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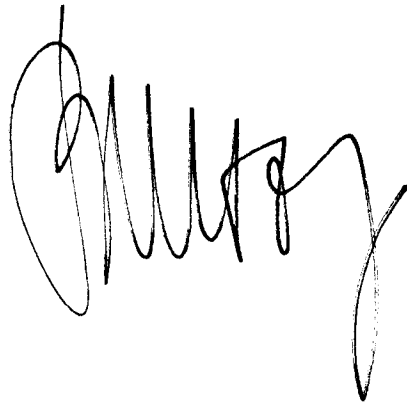
May 23, 1992

Dear Architects,

A while ago, I send you a communique about the show. Since then, not much has come back...I presume you are coping. On the other hand Katharina asked me to send you some text, is this what you need?

We are terribly busy here by making the laserdisk and working on the catalog but if you need something, let me know...

Woody

A handwritten signature in cursive script, appearing to read "Woody".

SEVEN PAGES FOLLOW

①

5-28-92
~~5-23-92~~

Early Electronic Audio/Video Instruments to be Physically Present on the Floor of the Exhibit

Installations:

- Experimental **VIDEO FEEDBACK W/AUDIO INPUT MODULATION--INTERACTIVE INSTALLATION**
Ubiquitous - No description
- 1969 Industrial **SONY CV PORTAPAK**
Ubiquitous - Produced Industrially - No description
- 1974 - 1979
Robert Watts, David Behrman & Bob Diamond **CLOUD MUSIC INSTALLATION (Hybrid audio/video interactive instrument)**
Courtesy of The Robert Watts Studio Archive, Sara Seagull and Larry Miller in collaboration with David Behrman, and Bob Diamond

End of installations

Instruments exhibited:

(Listed chronologically)

- 1964 Don Buchla **BUCHLA PRE-100 SERIES (Audio synthesizer)**
*Collection of Michael Czajkowsky, New York City
Produced Industrially - No description*
- 1964 Robert Moog **MOOG MODULAR AUDIO SYNTHESIZER**
*Courtesy of Norman Lowrey, Professor of Music
Collection of Drew University, Madison, New Jersey
Donated by CBS (Columbia Broadcasting System)
Produced Industrially - No description*
- 1968 EMS **PUTNEY, MODEL VCS 3 (Audio synthesizer)**
*Collection of the Experimental Television Center,
Ltd. & The State University of New York,
Binghamton
Produced Industrially - No description*

1969

Bill Hearn

VIDIUM (Analog XYZ driver/sequencer)

*Courtesy of Steve Anderson, Physics Department,
Sonoma State University, Rohnert Park,
California*

Collection of Bill Hearn

1960's

The Vidium "MK II" is a hybrid analog synthesizer which acts as a "hyper Lissajous pattern generator." Developed by Bill Hearn in the early 1970's, the Vidium was inspired by earlier color XY display art and an exhibit called "Sidebands" at the Exploratorium in San Francisco. The fascination with animated color shapes driven from sound formed the basis for Vidium. Numerous XY displays and audio function generators were tried before arriving at the current form of the MK II unit. [J.S.]

LATE

1970

Glen Southworth

CVI (COLORADO VIDEO INC) QUANTIZER (Colorizer)

*Collection of the Experimental Television Center,
Ltd. & The State University of New York,
Binghamton*

The Colorado Video Inc (CVI) Model 606C Video Quantizer is a commercial example of a threshold based colorizer. It processes a monochrome video signal "to achieve radical alterations in output linearity or to synthesize color signals from different shades of grey" (From the CVI 606C manual). It identifies intensity regions and then displays them in color to make them more visible. X-ray, Medical and Thermal Analysis are some examples where regions are tinted with color to reveal swollen bones tissue or heat emissions. [J.S.]

1970

**Nam June Paik
& Shuya Abe**

**PAIK/ABE VIDEO SYNTHESIZER (Keyer & colorizer)
& SCAN MODULATOR (a.k.a. THE WOBBULATOR)**

*Collection of the Experimental Television Center,
Ltd. & The State University of New York,
Binghamton*

The Paik/Abe Video Synthesizer was a collaboration between Nam June Paik and video engineer Shuya Abe. The basic synthesizer is a colorizer, but in keeping with Nam June Paik's method of creating a "smorgasbord of video art," a scan modulator is often found adjacent to the colorizer. The capacities for combining video feedback, magnetic scan modulation, and non-linear mixing followed by colorizing result in its novel style of imagery. [J.S.]

