

Straubing, June 25, 2008

TEST-REPORT

No. 56113-080538 (Edition 1)

for

5691

SHOW DMX Transceiver

Applicant: City Theatrical, Inc.

Test Specifications: FCC Code of Federal Regulations, CFR 47, Part 15, Sections 15.107, 15.109, 15.205, 15.207, 15.215 and 15.247

> Industry Canada Radio Standards Specifications RSS-Gen Issue 2, Sections 7.2.2, 7.2.3 and RSS-210 Issue 7, Sections 2.2, A8 (Category I Equipment)

Reason for Class II Permissive Change: Four antennas shall be added to the certification

Note:

The test data of this report is related only to the individual item which has been tested. This report shall not be reproduced except in full extent without the written approval of the testing laboratory.



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Description of the Equipment Under Test (EUT) 1

General data of EUT		
Type designation ¹ :	5691	
Parts ² :		
Serial number(s):		
Manufacturer:	City Theatrical, Inc.	
Type of equipment:	SHOW DMX Transceiver	
Version:	as received	
FCC ID:	VU65691	
Additional parts/accessories:		

Technical data of EUT				
Application frequency range:	2400 - 2483.5 M	Hz		
Frequency range:	2406 – 2476 MH	lz		
Operating frequency:	Low channel: 2406 MHz Middle channel: 2440 MHz High channel: 2476 MHz			
Type of modulation:	FSK			
Pulse train:	See Protocol Data Systems Test Report No. 03229			
Pulse width:	See Protocol Data Systems Test Report No. 03229			
Number of RF-channels:	72			
Channel spacing:	2 MHz			
Designation of emissions ³ :				
Type of antenna:	Туре	Gain	Length	Tested
Maxrad MP24008XFPT	Panel	8.5 dBi	12.9 x 11.9 x 3.8 cm	No
Maxrad MP24012CPLXFPT	Panel	12.0 dBic	22.4 x 20.6 x 4.06 cm	Yes
Maxrad MYP24010PT	Yagi	10 dBi	114 x 76 mm	No
Maxrad MYP24014PT	Yagi	14 dBi	356 x 76 mm	Yes

 $^{^1}$ Type designation of the system if EUT consists of more than one part. 2 Type designations of the parts of the system, if applicable.

³ Also known as "Class of Emission".



Statement for antennas covered by this report:	The antenna with the highest gain of each type has been tested.	
Type of power supply: Specifications for power supply:	DC supply nominal voltage: 5.00 V minimum voltage: 4.75 V maximum voltage: 5.25 V	



2 Administrative Data

Application details			
Applicant (full address):	City Theatrical, Inc. 475 Barell Ave., Carlstadt, NJ 07072 USA		
Contact person:	Larry Dunn		
Contract identification:	Purchase Order LD-102235		
Receipt of EUT:	May 06, 2008		
Date(s) of test:	May/June 2008		
Note(s):			

Report details		
Report number:	56113-080538	
Edition:	1	
Issue date:	June 25, 2008	

3 Identification of the Test Laboratory

Details of the Test Laboratory			
Company name:	Senton GmbH EMI/EMC Test Center		
Address:	Aeussere Fruehlingstrasse 45 D-94315 Straubing Germany		
Laboratory accreditation:	DAR-Registration No. DAT-P-171/94-02		
FCC test site registration number	90926		
Industry Canada test site registration:	3050A-1		
Contact person:	Mr. Johann Roidt		
	Phone: (+49) (0)9421 5522-0 Fax: (+49) (0)9421 5522-99		

4 Summary

Summary of test results

The tested sample complies with the requirements set forth in the

Code of Federal Regulations CFR 47, Part 15, Sections 15.109, 15.204, 15.205, 15.215, 15.247 and 2.1093

of the Federal Communication Commission (FCC) and the

Radio Standards Specifications RSS-Gen Issue 2, Section 7.2.3 and RSS-210 Issue 7, Sections 2.2, 2.6, 7.1.4 and A8 (Category I Equipment)

of Industry Canada (IC).

Personnel involved in this report			
Laboratory Manager:			
	He Col		
	Mr. Johann Roidt		
Responsible for testing:	Mr. Johann Roidt		
Responsible for test report:	Mr. Johann Roidt		



5 Operation Mode and Configuration of EUT

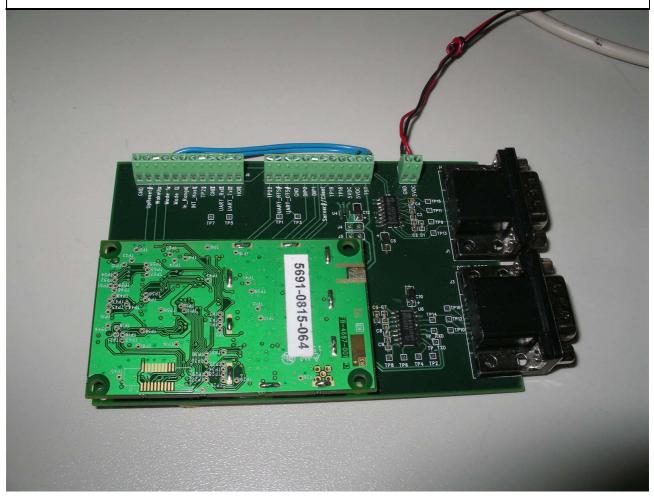
Operation Mode(s)

Transmitter operating continuously Full TX tests were performed on lowest, middle and highest RF channel RX mode was tested on the middle channel.

Low channel:	2406 MHz
Middle channel:	2440 MHz
Highest Channel:	2476 MHz

Configuration(s) of EUT

A full test setup was supplied by the applicant, see EUT mounted on the test board below





List	List of ports and cables				
Port	Description	Classification ⁴	Cable type	Cable length	
1	DC supply input				
2	Serial interface 5 V TTL				

Listo	List of devices connected to EUT				
Item	Description	Type Designation	Serial no. or ID	Manufacturer	
1	Notebook PC Latitude	D810		DELL	

List of support devices				
Item Description	Type Designation	Serial no. or ID	Manufacturer	
Test board	N/A	N/A	City Theatrical, Inc.	

⁴ Ports shall be classified as ac power, dc power or signal/control port



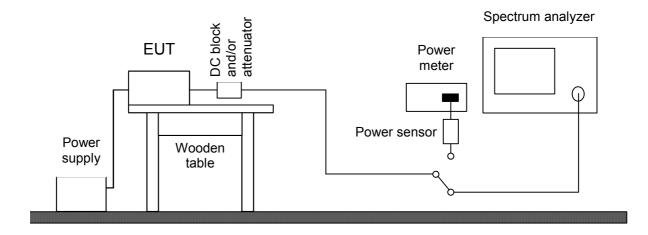
6 Measurement Procedures

6.1 Conducted Output Power

Measurement Procedure:		
Rules and specifications:CFR 47 Part 2, section 2.1046(a)IC RSS-Gen Issue 2, section 4.8		
Guide: CFR 47 Part 2, section 2.1046 / IC RSS-Gen Issue 2		
Conducted output power is measured at the RF output terminals (e.g. antenna connector if antenna is detachable) when the transmitter is adjusted in accordance with the tune-up procedure, if applicable. The RF output terminals are connected to a spectrum analyzer and/or a power meter with appropriate sensor. I required, a resistive matching network equal to the impedance specified or employed for the antenna is used as well as dc block and appropriate attenuators (50 Ohms). The electrical characteristics of the radio		

frequency load attached to the output terminals shall be stated, if applicable. If a spectrum analyzer is used and no other settings are specified resolution bandwidth shall be selected according to the carrier frequency f_c and set to 10 kHz (150 kHz $\leq f_c <$ 30 MHz), 100 kHz (30 MHz $\leq f_c <$ 1 GHz) or 1 MHz ($f_c \geq$ 1 GHz). The video bandwidth shall be at least three times greater than the resolution bandwidth. The settings used have to be indicated within the appropriate test record(s).





Test instruments used:

Used	Туре	Model	Serial No. or ID	Manufacturer
\square	Spectrum Analyzer	FSP 30	100063	Rohde & Schwarz
	EMI test receiver	ESPI7	836914/0002	Rohde & Schwarz
	EMI test receiver	ESMI	839379/013 839587/006	Rohde & Schwarz
	Power meter	NRVS	836856/015	Rohde & Schwarz
	Peak power sensor	NRV-Z31	8579604.03	Rohde & Schwarz
	Power sensor	NRV-Z52	837901/030	Rohde & Schwarz
	Power sensor	NRV-Z4	863828/015	Rohde & Schwarz
	DC-block	7006	A2798	Weinschel
	Attenuator	4776-10	9412	Narda
	Attenuator	4776-20	9503	Narda

6.2 Bandwidth Measurements

Measurement Procedure:

Rules and specifications:	CFR 47 Part 2, section 2.202(a) CFR 47 Part 15, section 15.215(c) IC RSS-Gen Issue 2, sections 4.6.1 and 4.6.2 IC RSS-210 Issue 7, section A1.1.3 ANSI C63.4, annex H.6	
Guide:	ANSI C63.4 / IC RSS-Gen Issue 2, sections 4.6.1 and 4.6.2	
Measurement setup:	 ☐ Conducted: See below ☑ Radiated: Radiated Emission in Fully or Semi Anechoic Room (6.4) 	
If antenna is detachable bandwidth measurements shall be performed at the antenna connector (conducted		

If antenna is detachable bandwidth measurements shall be performed at the antenna connector (conducted measurement) when the transmitter is adjusted in accordance with the tune-up procedure, if applicable. The RF output terminals are connected to a spectrum analyzer. If required, a resistive matching network equal to the impedance specified or employed for the antenna is used as well as dc block and appropriate attenuators (50 Ohms). The electrical characteristics of the radio frequency load attached to the output terminals shall be stated, if applicable.

If radiated measurements are performed the same test setups and instruments are used as with radiated emission measurements for the appropriate frequency range.

The analyzer settings are specified by the test description of the appropriate test record(s).

6.3 Radiated Emission Measurement 9 kHz to 30 MHz

Measurement Procedure:

Rules and specifications:	CFR 47 Part 15, sections 15.205(b) and 15.247 IC RSS-210 Issue 7, sections 2.2(b)(c), 2.6 and A8.5
Guide:	ANSI C63.4

Radiated emission in the frequency range 9 kHz to 30 MHz is measured using an active loop antenna. First the whole spectrum of emission caused by the equipment is recorded at a distance of 3 meters in a fully or semi anechoic room with the detector of the spectrum analyzer or EMI receiver set to peak. This configuration is also used for recording the spectrum of intentional radiators.

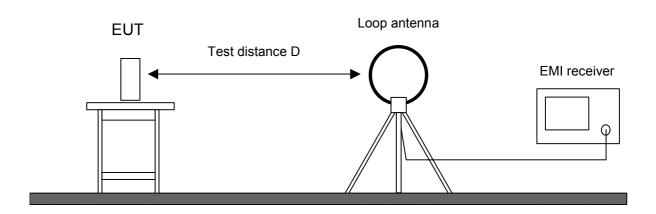
Hand-held or body-worn devices are rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit and therefore shall be used for final testing.

EUT is rotated all around to find the maximum levels of emissions. Equipment and cables are placed and moved within the range of position likely to find their maximum emissions.

If worst case emission of the EUT cannot be recorded with EUT in standard position and loop antenna in vertical polarization the EUT (or the radiating part of the EUT) is rotated by 90 degrees instead of changing the loop antenna to horizontal polarization. This procedure is selected to minimize the influence of the environment (e.g. effects caused by the floor especially with longer distances).

Final measurement is performed at a test distance D of 30 meters using an open field test site. In case the regulation requires testing at other distances, the result is extrapolated by either making measurements at an additional distance D of 10 meters to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). In cases of very low emissions measurements are performed at shorter distances and results are extrapolated to the required distance. The provisions of CFR 47 Part 15 sections 15.31(d) and (f)(2) apply. According to CFR 47 Part 15 section 15.209(d) final measurement is performed with detector function set to quasi-peak except for the frequency bands 9 to 90 kHz and 110 to 490 kHz where, for non-pulsed operation, average detector is employed.

If the radiated emission limits are expressed in terms of the average value of the emission there also is a peak limit corresponding to 20 dB above the maximum permitted average limit. Additionally, if pulsed operation is employed, the average field strength is determined by averaging over one complete pulse train, including blanking intervals, as specified in CFR 47 Part 15 section 15.35(c). If the pulse train exceeds 0.1 second that 0.1 second interval during which the value of the emission is at its maximum is selected for calculation. The pulse train correction is added to the peak value of the emission to get the average value.





Test instruments used:

Used	Туре	Model	Serial No. or ID	Manufacturer
\square	Spectrum Analyzer	FSP 30	100063	Rohde & Schwarz
	EMI test receiver	ESMI	839379/013 839587/006	Rohde & Schwarz
	Test receiver	ESHS 10	860043/016	Rohde & Schwarz
	Preamplifier	CPA9231A	3393	Schaffner
\boxtimes	Loop antenna	HFH2-Z2	882964/1	Rohde & Schwarz
\square	Fully anechoic room	No. 2	1452	Albatross Projects
	Semi-anechoic room	No. 3	1453	Siemens
	Open field test site	EG 1	1450	Senton

6.4 Radiated Emission in Fully or Semi Anechoic Room

Measurement Procedure:

A	
Rules and specifications:	CFR 47 Part 15, sections 15.109, 15.215(b) and 15.249 IC RSS-Gen Issue 2, sections 6(a), 7.2.3.2 IC RSS-210 Issue 7, section A2.9

Guide: ANSI C63.4

Radiated emission in fully or semi anechoic room is measured in the frequency range from 30 MHz to the maximum frequency as specified in CFR 47 Part 15 section 15.33.

Measurements are made in both the horizontal and vertical planes of polarization in a fully anechoic room using a spectrum analyzer with the detector function set to peak and resolution as well as video bandwidth set to 100 kHz (below 1 GHz) or 1 MHz (above 1 GHz).

Testing up to 1 GHz is performed with a linear polarized logarithmic periodic antenna combined with a 4:1 broadband dipole ("Trilog broadband antenna"). For testing above 1 GHz horn antennas are used.

All tests below 18 GHz are performed at a test distance D of 3 meters. For higher frequencies the test distance is reduced (e.g. to 1 meter) due to the sensitivity of the measuring instrument(s) and the test results are calculated according to CFR 47 Part 15 section 15.31(f)(1) using an extrapolation factor of 20 dB/decade. If required, preamplifiers are used for the whole frequency range. Special care is taken to avoid overload, using appropriate attenuators and filters, if necessary.

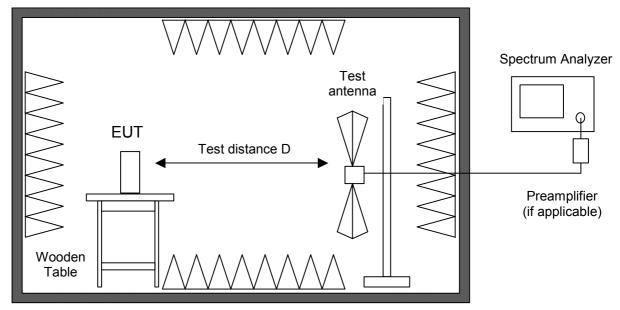
If the radiated emission limits are expressed in terms of the average value of the emission there also is a peak limit corresponding to 20 dB above the maximum permitted average limit. Additionally, if pulsed operation is employed, the average field strength is determined by averaging over one complete pulse train, including blanking intervals, as specified in CFR 47 Part 15 section 15.35(c). If the pulse train exceeds 0.1 second that 0.1 second interval during which the value of the emission is at its maximum is selected for calculation. The pulse train correction is added to the peak value of the emission to get the average value.

Hand-held or body-worn devices are rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit and therefore shall be used for final testing.

