

CVR-75

BETACAM SP STUDIO RECORDER/ PLAYER WITH AST™ AUTOMATIC TRACKING SYSTEM

Applications:

The CVR-75 is a Betacam SP studio record/playback VTR with built-in full-featured editing capability. It's designed for high quality ENG/EFP, broadcast replay, feeding a composite editing system, or post-production recording in the component domain.

General:

Four channels of audio are provided: two high performance AFM tracks and two longitudinal channels with built-in mixer and Dolby* C noise reduction.

A second set of heads in the CVR-75 provides audio/video confidence playback during recording and editing sessions.

AST™ automatic scan tracking provides broadcast-quality playback from -1 to +2 times normal tape speed. A *Dynamic Motion Control* feature can "learn" a variable speed profile, and play it back on command.

For editing, a wide range of Betacam VTRs can be controlled by the CVR-75, without the need for an external edit controller. An RS-422 interface is also provided if external control is desired.

A built-in editor includes assemble and insert edit controls for Video, Audio 1 and 2, and time code. Pre-roll times are selectable, edit points may be trimmed frame-by-frame, and Preview/Review modes allow you to check edit accuracy.

In search mode, pictures are viewable in color at 5X normal speed, and in monochrome up through 24X.

Longitudinal Time Code (LTC) with user bits and Vertical Interval Time Code (VITC) are both provided.

SCH phase indicators monitor video input/output for correct phasing, assuring you of good edits whether the CVR-75 is the source or recorder.

An internal TBC with advanced digital dropout circuitry is included together with a 15 pin interface for a remote control panel.

*Dolby is a registered trademark of Dolby Laboratories Licensing Corporation.

Features:

VIDEO

- AST™ Automatic Scan Tracking with Dynamic Motion Control Memory
- Integrated TBC with remote control capability
- SMPTE/EBU time code generator/reader for LTC, VITC or User Bits
- Built-in character generator
- Capstan override capability
- Built-in SCH phase indicators
- Record inhibit switch with indicator
- Multi-function hours meter

AUDIO

- Four channels 2 longitudinal, 2 AFM
- Separate record and playback level controls for each channel



IN THE EDITING SUITE OR ON THE STUDIO FLOOR, THE AMPEX CVR-75 TAKES BETACAM PERFORMANCE TO NEW HEIGHTS

The CVR-75 studio VTR combines all the performance of Betacam SP with features like AST™ Automatic Scan Tracking and Dynamic Motion Control.

The unit itself is compact, lightweight and includes a full featured, flexible editing system.

One of the most important new features on the CVR-75 is its extended playtime. With the new larger cassettes, up to 90 minutes (100 minutes PAL) recording and playback time is available.

These features, when combined with the performance of Betacam SP, make the CVR-75 ideal for high quality ENG/EFP, broadcast replay, feeding a composite editing system, or post production recording in the component domain.

AST™ Automatic Scan Tracking for versatile broadcast playback capability

AST capability puts all kinds of creative options in your hands. Broadcast-quality playback is available on command within a range of speeds from -1 to +2 times the normal tape speed picture *without breakup*. The AST system can also be used for rock-steady slow motion and freeze frame effects. Rotation of the shuttle/jog knob determines the speed selection within the AST tracking range.

For automatic operation, the AST system incorporates a feature called Dynamic Motion Control (DMC). DMC is capable of "learning" a variable play profile and replaying it upon command. When production deadlines are near, DMC can be a real time saver.

Pictures at shuttle speed

To enhance the editing process, the CVR-75 lets you view color video up to *five times* normal tape speed in both forward and reverse direction.

The easily accessed shuttle knob permits search speeds up to 24X in either direction, with viewable monochrome pictures. A microprocessor-controlled servo and precise transport provide quick lockup—only 0.6 seconds from the stand-by mode.

In Jog mode the tape is synchronized to the rotation of the shuttle knob. Frame-by-frame advance of the tape in either direction can be accomplished without picture break-up by rotating the knob.

Studio quality four-channel audio

With Betacam SP the CVR-75 delivers true studio-quality audio performance.

In addition to two new high performance AFM tracks, specifications have been improved on the longitudinal channels. Dolby* C noise reduction is also provided on the longitudinal channels to further improve sound quality.

