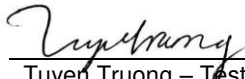
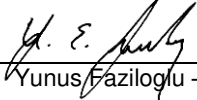




**BUREAU
VERITAS**

Test Report

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

Report No	EQ1735-1
Client	DogWatch Inc.
Address	10 Michigan Drive Natick, MA 01760
Phone	(800) 793-3436 x625
Items tested	Smart Transmitter (M/N: SF-T10)
FCC ID	L66DWSFT
IC ID	8187A-DWSFT
FRN	0018536615
Equipment Type	Low Power Communication Device Transmitter
Equipment Code	DXX
Standards	CFR 47 FCC 15.249, RSS 210 Issue 9 Annex B.10
Test Dates	July 19, 20 and 21 , 2016
Results	As detailed within this report
Prepared by	 Tuyen Truong – Test Engineer
Authorized by	 Yunus Faziloglu – Sr. EMC Engineer
Issue Date	9/16/2016
Conditions of Issue	This Test Report is issued subject to the conditions stated in the 'Conditions of Testing' section on page 21 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
One Distribution Center Circle, #1 • Littleton, MA • TEL (978) 486-8880 • FAX (978) 486-8828



Contents

Contents	2
Product Tested - Configuration Documentation	3
Summary	4
Test Methodology	5
Compliance Statement	6
Test Results	7
Fundamental Measurements.....	7
Radiated Spurious Emissions	10
AC Line Conducted Emissions.....	15
<i>Occupied Bandwidth</i>	17
Measurement Uncertainty.....	20
Conditions Of Testing	21

Form Final Report REV 2-16-07 (DW)



Product Tested - Configuration Documentation

EUT Configuration										
Work Order:	Q1735									
Company:	DogWatch Inc.									
Company Address:	10 Michigan Drive									
	Natick, MA, 01760									
Contact:	Frederic Peterson									
	MN			PN			SN			
EUT:	SF-T10			--			3 (used for TX at 902.1 MHz)			
	SF-T10			--			2 (used for TX at 915.1 MHz)			
	SF-T10			--			7 (used for TX at 927.9 MHz)			
	SF-T10			--			4 (used for RX mode)			
EUT Description:	Smart Transmitter									
EUT Max Frequency:	27 MHz (Associated Circuitry)									
EUT TX Frequency:	902.1 to 927.9 MHz									
Port Label	Port Type	# ports	# populated	cable type	shielded	ferrites	length (m)	in/out	under test	comment
AC/DC power	Power AC	1	1	Power AC	No	No	2.4	in	yes	
Loop	other	1	1	other	No	No	4.57	in	yes	
Ground	other	1	1	other	No	No	1	in	yes	
P Pak	other	1	0							Not used
Software Operating Mode Description:										
EUT is set to transmit at the following channels 902.1, 915.1, and 927.9MHz. EUT is normally in "Receive" mode; except it transmits once every 10 minutes. Modulation is FSK. Data rate = 3kbps, Duty-Cycle = 100%										
Performance Criteria:										
EMI testing only										



Reason for change
Original Release

Date Issued
September 16, 2016

Curtis-Straus LLC, a wholly owned subsidiary of BV CPS
One Distribution Center Circle, #1 • Littleton, MA • TEL (978) 486-8880 • FAX (978) 486-8828



Summary

This test report supports an application for certification of a transmitter operating pursuant to CFR 47 FCC 15.249, RSS 210 Issue 9 Annex B.10. The product operates in the 902.1MHz to 927.9MHz frequency range.

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

Model tested: SF-T10

Test results in this report represent the following additional models. The differences between models are in software that control features. All models share the same circuit boards and RF parameters.

Additional Models: SF-T20, SF-T30, SF-T40



Reason for change
Original Release

Date Issued
September 16, 2016

Curtis-Straus LLC, a wholly owned subsidiary of BV CPS
One Distribution Center Circle, #1 • Littleton, MA • TEL (978) 486-8880 • FAX (978) 486-8828



Test Methodology

Radiated emissions testing was performed according to the procedures specified in ANSI C63.10-2013 and RSS-Gen Issue 4. Radiated Emissions were maximized in the orientation of final installation. The device antenna is integral and cannot be maximized separately.

AC Mains Conducted Emission was tested with a 50 Ω /50 μ H LISN.

The product was tested with modulation ON.

Operating channel frequency = 902.1 MHz (EUT Sample #3)

Operating channel frequency = 915.1 MHz (EUT Sample #2)

Operating channel frequency = 927.9 MHz (EUT Sample #7)

The EUT operating voltage is 120VAC/60Hz.

Following bandwidths were used during radiated spurious emissions and line conducted emissions tests.

Frequency	RBW	VBW
0.15-30MHz	9kHz	30kHz
30-1000MHz	120kHz	1MHz
1-25GHz	1MHz	3MHz



Reason for change
Original Release

Date Issued
September 16, 2016

Curtis-Straus LLC, a wholly owned subsidiary of BV CPS
One Distribution Center Circle, #1 • Littleton, MA • TEL (978) 486-8880 • FAX (978) 486-8828



Compliance Statement

The product complied with the following parts of CFR 47 and RSS 210 as detailed below:

RSS-GEN	RSP-100	RSS 210	Part 15	Comments
6.3			15.15(b)	There are no controls accessible to the user that vary the output power.
	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.
6.1, 6.5			15.31	The EUT was tested in accordance with the measurement standards in this section.
			15.33	Frequency range was investigated according to this section, unless noted in specific rule section under which the equipment operates.
8.1			15.35	The EUT emissions were measured using the measurement detector and bandwidth specified in this section, unless noted in specific rule section under which the equipment operates.
8.3			15.203	The antenna is etched on PCB and internal to the device.
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 and RSS-Gen.
8.8			15.207	EUT meets the limits in 15.207
		B.10(a)	15.249(a)	The fundamental and harmonics meet the limits in 15.249(a).
		B.10(b)	15.249(d)	Spurious emissions meet the limits in 15.209.
6.6				99% emissions bandwidth plots included.



