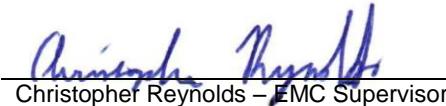




BUREAU
VERITAS

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

Test Report

Report No	EO2230-2
Client	AirPointe of New Hampshire
Address	35E Industrial Way Suite 101 Rochester, NH 03867
Phone	603-994-2200
Items tested	T6300
FCC ID	WUS00053
FRN	0018228197
Equipment Type	Part 15 Security/Remote Control Transmitter
Equipment Code	DSC
FCC Rule Parts	47 CFR 15.231(a), 47 CFR 15.231(e)
Test Dates	September 5, 2014
Results	As detailed within this report
Prepared by	 Tuyen Truong – Test Engineer
Authorized by	 Christopher Reynolds – EMC Supervisor
Issue Date	3/11/2015
Conditions of Issue	This Test Report is issued subject to the conditions stated in the 'Conditions of Testing' section on page 22 of this report.

Curtis-Straus LLC is accredited by the American Association for Laboratory Accreditation for the specific scope of accreditation under Certificate Number 1627-01. This report may contain data which is not covered by the A2LA accreditation.



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Form Final Report REV 7-20-07 (DW)



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Summary

This test report supports an application for certification of a transmitter operating pursuant to 47 CFR 15.231(a) and 47 CFR 15.231(e). The product is the T6300. The operating frequency is 440MHz. It is powered by +3Vdc coin cell batteries, therefore, Line Conducted Emissions was not applicable.

We found that the product met the requirements without modification. Mike Pena from AirPointe was present during the testing. The test sample was received in good condition.

Test Methodology

Testing was performed according to ANSI C63.4-2003 and ANSI C63.10-2009. Radiated emissions were maximized by rotating the device around its three orthogonal axes, as well as varying the test antenna's height and polarity. The EUT's antenna cannot be maximized separately. Fresh batteries were used for testing.

Frequency range investigated: 30MHz – 5GHz

Measurement distance: 30-5000MHz 3m

This device has no receiver portion.

The EUT is comprised of two portions of software, one which complies with 47 CFR 15.231(a), and the other which is 47 CFR 15.231(e). Under steady conditions, the EUT transmits every 10 seconds for duration of 987.5µs. Once motion is detected the EUT would transmit for duration of 987.5µs for every 5 seconds.

In order to meet 15.231(b) Field strength of fundamental frequency limit, EUT power was set at 9.2dB and also, in order to meet 15.231(e) Field strength of fundamental frequency limit, the EUT power was set at 4.8dB. Spurious emissions were tested using the highest power settings available which were 9.2dB to meet 15.231(b) requirement and 4.8dB to meet 15.231(e) requirement as the EUT was set to pass the Field strength of fundamental frequency limits.

Release Control Record

Issue No. 1 Reason for change Original Release

Date Issued
March 11, 2015



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Product Tested - Configuration Documentation

EUT Configuration														
Work Order: O2230														
Company: airPointe														
Company Address: 35E Industrial Way Rochester, NH 03867														
Contact: Don Proulx														
Person Present: Mike Pena														
MN			PN			SN								
EUT: T6300			--			Sample 1								
EUT Description: Mr. Ray Badge														
EUT TX Frequency: 440 MHz														
Support Equipment:			MN			SN								
None														
EUT Ports:														
Port Label	Port Type	No. of ports	No. Populated	Cable Type	Shielded	Ferrites	Length	Max Length						
None														
Software / Operating Mode Description:														
EUT is 3Vdc Battery Powered. EUT transmit the packets at every 10-second and if EUT detects motion, it transmit every 5 seconds. During every transmission, it sends an infrared signal.														



Test Results

Fundamental Emission

LIMIT

<i>Fundamental Frequency</i>	<i>Field Strength of Fundamental (microvolts/meter)</i>	<i>Field Strength of Spurious Emission (microvolts/meter)</i>
260-470MHz	3,750 to 12,500	375 to 1,250
[15.231(b)]		

<i>Fundamental Frequency</i>	<i>Field Strength of Fundamental (microvolts/meter)</i>	<i>Field Strength of Spurious Emission (microvolts/meter)</i>
260-470MHz	1,500 to 5,000	150 to 500
[15.231(e)]		

Average Limit [dB μ V/m] = $20 \log(16.6667(F[\text{in MHz}]) - 2833.3333)$ @ 3m

Example Calculation: $20 \log(16.6667(440) - 2833.3333) = 73.1 \text{ dB}\mu\text{V/m}$ @ 3m

MEASUREMENT

The 9.2dBm mode operating under 15.231 (a) corresponds to both the manually operated (tag in motion) transmit mode and with a timing of a 22 byte packet (932uS) followed by a 5sec transmission off/wait time.

Radiated Emissions Table															
Date: 05-Sep-14	Company: airPointe							Work Order: O2230							
Engineer: Tuyen Truong	EUT Desc: T6300							EUT Operating Voltage/Frequency: 3Vdc Battery							
Temp: 25°C	Humidity: 40%							Pressure: 1002mBar							
Frequency Range: 440 MHz						Measurement Distance: 3 m									
Notes: All 3 orientations of EUT were checked (x, y and z) DCCF is applied EUT power is set at 9.2dB (original setting)						EUT Tx Freq: 440 MHz									
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 15.231(b) High Frequency - Peak			FCC 15.231(b) High Frequency - Average			
									Limit (dB μ V/m)	Margin (dB)	Result (Pass/Fail)	Limit (dB μ V/m)	Margin (dB)	Result (Pass/Fail)	
v	440.0	81.13	61.1	0.0	16.8	1.7	99.6	79.6	101.0	-1.4	---	81.0	-1.4	---	
h	440.0	74.39	54.4	0.0	16.8	1.7	92.9	72.9	101.0	-8.1	---	81.0	-8.1	---	
Table Result: Pass by -1.4 dB												Worst Freq: 440.0 MHz			
Test Site: EMI Chamber 1	Cable 1: Asset #1505			Cable 2: Asset #1507			Cable 3: ---			Antenna: Red-Black	Preselector: ---				
Analyzer: Rental SA#2	Preamp: none														



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Rev.9/4/2014

Spectrum Analyzers / Receivers /Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Rental SA #2 (1860)		9kHz-26.5 GHz	E7405A	Agilent	MY45104916	1860	I	6/4/2015	
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	3/15/2015	3/15/2014		
Antennas		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Red-Black BiLog	30-2000MHz	JB1	Sunol	A091604-2	1106	I	1/28/2015	1/28/2013	
Cables		Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #1505	9kHz - 18GHz	Florida RF	II	3/7/2015	3/7/2014				
Asset #1507	9kHz - 18GHz	Florida RF	II	2/23/2015	2/23/2014				
Meteorological Meters		MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)	BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014		
TH A#1832	35519-044	Control Company	130318277	1832	II	6/13/2015	6/13/2013		

