

March 19, 1987

TO: Distribution
FROM: Pete Sucy
SUBJECT: Control Center Update

Attached is the latest version of the Control Center Proposal. Both the diagrams and the text have been updated to reflect the changes we discussed at our last meeting.

Several of the most notable changes are; the addition of a looped input on one of the RGB inputs, and a selection switch and circuitry for level tracking on the auxillary RGB output.

Please review the package and if you note any errors or discrepancies please let me know so that I may update it.



PJS:pjs

cc A. Arnold
 B. Cosway
 B. Eckenbrecht
 J. Sanchez
 S. Sasson
 C. Schaufele

KODAK

NEW PRODUCT PROPOSAL

SVS CONTROL CENTER

RGB/NTSC SWITCHER/DA/COLOR CONTROLLER

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ROCHESTER, NEW YORK 14650**

MARCH 17, 1987

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1. INTRODUCTION

As a result of the work done by the SVS Interconnect Committee, it was pointed out that an RGB switcher is necessary for certain SVS applications where RGB signal transmission is required between two or more SVS products and an external RGB source.

Specifically, a scenario exists where the customer has an RGB input device, such as an RGB camera or film transfer device, and is using two or more SVS products. When connecting two SVS products using the RGB interface, all the available RGB inputs and outputs are used. This then poses the problem of how to connect the transfer device or camera.

By far the simplest solution is a two input, one output switcher. However, that is not the approach we have taken in this proposal. Instead we have opted for a solution which provides the needed capabilities and in addition offers unique features and useful benefits to ALL users of the SVS system, not just those that use RGB.

2. INTENT AND SCOPE

The intent of this document is to present a new product proposal for discussion and provide a vehicle for comments and suggestions to find their way into the final product. Please feel to use these pages to record your thoughts and ideas.

The scope of this document is to define a product concept in such a way as to allow for a thorough evaluation of the concept keeping in mind the needs of the Commercial and Industrial market as we understand it.

3. PRODUCT CONCEPT

As stated earlier a need exists for an RGB switcher with two inputs and one output. The Control Center as proposed here satisfies that need and surpasses it and also provides many other unique features which combine to make it a very attractive addition to the SVS family of products.

The Control Center combines the features/functions of several standard video products/accessories.

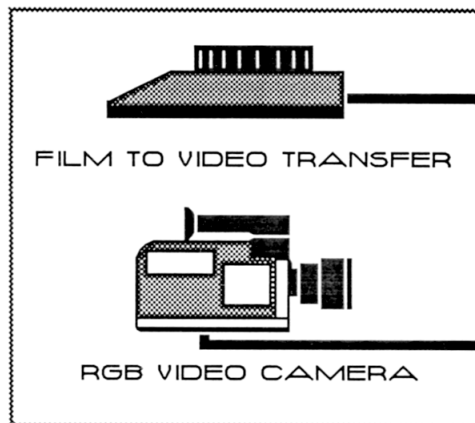
- 1. RGB Switcher - 6 inputs/1 output, with gain adjustment on the two external RGB inputs.**
- 2. NTSC Switcher - 4 inputs.**
- 3. NTSC to RGB decoder - converts NTSC input to RGB for distribution.**
- 4. Distribution Amplifier - sends buffered RGB output to up to four SVS products and two RGB monitors.**
- 5. Color Controls - allows control of hue, saturation, contrast and white balance of the RGB signal output**

This combination provides a very efficient and cost effective means to connect and control video signals between several SVS products and up to six external video sources. The product may also appeal to anybody who works with a variety of video input sources desiring RGB signal passing for optimal duplication quality.

The illustration on the next page shows a hypothetical situation in which all of the inputs and outputs of the Control Center are utilized. From this layout you can see the real power this unit provides in managing a variety of video sources and destinations in a user friendly manner.

