



Jaguar Video

PESA Switching Systems
330A Wynn Drive
Huntsville, AL 35805

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Ordering Assistance, Service & Inquiries

Service and Ordering Assistance

PESA Switching Systems, Inc.

330A Wynn Drive
Huntsville, AL 35805

Main Numbers:

Tel: (256) 726-9200

Fax: (256) 726-9271

Service Department Numbers:

Tel: (256) 726-9222

Fax: (256) 726-9268

Sales Office

National Sales Office

PESA Switching Systems, Inc.
35 Pinelawn Road, Suite 99E
Melville, NY 11747

Tel: (800) 328-1008

Fax: (516) 845-5023



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Please address all comments or suggestions concerning this or other PESA manuals to:

**Publications Department
Attn: Charles E. Jaynes
(Engineering Technical Writer)
PESA Switching Systems, Inc.
330A Wynn Drive
Huntsville, Alabama 35805
(256) 726-9200 EXT. 145**



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Table of Contents

Jaguar Video

Section 1. Introduction

1.1 Manual Overview	1.1
1.2 General Description	1.2
1.3 Analog Video Specifications	1.4
1.4 Digital Video Specifications	1.6
1.5 Video Frame Specifications	1.7
1.6 PS130 Power Supply Specifications	1.7

Figures

Figure 1-1 Jaguar Video Routing Switcher Front View	1.3
Figure 1-2 Jaguar Video Routing switcher Rear View	1.3

Section 2. Installation

2.1 Introduction	2.1
General	2.1
2.2 Receipt Inspection	2.2
2.3 Unpacking	2.2
2.4 Location	2.4
2.5 Mounting	2.4
2.6 Cabling	2.4
2.7 Level Code (Strobe) Selection	2.5
2.8 Output/Input Code Selection	2.8
Output Code	2.8
Input Code	2.9
2.9 Analog Video Matrix Card Line and Sync Selection	2.10
2.10 Digital Video Matrix Card Line and Sync Selection	2.11
2.11 Output Monitor Card Level Code (Strobe) Selection	2.13
2.12 Output Monitor Card Input/Output Coding Select.	2.14
Input Code	2.14
Output Code	2.15
2.13 Output Monitor Card Line and Sync Selection	2.16
2.14 Input Buffer Card Installation	2.17
2.15 Reference Interface Card Installation	2.18
2.16 8X1 Crosspoint Card Installation	2.19
2.17 Output Combiner Card Installation	2.20
2.18 PS130 Power Supply Installation	2.21
2.19 3300 Controller Card Installation	2.22
2.20 Output Monitor Card Installation	2.22
2.21 16X16 Crosspoint Card Installation (Analog Video)	2.23

Table of Contents

Jaguar Video

Section 2. Installation Continued:

2.22	32X32 Matrix Card Installation	2.25
2.23	Rear Panel Connectors	2.25
	DC Power In/Out Connector	2.26
	Fan Connectors	2.27
	AC Power Connector	2.27
	System Alarm Connectors	2.27
	Control (PRC) Connectors	2.28
	Serial (CPU Link) Connectors (SERIAL 1 and SERIAL 2)	2.28
	RCP Panel Connectors	2.29
	Monitor Output Connectors	2.29
	Reference (Sync) Connectors (1 and 2)	2.29
	Video Input Connectors	2.29
	Video Output Connectors	2.30
2.24	Control Panel Connection	2.30
2.25	System Connections	2.31
	Connection Guide	2.31

Figures

Figure 2-1	Level Code Selection	2.6
Figure 2-2	Coding Switch Locations	2.7
Figure 2-3	Output Code Selection	2.8
Figure 2-4	Input Code Selection	2.9
Figure 2-5	Analog Video Matrix Card Line and Sync Selection	2.10
Figure 2-6	Analog Video Matrix Card Line and Sync Switch Loc.	2.11
Figure 2-7	Digital Video Matrix Card Line and Sync Selection	2.12
Figure 2-8	Digital Video Matrix Card Line and Sync Switch Loc.	2.12
Figure 2-9	Output Monitor Card Level Code	2.13
Figure 2-10	Output Monitor Card Switch Locations	2.14
Figure 2-11	Output Monitor Card Input Code Selection	2.15
Figure 2-12	Output Monitor Card Output Code Selection	2.16
Figure 2-13	Output Monitor Card Line and Sync Selection	2.17
Figure 2-14	Inputs and Outputs	2.24
Figure 2-15	Jaguar Video Routing Switcher Rear View	2.26
Figure 2-16	External Power Supply Isolation	2.26
Figure 2-17	Jaguar Video Frame and RCP Control Panel Inter.	2.31

Tables

Table 2-1	Jaguar Analog Video Configuration Table	2.3
Table 2-2	Jaguar Digital Video Configuration Table	2.3
Table 2-3	Switch Position to Binary Code Conversion	2.5

Table of Contents

Jaguar Video

Section 3. Operation

3.1	Introduction	3.1
3.2	Input Buffer Card Operation	3.1
	Power OK LED (Green)	3.1
3.3	Analog Video Output Combiner Card Operation	3.2
	Power OK LED (Green)	3.2
3.4	Digital Video Output Combiner Card Operation	3.2
	Power OK LED (Green)	3.2
3.5	Dual Reference Interface Card Operation	3.2
	Sync #1A Fail LED (Red)	3.2
	Sync #2A Fail LED (Red)	3.3
	Sync #1B Fail LED (Red)	3.3
	Sync #2B Fail LED (Red)	3.3
3.6	3300 Controller Card Operation	3.3
3.7	PS130 Power Supply Operation	3.3
3.8	Analog Video Matrix Card Operation	3.3
	Regulator Fault LED (Red)	3.4
	CPU Fault LED (Red)	3.4
	Power OK LED (Green)	3.4
3.9	Digital Video Matrix Card Operation	3.4
	Regulator Fault LED (Red)	3.4
	CPU Fault LED (Red)	3.4
	Power OK LED (Green)	3.4
3.10	Video Output Monitor Card Operation	3.5
	Power OK LED (Green)	3.5
	CPU Fault LED (Red)	3.5
3.11	Jaguar Analog Video Routing Switcher Adjustment	3.5
	Gain Adjustments	3.6
	Output Equalization Adjustments	3.7

Table of Contents

Jaguar Video

Section 4. Funtional

4.1	Introduction	4.1
4.2	Matrix Mid-Plane	4.1
4.3	Power Mid-Plane	4.2
4.4	Video Input Buffer Card	4.2
4.5	Analog Video Output Combiner Card	4.2
4.6	Digital Video Output Combiner Card	4.3
	Control	4.3
	Power	4.3
	2X1 Crosspoints	4.3
	Outputs	4.4
4.7	Dual Reference Interface	4.4
4.8	Rear Panel Connector	4.5
4.9	3300 Controller Card	4.5
4.10	PS130 Power Supply	4.5
4.11	32X32 Analog Video Matrix Card	4.6
	Control	4.6
	32X8 Control ICs	4.7
	Input	4.7
	16X16 Crosspoint Interface	4.7
	Output	4.8
	Power	4.8
4.12	16X16 Crosspoint Card	4.8
	Input	4.9
	16X1 Crosspoint	4.9
	Control Logic	4.9
4.13	32X32 Digital Video Matrix Card	4.9
	Control	4.9
	Crosspoint Matrix	4.10
	Input Equalizers	4.10
	Output Drivers	4.10
	Power Regulators	4.10
4.14	Analog Video Output Monitor Card	4.11
	Control	4.11
	3X8 Decoder	4.11
	4X1 Crosspoint	4.12
	Power	4.12
	Digital Output	4.12
4.15	Digital Video Output Monitor Card	4.12
4.16	8X1 Crosspoint Card	4.12

Table of Contents

Jaguar Video

Section 5. Maintenance

5.1	Introduction	5.1
5.2	General	5.1
5.3	Test Equipment	5.1
5.4	Preventive Maintenance	5.2
5.5	Maintenance	5.2
5.6	Corrective Maintenance	5.2
	Factory Repair Service	5.2
	Troubleshooting	5.3
	System Checks	5.4
	Replacement Parts	5.4
5.7	Filter Cleaning	5.4

Table of Contents

Jaguar Video

Section 6. Schematics

6.1 Schematics	6.1
General	6.1
Jaguar Video Mainframe Assembly	CD63-0765 6.2
Jaguar Video Chassis Assembly	CD63-0764 6.4
Matrix Mid-Plane	CA25-1309 6.5
.....	SC33-1309 6.7
Power Mid-Plane	CA25-1313 6.13
.....	SC33-1313 6.15
Video Input Buffer Card	CA25-1310 6.17
.....	SC33-1310 6.18
Analog Video Output Combiner Card	CA25-1311 6.19
.....	SC33-1311 6.20
Digital Video Output Combiner Card	CA25-1349 6.22
.....	SC33-1349 6.24
Dual Reference Interface	CA25-1340 6.28
.....	SC33-1340 6.30
Rear Panel Connector	CA25-1314 6.32
.....	SC33-1314 6.33
32X32 Analog Video Matrix Card	CA25-1276 6.34
.....	SC33-1276 6.36
16X16 Crosspoint Card	CA25-1284 6.51
.....	SC33-1284 6.53
32X32 Digital Video Matrix Card	CA25-1353 6.59
.....	SC33-1353 6.61
Analog/Digital Video Output Monitor Card	CA25-1316 6.70
.....	SC33-1316 6.71
8X1 Crosspoint Card	CA25-1312 6.74
.....	SC33-1312 6.75
Dummy Load Card	CA25-1356 6.76
.....	SC33-1356 6.77

Table of Contents

Jaguar Video

Section 7. Parts List

7.1 Parts List	7.1
General	7.1
Jaguar Video Mainframe Assembly	81906518250 7.2
Jaguar Video Chassis Assembly	81906518230 7.3
Matrix Mid-Plane	81906518130 7.4
Power Mid-Plane	81906518170 7.5
Video Input Buffer Card	81906518140 7.6
Analog Video Output Combiner Card	81906518150 7.7
Digital Video Output Combiner Card	81906518790 7.9
Dual Reference Interface	81906518620 7.12
Rear Panel Connector	81906518180 7.14
32X32 Analog Video Matrix Assembly	81906518480 7.15
32X32 Analog Video Matrix Card	81906517460 7.16
16X16 Crosspoint Card	81906517550 7.25
32X32 Digital Video Matrix Assembly	81906518860 7.27
32X32 Digital Video Matrix Card	81906518880 7.28
Analog Video Output Monitor Card	81906518200 7.32
Digital Video Output Monitor Card	81906518210 7.34
8X1 Crosspoint Card	81906518160 7.36
Dummy Load Card	81906518920 7.37
Matrix Extender Card	81906518930 7.38

1.1 Manual Overview

This manual provides detailed instructions for installing and operating the PESA Jaguar Video Switchers. This manual is divided into seven sections as shown. Sections 3 and 4 contain operational and functional descriptions of the Jaguar Video Switchers and their associated circuit cards.



Section 1, **INTRODUCTION**, summarizes the manual, describes the product, presents a list of terms, and provides the panel specifications.



Section 2, **INSTALLATION**, provides installation and setup instructions.



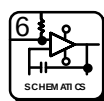
Section 3, **OPERATION**, describes system operation procedures.



Section 4, **FUNCTIONAL DESCRIPTIONS**, presents an in-depth description of each component.



Section 5, **MAINTENANCE**, explains procedures for maintenance.



Section 6, **SCHEMATICS**, gives a complete package of technical documents such as schematics, and assembly drawings.



Section 7, **PARTS LIST**, provides a detailed list of system parts and components.



1.2 General Description

The Jaguar Video Routing Switchers are housed in 6RU frames providing small profiles for space efficient installations while providing a 64X64 routing matrix. The Jaguar Video Frames can be equipped with either a single System Controller or dual System Controllers. The option of dual controllers provides seamless transfer of system control in case control change-over is required. The Jaguar Video Frame can also be equipped with up to four PS130 Power Supplies for maximum reliability and fail safe operation.

The Jaguar Video Routing Switchers are designed with mid-range size routing matrix applications in mind. The Video Routing Switchers provide a 64X64 size switching matrix. The main matrix components use plug-in circuit cards for ease of maintenance and component replacement. The Jaguar Video Routing Switchers can be serviced hot, allowing circuit card removal and insertion without powering down the matrix.

The main Jaguar Video Routing Circuit Cards feature easily visible LED indicators for quick view of critical voltage and circuit conditions. The Jaguar Video Frame comes equipped with one control port, two RS232 ports, four RS485 control panel ports, and external alarm connectors for audible monitoring of the operation of the internal power, controller circuits, and monitor circuits. Please note that the control port, the RS232 port, and the four RS485 ports are only active when at least one system controller is installed in the Jaguar Video Frame. The Jaguar Video Frame utilizes RS485 looping interfaces for system connection to remote control panels using standard twisted pair cables.

The Jaguar Video Routing Switcher utilizes the PESA System Controllers for system control either in single or dual configuration. The System Controller provides a user friendly graphical interface; operating in a Windows 95™ personal computer environment. The Jaguar Video Routing Switcher working in conjunction with the System Controller either in single or dual configuration utilizes PESA's low cost RCP line of control panels for remote system operation. The internal System Controller(s) can also control other frames (i.e. audio frames, and etc).

The Jaguar Analog Video Routing Switcher provides wide bandwidth performance for conventional NTSC/PAL analog video signals. The Jaguar Digital Video Routing Switcher is capable of switching and routing digital video up to and including 360Mb/s.

1.2 General Description Continued:

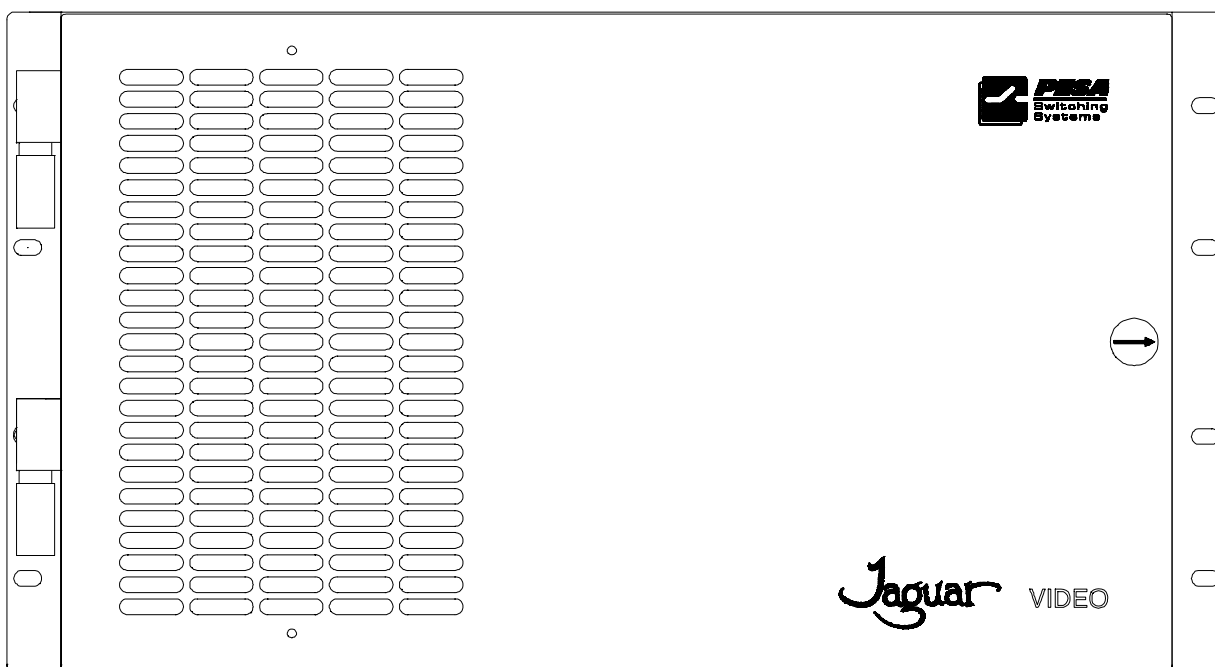


Figure 1-1 Jaguar Video Routing Switcher Front View

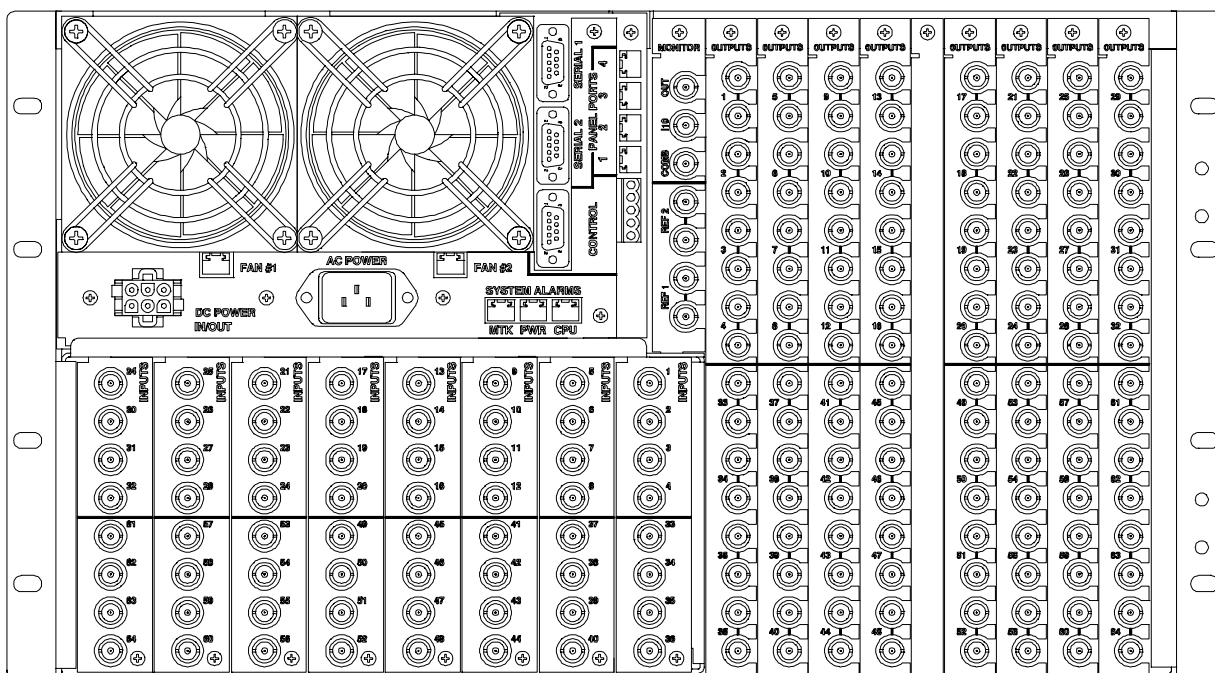


Figure 1-2 Jaguar Video Routing switcher Rear View

1.3 Analog Video Specifications

INPUT CHARACTERISTICS

Level	1V P-P Nominal 2V P-P Max (without obvious distortion)
Impedance	75 Ohm Internally Terminated
Return Loss	>40dB to 5MHz >15dB to 100MHz
Coupling	Direct (DC)
Type	Non-Balanced Standard/Differential Inputs Optional
Connector Type	BNC

OUTPUT CHARACTERISTICS

Level	1V P-P Nominal 2V P-P Max (without obvious distortion)
Impedance	75 Ohms
Return Loss	>40dB to 5MHz >15dB to 100MHz
Coupling	Direct (DC)
DC on Outputs	<±20mV Max
Connector Type	BNC
Number	Dual Outputs
Slew Rate	>200V/μS
Equalization	50 Meters Belden 8281 or Equivalent to 100MHz

GAIN CHARACTERISTICS

Gain	Unity
Gain Stability	<±0.1dB Max
Gain Adjust Range	±0.5dB

LINEAR DISTORTIONS

Frequency Response	±0.1dB to 10MHz ±0.5dB to 35MHz ±1.0dB to 60 MHz +1.0dB, -3.0dB to 125MHz
Vertical Tilt	0.25% (50Hz Square Wave)
Horizontal Tilt	0.25%
Low Frequency	+0.2%/ms Max with 10% Overshoot (10% - 90% or 90% - 10% change)

1.3 Analog Video Specifications Continued:

PULSE AND BAR RESPONSES

Factor (2T)

Bar Slope

0.2% K

Pulse/Bar Ratio

0.2% K

Pulse Sharp

0.2% K

CHROMINANCE / LUMINANCE CHARACTERISTICS

Gain Inequality

±1% Max

Delay Inequality

±1ns

NON-LINEAR DISTORTION CHARACTERISTICS

(All tests, 10% - 90%, 3.58MHz or 12.5% - 87.5%, 4.43MHz)

Differential Gain

0.1% @ 4.43MHz

Envelop Delay

<2nS, 50MHz to 85MHz

Differential Phase

0.1° @ 4.43MHz

Line Time Non-Linearity

0.2%

Transient Gain

1% (Luminance, Chrominance, or Sync)

CROSSTALK CHARACTERISTICS

(All Inputs and Outputs Hostile)

Video to Video

≤-60dB to 5MHz

≤-35dB @ 35MHz

≤-15dB @ 125MHz

SWITCHING CHARACTERISTICS

Switching Time

≤1μS

Switching Transient

22mV (30 IRE Units)

Differential Delay

Input to Input, Same Output

±1.0° @ 4.43MHz

Output to Output, Same Input

±2.5° @ 4.43MHz

SIGNAL TO NOISE CHARACTERISTICS

Video Filter (Low Pass to 5MHz std B, C, G, H, I or to 4.2MHz std M)

-73dB

Luminance Weighting Filter (std A, B, C, D, G, H, K, L)

-81dB

1.4 Digital Video Specifications

INPUT CHARACTERISTICS

Impedance	75 Ohm, Internally Terminated, Non-Looping, BNC
Return Loss	>15dB 5MHz to 270MHz
Standard	SMPTE 259M for (D1, 270Mbit/s); (D2 or D3, NTSC, 143Mbit/s); (D2 or D3, PAL, 177Mbit/s); and the proposed (Compressed, 16:9 HDTV, 360Mbit/s)
Equalization	Automatic equalization for 0 to 250 meters of Belden 8281 or equivalent for data rates up to 270 Mbit/s and for 0 to 150 meters for data rates up to 360Mbit/s.

OUTPUT CHARACTERISTICS

Impedance	75 Ohm BNC
Return Loss	>15dB 5MHz to 270MHz
Signal Amplitude	800mV $\pm$ 10%, Terminated into 75 Ohms
DC Offset	$\pm$ 0.5V, Terminated into 75 Ohms
Rise/Fall Times	0.6nS $\pm$ 100pS (20% to 80%) Terminated into 75 Ohms
Timing Jitter	<0.2UI P-P (As defined by SMPTE 259M)
Alignment Jitter	<0.2UI P-P (As defined by SMPTE 259M)
Standard	SMPTE 259M for (D1, 270Mbit/s); (D2 or D3, NTSC, 143Mbit/s); (D2 or D3, PAL, 177Mbit/s); and the proposed (Compressed, 16:9 HDTV, 360Mbit/s)
Number	Dual Outputs
Reclocking	Auto Standards @ 143 Mbit/s, 177Mbit/s, 270Mbit/s and 360Mbit/s

1.5 Video Frame Specifications

POWER REQUIREMENTS

(A minimum of two PS130 Power Supplies are required for power-up.)

Dual Range 115VAC $\pm 10\%$ and 220VAC $\pm 10\%$, 47Hz - 63Hz

IEC380 Standard Power Sockets

SAFETY STANDARDS

(APPLIED FOR AGENCY APPROVALS)

UL, CSA, VDE, and CE

RFI AND EMI STANDARDS

FCC

PHYSICAL CHARACTERISTICS

Height 10.5 Inches (6RU) (267mm)

Width 19 Inches (483mm)

Depth ? Inches (?mm)

Weight 55lbs. (?kg)

OPERATIONAL ENVIRONMENT

Temperature 0-40°C

Humidity 0-90% Non-Condensing

1.6 PS130 Power Supply Specifications

INPUT POWER

Power 163 Watts

Rated Voltage Range 100 - 240 VAC

Operating Voltage Range 90 - 264 VAC

Frequency Range 47 - 63 Hz

Nominal Current 1.6A rms @ 115 VAC

0.78A rms @ 230 VAC

Peak Inrush Current TBD A peak @ 230 VAC

Efficiency 80%

Power Factor 0.9 Minimum

OUTPUT POWER

Maximum Total Power 130 Watts

Output Voltage +8.5VDC +6%; -0% @ 7.65A

-8.5VDC -6%, +0% @ 7.65A

High Frequency Noise Voltage (>10KHz) 20mV P-P

Ripple Voltage (2X Line Frequency) +200mV peak

2.1 Introduction

This section details the Jaguar Video Routing Switcher installation procedures. The following topics are discussed:

- Receipt Inspection
- Unpacking
- Location
- Mounting
- Cabling
- Jaguar Frame Level Code (Strobe) Selection
- Jaguar Frame Input/Output Coding Selection
- Analog Video Matrix Card Line and Sync Selection
- Digital Video Matrix Card Line and Sync Selection
- Output Monitor Card Level Code (Strobe) Selection
- Output Monitor Card Input Coding Selection
- Output Monitor Card Output Coding Selection
- Output Monitor Card Line and Sync Selection
- Input Buffer Card Installation
- Reference Card Installation
- 8X1 Crosspoint Card Installation
- Output Combiner Card Installation
- PS130 Power Supply Installation
- System Controller Card Installation
- Output Monitor Card Installation
- 16X16 Crosspoint Card Installation (Analog Video)
- 32X32 Matrix Card Installation
- Rear Panel Connectors
- Control Panel System Connections
- System Connections

General

If specified when ordered, the Jaguar Video Frame will be configured for the intended system at the factory. Before attempting to install any frame, matrix card, controller card, or power supply; this section should be read carefully. **NOTE:** See section 2.18 for power-up instructions.

WARNING

THE JAGUAR VIDEO CHASSIS AND PS130 POWER SUPPLIES CONTAIN ELECTRICAL SHOCK HAZARDS. THE JAGUAR VIDEO ROUTING SWITCHER AND THE PS130 POWER SUPPLIES SHOULD ONLY BE SERVICED BY QUALIFIED SERVICE PERSONNEL AND/OR QUALIFIED TECHNICIANS.



2.1 Introduction Continued:

NOTICE

BOTH THE ANALOG AND DIGITAL JAGUAR VIDEO ROUTING SWITCHERS CONTAIN STATIC SENSITIVE DEVICES. CARE SHOULD BE TAKEN WHEN IT IS NECESSARY TO HANDLE THE INTERNAL CIRCUIT CARDS. IT IS RECOMMENDED THAT A GROUND WRIST STRAP AND GROUNDING MAT BE USED BEFORE ATTEMPTING ANY EQUIPMENT INSTALLATIONS.

2.2 Receipt Inspection

The Jaguar Video Routing Switcher was tested and inspected prior to leaving the factory. Upon receipt, inspect the equipment for shipping damage. If any damage is found, contact the carrier immediately and save all packing material.

2.3 Unpacking

The standard Jaguar Analog Video Routing Switcher is comprised of a frame (which includes the Power Mid-Plane, the Matrix Mid-Plane, and the Rear Panel Connector Assembly), eight Video Input Buffer Cards, one Reference Interface Card, four 32X32 Analog Video Matrix Cards, four 16X16 Crosspoint Cards per 32X32 Analog Video Matrix Card (16 total), eight Analog Video Output Combiner Cards, two 3300 Controller Cards, and four PS130 Power Supplies. Optionally, an Analog Video Output Monitor Card and eight 8X1 Crosspoint Cards (one per Analog Video Output Combiner Card) may also be included in the Jaguar Analog Video Routing Switcher's configuration. See Table 2-1 for complete configuration details.

The standard Jaguar Digital Video Routing Switcher is comprised of a frame (which includes the Power Mid-Plane, the Matrix Mid-Plane, and the Rear Panel Connector Assembly), eight Video Input Buffer Cards, one Reference Interface Card, four 32X32 Digital Video Matrix Cards, eight Digital Video Output Combiner Cards, two 3300 Controller Cards, and four PS130 Power Supplies. Optionally, a Digital Video Output Monitor Card and eight 8X1 Crosspoint Cards may also be included in the Jaguar Digital Video Routing Switcher's configuration. See Table 2-2 for complete configuration details.

2.3 Unpacking Continued:

Prior to discarding packing material compare the parts received against the packing list. Carefully inspect the layers of packing material for any components which may have been overlooked during the initial unpacking.

Table 2-1 Jaguar Analog Video Configuration Table

JAGUAR ANALOG VIDEO ROUTING SWITCHER CONFIGURATION	
Video Frame (Includes the Power Mid-Plane, the Matrix Mid-Plane, and the Rear Panel Connector Assembly)	1
Video Input Buffer Cards	8
Reference Interface Card	1
32X32 Analog Video Matrix Cards	4
16X16 Crosspoint Cards	16 (4 per 32X32 Analog Video Matrix Card)
Analog Video Output Combiner Cards	8
3300 Controller Cards	2
PS130 Power Supplies	4
Analog Video Output Monitor Card (Optional)	1
8X1 Crosspoint Cards (Optional)	8 (1 per Analog Video Output Combiner Card)

Table 2-2 Jaguar Digital Video Configuration Table

JAGUAR DIGITAL VIDEO ROUTING SWITCHER CONFIGURATION	
Video Frame (Includes the Power Mid-Plane, the Matrix Mid-Plane, and the Rear Panel Connector Assembly)	1
Video Input Buffer Cards	8
Reference Interface Card	1
32X32 Digital Video Matrix Cards	4
Digital Video Output Combiner Cards	8
3300 Controller Cards	2
PS130 Power Supplies	4
Digital Video Output Monitor Card (Optional)	1
8X1 Crosspoint Cards (Optional)	8 (1 per Digital Video Output Combiner Card)

2.4 Location

Both models of the Jaguar Video Routing Switcher may be located anywhere power is available. However, units should be mounted as close as possible to their associated equipment to minimize cable runs. Forced air cooling is provided by a fans located at the back of the units. Care should be taken not to block airflow around these fans. Installation should be in an area where the ambient temperature does not exceed 40°C (104°F) inside the equipment rack.

2.5 Mounting

Both the analog and digital models of the Jaguar Video Routing Switcher are rack mountable in a standard 19" equipment rack. Sufficient space must be provided behind the equipment racks to allow for the control cables, signal cables, and power cables. All mounting holes should be utilized and mounting hardware tightened securely. As with all equipment installed in a rack, the bottom screw on each side should be installed before proceeding with the remainder of the screws. Then all screws should be securely tightened. Support the Jaguar Video Routing Switcher's bottom while installing it in the rack.

To install a Jaguar Video Routing Switcher in an equipment rack follow these steps:

1. Align the frame with the slotted opening in the rack.
2. Install the bottom screws first.
3. Install the two top screws
4. Install the other four screws in their allocated positions.
5. Tighten all of the screws until they are secure.

2.6 Cabling

Considerable weight will be added to the rear panel of the Jaguar Video Routing Switchers by the control, signal, and power cables. Therefore, all cables should be strain relieved and secured to racks or other supporting structures. Failure to provide adequate cable support can result in cables separating from connectors.

2.6 Cabling Continued:

If cable runs are to be stored under an elevated floor, they should be tied to the racks as a guide. If cables are run along the floor, do not allow them to lay in the work area behind the racks. Stepping or tripping on the cables may result in connections being pulled free or wire breakage inside the insulation. The Jaguar Video Routing Switcher should be installed in the equipment rack prior to attaching cables.

Use the following rules when cabling the Jaguar Video Routing Switcher:

1. Lay all cables in their intended positions, separating control, video, and power cables wherever possible.
2. Provide proper support for each cable during the cabling process. The use of tie-wraps is recommended.

2.7 Level Code (Strobe) Selection

The level (strobe) select switch, S3, (a binary coded switch) is located on the inside of the Jaguar Video Routing Switcher on upper left-hand side of the Matrix Mid-Plane. For all switch position to binary code conversions refer to Table 2-3.

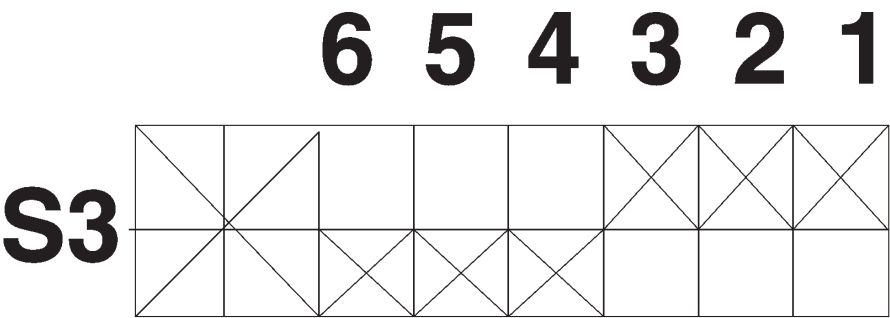
Table 2-3 Switch Position to Binary Code Conversion

SWITCH POSITION TO BINARY CODE CONVERSION	
SWITCH POSITION	BINARY CODE
1	1
2	2
3	4
4	8
5	16
6	32
7	64
8	128

2.7 Level Code (Strobe) Selection Continued:

Switch numbers are 1 through 8 right to left. Switches 1-6 select level codes 1 through 62. **Switches 7 and 8 are not used – their position is unimportant.** Refer to Figure 2-1 for an example of level code selection and see Figure 2-2 for the physical location of the level code switch.

Physical 0 (Logical 1) = OFF (UP)
Physical 1 (Logical 0) = ON (DOWN)



SHOWN WITH LEVEL CODE 7 SELECTED

Figure 2-1 Level Code Selection

SWITCH POSITIONS	6	5	4	3	2	1
STROBE LEVEL 1	0	0	0	0	0	1
STROBE LEVEL 2	0	0	0	0	1	0
STROBE LEVEL 3	0	0	0	0	1	1
STROBE LEVEL 4	0	0	0	1	0	0
STROBE LEVEL 5	0	0	0	1	0	1
STROBE LEVEL 6	0	0	0	1	1	0
STROBE LEVEL 7	0	0	0	1	1	1
UP TO....						
STROBE LEVEL 62	1	1	1	1	1	0

2.7 Level Code (Strobe) Selection Continued:

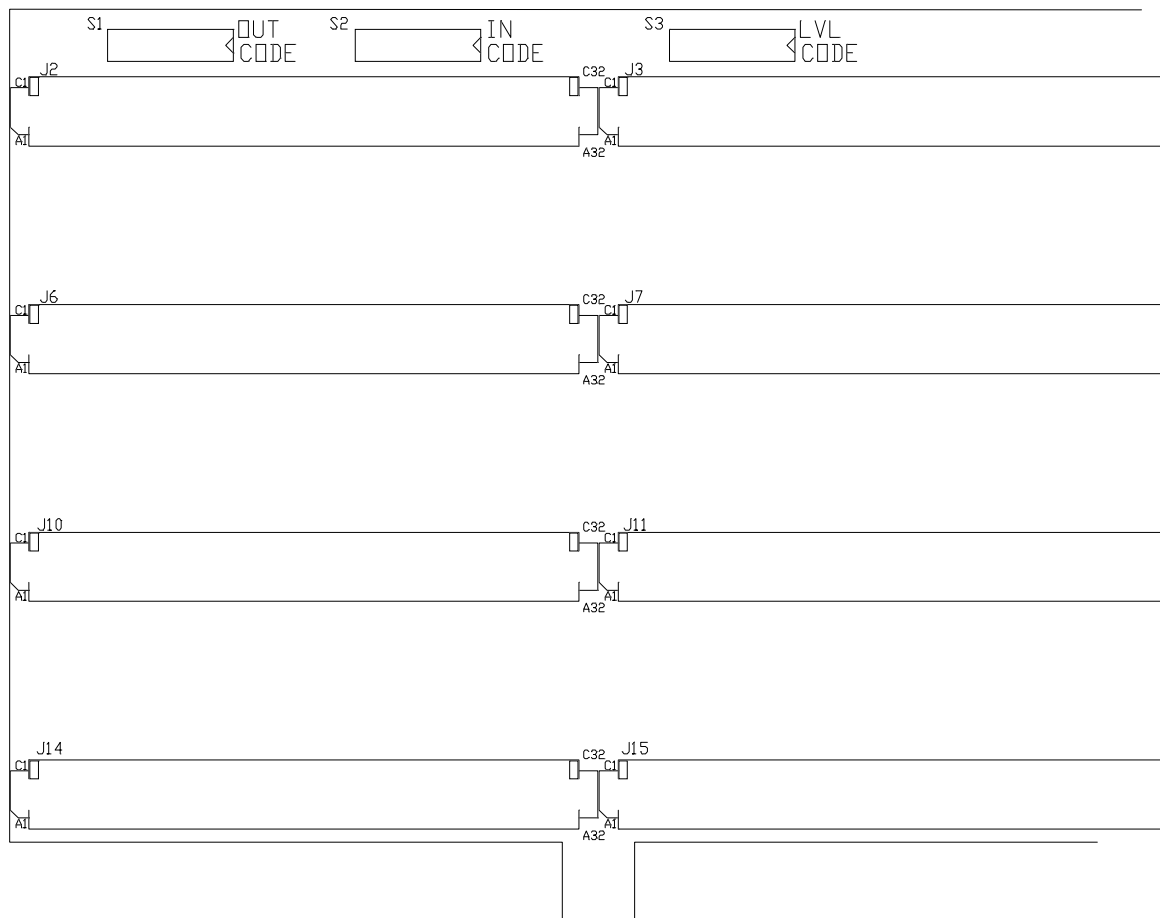


Figure 2-2 Coding Switch Locations

2.8 Output/Input Code Selection

Input and output coding switches are located on the inside of the Jaguar Video Routing Switcher on upper left-hand side of the Matrix Mid-Plane. The input and output switch numbers run 1 to 8, right to left. For all switch position to binary code conversions refer to Table 2-3.

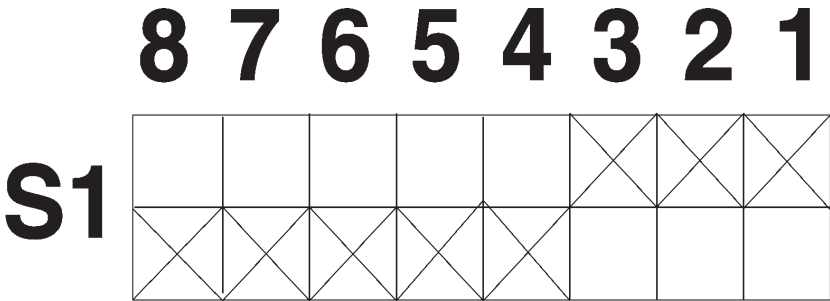
Switch S1 (outcode switch) selects output codes 0-255 and switch S2 (incode switch) selects input codes 0-255. Refer to Figures 2-3 and 2-4 for examples of input and output code selection and see Figure 2-2 for the physical location of the output and input code switches.

Output Code

Physical 0 (Logical 1) = OFF (UP)
Physical 1 (Logical 0) = ON (DOWN)

NOTE: The following are logical selections. Output code 0 is all switches on (down) or all switches in the physical 1 position.

SWITCH POSITION	8	7	6	5	4	3	2	1	OUTPUTS
OUTPUT CODE 0	0	0	0	0	0	0	0	0	1-64
OUTPUT CODE 1	0	0	0	0	0	0	0	1	65-128
OUTPUT CODE 2	0	0	0	0	0	0	1	0	129-192
OUTPUT CODE 3	0	0	0	0	0	0	1	1	193-256
OUTPUT CODE 4	0	0	0	0	0	1	0	0	257-320
OUTPUT CODE 5	0	0	0	0	0	1	0	1	321-384
OUTPUT CODE 6	0	0	0	0	0	1	1	0	385-448
OUTPUT CODE 7	0	0	0	0	0	1	1	1	449-512
UP TO....									
OUTPUT CODE 14	0	0	0	0	1	1	1	0	961-1024



SHOWN WITH OUTPUT CODE 7 SELECTED

Figure 2-3 Output Code Selection

2.8 Input/Output Code Selection Continued:

Input Code

Physical 0 (Logical 1) = OFF (UP)

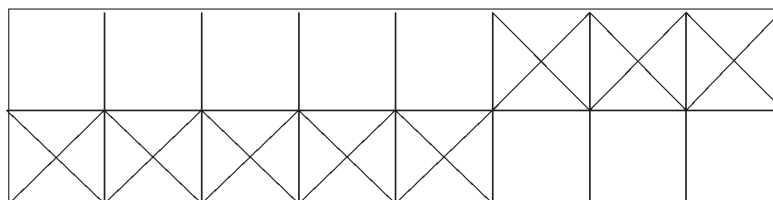
Physical 1 (Logical 0) = ON (DOWN)

NOTE: The following are logical selections. Input code 0 is all switches on (down) or all switches in the physical 1 position.

SWITCH POSITION	8	7	6	5	4	3	2	1	INPUTS
INPUT CODE 0	0	0	0	0	0	0	0	0	1-64
INPUT CODE 1	0	0	0	0	0	0	0	1	65-128
INPUT CODE 2	0	0	0	0	0	0	1	0	129-192
INPUT CODE 3	0	0	0	0	0	0	1	1	193-256
INPUT CODE 4	0	0	0	0	0	1	0	0	257-320
INPUT CODE 5	0	0	0	0	0	1	0	1	321-384
INPUT CODE 6	0	0	0	0	0	1	1	0	385-448
INPUT CODE 7	0	0	0	0	0	1	1	1	449-512
UP TO....									
OUTPUT CODE 14	0	0	0	0	1	1	1	0	961-1024

8 7 6 5 4 3 2 1

S2



SHOWN WITH INPUT CODE 7 SELECTED

Figure 2-4 Input Code Selection

2.9 Analog Video Matrix Card Line and Sync Selection

The 32X32 Analog Video Matrix Card's line and sync select switch, S1, is located in the middle, left side of the 32X32 Analog Video Matrix Card. Switch numbers are 1 through 4 top to bottom. Switch numbers 1 and 2 select the video line (sync 2) to trigger switches on and switch numbers 3 and 4 select the video line (sync 1) to trigger switches on. Refer to Figure 2-5 for examples of line and sync selection and see Figure 2-6 for the physical location of the 32X32 Analog Video Matrix Card's line and sync select switch.

RIGHT = CLOSED
LEFT = OPEN

Switch 1	Switch 2	Switch 3	Switch 4	Sync 1 Line #	Sync 2 Line #
X	X	OPEN	OPEN	13	X
X	X	OPEN	CLOSED	12	X
X	X	CLOSED	OPEN	11	X
X	X	CLOSED	CLOSED	10	X
OPEN	OPEN	X	X	X	13
OPEN	CLOSED	X	X	X	12
CLOSED	OPEN	X	X	X	11
CLOSED	CLOSED	X	X	X	10

Figure 2-5 32X32 Analog Video Matrix Card Line and Sync Selection

2.9 Analog Video Matrix Card Line and Sync Sel. Cont:

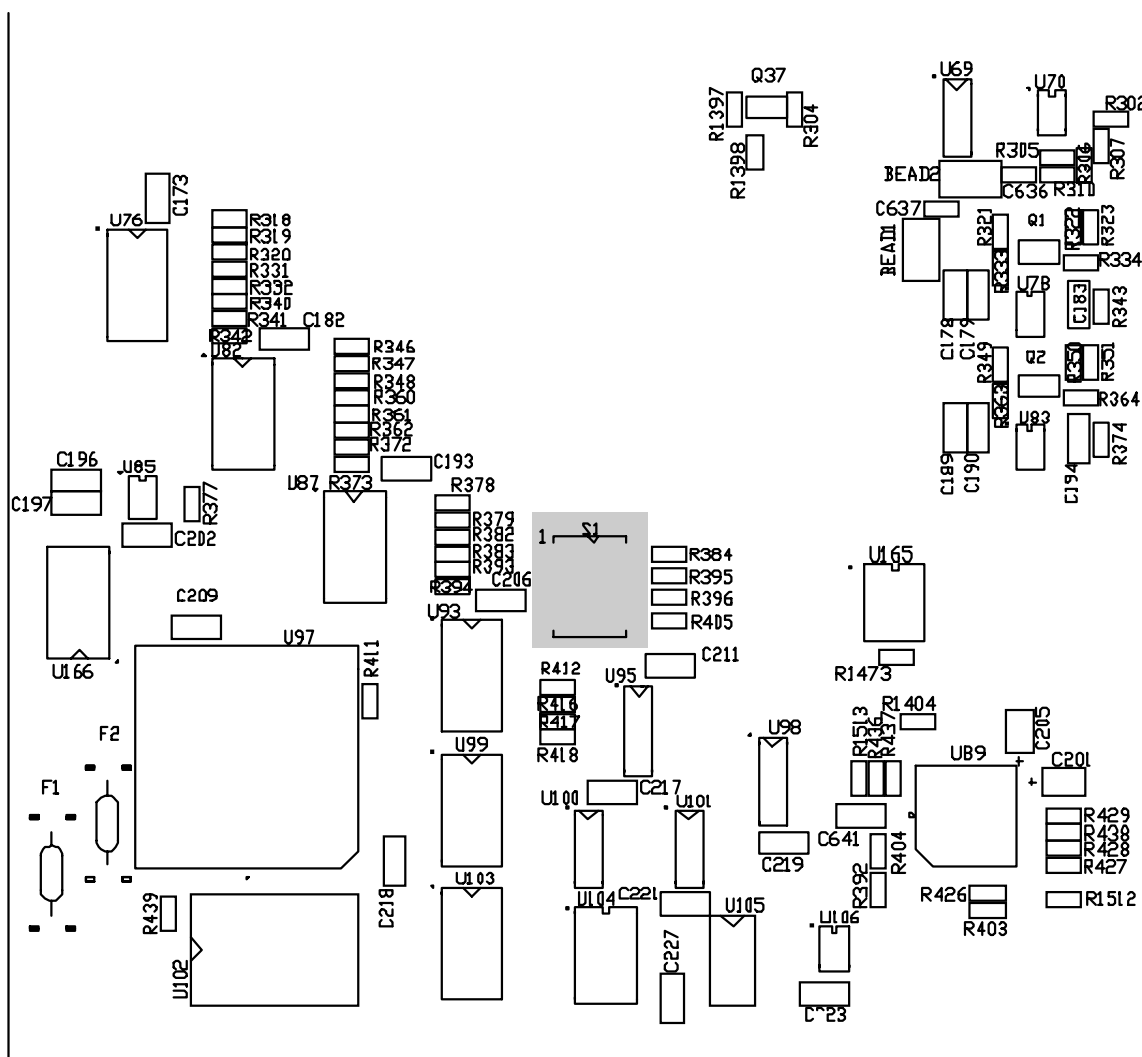


Figure 2-6 32X32 Analog Video Matrix Card Line and Sync Switch Location

2.10 Digital Video Matrix Card Line and Sync Selection

The 32X32 Digital Video Matrix Card's line and sync select switch, S1, is located on the middle, left side of the 32X32 Digital Video Matrix Card. Switch numbers are 1 through 4 left to right. Switches 1 and 2 select the video line to trigger switches on. Switch 3 selects the sync signal which will be used to time switch commands. **Switch 4 is not used – its position is unimportant.** Refer to Figure 2-7 for examples of line and sync selection and see Figure 2-8 for the physical location of the 32X32 Digital Video Matrix Card's line and sync select switch.

2.10 Digital Video Matrix Card Line and Sync Sel. Cont:

UP = CLOSED
DOWN = OPEN

LINE SEL 1	LINE SEL 0	SWITCH LINE
OPEN	OPEN	LINE 13
OPEN	CLOSED	LINE 12
CLOSED	OPEN	LINE 11
CLOSED	CLOSED	LINE 10

SYNC1/SYNC2	SELECTED SYNC
OPEN	SYNC2
CLOSED	SYNC1

Figure 2-7 32X32 Digital Video Matrix Card Line and Sync Selection

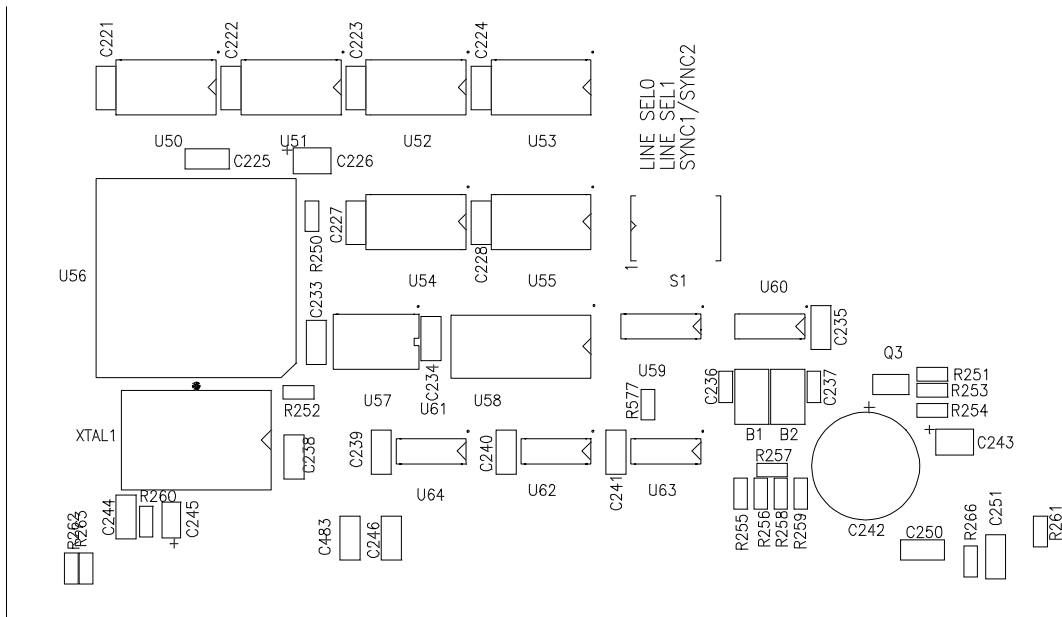


Figure 2-8 32X32 Digital Video Matrix Card Line and Sync Switch Location

2.11 Output Monitor Card Level Code (Strobe) Selection

The Output Monitor Card's level (strobe) select switch, S2, (a binary coded switch) is located on the front edge of the Output Monitor Card. For all switch position to binary code conversions refer to Table 2-3.

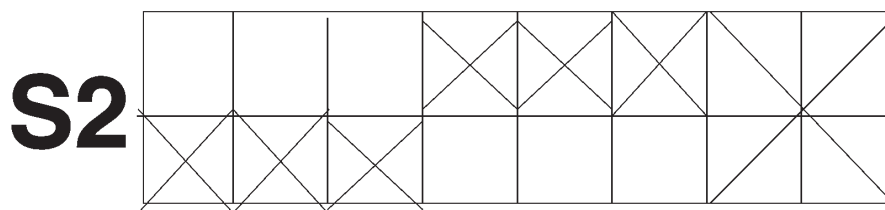
Switch numbers are 1 through 8 left to right. Switches 1-6 select level codes 1 through 62. **Switches 7 and 8 are not used – their position is unimportant.** Refer to Figure 2-9 for an example of level code selection and see Figure 2-10 for the physical location of the level code switch.

Physical 0 (Logical 1) = OFF (DOWN)

Physical 1 (Logical 0) = ON (UP)

SWITCH POSITIONS	1	2	3	4	5	6
STROBE LEVEL 1	1	0	0	0	0	0
STROBE LEVEL 2	0	1	0	0	0	0
STROBE LEVEL 3	1	1	0	0	0	0
STROBE LEVEL 4	0	0	1	0	0	0
STROBE LEVEL 5	1	0	1	0	0	0
STROBE LEVEL 6	0	1	1	0	0	0
STROBE LEVEL 7	1	1	1	0	0	0
UP TO....						
STROBE LEVEL 62	0	1	1	1	1	1

1 2 3 4 5 6



SHOWN WITH LEVEL CODE 7 SELECTED

Figure 2-9 Output Monitor Card Level Code

2.11 Output Monitor Card Level Code Select. Cont:

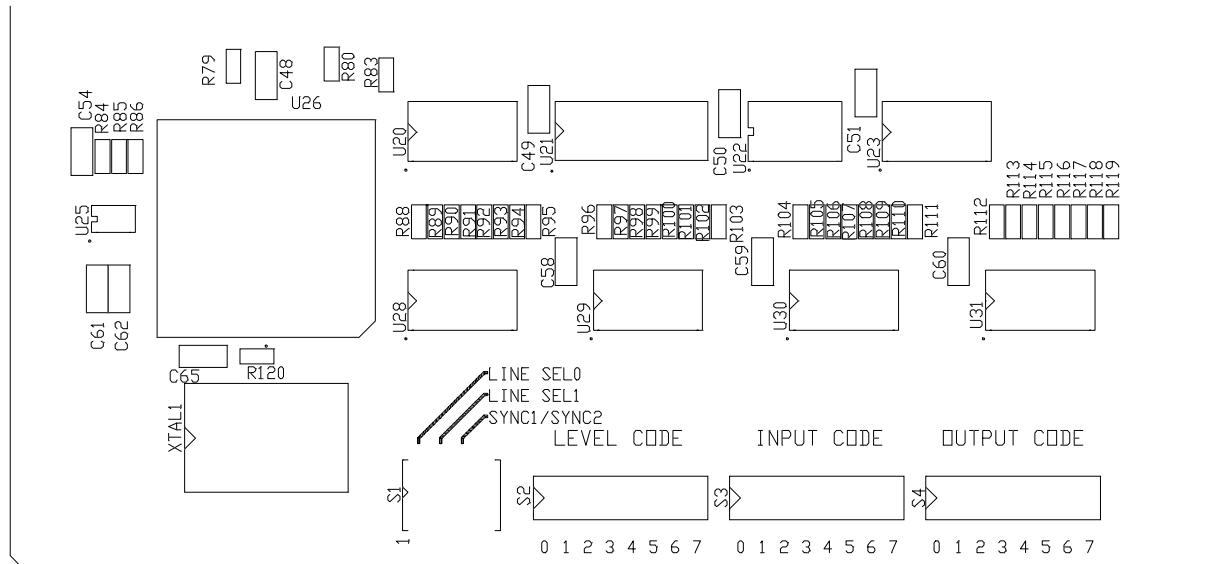


Figure 2-10 Output Monitor Card Switch Locations

2.12 Output Monitor Card Input/Output Coding Select.

The Output Monitor Card's input and output code select switches are located on the front edge of the Output Monitor Card. For all switch position to binary code conversions refer to Table 2-3.

The input and output switch numbers run 1 to 8, left to right. Switch S3 (input code switch) selects input codes 0-255 and switch S4 (output code switch) selects output codes 0-255. Refer to Figures 2-11 and 2-12 for examples of input and output code selection and see Figure 2-10 for the physical location of the output and input code switches.

Input Code

Physical 0 (Logical 1) = OFF (DOWN)

Physical 1 (Logical 0) = ON (UP)

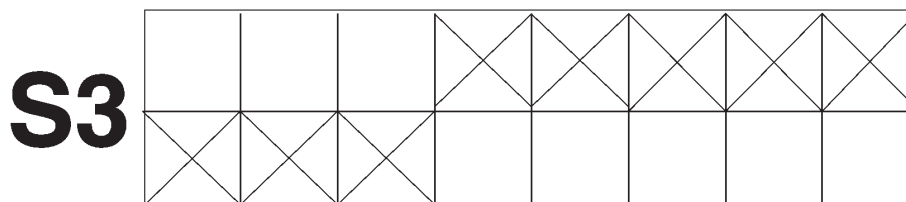
NOTE: The following are logical selections. Input code 0 is all switches on (up) or all switches in the physical 1 position.

2.12 Output Monitor Card In/Out Coding Select. Cont:

Input Code Continued:

SWITCH POSITION	1	2	3	4	5	6	7	8	INPUTS
INPUT CODE 0	0	0	0	0	0	0	0	0	1-64
INPUT CODE 1	1	0	0	0	0	0	0	0	65-128
INPUT CODE 2	0	1	0	0	0	0	0	0	129-192
INPUT CODE 3	1	1	0	0	0	0	0	0	193-256
INPUT CODE 4	0	0	1	0	0	0	0	0	257-320
INPUT CODE 5	1	0	1	0	0	0	0	0	321-384
INPUT CODE 6	0	1	1	0	0	0	0	0	385-448
INPUT CODE 7	1	1	1	0	0	0	0	0	449-512
UP TO....									
OUTPUT CODE 14	0	0	0	0	1	1	1	0	961-1024

1 2 3 4 5 6 7 8



SHOWN WITH INPUT CODE 7 SELECTED

Figure 2-11 Output Monitor Card Input Code Selection

Output Code

Physical 0 (Logical 1) = OFF (DOWN)

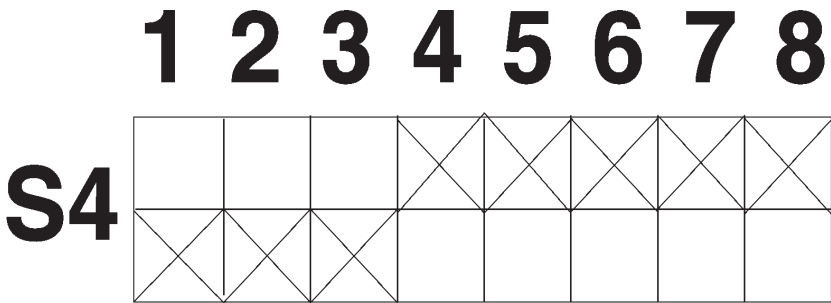
Physical 1 (Logical 0) = ON (UP)

NOTE: The following are logical selections. Output code 0 is all switches on (up) or all switches in the physical 1 position.

2.12 Output Monitor Card In/Out Coding Select. Cont:

Output Code Continued:

SWITCH POSITION	1	2	3	4	5	6	7	8	OUTPUT
OUTPUT CODE 0	0	0	0	0	0	0	0	0	0
OUTPUT CODE 1	1	0	0	0	0	0	0	0	1
OUTPUT CODE 2	0	1	0	0	0	0	0	0	2
OUTPUT CODE 3	1	1	0	0	0	0	0	0	3
OUTPUT CODE 4	0	0	1	0	0	0	0	0	4
OUTPUT CODE 5	1	0	1	0	0	0	0	0	5
OUTPUT CODE 6	0	1	1	0	0	0	0	0	6
OUTPUT CODE 7	1	1	1	0	0	0	0	0	7
UP TO....									
OUTPUT CODE 255	1	1	1	1	1	1	1	1	255



SHOWN WITH OUTPUT CODE 7 SELECTED

Figure 2-12 Output Monitor Card Output Code Selection

2.13 Output Monitor Card Line and Sync Selection

The Output Monitor Card's line and sync select switch, S1, is located on the left, front edge of the Output Monitor Card. Switch numbers are 1 through 4 left to right. Switches 1 and 2 select the video line to trigger switches on. Switch 3 selects the sync signal which will be used to time switch commands. **Switch 4 is not used – its position is unimportant.** Refer to Figure 2-13 for examples of line and sync selection and see Figure 2-10 for the physical location of the Output Monitor Card's line and sync select switch.

UP = CLOSED
DOWN = OPEN

2.13 Output Monitor Card Line and Sync Selection Cont:

LINE SEL 1	LINE SEL 0	SWITCH LINE
OPEN	OPEN	LINE 13
OPEN	CLOSED	LINE 12
CLOSED	OPEN	LINE 11
CLOSED	CLOSED	LINE 10

SYNC1/SYNC2	SELECTED SYNC
OPEN	SYNC2
CLOSED	SYNC1

Figure 2-13 Output Monitor Card Line and Sync Selection

2.14 Input Buffer Card Installation

The Input Buffer Cards are installed in the lower, left-hand portion of the rear of the Jaguar Video Routing Switcher. The Jaguar Video Routing Switcher is designed for the installation of up to eight Input Buffer Cards.

To install the Input Buffer Cards in the Jaguar Video Routing Switcher take the following steps while referring to the Jaguar Video Mainframe configuration drawings on pages 6.3 and 6.4:

1. Align the first Input Buffer Card with the left-hand of circuit card guides in the lower, left-hand portion of the rear of the Jaguar Video Routing Switcher (circuit side to the right).
2. Carefully push the Input Buffer Card into the Jaguar Video Routing Switcher until the circuit card connectors make initial contact with the Matrix Mid-Plane connectors. At this point, firmly but carefully continue pushing the buffer card into the frame while making sure the connectors are properly aligned. Continue pushing the buffer card until it is in place and the connectors are firmly mated.

2.14 Input Buffer Card Installation Continued:

3. Once the Input Buffer Card is installed in the Jaguar Video Frame, install the appropriate buffer card locking brace. To install the buffer card locking brace align the tab end of the locking brace with the slot provided on the Jaguar Video Frame and insert the tab into the slot. Once the tab is inserted into the appropriate slot, align the screw hole on lower end of the locking brace with the appropriate screw hole on the Jaguar Video Frame. Once the locking brace screw hole is aligned with the screw hole on the Jaguar Video Frame, attach the buffer card locking brace to the Jaguar Video Frame using a pan-head Phillips screw.
4. Align the next Input Buffer Card with the next set of circuit card guides in the lower, left-hand portion of the rear of the Jaguar Video Routing Switcher and repeat steps 2 and 3.
5. Repeat steps 2 thru 4 until all of the Input Buffer Cards are installed in the Jaguar Video Frame.

2.15 Reference Interface Card Installation

The Reference Interface Card is installed in the upper, middle portion of the rear of the Jaguar Video Routing Switcher. To install the Reference Interface Card in the Jaguar Video Routing Switcher take the following steps while referring to the Jaguar Video Mainframe configuration drawings on pages 6.3 and 6.4:

1. Align Reference Interface Card with the set of circuit card guides in the upper, middle portion of the rear of the Jaguar Video Routing Switcher (circuit side to the right).
2. Carefully push the Reference Interface Card into the Jaguar Video Routing Switcher until the circuit card connectors make initial contact with the Power Mid-Plane connectors. At this point, firmly but carefully continue pushing the interface card into the frame while making sure the connectors are properly aligned. Continue pushing the interface card until it is in place and the connectors are firmly mated.

2.15 Reference Interface Card Installation Continued:

3. Once the Reference Interface Card is installed in the Jaguar Video Frame, install the interface card locking brace. To install the reference interface card locking brace align the tab end of the locking brace with the slot provided on the Jaguar Video Frame and insert the tab into the slot. Once the tab is inserted into the appropriate slot, align the screw hole on upper end of the locking brace with the appropriate screw hole on the Jaguar Video Frame. Once the locking brace screw hole is aligned with the screw hole on the Jaguar Video Frame, attach the interface card locking brace to the Jaguar Video Frame using a pan-head Phillips screw.

2.16 8X1 Crosspoint Card Installation

The optional 8X1 Crosspoint Card is designed to be installed on the Analog or Digital Video Output Combiner Cards. To install the 8X1 Crosspoint Cards on the Video Output Combiner Cards take the following steps:

1. Place the Video Output Combiner Card on solid flat surface.
2. Align the connectors on the lower side of the 8X1 Crosspoint Card with the connectors on the Video Output Combiner Card. Also, make sure that the stand-off connectors on the 8X1 Crosspoint Card are aligned with the stand-off connector holes on the Video Output Combiner Card .
3. Carefully mate the connectors on the 8X1 Crosspoint Card with the connectors on the Video Output Combiner Card. As the connectors are being mated make sure no connector pins are bent or misaligned. Also, make sure that the stand-offs are still aligned with the stand-off connector holes.
4. Carefully but firmly push the 8X1 Crosspoint Card down until the connectors on the 8X1 Crosspoint Card are firmly mated with the connectors on the Video Output Combiner Card. Continued pushing down on the 8X1 Crosspoint Card until the stand-off connectors snap into the stand-off connector holes on the Video Output Combiner Card.
5. Repeat steps 1-4 until all of the 8X1 Crosspoint Cards are installed on the Video Output Combiner Cards.

2.17 Output Combiner Card Installation

The Output Combiner Cards are installed in the right-hand portion of the rear of the Jaguar Video Routing Switcher. The Jaguar Video Routing Switcher is designed for the installation of up to eight Output Combiner Cards.

To install the Output Combiner Cards in the Jaguar Video Routing Switcher take the following steps while referring to the Jaguar Video Mainframe configuration drawings on pages 6.3 and 6.4:

1. Align the first Output Combiner Card with the right-hand of circuit card guides in the right-hand portion of the rear of the Jaguar Video Routing Switcher (circuit side to the right).
2. Carefully push the Output Combiner Card into the Jaguar Video Routing Switcher until the circuit card connectors make initial contact with the Matrix Mid-Plane connectors. At this point, firmly but carefully continue pushing the combiner card into the frame while making sure the connectors are properly aligned. Continue pushing the combiner card until it is in place and the connectors are firmly mated. If a 8X1 Crosspoint Card is installed on the Output Combiner Card, make sure its connector is properly aligned and firmly mated to its corresponding connector on the Power Mid-Plane.
3. Once the Output Combiner Card is installed in the Jaguar Video Frame, install the appropriate combiner card locking brace. To install the combiner card locking brace align the tab end of the locking brace with the slot provided on the Jaguar Video Frame and insert the tab into the slot. Once the tab is inserted into the appropriate slot, align the screw hole on upper end of the locking brace with the appropriate screw hole on the Jaguar Video Frame. Once the locking brace screw hole is aligned with the screw hole on the Jaguar Video Frame, attach the combiner card locking brace to the Jaguar Video Frame using a pan-head Phillips screw.
4. Align the next Output Combiner Card with the next set of circuit card guides in the right-hand portion of the rear of the Jaguar Video Routing Switcher and repeat steps 2 and 3.
5. Repeat steps 2 thru 4 until all of the Output Combiner Cards are installed in the Jaguar Video Frame.

2.18 PS130 Power Supply Installation

The PS130 Power Supplies are installed in the upper, right-hand portion of the front of the Jaguar Video Routing Switcher. The Jaguar Video Routing Switcher is designed for the installation of up to four PS130 Power Supplies.

WARNING

THE JAGUAR VIDEO CHASSIS AND PS130 POWER SUPPLIES CONTAIN ELECTRICAL SHOCK HAZARDS. THE JAGUAR VIDEO ROUTING SWITCHER AND THE PS130 POWER SUPPLIES SHOULD ONLY BE SERVICED BY QUALIFIED SERVICE PERSONNEL AND/OR QUALIFIED TECHNICIANS.

CAUTION

The minimum number of power supplies (at least two) must be installed in the Jaguar Frame before attempting to power-up the frame.

To install the PS130 Power Supplies in the Jaguar Video Routing Switcher take the following steps while referring to the Jaguar Video Mainframe configuration drawing on page 6.3:

1. Align the shield plate on the first PS130 Power Supply with the left-hand set of circuit card guides in the upper, right-hand portion of the front of the Jaguar Video Routing Switcher (circuit side to the left).
2. Carefully push the PS130 Power Supply into the Jaguar Video Routing Switcher until the power supply connectors make initial contact with the Power Mid-Plane connectors. At this point, firmly but carefully continue pushing the PS130 Power Supply into the frame while making sure the connectors are properly aligned. Continue pushing the power supply until the slide lock snaps into place and the connectors are firmly mated.
3. Align the shield plate on the next PS130 Power Supply with the next set of circuit card guides in the upper, right-hand portion of the front of the Jaguar Video Routing Switcher and repeat step 2.
4. Repeat step 3 until all of the PS130 Power Supplies are installed in the Jaguar Video Frame.

2.19 System Controller Card Installation

The System Controller Card(s) are installed in the upper, left-hand portion of the front of the Jaguar Video Routing Switcher. The Jaguar Video Routing Switcher is designed for the installation of up to two System Controller Cards. If only one System Controller Card is to be installed in the Jaguar Video Routing Switcher, install it in the upper card slot.

To install the System Controller Card(s) in the Jaguar Video Routing Switcher take the following steps while referring to the Jaguar Video Mainframe configuration drawing on page 6.3:

1. Align the shield plate attached to the first (primary) System Controller Card with the upper set of circuit card guides in the upper, left-hand portion of the front of the Jaguar Video Routing Switcher.
2. Carefully push the System Controller Card into the Jaguar Video Routing Switcher until the controller card connectors make initial contact with the corresponding Power Mid-Plane connectors. At this point, firmly but carefully continue pushing the controller card into the frame while making sure the connectors are properly aligned. Continue pushing the controller card until it is in place and the connectors are firmly mated.
3. Align the shield plate attached to the second (redundant) System Controller Card with the middle set of circuit card guides in the upper, left-hand portion of the front of the Jaguar Video Routing Switcher and repeat step 2.

2.20 Output Monitor Card Installation

The optional Output Monitor Card is installed in the upper, left-hand portion of the front of the Jaguar Video Routing Switcher. The Jaguar Video Routing Switcher is designed for the installation of one Output Monitor Card.

To install the Output Monitor Card in the Jaguar Video Routing Switcher take the following steps while referring to the Jaguar Video Mainframe configuration drawing on page 6.3:

1. Align the shield plate attached to the Output Monitor Card with the lower set of circuit card guides in the upper, left-hand portion of the front of the Jaguar Video Routing Switcher.

2.20 Output Monitor Card Installation Continued:

2. Carefully push the Output Monitor Card into the Jaguar Video Routing Switcher until the monitor card connectors make initial contact with the corresponding Power Mid-Plane connectors. At this point, firmly but carefully continue pushing the monitor card into the frame while making sure the connectors are properly aligned. Continue pushing the monitor card until it is in place and the connectors are firmly mated.

2.21 16X16 Crosspoint Card Installation (Analog Video)

Up to four 16X16 Crosspoint Cards can be installed on each 32X32 Analog Video Matrix Card. For the inputs and outputs controlled by each crosspoint card refer to Figure 2-14. Normally, the 16X16 Crosspoint Cards are installed on the 32X32 Analog Video Matrix Cards at the PESA factory but in the event the 16X16 Crosspoint Cards are removed or need to be replaced use the following instructions as a crosspoint card installation guide.

To install the crosspoint cards on the 32X32 Video Matrix Card take the following steps:

1. Place the video matrix card on solid flat surface.
2. Align the connectors on the lower side (connectors are along the left, right, and top sides) of the 16X16 Crosspoint Card with a set of crosspoint connectors on the right-hand side of the 32X32 Analog Video Matrix Card. Make sure the orientation of the 16X16 Crosspoint Card is correct.
3. Carefully mate the connectors on the 16X16 Crosspoint Card with the selected set of connectors on the 32X32 Analog Video Matrix Card. As the connectors are being mated make sure no connector pins are bent or misaligned.
4. Carefully but firmly push the 16X16 Crosspoint Card down until the connectors on the 16X16 Crosspoint Card are firmly mated with the selected set of connectors on the 32X32 Analog Video Matrix Card.
5. Repeat steps 1-4 until all of the 16X16 Crosspoint Cards are installed on all of the 32X32 Analog Video Matrix Cards.



2.21 16X16 Crosspoint Card Installation Continued:

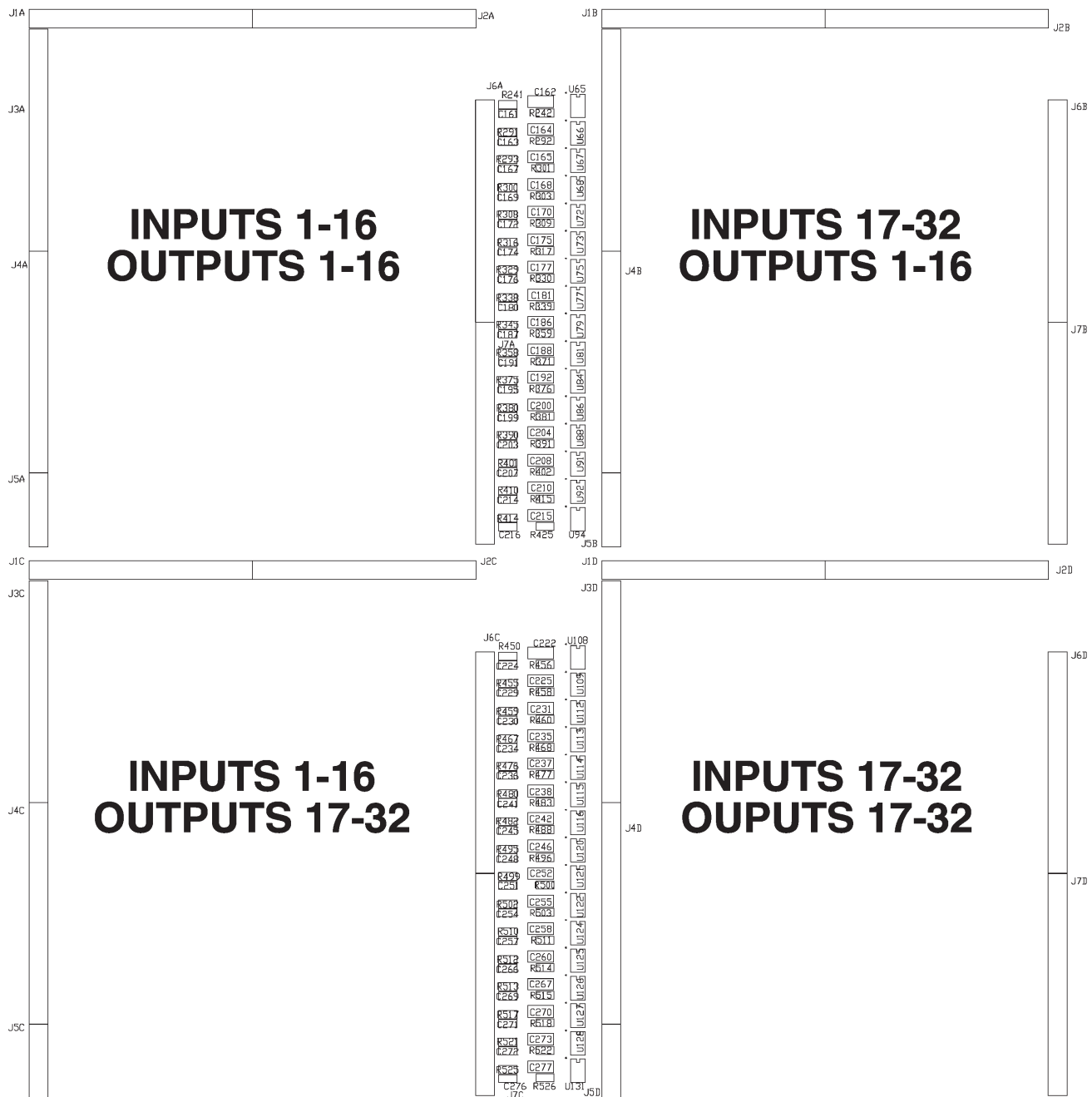


Figure 2-14 Inputs and Outputs

2.22 32X32 Matrix Card Installation

The 32X32 Matrix Cards are installed in the lower portion of the front of the Jaguar Video Routing Switcher. The Jaguar Video Routing Switcher is designed for the installation of up to four 32X32 Matrix Cards.

To install the 32X32 Matrix Cards in the Jaguar Video Routing Switcher take the following steps while referring to the Jaguar Video Mainframe configuration drawing on page 6.3:

1. Align the shield plate on the first 32X32 Matrix Card with the upper set of circuit card guides in the lower portion of the front of the Jaguar Video Routing Switcher.
2. Carefully push the 32X32 Matrix Card into the Jaguar Video Routing Switcher until the matrix card connectors make initial contact with the Matrix Mid-Plane connectors. At this point, firmly but carefully continue pushing the 32X32 Matrix Card into the frame while making sure the connectors are properly aligned. Continue pushing the matrix card until the connectors are firmly mated.
3. Align the shield plate on the next 32X32 Matrix Card with the next available set of circuit card guides in the lower portion of the front of the Jaguar Video Routing Switcher and repeat step 2.
4. Repeat step 3 until all of the 32X32 Matrix Cards are installed in the Jaguar Video Frame.

2.23 Rear Panel Connectors

These manual subsections discuss the various system connectors found on the rear of a fully configured Jaguar Video Routing Switcher. Refer to Figure 2-15 and to Jaguar Video Mainframe Assembly configuration drawing on page 6.4 for visual references.

2.23 Rear Panel Connectors Continued:

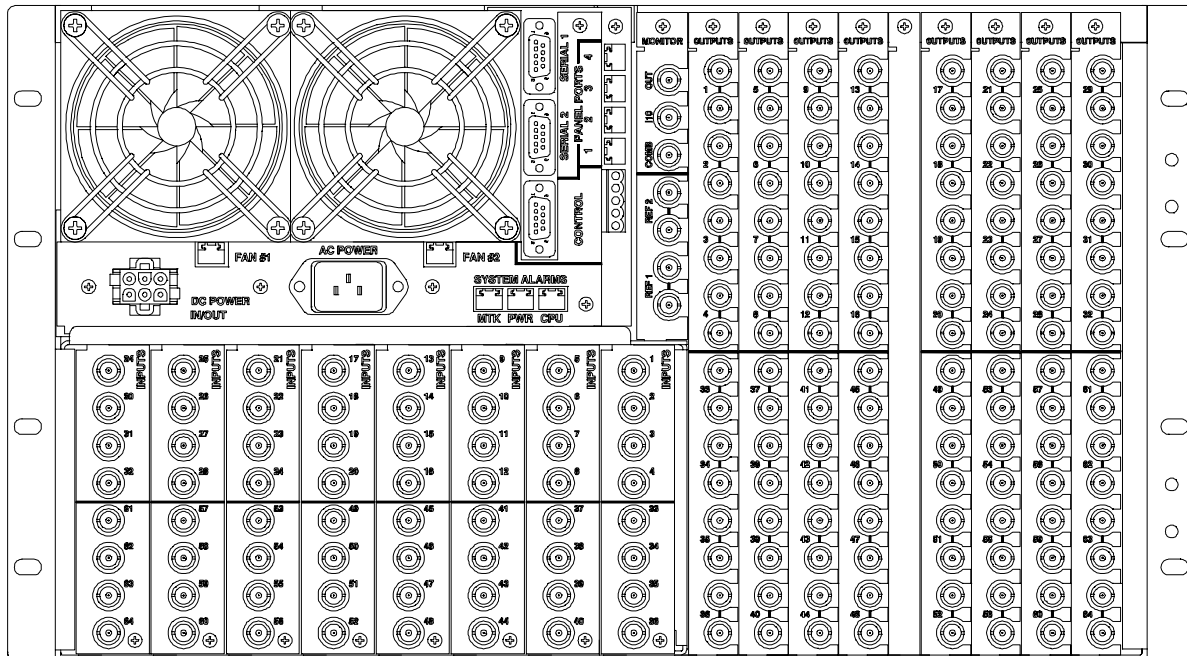


Figure 2-15 Jaguar Video Routing Switcher Rear View

DC Power In/Out Connector

Power can be supplied to the Jaguar Video Routing Switcher by the use of an externally mounted power supply or by the use of internal PS130 Power Supplies. The DC Power In/Out Connector can be used as DC power input (external power supply) or as DC power output (internal power supplies) to allow the Jaguar Video Routing Switcher to power additional equipment items. External power supplies must be diode isolated from the internal power supplies. 1N5821 or equivalent type diodes may be used for this purpose. See Figure 2-16 for an external power supply connection guide.

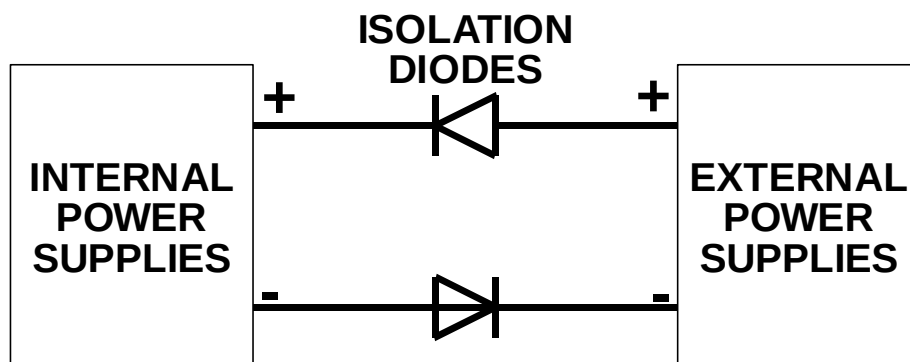


Figure 2-16 External Power Supply Isolation

2.23 Rear Panel Connectors Continued:

Fan Connectors

The fan connectors provide DC power to the Jaguar Video Routing Switcher's chassis fans.

AC Power Connector

The AC Power Connector enables the connection of the AC line to the Jaguar Video Routing Switcher. The AC line input voltage can be from 100 - 240 VAC and the AC line frequency range can be from 47 - 63 Hz.

System Alarm Connectors

Matrix Card Alarm Connector (MTX)

An alarm circuit has been provided in the circuitry of each of the 32X32 Video Matrix Cards. This circuit acts as a switch to trigger an optional external alarm in the event of a matrix card CPU fault or failure. The controller alarm circuit supplies a "contact" closure but does not provide a voltage to the external alarm. The alarm circuit has 10mA current limit. The Matrix Card Alarm Connector allows connection of the Matrix Card Alarm.

Power Supply Alarm Connector (PWR)

An alarm circuit has been provided in the circuitry of each of the PS130 Power Supplies. This circuit acts as a switch to trigger an optional external alarm in the event of a failure in the power supply or of the AC line source. The alarm circuit supplies a contact closure but does not provide a voltage to the external alarm and has a 10mA current limit. The Power Supply Alarm Connector allows connection of the Power Supply Alarm.

CPU Alarm Connector (CPU)

An alarm circuit has been provided in the circuitry of each of the 3300 Controller Cards installed in the Jaguar Video Frame. This circuit acts as a switch to trigger an optional external alarm in the event of a controller fault or failure. The controller alarm circuit supplies a "contact" closure but does not provide a voltage to the external alarm. The alarm circuit has 10mA current limit. The Controller Card Alarm Connector allows connection of the Controller Card Alarm.

2.23 Rear Panel Connectors Continued:

Control (PRC) Connectors

The 9-Pin Control Connector provides for the connection of an optional external controller to the Jaguar Video Routing Switcher. The 5-Pin Control Connector provides for the connection of additional Jaguar Video Routing Switchers to form a larger switching matrix. Both of the control connectors allow for the bi-directional transmission of data.

The pinout of the 9-Pin Control Connector is as follows:

PIN NO.	DESCRIPTION
1	GROUND
2	RX+ DATA
3	TX- DATA
4	GROUND
5	SPARE
6	GROUND
7	RX- DATA
8	TX+ DATA
9	GROUND

The pinout of 5-Pin Control Connector is as follows:

PIN NO.	DESCRIPTION
1	TX+ DATA
2	TX- DATA
3	GROUND
4	RX+ DATA
5	RX- DATA

For PRC communications, the user should use a direct pin-for-pin cable for interfacing between the control connectors and the peripheral equipment. DO NOT use a "NULL MODEM" cable.

Serial (CPU Link) Connectors (SERIAL 1 and SERIAL 2)

The CPU Link connectors allow serial communications between the internally installed 3300 Controllers and up to two external computers. The 3300 Controller supports asynchronous, bidirectional communications, at 9600 baud. The protocol used in communication via these ports is a proprietary protocol developed by PESA for switcher control. Be sure to use a "null modem" cable for all serial (CPU link) connections. The pinout for CPU link connectors is as follows:



2.23 Rear Panel Connectors Continued:

Serial (CPU Link) Connectors (SERIAL 1 and SERIAL 2) Continued:

PIN NO.	DESCRIPTION
1	CD
2	RX DATA
3	TX DATA
4	DTR
5	GROUND
6	DSR
7	RTS
8	CTS
9	N/C

RCP Panel Connectors

The RS485 panel port connectors allow the daisy-chained connection of up to 127 remote control panels to the Jaguar Video Routing Switcher. Bidirectional communications between the internally installed 3300 Controller(s) and the various models of PESA's low cost RCP control panels are sent and received over RS485 buss.

Monitor Output Connectors

The Monitor Output Connectors provide a test signal which will be utilized to monitor Jaguar Video Routing Switcher activity when a Output Monitor Card is installed in the Jaguar Frame. The test signals available are monitor output, combiner output, and a combination monitor/combiner output.

