



BUREAU
VERITAS

Test Report

Report No	EV0343-2
Client Contact	Bevi Nick Lancaster
Address	529 Main St. Suite 304 Charleston MA, 02129
Items tested	Standup Bevi V2
FCC ID	2AMTV-103838
IC	22810-103838
Equipment Code	RFID
FCC/IC Rule Parts	CFR Title 47 FCC Part 15.225, ISED Canada RSS-210 Issue 10 Annex B.6
Test Dates	4/2/2021 to 6/21/2021
Results	As detailed within this report
Prepared by	 Lucas Stampf – EMC Engineer
Authorized by	 Ryan M. Brown – Sr. Engineer
Issue Date	<u>11/2/2021</u>
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.

Bureau Veritas 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 12-07-15



Summary and Test Methodology

This test report supports an application for certification of a transmitter operating pursuant to:
CFR Title 47 FCC Part 15.225, ISED Canada RSS-210 Issue 10 Annex B.6

Standup Bevi V2 is a host unit with a transmitter operating at 13.56MHz and has an onboard antenna. The transmitter is powered by the Host unit.

All testing was performed in accordance with ANSI C63.10 2013. Radiated emissions were maximized by varying the test antenna's height and polarity. Worst case results were recorded.

We found that the product met the above requirements with modification. Test sample was received in good condition.

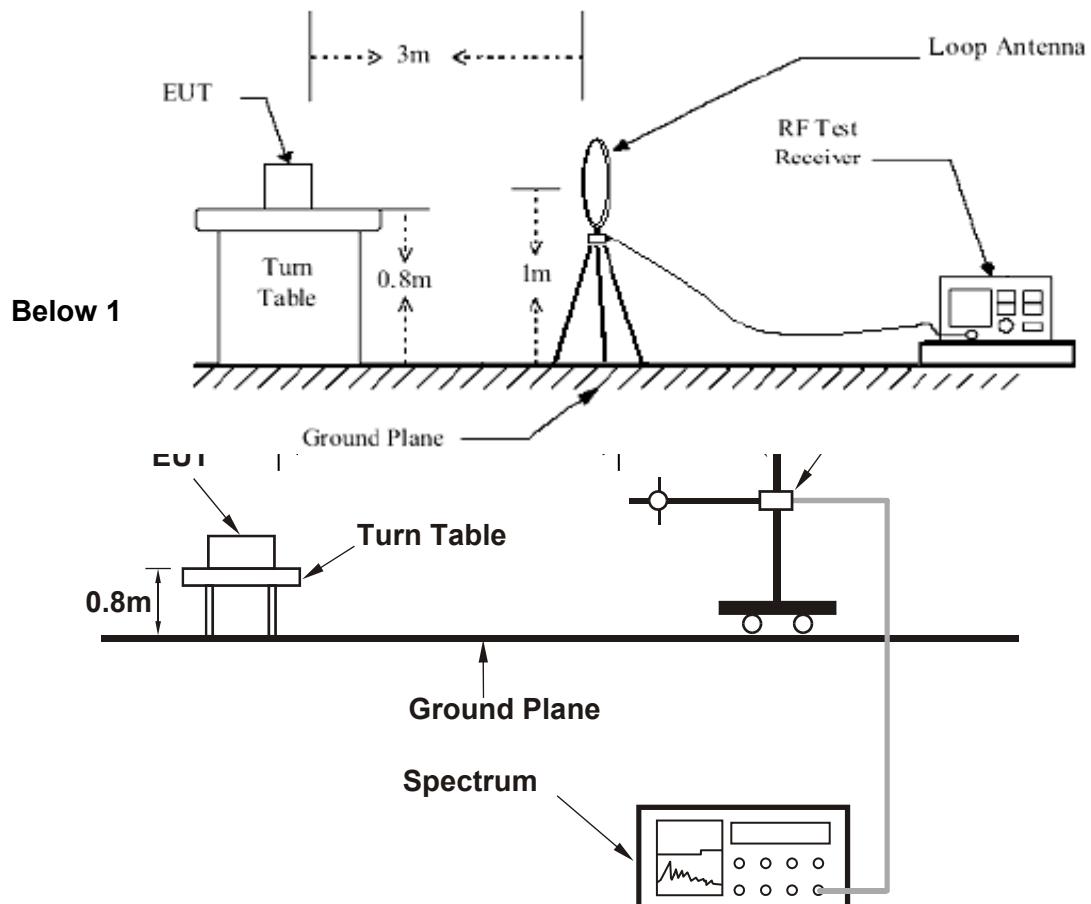
The environmental conditions during testing are documented on the associated data tables. Following bandwidths were used during emissions testing.

Frequency	RBW	VBW
9kHz-150kHz	200Hz	1kHz
150kHz-30MHz	9kHz	30kHz
30MHz-1GHz	120kHz	1MHz

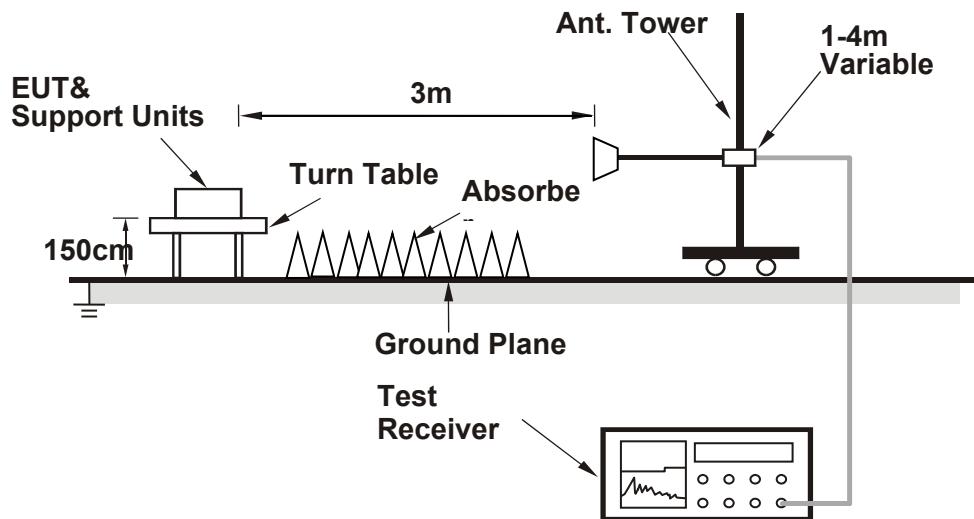
The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω . For example, the measurement frequency 592 KHz resulted in a level of 48 dBuV/m, which is equivalent to $48 - 51.5 = -3.5$ dBuA/m, which has the same margin, -24.2 dB, to the corresponding RSS-GEN Table 6 limit as it has to the 15.209(a) limit.



Block Diagram
Spurious Emissions
Below 30MHz test setup



Above 1GHz test setup



Spurious Emissions was performed in a Semi-Aniconic Chamber EUT was rotated 360 degrees and the measurement antenna was raised and lowered from 1-4M



Product Tested - Configuration Documentation

EUT Configuration										
Work Order:	V0343									
Company:	BEVI									
Company Address:	529 Main St. Suite 304 Charlestown, MA, 02129									
Contact:	Nick Lancaster									
		MN		PN		SN				
EUT:		700-0012		700-0012		DVP04				
EUT Description:	Standup Bevi V2									
EUT Max Frequency:	2400 MHz									
EUT Min Frequency:	0.032768 MHz									
Port Label	Port Type	# ports	# populated	cable type	shielded	ferrites	length (m)	in/out	under test	comment
Power AC	Power AC	1	1	Power AC	No	No	3	in	yes	
Ethernet	Ethernet	1	1	Ethernet	No	No	3	in	yes	
Software Operating Mode Description:										
Software version 12.2Firmware version 1.0.5, Base 0.2.2, Door 0.3.14										
Performance Criteria:										
N/A Emissions Testing Only										

Clock Frequencies										
freqencies (MHz)	2400, 2100, 1900, 1700, 850, 700, 27.12, 16, 6, 2.45, 1, 0.5, 0.032768									

RFID	
Operating Frequency	13.56 MHz
Modulation	BPSK



Statement of Conformity

The _____ complied with the following requirements:

RSS-GEN	RSP-100	RSS 210	Part 15	Comments
6.3			15.15(b)	There are no controls accessible to the user that varies the output power to operate in violation of the regulatory requirements.
	3.1		15.19	The label is shown in the label exhibit.
	4		15.21	Information to the user is shown in the instruction manual exhibit.
			15.27	No special accessories are required for compliance.
3, 6.1			15.31	The EUT was tested in accordance with the measurement standards in this section.
6.13			15.33	Frequency range was investigated according to this section, unless noted in specific rule section under which the equipment operates.
8.1			15.35	The EUT emissions were measured using the measurement detector and bandwidth specified in this section, unless noted in specific rule section under which the equipment operates.
8.3			15.203	EUT has an integral loop antenna
8.10			15.205 15.209	The fundamental is not in a Restricted band and the spurious and harmonic emissions in the Restricted bands comply with the general emission limits of 15.209 or RSS-Gen as applicable
8.8			15.207	EUT meets the AC Line conducted emissions requirements of this section.
			15.225	The unit complies with the requirements of 15.225
		Annex B.6		The unit complies with the requirements of RSS-210 Annex B.6
6.6				Occupied Bandwidth measurements were made.

Colocation testing was performed with two other radios from the host operating at the same time as the RFID, please refer to report EV0343-1 for colocation test data.

Modifications Required for Compliance

Conducted Emissions required a modification to the EUT to comply with the requirements of 15.207. An AC line filter Part number: 15CUFE1 was add to the EUT.



Test Results

Fundamental Reading

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

Conversion formulas used:

$$\text{dBuV/m} = 20 \log(\text{uV/m})$$

$$3\text{m Distance} = (\text{dBuV/m}@30\text{m}) + 40 \log(30/3)$$

MEASUREMENTS / RESULTS

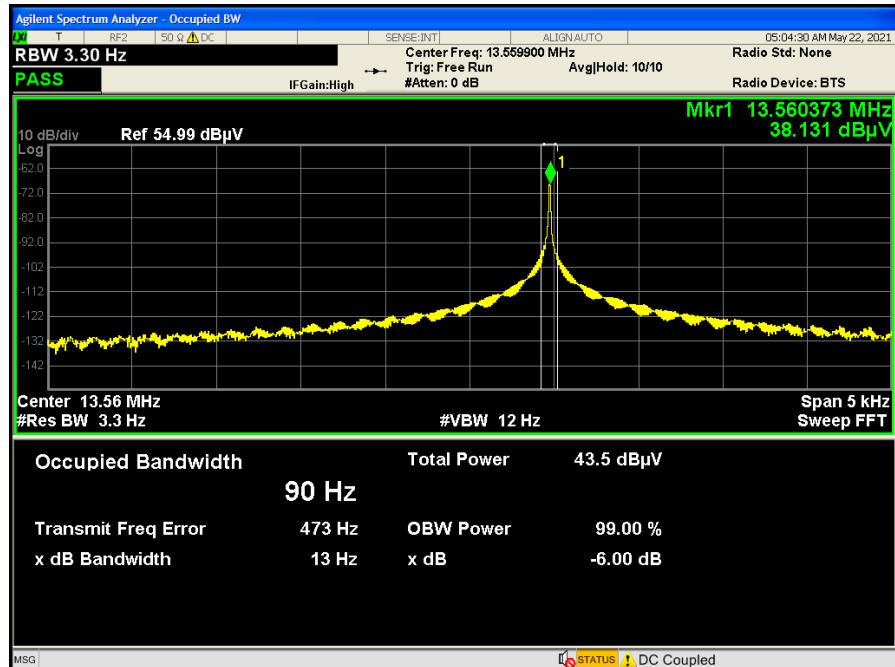
Radiated Emissions Table											Work Order: V0343											
Date: 02-Apr-21		Company: Bevi		EUT Operating Voltage/Frequency: 120VAC																		
Engineer: Ryan M. Brown		Temp: 23.4°C		Humidity: 35%		Pressure: 996			Measurement Distance: 3 m													
Frequency Range: Fundamental Reading at 13.56MHz											Notes:											
Antenna Polarization (H / V)	Frequency (MHz)	Reading (dB μ V)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dB μ V/m)	FCC 15.225			---												
							Limit (dB μ V/m)	Margin (dB)	Result (Pass/Fail)	Limit (dB μ V/m)	Margin (dB)	Result (Pass/Fail)										
Parallel:	13.56	37.5	0.0	10.9	0.2	48.6	124.0	-75.4	PASS	---	---	---										
			---	---	---	---	---	---	---	---	---	---										
Perpendicular:	13.56	35.3	0.0	10.9	0.2	46.4	124.0	-77.6	PASS	---	---	---										
			---	---	---	---	---	---	---	---	---	---										
Table Result: PASS				by -20.9 dB			Worst Freq: 13.56 MHz															
Test Site: EMI Chamber 1			Cable 1: Asset #2682			Cable 2: Asset #2456			Cable 3: ---													
Analyzer: Asset #1170725			Preamp: None			Antenna: Asset 2615 Loop			Preselector: ---			Copyright Curtis-Straus LLC 2000										
CSsoft Radiated Emissions Calculator v 1.017.215																						
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor																						



