

COLORADO VIDEO



1991 SHORT FORM CATALOG



Colorado Video is a leading manufacturer of video instruments and video communications equipment. Our products are used in a wide variety of applications, including:

• **Video Instruments**—The most complete line of video instruments available. Includes video pointers, XY indicators, video motion analyzers, video position analyzers, video micrometers, video calipers, video contrast enhancers, video quantizers, video digitizers, video sync strippers, video test generators, digital display generators, video frame stores, video subtractors, video peak stores, scan converters, asynchronous frame stores, video multimemory, monitoring memory, video multimemory, digital interfaces, image storage systems, multiplexing systems, graphics adders, freeze-frame video transceivers, digital transceivers, video compressors, subtracting transceivers, peak store transceivers, image change systems.

Video Instruments

Colorado Video's video instruments are used in a wide variety of applications, including: • **Positioning**—Video pointers, XY indicators, video motion analyzers, video position analyzers, video micrometers, video calipers, video contrast enhancers, video quantizers, video digitizers, video sync strippers, video test generators, digital display generators, video frame stores, video subtractors, video peak stores, scan converters, asynchronous frame stores, video multimemory, monitoring memory, video multimemory, digital interfaces, image storage systems, multiplexing systems, graphics adders, freeze-frame video transceivers, digital transceivers, video compressors, subtracting transceivers, peak store transceivers, image change systems.

Freeze-Frame Communications

Colorado Video pioneered the freeze-frame video communications industry. These products transmit high quality freeze-frame images to one or more locations. A wide variety of models and configurations are available for visual problem solving, general purpose corporate communications, remote environmental or security monitoring, education, medicine, and scientific data transmission.

International Trade

International trade has been an important part of Colorado Video's business since 1967. The video instruments, available to meet different scan rate and power supply requirements, are used world wide. Colorado Video freeze frame video communications systems also have a global reach. Virtually all of the monochrome systems are available for use outside North America. The company maintains a network of international distributors and an export manager handles inquiries at headquarters in Boulder, Colorado.

Contents:

Introduction		2
Video Instruments		3
Positioning		3
Video Pointer	610E	3
XY Indicator	620	3
XY Indicator	620A	3
Multiline Generator	623	3
Pattern Generator	670	3
Measurement and Analysis		3
Waveform Display Gen	303	3
Video Analyzer	321	3
Video Integrator	310A	3
Video Motion Analyzer	633	4
Video Position Analyzer	635	4
Video Micrometer	305	4
Video Caliper	306	4
Video Contrast Enhancer	605	4
Video Quantizer	606H	4
Video Digitizer	270A	4
Sync Stripper	302-2	4
Video Test Generator	615	4
Digital Display Gen	109A/B	4
Video Memories		5
Video Frame Store	491	5
Video Subtractor	492	5
Video Peak Store	493	5
Scan Converter	494	5
Asynch. Frame Store	495	5
Video Multimemory	499	5
Monitoring Memory	593	6
Video Multimemory	599	6
Digital Interfaces		6
Image Storage System	941	6
Video Communications		7
Wide-Band Products		7
Multiplexing System	496/497	7
Graphics Adder	880	7
Freeze-Frame Video		7
Video Transceiver	250	7
Video Transceiver	290	7
Digital Transceiver	286	7
Video Compressor	262	7
Subtracting Transceiver	257	7
Peak Store Transceiver	258	7
Image Change System	941	7



Glen Southworth, Colorado Video founder, received a 1990 Emmy award for "the technology and implementation of still picture technology for news."

INTRODUCTION

2

As it enters its 27th year, Colorado Video's commitment to designing and crafting unique video devices remains strong. The company's products provide creative solutions to complex problems throughout the world.

Video Instruments

Colorado Video instruments measure, record, modify, and analyze video images. A line of unique video frame stores, useful with a variety of computers is one of Colorado Video's specialties. These and other instruments can be integrated into systems for video micrometry, industrial inspection and control, image alteration and synthesis, and scan conversion. Customized designs for OEM and VAR integration and modifications for special applications are also available.

Freeze-Frame Communications

Colorado Video pioneered the freeze-frame (slow-scan) video communications industry. These products transmit high quality video images to one or more locations. A wide variety of models and configurations are available for visual industrial problem solving, general purpose corporate communications, remote environmental or security monitoring, education, medicine, and scientific data transmission.

