

PROPOSED SMPTE STANDARD for Television —

SMPTE 96
Revision, Redesignation and Consolidation of
ANSI/SMPTE 94-1985, ANSI PH22.95-1984
and ANSI PH22.96-1982

35- and 16-mm Motion-Picture Film and 2x2-in Slides — Scanned Area and Photographic Image Area for 4:3 Aspect Ratio

Page 1 of 3 pages

1 Scope

This standard specifies the size and location of that portion of 35- and 16-mm motion-picture film and 2x2-in slides to be reproduced by a 4:3 aspect ratio television film chain (telecine) and the size and location of the image area recorded on 35- and 16-mm motion-picture film in television-to-film recording equipment with a 4:3 aspect ratio.

2 Normative references

The following standards contain provisions which, through reference in this standard, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below.

- ANSI/SMPTE 7-1988, Motion-Picture Film (16-mm) — Camera Aperture Image and Usage
- ANSI/SMPTE 59-1989, Motion-Picture Film (35-mm) — Camera Aperture Images
- ANSI PH22.195-1984, Motion-Picture Film (35-mm) — Projectable Image Area — Motion-Picture Prints
- ANSI/SMPTE 233-1987, Motion-Picture Film (16-mm) — Projectable Image Area
- SMPTE RP 9-1986 (R1990), Dimensions of Double-Frame 35-mm 2x2 Slides for Precise Applications in Television
- SMPTE RP 27.3-1989, Specifications for Safe Action and Safe Title Areas Test Pattern for Television Systems

3 Television reproduction

3.1 Film prepared for television

Film prepared by conventional photographic techniques for television reproduction shall be in accordance with ANSI/SMPTE 7-1988 and ANSI/SMPTE 59-1989, which specify the location and size of the 16- and 35-mm camera aperture images. For convenience, these nominal dimensions are given in table 1.

A marking on the reticule of the film camera viewfinder may be used to indicate the television scanned image area which is smaller than the projectable image area. Since the majority of home television receivers display less than the television scanned image area, it may be desirable to indicate an even smaller area in the film camera viewfinder within which essential information should be photographed. (Refer to SMPTE RP 27.3-1989, the dimensions of which are also included in tables 1 and 2 for convenience.)

3.2 Dimensions for television reproduction (see figure 1 and tables 1 and 2)

ANSI/SMPTE 233-1987 and ANSI PH22.195-1984 specify the location and size of the 16- and 35-mm projectable image areas. The location and dimensions of the image area to be projected in a television film chain shall be in accordance with these standards. The projectable image area of a 2x2-in slide is described by the mask dimensions given in SMPTE RP 9-1986. Within these projected areas, the television film chain shall scan the areas given in tables 1 and 2. In all cases, the centers of the television scanned area, safe action area, and safe title area shall coincide with the centers given in the appropriate projectable image area documents.

