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**Test Report:** 96580-1R1TRFWL


**Applicant:** Digital Security Controls Ltd  
3301 Langstaff Road  
Vaughan, ON, L4K 4L2

**Apparatus:** SCW9047-433, SCW9045-433

**FCC ID:** F53079047

**In Accordance With:** FCC Part 15 Subpart B, 15.107 and 15.109  
Unintentional Radiators

**Tested By:** Nemko Canada Inc.  
303 River Road  
Ottawa, Ontario  
K1V 1H2

**Authorized By:**   
Jason Nixon, Wireless Specialist

**Date:** November 26, 2007

**Total Number of Pages:** 17

## Report Summary

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, Subpart B. Radiated tests were conducted in accordance with ANSI C63.4-2003. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.

The assessment summary is as follows:

<b>Apparatus Assessed:</b>	SCW9047-433, SCW9045-433
<b>Specification:</b>	FCC Part 15 Subpart B, 15.107 and 15.109
<b>Compliance Status:</b>	Complies
<b>Exclusions:</b>	None
<b>Non-compliances:</b>	None
<b>Report Release History:</b>	Original Release

Author: Roman Kuleba, EMC/Wireless Specialist

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025.

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## Section 1 : Equipment Under Test

### 1.1 Product Identification

The Equipment Under Test was identified as follows:

Self Contained Wireless Alarm System, Models: SCW9047-433 and SCW9045-433

### 1.2 Samples Submitted for Assessment

The following samples of the apparatus have been submitted for type assessment:

Sample No.	Description	Serial No.
6	Alarm System Panel DSC SCW9047-433	–
7	Class 2 Transformer DSC PTD1620U, 120VAC/16.5VAC	P/N: PTD1620U

The first samples were received on: November 14, 2007

### 1.3 Theory of Operation

The Self Contained Wireless Alarm System (models SCW9047-433 and SCW9045-433) is used for Fire and Burglary Alarm Installations using short range, low power security transmitters to supervise the protected premises. It receives supervision and alarm signals from enrolled transmitters and communicates the status of these devices to a monitoring station receiver via PSTN. This device has a narrow band ASK receiver for 433.92MHz.

## **1.4 Technical Specifications of the EUT**

<b>Receive Frequency:</b>	433.92 MHz
<b>Receiver Type:</b>	Super Heterodyne
<b>Antenna Data:</b>	Integral (on the PCB)
<b>Power Source:</b>	120 VAC / 60 Hz

## Section 2 : Test Conditions

### 2.1 Specifications

The apparatus was assessed against the following specifications:

FCC Part 15 Subpart B, 15.107 and 15.109  
Unintentional Radiators

### 2.2 Deviations From Laboratory Test Procedures

No deviations were made from laboratory test procedures.

### 2.3 Test Environment

All tests were performed under the following environmental conditions:

Temperature range : 15 – 30 °C  
Humidity range : 20 - 75 %  
Pressure range : 86 - 106 kPa  
Power supply range : +/- 5% of rated voltages

### 2.4 Test Equipment

Equipment	Manufacturer	Model No.	Asset/Serial No.	Next Cal.
Receiver/Spectrum Analyzer	Rohde & Schwarz	ESU	FA002043	Dec. 31/07
Spectrum Analyzer	Rohde & Schwarz	FSU46	FA001877	Jan 16/08
RF AMP	JCA	1-2 GHz	FA001498	Aug. 21/08
RF AMP	JCA	2-4 GHz	FA001496	Aug. 21/08
Bi-conical Antenna	Sunol	BC2	FA002078	July 25/08
Log Periodic Antenna	Sunol	LP5	FA002077	July 25/08
Horn Antenna #2	EMCO	3115	FA000825	Jan. 30/08
Flush Mount Turntable	Sunol	FM2022	FA002082	NCR
Controller	Sunol	SC104V	FA002060	NCR
Mast	Sunol	TLT2	FA002061	NCR

COU – Calibrate on Use

NCR – No Calibration Required

### 2.5 Measurement Uncertainty

Nemko Canada measurement uncertainty has been calculated using guidance of UKAS LAB 34:2003 and TIA-603-B Nov 7, 2002. All calculations have been performed to provide a confidence level of 95% and can be found in Nemko Canada document MU-003.

