

Application for FCC Certificate
On Behalf of
Fujian Joinluck Electronic Enterprise Co., Ltd.

E.S.L

Model No.: JLS Mini 26W JLS Mini 23W
 JLS Mini 18W

FCC ID: N6AFJEE0203

Prepared For : Fujian Joinluck Electronic Enterprise Co., Ltd.
 Cangshan Industrial Area, Cangshan District, Fuzhou,
 Fujian, China

Prepared By : Audix Technology (Shanghai) Co., Ltd.
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Report No. : ACI-F02025
Date of Test : Mar 19, 2002
Date of Report : Mar 21, 2002

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1 GENERAL INFORMATION

1.1 Description of Equipment Under Test

Description : E.S.L

Type of EUT : Production Pre-product Pro-type

Model Number : JLS Mini 26W JLS Mini 23W
JLS Mini 18W

Applicant : Fujian Joinluck Electronic Enterprise Co., Ltd.
Cangshan Industrial Area, Cangshan District, Fuzhou,
Fujian, China

Manufacturer : Fujian Joinluck Electronic Enterprise Co., Ltd.
Cangshan Industrial Area, Cangshan District, Fuzhou,
Fujian, China

Test Model	Apparent Power (V · A)	Real Power (W)
26W	48.9	24.3
23W	41.6	21.7
18W	32.7	18.1

1.2 Description of Test Facility

Site Description : Sept. 17, 1998 file on
(Semi-Anechoic Chamber) Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046, USA

Name of Firm : Audix Technology (Shanghai) Co., Ltd.

Site Location : 3F 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai, China 200233

NVLAP Lab Code : 200371-0

1.3 Measurement Uncertainty

Conducted Emission Uncertainty : $U = \pm 2.66\text{dB}$

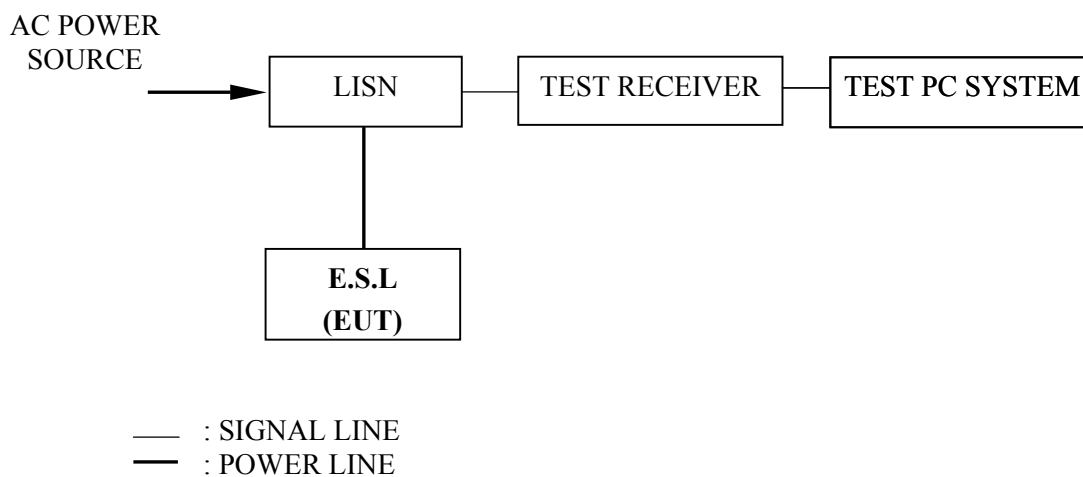
2 AC POWERLINE CONDUCTED EMISSION TEST

2.1 Test Equipment

The following test equipment are used during the powerline conducted emission test in a shielded room:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS10	844077/020	Apr 24, 2001	1 Year
2.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-5	May 08, 2001	1 Year

2.2 Block Diagram of Test Setup



2.3 Conducted Emission Limits

Frequency (MHz)	Maximum RF Line Voltage	
	(μ V)	dB(μ V)
0.45 ~ 2.51	250	48
2.51 ~ 3	3000	70
3 ~ 30	250	48

NOTE 1 – RF Line Voltage dB (μ V) = 20 log RF Line Voltage (μ V)
 NOTE 2 – The tighter limits shall apply at the boundary between two frequency ranges.

2.4 Test Configuration

The EUT (listed in Sec. 1.1) was installed as shown on Sec. 2.2 to meet FCC requirement and operating in a manner which tends to maximize its emission level in a normal application.

2.5 Operating Condition of EUT

2.5.1 Setup the EUT as shown in Sec. 2.2.

2.5.2 Turn on the power of all equipment.

2.5.3 The EUT will be operated normally.

2.6 Test Procedures

The EUT was connected to the power mains through a Line Impedance Stabilization Network (LISN). This provided a 50 ohm coupling impedance for the measuring equipment.

Both sides of AC line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed or manipulated according to MP-5/1986 during conducted emission test.

The IF bandwidth of Test Receiver ESHS10 was set at 10 kHz.

The frequency range from 450 kHz to 30 MHz was checked.

The test mode (26W/23W/18W) was done on conducted test and the test results of the highest emissions are listed in Sec. 2.7.

2.7 Test Results

< PASS >

The frequency and amplitude of the highest AC powerline conducted emissions relative to the limit is reported. All emissions not reported below are too low against the prescribed limits.

NOTE 1 – Emission Level = Read Level + Factor

NOTE 2 – Factor = Insertion Loss + Cable Loss

NOTE 3 – All reading are Quasi-Peak Values.

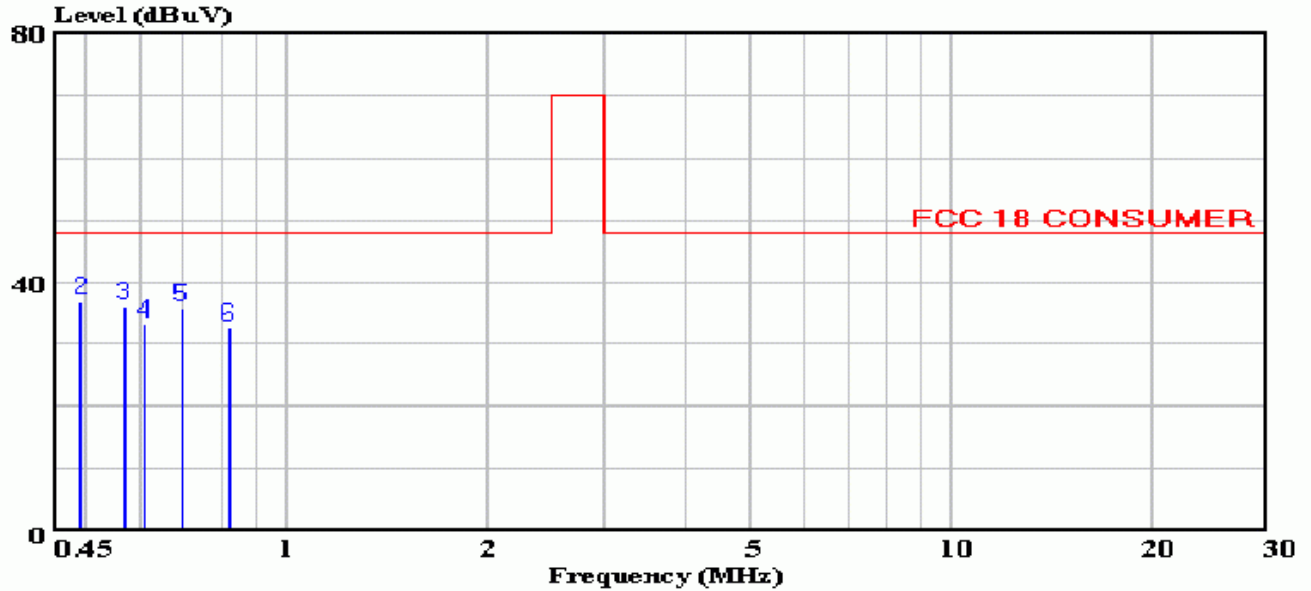


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 aciemc@audix.com

Data#: 650 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2002-03-19 Time: 18:51:11