During testing the EUT is rotated all around to find the maximum levels of emissions. Equipment and cables are placed and moved within the range of position likely to find their maximum emissions.

For final testing below 1 GHz an open field test-site is used and the plots recorded in the fully or semi anechoic room are indicated as prescans.

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Fully or semi anechoic room

Test instruments used:

Used	Туре	Model	Serial No. or ID	Manufacturer
\square	Spectrum Analyzer	FSP 30	100063	Rohde & Schwarz
	Spectrum analyzer	R 3271	05050023	Advantest
	EMI test receiver	ESMI	839379/013 839587/006	Rohde & Schwarz
\square	Preamplifier	CPA9231A	3393	Schaffner
\boxtimes	Preamplifier	R14601		Advantest
\boxtimes	Preamplifier 1-8 GHz	AFS3-00100800-32-LN	847743	Miteq
\boxtimes	Preamplifier 0.5-8 GHz	AMF-4D-005080-25-13P	860149	Miteq
\boxtimes	Preamplifier 8-18 GHz	ACO/180-3530	32641	CTT
\boxtimes	External Mixer	WM782A	845881/005	Tektronix
	Harmonic Mixer Accessories	FS-Z30	843389/007	Rohde & Schwarz
\boxtimes	Trilog broadband antenna	VULB 9163	9163-188	Schwarzbeck
\square	Horn antenna	3115	9508-4553	EMCO
\square	Horn antenna	3160-03	9112-1003	EMCO
\square	Horn antenna	3160-04	9112-1001	EMCO
\square	Horn antenna	3160-05	9112-1001	EMCO
\boxtimes	Horn antenna	3160-06	9112-1001	EMCO
\boxtimes	Horn antenna	3160-07	9112-1008	EMCO
\boxtimes	Horn antenna	3160-08	9112-1002	EMCO
\square	Horn antenna	3160-09	9403-1025	EMCO
\boxtimes	Horn antenna	3160-10	399185	EMCO
\boxtimes	Fully anechoic room	No. 2	1452	Albatross Projects
	Semi-anechoic room	No. 3	1453	Siemens

6.5 Radiated Emission at Open Field Test Site

Measurement Procedure:

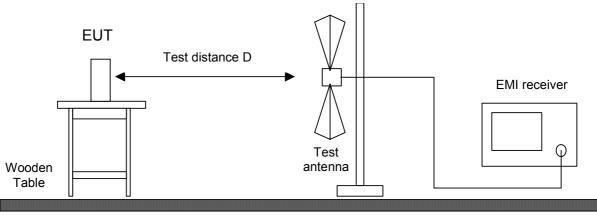
Rules and specifications:	CFR 47 Part 15, sections 15.109, 15.215(b) and 15.249 IC RSS-Gen Issue 2, sections 6(a), 7.2.3.2 IC RSS-210 Issue 7, section A2.9
Guide:	ANSI C63.4

Radiated emission at open field test site is measured in the frequency range 30 MHz to 1 GHz using a biconical antenna up to 300 MHz and a logarithmic periodic antenna above. The measurement bandwidth of

the test receiver is set to 120 kHz with quasi-peak detector selected. If the radiated emission limits are expressed in terms of the average value of the emission there also is a peak limit corresponding to 20 dB above the maximum permitted average limit. Additionally, if pulsed operation is employed, the average field strength is determined by averaging over one complete pulse train, including blanking intervals, as specified in CFR 47 Part 15 section 15.35(c). If the pulse train exceeds 0.1 second that 0.1 second interval during which the value of the emission is at its maximum is selected for calculation. The pulse train correction is added to the peak value of the emission to get the average value.

Hand-held or body-worn devices are tested in the position producing the highest emission relative to the limit as verified by prescans in the fully anechoic room. EUT is rotated all around and receiving antenna is raised and lowered within 1 meter to 4 meters to find the maximum levels of emission. Equipment and cables are placed and moved within the range of position likely to find their maximum emissions.

For measuring emissions of intentional radiators and receivers a test distance D of 3 meters is selected. Testing of unintentional radiators is performed at a distance of 10 meters. If limits specified for 3 meters shall be used for measurements performed at 10 meters distance the limits are calculated according to CFR 47 Part 15 section 15.31(d) and (f)(1) using an inverse linear-distance extrapolation factor of 20 dB/decade.



Ground plane

Test instruments used:

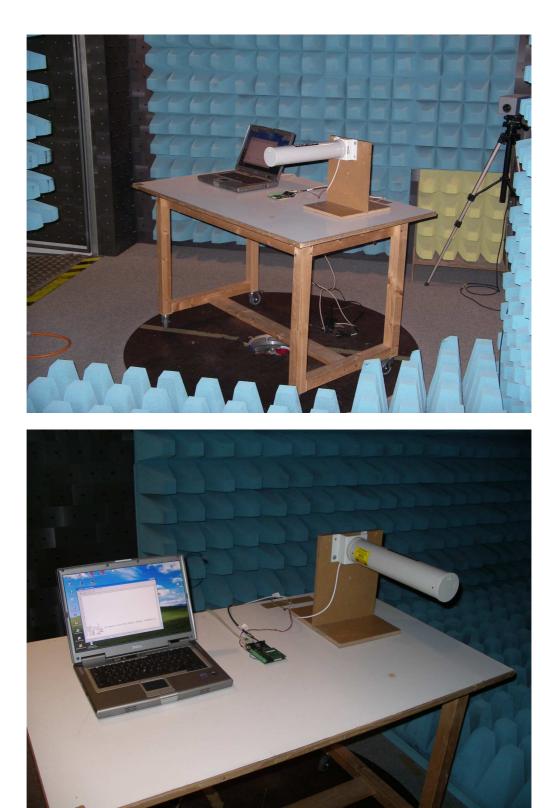
Used	Туре		Model	Serial No. or ID	Manufacturer
\boxtimes	EMI receiver		ESVP	881120/024	Rohde & Schwarz
\boxtimes	Biconical antenna	EG 1	HK 116	842204/001	Rohde & Schwarz
\boxtimes	Log. per. antenna	EG 1	HL 223	841516/023	Rohde & Schwarz
\square	Open field test site		EG 1	1450	Senton



7 Photographs Taken During Testing



Test setup for radiated emission measurement (fully anechoic room)





8 Test Results for Transmitter

FCC CFR 47 Parts 2 and 15				
Section(s)	Test	Page	Result	
2.1046(a)	Conducted output power	26	Test passed	
2.202(a)	Occupied bandwidth		Not applicable	
15.204	Antenna requirement	22	Test passed	
15.215(c)	Bandwidth of the emission		Not applicable	
2.201, 2.202	Class of emission		Not applicable	
15.35(c)	Pulse train measurement for pulsed operation		See Protocol Data Systems Test Report No. 03229	
15.205(a)	Restricted bands of operation	24	Test passed	
15.247(a)(1)(i)	Channel Bandwidth		Not tested	
15.247(a)(1)	Hopping channel separation		Not tested	
15.247(a)(1)(i)	Number of hopping frequencies used		Not tested	
15.247(a)(1)(i)	Time occupancy on any channel		Not tested	
15.247(b)(2)	Maximum peak output power	26	Test passed	
15.207	Conducted AC powerline emission 150 kHz to 30 MHz		Not applicable	
15.205(b) 15.247	Radiated emission 9 kHz to 30 MHz	27	Test passed	
15.205(b) 15.215(b) 15.247(d)	Radiated emission 30 MHz to 26 GHz	28	Test passed	
15.247(i) 2.1093	RF exposure requirement	31	Test passed	



IC RSS-Gen Issue 2			
Section(s)	Test	Page	Result
4.8	Transmitter output power (conducted)	26	Test passed
4.6.1	Occupied Bandwidth		Not applicable
3.2(h), 8	Designation of emissions		Not applicable
4.5	Pulsed operation		See Protocol Data Systems Test Report No. 03229
7.2.2	Transmitter AC power lines conducted emissions 150 kHz to 30 MHz		Not applicable
5.5	Exposure of Humans to RF Fields	33	Exempted from SAR and RF evaluation

IC RSS-210 Issue 7				
Section(s)	Test	Page	Result	
2.2(a)	Restricted bands and unwanted emission frequencies	24	Test passed	
7.1.4	Antenna requirement	22	Test passed	
A8.1(c)	Channel bandwidth		Not tested	
A8.1(b)	Hopping channel separation		Not tested	
A8.1(c)	Number of hopping frequencies used		Not tested	
A8.1(c)	Time occupancy on any channel		Not tested	
A8.4(1)	Maximum output power	26	Test passed	
2.2(b)(c) 2.6 A8.5	Unwanted emissions 9 kHz to 30 MHz	27	Test passed	
2.2(b)(c) 2.6 A8.5	Unwanted emissions 30 MHz to 26 GHz	28	Test passed	

Antenna requirement

Rules and Specifications:	15.204
Guide:	
Limit:	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.
Test Result	Pass
	The UUT employs a MMCX connector and reverse SMA connectors which meets the requirements for an unique antenna coupler



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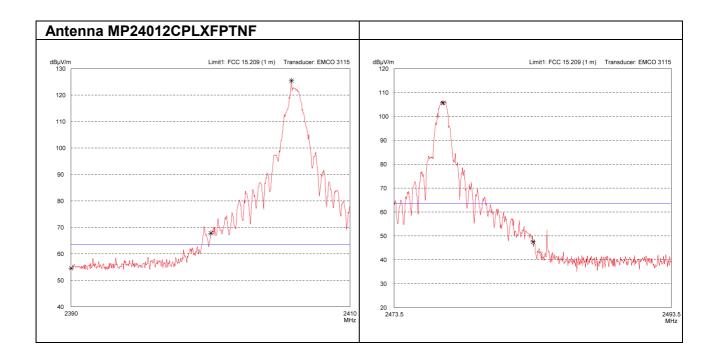
8.1 Restricted Bands of Operation

Rules and specifications:	CFR 47 Part 15, section 15.205(a) IC RSS-210 Issue 7, section 2.2(a)
Guide:	ANSI C63.4
Limit:	Only spurious emissions are permitted in any of the frequency bands listed in CFR 47 Part 15, section 15.205(a) or IC RSS-210 Issue 7, section 2.2(a).
Measurement procedure:	Radiated Emission in Fully or Semi Anechoic Room (6.4)

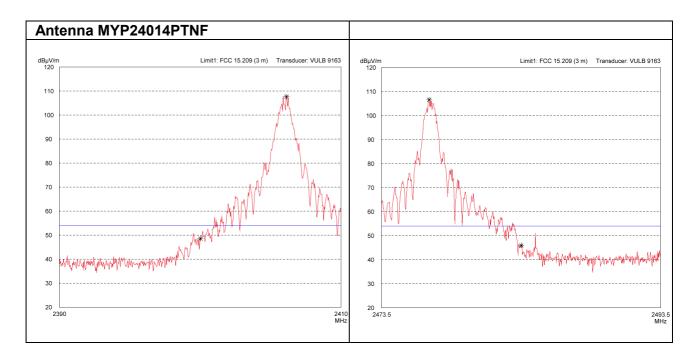
Comment:	Radiated Measurement			
Date of test:) June 2008			
Test site:	Fully anechoic room, cabin no. 2			
Test distance:	3 meters			

Test Result:

Test passed



SENTON

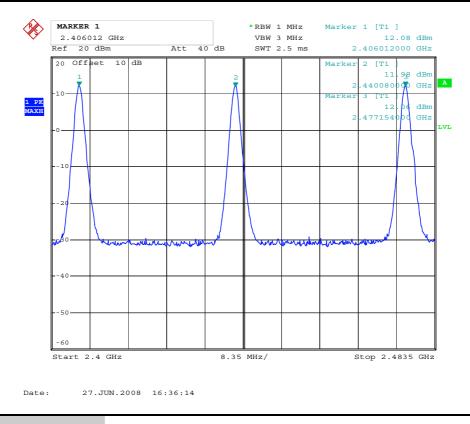


8.2 Maximum output power

Rules and specifications:	CFR 47 Part 15, section 15.247(b)(1) IC RSS-210 Issue 7, section A8.4(1)
Guide:	ANSI C63.4
Limit:	For frequency hopping systems operating in the 2400 - 2483.5 MHz band employing at least 75 non-overlapping channels the maximum peak conducted power ist 1 W (30 dBm). For all other frequency hopping systems 0.125 W (21 dBm).
Measurement procedure:	Conducted Output Power (6.1)

Comment:	
Date of test:	June 20, 2008
Test site:	Fully anechoic room, cabin no. 2
Test distance:	Conducted measurement

Frequency (MHz)	Output power Limit (dBm) (dBm)		Result	
2406	12.08	21	Pass	
2440	11.98	21	Pass	
2476	12.06	21	Pass	



Test Result:

Test passed

8.3 Radiated Emission Measurement 9 kHz to 30 MHz

Rules and specifications:	CFR 47 Part 15, sections 15.205 and 15.209 IC RSS-210 Issue 7, sections 2.2 and 2.6					
Guide:	ANSI C63.4					
Limit:	Frequency of EmissionFieldFieldMeasureme(MHz)StrengthStrengthDistance d(μV/m)(dBμV/m)(meters)					
-	0.009 - 0.490	2400/F(kHz)	67.6 - 20 · log(F(kHz))	300 30		
	0.490 - 1.70524000/F(kHz)87.6 - 20 · log(F(kHz))1.705 - 30.0003029.5					
Additionally, the level of any unwanted emissions shall not exceed of the fundamental emission.						
Measurement procedure:	Radiated Emission Measurement 9 kHz to 30 MHz (6.3)					

Comment:	
Date of test:	June 20, 2008
Test site:	Open field test site

All emissions show more than 20 dB margin to the limit, no values recorded.

