

# CETECOM ICT Services GmbH

Radio Satellite Communication

Untertürkheimer Straße 6–10 , D-66117 Saarbrücken

Telefon +49 (0) 681 598–0 , Fax –9075

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Test report No.: 2-3252-01-03/03

This test report consists of 21 pages

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**Recognized by the  
Federal Communications Commission**

FCC–Identification Number: 90462

TCB ID: DE 0001



Accredited by the  
German Accreditation Council  
**DAR–Registration Number**

**TTI–P–G 166/98**



Independent ETSI  
compliance test house



**Accredited Bluetooth™ Test Facility (BQTF)**

Testreport No.: 2\_3252-01-03/03

Type : HFD 1

Applicant : FUJI XEROX

FCC Part : 15.209

FCC ID : E46HFD1

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## 1 General information

### 1.1 Notes

The test results of this test report relate exclusively to the test item specified in 1.5.

The CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the CETECOM ICT Services GmbH.

### Test laboratory manager:

2003-07-03

RSC - 8431

Gillmann D.



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Date

Section

Name

Signature

### Technical responsibility for area of testing:

2003-07-03

RSC - 8412

Hausknecht D.



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Date

Section

Name

Signature

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## 1.2 Testing laboratory

CETECOM ICT Services GmbH

Untertürkheimer Straße 6 - 10

66117 Saarbrücken

Germany

Telephone : + 49 681 598 - 0

Telefax : + 49 681 598 - 9075

E-mail : detlev.gillmann@ict.cetecom.de

Internet : www.cetecom-ict.de

### Accredited testing laboratory

Accredited by : Regulierungsbehörde für Telekommunikation und Post (RegTP)

Listed by : Federal Communications Commission (FCC)

Authority	Identification/Registration No.
RegTP	TTI-P-G 166/98-30
FCC	90462

## 1.3 Details of applicant

Name : FUJI XEROX CO., LTD

Street : 2274 Hongo,Ebina-shi

City : Kanagawa 243-0494

Country : Japan

Telephone: +81-46-238-3111

Telex : +81-46-238-5796

E-mail : Tsuneo.imada@fujixerox.co.jp

### Contact person:

Name : Mr. Tsuneo Imada

Telephone: +81-46-238-3111

Telex : +81-46-238-5796

E-mail : : masayuki.hirata@fujixerox.co.jp

## 1.4 Application details

Date of receipt of test item : 2003-07-03

Date of test : 2003-0703

Person(s) who have been : Mr. G.Hedderich

present during the test : Mr. Masayuki Hirata

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## 1.5 Test item

Type of equipment : Cartridge identification  
Type designation : HFD1(Part composition: HFD1-C, HFD1-T)  
Manufacturer : applicant  
Street :  
City :  
Country :  
  
Additional Information :  
Frequency : 13.56 MHz  $\pm$  100 ppm  
Frequency (EUT) : 13.56 MHz  
Number of channels : 1  
Number of channels (EUT) : 1  
Modulation : Tx : 0H00NON; Passiv transponder: 4K00F1D  
Antenna HFD 1 : Integral ant.0,0019m<sup>2</sup>  
ERP : 29.4dB $\mu$ V/m  
Power supply (DC) : 5.0V  
Type of equipment : Class 1, Category III  
FCC ID : E46HFD1

## 1.6 Test specifications: FCC Part 15 §15.209

**CANADA RSS-210**

## 2 Technical test

### 2.1 Summary of test results

The radiated measurements are performed in vertical and horizontal plane in the frequency range from 9 kHz to 20 GHz in semi-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber.

The receiving antennas conform with specifications ANSI C63.2-1987 clause 15 and ANSI C63.4-1992 clause 4.1.5. These antennas can be moved over the height range between 1.0 m and 4.0 m in order to search for maximum field strength emitted from EUT. The measurement distances between EUT and receiving antennas are indicated in the test set-ups for the various frequency ranges. For each measurement, the EUT is rotated in all three axes until the maximum field strength is received.

The wanted and unwanted emissions are received by spectrum analysers where the detector modes and resolution bandwidths over various frequency ranges are set according to requirement ANSI C63.4-1992 clause 4.2.

Antennas conform with ANSI C63.2-1996 item 15.

150 kHz - 30 MHz: Quasi Peak measurement, 9kHz Bandwidth, passive loop antenna .

30 MHz - 200 MHz: Quasi Peak measurement, 120KHz Bandwidth, biconical antenna

200MHz - 1GHz: Quasi Peak measurement, 120KHz Bandwidth, log periodic antenna

>1GHz: Average, RBW 1MHz, VBW 10 Hz, wave guide horn

All measurement settings are according to FCC 15.35, 15.209.

The product fulfils also the requirements for CANADA RSS-210

No deviations from the technical specification(s) were ascertained in the course of the tests performed.

**FINAL VERDICT : PASS**

## LIST OF MEASUREMENTS.

The list of measured parameters is given below.

Clause		Page number
	<b>Transmitter parameters</b>	
§ 15.209	<b>Effective radiated RF power</b>	<b>9</b>
§ 15.209	<b>Spurious radiations – Radiated</b>	<b>10</b>
	<b>Test equipment listing</b>	<b>14</b>
	<b>Plots of the equipment</b>	<b>16</b>
	<b>Photographs of the equipment</b>	<b>16</b>



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## MAXIMUM PEAK OUTPUT POWER (RADIATED)

TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dB $\mu$ V/m) @ 10m	
Frequency (MHz)		13.56 MHz	
T <sub>nom</sub> ( 23 )?C	V <sub>nom</sub> ( 5.0 )V	29.4	
Maximum deviation from output power under extreme test conditions (dBc)		not applicable	
Measurement uncertainty		±3dB	

### Limits

### SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ( $\mu$ V/m)	Measurement distance (m)
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

Test result:

Passed:

Failed:

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## SPURIOUS RADIATION Radiated RF Power on

§ 15.209

SPURIOUS EMISSIONS LEVEL (dB $\mu$ V/m)		
f (MHz)	Band-width** (kHz)	Level (dB $\mu$ V/m) @ 10m
27.120	10	- 8.0
-	-	-
-	-	-
-	-	-
Measurement uncertainty		$\pm 3$ dB

f < 1 GHz : RBW/VBW: 100 kHz

f  $\geq$  1GHz : RBW/VBW: 1 MHz

H = Horizontal ; V= Vertical

Measurement distance see table

### Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ( $\mu$ V/m)	Measurement distance (m)
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

Test result:

Passed:

Failed:

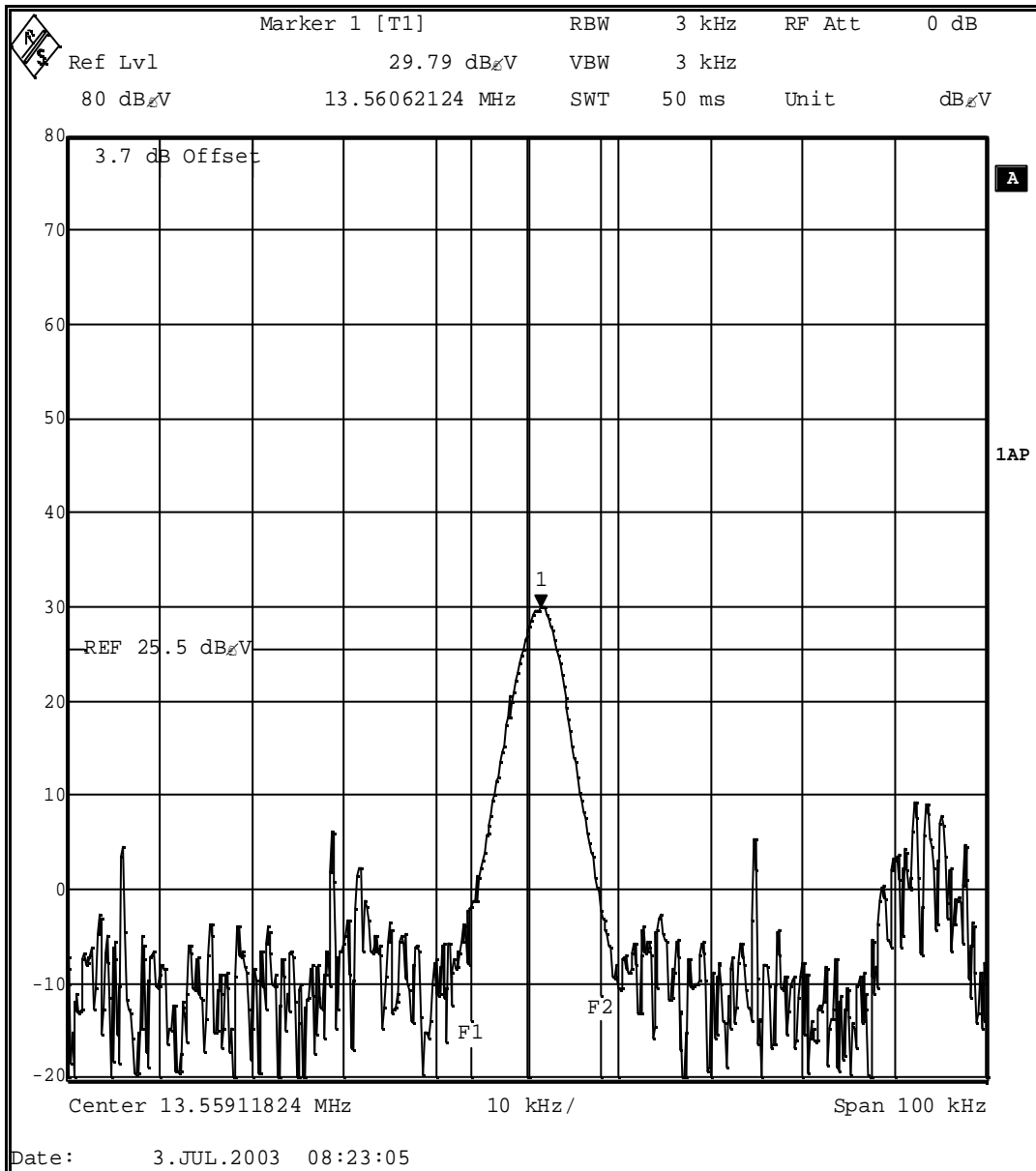
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## Plot 01



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## Plot 02

FCC Rule 47

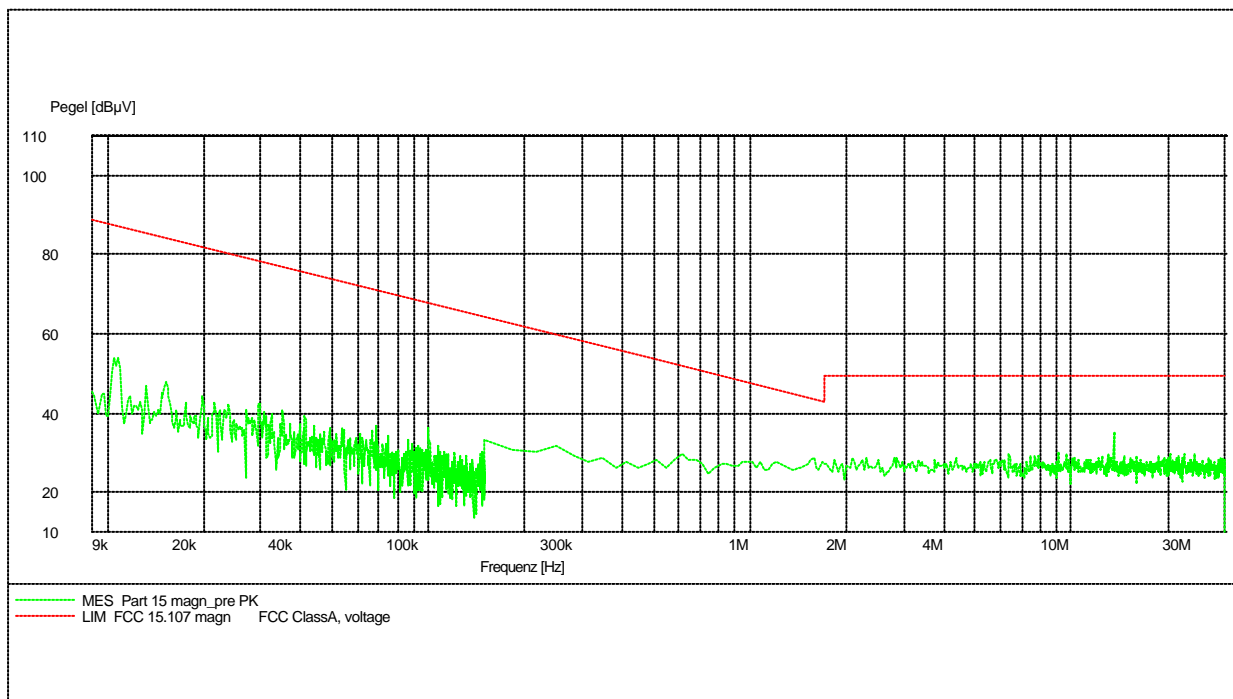
EUT: Cartridge Identification  
Manufacturer: FUJI XEROX Co. Ltd.  
Operating Condition: Continuous Tx mode on  
Test Site: Cetecom, Room 6  
Operator: Gillmann  
Start of Test: 02.07.03 / 09:47:39

SCAN TABLE: "FCC 15 magn"

Short Description: 0.009 - 30 MHz

Kurzbeschreibung: Voltage Mains 1.60

Start-Frequenz	Stop-Frequenz	Schrittweite	Detektor	Meßzeit	ZF-Bandbr.	Transducer
9.0 kHz	1 50.0 kHz	100.0 Hz	MaxPeak	100.0 ms	0.2 kHz	HFH2-Z2
150.0 kHz	30.0 MHz	10.0 kHz	MaxPeak	100.0 ms	10 kHz	HFH2-Z2



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## Plot 03

FCC Rule 47

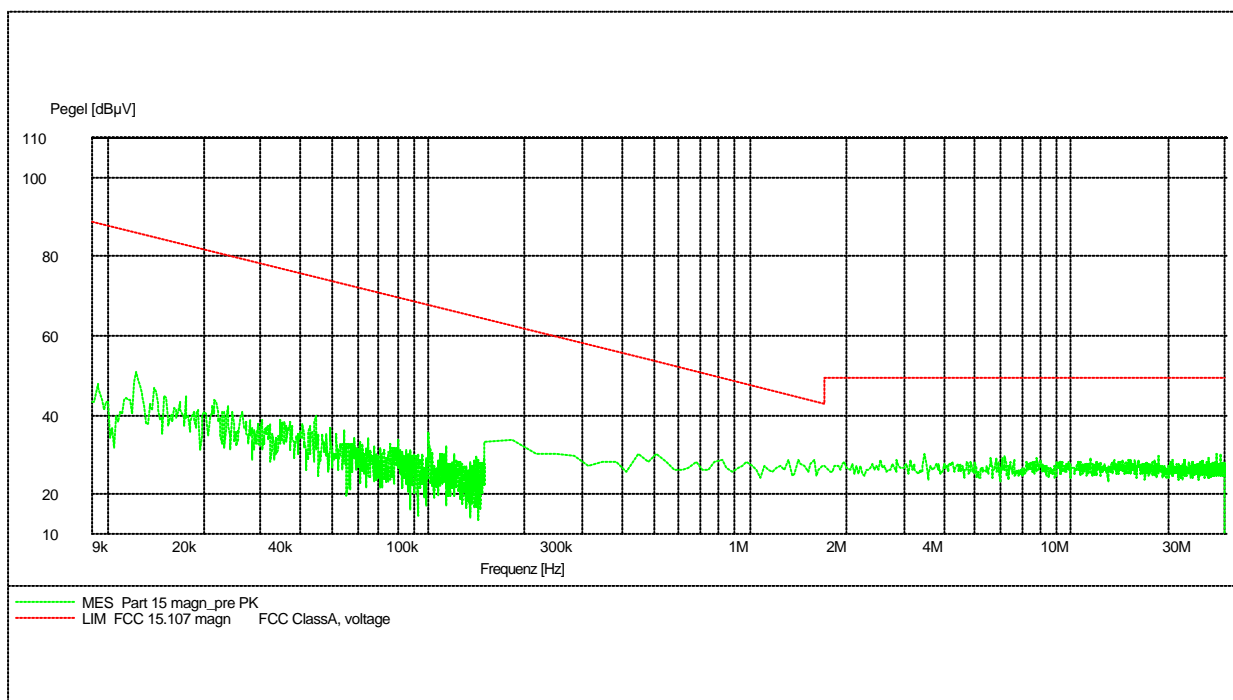
EUT: Cartridge Identification  
Manufacturer: FUJI XEROX Co. Ltd.  
Operating Condition: Continuous Tx mode off  
Test Site: Cetecom, Room 6  
Operator: Gillmann  
Start of Test: 02.07.03 / 10:48:20

SCAN TABLE: "FCC 15 magn"

Short Description: 0.009 - 30 MHz

Kurzbeschreibung: Voltage Mains 1.60

Start-Frequenz	Stop-Frequenz	Schrittweite	Detektor	Meßzeit	ZF-Bandbr.	Transducer
9.0 kHz	1 50.0 kHz	100.0 Hz	MaxPeak	100.0 ms	0.2 kHz	HFH2-Z2
150.0 kHz	30.0 MHz	10.0 kHz	MaxPeak	100.0 ms	10 kHz	HFH2-Z2



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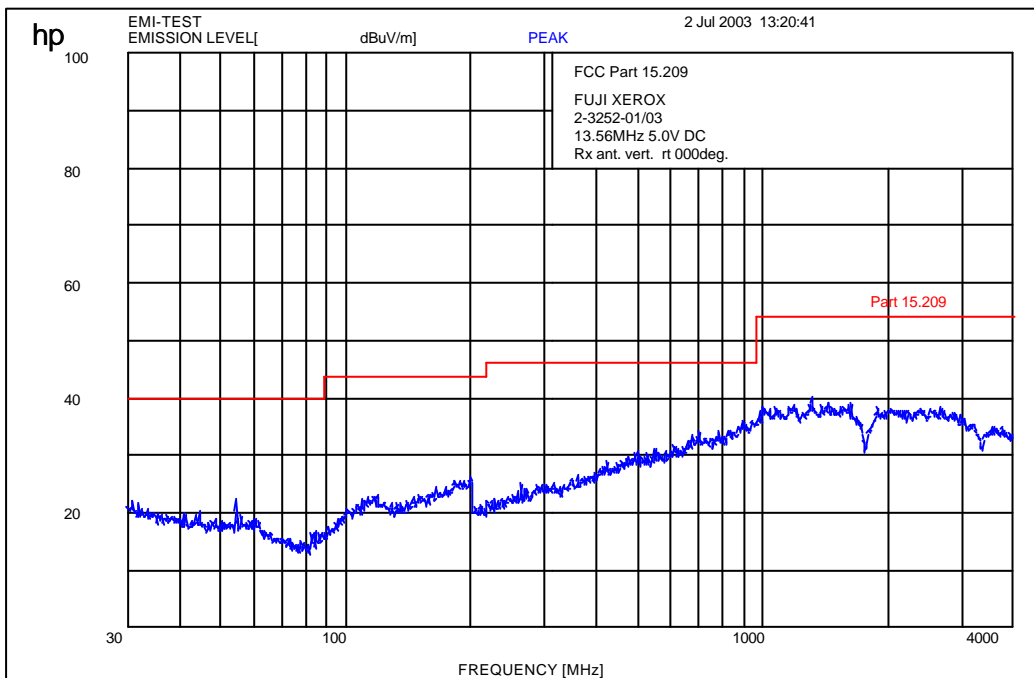
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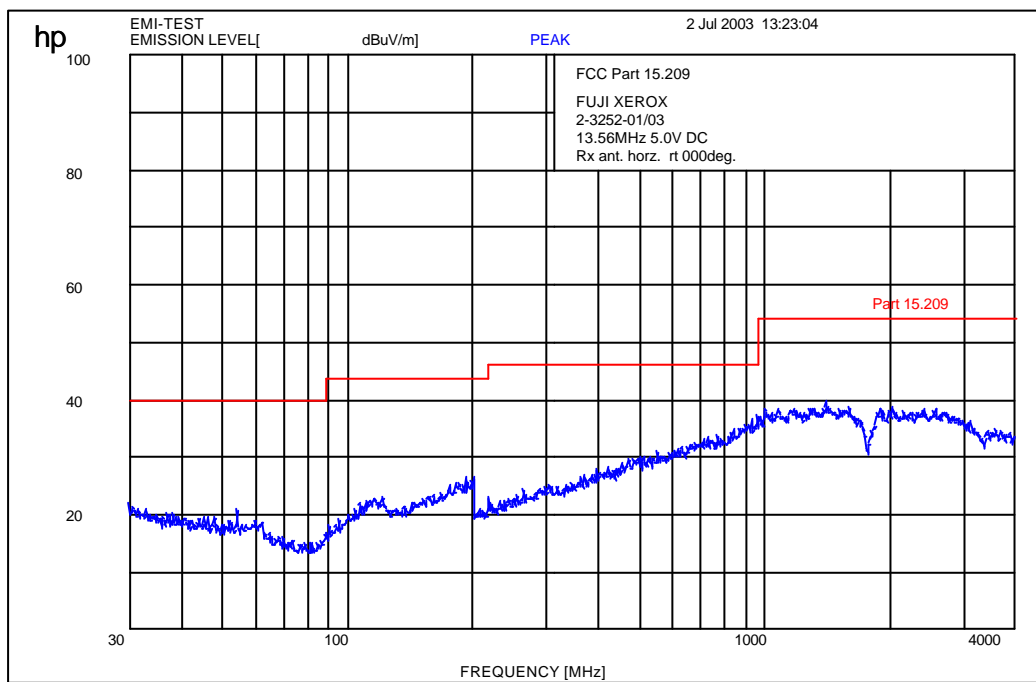
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## Plot 03

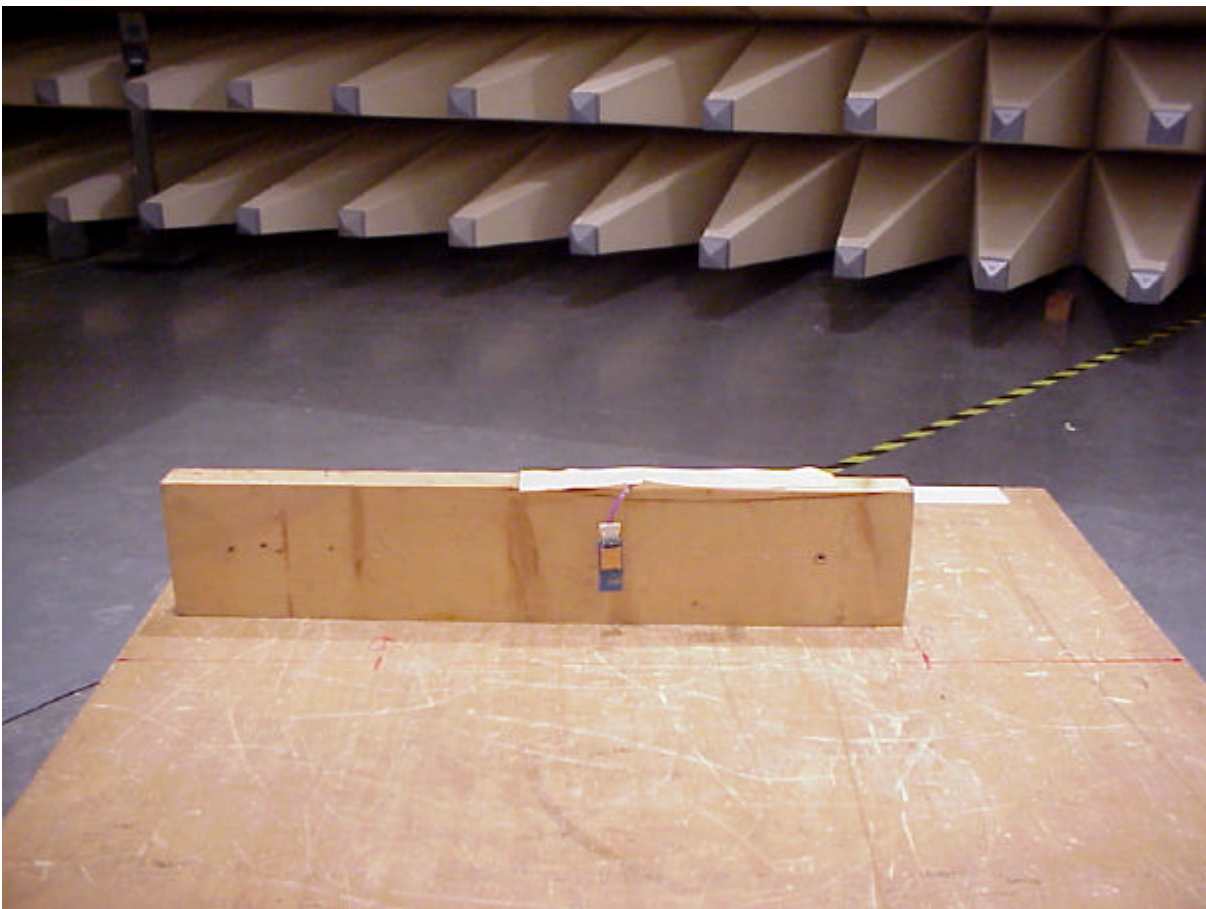




## Plot 04



## Photograph No.: 2



## Photograph No.: 3