Reference (Sync) Connectors (1 and 2)

The sync connectors are used to connect an external sync signal to the Jaguar Video Routing Switcher. The sync signal may be either a color black or composite sync signal. The use of an external sync signal allows switch changes to be accurately timed in the vertical interval. The sync connectors are loop-thru connectors and must be terminated with 75 ohms if looping is not used.

Video Input Connectors

There are 64 BNC video input connectors located on the rear of a fully configured Jaguar Video Routing Switcher. These connectors allow the connection of the video sources to the Jaguar Video Routing Switcher. The video input connectors are internally terminated into 75 ohms.



2.23 Rear Panel Connectors Continued:

Video Output Connectors

There are 64 BNC dual video outputs (for a total of 128 BNC output connectors) located on the rear of a fully configured Jaguar Video Routing Switcher. These connectors allow the connection of the video destinations to the Jaguar Video Routing Switcher. The unused connectors must be terminated with 75 ohms.

2.24 Control Panel Connection

This manual section is designed to be utilized as quick reference guide to the system interconnection between the Jaguar Video Frame's panel ports and the RCP Control Panels.

The pinout for the RCP Port Connectors on the rear panel of the Jaguar Video Frame is as follows:

Pin 1	+DATA
Pin 2	-DATA
Pin 3	Shield

The pinout for the Control Port Connector on the rear panel of the RCP Control Panel is as follows:

Pin 1	COM A (+DATA)
Pin 2	Shield
Pin 3	COM B (-DATA)

The twisted-pair cables between the Jaguar Video Frame RCP Port Connectors and the RCP Control Panels must be connected as shown in Figure 2-17.

2.24 Control Panel Connection Continued:

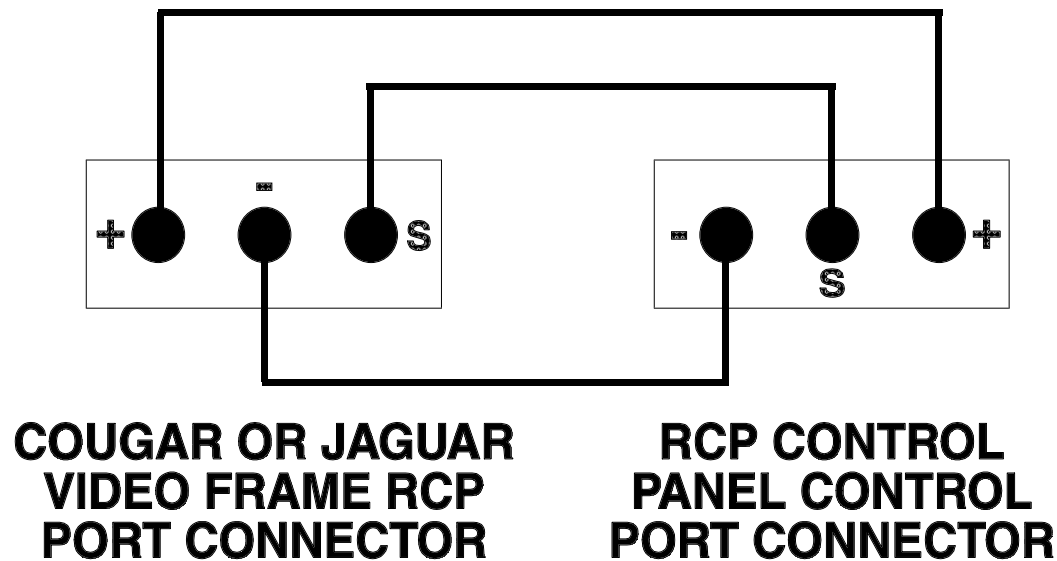


Figure 2-17 Jaguar Video Frame and RCP Control Panel Interconnection

2.25 System Connections

Once the Jaguar Video Routing Switcher is installed in the equipment rack and the buffer cards, reference card, and combiner cards are installed; system connections can be made. Use the following guide to insure that the Jaguar Video Routing Switcher system interconnections are properly connected and that the control, power, sync, and video cables are correctly installed.

Connection Guide

1. Connect the external sync sources to the reference inputs using Belden 8281 coaxial cable or equivalent. Be sure to properly terminate the external sync sources into 75 ohms.
2. Connect the primary external computer to the Serial 1 Connector using a 9-pin RS232 "null modem" cable. Please note that this connection has to be made in order to configure the internal 3300 Controllers using the Win3300 Control System software package. If a secondary external computer is to be used, connect it to the Serial 2 connector using a 9-pin RS232 "null modem" cable.
3. If an additional Jaguar Routing Switcher is to be utilized as part of the switching matrix, connect the 5-Pin Control Connector on the primary Jaguar Routing Switcher to 5-Pin Control Connector on the other Jaguar Video Routing Switcher using a 5-pin ribbon cable.

2.25 System Connections Continued:

Connection Guide Continued:

4. If an external controller is to be utilized to control the Jaguar Video Routing Switcher, connect the external controller to the 9-Pin Control Connector using a 9-pin RS232 cable.
5. Connect the RCP control panels to the RS485 ports using twisted pair cables. The connections to the control panels may be daisy chained.
6. If desired, connect external alarms to the System Alarm Connectors.
7. Connect the video sources to the video inputs using Belden 8281 coaxial cable or equivalent 75 ohm coaxial cable.
8. Connect the video outputs to the video destinations using Belden 8281 coaxial cable or equivalent 75 ohm coaxial cable. Unused output connectors must be terminated into 75 ohms.

3.1 Introduction

This section details the Jaguar Video Routing Switcher operational procedures and adjustment procedures. The operation of the Jaguar Video Routing Switcher consists mainly periodically monitoring the power supply and circuit card LEDs and ensuring that the System Controller Switches are set to the correct positions. The adjustment of the Jaguar Analog Video Routing Switcher consists of making gain and equalization adjustments. The Jaguar Digital Video Routing Switcher contains no adjustments. The following topics are discussed:

- Video Input Buffer Card Operation
- Analog Video Output Combiner Card Operation
- Digital Video Output Combiner Card Operation
- Dual Reference Interface Card Operation
- System Controller Card Operation
- PS130 Power Supply Operation
- Analog Video Matrix Card Operation
- Digital Video Matrix Card Operation
- Video Output Monitor Card Operation
- Jaguar Analog Video Routing Switcher Adjustment Procedure

WARNING

THE JAGUAR VIDEO CHASSIS AND PS130 POWER SUPPLIES CONTAIN ELECTRICAL SHOCK HAZARDS. THE JAGUAR VIDEO ROUTING SWITCHER AND THE PS130 POWER SUPPLIES SHOULD ONLY BE SERVICED BY QUALIFIED SERVICE PERSONNEL AND/OR QUALIFIED TECHNICIANS.

3.2 Input Buffer Card Operation

The operation of the Input Buffer Cards consists of periodically monitoring each buffer card's LED. The buffer card LED and its proper indication is discussed in the following manual sub-section.

Power OK LED (Green)

The Power OK LED (CR2), located in the middle of the buffer card, is utilized to visually indicate that the proper power supply voltage is being supplied to the card. A decrease in the brightness of this LED indicates an approximate 12% drop in voltage and should be checked. A 25% drop in voltage will cause the LED to extinguish.

3.3 Analog Video Output Combiner Card Operation

The operation of the Analog Video Output Combiner Cards consists of periodically monitoring each combiner card's LED. The combiner card LED and its proper indication is discussed in the following manual sub-section.

Power OK LED (Green)

The Power OK LED (CR3), located on back edge of the combiner card, is utilized to visually indicate that the proper power supply voltage is being supplied to the card. A decrease in the brightness of this LED indicates an approximate 12% drop in voltage and should be checked. A 25% drop in voltage will cause the LED to extinguish.

3.4 Digital Video Output Combiner Card Operation

The operation of the Digital Video Output Combiner Cards consists of periodically monitoring each combiner card's LED. The combiner card LED and its proper indication is discussed in the following manual sub-section.

Power OK LED (Green)

The Power OK LED (CR2), located on back edge of the combiner card, is utilized to visually indicate that the proper power supply voltage is being supplied to the card. A decrease in the brightness of this LED indicates an approximate 12% drop in voltage and should be checked. A 25% drop in voltage will cause the LED to extinguish.

3.5 Dual Reference Interface Card Operation

The operation of the Reference Interface Card consists of periodically monitoring the interface card LEDs. The interface card LEDs and their proper indication is discussed in the following manual sub-sections.

Sync #1A Fail LED (Red)

The Sync #1A Fail LED (CR1), located on the front edge of the interface card, is utilized to visually indicate that external sync number one has failed or is missing. Normally, the Sync #1A Fail LED should be extinguished.

3.5 Reference Interface Card Operation Continued:

Sync #2A Fail LED (Red)

The Sync #2A Fail LED (CR2), located on the front edge of the interface card, is utilized to visually indicate that external sync number one has failed or is missing. Normally, the Sync #2A Fail LED should be extinguished.

Sync #1B Fail LED (Red)

The Sync #1B Fail LED (CR4), located on the front edge of the interface card, is utilized to visually indicate that external sync number one has failed or is missing. Normally, the Sync #1B Fail LED should be extinguished.

Sync #2B Fail LED (Red)

The Sync #2B Fail LED (CR5), located on the front edge of the interface card, is utilized to visually indicate that external sync number one has failed or is missing. Normally, the Sync #2B Fail LED should be extinguished.

3.6 System Controller Card Operation

Refer to the System Controller's Manual for the description of the system controller's operation.

3.7 PS130 Power Supply Operation

The operation of the PS130 Power Supplies consists of periodically monitoring each power supply's LED to insure that each power supply is functioning properly.

3.8 Analog Video Matrix Card Operation

The operation of the Analog Video Matrix Cards consists of periodically monitoring the matrix card LEDs. The matrix card LEDs and their proper indications are discussed in the following manual sub-sections.

3.8 Analog Video Matrix Card Operation Continued:

Regulator Fault LED (Red)

The Regulator Fault LED (CR17) is utilized to visually indicate a regulator problem on the matrix card. A problem with the power supply or regulator circuits will cause this LED to light. However, in the event of a total power outage this LED will be rendered inoperable.

CPU Fault LED (Red)

The CPU Fault LED (CR6) is utilized to visually indicate a microprocessor problem on the matrix card. A problem with the CPU or controller circuits will cause this LED to light.

Power OK LED (Green)

The Power OK LED (CR7) on the front edge of the matrix card is utilized to visually indicate that the proper power supply voltage is being supplied to the card. A decrease in the brightness of this LED indicates an approximate 12% drop in voltage and should be checked. A 25% drop in voltage will cause the LED to extinguish.

3.9 Digital Video Matrix Card Operation

The operation of the Digital Video Matrix Card consists of periodically monitoring the matrix card LEDs. The matrix card LEDs and their proper indications are discussed in the following manual sections.

Regulator Fault LED (Red)

The Regulator Fault LED (CR24) is utilized to visually indicate a regulator problem on the matrix card. A problem with the power supply or regulator circuits will cause this LED to light. However, in the event of a total power outage this LED will be rendered inoperable.

CPU Fault LED (Red)

The CPU Fault LED (CR25) is utilized to visually indicate a microprocessor problem on the matrix card. A problem with the CPU or controller circuits will cause this LED to light.

Power OK LED (Green)

The Power OK LED (CR26) on the front edge of the matrix card is utilized to visually indicate that the proper power supply voltage is being supplied to the card. A decrease in the brightness of this LED indicates an approximate 12% drop in voltage and should be checked. A 25% drop in voltage will cause the LED to extinguish.

3.10 Video Output Monitor Card Operation

The operation of the Analog Video Output Monitor Card consists of periodically monitoring the circuit card LEDs. The monitor card LEDs and their proper indications are discussed in the following manual sub-sections.

Power OK LED (Green)

The Power OK LED (CR2) on the front edge of the matrix card is utilized to visually indicate that the proper power supply voltage is being supplied to the card. A decrease in the brightness of this LED indicates an approximate 12% drop in voltage and should be checked. A 25% drop in voltage will cause the LED to extinguish.

CPU Fault LED (Red)

The CPU Fault LED (CR3) is utilized to visually indicate a microprocessor problem on the monitor card. A problem with the CPU or controller circuits will cause this LED to light.

3.11 Jaguar Analog Video Routing Switcher Adjust.

The Jaguar Analog Video Routing Switcher is adjusted at the PESA factory prior to shipment and should only have to be readjusted if equipment repairs are made or if the equipment configuration changes. The adjustment of the Jaguar Analog Video Routing Switcher consists of adjusting the gain of each switch matrix for unity and adjusting the equalization of each output. The following calibrated test equipment items or their equivalent is needed to accurately adjust the Jaguar Analog Video Routing Switcher:

High Frequency Generator
Spectrum Analyzer
75 Ohm Termination

3.11 Jaguar Analog Video Routing Swit. Adjust. Cont:

Gain Adjustments

The output gain adjustments, located on the Analog Video Matrix Cards, provide the means to adjust the Jaguar Analog Routing Switcher's outputs for unity gain (output signal amplitude equal to input signal amplitude). The switching matrix of the Jaguar Video Routing Switcher functions as follows:

MATRIX CARD NUMBER	IN	OUT
1	1-32	1-32
2	1-32	33-64
3	33-64	1-32
4	33-64	33-64

NOTE: If you adjust the gain of an output on matrix card one for unity gain you must also adjust the corresponding output for unity gain on matrix card three. Also note, if you adjust the gain of an output on matrix card two for unity gain you must also adjust the corresponding output for unity gain on matrix card four.

To adjust the gain adjustments on the Analog Video Matrix Cards take the following steps while referring to the matrix card's component assemblies and schematics found in Section 6 of this manual for adjustment locations and to the input to output matrix table:

1. Connect the high frequency sweep generator to the spectrum analyzer. Be sure to terminate the high frequency generator's output into 75 ohms.
2. Adjust the sweep generator for a 1KHz to 10MHz at 0dB display on the spectrum analyzer. Set the sweep generator's timing markers for 1MHz intervals at 0dB.
3. Disconnect the sweep generator from the spectrum analyzer. Be sure to leave the spectrum analyzer's input terminated with 75 ohms.
4. Connect the sweep generator to one of the Jaguar Analog Video Routing Switcher's inputs.

3.11 Jaguar Analog Video Routing Swit. Adjust. Cont:

Gain Adjustments Continued:

5. Connect the spectrum analyzer to one of the Jaguar Analog Video Routing Switcher's outputs.
6. Switch the selected input to the selected output (see the matrix table).
7. Adjust the gain correlating to the selected output for a $0\text{dB} \pm 0.1\text{dB}$ display on the spectrum analyzer at 100KHz. A vertical display of $\pm 0.1\text{dB}$ per division is recommended.
8. Repeat steps 5-7 until all of the Jaguar Analog Video Routing Switcher's gain adjustments have been completed. Once all of the gain adjustments have been completed, disconnect all test equipment.

Output Equalization Adjustments

The output equalization adjustments, located on the Analog Video Output Combiner Cards, provide the means to adjust the equalization of the Jaguar Analog Routing Switcher's outputs for up to a 150 feet (50 meters) of Belden 8281 or equivalent 75 ohm coaxial cable.

To adjust the equalization adjustments on the Analog Video Output Combiner Cards take the following steps while referring to the Analog Video Output Combiner Card's component assemblies and schematics found in Section 6 of this manual for adjustment locations:

1. Connect the high frequency sweep generator to the spectrum analyzer. Be sure to terminate the high frequency generator's output into 75 ohms.
2. Adjust the sweep generator for a 1KHz to 10MHz at 0dB display on the spectrum analyzer. Set the sweep generator's timing markers for 1MHz intervals at 0dB.
3. Disconnect the sweep generator from the spectrum analyzer. Be sure to leave the spectrum analyzer's input terminated with 75 ohms.
4. Connect the sweep generator to one of the Jaguar Analog Video Routing Switcher's inputs using the shortest cable possible.
5. Connect a desired output cable to its corresponding Jaguar Analog Video Switcher output.



3.11 Jaguar Analog Video Routing Swit. Adjust. Cont:

Output Equalization Adjustments Continued:

6. Connect the spectrum analyzer to the far end of the selected output cable.
7. If necessary, remove the locking brace corresponding to the Analog Video Output Combiner Card under test to gain access to the combiner card's output equalization adjustments.
8. Switch the video test input to the selected output.
9. Adjust the output equalization adjustment that correlates to the output under test for the best signal quality on the spectrum analyzer. The adjustment of the output equalization pot should be made for the least amount of signal rolloff or for an even amplitude throughout the sweep. Use the timing markers as an amplitude guide.
10. Repeat steps 5-9 until all of the Jaguar Analog Video Routing Switcher's equalization adjustments have been completed. Once all of the equalization adjustments have been completed, disconnect all test equipment and replace the removed locking braces to their proper positions.

4.1 Introduction

This section contains the functional descriptions of the major circuit cards which can comprise the configuration of the Jaguar Video Switchers (both analog and digital versions). Please note that your Jaguar Video Switcher configuration may or may not contain all of the listed circuit cards. The circuit cards described in this manual sections are as follows:

- Matrix Mid-Plane
- Power Mid-Plane
- Video Input Buffer Card
- Analog Video Output Combiner Card
- Digital Video Output Combiner Card
- Dual Reference Interface
- Rear Panel Connector
- System Controller Card
- PS130 Power Supply
- 32X32 Analog Video Matrix Card
- 16X16 Crosspoint Card
- 32X32 Digital Video Matrix Card
- Analog Video Output Monitor Card
- Digital Video Output Monitor Card
- 8X1 Crosspoint Card

4.2 Matrix Mid-Plane

The Matrix Mid-Plane is responsible for providing direct electronic interface between the input buffer cards, the matrix cards, and the output combiner cards. Interface is also provided between the Matrix Mid-Plane and the Power Mid-Plane for power, reference, and control signals. The Matrix Mid-Plane is also responsible for distribution of the power and reference signals to the matrix cards and for interface of the control signals to and from the matrix cards. The Matrix Mid-Plane is also responsible for the distribution of unregulated DC power to the input buffer cards and the output combiner cards. The Matrix Mid-Plane also provides interface of the control signals to the digital output combiner cards (if installed). The Matrix Mid-Plane's electronic circuitry also contains the dip switches utilized for the setting the input, output, and level codes for the Jaguar Video Frame.

4.3 Power Mid-Plane

The Power Mid-Plane is responsible for the distribution of unregulated DC power from the internal power supplies or external power source to the controller cards, output monitor card, and reference interface. The Power Mid-Plane can also distribute power from the internal power supplies to additional equipment items through External DC In/Out Connector. The Power Mid-Plane is also responsible for distributing unregulated DC power and reference signals to the Matrix Mid-Plane. The Power Mid-Plane additional function is to interface the control signals to and from the Matrix Mid-Plane and the controller cards or to and from external control system through the PRC connectors and control panel connectors on the Rear Panel Connector.

4.4 Video Input Buffer Card

The Video Input Buffer Card's electronic circuits are responsible for providing the initial video signal conditioning. The Video Input Buffer Card contains eight video input circuits consisting of an operational amplifier and its associated components. The operational amplifiers drive the video inputs of the 32X32 Video Matrix Cards installed in the Jaguar Video Frame. All of the buffer card's inputs are into precision 75 ohm loads. Regulators U4 and U5 provide the regulated voltages to operate the Video Input Buffer Card's operational amplifiers. CR4 provides a visual indication of the health of the Video Input Buffer Card's regulator circuits.

4.5 Analog Video Output Combiner Card

The electronic circuits on the Analog Video Output Combiner Card are responsible for combining two outputs from the 32X32 Analog Video Matrix Cards to form one output from the Jaguar Video Frame. The circuits on the Analog Video Output Combiner Card consist of eight 2X1 summing combiner circuits and positive and negative power regulation circuits.

Each 2X1 output combiner circuit is comprised of two stage amplifier circuit. The first amplifier stage is responsible for resistively adding the video signals from the 32X32 Analog Video Matrix Cards. The second amplifier stage is responsible for driving the output lines and the 8X1 Crosspoint Card when it is installed. Adjustments are provided in each output combiner circuit to the gain and line equalization of the output combiner circuit.

4.5 Analog Video Output Combiner Card Continued:

The power regulator circuits on the Analog Video Output Combiner Card consist of power regulators U17 and U18 and their associated components. U17 is responsible for providing a regulated +5.5V and U18 is responsible for providing a regulated -5.5V. CR3 provides a visible means of checking the health of the power regulators.

4.6 Digital Video Output Combiner Card

The Digital Video Output Combiner Card contains several main circuits which include control, power, crosspoint, and output circuits. This discussion will be broken down to the main circuits as they are found on the schematics in Section 6 (Schematics).

Control

The control circuits on the Digital Video Output Combiner Card are comprised of U38, U41, and their associated components. U41, a serial port decoder, functions as 2X1 crosspoint controller. U41 interprets system switch commands and relays ON/OFF information to the 2X1 crosspoint circuits by setting HIGH (On) or setting LOW (Off) its BOUT lines. U38 provides programing logic for U41 each time power is applied to the board.

Power

The power circuits on the Digital Video Output Combiner Card are comprised of U11 a +5V switching regulator and U17 (-5V regulator), and their associated components. U11 and its associated components is responsible providing a regulated +5V to the Digital Video Output Combiner Card's electronic circuits. U17 is responsible for providing a regulated -5V to the Digital Video Output Combiner Card's electronic circuits. CR2 provides a visible means of checking the health of the regulator circuits.

2X1 Crosspoints

Each 2X1 crosspoint circuit on the Digital Video Output Combiner Card consists of two input buffers and their associated components. The input buffers are actively controlled by U41 through its BOUT lines. When an input buffer's corresponding BOUT line is high, the input buffer will pass its associated input signal to the Digital Video Combiner Card's output circuits. When an input buffer's corresponding BOUT line is low, the input buffer will act as high impedance block to its associated input signal.

4.6 Digital Video Output Combiner Card Continued:

Outputs

Each of the output circuits on the Digital Video Output Combiner Card consists of a digital receiver with reclocking, a digital decoder, an auto-tuner, and a digital cable line driver. Each digital output circuit reclocks the selected digital video signal and drives its corresponding output lines. The digital receiver and digital decoder convert the selected output signal. The auto-tuner automatically tunes the receiver/reclocker to the proper data rate (D1, D2 NTSC, D2 PAL, 360Mb/s). The digital cable line driver drives the corresponding digital outputs.

4.7 Dual Reference Interface

The Reference Interface is responsible for providing sync signals to the Jaguar Video Frame and for providing monitor outputs, through the output monitor bus, to the external world. The sync signals provided by the Reference Interface can either be derived from composite video or color black external video signals or generated internally by the Reference Interface.

U17, U18, and U15 provided regulated power (-5V, +5V1, and +5V2 respectively) for the Reference Interface's electronic circuits. U1, U5, U20, and U22 (sync separators) along with their associated components form the Reference Interface's sync separator network. U1, U5, U20, and U22 can separate the sync signal from either composite sync or color black video.

Once the "A" sync signal is separated, it is provided to U6 (inverter) and to U8 (quad two-input or gate). U6 and U8 along with U10 form a gating network that passes the external "A" sync signal to the Jaguar Video Frame when an external sync signal is present. Once the "B" sync signal is separated, it is provided to U21 (inverter) and to U23 (quad two-input or gate). U21 and U23 along with U24 form a gating network that passes the external "B" sync signal to the Jaguar Video Frame when an external sync signal is present.

If no external sync is supplied the gating network will pass the internally generated sync signal to the Jaguar Video Frame. Also when the external sync fails the gating network will illuminate the LED (CR1, CR2, CR4, or CR5) corresponding to the failed sync signal. U9 working in conjunction with U16 generates the INT_SYNC1 signal. U11 working in conjunction with U15 generates the INT_SYNC2 signal.

4.7 Reference Interface Continued:

The Reference Interface's monitor output buss is comprised of U12, U13, and U14 (buffers) along with U2, U3, and U4 (operational amplifiers). U12, U13, and U14 function as input buffers for the monitor buss. When a video monitor card is present in the Jaguar Video Frame the input buffers amplify and pass their corresponding input signals on to the monitor buss's operational amplifiers. When a video monitor card is not present in the Jaguar Video Frame the input buffers form a high impedance barrier against stray noise. U2 functions as line driver for the Monitor Output and the Monitor Output/Combiner Output. The monitor output signal is also applied to U3. U3 and U14 along with their associated components produce the combiner output signal. R8 (a variable resistor) provides gain adjustment for U3. U4 functions as a line driver for the Combiner Output. All output lines are driven into precision 75 ohm resistors.

4.8 Rear Panel Connector

The Rear Panel Connector provides the Jaguar Video Frame's external interface. The Rear Panel Connector provides connection to the Jaguar Video Frame for the external control panels through connectors J1 - J4 and to external control system or external routing system through J5 and J8. Additionally, J6 and J7 provide CPU link connection for the Jaguar Video Frame. J9, J10, and J11 provide connection to external alarm circuits for the control cards (if installed), power supplies, and matrix cards respectively. J12 and J13 provide power connection for the chassis fans.

4.9 System Controller Card

Refer to the System Controller's Manual for a functional description of the system controller's operation.

4.10 PS130 Power Supply

The PS130 Power Supply is responsible for providing an unregulated $\pm 8.5\text{VDC}$ @ 7.65A at a maximum power rating of 130 watts to the Jaguar Frame. The PS130 Power Supply is designed to operate within output specifications with AC line voltage ranges from 100 - 240 VAC and with AC line frequency ranges from 47 - 63 Hz automatically. 3.15A 250VAC AC line fuses provide over-load protection.

4.10 PS130 Power Supply Continued:

NOTE

There are no user serviceable parts contained in the PS130 Power Supply. All service performed on the PS130 Power Supply should be accomplished by qualified service personnel. **The internal circuits of the PS130 Power Supply contain dangerous voltage and current levels.**

4.11 32X32 Analog Video Matrix Card

The 32X32 Video Matrix Card contains a 32X32 matrix consisting of several main circuits. This discussion will be broken down to the main circuits as they are found on the schematics in Section 6 (Schematics).

Control

The microprocessor controller (U97) is used to interface switch commands from the PRCI control port (U166) to the switch matrix and return status information to the controller. Communications to and from the system controller are through U69, a RS485 receiver and transmitter. System timing is provided to the microprocessor by U102, a 7.3728MHz oscillator. The microprocessor divides the timing signal from the oscillator by a factor of four to form the system clock signal. Reset for the microprocessor is provided by U85.

U89, a power supply monitor, monitors the output of the 32X32 Video Matrix Card's power circuits and reports power fault conditions to the microprocessor. CR17 is utilized by power supply monitor circuit to provide a visual indication of power supply fault conditions.

Matrix output, input, and level coding is read from the backplane through U76, U82, and U87 respectively. U95, U98, and U99 provide address decoding for the 32X32 Video Matrix Card.

U104 and U110 comprise the nonvolatile RAM for the processor. C250 provides memory backup voltage for approximately seven days as long as the matrix card is not removed from the Jaguar Frame. CR6 is utilized by the processor on the 32X32 Video Matrix Card to indicate a CPU fault condition. An external alarm connection is provided by U165. The external connection can be utilized to audibly indicate CPU fault conditions.

4.11 32X32 Analog Video Matrix Card Continued:

Control Continued:

Two external sync signals are used for timing switches as set by S1. The external sync can be color black or composite sync. U78 and U83 decode the composite signal to an even/odd field signal which is used by the microprocessor.

32X8 Control ICs

The 32X8 control ICs (U74, U90, U107, and U118) are responsible for the control and switching of 32 inputs to 8 outputs. The control of the crosspoints is accomplished by signals sent over the control bus by the microprocessor. The crosspoints interpret the signals and provide control signals to the 16X16 Crosspoint Cards and the BUSEN to the 16X16 interface circuits. U105 and U106 provide the reset, data, and clock signals for the 32X8 crosspoints.

Input

The input circuits on the 32X32 Video Matrix Card provide the initial conditioning and termination of the video input signals. Common mode rejection ratio adjustments in each input circuit provide the means to eliminate unwanted hum and noise on the input video signals. The input circuits also provide the connection of the video input signals to the 16X16 Crosspoint Cards.

16X16 Crosspoint Interface

The 16X16 crosspoint interface circuits are responsible for providing the 16X16 Crosspoint Cards their interface with the 32X32 Video Matrix Card's video output circuits. The crosspoint interface circuits consists of two buffer amplifiers connected output to output and their associated components. When the BUSEN line corresponding to a buffer amplifier is active high and a video signal is applied to pin 7 of the same buffer amplifier by the 16X16 Crosspoint Card, the video signal will be passed through the buffer amplifier to the corresponding video output circuit.

4.11 32X32 Analog Video Matrix Card Continued:

Output

The output circuits on the 32X32 Video Matrix Card are responsible for driving the output lines. The output circuits are comprised of an operational amplifier, a transistor, and their associated components. The operational amplifier is responsible for conditioning the output video signal and driving the video output line through precision 75 ohm resistors. When the BUSOFF signal, connected to the base of the transistor, is active high the transistor will conduct collector to emitter and will shunt any unwanted crosstalk noise to ground. An adjustment is provided in each output circuit to adjust the output for unity gain.

Power

The power regulator circuits on the 32X32 Video Matrix Card are responsible for producing all of the regulated operational voltages required by the matrix card's electronic circuits. The power regulator circuits are also responsible for providing regulated power to the 16X16 Crosspoint Cards.

The heart of the power supply circuit on the video matrix card is a switching regulator (U117) which produces the +5.6V DC, -5.6V DC, and +5V DC. Adjustment of the output of the regulator is provided by R479, a variable resistor. CR7 provides a visual indication that power is being applied to the input of the regulator circuits. Fuses F1 and F2 protect the power regulator circuits from overload conditions and protect the circuit cards from overload damage. The power circuits also contain a fan speed regulator circuit which works in conjunction with fan regulator in the PS70V Power Supply to control the speed of the associated chassis fans. As the temperature of the matrix card's circuits increase the fan speed will increase. Inversely as the matrix card's circuits decrease in temperature the fan speed will slow down dependent upon the temperature of the associated PS70V Power Supply's circuits.

4.12 16X16 Crosspoint Card

The 16X16 Crosspoint Card contains a 16X16 matrix consisting of several main circuits. This discussion will be broken down to the main circuits as they are found on the schematics in Section 6 (Schematics).

4.12 16X16 Crosspoint Card Continued:

Input

The input circuits on the 16X16 Crosspoint Card are responsible for buffering the inputs to the crosspoint card from the 32X32 Video Matrix Card. The input circuits are comprised of a buffer and its associated components.

16X1 Crosspoint

The 16X1 crosspoint switches on the 16X16 Crosspoint Card are responsible for switching one of sixteen inputs to an output. The 16X1 crosspoint switches are comprised of four 4X1 crosspoints which form a 16X1 matrix, a output buffer, and their associated components. The switching of the input signals to the output buffer by 4X1 crosspoint is controlled by the state of their associated BUS and BUSEN data lines. The activation of the output buffer, in turn, is controlled by the state of the its associated OUTEN data line. The 16X1 crosspoint output buffers are also responsible for providing the selected output to the associated output circuit on the 32X32 Video Matrix Card.

Control Logic

The control logic circuits on the 16X16 Crosspoint Card are comprised of a two to four line decoder and an inverter. The control logic circuits are responsible for decoding control signals from the 32X32 Video Matrix Card and producing the BUSEN data signals utilized for the activation of the 4X1 crosspoint switches.

4.13 32X32 Digital Video Matrix Card

The 32X32 Digital Video Matrix Card contains a 32X32 matrix consisting of several main circuits. This discussion will be broken down to the main circuits as they are found on the schematics in Section 6 (Schematics).

Control

The microprocessor controller (U57) is used to interface switch commands from the PRCI control port (U64) to the switch matrix and return status information to the controller. Matrix input, output, and level coding is read from the backplane through U51 thru U54. U66, U56, and U60 provide address decoding for the 32X32 Digital Video Matrix Card.

4.13 32X32 Digital Video Matrix Card Continued:

Control Continued:

U59 and U58 comprise the nonvolatile RAM for the processor. C300 provides memory backup voltage for approximately seven days as long as the matrix card is not removed from the Jaguar Frame. CR25 is utilized by the processor on the 32X32 Digital Video Matrix Card to indicate a fault condition.

Two external sync signals are used for timing switches as set by S1. The external sync can be color black or composite sync. U68 and U72 decode the composite signal to an even/odd field signal which is used by the microprocessor.

Crosspoint Matrix

U50 is the 32X32 crosspoint matrix switch. A0-A4 select the output buss to control. D0-D4 select the input to be switched to the selected output. CS0 latches the data into a hold register, then VREF1 latches the data into the crosspoint control registers.

Input Equalizers

The 32 video inputs are terminated into 75 ohms on the matrix card. U1 thru U16 and U78 thru U93 provide automatic input cable equalization for the inputs. The inputs are equalized for 0 to 240 meters of Belden 8281 or equivalent cable for data rates up to 270Mbit/s and 0 to 150 meters for data rates up to 360Mbit/s.

Output Drivers

U17 thru U48 are used to drive the outputs for the 32X32 Digital Video Matrix Card.

Power Regulators

U96 is a switching regulator that creates -5.0 volts @ 5 amps to power the crosspoint matrix, input, and output ICs. U74 is a switching regulator that creates -2.00 volts @ 2 amps to power the video transmission line terminators. U73 is a +5 volt regulator which is used to power the control logic.

U76 provides power to the backplane to drive the chassis fan. U75 provides power to the heatsink fan used to cool U50. U95 monitors all primary circuit card voltages for out of voltage range conditions ($\pm 15\%$). If a fault is sensed CR24 will light and controller will report the error condition. CR26 indicates that power is applied to the 32X32 Digital Video Matrix Card.

4.14 Analog Video Output Monitor Card

The Analog Video Output Monitor Card contains several main circuits. This discussion will be broken down to the main circuits as they are found on the schematics in Section 6 (Schematics).

Control

The microprocessor controller (U26) is used to interface commands from the controller and return status information to the controller. Communications to and from the system controller are through U69, a RS485 receiver and transmitter. System timing is provided to the microprocessor by XTAL1, a 7.3728MHz oscillator. Reset for the microprocessor is provided by U25.

Monitor output, input, and level coding is read from S4, S3, and S2 by U31, U30, and U29 respectively. U18 and U19 provide address decoding for the Analog Video Output Monitor Card.

U21 and U22 comprise the nonvolatile RAM for the processor. C52 provides memory backup voltage for approximately seven days as long as the monitor card is not removed from the Jaguar Frame. CR3 is utilized by the processor on the Analog Video Output Monitor Card to indicate a CPU fault condition. An external alarm connection is provided by U27. The external connection can be utilized to audibly indicate CPU fault conditions.

Two external sync signals are used for timing switches as set by S1. The external sync can be color black or composite sync. U8 and U9 decode the composite signal to an even/odd field signal which is used by the microprocessor.

3X8 Decoder

The 3X8 decoder circuit on the Analog Video Output Monitor Card is comprised of U11 and U12 (3 to 8 decoders) and their associated components. U11, U12, and their associated components are responsible decoding the address signals provided by the controller circuit and providing the address signals to the 8X1 Crosspoint Boards mounted on the output combiners. U12 provides addressing for inputs 1-32 (system outputs 1-32) and U13 provides addressing for inputs 33-64 (system outputs 33-64).

4.14 Analog Video Output Monitor Card Continued:

4X1 Crosspoint

The 4X1 crosspoints (U1 and U2) and their associated components are responsible for the selection of the monitor signal to be provided to the monitor output. U3 and its associated components drives the selected monitor output into 75 ohms and functions as the monitor output line driver.

Power

The power regulator circuits on the Analog Video Output Monitor Card are comprised of U24 and U32 and their associated components. U24 is responsible for providing a regulated -5V to the Analog Video Output Monitor Card's electronic circuits and U32 is responsible for providing a regulated +5V to the Analog Video Output Monitor Card's electronic circuits. CR2 provides a visible indication of the health of the regulator circuits.

Digital Output

The digital output circuit is used in digital video systems only. U7 functions as a digital receiver with reclocking and U5 functions as a digital decoder. U6 auto tunes the digital reclocker to any SMPTE digital standard (D1, D2 NTSC, D2 PAL, 360 Mb/s). U4 drives the digital outputs.

4.15 Digital Video Output Monitor Card

For a functional description of the Digital Video Output Monitor Card refer to the Analog Video Output Monitor Card's functional description (digital output).

4.16 8X1 Crosspoint Card

The 8X1 Crosspoint Card selects one of outputs of the Analog Video Output Combiner Card and provides the selected output to the Analog Video Output Monitor Card. The 8X1 Crosspoint Card's output selection process is controlled by the controller circuit on the Analog Video Output Monitor Card.

4.16 8X1 Crosspoint Card Continued:

The electronic circuits on the 8X1 Crosspoint Card consist of eight input buffers, two 4X1 crosspoints, an output line driver, and their associated components. The input buffers isolate the video input signals provided by the Analog Video Output Combiner Card and provide the isolated video signal to their corresponding 4X1 crosspoint. The controller circuit on the Analog Video Output Monitor Card activates one of the two crosspoints and enables the selected crosspoint to select one of its four input signals. The selected video signal is passed by the selected crosspoint to the output line driver. The output line driver drives the selected output into 75 ohms.

5.1 Introduction

This section will cover the maintenance, troubleshooting, and repair of the Jaguar Video Switchers.

WARNING

THE JAGUAR VIDEO CHASSIS AND PS130 POWER SUPPLIES CONTAIN ELECTRICAL SHOCK HAZARDS. THE JAGUAR VIDEO ROUTING SWITCHER AND THE PS130 POWER SUPPLIES SHOULD ONLY BE SERVICED BY QUALIFIED SERVICE PERSONNEL AND/OR QUALIFIED TECHNICIANS.

NOTICE

THIS EQUIPMENT CONTAINS STATIC SENSITIVE DEVICES. IT IS RECOMMENDED THAT A GROUNDED WRIST STRAP AND MAT BE USED WHILE MAKING REPAIRS OR ADJUSTMENTS.

5.2 General

The Jagaur Video Switchers are designed to produce the proper video levels throughout the frame. There is no need to perform periodic adjustments and the need for regular maintenance is minimal.

5.3 Test Equipment

The test equipment recommended for servicing the Jaguar Video Switchers and their associated circuit cards is listed below. Equivalent test equipment may be used.

Audio Generator
Distortion Analyzer
High Frequency Generator
Spectrum Analyzer
Oscilloscope
Digital Voltmeter
75 Ohm Termination



5.4 Preventive Maintenance

Use the following guidelines for general preventive maintenance:

- Keep the inside of the equipment items clean, especially if your facility is subject to dust or dirt in the atmosphere. Use compressed air, an antistatic cloth, or a gentle vacuum to clean the frame and internal components.
- Observe proper procedures for preventing electrostatic discharge when cleaning the units, and when inserting and removing cards. Ensure that all tools and personnel handling individual components are properly grounded.
- Avoid covering the front grille for any extended period. Blocking the front grille will block the air flow through the chassis fans and may overheat the internal circuit cards.

5.5 Maintenance

The Jaguar Video Switchers and their associated circuit cards are designed and manufactured to give long, trouble free service with minimum maintenance requirements. If problems do occur, follow the troubleshooting procedure provided in this section. If additional technical assistance is required, refer to the General Assistance and Service information in the front of the manual. Section 6 contains component layout drawings and schematics for assistance in troubleshooting and Section 7 contains the lists of replacement parts for repairing the Jagaur Video Switchers and their associated circuit cards.

5.6 Corrective Maintenance

The following paragraphs provide information to assist the servicing technician in performing the maintenance of the Jagaur Video Switchers and their associated circuit cards.

Factory Repair Service

If desired, equipment or boards may be returned to the factory (transportation prepaid) for repair. Refer to the General Assistance and Service Information Sheet in the front of this manual. Call the PESA Service Department (the phone number is listed on the Service Information Sheet) for a RMA number before shipping an equipment item.



5.6 Corrective Maintenance Continued:

Factory Repair Service Continued:

NOTE

PACK THE EQUIPMENT SECURELY AND LABEL WITH THE CORRECT ADDRESS. PROPER PACKAGING SAVES MONEY. THE SMALL AMOUNT OF EXTRA CARE AND TIME IT TAKES TO CUSHION A PART OR UNIT PROPERLY MAY PREVENT COSTLY DAMAGE WHILE IN TRANSIT. MAKE CERTAIN THAT THE ADDRESS IS BOTH LEGIBLE AND COMPLETE. FAILURE TO DO SO OFTEN RESULTS IN DELAY OR EVEN LOSS.

Troubleshooting

The best troubleshooting tool is a familiarity with the equipment and a thorough understanding of its operation. Before troubleshooting the Jaguar Video Switchers or their associated circuit cards review Sections 3 and 4 of this manual. Use the functional descriptions and adjustment procedures to quickly locate problems.

- If a problem is suspected with an individual circuit card and a replacement card is available, swap out the card and recheck the system for the problem. If the problem can be isolated to the card, and your facility is equipped for component level repair, proceed with repairs using the schematics provided in Section 6 of this manual.

NOTE

BEFORE PROCEEDING WITH COMPONENT LEVEL REPAIR MAKE SURE THE EQUIPMENT IS OUT OF WARRANTY. REPAIRING EQUIPMENT COVERED BY A WARRANTY WILL VOID THE WARRANTY.



5.6 Corrective Maintenance Continued:

System Checks

Prior to troubleshooting the Jagaur Video Switchers the following basic system checks should be performed.

1. Verify the AC circuit condition. Ensure the unit is receiving the correct voltage from the main AC power source.
2. Check all line fuses and power cords.
3. Ensure that all circuit cards are firmly seated
4. Ensure all interconnecting cables and connectors are plugged in or firmly seated.
5. If applicable, ensure main power switch is turned on.

Replacement Parts

Only parts of the highest quality have been used in the design and manufacture of the Jaguar Video Switchers and their associated circuit cards. If the inherent stability and reliability are to be maintained, replacement parts must be of the same quality. A replacement parts list is provided in Section 7 of this manual. When replacing parts, avoid using excessive solder on the printed circuit board. Always make sure that the solder does not short two circuits together. Be sure the replacement part is identical to the original, and is placed in exactly the same position with the same lead lengths (if applicable).

5.7 Filter Cleaning

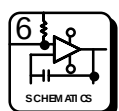
The front door of the Jagaur Video Switchers contains an air filter. The air filter should be cleaned on a periodic basis. Remove the filter from the door and clean it with soapy water or low pressure air. After drying reinstall the filter in the door.

6.1 Schematics

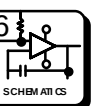
General

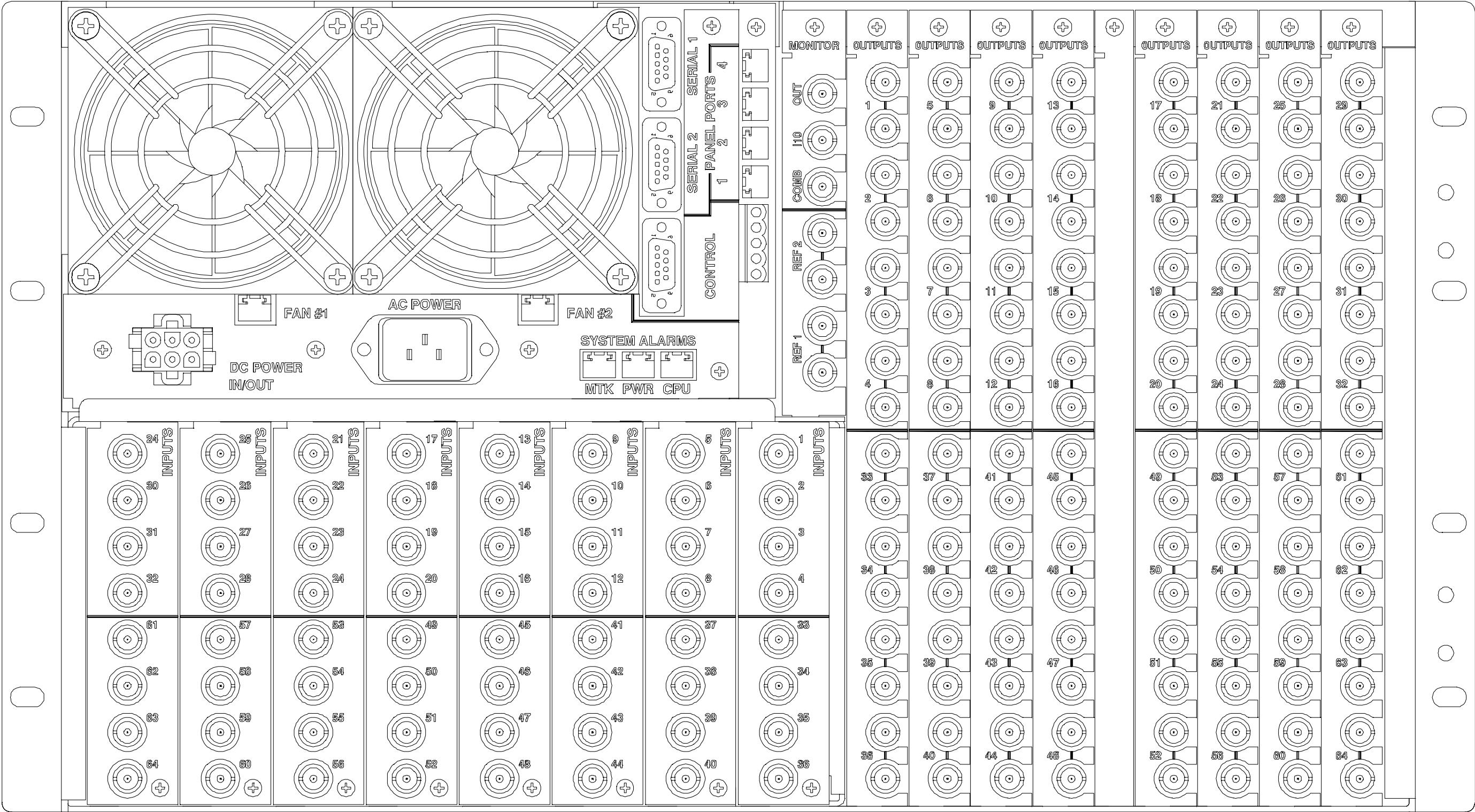
This section contains the schematic diagrams and parts location diagrams for the Jaguar Video Switchers . Please refer to this section when troubleshooting the equipment or replacing defective parts.

<u>Description</u>	<u>Dwg No.</u>	<u>Page No.</u>
Jaguar Video Mainframe Assembly	CD63-0765	6.2
Jaguar Video Chassis Assembly	CD63-0764	6.4
Matrix Mid-Plane	CA25-1309	6.5
	SC33-1309	6.7
Power Mid-Plane	CA25-1313	6.13
	SC33-1313	6.15
Video Input Buffer Card	CA25-1310	6.17
	SC33-1310	6.18
Analog Video Output Combiner Card	CA25-1311	6.19
	SC33-1311	6.20
Digital Video Output Combiner Card	CA25-1349	6.22
	SC33-1349	6.24
Dual Reference Interface	CA25-1340	6.28
	SC33-1340	6.30
Rear Panel Connector	CA25-1314	6.32
	SC33-1314	6.33
32X32 Analog Video Matrix Card	CA25-1276	6.34
	SC33-1276	6.36
16X16 Crosspoint Card	CA25-1284	6.51
	SC33-1284	6.53
32X32 Digital Video Matrix Card	CA25-1353	6.59
	SC33-1353	6.61
Analog/Digital Video Output Monitor Card	CA25-1316	6.70
	SC33-1316	6.71
8X1 Crosspoint Card	CA25-1312	6.74
	SC33-1312	6.75
Dummy Load Card	CA25-1356	6.76
	SC33-1356	6.77

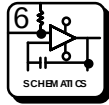


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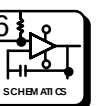




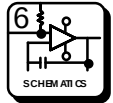
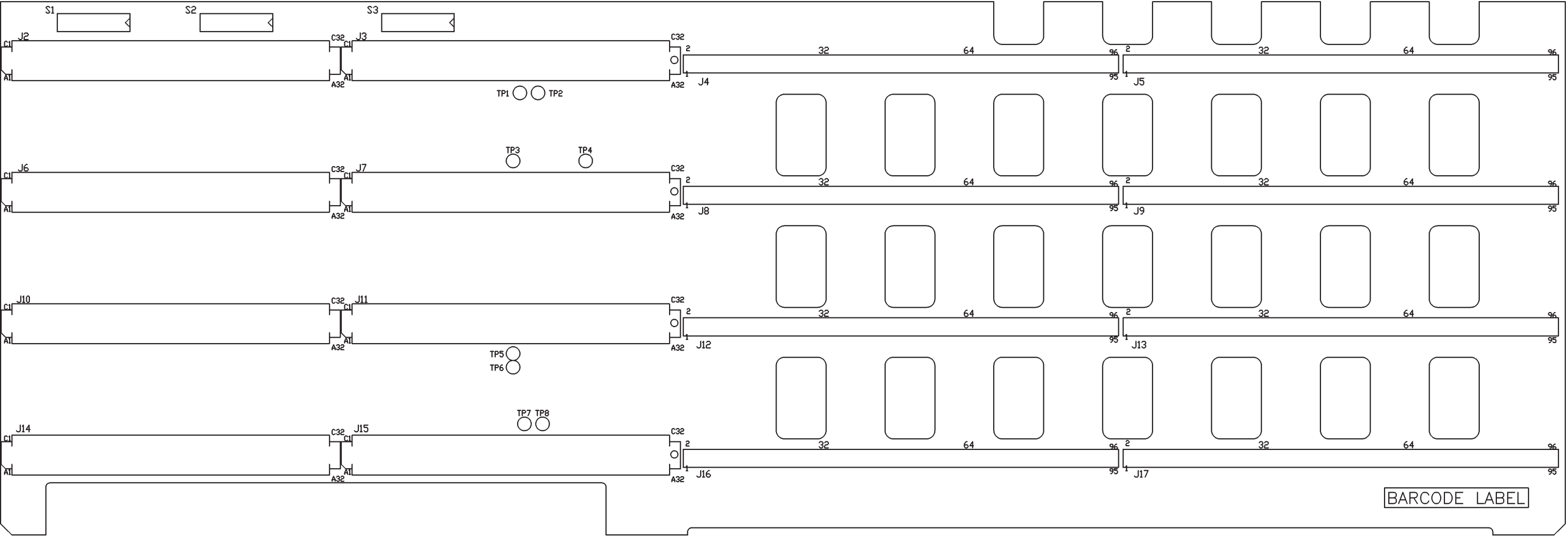
Configuration Drawing (Sheet 2 of 2) • Jaguar Video Mainframe Assembly • CD63-0765



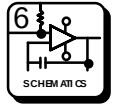
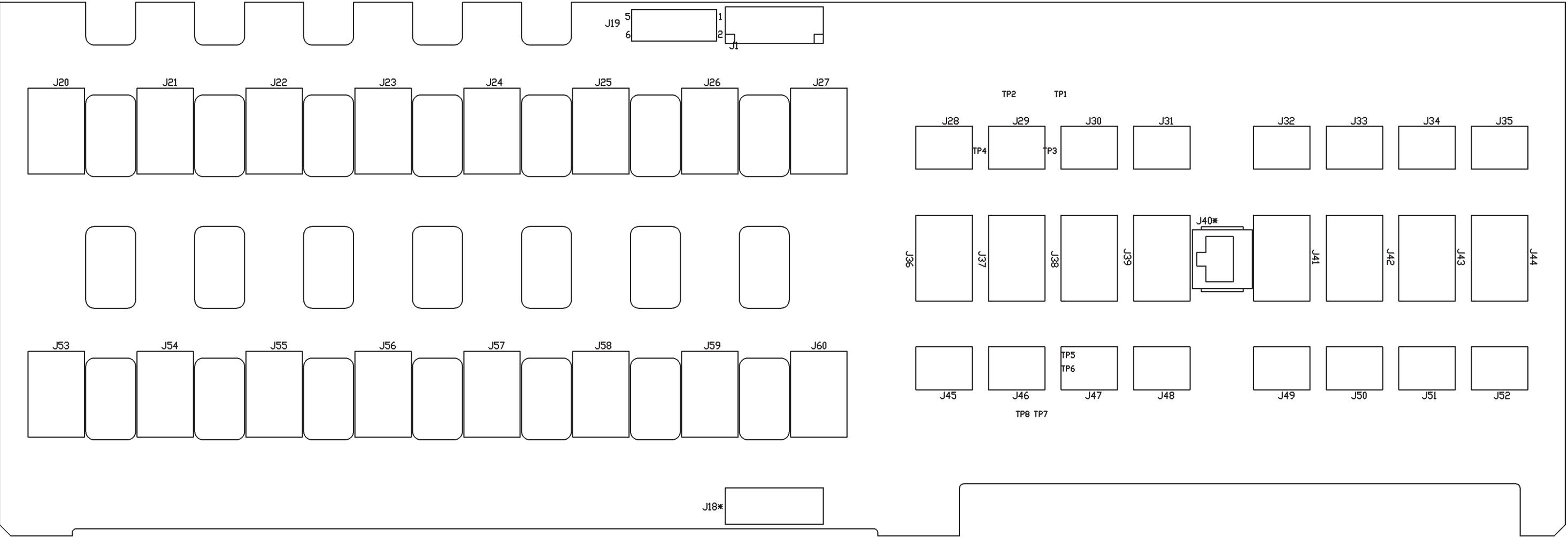
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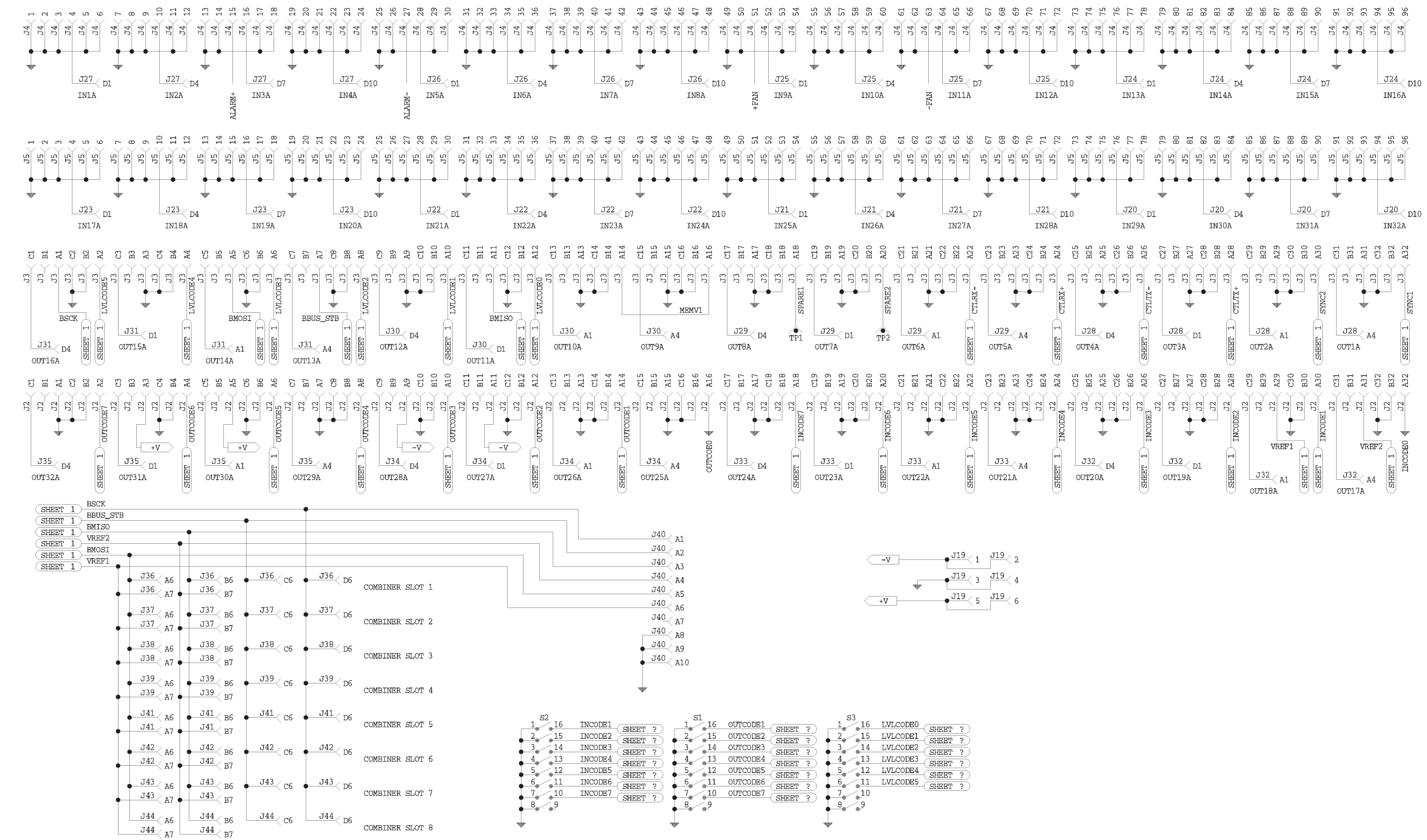
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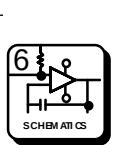
SOLDER SIDE LAYER 6 OF 6



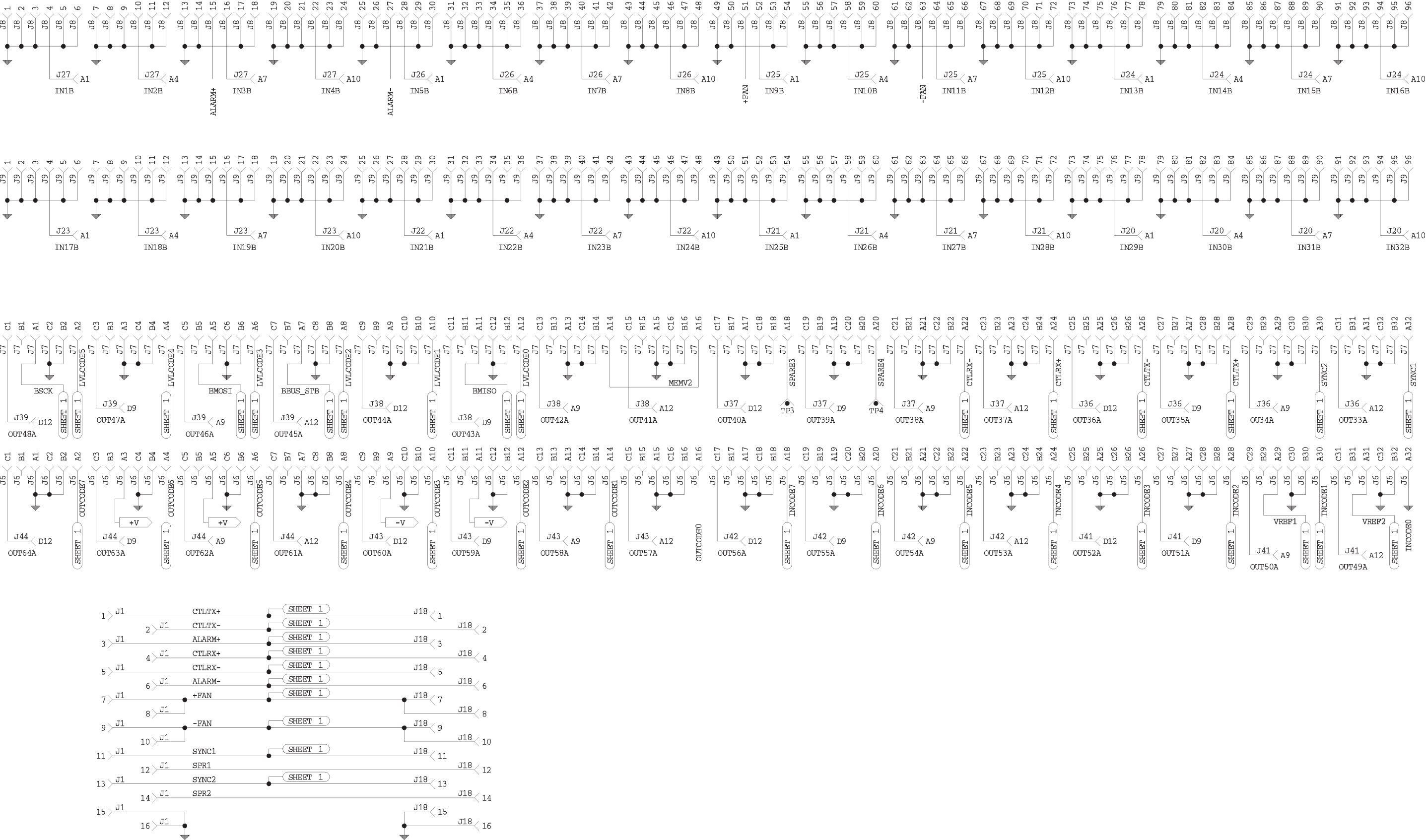
MATRIX SLOT #1 INPUT 0-32, OUTPUT 0-32



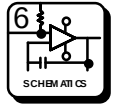
Schematic (Sheet 1 of 6) • Matrix Mid-Plane • SC33-1309



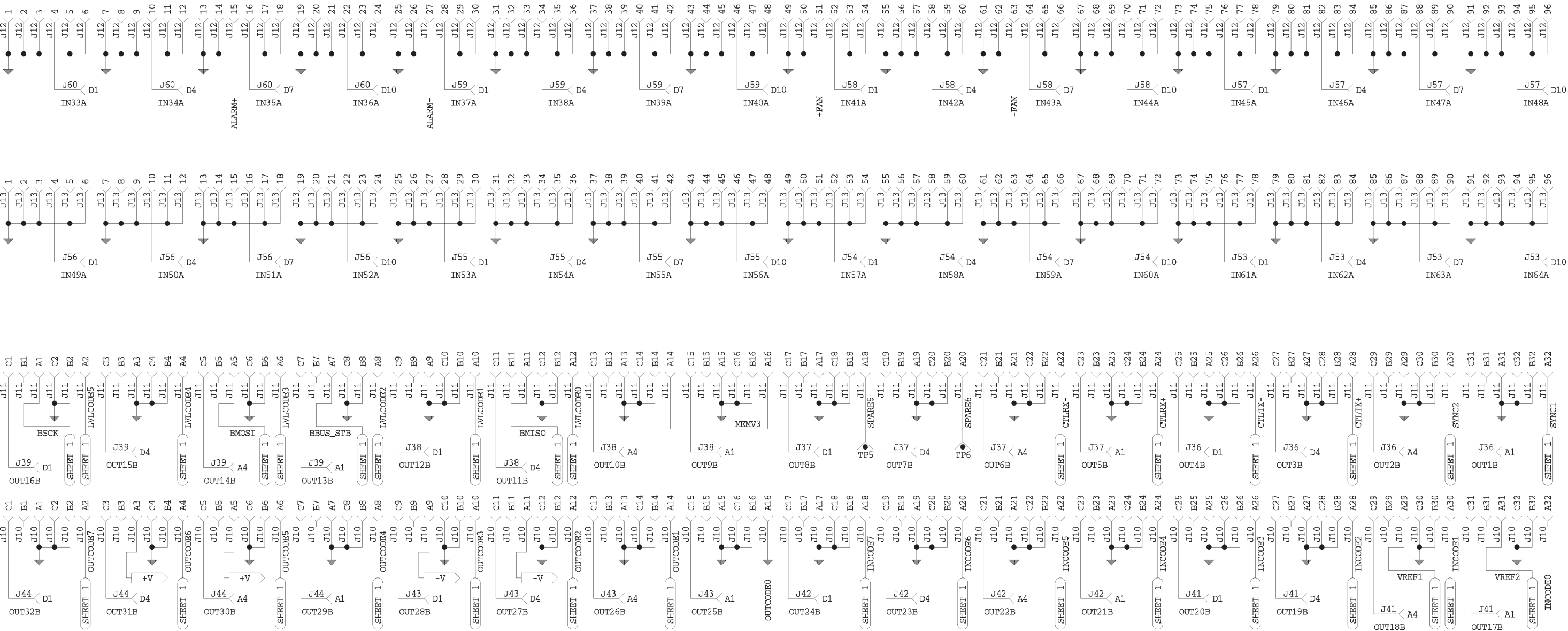
MATRIX SLOT #2 INPUT 0-32, OUTPUT 33-64



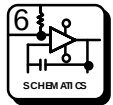
Schematic (Sheet 2 of 6) • Matrix Mid-Plane • SC33-1309



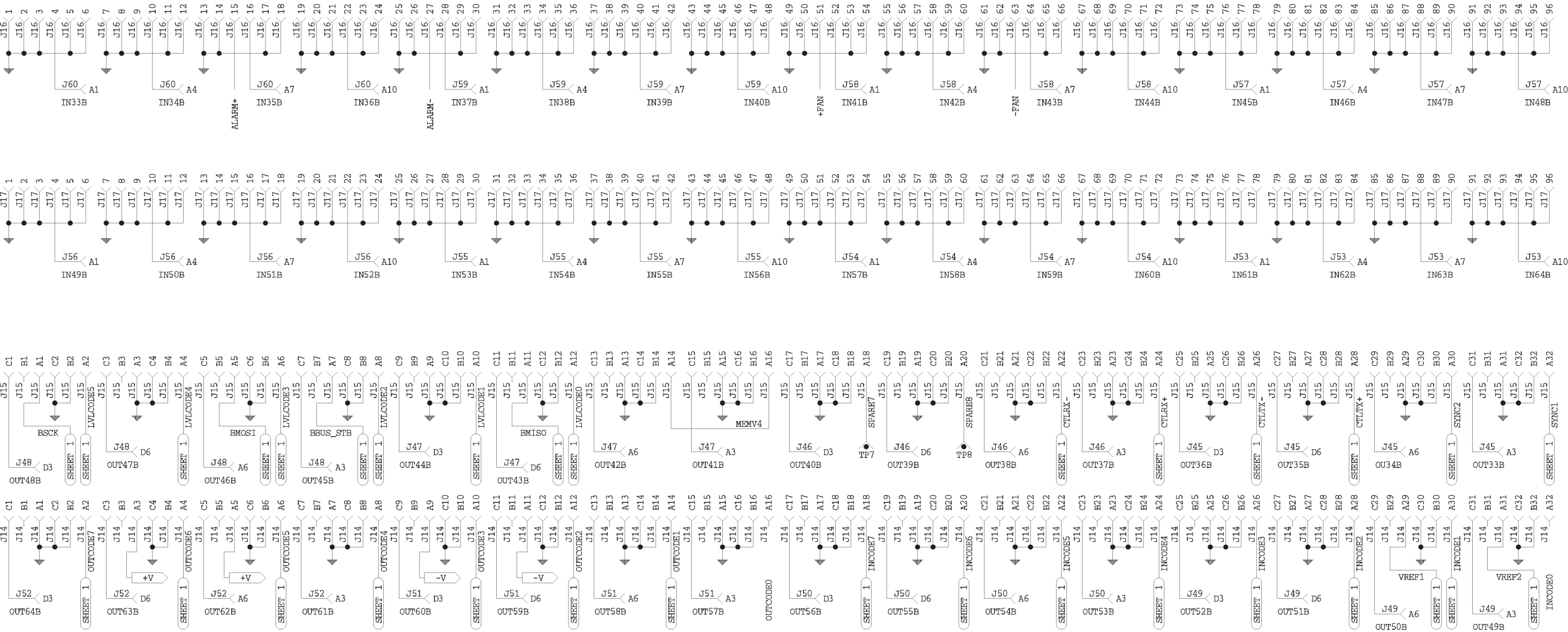
MATRIX SLOT #3 INPUT 33-64, OUTPUT 0-32



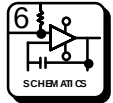
Schematic (Sheet 3 of 6) • Matrix Mid-Plane • SC33-1309

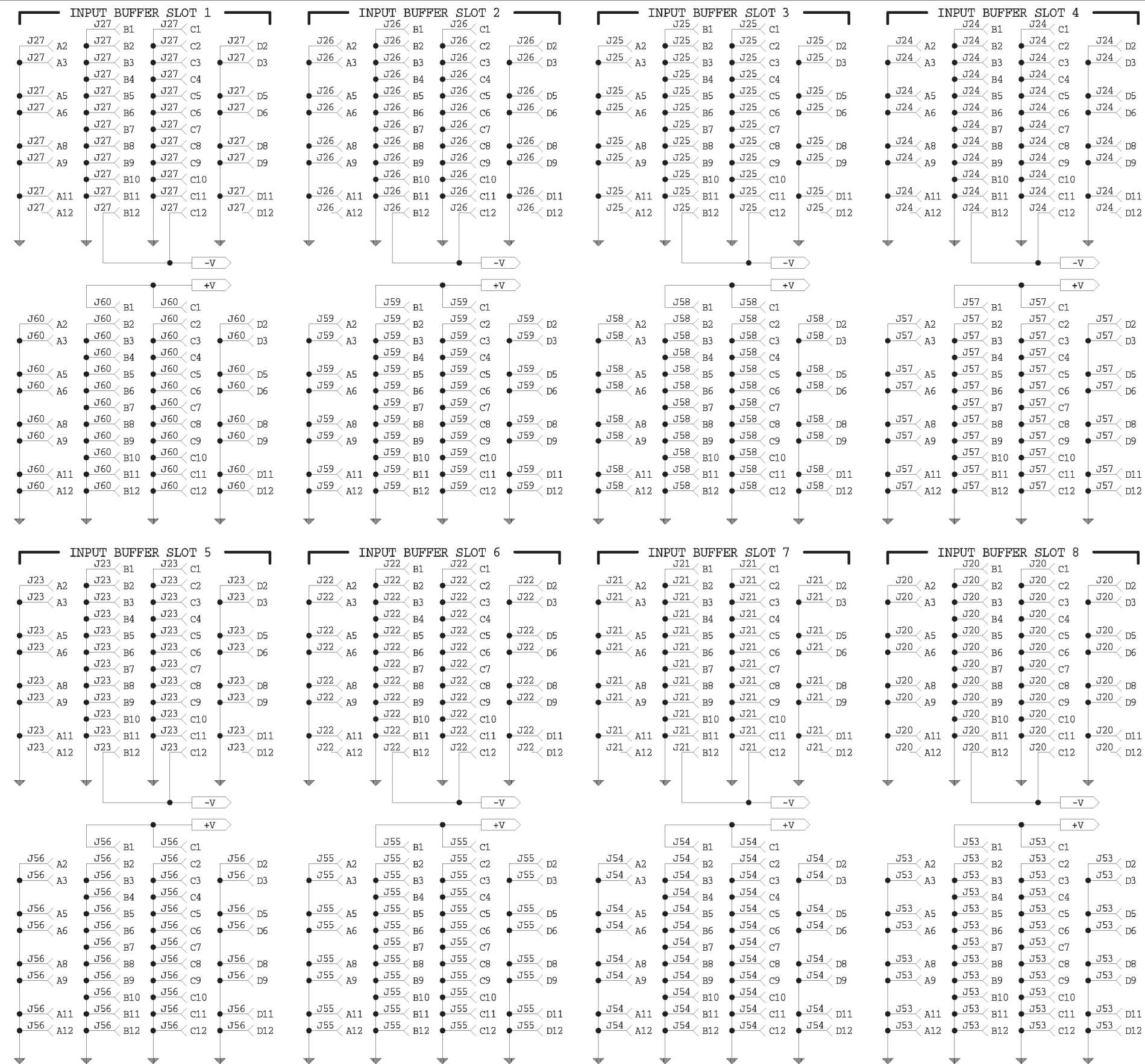


MATRIX SLOT #4 INPUT 33-64, OUTPUT 33-64

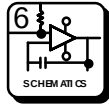


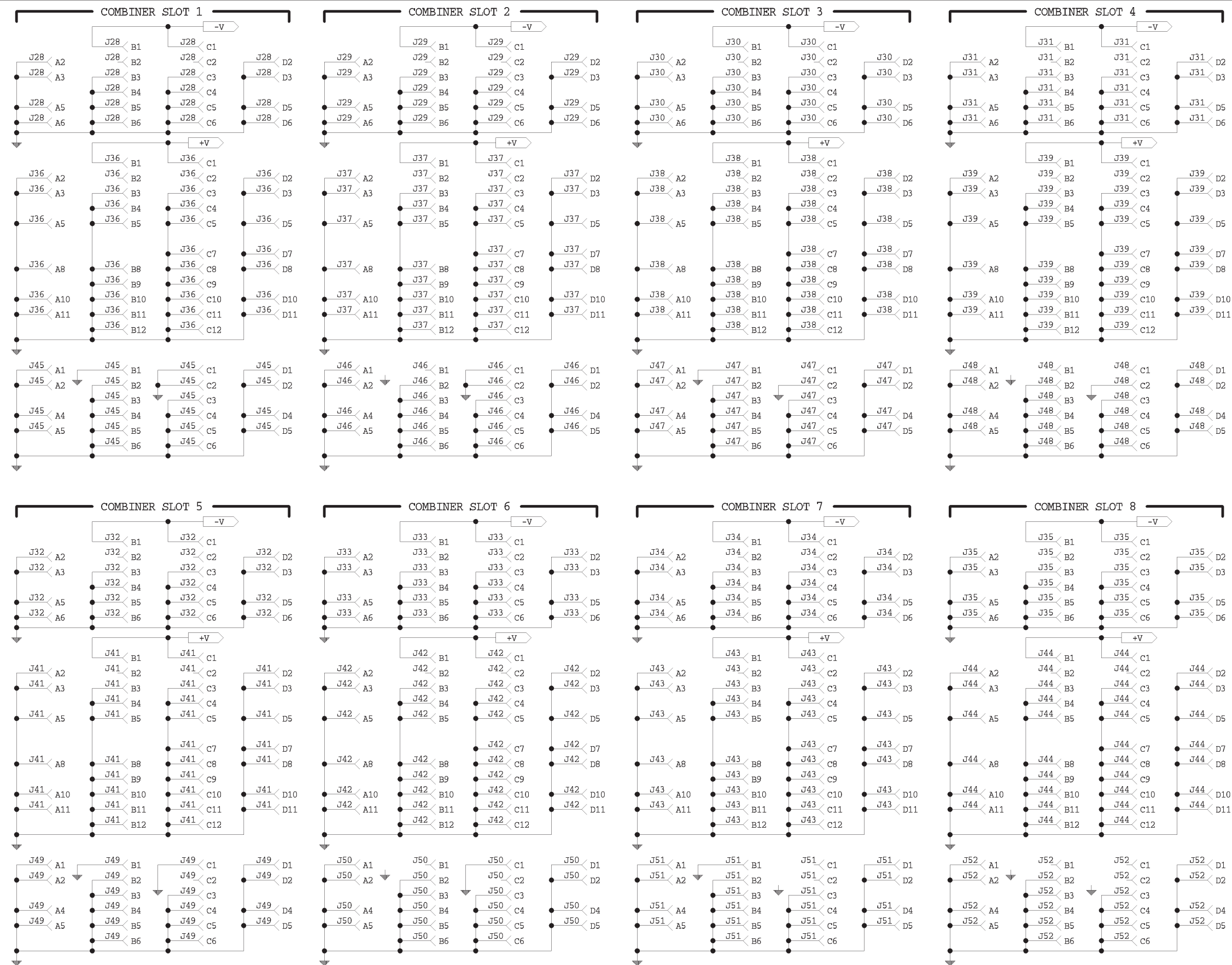
Schematic (Sheet 4 of 6) • Matrix Mid-Plane • SC33-1309



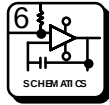


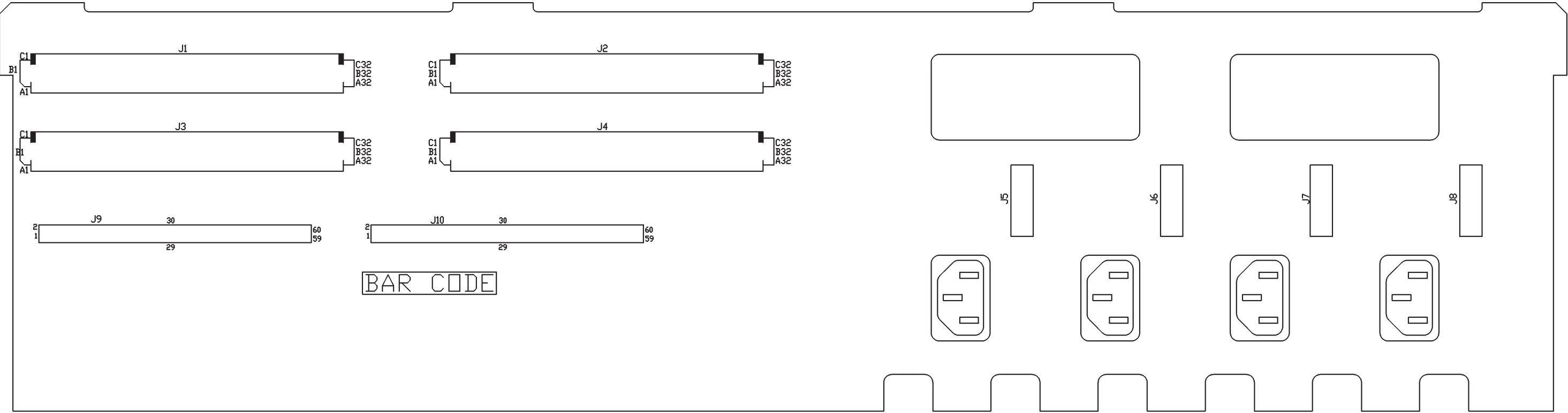
Schematic (Sheet 5 of 6) • Matrix Mid-Plane • SC33-1309



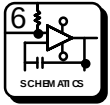


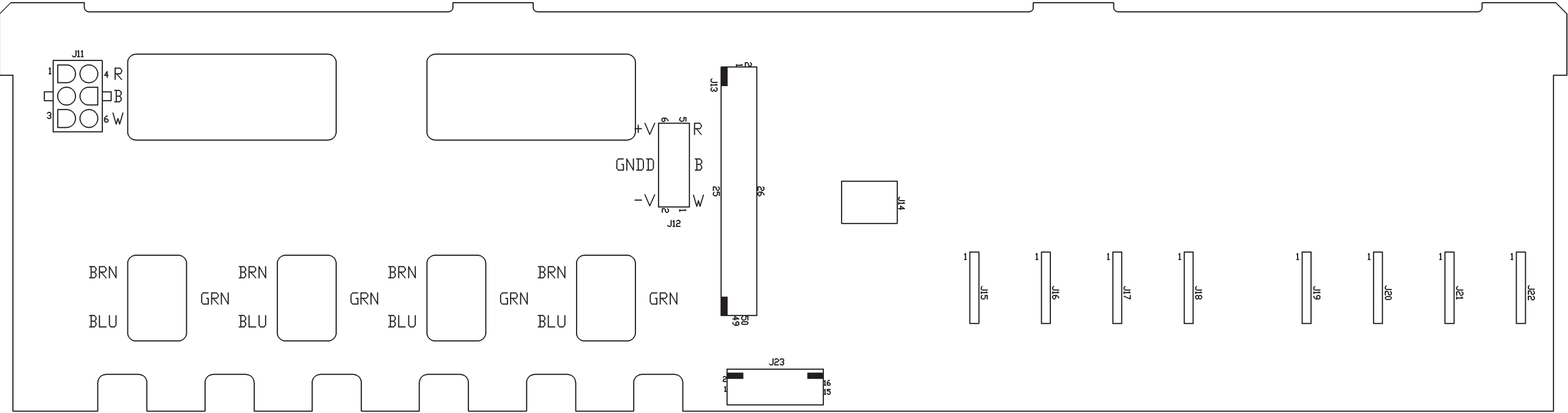
Schematic (Sheet 6 of 6) • Matrix Mid-Plane • SC33-1309



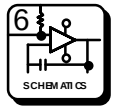


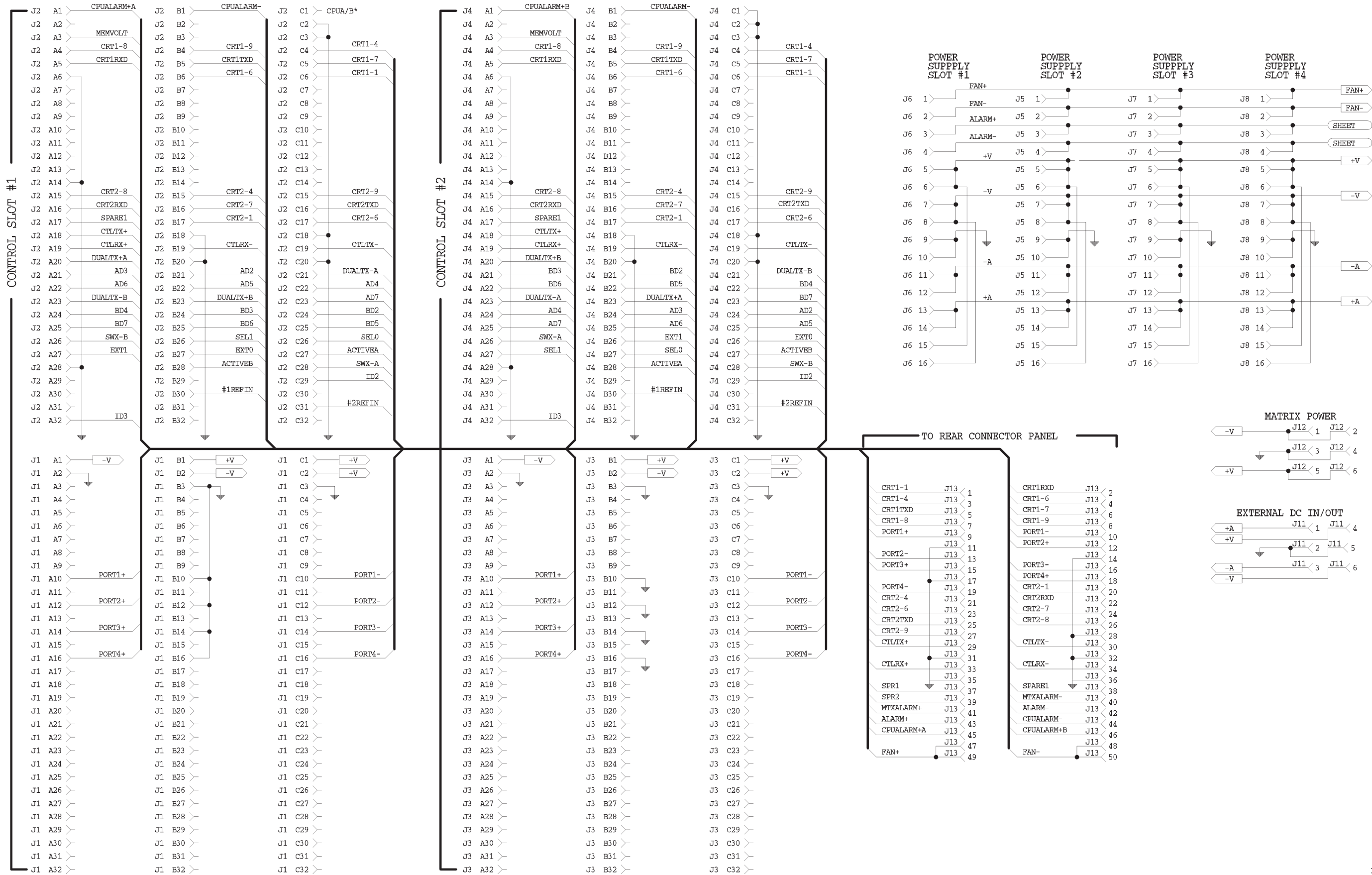
SILKSCREEN - TOP (LAYER 1)