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

The 4.8dBm mode operating under 15.231(e) corresponds to both the periodic (tag not in motion) transmit mode and with a timing of not more than 1s (932uS) on followed by an off time of 10.2s

Radiated Emissions Table

Date: 05-Sep-14	Company: airPointe	Work Order: O2230													
Engineer: Tuyen Truong	EUT Desc: T6300	EUT Operating Voltage/Frequency: 3Vdc Battery													
Temp: 25°C	Humidity: 40%	Pressure: 1002mBar													
Frequency Range: 440 MHz		Measurement Distance: 3 m													
Notes: All 3 orientations of EUT were checked (x, y and z) DCCF is applied Lowered EUT power from 9.2dB to 4.8dB		EUT Tx Freq: 440 MHz													
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 15.231(e) High Frequency -			FCC 15.231(e) High Frequency -			
									Peak	Margin	Result (Pass/Fail)	Average	Margin	Result (Pass/Fail)	
v	440.0	70.33	50.3	0.0	16.8	1.7	88.8	68.8	93.1	-4.3	---	73.1	-4.3	---	
h	440.0	62.76	42.8	0.0	16.8	1.7	81.3	61.3	93.1	-11.8	---	73.1	-11.8	---	
Table Result:		Pass	by	-4.3 dB									Worst Freq:		440.0 MHz
Test Site: EMI Chamber 1	Cable 1: Asset #1505			Cable 2: Asset #1507			Cable 3: ---			Antenna: Red-Black			Preselector: ---		
Analyzer: Rental SA#2	Preamp: none														

Rev.9/4/2014

Spectrum Analyzers / Receivers /Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Rental SA #2 (1860)		9kHz-26.5 GHz	E7405A	Agilent	MY45104916	1860	I	6/4/2015	
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	3/15/2015	3/15/2014		
Antennas		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Red-Black BiLog	30-2000MHz	JB1	Sunol	A091604-2	1106	I	1/28/2015	1/28/2013	
Cables		Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #1505	9kHz - 18GHz	Florida RF	II	3/7/2015	3/7/2014				
Asset #1507	9kHz - 18GHz	Florida RF	II	2/23/2015	2/23/2014				
Meteorological Meters		MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)	BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014		
TH A#1832	35519-044	Control Company	130318277	1832	II	6/13/2015	6/13/2013		

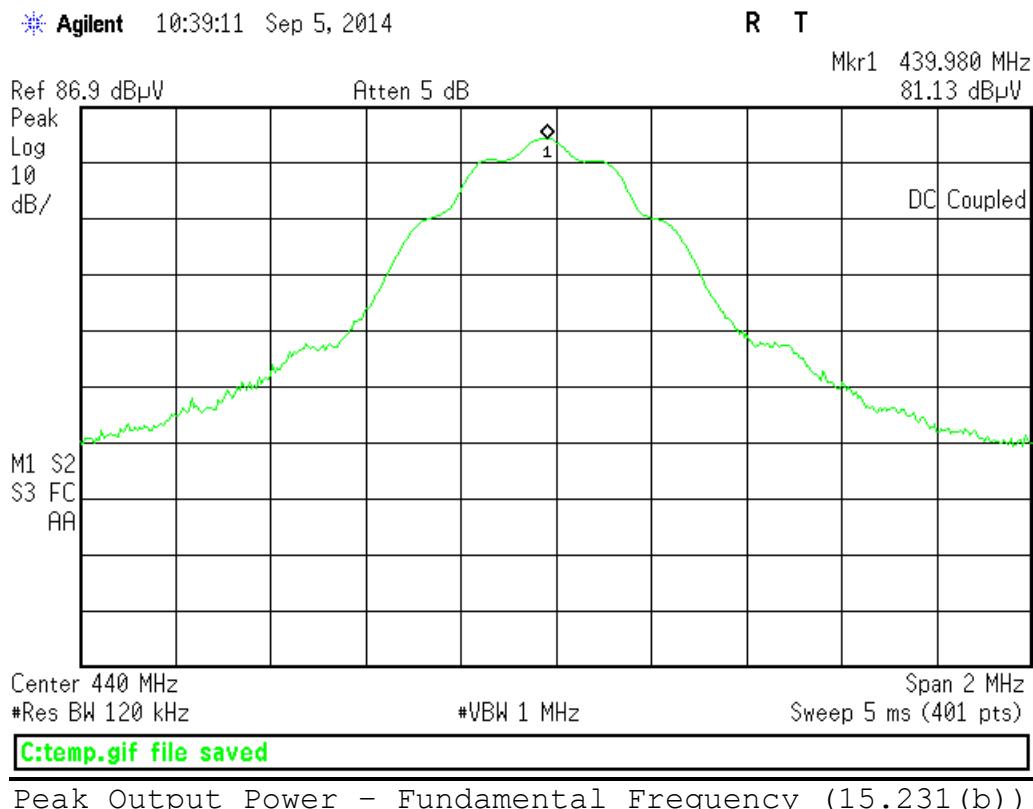
All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



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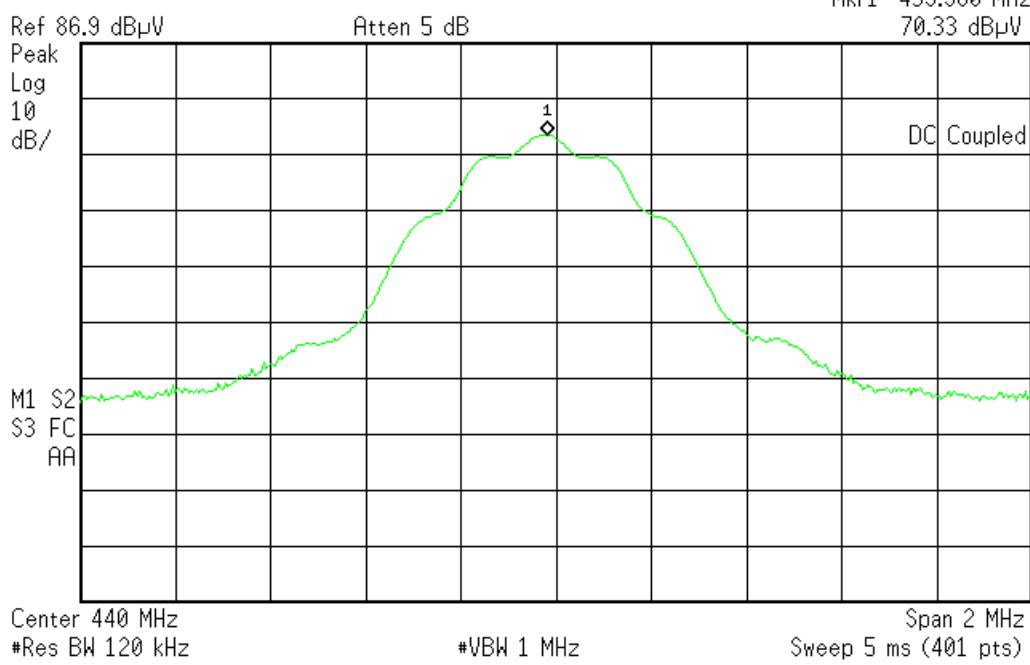


