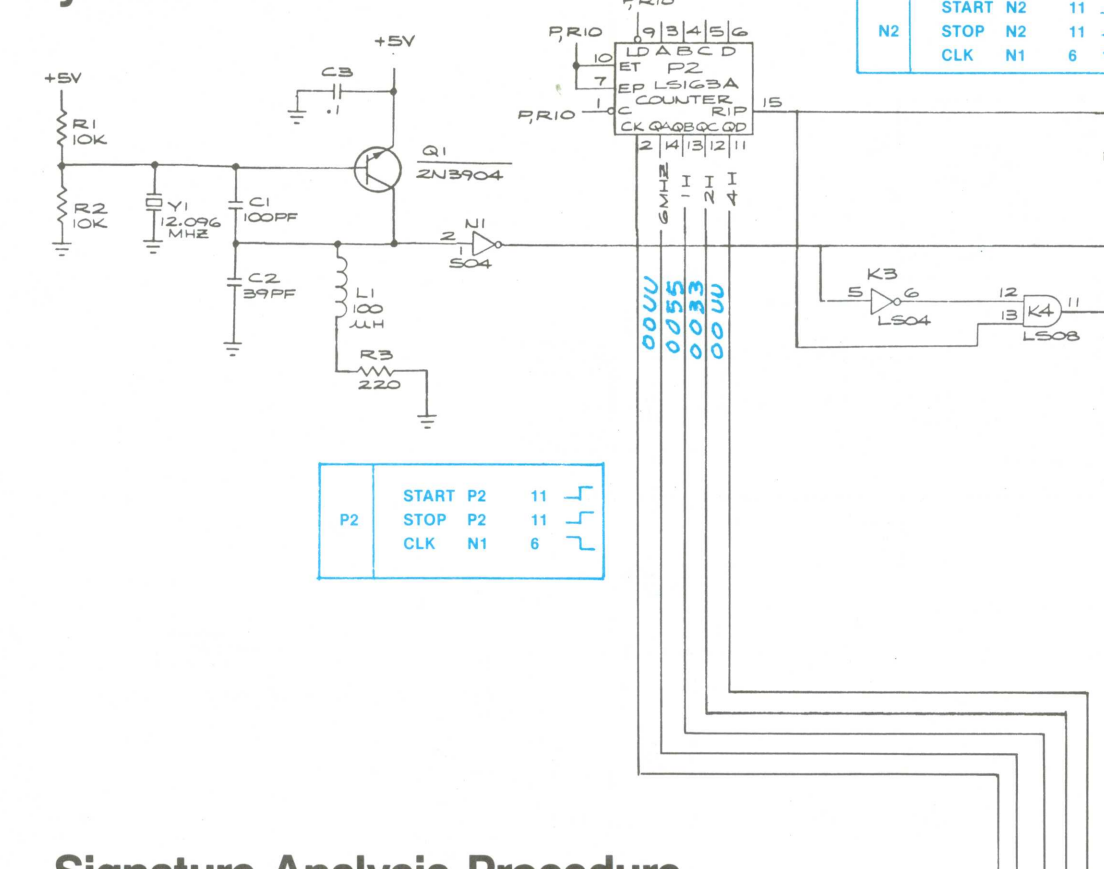
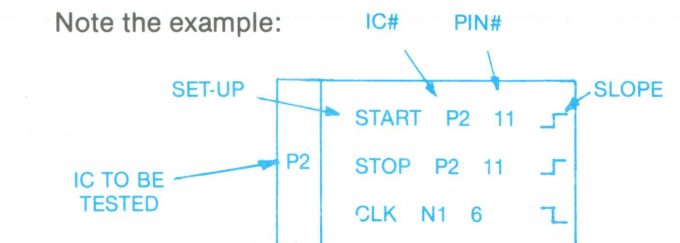


