October 1991
16-40009B-101

MIDWAY®

TERMINATOR™ 2 JUDGMENT DAY

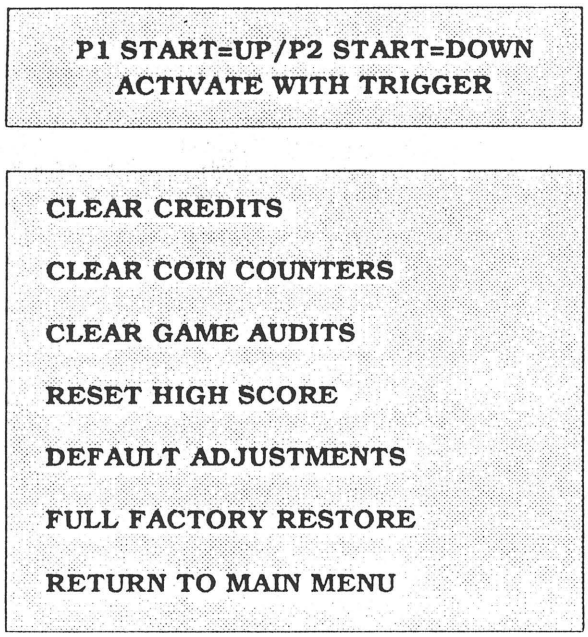
THE VIDEO

Operations Manual Addendum

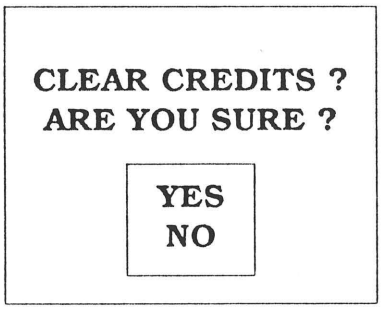
Pricing Table, page 1-22

The Pricing Table on page 1-22 has not changed.

Utilities Menu, page 1-24



Utility Setting Example, page 1-24



Installation & Inspection, page 1-3

Note: Check gun calibration when you receive your game. Guns might of been jarred during shipping and need to be re-calibrated.

Diagnostic Menu, page 1-11

P1 START=UP/P2 START=DOWN
ACTIVATE WITH TRIGGER

SWITCH TEST

DIP SWITCH TEST

CPU BOARD TEST

SOUND BOARD TEST

MONITOR PATTERNS

DRIVER BOARD TEST

BURN-IN TEST

RETURN TO MAIN MENU

DIP Switch Test, page 1-12

The DIP Switch Tables on page 1-12 have not changed.

Driver Board Test, page 1-15

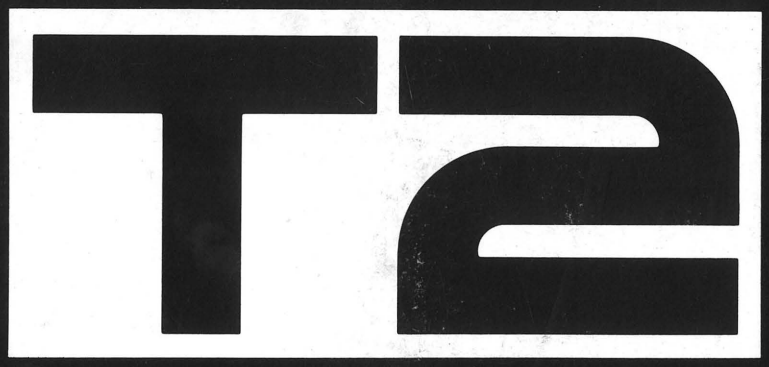
The Driver Board Test provides the operator with a way to test the Gun Coils, the Flashlamps, and the Gun LEDs. Press any Start button to select the Driver Board Test. Press either trigger to activate the test.

This test cycles through and pulses the Gun Coils (left, then right), the Flashlamps (left side, then right side), and the Green and Red LEDs (left gun, then right gun). To stop the cycle and continually pulse a particular coil, lamp or LED, press and hold the Service Credit Switch when the desired coil, lamp or LED is activated. As each device is activated, the name is displayed on the screen.

Press any Start Button to return to the Diagnostic Menu.

October 1991
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TERMINATOR™ 2
JUDGMENT DAY

THE VIDEO

Operations Manual

* Game Operation & Adjustments
* Game Testing & Problem Diagnosis
* Parts Information
* Wiring Diagrams & Schematics

TERMINATOR 2
Game Rules

You need two credits to start a game, and one credit to continue.

For a single player game press either of the Red, Player 1 Start Buttons after coins have been inserted.
For a two player game, press either of the Red, Player 1 Start Buttons and, either of the Blue, Player 2 Start Buttons after coins have been inserted.

Press the trigger to shoot at targets. Press the Red Bomb Button on the gun to launch rockets. Pick-up "Power-ups" by shooting them.

Mission 1
In the future... Join up with Sgt. John Connor - leader of the Human Resistance - to destroy the Machines of Skynet. Infiltrate Skynet Headquarters to ultimately control the Time Field Generator.

Mission 2
In the present... Sent back through the Time Field Generator to protect young John Connor at all costs! Destroy Cyberdyne Systems to save the world from Judgment Day!

MIDWAY MANUFACTURING COMPANY RESERVES THE RIGHTS TO MAKE MODIFICATIONS AND IMPROVEMENTS TO ITS PRODUCTS.

THE SPECIFICATIONS AND PARTS IDENTIFIED IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Terminator 2

TABLE OF CONTENTS

Section 1 Operation and Troubleshooting

Safety 1-2
Set-up Procedure
Installation & Inspection 1-3
Location Requirements 1-3
Front Cabinet Assembly Diagram 1-4
Rear Cabinet Assembly Diagram 1-5
Servicing 1-6
Game Features
Starting-up 1-8
Player Controls 1-8
Control Panel Diagram 1-8
Game Operation
Control Switches 1-9
Control Switch Location Diagram 1-9
Menu System Operation
Operation 1-10
Main Menu 1-10
Diagnostic Tests 1-11
Switch Test 1-11
DIP Switch Test & Table 1-12
CPU & Sound Tests 1-13
Monitor Patterns 1-14
Burn-in Test 1-15
Coin Bookkeeping 1-16
Game Audits 1-17
Game Adjustments 1-19
Standard Pricing Table 1-22
Custom Pricing Table 1-23
Utilities 1-24
Calibrate Guns 1-25
Troubleshooting 1-26

Section 2 Parts Information

Cabinet, Speaker, Manuals, & Monitor 2-2
PC Boards, Transformer & Lamp Assy, & Control Panel 2-3
Cables 2-4
Power Supply 2-5
CPU Board 2-6
Sound Board 2-8
Coil Lamp Driver Board 2-10
Gun Assembly 2-12
Dual Flashlamp & LED Boards 2-14

Section 3 Diagrams and Schematics

CPU Board 3-2
Dual Flashlamp & LED Boards 3-18
Sound Board 3-19
Coil Lamp Driver Board 3-23
JAMMA Chart & Power Wiring Diagram 3-26
Cabinet Wiring & Main Harness Wiring 3-27
Control Panel Wiring 3-28

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Terminator 2

SECTION
one

Operation

Safety Notices

The following safety instructions apply to all game operators and service personnel. Specific warnings and cautions will be found throughout this manual where they apply. We recommend that you read this page before preparing your game for play.

⚠ CAUTION

AC POWER CONNECTION. Before connecting the game to the AC power source, verify that the "line voltage selection chart" jumper wires are installed correctly for the line voltage in your area. For details, refer to Section 3.

PROPERLY GROUND THE GAME. To avoid electrical shocks, do not plug in the game until it has been inspected and properly grounded. MIDWAY games should only be plugged into a grounded 3-wire outlet. Shocks will also result, if the control panel is not properly grounded! After servicing any parts on the panel, assure that the ground wires are secure. Only then should you lock up the game.

DISCONNECT POWER DURING REPAIRS. To avoid electrical shock, disconnect the game from the AC power source before removing or repairing any part of the game.

USE THE PROPER FUSE. To avoid electrical shock, use the replacement fuse which is specified in the parts list for this game. The replacement fuse must match the original fuse in fuse type, voltage rating, and current rating.

MONITOR PRECAUTIONS. When removing or repairing the monitor, extra precautions must be taken to avoid electrical shock because high voltages may exist within the monitor circuitry and cathode ray tube (CRT) even after power has been disconnected. Do not touch internal parts of the monitor with your hands or metal objects! Always discharge the CRT by the following method: Attach one end of a large, well-insulated, 20-kV jumper to ground. Momentarily touch the free end of the grounded jumper to the anode by sliding it under the anode cap. Wait two minutes and discharge the anode again.

HANDLE FLUORESCENT TUBE AND CRT WITH CARE. If you drop a fluorescent tube or CRT and it breaks, it will implode! Shattered glass can fly eight feet or more from the implosion.

ATTENTION !

PROPERLY ATTACH ALL CONNECTORS. *Make sure that the connectors on each printed circuit board (PCB) are properly connected. If they do not slip on easily, do not force them. A reversed connector may damage your game and void the warranty. All connectors are keyed to fit specific pins on each board.*

Setup Procedure

INSTALLATION & INSPECTION

1. Remove all items from shipping container and set them aside. Inspect the exterior of the cabinet for any damage. Remove the shipping cleats from the bottom of the cabinet.

2. Remove keys from the taped coin return slot. Unlock and open the coin and cash box doors. (Leg levelers and spare parts are stored in the cash box.)

3. Tilt or lay the cabinet down. Locate the four threaded holes on the bottom of the cabinet (one in each corner), and install one leg leveler (with its hex nut) in each hole.

4. Stand the cabinet upright and make certain that it is in a stable position. Level the cabinet.

5. Remove the rear door of the cabinet. Inspect the interior for any signs of damage. Check all major assemblies to assure that they are mounted securely.

6. Refer to the game's Cabinet Wiring Diagram (Section 3), and check to see that all cable connectors are correctly secured. DO NOT FORCE CONNECTORS. Watch for damaged connectors and avoid making reversed connections.

7. Determine the value of your line voltage with a meter. Then, check the power input wires to the main power supply transformer on your game to be sure they are connected to taps which correspond to your local line voltage value. If necessary, reconnect the power input wires to the transformer in accordance with the Tranformer Chart in Section 3.

8. Lay the line cord (connected to the Power Chassis) in the slot along the bottom edge of the rear cabinet door. Replace the rear cabinet door and screw (lock) it securely. Close and lock the front coin and cash box doors.

9. Plug the line cord into a grounded (3-terminal) AC wall outlet.

10. Switch On the game, using the On/Off switch located on the upper left rear of the cabinet, to verify proper operation.

11. If the following message appears on the screen when the game is turned On, the guns must be calibrated.

CMOS RAM Error
Unable to read gun calibration values.

Gun calibration instruction are on page 1-25 of this manual.

Game Location Requirements

Power
Domestic 115V @ 60 Hz
Foreign 230V @ 50 Hz

Temp.
32° F to 100° F
(0° C to 38° C)

Humidity
Not to exceed 95% relative.

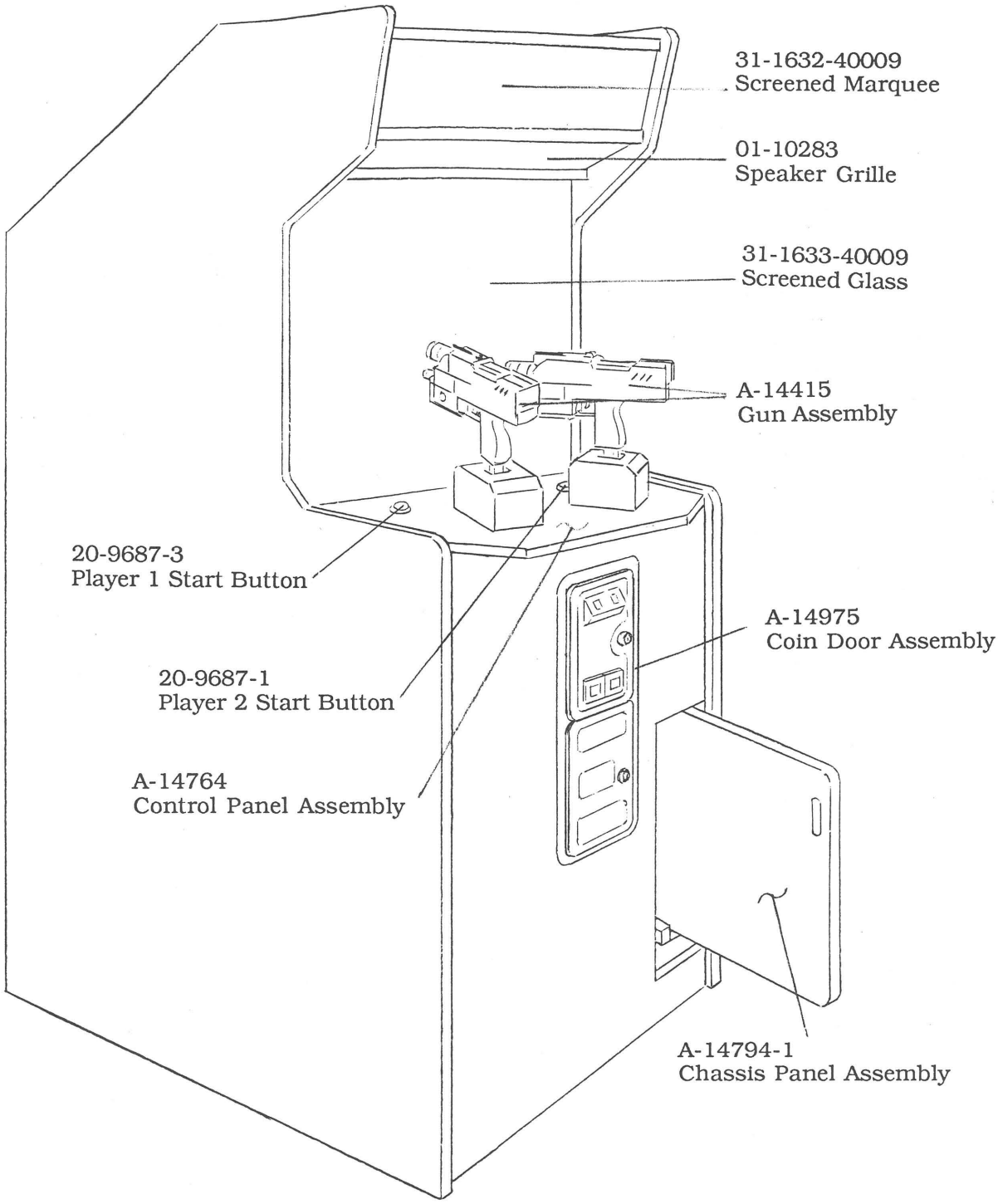
Height of game
Apx. 74"

Weight of game
Apx. 300 pounds

Note

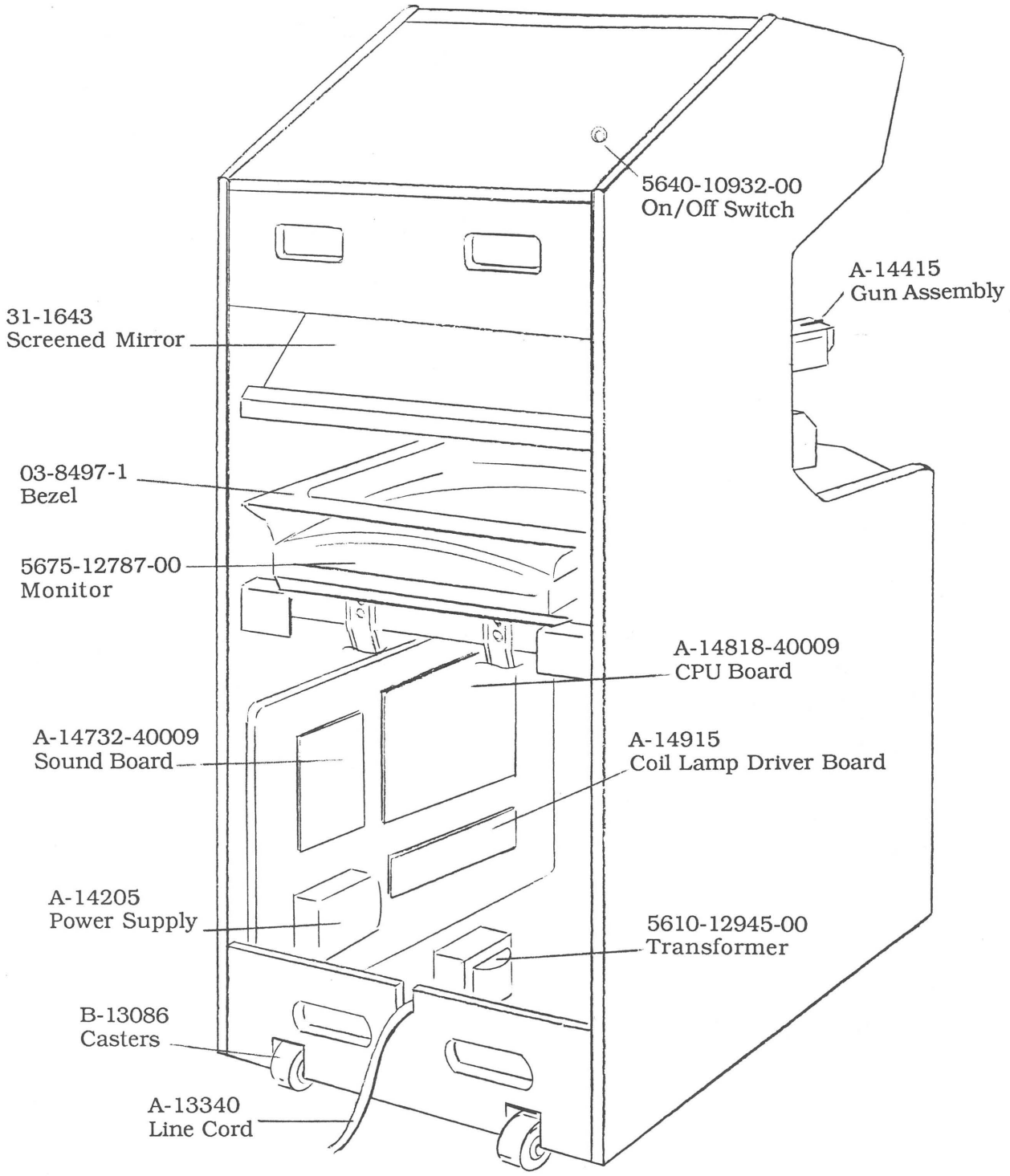
The Gun Assemblies are calibrated from the factory. However, if you change boards or replace ROMs, RAMs, or the battery, you must recalibrate the guns. Guns do not operate unless they are calibrated.

Cabinet Assembly



Front View

Cabinet Assembly



Rear View

Servicing

Servicing the Control Panel

Switch Off power to the game. The control panel is held in place by four latches (located inside the cabinet, on the left and right sides of the control panel) which provide constant pressure on the strikes. The latches can be reached through the coin door opening. To release the latches, lift the latch handle and unhook the wire fasteners. Carefully, use the guns to lift the control panel. Carefully, tilt the control panel forward until the guns rest against the viewing glass. THIS CONTROL PANEL DOES NOT HAVE A SUPPORT BRACKET. To reinstall the control panel, check for proper cable connections, including the ground strap, and use the guns to lower it into position, avoiding pinched wires. Reclamp the latches.

Note

To remove the control panel for bench servicing, reach through the coin door opening and release the latches located on the sides of the control panel. Be careful not to reach straight back through the coin door opening as you might damage the Monitor Control Board. Carefully, tilt the control panel forward until the guns rest against the viewing glass. Disconnect the cables and the ground strap. Lift the control panel out of the game cabinet.

Servicing the Chassis Panel

Switch Off power to the game and open the coin door. The chassis panel is accessible through the front door. The front door is held in place by the same type of latch that holds the control panel. The latch, located at the top of the front door, can be reached through the coin door. Lift the latch handle and unhook the wire fastner. Push the front door from the inside of the cabinet and remove it. Use the hand hole to slide the chassis panel forward.

Caution

The monitor DOES NOT contain an isolation transformer in its chassis (it is mounted instead in the Power Chassis Assembly located on the floor of the cabinet). When servicing the monitor on a test bench, YOU MUST ISOLATE THE MONITOR FROM THE LINE VOLTAGE WITH AN ISOLATION TRANSFORMER.

Removal of Viewing Glass

Switch Off power to the game, and open the control panel. Carefully lift the glass from its bottom groove and lift it clear of the cabinet.

Removal of Monitor Bezel

Switch Off power to the game. Remove T-15 torx screws holding the rear door. Remove the rear door. Remove the four screws holding the bezel. Lift the bezel off the monitor.

Caution

While removing the four bolts, firmly support the monitor from the front of the CRT so that it will not slip.

Monitor Replacement

We recommend that you read the WARNINGS section thoroughly before beginning this procedure.

Switch Off power to the game. Remove the rear door, the viewing glass and the monitor bezel. Completely disconnect the monitor from all of its cabling, including its chassis ground strap. Remove the four bolts securing the monitor's mounting flanges to its mounting panel. Pull the monitor carefully from the back of the cabinet.

Flashlamp Replacement

Switch Off power to the game. Open the control panel in order to remove the viewing glass; then, replace the control panel. Open the rear door. Remove the two screws holding the mirror retainer. Carefully, pull the mirror retainer out of the cabinet. The flashlamp boards are accessible from the front of the cabinet once the mirror is out.

Removal of the Marquee

Switch Off power to the game. Remove the five #8 hex washer head screws in the black plastic strip on top of the cabinet. Remove the strip and carefully lift the plastic marquee and the clear glass. Store the marquee and glass carefully to prevent damage.

The fluorescent tube is now accessible for replacement. Grasp the tube, give it a quarter turn, and remove it from its socket. Carefully place a new tube into the socket, and turn to reinstall.

WARNING

If you drop a fluorescent tube and it breaks, it will implode! Use care in handling.

Removal of the Fluorescent Light Assembly

Switch Off power to the game. Remove the marquee glass. Disconnect the fluorescent light assembly from its power cable. Remove the screws fastening the assembly to the cabinet and lift out the assembly.

Removal of the Speakers

Switch Off power to the game. Remove the marquee. The speakers pull out from the front of the cabinet. Be sure to disconnect the cabling and remove the nuts on the mounting bolts before attempting to pull the speakers out of their enclosure.

Volume Control, Test/Diagnostics Switch, and Service Credit Switch

Open the coin door to locate the game's volume control and Diagnostic switches on the small panel atop the cash box cover. The Volume Control is the white knob on left end of the panel. Turning the knob clockwise increases the volume. The upper right switch on the bracket is the Test/Diagnostics Switch that enables activating the game's Menu System. The lower right switch is the Service Credit Switch, which allows adding credits to a game for service testing without affecting the game's bookkeeping total.

Game Features

STARTING UP

Switch On power to the game. A "rug" pattern appears on the CRT screen. When the "rug" pattern ends, the screen shows CHECKING SCRATCH RAMS, and then CHECKING ROMS. The next screen shows **Terminator 2** REVISION LEVEL, CMOS TEST OK and the COIN SETTING. The game then moves to the Attract Mode.

Note

When an error is detected during Start-up Tests, game start-up pauses. Press any Start Button to continue.

Insert the desired amount of coins or tokens. Select which player receives the credit by pressing the appropriate Player Start Button.

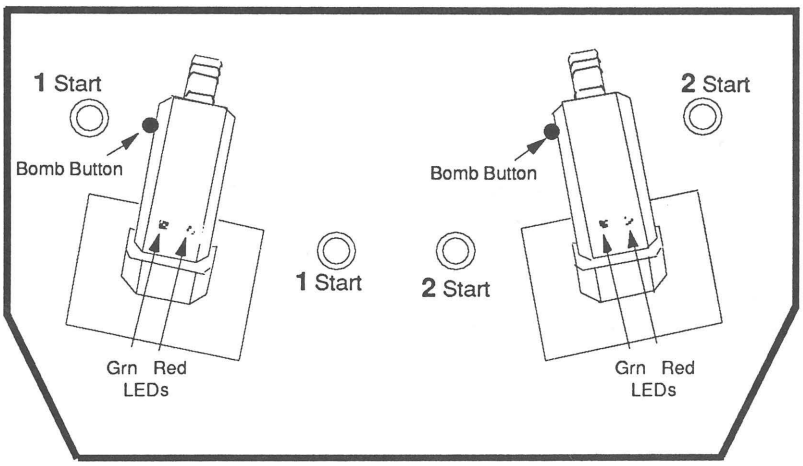
PLAYER CONTROLS

- **Start Button**
  Each player has two Start Buttons located on the left and right sides of the guns. The Start Buttons allow one or two players to begin or continue play.

- **Guns**
  Each player has a gun. The guns allow the player to aim for and shoot at moving targets.

- **Bomb Button**
  Each player has a Bomb Button located on the front left side of their gun. This button allows the player to fire bombs at targets.

- **LEDs**
  Each player has two LEDs located on the top of their gun. The Red LED indicates the player is targeted and being shot at. The Green LED indicates that the player is on target to shoot.



Control Panel

Game Operation

The **Terminator 2** Control Switches are located inside the coin door. These switches allow the operator to customize some features of the game.

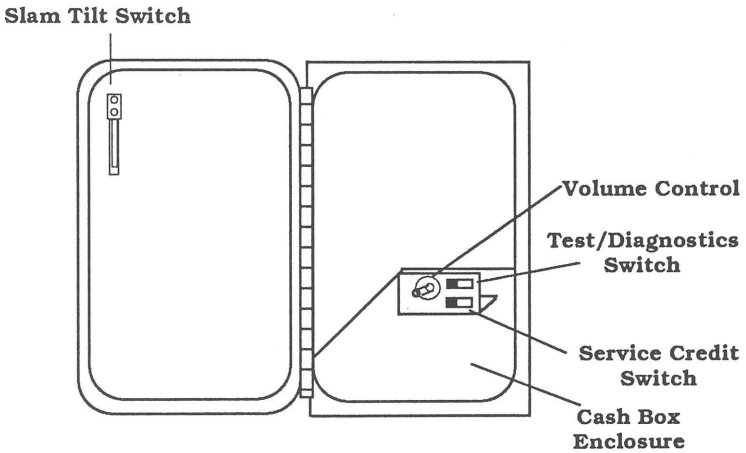
CONTROL SWITCHES

- The **COIN DOOR SLAM TILT SWITCH** detects any forceful vibrations against the Coin Door. This eliminates pounding for free games.

- The **VOLUME CONTROL** allows increasing or decreasing the volume level of the game music and speech. For greater profits, set your game's volume level at its maximum.

- The **TEST/DIAGNOSTICS SWITCH** allows you to activate the game's Menu System. Move the Test Switch to access the Main Menu. To exit the Menu System, select EXIT TO GAME OVER from the Main Menu, then press either trigger to activate your selection.

