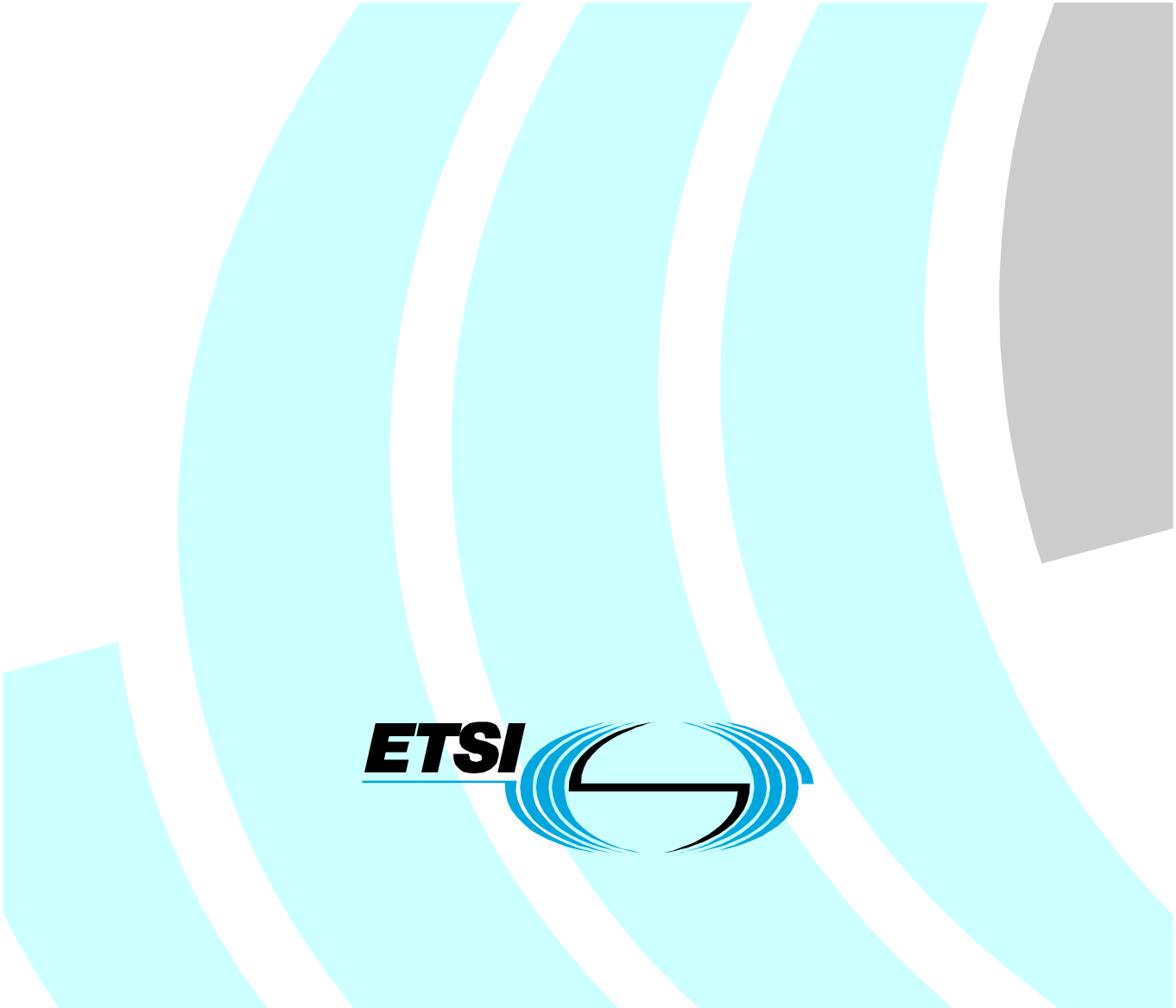
ETSI EN 300 430 V1.4.1 (2002-07)

European Standard (Telecommunications series)

Fixed Radio Systems;
Point-to-point equipment;
Parameters for radio systems for the transmission of STM-1 digital signals operating in the 18 GHz frequency band with channel spacing of 55 MHz and 27,5 MHz



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Contents

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Transmission and Multiplexing (TM).