International Trade

International trade has been an important part of Colorado Video's business since 1967. The video instruments, available to meet different scan rate and power supply requirements, are used world wide. Colorado Video freeze-frame video communications systems also have a global reach. Virtually all of the monochrome systems are available for use outside North America. The company maintains a network of international distributors and an export manager handles inquiries at headquarters in Boulder, Colorado.

Contents:

Introduction

Video Instruments

Positioning

Video Pointer	610E
X-Y Indicator	620
X-Y Indicator	620A
Multiline Generator	623
Pattern Generator	670

Measurement and Analysis

Waveform Display Gen.	303
Video Analyzer	321
Video Integrator	310A
Video Motion Analyzer	633
Video Position Analyzer	635
Video Micrometer	305
Video Caliper	306
Video Contrast Enhancer	605
Video Quantizer	606H
Video Digitizer	270A
Sync Stripper	302-
Video Test Generator	615 4
Digital Display Gen.	109A/B 4

Video Memories

Video Frame Store	491 5
Video Subtractor	492 5
Video Peak Store	493 5
Scan Converter	494 5
Asynch. Frame Store	495 5
Video Multimemory	499 5
Monitoring Memory	593 6
Video Multimemory	599 6
Digital Interfaces	6 6
Image Storage System	941 6

Video Communications

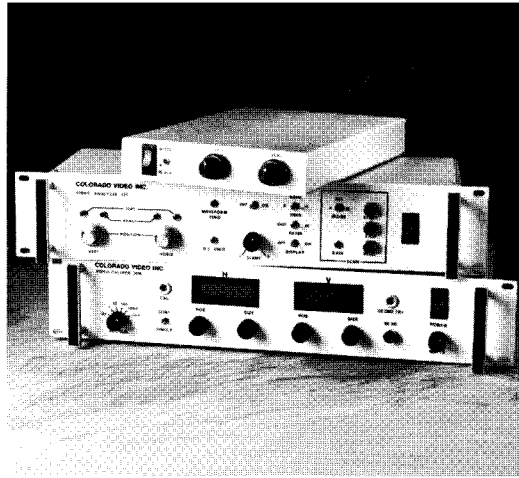
Wide-Band Products

Multiplexing System	496/497 7
Graphics Adder	860 7

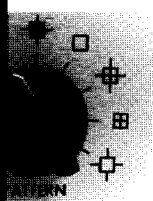
Freeze-Frame Video

Video Transceiver	250 7
Video Transceiver	290 7
Digital Transceiver	286 7
Video Compressor	262 7
Subtracting Receiver	292 7
Peak Store Transmitter	293 7
Image Comm. System	951 7

VIDEO INSTRUMENTS



DE
different com-
rectangle pat-
here within a



o
berimposes a
cross hair over a
particularly useful
ing. The cross
nt panel screw

X-Y Indicator Model 620A

The 620A adds lockable front panel position controls to the 620's features.

Multiline Generator Model 623

The Model 623 superimposes a series of equidistant vertical lines over a standard video signal. The number of lines is switch selectable between 2, 4, 8, 16, 32, 64, 128, or 256. Line brightness is continuously variable from black to white.

Video Pattern Generator Model 670

The Model 670 superimposes a single black or white pattern over a video signal. The pattern is specified by the user when the unit is ordered and may be range marks, measuring scales, alphanumeric, or a logo design. The Model 670 is ideal where a stable, fixed pattern is required.

Analysis

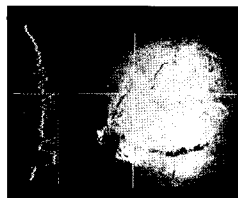
Video Waveform Display Generator Model 303

This unit generates a waveform display of the intensity underlying a white vertical cursor within a video image. The waveform is superimposed on the left side of the video image. Positions along the display's vertical axis correspond to positions along the cursor. Positions along the display's horizontal axis represent intensity increasing from left to right. The cursor is shown as a white vertical line and can be positioned throughout 90% of the image.

Video Analyzer Model 321

The Model 321 adds several capabilities to the Model 303's intensity analysis function (described above). This instrument displays both vertical and horizontal cursors and provides a grating for the waveform display. The horizontal cursor is useful to more accurately determine precisely which image feature corresponds to points along the waveform display. The vertical cursor can be slanted, left or right, to better analyze a particular object. Additionally, the 321 generates DC voltages proportional to the image intensity at the cursors' intersection and the X and Y positions of their intersection. A scan function can move either cursor at a controlled rate enabling a chart recorder to produce a copy of the intensity profile along either cursor.

