





# Test Report



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

Report No	EP2678-1
Client	Powercast Corporation Charles Greene
Address	566 Alpha Drive, Pittsburgh, PA 15238
Phone	412-436-4077
Items tested	Water Pressure Sensor
FCC ID	YESWFPS1
IC ID	8985A-WFPS1
FRN	0019814789
Equipment Type	Part 15.247 Digitally Modulated, Mobile
Equipment Code	DTS
FCC/IC Rule Parts	47 CFR 15.247, RSS-247 Issue 1
Test Dates	September 16 to 28, 2015 and January 27, 2016
Results	As detailed within this report
Prepared by	 Jason Haley – Test Engineer
Authorized by	 Christopher Reynolds – EMC Supervisor
Issue Date	01/29/2016
Conditions of Issue	This Test Report is issued subject to the conditions stated in the 'Conditions of Testing' section on page 24 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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One Distribution Center Circle, #1 • Littleton, MA • TEL (978) 486-8880 • FAX (978) 486-8828



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Form Final Report REV 12-07-15



**Summary**

This test report supports an application for certification of a transmitter operating pursuant to 47 CFR 15.247 and RSS-247. The product is the WFPS-1 Water Pressure Sensor. It is a transmitter that operates in the range 2402-2480MHz.

We found that the product met the above requirements without modifications. Nobody from Powercast Corporation was present during the testing. The test sample was received in good condition.

Release Control Record

Issue No.	Reason for change	Date Issued
1	Original Release	February 12, 2016



**Test Methodology**

Radiated emissions testing was performed according to DTS guidance document 558074D01 v03r04 specified in FCC guidance for performing compliance measurements on DTS devices under section 15.247, April 19, 2013, and ANSI C63.10 (2013), and RSS-GEN. Radiated Emissions were maximized by rotating the device around three orthogonal axes as well as varying the test antenna’s height and polarity. The device antenna cannot be maximized separately.

Conducted emission at the antenna port was not performed, because the EUT has a non-removable integrated antenna. All measurements were made using radiated methods.

AC Mains Conducted Emissions testing was not performed as the EUT is battery powered.

The environmental conditions are shown below.

Date	Temperature	Humidity
09/16/15	22.5 degrees C	50% RH
09/17/15	22.3 degrees C	52% RH
09/18/15	23.3 degrees C	53% RH
09/21/15	22 degrees C	50% RH

The following bandwidths were used during radiated spurious emissions.

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



**Product Tested - Configuration Documentation**

EUT Configuration											
<b>Work Order:</b>	P2678										
<b>Company:</b>	Powercast Corporation										
<b>Company Address:</b>	566 Alpha Drive Pittsburgh, PA, 15238										
<b>Contact:</b>	Charlie Greene										
	MN			PN			SN				
<b>EUT:</b>	WFPS-1			--			Sample 1				
<b>EUT Description:</b>	Water Pressure Sensor										
<b>EUT Tx Frequency:</b>	2402-2480 MHz										
Port Label	Port Type	# ports	# populated	cable type	shielded	ferrite s	length (m)	max length (m)	in/out	under test	comment
None											
<b>Software Operating Mode Description:</b>											
Radio Operating Frequencies: 2.4-2.483 GHz (channel 37,38, 39 only: 2402, 2426, 2480 MHz) - non-connectable											



## Statement of Conformity

The WFPS-1 Smart Pressure Switch has been found to conform to the following parts of 47 CFR and RSS 247 as detailed below:

RSS-GEN	RSP-100	RSS 247	Part 15	Comments
6.3			15.15(b)	There are no controls accessible to the user that varies the output power to operate in violation of the regulatory requirements.
	3.1		15.19	The label is shown in the label exhibit.
	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 for this device is non removable integrated antenna and it is hardwired to the PCB with a gain of 2.1dBi
8.10			15.205 15.209	The fundamental is not in a Restricted band and the spurious and harmonic emissions in the Restricted bands comply with the general emission limits of 15.209 or RSS-Gen as applicable
8.8			15.207	N/A. EUT is battery powered.
			15.247	The unit complies with the requirements of 15.247
		RSS 247		The unit complies with the requirements of RSS-247
6.6				Occupied Bandwidth measurements were made.

## Modifications Required for Compliance

None.

## Test Results

### Bandwidth

#### LIMIT

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

#### MEASUREMENTS / RESULTS

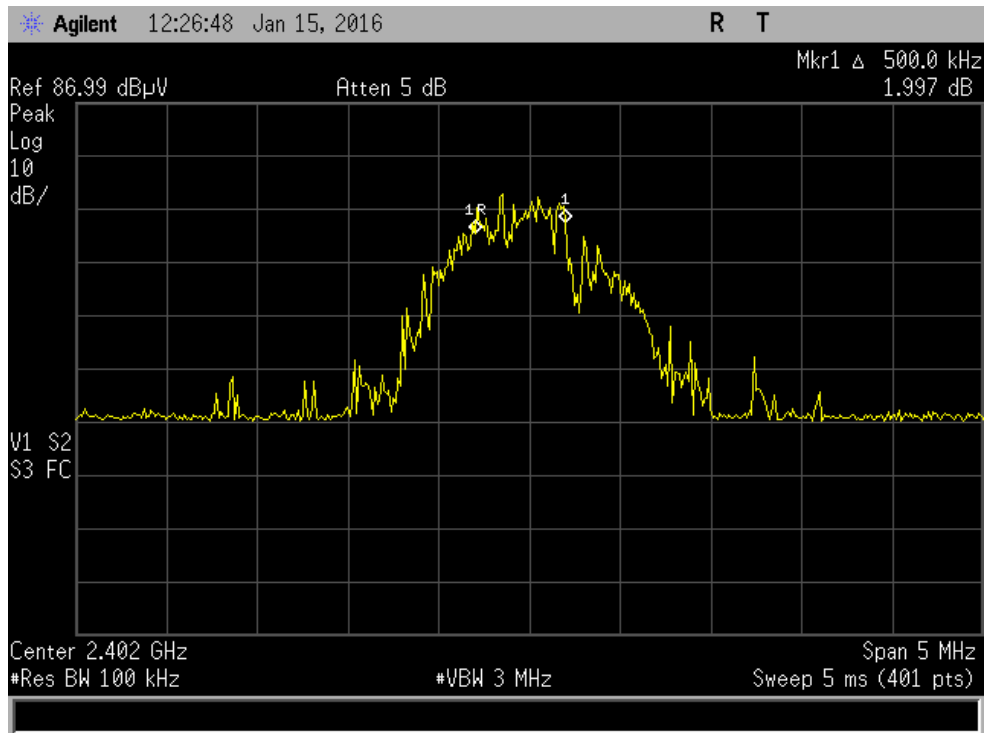
DTS Bandwidth			
Date: 15-Jan-16	Company: Powercast	Work Order: P2678	
Engineer: Jason Haley	EUT Desc: WFPS-1	EUT Operating Voltage/Frequency: 3V battery	
Temp: 22.3°C	Humidity: 37%	Pressure: 1007mBar	
Notes: Measurements of the Occupied Bandwidth IAW Ansi C63.10 2013, Section 6.9.2, per FCC CFR 47 part 15.247 (a) (2).			
Frequency (MHz)	Measured DTS Bandwidth (kHz)	DTS Bandwidth Limit (kHz)	Test Result
2402	500	at least 500kHz	Pass
2426	675	at least 500kHz	Pass
2480	650	at least 500kHz	Pass