## **Section 3 : Observations**

### **3.1 Modifications Performed During Assessment**

No modifications were performed during assessment.

### **3.2 Record Of Technical Judgements**

No technical judgements were made during the assessment.

### **3.3 EUT Parameters Affecting Compliance**

The user of the apparatus could not alter parameters that would affect compliance.

### **3.4 Test Deleted**

No Tests were deleted from this assessment.

### **3.5 Additional Observations**

There were no additional observations made during this assessment.

## **Section 4 : Results Summary**

This section contains the following:

FCC Part 15 Subpart B : Test Results

The column headed 'Required' indicates whether the associated clauses were invoked for the apparatus under test. The following abbreviations are used:

- N No : not applicable / not relevant.
- Y Yes : Mandatory i.e. the apparatus shall conform to these tests.
- N/T Not Tested, mandatory but not assessed. (See section 3.4 Test deleted)

The results contained in this section are representative of the operation of the apparatus as originally submitted.



**4.1 FCC Part 15 Subpart C : Test Results**

Part 15	Test Description	Required	Result
15.107(a) 15.109(a)	Conducted Emissions for Class B Radiated Emissions for Class B	YES YES	PASS PASS

Note: Only model SCW9047-433 was tested. As stated by the applicant, the SCW9045-433 is identical in construction with the SCW9047-433 model (using the same enclosure, same board assembly UA535 Rev 07 and same software) but it has a reduced set of features (no two way audio interface provided).

## Appendix A : Test Results

### Clause 15.107(a) Conducted Emissions

Frequency of Conducted limit (dB $\mu$ V)		
Emission (MHz)	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
* Decreases with the logarithm of the frequency.		

### Test Conditions:

<b>Sample Number:</b>	6	<b>Temperature:</b>	+23°C
<b>Date:</b>	November 15, 2007	<b>Humidity:</b>	45 %
<b>Modification State:</b>	0	<b>Tester:</b>	Roman Kuleba
		<b>Laboratory:</b>	Ottawa

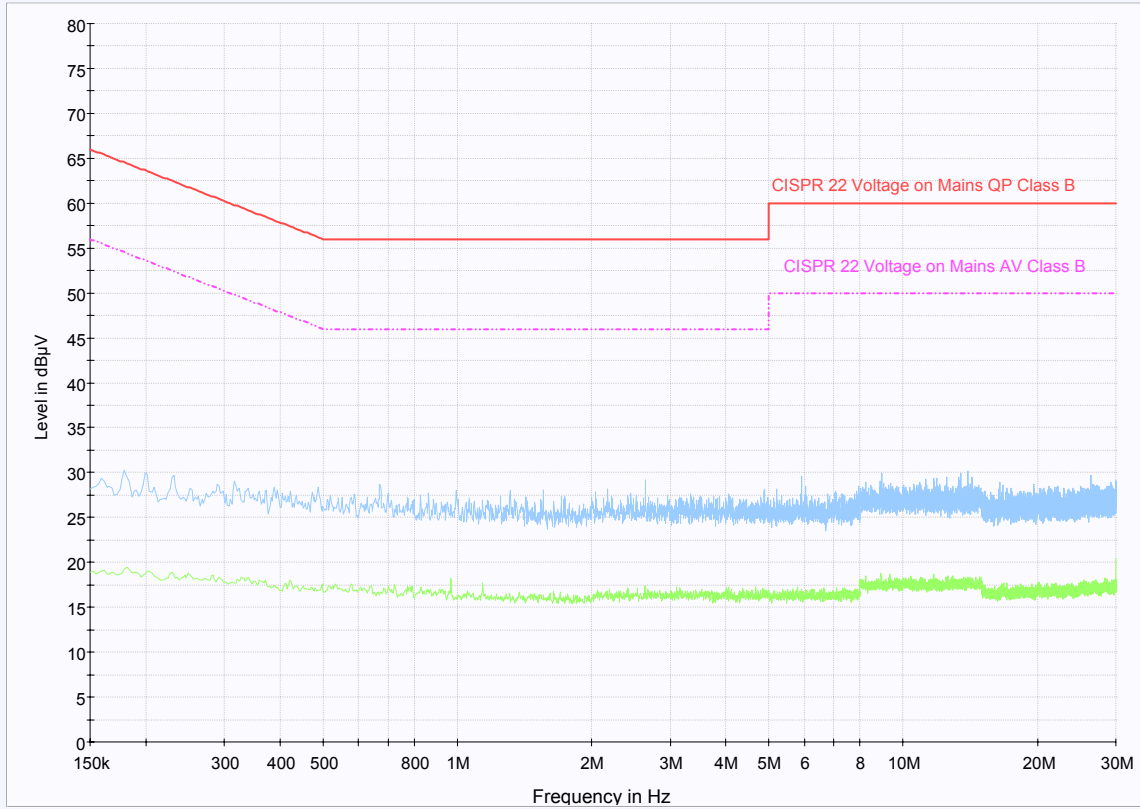
**Test Results:** See Attached Plots.

