

APPLICATION FOR CERTIFICATION

On Behalf of

HARVEST WAY LTD

FM Transmitter

Model Number: FT-19

Prepared for : HARVEST WAY LTD

UNITS A, 8/F., SPECTRUM TOWER, 53 HUNG TO  
ROAD, KWUN TONG, KOWLOON, HONG KONG

Prepared By : Audix Technology (Shenzhen) Co., Ltd.

No. 6, Ke Feng Rd., 52 Block,  
Shenzhen Science & Industrial Park,  
Nantou, Shenzhen, Guangdong, China

Tel: (0755) 26639496

Report Number : ACS-F07168

Date of Test : Apr.01-30, 2007

Date of Report : May.10, 2007

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## TEST REPORT DECLARATION

Applicant : HARVEST WAY LTD

Manufacturer : HONEY WAY MFY

EUT Description : FM Transmitter

(A) MODEL NO. : FT-19

(B) SERIAL NO. : N/A

(C) POWER SUPPLY : Battery 4.5V

Test Procedure Used:

FCC Rules and Regulations Part 15 Subpart C 2006

The device described above is tested by Audix Technology (Shenzhen) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits for radiated and conducted emissions.

The test results are contained in this test report and Audix Technology (Shenzhen) Co., Ltd. is assumed full responsibility for the accuracy and completeness of tests. Also, this report shows that EUT is technically compliant with FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shenzhen) Co., Ltd.

This report must not be used by the applicant to claim product endorsement by NVLAP or any agency of the U.S. Government.

Date of Test : Apr.01-30, 2007

Prepared by :

YoYo Wang

YoYo Wang / Assistant

Reviewer :

	 Leeman Hu / Senior Engineer, Ltd. EMC 部門報告專用章 Stamp only for EMC Dept. Report Signature: 
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Approved &amp; Authorized Signer :

Ken Lu / Deputy Manager

Name of the Representative of the Responsible Party :

Signature :

## 1. SUMMARY OF STANDARDS AND RESULTS

### 1.1.Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION			
Description of Test Item	Standard	Limits	Results
Conducted Emission Test	FCC Part 15: 15.207 ANSI C63.4: 2003	Part C Limit	N/A
Radiated Emission Test	FCC Part 15: 15.239 ANSI C63.4: 2003	Part C Limit	PASS
Bandwidth Test	FCC Part 15: 15.239	Part C Limit	PASS
N/A is an abbreviation for Not Applicable.			

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

Description : FM Transmitter

Model Number : FT-19

Working Frequency : 88.1MHz to 107.9MHz manually adjusted with 0.1MHz separation by press up/down buttons.

Applicant : HARVEST WAY LTD  
UNITS A, 8/F., SPECTRUM TOWER, 53 HUNG TO  
ROAD, KWUN TONG, KOWLOON, HONG KONG

Manufacturer : HONEY WAY MFY  
ZHU AO IND. ESTATE, GU SHU VILLAGE, XI SIANG,  
BAO AN, SHENZHEN, CHINA

Date of Test : Apr.01~30, 2007

Note: We selected 88.1MHz, 98.1MHz and 107.9MHz for all test.

### 2.2. Tested Supporting System Details

#### 2.2.1. MP3

M/N : E2

S/N : N/A

Manufacturer : Meizu

### 2.3. Test Facility

#### Site Description

- 3m Anechoic Chamber : Jun. 13, 2006 File on Federal Communication Commission  
Registration Number: 90454
- 3m & 10m Anechoic Chamber : Jan.31, 2007 File on Federal Communication Commission  
Registration Number: 794232
- EMC Lab. : Accredited by DATech, German  
Registration Number: DAT-P-091/99-01  
Feb. 02, 2006
- Accredited by NVLAP, USA  
NVLAP Code: 200372-0  
Apr. 01, 2006

### 2.4. Test Uncertainty

No.	Item	Uncertainty	Remark
1.	Uncertainty for Conducted Emission Test	1.22dB	
2.	Uncertainty for Radiated Emission Test	3.14dB	3m Chamber
3.	Uncertainty for Radiated Emission Test	3.18dB	10m Chamber
4.	Uncertainty for Power Clamp Test	1.38dB	

### **3. POWER LINE CONDUCTED EMISSION TEST**

According to Paragraph (f) of FCC Part 15C , Tests to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

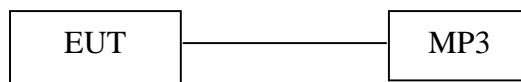
## 4. RADIATED EMISSION TEST

### 4.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Spectrum	HP	85422E	3625A00181	May 15, 06	1 Year
2.	Test Receiver	Rohde & Schwarz	ESVS20	830350/005	May 15, 06	1 Year
3.	Amplifier	HP	8447D	2944A07794	Mar.12, 07	1/2 Year
4.	Bilog Antenna	Schaffner	CBL6111C	2598	Feb.22, 07	1 Year
5.	RF Cable	MIYAZAKI	5D-2W	3# Chamber No.1	Jan. 18, 07	1/2 Year
6.	RF Cable	MIYAZAKI	5D-2W	3# Chamber No.2	Jan. 18,07	1/2 Year
7.	RF Cable	FUJIKURAw	RG-55/U	3# Chamber No.3	Jan. 18,07	1/2 Year
8.	RF Cable	FUJIKURA	RG-55/U	3# Chamber No.4	Jan. 18,07	1/2 Year
9.	Coaxial Switch	Anritsu	MP59B	M73989	Jan. 18,07	1/2 Year

### 4.2. Block Diagram of Test Setup

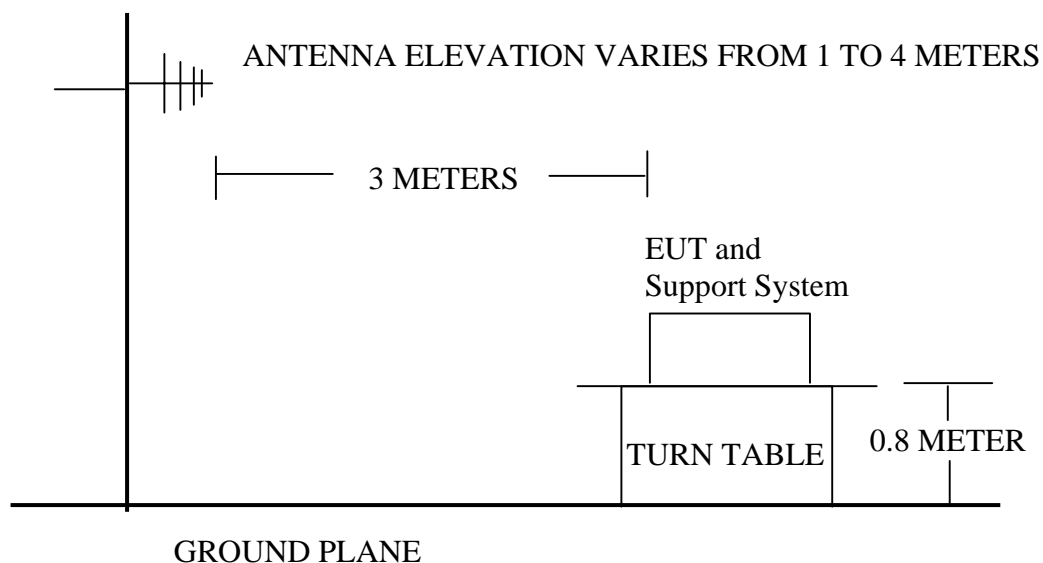
#### 4.2.1. Block Diagram of connection between EUT and simulators