Rev. 1/14/2016									
<b>Spectrum Analyzers / Receivers / Preselectors</b>	<b>Range</b>	<b>MN</b>	<b>Mfr</b>	<b>SN</b>	<b>Asset</b>	<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>	
SA EMI Chamber (1328)	9kHz-13.2 GHz	E4405B	Agilent	MY44210241	1328	I	8/19/2016	8/19/2015	
<b>Radiated Emissions Sites</b>	<b>FCC Code</b>	<b>IC Code</b>	<b>VCCI Code</b>	<b>Range</b>		<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>	
EMI Chamber 2	719150	2762A-7	A-0015	30-1000MHz		II	3/22/2017	3/22/2015	
<b>Preamps / Couplers Attenuators / Filters</b>	<b>Range</b>	<b>MN</b>	<b>Mfr</b>	<b>SN</b>	<b>Asset</b>	<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>	
1517 HF Preamp	1-20GHz	CS	CS	N/A	1517	II	8/6/2016	8/6/2015	
<b>Antennas</b>	<b>Range</b>	<b>MN</b>	<b>Mfr</b>	<b>SN</b>	<b>Asset</b>	<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>	
Blue Horn	1-18Ghz	3117	ETS	157647	1861	I	2/8/2017	2/8/2015	
<b>Meteorological Meters</b>		<b>MN</b>	<b>Mfr</b>	<b>SN</b>	<b>Asset</b>	<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>	
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014	
TH A#2081		HTC-1	HDE		2081	II	4/2/2016	4/2/2015	
<b>Cables</b>	<b>Range</b>		<b>Mfr</b>			<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>	
Asset #2052	9kHz - 18GHz		Florida RF			II	3/8/2016	3/8/2015	
Asset #2053	9kHz - 18GHz		Florida RF			II	3/8/2016	3/8/2015	

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

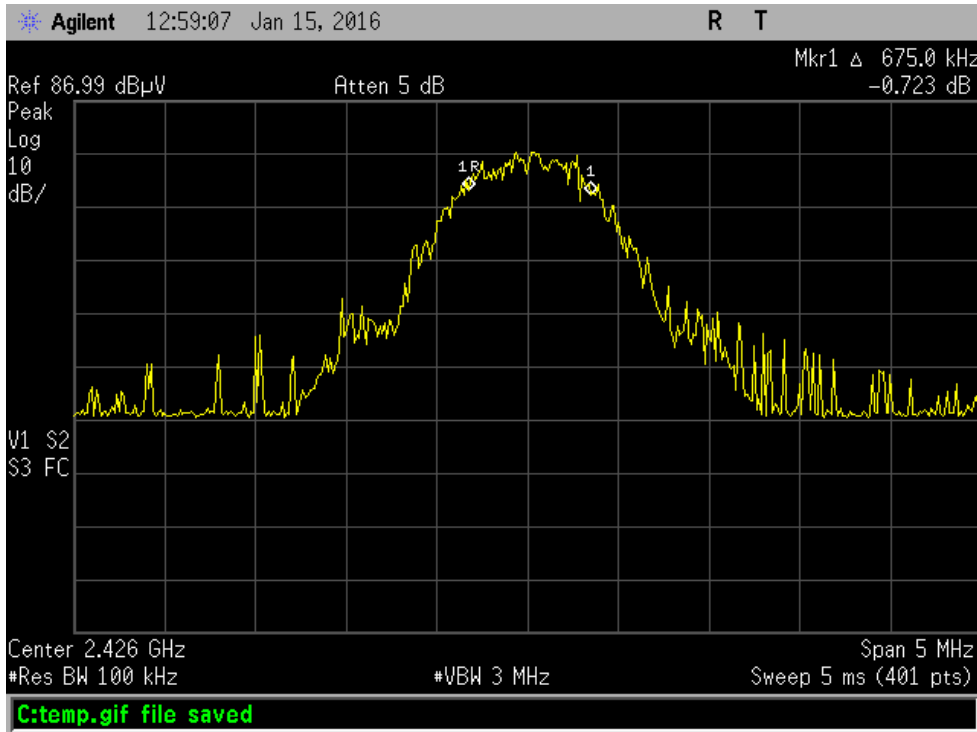


PLOTS

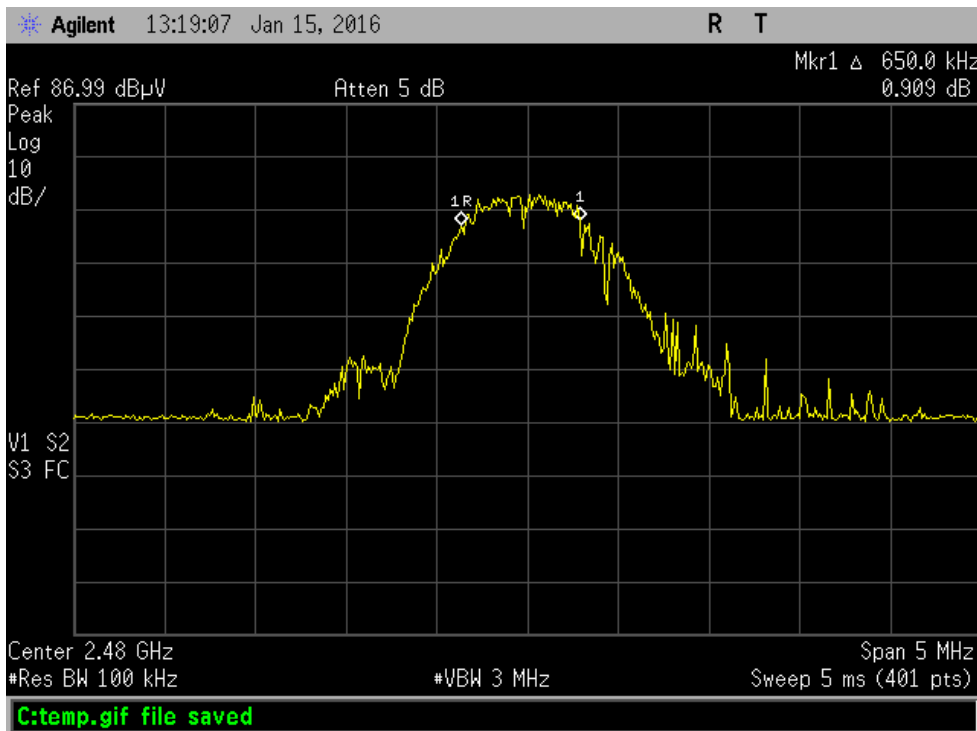


6dB Bandwidth Plot, Low Channel





6dB Bandwidth Plot, Middle Channel



6dB Bandwidth Plot, High Channel



# Fundamental Emission Output Power LIMIT

Conducted Output Power  
1W = 30dBm  
[15.247(b) (3)]

## MEASUREMENTS / RESULTS

Radiated Emissions Table													
Date: 15-Jan-16				Company: Powercast				Work Order: P2678					
Engineer: Jason Haley				EUT Desc: WFPS-1				EUT Operating Voltage/Frequency: Battery					
Temp: 22°C				Humidity: 27%				Pressure: 1007mBar					
Frequency Range: 1-6GHz								Measurement Distance: 3 m					
Notes: Maximized								EUT Max Freq: 2480					
Antenna Polarization (H/V)	Frequency (MHz)	Reading (dBuV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBuV/m)	Adjusted ERP Reading (dBm)	Antenna Gain (dBi)	Final Conducted Reading (dBm)	FCC 15.247			
										Limit (dBm)	Margin (dB)	Result (Pass/Fail)	
V, low ch	2402.0	77.1	19.9	32.3	3.3	92.8	-2.4	2.1	-4.5	30.0	-34.5	Pass	
V, mid ch	2426.0	78.3	20.0	32.3	3.3	93.9	-1.3	2.1	-3.4	30.0	-33.4	Pass	
V, high ch	2480.0	71.7	20.2	32.4	3.3	87.2	-8.0	2.1	-10.1	30.0	-40.1	Pass	
<b>Table Result:</b> Pass by -33.4 dB										<b>Worst Freq:</b> 2426.0 MHz			
Test Site: EMI Chamber 2				Cable 1: Asset #2052				Cable 2: Asset #2053				Cable 3: ---	
Analyzer: Asset #1328				Preamp: Asset #1517				Antenna: Blue Horn				Preselector: ---	
CSsoft Radiated Emissions Calculator v 1.017.154										Copyright Curtis-Straus LLC 2000			
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor													