BUREAU
VERITAS



Test Results

Fundamental Measurements

LIMITS

The field strength from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
902 - 928 MHz	50	500
2400 - 2483.5 MHz	50	500
5725 - 5875 MHz	50	500
24.0 - 24.25 GHz	250	2500

[15.249(a)]

MEASUREMENTS / RESULTS

Radiated Emissions Table									
Date: Jul 19 and 21, 2016		Company: Dogwatch Inc.				Work Order: Q1735			
Engineer: Tuyen Truong		EUT Desc: SF-T10				EUT Operating Voltage/Frequency: 120Vac/60Hz			
7/19 Temp: 24°C		Humidity: 0.45		Pressure: 1002mBar					
7/21 Temp: 23°C		Humidity: 41%		Pressure: 1005mBar					
Frequency Range: 902.1 to 927.9 MHz						Measurement Distance: 3m			
Notes: Sample #2 (915.1 MHz)		Sample #3 (902.1 MHz)		Sample #7 (927.9 MHz)		EUT TX Frequencies: 902.1 to 927.9 MHz			
Antenna Polarization (H / V)	Frequency (MHz)	Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBμV/m)	FCC 15.249		
							Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)
h	902.1	65.9	0.0	22.5	2.1	90.5	93.9	-3.4	Pass
h	915.1	68.5	0.0	22.4	2.1	93.0	93.9	-0.9	Pass
h	927.9	64.2	0.0	22.5	2.1	88.8	93.9	-5.1	Pass
Table Result: Pass by -0.9 dB Worst Freq: 915.1 MHz									
Test Site: EMI Chamber 1		Cable 1: Asset #2051				Cable 2: Asset #1784		Cable 3: ---	
Analyzer: Asset #1328		Preamp: none				Antenna: Red-Brown		Preselector: ---	
CSsoft Radiated Emissions Calculator v 1.017.165						Copyright Curtis-Straus LLC 2000			
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor									

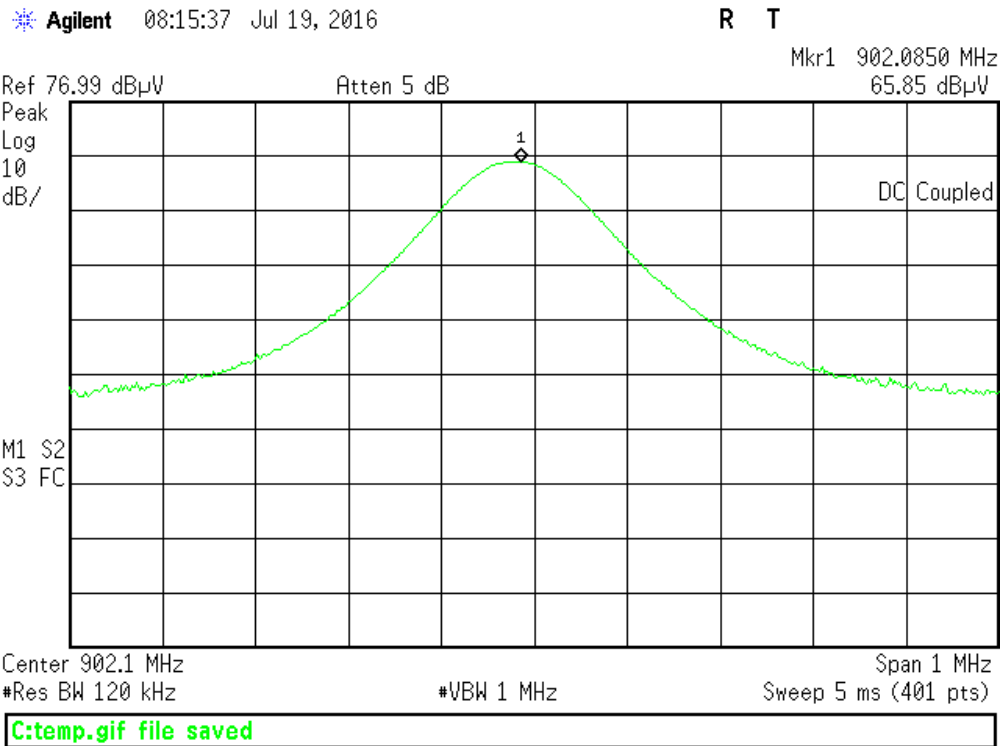
Rev. 7/4/2016

Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA EMI Chamber (1328)	9kHz-13.2 GHz	E4405B	Agilent	MY44210241	1328	I	2/26/2017	2/26/2016
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on
EMI Chamber 1	719150	2762A-6	A-0015	30-1000MHz		II	3/21/2017	3/21/2015
Preamps / Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
none (n/a)								
Antennas	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Red-Brown Bilog	30-2000MHz	JB1	Sunol	A0032406	1218	I	12/4/2016	12/4/2014
Meteorological Meters		MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
TH A#2080		HTC-1	HDE	2080	2080	II	4/5/2017	4/5/2016
Barometric A#2160		5396-0321	Monarch Instruments	4000060	2160	I	3/7/2017	3/7/2016
Cables	Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #1784	9kHz - 18GHz		Florida RF			II	3/7/2017	3/7/2016
Asset #2051	9kHz - 18GHz		Florida RF			II	3/2/2017	3/2/2016

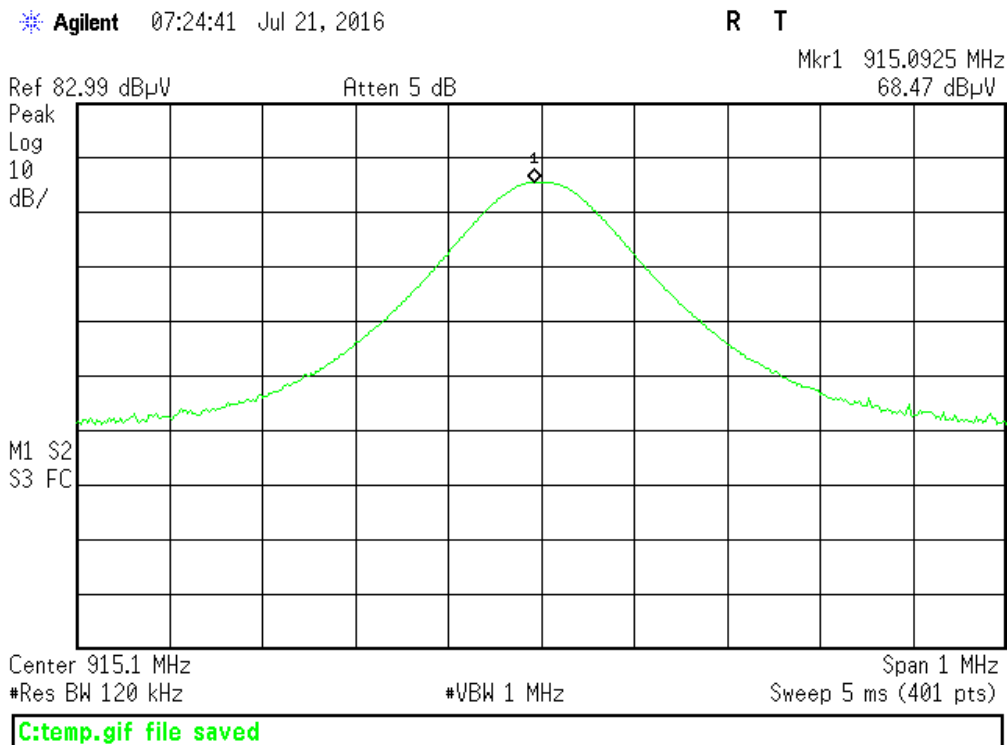
All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



Plot(s)



Peak Power - Low Channel (902.1 MHz)