The 321 has many applications. It is



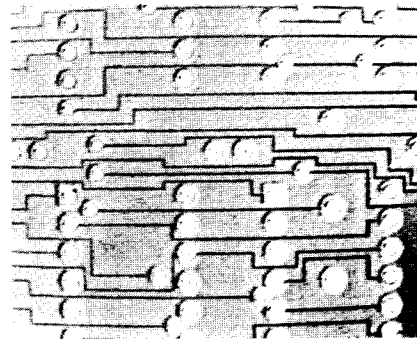
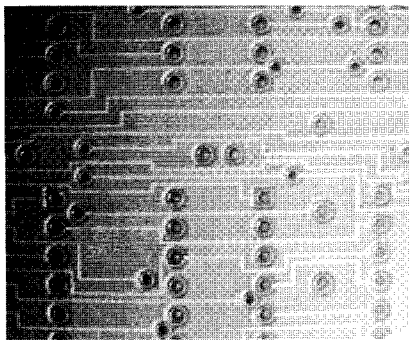
used in biological research for measurement of growth and size of tissue and as a real time video densitometer. It measures light level uniformity and concentricity in fiber optics. Manufacturing uses include quality control of video camera tubes, light emitting diodes, and laser beam energy profiles.

Video Integrator Model 310A

This unit produces a DC output voltage proportional to the overall intensity within a selected region of the input video signal. The analyzed region is rectangular, variable in both size and position. The DC output voltage may be displayed on a meter or used to directly control a process.

Applications include environmental or process monitoring of activities involving fog, smoke, dust, or other diffused subjects.

The Video Contrast Enhancer Model 605. An original image is at left. Shading correction, contrast stretching, and inversion produced the more useful image at right.



VIDEO INSTRUMENTS

4 Video Motion Analyzer Model 633

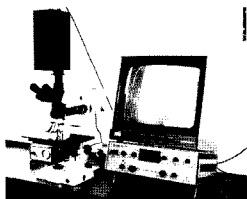
The Model 633 produces a DC voltage proportional to the horizontal position of a high contrast object in a selectable portion of a video signal. As the edge of an object of interest tends toward the right side of a video image, the 633's output voltage increases. Researchers have found the 633 useful for monitoring individual heart cell motion.

Video Position Analyzer Model 635

The Model 635 provides a digital horizontal position readout of a high contrast object in a selectable region of a video image. The region is variable in width and position and its height can be selected at 4 or 8 lines of the raster.

Video Micrometer Model 305

The Video Micrometer provides a means to measure dimensions of objects seen by a video camera. It includes significant contrast expansion capability to improve the visibility of the edges of low contrast features.

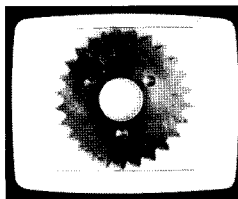


To take a measurement, the user positions two vertical cursors about the feature of interest. A front panel display indicates the distance between the cursors. The 305's waveform display, similar to that of the Model 321 (see page 3), significantly assists the user in precisely positioning the cursors for accurate, repeatable measurements. The 305 is used extensively in video microscopy systems for semiconductor research, development, manufacturing, and quality control.

Video Caliper Model 306

The Model 306 provides a means to take horizontal and vertical measurements simultaneously.

To take a measurement, the user positions a rectangular box about the feature of interest on the video monitor. Two front panel displays indicate the dimensions of the box. The box may be positioned over and encompass up to 80% of the image.



Video Contrast Enhancer Model 605

This instrument provides contrast expansion, shading correction, and inversion. The contrast enhancement function improves visibility of low contrast features by stretching a portion of the input video's grayscale to fill a larger grayscale range at the output. Shading correction can improve an unevenly illuminated image. The inversion function, by creating a negative image, can improve visibility of cracks, pits, scratches, and defects on highly reflective surfaces.

Video Quantizer Model 606H

The Quantizer synthesizes a color picture based on different shades of gray in a monochrome input signal. Sixteen threshold controls can be set to "slice" the input video signal, and sixteen sets of color controls vary the color assigned to each "slice" level. An eight level version, the 606G, is also available.

Video Digitizer Model 270A

This instrument digitizes high resolution images of primarily non-moving subjects.

