

TEST REPORT

Report Number: 103660896MPK-011 Project Number: G103660896 December 04, 2018

Testing performed on the Sufentanil Sublingual Tablet System Model Number: Zalviso

FCC ID: 2AA4P-ARX2006

to

FCC Part 15 Subpart C (15.225) Industry Canada RSS-210 Issue 9

For

AcelRx Pharmaceuticals, Inc

Test Performed by:
Intertek
1365 Adams Court
Menlo Park, CA 94025 USA

Test Authorized by:
AcelRx Pharmaceuticals, Inc
351 Galveston Drive
Redwood City, CA 94063 USA

Prepared by:	Anderson Soungpanya	Date:	December 04, 2018	
Reviewed by:	Krishna Vemuri	Date:	December 04, 2018	

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Report No. 103660896MPK-011			
Equipment Under Test:	Sufentanil Sublingual Tablet System		
Trade Name:	AcelRx Pharmaceuticals, Inc		
Model Number:	Zalviso		
Applicant:	AcelRx Pharmaceuticals, Inc		
Contact:	Al Landas		
Address:	AcelRx Pharmaceuticals, Inc 351 Galveston Drive Redwood City, CA 94063		
Country:	USA		
Tel. Number:	(650) 216-3521		
Email:	alandas@acelrx.com		
Applicable Regulation:	ation: FCC Part 15 Subpart C (15.225) Industry Canada RSS-210 Issue 9		
Date of Test:	November 26 & 27, 2018		

We attest to the accuracy of this report:

Anderson Soungpanya Project Engineer Krishna K Vemuri Engineering Team Lead



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1.0 Summary of Tests

TEST	REFERENCE FCC 15.225	REFERENCE RSS-210	RESULTS
Field Strength of Fundamental	15.225(a)	B.6	Complies
Radiated Emissions Outside the band	15.225(b), 15.225(c), 15.225(d), 15.209	B.6	Complies
Frequency Tolerance of the Carrier	15.225(e)	B.6	Complies
Line Conducted Emissions	15.207	RSS-GEN	Complies
Occupied Bandwidth	15.215	RSS-GEN	Complies
Antenna requirement	15.203	RSS-GEN	Complies ¹

EUT utilizes an internal Antenna.

² EUT is battery operated.



2.0 General Description

2.1 Product Description

AcelRx Pharmaceuticals, Inc supplied the following description of the EUT:

The Zalviso System is a medical drug/device combination product designed to allow patients to self-administer sufentanil sublingual tablets to manage moderate-to-severe acute pain during their hospital stay via a novel hand-held, battery operated, patient-controlled analgesia (PCA) system. System has three modes of use: Patient mode, Healthcare Professional mode and Device Battery Charging mode.

Overview of the EUT

Model	Zalviso
FCC Identifier	2AA4P-ARX2006
Operating Frequency	13.56MHz
Number of Channels	1
Type of Modulation	ООК
Operating Temperature	-20°C to +50°C
Antenna Type	Internal Loop Antenna
Applicant name & address Applicant name & address AcelRx Pharmaceuticals, Inc 351 Galveston Drive Redwood City, CA 94063 USA	

EUT receive date: November 19, 2018

EUT receive condition: The EUT was received in good condition with no apparent damage. As

declared by the Applicant it is identical to the production units.

Test start date: November 26, 2018 **Test completion date:** November 27, 2018

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2.2 Related Submittal(s) Grants

None

2.3 Test Methodology

Both AC mains line-conducted and radiated emissions measurements were performed according to the procedures in ANSI C63.4. Radiated tests were performed at an antenna to EUT distance of 10 meters, unless stated otherwise in this test report. All other measurements were made in accordance with the procedures in part 2 of CFR 47 7, ANSI C63.10: 2013 & RSS-GEN Issue 4.

2.4 Test Facility

The radiated emission test site and conducted measurement facility used to collect the data is 10m semi-anechoic chamber located in Menlo Park, California. This test facility and site measurement data have been fully placed on file with the FCC and Industry Canada (Site # 2042L-1).

2.5 Measurement Uncertainty

Compliance with the limits was based on the results of the measurements and doesn't take into account the measurement uncertainty.

