

SmartLabs, Inc.

TEST REPORT FOR

INSTEON LED Light Bulb, 2672-222 BulbLinc

Tested To The Following Standards:

FCC Part 15 Subpart B Section 15.107 and 15.109

Report No.: 93071-8

Date of issue: June 4, 2012



This test report bears the accreditation symbol indicating that the testing performed herein meets the test and reporting requirements of ISO/IEC 17025 under the applicable scope of EMC testing for CKC Laboratories, Inc.

We strive to create long-term, trust based relationships by providing sound, adaptive, customer first testing services. We embrace each of our customers' unique EMC challenges, not as an interruption to set processes, but rather as the reason we are in business.

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ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

SmartLabs, Inc.
16542 Millikan Ave.
Irvine, CA 92606

Representative: Matthew Carter
Customer Reference Number: 12-3MC0417-01

DATE OF EQUIPMENT RECEIPT:

DATE(S) OF TESTING:

REPORT PREPARED BY:

Joyce Walker
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Project Number: 93071

May 22, 2012

May 22, 2012

Report Authorization

The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the sample equipment tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.



Steve Behm
Director of Quality Assurance & Engineering Services
CKC Laboratories, Inc.

Test Facility Information



Our laboratories are configured to effectively test a wide variety of product types. CKC utilizes first class test equipment, anechoic chambers, data acquisition and information services to create accurate, repeatable and affordable test results.

TEST LOCATION(S):
CKC Laboratories, Inc.
110 Olinda Place
Brea, CA 92823

Site Registration & Accreditation Information

Location	CB #	TAIWAN	CANADA	FCC	JAPAN
Brea A	US0060	SL2-IN-E-1146R	3082D-1	90473	R-2945 C-3248 T-1572

SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart B

Description	Test Procedure/Method	Results
Conducted Emissions	FCC Part 15 Subpart B Section 15.107 Class B / ANSI C63.4 (2003)	Pass
Radiated Emissions	FCC Part 15 Subpart B Section 15.109 Class B / ANSI C63.4 (2003)	Pass

Conditions During Testing

This list is a summary of the conditions noted for or modifications made to the equipment during testing.

Summary of Conditions
None

EQUIPMENT UNDER TEST (EUT)

EQUIPMENT UNDER TEST

INSTEON LED Light Bulb

Manuf: SmartLabs, Inc.

Model: 2672-222 BulbLinc

Serial: NA

PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

FCC PART 15 SUBPART B

This report contains EMC emissions test results under United States Federal Communications Commission (FCC) 47 CFR 15B requirements for Unlicensed Radio Frequency Devices, Subpart B - Unintentional Radiators.

15.107 AC Conducted Emissions

Test Notes: Conducted Disturbances at Mains Terminals, LISN method.

Test Procedure: ANSI C63.4

Test Data Sheets

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer:	SmartLabs, Inc.	Date:	5/22/2012
Specification:	15.107 AC Mains Class B - Average	Time:	14:23:40
Work Order #:	93071	Sequence#:	20
Test Type:	Conducted Emissions	Tested By:	Don Nguyen
Equipment:	INSTEON LED Light Bulb		120V 60Hz
Manufacturer:	SmartLabs, Inc.		
Model:	2672-222 BULBLINC		
S/N:	NA		

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02610	High Pass Filter	HE9615-150K-50-720B	11/21/2011	11/21/2013
T2	ANP04358	Cable	RG142	4/10/2012	4/10/2014
T3	ANP06084	Attenuator	SA18N10W-06	12/8/2010	12/8/2012
	AN02672	Spectrum Analyzer	E4446A	8/9/2010	8/9/2012
T4	AN00847.1	50uH LISN-Line 1 (dB)	3816/2NM	12/21/2010	12/21/2012
	AN00847.1	50uH LISN-Line 2 (dB)	3816/2NM	12/21/2010	12/21/2012

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
INSTEON LED Light Bulb*	SmartLabs, Inc.	2672-222 BULBLINC	NA

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

The EUT is placed on the wooden table. EUT is installed in fixed position. The EUT is set in receive mode.
 Voltage input: 120Vac/60Hz
 RX freq = 914.5-915.5 MHz

Frequency range of measurement = 150kHz-30MHz
 150 kHz-30 MHz;RBW=9 kHz,VBW=9 kHz

