



# TEST REPORT



Applicant	Blues Wireless Inc.
Address	50 Dunham Ridge Suite 1650 Beverly, MA 01915

Model	NOTE-ESP
Date of tests	Sept 16 – 21, 2023

The submitted sample of the above equipment has been tested according to the requirements of the following standards:

EN 300 328 V2.2.2 (2019-07)

**CONCLUSION: The submitted sample was found to COMPLY with the test requirement**

Prepared by Bryan Valcourt EMC Engineer	Approved by Yunus Faziloglu Wireless Manager
	 Date: Oct 30, 2023

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
1	Original release	Oct 30, 2023



## 1. SUMMARY OF TEST RESULTS

The EUT was against the following requirements:

EN 300 328 V2.2.2		
Clause	Test Parameter	Results
4.3.2.9	Transmitter unwanted emissions in the spurious domain	Pass

**Note:** Radiated spurious emissions compliance verification only for integration purposes of a previously approved radio module.



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**1.1. TEST INSTRUMENTS**

Rev. 9/22/2023

<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>
2093 MXE EMI Receiver	20Hz-26.5GHz	N9038A	Agilent	MY51210181	2093	I	3/30/2024	3/30/2023
<b>Radiated Emissions Sites</b>	<b>FCC Code</b>	<b>IC Code</b>	<b>VCCI Code</b>	<b>Range</b>	<b>Asset</b>	<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>
EMI Chamber 2	719150	2762A-7	A-0015	30-1000MHz	1686	I	12/28/2024	12/28/2022
EMI Chamber 2	719150	2762A-7	A-0015	1-18GHz	1686	I	12/28/2024	12/28/2022
<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>
8449B HF Preamp	1-18GHz	8449B	Agilent	1149055		II	11/1/2023	11/1/2022
8447F Rental PA	9KHz-1.3GHz	84477F	HP	3113A05395		II	10/17/2023	10/17/2022
<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>
Red-Brown Bilog	30-2000MHz	JB1	Sunol	A0032406	1218	I	4/6/2025	4/6/2023
Blue Horn	1-18Ghz	3117	ETS	157647	1861	I	3/27/2025	3/27/2023
<b>Meteorological Meters/Chambers</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	12/15/2025	12/15/2022
Asset #2654		1235C97	Control Company	200477432	2654	I	8/18/2025	8/18/2022
<b>Cables</b>	<b>Range</b>		<b>Mfr</b>			<b>Cat</b>	<b>Calibration Due</b>	<b>Calibrated on</b>
Asset #2466	9KHz-18GHz		MegaPhase			II	11/1/2023	11/1/2022
Asset #2608	9KHz-18GHz		Pasternack			II	11/1/2023	11/1/2022
Asset #2682	9KHz-18GHz		Pasternack			II	10/6/2023	10/6/2022

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



## 1.2. 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. Values for measurement uncertainty are calculated per ETSI TR 100 028 (2001). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Expanded Uncertainty k=2	Maximum allowable uncertainty
Radio frequency (@ 2.4GHz)	3.23 x 10 <sup>-8</sup>	1 x 10 <sup>-7</sup>
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		



## 2. GENERAL INFORMATION

### 2.1. GENERAL DESCRIPTION OF EUT

<b>NOMINAL VOLTAGE</b>	5VDC
<b>EQUIPMENT TYPE</b>	Non-FHSS Equipment
<b>RADIO TECHNOLOGY</b>	WLAN (802.11b/g/n(HT20)/n(HT40))
<b>OPERATING FREQUENCY</b>	802.11b/g/n(HT20): 2412 - 2472MHz 802.11n(HT40): 2422 - 2462MHz
<b>EUT POWER/ATTENUATION SETTINGS</b>	Power reductions were necessary. Attenuation settings required for compliance can be found on the corresponding data tables.
<b>ANTENNA TYPE</b>	PCB antenna with 3.26dBi gain Note: Blues Wireless Inc. has declared that they have not modified the original antenna as supplied on the PCB by the radio module manufacturer.

