

**IEEE Standard Methods of Testing
Amplitude-Modulation
Broadcast Receivers**

**IEEE Standard Method of Testing
Receivers Employing
Ferrite Core Loop Antennas**

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THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, Inc.

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IEEE Standard Method of Testing Receivers Employing Ferrite Core Loop Antennas

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1.00. Introduction. The technique for introduction of a test signal into a loop antenna (see "Standards on Radio Receivers—Methods of Testing Amplitude-Modulation Broadcast Receivers—1948," Section 4.01.03, for example) has long been employed with receivers using air-core loop antennas. These antennas are normally of a more or less flat or "pancake" construction and, in general, lend themselves to the method described in the standard without ambiguity. When this method is extended to loop antennas wound on cores of high permeability in which the length-to-diameter ratio is high, it tends to break down. When the test loop and this type of antenna are coaxial, it is usually not feasible to

assign a spacing between these two for calibration purposes. Moreover, the use of the induction field to simulate the actual radiation field received by the loop is a satisfactory procedure only if the loop is immersed in a reasonably uniform field. This is substantially the situation with flat air core loops using the aforementioned technique but is not approximated satisfactorily when the relatively long ferrite core loop antenna is employed. This present standard describes a modification of the existing techniques which allows for the measurement of a receiver employing a ferrite-core loop antenna with the same precision as that obtained in the measurement of air-core loop antennas.