Per: DTS Meas Guidance Section 9.1.1

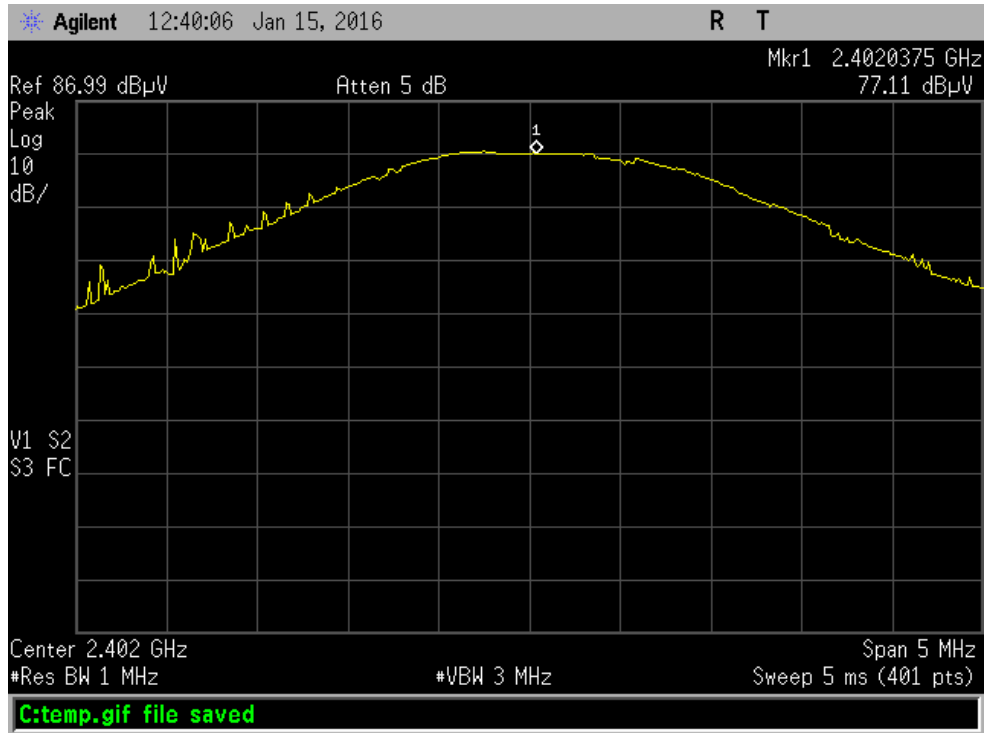
Rev. 1/14/2016

<b>Spectrum Analyzers / Receivers / Preselector:</b>	<b>Range</b>	<b>MN</b>	<b>Mfr</b>	<b>SN</b>	<b>Asset</b>	<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>
SA EMI Chamber (1328)	9kHz-13.2 GHz	E4405B	Agilent	MY44210241	1328	I	8/19/2016	8/19/2015
<b>Radiated Emissions Sites</b>	<b>FCC Code</b>	<b>IC Code</b>	<b>VCCI Code</b>	<b>Range</b>	<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>	
EMI Chamber 2	719150	2762A-7	A-0015	30-1000MHz	II	3/22/2017	3/22/2015	
<b>Preamps / Couplers Attenuators / Filters</b>	<b>Range</b>	<b>MN</b>	<b>Mfr</b>	<b>SN</b>	<b>Asset</b>	<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>
1517 HF Preamp	1-20GHz	CS	CS	N/A	1517	II	8/6/2016	8/6/2015
<b>Antennas</b>	<b>Range</b>	<b>MN</b>	<b>Mfr</b>	<b>SN</b>	<b>Asset</b>	<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>
Blue Horn	1-18Ghz	3117	ETS	157647	1861	I	2/8/2017	2/8/2015
<b>Meteorological Meters</b>		<b>MN</b>	<b>Mfr</b>	<b>SN</b>	<b>Asset</b>	<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014
TH A#2081		HTC-1	HDE		2081	II	4/2/2016	4/2/2015
<b>Cables</b>	<b>Range</b>		<b>Mfr</b>			<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>
Asset #2052	9kHz - 18GHz		Florida RF			II	3/8/2016	3/8/2015
Asset #2053	9kHz - 18GHz		Florida RF			II	3/8/2016	3/8/2015

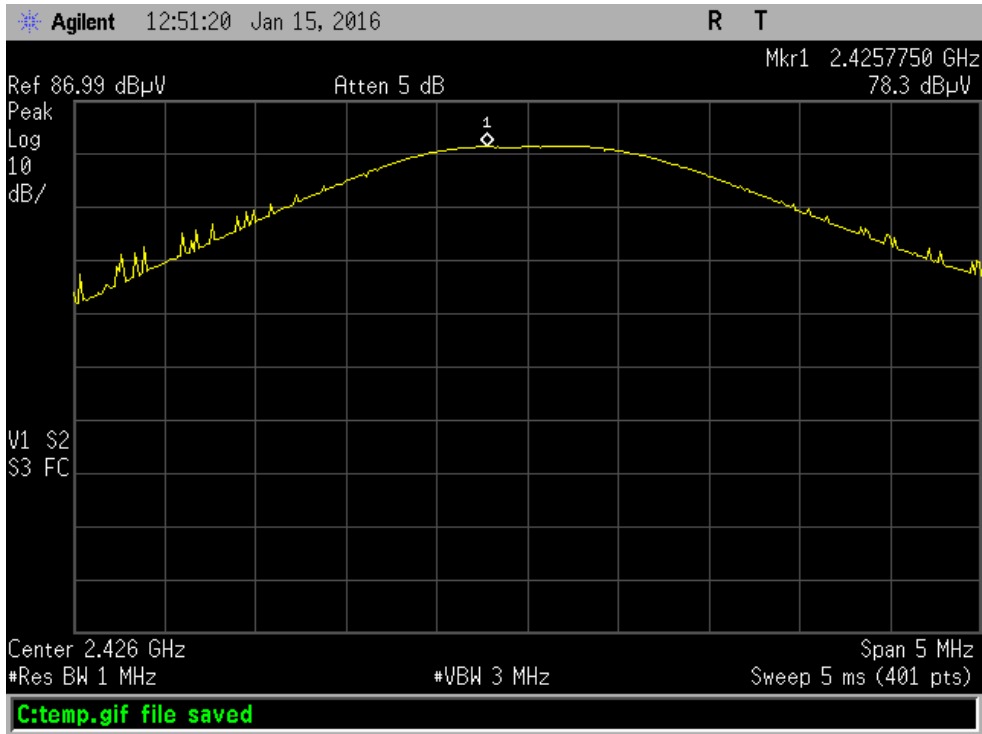
All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



