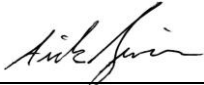





**BUREAU
VERITAS**

Test Report

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

Report No	ES3581-1
Client	Ideal Industries, Inc.
Address	Becker Place Sycamore, IL 60178
Phone	(815) 895-1295
Items tested	Occupancy/Vacancy Sensor (Model: VSC1303)
FCC ID	2AAMXVSC1303
IC	11250A-VSC1303
FRN	0002862225
Equipment Type	Digital Transmission System
Equipment Code	DTS
FCC/IC Rule Parts	CFR Title 47 FCC Part 15.247, ISSED Canada RSS-247 Issue 2
Test Dates	Dec 19, 2018 – Jan 8, 2019
Results	As detailed within this report
Prepared by	 Arik Zwirner – Test Engineer
Authorized by	 Yunus Faziloglu – Sr. Engineer
Issue Date	2/22/2019
Conditions of Issue	This Test Report is issued subject to the conditions stated in the 'Conditions of Testing' section on page 40 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.



Curtis-Straus LLC, a wholly owned subsidiary of BV CPS
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Form Final Report REV 7-20-07 (DW)



Summary

This test report supports an application for certification of a transmitter operating pursuant to: CFR Title 47 FCC Part 15.247, ISSED Canada RSS-247 Issue 2.

The product is the Occupancy/Vacancy Sensor (Model: VSC1303). It is a digitally modulated transmitter that operates in the 902.7 – 927.3MHz frequency range.

Antenna: Non-detachable PCB antenna with 2.5dBi gain.

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

Test Methodology

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

CFR Title 47 FCC Part 15.247, ISED Canada RSS-247 Issue 2, ISED Canada RSS-Gen Issue 5, FCC KDB 558074 D01 15.247 Measurement Guidance v05 and ANSI C63.10-2013.

Radiated emissions were maximized by rotating the device around three orthogonal planes (X, Y and Z) as well as varying the test antenna's height and polarity. Y orientation was found to be the worst and all radiated emissions tests were performed in this orientation. AC line conducted emissions testing was not applicable since device is battery-only powered.

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

Low channel = 902.7MHz

Mid channel = 915MHz

High channel = 927.3MHz

Following bandwidths were used during radiated spurious emissions tests:

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

Product Tested - Configuration Documentation

EUT Configuration			
Work Order:	S3581		
Company:	Ideal Industries Inc.		
Company Address:	1375 Park Ave		
	Sycamore, IL, 60178		
Contact:	Tim Tunnell		
	MN	PN	SN
EUT:	VSC1303		Test Sample 1
EUT Description:	Occupancy/Vacancy Sensor		
EUT Max Frequency:	927.3 MHz		
Software Operating Mode Description:			
Continuous transmission at low, mid, or high channel. Powered by internal battery			

Statement of Conformity

RSS-GEN	RSP-100	RSS 247	Part 15	Comments
6.4			15.15(b)	There are no controls accessible to the user that varies the output power to operate in violation of the regulatory requirements.
	3.1		15.19	The label is shown in the label exhibit.
	3.2		15.21	Information to the user is shown in the instruction manual exhibit.
			15.27	No special accessories are required for compliance.
3.2			15.31	The EUT was tested in accordance with the measurement standards in this section.
6.13.2			15.33	Frequency range was investigated according to this section, unless noted in specific rule section under which the equipment operates.
6.13.1			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.
6.8			15.203	The antenna for this device is non-detachable PCB antenna with 2.5dBi gain
8.10			15.205 15.209	The fundamental is not in a Restricted band and the spurious and harmonic emissions in the Restricted bands comply with the general emission limits of 15.209 or RSS-Gen as applicable
8.8			15.207	EUT is not connected to AC mains. Battery powered only.
			15.247	The unit complies with the requirements of 15.247
		RSS 247		The unit complies with the requirements of RSS-247
6.7				Occupied Bandwidth measurements were made.

Modifications Required for Compliance

None.

Test Results**DTS (6dB) Bandwidth****LIMIT**

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

MEASUREMENTS / RESULTS

6dB Bandwidth				
Date: 1/3/2019		Company: Ideal Industries		Work Order: S3581
Engineer: AKZ		EUT: Audacy Motion Sensor		Operating Voltage/Frequency: Battery
Temp: 20°C		Humidity: 32%		Pressure: 1001mBar
Frequency Range: 902-928 MHz		Measurement Type: Conducted		
Measurement Method: FCC KDB 558074 D01 Meas Guidance V05				
Notes:				
Frequency (MHz)	Reading (kHz)	6dB Bandwidth		
		Limit (kHz)	Margin (kHz)	Result (Pass/Fail)
902.7	661.6	≥500	161.6	Pass
915.0	661.3	≥500	161.3	Pass
927.3	660.7	≥500	160.7	Pass
Test Site: CEMI-2		Cable: none		Attenuator: Asset #2107
Analyzer: 1118473				

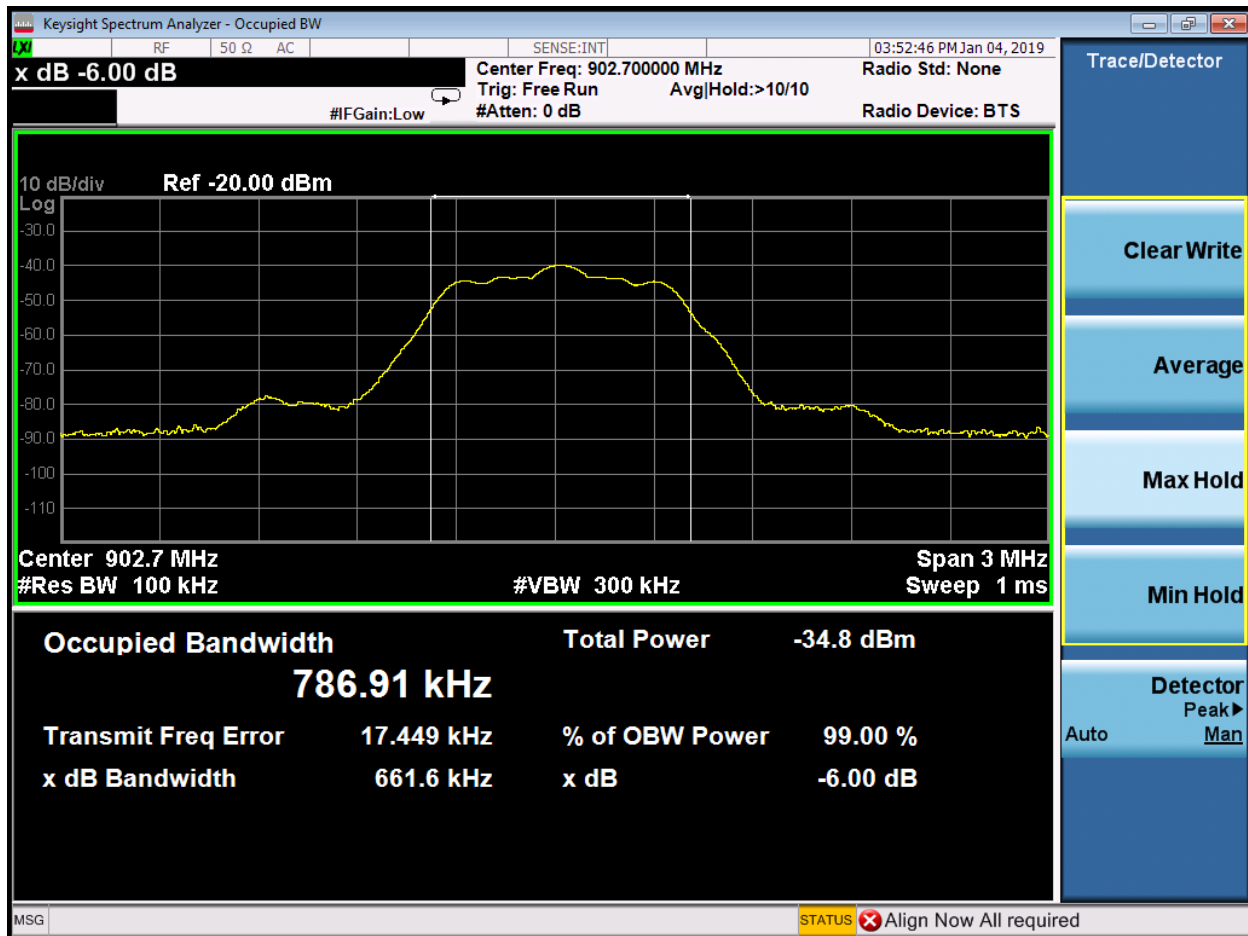
Rev. 12/27/2018

Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Rental EXA Signal Analyzer(1118473)	9KHz-26.5GHz	N9010A-526;N	AT	MY51170076	1118473	I	6/19/2019	6/19/2018
Conducted Test Sites (Mains / Telco)	FCC Code		VCCI Code			Cat	Calibration Due	Calibrated on
CEMI 2	719150		A-0015			III	NA	N/A
Preamps / Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
API - 40dB 100W Attenuator	0.009-18GHz	48-40-34	API Weinschel	CG7990	2107	II	10/9/2019	10/9/2018

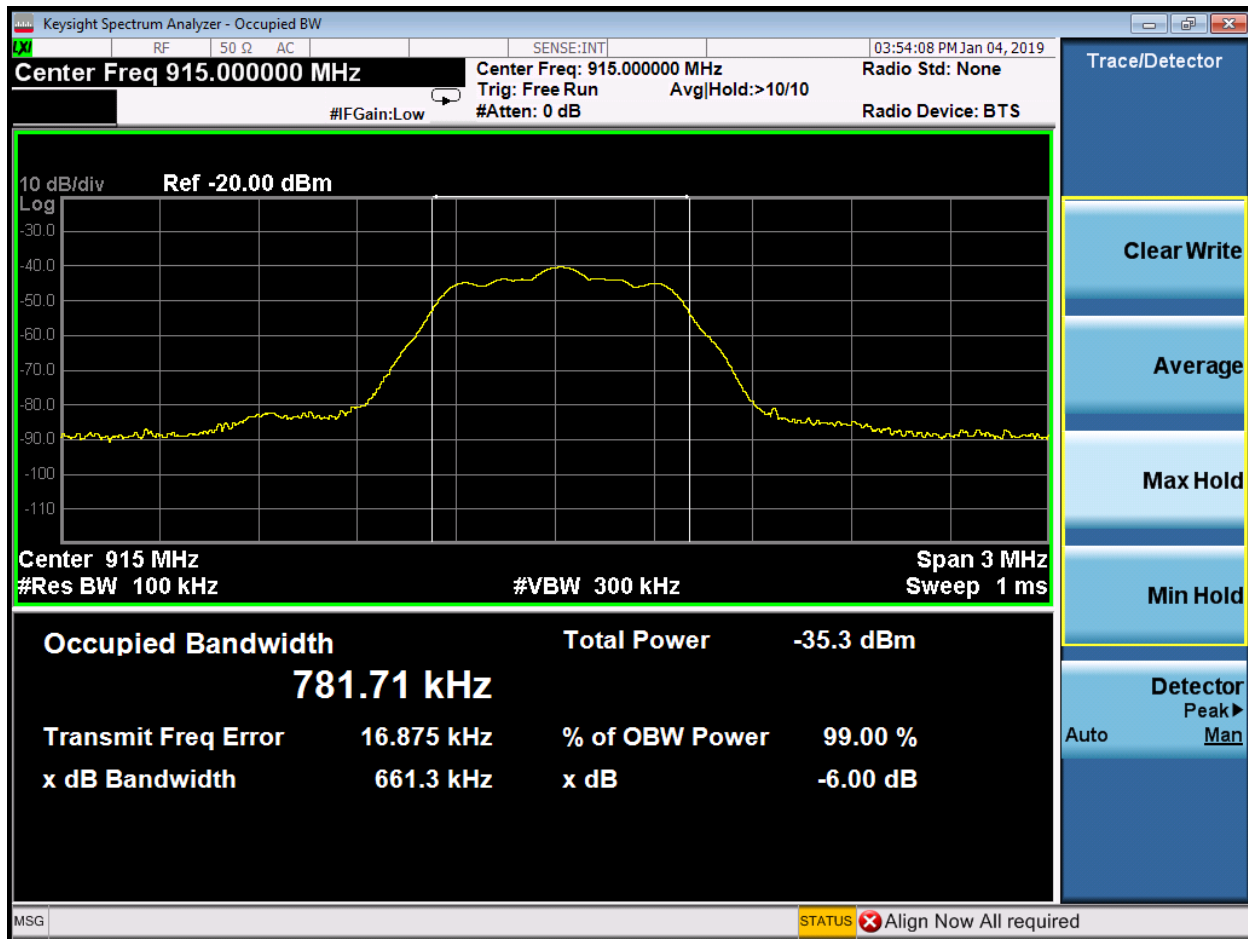
All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