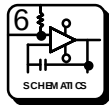


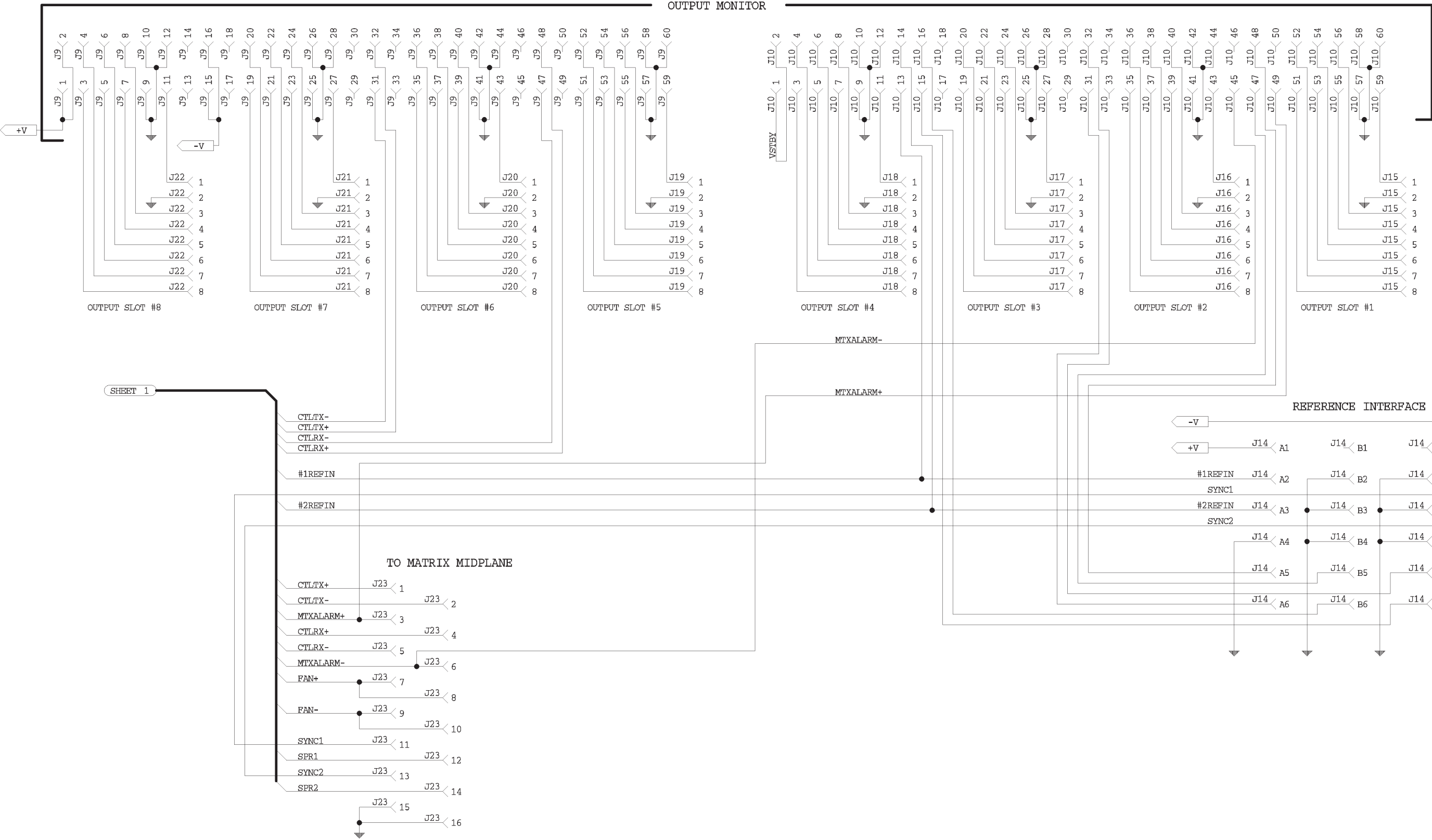
SILKSCREEN - BOTTOM (LAYER 2)



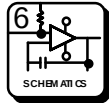


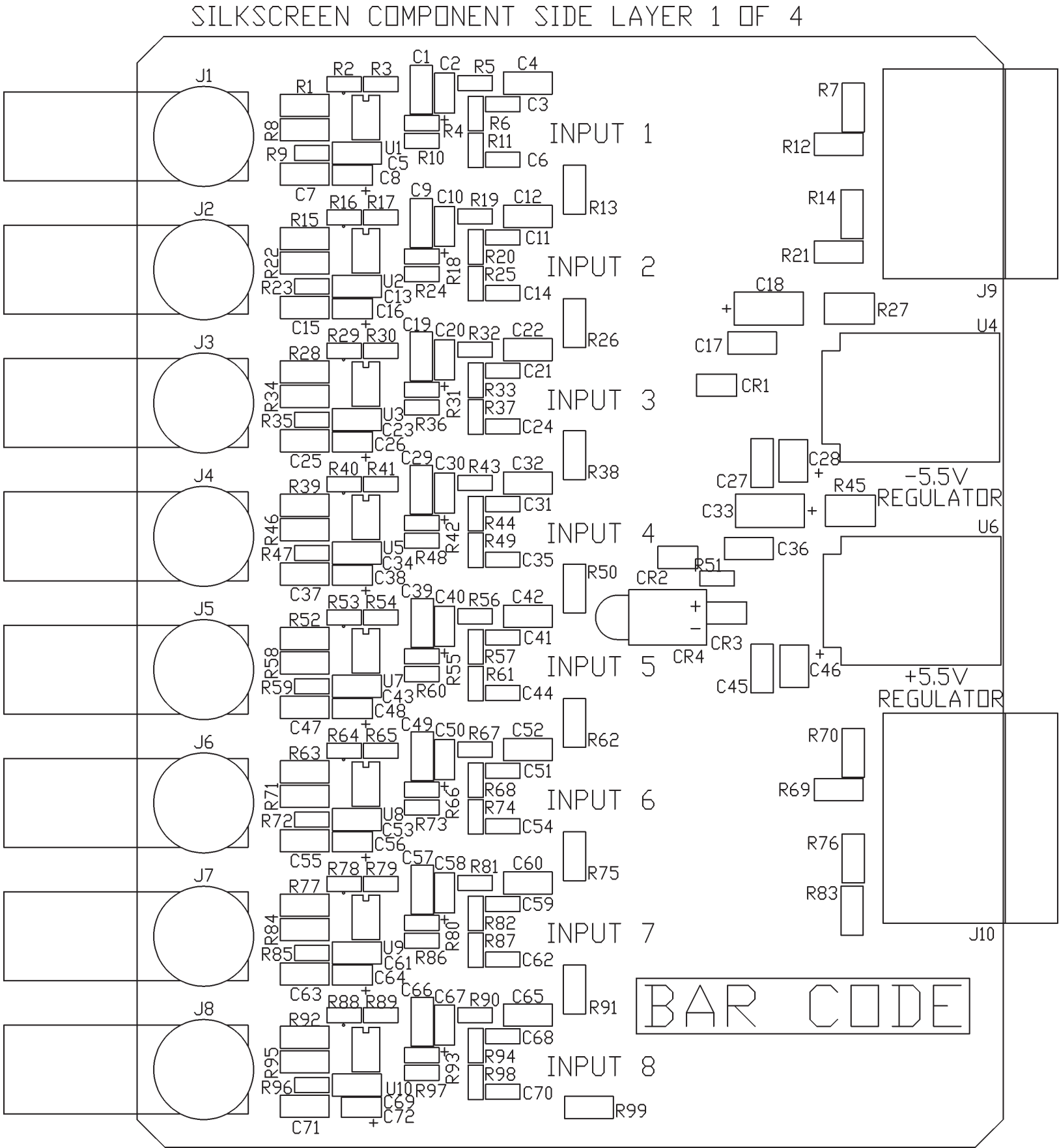
Schematic (Sheet 1 of 2) • Power Mid-Plane • SC33-1313



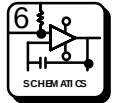


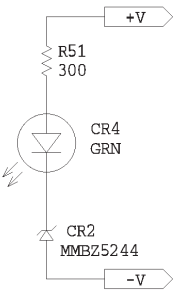
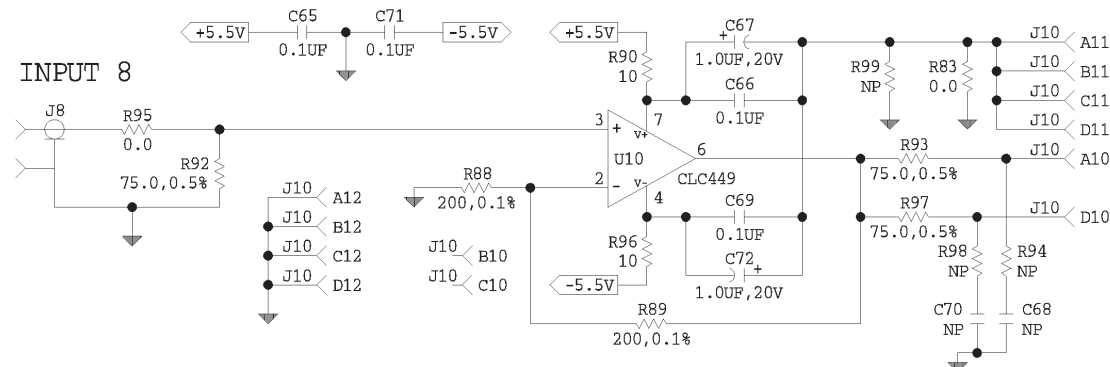
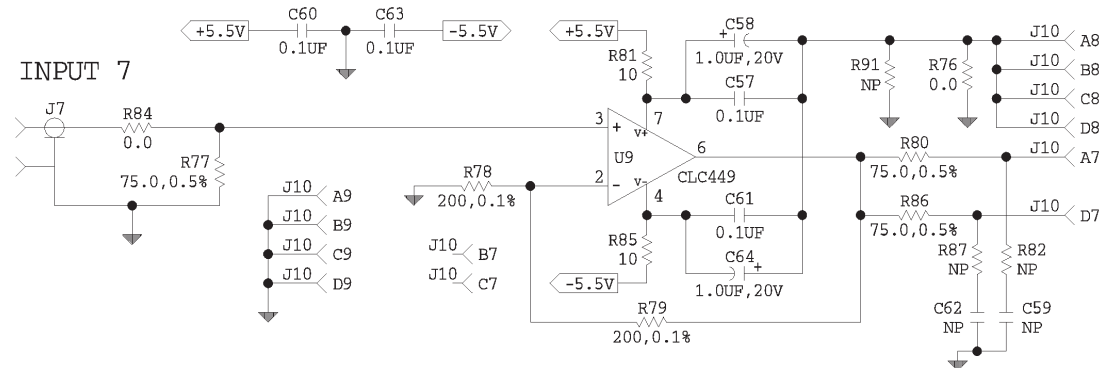
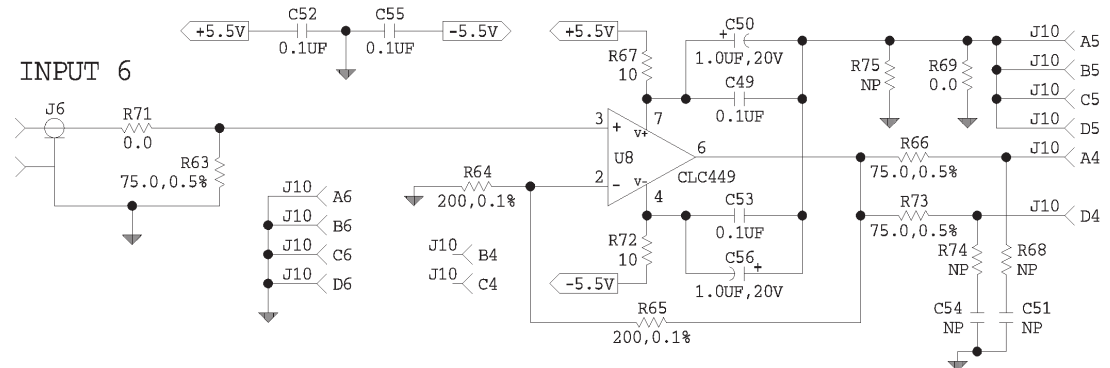
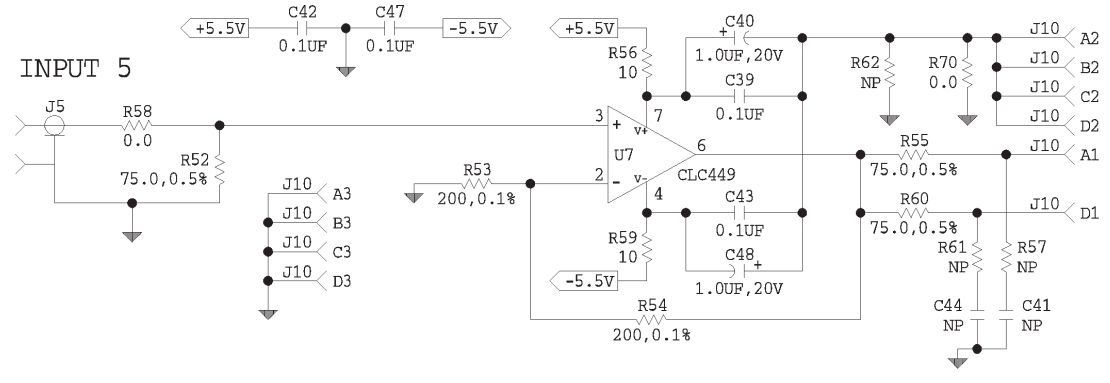
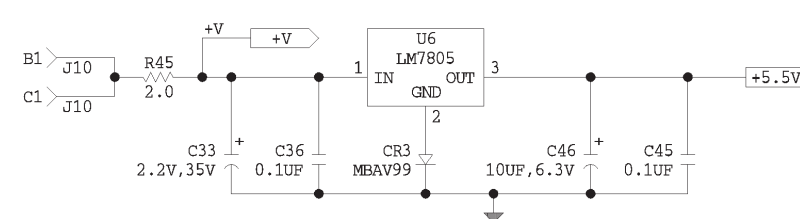
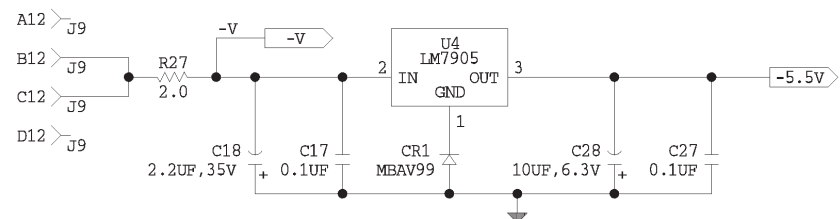
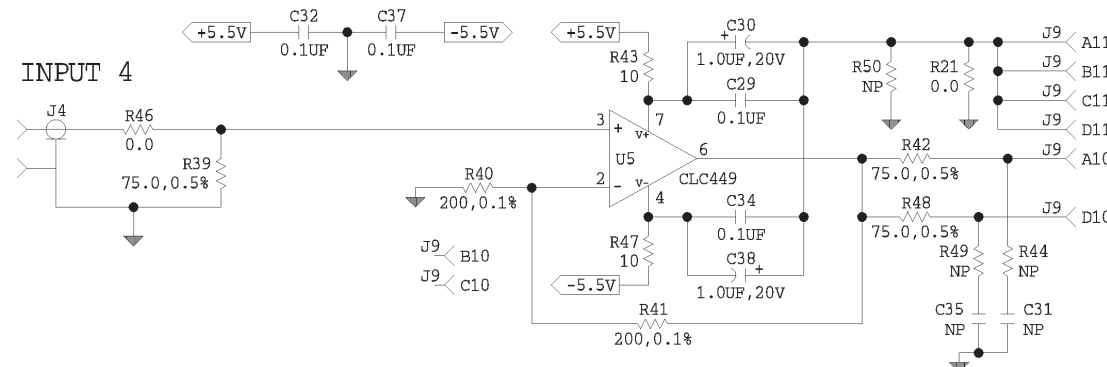
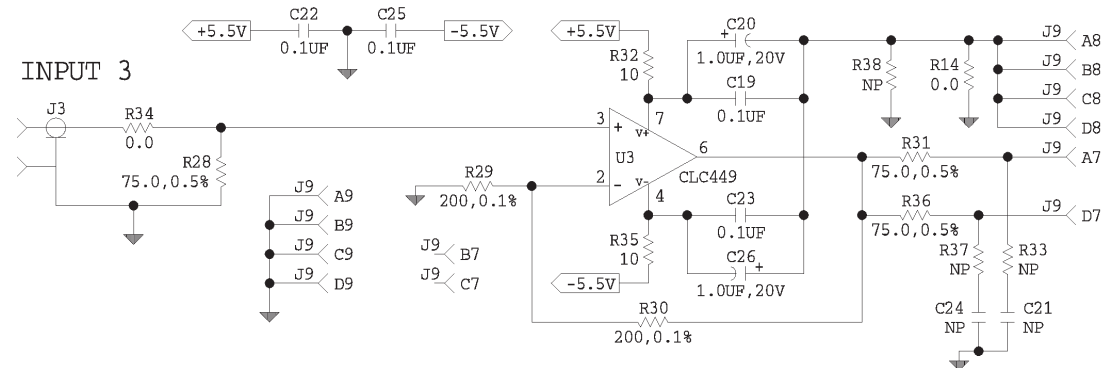
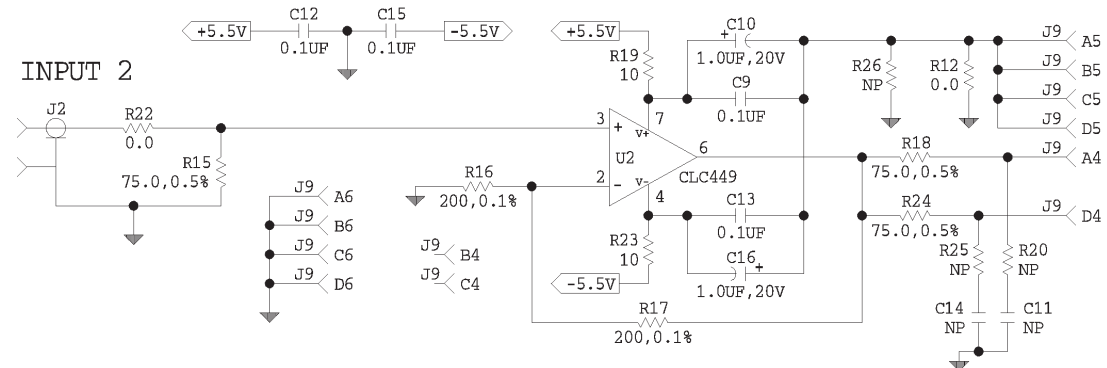
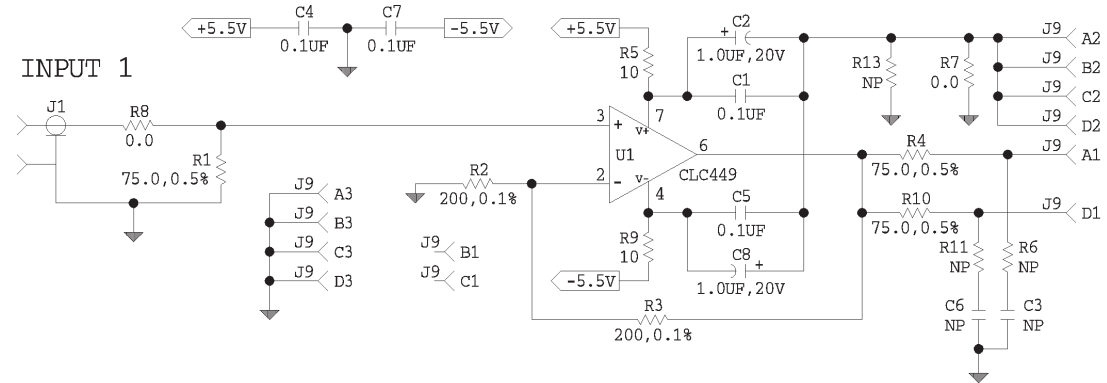
Schematic (Sheet 2 of 2) • Power Mid-Plane • SC33-1313



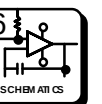


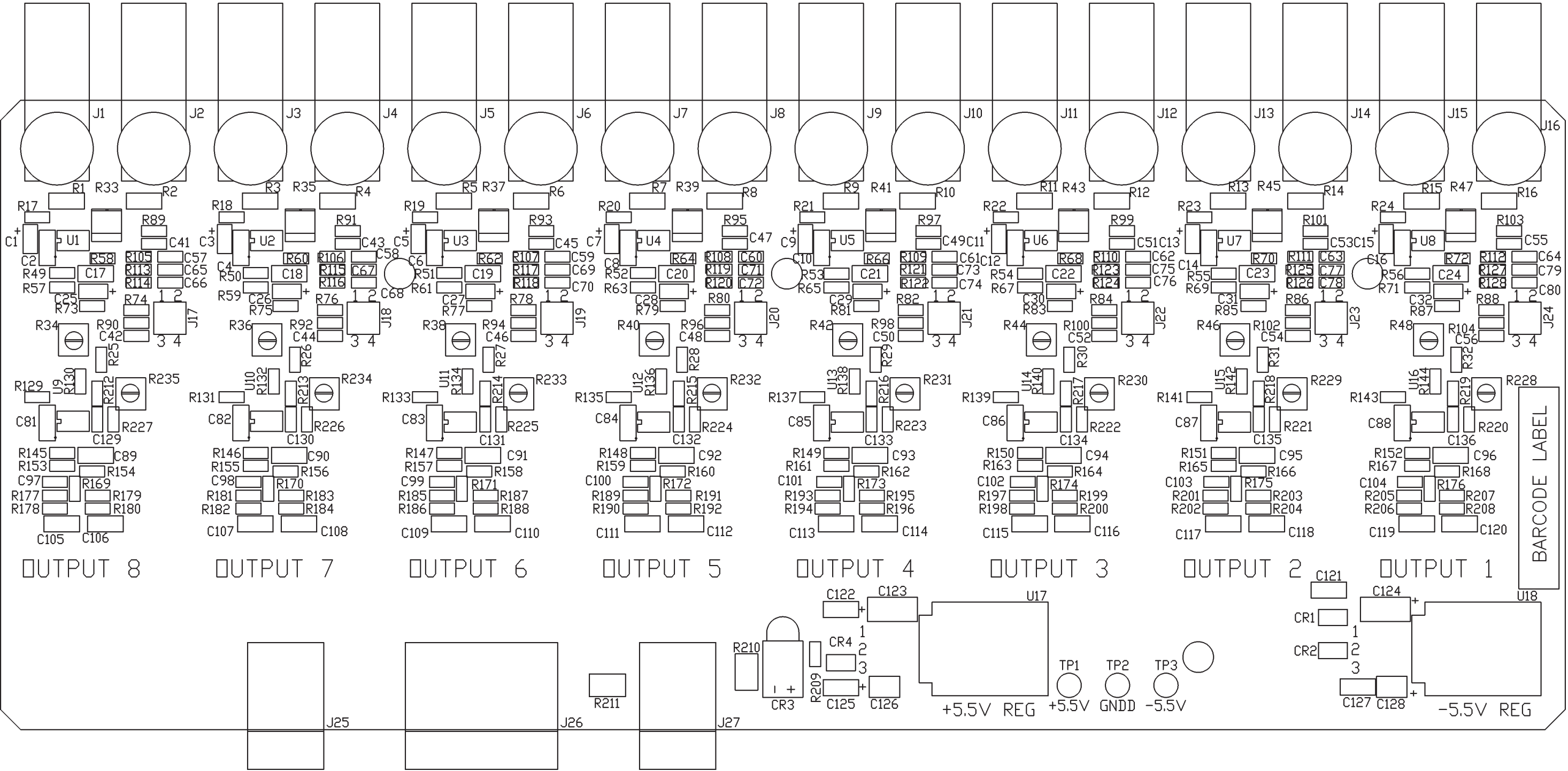
Component Assembly • Video Input Buffer Card • CA25-1310



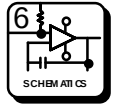


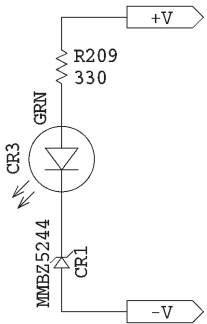
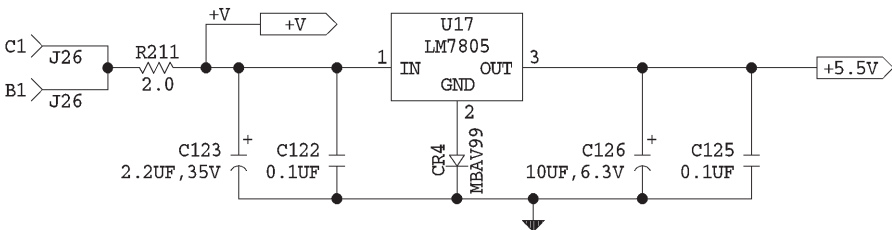
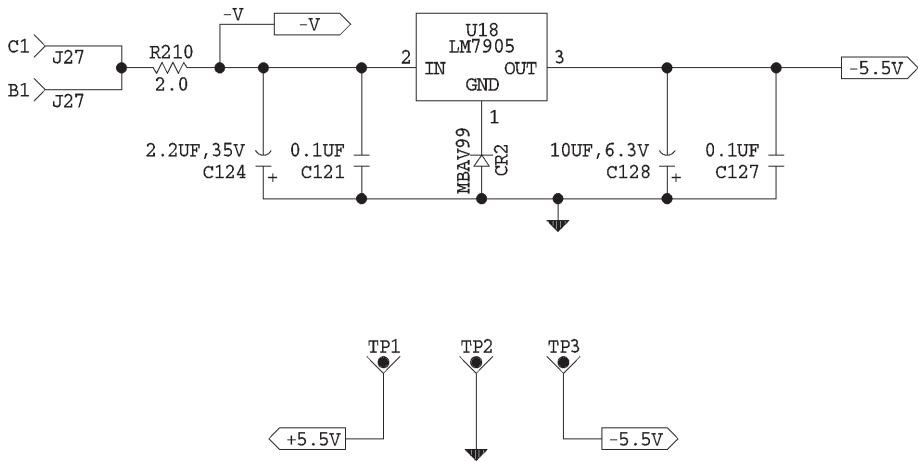
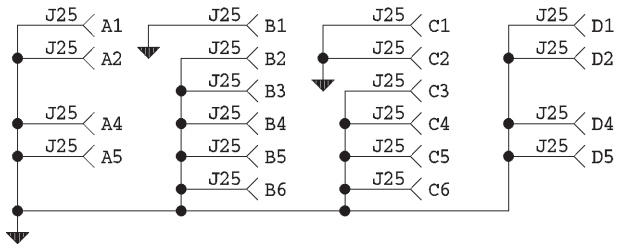
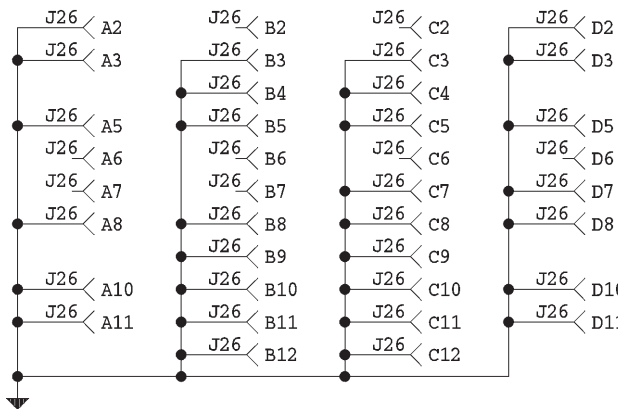
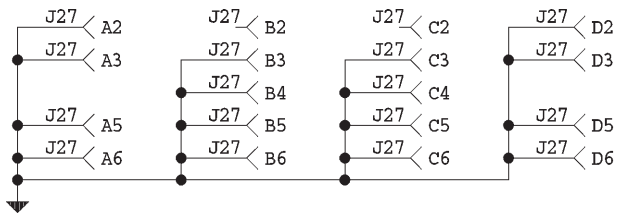
Schematic • Video Input Buffer Card • SC33-1310



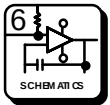


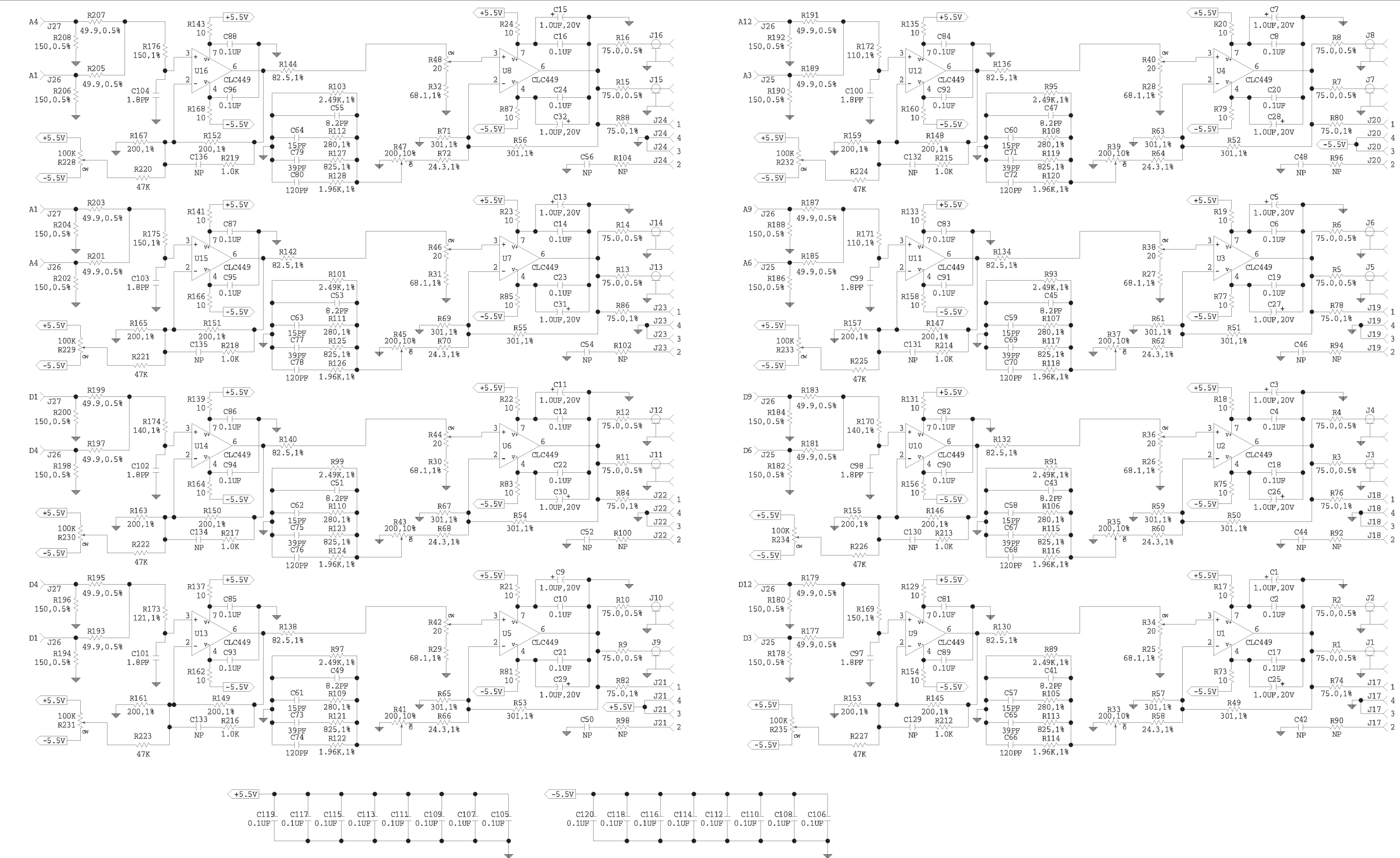
Component Assembly • Analog Video Output Combiner Card • CA25-1311



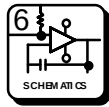


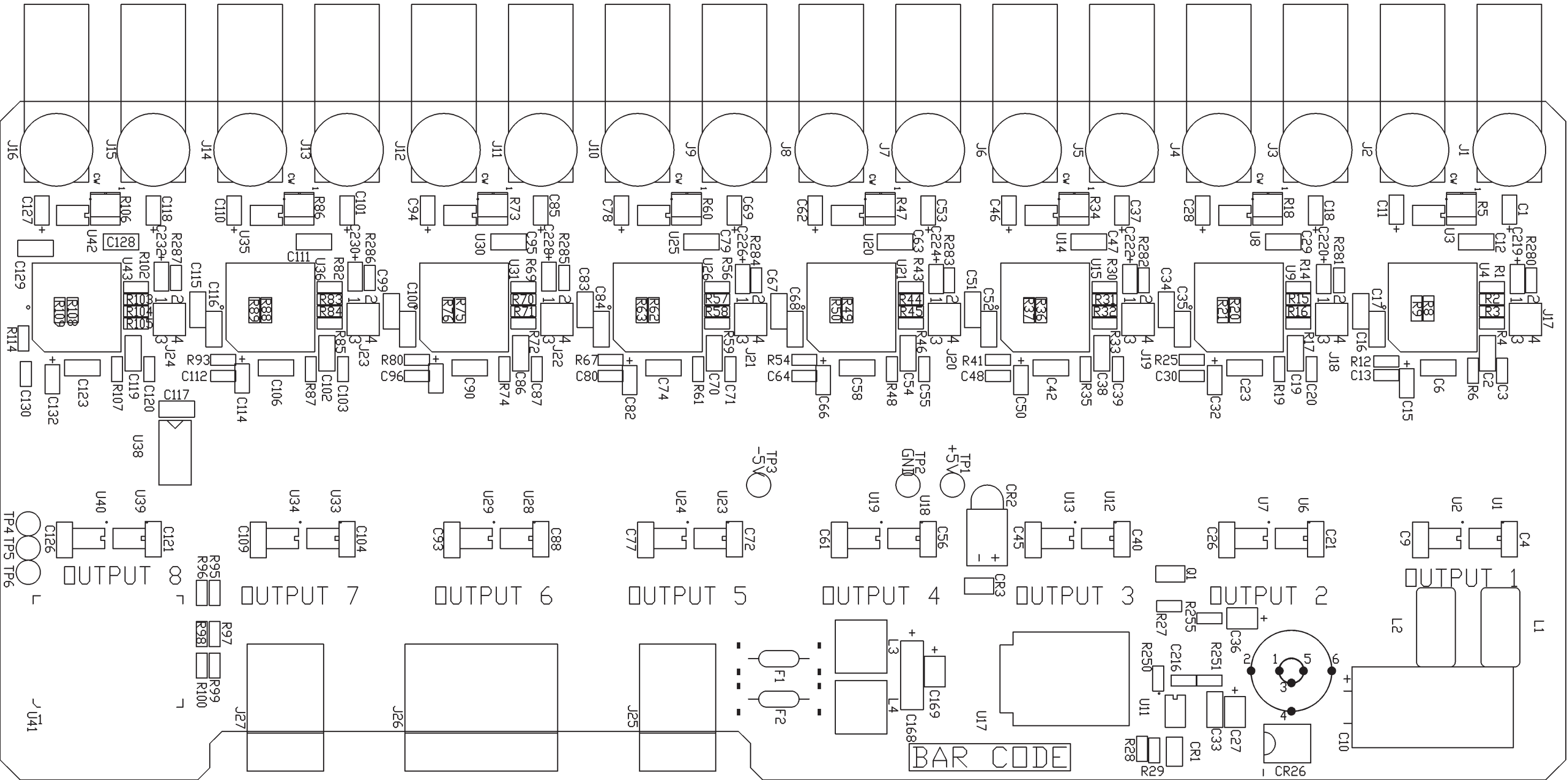
Schematic (Sheet 1 of 2) • Analog Video Output Combiner Card • SC33-1311



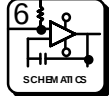


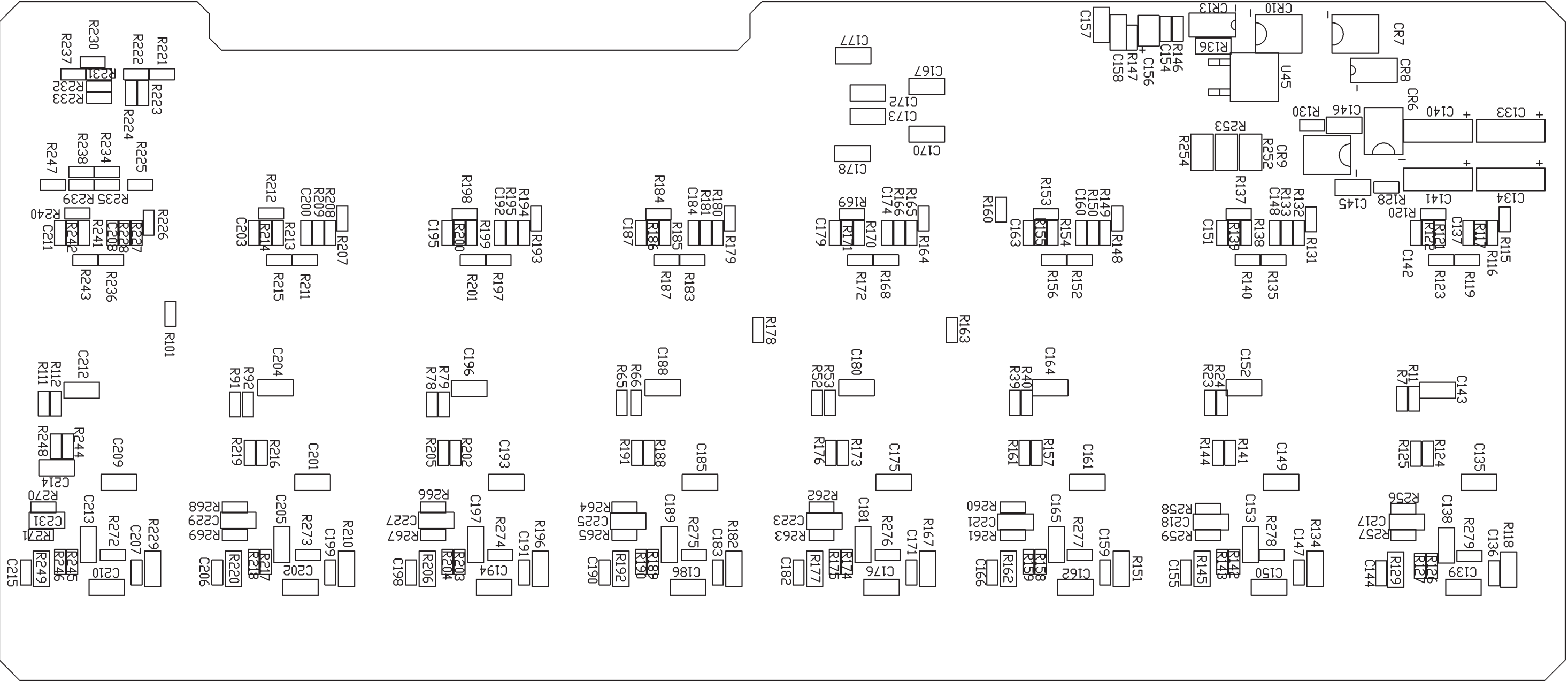
Schematic (Sheet 2 of 2) • Analog Video Output Combiner Card • SC33-1311



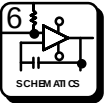


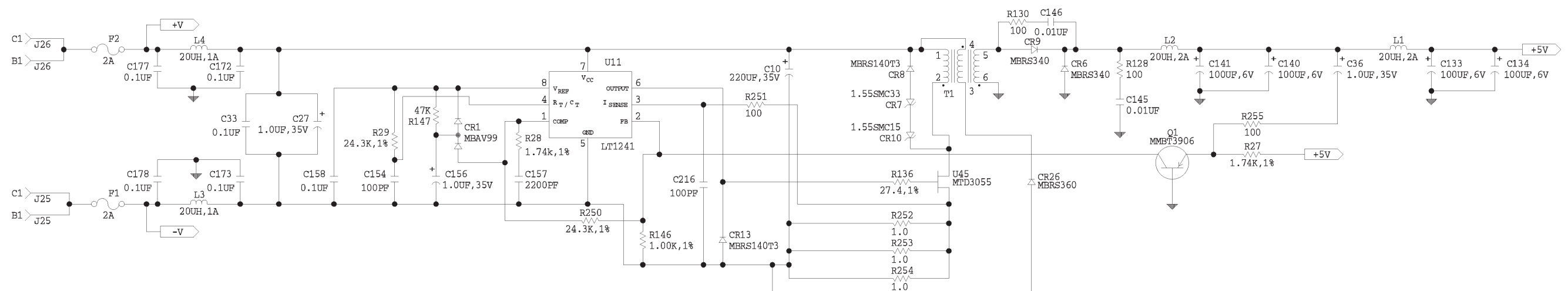
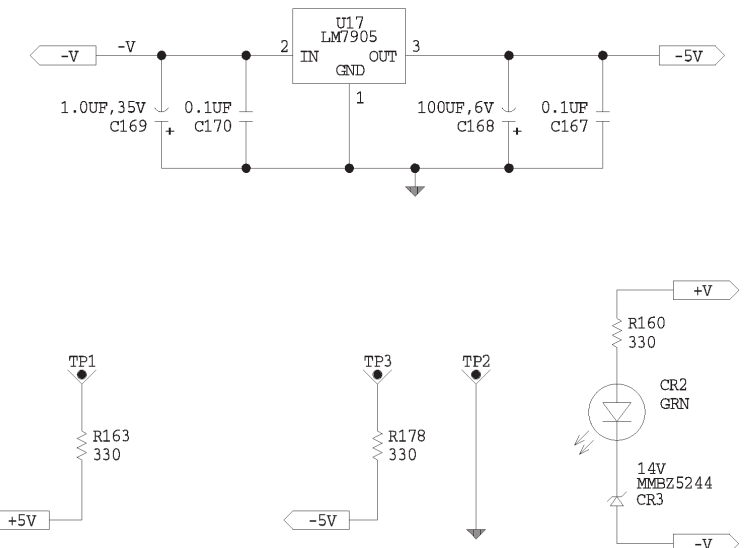
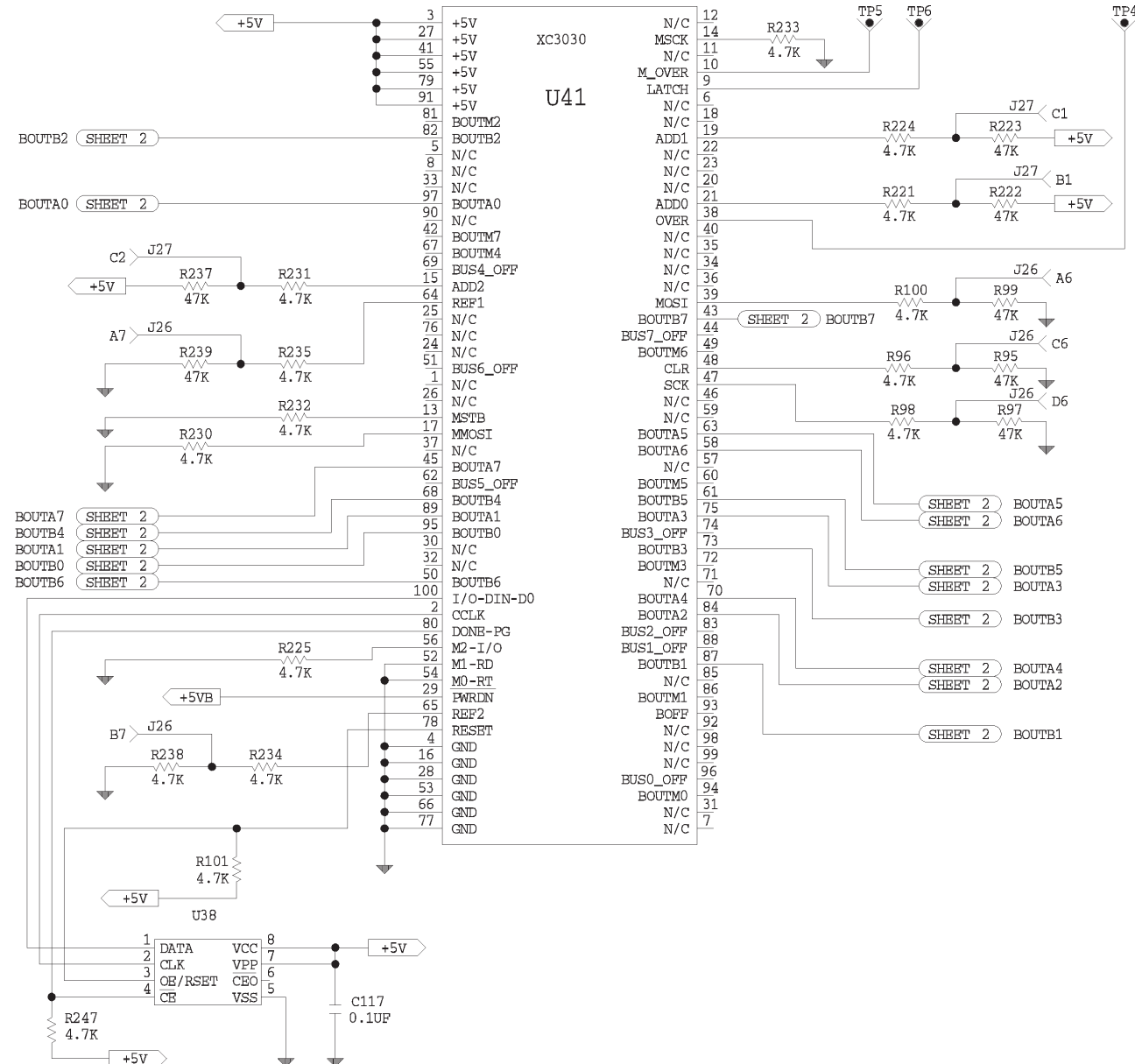
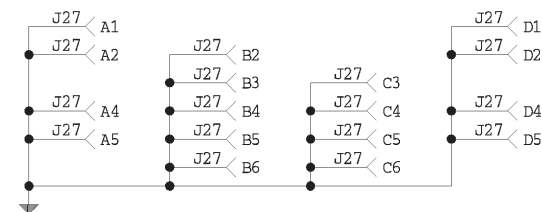
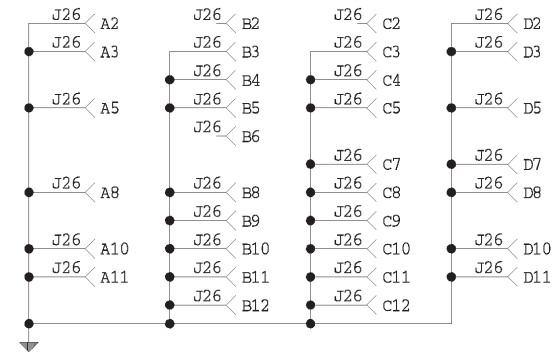
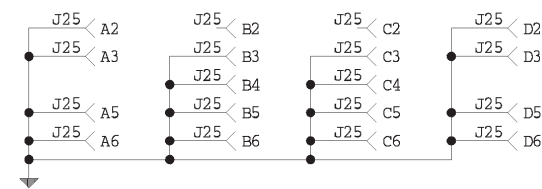
Component Assembly (Sheet 1 of 2) • Digital Video Output Combiner Card • CA25-1349



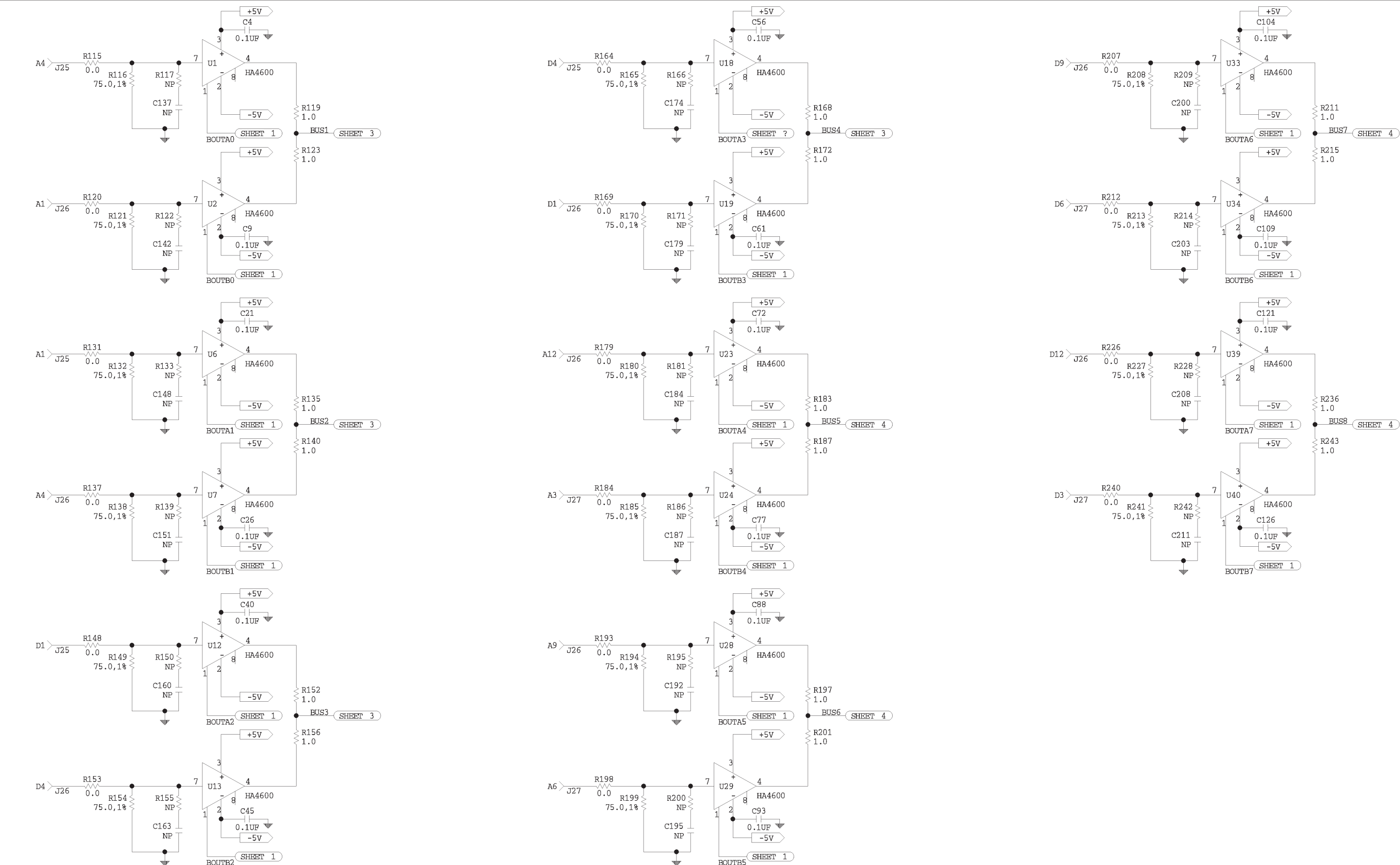


Component Assembly (Sheet 2 of 2) • Digital Video Output Combiner Card • CA25-1349

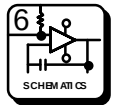


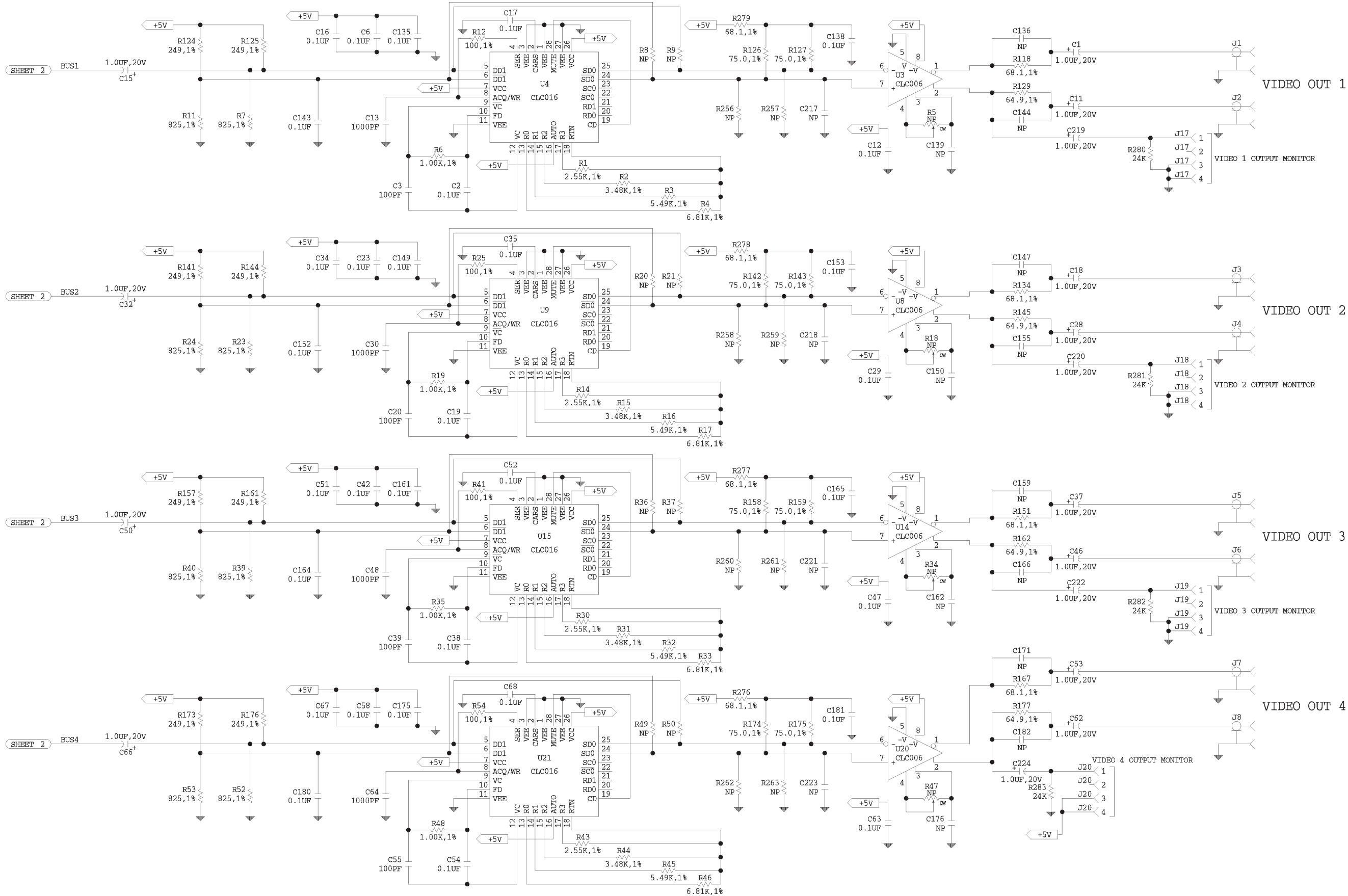


Schematic (Sheet 1 of 4) • Digital Video Output Combiner Card • SC33-1349

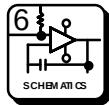


Schematic (Sheet 2 of 4) • Digital Video Output Combiner Card • SC33-1349



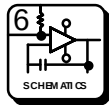


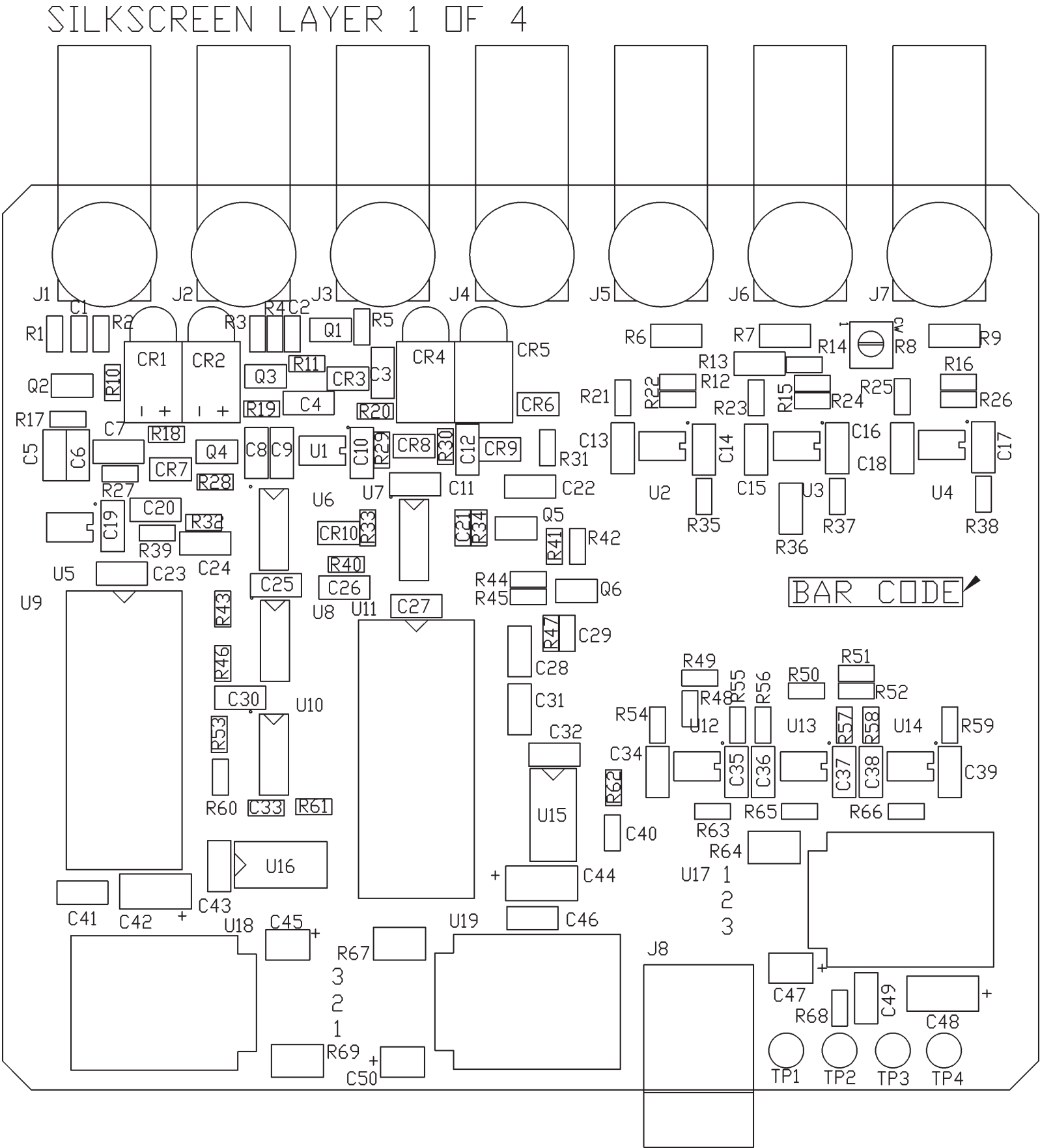
Schematic (Sheet 3 of 4) • Digital Video Output Combiner Card • SC33-1349



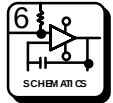


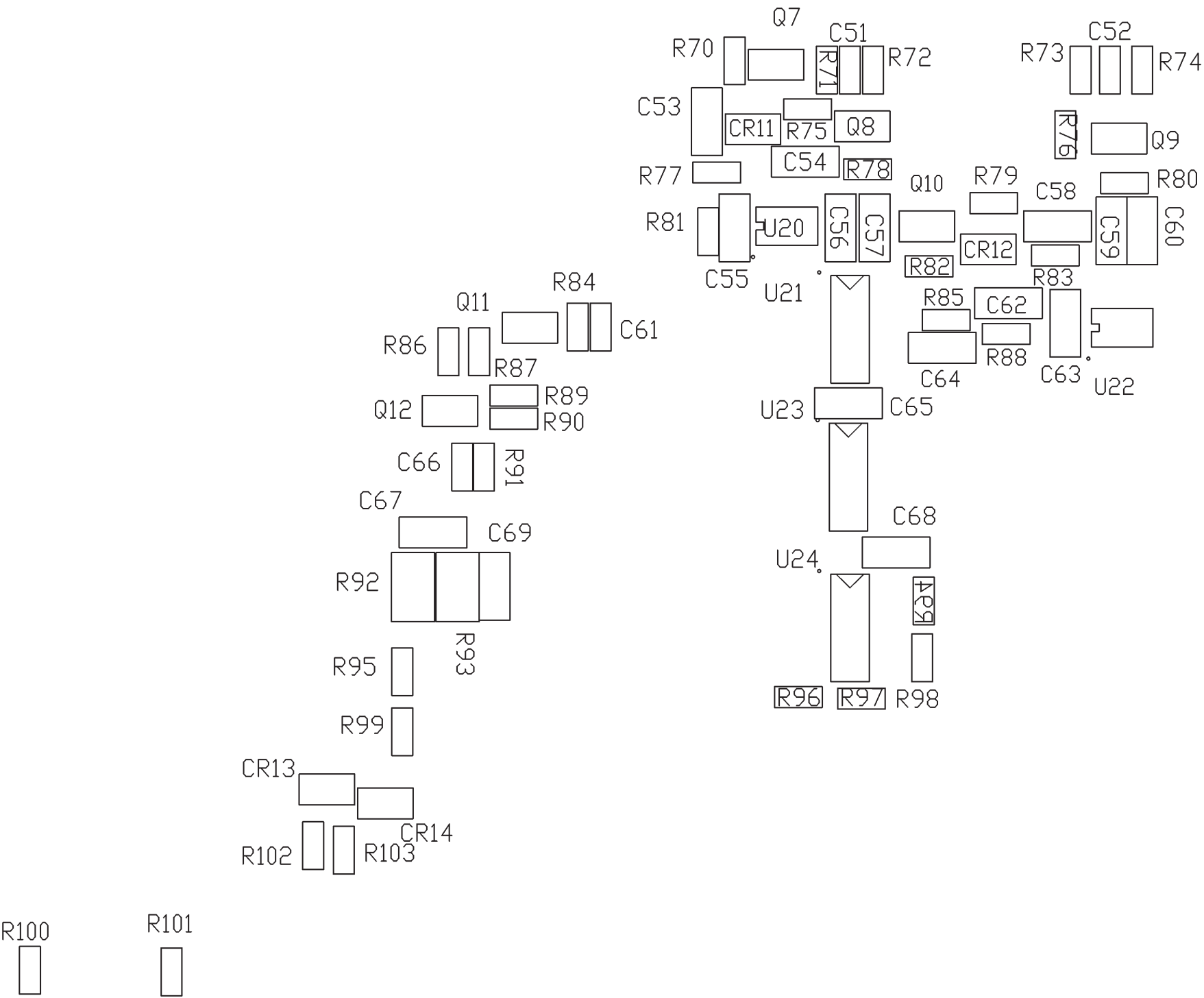
Schematic (Sheet 4 of 4) • Digital Video Output Combiner Card • SC33-1349



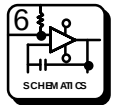


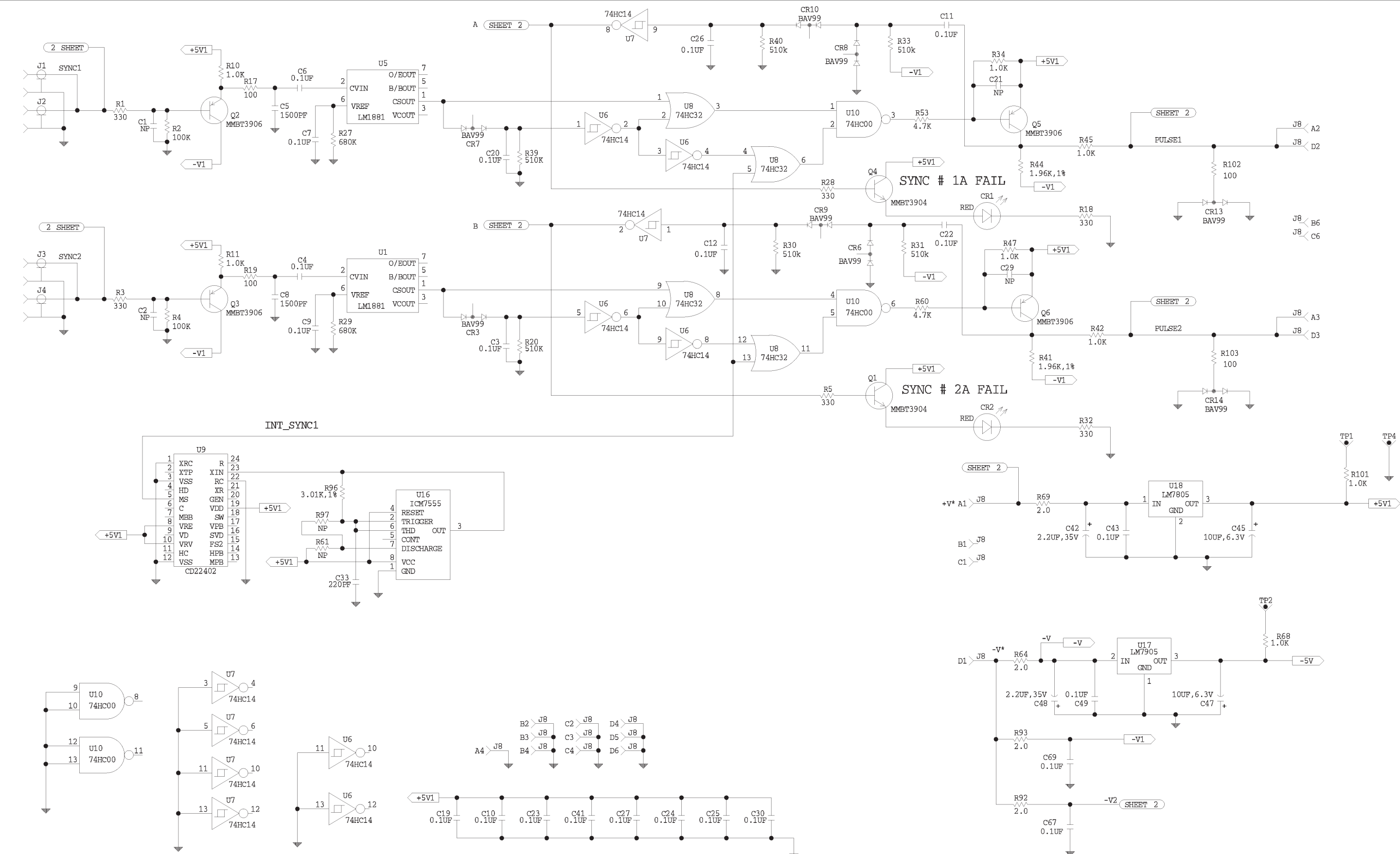
Component Assembly (Sheet 1 of 2) • Dual Reference Interface • CA25-1340



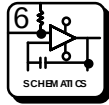


Component Assembly (Sheet 2 of 2) • Dual Reference Interface • CA25-1340

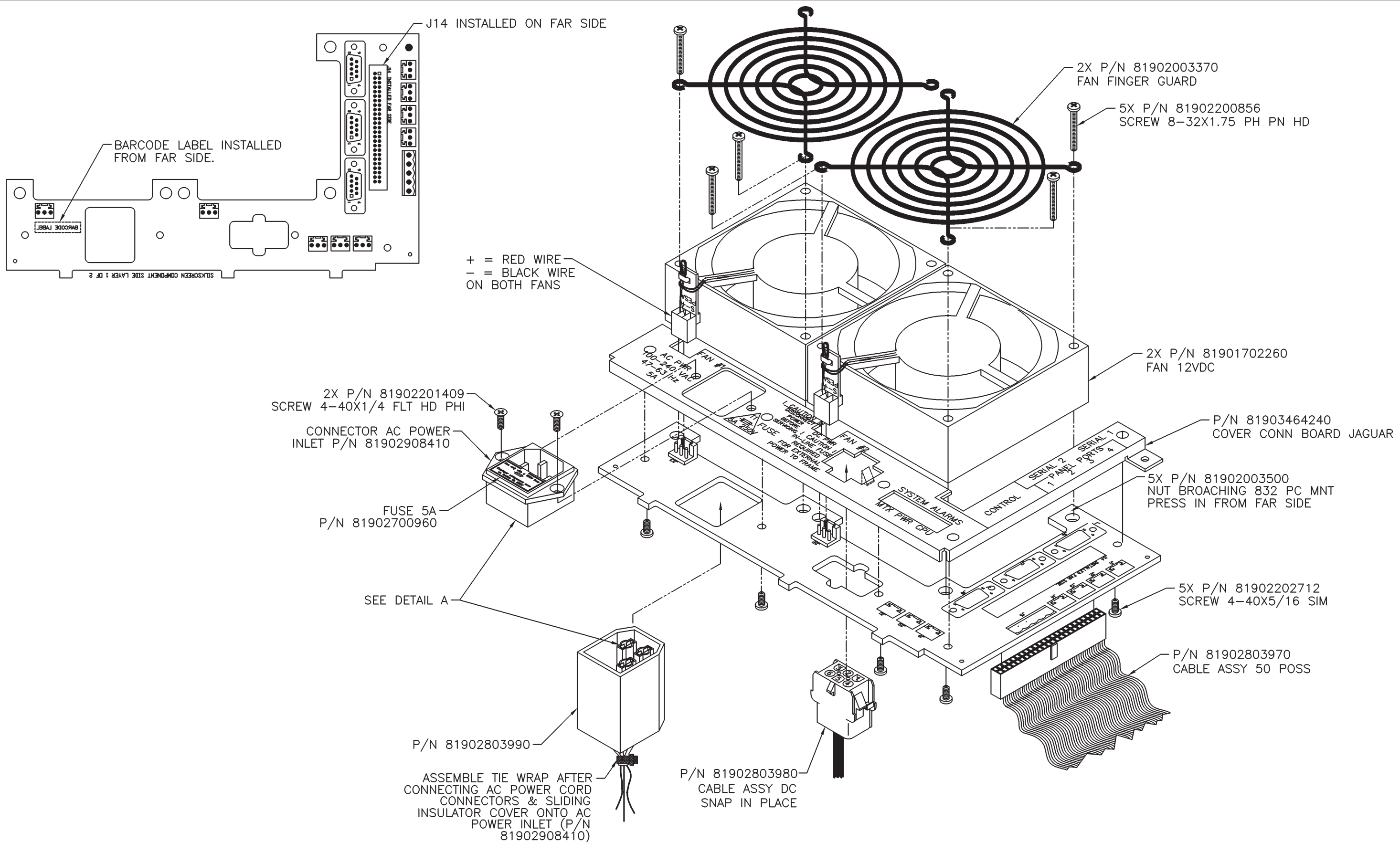




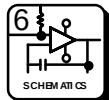
Schematic (Sheet 1 of 2) • Dual Reference Interface • SC33-1340

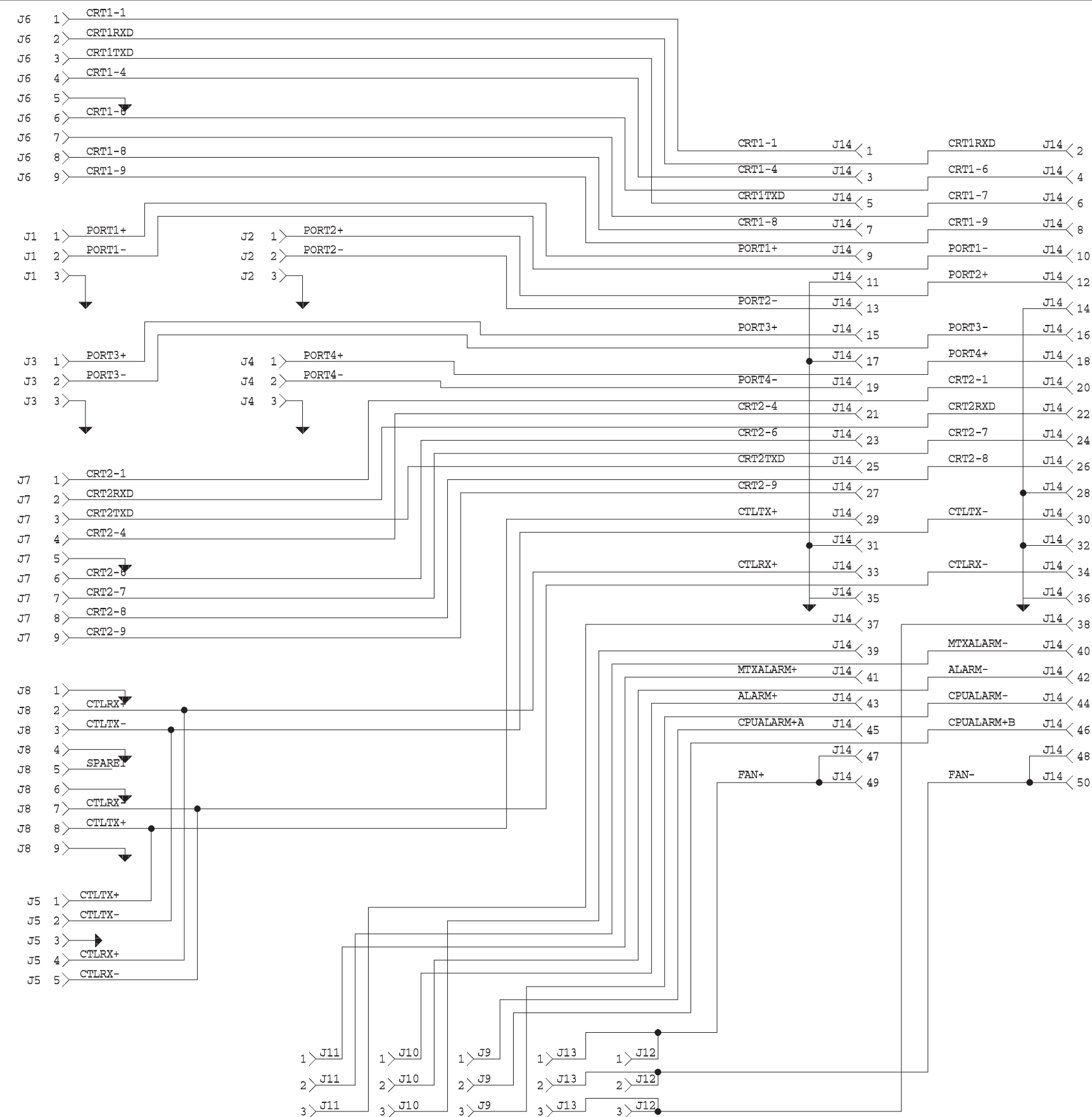




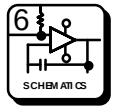


Component Assembly • Rear Panel Connector • CA25-1314

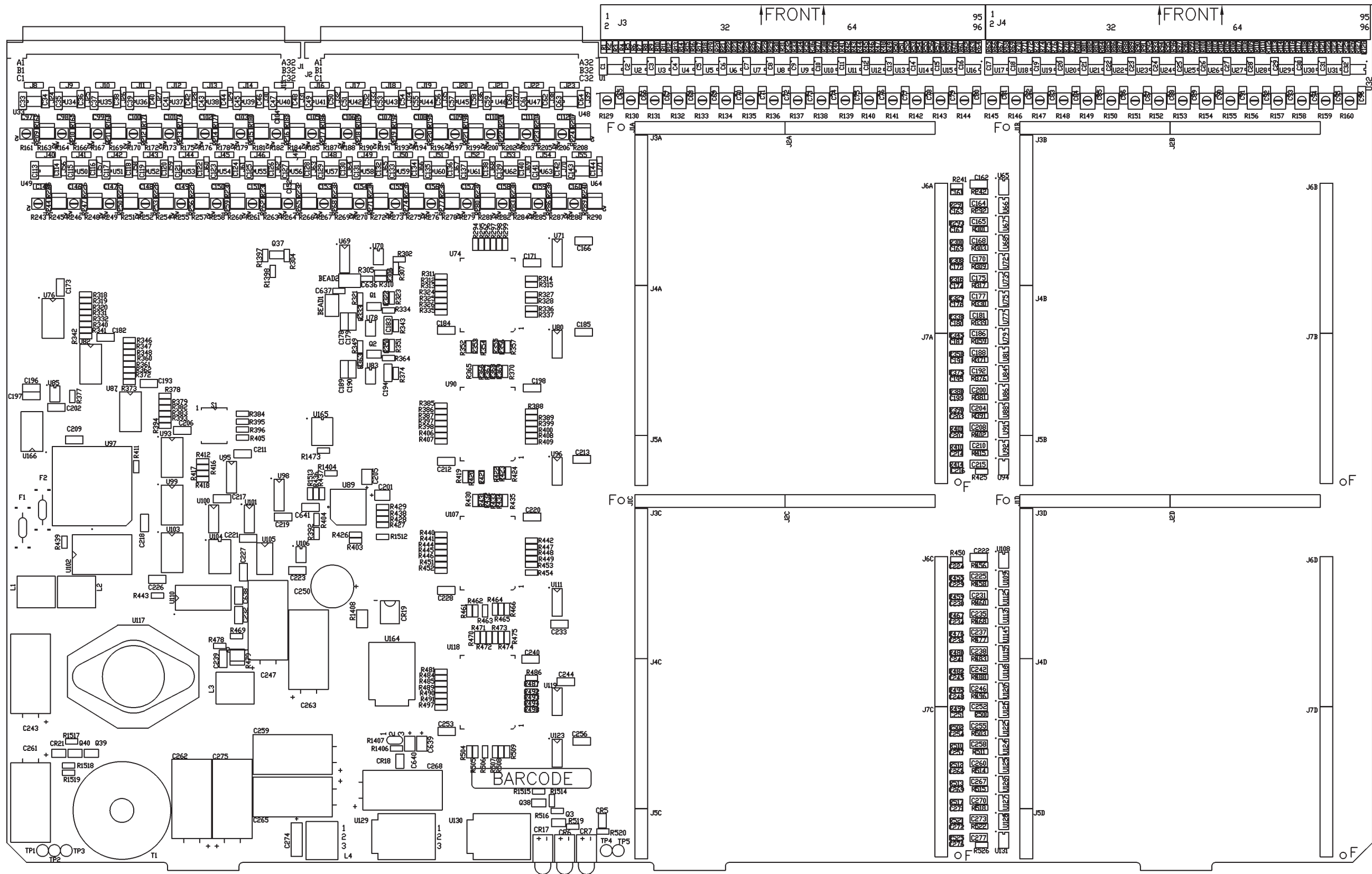




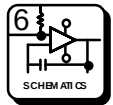
Schematic • Rear Panel Connector • SC33-1314

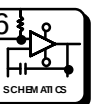


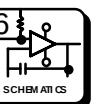
COMPONENT SIDE (LAYER 1 OF 10)

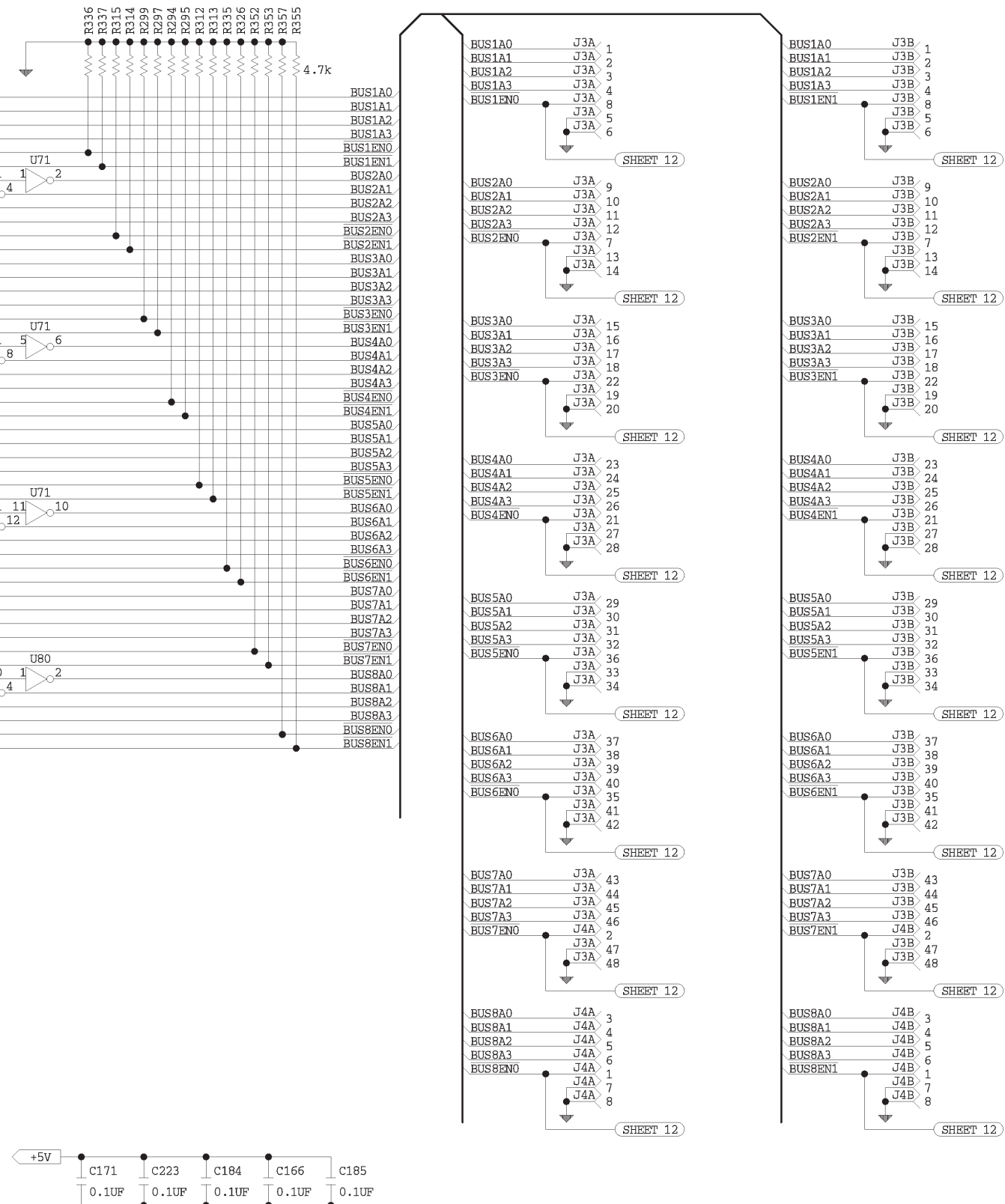


Component Assembly (Sheet 1 of 2) • 32X32 Analog Video Matrix Card • CA25-1276

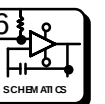




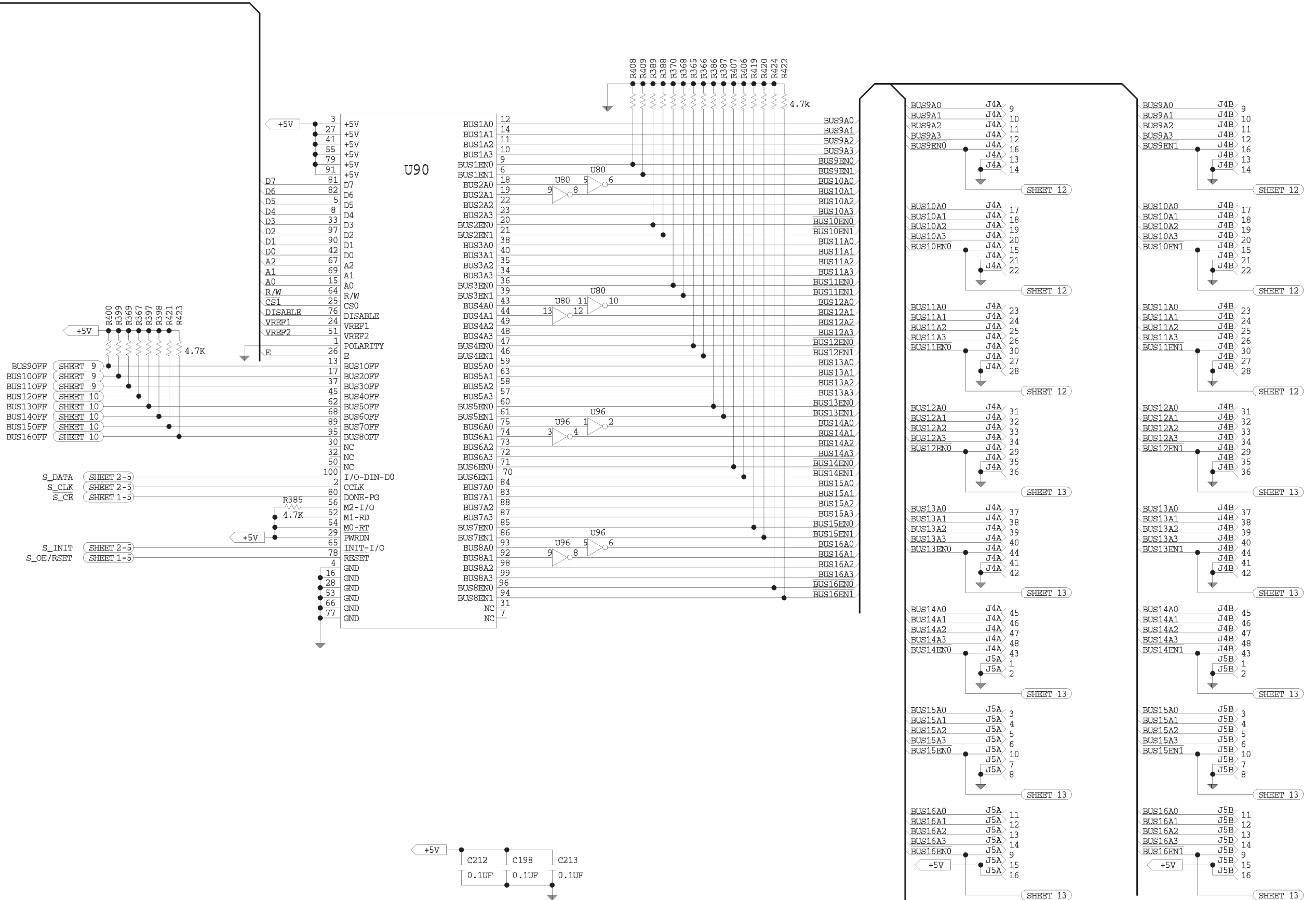




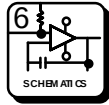
3/98
P/N 81905903690



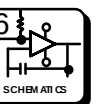
CONTROL BUS (PAGE 1)