Test Result:	Test passed
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8.4 Radiated Emission Measurement 30 MHz to 26 GHz

Rules and specifications:	CFR 47 Part 15, sections 15.215(b) and 15.247 IC RSS-210 Issue 7, section A8					
Guide:	ANSI C63.4					
Limit:	Frequency of Emission (MHz) Field Strength (μV/m) Field Strength (dBμV/m)					
-	30 - 88	100	40.0			
	88 - 216	150	43.5			
	216 - 960	200	46.0			
-	Above 960 500					
	Additionally, the level of any unwanted emissions shall not exceed the level of the fundamental emission.					
Measurement procedures:	Radiated Emission in Fully or Semi Anechoic Room (6.4) Radiated Emission at Open Field Test Site (6.5)					

Test Result:

Test passed

Comment:	
Mode:	Antenna: Maxrad MP24012CPLXFPT
Date of test:	June 20, 2008
Test site:	$\begin{array}{ll} \mbox{Frequencies} \leq 1 \mbox{ GHz:} & \mbox{Open field test site} \\ \mbox{Frequencies} > 1 \mbox{ GHz:} & \mbox{Fully anechoic room, cabin no. 2} \end{array}$
Test distance:	Frequencies ≤ 8.2 GHz: 3 meters Frequencies > 8.2 GHz: 1 meters (results converted for 3 m test distance)

Frequency (MHz)	Antenna Polarisation	Meter Reading (dBµV)	Antenna Correction (dB)	Duty Cycle Correction (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2406.0	Horizontal	90.91	33.32	-26.02	97.40	Fundamental	
2440.0	Horizontal	90.64	36.20	-26.02	100.78	Fundamental	
2476.0	Horizontal	89.85	36.37	-26.02	100.13	Fundamental	
Band Edge Compliance							
2400,0	Horizontal	24.45	33.38		57.83	77.40	N.R.B.
2483.5	Horizontal	-0.71	33.59		32.88	54.0	21.12
Low channel							
156.100	horizontal	26.07	10.18		36.25	43.5	7.25
798.240	horizontal	14.56	22.90		37.46	43.5	6.04
2428.000	horizontal	29.01	33.45	-26.02	36.44	54.0	17.56
7230.000	vertical	24.43	45.99	-26.02	44.40	54.0	9.60
9623.800	vertical	18.13	44.13	-26.02	36.24	54.0	17.76
Middle channel							
158.040	vertical	25.05	10.27		35.32	43.5	8.18
2442.000	horizontal	33.83	33.48	-26.02	41.29	54.0	12.71
7328.000	vertical	18.17	46.31	-26.02	38.46	54.0	15.54
9762.400	vertical	12.70	44.22	-26.02	30.90	54.0	23.10
12206.800	vertical	12.54	46.11	-26.02	32.63	54.0	21.37
High channel							
158.04	horizontal	26.89	10.27		37.16	43.5	6.34
835.10	vertical	16.13	23.38		39.51	46.0	6.49
2442.000	horizontal	28.38	33.48	-26.02	35.84	54.0	18.16
2498.000	vertical	27.76	33.63	-26.02	35.37	54.0	18.63
9905.200	vertical	14.81	44.38	-26.02	33,17	54.0	20.83

Sample calculation of final values:

Final Value (dBµV/m)

Reading Value (dBµV) + Correction Factor (dB/m)
 + Pulse Train Correction (dB)

Comment:	
Mode:	Antenna: Maxrad MYP24014PT
Date of test:	June 20, 2008
Test site:	$\begin{array}{ll} \mbox{Frequencies} \leq 1 \mbox{ GHz:} & \mbox{Open field test site} \\ \mbox{Frequencies} > 1 \mbox{ GHz:} & \mbox{Fully anechoic room, cabin no. 2} \end{array}$
Test distance:	Frequencies \leq 8.2 GHz: 3 meters Frequencies > 8.2 GHz: 1 meters (results converted for 3 m test distance)

Frequency (MHz)	Antenna Polarisation	Meter Reading (dBµV)	Antenna Correction (dB)	Duty Cycle Correction (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2406.0	Vertical	93.5	33.32	-26.02	100.8	Fundamental	
2440.0	Vertical	94.0	33.48	-26.02	101.46	Fundamental	
2476.0	Vertical	96.0	33.57	-26.02	103.55	Fundamental	
Band Edge Compliance							
2400.0	Horizontal	12.54	36.02		48.56	80.8	N.R.B.
2483.5	Horizontal	9.57	36.40		45.97	54.00	8.03
Low channel							
159.980	vertical	28.69	10.35		39.04	43.5	4.46
2386.000	horizontal	25.43	33.34	-26.02	32.75	54.0	21.25
7230.000	vertical	23.46	45.99	-26.02	43.43	54.0	10.57
9619.600	vertical	16.90	44.13	-26.02	35.01	54.0	18.99
12030.400	vertical	7.00	45.98	-26.02	26.96	54.0	27.04
Middle channel							
798.240	horizontal	16.91	22.90		39.81	46.0	6.19
2442.000	horizontal	31.42	33.48	-26.02	38.88	54.0	15.12
7328.000	horizontal	12.69	46.31	-26.02	32.98	54.0	21.02
9762.400	vertical	12.32	44.22	-26.02	30.52	54.0	23.48
12206.800	vertical	11.99	46.11	-26.02	32.08	54.0	21.92
High channel							
798.240	vertical	16.75	22.90		39.65	46.0	6.35
2470.000	horizontal	28.57	33.55	-26.02	36.10	54.0	17.90
2498.000	horizontal	27.66	33.63	-26.02	35.27	54.0	18.73
7440.000	vertical	8.92	46.66	-26.02	29.56	54.0	24.44
9905.200	horizontal	13.03	44.38	-26.02	31.39	54.0	22.61

Sample calculation of final values:

Final Value (dBµV/m)

Reading Value (dBµV) + Correction Factor (dB/m)
 + Pulse Train Correction (dB)

8.5 **RF exposure requirement**

Antenna: Maxrad MP24012CPLXFPT

Rules and specifications:		CFR 47 Part 15, section 15.247(i) CFR 47 Part 1, sections 1.1307(b)(1)						
Guide:	OET Bulletin 6	65, Edition 97-0 ⁻	1					
Limits:	Limits for gene	eral population /	uncontrolled ex	xposure				
	Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm²)	Averaging Time (minutes)			
	0.3 - 1.34	614	1.63	(100)*	30			
	1.34 - 30	824 / f	2.19 / f	(180 / f²)*	30			
	30 - 300	27.5	0.073	0.2	30			
	300 - 1500			f/1500	30			
	1500 - 100000			1.0	30			
	f = frequency in MHz * Plane-wave equivalent power density							

	Spectral power density	Declared by applicant	Measured
Prediction ⁵ :	$S = PG/4\pi R^2$		
Where:	S = Power density		
	P = Power input of antenna		
	G = Power gain of the antenna relativ to an isotropic radiator		
	R = Distance to the center of radiation of the antenna		
Maximum output power:	P = 12.08 dBm = 16.14 mW		\boxtimes
Antenna gain:	G = 12 dBi = 15.84	\square	
Prediction distance:	R = 20 cm		
Power density at 20 cm:	S = 0.05 mW/cm ²		

Test Result:

Test passed

⁵ MPE Prediction of MPE according to equation from page 19 of OET Bulletin 65, Ed. 97-01

8.6 **RF exposure requirement**

Antenna: Maxrad MYP24014PT

Rules and specifications:	CFR 47 Part 15, section 15.247(i) CFR 47 Part 1, sections 1.1307(b)(1)							
Guide:	OET Bulletin 6	65, Edition 97-0	1					
Limits:	Limits for gene	eral population /	uncontrolled e	xposure				
	Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm²)	Averaging Time (minutes)			
	0.3 - 1.34	614	1.63	(100)*	30			
	1.34 - 30	824 / f	2.19 / f	(180 / f²)*	30			
	30 - 300	27.5	0.073	0.2	30			
	300 - 1500			f/1500	30			
	1500 - 100000			1.0	30			
		f = frequency in MHz * Plane-wave equivalent power density						

Spectral power density			Measured
Prediction ⁶ :	$S = PG/4\pi R^2$		
Where:	S = Power density		
	P = Power input of antenna		
	G = Power gain of the antenna relativ to an isotropic radiator		
	R = Distance to the center of radiation of the antenna		
Maximum output power:	P = 12.08 dBm = 16.14 mW		\square
Antenna gain:	G = 14 dBi = 25.11	\square	
Prediction distance:	R = 20 cm		
Power density at 20 cm:	$S = 0.08 \text{ mW/cm}^2$		

Test Result:

Test passed

⁶ MPE Prediction of MPE according to equation from page 19 of OET Bulletin 65, Ed. 97-01

8.7 Exposure of Humans to RF Fields

Antenna: Maxrad MP24012CPLXFPT

Rules and specifications:	IC RSS-Gen Issue 2, section	on 5.5				
Guide:	IC RSS-102 Issue 2, section	on 2.5				
Expo	Applicable	Declared by applicant	Measured	Exemption		
The antenna is						
⊠ detachable						
The conducted or connector:	utput power (CP in watts) is n	neasured at the antenna				
	<i>CP</i> = 0.016 W				\square	
	Topic radiated power (EIRP in I antenna gain: $EIRP = G \cdot CP \Rightarrow EIRF$	<i>G</i> = 15.84				
the field stree	hgth ⁷ in V/m: Find the example of	S = V/m P = W				
with: Distance bet	ween the antennas in m: <i>L</i>) = m				
not detachable						
radiated power (E	easurement is used to detern IRP in watts) given by ⁷ : $EIRP = \frac{(FS \cdot D)^2}{30} \Rightarrow EIRP$					
with:						
Field strength in V	//m: FS	= dBµV/m = V/m				
Distance betweer	the two antennas in m:) = m				
Selection of output power						
The output power TP is power (e.i.r.p.):	C C	or effective isotropic radiated				
	$TP = \dots \mathbf{W}$					

⁷ The conversion formula is valid only for properly matched antennas. In other cases the transmitter output power may have to be measured by a terminated measurement when applying the exemption clauses. If an open area test site is used for field strength measurement, the effect due to the metal ground reflecting plane should be subtracted from the maximum field strength value in order to reference it to free space, before calculating TP.



Exposure of Humans to RF Fields (continued)	Applicable	Declared by applicant	Measured	Exemption
Separation distance between the user and the transmitting device is				
☐ less than or equal to 20 cm		\boxtimes		
Transmitting device is		•		
in the vicinity of the human head body-worn				
SAR evaluation		•		
SAR evaluation is required if the separation distance between the user and the device is less than or equal to 20 cm.				
The device operates from 3 kHz up to 1 GHz inclusively and its source-based time-averaged output power is less than, or equal to 200 mW for General Public Use and 1000 mW for Controlled Use.				
The device operates above 1 GHz up to 2.2 GHz inclusively and its source- based time-averaged output power is less than, or equal to 100 mW for General Public Use and 500 mW for Controlled Use.				
The device operates above 2.2 GHz up to 3 GHz inclusively and its source- based time-averaged output power is less than, or equal to 20 mW for General Public Use and 100 mW for Controlled Use.				
The device operates above 3 GHz up to 6 GHz inclusively and its source- based time-averaged output power) is less than, or equal to 10 mW for General Public Use and 50 mW for Controlled Use.				
SAR evaluation is documented in test report no				
RF exposure evaluation				
RF exposure evaluation is required if the separation distance between the user and the device is greater than 20 cm.				
The device operates below 1.5 GHz and its e.i.r.p. is equal to or less than 2.5 W.				
The device operates at or above 1.5 GHz and the e.i.r.p. of the device is equal to or less than 5 W.				\boxtimes
RF exposure evaluation is documented in test report no.				



8.8 Exposure of Humans to RF Fields

Antenna: Maxrad I	MYP24014PT
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Rules and specifications:	IC RSS-Gen Issue 2, section 5.5						
Guide:	Guide: IC RSS-102 Issue 2, section 2.5						
Expos	Applicable	Declared by applicant	Measured	Exemption			
The antenna is							
⊠ detachable							
The conducted out connector:	put power (CP in watts) is measured at the antenna						
	<i>CP</i> = 0.016 W			\bowtie			
The effective isotro	ppic radiated power (EIRP in watts) is calculated using antenna gain: $G = 25.11$ $EIRP = G \cdot CP \Rightarrow EIRP = 0.401 \text{ W}$		\boxtimes				
the field streng	gth ⁸ in V/m: $FS = \dots V/m$ $EIRP = \frac{(FS \cdot D)^2}{30} \Rightarrow EIRP = \dots W$						
with: Distance betw	een the antennas in m: $D = \dots m$						
not detachable							
radiated power (El	easurement is used to determine the effective isotropic RP in watts) given by ⁷ : $EIRP = \frac{(FS \cdot D)^2}{30} \Rightarrow EIRP = W$						
with: Field strength in V	= v/m						
Distance between the two antennas in m: $D = \dots \mathbf{m}$							
Selection of output power	he higher of the conducted or effective instranic redicted						
power (e.i.r.p.):	he higher of the conducted or effective isotropic radiated $TP = \dots \mathbf{W}$						

⁸ The conversion formula is valid only for properly matched antennas. In other cases the transmitter output power may have to be measured by a terminated measurement when applying the exemption clauses. If an open area test site is used for field strength measurement, the effect due to the metal ground reflecting plane should be subtracted from the maximum field strength value in order to reference it to free space, before calculating TP.



Exposure of Humans to RF Fields (continued)	Applicable	Declared by applicant	Measured	Exemption
Separation distance between the user and the transmitting device is				
□ less than or equal to 20 cm □ greater than 20 cm				
Transmitting device is		•		
in the vicinity of the human head body-worn				
SAR evaluation				
SAR evaluation is required if the separation distance between the user and the device is less than or equal to 20 cm.				
The device operates from 3 kHz up to 1 GHz inclusively and its source-based time-averaged output power is less than, or equal to 200 mW for General Public Use and 1000 mW for Controlled Use.				
The device operates above 1 GHz up to 2.2 GHz inclusively and its source- based time-averaged output power is less than, or equal to 100 mW for General Public Use and 500 mW for Controlled Use.				
The device operates above 2.2 GHz up to 3 GHz inclusively and its source- based time-averaged output power is less than, or equal to 20 mW for General Public Use and 100 mW for Controlled Use.				
The device operates above 3 GHz up to 6 GHz inclusively and its source- based time-averaged output power) is less than, or equal to 10 mW for General Public Use and 50 mW for Controlled Use.				
SAR evaluation is documented in test report no				
RF exposure evaluation				
RF exposure evaluation is required if the separation distance between the user and the device is greater than 20 cm.				
The device operates below 1.5 GHz and its e.i.r.p. is equal to or less than 2.5 W.				
The device operates at or above 1.5 GHz and the e.i.r.p. of the device is equal to or less than 5 W.				
RF exposure evaluation is documented in test report no	1			



9 Test Results for Receiver

FCC CFR 47 Part 15

Section(s)	Test	Page	Result
15.107	Conducted AC powerline emission 150 kHz to 30 MHz		Not applicable
15.109	Radiated emission 30 MHz to 12.5 GHz	38	Test passed
15.111(a)	Antenna power conduction emission of receivers 9 kHz to 12.5 GHz		Not applicable

IC RSS-Gen Issue 2						
Section(s)	Test	Page	Result			
7.2.2	Transmitter AC power lines conducted emissions 150 kHz to 30 MHz		Not applicable			
6(a), 7.2.3.2	Receiver spurious emissions (radiated) 30 MHz to 12.5 GHz	38	Test passed			
6(b), 7.2.3.1	Receiver spurious emissions (antenna conducted) 9 kHz to 12.5 GHz		Not applicable			

9.1 Radiated Emission Measurement 30 MHz to 12.5 GHz

Rules and specifications:	CFR 47 Part 15, section 15.109 (Class IC ICES-003 Issue 4, section 5.5	s B)					
Guide:	ANSI C63.4						
Limit:	harmonics, shall be attenuated at leas	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated at least 50 dB below the level of the fundamental or to the general radiated emission limits below, whichever is the lesser attenuation					
Limit:	Frequency of Emission (MHz)	Field Strength (microvolts/meter)					
	30 - 88	100					
-	88 - 216	150					
	216 - 960	200					
	Above 960	500					
Measurement procedures:	Radiated Emission in Fully or Semi Anechoic Room (6.4) Radiated Emission at Open Field Test Site (6.5)						
Comment:							
Date of test:	June 20, 2008						

Date of test:	June 20, 2008			
Mode:	Antenna: Maxrad MP24012CPLXFPT Middle Frequency: 2440 MHz			
Test site:	$\begin{array}{ll} \mbox{Frequencies} \leq 1 \mbox{ GHz:} & \mbox{Open field test site} \\ \mbox{Frequencies} > 1 \mbox{ GHz:} & \mbox{Fully anechoic room, cabin no. 2} \end{array}$			
Test distance:	3 meters			

	Test Result:	Test passed
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Frequency (MHz)	Detector	Antenna Polarization	Analyzer Reading (dBµV)	Correction Factor (dB/m)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
798.240	Peak	Vertical	16.23	22.90	39.12	46.00	6.88
1476.000	Peak	Vertical	14.97	29.51	44.48	54.00	9.52
2484.000	Peak	Vertical	17.63	33.59	51.22	54.00	2.78
2498.000	Peak	Vertical	18.00	33.63	51.63	54.00	2.37
7930.000	Peak	Vertical	-1.55	47.33	45.78	54.00	8.22

Sample calculation of final values:

Final Value $(dB\mu V/m)$ = Analyzer Reading $(dB\mu V)$ + Correction Factor (dB/m)

Comment:	
Date of test:	June 20, 2008
Mode:	Antenna: Maxrad MYP24014PT Middle Frequency: 2440 MHz
Test site:	$\begin{array}{llllllllllllllllllllllllllllllllllll$
Test distance:	3 meters
Test Result:	Test passed