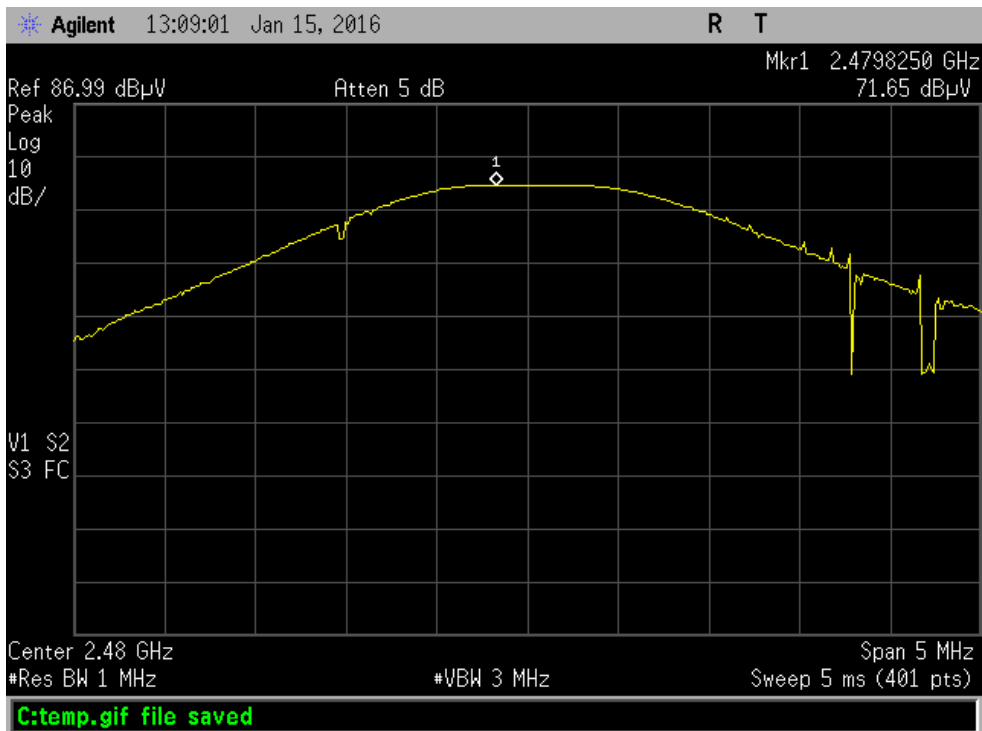
PLOTS



Peak Output Power, Low Channel



Peak Output Power, Middle Channel



Peak Output Power, High Channel



# Band Edge Measurements

## LIMITS

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

## MEASUREMENTS / RESULTS

Radiated Emissions Table - Band Edge															
Date: 27-Jan-16				Company: Powercast Corporation				Work Order: P2678							
Engineer: Tuyen Truong				EUT Desc: WFPS-1				EUT Operating Voltage/Frequency: 3Vdc							
Temp: 21°C				Humidity: 23%				Pressure: 1005mBar							
Frequency Range: Band Edge								Measurement Distance: 3 m							
Notes: EUT Tx Freq: 2402-2480 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)	
v	2483.5	34.48	22.6	20.2	32.4	3.9	50.6	38.7	74.0	-23.4	Pass	54.0	-15.3	Pass	
v	2400.0	53.5	21.8	19.9	32.3	3.7	69.6	37.9	74.0	-4.4	Pass	54.0	-16.1	Pass	
v	2390.0	34.36	22.3	19.9	32.3	3.7	50.5	38.4	74.0	-23.5	Pass	54.0	-15.6	Pass	
<b>Table Result:</b> Pass by -4.4 dB <b>Worst Freq:</b> 2400.0 MHz															
Test Site: EMI Chamber 1				Cable 1: Asset #2051				Cable 2: Asset #1784				Cable 3: ---			
Analyzer: Rental SA#1				Preamp: Asset #1517				Antenna: Blue Horn				Preselector: ---			
CSsoft Radiated Emissions Calculator v 1.017.154															
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor															
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Rev. 1/26/2016

Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA #2 (1860)	9kHz-26.5 GHz	E7405A	Agilent	MY45104916	1860	I	12/23/2016	12/23/2015
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range	Cat	Calibration Due	Calibrated on	
EMI Chamber 1	719150	2762A-6	A-0015	1-18GHz	I	5/23/2017	5/23/2015	
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	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014
TH A#2080		HTC-1	HDE		2080	II	4/2/2016	4/2/2015
Cables	Range	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Asset #1784	9kHz - 18GHz	Florida RF			II	3/20/2016	3/20/2015	
Asset #2051	9kHz - 18GHz	Florida RF			II	3/8/2016	3/8/2015	

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



# Radiated Spurious Emissions

## LIMITS

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

## MEASUREMENTS / RESULTS

Radiated Emissions Table												
Date: 16-Sep-15			Company: Powercast				Work Order: P2678					
Engineer: Jason Haley			EUT Desc: WFPS-1				EUT Operating Voltage/Frequency: 3V battery					
Temp: 22.5°C			Humidity: 50%				Pressure: 1019 mBar					
Frequency Range: 30-1000 MHz						Measurement Distance: 3 m						
Notes:						EUT Max Freq: 2480						
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	146.65	36.5	25.5	12.6	0.6	24.2	---	---	---	43.5	-19.3	Pass
V	152.57	35.5	25.4	12.4	0.7	23.2	---	---	---	43.5	-20.3	Pass
V	165.0	35.3	25.6	12.0	0.8	22.5	---	---	---	43.5	-21.0	Pass
V	178.15	33.8	25.5	11.2	0.7	20.2	---	---	---	43.5	-23.3	Pass
V	84.0	32.8	25.4	7.5	0.5	15.4	---	---	---	40.0	-24.6	Pass
V	54.75	30.9	25.2	7.2	0.5	13.4	---	---	---	40.0	-26.6	Pass
H	158.37	34.8	25.5	12.3	0.8	22.4	---	---	---	43.5	-21.1	Pass
H	152.33	34.1	25.4	12.5	0.7	21.9	---	---	---	43.5	-21.6	Pass
H	164.41	33.2	25.6	12.0	0.8	20.4	---	---	---	43.5	-23.1	Pass
H	149.01	30.0	25.4	12.5	0.7	17.8	---	---	---	43.5	-25.7	Pass
H	170.57	28.3	25.6	11.6	0.8	15.1	---	---	---	43.5	-28.4	Pass
<b>Table Result:</b> Pass			by -19.3 dB				<b>Worst Freq:</b>			146.65 MHz		
Test Site: EMI Chamber 1			Cable 1: Asset #2051				Cable 2: Asset #2054			Cable 3: ---		
Analyzer: Rental SA#2			Preamp: Red-White				Antenna: Red-Brown			Preselector: ---		
CSsoft Radiated Emissions Calculator			v 1.017.147							Copyright Curtis-Straus LLC 2000		
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor												

Note: This is a worst-case of all three channels (Low, Mid and High)