*(EUT: FM Transmitter)*

#### 4.2.2. Anechoic Chamber Setup Diagram

ANTENNA TOWER





### 4.3. Radiated Emission Limit 30~1000MHz

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 108	3	250	48.0 (Average) 68.0 (Peak)
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0

- Remark :
- (1) Emission level  $\text{dB}\mu\text{V} = 20 \log \text{Emission level } \mu\text{V/m}$
  - (2) The smaller limit shall apply at the cross point between two frequency bands.
  - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

### 4.4. EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 4.4.1. FM Transmitter (EUT)

Model Number : FT-19  
 Serial Number : N/A  
 Manufacturer : HONEY WAY MFY

4.4.2. Support Equipment : As Tested Supporting System Detail, in Section 2.2.

### 4.5. Operating Condition of EUT

4.5.1. Setup the EUT as shown in Section 4.2..

4.5.2. MP3 Playing 1kHz Audio Signal.

4.5.3. Let the EUT work in test modes (TX Mode) and test it.

### 4.6. Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2003 on radiated emission Test.

This test was performed with EUT in X, Y, Z position (see test photo), and the worse case was found when EUT in X and Y position.

The bandwidth of the EMI test receiver (R&S ESVS20) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The frequency range from 30MHz to 1000MHz are checked.

The test modes (TX Mode) is tested in Anechoic Chamber and all the scanning waveforms are reported on Section 4.7.

# 4.7.Radiated Emission Test Results

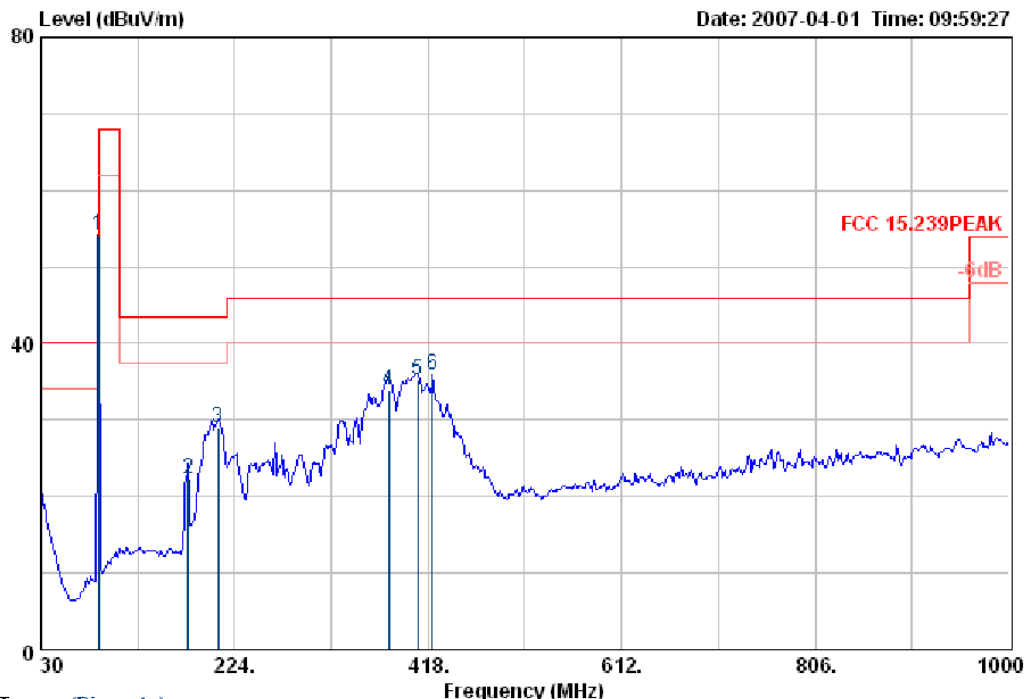
PASS.



No.6,Ke Feng Road,Block 52,  
Shenzhen Science&Industry Park  
tel:+86-755-26639495  
Fax:+86-755-26632877  
Postcode:518057

Data: 30

File: D:\2007 Report Data\HARVEST WAY\ACS70292.EMI (53)



Trace: (Discrete)

Site no.	: Audix 3# Chamber	Data no.	: 30
Dis. / Ant.	: 3m 2598	Ant. pol.	: HORIZONTAL
Limit	: FCC 15.239PEAK		
Env. / Ins.	: 25°C/55% ESVS20	Engineer	: Jamy
EUT	: FM Transmitter	M/N:FT-19	
Power Rating	: Battery 4.5V		
Test Mode	: Tx Mode in 88.1MHz		
Memo	: X Position		

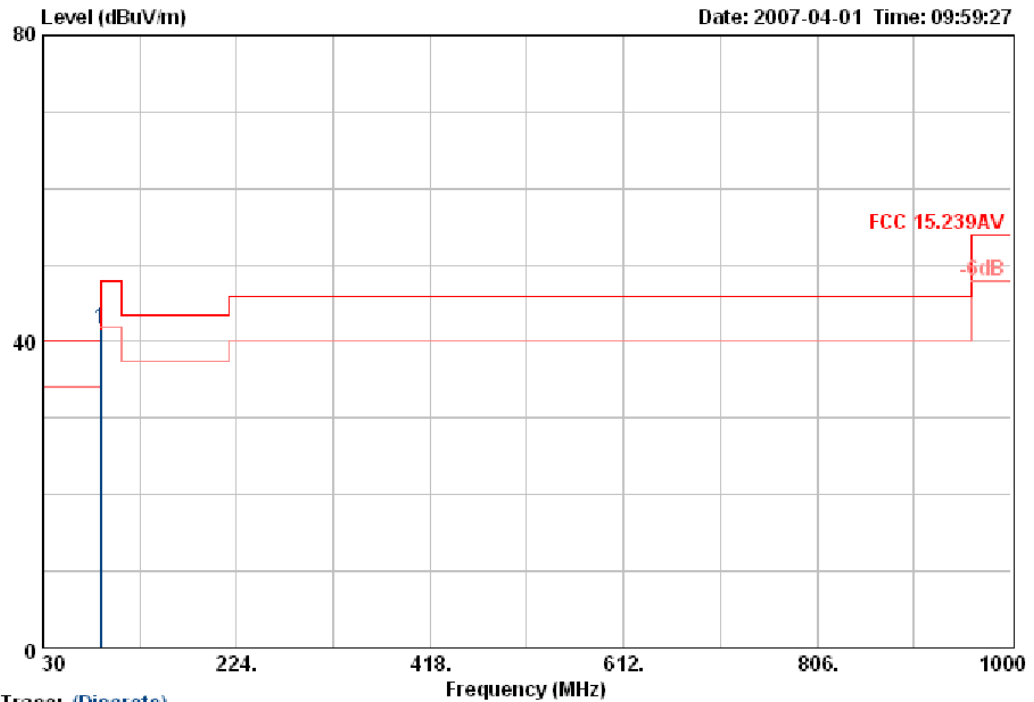
	Freq.	Ant.	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	88.12	8.76	1.02	44.39	54.17	68.00	13.83	Peak
2	177.44	9.45	1.27	11.54	22.26	43.50	21.24	QP
3	207.51	10.35	1.37	17.27	28.99	43.50	14.51	QP
4	378.23	15.82	1.78	16.30	33.90	46.00	12.10	QP
5	407.33	16.82	1.86	16.52	35.20	46.00	10.80	QP
6	421.88	17.26	1.81	16.78	35.85	46.00	10.15	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