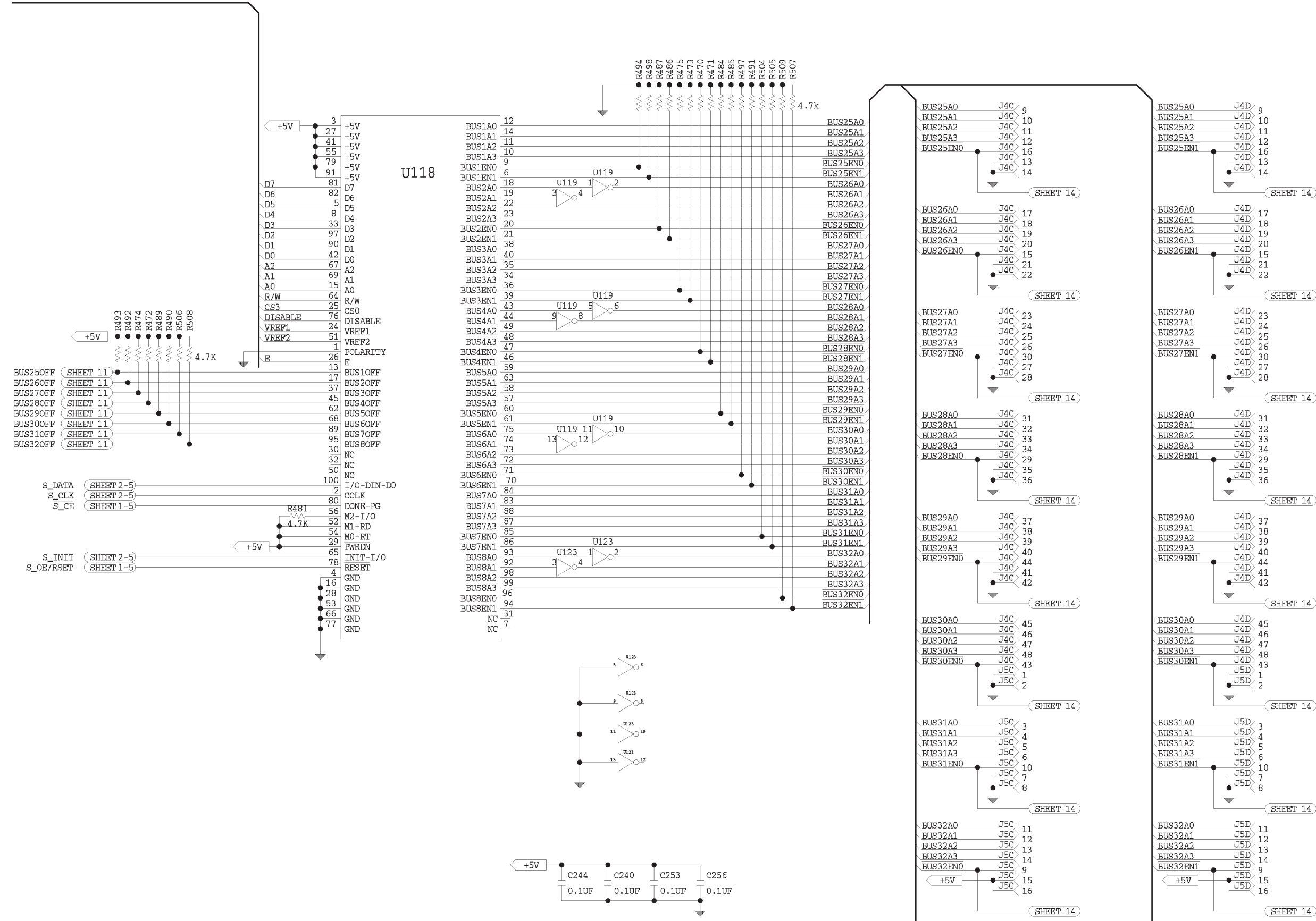
Schematic (Sheet 3 of 15) • 32X32 Analog Video Matrix Card • SC33-1276



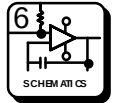
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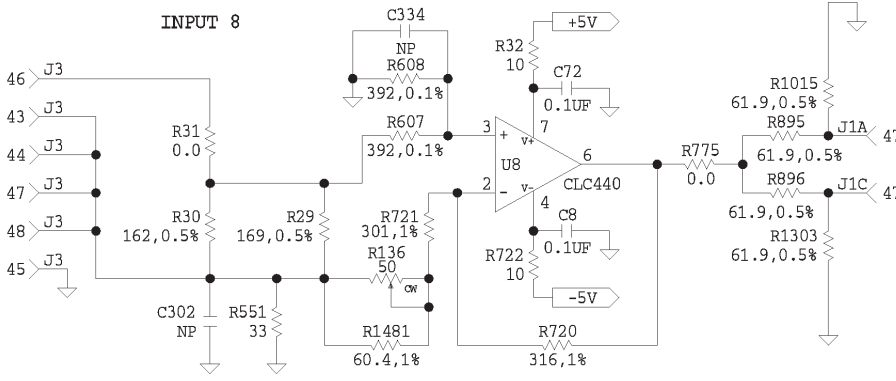
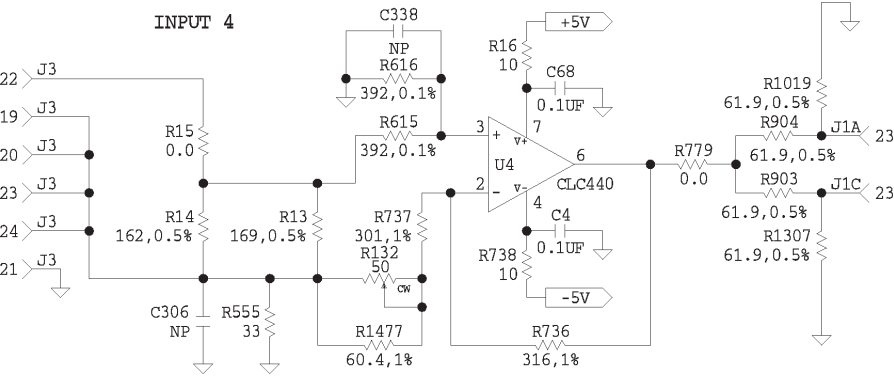
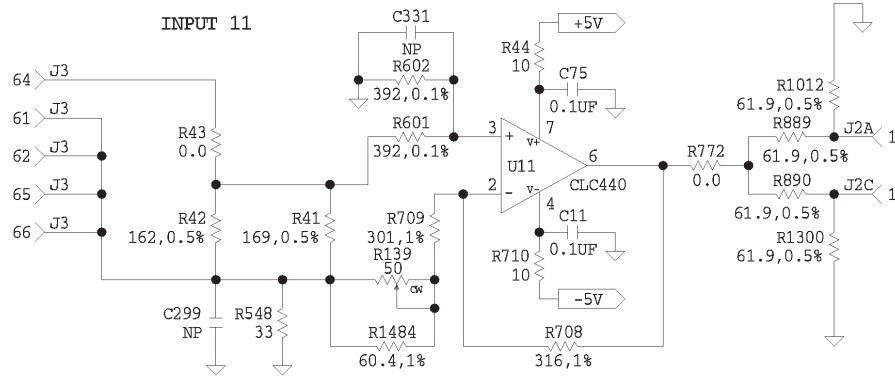
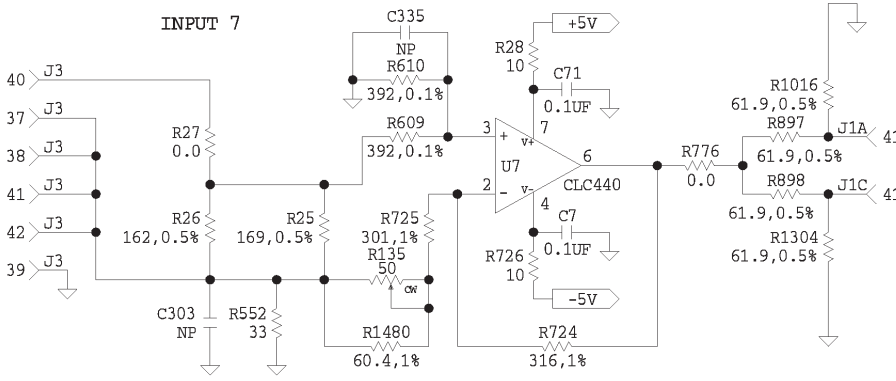
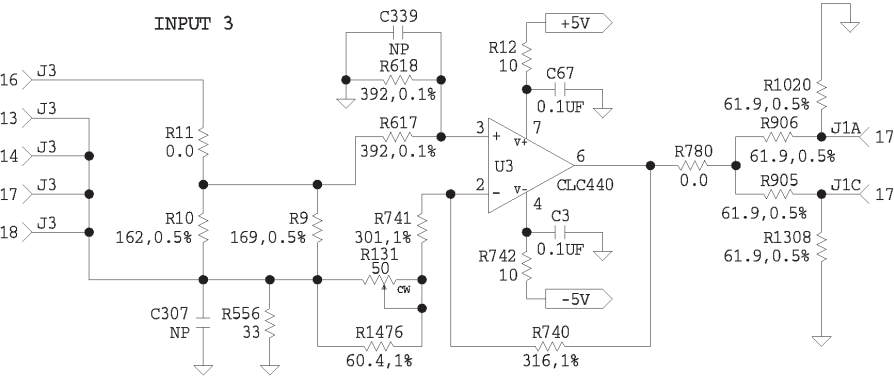
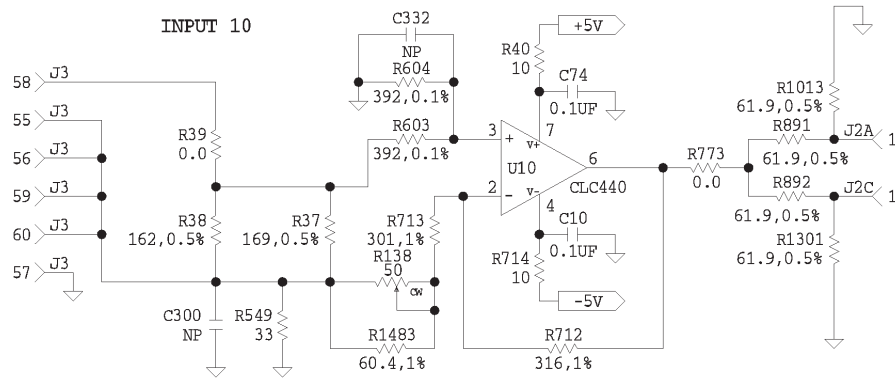
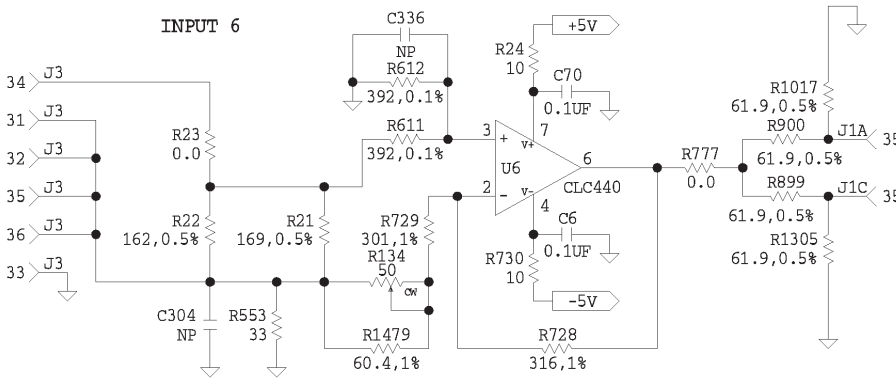
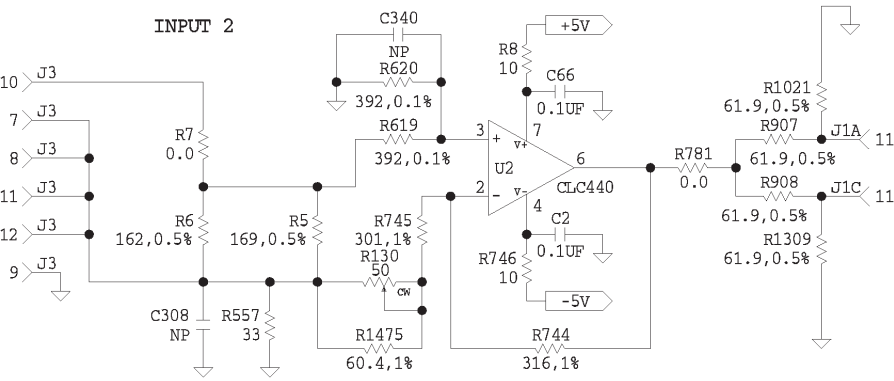
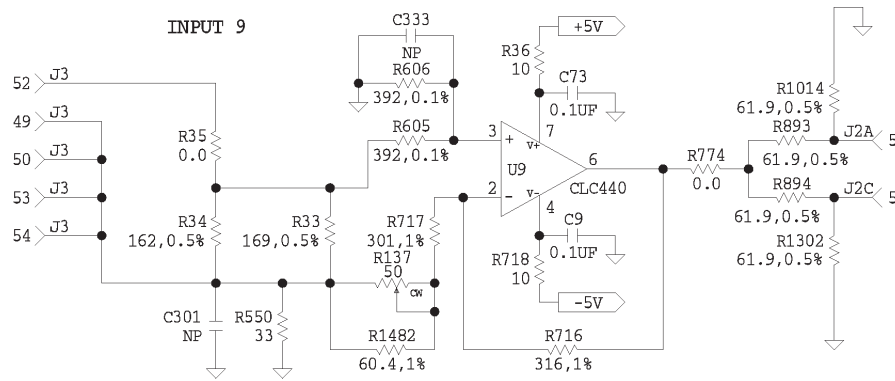
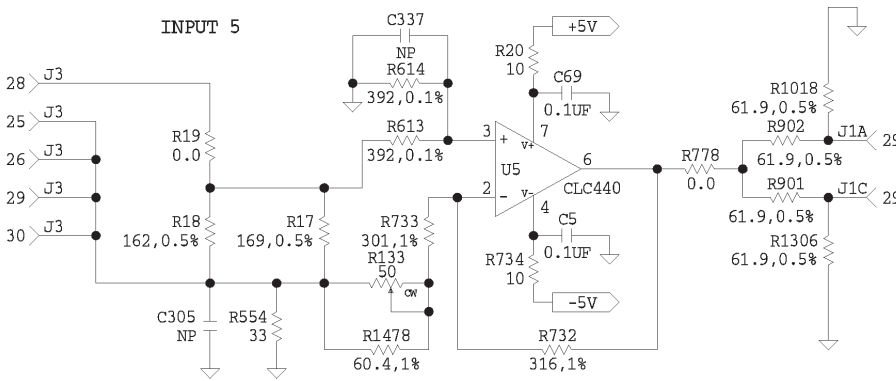
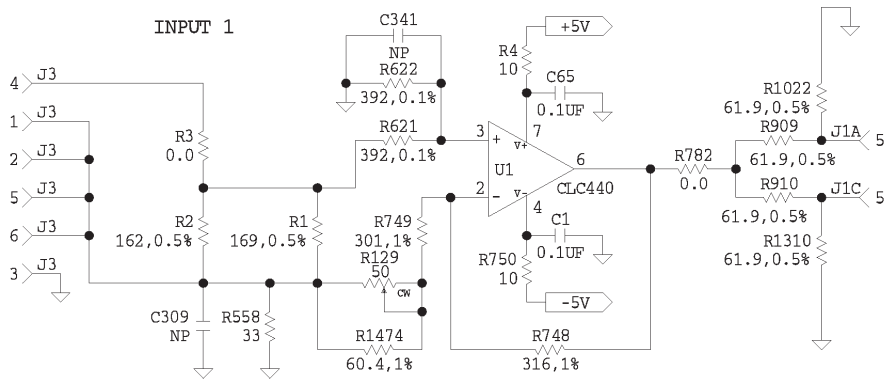


CONTROL BUS (PAGE 1)

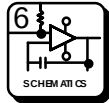


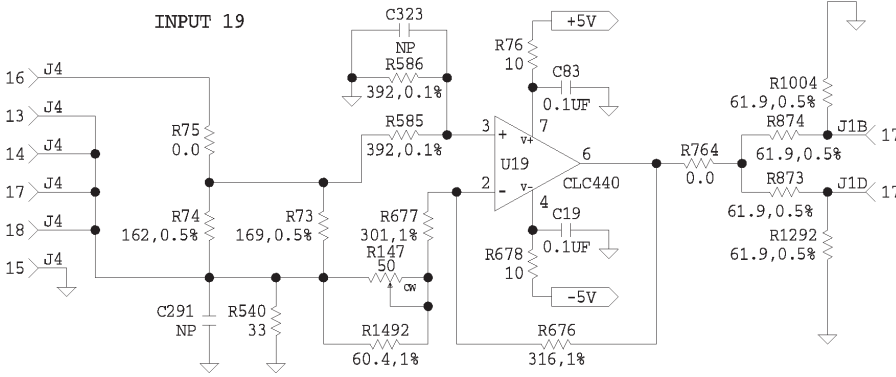
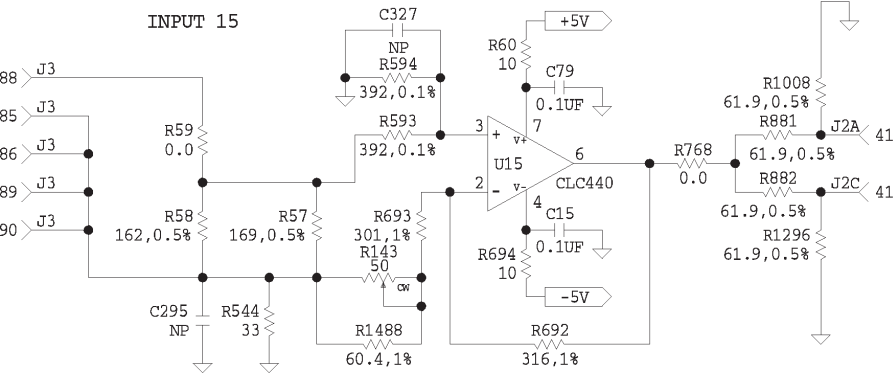
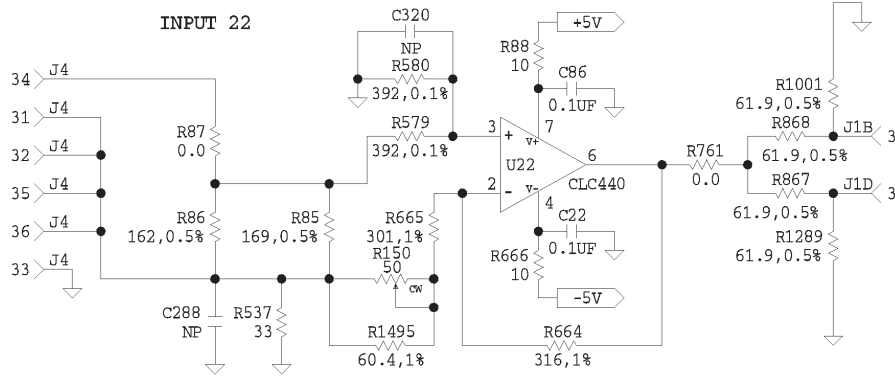
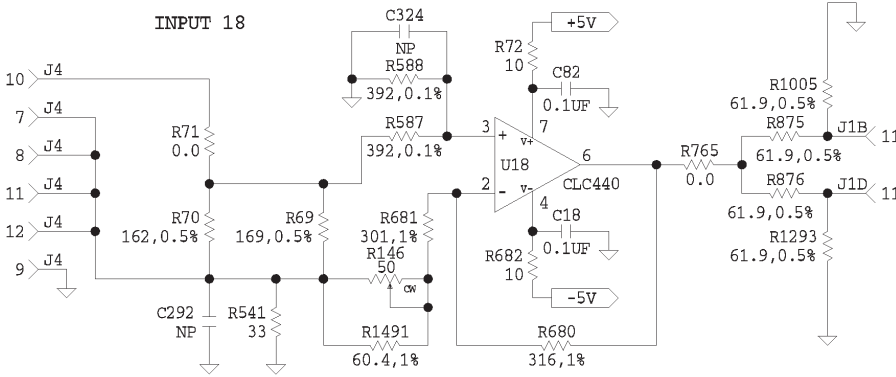
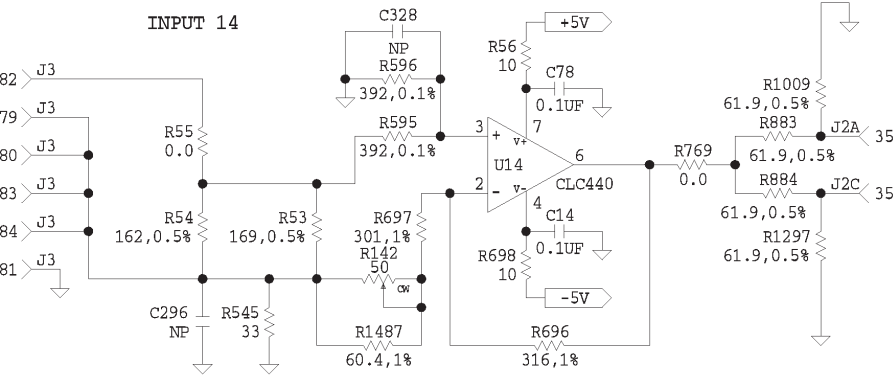
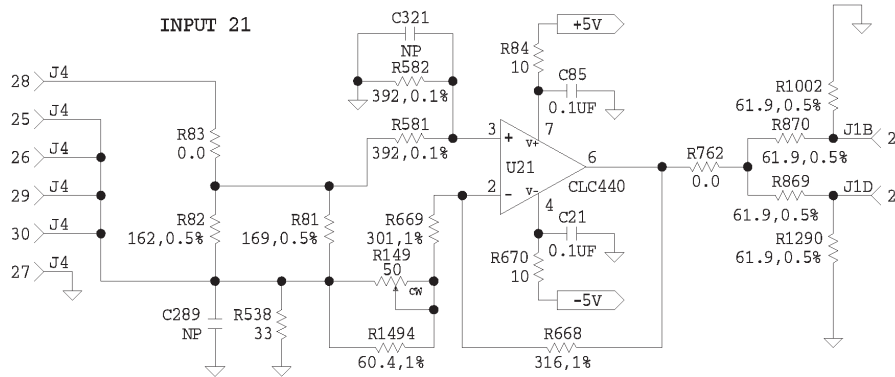
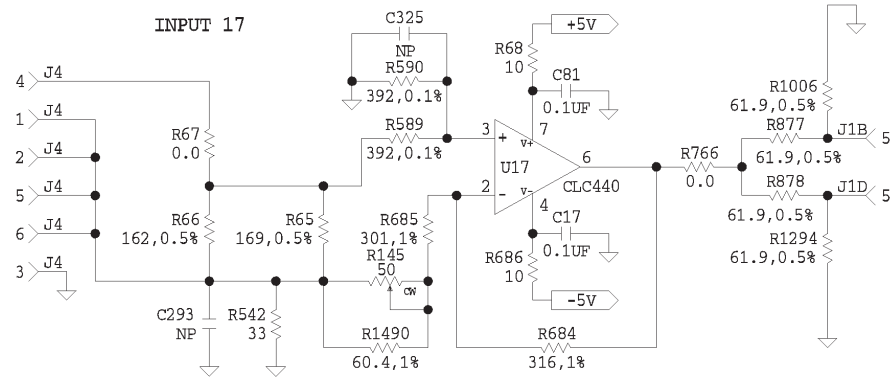
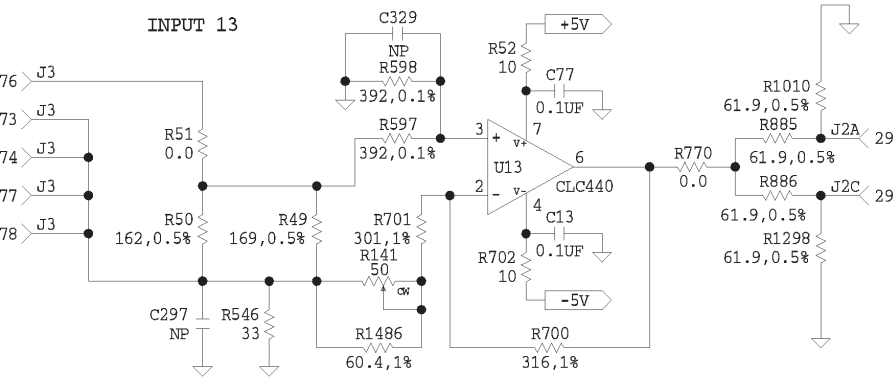
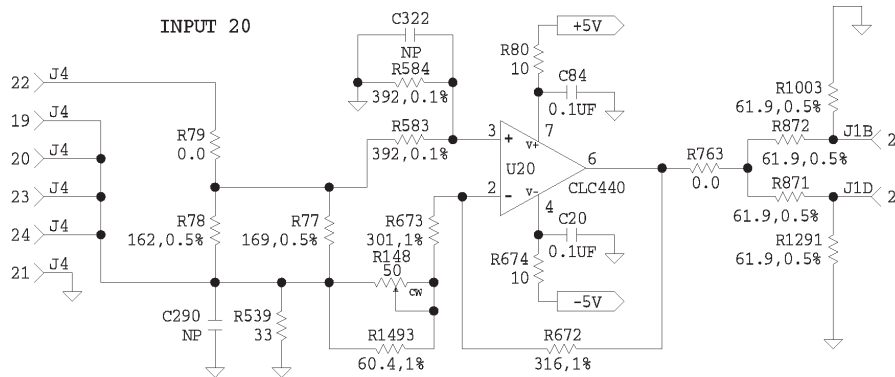
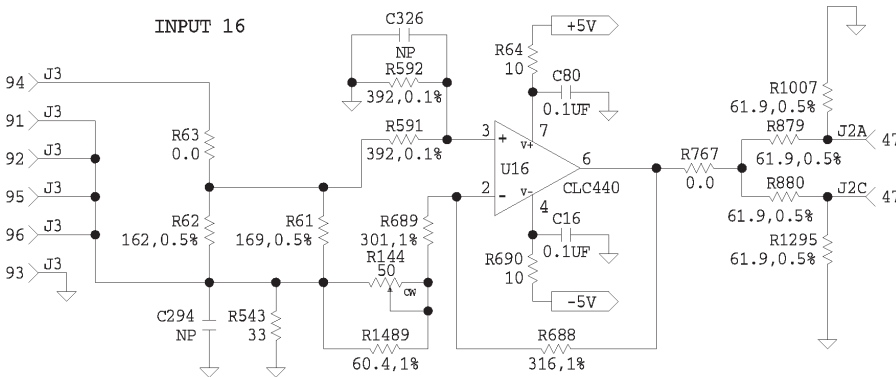
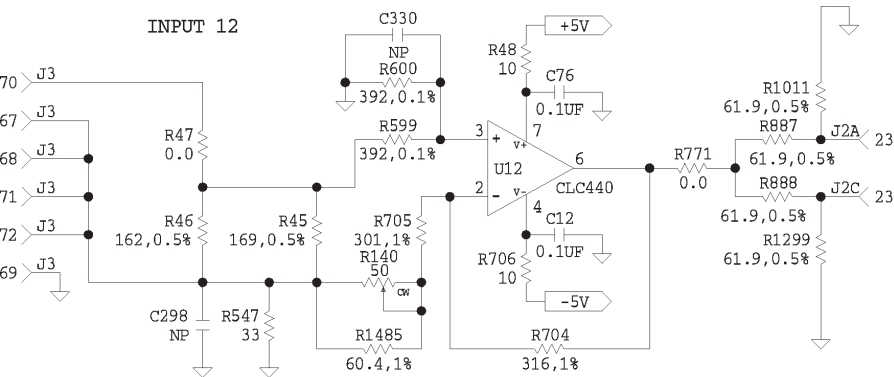
Schematic (Sheet 5 of 15) • 32X32 Analog Video Matrix Card • SC33-1276



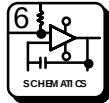


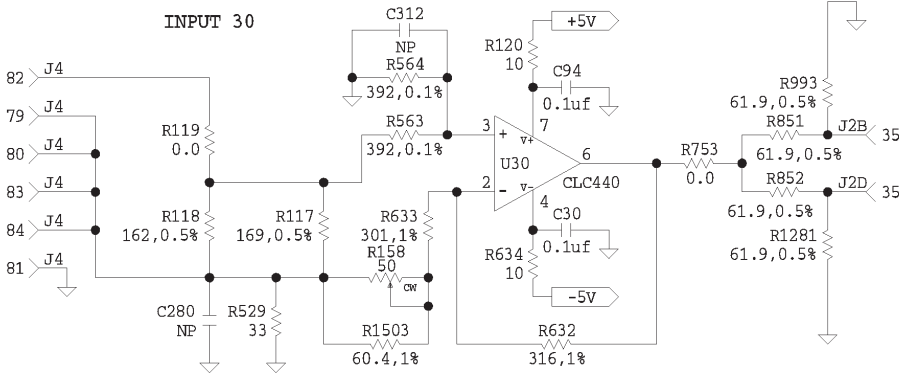
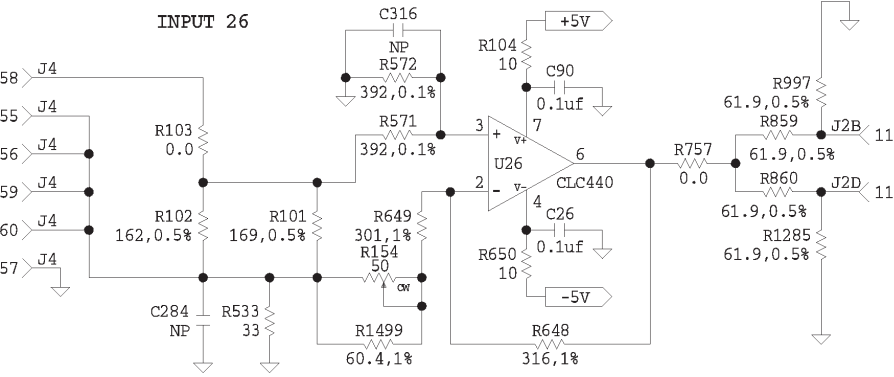
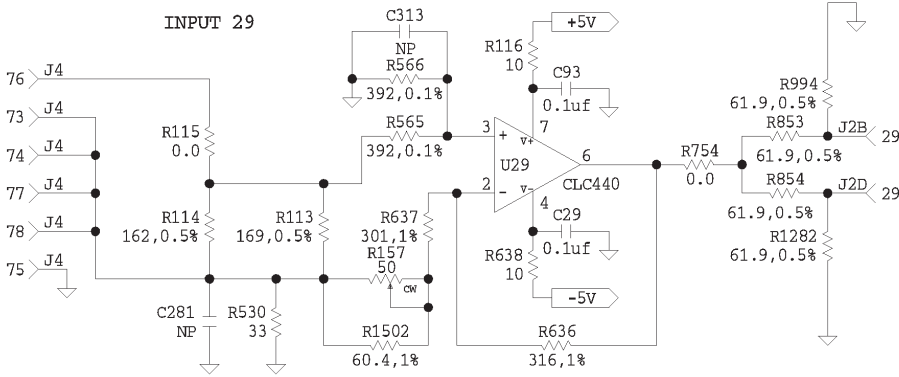
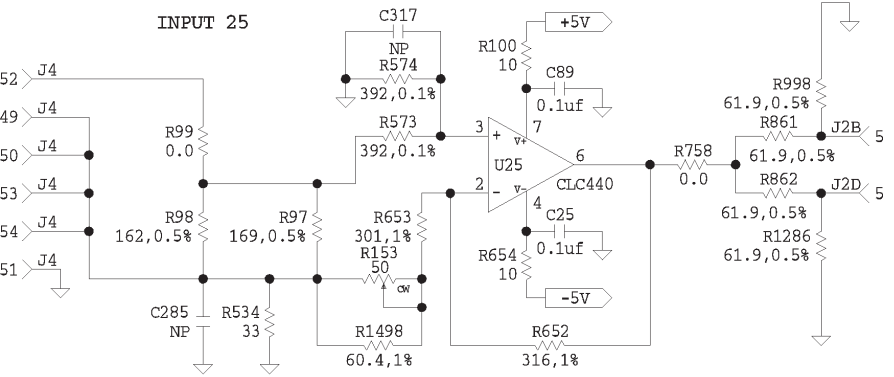
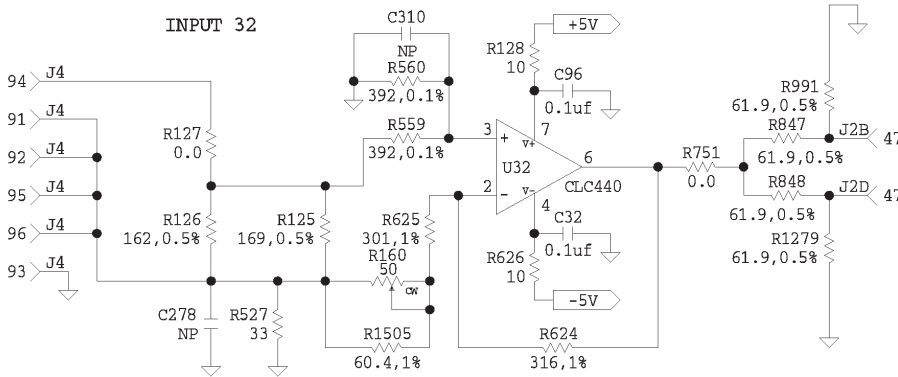
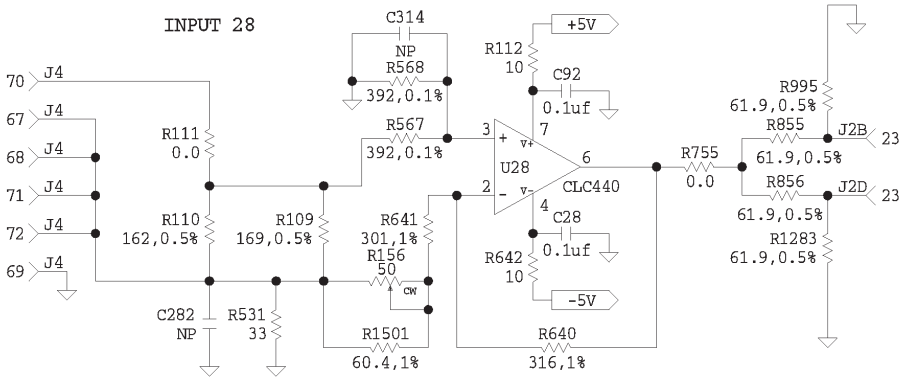
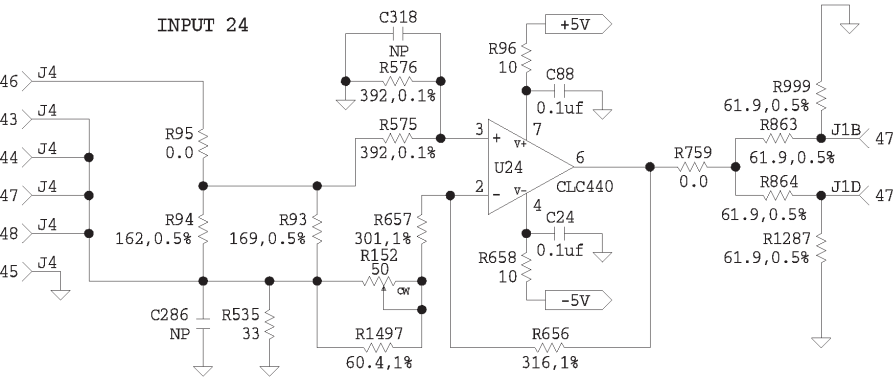
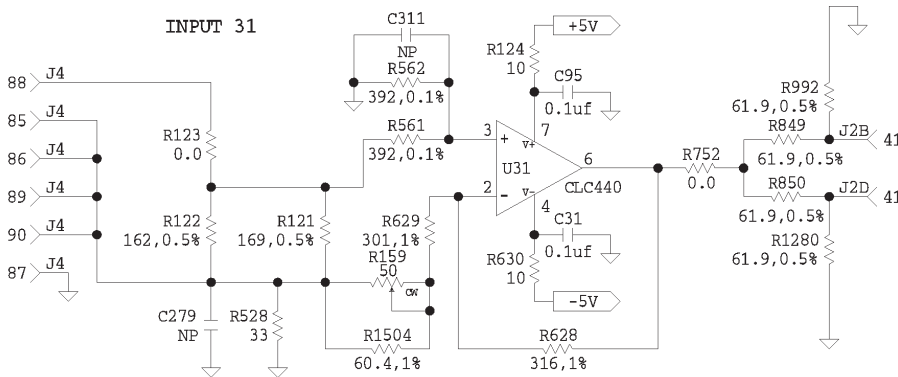
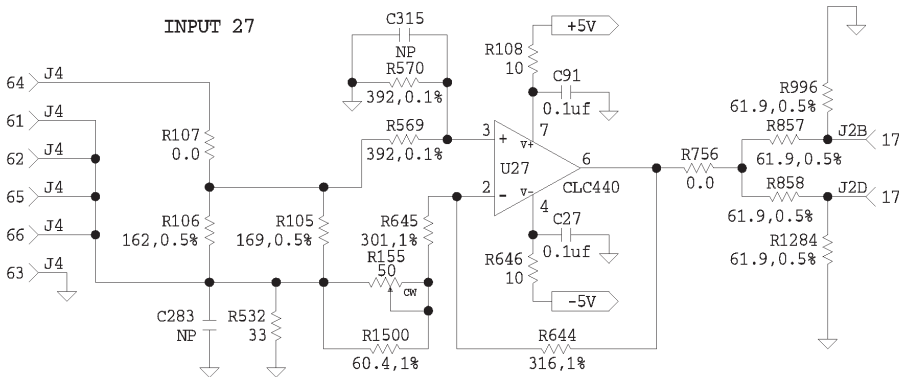
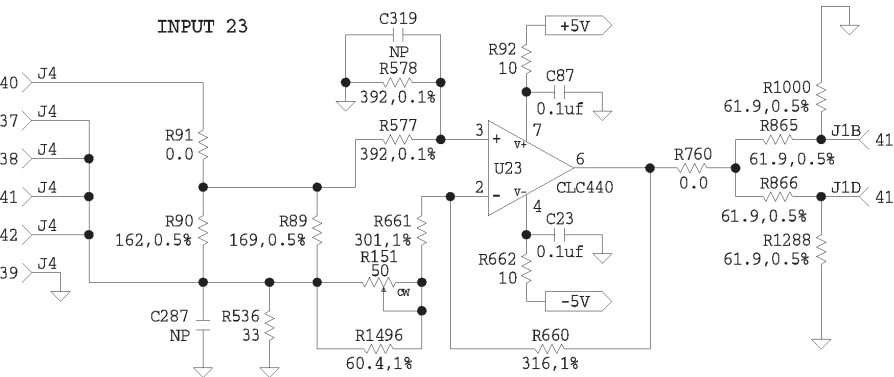
Schematic (Sheet 6 of 15) • 32X32 Analog Video Matrix Card • SC33-1276



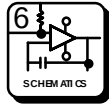


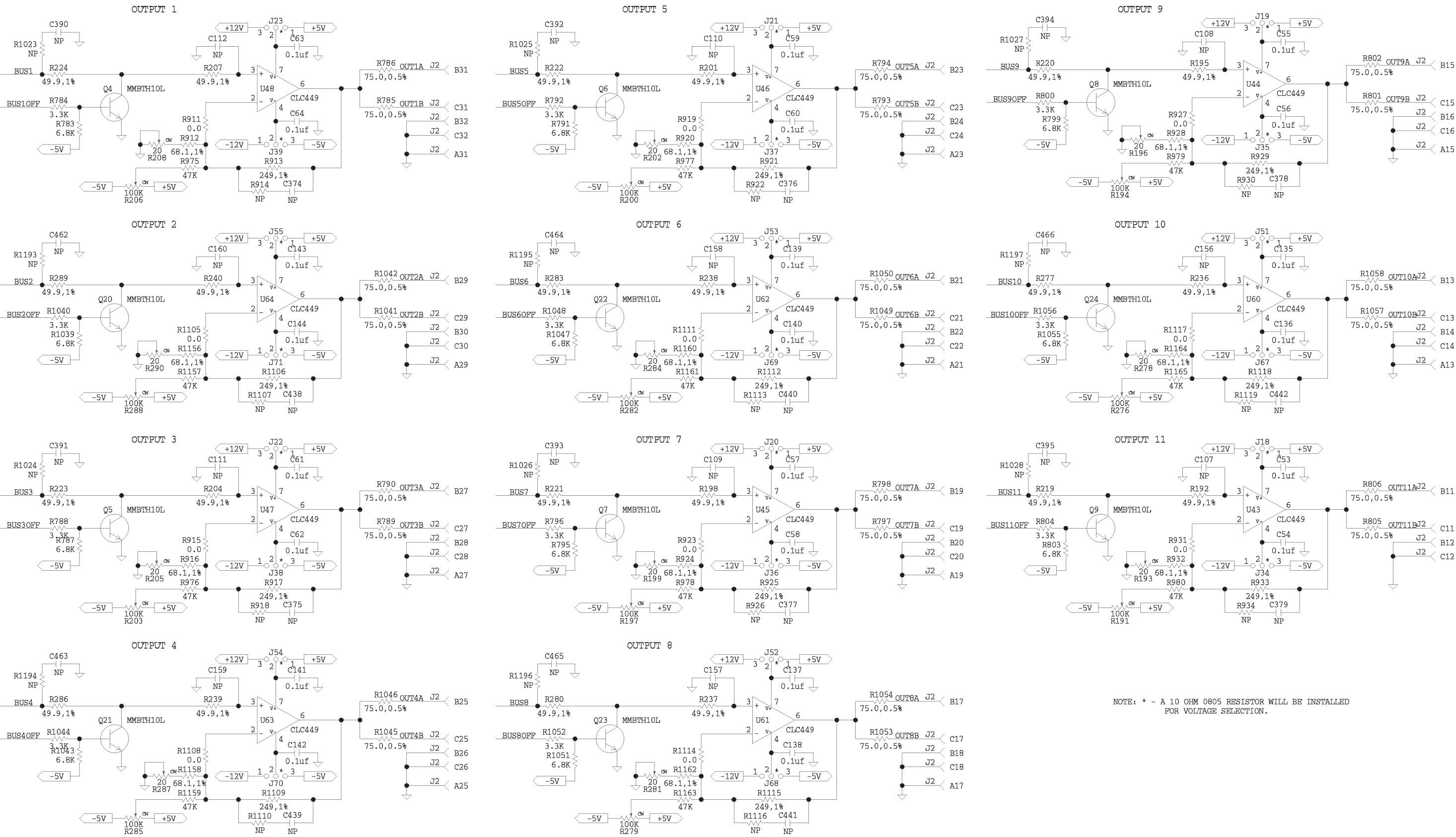
Schematic (Sheet 7 of 15) • 32X32 Analog Video Matrix Card • SC33-1276



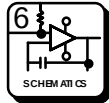


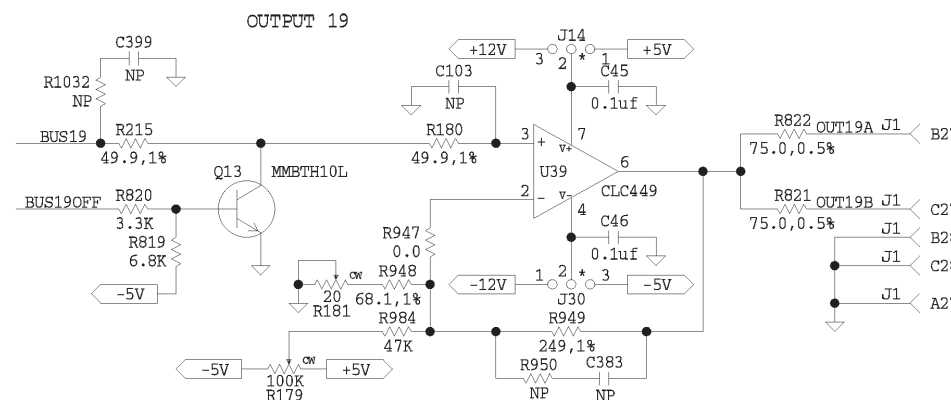
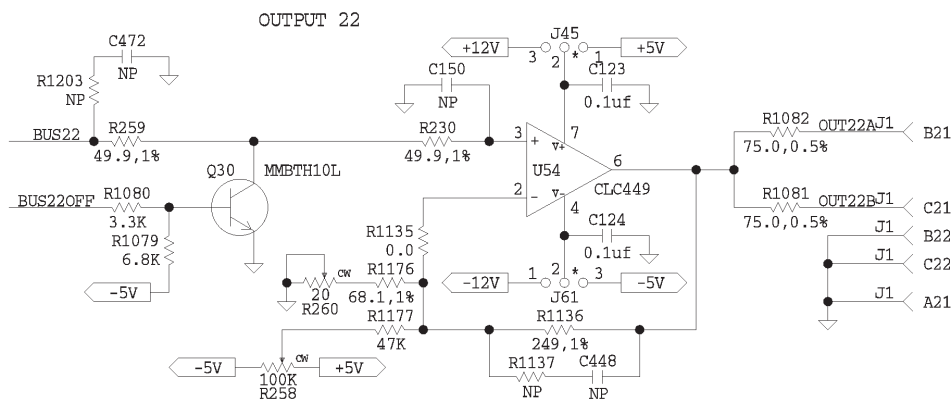
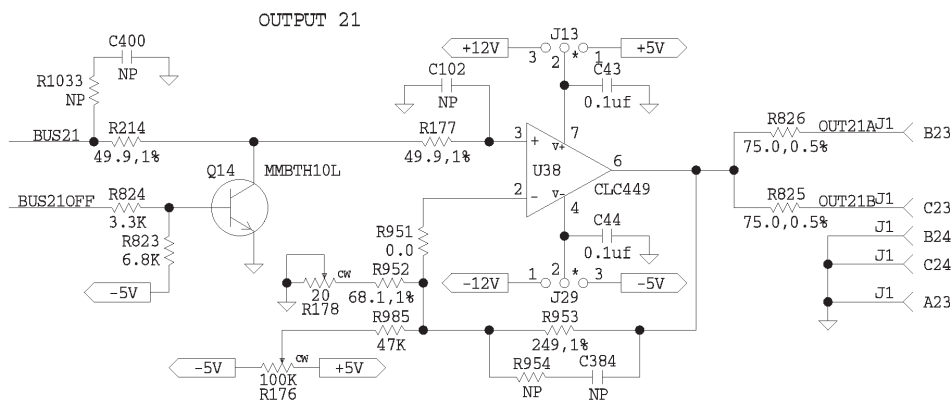
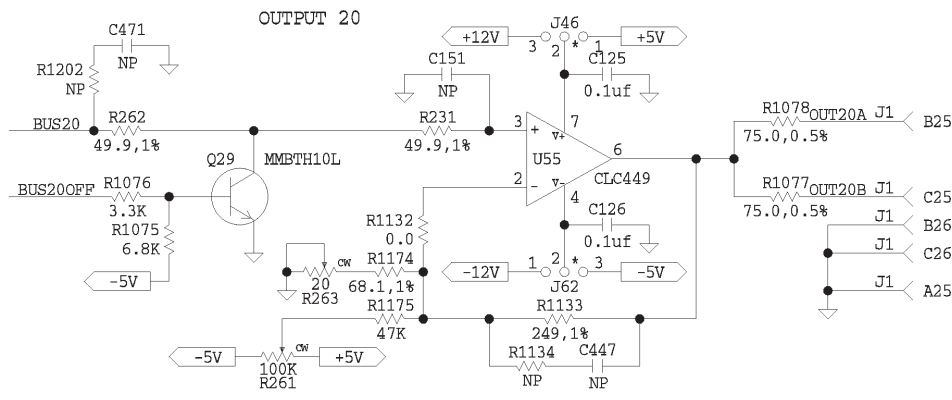
Schematic (Sheet 8 of 15) • 32X32 Analog Video Matrix Card • SC33-1276



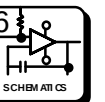


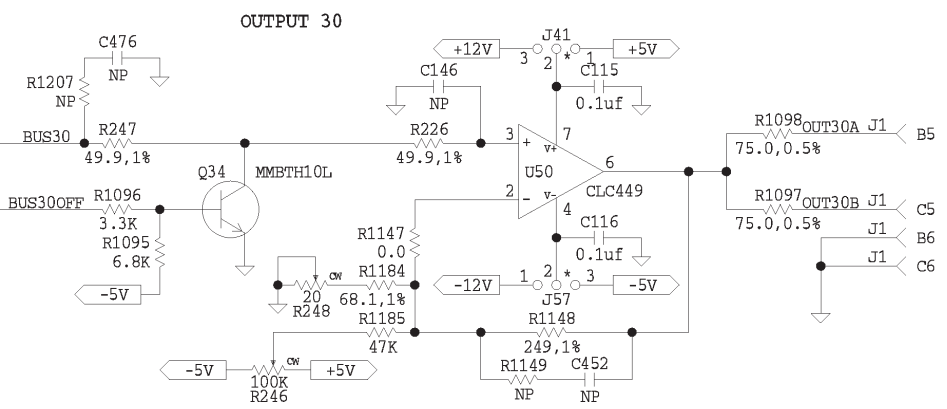
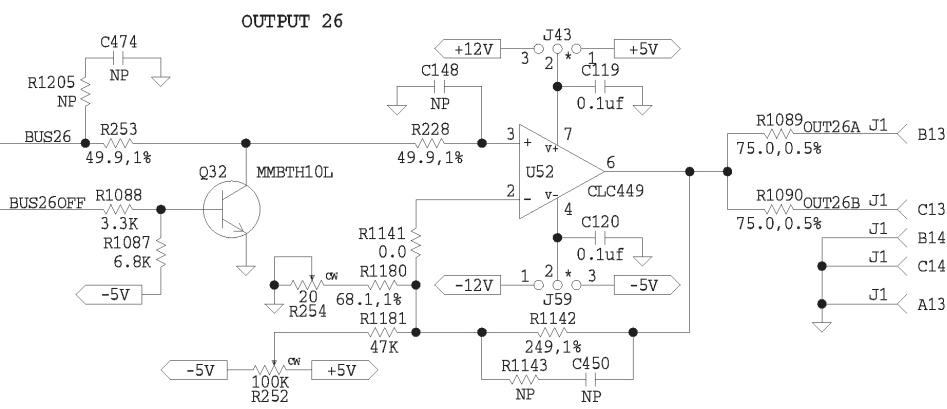
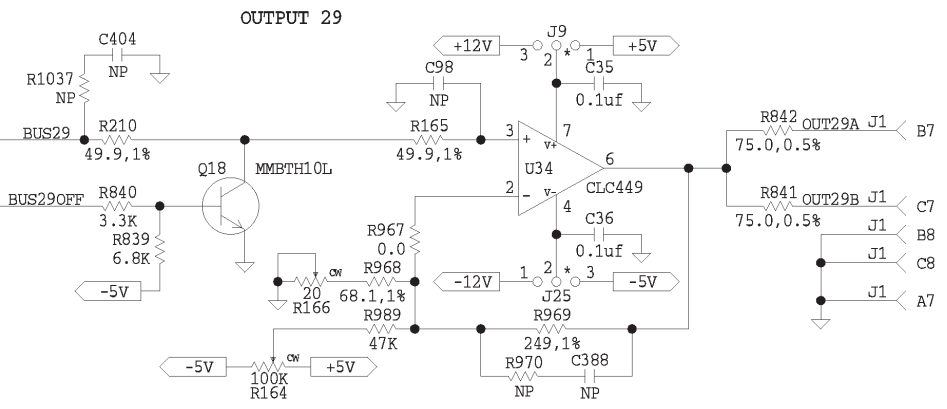
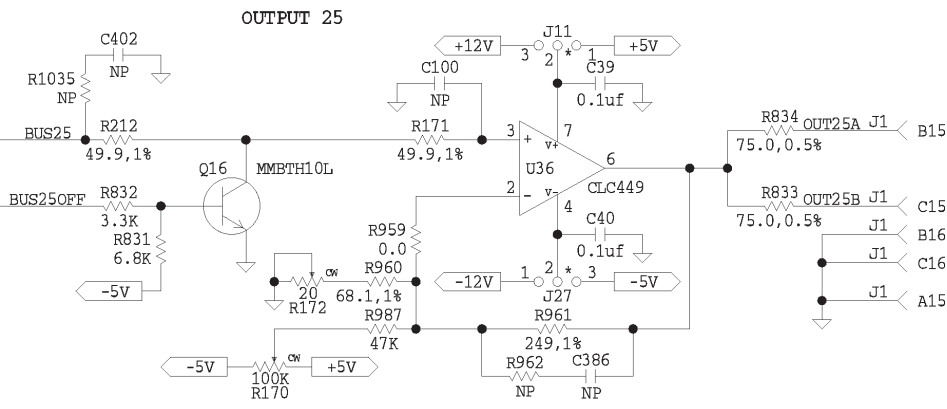
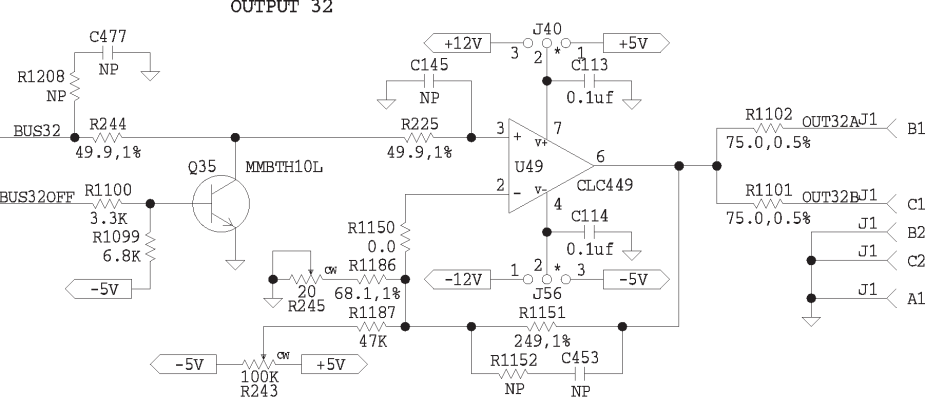
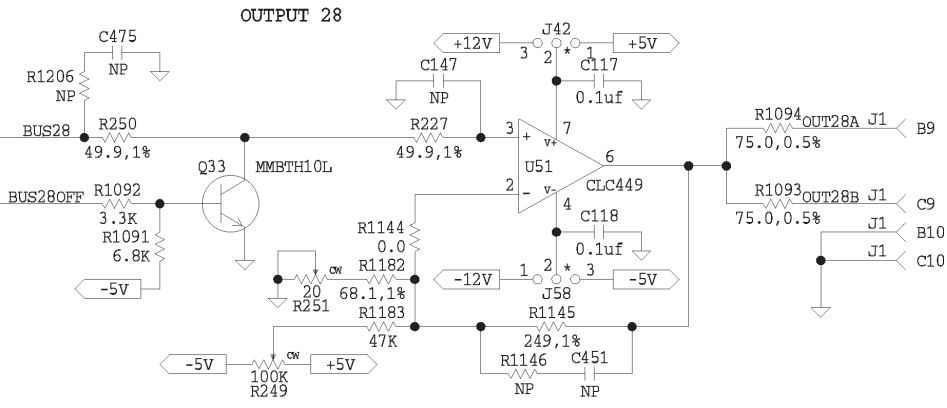
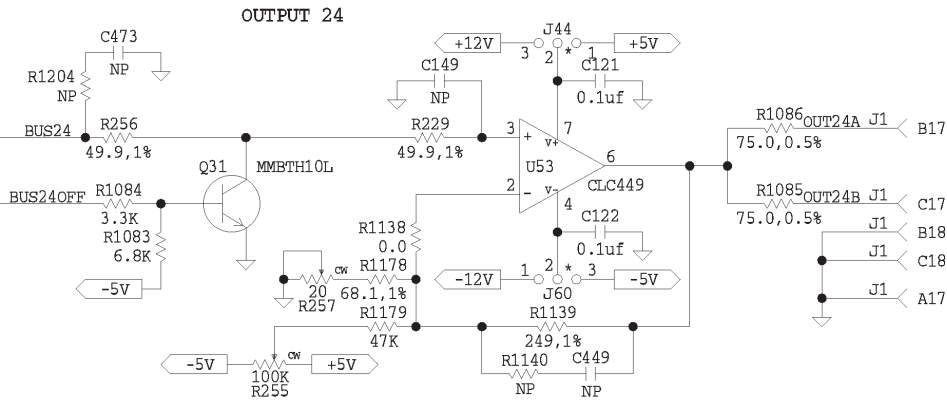
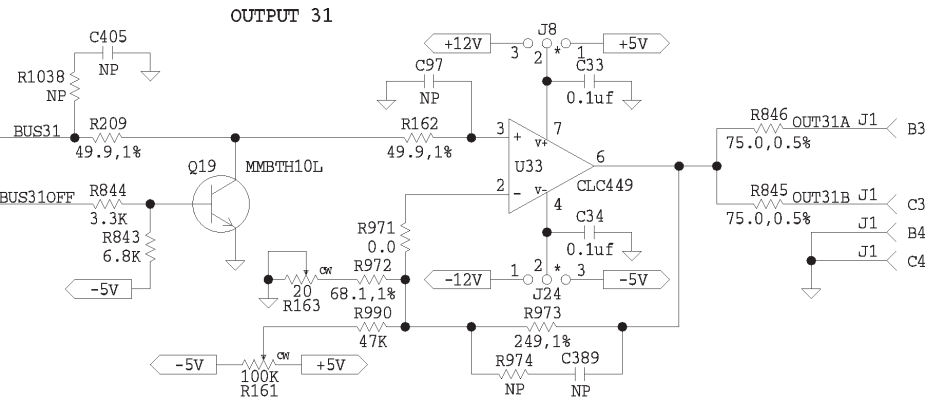
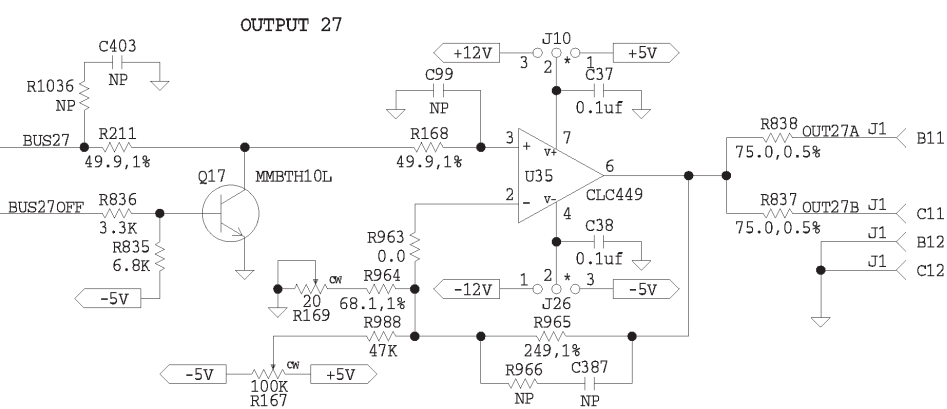
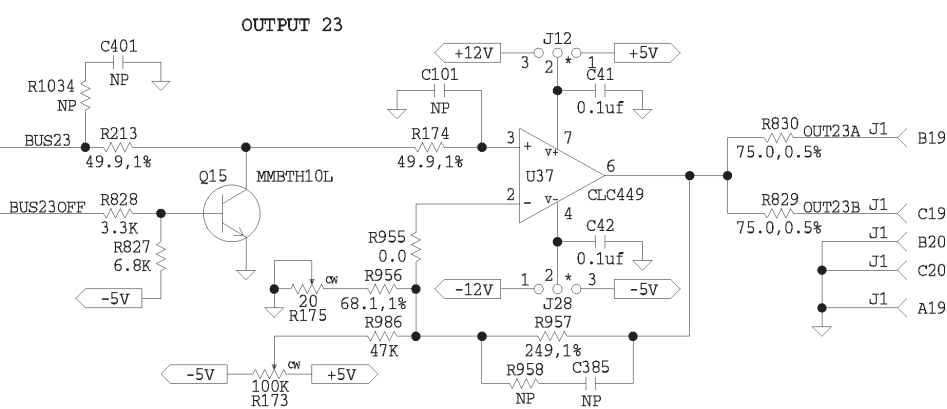
Schematic (Sheet 9 of 15) • 32X32 Analog Video Matrix Card • SC33-1276



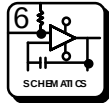


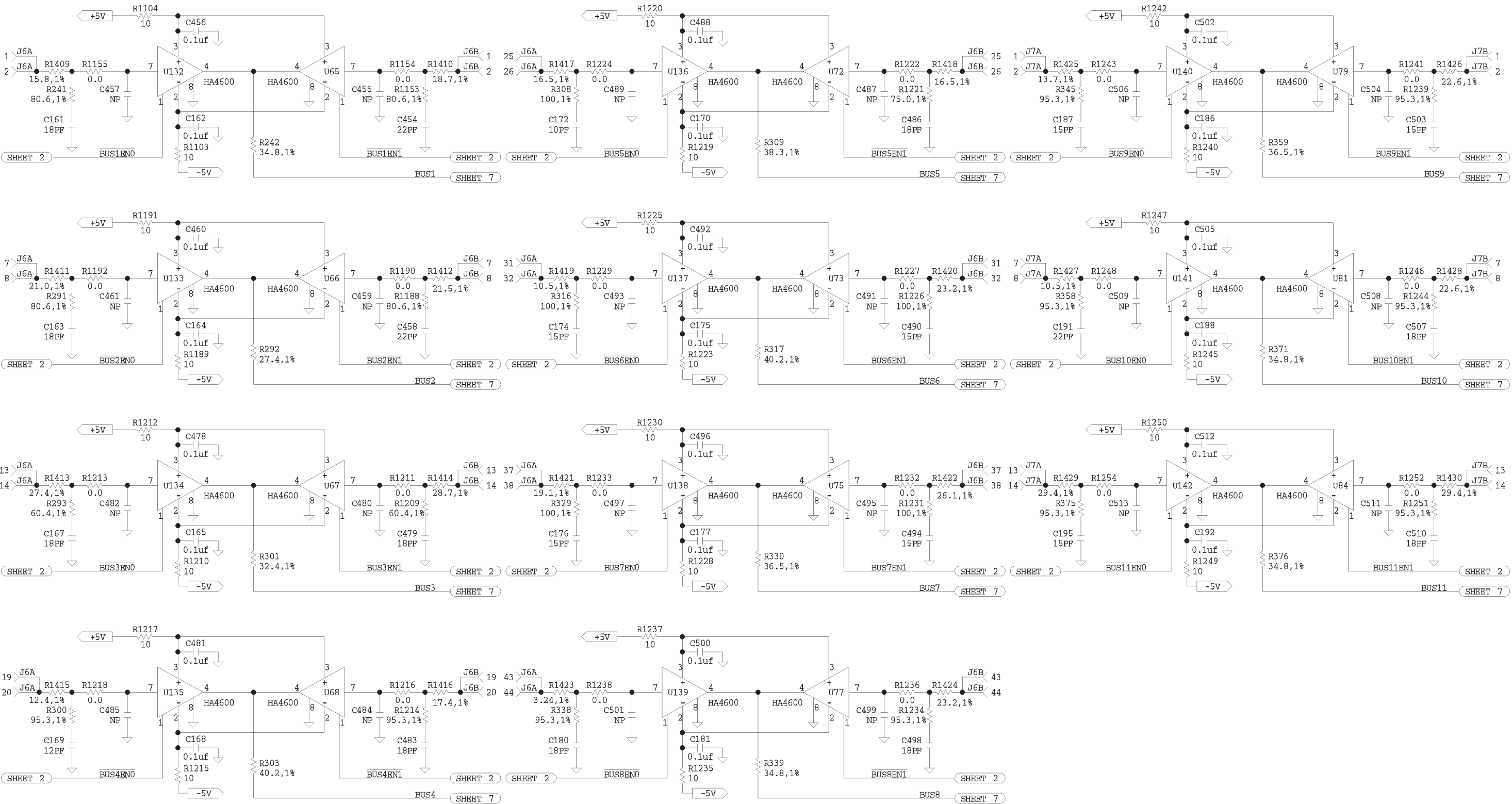
Schematic (Sheet 10 of 15) • 32X32 Analog Video Matrix Card • SC33-1276



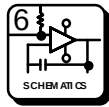


NOTE: * - A 10 OHM 0805 RESISTOR WILL BE INSTALLED FOR VOLTAGE SELECTION.



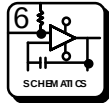


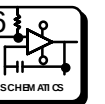
Schematic (Sheet 12 of 15) • 32X32 Analog Video Matrix Card • SC33-1276

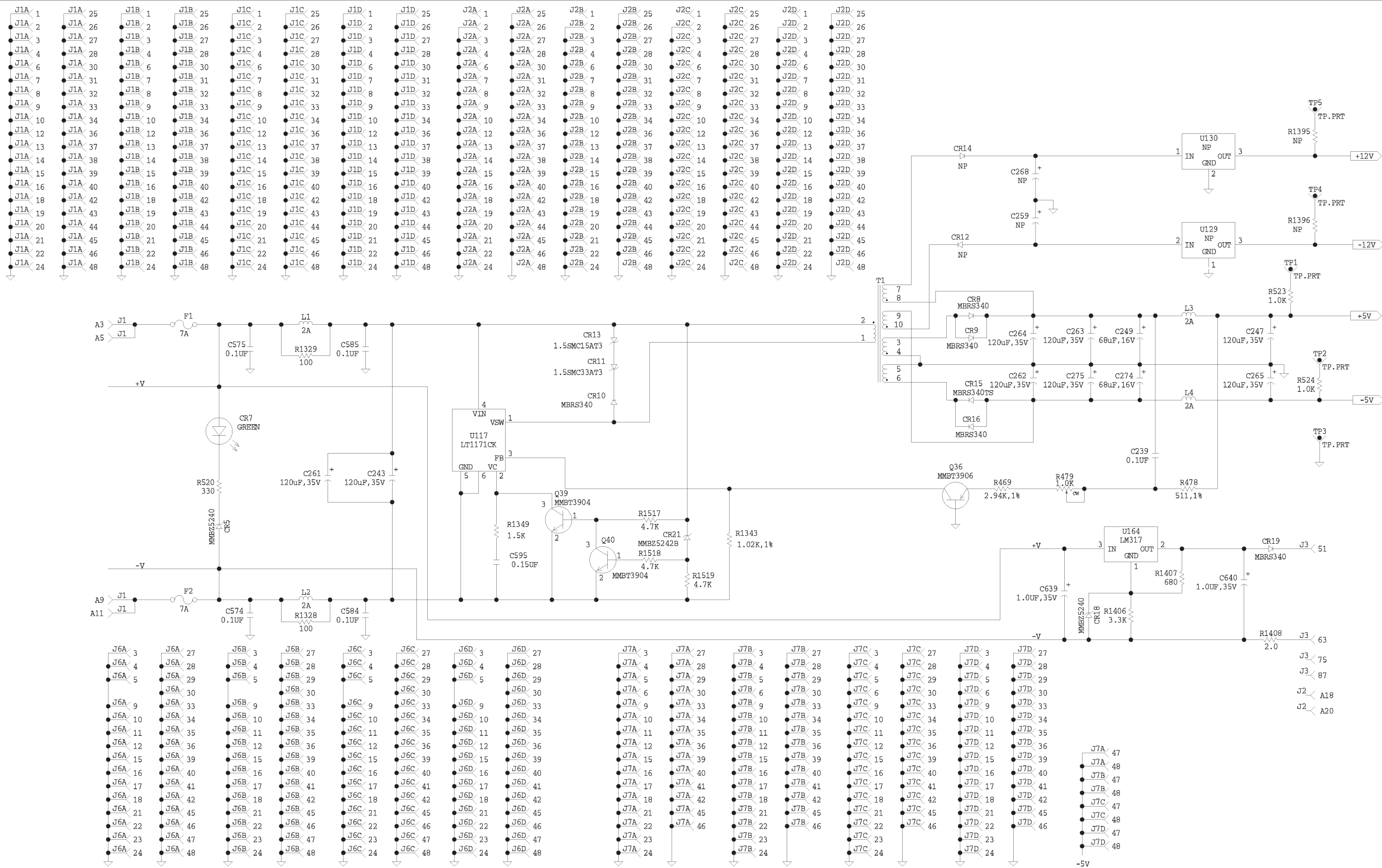




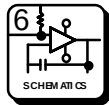
Schematic (Sheet 13 of 15) • 32X32 Analog Video Matrix Card • SC33-1276



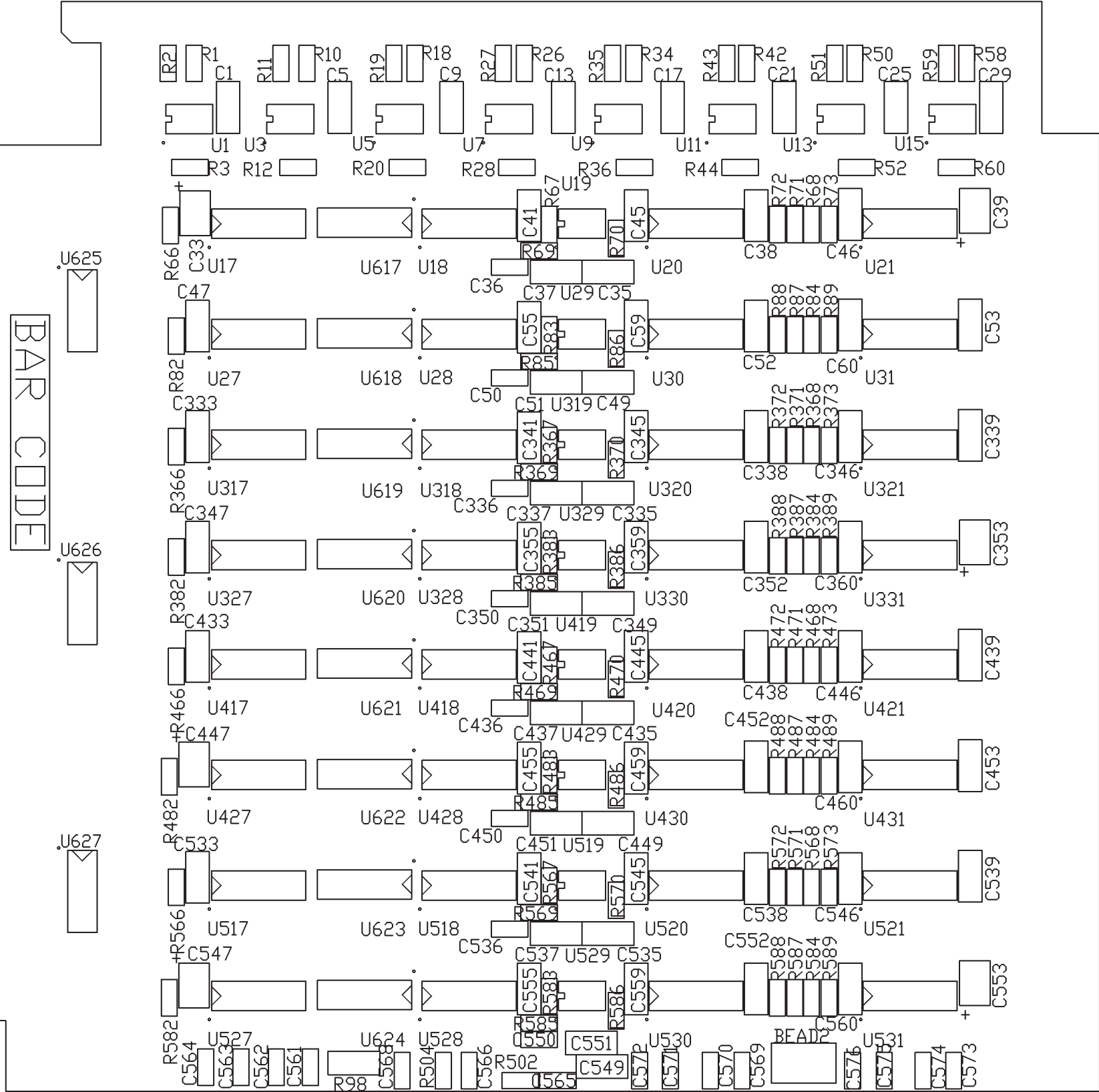




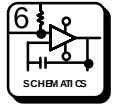
Schematic (Sheet 15 of 15) • 32X32 Analog Video Matrix Card • SC33-1276



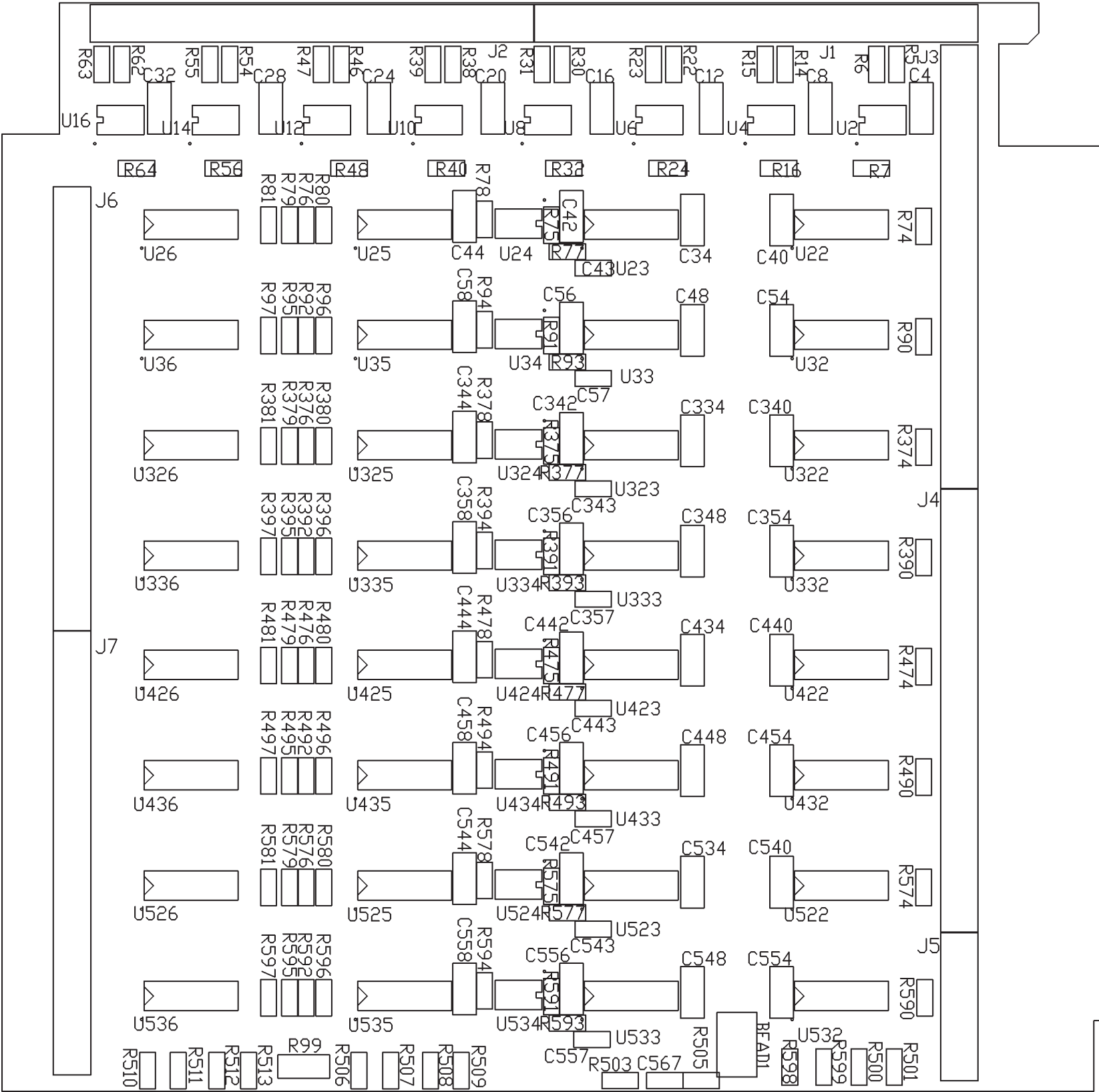
COMPONENT SIDE LAYER 1 OF 10



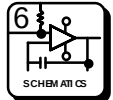
Component Assembly (Sheet 1 of 2) • 16X16 Crosspoint Card • CA25-1284



SOLDER SIDE LAYER 10 OF 10

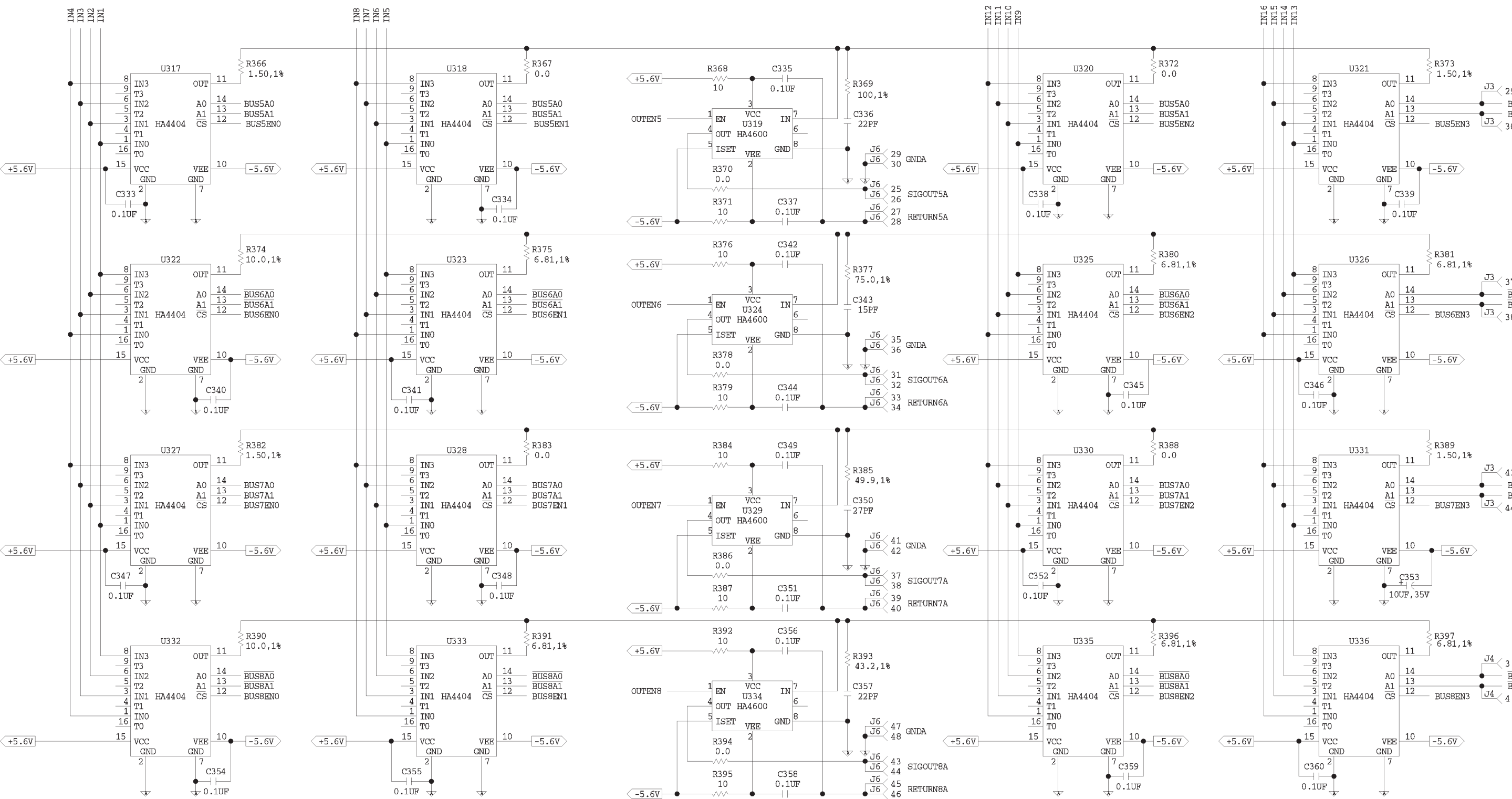


Component Assembly (Sheet 2 of 2) • 16X16 Crosspoint Card • CA25-1284

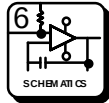


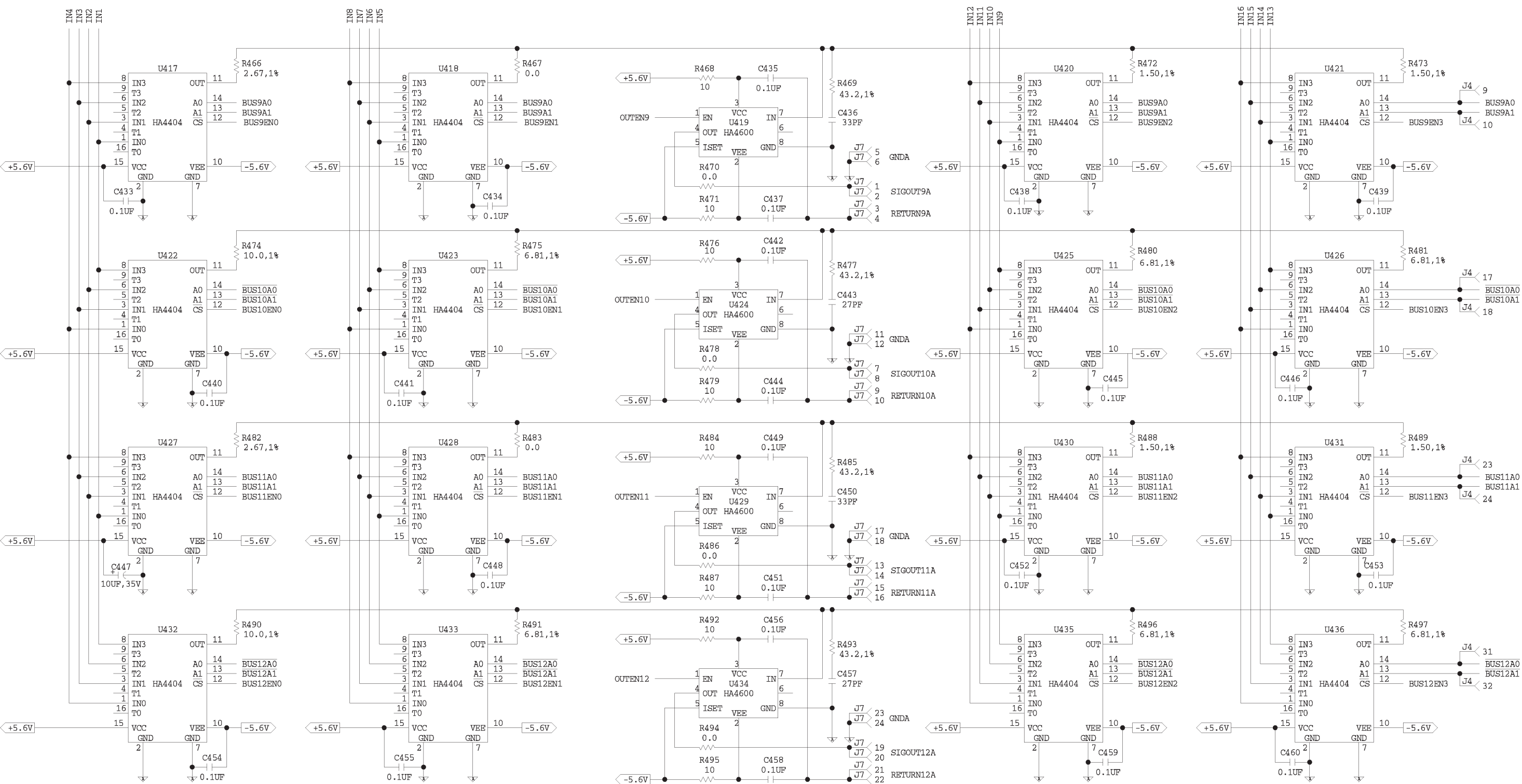




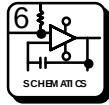


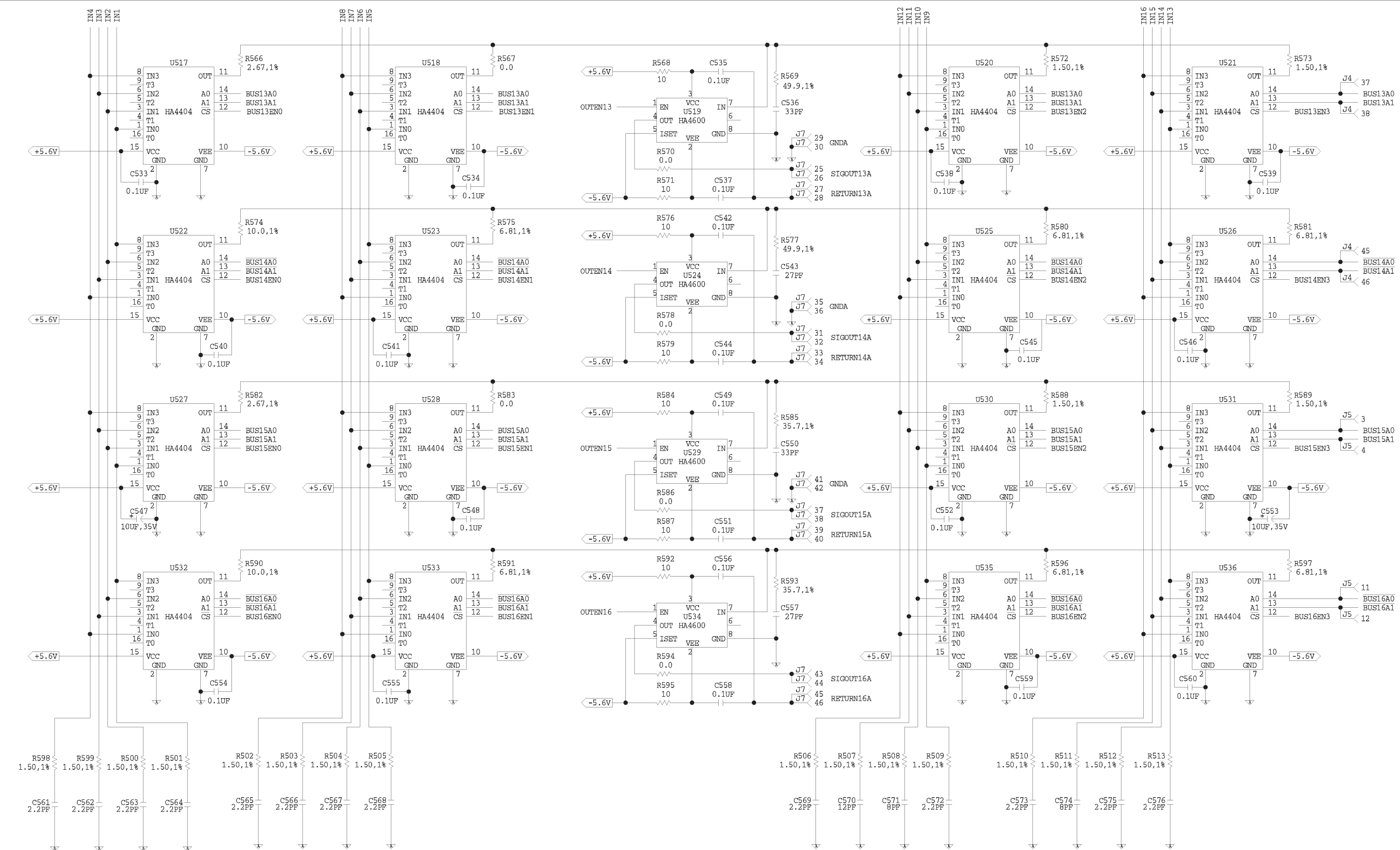
Schematic (Sheet 3 of 6) • 16X16 Crosspoint Card • SC33-1284



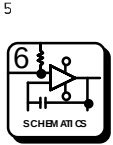


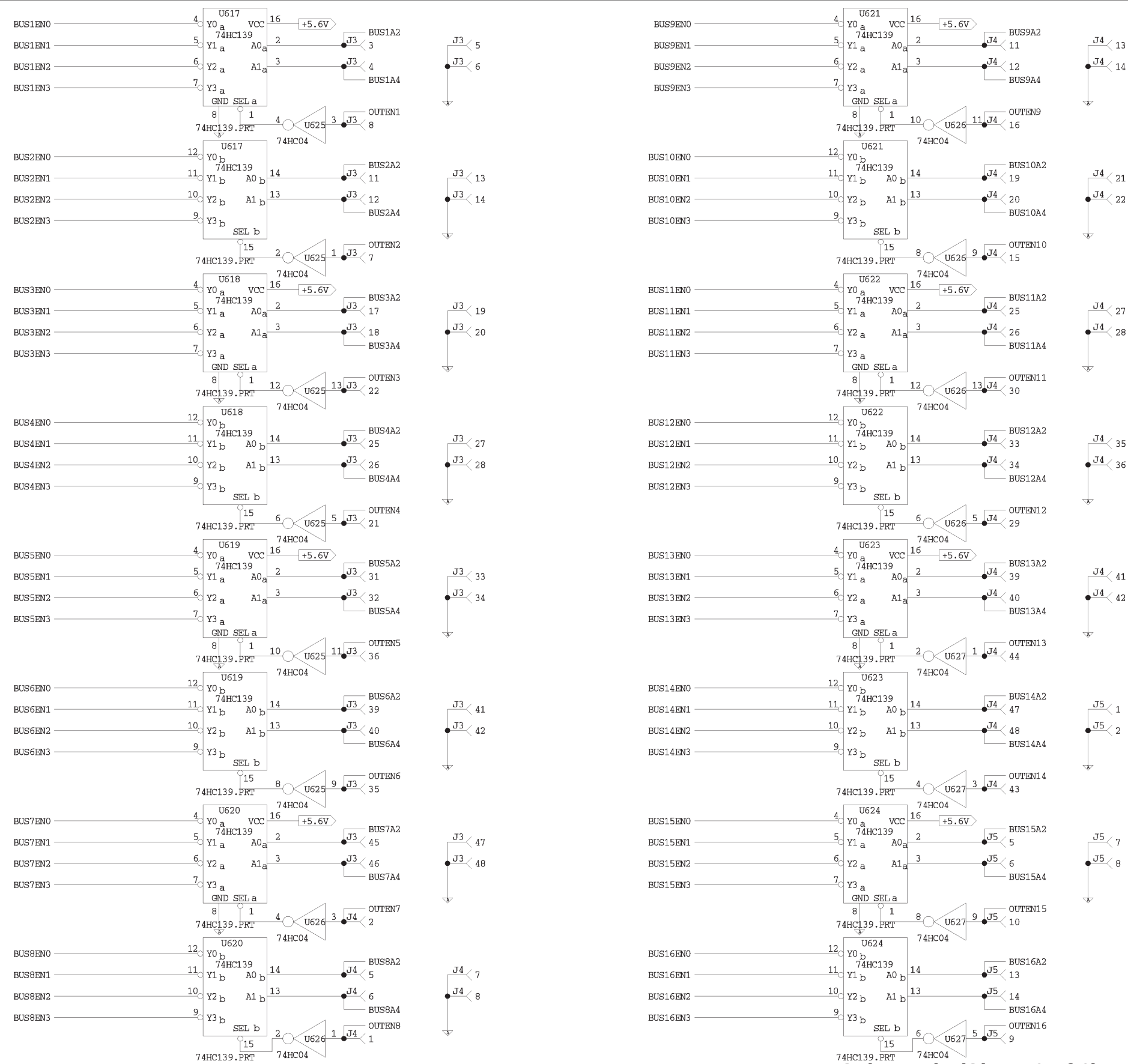
Schematic (Sheet 4 of 6) • 16X16 Crosspoint Card • SC33-1284





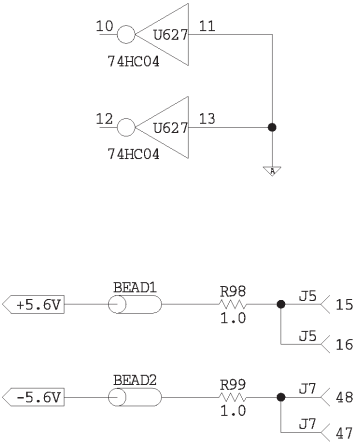
Schematic (Sheet 5 of 6) • 16X16 Crosspoint Card • SC33-1284



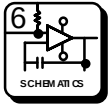


NOTE:
74HC04 PARTS SHOULD HAVE
+5.6V ON PIN 14.
INTERNAL ATTRIBUTE WILL
NOT ACCEPT DECIMAL POINT
ATTRIBUTE.