Estimated Measurement Uncertainty

	Expanded Uncertainty (k=2)			
Measurement	0.15 MHz – 1 GHz	1 GHz – 2.5 GHz	> 2.5 GHz	
RF Power and Power Density – antenna conducted	-	0.7 dB	-	
Unwanted emissions - antenna conducted	1.1 dB	1.3 dB	1.9 dB	
Bandwidth – antenna conducted	-	30 Hz	-	

	Expanded Uncertainty (k=2)			
Measurement	0.15 MHz – 30MHz	30 MHz – 1 GHz	1 GHz – 18 GHz	
Radiated emissions	-	4.7	5.1 dB	
AC mains conducted emissions	2.1 dB	-	-	

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3.0 System Test Configuration

3.1 Support Equipment and description

Support Equipment				
Description Manufacturer Model Number				
Laptop	Lenovo	ThinkPad Ultrabook		

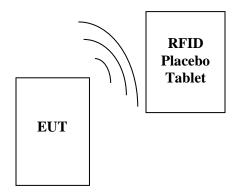
3.2 Block Diagram of Test Setup

Equipment Under Test					
Description	Manufacturer	Model	Serial Number		
Radiated Spurious Sample	AcelRx Pharmaceuticals, Inc.	Zalviso	1000072		
Conducted Emissions Sample	AcelRx Pharmaceuticals, Inc.	Zalviso	1000053		
Frequency Stability Sample	AcelRx Pharmaceuticals, Inc.	Zalviso	1000016		
Power Adapter	FRIWO Geratebau GmbH	FW766M/05	MPK1811270855-002		
RFID Card	AcelRx Pharmaceuticals, Inc.	Zalviso Access Card	000035		
RFID Placebo Tablet	AcelRx Pharmaceuticals, Inc.	LB3025B	Not Marked		

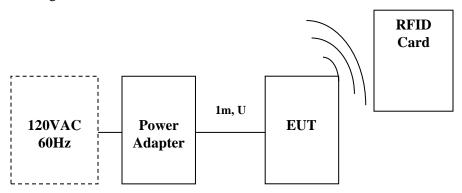


3.2 Block Diagram of Test Setup (Continued)

Battery Mode:



Charge Mode:



S = Shielded	F = With Ferrite
U = Unshielded	m = Length in Meters

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3.3 Justification

For radiated emission measurements the EUT is placed on a non-conductive table. The EUT was configured to continuously transmit and looking for tags. The highest clock frequency used in the EUT is 13.56 MHz.

3.4 Software Exercise Program

The EUT exercise program used during radiated and conducted testing was provided by AcelRx Pharmaceuticals, Inc.

3.5 Mode of Operation during test

The EUT was constantly broadcasting a 13.56 MHz signal while reading an RFID tag.

3.6 Modifications required for Compliance

No Modifications were made e to bring the EUT into compliance.

3.7 Additions, deviations and exclusions from standards

No additions, deviations or exclusion have been made from standard.



4.0 Measurement Results

4.1 Field Strength of Fundamental and Radiated Emissions Outside the band

4.1.1 Requirements

FCC Rules 15.225, 15.209

- a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter (84 dBuV) at 30 meters.
- b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.
- c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.
- d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

§15.209 Radiated emission limits; general requirements.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3



4.1.2 Procedure

Radiated Measurements Below 30 MHz

During the test the EUT is rotated and the measuring antenna angles are varied during the search for maximum signal level.

Radiated emissions are taken at ten meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance. Measurements for below 30 MHz were performed at 10 meters. Data results below are corrected for distance at 10m. Limits were normalized to 10 meters.

Radiated Measurements Above 30 MHz

During the test the EUT is rotated and the measuring antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters.

Radiated emissions are taken at ten meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance. Measurements for above 30 MHz were made at 10 meters.

Radiated emission measurements were performed from 9kHz to 1 GHz. Analyzer resolution is:

200Hz or greater for 9kHz to 150kHz 9 kHz or greater for 150kHz to 30 MHz 120 kHz or greater for 30MHz to 1000 MHz For those frequencies quasi-peak detector applies

Data includes of the worst-case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation is as follows:

FS = RA + AF + CF - AG - DCF

Where $FS = Field Strength in dB (\mu V/m)$

 $RA = Receiver Amplitude (including preamplifier) in dB (<math>\mu V$)

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB (1/m)

AG = Amplifier Gain in dB

DCF = Distance Correction Factor

Note: FS was measured with loop antenna below 30MHz



4.1.3 Test Results

Battery Mode

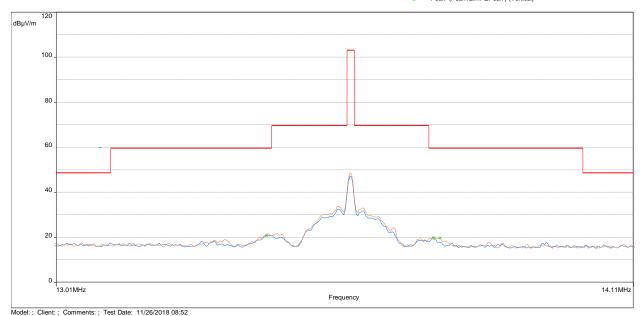
The data below shows the significant emission frequencies, the limit and the margin of compliance. Note: Measurements were performed at parallel and perpendicular orientation of loop antenna, and vertical and horizontal orientations of EUT. The worst-case data was presented below.