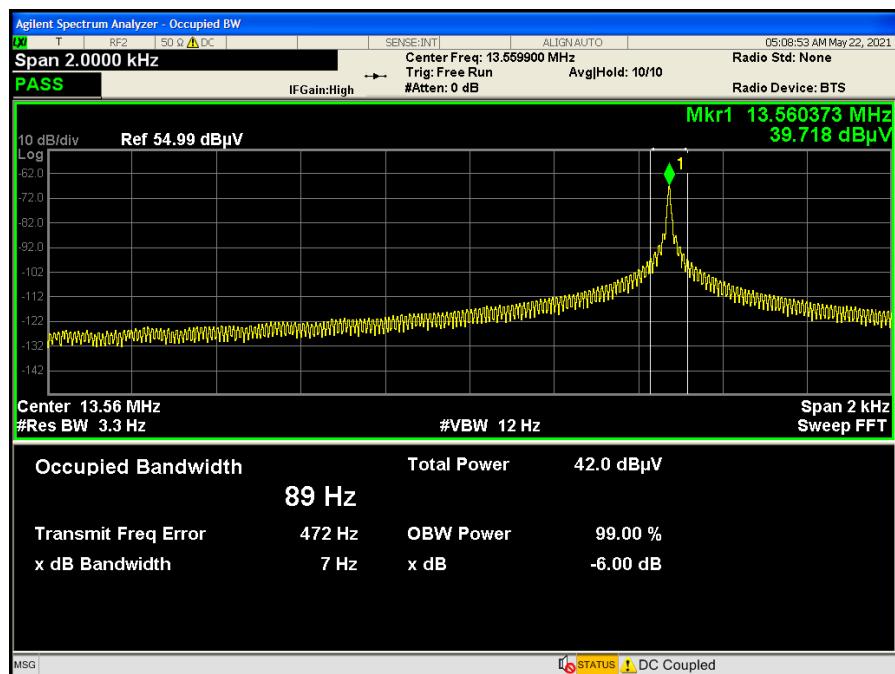
99% Occupied Bandwidth

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 6.6]



Parallel Antenna Position



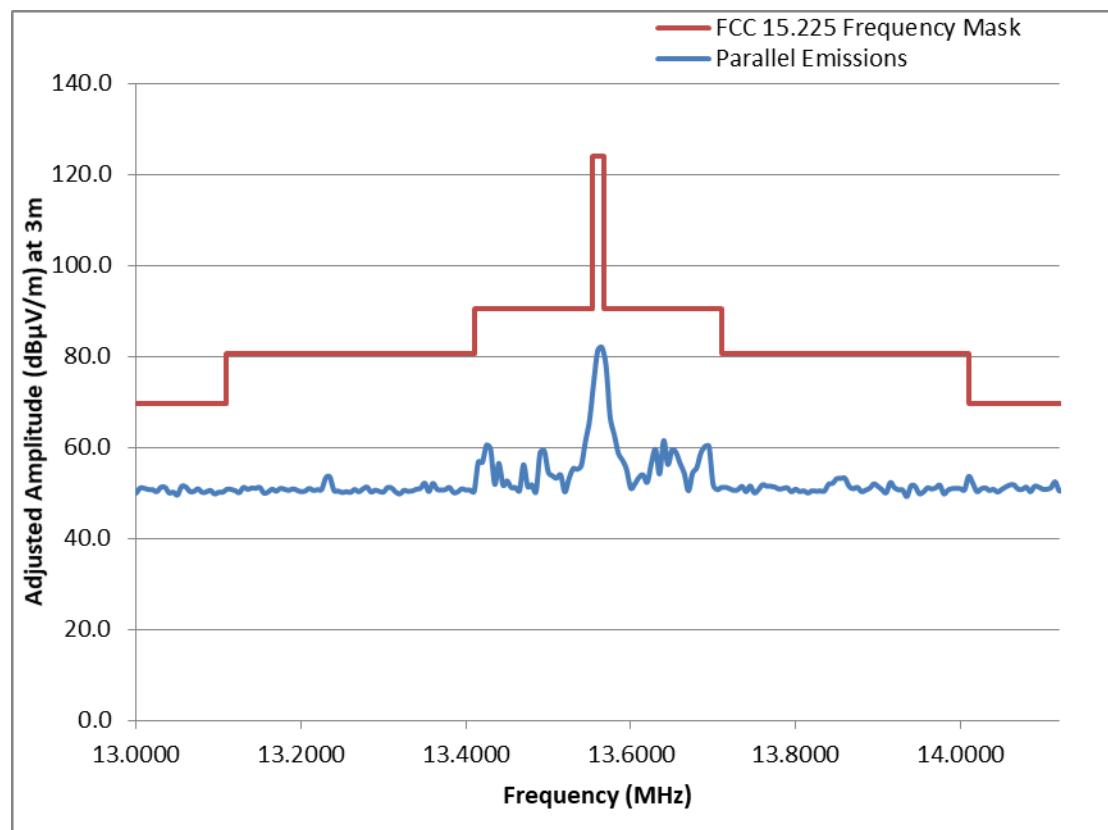
Perpendicular Antenna Position



Emission Mask

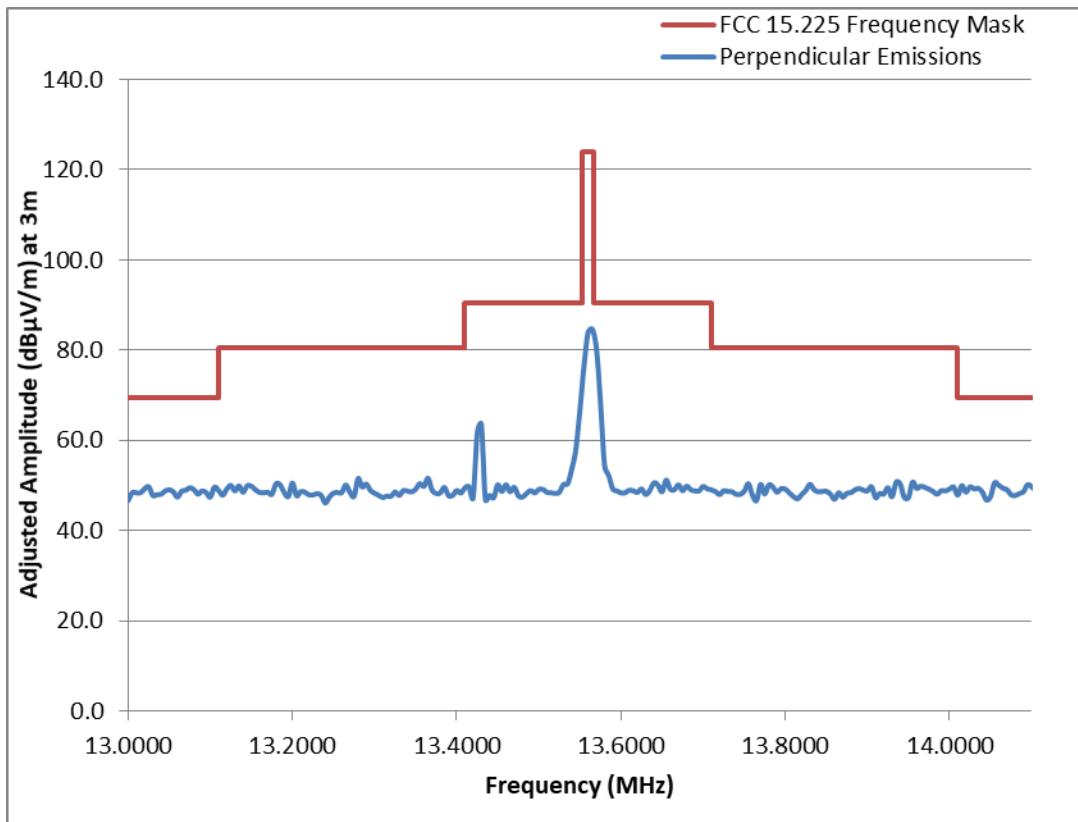
- (a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.
- (b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.
- (c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.
- (d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

MEASUREMENTS / RESULTS



Parallel Emissions





Perpendicular Emissions



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Radiated Spurious Emissions

The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

[15.225(d)]

Conversion Formulas

$$dBuA/m = dBuV/m - 20 \log(377)$$

$$dBuA/m = 20 \log(6.37/(F*1000)) + (40 \log(300/3))$$

$$dBuA/m = 20 \log(63.7/(F*1000)) + (40 \log(30/3))$$

$$dBuA/m = 20 \log(0.08) + (40 \log(30/3))$$

MEASUREMENTS / RESULTS

Low Channel

Bureau Veritas Consumer Product Services Inc.	Work Order - V0343
Radiated Emissions, Electric Field, 3m Measurement	EUT Power Input - 120VAC
Top Peaks Parallel 9-150kHz	Test Site - CH2
Notes:	Conditions - 24.3°C; 32.1%RH; 1010 mBar
9KHz-150KHz	Test Engineer - Ryan M. Brown
13.56MHz RFID	Date of Test - 4/10/21
	EUT Maximum Frequency - 2462

1 Fair-rite with 2 loops on Ethernet cable going to the Radio board,
and one fai-rite with the ethernet cable going strait through.

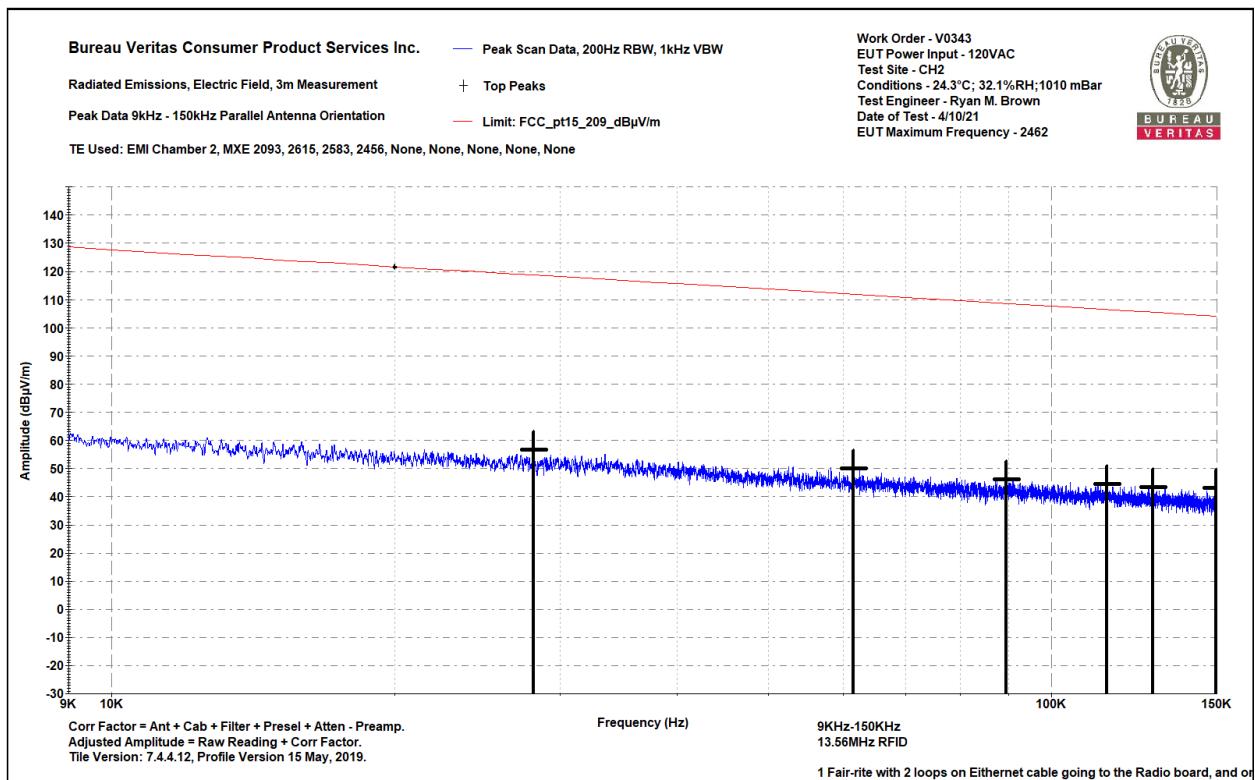
Frequency (MHz)	Raw Peak Reading (dB μ V)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dB μ V/m)	Lim: FCC_pt15_209_dB μ V/m (dB μ V/m)	Peak Margin (dB)	Peak Test Results (Pass/Fail)	Worst Margin (dB)	EUT Azimuth (degrees)
0.028123	43.2	13.6	56.8	118.6	-61.9	PASS		285
0.061508	39.4	10.7	50.1	111.8	-61.7	PASS		75
0.089596	35.7	10.5	46.2	108.6	-62.4	PASS		285
0.114651	34.4	10.1	44.5	106.4	-61.9	PASS		150
0.128346	33.2	10.1	43.3	105.4	-62.1	PASS		285
0.149714	33	10.1	43.1	104.1	-61	PASS	-61	45

9 KHz – 150 KHz Parallel



Radiated Emissions Table

Date: 10-Apr-21	Company: Bevi	Work Order: V0343										
Engineer: Ryan M. Brown	EUT Desc: Bevi V2	EUT Operating Voltage/Frequency: 120VAC/60Hz										
Temp: 24.3	Humidity: 32%	Pressure: 1010										
Frequency Range: 9-150KHz		Measurement Distance: 3 m										
Notes:		EUT Min Freq:										
Antenna Polarization (H / V)	Frequency (MHz)	Reading (dB μ A)	Preamp Factor (dB)	Antenna Factor (dB μ /m)	Cable Factor (dB)	Adjusted Reading (dB μ A/m)	---			RSS_GEN Section 8.9 Table 6		
							Limit (dB μ V/m)	Margin (dB)	Result (Pass/Fail)	Limit (dB μ A/m)	Margin (dB)	Result (Pass/Fail)
Para	0.028123	-8.3	0.0	-38.1	0.0	-46.4	---	---	---	67.1	-113.5	Pass
Para	0.061508	-12.1	0.0	-40.5	0.0	-52.6	---	---	---	60.3	-112.9	Pass
Para	0.089596	-15.8	0.0	-40.9	0.0	-56.7	---	---	---	57.0	-113.7	Pass
Para	0.114651	-17.1	0.0	-41.3	0.1	-58.3	---	---	---	54.9	-113.2	Pass
Para	0.128346	-18.3	0.0	-41.4	0.1	-59.6	---	---	---	53.9	-113.5	Pass
Para	0.149714	-18.5	0.0	-41.4	0.1	-59.8	---	---	---	52.6	-112.4	Pass
Table Result: Pass		by	-112.4 dB		Worst Freq: 0.149714 MHz							
Test Site: ---	Cable 1: Asset #2186		Cable 2: Asset #2456		Cable 3: Asset #2467							
Analyzer: ---	Preamp: None		Antenna: Asset 2615 Loop		Preselector: ---							
CSsoft Radiated Emissions Calculator	v 1.017.220		Copyright Curtis-Straus LLC 2000									
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor												

9 KHz – 150 KHz Parallel**9 KHz – 150 KHz Parallel**

Bureau Veritas Consumer Product Services Inc.
 Radiated Emissions, Electric Field, 3m Measurement
 Top Peaks Perpendicular 9-150kHz
 Notes:
 9KHz-150KHz
 13.56MHz RFID
 1 Fair-rite with 2 loops on Ethernet cable going to the Radio board,
 and one fai-rite with the ethernet cable going strait through.