A simple mixer for the longitudinal channels is built right into the CVR-75. Audio level bar graphs and switchable Peak/VU are provided for each channel, giving you optimum monitoring capability.

Audio/video confidence playback

A second set of heads in the CVR-75 allows confidence playback during recording. This allows you to *see* and hear what is being recorded during acquisition and editing sessions.

System interface

When it comes to setting up your editing bay, the CVR-75 offers real flexibility. The CVR-35, CVR-40, CVR-15, CVR-10 and other similarly controlled VTRs can be interfaced directly. Control functions can be handled by the CVR-75, without an external edit controller.

If external control is desired, an RS-422 interface is provided for an Ampex VRC-2, ACE Micro™ or other edit controller.

*Dolby is a registered trademark of Dolby Laboratories Licensing Corporation

CVR-75 is both 30 minute

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The CVR-75 is equipped with a built-in, full-featured editor that allows both assemble edits and insert edits for Video, Audio 1 and 2, and time code. Pre-roll times are selectable. Preview/Review functions can be engaged to check edit accuracy. And edit points determined by the use of in/out mark functions may be trimmed in either direction on a frame-by-frame basis.

A new feature, Sc/H (sub-carrier to horizontal sync) phase indicators, are built right into the CVR-75. These circuits monitor both the video input and output for correct RS-170A phasing, assuring you of good edits whether the CVR-75 is the source or recorder.

Multifunctional time code generator/reader

In the editing suite, the CVR-75 is a versatile work-horse. Designed to meet the stringent requirements of demanding editing sessions, the machine provides a selection of time codes.

Besides Longitudinal Time Code (LTC) with user bits, the CVR-75 provides Vertical Interval Time Code (VITC).

With the CVR-75, you always know exactly where you are on the tape. The need for shuttling back and forth to search for an exact insert or exit point is eliminated.

Built-in Time Base Corrector with remote control

An internal TBC provides broadcast quality video output from the CVR-75, eliminating the need for any additional signal processing equipment.

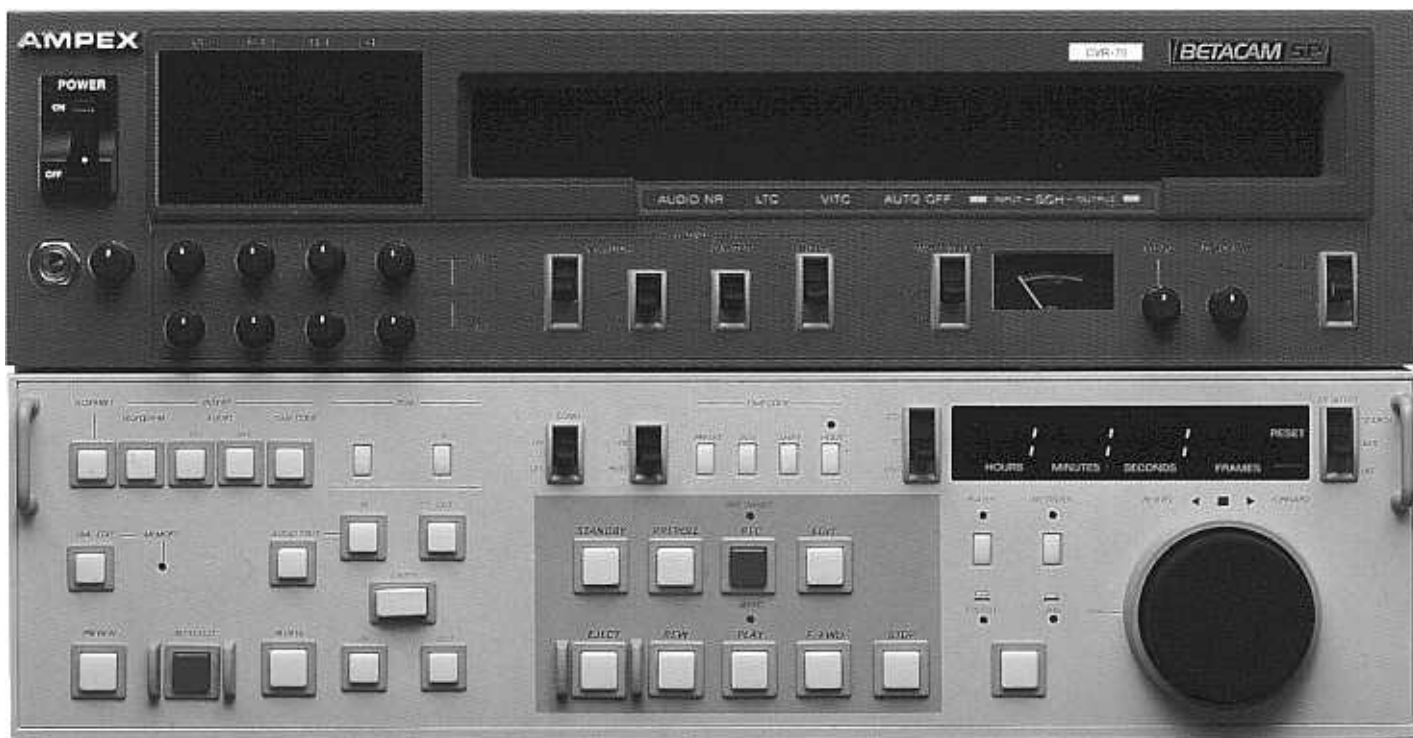
The advanced digital dropout compensation circuitry ensures consistent high quality picture performance.

