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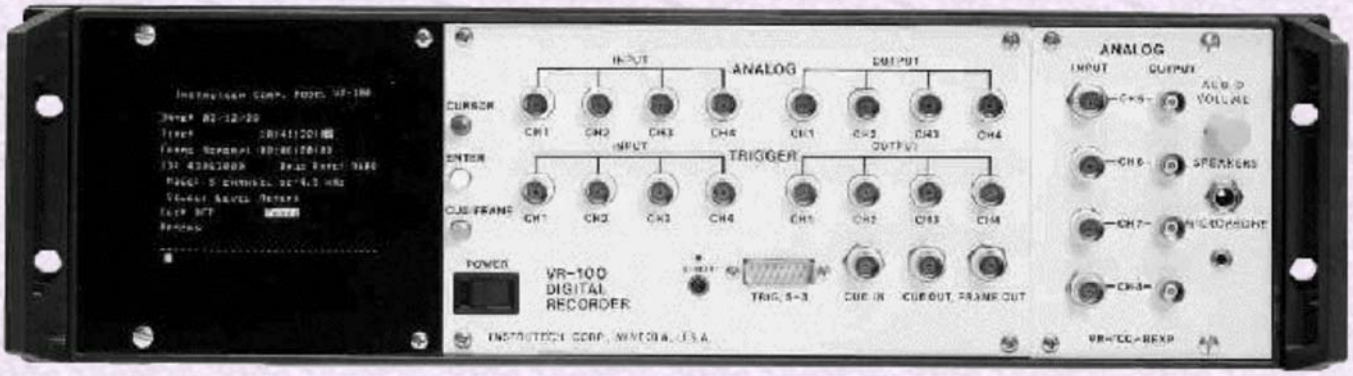
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VR-100B DIGITAL DATA RECORDER



- 94.4 kilosamples per second aggregate sampling rate can be distributed unevenly among eight analog channels
- Up to eight 14 bit analog channels
- Four trigger timing channels
- Analog and digital level meters with peak detection
- Anti-aliasing filters with Bessel/Butterworth response
- Voice channel with microphone and speaker amplifier
- CUE event marker
- Real time and date stored on the tape
- Precise tape position marker with programmable memory
- RS-232 control interface*
- ASCII descriptive text recording*
- Parallel port for data transfer using optional computer interface*

The VR-100B can record in eight distinctly different modes.

Channel Mode	Channel Distribution
mode 1	1 channel DC-37 kHz
mode 2	2 channels DC-18.5 kHz
mode 3	1 channel DC-18.5 kHz and 2 channels DC-9 kHz
mode 4	4 channels DC-9 kHz
mode 5	1 channel DC-18.5 kHz and 4 channels DC-4.5 kHz
mode 6	2 channels DC-9 kHz and 4 channels DC-4.5 kHz
mode 7	1 channel DC-9 kHz and 6 channels DC-4.5 kHz
mode 8	8 channels DC-4.5 kHz

Jump to the VR-100B technical specifications

Useful downloads

Download the full VR-100B manual in Adobe Acrobat format (250k)

Download the VR-111 manual in Adobe Acrobat format (140k)

Description

The VR-100B in conjunction with a video cassette recorder becomes a high performance digital recording system. A unique digital PCM tape encoding technique, together with state of the art microprocessor and digital signal processing technology provides for stable low noise recordings superior to that of analog FM devices.

The VR-100B records on the tape the time, the date and tape ID number. The ID is any eight digit number that the user enters that will help identify the tape during playback.

Along with the digitized analog data each video frame contains a unique time mark. Since there are sixty frames of data per second in NTSC format, this makes locating data on the tape accurate to within sixteen milliseconds. In PAL format there are fifty frames per second making data location accurate to within twenty milliseconds. This makes it possible to locate an exact position on the tape during playback. On each subsequent tape playback the frame compare signal will occur at the same exact position. This greatly simplifies such tasks as multiple pass signal averaging. The time mark is real time. During playback, the frame memory marker uses this time mark to provide a TTL output signal that a specific tape position has been reached.

The VR-100B has a cue tape marker to identify events of interest while recording. During playback the cue marks appear as TTL high level pulses at the cue output connector, and as an indication on the CRT display.

The built-in CRT displays the time, date, and the ID number. It also displays the frame number stored in the frame memory, the channel mode that the VR-100B is operating in, the status of the frame match and cue outputs as well as the record/playback status indicator. The bottom line of the display shows information that is being transmitted or received by the serial port*. In record these settings are determined by the user while in playback the display indicates the appropriate information as derived from the recorded tape.