Work Order - V0343
 EUT Power Input - 120VAC
 Test Site - CH2
 Conditions - 24.3°C; 32.1%RH; 1010 mBar
 Test Engineer - Ryan M. Brown
 Date of Test - 4/10/21
 EUT Maximum Frequency - 2462

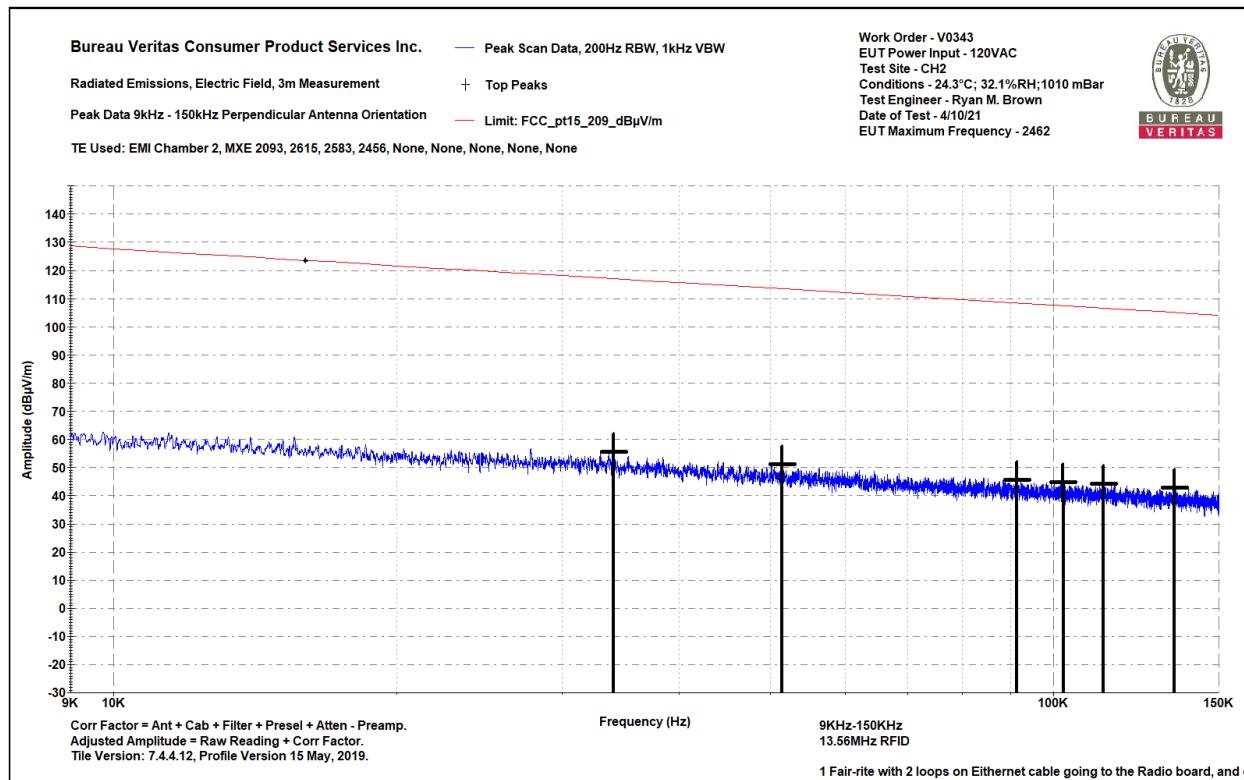
Frequency (MHz)	Raw Peak Reading (dB μ V)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dB μ V/m)	Lim: FCC_pt15_209_dB μ V/m (dB μ V/m)	Peak Margin (dB)	Peak Test Results (Pass/Fail)	Worst Margin (dB)	EUT Azimuth (degrees)
0.034013	42.5	13	55.5	117	-61.4	PASS	-61.4	345
0.051469	40	11	51	113.4	-62.4	PASS		105
0.091362	35.2	10.5	45.6	108.4	-62.8	PASS		255
0.102458	34.5	10.1	44.6	107.4	-62.8	PASS		240
0.113086	34	10.1	44.1	106.5	-62.4	PASS		15
0.134448	32.9	10.1	42.9	105	-62.1	PASS		105

9 KHz – 150 KHz Perpendicular

Radiated Emissions Table																	
Date: 10-Apr-21		Company: Bevi		Work Order: V0343													
Engineer: Ryan M. Brown		EUT Desc: Bevi V2		EUT Operating Voltage/Frequency: 120VAC/60Hz													
Temp: 24.3		Humidity: 32%		Pressure: 1010													
Frequency Range: 0.15-1MHz									Measurement Distance: 3 m								
Notes: EUT Min Freq:																	
Antenna Polarization (H / V)	Frequency (MHz)	Reading (dB μ A)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dB μ A/m)	---										
							Limit (dB μ A/m)	Margin (dB)	Result (Pass/Fail)								
Perp	0.034013	-9.0	0.0	-38.7	0.0	-47.7	---	---	---								
Perp	0.051469	-11.5	0.0	-40.4	0.0	-51.9	---	---	---								
Perp	0.091362	-16.3	0.0	-41.0	0.0	-57.3	---	---	---								
Perp	0.102458	-17.0	0.0	-41.3	0.1	-58.2	---	---	---								
Perp	0.113046	-17.5	0.0	-41.3	0.1	-58.7	---	---	---								
Perp	0.134448	-18.6	0.0	-41.4	0.1	-59.9	---	---	---								
Table Result: Pass by -113.1 dB									Worst Freq: 0.034013 MHz								
Test Site: ---		Cable 1: Asset #2186		Cable 2: Asset #2456		Cable 3: Asset #2467											
Analyzer: ---		Preamp: None		Antenna: Asset 2615 Loop		Preselector: ---											
CSsoft Radiated Emissions Calculator v 1.017.220																	
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor																	

9 KHz – 150 KHz Perpendicular





9 KHz – 150 KHz Perpendicular

Bureau Veritas Consumer Product Services Inc.	Work Order - V0343
Radiated Emissions Magnetic Field 3m Distance	EUT Power Input - 120VAC 60Hz
Top Peaks Parallel 150-1000kHz	Test Site - CH2
Notes:	Conditions - 24.3°C; 32.1%RH; 1010mBar
13.56MHz RFID	Test Engineer - Ryan M. Brown
1 Fair-rite with 2 loops on Ethernet cable going to the Radio	Date of Test - 4/9/2021
board, and one fai-rite with the ethernet cable going strait through.	EUT Maximum Frequency - 2462

Frequency (MHz)	Raw Peak Reading (dB μ V)	Correction Factor (dB/s)	Adjusted Peak Amplitude (dB μ V/m)	Lim: FCC_pt15_209_dB μ V/m (dB μ V/m)	Peak Margin (dB)	Peak Test Results (Pass/Fail)	Worst Margin (dB)	EUT Azimuth (degrees)
0.587	38.1	10.3	48.5	72.3	-23.8	PASS	-23.8	225
0.659	37	10.4	47.4	71.3	-23.8	PASS		165
0.711	36.3	10.5	46.7	70.6	-23.8	PASS		90
0.775	34.4	10.4	44.9	69.8	-25	PASS		330
0.901	33.4	10.5	43.9	68.5	-24.6	PASS		15
0.961	31.8	10.7	42.4	68	-25.5	PASS		105

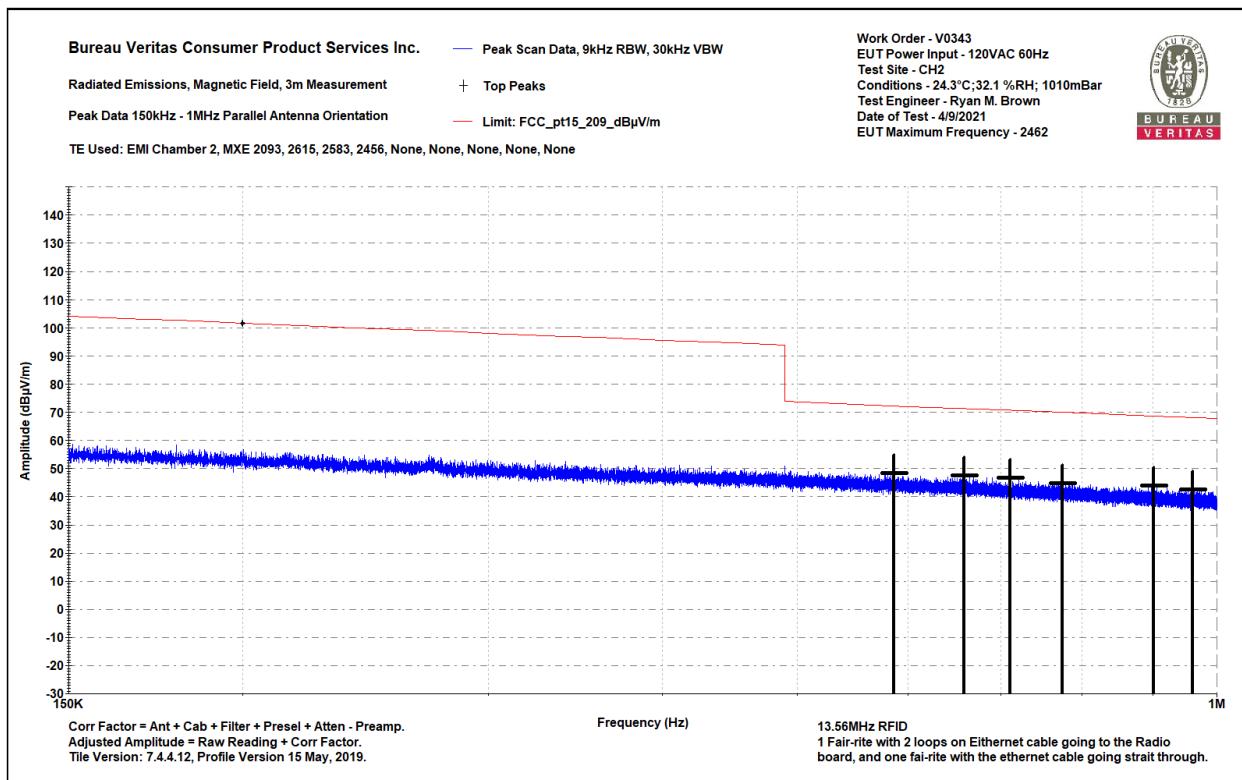
150 – 1000 KHz Parallel



Radiated Emissions Table

Date: 09-Apr-21	Company: Bevi	Work Order: V0343										
Engineer: Ryan M. Brown	EUT Desc: Bevi V2	EUT Operating Voltage/Frequency: 120VAC/60Hz										
Temp: 24.3	Humidity: 32%	Pressure: 1010										
Frequency Range: 0.15-1MHz		Measurement Distance: 3 m										
Notes:		EUT Min Freq:										
Antenna Polarization (H / V)	Frequency (MHz)	Reading (dB μ A)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dB μ A/m)	---			RSS - GEN Section 8.9 Table 6		
							Limit (dB μ A/m)	Margin (dB)	Result (Pass/Fail)	Limit (dB μ A/m)	Margin (dB)	Result (Pass/Fail)
Para	0.587	-13.4	0.0	-41.2	0.1	-54.5	---	---	---	20.7	-75.2	Pass
Para	0.659	-14.5	0.0	-41.1	0.1	-55.5	---	---	---	19.7	-75.2	Pass
Para	0.711	-15.2	0.0	-41.1	0.1	-56.2	---	---	---	19.0	-75.2	Pass
Para	0.775	-17.1	0.0	-41.0	0.1	-58.0	---	---	---	18.3	-76.3	Pass
Para	0.901	-18.1	0.0	-41.0	0.1	-59.0	---	---	---	17.0	-76.0	Pass
Para	0.961	-19.7	0.0	-40.9	0.0	-60.6	---	---	---	16.4	-77.0	Pass
Table Result: Pass		by	-75.2 dB		Worst Freq: 0.587 MHz							
Test Site: ---	Cable 1: Asset #2186		Cable 2: Asset #2456		Cable 3: Asset #2467							
Analyzer: ---	Preamp: None		Antenna: Asset 2615 Loop		Preselector: ---							
CSsoft Radiated Emissions Calculator	v 1.017.220		Copyright Curtis-Straus LLC 2000									
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor												