VIDEO CONTROL CENTER

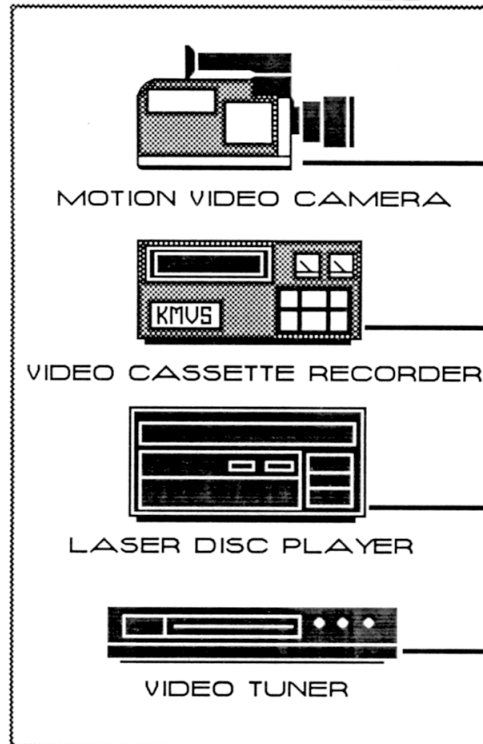
RGB SOURCES



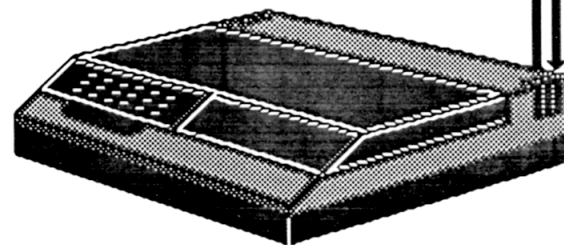
REMOTE CONTROL



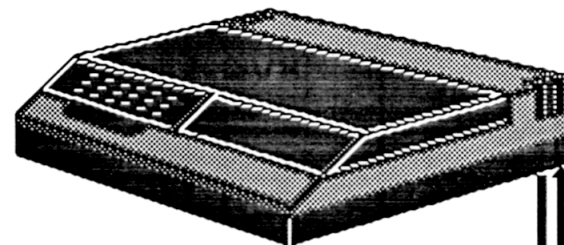
NTSC SOURCES



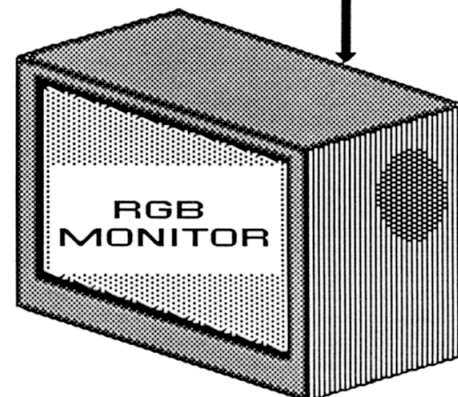
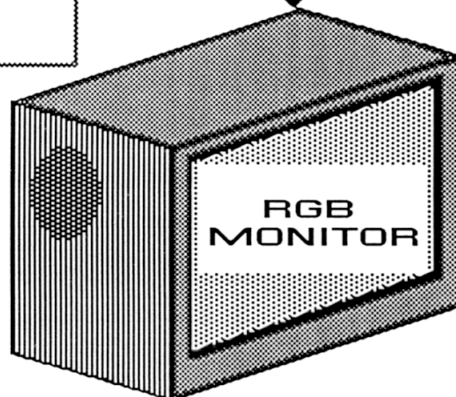
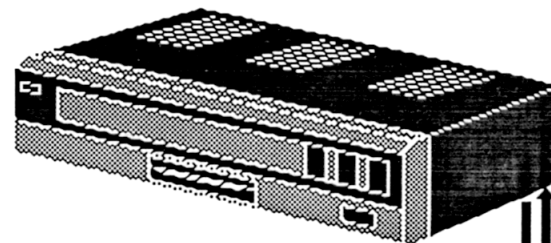
KSVX



VIDEOFILES



THERMAL PRINTER



4. INTERFACES

4.1 NTSC INPUTS - Four BNC connectors are provided for composite video input from external sources such as VCR's, cameras etc.

