

Guide for

Calibration tapes for broadcast VTRs

ICS 33.160.30

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

BSI
Documents

AVA

Document Sharing Hub

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee EPL/100, Audio, video and multimedia systems and equipment, to Subcommittee EPL/100/2, Recording, upon which the following bodies were represented:

- Association of Professional Recording Services Limited
- British Broadcasting Corporation
- British Kinematograph, Sound and Television Society
- British Radio and Electronic Equipment Manufacturer's Association
- British Tape Industry Association
- Federation of the Electronics Industry
- Independent Television Association (ITVA)
- Royal Television Society

This British Standard, having been prepared under the direction of the Electrotechnical Sector Board, was published under the authority of the Standards Board and comes into effect on 15 August 1996

© BSI 03-2000

The following BSI references relate to the work on this standard:
Committee reference EPL/100/2
Draft for comment 88/32599 DC

ISBN 0 580 26109 3

Amendments issued since publication

Amd. No.	Date	Comments

Contents

	Page
Committees responsible	Inside front cover
National foreword	ii
1 Scope	1
2 Normative references	1
3 Definitions	1
4 Highband transverse track (IEC 347)	2
5 B format (IEC 602)	3
6 C format (IEC 558)	4
7 U-matic-H format (IEC 712, Amendment 1)	9
8 U-matic-SP format (IEC 712, Amendment 2)	11
9 L format (IEC 961) Mode 1	13
10 M2 format (IEC 1118)	17
11 D-1 format (IEC 1016)	18
12 D-2 format (IEC 1179)	19
13 Addresses of manufacturers	21
14 Care of calibration tapes	22
List of references	Inside back cover

National foreword

This British Standard has been prepared by Subcommittee EPL/100/2 and is identical with IEC 1295:1994, *Calibration tapes for broadcast VTRs*, published by the International Electrotechnical Commission (IEC).

IEC 1295:1994 is a technical report type 3, which is collected data of a different kind from that which is normally published as an International Standard, and does not necessarily have to be reviewed until the data it provides is considered to be no longer valid or useful.

Cross-references

Publication referred to	Corresponding British Standard
IEC 50 (806):1975	BS 4727 <i>Glossary of electrotechnical, power, telecommunication, electronic, lighting and colour terms</i> Part 3 <i>Terms particular to telecommunications and electronics</i> Group 10:1979 <i>Recording and reproduction of sound and video terminology</i> (Technically equivalent)
IEC 347:1982 (HD 451 S1:1984)	BS 4967:1983 <i>Specification for transverse track video tape recorders</i> (Identical)
IEC 558:1982 (HD 573.S1:1990)	BS 6758:1987 <i>Specification for type C helical video tape recorders</i> (Identical)
IEC 712:1993 (EN 60712:1995)	BS EN 60712:1996 <i>Helical scan video tape cassette system using 19 mm (3/4 in) magnetic tape, known as U-format</i> (Identical)
IEC 961:1989 (EN 60961:1994)	BS EN 60961:1994 <i>Specification for helical-scan video tape cassette system using 12,65 mm (0,5 in) magnetic tape on type L</i> (Identical)
IEC 1016:1989	BS 7360:1990 <i>Specification for helical-scan digital component video cassette recording system using 19 mm magnetic tape (format D-1)</i> (Identical)
IEC 1118:1993 (EN 61118:1993)	BS EN 61118:1994 <i>Specification for helical-scan video tape cassette system using 12,65 mm (0,5 in) magnetic tape.</i> <i>Type M 2</i> (Identical)
IEC 1179:1993 (EN 61179:1993)	BS EN 61179:1993 <i>Specification for helical-scan digital composite video cassette recording system using 19 mm magnetic tape; format D2 (NTSC, PAL, PAL-M)</i> (Identical)

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 22, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This technical report describes the contents of calibration tapes for various broadcast VTRs.

The objective in using a calibration tape is to adjust the machine so that it will give optimum reproduction of a first-generation verified recording. The calibration signals recorded under controlled conditions on a machine corresponding to the relevant VTR standard.

The calibration procedure involves playing back the tape while making the necessary operational adjustments as described in the manufacturer's manual.

In addition, trial recordings and the adjustment of the record chain settings should lead to a similar play-back quality as obtained from the calibration tape.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this technical report. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this technical report are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 50(806):1975, *International Electrotechnical Vocabulary (IEV) — Chapter 806: Recording and reproduction of sound and video*.

IEC 347:1982, *Transverse track video recorders*.

IEC 558:1982, *Type C helical videotape recorders*.

IEC 602:1980, *Type B helical video recorders*.

IEC 712:1993, *Helical-scan videotape cassette system using 19 mm (3/4 in) magnetic tape, known as U-format Amendment 1 (1993)*.

IEC 961:1989, *Helical-scan videotape cassette system using 12,65 mm (0,5 in) magnetic tape on type L*.

IEC 1016:1989, *Helical-scan digital component video-cassette recording system using 19 mm magnetic tape (format D-1)*.

IEC 1118:1993, *Helical-scan videotape cassette recording system using 12,65 mm (0,5 in) magnetic tape on type M2*.

IEC 1179:1993, *Helical-scan digital composite video-cassette recording system using 19 mm magnetic tape, format D-2 (NTSC, Pal, PAL-M)*.

