SLOVENSKI STANDARD
SIST EN 50080:1999

01-julij-1999

RF characteristics of MAC-VSB cable receivers

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RF Merkmale von MAC AM-RSB Kabel-Empfängern

Caractéristiques RF des récepteurs MAC en MA/BLR pour télévision par câbles

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Ta slovenski standard je istoveten z: **EN 50080:1991**

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ICS:

33.060.40 Kabelski razdelilni sistemi Cabled distribution systems

SIST EN 50080:1999 **en**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPEENNE

EUROPÄISCHE NORM

EN 50080

May 1991

UDC 621.397.743:621.397.63

Descriptors: Telecommunication, cabled television, receiver, demodulator, signal, characteristic

ENGLISH VERSION

RF CHARACTERISTICS OF MAC AM-VSB CABLE RECEIVERS

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Up-to-date list and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B-1050 Brussels

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FOREWORD

This European Standard has been prepared by CENELEC Technical Committee TC 106, MAC receiving equipment. The text was submitted to the CENELEC Unique Acceptance Procedure (UAP) in July 1990.

The text of the draft was approved by all CENELEC members **with the exception of Finland** as EN 50080 on 15 March 1991.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1992-03-01
- latest date of withdrawal of conflicting national standards (dow) 1992-03-01

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Annexes designated "normative" are part of the body of the standard.
In this standard, annex A is normative.

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INTRODUCTION

The introduction of MAC transmission standards and the need to provide a possibility to introduce HDMAC signals at a later stage, gave rise for the need to standardize the RF characteristics of MAC AM-VSB cable receivers.

This standard is so far restricted to the use of MAC signals in the hyperband, some countries are however envisaging additional transmissions outside this band.

The most notable difference with the RF characteristics in case of conventional transmissions is the location of the vision Nyquist slope, which is the transmitter. This is done to improve the noise properties of the whole transmission chain.

Optimized behaviour of the complete AM-VSB CATV system will be attained only by correctly matching both RF receiver characteristics as well as RF transmitter characteristics. Therefore the RF transmitter characteristics described in Annex A are normative.

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1. SCOPE

This standard specifies the RF characteristics for MAC AM-VSB cable receivers and defines the behaviour of the receiver demodulator by referring to the characteristics of the modulated signal.

It takes into account the development of the HDMAC specification and ensures compatibility with the HDMAC transmission parameters.

2. RF CHARACTERISTICS OF MAC AM-VSB CABLE RECEIVERS

Frequency band:	Hyperband 300-470 MHz
Signal level:	70 dB μV range 60-84 dB μV
Channel spacing:	12 MHz (note 1)
Receiver filter characteristic:	see fig. 1 (note 2)
Group delay characteristic:	flat (linear phase characteristic)

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3. CHARACTERISTICS OF THE MODULATED SIGNAL:

Modulation polarity:	negative
Amplitude at black level:	100%
Residual carrier level:	10% (see fig. 2)

Notes:

1. 12 MHz channel spacing is required for DMAC and HDMAC and the bandwidth available for D2MAC signals received by satellite can be maintained. Unless special measures like e. g. scrambling of the wanted channel and/or frequency offsetting are taken, the lower adjacent channel shall not be a system B/G/I or system L signal, because the sound carrier will give rise to interference.