4.2.1 RGB INPUTS - Three sets of four (R,G,B & Sync) BNC connectors are provided (One RGB input has a bridged input with a terminating switch) for input from two external sources such as RGB cameras or a film to video transfer device.

4.2.2 SVS RGB INPUTS - Four Hirose connectors are provided for RGB input from up to four SVS products.

4.3.1 RGB OUTPUTS - One Hirose connector is provided for RGB signal output to an RGB monitor.

Four BNC connectors are provided for an auxillary RGB output. This output can have its signal level adjusted to track either of the two RGB inputs or the SVS input. (Range is from .250mV to 1.1V)

4.3.2 SVS RGB OUTPUTS - Four Hirose connectors are provided for RGB signal output for up to four SVS products.

4.4 REMOTE CONTROL INTERFACE - A 12 pin connector is provided to allow the user to connect a user supplied remote for remote operation of the front panel switches. Front panel switches are activated by signal to ground.

5. OPERATIONAL OVERVIEW

The Control Center as proposed eliminates most of the cabling and connection complexities which are a result from the SVS family of products being able to handle two different video formats (NTSC and RGB).

The Control Center has been optimized for SVS products in that all connections to SVS products are in RGB format and use the Hirose 8 pin connector common to the system. Incoming NTSC signals are decoded into RGB before being sent to the distribution amplifier for transmission to the connected SVS products and/or monitors.

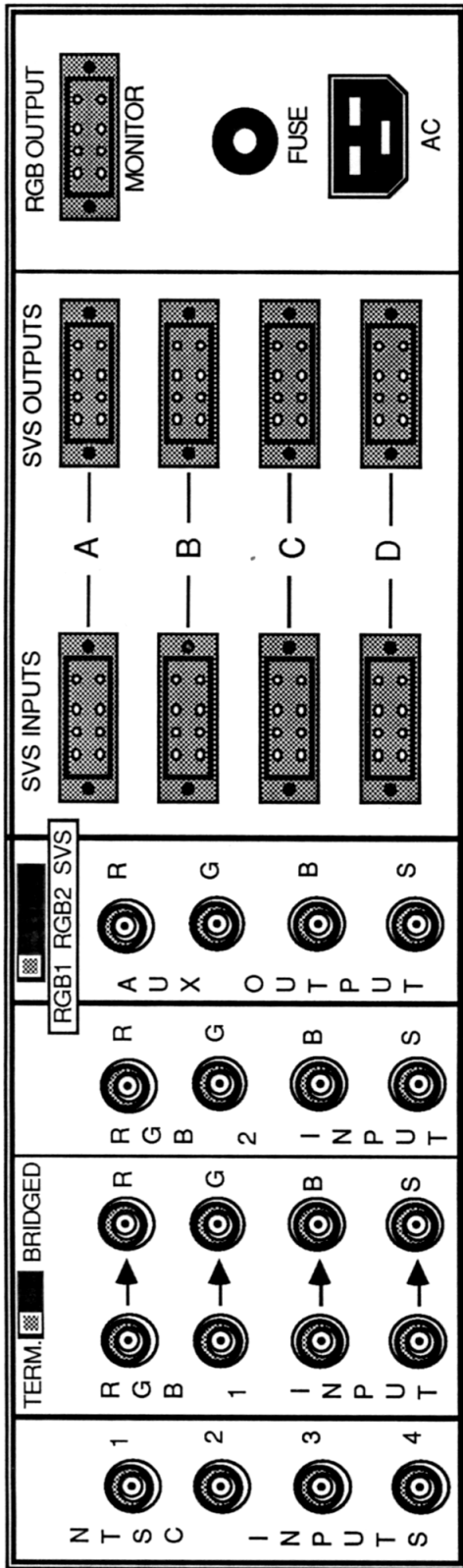
The distribution amplifier simplifies the operation of the unit by sending the selected input to all outputs. This design makes the axiom "What you see is what you get." really work in this case. What ever is displayed on the monitor is what is being sent to all the connected SVS products.

The user only has to set the RGB/NTSC switch on each SVS product to RGB once and then leave it there. In doing so he is guaranteed that he is receiving the highest possible quality input and that he is recording whatever is displayed on the monitor.