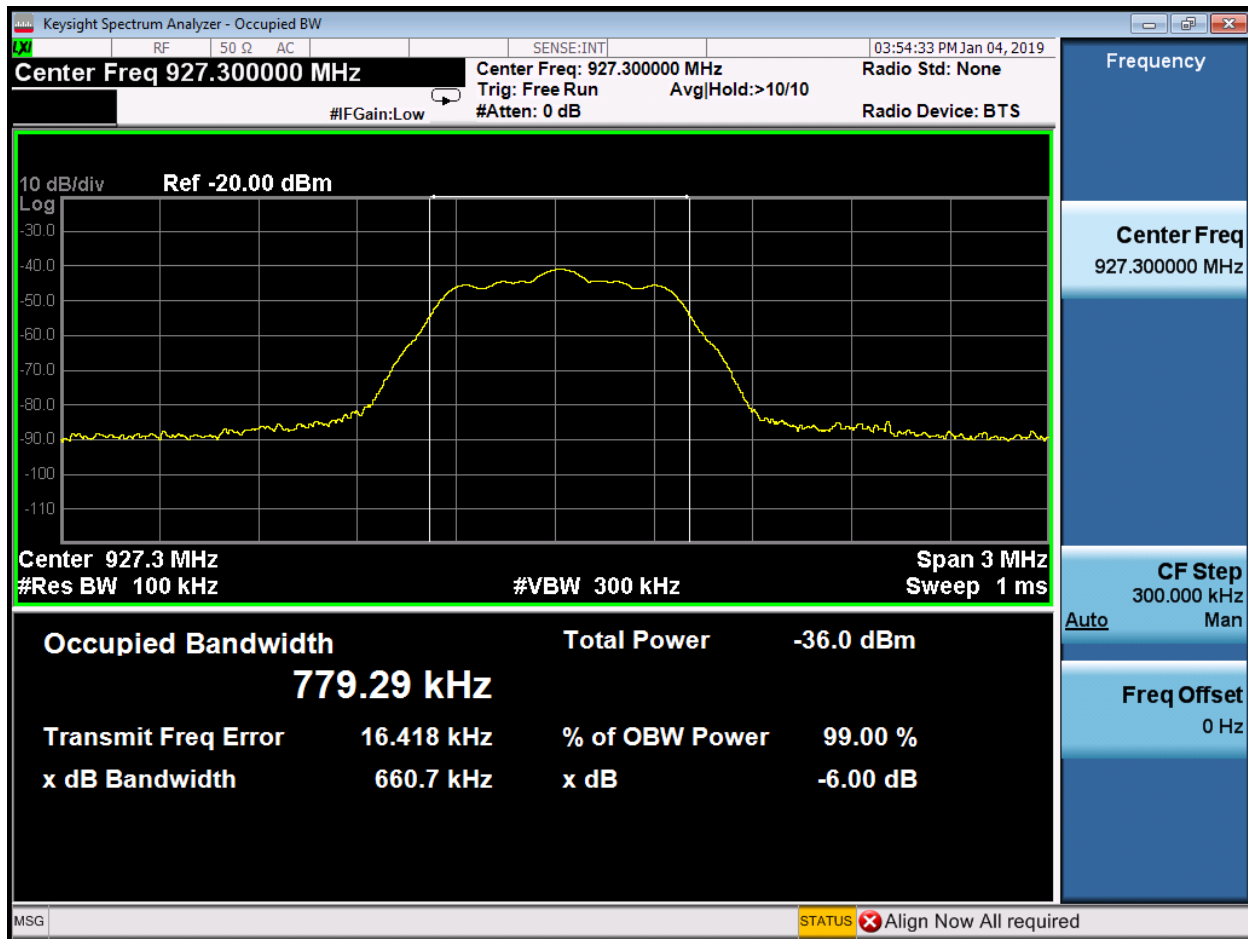
PLOT(s)



6dB Bandwidth – Low Channel



6dB Bandwidth – Mid Channel



6dB Bandwidth – High Channel

Output Power**LIMIT**

Conducted Output Power

1 Watt

[15.247(b) (3)]

Per ANSI C63.10 – 2013 Section 11.9.2.2.2 Method AVGSA-1

MEASUREMENTS / RESULTS

Peak Output Power							
Date: 1/3/2019		Company: Ideal Industries			Work Order: S3581		
Engineer: AKZ		EUT: Audacy Motion Sensor			Operating Voltage/Frequency: Battery		
Temp: 20°C		Humidity: 32%		Pressure: 1001mbar			
Frequency Range: 902-928 MHz				Measurement Type: Conducted			
Notes:							
Frequency	Peak Reading	Cable Loss	Attenuator Loss	Peak Output Power	Limit	Margin	Result
(MHz)	(dBm)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(Pass/Fail)
902.7	-37.24	0.00	40.03	2.79	30.0	-27.21	Pass
915.0	-37.71	0.00	40.03	2.32	30.0	-27.68	Pass
927.3	-38.36	0.00	40.03	1.67	30.0	-28.33	Pass
Test Site: CEMI-2		Cable: none		Attenuator: Asset #2107			
Analyzer: 1118473							
Peak Output Power (dBm)= Peak Reading (dBm) + Cable Loss (dB) + Attenuator Loss (dB)							

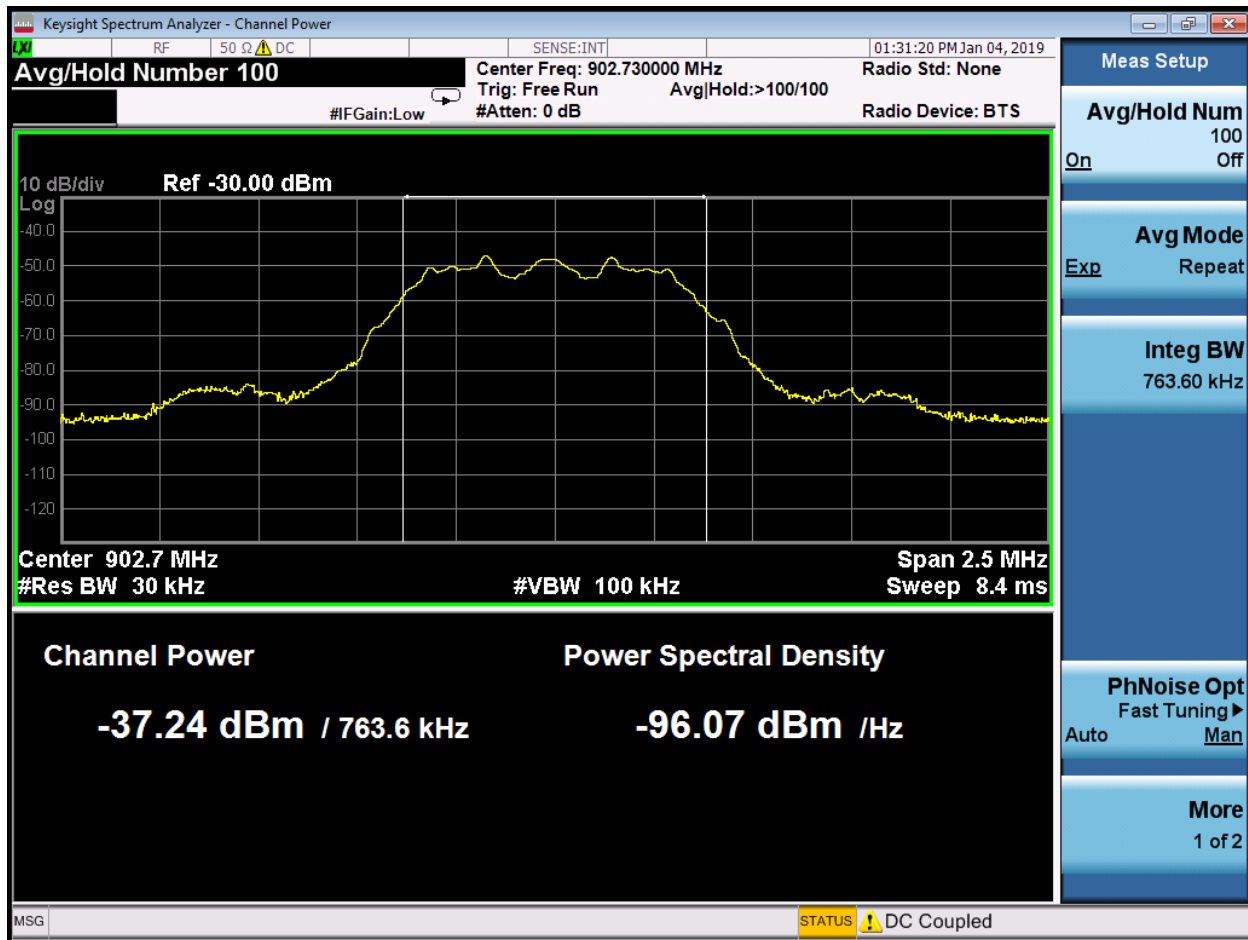
Rev. 12/27/2018

Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Rental EXA Signal Analyzer(1118473)	9KHz-26.5GHz	N9010A-526;N	AT	MY51170076	1118473	I	6/19/2019	6/19/2018
Conducted Test Sites (Mains / Telco)	FCC Code		VCCI Code			Cat	Calibration Due	Calibrated on
CEMI 2	719150		A-0015			III	NA	N/A
Preamps / Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
API - 40dB 100W Attenuator	0.009-18GHz	48-40-34	API Weinschel	CG7990	2107	II	10/9/2019	10/9/2018

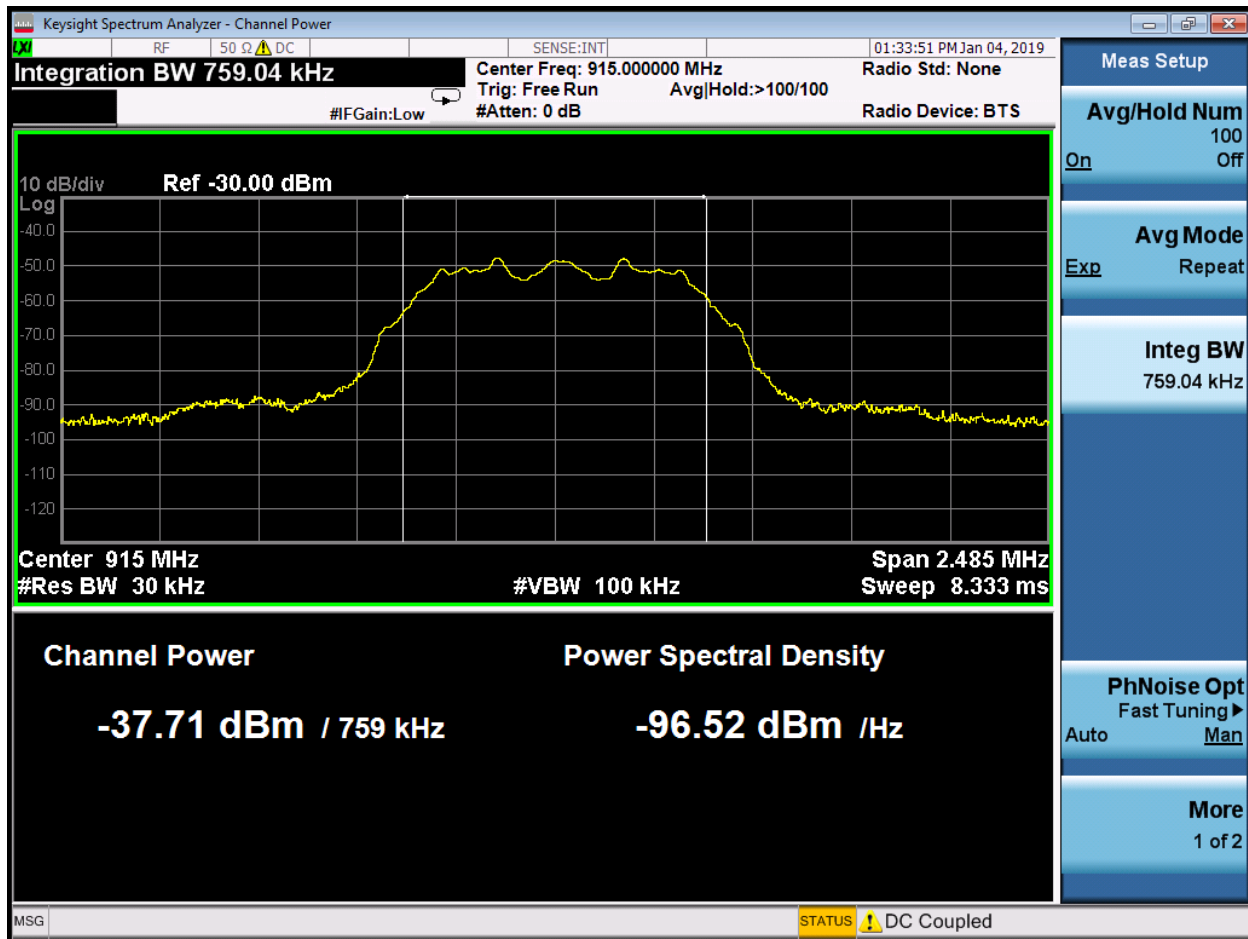
All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