Synchronizer



Signature Analysis Procedure

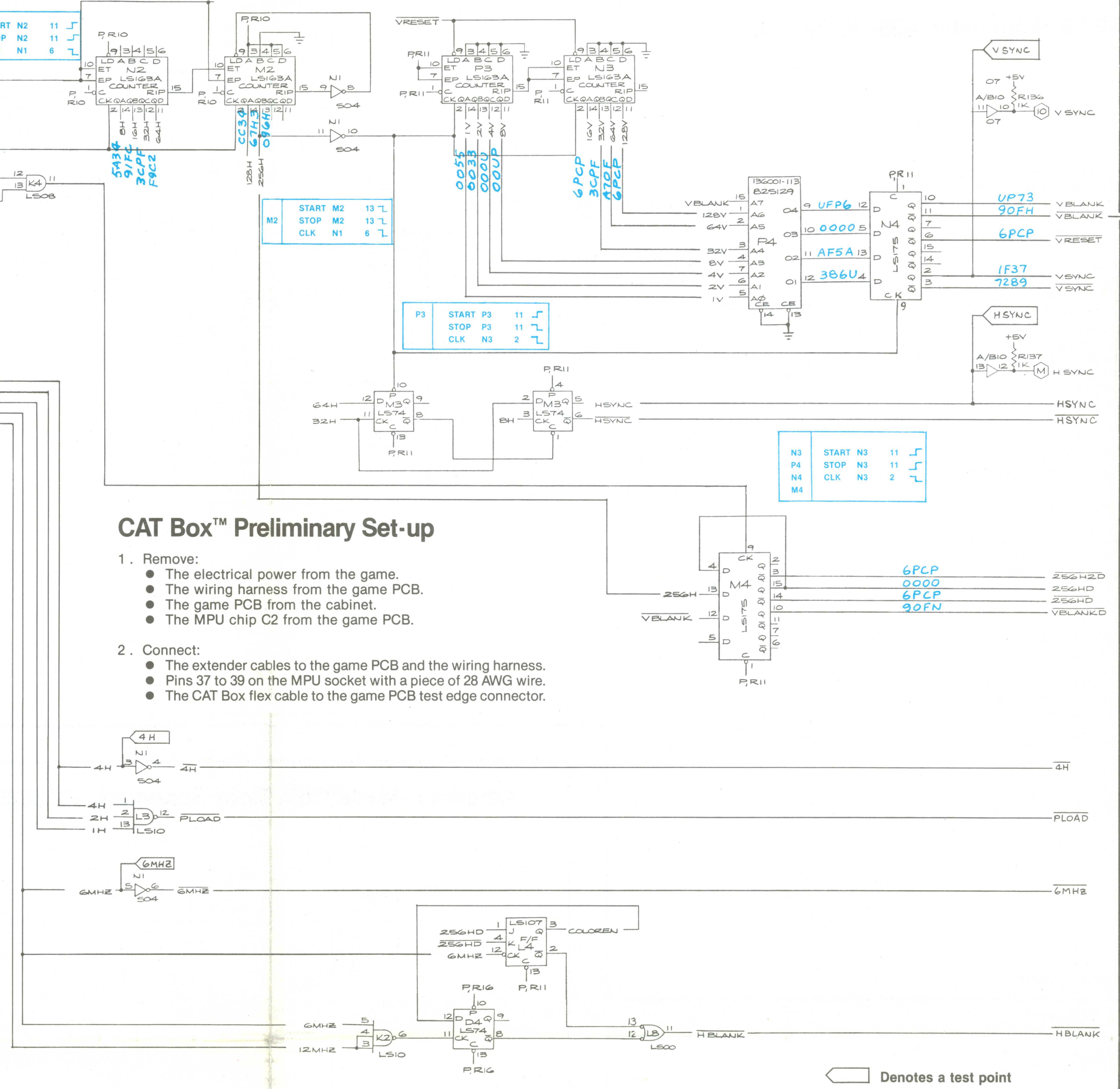
- Perform the CAT Box™ preliminary set-up.
- Connect the three BNC to E-Z clip cables (supplied with the CAT Box) to the SIGNATURE ANALYSIS CONTROL START, STOP, AND CLOCK jacks on the CAT Box.
- Attach the three black E-Z clips to a ground loop on the CENTIPEDE™ game PCB.
- Attach the CAT Box data probe to the DATA jack on the CAT Box.
- The red E-Z clips on the cables will be moved about for each group of signatures to be taken. The set-up for each group of signatures is located on the schematic sheet near the device to be checked. The signatures are located on or near the signal point on the schematic.