FCC Part 15/FCC Part 15.225, 9kHz - 30MHz at 10m - QPeak/10.0m/
Meas.Peak (Vertical)

Meas.Peak (Vertical)

Peak (Peak /Lim. QPeak) (Horizontal)

Peak (Peak /Lim. QPeak) (Vertical)



Frequency	Corrected Peak FS @10m	Limit @10m	Margin	RA@10m	Correction
(MHz)	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB
13.56	48.50	103.10	-54.60	45.20	3.30

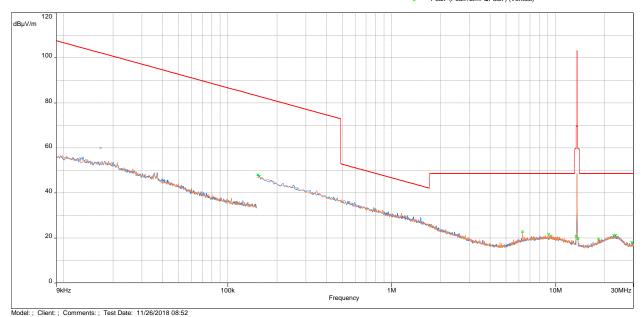
Note: Correction = AF+CF-AG



Radiated Spurious Emissions from 9 kHz to 30MHz FCC Part 15/FCC Part 15.225, 9kHz - 30MHz at 10m - QPeak/10.0m/

Meas.Peak (Horizontal)

- Meas.Peak (Vertical)
- Peak (Peak /Lim. QPeak) (Horizontal) Peak (Peak /Lim. QPeak) (Vertical)

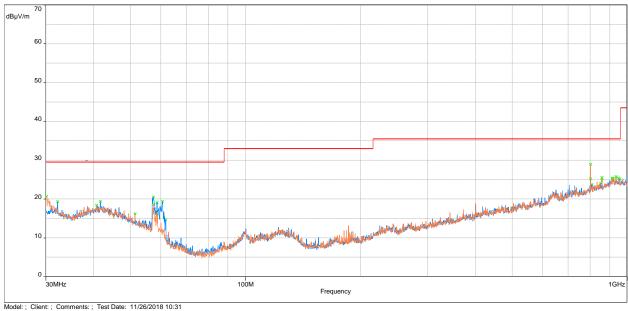




Radiated Spurious Emissions from 30 MHz to 1000 MHz







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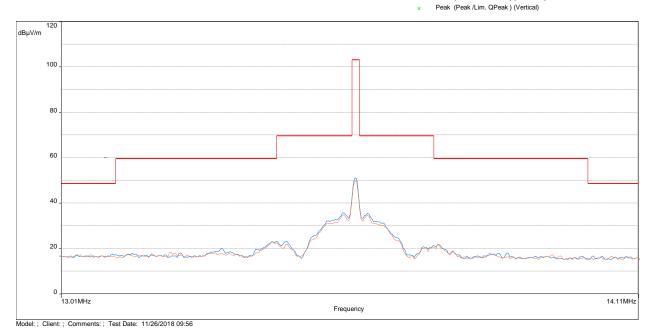


Charge Mode

The data below shows the significant emission frequencies, the limit and the margin of compliance. Note: Measurements were performed at parallel and perpendicular orientation of loop antenna, and vertical and horizontal orientations of EUT. The worst-case data was presented below.

FCC Part 15/FCC Part 15.225, 9kHz - 30MHz at 10m - QPeak/10.0m/
Meas.Peak (Horizontal)
Meas.Peak (Vertical)

Peak (Peak /Lim. QPeak) (Horizontal)



Frequency	Corrected Peak FS @10m	Limit @10m	Margin	RA@10m	Correction
(MHz)	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB
13.56	51.1	103.1	-52.0	47.8	3.3

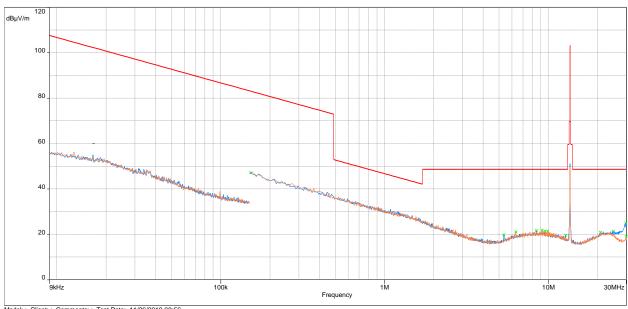
Note: Correction = AF+CF-AG



Radiated Spurious Emissions from 9 kHz to 30MHz

FCC Part 15/FCC Part 15.225, 9kHz - 30MHz at 10m - QPeak/10.0m/ Meas.Peak (Horizontal) Meas.Peak (Vertical)