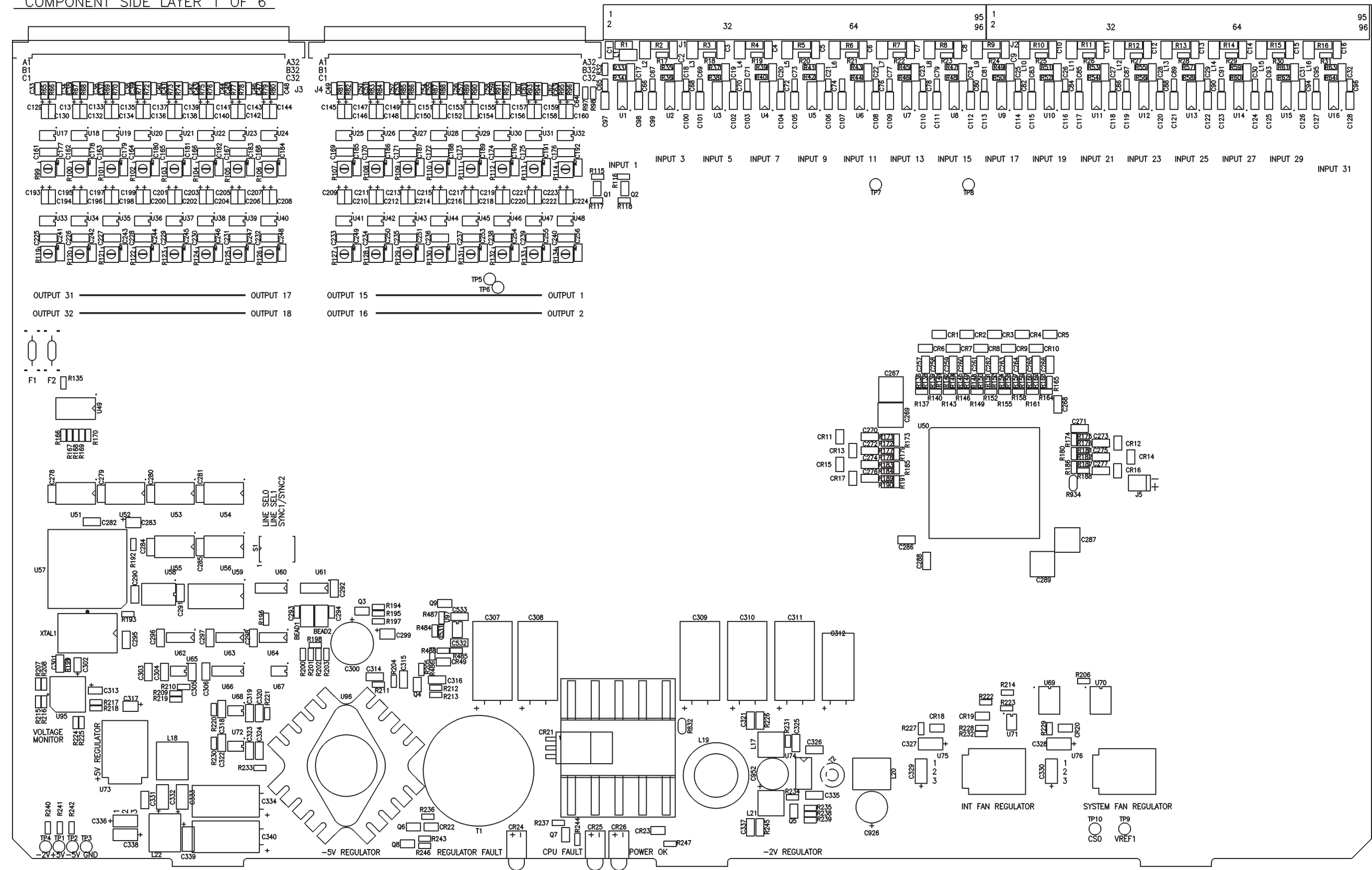
SPARE GATES U627



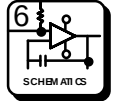
Schematic (Sheet 6 of 6) • 16X16 Crosspoint Card • SC33-1284

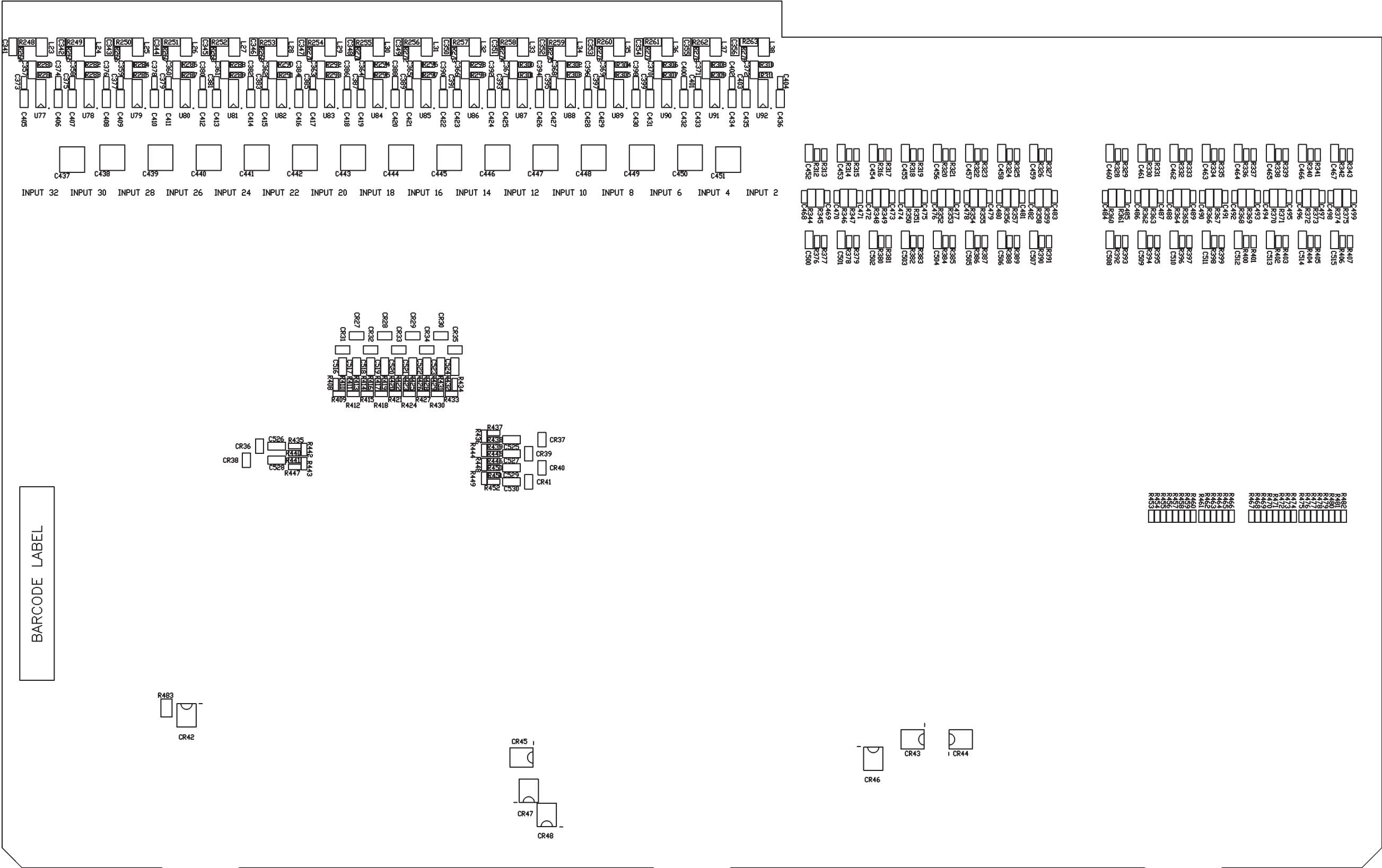


COMPONENT SIDE LAYER 1 OF 6

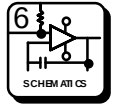


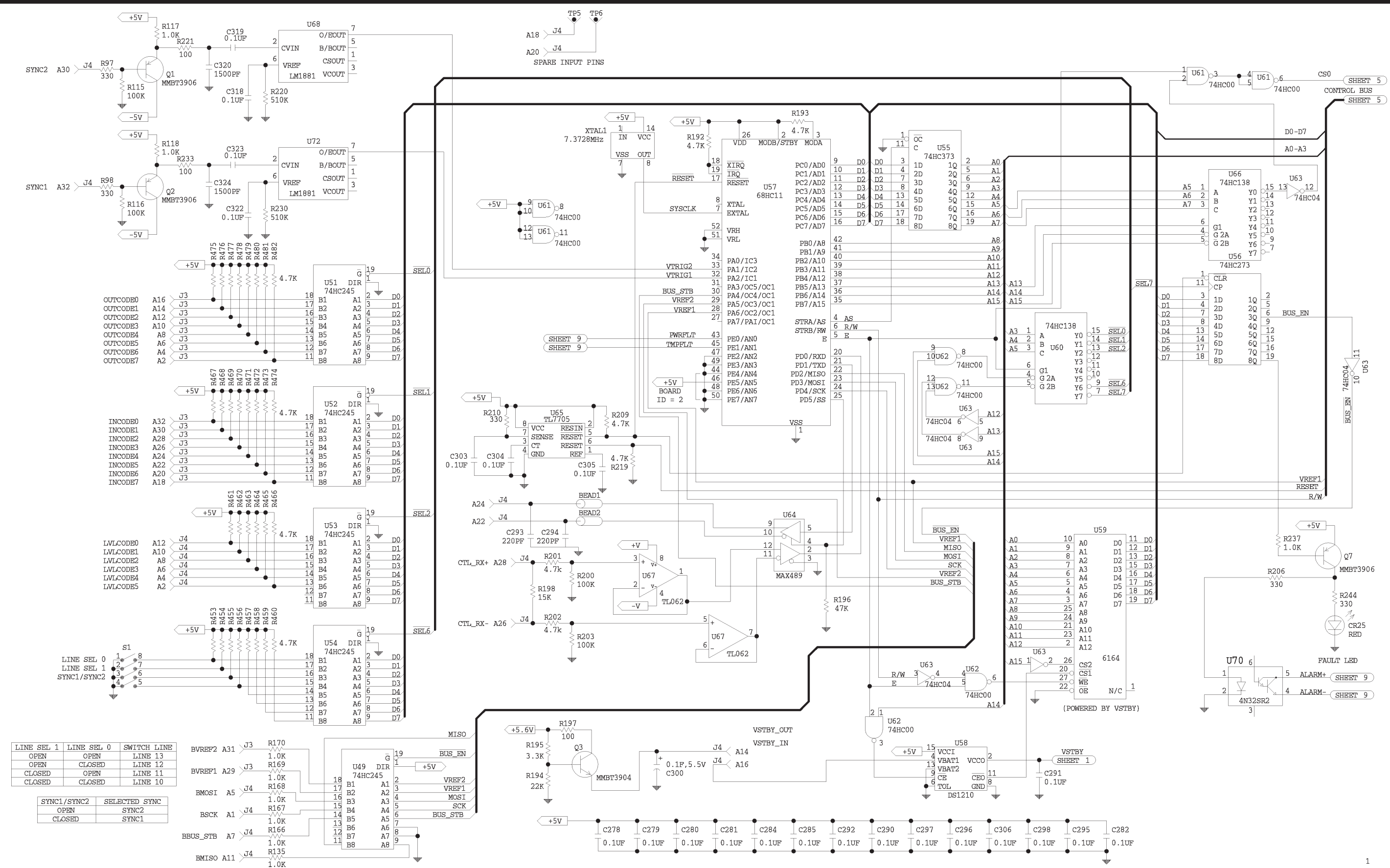
Component Assembly (Sheet 1 of 2) • 32X32 Digital Video Matrix Card • CA25-1353



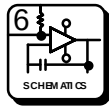


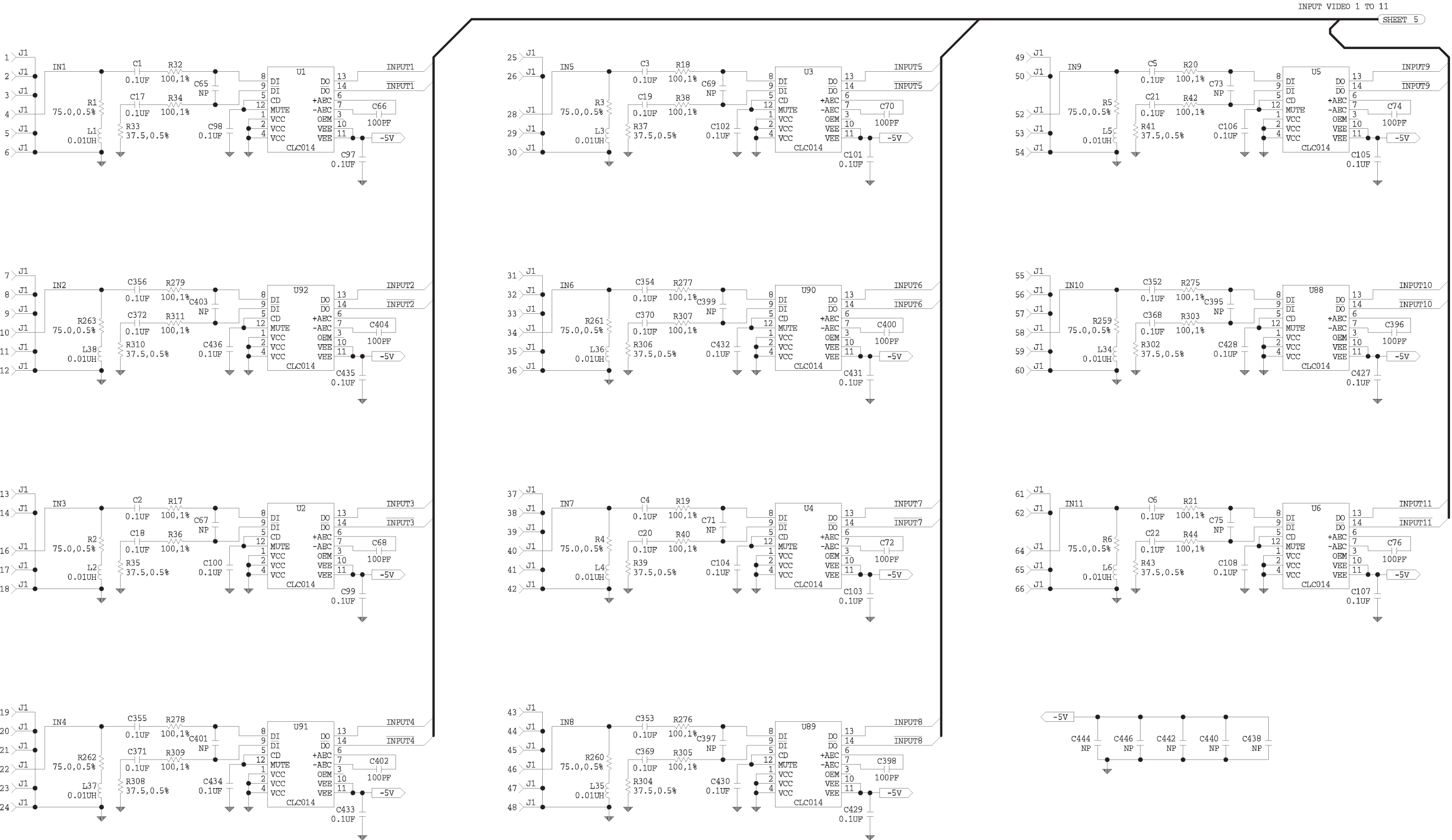
SOLDER SIDE LAYER 6 OF 6



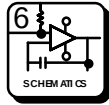


Schematic (Sheet 1 of 9) • 32X32 Digital Video Matrix Card • SC33-1353

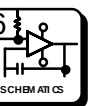


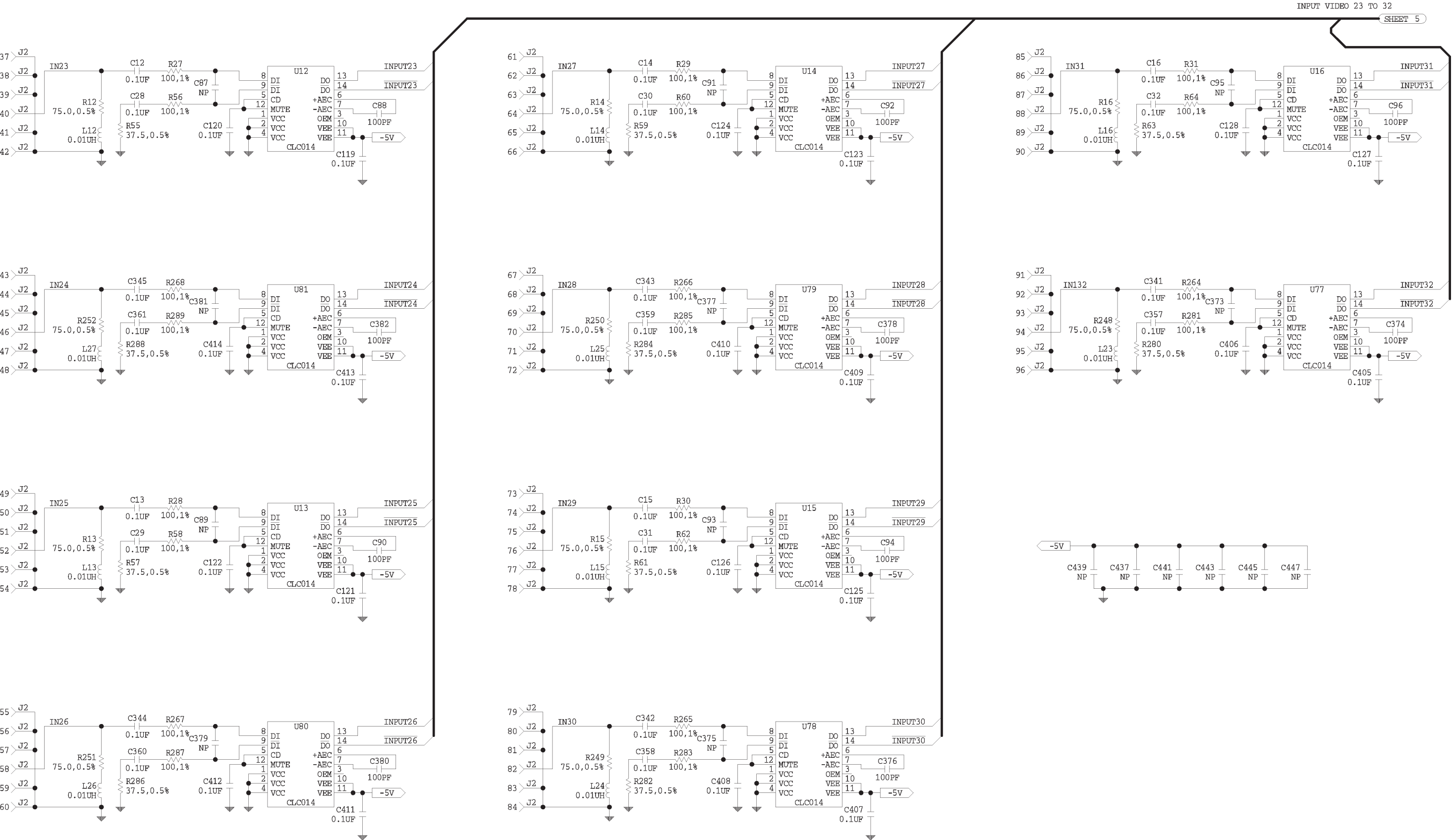


Schematic (Sheet 2 of 9) • 32X32 Digital Video Matrix Card • SC33-1353

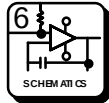


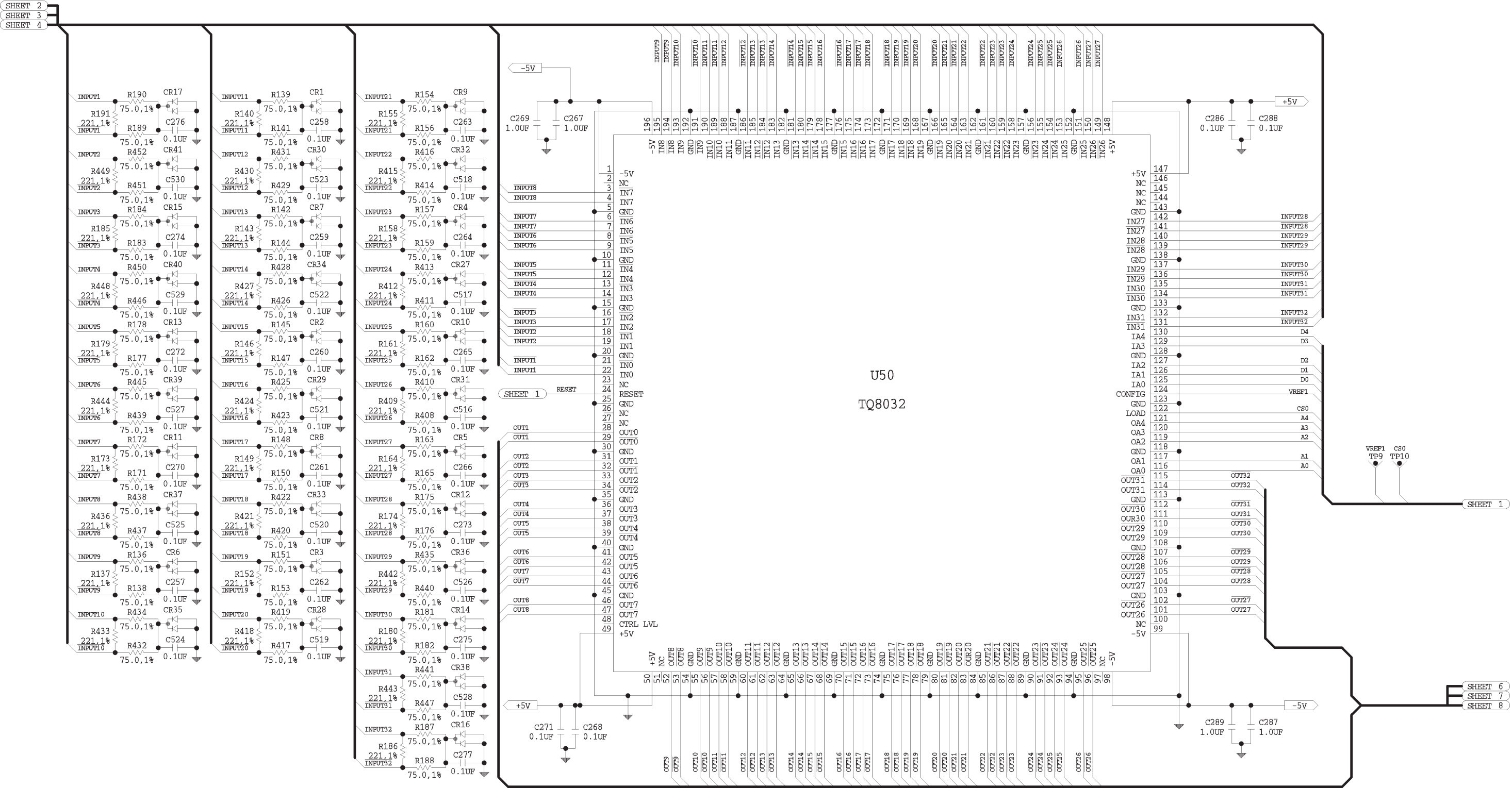
Schematic (Sheet 3 of 9) • 32X32 Digital Video Matrix Card • SC33-1353



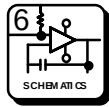


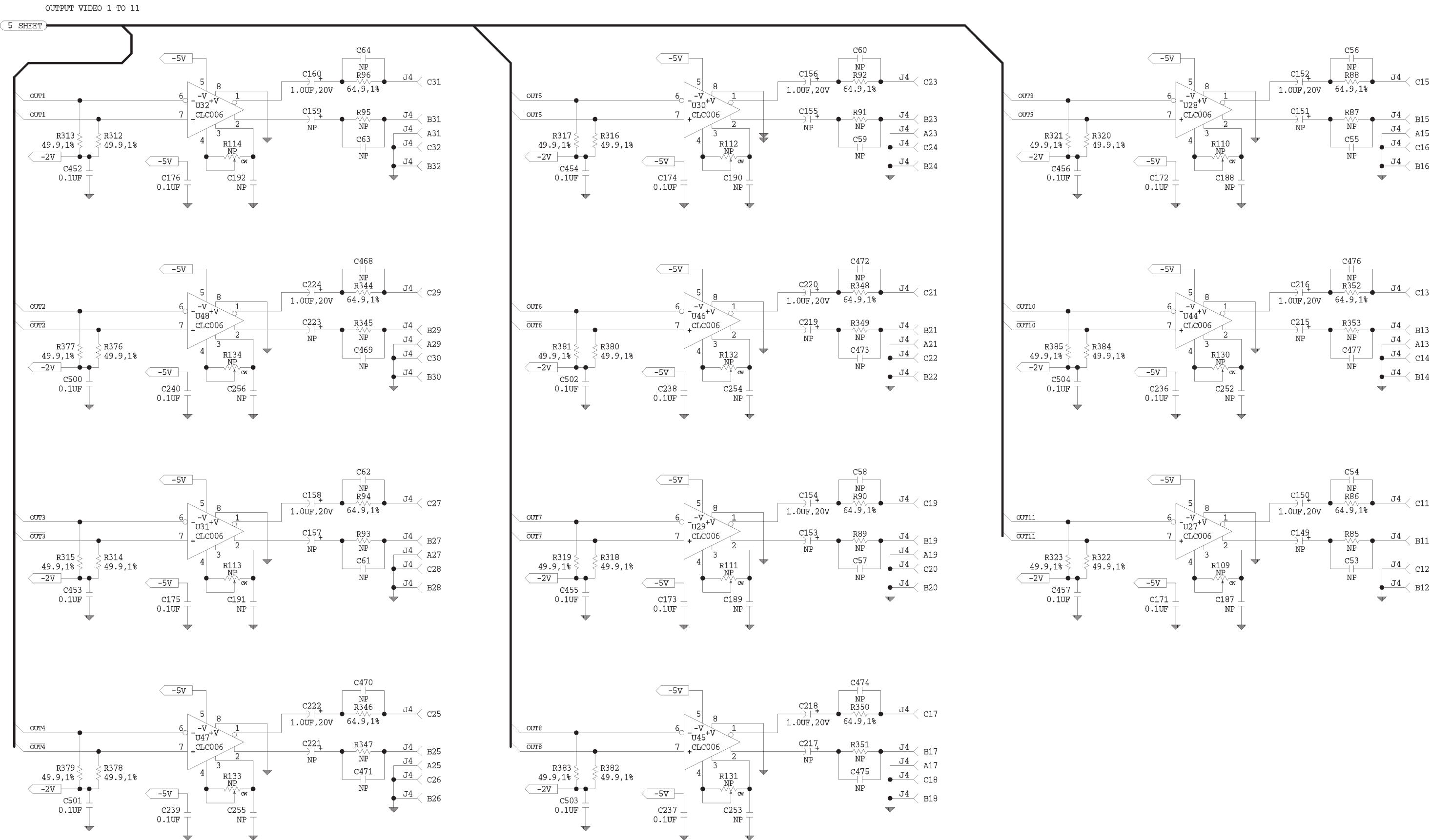
Schematic (Sheet 4 of 9) • 32X32 Digital Video Matrix Card • SC33-1353



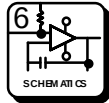


Schematic (Sheet 5 of 9) • 32X32 Digital Video Matrix Card • SC33-1353



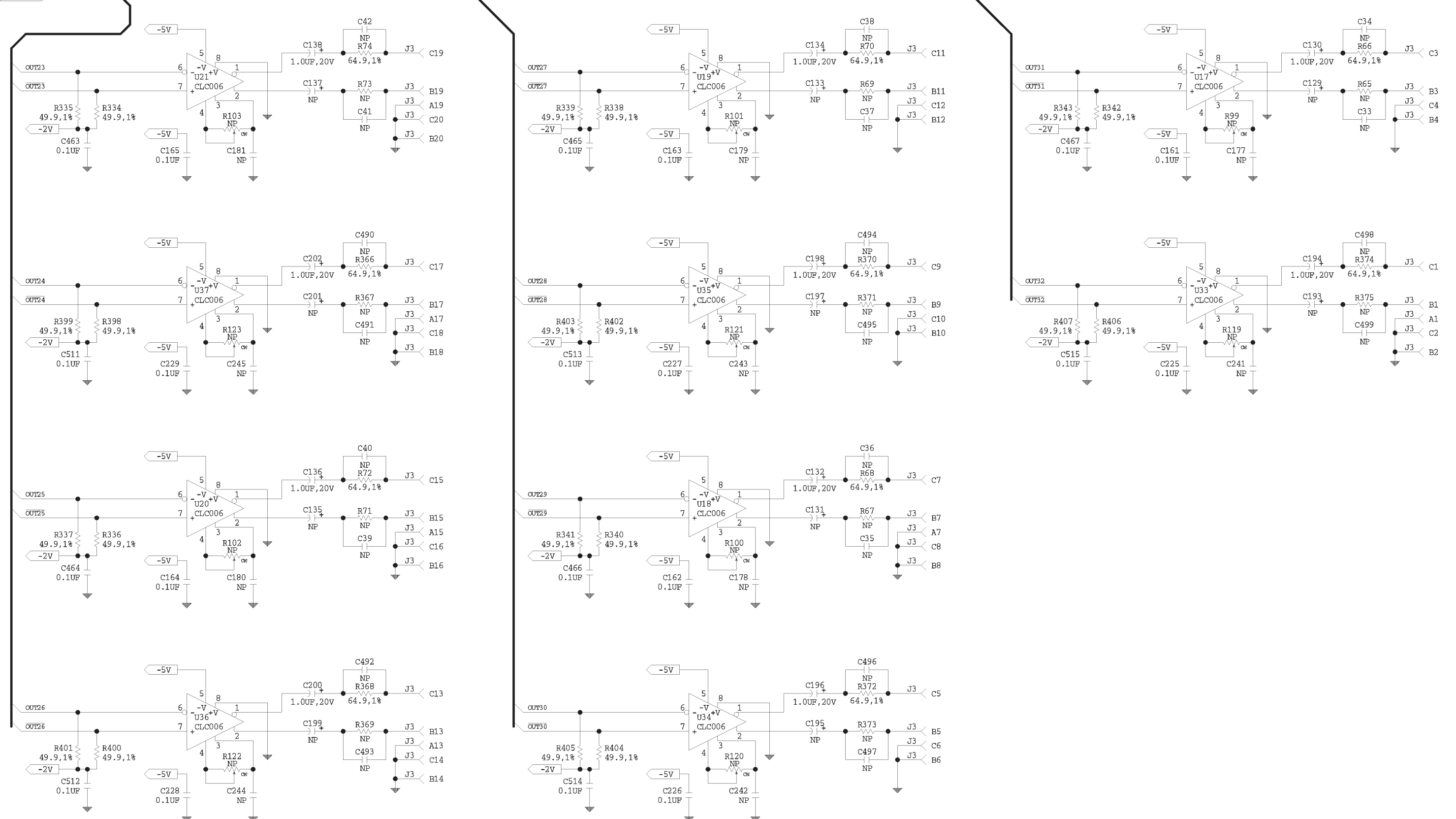


Schematic (Sheet 6 of 9) • 32X32 Digital Video Matrix Card • SC33-1353

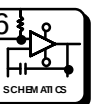


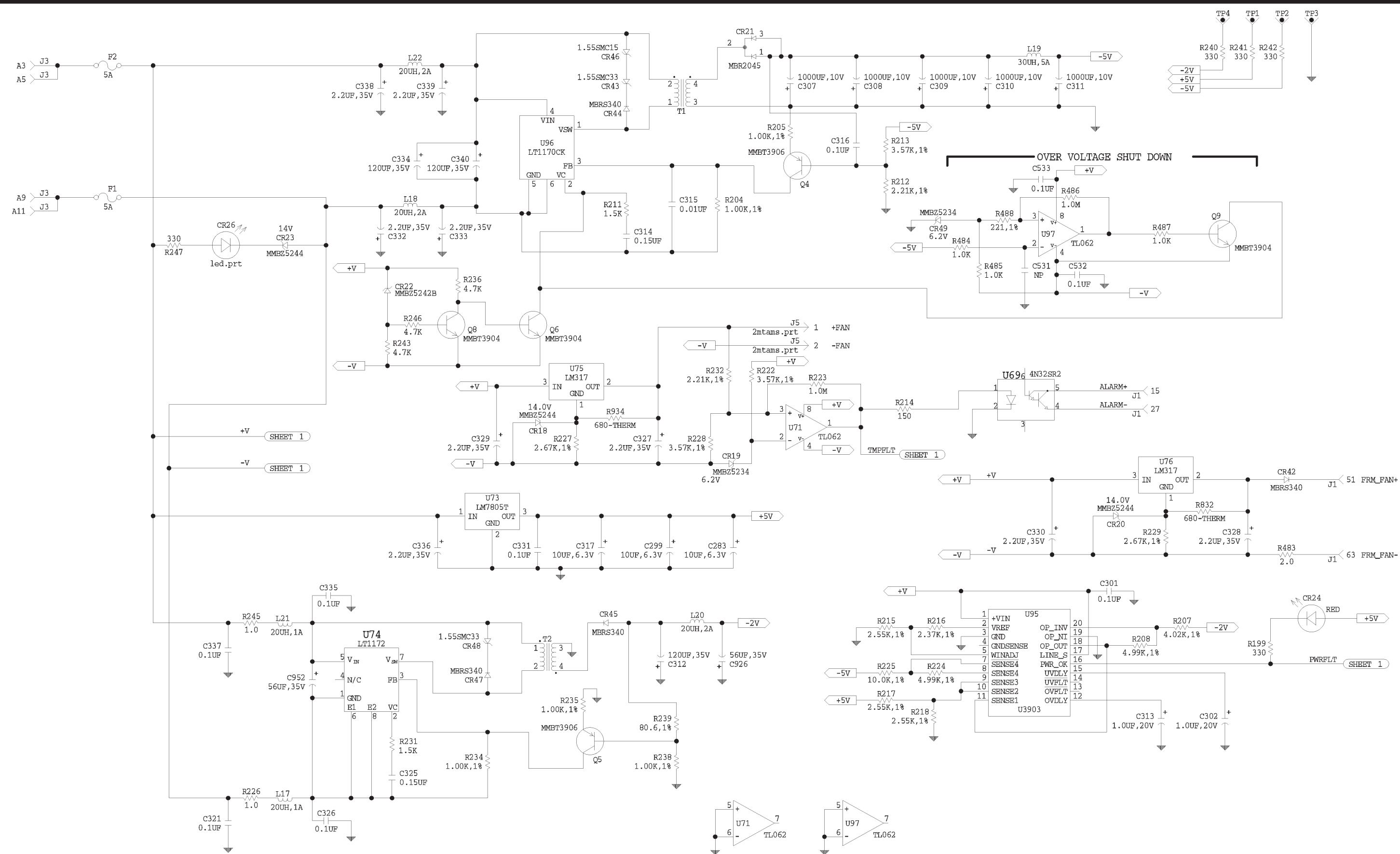


5 SHEET

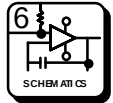


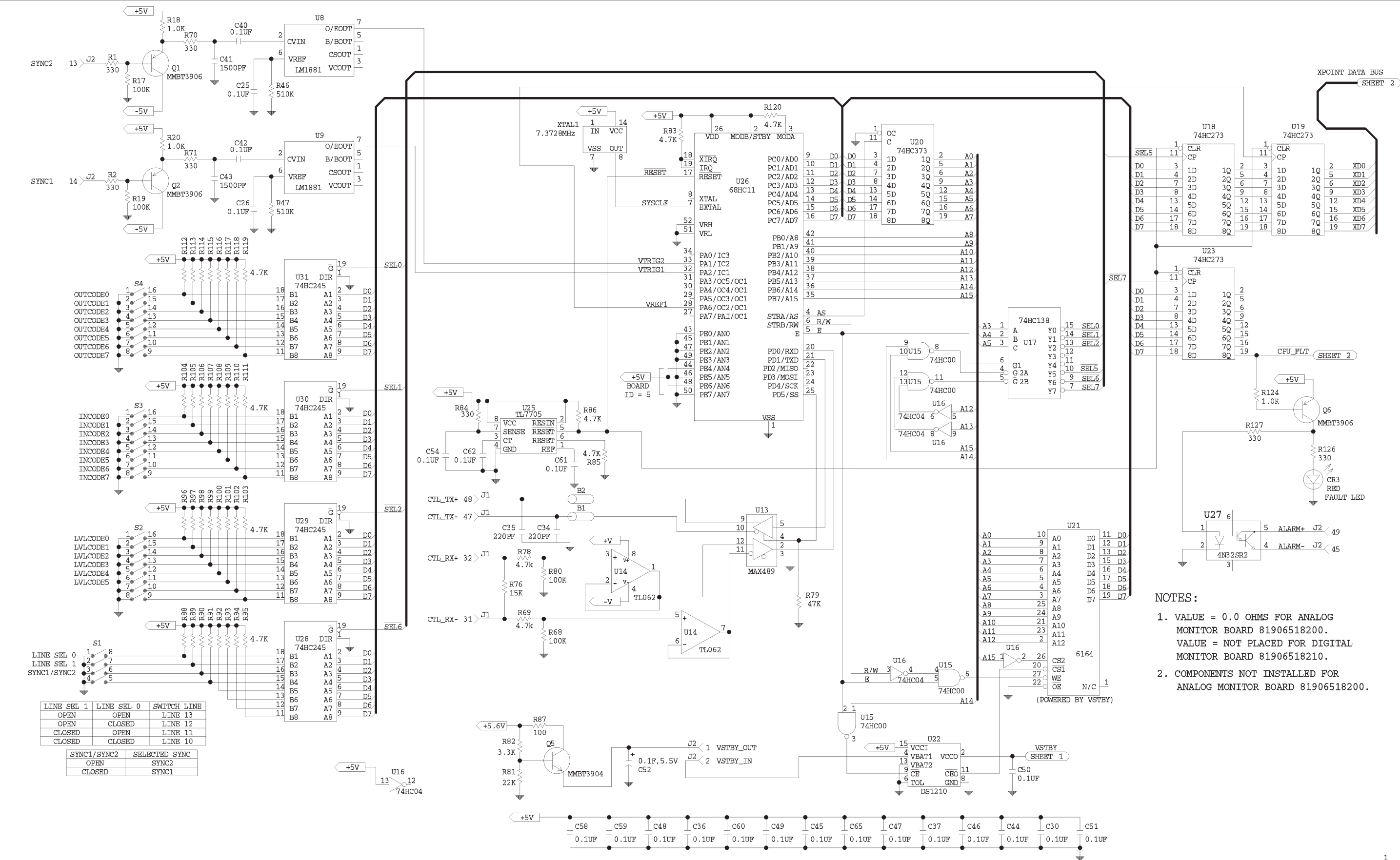
Schematic (Sheet 8 of 9) • 32X32 Digital Video Matrix Card • SC33-1353





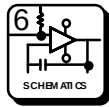
Schematic (Sheet 9 of 9) • 32X32 Digital Video Matrix Card • SC33-1353



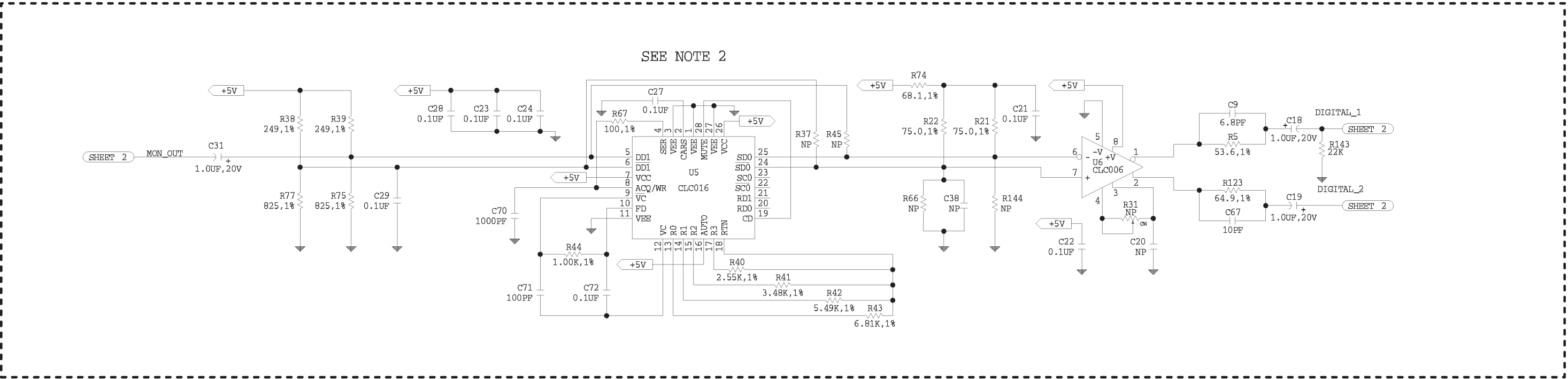


- NOTES:
- VALUE = 0.0 OHMS FOR ANALOG MONITOR BOARD 81906518200.
VALUE = NOT PLACED FOR DIGITAL MONITOR BOARD 81906518210.
 - COMPONENTS NOT INSTALLED FOR ANALOG MONITOR BOARD 81906518200.

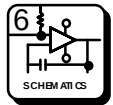
Schematic (Sheet 1 of 3) • Analog/Digital Video Output Monitor Card • SC33-1316

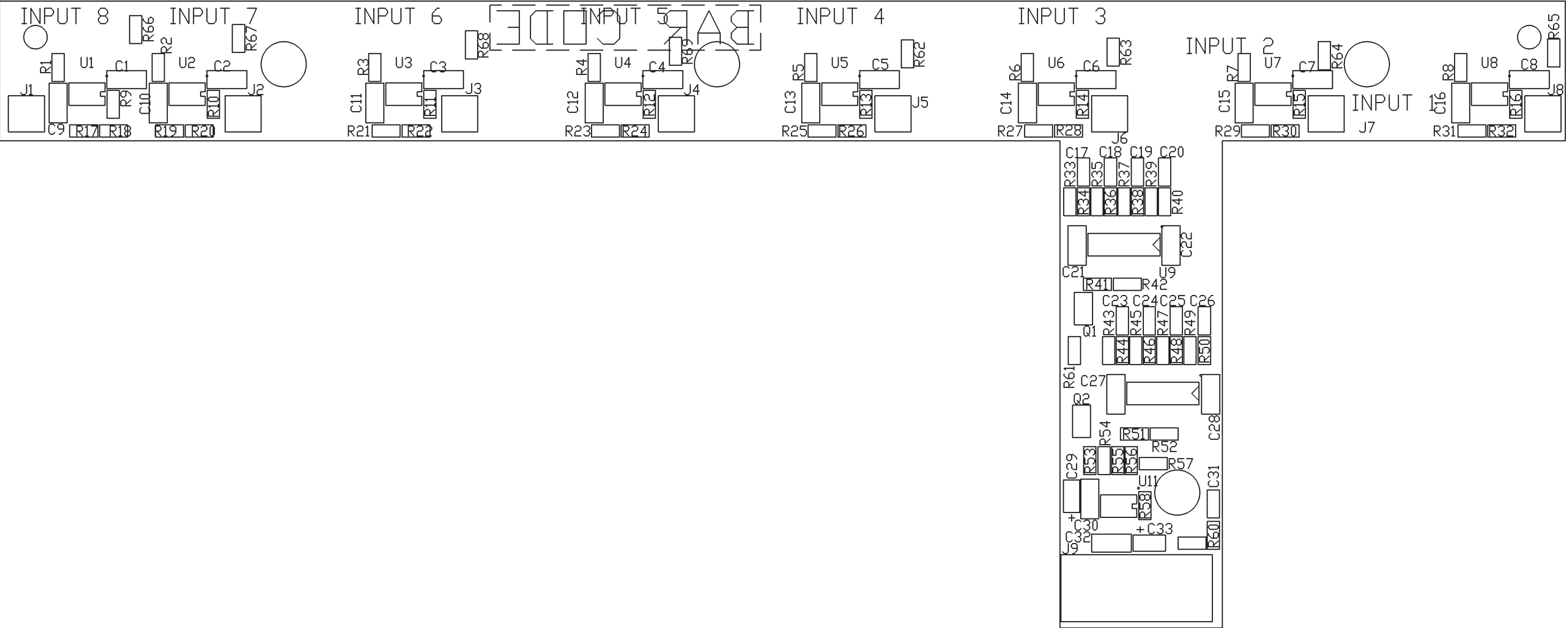


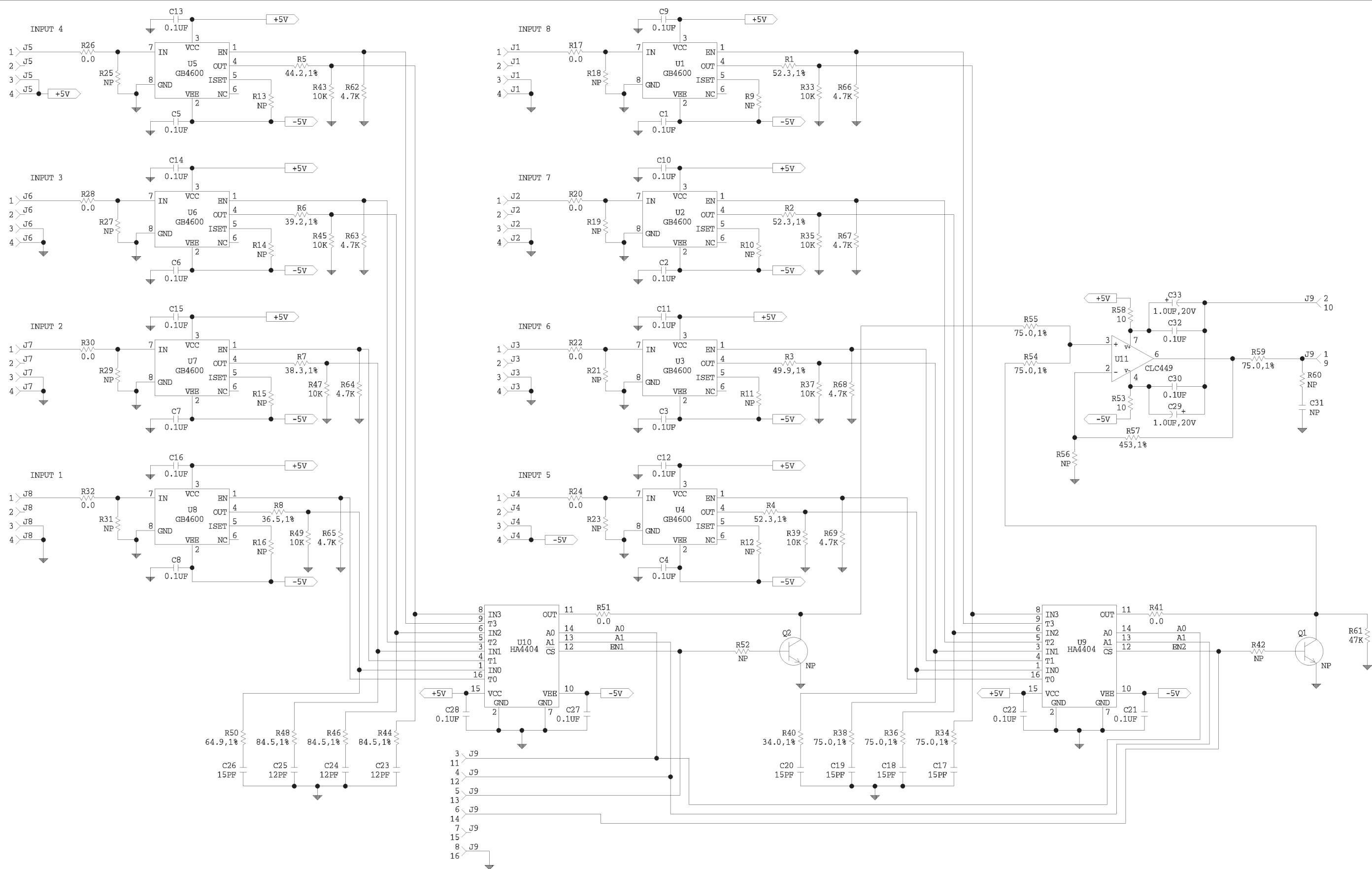




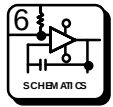
Schematic (Sheet 3 of 3) • Analog/Digital Video Output Monitor Card • SC33-1316

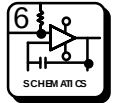
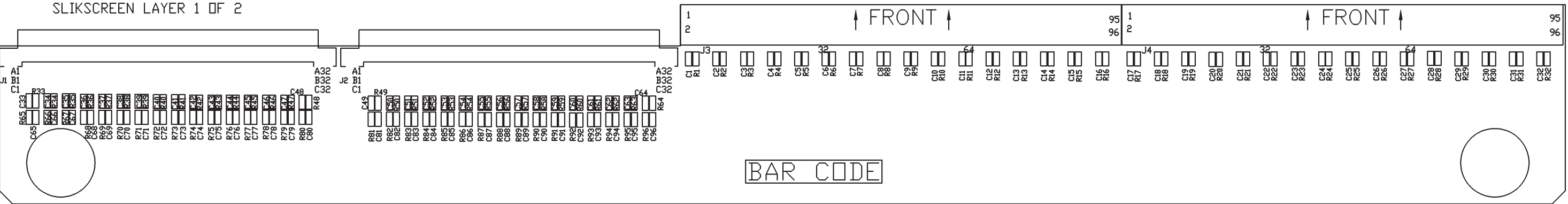


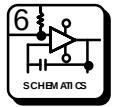
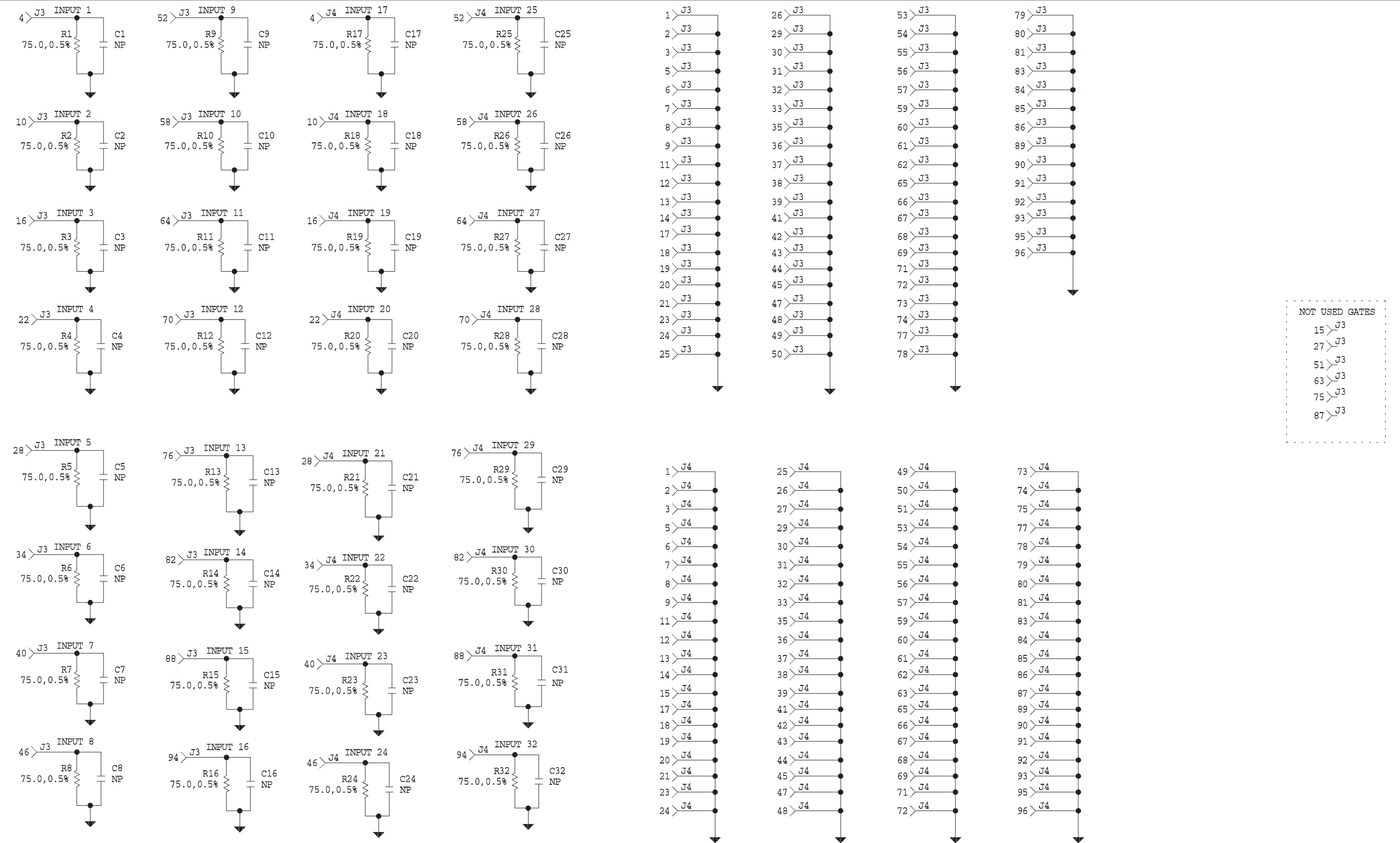




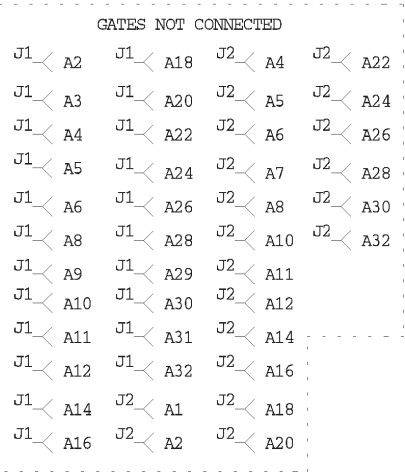
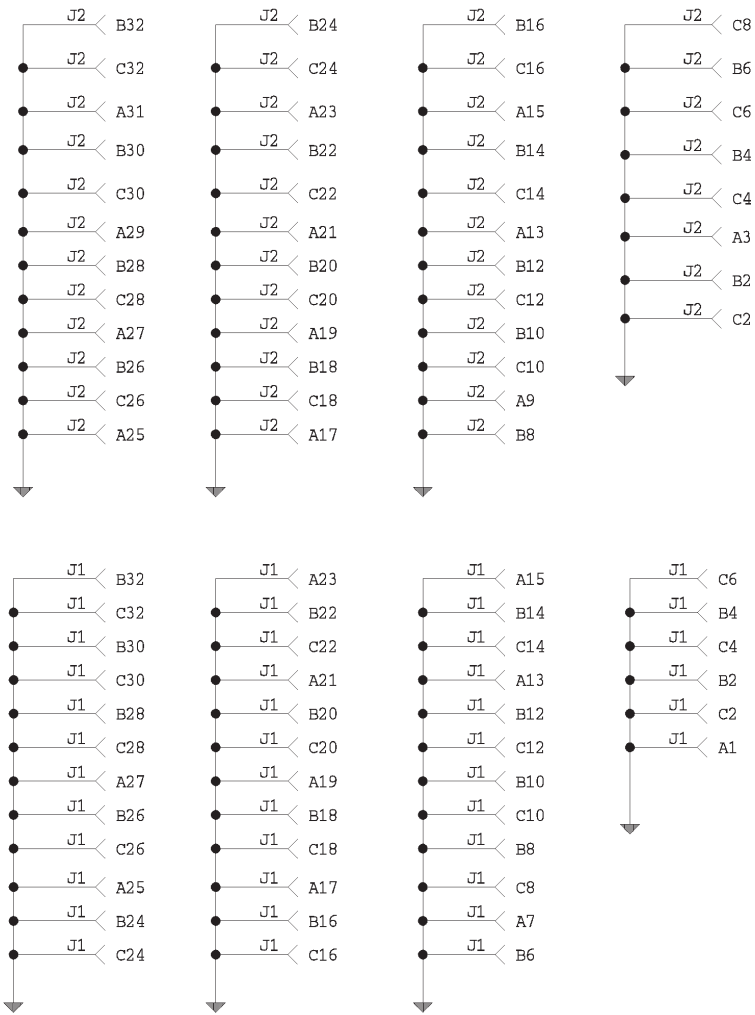
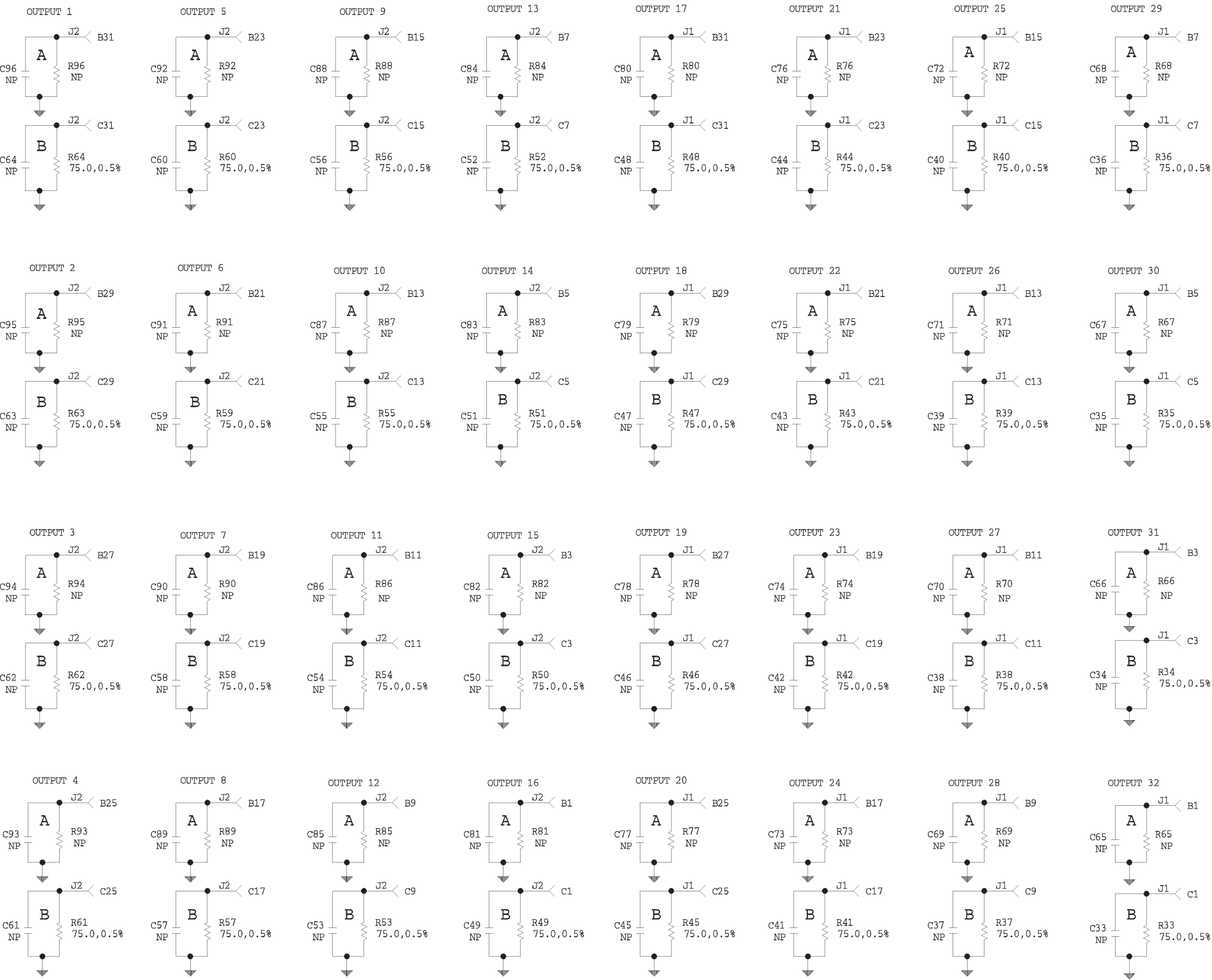
Schematic • 8X1 Crosspoint Card • SC33-1312



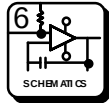




Schematic (Sheet 1 of 2) • Dummy Load Card • SC33-1356



Schematic (Sheet 2 of 2) • Dummy Load Card • SC33-1356



7.1 Parts List

General

The Parts List in this section have been grouped according to each assembly associated with the Jaguar Video Switchers. Refer to each list by name of card, board, or section of the equipment requiring replacement parts.