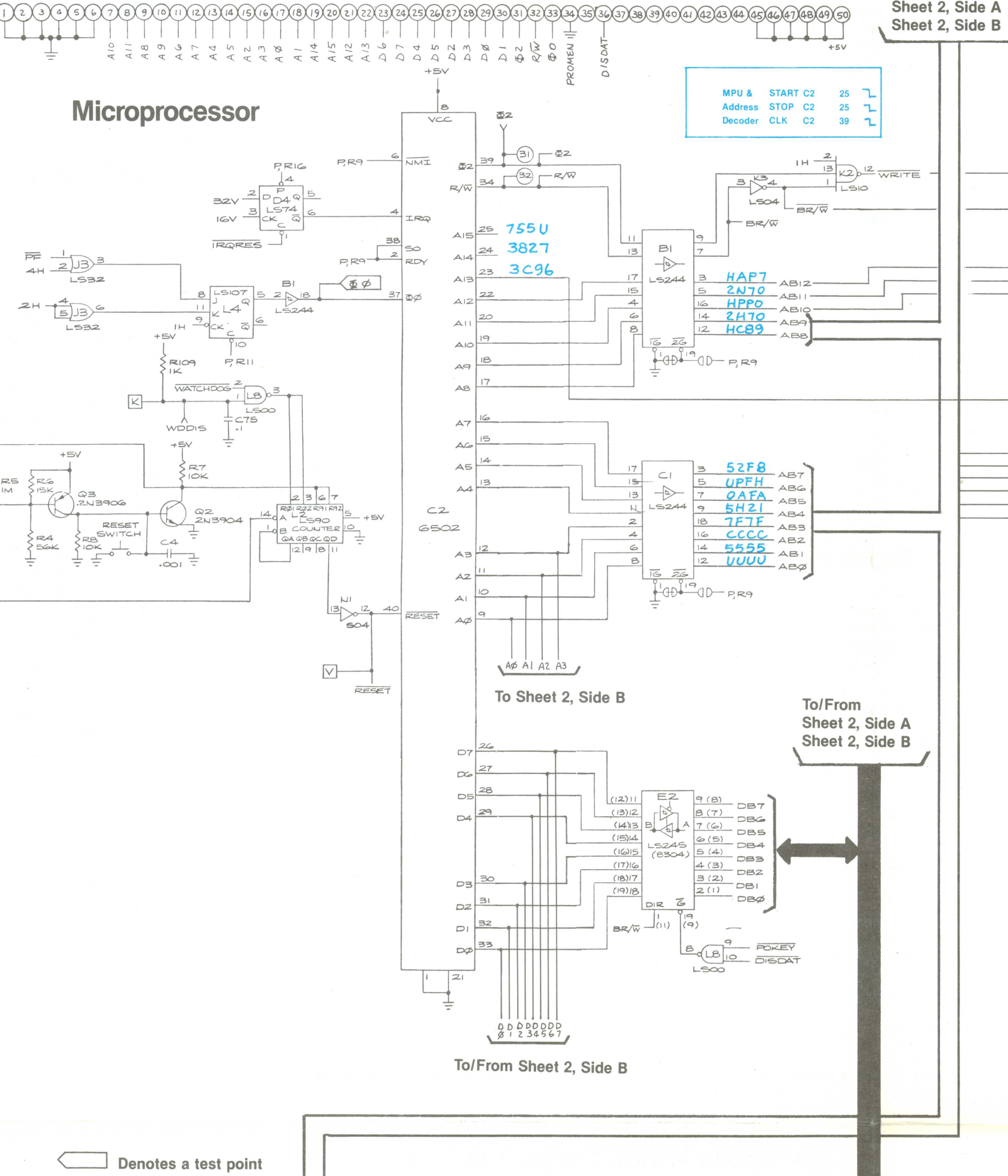
- Set the CAT Box switches as follows:
 - TESTER MODE: SIG
 - TESTER SELF TEST: OFF
 - PULSE MODE: LATCHED
 - START:
 - STOP:
 - CLOCK:

CAT Box™ Preliminary Set-up

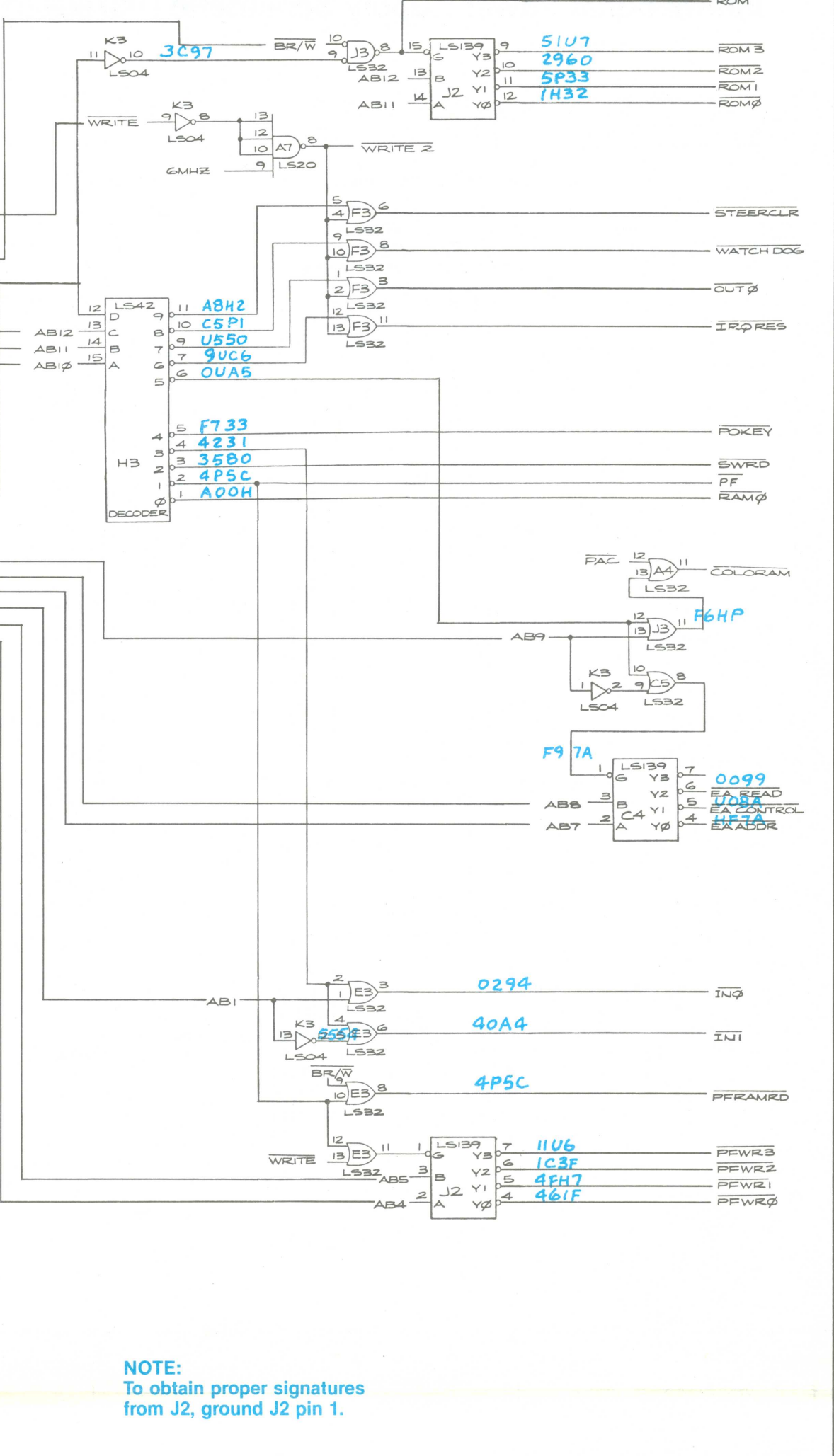
- Remove:
 - The electrical power from the game.
 - The wiring harness from the game PCB.
 - The game PCB from the cabinet.
 - The MPU chip C2 from the game PCB.
- Connect:
 - The extender cables to the game PCB and the wiring harness.
 - Pins 37 to 39 on the MPU socket with a piece of 28 AWG wire.
 - The CAT Box flex cable to the game PCB test edge connector.