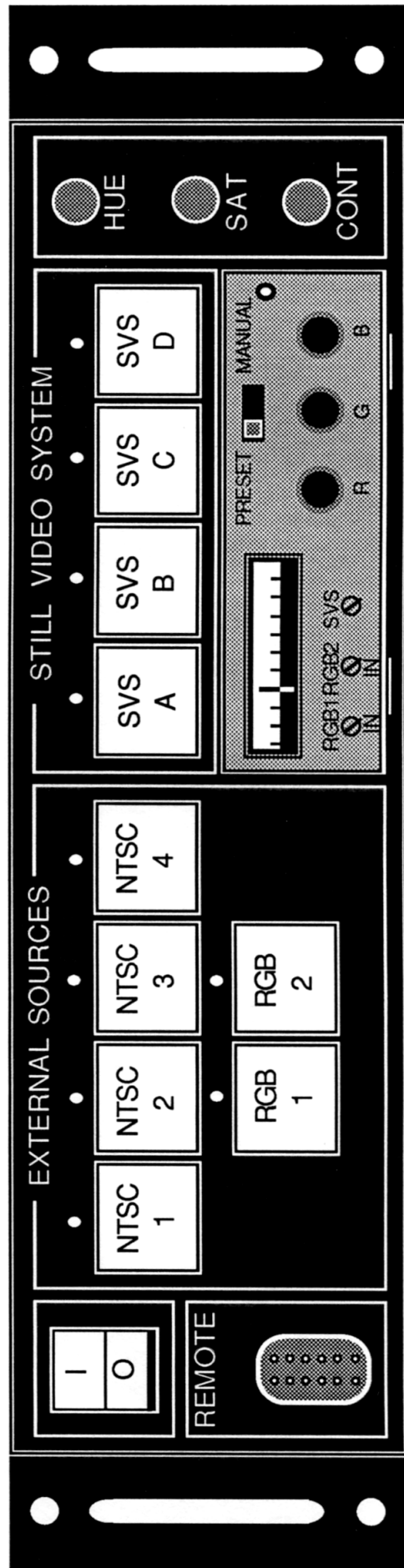
Another unique feature is the color control capability, allowing control over hue, saturation, contrast, and white balance of the RGB signal. This allows the user to fine tune his input signal before recording it. He can see the results of his color adjustments on the connected monitor. This could be very important if the customer has a Video Printer in his system because as it is currently designed you can only control the color, contrast, etc. with an NTSC input.

The hue, saturation and contrast controls will be on the front panel for easy access, while the white balance controls which are really signal level controls for R, G and B, are hidden behind a door. The white balance is more difficult to adjust and less likely to be used, thus the decision to make it less accessable.

One last feature worthy of mention is the auxillary RGB output which can track the output level of either RGB input or the SVS inputs depending on the position of the selection switch on the rear panel. This is especially important to the user who has a nonstandard RGB monitor or device which requires a signal level other than .714V.