1971

Eric Siegel **DUAL COLORIZER (Analog)**
Collection of the Vasulkas, Santa Fe, New Mexico

The Siegel Colorizer is a modulation based colorizer, that generates color images from monochrome sources by adding a modulated subcarrier onto a black and white video signal. The variations of the input signal shift the color hues, generating multitudes of colors that track the brightness of the video. The term "DUAL" refers to the customized package of two colorizing channels in one box. [J.S.]

1971

Glen Southworth
CVI DATA CAMERA (Camera/Scan processor)
*Collection of the Experimental Television
Center, Ltd. & The State University of
New York, Binghamton*

Colorado Video Inc (CVI) founded by Glenn Southworth, developed circa 1971 an externally lockable video camera, the CVI 502 Data Camera. It contained a one-inch pickup tube and was intended for use in laboratory research and in the scanning of non-standard video formats. To permit operation with slow scan television, provisions were made for external horizontal and vertical sweep signals and a beam blanking signal. [J.S.]

1972

George Brown **VIDEO SEQUENCER (a.k.a. FIELD FLIP/FLOP
SWITCHER, with digital control)**
Collection of the Vasulkas, Santa Fe, New Mexico

The George Brown Field/Frame Video Sequencer is a programmable digitally controlled switch between two video sources in field or frame rate. Intended originally for the binocular investigation by the Vasulkas, this "clean switching" is performed in the vertical blanking interval, and its duration, order and length are set through a front panel knob and a collection of toggle switches. The switching timebase can be counted down from video vertical pulses, or triggered externally from audio or other sources. [J.S.]

1972

Dan Sandin **IP (Analog IMAGE PROCESSOR)**
*Collection of Phil Morton, West Yellowstone,
Montana*

In the Sandin Image Processor the camera signal enters large arrays of analog processing modules patched individually in a personalized In/Out patchcord network. It seems to fully exhaust the image processing vocabulary and it was one of the most replicated instruments on hand.

Beside the external video inputs, it contains various waveform generators for image generation and control. This vast network of signals gets organized finally by the video color encoder, giving it a full broadcast legitimacy. [W.V.]

1973

George Brown **MULTIKEYER (Analog with digital control)**
Collection of the Vasulkas, Santa Fe, New Mexico

The George Brown Multi-Level Keyer consists of a programmable digital sequencer wired to an analog processing rack, where a digital "key priority encoder" combines with multiple analog keyer/mixers. An expansive matrix of red Light Emitting Diodes (LEDs), seven segment displays, and a keypad are used to interface with the digital sequencer. The analog keyer/mixer gates and prioritizes the six video sources, sorts them into multiple image planes, and routes them to a single output connector. This multi-level keyer was built for the Vasulkas in the early 1970's. A computer interface was appended in 1977 to allow remote storing, loading, and control of the program sequences. [J.S.]

1973

**Bill Etra &
Steve Rutt** **RUTT/ETRA SCAN PROCESSOR (Analog)**
*Collection of the Experimental Television
Center, Ltd. & The State University of
New York, Binghamton*

The Rutt/Etra Scan Processor is a real time system which electronically alters the deflection signals that generate the television raster. Developed in the early 1970's in New York by Steve Rutt and Bill Etra, this analog scan processor loosely resembles the Scanimate, but was simplified in operation and offered at a lower cost. Steve Rutt manufactured the unit, while Bill Etra refined the scan processor concept, placing an emphasis on external voltage control of the processing modules. (J.S.)

5

1974

Stephen Beck **BECK VIDEO WEAVER (Digital, reconstituted for this exhibit in 1992)**
Collection of Stephen Beck, San Francisco, California

The following description is of the original Instrument:

The Video Weaver is a digital pattern generator involving a string of counters and a Random Access Memory (RAM) to hold and later retrieve a stored pattern. It can be viewed as an electronic loom, having a vertical warp and a horizontal weft. The pattern is programmed into the memory then "woven" onto the screen by a set of phase shifting counters that slide and shift their count sequence in time to the video raster. It differs from a strict frame buffer design by the counters that read the memory which are not locked into a static scanning order, but drift and wrap around as the raster progresses. [J.S.]

1976

David Jones **JONES FRAME BUFFER (Digital buffer)**
Collection of Gary Hill, Seattle, Washington

David Jones explored early digital video processing techniques through design work at the Experimental Television Center (ETC) in Binghamton, N.Y. In April, 1977 he created the 64 by 64 frame buffer which stores images as a pattern of 64 horizontal by 64 vertical squares with a choice of 16 grey levels per square. [J.S.]