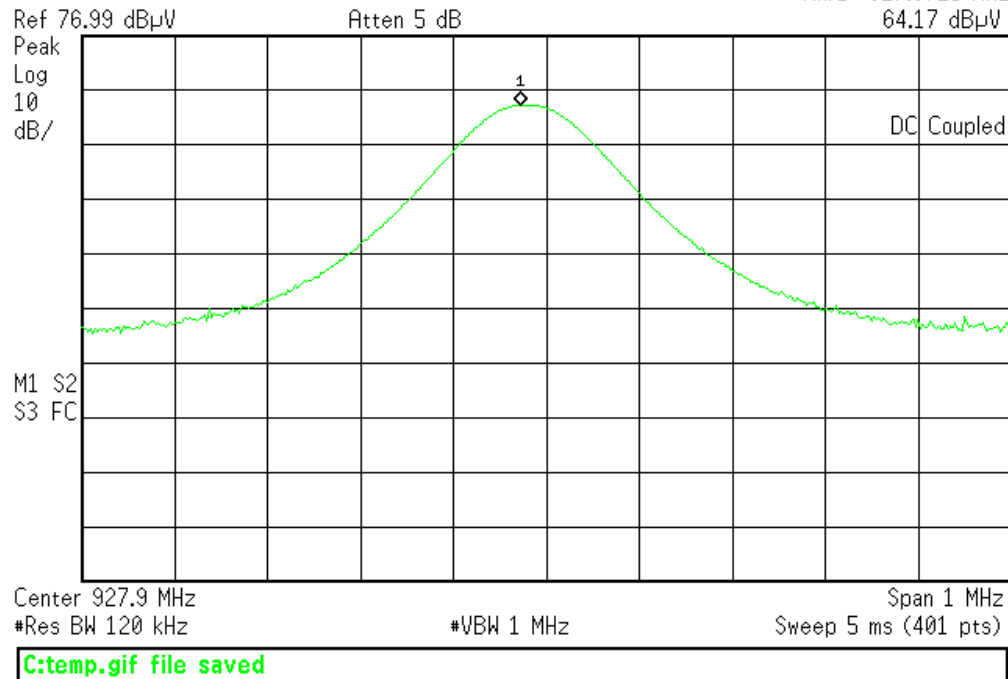


Peak Power - Mid Channel (915.1 MHz)

Agilent 08:24:37 Jul 19, 2016

R T

Mkr1 927.8725 MHz
64.17 dBμV



Peak Power - High Channel (927.9 MHz)

Radiated Spurious Emissions LIMITS

15.249 (d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

MEASUREMENTS / RESULTS

TX mode

Radiated Emissions Table												
Date: 19-Jul-16			Company: Dogwatch Inc.				Work Order: Q1735					
Engineer: Tuyen Truong			EUT Desc: SF-T10				EUT Operating Voltage/Frequency: 120Vac/60Hz					
Temp: 24°C			Humidity: 45%				Pressure: 1002mBar					
Frequency Range: 30 to 1000 MHz							Measurement Distance: 3m					
Notes: All three channels (EUT samples, S/N 2, 3 and 7) were investigated. Only the worst case recorded.							EUT Max Frequencies: 27 MHz					
							EUT TX Frequencies: 902.1 to 927.9 MHz					
Antenna Polarization (H/V)	Frequency (MHz)	Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBμV/m)	---			FCC15.209		
							Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)
v	49.4	30.6	25.5	8.4	0.5	14.0	---	---	---	40.0	-26.0	Pass
v	64.0	38.2	25.6	7.8	0.6	21.0	---	---	---	40.0	-19.0	Pass
h	73.7	32.4	25.5	8.2	0.6	15.7	---	---	---	40.0	-24.3	Pass
v	207.0	27.8	25.7	10.7	1.0	13.8	---	---	---	43.5	-29.7	Pass
v	240.0	25.3	25.6	11.7	1.2	12.6	---	---	---	46.0	-33.4	Pass
v	322.0	26.8	25.7	13.8	1.4	16.3	---	---	---	46.0	-29.7	Pass
h	340.0	35.1	26.0	14.1	1.4	24.6	---	---	---	46.0	-21.4	Pass
v	608.0	26.1	25.3	18.9	2.0	21.7	---	---	---	46.0	-24.3	Pass
v	960.0	26.2	25.7	22.9	2.2	25.6	---	---	---	46.0	-20.4	Pass
Table Result: Pass							by		-19.0 dB		Worst Freq: 64.0 MHz	
Test Site: EMI Chamber 1			Cable 1: Asset #2051				Cable 2: Asset #1784			Cable 3: ---		
Analyzer: Asset #1328			Preamp: Green				Antenna: Red-Brown			Preselector: ---		
CSsoft Radiated Emissions Calculator							v 1.017.165					
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor												
Copyright Curtis-Straus LLC 2000												

Rev. 7/4/2016

Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA EMI Chamber (1328)	9kHz-13.2 GHz	E4405B	Agilent	MY44210241	1328	I	2/26/2017	2/26/2016
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on
EMI Chamber 1	719150	2762A-6	A-0015	30-1000MHz		II	3/21/2017	3/21/2015
Preamps / Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Green	0.009-2000MHz	ZFL-1000-LN	CS	N/A	802	II	9/17/2016	9/17/2015
Antennas	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Red-Brown Bilog	30-2000MHz	JB1	Sunol	A0032406	1218	I	12/4/2016	12/4/2014
Meteorological Meters		MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
TH A#2080		HTC-1	HDE		2080	II	4/5/2017	4/5/2016
Barometric A#2160		5396-0321	Monarch Instruments	4000060	2160	I	3/7/2017	3/7/2016
Cables	Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #1784	9kHz - 18GHz		Florida RF			II	3/7/2017	3/7/2016
Asset #2051	9kHz - 18GHz		Florida RF			II	3/2/2017	3/2/2016

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



Radiated Emissions Table

Date: 19-Jul-16		Company: DogWatch Inc.				Work Order: Q1735								
Engineer: Chris Bramley		EUT Desc: SF-T10				EUT Operating Voltage/Frequency: 120V/60Hz								
Temp: 25.7°C		Humidity: 37%				Pressure: 1002mBar								
Frequency Range: 1-6GHz						Measurement Distance: 3m								
Notes:						EUT Max Freq: 27MHz								
						EUT TX Freq: 902.1 to 927.9 MHz								
Antenna Polarization (H/V)	Frequency (MHz)	Peak Reading (dBμV)	Average Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBμV/m)	Adjusted Avg Reading (dBμV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)
SN-3 - Tx at 902.1MHz														
v	1804.2	31.92	18.8	18.8	30.5	3.1	46.7	33.6	74.0	-27.3	Pass	54.0	-20.4	Pass
h	2706.3	32.93	20.5	20.3	32.9	4.6	50.1	37.7	74.0	-23.9	Pass	54.0	-16.3	Pass
v	3608.4	34.89	22.1	19.1	33.3	5.3	54.4	41.6	74.0	-19.6	Pass	54.0	-12.4	Pass
v	4510.5	31.52	18.9	17.9	34.2	6.2	54.0	41.4	74.0	-20.0	Pass	54.0	-12.6	Pass
h	5412.6	30.62	18.1	17.6	34.8	7.1	54.9	42.4	74.0	-19.1	Pass	54.0	-11.6	Pass
Table Result:		Pass		by		-11.6 dB				Worst Freq:		5412.6 MHz		
Test Site: EMI Chamber 1				Cable 1: Asset #2051				Cable 2: Asset #1784						
Analyzer: Asset #1328				Preamp: Asset #1517				Antenna: Blue Horn						
CSsoft Radiated Emissions Calculator v 1.017.165														
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														
Copyright Curtis-Straus LLC 2000														

