- MHz			
Test Site: 3MIndoor			Cable 1: ---			Cable 2: ---			Cable 3: ---			
Analyzer: GOLD			Preamp: ---			Antenna: ---			Preselector: ---			
Adjusted Reading = Reading + Attenuation Factor												

Rev. 5/31/2015

Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Gold	100Hz-26.5 GHz	E4407B	Agilent	MY45113816	1284	I	4/22/2016	4/22/2015
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) TH A#2082		BA928 HTC-1	Oregon Scientific HDE	C3166-1	831 2082	I II	3/19/2016 4/2/2016	3/19/2014 4/2/2015
Preamps/Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
HF 30dB 50W Attenuator	0.009-18 GHz	PE 7322-30	Pasternack	1	1840	II	9/16/2015	9/16/2014

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

Conducted Spurious Emissions at the Antenna Port:  
For these scans, the spectrum analyzer was set to the following:

- Span: 400MHz or less
- Resolution Bandwidth: 100 KHz
- Video Bandwidth: 300 KHz
- Points per sweep: 8192

The frequency range 25MHz-10GHz was tested at EUT antenna port and no emissions were found with a limit set at 30dB below the power of the transmit frequency. The low, mid, and high channels were tested.

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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)]

### MEASUREMENTS / RESULTS

<b>15.247 (e) Maximum Power Spectral Density</b>							
<b>Tested by:</b> Tuyen Truong							
<b>Date:</b> 4/29/2015				<b>Analyzer:</b> Brown SA			
<b>Company:</b> Ideal Industries, Inc.				<b>Attenuation:</b> PE7019-20 #791			
<b>EUT:</b> SCC1000		<b>Note:</b> AVGPSD-1					
channel (MHz)	mode	measured PSD (dBm)	attenuator factor (dB)	adjusted power measurement	limit (dBm)	margin (dB)	result
902.7	DMSS	-14.59	19.57	4.98	8	-3.02	Pass
915	DMSS	-15.74	19.57	3.83	8	-4.17	Pass
927.3	DMSS	-15.81	19.57	3.76	8	-4.24	Pass

Rev. 4/27/2015

**Spectrum Analyzers / Receivers / Preselectors**  
Brown

Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
9kHz-26.5GHz	E4407B	Agilent	SG44210511	1510	I	5/12/2015	5/12/2014

**Radiated Emissions Sites**  
EMI Chamber 2

FCC Code	IC Code	VCCI Code	Range	Cat	Calibration Due	Calibrated on
719150	2762A-7	A-0015	30-1000MHz	II	3/22/2017	3/22/2015

**Preamps / Couplers Attenuators / Filters**  
HF 20dB 50W Attenuator

Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
0.009-18 GHz	PE 7019-20	Pasternack	1	791	II	7/14/2015	7/14/2014

**Meteorological Meters**  
Weather Clock (Pressure Only)  
TH A#2081

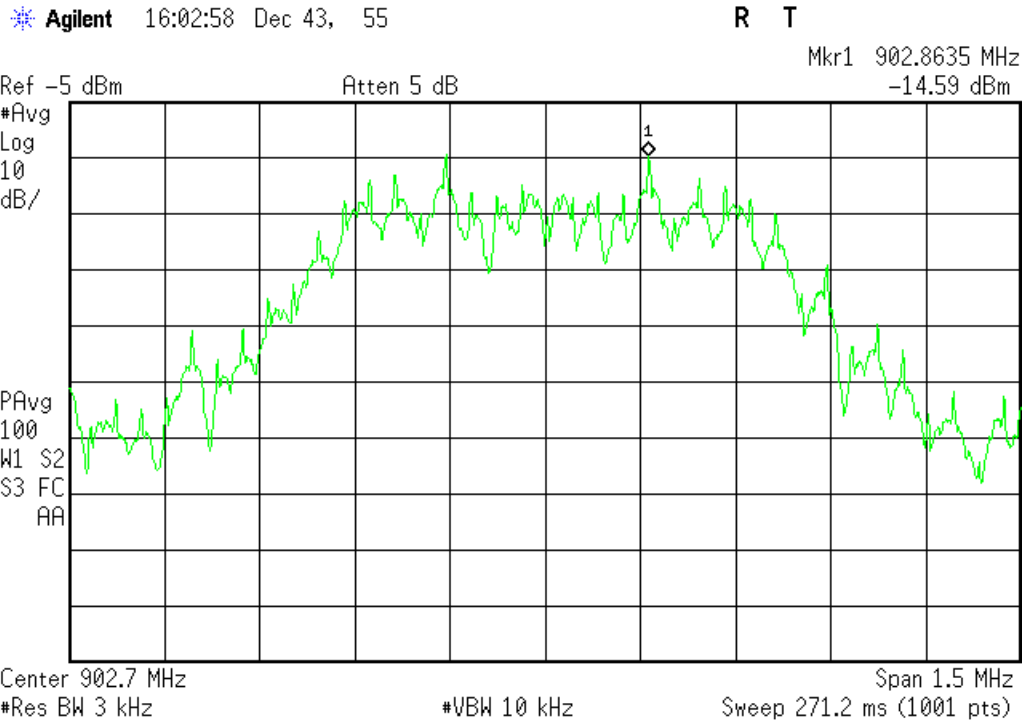
MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
BA928 HTC-1	Oregon Scientific HDE	C3166-1	831 2081	I II	3/19/2016 4/2/2016	3/19/2014 4/2/2015

