

Arovast Corporation

TEST REPORT

SCOPE OF WORK FCC TESTING–LAP-C202S-WUSR

REPORT NUMBER 210520010SZN-004

[REVISED DATE]

[-----]

June 23, 2021

ISSUE DATE

PAGES

73

DOCUMENT CONTROL NUMBER FCC ID 247_b © 2017 INTERTEK





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Intertek Report No.: 210520010SZN-004

Arovast Corporation

Application For Certification

FCC ID: 2ARBY-C202S-WUSR

Smart True HEPA Air Purifier

Model: LAP-C202S-WUSR

2.4GHz Wi-Fi Transceiver

Report No.: 210520010SZN-004

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-19]

Prepared and Checked by:

Approved by:

Rode Liu Project Engineer Peter Kang Senior Technical Supervisor Date: June 23, 2021

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Intertek Testing Services Shenzhen Ltd. Longhua Branch

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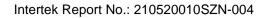
MEASUREMENT/TECHNICAL REPORT

This report concerns (check one)	Original Grant <u>X</u> Class II Change
Equipment Type: <u>DTS - Part 15 Digital T</u>	ransmission Systems (Wi-Fi transmitter portion)
Deferred grant requested per 47 CFR 0	.457(d)(1)(ii)? Yes NoX_
Company Name agrees to notify the Co	If yes, defer until : date ommission by:
company name agrees to notify the co	date
of the intended date of announcemen that date.	t of the product so that the grant can be issued on
Transition Rules Request per 15.37?	Yes NoX
If no, assumed Part 15, Subpart C fo 19] Edition] provision.	r intentional radiator - the new 47 CFR [10-01-
Report prepared by:	
	Rode Liu Intertek Testing Services Shenzhen Ltd. Longhua Branch 101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community, GuanHu Subdistrict, LongHua District, Shenzhen, P.R. China. Tel: (86 755) 8601 6288 Fax: (86 755) 8601 6661



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1.0 Summary of Test results

Applicant: Arovast Corporation Applicant Address: 1202 N. Miller St. Suite A, Anaheim, CA 92806, USA Manufacturer: Arovast Corporation Manufacturer Address: 1202 N. Miller St. Suite A, Anaheim, CA 92806, USA

Model: LAP-C202S-WUSR FCC ID: 2ARBY-C202S-WUSR

TEST ITEM	REFERENCE	RESULTS
Max. Output power	15.247(b)(3)	Pass
6 dB Bandwidth	15.247(a)(2)	Pass
Max. Power Density	15.247(e)	Pass
Out of Band Antenna Conducted Emission	15.247(d)	Pass
Radiated Emission in Restricted Bands	15.247(d), 15.209, FCC 15.205	Pass
AC Conducted Emission	15.207	Pass
Antenna Requirement	15.203	Pass (See Notes)

Notes: The EUT uses an Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.



2.0 General Description

2.1 Product Description

The Equipment Under Test (EUT) is a Smart True HEPA Air Purifier with Wi-Fi function operating at 2412-2462MHz for 802.11b/g/n-HT20, 11 channels with 5MHz channel spacing and 2422-2452MHz for 802.11n-HT40, 7 channels with 5MHz channel spacing. The EUT is powered by AC 120V, 60Hz. For more detailed features description, please refer to the user's manual.

Type of Modulation: BPSK, QPSK, 16QAM, 64QAM for OFDM; CCK, DQPSK, DBPSK for DSSS. Antenna Type: PCB Layout Antenna Gain: 3.7dBi

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

2.2 Related Submittal(s) Grants

This is an application for certification of:

DTS- Part 15 Digital Transmission Systems (2.4GHz Wi-Fi transmitter portion).

Remaining portions are subject to the following procedures:

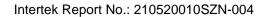
- 1. Receiver portion of WiFi: exempt from technical requirement of this Part.
- Other Digital Function: The Bluettoth EDR function is recorded in the test report: 210520010SZN-002. The Bluettoth BLE function is recorded in the test report: 210520010SZN-003, and related report for FCC SDOC is subjected to report number: 210520010SZN-001.

2.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10 (2013) and KDB 558074 D01 v05r02. Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "Justification Section" of this Application.

2.4 Test Facility

The Semi-anechoic chamber and shielded room used to collect the radiated data and conducted data are **Intertek Testing Services Shenzhen Ltd. Longhua Branch** and located at 101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community, GuanHu Subdistrict, LongHua District, Shenzhen, P.R. China. This test facility and site measurement data have been fully placed on file with File Number: CN1188.





3.0 System Test Configuration

3.1 Justification

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. The EUT was powered by AC 120V, 60Hz during the test.

On 802.11b/g/n-HT20/n-HT40 mode, only one antenna is used, and all data rate were tested and only the worst case data is shown in the report.

For maximizing emissions, the EUT was rotated through 360°, the EUT was placed on the styrene turntable with 0.8m up to 1GHz and 1.5 m above 1GHz. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

The EUT and transmitting antenna was centered on the turntable.

Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

3.2 EUT Exercising Software

The EUT exercise program (provided by client) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The worst case configuration is used in all specified testing.

The parameters of test software setting:

During the test, Channel and power controlling software provided by the applicant was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the application and is going to be fixed on the firmware of the end product.

3.3 Special Accessories

N/A.



3.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

3.5 Equipment Modification

Any modifications installed previous to testing by Arovast Corporation will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Longhua Branch.

3.6 Support Equipment List and Description

Description	Manufacturer	Model No.
USB cable (Provided by applicant)	Provided by applicant	unshielded, 0.8m
Notebook	DELL	1



Applicant: Arovast Corporation Date of Test: 10 June 2021

Model: LAP-C202S-WUSR

4.0 Measurement Results

4.1 Maximum Conducted Output Power at Antenna Terminals, FCC Rules 15.247(b)(3):

The antenna power of the EUT was connected to the input of a broadband peak RF power meter. The power meter have a video bandwidth that is greater than DTS bandwidth and utilize a fast-responding diode detector. Power was read directly at the EUT antenna terminals with cable loss added.

For antennas with gains of 6 dBi or less, maximum allowed Transmitter output is 1 watt (+30 dBm).

IEEE 802.11b (Antenna Gain = 3.7dBi) (CCK, 1Mbps)			
Frequency (MHz)Output in dBm (Peak Reading)Output in mWatt			
Low Channel: 2412 15.2 33.11		33.11	
Middle Channel: 2437 14.8 30.20		30.20	
High Channel: 2462	14.5	28.18	

IEEE 802.11g (Antenna Gain = 3.7dBi) (16QAM, 6Mbps)			
Frequency (MHz)Output in dBm (Peak Reading)Output in mWatt			
Low Channel: 2412	14.1	25.70	
Middle Channel: 2437 14.6 28.84		28.84	
High Channel: 2462	14.4	27.54	

IEEE 802.11n-HT20 (Antenna Gain = 3.7dBi) (64QAM, 6Mbps)			
Frequency (MHz)Output in dBm (Peak Reading)Output in mWatt			
Low Channel: 2412 14.7 29.51		29.51	
Middle Channel: 2437 15.2 33.11		33.11	
High Channel: 2462	14.9	30.91	



IEEE 802.11n-HT40 (Antenna Gain = 3.7dBi) (64QAM, 13.5Mbps)			
Frequency (MHz)Output in dBm (Peak Reading)Output in mWatt			
Low Channel: 2422 14.1 25.71		25.71	
Middle Channel: 2437 14.4 27.54		27.54	
High Channel: 2452	14.5	28.18	

Cable loss: 0.5 dB External Attenuation: 0 dB

Cable loss, external attenuation has been included in OFFSET function

EUT max. output level = 15.2dBm EUT max. E.I.R.P = 15.2dBm + 3.7dBi = 18.9dBm = 77.62mW

For RF Exposure, the information is saved with filename: RF exposure.pdf.



Applicant: Arovast Corporation Date of Test: 10 June 2021

Model: LAP-C202S-WUSR

4.2 Minimum 6 dB RF Bandwidth, FCC Rule 15.247(a) (2):

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 KHz according to FCC KDB 558074 D01 v05r02. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

Limit: The 6 dB Bandwidth is at least 500 kHz.

IEEE 802.11b (CCK, 1Mbps)		
Frequency (MHz)6 dB Bandwidth (MHz)		
2412	9.120	
2437	9.120	
2462	9.150	

IEEE 802.11g (16QAM, 6Mbps)		
Frequency (MHz) 6 dB Bandwidth (MHz)		
2412	16.440	
2437	16.440	
2462	16.470	

IEEE 802.11n-HT20 (64QAM, 6Mbps)		
Frequency (MHz)6 dB Bandwidth (MHz)		
2412	17.040	
2437	17.100	
2462	17.400	

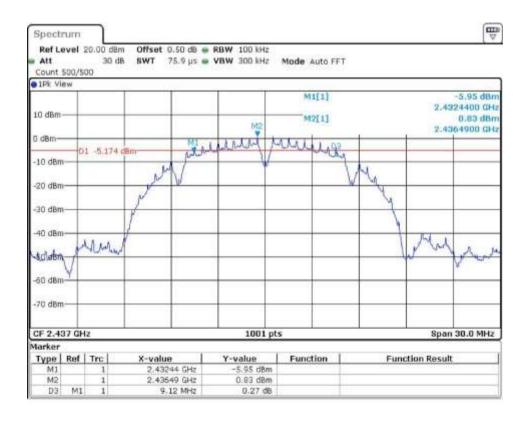
IEEE 802.11n-HT40 (64QAM, 13.5Mbps)		
Frequency (MHz)6 dB Bandwidth (MHz)		
2422	32.640	
2437	32.460	
2452	32.940	

The test plots are attached as below.



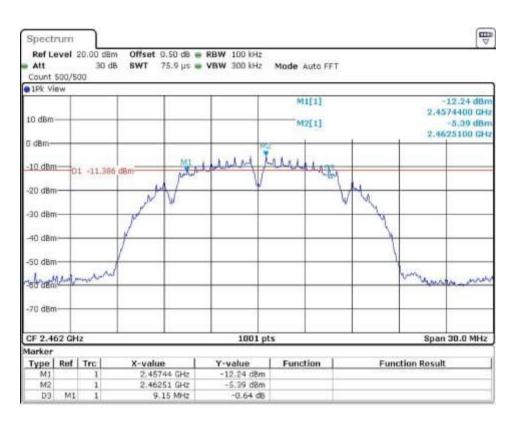
802.11b

u U U Spectrum Ref Level 20.00 dBm Offset 0.50 dB 🖷 RBW 100 kHz 8WT 75.9 µs 🖷 VBW 300 kHz Att 30 dB Mode Auto FFT Count 500/500 1Pk View M1[1] 5.86 dBm 2.4074400 GHz 10 dBm M2[1] 1,16 dBm M2 2.4114900 GHz Freferent 6 dBm-MALLAL 1 01 -4,844 0 -10 dBm Ł .1 ĸ. -20 dBm--30 dBm-40 dBm 4M Al solut Mush aplation -60 dBm -70 dBm-Span 30.0 MHz CF 2.412 GHz 1001 pts Marker Y-value -5.86 dBm Type Ref Trc Function X-value **Function Result** 2.40744 GHz MJ 2.41149 GHz M2 1.16 dBm 1 DЭ MI 9.12 MHz 0.58 dB

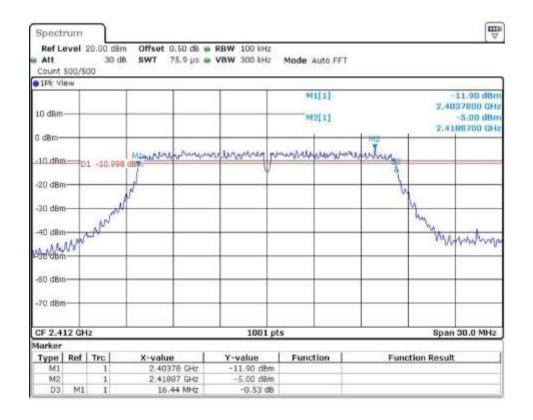




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802.11g





Intertek Report No.: 210520010SZN-004

Spect	rum									(m) V
Ref L Att Count		20.00 d 30			RBW 100 kHz VBW 300 kHz	Mode A	uto FFT			
• IPk V	iew	2417			1		Dent U			11 1 1 1 1 1 1 1
10 dBm	-						[1] [1]		2.4	-14.04 dBm 287800 GHz -7.57 dBm 438700 GHz
0 dBm-	-		-					(M2)		
-10 dBn		1 -13.5	75 det	pypingen	nonstanonanta la	manita	hereined	whereas		
-20 dBn			1		Y			4		
-30 dBr			N	-				V	4	
-40 dBr	n	P		_					wy	
-50 dBr	n p	N			_				.W.	monterin
-50 dBn -60 dBn	n.									
-70 dBn	n		-							
CF 2.4	37 GF	Iz			1001 p	ts			Spa	n 30.0 MHz
Marker										
Type	Ref	Trc	X-value		Y-value	Functi	ion	Fun	ction Resu	lt
M1	10000	1		78 GHz	-14.04 dBm	E. C.	SO 310 1	3396767	SASS/SHER	107.07 E
M2		1		97 GHz	-7.57 dBm					
D3	MI	1	16.	44 MHz	-0.63 dB					





802.11n-HT20

Count 1Pk Vi	500/5	00				C.	
10 dBm					M1[1] M2[1]		-11.00 dBn 2.4034800 GH -4.87 dBn 2.4113700 GH
-10 dBn	D	1 -10.06	Min mundar	meron monthly me	historia	Mymmings	
-20 dBn	-		1	_		-	n
-30 dBn	-	1.19	(A.
-40 dBn	-	AN	-			_	Manufactures and
-40 dBn -50 abh	Poster						+ beautioned
-60 dBn						_	
-70 dBn	-			_			
CF 2.4	12 GH	z		1001 pt	s		Span 30.0 MHz
Marker	200						
Type	Ref	Trc	X-value	Y-value	Function	Fund	tion Result
M1	1	1	2.40348 GHz				
M2 D3	1.17	1	2.41137 GH2				
	MI	1	17.04 MHz	-0.50 dB			

Ref Level 20.00 dBm Offset 0.50 dB RBW 100 iA Att 30 dB SWT 75.9 µs VBW 300 iA Count 500/500 0 0 0 0 0 10 dBm 0 0 0 0 0 0 0 10 dBm 0 <th>M1[1] -15.24 dBn</th>	M1[1] -15.24 dBn
10 dBm 0 dBm -10 dBm -10 dBm -10 dBm -20 dBm -20 dBm	
0 dBm -10 dBm 01 -13,820 dBm -20 dBm	
-10 dBm 01 -13,820 06m	M2[1] 2,4284200 GH M2[1] -7,82 dBn 2,4316300 GH
-20 dBm	
-30 dBm	
104-535 A 44-55	
-40 dBm	and the second s
-50 dBm	
-70 dBm	
CF 2.437 GHz 1001	01 pts Span 30.0 MHz
Marker	
Type Ref Trc X-value Y-value M1 1 2.42842 GHz -15.24 dB	
M1 1 2.42642 GH2 -15.24 00 M2 1 2.43163 GHz -7.92 dB	
D3 M1 1 17.1 MHz 1.31	716.00



Intertek Report No.: 210520010SZN-004

Spect	rum						(CIII)
Ref L Att Count		20.00 di 30		RBW 100 kHz VBW 300 kHz	Mode Auto FF	т	
● 1Pk V	iew.						
10 dBm	_				M1[1] M2[1]		-19.05 dBm 2.4534200 GHz -12.04 dBm 2.4566300 GHz
0 dBm-	-						
-10 dBr	n		M2 M3MW/Whan More	s- Subscredult, als	ANNING MARINA A	Maddinester	
-20 dBr	n-0	1 -18.04	+1 dem	deline and the	11111111111	and all the	
-30 dBr	n						
-40 dBr	n	Nord			-	-	Y.
-50 dBr	1-10	pre		_			"De
-50 dBr	n.					_	margare warden
-70 dBr							
CF 2.4	62 GH	z	2	1001 pt	5	200	Span 30.0 MHz
Marker	and the second second			100000000000000000000000000000000000000		11	125 Year (2000)
Туре	Ref	Trc	X-value	Y-value	Function	Function	on Result
M1	_	1	2.45342 GHz	-19.05 dBm			
M2 D3	MI	1	2.45663 GHz 17.4 MHz	-12.04 dBm -0.84 dB			
0.3	1617	1	17.4 MHZ	-0.84 GB			

802.11n-HT40

Spect			0. 00 - 0 TO - D	- PRIM 102 Min			(m ⊽
Att Count				 RBW 100 kHz VBW 300 kHz 	Mode Auto FF1	e.	
1Pk Vi	iew			147	6096753M		
10 dBm	-				M1[1] M2[1]		-16,98 dBm 2,4056900 GHz -9,65 dBm 2,4139400 GHz
0 dBm-	n-		Martin Contraction	2 Badatalana shaha ya	work to work the star		
-20 dBn	n 0	1 -15.6	154 dB	Y	hereby the providence of the	arran 103	
-30 dBn	n						h
-40 dBn		10 Mars					Mumphersun
-50 dBn							
-60 dBn	n						
-70 dBr	n					-	
CF 2.4		z		1001 pt	5		Span 60.0 MHz
Marker		-					· · · ·
Type M1	Ref	Trc	2.40568 GHz	-16.08 dBm	Function	Func	tion Result
M2		1	2.40306 GHz	-9.65 dBm			
D3	MI	1	32.64 MHz	0.14 d8			



Ref Level			1. 1. 1. 1. The second	BRBW 100 kHz				
Att Count 459/5		db SWT	132.7 µs	VBW 300 kHz	Mode Auto F	FT		
1Pk View	New							1
					M1[1]			-17,89 dBm
0 dBm								206800 GH
o ubni					M2[1]			-11.57 dBn
3 dBm		_	-	_			2.9	463600 GH
			1		M			
10 dBm			and have been	and more a	and a manual		-	
	1 -17.1	AND AND AND	Consumer an	and an interesting of the second	arenter to any and	meret surface		_
20 dBm		1º	-	1 1			V	
30 dBm								
20 0201		1						
40 dBm		×	_	_			1	
	. 1	6					May	(palmyluk
50 dBm	W	-	-				- Phil	Ca Allowed H & L
holloular	arv.				1		1	- and Mind
60 dBm	_	-	-	+ +			-	-
000000								
70 dBm								
CF 2.437 G	1z			1001 p	ots		Spa	n 60.0 MHz
larker				1				
Type Ref		X-vai		Y-value	Function	Fu	mction Resu	t
M1 M2	1		2068 GHz	-17.89 dBm -11.57 dBm				
D3 MI			2.46 MHz	-0.12 dB				
A	200.00	Office	0.60.40					1
Spectrum Ref Level Att		dBm Offset) dB SWT		 RBW 100 kHz VBW 300 kHz 		FT		[6]
Ref Level Att Count 465/5	30					FT		(H
Ref Level Att Count 465/5	30				Mode Auto F	FT		[7
Ref Level Att Count 465/5	30					FT		-20.91 dBn
Ref Level Att Count 465/5 1Pk View	30				Mode Auto F	FT	2.4	-20.91 dBr 356800 GH
Ref Level Att Count 455/5 1Pk View	30				Mode Auto F	FT	2.4	-20.91 dBr 356800 GH -14,13 dBr
Ref Level Att Count 455/5 1Pk View	30				Mode Auto F	FT	2.4	-20.91 dBr 356800 GH -14,13 dBr
Ref Level Att Count 465/5 1Pk View 10 dBm	30	dB SWT	132.7 µs	• VBW 300 kH2	Mode Auto F	FT	2.4	-20.91 dBr 356800 GH -14,13 dBr
Ref Level Att Count 465/5 1Pk View 10 dBm	30	dB SWT	132.7 µs	• VBW 300 kH2	Mode Auto F M1[1] M2[1]		2.4	-20.91 dBn 356800 GH -14,13 dBn
Ref Level Att Count 465/5 1Pk View 10 dBm	30	dB SWT	132.7 µs	• VBW 300 kH2	Mode Auto F		2.4	-20.91 dBr 356800 GH -14,13 dBr
Ref Level Att Count 465/5 1Pk View 10 dBm	30	dB SWT	132.7 µs	VBW 300 kH2	Mode Auto F M1[1] M2[1]		2.4	-20.91 dBr 356800 GH -14,13 dBr
Ref Level Att Count 465/5 1Pk View 10 dBm 10 dBm 10 dBm 20 dBm	30	dB SWT	132.7 µs	• VBW 300 kH2	Mode Auto F M1[1] M2[1]		2.4	-20.91 dBn 356800 GH -14,13 dBn
Ref Level Att Count 465/5 1Pk View 10 dBm 10 dBm 10 dBm 20 dBm	30	dB SWT	132.7 µs	• VBW 300 kH2	Mode Auto F M1[1] M2[1]		2.4	-20.91 dBn 356800 GH -14,13 dBn
Att Count 465/5 1PR View 10 dBm 5 dBm	30	dB SWT	132.7 µs	• VBW 300 kH2	Mode Auto F M1[1] M2[1]		3	-20.91 dBr 356900 GH -14,13 dBr 613600 GH
Ref Level Att Count 465/5 1Pk View 10 dBm 5 dBm 10 dBm 20 dBm 20 dBm 40 dBm	30 00 1 -20.)	dB SWT	132.7 µs	• VBW 300 kH2	Mode Auto F M1[1] M2[1]		3	-20.91 dBr 356900 GH -14,13 dBr 613600 GH
Ref Level Att Count 465/5 1Pk View 10 dBm 5 dBm 10 dBm 20 dBm 20 dBm 40 dBm	30 00 1 -20.1	dB SWT	132.7 µs	• VBW 300 kH2	Mode Auto F M1[1] M2[1]		3	-20.91 dBn 356900 GH -14,13 dBn 613600 GH
Ref Level Att Count 465/5 1Pk View 10 dBm 5 dBm 10 dBm 20 dBm 20 dBm 40 dBm	30 00 1 -20.1	dB SWT	132.7 µs	• VBW 300 kH2	Mode Auto F M1[1] M2[1]		3	-20.91 dBn 356900 GH -14,13 dBn 613600 GH
Ref Level Att Count 465/5 1Pk View 10 dBm 5 dBm 10 dBm 20 dBm 20 dBm 40 dBm	30 00 1 -20.1	dB SWT	132.7 µs	• VBW 300 kH2	Mode Auto F M1[1] M2[1]		3	-20.91 dBn 356900 GH -14,13 dBn 613600 GH
Ref Level Att Count 465/5 1Pk View 10 dBm 10 dBm 20 dBm 20 dBm 30 dBm 40 dBm 50 dBm	30 00 1 -20.1	dB SWT	132.7 µs	• VBW 300 kH2	Mode Auto F M1[1] M2[1]		3	-20.91 dBr 356900 GH -14,13 dBr 613600 GH
Ref Level Att Count 465/5 1Pk View 10 dBm 0 dBm 20 dBm 20 dBm 30 dBm 40 dBm 50 dBm	30 00 1 -20.1	dB SWT	132.7 µs	• VBW 300 kH2	Mode Auto F M1[1] M2[1]		3	-20.91 dBr 356900 GH -14,13 dBr 613600 GH
Ref Level Att Count 465/5 1Pk View 10 dBm 0 dBm 10 dBm 20 dBm 20 dBm 30 dBm 40 dBm 50 dBm 70 dBm	30 00	dB SWT	132.7 µs		Mode Auto F M1[1] M2[1] M2[1]		2.4 2.4	-20.91 dBn 356800 GH -14.13 dBn 613600 GH
Ref Level Att Count 465/5 1Pk View 10 dBm 10 dBm 20 dBm 20 dBm 30 dBm 40 dBm 50 dBm 70 dBm 70 dBm 70 dBm 70 dBm 70 dBm	30 00	dB SWT	132.7 µs	• VBW 300 kH2	Mode Auto F M1[1] M2[1] M2[1]		2.4 2.4	-20.91 dBn 356800 GH -14.13 dBn 613600 GH
Ref Level Att Count 465/5 1Pic View 1D dBm 1D dBm 1D dBm 20 dBm 30 dBm 40 dBm 50 dBm -70 dBm -70 dBm CF 2.452 G	30 00 1 -20.1	I34 dB SWT	132.7 µs	• VBW 300 kH2	Mode Auto F M1[1] M2[1] M2[1]		2.4 2.4 3 V/R, Spa	-20.91 dBn 356800 GH -14.13 dBn 613600 GH
Ref Level Att Count 465/5 1Pk: View 10 dBm 5 dBm 10 dBm 20 dBm 20 dBm	30 00 1 -20.1	134 dB SWT	132.7 µs		Mode Auto F MI[1] M2[1] M2[1] M2[1] M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2		2.4 2.4	-20.91 dBn 356900 GH -14.13 dBn 613600 GH



Applicant: Arovast Corporation Date of Test: 10 June 2021

Model: LAP-C202S-WUSR

4.3 Maximum Power Density Reading, FCC Rule 15.247(e):

The Measurement Procedure PKPSD was set according to the FCC KDB 558074 D01 v05r02.

Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

Limit: The Power Density does not exceed 8dBm/3 kHz.

IEEE 802.11b (CCK, 1Mbps)						
Frequency (MHz)	Power Density with RBW 3KHz					
2412	-15.23					
2437	-15.49					
2462	-21.73					

IEEE 802.11g (16QAM, 6Mbps)					
Frequency (MHz)	Power Density with RBW 3KHz				
2412	-20.16				
2437	-22.9				
2462	-24.85				

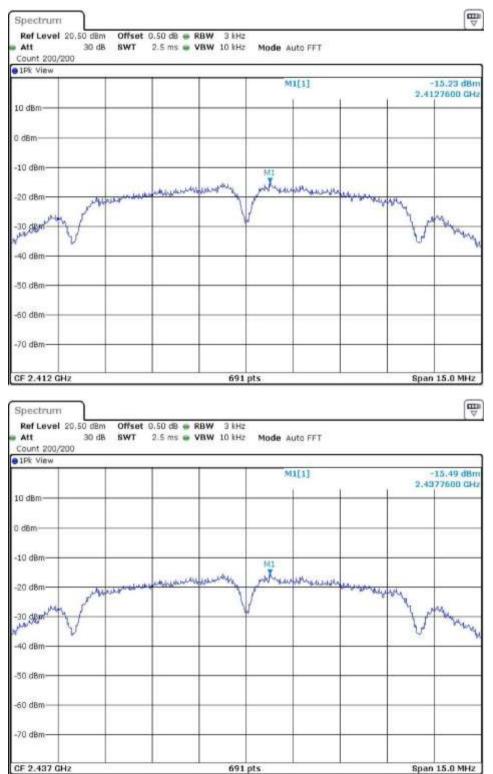
IEEE 802.11n-HT20 (64QAM, 6Mbps)					
Frequency (MHz)	Power Density with RBW 3KHz				
2412	-19.98				
2437	-22.59				
2462	-25.2				

IEEE 802.11n-HT40 (64QAM, 13.5Mbps)					
Frequency (MHz)	Power Density with RBW 3KHz				
2422	-30.32				
2437	-32.16				
2452	-34.64				

The test plots are attached as below.

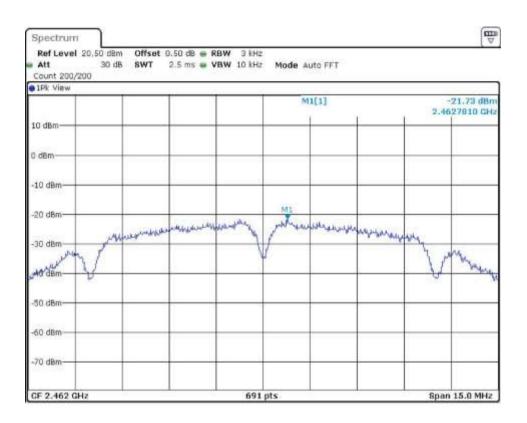


802.11b

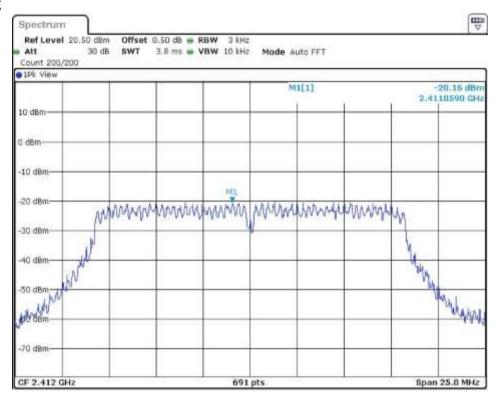


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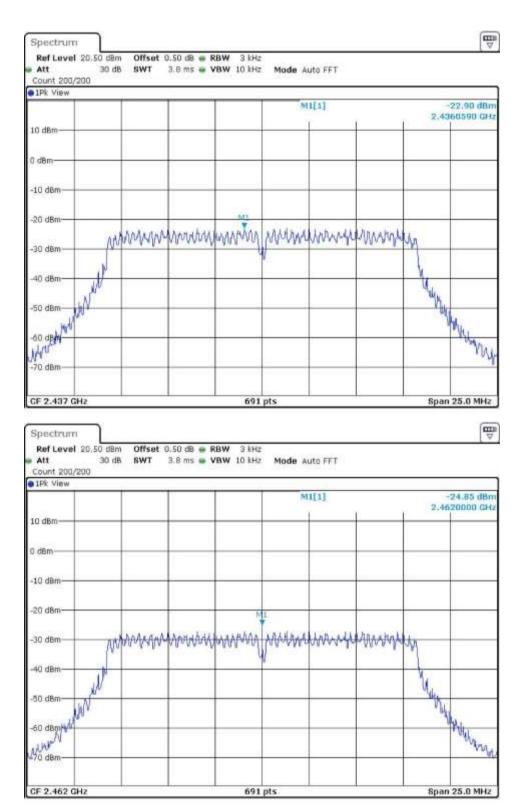
Intertek Report No.: 210520010SZN-004



802.11g







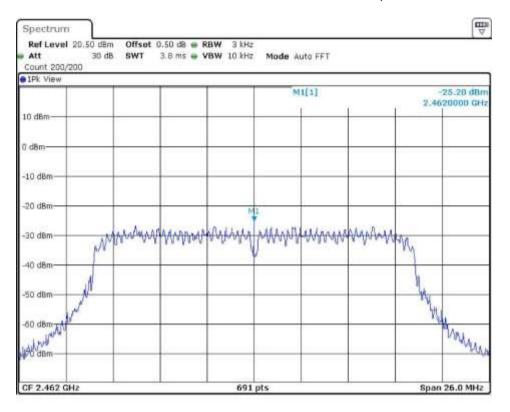


802.11n-HT20

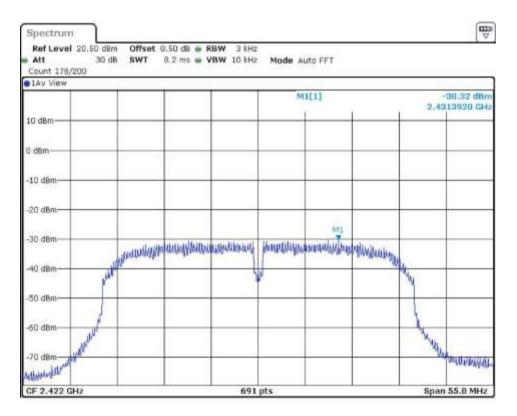
w ∀ Spectrum Offset 0.50 dB @ RBW 3 kHz Ref Level 20,50 dBm Att 30 dB SWT 3.8 ms 👄 VBW 10 kHz Mode Auto FFT Count 200/200 1Pk View M1[1] -19,98 dBm 2.4054530 GHz 10 dBm-0 dBm 10 dBm MMJMMMMMMMM -20 dBm MANNAMMANAM MA -30 dBm 40 dBm W HANDANAN AN -50 dBm repliced with 70 dBm CF 2.412 GHz 691 pts Span 26.0 MHz ₩ V Spectrum Ref Level 20,50 dBm Offset 0.50 dB 🖷 RBW 3 kHz Att 30 dB SWT 3.8 ms 🖷 VBW 10 kHz Mode Auto FFT Count 200/200 1Pk View M1[1] -22.59 dBm 2.4304530 GHz 10 dBm 0 dBm -10 dBm -20 dBmwhen monthly MANN LANANAN MAMM An -30 dBm 40 dBm -50 dBm HAMM -60 dBm J.M 0 dBm Span 26.0 MHz CF 2.437 GHz 691 pts

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Intertek Report No.: 210520010SZN-004



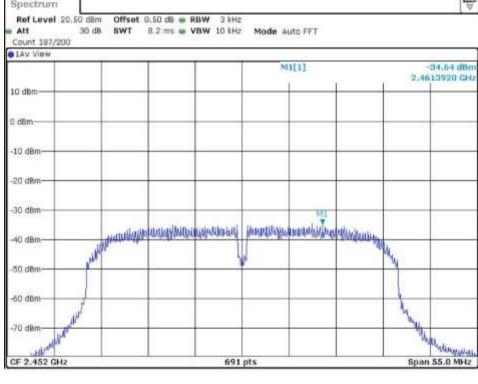
802.11n-HT40

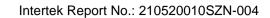




Intertek Report No.: 210520010SZN-004

Count 187/20	30 de	SWT	8.2 ms 👜 V	'BW 10 kHz	Mode A	uto FFT			
INV VIEW			1		M	1[1]			32.16 dBm
-22						r i	6 3	2.44	63920 GHz
10 dBm									
0 dBm									
-10 dBm									
-20 dBm				-		-		-	
-30 dBm				Constantial I	Vanitikui.	ma anenelijiline	di Stati		
-40 dBm	, de	phone in the second sec	harated freque	Chinataria	and the line	All Baleri fichodi	Ale and the second s	ML.	
-50 dBm	1							1	
-60 dBm	1							1	
-70 dBm	out the							"Willy	Aladiewajidy 55.0 MHz
and an address of the								-	a a surger and a surger a s
CF 2.437 GH	z	hi	du n	691	pts			Span	55.0 MHz
Spectrum									Ē
Ref Level 2 Att Count 187/20	30 d8		0.50 dB 👄 R 8.2 ms 👄 V	BW 3 kHz BW 10 kHz	Mode A	uto FFT			
1Av View	14	0.0				1.12			
					М	11[1]			34.64 dBm 13920 GHz
10 dBm			+						
0 dBm									
-10 dBm			-			-			







Applicant: Arovast Corporation Date of Test: 10 June 2021

Model: LAP-C202S-WUSR

4.4 Out of Band Conducted Emissions, FCC Rule 15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. The Measurement Procedure was set according to the FCC KDB 558074 D01 v05r02.

All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the passband.

Refer to the attached test plots for out of band conducted emissions data with rate of 1Mbps for 802.11b and 6Mbps for 802.11g and 6Mbps for 802.11n-HT20 and 13.5Mbps for 802.11n-HT40.

The test plots showed all spurious emission up to the tenth harmonic were measured and they were found to be at least 20 dB below the highest level of the desired power in the passband.

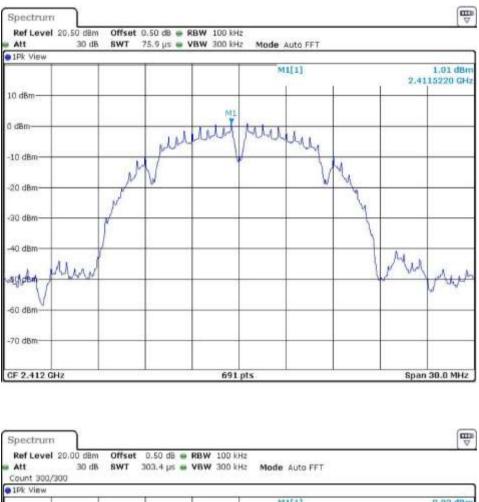
The test plots are attached as below.



802.11b Channel 01 (2412MHz) Reference Level: 1.01dBm

m ∀ Spectrum Ref Level 20.00 dBm Offset 0.50 dB 🖷 RBW 100 kHz Att 30 dB SWT 30.1 ms 🖷 VBW 300 kHz Mode Auto Sweep Count 10/10 DC • 1Pk Max M1[1] -42.85 dBm 2.3965220 GHz 10 dBm 0 dBm -10 dBm--20 dBm-D1 -18.990 dBm -30 dBm -40 dBm--50 dBm -60 dBm---all and the second 1.11 70 dBm-Start 1.0 MHz 30001 pts Stop 2.4 GHz ₩. Spectrum Ref Level 20.00 dBm Offset 0.50 dB 🖷 RBW 100 kHz Att 30 dB SWT 226 ms 👜 VBW 300 kHz Mode Auto Sweep Count 8/10 IPk Max ~46.46 dBm 4.824010 GHz M1[1] 10 dBm 0 dBm--10 dBm-20 dBm 01 -18.990 dBm -30 dBm 40 dBm 141 -50 dBm . . -70 dBm-Stop 25.0 GHz Start 2.4835 GHz 30001 pts





Count	300/3	00	orange sources a	W2 2305 CHIC S1/1-IL	003401501300994019	1.7			
1Pk Vi	ew.	_		147 - 146 -	6000 P 104				
10 dBm 0 dBm-	_				M1[1] M2[1]		0.83 dBr 2.411470 GH -45.00 dBr 12.400000 GH		
n opw-							110 54		
-10 dBn	+					-	A I	À	
-20 dBn		1 -19.170	dem			_	f*	1	
-30 dBn	1-							-	
-40 dBn						M4 642		1	
-50 dBr	1-					MAN		Phyle	
159 dBa	ليعد	a and	warden and sweeten	mar all refer	waywarahar	where a		- 10 A	
-70 dBn	-			<u>.</u>		-			
Start 2	.3 GH	iz		691 pts	8		Stop	2.43 GHz	
Marker	÷		12			1.5			
Type	Ref	Trc	X-value	Y-value	Function	Fun	ction Result	3	
M1		1	2.41147 GHz	0.83 dBm					
M2		1	2.4 GHz	-45.00 dBm					
M3		1	2.39 GHz	-54.18 dBm					
M4		1	2.396087 GHz	-43.86 dBm					

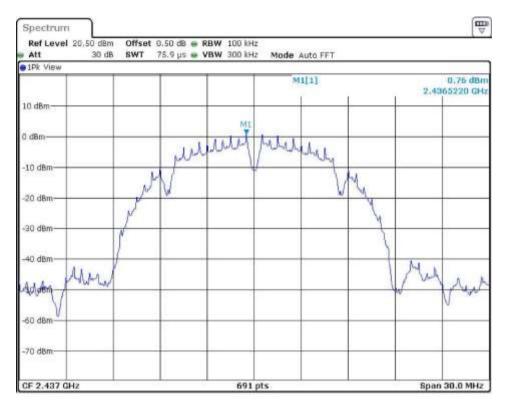


Channel 06 (2437MHz) Reference Level: 0.76dBm

u U U Spectrum Ref Level 20.00 dBm Offset 0.50 dB 🖷 RBW 100 kHz Att 30 dB SWT 30.1 ms 🖷 VBW 300 kHz Mode Auto Sweep Count 10/10 DC • 1Pk Max M1[1] -57.07 dBm 2.3978810 GHz 10 dBm 6 dBm -10 dBm--20 dBm--01 -19.240 dBm -30 dBm 40 dBm--50 dBmin the second second -60 dBmand a full of the 10.0 70 dBm Stop 2.4 GHz Start 1.0 MHz 30001 pts ₩. Spectrum Offset 0.50 dB
 RBW 100 kHz
 SWT 226 ms
 VBW 300 kHz Ref Level 20.00 dBm Att 30 dB Mode Auto Sweep Count 8/10 • 1Pk Max M1[1] -38,66 dBm 5.500240 GHz 10 dBm 6 dBm -10 dBm-01 -19.240 dBm -20 dBm---30 dBm M1 40 dBm -50 dBm -70 dBm Stop 25.0 GHz Start 2.4835 GHz 30001 pts

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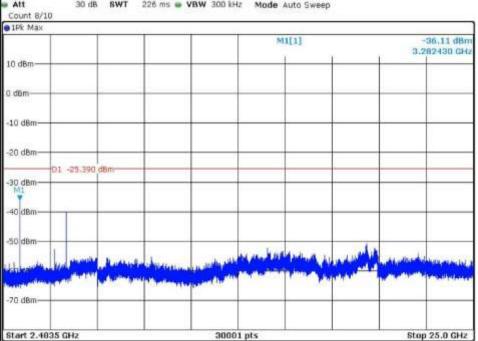
Intertek Report No.: 210520010SZN-004



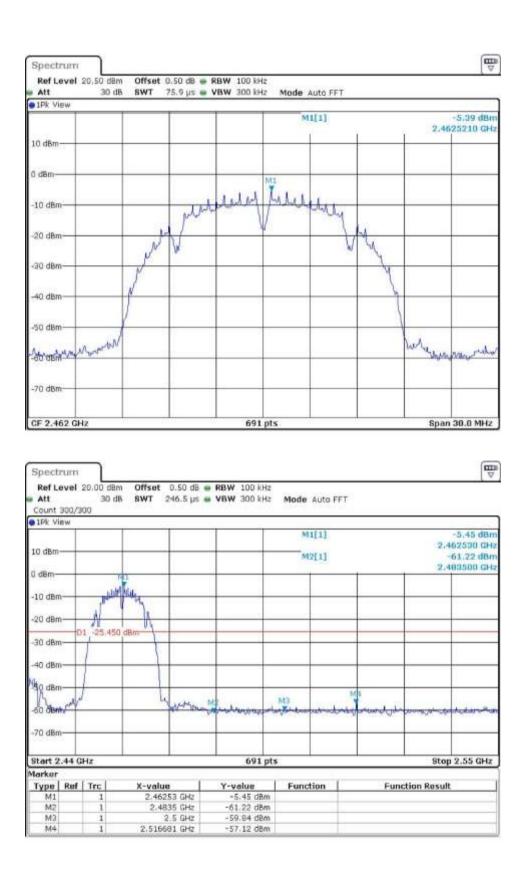


Channel 11 (2462MHz) Reference Level: -5.39dBm

m Spectrum Ref Level 20.00 dBm Offset 0.50 dB @ RBW 100 kHz 30 dB SWT 30.1 ms - VBW 300 kHz Mode Auto Sweep Att Count 10/10 DC • 1Pk Max M1[1] 46.22 dBrr 891.7590 MHz 10 dBm-0 dBm -10 dBm--20 dBm 01 -25.390 dBn -30 dBm-40 dBm M1 -50 dBm -60 dBm 70 dBm-Stop 2.4 GHz Start 1.0 MHz 30001 pts w ∀ Spectrum Ref Level 20.00 dBm Offset 0.50 dB @ RBW 100 kHz SWT 226 ms . VBW 300 kHz Mode Auto Sweep Att 30 dB Count 8/10 Pk Max M1[1] -36.11 dBm 3.282430 GHz 10 dBm 0 dBm -10 dBm-









802.11g Channel 01 (2412MHz) Reference Level: -5.15dBm

-Spectrum Ref Level 20.00 dBm Offset 0.50 dB @ RBW 100 kHz Att 30 dB SWT 30.1 ms . VBW 300 kHz Mode Auto Sweep Count 10/10 DC 1Pk Max M1[1] 44.19 dBm 890.6390 MHz 10 dBm-0 dBm--10 dBm--20 dBm D1 -25.150 dBm -30 dBm--40 dBm--50 dBm-60 dBm-70 dBm-Start 1.0 MHz 30001 pts Stop 2.4 GHz w ∀ Spectrum Ref Level 20.00 dBm Offset 0.50 dB @ RBW 100 kHz SWT 226 ms . VBW 300 kHz Mode Auto Sweep Att 30 dB Count 8/10 Pk Max M1[1] -39,25 dBm 3.216390 GHz 10 dBm 0 dBm -10 dBm--20 dBm-D1 -25.150 dBm -30 dBm MI 40 dBm -SO dBm--70 dBm-Start 2.4835 GHz 30001 pts Stop 25.0 GHz



10 dBm	Ref Level 20,50 dBm (Offset 0.50 dB 🖷 RBW 100 kHz		
0 dBm M111 2.4188000 (0 dBm M11 2.4188000 (0 dBm M11 M11 10 dBm M11 M11 11 data Spectrum M11 12 data G1 pts Span 30.0 M1 13 data SWT 30.3 4 µs VBW 300 kH2 14 view M111 2.418010 14 view M111 2.418010 10 dBm M111 2.418010 10 dBm M111 2.418010 10 dBm M111 2.400000 10 dBm M1211 2.400000	Att 30 dB 8	iWT 75.9 µs 👜 VBW 300 kHz	Mode Auto FFT	
0 dBm 2.4188600 (dBm M1 dBm M1 10 dBm M1 30 dBm M1 30 dBm M1 30 dBm M1 30 dBm M1 40 dBm M1 50 dBm M11 10 dBm M12 10 dBm M12 10 dBm M1 10 dBm M1 10 dBm M1	1Pk View		auta)	-E 15 du
dBm M1 10 dBm M1 20 dBm M1 40 dBm M1 50 dBm G91 pts 50 dBm Spectrum Ref Level 20.00 dBm 50 dBm Offset 0.0 dBm M1 10 dBm M1 11 2.410000 fr 10 dBm M1			witti	2.4188600 GH
dBm) dBm			
0 dBm				
0 dBm 0	d8m			
0 dBm 0		The second second second second		0.00
0 dBm 0	0 dBm	WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW	a water the second of the seco	4
0 dBm 0	100020	Y		
0 dBm 0	0 dBm			
0 dBm	V			U.
Biddem Image: Span 30.0 Million 10 dBm 691 pts Span 30.0 Million F 2.412 GHz 691 pts Span 30.0 Million Pectrum Ref Level 20.00 dBm Offset 0.50 dB @ RBW 100 kHz Att 30 dB SWT 303.4 µs VBW 300 kHz Mode Auto FFT Journ 300/300 IPk View M1[1] -5.11 d 10 dBm M2[1] 2.4189.00 (-43.67 d 10 dBm M1[1] 2.4189.00 (-43.67 (10 dBm M1[1] 2.4189.00 (-43.67 (10 dBm M1[1] 2.4189.00 (-43.67 (10 dBm M1[1] -5.11 d -6.11 d 10 dBm M1[1] -5.11 d -6.11 d	0 dBm			4
Biddem Image: Span 30.0 Million 10 dBm 691 pts Span 30.0 Million F 2.412 GHz 691 pts Span 30.0 Million Pectrum Ref Level 20.00 dBm Offset 0.50 dB @ RBW 100 kHz Att 30 dB SWT 303.4 µs VBW 300 kHz Mode Auto FFT Journ 300/300 IPk View M1[1] -5.11 d 0 dBm M2[1] -5.11 d 0 dBm M2[1] -5.11 d 0 dBm M1[1] -5.11 d	no			ny.
Biddem Image: Span 30.0 Mile 0 dBm 0 dBm 0 dBm 691 pts Span 30.0 Mile F2.412 GHz 691 pts Span 30.0 Mile pectrum Ref Level 20.00 dBm Offset 0.50 dB = RBW 100 kHz Att 30 dB SWT 303.4 µs WBW 300 kHz Att 30 dB SWT 303.4 µs WBW 300 kHz Joint 300/300 Ipk Visw M1[1] -5.11 d 0 dBm M2[1] 2.4188100 (-43.67 d 0 dBm M2[1] 2.418610 (-43.67 d 0 dBm M1[1] 2.418610 (-43.67 d 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm	0 dBm			7. 1
Biddem Image: Span 30.0 Mile 0 dBm 0 dBm 0 dBm 691 pts Span 30.0 Mile F2.412 GHz 691 pts Span 30.0 Mile pectrum Ref Level 20.00 dBm Offset 0.50 dB = RBW 100 kHz Att 30 dB SWT 303.4 µs WBW 300 kHz Att 30 dB SWT 303.4 µs WBW 300 kHz Joint 300/300 Ipk Visw M1[1] -5.11 d 0 dBm M2[1] 2.4188100 (-43.67 d 0 dBm M2[1] 2.418610 (-43.67 d 0 dBm M1[1] 2.418610 (-43.67 d 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm	A ANAN			Manna
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0 dBm 691 pts Span 30.0 Mi F 2.412 GHz 691 pts Span 30.0 Mi pectrum Ref Level 20.00 dBm Offset 0.50 dB = RBW 100 kHz Att 30 dB SWT 303.4 µs = VBW 300 kHz Mode Auto FFT Journal 300/300 IPk View -5,11.0 0 dBm M1[1] -5,11.0 10 dBm 0 dBm M1[1] -5,11.0 10 dBm 0 dBm 0 dBm 0 dBm	ADALESSON			
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F 2.412 GHz 691 pts. Span 30.0 Mi pectrum	P1:00:00			
F 2.412 GHz 691 pts Span 30.0 Mi Gpectrum Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz Att 30 dB SWT 303.4 µz VBW 300 kHz Mode Auto FFT Count 300/300 IPk View M1[1] -5,11.0 -5,11.0 0 dBm M2[1] -43.67 d -43.67 d 10 dBm 0 dBm 0 dBm 0 dBm 0 dBm	70 d8m			
Spectrum Image: Construction of the sector of	(5900))			
Spectrum Ref Level 20.00 dBm Offset 0.50 dB = RBW 100 kHz Att 30 dB SWT 303.4 µs = VBW 300 kHz Mode Auto FFT Sount 300/300 19k View M1[1] -5.11 d 0 dBm M2[1] -43.67 d 2.400000 d 10 dBm 0 dBm 0 dBm 0 dBm 0 dBm	C 0 440 OU:			0.000 00 0 000
Mile Mile <th< th=""><th>F 2.412 GHZ</th><th>091</th><th>AS</th><th>apan suta mra</th></th<>	F 2.412 GHZ	091	AS	apan suta mra
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Att 30 dB BWT 303.4 ps e VBW 300 kHz Mode Auto FFT count 300/300 IPk View M1[1] -5,11.0 -5,11.0 0 dBm M2[1] -43.67 d -43.67 d 0 dBm M2[1] -43.67 d -43.67 d 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm				G
iount 300/300 IPk View 0 dBm M1[1] -5.11 d 0 dBm M2[1] -43.67 d 0 dBm 0 dBm 0 dBm 10 dBm 0 dBm 0 dBm				(a)
0 dBm M1[1] -5,11 d 0 dBm M2[1] -43,67 d 0 dBm 2,418810 (-43,67 d 0 dBm 0 dBm -43,67 d 10 dBm 0 dBm 0 dBm	Ref Level 20.00 dBm C			(q
2.418610 0 43.67 d 43.67 d 2.400000 0 0 dBm 10 dBm D1 -25.110 dBm 0 dBm	Ref Level 20.00 dBm C Att 30 dB 8 ount 300/300			Ē
0 dBm M2[1] -43.67 d dBm 91 91 10 dBm 91 91 10 dBm 91 91	Ref Level 20.00 dBm C Att 30 dB 8 count 300/300		IZ Mode Auto FFT	۳ ۲
dBm	Ref Level 20.00 dBm C Att 30 dB 8 Sount 300/300 1Pk View		IZ Mode Auto FFT	-5,11 dB
10 dBm 01 -25.110 dBm	Ref Level 20.00 dBm C Att 30 dB 8 Sount 300/300 1Pk View		Mode Auto FFT	-5,11 dB 2,418610 G -43,67 dB
20 dBm D1 -25.110 dBm 30 dBm	Ref Level 20.00 dBm Count 300 dBm Count 300/300 IPk View 0 dBm Count 300/300		Mode Auto FFT	-5,11 dB 2,418610 G
10 dBm	Ref Level 20:00 dBm C Att 30 dB Sount 300/300 IPk View 0 dBm		Mode Auto FFT	-5,11 dB 2,418610 G -43,67 dB
i0 dBm-	Ref Level 20:00 dBm C Att 30 dB Sount 300/300 IPk View 0 dBm		Mode Auto FFT	-5,11 dB 2,418610 G -43,67 dB
	Ref Level 20.00 dBm Control (Control (Contro) (Contro) (Control (Control (Control (Contro) (Control (Contro		Mode Auto FFT	-5,11 d8 2,418810 G -43,67 d8
i0 dBm	Ref Level 20.00 dBm C Att 30 dB S Sount 300/300 1Pk View C D dBm 0 dBm C 0 dBm 0 dBm C 0 dBm 0 dBm C	303.4 µs • VBW 300 kH	Mode Auto FFT	-5,11 dB 2,418610 G -43,67 dB
50 dBm	Ref Level 20.00 dBm Count 30 dB S Count 300/300 1Pk View View Count 300 dB S 0 dBm 0 dBm 0 0 D -25.110 dBm	303.4 µs • VBW 300 kH	Mode Auto FFT	-5,11 dB 2,418610 G -43,67 dB
DU dBm	Ref Level 20.00 dBm Count 300/300 Att 30 dB Sount 300/300 IPk View 0 dBm 0 dBm 0 20 dBm 0 20 dBm 0 30 dBm 0	SWT 303.4 µs • VBW 300 kH	M1[1] M2[1]	-5,11 dB 2,418610 G -43,67 dB 2,400000 G
	Ref Level 20.00 dBm Control (1998) Att 30 dB Sount 300/300 19k View D dBm 0 dBm 0 0 dBm 0 0 dBm 0 0 dBm 0 0 dBm 0 0 dBm 0 0 dBm 0 0 dBm 0 0 dBm 0	SWT 303.4 µs • VBW 300 kH	M1[1] M2[1]	-5,11 dB 2,418610 G -43,67 dB 2,400000 G
a people worth the the of the people the the the second of the the second of the the second of the s	Ref Level 20.00 dBm C Att 30 dB Jount 300/300 IPic View D dBm 0 0 dBm 0	SWT 303.4 µs • VBW 300 kH	M1[1] M2[1]	-5,11 dB 2,418610 G -43,67 dB 2,400000 G
	Ref Level 20.00 dBm C Att 30 dB S Jount 300/300 IPK View IPK View D dBm 0 dBm Immediate 0 dBm D1 -25.110 dBm Immediate 0 dBm Immediate Immediate Immediate	SWT 303.4 µs • VBW 300 kH	Mode Auto FFT	-5,11 di 2,418810 d -43,67 di 2,40000 d

Version: 01-November-2017

Start 2.3 GHz

Type | Ref | Trc |

1

1

Marker

M1 M2

M3 M4 691 pts

Г

Function

Y-value -5.11 dBm -43.67 dBm -50.20 dBm

-43.54 dBm

X-value 2.41881 GHz 2.4 GHz 2.39 GHz

2.399855 GHz

Stop 2.43 GHz

Function Result



Channel 06 (2437MHz) Reference Level: -7.72dBm

m ∀ Spectrum Ref Level 20.00 dBm Offset D.50 dB - RBW 100 kHz Att 30 dB SWT 30.1 ms - VBW 300 kHz Mode Auto Sweep Count 10/10 DC • IPk Max M1[1] -58.61 dBm 949.4130 MHz 10 dBm-6 dBm--10 dBm-20 dBm D1 -27.720 dBr -30 dBm-40 dBm--50 dBm-M 60 dam-1000 70 dBm-Start 1.0 MHz 30001 pts Stop 2.4 GHz ₩. Spectrum Ref Level 20.00 dBm Offset 0.50 dB 🖷 RBW 100 kHz Att 30 dB SWT 226 ms - VBW 300 kHz Mode Auto Sweep Count 8/10 IPk Max M1[1] -36.92 dBm 3.249410 GHz 10 dBm-0 dBm--10 dBm--20 dBm-01 -27.720 dBm -30 dBm-M1 40 dBm -S0 dBm -70 dBm-Start 2.4835 GHz 30001 pts Stop 25.0 GHz

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	30 d8	SWT	75.9 µs 🖷 🕻	/BW 300 kH;	Mode	Auto FFT					
1Pk View			-		N	1111			-7.72 dBm		
					M1[1]			2.44	2.4438600 GHz		
10 dBm						-		-			
0 d8m				1			MI				
-10 dBm		unt	and the second	toman	where why	Wind Strategy					
				- V							
-20 dBm-		8	1			1	1				
-30 dBm		1	-	-				h			
10-10-10-10	MAN							hy			
-40 dBm	No		1				-	The			
-50 dBm	d'					ļ		~U.7	montering		
WWWW	1					1			Contra Do Ma		
-60 dBm			-			-					
-70 d8m	-					-					
CF 2.437 0	Hz		I,	691	ots			Span	30.0 MHz		



Channel 11 (2462MHz) Reference Level: -12.03dBm

m Spectrum Ref Level 20.00 dBm Offset 0.50 dB . RBW 100 kHz Att 30 dB SWT 30.1 ms 🖷 VBW 300 kHz Mode Auto Sweep Count 10/10 DC • 1Pk Max M1[1] -59.32 dBm 982.7580 MHz 10 dBm-0 dBm -10 dBm--20 dBm -30 dBm D1 -32.030 dBm -40 dBm--50 dBm--60 dam-THE R. LA -70 dBm-140 71 7 1 Stop 2.4 GHz Start 1.0 MHz 30001 pts i de la constante da la consta Spectrum Ref Level 20.00 dBm Offset 0.50 dB @ RBW 100 kHz Att 30 dB SWT 226 ms . VBW 300 kHz Mode Auto Sweep Count 8/10 IPk Max M1[1] -35,84 dBm 3.282430 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm D1 -32.030 dBm 40 dBm -50 dBm H Luc -70 dBm Start 2.4835 GHz Stop 25.0 GHz 30001 pts



Att 3		18 🖷 RBW 100 kHz us 🖷 VBW 300 kHz	Mode Auto FFT	
1Pk View				
			M1[1]	-12.03 dB/ 2.4645180 GH
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J GDIN				
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ubin .				
0 dBm			Ma	
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0 dBm		V	5 2 1 1	
2010	1			
0 dBm	- V			N
	ALC: N			M
0 dBm	NC			hy
.Je				
0 dBm				The second
- APT - MAR				Martinarah
0 dBm				
0 dBm				
F 2.462 GHz	MI 20172	691 p	ts	Span 30.0 MHz
pectrum				Ę
Ref Level 20.00 Att 3 ount 300/300		dB 🖶 RBW 100 kHz µs 🖶 VBW 300 kHz		,
Ref Level 20.00 Att 3 ount 300/300			Mode Auto FFT	
Ref Level 20.00 Att 3 ount 300/300 Pk View			Mode Auto FFT	-11.78 dB 2,468690 CF
Ref Level 20.00 Att 3 ount 300/300 Pk View			Mode Auto FFT	-11.78 dB 2,46890 G -59,22 dB
Ref Level 20.00 Att 3 ount 300/300 Pic View			Mode Auto FFT	-11.78 dB 2.468890 CF -59.22 dB 2.482500 CF
Ref Level 20.00 Att 3 ount 300/300 Pk View dBm- dBm-	30 dB SWT 246.5		Mode Auto FFT	-11.78 dB 2,46890 G -59,22 dB
Ref Level 20.00 Att 3 ount 300/300 Pk View dBm 0 dBm	30 dB SWT 246.5		Mode Auto FFT	-11.78 dB 2,46890 G -59,22 dB
Ref Level 20:00 Att 3 ount 300/300 Pk View I dBm 0 dBm 0 dBm	30 dB SWT 246.5		Mode Auto FFT	-11.78 dB/ 2,46890 CF -59,22 dB/
Ref Level 20:00 Att 3 ount 300/300 IPI: View 0 dBm 0 dBm 0 dBm	MI		Mode Auto FFT	-11.78 dB/ 2,46890 CF -59,22 dB/
Ref Level 20:00 Att 3 ount 300/300 Pk View I dBm 0 dBm 0 dBm	MI		Mode Auto FFT	-11.78 dB 2,468890 G -59,22 dB
Ref Level 20:00 Att 3 ount 300/300 IPI: View 0 dBm 0 dBm 0 dBm	MI		Mode Auto FFT	-11.78 dB 2,468890 G -59,22 dB
Ref Level 20:00 Att 3 ount 300/300 Pk View I dBm 0 dBm 0 dBm	MI	με 🗰 VBW 300 kHz	Mode Auto FFT	-11.78 dB 2,46890 G -59,22 dB
ount 300/300 IPk View 0 dBm 0 dBm 0 dBm	MI	με 🗰 VBW 300 kHz	Mode Auto FFT	-11.78 dB/ 2,46890 CF -59,22 dB/

Start 2	.44 G	Hz		691 pts	2	Stop 2.55 GHz		
Marker	÷	0.000	15		5			
Type	Ref	Trc	X-value	Y-value	Function	Function Result		
M1		1	2.46889 GHz	-11,78 dBm				
M2		1	2.4835 GHz	-59.22 dBm				
M3		1	2.5 GHz	-59.27 dBm				
M4		1	2.505841 GHz	-57.96 dBm				



802.11n-HT20 Channel 01 (2412MHz) Reference Level: -5.28dBm

Spectrum Ref Level 20.00 dBm Offset 0.50 dB = RBW 100 kHz Att 30 dB SWT 30.1 ms - VBW 300 kHz Mode Auto Sweep Count 10/10 DC 1Pk Max M1[1] -44.30 dBm 2.3999600 GHz 10 dBm 0 dBm -10 dBm -20 dBm 01 -25.290 dBm -30 dBm--40 dBm--50 dBm-60,dBm-w In the second second 10 all the set 111 111 70 dBm-30001 pts Start 1.0 MHz Stop 2.4 GHz ₩. Spectrum Ref Level 20.00 dBm Offset 0.50 dB 🖷 RBW 100 kHz SWT 226 ms \cdots VBW 300 kHz Mode Auto Sweep Att 30 dB Count 8/10 1Pk Max M1[1] -39.60 dBm 3.216390 GHz 10 dBm 0 dBm--10 dBm--20 dBm-01 -25.200 dBm -30 dBm 143 40 dBm 50 dBm -70 dBm Start 2.4835 GHz 30001 pts Stop 25.0 GHz



1Pk View					1[1]			-5.28 dBr
				1	41+1		2.4	066150 GH
10 dBm		-	-					
0 dBm		(M1	-					
-10 dBm	N	munin	innerwood	phannen	www.	marchy		
-20 dBm			3	,				
-30 dBm	1		-				4	-
-40 dBm	all		-				Ser Carl	MANNIN
40 dBm			_					-M Marry
-60 dBm	_	-	_					
-70 dBm								
CF 2.412 GH	iz .		691	pts			Spar	n 30.0 MHz





Channel 06 (2437MHz) Reference Level: -7.78dBm

u U U Spectrum Ref Level 20.00 dBm Offset 0.50 dB 🖷 RBW 100 kHz Att 30 dB SWT 30.1 ms 🖷 VBW 300 kHz Mode Auto Sweep Count 10/10 DC • 1Pk Max M1[1] -58.37 dBm 838.1830 MHz 10 dBm 6 dBm -10 dBm--20 dBm D1 -27.780 dBm -30 dBm-40 dBm--50 dBm-MI -60 dBmmillion . 1.1.1 70 dBm Stop 2.4 GHz Start 1.0 MHz 30001 pts ₩. Spectrum Offset 0.50 dB
 RBW 100 kHz
8WT 226 ms
 VBW 300 kHz Ref Level 20.00 dBm Att 30 dB Mode Auto Sweep Count 8/10 • 1Pk Max M1[1] -37.00 dBm 3.249410 GHz 10 dBm 6 dBm -10 dBm--20 dBm D1 -27,780 dBn -30 dBm-M1 40 dBm -SO dBm 1. 11 -70 dBm-Stop 25.0 GHz Start 2.4835 GHz 30001 pts

Total Quality. Assured. TEST REPORT

Intertek Report No.: 210520010SZN-004

					LPk View
M1[1] -7.78 dBm 2.4316160 GHz	M1[1]				
			-	-	dBm
			-		dBm
n n hand hand hand have a have a hand have a have	Week ward		MI Adamites	prover	0 dBm
					0 dBm
		-		P	0 dBm
			+	N	0 dBm
Whymenter		-			0 dBm
			-	-	0 dBm
				_	0 d8m

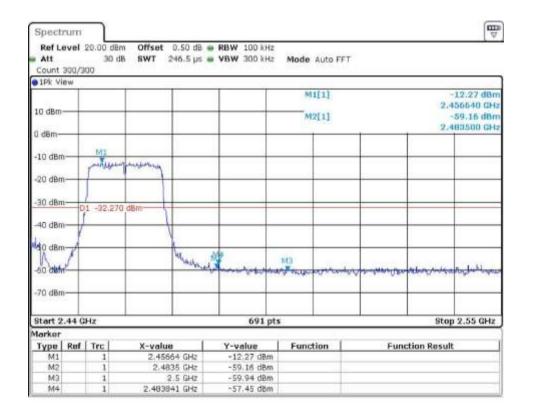


Channel 11 (2462MHz) Reference Level: -11.74dBm

u U U Spectrum Ref Level 20.00 dBm Offset 0.50 dB 🖷 RBW 100 kHz Att 30 dB SWT 30.1 ms 🖷 VBW 300 kHz Mode Auto Sweep Count 10/10 DC • 1Pk Max M1[1] -59,14 dBm 2.2522670 GHz 10 dBm 0 dBm--10 dBm--20 dBm -30 dBm 01 -31.740 dBm -40 dBm--50 dBm-MI -60 dBm-10 Sec. And a state of the local division of the loc 70 dBm-Stop 2.4 GHz Start 1.0 MHz 30001 pts ₩. Spectrum Offset 0.50 dB
 RBW 100 kHz
 SWT 226 ms
 VBW 300 kHz Ref Level 20.00 dBm Att 30 dB Mode Auto Sweep Count 8/10 • 1Pk Max M1[1] -35.74 dBm 3.282430 GHz 10 dBm 6 dBm -10 dBm--20 dBm -30 dBm-D1 -31.740 dBm 40 dBm -S0 dBm 1111 -70 dBm-Stop 25.0 GHz Start 2.4835 GHz 30001 pts



Att	30 dB SWT	75.9 µs 🖶 VB	W 300 kHz N	1ode Auto FFT		
1Pk View				M1[1]	3	-11.74 dBm 2.4613490 GHz
10 dBm						
d dBm						
-10 dBm			MI IN	La chana dal		_
-20 dBm	mare	Wee a Montana	manthas	hannennennen	romeny	_
-30 dBm	1					
-40 dBm	nrod				- V	
-50 dBm					7	when
X6 dBm						MANN
-70 dBm						





802.11n-HT40 Channel 01 (2422MHz) Reference Level: -9.87dBm

	dBm Offset 0 dB SWT DC			t Mode Auto Swe	ер		
1Pk Max	00						
				M1[1]			48.68 dBr
100				1	Ť.	2.39	98000 CH
0 dBm							
	_						
dBm							
0 dBm							
U dBm							0
10 dBm							
O ODM							
0 dBm 01 -29.	eza diter						
0 0Bm 01 -29.	erd dans						
0 dBm	_						
o ubii							
0 dBm							
o den							
0 dBm					_		
		NUCLEAR ADDRESS	Constant of the second	Wanter and a state	de Mansiluiques	and the first of the	A CONTRACTOR
0 dBm	Service Internation	A DOCTOR OF COMPANY	Contraction of the	A MARSHARE AND A MARSHARE	of the second	- MARINA COM	
					1		
			30001	pts		Sto	-
	dBm Offset 0 dB SWT				ep	Sto	-
pectrum			BW 100 kHz		ер	Sto	-
pectrum Ref Level 20.00 Att 3 Jount 8/10			BW 100 kHz		ер		39.26 dBr
pectrum Ref Level 20.00 Att 3 Jount 8/10 IPk Max			BW 100 kHz	: Mode Auto Swe	ep		39.26 dBr
pectrum Ref Level 20.00 Att 3 Jount 8/10			BW 100 kHz	: Mode Auto Swe	ep		39.26 dBr
pectrum Ref Level 20.00 Att 3 Jount 8/10 IPk Max 0 dBm			BW 100 kHz	: Mode Auto Swe	ep		39.26 dBr
pectrum Ref Level 20.00 Att 3 Jount 8/10 IPk Max 0 dBm			BW 100 kHz	: Mode Auto Swe	ер		39.26 dBr
Bectrum 20.00 Att 30 Sount 8/10 IPK Max 0 dBm dBm			BW 100 kHz	: Mode Auto Swe	ep		39.26 dBr
pectrum 20.00 Att 30 Jount 8/10 IPk Max 0 dBm dBm			BW 100 kHz	: Mode Auto Swe	ep		39.26 dBr
pectrum Ref Level 20.00 Att 31 Jount 8/10 IPK Max 0 dBm 0 dBm			BW 100 kHz	: Mode Auto Swe	ep		39.26 dBr
pectrum Ref Level 20.00 Att 31 Jount 8/10 IPK Max 0 dBm 0 dBm			BW 100 kHz	: Mode Auto Swe	ep		39.26 dBr
pectrum Ref Level 20.00 Att 31 Jount 8/10 IPK Max 0 dBm 0 dBm 0 dBm	o da swr		BW 100 kHz	: Mode Auto Swe	ep		39.26 dBr
pectrum 20.00 Att 31 count 8/10 31 D dBm 31 0 dBm 31 0 dBm 31 0 dBm 31 0 dBm 31	o da swr		BW 100 kHz	: Mode Auto Swe	ер		39.26 dBr
Opectrum 20:00 Att 3i Jount 8/10 3i D dBm 0 00 dBm 0 00 dBm 0 00 dBm 0 00 dBm 0 3i 0	o da swr		BW 100 kHz	: Mode Auto Swe	ep		39.26 dBr
pectrum 20.00 Att 31 count 8/10 31 D dBm 31 0 dBm 31 0 dBm 31 0 dBm 31 0 dBm 31	o da swr		BW 100 kHz	: Mode Auto Swe	ep		9 2.4 GHz
pectrum	o da swr		BW 100 kHz	: Mode Auto Swe	ep		39.26 dBr
pectrum	o da swr		BW 100 kHz	: Mode Auto Swe	ep		39.26 dBr
Opectrum 20:00 Att 3i Jount 8/10 3i D dBm 0 00 dBm 0 00 dBm 0 00 dBm 0 00 dBm 0 3i 0	o da swr		BW 100 kHz	: Mode Auto Swe			39.26 dBr
pectrum	o da swr		BW 100 kHz	: Mode Auto Swe			39.26 dBr
pectrum	o da swr		BW 100 kHz	: Mode Auto Swe			39.26 dBr



Spectrum										1
Ref Level	20,50 dBm		and the second sec	RBW 100		. material and				1
Att 1Pk View	30 dB	8WT 132	t.7 μs 🖷	VBW 3001	Hz Mode	Auto FF	F			-
110.110.0					8	11[1]			-9.8	17 dBn
						1		1	2.43172	50 GH
10 dBm-					-	+	-			
0 dBm		-		-		-	-	_		
						741				
-10 dBm		weeksterness	-LOPLING	enderer an	Autoritude	ALL SAMMER	and company	-		
		where the prover of the					- Kranky	5		
-20 dBm-		1			1	-	-	1		
	1									
-30 dBm-		-		-		-	-	1	-	
	Ŧ									
-40 dBm	1					-	_	1		
	1							.74	North An	
-50 dBm-	M						_	_	maraday	MAR
randwither	r				-					
-60 dBm-							_	_		
/96/05/11										
-70 d8m-						-				
000000										
	5103			-				_		
CF 2.422 G	_	10 10 Ma		691	L pts	<u></u>			Span 60.	
Spectrum Ref Level Att Count 26/30	20.00 dBm 30 dB			RBW 100-	nkosco	Auto FF	т	- <u>k</u>	Span 60.	
Spectrum Ref Level Att Count 26/30	20.00 dBm 30 dB			RBW 100-	(Hz (Hz Mode		T	<u>.</u>		œ
Spectrum Ref Level Att Count 25/30 1Pk View	20.00 dBm 30 dB			RBW 100-	(Hz (Hz Mode	4uto FF	T			(
Spectrum Ref Level Att Count 26/30	20.00 dBm 30 dB			RBW 100-	KHZ KHZ Mode		T		-9.8 2.4138 -48.3	(▼ 02 dBn 60 GH 79 dBn
Spectrum Ref Level Att Count 26/30 1Pk View	20.00 dBm 30 dB			RBW 100-	KHZ KHZ Mode	11[1]	т.		-9.8 2.4138	(▼ 02 dBn 60 GH 79 dBn
Spectrum Ref Level Att Count 26/30 1Pk View 10 dBm 0 dBm	20.00 dBm 30 dB			RBW 100-	KHZ KHZ Mode	11[1]	MI		-9.8 2.4138 -46.7 2.4000	(▼ 02 dBn 60 GH 79 dBn
Spectrum Ref Level Att Count 26/30 19k Visw 10 dBm	20.00 dBm 30 dB			RBW 100-	KHZ KHZ Mode	11[1]	MI		-9.8 2.4138 -48.3	(▼ 02 dBn 60 GH 79 dBn
Spectrum Ref Level Att Count 26/30 1Pk View 10 dBm 0 dBm	20.00 dBm 30 dB			RBW 100-	KHZ KHZ Mode	11[1]	MI		-9.8 2.4138 -46.7 2.4000	(▼ 02 dBn 60 GH 79 dBn
Spectrum Ref Level Att Count 26/30 1Pk View 10 dBm -10 dBm -20 dBm	20.00 dBm 30 dB	SWT 341		RBW 100-	KHZ KHZ Mode	11[1]	MI		-9.8 2.4138 -46.7 2.4000	(▼ 02 dBn 60 GH 79 dBn
Spectrum Ref Level Att Count 25/30 1Pk View 10 dBm d dBm -10 dBm	20.00 dBm 30 dB	SWT 341		RBW 100-	KHZ KHZ Mode	11[1]	MI		-9.8 2.4138 -46.7 2.4000	(▼ 02 dBn 60 GH 79 dBn
Spectrum Ref Level Att Count 26/30 1Pk View 10 dBm -10 dBm -10 dBm -20 dBm (10 dBm)	20.00 dBm 30 dB 30	dBm-	3 µ£ 🖷	RBW 1001	KH2 KH2 Mode	12[1] 12[1]	MI MI		-9.8 2.4138 -46.7 2.4000	2 dBn 60 GH 79 dBn 00 GH
Spectrum Ref Level Att Count 26/30 1Pk View 10 dBm -10 dBm -10 dBm -20 dBm (10 dBm)	20.00 dBm 30 dB 30	dBm-	3 µ£ 🖷	RBW 1001	KH2 KH2 Mode	12[1] 12[1]	MI MI		-9.8 2.4138 -46.7 2.4000	22 dBn 60 GH 79 dBn 00 GH
Spectrum Ref Level Att Count 26/30 1Pk View 10 dBm -10 dBm -10 dBm -20 dBm (10 dBm)	20.00 dBm 30 dB 30	dBm-	3 µ£ 🖷	RBW 1001	KH2 KH2 Mode	12[1] 12[1]	MI MI		-9.8 2.4138 -46.7 2.4000	22 dBn 60 GH 79 dBn 00 GH
Spectrum Ref Level Att Count 26/30 1Pk View 10 dBm -10 dBm -10 dBm -20 dBm (10 dBm)	20.00 dBm 30 dB 30	dBm-	3 µ£ 🖷	RBW 1001	KH2 KH2 Mode	12[1] 12[1]	MI MI		-9.8 2.4138 -46.7 2.4000	22 dBn 60 GH 79 dBn 00 GH
Spectrum Ref Level Att Count 26/30 1Pk View 10 dBm -10 dBm -10 dBm -20 dBm (10 dBm)	20.00 dBm 30 dB 30	dBm-	3 µ£ 🖷	RBW 1001	KH2 KH2 Mode	12[1] 12[1]	MI MI		-9.8 2.4138 -46.7 2.4000	22 dBn 60 GH 79 dBn 00 GH
Spectrum Ref Level Att Count 26/30 1Pk View 10 dBm -10 dBm -10 dBm -20 dBm (10 dBm)	20.00 dBm 30 dB 30	SWT 341	3 µ£ 🖷	RBW 1001	KH2 KH2 Mode	12[1] 12[1]	MI MI		-9.8 2.4138 -46.7 2.4000	22 dBn 60 GH 79 dBn 00 GH
Spectrum Ref Level Att Count 26/30 1Pk View 10 dBm d dBm -10 dBm -20 dBm -20 dBm -20 dBm -50 dBm -50 dBm -70 dBm	20.00 dBm 30 dB 30	dBm-	3 µ£ 🖷	RBW 100 VBW 300	H2 Mode	12[1] 12[1]	MI MI		-9.8 2.4138 -48.7 2.4000	2 dBn 60 GH 9 dBn 00 GH
Spectrum Ref Level Att Count 26/30 1Pk View 10 dBm -10 dBm -20 dBm -20 dBm -20 dBm -40 dBm -50 dBm -50 dBm -70 dBm -70 dBm -70 dBm	20.00 dBm 30 dB 30	dBm-	3 µ£ 🖷	RBW 100 VBW 300	KH2 KH2 Mode	12[1] 12[1]	MI MI		-9.8 2.4138 -46.7 2.4000	2 dBn 60 GH2 9 dBn 00 GH2
Spectrum Ref Level Att Count 26/30 1Pk View 10 dBm -10 dBm -20 dBm -20 dBm -20 dBm -40 dBm -50 dBm -50 dBm -70 dBm -70 dBm -70 dBm	20.00 dBm 30 dB 30 30 30 30 30 30 30 30 30 30 30 30 30	dBm-	3 µ£ 🖷	RBW 100 VBW 300	H2 Mode	12[1] 12[1]	A CONTRACTOR		-9.8 2.4138 -48.3 2.4000	2 dBn 60 GH2 9 dBn 00 GH2
Spectrum Ref Level Att Count 26/30 1Pk View 10 dBm 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -50 dBm -50 dBm -50 dBm -70 dBm -70 dBm Start 2.3 GH Marker Type M1	20.00 dBm 30 dB 30 30 30 30 30 30 30 30 30 30 30 42 42 42 42 42 1	BWT 341	Hartonal	RBW 100 0 VBW 300 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	H2 H2 Mode	111 12[1]	A CONTRACTOR		-9.8 2.4138 -48.3 2.4000	2 dBm 60 GH2 9 dBn 00 GH2
Ref Level Att Count 26/30 1Pk View 10 dBm 10 dBm -10 dBm -20 dBm -80 dBm -60 dBm -50 dBm -50 dBm -50 dBm -70 dBm -70 dBm Start 2.3 GB Marker Type	20.00 dBm 30 dB 30 31 -29.820	BWT 341	Harris Harris	RBW 100 1 VBW 300 1	(H2 (H2 Mode	111 12[1]	A A A A A A A A A A A A A A A A A A A		-9.8 2.4138 -48.3 2.4000	2 dBm 60 GH2 9 dBn 00 GH2



Channel 06 (2437MHz) Reference Level: -11.62dBm

u U U Spectrum Ref Level 20.00 dBm Offset 0.50 dB 🖷 RBW 100 kHz Att 30 dB SWT 30.1 ms 🖷 VBW 300 kHz Mode Auto Sweep Count 10/10 DC • 1Pk Max M1[1] -58.37 dBm 2.3989200 GHz 10 dBm 0 dBm--10 dBm--20 dBm -30 dBm 01 -31.620 dBm 40 dBm--50 dBm--60 dBm----and an distance constanting the support -70 dBm-Stop 2.4 GHz Start 1.0 MHz 30001 pts ₩. Spectrum Offset 0.50 dB
 RBW 100 kHz
 SWT 226 ms
 VBW 300 kHz Ref Level 20.00 dBm Att 30 dB Mode Auto Sweep Count 8/10 • 1Pk Max M1[1] -37.00 dBm 3.249410 GHz 10 dBm 6 dBm -10 dBm--20 dBm -30 dBm-01 -31.620 dBm MU 40 dBm -SO dBm h. h. h. A -70 dBm-Stop 25.0 GHz Start 2.4835 GHz 30001 pts