The present document contains the minimum technical requirements to ensure compatibility of products and conformance with radio regulations across ETSI member states. Radio terminals from different manufacturers are not required to interwork at radio frequency (i.e. no common air interface). However, terminals may be combined with other manufacturers' equipment on a Radio Frequency (RF) branching network for operation on different polarizations.

The present document defines the requirements of radio terminal and radio relay equipment and associated interfaces. The requirements for multiplex, network management and antenna/feeder equipment may be addressed elsewhere.

This new version modifies only class 5b spectrum mask giving more allowance for practical implementations, without modifying any other requirements, and proposed design objectives for class 5a BER versus RSL.

National transposition dates	
Date of adoption of this EN:	12 July 2002
Date of latest announcement of this EN (doa):	31 October 2002
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 April 2003
Date of withdrawal of any conflicting National Standard (dow):	30 April 2003

1 Scope

The present document specifies parameters for high capacity STM-1 digital radio-relay systems designed to operate in the 17,7 GHz to 19,7 GHz band. The channel spacing between adjacent co-polar channels shall be 55 MHz or 27,5 MHz. Operation in the Adjacent Channel Co-Polarization (ACCP) mode for class 4 systems and class 5 systems as defined below with orthogonal polarizations or in the alternated cross-polar mode is foreseen. Additionally for class 4 systems, operation in the Co-Channel Dual Polarized (CCDP) mode with orthogonal polarization is also foreseen. The present document covers both single and multi-channel systems.

The present document specifies the minimum performance parameters for terrestrial fixed service radio communications equipment operating in the frequency range 17,7 GHz to 19,7 GHz and contains a revision from the previous version, in the area of:

- categorization of previously considered equipments into a new spectrum efficiency class 4;
- introduction of unique system type codes for regulatory reference to the various system types detailed in the present document, refer to new annex C and related categories of equipment classes of spectral efficiency;
- new spectrum efficiency class 5 for STM-1 capacity for 27,5 MHz Adjacent Channel Alternate-Polarization (ACAP as class 5a) and Adjacent Channel Co-Polarization (ACCP as class 5b), see examples of the spectrum usage in figures 1.1a and 1.1b:

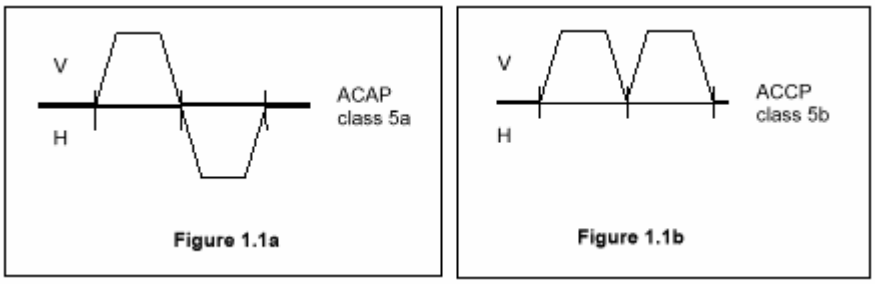

Figure 1

- technical specifications relevant to the EMC Directive [30], detailed in annex B.

The applications of these digital radio-relay systems are anticipated to be in the regional and access networks, at data rates of Synchronous Transport Module, level 1 (STM-1). The parameters to be specified fall into two categories:

a) those that are required to provide compatibility between channels from different sources of equipment on the same route connected either to:
   - separate antennas; or
   - separate polarizations of the same antenna; or
   - one polarization of one antenna at a frequency separation of 110 MHz or more, enabling, in addition for class 4 equipment only, interworking of different manufacturers equipment at the same Radio Frequency (RF) branching;
   - this category also includes parameters providing compatibility with the existing radio-relay network.

b) parameters defining the transmission quality of the proposed system.

The standardization deals with RF and baseband characteristics. Antenna/feeder system requirements are covered in EN 300 833 [33].

Two possible baseband interfaces for SDH systems have to be considered: one for STM-1 and another for 140 Mbit/s signals.

The present document does not contain aspects related to test procedures and test conditions, however they are to be found in EN 301 126-1 [19].