<u>Part</u>	<u>Part Number</u>	<u>Page</u>
Jaguar Video Mainframe Assembly	81906518250	7.2
Jaguar Video Chassis Assembly	81906518230	7.3
Matrix Mid-Plane	81906518130	7.4
Power Mid-Plane	81906518170	7.5
Video Input Buffer Card	81906518140	7.6
Analog Video Output Combiner Card	81906518150	7.7
Digital Video Output Combiner Card	81906518790	7.9
Dual Reference Interface	81906518620	7.12
Rear Panel Connector	81906518180	7.14
32X32 Analog Video Matrix Assembly	81906518480	7.15
32X32 Analog Video Matrix Card	81906517460	7.16
16X16 Crosspoint Card	81906517550	7.25
32X32 Digital Video Matrix Assembly	81906518860	7.27
32X32 Digital Video Matrix Card	81906518880	7.28
Analog Video Output Monitor Card	81906518200	7.32
Digital Video Output Monitor Card	81906518210	7.34
8X1 Crosspoint Card	81906518160	7.36
Dummy Load Card	81906518920	7.37
Matrix Extender Card	81906518930	7.38



Jaguar Video Mainframe Assembly - 81906518250

81901702700	AIR FILTER 7" x 4.5"	1	EA	
81901702740	AIR FLTR 6 7/16"x9 11/16"	1	EA	
81902200120	SCREW 4-40x1/4 PN HD PHIL	22	EA	
81902200856	SCREW 8-32x3/4 PH PN HD	3	EA	
81902201409	SCREW 4-40x1/4 FLT HD PHI	9	EA	
81902202712	SCREW 4-40x5/16 SIMM PNHD	14	EA	
81902202980	#6 WING NUT	4	EA	REF:FILTER
81902202990	SCREW 8-32x1/2 WING HEAD	2	EA	
81902803960	CABLE ASSEMBLY 16 POS	1	EA	
81902804090	CABLE PWR INTRCNCT JAGUAR	1	EA	
81902908110	CONN 3 PIN F STRAIN RELF	7	EA	
81903463890	CPU SHIPPING SUPT 32x32	1	EA	
81906518130	VIDEO MID PLANE	1	EA	
81906518170	POWER MID-PLANE	1	EA	
81906518180	REAR PANEL CONNECTOR CARD	1	EA	
81906518230	CHASSIS VIDEO JAGUAR	1	EA	
81906518620	DUAL REF INTRFCE VID JAG	1	EA	

Jaguar Video Chassis Assembly - 81906518230

81902003235	LATCH ADJUST GRIP ARROWHD	1	EA	
81902104810	HINGE LIFTOFF 10-24 NYLON	2	EA	
81902105220	CARD GUIDE PLASTIC 3"	26	EA	
81902200138	SCREW 4-40x5/16 PN HD PHI	13	EA	
81902201409	SCREW 4-40x1/4 FLT HD PHI	4	EA	
81902203060	SCREW 10-32x5/16 UCFH PHI	8	EA	
81903464160	COVER VIDEO INPUT BOARD	1	ST	1 SET = 8 PARTS
81903464170	COVER VIDEO OUTPUT BOARD	1	ST	1 SET = 8 PARTS
81903464180	COVER VIDEO REF INTERFACE	1	EA	
81903464190	PLATE SUPPORT VERTICL JAG	1	EA	
81903464200	SUPPORT PLATE HORIZ. JAG	1	EA	
81903464210	TOP COVER JAGUAR	1	EA	
81903464220	GUIDE PLTE UPPER REAR	1	EA	
81903464230	GUIDE PLTE LOWER REAR JAG	1	EA	
81903464250	FRONT DOOR VIDEO JAGUAR	1	EA	
81903464260	TRAY CHASSIS VIDEO JAGUAR	1	EA	
81903464270	SPACER REAR OUTPUT VID JA	1	EA	
81903464280	HINGE SPACER, JAGUAR	2	EA	
81903464440	BRACKET SHIP VID PS JAG	1	EA	
CD63-0764	DOC CHASSIS VIDEO JAGUAR	0	EA	
SS49-0829	DOC VIDEO INTERFACE	0	EA	
SS49-0830	DOC FRONT DOOR VIDEO JAG	0	EA	
SS49-0837	DOC INPUT CARD	0	EA	
SS49-0838	DOC OUTPUT CARD	0	EA	



Matrix Mid-Plane - 81906518130

81902003530	PIN GUIDE VIDEO MATRIX	4	EA	REF J3 J7 J11 J15
81902105050	LABEL BARCODE 1.5"x0.25"	1	EA	
81902200070	NUT 4-40 HEX	4	EA	REF J3 J7 J11 J15
81902413090	PCB VIDEO MID-PLANE	1	EA	
81902600436	SWITCH 8 POS DIP 16-PIN	3	EA	S1-S3
81902906908	CONN 96-PIN MALE PRESS-IN	8	EA	J2 J3 J6 J7 J10 J11 J14 J15
81902907980	CONN 2x12 PST PRESS .1x.1	32	EA	J4 J5 J8 J9 J12 J13 J16 J17
81902908160	HEADER SHROUD ST 4X12 2MM	24	EA	J20-J27 J53-J60 J36-J39 J41-J44
81902908170	HEADER SHROUD ST 4X6 2MM	16	EA	J28-J35 J45-J52
81902908210	HEADER 2x8 SHROUDED STRA	1	EA	J1
81902908220	CONN 3 POSITION TAB	1	EA	J19
CA25-1309	DOC VIDEO MID-PLANE	0	EA	
DD52-1309	DOC VIDEO MID-PLANE	0	EA	
NOT-PLACED	ITEMS NOT PLACED ON EBOM	0	EA	J18 J40
SC33-1309	DOC VIDEO MID-PLANE	0	EA	

Power Mid-Plane - 81906518170

81902105050	LABEL BARCODE 1.5"x0.25"	1	EA	
81902200070	NUT 4-40 HEX	8	EA	PART OF PLUG ASSEMBLY
81902200088	WASHER #4 FLAT	8	EA	PART OF PLUG ASSEMBLY
81902202960	SCREW 4-40x7/16 FH PHIL	8	EA	PART OF PLUG ASSEMBLY
81902413130	PCB POWER MID-PLANE	1	EA	
81902901594	CONN M-N-L 6 POS FEMALE	1	EA	J11
81902906304	CONN 30X2 PIN MALE PRESS	2	EA	J9 J10
81902906908	CONN 96-PIN MALE PRESS-IN	4	EA	J1 J2 J3 J4
81902907200	CONN 16-POS PC MT FEMALE	4	EA	J5 J6 7J J8
81902908170	HEADER SHROUD ST 4X6 2MM	1	EA	J14
81902908200	HEADER 2x25 SHROUDED STRA	1	EA	J13
81902908210	HEADER 2x8 SHROUDED STRA	1	EA	J23
81902908220	CONN 3 POSITION TAB	1	EA	J12
81902908250	HEADER SNGL ROW 8pin PRES	8	EA	J15-J22
81902908260	POWER PLUG CONN SIDE FLNG	4	EA	
CA25-1313	DOC POWER MID-PLANE	0	EA	
DD52-1313	DOC POWER MID-PLANE	0	EA	
SC33-1313	DOC POWER MID-PLANE	0	EA	



Video Input Buffer Card - 81906518140

81901601187	REG MC7805C +5V 1A TO-220	1	EA	U6
81901602219	REG 7905 -5V 1.5A TO-220	1	EA	U4
81902105050	LABEL BARCODE 1.5"x0.25"	1	EA	
81902413100	PCB VID INPUT BUFFER CARD	1	EA	
81902907810	CONN BNC RITE ANGLE PC MT	8	EA	J1-J8
81902908150	RECEPT PC MT RA 4X12 2MM	2	EA	J9 J10
81903200541	LED GREEN RT/A HI-EFF PCB	1	EA	CR4
81906600184	RESISTOR 10 OHM 5% 0805	16	EA	R5 R9 R19 R23 R32 R35 R43 R47 R56 R59 R67 R72 R81 R85 R90 R96
81906600549	RESISTOR 330 OHM 5% 0805	1	EA	R51
81906621520	RESISTOR 0.0 OHM 5% 1206	16	EA	R8 R22 R34 R46 R58 R71 R84 R95 R7 R12 R14 R21 R69 R70 R76 R83
81906640024	RESISTOR 2.0 OHM 5% 1210	2	EA	R27 R45
81906640073	RESISTOR 75 OHM 0.5% 1206	8	EA	R1 R15 R28 R39 R52 R63 R77 R92
81906640107	RESISTOR 75 OHM 0.5% 0805	16	EA	R4 R10 R18 R24 R31 R36 R42 R48 R55 R60 R66 R73 R80 R86 R93 R97
81906640350	RESISTOR 200 OHM .1% 0805	16	EA	R3 R17 R30 R41 R54 R65 R79 R89 R2 R16 R29 R40 R53 R64 R78 R88
81906730015	CAP 0.1MF 50V CERMIC 1206	36	EA	C1 C4 C5 C7 C9 C12 C13 C15 C17 C19 C22 C23 C25 C27 C29 C32 C34 C36 C37 C39 C42 C43 C45 C47 C49 C52 C53 C55 C57 C60 C61 C63 C65 C66 C69 C71
81906770037	CAP TANTLM,SMT,2.2MFD/35V	2	EA	C18 C33
81906770052	CAP 1MF 20V TANLUM SIZE A	16	EA	C2 C8 C10 C16 C20 C26 C30 C38 C40 C48 C50 C56 C58 C64 C67 C72
81906770060	CAP 10MF 6.3V TANT CASE B	2	EA	C28 C46
81906800164	DIODE BAV99 50ma SOT-23	2	EA	CR1 CR3
81906800360	ZENER MB5244 14V SOT-23	1	EA	CR2
81906811120	IC CLC449 IFB 1.2GHZ OP	8	EA	U1 U2 U3 U5 U7 U8 U9 U10
CA25-1310	DOC VIDEO INPUT BUFFER CD	0	EA	
DD52-1310	DOC VIDEO INPUT BUFFER CD	0	EA	
NOT-PLACED	ITEMS NOT PLACED ON EBOM	0	EA	R13 R26 R38 R50 R62 R75 R91 R99 R6 R11 R20 R25 R33 R37 R44 R49 R57 R61 R68 R74 R82 R87 R94 R98 C3 C6 C11 C14 C21 C24 C31 C35 C41 C44 C51 C54 C59 C62 C68 C70
SC33-1310	DOC VIDEO INPUT BUFFER CD	0	EA	
SP57-0361	DOC PANELIZATION DRAWING	0	EA	

Analog Video Output Combiner Card - 81906518150

81901601187	REG MC7805C +5V 1A TO-220	1	EA	U17
81901602219	REG 7905 -5V 1.5A TO-220	1	EA	U18
81902105050	LABEL BARCODE 1.5"x0.25"	1	EA	
81902413110	PCB VID ANAL OUTPUT COMB	1	EA	
81902906643	CONN HEADER 2x2 DBLE ROW	8	EA	J17-J24
81902907810	CONN BNC RITE ANGLE PC MT	16	EA	J1-J16
81902908150	RECEPT PC MT RA 4X12 2MM	1	EA	J26
81902908180	RECEPT PC MT RA 4X6 2MM	2	EA	J25 J27
81903200541	LED GREEN RT/A HI-EFF PCB	1	EA	CR3
81906600184	RESISTOR 10 OHM 5% 0805	32	EA	R17-R24 R73 R75 R77 R79 R81 R83 R85 R87 R129 R131 R133 R135 R137 R139 R141 R143 R154 R156 R158 R160 R162 R164 R166 R168
81906600549	RESISTOR 330 OHM 5% 0805	1	EA	R209
81906600663	RESISTOR 1K OHM 5% 0805	8	EA	R212-R219
81906601067	RESISTOR 47K 5% 0805 SMT	8	EA	R220-R227
81906610381	RESISTOR 24.3 OHM 1% 0805	8	EA	R58 R60 R62 R64 R66 R68 R70 R72
81906610810	RESISTOR 68.1 OHM 1% 0805	8	EA	R25-R32
81906610852	RESISTOR 75.0 OHM 1% 0805	8	EA	R74 R76 R78 R80 R82 R84 R86 R88
81906610894	RESISTOR 82.5 OHM 1% 0805	8	EA	R130 R132 R134 R136 R138 R140 R142 R144
81906611010	RESISTOR 110 OHM 1% 0805	2	EA	R171 R172
81906611058	RESISTOR 121 OHM 1% 0805	1	EA	R173
81906611116	RESISTOR 140 OHM 1% 0805	2	EA	R170 R174
81906611140	RESISTOR 150 OHM 1% 0805	19	EA	R178 R180 R182 R184 R186 R188 R190 R192 R194 R196 R198 R200 R202 R204 R206 R208 R169 R175 R176
81906611264	RESISTOR 200 OHM 1% 0805	16	EA	R145-R153 R155 R157 R159 R161 R163 R165 R167
81906611400	RESISTOR 280 OHM 1% 0805	8	EA	R105 THROUGH R112
81906611431	RESISTOR 301 OHM 1% 0805	16	EA	R59 R61 R63 R65 R67 R69 R71 R49-R57
81906611850	RESISTOR 825 OHM 1% 0805	8	EA	R113 R115 R117 R119 R121 R123 R125 R127
81906612213	RESISTOR 1.96K 1% 0805	8	EA	R114 R116 R118 R120 R122 R124 R126 R128
81906612310	RESISTOR 2.49K 1% 0805	8	EA	R89 R91 R93 R95 R97 R99 R101 R103
81906640024	RESISTOR 2.0 OHM 5% 1210	2	EA	R210 R211
81906640073	RESISTOR 75 OHM 0.5% 1206	16	EA	R1-R16
81906640160	RESISTOR 49.9ohm .5% 0805	16	EA	R177 R179 R181 R183 R185 R187 R189 R191 R193 R195 R197 R199 R201 R203 R205 R207



Analog Video Output Combiner Card - 81906518150 Cont:

81906650080	POT 200 OHM R/A 1-TRN 10%	8	EA	R33 R35 R37 R39 R41 R43 R45 R47
81906650230	POT 20 OHM 20% VERT 1TURN	8	EA	R34 R36 R38 R40 R42 R44 R46 R48
81906650260	POT 100K OHM 20% VERT 1T	8	EA	R228-R235
81906700117	CAP 15PF 50V CERAM 0805	8	EA	C57-C64
81906700158	CAP 8.2PF 50V CERAM 0805	8	EA	C41 C43 C45 C47 C49 C51 C53 C55
81906700310	CAP 120PF NPO 0805 CERAMC	8	EA	C66 C68 C70 C72 C74 C76 C78 C80
81906700340	CAP 1.8PF CERAMC 0805 NPO	8	EA	C97-C104
81906700500	CAP 39PF CER NPO 5% 0805	8	EA	C65 C67 C69 C71 C73 C75 C77 C79
81906730015	CAP 0.1MF 50V CERMIC 1206	52	EA	C2 C4 C6 C8 C10 C12 C14 C16- C24 C81-C96 C105-C122 C125 C127
81906770037	CAP TANTLM,SMT,2.2MFD/35V	2	EA	C123 C124
81906770052	CAP 1MF 20V TANLUM SIZE A	16	EA	C1 C3 C5 C7 C9 C11 C13 C15 C25- C32
81906770060	CAP 10MF 6.3V TANT CASE B	2	EA	C126 C128
81906800164	DIODE BAV99 50ma SOT-23	2	EA	CR2 CR4
81906800360	ZENER MB5244 14V SOT-23	1	EA	CR1
81906811120	IC CLC449 IFB 1.2GHZ OP	16	EA	U1-U16
CA25-1311	DOC VID ANALG OUTPUT COMB	0	EA	
DD52-1311	DOC VID ANAL OUTPUT COMB	0	EA	
NOT-PLACED	ITEMS NOT PLACED ON EBOM	0	EA	NOT PLACED 0805 SMT C42 C44 C46 C48 C50 C52 C54 C56 NOT PLACED 0805 SMT R90 R92 R94 R96 R98 R100 R102 R104 TP1 TP2 TP3 C129-C136
SC33-1311	DOC VID ANALG OUTPUT COMB	0	EA	
SP57-0362	DOC PNLIZATION ANAL VIDEO	0	EA	

Digital Video Output Combiner Card - 81906518790

81901000740	CAP SWXR REG OUT 35V ELEC	1	EA	C10
81901602219	REG 7905 -5V 1.5A TO-220	1	EA	U17
81902105050	LABEL BARCODE 1.5"x0.25"	1	EA	
81902301080	INDUCTOR 20uH 2A TOROIDAL	2	EA	L1 L2
81902301400	TRANSFORMER CUSTOM JAGUAR	1	EA	
81902413490	PCB DIGITL VID OUTPUT CMB	1	EA	
81902700800	FUSE 2A PICO AXIAL LEAD	2	EA	F1 F2
81902901479	SOCKET 8 PIN LOW PROF IC	1	EA	REF:U38
81902906643	CONN HEADER 2x2 DBLE ROW	8	EA	J17-J24
81902907810	CONN BNC RITE ANGLE PC MT	16	EA	J1-J16
81902908060	SPLIT TERMINAL	4	EA	REF:F1 F2
81902908150	RECEPT PC MT RA 4X12 2MM	1	EA	J26
81902908180	RECEPT PC MT RA 4X6 2MM	2	EA	J25 J27
81903200541	LED GREEN RT/A HI-EFF PCB	1	EA	CR2
81903900700	INDUCT 20MH 1A TORIODAL	2	EA	L3 L4
81906518490	SOFT SERIAL PORT DECODER	1	EA	U38
81906600424	RESISTOR 100 OHM 5% 0805	4	EA	R128 R130 R251 R255
81906600549	RESISTOR 330 OHM 5% 0805	3	EA	R160 R163 R178
81906600820	RESISTOR 4.7K 5% 0805 SMT	15	EA	R230-R235 R96 R98 R100 R101 R221 R224 R225 R238 R247
81906600986	RESISTOR 22K 5% 0805 SMT	8	EA	R280-R287
81906601067	RESISTOR 47K 5% 0805 SMT	8	EA	R95 R97 R99 R147 R222 R223 R237 R239
81906601513	RESISTOR 1.0 OHM 5% 0805	16	EA	R119 R123 R135 R140 R152 R156 R168 R172 R183 R187 R197 R201 R211 R215 R236 R243
81906601521	RESISTOR 0.0 OHM 5% 0805	16	EA	R115 R120 R131 R137 R148 R153 R164 R169 R179 R184 R193
81906601521	RESISTOR 0.0 OHM 5% 0805	16	EA	R198 R207 R212 R226 R240
81906610810	RESISTOR 68.1 OHM 1% 0805	8	EA	R272-R279
81906610852	RESISTOR 75.0 OHM 1% 0805	32	EA	R116 R121 R126 R127 R132 R138 R142 R143 R149 R154 R158 R159 R165 R170 R174 R175 R180 R185 R194 R199 R189 R190 R203 R208 R213 R227 R241 R245 R246 R248 R204 R217 R218
81906610977	RESISTOR 100 OHM 1% 0805	2	EA	R12 R41 R54 R25 R67 R80 R93 R114
81906611357	RESISTOR 249 OHM 1% 0805	16	EA	R124 R125 R141 R144 R157 R161 R173 R176 R188 R191 R202 R205 R216 R219 R244 R248
81906611850	RESISTOR 825 OHM 1% 0805	16	EA	R7 R11 R23 R24 R39 R40 R52 R53 R65 R66 R78 R79 R91 R92 R111 R112
81906611930	RESISTOR 1.0K 1% 0805 SMT	9	EA	R6 R19 R35 R48 R61 R74 R87 R107 R146
81906612163	RESISTOR 1.74K 1% 0805	2	EA	R27 R28



Digital Video Output Combiner Card - 81906518790 Continued:

81906612320 RESISTOR 2.55K 1% 0805	8	EA	R1 R14 R30 R43 R56 R69 R82 R102
81906612450 RESISTOR 3.48K 1% 0805	8	EA	R2 R15 R31 R44 R57 R70 R83 R103
81906612635 RESISTOR 5.49K 1% 0805	8	EA	R3 R16 R32 R45 R58 R71 R84 R104
81906612720 RESISTOR 6.81K 1% 0805	8	EA	R4 R17 R33 R46 R59 R72 R85 R105
81906613250 RESISTOR 24.3K 1% 0805	2	EA	R29 R250
81906630439 RESISTOR 27.4 OHM 1% 1206	1	EA	R136
81906630810 RESISTOR 68.1 OHM 1% 1206	8	EA	R118 R134 R151 R167 R182 R196 R210 R229
81906640320 RESISTOR 1 OHM 5% 1210	3	EA	R252 R253 R254
81906640620 RESISTOR 64.9OHM 1% 1206	8	EA	R129 R145 R162 R177 R192 R206 R220 R249
81906700091 CAP 1000PF 50V CERAM 0805	8	EA	C13 C30 C48 C64 C80 C96 C112 C130
81906700166 CAP 100PF 50V CERAMC 0805	10	EA	C3 C20 C39 C55 C71 C87 C103 C120 C154 C216
81906710017 CAP 2200pf 5% CERAM. 1206	1	EA	C157
81906730015 CAP 0.1MF 50V CERMIC 1206	89	EA	C2 C4 C6 C9 C12 C16 C17 C19 C21 C23 C26 C29 C33 C34 C35 C38 C40 C42 C45 C47 C51 C52 C54 C56 C58 C61 C63 C67 C68 C70 C72 C74 C77 C79 C83 C84 C86 C88 C90 C93 C95 C99 C100 C102 C104 C106 C109 C111 C115 C116 C117 C119 C121 C123 C126 C128 C129 C135 C138 C143 C149 C152 C153 C158 C161 C164 C165 C167 C170 C172 C173 C175 C177 C178 C180 C181 C185 C188 C189 C193 C196 C197 C201 C204 C205 C209 C212 C213 C214
81906730056 CAP 0.01MF 50V CERAM 1206	2	EA	C145 C146
81906770052 CAP 1MF 20V TANLUM SIZE A	32	EA	C1 C11 C15 C18 C28 C32 C37 C46 C50 C53 C62 C66 C69 C78 C82 C85 C94 C98 C101 C110 C114 C118 C127 C132 C219 C220 C222 C224 C226 C228 C230 C232
81906770080 CAP TANT 100MF/6V SIZE D	5	EA	C133 C134 C140 C141 C168
81906770100 CAP 1mf 35 VOLTS TANTALUM	4	EA	C27 C156 C36 C169
81906800107 TRANS SMT,MMBT3906L	1	EA	Q1
81906800164 DIODE BAV99 50ma SOT-23	1	EA	CR1
81906800230 DIODE MBR340 40V 3A SHTTK	2	EA	CR6 CR9
81906800360 ZENER MB5244 14V SOT-23	1	EA	CR3
81906800390 ZENER MC15 15V 1.5W SMT	1	EA	CR10



Digital Video Output Combiner Card - 81906518790 Continued:

81906800410	TRANSIENT SUPPRESSOR 33V	1	EA	CR7
81906800540	DIODE 40V 1A STKY SMB	2	EA	CR8 CR13
81906800570	DIODE MBR360 SCHTTKY 3A	1	EA	CR26
81906800600	TRANS MTD3055V TMOS SMT	1	EA	U45
81906810990	IC BUFFER HA4600 SO-8	16	EA	U1 U2 U6 U7 U12 U13 U18 U19 U23 U24 U28 U29 U33 U34
81906810990	IC BUFFER HA4600 SO-8	16	EA	U39 U40
81906811060	IC XC3030A LCA	1	EA	U41
81906811180	IC CLC006 CABLE DRIVER	8	EA	U3 U8 U14 U20 U25 U30 U35 U42
81906811190	IC CLC016 RETIMMR DIG VID	8	EA	U4 U9 U15 U21 U26 U31 U36 U43
81906811200	IC LT1241 PMW SMT	1	EA	U11
CA25-1349	DOC DIGITL VID OUTPUT CMB	0	EA	
DD52-1349	DOC DIGITL VID OUTPUT CMB	0	EA	
NOT-PLACED	ITEMS NOT PLACED ON EBOM	0	EA	C136 C137 C142 C144 C147 C148 C151 C155 C159 C160 C163 C166 C171 C174 C179 C182 C183 C184 C187 C190 C191 C192 C195 C198 C199 C200 C203 C206 C207 C208 C211 C215 R8 R9 R20 R21 R36 R37 R49 R50 R62 R63 R75 R76 R88 R89 R108 R109 R117 R122 R133 R139 R150 R155 R166 R171 R181 R186 R195 R200 R209 R214 R228 R242 C139 C150 C162 C176 C186 C194 C202 C210 R5 R18 R34 R47 R60 R73 R86 R106 TP1 TP2 TP3 TP4 TP5 TP6 R256-R271 C217 C218 C221 C223 C225 C227 C224 C231
SC33-1349	DOC DIGITL VID OUTPUT CMB	0	EA	
SP57-0380	DOC DIGITL VID OUTPUT CMB	0	EA	



Dual Reference Interface - 81906518620

81901601187	REG MC7805C +5V 1A TO-220	2	EA	U18 U19
81901602219	REG 7905 -5V 1.5A TO-220	1	EA	U17
81901606740	IC LMC555 CMOS TIMER	2	EA	U15 U16
81901607100	IC CD22402E SYNC GENERATOR	2	EA	U9 U11
81902105050	LABEL BARCODE 1.5"x0.25"	1	EA	
81902413400	PCB DUAL REF INTRFCE VID	1	EA	
81902907810	CONN BNC RITE ANGLE PC MT	7	EA	J1-J7
81902908180	RECEPT PC MT RA 4X6 2MM	1	EA	J8
81903200558	LED RED RT/A HI-EFF PC MT	4	EA	CR1 CR2 CR4 CR5
81906600184	RESISTOR 10 OHM 5% 0805	12	EA	R21 R23 R25 R35 R37 R38 R54-R59
81906600424	RESISTOR 100 OHM 5% 0805	6	EA	R17 R19 R78 R80 R102 R103
81906600549	RESISTOR 330 OHM 5% 0805	12	EA	R1 R3 R5 R18 R28 R32 R70 R72 R74 R79 R82 R85
81906600663	RESISTOR 1K OHM 5% 0805	17	EA	R10 R11 R34 R42 R43 R47 R45 R46 R68 R75 R76 R86 R84 R91 R90 R100 R101
81906600820	RESISTOR 4.7K 5% 0805 SMT	4	EA	R53 R60 R94 R98
81906601133	RESISTOR 100K 5% 0805 SMT	6	EA	R2 R4 R49 R51 R71 R73
81906601307	RESISTOR 510K 5% 0805 SMT	8	EA	R20 R30 R31 R33 R39 R40 R77 R88
81906601331	RESISTOR 680K 5% 0805 SMT	4	EA	R27 R29 R81 R83
81906601513	RESISTOR 1.0 OHM 5% 0805	4	EA	R50 R52 R63 R65
81906610680	RESISTOR 49.9 OHM 1% 0805	1	EA	R48
81906610852	RESISTOR 75.0 OHM 1% 0805	1	EA	R66
819066111300	RESISTOR 221 OHM 1% 0805	1	EA	R24
819066111357	RESISTOR 249 OHM 1% 0805	4	EA	R12 R15 R16 R26
81906612213	RESISTOR 1.96K 1% 0805	4	EA	R41 R44 R87 R89
81906612397	RESISTOR 3.01K 1% 0805	2	EA	R96 R99
81906613179	RESISTOR 20K 1% 0805	1	EA	R22
81906640024	RESISTOR 2.0 OHM 5% 1210	5	EA	R64 R67 R69 R92 R93
81906640073	RESISTOR 75 OHM 0.5% 1206	5	EA	R6 R7 R9 R13 R36
81906650049	POT 50 OHM 1-TRN VERTL SM	1	EA	R8
81906700320	CAP 220PF NPO 0805 CERAMC	2	EA	C33 C40
81906730015	CAP 0.1MF 50V CERMIC 1206	50	EA	C3 C4 C6 C7 C9-C20 C22-C28 C30 C31 C32 C34-C39 C41 C43 C46 C49 C53-C56 C58 C59 C62-C65 C67-C69
81906760160	CAP 1500PF 50V CERAM 1206	4	EA	C5 C8 C57 C60
81906770037	CAP TANTLM,SMT,2.2MFD/35V	3	EA	C42 C44 C48
81906770060	CAP 10MF 6.3V TANT CASE B	3	EA	C45 C47 C50
81906800016	TRANS SMT,MMBT3904LT1	4	EA	Q10 Q1 Q4 Q7
81906800107	TRANS SMT,MMBT3906L	8	EA	Q2 Q5 Q6 Q3 Q8 Q9 Q11 Q12
81906800164	DIODE BAV99 50ma SOT-23	10	EA	CR3 CR6 CR7 CR8 CR9 CR10 CR11 CR12 CR13 CR14
81906810106	IC LM1881 VID SYNC SEPART	4	EA	U1 U5 U20 U22
81906810340	IC 74HC00 QUAD AND SO SMT	2	EA	U10 U24



Dual Reference Interface - 81906518620 Continued:

81906810530 IC 74HC14 HEX INVERTER SO	3	EA	U6 U7 U21
81906810770 IC 74HC32 QUAD 2-INPUT OR	2	EA	U8 U23
81906810990 IC BUFFER HA4600 SO-8	3	EA	U12 U13 U14
81906811120 IC CLC449 IFB 1.2GHZ OP	3	EA	U2 U3 U4
CA25-1340 DOC DUAL REF INTRFCE VID	0	EA	
DD52-1340 DOC DUAL REF INTRFCE VID	0	EA	
NOT-PLACEDITEMS NOT PLACED ON EBOM	0	EA	R14 R61 R62 R95 R97 C1 C2 C21 C29 C51 C52 C61 C66
NOT-PLACEDITEMS NOT PLACED ON EBOM	0	EA	TP1 TP2 TP3 TP4
SC33-1340 DOC DUAL REF INTRFCE VID	0	EA	



Rear Panel Connector - 81906518180

81901702260	FAN 12Vdc 3.62x1.26 55CFM	2	EA
81902003370	FINGER GUARD 3.62" FAN	2	EA
81902003500	NUT BROACHING 832 PC MNT	5	EA
81902100288	CABLE TIE 4" R/A SST1M-MP	1	EA
81902105050	LABEL BARCODE 1.5"x0.25"	1	EA
81902200856	SCREW 8-32x3/4 PH PN HD	5	EA
81902201409	SCREW 4-40x1/4 FLT HD PHI	2	EA
81902202696	SCREW 4-40x7/16 SIMM PANH	6	EA
81902202712	SCREW 4-40x5/16 SIMM PNHD	5	EA
81902413140	PCB REAR PNL CONNECTOR	1	EA
81902700960	FUSE 5X20 5A T-LAG HI CAP	1	EA
81902803970	CABLE ASSEMBLY 50 POS	1	EA
81902803980	CABLE ASSY DC POWER JAG	1	EA
81902803990	CABLE ASSY AC POWER JAG	1	EA
81902906932	CONN 9-PIN MALE D SOLDER	3	EA
81902908010	CONN 5 PIN 5.08mm VT MALE	1	EA
81902908100	CONN 3 PIN PC MNT VERTCL	9	EA
81902908110	CONN 3 PIN F STRAIN RELF	2	EA
81902908200	HEADER 2x25 SHROUDED STRA	1	EA
81902908410	CONN AC PWER INLET W/FUSE	1	EA
81903464240	COVER CONN BOARD JAGUAR	1	EA
CA25-1314	DOC REAR PNL CONNECTOR	0	EA
DD52-1314	DOC REAR PNL CONNECTOR	0	EA
SC33-1314	DOC REAR PNL CONNECTOR	0	EA

32X32 Analog Video Matrix Assembly - 81906518480

81902203050	SCREW 4-40x1/2 SIMM PN HD	5	EA
81903464290	SHIELD VIDEO MATRX JAGUAR	1	EA
81906517460	32x32 VIDEO MATRIX-BASIC	1	EA
CA25-1276	DOC 32x32 VIDEO MATRIX	0	EA
SC33-1276	DOC 32x32 VIDEO MATRIX	0	EA



32X32 Analog Video Matrix Card - 81906517460

81900601022	THERMISTOR 680 OHM 5%	1	EA	R1407
81901000720	CAP SWX REG 35V 1.7A RAD	8	EA	C243 C247 C261 C265 C262 C263 C264 C275
81901000840	CAP 0.1F 5.5V	1	EA	C250
81901603738	REG LM317T 1.2V-37V ADJST	1	EA	U164
81901606830	IC 7.3728 MHZ OSCILLATOR	1	EA	U102
81901606980	REG LT1170 5A SWXING 60V	1	EA	U117
81902003580	STANDOFF 2-56 PC BD MNTD	8	EA	
81902105050	LABEL BARCODE 1.5"x0.25"	1	EA	
81902200039	SCREW 2-56X1/4 PAN HD PHI	8	EA	
81902200070	NUT 4-40 HEX	2	EA	REF: U117
81902202696	SCREW 4-40x7/16 SIMM PANH	2	EA	REF: U117
81902301080	INDUCTOR 20uH 2A TOROIDAL	4	EA	L1 L2 L3 L4
81902301370	TRANSFORMER ANALOG VIDEO	1	EA	T1
81902412760	PCB 32x32 VIDEO MATRIX	1	EA	
81902700749	FUSE PICO, 7 AMP, LEADED	2	EA	F1 F2
81902901479	SOCKET 8 PIN LOW PROF IC	1	EA	REF: U105
81902906668	CONN RA,FEMALE,96POS,3ROW	2	EA	J1 J2
81902907960	CONN 2x8 POST 2MM .1 PCB	4	EA	J5A J5B J5C J5D
81902907970	CONN 2x24 POST 2MM .1 PCB	24	EA	J1A J1B J1C J1D J2A J2B J2C J2D J3A J3B J3C J3D J4A J4B J4C J4D J6A J6B J6C J6D J7A J7B J7C J7D
81902908000	CONN 2x48 RECPT RA .1x.1	2	EA	J3 J4
81902908060	SPLIT TERMINAL	4	EA	REF: F1 F2
81903200541	LED GREEN RT/A HI-EFF PCB	1	EA	CR7
81903200558	LED RED RT/A HI-EFF PC MT	2	EA	CR6 CR17
81903462740	HEATSINK 24x16 VID MATRIX	1	EA	REF: U117
81906517730	SOFT 32x8 CNTRL CHIP	0	EA	REF: U105
81906517980	SOFT COUGAR BIOS	0	EA	REF: U97

32X32 Analog Video Matrix Card - 81906517460 Continued:

81906600184	RESISTOR 10 OHM 5% 0805	192	EA	R4 R8 R12 R16 R20 R24 R28 R32 R36 R40 R44 R48 R52 R56 R60 R64 R68 R72 R76 R80 R84 R88 R92 R96 R100 R104 R108 R112 R116 R120 R124 R128 R626 R630 R634 R638 R642 R646 R650 R654 R658 R662 R666 R670 R674 R678 R682 R686 R690 R694 R698 R702 R706 R710 R714 R718 R722 R726 R730 R734 R738 R742 R746 R750 R1103 R1104 R1189 R1191 R1210 R1212 R1215 R1217 R1219 R1220 R1223 R1225 R1228 R1230 R1235 R1237 R1240 R1242 R1245 R1247 R1249 R1250 R1253 R1255 R1260 R1262 R1265 R1267 R1270 R1272 R1275 R1277 R1312 R1314 R1317 R1319 R1321 R1322 R1325 R1327 R1334 R1336 R1339 R1341 R1345 R1347 R1350 R1351 R1354 R1356 R1361 R1363 R1366 R1368 R1371 R1373 R1376 R1378 R1380 R1381 R1384 R1386 R1391 R1393 J8 THRU J71
81906600309	RESISTOR 33 OHM 5% 0805	32	EA	R527 THRU R558
81906600424	RESISTOR 100 OHM 5% 0805	4	EA	R1328 R1329 R333 R363
81906600465	RESISTOR 150 OHM 5% 0805	1	EA	R519
81906600499	RESISTOR 200 OHM 5% 0805	1	EA	R304
81906600520	RESISTOR 270 OHM 5% 0805	2	EA	R323 R351
81906600549	RESISTOR 330 OHM 5% 0805	1	EA	R520
81906600620	RESISTOR 680 OHM 5% 0805	1	EA	R1473
81906600663	RESISTOR 1K OHM 5% 0805	11	EA	R334 R364 R516 R523 R524 R1506 THRU R1511
81906600700	RESISTOR 1.5K 5% 0805	1	EA	R1349
81906600747	RESISTOR 2.2K 5% 0805	1	EA	R1397
81906600783	RESISTOR 3.3K 5% 0805 SMT	35	EA	R321 R349 R784 R788 R792 R796 R800 R804 R808 R812 R816 R820 R824 R828 R832 R836 R840 R844 R1040 R1044 R1048 R1052 R1056 R1060 R1064 R1068 R1072 R1076 R1080 R1084 R1088 R1092 R1096 R1100 R1406



32X32 Analog Video Matrix Card - 81906517460 Continued:

81906600820 RESISTOR 4.7K 5% 0805 SMT	139	EA	R294-R299 R307 R310-R315 R318-R320 R324-R328 R331 R332 R335 R336 R337 R340 R341 R342 R346 R347 R348 R352-R357 R360 R361 R362 R365-R370 R372 R373 R377 R378 R379 R382-R389 R393-R400 R405-R409 R411 R412 R416-R424 R430-R435 R439-R442 R444-R449 R451-R454 R461-R466 R470-R475 R481 R484-R487 R489-R494 R497 R498 R504-R509 R1514 R1517 R1518 R1519
81906600866 RESISTOR 6.8K 5% 0805 SMT	32	EA	R783 R787 R791 R795 R799 R803 R807 R811 R815 R819 R823 R827 R831 R835 R839 R843 R1039 R1043 R1047 R1051 R1055 R1059 R1063 R1067 R1071 R1075 R1079 R1083 R1087 R1091 R1095 R1099
81906600903 RESISTOR 10K 5% 0805 SMT	3	EA	R1404 R443 R1515
81906600920 RESISTOR 12K OHM 5% 0805	1	EA	R306
81906600986 RESISTOR 22K 5% 0805 SMT	1	EA	R1398
81906601067 RESISTOR 47K 5% 0805 SMT	32	EA	R975-R990 R1157 R1159 R1161 R1163 R1165 R1167 R1169 R1171 R1173 R1175 R1177 R1179 R1181 R1183 R1185 R1187
81906601133 RESISTOR 100K 5% 0805 SMT	4	EA	R302 R305 R322 R350
81906601307 RESISTOR 510K 5% 0805 SMT	2	EA	R343 R374

32X32 Analog Video Matrix Card - 81906517460 Continued:

81906601521	RESISTOR 0.0 OHM 5% 0805	160	EA	R3 R7 R11 R15 R19 R23 R27 R31 R35 R39 R43 R47 R51 R55 R59 R63 R67 R71 R75 R79 R83 R87 R91 R95 R99 R103 R107 R111 R115 R119 R123 R127 R751 THRU R782 R911 R915 R919 R923 R927 R931 R935 R939 R943 R947 R951 R955 R959 R963 R967 R971 R1105 R1108 R1111 R1114 R1117 R1120 R1123 R1126 R1129 R1132 R1135 R1138 R1141 R1144 R1147 R1150 R1154 R1155 R1190 R1192 R1211 R1213 R1216 R1218 R1222 R1224 R1227 R1229 R1232 R1233 R1236 R1238 R1241 R1243 R1246 R1248 R1252 R1254 R1257 R1258 R1261 R1263 R1266 R1268 R1271 R1273 R1276 R1278 R1313 R1315 R1318 R1320 R1324 R1326 R1331 R1332 R1335 R1337 R1340 R1342 R1346 R1348 R1353 R1355 R1358 R1359 R1362 R1364 R1367 R1369 R1372 R1374 R1377 R1379 R1383 R1385 R1388 R1389 R1392 R1394
81906610035	RESISTOR 10.5 OHM 1% 0805	6	EA	R1419 R1427 R1447 R1457 R1461 R1462
81906610100	RESISTOR 12.4 OHM 1% 0805	2	EA	R1415 R1443
81906610140	RESISTOR 13.7 OHM 1% 0805	2	EA	R1449 R1425
81906610160	RESISTOR 14.3 OHM 1% 0805	2	EA	R1455 R1453
81906610200	RESISTOR 15.8 OHM 1% 0805	3	EA	R1409 R1441 R1460
81906610220	RESISTOR 16.5 OHM 1% 0805	5	EA	R1417 R1448 R1418 R1437 R1456
81906610241	RESISTOR 17.4 OHM 1% 0805	4	EA	R1442 R1454 R1416 R1465
81906610274	RESISTOR 18.7 OHM 1% 0805	1	EA	R1410
81906610280	RESISTOR 19.1 OHM 1% 0805	1	EA	R1421
81906610320	RESISTOR 21.0 OHM 1% 0805	2	EA	R1411 R1450
81906610332	RESISTOR 21.5 OHM 1% 0805	2	EA	R1412 R1467
81906610357	RESISTOR 22.6 OHM 1% 0805	9	EA	R1431 R1433 R1451 R1445 R1463 R1426 R1428 R1432 R1435
81906610365	RESISTOR 23.2 OHM 1% 0805	3	EA	R1458 R1420 R1424
81906610399	RESISTOR 24.9 OHM 1% 0805	2	EA	R1470 R1434
81906610415	RESISTOR 26.1 OHM 1% 0805	6	EA	R1439 R1444 R1446 R1466 R1422 R1469
81906610431	RESISTOR 27.4 OHM 1% 0805	4	EA	R1413 R1459 R292 R1468
81906610456	RESISTOR 28.7 OHM 1% 0805	2	EA	R1414 R1464
81906610464	RESISTOR 29.4 OHM 1% 0805	2	EA	R1429 R1430
81906610472	RESISTOR 30.1 OHM 1% 0805	2	EA	R1438 R1440



32X32 Analog Video Matrix Card - 81906517460 Continued:

81906610498	RESISTOR 31.6 OHM 1% 0805	2	EA	R1471 R1472
81906610506	RESISTOR 32.4 OHM 1% 0805	1	EA	R301
81906610514	RESISTOR 33.2 OHM 1% 0805	3	EA	R1452 R402 R1436
81906610530	RESISTOR 34.8 OHM 1% 0805	4	EA	R339 R371 R376 R242
81906610555	RESISTOR 36.5 OHM 1% 0805	4	EA	R415 R330 R359 R460
81906610571	RESISTOR 38.3 OHM 1% 0805	6	EA	R391 R309 R381 R425 R456 R458
81906610597	RESISTOR 40.2 OHM 1% 0805	7	EA	R500 R514 R503 R303 R317 R515 R518
81906610605	RESISTOR 41.2 OHM 1% 0805	4	EA	R468 R477 R483 R522
81906610621	RESISTOR 43.2 OHM 1% 0805	2	EA	R488 R496
81906610630	RESISTOR 44.2 OHM 1% 0805	2	EA	R526 R511
81906610680	RESISTOR 49.9 OHM 1% 0805	64	EA	R162 R165 R168 R171 R174 R177 R180 R183 R186 R189 R192 R195 R198 R201 R204 R207 R209 THRU R240 R244 R247 R250 R253 R256 R259 R262 R265 R268 R271 R274 R277 R280
81906610680	RESISTOR 49.9 OHM 1% 0805	64	EA	R283 R286 R289
81906610761	RESISTOR 60.4 OHM 1% 0805	34	EA	R293 R1209 R1474-R1505
81906610810	RESISTOR 68.1 OHM 1% 0805	32	EA	R912 R916 R920 R924 R928 R932 R936 R940 R944 R948 R952 R956 R960 R964 R968 R972 R1156 R1158 R1160 R1162 R1164 R1166 R1168 R1170 R1172 R1174 R1176 R1178 R1180 R1182 R1184 R1186
81906610852	RESISTOR 75.0 OHM 1% 0805	2	EA	R380 R1221
81906610880	RESISTOR 80.6 OHM 1% 0805	8	EA	R241 R291 R1153 R1188 R1274 R401 R414 R517
81906610900	RESISTOR 84.5 OHM 1% 0805	2	EA	R521 R482
81906610950	RESISTOR 95.3 OHM 1% 0805	25	EA	R338 R345 R358 R375 R480 R1214 R1234 R1259 R1239 R1338 R1370 R1375 R1387 R1244 R502 R1360 R512 R300 R513 R390 R525 R1251 R1264 R1382 R1390
81906610977	RESISTOR 100 OHM 1% 0805	25	EA	R308 R316 R329 R450 R455 R467 R476 R495 R459 R499 R510 R1311 R1323 R1333 R1344 R1352 R1365 R1256 R1269 R1330 R1316 R410 R1226 R1231 R1357
81906611357	RESISTOR 249 OHM 1% 0805	32	EA	R913 R917 R921 R925 R929 R933 R937 R941 R945 R949 R953 R957 R961 R965 R969 R973 R1106 R1109 R1112 R1115 R1118 R1121 R1124 R1127 R1130 R1133 R1136 R1139 R1142 R1145 R1148 R1151

32X32 Analog Video Matrix Card - 81906517460 Continued:

81906611431 RESISTOR 301 OHM 1% 0805	32	EA	R625 R629 R633 R637 R641 R645 R649 R653 R657 R661 R665 R669 R673 R677 R681 R685 R689 R693 R697 R701 R705 R709 R713 R717 R721 R725 R729 R733 R737 R741 R745 R749
81906611454 RESISTOR 316 OHM 1% 0805	32	EA	R624 R628 R632 R636 R640 R644 R648 R652 R656 R660 R664 R668 R672 R676 R680 R684 R688 R692 R696 R700 R704 R708
81906611454 RESISTOR 316 OHM 1% 0805	32	EA	R712 R716 R720 R724 R728 R732 R736 R740 R744 R748
81906611652 RESISTOR 511 OHM 1% 0805	1	EA	R478
81906611942 RESISTOR 1.02K 1% 0805	1	EA	R1343
81906612296 RESISTOR 2.37K 1% 0805	3	EA	R404 R429 R437
81906612320 RESISTOR 2.55K 1% 0805	2	EA	R392 R438
81906612380 RESISTOR 2.94K 1% 0805	1	EA	R469
81906612570 RESISTOR 4.75K 1% 0805	2	EA	R1512 R1513
81906612593 RESISTOR 4.99K 1% 0805	1	EA	R426
81906612940 RESISTOR 11.5K 1% 0805	1	EA	R403
81906614750 RESISTOR 3.24 OHM 1% 0805	1	EA	R1423
81906640024 RESISTOR 2.0 OHM 5% 1210	1	EA	R1408
81906640073 RESISTOR 75 OHM 0.5% 1206	64	EA	R785 R786 R789 R790 R793 R794 R797 R798 R801 R802 R805 R806 R809 R810 R813 R814 R817 R818 R821 R822 R825 R826 R829 R830 R833 R834 R837 R838 R841 R842 R845 R846 R1041 R1042 R1045 R1046 R1049 R1050 R1053 R1054 R1057 R1058 R1061 R1062 R1065 R1066 R1069 R1070 R1073 R1074 R1077 R1078 R1081 R1082 R1085 R1086 R1089 R1090 R1093 R1094 R1097 R1098 R1101 R1102
81906640270 RESISTOR 162 OHM .5% 0805	32	EA	R2 R6 R10 R14 R18 R22 R26 R30 R34 R38 R42 R46 R50 R54 R58 R62 R66 R70 R74 R78 R82 R86 R90 R94 R98 R102 R106 R114 R118 R122 R126 R110
81906640280 RESISTOR 169 OHM .5% 0805	32	EA	R1 R5 R9 R13 R17 R21 R29 R33 R37 R41 R45 R49 R53 R57 R25 R61 R65 R69 R73 R77 R81 R85 R89 R93 R97 R101 R105 R109 R113 R117 R121 R125
81906640580 RESISTOR 392 OHM .1% 0805	64	EA	R559-R622
81906640610 RESISTOR 61.9ohm .5% 0805	128	EA	R847-R910 R991-R1022 R1279- R1310



32X32 Analog Video Matrix Card - 81906517460 Continued:

81906650049	POT 50 OHM 1-TRN VERTL SM	32	EA	R129-R160
81906650210	POT 1K VERT 1T 20% 4MM	1	EA	R479
81906650250	POT 20 OHMS R/A 1T 4mm SQ	32	EA	R163 R166 R169 R172 R175 R178 R181 R184 R187 R190 R193 R196 R199 R202 R205 R208 R245 R248 R251 R254 R257 R260 R263 R266 R269 R272 R275 R278 R281 R284 R287 R290
81906650260	POT 100K OHM 20% VERT 1T	32	EA	R161 R164 R167 R170 R173 R176 R179 R182 R185 R188 R191 R194 R197 R200 R203 R206 R243 R246 R249 R252 R255 R258 R261 R264 R267 R270 R273 R276 R279 R282 R285 R288
81906700018	CAP 12PF 50V CERAMIC SMT	7	EA	C169 C254 C257 C199 C203 C245 C236
81906700109	CAP 10PF 50V CERAM 0805	1	EA	C172
81906700117	CAP 15PF 50V CERAM 0805	17	EA	C174 C176 C241 C195 C187 C586 C591 C266 C603 C216 C251 C272 C490 C494 C503 C518 C522
81906700320	CAP 220PF NPO 0805 CERAMC	2	EA	C636 C637
81906700350	CAP 22PF CERAMIC 0805 NPO	9	EA	C191 C207 C214 C234 C576 C454 C458 C623 C631
81906700360	CAP 18PF 50V CERAMIC 0805	27	EA	C180 C230 C269 C271 C276 C479 C498 C571 C596 C531 C627 C248 C483 C510 C229 C599 C507 C514 C527 C611 C616 C224 C161 C163 C167 C486 C620
81906700550	CAP 27PF NPO 0805 CERAMIC	3	EA	C580 C607 C567
81906710110	CAP 0.15MF 50V CERAM 1206	1	EA	C595
81906730015	CAP 0.1MF 50V CERMIC 1206	233	EA	C1-C96 C113-C144 C162 C164 C165 C166 C168 C170 C171 C173 C175 C177 C179 C181 C182 C183 C184 C185 C186 C188 C190 C192 C193 C194 C196 C197 C198 C200 C202
81906730015	CAP 0.1MF 50V CERMIC 1206	233	EA	C204 C206 C208-C213 C215 C217-C223 C225-C228 C231 C232 C233 C235 C237 C238 C240 C242 C244 C246 C252 C253 C255 C256 C258 C260 C267 C270 C273 C277 C456 C460 C478 C481 C488 C492 C496 C500 C502 C505 C512 C516 C520 C524 C526 C529 C566 C569 C574 C575 C578 C582 C584 C585 C588 C590 C593 C601 C605 C609 C613 C615 C618 C625 C629 C633 C638 C641



32X32 Analog Video Matrix Card - 81906517460 Continued:

81906760160	CAP 1500PF 50V CERAM 1206	2	EA	C178 C189
81906770052	CAP 1MF 20V TANLUM SIZE A	3	EA	C201 C205 C239
81906770090	CAP 68uf 16V TANT D CASE	2	EA	C249 C274
81906770100	CAP 1mf 35 VOLTS TANTALUM	2	EA	C639 C640
81906800016	TRANS SMT,MMBT3904LT1	4	EA	Q37-Q40
81906800073	DIODE ZENER SMT,MMBZ5240B	2	EA	CR5 CR18
81906800099	TRANS SMT, MMBTH10L	32	EA	Q4 THRU Q35
81906800107	TRANS SMT,MMBT3906L	4	EA	Q1 Q2 Q3 Q36
81906800230	DIODE MBR340 40V 3A SHTTK	6	EA	CR8 CR9 CR10 CR15 CR19 CR16
81906800390	ZENER MC15 15V 1.5W SMT	1	EA	CR13
81906800410	TRANSIENT SUPPRESSOR 33V	1	EA	CR11
81906800580	ZENER MBZ5242 12V SOT23	1	EA	CR21
81906810072	IC 3903 QUAD SPLY MONITOR	1	EA	U89
81906810106	IC LM1881 VID SYNC SEPART	2	EA	U78 U83
81906810171	IC SMT,74HC04 (SOIC-14)	7	EA	U71 U80 U96 U101 U111 U119 U123
81906810340	IC 74HC00 QUAD AND SO SMT	1	EA	U100
81906810510	IC 6264 8Kx8 SRAM 100ns	1	EA	U110
81906810550	IC 74HC245 OCTL TRANSCEVR	5	EA	U76 U82 U87 U93 U166
81906810570	IC 74HC373 OCTAL LATCH SO	1	EA	U103
81906810690	IC TL062 DUAL JFET OP S08	1	EA	U70
81906810890	IC RS485 RECVR/TRANSMITTR	1	EA	U69
81906810930	IC TL7705 MICRO SUPERVISR	1	EA	U85
81906810960	IC OPTOCOUPLER SMT 4N32	1	EA	U165
81906810990	IC BUFFER HA4600 SO-8	64	EA	U65 THRU U68 U72 U73 U75 U77 U79 U81 U84 U86 U88 U91 U92 U94 U108 U109 U112 U113 U114 U115 U116 U120 U121 U122 U124 THRU U128 U131 THRU U163
81906811030	IC 74HC273 OACTAL REGISTR	1	EA	U99
81906811040	IC 74HC138 3 TO 8 DECODER	2	EA	U95 U98
81906811060	IC XC3030A LCA	4	EA	U74 U90 U107 U118
81906811080	IC DS1210 NONVOL CNTL CHP	1	EA	U104
81906811120	IC CLC449 IFB 1.2GHZ OP	32	EA	U33-U64
81906811160	IC CLC440AJE VFB S08	32	EA	U1-U32
81906920030	SWITCH DIP 4 POS GULLWING	1	EA	S1
81906940040	SOCKET 52 PIN PLCC SMT	1	EA	REF: U97
81906950040	BEAD INDUCTOR SMT	2	EA	BEAD1 BEAD2
CA25-1276	DOC 32x32 VIDEO MATRIX	0	EA	



32X32 Analog Video Matrix Card - 81906517460 Continued:

NOT-PLACED ITEMS NOT PLACED ON EBOM 0 EA R914 R918 R922 R926 R930 R934
R938 R942 R946 R950 R954 R958
R962 R966 R970 R974
R1023 THRU R1038 R1107 R1110
R1113 R1116 R1119 R1122 R1125
R1128 R1131 R1134 R1137 R1140
R1143 R1146 R1149 R1152
R1193 THRU R1208
C97 THRU C112 C145 THRU C160
C310 THRU C341
C374 THRU C405
C438 THRU C453 C455 C457 C459
C461 THRU C477 C480 C482 C484
C485 C487 C489 C491 C493 C495
C497 C499 C501 C504 C506 C508
C509 C511 C513 C515 C517 C519
C521 C523 C525 C528 C530 C532
C533 C568 C570 C572 C573 C577
C579 C581 C583 C587 C589 C592
C594 C597 C598 C600 C602 C604
C606 C608 C610 C612 C614 C617
C619 C621 C622 C624 C626 C628
C630 C632 C634 C278-C309 TP1
TP2 TP3 TP4 TP5 R427 R428 CR12
CR14 C259 C268 U129 U130
R1395 R1396 R436 U106

SC33-1276 DOC 32x32 VIDEO MATRIX 0 EA

16X16 Crosspoint Card - 81906517550

81902105050 LABEL BARCODE 1.5"x0.25"	1	EA	
81902412840 PCB 16x16 CROSSPOINT	1	EA	
81902907940 CONN 2x8 2MM RECEPTACLE	1	EA	J5
81902907950 CONN 2x24 2MM RECEPTACLE	6	EA	J1 THRU J7
81906600184 RESISTOR 10 OHM 5% 0805	32	EA	R68 R71 R76 R79 R84 R87 R92 R95 R368 R371 R376 R379 R384 R387 R392 R395 R468 R471 R476 R479 R484 R487 R492 R495 R568 R571 R576 R579 R584 R587 R592 R595
81906600341 RESISTOR 47 OHM 5% 0805	16	EA	R2 R6 R11 R15 R19 R23 R27 R31 R35 R39 R43 R47 R51 R55 R59 R63
81906600903 RESISTOR 10K 5% 0805 SMT	16	EA	R1 R5 R10 R14 R18 R22 R26 R30 R34 R38 R42 R46 R50 R54 R58 R62
81906601521 RESISTOR 0.0 OHM 5% 0805	29	EA	R67 R70 R72 R73 R78 R83 R86 R88 R94 R367 R370 R372 R378 R383 R386 R388 R394 R467 R470 R478 R483 R486 R494 R567 R570 R578 R583 R586 R594
81906610019 RESISTOR 10.0 OHM 1% 0805	8	EA	R74 R90 R374 R390 R474 R490 R574 R590
81906610548 RESISTOR 35.7 OHM 1% 0805	2	EA	R585 R593
81906610621 RESISTOR 43.2 OHM 1% 0805	5	EA	R393 R469 R477 R485 R493
81906610680 RESISTOR 49.9 OHM 1% 0805	3	EA	R385 R569 R577
81906610852 RESISTOR 75.0 OHM 1% 0805	1	EA	R377
81906610977 RESISTOR 100 OHM 1% 0805	2	EA	R93 R369
81906611058 RESISTOR 121 OHM 1% 0805	2	EA	R77 R85
81906611116 RESISTOR 140 OHM 1% 0805	1	EA	R69
81906614631 RESISTOR 9.53 OHM 1% 0805	16	EA	R3 R7 R12 R16 R20 R24 R28 R32 R36 R40 R44 R48 R52 R56 R60 R64
81906614640 RESISTOR 2.67 OHM 1% 0805	4	EA	R466 R482 R566 R582
81906614660 RESISTOR 6.81 OHM 1% 0805	24	EA	R75 R80 R81 R91 R96 R97 R375 R380 R381 R391 R396 R397 R475 R480 R481 R491 R496 R497 R575 R580 R581 R591 R596 R597
81906614740 RESISTOR 1.50 OHM 1% 0805	30	EA	R82 R89 R366 R373 R382 R389 R472 R473 R488 R489 R500 R501 R503 R504 R505 R506 R507 R508 R509 R510 R511 R512 R513 R572 R573 R588 R589 R598 R599 R502
81906614760 RESISTOR 3.74 OHM 1% 0805	1	EA	R66
81906621513 RESISTOR 1 OHM 5% 1206	2	EA	R98 R99
81906700018 CAP 12PF 50V CERAMIC SMT	1	EA	C570
81906700042 CAP SMT,33PF,50V,0805,CER	4	EA	C436 C450 C536 C550



16X16 Crosspoint Card - 81906517550 Continued:

81906700059	CAP 6.8PFD 50V CERAM,0805	1	EA	C43
81906700109	CAP 10PF 50V CERAM 0805	1	EA	C57
81906700117	CAP 15PF 50V CERAM 0805	2	EA	C50 C343
81906700125	CAP 2.2PF CERAM 50V 0805	13	EA	C561 THRU C569 C573 C575 C572 C576
81906700158	CAP 8.2PF 50V CERAM 0805	1	EA	C36
81906700232	CAP 8PF CERAMIC 2% 0805	2	EA	C571 C574
81906700350	CAP 22PF CERAMIC 0805 NPO	2	EA	C336 C357
81906700550	CAP 27PF NPO 0805 CERAMIC	5	EA	C350 C443 C457 C543 C557
81906730015	CAP 0.1MF 50V CERMIC 1206	106	EA	C1 C4 C5 C8 C9 C12 C13 C16 C17 C20 C21 C24 C25 C28 C29 C32 C34 C35 C37 C38 C40 C41 C42 C44-C49 C51-C56 C58 C59 C60 C333 C334 C335 C337-C342 C344-C349 C351 C352 C354 C355 C356 C358-C360 C433-C435 C437-C442 C444 C445 C446 C448 C449
81906730015	CAP 0.1MF 50V CERMIC 1206	106	EA	C451-C456 C458-C460 C533-C535 C537-C542 C544 C545 C546 C548 C549 C551 C552 C554 C555 C556 C558 C559 C560
81906770060	CAP 10MF 6.3V TANT CASE B	6	EA	C33 C39 C353 C547 C447 C553
81906810171	IC SMT,74HC04 (SOIC-14)	3	EA	U625 U626 U627
81906810840	IC DUAL 2 TO 4 LINE DCODR	8	EA	U617 THRU U624
81906810920	IC HA4404 4x1 CROSSPOINT	64	EA	U17 U18 U20 U21 U22 U23 U25 U26 U27 U28 U30 U31 U32 U33 U35 U36 U317 U318 U320 U321 U322 U323 U325 U326 U327 U328 U330 U331 U332 U333 U335 U336 U417 U418 U420 U421 U422 U423 U425 U426 U427 U428 U430 U431 U432 U433 U435 U436 U517 U518 U520 U521 U522 U523 U525 U526 U527 U528 U530 U531 U532 U533 U535 U536
81906810990	IC BUFFER HA4600 SO-8	32	EA	U1 THRU U16 U19 U24 U29 U34 U319 U324 U329 U334 U419 U424 U429 U434 U519 U524 U529 U534
81906950040	BEAD INDUCTOR SMT	2	EA	BEAD1 BEAD2
CA25-1284	DOC 16x16 CROSSPOINT	0	EA	
SC33-1284	DOC 16x16 CROSSPOINT	0	EA	



32X32 Digital Video Matrix Assembly - 81906518860

81902105050 LABEL BARCODE 1.5"x0.25"	1	EA
81902202647 SCREW 4-40x1/4 SIMM PANHD	5	EA
81903464290 SHIELD VIDEO MATRX JAGUAR	1	EA
81906518880 32X DIGITL VID MTRX BASIC	1	EA



32X32 Digital Video Matrix Card - 81906518880

81900601022	THERMISTOR 680 OHM 5%	2	EA	R832 R934
81901000720	CAP SWX REG 35V 1.7A RAD	3	EA	C312 C334 C340
81901000760	CAP SWXR REG OUT 10V 12mm	5	EA	C307-C311
81901000840	CAP 0.1F 5.5V	1	EA	C300
81901000850	CAP DA SWX REG 35V ELECT	2	EA	C926 C952
81901500827	DIODE PACK MBR2045	1	EA	CR21
81901601187	REG MC7805C +5V 1A TO-220	1	EA	U73
81901603738	REG LM317T 1.2V-37V ADJUST	2	EA	U75 U76
81901606830	IC 7.3728 MHZ OSCILLATOR	1	EA	XTAL1
81901606980	REG LT1170 5A SWXING 60V	1	EA	U96
81901607070	IC LT1172CN8 60V 1A 8PDIP	1	EA	U74
81901900270	HEATSINK WITH 12V FAN	1	EA	REF U50
81901900280	HEATSINK LOW PROFILE	1	EA	REF CR21
81901900290	HEATSINK TO-3 4 PIN	1	EA	REF U96
81902105050	LABEL BARCODE 1.5"x0.25"	1	EA	
81902200070	NUT 4-40 HEX	4	EA	REF CR21 U96
81902202704	SCREW 4-40x3/8 PN HD SIMM	4	EA	REF CR21 U96
81902301080	INDUCTOR 20uH 2A TOROIDAL	3	EA	L18 L20 L22
81902301280	TRANSFORMER CUST SDV24x16	1	EA	T1
81902301300	TRANSFORMER SDVDA3001	1	EA	T2
81902301330	INDUCTOR 30 UH CUSTOM	1	EA	L19
81902413530	PCB 32X DIGITAL VID MTRX	1	EA	
81902700880	FUSE 5A PICO AXIAL 125V	2	EA	F1 F2
81902903160	HEADER 2 PIN MTA LOCKING	1	EA	J5
81902905934	CONN 2-PIN MTA-100 24AWG	1	EA	REF FAN
81902906668	CONN RA,FEMALE,96POS,3ROW	2	EA	J3 J4
81902908000	CONN 2x48 RECPT RA .1x.1	2	EA	J1 J2
81902908060	SPLIT TERMINAL	4	EA	REF F1 F2
81903200541	LED GREEN RT/A HI-EFF PCB	1	EA	CR26
81903200558	LED RED RT/A HI-EFF PC MT	2	EA	CR24 CR25
81903900700	INDUCT 20MH 1A TORIODAL	2	EA	L17 L21
81906517980	SOFT COUGAR BIOS	1	EA	U57
81906600424	RESISTOR 100 OHM 5% 0805	3	EA	R197 R221 R233
81906600465	RESISTOR 150 OHM 5% 0805	1	EA	R214
81906600549	RESISTOR 330 OHM 5% 0805	10	EA	R97 R98 R199 R206 R210 R240- R242 R244 R247
81906600663	RESISTOR 1K OHM 5% 0805	9	EA	R117 R118 R135 R166-R170 R237
81906600700	RESISTOR 1.5K 5% 0805	2	EA	R211 R231
81906600783	RESISTOR 3.3K 5% 0805 SMT	1	EA	R195
81906600820	RESISTOR 4.7K 5% 0805 SMT	39	EA	R192 R193 R201 R202 R209 R219 R236 R243 R246 R453-R482
81906600945	RESISTOR 15K 5% 0805 SMT	1	EA	R198
81906600986	RESISTOR 22K 5% 0805 SMT	1	EA	R194
81906601067	RESISTOR 47K 5% 0805 SMT	1	EA	R196
81906601133	RESISTOR 100K 5% 0805 SMT	4	EA	R115 R116 R200 R203
81906601307	RESISTOR 510K 5% 0805 SMT	2	EA	R220 R230
81906601372	RESISTOR 1M 5% 0805 SMT	2	EA	R223 R486



32X32 Digital Video Matrix Card - 81906518880 Continued:

81906610680 RESISTOR 49.9 OHM 1% 0805	64	EA	R312-R343 R376-R407
81906610852 RESISTOR 75.0 OHM 1% 0805	64	EA	R136 R138 R139 R141 R142 R144 R145 R147 R148 R150 R151 R153 R154 R156 R157 R159 R160 R162 R163 R165 R171 R172
81906610852 RESISTOR 75.0 OHM 1% 0805	64	EA	R175 R176 R177 R178 R181 R182 R183 R184 R187 R188 R189 R190 R408 R410 R411 R413 R414 R416 R417 R419 R420 R422 R423 R425 R426 R428 R429 R431 R432 R434 R435 R437 R438 R439 R440 R441 R445 R446 R447 R450 R451 R452
81906610880 RESISTOR 80.6 OHM 1% 0805	1	EA	R239
81906610977 RESISTOR 100 OHM 1% 0805	64	EA	R17-R32 R34 R36 R38 R40 R42 R44 R46 R48 R50 R52 R54 R56 R58 R60 R62 R64 R264-R279 R281 R283 R285 R287 R289 R291 R293 R295 R297 R299 R301 R303 R305 R307 R309 R311
81906611300 RESISTOR 221 OHM 1% 0805	33	EA	R137 R140 R143 R146 R149 R152 R155 R158 R161 R164 R173 R174 R179 R180 R185 R186 R191 R409 R412 R415 R418 R421 R424 R427 R430 R436 R442 R443 R444 R433 R448 R449 R488
81906611930 RESISTOR 1.0K 1% 0805 SMT	5	EA	R204 R205 R234 R235 R238
81906612264 RESISTOR 2.21K 1% 0805	2	EA	R212 R232
81906612296 RESISTOR 2.37K 1% 0805	1	EA	R216
81906612320 RESISTOR 2.55K 1% 0805	3	EA	R215 R217 R218
81906612340 RESISTOR 2.67K 1% 0805	2	EA	R227 R229
81906612460 RESISTOR 3.57K 1% 0805	3	EA	R213 R222 R228
81906612500 RESISTOR 4.02K 1% 0805	1	EA	R207
81906612593 RESISTOR 4.99K 1% 0805	2	EA	R208 R224
81906612882 RESISTOR 10K 1% 0805 SMT	1	EA	R225
81906621513 RESISTOR 1 OHM 5% 1206	2	EA	R226 R245
81906640024 RESISTOR 2.0 OHM 5% 1210	1	EA	R483
81906640073 RESISTOR 75 OHM 0.5% 1206	32	EA	R1-R16 R248-R263
81906640150 RESISTOR 37.5 OHM 0.5% 08	32	EA	R33 R35 R37 R39 R41 R43 R45 R47 R49 R51 R53 R55 R57
81906640150 RESISTOR 37.5 OHM 0.5% 08	32	EA	R59 R61 R63 R280 R282 R284 R286 R288 R290 R292 R294 R296 R298 R300 R302 R304 R306 R308 R310



32X32 Digital Video Matrix Card - 81906518880 Continued:

81906640620 RESISTOR 64.9OHM 1% 1206	32	EA	R66 R68 R70 R72 R74 R76 R78 R80 R82 R84 R86 R88 R90 R92 R94 R96 R344 R346 R348 R350 R352 R354 R356 R358 R360 R362 R364 R366 R368 R370 R372 R374
81906700166 CAP 100PF 50V CERAMC 0805	32	EA	C66 C68 C70 C72 C74 C76 C78 C80 C82 C84 C86 C88 C90 C92 C94 C96 C374 C376 C378 C380 C382 C384 C386 C388 C390 C392 C394 C396 C398 C400 C402 C404
81906700320 CAP 220PF NPO 0805 CERAMC	2	EA	C293 C294
81906710110 CAP 0.15MF 50V CERAM 1206	2	EA	C314 C325
81906730015 CAP 0.1MF 50V CERMIC 1206	259	EA	C1-C32 C97-C128 C161-C176 C225-C240 C257-266 C268 C270-C282 C284-C286 C288 C290-C292 C295-C298 C301 C303-C306 C316 C318 C319 C321-C323 C326 C331 C335 C337 C341-C372 C405-C436 C452-C467 C500-C530 C532 C533
81906730056 CAP 0.01MF 50V CERAM 1206	1	EA	C315
81906760160 CAP 1500PF 50V CERAM 1206	2	EA	C320 C324
81906760220 CAP 1.0MF 50V CERMAM 1825	4	EA	C267 C269 C287 C289
81906770037 CAP TANTLM,SMT,2.2MFD/35V	9	EA	C327-C330 C332 C333 C336 C338 C339
81906770052 CAP 1MF 20V TANLUM SIZE A	34	EA	C130 C132 C134 C136 C138 C140 C142 C144 C146 C148 C150 C152 C154 C156 C158 C160 C194 C196 C198 C200 C202 C204 C206 C208 C210 C212 C214 C216 C218 C220 C222 C224 C302 C313
81906770060 CAP 10MF 6.3V TANT CASE B	3	EA	C283 C299 C317
81906800016 TRANS SMT,MMBT3904LT1	4	EA	Q3 Q6 Q8 Q9
81906800024 DIODE SMT,MMBD6100,SOT23	32	EA	CR1-CR17 CR27-CR41
81906800065 TRANS SMT,MMBZ5234B	2	EA	CR19 CR49
81906800107 TRANS SMT,MMBT3906L	5	EA	Q1 Q2 Q4 Q5 Q7
81906800230 DIODE MBR340 40V 3A SHTTK	4	EA	CR42 CR44 CR45 CR47
81906800360 ZENER MB5244 14V SOT-23	3	EA	CR18 CR20 CR23
81906800390 ZENER MC15 15V 1.5W SMT	1	EA	CR46
81906800410 TRANSIENT SUPPRESSOR 33V	2	EA	CR43 CR48
81906800580 ZENER MBZ5242 12V SOT23	1	EA	CR22
81906810072 IC 3903 QUAD SPLY MONITOR	1	EA	U95
81906810106 IC LM1881 VID SYNC SEPART	2	EA	U68 U72
81906810171 IC SMT,74HC04 (SOIC-14)	1	EA	U63
81906810340 IC 74HC00 QUAD AND SO SMT	2	EA	U61 U62
81906810510 IC 6264 8Kx8 SRAM 100ns	1	EA	U59
81906810550 IC 74HC245 OCTL TRANSCEVR	5	EA	U49 U51-U54



32X32 Digital Video Matrix Card - 81906518880 Continued:

81906810570	IC 74HC373 OCTAL LATCH SO	1	EA	U55
81906810690	IC TL062 DUAL JFET OP S08	3	EA	U67 U71 U97
81906810790	IC TQ8032 32x32 XPT DIGTL	1	EA	U50
81906810890	IC RS485 RECVR/TRANSMITTR	1	EA	U64
81906810930	IC TL7705 MICRO SUPERVISR	1	EA	U65
81906810960	IC OPTOCOUPLER SMT 4N32	2	EA	U69 U70
81906811030	IC 74HC273 OACTAL REGISTR	1	EA	U56
81906811040	IC 74HC138 3 TO 8 DECODER	2	EA	U60 U66
81906811080	IC DS1210 NONVOL CNTL CHP	1	EA	U58
81906811170	IC CLC014 CABLE EQUALIZER	32	EA	U1-U16 U77-U92
81906811180	IC CLC006 CABLE DRIVER	32	EA	U17-U48
81906920030	SWITCH DIP 4 POS GULLWING	1	EA	S1
81906940040	SOCKET 52 PIN PLCC SMT	1	EA	REF U57
81906950019	INDUCT SMT, .010UH	32	EA	L1-L16 L23-L38
81906950040	BEAD INDUCTOR SMT	2	EA	BEAD1 BEAD2
CA25-1353	DOC 32X DIGITAL VID MTRX	0	EA	
DD52-1353	DOC 32X DIGITAL VID MTRX	0	EA	
NOT-PLACED	ITEMS NOT PLACED ON EBOM	0	EA	R65 R67 R69 R71 R73 R75 R77 R79 R81 R83 R85 R87 R89 R91 R93 R95 R345 R347 R349 R351 R353 R355 R357 R359 R361 R363 R365 R367 R369 R371 R373 R375 R99-R114 R119-R134 C33 C35 C37 C39 C41 C43 C45 C47 C49 C51 C53 C55 C57 C59 C61 C63 C65 C67 C69 C71 C73 C75 C77 C79 C81 C83 C85 C87 C89 C91 C93 C95 C373 C375 C377 C379 C381 C383 C385 C387 C389 C391 C393 C395 C397 C399 C401 C403 C469 C471 C473 C475 C477 C479 C481 C483 C485 C487 C489 C491 C493 C495 C497 C499 C129 C131 C135 C137 C139 C141 C143 C145 C147 C149 C151 C153 C155 C157 C159 C193 C195 C197 C199 C201 C203 C205 C207 C209 C211 C213 C215 C217 C219 C221 C223 TP1-TP10 C437-C451 C177-C192 C241-C256 C133 C34 C36 C40 C42 C44 C46 C48 C50 C52 C54 C56 C58 C60 C62 C64 C468 C472 C474 C476 C478 C480 C482 C484 C486 C488 C490 C492 C494 C496 C498 C531 C38
SC33-1353	DOC 32X DIGITAL VID MTRX	0	EA	



Analog Video Output Monitor Card - 81906518200

81901000840	CAP 0.1F 5.5V	1	EA	C52
81901601187	REG MC7805C +5V 1A TO-220	1	EA	U32
81901602219	REG 7905 -5V 1.5A TO-220	1	EA	U24
81901606830	IC 7.3728 MHZ OSCILLATOR	1	EA	XTAL1
81902105050	LABEL BARCODE 1.5"x0.25"	1	EA	
81902202647	SCREW 4-40x1/4 SIMM PANHD	4	EA	REF:SHIELD PLATE
81902413160	PCB VID ANAL OUTPUT MONIT	1	EA	
81902600436	SWITCH 8 POS DIP 16-PIN	3	EA	S2 S3 S4
81902906296	CONN 30X2 DOUBLE ROW RA	2	EA	J1 J2
81902907810	CONN BNC RITE ANGLE PC MT	1	EA	J3
81903200541	LED GREEN RT/A HI-EFF PCB	1	EA	CR2
81903200558	LED RED RT/A HI-EFF PC MT	1	EA	CR3
81903464580	SHIELD ANALOG OUTPUT MON	1	EA	
81906517980	SOFT COUGAR BIOS	1	EA	U26
81906600184	RESISTOR 10 OHM 5% 0805	4	EA	R14 R25 R128 R129
81906600424	RESISTOR 100 OHM 5% 0805	3	EA	R48 R49 R87
81906600549	RESISTOR 330 OHM 5% 0805	8	EA	R1 R2 R70 R71 R84 R125 R126 R127
81906600663	RESISTOR 1K OHM 5% 0805	22	EA	R3 R18 R20 R50-R65 R72 R73 R124
81906600783	RESISTOR 3.3K 5% 0805 SMT	1	EA	R82
81906600820	RESISTOR 4.7K 5% 0805 SMT	38	EA	R69 R78 R83 R85 R86 R88-R120
81906600945	RESISTOR 15K 5% 0805 SMT	1	EA	R76
81906600986	RESISTOR 22K 5% 0805 SMT	1	EA	R81
81906601067	RESISTOR 47K 5% 0805 SMT	4	EA	R79 R138 R139 R140
81906601133	RESISTOR 100K 5% 0805 SMT	4	EA	R17 R19 R68 R80
81906601307	RESISTOR 510K 5% 0805 SMT	2	EA	R46 R47
81906601521	RESISTOR 0.0 OHM 5% 0805	3	EA	R4 R29 R122
81906610090	RESISTOR 12.1 OHM 1% 0805	3	EA	R6 R8 R9
81906610852	RESISTOR 75.0 OHM 1% 0805	2	EA	R15 R23
81906610950	RESISTOR 95.3 OHM 1% 0805	1	EA	R30
81906611190	RESISTOR 169 OHM 1% 0805	1	EA	R28
81906611230	RESISTOR 187 OHM 1% 0805	1	EA	R24
81906614660	RESISTOR 6.81 OHM 1% 0805	1	EA	R7
81906640024	RESISTOR 2.0 OHM 5% 1210	2	EA	R34 R35
81906640107	RESISTOR 75 OHM 0.5% 0805	8	EA	R130-R137
81906640140	POT 50 OHM R/A 1-TURN 10%	1	EA	R142
81906650301	POT 100K OHM 10% R/A 1T	1	EA	R141
81906700042	CAP SMT,33PF,50V,0805,CER	4	EA	C1-C4
81906700320	CAP 220PF NPO 0805 CERAMC	2	EA	C34 C35
81906730015	CAP 0.1MF 50V CERMIC 1206	32	EA	C11-C16 C25 C26 C30 C36 C37 C40 C42 C44 C45-C51 C54 C55 C56 C58 C59 C60 C61 C62 C64 C65 C68
81906760160	CAP 1500PF 50V CERAM 1206	2	EA	C41 C43
81906770037	CAP TANTLM,SMT,2.2MFD/35V	2	EA	C53 C63
81906770052	CAP 1MF 20V TANLUM SIZE A	2	EA	C10 C17



Analog Video Output Monitor Card - 81906518200 Continued:

81906770060	CAP 10MF 6.3V TANT CASE B	2	EA	C57 C69
81906800016	TRANS SMT,MMBT3904LT1	1	EA	Q5
81906800107	TRANS SMT,MMBT3906L	3	EA	Q1 Q2 Q6
81906800360	ZENER MB5244 14V SOT-23	1	EA	CR1
81906810106	IC LM1881 VID SYNC SEPART	2	EA	U8 U9
81906810171	IC SMT,74HC04 (SOIC-14)	2	EA	U10 U16
81906810340	IC 74HC00 QUAD AND SO SMT	1	EA	U15
81906810510	IC 6264 8Kx8 SRAM 100ns	1	EA	U21
81906810550	IC 74HC245 OCTL TRANSCEVR	4	EA	U28-U31
81906810570	IC 74HC373 OCTAL LATCH SO	1	EA	U20
81906810690	IC TL062 DUAL JFET OP S08	1	EA	U14
81906810770	IC 74HC32 QUAD 2-INPUT OR	1	EA	U33
81906810890	IC RS485 RECVR/TRANSMITTR	1	EA	U13
81906810920	IC HA4404 4x1 CROSSPOINT	2	EA	U1 U2
81906810930	IC TL7705 MICRO SUPERVISR	1	EA	U25
81906810960	IC OPTOCOUPLER SMT 4N32	1	EA	U27
81906811030	IC 74HC273 OACTAL REGISTR	3	EA	U18 U19 U23
81906811040	IC 74HC138 3 TO 8 DECODER	3	EA	U11 U12 U17
81906811080	IC DS1210 NONVOL CNTL CHP	1	EA	U22
81906811120	IC CLC449 IFB 1.2GHZ OP	1	EA	U3
81906920030	SWITCH DIP 4 POS GULLWING	1	EA	S1
81906940040	SOCKET 52 PIN PLCC SMT	1	EA	REF:U26
81906950040	BEAD INDUCTOR SMT	2	EA	B1 B2
CA25-1316	DOC VID ANALOG OUTPUT MON	0	EA	
DD52-1316	DOC VID ANALOG OUTPUT MON	0	EA	
NOT-PLACED	ITEMS NOT PLACED ON EBOM	0	EA	C18-C24 C27-C29 C31 C38 C39 C66 C67 C70-C72 C5-C9 R5 R10- R13 R16 R21 R22 R26 R27 R31 R37-R45 R66 R67 R74 R75 R77 R121 R123 R143 R144 U5 U6 Q3 Q4 TP1-TP3
SC33-1316	DOC VID ANALOG OUTPUT MON	0	EA	



Digital Video Output Monitor Card - 81906518210

81901000840	CAP 0.1F 5.5V	1	EA	C52
81901601187	REG MC7805C +5V 1A TO-220	1	EA	U32
81901602219	REG 7905 -5V 1.5A TO-220	1	EA	U24
81901606830	IC 7.3728 MHZ OSCILLATOR	1	EA	XTAL1
81902105050	LABEL BARCODE 1.5"x0.25"	1	EA	
81902202647	SCREW 4-40x1/4 SIMM PANHD	4	EA	REF:SHIELD PLATE
81902413160	PCB VID ANAL OUTPUT MONIT	1	EA	
81902600436	SWITCH 8 POS DIP 16-PIN	3	EA	S2 S3 S4
81902906296	CONN 30X2 DOUBLE ROW RA	2	EA	J1 J2
81902907810	CONN BNC RITE ANGLE PC MT	1	EA	J3
81903200541	LED GREEN RT/A HI-EFF PCB	1	EA	CR2
81903200558	LED RED RT/A HI-EFF PC MT	1	EA	CR3
81903464580	SHIELD ANALOG OUTPUT MON	1	EA	
81906517980	SOFT COUGAR BIOS	1	EA	U26
81906600184	RESISTOR 10 OHM 5% 0805	4	EA	R14 R25 R128 R129
81906600424	RESISTOR 100 OHM 5% 0805	3	EA	R48 R49 R87
81906600549	RESISTOR 330 OHM 5% 0805	8	EA	R1 R2 R70 R71 R84 R125 R126 R127
81906600663	RESISTOR 1K OHM 5% 0805	22	EA	R3 R18 R20 R50-R65 R72 R73 R124
81906600783	RESISTOR 3.3K 5% 0805 SMT	1	EA	R82
81906600820	RESISTOR 4.7K 5% 0805 SMT	38	EA	R69 R78 R83 R85 R86 R88-R120
81906600945	RESISTOR 15K 5% 0805 SMT	1	EA	R76
81906600986	RESISTOR 22K 5% 0805 SMT	2	EA	R81 R143
81906601067	RESISTOR 47K 5% 0805 SMT	4	EA	R79 R138 R139 R140
81906601133	RESISTOR 100K 5% 0805 SMT	4	EA	R17 R19 R68 R80
81906601307	RESISTOR 510K 5% 0805 SMT	2	EA	R46 R47
81906601521	RESISTOR 0.0 OHM 5% 0805	1	EA	R29
81906610090	RESISTOR 12.1 OHM 1% 0805	3	EA	R6 R8 R9
81906610506	RESISTOR 32.4 OHM 1% 0805	1	EA	R16
81906610810	RESISTOR 68.1 OHM 1% 0805	1	EA	R74
81906610852	RESISTOR 75.0 OHM 1% 0805	4	EA	R15 R21-R23
81906610950	RESISTOR 95.3 OHM 1% 0805	1	EA	R30
81906610977	RESISTOR 100 OHM 1% 0805	1	EA	R67
81906611190	RESISTOR 169 OHM 1% 0805	1	EA	R28
81906611230	RESISTOR 187 OHM 1% 0805	1	EA	R24
81906611357	RESISTOR 249 OHM 1% 0805	2	EA	R38 R39
81906611850	RESISTOR 825 OHM 1% 0805	2	EA	R75 R77
81906611930	RESISTOR 1.0K 1% 0805 SMT	1	EA	R44
81906612320	RESISTOR 2.55K 1% 0805	1	EA	R40
81906612450	RESISTOR 3.48K 1% 0805	1	EA	R41
81906612635	RESISTOR 5.49K 1% 0805	1	EA	R42
81906612720	RESISTOR 6.81K 1% 0805	1	EA	R43
81906614660	RESISTOR 6.81 OHM 1% 0805	1	EA	R7
81906630710	RESISTOR 53.6 OHM 1% 1206	1	EA	R5
81906640024	RESISTOR 2.0 OHM 5% 1210	2	EA	R34 R35
81906640107	RESISTOR 75 OHM 0.5% 0805	8	EA	R130-R137



Digital Video Output Monitor Card - 81906518210 Continued:

81906640140	POT 50 OHM R/A 1-TURN 10%	1	EA	R142
81906640620	RESISTOR 64.9OHM 1% 1206	1	EA	R123
81906650301	POT 100K OHM 10% R/A 1T	1	EA	R141
81906700042	CAP SMT,33PF,50V,0805,CER	4	EA	C1 C2 C3 C4
81906700059	CAP 6.8PFD 50V CERAM,0805	1	EA	C9
81906700091	CAP 1000PF 50V CERAM 0805	1	EA	C70
81906700109	CAP 10PF 50V CERAM 0805	1	EA	C67
81906700166	CAP 100PF 50V CERAMC 0805	1	EA	C71
81906700320	CAP 220PF NPO 0805 CERAMC	2	EA	C34 C35
81906730015	CAP 0.1MF 50V CERMIC 1206	40	EA	C11-C16 C21-C30 C36 C37 C40 C42 C44 C45-C51 C54 C55 C56 C58 C59 C60 C61 C62 C64 C65 C68 C72
81906760160	CAP 1500PF 50V CERAM 1206	2	EA	C41 C43
81906770037	CAP TANTLM,SMT,2.2MFD/35V	2	EA	C53 C63
81906770052	CAP 1MF 20V TANLUM SIZE A	5	EA	C10 C17-C19 C31
81906770060	CAP 10MF 6.3V TANT CASE B	2	EA	C57 C69
81906800016	TRANS SMT,MMBT3904LT1	1	EA	Q5
81906800107	TRANS SMT,MMBT3906L	3	EA	Q1 Q2 Q6
81906800360	ZENER MB5244 14V SOT-23	1	EA	CR1
81906810106	IC LM1881 VID SYNC SEPART	2	EA	U8 U9
81906810171	IC SMT,74HC04 (SOIC-14)	2	EA	U10 U16
81906810340	IC 74HC00 QUAD AND SO SMT	1	EA	U15
81906810510	IC 6264 8Kx8 SRAM 100ns	1	EA	U21
81906810550	IC 74HC245 OCTL TRANSCEVR	4	EA	U28-U31
81906810570	IC 74HC373 OCTAL LATCH SO	1	EA	U20
81906810690	IC TL062 DUAL JFET OP S08	1	EA	U14
81906810770	IC 74HC32 QUAD 2-INPUT OR	1	EA	U33
81906810890	IC RS485 RECVR/TRANSMITTR	1	EA	U13
81906810920	IC HA4404 4x1 CROSSPOINT	2	EA	U1 U2
81906810930	IC TL7705 MICRO SUPERVISR	1	EA	U25
81906810960	IC OPTOCOUPLER SMT 4N32	1	EA	U27
81906811030	IC 74HC273 OACTAL REGISTR	3	EA	U18 U19 U23
81906811040	IC 74HC138 3 TO 8 DECODER	3	EA	U11 U12 U17
81906811080	IC DS1210 NONVOL CNTL CHP	1	EA	U22
81906811120	IC CLC449 IFB 1.2GHZ OP	1	EA	U3
81906811180	IC CLC006 CABLE DRIVER	1	EA	U6
81906811190	IC CLC016 RETIMMR DIG VID	1	EA	U5
81906920030	SWITCH DIP 4 POS GULLWING	1	EA	S1
81906940040	SOCKET 52 PIN PLCC SMT	1	EA	REF:U26
81906950040	BEAD INDUCTOR SMT	2	EA	B1 B2
CA25-1316	DOC VID ANALOG OUTPUT MON	0	EA	
DD52-1316	DOC VID ANALOG OUTPUT MON	0	EA	
NOT-PLACED	ITEMS NOT PLACED ON EBOM	0	EA	C66 R31 TP1 TP2 TP3 C5-C8 C20 R10-R13 R4 R122 R26 R27 R37 R45 R121 Q3 Q4 R66 C38 R144
SC33-1316	DOC VID ANALOG OUTPUT MON	0	EA	



8X1 Crosspoint Card - 81906518160

81902003470	STANDOFF SNAP TOP PCB	4	EA	
81902105050	LABEL BARCODE 1.5"x0.25"	1	EA	
81902413120	PCB VIDEO 8X1 CROSSPOINT	1	EA	
81902906429	CONN RECEPTACLE 2X2 LOW	8	EA	J1 - J8
81902908240	CONN RECP SNG ROW 8pos RA	1	EA	J9
81906600184	RESISTOR 10 OHM 5% 0805	2	EA	R53 R58
81906600820	RESISTOR 4.7K 5% 0805 SMT	8	EA	R62 - R69
81906600903	RESISTOR 10K 5% 0805 SMT	8	EA	R33 R35 R37 R39 R43 R45 R47 R49
81906601067	RESISTOR 47K 5% 0805 SMT	1	EA	R61
81906601521	RESISTOR 0.0 OHM 5% 0805	10	EA	R17 R20 R22 R24 R26 R28 R30 R32 R41 R51
81906610523	RESISTOR 34.0 OHM 1% 0805	1	EA	R40
81906610555	RESISTOR 36.5 OHM 1% 0805	1	EA	R8
81906610571	RESISTOR 38.3 OHM 1% 0805	1	EA	R7
81906610589	RESISTOR 39.2 OHM 1% 0805	1	EA	R6
81906610630	RESISTOR 44.2 OHM 1% 0805	1	EA	R5
81906610680	RESISTOR 49.9 OHM 1% 0805	1	EA	R3
81906610700	RESISTOR 52.3 OHM 1% 0805	3	EA	R1 R2 R4
81906610795	RESISTOR 64.9 OHM 1% 0805	1	EA	R50
81906610852	RESISTOR 75.0 OHM 1% 0805	6	EA	R34 R36 R38 R54 R55 R59
81906610900	RESISTOR 84.5 OHM 1% 0805	1	EA	R44 R46 R48
81906611603	RESISTOR 453 OHM 1% 0805	1	EA	R57
81906700018	CAP 12PF 50V CERAMIC SMT	3	EA	C23 C24 C25
81906700117	CAP 15PF 50V CERAM 0805	5	EA	C17-C20 C26
81906730015	CAP 0.1MF 50V CERMIC 1206	22	EA	C1 - C16 C21 C22 C27 C28 C30 C32
81906770052	CAP 1MF 20V TANLUM SIZE A	2	EA	C29 C33
81906810920	IC HA4404 4x1 CROSSPOINT	2	EA	U9 U10
81906810990	IC BUFFER HA4600 SO-8	8	EA	U1 - U8
81906811120	IC CLC449 IFB 1.2GHZ OP	1	EA	U11
CA25-1312	DOC VIDEO 8X1 CROSSPOINT	0	EA	
DD52-1312	DOC VIDEO 8X1 CROSSPOINT	0	EA	
NOT-PLACED	ITEMS NOT PLACED ON EBOM	0	EA	R9-R16 R18 R19 R21 R23 R25 R27 R29 R31 R42 R52 R56 R60 C31 Q1 Q2
SC33-1312	DOC VIDEO 8X1 CROSSPOINT	0	EA	
SP57-0367	DOC PNLZATION 8x1 XPT JAG	0	EA	

Dummy Load Card - 81906518920

81902105050	LABEL BARCODE 1.5"x0.25"	1	EA	
81902413560	PCB DMY LD CD ASSY JAG V	1	EA	
81902906668	CONN RA,FEMALE,96POS,3ROW	2	EA	J1 J2
81902908000	CONN 2x48 RECPT RA .1x.1	2	EA	J3 J4
81906640107	RESISTOR 75 OHM 0.5% 0805	64	EA	R1-R64
CA25-1356	DOC DUMMY LD CD JAG VID	0	EA	
DD52-1356	DOC DUMMY LD CD JAG VID	0	EA	
NOT-PLACED	ITEMS NOT PLACED ON EBOM	0	EA	C1-C96 R65-R96
SC33-1356	DOC DUMMY LD CD JAG VID	0	EA	



Matrix Extender Card - 81906518930

81902105050	LABEL BARCODE 1.5"x0.25"	1	EA	
81902202712	SCREW 4-40x5/16 SIMM PNHD	10	EA	
81902413570	PCB EXTENDER CARD JAG VID	1	EA	
81902906650	CONN RA MALE 96POS 3ROW	2	EA	J5 J6
81902906668	CONN RA,FEMALE,96POS,3ROW	2	EA	J1 J2
81902908000	CONN 2x48 RECPT RA .1x.1	2	EA	J3 J4
81902908460	CONN RET HDR 2X12 MALE	8	EA	J7 J8
81903464910	EXTENDER PLT 32X32 VID MT	1	EA	
CA25-1357	DOC EXTENDER CARD JAG VID	0	EA	
DD52-1357	DOC EXTENDER CARD JAG VID	0	EA	
SC33-1357	DOC EXTENDER CARD JAG VID	0	EA	

Internal PS130 Power Supply Addendum

Introduction

CAUTION

PS130 POWER SUPPLIES CONTAIN ELECTRICAL SHOCK HAZARDS AND SHOULD ONLY BE SERVICED BY QUALIFIED SERVICE PERSONNEL WITH EXPERIENCE IN SERVICING OFF-LINE SWITCHING REGULATORS.

CAUTION

There are no user serviceable parts contained in the PS130 Power Supply. All service performed on the PS130 Power Supply should be accomplished by qualified service personnel. **The internal circuits of the PS130 Power Supply contain dangerous voltage and current levels. Prior to servicing any PS130 Power Supply make absolutely sure that the AC line input is disconnected.**

NOTE

The PS130 Power Supply replaces the power supply formerly used to power the PESA equipment item referenced in the technical manual to which this addendum is attached. This addendum takes precedence over any mention of the former power supply in the technical manual for any PESA equipment items where the PS130 Power Supply is utilized.

This addendum contains the power connection, front door removal and replacement, power supply removal and installation, and fuse replacement instructions for the PS130 Power Supply. The purpose of this addendum is to provide technical information to the customer concerning the operation and servicing of the PS130 Power Supply.

General

CAUTION

HIGH LEAKAGE CURRENT AT 230 VAC

The PS130 Power Supply leakage current exceeds 3.5mA when used at 230VAC because of leakage through emission filter capacitors.

Internal PS130 Power Supply Addendum

The PS130 Video Power Supply is responsible for providing a regulated $\pm 8.9\text{VDC}$ @ 5.5A to the switching frame. The PS130 Power Supply is designed to operate within output specifications with AC line voltages ranges from 105 - 240 VAC and with AC line frequencies of 50/60 Hz automatically. 3.15A 250VAC AC line fuses provide over-load protection.

The PS130 Audio Power Supply is responsible for providing a regulated $\pm 24\text{VDC}$ @ 2.35A to the switching frame. The PS130 Power Supply is designed to operate within output specifications with AC line voltages ranges from 105 - 240 VAC and with AC line frequencies of 50/60 Hz automatically. 3.15A 250VAC AC line fuses provide over-load protection.

CAUTION

Disconnect AC Power Cord Before Removing Power Supply.

In the event of a PS130 Power Supply failure, PESA suggests returning the malfunctioning unit to the PESA Service Department for replacement. **PS130 Power Supplies contain lethal voltages when operating and should only be serviced by technicians qualified to service off-line switching regulators.** Please call the PESA Service Department for a RMA number before returning any units for replacement. The service department's phone number is listed on the Service and Ordering Assistance Page.

Power Connections

CAUTION

PS130 POWER SUPPLIES CONTAIN ELECTRICAL SHOCK HAZARDS AND SHOULD ONLY BE SERVICED BY QUALIFIED SERVICE PERSONNEL AND/OR QUALIFIED TECHNICIANS.