Analyzer Screen Plot



* Agilent 10:12:09 Sep 5, 2014

R T

Mkr1 439.980 MHz
70.33 dB μ V

C:\temp.gif file saved

Peak Output Power - Fundamental Frequency (15.231 (e))



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Testing Cert. No. 1627-01

Bandwidth

LIMIT

"The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70MHz and below 900MHz...Bandwidth is determined at the points 20dB down from the modulated carrier". [15.231(c)]

MEASUREMENTS / RESULTS

Radiated Emissions Table															
Date: 05-Sep-14	Company: airPointe					Work Order: O2230									
Engineer: Tuyen Truong	EUT Desc: T6300					EUT Operating Voltage/Frequency: Battery Powered									
Temp: 25°C	Humidity: 40%					Pressure: 1002mBar									
Frequency Range: 440MHz						Measurement Distance: 3 m									
Notes: EUT power setting is at 4.8dB						EUT Max Freq: 440MHz									
Antenna Polarization (H / V)	Frequency (MHz)	20dB (MHz)				FCC 15.231(c)									
								Limit (MHz)	Margin (MHz)	Result (Pass/Fail)					
h	440.0	0.61	---	---	---	---	---	1.1	-0.50	Pass					
Table Result: Pass						Worst Freq: 440.0 MHz									
Test Site: EMI Chamber 1			Cable 1: Asset #1505			Cable 2: Asset #1507									
Analyzer: SA#2			Preamp: none			Antenna: Red-Black									

Rev.9/4/2014

Spectrum Analyzers / Receivers/Preselectors Rental SA #2 (1860)	Range 9kHz-26.5 GHz	MN E7405A	Mfr Agilent	SN MY45104916	Asset 1860	Cat I	Calibration Due 6/4/2015	Calibrated on
Radiated Emissions Sites EMI Chamber 1	FCC Code 719150	IC Code 2762A-6	VCCI Code A-0015	Range 30-1000MHz		Cat II	Calibration Due 3/15/2015	Calibrated on 3/15/2014
Antennas Red-Black Bilog	Range 30-2000MHz	MN JB1	Mfr Sunol	SN A091604-2	Asset 1106	Cat I	Calibration Due 1/28/2015	Calibrated on 1/28/2013
Cables Asset #1505 Asset #1507	Range 9kHz - 18GHz 9kHz - 18GHz		Mfr Florida RF Florida RF			Cat II	Calibration Due 3/7/2015 2/23/2015	Calibrated on 3/7/2014 2/23/2014
Meteorological Meters Weather Clock (Pressure Only) TH A#1832	MN BA928 35519-044	Mfr Oregon Scientific Control Company	SN C3166-1 130318277	Asset 831 1832	Cat I II	Calibration Due 3/19/2016 6/13/2015	Calibrated on 3/19/2014 6/13/2013	

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



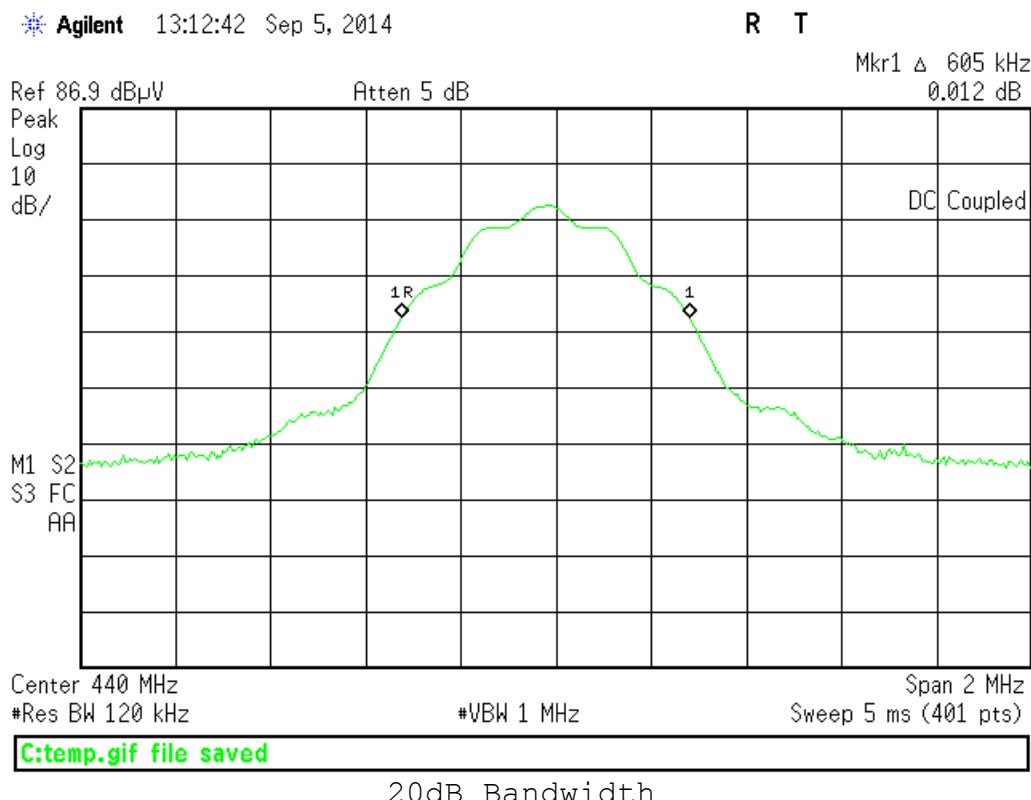
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Testing Cert. No. 1627-01

Analyzer Plot



Harmonics and Spurious Emissions**LIMIT**

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emissions (microvolts/meter)
40.66-40.70	2,250	225
70-130	1,250	125
130-174	¹ 1,250 to 3,750	¹ 125 to 375
174-260	3,750	375
260-470	¹ 3,750 to 12,500	¹ 375 to 1,250
Above 470	12,500	1,250

...Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in §15.209, whichever limit permits a higher field strength.