In addition to the integral TBC controls provided on the CVR-75, remote adjustment is possible through a 15 pin interface.

Fast and easy installation

The machine's compact size makes it a welcome addition in any crowded production environment. The CVR-75 can be mounted into any standard 19-inch EIA rack, studio console, or OB vehicle where space is at a premium. All operational functions, including tape cassette insertion, are front accessed.

A secondary control panel containing switches and adjustments for the TBC, audio routing/monitoring, record lockout, Dolby NR on/off, color frame mode, and hour meter can be accessed by simply pulling out the front panel's lower section.



From manufacturing through customer service and support, Ampex is committed to Betacam and Betacam SP. And we'll provide this support to any Betacam professional, whether our name is on the product or not.



Standard features

VIDEO

- AST™ Automatic Scan Tracking with Dynamic Motion Control
- Integrated TBC with remote control
- SMPTE/EBU time code generator/reader for LTC, VITC or User Bits
- Built-in character generator
- Capstan override capability
- Built-in Sc/H phase indicators
- Record inhibit switch with indicator
- Multi-function hours meter

AUDIO

- Four channels, 2 longitudinal, 2 AFM
- Separate record and playback level controls for each channel
- Four discrete audio level bar graphs with selectable Peak/VU indicators
- Integrated mixer for Channels 1 and 2
- Low impedance audio monitor outputs for separate or mixed output
- Dolby C noise reduction on longitudinal channels