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

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PLOTS



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Channel Low – PSD

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1	Original Release	November 10, 2015



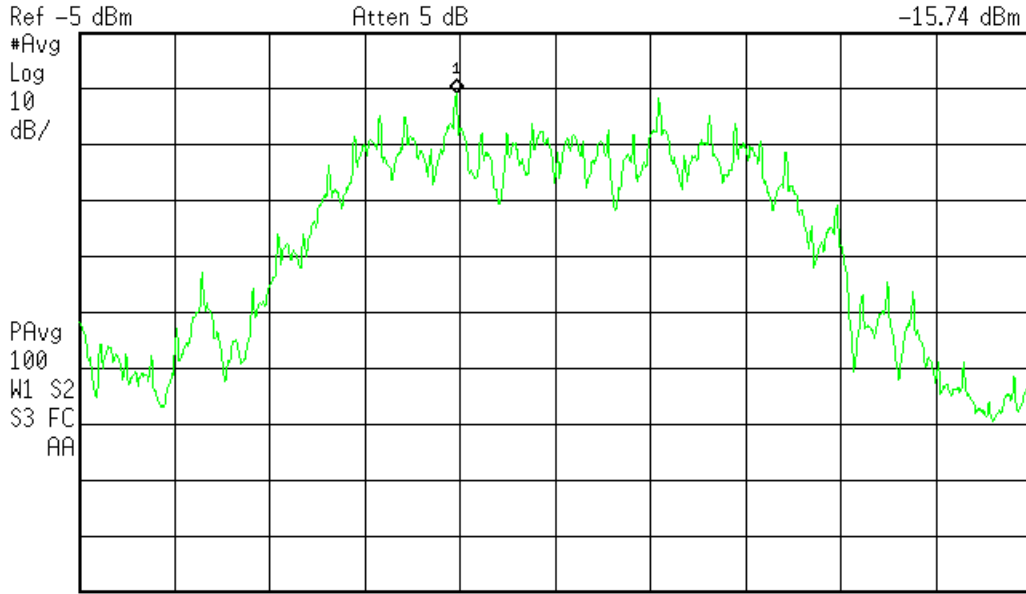
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Agilent 16:05:26 Dec 43, 55

R T

Mkr1 914.8440 MHz  
-15.74 dBm



Center 915 MHz Span 1.5 MHz  
#Res BW 3 kHz #VBW 10 kHz Sweep 271.2 ms (1001 pts)

