

ICS 43.040.15



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

GB/T 42691.2-2023

**Road vehicles - Local Interconnect Network(LIN) - Part 2:
Transport protocol and network layer services**

道路车辆 局域互联网络 (LIN) 第2部分: 传输层协议和网络层服务
(English Translation)

Issued on: May 23, 2023

Implemented on: December 1, 2023

Issued by: State Administration for Market Regulation

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Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part 1: Rules for the Structure and Drafting of Standardizing Documents.

This Document was Part 2 of GB/T 42691 Road Vehicles - Local Interconnect Network (LIN).

GB/T 42691 has already published the following parts:

- Part 1: General Information and Use Case Definition;
- Part 2: Transport Protocol and Network Layer Services;
- Part 3: Protocol Specification;

- Part 4: Electrical Physical Layer (EPL) Specification 12V/24V;
- Part 5: Application Programmers Interface (API);
- Part 6: Protocol Conformance Test Specification;
- Part 7: Electrical Physical Layer (EPL) Conformance Test Specification;
- Part 8: Electrical Physical Layer (EPL) Specification: LIN over DC Powerline (DC-LIN).

This Document equivalently adopts ISO 17987-2:2016 Road Vehicles - Local Interconnect Network (LIN) - Part 2: Transport Protocol and Network Layer Services.

Please note some contents of this Document may involve patents. The issuing agency of this

Document shall not assume the responsibility to identify these patents.

This Document was proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

This Document shall be under the jurisdiction of National Technical Committee of Auto Standardization (SAC/TC 114).

Drafting organizations of this Document: Pan-Asia Technical Automotive Center Co., Ltd.; China Automotive Technology and Research Center Co., Ltd.; Great Wall Motor Company Limited; Huizhou Desay SV Automotive Co., Ltd.; FAW-Volkswagen Automotive Co., Ltd.; Dongfeng Motor Group Co., Ltd.; Geely Automobile Research Institute (Ningbo) Co., Ltd.; SAIC-GM-Wuling Automobile Co., Ltd.; SAIC Maxus Automotive Co., Ltd.; China FAW Group Corporation; National New Energy Vehicle Technology Innovation Center Co., Ltd.; and

China Automotive Research Institute (Tianjin) Automotive Engineering Research Institute Co.,

Ltd.

Chief drafting staffs of this Document: Wu Shang, Zhu Tong, Qu Yunge, Wu Hanbing, Wang Road Vehicles - Local Interconnect Network (LIN)

- Part 2: Transport Protocol and Network Layer Services

1 Scope

This document specifies a transport protocol and network layer services tailored to meet the

requirements of LIN-based vehicle network systems on local interconnect networks. The protocol specifies an unconfirmed communication.

The LIN protocol supports the standardized service primitive interface as specified in ISO 14229-2.

This document provides the transport protocol and network layer services to support different

application layer implementations like

- normal communication messages, and
- diagnostic communication messages.

The transport layer defines transportation of data that is contained in one or more frames. The

transport layer messages are transported by diagnostic frames. A standardized API is specified

for the transport layer.

Use of the transport layer is targeting systems where diagnostics are performed on the backbone

bus (e.g., CAN) and where the system builder wants to use the same diagnostic capabilities on

the LIN sub-bus clusters. The messages are in fact identical to the ISO 15765-2 and the PDUs

carrying the messages are very similar.

The goals of the transport layer are

- low load on LIN master node,
- to provide full (or a subset thereof) diagnostics directly on the LIN slave nodes, and
- targeting clusters built with powerful LIN nodes (not the mainstream low cost).

A typical system configuration is shown in Figure 1.

receiver/sender, a timeout mechanism allows detection of a transmission failure (see 7.6.2).