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

GB/T 42443-2023

**Information technology - Automatic identification and data
capture techniques - Syntax for high-capacity ADC media**

信息技术 自动识别与数据采集技术 大容量自动数据采集(ADC)媒体语法

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Foreword

This document was issued on 17 March 2023 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 October 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

1 Scope

GB/T 42443-2023 covers the message that a high-capacity automatic data capture medium hands to the software reading it, where trading partners exchange goods between supplier and recipient and where carriers use the same medium for bills of lading, sorting and tracking. Terms are taken from GB/T 12905-2019 and GB/T 37056-2018 rather than redefined. A short clause fixes the notation used throughout, including how the non-printable separator characters are shown on the page, since a specification about invisible characters is unreadable without one. The message format clause carries the substance: the transmission structure that moves data from the reading device to the user application software, and the way the parts of a message are delimited and identified. Human-readable representations then set out how the same content is printed for a person, with the non-printable control characters drawn from the character set of GB/T 1988-1998. Interchange is the whole point, and it is where this fails in practice: a label read at a receiving dock has to parse identically in a system that never met the one that encoded it, and a field boundary understood one way at the source and another at the destination corrupts the data without announcing it. For system integrators, encoding and label suppliers, logistics software developers and the trading partners who must agree on a

format.

This Document specifies when using the high-capacity ADC media between trading partners

(particularly between suppliers and recipients) and where applicable, when supporting carrier

applications (such as bills of lading, carrier sorting and tracking), the transmission structure, syntax and encoding of message and data formats.

Data encoded according to this Document includes:

- data available for shipping, receiving and counting transport units;
- data in paper or electronic form relating to unit loads or transport packages that may be included in supporting documentation;
- data that can be used for sorting and tracking transport units.

This Document gives GB/T1988-1998 characters for automatic data collection.

This Document does not supersede or replace any applicable safety or other marking or labeling

requirements. Unless there are any other mandatory labeling requirements, this Document applies.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates

indicated are applicable to this Document; for the undated documents, only the latest version

(including all the amendments) is applicable to this Document.

GB/T 1988-1998 Information technology - 7-bit Coded character set for information interchange (eqv ISO/IEC 646:1991)

GB/T 12905-2019 Bar code terminology

GB/T 37056-2018 Article numbering terminology

3 Terms and Definitions

For the purposes of this Document, the terms and definitions given in GB/T 12905-2019 and

GB/T 37056-2018 apply.

4 Conventions of Symbols in Document

This Document is formatted as follows in the message examples.

Bold and uppercase letters: The entered text should be exactly the same as the displayed text

(in this Document, FS, GS, US, RS, EoT are used to represent special non-printable characters. The

special characters in GB/T 1988-1998 used in this Document shall comply with the provisions

of Appendix A).

Italics and lowercase letters: variable parameters. User shall provide appropriate value. In some

cases, the default value should be used.

5 Message Format

5.1 General

The message format defines the method of transferring data from the high-capacity ADC media

reading device to the user application software.

In order to include multiple data formats in the data stream, a two-layer encapsulation structure

is adopted. The outermost layer of the message is the message encapsulation that defines the

header and tailer of the message. There are one or more format encapsulations containing data

in the message encapsulation (see Figure 1). Multiple formats in a single message can only be

used for bilateral agreements between trading partners.

The message encapsulation shall include:

--- 1 message header;

- 1 or more format encapsulations, and;
- 1 message trailer (when needed).

Each format encapsulation within the message encapsulation shall include:

- 1 format header;
- formatted data stored according to the rules defined by the format, and;
- Format, containing one or more fields;
- Field, containing 1 or more data elements;
- Data element (field), may contain 1 or more child elements (subfield).

5.2.2 Message header

5.2.2.1 General

The message header consists of 2 parts:

- Conformance identifier of 3 characters;
- Format trailer character.

The complete message header shall be:

5.2.2.2 Conformance identifiers

The conformance identifier shall be the first 3 characters in the message header.

Conformance

identifiers are "[" ") " " > ". Appendix A gives the table of decimal and hexadecimal values of GB/T1988-1998 characters used in this Document.

5.2.2.3 Format trailer characters

The format trailer character shall be the 4th character in the message header. The format trailer

character is the non-printable character "RS" (as per Appendix A). The format trailer character

is used throughout the message to mark the end of the data format encapsulation (see 5.3.16).

5.2.3 Message trailer

The message trailer identifies the end of the message in the data stream, which shall be the end

of the transaction character. The message trailer is "EoT" (according to Appendix A). Except