No.6, Ke Feng Road, Block 52,  
Shenzhen Science&Industry Park  
tel: +86-755-26639495  
Fax: +86-755-26632877  
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Trace: (Discrete)

Site no.	: Audix 3# Chamber	Data no.	: 31
Dis. / Ant.	: 3m 2598	Ant. pol.	: HORIZONTAL
Limit	: FCC 15.239AV		
Env. / Ins.	: 25°C/55% ESVS20	Engineer	: Jamy
EUT	: FM Transmitter	M/N:FT-19	
Power Rating	: Battery 4.5V		
Test Mode	: Tx Mode in 88.1MHz		
Memo	: X Position		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission			Remark
					Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	88.12	8.76	1.02	31.90	41.68	48.00	6.32	Average

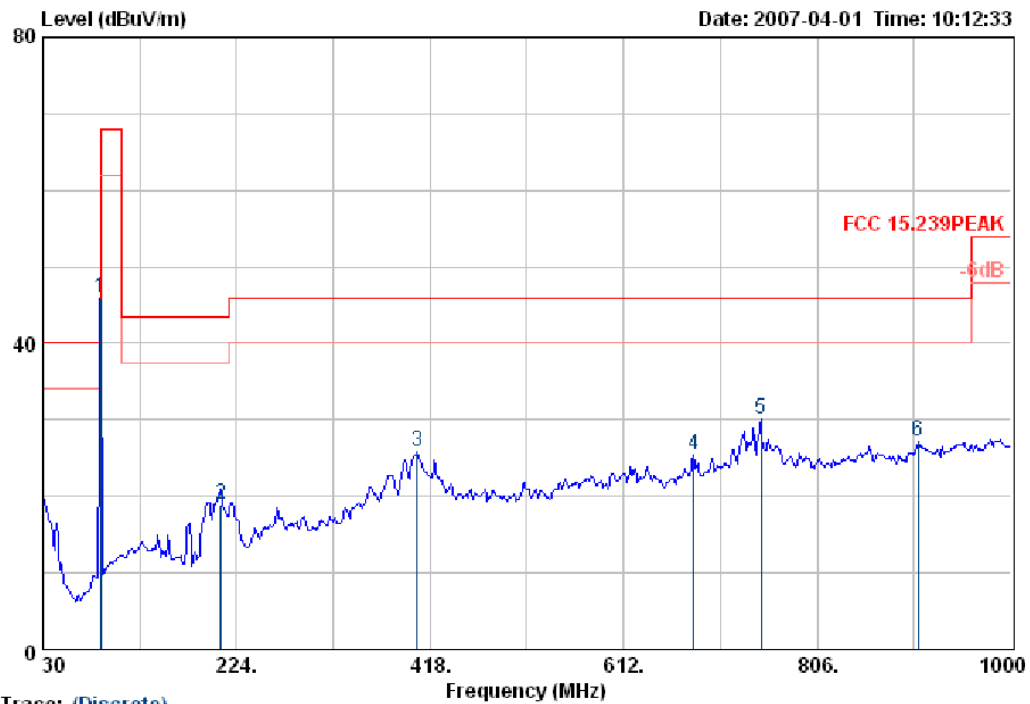
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



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Shenzhen Science & Industry Park  
tel: +86-755-26639495  
Fax: +86-755-26632877  
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Data: 32

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Trace: (Discrete)

Site no.	: Audix 3# Chamber	Data no.	: 32
Dis. / Ant.	: 3m 2598	Ant. pol.	: VERTICAL
Limit	: FCC 15.239PEAK		
Env. / Ins.	: 25°C/55% ESVS20	Engineer	: Jamy
EUT	: FM Transmitter	M/N:FT-19	
Power Rating	: Battery 4.5V		
Test Mode	: Tx Mode in 88.1MHz		
Memo	: Y Position		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	88.12	8.76	1.02	36.23	46.01	68.00	21.99	Peak
2	208.48	10.37	1.39	7.21	18.97	43.50	24.53	QP
3	405.39	16.70	1.86	7.20	25.76	46.00	20.24	QP
4	681.84	20.60	2.43	2.31	25.34	46.00	20.66	QP
5	749.74	21.90	2.59	5.50	29.99	46.00	16.01	QP
6	906.88	23.08	2.81	1.36	27.25	46.00	18.75	QP

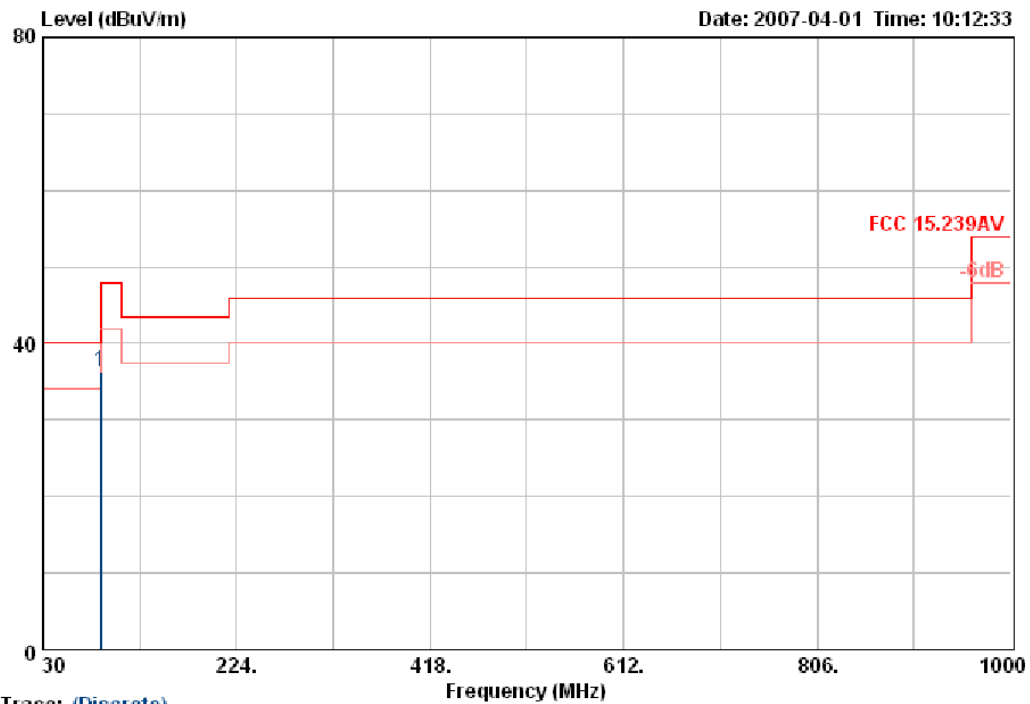
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