Test environment conditions: 20°C, 42% relative humidity, 100kPa

Ext Attn: 0 dB

Measurement Data:

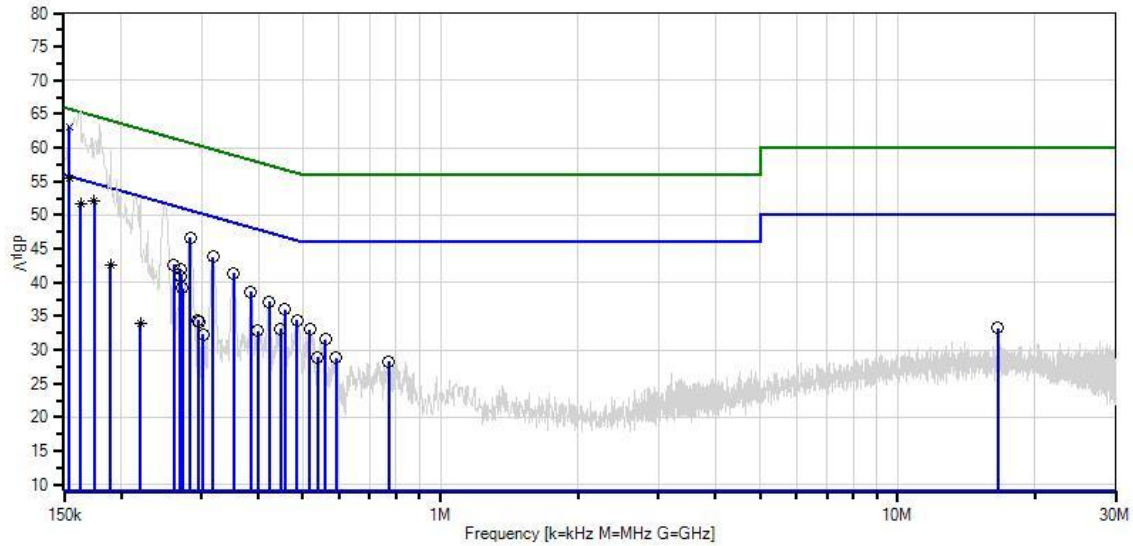
Reading listed by margin.

Test Lead: L1 (Live)

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	153.878k	48.2	+1.5	+0.0	+5.8	+0.0	+0.0	55.5	55.8	-0.3	L1 (L)
	Ave										
2	174.809k	45.9	+0.4	+0.0	+5.8	+0.0	+0.0	52.1	54.7	-2.6	L1 (L)
	Ave										
^	174.809k	54.0	+0.4	+0.0	+5.8	+0.0	+0.0	60.2	54.7	+5.5	L1 (L)
4	153.878k	55.8	+1.5	+0.0	+5.8	+0.0	+0.0	63.1	65.8	-2.7	L1 (L)
	QP										
^	153.878k	60.0	+1.5	+0.0	+5.8	+0.0	+0.0	67.3	55.8	+11.5	L1 (L)
6	163.089k	45.4	+0.5	+0.0	+5.8	+0.0	+0.0	51.7	55.3	-3.6	L1 (L)
	Ave										
^	163.089k	59.2	+0.5	+0.0	+5.8	+0.0	+0.0	65.5	55.3	+10.2	L1 (L)
8	283.078k	40.7	+0.2	+0.1	+5.7	+0.0	+0.0	46.7	50.7	-4.0	L1 (L)
9	317.984k	37.8	+0.2	+0.1	+5.7	+0.0	+0.0	43.8	49.8	-6.0	L1 (L)
10	352.889k	35.4	+0.2	+0.1	+5.7	+0.0	+0.0	41.4	48.9	-7.5	L1 (L)
11	260.534k	36.7	+0.2	+0.0	+5.8	+0.0	+0.0	42.7	51.4	-8.7	L1 (L)
12	269.261k	36.0	+0.2	+0.0	+5.8	+0.0	+0.0	42.0	51.1	-9.1	L1 (L)
13	384.887k	32.6	+0.2	+0.1	+5.7	+0.0	+0.0	38.6	48.2	-9.6	L1 (L)
14	270.715k	35.0	+0.2	+0.0	+5.8	+0.0	+0.0	41.0	51.1	-10.1	L1 (L)
15	421.974k	31.2	+0.2	+0.1	+5.7	+0.0	+0.0	37.2	47.4	-10.2	L1 (L)
16	456.153k	30.0	+0.2	+0.1	+5.7	+0.0	+0.0	36.0	46.8	-10.8	L1 (L)
17	189.995k	36.7	+0.2	+0.0	+5.8	+0.0	+0.0	42.7	54.0	-11.3	L1 (L)
	Ave										
^	189.995k	53.4	+0.2	+0.0	+5.8	+0.0	+0.0	59.4	54.0	+5.4	L1 (L)
19	272.897k	33.2	+0.2	+0.0	+5.8	+0.0	+0.0	39.2	51.0	-11.8	L1 (L)

