

# VPR-20

PORTABLE  
VIDEO  
RECORDER



AMPEX

LOADING SEQUENCE  
TURN CLOCKWISE TO LOCK

LOAD SUPPLY REEL - TURN ① CW  
TURN DIAL ② CW - LOAD TAKE-UP  
REEL AND ROTATE UNTIL REEL  
DROPS INTO PLACE - TURN  
C/W - TO UNLOAD  
REV SEQUENCE

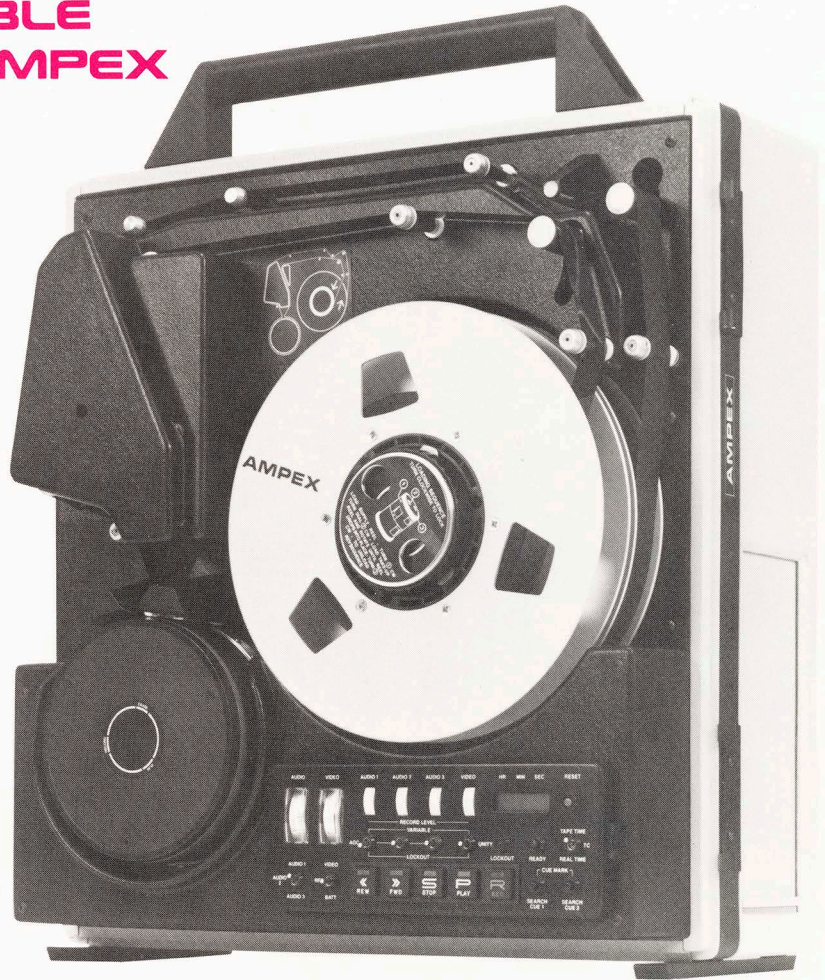
AMPEX

# VPR-20

**HIGH BAND QUALITY,  
BROADCAST SOPHISTICATION,  
IN A COMPACT RELIABLE  
PACKAGE . . . FROM AMPEX**

## Important Features at a Glance

- Rugged, weatherproof and dustproof packaging
- Unique full function remoteable control panel
- Unique camera interface connector permits Tape Remaining and Low Battery displays in camera viewfinder
- Playback video confidence simultaneously with record
- Switchable re-cue to the beginning or end of the last recorded segment with the tape timer
- Automatic backspace assemble editor
- Operates in any position and in motion
- Total interchange with SMPTE Type "C" (for 525 NTSC) and 625 1" EBU Type "C" highband helical recorders
- Self-contained AC power pack standard
- Individually field replaceable video heads
- Electronic tape tension for gentle yet precise tape control
- Optional SMPTE/EBU time code generator, color stabilizer, and sync channel accessories