[15.231(b)(3)]

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emission (microvolts/meter)
40.66-40.70	1,000	100
70-130	500	50
130-174	500 to 1,500 ¹	50 to 150 ¹
174-260	1,500	150
260-470	1,500 to 5,000 ¹	150 to 500 ¹
Above 470	5,000	500

[15.231(e)]



MEASUREMENTS

Radiated Emissions Table											Work Order: O2230					
Date: 19-Sep-14		Company: airPointe											EUT Operating Voltage/Frequency: Battery Powered			
Engineer: Tuyen Truong		EUT Desc: T6300											Measurement Distance: 3 m			
Temp: 20°C		Humidity: 30%											EUT TX Freq: 440MHz			
Frequency Range: 30-1000MHz											FCC 15.231(b) - Peak					
Notes: All 3 orientations of EUT were checked (x, y and z) EUT power setting is at 9.2dB - DCCF applies											FCC 15.231(b) - Average					
Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dB ₁ uV)	Average Reading (dB ₁ uV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dB ₁ uV/m)	Adjusted Avg Reading (dB ₁ uV/m)	Limit (dB ₁ uV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dB ₁ uV/m)	Margin (dB)	Result (Pass/Fail)		
v h	880.0 880.0	76.43 61.21	56.4 41.2	25.9 25.9	22.3 22.3	2.6 2.6	75.4 60.2	55.4 40.2	81.0 81.0	-5.6 -20.8	Pass Pass	61.0 61.0	-5.6 -20.8	Pass Pass		
Table Result: Pass by -5.6 dB											Worst Freq: 880.0 MHz					
Test Site: EMI Chamber 1	Cable 1: Asset #1505											Cable 2: Asset #1507	Cable 3: ---			
Analyzer: Rental SA#2	Preamp: Red-White											Antenna: Red-Black	Preselector: ---			

Rev.9/18/2014

Spectrum Analyzers / Receivers /Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Rental SA #2 (1860)		9kHz-26.5 GHz	E7405A	Agilent	MY45104916	1860	I	6/4/2015	
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	3/15/2015	3/15/2014		
Preamps /Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Red-White	0.009-2000MHz	ZFL-1000-LN	CS	N/A	1258	II	7/3/2015	7/3/2014	
Antennas	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Red-Black Biolog	30-2000MHz	JB1	Sunol	A091604-2	1106	I	1/28/2015	1/28/2013	
Cables	Range	Mfr		Cat	Calibration Due	Calibrated on			
Asset #1505	9kHz - 18GHz	Florida RF		II	3/7/2015	3/7/2014			
Asset #1507	9kHz - 18GHz	Florida RF		II	2/23/2015	2/23/2014			
Meteorological Meters	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on		
Weather Clock (Pressure Only)	BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014		
TH A#1832	35519-044	Control Company	130318277	1832	II	6/13/2015	6/13/2013		

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

Radiated Emissions Table											Work Order: O2230					
Date: 19-Sep-14		Company: airPointe											EUT Operating Voltage/Frequency: Battery Powered			
Engineer: Tuyen Truong		EUT Desc: T6300											Measurement Distance: 3 m			
Temp: 20°C		Humidity: 30%											EUT TX Freq: 440MHz			
Frequency Range: 1-5GHz											FCC 15.209 - High Frequency - Peak					
Notes: All 3 orientations of EUT were checked (x, y and z) EUT power setting is at 9.2dB - DCCF applies											FCC 15.209 - High Frequency - Average					
Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dB ₁ uV)	Average Reading (dB ₁ uV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dB ₁ uV/m)	Adjusted Avg Reading (dB ₁ uV/m)	Limit (dB ₁ uV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dB ₁ uV/m)	Margin (dB)	Result (Pass/Fail)		
v h v h v h v h v	1325.0 1325.0 2200.0 2200.0 2412.5 2412.5 3075.0 3075.0 3750.0 5362.5	44.59 41.91 43.85 40.35 39.0 39.81 38.14 38.26 39.03 36.56	24.6 21.9 23.9 20.4 19.0 19.8 18.1 18.3 19.0 16.6	18.1 18.1 18.4 18.4 18.3 18.3 18.6 18.6 17.8 16.9	25.3 25.3 27.6 27.6 28.2 28.2 30.6 30.6 32.4 34.3	3.3 3.3 4.8 4.8 5.0 5.0 5.5 5.5 5.9 7.1	55.1 52.4 57.9 54.4 53.9 54.7 55.6 55.8 59.5 61.1	35.1 32.4 37.9 34.4 33.9 34.7 35.6 35.8 39.5 41.1	81.0 81.0 81.0 81.0 81.0 81.0 81.0 81.0 81.0 81.0	-25.9 -28.6 -23.1 -26.6 -27.1 -26.3 -25.4 -25.2 -21.5 -19.9	Pass Pass Pass Pass Pass Pass Pass Pass Pass Pass	61.0 61.0 61.0 61.0 61.0 61.0 61.0 61.0 61.0 61.0	-25.9 -28.6 -23.1 -26.6 -27.1 -26.3 -25.4 -25.2 -21.5 -19.9	Pass Pass Pass Pass Pass Pass Pass Pass Pass Pass		
Table Result: Pass by -19.9 dB											Worst Freq: 5362.5 MHz					
Test Site: EMI Chamber 1	Cable 1: Asset #1505											Cable 2: Asset #1507	Cable 3: ---			
Analyzer: Rental SA#2	Preamp: Brown											Antenna: Yellow Horn	Preselector: ---			



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Testing Cert. No. 1627-01

Rev.9/18/2014

Spectrum Analyzers / Receivers /Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Rental SA #2 (1860)		9kHz-26.5 GHz	E7405A	Agilent	MY45104916	1860	I	6/4/2015	
Radiated Emissions Sites	EMI Chamber 1	FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on
		719150	2762A-6	A-0015	30-1000MHz		II	3/15/2015	3/15/2014
Preamps /Couplers Attenuators / Filters	Brown	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
		1-10GHz	CS	CS	N/A	1523	II	4/10/2015	4/10/2014
Antennas	Yellow Horn	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
		1-18GHz	3115	EMCO	9608-4898	37	I	7/28/2015	7/28/2014
Cables		Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #1505		9kHz - 18GHz		Florida RF			II	3/7/2015	3/7/2014
Asset #1507		9kHz - 18GHz		Florida RF			II	2/23/2015	2/23/2014
Meteorological Meters			MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014	
TH A#1832		35519-044	Control Company	130318277	1832	II	6/13/2015	6/13/2013	