Copyright Curtis-Straus LLC 2000

Radiated Emissions Table

Date: 19-Jul-16		Company: DogWatch Inc.				Work Order: Q1735								
Engineer: Chris Bramley		EUT Desc: SF-T10				EUT Operating Voltage/Frequency: 120V/60Hz								
Temp: 25.7°C		Humidity: 37%				Pressure: 1002mBar								
Frequency Range: 6-10GHz						Measurement Distance: 1m								
Notes:						EUT Max Freq: 27MHz								
						EUT TX Freq: 902.1 to 927.9 MHz								
Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBμV)	Average Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBμV/m)	Adjusted Avg Reading (dBμV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)
SN-3 - Tx at 902.1MHz														
v	6314.7	34.32	23.9	17.2	35.8	8.0	60.9	50.5	83.5	-22.6	Pass	63.5	-13.0	Pass
v	7216.8	32.73	19.6	16.6	35.9	8.0	60.0	46.9	83.5	-23.5	Pass	63.5	-16.6	Pass
h	8118.9	32.44	19.1	16.9	36.1	8.1	59.7	46.4	83.5	-23.8	Pass	63.5	-17.1	Pass
h	9021.0	31.9	18.6	17.3	36.6	8.0	59.2	45.9	83.5	-24.3	Pass	63.5	-17.6	Pass
v	9923.1	30.62	18.1	17.3	37.8	9.5	60.6	48.1	83.5	-22.9	Pass	63.5	-15.4	Pass
Table Result:		Pass		by		-13.0 dB				Worst Freq:		6314.7 MHz		
Test Site: EMI Chamber 1				Cable 1: Asset #2051				Cable 2: Asset #1784						
Analyzer: Asset #1328				Preamp: Asset #1517				Antenna: Blue Horn						
CSsoft Radiated Emissions Calculator v 1.017.165														
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														
Copyright Curtis-Straus LLC 2000														

Copyright Curtis-Straus LLC 2000

Radiated Emissions Table

Date: 19-Jul-16		Company: DogWatch Inc.				Work Order: Q1735								
Engineer: Chris Bramley		EUT Desc: SF-T10				EUT Operating Voltage/Frequency: 120V/60Hz								
Temp: 25.7°C		Humidity: 37%				Pressure: 1002mBar								
Frequency Range: 1-6GHz						Measurement Distance: 3m								
Notes:						EUT Max Freq: 27MHz								
						EUT TX Freq: 902.1 to 927.9 MHz								
Antenna Polarization (H/V)	Frequency (MHz)	Peak Reading (dBμV)	Average Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBμV/m)	Adjusted Avg Reading (dBμV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)
SN2 - Tx at 915.1MHz														
v	1830.2	32.16	19.3	18.8	30.7	3.1	47.2	34.3	74.0	-26.8	Pass	54.0	-19.7	Pass
h	2745.3	32.9	20.4	20.2	33.0	4.5	50.2	37.7	74.0	-23.8	Pass	54.0	-16.3	Pass
v	3660.4	34.66	22.3	19.1	33.4	5.4	54.4	42.0	74.0	-19.6	Pass	54.0	-12.0	Pass
v	4575.5	31.12	18.7	17.9	34.3	6.0	53.5	41.1	74.0	-20.5	Pass	54.0	-12.9	Pass
h	5490.6	30.92	18.0	17.6	34.8	6.9	55.0	42.1	74.0	-19.0	Pass	54.0	-11.9	Pass
Table Result:		Pass				by		-11.9 dB		Worst Freq:		5490.6 MHz		
Test Site: EMI Chamber 1					Cable 1: Asset #2051					Cable 2: Asset #1784				
Analyzer: Asset #1328					Preamp: Asset #1517					Antenna: Blue Horn				
CSsoft Radiated Emissions Calculator v 1.017.165														
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														
Copyright Curtis-Straus LLC 2000														

Copyright Curtis-Straus LLC 2000

BUREAU
VERITAS

Curtis-Straus LLC, a wholly owned subsidiary of BV CPS
One Distribution Center Circle, #1 • Littleton, MA • TEL (978) 486-8880 • FAX (978) 486-8828



page 11 of 22

Radiated Emissions Table

Date: 19-Jul-16		Company: DogWatch Inc.				Work Order: Q1735								
Engineer: Chris Bramley		EUT Desc: SF-T10				EUT Operating Voltage/Frequency: 120V/60Hz								
Temp: 25.7°C		Humidity: 37%				Pressure: 1002mBar								
Frequency Range: 6-10GHz						Measurement Distance: 1m								
Notes:						EUT Max Freq: 27MHz								
						EUT TX Freq: 902.1 to 927.9 MHz								
Antenna Polarization (H/V)	Frequency (MHz)	Peak Reading (dBμV)	Average Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBμV/m)	Adjusted Avg Reading (dBμV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)
SN:2 - Tx at 915.1MHz														
v	6405.7	33.22	23.0	17.3	35.8	8.1	59.8	49.6	83.5	-23.7	Pass	63.5	-13.9	Pass
v	7320.8	32.48	19.5	17.0	35.9	7.7	59.1	46.1	83.5	-24.4	Pass	63.5	-17.4	Pass
h	8235.9	31.67	18.8	17.4	36.1	8.1	58.5	45.6	83.5	-25.0	Pass	63.5	-17.9	Pass
h	9151.0	31.47	18.4	17.2	36.7	8.0	59.0	45.9	83.5	-24.5	Pass	63.5	-17.6	Pass
Table Result: Pass by -13.9 dB Worst Freq: 6405.7 MHz														
Test Site: EMI Chamber 1					Cable 1: Asset #2051					Cable 2: Asset #1784				
Analyzer: Asset #1328					Preamp: Asset #1517					Antenna: Blue Horn				
CSsoft Radiated Emissions Calculator v 1.017.165														
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														
Copyright Curtis-Straus LLC 2000														