Lowest clock frequency in the device (used/generated): 80MHz

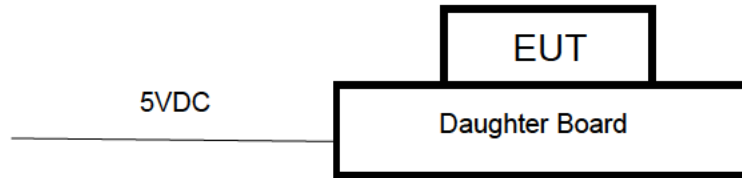
Highest clock frequency in the device (used/generated): 2480MHz

EUT Configuration											
Work Order: X0646 Company: Blues Wireless Inc. Company Address: 50 Dunham Ridge Suite 1650 Beverly, MA 01915 Contact: Robert [REDACTED] Present: Yes, Sean Taylor											
<b>MN</b>			<b>PN</b>			<b>SN</b>					
EUT:			NOTE-ESP			4827E21DED00					
EUT Description: Embeddable Wifi Communications Module EUT Max Frequency: 2480MHz EUT Min Frequency: 80MHz											
<b>Support Equipment:</b>			<b>MN</b>			<b>SN</b>					
Daughter Board			CARR-B			N/A					
Dell Inspiron Lap top											
Archer Wifi Router			AX21			Y218003000680					
<b>EUT Ports:</b>											
Port Label	Port Type	No. of ports	No. Populated	Cable Type	Shielded	Ferrites	Length	Max Length	In/Out	NEBS Type	Unpopulated Reason
Micro USB	USB	1	0	USB	Y	N	2m	5m	Inside		On daughter Board for Set Up
2 Pin JST Lipo Connection	Battery	1	0	Twisted Pair	N	N	0.1m	0.1m	Inside		Connected to DC Power Supply
Qwic 12C	Twisted pair	1	0	Twisted Pair	N	N	0.1m	0.1m	Inside		For Client connectivity

EUT test modes:

TEST MODE	DESCRIPTION
A	Continuous Transmit at selected data rate (Duty-cycle: >98%)

**EUT SETUP BLOCK DIAGRAM**  
**Radiated Emissions EUT Setup**



Following channels/modes were selected for the applicable tests below.

TEST	TEST MODE	AVAILABLE CHANNELS	TESTED CHANNEL	MODULATION TYPE	DATA RATE (Mbps)	Notes
TxSE<1G	A	1 to 11	11	802.11b	1Mbps	1, 3
TxSE≥1G	A	1 to 11	11	802.11b	1 Mbps	1, 2, 3
		1 to 11	11	802.11g	6 Mbps	
		1 to 11	11	802.11n HT20	MCS0	
		3 to 9	9	802.11n HT40	MCS0	

Note 1: Only 1 channel was tested for compliance verification purposes.

Note 2: Only 802.11n and 802.11g modes were tested in 6-13GHz range for compliance verification purposes.

Note 3: For radiated emissions, worst-case orientation was found when the EUT was positioned on Y-axis as shown in the Test Setup Photos section of this report.

TxSE<1G: Tx spurious emissions below 1GHz

TxSE≥1G: Tx spurious emissions above 1GHz

## 2.2. MEASUREMENT PROCEDURE USED

All tests were performed in accordance with the measurement procedures in the following standard:

**EN 300 328 V2.2.2 (2019-07)**

Deviations: None



### 3. TEST PROCEDURES AND RESULTS

#### 3.1. TRANSMITTER SPURIOUS EMISSIONS

##### 3.1.1. LIMITS OF TRANSMITTER SPURIOUS EMISSIONS

Transmitter limits for narrowband spurious emissions:

Frequency Range	Maximum Power Limit (e.r.p. ( $\leq 1$ GHz) e.i.r.p. ( $> 1$ GHz))	Bandwidth
30 MHz to 47 MHz	-36dBm	100kHz
47 MHz to 74 MHz	-54dBm	100kHz
74 MHz to 87,5 MHz	-36dBm	100kHz
87,5 MHz to 118 MHz	-54dBm	100kHz
118 MHz to 174 MHz	-36dBm	100kHz
174 MHz to 230 MHz	-54dBm	100kHz
230 MHz to 470 MHz	-36dBm	100kHz
470 MHz to 694 MHz	-54dBm	100kHz
694 MHz to 1 GHz	-36dBm	100kHz
1GHz ~ 12.75GHz	-30dBm	1MHz

Note: These limits are e.r.p. for emissions up to 1 GHz and e.i.r.p. for emissions above 1 GHz.