150 – 1000 KHz Parallel



150 KHz – 1 MHz Parallel



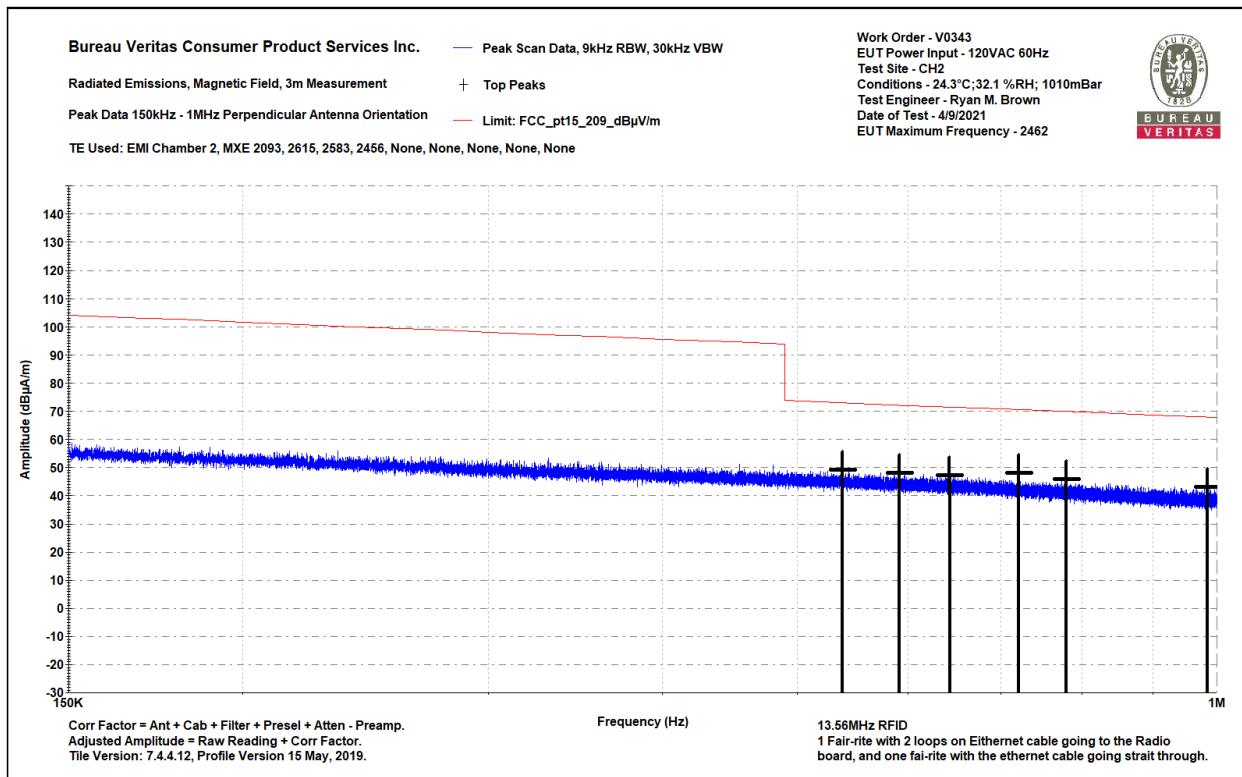
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Radiated Emissions Table

Date: 09-Apr-21	Company: Bevi	Work Order: V0343										
Engineer: Ryan M. Brown	EUT Desc: Bevi V2	EUT Operating Voltage/Frequency: 120VAC/60Hz										
Temp: 24.3	Humidity: 32%	Pressure: 1010										
Frequency Range: 0.15-1MHz		Measurement Distance: 3 m										
Notes:		EUT Min Freq:										
Antenna Polarization (H / V)	Frequency (MHz)	Reading (dB μ A)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dB μ A/m)	---			RSS - GEN Section 8.9 Table 6		
							Limit (dB μ A/m)	Margin (dB)	Result (Pass/Fail)	Limit (dB μ A/m)	Margin (dB)	Result (Pass/Fail)
Perp	0.538	-12.8	0.0	-41.3	0.1	-54.0	---	---	---	21.5	-75.5	Pass
Perp	0.592	-13.9	0.0	-41.2	0.1	-55.0	---	---	---	20.6	-75.6	Pass
Perp	0.643	-14.8	0.0	-41.2	0.1	-55.9	---	---	---	19.9	-75.8	Pass
Perp	0.721	-13.7	0.0	-41.1	0.1	-54.7	---	---	---	18.9	-73.6	Pass
Perp	0.78	-16.0	0.0	-41.0	0.1	-56.9	---	---	---	18.2	-75.1	Pass
Perp	0.984	-19.1	0.0	-40.8	0.0	-59.9	---	---	---	16.2	-76.1	Pass
Table Result: Pass		by	-73.6 dB		Worst Freq: 0.721 MHz							
Test Site: ---	Cable 1: Asset #2186		Cable 2: Asset #2456		Cable 3: Asset #2467							
Analyzer: ---	Preamp: None		Antenna: Asset 2615 Loop		Preselector: ---							
CSsoft Radiated Emissions Calculator	v 1.017.220		Copyright Curtis-Straus LLC 2000									
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor												

150 KHz – 1 MHz Perpendicular



150 KHz – 1 MHz Perpendicular



Bureau Veritas Consumer Product Services Inc.
 Radiated Emissions Magnetic Field 3m Distance
 Top Peaks Parallel 1-30MHz
 Notes:
 13.56 MHZ RFID
 1 Fair-rite with 2 loops on Ethernet cable going to the Radio
 board, and one fai-rite with the ethernet cable going strait through.

Work Order - V0343
 EUT Power Input - 120VAC 60Hz
 Test Site - CH2
 Conditions - 23.6°C;33.4 %RH; 1007mBar
 Test Engineer - Ryan M. Brown
 Date of Test - 4/7/2021
 EUT Maximum Frequency - 2462

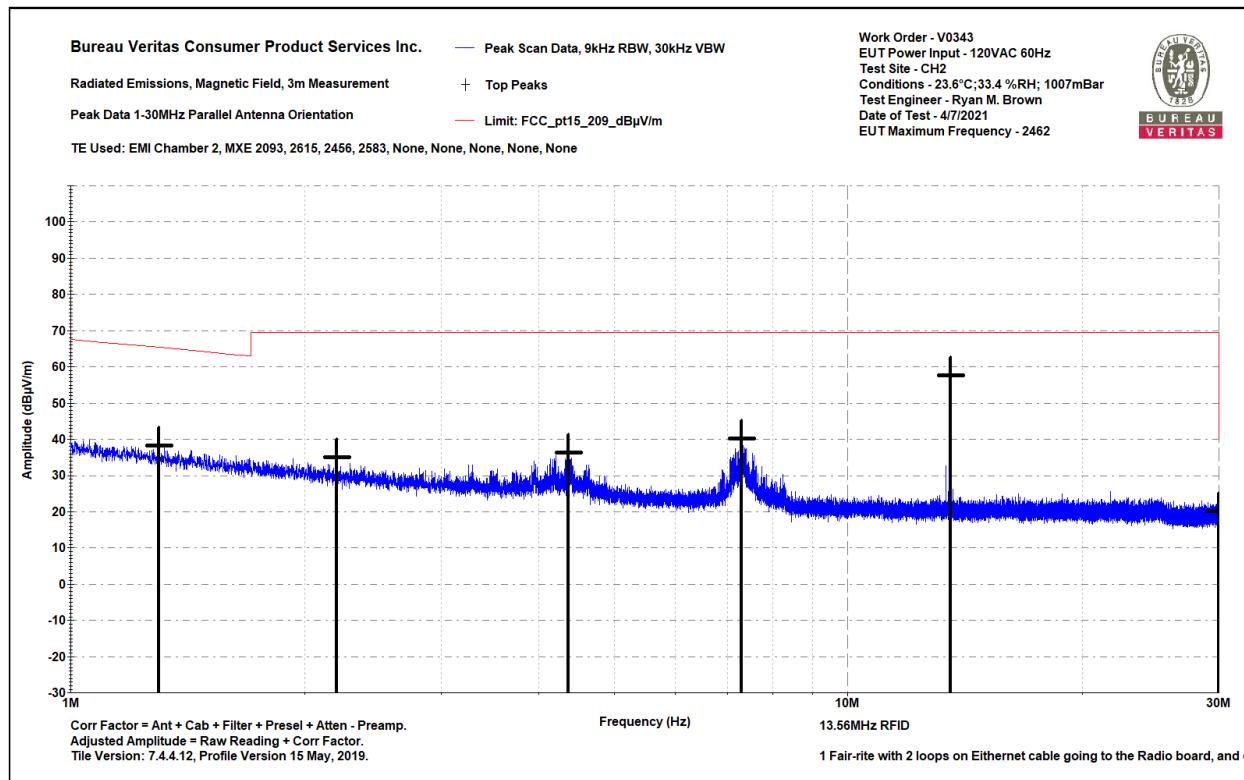
Frequency (MHz)	Raw Peak Reading (dB μ V)	Correction Factor (dB/s)	Adjusted Peak Amplitude (dB μ V/m)	Lim: FCC_pt15_209_dB μ V/m (dB μ V/m)	Peak Margin (dB)	Peak Test Results (Pass/Fail)	Worst Margin (dB)	EUT Azimuth (degrees)
1.299	27.5	10.7	38.2	65.3	-27.1	PASS		165
2.199	24.5	10.5	35	69.5	-34.6	PASS		315
4.372	25.6	10.7	36.3	69.5	-33.2	PASS		315
7.301	29.4	10.9	40.3	69.5	-29.2	PASS		240
13.561	46.6	11	57.6	69.5	-12	PASS	-12	315
30	12.1	8	20.1	40	-19.9	PASS		300

1 – 30 MHz Parallel

Radiated Emissions Table							Work Order: V0343										
Date: 09-Apr-21		Company: Bevi		EUT Operating Voltage/Frequency: 120VAC/60Hz													
Engineer: Ryan M. Brown		EUT Desc: Bevi V2															
Temp: 24.3		Humidity: 32%		Pressure: 1010													
Frequency Range: 1-30 MHz				Measurement Distance: 3 m													
Notes:									EUT Min Freq:								
Antenna Polarization (H / V)	Frequency (MHz)	Reading (dB μ A)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dB μ A/m)	---		RSS - GEN Section 8.9 Table 6								
Para	1.299	-24.0	0.0	-40.9	0.1	-64.8	---	---	13.8 -78.6 Pass								
	2.199	-27.0	0.0	-41.0	0.1	-67.9	---	---	18.1 -86.0 Pass								
	4.372	-25.9	0.0	-40.8	0.2	-66.5	---	---	18.1 -84.6 Pass								
	7.301	-22.1	0.0	-40.7	0.3	-62.5	---	---	18.1 -80.6 Pass								
	13.561	-4.9	0.0	-40.6	0.5	-45.0	---	---	18.1 -63.1 Pass								
	30.0	-39.4	0.0	-43.6	0.7	-82.3	---	---	-11.5 -70.8 Pass								
	Table Result: Pass by -63.1 dB				Worst Freq: 13.561 MHz												
Test Site: ---		Cable 1: Asset #2186			Cable 2: Asset #2456		Cable 3: Asset #2467										
Analyzer: ---		Preamp: None			Antenna: Asset 2615 Loop		Preselector: ---										
CSsoft Radiated Emissions Calculator v 1.017.220					Copyright Curtis-Straus LLC 2000												
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor																	

1 – 30 MHz Parallel





1 – 30 MHz Parallel

Bureau Veritas Consumer Product Services Inc.

Work Order - V0343

Radiated Emissions Magnetic Field 3m Distance

EUT Power Input - 120VAC 60Hz

Top Peaks Perpendicular 1-30MHz

Test Site - CH2

Notes:

Conditions - 23.6°C; 33.4 %RH; 1007mBar

13.56 MHZ RFID

Test Engineer - Ryan M. Brown

1 Fair-rite with 2 loops on Ethernet cable going to the Radio

Date of Test - 4/7/2021

board, and one fai-rite with the ethernet cable going strait through.

EUT Maximum Frequency - 2462

Frequency (MHz)	Raw Peak Reading (dB μ V)	Correction Factor (dB/s)	Adjusted Peak Amplitude (dB μ V/m)	Lim: FCC_pt15_209_dB μ V/m (dB μ V/m)	Peak Margin (dB)	Peak Test Results (Pass/Fail)	Worst Margin (dB)	EUT Azimuth (degrees)
1.618	25.9	10.6	36.5	63.4	-26.9	PASS		90
2.24	23.1	10.5	33.6	69.5	-35.9	PASS		285
7.297	38.8	10.9	49.7	69.5	-19.8	PASS		195
7.803	26.8	10.9	37.7	69.5	-31.9	PASS		165
13.561	45.8	11	56.8	69.5	-12.7	PASS	-12.7	30
30	13	8	21	40	-19	PASS		120