- The **SERVICE CREDIT SWITCH** is a special feature switch that allots credits without affecting the game's bookkeeping total.



Control Switch Locations

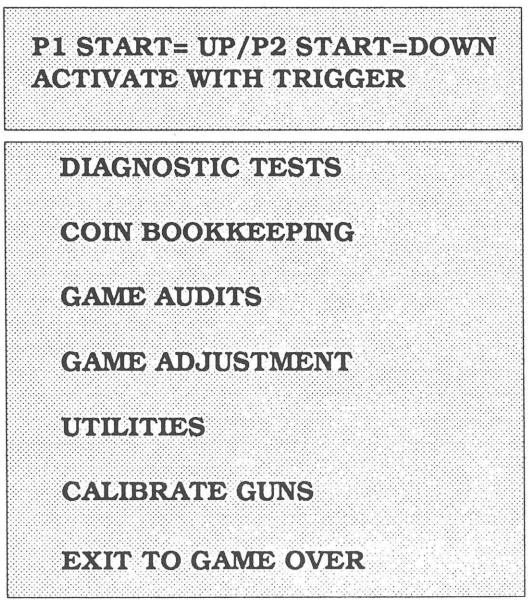
Menu System Operation

OPERATION

All Game Audits, Adjustments, and Diagnostics are options of the Main Menu. Each option, in turn, has its own menu, listing several choices that you may act upon as desired.

Move the Test Switch (on the cashbox lid panel), or close Switch #8 of DIP Switch Bank #2, to activate the Main Menu (shown below). Game adjustments, bookkeeping, and diagnostics are all accessible from this menu.

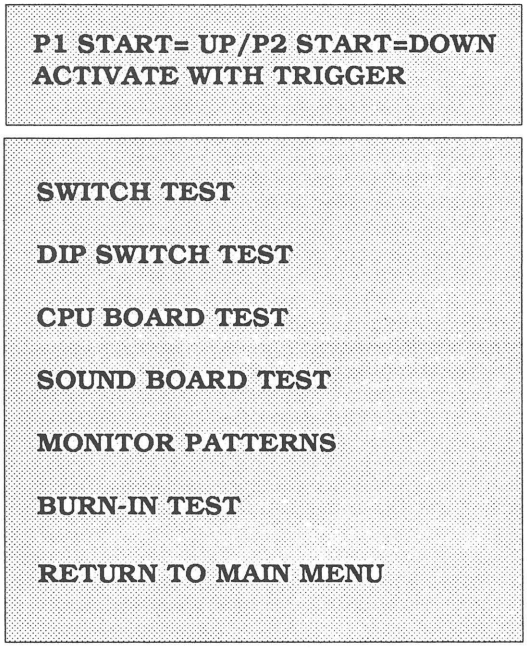
Press either Player 1 Start Button to move up the menu. Press either Player 2 Start Button to move down the menu. Notice that the options are highlighted in sequence. Press either trigger to activate a highlighted option.
Note: Only highlighted options can be activated.



Main Menu

DIAGNOSTIC TESTS †

To enter the Diagnostic Tests from the Main Menu, press any Start Button to select (highlight) the Diagnostic Test option, then, press either trigger to activate the option.



Diagnostic Menu

Switch Test

The Switch Test allows the operator to test the switches on the control panel and the coin door.

During the Switch Test, the top of the screen is black and the bottom of the screen shows the coin door switches. Pressing a Start Button or trigger causes the name of the switch activated to light on the top of the screen. Pressing a coin door switch causes the switch location activated to light on the bottom of the screen. Releasing the switch causes the location to return to normal.

Press a Player 1 Start Button and Player 1 Trigger to return to the Diagnostic Menu.

† See Addendum #16-40009B-101 for updated Diagnostic Tests.

DIP Switch Test †

The DIP Switch Test allows the operator to check the position of the two 8-position DIP Switches on the CPU Board. The operator can also change the setting of each position of each DIP Switch during this mode.

Use any Start Button to select the DIP Switch Test and either trigger to activate it. The screen displays a layout of their current settings.

To change a DIP Switch setting, press the switch to the desired setting, then press the reset button on the CPU next to the DIP Switches. Check the screen to verify that the switch now shows the new setting.

Press either trigger to return to the Diagnostic Menu.

DIP Switch 1 Settings Table

	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7	SW 8
Mirror Display Mirror Non-mirror	Off * On							
Coinage DIP Switch CMOS		Off * On						
Coin Settings USA 1 Ger 1 Fr 1 USA 2 Ger 2 Fr 2 USA 3 Ger 3 Fr 3 USA 4 Ger 4 Fr 4 USA ECA Ger ECA Fr ECA N/U N/U N/U N/U N/U N/U Free Play Free Play Free Play			Off * On Off On Off On Off On	Off * Off On On Off Off Off On	Off * Off Off Off On On On On			
Not Used						Off * On	Off * On	Off * On

DIP Switch 2 Settings Table

	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
USA German French Not Used	Off * On Off On	Off * Off On On						
Not Used			Off * On					
One Counter Two Counters				Off * On				
2 Players 1 Player					Off * On			
Not Used						Off * On		
Video Freeze							Off * On	
Test Switch Game Mode Test Mode								Off * On

*** Indicates Factory Setting.**

† See Addendum #16-40009B-101 for updated DIP Switch Setting Tables.

CPU Board Test

The CPU Board Test (much like the Start-up Test) allows the operator to check the RAMs and ROMs.

Select the CPU Board Test with any Start Button then, press either trigger to activate the automatic test of the CPU Board's RAMs and ROMs. When this test is activated, a "rug'" pattern appears on the screen. The screen then changes to show the layout of the RAMs, and ROMs on the CPU. Any chip that is shown as black with a white outline is part of the CPU and should turn either red or green during the CPU Test. Any chip that is shown as gray with a white outline is not installed in the game. During the test, chips are good, if they turn green; they are faulty, if they turn red.

Press either trigger to exit back to the Diagnostic Menu.

Sound Board Test

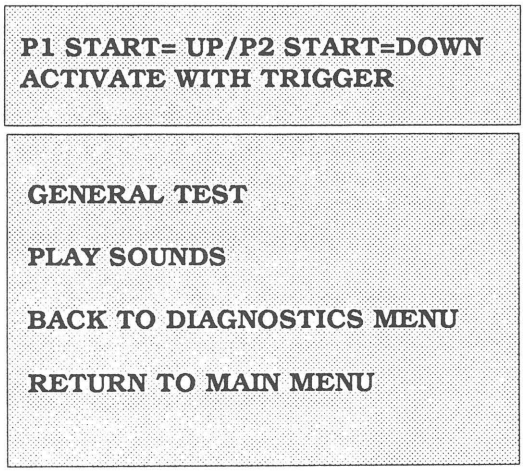
The Sound Test allows listening to some of the sounds that the game is capable of producing. This test also emits a tone for each fault that is detected.

Select the Sound Board Test with any Start Button then, press either trigger to activate the test. The screen displays two test options:

GENERAL TEST analyzes the sound circuitry. A successful test causes a single "tone" to sound. Detection of a fault causes a series of tones or no tone at all to sound. To enter this test, or exit back to the Sound Test Menu, press either trigger.

PLAY SOUNDS tests synthesized & digitized sounds from the Sound Board. Enter and advance through this test by pressing either trigger. Repeat a sound by pressing the Bomb Button. Exit this test by pressing any Start Button.

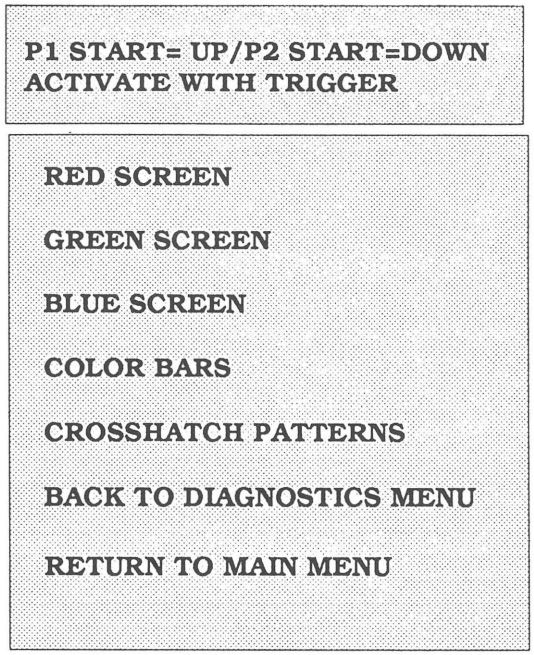
Select RETURN TO MAIN MENU or BACK TO DIAGNOSTIC MENU with any Start Button. Press either trigger to activate your selection.



Sound Test Menu

Monitor Patterns

The Monitor Patterns Test provides a menu for testing the monitor. Select the test with any Start Button and activate it with either trigger. Once the Monitor Test is activated, use any Start Button to select a Monitor Test option; press either trigger to activate the option.



Monitor Pattern Menu

The **RED, GREEN**, and **BLUE SCREEN** tests fill the screen with either red, green or blue. Select a screen test with any Start Button. Press and hold either trigger to see the color screen. Release the trigger to return to the Monitor Pattern Menu.

The **COLOR BARS** test fills the screen with several shades of colors to help with red, green and, blue level adjustments. Each color should appear sharp and clear. Press and hold either trigger to see the color bars screen. Release the trigger to return to the Monitor Pattern Menu.

The **CROSSHATCH PATTERNS** test fills the screen with a grid and a series of dots. The grid and the dots should be clear. The dots should appear round. Press and hold either trigger to see the crosshatch patterns screen. Release the trigger to return to the Monitor Pattern Menu.

If any of the Monitor Pattern Tests shows a need for adjustment, use the proper white knobs on the Monitor Board.

Use any Start Button to select RETURN TO MAIN MENU or BACK TO DIAGNOASTIC MENU and activate your selection with either trigger.

Burn-in Test

The Burn-in Test continually repeats the CPU Board Test.

Press any Start Button to select the Burn-in Test; then, press either trigger to activate the test. When the Burn-in Test detects an error, the test stops and displays an error message on the screen. The Audit Table specifies the number of Burn-in cycles successfully completed. Use this test to find intermittent CPU problems.

To exit this test, switch the game Off then On again.

COIN BOOKKEEPING

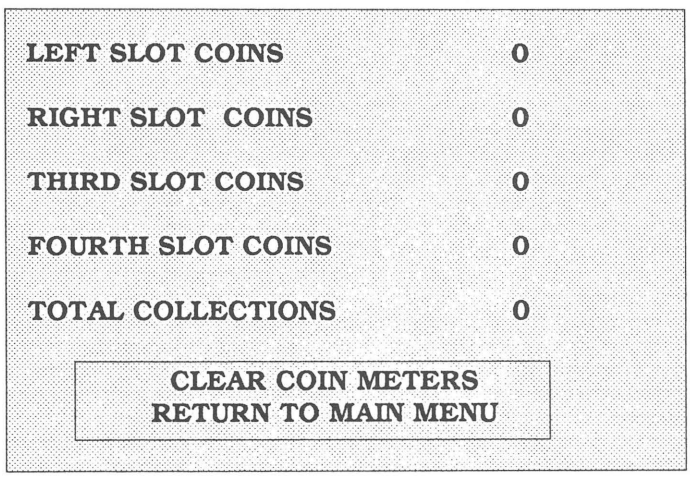
To enter the Coin Bookkeeping from the Main Menu, press any Start Button to select the Coin Bookkeeping option; then, press either trigger to activate it.

The Coin Bookkeeping Table records the coinbox totals and game play counters. The left side of the table names the bookkeeping item; the right side shows the number of coins, credits, or plays for each item.

To exit Coin Bookkeeping, press any Start Button to select RETURN TO MAIN MENU; then, press either trigger to activate it.



Coin Bookkeeping Table

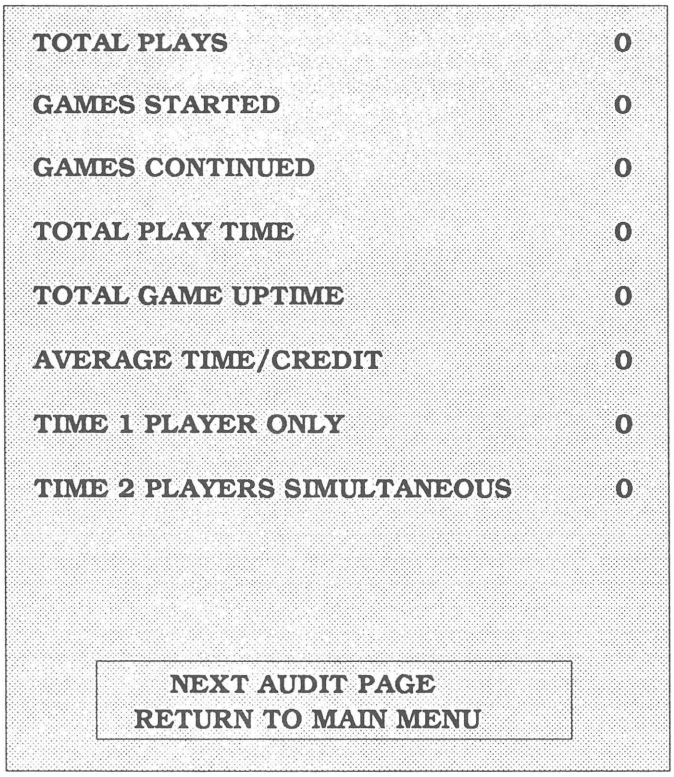


Total Collection Table

GAME AUDITS

To enter Game Audits from the Main Menu, press any Start Button to select the Game Audits option; then, press either trigger to activate it. To advance to the next (or return to the previous) page of the Game Audit Table, press any Start Button to select either "Next Audit Page", or "Previous Audit Page"; then, press either trigger to change the page.

The Game Audits Table records the game play statistics. The left side of the table names the Audit item; the right side shows the amount of play.



Page 1 of Audit Table

GAME AUDITS Continued

TOTAL PLAYS	0
GAME CONTINUES OFFERED	0
GAME CONTINUES TAKEN	0
PERCENTAGE OF CONTINUES TAKEN	0
AVERAGE CREDITS/GAME	0
AVERAGE WAVE REACHED	0
GAMES PLAYED TO COMPLETION	0
MAXIMUM WAVE COMPLETED	0

NEXT AUDIT PAGE
PREVIOUS AUDIT PAGE
RETURN TO MAIN MENU

Page 2 of Audit Table

COIN DOOR SLAMS	0
BURN-IN LOOPS SUCCESSFULLY COMPLETED	0
WATCHDOGS TRIGGERED	0
START FAILURES	0

PREVIOUS AUDIT PAGE
RETURN TO MAIN MENU

Page 3 of Audit Table

To exit the Game Audit Table, press any Start Button to select RETURN TO MAIN MENU; then, press either trigger to activate your selection.

GAME ADJUSTMENTS

Press any Start Button to select the Game Adjustment option on the Main Menu; then, press either trigger to activate it.

The Game Adjustments Menu allows the owner/operator to change the Game Pricing and Game Difficulty.

The Game Adjustments Menu offers several options. Each option has its own menu. Press any Start Button to select an option; then, press either trigger to activate that option. On the next menu screen, press any Start Button to select the item you wish to modify; then, press either trigger to activate that item. The activated item provides a setting choice. Press any Start Button to change the current setting value; then, press either trigger to lock in the new setting value. Pressing the Player 1 Start Button increases the setting value. Pressing the Player 2 Start Button decreases the setting value.

To exit the Adjustments Menu, press any Start Button to select RETURN TO MAIN MENU; then, press either trigger to activate your selection.



Game Adjustment Menu

GAME ADJUSTMENTS Continued

Standard Pricing
Standard Pricing allows the operator to choose any of the "Standard" selections for the Standard Pricing Table.
Note: DIP Switch settings override Standard Pricing changes made from the Game Adjustment Menu.

Custom Pricing
Custom Pricing allows the operator to install pricing other than that of the Standard Pricing Table. Custom Pricing also allows the operator to select the maximum amount of credits per game, the amount of credits required to start a game, and the amount of credits required to continue a game.
Note: DIP Switch settings override Custom Pricing changes made from the Game Adjustment Menu.

Free Play
This option allows the operator to select free play. The settings for the adjustment are:

- No (factory)
- Yes

Game Difficulty
The operator chooses the the difficulty level of the game. The settings for this adjustment are:

- 1 Easiest
- 5 Medium (factory)
- 10 Hardest

Energy Per Play
The operator chooses the amount of energy a player receives each time he/she starts or continues a game. The setting range for this adjustment is:

- 5 Lowest
- 100 Medium (factory)
- 200 Highest

Bombs Per Play
The operator chooses the amount of bombs a player receives each time he/she starts or continues a game. The setting range for this adjustment is:

- 1 Lowest
- 25 (factory)
- 99 Highest

Minimum Time Per Play*
The operator chooses the minimum time in seconds each player is guaranteed to receive for each play. The setting range for this adjustment is:

- 30 Lowest
- 45 (factory)
- 300 Highest

* Not in effect during end-of-wave confrontations: For example, Tank Hunter Killer.

Attract Mode Sound
The operator determines whether the game will make sounds during the Attract Mode. The settings for this adjustment are:

- On (factory)
- Off

Auto High Score Reset
The All -time High Score Table is reset to factory values each time this many plays occur. The setting range for this adjustment is:

- Off
- 250 Lowest
- 5000 (factory)
- 25, 000 Highest

High Score Entry
The operator determines whether the game will allow High Score Entry and Table display. The settings for the adjustment are:

- No
- Yes (factory)

Allow to Continue
The operator determines whether the game allows a player to continue after all the players are dead. The setting for this adjustment are:

- Never
- Sometimes
- Always (factory)

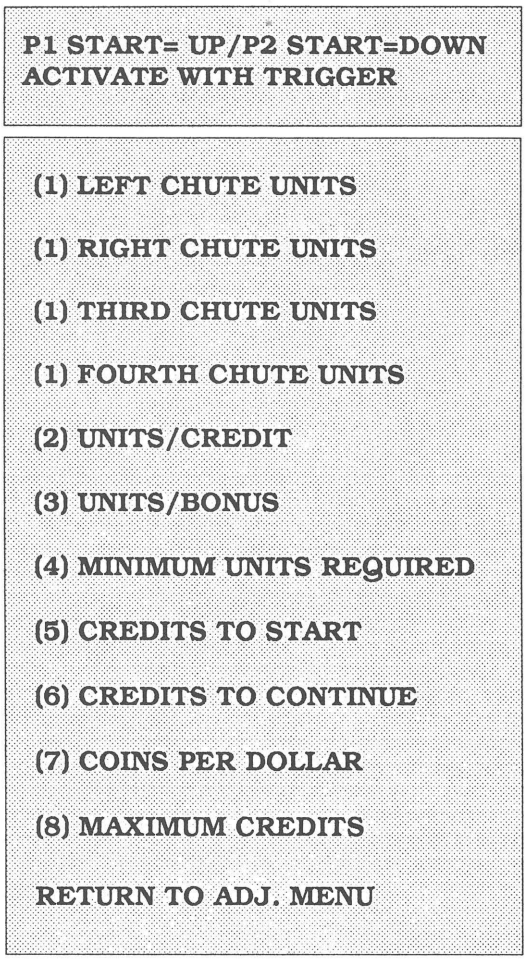
Standard Pricing Table †

NAME	SETTING Credit/Coin	LEFT CHUTE	CENTER CHUTE	RIGHT CHUTE	FOURTH CHUTE
USA 1	1/25¢	25¢		25¢	
USA 2	1/50¢	25¢		25¢	
USA 3	1/50¢, 3/$1.00	25¢		25¢	
USA 4	1/50¢, 4/$1.00	25¢		25¢	
USA 5	1/25¢, 4/$1.00	25¢	$1.00	25¢	
USA 6	1/50¢, 2/$1.00	25¢	$1.00	25¢	
USA 7	1/50¢, 3/$1.00	25¢	$1.00	25¢	
USA 8	1/50¢, 4/$1.00	25¢	$1.00	25¢	
USA ECA	1/25¢, 4/$1.00	$1.00	10¢	25¢	5¢
German 1	1/1DM, 6/5DM	1DM		5DM	
German 2	1/1DM, 7/5DM	1DM		5DM	
German 3	1/1DM, 8/5DM	1DM		5DM	
German 4	1/1DM, 5/5DM	1DM		5DM	
German ECA	1/1DM, 2/2DM, 6/5DM	5DM	1DM	2DM	
France 1	2/5F, 5/10F	5F		10F	
France 2	2/5F, 4/10F	5F		10F	
France 3	1/5F, 3/10F	5F		10F	
France 4	1/5F, 2/10F	5F		10F	
France 5	2/5F, 5/10F, 11/2 x 10F	5F		10F	
France 6	2/5F, 4/10F, 9/2 x 10F	5F		10F	
France 7	1/5F, 3/10F, 7/2 x 10F	5F		10F	
France 8	1/5F, 2/10F, 5/2 x 10F	5F		10F	
France 9	1/3 x 1F, 2/5F	1F		5F	
France 10	1/2 x 1F, 3/5F	1F		5F	
France 11	1/3 x 1F, 2/5F, 5/2 x 5F	1F		5F	
France 12	1/2 x 1F, 3/5F, 7/2 x 5F	1F		5F	
France ECA	1/3 X 1F, 2/5F, 5/2 x 5F	1F	10F	5F	10 P
Canada	1/2 x 25¢, 3/$1.00	25¢		$1.00	
Swiss 1	1/1F, 6/5F	1F		5F	
Swiss 2	1/1F, 7/5F	1F		5F	
Swiss 3	1/1F, 3/5F	1F		5F	
Italy	1/500 Lire	500 Lire		500 Lire	
UK 1	1/20P, 3/50P	20P		50P	
UK 2	2/20P, 5/50P	20P		50P	
UK ECA	1/30P, 2/50P, 4/£1.00	£1.00	20P	50P	
UK w/CCU	1/30P, 2/50P, 4/£1.00	CCU			
Spain 1	1/25 Peseta, 5/100 Peseta	25 Peseta		100 Peseta	
Spain 2	1/25 Peseta, 4/100 Peseta	25 Peseta		100 Peseta	
Australia 1	1/3 x 20¢, 2/$1.00	20¢		$1.00	
Australia 2	1/5 x 20¢, 1/$1.00, 3/$2.00	20¢		$1.00	
Japan 1	1/100 Yen	100 Yen		100 Yen	
Japan 2	2/100 Yen	100 Yen		100 Yen	
Austria 1	1/5Sch, 2/10Sch	5Sch		10Sch	
Austria 2	1/2 x 5Sch, 3/2 x 10Sch	5Sch		10Sch	
Belgium 1	1/20F	20F		20F	
Belgium 2	3/20F	20F		20F	
Belgium 3	2/20F	20F		20F	
Belgium ECA	1/25F, 4/100F	50F	5F	20F	
Sweden	1/3 x 1Kr, 2/5Kr	1Kr		5Kr	
New Zealand 1	1/3 x 20¢	20¢		20¢	
New Zealand 2	1/2 x 20¢	20¢		20¢	
Netherlands	1/1Hfi, 3/2.5Hfi	1Hfi		2.5Hfi	
Finland	1/1Mka	1Mka		1Mka	
Norway	1/2 x 1Kr, 3/5 x 1Kr	1Kr		1Kr	
Denmark	1/2 x 1Kr, 3/5Kr, 7/2 x 5Kr	1Kr		5Kr	
Antilles	1/25¢, 4/1 Guilder	25¢		1 Guilder	

If option desired is not shown above, use custom pricing .

† See Addendum #16-40009B-101 for updated Standard Pricing Table.

Custom Pricing



(1) Coins inserted accumulate units. This adjustment specifies the number of units given for each coin in the fourth chute (see "units/credit").

(2) This is the number of coin units required to buy one credit.

(3) One bonus credit is awarded after this many coin units have accumulated.

(4) No credits will be awarded until this many coin units have accumulated.

(5) Each player needs this many credits to begin a game.

(6) Each player needs this many credits to continue a game.

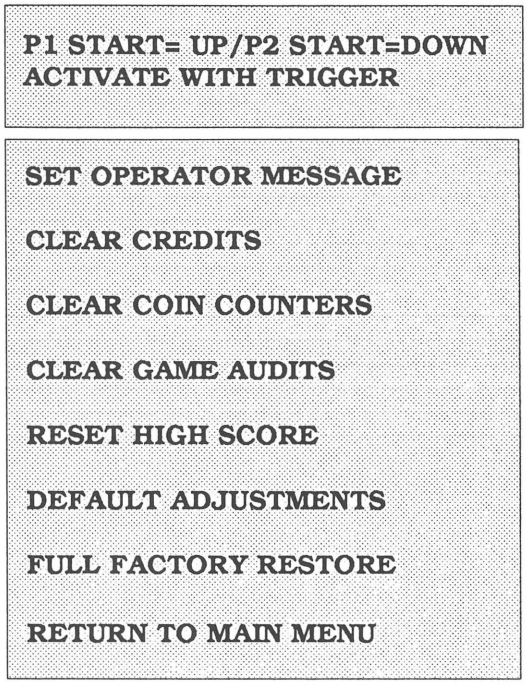
(7) The detailed bookkeeping screen shows total collections based on this many coins per dollar. (Set to zero to disable the display of money totals)

(8) This is the limit for the credits counter. Additional coins inserted will be lost. (factory setting: 30)

UTILITIES

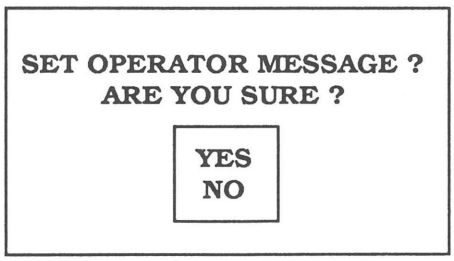
Press any Start Button to select the Utilities option on the Main Menu; then, press either trigger to activate it.

The Utilities Menu allows the owner/operator to clear the game's bookkeeping memory and to install a custom message.



Utilities Menu

Press any Start Button to select an item from the Utilities Menu; then, press either trigger to activate that item. After an item has been activated, you are given the option of resetting that item or not. For example,



Press any Start Button to choose YES or NO; then, press either trigger to lock in your choice and to return to the Utilities Menu.

To exit the Utilities Menu, press any Start Button to select RETURN TO MAIN MENU; then press either trigger to activate your selection.

CALIBRATE GUNS

Press any Start Button to select the Calibrate Guns option on the Main Menu; then, press either trigger to activate it.

The Calibrate Guns option allows the operator to align the guns.

Once the option is activated, the screen gives the operator three targets to aim and shoot at. First with the left gun, then with the right gun. The targets are located in the top left, center, and bottom right of the screen.