Site : audix-aci Conducted Emission
 Condition : FCC 18 CONSUMER
 Project No. : AOE-000175
 Applicant : Fujian Joinluck Electronic Enterprise
 : Co.,Ltd
 EUT : E.S.L
 M/N : JLS Mini 26W
 S/N : E031901
 Power Supply : 120V/60Hz
 Ambient : 21.8'C 53%
 Test Line : VA
 Test Mode : ON
 Test Engineer:

Page: 1

	Freq	Read Level	Limit Level	Over Line	Over Limit	Factor
	MHz	dBuV	dBuV	dBuV	dB	dB
1	0.450	38.14	38.21	48.00	-9.79	0.07
2	0.491	36.80	36.86	48.00	-11.14	0.06
3	0.570	36.14	36.19	48.00	-11.81	0.05
4	0.611	33.37	33.41	48.00	-14.59	0.04
5	0.697	35.71	35.74	48.00	-12.26	0.03
6	0.818	32.58	32.62	48.00	-15.38	0.04

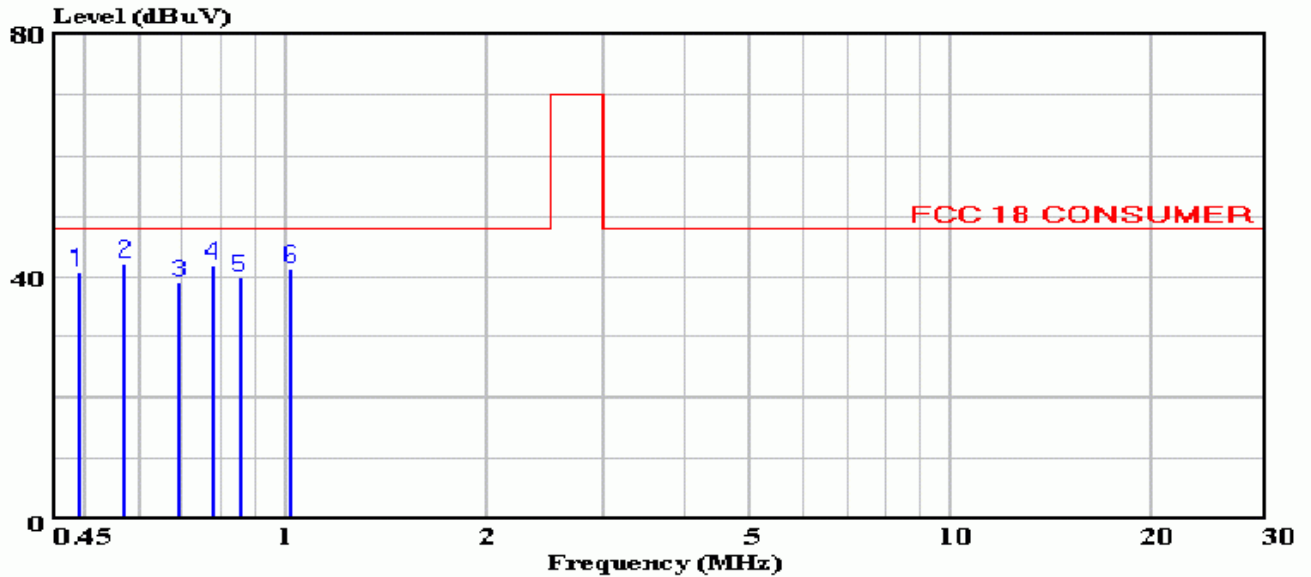


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Data#: 652 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2002-03-19 Time: 18:54:39



Site : audix-aci Conducted Emission
 Condition : FCC 18 CONSUMER
 Project No. : AOE-000175
 Applicant : Fujian Joinluck Electronic Enterprise
 : Co.,Ltd
 EUT : E.S.L
 M/N : JLS Mini 26W
 S/N : E031901
 Power Supply : 120V/60Hz
 Ambient : 21.8'C 53%
 Test Line : VB
 Test Mode : ON
 Test Engineer:

Page: 1

	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	
MHz	dBuV	dBuV	dBuV	dB	dB	
1	0.490	40.62	40.71	48.00	-7.29	0.09
2	0.573	42.14	42.23	48.00	-5.77	0.09
3	0.692	38.98	39.06	48.00	-8.94	0.08
4	0.779	41.74	41.82	48.00	-6.18	0.08
5	0.854	39.70	39.78	48.00	-8.22	0.08
6	1.021	41.09	41.17	48.00	-6.83	0.08

NOTE – The worst emission is detected at 0.573 MHz with corrected signal level of 42.23dB(μV) (limit is 48.00 dB(μV)), when the VB of the EUT is connected to LISN.

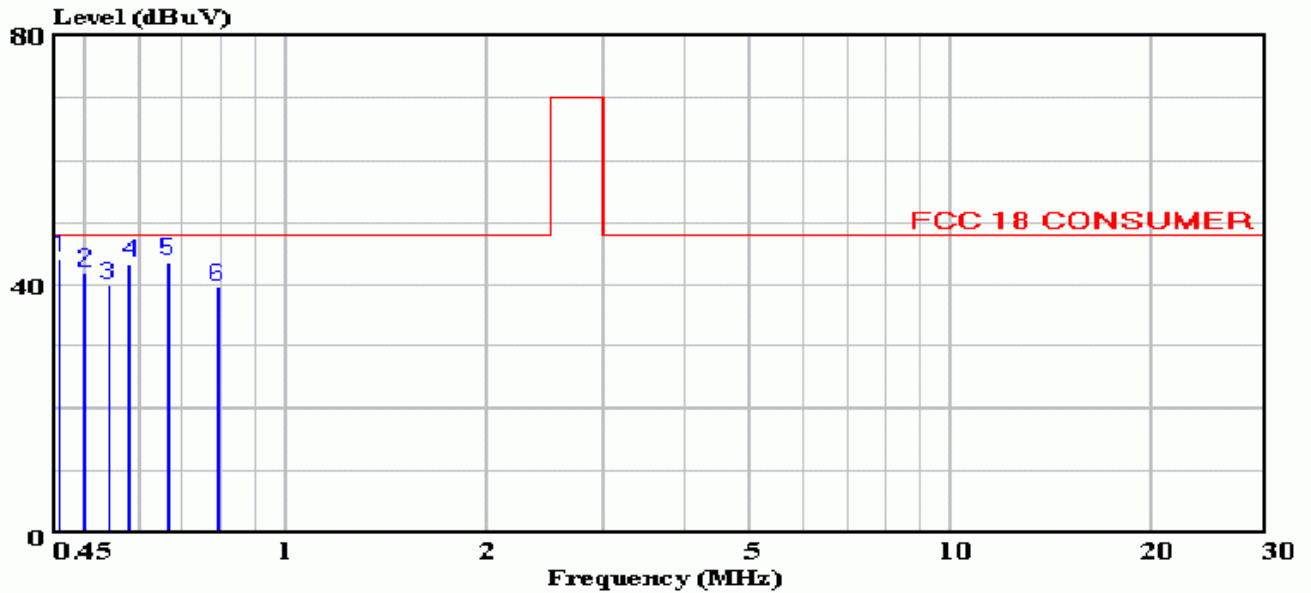


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Date: 2002-03-19 Time: 19:18:13