Copyright Curtis-Straus LLC 2000

Radiated Emissions Table

Date: 19-Jul-16		Company: DogWatch Inc.				Work Order: Q1735								
Engineer: Chris Bramley		EUT Desc: SF-T10				EUT Operating Voltage/Frequency: 120V/60Hz								
Temp: 25.7°C		Humidity: 37%				Pressure: 1002mBar								
Frequency Range: 1-6GHz								Measurement Distance: 3m						
Notes:		EUT Max Freq: 27MHz												
		EUT TX Freq: 902.1 to 927.9 MHz												
Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBμV)	Average Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBμV/m)	Adjusted Avg Reading (dBμV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)
SN:7 - Tx at 927.9MHz														
v	1855.8	32.65	19.1	18.8	30.9	3.2	48.0	34.4	74.0	-26.0	Pass	54.0	-19.6	Pass
h	2783.7	33.03	20.1	20.1	33.0	4.4	50.3	37.4	74.0	-23.7	Pass	54.0	-16.6	Pass
h	3711.6	34.4	21.7	19.1	33.4	5.5	54.2	41.5	74.0	-19.8	Pass	54.0	-12.5	Pass
v	4639.5	30.85	18.0	17.9	34.3	6.0	53.3	40.4	74.0	-20.7	Pass	54.0	-13.6	Pass
h	5567.4	31.52	18.5	17.6	34.9	6.8	55.6	42.6	74.0	-18.4	Pass	54.0	-11.4	Pass
Table Result:		Pass				by -11.4 dB				Worst Freq:		5567.4 MHz		
Test Site: EMI Chamber 1				Cable 1: Asset #2051				Cable 2: Asset #1784						
Analyzer: Asset #1328				Preamp: Asset #1517				Antenna: Blue Horn						
CSsoft Radiated Emissions Calculator v 1.017.165														
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														
Copyright Curtis-Straus LLC 2000														

Copyright Curtis-Straus LLC 2000

Radiated Emissions Table

Date: 19-Jul-16		Company: DogWatch Inc.				Work Order: Q1735								
Engineer: Chris Bramley		EUT Desc: SF-T10				EUT Operating Voltage/Frequency: 120V/60Hz								
Temp: 25.7°C		Humidity: 37%				Pressure: 1002mBar								
Frequency Range: 6-10GHz						Measurement Distance: 1m								
Notes:						EUT Max Freq: 27MHz								
						EUT TX Freq: 902.1 to 927.9 MHz								
Antenna Polarization (H/V)	Frequency (MHz)	Peak Reading (dBμV)	Average Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBμV/m)	Adjusted Avg Reading (dBμV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)
SN:7 - Tx at 927.9MHz														
v	6495.3	31.95	20.4	17.4	35.8	7.2	57.6	46.0	83.5	-25.9	Pass	63.5	-17.5	Pass
v	7423.2	32.72	20.0	17.2	36.0	8.0	59.5	46.8	83.5	-24.0	Pass	63.5	-16.7	Pass
v	8351.1	31.52	18.7	17.5	36.1	8.2	58.3	45.5	83.5	-25.2	Pass	63.5	-18.0	Pass
h	9279.0	32.08	18.4	17.3	36.8	8.6	60.2	46.5	83.5	-23.3	Pass	63.5	-17.0	Pass
Table Result: Pass by -16.7 dB Worst Freq: 7423.2 MHz														
Test Site: EMI Chamber 1					Cable 1: Asset #2051					Cable 2: Asset #1784				
Analyzer: Asset #1328					Preamp: Asset #1517					Antenna: Blue Horn				
CSsoft Radiated Emissions Calculator v 1.017.165														
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														
Copyright Curtis-Straus LLC 2000														

Copyright Curtis-Straus LLC 2000

BUREAU
VERITAS

Curtis-Straus LLC, a wholly owned subsidiary of BV CPS
One Distribution Center Circle, #1 • Littleton, MA • TEL (978) 486-8880 • FAX (978) 486-8828



page 12 of 22

Rev. 7/4/2016

Spectrum Analyzers / Receivers/Preselectors SA EMI Chamber (1328)	Range 9kHz-13.2 GHz	MN E4405B	Mfr Agilent	SN MY44210241	Asset 1328	Cat I	Calibration Due 2/26/2017	Calibrated on 2/26/2016
Radiated Emissions Sites EMI Chamber 1	FCC Code 719150	IC Code 2762A-6	VCCI Code A-0015	Range 30-1000MHz		Cat II	Calibration Due 3/21/2017	Calibrated on 3/21/2015
Preamps/Couplers Attenuators / Filters 1517 HF Preamp	Range 1-20GHz	MN CS	Mfr CS	SN N/A	Asset 1517	Cat II	Calibration Due 8/6/2016	Calibrated on 8/6/2015
Antennas Blue Horn	Range 1-18GHz	MN 3117	Mfr ETS	SN 157647	Asset 1861	Cat I	Calibration Due 2/8/2017	Calibrated on 2/8/2015
Meteorological Meters Weather Clock (Pressure Only) TH A#2080		MN BA928 HTC-1	Mfr Oregon Scientific HDE	SN C3166-1	Asset 831 2080	Cat I II	Calibration Due 4/28/2018 4/5/2017	Calibrated on 4/28/2016 4/5/2016
Cables Asset #1784 Asset #2051	Range 9kHz - 18GHz 9kHz - 18GHz		Mfr Florida RF Florida RF			Cat II II	Calibration Due 3/7/2017 3/2/2017	Calibrated on 3/7/2016 3/2/2016

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

RX mode

Radiated Emissions Table												
Date: 20-Jul-16			Company: Dogwatch Inc.				Work Order: Q1735					
Engineer: Ahmed Ahmed			EUT Desc: SF-T10				EUT Operating Voltage/Frequency: 120Vac/60Hz					
Temp: 22°C			Humidity: 39%				Pressure: 1002mBar					
Frequency Range: 30-1000MHz							Measurement Distance: 3m					
Notes: RX mode, SN:04. Peak readings.							EUT Max Freq: 27MHz EUT TX Freq: 902.1 to 927.9 MHz					
Antenna Polarization (H / V)	Frequency (MHz)	Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBμV/m)	---			FCC 15.209		
							Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)
V	44.6	36.3	25.2	10.7	0.5	22.3	---	---	---	40.0	-17.7	Pass
V	59.0	34.6	25.3	7.4	0.6	17.3	---	---	---	40.0	-22.7	Pass
V	85.8	37.2	25.3	7.5	0.6	20.0	---	---	---	40.0	-20.0	Pass
H	90.6	34.0	25.3	7.9	0.7	17.3	---	---	---	43.5	-26.2	Pass
V	182.8	26.8	25.0	11.0	1.0	13.8	---	---	---	43.5	-29.7	Pass
V	541.7	26.5	25.2	18.2	1.8	21.3	---	---	---	46.0	-24.7	Pass
Table Result: Pass by -17.7 dB Worst Freq: 44.6 MHz												
Test Site: EMI Chamber 1			Cable 1: Asset #2051				Cable 2: Asset #1784					
Analyzer: Asset #1328			Preamp: Blue-Blk				Antenna: Red-Brown					
CSsoft Radiated Emissions Calculator v 1.017.165												
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor												
Copyright Curtis-Straus LLC 2000												

