

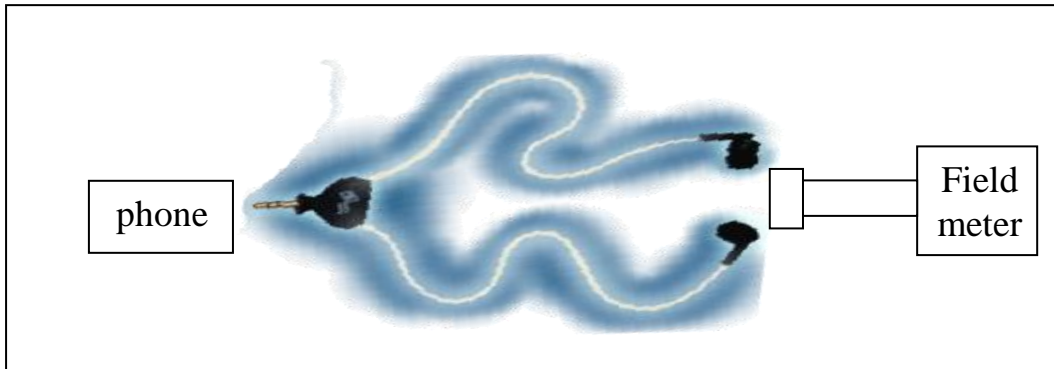
**General Information.**

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<b>The testing was observed by the following applicant's personnel:</b>	Mr. Omer Wax
<b>Dates of testing:</b>	November 2012
<b>Test Laboratory Location:</b>	
<b>E-Mail:</b>	
<b>Web:</b>	
<b>Equipment Under Test (EUT):</b>	Radiation reducing Earpices See clause 4
	Radiation blocking products See clause 5

# **Test Summary and Results**

# 1. Earpieces efficiency for several types of phones

## 1.1. Tested configuration



## 1.2. Test results

### 1.2.1. "Apple iPhone 3GS"

	<u>Base – 1cm</u>		<u>Earpiece</u>	
<b>Door Open</b>	Ring 1.5 V/M	Call 2 V/M	Ring 0.1 V/M	Call 0.5 V/M
	Ring 1 $\mu\text{W}/\text{cm}^2$	Call 0.3 $\mu\text{W}/\text{cm}^2$	Ring 0.1 $\mu\text{W}/\text{cm}^2$	Call 0.3 $\mu\text{W}/\text{cm}^2$
<b>Door Closed</b>	Ring 20.6 V/M	Call 40.6 V/M	Ring 1.3 V/M	Call 1.5 V/M
	Ring 96.7 $\mu\text{W}/\text{cm}^2$	Call 114.7 $\mu\text{W}/\text{cm}^2$	Ring 0.2 $\mu\text{W}/\text{cm}^2$	Call 0.1 $\mu\text{W}/\text{cm}^2$

**Conclusion:** The earpiece screen the radiation significantly.

### 1.2.2. "Samsung Galaxy S1"

	<u>Base – 1cm</u>		<u>Earpiece</u>	
<b>Door Open</b>	Ring 1.2V/M	Call 2 V/M	Ring 0.4 V/M	Call 0.8 V/M
	Ring 0.2 $\mu\text{W}/\text{cm}^2$	Call 0.5 $\mu\text{W}/\text{cm}^2$	Ring 0.1 $\mu\text{W}/\text{cm}^2$	Call 0.2 $\mu\text{W}/\text{cm}^2$
<b>Door Closed</b>	Ring 5.7 V/M	Call 3.1 V/M	Ring 0.5 V/M	Call 1.5 V/M
	Ring 0.9 $\mu\text{W}/\text{cm}^2$	Call 0.7 $\mu\text{W}/\text{cm}^2$	Ring 0.1 $\mu\text{W}/\text{cm}^2$	Call 0.4 $\mu\text{W}/\text{cm}^2$

**Conclusion:** The earpiece screen the radiation significantly.

### 1.2.3. "Nokia 2330"

	<u>Base – 1cm</u>		<u>Earpiece</u>	
Door Open	Ring 14.3 V/M	Call 1.3 V/M	Ring 2.4 V/M	Call 2.2 V/M
	Ring 57 $\mu\text{W}/\text{cm}^2$	Call 10.2 $\mu\text{W}/\text{cm}^2$	Ring 1.6 $\mu\text{W}/\text{cm}^2$	Call 0.6 $\mu\text{W}/\text{cm}^2$
Door Closed	Ring 14.1 V/M	Call 8.5 V/M	Ring 2.2 V/M	Call 1.5 V/M
	Ring 62.8 $\mu\text{W}/\text{cm}^2$	Call 12.4 $\mu\text{W}/\text{cm}^2$	Ring 2.3 $\mu\text{W}/\text{cm}^2$	Call 1.3 $\mu\text{W}/\text{cm}^2$