1976

Don McArthur **SAID (SPATIAL AND INTENSITY DIGITIZER)**
Collection of the Experimental Television Center, Ltd. & The State University of New York, Binghamton

The Spatial and Intensity Digitizer or "SAID" arose from an early attempt to create a low-cost video-speed analog to digital converter (A/D). In 1976 no monolithic silicon A/D converters existed, and their cost was outside the range of most video art budgets. As this component was basic to digital video processing, a 6 bit A/D converter was attempted. An A/D converter of 4 bits or less was commonly constructed using strings of high speed comparators, but resolutions greater than 4 bits were difficult to perfect. [J.S.]

6

1976

Don McArthur **DIGITAL IMAGE PROCESSOR**
& **Jeffy Schier** *Collection of the Vasulkas, Santa Fe, New Mexico*

The Schier/McArthur Digital Image Processor was constructed in 1976-1977 at Steina and Woody Vasulka's loft in Buffalo, N.Y. It began as a mathematical exploration by Don McArthur of the digital raster, and was built from digital modules locked to video time by a 16 bit micro-computer, the DEC LSI-11. It was built in stages starting with the Sync Generator and Computer Interface, then adding a Digital Selector, Arithmetic Logic Unit, Lookup Pattern RAM, and finally a Rectangular Window Generator. The video outputs came from three 4 bit digital to analog (D/A) converters, and was converted to composite video by an external NTSC Color Encoder. [J.S.]