Rev. 7/4/2016

Spectrum Analyzers / Receivers/Preselectors SA EMI Chamber (1328)	Range 9kHz-13.2 GHz	MN E4405B	Mfr Agilent	SN MY44210241	Asset 1328	Cat I	Calibration Due 2/26/2017	Calibrated on 2/26/2016
Radiated Emissions Sites EMI Chamber 1	FCC Code 719150	IC Code 2762A-6	VCCI Code A-0015	Range 30-1000MHz		Cat II	Calibration Due 3/21/2017	Calibrated on 3/21/2015
Preamps/Couplers Attenuators / Filters Green	Range 0.009-2000MHz	MN ZFL-1000-LN	Mfr CS	SN N/A	Asset 802	Cat II	Calibration Due 9/17/2016	Calibrated on 9/17/2015
Antennas Red-Brown Bilog	Range 30-2000MHz	MN JB1	Mfr Sunol	SN A0032406	Asset 1218	Cat I	Calibration Due 12/4/2016	Calibrated on 12/4/2014
Meteorological Meters TH A#2080 Barometric A#2160		MN HTC-1 5396-0321	Mfr HDE Monarch Instruments	SN 2080 4000060	Asset 2160	Cat II I	Calibration Due 4/5/2017 3/7/2017	Calibrated on 4/5/2016 3/7/2016
Cables Asset #1784 Asset #2051	Range 9kHz - 18GHz 9kHz - 18GHz		Mfr Florida RF Florida RF			Cat II II	Calibration Due 3/7/2017 3/2/2017	Calibrated on 3/7/2016 3/2/2016

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



Radiated Emissions Table

Date: 19-Jul-16				Company: DogWatch Inc.				Work Order: Q1735																							
Engineer: Chris Bramley				EUT Desc: SF-T10				EUT Operating Voltage/Frequency: 120V/60Hz																							
Temp: 25.7°C				Humidity: 37%				Pressure: 1002mBar																							
Frequency Range: 1-6GHz								Measurement Distance: 3m																							
Notes: SN:4				Rx Mode				EUT Max Freq: 27MHz																							
								EUT TX Freq: 902.1 to 927.9 MHz																							
Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBμV)	Average Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBμV/m)	Adjusted Avg Reading (dBμV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average																			
									Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)																	
No emissions found																															
Table Result:				---				by				---				dB				Worst Freq:				---				MHz			
Test Site: EMI Chamber 1				Cable 1: Asset #2051				Cable 2: Asset #1784																							
Analyzer: Asset #1328				Preamp: Asset #1517				Antenna: Blue Horn																							
CSsoft Radiated Emissions Calculator v 1.017.165																Copyright Curtis-Straus LLC 2000															
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor																															

Copyright Curtis-Straus LLC 2000

Radiated Emissions Table

Date: 19-Jul-16		Company: DogWatch Inc.				Work Order: Q1735								
Engineer: Chris Bramley		EUT Desc: SF-T10				EUT Operating Voltage/Frequency: 120V/60Hz								
Temp: 25.7°C		Humidity: 37%				Pressure: 1002mBar								
Frequency Range: 6-10GHz						Measurement Distance: 1m								
Notes: SN:4 Rx Mode						EUT Max Freq: 27MHz EUT TX Freq: 902.1 to 927.9 MHz								
Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBμV)	Average Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBμV/m)	Adjusted Avg Reading (dBμV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)
No emissions found														
Table Result: --- by --- dB						Worst Freq: --- MHz								
Test Site: EMI Chamber 1					Cable 1: Asset #2051					Cable 2: Asset #1784				
Analyzer: Asset #1328					Preamp: Asset #1517					Antenna: Blue Horn				
CSsoft Radiated Emissions Calculator v 1.017.165														
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														
Copyright Curtis-Straus LLC 2000														

Copyright Curtis-Straus LLC 2000

Rev. 7/4/2016

Spectrum Analyzers / Receivers / Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA EMI Chamber (1328)		9kHz-13.2 GHz	E4405B	Agilent	MY44210241	1328	I	2/26/2017	2/26/2016
Radiated Emissions Sites		FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on
EMI Chamber 1		719150	2762A-6	A-0015	30-1000MHz		II	3/21/2017	3/21/2015
Preamps / Couplers Attenuators / Filters		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
1517 HF Preamp		1-20GHz	CS	CS	N/A	1517	II	8/6/2016	8/6/2015
Antennas		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Blue Horn		1-18Ghz	3117	ETS	157647	1861	I	2/8/2017	2/8/2015
Meteorological Meters			MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Weather Clock (Pressure Only)			BA928	Oregon Scientific	C3166-1	831	I	4/28/2018	4/28/2016
TH A#2080			HTC-1	HDE		2080	II	4/5/2017	4/5/2016
Cables		Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #1784		9kHz - 18GHz		Florida RF			II	3/7/2017	3/7/2016
Asset #2051		9kHz - 18GHz		Florida RF			II	3/2/2017	3/2/2016

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

BUREAU
VERITAS

Curtis-Straus LLC, a wholly owned subsidiary of BV CPS
One Distribution Center Circle, #1 • Littleton, MA • TEL (978) 486-8880 • FAX (978) 486-8828



page 14 of 22

AC Line Conducted Emissions LIMITS

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

*Decreases with the logarithm of the frequency.

[47 CFR 15.207(a)]

MEASUREMENTS / RESULTS

TX mode

AC Conducted Emissions Data Table														
Date: 21-Jul-16 Engineer: Ahmed Ahmed Temp: 23.9 °C					Company: Dogwatch Inc. EUT Desc: SF-T10 Humidity: 43%					Work Order: Q1735 Pressure: 1001 mBar				
Notes: TX mode, EUT(SN:07) set at the channel (927.9MHz).														
Frequency Range: 0.15-30MHz EUT Input Voltage/Frequency: 120Vac/60Hz														
Frequency (MHz)	Quasi-Peak Readings		Average Readings		LISN Factors		Cable Factor	ATTN Factor	FCC 15.207			FCC 15.207		
	QP1 (dBµV)	QP2 (dBµV)	AVG1 (dBµV)	AVG2 (dBµV)	L1 (dB)	L2 (dB)			QP Limit (dBµV)	Margin (dB)	Result (Pass/Fail)	AVG Limit (dBµV)	Margin (dB)	Result (Pass/Fail)
0.15	27.0	26.1	27.0	26.1	-0.2	-0.1	0.0	-19.4	66.0	-19.4	Pass	56.0	-9.3	Pass
0.17	27.3	24.0	27.3	24.0	-0.1	-0.1	0.0	-19.4	64.8	-17.9	Pass	54.8	-7.9	Pass
0.19	21.4	22.5	21.4	22.5	-0.1	-0.1	-0.1	-19.4	63.9	-21.8	Pass	53.9	-11.8	Pass
0.29	18.2	18.3	18.2	18.3	-0.1	-0.1	-0.1	-19.4	60.5	-22.6	Pass	50.5	-12.6	Pass
0.52	18.0	17.8	18.0	17.8	-0.1	0.0	0.0	-19.4	56.0	-18.5	Pass	46.0	-8.5	Pass
15.57	20.3	21.0	20.3	21.0	-0.1	-0.1	-0.2	-19.5	60.0	-19.3	Pass	50.0	-9.3	Pass
Result: Pass					Worst Margin: -7.9 dB					Frequency: 0.173 MHz				
Measurement Device: LISN ASSET 1728(Line 1) LISN ASSET 1729(Line 2)							Cable: CEMI-02			Spectrum Analyzer: SA EMI Chamber (1328)				
							Attenuator: 20dB Attenuator-60			Site: CEMI 5				
C-S CEMI Calculator Version 3.0.14														
Adjusted Reading = Raw Reading + LISN Insertion Loss + Cable Loss + Attenuation														
Equipment Factor Sheet rev: 7/5/2016														