2. The receiver filter is a so called window filter.

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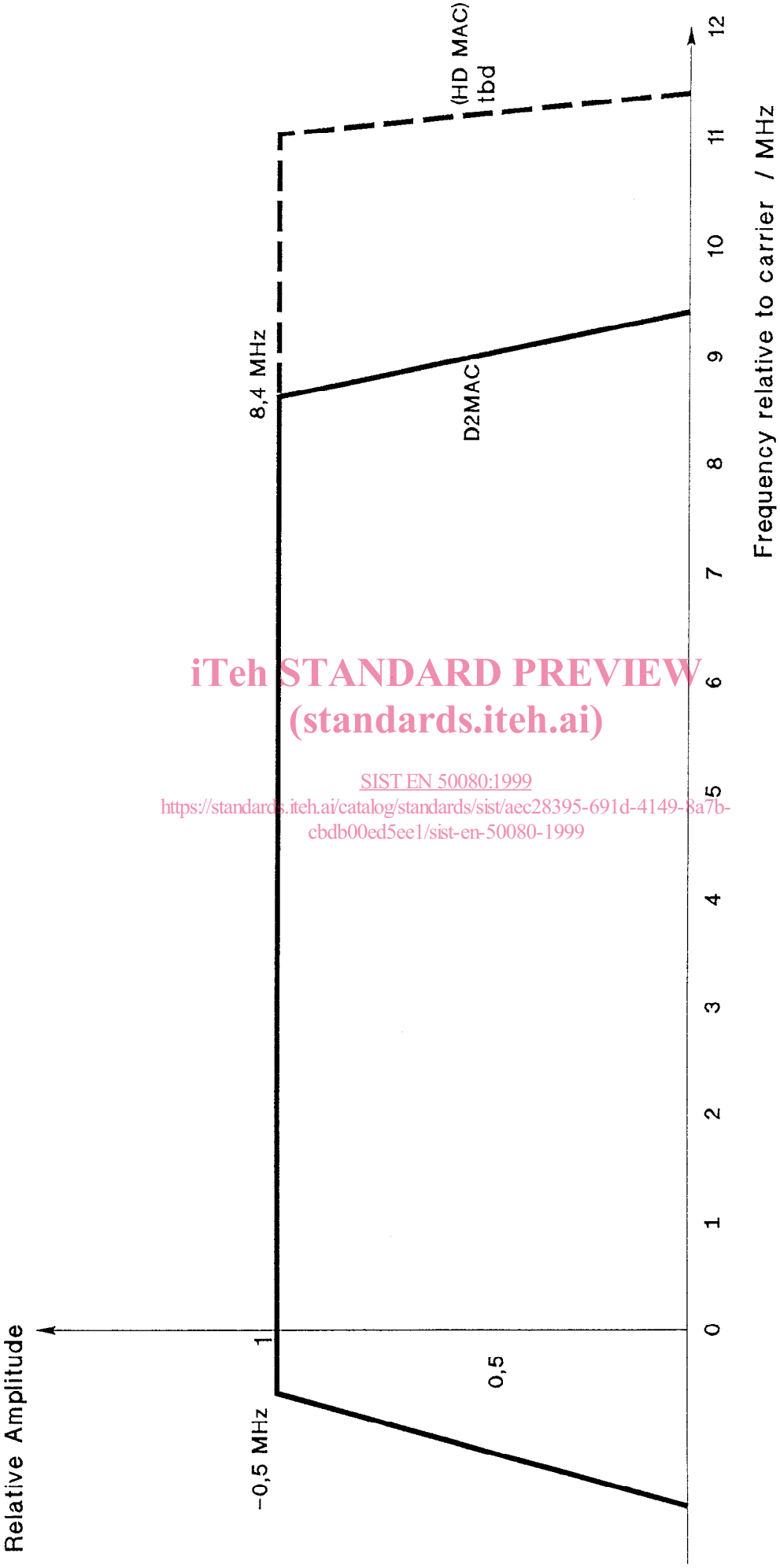