CAUTION

**THIS POWER SUPPLY USES AN INDIVIDUAL AC POWER CORD.
DISCONNECT CORD BEFORE REMOVING SUPPLY.**

Internal PS130 Power Supply Addendum

Power Connect

To power-up a PS130 Power Supply and its associated routing switcher frame take the following steps:

1. Insert the power supply into the frame following the instructions in the Power Removal Section of this addendum.
2. Connect the power supply to the AC line.
3. Repeat steps 1 and 2 for a secondary power supply if applicable.
4. If applicable, connect any DC power looped to and from other frames in the routing switcher system to the unit under test.

Power Disconnect

To power-down a PS130 Power Supply, disconnect the AC power cord from the power supply's AC line input connector. To power-down a PS130 Power Supply and its associated routing switcher frame take the following steps:

1. If applicable, disconnect any DC power looped to and from other frames in the routing switcher system from the unit under test.
2. Disconnect the AC line from the primary PS130 Power Supply.
3. If applicable, disconnect the AC line from the secondary PS130 Power Supply.

Front Door Removal and Replacement

Front Door Removal (Removable Front Doors Only)

To remove the PESA equipment item's front door (cover) take the following steps:

1. Grasp the both the left and right front cover slide locks and push or pull them towards the center of the equipment item's front.
2. Once both slide locks are slide toward the center of the equipment items front, carefully pull the front door off the equipment item.

Internal PS130 Power Supply Addendum

Front Door Installation (Removable Front Doors Only)

To install the PESA equipment item's front door (cover) take the following steps:

1. Align the front door with the front of the PESA equipment item.
2. Once the front door is aligned with the front of the PESA equipment item, slide the front door onto the equipment item until the slide locks snap into the locking provided on the equipment item's chassis.

Power Supply Removal and Replacement

CAUTION

Two AC Power Cords may be connected to this unit.

Power Supply Removal

To remove the PESA equipment item's power supply or power supplies take the following steps:

1. **Disconnect the AC power cord connected to the power supply to be removed.**
2. Remove or open the equipment item's front door.
3. Grasp the power supply slide lock and pull it toward the center of the supply.
4. Once the slide lock is slid toward the center of the supply, carefully pull the power supply out of the equipment chassis.
5. Repeat step 1 and steps 3 and 4 to remove any additional power supplies from the equipment item.

Power Supply Installation

To install the PESA equipment item's power supply or power supplies take the following steps:

1. Align the primary power supply with the primary set of power supply circuit card guides in the equipment item's chassis.

Internal PS130 Power Supply Addendum

2. Carefully push the power supply into the chassis until the power supply connector makes initial contact with the backplane power connector. At this point, firmly but carefully continue pushing the power supply into the equipment chassis while making sure the power connectors are properly aligned. You may have to slide the power supply latch toward the center of the supply in order for the latch to move past the frame's metal work. Continue pushing the power supply until the power supply slide lock clicks into the power supply slide lock hole provided in the equipment chassis and the power connectors are firmly mated.
3. If additional power supplies are to be installed in the equipment chassis, align them with a set of power supply circuit card guides in the equipment item and repeat step 2.

Fuse Replacement

CAUTION

DOUBLE-POLE/NEUTRAL FUSING

To replace the PS130 Power Supply line fuses take the following steps:

1. **Disconnect the AC power cord from the power supply being serviced.**
2. Remove or open the front door of the equipment item containing the PS130 Power Supply needing serviced.
3. Remove the power supply from the equipment item. Refer to the Power Supply Removal Section of this addendum for power supply removal instructions.
4. Carefully pull the AC line fuse holder open. The fuse holder is located adjacent to the PS130 Power Supply AC line input connector.
5. **Replace the fuses with fuses of equal current and voltage rating.**
6. Carefully slide the AC line fuse holder closed.
7. Install the power supply back into the equipment chassis. Refer to the Power Supply Installation Section of this addendum for complete power supply installation instructions.
5. Reconnect the associated AC power cord.

Control Panel Connection Addendum

Jaguar Video Frame RCP Port Addendum

This addendum is designed to be utilized as quick reference guide to the system interconnection between the Jaguar Video Frame and the RCP Control Panels.

The pinout for the RCP Port Connectors on the rear panel of the Jaguar Video Frame is as follows:

Pin 1	+DATA
Pin 2	-DATA
Pin 3	Shield

The pinout for the Control Port Connector on the rear panel of the RCP Control Panel is as follows:

Pin 1	-DATA
Pin 2	Shield
Pin 3	+DATA

The twisted-pair cables between the Jaguar Video Frame RCP Port Connectors and the RCP Control Panels must be connected as shown in Figure 1.

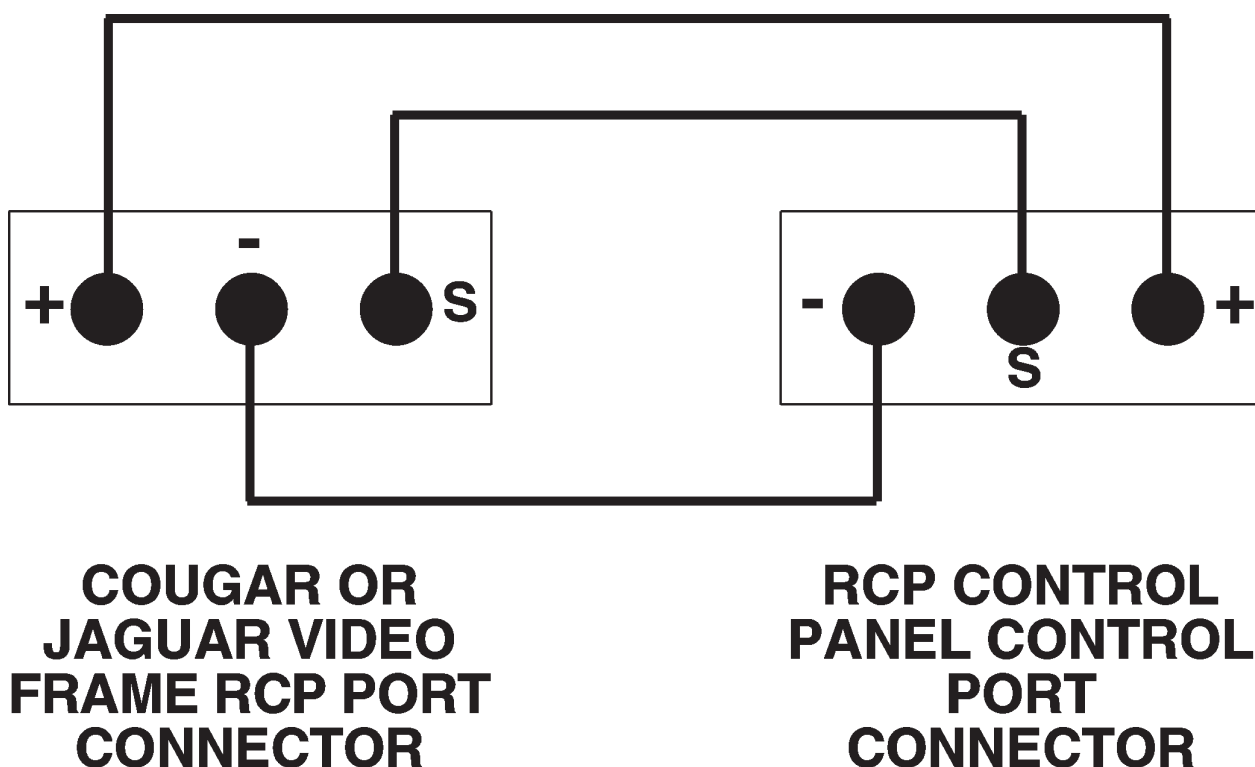
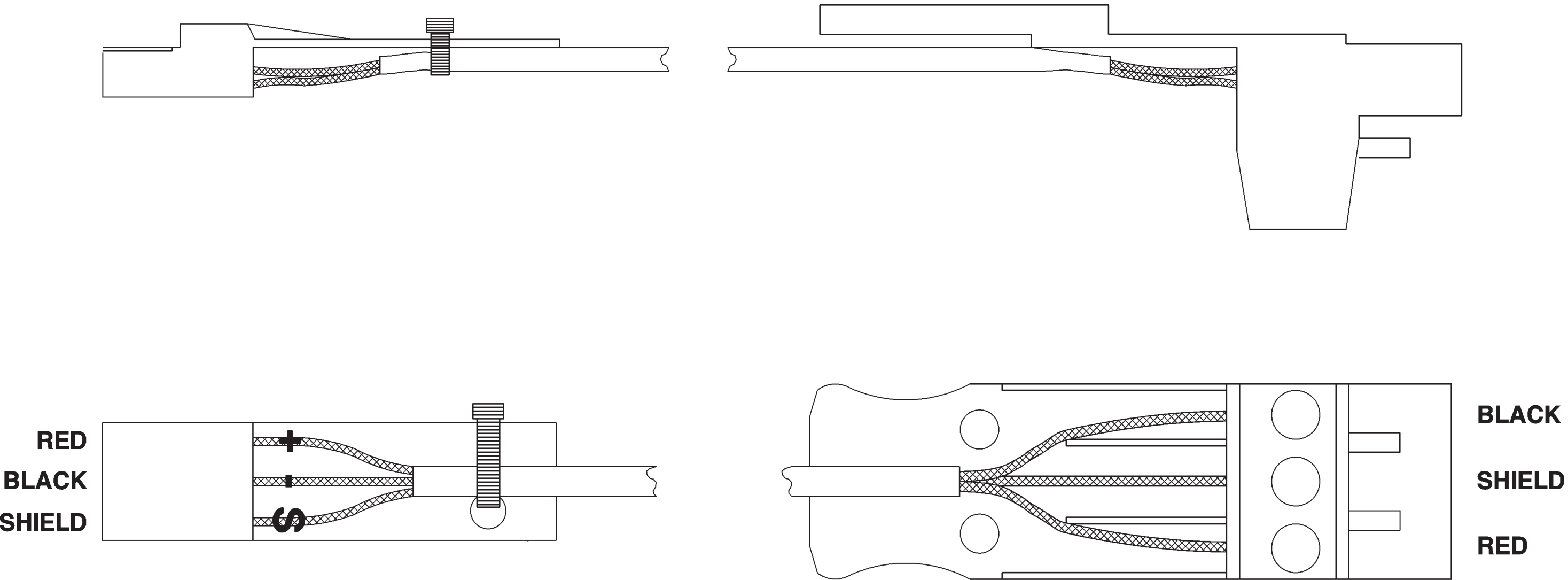
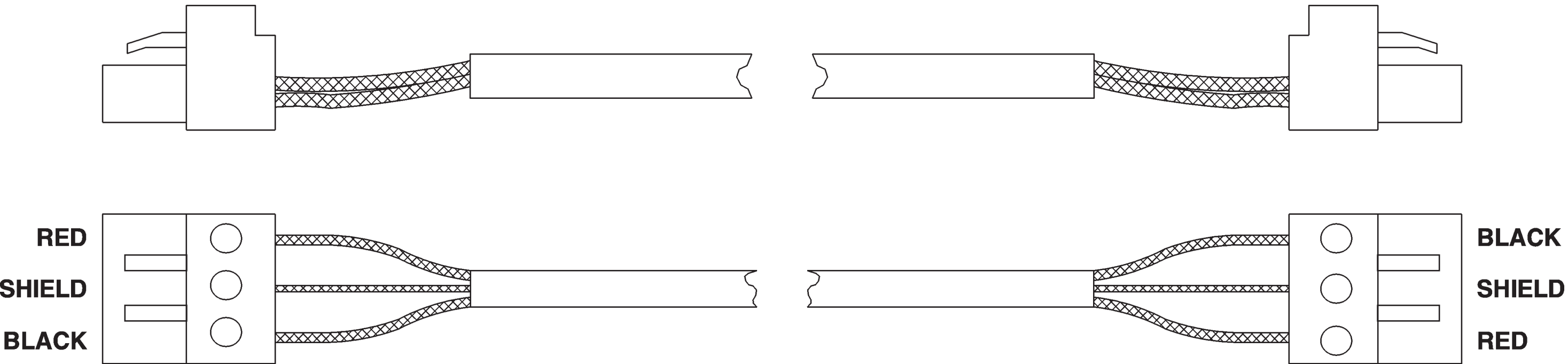


Figure 1 Jaguar Video Frame and RCP Control Panel Interconnection



NOTE: THIS CABLE DIAGRAM REPRESENTS THE CONNECTION OF A COUGAR OR JAGUAR VIDEO FRAME CONTROL PANEL PORT TO THE FIRST CONTROL PANEL IN A CONTROL PANEL PORT CONNECTION DAISY-CHAIN.

Figure 2 Jaguar Video Frame Control Panel Port to the First Control Panel in a Daisy-Chain Connection



NOTE: THIS CABLE DIAGRAM REPRESENTS THE CONNECTION OF A CONTROL PORT TO A CONTROL PORT IN CONTROL PORT CONNECTION DAISY-CHAIN.

Figure 3 Control Panel Port to Control Panel Port Connection

32X32 Wideband Analog Video Addendum

Introduction

This addendum contains the parts lists and schematics for the 32X32 Wideband Analog Video Card and for the associated 16X16 Wideband Crosspoint Cards. Please refer to this addendum and the Cougar Video Manual (P/N 81905903420) or to the Jaguar Video Manual (P/N 81905903690) when troubleshooting or replacing parts on the 32X32 Wideband Analog Video Card or on the associated 16X16 Wideband Crosspoint Cards.

Parts Lists

The Parts Lists in this section have been grouped according to each assembly associated with the 32X32 Analog Video Wideband Card and with the associated 16X16 Wideband Crosspoint Cards. Refer to each list by name of card, board, or section of the equipment requiring replacement parts.

<u>Part</u>	<u>Part Number</u>	<u>Page</u>
32X32 WB Analog Video Matrix Card	81906518120	2
16X16 WB Crosspoint Card	81906518110	11

32X32 Wideband Analog Video Addendum

32X32 WB Analog Video Matrix Card - 81906518120

81900601022	THERMISTOR 680 OHM 5%	1	EA	R531
81901000740	CAP SWXR REG OUT 35V ELEC	8	EA	C220 C223 C228 C229 C242 C243 C245 C246
81901000840	CAP 0.1F 5.5V	1	EA	C214
81901603738	REG LM317T 1.2V-37V ADJST	1	EA	U120
81901606830	IC 7.3728 MHZ OSCILLATOR	1	EA	U104
81901606980	REG LT1170 5A SWXING 60V	1	EA	U119
81902003580	STANDOFF 2-56 PC BD MNTD	8	EA	
81902105050	LABEL BARCODE 1.5"x0.25"	1	EA	
81902200039	SCREW 2-56X1/4 PAN HD PHI	8	EA	
81902200070	NUT 4-40 HEX	2	EA	REF U119
81902202696	SCREW 4-40x7/16 SIMM PANH	2	EA	REF U119
81902301080	INDUCTOR 20uH 2A TOROIDAL	4	EA	L1-L4
81902301370	TRANSFORMER ANALOG VIDEO	1	EA	T1
81902413080	PCB 32x32 WB VIDEO MATRIX	1	EA	
81902700749	FUSE PICO, 7 AMP, LEADED	2	EA	F1 F2
81902901479	SOCKET 8 PIN LOW PROF IC	1	EA	REF U107
81902906668	CONN RA FEMALE 96POS 3ROW	2	EA	J1 J2
81902907960	CONN 2x8 POST 2MM .1 PCB	4	EA	J5A-J5D
81902907970	CONN 2x24 POST 2MM .1 PCB	24	EA	J1A-J1D J2A-J2D J3A-J3D J4A-J4D J6A-J6D J7A-J7D
81902908000	CONN 2x48 RECPT RA .1x.1	2	EA	J3 J4
81902908060	SPLIT TERMINAL	2	EA	REF F1 F2
81903200541	LED GREEN RT/A HI-EFF PCB	1	EA	CR5
81903200558	LED RED RT/A HI-EFF PC MT	2	EA	CR3 CR4
81903462740	HEATSINK 24x16 VID MATRIX	1	EA	REF U119
81906517730	SOFT 32x8 CNTRL CHIP	1	EA	REF U107
81906517980	SOFT COUGAR BIOS	1	EA	REF U98

32X32 Wideband Analog Video Addendum

32X32 WB Analog Video Matrix Card - 81906518120 Continued:

81906600184	RESISTOR 10 OHM 5% 0805	194	EA	R4 R8 R12 R16 R20 R24 R28 R32 R36 R40 R44 R48 R52 R56 R60 R64 R68 R72 R76 R80 R84 R88 R92 R96 R100 R104 R108 R112 R116 R120 R124 R128 R658 R661 R664 R667 R670 R673 R676 R679 R682 R685 R688 R691 R694 R697 R700 R703 R706 R709 R712 R715 R718 R721 R724 R727 R730 R733 R736 R739 R742 R745 R748 R751 R1158 R1229 R1230 R1254 R1260 R1261 R1266 R1267 R1275 R1283 R1284 R1291 R1292 R1299 R1300 R1308 R1311 R1312 R1320 R1321 R1329 R1337 R1338 R1344 R1345 R1353 R1354 R1365 R1371 R1372 R1380 R1381 R1421 R1422 R1430 R1431 R1439 R1447 R1448 R1456 R1457 R1464 R1472 R1473 R1479 R1480 R1488 R1489 R1496 R1497 R1504 R1505 R1512 R1513 R1521 R1525 R1526 R1534 R1535 R1544 R1550 R1551 R1559 R1560 R1568 R1569 R1575-R1638
81906600424	RESISTOR 100 OHM 5% 0805	2	EA	R1440 R1441
81906600465	RESISTOR 150 OHM 5% 0805	1	EA	R552
81906600499	RESISTOR 200 OHM 5% 0805	1	EA	R301
81906600520	RESISTOR 270 OHM 5% 0805	2	EA	R330 R361
81906600549	RESISTOR 330 OHM 5% 0805	1	EA	R556
81906600570	RESISTOR 430 OHM 5% 0805	2	EA	R341 R372
81906600620	RESISTOR 680 OHM 5% 0805	1	EA	R425
81906600663	RESISTOR 1K OHM 5% 0805	11	EA	R342 R373 R549 R1355-R1358 R1366 R1367 R1564 R1565
81906600700	RESISTOR 1.5K 5% 0805	1	EA	R1474
81906600747	RESISTOR 2.2K 5% 0805	1	EA	R300
81906600783	RESISTOR 3.3K 5% 0805 SMT	35	EA	R328 R359 R532 R817 R821 R825 R829 R833 R837 R841 R845 R849 R853 R857 R861 R865 R869 R873 R877 R1073 R1077 R1081 R1085 R1089 R1093 R1097 R1101 R1105 R1109 R1113 R1117 R1121 R1125 R1129 R1133

32X32 Wideband Analog Video Addendum

32X32 WB Analog Video Matrix Card - 81906518120 Continued:

81906600820	RESISTOR 4.7K 5% 0805 SMT	139	EA	R302-R307 R312 R317 R319-R323 R326 R327 R331-334 R338 R339 R340 R343-R346 R349-R351 R356-R358 R362-R367 R370 R371 R377-R379 R381-R386 R390 R391 R394-R400 R404-R413 R416-R420 R424 R428-R431 R434-R439 R445-R450 R455 R459 R460-R467 R470-R473 R482-R487 R492-R497 R508-R512 R515 R516-R519 R523-R525 R535-R540 R1570 R1640-R1642
81906600866	RESISTOR 6.8K 5% 0805 SMT	32	EA	R816 R820 R824 R828 R832 R836 R840 R844 R848 R852 R856 R860 R864 R868 R872 R876 R1072 R1076 R1080 R1084 R1088 R1092 R1096 R1100 R1104 R1108 R1112 R1116 R1120 R1124 R1128 R1132
81906600903	RESISTOR 10K 5% 0805 SMT	3	EA	R432 R433 R1571
81906600920	RESISTOR 12K OHM 5% 0805	1	EA	R318
81906600986	RESISTOR 22K 5% 0805 SMT	1	EA	R310
81906601133	RESISTOR 100K 5% 0805 SMT	4	EA	R311 R313 R329 R360
81906601307	RESISTOR 510K 5% 0805 SMT	2	EA	R352 R380
81906601521	RESISTOR 0.0 OHM 5% 0805	128	EA	R3 R7 R11 R16 R19 R23 R27 R31 R35 R39 R43 R47 R51 R55 R59 R63 R67 R71 R75 R79 R83 R87 R91 R95 R99 R103 R107 R111 R115 R119 R123 R127 R161 R163 R165 R167 R169 R171 R173 R175 R177 R179 R181 R182 R183 R184 R185 R186 R225
81906601521	RESISTOR 0.0 OHM 5% 0805	128	EA	R226-R241 R292 R295 R297 R308 R315 R335 R347 R353 R368 R375 R388 R401 R414 R421 R426 R468 R474 R477 R488 R498 R502 R505 R513 R521 R528 R533 R541 R544 R547 R553 R557 R1152 R1223 R1247 R1262 R1268 R1276 R1285 R1293 R1301 R1313 R1322 R1330 R1339 R1346 R1359 R1373 R1414 R1423 R1432 R1442 R1449 R1458 R1475 R1481 R1490 R1498 R1506 R1514 R1527 R1537 R1545 R1552

32X32 Wideband Analog Video Addendum

32X32 WB Analog Video Matrix Card - 81906518120 Continued:

81906607060 RESISTOR 4.7K OHM 5% 603	32	EA	R993 R995 R997 R999 R1001 R1003 R1005 R1007 R1009 R1011 R1013 R1015 R1017 R1019 R1021 R1023 R1161 R1165 R1169 R1173 R1177 R1181 R1185 R1189 R1193 R1197 R1201 R1205 R1209 R1213 R1217 R1221
81906610630 RESISTOR 44.2 OHM 1% 0805	32	EA	R1056-R1071 R1231-1246
81906610710 RESISTOR 53.6 OHM 1% 0805	32	EA	R243 R294 R299 R309 R316 R325 R337 R355 R369 R376 R389 R393 R403 R423 R427 R441 R475 R478 R480 R490 R500 R507 R514 R522 R527 R530 R543 R545 R548 R551 R555 R559
81906610852 RESISTOR 75.0 OHM 1% 0805	32	EA	R188 R190 R192 R194 R196 R198 R200 R202 R204 R206 R208 R211 R214 R217 R220 R223 R245 R248 R251 R254 R257 R260 R263 R266 R269 R272 R275 R278 R281 R284 R287 R290
81906610860 RESISTOR 76.8 Ohm 1% 0805	32	EA	R1228 R1253 R1259 R1265 R1274 R1282 R1298 R1307 R1310 R1319 R1328 R1336 R1352 R1364 R1370 R1379 R1420 R1429 R1438 R1455 R1463 R1471 R1478 R1487 R1495 R1511 R1520 R1524 R1533 R1543 R1558 R1567
81906611652 RESISTOR 511 OHM 1% 0805	1	EA	R501
81906611942 RESISTOR 1.02K 1% 0805	1	EA	R1465
81906612296 RESISTOR 2.37K 1% 0805	1	EA	R451
81906612320 RESISTOR 2.55K 1% 0805	3	EA	R444 R452 R456
81906612380 RESISTOR 2.94K 1% 0805	1	EA	R491
81906612593 RESISTOR 4.99K 1% 0805	1	EA	R457
81906612882 RESISTOR 10K 1% 0805 SMT	1	EA	R458
81906617000 RESISTOR 0.0 OHM 1% 0603	32	EA	R944 R947 R950 R953 R956 R959 R962 R965 R968 R971 R977 R980 R983 R986 R989 R1159 R1163 R1167 R1171 R1175 R1179 R1183 R1187 R1191 R1195 R1199 R1203 R1207 R1211 R1215 R1219 R1639
81906617370 RESISTOR 100 Ohm 1% 0603	32	EA	R1156 R1227 R1252 R1263 R1272 R1280 R1289 R1297 R1306 R1317 R1326 R1334 R1343 R1351 R1368 R1377 R1418 R1427 R1436 R1446 R1454 R1469 R1476 R1485 R1494 R1502 R1518 R1522 R1531 R1541 R1549 R1557

32X32 Wideband Analog Video Addendum

32X32 WB Analog Video Matrix Card - 81906518120 Continued:

81906617380 RESISTOR 150 Ohm 1% 0603	32	EA	R992 R994 R996 R998 R1000 R1002 R1004 R1006 R1008 R1010 R1012 R1014 R1016 R1018 R1020 R1022 R1160 R1164 R1168 R1172 R1176 R1180 R1184 R1188 R1192 R1196 R1200 R1204 R1208 R1212 R1216 R1220
81906617390 RESISTOR 249 Ohm 1% 0603	64	EA	R945 R948 R951 R954 R957 R960 R963 R966 R969 R972 R975 R978 R981 R984 R987 R990 R1136-R1151 R1157 R1251 R1258 R1264 R1273 R1281 R1290 R1305 R1309 R1318 R1327 R1335 R1350 R1363 R1369 R1378 R1419 R1428 R1437 R1453 R1462 R1470 R1477 R1486 R1503 R1510 R1519 R1523 R1532 R1542 R1556 R1566
81906630700 RESISTOR 52.3 OHM 1% 1206	32	EA	R560-R591
81906640024 RESISTOR 2.0 OHM 5% 1210	1	EA	R481
81906640073 RESISTOR 75 OHM 0.5% 1206	64	EA	R818 R819 R822 R823 R826 R827 R830 R831 R834 R835 R838 R839 R842 R843 R846 R847 R850 R851 R854 R855 R858 R859 R862 R863 R866 R867 R870 R871 R874 R875 R878 R879 R1074 R1075 R1078 R1079 R1082 R1083 R1086 R1087 R1090 R1091 R1094 R1095 R1098 R1099 R1102 R1103 R1106 R1107 R1110 R1111 R1114 R1115 R1118 R1119 R1122 R1123 R1126 R1127 R1130 R1131 R1134 R1135
81906640115 RESISTOR 100 OHM 0.1% O80	128	EA	R592-R655 R880 R882 R884 R886 R888 R890 R892 R894 R896 R898 R901 R903 R905 R907 R908 R910 R912 R914 R916 R918 R920 R922 R924 R926 R928 R930 R933 R935 R937 R939 R940 R942 R1024-R1055
81906640900 RESISTOR 52.3 Ohm .1% 805	32	EA	R1155 R1226 R1250 R1257 R1271 R1279 R1288 R1296 R1304 R1316 R1325 R1333 R1342 R1349 R1362 R1376 R1417 R1426 R1435 R1445 R1452 R1461 R1468 R1484 R1493 R1501 R1509 R1517 R1530 R1540 R1548 R1555

32X32 Wideband Analog Video Addendum

32X32 WB Analog Video Matrix Card - 81906518120 Continued:

81906640920	RESISTOR 56.2 Ohm .1% 805	64	EA	R242 R293 R296 R298 R314 R324 R336 R348 R354 R374 R387 R392 R402 R415 R422 R440 R469 R476 R479 R489 R499 R503 R506 R520 R526 R529 R534 R542 R546 R550 R554 R558 R1153 R1224 R1248 R1255 R1269 R1277 R1286 R1294 R1302 R1314 R1323 R1331 R1340 R1347 R1360 R1374 R1415 R1424 R1433 R1443 R1450 R1459 R1466 R1482 R1491 R1499 R1507 R1515 R1528 R1538 R1546 R1553
81906640930	RESISTOR 71.5 Ohm .1% 805	32	EA	R1154 R1225 R1249 R1256 R1270 R1278 R1287 R1295 R1303 R1315 R1324 R1332 R1341 R1348 R1361 R1375 R1416 R1425 R1434 R1444 R1451 R1460 R1467 R1483 R1492 R1500 R1508 R1516 R1529 R1539 R1547 R1554
81906640940	RESISTOR 75.0 Ohm .1% 805	64	EA	R881 R883 R885 R887 R889 R891 R893 R895 R897 R899 R900 R902 R904 R906 R909 R911 R913 R915 R917 R919 R921 R923 R925 R927 R929 R931 R932 R934 R936 R938 R941 R943 R1382-R1413
81906640950	RESISTOR 121 OHM .1% 0805	32	EA	R2 R6 R10 R14 R18 R22 R26 R30 R34 R38 R42 R46 R50 R54 R58 R62 R66 R70 R74 R78 R82 R86 R90 R94 R98 R102 R106 R110 R114 R118 R122 R126
81906641160	RESISTOR 392 OHM .1% 0603	27	EA	R657 R663 R666 R672 R675 R678 R681 R684 R687 R690 R693 R696 R699 R702 R708 R711 R714 R717 R723 R726 R732 R735 R738 R741 R744 R747 R750
81906641170	RESISTOR 412 OHM .1% 0603	32	EA	R656 R660 R662 R665 R669 R671 R674 R677 R680 R683 R686 R689 R692 R695 R698 R701 R705 R707 R710 R713 R716 R720 R722 R725 R729 R731 R734 R737 R740 R743 R746 R749
81906641180	RESISTOR 432 OHM .1% 603	5	EA	R659 R668 R704 R719 R728
81906650049	POT 50 OHM 1-TRN VERTL SM	32	EA	R129-R160

32X32 Wideband Analog Video Addendum

32X32 WB Analog Video Matrix Card - 81906518120 Continued:

81906650064 POT 100 OHM R/A 10% SMT	32	EA	R162 R164 R166 R168 R170 R172 R174 R176 R178 R180 R209 R212 R215 R218 R221 R224 R246 R249 R252 R255 R258 R261 R264 R267 R270 R273 R276 R279 R282 R285 R288 R291
81906650210 POT 1K VERT 1T 20% 4MM	1	EA	R504
81906650220 POT 50K VERT 1T 20% 4MM	32	EA	R187 R189 R191 R193 R195 R197 R199 R201 R203 R205 R207 R210 R213 R216 R219 R222 R244 R247 R250 R253 R256 R259
81906650220 POT 50K VERT 1T 20% 4MM	32	EA	R262 R265 R268 R271 R274 R277 R280 R283 R286 R289
81906700059 CAP 6.8PFD 50V CERAM,0805	1	EA	C399
81906700125 CAP 2.2PF CERAM 50V 0805	9	EA	C347 C349 C376 C401 C403 C406 C419 C445 C467
81906700133 CAP 3.3PF CERAM 50V 0805	6	EA	C384 C389 C394 C424 C480 C501
81906700210 CAP 1PF CERAMIC 2% 0805	9	EA	C376 C397 C422 C432 C455 C475 C486 C491 C792
81906700224 CAP 3.9PF CERAMIC 2% 0805	7	EA	C378 C386 C397 C403 C416 C445 C492
81906700232 CAP 8PF CERAMIC 2% 0805	1	EA	C488
81906700320 CAP 220PF NPO 0805 CERAMC	2	EA	C169 C171
81906700340 CAP 1.8PF CERAMC 0805 NPO	3	EA	C408 C464 C504
81906700390 CAP 1.2PF 50V NPO 0805	4	EA	C364 C390 C399 C460
81906700400 CAP 1.5PF 50V NPO 0805	8	EA	C351 C363 C392 C428 C443 C453 C469 C473
81906700490 CAP 5.6PF 50V CERM5% 0805	8	EA	C390 C419 C429 C455 C464 C475 C496 C506
81906700510 CAP 2.7PF 50V CERMC 0805	11	EA	C353 C359 C361 C367 C369 C378 C414 C416 C418 C434 C509
81906700540 CAP 0.01mf 50V CERM 0805	2	EA	C472 C516
81906700600 CAP 4.7PF 50V CERAMC 0805	5	EA	C408 C424 C440 C469 C511
81906710110 CAP 0.15MF 50V CERAM 1206	1	EA	C462

32X32 Wideband Analog Video Addendum

32X32 WB Analog Video Matrix Card - 81906518120 Continued:

81906730015	CAP 0.1MF 50V CERMIC 1206	298	EA	C1-C96 C113-C144 C161-C168 C170 C172 C174-C181 C183 C184-C200 C203-C213 C215-C219 C221 C222 C224 C226 C227 C230-C234 C237 C238 C240 C241 C247 C248 C250 C348 C350 C352 C354-C358 C360 C362 C365 C366 C368 C370 C372 C374 C375 C377 C379-C383 C385 C387 C388 C391 C393 C395 C396 C398 C400 C402 C404 C405 C407 C409-C413 C415 C417 C420 C421 C423 C425 C426 C427 C430 C431 C433 C435 C436 C437 C439 C441 C442 C444 C446 C447 C448 C449 C450 C451 C452
81906730015	CAP 0.1MF 50V CERMIC 1206	298	EA	C454 C456 C457 C459 C461 C465 C468 C470 C471 C474 C477 C479 C481 C482 C483 C484 C485 C487 C489 C490 C493 C495 C497 C500 C502 C503 C505 C507 C508 C510 C512 C513 C515 C549 C550
81906760160	CAP 1500PF 50V CERAM 1206	2	EA	C173 C182
81906770052	CAP 1MF 20V TANLUM SIZE A	3	EA	C201 C202 C551
81906770090	CAP 68uf 16V TANT D CASE	2	EA	C249 C466
81906770100	CAP 1mf 35 VOLTS TANTALUM	2	EA	C235 C236
81906800016	TRANS SMT,MMBT3904LT1	4	EA	Q1 Q38 Q39 Q40
81906800073	DIODE ZENER SMT,MMBZ5240B	2	EA	CR1 CR2
81906800099	TRANS SMT, MMBTH10L	32	EA	Q5-Q36
81906800107	TRANS SMT,MMBT3906L	4	EA	Q2-Q4 Q37
81906800230	DIODE MBR340 40V 3A SHTTK	6	EA	CR8-CR11 CR15 CR16
81906800390	ZENER MC15 15V 1.5W SMT	2	EA	CR13 CR18
81906800410	TRANSIENT SUPPRESSOR 33V	1	EA	CR12
81906800580	ZENER MBZ5242 12V SOT23	1	EA	CR17
81906810072	IC 3903 QUAD SPLY MONITOR	1	EA	U101
81906810106	IC LM1881 VID SYNC SEPART	2	EA	U78 U83
81906810171	IC SMT,74HC04 (SOIC-14)	7	EA	U71 U80 U96 U103 U113 U122 U127
81906810340	IC 74HC00 QUAD AND SO SMT	1	EA	U102
81906810510	IC 6264 8Kx8 SRAM 100ns	1	EA	U112
81906810550	IC 74HC245 OCTL TRANSCEVR	5	EA	U76 U81 U87 U89 U94
81906810570	IC 74HC373 OCTAL LATCH SO	1	EA	U105
81906810690	IC TL062 DUAL JFET OP S08	1	EA	U70
81906810890	IC RS485 RECVR/TRANSMITTR	1	EA	U69
81906810930	IC TL7705 MICRO SUPERVISR	1	EA	U85
81906810960	IC OPTOCOUPLER SMT 4N32	1	EA	U90

32X32 Wideband Analog Video Addendum

32X32 WB Analog Video Matrix Card - 81906518120 Continued:

81906810990 IC BUFFER HA4600 SO-8	64	EA	U65-U68 U72 U73 U75 U77 U79 U82 U84 U86 U88 U92 U93 U97 U110 U111 U114-U118 U123-U126 U128-U131 U134-U166
81906811030 IC 74HC273 OACTAL REGISTR	1	EA	U100
81906811040 IC 74HC138 3 TO 8 DECODER	2	EA	U95 U99
81906811060 IC XC3030A LCA	4	EA	U74 U91 U109 U121
81906811080 IC DS1210 NONVOL CNTL CHP	1	EA	U106
81906811220 IC OPA 658U OP-AMP WIDEBD	96	EA	U1-U64 U167-U198
81906920030 SWITCH DIP 4 POS GULLWING	1	EA	S1
81906940040 SOCKET 52 PIN PLCC SMT	1	EA	REF U98
81906950030 INDUCT 0.022Uh 10% SMT	32	EA	L5-L36
81906950040 BEAD INDUCTOR SMT	2	EA	B1 B2
CA25-1308 DOC 32x32 WB VIDEO MATRIX	0	EA	
DD52-1308 DOC 32x32 WB VIDEO MATRIX	0	EA	
NOT-PLACEDITEMS NOT PLACED ON EBOM	0	EA	R1 R5 R9 R13 R17 R21 R25 R29 R33 R37 R41 R45 R49 R53 R57 R61 R65 R69 R73 R77 R81 R85 R89 R93 R97 R101 R105 R109 R113 R117 R121 R125 R753 R755 R757 R759 R761 R763 R765 R767 R769 R771 R773 R775 R777 R779 R781 R783 R785 R787 R789 R791 R793 R795 R797 R799 R801 R803 R805 R807 R809 R811 R813 R815 C97-C112 C145-160 C251-C314 C371 C373 C429 C438 C440 C458 C463 C478 C488 C494 C496 C499 C506 C517 C518 C519
NOT-PLACEDITEMS NOT PLACED ON EBOM	0	EA	C520 C521 C522 C523 C524 C525 C526 C527 C528 C529 C530 C531 C532 C533 C534 C535 C536 C537 C538 C539 C540 C541 C542 C543 C544 C545 C546 C547 C548 TP1-TP3 U108
SC33-1308 DOC 32x32 WB VIDEO MATRIX	0	EA	

32X32 Wideband Analog Video Addendum

16X16 WB Crosspoint Card - 81906518110

81902105050 LABEL BARCODE 1.5"x0.25"	1	EA	
81902413070 PCB 16x16 WB CROSSPOINT	1	EA	
81902907940 CONN 2x8 2MM RECEPTACLE	1	EA	J5
81902907950 CONN 2x24 2MM RECEPTACLE	6	EA	J1-J4 J6 J7
81906600184 RESISTOR 10 OHM 5% 0805	24	EA	R208 R210 R226 R240 R242 R258 R308 R310 R326 R340 R342 R358 R408 R410 R426 R440 R442 R458 R508 R510 R526 R540 R542 R558
81906600903 RESISTOR 10K 5% 0805 SMT	72	EA	R201 R203 R213 R215 R217 R219 R222 R229 R231 R233 R235 R245 R247 R249 R251 R254 R261 R263 R301 R303 R313 R315 R317 R319 R322 R329 R331 R333 R335 R345 R347 R349 R351 R354 R361 R363 R401 R403 R413 R415 R417 R419 R422 R429 R431 R433 R435 R445 R447 R449 R451 R454 R461 R463 R501 R503 R513 R515 R517 R519 R522 R529 R531 R533 R535 R545 R547 R549 R551 R554 R561 R563
81906610472 RESISTOR 30.1 OHM 1% 0805	6	EA	R200 R216 R230 R232 R234 R532
81906610597 RESISTOR 40.2 OHM 1% 0805	2	EA	R300 R534
81906610680 RESISTOR 49.9 OHM 1% 0805	5	EA	R202 R302 R332 R348 R500
81906610761 RESISTOR 60.4 OHM 1% 0805	7	EA	R248 R316 R334 R400 R416 R432 R548
81906610830 RESISTOR 71.5 Ohm 1% 0805	7	EA	R262 R330 R448 R462 R502 R516 R562
81906610880 RESISTOR 80.6 OHM 1% 0805	4	EA	R362 R402 R430 R434
81906610940 RESISTOR 93.1 OHM 1% 0805	16	EA	R204 R220 R236 R252 R304 R320 R336 R352 R404 R420 R436 R452 R504 R520 R536 R552
81906610950 RESISTOR 95.3 OHM 1% 0805	1	EA	R530
81906617120 RESISTOR 10.0 OHM 1% 0603	24	EA	R207 R223 R224 R239 R255 R256 R307 R323 R324 R339 R355 R356 R407 R423 R424 R439 R455 R456 R507 R523 R524 R539 R555 R556
81906617350 RESISTOR 10.0K Ohm 1%0603	24	EA	R1 R5 R10 R14 R18 R22 R26 R30 R34 R38 R42 R46 R50 R54 R58 R62 R206 R238 R306 R338 R406 R438 R506 R538
81906617360 RESISTOR 47.5 Ohm 1% 0603	16	EA	R2 R6 R11 R15 R19 R23 R27 R31 R35 R39 R43 R47 R51 R55 R59 R63
81906630470 RESISTOR 30.1 Ohm 1% 1206	4	EA	R212 R228 R244 R246
81906630590 RESISTOR 40.2 Ohm 1% 1206	2	EA	R218 R544
81906630680 RESISTOR 49.9 OHM 1% 1206	1	EA	R546
81906630760 RESISTOR 60.4 Ohm 1% 1206	5	EA	R214 R250 R318 R350 R550
81906630830 RESISTOR 71.5 OHM 1% 1206	3	EA	R314 R346 R418

32X32 Wideband Analog Video Addendum

16X16 WB Crosspoint Card - 81906518110 Continued:

81906630880 RESISTOR 80.6 Ohm 1% 1206	5	EA	R414 R446 R450 R514 R518
81906630970 RESISTOR 100 Ohm 1% 1206	1	EA	R260
81906631010 RESISTOR 110 Ohm 1% 1206	1	EA	R460
81906631050 RESISTOR 121 Ohm 1% 1206	4	EA	R312 R328 R344 R360
81906631080 RESISTOR 130 Ohm 1% 1206	4	EA	R412 R428 R512 R560
81906631140 RESISTOR 150 Ohm 1% 1206	2	EA	R444 R528
81906640320 RESISTOR 1 OHM 5% 1210	2	EA	R580 R581
81906640770 RESISTOR 56.2 Ohm .1% 603	8	EA	R227 R259 R327 R359 R427 R459 R527 R559
81906640790 RESISTOR 169 Ohm .1% 0603	16	EA	R205 R221 R237 R253 R305 R321 R337 R353 R405 R421 R437 R453 R505 R521 R537 R553
81906640830 RESISTOR 357 Ohm .1% 0603	16	EA	R209 R225 R241 R257 R309 R325 R341 R357 R409 R425 R441 R457 R509 R525 R541 R557
81906640840 RESISTOR 25.5 Ohm .1% 805	3	EA	R567 R575 R579
81906640850 RESISTOR 26.1 Ohm .1% 805	5	EA	R564 R565 R568 R571 R576
81906640860 RESISTOR 27.4 Ohm .1% 805	6	EA	R566 R569 R570 R572 R574 R577
81906640870 RESISTOR 28.7 Ohm .1% 805	2	EA	R573 R578
81906640880 RESISTOR 49.9 Ohm .1% 805	3	EA	R3 R36 R52
81906640890 RESISTOR 51.1 Ohm .1% 805	5	EA	R12 R16 R20 R32 R64
81906640910 RESISTOR 53.6 Ohm .1% 805	6	EA	R7 R24 R28 R40 R48 R60
81906640920 RESISTOR 56.2 Ohm .1% 805	10	EA	R44 R56 R211 R243 R311 R343 R411 R443 R511 R543
81906641180 RESISTOR 432 OHM .1% 603	16	EA	R98 R100 R102 R104 R106 R108 R110 R112 R114 R116 R118 R120 R122 R124 R126 R128
81906641200 RESISTOR 261 OHM .1% 0603	16	EA	R99 R101 R103 R105 R107 R109 R111 R113 R115 R117 R119 R121 R123 R125 R127 R129
81906700117 CAP 15PF 50V CERAM 0805	16	EA	C202 C210 C218 C226 C302 C310 C318 C326 C402 C410 C418 C426 C502 C510 C518 C526
81906730015 CAP 0.1MF 50V CERMIC 1206	112	EA	C1 C4 C5 C8 C9 C12 C13 C16 C17 C20 C21 C24 C25 C28 C29 C32 C200 C201 C204-C209 C212-C215 C217 C220-C225 C228 C229-C231 C300 C301 C304-C307 C309 C312-C317 C320-C325 C328 C329-C331 C400 C401 C404-C407 C409 C420-C425 C428 C429-C431 C500 C501 C504-C507 C509 C512-C515 C517 C520 C521-C525 C528-C531 C412-C415 C417
81906770070 CAP 33MF 6.3V TANT SIZE C	6	EA	C216 C308 C408 C416 C508 C516
81906810171 IC SMT,74HC04 (SOIC-14)	3	EA	U625 U626 U627
81906810840 IC DUAL 2 TO 4 LINE DCODR	8	EA	U617-U624

32X32 Wideband Analog Video Addendum

16X16 WB Crosspoint Card - 81906518110 Continued:

81906810920 IC HA4404 4x1 CROSSPOINT	80	EA	U317 U318 U320 U322 U323 U417 U418 U420 U422 U423 U517 U518 U520 U522 U523 U200-U202 U204-U208 U210-U214 U216
81906810920 IC HA4404 4x1 CROSSPOINT	80	EA	U217-U220 U222 U223 U300-U302 U304-U308 U310-U314 U316 U319 U400-U402 U404-U408 U410-U414 U416 U419 U500-U502 U504-U508 U510-U514 U516 U519
81906811220 IC OPA 658U OP-AMP WIDEBD	32	EA	U1-U16 U203 U209 U215 U221 U303 U309 U315 U321 U403 U409 U415 U421 U503 U509 U515 U521
81906950050 INDUCTOR 1812 4.5x3.2x1.5	2	EA	BEAD1 BEAD2
CA25-1307 DOC 16x16 WB CROSSPOINT	0	EA	
DD52-1307 DOC 16x16 WB CROSSPOINT	0	EA	
NOT-PLACED ITEMS NOT PLACED ON EBOM	0	EA	C203 C211 C219 C227 C303 C311 C319 C327 C403 C411 C419 C427 C503 C511 C519 C527
SC33-1307 DOC 16x16 WB CROSSPOINT	0	EA	

32X32 Wideband Analog Video Addendum

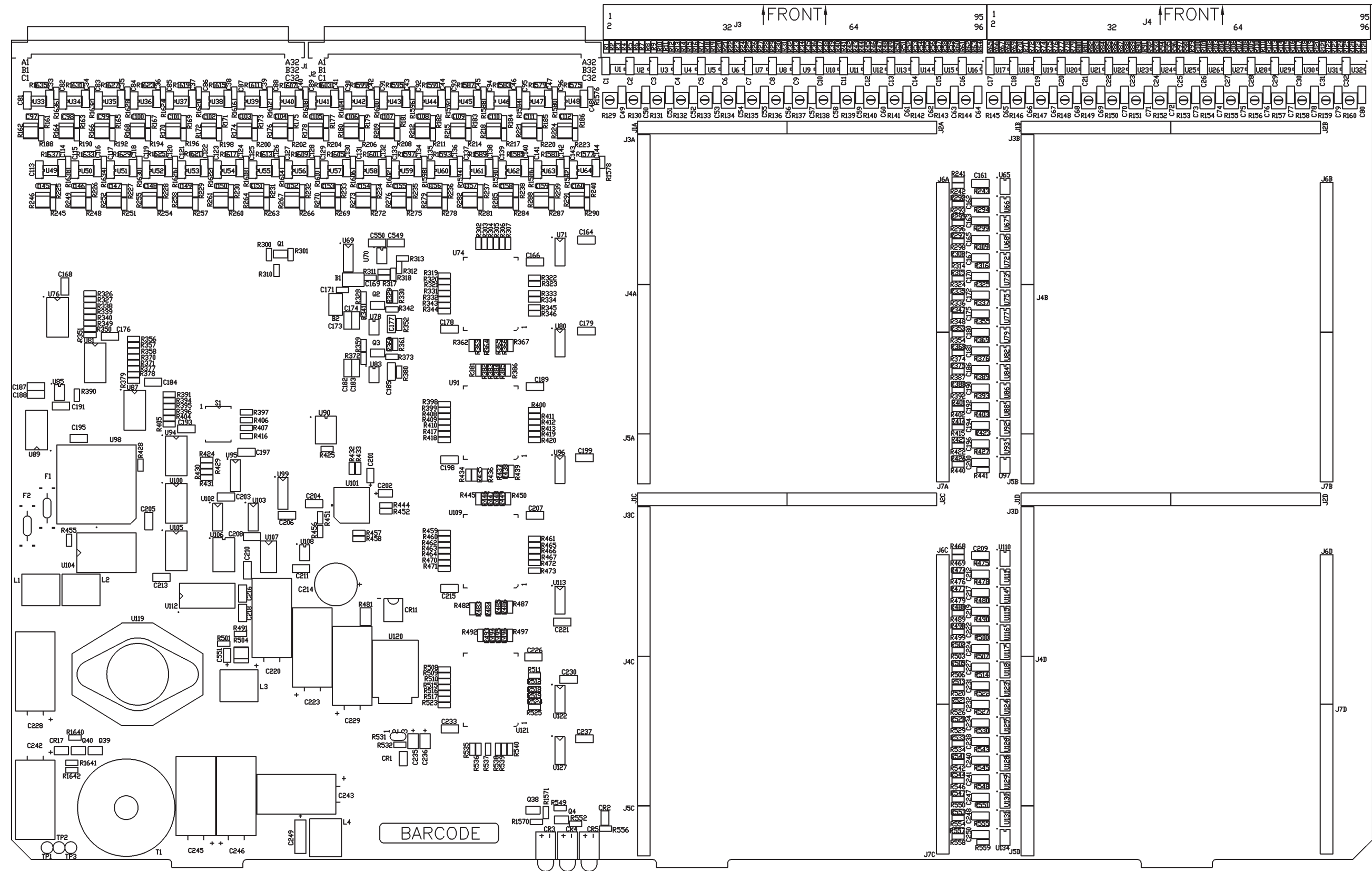
Schematics

This section contains the schematic diagrams and parts location diagrams for the 32X32 Wideband Analog Video Card and for the associated 16X16 Wideband Crosspoint Cards. Please refer to this section when troubleshooting the equipment or replacing defective parts.

<u>Description</u>	<u>Dwg No.</u>	<u>Page No.</u>
32X32 WB Analog Video Matrix Card	CA25-1308	15
	SC33-1308	17
16X16 WB Crosspoint Card	CA25-1307	33
	SC33-1307	35

32X32 Wideband Analog Video Addendum

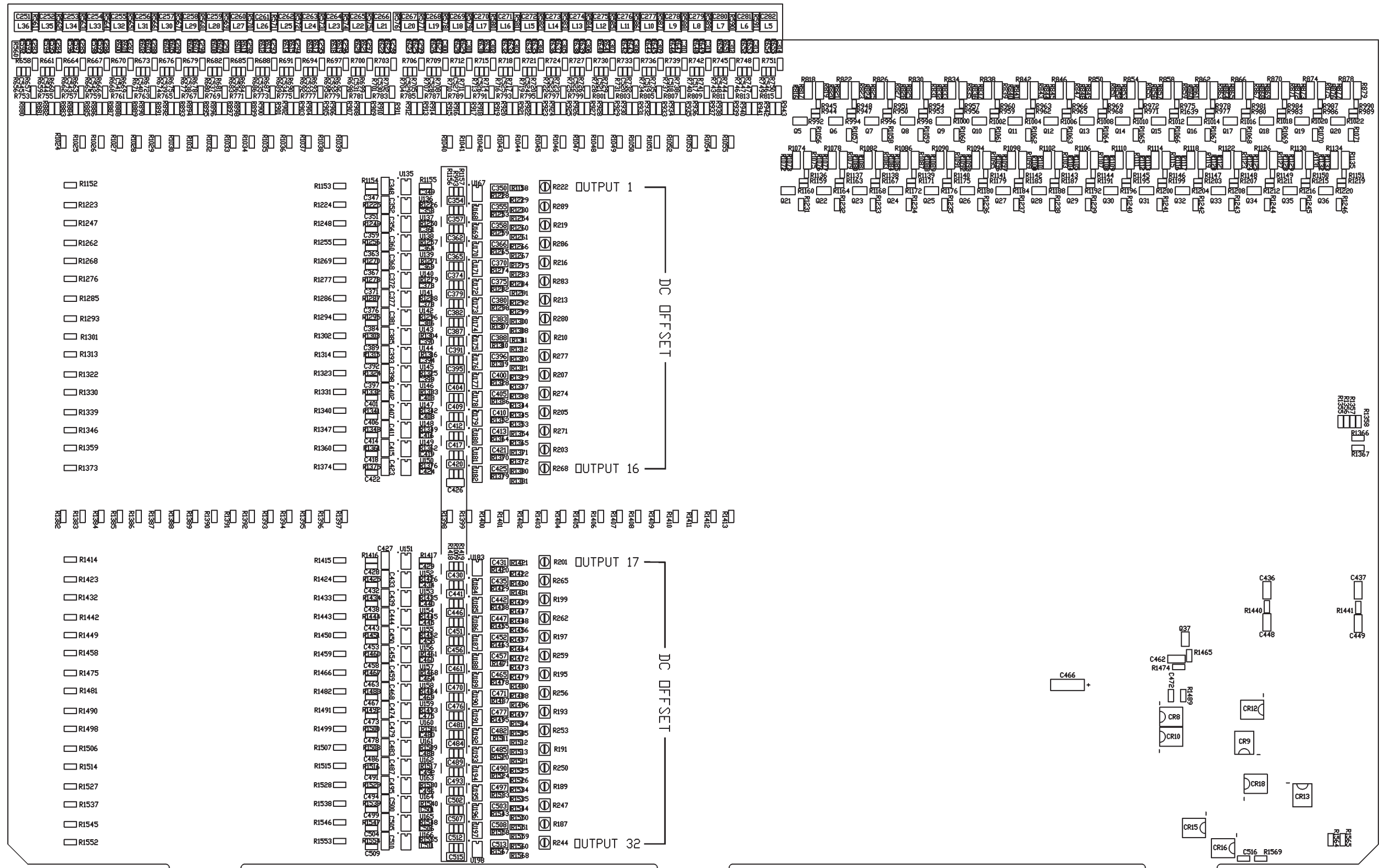
COMPONENT SIDE (LAYER 1 OF 10)



Component Assembly (Sheet 1 of 2) • 32X32 WB Analog Video Matrix Card • CA25-1308

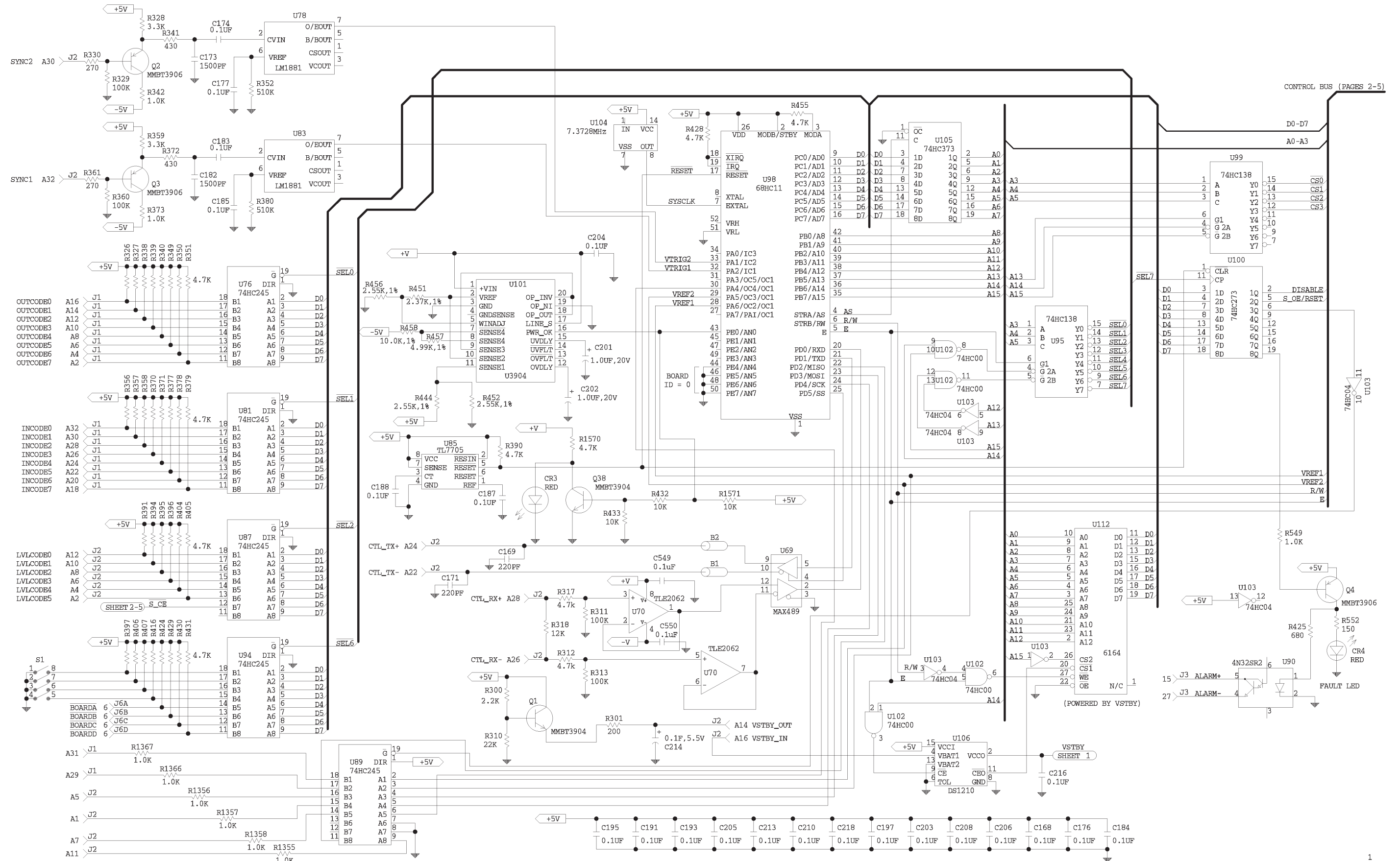
32X32 Wideband Analog Video Addendum

SOLDER SIDE (LAYER 10 OF 10)



Component Assembly (Sheet 2 of 2) • 32X32 WB Analog Video Matrix Card • CA25-1308

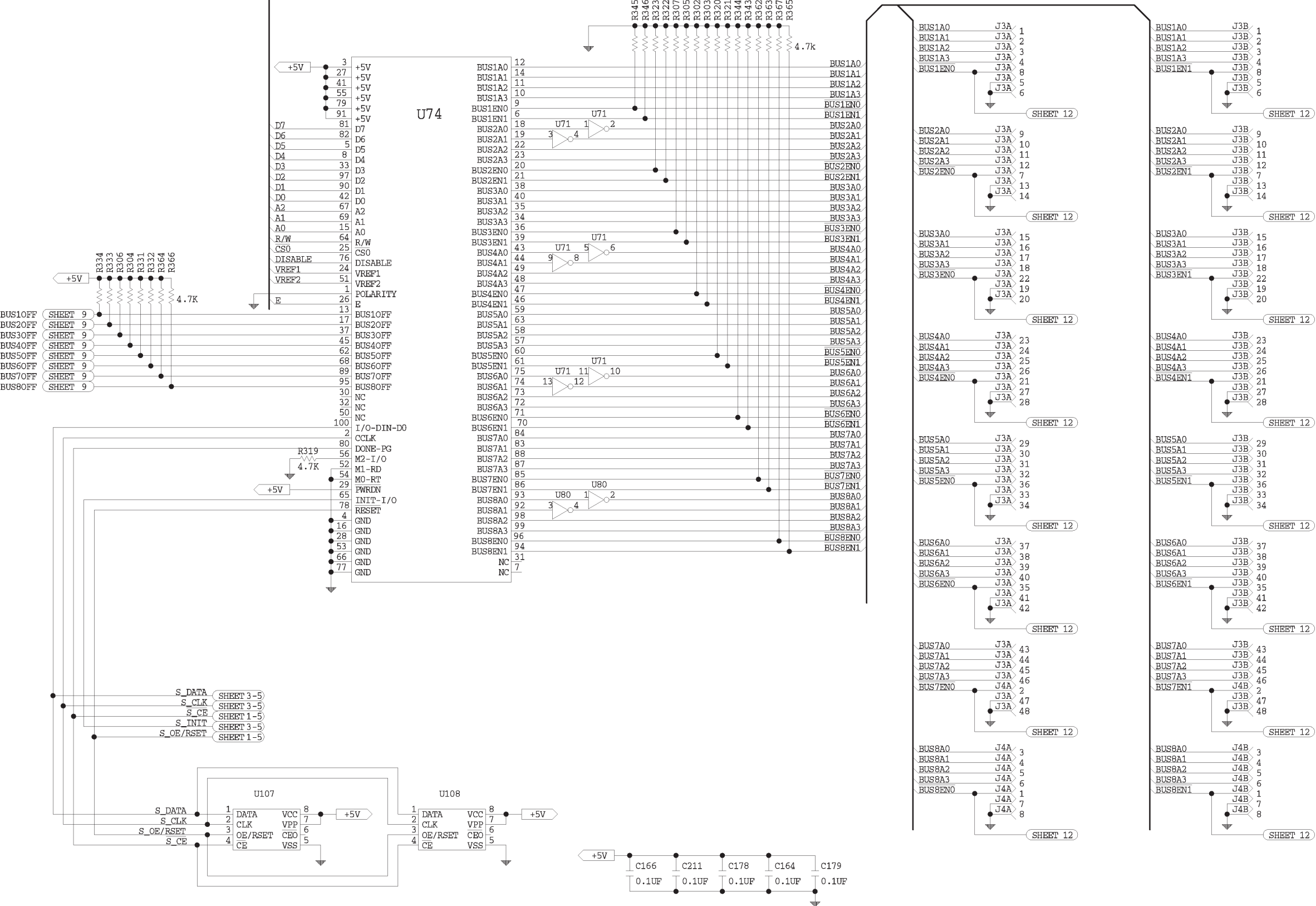
32X32 Wideband Analog Video Addendum



Schematic (Sheet 1 of 16) • 32X32 WB Analog Video Matrix Card • SC33-1308

32X32 Wideband Analog Video Addendum

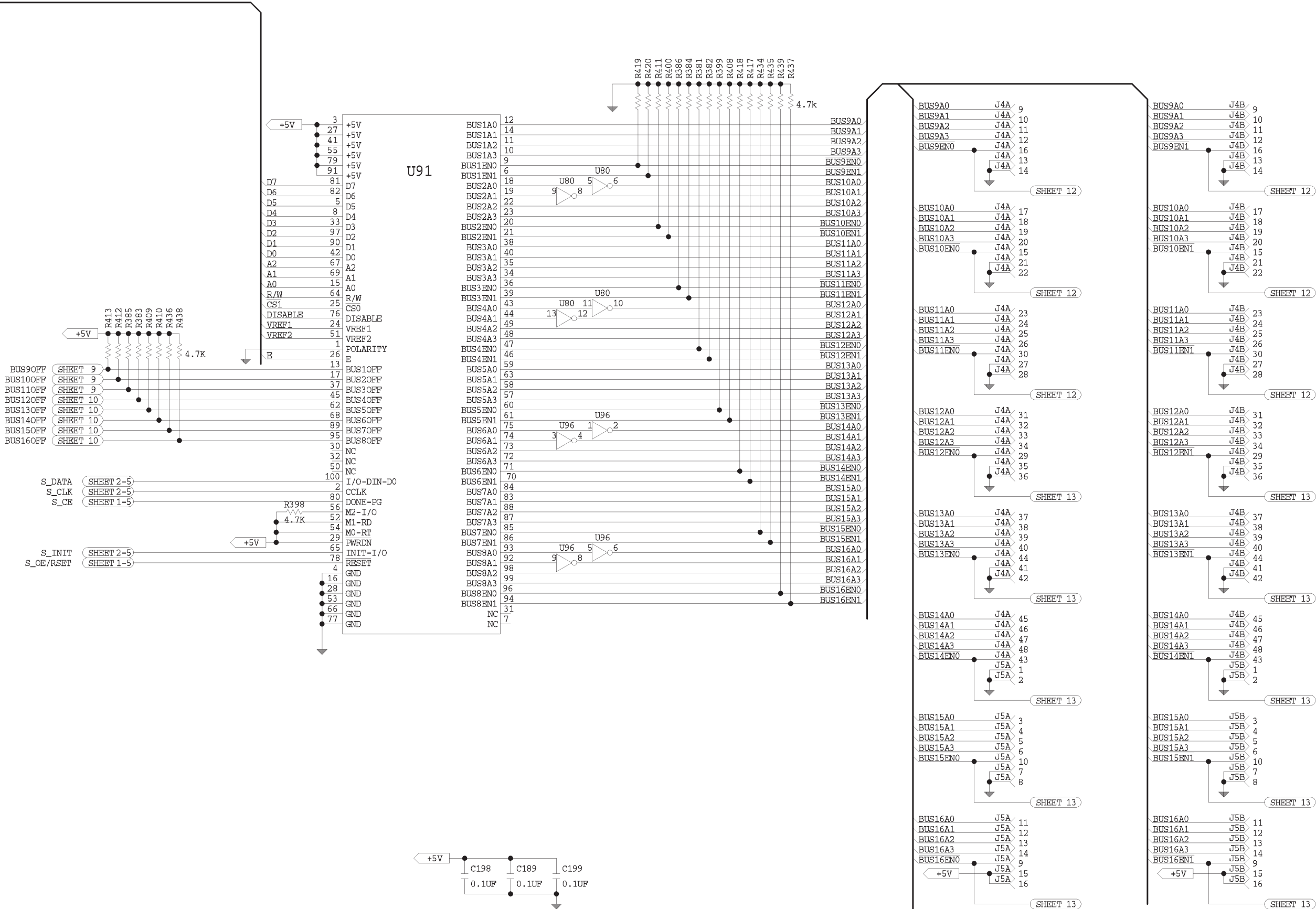
CONTROL BUS (PAGE 1)



Schematic (Sheet 2 of 16) • 32X32 WB Analog Video Matrix Card • SC33-1308

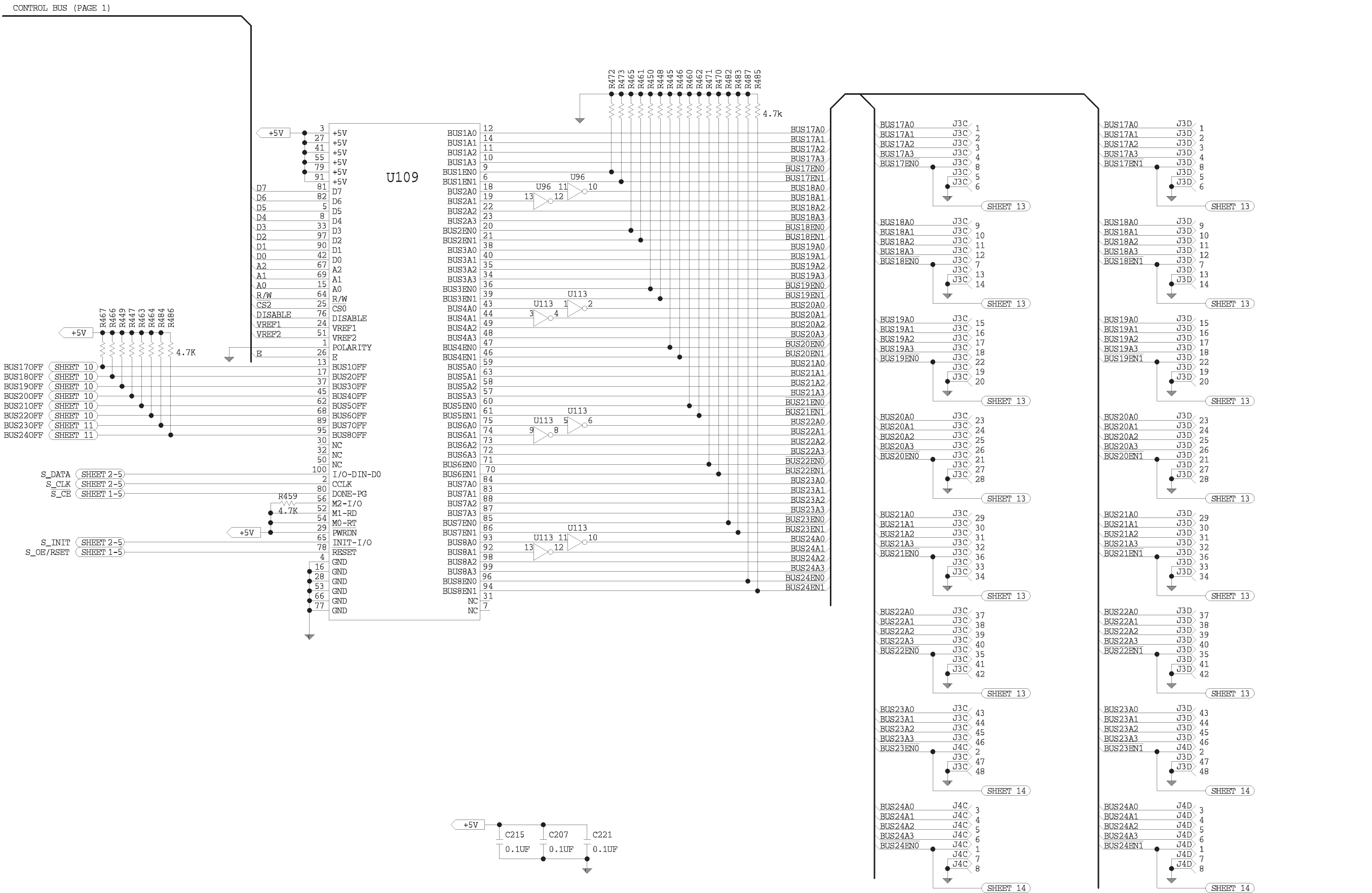
32X32 Wideband Analog Video Addendum

CONTROL BUS (PAGE 1)



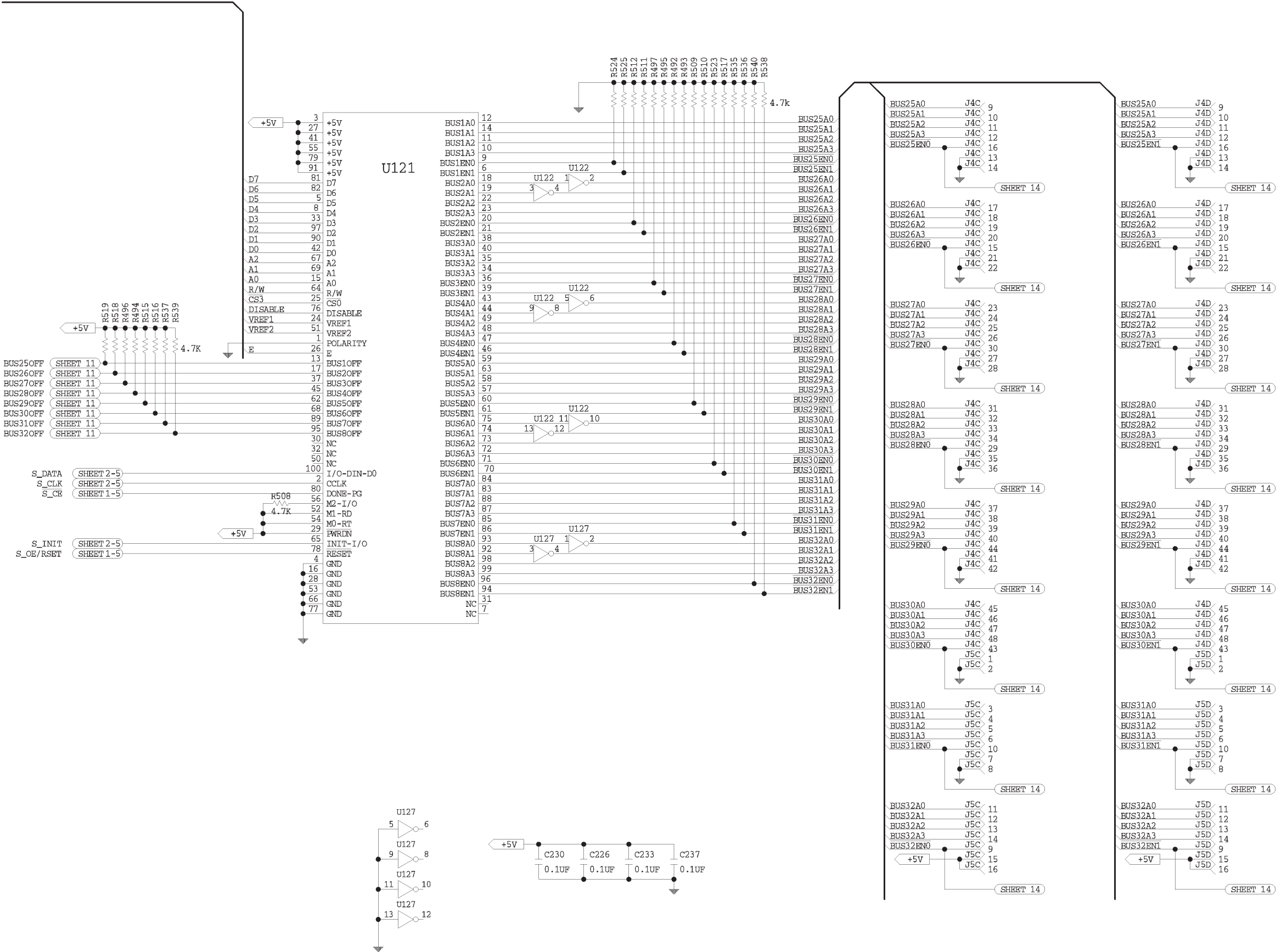
Schematic (Sheet 3 of 16) • 32X32 WB Analog Video Matrix Card • SC33-1308

32X32 Wideband Analog Video Addendum



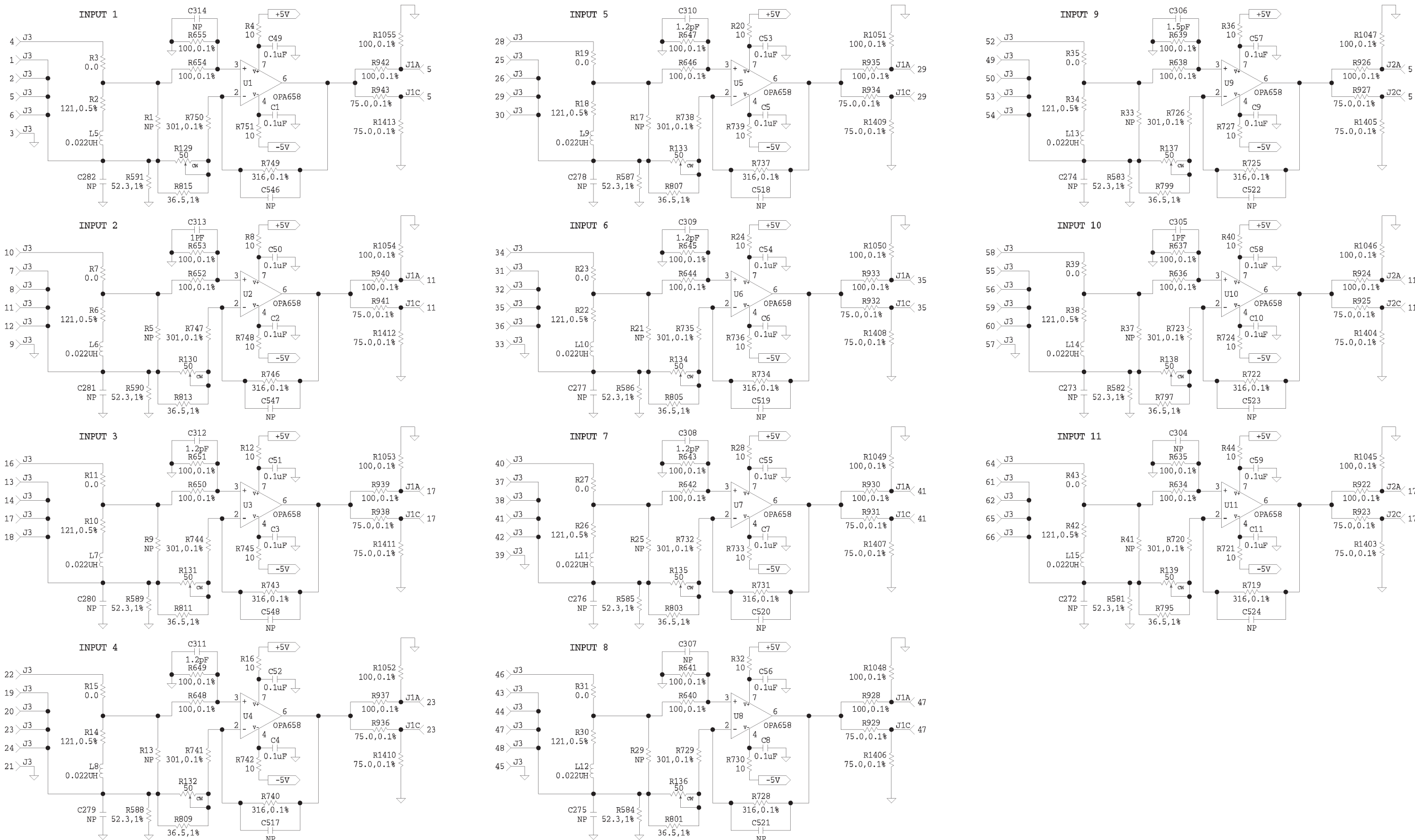
32X32 Wideband Analog Video Addendum

CONTROL BUS (PAGE 1)



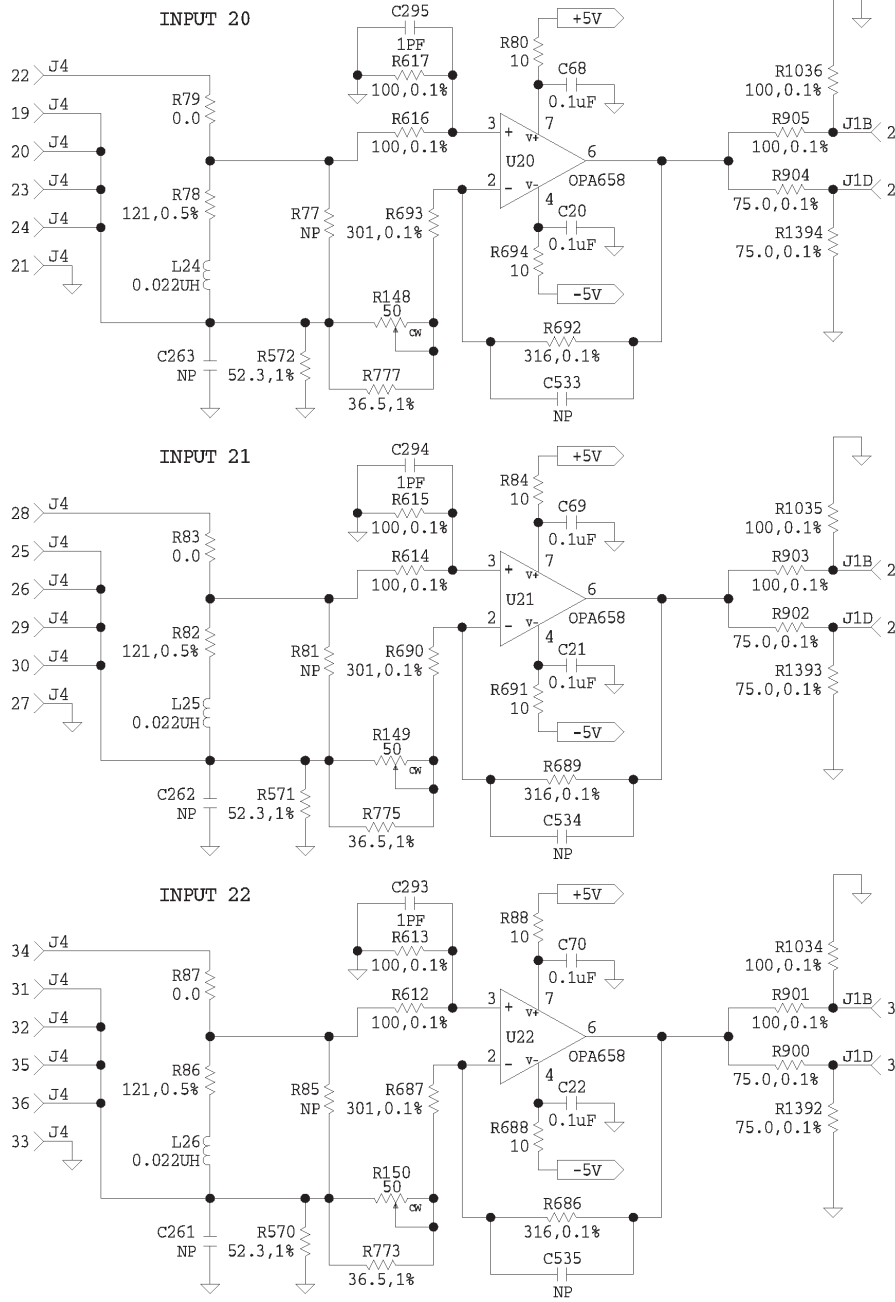
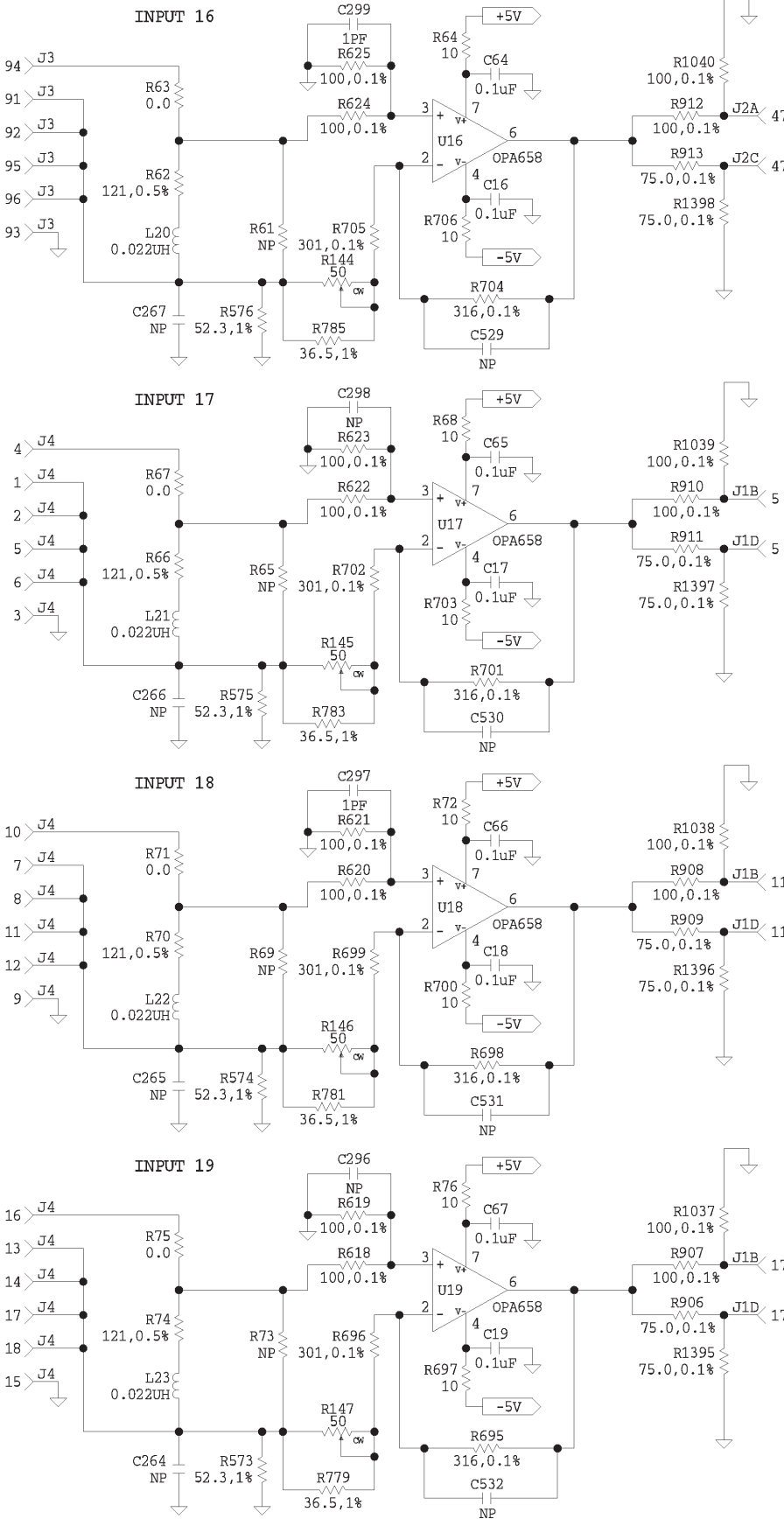
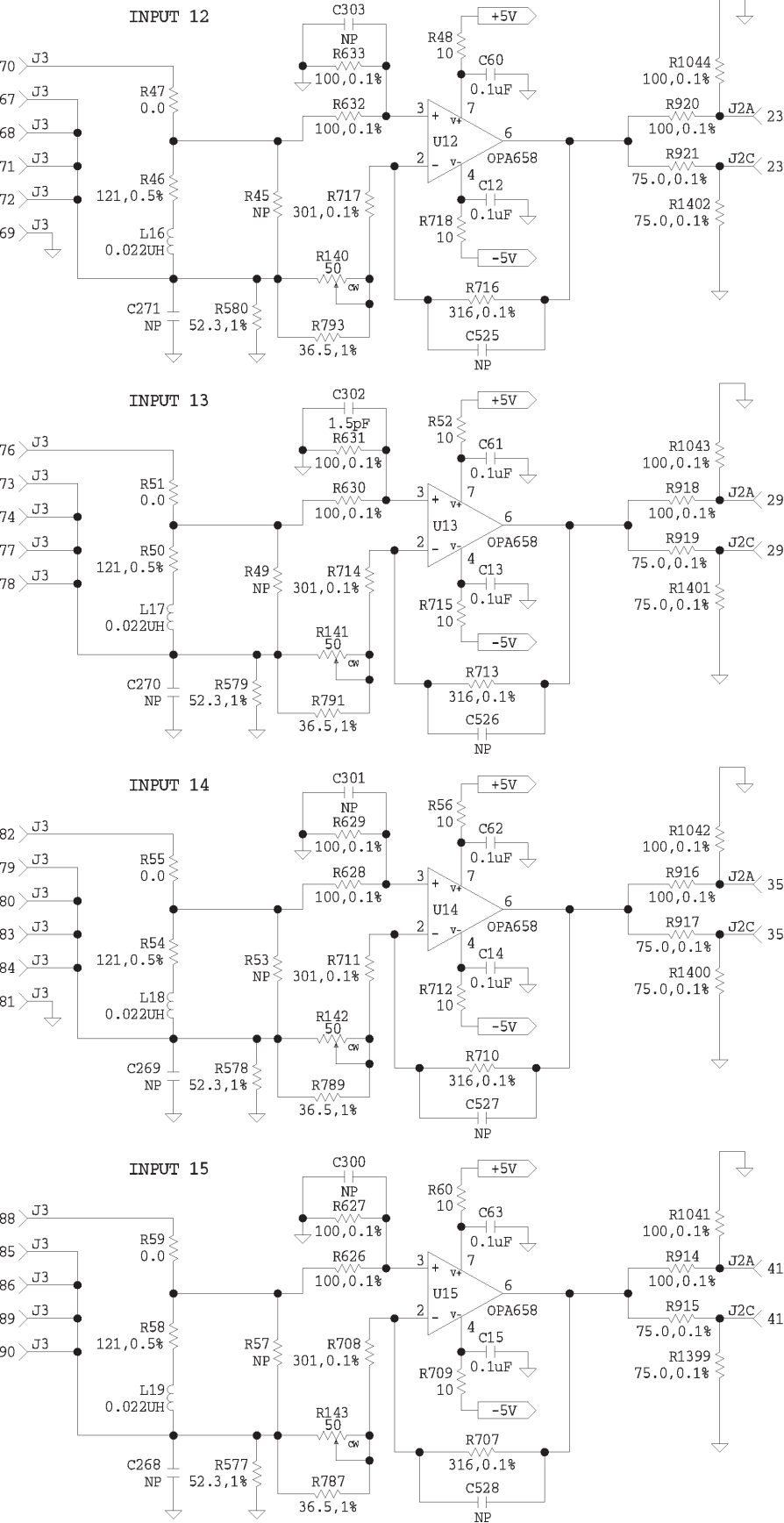
Schematic (Sheet 5 of 16) • 32X32 WB Analog Video Matrix Card • SC33-1308