Rev. 7/4/2016									
Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
SA EMI Chamber (1328)	9kHz-13.2 GHz	E4405B	Agilent	MY44210241	1328	I	2/26/2017	2/26/2016	
—									
LISNs/Measurement Probes	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
LISN Asset 1728	150kHz-30MHz	LI-150A	Com-Power	201084	1728	I	4/20/2017	4/20/2016	
LISN Asset 1729	150kHz-30MHz	LI-150A	Com-Power	201085	1729	I	4/20/2017	4/20/2016	
—									
Conducted Test Sites (Mains / Telco)	FCC Code	VCCI Code				Cat	Calibration Due	Calibrated on	
CEMI 5	719150	A-0015				III	NA	N/A	
—									
Meteorological Meters		MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	4/28/2018	4/28/2016	
TH A#2085		HTC-1	HDE		2085	II	4/5/2017	4/5/2016	
—									
Cables	Range		Mfr			Cat	Calibration Due	Calibrated on	
CEMI-02	9kHz - 2GHz		C-S			II	4/10/2017	4/10/2016	
—									
Attenuators	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
20dB Attenuator-60	9kHz-2GHz			N/A		II	4/12/2017	4/12/2016	

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



RX mode

AC Conducted Emissions Data Table

Date: 21-Jul-16				Company: Dogwatch Inc.				Work Order: Q1735						
Engineer: Ahmed Ahmed				EUT Desc: SF-T10										
Temp: 23.9 °C				Humidity: 43%				Pressure: 1001 mBar						
Notes: RX mode, EUT(SN:04)														
Frequency Range: 0.15-30MHz						EUT Input Voltage/Frequency: 120Vac/60Hz								
Frequency (MHz)	Quasi-Peak Readings		Average Readings		LISN Factors		Cable Factor	ATTN Factor	FCC 15.207		FCC 15.207			
	QP1 (dBµV)	QP2 (dBµV)	AVG1 (dBµV)	AVG2 (dBµV)	L1 (dB)	L2 (dB)	Factor (dB)	(dB)	QP Limit (dBµV)	Margin (dB)	Result (Pass/Fail)	AVG Limit (dBµV)	Margin (dB)	Result (Pass/Fail)
0.15	25.1	24.0	25.1	24.0	-0.2	-0.1	0.0	-19.4	66.0	-21.3	Pass	56.0	-11.3	Pass
0.17	26.0	27.5	26.0	27.5	-0.1	-0.1	0.0	-19.4	64.8	-17.8	Pass	54.8	-7.8	Pass
0.19	23.1	23.4	23.1	23.4	-0.1	-0.1	-0.1	-19.4	63.9	-20.9	Pass	53.9	-10.9	Pass
0.29	19.0	19.2	19.0	19.2	-0.1	-0.1	-0.1	-19.4	60.5	-21.7	Pass	50.5	-11.7	Pass
0.52	18.0	18.6	18.0	18.6	-0.1	0.0	0.0	-19.4	56.0	-17.9	Pass	46.0	-7.9	Pass
15.57	21.8	21.9	21.8	21.9	-0.1	-0.1	-0.2	-19.5	60.0	-18.4	Pass	50.0	-8.4	Pass
Result: Pass						Worst Margin: -7.8 dB			Frequency: 0.173 MHz					
Measurement Device: LISN ASSET 1728(Line 1) LISN ASSET 1729(Line 2)						Cable: CEMI-02			Spectrum Analyzer: SA EMI Chamber (1328)					
						Attenuator: 20dB Attenuator-60			Site: CEMI 5					
C-S CEMI Calculator Version 3.0.14												Equipment Factor Sheet rev: 7/5/2016		
Adjusted Reading = Raw Reading + LISN Insertion Loss + Cable Loss + Attenuation														

Rev. 7/4/2016									
Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
SA EMI Chamber (1328)	9kHz-13.2 GHz	E4405B	Agilent	MY44210241	1328	I	2/26/2017	2/26/2016	
LISNs/Measurement Probes	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
LISN Asset 1728	150kHz-30MHz	LI-150A	Com-Power	201084	1728	I	4/20/2017	4/20/2016	
LISN Asset 1729	150kHz-30MHz	LI-150A	Com-Power	201085	1729	I	4/20/2017	4/20/2016	
Conducted Test Sites (Mains / Telco)	FCC Code		VCCI Code			Cat	Calibration Due	Calibrated on	
CEMI 5	719150		A-0015			III	NA	N/A	
Meteorological Meters		MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	4/28/2018	4/28/2016	
TH A#2085		HTC-1	HDE		2085	II	4/5/2017	4/5/2016	
Cables	Range		Mfr			Cat	Calibration Due	Calibrated on	
CEMI-02	9kHz - 2GHz		C-S			II	4/10/2017	4/10/2016	
Attenuators	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
20dB Attenuator-60	9kHz-2GHz			N/A		II	4/12/2017	4/12/2016	

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



BUREAU
VERITAS

Curtis-Straus LLC, a wholly owned subsidiary of BV CPS
One Distribution Center Circle, #1 • Littleton, MA • TEL (978) 486-8880 • FAX (978) 486-8828



page 16 of 22

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]

MEASUREMENTS / RESULTS

99% Occupied Bandwidth - Radiated Emissions Table									
Date: 19-Jul-16			Company: Dogwatch Inc.				Work Order: Q1735		
Engineer: Tuyen Truong			EUT Desc: SF-T10				EUT Operating Voltage/Frequency: 120Vac/60Hz		
Temp: 24°C			Humidity: 45%		Pressure: 1002mBar				
Frequency Range: Fundamental Frequencies						Measurement Distance: 3m			
Notes: Sample #3 (902.1 MHz)						EUT TX Frequencies: 902.1 to 927.9 MHz			
Sample #2 (915.1 MHz) Sample #7 (927.9 MHz)									
Antenna Polarization (H / V)		Channel / Frequency (MHz)		99% OCC BW Readings (KHz)					
h		902.1		14.0954					
v		915.1		14.0557					
h		927.9		14.0329					
Test Site: EMI Chamber 1			Cable 1: Asset #2051			Cable 2: Asset #1784		Cable 3: ---	
Analyzer: Asset #1328			Preamp: none			Antenna: Red-Brown		Preselector: ---	
CSsoft Radiated Emissions Calculator			v 1.017.165						
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor									
Copyright Curtis-Straus LLC 2000									