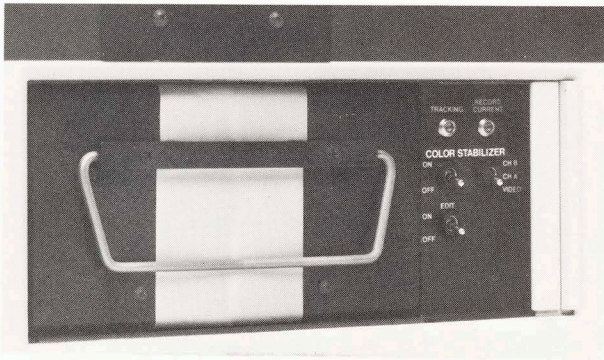


The VPR-20 is a compact answer to a big order. Needed: a rugged, reliable, lightweight ENG/EFP acquisition recorder, totally interchangeable with SMPTE or EBU Type C 1-inch helical VTRs such as the VPR-2. To these basic requirements add many other refinements that broadcasters and production facilities need for efficiency and economy. You'll find all of them in the VPR-20, and some other capabilities not found in any other portable VTR.

### **Rugged, versatile, and easy to use.**

Its basic construction allows the VPR-20 to perform well under demanding field conditions. A lightweight but rigid transport and a responsive tape handling system let you operate the VPR-20 confidently in any position or in motion. Dustproof, weatherproof packaging helps insure the quality of the recorded tape on any location. Despite its small size (a little over one cubic foot), it is conveniently arranged for easy serviceability.

But the VPR-20 is much more than just an efficient, dependable recorder. It has capabilities to fill almost any need and desire you can ask for.



Secondary control panel, adjacent to the battery compartment, provides easy access to the optional color stabilizer controls.

### Complete video "confidence" in record

With simultaneous video playback, there's no doubt you have the recording you want. Ultimate field confidence is obtained by a scanner-mounted video playback head. This allows off-tape monitoring as you are recording, and instant video optimization.

### Video monitoring flexibility

The VPR-20 allows you three choices in video monitoring. On location you have monochrome at least. If you desire color, you need only add the optional, internal color stabilizer. With this versatile option you can scrutinize video on a color monitor, or review both video and audio with an inexpensive color receiver. You can even connect a digital time base corrector for full studio quality synchronous playback with dropout compensation.

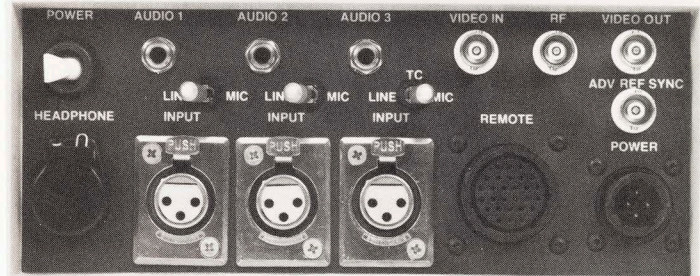
### Exclusive dual-cue tape timer

Cue #1 lets you re-cue to the start of a previous segment for review and Cue #2 prepares for a new assemble edit recording. By depressing Cue #1 and Cue #2 simultaneously the recording cue point can be relocated to meet your creative editing requirements. Color framed edits are produced in the VPR-20 by the automatic backspace assemble editor when high quality, RS-170A or EBU equivalent, signal sources are used.

Even with all its capabilities, SIMPLICITY and CONVENIENCE characterize the operation of the VPR-20. Logically arranged, labeled and illuminated functional controls contribute to rapid, error-free operation. Video status, R.F., battery and audio channels are all monitored on two switchable meters. An audible warning informs the operator of Near End of Tape, Low Battery, Servos Unlocked, and when an edit takes place. The back-lit LCD tape timer display rounds out a full complement of professional features: tape time, time code and 24-hour clock. Tape time, real-time clock and both cue points are protected by a power down memory so you can change location or power without losing valuable information. An added feature provides switch selectable automatic gain control (AGC) on each audio track.

