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Information processing—

Start-stop transmission signal quality at DTE/DCE interfaces

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(ISO/IEC 7480:1991)
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Specifies signal quality requirements for serial data transmission at the interface between start-stop transmission data terminal equipment and data circuit-terminating equipment. This Standard is identical with, and has been reproduced from, ISO/IEC 7480:1991.
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D

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Australian Association of Permanent Building Societies
Australian Bankers' Association
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Australian Computer Equipment Manufacturers Association
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Computer consultants

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PREFACE

This Standard was prepared by Standards Australia's Committee on Information Processing Systems. It is identical with and has been reproduced from International Standard ISO 7480-1984.

This Standard provides a guide for signal quality requirements for serial data transmission at the interface between start-stop transmission Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE).

The Standard is one of a series of Open Systems Interconnection (OSI) Standards which are currently under development. Since OSI Standards are developmental, there may be some minor difficulties encountered in their implementation. For this reason, Standards Australia will be providing a limited interpretation service to coordinate and disseminate information concerning difficulties which are identified in using this Standard.

For the purpose of this Australian Standard, the text of the ISO Standard given herein should be modified as follows:

(a) *Terminology.* The words 'Australian Standard' should replace the words 'International Standard' wherever they appear.

(b) *References.* The references to international Standards should be replaced by references to Australian Standards as follows:

Reference to international Standard		*Australian Standard*	
ISO	— –	AS	
2382/9	Data processing—Vocabulary—Part 09—Data communication	1189.9	Data processing—Vocabulary—Part 09—Data communication
CCITT			
	Definitions—Green book, Vol. VIII, 1972	—	
	V- and X-series recommendations, Yellow Book, Vol VIII, 1981	—	
V.10	Electrical characteristics for unbalanced double-current interchange circuits for general use with integrated circuit equipment in the field of data communications	—	
V.11	Electrical characteristics for balanced double-current interchange circuits for general use with integrated circuit equipment in the field of data communications	—	
V.21	300 bits per second duplex modem standardized for use in the general switched telephone network	—	
V.22	1 200 bits per second duplex modem standardized for use in the general switched telephone network and on leased circuits	—	
V.22 bis	2 400 bits per second duplex modem using the frequency division technique standardized for use on the general switched telephone network and on point-to-point 2-wire leased telephone-type circuits	—	
V.123	600/1 200 baud modem standardized for use in the general switched telephone network	—	

Reference to international Standard		*Australian Standard*
CCITT		
V.24	List of definitions for interchange circuits between data terminal equipment and data circuit-terminating equipment	—
V.26 ter	2 400 bits per second duplex modem using the echo cancellation technique standardized for use on the general switched telephone network and on point-to-point 2-wire leased telephone-type circuits	—
V.28	Electrical characteristics for unbalanced double-current interchange circuits	—
X.20	Interface between data terminal equipment (DTE) and data circuit-terminating equipment (DCE) for start-stop transmission services on public data networks	—
X.20 bis	V.21 compatible interface between data terminal equipment (DTE) and data circuit-terminating equipment (DCE) for start-stop transmission services on public data networks	—
X.24	List of definitions for interchange circuits between data terminal equipment (DTE) and data circuit-terminating equipment (DCE) on public data networks	—

CONTENTS

Information processing — Start-stop transmission signal quality at DTE/DCE interfaces

1 Scope and field of application

1.1 This International Standard provides a guide for signal quality requirements for serial data transmission at the interface between start-stop transmission Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE). The interface referred to in this International Standard conforms to CCITT Recommendations V.24 (telephone networks), X.24 (data networks) and the transmitting/receiving equipment to CCITT Recommendations V.21, V.22, V.22 bis, V.23, V.26 ter, X.20, X.20 bis together with V.28, or X.20 together with X.26 (= V.10) and/or X.27 (= V.11).

The signal quality requirement is limited to start-stop transmission at the interface with asynchronous DCEs or synchronous DCEs such as CCITT type V.22. Signal quality pertaining to synchronous DTEs is not part of this International Standard.

1.2 This International Standard recognizes the need to have a number of different performance categories of signal quality depending on the type of timing used. Two types of timing are distinguished, electronic timing and mechanical timing, and the appropriate characteristics are indicated in the table.

Four signal quality categories are defined for transmitting DTEs. The categories I and II have been chosen to cover equipment using all electronic signal generation. Category II is for the attachment of start-stop transmitting DTEs to synchronous DCEs. Categories P1 and P2 are provided for DTEs using mechanical timing. Complementary categories for receiving DTEs are shown under the headings A, B, PA and PB.

The signal quality characteristics apply to data circuits regardless of whether or not multiplexing equipment is included. They do not apply to tandem data circuits where no signal regeneration is provided between interconnected sections.

A number of signal quality categories, therefore, are defined for transmitting equipment and for receiving equipment, the intention being that any receiving equipment may operate with any transmitting equipment, the actual selection being dependent upon such factors as channel characteristics, and economic considerations of the data communication system.

1.3 This International Standard is of particular importance when the transmitting or receiving equipment are furnished by different oganizations. It does not attempt to indicate what action, if any, is to be taken if the limits are not met, but it is intended to provide a basis for agreement between parties involved.

1.4 This International Standard does not describe the signal quality of the DCE or the line associated with it. Neither does it describe any requirement for an acceptable bit error rate.

2 References

ISO 2382/9, *Data processing — Vocabulary — Part 09 — Data communication.*

CCITT Definitions, *Green Book*, Vol. VIII, 1972.

CCITT V and X-series recommendations, *Yellow Book*, Vol. VIII, 1981.

CCITT Recommendation V.10, *Electrical characteristics for unbalanced double-current interchange circuits for general use with integrated circuit equipment in the field of data communications.*

CCITT Recommendation V.11, *Electrical characteristics for balanced double-current interchange circuits for general use with integrated circuit equipment in the field of data communications.*

CCITT Recommendation V.21, *300 bits per second duplex modem standardized for use in the general switched telephone network.*

CCITT Recommendation V.22, *1 200 bits per second duplex modem standardized for use on the general switched telephone network and on leased circuits.*