### Additional Observations:

All plots were obtained using an EMI test receiver in scan mode with a 10 kHz IF bandwidth and Peak and Average detectors. The readings have been corrected with the LISN and cable losses to show compliance with the limits.

15.107(a) Conducted Emissions, continued

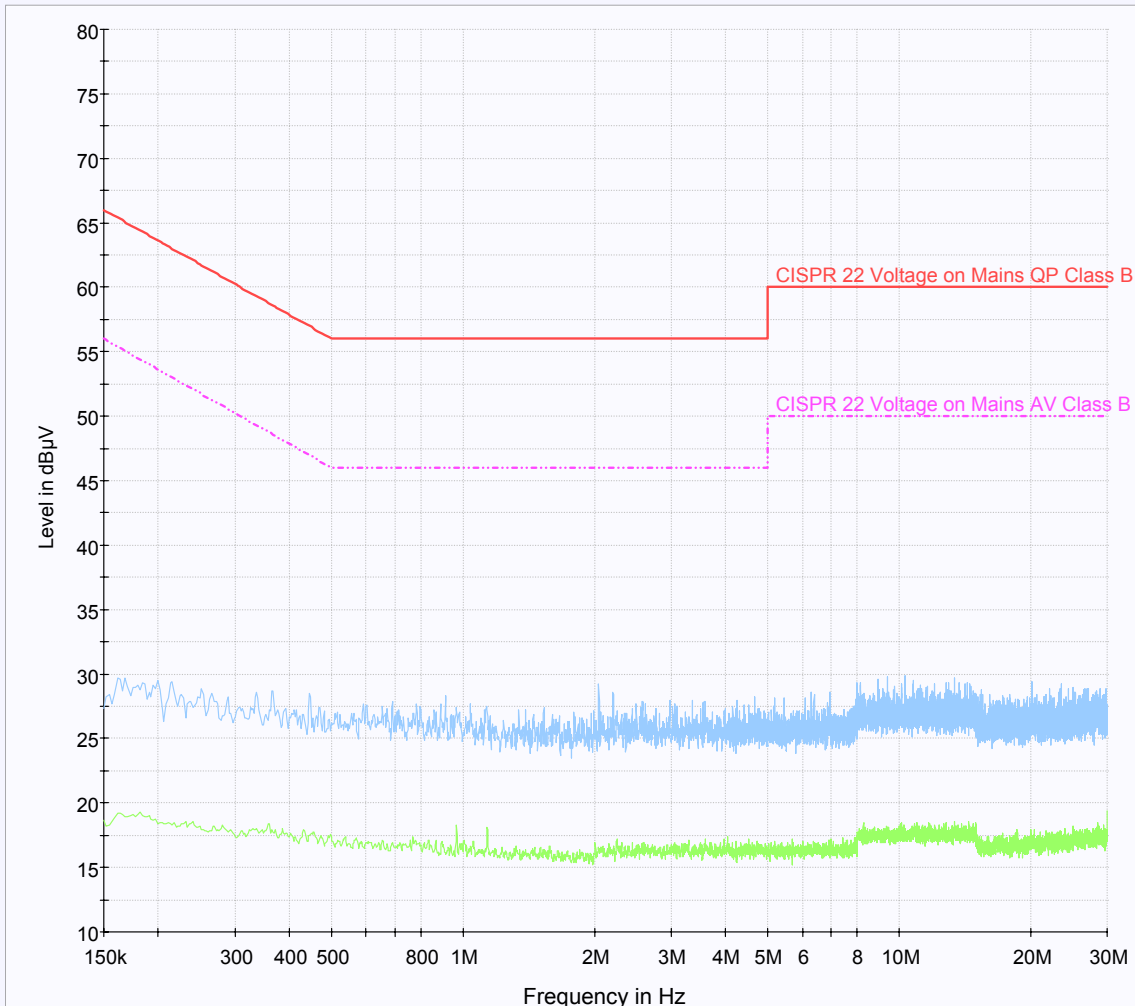
Line: Phase



Line-120V/60Hz  
— CISPR 22 Voltage on Mains QP Class B.LimitLine    - - - CISPR 22 Voltage on Mains AV Class B.LimitLine  
— Preview Measurement Detector 1                      — Preview Measurement Detector 2

15.107(a) Conducted Emissions, continued

Line: Neutral



Neutral- 120V/60Hz  
— CISPR 22 Voltage on Mains QP Class B.LimitLine - - - CISPR 22 Voltage on Mains AV Class B.LimitLine  
— Preview Measurement Peak Detector — Preview Measurement Average Detector

**Clause 15.109(a) Radiated Emissions**

Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of Emission (MHz)	Field Strength (microvoltsmeter)
30 - 88	100
88 - 216	150
216 - 960	200
Above 960	500

**Test Conditions:**

<b>Sample Number:</b>	6	<b>Temperature:</b>	+23°C
<b>Date:</b>	November 15, 2007	<b>Humidity:</b>	45 %
<b>Modification State:</b>	0	<b>Tester:</b>	Roman Kuleba
		<b>Laboratory:</b>	Ottawa