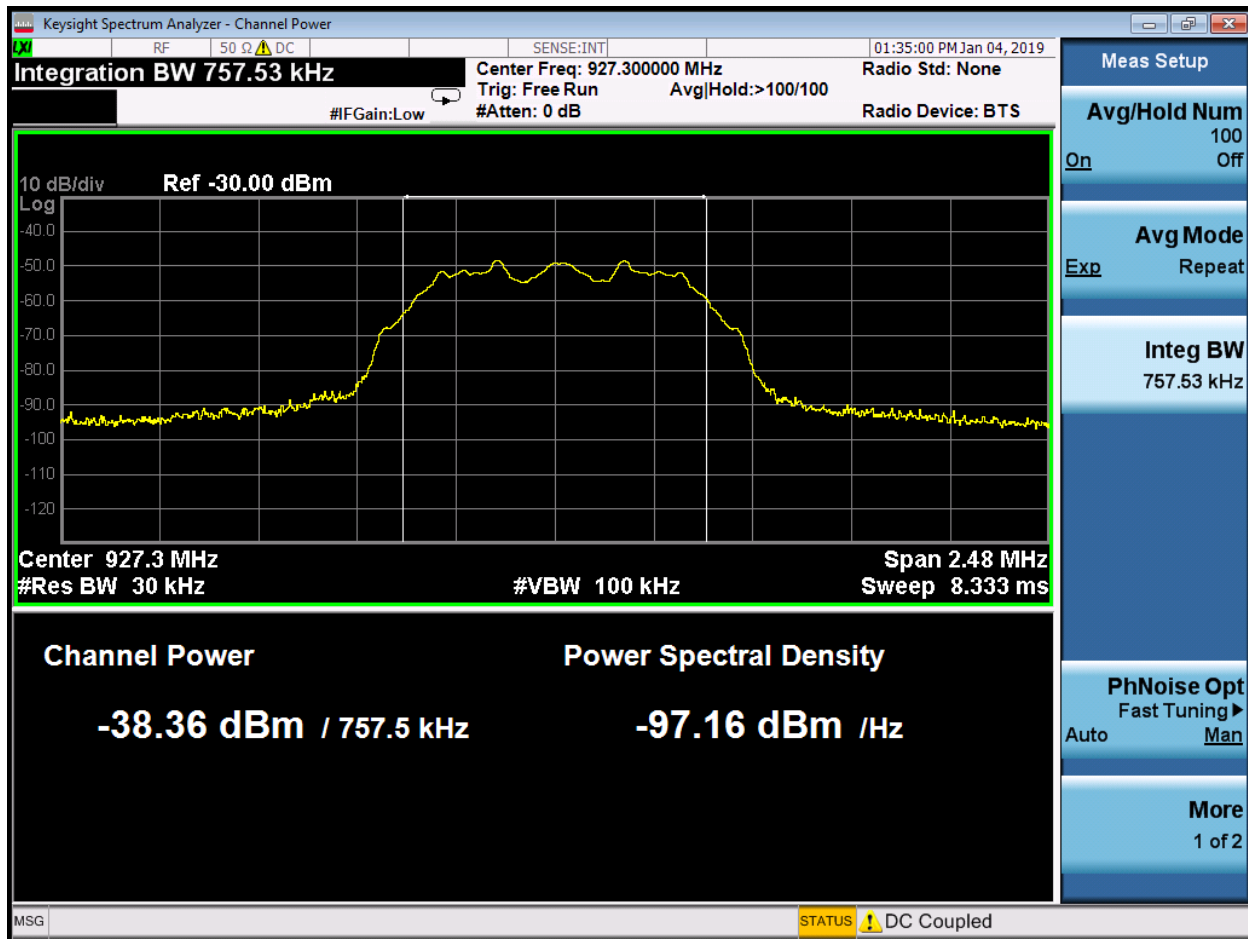
PLOTS



Channel Power – Low Channel



Channel Power – Mid Channel



Channel Power – High Channel

Band Edge (Conducted)

Band Edge readings must be more than 30dB below the value of the fundamental.

MEASUREMENTS / RESULTS

Conducted Bandedge					
Date: 12/19/2018		Company: Ideal Industries		Work Order: S3581	
Engineer: AKZ		EUT: Audacy Motion Sensor		Operating Voltage/Frequency: Battery	
Temp: 21°C		Humidity: 33%		Pressure: 1008mbar	
Frequency Range: 902-928 MHz			Measurement Type: Conducted		
			Measurement Method: FCC KDB 558074 D01 Meas Guidance V05		
Notes:					
	Adjusted Bandedge (dBm)	Adjusted Fundamental (dBm)	Delta to Peak (dB)	Limit	
				(dB)	(Pass/Fail)
	Low Bandedge	-69.054	-29.45	39.604	≥ 20
High Bandedge	-76.228	-30.569	45.659	≥ 20	Pass
Test Site: CEMI-2		Cable: none		Attenuator: Asset #2107	
Analyzer: 1118473					
Copyright Curtis-Straus LLC 2000					

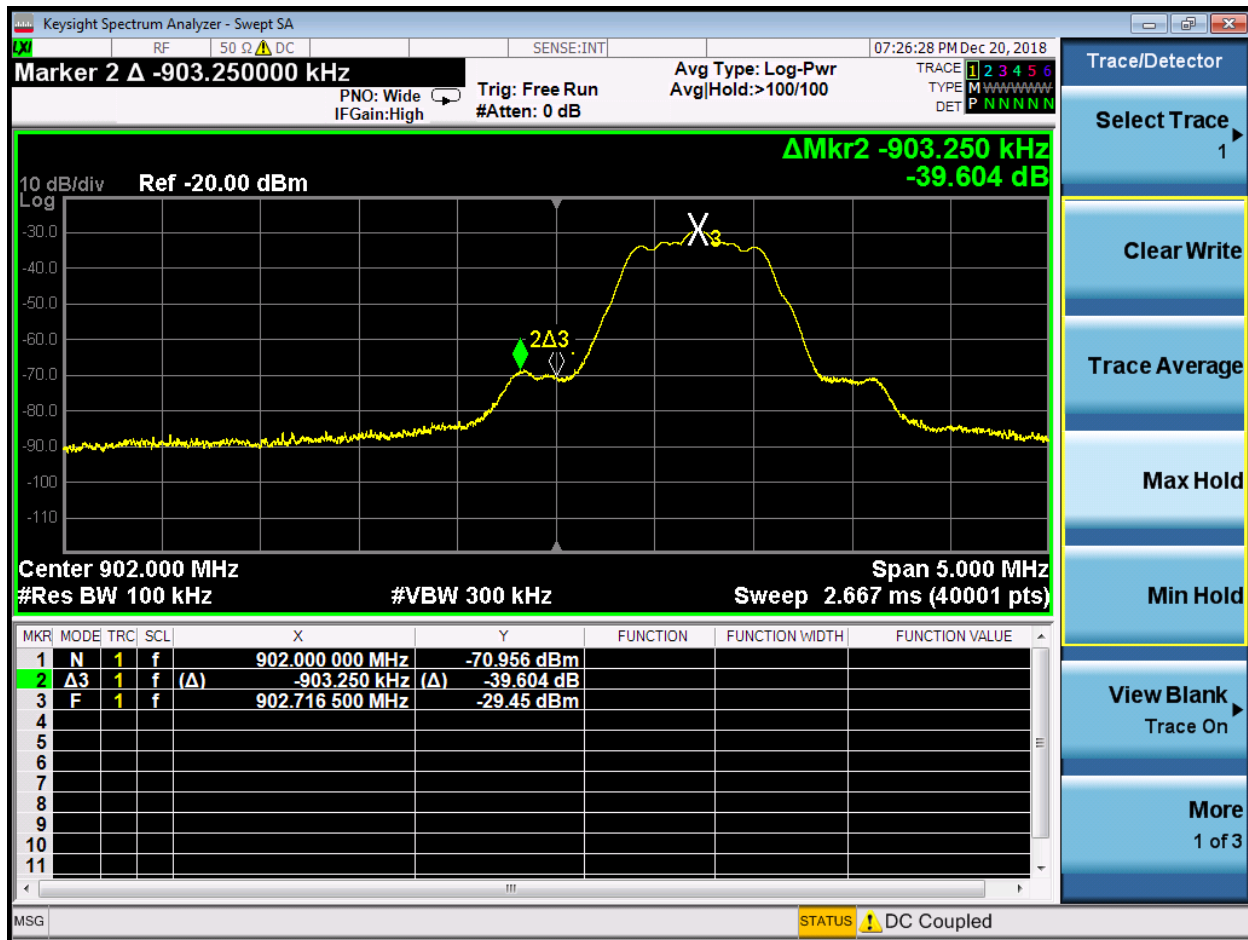
Rev. 12/27/2018

Spectrum Analyzers / Receivers / Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Rental EXA Signal Analyzer(1118473)		9KHz-26.5GHz	N9010A-526;N	AT	MY51170076	1118473	I	6/19/2019	6/19/2018
Conducted Test Sites (Mains / Telco)		FCC Code		VCCI Code			Cat	Calibration Due	Calibrated on
CEMI 2		719150		A-0015			III	NA	N/A
Preamps / Couplers Attenuators / Filters		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
API - 40dB 100W Attenuator		0.009-18GHz	48-40-34	API Weinschel	CG7990	2107	II	10/9/2019	10/9/2018

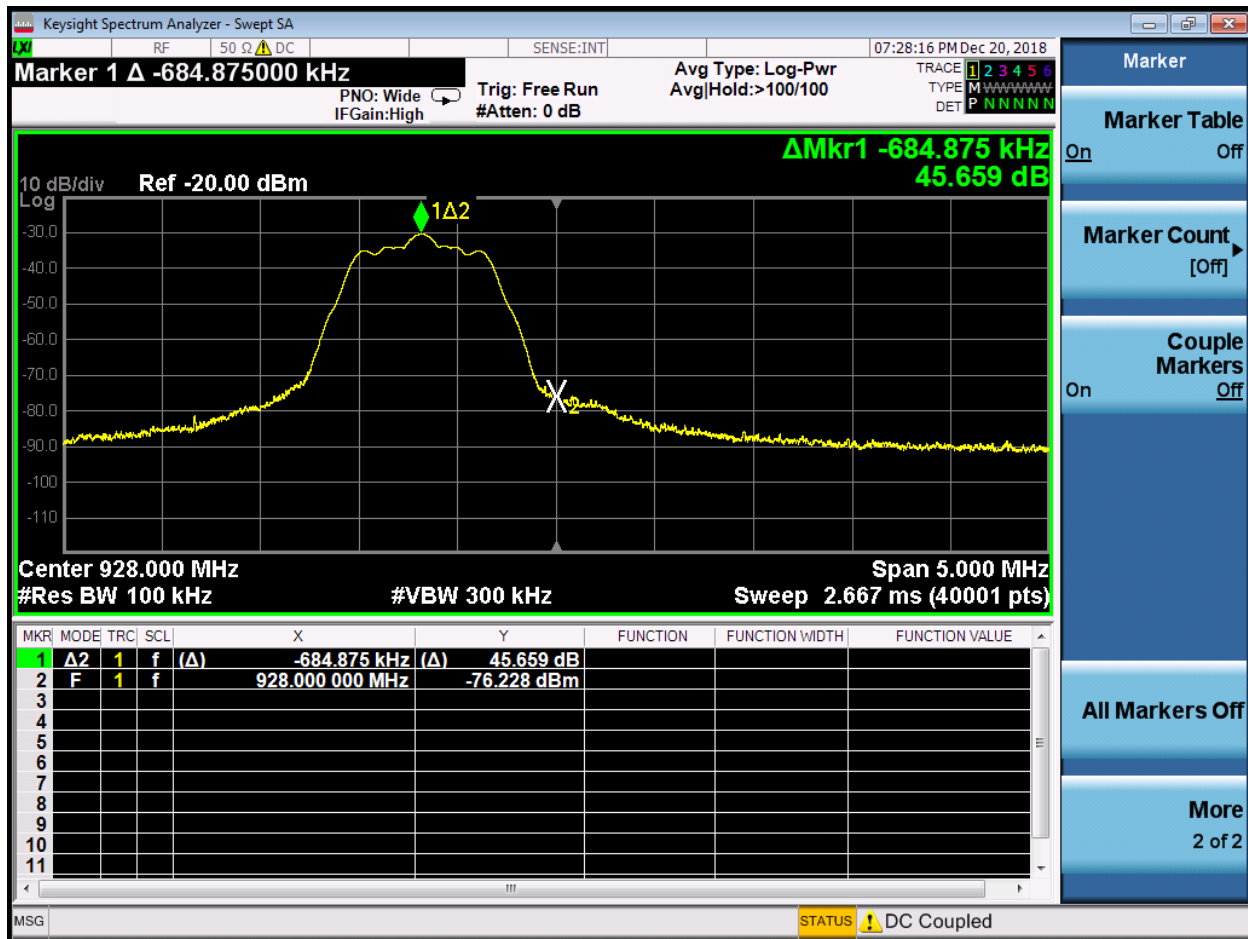
All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



PLOTS



Low Band Edge



High Band Edge

Radiated Spurious Emissions

LIMITS

Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
[15.247(d)]

MEASUREMENTS / RESULTS

Curtis Straus - a Bureau Veritas Company	Work Order - S3581
Radiated Emissions Electric Field 3m Distance	EUT Power Input - Battery
Top Peaks Horizontal 30-1000MHz	Test Site - CH-2
Operator: AKZ	Conditions - 24°C; 23%RH; 1008mBar
Notes:	
Low Channel	EUT Maximum Frequency - 928MHz

