

JJF

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Calibration Specification for Triple-Loop Antennas (English Translation)

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Introduction

JJF 1071-2010 "Rules for the Preparation of National Metrology and Calibration Specifications" and JJF 1059.1-2012 "Measurement Uncertainty "Degree Assessment and Representation" together constitute the basic series of standards supporting the preparation of this standard.

This specification refers to GB/T 6113.104-2016 "Radio disturbance and immunity measurement equipment and measurement methods" Specification Part 1-4. Antennas and test sites for radiated disturbance measurements of radio disturbance and immunity measuring equipment and CISPR16-1-4:2019/AMD1:2020 Specification for Radio Disturbance and Immunity Measurement Equipment and Methods Part 1-4. Antennas and test sites for radiated disturbance measurements of radio disturbance and immunity measuring equipment the degree of consistency between this specification and CISPR16-1-4:2019/AMD1:2020 is non-equivalent.

This specification is published for the first time.

Three-loop antenna calibration specifications

1 Scope

This specification applies to the calibration of three-loop antennas in the frequency range of 9kHz~30MHz.

2 References

This specification references the following documents.

GB/T 6113.104 Specification for radio disturbance and immunity measuring equipment and methods Part 1-4. None Antennas and test sites for radiated disturbance measurements of line disturbance and immunity measuring equipment CISPR16-1-4 Radio disturbance and immunity measuring equipment and measurement methods specification Part 1-4. Radio disturbance and immunity measuring apparatus-Antennas and test sites for radiated for any referenced document with a date, only the version with the date is applicable to this specification; for any referenced document without a date, the latest version (including all amendments) shall apply to this specification.

3 Terminology and units of measurement the following terms and definitions apply to this specification.

3.1 validation factor; VF the confirmation coefficient can be expressed as.

$$F=20\lg(V_{go}/I_i) \quad (1)$$

Where.

F --- confirmation coefficient, dB (ohm);

V_{go} --- Open circuit voltage of RF signal source, V;

I_i --- Induced current of large loop antenna, A.

4 Overview

The three-loop antenna is composed of three mutually perpendicular large loop antennas (LLA), the standard diameter of the large loop antenna is 2m.

The entire three-ring antenna system is supported by a non-metallic base. The output end of each large ring antenna has a sensitivity of 1V/A.

The loop antenna system is used to measure the current induced by the magnetic field emitted by a single device under test.

The device is placed at the center of the loop antenna system. The structure of the three-loop antenna is shown in Figure 1.