Rev.9/16/2015

<b>Spectrum Analyzers / Receivers / Preselectors</b> Gold	<b>Range</b> 100Hz-26.5 GHz	<b>MN</b> E4407B	<b>Mfr</b> Agilent	<b>SN</b> MY45113816	<b>Asset</b> 1284	<b>Cat</b> I	<b>Calibration Due</b> 4/22/2016	<b>Calibrated on</b>
<b>Radiated Emissions Sites</b> EMI Chamber 1	<b>FCC Code</b> 719150	<b>IC Code</b> 2762A-6	<b>VCCI Code</b> A-0015	<b>Range</b> 30-1000MHz	<b>Cat</b> II	<b>Calibration Due</b> 3/21/2017	<b>Calibrated on</b> 3/21/2015	
<b>Preamps / Couplers Attenuators / Filters</b> Red-White	<b>Range</b> 0.009-2000MHz	<b>MN</b> ZFL-1000-LN	<b>Mfr</b> CS	<b>SN</b> N/A	<b>Asset</b> 1258	<b>Cat</b> II	<b>Calibration Due</b> 12/26/2015	<b>Calibrated on</b> 12/26/2014
<b>Antennas</b> Red-Brown Bilog	<b>Range</b> 30-2000MHz	<b>MN</b> JB1	<b>Mfr</b> Sunol	<b>SN</b> A0032406	<b>Asset</b> 1218	<b>Cat</b> I	<b>Calibration Due</b> 12/4/2016	<b>Calibrated on</b> 12/4/2014
<b>Cables</b> Asset #2051	<b>Range</b> 9kHz - 18GHz		<b>Mfr</b> Florida RF			<b>Cat</b> II	<b>Calibration Due</b> 3/8/2016	<b>Calibrated on</b> 3/8/2015
Asset #2054	9kHz - 18GHz		Florida RF			II	3/8/2016	3/8/2015
<b>Meteorological Meters</b> Weather Clock (Pressure Only) TH A#2081		<b>MN</b> BA928 HTC-1	<b>Mfr</b> Oregon Scientific HDE	<b>SN</b> C3166-1	<b>Asset</b> 831 2081	<b>Cat</b> I II	<b>Calibration Due</b> 3/19/2016 4/2/2016	<b>Calibrated on</b> 3/19/2014

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



Radiated Emissions Table														
Date: 16-Sep-15				Company: Powercast				Work Order: P2678						
Engineer: Jason Haley				EUT Desc: WFPS-1				EUT Operating Voltage/Frequency: 3V battery						
Temp: 22.5°C				Humidity: 50%				Pressure: 1019 mBar						
Frequency Range: 1-6GHz							Measurement Distance: 3 m							
Notes: EUT Max Freq: 2480														
Antenna Polarization (H/V)	Frequency (MHz)	Peak Reading (dBµV)	Average Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBµV/m)	Adjusted Avg Reading (dBµV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)
V.N.F.	1883.0	28.49	28.5	18.9	27.5	2.9	40.0	40.0	74.0	-34.0	Pass	54.0	-14.0	Pass
H.N.F.	4207.0	31.71	28.6	18.7	32.1	4.3	49.4	46.3	74.0	-24.6	Pass	54.0	-7.7	Pass
<b>Table Result:</b> Pass by -7.7 dB <b>Worst Freq:</b> 4207.0 MHz														
Test Site: EMI Chamber 1				Cable 1: Asset #2051				Cable 2: Asset #2054				Cable 3: ---		
Analyzer: Rental SA#2				Preamp: Asset #1517				Antenna: Black Horn				Preselector: ---		
CSsoft Radiated Emissions Calculator v 1.017.147 <span style="float: right;">Copyright Curtis-Straus LLC 2000</span>														
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														

Note: This is a worst-case of all three channels (Low, Mid and High)

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Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA #2 (1860)	9kHz-26.5 GHz	E7405A	Agilent	MY45104916	1860	I	7/30/2016	
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range	Cat	Calibration Due	Calibrated on	
EMI Chamber 2	719150	2762A-7	A-0015	30-1000MHz	II	3/22/2017	3/22/2015	
Preamps/Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Brown	1-10GHz	CS	CS	N/A	1523	II	4/9/2016	4/9/2015
Antennas	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Black Horn	1-18GHz	3115	EMCO	9703-5148	56	I	8/21/2016	8/21/2014
Cables	Range	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Asset #2051	9kHz - 18GHz	Florida RF			II	3/8/2016	3/8/2015	
Asset #2054	9kHz - 18GHz	Florida RF			II	3/8/2016	3/8/2015	
Meteorological Meters	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)	BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014	
TH A#2080	HTC-1	HDE		2080	II	4/2/2016	4/2/2015	

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

Radiated Emissions Table														
Date: 16-Sep-15				Company: Powercast				Work Order: P2678						
Engineer: Jason Haley				EUT Desc: WFPS-1				EUT Operating Voltage/Frequency: 3V battery						
Temp: 22.5°C				Humidity: 50%				Pressure: 1019 mBar						
Frequency Range: 1-6GHz							Measurement Distance: 1 m							
Notes: EUT Max Freq: 2480														
Antenna Polarization (H/V)	Frequency (MHz)	Peak Reading (dBµV)	Average Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBµV/m)	Adjusted Avg Reading (dBµV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)
V.N.F.	7440.0	32.1	17.6	17.2	37.9	5.7	58.5	44.0	83.5	-25.0	Pass	63.5	-19.5	Pass
H.N.F.	14880.0	32.24	19.2	17.0	40.8	8.0	64.0	51.0	83.5	-19.5	Pass	63.5	-12.5	Pass
V.N.F.	17360.0	29.95	18.4	15.8	43.5	8.7	66.4	54.8	83.5	-17.1	Pass	63.5	-8.7	Pass
<b>Table Result:</b> Pass by -8.7 dB <b>Worst Freq:</b> 17360.0 MHz														
Test Site: EMI Chamber 1				Cable 1: Asset #2051				Cable 2: Asset #2054				Cable 3: ---		
Analyzer: Rental SA#2				Preamp: Asset #1517				Antenna: Black Horn				Preselector: ---		
CSsoft Radiated Emissions Calculator v 1.017.147 <span style="float: right;">Copyright Curtis-Straus LLC 2000</span>														
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														

Note: This is a worst-case of all three channels (Low, Mid and High)



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<b>Spectrum Analyzers / Receivers/Preselectors</b> SA #2 (1860)	<b>Range</b> 9kHz-26.5 GHz	<b>MN</b> E7405A	<b>Mfr</b> Agilent	<b>SN</b> MY45104916	<b>Asset</b> 1860	<b>Cat</b> I	<b>Calibration Due</b> 7/30/2016	<b>Calibrated on</b> 
<b>Radiated Emissions Sites</b> EMI Chamber 2	<b>FCC Code</b> 719150	<b>IC Code</b> 2762A-7	<b>VCCI Code</b> A-0015	<b>Range</b> 30-1000MHz		<b>Cat</b> II	<b>Calibration Due</b> 3/22/2017	<b>Calibrated on</b> 3/22/2015
<b>Preamps/Couplers Attenuators / Filters</b> Brown	<b>Range</b> 1-10GHz	<b>MN</b> CS	<b>Mfr</b> CS	<b>SN</b> N/A	<b>Asset</b> 1523	<b>Cat</b> II	<b>Calibration Due</b> 4/9/2016	<b>Calibrated on</b> 4/9/2015
<b>Antennas</b> Black Horn	<b>Range</b> 1-18GHz	<b>MN</b> 3115	<b>Mfr</b> EMCO	<b>SN</b> 9703-5148	<b>Asset</b> 56	<b>Cat</b> I	<b>Calibration Due</b> 8/21/2016	<b>Calibrated on</b> 8/21/2014
<b>Cables</b> Asset #2051 Asset #2054	<b>Range</b> 9kHz - 18GHz 9kHz - 18GHz		<b>Mfr</b> Florida RF Florida RF			<b>Cat</b> II II	<b>Calibration Due</b> 3/8/2016 3/8/2016	<b>Calibrated on</b> 3/8/2015 3/8/2015
<b>Meteorological Meters</b> Weather Clock (Pressure Only) TH A#2080		<b>MN</b> BA928 HTC-1	<b>Mfr</b> Oregon Scientific HDE	<b>SN</b> C3166-1	<b>Asset</b> 831 2080	<b>Cat</b> I II	<b>Calibration Due</b> 3/19/2016 4/2/2016	<b>Calibrated on</b> 3/19/2014 4/2/2015

