

# TEST REPORT



Certification # 1367-01

Laboratory ID  
PRODUCT SAFETY ENGINEERING, INC.  
12955 Bellamy Brothers Boulevard  
Dade City, Florida 33525 USA  
PH (352) 588-2209 FX (352) 588-2544

Submitter ID  
XM Radio  
7777 Glades Road  
Boca Raton, FL 33434

Report Issue Date: 10/18/2004  
Sample S/N: None  
Sample Receipt Date: 10/12/2004

Test Report Number: 04F461B  
Model Designation: MyFi  
Product Description: Satellite Radio  
Receiver

Sample Test Date: see data sheets

Marketing Approval \_\_\_\_\_

Description of non-standard test method or test practice: *None*

Estimated Measurement Uncertainty: *Not Applicable*

Special limitations of use: *None*

Traceability: *reference standards of measurement have been calibrated by a competent body using standards traceable to the NIST.*

According to testing performed at Product Safety Engineering, Inc., the above-mentioned unit is in compliance with the electromagnetic compatibility requirements defined in regulations indicated on page (3) of the test report. The test results contained herein relate only to the model(s) identified above. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics.

As the responsible EMC Project Engineer, I hereby declare that the equipment tested as specified above conforms to the requirements indicated on page (3) of the test report.

Signature David Foerstner Name David Foerstner

Title Engineering Group Leader Date 18 OCT 04

Reviewed by: John E. Hahn Date 18 OCT 04  
Approved Signatory

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Test Report Number 04F461B

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525  
Tel (352) 588-2209 Fax (352) 588-2544

## DIRECTORY - EMISSIONS

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## EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to following regulations:

- EN 61000-6-3:2001
- EN 61000-6-4:2001
  
- EN 55011 : 1998 / A1:1999
- Group 1
- Group 2
- Class A
- Class B
  
- EN 55013 : 1990 / A12:1994 / A13:1996 / A14:1999
  
- EN 55014 -1: 2001
- Household appliances and similar
- Portable tools
- Semiconductor devices
  
- EN 55022 : 1998
- Class A
- Class B
  
- AS/NZS 3548:1995
- Class A
- Class B
  
- ICES-003
- Class A
- Class B
  
- CNS 13438
- Class A
- Class B
  
- VCCI : 1999
- Class A
- Class B
  
- FCC Part 15
- Class A
- Class B
  
- Certification
- Verification
- Declaration of Conformity
  
  
- FCC Part 18

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**Environmental conditions during testing:**

	LAB	OATS
Temperature: *	_____	: _____
Relative Humidity: **	_____	: _____

\* The ambient temperature during the testing was within the range of (50° - 104° F) unless indicted above.  
\*\* The humidity levels during the testing was within the range of (10% - 90%) relative humidity unless indicated above.

Power supply system : 110 Volts 60 Hz SINGLE phase  
Also internal 3.6 VDC battery at & external 12 VDC

**Sign Explanations:**

- not applicable
- applicable

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## Emissions Test Conditions: CONDUCTED EMISSIONS (Interference Voltage)

The *CONDUCTED EMISSIONS (INTERFERENCE VOLTAGE)* measurements were performed at the following test location:

- Test not applicable

- Darby Test Site (Open Area Test Site)
- Darby Laboratory

### Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
<input checked="" type="checkbox"/>	8028-50	Solar	50 $\Omega$ LISN	829012, 829022
<input type="checkbox"/>	3825/2	Solar	50 $\Omega$ LISN	924840
<input checked="" type="checkbox"/>	EMC-30	Electro-Metrics	EMI Receiver	191
<input type="checkbox"/>	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
<input type="checkbox"/>	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
<input type="checkbox"/>	85662A	Hewlett Packard	Analyzer Display	2403A07352
<input type="checkbox"/>	8028-50	Solar	50 $\Omega$ LISN	903725, 903726
<input type="checkbox"/>	FCC-TLISN-T4	Fisher Custom Com.	Telecom ISN	20072

## Emissions Test Conditions: RADIATED EMISSIONS (Magnetic Field)

The *RADIATED EMISSIONS (MAGNETIC FIELD)* measurements were performed at the following test location:

- Darby Test Site (Open Area Test Site)
- 
- 

### at a test distance of :

- 3 meters
- 30 meters

- Test not applicable

### Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
<input type="checkbox"/>	96005	Eaton	Log Periodic Antenna	1099
<input type="checkbox"/>	BIA-25	Electro-Metrics	Biconical Antenna	4283
<input type="checkbox"/>	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
<input type="checkbox"/>	85662A	Hewlett-Packard	Analyzer Display	2403A07352
<input type="checkbox"/>	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
<input type="checkbox"/>	ALR-30M	Electro-Metrics	Loop Antenna	824
<input type="checkbox"/>	8447D	Hewlett Packard	Preamplifier	2944A06832
<input type="checkbox"/>	EMC-30	Electro-Metrics	EMI Receiver	191
<input type="checkbox"/>	ALA-130/A	Antenna Research	Loop Antenna	106

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## Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *RADIATED EMISSIONS (ELECTRIC FIELD)* measurements, in the frequency range of 30 MHz-1000 MHz, were tested in a horizontal and vertical polarization at the following test location :

- Test not applicable

- - Darby Site (Open Area Test Site)
- Darby Lab
- 

at a test distance of :