20	485.968k	28.4	+0.2	+0.1	+5.7	+0.0	+0.0	34.4	46.2	-11.8	L1 (L)
21	517.965k	27.0	+0.2	+0.1	+5.7	+0.0	+0.0	33.0	46.0	-13.0	L1 (L)
22	446.699k	27.1	+0.2	+0.1	+5.7	+0.0	+0.0	33.1	46.9	-13.8	L1 (L)
23	560.143k	25.6	+0.2	+0.0	+5.8	+0.0	+0.0	31.6	46.0	-14.4	L1 (L)
24	397.976k	26.8	+0.2	+0.1	+5.7	+0.0	+0.0	32.8	47.9	-15.1	L1 (L)
25	294.713k	28.4	+0.2	+0.1	+5.7	+0.0	+0.0	34.4	50.4	-16.0	L1 (L)
26	296.167k	28.2	+0.2	+0.1	+5.7	+0.0	+0.0	34.2	50.3	-16.1	L1 (L)
27	16.589M	26.0	+0.2	+0.3	+5.8	+0.9	+0.0	33.2	50.0	-16.8	L1 (L)
28	537.600k	22.9	+0.2	+0.0	+5.8	+0.0	+0.0	28.9	46.0	-17.1	L1 (L)
29	589.959k	22.8	+0.2	+0.0	+5.8	+0.0	+0.0	28.8	46.0	-17.2	L1 (L)
30	769.579k	22.3	+0.2	+0.0	+5.8	+0.0	+0.0	28.3	46.0	-17.7	L1 (L)
31	301.985k	26.3	+0.2	+0.1	+5.7	+0.0	+0.0	32.3	50.2	-17.9	L1 (L)
32	220.538k	27.9	+0.2	+0.0	+5.8	+0.0	+0.0	33.9	52.8	-18.9	L1 (L)
	Ave										
^	220.538k	46.6	+0.2	+0.0	+5.8	+0.0	+0.0	52.6	52.8	-0.2	L1 (L)

CKC Laboratories, Inc. Date: 5/22/2012 Time: 14:23:40 SmartLabs, Inc. WO#: 93071
15.107 AC Mains Class B - Average Test Lead: L1 (Live) 120V 60Hz Sequence#: 20 Ext ATTN: 0 dB



— Sweep Data
○ Peak Readings
* Average Readings
— Readings
× QP Readings
▼ Ambient
— 1 - 15.107 AC Mains Class B - Average
— 2 - 15.107 AC Mains Class B - Quasi-peak

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **SmartLabs, Inc.**
 Specification: **15.107 AC Mains Class B - Average**
 Work Order #: **93071**
 Test Type: **Conducted Emissions**
 Equipment: **INSTEON LED Light Bulb**
 Manufacturer: SmartLabs, Inc.
 Model: 2672-222 BULBLINC
 S/N: NA

Date: 5/22/2012
 Time: 14:16:44
 Sequence#: 19
 Tested By: Don Nguyen
 120V 60Hz

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02610	High Pass Filter	HE9615-150K-50-720B	11/21/2011	11/21/2013
T2	ANP04358	Cable	RG142	4/10/2012	4/10/2014
T3	ANP06084	Attenuator	SA18N10W-06	12/8/2010	12/8/2012
	AN02672	Spectrum Analyzer	E4446A	8/9/2010	8/9/2012
	AN00847.1	50uH LISN-Line 1 (dB)	3816/2NM	12/21/2010	12/21/2012
T4	AN00847.1	50uH LISN-Line 2 (dB)	3816/2NM	12/21/2010	12/21/2012