##### 3.1.2. TEST PROCEDURE

Refer to chapter 5.4.9.2 of ETSI EN 300 328 V2.2.2.

Measurement	
<input type="checkbox"/> Conducted measurement	<input checked="" type="checkbox"/> Radiated measurement



**Test Report for Blues Wireless Inc.**  
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**3.1.3. TEST RESULTS**

Bureau Veritas Consumer Product Services Inc. Radiated Emissions Electric Field 3m Distance 30-1000MHz Vertical Data Notes: 11b 1Mbps Channel 11 0.5% Attenuation	Work Order - X0646 EUT Power Input - 5VDC Test Site - Chamber 2 Conditions - 22.3°C; 57.1%RH; 1000mBar Test Engineer - Bryan Valcourt Date of Test - September 20, 2023
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Frequency (MHz)	Raw RMS (dBµV)	Correction Factor (dB/m)	Adjusted RMS (dBµV/m)	RMS Limit 300 328 (dBµV/m)	RMS Margin (dB)	PMS Result (Pass/Fail)	RMS Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
52.92	38.055	-11.8	26.255	41.2	-14.945	PASS	--	186	0
193.903	34.109	-6.5	27.609	41.2	-13.591	PASS	--	153	155
213.708	29.213	-7.4	21.813	41.2	-19.387	PASS	--	137	0
483.383	29.222	-0.8	28.422	41.2	-12.778	PASS	-12.778	137	0
525.323	26.251	-0.8	25.451	41.2	-15.749	PASS	--	182	0
538.556	25.426	-0.4	25.026	41.2	-16.174	PASS	--	185	0

**30-1000MHz 802.11b Vertical RMS**

Bureau Veritas Consumer Product Services Inc. Radiated Emissions Electric Field 3m Distance 30-1000MHz Horizontal Data Notes: 11b 1Mbps Channel 11 0.5% Attenuation	Work Order - X0646 EUT Power Input - 5VDC Test Site - Chamber 2 Conditions - 22.3°C; 57.1%RH; 1000mBar Test Engineer - Bryan Valcourt Date of Test - September 20, 2023
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Frequency (MHz)	Raw RMS (dBµV)	Correction Factor (dB/m)	Adjusted RMS (dBµV/m)	RMS Limit 300 328 (dBµV/m)	RMS Margin (dB)	PMS Result (Pass/Fail)	RMS Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
481.867	28.662	-0.9	27.762	41.2	-13.438	PASS	--	100	0
497.317	26.216	-0.7	25.516	41.2	-15.684	PASS	--	275	0
503.244	28.633	-0.5	28.133	41.2	-13.067	PASS	-13.067	100	329
512.925	28.38	-0.9	27.48	41.2	-13.72	PASS	--	170	305
524.442	27.987	-0.9	27.087	41.2	-14.113	PASS	--	100	0
539.517	25.841	-0.4	25.441	41.2	-15.759	PASS	--	100	0

**30-1000MHz 802.11b Horizontal RMS**



**Test Report for Blues Wireless Inc.**  
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Bureau Veritas Consumer Product Services Inc. Radiated Emissions Electric Field 3m Distance Top Peaks Vertical 1-6GHz Notes: Constant Transmit Mode 11b 1Mbps Channel 11 0.5% Attenuation	Work Order - X0646 EUT Power Input - 5VDC Test Site - Chamber 2 Conditions - 22.1°C; 49.5%RH; 997mBar Test Engineer - Bryan Valcourt Date of Test - September 16, 2023
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Frequency (MHz)	Raw RMS Reading (dBµV)	Correction Factor (dB/m)	Adjusted RMS Amplitude (dBµV/m)	RMS Lim: ETSI_EN_300_328_TX_spu rious (dBµV/m)	Margin to RMS Limit (dB)	RMS Limit Test Results (Pass/Fail)	RMS Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1023.13	51.4	-9.6	41.9	65.2	-23.3	PASS		200	41
1066.38	51.5	-9.4	42.1	65.2	-23.1	PASS		200	69
2190.13	46.3	0.7	47	65.2	-18.2	PASS		300	0
2811.75	45	3.9	48.8	65.2	-16.4	PASS		100	81
4923.88	54.1	3.5	57.5	65.2	-7.7	PASS	-7.7	100	304