Site : audix-aci Conducted Emission
 Condition : FCC 18 CONSUMER
 Project No. : AOE-000175
 Applicant : Fujian Joinluck Electronic Enterprise
 : Co.,Ltd
 EUT : E.S.L
 M/N : JLS Mini 23W
 S/N : E031902
 Power Supply : 120V/60Hz
 Ambient : 21.8'C 53%
 Test Line : VA
 Test Mode : ON
 Test Engineer:

Page: 1

	Freq	Read Level	Limit Level	Over Limit	Factor
	MHz	dBuV	dBuV	dBuV	dB
1	0.459	44.23	44.29	48.00	-3.71 0.06
2	0.501	41.71	41.77	48.00	-6.23 0.06
3	0.541	39.81	39.86	48.00	-8.14 0.05
4	0.584	43.22	43.27	48.00	-4.73 0.05
5	0.668	43.49	43.52	48.00	-4.48 0.03
6	0.792	39.42	39.46	48.00	-8.54 0.04

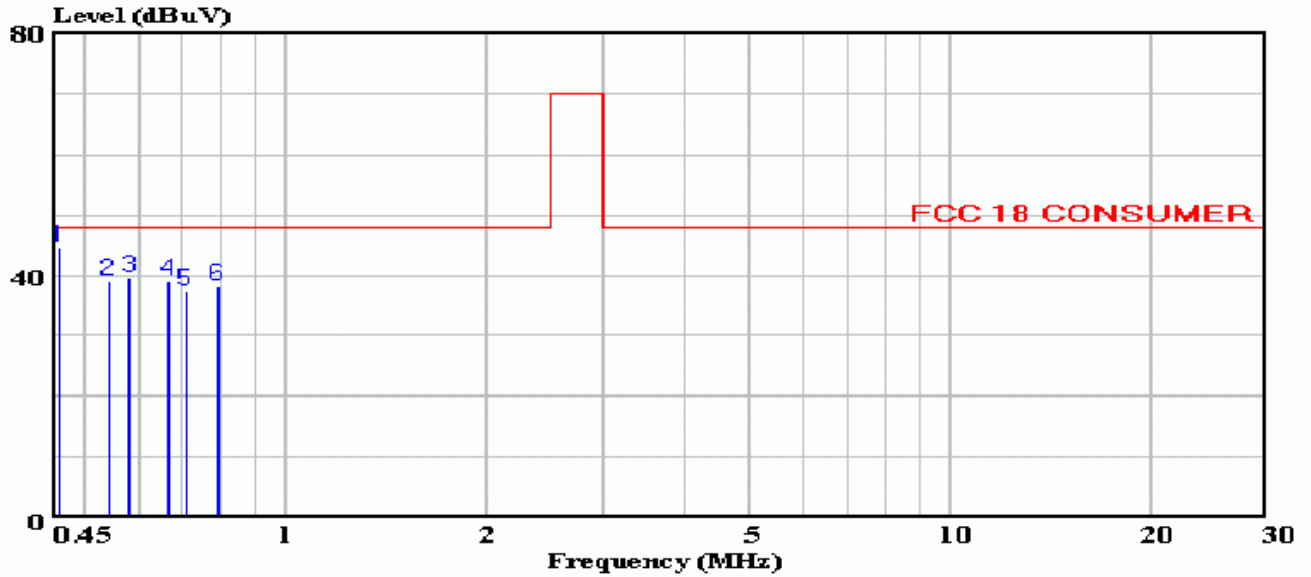


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Data#: 654 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2002-03-19 Time: 19:14:09



Site : audix-aci Conducted Emission
 Condition : FCC 18 CONSUMER
 Project No. : AOE-000175
 Applicant : Fujian Joinluck Electronic Enterprise
 : Co.,Ltd
 EUT : E.S.L
 M/N : JLS Mini 23W
 S/N : E031902
 Power Supply : 120V/60Hz
 Ambient : 21.8°C 53%
 Test Line : VB
 Test Mode : ON
 Test Engineer:

Page: 1

	Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor
MHz	dBuV	dBuV	dBuV	dB	dB
1	0.458	44.45	44.54	48.00	-3.46 0.09
2	0.543	39.05	39.14	48.00	-8.86 0.09
3	0.584	39.59	39.68	48.00	-8.32 0.09
4	0.667	38.86	38.94	48.00	-9.06 0.08
5	0.709	37.18	37.26	48.00	-10.74 0.08
6	0.791	38.16	38.24	48.00	-9.76 0.08

The worst emission is detected at 0.458 MHz with corrected signal level of 44.54dB(μV) (limit is 48.00 dB(μV)), when the VB of the EUT is connected to LISN.

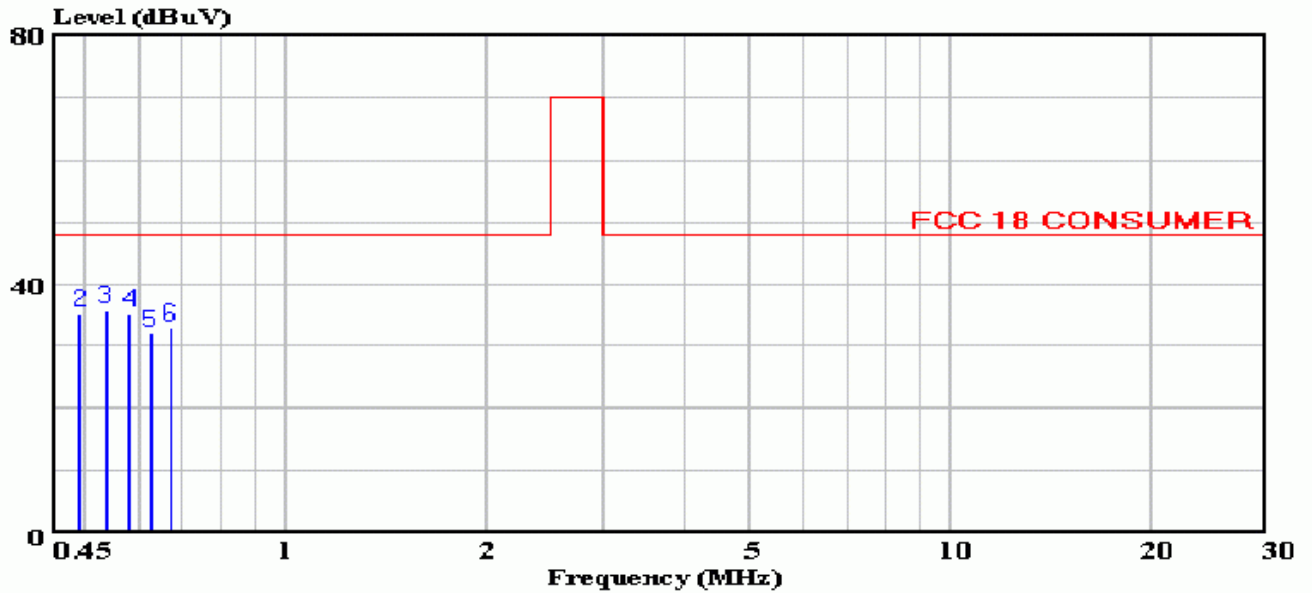


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Data#: 658 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2002-03-19 Time: 19:33:13