- Peak (Peak /Lim. QPeak) (Horizontal)
- Peak (Peak /Lim. QPeak) (Vertical)



Model: ; Client: ; Comments: ; Test Date: 11/26/2018 09:56

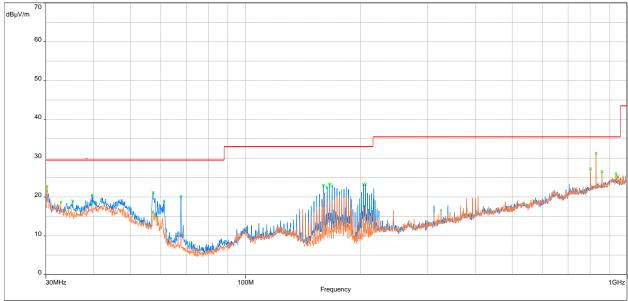
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Radiated Spurious Emissions from 30 MHz to 1000 MHz

FCC Part 15/FCC Part 15.209 Only, 30MHz-40GHz - QPeak/10.0m/ Meas.Peak (Horizontal) Meas.Peak (Vertical) Peak (Peak /Lim. QPeak) (Horizontal)

- Peak (Peak /Lim. QPeak) (Vertical)



Ī	Model: ;	Client:;	Comments:;	Test Date:	11/26/2018	11:43
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Frequency (MHz)	Peak @10m (dBµV/m)	Lim. QPeak @10m (dBµV/m)	Margin (dB)	Height (m)	Angle (°)	Polarity	Correction (dB)
30.161	21.56	29.5	-7.94	4.00	218	Vertical	-9.74
30.226	22.78	29.5	-6.72	4.00	322	Horizontal	-9.72
57.354	21.13	29.5	-8.37	4.00	144	Vertical	-15.57
67.765	20.14	29.5	-9.36	4.00	292	Vertical	-19.55
159.980	23.01	33.0	-9.99	1.00	335	Vertical	-18.34
166.252	23.36	33.0	-9.64	1.00	359	Vertical	-17.53
206.249	23.22	33.0	-9.78	1.00	49	Vertical	-16.55
801.829	27.27	35.5	-8.23	1.02	318	Horizontal	-3.14
828.601	31.22	35.5	-4.28	4.00	0	Horizontal	-2.83

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4.1.4 Test Configuration Photographs

The following photographs show the testing configurations used.

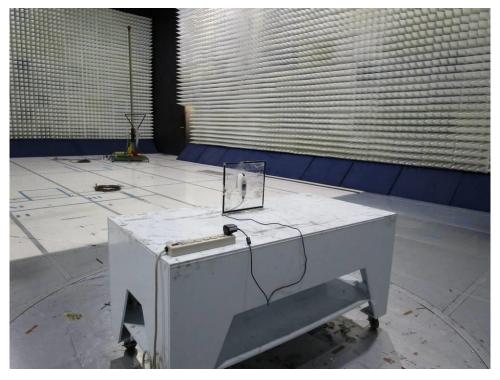


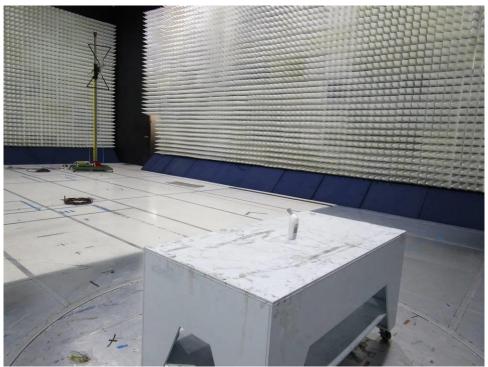


Electromagnetic Radiated Disturbance Setup Photograph



4.1.5 Test Configuration Photographs (Continued)







4.1.5 Test Configuration Photographs (Continued)







4.1.5 Test Configuration Photographs (Continued)







4.2 Frequency Tolerance

4.2.1 Requirement FCC 15.225 (e)

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

4.2.2 Procedure

The EUT was placed in the temperature chamber. The frequency counter was connected to the transmitter output. For each temperature, the carrier frequency was recorded.