**Test Results:**

See Attached Plots for Results

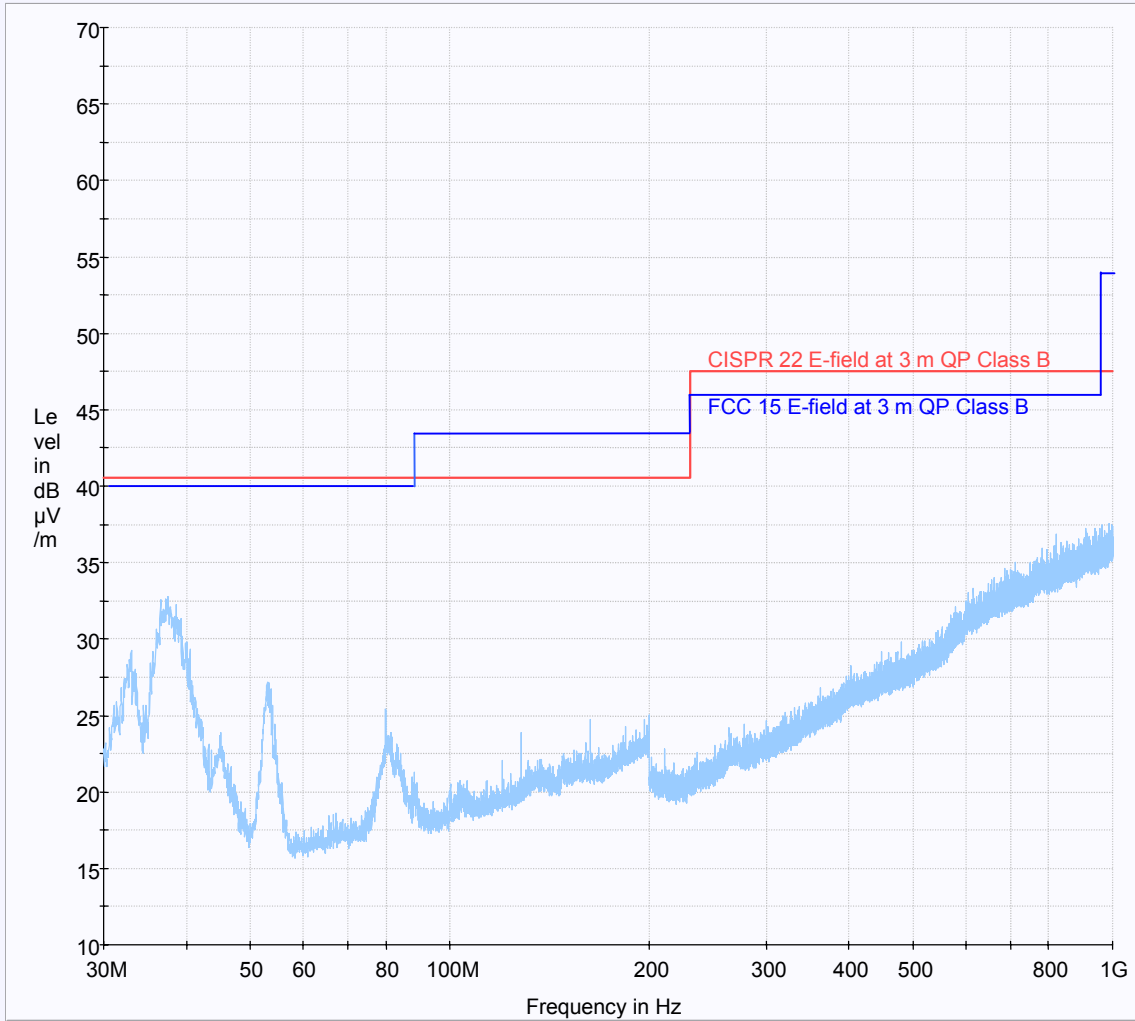
**Additional Observations:**

The EUT was tested at 3m distance.

The Spectrum was searched from 30MHz to the 10<sup>th</sup> Harmonic.