Site : audix-aci Conducted Emission
 Condition : FCC 18 CONSUMER
 Project No. : AOE-000175
 Applicant : Fujian Joinluck Electronic Enterprise
 : Co.,Ltd
 EUT : E.S.L
 M/N : JLS Mini 18W
 S/N : E031903
 Power Supply : 120V/60Hz
 Ambient : 21.8'C 53%
 Test Line : VA
 Test Mode : ON
 Test Engineer:

Page: 1

	Freq	Read Level	Level	Limit Line	Over Limit	Factor
	MHz	dBuV	dBuV	dBuV	dB	dB
1	0.450	38.56	38.63	48.00	-9.37	0.07
2	0.491	35.29	35.35	48.00	-12.65	0.06
3	0.538	35.78	35.83	48.00	-12.17	0.05
4	0.584	35.14	35.19	48.00	-12.81	0.05
5	0.628	32.15	32.19	48.00	-15.81	0.04
6	0.671	33.04	33.07	48.00	-14.93	0.03

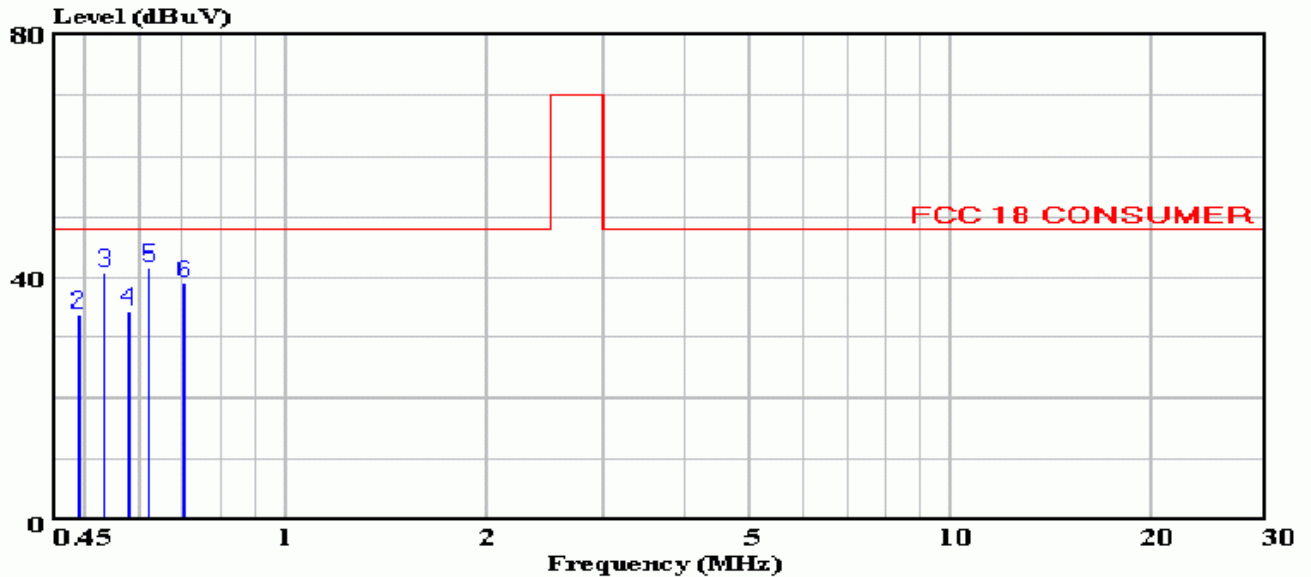


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Data#: 660 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2002-03-19 Time: 19:37:41



Site : audix-aci Conducted Emission
 Condition : FCC 18 CONSUMER
 Project No. : AOE-000175
 Applicant : Fujian Joinluck Electronic Enterprise
 : Co.,Ltd
 EUT : E.S.L
 M/N : JLS Mini 18W
 S/N : E031903
 Power Supply : 120V/60Hz
 Ambient : 21.8'C 53%
 Test Line : VB
 Test Mode : ON
 Test Engineer:

Page: 1

	Freq	Read Level	Level	Limit Line	Over Limit	Factor
	MHz	dBuV	dBuV	dBuV	dB	dB
1	0.450	43.27	43.37	48.00	-4.63	0.10
2	0.490	33.67	33.76	48.00	-14.24	0.09
3	0.536	40.61	40.70	48.00	-7.30	0.09
4	0.581	34.26	34.35	48.00	-13.65	0.09
5	0.623	41.41	41.49	48.00	-6.51	0.08
6	0.705	38.97	39.05	48.00	-8.95	0.08

The worst emission is detected at 0.450 MHz with corrected signal level of 43.37dB(μV) (limit is 48.00 dB(μV)), when the VB of the EUT is connected to LISN.

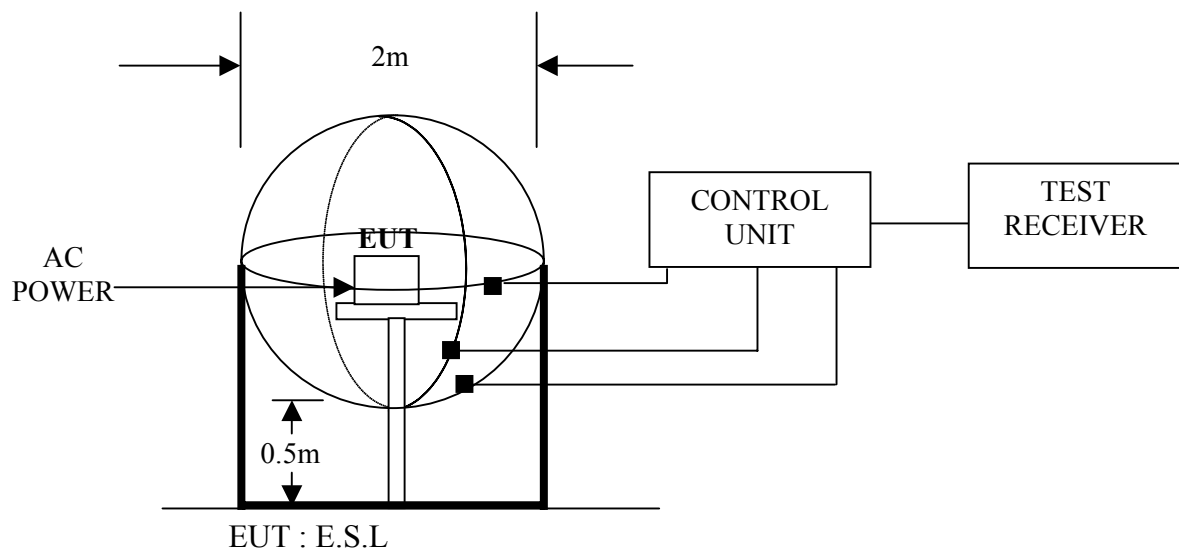
3 FIELDSTRENGTH TEST

3.1 Test Equipment

The following test equipment are used during the field strength test in a shielded room:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Loop Antenna	Laplace	RF300	5001	Oct 25, 2001	1/2 Year
2.	Test Receiver	Rohde & Schwarz	ESHS10	844077/020	Apr 24, 2001	1 Year

3.2 Block Diagram of Test Setup



3.3 Test Configuration

The configuration of the EUT is same as those used in conducted emission test. Refer to Sec. 2.4, except the test setup replaced by Sec. 3.2.