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Fax: +86-755-26632877  
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Data: 33

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Trace: (Discrete)

Site no.	: Audix 3# Chamber	Data no.	: 33
Dis. / Ant.	: 3m 2598	Ant. pol.	: VERTICAL
Limit	: FCC 15.239AV		
Env. / Ins.	: 25°C/55% ESVS20	Engineer	: Jamy
EUT	: FM Transmitter	M/N:FT-19	
Power Rating	: Battery 4.5V		
Test Mode	: Tx Mode in 88.1MHz		
Memo	: Y Position		

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission		Margin	Remark
				Level (dBuV/m)	Limits (dBuV/m)		
1	88.12	8.76	1.02	26.50	36.28	48.00	11.72 Average

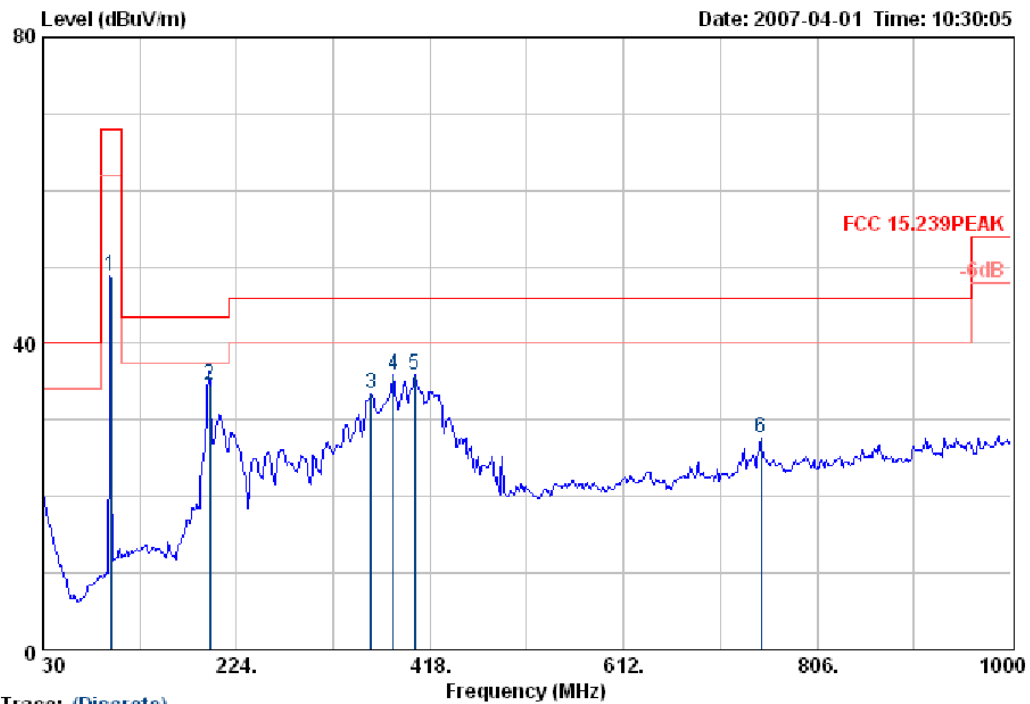
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
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Shenzhen Science&Industry Park  
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Data: 36

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Trace: (Discrete)

Site no.	: Audix 3# Chamber	Data no.	: 36
Dis. / Ant.	: 3m 2598	Ant. pol.	: HORIZONTAL
Limit	: FCC 15.239PEAK		
Env. / Ins.	: 25°C/55% ESVS20	Engineer	: Jamy
EUT	: FM Transmitter	M/N:FT-19	
Power Rating	: Battery 4.5V		
Test Mode	: Tx Mode in 98.1MHz		
Memo	: X Position		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission		Margin (dB)	Remark
					Level (dBuV/m)	Limits (dBuV/m)		
1	98.11	10.12	1.08	37.67	48.87	68.00	19.13	Peak
2	196.84	9.92	1.34	23.37	34.63	43.50	8.87	QP
3	358.83	15.40	1.76	16.18	33.34	46.00	12.66	QP
4	381.14	15.92	1.80	18.09	35.81	46.00	10.19	QP
5	402.48	16.60	1.86	17.43	35.89	46.00	10.11	QP
6	749.74	21.90	2.59	3.08	27.57	46.00	18.43	QP

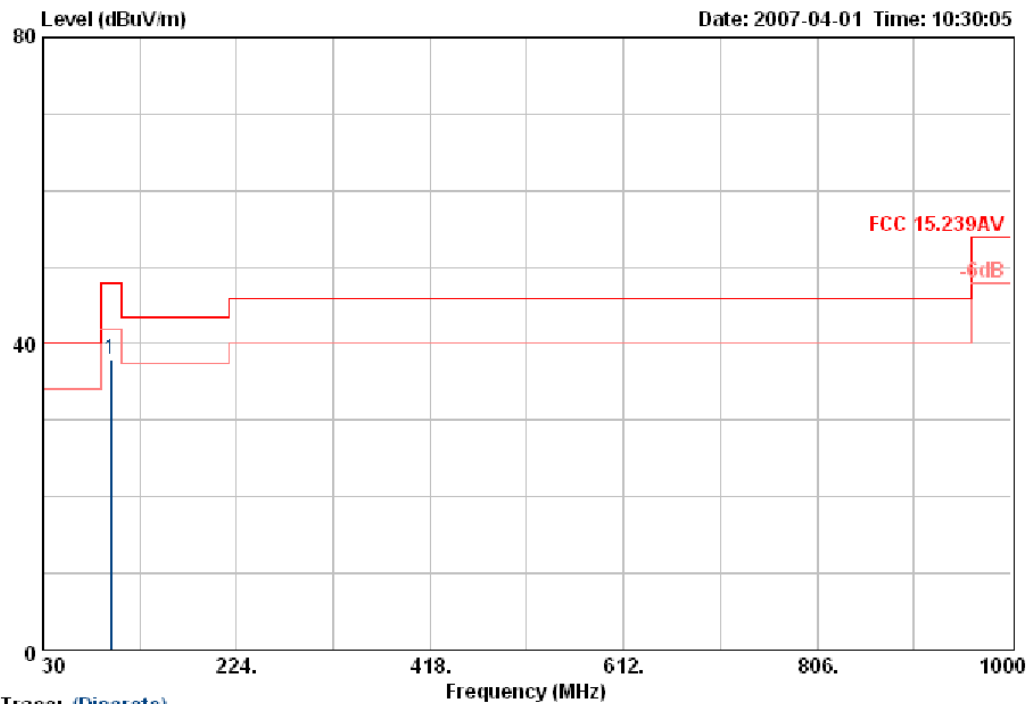
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