When the guns are calibrated correctly, the message

Calibration Successful

appears on the screen and the data is stored in the CMOS RAM. The game automatically returns to the Main Menu. If gun calibration is not successful the following message appears;

CMOS RAM ERROR
Unable to write calibration values.
Guns are not aligned.
Press any button to continue.

Begin again to calibrate the guns. If you make a mistake, press any Start Button to abort the procedure and start over.

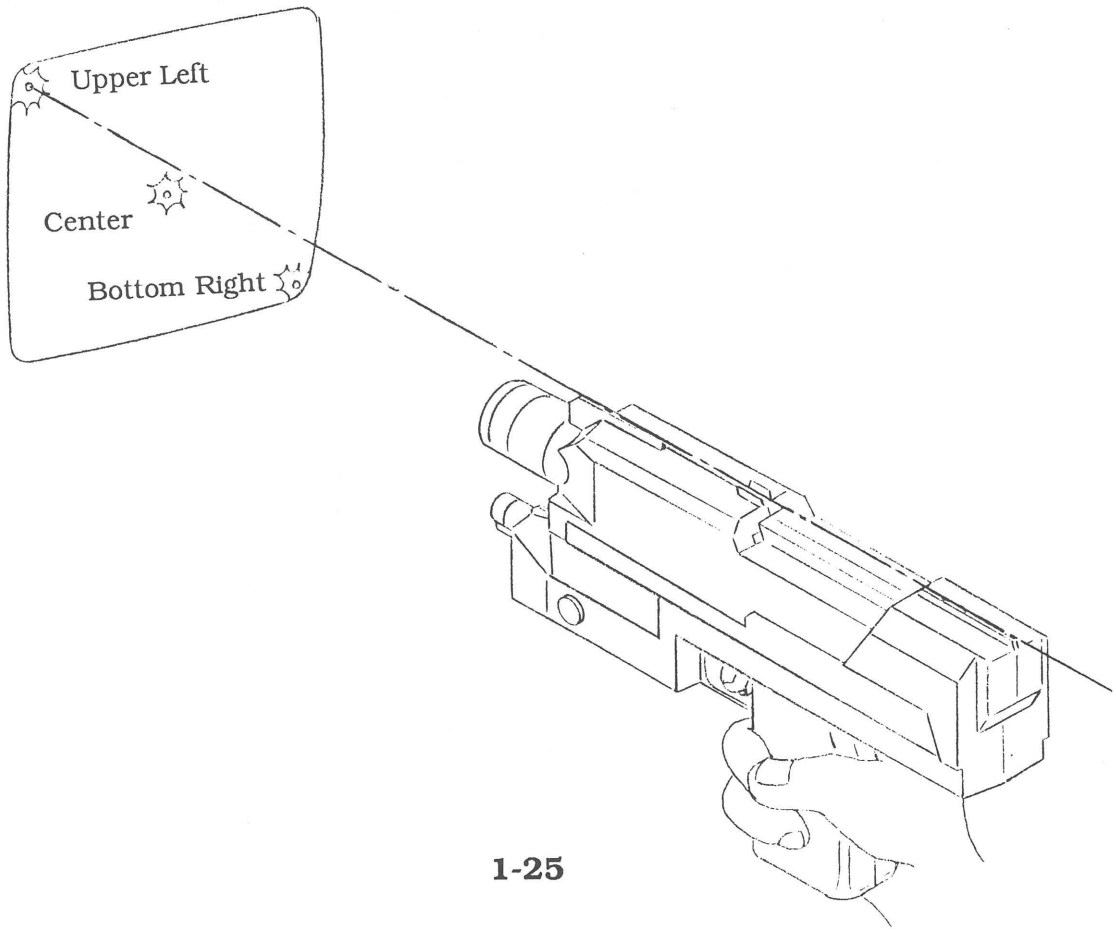
To exit the Main Menu from the Calibrate Guns option, press the Player 2 Start Button to select EXIT TO GAME OVER: then, press either trigger to activate your selection.

Note

The Gun Assemblies are calibrated from the factory. However, if you change boards or replace ROMs, RAMs, or the battery, you must recalibrate the guns. Guns do not operate unless they are calibrated.

Note

It is necessary to turn Off the Test Switch in the coin door, and/or Switch #8 of DIP Switch Bank 2 on the CPU Board to enter the Game Over Mode.



Troubleshooting

Problem	Possible Solution
No picture, or distorted picture.	Check for faulty video board or monitor. Check for disconnected video signal cable.
Turn the game on and nothing happens.	Check line fuse. Check for +5Vdc at pins C, D, 3, and 4 of the CPU Board JAMMA Connector.
No Sound.	Check the speaker and speaker connection to pins L and 10 on the CPU Board JAMMA Connector. Check volume control setting. Check for +12V dc at pins F and 6 on the JAMMA Connector. Check interboard wiring from CPU Board to the Sound Board.
No General Illunination.	Check the 1A., S-B fuse on the floor, left of the front slide out door.
Press the trigger and nothing happens.	Check for open wires between the trigger and CPU Board JAMMA Connector. Check for proper ground. Check the trigger switch inside the gun assembly.
Press the Start Button and nothing happens.	Check for open wires between the Start Button and CPU Board JAMMA Connector. Check for proper ground. Check Start Button switch.
Press the Bomb Button and nothing happens.	Check for open wires between the Bomb Button and the CPU Board JAMMA Connector. Check for proper ground. Check the Bomb Button switch inside the gun assembly.
No credits given when coins are inserted.	Check DIP switch coin setting. Check for contamination on coin switch contacts. Check for an open wire between Coin Switch 1 and pin 16 on the JAMMA Connector or Coin Switch 2 and pin T of the JAMMA Connector.
To many credits for the amount of coins inserted.	Check Game Pricing setting. Check for a short between pins T & 16 on the JAMMA Connector.
The game stays in the Test Mode.	Check that the Test Switch in the coin door and Switch #8 on DIP Switch 2 are set to Off.
Guns do not operate.	Enter the Menu System and activate the Calibrate Guns option. Calibrate both Guns.
Guns do not shake during play mode.	Coil inside gun assembly could be bad. Fuse 1 (Player 1), or fuse 2 (Player 2) on the Coil Lamp Driver Board could be open.
Flashlamps do not light.	Flashlamp could be bad. Fuse 4 on the Coil Lamp Driver Board could be open.
Flashlamps do not light, guns do not shake during play, and the LEDs on the guns do not light.	Fuse 3 on the Coil Lamp Driver Board is probably open.

Terminator 2

SECTION
two

Parts

Cabinet Hardware

Cabinet Assembly	A-14762
Caster Wheel	B-13086
Leg Leveler Plate	01-9155
Leg Adjuster, 3.0"	08-7377
Front Door Assembly	A-14763
Latch Bracket	01-6994
Wood Door	11-1022
Coin Door Assembly	A-14975
Test Switch	A-13115
Coin Door Cable	H-13842
Coin Door Cable	H-14923
Coin Door, U.S.A.	09-20000-V-1
50KΩ Volume Control Pot.	5014-12925-00
20" Vent Hole Cover	03-7602
Marquee Retainer	03-8252-2
Lamp Lock	03-8327
Glass Edge Channel	03-8358
25" CRT Bezel	03-8497-1
Clear Glass Marquee	08-7456-12
Wood Rear Deck	11-1021
Wood Mirror Support	11-1024
Toggle Latch	20-9347
Long Arm Key T-20	20-9620
Long Arm Key T-15	20-9680
Screened Marquee	31-1632-40009
Screened CRT Glass	31-1633-40009
Screened Mirror	31-1643

Speakers

Speaker & Cap Assembly	A-14968
Speaker Cable	H-14922
Cap. 10mF, NP, 50V	5045-12914-00
4Ω, Tweeter Speaker	5555-12924-00
6", 4Ω, Round Speaker	5555-12929-00
Speaker Grille	01-10283
Steel Speaker Screen	4506-01103-24B

Manuals

Monitor Manual	16-3000-103
Instruction Manual	16-40009-101

Monitor

Monitor Support Bracket	A-14769
Monitor Support Bracket	A-14770
25" Monitor	5675-12787-00

PC Boards

Chassis Panel Assembly	A-14794-1
Wood Chassis Panel	11-990
Power Supply Assembly	A-14205
Sound Board Assembly	A-14732-40009
Y-Unit CPU Assembly	A-14818-40009
Coil Lamp Driver Board	A-14915
Dual Flashlamp Board	A-15021
Twist Lamp Socket	24-8767
#906 Bulb	24-8802

Transformer Assembly

Power Pack Assembly	A-15123
Line Cord Assembly	A-13340
Power Pack Chassis Assy	A-15124
Power Pack Jumper Cable	H-13265
Line Filter Jumper Cable	H-13344
Transformer Jumper Cable	H-13378
Varistor, 130V, 10J	5017-09044-00
Line Filter, 5 Amp	5102-08895-00
Power Transformer	5610-12945-00
Fuse, SB, 5A, 250V	5731-09651-00
Fuse Holder, Panel	5733-10358-00

Fluorescent Lamp Assembly

Fluorescent Housing & Bracket	C-12679
Housing Mounting Brkt	01-9146
Light Fixture	20-9590
18" Fluorescent Bulb, 15 W	24-8809

Control Panel

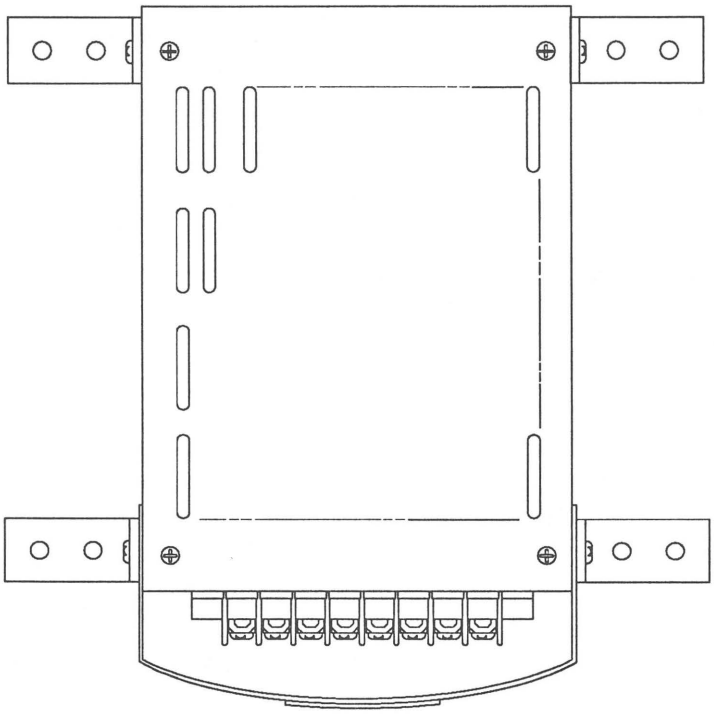
Control Panel Assembly	A-14764
Gun Assembly	A-14415
Control Panel Cable	H-14920
Earth Ground Cable	H-14950
Latch Bracket	01-6994
Wood Control Panel	11-1023
Toggle Latch	20-9347
Red Pushbutton	20-9687-1
Blue Pushbutton	20-9687-3

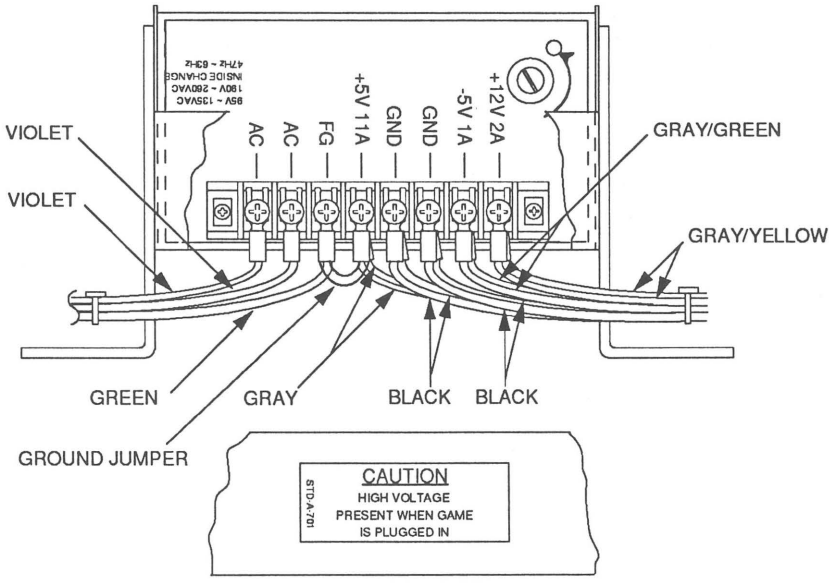
Cables

Line Voltage Cable Assembly	A-14969
Video Sw/Power Cable	H-10217-4
Power Pack Jumper Cable	H-13265
Line Filter Jumper Cable	H-13344
Transformer Jumper Cable	H-13378
Coin Door Cable	H-13842
Ground Jumper Cable	H-13953
Machine Gun Cable	H-14904
Main Harness Cable	H-14905
Video Signal Cable	H-14949
Secondary Jumper Cable	H-14906
Lamp/Speaker Cable	H-14907
Control Panel Cable	H-14920
Piezo Speaker Cable	H-14922
Coin Door Cable	H-14923
Video Extension Cable	H-14924
Sound Power Speaker Cable	H-14925
G.I. Cable	H-14926
Gun Ground Cable	H-14927
Control Panel Earth Ground	H-14950

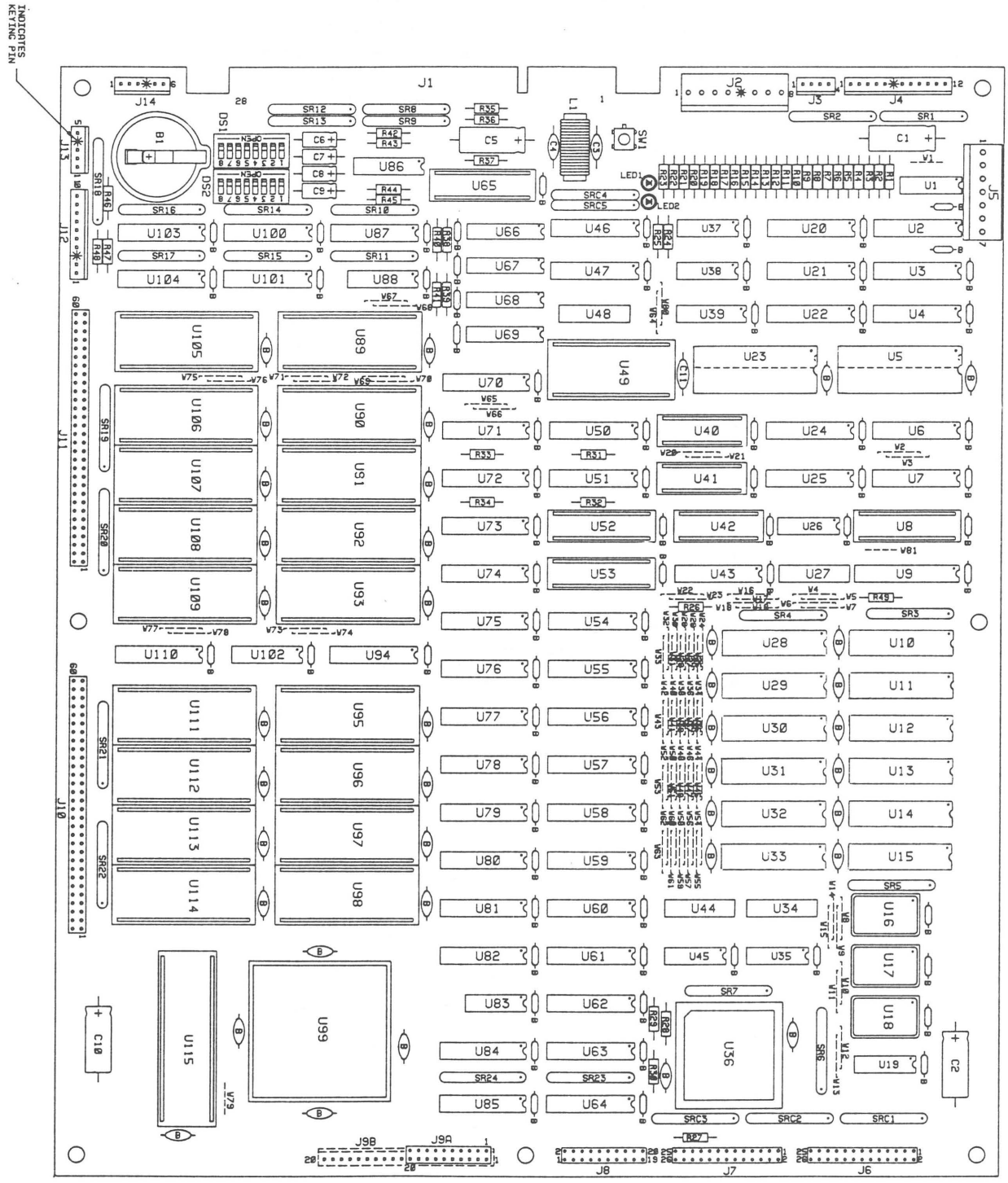
A-14205
Power Supply Switcher Assembly

Part Number	Description
H-10217-4	Video Sw/Power Cable
H-13953	Ground Jumper Cable
01-9254	Shield
01-9938	Mounting Bracket





A-14818-40009
CPU Board Assembly

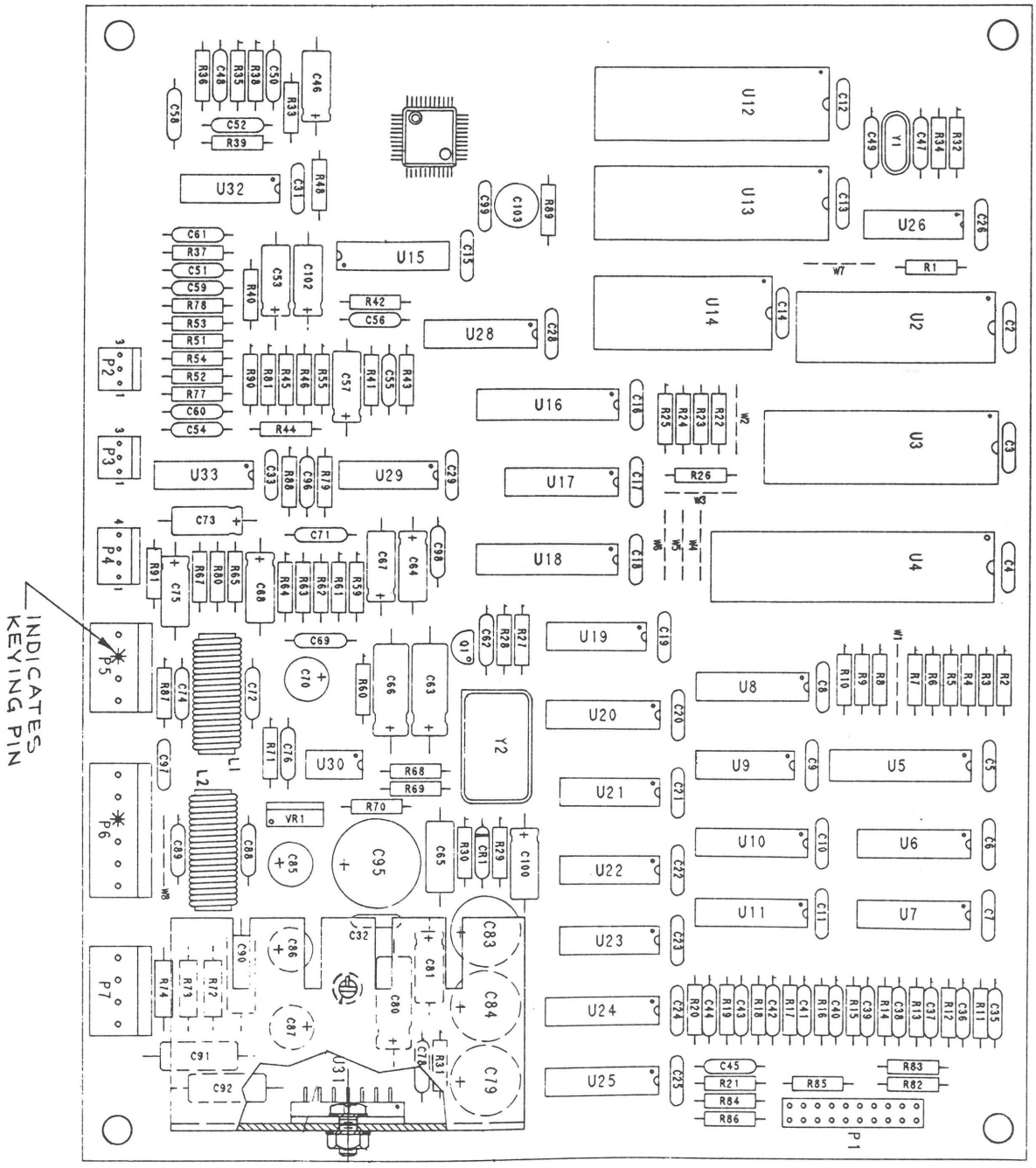


A-14818-40009
CPU Board Parts

Part No.	Ckt.Designator	Description
*		Bare PC Brd.
5281-09737-00	U1	IC, 74LS86 XOR
5317-12211-00	U2, U20, U24, U43 U61, U62, U70	IC, 74ALS541
5317-12212-00	U3, U6, U7, U21, U25 U50, U58, U63, U64 U71, U72, U74, U79, U84, U85	74ALS574
5317-12208-00	U4, U22, U54-U57 U59, U60, U75-U78 U80, U81, U94, U110	74ALS245
5340-12840-00	U5, U23	IC, 8K x 8 S RAM
5700-12047-00	U8, U52, U53, U65	24-pin Socket
5340-12213-00	U10, U11, U28-U33	IC, 4461 VRAM
5521-12934-00	U16	50 MHZ Xtal
5521-10318-00	U17	24 MHZ Xtal
5283-10468-00	U19, U45	IC, 74F74
5019-10849-00	U27, U34, U44, U48	100Ω DIP Res.
5317-12305-00	U35	IC, 74ALS00
5700-12253-00	U36	68-pin Socket
5280-09309-00	U37	IC, 7407
5281-09487-00	U38	IC, 74LS74
5434-12255-00	U39	IC, MAX691
5700-09915-00	U40-U42	20-pin Socket
5311-12287-00	U47, U46, U87, U100 U101, U103, U104	IC, 74HC541
5700-10176-00	U49	28-pin Socket
5311-12285-00	U51, U73, U82	IC, 74HC573
5340-12014-00	U66-U69	IC, 4464 DRAM
5283-10552-00	U83	IC, 74F04
5370-12602-00	U86	IC, ULN2064B
5317-12023-00	U88	IC, 74ALS138
5700-12088-00	U89-U93, U95-U98 U105-U109, U111-U114	32-pin Socket
5700-12254-00	U99	144-pin Socket
5317-12024-00	U102	IC, 74ALS139
5700-08985-00	U115	40-pin Socket
5010-08991-00	R1,R24, R27	Res. 4.7KΩ 5% 1/4W
5010-10204-00	R2, R7, R12	Res. 1KΩ 2% 1/4W
5010-10205-00	R3, R8, R13	Res. 2KΩ 2% 1/4W
5010-10000-00	R4, R9, R14	Res. 3.9KΩ 5% 1/4W
5010-09219-00	R5, R10, R15	Res. 8.2KΩ 5% 1/4W
5010-08772-00	R6, R11, R16	Res. 15KΩ 5%1/4W
5010-09001-00	R23, R25	Res. 330Ω 5% 1/4W
5010-09036-00	R26, R29-R34, R50, R51	Res. 100Ω 5% 1/4W
5010-09416-00	R35-R37, R46-R48	Res. 470Ω 5% 1/4W
5010-08997-00	R38-R45	Res. 2.7KΩ 5% 1/4W
5010-09534-00	W2, W8, W11, W12, W14, W21, W22, W24, W27, W29, W30, W32, W34, W36, W39, W41, W42, W45, W47, W48, W50, W52, W55, W57, W58, W60, W62, W65, W68, W69, W71, W73, W75, W77, W80, W83	Res. 0Ω
5043-08980-00	B	Cap. .01 µfd 10V
5040-08986-00	C1, C2, C5, C10	Cap. 100µfd 10V
5043-09845-00	C3, C4	Cap. .001µfd 10V
5041-09243-00	C6-C9	Cap. 10µfd 10V
5043-8996-00	C11	Cap. .1µfd
5019-12611-00	SR1, SR2, SR8 SR9, SR12, SR13 SR18	SIP, 470Ω, 5 Res.
5019-09362-00	SR3, SR4, SR6 SR7, SR11, SR15 SR17, SR19-SR24 SRC1-SRC3	SIP, 4.7KΩ, 9 Res.
5091-10143-00	SR5	SIP, 470Ω, 9 Res.
5060-10396-00	SRC4, SRC5 SRC10, SRC14 SRC16	SIP. 4.7KΩ 470pf
5671-09019-00	LED1, LED 2	LED, Red
5551-09822-00	L1	Inductor, 4.7UH
5645-09025-00	DS1, DS2	DIP. Sw. 16 pin
5641-12551-00	SW1	Pushbutton Sw.
5881-12315-00	B1	Battery Holder
5791-10862-08	J2	8-pin Header
5791-12461-12	J4	12-pin Header
5791-10850-00	J6, J7	26-pin Ribbon Conn.
5791-12461-04	J3	4-pin Header
5791-12461-20	J9A, J9B	20-pin Header
5791-09437-00	J8	20-pin Ribbon Conn.
5791-12461-10	J12	10-pin Header
5700-12252-00	U12-U15	24-pin Socket
5791-12461-05	J13	5-pin Header
A-14819		CPU Sub-assembly
A-5346-40009-1	U8	IC, PLD Color RAM Ctrl
5400-12220-00	U36	IC, TM34010-50, GSP
A-5346-40009-2	U40	IC, PLD Address Decode
A-5346-40009-3	U41	IC, Video RAM Control
A-5346-40009-10	U42	IC, PLD Local Control
5340-12558-00	U49	IC, Static RAM, 150ns
A-5346-40009-11	U52	IC, PLD Video RAM Seq.
A-5346-40009-6	U53	IC, PLD Image ROM Ctrl
A-5346-40009-7	U65	IC, PLD Misc. Control
A-5343-40009-1	U89	IC, Game EPROM
A-5343-40009-2	U90	IC, Game EPROM
A-5343-40009-3	U91	IC, Game EPROM
A-5343-40009-4	U92	IC, Game EPROM
A-5343-40009-5	U93	IC, Game EPROM
A-5341-12952-02	U95	IC, Image ROM, 2M-01
A-5343-40009-7	U96	IC, Game EPROM
A-5343-40009-8	U97	IC, Game EPROM
A-5343-40009-9	U98	IC, Game EPROM
5410-12239-00	U99	IC, Custom ASIC
A-5343-40009-10	U105	IC, Game EPROM
A-5341-12952-03	U106	IC, Image ROM, 2M-02
A-5343-40009-12	U107	IC, Game EPROM
A-5343-40009-13	U108	IC, Game EPROM
A-5343-40009-14	U109	IC, Game EPROM
A-5341-12952-01	U111	IC, Image ROM, 2M-00
A-5343-40009-16	U112	IC, Game EPROM
A-5343-40009-17	U113	IC, Game EPROM
A-5343-40009-18	U114	IC, Game EPROM
A-5346-40009-8	U115	IC, PLD Autoerase Ctrl
5880-11056-00	B1	Battery, Lithium, 3V
03-8338-1		1/4" Spacer

Notes: 1. See Section 3 for schematic
2. *= Not available for individual sale.

