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

GB/T 42891-2023

**Technical requirements for broadband customer networking based on
public telecommunication network - Unified high-speed wireline based
home networking with the multiple input/multiple output**

基于公用电信网的宽带客户网络联网技术要求 多入多出（MIMO）的通用介质有线联网

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting.

This document is one of the series of standards "Technical Requirements for Broadband Customer Network Networking Based on Public Telecommunications Networks". The published standardization documents constitute becomes as follows.

---GB/T 33854-2017 Broadband customer network networking technology requirements for power line networking based on public telecommunications networks;

---GB/T 38832-2020 Technical requirements for broadband customer network networking based on public telecommunications networks, integrated high-speed visible Optical Communication;

Universal media wired networking.

This document is modified to adopt ITU-TG.9963(2018)/Amd.1(2021) "High-speed Universal Media Wired Home Networking Transceiver Multi-Input" Input/Multiple Output Specification".

Compared with ITU-TG.9963(2018)/Amd.1(2021), this document has many structural adjustments.

See Appendix A for a list of number changes.

The technical differences between this document and ITU-TG.9963(2018)/Amd.1(2021) and their reasons are as follows.

---Modified the description of the scope of Chapter 1;

---Deleted ITU-TG.9962-2018;

---Deleted "3.7 Send Stream";

---Deleted Appendix A~Appendix X.

The following editorial changes have been made to this document.

---In order to coordinate with the existing standards, the name of the standard is changed to "Technical Requirements for Broadband Customer Network Networking Based on Public Telecommunications Networks" Universal Medium Wired Networking (MIMO).

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

1 Scope

This document specifies the system architecture and reference model, template, physical layer (PHY), MIMO transceiver for universal media wired networking technology Data Link Layer (DLL) specifications and security requirements.

This document applies to the design, development and production of general-media wired networking equipment in a broadband customer network environment based on public telecommunications networks.

Production, dedicated telecommunications network can also be used as a reference.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations for undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document.

YD/T 3829-2021 Broadband customer network networking technical requirements based on public telecommunications network wired networking physics of general media layer and data link layer (ITU-TG.9960-2018, ITU-TG.9961-2018, NEQ) Note. There is no technical difference between the cited content of YD/T 3829-2021 and the cited content of ITU-TG.9960-2018 and ITU-TG.9961-2018.

difference.

ITU-TG.9964-2011 High-speed universal medium wired home networking transceiver-Power spectral density specification (Unified high-speed ITU-TG.9991-2019 High-speed indoor visible light communication transceiver-system structure, physical layer and data link layer specifications (High-layer specification))

3 Terms and definitions

The terms and definitions defined in YD/T 3829-2021 and the following apply to this document.

Ground conductor **groundconductor(G)** A conductor in an electrical branch circuit that does not carry mains current under normal operation.

NOTE: It provides a low impedance return path for ground fault current back to the service entrance panel to protect personnel and equipment and ensure circuit breaker tripping. In maintenance on the orifice panel, this conductor is bonded to the ground (ground) electrode.

MIMO channel **MIMO channel** A channel with multiple output ports (Tx ports) and multiple input ports (Rx ports).

Note: A "2x2" MIMO channel has 2 Tx ports and 2 Rx ports.

MIMO transmission **MIMO transmission** Transmission that converts one or more spatial streams into multiple transport streams.