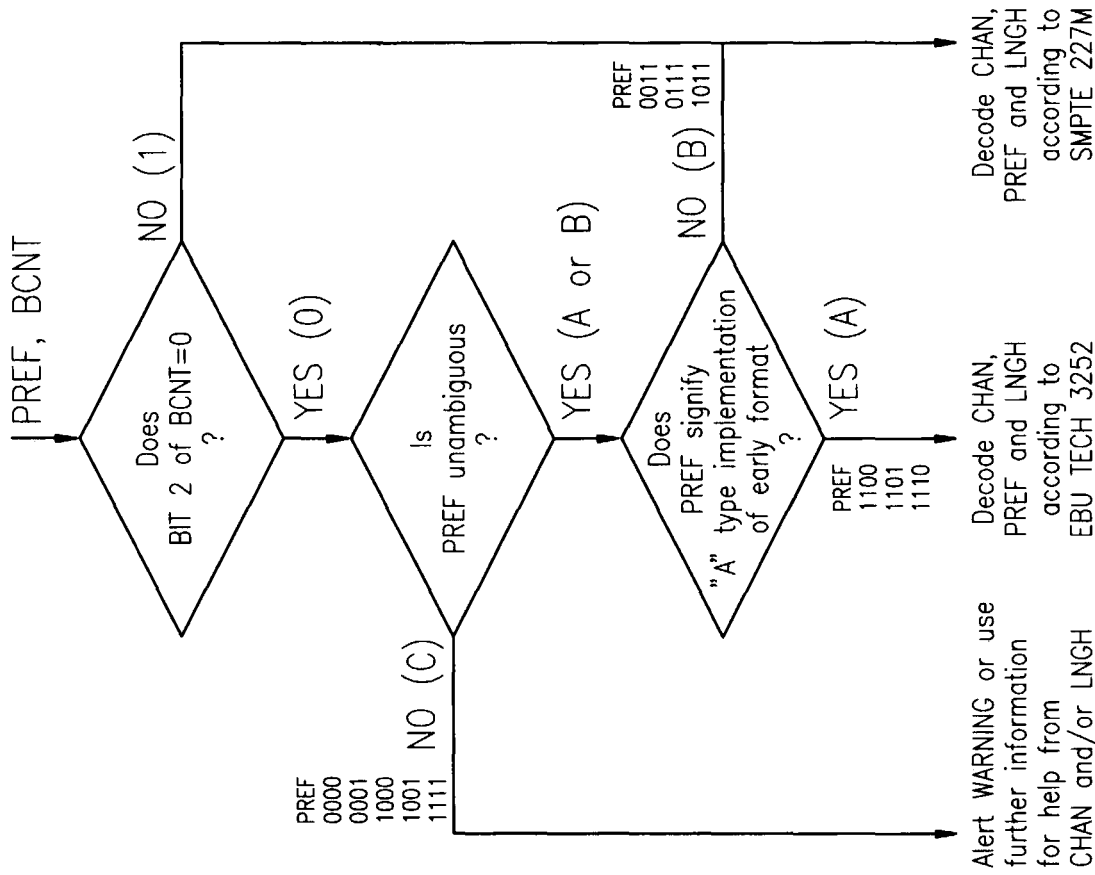


Figure 1 - Suggested logic for decoding audio control words

4 Television-to-film recording

The camera aperture image of a 16- or 35-mm television film recording camera shall be in accordance with ANS/SMPTTE 59-1989 or ANS/SMPTTE 7-1988. Within this image shall be recorded the entire television active picture area. The dimensions of the television active picture area as recorded on the film shall

be as given in tables 3 and 4, and shall depend upon the intended use of the resulting film image: film images intended only for television rebroadcast (kinescopes) and film images intended for motion-picture audiences (cinema). The center of the television active picture area shall coincide with the centers given in the appropriate camera aperture image standards.

Table 1 – Dimensions in inches for television reproduction

Film size	Camera image area		Projectable image area		Television scanned area		Safe action area		Safe title area	
	Height	Width	Height	Width	Height	Width	Height	Width	Height	Width
16 mm	0.295	0.404	0.284	0.380	0.276	0.368	0.248	0.331	0.221	0.293
							0.066R	corner	0.058R	corner
35 mm	0.630	0.864	0.602	0.825	0.594	0.792	0.535	0.713	0.475	0.630
							0.143R	corner	0.125R	corner
2x2-in slides	0.952	1.417	0.921	1.228	0.843	1.124	0.759	1.013	0.674	0.894
							0.203R	corner	0.177R	corner

Table 2 – Dimensions in millimeters for television reproduction

Film size	Camera image area		Projectable image area		Television scanned area		Safe action area		Safe title area	
	Height	Width	Height	Width	Height	Width	Height	Width	Height	Width
16 mm	7.49	10.26	7.21	9.65	7.01	9.35	6.30	8.41	5.61	7.44
							1.68R	corner	1.47R	corner
35 mm	16.00	21.95	15.29	20.96	15.09	20.12	13.59	18.11	12.06	16.00
							3.63R	corner	3.18R	corner
2x2-in slides	24.18	35.99	23.39	31.19	21.41	28.55	19.28	25.73	17.12	22.71
							5.16R	corner	4.50R	corner

Table 3 – Dimensions in inches for television-to-film recording

Film size	Kinescope		Cinema	
	Height	Width	Height	Width
16 mm	0.285 ± 0.002	0.380 ± 0.002	0.295 ± 0.003	0.393 ± 0.003
35 mm	0.612 ± 0.002	0.816 ± 0.002	0.630 ± 0.002	0.840 ± 0.004

Table 4 – Dimensions in millimeters for television-to-film recording

Film size	Kinescope		Cinema	
	Height	Width	Height	Width
16 mm	7.24 ± 0.05	9.66 ± 0.05	7.49 ± 0.08	9.98 ± 0.08
35 mm	15.54 ± 0.05	20.73 ± 0.05	16.00 ± 0.05	21.34 ± 0.10