Rev. 7/4/2016

Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA EMI Chamber (1328)	9kHz-13.2 GHz	E4405B	Agilent	MY44210241	1328	I	2/26/2017	2/26/2016
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on
EMI Chamber 1	719150	2762A-6	A-0015	30-1000MHz		II	3/21/2017	3/21/2015
Preamps / Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
none (n/a)								
Antennas	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Red-Brown Bilog	30-2000MHz	JB1	Sunol	A0032406	1218	I	12/4/2016	12/4/2014
Meteorological Meters		MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
TH A#2080		HTC-1	HDE	2080	2080	II	4/5/2017	4/5/2016
Barometric A#2160		5396-0321	Monarch Instruments	4000060	2160	I	3/7/2017	3/7/2016
Cables	Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #1784	9kHz - 18GHz		Florida RF			II	3/7/2017	3/7/2016
Asset #2051	9kHz - 18GHz		Florida RF			II	3/2/2017	3/2/2016

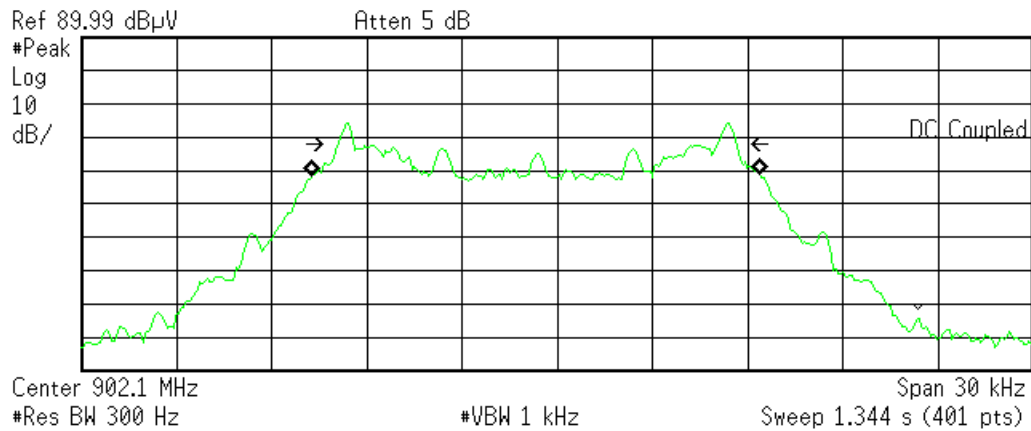
All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



Plot(s)

Agilent 07:34:38 Jul 19, 2016

R T



Occupied Bandwidth
14.0954 kHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

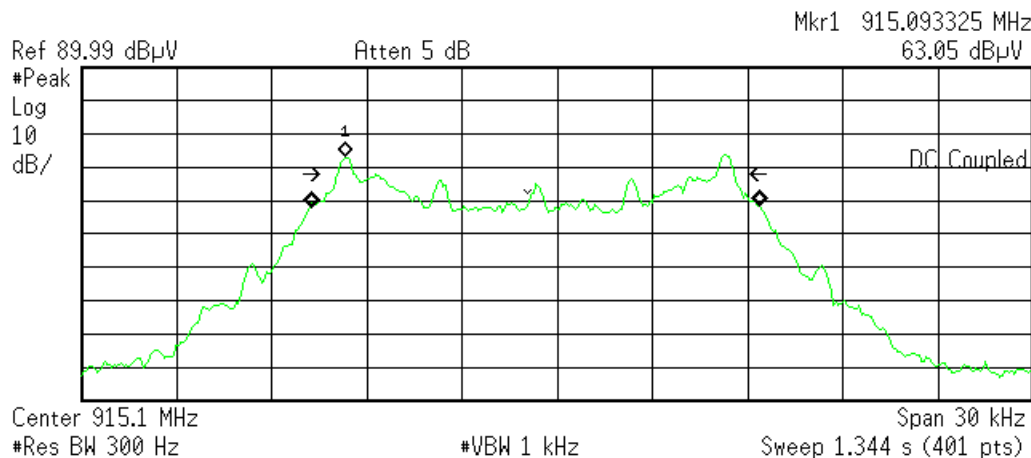
Transmit Freq Error -651.018 Hz
x dB Bandwidth 12.567 kHz

C:\temp.gif file saved

Occupied Bandwidth - Low Channel (902.1 MHz)

Agilent 07:45:17 Jul 19, 2016

R T



Occupied Bandwidth
14.0557 kHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -664.100 Hz
x dB Bandwidth 12.524 kHz

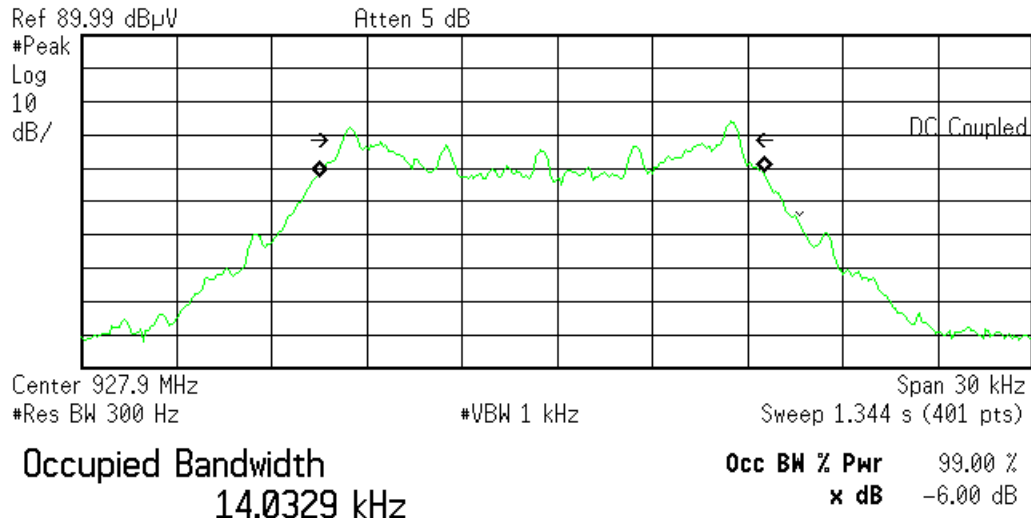
C:\temp.gif file saved

Occupied Bandwidth - Mid channel (915.1 MHz)



Agilent 08:30:13 Jul 19, 2016

R T



Transmit Freq Error -513.541 Hz
x dB Bandwidth 12.529 kHz

C:\temp.gif file saved

Occupied Bandwidth - High Channel (927.9 MHz)

Measurement Uncertainty

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

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



BUREAU
VERITAS

Curtis-Straus LLC, a wholly owned subsidiary of BV CPS
One Distribution Center Circle, #1 • Littleton, MA • TEL (978) 486-8880 • FAX (978) 486-8828



Conditions Of Testing

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

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



BUREAU
VERITAS

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

One Distribution Center Circle, #1 • Littleton, MA • TEL (978) 486-8880 • FAX (978) 486-8828



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.

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.

Rev.160009121(2)_#684340 v13CS