Data Taken at 03:24:08 PM, Wednesday, December 19, 2018

Frequency (MHz)	Peak Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Lim1: FCC_pt15_2 09 (dBμV/m)	Lim1 Margin (dB)	Lim1 Test Results (Pass/Fail)	Worst Margin Lim1 (dB)	Lim2: FCC_pt15_1 09_Class_B (dBμV/m)	Lim2 Margin (dB)	Lim2 Test Results (Pass/Fail)	Worst Margin Lim2 (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
30.97	33.2	-8.4	24.9	40	-15.1	PASS		40	-15.1	PASS		150	45
72.753	34.3	-20.2	14.1	40	-25.9	PASS		40	-25.9	PASS		100	180
122.756	34.4	-14.7	19.7	43.5	-23.8	PASS		43.5	-23.8	PASS		100	180
184.084	40.8	-17.2	23.6	43.5	-19.9	PASS		43.5	-19.9	PASS		150	180
466.354	41.7	-10.2	31.5	46	-14.5	PASS	-14.5	46	-14.5	PASS	-14.5	100	135
806.315	31.1	-2.2	28.9	46	-17.1	PASS		46	-17.1	PASS		100	225

Curtis Straus - a Bureau Veritas Company	Work Order - S3581
Radiated Emissions Electric Field 3m Distance	EUT Power Input - Battery
Top Peaks Vertical 30-1000MHz	Test Site - CH-2
Operator: AKZ	Conditions - 24°C; 23%RH; 1008mBar
Notes:	
Low Channel	EUT Maximum Frequency - 928MHz

Data Taken at 03:24:08 PM, Wednesday, December 19, 2018

Frequency (MHz)	Peak Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Lim1: FCC_pt15_2 09 (dBμV/m)	Lim1 Margin (dB)	Lim1 Test Results (Pass/Fail)	Worst Margin Lim1 (dB)	Lim2: FCC_pt15_1 09_Class_B (dBμV/m)	Lim2 Margin (dB)	Lim2 Test Results (Pass/Fail)	Worst Margin Lim2 (dB)	Antenna Height (cm)	Turntable Azimuth (degrees)
30.024	32.3	-7.4	24.8	40	-15.2	PASS	-15.2	40	-15.2	PASS	-15.2	100	270
36.378	36	-12.9	23.1	40	-16.9	PASS		40	-16.9	PASS		150	0
119.846	35	-14.9	20.1	43.5	-23.4	PASS		43.5	-23.4	PASS		200	315
196.404	34.9	-16.2	18.7	43.5	-24.8	PASS		43.5	-24.8	PASS		200	270
329.948	36.2	-14	22.2	46	-23.8	PASS		46	-23.8	PASS		200	180
797.779	30.8	-2.3	28.5	46	-17.5	PASS		46	-17.5	PASS		100	315



Curtis Straus - a Bureau Veritas Company
 Radiated Emissions Electric Field 3m Distance
 Top Peaks Horizontal 30-1000MHz
 Operator: AKZ
 Notes:
 Mid Channel

Work Order - S3581
 EUT Power Input - Battery
 Test Site - CH-2
 Conditions - 24°C; 23%RH; 1008mBar
 EUT Maximum Frequency - 928MHz

Data Taken at 03:50:54 PM, Wednesday, December 19, 2018

Frequency (MHz)	Peak Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Lim1: FCC_pt15_2 09 (dBμV/m)	Lim1 Margin (dB)	Lim1 Test Results (Pass/Fail)	Worst Margin Lim1 (dB)	Lim2: FCC_pt15_1 09_Class_B (dBμV/m)	Lim2 Margin (dB)	Lim2 Test Results (Pass/Fail)	Worst Margin Lim2 (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
30.364	32.5	-7.8	24.7	40	-15.3	PASS		40	-15.3	PASS		150	90
36.353	36.3	-12.9	23.4	40	-16.6	PASS		40	-16.6	PASS		200	270
184.109	41.2	-17.2	24	43.5	-19.5	PASS		43.5	-19.5	PASS		150	90
454.108	35.7	-10.7	25	46	-21	PASS		46	-21	PASS		100	180
466.379	41.5	-10.2	31.3	46	-14.7	PASS	-14.7	46	-14.7	PASS	-14.7	100	45
770.328	30.8	-2.6	28.2	46	-17.8	PASS		46	-17.8	PASS		100	45

Curtis Straus - a Bureau Veritas Company
 Radiated Emissions Electric Field 3m Distance
 Top Peaks Vertical 30-1000MHz
 Operator: AKZ
 Notes:
 Mid Channel

Work Order - S3581
 EUT Power Input - Battery
 Test Site - CH-2
 Conditions - 24°C; 23%RH; 1008mBar
 EUT Maximum Frequency - 928MHz

Data Taken at 03:50:54 PM, Wednesday, December 19, 2018

Frequency (MHz)	Peak Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Lim1: FCC_pt15_2 09 (dBμV/m)	Lim1 Margin (dB)	Lim1 Test Results (Pass/Fail)	Worst Margin Lim1 (dB)	Lim2: FCC_pt15_1 09_Class_B (dBμV/m)	Lim2 Margin (dB)	Lim2 Test Results (Pass/Fail)	Worst Margin Lim2 (dB)	Antenna Height (cm)	Turntable Azimuth (degrees)
30.049	32	-7.5	24.6	40	-15.4	PASS	-15.4	40	-15.4	PASS	-15.4	100	225
72.777	35.5	-20.2	15.3	40	-24.7	PASS		40	-24.7	PASS		150	135
121.253	33.5	-14.2	19.3	43.5	-24.2	PASS		43.5	-24.2	PASS		200	135
196.404	34.6	-16.2	18.3	43.5	-25.2	PASS		43.5	-25.2	PASS		100	0
466.33	35.4	-10.2	25.2	46	-20.8	PASS		46	-20.8	PASS		200	90
769.698	31.2	-2.6	28.6	46	-17.4	PASS		46	-17.5	PASS		100	135



Curtis Straus - a Bureau Veritas Company
 Radiated Emissions Electric Field 3m Distance
 Top Peaks Horizontal 30-1000MHz
 Operator: AKZ
 Notes:
 High Channel

Work Order - S3581
 EUT Power Input - Battery
 Test Site - CH-2
 Conditions - 24°C; 23%RH; 1008mBar
 EUT Maximum Frequency - 928MHz

Data Taken at 04:22:27 PM, Wednesday, December 19, 2018

Frequency (MHz)	Peak Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Lim1: FCC_pt15_2 09 (dBμV/m)	Lim1 Margin (dB)	Lim1 Test Results (Pass/Fail)	Worst Margin Lim1 (dB)	Lim2: FCC_pt15_1 09_Class_B (dBμV/m)	Lim2 Margin (dB)	Lim2 Test Results (Pass/Fail)	Worst Margin Lim2 (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
30.703	32.8	-8.1	24.7	40	-15.3	PASS		40	-15.3	PASS		250	45
72.777	35.6	-20.2	15.4	40	-24.6	PASS		40	-24.6	PASS		250	45
127.364	33.7	-14.3	19.4	43.5	-24.1	PASS		43.5	-24.1	PASS		250	270
184.109	41.2	-17.2	24	43.5	-19.5	PASS		43.5	-19.6	PASS		150	180
466.33	41	-10.2	30.8	46	-15.2	PASS	-15.2	46	-15.2	PASS	-15.2	100	45
785.096	31.6	-2.2	29.4	46	-16.6	PASS		46	-16.6	PASS		250	180

Curtis Straus - a Bureau Veritas Company
 Radiated Emissions Electric Field 3m Distance
 Top Peaks Vertical 30-1000MHz
 Operator: AKZ
 Notes:
 High Channel

Work Order - S3581
 EUT Power Input - Battery
 Test Site - CH-2
 Conditions - 24°C; 23%RH; 1008mBar
 EUT Maximum Frequency - 928MHz

Data Taken at 04:22:27 PM, Wednesday, December 19, 2018

Frequency (MHz)	Peak Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Lim1: FCC_pt15_2 09 (dBμV/m)	Lim1 Margin (dB)	Lim1 Test Results (Pass/Fail)	Worst Margin Lim1 (dB)	Lim2: FCC_pt15_1 09_Class_B (dBμV/m)	Lim2 Margin (dB)	Lim2 Test Results (Pass/Fail)	Worst Margin Lim2 (dB)	Antenna Height (cm)	Turntable Azimuth (degrees)
30.097	32	-7.5	24.5	40	-15.5	PASS	-15.5	40	-15.5	PASS	-15.5	150	0
72.777	34.8	-20.2	14.7	40	-25.3	PASS		40	-25.3	PASS		100	45
120.622	34.2	-14.4	19.9	43.5	-23.6	PASS		43.5	-23.7	PASS		200	315
196.355	34.6	-16.2	18.4	43.5	-25.1	PASS		43.5	-25.1	PASS		100	45
348.863	34.9	-13.6	21.2	46	-24.8	PASS		46	-24.8	PASS		150	225
778.986	30.7	-2.1	28.6	46	-17.4	PASS		46	-17.4	PASS		200	135



Curtis Straus - a Bureau Veritas Company
 Radiated Emissions Electric Field 3m Distance
 1-6GHz Horizontal Data
 Operator: AKZ
 Notes:
 Low Channel

Work Order - S3581
 EUT Power Input - Battery
 Test Site - CH-1
 Conditions - 23°C; 22%RH; 1029mBar

Data Taken at 11:13:45 AM, Thursday, December 27, 2018

Frequency (MHz)	Raw Peak Reading (dBμV)	Raw Avg Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Pk Lim: FCC_pt15_2 09_Peak (dBμV/m)	Peak Margin (dB)	Peak Results (Pass/Fail)	Worst Peak Margin (dB)	Adjusted Avg Amplitude (dBμV/m)	Av Lim: FCC_pt15_2 09_Average (dBμV/m)	Avg Margin (dB)	Avg Results (Pass/Fail)	Worst Average Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1289.2	46.1	36	-6.9	39.2	74	-34.8	PASS		29.1	54	-24.9	PASS		219	244
2414	44.2	37.5	-2.4	41.8	74	-32.2	PASS		35.1	54	-18.9	PASS		100	84
2450.6	43.4	36.8	-2.3	41	74	-33	PASS		34.5	54	-19.5	PASS		199	184
2461.7	44.5	36.3	-2.3	42.2	74	-31.8	PASS		34	54	-20	PASS		125	169
3610.9	52.6	49.8	-0.1	52.5	74	-21.5	PASS	-21.5	49.7	54	-4.3	PASS	-4.3	100	208
5800.9	41	33	2.1	43	74	-31	PASS		35.1	54	-18.9	PASS		275	10

Curtis Straus - a Bureau Veritas Company
 Radiated Emissions Electric Field 3m Distance
 1-6GHz Vertical Data
 Operator: AKZ
 Notes:
 Low Channel

Work Order - S3581
 EUT Power Input - Battery
 Test Site - CH-1
 Conditions - 23°C; 22%RH; 1029mBar

Data Taken at 11:13:45 AM, Thursday, December 27, 2018

Frequency (MHz)	Raw Peak Reading (dBμV)	Raw Avg Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Pk Lim: FCC_pt15_2 09_Peak (dBμV/m)	Peak Margin (dB)	Peak Results (Pass/Fail)	Worst Peak Margin (dB)	Adjusted Avg Amplitude (dBμV/m)	Av Lim: FCC_pt15_2 09_Average (dBμV/m)	Avg Margin (dB)	Avg Results (Pass/Fail)	Worst Avg Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2407.6	44.3	35.4	-2.4	41.9	74	-32.1	PASS		33	54	-21	PASS		175	325
2467.5	42.6	34.9	-2.3	40.3	74	-33.7	PASS		32.6	54	-21.4	PASS		125	7
3610.7	49.5	45.3	-0.1	49.4	74	-24.6	PASS	-24.6	45.2	54	-8.8	PASS	-8.8	300	225
5771.4	42.6	32.9	2	44.6	74	-29.4	PASS		34.9	54	-19.1	PASS		207	147
5781	42.1	32.9	2	44.1	74	-29.9	PASS		34.9	54	-19.1	PASS		213	59
5792.9	42.9	32.8	2.1	45	74	-29	PASS		34.8	54	-19.2	PASS		100	29



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Curtis Straus - a Bureau Veritas Company
 Radiated Emissions Electric Field 3m Distance
 1-6GHz Horizontal Data
 Operator: AKZ
 Notes:
 Mid Channel

Work Order - S3581
 EUT Power Input - Battery
 Test Site - CH-1
 Conditions - 23°C; 22%RH; 1029mBar

Data Taken at 12:07:41 PM, Thursday, December 27, 2018

Frequency (MHz)	Raw Peak Reading (dBμV)	Raw Avg Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Pk Lim: FCC_pt15_2 09_Peak (dBμV/m)	Peak Margin (dB)	Peak Results (Pass/Fail)	Worst Peak Margin (dB)	Adjusted Avg Amplitude (dBμV/m)	Av Lim: FCC_pt15_2 09_Average (dBμV/m)	Avg Margin (dB)	Avg Results (Pass/Fail)	Worst Average Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1330.1	45.2	35.4	-6.7	38.5	74	-35.5	PASS		28.7	54	-25.3	PASS		125	80
3659	41.3	33.4	0.4	41.7	74	-32.3	PASS		33.8	54	-20.2	PASS		189	153
5317.5	42.2	33.1	1.7	43.9	74	-30.1	PASS		34.8	54	-19.2	PASS		201	315
5444.1	42.7	33.2	2.3	45	74	-29	PASS	-29	35.5	54	-18.5	PASS	-18.5	208	146