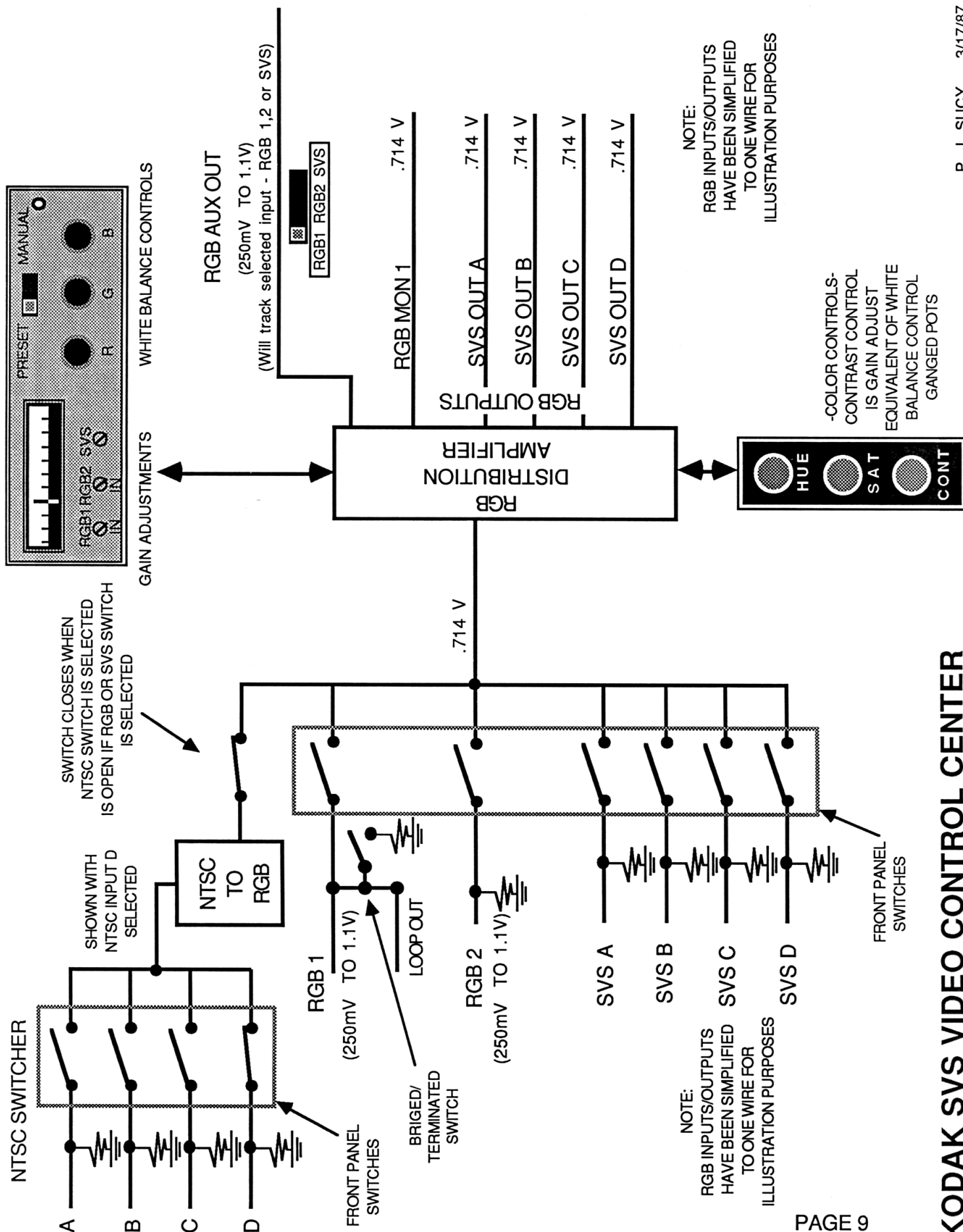


19" (TO FIT RACK MOUNT)