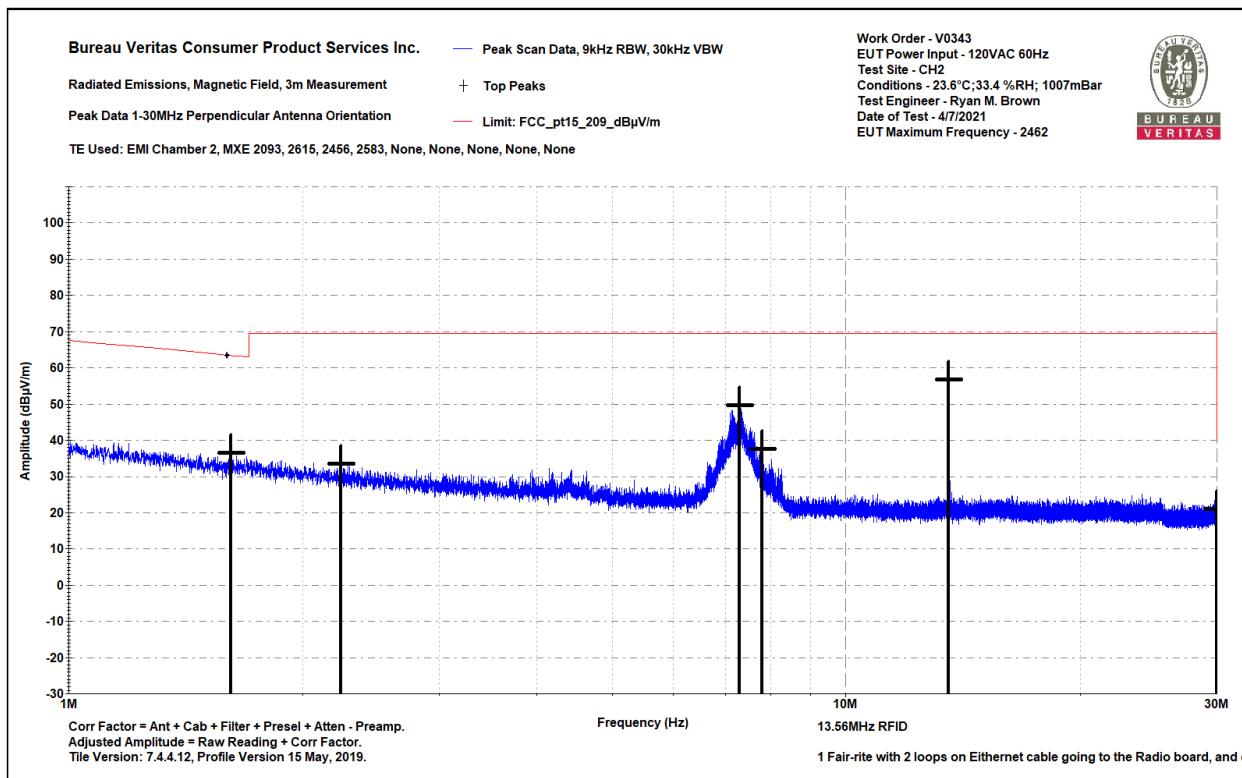
1 – 30 MHz Perpendicular



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Radiated Emissions Table

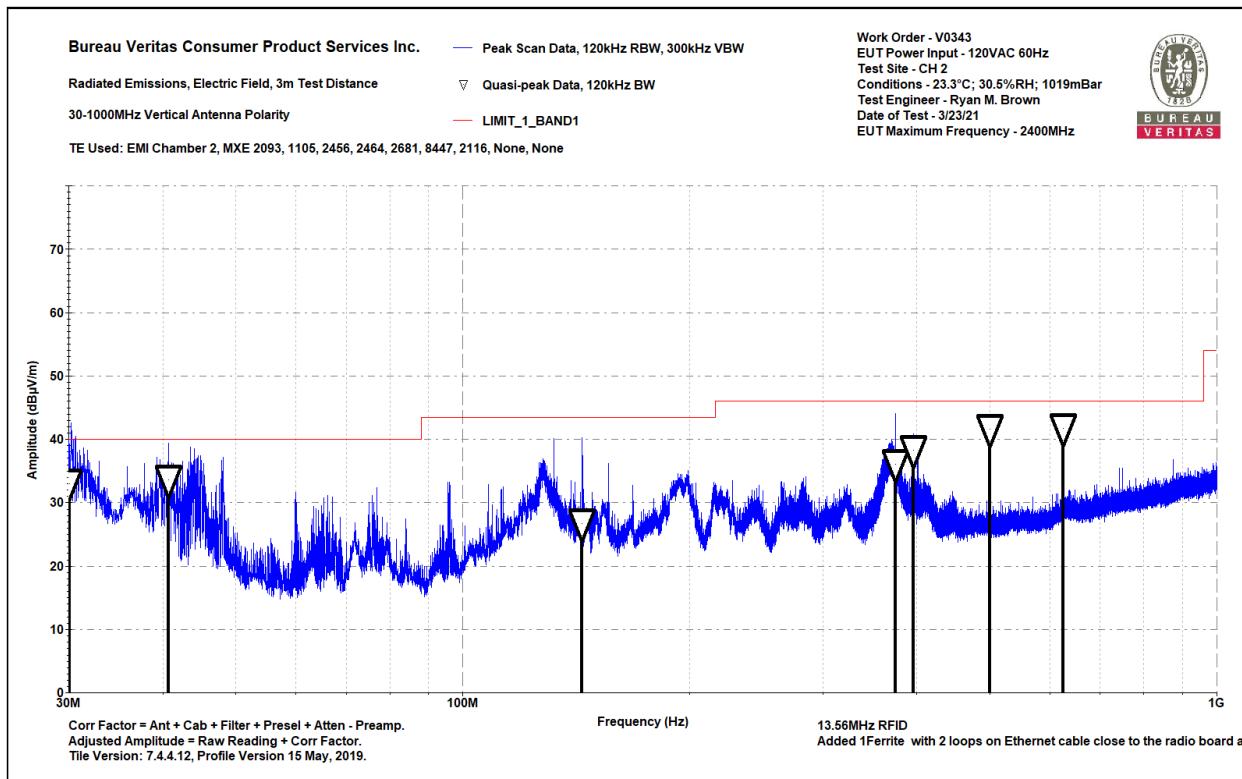
Date: 09-Apr-21	Company: Bevi	Work Order: V0343										
Engineer: Ryan M. Brown	EUT Desc: Bevi V2	EUT Operating Voltage/Frequency: 120VAC/60Hz										
Temp: 24.3	Humidity: 32%	Pressure: 1010										
Frequency Range: 1-30MHz		Measurement Distance: 3 m										
Notes:		EUT Min Freq:										
Antenna Polarization (H / V)	Frequency (MHz)	Reading (dB μ A)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dB μ A/m)	---			RSS - GEN Section 8.9 Table 6		
							Limit (dB μ A/m)	Margin (dB)	Result (Pass/Fail)	Limit (dB μ A/m)	Margin (dB)	Result (Pass/Fail)
Perp	1.618	-25.6	0.0	-40.9	0.1	-66.4	---	---	---	11.9	-78.3	Pass
Perp	2.24	-28.4	0.0	-41.0	0.1	-69.3	---	---	---	18.1	-87.4	Pass
Perp	7.297	-12.7	0.0	-40.7	0.3	-53.1	---	---	---	18.1	-71.2	Pass
Perp	7.803	-24.7	0.0	-40.8	0.3	-65.2	---	---	---	18.1	-83.3	Pass
Perp	13.561	-5.7	0.0	-40.6	0.5	-45.8	---	---	---	18.1	-63.9	Pass
Perp	30.0	-38.5	0.0	-43.6	0.7	-81.4	---	---	---	-11.5	-69.9	Pass
Table Result: Pass		by	-63.9 dB		Worst Freq: 13.561 MHz							
Test Site: ---	Cable 1: Asset #2186		Cable 2: Asset #2456		Cable 3: Asset #2467							
Analyzer: ---	Preamp: None		Antenna: Asset 2615 Loop		Preselector: ---							
CSsoft Radiated Emissions Calculator	v 1.017.220		Copyright Curtis-Straus LLC 2000									
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor												

1 – 30 MHz Perpendicular**1 – 30 MHz Perpendicular**

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Bureau Veritas Consumer Product Services Inc. Radiated Emissions Electric Field 3m Distance 30-1000MHz Vertical Data Notes: 13.56 MHZ RFID 120VAC 60Hz								Work Order - V0343 EUT Power Input - 120VAC 60Hz Test Site - CH 2 Conditions - 23.3°C; 30.5%RH; 1019mBar Test Engineer - Ryan M. Brown Date of Test - 3/23/21 EUT Maximum Frequency - 2400MHz	
Added 1Ferrite with 2 loops on Ethernet cable close to the radio board and one fair-rite strait through on the ethernet cable									
Frequency (MHz)	Raw QP Reading (dB μ V)	Correction Factor (dB/m)	Adjusted QP Amplitude (dB μ V/m)	Lim1: FCC_pt15_209 (dB μ V/m)	Margin to Lim1 (dB)	Test Results Lim1 (Pass/Fail)	Worst Margin Lim1 (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
30.036	32.1	0.9	33	40	-7	PASS		100	146
40.695	40.3	-6.6	33.6	40	-6.4	PASS		101	286
143.749	33.3	-6.6	26.7	43.5	-16.8	PASS		106	27
375.212	39.2	-3.2	36	46	-10	PASS		102	10
396.141	40.9	-2.7	38.2	46	-7.8	PASS		169	1
500.007	42.2	-0.6	41.6	46	-4.4	PASS		100	328
625.002	40	1.7	41.7	46	-4.3	PASS	-4.3	100	0

30 – 1000 MHz Vertical



30 – 1000 MHz Vertical

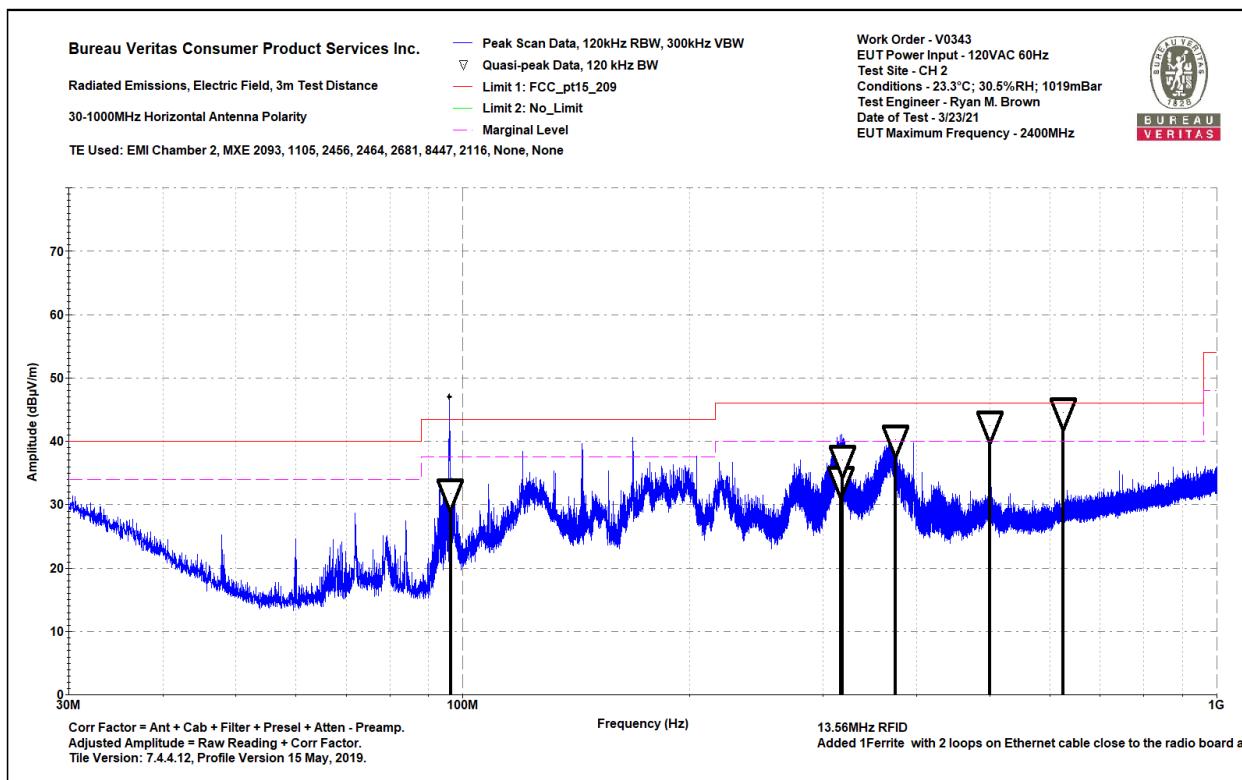


Bureau Veritas Consumer Product Services Inc.	Work Order - V0343
Radiated Emissions Electric Field 3m Distance	EUT Power Input - 120VAC 60Hz
30-1000MHz Horizontal Data	Test Site - CH 2
Notes:	Conditions - 23.3°C; 30.5%RH; 1019mBar
30-1000MHz	Test Engineer - Ryan M. Brown
802.11b Low CH, Data Rate: 11, & RFID	Date of Test - 3/23/21
	EUT Maximum Frequency - 2462MHz

Added 1Ferrite with 2 loops on Ethernet cable close to the radio board and one fair-rite strait through on the ethernet cable

Frequency (MHz)	Raw QP Reading (dB μ V)	Correction Factor (dB/m)	Adjusted QP Amplitude (dB μ V/m)	Lim1: FCC_pt15_209 (dB μ V/m)	Margin to Lim1 (dB)	Test Results Lim1 (Pass/Fail)	Worst Margin Lim1 (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
96.278	43.1	-11.4	31.7	43.5	-11.8	PASS		175	280
317.419	38	-4.3	33.7	46	-12.3	PASS		125	25
318.523	41.3	-4.3	37	46	-9	PASS		100	25
374.968	43.5	-3.2	40.3	46	-5.7	PASS		125	42
500.003	43	-0.6	42.4	46	-3.6	PASS		125	25
625.025	42.8	1.7	44.5	46	-1.5	PASS	-1.5	100	37