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Shenzhen Science&Industry Park  
tel:+86-755-26639495  
Fax:+86-755-26632877  
Postcode:518057

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Trace: (Discrete)

Site no.	: Audix 3# Chamber	Data no.	: 37
Dis. / Ant.	: 3m 2598	Ant. pol.	: HORIZONTAL
Limit	: FCC 15.239AV		
Env. / Ins.	: 25°C/55% ESVS20	Engineer	: Jamy
EUT	: FM Transmitter	M/N:FT-19	
Power Rating	: Battery 4.5V		
Test Mode	: Tx Mode in 98.1MHz		
Memo	: X Position		

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission		Margin	Remark
				Level (dBuV/m)	Limits (dBuV/m)		
1	98.11	10.12	1.08	26.67	37.87	48.00	10.13 Average

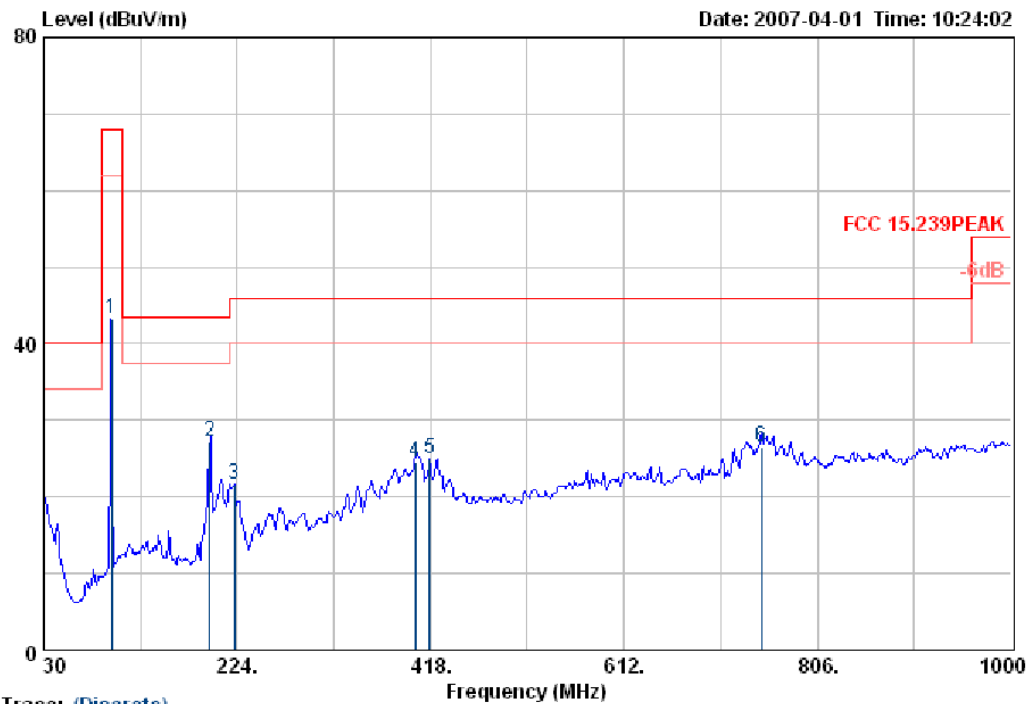
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



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Shenzhen Science&Industry Park  
tel:+86-755-26639495  
Fax:+86-755-26632877  
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Data: 34

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Trace: (Discrete)

Site no.	: Audix 3# Chamber	Data no.	: 34
Dis. / Ant.	: 3m 2598	Ant. pol.	: VERTICAL
Limit	: FCC 15.239PEAK		
Env. / Ins.	: 25°C/55% ESVS20	Engineer	: Jamy
EUT	: FM Transmitter	M/N:FT-19	
Power Rating	: Battery 4.5V		
Test Mode	: Tx Mode in 98.1MHz		
Memo	: Y Position		

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission		Margin (dB)	Remark
				Level (dBuV/m)	Limits (dBuV/m)		
1	98.11	10.12	1.08	32.00	43.20	68.00	24.80 Peak
2	196.22	9.86	1.35	15.91	27.12	43.50	16.38 QP
3	221.09	10.38	1.42	9.84	21.64	46.00	24.36 QP
4	402.48	16.60	1.86	6.13	24.59	46.00	21.41 QP
5	417.03	17.24	1.83	5.88	24.95	46.00	21.05 QP
6	749.74	21.90	2.59	2.07	26.56	46.00	19.44 QP

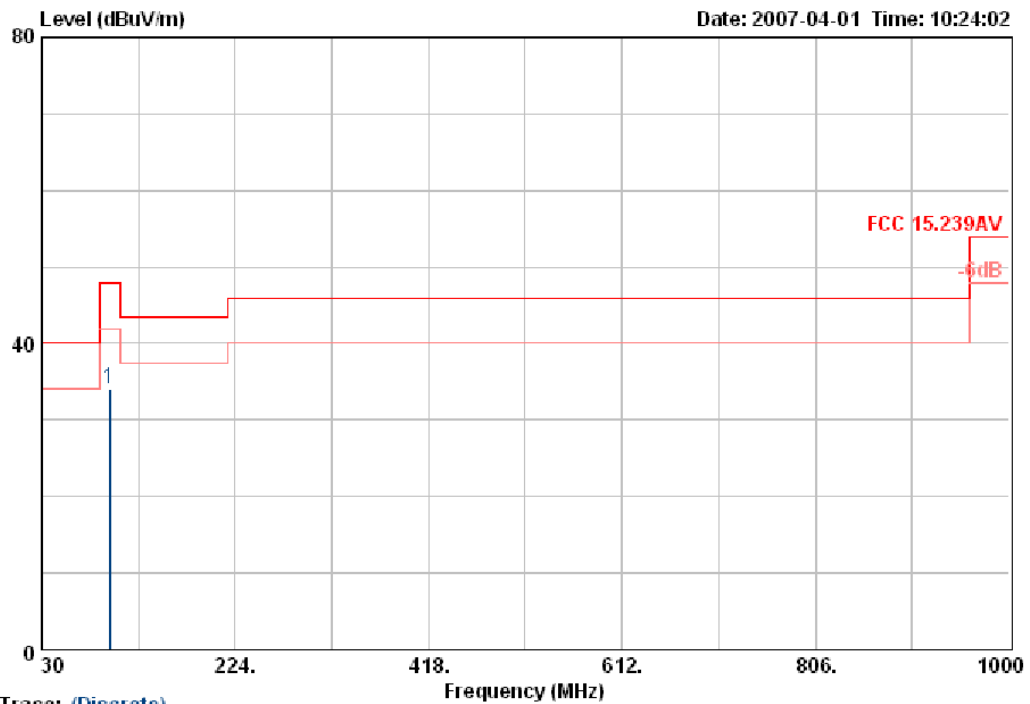
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.





