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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 44110-2024

**Satellite navigation and positioning sounding system - Ground
receiver**

卫星导航定位探空系统 地面接收机

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Foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting: Please note that some of the contents of this document may involve patents: The issuing organization of this document does not assume the responsibility for identifying patents: This document was proposed by the China Meteorological Administration: This document is under the jurisdiction of the National Technical Committee for Standardization of Meteorological Instruments and Observation Methods (SAC/TC507): This document was drafted by: Beijing Huayun Dongfang Detection Technology Co., Ltd., China Meteorological Administration Meteorological Detection Center, Chinese People's Liberation Army Unit 61540, Meteorological Cadre Training Institute of China Meteorological Administration, Liaoning Meteorological Equipment Support Center, and Zhongman Technology (Beijing) Co., Ltd: The main drafters of this document are: Liu Yinfeng, Guo Qiyun, Jiang Mingbo, Ji Cuiling, Chen Xi, Gong Na, Li Xin, Du Zhitao, Du Jianping, Ren Jie, Wu Qun, Sally, Song Daquan: Satellite navigation positioning sounding system ground receiver

1 Scope

GB/T 44110-2024 specifies the ground receiver of a satellite navigation positioning radiosonde system, the equipment that tracks a weather balloon and receives its telemetry. Upper air soundings are the backbone of numerical weather prediction, and in the GNSS era the wind is derived from the sonde's own navigation solution rather than from tracking the balloon optically or by radar, which puts the ground receiver at the centre of the measurement: it has to acquire and hold a weak signal from a transmitter that climbs to thirty kilometres and drifts a hundred kilometres downrange, in all weathers, from an

unattended station. The standard sets the composition of the receiver, then the technical requirements: the general and safety requirements, the technical indicators for sensitivity, tracking range, data rate and positioning performance, the functional requirements, the power supply adaptability, the environmental adaptability and the reliability. It then covers the test methods, the inspection rules and the marking, packaging, transport and storage. For a manufacturer supplying the Chinese meteorological network, this is the acceptance text. It took effect on 28 May 2024.

This document specifies the technical requirements for ground receivers of satellite navigation and positioning sounding systems, provides corresponding test methods, and establishes The composition and inspection rules of the surface receiver are specified, as well as the identification and accompanying documents, packaging, transportation and storage: This document applies to the design, production and acceptance of ground receivers:

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document: For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document:

GB/T 191-2008 Pictorial markings for packaging, storage and transportation

GB/T 2423:1-2008 Environmental testing for electric and electronic products Part 2: Test methods Test A: Low temperature

GB/T 2423:2-2008 Environmental testing for electric and electronic products Part 2: Test methods Test B: High temperature

GB/T 2423:3-2016 Environmental testing Part 2: Test method Test Cab: Steady state damp heat test

GB/T 2423:17-2008 Environmental testing for electric and electronic products Part 2: Test methods Test Ka: Salt spray

GB/T 2423:21-2008 Environmental testing for electric and electronic products Part 2: Test methods Test M: Low pressure

GB/T 2828:1-2012 Sampling procedures for inspection by attributes Part 1: Sampling for batch inspection based on acceptance quality limit (AQL) plan

GB/T 4208-2017 Enclosure protection degree (IP code)

GB 4793:1-2007 Safety requirements for electrical equipment for measurement, control and laboratory use Part 1: General requirements

GB/T 6587-2012 General specification for electronic measuring instruments GB/T 17626:

2 Electromagnetic compatibility test and measurement technology Electrostatic discharge immunity test GB/T 17626:

3 Electromagnetic compatibility test and measurement technology Radio frequency electromagnetic field radiation immunity test GB/T 17626:

4 Electromagnetic compatibility test and measurement technology Electrical fast transient pulse group immunity test GB/T 17626:

3 Terms and definitions

The following terms and definitions apply to this document: 3:1 ground receiver groundreceiver Equipment used to receive radio signals from the sonde of a satellite navigation and positioning sounding system: 3:

2 Sensitivity Under the specified test frequency and modulation mode, when the receiver bit error rate is less than or equal to the specified value, the receiver antenna port input signal