GAIN ADJUSTMENTS WHITE BALANCE CONTROLS

RACK MOUNT ADAPTOR



CONTROL CENTER PROS/CONS

PROS

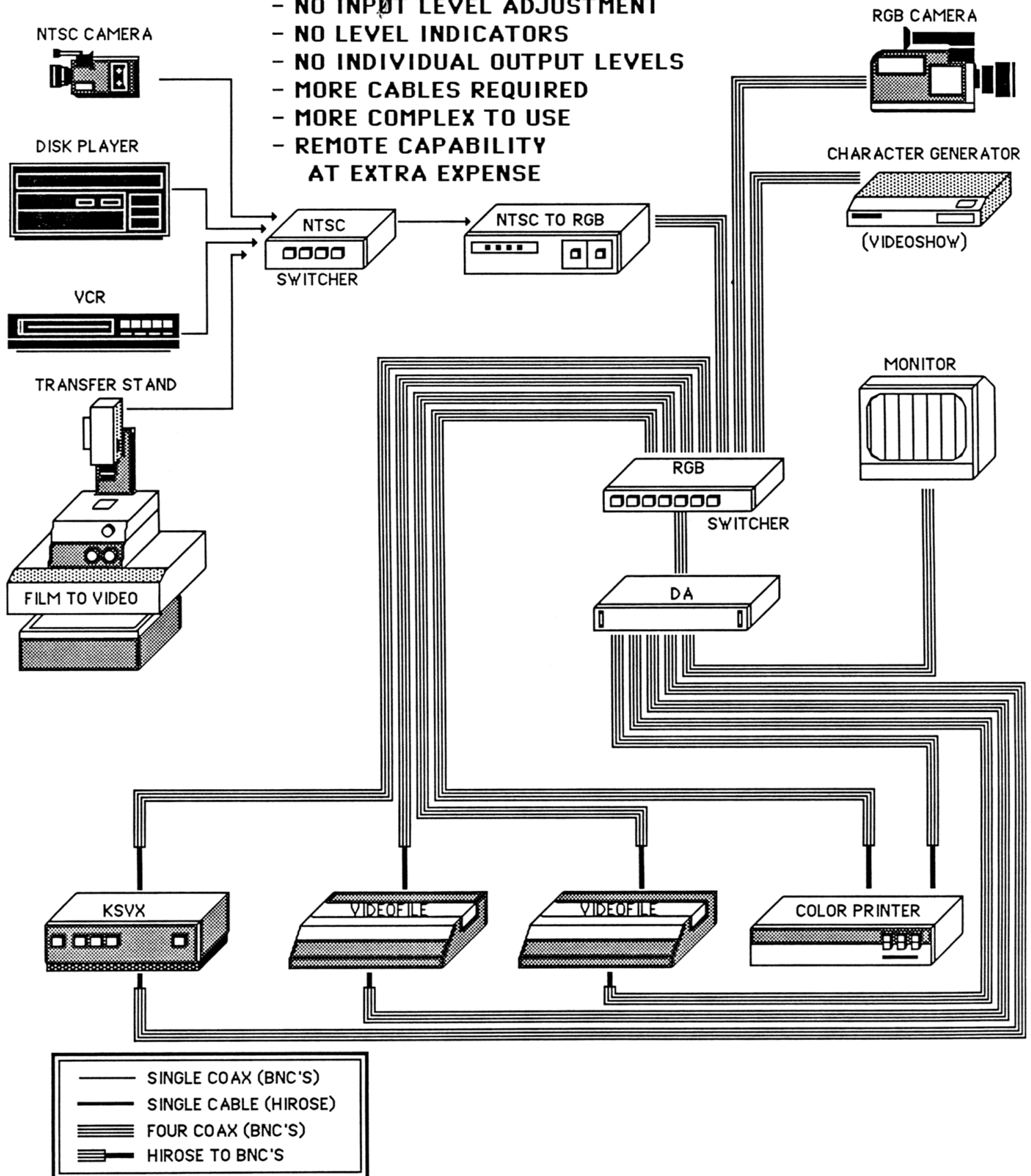
- EASY TO CONNECT SYSTEM
- MINIMIZES REQUIRED CABLING
- EASY TO UNDERSTAND OPERATION AND USE
- WHAT YOU SEE ON THE MONITOR IS WHAT YOU GET EVERYWHERE
- FLEXIBLE, MEETS KSVX, TP AND VF SYSTEM INTERFACE NEEDS
- RGB INPUT TO ALL SVS UNITS. ONLY ONE NTSC TO RGB CONVERSION
- MINIMIZES SIGNAL DEGRADATION BETWEEN UNITS
- PROVIDES ABILITY TO ADJUST RGB SIGNALS FOR HUE, SAT, CONTRAST
- SINGLE POINT OF ADJUSTMENT FOR SYSTEM OF HUE, SAT, CONTRAST
- PROVIDES ABILITY TO INTERFACE TO NONSTANDARD RGB SOURCES
- ALL SVS UNITS PUT INTO RGB MODE PERMANENTLY (NO NEED TO USE RGB/NTSC SWITCH FOR INPUT SELECTION)
- WIRED REMOTE CONTROL INTERFACE