A-14732-40009
Sound Board Assembly



NOTE:
U15 IS ROTATED (180°)
WITH RESPECT TO
OTHER IC's.

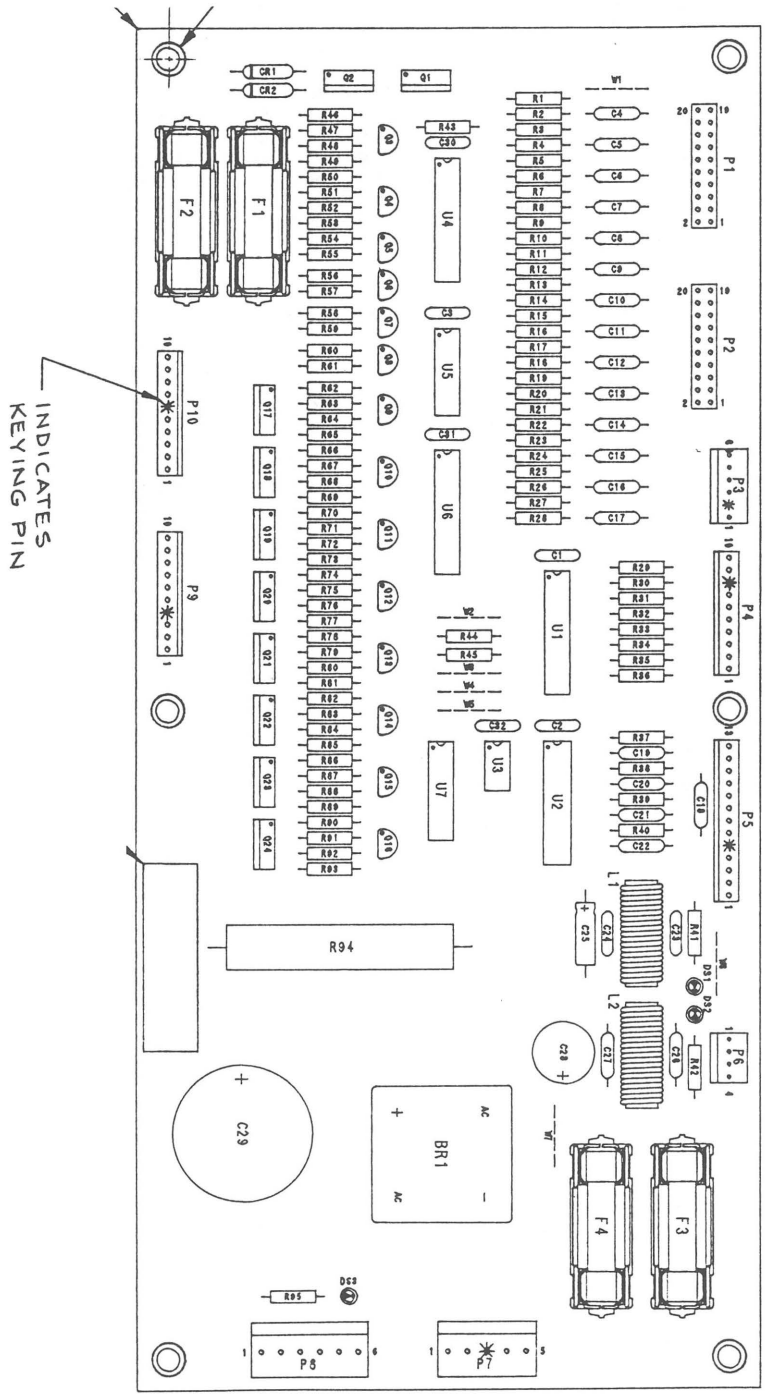
A-14732-40009
Sound Board Parts

Part No.	Ckt. Designator	Description
5340-12958-00	U7, U11, U24	IC, 26LS31
5340-12959-00	U6, U10, U25	IC, 26LS32
5281-09850-00	U19	IC, 74LS11
5281-09215-00	U26	IC, 74LS04
5281-09851-00	U21	IC, 74LS14
5281-09487-00	U9, U22, U23	IC, 74LS74
5281-09745-00	U8	IC, 74LS138
5281-09246-00	U20	IC, 74LS139
5281-09733-00	U17	IC, 74LS174
5281-09486-00	U5, U16	IC, 74LS374
5340-12278-00	U2	IC, Static RAM
5370-12260-00	U30	IC, 3340 Attenuator
5460-12743-00	VR1	IC, 7809 Regulator
5370-12960-00	U29	IC, LM324 OP Amp
5370-12730-00	U32, U33	IC, TL084 OP Amp
5371-12727-00	U15	AD7524 DAC
5370-12963-00	U31	HA13116 Pwr. Amp.
5521-10931-00	Y2	8Mhz Oscillator
5520-09020-00	Y1	3.58Mhz Crystal
5010-09534-00	W2, W3, W5, W7, W8	0Ω Resistor
5010-12961-00	R72-R74	3.3Ω Res., 5%, 1/2W
5010-09039-00	R89	10Ω Res., 5%, 1/4W
5010-10170-00	R11-R21	47Ω Res., 5%, 1/4W
5010-09036-00	R4, R30, R90	100Ω Res., 5%, 1/4W
5010-09187-00	R27	150Ω Res., 5%, 1/4W
5010-09160-00	R83	220Ω Res., 5%, 1/4W
5010-09416-00	R32, R43, R41, R82	470Ω Res., 5%, 1/4W
5010-09358-00	R43, R68	1KΩ Res., 5%, 1/4W
5010-08998-00	R22-R24, R26, R59, R61	2.2KΩ Res., 5%, 1/4W
5010-08983-00	R28	3.3KΩ Res., 5%, 1/4W
5010-10000-00	R87	3.9KΩ Res., 5%, 1/4W
5010-08991-00	R1-R3, R5-R10, R25, R84-R86, R91	4.7KΩ Res., 5%, 1/4W
5010-09219-00	R69	8.2KΩ Res., 5%, 1/4W
5010-09034-00	R62, R63, R67, R70, R80	10KΩ Res., 5%, 1/4W
5010-09269-00	R64	12KΩ Res., 5%, 1/4W
5010-09324-00	R58	27KΩ Res., 5%, 1/4W
5010-09325-00	R36	39KΩ Res., 5%, 1/4W
5010-09035-00	R29, R53, R81	47KΩ Res., 5%, 1/4W
5010-10987-00	R77, R78	56KΩ Res., 5%, 1/4W
5010-10650-00	R38, R45, R51	62KΩ Res., 5%, 1/4W
5010-08776-00	R31, R71	68KΩ Res., 5%, 1/4W
5010-10257-00	R35	75KΩ Res., 5%, 1/4W
5010-12927-00	R79	82KΩ Res., 5%, 1/4W
5010-09162-00	R33, R48, R54, R55, R60, R65	100KΩ Res., 5%1/4W
5010-12965-00	R39	130KΩ Res., 5%, 1/4W
5010-09134-00	R40, R44, R46, R52	150KΩ Res., 5%, 1/4W
5010-12964-00	R37, R42	820KΩ Res., 5%, 1/4W
5048-11027-00	C59, C60	33pF Cap., 10%
5043-10264-00	C50, C62	68pF Cap., 10%
5043-09492-00	C35-C45, C47, C49 C98	100pF Cap., 10%
5048-12748-00	C54, C61, C96	220pF Cap., 10%
5048-11030-00	C71	470pF Cap., 10%
5048-12506-00	C78	820pF Cap., 10%
5048-11031-00	C48, C55, C76	1000pF Cap., 10%
5048-11065-00	C69	2200pF Cap., 10%
5048-12967-00	C58	2700pF Cap., 10%
5048-11072-00	C51, C56	3300pF Cap., 10%
5048-12966-00	C52	3900PFCap., 10%
5043-08980-00	C2-C26, C28, C29, C31-C33, C97, C99	.01mF Cap.
5045-12926-00	C90-C92	.1mF Cap., 10%
5043-08996-00	C72, C74, C88, C89	.1mF Cap., 20%
5048-12036-00	C65	.22mF Cap., 10%
5040-09365-00	C68	1mF, Cap.,
5040-09343-00	C46, C53, C57, C64 C67, C73, C75, C81 C100, C102	10mF Cap., 16V, 20%

Part No.	Ckt Designator	Description
5040-09332-00	C63, C66, C80	47mF Cap., 25V
5040-09421-00	C70, C85-C87, C103	100mF Cap., 25V
5040-09506-00	C79, C83, C84	220mF Cap., 16V
5040-12670-00	C95	2200mF Cap., 16V
5070-08919-00	CR1	1N4148 Diode
5160-12891-00	Q1	MPS3646 Trans.
5551-09822-00	L1, L2	4.7µH Inductor, 3A
5700-09006-00	U28	16-pin Socket
5700-09915-00	U18	20-pin Socket
5700-09004-00	U14	24-pin Socket
5700-08985-00	U4	40-pin Socket
5700-12088-00	U3, U12, U13	32-pin Socket
5791-10862-04	P5, P7	4-pin Header
5791-10862-06	P6	6-pin Socket
5791-09437-00	P1	20-pin Header
01-10516		Heat Sink
4406-01128-00		6-32 Hex Nut
4006-01003-06		6-32 x 3/8 P-PH-S
20-9690-18		Spacer, 1-1/8
*		Bare PCB
5433-12962-00	U1	IC, OK16295
5400-10320-00	U4	IC, 68B09E MPU
5371-11087-00	U28	IC, YM3012 DAC
5370-11086	U14	IC, YM2151 Sd Gen
A-5346-40009-9	U18	IC, PLD Sound
A-5343-40009-19	U3	IC, EPROM Assy
A-5343-40009-20	U12	IC, EPROM Assy
A-5343-40009-21	U13	IC, EPROM Assy
*		Label
03-8358-1		PCB Mtg. Spacer
A-14733		Sub-assembly

Notes: 1. See Section 3 For Schematic
2. * = Not for individual sale.

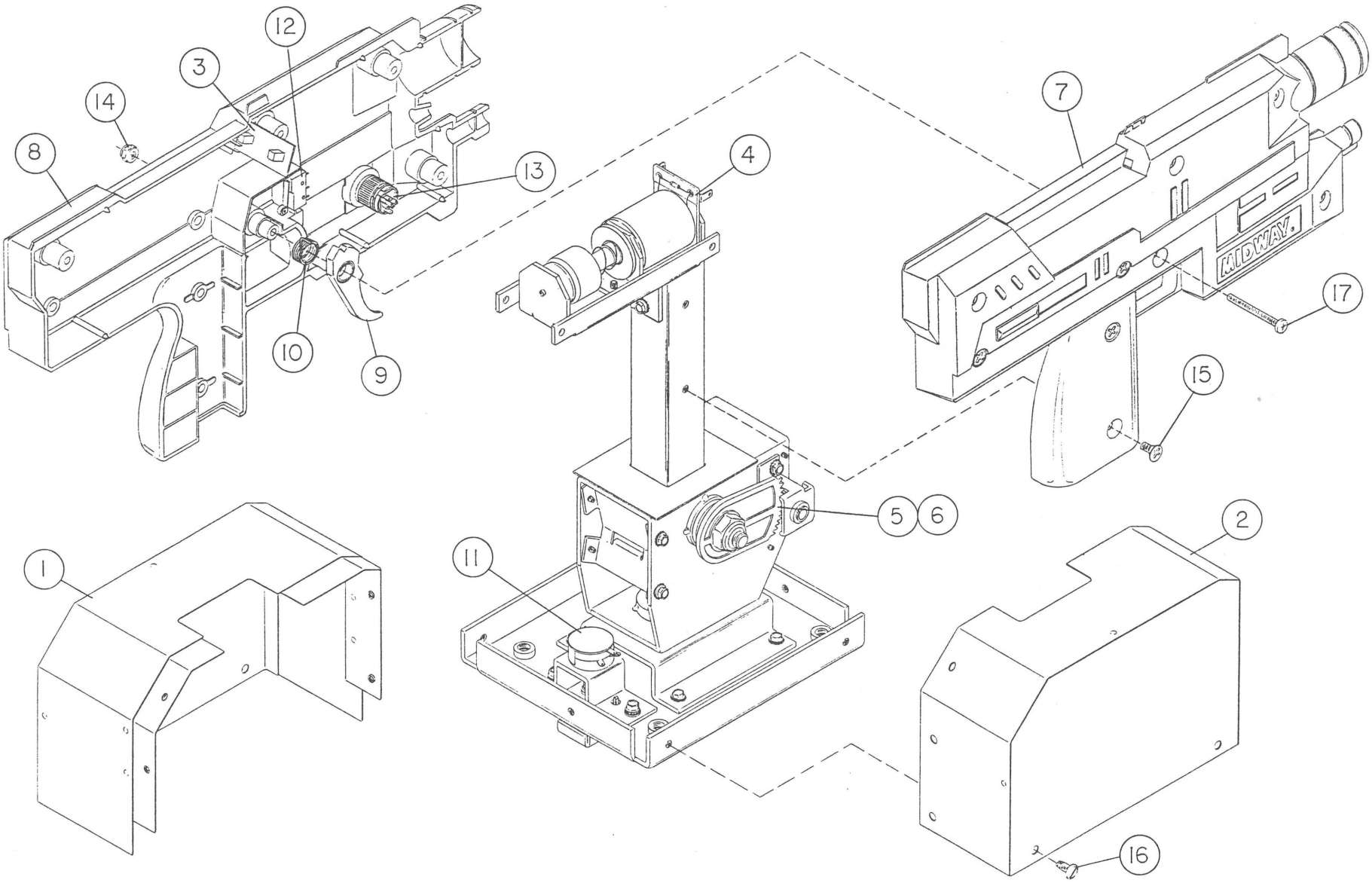
A-14915
Coil Lamp Driver Board Assembly



A-14915
Coil Lamp Driver Board Parts

Part Number	Ckt. Designator	Description
5315-12031-00	U1	IC, 74HCT244
5372-12901-00	U2	IC, ADC0844
5311-12668-00	U4, U6	IC, 74HCT273
5311-12669-00	U5	IC, 74HCT14
5434-12910-00	U3	IC, MAX699
5162-12635-00	Q1, Q2, Q17-Q24	Trans., TIP102
5160-10269-00	Q3, Q4, Q9-Q16	Trans., 2N3904
5010-09034-00	R1, R3, R5, R7, R9, R11, R13, R15, R17, R19, R21, R23, R25, R27, R37, R38, R39, R40, R44, R45	Res., 10KΩ, 1/4W, 5%
5010-09162-00	R2, R4, R6, R8, R10, R12, R14, R16, R18, R20, R22, R24, R26 R28	Res., 100KΩ, 1/4W, 5%
5010-09416-00	R29-R36, R49, R53, R65, R69, R73, R77, R81, R85, R89, R93	Res., 470Ω, 1/4W, 5%
5010-09224-00	R41, R42	Res., 270Ω, 1/4W, 5%
5010-08991-00	R43, R48, R52, R64, R68, R72, R76, R80, R84, R88, R92	Res., 4.7KΩ, 1/4W, 5%
5010-08997-00	R46, R50, R62, R66, R70, R74, R78, R82, R86, R91	Res., 2.7KΩ, 1/4W, 5%
5010-12480-00	R47, R51, R63, R67, R71, R75, R79, R83, R87, R90	Res., 68Ω, 1/4W, 5%
5010-09187-00	R54, R56, R58, R60	Res., 150Ω, 1/4W, 5%
5010-10983-00	R55, R57, R59, R61	Res., 1.8KΩ, 1/4W, 5%
5012-12632-00	R94	Res., .12Ω, 10W, 10%
5010-09085-00	R95	Res., 1.5KΩ, 1/4W, 5%
5010-09534-00	W1, W6, W7	Jumper Wire
5070-09054-00	CR1, CR2	Diode, 1N4004, 1A
5043-08980-00	C1-C3, C23, C24, C30-C32	Cap., .01mF, 50V
5043-09492-00	C4-C7, C9-C22	Cap., 100pF, 50V
5040-12751-00	C25	Cap., 4.7mF, 10V
5048-11031-00	C26, C27	Cap., .001mF, 50V
5040-10974-00	C28	Cap., 100mF, 35V
5551-09822-00	L1, L2	Ind., 4.7μH, 3A
5100-09418-00	BR1	Bridge Rec., 100V, 35A
5730-06311-00	F1, F2	Fuse, 3A, FB, 250V
5730-12985-00	F3	Fuse, 1A, FB, 250V
5731-09432-00	F4	Fuse, 7A, SB, 125V
5733-12060-01		Fuse Holder
5671-09019-00	DS1, DS2, DS3	LED Red
5791-09437-00	P1, P2	20-pin Header
5791-12461-06	P3	6-pin Header .100
5791-12461-10	P4, P9, P10	10-pin Header .100
5791-12461-13	P5	13-pin Header .100
5791-12461-04	P6	4-pin Header .100
5791-10862-05	P7	5-pin Header .156
5791-10862-06	P8	6-pin Header .156
5190-09016-00	Q5-Q8	Trans., 2N4403
03-8338-1		Spacer, PCB Mtg., 1/4"

A-14415
Gun Assembly

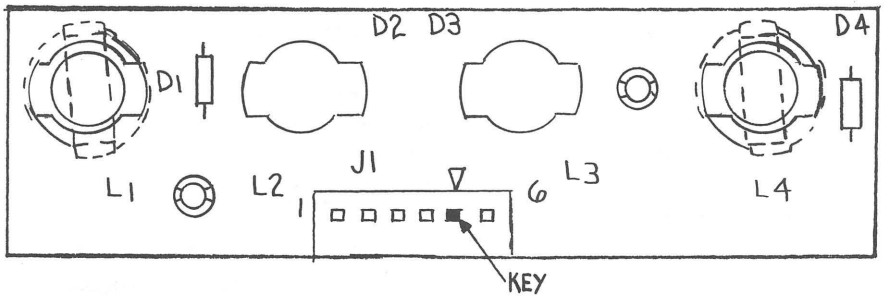


A-14415
Gun Parts

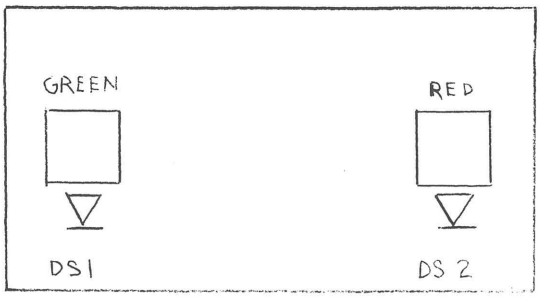
Item	Part Number	Description
1	A-14444	Housing Assembly, Left
2	A-14590	Housing Assembly, Right
3	A-14914	Gun LED Assembly
4	A-14455	Coil & Bracket Assembly
5	03-8528	Gear Drive
6	03-8529	Gear Pinion
7	03-8537	Molded Housing, Right
8	03-8538	Molded Housing, Left
9	03-8539	Molded Trigger
10	10-429	Trigger Return Spring
11	5014-12909-00	Potentiometer, 5KΩ, Long Life
12	5647-12863-00	Switch, Snap Action Trigger
13	5641-12864-00	Switch, Pushbutton, Rocket
Hardware:		
14	4408-01119-00B	Nut, #8-32 ESNA, Black Oxide
15	4010-01148-06B	MS, #10-43, FH Torx TP, Black Oxide
16	4008-01090-06B	MS, #8-32 x 3/8 PH Torx TP, T23
17	4008-01093-22B	MS, #8-32 x 1-3/8, TPR
	4422-01119-00	Nut, 3/8-16 ESNA/NTU
	4410-01153-20	Nut, #10-24 x 1-1/4, HWHD, Sems
	4108-01150-06	SMS, #8-32, PL HWHD, Sems, T23
	4700-00034-00	FW, .265 x .875 x .067 ga.
	4700-00012-00	FW, .172 x .375 x .032 ga.
	4420-01119-00	Nut, 1/4-20 ESN/NTU
	4320-01124-20	Bolt, 1/4-20 x 1/4 H, HD