**1-6GHz 802.11b Vertical RMS**

Bureau Veritas Consumer Product Services Inc. Radiated Emissions Electric Field 3m Distance Top Peaks Horizontal 1-6GHz Notes: Constant Transmit Mode 11b 1Mbps Channel 11 0.5% Attenuation	Work Order - X0646 EUT Power Input - 5VDC Test Site - Chamber 2 Conditions - 22.1°C; 49.5%RH; 997mBar Test Engineer - Bryan Valcourt Date of Test - September 16, 2023
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Frequency (MHz)	Raw RMS Reading (dBµV)	Correction Factor (dB/m)	Adjusted RMS Amplitude (dBµV/m)	RMS Lim: ETSI_EN_300_328_TX_spu rious (dBµV/m)	Margin to RMS Limit (dB)	RMS Limit Test Results (Pass/Fail)	RMS Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1059.13	51.6	-9.5	42.2	65.2	-23	PASS		200	291
1484.88	49	-6.4	42.6	65.2	-22.6	PASS		100	217
2175.25	46.9	0.5	47.4	65.2	-17.8	PASS		200	208
2809	45.8	4	49.9	65.2	-15.3	PASS		200	42
4924	55.4	3.5	58.9	65.2	-6.3	PASS	-6.3	100	0

**1-6GHz 802.11b Horizontal RMS**



**Test Report for Blues Wireless Inc.**  
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Bureau Veritas Consumer Product Services Inc. Radiated Emissions Electric Field 3m Distance Top Peaks Vertical 1-6GHz Notes: Constant Transmit Mode 11g 6Mbps Channel 11 0.5% Attenuation	Work Order - X0646 EUT Power Input - 5VDC Test Site - Chamber 2 Conditions - 22.1°C; 49.5%RH; 997mBar Test Engineer - Bryan Valcourt Date of Test - September 16, 2023
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Frequency (MHz)	Raw RMS Reading (dBµV)	Correction Factor (dB/m)	Adjusted RMS Amplitude (dBµV/m)	RMS Lim: ETSI_EN_300_328_TX_spu rious (dBµV/m)	Margin to RMS Limit (dB)	RMS Limit Test Results (Pass/Fail)	RMS Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1018.63	51.2	-9.5	41.7	65.2	-23.5	PASS		200	41
1101.5	51.8	-8.8	42.9	65.2	-22.3	PASS		200	41
1488.75	49.1	-6.4	42.7	65.2	-22.5	PASS		200	69
2187.25	46.9	0.7	47.6	65.2	-17.6	PASS		300	135
2808.75	45.3	4	49.4	65.2	-15.8	PASS		300	246
4925.13	50.1	3.5	53.5	65.2	-11.7	PASS	-11.7	100	299

**1-6GHz 802.11g Vertical RMS**

Bureau Veritas Consumer Product Services Inc. Radiated Emissions Electric Field 3m Distance Top Peaks Horizontal 1-6GHz Notes: Constant Transmit Mode 11g 6Mbps Channel 11 0.5% Attenuation	Work Order - X0646 EUT Power Input - 5VDC Test Site - Chamber 2 Conditions - 22.1°C; 49.5%RH; 997mBar Test Engineer - Bryan Valcourt Date of Test - September 16, 2023
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Frequency (MHz)	Raw RMS Reading (dBµV)	Correction Factor (dB/m)	Adjusted RMS Amplitude (dBµV/m)	RMS Lim: ETSI_EN_300_328_TX_spu rious (dBµV/m)	Margin to RMS Limit (dB)	RMS Limit Test Results (Pass/Fail)	RMS Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1026.25	51.7	-9.6	42.1	65.2	-23.1	PASS		200	16
2200.13	46.5	0.7	47.2	65.2	-18	PASS		100	271
2814.38	45.5	3.7	49.2	65.2	-16	PASS		100	0
4923.63	51.1	3.5	54.6	65.2	-10.6	PASS	-10.6	100	0