32X32 Wideband Analog Video Addendum



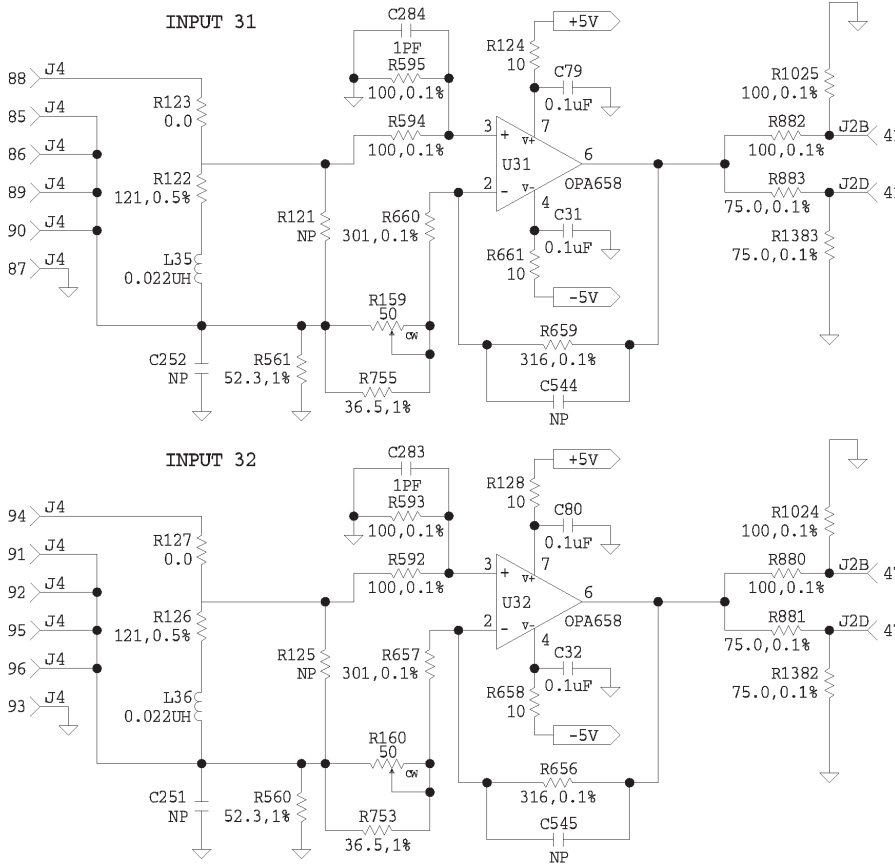
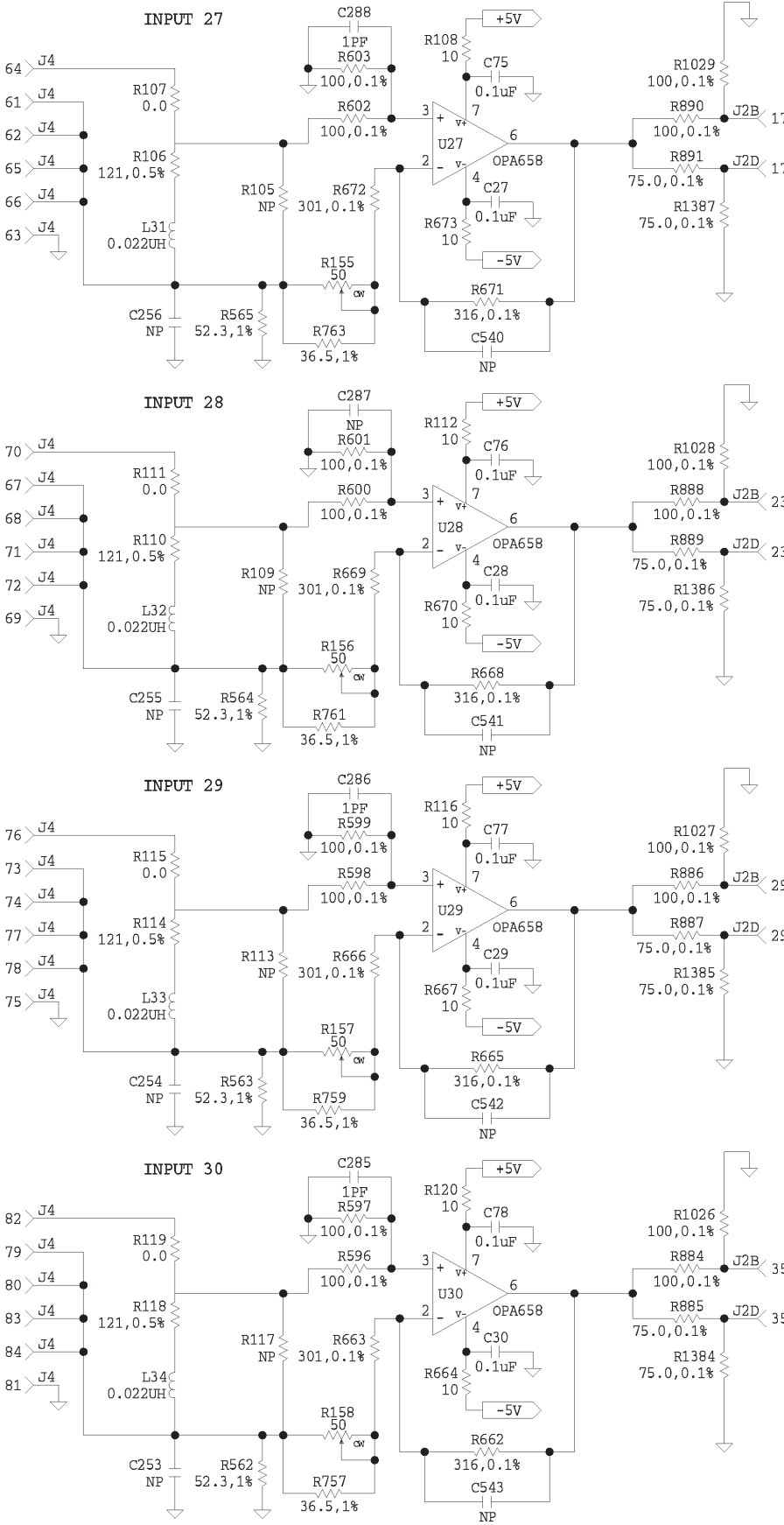
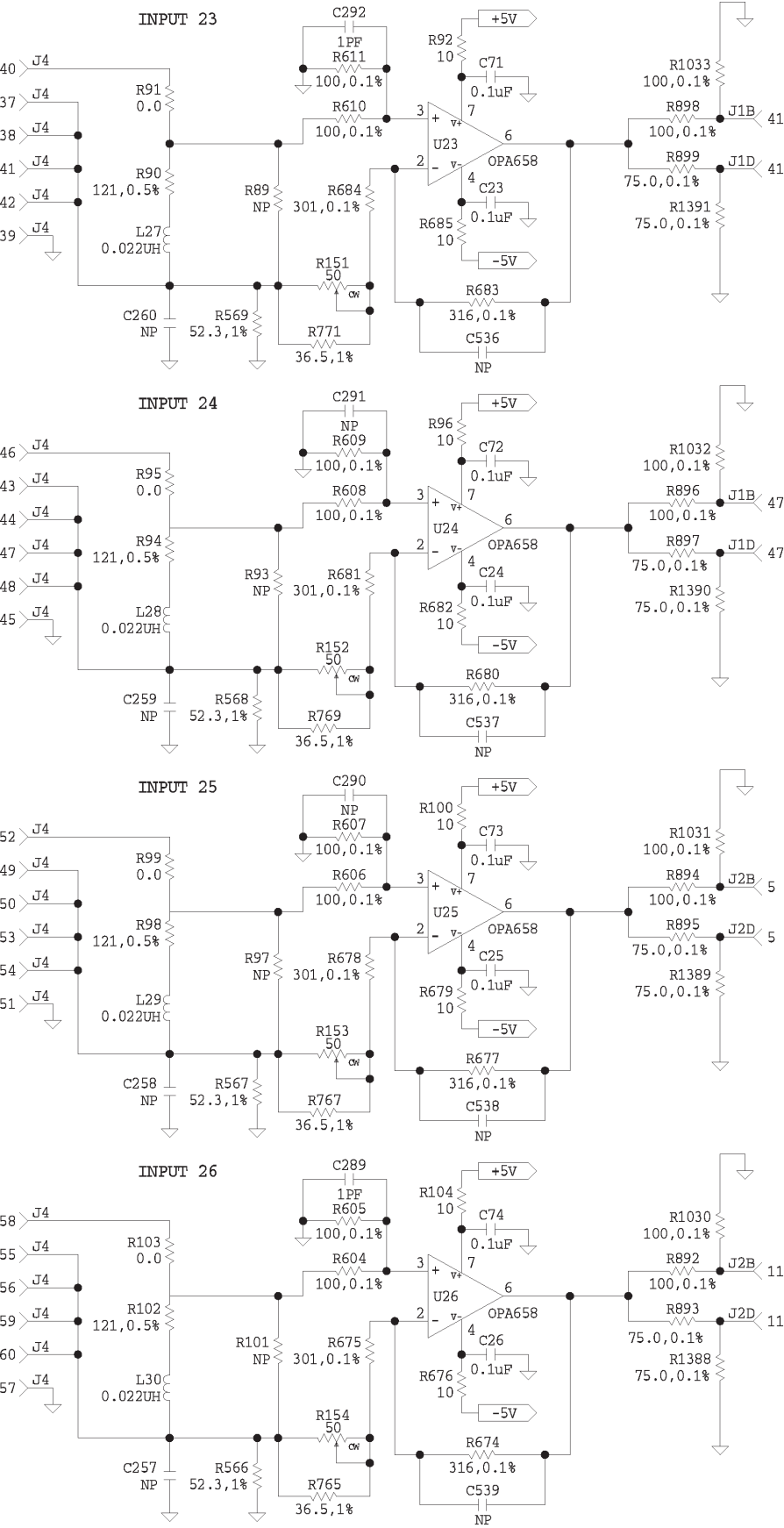
Schematic (Sheet 6 of 16) • 32X32 WB Analog Video Matrix Card • SC33-1308

32X32 Wideband Analog Video Addendum



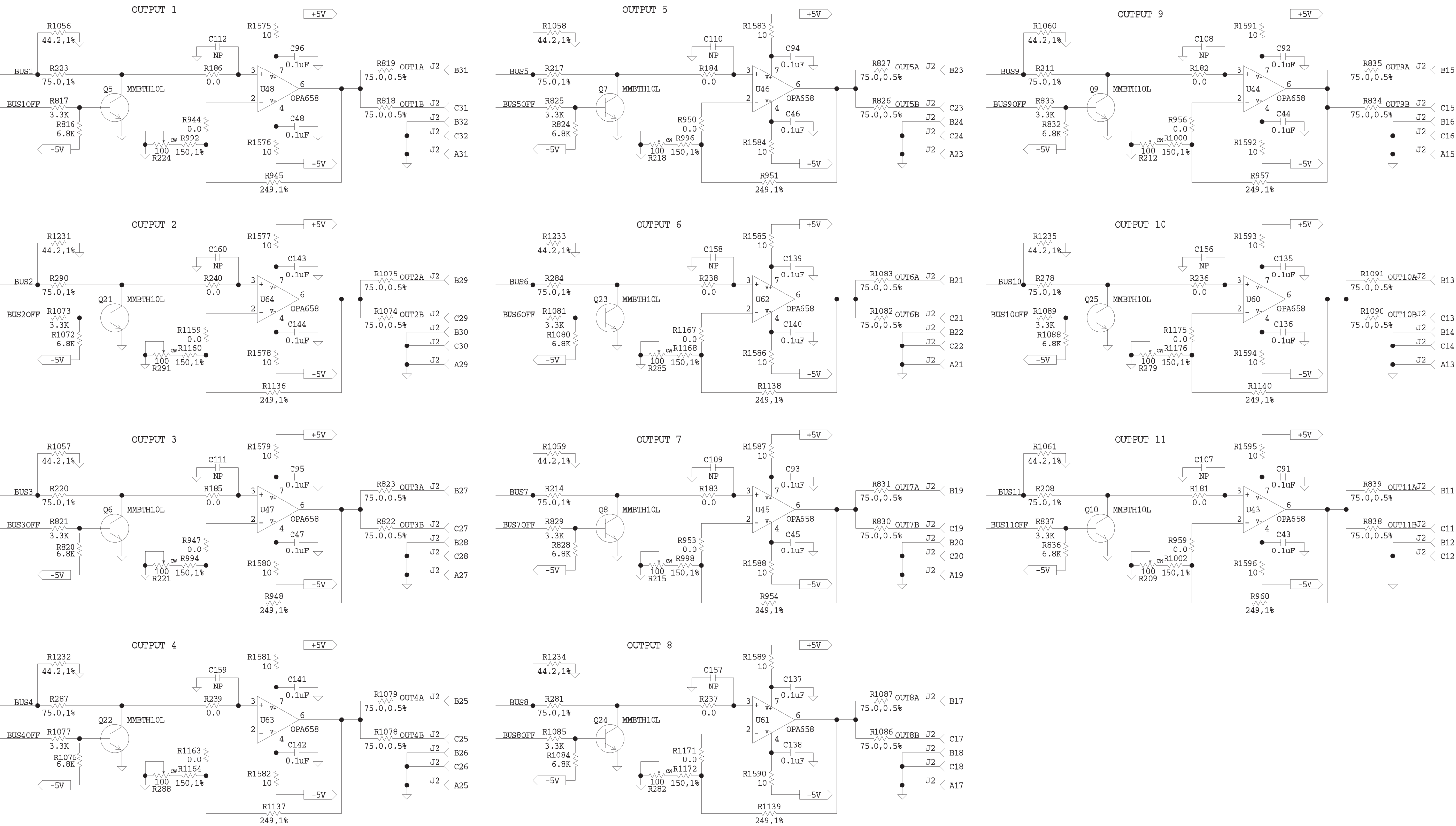
Schematic (Sheet 7 of 16) • 32X32 WB Analog Video Matrix Card • SC33-1308

32X32 Wideband Analog Video Addendum



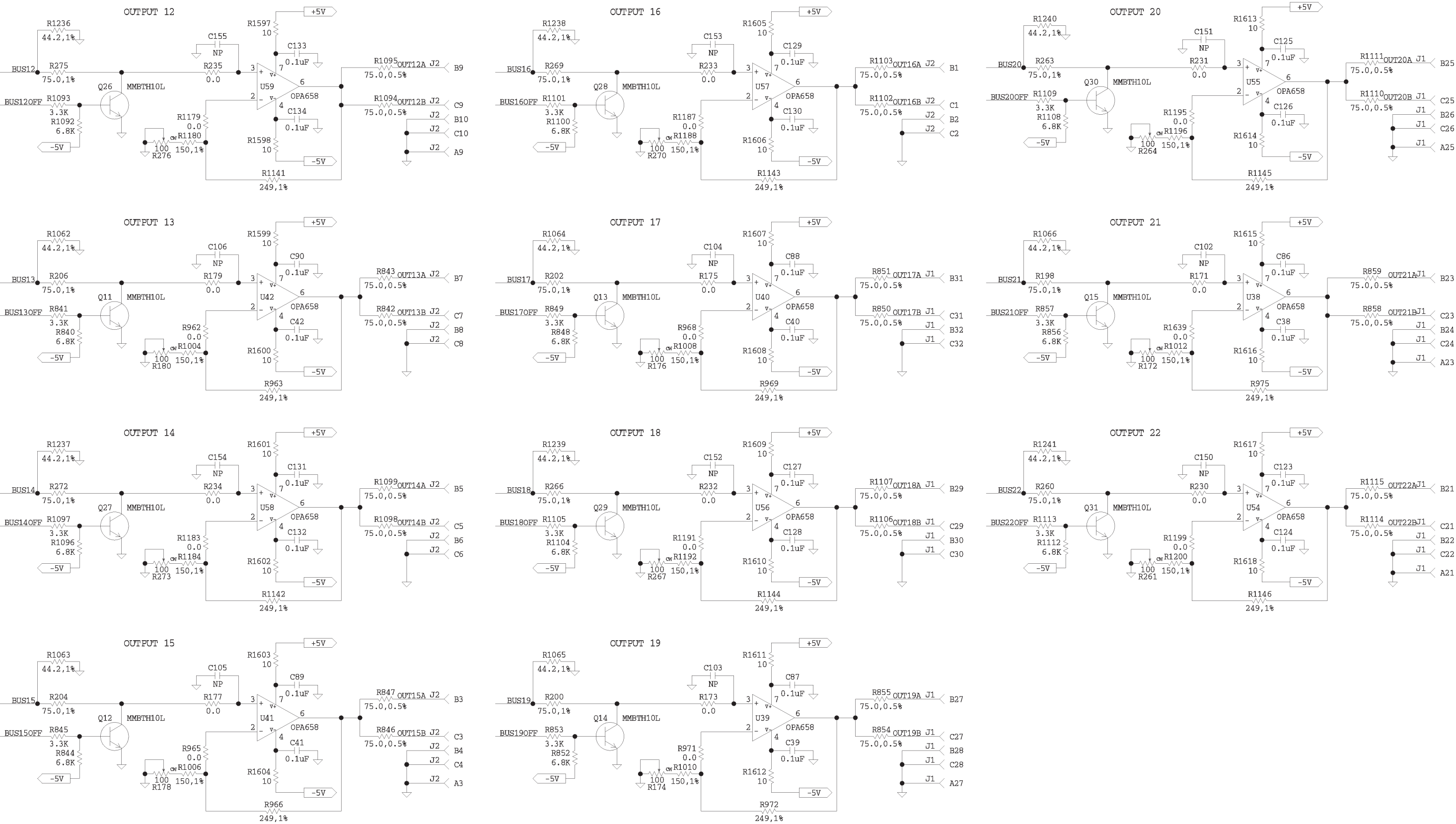
Schematic (Sheet 8 of 16) • 32X32 WB Analog Video Matrix Card • SC33-1308

32X32 Wideband Analog Video Addendum



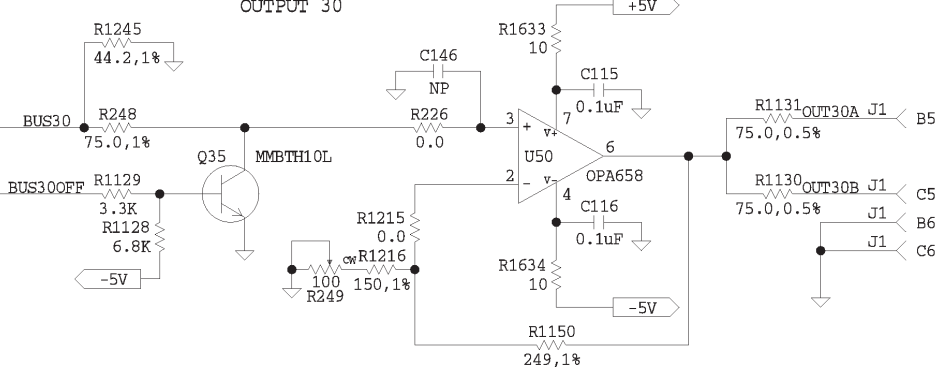
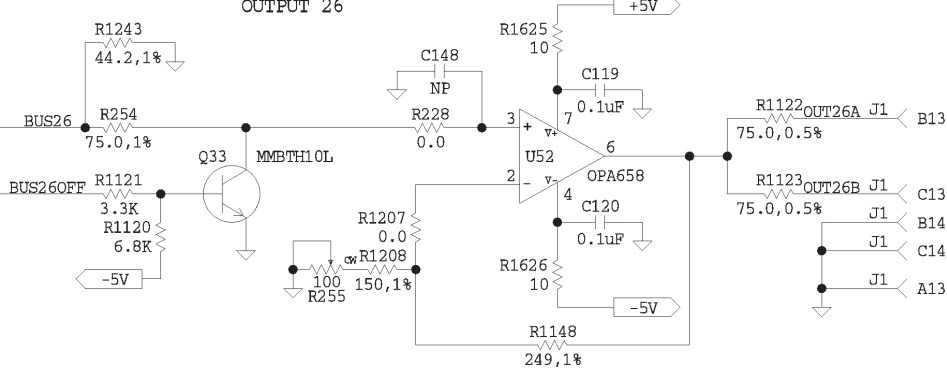
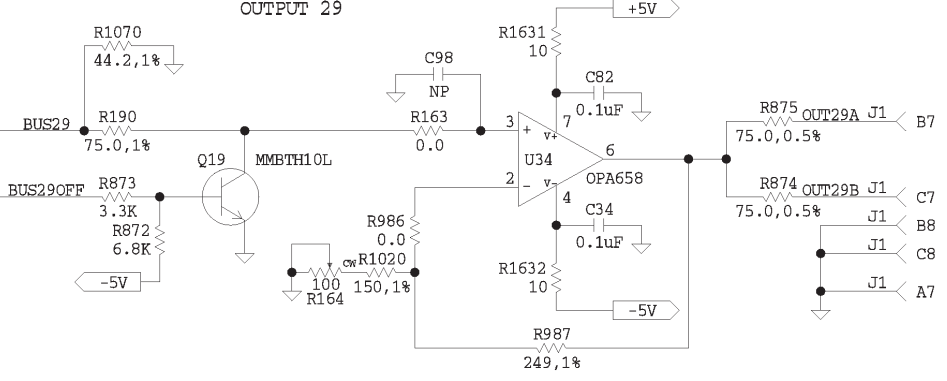
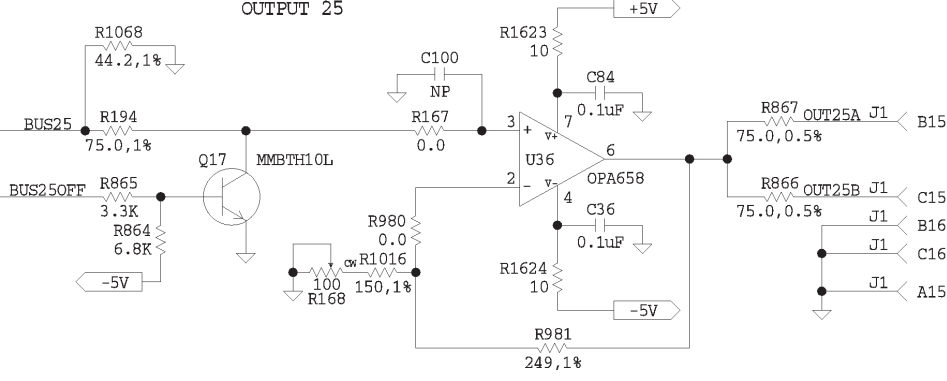
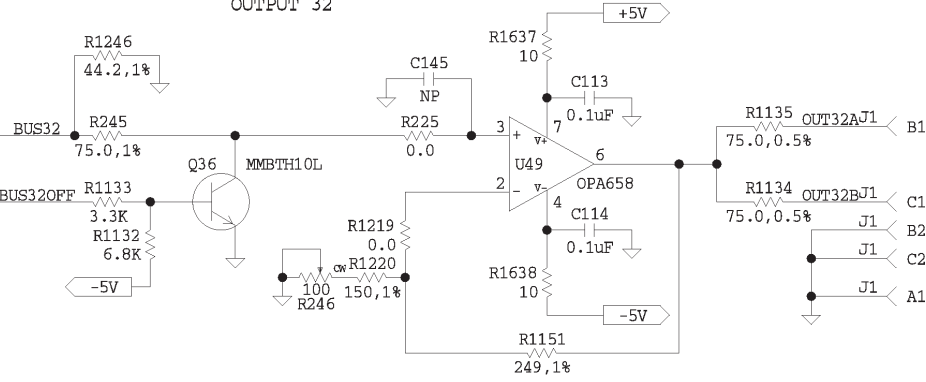
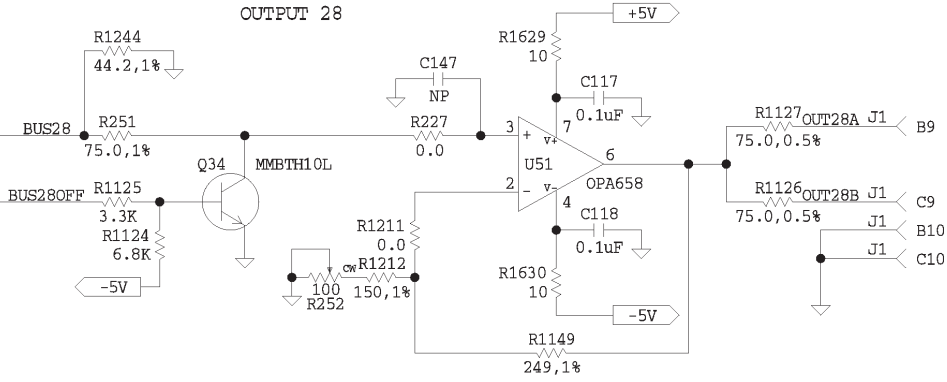
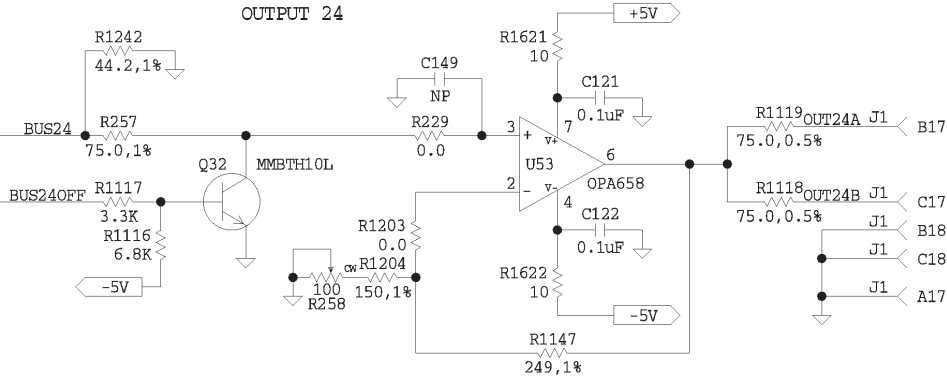
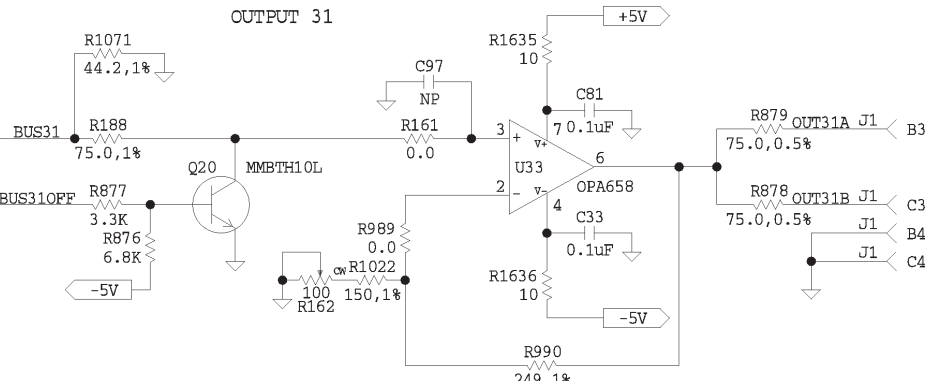
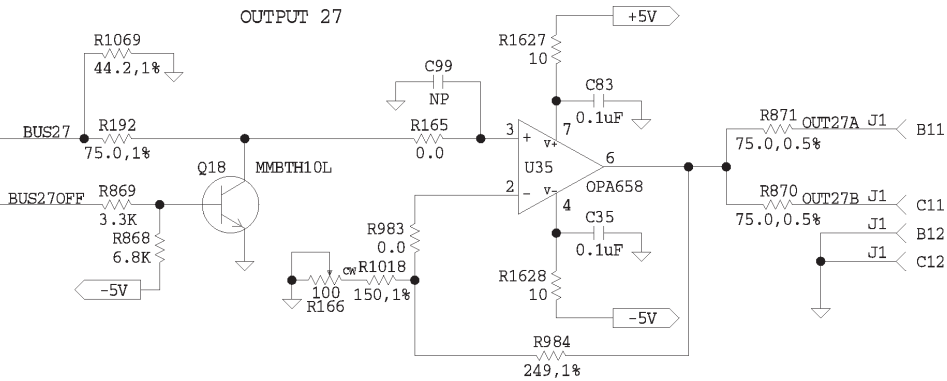
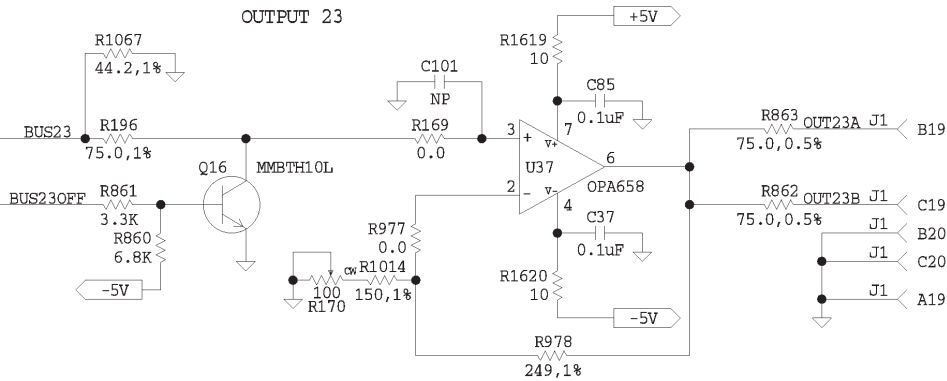
Schematic (Sheet 9 of 16) • 32X32 WB Analog Video Matrix Card • SC33-1308

32X32 Wideband Analog Video Addendum



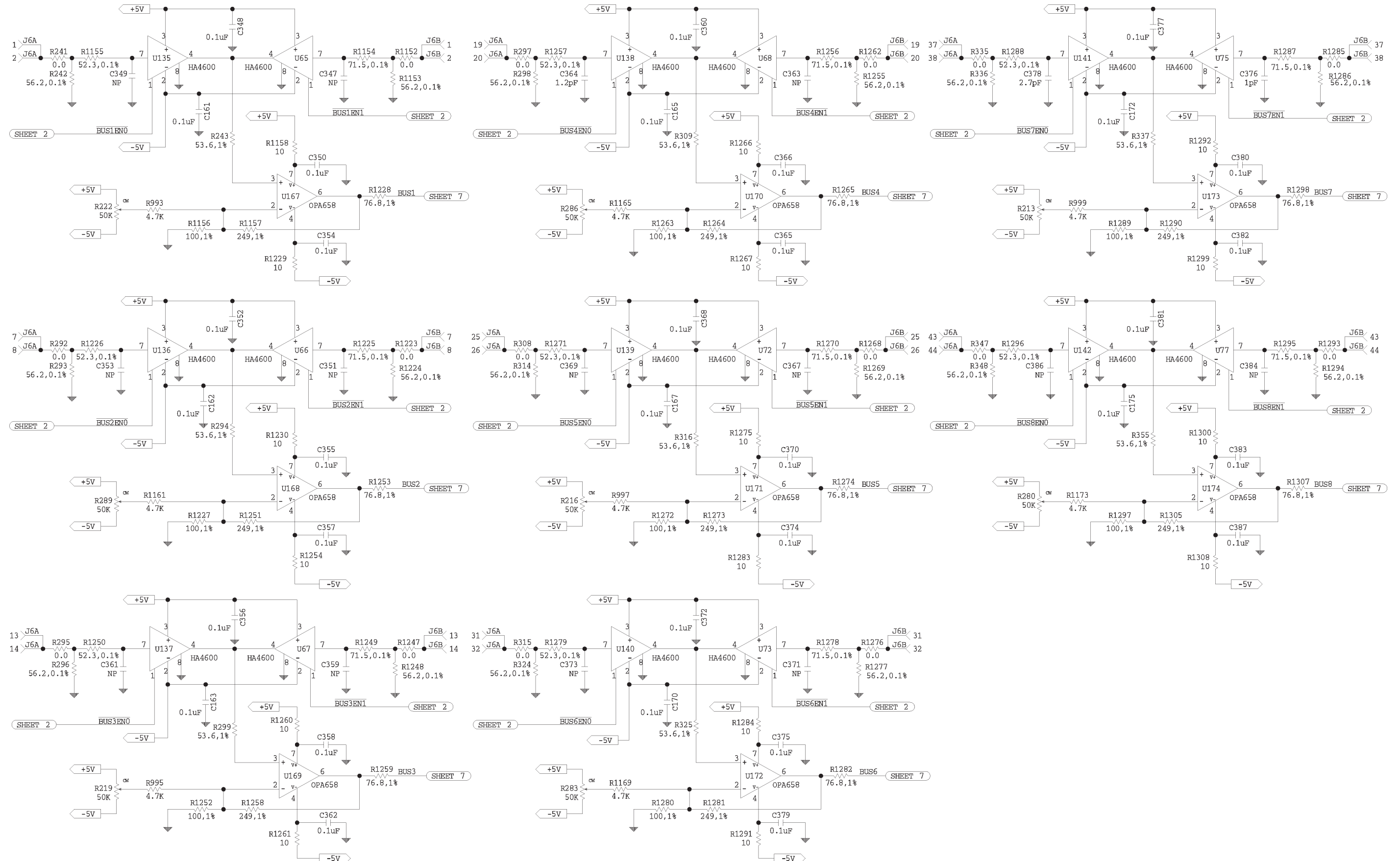
Schematic (Sheet 10 of 16) • 32X32 WB Analog Video Matrix Card • SC33-1308

32X32 Wideband Analog Video Addendum



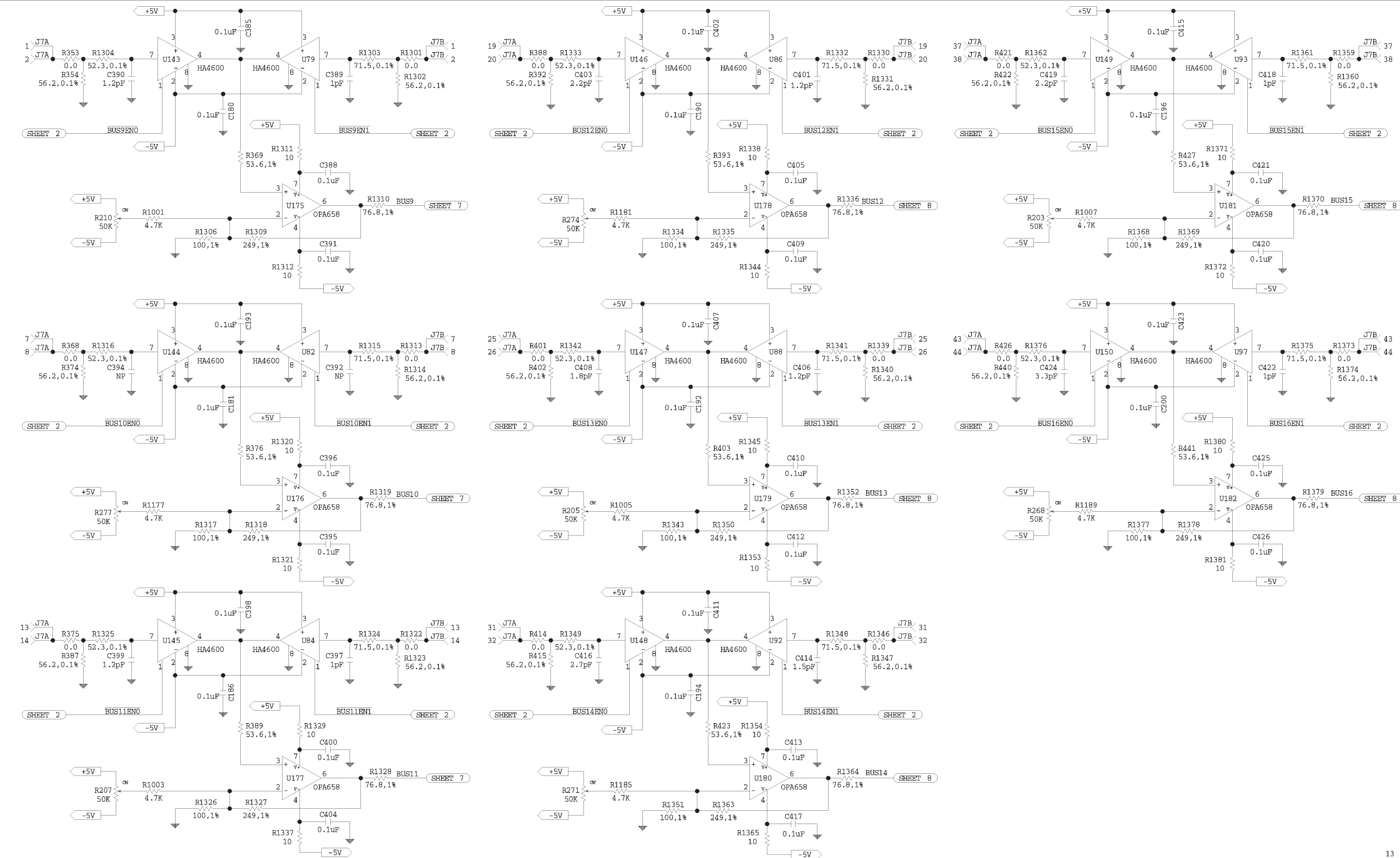
Schematic (Sheet 11 of 16) • 32X32 WB Analog Video Matrix Card • SC33-1308

32X32 Wideband Analog Video Addendum



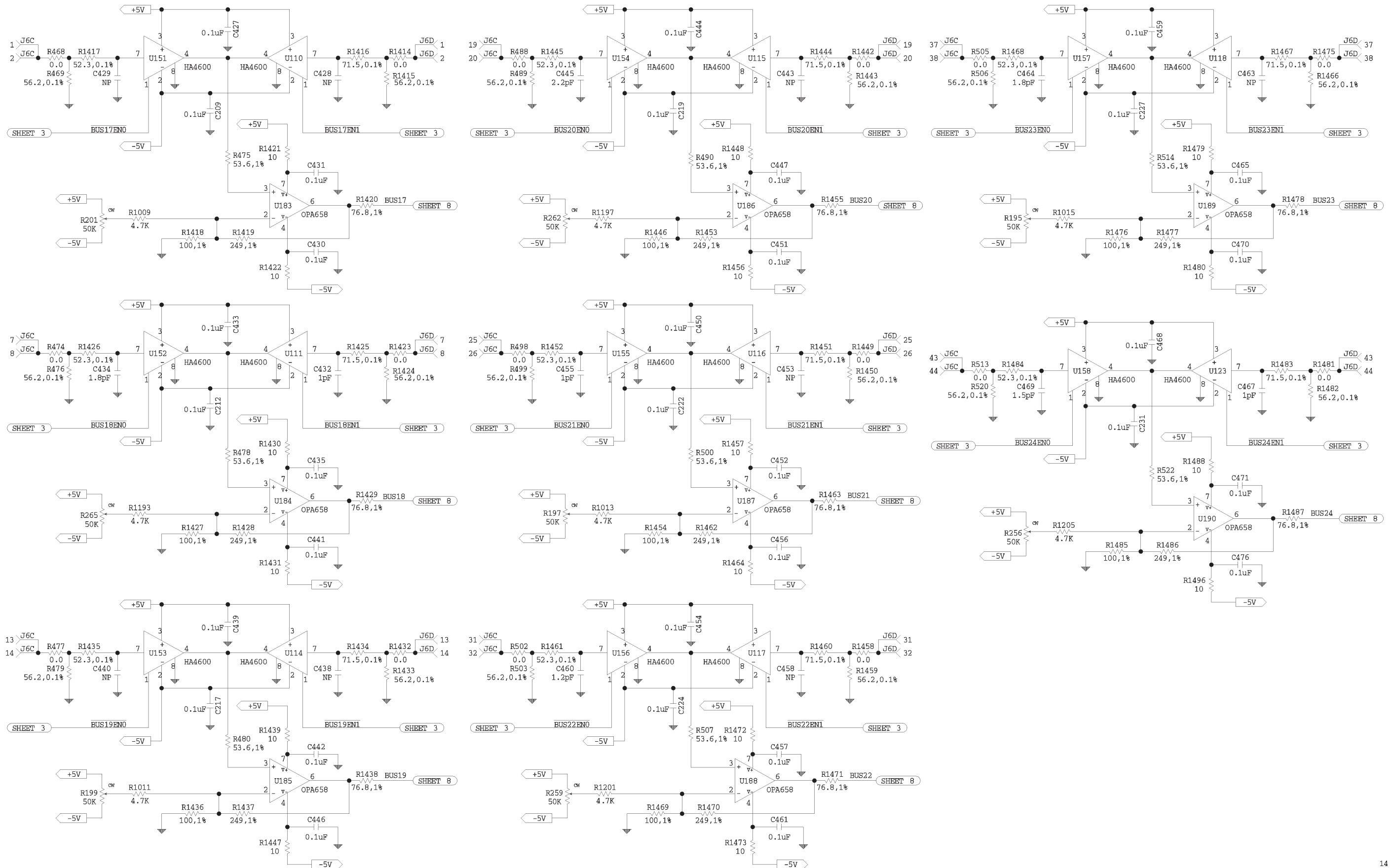
Schematic (Sheet 12 of 16) • 32X32 WB Analog Video Matrix Card • SC33-1308

32X32 Wideband Analog Video Addendum

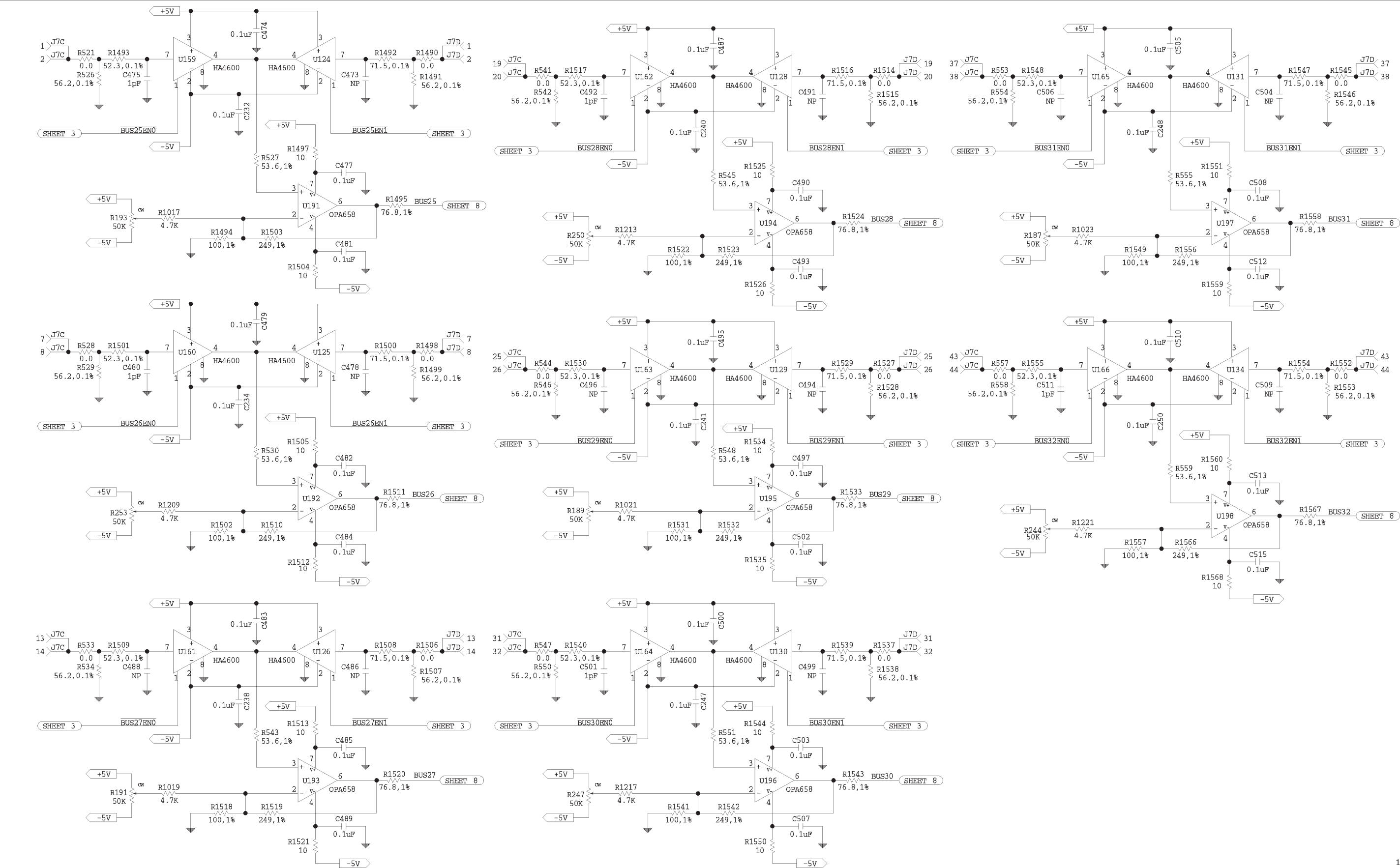


Schematic (Sheet 13 of 16) • 32X32 WB Analog Video Matrix Card • SC33-1308

32X32 Wideband Analog Video Addendum

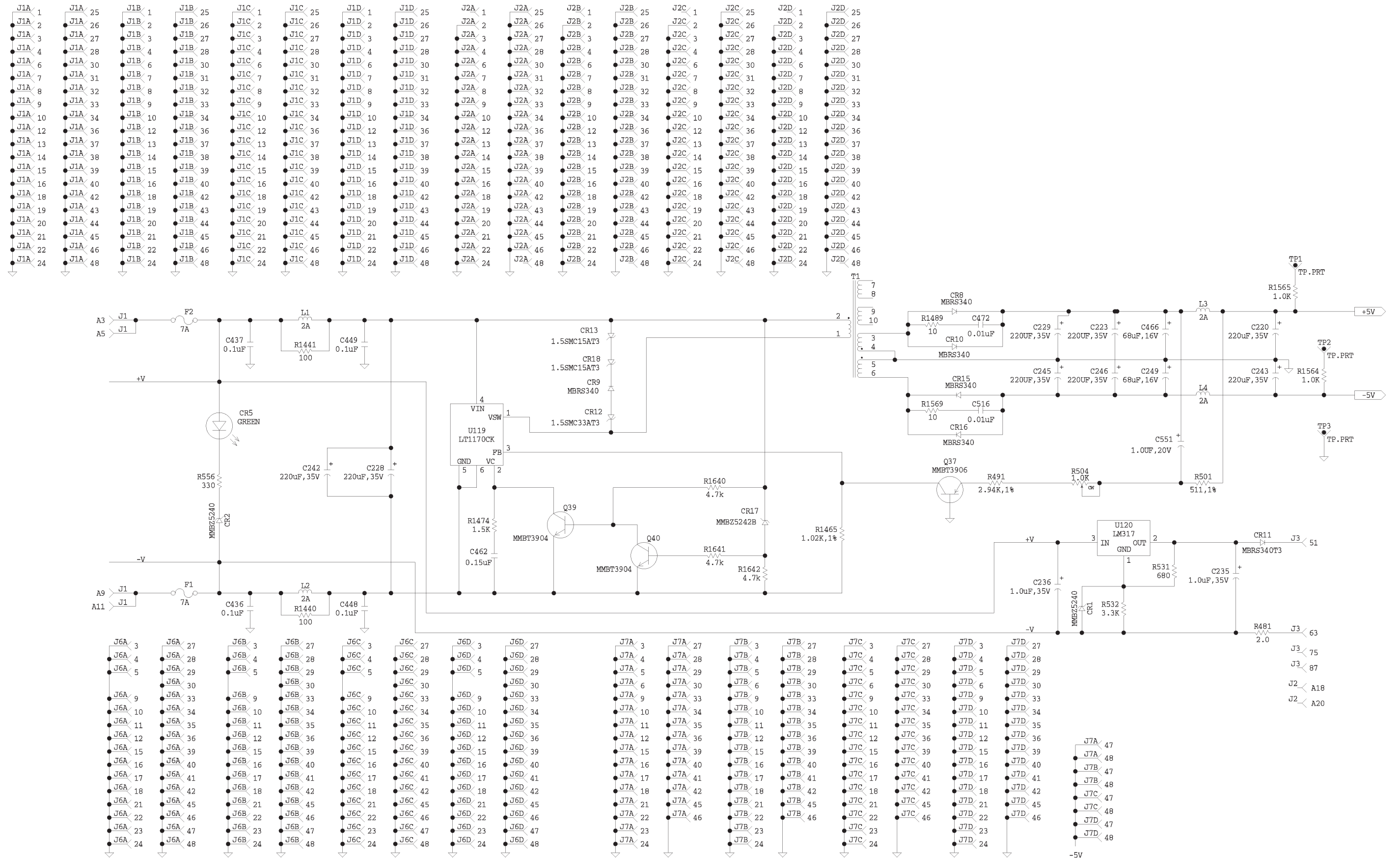


32X32 Wideband Analog Video Addendum

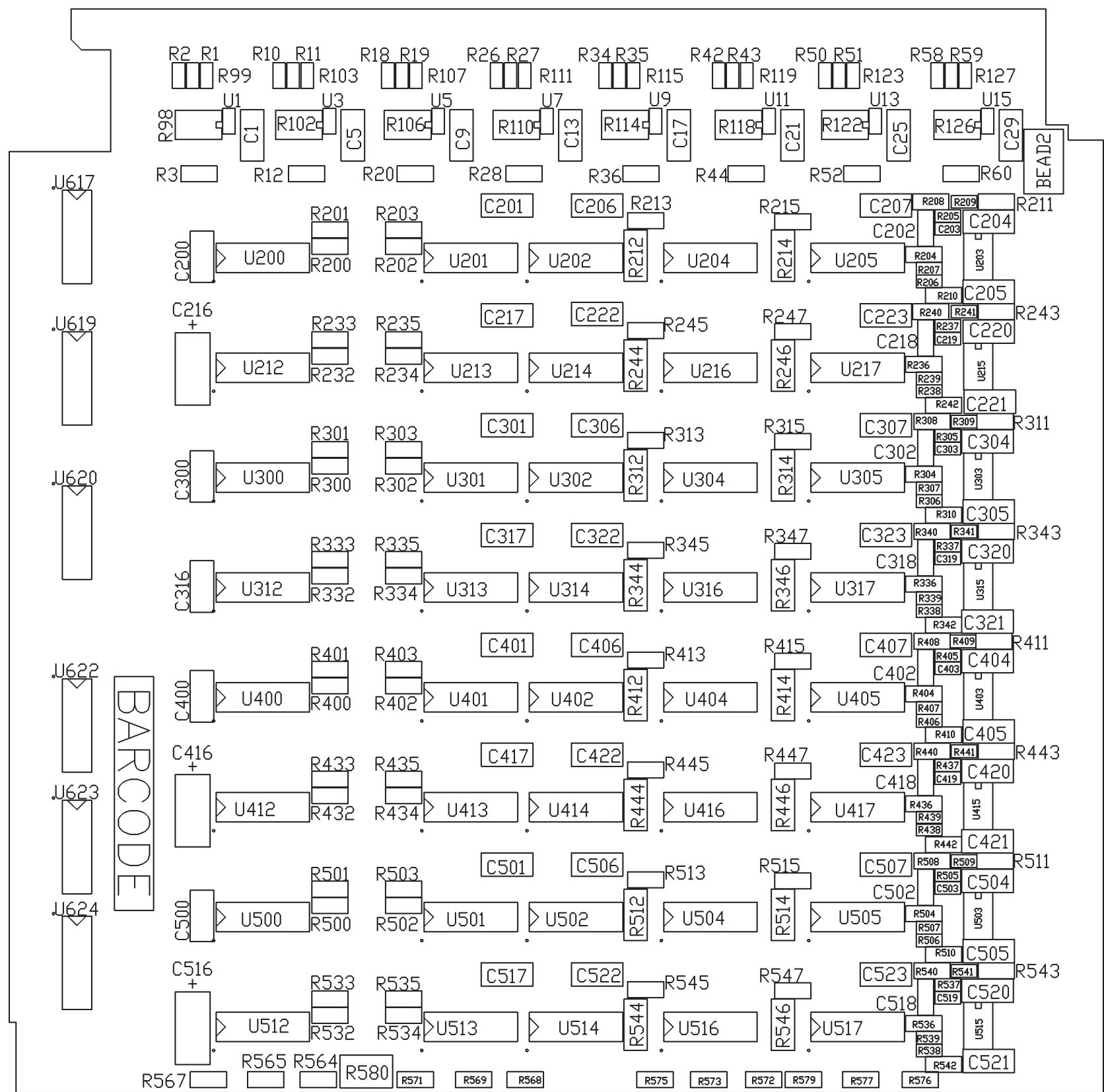


Schematic (Sheet 15 of 16) • 32X32 WB Analog Video Matrix Card • SC33-1308

32X32 Wideband Analog Video Addendum



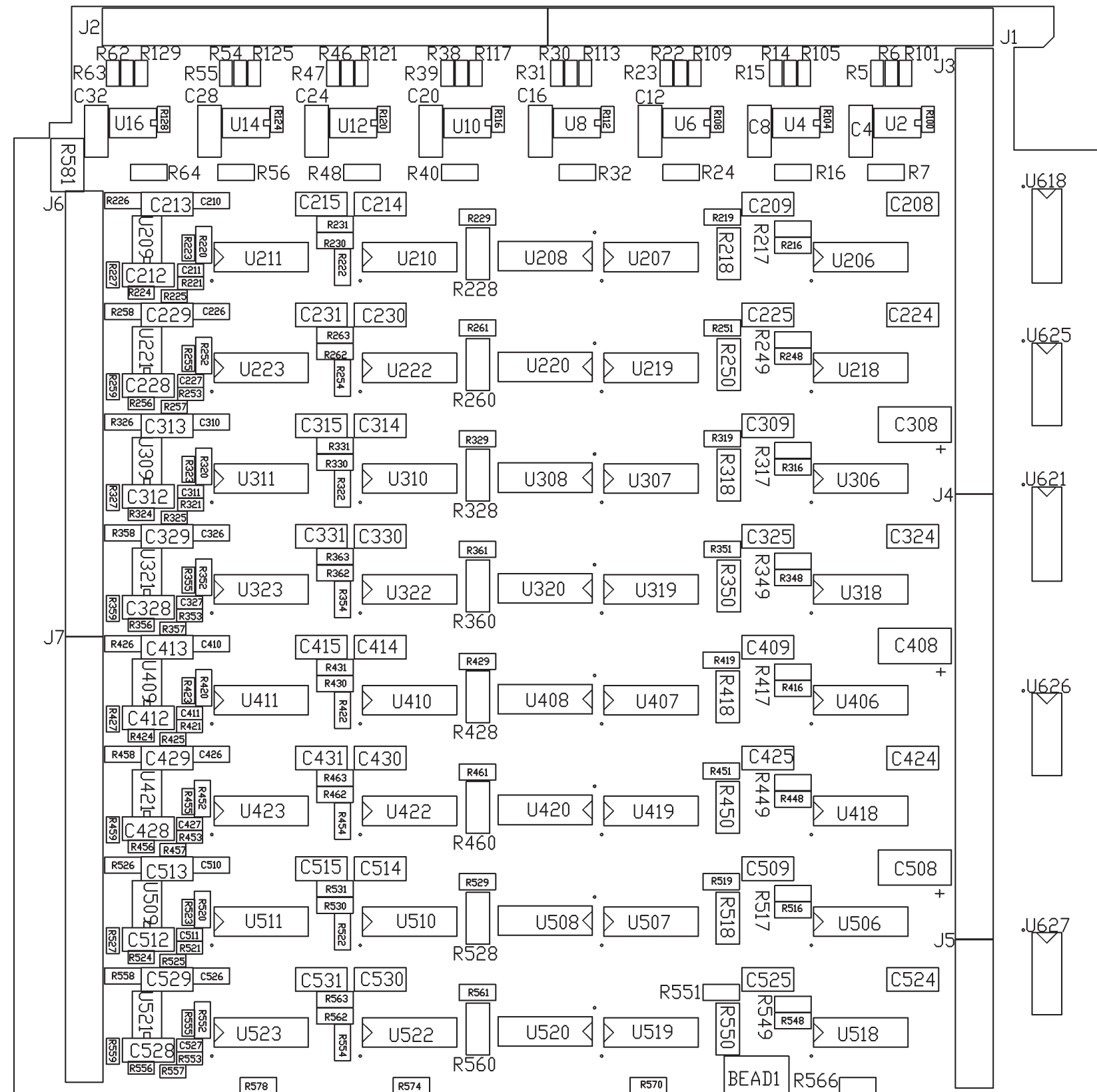
COMPONENT SIDE LAYER 1 OF 10



Component Assembly (Sheet 1 of 2) • 16X16 WB Crosspoint Card • CA25-1307

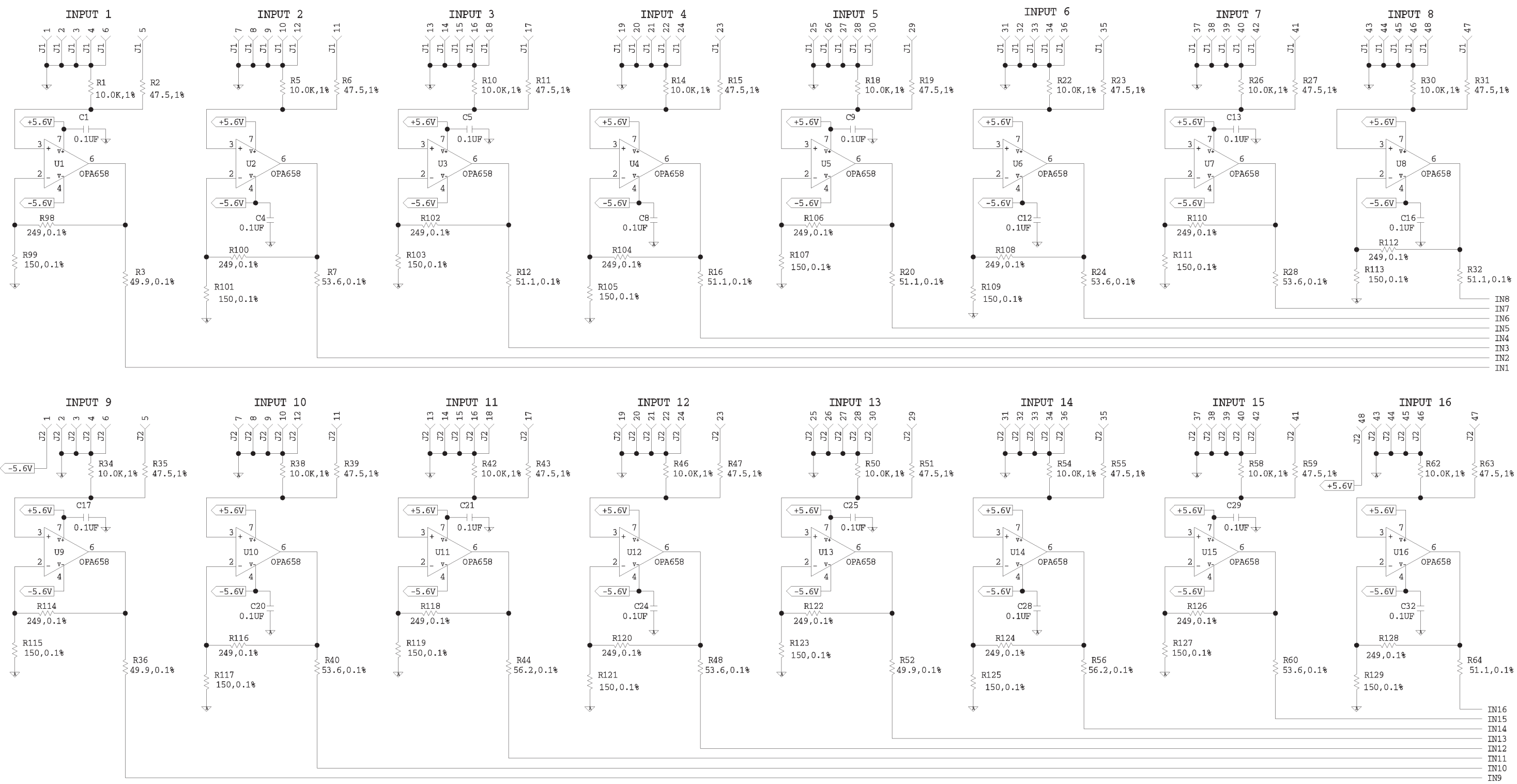
32X32 Wideband Analog Video Addendum

SOLDER SIDE LAYER 10 OF 10



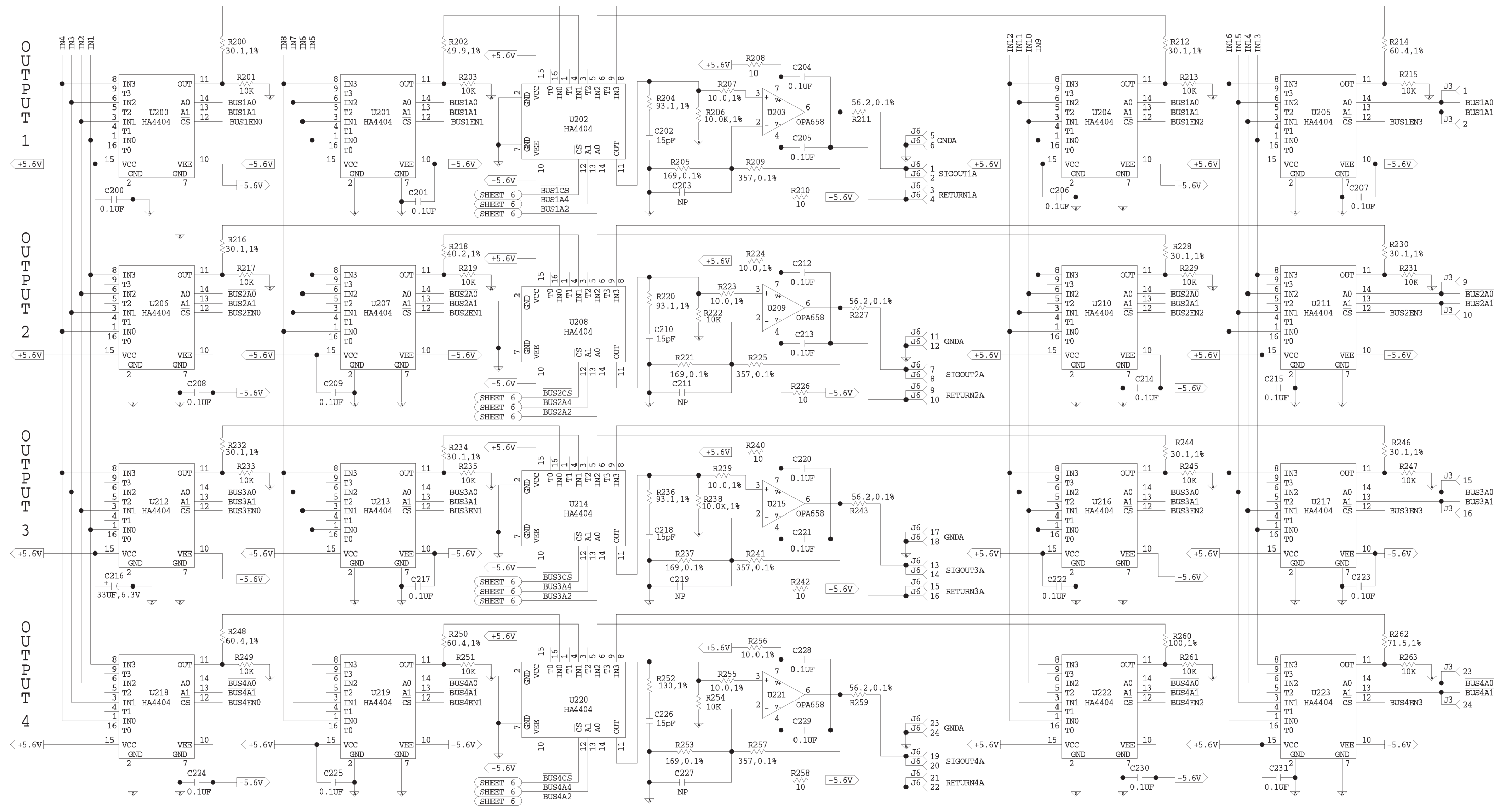
Component Assembly (Sheet 2 of 2) • 16X16 WB Crosspoint Card • CA25-1307

32X32 Wideband Analog Video Addendum



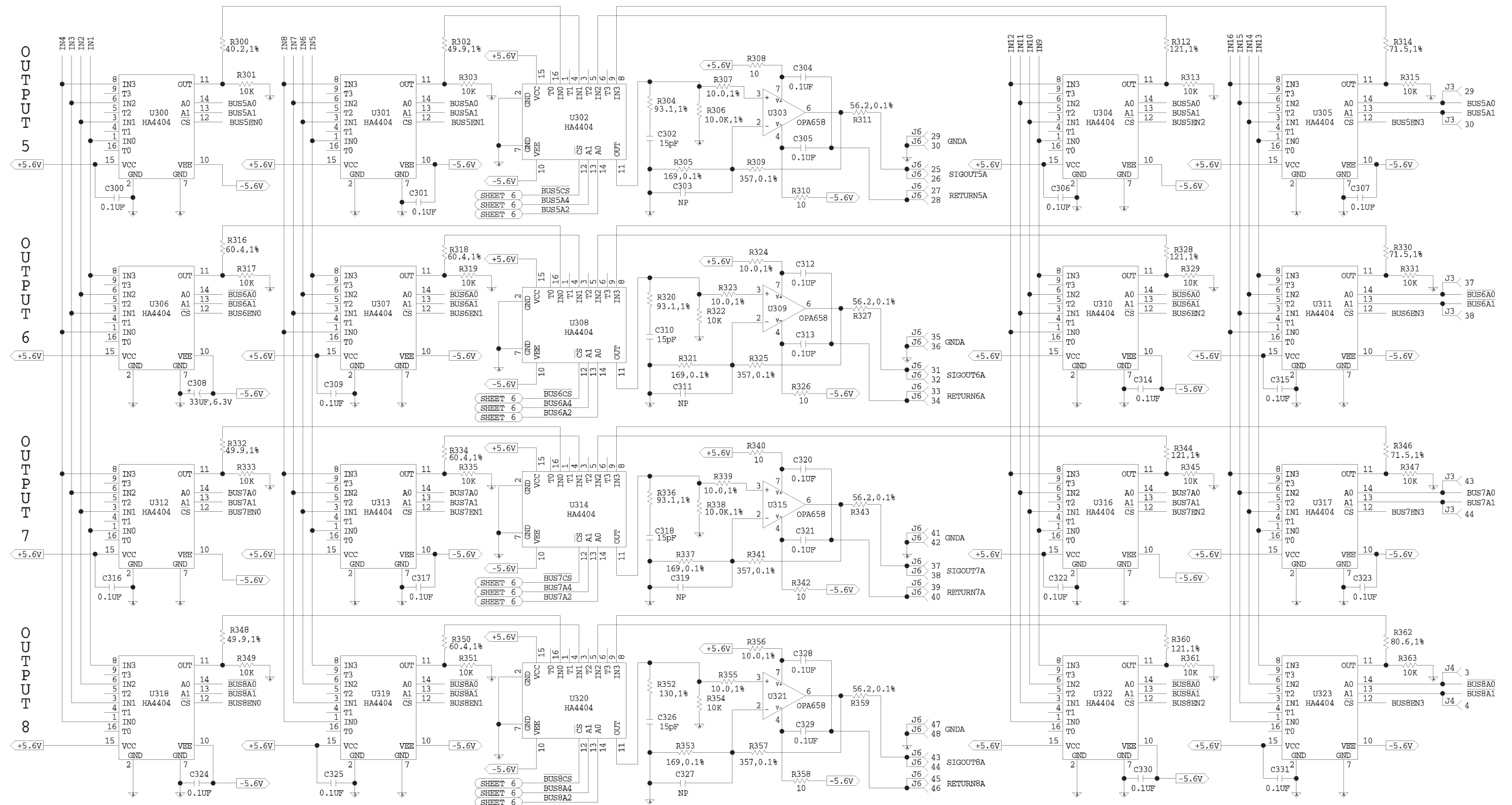
Schematic (Sheet 1 of 6) • 16X16 WB Crosspoint Card • SC33-1307

32X32 Wideband Analog Video Addendum

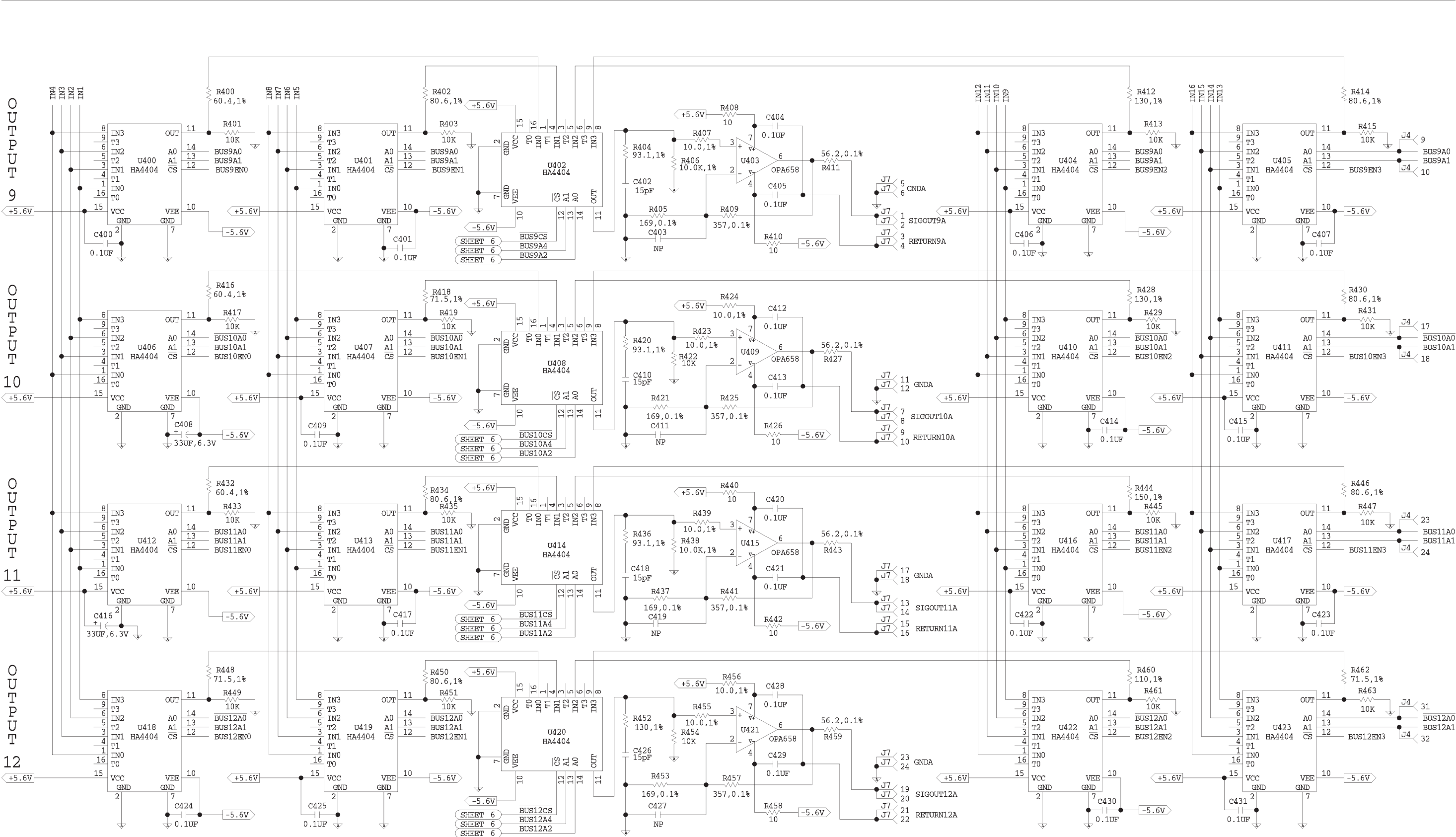


Schematic (Sheet 2 of 6) • 16X16 WB Crosspoint Card • SC33-1307

32X32 Wideband Analog Video Addendum

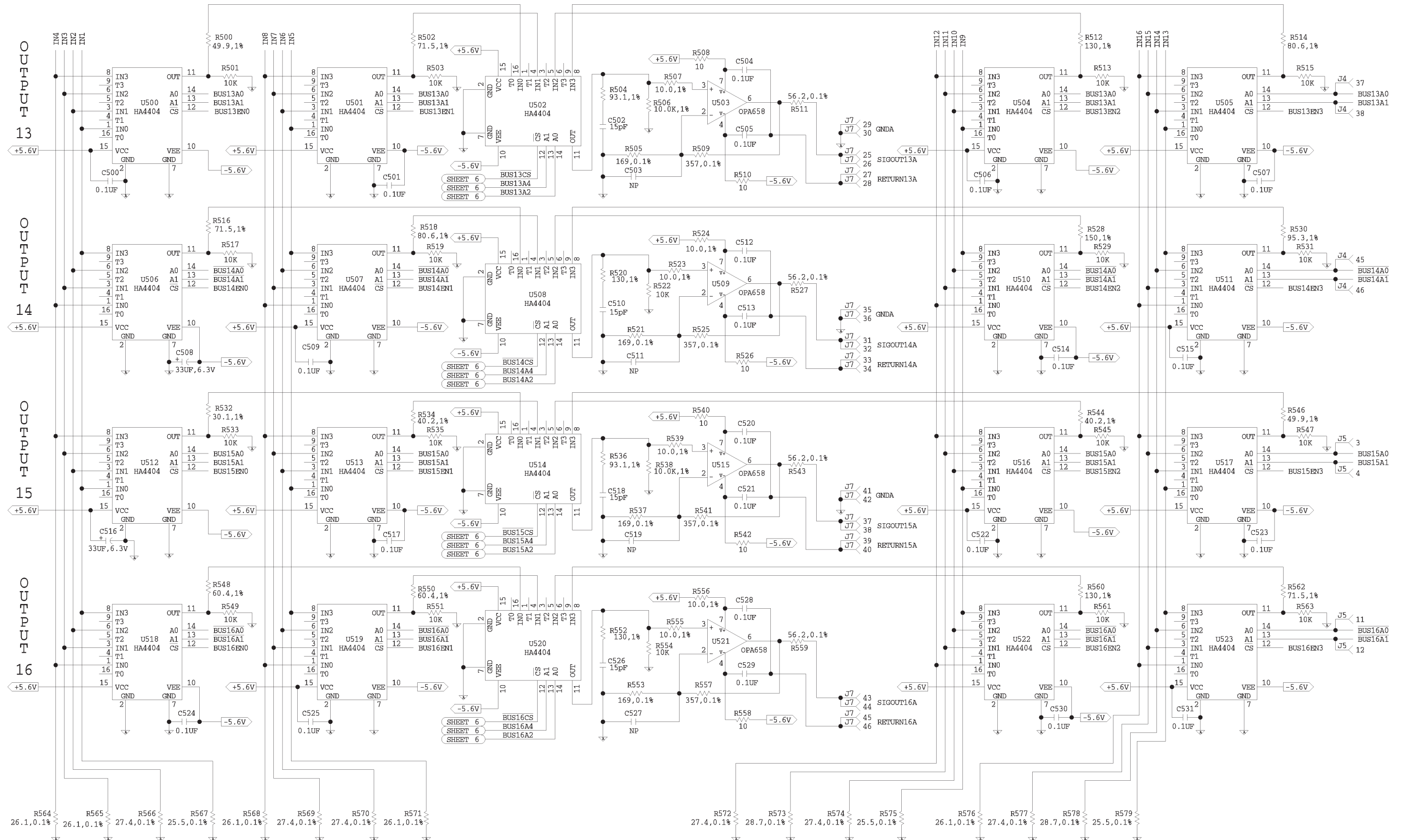


Schematic (Sheet 3 of 6) • 16X16 WB Crosspoint Card • SC33-1307



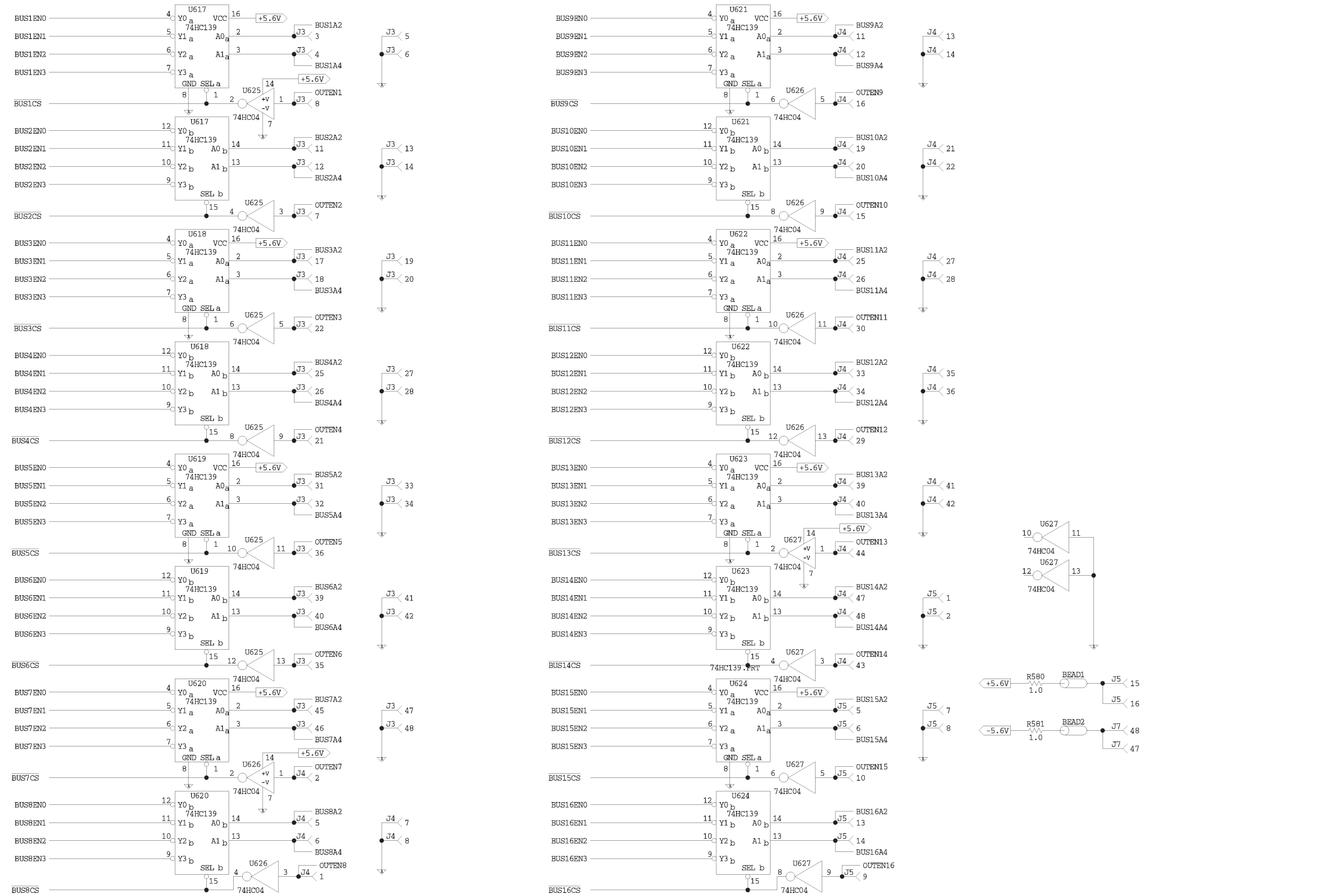
Schematic (Sheet 4 of 6) • 16X16 WB Crosspoint Card • SC33-1307

32X32 Wideband Analog Video Addendum



Schematic (Sheet 5 of 6) • 16X16 WB Crosspoint Card • SC33-1307

32X32 Wideband Analog Video Addendum



Schematic (Sheet 6 of 6) • 16X16 WB Crosspoint Card • SC33-1307