

# AMPEX

AMPEX  
RECORDER/CAMERA  
SYSTEM

## ARC





# ***The Ampex ARC system is the integrated 1/2" recorder/camera you'd expect from a leader***

The Ampex ARC system utilizes the half-inch "M-format" to produce broadcast video and audio quality in a portable package that is superior to 3/4" VTRs. This lightweight, versatile system is ideally suited for ENG/EFP applications. You can shoot and record quickly and easily, then edit and go on the air via necessary time base correction but without dubbing to another format. The self-contained camera/VTR unit can be operated by one person and uses readily available, inexpensive VHS cassettes.

The complete ARC system consists of a camera, a portable VTR, a studio editing VTR and an editing controller. The camera and portable VTR can be used separately. All components interface with each other and are compatible with existing studio equipment.

The ARC system is a new addition to the Ampex family and provides an ideal combination of technical excellence along with the worldwide service for which Ampex is famous. With every ARC system comes a global network of field engineering, spares, technical and training support. Ampex support is just a phone call away.

## **ARC-40 STUDIO VTR**

Features broadcast quality audio and video performance in an ENG/EFP editing VTR

- ★ M-format analog component signal system
- ★ Microprocessor-based control system
- ★ Insert and assembly editing
- ★ Video, Audio 1, Audio 2 edit independence
- ★ Variable speed search and jog modes
- ★ Direct dub inputs and outputs for high quality multi-generation editing
- ★ Two audio tracks and time code track
- ★ Built-in audio limiter
- ★ Comprehensive warning and fault detection
- ★ Rugged transport
- ★ 4 servo controlled, direct drive motors
- ★ EIA rack mountable

## **ARC-30 EDITING CONTROLLER**

Features simple and rapid selection of edit points, edit preview, edit execution and edit review.

The ARC-30 editing controller offers speed and accuracy when operating the ARC-40 studio VTR. It's easy to select edit points because of the convenient search and jog modes. Easy to read digital displays indicate your selected entry/exit points by minutes, seconds and frames. Edit mode may be either insert or assembly. You can edit on video and audio channels 1 and 2 independently.







## THE AMPEX ARC-10 CAMERA/VTR

*The lightweight, portable,  
integrated camera/VTR built with  
quality to perform with quality*

The Ampex ARC-10 integrated camera/VTR allows one person to cover all the action with comfort, with precision, and with efficiency. Light and compact, the ARC-10 has a low center of gravity and is well balanced for shoulder operation. The entire unit is approximately the size of many full quality portable broadcast cameras. It produces 20 minutes of recording time on one VHS cassette. The rechargeable battery gives a full 60 minutes of power.

Weighing less than 22 lbs., the ARC-10 camera and VTR lock together to form a self-contained system with freedom from connecting cables, shoulder straps, and pack frames. Comfortable shoulder pads give the operator ease and control. All operator functions and displays are in easy reach for maximum efficiency.

The integrated camera/VTR utilizes microprocessor-based circuitry to provide automatic functions. It features a weatherproof, high power, motorized zoom lens with automatic lens cap when the camera is in stand-by or off. Other features include a high sensitivity cardioid microphone that is removable for interviews and a slide-in/out rechargeable battery pack for rapid change in the field.