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

Radiated Emissions Table

Date: 05-Sep-14	Company: airPointe	Work Order: 02230										
Engineer: Tuyen Truong	EUT Desc: T6300	EUT Operating Voltage/Frequency: 3Vdc Battery										
Temp: 25°C	Humidity: 40%	Pressure: 1002mBar										
Frequency Range: 30-1000 MHz		Measurement Distance: 3 m										
Notes: All 3 orientations of EUT were checked (x, y and z) EUT power setting is at 4.8dB and DCCF is applied		EUT Max Freq: 440MHz (Tx frequency)										
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 15.231(e)		
							Limit (dB μ V/m)	Margin (dB)	Result (Pass/Fail)	Limit (dB μ V/m)	Margin (dB)	Result (Pass/Fail)
v, peak	880.0	54.6	25.6	22.3	2.6	53.9	---	---	---	73.1	-19.2	Pass
v, avg	880.0	34.6	25.6	22.3	2.6	33.9	---	---	---	53.1	-19.2	Pass
h, peak	880.0	42.5	25.6	22.3	2.6	41.8	---	---	---	73.1	-31.3	Pass
h, avg	880.0	22.5	25.6	22.3	2.6	21.8	---	---	---	53.1	-31.3	Pass
Table Result: Pass		by -19.2 dB					Worst Freq: 880.0 MHz					
Test Site: EMI Chamber 1	Cable 1: Asset #1505		Cable 2: Asset #1507		Cable 3: ---							
Analyzer: Rental SA#2	Preamp: Orange		Antenna: Red-Black		Preselector: ---							

Rev.9/4/2014

Spectrum Analyzers / Receivers/Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Rental SA #2 (1860)		9kHz-26.5 GHz	E7405A	Agilent	MY45104916	1860	I	6/4/2015	
Radiated Emissions Sites	EMI Chamber 1	FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on
		719150	2762A-6	A-0015	30-1000MHz		II	3/15/2015	3/15/2014
Preamps /Couplers Attenuators / Filters	Orange	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
		0.009-2000MHz	ZFL-1000-LN	CS	N/A	765	II	6/5/2015	6/5/2014
Antennas	Red-Black BiLog	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
		30-2000MHz	JB1	Sunol	A091604-2	1106	I	1/28/2015	1/28/2013
Cables		Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #1505		9kHz - 18GHz		Florida RF			II	3/7/2015	3/7/2014
Asset #1507		9kHz - 18GHz		Florida RF			II	2/23/2015	2/23/2014
Meteorological Meters			MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014	
TH A#1832		35519-044	Control Company	130318277	1832	II	6/13/2015	6/13/2013	

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



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Radiated Emissions Table

Date: 05-Sep-14	Company: airPointe	Work Order: O2230												
Engineer: Tuyen Truong	EUT Desc: T6300	EUT Operating Voltage/Frequency: 3Vdc Battery												
Temp: 25°C	Humidity: 40%	Pressure: 1002mBar												
Frequency Range: 1.5GHz		Measurement Distance: 3 m												
Notes: All 3 orientations of EUT were checked (x, y and z) EUT power setting is at 4.8dB		EUT Max Freq: 440MHz (Tx frequency)												
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 15.231(e) - Peak			FCC 15.231(e) - Average		
									Limit (dB μ V/m)	Margin (dB)	Result (Pass/Fail)	Limit (dB μ V/m)	Margin (dB)	Result (Pass/Fail)

Table Result: Pass by -9.5 dB**Worst Freq:** 3080.0 MHz

Test Site: EMI Chamber 1	Cable 1: Asset #1505	Cable 2: Asset #1507	Cable 3: ---
Analyzer: Rental SA#2	Preamp: Asset #1517	Antenna: Orange Horn	Preselector: ---

Rev.9/4/2014

Spectrum Analyzers / Receivers /Preselectors Rental SA #2 (1860)	Range 9kHz-26.5 GHz	MN E7405A	Mfr Agilent	SN MY45104916	Asset 1860	Cat I	Calibration Due 6/4/2015	Calibrated on
Radiated Emissions Sites EMI Chamber 1	FCC Code 719150	IC Code 2762A-6	VCCI Code A-0015	Range 30-1000MHz		Cat II	Calibration Due 3/15/2015	Calibrated on 3/15/2014
Preamps /Couplers Attenuators / Filters 1517 HF Preamp	Range 1-20GHz	MN CS	Mfr CS	SN N/A	Asset 1517	Cat II	Calibration Due 9/11/2014	Calibrated on 9/11/2013
Antennas Orange Horn	Range 1-18GHz	MN 3115	Mfr EMCO	SN 0004-6123	Asset 390	Cat I	Calibration Due 10/2/2014	Calibrated on 10/2/2013
Cables Asset #1505 Asset #1507	Range 9kHz - 18GHz 9kHz - 18GHz		Mfr Florida RF Florida RF			Cat II II	Calibration Due 3/7/2015 2/23/2015	Calibrated on 3/7/2014 2/23/2014
Meteorological Meters Weather Clock (Pressure Only) TH A#1832	MN BA928 35519-044	Mfr Oregon Scientific Control Company	SN C3166-1 130318277	Asset 831 1832	Cat I II	Calibration Due 3/19/2016 6/13/2015	Calibrated on 3/19/2014 6/13/2013	