It is available with 512 x 480, 2048 x 480, or 1024 x 1024 visible pixel resolution. All have 256 shades of gray.

The Model 270A displays a cursor to show the location of pixels being encoded. A waveform, displayed on the monitor screen, shows a brightness profile, facilitating quick and accurate gray scale level setting without additional equipment. The unit interfaces with most mini or micro computers.

Sync Stripper Model 302-2

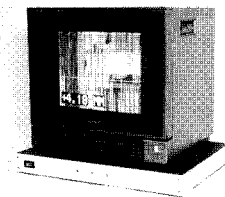
Given a video input, this unit provides video synchronization pulses. Composite sync, composite blanking, horizontal drive, and vertical drive outputs are derived from the loop-through video input. The Model 302-2 is a very cost effective alternative to a genlockable sync generator.

Video Test Generator Model 615

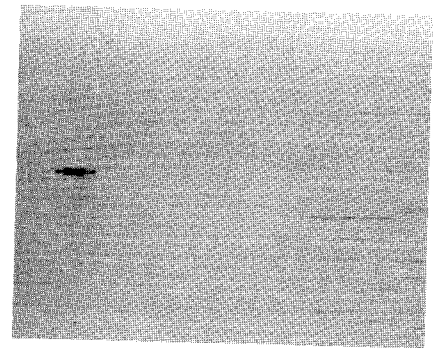
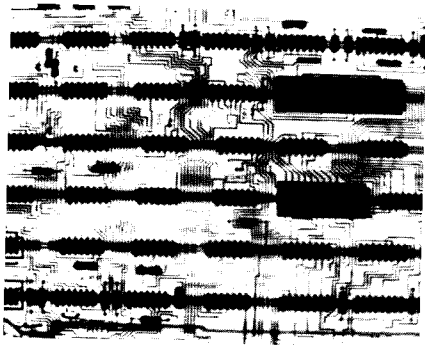
The Model 615 generates video test signals for evaluating geometric, grayscale, and resolution characteristics of video equipment. Available in two versions, the 615 requires external sync, blanking, and drive inputs, the 615A generates these pulses and provides them as outputs.

Digital Display Generator Model 109A/B

The Model 109A superimposes a number on a video display corresponding to the value of an analog input voltage. Designed primarily for use with Colorado Video Models 310A, 321, 635A, it may also display voltages from -5 to +5 VDC derived from other sources.



The Model 109B superimposes a number on a video display corresponding to the value of 3 1/2 or 4 1/2 digit BCD input. Designed primarily for use with Colorado Video Models 305, 305A, 635, it may also display values from other equipment providing BCD ports.



Video Subtractor Model 492 inspection application. Left, a "good" image was stored for reference. Center, an image of a part under inspection is captured. Right, the Model 492 displays any discrepancies between the images.

VIDEO MEMORIES

Colorado Video provides stand-alone, self-powered video frame stores. Designed for use in a wide variety of engineering, medical, research, and scientific applications, they may be interfaced with most computers.

Standard configuration is 512 x 480 pixels with 256 shades of gray. Single field or full frame storage is available. NTSC color is also available for most models.

Video Frame Store Model 491

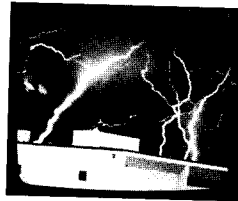
The Model 491 is available with from one to four frames of memory in a single chassis. This feature facilitates image comparison, overlay, subtraction, or sequential RGB color frame capture.

Video Subtractor Model 492

The dual memory video subtractor is useful for single frame or real time comparison of a reference image and images under analysis. The difference between the two images is displayed on a video monitor. Separate outputs from the memories are provided in addition to the difference signal.

Video Peak Store Model 493

The Model 493 creates video "time exposures" by continuously adding video data that is of higher (or lower) amplitude than that already stored. The "time exposed" image is continuously viewable and may be reset at will or at timed intervals. For remote monitoring applications, the Model 293 combines this peak store capability with a freeze-frame transmission capability. Applications include object tracking, recording transient phenomena such as lightning, and dynamic noise reduction.



Scan Converter Model 494

This instrument converts a standard 525 line, 2:1 interlaced video signal to a 525 line sequential signal with a 30Hz vertical rate or vice versa. Whether the input video is continuous or intermittent a picture is always provided for display at the output.