3.4 Operating Condition of EUT

Same as conducted emission test which is listed in Sec. 2.5, except the test setup replaced by Sec. 3.2.

3.5 Test Procedure

The EUT was placed on a wooden table, which is in the center of the loop antenna. The loop antenna is 0.5 meters above the ground. Each side had one sensor. The three sensors were through the control unit to connect the Test receiver, which receiving the emission and find out the maximum emission of each side of the loop antenna.

The IF bandwidth of R&S Test Receiver ESHS10 was set at 200 Hz from 9kHz to 150kHz and 10kHz from 150 kHz to 30 MHz.

The IF frequency range from 9 kHz to 30 MHz was checked.

The test mode (26W/23W/18W) was done on field strength test and all the test results are listed in Sec. 3.6.

3.6 Test Result

<PASS>

Refer to the following pages.

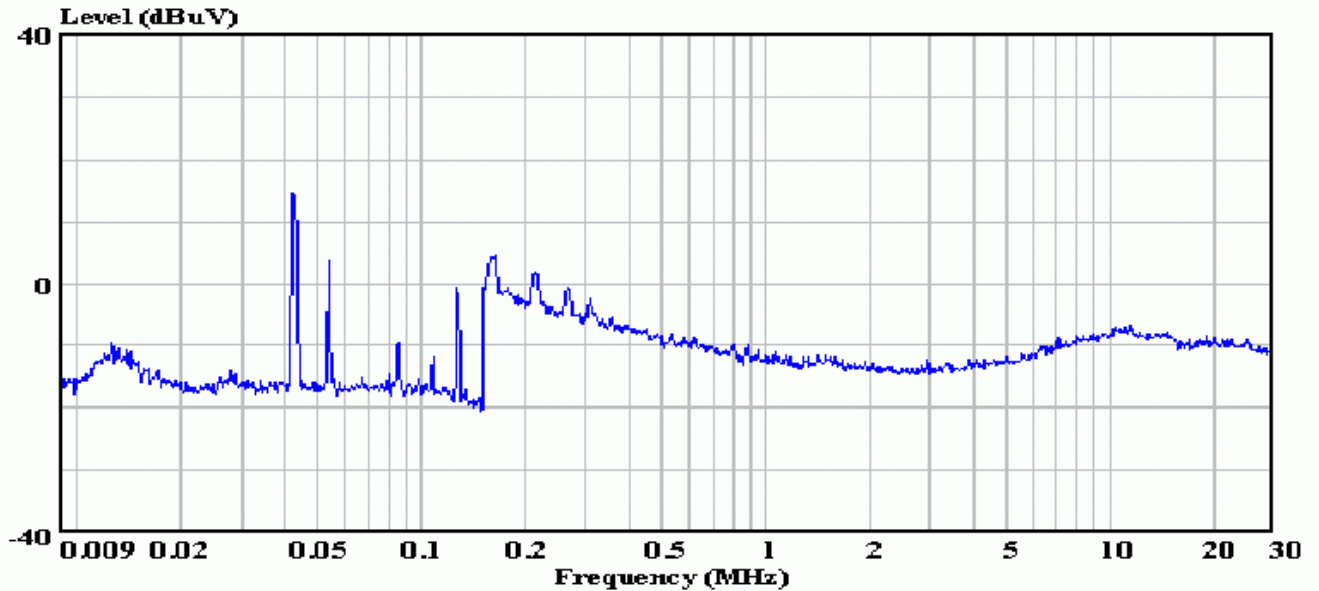


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Data#: 681 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2002-03-19 Time: 20:08:43



Site : audix-aci Conducted Emission
Condition :
Project No. : AOE-000175
Applicant : Fujian Joinluck Electronic Enterprise
: Co.,Ltd
EUT : E.S.L
M/N : JLS Mini 26W
S/N : E031901
Power Supply : 120V/60Hz
Ambient : 21.8°C 53%
Test Line : A
Test Mode : ON
Test Engineer:

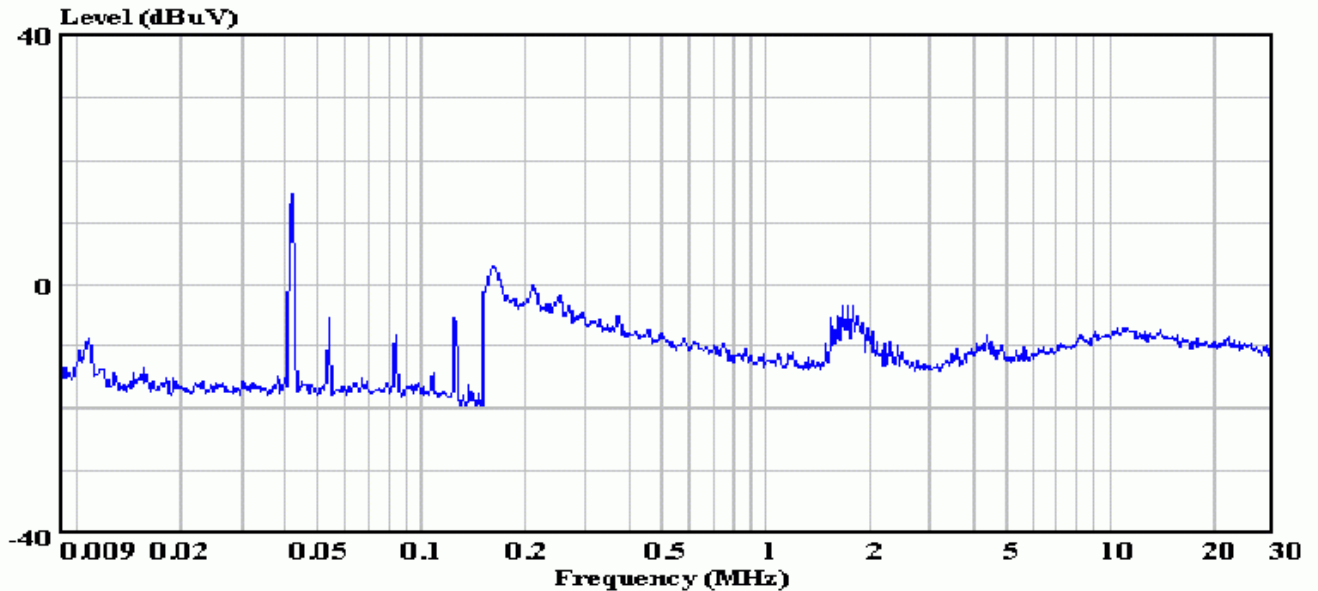


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Data#: 684 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2002-03-19 Time: 20:10:50