### Power source flexibility

An optional fast-charge (40 min.) battery system or self-contained A.C. power pack which plugs directly into the VPR-20 battery compartment, combined with nine-inch tape reels, lets you record for a full 64 minutes without interruption. Quick-charge batteries are totally enclosed within the VTR. If you run low on power, you can change batteries in seconds, literally. The VPR-20 will operate on 12 volt vehicle power as well. VTR battery drain is prevented by automatic power switching when external power is applied.

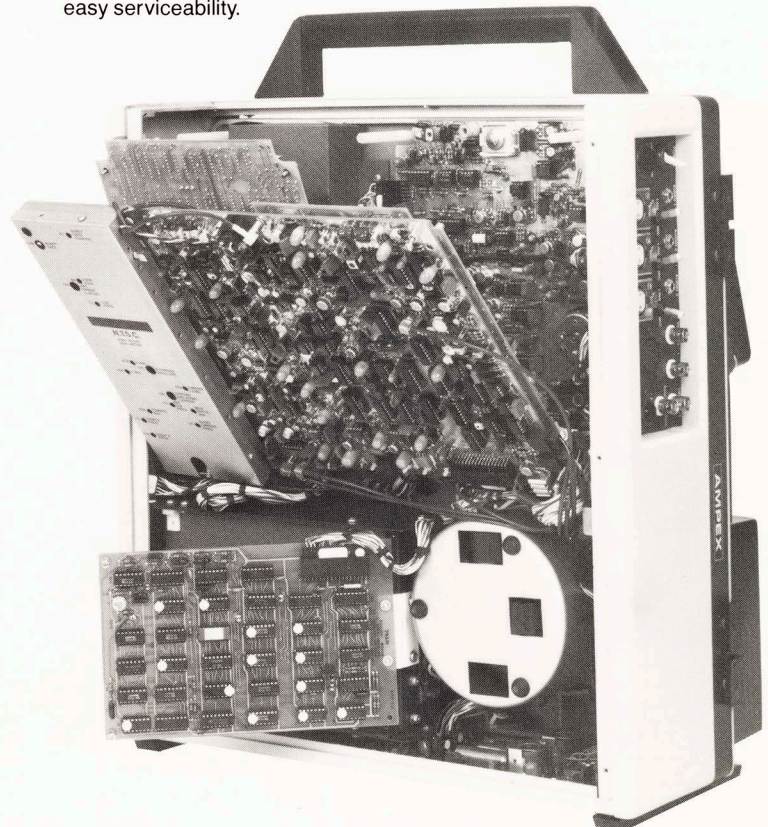


Full capability I/O panel featuring Advance Sync Reference input and R.F. output, provides simplified interface with a digital TBC such as the Ampex TBC-2.

### Rounds out the team

For full-service broadcast and production facilities, the VPR-20 is an ideal partner for the VPR-2s in the studio. From initial recording to post-production editing, these unsurpassed Type C 1-inch VTRs offer every capability and economy of today's Ampex helical video technology.

The VPR-20's hinge-mounted printed circuit boards allow easy serviceability.