30 – 1000 MHz Horizontal



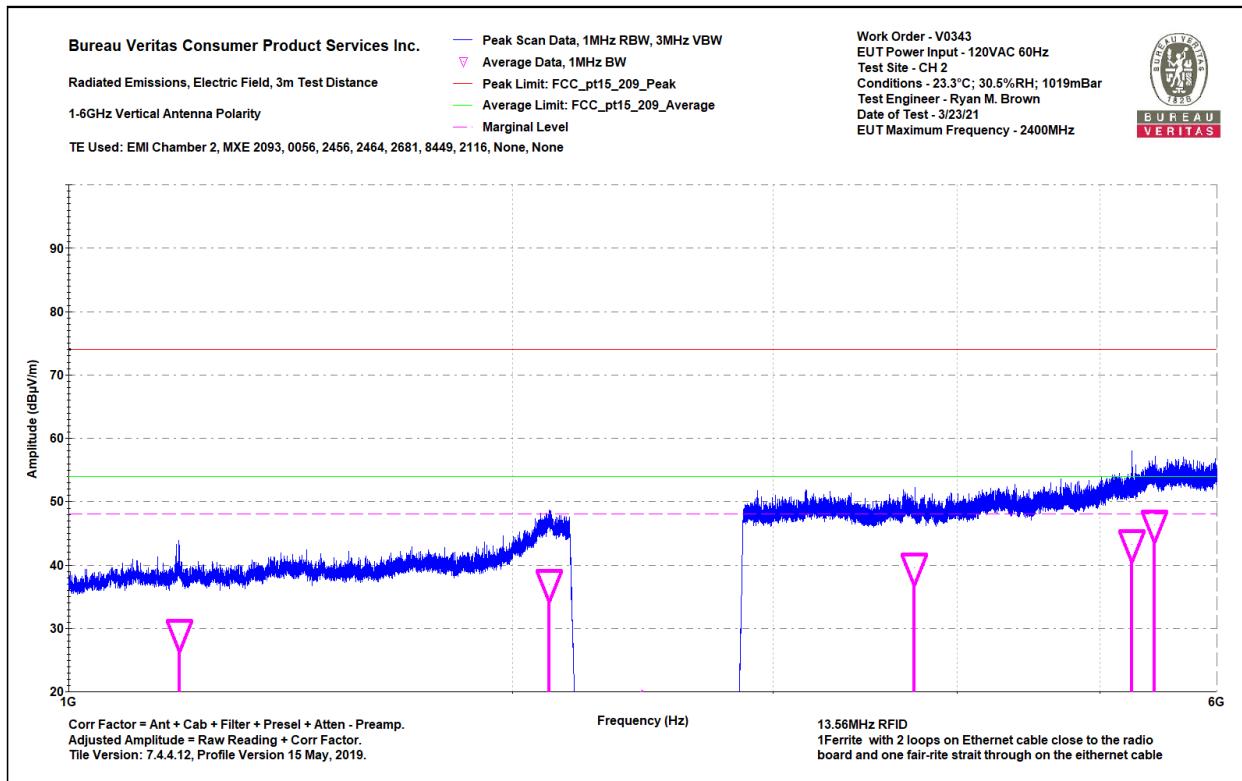
30 – 1000 MHz Horizontal



Bureau Veritas Consumer Product Services Inc.	Work Order - V0343
Radiated Emissions Electric Field 3m Distance	EUT Power Input - 120VAC 60Hz
1-6GHz Vertical Data	Test Site - CH 2
Notes:	Conditions - 23.3°C; 30.5%RH; 1019mBar
13.56MHz RFID	Test Engineer - Ryan M. Brown
1Ferrite with 2 loops on Ethernet cable close to the radio board and one fair-rite strait through on the ethernet cable	Date of Test - 3/23/21
	EUT Maximum Frequency - 2462MHz

Frequency (MHz)	Raw Peak Reading (dB μ V)	Raw Avg Reading (dB μ V)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dB μ V/m)	Pk Lim: FCC_pt15_20_9_Peak (dB μ V/m)	Peak Margin (dB)	Peak Results (Pass/Fail)	Worst Peak Margin (dB)	Adjusted Avg Amplitude (dB μ V/m)	Av Lim: FCC_pt15_20_9_Average (dB μ V/m)	Avg Margin (dB)	Avg Results (Pass/Fail)	Worst Avg Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1188.3	47.5	36	-7	40.5	74	-33.5	PASS	29.1	54	-24.9	PASS			300	340
2116.8	45.5	35.5	1.5	47	74	-27	PASS	37	54	-17	PASS			100	0
3743.6	41.9	33.5	6.1	48	74	-26	PASS	39.6	54	-14.4	PASS			100	6
5256.1	42.5	33.5	9.8	52.3	74	-21.7	PASS	43.3	54	-10.7	PASS			285	102
5445.4	44.1	34.5	11.8	55.9	74	-18.1	PASS	46.3	54	-7.7	PASS			275	6

1 – 6 GHz Vertical



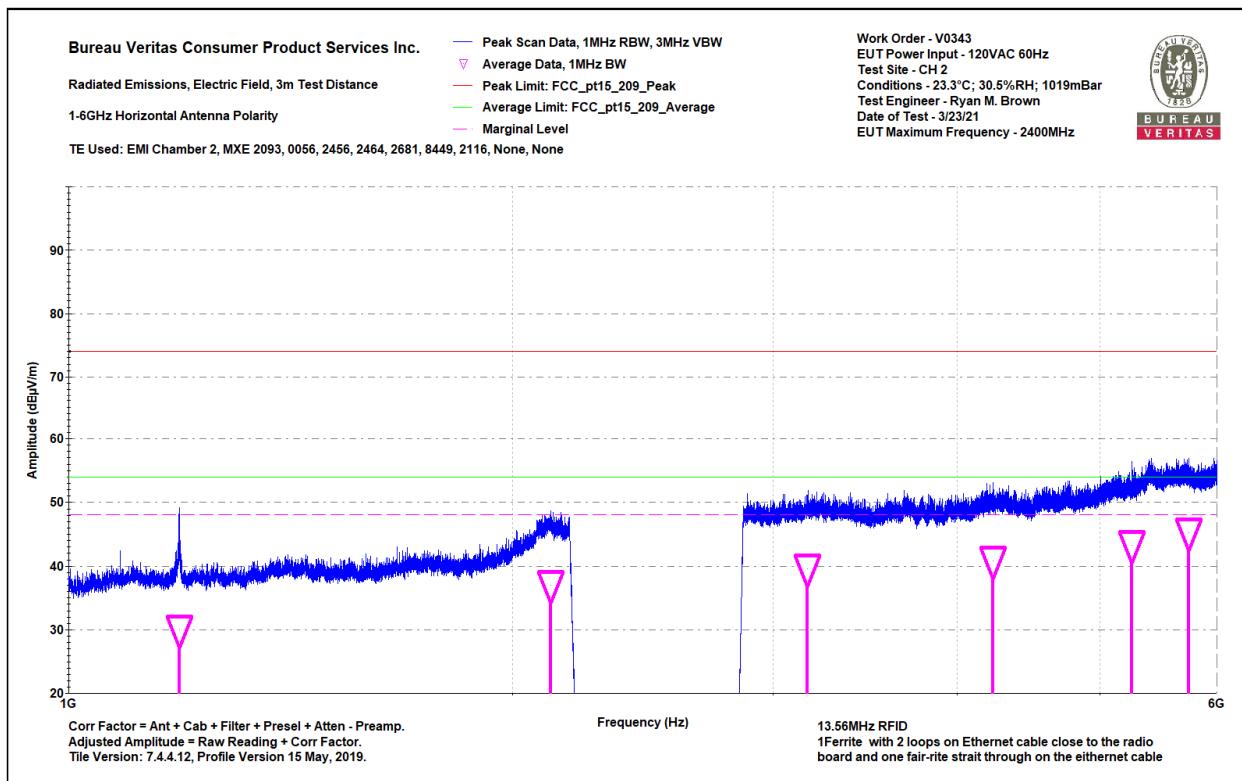
1 – 6 GHz Vertical



Bureau Veritas Consumer Product Services Inc.	Work Order - V0343
Radiated Emissions Electric Field 3m Distance	EUT Power Input - 120VAC 60Hz
1-6GHz Horizontal Data	Test Site - CH 2
Notes:	Conditions - 23.3°C; 30.5%RH; 1019mBar
13.56MHz RFID	Test Engineer - Ryan M. Brown
1Ferrite with 2 loops on Ethernet cable close to the radio board and one fair-rite strait through on the ethernet cable	Date of Test - 3/23/21
	EUT Maximum Frequency - 2462MHz

Frequency (MHz)	Raw Peak Reading (dB μ V)	Raw Avg Reading (dB μ V)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dB μ V/m)	Pk Lim: FCC_pt15_20_9_Peak (dB μ V/m)	Peak Margin (dB)	Peak Results (Pass/Fail)	Worst Peak Margin (dB)	Adjusted Avg Amplitude (dB μ V/m)	Av Lim: FCC_pt15_20_9_Average (dB μ V/m)	Avg Margin (dB)	Avg Results (Pass/Fail)	Worst Average Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1188.1	47.3	37	-7	40.3	74	-33.7	PASS	30	54	-24	PASS		125	314	
2122.2	44.2	35.5	1.6	45.7	74	-28.3	PASS	37	54	-17	PASS		125	12	
3168.2	42.6	34.2	5.4	48	74	-26	PASS	39.6	54	-14.4	PASS		128	17	
4228.9	44.4	33.4	7.3	51.8	74	-22.2	PASS	40.8	54	-13.2	PASS		125	264	
5255.9	42.9	33.4	9.8	52.8	74	-21.2	PASS	43.2	54	-10.8	PASS		187	115	
5742.2	41.7	33.8	11.4	53.1	74	-20.9	PASS	45.3	54	-8.7	PASS	-8.7	189	264	

1 – 6 GHz Horizontal

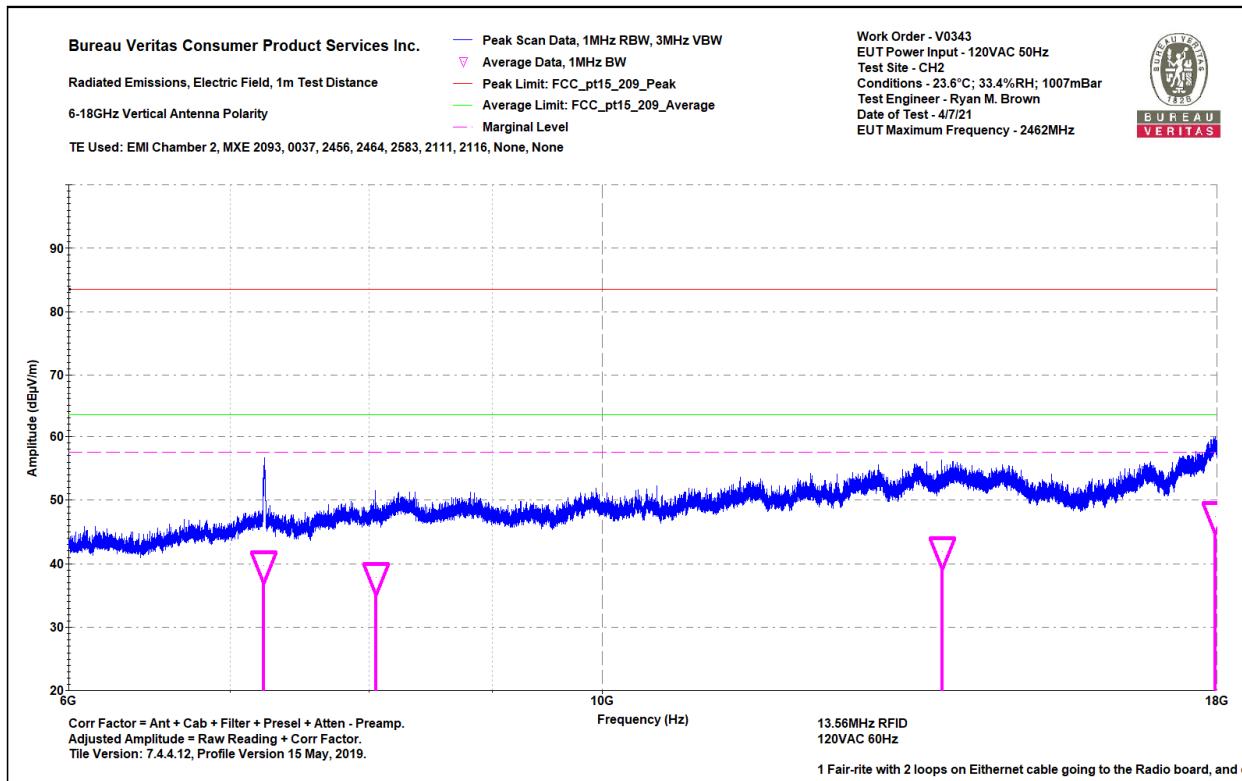


1 – 6 GHz Horizontal



Bureau Veritas Consumer Product Services Inc.		Work Order - V0343													
Radiated Emissions Electric Field 1m Distance		EUT Power Input - 120VAC 50Hz													
6-18GHz Vertical Data		Test Site - CH2													
Notes:		Conditions - 23.6°C; 33.4%RH; 1007mBar													
6-18GHz		Test Engineer - Ryan M. Brown													
13.56MHz RFID		Date of Test - 4/7/21													
120VAC 60Hz															
Frequency (MHz)	Raw Peak Reading (dB μ V)	Raw Avg Reading (dB μ V)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dB μ V/m)	Pk Lim: FCC_pt15_20_9_Peak (dB μ V/m)	Peak Margin (dB)	Peak Results (Pass/Fail)	Worst Peak Margin (dB)	Adjusted Avg Amplitude (dB μ V/m)	Av Lim: FCC_pt15_20_9_Average (dB μ V/m)	Avg Margin (dB)	Avg Results (Pass/Fail)	Worst Avg Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7231.4	46.2	38.8	0.9	47.1	83.5	-36.4	PASS		39.7	63.5	-23.8	PASS		100	42
8049.3	44	35.8	2.1	46	83.5	-37.5	PASS		37.9	63.5	-25.6	PASS		200	282
13836.5	44.6	33.8	8.1	52.7	83.5	-30.8	PASS		41.9	63.5	-21.6	PASS		100	81
17975.7	40.7	33.2	14.3	55.1	83.5	-28.4	PASS	-28.4	47.5	63.5	-16	PASS	-16	200	251

