

Personal Component Adapter



DIGITAL
PROCESSING SYSTEMS INC.

Digital Processing Systems Inc.
55 Nugget Ave., Unit #10, Scarborough,
Ontario, Canada M1S 3L1
Phone: (416) 754-8090
Fax: (416) 754-7046

Information in this document is subject to change without notice and does not represent a commitment on the part of Digital Processing Systems Inc.

This product requires technical and mechanical ability and requires precautions against electrostatic discharge. The user assumes all risks when this product is assembled by anyone other than an authorized Digital Processing Systems dealer.

This manual, the Personal Component Adapter, distribution disks and all related material are Copyright © 1993, Digital Processing Systems Inc. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording or any information storage or retrieval system, without permission in writing from the publisher.

Canada / International

Digital Processing Systems Inc.
55 Nugget Ave., Unit 10
Scarborough, Ontario
Canada M1S 3L1
(416) 754-8090
Fax: (416) 754-7046

U.S.A.

Digital Processing Systems Inc.
11 Spiral Drive, Suite 10
Florence, KY 41042
(606) 371-5533
Fax: (606) 371-3729

Europe

Digital Processing Systems Ltd.
138 The Causeway
Petersfield
Hampshire GU31 4LL U.K.
(0730) 233084
Fax: (0730) 266691

Table Of Contents

Chapter 1

Introduction.....	4
Unpacking and Inspection.....	5

Chapter 2

Jumpers	6
Figure 2-1 PCA Jumper Positions.....	7

Chapter 3

Installation.....	8
Figure 3-1 Ribbon Cable Installation.....	9
Figure 3-2 PCA I/O Connections.....	10

Interfacing Examples

Figure 3-3 Two S-Vid Sources & One NTSC Source..	12
Figure 3-4 Using the S-Video Outputs.....	13
Figure 3-5 Using the CAV Output	14
Figure 3-6 CAV Breakout Cable Assembly.....	15

Appendix A

Specifications	16
----------------------	----

Appendix B

FCC Compliance Statement.....	17
-------------------------------	----

Appendix C

Warranty.....	18
Limitations	18
Warranty Service.....	19

CHAPTER 1

Introduction

The DPS Personal Component Adapter is a combination 3-Line Adaptive Digital Comb Filter Decoder and Y/C Encoder card designed for use with a NewTek Video Toaster. The DPS PCA converts the composite output of the Video Toaster into two Y/C (S-Video) outputs and a component analog video (Betacam/MII) output. These outputs can then be connected to Y/C monitors, S-VHS, Hi-8, Betacam, and MII recorders as well as other devices like component production switchers.

The DPS Personal Component Adapter is also equipped with three Y/C inputs, which are converted to Video Toaster input feeds. S-Video output devices such as TBCs and camcorders can thus be connected directly to a Video Toaster system.

The DPS Personal Component Adapter offers superior diagonal luminance resolution compared to products based on two-line comb filter designs. The DPS PCA enables the full resolution of a Video Toaster to be displayed on a standard Y/C monitor. Depending on the make, model and format of the record VCR, the PCA can also provide improvements in the record video signal.

UNPACKING & INSPECTION

This unit has been thoroughly calibrated and inspected, both electrically and mechanically, to ensure that it meets the published specifications. The following items are included with each DPS Personal Component Adapter:

QTY	DESCRIPTION
1	DPS Personal Component Adapter
1	Operations Manual
1	14" Female to Female Ribbon Cable
1	14½" Male to Female Ribbon Cable
1	DIN-9 to 3 BNC CAV Cable

We suggest that you retain all original packing materials. This will facilitate reshipment should it ever become necessary.

CHAPTER 2

Jumpers

This section describes the operating modes of the jumper fields on the PCA card. These jumpers are selected according to your system configuration and should be inserted before installing the card into the computer.

AHE2, AHE3 MII/Betacam Level Select

With AHE2 and AHE3 not installed, the CAV outputs at CN6 will be at Betacam level. If AHE2 and AHE3 are installed, this changes the CAV output at CN6 to MII levels.

AHE4 Toaster Input Definitions

The Jumper field, labeled AHE4 on the card, is used to route the S-Video inputs at CN1, CN2, and CN3 to the Video Toaster inputs 1 to 4.

Installing AHE4-CH1 routes the S-Video signal at CN1 to Toaster input 1.

Installing AHE4-CH2 routes the S-Video signal at CN2 to Toaster input 2.

Installing AHE4-CH3 routes the S-Video signal at CN3 to Toaster input 3.

Installing AHE4-CH4 routes the S-Video signal at CN1 to Toaster input 4.