Total Quality. Assured. TEST REPORT

Intertek Report No.: 210520010SZN-004

Spectrum Ref Level			0.50 dB 🖷						
	30 dB	SWT	132.7 µs 🖷	VBW 300 k	Hz Mode	Auto FFT			
1Pk View			T		M	1[1]		-	11.62 dBm
10 dBm						-			67250 GHz
0 d8m			-	-					
-10 dBm		. dates	parameter	historicaria	ptoperity.	MI MA	destan.	·	
-20 dBm-		K. Martin							
«30 dBm			-	-					
-40 dBm	pt -		-					hy a	
-50 dBm	n ^s		-					has	at some way
-60 dBm	6		-						
-70 dBm									
CF 2.437 GH	z	in i	J	691	pts			Span	60.0 MHz



Channel 11 (2452MHz) Reference Level: -14.18dBm

u U U Spectrum Ref Level 20.00 dBm Offset 0.50 dB 🖷 RBW 100 kHz Att 30 dB SWT 30.1 ms 🖷 VBW 300 kHz Mode Auto Sweep Count 10/10 DC • 1Pk Max -58,69 dBm M1[1] 652.5870 MHz 10 dBm 6 dBm -10 dBm--20 dBm -30 dBm-D1 -34.180 dBm 40 dBm--50 dBm-Mt -60 dBm----A STREET IN 117 The second 70 dBm Stop 2.4 GHz Start 1.0 MHz 30001 pts ₩. Spectrum Offset 0.50 dB - RBW 100 kHz 8WT 226 ms - VBW 300 kHz Ref Level 20.00 dBm Att 30 dB Mode Auto Sweep Count 8/10 • 1Pk Max -35.71 dBm 3.269570 GHz M1[1] 10 dBm 6 dBm -10 dBm--20 dBm -30 dBm 01 -34.180 dBm 40 dBm -S0 dBm 1.4.62 44 100 -70 dBm-Stop 25.0 GHz Start 2.4835 GHz 30001 pts



Ref Level	20.50 dBm	Offset	0.50 dB	· RRW	100 24	2						m ∇
Att	30 dB		132.7 µs				Auto FF	т				
1Pk View												
						N	11[1]			2		4.18 dBn 9640 GH
dBm-			-	_			-	-			-	
dām			-		-			-			+	
0 dBm			-	101	-			-			+	
		1 Acres	homester	adapation i	prover	hourse	armin th	Aller	Sec. 1.			
0 dBm		por an							- 1.1		+	
	1	1.			1				1			
0 dBm			+		-		-	+		N .	+	
										1		
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	J									N.		
0 dBm	N	-	-	-	-		-			Im	A.,	
willial	P ^{res}									222	"My	hundan
o dam Brabal				-	-		1	-				
0 dBm								-				
F 2.452 GF	4z				691 (Sr	an 6	0.0 MHz
pectrum											Han u	
pectrum Ref Level Att	20.00 dBm 30 dB		0.50 dB 265.5 µs		/ 100 kH	2	Auto FF	T				
pectrum Ref Level Att ount 33/30	20.00 dBm 30 dB				/ 100 kH	2	Auto FF	т				
pectrum Ref Level Att ount 33/30	20.00 dBm 30 dB				/ 100 kH	iz Iz Mode	Auto FF	т			-1	(T) 4.14 dBr
pectrum Ref Level Att ount 33/30 IPk View	20.00 dBm 30 dB				/ 100 kH	iz Mode	11[1]	T			-1 2,44	4.14 dBr 3290 GH
pectrum Ref Level Att ount 33/30 IPk View	20.00 dBm 30 dB				/ 100 kH	iz Mode	- 2968,01. X1000	T			-1 2.44 -5	4.14 dBr 3290 GH 6.58 dBr
pectrum Ref Level Att ount 33/30 IPk View	20.00 dBm 30 dB				/ 100 kH	iz Mode	11[1]	T			-1 2.44 -5	4.14 dBr 3290 GH 6.58 dBr
pectrum Ref Level Att ount 33/30 IPk View 3 dBm	20.00 dBm 30 dB 10				/ 100 kH	iz Mode	11[1]	T			-1 2.44 -5	4.14 dBr 3290 GH 6.58 dBr
pectrum Ref Level Att ount 33/30 IPk View 0 dBm dBm 0 dBm	20.00 dBm 30 dB				/ 100 kH	iz Mode	11[1]	T			-1 2.44 -5	4.14 dBr 3290 GH 6.58 dBr
pectrum Ref Level Att ount 33/30 DRk View 0 dBm 0 dBm 0 dBm	20.00 dBm 30 dB 10				/ 100 kH	iz Mode	11[1]	T			-1 2.44 -5	4.14 dBr 3290 GH 6.58 dBr
pectrum Ref Level Att ount 33/30 IPk View I dBm dBm 0 dBm 0 dBm	20.00 dBm 30 dB 10	SWT			/ 100 kH	iz Mode	11[1]	T			-1 2.44 -5	4.14 dBr 3290 GH 6.58 dBr
pectrum Ref Level Att Jount 33/30 IPk View D dBm dBm 0 dBm 0 dBm	20.00 dBm 30 dB	SWT			/ 100 kH	iz Mode	11[1]	T			-1 2.44 -5	4.14 dBr 3290 GH 6.58 dBr
pectrum Ref Level Att ount 33/30 IPk View 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm	20.00 dBm 30 dB	SWT	265.5 µs	• VBW	/ 100 kH / 300 kH	iz Mode				3	-1 2,44 -5 2,48	4,14 dBr 3290 GH 6,50 dBr 3500 GH
pectrum Ref Level Att ount 33/30 IPk View 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm	20.00 dBm 30 dB	SWT	265.5 µs	• VBW	/ 100 kH / 300 kH	iz Mode				3	-1 2,44 -5 2,48	4.14 dBr 3290 GH 6.50 dBr 3500 GH
pectrum Ref Level Att ount 33/30 IPk View 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm	20.00 dBm 30 dB	SWT	265.5 µs	• VBW	/ 100 kH / 300 kH	iz Mode			ערייייייייייייייייייייייייייייייייייייי	3	-1 2,44 -5 2,48	4.14 dBr 3290 GH 6.50 dBr 3500 GH
pectrum Ref Level Att Jount 33/30 D dBm 0 dBm	20.00 dBm 30 dB	SWT	265.5 µs	• VBW	/ 100 kH / 300 kH	iz Mode			entry/2.14	3	-1 2,44 -5 2,48	4.14 dBr 3290 GH 6.50 dBr 3500 GH
pectrum Ref Level Att ount 33/30 D dBm dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm 0 dBm	20.00 dBm 30 dB	SWT	265.5 µs	• VBW	/ 100 kH / 300 kH	iz Mode			2012 Alar	3	-1 2,44 -5 2,48	4.14 dBr 3290 GH 6.50 dBr 3500 GH
pectrum Ref Level Att ount 33/30 IPk View 0 dBm 0 dBm	20.00 dBm 30 dB 30	SWT	265.5 µs	• VBW	/ 100 kH / 300 kH	N N N			earty2.24		-1 2,44 -5 2,48	4,14 dBr 3290 GH 6.58 dBr 3500 GH
pectrum Ref Level Att oount 33/30 IPk View 0 dBm 0 dBm	20.00 dBm 30 dB 30 10	SWT	265.5 µs	* VBW	7 100 kH 7 300 kH	N N N N N N N N N N N N N N N N N N N				S	-1 2,44 -5 2,48	4,14 dBr 3290 GH 6.58 dBr 3500 GH
pectrum Ref Level Att Sount 33/30 1Pk View 0 dBm dBm 0 dBm 0 dBm	20.00 dBm 30 dB 30 10	SWT	265.5 µs	a vew	/ 100 kH / 300 kH	N N N N N N N N N N N N N N N N N N N					-1 2,44 -5 2,48	4,14 dBr 3290 GH 6.58 dBr 3500 GH
Spectrum Ref Level Att Count 33/30 1Pk View 0 dBm dBm 0 dBm 20 dBm 0 dBm 50 dBm 50 dBm 70 dBm 70 dBm 70 dBm	20.00 dBm 30 dB 30 10 1 -34.140 c	SWT	265.5 µs	**************************************	 100 kH 300 kH	IZ Mode				S	-1 2,44 -5 2,48	4,14 dBn 9290 GH 6.58 dBn 9500 GH



Applicant: Arovast Corporation Date of Test: 10 June 2021

Model: LAP-C202S-WUSR

4.5 Out of Band Radiated Emissions (for emissions in 4.4 above that are less than 20dB below carrier), FCC Rule 15.247(d):

For out of band emissions that are close to or that exceed the 20dB attenuation requirement described in the specification, radiated measurements were performed at a 3m separation distance to determine whether these emissions complied with the general radiated emission requirement.

- [×] Not required, since all emissions are more than 20dB below fundamental
- [] See attached data sheet



Applicant: Arovast Corporation Date of Test: 10 June 2021

Model: LAP-C202S-WUSR

4.6 Transmitter Radiated Emissions in Restricted Bands, FCC Rule 15.35(b) (c):

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak detection unless otherwise specified.

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.



Applicant: Arovast Corporation Date of Test: 10 June 2021

Model: LAP-C202S-WUSR

4.7 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

FS = RA + AF + CF - AG + PD

Where	FS = Field Strength in dBµV/m
	RA = Receiver Amplitude (including preamplifier) in $dB\mu V$
	CF = Cable Attenuation Factor in dB
	AF = Antenna Factor in dB
	AG = Amplifier Gain in dB
	PD = Pulse Desensitization in dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

FS = RA + AF + CF - AG + PD

Example

Assume a receiver reading of 62.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB. The net field strength for comparison to the appropriate emission limit is 42 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

RA = 62.0 dBµV AF = 7.4 dB CF = 1.6 dB AG = 29.0 dB PD = 0 dB FS = 62 + 7.4 + 1.6 - 29 + 0 = 42 dBµV/m

Level in mV/m = Common Antilogarithm [(42 dB μ V/m)/20] = 125.9 μ V/m



Applicant: Arovast Corporation Date of Test: 10 June 2021

Model: LAP-C202S-WUSR

4.8 Radiated Spurious Emission

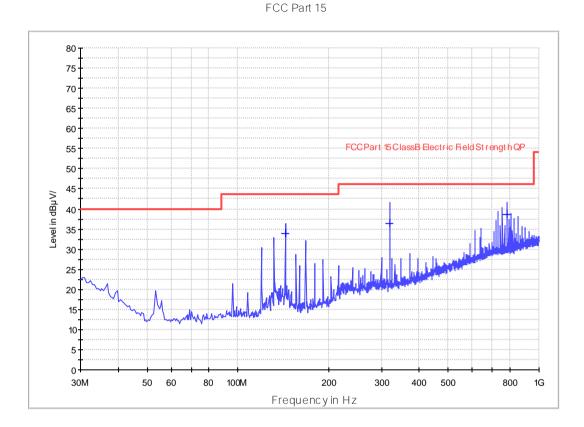
Worst Case Radiated Spurious Emission at 7386.0MHz is passed by 0.3dB margin.

For the electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf.



Model: LAP-C202S-WUSR transmit simultaneously

ANT Polarity: Horizontal



Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
143.975000	33.8	1000.0	120.000	н	9.9	9.7	43.5
320.030000	36.3	1000.0	120.000	н	16.5	9.7	46.0
780.295000	38.6	1000.0	120.000	Н	25.4	7.4	46.0

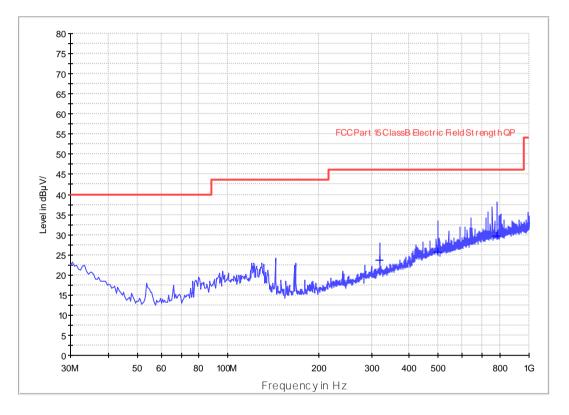
Remark:

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. QuasiPeak (dB μ V/m)= Corr. (dB/m)+ Read Level (dB μ V)
- 3. Margin (dB) = Limit Line(dBµV/m) Level (dBµV/m)



Model: LAP-C202S-WUSR transmit simultaneously

ANT Polarity: Vertical



FCC Part 15

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
320.030000	23.7	1000.0	120.000	v	16.5	22.3	46.0
498.025000	25.7	1000.0	120.000	v	21.0	20.3	46.0
780.295000	29.7	1000.0	120.000	v	25.4	16.3	46.0

Remark:

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. QuasiPeak (dBµV/m)= Corr. (dB/m)+ Read Level (dBµV)
- 3. Margin (dB) = Limit Line(dB μ V/m) Level (dB μ V/m)



Model: LAP-C202S-WUSR Transmitting (802.11b-Channel 01)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	55.4	36.8	33.5	52.1	74.0	-21.9
Horizontal	*2390.000	67.2	36.4	29.1	59.9	74.0	-14.1

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	48.0	36.8	33.5	44.7	54.0	-9.3
Horizontal	*2390.000	58.4	36.4	29.1	51.1	54.0	-2.9

- 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
- 3. Negative value in the margin column shows emission below limit.
- 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.