No.6, Ke Feng Road, Block 52,  
Shenzhen Science&Industry Park  
tel: +86-755-26639495  
Fax: +86-755-26632877  
Postcode: 518057

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Trace: (Discrete)

Site no.	: Audix 3# Chamber	Data no.	: 35
Dis. / Ant.	: 3m 2598	Ant. pol.	: VERTICAL
Limit	: FCC 15.239AV		
Env. / Ins.	: 25°C/55% ESVS20	Engineer	: Jamy
EUT	: FM Transmitter	M/N:FT-19	
Power Rating	: Battery 4.5V		
Test Mode	: Tx Mode in 98.1MHz		
Memo	: Y Position		

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission		Margin (dB)	Remark
				Level (dBuV/m)	Limits (dBuV/m)		
1	98.11	10.12	1.08	23.00	34.20	48.00	13.80 Average

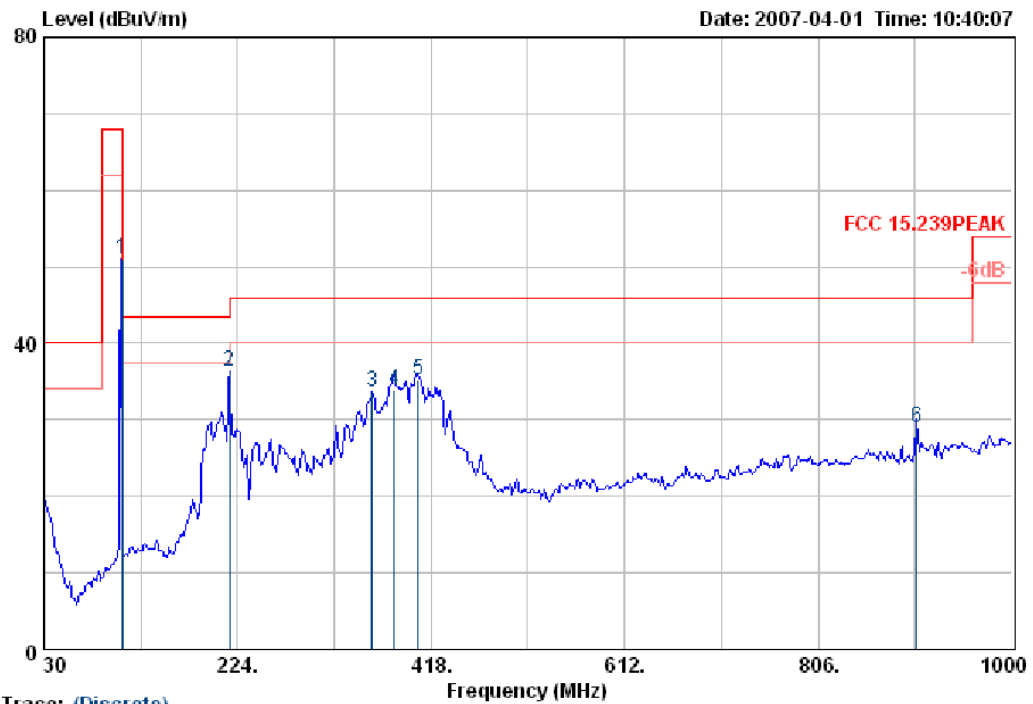
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



No.6, Ke Feng Road, Block 52,  
Shenzhen Science&Industry Park  
tel:+86-755-26639495  
Fax:+86-755-26632877  
Postcode:518057

Data: 38

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Trace: (Discrete)

Site no.	: Audix 3# Chamber	Data no.	: 38
Dis. / Ant.	: 3m 2598	Ant. pol.	: HORIZONTAL
Limit	: FCC 15.239PEAK		
Env. / Ins.	: 25°C/55% ESVS20	Engineer	: Jamy
EUT	: FM Transmitter	M/N:	FT-19
Power Rating	: Battery 4.5V		
Test Mode	: Tx Mode in 107.9MHz		
Memo	: X Position		

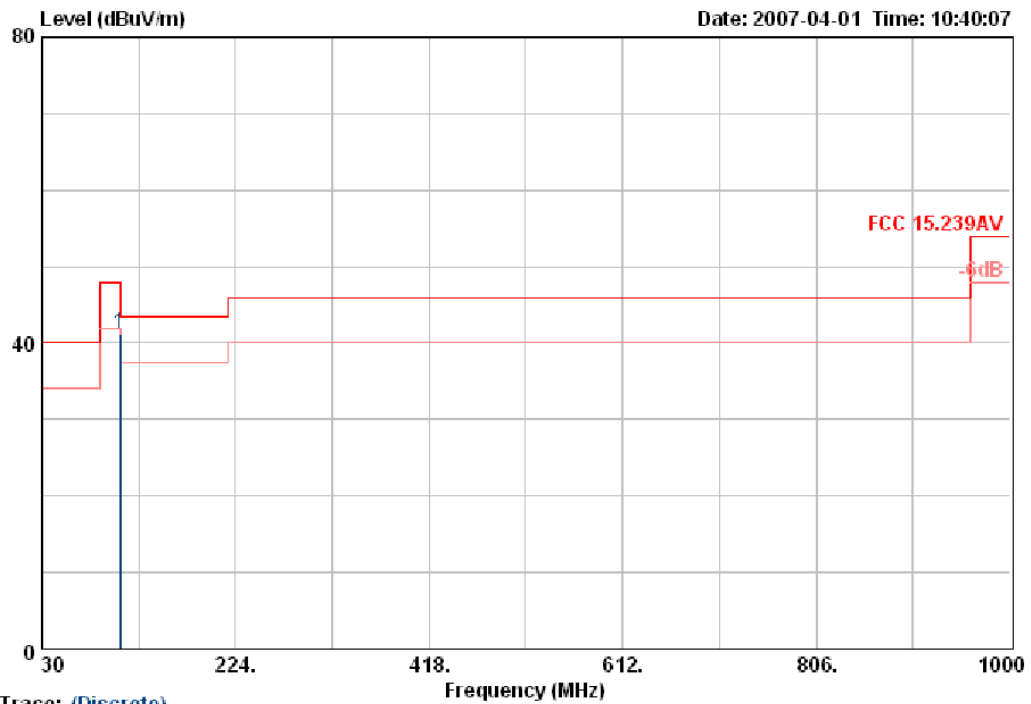
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission		Margin (dB)	Remark
					Level (dBuV/m)	Limits (dBuV/m)		
1	107.89	11.22	1.07	38.85	51.14	68.00	16.86	Peak
2	215.80	10.06	1.39	24.81	36.26	43.50	7.24	QP
3	358.83	15.40	1.76	16.57	33.73	46.00	12.27	QP
4	381.14	15.92	1.80	16.19	33.91	46.00	12.09	QP
5	405.39	16.70	1.86	16.62	35.18	46.00	10.82	QP
6	904.94	23.00	2.65	3.38	29.03	46.00	16.97	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