Curtis Straus - a Bureau Veritas Company
 Radiated Emissions Electric Field 3m Distance
 1-6GHz Vertical Data
 Operator: AKZ
 Notes:
 Mid Channel

Work Order - S3581
 EUT Power Input - Battery
 Test Site - CH-1
 Conditions - 23°C; 22%RH; 1029mBar

Data Taken at 12:07:41 PM, Thursday, December 27, 2018

Frequency (MHz)	Raw Peak Reading (dBμV)	Raw Avg Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Pk Lim: FCC_pt15_2 09_Peak (dBμV/m)	Peak Margin (dB)	Peak Results (Pass/Fail)	Worst Peak Margin (dB)	Adjusted Avg Amplitude (dBμV/m)	Av Lim: FCC_pt15_2 09_Average (dBμV/m)	Avg Margin (dB)	Avg Results (Pass/Fail)	Worst Avg Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1363.1	44.4	36.1	-6.9	37.5	74	-36.5	PASS		29.2	54	-24.8	PASS		124	219
3658.8	42	33.4	0.4	42.5	74	-31.5	PASS		33.8	54	-20.2	PASS		186	287
5316.4	42.4	33.1	1.7	44.1	74	-29.9	PASS	-29.9	34.8	54	-19.2	PASS	-19.2	201	146



Curtis Straus - a Bureau Veritas Company
 Radiated Emissions Electric Field 3m Distance
 1-6GHz Horizontal Data
 Operator: AKZ
 Notes:
 High Channel

Work Order - S3581
 EUT Power Input - Battery
 Test Site - CH-1
 Conditions - 23°C; 22%RH; 1029mBar

Data Taken at 01:46:07 PM, Thursday, December 27, 2018

Frequency (MHz)	Raw Peak Reading (dBμV)	Raw Avg Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Pk Lim: FCC_pt15_2 09_Peak (dBμV/m)	Peak Margin (dB)	Peak Results (Pass/Fail)	Worst Peak Margin (dB)	Adjusted Avg Amplitude (dBμV/m)	Av Lim: FCC_pt15_2 09_Average (dBμV/m)	Avg Margin (dB)	Avg Results (Pass/Fail)	Worst Average Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1300.6	45.4	36.2	-6.7	38.7	74	-35.3	PASS		29.5	54	-24.5	PASS		125	335
2415	42.9	35.9	-2.4	40.5	74	-33.5	PASS		33.6	54	-20.4	PASS		103	0
2448.6	42.8	34.8	-2.3	40.5	74	-33.5	PASS		32.5	54	-21.5	PASS		275	124
3543.3	43.2	34.1	0.1	43.3	74	-30.7	PASS	-30.7	34.2	54	-19.8	PASS		225	180
5316.5	41.3	33.1	1.7	42.9	74	-31.1	PASS		34.7	54	-19.3	PASS	-19.3	175	89

Curtis Straus - a Bureau Veritas Company
 Radiated Emissions Electric Field 3m Distance
 1-6GHz Vertical Data
 Operator: AKZ
 Notes:
 High Channel

Work Order - S3581
 EUT Power Input - Battery
 Test Site - CH-1
 Conditions - 23°C; 22%RH; 1029mBar

Data Taken at 01:46:07 PM, Thursday, December 27, 2018

Frequency (MHz)	Raw Peak Reading (dBμV)	Raw Avg Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Pk Lim: FCC_pt15_2 09_Peak (dBμV/m)	Peak Margin (dB)	Peak Results (Pass/Fail)	Worst Peak Margin (dB)	Adjusted Avg Amplitude (dBμV/m)	Av Lim: FCC_pt15_2 09_Average (dBμV/m)	Avg Margin (dB)	Avg Results (Pass/Fail)	Worst Avg Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1105.4	45.2	36.1	-8.2	37	74	-37	PASS		27.9	54	-26.1	PASS		275	96
1327.7	44.3	36.4	-6.7	37.6	74	-36.4	PASS		29.7	54	-24.3	PASS		196	222
2414.5	44.1	35.4	-2.4	41.7	74	-32.3	PASS		33	54	-21	PASS		108	193
2450.1	42.9	36	-2.3	40.6	74	-33.4	PASS		33.7	54	-20.3	PASS		225	83
3706.6	42.3	33.3	0.5	42.8	74	-31.2	PASS		33.7	54	-20.3	PASS		109	43
5444	43.8	33.3	2.3	46	74	-28	PASS	-28	35.5	54	-18.5	PASS	-18.5	175	164



Curtis Straus - a Bureau Veritas Company

Radiated Emissions Electric Field 1m Distance

Top Peaks Horizontal 6-18GHz

Operator: Aristotelis Casternopoulos

Notes:

Low Channel

Work Order - S3581

EUT Power Input - Battery

Test Site - CH-2

Conditions - 23.4°C; 22%RH; 1005mBar

0

0

Data Taken at 01:53:40 PM, Tuesday, January 08, 2019

Frequency (MHz)	Raw Peak Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Pk Lim: FCC_pt15_2 09_Peak (dBμV/m)	Margin to Peak Limit (dB)	Peak Limit Test Results (Pass/Fail)	Peak Limit Worst Margin (dB)	Av Lim: FCC_pt15_2 09_Average (dBμV/m)	Margin to Avg Limit (dB)	Avg Limit Test Results (Pass/Fail)	Avg Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
9974.5	47.4	7.2	54.7	83.5	-28.8	PASS	-28.8	63.5	-8.8	PASS	-8.8	200	56

Curtis Straus - a Bureau Veritas Company						Work Order - S3581							
Radiated Emissions Electric Field 1m Distance						EUT Power Input - Battery							
Top Peaks Vertical 6-18GHz						Test Site - CH-2							
Operator: Aristotelis Casternopoulos						Conditions - 23.4°C; 22%RH; 1005mBar							
Notes:						0							
Low Channel						0							
Data Taken at 01:53:40 PM, Tuesday, January 08, 2019													
Frequency (MHz)	Raw Peak Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Pk Lim: FCC_pt15_2 09_Peak (dBμV/m)	Margin to Peak Limit (dB)	Peak Limit Test Results (Pass/Fail)	Peak Limit Worst Margin (dB)	Av Lim: FCC_pt15_2 09_Average (dBμV/m)	Margin to Avg Limit (dB)	Avg Limit Test Results (Pass/Fail)	Avg Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
9931.4	48.1	7.3	55.3	83.5	-28.2	PASS	-28.2	63.5	-8.2	PASS	-8.2	200	115



Curtis Straus - a Bureau Veritas Company

Radiated Emissions Electric Field 1m Distance

Top Peaks Horizontal 6-18GHz

Operator: Aristotelis Casternopoulos

Notes:

Mid Channel

Work Order - S3581

EUT Power Input - Battery

Test Site - CH-2

Conditions - 23.4°C; 22%RH; 1005mBar

0

0

Data Taken at 02:23:14 PM, Tuesday, January 08, 2019

Frequency (MHz)	Raw Peak Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Pk Lim: FCC_pt15_2 09_Peak (dBμV/m)	Margin to Peak Limit (dB)	Peak Limit Test Results (Pass/Fail)	Peak Limit Worst Margin (dB)	Av Lim: FCC_pt15_2 09_Average (dBμV/m)	Margin to Avg Limit (dB)	Avg Limit Test Results (Pass/Fail)	Avg Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
9917.3	47.7	7.3	55	83.5	-28.5	PASS	-28.5	63.5	-8.5	PASS	-8.5	125	200

Curtis Straus - a Bureau Veritas Company						Work Order - S3581							
Radiated Emissions Electric Field 1m Distance						EUT Power Input - Battery							
Top Peaks Vertical 6-18GHz						Test Site - CH-2							
Operator: Aristotelis Casternopoulos						Conditions - 23.4°C; 22%RH; 1005mBar							
Notes:						0							
Mid Channel						0							
Data Taken at 02:23:13 PM, Tuesday, January 08, 2019													
Frequency (MHz)	Raw Peak Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Pk Lim: FCC_pt15_2 09_Peak (dBμV/m)	Margin to Peak Limit (dB)	Peak Limit Test Results (Pass/Fail)	Peak Limit Worst Margin (dB)	Av Lim: FCC_pt15_2 09_Average (dBμV/m)	Margin to Avg Limit (dB)	Avg Limit Test Results (Pass/Fail)	Avg Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7069.7	47	4.7	51.7	83.5	-31.8	PASS		63.5	-11.8	PASS		100	175
9988.4	47.4	7.2	54.6	83.5	-28.9	PASS	-28.9	63.5	-8.9	PASS	-8.9	125	22



Curtis Straus - a Bureau Veritas Company
 Radiated Emissions Electric Field 1m Distance
 Top Peaks Horizontal 6-18GHz
 Operator: Aristotelis Casternopoulos
 Notes:
 High Channel

Work Order - S3581
 EUT Power Input - Battery
 Test Site - CH-2
 Conditions - 23.4°C; 22%RH; 1005mBar

Data Taken at 02:40:36 PM, Tuesday, January 08, 2019

Frequency (MHz)	Raw Peak Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Pk Lim: FCC_pt15_2 09_Peak (dBμV/m)	Margin to Peak Limit (dB)	Peak Limit Test Results (Pass/Fail)	Peak Limit Worst Margin (dB)	Av Lim: FCC_pt15_2 09_Average (dBμV/m)	Margin to Avg Limit (dB)	Avg Limit Test Results (Pass/Fail)	Avg Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
9941.8	47.7	7.3	55	83.5	-28.5	PASS	-28.5	63.5	-8.5	PASS	-8.5	150	294

Curtis Straus - a Bureau Veritas Company
 Radiated Emissions Electric Field 1m Distance
 Top Peaks Vertical 6-18GHz
 Operator: Aristotelis Casternopoulos
 Notes:
 High Channel

Work Order - S3581
 EUT Power Input - Battery
 Test Site - CH-2
 Conditions - 23.4°C; 22%RH; 1005mBar

Data Taken at 02:40:36 PM, Tuesday, January 08, 2019

Frequency (MHz)	Raw Peak Reading (dBμV)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dBμV/m)	Pk Lim: FCC_pt15_2 09_Peak (dBμV/m)	Margin to Peak Limit (dB)	Peak Limit Test Results (Pass/Fail)	Peak Limit Worst Margin (dB)	Av Lim: FCC_pt15_2 09_Average (dBμV/m)	Margin to Avg Limit (dB)	Avg Limit Test Results (Pass/Fail)	Avg Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
9891.4	47.8	7.1	54.9	83.5	-28.6	PASS	-28.6	63.5	-8.6	PASS	-8.6	200	203



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Rev. 12/27/2018

Spectrum Analyzers / Receivers /Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
2093 MXE EMI Receiver		20Hz-26.5GHz	N9038A	Agilent	MY51210181	2093	I	11/21/2019	11/21/2018
Rental MXE EMI Receiver(1170725)		20Hz-26.5GHz	N9038A	Agilent	MY51210151	1170725	I	4/10/2019	4/10/2018
Radiated Emissions Sites		FCC Code	IC Code	VCCI Code	Range	Asset	Cat	Calibration Due	Calibrated on
EMI Chamber 1		719150	2762A-6	A-0015	30-1000MHz	1685	I	12/7/2020	12/7/2018
EMI Chamber 1		719150	2762A-6	A-0015	1-18GHz	1685	I	12/7/2020	12/7/2018
EMI Chamber 2		719150	2762A-7	A-0015	30-1000MHz	1686	I	12/7/2020	12/7/2018
EMI Chamber 2		719150	2762A-7	A-0015	1-18GHz	1686	I	12/7/2020	12/7/2018
Preamps /Couplers Attenuators / Filters		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
2310 PA		1-1000MHz	PAM-103	COM-POWER	441175	2310	II	10/29/2019	10/29/2018
8449B HF Preamp		1-18GHz	8449B	Agilent	1149055		II	11/26/2019	11/26/2018
Antennas		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Red-Brown Bilog		30-2000MHz	JB1	Sunol	A0032406	1218	I	1/13/2019	1/13/2017
Blue Horn		1-18Ghz	3117	ETS	157647	1861	I	2/14/2019	2/14/2017
Meteorological Meters/Chambers			MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Weather Clock (Pressure Only)			BA928	Oregon Scientific	C3166-1	831	I	5/15/2020	5/15/2018
TH A#2080			HTC-1	HDE		2080	II	3/23/2019	3/23/2018
TH A#2084			HTC-1	HDE		2084	II	3/23/2019	3/23/2018
Cables		Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #2051		9kHz - 18GHz		Florida RF			II	3/7/2019	3/7/2018
Asset #2455		9KHz-18GHz		MegaPhase			II	10/29/2019	10/29/2018
Asset #2456		9KHz-18GHz		MegaPhase			II	10/31/2019	10/31/2018
Asset #2466		9KHz-18GHz		MegaPhase			II	10/31/2019	10/31/2018
Asset #2467		9KHz-18GHz		MegaPhase			II	10/31/2019	10/31/2018
Asset #2480		9KHz-18GHz		MegaPhase			II	10/29/2019	10/29/2018
2487(6dB)		9KHz-18GHz					II	11/27/2019	11/27/2018
Preamps /Couplers Attenuators / Filters		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
2130 BRF		9KHz-10GHz	BRM1877C	Micro-Tronics	1	2130	II	1/10/2019	1/10/2018