A wide selection of equipment, options and accessories

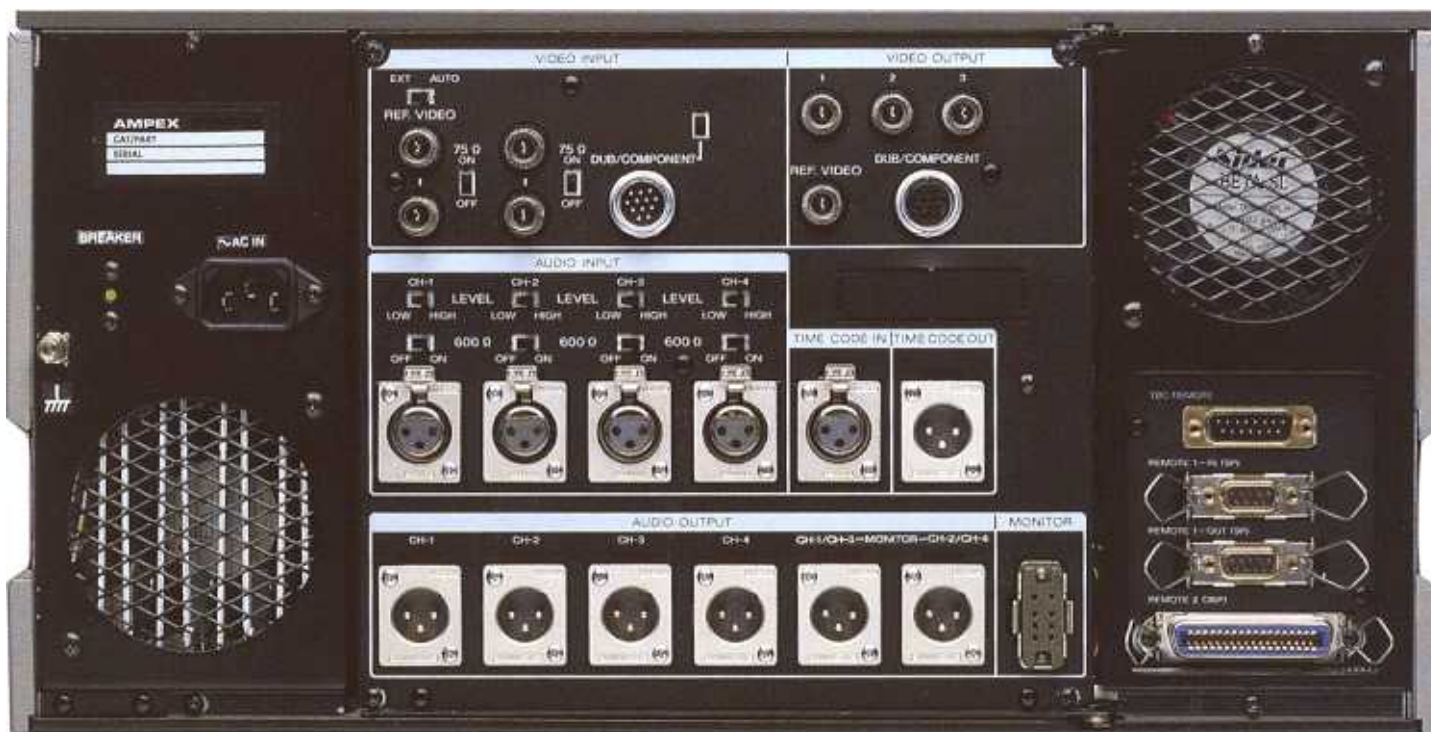
Ampex offers a complete line of Betacam and Betacam SP cameras, portable recorders and studio VTRs.

We also have a wide selection of options and accessories designed to help you configure a Betacam system to meet your specific production requirements. Our informative Systems and Accessories Guide offers configuration diagrams that can help you plan your system. You can get a copy from your nearest Ampex sales office or authorized Ampex Dealer.

Ampex and Betacam—the best of both worlds

Take a good look at the Ampex line of Betacam products. They really do deliver the best of both worlds: a reliable, high-quality format, and a supplier with a reputation for customer service and support that's second to none.

Besides Betacam, Ampex offers a complete line of graphics systems, editors, ADO™ effects and switchers as well as the finest Type "C" VTRs in the world. No one provides complete system solutions like Ampex.



INTRODUCING BETACAM SP... STUDIO QUALITY VIDEO AND AUDIO IN A 1/2" FORMAT

One of the most notable improvements in the evolution of video production came in 1982 with the introduction of Betacam. This revolutionary format marked the beginning of a new era in portability.

Originally developed for broadcast news gathering, Betacam is used today as the acquisition format for all types of production. But with new applications came demands for improvement in picture and sound quality—as well as longer play times.

Betacam SP, developed as a compatible extension to the Betacam format, meets these needs while maintaining the reliability and durability of the original format. Either format, recorded on a 30-minute cassette, will play-back in all existing and new Betacam products.

Best of all, users can now choose operation on Betacam or Betacam SP, as best meets their production requirements—without having to replace existing equipment.

The SP stands for superior performance

Betacam SP format recordings use metal particle tape. The finer particle structure, higher coercivity and fundamental magnetic properties of the metal particle tape provide:

- use of higher carrier frequencies
- improved luminance and chrominance signal-to-noise ratio
- improved luminance bandwidth
- improved K-factor and picture detail reproduction

All these factors also contribute to a significant improvement in multi-generation performance.

Four audio channels with performance to match the video

Audio quality of Betacam SP takes a step up as well.

In addition to better specifications on the two longitudinal tracks, Betacam SP adds two audio frequency-modulated (AFM) channels for studio-quality sound.

New longer playing time

In response to industry demands, the Ampex Betacam SP studio VTRs are designed to accommodate both the conventional 30 minute cassette as well as a new, longer playing cassette. This larger cassette has a playing time of up to 90 minutes NTSC or 100 minutes PAL.