Notes: Installing a jumper for channel 1 to 4 will define the appropriate toaster input as S-Video. If you intend to use composite signals on the toaster BNC inputs, DO NOT install the jumper for that channel.

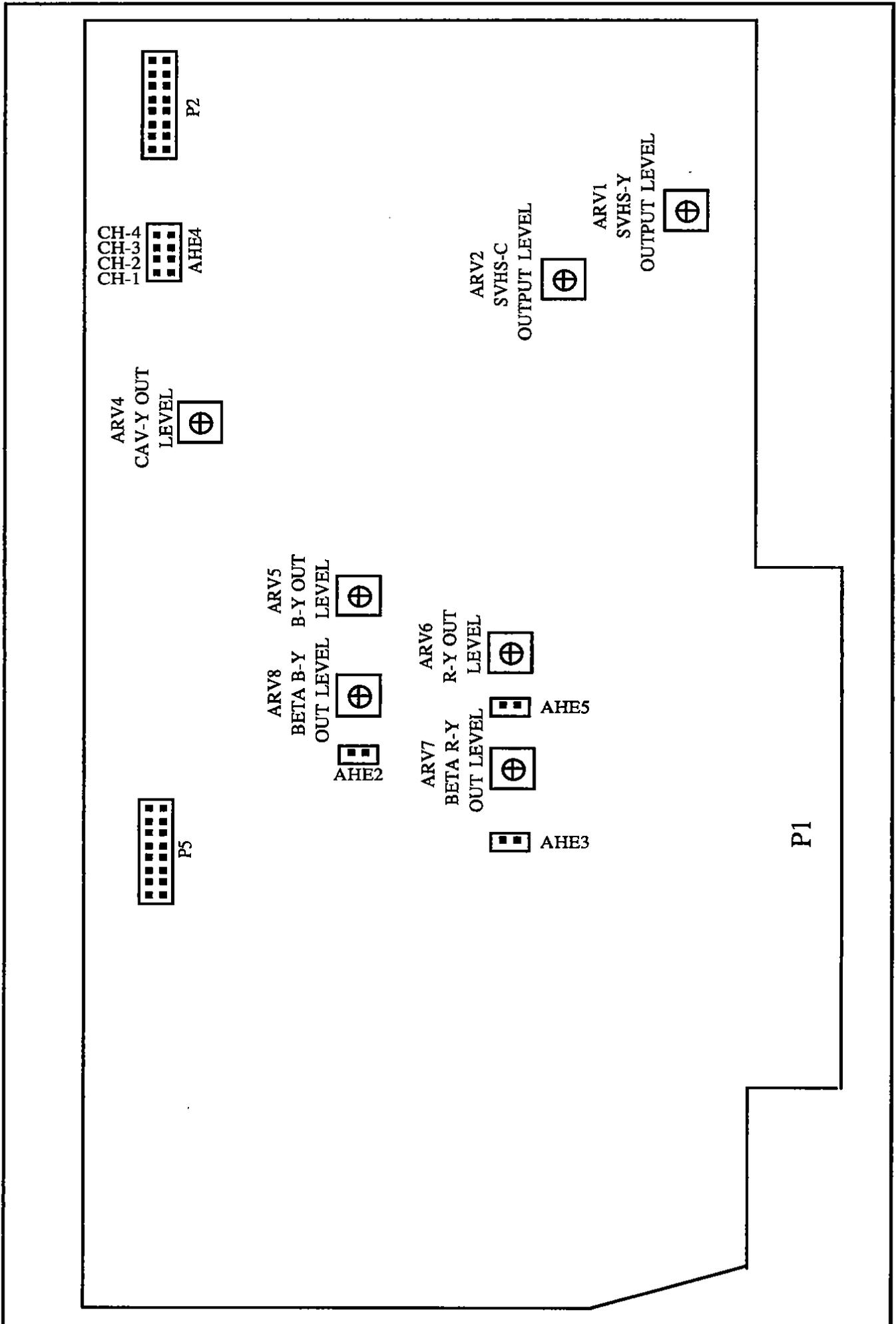
By installing AHE4 CH1 and AHE4-CH4 the S-Video input at CN1 will be routed to both video inputs 1 and 4. If this type of operation is desired, the 75 Ω termination for either channel 1 or 4 must be turned off on the Video Toaster preferences screen.

AHE5 Program Termination

Do not install this jumper.

Figure 2-1

Personal Component Adapter Jumper Positions



CHAPTER 3

Installation

CAUTION: In the interest of personal safety and to prevent damage to the cards, disconnect power before servicing this unit. Refer service to qualified personnel.

