Annex 63A. PMD Profiles for 2Base-TL

63A.1 Introduction and rationale

Annex 63A defines the PMD profiles for 2Base-TL. These profiles define the transmission characteristics of the PHY on the media. 2Base-TL PHYs are required to operate across varying media quality, regulatory and noise environments.
The profiles defined in this clause have two purposes. The first is to describe a bounded set of operating modes that a party might choose from when implementing, integrating and installing 2Base-TL equipment. 2Base-TL PHYs are inherently flexible in their transmission capabilities. The defined profiles collect a subset of these parameters into modes that work well in most deployments. For deployments that require an operating mode not defined in this Annex, profiles can be overridden by setting PHY PMD registers directly, via Clause 45 [see Clause 45] for example.
The second purpose of the profiles is to define a set of operating modes against which PHY performance compliance may be tested. The topic of performance compliance is addressed for 2Base-TL in Annex 63B.

63A.2 Relationship to other clauses

Clause 30 [see Clause 30] describes how the selection of Annex 63A profiles is exported to a management entity.
Clause 45 [see Clause 45] registers describe an optional mechanism for configuring a 2Base-TL PHY to use a particular profile. The register settings for each profile are contained in 63A.x.y.z

63A.3 Profile Definitions

A 2Base-TL profile is characterized by 4 parameters: data rate, power, constellation size and region. Different regions have different constraints on the PHY. G.991.2 distinguishes 3 regions and lists regional requirements in three annexes labeled A, B, C. Annex A generally describes those specifications that are unique to SHDSL systems operating under conditions such as those typically encountered within the North American network; Annex B, within European networks; and Annex C, within networks with existing TCM-ISDN service.

The profiles of Table 63A-1 will generate a net data rate greater than 2Mbps at the MII interface on M pairs where M is between 1 and 4. Note that the profiles are defined on a single pair basis. The aggregation mechanism is outside the scope of this annex. The Data rate is the closest multiple of 64kbps greater than a net data rate of 2Mbps plus the corresponding 64/65B encapsulation overhead divided by M. The line rate has an additional 8kbps of SHDSL overhead.

Table 63A-1. 2Base-TL Profiles

Profile #	Data rate per pair (kbps)	Line rate per pair (kbps)	PSD Power (dBm)	Region	Constellation
1	2048	2056	13.5	Annex A sec. A.4.1	16-TCPAM
2	1024	1032	13.5	Annex A sec. A.4.1	16-TCPAM
3	704	712	13.5	Annex A sec. A.4.1	16-TCPAM
4	512	520	13.5	Annex A sec. A.4.1	16-TCPAM
5	2048	2056	14.5	Annex B sec. B.4.1	16-TCPAM
6	1024	1032	13.5	Annex B sec. B.4.1	16-TCPAM
7	704	712	13.5	Annex B sec. B.4.1	16-TCPAM
8	512	520	13.5	Annex B sec. B.4.1	16-TCPAM