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
INSTEON LED Light Bulb*	SmartLabs, Inc.	2672-222 BULBLINC	NA

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

The EUT is placed on the wooden table. EUT is installed in fixed position. The EUT is set in receive mode.
 Voltage input: 120Vac/60Hz
 RX freq = 914.5-915.5 MHz
 Frequency range of measurement = 150kHz-30MHz
 150 kHz-30 MHz;RBW=9 kHz,VBW=9 kHz
 Test environment conditions: 20°C, 42% relative humidity, 100kPa

Ext Attn: 0 dB

Measurement Data:

Reading listed by margin.

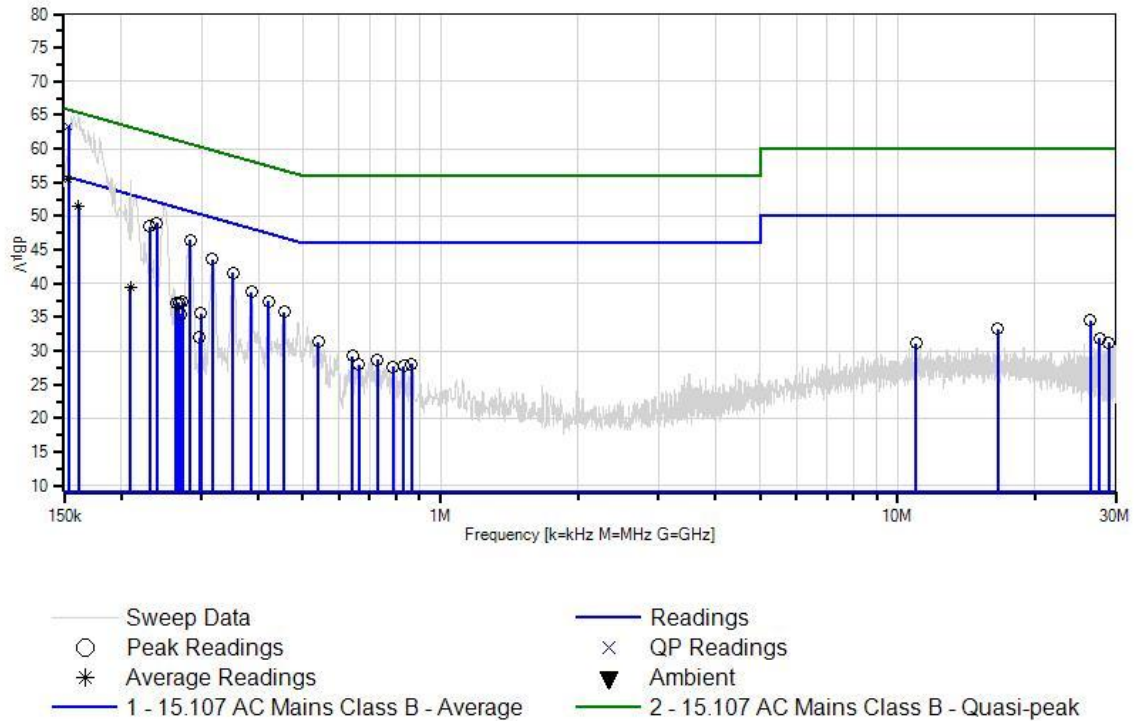
Test Lead: L2 (Neutral)

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	153.331k	48.0	+1.6	+0.0	+5.8	+0.0	+0.0	55.4	55.8	-0.4	L2 (N)
	Ave										
2	153.331k	55.9	+1.6	+0.0	+5.8	+0.0	+0.0	63.3	65.8	-2.5	L2 (N)
	QP										
^	153.331k	59.6	+1.6	+0.0	+5.8	+0.0	+0.0	67.0	55.8	+11.2	L2 (N)
4	239.446k	43.0	+0.2	+0.0	+5.8	+0.0	+0.0	49.0	52.1	-3.1	L2 (N)
5	230.720k	42.5	+0.2	+0.0	+5.8	+0.0	+0.0	48.5	52.4	-3.9	L2 (N)