Refer to the instructions accompanying your computer for instructions on removing the top cover

Card Installation

Remove the cover on the access opening of the slot chosen for the card. (Keep the screw, You will need it later.)

Insert the PCA card into the computer. Align the gold pins with the socket on the computer board, then push the card firmly into the slot. You should feel the card snap into place. Install the screw on the rear panel support bracket.

Install the supplied 14" ribbon cable with two female connectors from the JP2 header on the Video Toaster to P2 on the PCA card. JP2 on the toaster is the right angled header pins located closest to the BNC's. Make sure the connectors are oriented so the red stripe on the edge of the cable is toward the front of the computer and there are no twists in the ribbon cable.

Install the supplied 14½" ribbon cable with one male and one female connector from the JP5 connector on the Video Toaster to J5 on the PCA card. Make sure the connectors are oriented so the red stripe on the edge of the cable is toward the front of the computer and there are no twists in the ribbon cable.

CAUTION: Ensure that the ribbon cables are installed correctly, damage to the Video Toaster can result if these cables are improperly installed.

Replace the top cover on your computer.

Figure 3-1

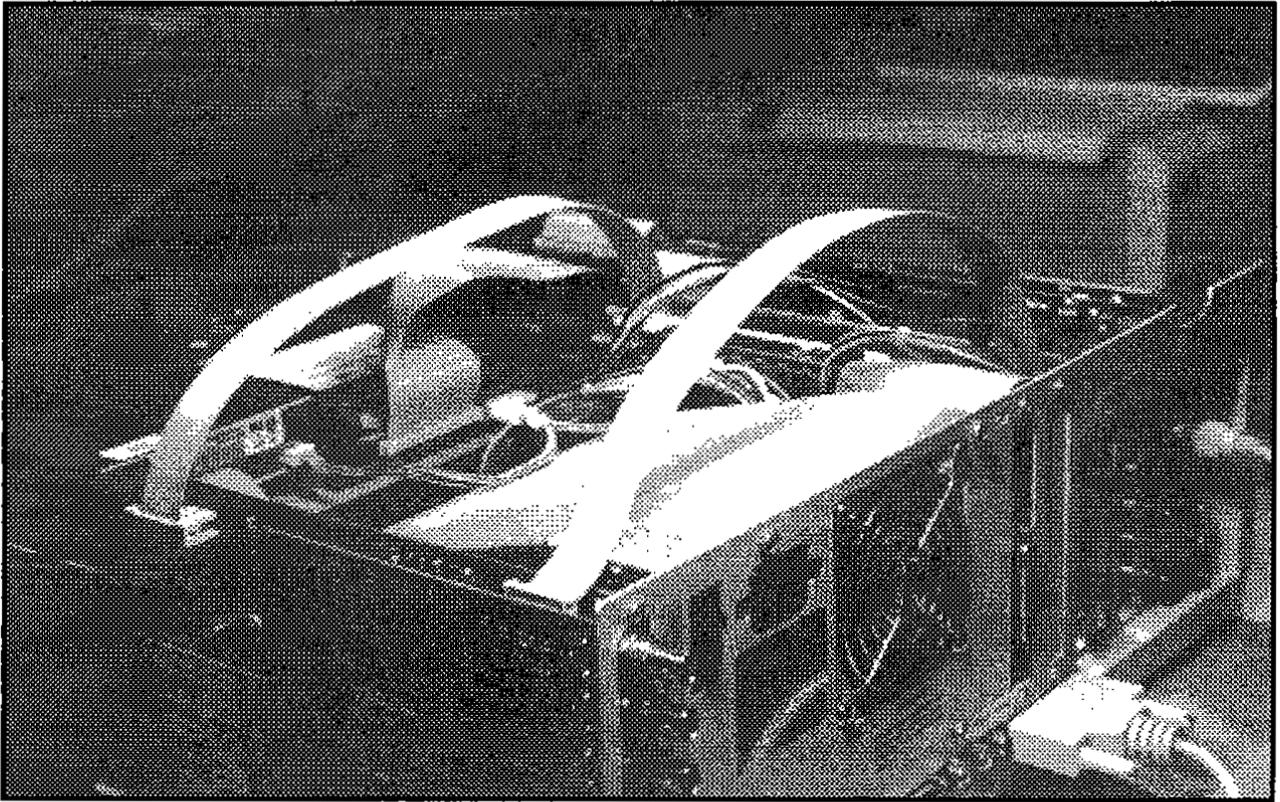
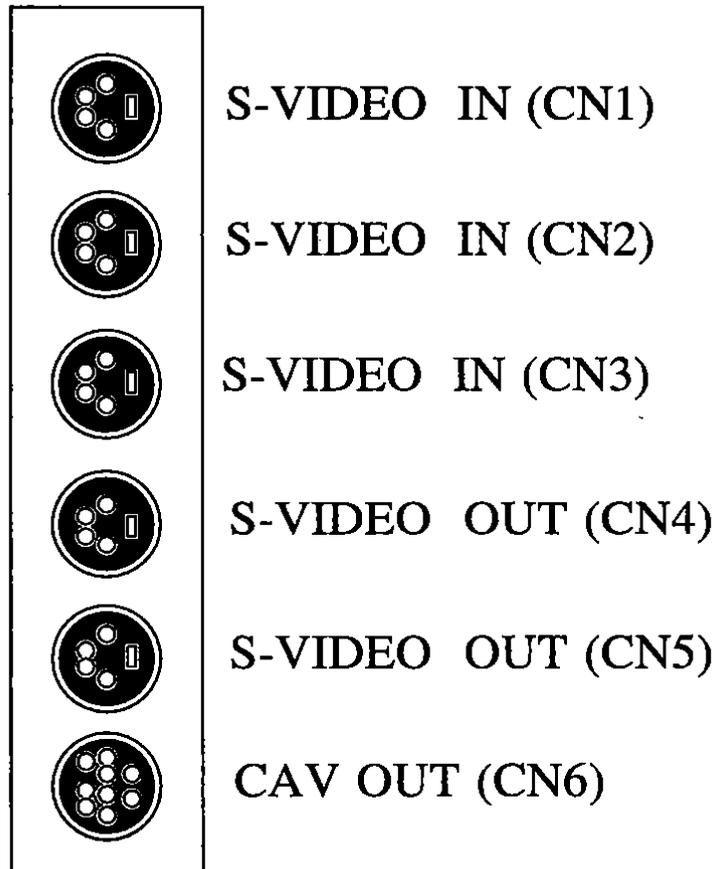


