

American National Standard

for instrumentation—
electromagnetic noise and field
strength, 10 kHz to 40 GHz—
specifications

ANSI C63.2-1987



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American National Standard
for Instrumentation—
Electromagnetic Noise and Field Strength,
10 kHz to 40 GHz—
Specifications

Accredited Standards Committee On Electromagnetic Compatibility, C63
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Foreword

(This Foreword is not part of American National Standard C63.2-1987.)

Almost from the beginning of radio broadcasting, the electric utility companies were faced with problems of radio noise. In 1924 the National Electric Light Association appointed a committee to study the subject. The manufacturers of electric power equipment had encountered similar problems, and in 1930, a subcommittee of the NEMA Codes and Standards Committee was set up. The following year, the EEI-NEMA-RMA Joint Coordination Committee on Radio Reception was organized.

The Joint Coordination Committee issued a number of reports, among which was *Methods of Measuring Radio Noise, 1940*. This report included specifications for a radio-noise and field-strength meter for the frequency band 0.15–18 MHz. The report recommended procedures for measuring radio-noise voltage (conducted noise) from low- and high-voltage apparatus, making noise field-strength measurements near overhead power lines, determining broadcast field strengths, and collecting data upon which to base tolerable limits for radio noise. More than a thousand radio-noise meters were built, essentially in conformance with those specifications. They have been used to make extensive field, factory, and laboratory tests on many types of electrical apparatus.

During World War II, the needs of the armed services for instruments and methods for radio-noise measurement, particularly at frequencies higher than the broadcast band, became pressing and, in 1944, work on developing suitable specifications was begun by a special subcommittee of ASA Sectional Committee C63, Radio-Electrical Coordination. This special subcommittee developed a war-time specification which became the joint Army-Navy Specification JAN-I-225 which was issued in 1945 and later approved as American War Standard — Method of Measuring Radio Interference of Electrical Components and Completed Assemblies of Electrical Equipment for the Armed Forces from 150 kc to 20 Mc, C63.1-1946. This American War Standard included the specifications for a radio-noise meter similar to those included in the JCC 1940 report with the addition of some refinements and improvements.

In 1950, the ASA Sectional Committee C63 completed preparation of Proposed American Standard Specifications for a Radio Noise Meter, 0.015 to 25 Mc/s, C63.2, which was published in March 1950 for trial and study. An effort was made to take advantage of the extensive experience with meters made under the specification in the 1940 report as well as advances in radio engineering practice.

Experience with the proposed standard indicated a number of needed revisions and improvements. The various branches of the Armed Forces had developed new specifications for radio-noise meters since 1950, and the International Electrotechnical Commission published for CISPR (International Special Committee on Radio Interference) *Specification for CISPR radio interference measuring apparatus for the frequency range 0.15 Mc/s to 30 Mc/s*, Publication 1, First edition, 1961. The revised standard was published as American Standard Specifications for Radio-Noise and Field Strength Meters 0.015 to 30 Mc/s, C63.2-1963. In 1964, standard C63.3, covering instruments for the frequency range 20 MHz to 1000 MHz was issued, which was based upon the principles of measurement used in standard C63.2. More recently, CISPR Publication 16 has been issued.¹

The experience with meters made under the specifications set forth in the 1950 Proposed American Standard and the advances in radio engineering practice evidenced by these newer specifications for radio-noise meters have resulted in the inclusion of a number of revisions and improvements in this standard.

This standard was developed by Subcommittee One on Techniques and Developments of Accredited Standards Committee on Radio-Electrical Coordination, C63.

Methods of measurement in the frequency range of up to 1 GHz are covered in ANSI C63.4-1981, Methods of Measurement of Radio-Noise Emissions From Low-Voltage Electrical and Electronic Equipment in the Range of 10 kHz to 1 GHz. Methods of measurement up to 40 GHz are under consideration.

¹ See [4] in Section 19.

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