- - 3 meters
- 10 meters
- 30 meters

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
■ -	LPA30	eElectro-Metrics	Log Periodic Antenna	2280
■ -	BIA-30	Electro-Metrics	Biconical Antenna	3852
■ -	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
■ -	85662A	Hewlett-Packard	Analyzer Display	2403A07352
■ -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
■ -	8447D	Hewlett-Packard	Preamplifier (26dB)	2944A06832
<input type="checkbox"/> -	EMC-30	Electro-Metrics	EMI Receiver	191
<input type="checkbox"/> -	8568B	Hewlett Packard	Spectrum Analyzer	2407A03213
<input type="checkbox"/> -	85650A	Hewlett Packard	Quasi-Peak Adapter	2043A00358
<input type="checkbox"/> -	85662A	Hewlett Packard	Analyzer Display	2340A05806
<input type="checkbox"/> -	96005	Eaton	Log Periodic	1099
<input type="checkbox"/> -	BIA 25	Electro-Metrics	Biconical Antenna	4283

## Emissions Test Conditions): INTERFERENCE POWER

The *INTERFERENCE POWER* measurements were performed by using the absorbing clamp on the mains and interface cables in the frequency range 30 MHz - 300 MHz at the following test location :

■ - Test not applicable

- Darby Lab
- 

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
<input type="checkbox"/> -	MDS-21	Rhode&Schwarz	Absorbing Clamp	8608447020
<input type="checkbox"/> -	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
<input type="checkbox"/> -	85662A	Hewlett-Packard	Analyzer Display	2403A07352
<input type="checkbox"/> -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
<input type="checkbox"/> -	8447D	Hewlett-Packard	Amplifier (26 dB)	2944A06832
<input type="checkbox"/> -	EMC-30	Electro-Metrics	EMI Receiver	191

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**The EQUIVALENT RADIATED EMISSIONS measurements in the frequency range      GHz -      GHz were performed in a horizontal and vertical polarization at the following test location :**

- - Darby Test Site (Open Area Test Site)
- -
- -
- -

**at a test distance of:**

- - 1 meters
- - 3 meters
- - 10 meters

- Test not applicable

**Test equipment used :**

Model Number	Manufacturer	Description	Serial Number
■ - 8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
■ - 85662A	Hewlett-Packard	Analyzer Display	2403A07352
■ - 85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
■ - 8449B	Hewlett-Packard	Preamplifier	3008A00320
■ - 3115	Electro-Mechanics	Double Ridge Guide Horn	3810

**The ANTENNA TERMINAL DISTURBANCE VOLTAGE in the frequency range 30 MHz - 1,000 MHz were performed.**

- - Darby Test Site (Open Area Test Site)
- - Laboratory
- -
- -

- Test not applicable

Model Number	Manufacturer	Description	Serial Number
□ - 2F9-3C4-3C5	Wavecom	UHF PAL TV Modulator	185879
□ - 2F1-3C4-3C5	Wavecom	VHF PAL TV Modulator	157728
□ - A-8000	IFR	Spectrum Analyzer	1306
□ - 8648B	Hewlett-Packard	Signal Generator	3623A01433
□ - 8648B	Hewlett-Packard	Signal Generator	3623A01477
□ - LMV-182A	Leader	RMS Milli-Voltmeter	8010091
□ - 3202	Krhon-Hite	Active filter	5899
□ - FMT115	Leaming	FM Modulator	NONE
□ - 371	UDT	Optical power meter	06657
□ - TSG95	Tektronix	PAL video / Audio generator	B028883
□ -			

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**Equipment Under Test (EUT) Test Operation Mode - Emission tests :**

The device under test was operated under the following conditions during emissions testing:

- Standby
- Test program (H - Pattern)
- Test program (color bar)
- Test program (customer specific)
- Practice operation
- Normal Operating Mode
- 

**Configuration of the device under test:**

- See System Under Test Information in Appendix B

**Rationale for EUT setup / configuration:**

ANSI C63.4

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## Emission Test Results:

### Conducted emissions 150 kHz - 30 MHz

The requirements are  - MET  - NOT MET  
Minimum limit margin 6.1 dB at 0.239 MHz  
Remarks:

### Radiated emissions (magnetic field) 10 kHz - 30 MHz

The requirements are  - MET  - NOT MET  
Minimum limit margin dB at MHz  
Remarks:

### Radiated emissions (electric field) 30 MHz - 1000 MHz

The requirements are  - MET  - NOT MET  
Minimum limit margin 0.3 dB at 107.5 MHz  
Remarks: Measured with the Home Docking configuration

### Interference Power at the mains and interface cables 30 MHz - 300 MHz

The requirements are  - MET  - NOT MET  
Minimum limit margin dB at MHz  
Remarks:

### Radiated emissions 1 GHz - 1.08 GHz

The requirements are  - MET  - NOT MET  
Minimum limit margin >20 dB at all GHz  
Remarks:

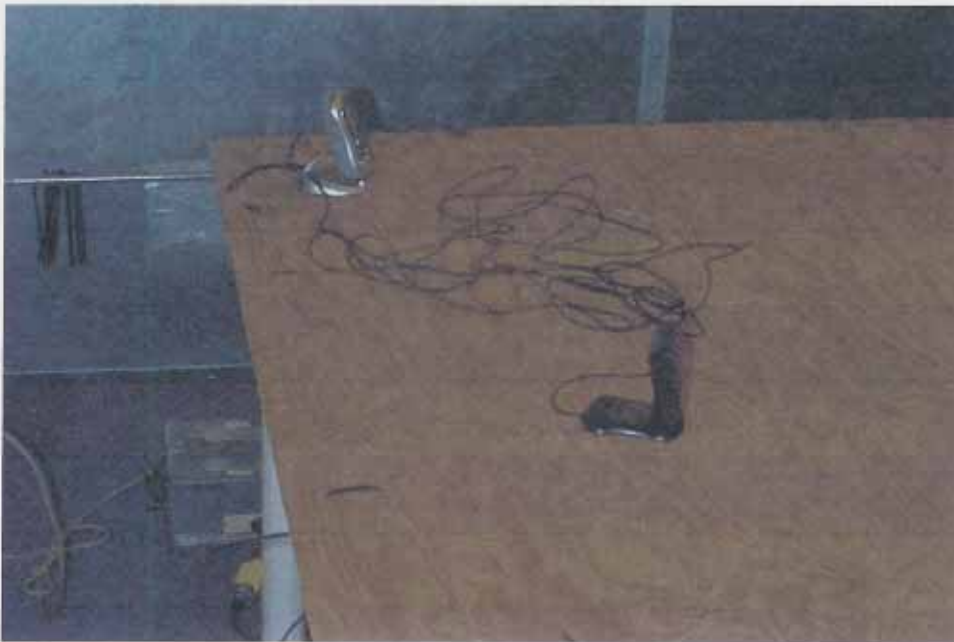
### Antenna Terminal Disturbance Voltage 30 MHz - 1,000 MHz

The requirements are  - MET  - NOT MET  
Minimum limit margin dB at MHz  
Remarks:

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Test-setup photo(s):  
Conducted emission 450/150 kHz - 30 MHz



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Test-setup photo(s):  
Radiated emission 30 MHz - 1000 MHz



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# **APPENDIX**

## **A**

# **Test Equipment Calibration Information & Test Data Sheets**

## TEST EQUIPMENT CALIBRATION INFORMATION

Manufacturer	Model	Description	Serial Number	Cal Due
Hewlett Packard	8566B	Spectrum Analyzer	2421A00526	08/12/05
Hewlett Packard	85662A	Display	2403A07352	08/12/05
Hewlett Packard	85650A	Quasi-Peak Adapter	2043A00209	08/12/05
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	2944A06832	12/10/04
Hewlett Packard	8568B	Spectrum Analyzer	2407A03213	08/12/05
Hewlett Packard	85662A	Display	2340A05806	08/12/05
Hewlett Packard	85650A	Quasi-Peak Adapter	2043A00358	08/12/05
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	2944A06901	08/12/05
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	1937A03247	08/12/05
Hewlett Packard	8449B	Preamp 1 - 26.5 GHz	3008A00320	12/02/04
Hewlett Packard	8648B	Signal Generator	3443U00312	05/04/05
Hewlett Packard	8672A	Signal Generator	2211A02426	10/17/04
Eaton	96005	Log Periodic Antenna	1099	02/05/05
Electro-Metrics	LPA 30	Log Periodic Antenna	2280	01/12/05
Electro-Metrics	BIA 30	Biconical Antenna	3852	01/13/05
Electro-Metrics	BIA 25	Biconical Antenna	4283	02/04/05
Electro-Mechanics	3115	Double Ridge Guide Ant.	3810	11/25/05
Electro-Metrics	ALR30M	Magnetic Loop Antenna	824	01/12/05
Solar	8012	LISN	924840	12/24/04
Solar	8028	LISN	829012/809022	12/12/04
Solar	8028	LISN	903725/903726	12/01/04
Schwartzbeck	MDS-21	Absorbing Clamp	02581	09/18/04
Leader	LFG1310	Function Generator	8060233	05/04/05
IFR Systems	A-8000	Spectrum Analyzer	1306	12/08/04
Electro-Metrics	EMC-30	EMI Receiver	191	05/04/05
Antenna Research	ALA-130/A	Loop Antenna	106	05/03/05
Radio Shack	63-867	Temp/Hygrometer	N/A	05/04/05
Radio Shack	63-867A	Temp/Hygrometer	N/A	05/04/05

PRODUCT EMISSIONS

PRODUCT SAFETY ENGINEERING

Data File: MYFI MOBILE DOCK FCC-B 10-12-2004

No	EMISSION FREQUENCY MHz	SPEC LIMIT dBuV/m	MEASUREMENTS			POL	SITE		CORR FACTOR dB	COMMENTS
			ABS	dLIM dB	MODE		HGT cm	AZM deg		
1	88.71	43.5	45.3	1.8	QP	V	100	1	-19.6	
2	107.498	43.5	46.8	3.3	QP	V	100	315	-15.2	
3	177.400	43.5	27.3	-16.2	PK	H	200	315	-10.6	
4	215.807	43.5	14.4	-29.1	PK	H	200	45	-13.2	
5	266.100	46.0	17.0	-29.0	PK	H	200	45	-12.3	
6	323.711	46.0	20.9	-25.1	PK	H	200	45	-10.5	
7	354.800	46.0	19.8	-26.3	PK	H	200	1	-10.4	
8	431.614	46.0	22.0	-24.1	PK	H	200	45	-9.1	
9	443.500	46.0	19.6	-26.4	PK	H	200	1	-8.9	
10	532.200	46.0	21.4	-24.6	PK	H	200	1	-7.7	
11	539.517	46.0	21.2	-24.9	PK	H	200	45	-7.6	
12	620.900	46.0	23.1	-22.9	PK	H	200	1	-6.4	
13	647.421	46.0	23.1	-22.9	PK	H	200	45	-5.7	
14	709.600	46.0	25.4	-20.6	PK	H	200	1	-3.4	
15	755.325	46.0	25.8	-20.3	PK	H	200	45	-3.4	
16	798.300	46.0	25.5	-20.5	PK	H	200	1	-3.4	
17	863.230	46.0	12.3	-33.7	PK	H	200	45	-2.	
18	887.000	46.0	26.6	-19.4	PK	H	200	1	-1.3	
19	971.131	54.0	28.4	-25.6	PK	H	200	45	1.	
20	975.700	54.0	29.2	-24.8	PK	H	200	45	1.1	
21	1000.00	54.0	28.7	-25.3	PK	H	200	45	1.5	Mkr @ 1079 MHz