TEST CONNECTOR-FOR ATARI CAT BOX™



Address Decoder

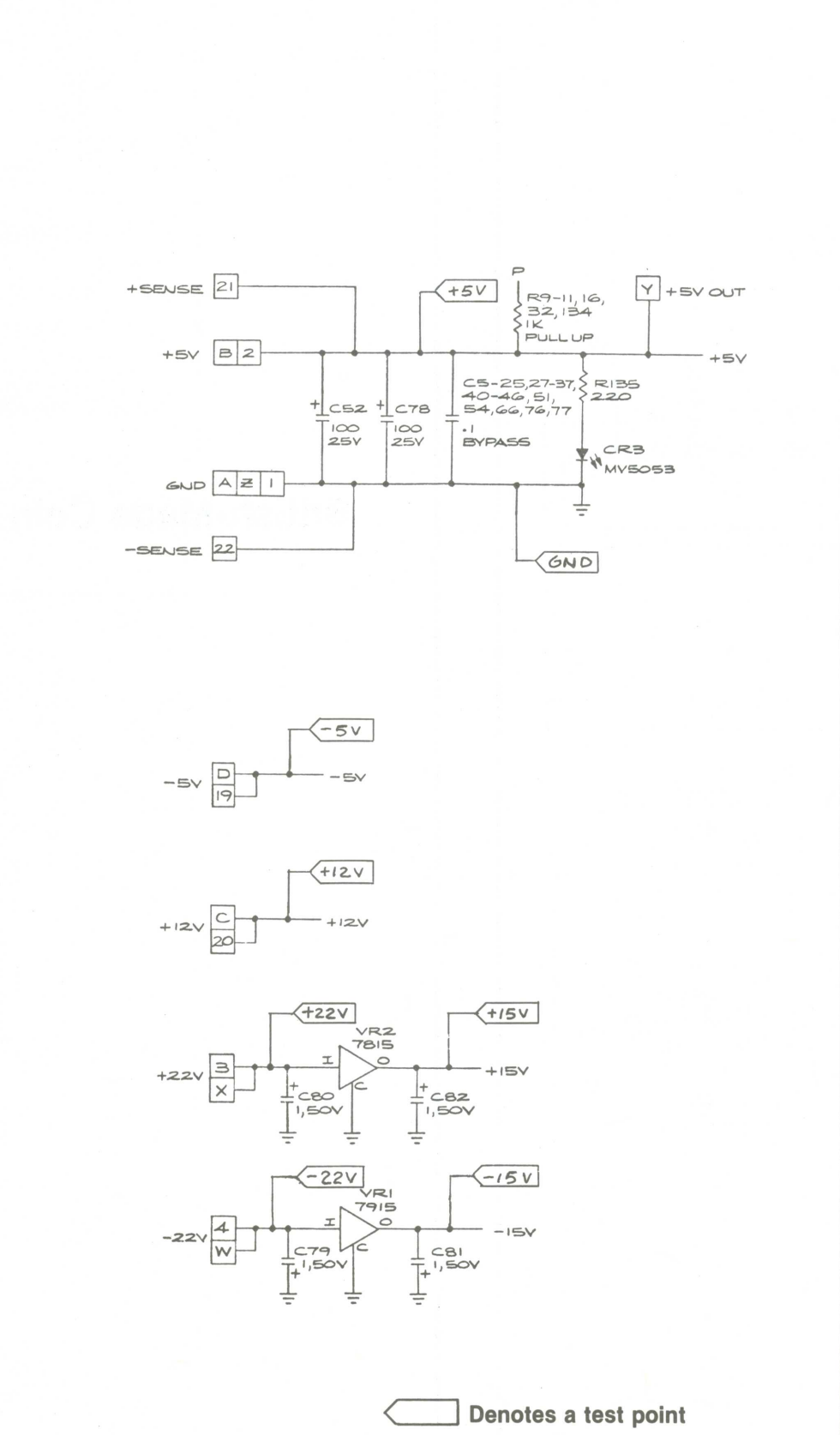


Diagnostic Tests

- Instruction**
- Hold the slam switch closed, while setting the self-test switch to the on position. The monitor displays the color hue adjustment pattern of 16 rectangles, as follows. Do not attempt any color hue or brightness adjustments unless you are a qualified color TV technician!
 - Activate any of the coin switches on the coin door. A convergence pattern appears with a grid of white dots on a black screen. Do not attempt any convergence adjustments unless you are a qualified color TV technician!
 - Set self-test switch to the off position. Check attract-mode display and readjust brightness if necessary.
- Use of Test**
- | | | | |
|-------------------|------------|------------|-------------|
| Pale Yellow-Green | Orange | White | Deep Yellow |
| Light Green | Dark Green | Light Blue | Lime Green |
| Deep Rose | Red | Purple | M |
| Navy Blue | Black | Royal Blue | Black |