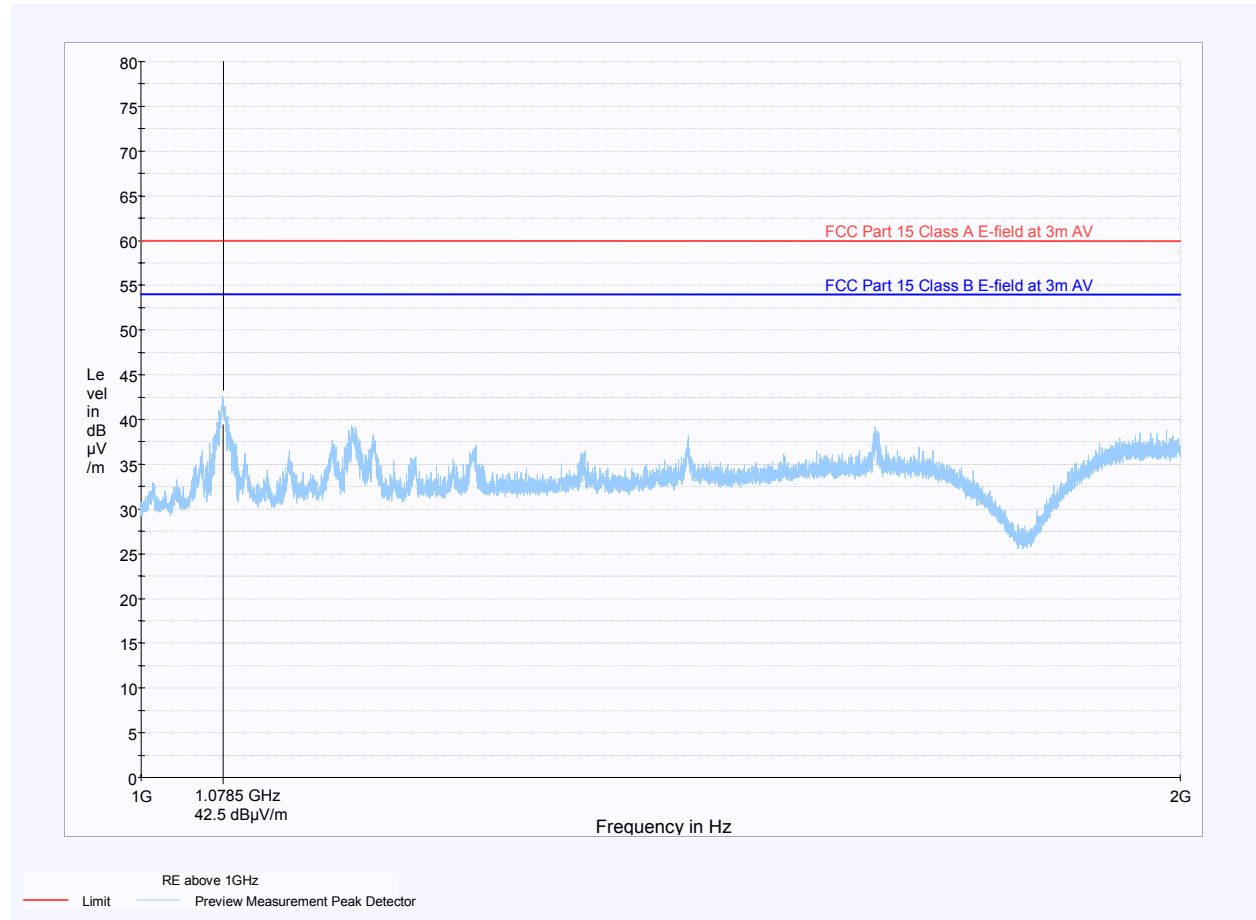
Measurements below 1GHz were performed with a 100kHz RBW/VBW Peak detector and measurements above 1GHz were performed with a 1MHz RBW/VBW Peak detector.

15.109(a) Radiated Emissions, continued



Radiated Emissions  
— CISPR 22 Electric Field Strength 3 m QP Class B.LimitLine Preview Measurement Peak Detector