Figure 3-1 is an example of how to install the supplied ribbon cables. Note that the ribbon cables are not twisted and the red stripes on the edge of the cables are facing toward the front of the computer.

Figure 3-2

Personal Component Adapter I/O Connections



S-Video Inputs

These 4-pin connectors are used to input S-Video (S-VHS or Hi8) to the Video Toaster inputs 1 to 4. These inputs are normally connected to a time base corrected S-Video source using a standard S-Video 4-pin to 4-pin S-Video cable. (An acceptable time base corrected source would be an S-Video playback VTR routed through a DPS Personal TBC IV.)

S-Video Outputs

These 4-pin connectors provide the S-Video version of the video signal that would normally be on the Video Toaster's Program Output. If the Video Toaster's composite program output will not be used in your system, it **MUST** be terminated using a 75Ω external BNC type precision termination.

CAV Output

This Mini DIN-9 connector provides the Component Analog Video (Y, R-Y, B-Y) version of the video signal that would normally be on the Video Toaster's Program Output.

Interfacing Examples

The following examples illustrate the correct method of interfacing the Personal Component Adapter to several different types of video signals.

Figure 3-3

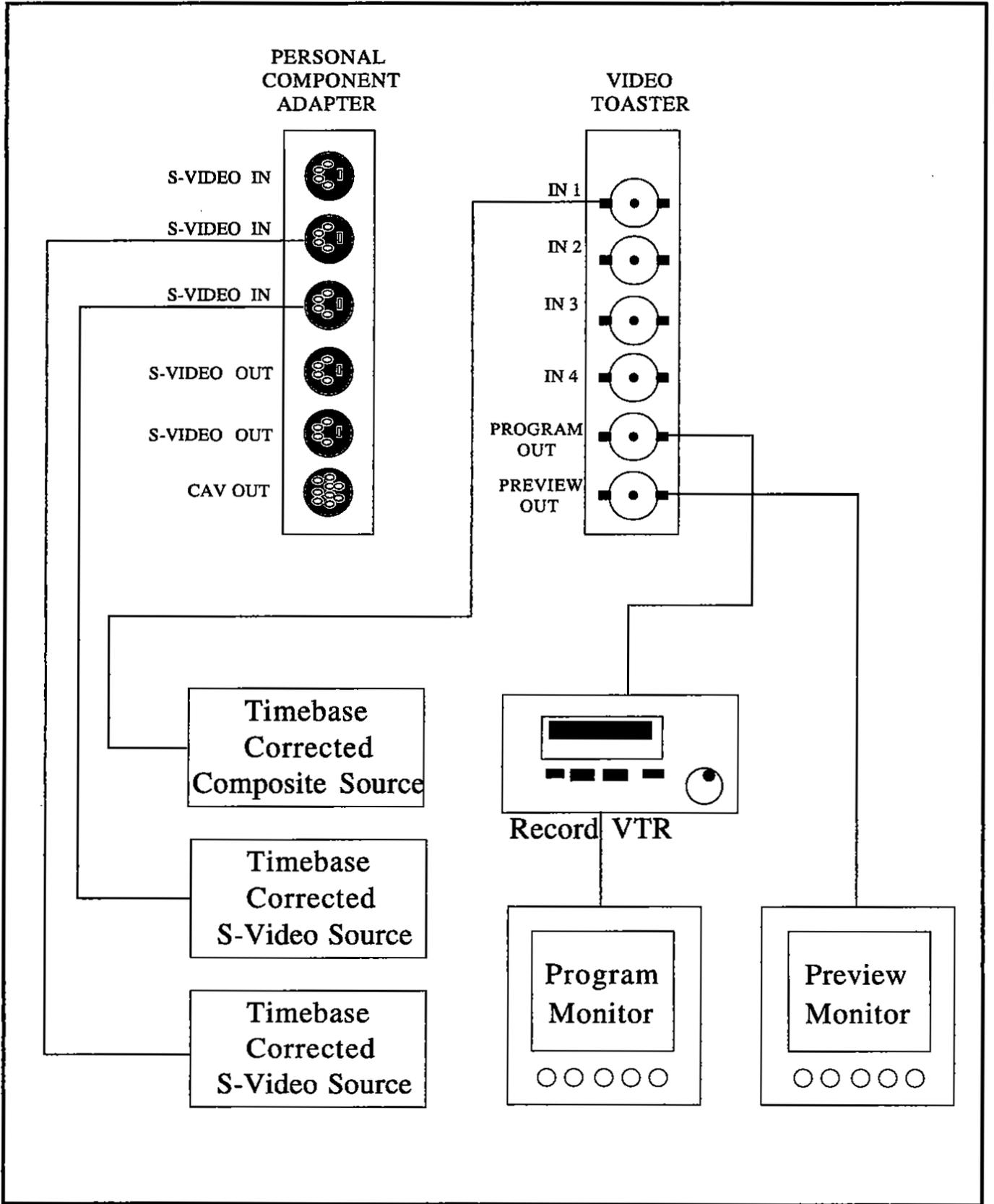


Figure 3-3 is an example of how to interface the toaster and the PCA card to one composite source and two S-Video Sources.