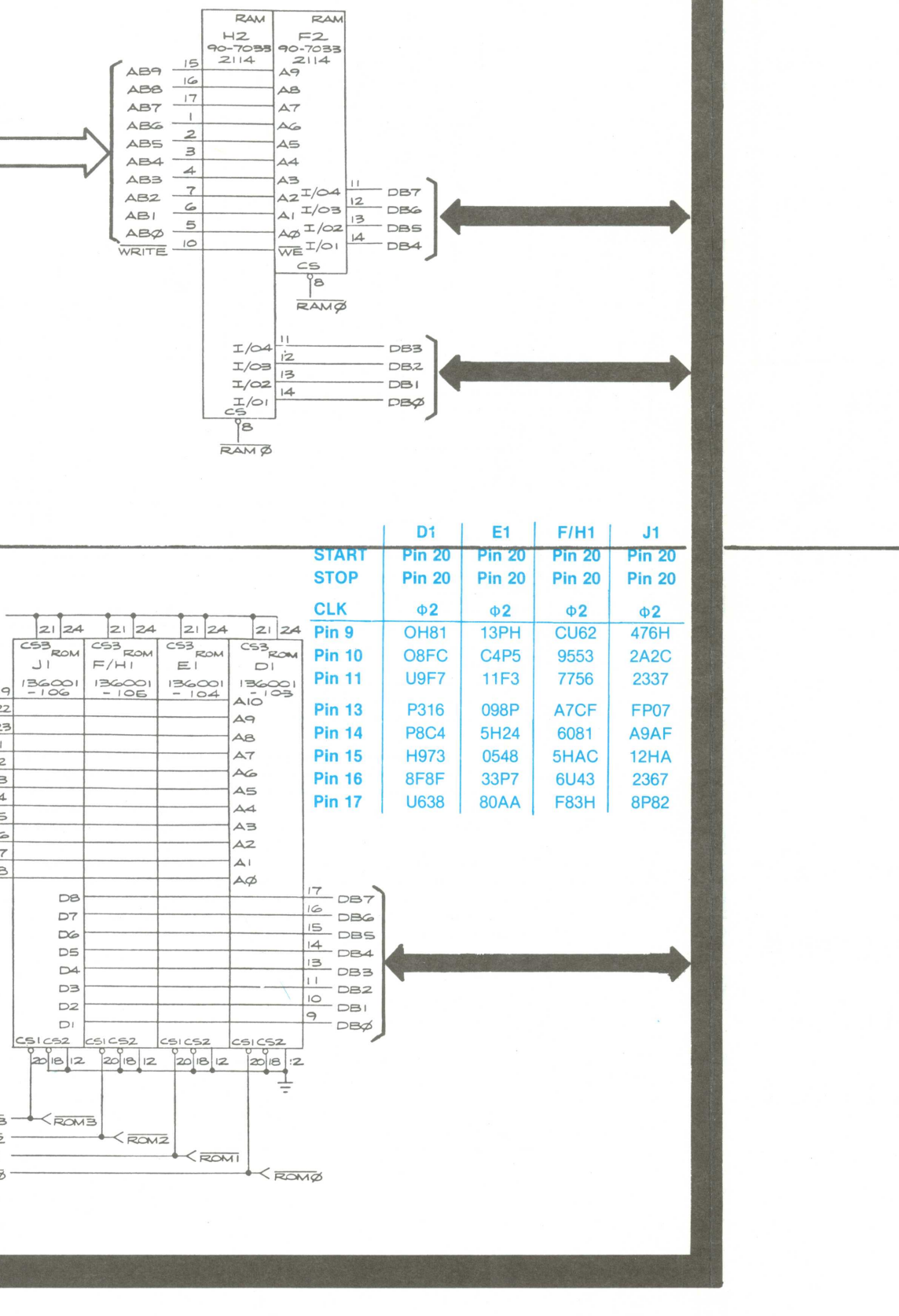
Power Input



Testing the RAM

- Perform the CAT Box™ preliminary set-up.
- Set the CAT Box switches as follows:
 - Press TESTER RESET
 - DBUS SOURCE to ADDR
 - BYTES to 1024
 - R/W MODE to (OFF)
 - R/W to WRITE
 - Key in 0000
 - Toggle R/W MODE to SINGLE
 - R/W to READ
 - Toggle R/W MODE to SINGLE
- If the CAT Box reads an address that doesn't compare, the COMPARE ERROR LED lights, the ADDRESS/SIGNATURE display shows the failing address location, and the ERROR DATA DISPLAY switch is enabled.
- If the COMPARE ERROR LED does not light, rekey 0000 and repeat the test with the DBUS SOURCE switch set to ADDR. This ensures that the data bits at address 0000 will go high. If the COMPARE ERROR LED does not light after this step, the RAM is good.

RAM



Memory Map

HEXA-DECIMAL ADDRESS		R/W	DATA					FUNCTION			
			D7	D6	D5	D4	D3	D2	D1	D0	
0000-03FF			D	D	D	D	D	D	D	D	RAM
0400-07BF			D	D	D	D	D	D	D	D	Playfield RAM
07C0-07CF			D	D	D	D	D	D	D	D	Motion Object Picture
07D0-07DF			D	D	D	D	D	D	D	D	Motion Object Vert.
07E0-07EF			D	D	D	D	D	D	D	D	Motion Object Horiz.
07F0-07FF			D	D	D	D	D	D	D	D	Motion Object Color
0800		R	D	D	D	D	D	D	D	D	Option Switch 1 (0 = On)
0801		R	D	D	D	D	D	D	D	D	Option Switch 2 (0 = On)
0C00		R	D								Horizontal Trak Ball™ Inputs
0C01		R	D	D	D	D	D	D	D	D	Self-Test (1 = VBlank)
0C02		R	D	D	D	D	D	D	D	D	Cocktail Cabinet (1 = Cocktail)
0C03		R	D	D	D	D	D	D	D	D	R,C,L Coin Switches (0 = On)