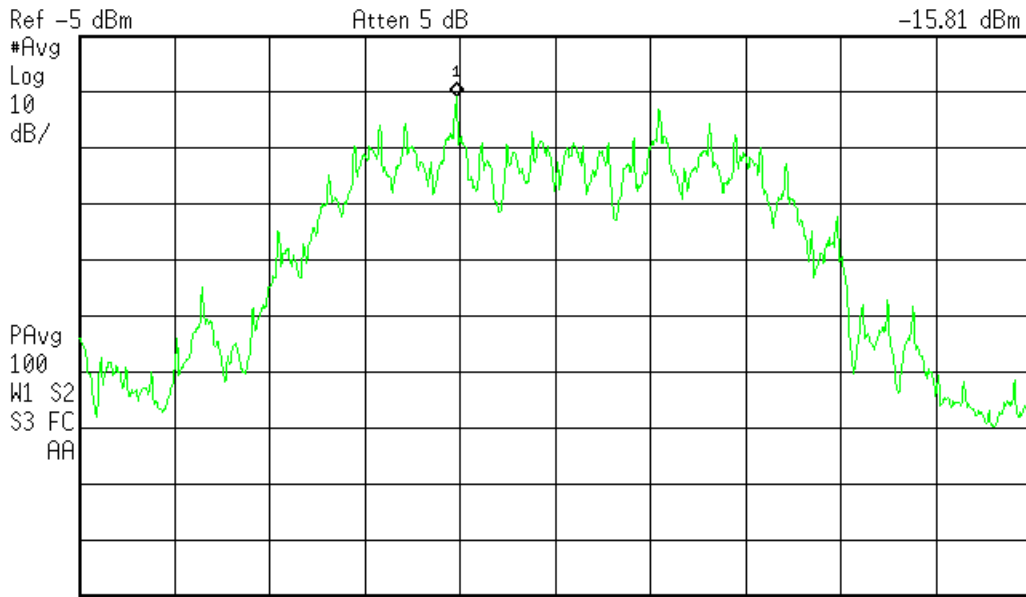
C:\temp.gif file saved

Channel Mid – PSD

Agilent 16:00:15 Dec 43, 55

R T

Mkr1 927.1440 MHz  
-15.81 dBm



Center 927.3 MHz Span 1.5 MHz  
#Res BW 3 kHz #VBW 10 kHz Sweep 271.2 ms (1001 pts)

C:\temp.gif file saved

Channel High – PSD

Issue No.	Reason for change	Date Issued
1	Original Release	November 10, 2015



## 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: 23-Apr-15				Company: Ideal Industries, Inc.				Work Order: O3616						
Engineer: Ahmed Ahmed				EUT Desc: SCC1000				Pressure: 994 mBar						
Temp: 24.5 °C				Humidity: 24%				Notes: SCC1000 unit.						
Frequency Range: 0.15-30 MHz							EUT Input Voltage/Frequency: 120V/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)
0.18	35.0	33.0	15.0	14.7	-0.1	-0.1	0.0	-19.9	64.7	-9.7	Pass	54.7	-19.7	Pass
0.26	33.2	32.0	12.6	13.0	-0.1	0.0	0.0	-19.9	61.4	-8.2	Pass	51.4	-18.4	Pass
0.35	30.6	29.7	10.3	11.1	-0.1	0.0	0.0	-19.9	59.0	-8.5	Pass	49.0	-18.0	Pass
0.53	33.8	32.0	17.8	18.4	0.0	0.0	0.0	-19.9	56.0	-2.3	Pass	46.0	-7.7	Pass
0.61	30.3	29.0	10.9	10.7	0.0	0.0	0.0	-19.9	56.0	-5.7	Pass	46.0	-15.1	Pass
0.96	32.0	32.8	10.8	11.3	0.0	0.0	0.0	-19.9	56.0	-3.3	Pass	46.0	-14.8	Pass
1.31	31.6	30.0	10.6	11.1	0.0	0.0	0.0	-19.9	56.0	-4.5	Pass	46.0	-14.9	Pass
<b>Result:</b> Pass				<b>Worst Margin:</b> -2.3 dB				<b>Frequency:</b> 0.525 MHz						
Measurement Device: LISN ASSET 1728(Line 1) LISN ASSET 1729(Line 2)						Cable: CEMI-02			Spectrum Analyzer: Black					
						Attenuator: 20dB Attenuator-05			Site: CEMI 3					

$$\text{Final Reading (dBuV)} = \text{Reading (dBuV)} + \text{LISN Insertion Loss} + \text{Cable Loss} + \text{ATTN}$$

Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Black	9kHz-12.8GHz	8596E	Agilent	3710A00944	337	I	2/12/2016	2/12/2015	
LISNs/Measurement Probes	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
LISN Asset 1728	150kHz-30MHz	LI-150A	Com-Power	201084	1728	I	4/7/2016	4/7/2015	
LISN Asset 1729	150kHz-30MHz	LI-150A	Com-Power	201085	1729	I	4/7/2016	4/7/2015	
Conducted Test Sites (Mains / Telco)	FCC Code	VCCI Code	Cat	Calibration Due	Calibrated on				
CEMI-03	9kHz - 2GHz	C-S	II	9/14/2015	9/14/2014				
Cables	Range	Mfr	Cat	Calibration Due	Calibrated on				
CEMI-02	9kHz - 2GHz	C-S	II	4/4/2016	4/4/2015				
Attenuators	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
20dB Attenuator-05	9kHz-2GHz	2	Aeroflex/Weinschel	BS9092		II	7/24/2015	7/24/2014	
Meteorological Meters	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on		
TH A#2078	HTC-1	HDE	2078		II	4/2/2016	4/2/2015		

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

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## Occupied Bandwidth

### REQUIREMENT

When an occupied bandwidth is no specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured. [RSS-GEN 6.6]

### MEASUREMENTS / RESULTS

Occupied Bandwidth		
Frequency (MHz)	Mode	99% Occupied Bandwidth (MHz)
902.7	DMSS	0.751275
915	DMSS	0.750256
927.3	DMSS	0.750119
<p><b>Tested by:</b> Ryan Brown <span style="float: right;"><b>RBW = 30KHz VBW = 100KHz</b></span>  <b>Date:</b> 5/26/2015 <span style="float: right;"><b>Analyzer:</b> Gold SA</span>  <b>Company:</b> Ideal Industries, Inc. <span style="float: right;"><b>Attenuator:</b> PE7322-30 #1840</span>  <b>EUT:</b> SCC1000</p>		

Rev. 5/31/2015

Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Gold	100Hz-26.5 GHz	E4407B	Agilent	MY45113816	1284	I	4/22/2016	4/22/2015	
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) TH A#2082	BA928 HTC-1	Oregon Scientific HDE	C3166-1	831 2082	I II	3/19/2016 4/2/2016	3/19/2014 4/2/2015		
Preamps / Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
HF 30dB 50W Attenuator	0.009-18 GHz	PE 7322-30	Pasternack	1	1840	II	9/16/2015	9/16/2014	

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

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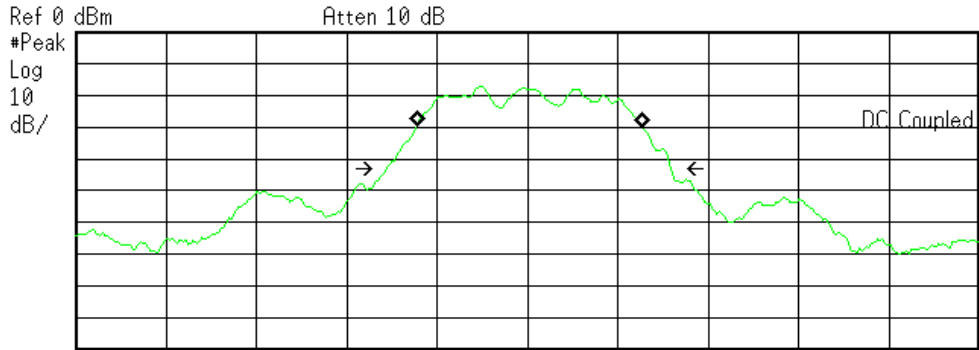




Plot(s)

Agilent 17:13:00 May 26, 2015

R T



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

Occupied Bandwidth  
 751.2747 kHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

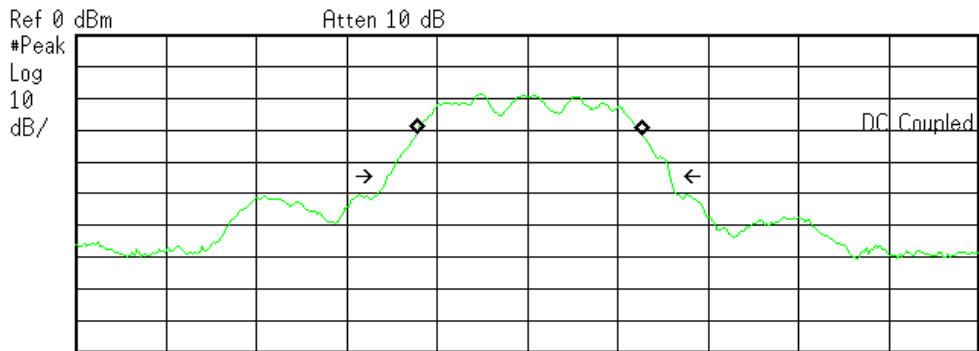
Transmit Freq Error 7.574 kHz  
 x dB Bandwidth 944.823 kHz