Fig. 1: FILTER CHARACTERISTICS OF THE RECEIVER

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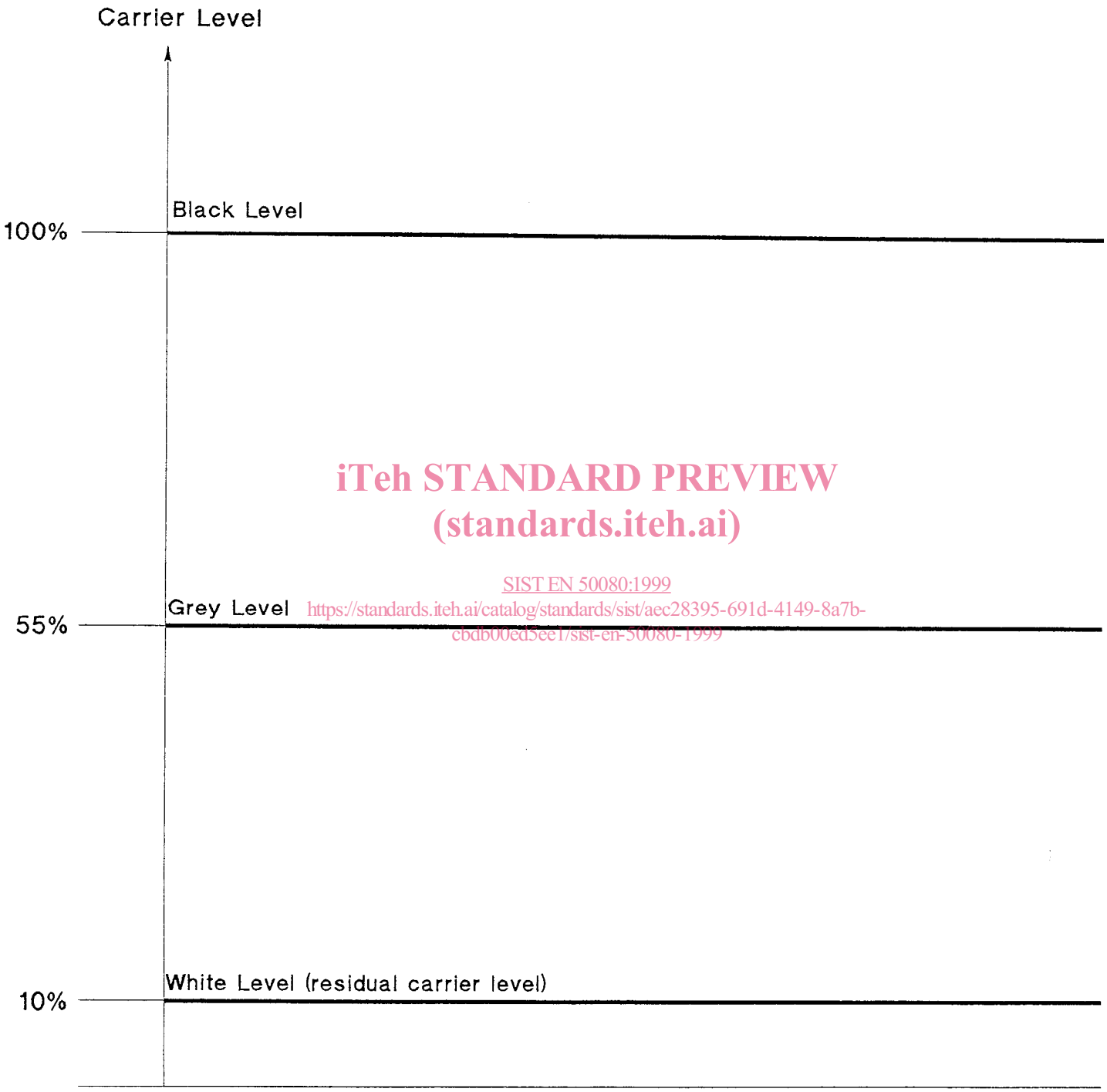

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Fig. 2: CARRIER LEVELS

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Annex A
(Normative)

CORRESPONDING CABLE PARAMETERS

The following essential cable parameters are assumed to ensure a good performance of the receiver. They are given here as far they are not clear from clause 2. A complete cable specification will be defined by CLC/TC109.

Maximum level difference between adjacent channels:	3 dB
Filter characteristics of the modulator:	see fig. A.1 (note 1)
Minimum C/N_O level:	50 dB at 1 MHz bandwidth (note 2)

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SIGNALS RECEIVED FROM SATELLITE SERVICES:

Any energy dispersal waveform added to the MAC/packet signal shall be removed prior to transmission in cable systems.

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The linear pre-emphasis specified in the MAC packet specification for the FM transmission shall be removed prior to transmission in cable systems.

MAC/packet systems may use maximum amplitude colour-difference signals. For broadcasting via satellites, some systems may also use nominal data amplitudes for D-MAC which have been increased in order to optimize bit-error-rate performance. For both these cases over-modulation of the VSB/AM/MAC packet signal will occur if the simplest types of remodulation schemes are used.

Notes:

1. For HDMAC the so called HDMAC Nyquist slope around 10.125 MHz is not yet fully determined.

2. For HDMAC the value is still under consideration.