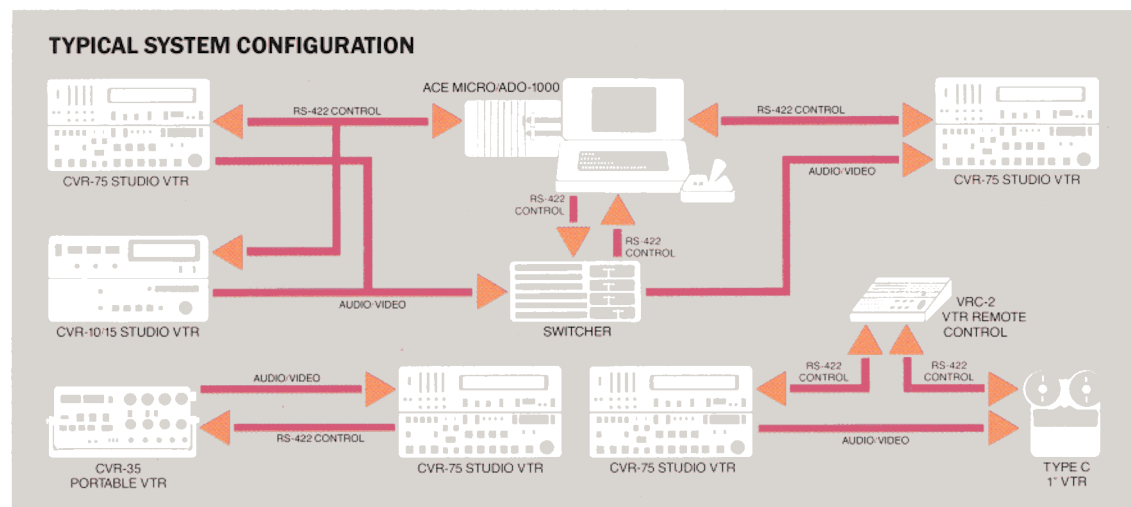
We're committed to Betacam

From manufacturing through service we're as committed to Betacam and Betacam SP as we are to all our products.

Our prompt technical support, speedy spare parts delivery and responsive field service all translate into real added value for Ampex customers.

And we provide this service to all Betacam professionals worldwide—whether our name is on the product or not.