Figure 3-4

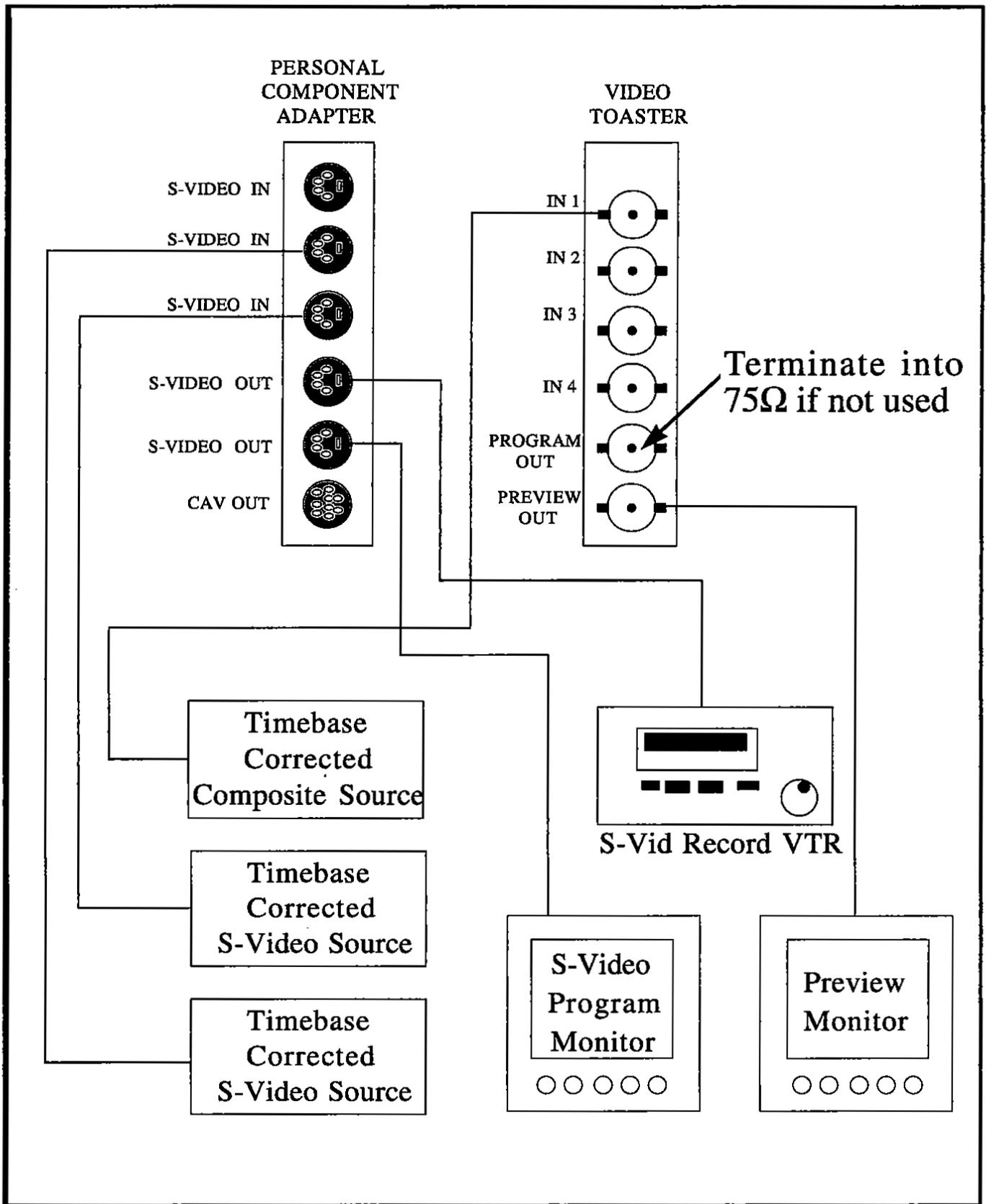


Figure 3-4 is an example of how to use the S-Video outputs. If the Video Toaster's composite program output will not be used in your system, it should be terminated using a 75Ω external BNC type precision termination.