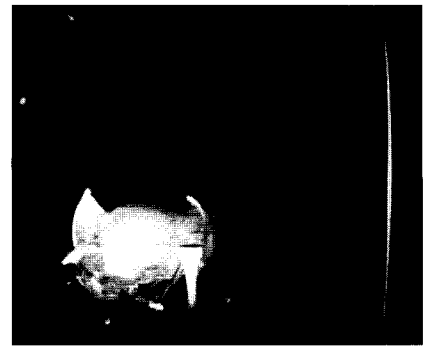
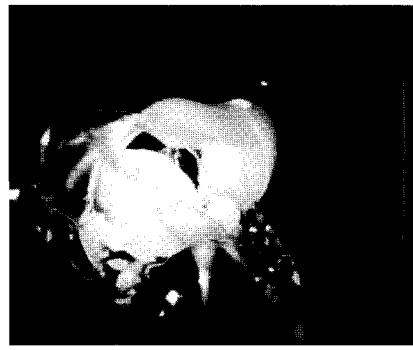
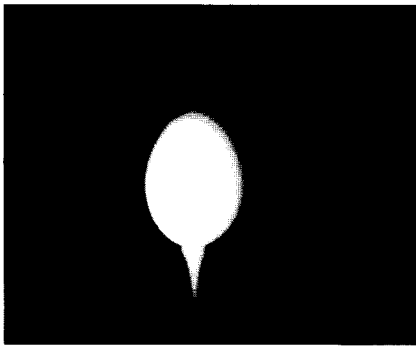
Asynchronous Frame Store Model 495

This "wrap around" grabber captures events that cannot be synchronized with a video camera. After it is triggered, a

typical frame store waits for the camera to start scanning a new frame before commencing storage. This delay means that as much as 33 milliseconds can elapse between trigger and storage commencement. Upon trigger, the Model 495 commences storage when the camera starts a new horizontal line. It continues storage until an entire frame is captured. The maximum delay is 63 microseconds.

Video Multimemory Model 499

The Model 499 sequentially freezes, stores, and reproduces 16, 32, or 64 images. Each frame may be selected for viewing, or images may be sequenced forward or backward at normal speed. Slow motion playback and time lapse recording are also featured.



A series of images captured by a Video Multimemory (Models 499 and 599).

VIDEO MEMORIES

6 Monitoring Memory Model 593

The Model 593 makes video time exposures, allowing an observer to review, at a glance, events that occurred over prior seconds, minutes, or hours. If an observer should become distracted from his monitoring duties, the 593 will provide a record of events during his absence.

The 593 is easily installed between a video camera output and video monitor input. A hard-wired remote control enables selection of live video or the time exposed image. Additional controls allow preservation of the exposed image and start of a new time exposure.

Video Multimemory Model 599

The Model 599 provides a record of the time immediately before and after a triggering event. Connected to a camera, the unit continually records a sixteen frame loop. When triggered, the Model 599 records eight more frames and stops. Hence, eight frames before the trigger and eight frames after are captured. These sixteen frames can then be replayed continuously or stepped through individually for subsequent viewing.

Digital I/O Modules

I/O Module Model 793

This plug-in module interfaces computers with Models 491, 492, 493, 494, 495 and 593.

I/O Module Model 799

This plug-in module interfaces computers with Models 499 and 599.

Host Adapters

Colorado Video Host Adapters are parallel I/O boards designed for specific computers. They interface with Models 793 and 799 I/O Modules.

Host Adapter Model 741

For Apple IIe™

Host Adapter Model 745

For IBM PC/XT™ and PS/2™ Model 30.

Digital Image Storage System Model 941

Colorado Video's Digital Image Storage System provides convenient image storage. The Model 941 enables up to 80 full frame images to be stored, recalled, and deleted. Picture annotation is also featured.

This system consists of an IBM Personal System/2™ Model 30 computer, 20MB hard disk drive, special interface cards, cabling, and software. Greater storage capacity or removable 20MB disk cartridges are optional.

The Model 941 must be used with one of the following video memories:

Model 491 Frame Store

Model 492 Video Subtractor

Model 493 Peak Store

Model 495 Asynchronous Frame Store

Model 499 Multimemory

Model 593 Monitoring Memory

Model 599 Multimemory.