*Betacam and Betacam SP are trademarks of Sony Corporation



CVR-75 RECORDER SPECIFICATIONS

	NTSC	NTSC	PAL/SECAM	PAL/SECAM
VIDEO				
Bandwidth, luminance	30 Hz to 4.1 MHz +0.5/-6.0 dB	30 Hz to 4.5 MHz +0.5/-3.0 dB	25 Hz to 4.0 MHz +0.5/-6.0 dB	25 Hz to 5.5 MHz +0.5/-3.0 dB
Chrominance, R-Y/B-Y:	30 Hz to 1.5 MHz +0.5/-3.0 dB	30 Hz to 1.5 MHz +0.5/-3.0 dB	25 Hz to 1.5 MHz +0.5/-3.0 dB	25 Hz to 1.5 MHz +0.5/-3.0 dB
S/N Luminance	48 dB	51 dB	46 dB	48 dB
Chrominance, amplitude	50 dB	55 dB	49 dB	50 dB
Chrominance, phase	50 dB	55 dB	49 dB	50 dB
K-factor (2T pulse)	Less than 3%	Less than 2%	Less than 3%	Less than 2%
Differential gain	Less than 3%	Less than 2%	Less than 3%	Less than 2%
Differential phase	Less than 3°	Less than 2°	Less than 3°	Less than 2°
Chrominance/luminance			Less than 20 nsec PAL	Less than 20 nsec PAL
Delay	Less than 20 nsec	Less than 20 nsec	Less than 50 nsec SECAM	Less than 50 nsec SECAM
AUDIO				
	LONGITUDINAL: OXIDE TAPE	LONGITUDINAL: METAL PARTICLE TAPE	AFM METAL PARTICLE TAPE	
Frequency response	50 Hz to 15 KHz ±3 dB	50 Hz to 15 KHz 1/-2 dB	20 Hz to 20 KHz +0.5/-2.0 dB	
S/N	50 dB (3% distortion level, without NR system)	54 dB (3% distortion level, without NR system)		
Dynamic range	N/A	N/A	More than 85 dB	
Phase difference	N/A	±20 degrees at 15 KHz	±10 degrees at 20 KHz	
Distortion (1 KHz ref. level)	Less than 2%	Less than 1%	Less than 0.5%	
Wow and flutter	Less than 0.10% rms	Less than 0.10% rms	N/A	
Crosstalk	N/A	-65 dB	-65 dB	
Depth of Erasure	More than 70 dB	More than 70 dB	N/A	
SIGNAL INPUTS				
Video (75 Ohms)	Composite video 1.0V p-p			
Ref video (75 Ohms)	1.0V p-p, ±0.3V			
Dub/component (75 Ohms)	(12-pin connector)			
Luminance	1.0V p-p, sync negative			
Chrominance, R-Y/B-Y:	0.7V p-p (75% color bars)			
Component (75 Ohms)	(3 BNC connector)			
Luminance, Y:	1.0V p-p, sync negative			
Chrominance, R-Y/B-Y:	0.7V p-p (100% color bars)			
Audio Ch. 1/2/3/4	Low	-60 dB, 3K Ohms, balanced		
	High	+4 dB, 600 Ohms, 10K Ohms balanced		
Time code		0.5V to 18V p-p, 600 Ohms balanced		
SIGNAL OUTPUTS				
Video 1 (75 Ohms)	1.0V p-p, sync negative			
Video 2 (75 Ohms)				
Composite video	1.0V p-p, sync negative			
Non-composite video	0.714V p-p/NTSC	0.7V p-p/PAL/SECAM		
Video 3 (75 Ohms)				
Composite video	1.0V p-p, sync negative (monitor out with character insertion)			
Dub/component (75 Ohms)	(12-pin connector)			
Luminance	1.0V p-p, sync negative			
Chrominance, R-Y/B-Y:	0.7V p-p (75% color bars)			
Component (75 Ohms)	(3 BNC connector)			
Luminance, Y:	1.0V p-p, sync negative			
Chrominance, R-Y/B-Y:	0.7V p-p (100% color bars)			
Audio Ch. 1/2/3/4		+4 dBm, 600 impedance balanced (150 Ohms load permissible)		
Monitor Ch. 1/3, Ch. 2/4				
Time code		2.2V p-p, 600 Ohms, unbalanced		
PROCESSOR ADJUSTMENT RANGE				
Video level	±3 dB			
Chroma level	±3 dB			
Set-up level/black level	0 to +15 IRE			
Hue/burst chroma phase	±15°			
System SC phase	360° p-p			
System sync phase	+3 to -1 μ sec			
Chrominance/luminance delay	±50 nsec			
GENERAL				
Record/playback time	90 min./NTSC	100 min./PAL/SECAM		
Shuttle time	Less than 3 min. with 90 min. cassette (±32X play speed)			
Variable play speed	-1 thru still to +2X play speed (with AST)			
Search speed, Shuttle	Still, 1/30, 1/10, 1/5, 1/2, 1, 2, 5 and 24 times normal forward and reverse			
Variable Jog	-1, -1/2, -1/5, -1/10, -1/30, still, 1/30, 1/10, 1/5, 1/2, 1 and 2 times normal speed, forward/reverse			
Servo Lock	Frame-by-frame, forward and reverse			
Tape speed	Less than 0.6 seconds from Stand-by mode			
Dimensions	11.86 cm/sec/NTSC	10.15 cm/sec/PAL/SECAM		
Weight	218 mm (8.6 in) H x 427 mm (16.8 in) W x 520 mm (20.5 in) D			
Temperature, Operating	30 kg (66 lb)			
Storage	5° C to +40° C (41° F to 104° F)			
Humidity	-20° C to 60° C (-4° F to 140° F)			
Power requirements	Less than 80% RH			
Power consumption	AC 90V to 265V, 48 to 64 Hz			
Supplied accessories	210W			
	AC power cord, 12-pin dubbing cable, Extender Boards, RCC-5G 9-pin remote control cable, Operation/maintenance manual			

Ampex reserves the right to make product and specification changes at any time without notice.

AMPEX Ampex Corporation, Audio-Video Systems Division

FOR INFORMATION ON AMPEX BROADCAST VIDEO PRODUCTS CONTACT THE VIDEO SALES MANAGER NEAREST YOU.

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