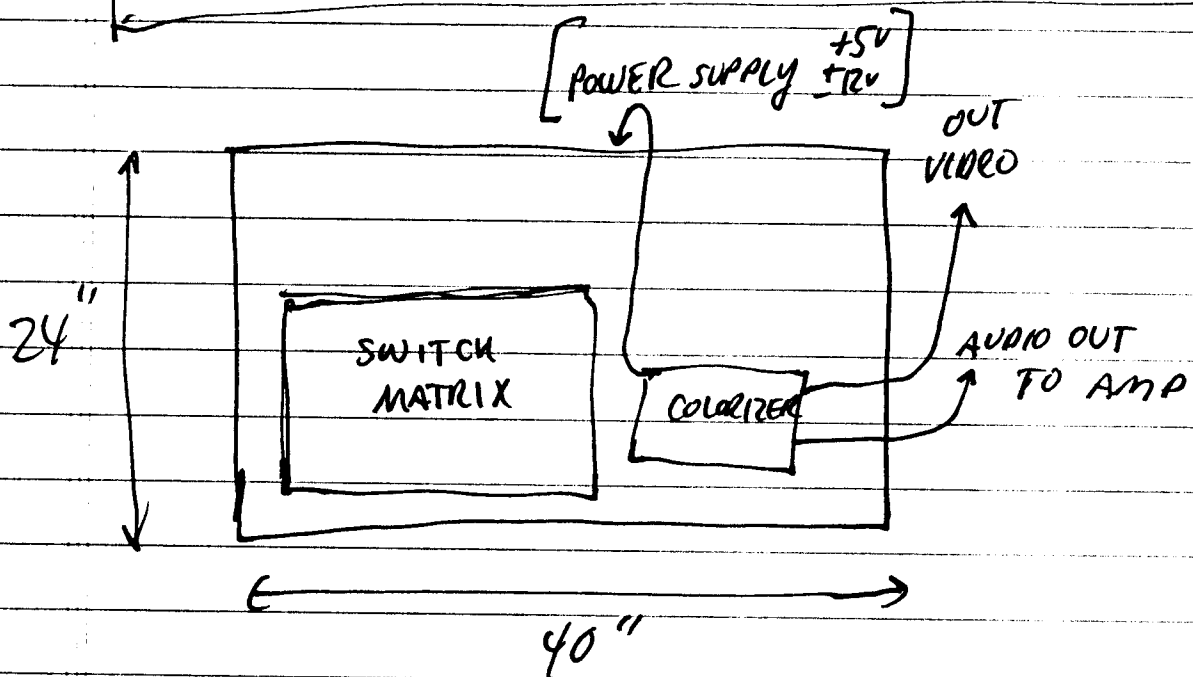
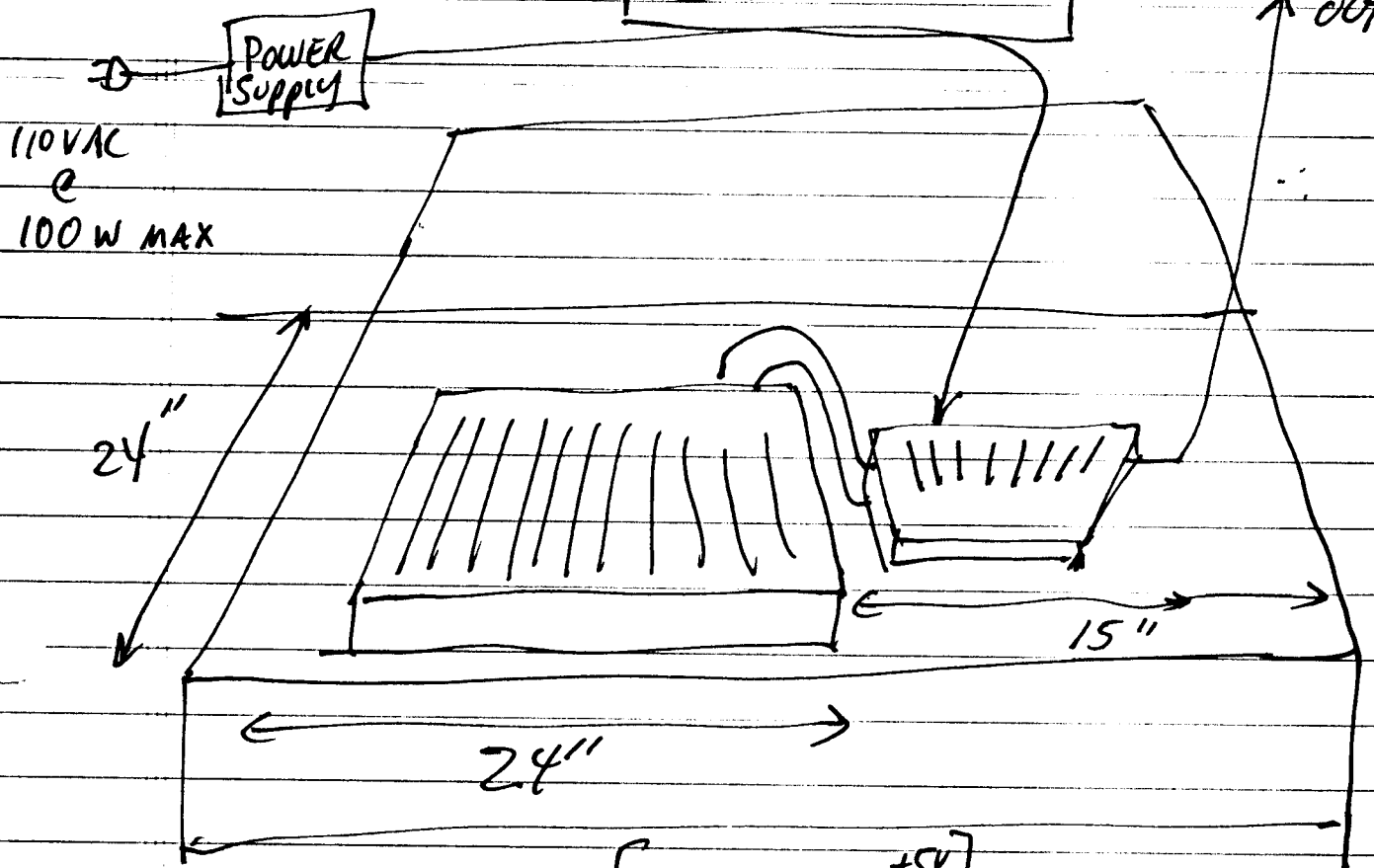
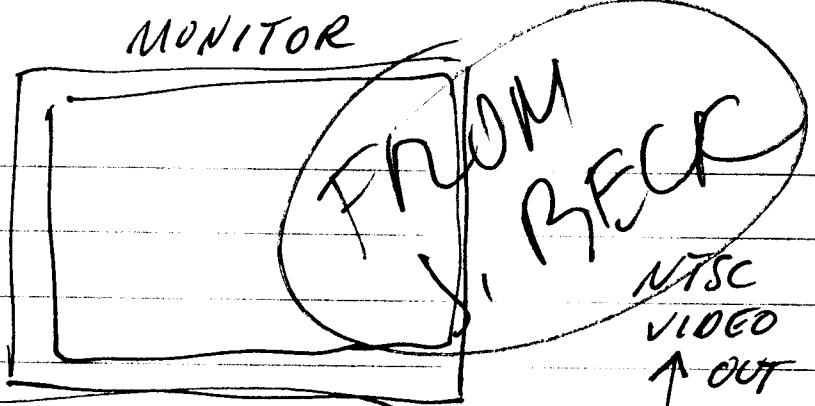
Date Unknown *027*
Marcel Dupouy **LE MOVICOLOR (Colorizer)**
 Courtesy of Don Foresta
 Collection of Ecole de Beaux Artes Decoratif,
 Paris

