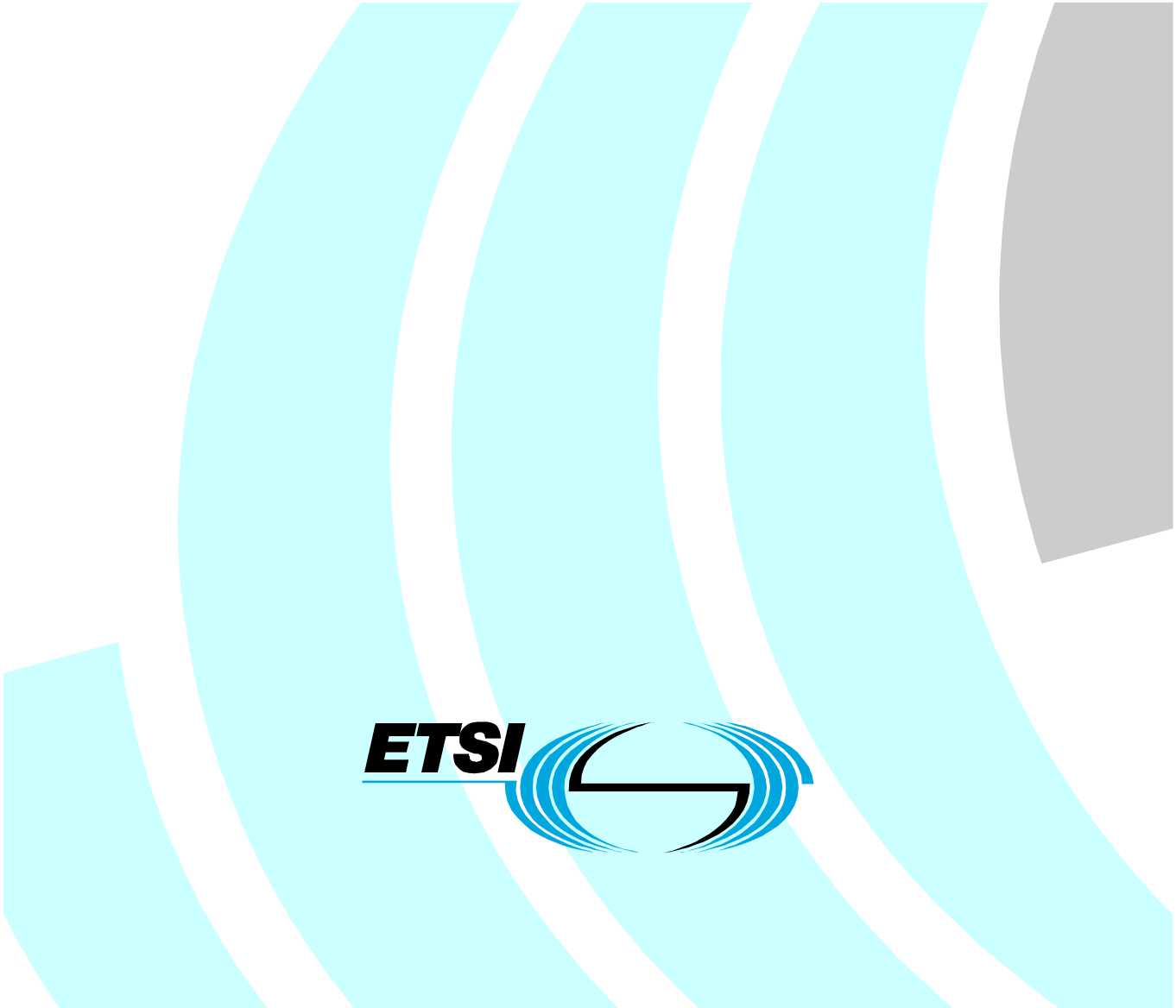
ETSI TS 101 270-1 V1.4.1 (2005-10)

Technical Specification

Transmission and Multiplexing (TM);
Access transmission systems on metallic access cables;
Very high speed Digital Subscriber Line (VDSL);
Part 1: Functional requirements



Reference
RTS/TM-06039

Keywords
access, ATM, B-ISDN, functional, IP,
transmission, VDSL, xDSL

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Contents

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (http://webapp.etsi.org/IPR/home.asp).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Transmission and Multiplexing (TM).

The present document is part 1 of a multi-part deliverable covering the Transmission and Multiplexing (TM); Access transmission systems on metallic access cables; Very high speed Digital Subscriber Line (VDSL), as identified below:

Part 1: "Functional requirements";

Part 2: "Transceiver specification".

The present document includes clarification of the noise models, power spectral density masks and evaluation data rates.

1 Scope

The present document specifies requirements for transceivers providing very high bit-rate digital transmission on metallic, unshielded, access network wire pairs. The technology is referred to as Very high speed Digital Subscriber Line (VDSL).

The present document is part 1 of the specification for VDSL and is applicable to metallic access transmission systems designed to provide multi-megabit/s digital access over part of the existing, unshielded, metallic access network. It is concerned with the key functional and electrical requirements for VDSL. It is linecode independent and is intended to set the boundary requirements that all compliant VDSL transceivers shall meet. TS 101 270-2 [18] is concerned with requirements of the linecode method that enable the requirements of the present document to be met.

The definition of physical interfaces is outside the scope of the present document. If an appropriate interface for a specific application exists it may be included to describe how these requirements map to it. The VDSL transmission system, in its most basic form, consists of an application independent core and an application specific block.

The core is purely an application independent bit-pump which transports information from one end of the metallic access link to the other. The digital data is mapped into a core frame that is defined logically and not physically. The core frame is therefore considered to be the interface between the application specific and the application independent part of the VDSL system. The application specific part may be subdivided into (at least) two smaller parts: mapping and interface.

The scope of the present document is shown graphically in figure 1 and figure 2, where the Network Termination (NT) and Line Termination (LT) are considered separately.

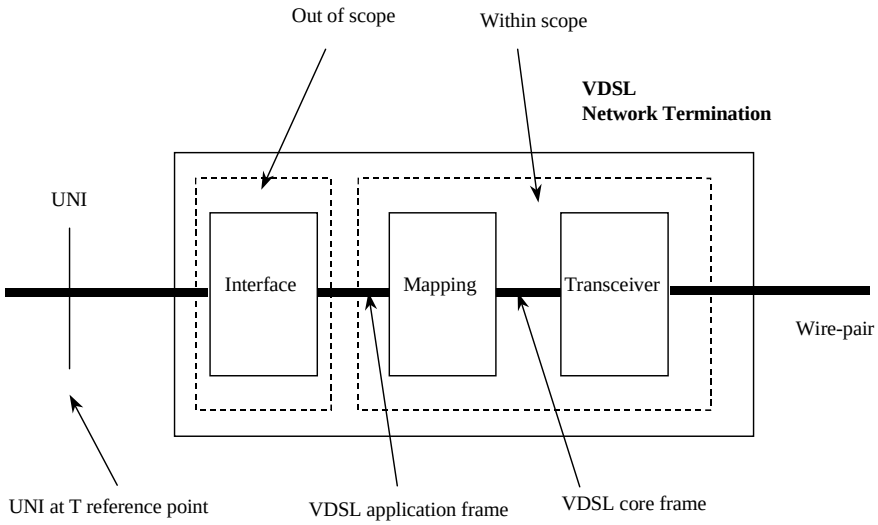


Figure 1: NT reference model scope