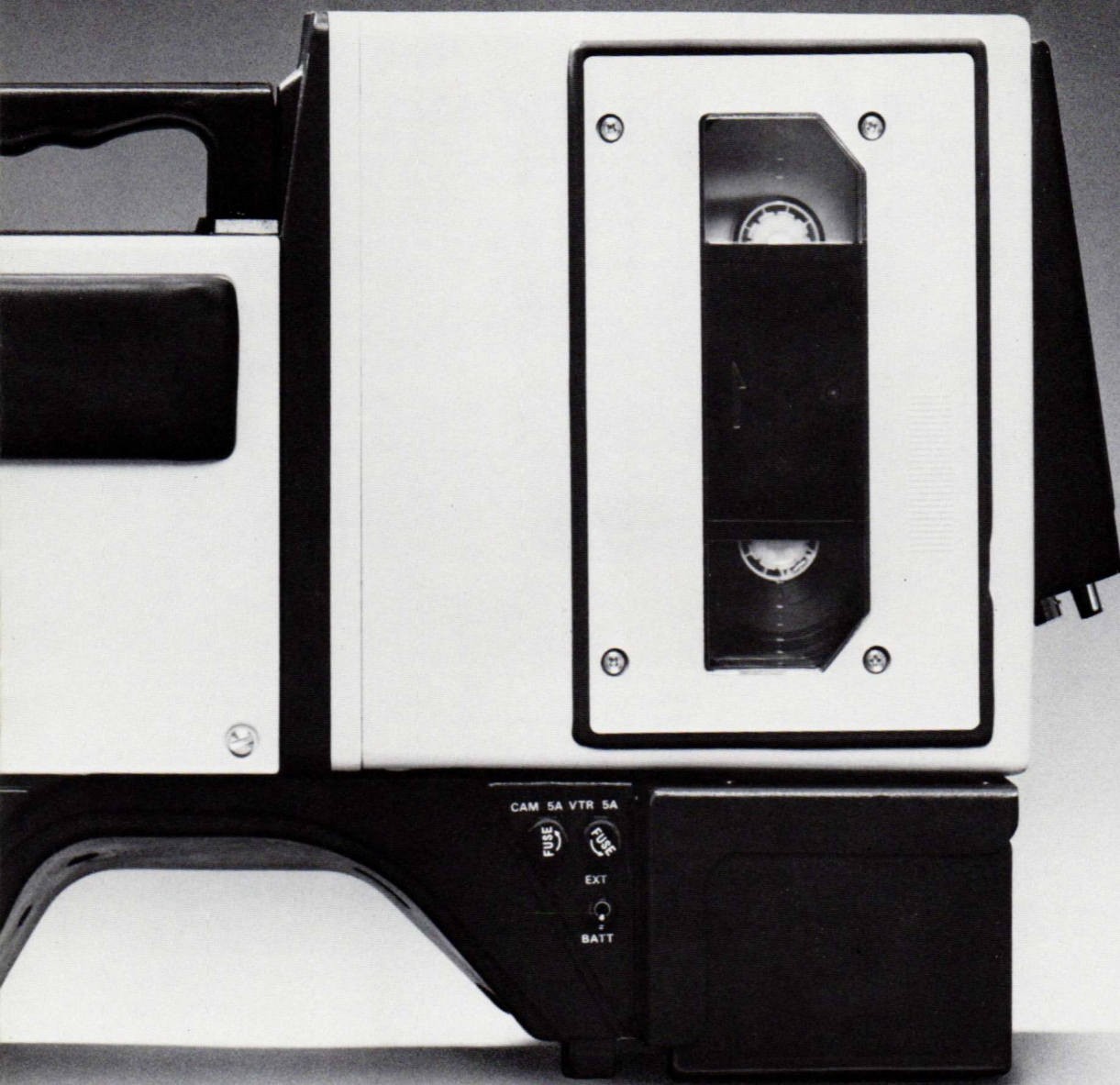
*Prime quality is one of the most  
important components of the camera.*

The camera employed in the ARC-10 is a 3-tube prism optics camera with automatic beam control, 2-line vertical aperture corrector, black stretch, and corner registration circuitry.

This 3-tube system provides a superb picture which is well matched to the superior performance of the M-format system. This permits multiple generations without the degradation which existing  $\frac{3}{4}$ " systems deliver. Choose from either a  $\frac{2}{3}$ " Plumbicon or Saticon tube. The economical Saticon offers high resolution with 550 lines; the Plumbicon offers higher resolution with 600 lines. Signal-to-noise ratio is 59dB for Plumbicon, 58dB for Saticon.

You get all this plus a fully adjustable viewfinder with LED displays. Operating the Ampex ARC-10 camera/VTR is a pleasure. To start and stop shooting, simply press the lens mounted button. The tape is automatically back-spaced at the end of each take and the next scene smoothly assembled in





sequence with a maximum of two frames accuracy.

The camera provides you with automatic white balance control, automatic black balance control, automatic iris circuit, automatic lens close, EIA color bar generator, +9dB and +18dB high gain selector, gain preset switch, and adjustable blanking width. All this is encased in a rugged, diecast mainframe.

