Application for Certification For a Transmitter.

RedSeat Entertainment LLC 6440 South Wasatch Blvd., Suite 105 Holladay, UT 84121

GT Chair

M/N: 02661

FCC ID: 2AK7R-02661

REPORT # UT16085A-003

This report was prepared in accordance with the requirements of the FCC Rules and Regulations Part 2, Subpart J, 2.1033, Part 15.247, RSS-247 Issue 2, and other applicable sections of the rules as indicated herein.

Prepared By:

DNB Engineering, Inc. 1100 E Chalk Creek Road Coalville, UT 84017

21 May 2023

TABLE OF CONTENTS

Paragraph numbers in this report follow the application section numbers found in the FEDERAL COMMUNICATIONS COMMISSION Rules and Regulations, Part 2, Subpart J for Certification of electronic equipment.

TABLE	OF CO	ONTENTS	
1 1 1 1 1 1 1 1	.0 .1 .2 .3 .4 .5	ADMINISTRA Certifications Measurement Test Equipmen Test Summary Measurement	ATIVE DATA
2.1033 (t	o,2)	FCC Identifier	•
2.1033 (t	o,3)	Installation and	d Operating Instructions
2.1033 (t	0, 4)	Brief Descript	ion of Circuit Function 8
2.1033 (t	o,5)	Block Diagran	n 8
2.1033 (t	0 ,7)	Equipment Ph	otographs 8
2.1033 (t 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1:	5,6) 5.203 5.207 5.209 5.247 5.247 5.247 5.247 5.247 5.247 5.247	Report of Mea (b,2) (e) (d) (a,2) (d) (d) (d) (d)	surements.9Antenna Requirement10Conducted Emissions11Radiated Emissions (General Provisions)15Output Power (DTS)18Power Spectral Density (PSD)22Band-edge RF Conducted26DTS Bandwidth30Conducted Spurious34Radiated Spurious Emissions47Restricted Bands51
End of R	eport	UT16085A-00	3

1.0 ADMINISTRATIVE DATA

1.1 Certifications and Qualifications

I certify that DNB Engineering, Inc conducted the tests performed in order to obtain the technical data presented in this application. Also, based on the results of the enclosed data, I have concluded that the equipment tested meets or exceeds the requirements of the Rules and Regulations governing this application.

1.2 Measurement Repeatability Information

The test data presented in this report has been acquired using the guidelines set forth in FCC Part 2.1031 through 2.1057, Part 15. The test results presented in this document are valid only for the equipment identified herein under the test conditions described. Repeatability of these test results will only be achieved with identical measurement conditions. These conditions include: The same test distance, EUT Height, Measurement Site Characteristics, and the same EUT System Components. The system must have the same Interconnecting Cables arranged in identical placement to that in the test set-up, with the system and/or EUT functioning in the identical mode of operation (i.e. software and so on) as on the date of the test. Any deviation from the test conditions and the environment on the date of the test may result in measurement repeatability difficulties.

All changes made to the EUT during the course of testing as identified in this test report must be incorporated into the EUT or identical models to ensure compliance with the FCC regulations.

Coffayne II

C. L. Payne III (Para. 1.1) Facility Manager Coalville Facility. DNB Engineering, Inc. Tel. (435) 336-4433 FAX (435) 336-4436

1.3 Test Equipment List

TEST EQUIPMENT LIST - CONDUCTED EMISSIONS						
Description	Manufacturer	Model No.	Asset #	Serial #	Cal Due	
LISN	Fisher Custom Communications	FCCLISN5032401	U-286	2020	03 Feb 2024	
Site 1 CE Cable	DNB	N/A	U-400B	N/A	01 Dec 2023	
Spectrum Analyzer	Rhode & Schwarz	FSV30	U-248	101367	27 Aug 2023	
TILE Software	ETS Lindgren	3.4.11.13	U-317	8112006	07 Mar 2024	

TEST EQUIPMENT LIST - RADIATED EMISSIONS						
Description	Manufacturer	Model No.	Asset #	Serial #	Cal Due	
Pre-Amplifier	Hewlett Packard	8447D	U-068	2727A06184	04 Aug 2023	
Pre-Amplifier	DNB	S-21G	U-095	U-095-1	03 Feb 2024	
Site 1 RE Cable	DNB	N/A	U-400B	N/A	01 Dec 2023	
High Freq Cable	TRU Corp	210	U-066	TRU-21B1111-080M	08 Feb 2024	
BiConiLog Antenna	ETS - Lindgren	3142E	U-255	154973	03 Sep 2023	
DRG Horn Antenna	AH Systems	SAS-571	U-071	417	11 Jul 2023	
Spectrum Analyzer	Rhode & Schwarz	FSV30	U-248	101367	27 Aug 2023	
TILE Software	ETS- Lindgren	3.4.11.13	U-317	8112006	07 Mar 2024	