Model: LAP-C202S-WUSR Transmitting (802.11b-Channel 06)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	55.3	36.7	33.4	52.0	74.0	-22.0
Horizontal	*7311.000	61.4	36.6	35.8	60.6	74.0	-13.4

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	44.6	36.7	33.4	41.3	54.0	-12.7
Horizontal	*7311.000	52.6	36.6	35.8	51.8	54.0	-2.2

- 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
- 3. Negative value in the margin column shows emission below limit.
- 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.



Model: LAP-C202S-WUSR Transmitting (802.11b-Channel 11)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	56.0	36.8	33.3	52.5	74.0	-21.5
Horizontal	*7386.000	69.0	36.5	29.3	61.8	74.0	-12.2

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	44.7	36.8	33.3	41.2	54.0	-12.8
Horizontal	*7386.000	60.9	36.5	29.3	53.7	54.0	-0.3

- 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
- 3. Negative value in the margin column shows emission below limit.
- 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.



Model: LAP-C202S-WUSR Transmitting (802.11g-Channel 01)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	55.6	36.8	33.5	52.3	74.0	-21.7
Horizontal	*2390.000	67.4	36.4	29.1	60.1	74.0	-13.9

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	48.6	36.8	33.5	45.3	54.0	-8.7
Horizontal	*2390.000	58.5	36.4	29.1	51.2	54.0	-2.8

- 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
- 3. Negative value in the margin column shows emission below limit.
- 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.



Model: LAP-C202S-WUSR Transmitting (802.11g-Channel 06)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	55.5	36.7	33.4	52.2	74.0	-21.8
Horizontal	*7311.000	61.5	36.6	35.8	60.7	74.0	-13.3

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	44.8	36.7	33.4	41.5	54.0	-12.5
Horizontal	*7311.000	52.1	36.6	35.8	51.3	54.0	-2.7

- 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
- 3. Negative value in the margin column shows emission below limit.
- 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.



Model: LAP-C202S-WUSR Transmitting (802.11g-Channel 11)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	56.3	36.8	33.3	52.8	74.0	-21.2
Horizontal	*7386.000	69.6	36.5	29.3	62.4	74.0	-11.6

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	45.0	36.8	33.3	41.5	54.0	-12.5
Horizontal	*7386.000	60.4	36.5	29.3	53.2	54.0	-0.8

- 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
- 3. Negative value in the margin column shows emission below limit.
- 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.



Model: LAP-C202S-WUSR Transmitting (802.11n20-Channel 01)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	56.7	36.8	33.5	53.4	74.0	-20.6
Horizontal	*2390.000	67.6	36.4	29.1	60.3	74.0	-13.7

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	48.7	36.8	33.5	45.4	54.0	-8.6
Horizontal	*2390.000	57.9	36.4	29.1	50.6	54.0	-3.4

- 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
- 3. Negative value in the margin column shows emission below limit.
- 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.



Model: LAP-C202S-WUSR Transmitting (802.11n20-Channel 06)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	56.7	36.7	33.4	53.4	74.0	-20.6
Horizontal	*7311.000	62.3	36.6	35.8	61.5	74.0	-12.5

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	45.6	36.7	33.4	42.3	54.0	-11.7
Horizontal	*7311.000	52.9	36.6	35.8	52.1	54.0	-1.9

- 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
- 3. Negative value in the margin column shows emission below limit.
- 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.



Model: LAP-C202S-WUSR Transmitting (802.11n20-Channel 11)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	55.9	36.8	33.3	52.4	74.0	-21.6
Horizontal	*7386.000	68.3	36.5	29.3	61.1	74.0	-12.9

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	45.4	36.8	33.3	41.9	54.0	-12.1
Horizontal	*7386.000	60.5	36.5	29.3	53.3	54.0	-0.7

- 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
- 3. Negative value in the margin column shows emission below limit.
- 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.



Model: LAP-C202S-WUSR Transmitting (802.11n40-Channel 03)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4844.000	56.5	36.8	33.5	53.2	74.0	-20.8
Horizontal	*2390.000	67.0	36.4	29.1	59.7	74.0	-14.3

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4844.000	48.7	36.8	33.5	45.4	54.0	-8.6
Horizontal	*2390.000	58.6	36.4	29.1	51.3	54.0	-2.7

- 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
- 3. Negative value in the margin column shows emission below limit.
- 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.



Model: LAP-C202S-WUSR Transmitting (802.11n40-Channel 06)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	56.7	36.7	33.4	53.4	74.0	-20.6
Horizontal	*7311.000	62.3	36.6	35.8	61.5	74.0	-12.5

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	45.7	36.7	33.4	42.4	54.0	-11.6
Horizontal	*7311.000	52.4	36.6	35.8	51.6	54.0	-2.4

- 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
- 3. Negative value in the margin column shows emission below limit.
- 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.



Model: LAP-C202S-WUSR Transmitting (802.11n40-Channel 09)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4904.000	57.8	36.8	33.3	54.3	74.0	-19.7
Horizontal	*7356.000	69.6	36.5	29.3	62.4	74.0	-11.6

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4904.000	45.7	36.8	33.3	42.2	54.0	-11.8
Horizontal	*7356.000	60.1	36.5	29.3	52.9	54.0	-1.1

- 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
- 3. Negative value in the margin column shows emission below limit.
- 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.



Applicant: Arovast Corporation Date of Test: 10 June 2021 Model: LAP-C202S-WUSR

4.9 Conducted Emission

Worst Case Conducted Emission (802.11b-Channel 01) at 0.978MHz is passed by 14.4dB margin.

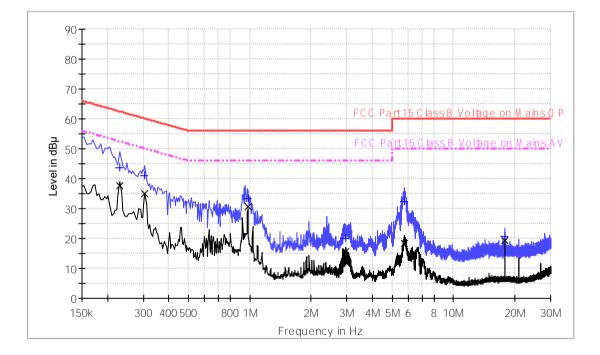
For the electronic filing, the worst case radiated emission configuration photographs are saved with filename: conducted photos.pdf.



Applicant: Arovast Corporation Date of Test: 10 June 2021 Model: LAP-C202S-WUSR Worst Case Operating Mode: transmit simultaneously Phase: Live

Graphic / Data Table

Conducted Emissions Pursuant to FCC 15.207: Emissions Requirement



Limit and Margin QP

Frequency	QuasiPeak	Bandwidth	Line	Corr.	Margin	Limit	
(MHz)	(dBuV)	(kHz)		(dB)	(dB)	(dBuV)	
0.231000	43.5	9.000	L1	9.6	18.9	62.4	
0.306000	41.1	9.000	L1	9.6	19.0	60.1	
0.978000	33.4	9.000	L1	9.7	22.6	56.0	
2.954000	19.9	9.000	L1	9.7	36.1	56.0	
5.722000	32.2	9.000	L1	9.7	27.8	60.0	
17.946000	20.6	9.000	L1	10.4	39.4	60.0	

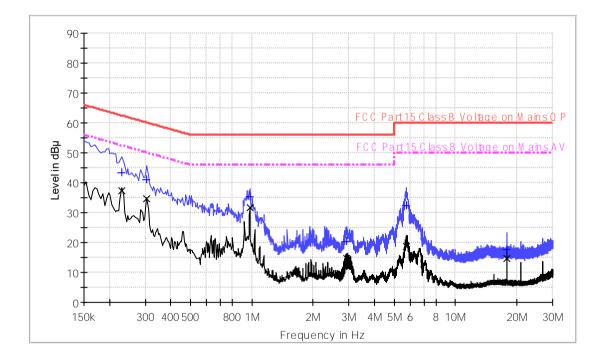
Limit and Margin AV

Frequency	Average	Bandwidth	Line	Corr.	Margin	Limit
(MHz)	(dBuV)	(kHz)		(dB)	(dB)	(dBuV)
0.231000	37.5	9.000	L1	9.6	14.9	52.4
0.306000	35.1	9.000	L1	9.6	15.0	50.1
0.978000	30.6	9.000	L1	9.7	15.4	46.0
2.954000	15.8	9.000	L1	9.7	30.2	46.0
5.722000	18.4	9.000	L1	9.7	31.6	50.0
17.946000	19.3	9.000	L1	10.4	30.7	50.0



Applicant: Arovast Corporation Date of Test: 10 June 2021 Model: LAP-C202S-WUSR Worst Case Operating Mode: transmit simultaneously Phase: Neutral

Graphic / Data Table



Conducted Emissions Pursuant to FCC 15.207: Emissions Requirement

Limit and Margin QP

Frequency	QuasiPeak	Bandwidth	Line	Corr.	Margin	Limit	
(MHz)	(dBuV)	(kHz)		(dB)	(dB)	(dBuV)	
0.231000	43.5	9.000	N	9.5	18.9	62.4	
0.306000	40.9	9.000	N	9.5	19.2	60.1	
0.978000	35.3	9.000	N	9.5	20.7	56.0	
2.938000	20.4	9.000	N	9.5	35.6	56.0	
5.726000	32.3	9.000	N	9.6	27.7	60.0	
17.942000	17.5	9.000	N	10.4	42.5	60.0	

Limit and Margin AV

Frequency	Average	Bandwidth	Line	Corr.	Margin	Limit
(MHz)	(dBuV)	(kHz)		(dB)	(dB)	(dBuV)
0.231000	37.4	9.000	Ν	9.5	15.0	52.4
0.306000	34.8	9.000	Ν	9.5	15.3	50.1
0.978000	31.6	9.000	Ν	9.5	14.4	46.0
2.938000	14.8	9.000	Ν	9.5	31.2	46.0
5.726000	18.7	9.000	Ν	9.6	31.3	50.0
17.942000	14.7	9.000	Ν	10.4	35.3	50.0



Applicant: Arovast Corporation Date of Test: 10 June 2021 Model: LAP-C202S-WUSR

4.10 Radiated Emissions from Digital Section of Transceiver, FCC Ref: 15.109

- [] Not required No digital part
- [] Test results are attached
- [x] Included in the separated report.



Applicant: Arovast Corporation Date of Test: 10 June 2021 Model: LAP-C202S-WUSR

4.11 Transmitter Duty Cycle Calculation and Measurements, FCC Rule 15.35(b), (c)

The EUT antenna output port was connected to the input of the spectrum analyzer. The analyzer center frequency was set to EUT RF channel carrier. The SWEP function on the analyzer was set to ZERO SPAN. The Transmitter ON time was determined from the resultant time-amplitude display:

	See attached spectrum analyzer chart (s) for Transmitter timing
	See Transmitter timing diagram provided by manufacturer
x	Not applicable, duty cycle was not used.



5.0 Equipment Photographs

For electronic filing, the photographs are saved with filename: external photos.pdf & internal photos.pdf.

6.0 **Product Labeling**

For electronic filing, the FCC ID label artwork and location is saved with filename: label.pdf.

7.0 Technical Specifications

For electronic filing, the block diagram and circuit diagram are saved with filename: block.pdf and circuit.pdf respectively.

8.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

9.0 <u>Confidentiality Request</u>

For electronic filing, the confidentiality request of the tested EUT is saved with filename: request.pdf.

10.0 Discussion of Pulse Desensitization

The determination of pulse desensitivity was made in accordance with Hewlett Packard Application Note 150-2, *Spectrum Analysis ... Pulsed RF.*

Pulse desensitivity is not applicable for this device since the transmitter transmits the RF signal continuously.



TEST REPORT

11.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-12	Biconilog Antenna	ETS	3142E	00166158	14-Sep-2018	14-Sep-2021
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	18-May-2021	18-May-2023
SZ061-08	Horn Antenna	ETS	3115	00092346	07-Sep-2019	07-Sep-2021
SZ061-07	Pyramidal Horn Antenna	ETS	3160-09	00083067	13-Aug -2019	13-Aug-2021
SZ056-03	Spectrum Analyzer	R&S	FSP30	101148	10-May-2021	10-May-2022
SZ185-01	EMI Receiver	R & S	ESCI	100547	22-Dec-2020	22-Dec-2021
SZ181-04	Preamplifier	Agilent	8449B	3008A024 74	10-May-2021	10-May-2022
SZ188-01	Anechoic Chamber	ETS	RFD-F/A- 100	4102	15-Dec-2018	15-Dec-2021
SZ062-02	RF Cable	RADIALL	RG 213U		01-Dec-2020	01-Dec-2021
SZ062-05	RF Cable	RADIALL	0.04- 26.5GHz		01-Dec-2020	01-Dec-2021
SZ062-12	RF Cable	RADIALL	0.04- 26.5GHz		01-Dec-2020	01-Dec-2021
SZ067-04	Notch Filter	Micro-Tronics	BRM5070 2-02		11-May-2021	11-May-2022
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	27-Oct-2020	27-Oct-2021
SZ187-02	Two-Line V- Network	R&S	ENV216	100073	12-May-2021	12-May-2022
SZ188-03	Shielding Room	ETS	RFD-100	4100	07-Jan-2020	07-Jan-2023
SZ062-16	RF Cable	HUBER+SUHNER	CBL2-BN- 1m	110127- 2231000	13-Nov-2020	13-Nov-2021