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4.2.3 Test Results

Battery Voltage (DC)	Temperature (C)	Measured Frequency (Hz)	Deviation from Reference (Hz)	Deviation (%)
3.6	50	13559582	121	0.00089
3.6	40	13559626	77	0.00057
3.6	30	13559676	27	0.00020
3.6	20	13559703	0	0.00000
3.6	10	13559749	46	0.00034
3.6	0	13559769	66	0.00049
3.6	-10	13559771	68	0.00050
3.6	-20	13559782	79	0.00058
3.6 (with Fully Charged Battery)	20	13559685	18	0.00013
Voltage (AC)	Temperature (C)	Measured Frequency (Hz)	Deviation from Reference (Hz)	Deviation (%)
102	20	13559675	28	0.00021
138	20	13559670	33	0.00024

Nominal Frequency @ 20C, 3VDC: 13559703 Hz



4.3 Occupied Bandwidth FCC 15.215

4.3.1 Requirements

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage.

4.3.2 Procedure

The EUT was setup to transmit in normal operating condition.

Measurements were made with the loop antenna in close proximity of the EUT. Following the procedures of ANSI 63.10, the 20dB bandwidth measurements were taken. The following plots show Occupied Bandwidth.

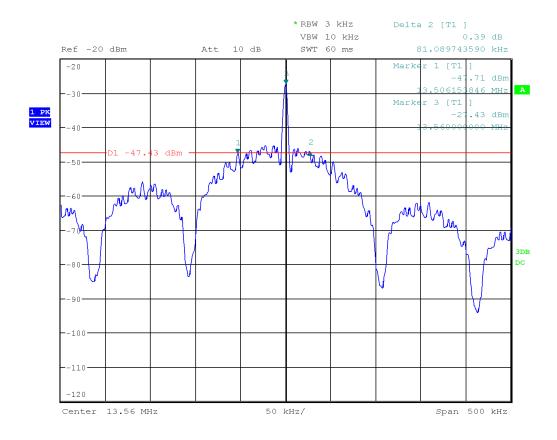
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4.3.3 Test Results

Frequency (MHz)	20-dB Channel Bandwidth (kHz)	99% Channel Bandwidth (kHz)
13.56	81.09	309.3

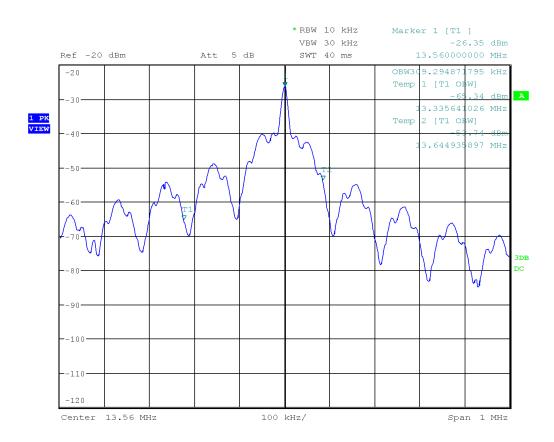
20-dB Channel Bandwidth



Date: 27.NOV.2018 06:29:55



99% Channel Bandwidth



Date: 27.NOV.2018 06:33:51



4.4 AC Line Conducted Emission FCC Rule 15.207

4.4.1 Requirement

Frequency Band MHz	15.207 Limit dB(μV)		
	Quasi-Peak	Average	
0.15-0.50	66 to 56 *	56 to 46 *	
0.50-5.00	56	46	
5.00-30.00	60	50	

Note: *Decreases linearly with the logarithm of the frequency. At the transition frequency the lower limit applies.

4.4.2 Procedure

Measurements are carried out using quasi-peak and average detector receivers in accordance with CISPR 16. An AMN is required to provide a defined impedance at high frequencies across the power feed at the point of measurement of terminal voltage and also to provide isolation of the circuit under test from the ambient noise on the power lines. An AMN as defined in CISPR 16 shall be used.

The EUT is located so that the distance between the boundary of the EUT and the closest surface of the AMN is 0.8m.

Where a flexible mains cord is provided by the manufacturer, this shall be 1m long or if in excess of 1m, the excess cable is folded back and forth as far as possible so as to form a bundle not exceeding 0.4m in length.

The EUT is arranged and connected with cables terminated in accordance with the product specification.

Conducted disturbance is measured between the phase lead and the reference ground, and between the neutral lead and the reference ground. Both measured values are reported.

The EUT, where intended for tabletop use, is placed on a table whose top is 0.8m above the ground plane. A vertical, metal reference plane is placed 0.4m from the EUT. The vertical metal reference-plane is at least 2m by 2m. The EUT shall be kept at least 0.8m from any other metal surface or other ground plane not being part of the EUT. The table is constructed of non-conductive materials. Its dimensions are 1m by 1.5m, but may be extended for larger EUT.

Floor standing EUT are placed on a horizontal metal ground plane and isolated from the ground plane by resting on an insulating material. The metal ground plane extends at least 0.5m beyond the boundaries of the EUT and has minimum dimensions of 2m by 2m.

EUT was placed in transmission mode then tested for conducted emissions per 15.207 to ensure the device complies with 15.207 outside the transmitter fundamental emissions band. After, the EUT antenna is removed from the EUT and only the fundamental emission band was measured to show that the fundamental emission band is in compliance with the 15.207 limits.

