

Test Report

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

Report No EQ1922-1

Client Amazon Robotics LLC

Address 300 Riverpark Drive

North Reading, MA 01864

Phone (978) 276-2815

Items tested SRBRS Badge Module

FCC ID 2AEZR-SRBRSBADGE 10244A-SRBRSBADGE

FRN 0024656845

Equipment Type Low Power Communication Device Transmitter

Equipment Code DXX

Standards CFR Title 47 FCC Part 15.249, RSS-210 Issue 9 Annex B.10

Test Dates | July 14 and 15, 2016

Results As detailed within this report

Prepared by

Tuyen Truong – EMC Jest Engineer

Authorized by

unus Faziloglu / Sr. EMC Engineer

Issue Date

10/25/2016

Conditions of Issue

This Test Report is issued subject to the conditions stated in the 'Conditions of Testing' section on page 13 of this report.

B U R E A U



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



Product Tested - Configuration Documentation

					EUT C	onfiguration							
Work O	rder:	Q1922											
Comp	oany:	Amazo	Amazon Robotics LLC										
Company Add	lress:	300 Riv	300 Riverpark Drive										
		North F	North Reading, MA, 01864										
Cor	ntact:	Dao Ke	opadith										
				MN			PN			SN			
]	EUT:	SRBRS Badge Module				60	00-00928			Product	ion 1		
EUT Descrip	otion:	SRBRS	Badge Mod	lule									
EUT TX Freque	ency:	925 MI	Hz										
EUT TX Freque	ency:	0.125 N	ИHz										
Support Equipment				M	N				SN				
Laptop Lenovo				Thinkpac					2144	2			
Cerberus, Vest and Cab	ole			610-0	1026								
Assembly (Host)													
D (7.1.1	- n	m	" 4		11.4		T e •	1 4 ()	1 . , ,	,	· · · · · · ·		
Port Label	Port	Type	# ports	# populated	cable type	shielded	ferrites	length (m)	in/out	under test	comment		
RJ45	other		1	1	other	Yes	No	1.5	in	yes			
USB maintenance port cable	USB	1 1 USB				Yes	No	3	in	no	only used to configure the EUT		
Software Operating M EUT was set to transmi Normal mode: -10dBm Maximum transmit pow	it at 925 1 TX po	MHz an wer with	d 125 KHz. 500mS inte		F42								



Reason for change Original Release Date Issued October 25, 2016

ACCREDITED
Tasking Cort. No. 1627 05

Summary and Test Methodology

On July 14-15, 2016 we tested the SRBRS Badge Module for compliance with the following requirements:

CFR Title 47 FCC Part 15.249, RSS-210 Issue 9 Annex B.10

EUT transmits at 925MHz. Emissions were maximized by rotating the device around 3 orthogonal planes. EUT has an integral antenna.

Radiated emission testing was performed according to the procedures specified in ANSI C63.10-2013 and RSS-Gen Issue 4.

AC mains conducted emission testing was not required because the EUT is battery powered.

EUT operating voltage is 15VDC.

The following bandwidths were used during radiated spurious emissions testing.

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

We found that the product met the above limits. The test sample was received in good condition.



Compliance Statement

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 for this device is an internal surface- mount antenna with 1.4dBi gain.
8.10			15.205	The fundamental is not in a Restricted band and the
			15.209	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	Not applicable since EUT is battery powered.
		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 plot is provided.

Modifications Required for Compliance

None.





Test Results

Fundamental Measurements

LIMITS

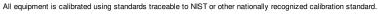
The field strength from intentional radiators operated within these frequency bands shall comply with the following:

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

Date:	Date: 14-Jul-16 Company: Amazon Robotics LLC									W	ork Order	: Q1922
Engineer:	Engineer: Jason Haley EUT Desc: SRBRS Badge Module EUT							EUT Ope	rating	Voltage/	Frequency	: 15VDC Batte
Temp:	22°C		Humidity:	36%	Pressure	: 1005mBar						
	Freque	ncy Range:	30-1000MH	łz				/leasuren	nent Di	stance:	3m	
Notes:	EUT power set	tings are -10	dB and 10d	В				E	UT Ma	x Freq:	925MHz	
4-4			B	Antenna Cable	Adlinated					FC	CC 15.249/R	ISS-210
Antenna Polarization	Frequency	Reading	Preamp Factor	Antenna Cable Factor Factor	Adjusted Reading	Limit	Margin	Result	-	Limit	Margin	Result
(H / V)	(MHz)	(dBµV)	(dB)	(dB/m) (dB)	(dBµV/m)	(dBµV/m)	(dB)	(Pass/Fail)		BμV/m)	(dB)	(Pass/Fail)
V eut at -10	925.0	76.2	25.8	22.5 2.1	75.0				+ -	94.0	-19.0	Pass
Heut at -10	925.0	78.2	25.8	22.5 2.1	77.0					94.0	-17.0	Pass
V eut at 10	925.0	84.4	25.8	22.5 2.1	83.2					94.0	-10.8	Pass
H eut at 10	925.0	88.2	25.8	22.5 2.1	87.0					94.0	-7.0	Pass
Tab	le Result:	Pass	by	-7.0 dB		"	<u>'</u>	ı	Norst	Freq:	925.0) MHz
Test Site:	FMI Chamber	1	Cable 1:	Asset #1784			Cable 2: A	sset #205	51		Cable 3	:
	EMI Chamber	1		Asset #1784 Green			Cable 2: Antenna: F				Cable 3	
Analyzer:	EMI Chamber MXE 2093 d Emissions Ca		Cable 1: Preamp: 1.017.165							P	reselector	
Analyzer: Ssoft Radiate	MXE 2093 ed Emissions Ca	llculator v	Preamp: 1.017.165		actor					P	reselector	
Analyzer: Ssoft Radiate ljusted Readi	MXE 2093 ed Emissions Ca	llculator v	Preamp: 1.017.165	Green	actor					F	reselector	
Analyzer: Ssoft Radiate justed Readi v. 7/4/2016	MXE 2093 ed Emissions Ca	llculator v Preamp Fac	Preamp: 1.017.165 stor + Anteni	Green	actor	Mfr					reselector	: t Curtis-Straus LLC
Analyzer: Ssoft Radiate justed Readi v. 7/4/2016	MXE 2093 ed Emissions Ca ing = Reading -	llculator v Preamp Fac	Preamp: 1.017.165 stor + Anteni	Green na Factor + Cable F	MN	Mfr Agilent	Antenna: F	Red-Brown Asset	1	Calibra	Preselector: Copyrigh	
Analyzer: Ssoft Radiate ljusted Readi v. 7/4/2016	MXE 2093 and Emissions Caloring = Reading - and Analyzers / R MXE EMI	lculator v Preamp Fac eceivers /Pr Receiver	Preamp: v1.017.165 stor + Anteni reselectors	Green na Factor + Cable F Range 20Hz-26.5GF	MN Iz N9038A	Agilent	SN MY51210181	Red-Brown Asset	Cat	Calibra 7/2	Copyrigh ation Due 1/2016	t Curtis-Straus LLC Calibrated 7/21/2015
Analyzer: Ssoft Radiate ljusted Readi v. 7/4/2016	MXE 2093 ad Emissions Caing = Reading -	lculator v Preamp Face eceivers /Pr Receiver	Preamp: v1.017.165 stor + Anteni reselectors	Green na Factor + Cable F	MN		Antenna: F	Red-Brown Asset	Cat	Calibra 7/2 Calibra	Copyrigh	t Curtis-Straus LLC Calibrated 7/21/2015 Calibrated
Analyzer: Ssoft Radiate Ijusted Readi v. 7/4/2016 Spectrun	MXE 2093 ad Emissions Ca ing = Reading - n Analyzers / R MXE EMI Radiated Emi EMI Cha	lculator v Preamp Face eceivers /Pr Receiver issions Sites imber 1	Preamp: v1.017.165 ttor + Anteni reselectors	Green na Factor + Cable II Range 20Hz-26.5Gi FCC Code 719150	MN N9038A IC Code 2762A-6	Agilent VCCI Code A-0015	SN MY51210181 Range 30-1000MHz	Asset 2093	Cat Cat 	Calibra 7/2 Calibra 3/2	Preselector Copyright ation Due 1/2016 ation Due 1/2017	Calibrated 7/21/2019 Calibrated 3/21/2019