C:\temp.gif file saved

Low Channel – Occupied Bandwidth

Agilent 17:16:53 May 26, 2015

R T



Center 915 MHz Span 3 MHz  
 #Res BW 30 kHz #VBW 100 kHz Sweep 5 ms (401 pts)

Occupied Bandwidth  
 750.2565 kHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error 5.728 kHz  
 x dB Bandwidth 938.901 kHz

C:\temp.gif file saved

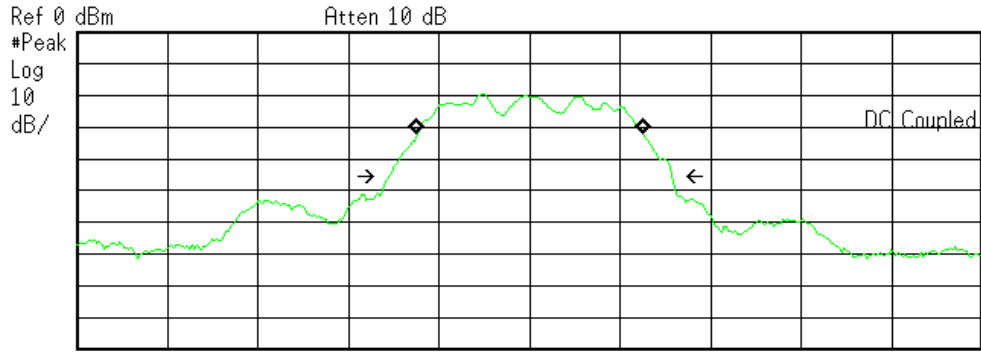
Mid Channel – Occupied Bandwidth

Issue No.	Reason for change	Date Issued
1	Original Release	November 10, 2015



Agilent 17:19:51 May 26, 2015

R T



Center 927.3 MHz Span 3 MHz  
 #Res BW 30 kHz #VBW 100 kHz Sweep 5 ms (401 pts)

**Occupied Bandwidth**  
 750.1193 kHz

**Occ BW % Pwr** 99.00 %  
**x dB** -26.00 dB

**Transmit Freq Error** 2.922 kHz  
**x dB Bandwidth** 938.252 kHz

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High Channel – 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.

