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**INDUSTRY STANDARD OF THE
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MH/T 4039-2013

**L band primary surveillance radar for ATC.Test methods
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed by the Air Traffic Control Industry Management Office of the Civil Aviation Administration of China.

This standard was approved by the Aircraft Airworthiness Certification Department of the Civil Aviation Administration of China.

This standard is under the jurisdiction of the China Academy of Civil Aviation Science and Technology.

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1 Scope

This standard specifies the test methods for the main indicators of the L-band primary surveillance radar equipment for civil aviation air traffic control.

This standard applies to the testing of L-band primary surveillance radar equipment for civil aviation air traffic control.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated references, the latest version (including all amendments) applies to this document.

The verification test of failure rate and mean time between failures under the assumption of constant failure rate in GB/T 5080.7-1986 equipment reliability test Program GB 6364 Electromagnetic environment requirements for aeronautical radio navigation stations MH/T 4003 radio navigation station and air traffic control radar station setting site specifications MH/T 4032 Civil Aviation Flight Check Technical Requirements Radar MH/T 4038 L-band primary surveillance radar technical requirements for air traffic control

3.1 Terms and definitions

The terms and definitions established in MH/T 4038 apply to this document.

3.2 Abbreviations

The following abbreviations apply to this document.

GNSS global navigation satellite system PPI plane position indicator STC sensitivity-time control

4.1 Radar under test

The radar under test should be in the state specified in the radar product manual before the various indicators are tested, the equipment should be intact and work stable.

4.2 Test environment

4.2.1

The wind at the test site should not be greater than level 3, and the weather should be fine.

4.2.2

The electromagnetic environment around the test site should meet the requirements of GB 6364.

4.2.3

The obstacle environment around the test site should meet the requirements of MH/T 4003.

4.3 Test equipment and instruments

4.3.1

Test equipment and instrument test capabilities should cover the indicators of the radar to be tested.

4.3.2

The self-made test equipment shall be approved by the competent authority of the industry before being used.

4.3.3

The test equipment and instruments should reach the specified accuracy.

4.3.4

Test equipment and instruments should be within the validity period of verification or calibration.

4.4 Test record

4.4.1

During the test, the original information and data related to the test results should be recorded in accordance with the test procedures for data processing.

4.4.2

The test record should include the following.

- The basis, time, place, project, implementation process and participants of the test;
- The name and code of the radar under test, and the model and identification date of all instruments;
- Original data records, data processing methods and results.

5.1 Equipment composition inspection

Count and record item by item according to the equipment composition table in the radar product manual.

5.2 Appearance quality inspection

Use visual inspection and hand feel method to check the appearance quality of the whole radar.

5.3 Identification check

In accordance with the provisions of the radar product manual, check the product part number and serial number of the radar and record them.

5.4.1 Test equipment

Use a spectrum analyzer.

5.4.2 Test method

Connect the radar excitation signal (milliwatt level) before power amplification directly to the spectrum analyzer, select the operating frequency point, and check the excitation signal on