



# **The ATM Forum Technical Committee**

## **PICS Proforma for the 25.6 Mb/s over Twisted Pair Cable Physical Layer Interface**

**af-test-0051**

**March, 1996**

**Copyright release for PICS:**

This PICS Proforma may be freely reproduced, so that it may be used for its intended purpose.

**PICS Proforma for the 25.6 Mb/s over Twisted  
Pair Cable Physical Layer Interface**

**af-test-0051.000**

March 1996

(C) 1996 The ATM Forum. All Rights Reserved. No part of this publication may be reproduced in any form or by any means.

The information in this publication is believed to be accurate as of its publication date. Such information is subject to change without notice and the ATM Forum is not responsible for any errors. The ATM Forum does not assume any responsibility to update or correct any information in this publication. Notwithstanding anything to the contrary, neither The ATM Forum nor the publisher make any representation or warranty, expressed or implied, concerning the completeness, accuracy, or applicability of any information contained in this publication. No liability of any kind shall be assumed by The ATM Forum or the publisher as a result of reliance upon any information contained in this publication.

The receipt or any use of this document or its contents does not in any way create by implication otherwise:

- Any express or implied license or right to or under any ATM Forum member company's patent, copyright, trademark or trade secret rights which are or may be associated with the ideas, techniques, concepts or expressions contained herein; nor
- Any warranty or representation that any ATM Forum member companies will announce any product(s) and/or service(s) related thereto, or if such announcements are made, that such announced product(s) and/or service(s) embody any or all of the ideas, technologies, or concepts contained herein; nor
- Any form of relationship between any ATM Forum member companies and the recipient or user of this document.

Implementation or use of specific ATM standards or recommendations and ATM Forum specifications will be voluntary, and no company shall agree or be obliged to implement them by virtue of participation in The ATM Forum.

The ATM Forum is a non-profit international organization accelerating industry cooperation on ATM technology. The ATM Forum does not, expressly or otherwise, endorse or promote any specific products or services.

NOTE: The user's attention is called to the possibility that implementation of the ATM interoperability specification contained herein may require use of an invention covered by patent rights held by ATM Forum Member companies or others. By publication of this ATM interoperability specification, no position is taken by The ATM Forum with respect to validity of any patent claims or of any patent rights related thereto or the ability to obtain the license to use such rights. ATM Forum Member companies agree to grant licenses under the relevant patents they own on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license. For additional information contact:

The ATM Forum  
Worldwide Headquarters  
2570 West El Camino Real  
Suite 304  
Mountain View, CA 94040  
Tel: +1-415-949-6700  
Fax: +1-415-949-6705

# Contents

1. Introduction.....	1
1.1 Scope.....	1
1.2 Normative References .....	1
1.3 Definitions .....	1
1.4 Conformance Statement .....	2
2. Identification of the Implementation.....	2
3. PICS Proforma .....	4
3.1 Global Statement of Conformance.....	4
3.2 Instructions for Completing the PICS Proforma .....	4
3.3 Physical Media Dependent (PMD) Specification.....	5
3.4 Transmission Convergence (TC) Sublayer Functions.....	6

## 1. Introduction

Prior to the conformance testing and the interoperability testing of IUTs, it is necessary to have the PICS (Protocol Implementation Conformance Statement) documents for both implementations.

This particular PICS deals with the implementation of the 25.6 Mb/s over Twisted Pair Cable.

### 1.1 Scope

This document provides the PICS proforma for the Mid-range Physical Layer Interface as described in the Physical Interface Specification for 25.6 Mb/s over Twisted Pair Cable [1], in compliance with the relevant requirements, and in accordance with the relevant guidelines, given in ISO/IEC 9646-2 [2].

### 1.2 Normative References

- [1] AF-PHY-0040.000, "Physical Interface Specification for 25.6 Mb/s over Twisted Pair Cable", June 11, 1995.
- [2] ISO/IEC 9646-2 1990, Information technology - Open systems inter-connection - Conformance testing methodology and framework - Part 2: Abstract test suite specification. (See also ITU-TS Recommendation X.290 (1991)).
- [3] IEC 603-7, "Connectors for Frequencies Below 3 Mhz for Use with Printed Boards Part 7: Detail Sepcification for Connectors, 8-Way, Including Fixed and Free Connectors with Common Mating Features First Edition" (1993).
- [4] EIA/TIA, "Commercial Building Telecommunications Cabling Standard, TIA/EIA-568-A", Draft Version, July, 1991.

### 1.3 Definitions

ATM	Asynchronous Transfer Mode
HEC	Header Error Control
IUT	Implementation Under Test
M	Mandatory
O	Optional
O.<n>	Optional, but, if chosen, support is required for either at least one or only one of the options in the group labelled by the same numeral <n>
P	Prohibited
PMD	Physical Media Dependent
S.<i>	Supplementary information number i
TC	Transmission Convergence
X.<i>	Exceptional information number i

## 1.4 Conformance Statement

The supplier of a protocol implementation which is claimed to conform to the Physical Interface Specification for 25.6 Mb/s over Twisted Pair Cable is required to complete a copy of the PICS proforma provided in Section 3 and is required to provide the information necessary to identify both the supplier and the implementation.