The Model 941 may also combine with the following communications units:

Model 240 VBI Transmitter

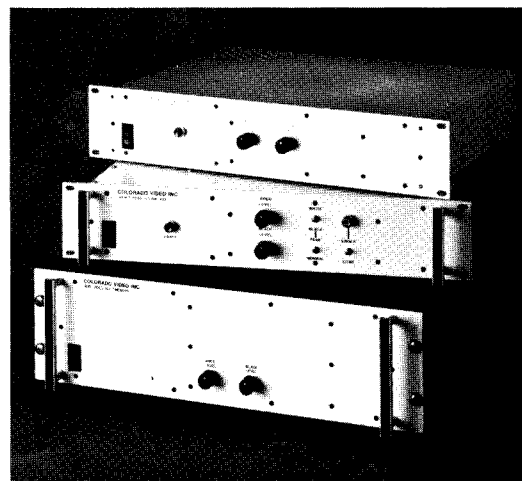
Model 241 VBI Receiver

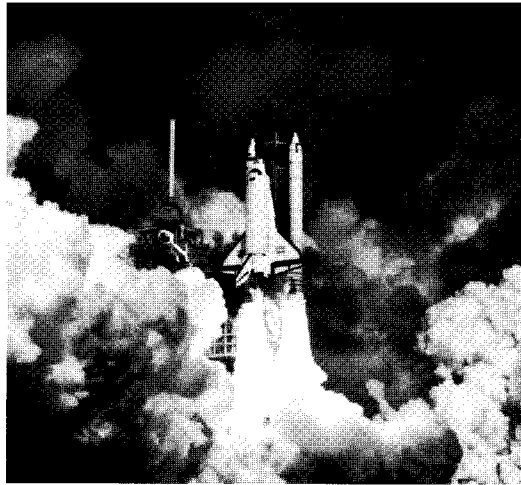
Model 286 Digital Transceiver

Model 290 Video Transceiver

Model 292 Subtracting Receiver

Model 293 Video Transmitter.





Colorado Video's Multiplexing system is used to relay shuttle launch scenes from multiple cameras via one satellite transponder. Up to four video signals may be combined in this manner.

VIDEO COMMUNICATIONS

Colorado Video communications equipment transmits video images using

Vertical Blanking Interval Transmitter/Receiver Model 240/1

The Model 240 hides frozen images in

PLEASE Provide detailed information about video instruments for:

- | | |
|--|--|
| <input type="checkbox"/> Measuring Dimensions | <input type="checkbox"/> Measuring Intensity |
| <input type="checkbox"/> Scan Conversion | <input type="checkbox"/> Still Image Transmission |
| <input type="checkbox"/> Image Enhancement & Modification | <input type="checkbox"/> Add my name to your mailing list. |
| <input type="checkbox"/> Crosshair, Pattern, or Character Generation | <input type="checkbox"/> Send a new Short Form Catalog. |
| <input type="checkbox"/> Wide Band Communications Systems | <input type="checkbox"/> Send information on Model: _____ |
| | <input type="checkbox"/> Have a Colorado Video representative call me. |

TAPE BUSINESS CARD HERE

My application is: _____

Name and Title _____

Company _____ Dept. _____

Address _____

City _____ State _____ Zip _____

Country _____

Phone (____) _____ Fax (____) _____

The Model 860, easily added to full-motion video conferencing systems, provides graphic image transmission capability. Graphic displays and frozen images can be conveyed between conference sites using only the full-motion channel.

The Model 860 uses an additional monitor for graphic display, and camera to pick up graphic images. Pushing the 860's "send graphics" button transmits the graphic. A Model 860 at the other site senses the graphic transmission and displays it on the second monitor until a new graphic is sent.

freeze-frame video at a low price. Resolution is 256 x 240. Options include a second video memory or higher resolution.

Video Transceiver Model 290

This versatile, high quality transceiver can hold up to four frame memories for simultaneous viewing, and has a built-in three camera video input switch. A hard-wired remote control is standard. Most Model 290s may interface with the Model 941 Image Storage System.

Monochrome versions are available with from 256 x 480 to 512 x 480 pixel resolution. NTSC color units are available with from 512 x 240 to 512 x 480 resolution.

Digital Video Transceiver Model 286

The Model 286 is the most versatile video transceiver. It digitally transmits color or monochrome images and can accommodate up to four frame memories for simultaneous image viewing. Most Model 286s may be interfaced with the Model 941 Image Storage System.

Modems running from 1200 bps to 512K bps may be connected to a choice of ports, making the 286 useful with several types of communication channels.