CONS

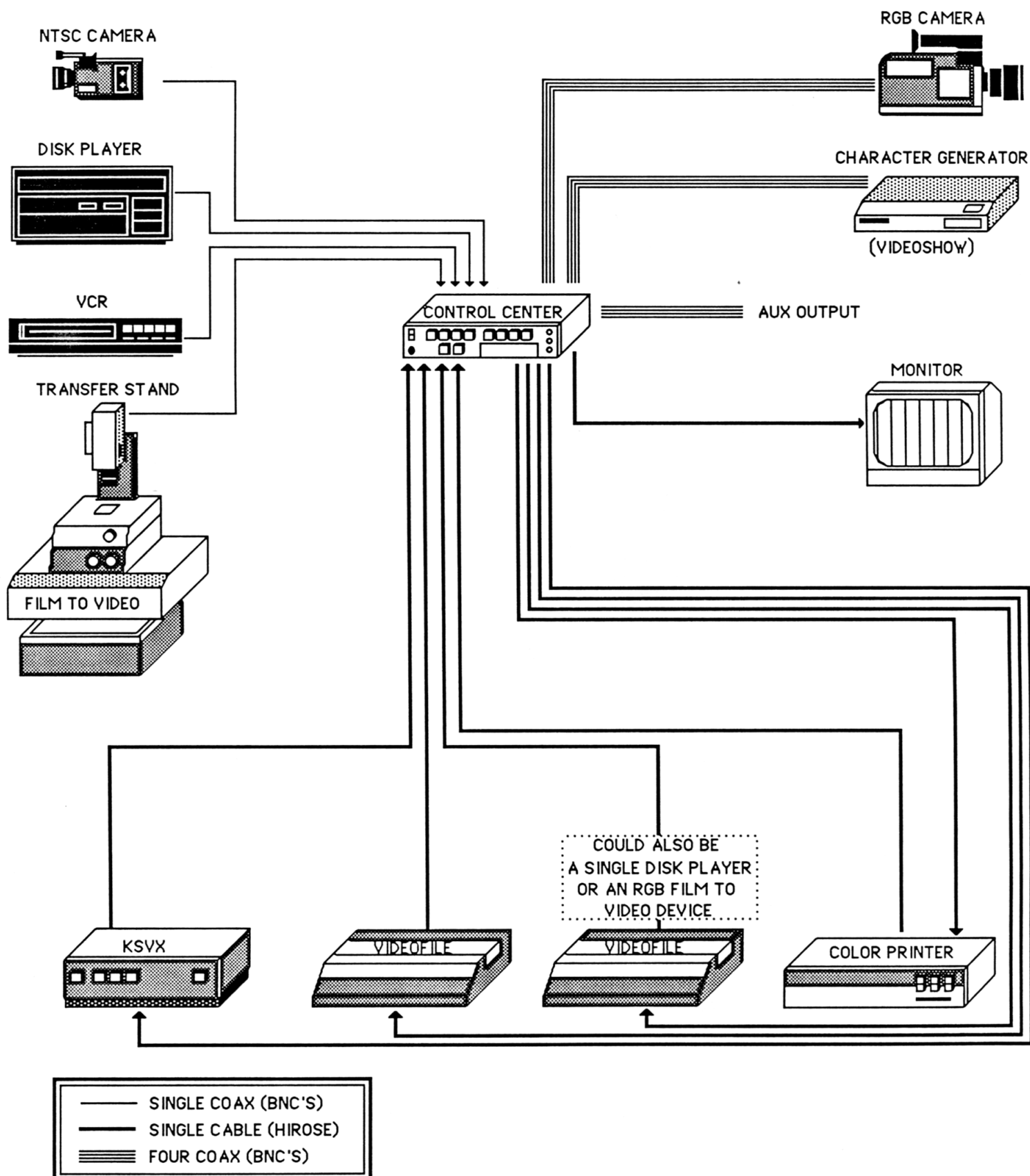
- COST
- REQUIRES RESOURCES TO BUILD
- REQUIRES RGB MONITOR

ALTERNATIVE TO CONTROL CENTER SYSTEM

- NO COLOR CONTROL
- NO INPUT LEVEL ADJUSTMENT
- NO LEVEL INDICATORS
- NO INDIVIDUAL OUTPUT LEVELS
- MORE CABLES REQUIRED
- MORE COMPLEX TO USE
- REMOTE CAPABILITY AT EXTRA EXPENSE