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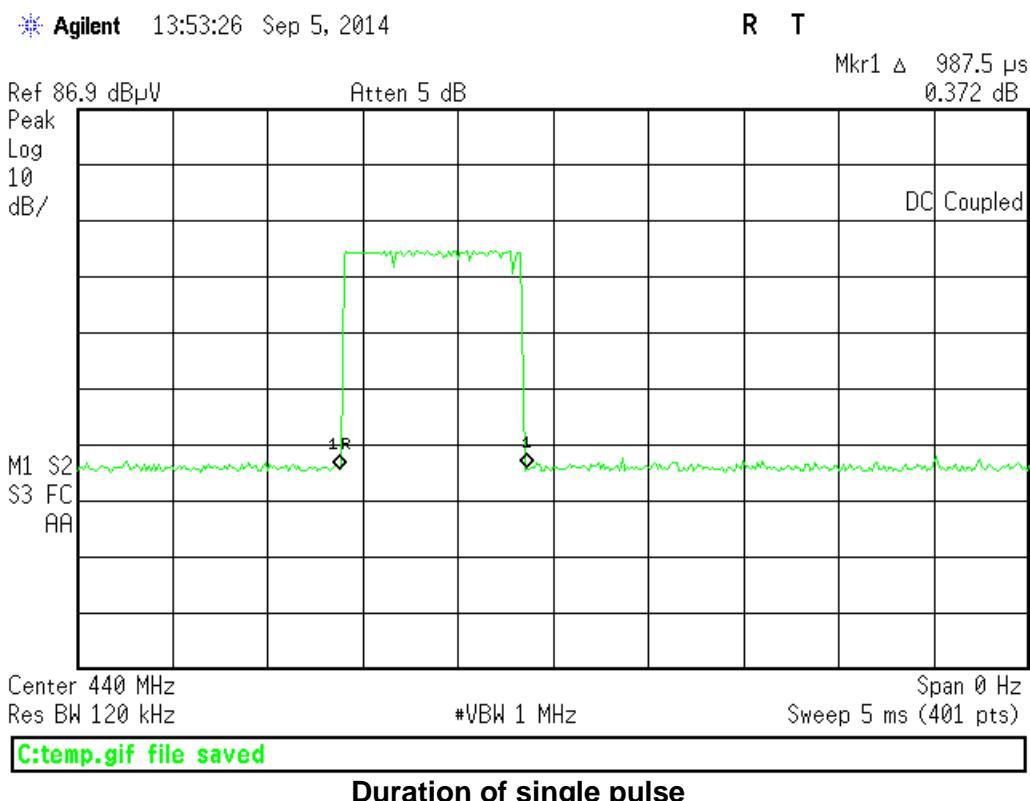
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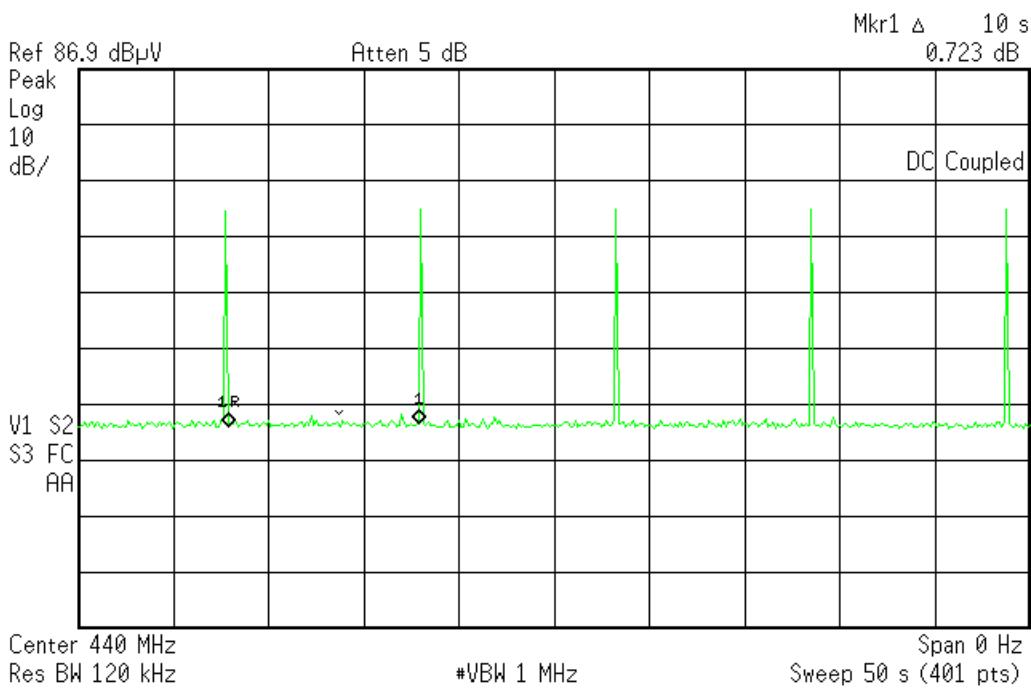
Duty Cycle Correction Factor

Engineer	Tuyen Truong
Date	Sep 5, 2014
Site	Chamber 2
Environmental Conditions	25°C, 40%, 1002mb



* Agilent 13:56:02 Sep 5, 2014

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C:\temp.gif file saved

Silent Period**Calculation(s)**

The worst case duty cycle is represented by the two analyzer plots immediately above.

$$DCCF = 20 * \log (0.9875\text{ms}/100\text{ms})$$

$$DCCF = 20 * \log (0.009875)$$

$$DCCF = -40.109\text{dB}$$

A 20dB Duty Cycle Correction Factor was used in this report.

Rev.9/4/2014									
Spectrum Analyzers / Receivers /Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Rental SA #2 (1860)		9kHz-26.5 GHz	E7405A	Agilent	MY45104916	1860	I	6/4/2015	
Radiated Emissions Sites		FCC Code	IC Code	VCCI Code	Range				
EMI Chamber 1		719150	2762A-6	A-0015	30-1000MHz		II	3/15/2015	Calibrated on 3/15/2014
Preamps /Couplers Attenuators / Filters		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Orange		0.009-2000MHz	ZFL-1000-LN	CS	N/A	765	II	6/5/2015	6/5/2014
Antennas		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Red-Black BiLog		30-2000MHz	JB1	Sunol	A091604-2	1106	I	1/28/2015	1/28/2013
Cables		Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #1505		9kHz - 18GHz		Florida RF			II	3/7/2015	3/7/2014
Asset #1507		9kHz - 18GHz		Florida RF			II	2/23/2015	2/23/2014
Meteorological Meters		MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014	
TH A#1832		35519-044	Control Company	130318277	1832	II	6/13/2015	6/13/2013	

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Timing Requirements

The provisions of this section are restricted to periodic operation within the band 40.66-40.70 MHz and above 70 MHz etc.

...The following conditions shall be met to comply with the provisions for this periodic operation:

- 1) *A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.*
- 2) *A transmitter activated automatically shall cease transmission within 5 seconds after activation.*
- 3) *Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour.*
...
- (5) *Transmission of set-up information for security systems may exceed the transmission duration limits in paragraphs (a)(1) and (a)(2) of this section, provided such transmissions are under the control of a professional installer and do not exceed ten seconds after a manually operated switch is released or a transmitter is activated automatically. Such set-up information may include data.*

[FCC 15.231(a)]

*Intentional radiators may operate at a periodic rate exceeding that specified in paragraph (a) of this section and may be employed for **any type of operation**, including operation prohibited in paragraph (a) of this section*

In addition, devices operated under the provisions of this paragraph shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

[FCC 15.231(e)]