## THE AMPEX FPR-10 PORTABLE VTR

*Compact, versatile, lightweight, rugged, and capable of achieving outstanding video quality*

You'll appreciate the flexibility of the FPR-10: it can work as part of the ARC-10 System while directly coupled with the camera; it can be separated for operation as a two-unit system equipped with a multipurpose video adaptor and used with any camera or video source with a composite output.

The FPR-10 comes complete with two audio tracks, a dedicated SMPTE/EBU Time Code Track, a built-in Backspace Record function, and a built-in SMPTE/EBU Time Code Generator. The controls located at the rear of the unit are easily accessed. Operational functions are microprocessor controlled for reliability and smooth tape handling.

There's a built-in fault detection facility which performs a self-check and verifies that the system and components are functioning correctly. The "M-format" recording assures you of professional quality, giving you the confidence to handle not only news and sports but also the most complex production assignments.



### Features:

- ★ Microprocessor-controlled machine functions.
- ★ Rugged packaging protects against dust, moisture, and RFI.
- ★ Built-in SMPTE/EBU Time Code Generator.
- ★ Uses 1/2-inch tape in standard 250 meter VHS cassette.
- ★ 20-minute recording time.
- ★ Simple mechanical operation for high reliability.
- ★ Easy loading and unloading of cassettes as well as battery packs.
- ★ Two audio tracks along with dedicated Time Code Track.
- ★ Built-in Backspace Record function.
- ★ Five fully automatic LED warning indicators.



# Specifications

## FPR-10 PORTABLE VTR

### GENERAL

<b>Power Source:</b>	DC 12 $\pm$ 3V
<b>Power Consumption:</b>	12W (nominal DC 12V)
<b>Video Recording System:</b>	4 rotary heads, 2-track helical scanning system
<b>Tape Speed:</b>	8 ips (204.5mm/sec.)
<b>Recording Time:</b>	20 min. (T120HG VHS cassette)
<b>FF/REW Time:</b>	Less than 5 min.
<b>Tape:</b>	T120HG VHS cassette
<b>Dimensions (W x H x D):</b>	4 $\frac{3}{4}$ " x 9 $\frac{3}{8}$ " x 9 $\frac{1}{2}$ " (120mm x 237mm x 240mm)
<b>Weight:</b>	9.0 lbs. (4.1 kg)

### VIDEO

<b>Television System:</b>	NTSC system, 525 lines, 60 fields
<b>Modulation System:</b>	2 channel Y/I/Q frequency modulation I/Q frequency multiplexing
<b>Bandwidth:</b>	
Luminance;	3.0MHz, -1dB
Chrominance;	1.0MHz, -1dB
<b>Signal-to-Noise Ratio:</b>	
Luminance;	Better than 47dB
Chrominance;	Better than 48dB

<b>Differential Gain:</b>	Less than 5%
<b>Differential Phase:</b>	Less than 5°
<b>K-Factor (2T Pulse):</b>	Less than 2%
<b>Chrominance</b>	
Luminance Delay:	90 nsec.
<b>Inputs:</b>	Y/I/Q from camera
<b>Outputs:</b>	Composite video; 1.0 Vp-p, 75 $\Omega$

### AUDIO

<b>Frequency Response:</b>	50 ~ 15,000Hz $\pm$ 3dB
<b>Signal-to-Noise Ratio:</b>	Better than 50dB
<b>Crosstalk:</b>	Better than -40dB
<b>Inputs:</b>	
Mic 1 (XLR);	-60dBm, 600 $\Omega$
Mic 2 (XLR);	-60dBm, 600 $\Omega$
<b>Output:</b>	Headphone -20 to -32dB, 8 $\Omega$

### ENVIRONMENTAL

<b>Ambient Temperature:</b>	32° ~ 104°F (0° ~ 40°C)
<b>Relative Humidity:</b>	20 ~ 85% (noncondensing)
<b>Operating Altitude:</b>	0 ~ 10,000 ft (3040m) unpressurized