No.6, Ke Feng Road,Block 52,  
Shenzhen Science&Industry Park  
tel:+86-755-26639495  
Fax:+86-755-26632877  
Postcode:518057

Data: 39 File: D:\2007 Report Data\H\HARVEST WAY\ACS7Q292.EMI (53)



Trace: (Discrete)

Site no.	: Audix 3# Chamber	Data no.	: 39
Dis. / Ant.	: 3m 2598	Ant. pol.	: HORIZONTAL
Limit	: FCC 15.239AV		
Env. / Ins.	: 25°C/55% ESWS20	Engineer	: Jamy
EUT	: FM Transmitter	M/N:FT-19	
Power Rating	: Battery 4.5V		
Test Mode	: Tx Mode in 107.9MHz		
Memo	: X Position		

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission		Margin (dB)	Remark
				Level (dBuV/m)	Limits (dBuV/m)		
1	107.87	11.22	1.07	28.85	41.14	48.00	6.86 Average

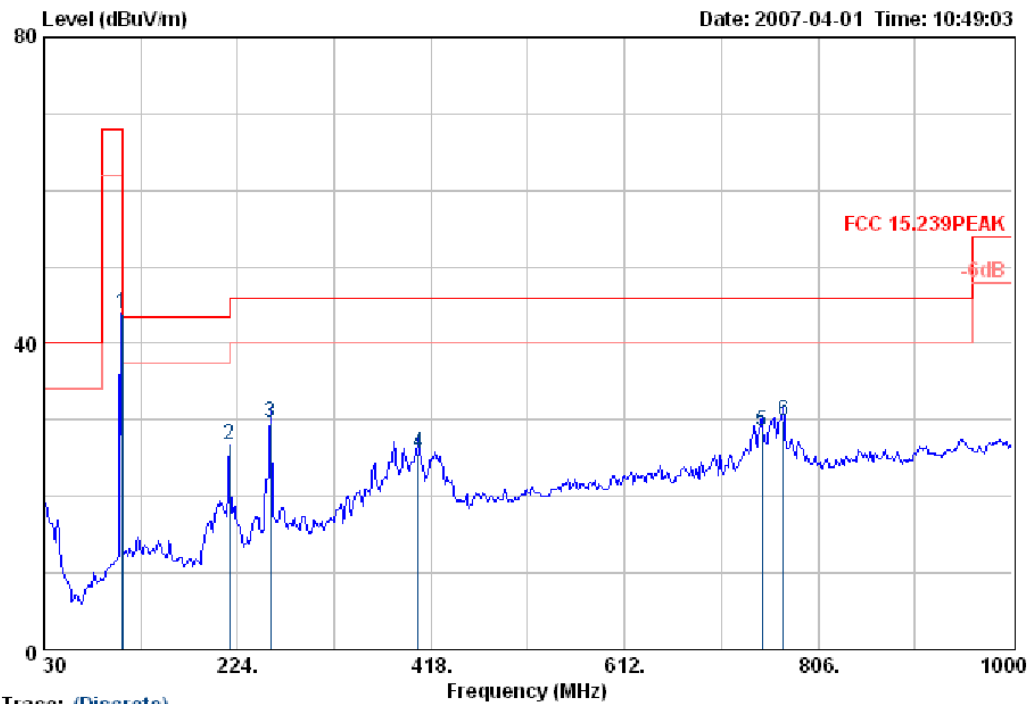
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 40

File: D:\2007 Report Data\H\HARVEST WAY\ACS7Q292.EMI (53)



Trace: (Discrete)

Site no.	: Audix 3# Chamber	Data no.	: 40
Dis. / Ant.	: 3m 2598	Ant. pol.	: VERTICAL
Limit	: FCC 15.239PEAK		
Env. / Ins.	: 25°C/55% ESVS20	Engineer	: Jamy
EUT	: FM Transmitter	M/N:FT-19	
Power Rating	: Battery 4.5V		
Test Mode	: Tx Mode in 107.9MHz		
Memo	: Y Position		

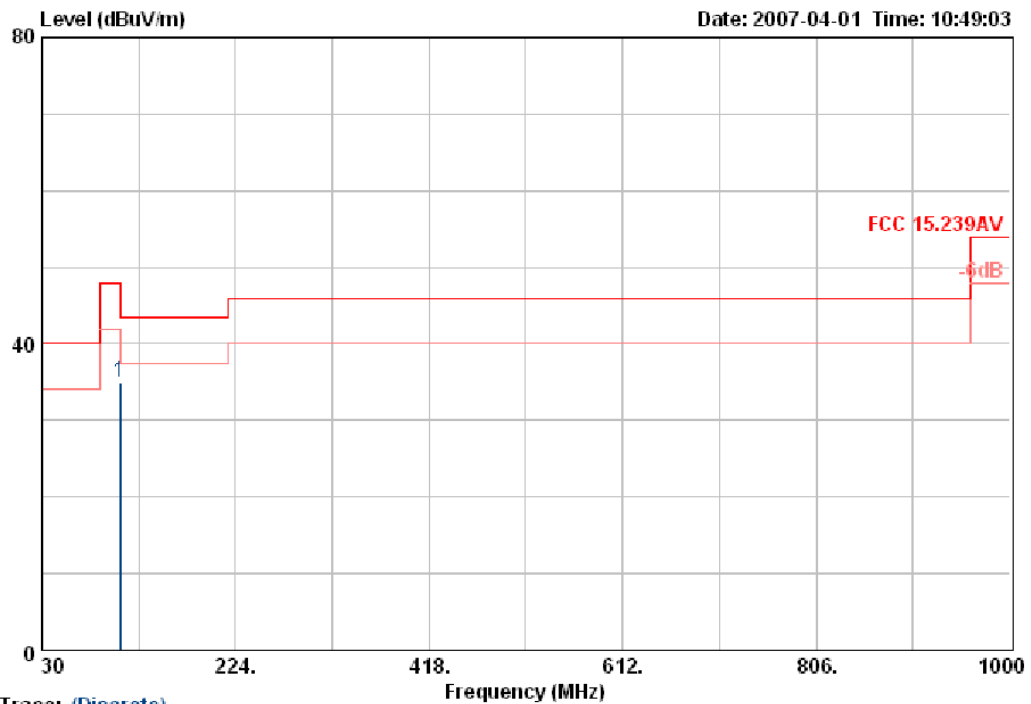
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission		Margin (dB)	Remark
				Level (dBuV/m)	Limits (dBuV/m)		
1	107.86	11.22	1.07	31.68	43.97	68.00	24.03 Peak
2	216.24	10.06	1.39	15.34	26.79	46.00	19.21 QP
3	256.98	13.48	1.57	14.55	29.60	46.00	16.40 QP
4	405.39	16.70	1.86	7.01	25.57	46.00	20.43 QP
5	749.74	21.90	2.59	4.08	28.57	46.00	17.43 QP
6	771.08	21.82	2.26	5.87	29.95	46.00	16.05 QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 41 File: D:\2007 Report Data\H\HARVEST WAY\ACS7Q292.EMI (53)