**1-6GHz 802.11g Horizontal RMS**



**Test Report for Blues Wireless Inc.  
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Bureau Veritas Consumer Product Services Inc. Radiated Emissions Electric Field 3m Distance Top Peaks Vertical 1-6GHz Notes: Constant Transmit Mode 11n(20) Mcs0 Channel 11 0.5% Attenuation	Work Order - X0646 EUT Power Input - 5VDC Test Site - Chamber 2 Conditions - 22.1°C; 49.5%RH; 997mBar Test Engineer - Bryan Valcourt Date of Test - September 16, 2023
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Frequency (MHz)	Raw RMS Reading (dBµV)	Correction Factor (dB/m)	Adjusted RMS Amplitude (dBµV/m)	RMS Lim: ETSI_EN_300_328_TX_spu rious (dBµV/m)	Margin to RMS Limit (dB)	RMS Limit Test Results (Pass/Fail)	RMS Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1027.13	51.3	-9.6	41.7	65.2	-23.5	PASS		200	42
2164.25	47.3	0.2	47.6	65.2	-17.6	PASS		300	79
2813.63	45.5	3.8	49.2	65.2	-16	PASS		100	190
4925.13	50.5	3.5	53.9	65.2	-11.3	PASS	-11.3	100	300

**1-6GHz 802.11n(20) Vertical RMS**

Bureau Veritas Consumer Product Services Inc. Radiated Emissions Electric Field 3m Distance Top Peaks Horizontal 1-6GHz Notes: Constant Transmit Mode 11n(20) Mcs0 Channel 11 0.5% Attenuation	Work Order - X0646 EUT Power Input - 5VDC Test Site - Chamber 2 Conditions - 22.1°C; 49.5%RH; 997mBar Test Engineer - Bryan Valcourt Date of Test - September 16, 2023
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Frequency (MHz)	Raw RMS Reading (dBµV)	Correction Factor (dB/m)	Adjusted RMS Amplitude (dBµV/m)	RMS Lim: ETSI_EN_300_328_TX_spu rious (dBµV/m)	Margin to RMS Limit (dB)	RMS Limit Test Results (Pass/Fail)	RMS Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1146	50.4	-8.4	42	65.2	-23.2	PASS		200	208
2164.63	46.9	0.3	47.2	65.2	-18	PASS		102	162
2801.13	45.5	4.4	49.9	65.2	-15.3	PASS		300	217
4925	49.7	3.5	53.1	65.2	-12.1	PASS	-12.1	102	0
5960	45.8	4.1	49.9	65.2	-15.3	PASS		102	217

**1-6GHz 802.11n(20) Horizontal RMS**



**Test Report for Blues Wireless Inc.**  
**Report No. EX0646-3 Issue 1**



Bureau Veritas Consumer Product Services Inc. Radiated Emissions Electric Field 3m Distance Top Peaks Vertical 1-6GHz Notes: Constant Transmit Mode 11n(40) Mcs0 Channel 9 0.5% Attenuation	Work Order - X0646 EUT Power Input - 5VDC Test Site - Chamber 2 Conditions - 22.3°C; 57.1%RH; 1000mBar Test Engineer - Bryan Valcourt Date of Test - September 20, 2023
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Frequency (MHz)	Raw RMS Reading (dBµV)	Correction Factor (dB/m)	Adjusted RMS Amplitude (dBµV/m)	RMS Lim: ETSI_EN_300_328_TX_s purious (dBµV/m)	Margin to RMS Limit (dB)	RMS Limit Test Results (Pass/Fail)	RMS Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1070.5	51.9	-9.3	42.6	65.2	-22.6	PASS		300	162
2165.13	48.3	0.3	48.5	65.2	-16.7	PASS		200	207
2808.25	46.6	4.1	50.6	65.2	-14.6	PASS		200	235
4908	47.8	3.6	51.4	65.2	-13.8	PASS	-13.8	100	273

**1-6GHz 802.11n(40) Vertical RMS**

Bureau Veritas Consumer Product Services Inc. Radiated Emissions Electric Field 3m Distance Top Peaks Horizontal 1-6GHz Notes: Constant Transmit Mode 11n(40) Mcs0 Channel 9 0.5% Attenuation	Work Order - X0646 EUT Power Input - 5VDC Test Site - Chamber 2 Conditions - 22.3°C; 57.1%RH; 1000mBar Test Engineer - Bryan Valcourt Date of Test - September 20, 2023
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Frequency (MHz)	Raw RMS Reading (dBµV)	Correction Factor (dB/m)	Adjusted RMS Amplitude (dBµV/m)	RMS Lim: ETSI_EN_300_328_TX_s purious (dBµV/m)	Margin to RMS Limit (dB)	RMS Limit Test Results (Pass/Fail)	RMS Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1073	53.1	-9.3	43.8	65.2	-21.4	PASS		300	274
1338.5	48.6	-6	42.7	65.2	-22.5	PASS		300	191
2188.5	47.8	0.7	48.5	65.2	-16.7	PASS		300	191
2812.5	47.4	3.8	51.3	65.2	-13.9	PASS		100	52
4909	49.5	3.6	53.1	65.2	-12.1	PASS	-12.1	100	0

**1-6GHz 802.11 n(40) Horizontal RMS**



**Test Report for Blues Wireless Inc.**  
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Bureau Veritas Consumer Product Services Inc. Radiated Emissions Electric Field 1m Distance Top Peaks Vertical 6-18GHz Notes: Constant Transmit Mode 11b 1Mbps Channel 11 0.5% Attenuation	Work Order - X0646 EUT Power Input - 5VDC Test Site - Chamber 2 Conditions - 21.7°C; 51.7%RH; 1017mBar Test Engineer - Bryan Valcourt Date of Test - September 21, 2023
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Frequency (MHz)	Raw RMS Reading (dBµV)	Correction Factor (dB/m)	Adjusted RMS Amplitude (dBµV/m)	RMS Lim: ETSI_EN_300_328_TX_s purious (dBµV/m)	Margin to RMS Limit (dB)	RMS Limit Test Results (Pass/Fail)	RMS Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
9847.73	50.1	6.4	56.5	74.7	-18.2	PASS		175	70
11703.95	48	8.8	56.8	74.7	-17.9	PASS	-17.9	175	125

**6-13GHz 802.11b Vertical RMS**

Bureau Veritas Consumer Product Services Inc. Radiated Emissions Electric Field 1m Distance Top Peaks Horizontal 6-18GHz Notes: Constant Transmit Mode 11b 1Mbps Channel 11 0.5% Attenuation	Work Order - X0646 EUT Power Input - 5VDC Test Site - Chamber 2 Conditions - 21.7°C; 51.7%RH; 1017mBar Test Engineer - Bryan Valcourt Date of Test - September 21, 2023
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Frequency (MHz)	Raw RMS Reading (dBµV)	Correction Factor (dB/m)	Adjusted RMS Amplitude (dBµV/m)	RMS Lim: ETSI_EN_300_328_TX_s purious (dBµV/m)	Margin to RMS Limit (dB)	RMS Limit Test Results (Pass/Fail)	RMS Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
9848.08	51.9	6.4	58.2	74.7	-16.5	PASS	-16.5	200	52
11673.33	47.9	8.9	56.8	74.7	-17.9	PASS		150	272

**6-13GHz 802.11b Horizontal RMS**



**Test Report for Blues Wireless Inc.  
Report No. EX0646-3 Issue 1**



Bureau Veritas Consumer Product Services Inc. Radiated Emissions Electric Field 1m Distance Top Peaks Vertical 6-18GHz Notes: Constant Transmit Mode 11g 6Mbps Channel 11 0.5% Attenuation	Work Order - X0646 EUT Power Input - 5VDC Test Site - Chamber 2 Conditions - 21.7°C; 51.7%RH; 1017mBar Test Engineer - Bryan Valcourt Date of Test - September 21, 2023
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Frequency (MHz)	Raw RMS Reading (dBμV)	Correction Factor (dB/m)	Adjusted RMS Amplitude (dBμV/m)	RMS Lim: ETSI_EN_300_328_TX_s purious (dBμV/m)	Margin to RMS Limit (dB)	RMS Limit Test Results (Pass/Fail)	RMS Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
11766.95	48.1	8.8	56.9	74.7	-17.8	PASS	-17.8	175	181