Site : audix-aci Conducted Emission
Condition :
Project No. : AOE-000175
Applicant : Fujian Joinluck Electronic Enterprise
: Co.,Ltd
EUT : E.S.L
M/N : JLS Mini 26W
S/N : E031901
Power Supply : 120V/60Hz
Ambient : 21.8'C 53%
Test Line : B
Test Mode : ON
Test Engineer:

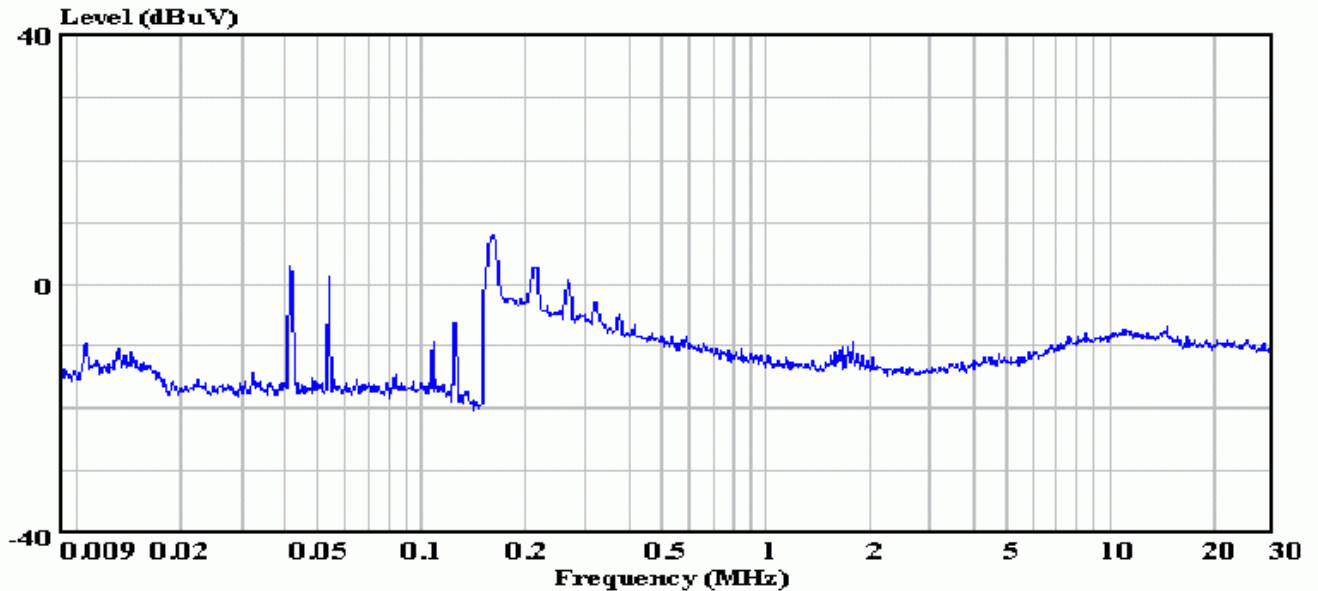


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Data#: 687 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2002-03-19 Time: 20:13:04



Site : audix-aci Conducted Emission
Condition :
Project No. : AOE-000175
Applicant : Fujian Joinluck Electronic Enterprise
: Co.,Ltd
EUT : E.S.L
M/N : JLS Mini 26W
S/N : E031901
Power Supply : 120V/60Hz
Ambient : 21.8'C 53%
Test Line : C
Test Mode : ON
Test Engineer:

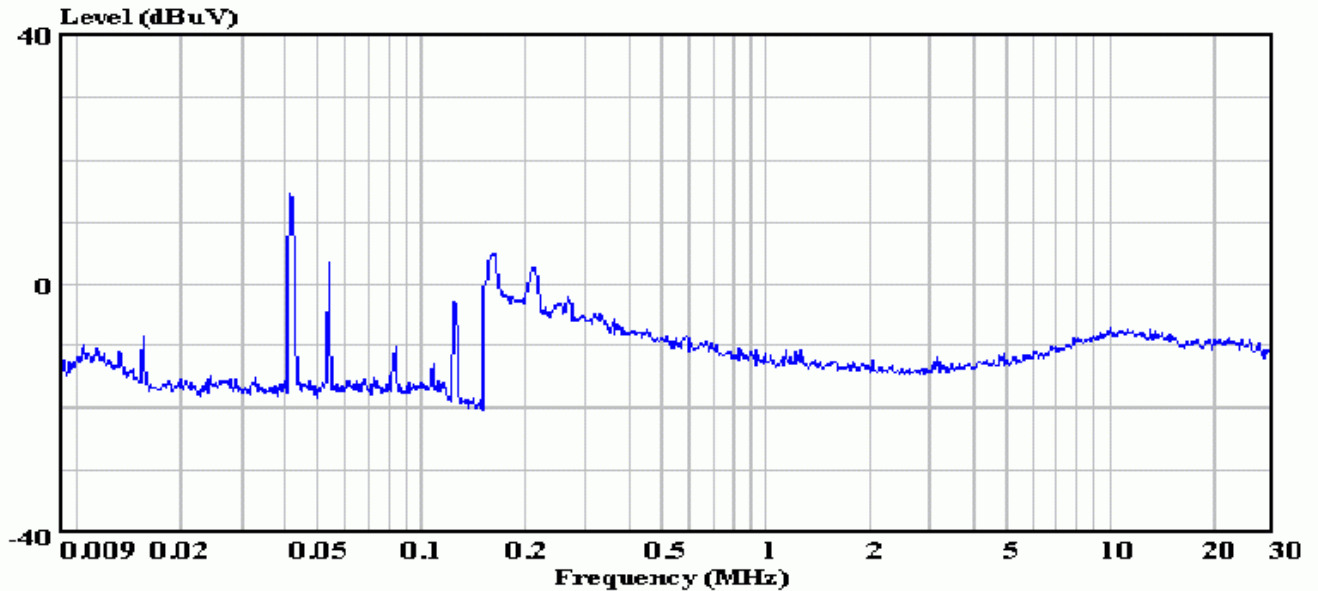


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Data#: 678 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2002-03-19 Time: 20:06:06



Site : audix-aci Conducted Emission
Condition :
Project No. : AOE-000175
Applicant : Fujian Joinluck Electronic Enterprise
: Co.,Ltd
EUT : E.S.L
M/N : JLS Mini 23W
S/N : E031902
Power Supply : 120V/60Hz
Ambient : 21.8'C 53%
Test Line : A
Test Mode : ON
Test Engineer:

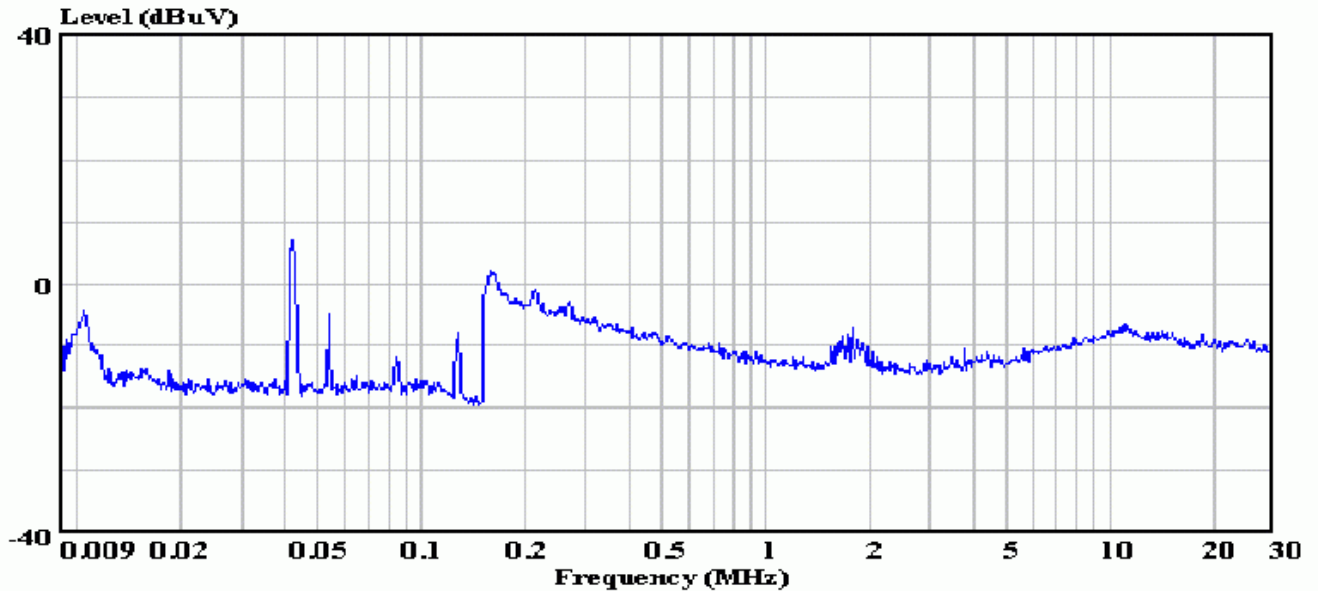


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Data#: 675 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2002-03-19 Time: 20:04:03



Site : audix-aci Conducted Emission
Condition :
Project No. : AOE-000175
Applicant : Fujian Joinluck Electronic Enterprise
: Co.,Ltd
EUT : E.S.L
M/N : JLS Mini 23W
S/N : E031902
Power Supply : 120V/60Hz
Ambient : 21.8'C 53%
Test Line : B
Test Mode : ON
Test Engineer:

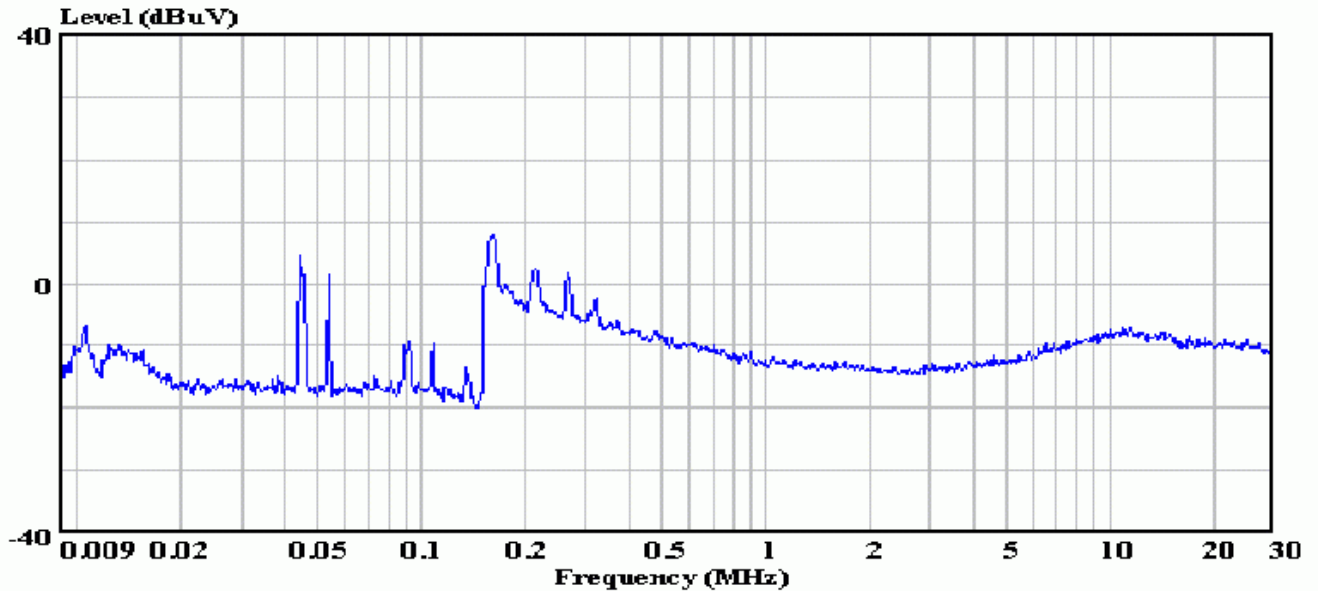


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Data#: 672 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2002-03-19 Time: 20:01:48



Site : audix-aci Conducted Emission
Condition :
Project No. : AOE-000175
Applicant : Fujian Joinluck Electronic Enterprise
: Co.,Ltd
EUT : E.S.L
M/N : JLS Mini 23W
S/N : E031902
Power Supply : 120V/60Hz
Ambient : 21.8'C 53%
Test Line : C
Test Mode : ON
Test Engineer:

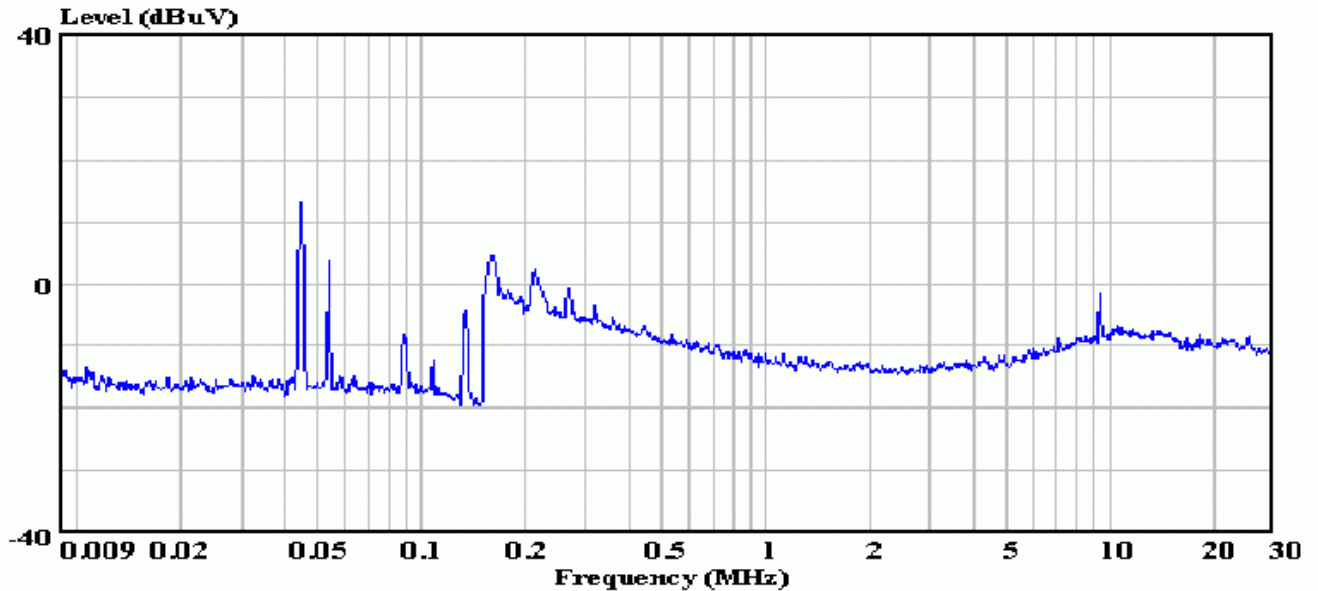


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Data#: 663 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2002-03-19 Time: 19:45:35