6	161.635k	45.1	+0.5	+0.0	+5.8	+0.0	+0.0	51.4	55.4	-4.0	L2 (N)
	Ave										
^	161.635k	58.5	+0.5	+0.0	+5.8	+0.0	+0.0	64.8	55.4	+9.4	L2 (N)
8	283.079k	40.5	+0.2	+0.1	+5.7	+0.0	+0.0	46.5	50.7	-4.2	L2 (N)
9	317.257k	37.6	+0.2	+0.1	+5.7	+0.0	+0.0	43.6	49.8	-6.2	L2 (N)
10	351.436k	35.6	+0.2	+0.1	+5.7	+0.0	+0.0	41.6	48.9	-7.3	L2 (N)
11	386.342k	32.7	+0.2	+0.1	+5.7	+0.0	+0.0	38.7	48.1	-9.4	L2 (N)
12	419.793k	31.4	+0.2	+0.1	+5.7	+0.0	+0.0	37.4	47.5	-10.1	L2 (N)
13	454.699k	29.8	+0.2	+0.1	+5.7	+0.0	+0.0	35.8	46.8	-11.0	L2 (N)
14	209.631k	33.5	+0.2	+0.0	+5.8	+0.0	+0.0	39.5	53.2	-13.7	L2 (N)
	Ave										
^	209.631k	49.3	+0.2	+0.0	+5.8	+0.0	+0.0	55.3	53.2	+2.1	L2 (N)
16	272.171k	31.3	+0.2	+0.0	+5.8	+0.0	+0.0	37.3	51.1	-13.8	L2 (N)
17	267.807k	31.2	+0.2	+0.0	+5.8	+0.0	+0.0	37.2	51.2	-14.0	L2 (N)
18	263.444k	31.0	+0.2	+0.0	+5.8	+0.0	+0.0	37.0	51.3	-14.3	L2 (N)
19	540.510k	25.3	+0.2	+0.0	+5.8	+0.0	+0.0	31.3	46.0	-14.7	L2 (N)
20	299.077k	29.6	+0.2	+0.1	+5.7	+0.0	+0.0	35.6	50.3	-14.7	L2 (N)
21	26.375M	26.2	+0.3	+0.4	+5.8	+1.8	+0.0	34.5	50.0	-15.5	L2 (N)
22	269.989k	29.5	+0.2	+0.0	+5.8	+0.0	+0.0	35.5	51.1	-15.6	L2 (N)
23	16.589M	26.0	+0.2	+0.3	+5.8	+1.0	+0.0	33.3	50.0	-16.7	L2 (N)
24	641.591k	23.2	+0.2	+0.0	+5.8	+0.0	+0.0	29.2	46.0	-16.8	L2 (N)
25	728.129k	22.7	+0.2	+0.0	+5.8	+0.0	+0.0	28.7	46.0	-17.3	L2 (N)
26	864.116k	22.0	+0.2	+0.1	+5.8	+0.0	+0.0	28.1	46.0	-17.9	L2 (N)
27	661.953k	22.0	+0.2	+0.0	+5.8	+0.0	+0.0	28.0	46.0	-18.0	L2 (N)
28	27.650M	23.5	+0.3	+0.4	+5.8	+1.9	+0.0	31.9	50.0	-18.1	L2 (N)
29	830.665k	21.8	+0.2	+0.0	+5.8	+0.0	+0.0	27.8	46.0	-18.2	L2 (N)
30	788.487k	21.7	+0.2	+0.0	+5.8	+0.0	+0.0	27.7	46.0	-18.3	L2 (N)
31	296.896k	26.0	+0.2	+0.1	+5.7	+0.0	+0.0	32.0	50.3	-18.3	L2 (N)

32	29.041M	22.6	+0.3	+0.5	+5.8	+2.0	+0.0	31.2	50.0	-18.8	L2 (N)
33	10.959M	24.2	+0.2	+0.2	+5.8	+0.7	+0.0	31.1	50.0	-18.9	L2 (N)

CKC Laboratories, Inc. Date: 5/22/2012 Time: 14:16:44 SmartLabs, Inc. WO#: 93071
 15.107 AC Mains Class B - Average Test Lead: L2 (Neutral) 120V 60Hz Sequence#: 19 Ext ATTN: 0 dB



Test Setup Photos



15.109 Radiated Emissions

Test Notes: Radiated disturbances emanating from enclosure.

