

ICS 43.040.10
CCS T36



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

GB 39732-2020

Vehicle event data recorder system

汽车事件数据记录系统

Issued on: December 24, 2020

Implemented on: January 1, 2022

**Issued by: State Administration for Market Regulation;
Standardization Administration of China**

Table of Contents

1	Scope
2	Normative references
3	Terms and definitions
4	Technical requirements
4.1	Requirements for impact event
4.1.1	Trigger threshold
4.1.2	Lockout conditions
4.2	Data recording requirements
4.3	EDR recording functional requirements
4.3.4	Requirements for storage overwriting mechanism
4.4	Data extraction requirements
4.4.3	Requirements for data extraction protocol
4.4.4	Requirements for data extraction symbol
5	Test methods and requirements
5.1	Impact test
5.2	Driving operation data test
5.3	Bench test
5.3.1	Test preparation
5.3.2	EDR system trigger test
5.3.4	Storage overwriting mechanism test
5.3.5	Power-off storage test
6	Appearance and marking
7	Extension of vehicle models
7.2	Judgment conditions
8	Instruction manual
8.2	For
9	Implementation of standard

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard was proposed by AND shall be under the jurisdiction of the Ministry of Industry

and Information Technology of the People's Republic of China. Vehicle event data recorder system

1 Scope

GB 39732-2020 is the Chinese national standard on vehicle event data recorder system, in the field of road vehicles engineering. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 24 December 2020 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 January 2022. Classification: ICS 43.040.10, CCS T36. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the terms and definitions, technical requirements, test methods and requirements, appearance and marking, vehicle type extensions and instructions, for the vehicle event data recorder system of category M1 vehicles. This standard applies to category M1 vehicles, which are equipped with a vehicle event data recorder system. Other vehicles can make reference with it.

2 Normative references

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

GB 11551-2014 The protection of the occupants in the event of a frontal impact for motor vehicle

GB 14166 Safety-belts, restraint systems, child restraint systems and ISOFIX child restraint systems for occupants of power-driven vehicles

GB 20071 The protection of the occupants in the event of a lateral impact

GB/T 20913 The protection of the occupants in the event of an off-set frontal impact for passenger car

GB/T 30038 Road vehicles - Degrees of protection (IP-Code) - Protection of electrical equipment against foreign objects, water and access

GB/T 34589-2017 Road vehicles - Diagnostic connector

ISO 14229-1:2020 Road vehicles - Unified diagnostic services (UDS) - Part 1. Application layer ISO 14230-

3 Terms and definitions

The terms and definitions, as defined in GB 14166, as well as the following terms and definitions, apply to this document.

3.1 Impact event A impact or other physical event, that reaches or exceeds the trigger threshold, OR any other event, that causes an irreversible restraint to deploy, whichever occurs first.

3.2 Vehicle event data recorder system; EDR A device or system, which is composed of one or more on-board electronic modules; has the function of monitoring, collecting, recording the data of the vehicle and occupant protection system before, during, after the occurrence of an impact event.

3.3 EDR controller In-vehicle electronic module, for monitoring, collecting, recording time-series data, during an impact event.

3.4 Lateral acceleration The component of the acceleration vector, at a point on the vehicle, in the direction of the Y axis.

3.5 Longitudinal acceleration The component of the acceleration vector, at a point on the vehicle, in the direction of the X axis.

3.6 Normal acceleration The component of the acceleration vector at a point on the vehicle in the direction of the Z axis.

4.1.2 Lockout conditions

4.1.3 Starting point of impact event The starting point of the impact event (time zero T0) shall meet any of the following requirements, as shown in Figure 2.

4.1.4 End of impact event The end of the impact event (T end) shall meet the following requirements.

4.1.5 Duration of impact event The duration of impact event is the time interval, between the impact event's start point (T0) and the end point of impact event (T end).

4.2 Data recording requirements

4.2.1 The data elements of EDR records are divided into two levels, according to the following requirements.

4.2.2 In the event of an impact, the data elements recorded by the EDR shall meet the requirements of Appendix A, meanwhile the data recorded by the EDR shall meet the test requirements of 5.1, 5.2, 5.3.

4.3 EDR recording functional requirements

4.3.1 Storage media requirements EDR data shall be recorded in non-volatile memory.

4.3.2 EDR trigger requirements When the vehicle reaches the trigger threshold, which is specified in 4.1.1, the EDR controller shall trigger the recording of data; after the test according to 5.3.2, it shall meet the test requirements.

4.3.3 Requirements for the number of storage events The EDR system shall be able to record at least three consecutive impact event data. After the test according to 5.3.3, it shall meet the test requirements.

4.3.4 Requirements for storage overwriting mechanism

4.3.5 Requirements for power-off storage In the process of impact, if the power supply circuit in the vehicle cannot supply power normally, due to the impact event, then the EDR system itself shall have the power supply capability.

4.4 Data extraction requirements

4.4.1 General requirements After the event occurs, the data recorded by the EDR shall be able to be extracted, AND the data shall be prevented from being tampered with or deleted.

4.4.2 Requirements for data extraction port The EDR data extraction port shall comply with the port definition, in

4.2.1 of GB/T 34589-2017. The terminal arrangement is as shown in Table 4.

4.4.4 Requirements for data extraction symbol

4.4.5 Requirements for data translation The data recorded by the EDR shall meet the requirements of Table A.1 in Appendix A. It shall be translated, in accordance with the data arrangement in Table B.1.

4.4.6 Requirements for storage period If the EDR storage unit is not replaced, the event data stored by the EDR system shall be available for reading, throughout the vehicle's life cycle.

4.4.7 Additional data extraction requirements If the EDR data is scattered in different on-board electronic modules, then the recorded data shall ensure time synchronization.

4.5 Requirements for protective performance The protection performance of the EDR controller, which records the EDR data, shall meet the functional status requirements, which are specified in GB/T 30038, as shown in Table 10.

5.1 Impact test