PRODUCT EMISSIONS

PRODUCT SAFETY ENGINEERING

Data File: MYFI BATTERY FCC-B 10-12-2004

No	EMISSION FREQUENCY MHz	SPEC LIMIT dBuV/m	MEASUREMENTS			MODE	POL	SITE		CORR FACTOR dB	COMMENTS
			ABS	dLIM dB				HGT cm	AZM deg		
1	88.711	43.5	41.9	-1.6	QP	H	400	315	-19.6		
2	107.480	43.5	41.5	-2.0	QP	H	400	315	-15.2		
3	177.400	43.5	18.4	-25.1	PK	V	200	315	-10.6		
4	215.807	43.5	13.2	-30.3	PK	H	200	270	-13.2		
5	266.100	46.0	17.2	-28.8	PK	H	200	270	-12.3		
6	323.711	46.0	17.9	-28.1	PK	H	200	270	-10.5		
7	354.800	46.0	15.5	-30.6	PK	H	200	270	-10.4		
8	431.614	46.0	19.4	-26.7	PK	H	200	270	-9.1		
9	443.500	46.0	17.8	-28.2	PK	H	200	270	-8.9		
10	532.200	46.0	23.9	-22.1	PK	H	200	270	-7.7		
11	539.517	46.0	18.0	-28.1	PK	H	200	270	-7.6		
12	620.900	46.0	19.5	-26.5	PK	H	200	270	-6.4		
13	647.421	46.0	20.8	-25.2	PK	H	200	270	-5.7		
14	709.600	46.0	22.3	-23.7	PK	H	200	270	-3.4		
15	755.325	46.0	22.0	-24.1	PK	H	200	270	-3.4		
16	798.300	46.0	23.0	-23.0	PK	H	200	270	-3.4		
17	863.230	46.0	25.0	-21.0	PK	H	200	270	-2.		
18	887.000	46.0	25.0	-21.0	PK	H	200	270	-1.3		
19	971.131	54.0	26.2	-27.8	PK	H	200	270	1.		
20	975.700	54.0	26.9	-27.1	PK	H	200	270	1.1		
21	1000.00	54.0	26.8	-27.2	PK	H	200	270	1.5	Mkr @ 1079 MHz	



PRODUCT EMISSIONS

PRODUCT SAFETY ENGINEERING

Data File: MYFI HOME DOCK FCC-B 10-12-2004

No	EMISSION FREQUENCY MHz	SPEC LIMIT dBuV/m	MEASUREMENTS			MODE	POL	SITE		CORR FACTOR dB	COMMENTS
			ABS	dLIM dB				HGT cm	AZM deg		
1	88.706	43.5	46.3	2.8	QP	H	200	315	-19.6		
2	107.486	43.5	47.7	4.2	QP	H	200	315	-15.2		
3	177.400	43.5	32.7	-10.8	PK	H	200	315	-10.6		
4	215.807	43.5	19.0	-24.5	PK	H	200	315	-13.2		
5	266.100	46.0	13.4	-32.6	PK	H	200	315	-12.3		
6	323.711	46.0	18.1	-27.9	PK	H	200	315	-10.5		
7	354.800	46.0	17.0	-29.1	PK	H	200	315	-10.4		
8	431.614	46.0	20.0	-26.1	PK	H	200	315	-9.1		
9	443.500	46.0	21.3	-24.7	PK	H	200	315	-8.9		
10	532.200	46.0	21.0	-25.0	PK	H	200	315	-7.7		
11	539.517	46.0	21.6	-24.5	PK	H	200	315	-7.6		
12	620.900	46.0	23.1	-22.9	PK	H	200	315	-6.4		
13	647.421	46.0	23.2	-22.8	PK	H	200	315	-5.7		
14	709.600	46.0	25.6	-20.4	PK	H	200	315	-3.4		
15	755.325	46.0	26.2	-19.9	PK	H	200	315	-3.4		
16	798.300	46.0	24.8	-21.2	PK	H	200	315	-3.4		
17	863.230	46.0	19.7	-26.3	PK	H	200	315	-2.		
18	887.000	46.0	27.2	-18.8	PK	H	200	315	-1.3		
19	971.131	54.0	28.8	-25.2	PK	H	200	315	1.		
20	975.700	54.0	28.8	-25.2	PK	H	200	315	1.1		
21	1000.00	54.0	28.8	-25.2	PK	H	200	315	1.5	Mkr @ 1079 MHz	