**Conclusion:** The earpiece screen the radiation significantly.

### 1.2.4. "Blackberry Bold 9000"

	<u>Base – 1cm</u>		<u>Earpiece</u>	
Door Open	Ring 9.8 V/M	Call 6.3 V/M	Ring 2.4 V/M	Call 0.6 V/M
	Ring 14.8 $\mu\text{W}/\text{cm}^2$	Call 21.3 $\mu\text{W}/\text{cm}^2$	Ring 0.7 $\mu\text{W}/\text{cm}^2$	Call 0.9 $\mu\text{W}/\text{cm}^2$
Door Closed	Ring 28.9 V/M	Call 40.3 V/M	Ring 2.4 V/M	Call 2.1 V/M
	Ring 198.5 $\mu\text{W}/\text{cm}^2$	Call 187.3 $\mu\text{W}/\text{cm}^2$	Ring 1.2 $\mu\text{W}/\text{cm}^2$	Call 1.3 $\mu\text{W}/\text{cm}^2$

**Conclusion:** The earpiece screen the radiation significantly.

### 1.2.5. "LG VX-8300"

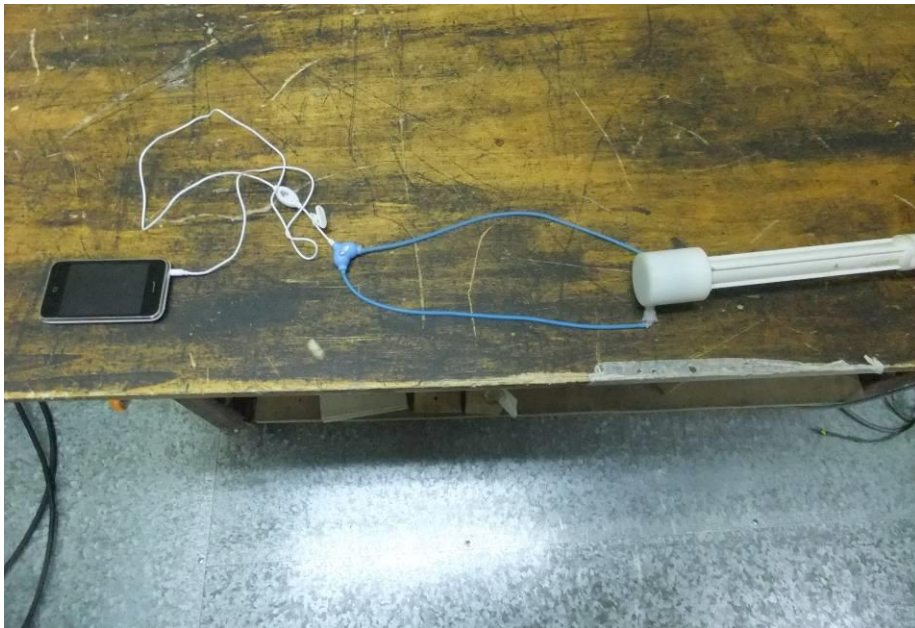
	<u>Base – 1cm</u>		<u>Earpiece</u>	
Door Open	Ring 1.2V/M	Call 0.3 V/M	Ring 0.7 V/M	Call 1.8 V/M
	Ring 28.2 $\mu\text{W}/\text{cm}^2$	Call 0.2 $\mu\text{W}/\text{cm}^2$	Ring 0.1 $\mu\text{W}/\text{cm}^2$	Call 0.4 $\mu\text{W}/\text{cm}^2$
Door Closed	Ring 10.3 V/M	Call 5.7 V/M	Ring 1.8 V/M	Call 1.5 V/M
	Ring 10.1 $\mu\text{W}/\text{cm}^2$	Call 3.6 $\mu\text{W}/\text{cm}^2$	Ring 2.4 $\mu\text{W}/\text{cm}^2$	Call 0.6 $\mu\text{W}/\text{cm}^2$