Figure 3-5

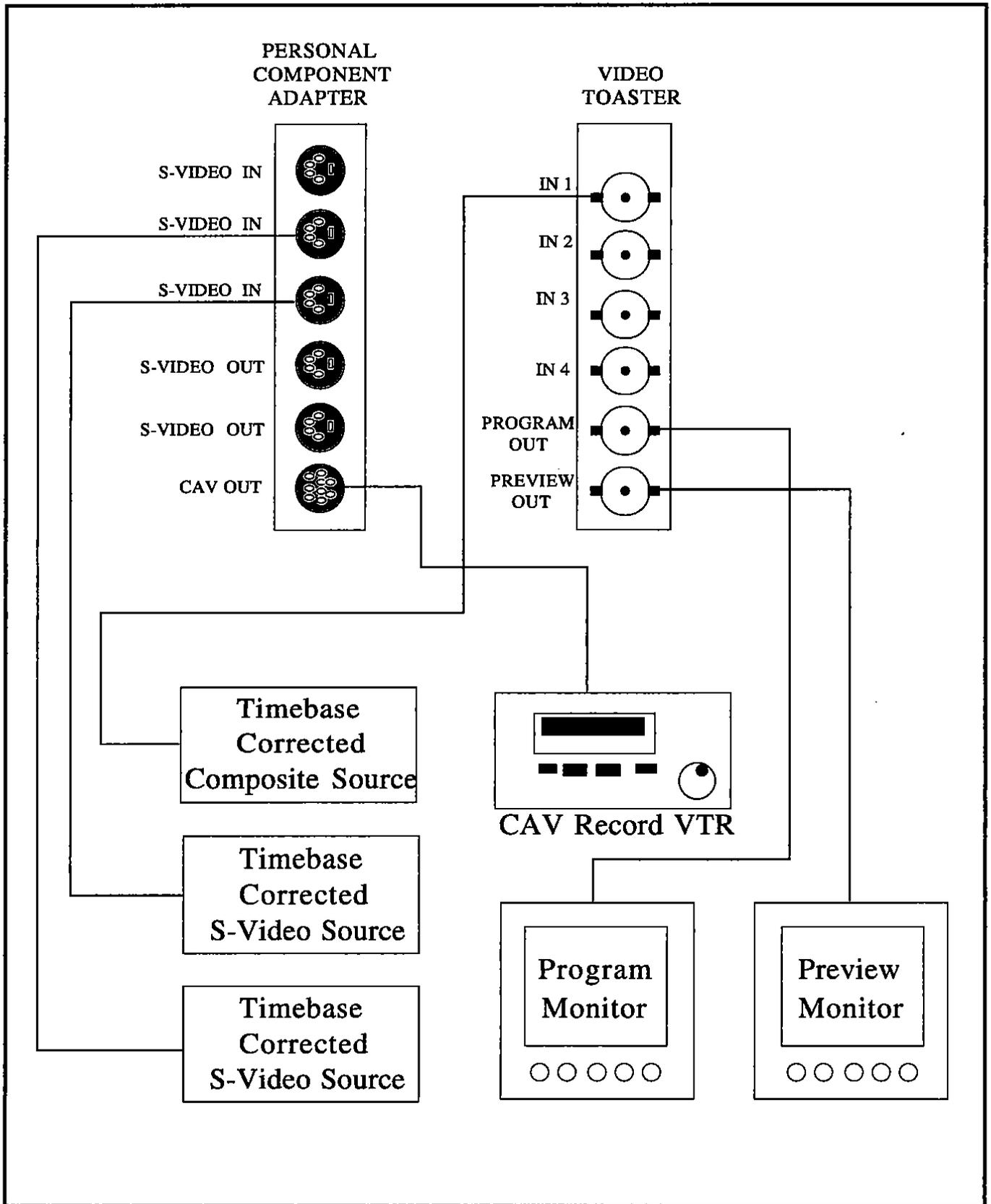