TEST EQUIPMENT LIST - ANTENNA CONDUCTED						
Description	Manufacturer	Model No.	Asset #	Serial #	Cal Due	
Spectrum Analyzer	Rhode & Schwarz	FSV30	U-248	101367	27 Aug 2024	

1.4 Test Summary Cross Reference

Test Item	FCC Requirement	IC Requirement	Test Method	Result
Antenna Requirement	15.203/15.247	RSS-Gen 6.8		Pass
Conducted Emissions (General Provisions)	15.207	RSS-Gen 8.8	ANSI C63.10-2013	Pass
Radiated Emissions (General Provisions)	15.209	RSS-Gen 8.9	ANSI C63.10-2013	Pass
Output Power (FHSS)	15.247 (b,2)	RSS-247 5.4 d)	ANSI C63.10-2013 Clause 11.9.1.1	Pass
Power Spectral Densisty	15.247 (e)	RSS-247 5.2 b)	ANSI C63.10-2013 Clause 11.10.2	Pass
Band-edge RF Conducted	15.247 (d)	RSS-247 5.5	ANSI C63.10-2013 Clause 11.13.2	Pass
DTS Bandwidth	15.247 (a,2)	RSS-247 5.2 a)	ANSI C63.10-2013 Clause 11.8.1	Pass
Conducted Spurious	15.247 (d)	RSS-247 5.5	ANSI C63.10-2013 Clause 11.11.3	Pass
Radiated Spurious Emissions	15.247 (d)	RSS-247 5.5	ANSI C63.10-2013Clause 11.12.2.7	Pass
Restricted Bands	15.247 (d)	RSS-Gen 8.10	ANSI C63.10-2013 Clause 11.12.2	Pass

RSS-GEN	Issue 5	Mar 2021
RSS-247	Issue 2	Feb 2017

Preliminary scans were performed to determine worst case modulation, packet length, and data rates. Only worst case data has been recorded within the body of the test report.

1.5 Measurement Uncertainty

Measurement Type	Uncertainty
AC Conducted Emissions	± 1.67 dB
OATS - Radiated Emissions - Vertical Biconical (30-300MHz)	$\pm 4.17 \text{ dB}$
OATS - Radiated Emissions - Horizontal Biconical (30-300MHz)	± 4.22 dB
OATS - Radiated Emissions - Vertical Log Periodic (300-100MHz)	± 4.92 dB
OATS - Radiated Emissions - Horizontal Log Periodic (300-1000MHz)	± 4.79 dB
OATS - Radiated Emissions - Vertical DRG Horn (> 1GHz)	± 5.74 dB
OATS - Radiated Emissions - Horizontal DRG Horn (>1GHz)	$\pm 5.80 \text{ dB}$
Antenna Conducted Measurements	± 1.96 dB

2.1033 (b) (1) Application for Certification

Name of Applicant:	RedSeat Entertainment LLC 6440 South Wasatch Blvd, Suite 105 Holladay, UT 84121
FRN Number:	0026273516
Name of Manufacturer :	RedSeat Entertainment LLC 6440 South Wasatch Blvd, Suite 105 Holladay, UT 84121
Description:	GT Chair
Model Number(s):	02661
Anticipated Production Quantity:	Multiple Units
Frequency Band:	2406 - 2474 MHz
Rated Power:	-0.15 dBm (1 mW rounded up)
Type of Signal:	Digital Transmission System (DTS)
Modulation and data rate:	Proprietary baseband processing with shaped-8FSK modulation at a 2 MHz symbol rate using a rate-5/6 4D trellis coded modulation scheme to achieve a 5 Mbps raw data rate.
Antenna Type:	Internal - Chip - Monopole
Antenna Gain:	0.5dBi (derived from data sheet)

2.1033 (b,2) FCC Identifier

Model Number:	02661
FCC ID:	2AK7R-02661



Installation and Operating Instructions -	Supplied separately.
Brief Description of Circuit Function -	Supplied separately.
Block Diagram -	Supplied separately.
Equipment Photographs -	Supplied separately.
	Installation and Operating Instructions - Brief Description of Circuit Function - Block Diagram - Equipment Photographs -

2.1033 (b,6) Report of Measurements

15.203 Antenna Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Pass - Antenna gain is equal to or less than 0.5dBi

Pass - Antenna is an internal monopole chip antenna

15.207 Conducted Emissions

Test Procedure: As specified in ANSI C63.10-2013

EUT has an indirect connection to the AC Mains through an AC Wall mount power supply was provided by the manufacturer which simulated worst case conditions. Conducted emissions were made in accordance with ANSI C63.10-2013 Clause 6.2.

	Conducted limit (dBµV)		
Frequency of emission (MHz)	Quasi-peak	Average	
0.15-0.5	66 to 56*	56 to 46*	
0.5-5	56	46	
5-30	60	50	

*Decreases with the logarithm of the frequency.