Analyzer: Ssoft Radiate Ijusted Readi v. 7/4/2016 Spectrun	MXE 2093 ad Emissions Ca ing = Reading - n Analyzers / R MXE EMI Radiated Emi	Preamp Face eceivers /Pr Receiver issions Sites imber 1	Preamp: v1.017.165 ttor + Anteni reselectors	Green na Factor + Cable I Range 20Hz-26.5GI FCC Code 719150 Range	MN Iz N9038A IC Code	Agilent VCCI Code	SN MY51210181 Range	Red-Brown Asset	Cat Cat	Calibra 7/2 Calibra 3/2 Calibra	Copyrigh ation Due 1/2016 ation Due	t Curtis-Straus LLC Calibrated 7/21/2015 Calibrated
Analyzer: Ssoft Radiate jjusted Readi v. 7/4/2016 Spectrun	MXE 2093 ad Emissions Caing = Reading - n Analyzers / R MXE EMI Radiated Emi EMI Cha mps / Couplers A Gree	Preamp Face eceivers /Pr Receiver issions Sites imber 1	Preamp: v1.017.165 ttor + Anteni reselectors	Green Range 20Hz-26.5GH FCC Code 719150 Range 0.009-2000M	MN N9038A IC Code 2762A-6 MN Hz ZFL-1000-LN	Agilent VCCI Code A-0015 Mfr CS	SN MY51210181 Range 30-1000MHz SN N/A	Asset 2093 Asset 802	Cat Cat Cat	Calibra 7/2 Calibra 3/2 Calibra 9/1	ation Due 1/2016 ation Due 1/2017 ation Due 1/2017	Calibrated 7/21/201 Calibrated 3/21/201 Calibrated 9/17/201
Analyzer: isoft Radiate justed Readi v. 7/4/2016 Spectrun	MXE 2093 and Emissions Caloring = Reading - n Analyzers / R MXE EMI Radiated Emi EMI Cha https://couplers/A	Preamp Face eceivers /Pr Receiver issions Sites imber 1	Preamp: v1.017.165 ttor + Anteni reselectors	Green na Factor + Cable I Range 20Hz-26.5GI FCC Code 719150 Range	MN iz N9038A IC Code 2762A-6 MN Hz ZFL-1000-LN MN	Agilent VCCI Code A-0015 Mfr	SN MY51210181 Range 30-1000MHz	Asset 2093	Cat Cat Cat	Calibra 7/2 Calibra 3/2 Calibra 9/1	Preselector Copyright ation Due 1/2016 ation Due 1/2017 ation Due	Calibrated 3/21/201 Calibrated 9/17/201 Calibrated 9/17/201 Calibrated
Analyzer: Ssoft Radiate justed Readi v. 7/4/2016 Spectrun	MXE 2093 sd Emissions Caing = Reading - n Analyzers / R MXE EMI Radiated Emi EMI Cha nps /Couplers A Gree Anten Red-Brow	eceivers /Pr Receiver /Pr Receiver issions Sites imber 1 Attenuators /een	Preamp: v1.017.165 ttor + Anteni reselectors	Range 20Hz-26.5Gi FCC Code 719150 Range 0.009-2000M Range	MN N9038A IC Code 2762A-6 MN ZFL-1000-LN MN JB1	Agilent VCCI Code A-0015 Mfr CS Mfr Sunol	SN MY51210181 Range 30-1000MHz SN N/A SN A0032406	Asset 2093 Asset 802 Asset 1218	Cat Cat Cat Cat Cat	Calibra 7/2 Calibra 3/2 Calibra 9/1' Calibra 12/4	ation Due 1/2016 ation Due 1/2017 ation Due 1/2017 ation Due 1/2016 ation Due 1/2016	Calibrated 7/21/201 Calibrated 3/21/201 Calibrated 9/17/201 Calibrated 12/4/201
Analyzer: ssoft Radiate justed Readi v. 7/4/2016 Spectrun Pream	MXE 2093 d Emissions Ca ing = Reading - n Analyzers / R MXE EMI Radiated Emi EMI Cha mps / Couplers / Gree Anter Red-Brow Meteorologi	eceivers /Pr Receiver Receiver issions Sites imber 1 Attenuators / en nnas vn Bilog	Preamp: v1.017.165 tor + Anteni eselectors	Range 20Hz-26.5Gi FCC Code 719150 Range 0.009-2000M Range	MN N9038A IC Code 2762A-6 MN Hz ZFL-1000-LN MN JB1 MN	Agilent VCCI Code A-0015 Mfr CS Mfr Sunol	SN MY51210181 Range 30-1000MHz SN N/A SN A0032406 SN	Asset 2093 Asset 802 Asset 1218 Asset	Cat Cat Cat Cat Cat Cat	Calibra 7/2 Calibra 3/2 Calibra 9/1' Calibra 12/4 Calibra	ation Due 1/2016 ation Due 1/2017 ation Due 1/2016 ation Due 4/2016 ation Due ation Due	Calibrated 3/21/201 Calibrated 3/21/201 Calibrated 9/17/201 Calibrated 12/4/201 Calibrated
Analyzer: ssoft Radiate justed Readi v. 7/4/2016 Spectrun Pream	MXE 2093 sd Emissions Caing = Reading - n Analyzers / R MXE EMI Radiated Emi EMI Cha nps /Couplers A Gree Anten Red-Brow	eceivers /Pr Receiver Receiver Issions Sites Imber 1 Attenuators Innas I	Preamp: v1.017.165 tor + Anteni eselectors	Range 20Hz-26.5Gi FCC Code 719150 Range 0.009-2000M Range	MN N9038A IC Code 2762A-6 MN ZFL-1000-LN MN JB1	Agilent VCCI Code A-0015 Mfr CS Mfr Sunol	SN MY51210181 Range 30-1000MHz SN N/A SN A0032406	Asset 2093 Asset 802 Asset 1218	Cat Cat Cat Cat Cat	Calibra 7/2 Calibra 3/2 Calibra 9/1' Calibra 12/- Calibra 4/24	ation Due 1/2016 ation Due 1/2017 ation Due 1/2017 ation Due 1/2016 ation Due 1/2016	Calibrated 3/21/201 Calibrated 3/21/201 Calibrated 9/17/201 Calibrated 12/4/201 Calibrated 4/28/201
Analyzer: ssoft Radiate justed Readi v. 7/4/2016 Spectrun Pream	MXE 2093 Id Emissions Caing = Reading - In Analyzers / R MXE EMI Radiated Emi EMI Cha Inps / Couplers A Gree Anter Red-Brow Meteorologi Weather Clock (I TH A#	eceivers /Pr Receiver sissions Sites imber 1 Attenuators /een inas vn Bilog cal Meters Pressure Onl 2080	Preamp: v1.017.165 tor + Anteni eselectors	Green Range 20Hz-26.5Gl FCC Code 719150 Range 0.009-2000M Range 30-2000MH	MN N9038A IC Code 2762A-6 MN Hz ZFL-1000-LN MN JB1 MN BA928	Agilent VCCI Code A-0015 Mfr CS Mfr Sunol Mfr Oregon Scientific HDE	SN MY51210181 Range 30-1000MHz SN N/A SN A0032406 SN	Asset 802 Asset 1218 Asset 831	Cat Cat Cat Cat Cat	Calibra 7/2 Calibra 3/2 Calibra 9/1' Calibra 12/4 Calibra 4/20 4/5	ation Due 1/2016 ation Due 1/2017 ation Due 1/2017 ation Due 1/2016 ation Due 1/2016 ation Due 1/2016 ation Due 1/2016	Calibrated 3/21/201 Calibrated 9/17/201 Calibrated 9/17/201 Calibrated 12/4/201 Calibrated 12/4/201 Calibrated 4/28/201 4/5/2016
Analyzer: Ssoft Radiate jjusted Readi v. 7/4/2016 Spectrun	MXE 2093 ad Emissions Ga ing = Reading - n Analyzers / R MXE EMI Radiated Emi EMI Cha anps / Couplers / Gree Anter Red-Brow Meteorologi Weather Clock (i	eceivers / Pr Receiver sissions Sites imber 1 Attenuators / en nnas vn Bilog	Preamp: v1.017.165 tor + Anteni eselectors	Range 20Hz-26.5Gi FCC Code 719150 Range 0.009-2000M Range	MN 12 N9038A IC Code 2762A-6 MN 12 ZFL-1000-LN MN 13B1 MN 14BA928 HTC-1	Agilent VCCI Code A-0015 Mfr CS Mfr Sunol Mfr Oregon Scientific	SN MY51210181 Range 30-1000MHz SN N/A SN A0032406 SN	Asset 802 Asset 1218 Asset 831	Cat Cat Cat Cat Cat	Calibra 7/2 Calibra 3/2 Calibra 9/1 Calibra 12/4 Calibra 4/21 4/5 Calibra	ation Due 1/2016 ation Due 1/2017 ation Due 1/2016 ation Due 4/2016 ation Due	Calibrated 3/21/201 Calibrated 3/21/201 Calibrated 9/17/201 Calibrated 12/4/201 Calibrated 4/28/201







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

Date:	14-Jul-16		Company:	Amazon R	obotics LL	С				V	ork Order: (Q1922		
Engineer:	Jason Haley		EUT Desc:	SRBRS Ba	adge Modu	ıle			EUT Opera	ting Voltage/	Frequency:	15VDC Batter		
Temp:	,		Humidity:			Pressure:	: 1005mB				,			
		nov Pongo							Mossuromo	nt Distance:	2m			
		ncy Range:	30-1000IVII	72										
Notes:	Quasi-peak rea EUT transmiting		node						EU	T Max Freq:	925MHz			
		<u> </u>		FCC								FCC 15.209/RSS-GEN		
Antenna			Preamp	Antenna	Cable	Adjusted								
Polarization	Frequency	Reading	Factor	Factor	Factor	Reading	Limit	Margin	Result	Limit	Margin	Result		
(H / V)	(MHz)	(dBµV)	(dB)	(dB/m)	(dB)	(dBμV/m)	(dBµV/m)	(dB)	(Pass/Fail)	(dBμV/m)	(dB)	(Pass/Fail)		
/ eut at -10	31.357	29.6	25.5	20.4	0.4	24.9				40.0	-15.1	Pass		
l eut at -10	79.96	45.1	25.5	7.7	0.6	27.9				40.0	-12.1	Pass		
/ eut at -10	80.044	45.3	25.5	7.7	0.6	28.1				40.0	-11.9	Pass		
l eut at -10	80.474	41.8	25.5	7.7	0.6	24.6				40.0	-15.4	Pass		
/ eut at -10	82.238	42.5	25.5	7.6	0.6	25.2				40.0	-14.8	Pass		
l eut at -10	86.574	34.0	25.5	7.5	0.6	16.6				40.0	-23.4	Pass		
/ eut at -10	161.523	30.4	25.5	12.2	1.0	18.1				43.5	-25.4	Pass		
l eut at -10	161.956	31.6	25.5	12.2	1.0	19.3				43.5	-24.2	Pass		
eut at -10	221.968	37.1	25.7	10.8	1.1	23.3				46.0	-22.7	Pass		
/ eut at -10	226.995	47.8	25.7	11.0	1.2	34.3				46.0	-11.7	Pass		
/ eut at -10	633.934	31.0	25.5	19.8	1.8	27.1				46.0	-18.9	Pass		
eut at -10	902.0	35.0	25.8	22.5	2.1	33.8				46.0	-12.2	Pass		
l eut at -10	902.0	25.9	25.8	22.5	2.1	24.7				46.0	-21.3	Pass		
eut at -10	928.0	35.2	25.8	22.5	2.1	34.0				46.0	-12.0	Pass		
eut at -10	928.0	25.8	25.8	22.5	2.1	24.6				46.0	-21.4	Pass		
V eut at 10	30.127	29.7	25.5	21.3	0.4	25.9				40.0	-14.1	Pass		
V eut at 10	79.975	43.6	25.5	7.7	0.6	26.4				40.0	-13.6	Pass		
V eut at 10	81.771	41.0	25.5	7.6	0.6	23.7				40.0	-16.3	Pass		
V eut at 10	222,109	47.9	25.7	10.8	1.1	34.1				46.0	-11.9	Pass		
V eut at 10	226.901	48.3	25.7	11.0	1.2	34.8				46.0	-11.2	Pass		
V eut at 10	231.274	48.0	25.7	11.2	1.2	34.7				46.0	-11.3	Pass		
H eut at 10	74.148	33.4	25.5	8.2	0.6	16.7				40.0	-23.3	Pass		
H eut at 10	80.062	42.1	25.5	7.7	0.6	24.9				40.0	-15.1	Pass		
H eut at 10	85.73	32.8	25.5	7.5	0.6	15.4				40.0	-24.6	Pass		
H eut at 10	207.491	38.0	25.7	10.7	1.0	24.0				43.5	-19.5	Pass		
Heut at 10	226.986	41.3	25.7	11.0	1.2	27.8				46.0	-18.2	Pass		
V eut at 10	902.0	35.6	25.8	22.5	2.1	34.4				46.0	-11.6	Pass		
Heut at 10	902.0	30.6	25.8	22.5	2.1	29.4				46.0	-16.6	Pass		
eut at 10	928.0	29.4	25.8	22.5	2.1	28.2				46.0	-17.8	Pass		
Heut at 10	928.0	29.6	25.8	22.5	2.1	28.4				46.0	-17.6	Pass		
H eut at 10	846.684	30.4	25.7	21.8	2.1	28.6				46.0	-17.4	Pass		
	le Result:	Pass	by	-11.2					W	orst Freq:	226.9 !			
								Cable C						
Analyzer:	EMI Chamber		Preamp:	Asset #178) 1				Asset #2051 Red-Brown		Cable 3: - Preselector: -			





Rev. 7/4/2016 Spectrum Analyzers / Receivers / Preselectors Range MN Mfr SN Cat Calibration Due Calibrated on Asset MXE EMI Receiver 20Hz-26.5GHz MY51210181 2093 7/21/2016 7/21/2015 N9038A Agilent Radiated Emissions Sites FCC Code IC Code VCCI Code Range Cat Calibration Due Calibrated on 30-1000MHz EMI Chamber 1 719150 2762A-6 A-0015 3/21/2017 3/21/2015 Preamps / Couplers Attenuators / Filters MN Calibrated on Range SN Cat Calibration Due 0.009-2000MHz ZFL-1000-LN CS N/A 802 9/17/2016 9/17/2015 Calibrated on Antennas Range MN Mfr SN Asset Cat Calibration Due 30-2000MHz JB1 Red-Brown Bilog Sunol A0032406 1218 12/4/2016 **Meteorological Meters** MN Mfr SN Cat Calibration Due Calibrated on BA928 C3166-1 831 Weather Clock (Pressure Only) Oregon Scientific 4/28/2018 4/28/2016 TH A#2080 HTC-1 4/5/2017 4/5/2016 HDE 2080 Ш Cables Calibration Due Calibrated on Range Florida RF Asset #1784 9kHz - 18GHz 3/7/2017 3/7/2016 Asset #2051 9kHz - 18GHz Florida RF Ш 3/2/2017 3/2/2016

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

Radiated Emissions Table Company: Amazon Robotics LLC Work Order: Q1922 EUT Desc: SRBRS Badge Module EUT Operating Voltage/Frequency: 15VDC Battery Engineer: Jason Haley Humidity: 36% Temp: 22°C Pressure: 1005mB Frequency Range: 1-6GHz Measurement Distance: 3m Notes: Noise Floor Readings EUT transmiting in normal mode at level 10. EUT Max Freq: 925MHz FCC 15.209 High Frequency - Peak FCC 15.209 High Frequency - Average Adjusted Polarization Reading Reading Factor Factor Factor Peak Readin Avg Reading Limit Result Limit Margin (dBµV) (dBµV/m) (dBµV) (dB/m) (dBµV/m (H / V) Horizontal 1850.0 26.0 16.6 18.8 30.8 3.2 41.2 31.8 74.0 -32.8 Pass 54.0 -22.2 Pass Horizontal 2775.0 28.5 18.4 20.1 33.0 4.5 45.9 35.8 74.0 -28.1 Pass 54.0 -18.2 Pass 54.0 3700.0 19.1 44.8 36.7 74.0 -17.3 Pass Horizontal 16.9 33.4 5.5 -29.2 Pass Horizontal 4625.0 25.1 15.7 17.9 34.3 6.0 47.5 38.1 74.0 -26.5 Pass 54.0 -15.9 Pass Horizontal 5550.0 25.2 15.1 17.6 34.9 6.8 49.3 39.2 74.0 -24.7Pass 54.0 -14.8 Pass Pass Worst Freq: 5550 0 MHz Table Result: by -14 8 dB

Test Site: EMI Chamber 1 Cable 1: Asset #1784 Cable 2: Asset #2051 Cable 3: --
Analyzer: Rental SA#5 Preamp: Asset #1517 Antenna: Blue Horn Preselector: --
CSsoft Radiated Emissions Calculator v 1.017.165

Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor

Radiated Emissions Table Company: Amazon Robotics LLC Date: 15-Jul-16 Work Order: Q1922 Engineer: Jason Halev EUT Desc: SRBRS Badge Module EUT Operating Voltage/Frequency: 15VDC Battery Temp: 22°C Humidity: 36% Pressure: 1002mB Frequency Range: 6-10GHz Measurement Distance: 1m Notes: Noise Floor readings EUT Max Freq: 925MHz EUT transmiting in normal mode at level 10. FCC 15.209 High Frequency - Peak FCC 15.209 High Frequency - Average Antenna Peak Preamp Antenna Cable Adjusted Adjusted Average Reading Margin Margin Reading Peak Reading Avg Reading Limit Limit (H / V) (MHz) (dBuV) (dBuV) (dB) (dB/m) (dB) (dBuV/m (dBuV/m dBuV/m (Pass/Fail dBuV/m (Pass/Fail 6475.0 13.4 17.4 35.8 48.1 39.2 83.5 -35.4 Pass -24.3 Pass Vert 22.3 7.4 63.5 Vert 7400 0 21 4 13.2 17.2 36.0 7.7 47.9 39.7 83.5 -35.6 Pass 63.5 -23.8 Pass Vert 8325.0 22.5 13.6 17.6 36.1 8.4 49.4 40.5 83.5 -34.1 Pass 63.5 -23.0 Pass Table Result: Pass by -22.1 dB Worst Freq: 9250.0 MHz





Rev. 7/4/2016 Spectrum Analyzers / Receivers / Preselectors MXE EMI Receiver	Range 20Hz-26.5GHz	MN N9038A	Mfr Agilent	SN MY51210181	Asset 2093	Cat 	Calibration Due 7/21/2016	Calibrated on 7/21/2015
Radiated Emissions Sites EMI Chamber 1	FCC Code 719150	IC Code 2762A-6	VCCI Code A-0015	Range 1-18GHz		Cat I	Calibration Due 5/23/2017	Calibrated on 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	1	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	1	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.

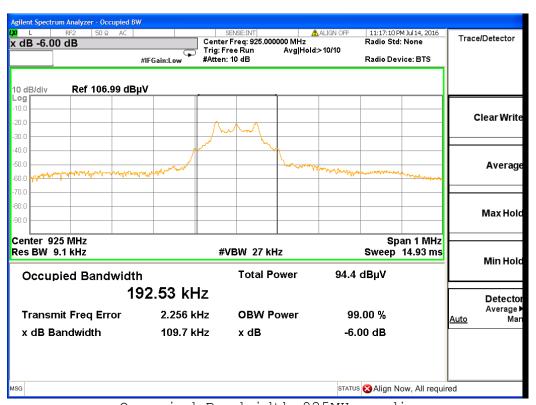




Occupied Bandwidth

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]



Occupied Bandwidth 925MHz radio





Occupied Bandwidth 125kHz radio



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 Radiated Emissions (30-1000MHz)	Expanded Uncertainty k=2	Maximum allowable uncertainty
NIST CISPR	5.6dB 4.6dB	N/A 5.2dB (Ucispr)
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 CISPR	3.9dB 3.6dB	N/A 3.6dB (Ucispr)
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 x 10 ⁻⁸	1 x 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 Člient, 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.

 3. 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.

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