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SIST ETS 300 294 E2:2003

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Television systems; 625-line television Wide Screen Signalling (WSS)

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Wide Screen Signalling (WSS)

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Joint Technical Committee (JTC) of the European Broadcasting Union (EBU), Comité Européen de Normalisation ELECtrotechnique (CENELEC) and the European Telecommunications Standards Institute (ETSI).

NOTE: The EBU/ETSI JTC was established in 1990 to co-ordinate the drafting of ETSs in the specific field of broadcasting and related fields. Since 1995 the JTC became a tripartite body by including in the Memorandum of Understanding also CENELEC, which is responsible for the standardization of radio and television receivers. The EBU is a professional association of broadcasting organisations whose work includes the co-ordination of its Members' activities in the technical, legal, programme-making and programme-exchange domains. The EBU has Active Members in about 60 countries in the European Broadcasting Area; its headquarters is in Geneva*.

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Proposed transposition dates	
Date of latest announcement of this ETS (doa):	3 months after ETSI publication
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Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

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Introduction

For a smooth introduction of new television services with a 16:9 display aspect ratio in PAL and SECAM standards, it is necessary to signal the aspect ratio used together with some switching information to the television receiver. The receiver should be capable of reacting automatically to this information by displaying the video information in a specified aspect ratio. This signalling is to be considered separately from the type of system used, but it should allow transmission of system related switching information as well.

This ETS permits the later allocation of additional switching information, related to the introduction of enhanced television services.

This ETS is applicable for 625-line PAL and SECAM television systems, but there is potential to adopt it to other standards as well.

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1 Scope

This European Telecommunication Standard (ETS) is applicable to 625-line PAL and SECAM systems in use, in case, where wide screen signalling is required by the broadcasters.

It specifies the wide screen signalling information, the coding and the way of incorporating the coded information into a 625-line system.

The wide screen signalling information contains information on the aspect ratio range of the transmitted signal and its position, on the position of the subtitles and on the camera/film mode. Furthermore signalling for EDTV and for surround sound is included. Some bits are reserved for future use.

This ETS specifies the transmitted signal. Annex A gives the rules of operation for the minimum requirements for receiver display formats as well as for subtitling.

2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] EBU Recommendation R62 (1990): "Recommendation dominant field for 625-line 50 Hz processing".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of this ETS, the following definition applies:

letterbox operation: Is the use of a picture format with an aspect ratio greater than 1,33, in such a way that empty (black) lines are added to conform to a 4:3 transmission format.

3.2 Symbols and abbreviations

For the purposes of this ETS, the following symbols and abbreviations apply:

a	aspect ratio
F_s	clock frequency
o_h	falling sync edge
T_d	data bit period
T_s	sampling period
TXT	Teletext
WSS	Wide Screen Signalling