**6-13GHz 802.11g Vertical RMS**

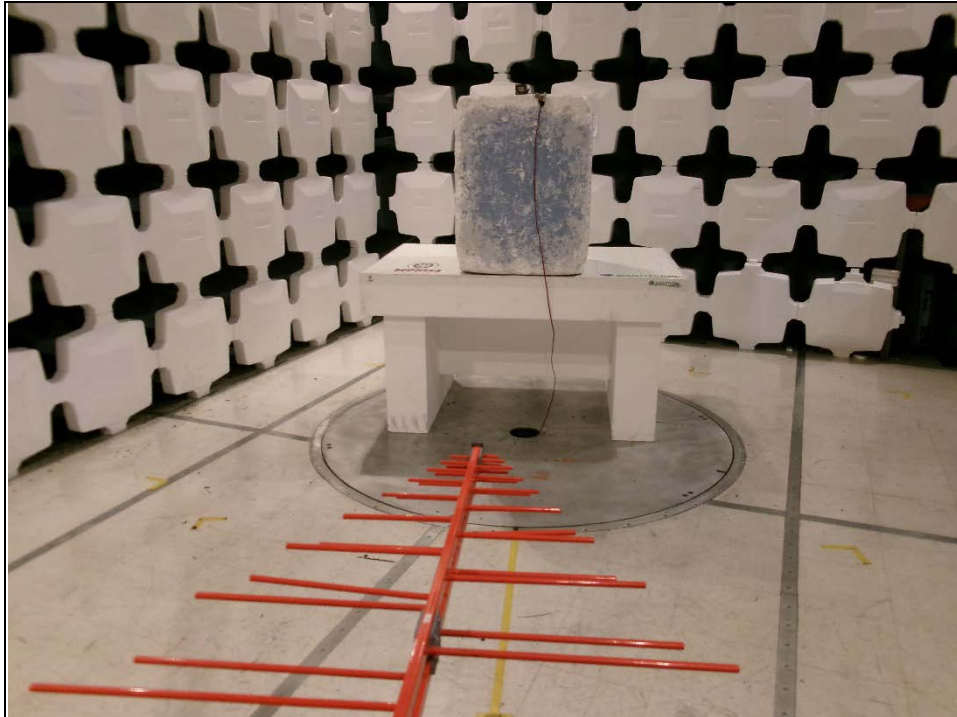
Bureau Veritas Consumer Product Services Inc. Radiated Emissions Electric Field 1m Distance Top Peaks Horizontal 6-18GHz Notes: Constant Transmit Mode 11g 6Mbps Channel 11 0.5% Attenuation	Work Order - X0646 EUT Power Input - 5VDC Test Site - Chamber 2 Conditions - 21.7°C; 51.7%RH; 1017mBar Test Engineer - Bryan Valcourt Date of Test - September 21, 2023
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Frequency (MHz)	Raw RMS Reading (dBμV)	Correction Factor (dB/m)	Adjusted RMS Amplitude (dBμV/m)	RMS Lim: ETSI_EN_300_328_TX_s purious (dBμV/m)	Margin to RMS Limit (dB)	RMS Limit Test Results (Pass/Fail)	RMS Limit Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7385.3	49.1	4	53.2	74.7	-21.5	PASS		175	315
9850.17	48.4	6.4	54.7	74.7	-20	PASS		125	263
11717.77	48.2	8.8	57	74.7	-17.7	PASS	-17.7	100	218