Site : audix-aci Conducted Emission
Condition :
Project No. : AOE-000175
Applicant : Fujian Joinluck Electronic Enterprise
: Co.,Ltd
EUT : E.S.L
M/N : JLS Mini 18W
S/N : E031903
Power Supply : 120V/60Hz
Ambient : 21.8'C 53%
Test Line : A
Test Mode : ON
Test Engineer:

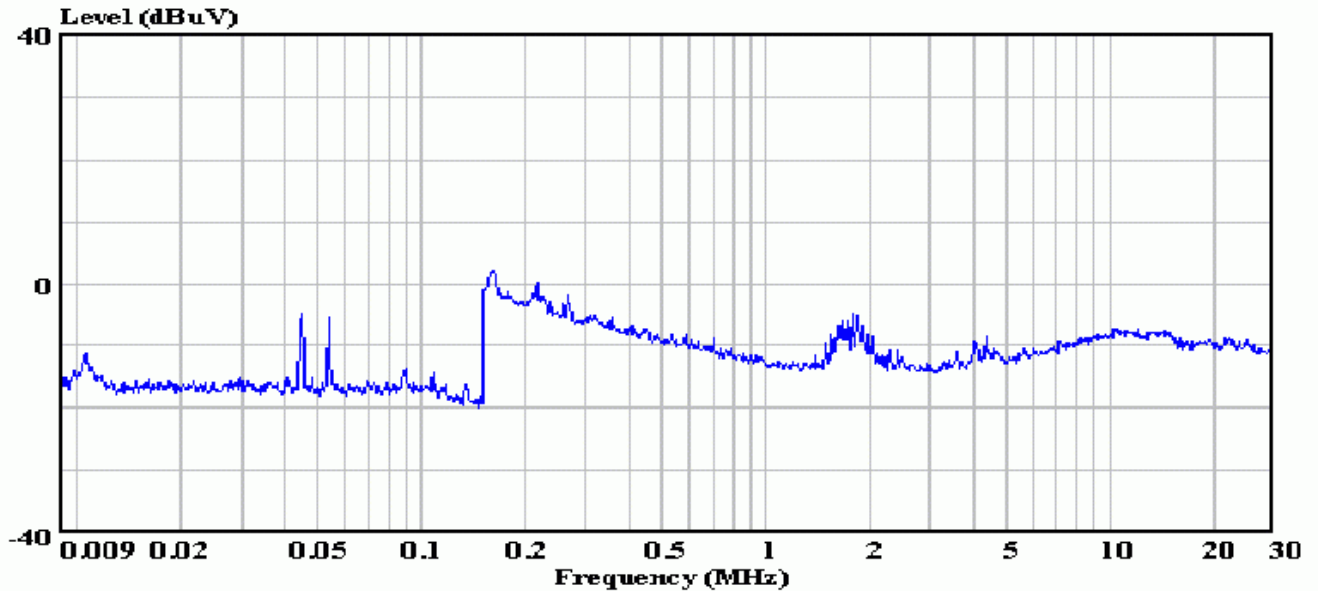


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Data#: 666 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2002-03-19 Time: 19:57:22



Site : audix-aci Conducted Emission
Condition :
Project No. : AOE-000175
Applicant : Fujian Joinluck Electronic Enterprise
: Co.,Ltd
EUT : E.S.L
M/N : JLS Mini 18W
S/N : E031903
Power Supply : 120V/60Hz
Ambient : 21.8'C 53%
Test Line : B
Test Mode : ON
Test Engineer:

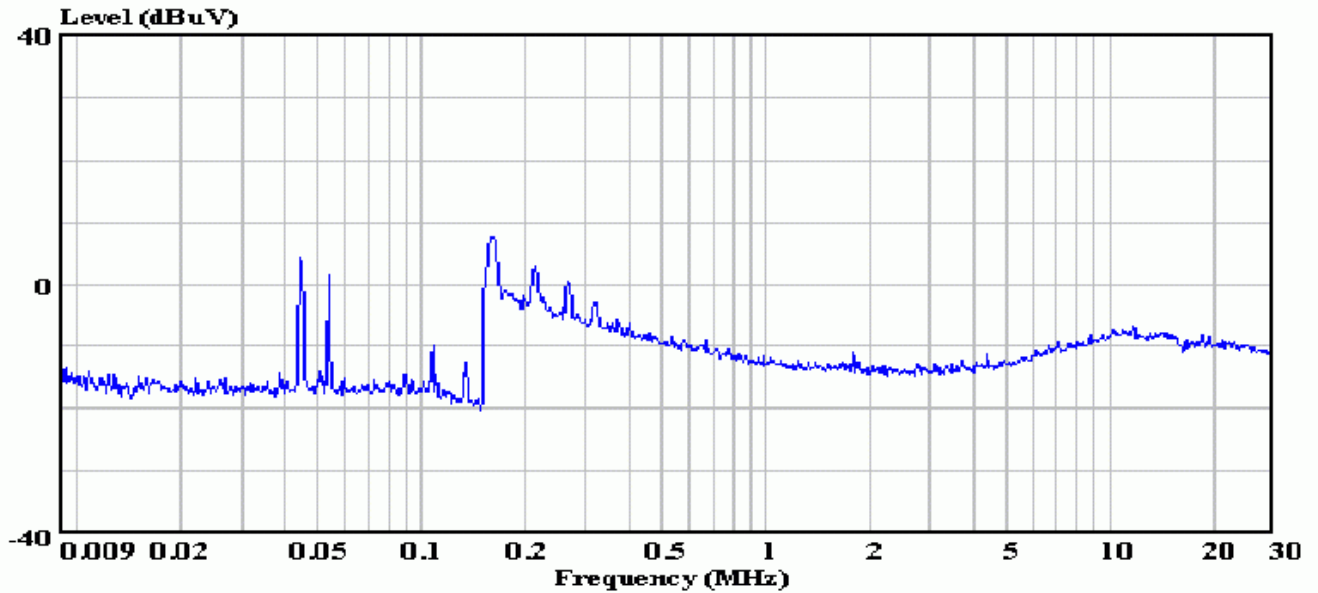


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Data#: 669 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2002-03-19 Time: 19:59:36



Site : audix-aci Conducted Emission
Condition :
Project No. : AOE-000175
Applicant : Fujian Joinluck Electronic Enterprise
: Co.,Ltd
EUT : E.S.L
M/N : JLS Mini 18W
S/N : E031903
Power Supply : 120V/60Hz
Ambient : 21.8'C 53%
Test Line : C
Test Mode : ON
Test Engineer: