

# ALIGNMENT TAPES PRECISION VIDEO AND AUDIO TAPES FOR OPTIMUM EQUIPMENT PERFORMANCE



**AMPEX**

# 1 INCH HELICAL VIDEO ALIGNMENT TAPES

## TYPE C FORMAT

CATALOG NUMBER	LINE/STD	DESCRIPTION	LENGTH (in minutes)
<b>GUIDE ADJUSTMENT</b>			
1498608-03	525/NTSC	Guide Adjustment Tape	10
1498609-02	625/PAL	Guide Adjustment Tape	10
<b>HIGH BAND VIDEO REFERENCE</b>			
1498604-03	525/NTSC	Highband Carrier Video Reference	30
1498605-02	625/PAL	Highband Carrier Video Reference	30
1498606-02	625/SECAM	Highband Carrier Video Reference	30
1498638-01	PAL M	Highband Carrier Video Reference	30
1498625-01	525/NTSC	Programmed Drop-out Tape	15
1498626-01	625/PAL	Programmed Drop-out Tape	15

CATALOG NUMBER	LINE/STD	DESCRIPTION	LENGTH (in minutes)
<b>AUDIO</b>			
1498600-04	525/NTSC	Audio Alignment Tape	10
1498601-04	625/PAL	Audio Alignment Tape	10
1498644-01	625/PAL	Biased CNTL. Trk. Reference Level Tape 1 KHz at 9.4409 in/sec. 100nWb/m	10
<b>FLUTTER</b>			
1498602-02	525/NTSC	Audio Flutter Tape 3 KHz @ 9.6063 in/sec.	5
1498603-02	625/PAL	Audio Flutter Tape 3 KHz @ 9.4409 in/sec.	5

## QUAD ALIGNMENT TAPES

CATALOG NUMBER	LINE/STD	DESCRIPTION	LENGTH (in minutes)
50262-07	525/NTSC	Vertical Bar Test Tape—Low Band	5
52082-04	625/PAL	Vertical Bar Test Tape—Low Band	5
1370651-03	525/NTSC	Vertical Bar Test Tape—High Band for Ampex ACR-25	5
1370651-04	625/PAL	Vertical Bar Test Tape—High Band for Ampex ACR-25	5
1372422-01	525/ANSI	Quad/Audio-2000/35 MSEC—High Band	5
1372424-01	625/PAL	Color Alignment Tape—High Band (video signals per EBU tech. 3219-E chapter 1, plus audio and cue "op. level" tones)	11
1372424-02 (UK VERSION)			
1373857-01	525/NTSC	Color—Video Test Tape—High Band (conforms to SMPTE/RP-43)	11
1374503-01	625/PAL	Color—Primary Reference Tape High Band (Video signals per EBU Tech 3219-E chapter 3, plus audio and cue "op level" tones)	17

CATALOG NUMBER	LINE/STD	DESCRIPTION	LENGTH (in minutes)
1374554-01	525/NTSC	Vertical Bar Test Tape—High Band	5
1374556-01	625/PAL	Vertical Bar Test Tape—High Band	5
1374798-01	625/CCIR	Quad/Audio—Inf/35 $\mu$ sec—High Band	5
1405476-01	525/ANSI	Quad/Audio—7.5 in/sec—2000/35 $\mu$ High Band	5
1405477-01	625/CCIR	Quad/Audio—7.8 in/sec—inf/35 $\mu$ sec High Band	5
1408945-01	525/PAL M	Quad/color test tape—High Band (Multi-ramp-12.5T-C. Bars)	12
1460240-01	525/NTSC	Vertical Bar Test Tape—7.5 in/sec—High Band	5
1460241-01	625/PAL	Vertical Bar Test Tape—7.8 in/sec—High Band	5

There are no video signals or control track information recorded. Both 525/60 NTSC/PAL-M and 625/50 PAL/SECAM standards may be obtained.

#### Flutter Test

This tape measures playback flutter and tape speed in both 525/60 NTSC/PAL-M and 625/50 PAL/SECAM standards.

#### Dropout Compensator Test

This tape is intended for use on all Type C format helical scan video recorders when used in conjunction with time base correctors, and will aid in the alignment of the dropout compensator in the time base corrector. Available in 525/60 NTSC/PAL-M and 625/50 PAL/SECAM.

#### Video and Audio Reference

This tape, recorded in accordance with SMPTE V16.46-634, is intended for use on all Type C format helical scan video recorders, and is to be used for adjustments, comparisons, and verification of unit performance.

## QUADRUPLEX VIDEO ALIGNMENT TAPES

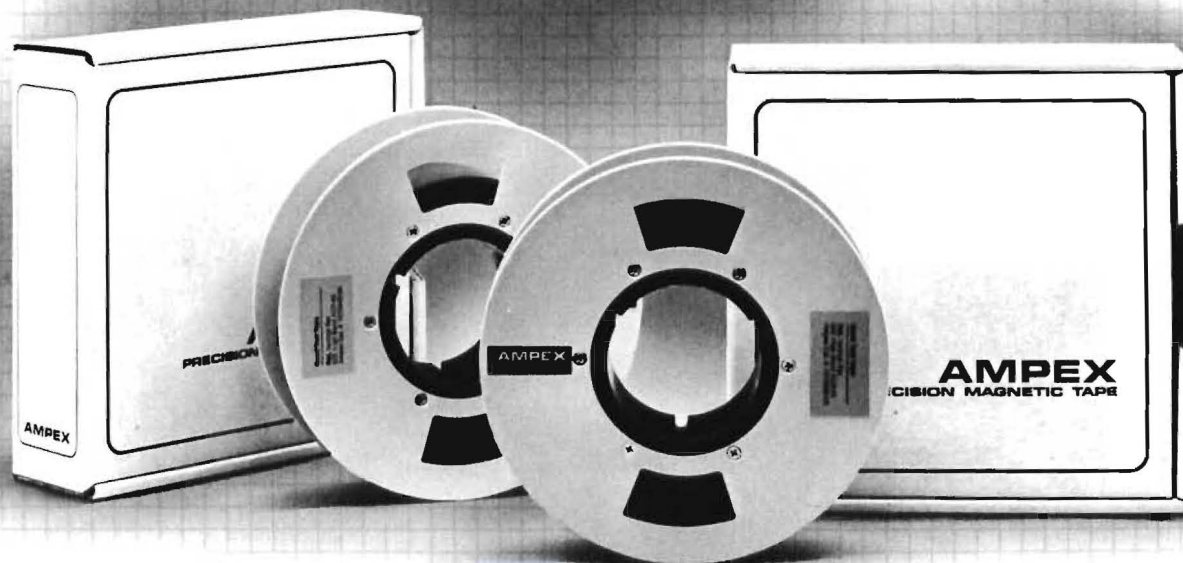
AmpeX produces a series of test tapes for use with quadruplex video

recorders operating with 525/60 NTSC/PAL-M or 625/50 PAL/SECAM systems. The basic "Vertical Bar Tapes" may be used to set guide height and engagement, check control track level and phasing, set audio and cue channel playback levels, and check tach phasing. The "Color" tapes, recorded with signals recommended by SMPTE, EBU, CCIR, and ANSI,

permit playback verification of the following parameters:

- 1) vacuum guide position
- 2) video frequency response
- 3) chrominance-to-luminance gain and group delay
- 4) differential gain, phase, and K-factor
- 5) moire and signal-to-noise (with PAL tape #1374503)
- 6) subcarrier phase and channel chroma levels
- 7) control track level and phase
- 8) video gain and carrier frequency
- 9) audio and cue channel gains

The "Quad/Audio" test tapes contain multi-frequency reference level tones recorded to the 2000/35  $\mu$ sec (80/4500 Hz) or  $\infty$ /35  $\mu$ sec (0/4500 Hz) curves to permit checking audio and cue channel playback response. Operating level tones, recorded at tape flux levels of 110 nWb/m for audio and 260 nWb/m for cue, are used to set playback gain controls.





## AUDIO ALIGNMENT TAPES

Ampex manufactures a complete line of audio alignment tapes in ¼-inch, ½-inch, 1-inch, and 2-inch widths — in full track and 2-track configurations. These tapes are available in NAB, IEC, and AES equalizations.

Ampex also produces flutter tapes for ¼-inch machines.

Level tapes of 700 hertz may be purchased in ¼ inch widths. Operating level corresponds to a tape flux per unit width of 185 nWb/m.

## CARING FOR ALIGNMENT TAPES

Due to the precise nature of alignment tapes, certain precautionary measures should be taken in order to prolong their usefulness in standardization work.

One enemy of any magnetic tape is physical deterioration. Tape edge deformation, for example, can result in uneven tracking with constantly changing relative azimuth. Edge deformation occurs whenever tape is unevenly spooled and subsequently crushed by the reel flanges. Care

should be taken to allow for a smooth, compact tape pack, both during play and shuttle modes. If your machine is equipped with a special shuttle mode, it would be prudent to use it.

Magnetized heads and tape guides are pitfalls to be avoided at all costs. It is good practice to clean and demagnetize them frequently. Use only approved cleaners.



Alignment tapes should always be stored in a safe, dry environment. Changing temperatures and humidity can have an adverse effect on the tape base material, causing it to alternately swell and shrink. The result can degrade the tape's usefulness as a reference tape.

When an alignment tape is in the process of being played, it should NEVER be stopped during the middle of a test. If a mistake occurs, allow the tape to play through to the end, then rewind it carefully and start again. Stopping and starting a tape during a pass results in unnecessary tape tension changes, thus increasing the possibility of tape stretch and distortion of the recorded signal.

Finally, two factors which cannot be avoided: wear and age. Each time a tape is played, physical wear and signal deterioration occur. As a tape gets older, its output diminishes; thus, it should be carefully monitored, and after 20 to 25 passes or one to two years of use, it should be replaced. Ampex recommends this periodic tape replacement to assure compliance with all critical parameters.



## **NO OTHER MANUFACTURER OFFERS A MORE COMPLETE SELECTION OF ALIGNMENT TAPES**

Today, when so many professionally recorded tapes are being shuttled to and from different studios, compatibility between identical format recording machines is an absolute necessity. Engineers agree that the most accurate, most reliable method of measuring and testing a recorder/reproducer's operational parameters and flux characteristics is through the use of alignment tapes.

And no company in the world manufactures or markets more of these tapes than Ampex. This shouldn't come as a surprise when you stop to consider that we've been designing and manufacturing the finest professional video and audio tape recorders in the industry for more than a quarter of a century.

### **ONE OF A KIND**

Every Ampex alignment tape is a first generation original. Specially modified master recorders and a meticulous calibration process are just part of a very strict quality control program.

Before any tape is recorded, each machine is carefully aligned and calibrated to a master vault tape, then monitored continuously to assure absolute compliance and adherence to frequency reproduction and other measurement parameters. Though the voice tags are dubbed, all test signals are supplied directly to the record



amplifiers from the most accurate programmable tone and signal generators available.

Whether it's audio or video, helical or quad, there's an Ampex alignment tape series that's just right for your studio needs. This brochure offers a brief description and a listing of some of the more popular tapes available. For more detailed information, contact your Ampex sales office.

## **HELICAL SCAN VIDEO ALIGNMENT TAPES FOR 1 INCH TYPE C FORMAT**

### **Guide Adjustment**

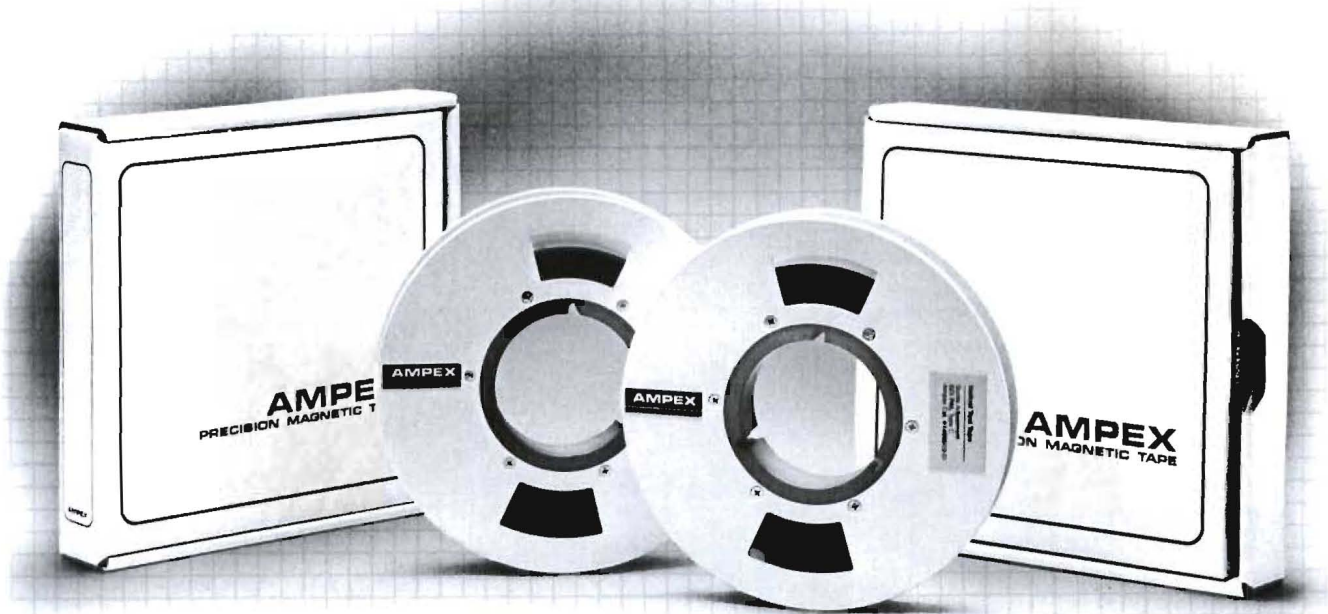
This tape is specifically designed for critical guide adjustments and interchange verification. It is available in both 525/60 NTSC/PAL-M and 625/50 PAL/SECAM standards.

### **High Band Carrier Video Reference**

This tape contains standard references for mechanical and electrical checks to assure uniform performance. 525/60 NTSC/PAL-M and 625/50 PAL/SECAM standards are available.

### **Helical Audio Alignment**

The purpose of this tape is to test for audio alignment and verification.



# AUDIO ALIGNMENT TAPES

CATALOG NUMBER	STANDARD	SPEED	EQUALIZATION	TRACKS	CATALOG NUMBER	SPEED	UNWEIGHTED FREQUENCY/RMS FLUTTER	TRACKS
<b>¼ INCH REPRODUCE ALIGNMENT TAPE</b>					<b>¼ INCH FLUTTER TAPES</b>			
4690037-01	NAB	3.75 in/s	90 µs & 3180 µs	Full	01-31336-01	3.75 in/s	3000 Hz/<0.03%	Full
01-31331-01	EIA	3.75 in/s	120 µs & 3180 µs	Full	4690013-01	3.75 in/s	3150 Hz/<0.03%	Full
01-31321-01	NAB	7.5 in/s	50 µs & 3180 µs	Full	01-31326-01	7.5 in/s	3000 Hz/<0.03%	Full
4690010-01	NAB	7.5 in/s	50 µs & 3180 µs	2	4690012-01	7.5 in/s	3150 Hz/<0.03%	Full
4690014-01	IEC	7.5 in/s	70 µs & ∞	Full	01-31316-01	15 in/s	3000 Hz/<0.03%	Full
01-31311-01	NAB	15 in/s	50 µs & 3180 µs	Full	4690011-01	15 in/s	3150 Hz/<0.03%	Full
4690009-01	NAB	15 in/s	50 µs & 3180 µs	2	4690099-01	30 in/s	3000 Hz/<0.03%	Full
01-31313-01	IEC	15 in/s	35 µs & ∞	Full	<b>¼ INCH LEVEL TAPES</b>			
4690093-01	AES	30 in/s	17.5 µsec & ∞	Full	01-31325-01	7.5 in/s	700 Hz @ 185 nanoWebers/meter	Full
<b>½ INCH REPRODUCE ALIGNMENT TAPE</b>					01-31315-01	15 in/s	700 Hz @ 185 nanoWebers/meter	Full
01-31321-05	NAB	7.5 in/s	50 µs & 3180 µs	Full				
4690015-01	IEC	7.5 in/s	70 µs & ∞	Full				
01-31311-05	NAB	15 in/s	50 µs & 3180 µs	Full				
01-31313-05	IEC	15 in/s	35 µs & ∞	Full				
4690085-01	AES	30 in/s	17.6 µs & ∞	Full				
<b>1 INCH REPRODUCE ALIGNMENT TAPE</b>								
4690032-01	IEC	7.5 in/s	70 µs & ∞	Full				
4690005-01	NAB	15 in/s	50 µs & 3180 µs	Full				
4690031-01	IEC	15 in/s	35 µs & ∞	Full				
4690049-065	NAB	7.5 in/s	50 µs & 3180 µs	Full				
4690048-01	AES	30 in/s	17.5 µs & ∞	Full				
<b>2 INCH REPRODUCE ALIGNMENT TAPE</b>								
4690025-01	NAB	7.5 in/s	50 µs & 3180 µs	Full				
4690036-01	IEC	7.5 in/s	70 µs & ∞	Full				
4690024-01	NAB	15 in/s	50 µs & 3180 µs	Full				
4690035-01	IEC	15 in/s	35 µs & ∞	Full				
4690047-01	AES	30 in/s	17.5 µs & ∞	Full				

## WARRANTY

### EXCLUSION OF DAMAGES

In no event shall Ampex be liable for any consequential, incidental, indirect, exemplary, or special damages, whether in contract or in tort, in any action, in connection with these, parts furnished.

## Ampex Customer Express Service (ACES):

(800) 227-8401 (Outside California)  
982-5875 (California Only)

# AMPEX

Ampex Corporation, Audio-Video Systems Division

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