## ARC-40 STUDIO VTR

### GENERAL

<b>Power Source:</b>	AC 100/120/220/240V $\pm$ 10%, 50/60Hz
<b>Power Consumption:</b>	210W nominal
<b>Recording Format:</b>	FM, 4 rotary heads, 2-track helical scanning system
<b>Tape Speed:</b>	8 ips (204.5mm/sec.)
<b>Recording Time:</b>	20 min. (T120HG VHS cassette)
<b>FF/REW Time:</b>	Less than 90 sec.
<b>Tape:</b>	T120HG VHS cassette
<b>Dimensions (W x H x D):</b>	16 $\frac{5}{8}$ " x 20 $\frac{1}{2}$ " x 19" (421mm x 518mm x 480mm)
<b>Weight:</b>	123 lbs. (56kg)

### VIDEO

<b>Television System:</b>	NTSC system, 525 lines, 60 fields
<b>Modulation System:</b>	Y/I/Q frequency modulation I/Q frequency multiplexing
<b>Bandwidth:</b>	
Luminance;	3.0MHz, -1dB
Chrominance;	1.0MHz, -1dB
<b>Signal-to-Noise Ratio:</b>	
Luminance;	Better than 47dB
Chrominance;	Better than 48dB
<b>Differential Gain:</b>	Less than 5%
<b>Differential Phase:</b>	Less than 5°
<b>K-Factor (2T Pulse):</b>	Less than 2%
<b>Chrominance</b>	
Luminance Delay:	90 nsec.
<b>Dub Inputs/Outputs:</b>	
Dub Y;	1.0Vp-p 75 $\Omega$ , unbalanced
Dub I;	0.71 Vp-p, 75 $\Omega$ , unbalanced
Dub Q;	0.714 Vp-p, 75 $\Omega$ , unbalanced

<b>Video Input Connectors:</b>	BNC x 2, 1.0Vp-p, 75 $\Omega$ , unbalanced
<b>Video Output Connectors:</b>	BNC x 2, 1.0 Vp-p, 75 $\Omega$ , unbalanced

### AUDIO

<b>Frequency Response:</b>	50 ~ 15,000Hz $\pm$ 3dB
<b>Signal-to-Noise Ratio:</b>	Better than 50dB
<b>Wow &amp; Flutter:</b>	0.2% RMS (NAB unweighted)
<b>Audio 1/Audio 2:</b>	
Input;	Line (XLR) 4dBm, 600 $\Omega$ , balanced Mic. (XLR) -60dBm, 600 $\Omega$ , balanced
Outputs;	Line (XLR) 4dBm, 600 $\Omega$ , balanced Headphone -32 to -20dB, 8 $\Omega$ , unbalanced Audio monitor (RCA) 1V RMS, 10k $\Omega$ , unbalanced
<b>Time Code:</b>	Input (XLR) 2.5 Vp-p, 2.4k $\Omega$ , unbalanced Output (XLR) 2.5 Vp-p, 600 $\Omega$ , unbalanced

### CONNECTORS (75 $\Omega$ Terminations)

<b>Subcarrier Input:</b>	BNC
<b>External Sync Input:</b>	BNC
<b>Reference Video:</b>	BNC
<b>Time Base Corrector:</b>	7-pin
<b>Spare:</b>	BNC
<b>Remote:</b>	50-pin

### ENVIRONMENTAL

<b>Ambient Temperature:</b>	32° ~ 104°F (0° ~ 40°C)
<b>Relative Humidity:</b>	Lower than 85% (non condensing)

## ARC-30 EDITING CONTROLLER

<b>Power Source:</b>	AC 100/120/220/240V (selectable), 50/60 Hz
<b>Power Consumption:</b>	50W nominal
<b>Control Modes:</b>	Record [REC], edit [(EDIT), cut-in [CUT-IN], cut-out [CUT OUT], fast forward [FF], play [PLAY], rewind [REW], stop [STOP], search [SEARCH], jog [JOG]

<b>Editing Controls:</b>	
<b>Editing Modes:</b>	Assemble [ASSEMBLE], insert [CH 1, CH 2, VIDEO]
<b>Edit Point Entry:</b>	In [MARK IN], clear [CLEAR], out [MARK OUT]
<b>Control Names;</b>	Preview [PREVIEW], edit start [EDIT START], edit stop [EDIT STOP], replay [REPLAY], cue-in [CUE IN], cue-out [CUE OUT]