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

Test Equipment Used



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Conducted Spurious Emissions

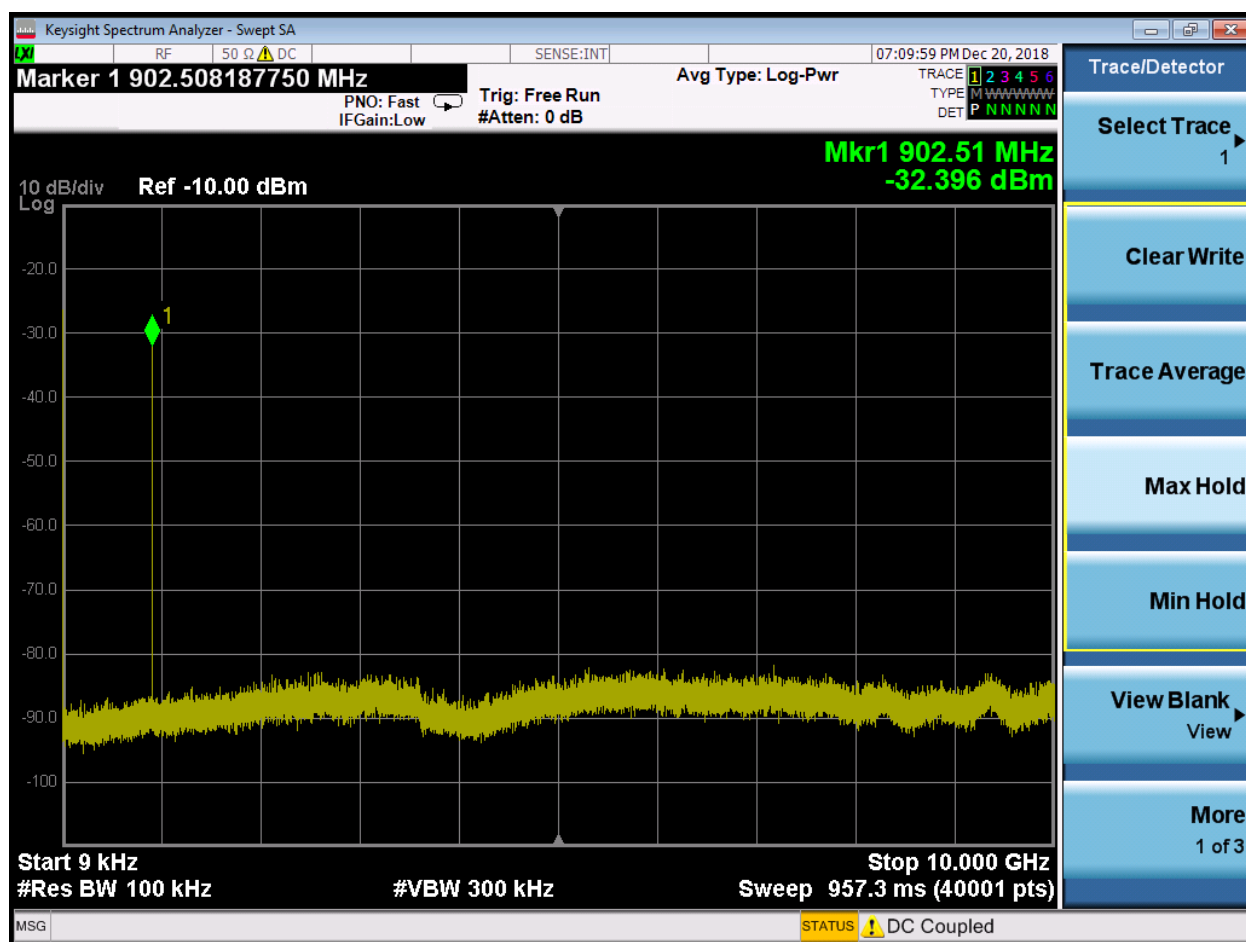
LIMITS

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)]

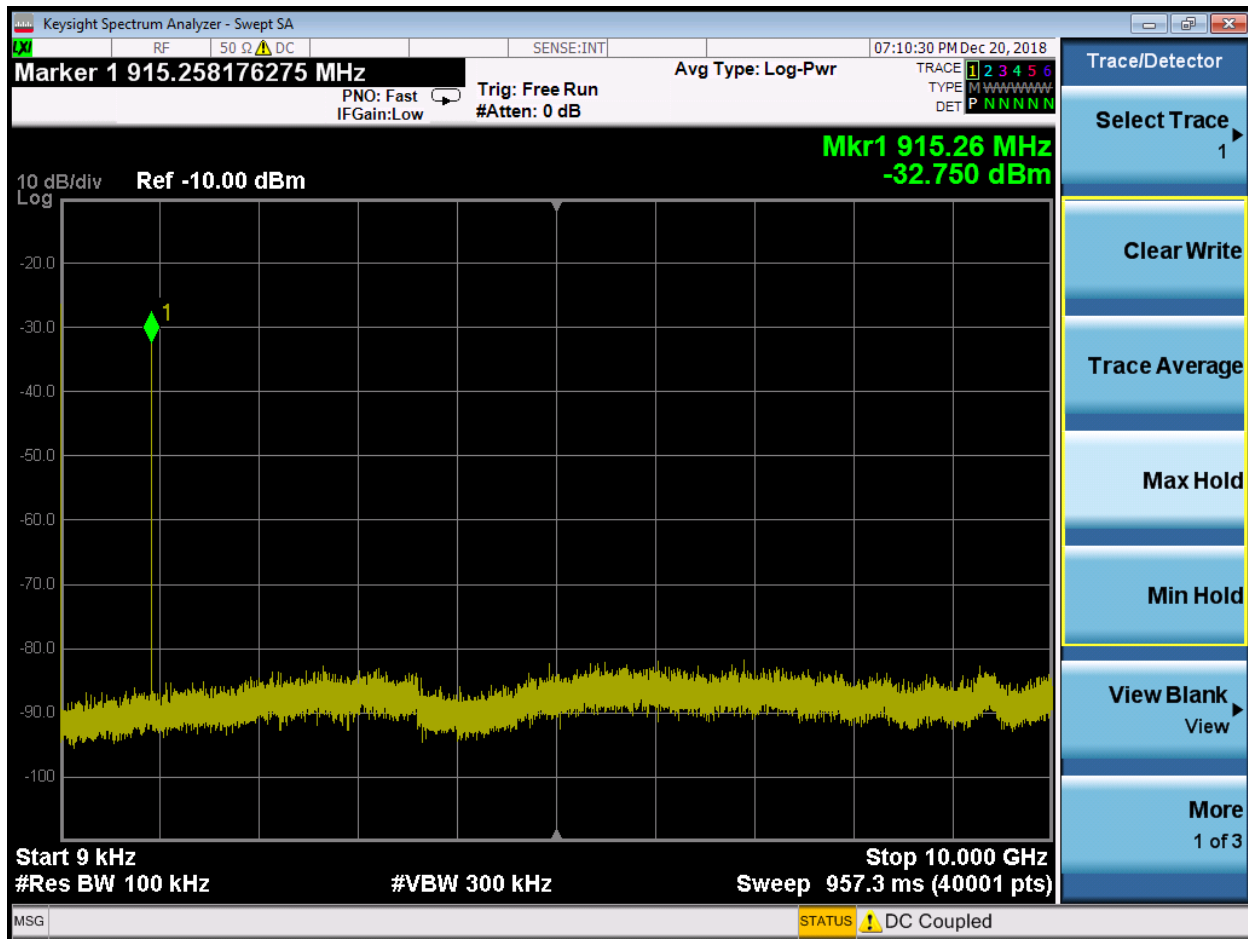
Conducted spurious emissions at the antenna port were measured in accordance with ANSI C63.10-2013 Section 11.11.

Frequency range up to 10GHz was investigated for all 3 channels (low, middle and high) at the EUT antenna port. No emissions within 30dB of their corresponding fundamental were found.

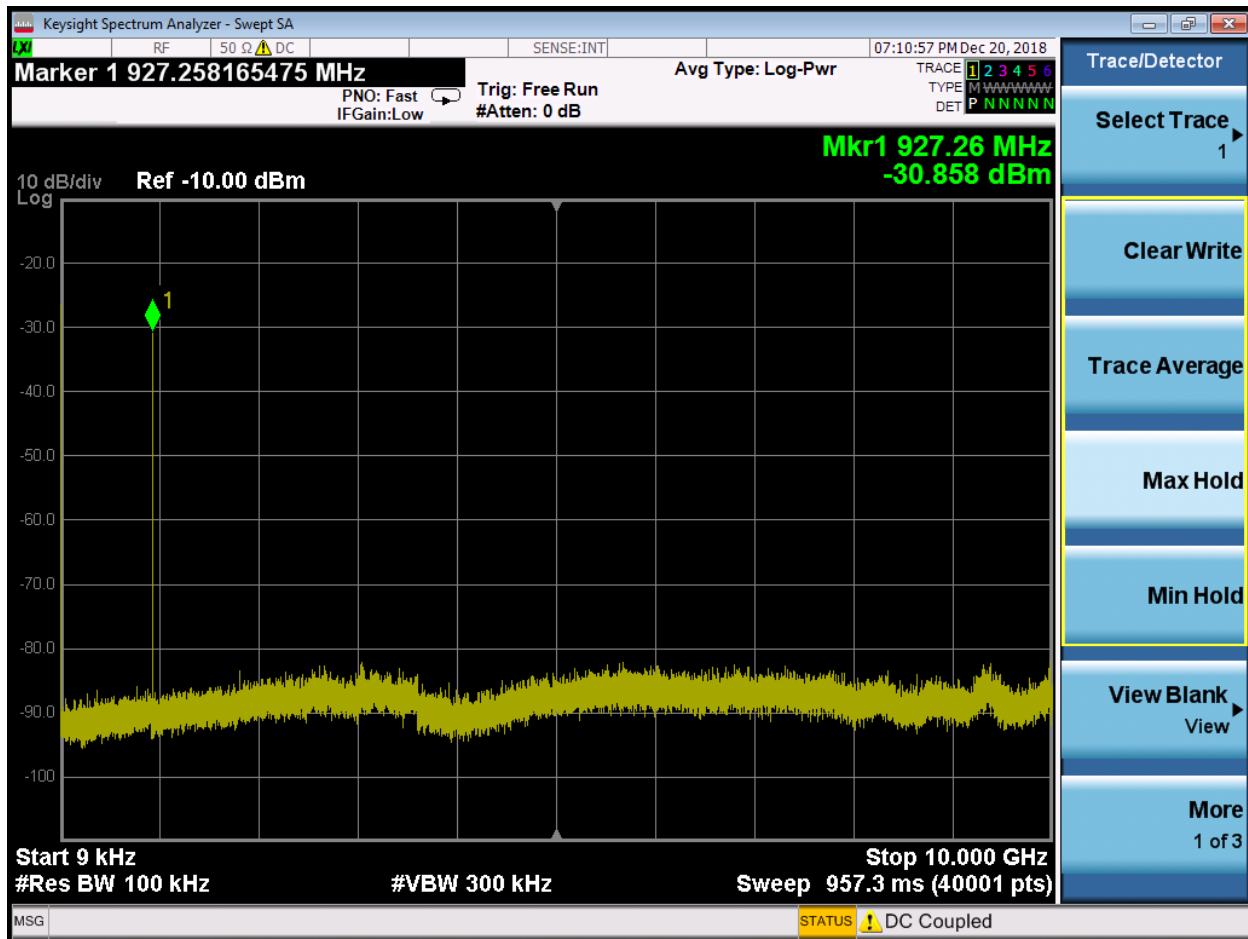


Low Channel





Mid Channel



High Channel

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 ANSI C63.10-2013 Section 11.10.3 Method AVGPSD-1

MEASUREMENTS / RESULTS

Peak Power Spectral Density							
Date: 1/3/2019		Company: Ideal Industries			Work Order: S3581		
Engineer: AKZ		EUT: Audacy Motion Sensor			Operating Voltage/Frequency: Battery		
Temp: 20°C		Humidity: 32%		Pressure: 1001mbar			
Frequency Range: 902-928 MHz				Measurement Type: Conducted			
Notes:							
Frequency	Peak Reading	Cable Loss	Attenuator Loss	Peak PSD	Limit	Margin	Result
(MHz)	(dBm)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
902.7	-51.17	0.00	40.03	-11.14	8.0	-19.14	Pass
915.0	-51.13	0.00	40.03	-11.10	8.0	-19.10	Pass
927.3	-51.72	0.00	40.03	-11.69	8.0	-19.69	Pass
Test Site: CEMI-2		Cable: none		Attenuator: Asset #2107			
Analyzer: 1118473							
PSD(dBm) = Reading (dBm) + Cable Loss (dB) + Attenuator Loss (dBm)							