As of May 20, 1992 still not collected and restored

NOT AVAILABLE FOR THIS SHOW

BECK VIDEO
WEAVER for
AAS ELECTRONICA

FAXED
5-28-02



filename: cat.por

1969 **SONY CV PORTAPAK**

Woody Vasulka: The introduction of the portapack into artistic formulation was paramount. In the late 1960's the use of video was confined to close circuit installations, a very elegant solution to the use of video in the gallery. With the invasion of tape on the scene it took some time to settle the problem of exhibition. Speaking to Steina about reel to reel machines Bruce Nauman put it more directly: I almost dropped video when tape was introduced; when the tape ran out there was no one in the gallery to rewind it, thread it and run it again.

It was an entirely different story for the socially engaged. The portapack was considered a revolutionary tool, almost a weapon against the establishment. Overnight it dissolved the hegemony of documentary films. A vast number of genres sprang up (including the notorious 30 minute single take), and the documentary branch was never the same again.

The middle ground was also interesting. With tape new networks of distribution were quickly established. Video became truly international. It was easy to duplicate, mail, and view. With the introduction of the video cassettes in 1973 it became even easier, and harmonized with the exhibition purposes of video. By the mid-1970's video as art was fully entrenched in the galleries, with many developed genres, forms and concepts.

Only a few people tried to develop the so called "abstract" genre. It failed in the first decade entirely. We and other people dealing with early synthetic images used tape primarily as extended studio material (input), and secondarily as a method of documentation of these new processes and phenomena unexpectedly popping up in front of our eyes.

Early Electronic Audio/Video Personal Instruments
(Listed chronologically)

Following are a list of early "personal" electronic audio & video instruments used by artists and researched for this exhibition. Even though it is recent history, the whereabouts of a number of these machines is unknown, and we can only document their existence from ephemera - images on paper, in photographs, and on video tapes. This ARS ELECTRONICA exhibition at the Landesmuseum - Francisco Carolinum will include those machines that have been dusted off and restored to life. This list is not meant to be comprehensive, it is archaeological. During our research we found leads to many other instruments that we hope can also be revived - before it is too late.

Experimental **Video Feed Back w/Audio Input Modulation Interactive Installation**
Ubiquitous

D
62
OK
1964

Lee Harrison Associates **ANIMAC (Hybrid graphic animation computer)**
Destroyed, documented on film

1
2

OK
1968

Don Buchla **BUCHLA PRE-100 SERIES (Audio synthesizer)**
Collection of Michael Czajkowsky, New York City

OK

Eric Siegel **IMAGE ORTHICON T.V CAMERA (Prepared camera)**
*Courtesy of Vinnie Novak
On loan to the Experimental Television Center, Ltd. & The State University of New York, Binghamton
Collection of Eric Siegel*

1968
OK

Eric Siegel **PROCESSING CHROMINANCE SYNTHESIZER (Analog)**
Whereabouts unknown, no known documentation

8

1968 - 1969
Robert Moog

MOOG MODULAR AUDIO SYNTHESIZER
*Courtesy of Norman Lowrey, Professor of Music
Collection of Drew University, Madison New Jersey
Donated by CBS (Columbia Broadcasting System)*

3

OK
LOWREY
7/11/69

1968 - 1969
Bill Hearn

OK

VIDIUM (Analog XYZ driver sequencer)
Courtesy of Steve Anderson, Physics Department,
Sonoma State University, Rohnert Park,
California
Collection of Bill Hearn

4

1968
Pulsa Group/
Peter Kindelman

N

HYBRID DIGITAL/ANALOG AUDIO SYNTHESIZER
Collection of Bill Crosby, Tucson, Arizona

