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SERIES I: INTEGRATED SERVICES DIGITAL
NETWORK

ISDN user-network interfaces – Layer 1
Recommendations

**B-ISDN user-network interface – Physical layer
specification: 51 840 kbit/s operation**

ITU-T Recommendation I.432.4

(Previously CCITT Recommendation)

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ITU-T RECOMMENDATION I.432.4

**B-ISDN USER-NETWORK INTERFACE – PHYSICAL LAYER
SPECIFICATION: 51 840 kbit/s OPERATION****Summary**

This Recommendation covers Physical Layer characteristics for transporting Asynchronous Transfer Mode (ATM) cells at a nominal bit rate of 51 840 kbit/s over Category 3 Unshielded Twisted Pair (UTP) cabling at the S_B reference point of the B-ISDN User Network Interface (UNI). The maximum distance is approximately 100 m. This specification may be used to take advantage of existing building wiring.

Functionality is presented in terms of Physical Media Dependent (PMD) and Transmission Convergence (TC) sublayers, and both Synchronous Digital Hierarchy (SDH)-based and cell-based formats are included.

This Recommendation is part of the I.432-series Recommendations, and includes references to Recommendation I.432.1 on general characteristics, and Recommendation I.432.2 on Transmission Convergence sublayer aspects.

Source

ITU-T Recommendation I.432.4 was prepared by ITU-T Study Group 13 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 15th of February 1999.

Keywords

Asynchronous Transfer Mode (ATM), Broadband Integrated Services Digital Network (B-ISDN), User Network Interface (UNI).

FOREWORD

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Recommendation I.432.4**B-ISDN USER-NETWORK INTERFACE – PHYSICAL LAYER
SPECIFICATION: 51 840 kbit/s OPERATION***(Geneva, 1999)***1 Scope**

This Recommendation covers Physical Layer characteristics for transporting Asynchronous Transfer Mode (ATM) cells at a nominal bit rate of 51 840 kbit/s over Category 3 Unshielded Twisted Pair (UTP) cabling at the S_b reference point of the B-ISDN User Network Interface (UNI). The maximum distance is approximately 100 m. This specification may be used to take advantage of existing building wiring.

Functionality is presented in terms of Physical Media Dependent (PMD) and Transmission Convergence (TC) sublayers, and both Synchronous Digital Hierarchy (SDH)-based and cell-based formats are included.

2 Background

This Recommendation was previously contained in Recommendation I.432 (as published in March 1993) along with characteristics now published as Recommendation I.432.1 [1] on general characteristics that contain characteristics which are relevant to all B-ISDN transmission systems at the UNI.

This Recommendation contains only those characteristics that are specific to transmission systems operating at 51 840 kbit/s. Information on other bit rates can be found in other Recommendations of the I.432-series.

3 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

- [1] ITU-T Recommendation I.432.1 (1999), *B-ISDN user-network interface – Physical layer specification: General characteristics.*
- [2] ISO/IEC 11801:1995, *Information technology – Generic cabling for customer premises.*
- [3] ISO/IEC 8877:1992, *Information technology – Telecommunications and information exchange between systems – Interface connector and contact assignments for ISDN Basic Access Interface located at reference points S and T.*
- [4] ITU-T Recommendation I.432.2 (1999), *B-ISDN user-network interface – Physical layer specification: 155 520 kbit/s and 622 080 kbit/s operation.*
- [5] ITU-T Recommendation G.707 (1996), *Network node interface for the synchronous digital hierarchy (SDH).*



- [6] ITU-T Recommendation I.361 (1995), *B-ISDN ATM layer specification*.
- [7] ITU-T Recommendation G.826 (1996), *Error performance parameters and objectives for international, constant bit rate digital paths at or above the primary rate*.
- [8] ITU-T Recommendation I.610 (1995), *B-ISDN operation and maintenance principles and functions*.

4 Definitions and abbreviations

4.1 Definitions

None.

4.2 Abbreviations

This Recommendation uses the following abbreviations:

AIS	Alarm Indication Signal
ATM	Asynchronous Transfer Mode
AU	Administrative Unit
BER	Bit Error Ratio
BIP	Bit Interleaved Parity
B-ISDN	Broadband Integrated Services Digital Network
CEC	Cell Error Control
EDC	Error Detection Code
ISO/IEC	International Organization for Standardization/International Electrotechnical Commission
LCD	Loss of Cell Delineation
LSB	Least Significant Bit
MIC	Media Interface Connector
NEXT	Near End Crosstalk
OAM	Operations, Administration and Maintenance
PL	Physical Layer
PM	Physical Medium
PMD	Physical Medium Dependent
POH	Path Overhead
ppm	parts per million
PSN	PL-OAM Sequence Number
QAM	Quadrature Amplitude Modulation
RDI	Remote Defect Indication
REB	Remote Errored Blocks
REI	Remote Error Indication