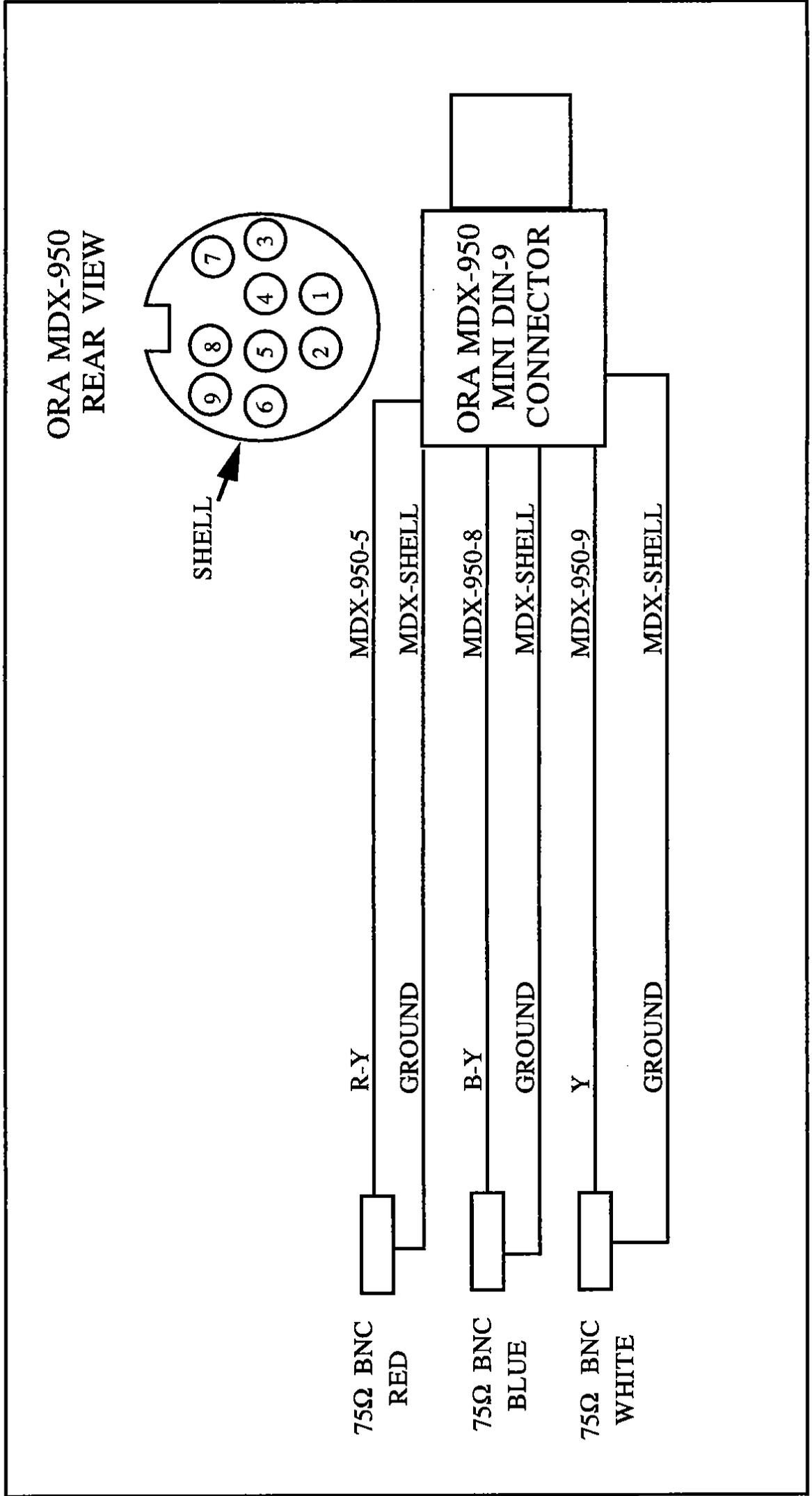