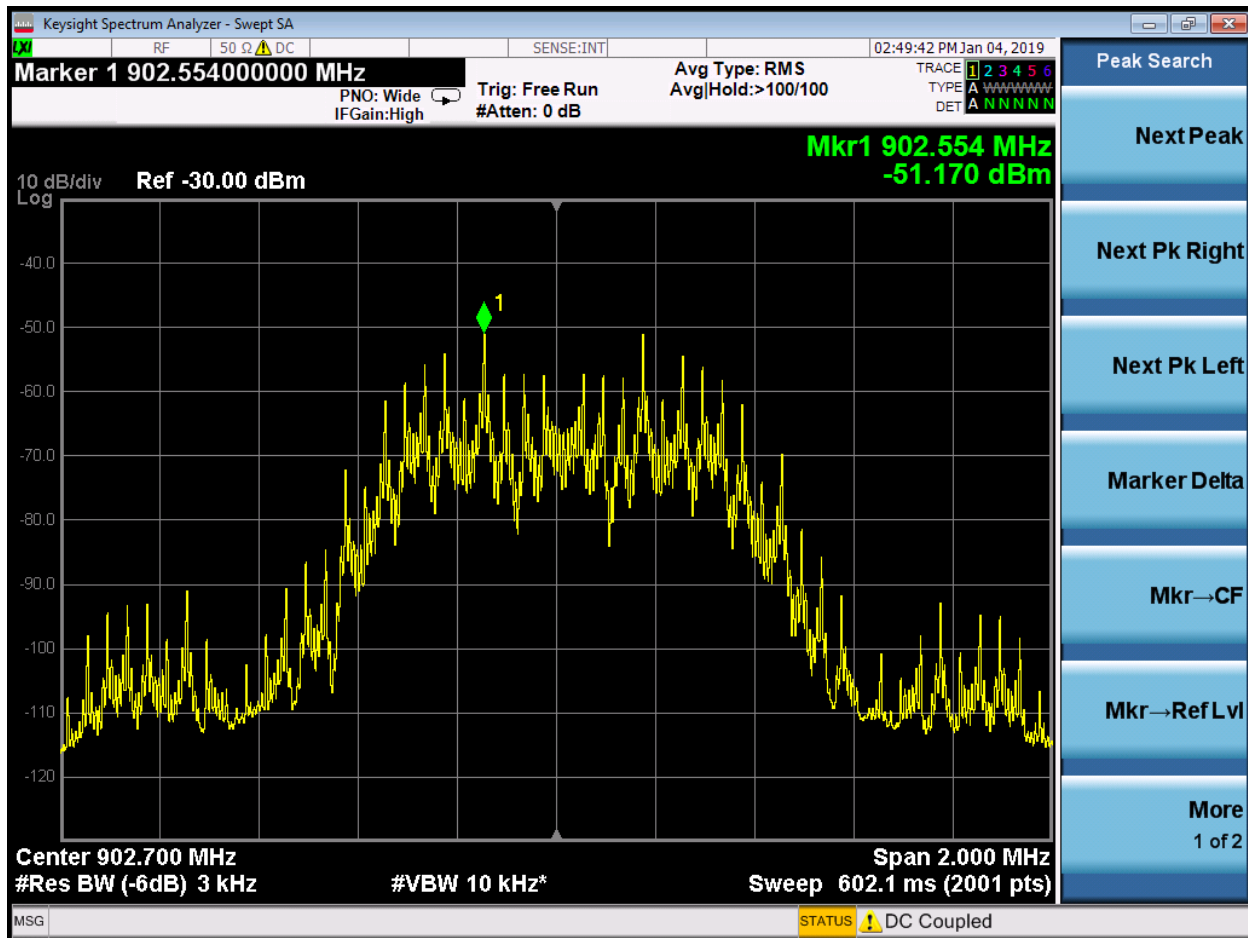
Rev. 12/27/2018

Spectrum Analyzers / Receivers/Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Rental EXA Signal Analyzer(1118473)	9KHz-26.5GHz	N9010A-526;N	AT	MY51170076	1118473	I	6/19/2019	6/19/2018
Conducted Test Sites (Mains / Telco)	FCC Code		VCCI Code			Cat	Calibration Due	Calibrated on
CEMI 2	719150		A-0015			III	NA	N/A
Preamps/Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
API - 40dB 100W Attenuator	0.009-18GHz	48-40-34	API Weinschel	CG7990	2107	II	10/9/2019	10/9/2018

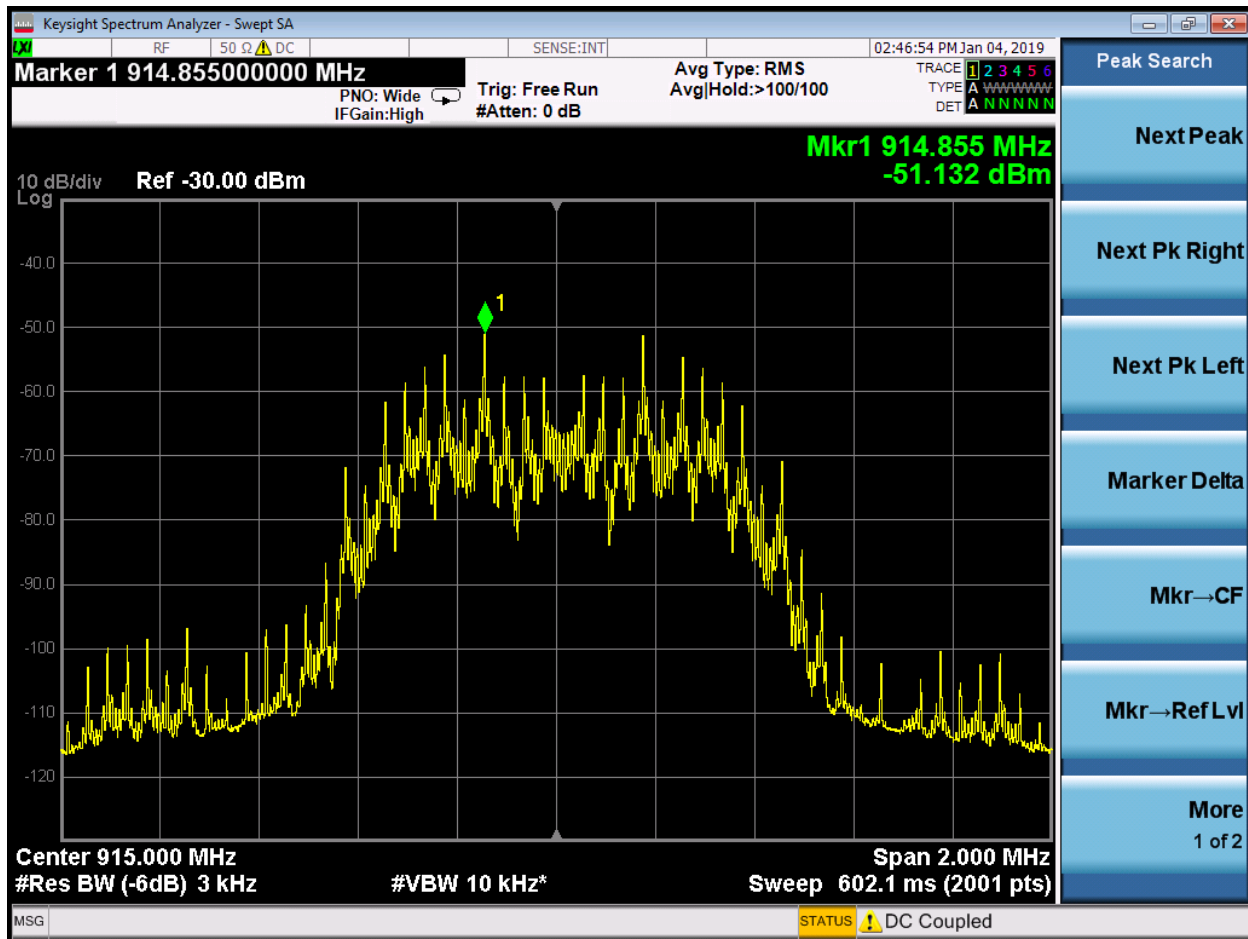
All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



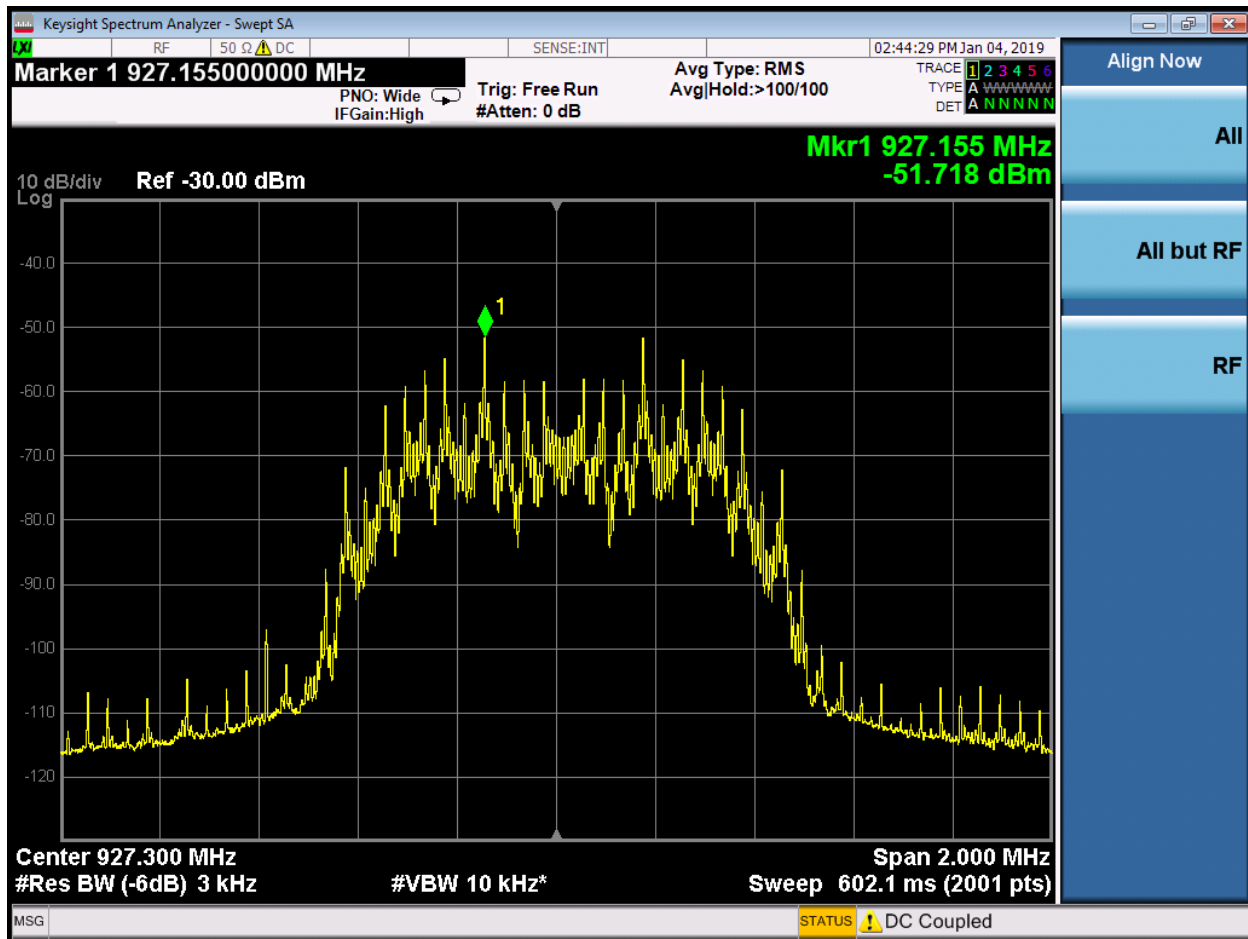
PLOTS



PSD – Low Channel



PSD – Mid Channel



PSD – High Channel

Occupied Bandwidth

REQUIREMENT

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

[RSS-GEN Issue 5 Section 6.7]