Equipment setup for conducted disturbance tests followed.

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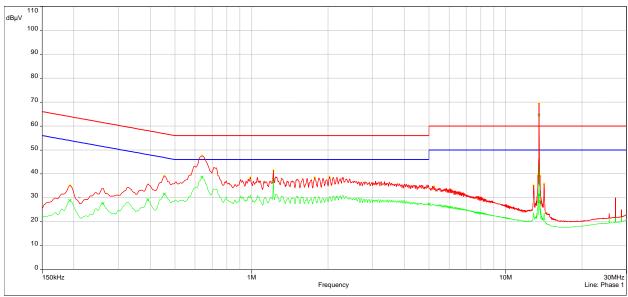
4.4.3 Test Result

Measured with RFID Antenna



FCC Part 15/FCC Part 15.107 B - Average/
FCC Part 15/FCC Part 15.107 B - QPeak/
Meas.QPeak (Phase 1)
Mes. CISPR AVG (Phase 1)

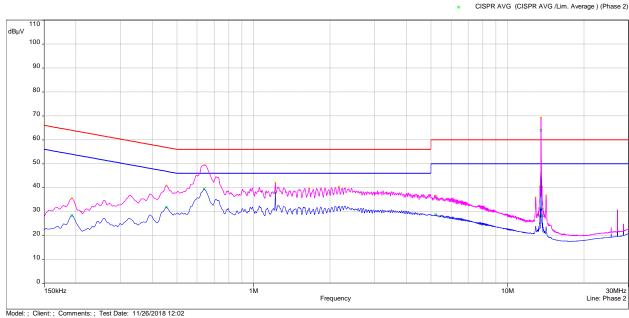
- QPeak (QPeak /Lim. QPeak) (Phase 1)
- x CISPR AVG (CISPR AVG /Lim. Average) (Phase 1)



Model: ; Client: ; Comments: ; Test Date: 11/26/2018 12:02



FCC Part 15/FCC Part 15.107 B - Average/
FCC Part 15/FCC Part 15.107 B - QPeak/
Meas.QPeak (Phase 2)
Mes. CISPR AVG (Phase 2)
QPeak (QPeak /Lim. QPeak) (Phase 2)



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	Quasi-Peak Table						
Frequency	Q.Peak	Limit	Margin		Correction		
(MHz)	(dBµV)	(dBµV)	(dB)	Comment	(dB)		
0.193	35.56	63.92	-28.36	Phase 2	21.57		
0.193	35.18	63.92	-28.74	Phase 1	21.57		
0.454	40.89	56.81	-15.91	Phase 2	21.60		
0.454	39.17	56.81	-17.63	Phase 1	21.60		
0.641	49.51	56.00	-6.49	Phase 2	21.61		
0.641	47.52	56.00	-8.48	Phase 1	21.61		
0.989	38.55	56.00	-17.45	Phase 1	21.63		
1.219	42.07	56.00	-13.93	Phase 2	21.64		
1.221	41.52	56.00	-14.48	Phase 1	21.64		
1.658	39.85	56.00	-16.15	Phase 2	21.66		
1.775	38.48	56.00	-17.52	Phase 1	21.67		
2.029	38.75	56.00	-17.25	Phase 1	21.67		
2.173	40.40	56.00	-15.60	Phase 2	21.72		
5.226	36.81	60.00	-23.19	Phase 2	21.82		
5.228	34.80	60.00	-25.20	Phase 1	21.82		
12.919	35.27	60.00	-24.73	Phase 1	22.03		
12.919	35.96	60.00	-24.04	Phase 2	22.03		
13.432	39.38	60.00	-20.62	Phase 1	22.04		
13.432	40.69	60.00	-19.31	Phase 2	22.04		
13.560	69.52	60.00	9.52	Phase 1	22.04		
13.560	69.35	60.00	9.35	Phase 2	22.04		
13.688	39.13	60.00	-20.87	Phase 1	22.04		
13.688	40.49	60.00	-19.51	Phase 2	22.04		
14.199	35.89	60.00	-24.11	Phase 1	22.04		
14.201	36.73	60.00	-23.27	Phase 2	22.04		