A-15021
Dual Flashlamp Board Assembly

Part No.	Description
24-8802	Bulb, #906, 12V, 2.5A



A-14914
Gun LED Board Assembly

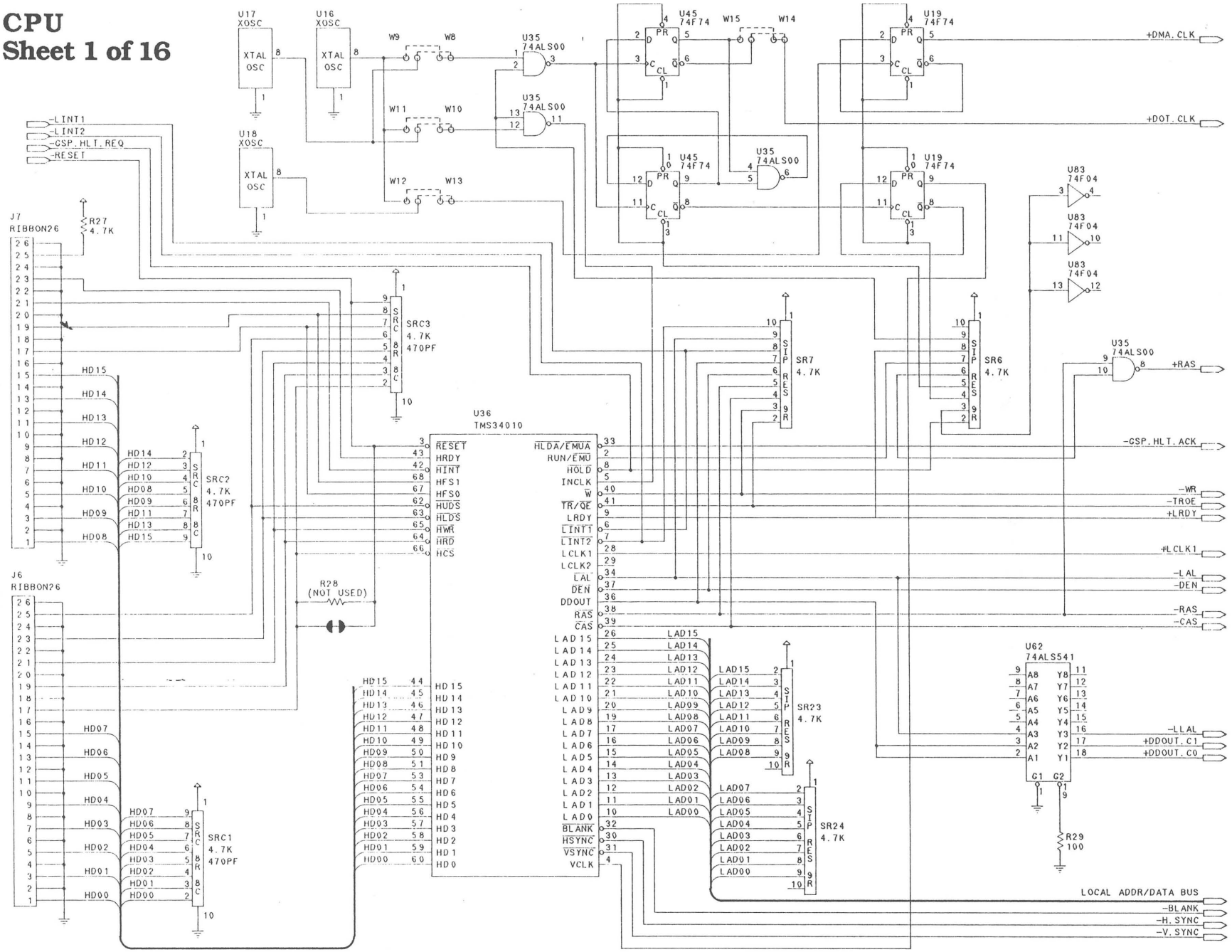


Terminator 2

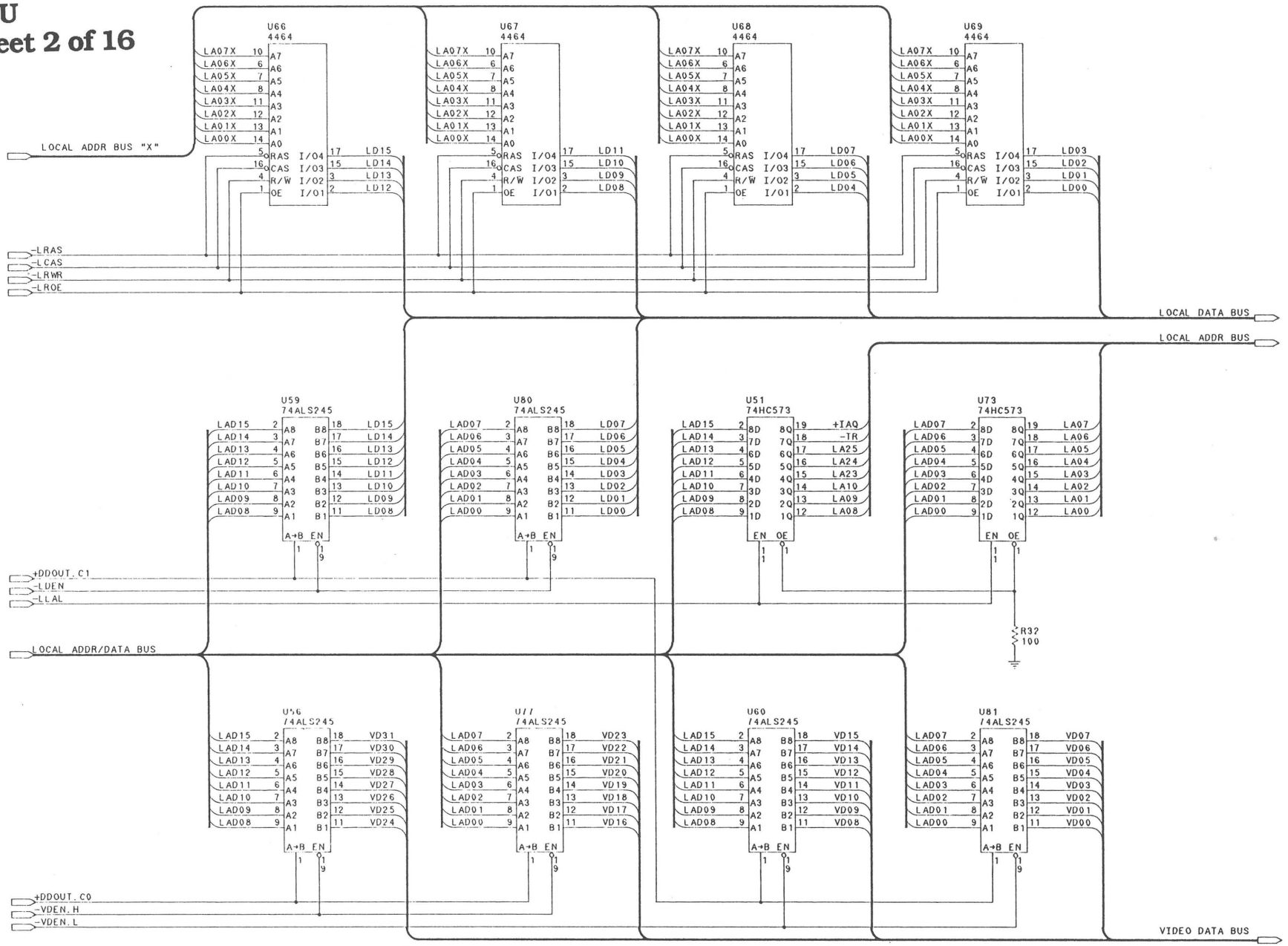
SECTION
three

Schematics & Wiring

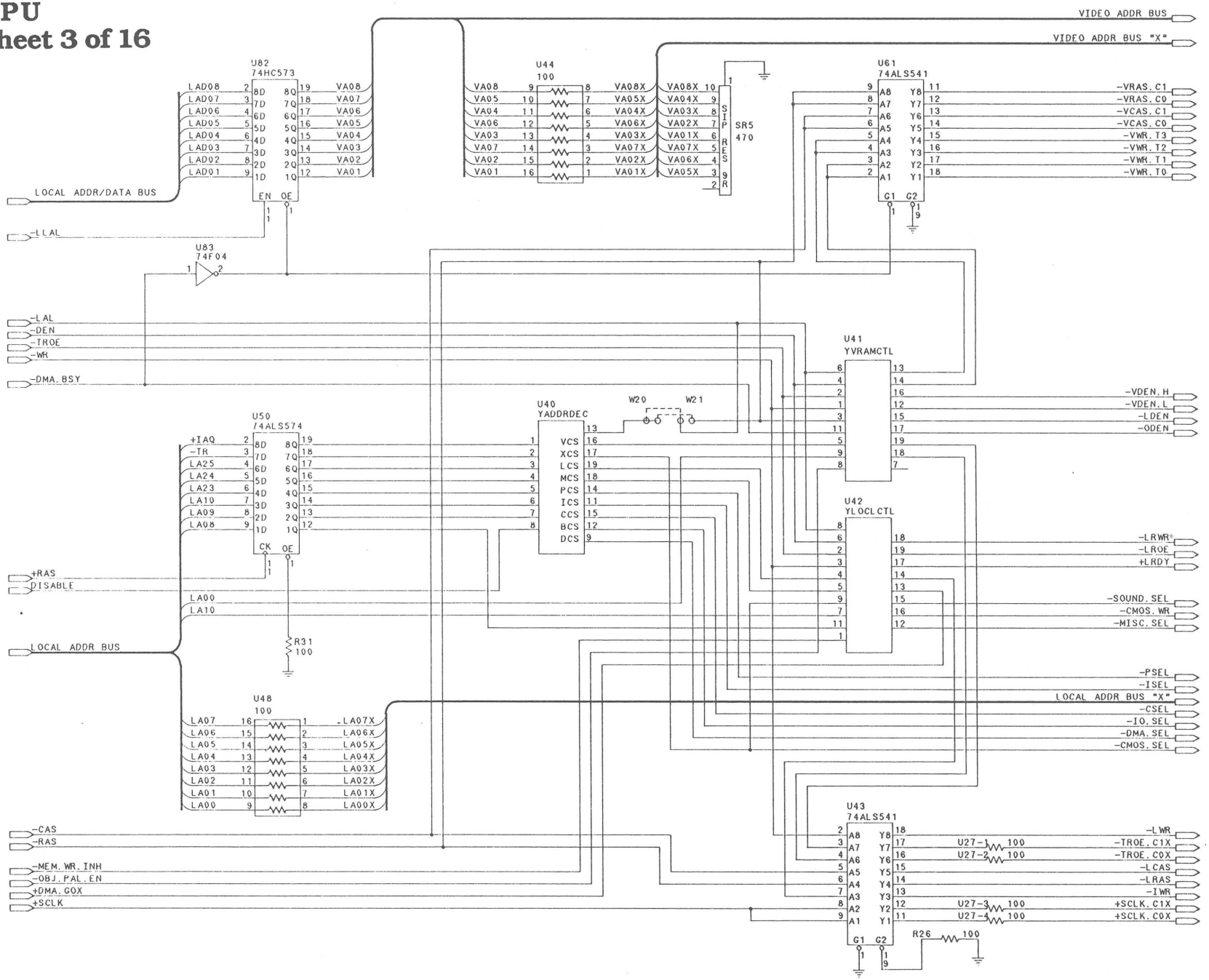
CPU
Sheet 1 of 16



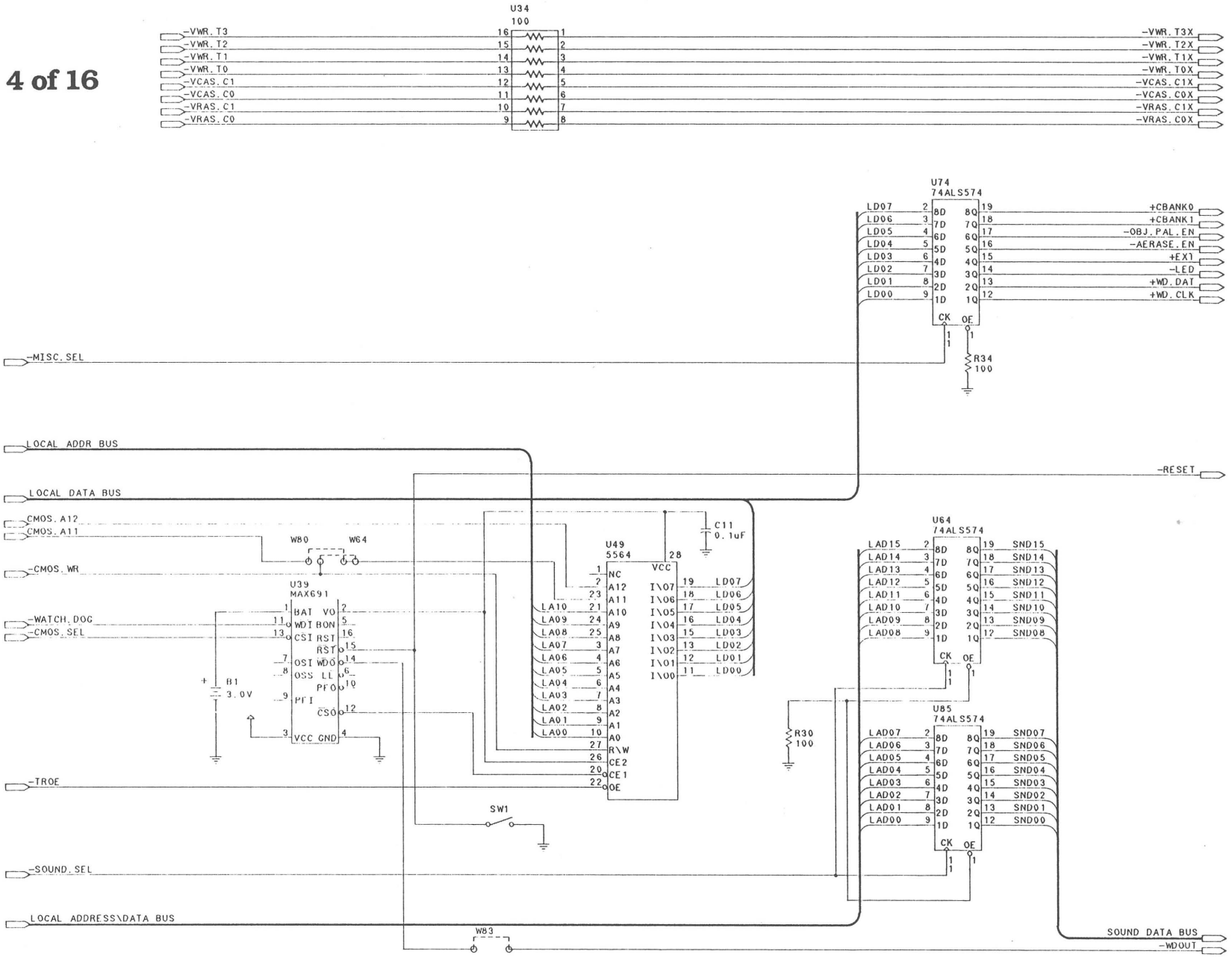
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Sheet 2 of 16



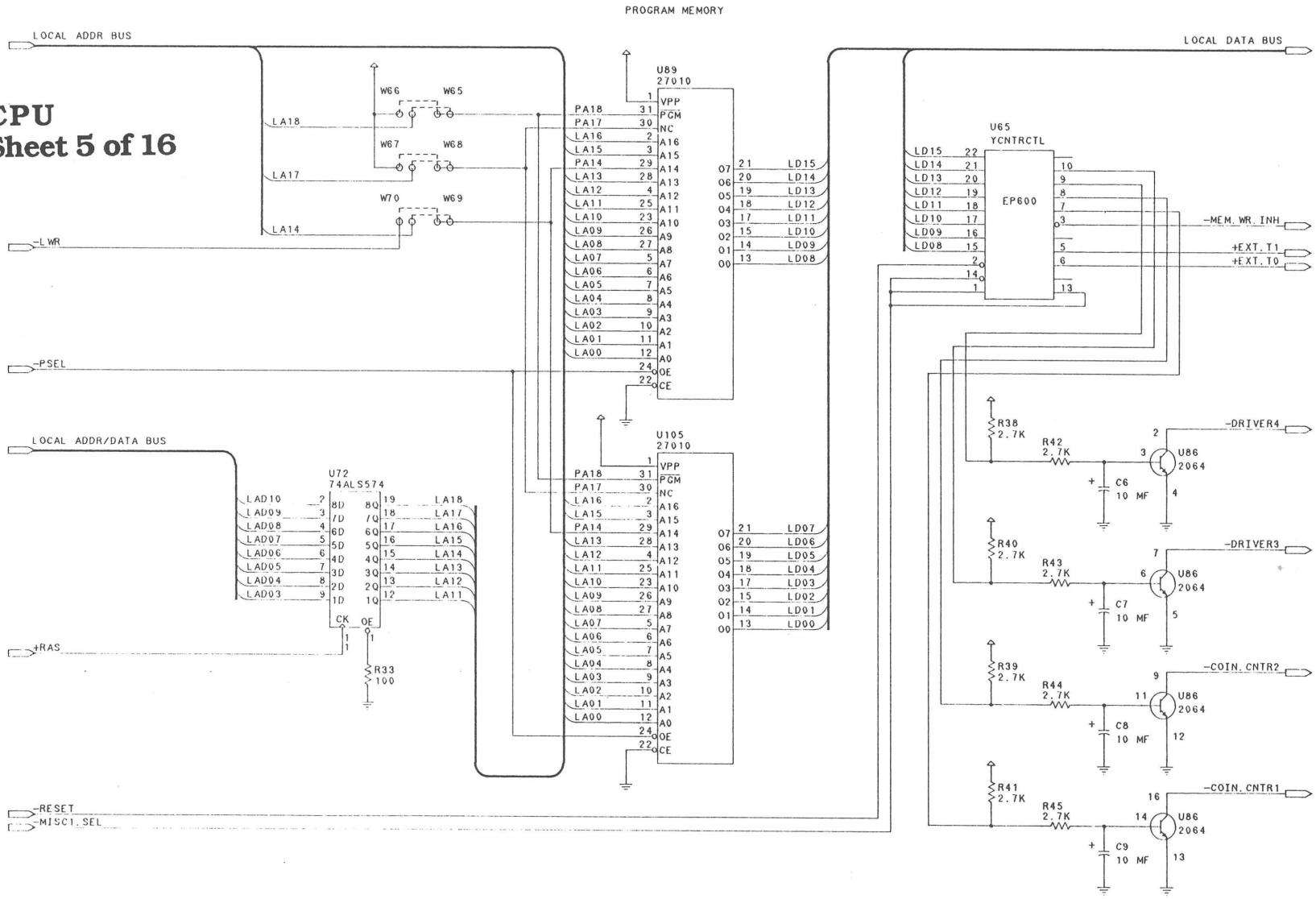
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Sheet 3 of 16



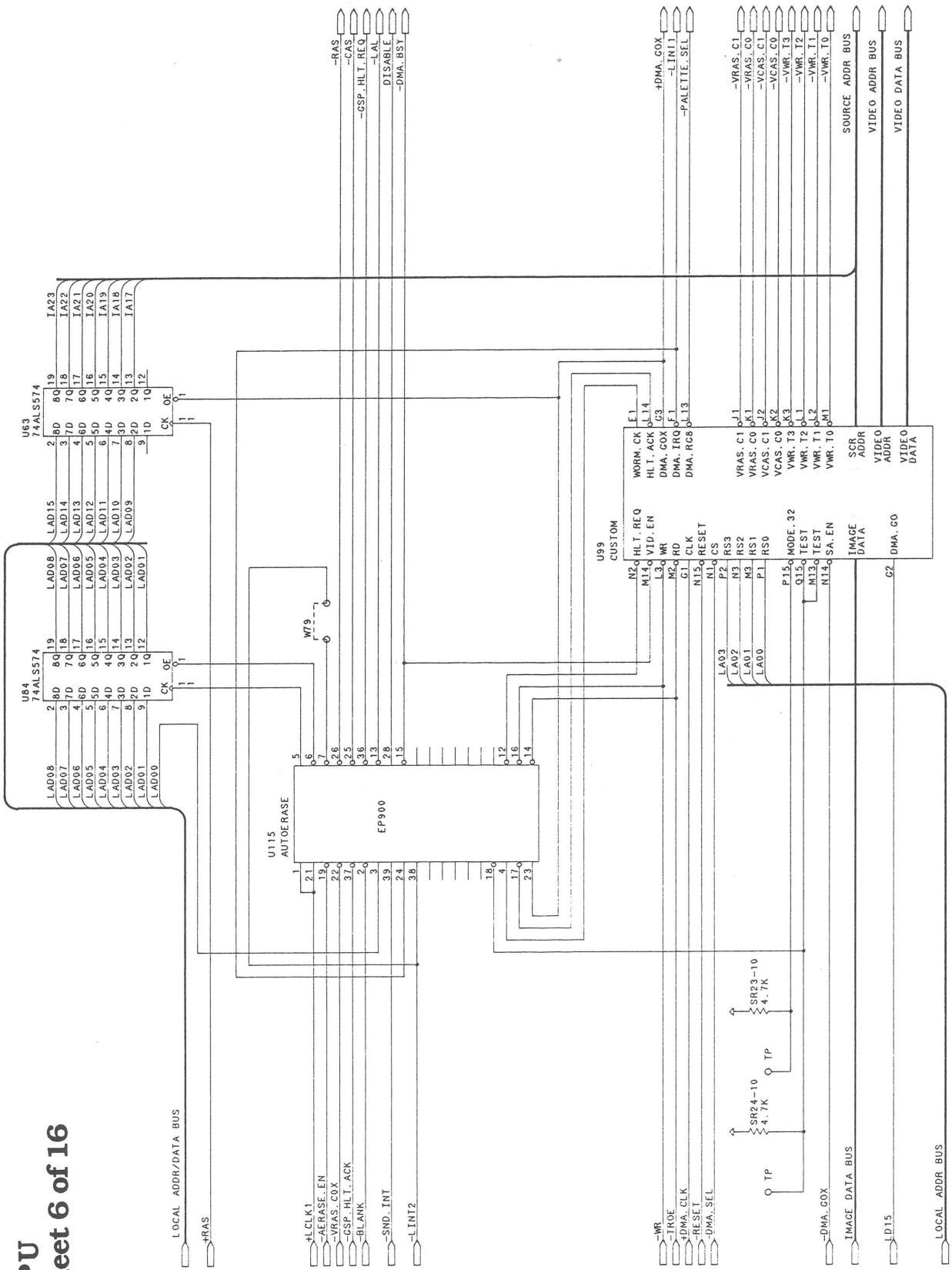
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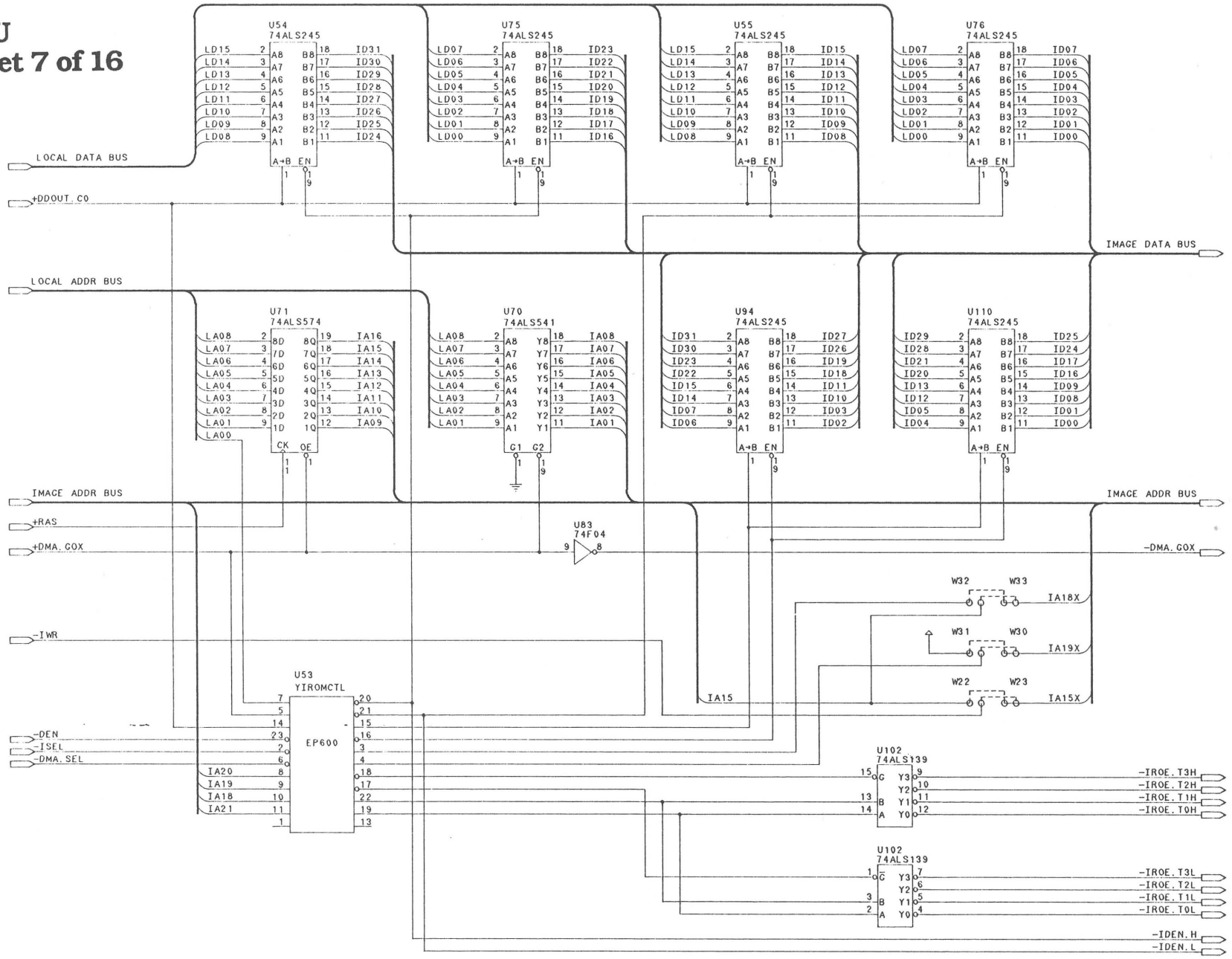
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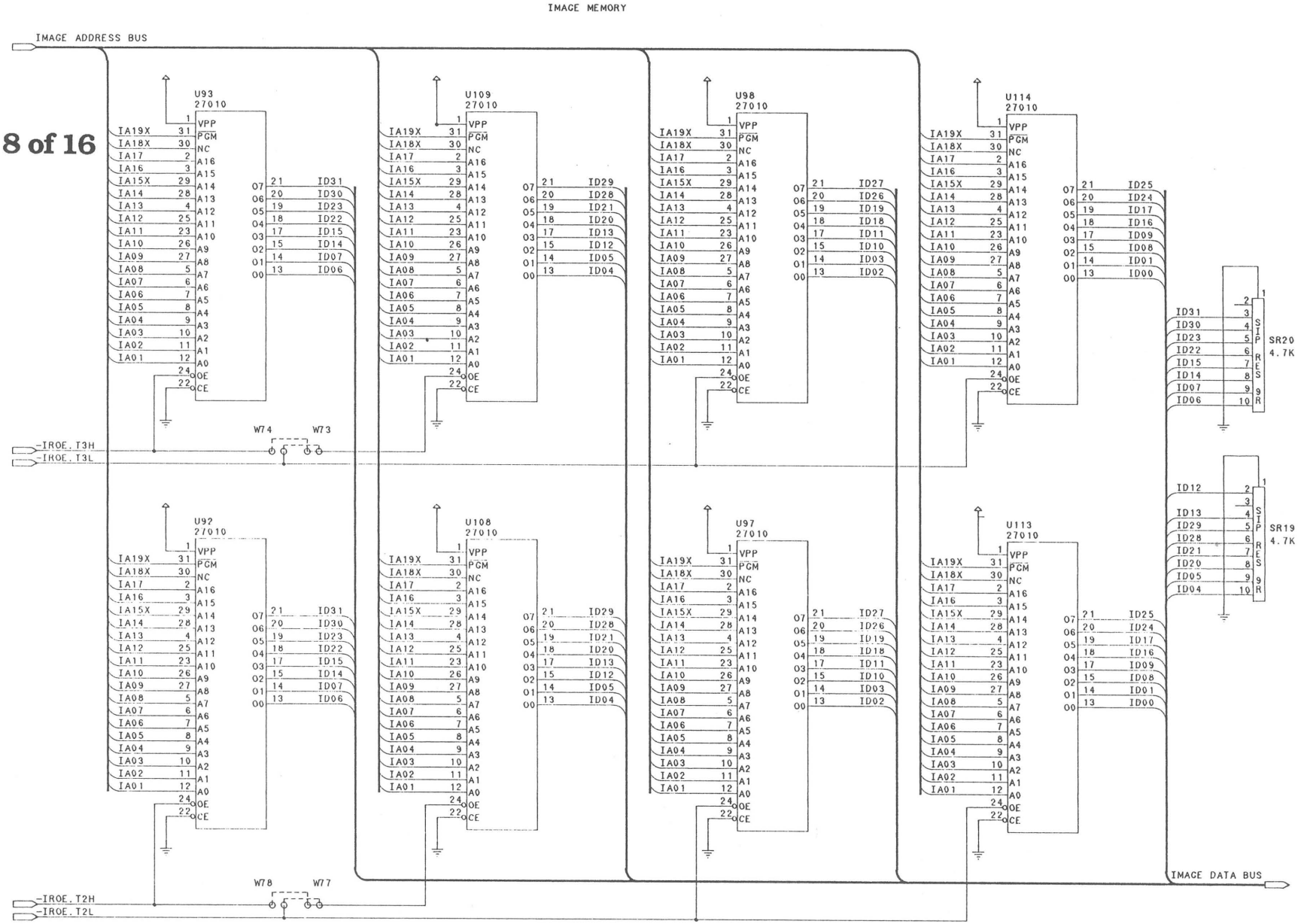


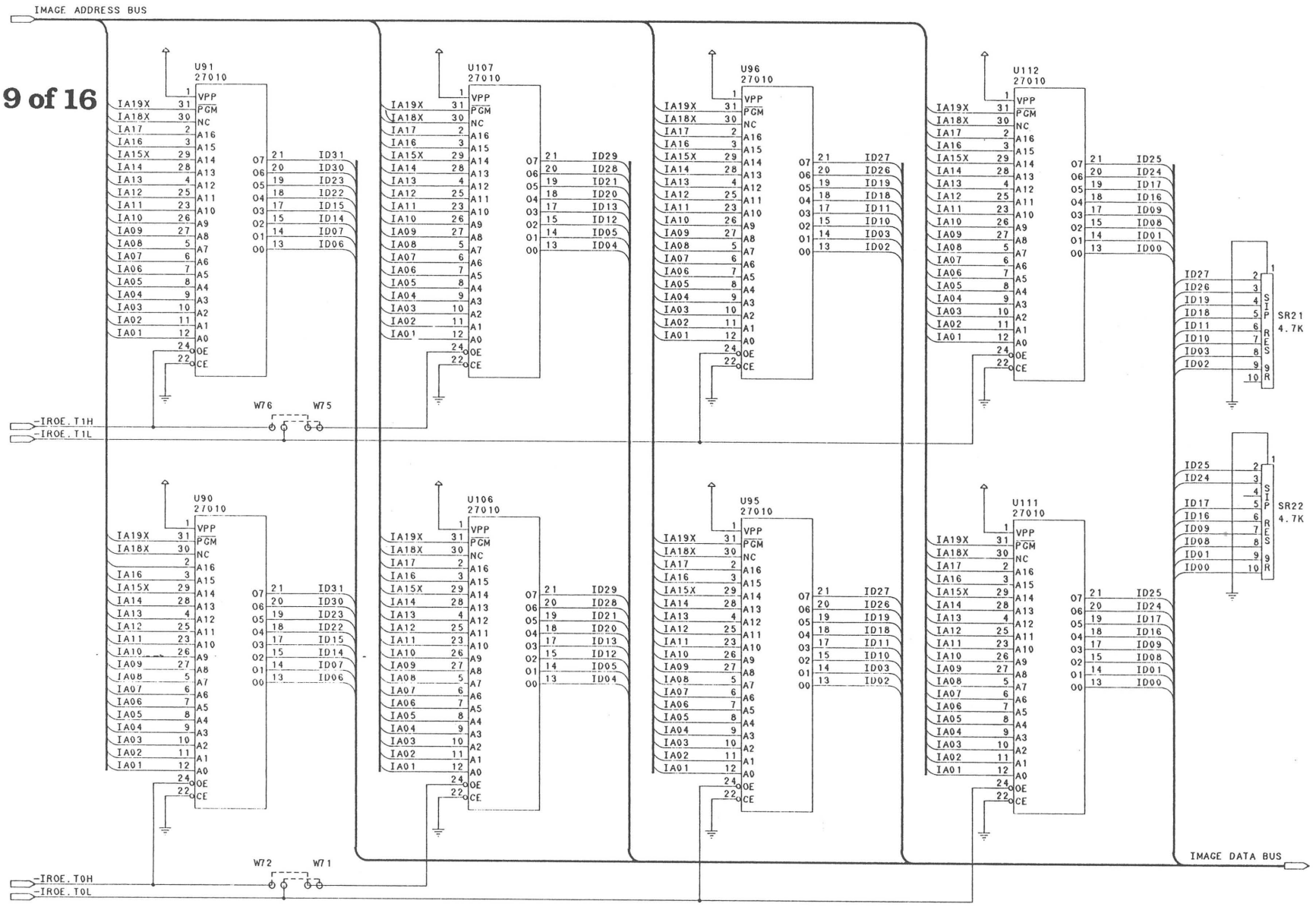
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Sheet 6 of 16