Frequency (MHz)	Detector	Antenna Polarization	Analyzer Reading (dBµV)	Correction Factor (dB/m)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
154.16	Peak	Horizontal	25.79	10.10	35.89	43.5	7.61
163.860	Peak	Vertical	25.86	10.48	36.34	43.5	7.16
299.660	Peak	Vertical	23.33	15.02	38.35	46.0	7.65
7440.000	Peak	Horizontal	-2.54	46.66	44.12	54.0	9.88
7972.000	Peak	Horizontal	-2.80	47.37	44.57	54.0	9.43

Sample calculation of final values:

Final Value $(dB\mu V/m)$ = Analyzer Reading $(dB\mu V)$ + Correction Factor (dB/m)

10 Referenced Regulations

All tests were performed with reference to the following regulations and standards:

	CFR 47 Part 2	Code of Federal Regulations Part 2 (Frequency allocation and radio treaty matters; General rules and regulations) of the Federal Communication Commission (FCC)	October 1, 2006
\square	CFR 47 Part 15	Code of Federal Regulations Part 15 (Radio Frequency Devices) of the Federal Communication Commission (FCC)	May 4, 2007
	ANSI C63.4	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low- Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	December 11, 2003 (published on January 30, 2004)
	RSS-Gen	Radio Standards Specification RSS-Gen Issue 2 containing General Requirements and Information for the Certification of Radiocommunication Equimpment, published by Industry Canada	June 2007
	RSS-210	Radio Standards Specification RSS-210 Issue 7 for Low Power Licence-Exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment, published by Industry Canada	June 2007
	RSS-310	Radio Standards Specification RSS-310 Issue 1 for Low Power Licence-Ecempt Radiocommunicaton Devices (All Frequency Bands): Category II Equipment, published by Industry Canada	September 2005
	RSS-102	Radio Standards Specification RSS-102 Issue 2: Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)	November 2005
	ICES-003	Interference-Causing Equipment Standard ICES-003 Issue 4 for Digital Apparatus, published by Industry Canada	February 7, 2004
	CISPR 22	Third Edition of the International Special Committee on Radio Interference (CISPR), Pub. 22, "Information Technology Equipment – Radio Disturbance Characteristics – Limits and Methods of Measurement"	1997
	CAN/CSA- CEI/IEC CISPR 22	Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment	2002
	TRC-43	Notes Regarding Designation of Emission (Including Necessary Bandwidth and Classification), Class of Station and Nature of Service, published by Industry Canada	October 9, 1982



11 Revision History

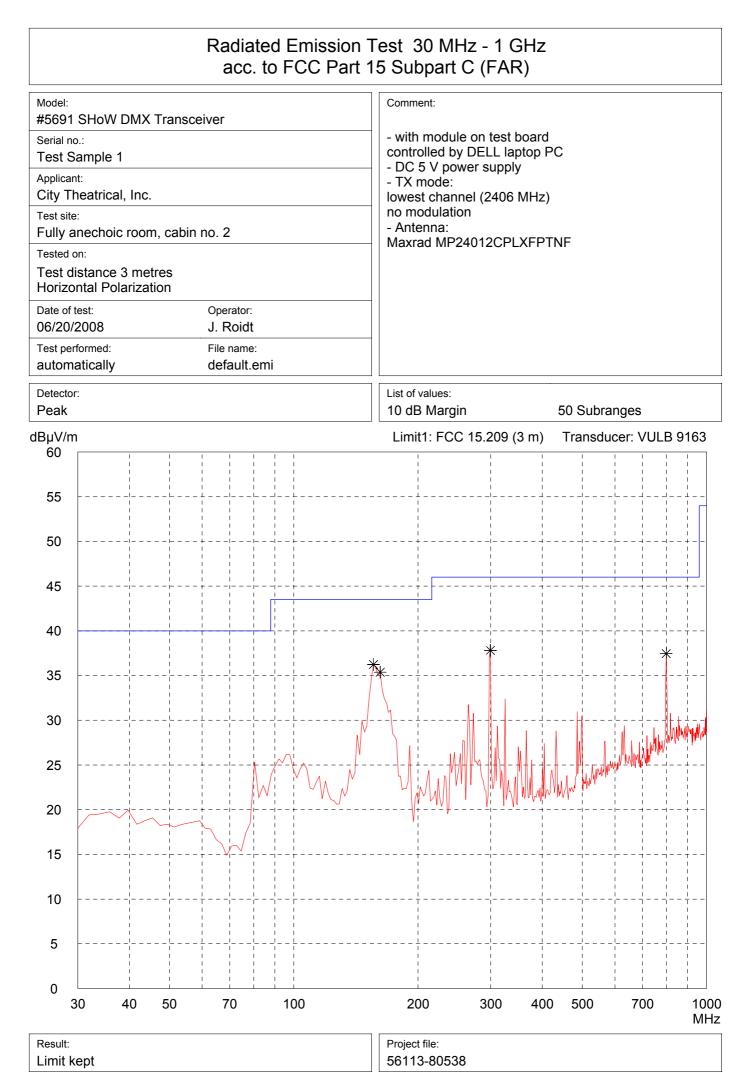
Revision History					
Edition	Date	Issued by	Modifications		
1	June 25, 2008	Johann Roidt (cj)	Edition 1		



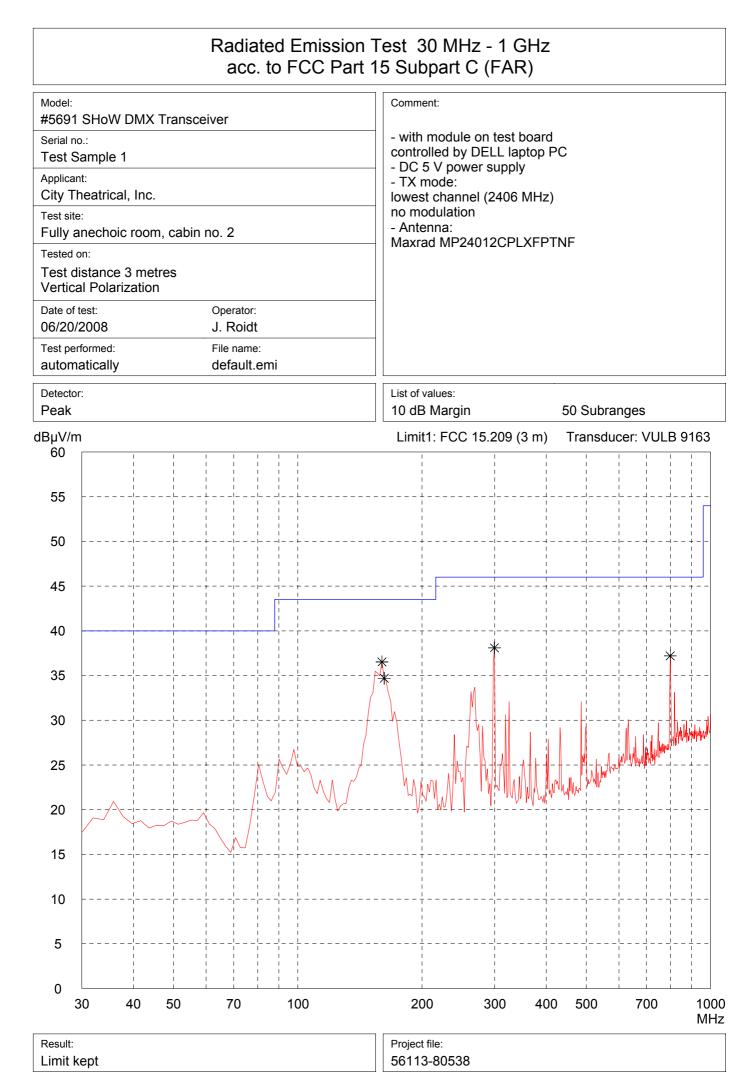
12 Charts taken during testing

Three enclosures are attached to this test report:

- Test sheets for ANT-2 tx mode
- Test sheets for ANT-4 tx mode
- Test sheets for ANT-2 and ANT-4 rx mode



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Model: #5691	SHoW DMX Transceiver		Com	iment:				
	Sample 1		 with module on test board controlled by DELL laptop PC DC 5 V power supply 					
-	heatrical, Inc.		- TX mode: - Lowest channel channel (2406 MHz)					
Test site Fully a	e: anechoic room, cabin no. 2		- Ar	o modulatic ntenna: axrad MP2	on 4012CPLXF	PTNF		
	^{on:} listance 1 metre ontal Polarization				n fundamen		ency	
Date of 06/20/	/2008 J. Roidt							
	rformed: File name: natically default.emi							
Detecto Peak	r:			of values: dB Margin		50 Su	Ibranges	
dBµV/n 83.5	n		Lim	iit1: FCC 1	5.209 (1 m)	Trans	ducer: EN	/ICO 3115
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		*						
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60						*:		
								**
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30				 +				
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10						+	 	
0 1(000 200)0	30	000	4000	5000	6000	8000
Result:				ect file:				MHz
Limit k	kept	56113-80538						

Model: #5691	SHoW DMX Transceiver		Comment:					
Serial no			 with module on test board controlled by DELL laptop PC DC 5 V power supply TX mode: Lowest channel channel (2406 MHz) 					
Applicar City Th	^{nt:} heatrical, Inc.							
Test site Fully a	anechoic room, cabin no. 2		- no modula - Antenna: Maxrad M	ition P24012CPLXF	PTNF			
	^{on:} istance 1 metre al Polarization			r on fundament		ncy		
Date of 1 06/20/2	2008 J. Roid							
Test per autom	rformed: File nam atically default							
Detector Peak	r:		List of values: 10 dB Marg	in	50 Sub	oranges		
dBµV/m 83.5	ו 		Limit1: FCC	: 15.209 (1 m)	Transd	lucer: EMC	C 3115	
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10			 	 				
0					5000	0000		
	000	2000	3000	4000	5000	6000	8000 MHz	
Result: Limit k	cept		Project file: 56113-8053	38				

Model: #5691 SHoW DMX Transceiv	ver	Comment:		
Serial no.: Test Sample 1 Applicant: City Theatrical, Inc. Test site: Fully anechoic room, cabin no. 2		 with module on test board controlled by DELL laptop PC DC 5 V power supply 		
		- TX mode: - Lowest channel channel (2	2406 MHz)	
		 - no modulation - Antenna: Maxrad MP24012CPLXFF 	YTNF	
Tested on: Test distance 1 meter Horizontal Polarization		- Notch filter on fundamenta		
	Operator: J. Roidt			
	File name: default.emi			
Detector: Peak		List of values: 10 dB Margin	50 Subranges	
dBµV/m 80		Limit1: FCC 15.209 (1 m)	Transducer: EMCO 3160	
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	an when the and the second the second the second se	man all and the second second		
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30				
25				
20				
15				
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5				
0 8200	1	0000		
Result:		Project file:	MHz	
Limit kept		56113-80538		

Model: #5691 SHoW DMX Transceiver Serial no.: Test Sample 1 Applicant: City Theatrical, Inc. Test site: Fully anechoic room, cabin no. 2 Tested on: Test distance 1 meter Vertical Polarization Date of test: Operator: 06/20/2008 J. Roidt Test performed: File name: automatically default.emi		0. 2 Operator: . Roidt ile name:	Comment: - with module on test board controlled by DELL laptop PC - DC 5 V power supply - TX mode: - Lowest channel channel (2476 MHz) - no modulation - Antenna: Maxrad MP24012CPLXFPTNF - Notch filter on fundamental frequency		
Detector: Peak			List of values:10 dB Margin50 Subranges		
dBµV/m 80 ┌			Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160		
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5 -					
0 - 820	00	1	0000 12400 MHz		
Result: Limit ke	pt		Project file: 56113-80538		

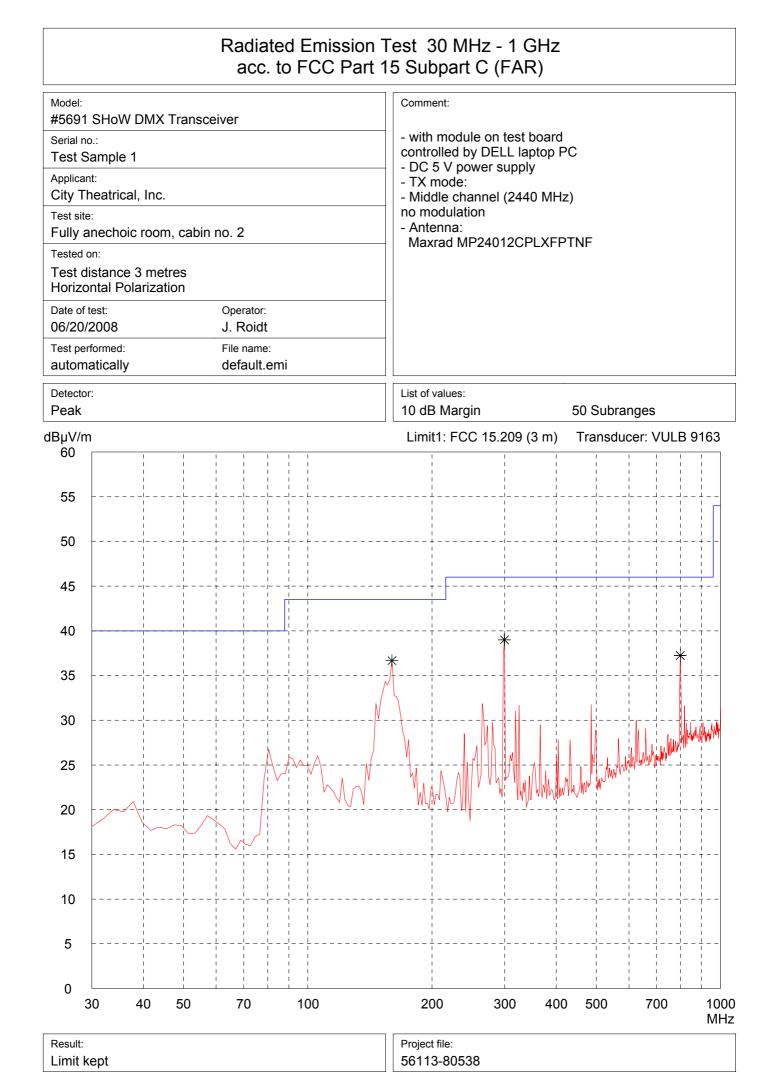
Model: #5691	SHoW DMX Transce	eiver	Comment:			
Serial no.: Test Sample 1 Applicant: City Theatrical, Inc.			 with module on test board controlled by DELL laptop PC DC 5 V power supply 			
			- TX mode: - Lowest channel channel (2406 MHz)			
Test site		_	- no modulation			
Fully a	anechoic room, cabin	no. 2	Maxrad MP24012CPLXFPTNF			
	listance 1 meter		- Notch filter on fundamental frequency			
Vertica	al Polarization					
Date of 06/20/		Operator: J. Roidt				
	rformed:	File name:				
by har		default.emi				
Detecto Peak	r:		List of values: Selected by hand			
dBµV/n	n		Limit1: FCC 15.209 (1 m) Transducer: EMC	O 3160		
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	2400			18000 MHz		
Result:			Project file:			
Limit k	kept		56113-80538			