3 Definitions

3.1

calibration tape

a magnetic tape on which signals have been recorded, corresponding to a specified characteristic, used to calibrate a reproducing chain [IEC 50-806-05-58]

3.2

reference tape

an unrecorded magnetic tape with specified characteristics, selected as a reference, to enable a comparison to be made with other magnetic tapes or to measure characteristics of magnetic tape recorders [IEC 50-806-05-59, modified]

NOTE In other organizations there are other definitions of the terms calibration tape and reference tape. Organizations and manufacturers are encouraged to bring their definitions in line with IEC definitions.

4 Highband transverse track (IEC 347)

(625/50)

NAME	EBU highband transverse track “primary reference tape”
APPLICATION FOR:	
VIDEO PLAYBACK ADJUSTMENT:	PAL: frequency response, white level, bar tilt, pulse/bar ratio, K2T, KBAR, chroma/luma delay, line-time linearity, chroma/luma gain, diff. gain/phase, moire, S/N ratio
AUDIO PLAYBACK ADJUSTMENT:	Only CH 1: reference level
MECHANICAL ADJUSTMENT:	
MANUFACTURER: PART No.:	EBU No longer available

NAME	EBU Highband transverse track alignment tape
APPLICATION FOR:	
VIDEO PLAYBACK ADJUSTMENT:	PAL: diff. gain/phase, general purpose
AUDIO PLAYBACK ADJUSTMENT:	Only CH 1: reference level
MECHANICAL ADJUSTMENT:	
MANUFACTURER: PART No.:	EBU No longer available

NAME	AGFA transverse track format highband audio-alignment type 50
APPLICATION FOR:	
VIDEO PLAYBACK ADJUSTMENT:	PAL: general purpose
AUDIO PLAYBACK ADJUSTMENT:	CH 1 and CH 2: peak level, reference level, azimuth, frequency response only CH 2:250 Hz notch adjustment
MECHANICAL ADJUSTMENT:	
MANUFACTURER: PART No.:	AGFA Type 50

5 B format (IEC 602)**(625/50)**

NAME	AGFA B format audio alignment tape
APPLICATION FOR:	
VIDEO PLAYBACK ADJUSTMENT:	
AUDIO PLAYBACK ADJUSTMENT:	CH 1 and CH 2: peak level, reference level, azimuth, frequency response, cross-talk
MECHANICAL ADJUSTMENT:	
MANUFACTURER: PART No.:	AGFA BJ96J

NAME	BASF B format audio alignment tape
APPLICATION FOR:	
VIDEO PLAYBACK ADJUSTMENT:	
AUDIO PLAYBACK ADJUSTMENT:	CH 1 and CH 2: peak level, reference level, azimuth, frequency response, cross-talk
MECHANICAL ADJUSTMENT:	
MANUFACTURER: PART No.:	BASF 680-461-28XA

NAME	
APPLICATION FOR:	
VIDEO PLAYBACK ADJUSTMENT:	
AUDIO PLAYBACK ADJUSTMENT:	
MECHANICAL ADJUSTMENT:	
MANUFACTURER: PART No.:	

6 C format (IEC 558)**(625/50)**

NAME	AMPEX C format “highband carrier PAL video reference tape”
APPLICATION FOR:	
VIDEO PLAYBACK ADJUSTMENT:	PAL: general purpose, frequency response, K2T, KBAR, chroma/luma delay, diff. gain/phase, drop-out
AUDIO PLAYBACK ADJUSTMENT:	Channel identification
MECHANICAL ADJUSTMENT:	
MANUFACTURER: PART No.:	AMPEX 1498605-01

NAME	AMPEX C format “highband carrier PAL multipurpose tape”
APPLICATION FOR:	
VIDEO PLAYBACK ADJUSTMENT:	PAL: general purpose, frequency response, K2T, KBAR, chroma/luma delay, diff. gain/phase, drop-out, moire
AUDIO PLAYBACK ADJUSTMENT:	CH 1, CH 2 and CH 3: reference level, frequency response, phase, azimuth
MECHANICAL ADJUSTMENT:	Guide adjustment
MANUFACTURER: PART No.:	AMPEX 1498635-01

NAME	AMPEX C format PAL four-track audio alignment tape
APPLICATION FOR:	
VIDEO PLAYBACK ADJUSTMENT:	
AUDIO PLAYBACK ADJUSTMENT:	CH 1, CH 2, CH 3 and CH 4: reference level, azimuth, frequency response
MECHANICAL ADJUSTMENT:	
MANUFACTURER: PART No.:	AMPEX 1498601-04

(625/50)

NAME	AMPEX C format programmed drop-out tape (PAL)
APPLICATION FOR:	
VIDEO PLAYBACK ADJUSTMENT:	PAL: re-insertion gain and phase of drop-out compensation
AUDIO PLAYBACK ADJUSTMENT:	Channel identification
MECHANICAL ADJUSTMENT:	
MANUFACTURER: PART No.:	AMPEX 1498626-01

NAME	AMPEX C format “highband carrier SECAM video reference tape”
APPLICATION FOR:	
VIDEO PLAYBACK ADJUSTMENT:	SECAM: general purpose, frequency response, K2T, KBAR, chroma/luma delay, diff. gain/phase, drop-out
AUDIO PLAYBACK ADJUSTMENT:	Channel identification
MECHANICAL ADJUSTMENT:	
MANUFACTURER: PART No.:	AMPEX 1498696-01

NAME	AMPEX C format biased control track alignment
APPLICATION FOR:	
VIDEO PLAYBACK ADJUSTMENT:	
AUDIO PLAYBACK ADJUSTMENT:	
MECHANICAL ADJUSTMENT:	PAL/SECAM: checking control track
MANUFACTURER: PART No.:	AMPEX 1498644-01