4 Requirements

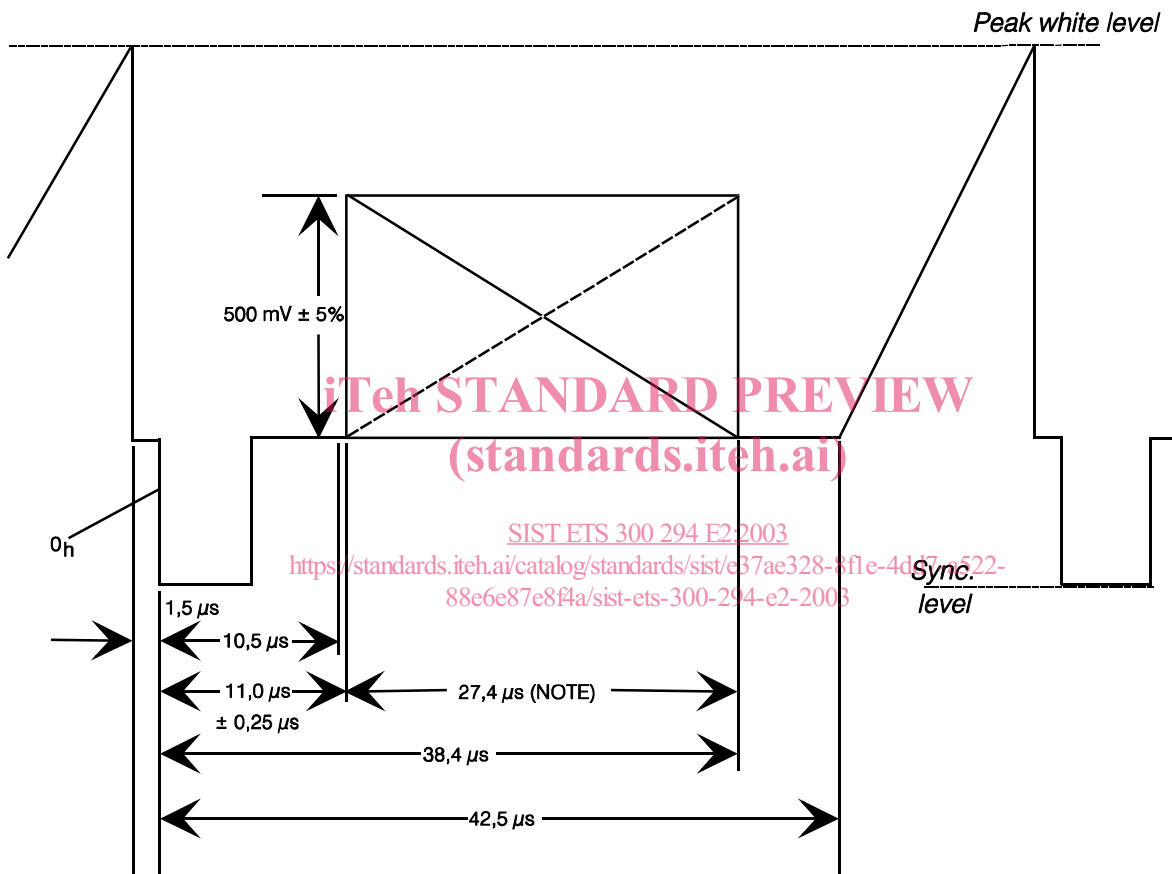
4.1 Line code

The following subclauses specify the line code of the Wide Screen Signalling (WSS).

4.1.1 Position

The signalling bits shall be transmitted as a data burst in the first part of line 23.

The position of the beginning of the Wide Screen Signalling bits shall be $11,0 \pm 0,25 \mu\text{s}$ from O_h of the horizontal sync, as indicated in figure 1. This figure is intended to illustrate the position of the signalling bits in line 23. For the purpose of commonality between PAL and SECAM, the colour burst and chrominance sub-carrier are not shown.



NOTE: For optimum decoder performance, it is recommended that this period is free from other signals.

Figure 1: Position of status bit signalling in line 23

In each frame line 23 shall be occupied with the WSS.

4.1.2 Clock frequency

The clock frequency shall be:
The period shall be:

$$F_s = 5 \text{ MHz } (\pm 1 \times 10^{-4});$$

$$T_s = 200 \text{ ns.}$$

4.1.3 Pulse shape

The pulse shaping function $h(\tau)$ shall be approximately a sine square:

$$h(\tau) \approx \begin{cases} \frac{2}{T_2} \sin^2\left(\frac{\pi\tau}{2T_s} + \frac{\pi}{2}\right) & |\tau| \leq T_s \\ 0 & \text{elsewhere} \end{cases}$$

The half amplitude pulse duration shall be: 200 ns \pm 10 ns.

4.1.4 Signal amplitude

The signal amplitude with respect to a maximum video signal amplitude of 700 mV shall be:

$$0,5 \text{ V} \pm 5 \%$$

4.1.5 Modulation coding

Bi-phase coding shall be used in accordance with figure 2.

Duration of one data bit: T_d

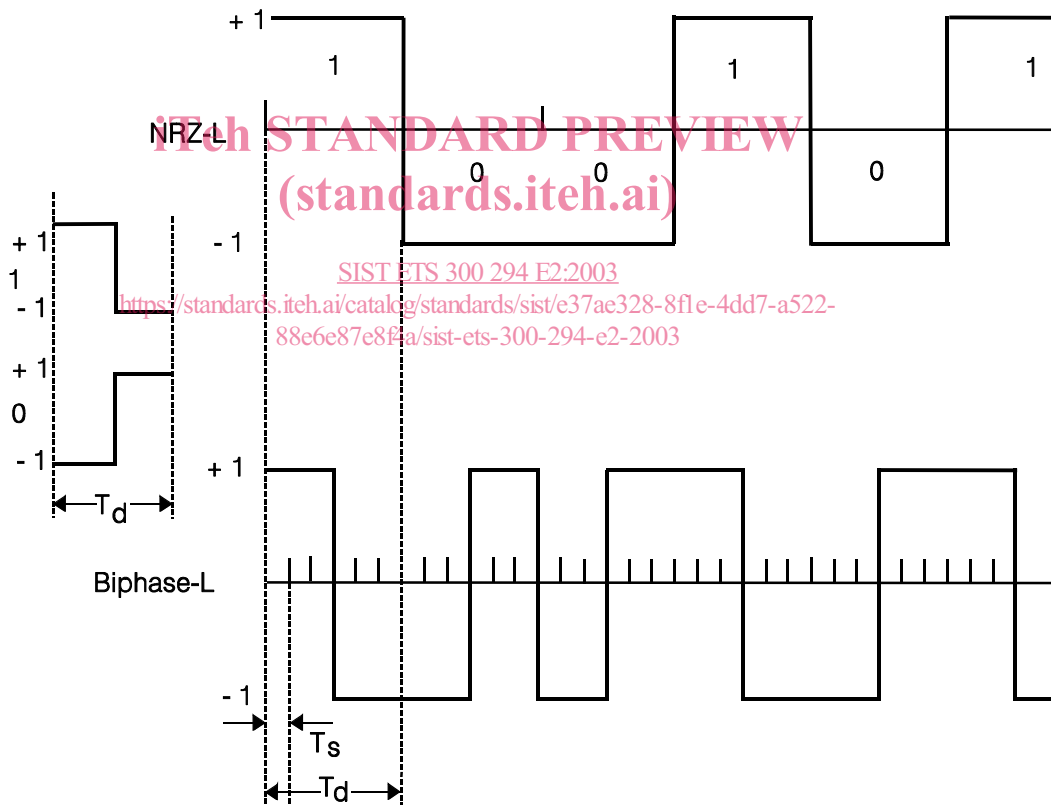


Figure 2: Example of bi-phase-L coding