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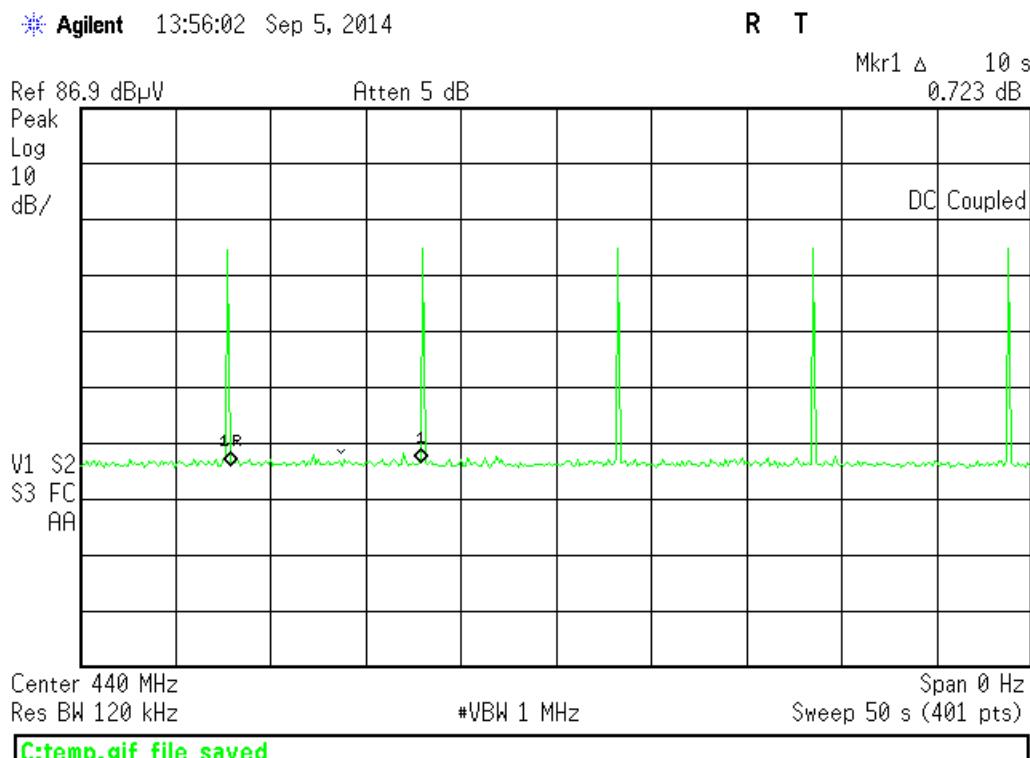
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Engineer	Tuyen Truong
Date	Sep 5, 2014
Site	Chamber 2
Environmental Conditions	25°C, 40%, 1002mb

15.231(a) - Timing



Timing while not in motion – duration between transmissions

Note: While EUT does not detect any motion, it transmits within every 10-second



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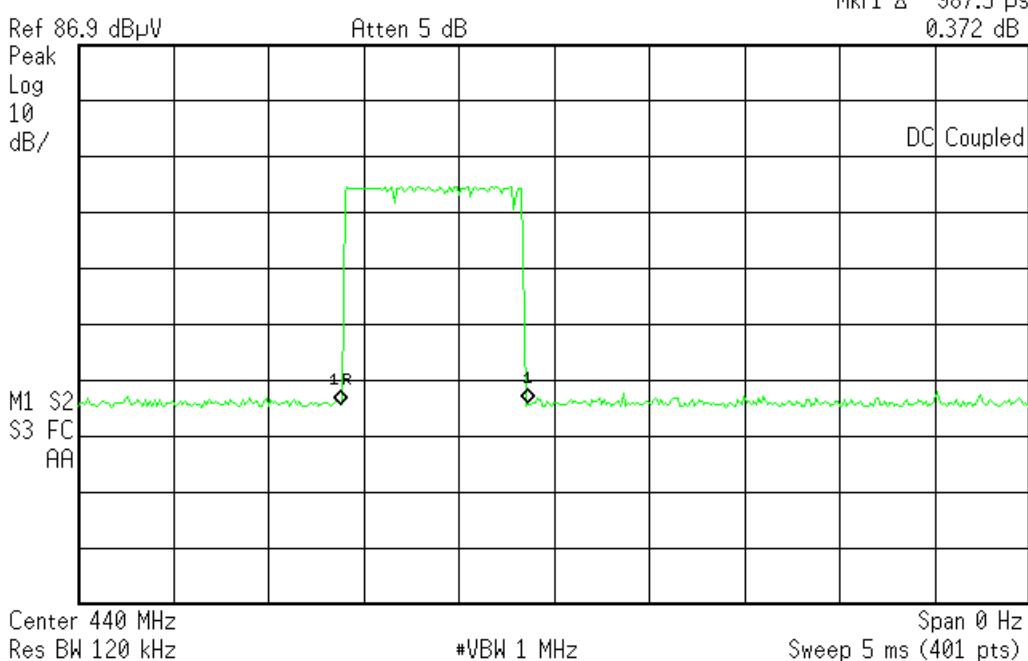
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* Agilent 13:53:26 Sep 5, 2014

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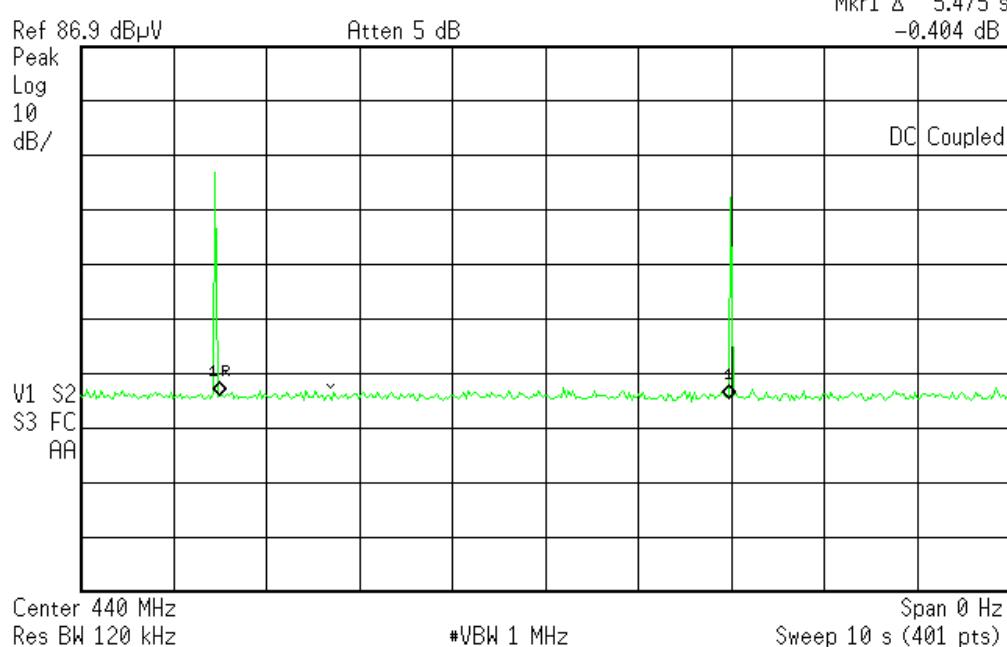
Mkr1 Δ 987.5 μs
0.372 dB

Timing while not in motion – single transmission

15.231(e) – Timing

* Agilent 14:07:37 Sep 5, 2014

R T

Mkr1 Δ 5.475 s
-0.404 dB

Timing while in motion – duration between transmissions

Note: while EUT detects motion, it transmits approximately every 5- second.