# Product Safety Engineering

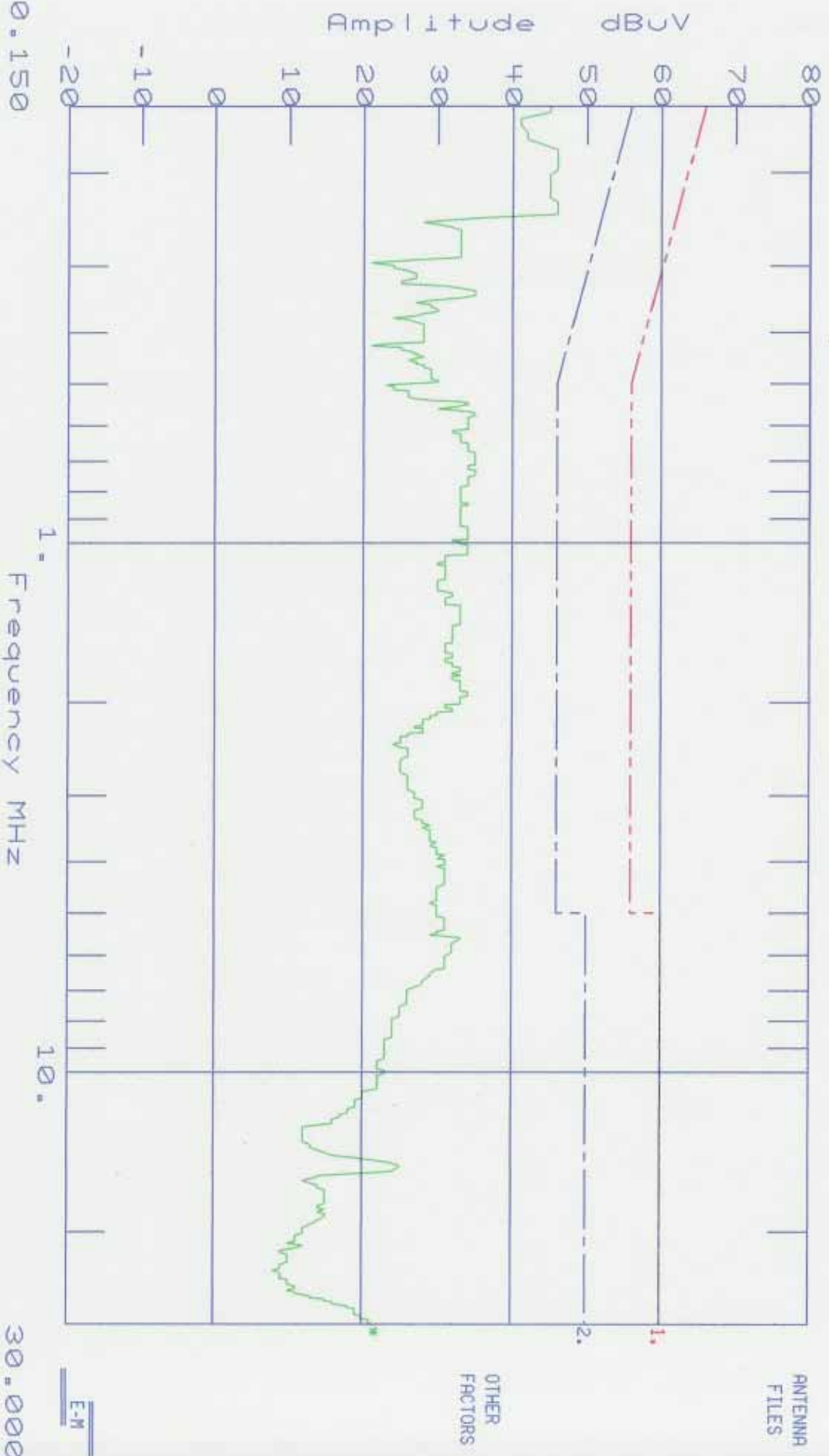
XM RADIO

Date : 10/12/04  
 Technician : JACK GARNER  
 Test Method : EN55022 CLASS B  
 Equipment : MFI H/ HOME DOCK  
 Mode of Op. : NORMAL  
 Serial No. : 8PT5604C  
 Comment : 120 VAC / 60 HZ

Time : 15:11:28.10  
 Test Equip. : EMC-30  
 Test Number : 1  
 Sensor Loc. : LINE  
 Sensor Pol. :  
 Ext. Atten. : 0 dB

EMC-30 SETTINGS  
 Detector QuasiPeak  
 Bandwidth CISPR  
 Dump/Dwell N/A  
 RF Atten. 10 dB  
 IF Atten. 10 dB

SPECS  
 1) CISPR 22 Quasi Peak  
 2) CISPR 22 AVG  
 3)  
 4)



Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
0.1933	43.0		-10.894 *
0.1975	43.0		-10.715 *
0.6063	35.0		-11.000 *
0.6097	35.0		-11.000 *
0.6131	35.0		-11.000 *
0.6708	35.0		-11.000 *
0.6743	35.0		-11.000 *
0.6777	35.0		-11.000 *
0.6947	35.0		-11.000 *
0.6981	35.0		-11.000 *
0.7015	35.0		-11.000 *
0.7049	35.0		-11.000 *
0.7083	35.0		-11.000 *
0.7118	35.0		-11.000 *
0.7493	35.0		-11.000 *
0.7765	35.0		-11.000 *
0.7799	35.0		-11.000 *
0.7833	35.0		-11.000 *
0.7867	35.0		-11.000 *
0.7901	35.0		-11.000 *
0.7935	35.0		-11.000 *
0.7969	35.0		-11.000 *
0.8002	35.0		-11.000 *
0.8036	35.0		-11.000 *
0.8070	35.0		-11.000 *
0.8105	35.0		-11.000 *
0.8139	35.0		-11.000 *

# Product Safety Engineering

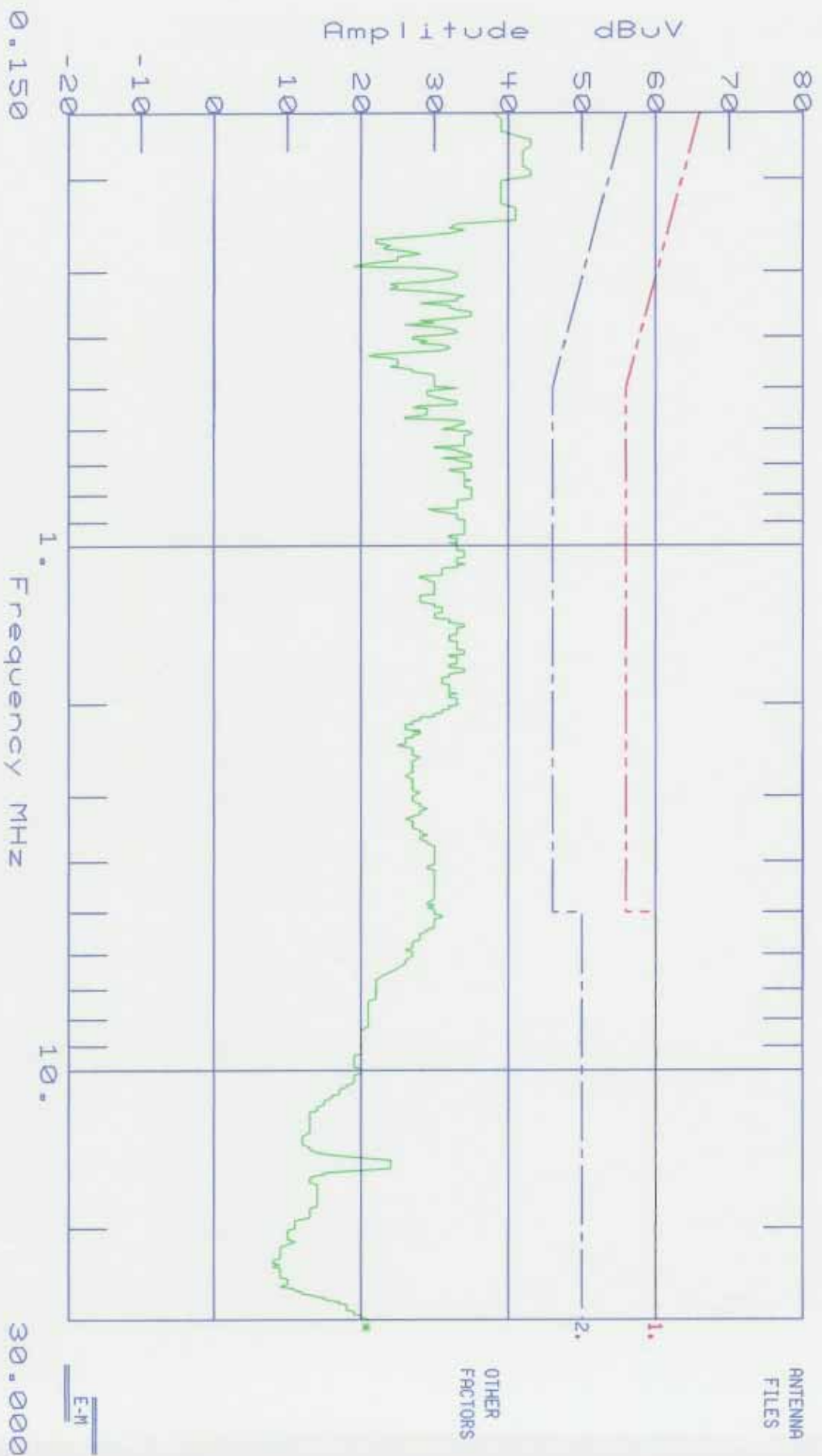
XM RADIO

Date : 10/12/04  
 Technician : JACK GARNER  
 Test Method : EN55022 CLASS B  
 Equipment : MYFI W/ HOME DOCK  
 Mode of Op. : NORMAL  
 Serial No. : 8P15604C  
 Comment : 120 VAC / 60 HZ

Time : 15:25:08.25  
 Test Equip. : EMC-30  
 Test Number : 1  
 Sensor Loc. : NEUTRAL  
 Sensor Pol. :  
 Ext. Atten. : 0 dB

EMC-30 SETTINGS  
 Detector QuasiPeak  
 Bandwidth CISPR  
 Dump/Dwell IN/A  
 RF Atten. 10 dB  
 IF Atten. 10 dB

SPECS  
 1) CISPR 22 Quasi Peak  
 2) CISPR 22 AVG  
 3)  
 4)



TEST TITLE:XM RADIO  
DATA FILE :461\_L.D30  
Amplitude Units : dBuV

Threshold -10 dB

PAGE 1  
Freq.(MHz)  
0.1500

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
0.1812	46.0		-8.430 *
0.1854	46.0		-8.240 *
0.1892	46.0		-8.072 *
0.1933	46.0		-7.894 *
0.1975	46.0		-7.715 *
0.2021	45.0		-8.524 *
0.2062	45.0		-8.357 *
0.2104	45.0		-8.190 *
0.2145	45.0		-8.029 *
0.2187	45.0		-7.868 *
0.2228	45.0		-7.714 *
0.2274	46.0		-6.544 *
0.2316	46.0		-6.392 *
0.2357	46.0		-6.246 *
0.2395	46.0		-6.114 *



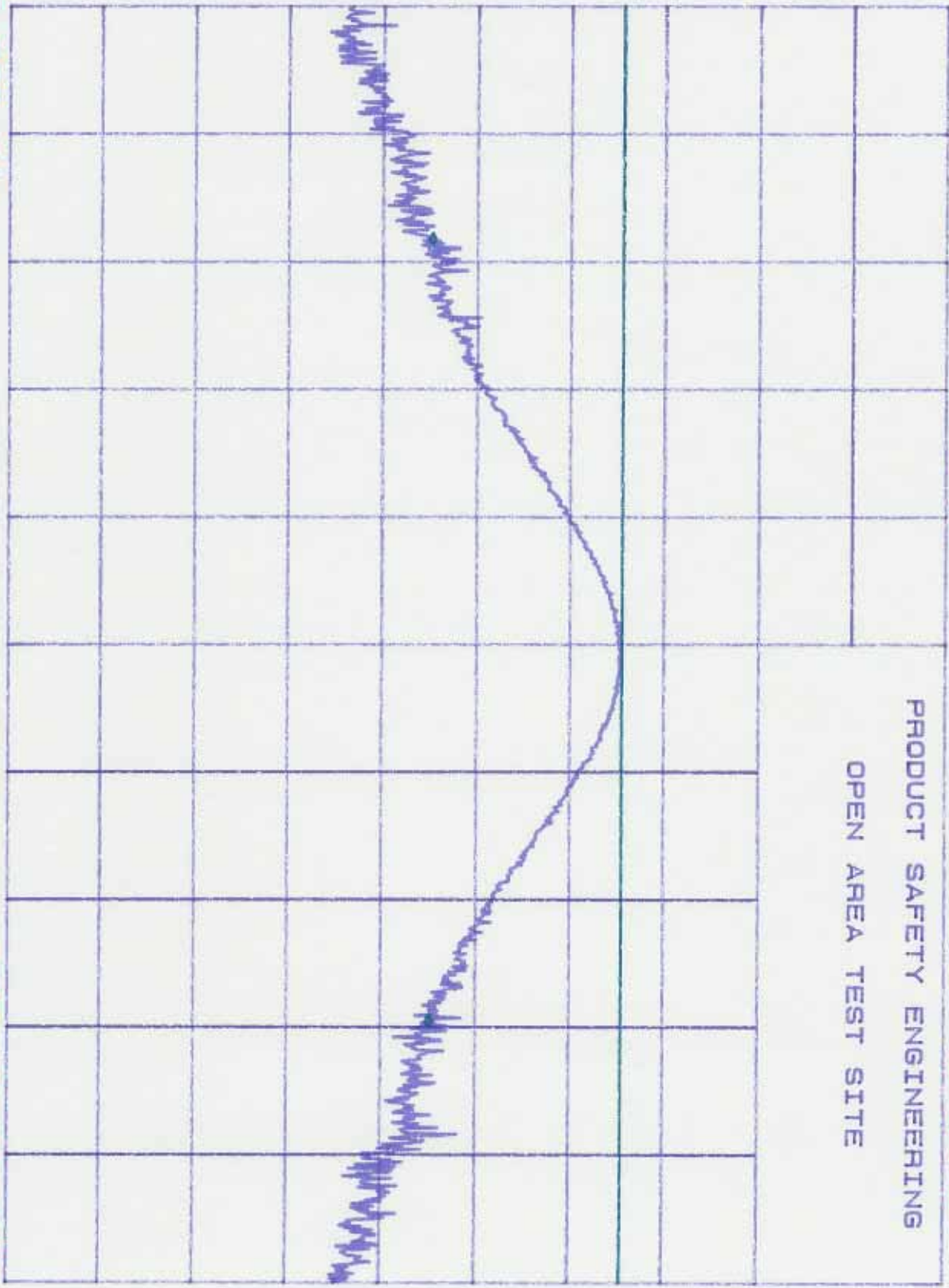
PRODUCT SAFETY ENGINEERING  
HP REF 97.0 DBμV ATTN 0 DB

MKR Δ 122.6 KHZ  
-0.10 DB

10 DB/  
POS PK

PRODUCT SAFETY ENGINEERING  
OPEN AREA TEST SITE

DL  
62.5  
DBμV



START 88.000 MHZ RES 9W 30 KHZ VBW 30 KHZ STOP 88.200 MHZ SWP 100 msec

A10

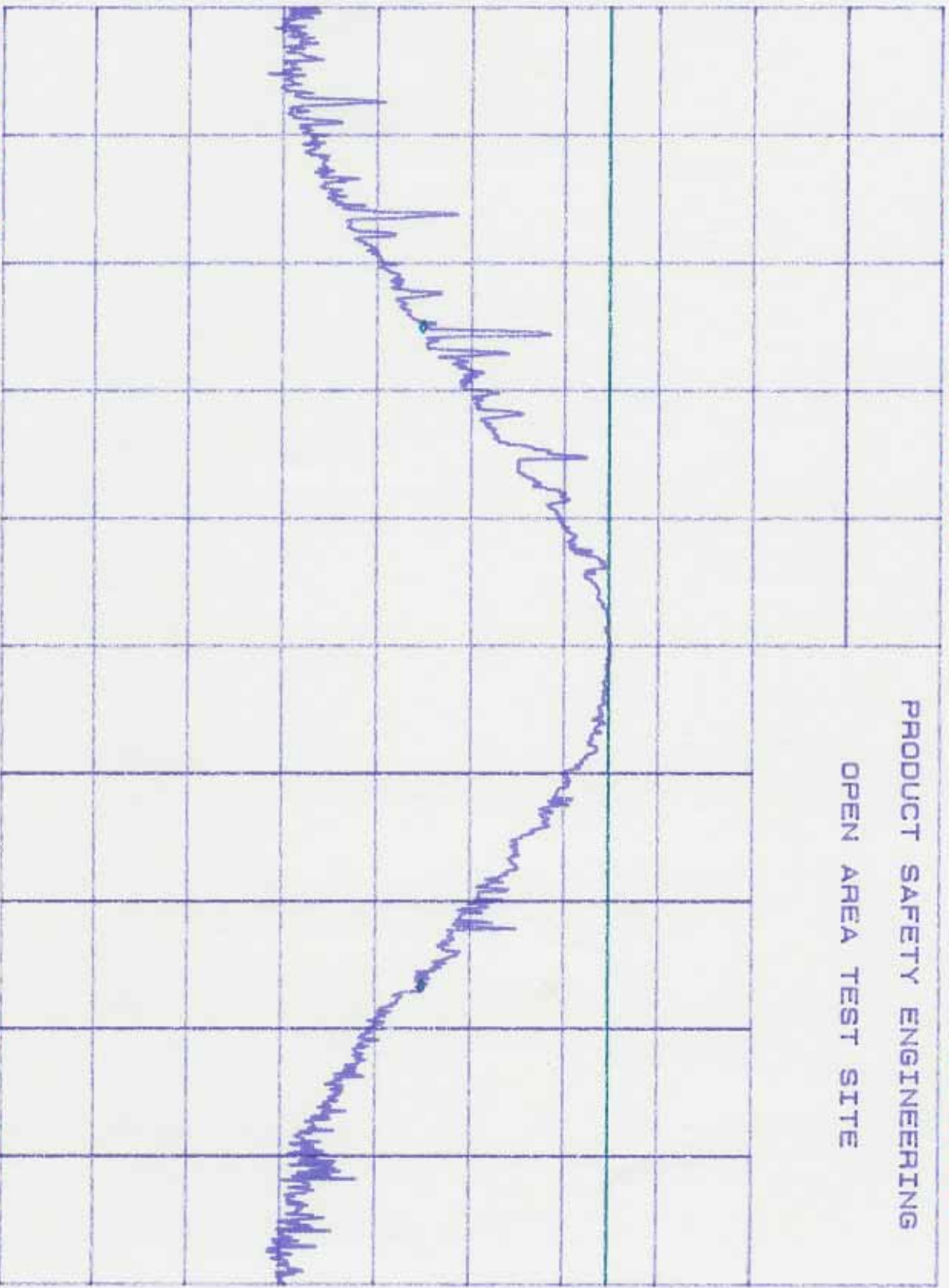
PRODUCT SAFETY ENGINEERING  
REF 97.0 DBµV ATTEN 0 DB

MKRA Δ-103.4 KHZ  
0.00 DB

10 DB/  
POS PK

PRODUCT SAFETY ENGINEERING  
OPEN AREA TEST SITE

DL  
61.7  
DBµV



CENTER 107.900 MHZ  
RES BW 30 KHZ  
VBW 30 KHZ  
SPAN 200 KHZ  
SMP 100 msec

# APPENDIX

## B

### System Under Test Description



**SYSTEM COMPONENTS**  
\*\*\*\*\*

DEVICE TYPE: EUT - XM Radio MiFi  
\*\*\*\*\*  
DEVICE TYPE: EUT - XM Radio Mobile Cradle  
\*\*\*\*\*  
DEVICE TYPE: EUT - XM Radio Home Cradle  
\*\*\*\*\*  
DEVICE TYPE: EUT - XM Radio Mobile Antenna  
\*\*\*\*\*  
DEVICE TYPE: EUT - XM Radio Home Antenna  
\*\*\*\*\*  
DEVICE TYPE: EUT - XM Radio XM Radio Power Supply (model SMPS5V2A-XM)  
\*\*\*\*\*

**INTERFACE CABLES**  
\*\*\*\*\*

DEVICE TYPE: EUT XM Radio (Home Cradle)  
SHIELD: No  
LENGTH: 8 feet  
CONNECTOR TYPE: Special to dedicated  
PORT: 5 V DC In  
\*\*\*\*\*

DEVICE TYPE: EUT XM Radio (Home Cradle)  
SHIELD: Yes  
LENGTH: 25 feet  
CONNECTOR TYPE: Special Coax to dedicated  
PORT: ANT Port to Home Antenna  
\*\*\*\*\*

DEVICE TYPE: EUT XM Radio (Mobile Cradle)  
SHIELD: No  
LENGTH: 6  
CONNECTOR TYPE: Special to dedicated  
PORT: 5 V DC In  
\*\*\*\*\*

DEVICE TYPE: EUT XM Radio (Mobile Cradle)  
SHIELD: Yes  
LENGTH: 25 feet  
CONNECTOR TYPE: Special Coax to dedicated  
PORT: ANT Port to Mobile Antenna  
\*\*\*\*\*

**AC LINE CORDS**  
\*\*\*\*\*

DEVICE TYPE: EUT - XM Radio Power Supply  
SHIELD: No  
LENGTH: 8 feet  
CONNECTOR TYPE: Dedicated to Dedicated  
\*\*\*\*\*

# APPENDIX

## C

### Measurement Protocol

The test methodology followed during the collection of the data included within this technical report was ANSI C63.4:1992.

The EUT was powered with (120) VAC / (60) Hz during the collection of data included within.

The data is compared to the FCC Part 15 Class A limits.

The "EMI" instrumentation is capable of calculating the final emission level based on the following formula:

Level at the receiver (dB $\mu$ V) + Antenna Correction Factor (dB/M) + Cable Loss (dB) - Preamp Gain (dB) = Actual Level in dB $\mu$ V/M.

The sample calculation below is based on the actual test data collected:

Observed Level		<b>62.5</b>	dB $\mu$ V	
ACF	+	<b>10.2</b>	dB/M	
Cable Loss	+	<b>1.0</b>	dB	
Preamp Gain	-	<b><u>26.0</u></b>	dB	
Actual Level		<b>47.7</b>	dB $\mu$ V/M	@ <b>170.5</b> MHz

**Please have a company official review this report and sign.**

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