

ICS 49.140
CCS M 50



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

GB/T 47814-2026

Global navigation satellite system (GNSS) receiver class codes

全球卫星导航系统（GNSS）接收机分类代码

(English Translation)

Issued on: July 2, 2026

Implemented on: November 1, 2026

Issued by: State Administration for Market Regulation

Table of Contents

Preface
Introduction
1 Scope
2 Normative References
3 Terms and Definitions
4 Abbreviations 3.
5 Coding System
5.1 Positioning
5.2 Time synchronization
6 Classification criteria for receiver codes 7.
7 Multiple annotations
Appendix A (Informative) GNSS Application Examples
Reference

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document adopts ISO 24245:2023, "Space Systems - Classification codes for Global Navigation Satellite System (GNSS) receivers".

The following minimal editorial changes have been made to this document.

---To harmonize with existing standards, the standard name has been changed to "Classification Codes for Global Navigation Satellite System (GNSS) Receivers";

---The abbreviation RTK has been corrected, and the abbreviation PPP-RTK has been added (see Chapter 4);

---Corrected classification codes C11a (see 5.1.3), P11a, P11 receiver (see 5.1.9), P16a, and P16 Receiver (see 5.1.10), classification code P26a, P26 receiver (see 5.1.12);

---A footnote for "Examples of Earth Observation Applications" has been added (see Table A.1);

---Added explanations to the remarks column for serial numbers "2-4" (see Table A.2);

---Corrected C10a and C20a in the code column "3-3" (see Table A.3);

---Corrected C10a and C20a in the code columns "4-1" and "4-6" (see Table A.4).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Aerospace Technology and Its Applications (SAC/TC425).

Institute, Hangzhou Zhongke Microelectronics Co., Ltd., Inner Mongolia Autonomous Region Military-Civilian Integration Development Research Center, Guoneng Digital Intelligence Technology Development (Beijing) Co., Ltd.

Sishi Spacetime Information Branch, Guoqi Dashi Spacetime Technology (Anqing) Co., Ltd., Beijing Hongxiang Technology Co., Ltd., Hunan Zhongdian Xinghe Electronics Co., Ltd.

Limited Company, Guangzhou Haige Jingwei Information Industry Co., Ltd., Tianjin 764 Communication & Navigation Technology Co., Ltd., Huadian Jinsha River Upper Reaches Water Electric Power Development Co., Ltd., Jiujiang Chaisang District Inspection and Testing Center (Jiangxi Province Beidou Application Product Quality Inspection and Testing Center), Sinopec Petroleum Engineering Cheng Geophysical Co., Ltd. Beidou Operation Service Center, China Petroleum Pipeline Communication & Power Engineering Co., Ltd., and CCCC Xingyu Technology Co., Ltd.

Limited Company, China Time and Space Information Group Co., Ltd., Guangzhou Swode Technology Co., Ltd., and Beijing Zhongweixie Beidou Time and Space Technology Research Institute.

Introduction

Global Navigation Satellite System (GNSS) is an internationally recognized advanced space-based navigation, positioning, and timing infrastructure with a wide range of applications.

my country's independently developed and operated BeiDou Navigation Satellite System (BDS), along with GPS, GLONASS, and GALILEO, is one of the four internationally recognized global navigation satellite systems.

Satellite navigation systems have been widely applied in many industries and fields of my country's national economic and social development, contributing to economic development and industrial upgrading.

It has made significant contributions to upgrading and improving the quality of life for the general public. Currently, GNSS application technologies are becoming more complex and diverse, posing challenges to GNSS technology.

For users of GNSS technology, the abundance of available models makes it difficult to quickly find the product that best suits their needs. In order to...

To solve this problem, ISO developed a set of GNSS receiver classification codes, which have been widely used in many international commercial applications and government procurement scenarios.

Upon application, it was considered helpful in promoting the use of global satellite navigation systems and received high praise. Currently, many domestically developed and produced [products/equipment] are available.

Multiple types of GNSS receivers can not only receive signals from multiple satellite navigation systems, but also provide positioning, navigation, timing, communication, and augmentation functions.

With multiple functions such as search and rescue, GNSS receiver products are becoming increasingly diversified to meet the different needs of various users.

The project addresses GNSS issues and collaborates with TC20/SC13, other ISO TCs, IEC TCs, and other international organizations on relevant standards in the GNSS field.

The two sides are mutually coordinated, and their relationship is shown in Figure 1.

Figure 1. Standardization of Space-Based Services (GNSS-Related Fields)

This document aims to promote the use of GNSS receivers by stakeholders in the global space-based positioning, navigation, and timing services market.

The classification code. Using this document helps end users understand the type of equipment they are using, and also facilitates receiver suppliers in accurate classification.

Clearly identify the type and characteristics of its products. See Figure 2.

Figure 2. GNSS receiver classification codes for improving market efficiency.

Some GNSS receivers also have other functions, such as attitude detection and Wi-Fi mobile communication. These are not covered in this document.

Function.

Global Navigation Satellite System (GNSS) Receiver Classification Code

1 Scope

This document specifies the classification codes for Global Navigation Satellite System (GNSS) receivers. These classification codes indicate the type of receiver used for transmitting navigation satellite signals.

How to handle the output.

This document applies to all types of GNSS receivers.

The classification codes in this document do not apply to the following items.

- Status of navigation satellites;
- Radio propagation environment, including multipath, shielding, and obstacle effects;
- The receiver's external antenna;
- Additional application software for the receiver.

This document has no normative references.

3 Terms and Definitions

The following terms and definitions apply to this document.

receiver

Equipped with or containing a matching antenna, it is used to select, receive, amplify, and demodulate the required radio frequency signals, and convert the reproduced signals into usable signals as needed.

Devices in the form of direct use (3.2).

[Source. IEC 60050-713:1998, 713-10-02, modified] 3.2 device Material elements or components thereof capable of performing a specific function.

Note: A device can be a component of a larger device.

[Source. IEC 60050-151:2001, 151-11-20] 3.3 GNSS receiver A receiver (3.1) that determines the user's position, speed, and/or precise time by processing the radio navigation (3.6) signals broadcast by satellite.

Radio measurement

Using radio waves, the position, velocity and/or other properties of an object can be determined, or information related to these properties can be obtained.

Radio measurements using satellite systems (3.4).

[Source. IEC 60050-725:1994, 725-12-49]