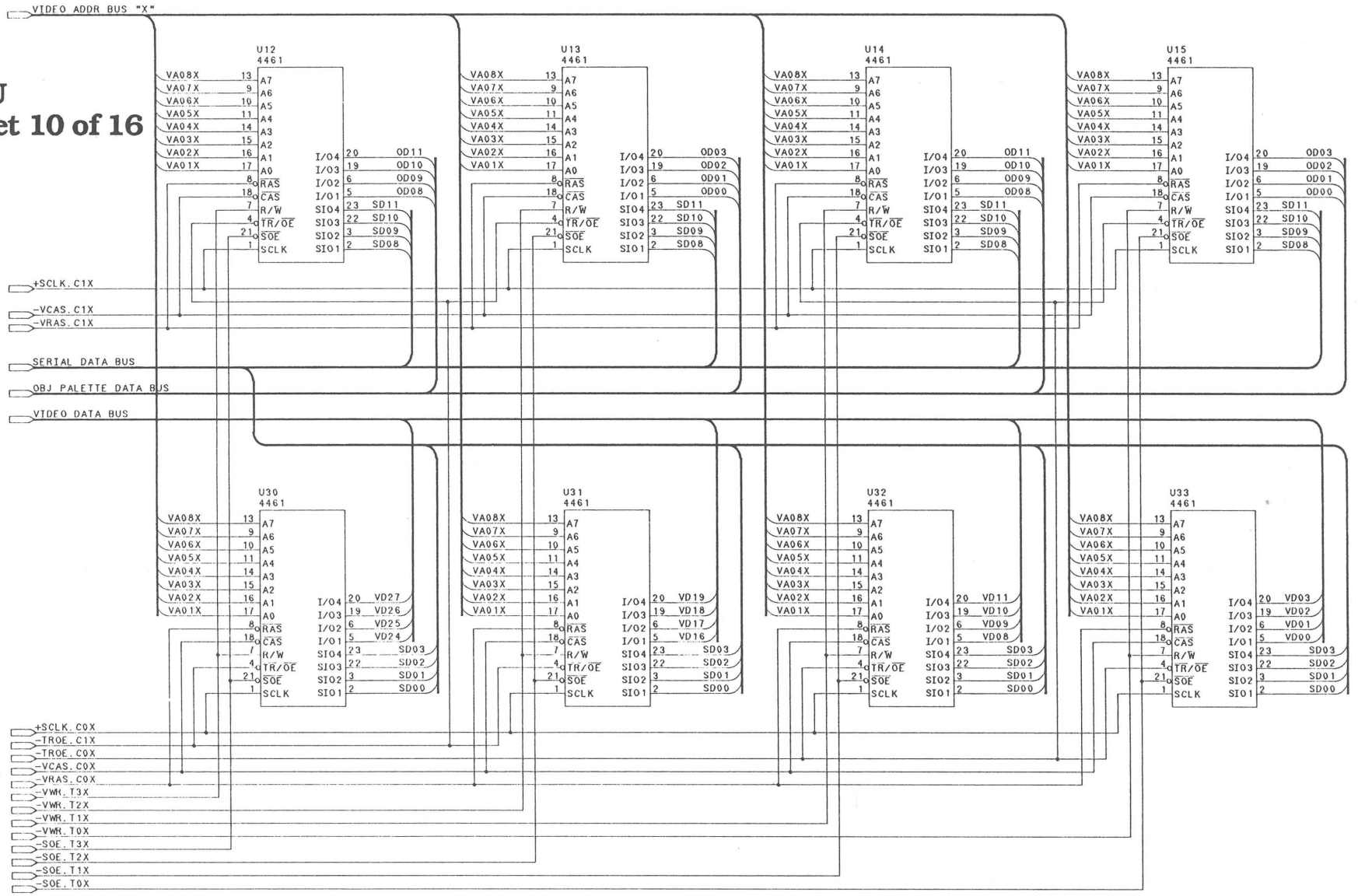
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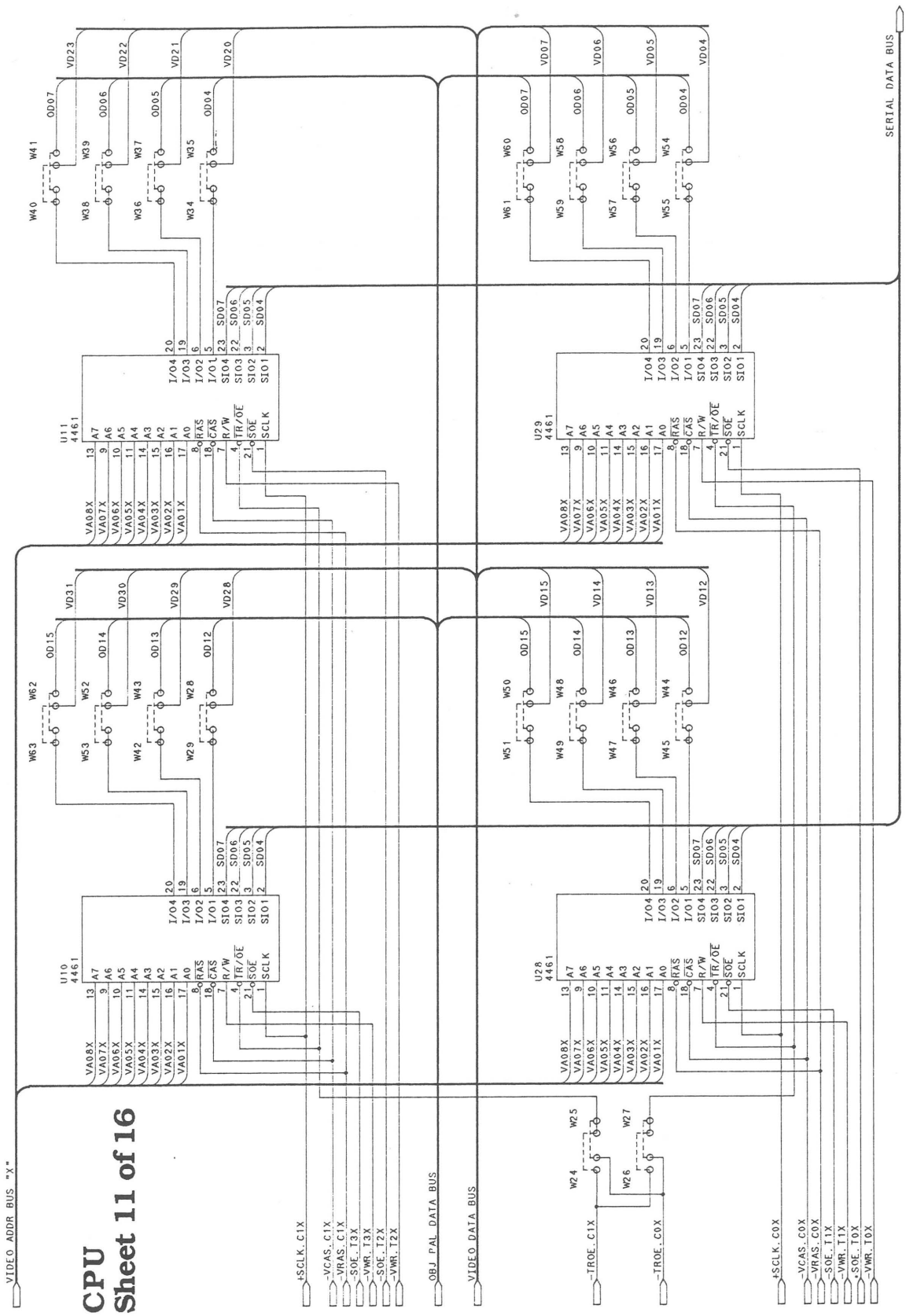


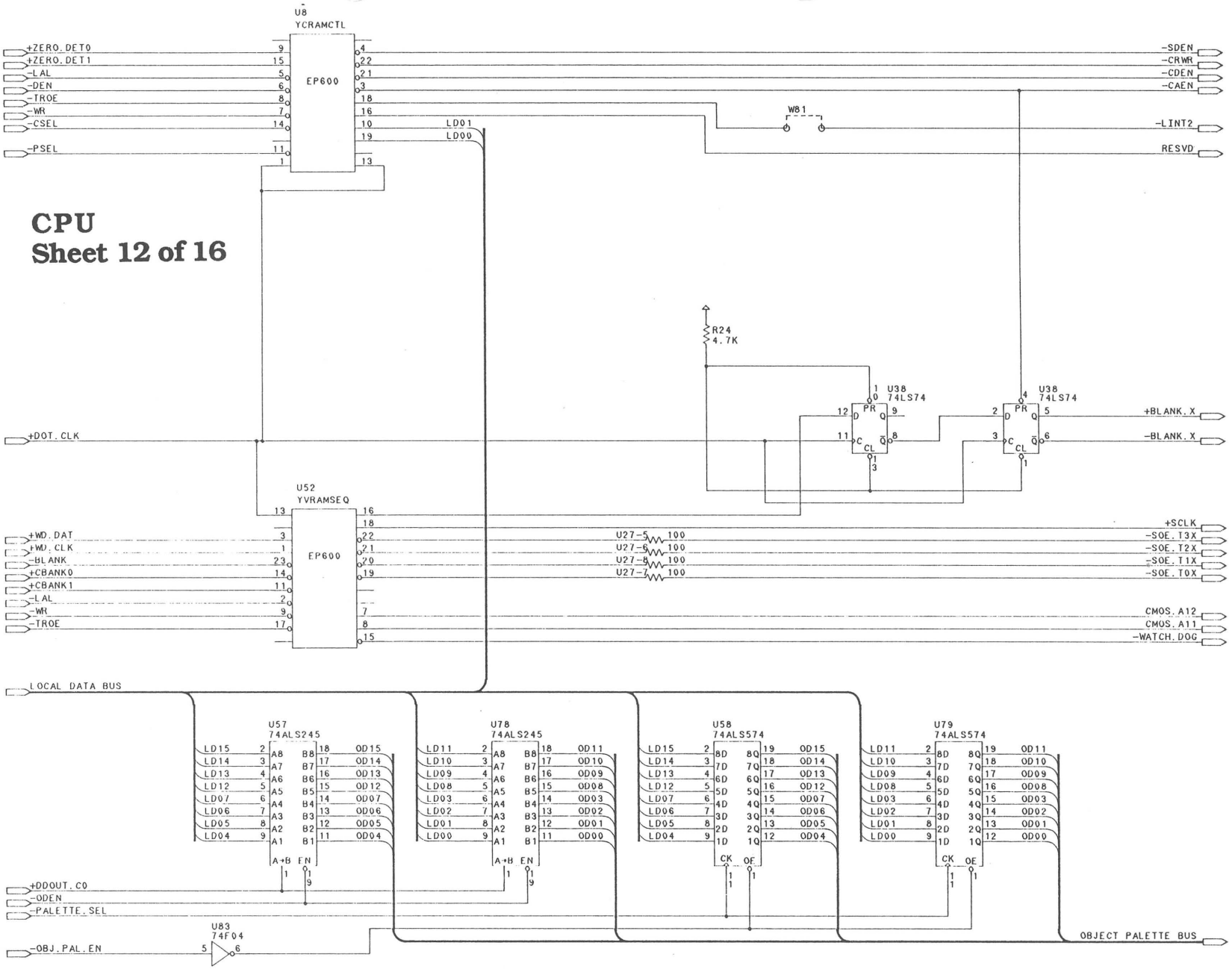

IMAGE MEMORY
IMAGE ADDRESS BUS
U93
27010
U109
27010
U98
27010
U114
27010
U92
27010
U108
27010
U97
27010
U113
27010
VPP
PGM
NC
A16
A15
A14
A13
A12
A11
A10
A9
A8
A7
A6
A5
A4
A3
A2
A1
A0
OE
CE
IA19X
IA18X
IA17
IA16
IA15X
IA14
IA13
IA12
IA11
IA10
IA09
IA08
IA07
IA06
IA05
IA04
IA03
IA02
IA01
ID31
ID30
ID29
ID28
ID27
ID26
ID25
ID24
ID23
ID22
ID21
ID20
ID19
ID18
ID17
ID16
ID15
ID14
ID13
ID12
ID11
ID10
ID09
ID08
ID07
ID06
ID05
ID04
ID03
ID02
ID01
ID00
W74
W73
W78
W77
-IROE.T3H
-IROE.T3L
-IROE.T2H
-IROE.T2L
SR20
4.7K
SR19
4.7K
SIP
RES
IMAGE DATA BUS


IMAGE MEMORY
IMAGE ADDRESS BUS
U91
27010
U107
27010
U96
27010
U112
27010
U90
27010
U106
27010
U95
27010
U111
27010
VPP
PGM
NC
OE
CE
W76
W75
W72
W71
-IROE.T1H
-IROE.T1L
-IROE.T0H
-IROE.T0L
SR21
4.7K
SR22
4.7K
IMAGE DATA BUS

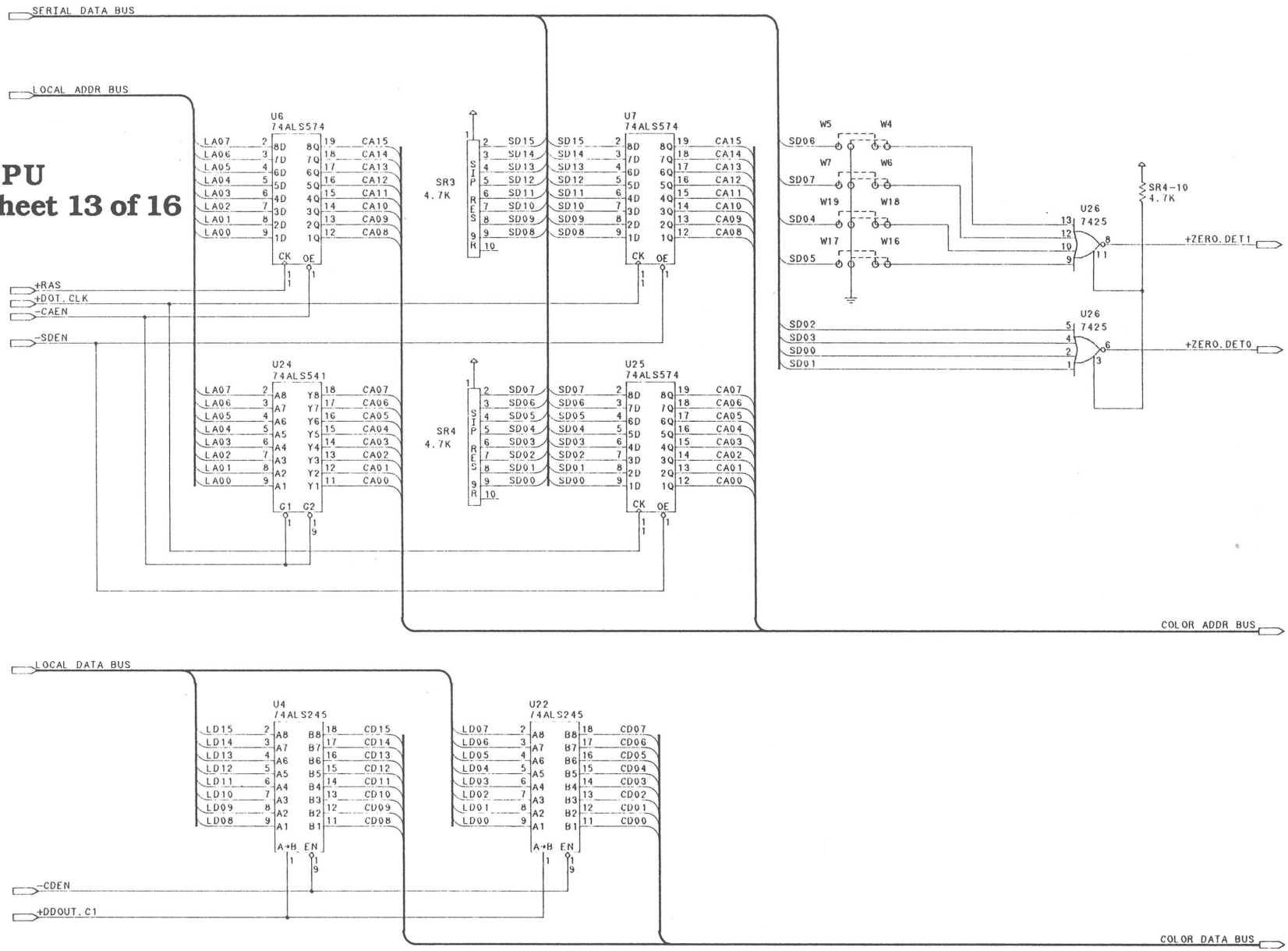
CPU
Sheet 10 of 16



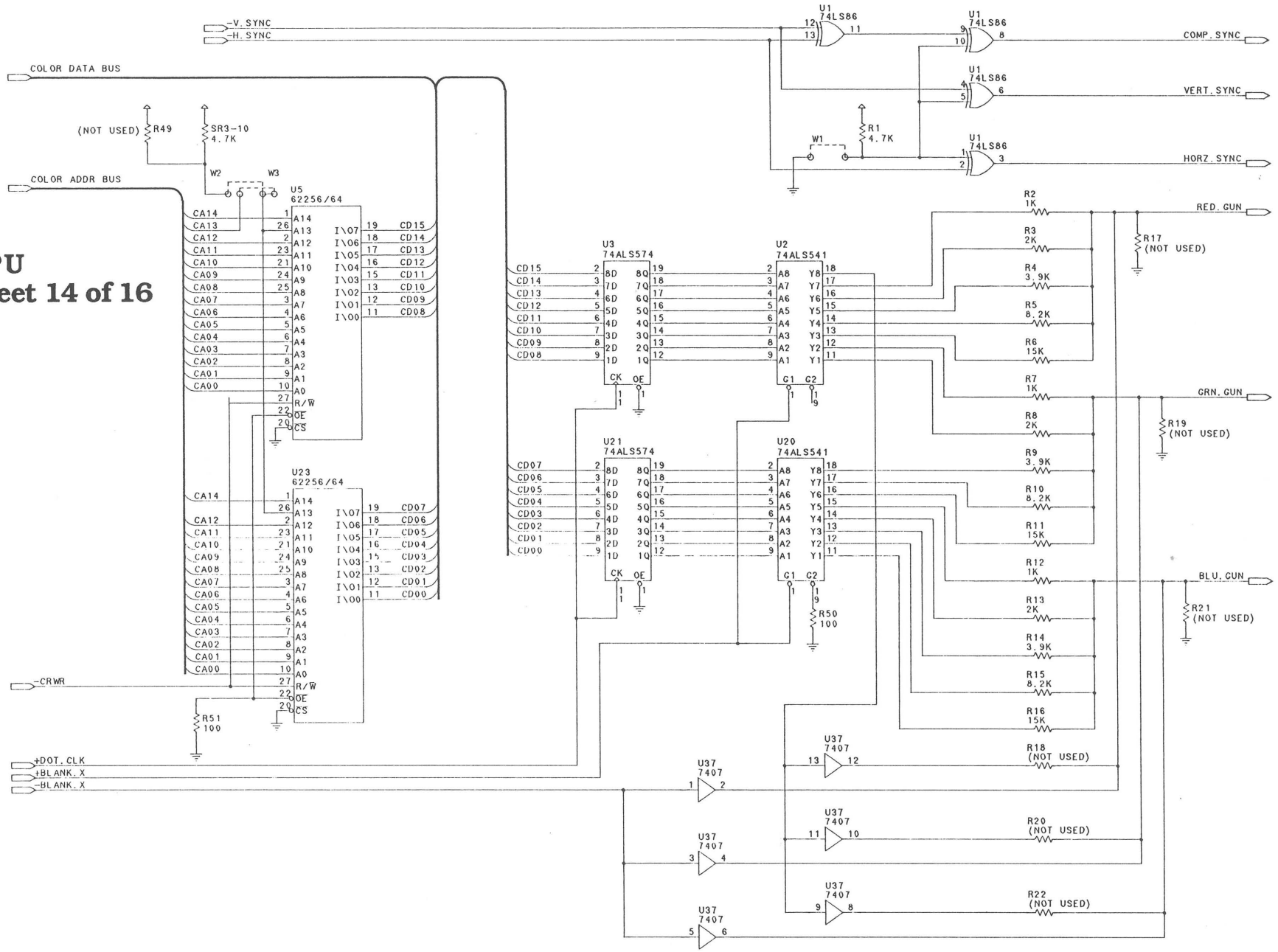

CPU
Sheet 11 of 16
VIDEO ADDR BUS "X"
SERIAL DATA BUS
OBJ PAL DATA BUS
VIDEO DATA BUS
+SCLK.C1X
-VCAS.C1X
-VRAS.C1X
-SOE.T3X
-VWR.T3X
-SOE.T2X
-VWR.T2X
-TROE.C1X
-TROE.C0X
+SCLK.C0X
-VCAS.C0X
-VRAS.C0X
-SOE.T1X
-VWR.T1X
+SOE.T0X
-VWR.T0X
U10 4461
U11 4461
U28 4461
U29 4461

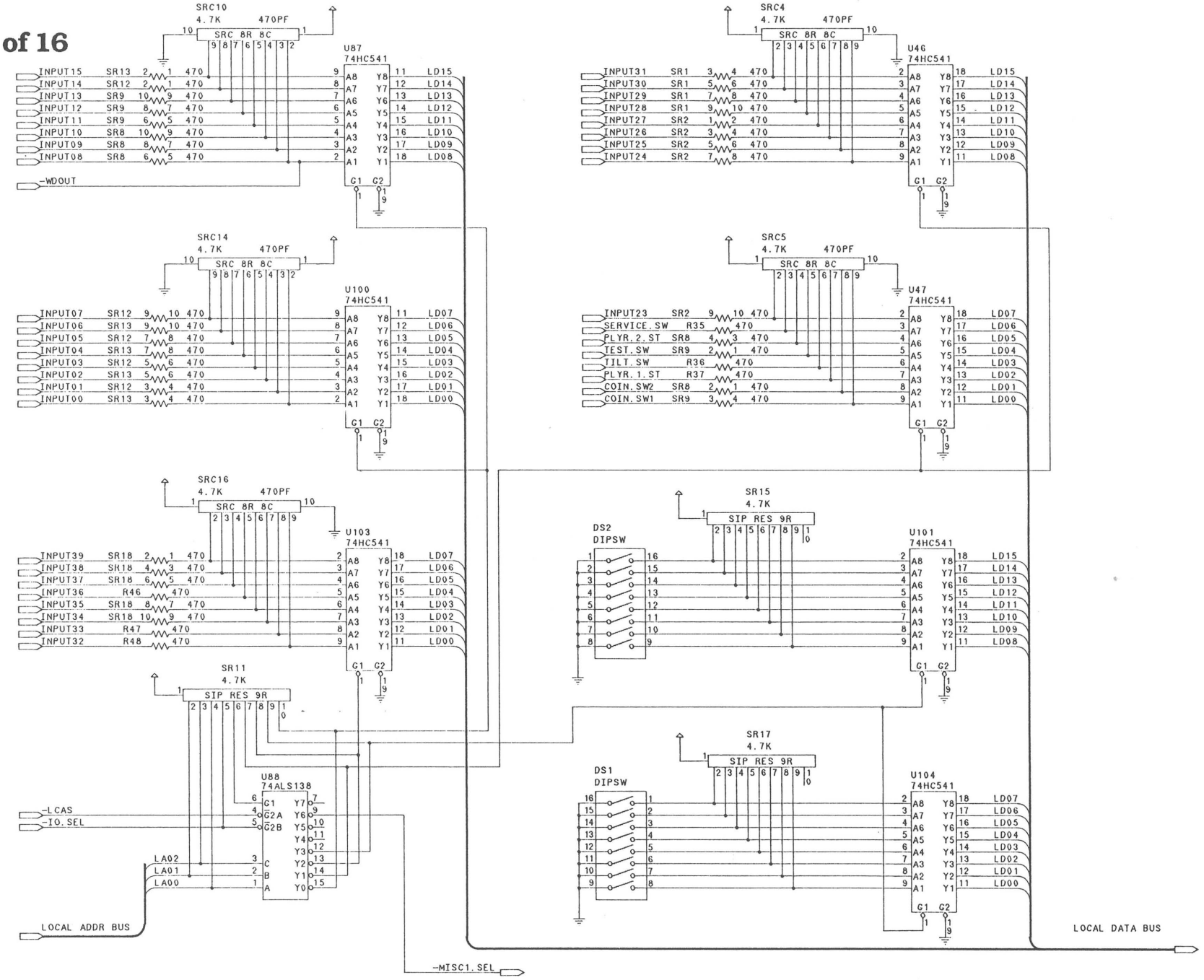

U8
YCRAMCTL
EP600
+ZERO.DET0
+ZERO.DET1
-LAL
-DEN
-TROE
-WR
-CSEL
-PSEL
LD01
LD00
-SDEN
-CRWR
-CDEN
-CAEN
W81
-LINT2
RESVD
CPU
Sheet 12 of 16
R24
4.7K
U38
74LS74
+DOT.CLK
+BLANK.X
-BLANK.X
U52
YVRAMSEQ
EP600
+WD.DAT
+WD.CLK
-BLANK
+CBANK0
+CBANK1
-LAL
-WR
-TROE
U27-5 100
U27-6 100
U27-8 100
U27-7 100
+SCLK
-SOE.T3X
-SOE.T2X
-SOE.T1X
-SOE.T0X
CMOS.A12
CMOS.A11
-WATCH.DOG
LOCAL DATA BUS
U57
74ALS245
U78
74ALS245
U58
74ALS574
U79
74ALS574
+DDOUT.C0
-ODEN
-PALETTE.SEL
U83
74F04
-OBJ.PAL.EN
OBJECT PALETTE BUS