Test Procedure: ANSI C63.4

Test Data Sheets

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **SmartLabs, Inc.**
 Specification: **15.109 Radiated Emissions Class B**
 Work Order #: **93071** Date: 5/22/2012
 Test Type: **Maximized Emissions** Time: 14:52:17
 Equipment: **INSTEON LED Light Bulb** Sequence#: 9
 Manufacturer: SmartLabs, Inc. Tested By: Don Nguyen
 Model: 2672-222 BULBLINC
 S/N: NA

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00309	Preamp	8447D	3/29/2012	3/29/2014
T2	ANP05050	Cable	RG223/U	3/21/2011	3/21/2013
T3	ANP05198	Cable	8268	12/21/2010	12/21/2012
T4	AN01996	Biconilog Antenna	CBL6111C	3/2/2012	3/2/2014
	AN02672	Spectrum Analyzer	E4446A	8/9/2010	8/9/2012
	AN00786	Preamp	83017A	8/5/2010	8/5/2012
	AN01646	Horn Antenna	3115	4/13/2012	4/13/2014
	AN03239	Cable	32022-2-29094K-24TC	8/30/2011	8/30/2013
	ANP05421	Cable	Sucoflex 104A	2/8/2012	2/8/2014
	ANP06081	Cable	L1-PNMNM-48	4/28/2011	4/28/2013
	AN03169	High Pass Filter	HM1155-11SS	9/22/2011	9/22/2013

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
INSTEON LED Light Bulb*	SmartLabs, Inc.	2672-222 BULBLINC	NA

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is installed in fixed position.
 The EUT is set in receive mode.
 Voltage input: 120Vac/60Hz
 RX freq = 914.5-915.5 MHz

Frequency range of measurement = 30MHz-10GHz
 30-1000MHz, RBW=120 kHz, VBW=120 kHz
 1000-10000MHz, RBW=1MHz, VBW=1MHz

