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**In-home display terminal for smart-utilization power -**

**Part 2: Data exchange**

户内智能用电显示终端 第2部分：数据交换

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# In-home display terminal for smart-utilization power - Part 2: Data exchange

## 1 Scope

This Part of GB/T 34067 specifies the data exchange model of in-home display terminal for smart-utilization power (hereinafter referred to as terminal), and specifications of local connection data exchange, Local Area Network (LAN) data exchange, Wide Area Network (WAN) data exchange which are based on RS485 communication interface, short-range wireless communication interface, low-voltage power line narrow-band carrier communication interface and GPRS public network communication interface.

This Part applies to terminal equipment that is used in-home to display power consumption information by communication.

## 2 Normative references

The following documents are indispensable 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/T 9387.1-1998, Information technology. Open Systems Interconnection. Basic Reference Model. Part 1: The Basic Model

GB/T 17215.101-2010, Electricity metering. Data exchange for meter reading, tariff and load control. Glossary of terms. Part 1: Terms related to data exchange with metering equipment using DLMS/COSEM

GB/T 19882.31-2007, Automatic meter reading system. Part 3-1: Application layer data exchange protocols. Object identification system

GB/T 19882.32-2007, Automatic meter reading system. Part 3-2: Application layer data exchange protocols. Interface class

GB/T 19882.33-2007, Automatic meter reading system. Part 3-3: Application layer data exchange protocols. COSEM application layer

GB/T 19882.222-2017, Automatic meter reading system. Part 222: Physical layer (PHY) specifications. Wireless communication meter reading system

GB/T 19882.223-2017, Automatic meter reading system. Part 223: Data link layer (MAC sub-layer). Wireless communication meter reading system

GB/T 19897.1-2005, Automatic meter reading system lower layer communication protocol. Part 1: direct local data exchange

GB/T 26831.1-2010, Society energy metering for reading system specification. Part 1: Data exchange

GB/T 26831.4-2017, Specification for reading system of energy metering in community. Part 4: Wireless meter readout

GB/T 26831.5-2017, Specification for reading system of energy metering in community. Part 5: Wireless relaying

GB/T 31983.11-2015, Narrow band power line communication over low-voltage mains. Part 11: 3 kHz to 500 kHz frequency bands and classifications, limits of output level and electromagnetic disturbances

GB/T 31983.31-2017, Narrow band power line communication over low-voltage mains. Part 31: Narrow band orthogonal frequency division multiplexing power line. Communication physical layer specification

GB/T 34067.1-2017, In-home display terminal for smart-utilization power. Part 1: General technical requirements

DL/T 645-2007, Multi-function watt-hour meter communication protocol

DL/T 698.35-2010, Data acquisition and management system for electrical energy. Part 3-5: Technical specification of electrical energy data acquisition terminal. Special requirement for meter reading terminal of LV customers

DL/T 698.45-2017, Data acquisition and management system for electrical energy. Part 4-5: Communication protocol-object oriented data exchange protocol

YD/T 1208-2002, 800MHz CDMA digital cellular mobile communication network Wireless Intelligence Network (WIN). Phase 1: Technical specification of interface

YD/T 1214-2006, Technical requirement of 900/1800MHz TDMA Digital Cellular Mobile Telecommunication Network General Packet Radio Service (GPRS). Equipment: Mobile Stations

### 3 Terms and definitions

Terms and definitions determined by GB/T 17215.101-2010, GB/T 19897.1-2005 and GB/T 34067.1-2017, and the following ones are applicable to this document.

The application layer supports GB/T 19882.31-2007, GB/T 19882.32-2007, GB/T 19882.33-2007, GB/T 26831.1-2010, DL/T 645-2007 and DL/T 698.45-2017.

Refer to Appendix A for in-home display terminal for smart-utilization power and smart energy meter data exchange.

## **5 Data exchange based on RS-485 communication interface**

The interface is a RS-485 communication interface of the two-wire configuration (A, B); it shall comply with the provisions of 4.6.3 of DL/T 698.35-2010.

When it is used for local connection data exchange, the terminal is connected by the main unit.

When it is used for Local Area Network (LAN) data exchange, the terminal is connected by the slave unit.

## **6 Low-voltage power line narrow-band carrier communication technical requirements**

It shall comply with the provisions of GB/T 31983.11-2015, and GB/T 31983.31-2017.

## **7 Short-range wireless communication technical requirements**

It shall comply with the provisions of GB/T 26831.4-2017, GB/T 26831.5-2017, GB/T 19882.222-2017, and GB/T 19882.223-2017.

## **8 Wireless public network communication interface technical requirements**

It shall comply with corresponding national standards or industry standards.

The use of CDMA interfaces shall comply with the provisions of YD/T 1208-2002.

The use of TDMA interfaces shall comply with the provisions of YD/T 1214-2006.

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