CPU
Sheet 13 of 16

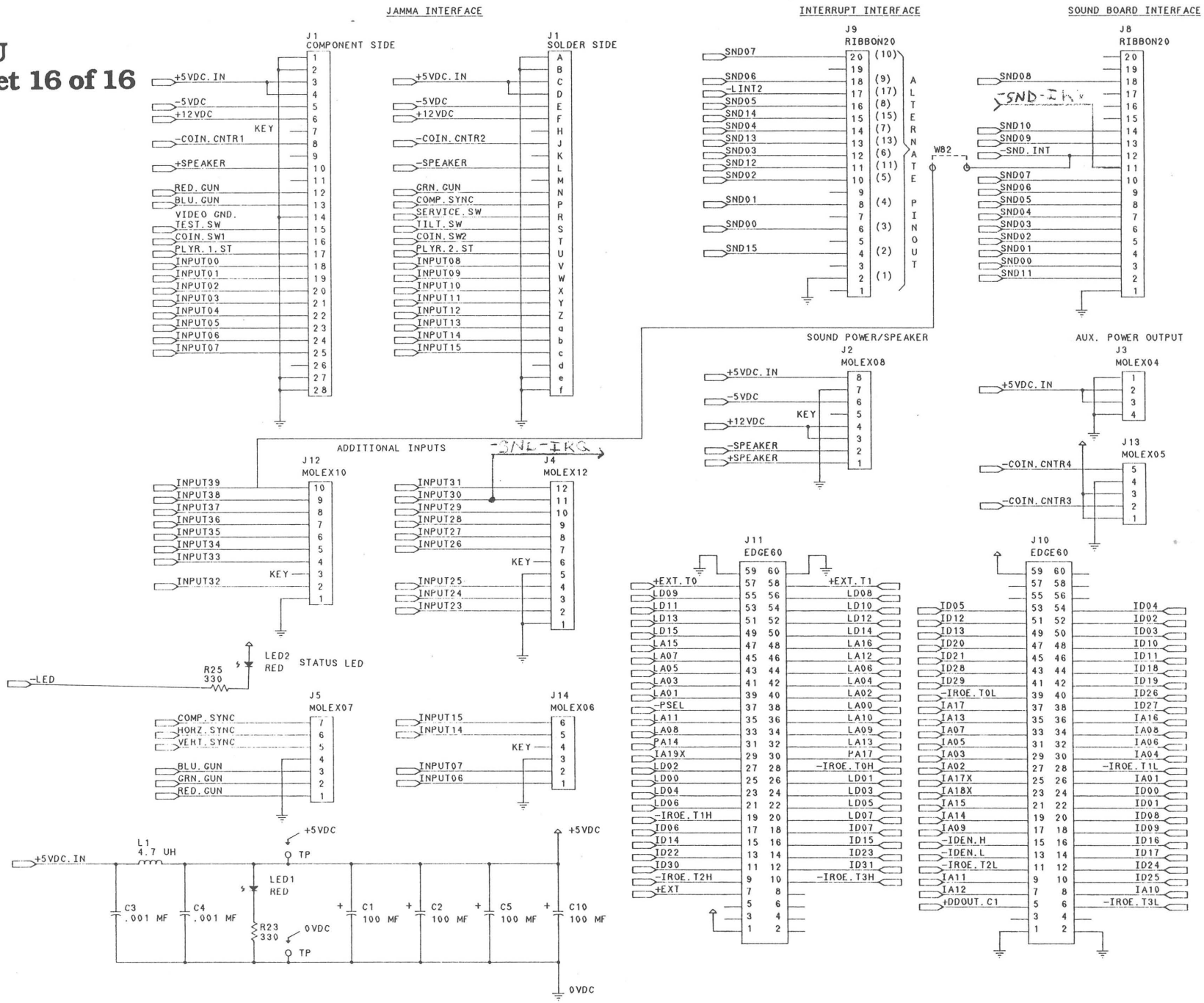


CPU
Sheet 14 of 16

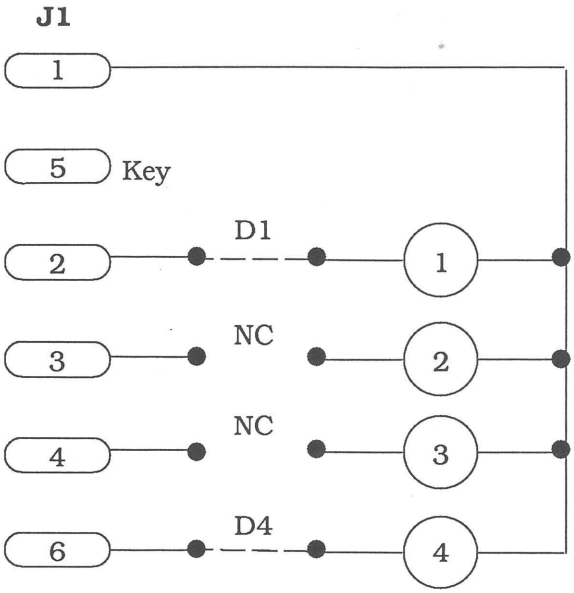



SRC10
4.7K
470PF
SRC 8R 8C
U87
74HC541
INPUT15 SR13 LD15
INPUT14 SR12 LD14
INPUT13 SR9 LD13
INPUT12 SR9 LD12
INPUT11 SR9 LD11
INPUT10 SR8 LD10
INPUT09 SR8 LD09
INPUT08 SR8 LD08
-WDOUT
SRC4
U46
INPUT31 SR1 LD15
INPUT30 SR1 LD14
INPUT29 SR1 LD13
INPUT28 SR1 LD12
INPUT27 SR2 LD11
INPUT26 SR2 LD10
INPUT25 SR2 LD09
INPUT24 SR2 LD08
SRC14
U100
INPUT07 SR12 LD07
INPUT06 SR13 LD06
INPUT05 SR12 LD05
INPUT04 SR13 LD04
INPUT03 SR12 LD03
INPUT02 SR13 LD02
INPUT01 SR12 LD01
INPUT00 SR13 LD00
SRC5
U47
INPUT23 SR2 LD07
SERVICE.SW R35 LD06
PLYR.2.ST SR8 LD05
TEST.SW SR9 LD04
TILT.SW R36 LD03
PLYR.1.ST R37 LD02
COIN.SW2 SR8 LD01
COIN.SW1 SR9 LD00
SRC16
U103
INPUT39 SR18 LD07
INPUT38 SR18 LD06
INPUT37 SR18 LD05
INPUT36 R46 LD04
INPUT35 SR18 LD03
INPUT34 SR18 LD02
INPUT33 R47 LD01
INPUT32 R48 LD00
SR15
4.7K
SIP RES 9R
DS2
DIPSW
U101
74HC541
SR11
4.7K
SIP RES 9R
U88
74ALS138
-LCAS
-IO.SEL
LA02
LA01
LA00
LOCAL ADDR BUS
SR17
4.7K
SIP RES 9R
DS1
DIPSW
U104
74HC541
LOCAL DATA BUS
-MISC1.SEL

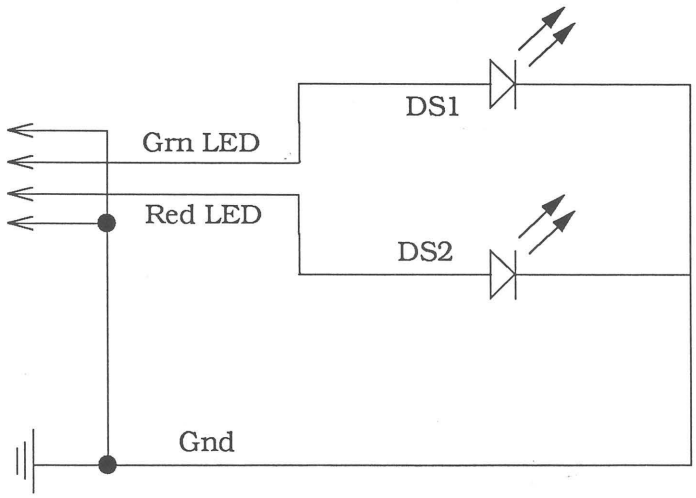
CPU
Sheet 16 of 16



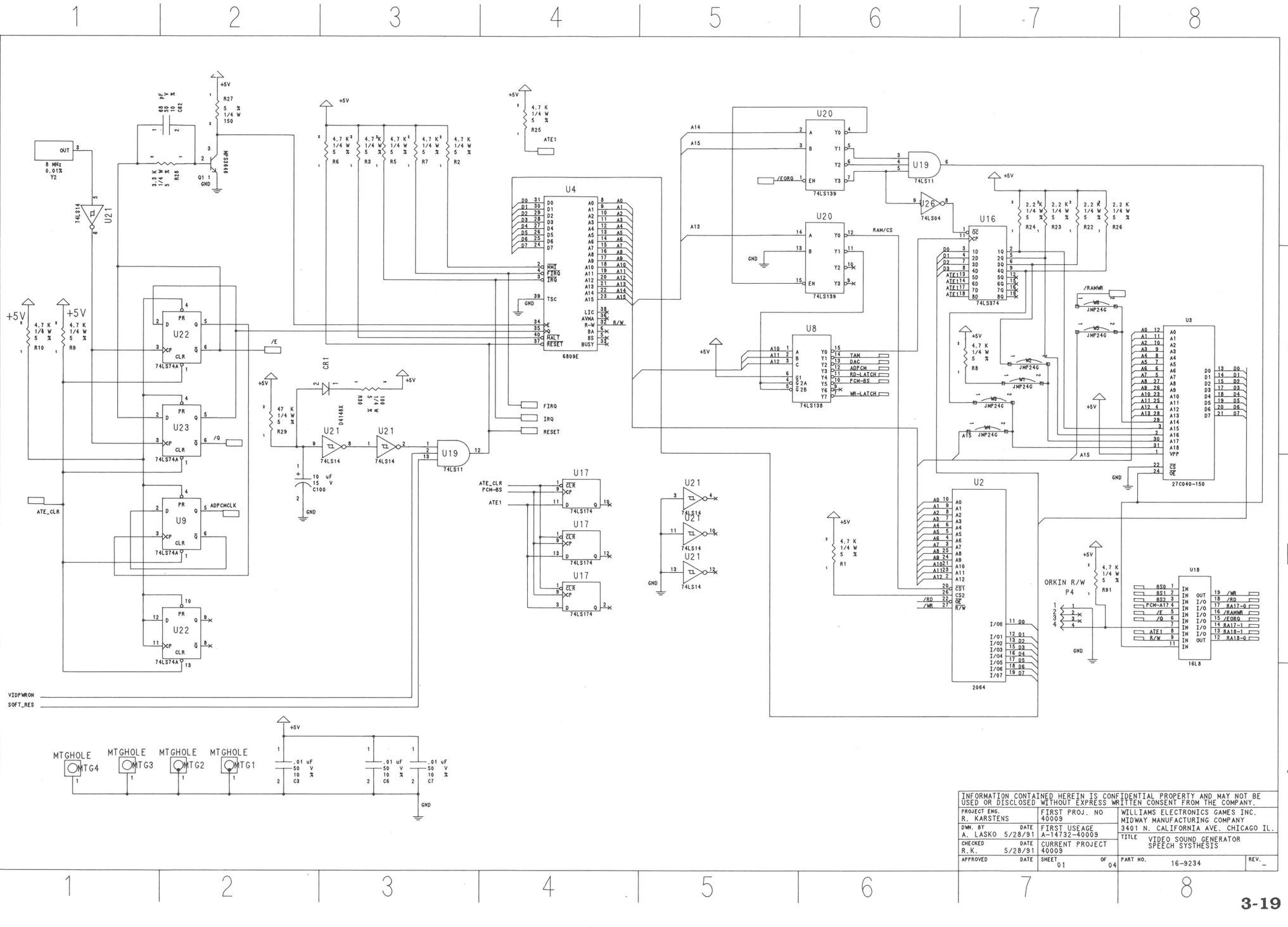
Dual Flashlamp Board Schematic



Gun LED Board Schematic

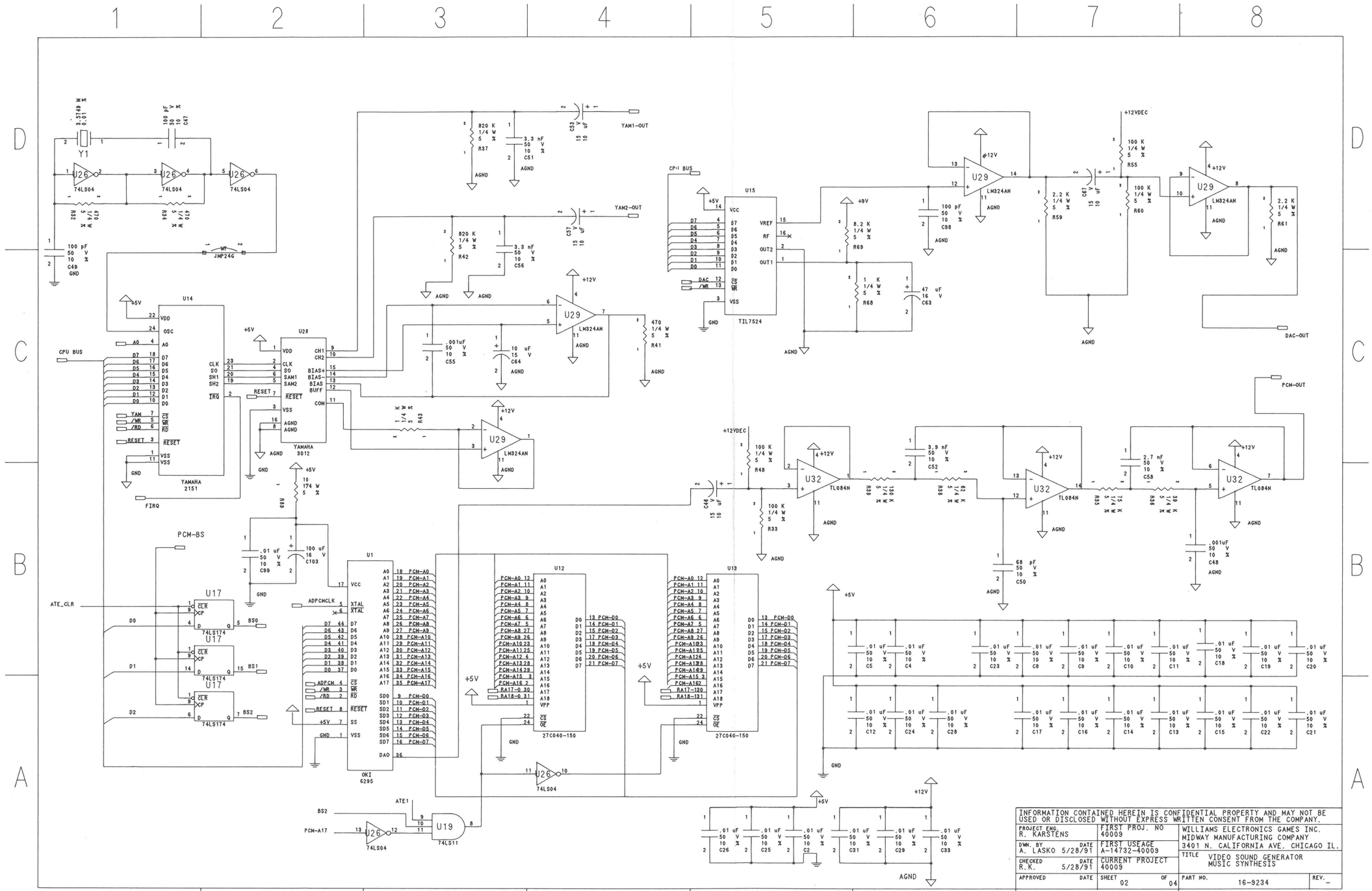


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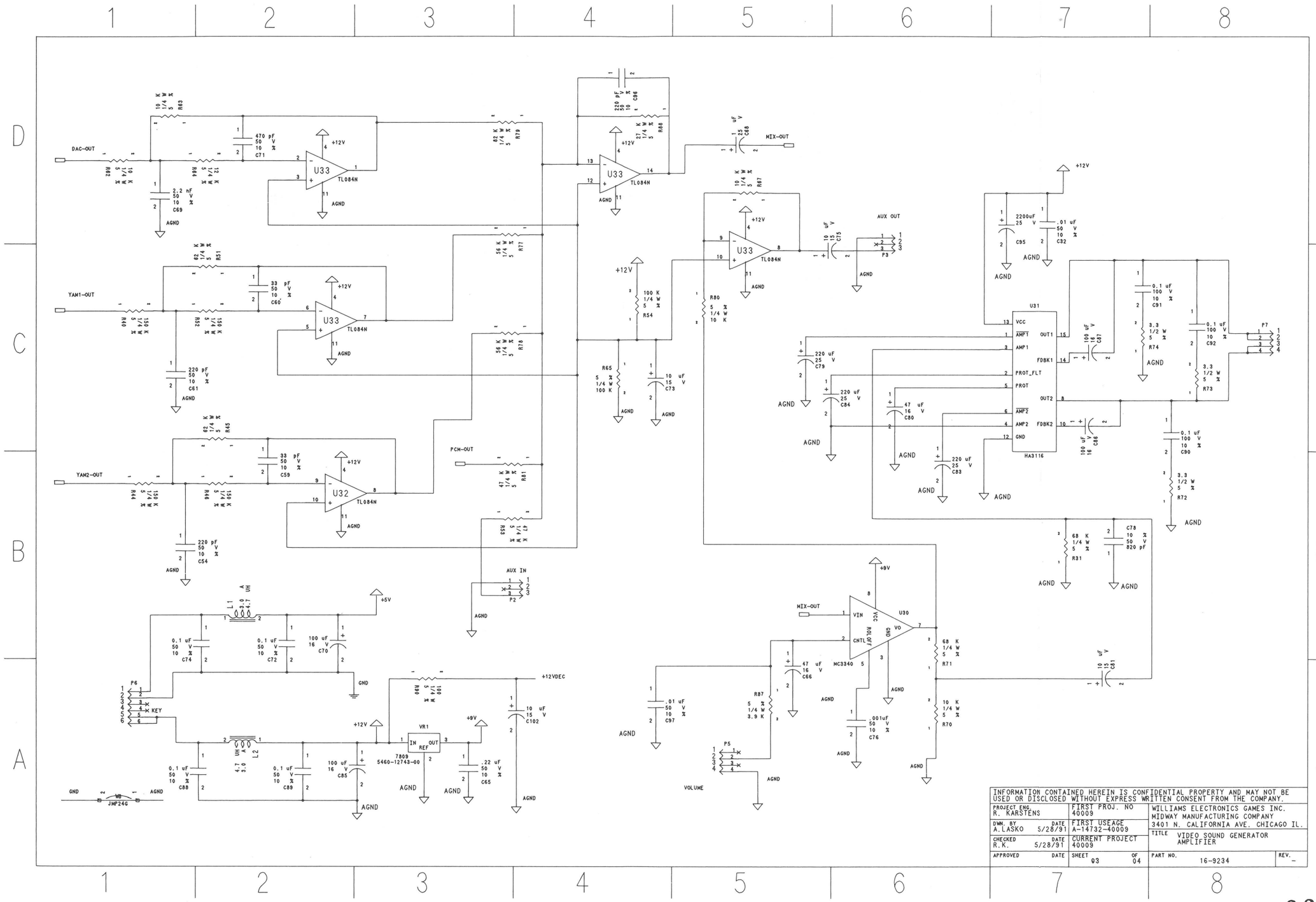
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DWN. BY A. LASKO DATE 5/28/91	FIRST USEAGE A-14732-40009	TITLE VIDEO SOUND GENERATOR SPEECH SYSTHESIS
CHECKED R.K. DATE 5/28/91	CURRENT PROJECT 40009	
APPROVED DATE	SHEET 01 OF 04	PART NO. 16-9234 REV. -

REV	DESCRIPTION	
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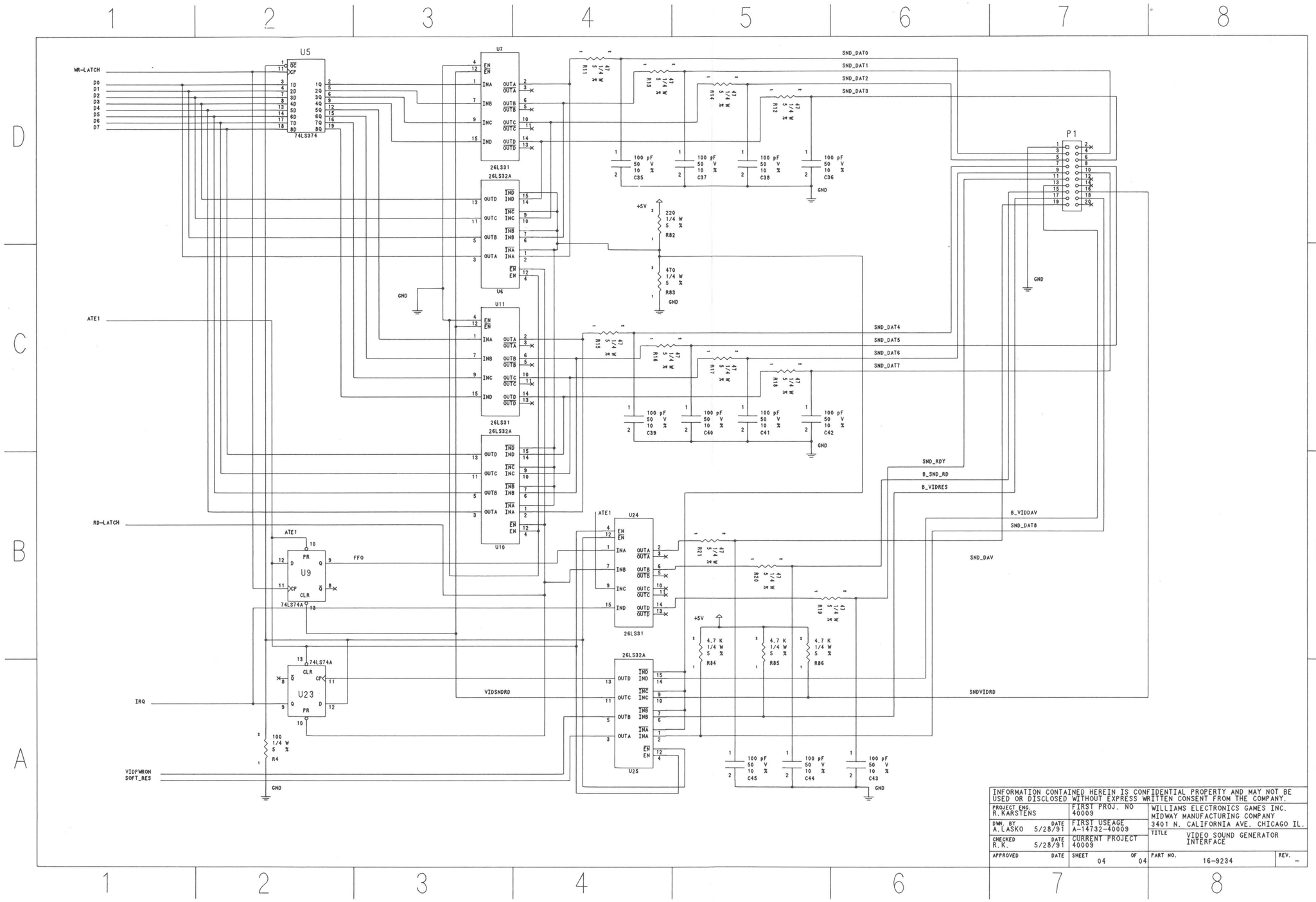
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DWN. BY A. LASKO 5/28/91	FIRST USEAGE A-14732-40009		
CHECKED R.K. 5/28/91	CURRENT PROJECT 40009	TITLE VIDEO SOUND GENERATOR MUSIC SYNTHESIS	
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REV	DESCRIPTION	ECN NO
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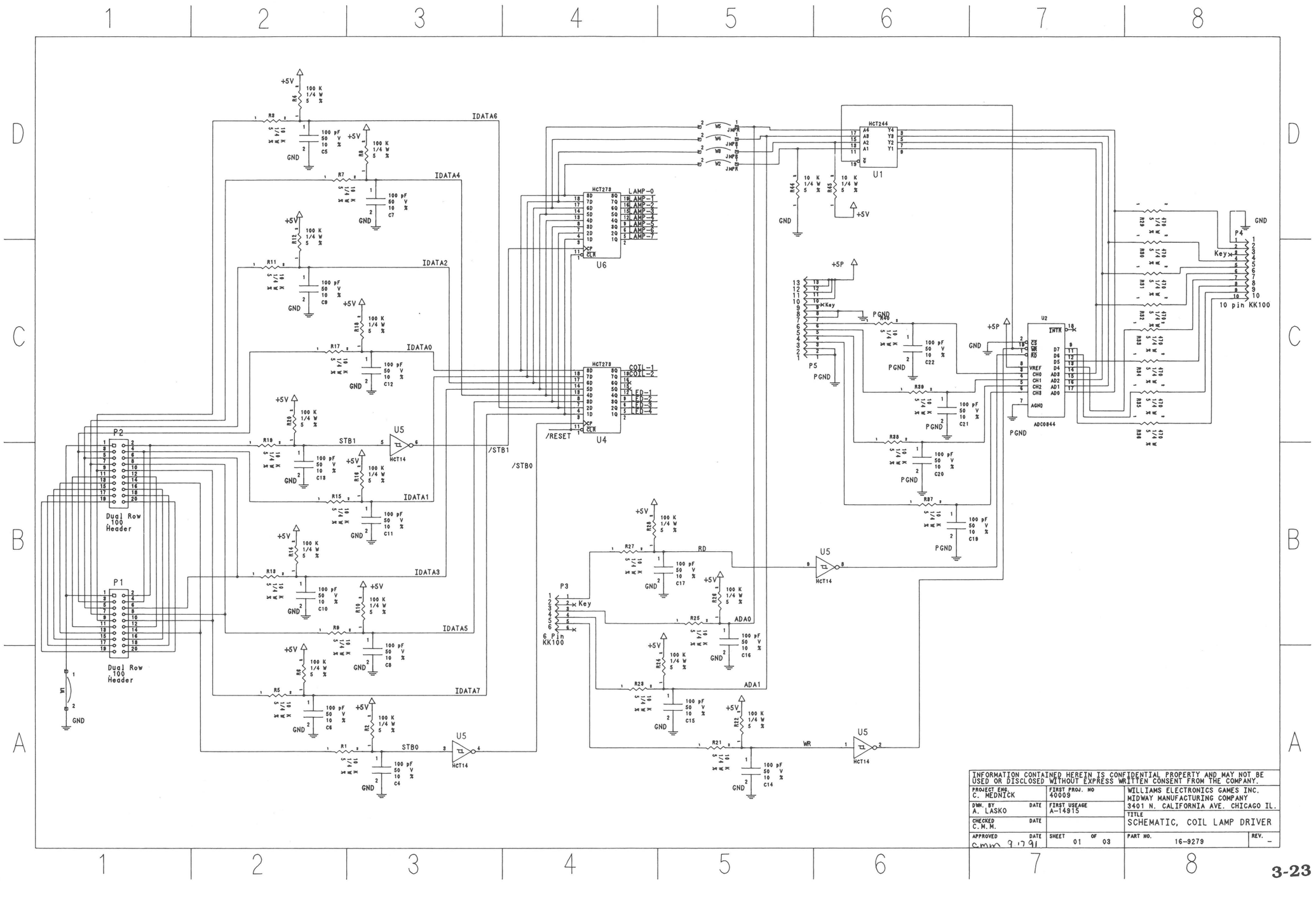
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DWN. BY A.LASKO DATE 5/28/91	FIRST USEAGE A-14732-40009	TITLE VIDEO SOUND GENERATOR AMPLIFIER
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APPROVED DATE	SHEET 03 OF 04	PART NO. 16-9234 REV. -