	Average Table						
Frequency	Average	Limit	Margin		Correction		
(MHz)	(dBµV)	(dBµV)	(dB)	Comment	(dB)		
0.193	28.88	53.92	-25.03	Phase 1	21.57		
0.193	28.27	53.92	-25.65	Phase 2	21.57		
0.260	27.65	51.42	-23.78	Phase 1	21.58		
0.391	29.15	48.05	-18.90	Phase 1	21.59		
0.454	31.76	46.81	-15.05	Phase 2	21.60		
0.454	31.49	46.81	-15.31	Phase 1	21.60		
0.638	38.60	46.00	-7.40	Phase 1	21.61		
0.641	39.46	46.00	-6.54	Phase 2	21.61		
1.221	37.70	46.00	-8.30	Phase 1	21.64		
1.221	37.90	46.00	-8.10	Phase 2	21.64		
5.010	27.31	50.00	-22.69	Phase 1	21.83		
5.228	28.68	50.00	-21.32	Phase 2	21.82		
13.432	28.34	50.00	-21.66	Phase 1	22.04		
13.432	28.35	50.00	-21.65	Phase 2	22.04		
13.497	31.26	50.00	-18.74	Phase 1	22.04		
13.497	31.11	50.00	-18.89	Phase 2	22.04		
13.560	64.55	50.00	14.55	Phase 1	22.04		
13.560	63.96	50.00	13.96	Phase 2	22.04		
13.623	31.18	50.00	-18.82	Phase 1	22.04		
13.623	31.04	50.00	-18.96	Phase 2	22.04		
13.686	28.41	50.00	-21.59	Phase 2	22.04		
13.688	28.40	50.00	-21.60	Phase 1	22.04		

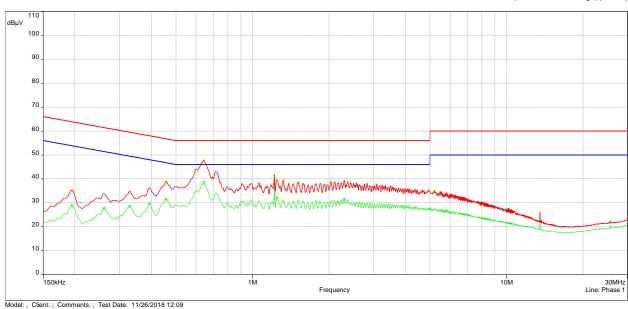


Measured with RFID Antenna Terminated with Load



FCC Part 15/FCC Part 15.107 B - Average/ FCC Part 15/FCC Part 15.107 B - QPeak/ Meas.QPeak (Phase 1) Mes. CISPR AVG (Phase 1) QPeak (QPeak /Lim. QPeak) (Phase 1)

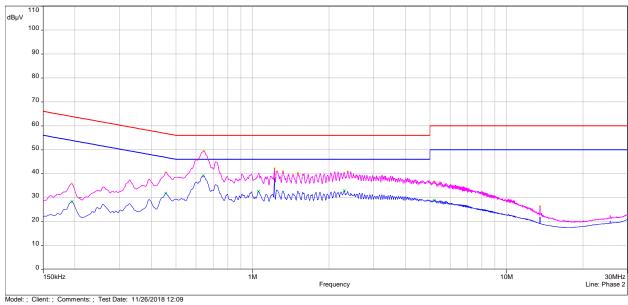
- CISPR AVG (CISPR AVG /Lim. Average) (Phase 1)





FCC Part 15/FCC Part 15.107 B - Average/ FCC Part 15/FCC Part 15.107 B - QPeak/ Meas.QPeak (Phase 2) Mes. CISPR AVG (Phase 2) QPeak (QPeak /Lim. QPeak) (Phase 2)

CISPR AVG (CISPR AVG /Lim. Average) (Phase 2)



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	Quasi-Peak Table					
Frequency	Q.Peak	Limit	Margin		Correction	
(MHz)	(dBµV)	(dBµV)	(dB)	Comment	(dB)	
0.195	35.33	63.82	-28.49	Phase 1	21.57	
0.195	35.76	63.82	-28.06	Phase 2	21.57	
0.456	38.89	56.77	-17.87	Phase 1	21.60	
0.456	40.63	56.77	-16.13	Phase 2	21.60	
0.643	47.79	56.00	-8.21	Phase 1	21.61	
0.643	49.66	56.00	-6.34	Phase 2	21.61	
1.219	42.26	56.00	-13.74	Phase 2	21.64	
1.221	41.72	56.00	-14.28	Phase 1	21.64	
1.246	39.44	56.00	-16.56	Phase 1	21.64	
1.248	40.95	56.00	-15.05	Phase 2	21.64	
1.320	41.07	56.00	-14.93	Phase 2	21.66	
1.322	39.32	56.00	-16.68	Phase 1	21.66	
1.509	40.30	56.00	-15.70	Phase 2	21.68	
1.511	38.62	56.00	-17.38	Phase 1	21.68	
2.299	39.24	56.00	-16.76	Phase 1	21.70	
2.371	40.95	56.00	-15.05	Phase 2	21.70	
5.208	36.75	60.00	-23.25	Phase 2	21.82	
5.213	35.00	60.00	-25.00	Phase 1	21.82	
13.560	26.41	60.00	-33.59	Phase 2	22.04	
13.560	25.87	60.00	-34.13	Phase 1	22.04	
Results: Com						