Trace: (Discrete)

Site no.	: Audix 3# Chamber	Data no.	: 41
Dis. / Ant.	: 3m 2598	Ant. pol.	: VERTICAL
Limit	: FCC 15.239AV		
Env. / Ins.	: 25°C/55% ESVS20	Engineer	: Jamy
EUT	: FM Transmitter	M/N:	FT-19
Power Rating	: Battery 4.5V		
Test Mode	: Tx Mode in 107.9MHz		
Memo	: Y Position		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission			Remark
					Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	107.87	11.22	1.07	22.68	34.97	68.00	33.03	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.

## 5. BANDWIDTH TEST

### 5.1. Test Equipment

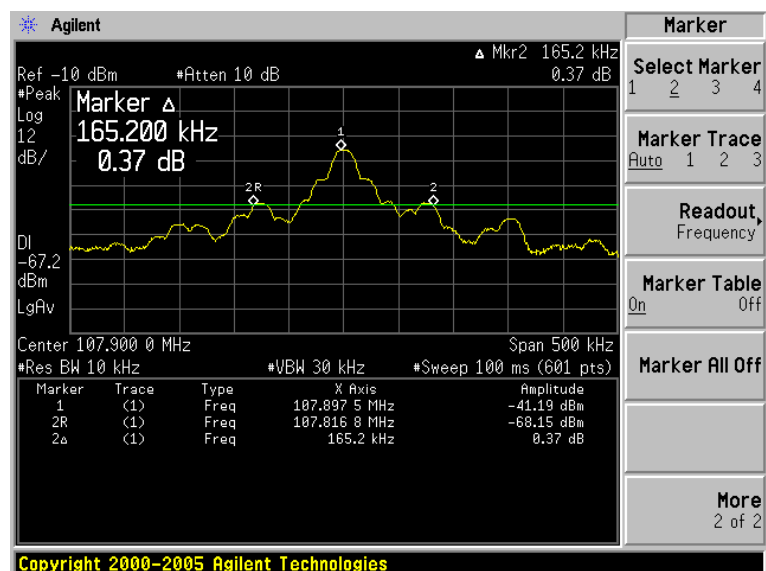
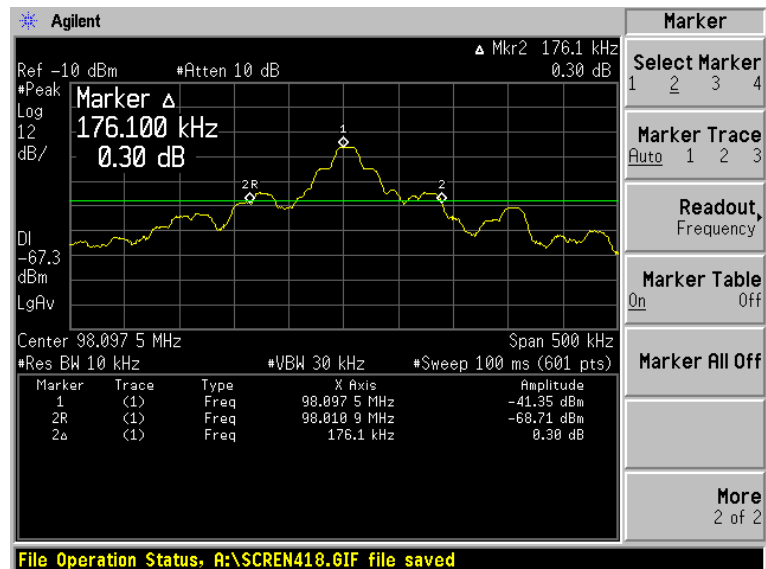
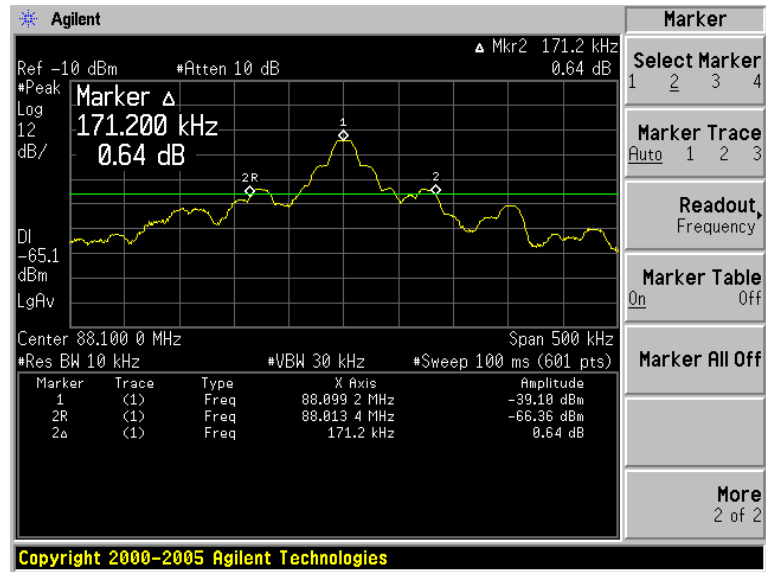
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4407B	MY41440292	May 15, 06	1 Year
2.	Amp	HP	8449B	3008A00863	May 15, 06	1 Year
3.	Antenna	EMCO	3115	9607-4877	Jan. 23, 07	1.5 Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May 15, 06	1 Year

### 5.2. Test Information

EUT:	FM Transmitter
M/N:	FT-19
Test Date:	Apr.30, 2007
Ambient Temperature:	24°C
Relative Humidity:	54%
Test standard:	FCC PART 15C: 15.239
Test mode:	Transmitting
Test signal:	Maximum Jazz music audio input from MEI ZU E2 mp3 player.
Test Frequency:	88.1MHz 98.1MHz 107.9MHz
Test By:	Jamy

### 5.3. Test Results

Test Frequency	Bandwidth (kHz)	Limit (kHz)	Conclusion
88.1MHz	171.2	200	PASS
98.1MHz	176.1	200	PASS
107.9MHz	165.2	200	PASS



## **6. DEVIATION TO TEST SPECIFICATIONS**

[ NONE]