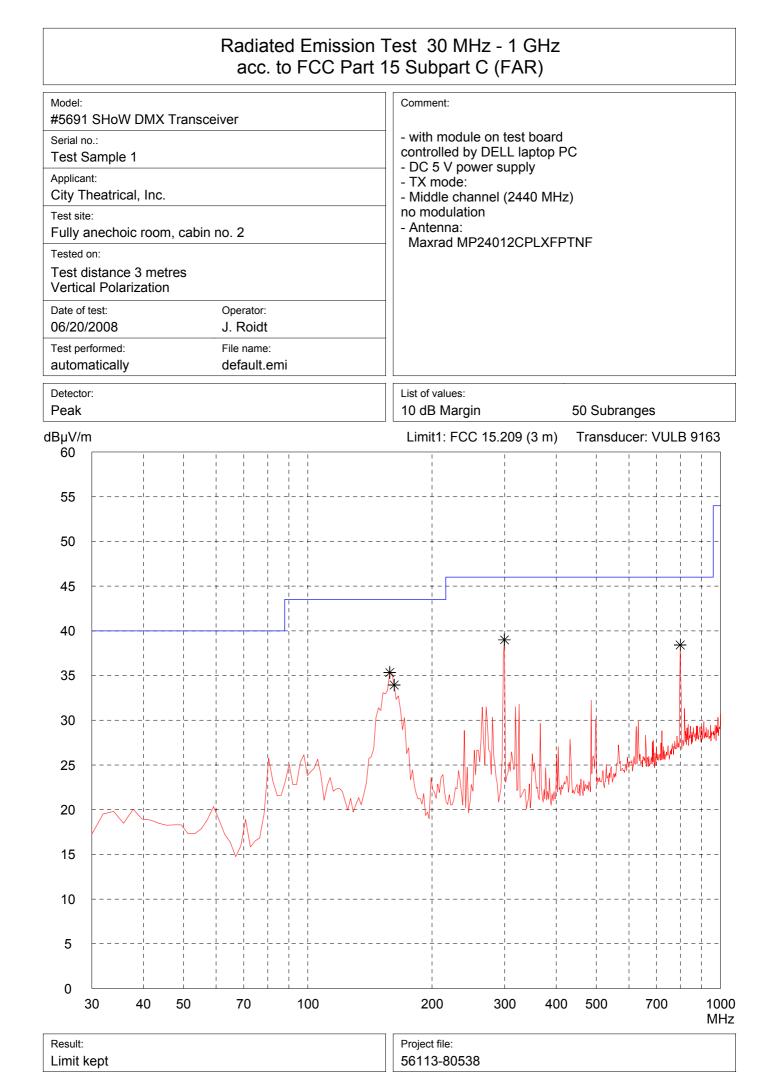
Model: #5691 SHoW DMX Transceiver Serial no.: Test Sample 1 Applicant: City Theatrical, Inc.			Comment:			
			 with module on test board controlled by DELL laptop PC DC 5 V power supply TX mode: Lowest channel channel (2476 MHz) 			
Test site			- no modulation - Antenna:			
Tested	anechoic room, cabin no. 2	2	Maxrad MP24012CPLXFF	'TNF		
	listance 1 meter		- Notch filter on fundamenta	al frequency		
Horizo	ontal Polarization					
Date of 06/20/		erator: Roidt				
		name:				
by har	nd det	ault.emi				
Detecto Peak	r:		List of values: Selected by hand			
dBµV/n 80	n		Limit1: FCC 15.209 (1 m)	Transducer: EMCO 3160		
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0 12	2400			 18000 MHz		
Result:			Project file:			
Limit	kept		56113-80538			

Model:	Mode:				
Serial No.:	- DC 5 V power sup	st board, controlled by DELL lapt ply			
Applicant: City Theatrical, Inc.	- Lowest channel (2 - no modulation - Antenna: Maxrad MP240120	 - TX mode: - Lowest channel (2406 MHz) - no modulation 			
tef.Level 87 dBμV 0 dB/Div.	ATT 0 dB	· · · · · · · · · · · · · · · · · · ·			
		Marker 18.047222 GHz 20.22 dBµV			
		L			
- พ.ศ. 2011 มี 1971 - มีการ์ เป็นการ์ เป็นการ์ เป็นการ์ เป็นการ์ เป็นการ์ เป็นการ์ เป็นการ์ เป็นการ์ เป็นการ์ เป	where the second manual properties	New Manager and			
	n na siya na s Na siya na siya Na siya na siya	r			
tart 18.000 GHz BW 100 kHz	/BW 100 kHz	Stop 26.500 GHz SWP 2.60 s			

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Model: #5691	SHoW DMX Transceiver		Comment:				
Test S	Serial no.: Test Sample 1 Applicant: City Theatrical, Inc.			 with module on test board controlled by DELL laptop PC DC 5 V power supply 			
				annel channel (2440 MF	Hz)	
Test site Fully a	e: inechoic room, cabin no. 2		- no modula - Antenna:	ition P24012CPLXF			
	on: istance 1 metre intal Polarization			r on fundament		ency	
Date of t 06/20/2	2008 J. Roidt						
Test per automa	formed: File name: atically default.emi						
Detector Peak	r:		List of values: 10 dB Marg	in	50 Su	branges	
dBµV/m 83.5	1		Limit1: FCC	: 15.209 (1 m)	Transo	ducer: EMO	CO 3115
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10					+	 	·
0					 	 	
	000 200	00	3000	4000	5000	6000	8000 MHz
Result: Limit k	ept		Project file: 56113-8053	38			

Model: #5691	SHoW DMX Transceiver		Comme	ent:			
Serial no.: Test Sample 1			 with module on test board controlled by DELL laptop PC DC 5 V power supply 				
	Applicant: City Theatrical, Inc.			node: lle channel chann	el (2440 MI	Hz)	
Test site Fully a	: nechoic room, cabin no. 2		- Ante	iodulation nna: ad MP24012CPL	XEPTNE		
	^{n:} stance 1 metre Il Polarization			h filter on fundam		ency	
Date of to 06/20/2	2008 J. Roi	dt					
Test perf automa							
Detector Peak	:		List of v 10 dB	alues: Margin	50 Su	Ibranges	
dBµV/m 83.5			Limit1	: FCC 15.209 (1 r	n) Trans	ducer: EMC	C 3115
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	00	2000	3000) 4000	5000	6000	8000 MHz
Result: Limit ke	ept		Project	file: -80538			

Model: #SG91 SHoW DMX Transceiver Comment: Serial no: Test Sample 1	
Test Sample 1 controlled by DELL laptop PC Applicant: City Theatrical, Inc. City Theatrical, Inc. - Niddle channel channel (2440 MHz) Fest Sample 1 - Middle channel channel (2440 MHz) Fully anechoic room, cabin no. 2 - Antenna: Maxrad MP24012CPLXFPTNF Tested on: - Antenna: Maxrad MP24012CPLXFPTNF Test performed: Operator: 06/20/2008 J. Roidt Date of test: Operator: 06/20/2008 J. Roidt Test performed: Flie name: automatically List of values: 10 dB Margin 50 Subranges BuyVm Limit1: FCC 15.209 (1 m) Transducer: EMCO 316 65	
Applicant: - TX mode: City Theatrical, Inc. - TX mode: Fest site: - no modulation Fully anechoic room, cabin no. 2 - Antenna: Test doi: Operator: 06/20/2008 J. Roidt Test distance 1 meter - Notch filter on fundamental frequency 06/20/2008 J. Roidt Test performed: File name: automatically default.emi Detector: - Peak Peak - TX mode: 06 - TX mode: 70 - Notch filter on fundamental frequency 65 - Transducer: EMCO 316 75	controlled by DELL laptop PC
Fully anechoic room, cabin no. 2 - Antenna: Maxrad MP24012CPLXFPTNF Tested on: Test distance 1 meter Horizontal Polarization - Notch filter on fundamental frequency Date of test: 06/20/2008 Operator: 06/20/2008 - Notch filter on fundamental frequency Detector: Peak Elist of values: 10 dB Margin - S0 Subranges dBµV/m Limit1: FCC 15.209 (1 m) Transducer: EMCO 316 75	- TX mode: - Middle channel channel (2440 MHz)
Test distance 1 meter - Notch filter on fundamental frequency Date of test: Operator: 06/20/2008 J. Roidt Test performed: File name: automatically default.emi Detector: Peak Peak 10 dB Margin 50 List of values: 10 dB Margin 50 Subranges dBµV/m Limit1: FCC 15.209 (1 m) 75	n no. 2 - Antenna:
Date of test: Operator: 06/20/2008 J. Roidt Test performed: File name: automatically default.emi Detector: Peak Peak List of values: 10 dB Margin 50 Subranges dBµV/m Limit1: FCC 15.209 (1 m) 75 Transducer: EMCO 316 76 G6 60 G6 65 G0 65 G0 50 Mum	
automatically default.emi Detector: List of values: 10 dB Margin 50 Subranges dBµV/m Limit1: FCC 15.209 (1 m) 75	
Peak 10 dB Margin 50 Subranges dBµV/m Limit1: FCC 15.209 (1 m) Transducer: EMCO 316 75	
80 75 70 65 60 * 55 * 50 * 45 * 45 * 30 25	
75	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
65 60 55 50 50 50 50 50 50 50 50 5	
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	10000 12400 MHz
Result: Project file: Limit kept 56113-80538	Project file:

Model: #5691	SHoW DMX Trans	sceiver		Comment:	
Serial no Test S	o.: Sample 1			 with module on test board controlled by DELL laptop PC DC 5 V power supply 	
	Applicant: City Theatrical, Inc.			- TX mode: - Middle channel channel (2440 MHz)	
Test site	Test site: Fully anechoic room, cabin no. 2 Tested on:			- no modulation - Antenna:	
				Maxrad MP24012CPLXFPTNF	
	listance 1 meter al Polarization			- Notch filter on fundamental frequency	
Date of 06/20/		Operator: J. Roidt			
Test per autom	rformed: atically	File name: default.emi			
Detector Peak	r:			List of values: 10 dB Margin 50 Subranges	
dBµV/m 80	n			Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160	
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Result: Limit k	kept			Project file: 56113-80538	

Radiated Emission Test 12.4 GHz - 18 GH	łz
acc. to FCC Part 15 Subpart C (FAR)	

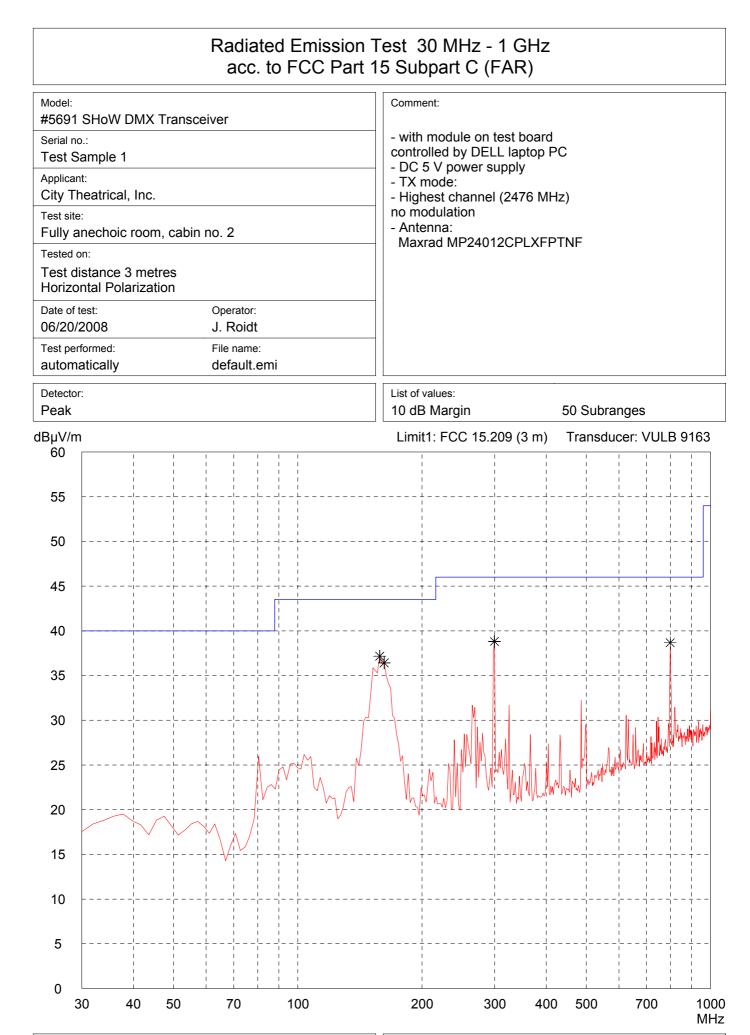
Model: #5691	SHoW DMX Transceiver		Comment:		
Serial no.: Test Sample 1			- with module on test board controlled by DELL laptop PC - DC 5 V power supply		
Applicar	^{nt:} heatrical, Inc.		- TX mode: - Middle channel channel (2440		
Test site	Test site:		- no modulation	MHZ)	
-	anechoic room, cabin no. 2	2	- Antenna: Maxrad MP24012CPLXFPTNF	:	
Tested Test d	listance 1 meter		- Notch filter on fundamental fre	quency	
	ontal Polarization				
Date of 06/20/		rator: Roidt			
		name:			
by har		ault.emi			
Detecto Peak	ir:		List of values: Selected by hand		
dBµV/n 80	n		Limit1: FCC 15.209 (1 m) Tra	nsducer: EMCO 3160	
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12	2400			18000 MHz	
Result: Limit k	kept		Project file: 56113-80538		

Model: #5691 SHoW DMX Transceiver			Comment:		
Serial no.: Test Sample 1			- with module on test board controlled by DELL laptop PC - DC 5 V power supply		
	Applicant: City Theatrical, Inc. Test site: Fully anechoic room, cabin no. 2		- TX mode: - Middle channel channel (2440 MHz)		
			- no modulation - Antenna:		
Tested	on:		Maxrad MP24012CPLXFPTNF		
	listance 1 meter al Polarization		- Notch filter on fundamental frequency		
Date of 06/20/		Operator: I. Roidt			
Test per	rformed: F	ile name:			
by har		lefault.emi			
Detecto Peak	r:		List of values: Selected by hand		
dBµV/m 80	n		Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160		
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	2400		18000 MHz		
Result: Limit k	kept		Project file: 56113-80538		

Model:			Mode:	Mode:				
Serial No.:			- DC	5 V power s	test board, c upply	ontrolled by	DELL lapt	
Applicant: City Theatrical, Inc.			- Mid - no i - Ant Max	 - TX mode: - Middle channel (2440 MHz) - no modulation - Antenna: Maxrad MP24012CPLXFPTNF 				
			Test	distance 1 m	n , reading wi	thout anten	na correcti	
Ref.Level 87 dBμV 0 dB/Div.		ŀ	ATT 0 dB				1	
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Start 18.000 GHz RBW 100 kHz		VB	W 100 kHz		1	Stop 2	6.500 GHz WP 2.60 s	
Tested by: Johann Roidt				Project-No.: 56113-080538				

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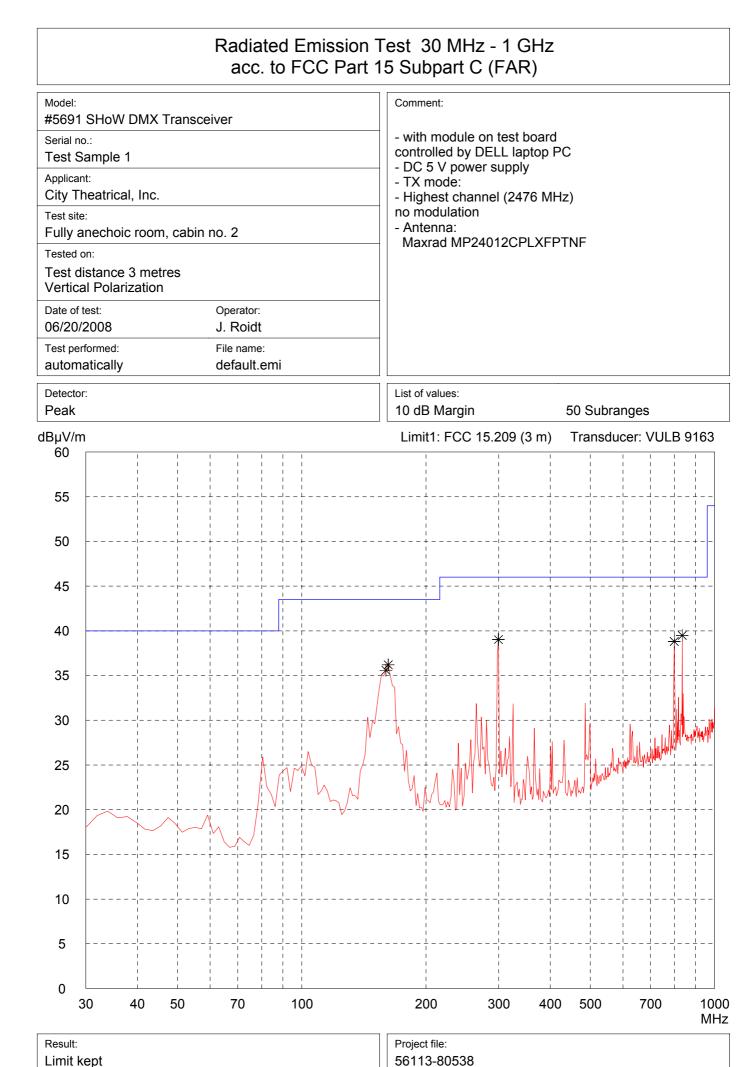
Senton GmbH / Aeussere Fruehlingstrasse 45 / D-94315 Straubing / Germany / Tel. +49 (0)9421 5522-0 / Fax +49 (0)9421 5522-99