# VPR-20 SPECIFICATIONS

Video and Audio Specifications are based on replay on VPR-2

## VIDEO AND SYNC

	NTSC 525/60	PAL/SECAM 625/50
Bandwidth	Flat to 4.2 MHz $\pm 0.5$ dB -3 dB at 5.0 MHz	Flat to 5.0 MHz $\pm 0.5$ dB -3 dB at 6.0 MHz
S/N (Rhode & Schwarz unweighted with bandpass filter Demodulator video output)	-46 dB peak-to-peak video to rms noise on interchange basis	-43 dB peak-to-peak video to rms noise on interchange basis
LF Linearity	2% blanking to white (maximum)	2% blanking to white (maximum)
Differential Gain	4% blanking to white (maximum)	4% blanking to white (maximum)
Differential Phase (40 IEEE units of subcarrier thru TBC)	4° at 3.58 MHz off-tape (max)	4° at 4.43 MHz off-tape (max)
Chrominance/Luminance Delay	20 n sec (maximum)	25 n sec (maximum)
2T sin <sup>2</sup> pulse & bar	1% K-factor maximum	1% K-factor maximum
Moire	-40 dB color bars 75% amplitude 3.58 MHz sub-carrier	-36 dB color bars 75% amplitude 4.43 MHz subcarrier

## AUDIO (Channels 1, 2 & 3)\*

Frequency Response (400 Hz Ref) 100 nWb/m	$\pm 1$ dB 500 Hz to 10 KHz $\pm 2$ dB 50 Hz to 15 KHz
S/N with respect to 8 dB above reference level	-56 dB Audio 1 & 2 -50 dB Audio 3 (note 1)
Distortion (measured at 1 KHz) @ 100 nWb/m reference level (+8 dBm) @ 251 nWb/m peak level (+16 dBm)	1% maximum 3% maximum
Depth of Erasure on its own recording	-70 dB
Wow & Flutter (NAB unweighted)	0.15% rms
Crosstalk (Audio 1 & 2) 1 kHz referenced to +8 dBm or 100 nWb/m	-50 dB maximum

## SIGNAL INPUTS

Video (75 ohms) BNC Connector	0.5 to 2.0 Volts peak-to-peak
Audio Switchable Line/Mic, channels 1 & 2	
Mic:	-70 dBm minimum @ 200 ohms -20 dBm maximum
Line:	+8 dBm nominal @ 50 k ohms bridging +24 dBm maximum, -26 dBm minimum
All 3 channels independently switchable from manual level/AGC/Record Inhibit	Meter jumper selectable VU or PPM
	Audio 3 input switchable line/mic/optional internal time code generator

## SIGNAL OUTPUTS

Video 75 ohms BNC **	1 Volt peak-to-peak
Audio Monitor Output Channels 1, 2 & 3	+8 dBm to drive 600 ohm balanced isolated inputs
Maximum Output	+16 dBm
** Video output with optional color stabilizer provides a video/audio one modulated VHF RF signal.	two channels adjust for 61.25 & 67.25 MHz
	two channels adjustable 50 to 100 MHz

## GENERAL

Weight: including battery pack and 60 minute reel	24 kg; 53 lbs.
Record Time	60 minutes with 9" reel
Shuttle Time	4 minutes max, 1 hour reel
Battery capacity	up to 70 minutes
Tape Speed (Nominal)	<b>525</b> 9.6 ips
Video Writing Speed (Nominal)	<b>625</b> 9.44 ips
Carrier Frequencies	1009 ips
Audio Equalization	7.9 MHz blanking level 10.0 MHz peak white
Record Lock-up time (editor on) from ready (editor off)	15 microseconds 3180 microseconds
Scanner Run-up	2-3 seconds .75 seconds
	2-3 seconds .75 seconds
	4 seconds

## PHYSICAL DIMENSIONS

WIDTH	16.6"	422 mm
LENGTH	17.7"	450 mm
HEIGHT	9.0"	229 mm

## TEMPERATURE & HUMIDITY

TEMPERATURE	0-45°C
HUMIDITY	10%-90% RH (non-condensing)

## POWER REQUIREMENTS

For AC operation:	50/60 Hz, single 105/115 Volts AC at 1.5A Nominal 210/230 Volts AC at 0.75 A Nominal
For external DC Operation:	10-18V, 75W Nominal, Record Mode

\* Audio 3 Channel is used for Time Code if selected.

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



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AND MAGNETIC TAPE  
XXII OLYMPIAD

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