The VR-100B provides a level meter screen to enable the user to quickly see the amplitude of the analog signals. This screen displays an analog level meter for each of the channels. Indicators show the peak voltage levels for any active channels. A digital readout of the peak voltage is also displayed. Markers on this screen also indicate activity on the trigger channels.

The VR-100B has a parallel data interface to allow for the direct transfer of data to a computer system *. When connected to a computer with an Instrutech computer interface, the VR-100B will transfer data from video tape storage or real time into a computer. This eliminates the need to use the recorder digital to analog converter and another analog to digital converter in the computer. Transferring data in this way could result in unnecessary degradation of your analog data. Instrutech's direct digital transfer system will completely avoid the possibility of this type of degradation. Instrutech has available the VR-111 computer interface for IBM AT compatible ISA bus computers. Using the Instrutech ITC-16 interface the VR-100B can be interfaced to MacOS and Windows 95/98/NT/2000 computers for direct digital data transfer.

A built in RS232 interface enables a host computer or terminal to control some functions of the VR-100B*. By using control functions, the computer can read, reset, store the current, or write a new frame number into the VR-100B memory. It can also switch the cue on or off. In addition to the control functions, any ASCII text can be stored on the tape. During playback, this text will be replayed on the computer or terminal, as well as on the bottom line of the VR-100B CRT. This text may be any information that the user desires such as experiment identification, or a description of the experiment.

The VR-100B is supplied with a microphone, built-in speaker, and an amplifier for recording voice comments on the audio track of the video recorder.

Technical Specifications

Analog channels:

Channel mode	Analog frequency response	Sampling rate
1 channel mode:	1 @ DC - 37 kHz	94.4 ksamples/s
2 channel mode:	2 @ DC - 18.5 kHz	47.2 ksamples/s per channel
3 channel mode:	1 @ DC - 18.5 kHz	47.2 ksamples/s
	2 @ DC - 9 kHz	23.6 ksamples/s per channel
4 channel mode:	4 @ DC - 9 kHz	23.6 ksamples/s per channel
5 channel mode:	1 @ DC- 18.5 kHz	47.2 ksamples/s
	4 @ DC - 4.5 kHz	11.8 ksamples/s per channel
6 channel mode:	2 @ DC - 9 kHz	23.6 ksamples/s per channel
	4 @ DC - 4.5 kHz	11.8 ksamples/s per channel
7 channel mode:	1 @ DC - 9 kHz	23.6 ksamples/s
	6 @ DC - 4.5 kHz	11.8 ksamples/s per channel
8 channel mode:	8 @ DC - 4.5 kHz	11.8 ksamples/s per channel

Analog input range:	±10 V
Resolution:	14 bits
Signal to noise ratio:	84 dB
Linearity error:	1/2 LSB
Anti-aliasing filters:	Record: 8 order Bessel response
	Playback: 8 order Butterworth response -48dB/octave (Bessel optional)

Trigger timing channels:

Channel mode	Resolution	Min. Width	Range
1 channel mode:	1 @ 10.6 us	24 us	TTL
2 channel mode:	2 @ 21.2 us	48 us	TTL
3 channel mode:	4 @ 42.4 us	96 us	TTL
4 channel mode:	4 @ 42.4 us	96 us	TTL

5 channel mode:	4 @ 84.4 us	192 us	TTL
6 channel mode:	4 @ 84.4 us	192 us	TTL
7 channel mode:	4 @ 84.4 us	192 us	TTL
8 channel mode:	4 @ 84.4 us	192 us	TTL

General specifications:

Computer ports*:	Parallel data port:	14 bit data, 1 bit trigger, 1 bit CRC code and data strobe signal
	RS232 control port:	TxD, RxD and ground, 9600 baud
	Display:	5 inch CRT monitor displays setup information, clock, status and signal level meters.
	Dimensions:	19" W(standard rack), 5.5" H, 16" D
	Weight:	25 Lb.
	Power requirements:	100 - 240VAC, 47 - 440 Hz, 60 Watts auto-selected
	Recording format:	RS170 comp. video, NTSC or PAL format (Please specify when ordering)

***Parallel and serial port functions are not available on CE approved VR-100B units shipped to the European Union.**

Available model numbers:	
Model	**Description**
VR-100B	VR-100B for NTSC video
VR-100B/PAL	VR-100B for PAL video
VR-100B/CE	VR-100B for PAL video with EC RFI standards (CE approval)

Specifications subject to change without prior notice.

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