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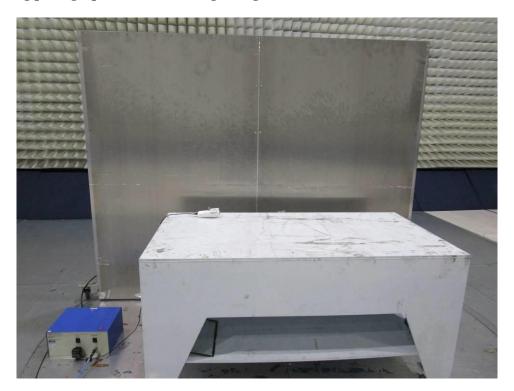
Average Table						
Frequency	Average	Limit	Margin		Correction	
(MHz)	(dBµV)	(dBµV)	(dB)	Comment	(dB)	
0.195	28.24	53.82	-25.58	Phase 2	21.57	
0.195	28.80	53.82	-25.02	Phase 1	21.57	
0.260	27.61	51.42	-23.81	Phase 1	21.58	
0.328	28.52	49.51	-20.99	Phase 1	21.57	
0.393	29.58	48.00	-18.42	Phase 1	21.59	
0.456	31.52	46.77	-15.25	Phase 1	21.60	
0.456	31.74	46.77	-15.03	Phase 2	21.60	
0.641	39.08	46.00	-6.92	Phase 2	21.61	
0.643	38.47	46.00	-7.53	Phase 1	21.61	
1.057	32.59	46.00	-13.41	Phase 2	21.64	
1.221	37.71	46.00	-8.29	Phase 1	21.64	
1.221	37.98	46.00	-8.02	Phase 2	21.64	
1.246	32.00	46.00	-14.00	Phase 1	21.64	
2.301	31.48	46.00	-14.52	Phase 1	21.70	
2.301	32.81	46.00	-13.19	Phase 2	21.70	
5.001	27.46	50.00	-22.54	Phase 1	21.83	
5.204	28.91	50.00	-21.09	Phase 2	21.82	
Results: Com	plies by -6.92 dB					

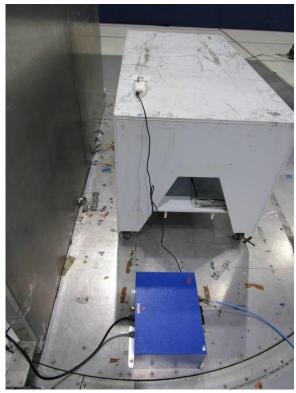
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4.4.4 Test Configuration Photographs

The following photographs show the testing configurations used.





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5.0 List of test equipment

Measurement equipment used for emission compliance testing utilized the equipment on the following list:

Equipment Equipment	Manufacturer	Model/Type	Asset No.	Calibration Interval	Cal Due
Bi-Log Antenna	Teseq	CBL 6111D	ITS 01058	12	09/20/19
Pre-Amplifier	Sonoma Instrument	310N	ITS 00942	12	01/26/19
EMI Receiver	Rohde and Schwarz	ESU40	ITS 00961	12	10/26/19
EMI Receiver	Rohde and Schwarz	ESR7	ITS 01607	12	10/23/19
LISN	Com Power	LIN-115A	ITS 01283	12	10/03/19
RF Cable	Megaphase	EMC1-K1K1-236	ITS 01538	12	06/25/19
RF Cable	Megaphase	TM40-K1K1-59	ITS 01657	12	06/26/19
RF Cable	TRU Corporation	TRU CORE 300	ITS 01330	12	11/29/18
RF Cable	TRU Corporation	TRU CORE 300	ITS 00465	12	08/16/19
RF Cable	TRU Corporation	TRU CORE 300	ITS 01470	12	08/16/19
Loop Sensor	Solar Electronics	7334-1	ITS 01608	12	10/09/19
Environmental Test Chamber	ESPEC	BTX-475	ITS 01436	12	09/21/19
Ant-Passive Loop	EMCO	6512	ITS 01598	12	10/09/19
Variac	Powerstat	3PN2368	ITS 00726	12	#
Digital Power Meter	Fluke	87	ITS 1328	12	01/29/19

[#] Verified before use

Software used for emission compliance testing utilized the following:

Name	Manufacturer	Version	Template/Profile
BAT-EMC	Nexio	3.17.0.10	AcelRX RFID 3-21-18.bpp



6.0 Document History

Revision/ Job Number	Writer Initials	Reviewer Initials	Date	Change
1.0 / G103660896	AS	KV	December 04, 2018	Original document

END OF REPORT