Project file:

56113-80538

Result:

Limit kept



Model: #5691	SHoW DMX Transceiver		Comment:						
	Sample 1		 with module on test board controlled by DELL laptop PC DC 5 V power supply TX mode: Highest channel channel (2476 MHz) no modulation Antenna: Maxrad MP24012CPLXFPTNF 						
Applicar City Th	^{nt:} heatrical, Inc.								
Test site Fully a	e: anechoic room, cabin no. 2								
	^{on:} istance 1 metre ontal Polarization		on fundament		ncy				
Date of 1 06/20/2	test: Operator:								
Test per autom	formed: File name: atically default.emi								
Detector Peak	r:		List of values: 10 dB Margi	n	50 Sub	ranges			
dBµV/m 83.5	1		Limit1: FCC	15.209 (1 m)	Transd	ucer: EMC	CO 3115		
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Result: Limit k	kept		Project file: 56113-8053	8					

Model: #5691	SHoW DMX Transceiver			Com	ment:					
	ample 1			 with module on test board controlled by DELL laptop PC DC 5 V power supply TX mode: Highest channel channel (2476 MHz) 						
Applicar City Th	^{nt:} neatrical, Inc.									
Test site Fully a	e: Inechoic room, cabin no. 2		- An	modulat tenna:		·				
Tested of	Tested on: Test distance 1 metre Vertical Polarization					24012CPLXF				
						on fundamen	tal frequ	ency		
Date of t 06/20/2	•									
Test per automa	formed: File name: atically default.emi									
Detector Peak	r:				f values: IB Margir	1	50 Sı	ıbranges		
dBµV/m 83.5	1			Limi	t1: FCC	15.209 (1 m)	Trans	ducer: EN	CO 3115	
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Result: Limit k	ent			-	ct file: 13-80538	3				

Serial no Test S Applicar City Th Test site Fully a Tested o Horizo Date of t 06/20/ Test per automa	ample 1 t: heatrical, Inc. timechoic room, cabin no. 2 n: istance 1 meter intal Polarization test: 2008 J. Roidt formed: atically default.emi	Comment: - with module on test board controlled by DELL laptop PC - DC 5 V power supply - TX mode: - Highest channel channel (2476 MHz) - no modulation - Antenna: Maxrad MP24012CPLXFPTNF - Notch filter on fundamental frequency
Detector Peak	r.	List of values: 10 dB Margin 50 Subranges
dBµV/m	1	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
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	200	10000 12400 MHz
Result: Limit k	ept	Project file: 56113-80538

Model: #5691	SHoW DMX Tra	nsceiver	Comment:
Serial no Test S	o.: Sample 1		 with module on test board controlled by DELL laptop PC DC 5 V power supply
Applicar City TI	^{nt:} heatrical, Inc.		- TX mode: - Highest channel channel (2476 MHz)
Test site Fully a	e: anechoic room, ca	abin no. 2	- no modulation - Antenna:
Tested of			Maxrad MP24012CPLXFPTNF
Vertica	al Polarization		- Notch filter on fundamental frequency
Date of 06/20/		Operator: J. Roidt	
	rformed: natically	File name: default.emi	
Detecto Peak	r:		List of values: 10 dB Margin 50 Subranges
dBµV/m 80	n		Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
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Result: Limit k	kept		Project file: 56113-80538

Model: #5691	SHoW DMX Transceiver	Comment:				
Serial n Test S	o.: Sample 1	 with module on test board controlled by DELL laptop PC DC 5 V power supply TX mode: Highest channel channel (2476 MHz) no modulation Antenna:				
Applicar City T	^{nt:} heatrical, Inc.					
Test site						
Tested						
	listance 1 meter ontal Polarization	- Notch filter on fundamental frequency				
Date of 06/20/	•					
	rformed: File name:					
by har	nd default.emi					
Detecto Peak	or:	List of values: Selected by hand				
dBµV/n 80	n	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160				
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0 12	2400	18000				
		MHz				
Result:		Project file: 56113-80538				

Model: #5691	SHoW DMX Transceiver		Comment:					
Serial no Test S	^{o.:} Sample 1		 with module on test board controlled by DELL laptop PC DC 5 V power supply 					
Applicar City TI	^{nt:} heatrical, Inc.		 - TX mode: - Highest channel channel (2476 MHz) 					
Test site			- no modulation - Antenna:					
Tested of	anechoic room, cabin no. 2	2	- Antenna: Maxrad MP24012CPLXFPTNF - Notch filter on fundamental frequency					
	listance 1 meter							
Vertica	al Polarization							
Date of 06/20/		rator: Roidt						
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by har		ault.emi						
Detecto Peak	r:		List of values: Selected by hand					
dBµV/m 80	1		Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160					
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Result:			Project file:					
Limit k	kept		56113-80538					

Model:		Mode:				
Serial No.:		- DC 5	odule on te / power sup	st board, co ply	ontrolled by	DELL lapt
Applicant: City Theatrical, Inc.	 TX mode: Highest channel (2476 MHz) no modulation Antenna:					
Ref.Level 87 dBμV 0 dB/Div.	AT	T 0 dB				
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Start 18.000 GHz RBW 100 kHz	VBW	100 kHz			Stop 2	6.500 GHz WP 2.60 s
Tested by: Johann Roidt	Project-No.: 56113-080538					

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Model: #5691 SHoW	DMX Tran	sceiver		Comment:						
Serial no.: Test Sample	1			 - with module on test board controlled by DELL laptop PC - DC 5 V power supply - TX mode: - Lowest channel channel (2406 MHz) 						
Applicant: City Theatrica	II, Inc.									
Test site: Fully anechoid	c room cal	hin no 2		- without modulation - Antenna:						
Tested on:		511110. 2		Maxrad MYP24014F	'TNF					
Test distance Horizontal Po										
Date of test: 06/20/2008		Operator: J. Roidt								
Test performed: automatically		File name: default.e								
Detector: Peak				List of values: 10 dB Margin	50 Subranges					
dBµV/m				Limit1: FCC 15.209 (-					
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Result: Limit kept				Project file: 56113-80538						

Model: #5691 SHoW DMX Transceiver Serial no.: Test Sample 1 Applicant: City Theatrical, Inc. Test site: Fully anechoic room, cabin no. 2 Tested on: Test distance 3 metres Vertical Polarization Date of test: Operator: Operator: Operator:					control - DC 5 - TX m - Lowe - witho - Anter	nodule on test led by DELL la V power supp ode: st channel cha ut modulation	aptop PC ly annel (24				
06/20/2008 Test performed			J. Roid	e:							
automaticall Detector: Peak	y		default.	emi		List of va		Ę	50 Subran	nges	
dBµV/m 60	1					Limit1	: FCC 15.209	(3 m)	Transduc	er: VULB 9	9163
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0 30	40	50	70	100		200	300	400	500	700	1000 MHz
Result: Limit kept						Project fi 56113-					

Model: #5691	SHoW DMX Transce	eiver		Comment:								
Serial no Test S	^{o.:} Sample 1			 with module on test board controlled by DELL laptop PC DC 5 V power supply 								
Applicar City Th	^{nt:} heatrical, Inc.			 DC 5 V power supply TX mode: Low channel channel (2406 MHz) 								
	Test site: Fully anechoic room, cabin no. 2				- without modulation - Antenna:							
Tested of	Tested on: Test distance 1 metre			Maxrad M	1YP24014PTN	F						
Horizo	ontal Polarization											
Date of 06/20/		Operator: J. Roidt										
Test per autom	rformed: atically	File name: default.emi										
Detector Peak	r:			List of values: 10 dB Marg		50 Subra	naes					
dBµV/m	1				C 15.209 (1 m)		er: EMCO 311	15				
90		 				 						
85												
80		+ 			·							
75			·				*					
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60 55		*										
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20		 		$\frac{1}{1}$	·	' 						
15				 		 						
10						 						
10	000	2000		3000	4000	5000 6		8000 MHz				
Result: Limit k	cept			Project file: 56113-805	38							
	ωpi			1 001 10-000	00							

Serial no Test S Applican City Th Test site Fully a Tested o Test di	ample 1 t: heatrical, Inc. test: heatrical, Inc. test: heatrical, Inc. Coperator: heatrical, Inc. formed: heatrical, Inc. test: heatrical, Inc. heatrical, In	Comment: - with module on test board controlled by DELL laptop PC - DC 5 V power supply - TX mode: - Low channel channel (2406 MHz) - without modulation - Antenna: Maxrad MYP24014PTNF -	
Detector Peak		List of values: 10 dB Margin 50 Subranges	
dBµV/m]	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3	115
90 85 80 75 70 65 60 55 50 45 40		* * * *	
35			
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20		$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
15			
10 10	000 2000	3000 4000 5000 6000	8000 MHz
Result: Limit k	ept	Project file: 56113-80538	

Comment:
 with module on test board controlled by DELL laptop PC DC 5 V power supply
- TX mode: - Lowest channel channel (2406 MHz)
 without modulation Antenna: Maxrad MYP24014PTNF
-
List of values: 10 dB Margin 50 Subranges
Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
your man when the way was the way was a series of the seri
Monthe manual Mar Dentron and Mar and Marian and Mar
10000 12400
MHz Project file: 56113-80538

				-
Model: #5691	SHoW DMX Transc	ceiver		Comment:
Serial n Test S	_{o.:} Sample 1			 with module on test board controlled by DELL laptop PC DC 5 V power supply
Applicar City T	^{nt:} heatrical, Inc.			- TX mode: - Lowest channel channel (2406 MHz)
Test site Fully a	e: anechoic room, cabir	ו no. 2		- without modulation - Antenna:
Tested of Test d	^{on:} listance 1 meter			Maxrad MYP24014PTNF -
Vertica Date of	al Polarization	Operator:		
06/20/	/2008 rformed:	J. Roidt File name:		
-	atically	default.emi		
Detecto Peak	r:			List of values:10 dB Margin50 Subranges
dBµV/m 80	n			Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
75				
70			€	
65				
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50	had warden	- may and a marked and a second	part of the part o	phaneter han about my manual and and
45		+ - - - -		
40		<u>+</u>		
35		+ 		
30		+		▶
25				
20 15				
10				
5		 +		
0				
	200		100	000 12400 MHz
Result: Limit k	kept			Project file: 56113-80538

	on Test 12.4 GHz - 18 GHz Part 15 Subpart C (FAR)
Model: #5691 SHoW DMX Transceiver Serial no.:	- with module on test board controlled by DELL laptop PC
Test Sample 1 Applicant:	- DC 5 V power supply
City Theatrical, Inc.	- TX mode: - Lowest channel channel (2406 MHz)
Test site: Fully anechoic room, cabin no. 2	 without modulation Antenna: Maxrad MYP24014PTNF
Tested on: Test distance 1 meter Horizontal Polarization	-
Date of test: Operator:	
06/20/2008 J. Roidt	
Test performed:File name:by handdefault.emi	
Detector: Peak	List of values: Selected by hand
dBµV/m	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
80	
75	
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60	
55 MM.	me Morrison Marine Ma
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25	
20	
15	
10	
5	
0 12400	18000
	MHz
Result: Limit kept	Project file: 56113-80538

		est 12.4 GHz - 18 GHz 5 Subpart C (FAR)						
Serial no Test S Applicar City Th Test site Fully a Tested o Test d	ample 1 ht: heatrical, Inc. a: anechoic room, cabin no. 2 htest: Coperator: 2008 J. Roidt formed: File name:	Comment: - with module on test board controlled by DELL laptop PC - DC 5 V power supply - TX mode: - Lowest channel channel (2406 MHz) - without modulation - Antenna: Maxrad MYP24014PTNF -						
Detector Peak	r:	List of values: 10 dB Margin 50 Subranges						
dBµV/m 80	1	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160						
75 70 65 60 55 50 45 40		* ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						
35								
30								
25								
20								
15								
10								
5								
0 12	400	18000 MHz						
Result: Limit k	sept	Project file: 56113-80538						

City Theatrical, Inc.	 Low channel (2406 MHz) no modulation Antenna: Maxrad MYP24014TNF
	Test distance 1 m , reading without antenna correcti
Ref.Level 87 dBµV ATT 0 dB/Div.	Г 0 dВ
	I I I I I I I I I I I I I I I I I I I I I I I
	Marker
	18.047222 GHz 18.26 dBμV
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nen Cantonne Mar on dana Laa na biyan na sa	a a na na ana ana ang ang ang ang ang an
	I I I I I I I I I I I

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Serial no.: Test Sar Applicant: City The Test site: Fully and Tested on: Test dist	mple 1 eatrical, Inc echoic roo tance 3 me tal Polariza	c. m, cabin etres	no. 2 Operator: J. Roidt File name:			controlled - DC 5 V - TX mod - Middle d - without - Antenna	channel chann modulation	op PC el (2406	6 MHz)		
automat	ically		default.e	mi		List of value					
Peak						10 dB Ma		50) Subran	ges	
dBµV/m 60 ┌─	· · ·					Limit1: F	CC 15.209 (3	m) T	ransduce	er: VULB	9163
55 - · 50 - ·											
45		 									
40					****	 + 	****			*	- +
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15						 + 		 			
10 -	 							 			
5 -											
0 30	40	50	70	100		200	300	400	500	700	1000 MHz
Result: Limit kep	ot					Project file: 56113-80	538				

Model: #5691	SHoW DI	ЛХ Tra	ansce	iver				Comm	ent:						
Serial no.: Test Sample 1					 with module on test board controlled by DELL laptop PC DC 5 V power supply 										
City Th	Applicant: City Theatrical, Inc.					- TX ı - Mide	mode: dle char	nnel chan		06 MHz))				
Test site: Fully a	: nechoic ro	oom, c	abin ı	no. 2				- Ante		dulation P24014P					
	^{on:} stance 3 i I Polariza		6					-		F 240 14F					
Date of to 06/20/2				Opera J. Ro											
Test perf automa				File n defa		ni									
Detector: Peak	:								values: 8 Margir	ı	Ę	50 Subra	anges		
dBµV/m 60	l							Limi	t1: FCC	15.209 (3 m)	Transdu	icer: V	/ULB 9	163
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0 3	60 40) 5	0	70)	10	0	20	00	300	400	500	70)0	1000 MHz
Result: Limit ke	ept							Project	t file: 3-80538	}					

Serial no Test S Applican City Th Test site Fully a Tested o Test di Horizo Date of t 06/20/2 Test per	ample 1 ht: heatrical, Inc. anechoic room, cabin r on: istance 1 metre ontal Polarization test: 2008	 - - - - -	ontrolled by DC 5 V pov TX mode: Midlle char without mo Antenna:	nel channel (PC 2440 MH	lz)			
Detector Peak	· · · · · · · · · · · · · · · · · · ·	default.emi			st of values: 0 dB Margi	n	50 Su	branges	
dBµV/m	1					15.209 (1 m)		ducer: EM	CO 3115
90 85 80 75 70		·	x						
65		 	*		- <u>+</u>	 	 <u> </u> 	 	
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45 40					w/w/WM	лудаал	+		
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30					+		+		
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15		 			+	 	 	 	
10 10	000	200	00		3000	4000	5000	6000	800 MH
Result: Limit k	ept				roject file: 6113-8053	8			

Model: #5691 SHoW DMX Transceive	r	Comr	nent:						
Serial no.: Test Sample 1		- with module on test board controlled by DELL laptop PC							
Applicant: City Theatrical, Inc.	- DC 5 V power supply - TX mode: - Midlle channel channel (2440 MHz)								
Test site: Fully anechoic room, cabin no.	2	- without modulation - Antenna:							
Tested on: Test distance 1 metre Vertical Polarization		- Ma	xrad MYP240	14PINF					
-	perator: Roidt								
	e name: efault.emi								
Detector: Peak			f values: B Margin		50 Subra	anges			
dBµV/m 90		Limi	t1: FCC 15.20)9 (1 m)	Transduo	cer: EMC	O 3115		
85		 			, , , , , , , , , ,				
80	·	 		 		 			
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10		 		 		 			
1000	2000	30	20 40	000	5000 6	6000	8000 MHz		
Result: Limit kept		-	ct file: 13-80538						

Model: #5691 SHoW DMX Transceiver	Comment:					
Serial no.: Test Sample 1	- with module on test board controlled by DELL laptop PC					
Applicant:	- DC 5 V power supply - TX mode:					
City Theatrical, Inc. Test site:	 Middle channel channel (2440 MHz) without modulation 					
Fully anechoic room, cabin no. 2	- Antenna: Maxrad MYP24014PTNF					
Tested on: Test distance 1 meter	-					
Horizontal Polarization						
Date of test:Operator:06/20/2008J. Roidt						
Test performed: File name:						
automatically default.emi						
Detector: Peak	List of values: 10 dB Margin 50 Subranges					
dBµV/m 80	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160					
75						
70						
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50 mount and some show and some the source of the source o	have been and a second and the second and the					
45						
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0 200	10000					
8200	10000 12400 MHz					
Result: Limit kept	Project file: 56113-80538					
•						

Model: #5691 SHoW DMX	
Serial no.: Test Sample 1	- with module on test board controlled by DELL laptop PC - DC 5 V power supply
Applicant:	- TX mode:
City Theatrical, Inc Test site:	- without modulation
Fully anechoic roc	n, cabin no. 2 - Antenna: Maxrad MYP24014PTNF
Tested on: Test distance 1 m Vertical Polarizatio	
Date of test: 06/20/2008	Operator: J. Roidt
Test performed: automatically	File name: default.emi
Detector: Peak	List of values:10 dB Margin50 Subranges
dBµV/m 80	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
75	
70	*
65	*
60	*
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50 mm_m_	hard marshard and have a second with the second of the sec
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0 8200	10000 1240 MH:
Result: Limit kept	Project file: 56113-80538

		est 12.4 GHz - 18 GHz 15 Subpart C (FAR)
Model: #5691	SHoW DMX Transceiver	Comment:
Serial no Test S	ample 1	- with module on test board controlled by DELL laptop PC
Applicar City Th	nt: neatrical, Inc.	 DC 5 V power supply TX mode: Middle channel channel (2440 MHz)
Test site	x	- without modulation - Antenna:
Tested of	nechoic room, cabin no. 2	Maxrad MYP24014PTNF
	istance 1 meter ntal Polarization	
Date of t 06/20/2	•	
Test per	formed: File name:	
by han		List of values:
Peak		Selected by hand
dBµV/m 80	1	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
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50	pmmmmmmmm	
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15		
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5		
0	400	40000
124	400	18000 MHz
Result: Limit k	ept	Project file: 56113-80538

	est 12.4 GHz - 18 GHz 15 Subpart C (FAR)
Model:	Comment:
#5691 SHoW DMX Transceiver Serial no.:	with module on test board
Test Sample 1	controlled by DELL laptop PC – DC 5 V power supply
Applicant: City Theatrical, Inc.	- TX mode:
Test site:	 Middle channel channel (2440 MHz) without modulation
Fully anechoic room, cabin no. 2	Antenna: Maxrad MYP24014PTNF
Tested on: Test distance 1 meter	-
Vertical Polarization	
Date of test:Operator:06/20/2008J. Roidt	
Test performed: File name:	
by hand default.emi	
Detector: Peak	List of values: Selected by hand
dBµV/m	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
80	
75	
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45 Martin Walt	
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0 12400	
	MHz
Result: Limit kept	Project file: 56113-80538

	Test d	istance 1 m	n , reading wi	thout anten	na correctio		
ef.Level 87 dBµV		тл.					
odB/Div.		A1					
			1 1 1		1 1 1		
		· · · · · · · · · · · · · · · · · · ·					·
					18.04	ker 47222 GHz 6 dBµV	· · · · · · · ·
			· _ · _ · · · _ · · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · · _ · · _ · · _ ·		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
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and the production of the production of the	AL MA HAR A MARKAN A	have I on Mark Assessed Well	Mahnaman	unununun a	man August Januta	La Maria Andrea Maria	Jonness WWWW
alizationa and a new fill and the photo	Hanna Carling Maria and Hanna da Way Ayara Ayarand	they Mix Manual is	y North Mathematica W	Minin Alaman Alam	MaryMaryMaryMaryMaryMaryMaryMaryMaryMary	Wymlyn Mary M	wawywawywaw
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Model: #5691 SHoW Serial no.: Test Sample 1 Applicant: City Theatrical Test site: Fully anechoic Tested on: Test distance Horizontal Pol	, Inc. room, cabin 3 metres			controlled b - DC 5 V po - TX mode: - Highest ch - without mo - Antenna:	annel channel (24	
Date of test: 06/20/2008		Operator: J. Roidt		-		
Test performed: automatically		File name: default.em				
Detector: Peak				List of values: 10 dB Marg	in t	50 Subranges
dBµV/m 60				Limit1: FC	C 15.209 (3 m)	Transducer: VULB 9163
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10			, , - 			
5						
0 30	40 50	70	100	200	300 400	500 700 10 Mi
Result: Limit kept				Project file: 56113-8053	38	IVIF

Serial no. Test Sa Applicant City The Test site: Fully ar Tested or Test dis	ample 1 : eatrical, Ind nechoic roo n: stance 3 ma I Polarizatio est: :008	c. m, cabin etres	no. 2 Operator: J. Roidt File name	:	- wi con - D(- T) - Hi - Hi - wi - Ar	nent: h module on test rolled by DELL la 5 V power supp mode: ghest channel cha hout modulation tenna: hxrad MYP24014	aptop PC ly annel (247	76 MHz)	
automa			default.	emi		f values:			
Peak						B Margin	50) Subranges	
dBµV/m 60 ⊓					Lin	nit1: FCC 15.209	(3 m) T	ransducer: \	/ULB 9163
55 - 50 - 45 - 40 -					······		·		
35 30 -					*	*			
25								- M-MMM/MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM	MM
20					·¥'V		₩		
15									
10		 							
5	 								
0 30	0 40	50	70	100	:	200 300	400	500 70	00 1000 MHz
Result: Limit ke	ept					ct file: 13-80538			

Model: #5691	SHoW DMX Transceiver			Comment:				
	ample 1			- with module controlled by - DC 5 V pow	DELL lapto			
Applicar City Th	^{nt:} neatrical, Inc.			- TX mode: - Highest cha	nnel channe	el (2476 N	1Hz)	
Test site Fully a	e nechoic room, cabin no. 2			 without mod Antenna: Maxrad MYI 		E		
Tested o	on: istance 1 metre				224014P11N	F		
	ntal Polarization							
Date of 1	•							
Test per	formed: File name: atically default.emi							
Detector				List of values:				
Peak				10 dB Margin			branges	
dBµV/m 90	1	1		Limit1: FCC 2	15.209 (1 m) Trans	ducer: EM	CO 3115
85		 T		 	 	 	, , , , , , , ,	
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20		 				$\frac{1}{1}$		
15		 		+		+ 1	 	
10 10	000 20	00		3000	4000	5000	6000	8000 MHz
Result:				Project file:				
Limit k	ept			56113-80538				

Madal									
Model: #5691 S	SHoW DMX Transce	eiver			mment:				
Serial no.: Test Sa				co	ntrolled by	e on test bo / DELL lapto wer supply			
Applicant: City The	eatrical, Inc.			- 1 - F	X mode: lighest ch	annel chann	el (2476 N	/Hz)	
Test site:	nechoic room, cabin	no 2			vithout mo Antenna:	dulation			
Tested on		110. 2				/P24014PT	NF		
	stance 1 metre Polarization								
Date of te 06/20/2		Operator: J. Roidt							
Test perfo		File name: default.emi							
Detector: Peak					t of values: dB Margi	n	50 Su	ıbranges	
dBµV/m 90 ┌				Lii	nit1: FCC	15.209 (1 m	n) Trans	ducer: EM	CO 3115
85 -		 			 - +	, , , , ,	 		
80 -					 - +	 	 	 	
75 -					 		, , , , , , , , , , , , , , , , , , ,		
70 -					 +		 		
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10 100	00	200	0	3	000	4000	5000	6000	800 MH
Result: Limit ke	eot				oject file: 113-8053	8			

Medit: #5691 ShoW DMX Transceiver #5691 ShoW DMX Transceiver Comment: - with module on test board controlled by DELL laptop PC - OC 5 V power supply - NC 5 V power supply - Tits iste: - OC 5 V power supply - Fully anechoic room, cabin no. 2 - With module on test board Test site: - Highest channel channel (2476 MHz) - Without modulation - Antenna: Maxrad MYP24014PTNF - Without modulation - Stop power supply - Antenna: Maxrad MYP24014PTNF - Without modulation - Beak meter - Do and test: - Beak meter - Do and test: - Beak Do de Margin - Detector: - Elist of values: - Beak - Do de Margin -			
Test Sample 1 controlled by DELL laptop PC Applicant: - DC 6 V power supply City Theatrical, Inc. - TX mode: Test site: - Highest channel channel (2476 MHz) Fully anechoic room, cabin no. 2 - Highest channel channel (2476 MHz) Test site: - Highest channel channel (2476 MHz) - Highest channel channel (2476 MHz) - Highest channel channel (2476 MHz) Date of test: Operator: OB/20/2008 J. Roidt Test performed: File name: automatically default.emi Detector: - Peak 10 dB Margin 50 - 65 - 64 - 65 - 64 - 65 - 66 - 67 -		X Transceiver	Comment:
Applicant:			controlled by DELL laptop PC
Test site: - without modulation Fully arechoic room, cabin no. 2 - without modulation Test distance 1 meter - without modulation Horizontal Polarization - without modulation Date of test: Operator: 06/20/2008 J. Roidt Test geformed: File name: automatically default.emi Detector: - Peak List of values: 10 dB Margin 50 Subranges dBµV/m Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160 80 - - 75 - - 70 - * 65 - * 60 - - 75 - - 70 - * 65 - * 60 - - 75 - - 70 - * 65 - * 60 - - 75 - - 70 -		•	- TX mode:
Auty anechol: 1001; Cabin Ho. 2 Tested on: Test distance 1 meter Horizontal Polarization Date of test: Operator: 06/20/2008 J. Roidt Test performed: automatically default.emi Detector: Peak dBµV/m List of values: 10 dB Margin 5	-	С.	- without modulation
Test distance 1 meter Operator: Date of test: Operator: 06/20/2008 J. Roidt Test performed: File name: automatically default.emi Detector: Peak Detector: Peak Child List of values: 10 dB Margin 50 Subranges dBµV/m Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160 80 * 75 * 65 * 60 * 51 * 62 * 63 * 64 * 65 * 60 * 52 * 54 * 55 * 50 * 51 * 52 * 53 * 54 * 55 * 56 * 57 * 58 * 50 * <tr< td=""><td></td><td>om, cabin no. 2</td><td></td></tr<>		om, cabin no. 2	
Date of test: Operator: 06/20/2008 J. Roidt Test performed: File name: automatically default.emi Detector: Peak Peak List of values: 10 dB Margin 50 Subranges dBµV/m Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160 80	Test distance 1 m		-
Test performed: automatically File name: default.emi Detector: Peak List of values: 10 dB Margin 50 Subranges dBµV/m Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160 80 * 66 70 * * 65 * * 60 * * 55 * * 60 * * 61 * * 62 * * 63 * * 64 * * 65 * * 60 * * 50 * * 61 * * 62 * * 63 * * 50 * * 51 * * 52 * * 53 * * 54 * * 55 * * 56 * * 57 * * <td>Date of test:</td> <td>Operator:</td> <td></td>	Date of test:	Operator:	
Detector: List of values: Peak List of values: 10 dB Margin 50 Subranges dBµV/m Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160 75			
Peak 10 dB Margin 50 Subranges dBµV/m Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160 80	automatically	default.emi	
80 75 70 65 60 * 61 * 62 * 63 * 64 * 75 * 70 * 71 * 72 * 73 * 74 * 75 * 76 * 77 * 70 * 71 * 72 * 73 * 74 * 75 * 75 * 76 * 77 * 70 * 71 * 75 * 76 * 77 * 77 * 70 * 71 * 72 * 73 * 74 * 75 * 75 * 76 * 77 * 77 * 77 * 77 * 70 * 70<			
75 70 65 60 55 50 90 45 40 35 30 25 20 15 10 5			Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
70 * 65 * 60 * 55 * 50 * 45 * 40 * 35 * 30 * 25 * 20 * 15 * 10 * 5 *			
65 66 60 55 50 50 45 50 45 50 36 50 37 50 38 50 39 50 30 50 30 50 30 50 30 50 30 50 30 50 30 50 30 50 30 50 50 50			
55 50 45 40 35 30 25 20 15 10 5	65		*
50	60		*
45 40 35 30 25 20 15 10 5	55		
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10 5			
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		ı	10000 12400 MHz
Result: Project file: Limit kept 56113-80538			Project file:

Model: #5691	SHoW DMX Transceiver	Comment:
Serial no Test S	o.: Sample 1	 with module on test board controlled by DELL laptop PC DC 5 V power supply
	heatrical, Inc.	 TX mode: Highest channel channel (2476 MHz) without modulation
Test site Fully a	^{e:} anechoic room, cabin no. 2	- Antenna: Maxrad MYP24014PTNF
	^{on:} listance 1 meter al Polarization	-
Date of 06/20/	•	
	rformed: File name: natically default.emi	
Detecto Peak	r:	List of values: 10 dB Margin 50 Subranges
dBµV/m 80	n	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
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0 82	200	10000 12400 MHz
Result: Limit k	kept	Project file: 56113-80538

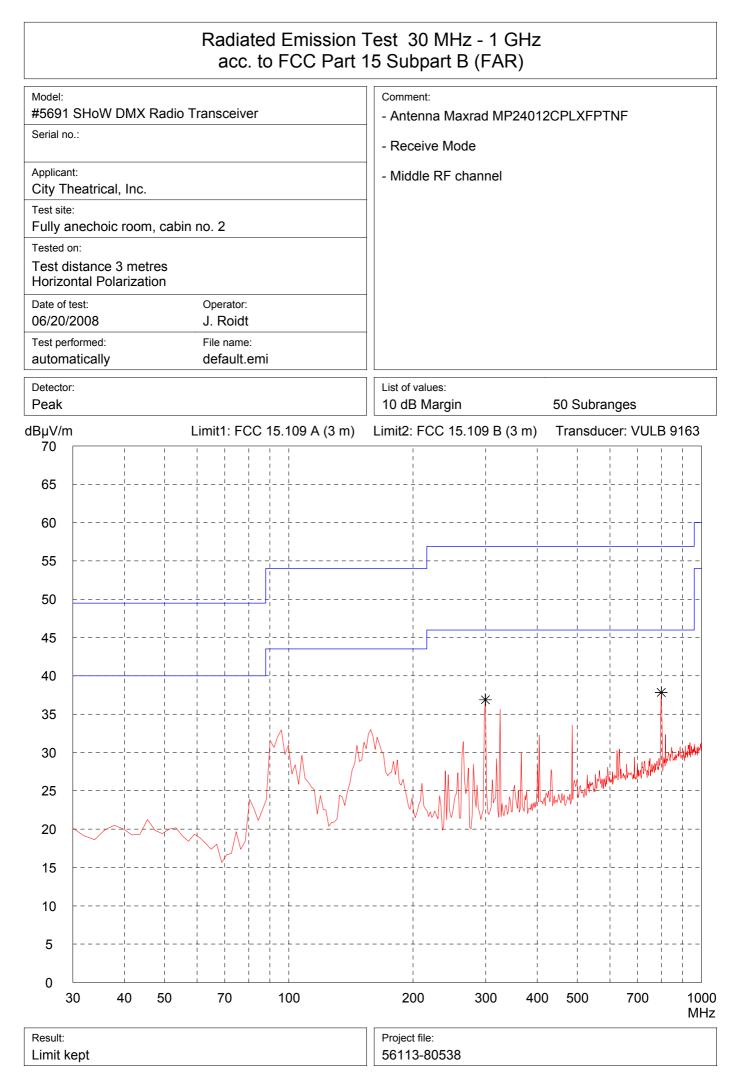
	n Test 12.4 GHz - 18 GHz art 15 Subpart C (FAR)
Model: #5691 SHoW DMX Transceiver Serial no.: Test Sample 1	Comment: - with module on test board controlled by DELL laptop PC - DC 5 V power supply
Applicant: City Theatrical, Inc. Test site: Fully anechoic room, cabin no. 2 Tested on: Test distance 1 meter Horizontal Polarization Date of test: Operator:	 TX mode: Highest channel channel (2440 MHz) without modulation Antenna: Maxrad MYP24014PTNF
06/20/2008 J. Roidt Test performed: File name: by hand default.emi	
Detector: Peak	List of values: Selected by hand
dBµV/m 80	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
65 60	
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0 12400	18000 MHz
Result: Limit kept	Project file: 56113-80538

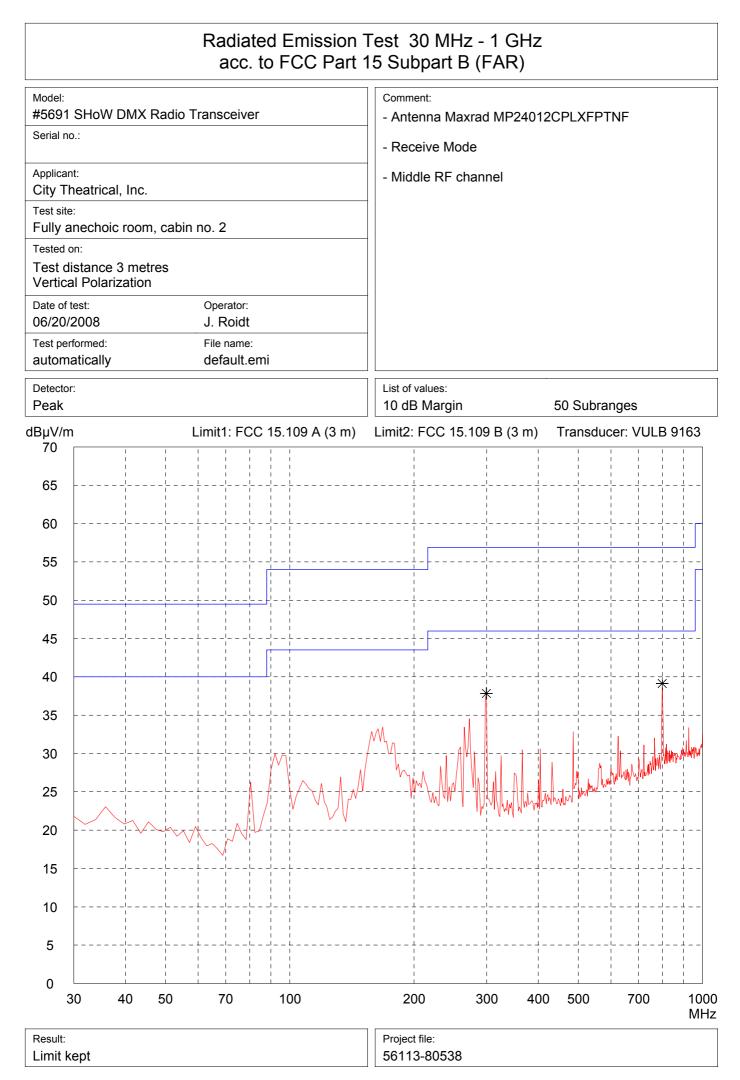
		est 12.4 GHz - 18 GHz I5 Subpart C (FAR)
Serial n Test S Applican City T Test site Fully a Test d Vertica Date of 06/20/	Sample 1 nt: heatrical, Inc. e: anechoic room, cabin no. 2 on: listance 1 meter al Polarization test: Operator: /2008 J. Roidt rformed: File name:	Comment: - with module on test board controlled by DELL laptop PC - DC 5 V power supply - TX mode: - Highest channel channel (2440 MHz) - without modulation - Antenna: Maxrad MYP24014PTNF -
Detecto Peak		List of values: Selected by hand
dBµV/n	n	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
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0 12	2400	18000 Mile
Result: Limit k	kept	MHz Project file: 56113-80538

Tested by: Johann Roidt				Project-No 56113-0				
tart 18.000 GHz BW 100 kHz		, 	VBW 1	Stop 26.500 GHz 100 kHz SWP 2.60 s				
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ef.Level 87 dBµV 0 dB/Div.			ATT	0 dB				
Applicant: City Theatrical, Inc.					tance 1 m ,	reauing wi	unout anten	
					d MYP2401		thout orter	
					st channel (dulation na:	2476 MHz)		
Serial No.:				- with m - DC 5 \ - TX mo	odule on te / power sup	st board, co oply	ontrolled by	DELL lapt

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Senton GmbH / EMI/EMC Test Center / Aeussere Fruehlingstrasse 45 / 94315 Straubing / Tel. +49 9421 55220





		Emission FCC Part 1						
Model: #5691 SH	oW DMX Radio Transceiver		Comment: - Antenna Maxrad MP24012CPLXFPTNF					
Serial no.:			- F	Receive Mod	е			
Applicant:				/liddle RF ch	annel			
City Theat Test site:	trical, Inc.							
	choic room, cabin no. 2							
	nce 1 metre I Polarization							
Date of test: 06/20/2008	Operator: 8 J. Roidt							
Test performe automatica	ed: File name:							
Detector: Peak				t of values: dB Margin		50 Sul	branges	
dBµV/m 90	Limit1: FCC 15.	109 A (1 m)	Limit	2: FCC 15.1	09 B (1 m)	Transo	lucer: EMC	O 3115
85		 		 - +	 	 		
80		 +					; ; ; ;	
75		 <u>-</u>			 	 	 	
70		 +		 		 +		
65		 			 	 	 	
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1000	20	00	3	8000	4000	5000	6000	8000 MHz
Result: Limit kept				oject file: 113-80538				

	Radiated Emission acc. to FCC Part							
Model: #5691	SHoW DMX Radio Transceiver		Comment: - Antenna Maxrad MP24012CPLXFPTNF					
Serial no).:		- Receive Mode					
Applican City Th	t: neatrical, Inc.		- Middle RF	- channel				
Test site								
Tested o Test di								
Date of to 06/20/2	est: Operator:							
Test perf automa								
Detector Peak			List of values: 10 dB Març	jin	50 St	ıbranges		
dBµV/m 90	Limit1: FCC 15.109 A (1 m)	Lir	mit2: FCC 1	5.109 B (1 m)	Trans	ducer: EM	CO 3115	
85			 		 	 		
80			+		 			
75			 		, , , , , , , , , , , , , , , , , , ,	 		
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10	000 2000		3000	4000	5000	6000	8000 MHz	
Result: Limit ke	ept		Project file: 56113-805	38				

		st 8 GHz - 12.75 GHz 5 Subpart B (FAR)					
Model: #5691 SHoW DMX Radio Transce	iver	Comment: - Antenna Maxrad MP24012CPLXFPTNF					
Serial no.:		- Receive Mode					
Applicant: City Theatrical, Inc.		- Middle RF channel					
Test site: Fully anechoic room, cabin no. 2							
Tested on:							
Test distance 1 metre Horizontal Polarization							
Date of test: Operation 06/20/2008 J. Ro							
Test performed: File na automatically defau	^{me:} Ilt.emi						
Detector: Peak		List of values: Selected by hand					
	CC 15.109 A (1 m) L	imit2: FCC 15.109 B (1 m) Transducer: EMCO 3115					
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80							
75							
70							
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10 8000 900	101	000 12750					
		MHz					
Result: Limit kept		Project file: 56113-80538					

			st 8 GHz - 12.75 GHz 5 Subpart B (FAR)					
Model: #5691	SHoW DMX Radio Transc	eiver	Comment: - Antenna Maxrad MP24012CPLXFPTNF					
Serial no	.:		- Receive Mode					
Applicant City Th	t: eatrical, Inc.		- Middle RF channel					
Test site: Fully a	nechoic room, cabin no. 2							
Tested o Test dis								
Date of te 06/20/2	est: Opera							
Test perf automa	formed: File na							
Detector	-		List of values:					
Peak dBµV/m	Limit1: F	ECC 15.109 A (1 m) L	Selected by hand imit2: FCC 15.109 B (1 m) Transducer: EMCO 3115					
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30								
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15		 						
10 80	00 90	00 100	000 12750 MHz					
Result:	ant		Project file: 56113-80538					
Limit ke	եիլ		00110-00000					

Model: #5691 SHoW DMX T Serial no.:	Fransceiver		Comment:	e on test board			
Test Sample 1				/ DELL laptop P	С		
Applicant:			- RX mode:				
City Theatrical, Inc. Test site:			- Middle Cha	annel (2440 MHz	z)		
Fully anechoic room	, cabin no. 2		- Antenna:				
Tested on:	,			P24014TPTNF			
Test distance 3 metr Horizontal Polarization							
Date of test: 06/20/2008	Operator: J. Roidt						
Test performed: automatically	File name: default.er	ni					
Detector:			List of values:				
Peak			10 dB Margi	n	50 Subran	ges	
dBµV/m			Limit1: FCC	C 15.209 (3 m)	Transduce	ər: VULE	3 9163
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55							
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30 40	50 70	100	200	300 400	500	700	100 MH
Result: Limit kept			Project file: 56113-8053	8	Page	of	Pages

Model:								Comm	ent:	•	-			
#5691	SHoW DI	MX Tra	ansceiv	/er						on toot k	aard			
Serial no.: Test Sample 1				contr	olled by 5 V pow	on test b DELL lap er supply	otop PC							
Applicant: City Theatrical, Inc.			- RX - Mid	mode: dle Char	nel (244									
Test site Fully a	: nechoic r	oom c	abin n	02				- Ant	modulatio enna:					
Tested o				0. 2				Max	rad MYF	P24014T	PTNF			
	stance 3 I Polariza		;											
Date of t				Operator				+						
06/20/2 Test perf				J. Roid				-						
automa				default	.emi									
Detector Peak									_{values:} 3 Margin		5	50 Subra	nges	
dBµV/m	l							Limi	t1: FCC	15.209 (3 m)	Transdu	cer: VUL	B 9163
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03	60 40) 5	0	70		100		20	00	300	400	500	700	100
														MH
Result: Limit ke	ept							Projec	t file: 3-80538			Page	of	Pages

Serial no Test S	Model: #5691 SHoW DMX Transceiver Serial no.: Test Sample 1 Applicant:			Comment: - with module on test board controlled by DELL laptop PC - DC 5 V power supply							
City Theatrical, Inc.				- RX mode: - Middle Channel (2440 MHz)							
Test site: Fully anechoic room, cabin no. 2				- no modulation - Antenna:							
Tested o		1110. 2		Antenna: Maxrad MYP24014TPTNF							
Test di	istance 1 metre ntal Polarization										
Date of t 06/20/2		Operator: J. Roidt									
Test per automa	formed:	File name: default.emi									
Detector Peak					of values: dB Margir	า	50 Sı	ubranges			
dBµV/m	1			Lim	it1: FCC	15.209 (1	m) Trans	sducer: EM	CO 3115		
90		 			 		 				
85					 +		+	·			
80					 		<u>+</u>	·			
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10 10	000	2000)	30	000	4000	5000	6000	800 MH		
Result: Limit k	ent				ect file: 13-80538	3	Pa	ge of	Pages		

L		,							
Model: #5691	SHoW DMX Transceiver		Con	nment:					
Serial no Test S	o.: Sample 1		 with module on test board controlled by DELL laptop PC DC 5 V power supply RX mode: Middle Channel (2440 MHz) 						
Applicar									
Test site	City Theatrical, Inc. Test site: Fully anechoic room, cabin no. 2 Tested on:				on	viriz)			
					- Antenna: Maxrad MYP24014TPTNF				
Test d	istance 1 metre al Polarization								
	Date of test: Operator: 06/20/2008 J. Roidt								
Test per	formed: File name:								
	atically default.emi								
Detector Peak	r:			of values: dB Margin		50 Sub	oranges		
dBµV/m 90	1		Lin	nit1: FCC 1	5.209 (1 m) Transd	ucer: EMC	O 3115	
85		 							
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80		+		+		+ 			
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Result: Limit k	zent			ect file: 13-80538		Page	e of	Pages	
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Radiated Emission Test 8 GHz - 12.75 GHz
acc. to FCC Part 15 Subpart C (FAR)

Model: #5691	SHoW DMX Tra	ansceiver	Comment:
Serial no Test S	o.: Sample 1		 with module on test board controlled by DELL laptop PC DC 5 V power supply
Applicar Citv Th	^{nt:} heatrical, Inc.		- RX mode: - Middle Channel (2440 MHz)
Test site	e:	chip po 0	- no modulation - Antenna:
Tested of	anechoic room, c		Maxrad MYP24014TPTNF
	listance 1 metre ontal Polarization		
Date of 06/20/		Operator: J. Roidt	
Test per autom	rformed: atically	File name: default.emi	
Detector Peak	r:		List of values: Selected by hand
dBµV/m 90	n		Limit1: FCC 15.209 (1 m) Transducer: EMCO 3115
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40 35			
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30 25			
20			
15			
10 80	000	9000	10000 12750 MHz
Result: Limit k	kept		Project file: 56113-80538 Page of Pages

Radiated Emission Test 8 GHz - 12.75 GHz	
acc. to FCC Part 15 Subpart C (FAR)	

Model: #5691 \$	SHoW DMX Transceiver		Comment:
Serial no. Test Sa	:		 with module on test board controlled by DELL laptop PC DC 5 V power supply
Applicant City The	: eatrical, Inc.		- DC 5 V power supply - RX mode: - Middle Channel (2440 MHz)
Test site:			- no modulation
	nechoic room, cabin no. 2	2	- Antenna: Maxrad MYP24014TPTNF
	n: stance 1 metre I Polarization		
Date of te 06/20/2		erator: Roidt	
Test perfo automa		name: fault.emi	
Detector: Peak			List of values: Selected by hand
dBµV/m 90 ⊓			Limit1: FCC 15.209 (1 m) Transducer: EMCO 3115
85			
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10 800	00 9	9000	10000 12750 MHz
Result: Limit ke	ept		Project file: 56113-80538 Page of Pages