<b>Counter Display:</b>	
<b>Time Indication;</b>	Maximum $\pm$ 9 hr. 59 min. 59 sec. 29 frames (source-unit/editor-unit)
<b>Duration Indication;</b>	Maximum $\pm$ 9 hr. 59 min. 59 sec. 29 frames (source-unit/editor-unit)

<b>Counter Display Selection;</b>	Time indication or duration
<b>Connection Capability (number of units):</b>	1 source-unit 1 editor-unit

<b>Connectors:</b>	
<b>Power Terminal;</b>	3-pin connector
<b>Remote-Control Terminal;</b>	50-pin remote control cable connector (source/editor)

<b>Editing Precision:</b>	$\pm$ 2 frames
<b>Operating Temperature:</b>	41° ~ 104°F (5° ~ 40°C)
<b>Operating Humidity:</b>	35 ~ 80%
<b>Dimensions (W x H x D):</b>	17" x 9 $\frac{1}{4}$ " x 17" (432mm x 233mm x 430mm)
<b>Weight:</b>	30.8 lbs (14.0kg)
<b>Supplied Accessories:</b>	1 pc. AC power cord 2 pcs. 50-pin remote control cables



# Specifications

## FPC-10P PORTABLE CAMERA (PLUMBICON)\*

<b>Power Requirements:</b>	DC 10.5 to 17.0V, 1.45A
<b>Television System:</b>	NTSC color signal EIA standard 525 lines, 60 fields, 30 frames
<b>Optical System:</b>	Middle index prism
<b>Pick-up Tubes:</b>	Three 2/3" PLUMBICON
<b>Signal-to-Noise Ratio:</b>	Typical 59dB (luminance channel, aperture correction off, gamma = 1.0, 0dB gain) LOC diode gun Pbo 200 footcandles, f/4.0, 3200°K, illuminant, 60% reflectance
<b>Sensitivity:</b>	600 lines
<b>Horizontal Resolution:</b>	
<b>Registration:</b>	
<b>Zone 1;</b>	0.1% (circle in center = 0.8 picture height)
<b>Zone 2;</b>	0.2% (circle in center = picture height)
<b>Zone 3;</b>	0.5% (area outside zone 2)
<b>Geometric Distortion:</b>	Less than 2%
<b>Encoder:</b>	NTSC, Y/I/Q
<b>Microphone Input:</b>	-70dBm, balanced, XLR connector
<b>Monitor Video Output (Switchable):</b>	Composite, Red, Green, Blue, R-G, B-G
<b>Blanking:</b>	
<b>Horizontal;</b>	10.7 $\mu$ sec, variable
<b>Vertical;</b>	19 lines variable
<b>Gamma:</b>	Adjustable from 0.4 to 0.55 Switchable to 1.0
<b>Vertical Aperture Correction:</b>	Self-contained 2-line type
<b>Self-Contained Test Signal Generators:</b>	EIA standard color bars, focus wobbling sawtooth
<b>Filter Wheel:</b>	
<b>Color Conversion Filter;</b>	(A) Clear (B) 4700°K (C) 5600°K (D) 7500°K
<b>Neutral Density Filter;</b>	(0) Cap (1) Clear (2) 25% (3) 6.5%
<b>Operating Conditions:</b>	-4° ~ 122°F (-20° ~ 50°C) Less than 90% humidity Specifications are met over a temperature range of $\pm 18^\circ\text{F}$ ( $\pm 10^\circ\text{C}$ ) of the set-up ambient temperature
<b>Stability:</b>	
<b>Dimensions (W x H x D):</b>	3 5/8" x 10 3/8" x 7 3/8" 4 3/8" x 13 1/8" x 8", including docking plate (90mm x 261mm x 186.5mm 117.3mm x 330.6mm x 201.5mm, including docking plate)
<b>Weight:</b>	8.66 lbs. (3.93 kg), including 1 1/2" viewfinder
<b>Lens:</b>	Bayonet mount
<b>Viewfinder:</b>	1.5 inch CRT
<b>External Controls:</b>	
<b>Front;</b>	Auto white/black balance 0/ + 9dB/ + 18dB Power; off/camera/camera + VTR Operate/standby Camera/color bars Gain; auto/pre-set Audio channel 1 level Audio channel 2 level Viewfinder video; R, B, G, -G, NTSC Detail; on/off Indicator; battery/audio channel 2 Master black level H and V centering of R and B channel Power; battery/external Battery bracket; quick mounting bracket Tally; on/off Indicator; on/off Peaking; on/off Brightness Contrast
<b>Set-up Panel;</b>	
<b>Power Source;</b>	
<b>1 1/2" Viewfinder;</b>	