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

Radiated Emissions Table														
Date: 17-Sep-15				Company: Powercast				Work Order: P2678						
Engineer: Jason Haley				EUT Desc: WFPS-1				EUT Operating Voltage/Frequency: 3V battery						
Temp: 22.3°C				Humidity: 52%				Pressure: 1013mBar						
Frequency Range: 18-26.5GHz							Measurement Distance: 0.1 m							
Notes: EUT Max Freq: 2480 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 signals within 10dB of the limit														
<b>Table Result:</b> --- by --- dB <b>Worst Freq:</b> --- MHz														
Test Site: EMI Chamber 1				Cable 1: EMIR-HIGH-07				Cable 2: ---				Cable 3: ---		
Analyzer: Gold				Preamp: 18-26.5GHz				Antenna: 18-26.5GHz Horn				Preselector: ---		
CSsoft Radiated Emissions Calculator v 1.017.147 Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														
Copyright Curtis-Straus LLC. 2000														

Note: This is a worst-case of all three channels (Low, Mid and High)

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<b>Spectrum Analyzers / Receivers/Preselectors</b> Gold	<b>Range</b> 100Hz-26.5 GHz	<b>MN</b> E4407B	<b>Mfr</b> Agilent	<b>SN</b> MY45113816	<b>Asset</b> 1284	<b>Cat</b> I	<b>Calibration Due</b> 4/22/2016	<b>Calibrated on</b> 4/22/2015
<b>Radiated Emissions Sites</b> EMI Chamber 1	<b>FCC Code</b> 719150	<b>IC Code</b> 2762A-6	<b>VCCI Code</b> A-0015	<b>Range</b> 30-1000MHz		<b>Cat</b> II	<b>Calibration Due</b> 3/21/2017	<b>Calibrated on</b> 3/21/2015
<b>Preamps/Couplers Attenuators / Filters</b> HF (Yellow)	<b>Range</b> 18-26.5GHz	<b>MN</b> AFS4-18002650-60-8P-4	<b>Mfr</b> CS	<b>SN</b> 467559	<b>Asset</b> 1266	<b>Cat</b> II	<b>Calibration Due</b> 3/13/2016	<b>Calibrated on</b> 3/13/2015
<b>Antennas</b> HF (White) Horn	<b>Range</b> 18-26.5GHz	<b>MN</b> 801-WLM	<b>Mfr</b> Waveline	<b>SN</b> 758	<b>Asset</b> 758	<b>Cat</b> III	<b>Calibration Due</b> Verify before Use	<b>Calibrated on</b> date of test
<b>Cables</b> REMHigh-07	<b>Range</b> 1 - 26.5GHz		<b>Mfr</b> TRU			<b>Cat</b> II	<b>Calibration Due</b> 8/7/2016	<b>Calibrated on</b> 8/7/2015 3/8/2015
<b>Meteorological Meters</b> Weather Clock (Pressure Only) TH A#2081		<b>MN</b> BA928 HTC-1	<b>Mfr</b> Oregon Scientific HDE	<b>SN</b> C3166-1	<b>Asset</b> 831 2081	<b>Cat</b> I II	<b>Calibration Due</b> 3/19/2016 4/2/2016	<b>Calibrated on</b> 3/19/2014 3/19/2014

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





# Power Spectral Density

## LIMIT

...the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.  
[15.247(e)]

## MEASUREMENTS / RESULTS

Power Spectral Density												
Date: 18-Sep-15			Company: Powercast				Work Order: P2678					
Engineer: CL/TT			EUT Desc: WFPS-1				EUT Operating Voltage/Frequency: 3Vdc					
Temp: 22.4°C			Humidity: 52%				Pressure: 1010mBar					
Frequency Range: Fundamental Frequencies							Measurement Distance: 3 m					
Notes:							TX Frequency: 2402-2480MHz					
FCC 15.247												
Antenna Polarization (H/V)	Frequency (MHz)	Reading (dBuV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBuV/m)	Adjusted ERP Reading (dBm)	Antenna Gain (dBi)	Final Conducted Reading (dBm)	Limit (dBm)	Margin (dB)	Result (Pass/Fail)
v	2402.0	66.4	18.8	28.6	3.3	79.5	-15.7	2.1	-17.8	8.0	-25.8	Pass
v	2426.0	64.3	18.8	28.7	3.3	77.5	-17.7	2.1	-19.8	8.0	-27.8	Pass
v	2480.0	60.8	18.9	28.8	3.4	74.1	-21.1	2.1	-23.2	8.0	-31.2	Pass
<b>Table Result:</b> Pass by -25.8 dB										<b>Worst Freq:</b> 2402.0 MHz		
Test Site: EMI Chamber 1			Cable 1: Asset #2051				Cable 2: Asset #2054			Cable 3: ---		
Analyzer: Rental SA#1			Preamp: Brown				Antenna: Black Horn			Preselector: ---		
CSsoft Radiated Emissions Calculator v 1.017.148												
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor												
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Per: DTS Meas Guidance Section 10.2

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Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA #2 (1860)	9kHz-26.5 GHz	E7405A	Agilent	MY45104916	1860	I	7/30/2016	
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range	Cat	Calibration Due	Calibrated on	
EMI Chamber 2	719150	2762A-7	A-0015	30-1000MHz	II	3/22/2017	3/22/2015	
Preamps /Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Brown	1-10GHz	CS	CS	N/A	1523	II	4/9/2016	4/9/2015
Antennas	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Black Horn	1-18GHz	3115	EMCO	9703-5148	56	I	8/21/2016	8/21/2014
Cables	Range	Mfr	Cat	Calibration Due	Calibrated on			
Asset #2051	9kHz - 18GHz	Florida RF	II	3/8/2016	3/8/2015			
Asset #2054	9kHz - 18GHz	Florida RF	II	3/8/2016	3/8/2015			
Meteorological Meters	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)	BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014	
TH A#2080	HTC-1	HDE		2080	II	4/2/2016	4/2/2015	

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

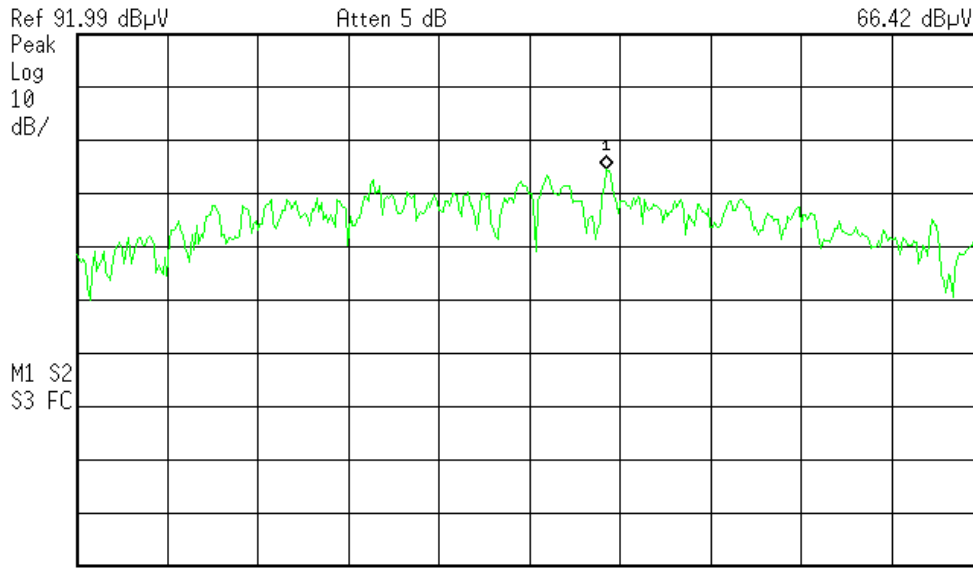


PLOTS

Agilent 12:33:38 Sep 18, 2015

R T

Mkr1 2.4020808 GHz  
66.42 dB $\mu$ V



Center 2.402 GHz Span 950 kHz  
#Res BW 3 kHz #VBW 10 kHz Sweep 108.6 ms (401 pts)