STILL VIDEO SYSTEM WITH CONTROL CENTER



COMPARABLE EQUIPMENT COSTS

LISTED BELOW ARE THE INDIVIDUAL PRODUCTS WHICH PROVIDE THE SAME CAPABILITIES AS THE PROPOSED CONTROL CENTER. IN SOME INSTANCES, THE NTSC TO RGB CONVERTOR FOR EXAMPLE, THE INDIVIDUAL UNITS PROVIDE MORE UTILITY THAN THE CONTROL CENTER, BUT THEY ARE THE ONLY PRODUCTS OF THAT TYPE ON THE MARKET.

1. NTSC PASSIVE SWITCHER - 4 INPUT / 1 OUTPUT (DYNAIR)	\$150.00
2. RGB SWITCHER - 6 INPUT / 1 OUTPUT (DYNAIR)	\$2000.00
3. DISTRIBUTION AMPLIFIER - 1 INPUT/6 OUTPUT X 4 (RGB&S) (GRASS VALLEY/DYNAIR)	\$1800.00
4. NTSC TO RGB DECODER (DYNAIR/SHIBA SOKU)	\$2000 - 5000.00
5. COLOR CONTROL IN RGB (N.A.)	+
6. INPUT LEVEL ADJUST (ATTENUATORS)	+
7. LEVEL INDICATORS (SCOPE)	+
8. OUTPUT LEVEL ADJUST ON INDIVIDUAL OUTPUTS (MULTIPLE DA'S)	+
9. REMOTE CONTROL CAPABILITY	+

TOTAL ~ \$5950-\$8950.00+

CONTROL CENTER SWITCHER

(approx. costs on amounts over 1000 units)

<u>PART</u>	<u>PRICE</u>
- 4 NTSC INPUTS (4 BNC CONNECTORS, FEMALE).....	5.52
- 2 RGB INPUTS (2 HIROSE FEMALE CONNECTORS).....	1.76
- 6 RGB OUTPUTS (6 HIROSE FEMALE CONNECTORS).....	5.28
- 4 SVS INPUTS (4 HIROSE FEMALE CONNECTORS).....	3.52
- FUSE HOLDER (PANEL MT.) WITH FUSE.....	1.00
- POWER SWITCH.....	2.00
- POWER CORD AND PLUG.....	1.57
- REMOTE (12 PINS) CONNECTOR (AMP#:206043-1).....	1.35
- 11 PINS FOR REMOTE CONN. (SOCKETS)28-24 AWG (TIN)AMP:66707-1.....	1.50
- 10 PUSH BUTTON SWITCHES:(SPST-NOPNLMT)ILLUM. W/BULBS.	15.00
- POWER SUPPLY $\pm 12V$, 1 AMP (POWER ONE).....	30.00
- CABINET (PER 1000 UNITS).....	60.00
- RGB POT CONTROLS (COLOR BALANCING).....	4.50
- CCT BOARD DESIGN (PER 1000 UNITS) 100HRS AT \$35/HR.....	3.50
- BOARD MANUFACTURING COST: 2 - BOARDS, DOUBLE SIDED, 300 IN ² AT 0.15/IN ²	45.00
- PARTS COST: (BY MODULES)	
- SWITCHING CONTROL.....	11.00
- NTSC TO RGB DEMODULATOR PLUS OTHER CIRCUITRY.....	110.00
- RGB PROCESSING.....	40.00
- INPUT SWITCHING, SYNC, COMPOSITE OUTPUTS.....	63.00
- DUTY (6%) + SCRAP (6%) + 10.5% OVERHEAD (25% APPROX).	27.00
- LABOR AND ASSEMBLY 400 PARTS AT 0.06 DOLLARS AVERAGE.....	25.00
TOTAL	457.50
35% ADDITION TO TOTAL CAUSED BY UNCERTAINTY.....	160.10
FINAL TOTAL.....	617.60 $\pm 25\%$