INTERNATIONAL STANDARD

ISO/IEC 12139-1

First edition
2009-07-01

Information technology — Telecommunications and information exchange between systems — Powerline communication (PLC) — High speed PLC medium access control (MAC) and physical layer (PHY) —

Part 1: General requirements

Technologies de l'information — Télécommunications et échange d'information entre systèmes — Courants porteurs en ligne (PLC) — Contrôle d'accès au support (MAC) et couche physique (PHY) par PLC à grande vitesse —

Partie 1: Exigences générales

Reference number
ISO/IEC 12139-1:2009(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 12139-1 was prepared by Korean Agency for Technology and Standards (as KS X 4600-1) and was adopted, under a special “fast-track procedure”, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by the national bodies of ISO and IEC.

ISO/IEC 12139 consists of the following parts, under the general title *Information technology — Telecommunications and information exchange between systems — Powerline communication (PLC) — High speed PLC medium access control (MAC) and physical layer (PHY)*:

— *Part 1: General requirements*

Advanced MAC and PHY requirements will form the subject of a future Part 2.

Part 1 covers MAC and PHY technology for In-home/Access data networks via powerline communications (PLC), the system of which is operating below 30MHz. The coexistence schemes will be considered in developing Part 2, which will apply to data and high quality multimedia networks requiring advanced MAC and PHY technology. The used or forbidden band of this standard will be subject to national regulations.

Information technology — Telecommunications and information exchange between systems — Powerline communication (PLC) — High speed PLC medium access control (MAC) and physical layer (PHY) —

Part 1:
General requirements

1 Scope

The scope of this standard is a physical and medium access control layer specification with respect to the connectivity for 'In-home' and 'Access' network high speed powerline communication stations.

This standard provides functional requirements and specification of the physical and medium access control layer for high speed powerline communication devices, and does not include specific implementation methods.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 8802-11:2005, Information technology — Telecommunications and information exchange between systems — Local and metropolitan area networks — Specific requirements — Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications

ITU-T G.992.1: Asymmetric Digital Subscriber Line (ADSL) Transceivers

ITU-T G.994.1: Handshake Procedure for Digital Subscriber Line (DSL) Transceivers

IEEE Std 802.3:2000, Information technology — Local and metropolitan area networks — Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications

FCC Rules, 47 CFR (10-1-98 Edition), Part 15: Radio Frequency Devices

Federal Information Processing Standards: Publication 46-3 Data Encryption Standard (DES)

T1E1.4 Trial-Use Standard: Very-High-Bit-Rate Digital Subscriber Lines (VDSL) Metallic Interface Part 1: Functional Requirements and Common Specification

T1E1.4 Trial-Use Standard: Very-High-Bit-Rate Digital Subscriber Lines (VDSL) Metallic Interface Part 3: Technical Specification for a Multi-Carrier Modulation (MCM) Transceiver