15.109(a) Radiated Emissions, continued



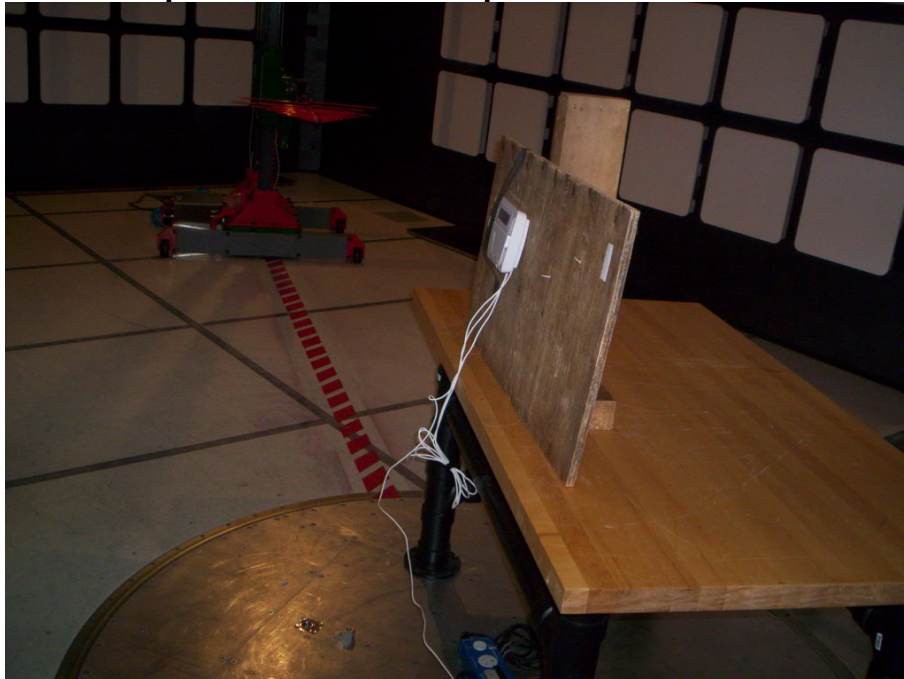
Spectrum was also searched from 2 – 5 GHz. No emissions associated with the receiver within 20 dB below the limit were detected.

## Appendix B : Setup Photographs

### Conducted Emissions Setup:



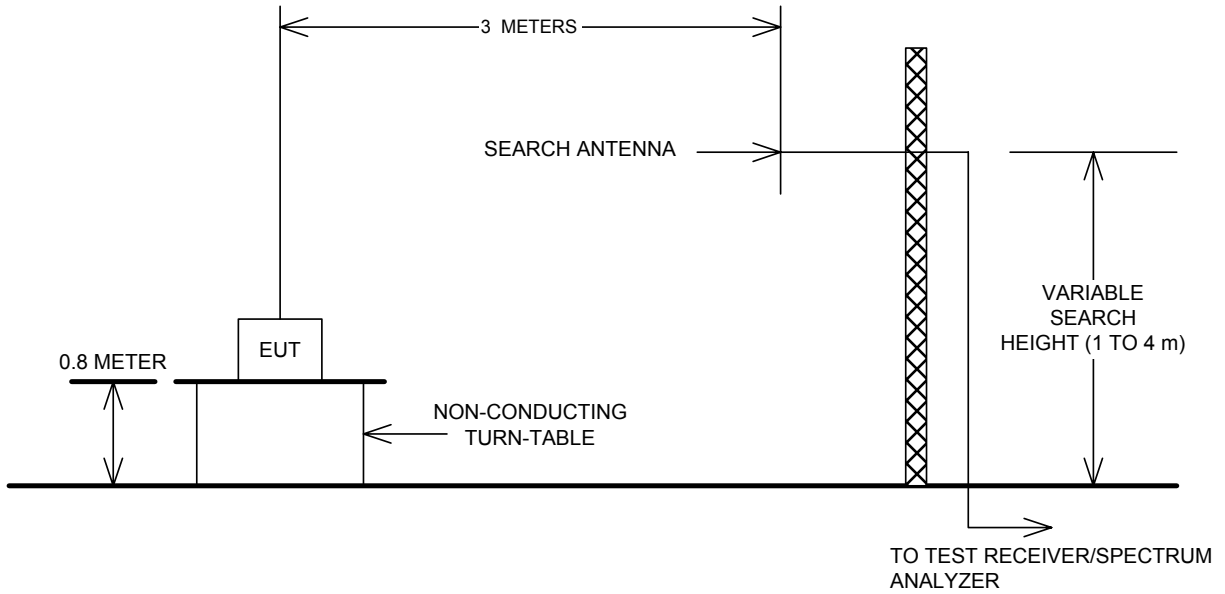
### Radiated Spurious Emissions Setup:





### Appendix C : Block Diagram of Test Setups

#### Test Site For Radiated Emissions



#### Conducted Emissions