## FPC-10S PORTABLE VTR (SATICON)\*\*

<b>Power Requirements:</b>	DC 10.5 to 17.0V, 1.25A
<b>Television System:</b>	NTSC color signal EIA standard 525 lines, 60 fields, 30 frames
<b>Optical System:</b>	Middle index prism
<b>Pick-up Tubes:</b>	Three 2/3" SATICON
<b>Signal-to-Noise Ratio:</b>	Typical 58dB (luminance channel, aperture correction off, gamma = 1.0, 0dB gain) 200 footcandles, f/3.5, 3200°K, illuminant, 60% reflectance
<b>Sensitivity:</b>	550 lines
<b>Horizontal Resolution:</b>	
<b>Registration:</b>	
<b>Zone 1;</b>	0.1% (circle in center = 0.8 picture height)
<b>Zone 2;</b>	0.2% (circle in center = picture height)
<b>Zone 3;</b>	0.5% (area outside zone 2)
<b>Geometric Distortion:</b>	Less than 2%
<b>Encoder:</b>	NTSC, Y/I/Q
<b>Microphone Input:</b>	-70dBm, balanced, XLR connector
<b>Monitor Video Output (Switchable):</b>	Composite, Red, Green, Blue, R-G, B-G
<b>Blanking:</b>	
<b>Horizontal;</b>	10.7 $\mu$ sec, variable
<b>Vertical;</b>	19 lines variable
<b>Gamma:</b>	Adjustable from 0.4 to 0.55 Switchable to 1.0
<b>Vertical Aperture Correction:</b>	Self-contained 2-line type
<b>Self-Contained Test Signal Generators:</b>	EIA standard color bars, focus wobbling sawtooth
<b>Filter Wheel:</b>	
<b>4 Positions;</b>	(0) Cap (1) Clear (3200°K) (2) 4700°K (3) 5600°K + 0.25ND -4° ~ 113°F (-20° ~ 45°C) Less than 90% humidity Specifications are met over a temperature range of $\pm 18^\circ\text{F}$ ( $\pm 10^\circ\text{C}$ ) of the set-up ambient temperature
<b>Operating Conditions:</b>	
<b>Stability:</b>	
<b>Dimensions (W x H x D):</b>	3 5/8" x 10 3/8" x 7 3/8" 4 3/8" x 13 1/8" x 8", including docking plate (90mm x 261mm x 186.5mm 117.3mm x 330.6mm x 201.5mm, including docking plate)
<b>Weight:</b>	8.25 lbs. (3.75 kg), including 1 1/2" viewfinder
<b>Lens:</b>	Bayonet mount
<b>Viewfinder:</b>	1.5 inch CRT
<b>External Controls:</b>	
<b>Front;</b>	Auto white/black balance 0/ + 9dB/ + 18dB Power; off/camera/camera + VTR Operate/standby Camera/color bars Gain; auto/pre-set Audio channel 1 level Audio channel 2 level Viewfinder video; R, B, G, -G, NTSC Detail; on/off Indicator; battery/audio channel 2 Master black level H and V centering of R and B channel Power; battery/external Battery bracket; quick mounting bracket Tally; on/off Indicator; on/off Peaking; on/off Brightness Contrast
<b>Set-up Panel;</b>	
<b>Power Source;</b>	
<b>1 1/2" Viewfinder;</b>	

\*™ N.V. Philips

\*\*™ Hitachi

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