6 – 18 GHz Vertical



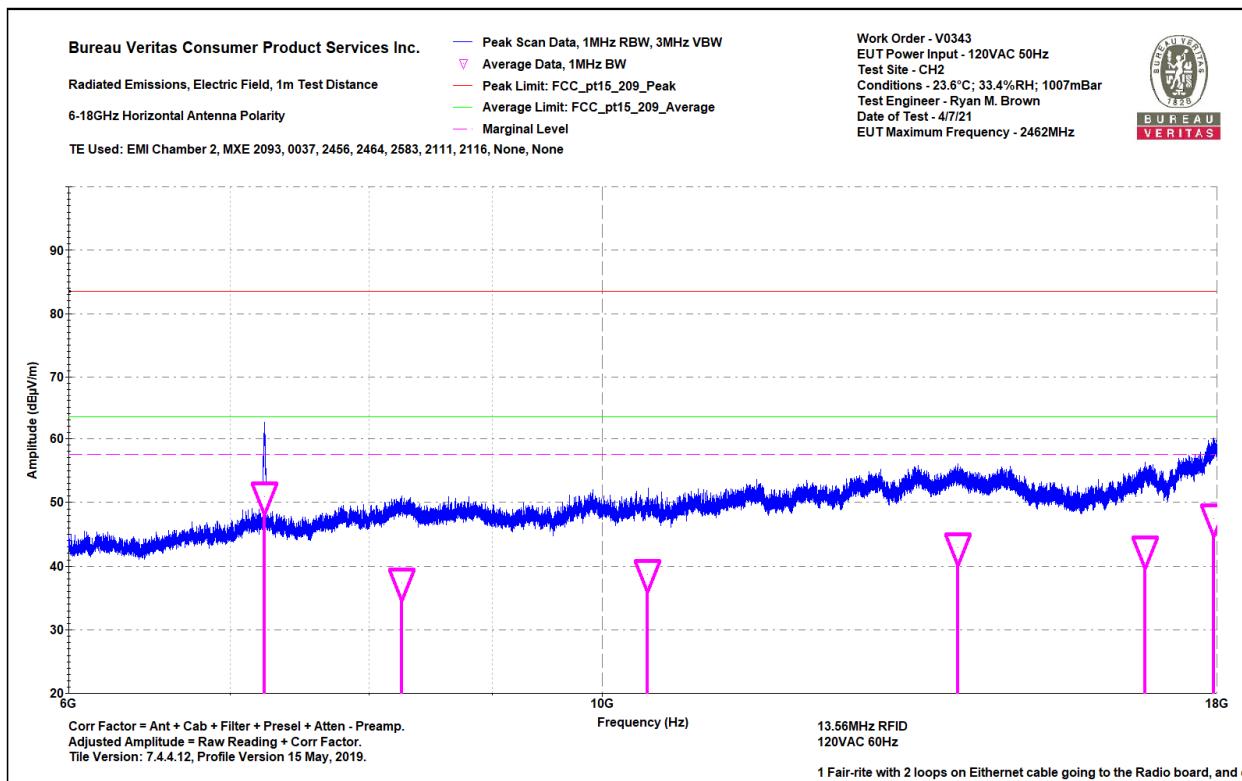
6 – 18 Vertical



Bureau Veritas Consumer Product Services Inc.	Work Order - V0343
Radiated Emissions Electric Field 1m Distance	EUT Power Input - 120VAC 50Hz
6-18GHz Horizontal Data	Test Site - CH2
Notes:	Conditions - 23.6°C; 33.4%RH; 1007mBar
6-18GHz	Test Engineer - Ryan M. Brown
13.56MHz RFID	Date of Test - 4/7/21
120VAC 60Hz	

Frequency (MHz)	Raw Peak Reading (dB μ V)	Raw Avg Reading (dB μ V)	Correction Factor (dB/m)	Adjusted Peak Amplitude (dB μ V/m)	Pk Lim: FCC_pt15_20_9_Peak (dB)	Peak Margin (dB)	Peak Test Results (Pass/Fail)	Worst Peak Margin (dB)	Adjusted Avg Amplitude (dB μ V/m)	Av Lim: FCC_pt15_20_9_Average (dB μ V/m)	Avg Margin (dB)	Avg Test Results (Pass/Fail)	Worst Avg Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7236.6	58.6	49.9	0.9	59.6	83.5	-23.9	PASS	-23.9	50.9	63.5	-12.6	PASS	-12.6	190	294
8252.9	45.4	34.5	2.8	48.2	83.5	-35.3	PASS		37.4	63.5	-26.1	PASS		149	37
10441.6	45.3	36.1	2.6	48	83.5	-35.5	PASS		38.7	63.5	-24.8	PASS		200	47
14049.4	43.3	34.1	8.8	52.1	83.5	-31.4	PASS		42.8	63.5	-20.7	PASS		200	340
16806.6	42.3	32.9	9.5	51.8	83.5	-31.7	PASS		42.4	63.5	-21.1	PASS		109	211
17940.9	41.7	33	14.5	56.2	83.5	-27.3	PASS		47.4	63.5	-16.1	PASS		183	249

6 – 18 GHz Horizontal



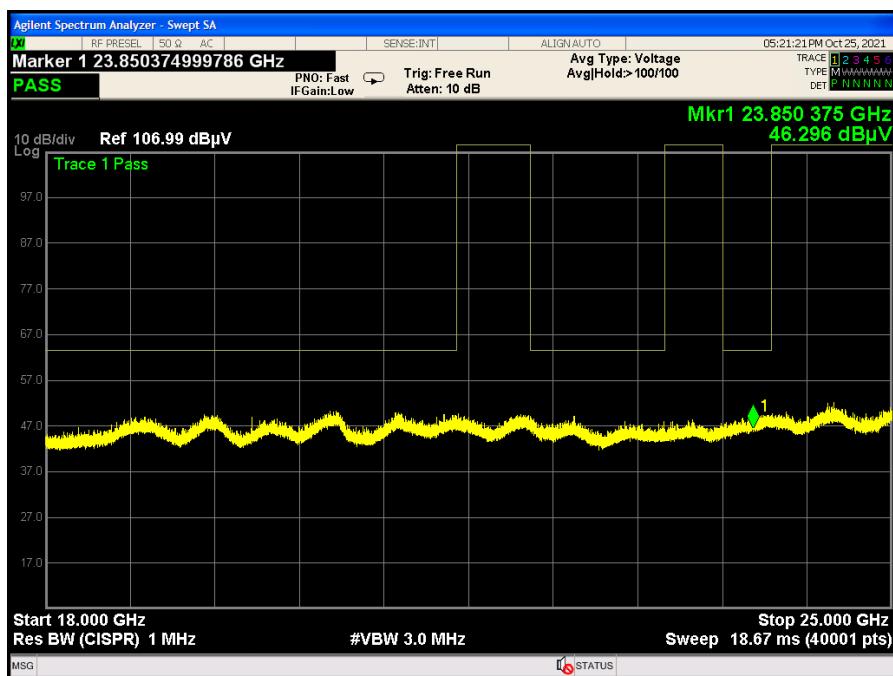
6 – 18 GHz Horizontal



Radiated Emissions Table

Date: 10-Apr-21	Company: BEVI	Work Order: V0343													
Engineer: Ryan M. Brown	EUT Desc: Standup Bevi, V2 product	EUT Operating Voltage/Frequency: 120VAC													
Temp:	Humidity:	Pressure:													
Frequency Range: 18-25GHz		Measurement Distance: 0.1 m													
Notes: 802.11b Data Rate: 11 Low Ch, & RFID		EUT Max Freq: 2462													
Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dB μ V)	Average Reading (dB μ V)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dB μ V/m)	Adjusted Avg Reading (dB μ V/m)	FCC Class B High Frequency - Peak			FCC Class B High Frequency - Average			
No Emissions Found in this Range		---	---	---	---	---	---	---	Limit (dB μ V/m)	Margin (dB)	Result (Pass/Fail)	Limit (dB μ V/m)	Margin (dB)	Result (Pass/Fail)	
Table Result: --- by --- dB								Worst Freq: --- MHz							
Test Site: EMI Chamber 2		Cable 1: Asset #2323		Cable 2: ---		Cable 3: ---		Antenna: 18-26.5GHz Horn		Preselector: ---		Copyright Curtis-Straus LLC 2000			
Analyzer: Rental SA#1		Preamp: 18-26.5GHz													
CSSoft Radiated Emissions Calculator v 1.017.217															
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor															

18 – 25 GHz



18 – 25 GHz



Rev. 4/30/2021

Spectrum Analyzers / Receivers /Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
2093 MXE EMI Receiver	Gold	20Hz-26.5GHz 100Hz-26.5 GHz	N9038A E4407B	Agilent Agilent	MY51210181 MY45113816	2093 1284	I I	1/14/2022 12/2/2021	1/14/2021 12/2/2020
Radiated Emissions Sites		FCC Code	IC Code	VCCI Code	Range	Asset	Cat	Calibration Due	Calibrated on
EMI Chamber 2		719150	2762A-7	A-0015	30-1000MHz	1686	I	12/5/2022	12/5/2020
EMI Chamber 2		719150	2762A-7	A-0015	1-18GHz	1686	I	12/8/2022	12/8/2020
Preamps /Couplers Attenuators / Filters		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
2111 HF Preamp		0.5-18GHz	PAM-118A	COM-POWER	551063	2111	II	10/11/2021	10/11/2020
8449B HF Preamp		1-18GHz	8449B	Agilent	1149055		II	11/8/2021	11/8/2020
8447F Rental PA		9KHz-1.3GHz	84477F	HP	3113A05395		II	10/11/2021	10/11/2020
Antennas		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Red-White Bilog		30-2000MHz	JB1	Sunol	A091604-1	1105	I	9/11/2021	9/11/2019
Yellow Horn		1-18GHz	3115	EMCO	9608-4898	37	I	10/20/2022	10/20/2020
Black Horn		1-18GHz	3115	EMCO	9703-5148	56	I	10/28/2022	10/28/2020
HF (White) Horn		18-26.5GHz	801-WLM	Waveline	758	758	III	Verify before Use	date of test
2615 Active Loop Antenna		9KHz-30MHz	6502	EMCO	2049	2615	I	11/23/2022	11/23/2020
Meteorological Meters/Chambers		MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)	Asset #2657	BA928 1235C97	Oregon Scientific Control Company	C3166-1 200435391	831 2657	I I	11/23/2022 8/3/2022	11/23/2020 8/3/2020	
Cables		Range	Mfr			Cat	Calibration Due	Calibrated on	
Asset #2456		9KHz-18GHz	MegaPhase			II	11/7/2021	11/7/2020	
Asset #2464		9KHz-18GHz	MegaPhase			II	11/7/2021	11/7/2020	
Asset #2583		9KHz-18GHz	Pasternack			II	2/21/2022	2/21/2021	
Asset #2323		1-26.5GHz	TM26-S1S1-120	MEGAPHASE	17139101 002		II	8/26/2021	8/26/2020
Asset #2681		9KHz-18GHz	Pasternack			II	1/17/2022	1/17/2021	

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

Test Equipment Used



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Temperature Stability

Limit: The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to + 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

[FCC 15.225]

MEASUREMENTS / RESULTS

13.56MHz * 0.01% = 1356Hz Allowable tolerance

Frequency Stability Under Extreme Conditions			
Date: 5/27/2021		Work Order: V0345	
Engineer: Ryan M. Brown			
Nominal Voltage: 120VAC	Min Voltage: 97.75VAC	Max Voltage: 132.25VAC	
Temperature	Voltage	Frequency	Frequency Delta
°C	V	(MHz)	(MHz)
-20C	Nominal	13560750.000000	276.000000
-10C	Nominal	13560375.000000	-99.000000
0C	Nominal	13560625.000000	151.000000
10C	Nominal	13560625.000000	151.000000
Nominal (20C)	Minimum	13560625.000000	151.000000
	Nominal	13560474.000000	Reference
	Maximum	13560500.000000	26.000000
30C	Nominal	13560625.000000	151.000000
40C	Nominal	13560550.000000	76.000000
50C	Nominal	13560500.000000	26.000000
Test Site: Temp Chamber 1436		Analyzer: Gold	
Antenna: 755		Cable 1: 2609	



Rev. 4/30/2021

Spectrum Analyzers / Receivers /Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Gold		100Hz-26.5 GHz	E4407B	Agilent	MY45113816	1284	I	12/2/2021	12/2/2020
Antennas	Small Loop	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
		10kHz-30MHz	PLA-130/A	ARA	1024	755	I	8/25/2022	8/25/2020
Meteorological Meters/Chambers	Temp/Humidity Chamber		MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
					1436	I		4/9/2022	4/9/2021
Cables	Asset #2609	Range		Mfr			Cat	Calibration Due	Calibrated on
		9KHz-18GHz		Passternack			II	2/21/2022	2/21/2021

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

Test Equipment Used



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AC Line Conducted Emissions**LIMITS**

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

*Decreases with the logarithm of the frequency.