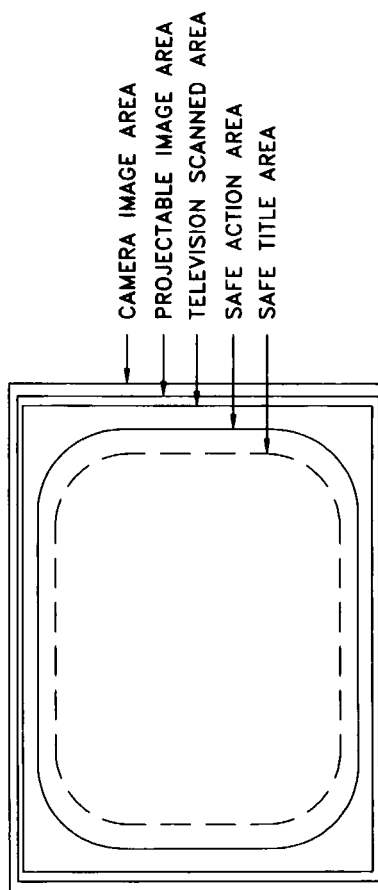


Figure 1 – Television reproduction film areas

PROPOSED SMPTE STANDARD

for Motion-Picture Film (35-mm) — Stereoscopic Prints with Vertically Positioned Subframes — Projectable Image Areas

1 Scope

This standard specifies the maximum dimensions of the film image area intended for projection from a 35-mm motion-picture film using vertically positioned subframes for stereoscopic projection, and the placement of this area relative to the perforations and the reference edge of the film.

2 Dimensions

The dimensions shall be as given in figure 1 and table 1.

3 Subframes

The image area intended for projection is divided into two subframes, as shown in figure 1. The upper

subframe relative to the direction of film travel shall be the left image, and the lower subframe relative to the direction of film travel shall be the right image.

4 Projection lens alignment

Projection lenses must be aligned to take into account the differences between the two formats, principally dimension G.

5 Reference marks

It is suggested that frame reference marks be printed between the perforations along the nonreference edge of the film. These frame reference marks are meant to encourage proper assembly of release print reels and to prevent loss of subframe sequence.

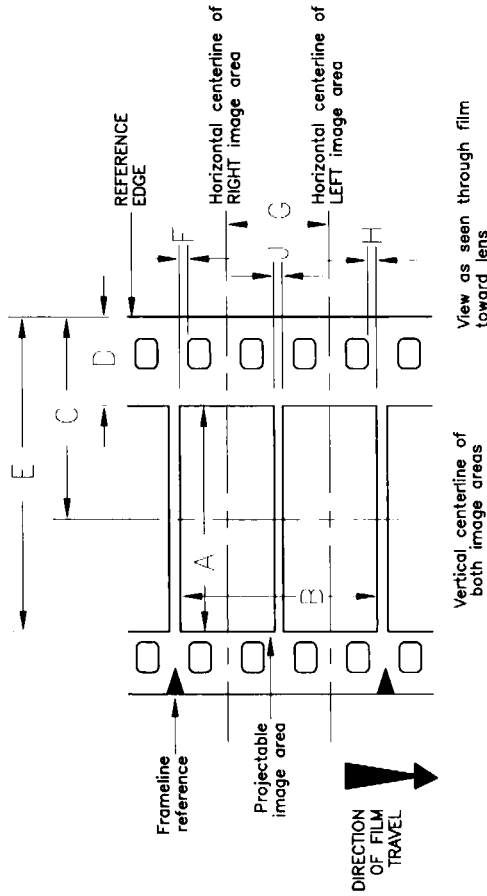


Figure 1

Table 1

Dimensions	Symmetrical Format		Asymmetrical Format	
	Inches	Millimeters	Inches	Millimeters
A	0.825	nom	0.825	nom
B	0.728	max	0.732	max
C	0.738	nom	0.738	nom
D	0.324	min	0.324	min
E	1.151	max	1.151	max
F = H	nominally equal	nominally equal	nominally equal	nominally equal
G	0.3740 ± 0.0005	9.500 ± 0.013	0.3870 ± 0.0005	9.830 ± 0.013
J	0.020	nom	0.042	nom