MEASUREMENTS / RESULTS

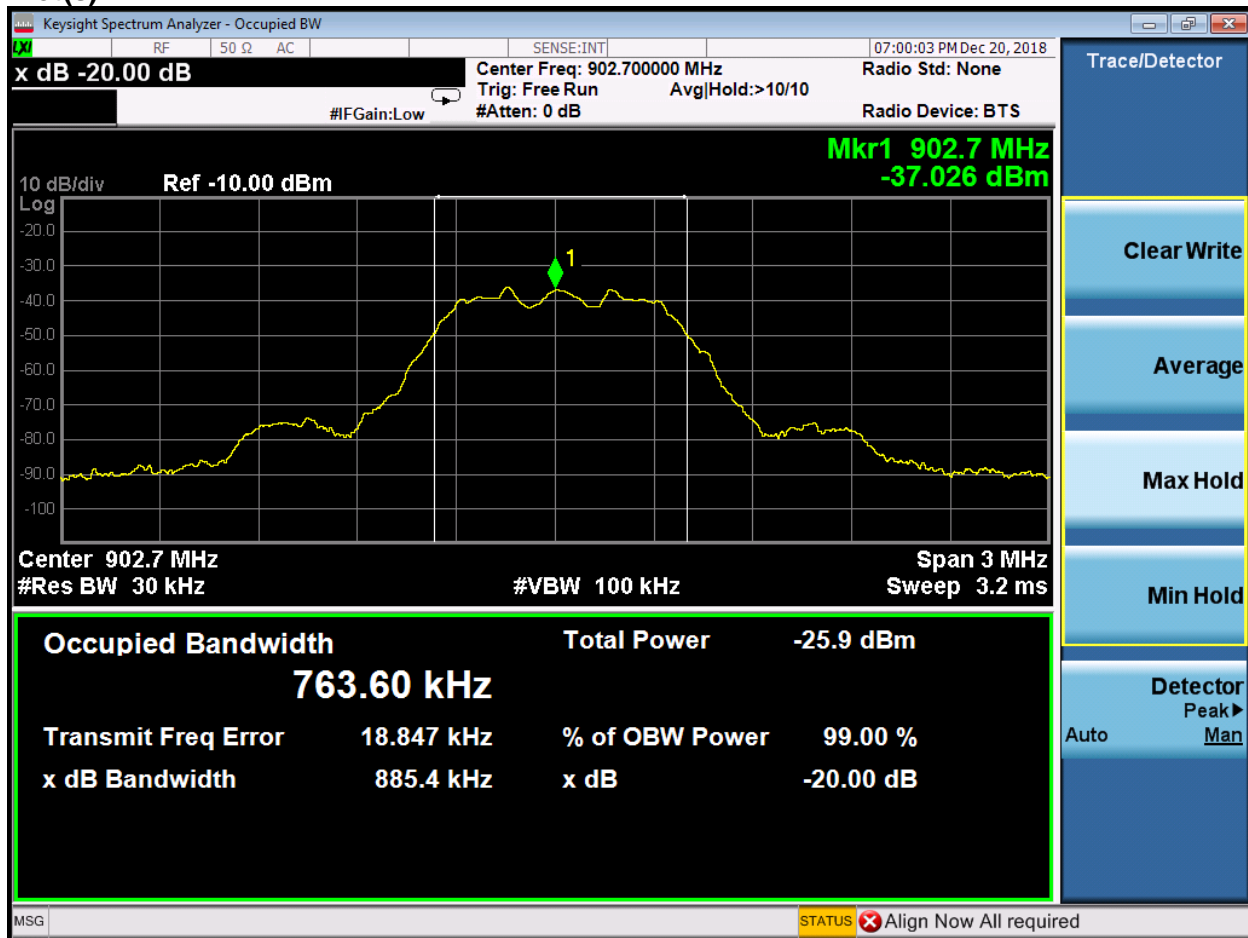
99% Occupied Bandwidth									
Date: 12/19/2018			Company: Ideal Industries				Work Order: S3581		
Engineer: AKZ			EUT: Audacy Motion Sensor				Operating Voltage/Frequency: Battery		
Temp: 21°C			Humidity: 33%		Pressure: 1008mbar				
Frequency Range: 902-928 MHz					Measurement Type: Conducted				
Notes:									
Frequency (MHz)		99% OBW (MHz)							
902.7		763.60							
915.0		759.04							
927.3		757.53							
Test Site: CEMI-2			Cable: none			Attenuator: Asset #2107			
Analyzer: 1118473			Copyright Curtis-Straus LLC 2000						

Rev. 12/27/2018

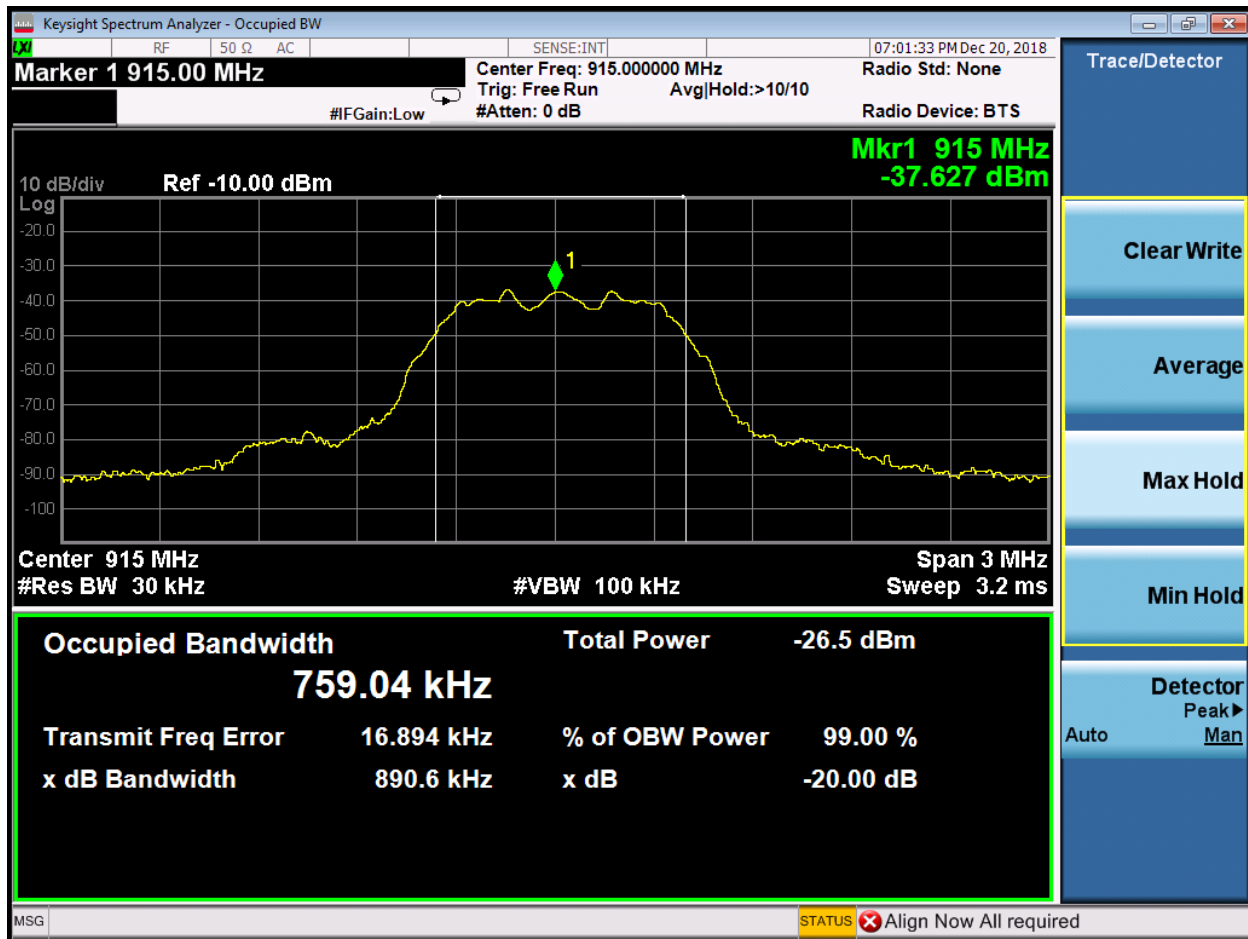
Spectrum Analyzers / Receivers / Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Rental EXA Signal Analyzer(1118473)		9KHz-26.5GHz	N9010A-526;N	AT	MY51170076	1118473	I	6/19/2019	6/19/2018
Conducted Test Sites (Mains / Telco)		FCC Code		VCCI Code			Cat	Calibration Due	Calibrated on
CEMI 2		719150		A-0015			III	NA	N/A
Preamps / Couplers Attenuators / Filters		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
API - 40dB 100W Attenuator		0.009-18GHz	48-40-34	API Weinschel	CG7990	2107	II	10/9/2019	10/9/2018

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

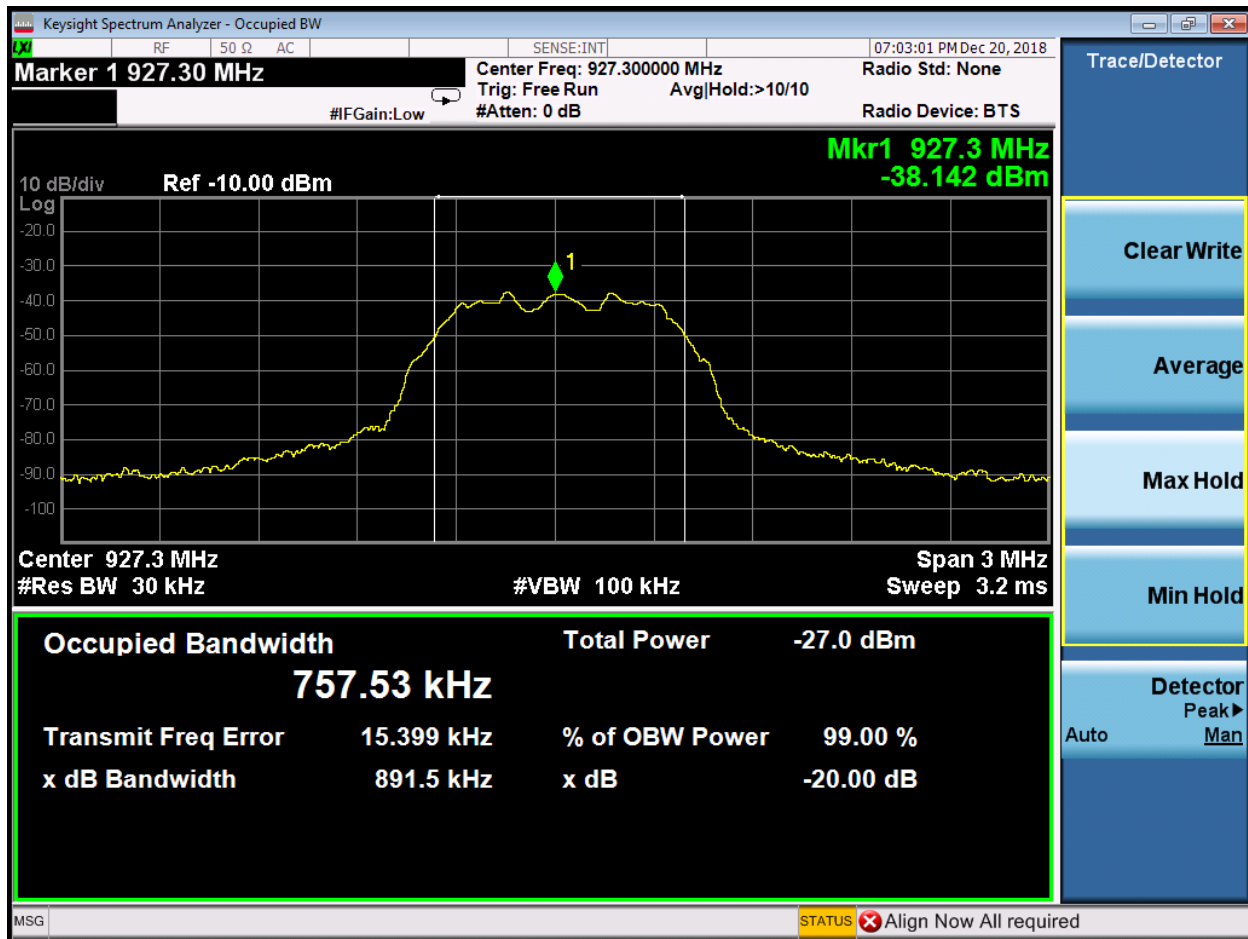
Plot(s)



Occupied Bandwidth – Low Channel



Occupied Bandwidth – Middle Channel



Occupied Bandwidth – High Channel

Measurement Uncertainty

The listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

Measurement	Expanded Uncertainty k=2	Maximum allowable uncertainty
Radiated Emissions (30-1000MHz)	5.6dB	N/A
NIST	4.6dB	5.2dB (Ucisp)
CISPR		
Radiated Emissions (1-26.5GHz)	4.6dB	N/A
Radiated Emissions (above 26.5GHz)	4.9dB	N/A
Magnetic Radiated Emissions	5.6dB	N/A
Conducted Emissions		
NIST	3.9dB	N/A
CISPR	3.6dB	3.6dB (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%	5%
	0.3dB	3dB
Adjacent channel power	1.9dB	3dB
Conducted spurious emission of transmitter, valid up to 12.75GHz	2.39dB	3dB
Conducted emission of receivers	1.3dB	3dB
Radiated emission of transmitter, valid up to 26.5GHz	3.9dB	6dB
Radiated emission of transmitter, valid up to 80GHz	3.3dB	6dB
Radiated emission of receiver, valid up to 26.5GHz	3.9dB	6dB
Radiated emission of receiver, valid up to 80GHz	3.3dB	6dB
Humidity	2.37%	5%
Temperature	0.7°C	1.0°C
Time	4.1%	10%
RF Power Density, Conducted	0.4dB	3dB
DC and low frequency voltages	1.3%	3%
Voltage (AC, <10kHz)	1.3%	2%
Voltage (DC)	0.62%	1%
The above reflects a 95% confidence level		



Conditions Of Testing

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

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



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

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

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

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

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

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

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

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