Figure 3-5 is an example of how to use the CAV video output.

Figure 3-6
CAV Breakout Cable Assembly



APPENDIX A

Specifications

Inputs:

3 - S-Video Type 4-Pin Y/C Inputs:

Y	1Vp-p	75Ω	(75% Color Bars)
C	600mVp-p	75Ω	(75% Color Bars)

Any of the existing Toaster BNC inputs can be used for NTSC video to the toaster provided the associated jumper on the DPS PCA card is not installed.

Outputs:

2 - S-Video Type 4-Pin Y/C Outputs.

Y	1Vp-p	75Ω	(75% Color Bars)
C	600mVp-p	75Ω	(75% Color Bars)

1 - Y, R-Y, B-Y component (BetaCAM/MII) compatible output 9-Pin Mini-Din connector with BNC breakout cable.

BetaCAM Output:

Y	1Vp-p	75Ω	(75% Color Bars)
R-Y	700mVp-p	75Ω	(75% Color Bars)
B-Y	700mVp-p	75Ω	(75% Color Bars)

MII Output:

Y	1Vp-p	75Ω	(75% Color Bars)
R-Y	486mVp-p	75Ω	(75% Color Bars)
B-Y	486mVp-p	75Ω	(75% Color Bars)

Signal Processing	4:2:2 Component
Sampling	8Bit, 14.31818MHz
Y/C Separation	3-Line Adaptive Comb Filter
Luminance Bandwidth	5.5MHz (-3db)
Chrominance Bandwidth	700KHz (-3db)
K-Factor	<1%
Signal to Noise	>57db Luminance Weighted

Power Consumption:

+12V	70mA
-12V	70mA
Total	1.7 Watts

APPENDIX B

FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Shielded cables must be used with this unit to ensure compliance with the Class A FCC limits.

APPENDIX C

Warranty

Digital Processing Systems Inc. warrants the original purchaser that this product is in good working condition for a period of two years from the date of purchase. Should this product, in Digital Processing System's opinion, malfunction within the warranty period, Digital Processing Systems Inc. will repair or replace this product without charge. This warranty does not apply to those products which have been damaged due to accident, unauthorized alterations, repairs or modifications.

Limitations

All warranties for this product, expressed or implied, are limited to two years from the date of purchase and no warranties, expressed or implied, will apply after that period.

The distributor, its dealers and customers agree that Digital Processing Systems Inc. shall not be liable for any loss of use, revenue or profit.

Digital Processing Systems Inc. makes no other representations of warranty as to fitness for purpose of merchantability of otherwise in respect to any of the products sold to the distributor pursuant to this agreement.

The liability of Digital Processing Systems Inc. in respect of any defective products will be limited to the repair or replacement of such products.

In no event shall Digital Processing Systems Inc. be responsible or liable for any damages arising from the use of such defective products whether such damages be direct, indirect, consequential or otherwise and whether such damages are incurred by the distributor or third party.

Warranty Service

Units requiring repair under warranty may be sent directly to Digital Processing Systems Inc. To obtain service under this warranty, first contact the Digital Processing Systems Customer Service Department to request a Return Material Authorization Number (RMA).

Canada and International (416) 754-8090

U.S.A. (606) 371-5533

Europe (0730) 233084

This number must be clearly displayed on the units external packaging. Units shipped without an RMA number will not be accepted. Include proof of purchase (including date of purchase), a note outlining the problem and the RMA number.

IMPORTANT: When shipping your unit, pack it securely and ship prepaid and insured. We will return it to you freight prepaid via surface transportation within the continental United States. Digital Processing Systems Inc. will not be held liable for damage of loss to the product in shipment.