**Conclusion:** The earpiece screen the radiation significantly.

### 1.3. Equipment used:

No.	Description	Manufacturer and Model Number	Series No.
1	Field strength meter	Chauvin Arnoux Model C.A. 43 + EF2A probe	142553TEV

### 1.4. Pictures:



**Pic #1: "Apple iPhone 3GS"**



**Pic #2: "Samsung Galaxy S1"**



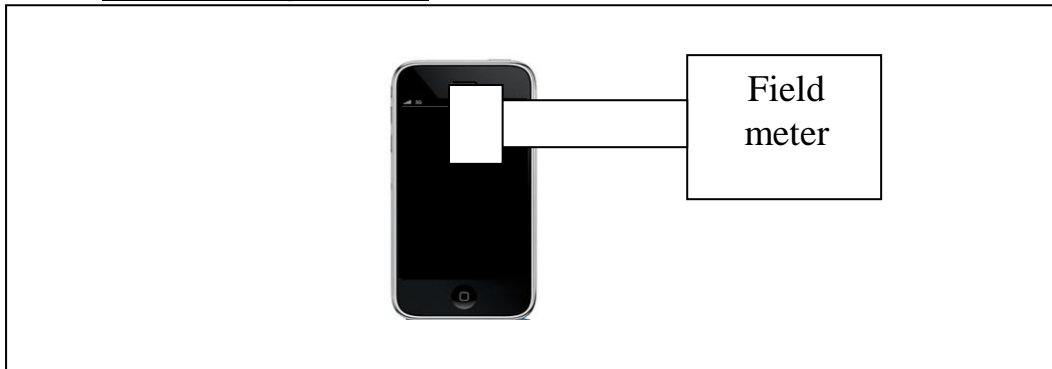
**Pic #3: "Blackberry Bold 9000"**



**Pic #4: "LG VX-8300"**

## 2. Radiation blocking products efficiency

### 2.1. Test configuration



The phone was covered with each of the blocking products.

### 2.2. Bluetooth Earpiece

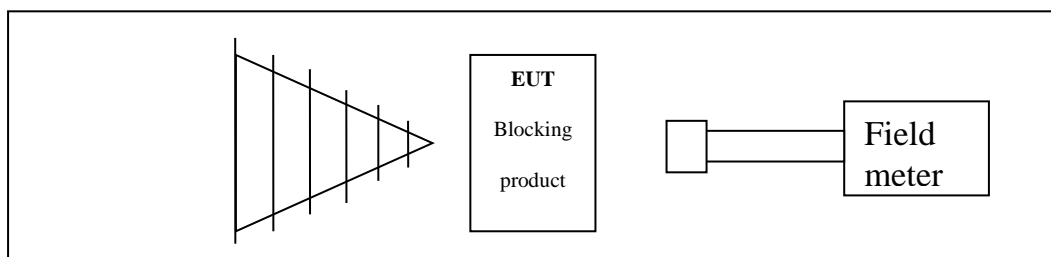
	"Samsung Galaxy S1"		"Apple iPhone 3GS"	
Door Open	Ring 0.3 V/M	Call 0.3 V/M	Ring 0.5 V/M	Call 0.4 V/M
	Ring 0.1 $\mu\text{W}/\text{cm}^2$	Call 0.1 $\mu\text{W}/\text{cm}^2$	Ring 0.3 $\mu\text{W}/\text{cm}^2$	Call 0.2 $\mu\text{W}/\text{cm}^2$
Door Closed	Ring 0.4 V/M	Call 0.2 V/M	Ring 0.7 V/M	Call 0.3 V/M
	Ring 0.5 $\mu\text{W}/\text{cm}^2$	Call 0.3 $\mu\text{W}/\text{cm}^2$	Ring 0.9 $\mu\text{W}/\text{cm}^2$	Call 0.8 $\mu\text{W}/\text{cm}^2$

**Conclusion:** The bluetooth earpiece screen the radiation significantly.

\*The distance between the earpiece and the phone has no effect on the results.

## Radiation blocking products efficiency in GSM broadcasting

### 2.2. Test configuration



### 2.3. Equipment used:

No.	Description	Manufacturer and Model Number	Series No.
1	Field strength meter	Chauvin Arnoux Model C.A. 43 + EF2A probe	142553TEV
2	Signal generator	Agilent E4438C CFG184	MY49071362
3	20MHz-1GHz RF power amplifier 40W	GTS GRF 5027	1780
4	1GHz-3GHz RF power amplifier 30W	Ophir 5172F	1050
5	Antenna	AEL APN101B	909