Test environment conditions: 20°C, 52% relative humidity, 100kPa

Ext Attn: 0 dB

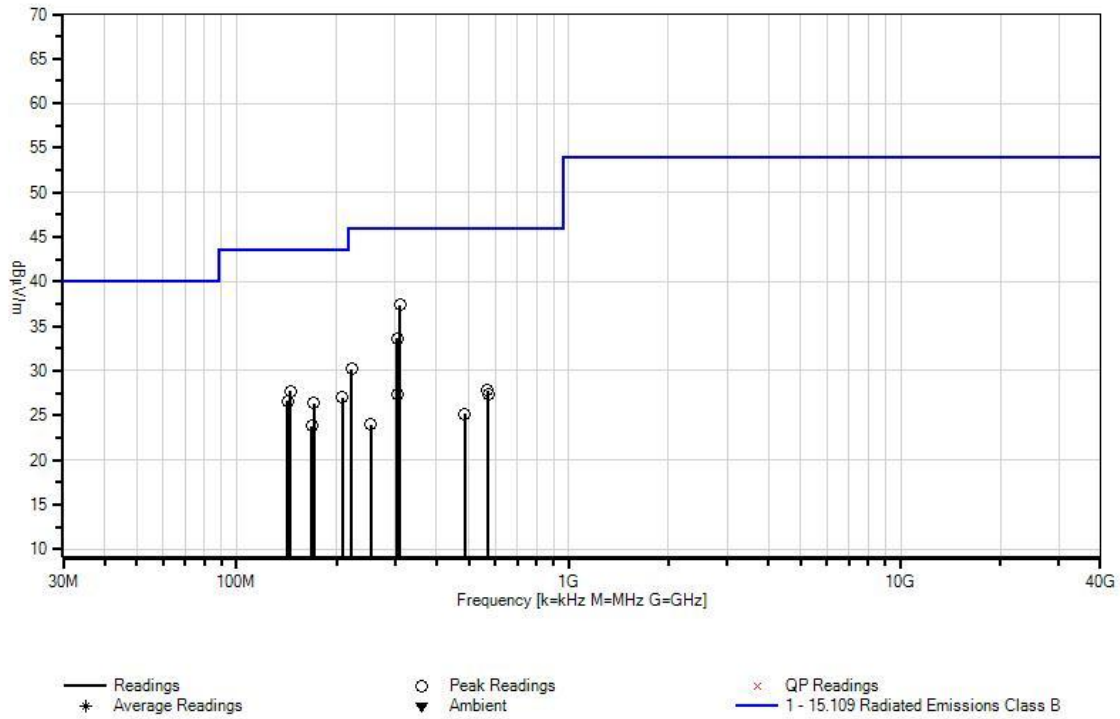
Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
1	310.000M	48.4	-27.8	+0.2	+3.1	+13.5	+0.0	37.4	46.0	-8.6	Horiz
2	304.600M	44.8	-27.8	+0.2	+3.1	+13.3	+0.0	33.6	46.0	-12.4	Horiz
3	145.430M	42.2	-27.9	+0.1	+2.1	+11.2	+0.0	27.7	43.5	-15.8	Horiz
4	221.930M	44.6	-27.8	+0.2	+2.6	+10.6	+0.0	30.2	46.0	-15.8	Horiz
5	208.460M	42.6	-27.9	+0.2	+2.5	+9.6	+0.0	27.0	43.5	-16.5	Vert
6	142.460M	41.0	-27.9	+0.1	+2.0	+11.4	+0.0	26.6	43.5	-16.9	Vert
7	170.960M	42.3	-27.9	+0.2	+2.3	+9.5	+0.0	26.4	43.5	-17.1	Vert
8	568.670M	31.1	-27.5	+0.4	+4.4	+19.4	+0.0	27.8	46.0	-18.2	Vert
9	571.120M	30.5	-27.5	+0.4	+4.4	+19.5	+0.0	27.3	46.0	-18.7	Vert
10	306.100M	38.5	-27.8	+0.2	+3.1	+13.3	+0.0	27.3	46.0	-18.7	Vert
11	169.430M	39.5	-27.9	+0.2	+2.3	+9.7	+0.0	23.8	43.5	-19.7	Horiz
12	168.460M	39.4	-27.9	+0.2	+2.3	+9.8	+0.0	23.8	43.5	-19.7	Vert
13	486.640M	30.8	-27.8	+0.4	+4.0	+17.8	+0.0	25.2	46.0	-20.8	Vert
14	253.430M	36.3	-27.8	+0.2	+2.8	+12.5	+0.0	24.0	46.0	-22.0	Horiz

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Test Setup Photos



SUPPLEMENTAL INFORMATION

Measurement Uncertainty

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

The reported measurement uncertainties are calculated based on the worst case of all laboratory environments from CKC Laboratories, Inc. test sites. Only those parameters which require estimation of measurement uncertainty are reported. The reported worst case measurement uncertainty is less than the maximum values derived in CISPR 16-4-2. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2. Compliance is deemed to occur provided measurements are below the specified limits.

Emissions Test Details

TESTING PARAMETERS

Unless otherwise indicated, the following configuration parameters are used for equipment setup: The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula. This reading was then compared to the applicable specification limit.

SAMPLE CALCULATIONS		
	Meter reading	(dB μ V)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dB μ V/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. Unless otherwise specified, the following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "positive peak" detector mode. Whenever a "quasi-peak" or "average" reading was recorded, the measurement was annotated with a "QP" or an "Ave" on the appropriate rows of the data sheets. In cases where quasi-peak or average limits were employed and data exists for multiple measurement types for the same frequency then the peak measurement was retained in the report for reference, however the numbering for the affected row was removed and an arrow or carrot ("^") was placed in the far left-hand column indicating that the row above takes precedence for comparison to the limit. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer or receiver recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature called "peak hold," the measurement device had the ability to measure intermittent or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

Quasi-peak measurements were taken using the quasi-peak detector when the true peak values exceeded or were within 2 dB of a quasi-peak specification limit. Additional QP measurements may have been taken at the discretion of the operator.

Average

Average measurements were taken using the average detector when the true peak values exceeded or were within 2 dB of an average specification limit. Additional average measurements may have been taken at the discretion of the operator. If the specification or test procedure requires trace averaging, then the averaging was performed using 100 samples or as required by the specification. All other average measurements are performed using video bandwidth averaging. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.