REV	DESCRIPTION	ECO
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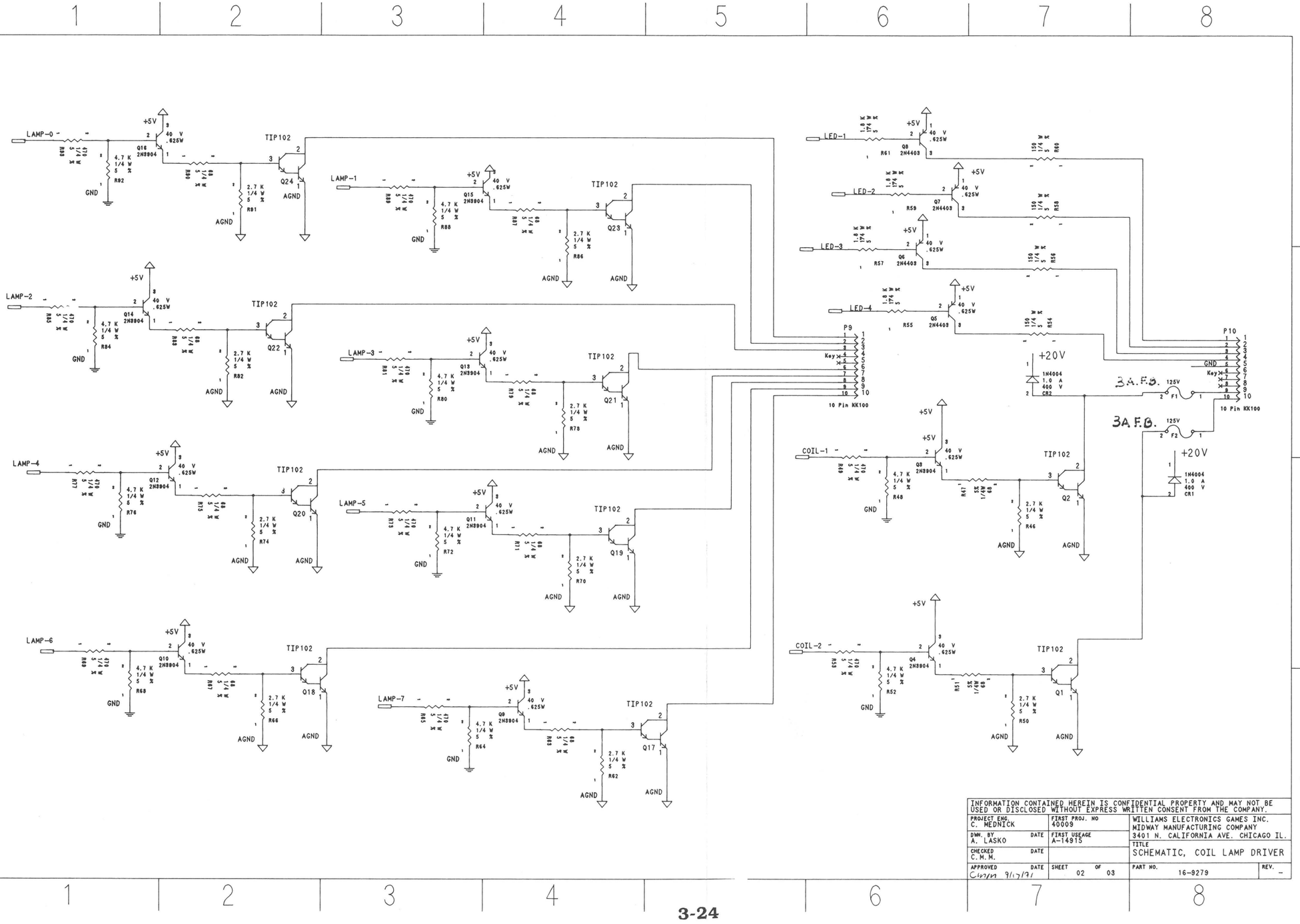
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DWN. BY A.LASKO	DATE 5/28/91	FIRST USEAGE A-14732-40009	TITLE VIDEO SOUND GENERATOR INTERFACE
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APPROVED	DATE	SHEET 04 OF 04	PART NO. 16-9234 REV. -

REV	DESCRIPTION	ECO #
-	I.R 9-18-91	7764



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DWN. BY A. LASKO DATE	FIRST USEAGE A-14915	TITLE SCHEMATIC, COIL LAMP DRIVER
CHECKED C.W.M. DATE		
APPROVED DATE 9.17.91	SHEET 01 OF 03	PART NO. 16-9279 REV. -

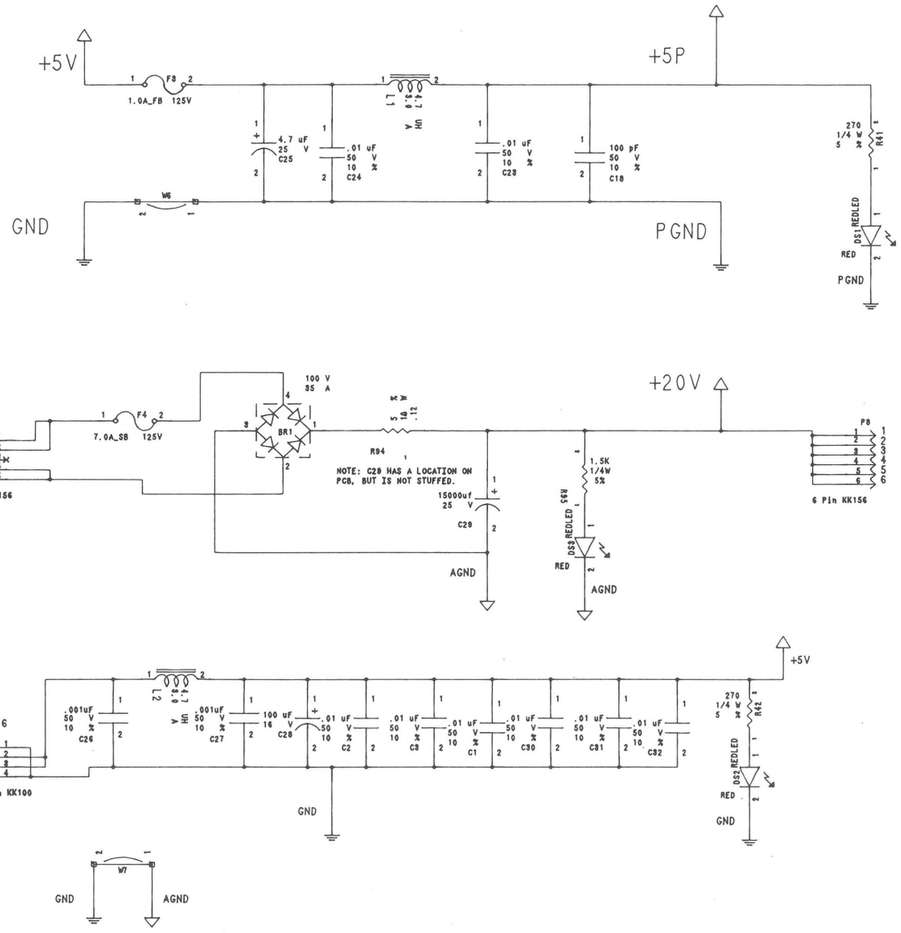
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DWN. BY A. LASKO DATE	FIRST USEAGE A-14915	TITLE SCHEMATIC, COIL LAMP DRIVER
CHECKED C.M.M. DATE		
APPROVED Cmm 9/17/91 DATE	SHEET 02 OF 03	PART NO. 16-9279 REV. -

REV	DESCRIPTION	ECI #
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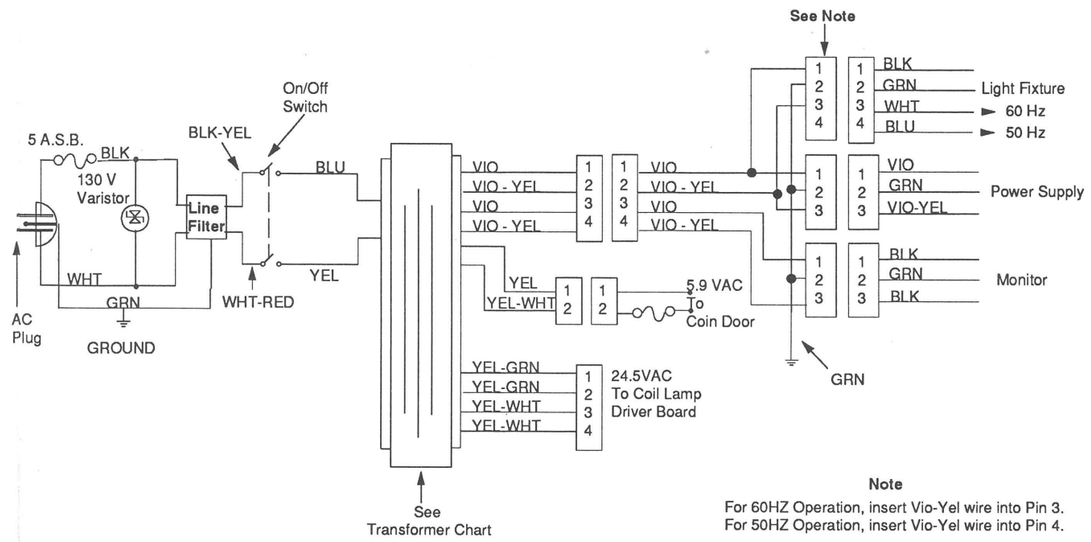
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PROJECT ENG. C. MEDNICK	FIRST PROJ. NO 40009	WILLIAMS ELECTRONICS GAMES INC. MIDWAY MANUFACTURING COMPANY 3401 N. CALIFORNIA AVE. CHICAGO IL.
DWN. BY A. LASKO DATE	FIRST USEAGE A-14915	TITLE SCHEMATIC, COIL LAMP DRIVER
CHECKED C.M.M. DATE		
APPROVED C.M.M. 9/17/91 DATE	SHEET 03 OF 03	PART NO. 16-9279 REV. -

JAMMA Chart

Function	Wire Color	Pin	Pin	Wire Color	Function
Ground	Blk	1	A	Blk	Ground
Ground	Grn-Brn	2	B	Blk	Ground
+5 Volts DC	Gry	3	C	Gry	+5 Volts DC
+5 Volts DC	Gry	4	D	Gry	+5 Volts DC
NC	NC	5	E	NC	NC
+12 Volts DC	Gry-Yel	6	F	Gry-Yel	+12 Volts DC
	Key	7	H	Key	
Counter 1	Wht-Org	8	J	Wht-Grn	Counter 2
NC	NC	9	K	NC	NC
Speaker (+)	Red-Vio	10	L	Grn-Vio	Speaker (-)
NC	NC	11	M	NC	NC
Video Red	Red	12	N	Grn	Video Grn
Video Blue	Brn	13	P	Wht	Video Sync
Video Grd	Shield	14	R	Wht-Red	Service Credit
Test	Grn	15	S	Wht-Vio	Slam Tilt
1 Coin	Wht-Blu	16	T	Yel-Wht	2 Coin
1 Start	Yel-Grn	17	U	Yel-Blu	2 Start
NC	NC	18	V	NC	NC
NC	NC	19	W	NC	NC
NC	NC	20	X	NC	NC
NC	NC	21	Y	NC	NC
1 Fire	Org-Yel	22	Z	Yel-Vio	2 Fire
1 Bomb	Org-Grn	23	a	Yel-Gry	2 Bomb
NC	NC	24	b	NC	NC
NC	NC	25	c	NC	NC
NC	NC	26	d	NC	NC
Ground	Blk	27	e	Blk	Ground
Ground	Blk	28	f	Blk	Ground

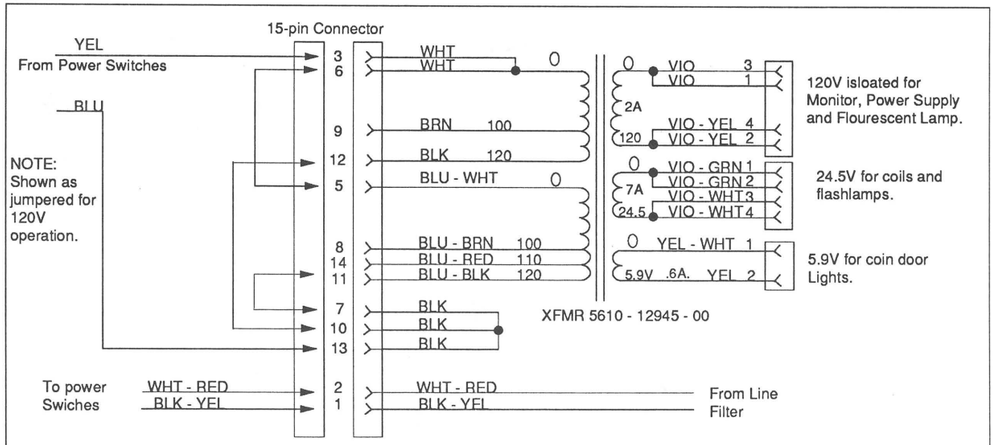
Power Wiring Diagram



Note

For 60HZ Operation, insert Vio-Yel wire into Pin 3.
For 50HZ Operation, insert Vio-Yel wire into Pin 4.

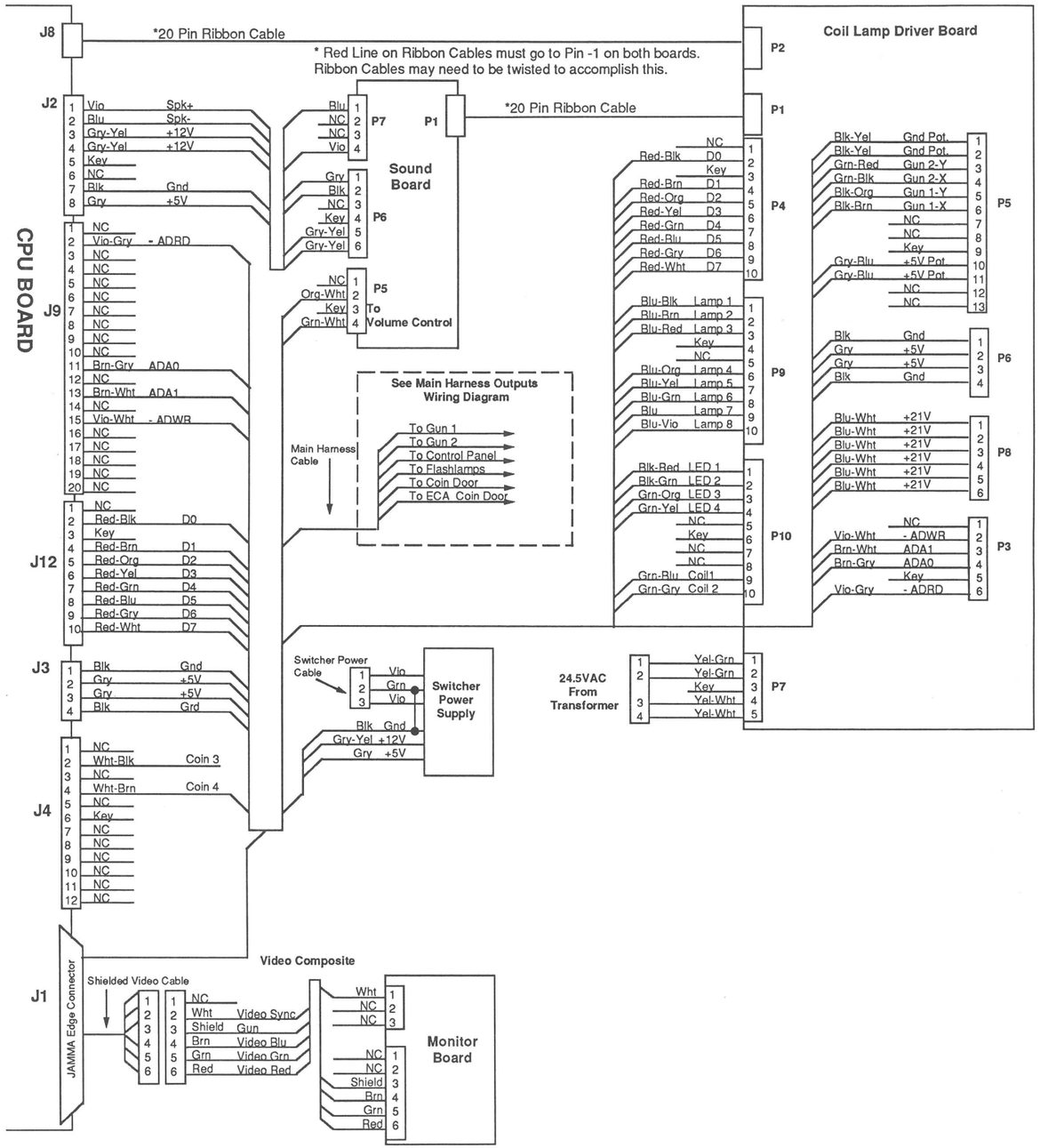
Transformer Chart



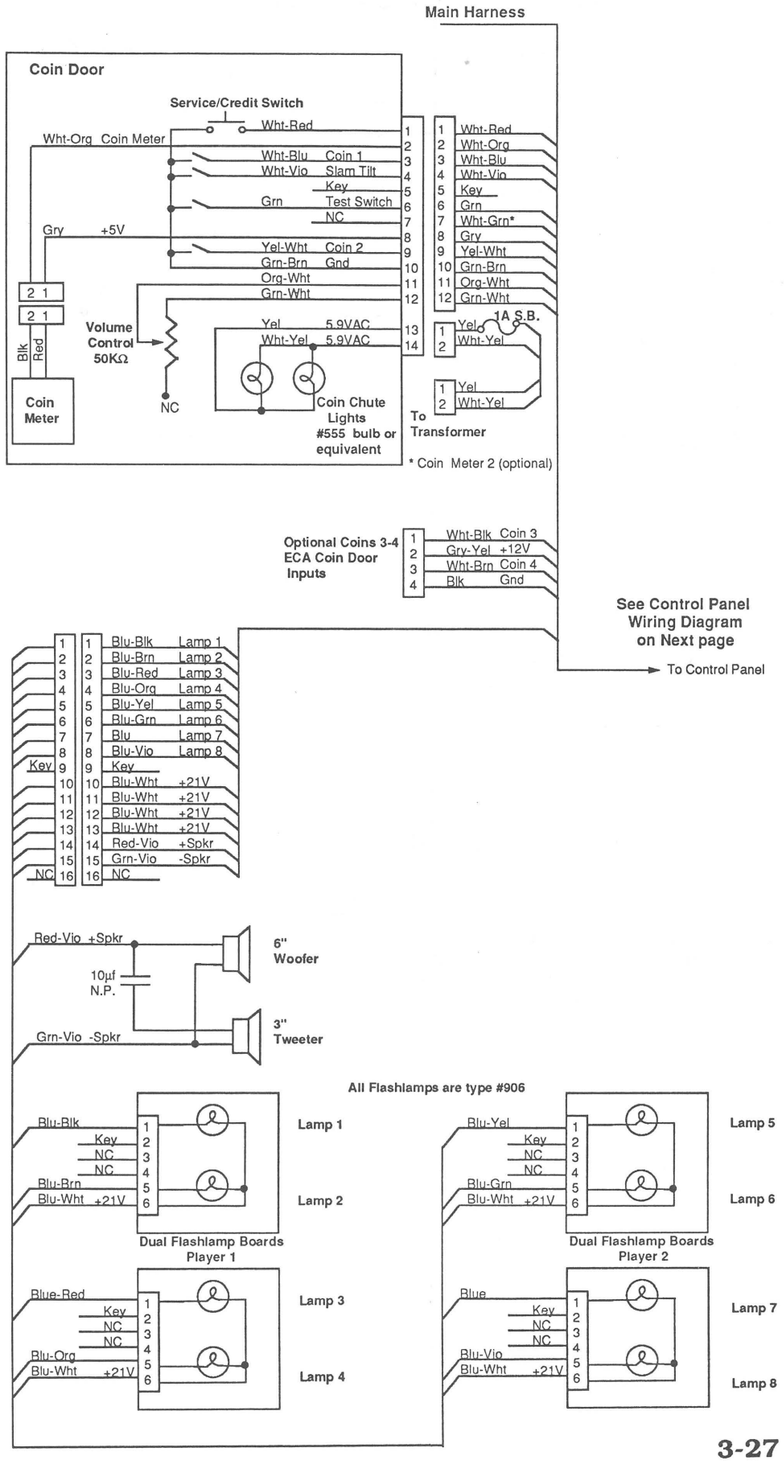
Voltage Selection Table

Voltage	Jumper Pins	Varistor	Fuse
100	5-6, 7-8, 9-10	130V	5A S.B.
120	5-6, 7-11, 10-12	130V	5A S.B.
200	5-9, 10-8	275V	3A S.B.
210	5-9, 10-14	275V	3A S.B.
220	5-9, 10-11	275V	3A S.B.
230	5-12, 10-14	275V	3A S.B.
240	5-12, 10-11	275V	3A S.B.

Cabinet Wiring Diagram

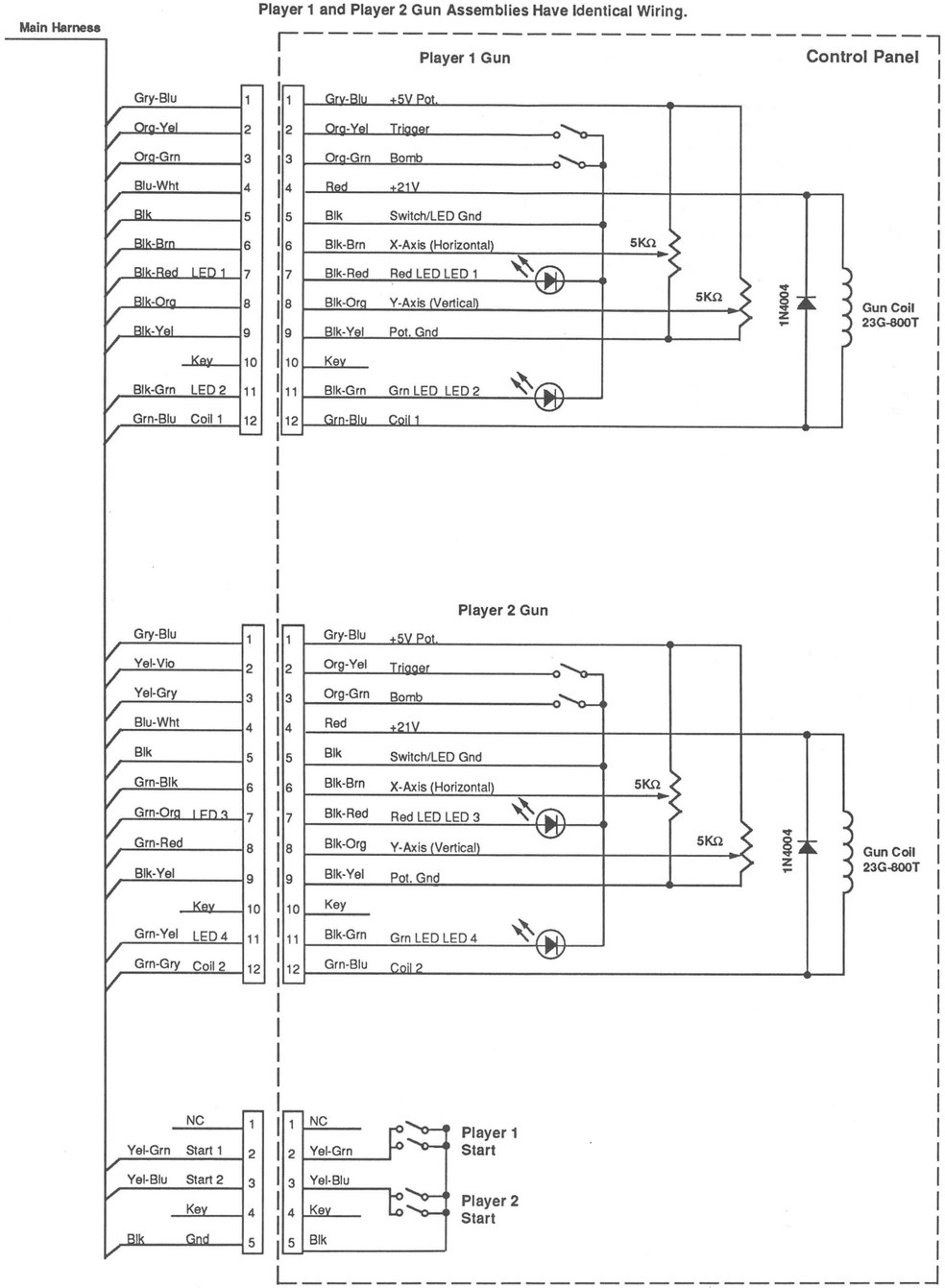


Main Harness Outputs Wiring Diagram



Control Panel Wiring Diagram

Player 1 and Player 2 Gun Assemblies Have Identical Wiring.



Notes

PC Board Jumper & Fuse Lists

CPU Board Jumpers
W2, W8, W11, W12, W14, W21, W22, W24, W27, W29, W30, W32, W34, W36, W39, W41, W42, W45, W47, W48, W50, W52, W55, W57, W58, W60, W62, W65, W68, W69, W71, W73, W75, W77, W80, W83

Sound Board Jumpers
W2, W3, W5, W7, W8

Coil Lamp Driver Board Jumpers
W1, W6, W7

Coil Lamp Driver Board Fuses

F1, F2
3A, F.B., 250V

F3
1A, F.B., 250V

F4
7A, S.B., 125V

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