1968
Industrial

N

PUTNEY, MODEL VCS 3 (Audio synthesizer)
Collection of the Experimental Television Center,
Ltd. & The State University of New York,
Binghamton

5

1969 - 1972
Salvatore
Martirano

N

SAL-MAR CONSTRUCTION (Hybrid audio instrument)
Collection of Salvatore Martirano, School of
Music, University of Illinois, Champaign/Urbana

1969
Aldo Tambellini
& Tracy Kinsel
& Hank Reinbold

OK

BLACK SPIRAL INSTALLATION (Prepared television set)
(Awaiting restoration)
Collection of the Everson Museum of Art,
Syracuse, New York

6

1969
Tom Tadlock

N

ARCHETRON (Analog color pattern generator)
Whereabouts unknown

1969
Industrial

SONY CV PORTAPAK
Ubiquitous

DELETED AS GENERAL
COLLECTIBLE

1970
Stephen Beck

OK

DIRECT VIDEO SYNTHESIZER (Analog)
(Awaiting restoration)
Collection of Stephen Beck, San Francisco

7

1970
Eric Siegel

OK

EVS (Analog ELECTRONIC VIDEO SYNTHESIZER)
Whereabouts unknown, last in the possession of Al
Phillips, documented in photographs

8

1970

Glen Southworth

CVI (COLORADO VIDEO INC) QUANTIZER (Colorizer) & CVI DATA CAMERA (Camera scan processor)
Collection of the Experimental Television Center, Ltd. & The State University of New York, Binghamton

9

1971

Nam June Paik & Shua Abe

PAIK/ABE SYNTHESIZER (Keyer & colorizer) & SCAN MODULATOR (a.k.a. as the "Wobulator")
Collection of the Experimental Television Center, Ltd. & The State University of New York, Binghamton

10

1971

George Brown

VIDEO SEQUENCER (a.k.a. FIELD FLIP/FLOP SWITCHER, with digital control)
Collection of the Vasulkas, Santa Fe, New Mexico

11

'71

Dan Sandin

IP (Analog IMAGE PROCESSOR)
Collection of Phil Morton, West Yellowstone, Montana

12

1972

Eric Siegel

DUAL COLORIZER (Analog)
Collection of the Vasulkas, Santa Fe, New Mexico

8

CIRCA 1972

Steve Rutt & Bill Etra

SCAN PROCESSOR PROTOTYPE (Analog)
Collection of the Experimental Television Center, Ltd. & The State University of New York, Binghamton
Donated by Barbara Buckner

1973

Don Hallock

VIDEOLA INSTALLATION, SAN FRANCISCO
Destroyed, documented in photographs

1973

George Brown

MULTIKEYER (Analog with digital control)
Collection of the Vasulkas, Santa Fe, New Mexico

11

-3-

[Handwritten scribble]

D

OK

D

OK

[Handwritten scribble]

N

OK

D-TONE ASPECT OF THE SIGNIFICANCE OF THE NEW IMAGE

[Large handwritten scribble]

1973

Bill Etra & Steve Rutt **RUTT/ETRA SCAN PROCESSOR (Analog)**
Collection of the Experimental Television Center, Ltd. & The State University of New York, Binghamton

13

1973

~~**Stephen Beck** **VIDEO OUTLINER (Digital)**
Collection of the Vasulkas, Santa Fe, New Mexico~~

7

1974

David Behrman & Bob Diamond & Robert Watts **CLOUD MUSIC INSTALLATION (Hybrid audio/video instrument)**
Courtesy of Sara Seagull & Larry Miller, Robert Watts Studio Archives
Collection of David Behrman, Bob Diamond & Estate of Estate of Robert Watts

1974

Stephen Beck **BECK DIGITAL VIDEO WEAVER (Synthesizer)**
Collection of Stephen Beck, San Francisco

7

1976

David Jones **JONES FRAME BUFFER (Digital buffer)**
Collection of Gary Hill, Seattle, Washington

14

Don McArthur **SAID (SPATIAL AND INTENSITY DIGITIZER)**
Collection of the Experimental Television Center, Ltd. & The State University of New York, Binghamton

15

1976

Don McArthur & Jeffy Schier **DIGITAL IMAGE GENERATOR**
Collection of the Vasulkas, Santa Fe, New Mexico

15

Date Unknown

Marcel Dupouy **LE MOVICOLOR (Colorizer)**
Courtesy of Don Foresta
Collection of Ecole de Beaux Artes Decoratif, Paris