The spectrum analyzer is setup to store the peak emissions over the range stated in the applicable standard. Cables are then adjusted to maximize emissions. The peak spectrum analyzer trace and limits are plotted onto graph paper. A receiver (with CISPR quasi peak and average capability) is used to identify the highest frequencies with respect to the limit. Ambient signals are noted on the graph along with emissions from the EUT. The highest levels are listed in the Conducted Emissions Summary Test Data. If the Peak readings are below the Average limits only the Peak have been recorded.

Example of Typical Calculation

Rohde and Schwarz reading @ 10 MHz	49.0	dBµV
LISN Factor	+7.5	dB
Cable Loss	+2.0	dB
Total Factors	9.5	dB
Voltage dBµV at LISN =	58.5	dBµv

SETUP DIAGRAM

NOTE: For FCC an 80cm table height



	CONDUCTED EMISSIONS - PHASE LEAD											
Freq. (MHz)	Meas'd (dBuV)	Atten. Factors (dB)	Amp Factors (dB)	LISN Factors (dB)	Cable Factors (dB)	Total Factors (dB)	Total (dBuV)	Limit (dBuV)	Delta (dB)	Limit Type AVE,QP	Line L1 L2 L3 L4	Meas. Type AVE, QP, Peak
0.329	33.23	9.52		0.10		9.62	42.85	51.00	-8.15	AVE	L1	Peak
0.367	32.70	9.53		0.10		9.63	42.33	50.00	-7.67	AVE	L1	Peak
0.605	30.00	10.22				10.22	40.22	46.00	-5.78	AVE	L1	Peak
0.744	27.81	10.24				10.24	38.05	46.00	-7.95	AVE	L1	Peak
0.761	26.68	10.23				10.23	36.91	46.00	-9.09	AVE	L1	Peak
0.795	26.20	10.23				10.23	36.43	46.00	-9.57	AVE	L1	Peak



	CONDUCTED EMISSIONS - NEUTRAL LEAD											
Freq. (MHz)	Meas'd (dBuV)	Atten. Factors (dB)	Amp Factors (dB)	LISN Factors (dB)	Cable Factors (dB)	Total Factors (dB)	Total (dBuV)	Limit (dBuV)	Delta (dB)	Limit Type AVE,QP	Line L1 L2 L3 L4	Meas. Type AVE, QP, Peak
0.328	31.96	9.52		0.10		9.62	41.58	51.00	-9.42	AVE	L2	Peak
0.364	29.86	9.53		0.10		9.63	39.49	50.00	-10.51	AVE	L2	Peak
0.369	28.86	9.53		0.10		9.63	38.49	50.00	-11.51	AVE	L2	Peak
0.592	27.59	10.21				10.21	37.80	46.00	-8.20	AVE	L2	Peak
0.606	27.95	10.22				10.22	38.17	46.00	-7.83	AVE	L2	Peak
1.286	29.09	9.71			0.07	9.78	38.87	46.00	-7.13	AVE	L2	Peak



Test Set Up - Conducted Emissions



15.209 Radiated Emissions (General Provisions)

Test Procedure: ANSI C63.10-2013

The EUT was measured on an open area test site (OATS).

A measuring distance of at least 3 m shall be used for measurements at frequencies up to 1 GHz. For frequencies above 1 GHz, any suitable measuring distance may be used. The equipment size (excluding the antenna) shall be less than 20 % of the measuring distance.

Sufficient precautions shall be taken to ensure that reflections from extraneous objects adjacent to the site do not degrade the measurement results, in particular:

- no extraneous conducting objects having any dimension in excess of a quarter wavelength of the highest frequency tested shall be in the immediate vicinity of the site;

- all cables shall be as short as possible; as much of the cables as possible shall be on the ground plane or preferably below; and the low impedance cables shall be screened.

- EUT was positioned in three orthogonal axis - only the worst case data (X-Axis) has been recorded

The EUT shall be placed upon a non-conductive table (wooden for below 1GHz and styrene above 1GHz) 0.80 meters above the ground plane for frequencies from 30 to 1000MHz and 1.5 meters above the ground plane above 1 Ghz and shall be placed in the "worst case" transmitting mode. The EUT shall be rotated 360 degrees to find the azimuth maxima. The receive antenna shall then be raised and lowered between 1 to 4 meters to find the maximum signal emanating from the EUT. This signal strength is then recorded on the data sheets.

Frequency (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measurement Distance (meters)
.0009 - 0.490	2400/F(kHz)	20*(Log ₁₀ (2400/F(kHz))	300
0.490 - 1.705	24000/F(kHz)	20*(Log ₁₀ (24000/F(kHz))	30
1.705 - 30.0	30	29.5	30
30 - 88	100	40.0	3
88 - 216	150	43.5	3
216 - 960	200	46.0	3
Above 960	500	54.0	3