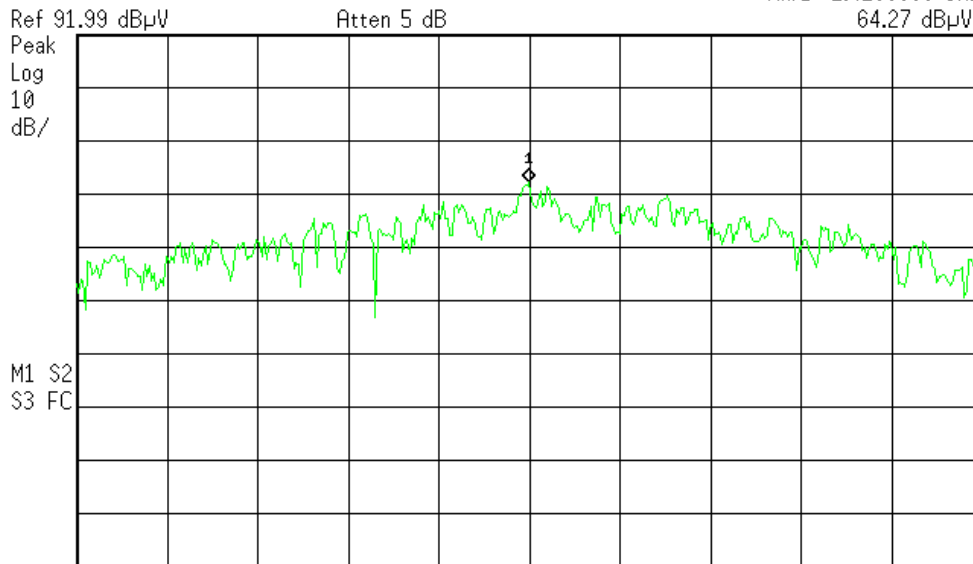
Option not installed

Power Spectral Density, Low Channel

Agilent 13:30:33 Sep 18, 2015

R T

Mkr1 2.4260000 GHz  
64.27 dB $\mu$ V



Center 2.426 GHz Span 1.029 MHz  
#Res BW 3 kHz #VBW 10 kHz Sweep 117.7 ms (401 pts)

C:\temp.gif file saved

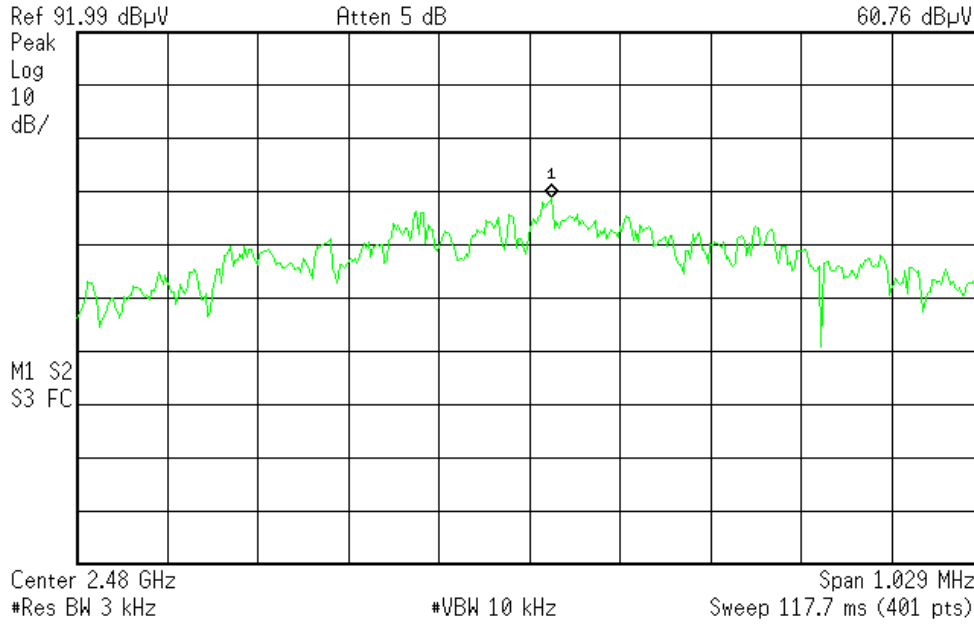
Power Spectral Density, Middle Channel



Agilent 14:48:36 Sep 18, 2015

R T

Mkr1 2.4800257 GHz  
60.76 dBμV



Power Spectral Density, High Channel



## Occupied Bandwidth

### REQUIREMENT

When an occupied bandwidth is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured. [RSS-GEN 6.6]

Occupied Bandwidth		
Date: 18-Sep-15	Company: Powercast	Work Order: P2678
Engineer: Jason Haley	EUT Desc: WFPS-1	EUT Operating Voltage/Frequency: 3V battery
Temp: 22.3°C	Humidity: 52%	Pressure: 1013mBar
Notes: Measurements of the Occupied Bandwidth - Power Bandwidth (99%) per Ansi C63.10_2013, Section 6.9.3		
Frequency (MHz)	Occupied Bandwidth Power 99% (MHz)	
2402	1.0123	
2426	1.0214	
2480	1.0324	

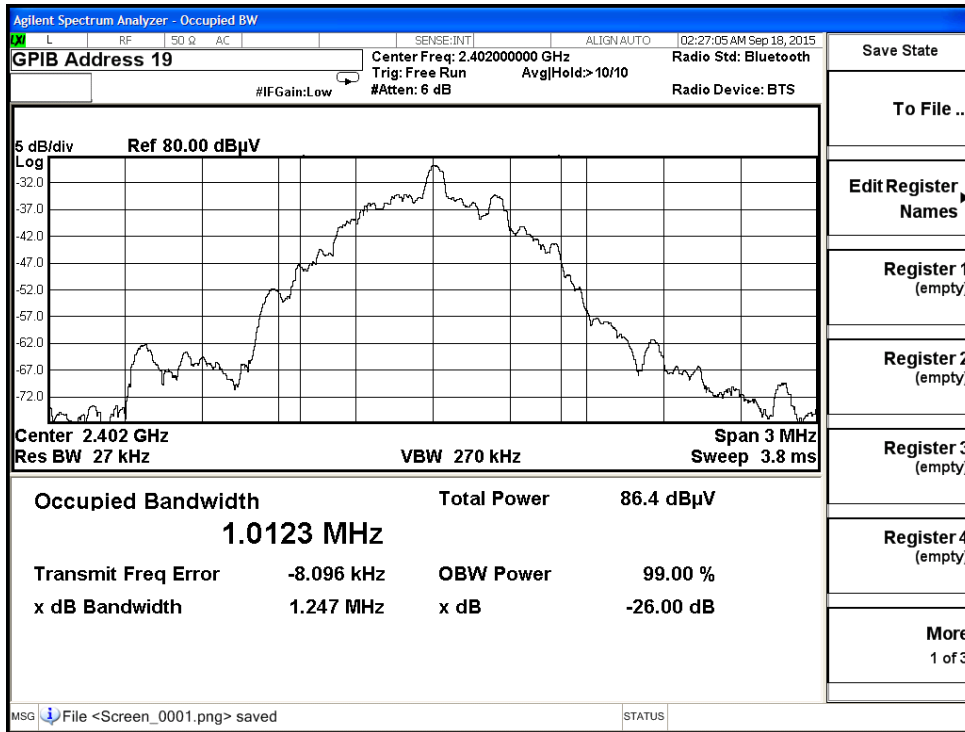
Rev.9/17/2015

Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA #2 (1860)	9kHz-26.5 GHz	E7405A	Agilent	MY45104916	1860	I	7/30/2016	
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on
EMI Chamber 2	719150	2762A-7	A-0015	30-1000MHz		II	3/22/2017	3/22/2015
Preamps / Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Brown	1-10GHz	CS	CS	N/A	1523	II	4/9/2016	4/9/2015
Antennas	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Black Horn	1-18GHz	3115	EMCO	9703-5148	56	I	8/21/2016	8/21/2014
Cables	Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #2051	9kHz - 18GHz		Florida RF			II	3/8/2016	3/8/2015
Asset #2054	9kHz - 18GHz		Florida RF			II	3/8/2016	3/8/2015
Meteorological Meters		MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	3/19/2016	3/19/2014
TH A#2080		HTC-1	HDE		2080	II	4/2/2016	4/2/2015