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

Issue No.	Reason for change	Date Issued
1	Original Release	November 10, 2015



## Conditions Of Testing

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

1. All orders for tests are subject to acceptance by the Company, and no order will constitute a binding commitment of the Company unless and until such order is accepted by it, as evidenced by the issuance of a written report ("Test Report") by the Company. The Test Report is issued solely by the Company, is intended for the exclusive use of Client and shall not be published, used for advertising purposes, copied or replicated for distribution to any other person or entity or otherwise publicly disclosed without the prior written consent of the Company. By submitting a request for services to the Company, Client consents to the disclosure to accreditation bodies of those records of Client relevant to the accreditation body's assessment of the Company's competence and compliance with relevant accreditation criteria. The Company shall not be liable for any loss or damage whatsoever resulting from the failure of the Company to provide its services within any time period for completion estimated by the Company. If Client anticipates using the Test Report in any legal proceeding, arbitration, dispute resolution forum or other proceeding, it shall so notify the Company prior to submitting the Test Report in such proceeding. The Company has no obligation to provide a fact or expert witness at such proceeding unless the Company agrees in advance to do so for a separate and additional fee.
2. The Test Report will set forth the findings of the Company solely with respect to the test samples identified therein. Unless specifically and expressly indicated in the Test Report, the results set forth in such Test Report are not intended to be indicative or representative of the quality or characteristics of the lot from which a test sample is taken, and Client shall not rely upon the Test Report as being so indicative or representative of the lot or of the tested product in general. The Test Report will reflect the findings of the Company at the time of testing only, and the Company shall have no obligation to update the Test Report after its issuance. The Test Report will set forth the results of the tests performed by the Company based upon the written information provided to the Company. The Test Report will be based solely on the samples and written information submitted to the Company by Client, and the Company shall not be obligated to conduct any independent investigation or inquiry with respect thereto.
3. The Company may, in its sole discretion, destroy samples which have been furnished to the Company for testing and which have not been destroyed in the course of testing. The Company may delegate the performance of all or a portion of the services contemplated hereunder to an affiliate, agent or subcontractor of the Company, and Client consents to such delegation.
4. These Conditions and the Test Report represent the entire understanding of the parties hereto with respect to the subject matter hereof and of the Test Report, and no modification, variance or extrapolation with respect thereto shall be permitted without the prior written consent of the Company.
5. The names, service marks, trademarks and copyrights of the Company and its affiliates, including the names "BUREAU VERITAS," "BUREAU VERITAS CONSUMER PRODUCTS SERVICES," "BVCPS," "MTL," "ACTS," "MTL-ACTS" and CURTIS-STRAUS (collectively, the "Marks") are and shall remain the sole property of the Company or its affiliates and shall not be used by Client except solely to the extent that Client obtains the prior written approval of the Company and then only in the manner prescribed by the Company. Client shall not contest the validity of the Marks or take any action that might impair the value or goodwill associated with the Marks or the image or reputation of the Company or its affiliates.
6. Payment in full shall be due 30 days after the date of invoice. Interest shall be due on overdue amounts from the due date until paid at an interest rate of 1.5% per month or, if less, the maximum rate permitted by law. The Company reserves the right, at any time and from time to time, to revoke any credit extended to Client. Client shall reimburse the Company for any costs it incurs in collecting past due amounts, including court costs and fees and expenses of attorneys and collection agencies. The Test Report may not be used or relied upon by Client if and for so long as Client fails to pay when due any invoice issued by the Company or any affiliate of it to Client or any affiliate or subsidiary of Client together with interest and penalties, if any, accrued thereon.
7. The Company disclaims any and all responsibility or liability arising out of or in connection with e-mail transmissions of such information.
8. Client understands and agrees that the Company is neither an insurer nor a guarantor, that the Company does not take the place of Client or any designer, manufacturer, agent, buyer, distributor or transportation or shipping company, and that the Company disclaims all liability in such capacities. Client further understands that if it seeks assurance against loss or damage, it should obtain appropriate insurance.
9. Client agrees that the Company, by providing the services, does not take the place of Client nor any third party, nor does the Company release them from any of their obligations, nor does the Company otherwise assume, abridge, abrogate or undertake to discharge any duty of any third party to Client or any duty of Client or any third party to any other third party, and Client will not release any third party from its obligations and duties with respect to the tested goods.
10. Client shall, on a timely basis, (a) provide adequate instructions to the Company in order to enable the Company to perform properly its services, (b) provide, or cause Client's suppliers and contractors to provide, the Company with all documents necessary to enable the Company to perform its services, (c) furnish the Company with all relevant information regarding Client's intended use and purposes of the tested goods, (d) advise the Company of essential dates and deadlines relevant to the tested goods and (e) fully exercise all rights and remedies available to Client against third parties in respect of the tested goods.
11. The Company shall undertake due care and ordinary skill in the performance of its services to Client, and the Company shall accept responsibility only where such skill has not been exercised and, even in such event, only to the extent of the limitation of liability set forth herein.
12. If Client desires to assert a claim arising from or relating to (i) the performance, purported performance or non-performance of any services by the Company or (ii) the sale, resale, manufacture, distribution or use of any tested goods, it must submit that claim to the Company in a writing that sets forth with particularity the basis for such claim within 60 days from discovery of the potential claim and not more than six months after the date of issuance of the Test Report to Client. Client waives any and all such claims including, without limitation, claims that the Test Report is inaccurate, incomplete or misleading or that additional or different testing is required, unless and then only to the extent that Client submits a written claim to the Company within both such time periods.
13. CLIENT SHALL, EXCEPT TO THE EXTENT OF COMPANY'S LIABILITY TO CLIENT HEREUNDER (WHICH IN NO EVENT SHALL EXCEED THE LIMITATION OF LIABILITY HEREIN), HOLD HARMLESS AND INDEMNIFY THE COMPANY, ITS AFFILIATES AND THEIR RESPECTIVE DIRECTORS, OFFICERS, EMPLOYEES, AGENTS AND SUBCONTRACTORS AGAINST ALL ACTUAL OR ALLEGED THIRD PARTY CLAIMS FOR LOSS, DAMAGE OR EXPENSE OF WHATSOEVER NATURE AND HOWSOEVER ARISING FROM OR

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1	Original Release	November 10, 2015



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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