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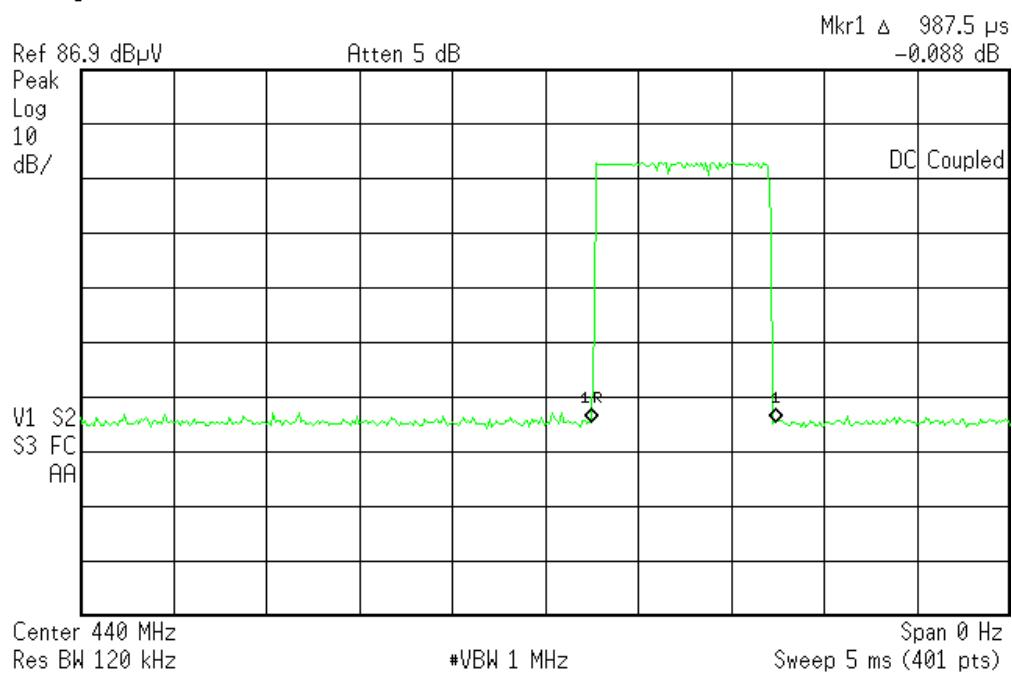
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Agilent 14:09:36 Sep 5, 2014

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Timing while in motion – single transmission

Rev.9/4/2014

Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Rental SA #2 (1860)	9kHz-26.5 GHz	E7405A	Agilent	MY45104916	1860	I	6/4/2015	
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	3/15/2015	3/15/2014
Preamps / Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Orange	0.009-2000MHz	ZFL-1000-LN	CS	N/A	765	II	6/5/2015	6/5/2014
Antennas	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Red-Black Bilog	30-2000MHz	JB1	Sunol	A091604-2	1106	I	1/28/2015	1/28/2013
Cables	Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #1505	9kHz - 18GHz		Florida RF			II	3/7/2015	3/7/2014
Asset #1507	9kHz - 18GHz		Florida RF			II	2/23/2015	2/23/2014
Meteorological Meters	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)	BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014	
TH A#1832	35519-044	Control Company	130318277	1832	II	6/13/2015	6/13/2013	

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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**," "**BVCPs**," "**MTL**," "**ACTS**," "**MTL-ACTS**" and **CURTIS-STRAUS** (collectively, the "Marks") are and shall remain the sole property of the Company or its affiliates and shall not be used by Client except solely to the extent that Client obtains the prior written approval of the Company and then only in the manner prescribed by the Company. Client shall not contest the validity of the Marks or take any action that might impair the value or goodwill associated with the Marks or the image or reputation of the Company or its affiliates.
6. Payment in full shall be due 30 days after the date of invoice. Interest shall be due on overdue amounts from the due date until paid at an interest rate of 1.5% per month or, if less, the maximum rate permitted by law. The Company reserves the right, at any time and from time to time, to revoke any credit extended to Client. Client shall reimburse the Company for any costs it incurs in collecting past due amounts, including court costs and fees and expenses of attorneys and collection agencies. The Test Report may not be used or relied upon by Client if and for so long as Client fails to pay when due any invoice issued by the Company or any affiliate of it to Client or any affiliate or subsidiary of Client together with interest and penalties, if any, accrued thereon.
7. The Company disclaims any and all responsibility or liability arising out of or in connection with e-mail transmissions of such information.
8. Client understands and agrees that the Company is neither an insurer nor a guarantor, that the Company does not take the place of Client or any designer, manufacturer, agent, buyer, distributor or transportation or shipping company, and that the Company disclaims all liability in such capacities. Client further understands that if it seeks assurance against loss or damage, it should obtain appropriate insurance.
9. Client agrees that the Company, by providing the services, does not take the place of Client nor any third party, nor does the Company release them from any of their obligations, nor does the Company otherwise assume, abridge, abrogate or undertake to discharge any duty of any third party to Client or any duty of Client or any third party to any other third party, and Client will not release any third party from its obligations and duties with respect to the tested goods.
10. Client shall, on a timely basis, (a) provide adequate instructions to the Company in order to enable the Company to perform properly its services, (b) provide, or cause Client's suppliers and contractors to provide, the Company with all documents necessary to enable the Company to perform its services, (c) furnish the Company with all relevant information regarding Client's intended use and purposes of the tested goods, (d) advise the Company of essential dates and deadlines relevant to the tested goods and (e) fully exercise all rights and remedies available to Client against third parties in respect of the tested goods.
11. The Company shall undertake due care and ordinary skill in the performance of its services to Client, and the Company shall accept responsibility only were such skill has not been exercised and, even in such event, only to the extent of the limitation of liability set forth herein.
12. If Client desires to assert a claim arising from or relating to (i) the performance, purported performance or non-performance of any services by the Company or (ii) the sale, resale, manufacture, distribution or use of any tested goods, it must submit that claim to the Company in a writing that sets forth with particularity the basis for such claim within 60 days from discovery of the potential claim and not more than six months after the date of issuance of the Test Report to Client. Client waives any and all such claims including, without limitation, claims that the Test Report is inaccurate, incomplete or misleading or that additional or different testing is required, unless and then only to the extent that Client submits a written claim to the Company within both such time periods.
13. CLIENT SHALL, EXCEPT TO THE EXTENT OF COMPANY'S LIABILITY TO CLIENT HEREUNDER (WHICH IN NO EVENT SHALL EXCEED THE LIMITATION OF LIABILITY HEREIN), HOLD HARMLESS AND INDEMNIFY THE COMPANY, ITS AFFILIATES AND THEIR RESPECTIVE DIRECTORS, OFFICERS, EMPLOYEES, AGENTS AND SUBCONTRACTORS AGAINST ALL ACTUAL OR ALLEGED THIRD PARTY CLAIMS FOR LOSS, DAMAGE OR EXPENSE OF WHATSOEVER NATURE AND HOWSOEVER ARISING FROM OR 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.



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

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

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

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

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



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