	NB	1	100 E Cl Coalvil (435 FAX (4	halk Cre le, UT 8) 336-44 (35) 336	ek Roac 34017 133 -4436	l	Radiated Emissions (General)							
DNB Job	Number:	160	85			Dat	e: 10	May 202	23	Spec	cificatior	ı		
Customer	Customer: RedSeat Entertainment LLC								гv	1 15 200)			
Model Nu	imber:	026	51						[X] 15.205] ANSI	, C63.10-	2013		
Descriptio	Description: GT Chair													
EU	T is in conf	ormance	with FC	C 15.209		X YES	NO	Signed		Y S	Staples			
				Rac	liated	Emissi	ons							
EDEO	S/A		Correcti	on Factor			dBuV/m			Posi	tions			
(Mhz)	Reading (dBuV)	Ant dB/m	Cbl dB	Amp dB	Distance dB	e Corr dBuV/m	Lim dBuV/m	Delta dB	Тур	Tbl	PI	Hgt		
56.070	35.01	10.64	1.80	26.14	10.46	31.77	40.00	-8.23	QP	38	Vert	2.05		
63.560	34.11	10.81	1.87	26.10	10.46	31.15	40.00	-8.85	QP	0	Vert	1.00		
41.311	30.68	13.80	1.73	26.20	10.46	30.46	40.00	-9.54	QP	0	Vert	1.00		
46.113	30.92	9.87	1.66	24.16	10.46	28.75	40.00	-11.25	QP	300	Vert	1.00		
39.810	28.10	14.50	1.70	26.20	10.46	28.56	40.00	-11.45	QP	261	Vert	1.00		
69.285	30.12	11.16	1.99	26.10	10.46	27.62	40.00	-12.38	QP	0	Vert	1.00		
34.923	19.23	17.14	1.60	26.30	10.46	22.13	40.00	-17.87	QP	0	Horz	4.00		
266.088	23.10	16.49	3.53	25.50	10.46	28.08	46.00	-17.92	QP	0	Horz	4.00		
138.454	17.96	12.15	2.48	25.91	10.46	17.15	40.00	-22.85	QP	0	Horz	1.00		

EUT was tested at a test distance of 10meters and corrected to a 3 meter specification distance.

Reference Radiated Spurious Emissions section for frequencies above 1GHz.

11.9.1 Maximum peak conducted output power

11.9.1.1 RBW > DTS bandwidth

The following procedure shall be used when an instrument with a resolution bandwidth that is greater than the DTS bandwidth is available to perform the measurement:

- a) Set the RBW \geq DTS bandwidth.
- b) Set VBW $\geq [3 \times RBW]$.
- c) Set span $\geq [3 \times RBW]$.
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use peak marker function to determine the peak amplitude level.

Requirement: FCC Part 15.247 Clause (b,3)

- 15.247 Operation within the bands 902-928 MHz.
- (b) The maximum peak conducted output power of the intentional radiator shall not exceed the following:
- (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Limit : 1 watt or 30dBm

Date: 7 May 2023 DNB

EUT: GT Chair

Model No: 02661

DNB Job: 16085

0. 02001

Requirement \leq 1 Watt or 30dBm

Low Channel: 2406 MHz

Power: -0.65 dBm

Tech: CL Payne

Result: Pass

Spectrum	r)							
Ref Leve	10.00 dBm	Offset 2	0.00 dB 😑	RBW 5 MH	łz			
👄 Att	10 dB	SWT	8 ms 👄	VBW 20 MH	lz Mode	Sweep		
😑 1Pk Max								
					M	1[1]		-0.65 dBm
					M1		2.406	16120 GHz
0 dBm		-			*			
-10 dBm							 1000	
00.10								
-20 aBm								
-30 dBm								-
-40 dBm								
50 dBm								
-50 0.011								
-60 dBm								
-70 dBm								
-80 dBm								
CF 2.406 C	GHz			8001	pts		Span	10.0 MHz

Page 19 of 77

Date: 7 May 2023 DNB Job: 16085

EUT: GT Chair

Model No: 02661

Requirement \leq 1 Watt or 30dBm

Mid Channel: 2442 MHz

Power: -0.41 dBm

Tech: CL Payne

Result: Pass

B Spectrum Ref Level 10.00 dBm Offset 20.00 dB 🖷 RBW 5 MHz 10 dB 8 ms 👄 **VBW** 20 MHz Att SWT Mode Sweep ●1Pk Max -0.41 dBm 2.44208120 GHz M1[1] И1 0 dBm--10 d8m--20 dBm--30 dBm--40 dBm--50 dBm--60 dBm--70 dBm--80 dBm-Span 10.0 MHz CF 2.442 GHz 8001 pts

Date: 7 May 2023 DNE

EUT: GT Chair

Model No: 02661

DNB Job: 16085

Requirement < 1 Watt or 30dBm

Tech: CL Payne

High Channel: 2474 MHz

Power: -0.15 dBm

Result: Pass



15.247 (e) Power Spectral Density (PSD)

Clause 11.10.2 Method PKPSD (peak PSD)

The following procedure shall be used if the maximum peak conducted output power was used to determine compliance, and it is optional if the maximum conducted (average) output power was used to determine compliance:

- a) Set analyzer center frequency to DTS channel center frequency
- b) Set the span to 1.5 times the DTS bandwidth
- c) Set the RBW to $3 \text{ kHz} \le \text{RBW} \le 100 \text{ kHz}$
- d) Set the VBW \geq [3 x RBW]
- e) Detector = peak
- f) Sweep time = auto couple
- g) Trace mode = max hold
- h) Allow trace to fully stabilize
- i) Use the peak marker function to determine the maximum amplitude level within the RBW
- j) If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat
- k) Submit plots

Requirement: FCC Part 15.247 Clause (e)

15.247 Power Spectral Density.

(e) For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Date: 7 May 2023 DNB Job: 16085

EUT: GT Chair

Model No: 02661

 $Requirement \leq 8 dBm$

Low Channel: 2406 MHz

Power: -3.87 dBm

Tech: CL Payne

Result: Pass

B Spectrum Ref Level 20.00 dBm Offset 20.00 dB 🖷 RBW 100 kHz 10 dB 8 ms 👄 VBW 300 kHz Att SWT Mode Sweep o1Pk View -3.87 dBm 2.406779400 GHz M1[1] 10 dBm-D1 8.000 dBm-0 dBm--10 dBm--20 dBm--30 dBm--40 dBm--50 dBm--60 dBm--70 dBm-CF 2.406 GHz 8001 pts Span 4.0 MHz

Page 23 of 77

Date: 7 May 2023 DNB Job: 16085

EUT: GT Chair

Model No: 02661

 $Requirement \leq 8 dBm$

Mid Channel: 2442 MHz

Power: -3.40 dBm

Tech: CL Payne

Result: Pass

B Spectrum Ref Level 20.00 dBm Offset 20.00 dB 🖷 RBW 100 kHz 10 dB 8 ms 👄 VBW 300 kHz Att SWT Mode Sweep o1Pk View M1[1] -3.40 dBm 2.441755030 GHz 10 dBm-D1 8.000 dBm-0 dBm -10 dBm-Thursday -20 dBm -30 dBm--40 dBm--50 dBm--60 dBm--70 dBm-CF 2.442 GHz 8001 pts Span 4.0 MHz

Date: 7 May 2023 DNB Job: 16085

EUT: GT Chair

Model No: 02661

 $Requirement \leq 8 dBm$

High Channel: 2474 MHz

Power: -3.23 dBm

Tech: CL Payne

Result: Pass

B Spectrum Ref Level 20.00 dBm Offset 20.00 dB 🖷 RBW 100 kHz 10 dB 8 ms 👄 VBW 300 kHz Att SWT Mode Sweep o1Pk View M1[1] -3.23 dBm 2.473746530 GHz 10 dBm-D1 8.000 dBm-0 dBm -10 dBm--20,d8m -30 dBm--40 dBm--50 dBm--60 dBm -70 dBm-8001 pts Span 4.0 MHz CF 2.474 GHz

Page 25 of 77

15.247 (d) Band-edge RF Conducted

For band-edge measurements, use the band-edge procedure in 6.10. Band-edge measurements shall be tested both on single channels, and with the EUT hopping.

6.10 Band-edge testing

The following procedure shall be used when band-edge measurements are required.

6.10.1 Band-edge data reporting requirements

These reporting requirements are applicable to all devices for which band-edge measurements are required. On each operating frequency measured, band-edge emissions shall be reported by providing plots of the measuring instrument display. The axes, the scale units per division, and the limit shall be clearly labeled in the test report. Tabular data are not suitable for reporting band-edge emissions.

6.10.4 Authorized-band band-edge measurements (relative method)

These procedures are applicable for determining compliance at authorized-band band-edges where the requirements are expressed as a value relative to the in-band signal level.

For devices that support frequency hopping, this test sequence shall be performed twice: once with the hopping function turned OFF and then repeated with the hopping function turned ON.

- a) Connect the EMI receiver or spectrum analyzer to the EUT using an appropriate RF cable connected to the EUT output. Configure the spectrum analyzer settings as described in step e) (be sure to enter all losses between the unlicensed wireless device output and the spectrum analyzer).
- b) Set the EUT to the lowest frequency channel (for the hopping on test, the hopping sequence shall include the lowest frequency channel).
- c) Set the EUT to operate at maximum output power and 100% duty cycle, or equivalent "normal mode of operation".
- d) Blank
- e) Perform the test as follows:
 - 1) Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation.

15.247 (d) Band-edge RF Conducted (*continued*)

- 2) Reference level: As required to keep the signal from exceeding the maximum instrument input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.
- 3) Attenuation: Auto (at least 10 dB preferred).
- 4) Sweep time: Coupled.
- 5) Resolution bandwidth: 100 kHz
- 6) Video bandwidth: 300 kHz
- 7) Detector: Peak.
- 8) Trace: Max hold.
- f) Allow the trace to stabilize. For the test with the hopping function turned ON, this can take several minutes to achieve a reasonable probability of intercepting any emissions due to oscillator overshoot.
- g) Set the marker on the emission at the band edge, or on the highest modulation product outside of the band, if this level is greater than that at the band edge. Enable the marker-delta function, and then use the marker-to-peak function to move the marker to the peak of the in-band emission.
- h) Repeat step c) through step e) for every applicable modulation.
- i) Set the EUT to the highest frequency channel (for the hopping on test, the hopping sequence shall include the highest frequency channel) and repeat step c) through step d).
- The band-edge measurement shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

Requirement: FCC Part 15.247 Clause (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.

Date: 7 May 2023

DNB Job: 16085

EUT: GT Chair

Model No: 02661

Requirement: Band-Edge Compliance (DTS)

Low Channel: 2406 MHz

Tech: CL Payne

Result: Pass



Date: 7 May 2023 I

DNB Job: 16085

EUT: GT Chair

Model No: 02661

Requirement: Band-Edge Compliance (DTS)

High Channel: 2474 Mhz

Tech: CL Payne

Result: Pass



15.247 (a,2) DTS Bandwidth

DTS bandwidth measurement procedure

- a) Set RBW = 100 kHz
- b) Set the VBW \geq [3 x RBW]
- * per ANSI C63.10-2013 clause 6.9.2

Set the span to 2 to 5 times the OBW

- c) Detector = peak
- d) Trace mode = max hold
- e) Sweep = auto couple
- f) Allow trace to stabilize
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6dB relative to the maximum level measured in the fundamental emission.
- h) Submit this plot(s).

Requirement: FCC Part 15.247 Clause (a,2)

The 6 dB DTS bandwidth shall be greater than 500 kHz.

Client: RedSeat Entertainme	ent LLC	Date: 7 May 2023	DNB Job: 16085
EUT: GT Chair		Model No: 02661	
Requirement: 6dB Bandwid	th greater than	500kHz	Tech: CL Payne
Low Channel: 2406	6dB Bandwi	$dth = 2011 ext{ kHz}$	Result: Pass



Client: RedSeat Entertainme	ent LLC	Date: 7 May 2023	DNB Job: 16085
EUT: GT Chair		Model No: 02661	
Requirement: 6dB Bandwid	th greater than	500kHz	Tech: CL Payne
Mid Channel: 2442	6dB Bandwid	dth = 2141 kHz	Result: Pass



Client: RedSeat Entertainme	ent LLC	Date: 7 May 2023	DNB Job: 16085
EUT: GT Chair		Model No: 02661	
Requirement: 6dB Bandwid	th greater than	500kHz	Tech: CL Payne
High Channel: 2474	6dB Bandwid	dth = 2098.5 kHz	Result: Pass



15.247 (d) Conducted Spurious

Conducted spurious emissions shall be measured for the transmit frequency, per 5.5 and 5.6, and at the maximum transmit powers.

Connect the primary antenna port through an attenuator to the spectrum analyzer input; in the results, account for all losses between the unlicensed wireless device output and the spectrum analyzer. The instrument shall span 30 MHz to 10 times the operating frequency in GHz, with a resolution bandwidth of 100 kHz, video bandwidth of 300 kHz, and a coupled sweep time with a peak detector. The band 30 MHz to the highest frequency may be split into smaller spans, as long as the entire spectrum is covered.

Requirement: FCC Part 15.247 Clause (d)

(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, provided the transmitter demonstrates compliance with the peak conducted power limits.

Client: RedSeat Entertainment LLC	Date: 7 May 2023	DNB Job: 16085
EUT: GT Chair	Model No: 02661	
Requirement: Conducted spurious emissi	ion <20dB of peak	Tech: CL Payne
Low Channel: 2406 MHz Requireme	ent = -20.72 dBm	Result: Pass
Frequency range: 30MHz to	6.2725GHz	

Spect	rum											
Ref L	evel	10.00 c	Bm Offset	20.00 dB	•	RBW 100 kH	Ηz					
👄 Att		10	dB SWT	62.5 ms	•	VBW 500 kH	Hz Mode	Sweep				
⊖1Pk Vi	iew)
							M	1[1]				-0.72 dBm
0 40					M1						2.4	06140 GHz
U UBIII-					T		M	2[1]				53.07 dBm
10 dba											19	1.890 MHz
-10 080	u											
20 dea												
-20 060		01 -20.7	20 dBm									
20 d9a												
-30 UBI	"											
- 40 dea												
-40 UBI												
-M2 dBa												M3
								-				والمراجعة والمحال الملاقة المراجع
and Station	Hund	والما والما والم	والمعالية ومعالية	al addate	a la	and the same of the last	all the table later and	In the second	lipsoil (Antional and a diversity of the second s	California a California a California	has a strange of the second
00 00	de la	a tana bina ang sa	Carpent and Allowed The Second	(Des Partientles	1	and the state of the state of the state	and the same same.					
-70 dBn	n											
20 001	· .											
-80 dBn	n											
00 001	· .											
Start 3	80.0 N	1Hz				8001	pts				Stop 6.	2725 GHz
Marker												
Туре	Ref	Trc	X-valu	э		Y-value	Func	tion		Func	tion Result	
M1		1	2.406	14 GHz		-0.72 dBi	m					
M2		1	191.	89 MHz		-53.07 dBi	m					
M3		1	5.956	12 GHz		-53.24 dBi	m					

Client: RedSeat Entertainment LLC	Date: 7 May 2023	DNB Job: 16085
EUT: GT Chair	Model No: 02661	
Requirement: Conducted spurious emissio	on <20dB of peak	Tech: CL Payne
Low Channel: 2406 MHz Requiremen	t = -20.72 dBm	Result: Pass
Frequency range: 6.2725GHz to	12.515GHz	

Spectr	um											
Ref Le	vel	10.00	dBm Offset :	20.00 dB	🖷 RBV	/ 100 kl	Hz					
👄 Att		10	dB SWT	62.5 ms	e VBV	🖌 500 ki	Hz Mod	e Sweep				
😑 1Pk Vie	W											
0 dBm—								M1[1]			6.5	51.50 dBm 93560 GHz
								MZ[1]			7.0	-34.74 uBm
-10 dBm·								1			7.8	17720 GH2
-20 dBm-	-D	1 -20.3	720 dBm					_				
-30 dBm-					_			_				
-40 dBm-					_							
-50 d9m-	a kilo a hu		M2					IVI.	3			
(Inclined and	A let pr	the shot de	ender the second rate	and the second	La La Land	ulification and	a sulf for lovel 10 a de	Lun and L	- Alle	and the sector bearing	Burlaus all Lung all	ماراية المرسية التي ويد أعد
-60 dBm-		hands typics	Providence of the second s	the second state in the	and dates	a line line parter	and the special difference of the		A something	ant-strand and party	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	
-70 dBm-	_							_				
-90 dBm-												
-00 0011												
Start 6.	2725	5 GHz	I	1		8001	pts				Stop 1	2.515 GHz
Marker												î
Type	Ref	Trc	X-value	.	Y-	value	Fur	ction		Fund	tion Result	. 1
M1		1	6.593	56 GHz	-5	1.50 dB	m					
M2		1	7.817	72 GHz	-5	4.74 dB	m					
M3		1	10.346	39 GHz	-5	5.25 dB	m					

Client: RedSeat Ente	ertainment LLC	Date: 7 May 2023	DNB Job: 16085		
EUT: GT Chair		Model No: 02661			
Requirement: Condu	cted spurious emissio	n <20dB of peak	Tech: CL Payne		
Low Channel: 2406	MHz Requiremen	t = -20.72 dBm	Result: Pass		
Frequency range:	12.515GHz to	18.7575GHz			

Spectru	m												
Ref Lev	el 1	.0.00 0	iBm Offset 2	20.00 dB	e RB	N 100 k	Hz						
👄 Att		10	dB SWT	62.5 ms	e ve	N 500 k	Hz	Mode	Sweep				
●1Pk View	<i>i</i>												
								М	1[1]			- 12.8	51.50 dBm 36060 GHz
0 dBm								M	2[1]			-	54.74 dBm
												14.0	60220 GHz
-10 dBm—													
-20 dBm—	-D1	-20.7	720 dBm		_								
-30 dBm—													
-40 dBm—					_								-
M1													
-50 00m-	No.	1	M2						M3				
diministration and	and party	he dut the	and a feel of the second	algoris - see	La La Land	and the second second	a sulfages	A MALAN	and state No	- All	Lands Hipson for the first for	Buchers and Long of the	edito Managatitaka
-60 aBm—		and the second	and the planet of the state	The second second second	No. No. of Colds	the little option of		Destruction	A STREET	A specific to	an	A CONTRACTOR OF A CONTRACTOR A	and a second
-70 dBm—					_								
-80 dBm—													
Start 12	515	CHA				0001	nte					Stop 19	7575 CU2
Markor	010	GITZ				500.	. pcs					500p 10.	7070 0112
	ef	Tre	X-value		Υ-	value	1	Eunc	tion		Euno	tion Result	1
M1		1	12,836	D6 GHz	-	51.50 dF	m	i ano	cion		- T une	Alon Kesuit	
M2		1	14.060	22 GHz	-	54.74 dE	m						
M3		1	16.588	89 GHz	-	55.25 dE	m						

Client: RedSeat Ente	ertainment LLC	Date: 7 May 2023	DNB Job: 16085		
EUT: GT Chair		Model No: 02661			
Requirement: Condu	cted spurious emissio	n <20dB of peak	Tech: CL Payne		
Low Channel: 2406	MHz Requiremen	t = -20.72 dBm	Result: Pass		
Frequency range:	18.7575GHz to	25GHz			

Spect	rum												
Ref L	evel	10.00 di	3m Offset 3	20.00 dB	🔵 RBW	/ 100 kl	Hz						
👄 Att		10	dB SWT	62.5 ms	● VBW	/ 500 kl	Hz	Mode	Sweep	(
😑 1Pk Vi	■1Pk View												
								M	1[1]				50.57 dBm
												19.4	77250 GHz
U UBIII-								M	2[1]				50.70 dBm
10 dpm												19.9	19630 GHz
-10 060													
20 dag													
-20 000		01 -20.7	20 dBm										
ap de													
-au ubn													
. 40 der													
-40 UBII			and a										
-50 dBm	N		12										MB
du altradit	dan 1	Palling aller	Library Conners Land		. Hales	بالا بعد الله		1	La la cial			Mile and a star	10 Little and a started
-60 dBm		d-0	and the second s	And a standard	and the second	Contraction of the local	All a laboration	and the second second	agent de plant	- I man	and and and the property in the	a the second second second	And Million and all all and
-00 001													
-70 dBm													
-70 abri													
-80 dBr	n —												
00 001													
Start 1	8.75	75 GHz				8001	pts					Stop	25.0 GHz
Marker													
Туре	Ref	Trc	X-value		Y-۱	/alue		Func	tion		Fun	ction Result	
M1		1	19.477	25 GHz	-5	0.57 dB	m						
M2		1	19.919	63 GHz	-5	0.70 dB	m						
M3		1	24.550	21 GHz	-5	1.71 dB	m						

Client: RedSeat Entertainment LLC	Date: 7 May 2023	DNB Job: 16085								
EUT: GT Chair	Model No: 02661									
Requirement: Conducted spurious emission <20dB of peak Tech: CL Pay										
Mid Channel: 2442 MHz Requirement	t = -20.44 dBm	Result: Pass								
Frequency range: 30MHz to	6.2725GHz									

Spect	rum													
Ref L	evel	10.00	dBm Of	fset 2	0.00 dB		RBW 100 kl	Hz						
👄 Att		10) dB 🛛 S \	ΥT	62.5 ms	•	VBW 500 ki	Hz	Mode	Sweep				
😑 1Pk Vi	iew													
						M1			M	1[1]			24	-0.44 dBm
0 dBm-						-			M	2[1]			2.1	52 21 dBm
									171.	2[1]			10	31.890 MHz
-10 dBn	n					+								1.050 1.112
-20 dBn	n)1 -20,	440 dBm=			_								
-30 dBn	n													
-40 dBn	n					-								
-M2 dBn	n													M3
uka wala					× 3.		and the states	- L C Jba	والمراجعة والمراجعة		the start	10 million and a street of the	والال المتبرك ومالده	In the party of the second
	and a second	A CONTRACTOR OF THE OWNER OF THE	the second state		and the state		and the best for the ball the set	and street	and the state	and the second s	franse te bade	دالاند و مور ود معدد	, Mara (Bell Boy south), suithfull	
-70 dBn	n													
-80 dBo	n													
Start 3	80.0 N	4Hz					8001	pts		-			Stop 6	.2725 GHz
Marker														
Туре	Ref	Trc	X	value			Y-value		Func	tion		Fund	tion Result	
M1		1		2.442	03 GHz		-0.44 dB	m						
M2		1		191.8	9 MHz		-52.21 dB	m			_			
M3		1		6.0770	D6 GHz		-52.96 dB	m						

Client: RedSeat Enter	tainment LLC	Date: 7 May 2023	DNB Job: 16085		
EUT: GT Chair		Model No: 02661			
Requirement: Conduc	ted spurious emission	<20dB of peak	Tech: CL Payne		
Mid Channel: 2442 M	Hz Requirement	= -20.44 dBm	Result: Pass		
Frequency range:	6.2725GHz to	12.515GHz			

Spectru	um											
Ref Lev	vel	10.00 c	Bm Offset 2	20.00 dB	RBW	100 kł	Ηz					
👄 Att		10	dB SWT	62.5 ms	🕳 VBW	500 kł	Hz Mode	Sweep				
●1Pk Vie	1Pk View											
							M	1[1]			-	52.37 dBm
											6.8	83020 GHz
0 dBm—							M	2[1]			-	55.48 dBm
											11.3	91100 GHz
-10 dBm-												
-20 dBm-	D	1 -20.4	40 dBm									
-30 dBm-												
-40 dBm-	-		-									
	0.41											
-50 dBm-	NIT.		1								M2 M	3
(hand the bar	ap Nigar Masudi		I what we	1.6			a contra datas	a	(a. ar		and a line of	· . In the second difference
-60 dBm-		V- P HERRIN	and in the particular of the particular	THE REAL PROPERTY.	August Million			10.4.00.000	Also de	dial musication distance	and the states of the states of	(accounts any justice) if it
-70 dBm-	_				-							
-80 dBm-	_											
start 6.2	2725	o GHZ				8001	pts				Stop 12	2.515 GHZ
Marker	22										2	
Type	Ref	Trc	X-value		Y-V	alue	Func	tion		Func	tion Result	
M1		1	6.883	02 GHz	-52	2.37 dB	m					
M2		1	11.39	11 GHz	-55	.48 dB	m					
M3		1	11.897	46 GHz	-55	.49 dB	m					