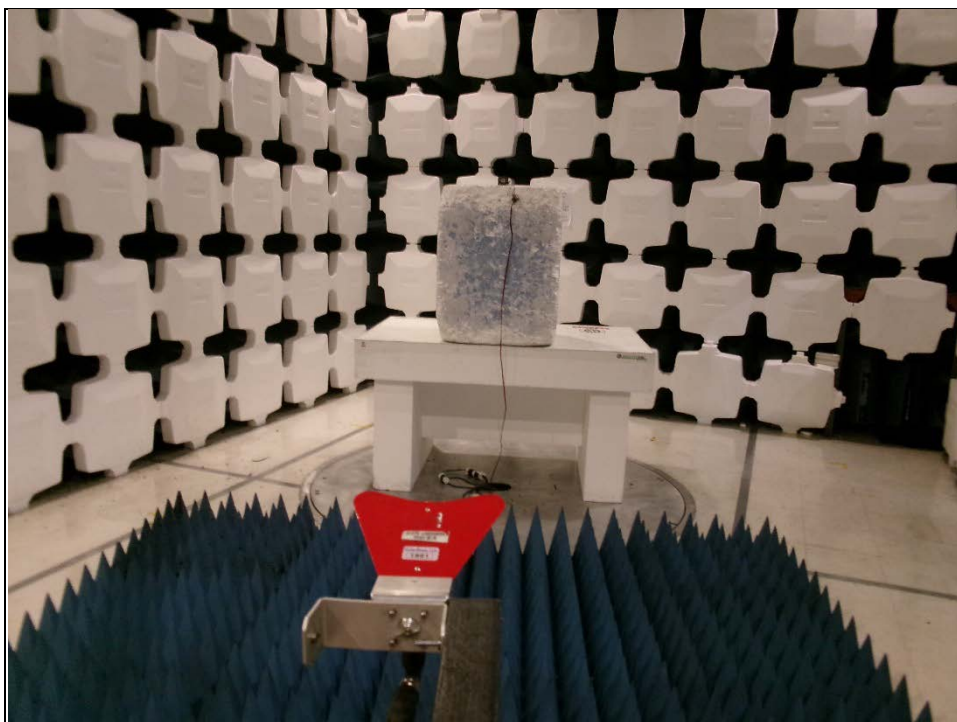
**6-13GHz 802.11g Horizontal RMS**



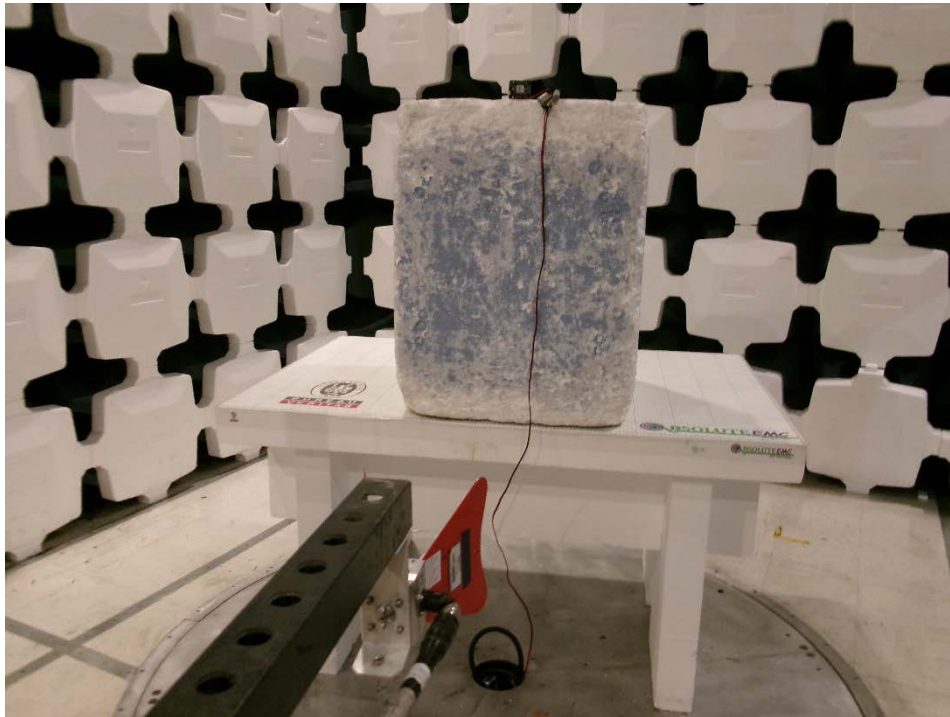
#### 4 PHOTOGRAPHS OF THE TEST CONFIGURATIONS



SPURIOUS EMISSIONS TEST BELOW 1GHZ



SPURIOUS EMISSIONS TEST 1-6GHZ



SPURIOUS EMISSIONS TEST 6-13GHz



## 5 APPENDIX A – MODIFICATIONS

No modifications were made to the EUT during the tests.

--- END OF REPORT---