Monochrome versions are available with from 256 x 240 to 512 x 480 pixel resolution. Color units are available with 512 x 240 or 512 x 480 resolution.

Video Compressor Model 262

Used for transmitting X-rays, photographs, and other motion free subjects, the Model 262 does not have a built-in video memory. Images must remain unchanged during transmission. A Model 250 or 290 is used at the receive site. The Model 262 is available with from 256 x 240 to 512 x 480 monochrome pixel resolution.

Subtracting Receiver Model 292

The Model 292 is a dual-memory receiver for image comparison. It receives images from Models 250 or 290 transmitters via telephone. The first received image is stored in a "reference" memory and succeeding images are stored in a "new" memory. A wired remote control selects between display of the reference image, the new image, or an image showing the difference between them.

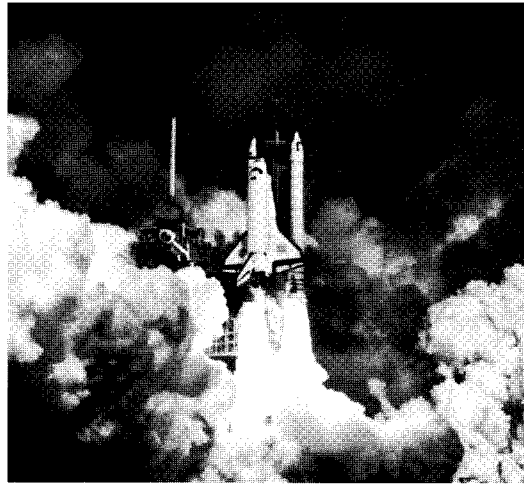
Peak Store Transmitter Model 293

The Model 293 combines freeze-frame transmission with a video memory that continually adds new data if it is of higher (or lower) amplitude than data already stored. This function allows video time exposures for object tracking or transient event recording. Models 250 and 290 receive images via phone line from the Model 293.

Digital Image Communications Systems Model 951

An IBM PS/2™ Model 30 Computer and a Colorado Video Frame Store Model 491 combine to provide transmission and reception of frozen video via phone lines. An internal hard drive provides storage, and retrieval of up to 80 full frame images.

NTSC color or monochrome operation is standard. RGB image operation is optional. Data compression is available for more rapid transmission.



Colorado Video's Multiplexing system is used to relay shuttle launch scenes from multiple cameras via one satellite transponder. Up to four video signals may be combined in this manner.

VIDEO COMMUNICATIONS

Colorado Video communications equipment transmits video images using full bandwidth channels, "spare" bandwidth within TV signals, data channels, or phone lines.

Video Multiplexer Model 496 Video Demultiplexer Model 497 Ruggedized Multiplexer 496A/B

The Video Multiplexer interleaves frames or fields from up to four synchronized video sources for transmission over one channel. Upon receiving the interleaved signals, the Demultiplexer provides each source as separate video outputs.

With multiplexing, one satellite circuit can be used to convey up to four separate programs. One video tape can record and play back up to four sources perfectly synchronized.

Current applications include use in aircraft and remotely piloted vehicles, and satellite relayed multiple camera launch observation.

Graphics Adder Model 860

The Model 860, easily added to full-motion video conferencing systems, provides graphic image transmission capability. Graphic displays and frozen images can be conveyed between conference sites using only the full-motion channel.

The Model 860 uses an additional monitor for graphic display, and camera to pick up graphic images. Pushing the 860's "send graphics" button transmits the graphic. A Model 860 at the other site senses the graphic transmission and displays it on the second monitor until a new graphic is sent.

Vertical Blanking Interval Transmitter/Receiver Model 240/1

The Model 240 hides frozen images in the vertical interval of a TV signal. The Model 241, when fed this "host" TV signal, reproduces the still video images.

Uses include instructional programming distribution and subscriber supported weather information services.

Models 250, 290, 286

These units take standard video signals, freeze them into a video memory upon command, and transmit them via phone line upon another command. As it receives a signal, each unit reconstructs the image for display. Each model provides 256 shades of gray.

Multiple video conference locations can be linked together using a standard audio conference bridge or bridge service. These products are approved for use with AT&T's Alliance 2000™ Audiographic Teleconference Bridging Service.

Video Transceiver Model 250

The preferred unit for distance education, this model provides monochrome freeze-frame video at a low price. Resolution is 256 x 240. Options include a second video memory or higher resolution.