[47 CFR 15.207(a)]

MEASUREMENTS / RESULTS

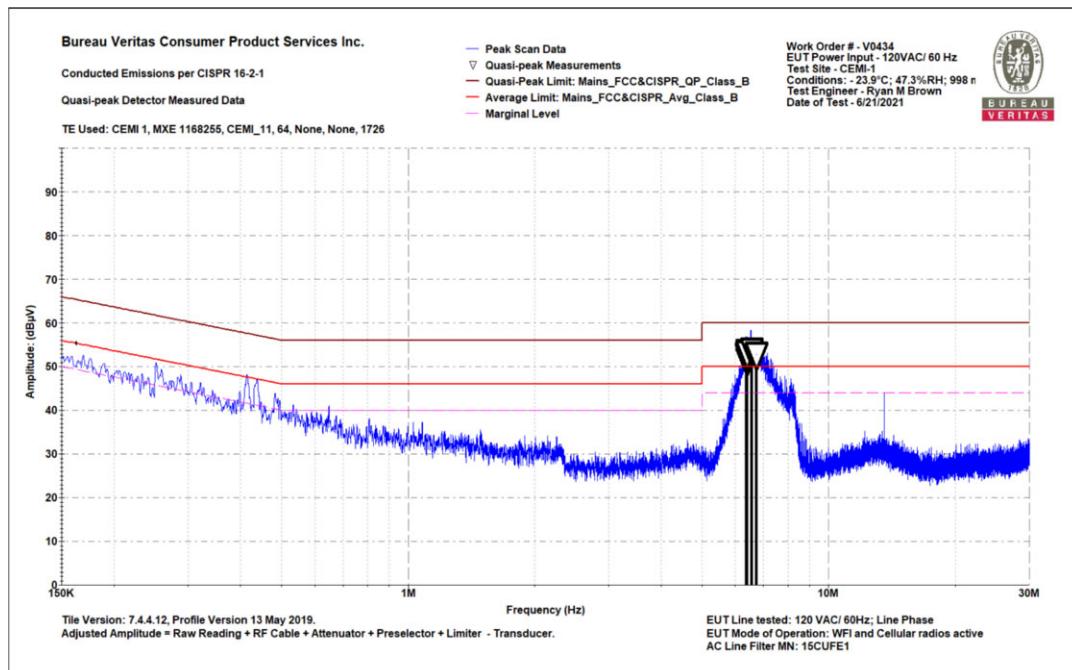
Measurements performed with antenna in place as well as antenna replaced with resistive load. Both sets of readings presented below:

Bureau Veritas Consumer Product Services Inc.	Work Order # - V0434
Conducted Emissions per CISPR 16-2-1	EUT Power Input - 120VAC/ 60 Hz
Quasi-peak Detector Data	Test Site - CEMI-1
Notes:	Conditions: - 23.9°C; 47.3%RH; 998 mBar
EUT Line tested: 120 VAC/ 60Hz; Line Phase	Test Engineer - Ryan M Brown
EUT Mode of Operation: WiFi and Cellular radios active & RFID	Date of Test - 6/21/2021
AC Line Filter MN: 15CUFE1	

Frequency (MHz)	Raw QP Reading (dB μ V)	Correction Factor (dB)	Adjusted QP Amplitude (dB μ V)	QP Lim: Mains_FCC&CISP R_QP_Class_B (dB μ V)	Margin to QP Limit (dB)	QP Limit Results (Pass/Fail)	Worst Margin (QP Limit) (dB)
6.367	32.201	20.4	52.6	60	-7.4	PASS	
6.394	33.01	20.4	53.4	60	-6.6	PASS	
6.4	31.171	20.4	51.5	60	-8.5	PASS	
6.403	32.751	20.4	53.1	60	-6.9	PASS	
6.557	33.361	20.4	53.8	60	-6.2	PASS	-6.2
6.734	32.339	20.4	52.7	60	-7.3	PASS	

0.15 – 30 MHz QP Line

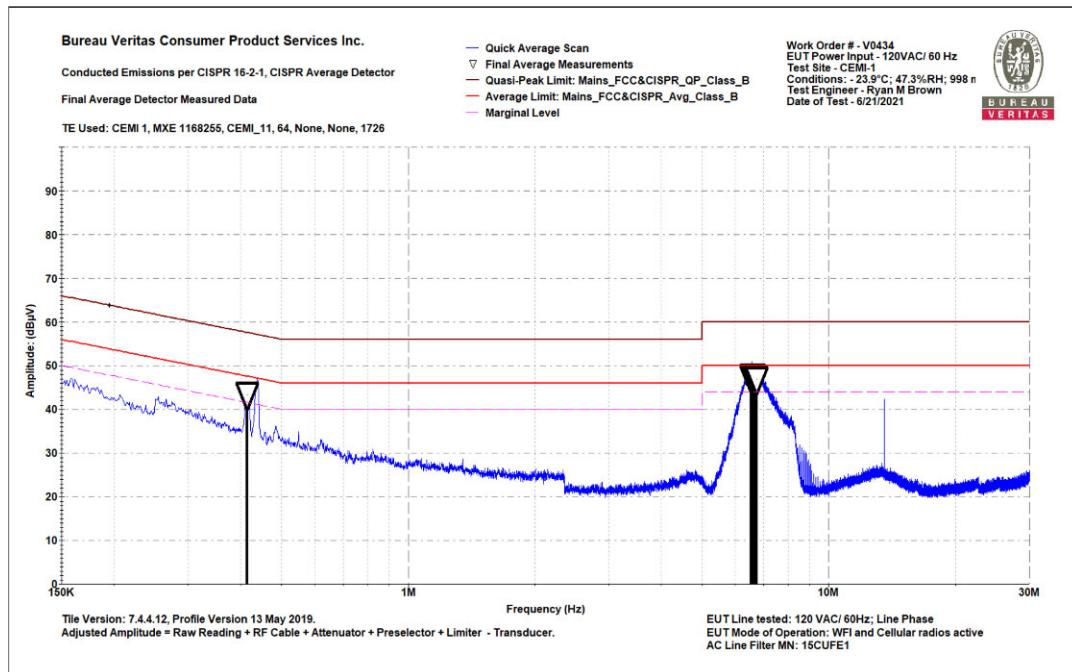




0.15 – 30 MHz QP Line

Bureau Veritas Consumer Product Services Inc. Conducted Emissions per CISPR 16-2-1, CISPR Average Detector Final Average Detector Data Notes: EUT Line tested: 120 VAC/ 60Hz; Line Phase EUT Mode of Operation: WiFi and Cellular radios active AC Line Filter MN: 15CUFE1				Work Order # - V0434 EUT Power Input - 120VAC/ 60 Hz Test Site - CEMI-1 Conditions: - 23.9°C; 47.3%RH; 998 mBar Test Engineer - Ryan M Brown Date of Test - 6/21/2021			
Data Taken at 10:52:55 AM, Monday, June 21, 2021							

0.15 – 30 MHz AVG Line



0.15 – 30 MHz AVG Line

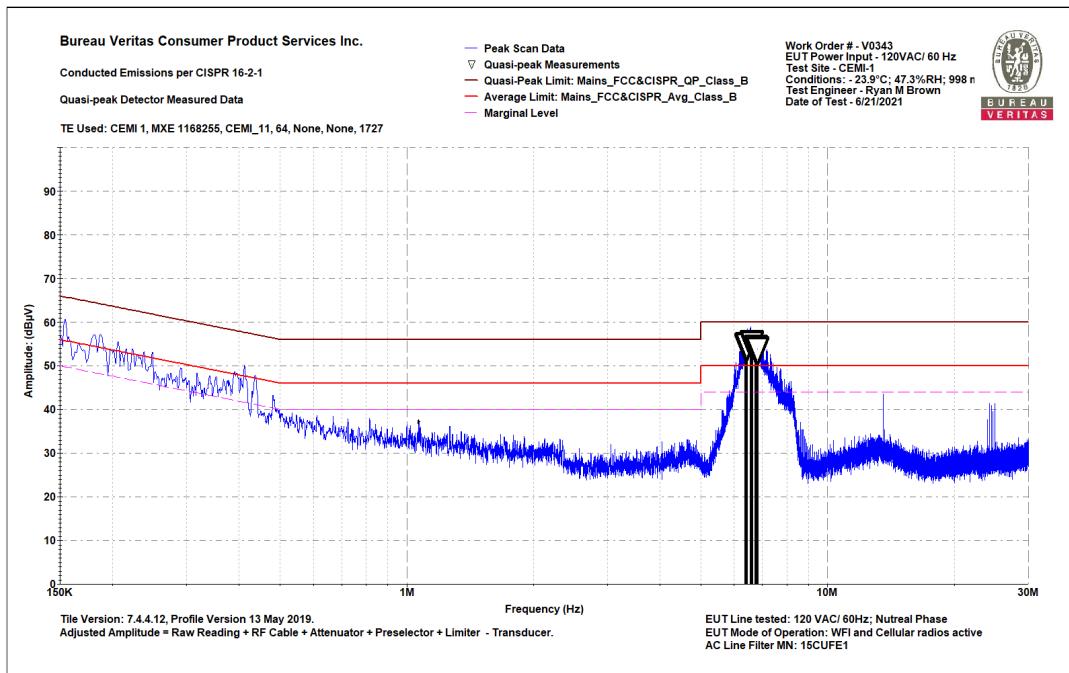
Bureau Veritas Consumer Product Services Inc.
Conducted Emissions per CISPR 16-2-1
Quasi-peak Detector Data
Notes:
EUT Line tested: 120 VAC/ 60Hz; Nutreal Phase
EUT Mode of Operation: WiFi and Cellular radios active & RFID
AC Line Filter MN: 15CUFE1

Work Order # - V0343
EUT Power Input - 120VAC/ 60 Hz
Test Site - CEMI-1
Conditions: - 23.9°C; 47.3%RH; 998 mBar
Test Engineer - Ryan M Brown
Date of Test - 6/21/2021

Frequency (MHz)	Raw QP Reading (dB μ V)	Correction Factor (dB)	Adjusted QP Amplitude (dB μ V)	QP Lim: Mains_FCC&CISPR_QP_Class_B (dB μ V)	Margin to QP Limit (dB)	QP Limit Results (Pass/Fail)	Worst Margin (QP Limit) (dB)
6.41	34.256	20.4	54.6	60	-5.4	PASS	
6.429	34.415	20.4	54.8	60	-5.2	PASS	
6.591	34.834	20.4	55.2	60	-4.8	PASS	-4.8
6.612	34.795	20.4	55.2	60	-4.8	PASS	
6.759	33.669	20.4	54.1	60	-5.9	PASS	
6.811	33.372	20.4	53.8	60	-6.2	PASS	



0.15 – 30 MHz Neutral QP



0.15 – 30 MHz Neutral QP

Bureau Veritas Consumer Product Services Inc.
Conducted Emissions per CISPR 16-2-1, CISPR Average Detector
Final Average Detector Data
Notes:
EUT Line tested: 120 VAC/ 60Hz; Nutreal Phase
EUT Mode of Operation: WiFi and Cellular radios active & RFID
AC Line Filter MN: 15CUFE1

Work Order # - V0343
EUT Power Input - 120VAC/ 60 Hz
Test Site - CEMI-1
Conditions: -23.9°C; 47.3%RH; 998 mBar
Test Engineer - Ryan M Brown
Date of Test - 6/21/2021

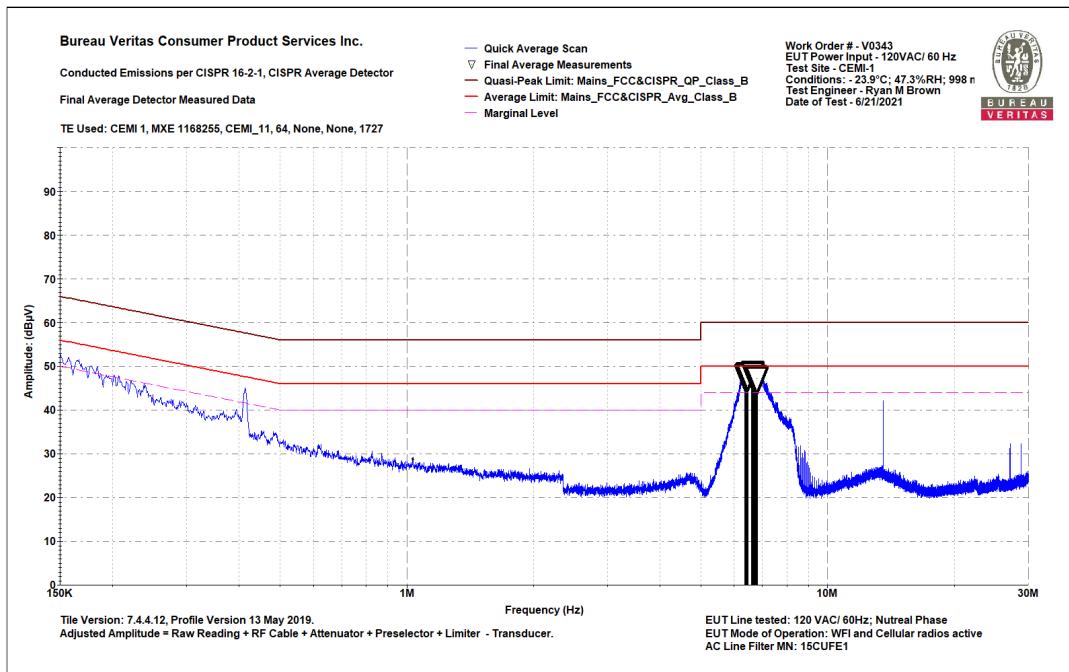
Data Taken at 11:16:40 AM, Monday, June 21, 2021

Frequency (MHz)	Raw Avg Reading (dBµV)	Correction Factor (dB)	Adjusted Avg Amplitude (dBµV)	Av Lim: Mains_FCC&CISP R_Avg_Class_B (dBµV)	Avg Margin (dB)	Avg Results (Pass/Fail)	Worst Avg Margin (dB)
6.403	27.3	20.4	47.7	50	-2.3	PASS	
6.44	27.6	20.4	48	50	-2	PASS	
6.628	27.9	20.4	48.3	50	-1.7	PASS	-1.7
6.634	27.9	20.4	48.3	50	-1.7	PASS	
6.733	26.9	20.4	47.3	50	-2.7	PASS	
6.789	26.9	20.4	47.3	50	-2.7	PASS	

0.15 – 30 MHz Neutral AVG



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0.15 – 30 MHz Neutral AVG

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Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Rental MXE EMI Receiver(1168255)	20Hz-8.4GHz	N9038A	Agilent	MY53290009	1168255	I	10/8/2021	10/8/2020
LISNs/Measurement Probes	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
LISN Asset 1726	150kHz-30MHz	LI-150A	Com-Power	201092	1726	I	11/4/2021	11/4/2020
LISN Asset 1727	150kHz-30MHz	LI-150A	Com-Power	201093	1727	I	11/4/2021	11/4/2020
Conducted Test Sites (Mains / Telco)	FCC Code		VCCI Code			Cat	Calibration Due	Calibrated on
CEMI 1	719150		A-0015			III	NA	N/A
Meteorological Meters/Chambers	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only) Asset #2657	BA928 1235C97	Oregon Scientific Control Company	C3166-1 200435391	831 2657	I I	11/23/2022 8/3/2022	11/23/2020 8/3/2020	
Cables	Range					Cat	Calibration Due	Calibrated on
CEMI-11	9kHz - 2GHz	C-S				II	10/11/2021	10/11/2020
Attenuators	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
20dB Attenuator-64	9kHz-2GHz	N/A				II	11/21/2021	11/21/2020

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

Test Equipment Used



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



Conditions of Testing

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

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