## 2. Identification of the Implementation

### Implementation Under Test (IUT) Identification

IUT Name: \_\_\_\_\_

\_\_\_\_\_

IUT Version: \_\_\_\_\_

\_\_\_\_\_

### System Under Test (SUT)

SUT Name: \_\_\_\_\_

\_\_\_\_\_

Hardware Configuration: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Operating System: \_\_\_\_\_

### Product Supplier

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Facsimile Number: \_\_\_\_\_

E-mail Address (optional): \_\_\_\_\_

Additional Information: \_\_\_\_\_

**Client**

Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Facsimile Number: \_\_\_\_\_

E-mail Address (optional): \_\_\_\_\_

Additional Information: \_\_\_\_\_

**PICS Contact Person**

Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Facsimile Number: \_\_\_\_\_

E-mail Address (optional): \_\_\_\_\_

Additional Information: \_\_\_\_\_

**PICS PICS-System Conformance Statement**

Provide the relationship of the PICS with the System Conformance Statement for the system:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Identification of the protocol**

This PICS proforma applies to the following document:

AF-PHY-0040.000, "Physical Interface Specification for 25.6 Mb/s over Twisted Pair Cable".



### 3. PICS Proforma

#### 3.1 Global Statement of Conformance

The implementation described in this PICS meets all of the mandatory requirements of the reference protocol.

Yes

No

Note: Answering "No" indicates non-conformance to the specified protocol. Non-supported mandatory capabilities are to be identified in the following tables, with an explanation in the comments section of each table of why the implementation is non-conforming.

#### 3.2 Instructions for Completing the PICS Proforma

The PICS Proforma is a fixed-format questionnaire. Answers to the questionnaire should be provided in the rightmost columns, either by simply indicating a restricted choice (such as Yes or No), or by entering a value or a set of range of values.

A supplier may also provide additional information, categorized as exceptional or supplementary information. This additional information should be provided as items labelled X.<i> for exceptional information, or S.<i> for supplemental information, respectively, for cross reference purposes, where <i> is any unambiguous identification for the item. The exceptional and supplementary information is not mandatory and the PICS is complete without such information. The presence of optional supplementary or exception information should not affect test execution, and will in no way affect interoperability verification.

### 3.3 Physical Media Dependent (PMD) Specification

Item	Protocol Feature	Status Predicate	Specification Reference	Support
3.3.1	Does the IUT implement the IEC 603-7 [3] (RJ-45) Media interface connector?	O.1	2.4.1.8 (T2.7)	Yes__No__X__S__
3.3.2	Does the IUT implement the STP Media connector as specified in EIA/TIA-568-A [4] Section 11?	O.1	2.4.3.4 (T2.8)	Yes__No__X__S__
3.3.3	Does the IUT transmitter conform to the line and bit rate requirements?	M	2.1.1	Yes__No__X__S__
3.3.4	Does the IUT transmitter conform to Bit Rate Symmetry?	M	2.1.2	Yes__No__X__S__
3.3.5	Will the IUT achieve the BER specified under the conditions specified up to 100 meters total?	M	2.1.3, 2.4	Yes__No__X__S__
3.3.6	Will the IUT transmitter meet Zero-crossing requirements specified?	M	2.2.1	Yes__No__X__S__
3.3.7	Will the IUT transmitter meet the Duty Cycle Distortion requirements as specified?	M	2.2.1.1	Yes__No__X__S__
3.3.8	Does the IUT Transmitter meet the Edge Jitter requirements as specified?	M	2.5.4.1	Yes__No__X__S__
3.3.9	Does the IUT transmitter conform to the Transmitter Waveshapes as specified?	M	2.2.2 (T2.0 thru T2.4)	Yes__No__X__S__
3.3.10	Does the IUT transmitter conform to the Return Loss?	M	2.2.4	Yes__No__X__S__
3.3.11	Will the IUT receiver acquire timing as specified?	M	2.3.1	Yes__No__X__S__
3.3.12	Will the IUT receiver conform to the Return Loss as specified?	M	2.3.2	Yes__No__X__S__
Comments:  O.1: The IUT must support one of these options.				

### 3.4 Transmission Convergence (TC) Sublayer Functions

Item	Protocol Feature	Status Predicate	Specification Reference	Support
3.4.1	Does the IUT scramble and descramble the cells as described?	M	3.1.1	Yes__No__X__S__
3.4.2	Does the IUT reset the scrambler PRNG as described?	M	3.1	Yes__No__X__S__
3.4.3	Does the IUT generate the PRNG as described?	M	3.1.1	Yes__No__X__S__
3.4.4	Does the IUT encode/decode the line symbols as described?	M	3.2	Yes__No__X__S__
3.4.5	Does the IUT maintain the symbol pair structure and send and receive commands as described?	M	3.2.1	Yes__No__X__S__
3.4.6	Does the IUT transmitter send the Sync Event Command as described?	O	3.2.3	Yes__No__X__S__
3.4.7	Will the IUT receiver signal reception of the Sync Event Command for timing reference?	O	3.2.3	Yes__No__X__S__
3.4.8	Will the IUT receiver accept the Sync Event Commands as described?	M	3.2.3	Yes__No__X__S__
3.4.9	Does the IUT delineate cells as described?	M	3.2.3	Yes__No__X__S__
3.4.10	Does the IUT encode/decode the NRZI line signal as described?	M	3.3	Yes__No__X__S__
3.4.11	Does the IUT generate and verify the HEC byte as described?	M	3.4	Yes__No__X__S__
Comments:				
.				