Video Transceiver Model 290

This versatile, high quality transceiver can hold up to four frame memories for simultaneous viewing, and has a built-in three camera video input switch. A hard-wired remote control is standard. Most Model 290s may interface with the Model 941 Image Storage System.

Monochrome versions are available with from 256 x 480 to 512 x 480 pixel resolution. NTSC color units are available with from 512 x 240 to 512 x 480 resolution.

Digital Video Transceiver Model 286

The Model 286 is the most versatile video transceiver. It digitally transmits color or monochrome images and can accommodate up to four frame memories for simultaneous image viewing. Most Model 286s may be interfaced with the Model 941 Image Storage System.

Modems running from 1200 bps to 512K bps may be connected to a choice of ports, making the 286 useful with several types of communication channels.

Monochrome versions are available with from 256 x 240 to 512 x 480 pixel resolution. Color units are available with 512 x 240 or 512 x 480 resolution.

Video Compressor Model 262

Used for transmitting X-rays, photographs, and other motion free subjects, the Model 262 does not have a built-in video memory. Images must remain unchanged during transmission. A Model 250 or 290 is used at the receive site. The 262 is available with from 256 x 240 to 512 x 480 monochrome pixel resolution.

Subtracting Receiver Model 292

The Model 292 is a dual-memory receiver for image comparison. It receives images from Models 250 or 290 transmitters via telephone. The first received image is stored in a "reference" memory and succeeding images are stored in a "new" memory. A wired remote control selects between display of the reference image, the new image, or an image showing the difference between them.

Peak Store Transmitter Model 293

The Model 293 combines freeze-frame transmission with a video memory that continually adds new data if it is of higher (or lower) amplitude than data already stored. This function allows video time exposures for object tracking or transient event recording. Models 250 and 290 receive images via phone line from the Model 293.

Digital Image Communications Systems Model 951

An IBM PS/2™ Model 30 Computer and a Colorado Video Frame Store Model 491 combine to provide transmission and reception of frozen video via phone lines. An internal hard drive provides storage, and retrieval of up to 80 full frame images.

NTSC color or monochrome operation is standard. RGB image operation is optional. Data compression is available for more rapid transmission.

FREQUENCY FOLLOWER MODEL FF-1



- HIGHLY ACCURATE FREQUENCY FOLLOWING
- HIGHLY ACCURATE ENVELOPE FOLLOWING
- WIDE VARIETY OF REMOTE CONTROLLED PERFORMANCE FEATURES
- AUTO-LOCK MODE FOR EXACT SOURCE/VCO PITCH MATCHING
- RACK MOUNTABLE CABINET WITH REMOVABLE BRACKETS

The POLYFUSION model FF-1 Frequency Follower is one of the most significant developments in the field of synthesizer controllers in recent years. This instrument enables you to accurately control a synthesizer with your flute, your voice, or any monophonic instrument you choose. Unlike other frequency followers, the FF-1 is not committed for use with only one specific instrument. This means that you can use the instrument pick-up you already have (without modification) or even sing into a microphone and obtain accurate pitch control voltages every time. That's right, it can follow the most complex waveform and reliably extract the fundamental frequency without being confused by overtones. The FF-1 also contains an envelope follower which supplies an additional control voltage for a synthesizer VCA, one which is proportional to the loudness and articulation of the input signal. In this way, the envelope of an acoustic instrument can be matched by the synthesizer sound. Also, gate outputs are provided to activate a synthesizer envelope generator each time the input signal exceeds a pre-determined loudness level. This level, called GATE THRESHOLD can be varied with a panel control.

In short, the instrument you now play becomes a complete synthesizer controller -- a controller with more flexibility, range, and responsiveness than the keyboard which the synthesizer has relied on for so long.

The FF-1 Frequency Follower has several special performance features which enhance its already formidable capabilities:

The AUTO-LOCK function compares the pitch of the audio signal with that of the VCO which is being controlled by the FF-1. Based on this comparison, the AUTO-LOCK corrects the pitch control voltage from the FF-1 to cause the VCO to exactly match the pitch of the input signal. The AUTO-LOCK will even correct for small errors in the VCO scaling!

The INTERVAL feature allows you, at any time, to instantly change the musical interval between your input signal and the VCO being controlled by the FF-1. This interval is tuned with the INTERVAL control and is selected by means of a footswitch.

polyfusion