

IEEE Standard Measurement Procedure for Field Disturbance Sensors 300 MHz to 40 GHz

Sponsor

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Abstract: Test procedures for microwave field disturbance sensors to measure radio frequency (RF) radiated field strength of the fundamental frequency, harmonic frequencies, near field power flux density, and nonharmonic spurious emissions of sensors operating within the frequency range of 300 MHz to 40 GHz are defined.

Keywords: field disturbance sensors, field strength measurements, measurement instrumentation, spurious emissions, test sites, test reports

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Introduction

(This introduction is not part of IEEE Std 475-2000, IEEE Standard Measurement Procedure for Field Disturbance Sensors 300 MHz to 40 GHz.)

This standard describes a test procedure for measurement of radio frequency (RF) emissions from microwave field disturbance sensors to assist manufacturers, standard laboratories, and test engineers in determining compliance with established technical specifications.

The IEEE Standards Association (IEEE-SA) Standards Board authorized the IEEE Electromagnetic Compatibility Society Standards Committee to update IEEE Std 475-1983 for consistency with other standards and regulatory requirements.

This revision was prepared by an appointed subcommittee of the Standards Development Committee of the Electromagnetic Compatibility Society. The members of this subcommittee were:

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1. Overview

1.1 Scope

This standard defines test procedures for microwave field disturbance sensors to measure radio frequency (RF) radiated field strength of the fundamental frequency, harmonic frequencies, near field power flux density, and nonharmonic spurious emissions of sensors operating within the frequency range of 300 MHz to 40 GHz.

Field disturbance perimeter protection systems that employ a balanced transmission line around the property being protected are not covered by this standard.

1.2 Applications

Specific types of field disturbance sensors to which this standard applies are as follows:

- a) RF intrusion detector
- b) Production line counter detector
- c) Anti-shoplifting detector
- d) Level sensor

1.3 Description

1.3.1 Field disturbance sensor

A field disturbance sensor is a device that employs a highly localized source of RF energy to detect the motion or presence of an object in the vicinity of the source, and in which the emitter and receiver (or detector) are essentially at the same point, that is, a space-protected system.