0C04		R	D	D	D	D	D	D	D	D	SLAM (0 = On)
0C05		R	D	D	D	D	D	D	D	D	Player 1 Fire Switch (0 = On)
0C06		R	D	D	D	D	D	D	D	D	Player 2 Fire Switch (0 = On)
0C07		R	D	D	D	D	D	D	D	D	Player 1 Start Switch (0 = On)
0C08		R	D	D	D	D	D	D	D	D	Player 2 Start Switch (0 = On)
0C09		R	D	D	D	D	D	D	D	D	Player 1 Start Switch (0 = On)
0C0A		R	D	D	D	D	D	D	D	D	Vertical Trak Ball™ Inputs
0C0B		R	D	D	D	D	D	D	D	D	Player 1 Joystick (R, L, Down, Up)
0C0C		R	D	D	D	D	D	D	D	D	Player 2 Joystick (0 = On)
1000-100F		R/W	D	D	D	D	D	D	D	D	Custom Audio Chip
1404		W	D	D	D	D	D	D	D	D	Playfield Color RAM
140C		W	D	D	D	D	D	D	D	D	Motion Object Color RAM
1600		W	D	D	D	D	D	D	D	D	EA ROM Address & Data Latch
1680		W	D	D	D	D	D	D	D	D	EA ROM Control Latch
1700		R	D	D	D	D	D	D	D	D	EA ROM Read Data
1800		W									IRQ Acknowledge
1C00		W	D								Left Coin Counter (1 = On)
1C01		W	D								Center Coin Counter (1 = On)
1C02		W	D								Right Coin Counter (1 = On)
1C03		W	D								Player 1 Start LED (0 = On)
1C04		W	D								Player 2 Start LED (0 = On)
1C07		W	D								Trak Ball™ Flip Control (0 = Player 1)
2000		W									WATCHDOG
2400		W									Clear Trak Ball™ Counters
2000-3FFF		R									Program ROM

Sheet 1, Side B

Centipede™

- Synchronizer
- Signature Analysis Procedure
- CAT Box™ Preliminary Set-Up
- Power Input
- Microprocessor
- Address Decoder
- RAM
- ROM
- Memory Map

Section of 037241-01 B

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