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

GB/T 35381.2-2017

**Tractors and machinery for agriculture and forestry -- Serial
control and communications data network -- Part 2: Physical
layer**

农林拖拉机和机械 串行控制和通信数据网络 第2部分：物理层

(English Translation)

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Table of Contents

- Foreword
- 1 Scope
- 2 Normative references
- 3 Terms and definitions
- 4 General rules
- 4.1 Network physical layer
- 4.2 Physical media
- 4.3 Differential voltage

Foreword

GB/T 35381 "agriculture and forestry tractors and machinery serial control and communication data network" is divided into the following 14 sections.

- Part 1. General standards for data communications;
- Part 2. Physical layer;
- Part 3. Data link layer;
- Part 4. Network layer;
- Part 5. Network Management;
- Part 6. Virtual terminal;
- Part 7. Machine information application layer;
- Part 8. Powertrain news;
- Part 9. Tractor ECU;
- Part 10. Task controller and management information system data exchange;
- Part 11. Data element dictionary;
- Part 12. Diagnostic Services;
- Part 13. File server;
- Part 14. Sequence control.

This section GB/T 35381 Part 2.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses the translation method identical with ISO 11783-2:2012 "agriculture and forestry tractors and machinery Serial Control and Communication Data Network Part 2. Physical layer. " the documents of our country that are consistent with the corresponding international documents that are normative references in this section are as follows.

--- GB/T 35381.1-2017 Agriculture, Forestry and Tractors and Machinery Serial Control and Communication Data Network Part 1. Data Communications Common Criteria (ISO 11783-1:2007, IDT)

--- GB/T 5053.2-2006 Road vehicles Tractor and trailer between the electrical connector 7-pin 12V standard (12N) (ISO 1724:2003, IDT) this part is proposed by China Machinery Industry Federation.

This part of the National Agricultural Machinery Standardization Technical Committee (SAC/TC201) centralized.

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1 Scope

GB/T 35381 provides for agriculture and forestry tractors and suspension, semi-suspension, traction or self-propelled equipment, serial control and communication data network, its purpose is to enable data transfer between sensors, actuators, control elements and information storage and display units of a suspended or semi-tractor Standardization of methods and formats, and open system interconnection reference model support (OSI) for electronic control systems for agricultural and forestry equipment.

GB/T 35381 This section defines and describes the speed of 250kbit/s four core twisted pair unshielded cable physical layer.

2 Normative references

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

ISO 1724 Road Vehicles Electrical Connectors Between Tractor and Trailer 7-pin 12V Standard (12N) [Roadvehicles-Connectors for electrical connection and routing and tonedvehicles-7-poleconnectortype 12N (normal) forvehicleswith12Vnominalsupplyvoltage]
ISO 11783-1 Tractors and machinery for agriculture and forestry - Serial control and communication data networks - Part 1. General standards for data communications (Tractorsandmachineryforagricultureandforestry-Serialcontrolandcommunicationsatanet-wor

k-Part 1: General standard for mobile data communication)

3 Terms and definitions

Terms and definitions as defined in ISO 11783-1 apply to this document.

4.1 Network physical layer

The network physical layer enables the electrical connection between several electronic control units (ECUs) and network bus segments. Connected electronic control list the total number of elements is limited by the electrical load on the bus segment. The electrical parameters specified in this section, electronic control on each bus segment the total number of ECUs should be 30.

4.2 Physical media

This section defines the physical media of a four-core, twisted-pair cable. Two of the wires, named CAN_H and CAN_L, are made by communication Signal driven. The corresponding ECU pin names are CAN_H and CAN_L, respectively. The third and fourth wires, named TBC-PWR and TBC-RTN to power terminal bias circuits (TBCs) on the bus segment.

4.3 Differential voltage

The voltages of CAN_H and CAN_L relative to ECU_GND (ground) are indicated by VCAN_H and VCAN_L. The difference between VCAN_H and VCAN_L