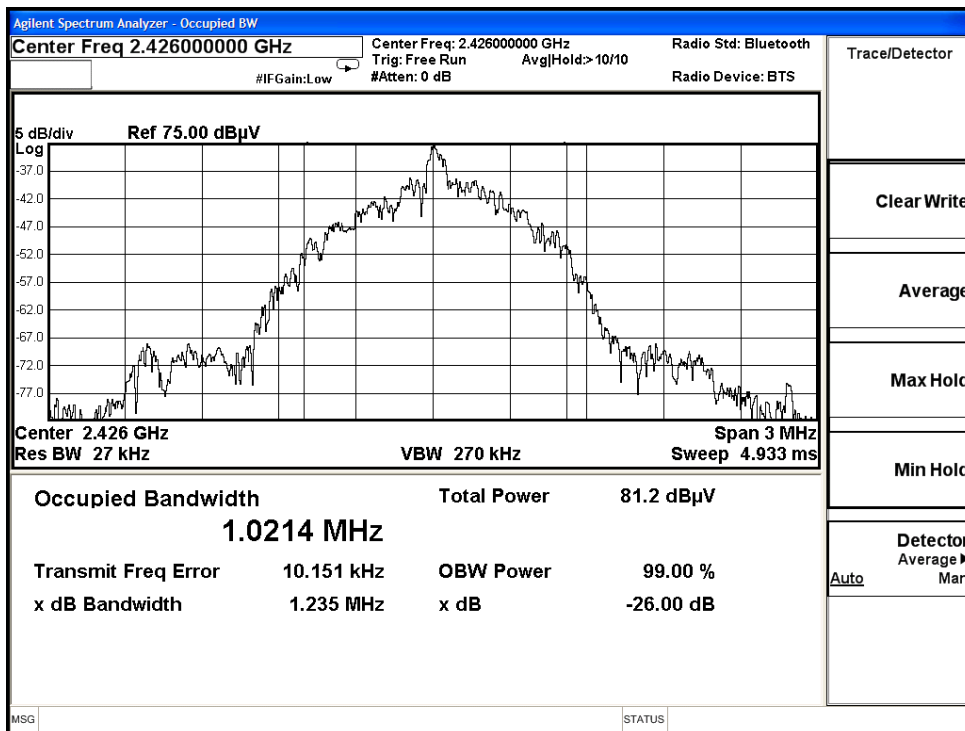
All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



PLOTS

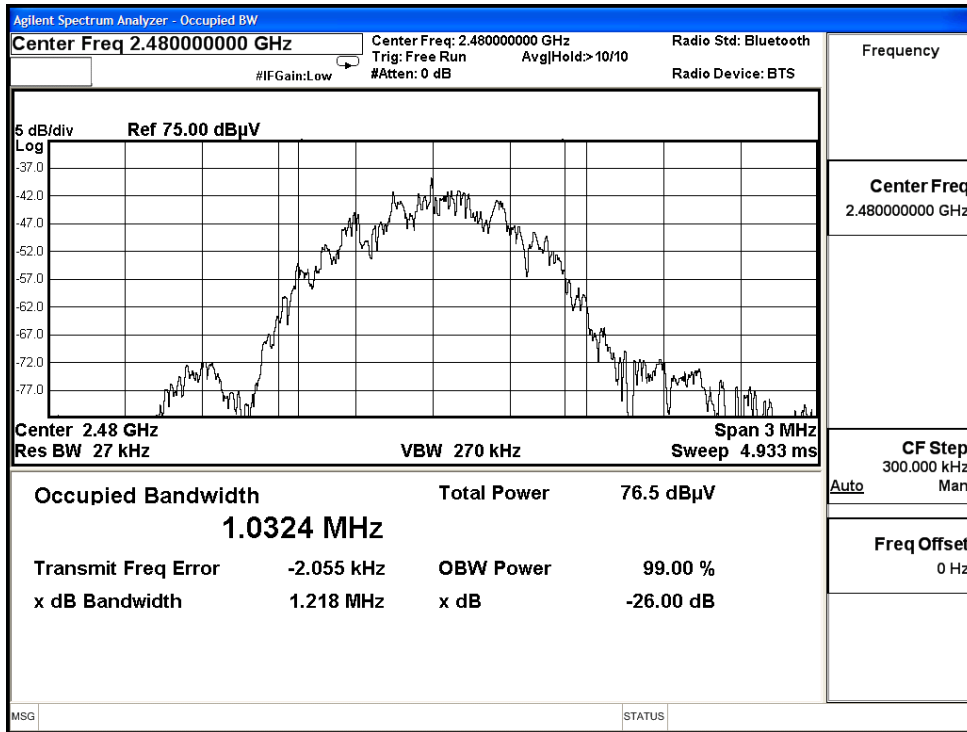


Occupied Bandwidth, Low Channel



Occupied Bandwidth, Middle Channel





Occupied Bandwidth, High Channel

### Measurement Uncertainty

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

Measurement	Expanded Uncertainty k=2	Maximum allowable uncertainty
Radiated Emissions (30-1000MHz)		
NIST	5.6dB	N/A
CISPR	4.6dB	5.2dB (Ucisprr)
Radiated Emissions (1-26.5GHz)	4.6dB	N/A
Radiated Emissions (above 26.5GHz)	4.9dB	N/A
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 where such skill has not been exercised and, even in such event, only to the extent of the limitation of liability set forth herein.
12. If Client desires to assert a claim arising from or relating to (i) the performance, purported performance or non-performance of any services by the Company or (ii) the sale, resale, manufacture, distribution or use of any tested goods, it must submit that claim to the Company in a writing that sets forth with particularity the basis for such claim within 60 days from discovery of the potential claim and not more than six months after the date of issuance of the Test Report to Client. Client waives any and all such claims including, without limitation, claims that the Test Report is inaccurate, incomplete or misleading or that additional or different testing is required, unless and then only to the extent that Client submits a written claim to the Company within both such time periods.
13. CLIENT SHALL, EXCEPT TO THE EXTENT OF COMPANY'S LIABILITY TO CLIENT HEREUNDER (WHICH IN NO EVENT SHALL EXCEED THE LIMITATION OF LIABILITY HEREIN), HOLD HARMLESS AND INDEMNIFY THE COMPANY, ITS AFFILIATES AND THEIR RESPECTIVE DIRECTORS, OFFICERS, EMPLOYEES, AGENTS AND SUBCONTRACTORS AGAINST ALL ACTUAL OR ALLEGED THIRD PARTY CLAIMS FOR LOSS, DAMAGE OR EXPENSE OF WHATSOEVER NATURE AND HOWSOEVER ARISING FROM OR 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.



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

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

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

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

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

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



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