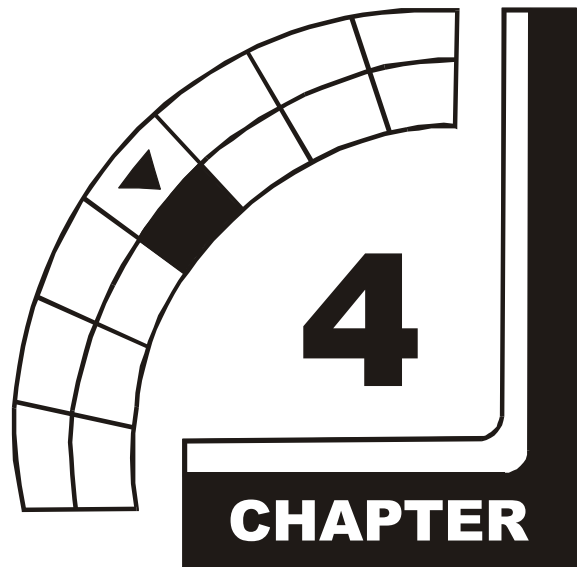




# **OFFROAD**

# **THE THUNDER™**



## **WIRING & CIRCUIT INFORMATION**

	<p><b>WARNING:</b> Failure to reconnect ground wires or replace metal shields may result in radio frequency interference.</p>
	<p><b>NOTICE:</b> The term VGM refers to the video game machine.</p>

# Harness Connector Prefixes

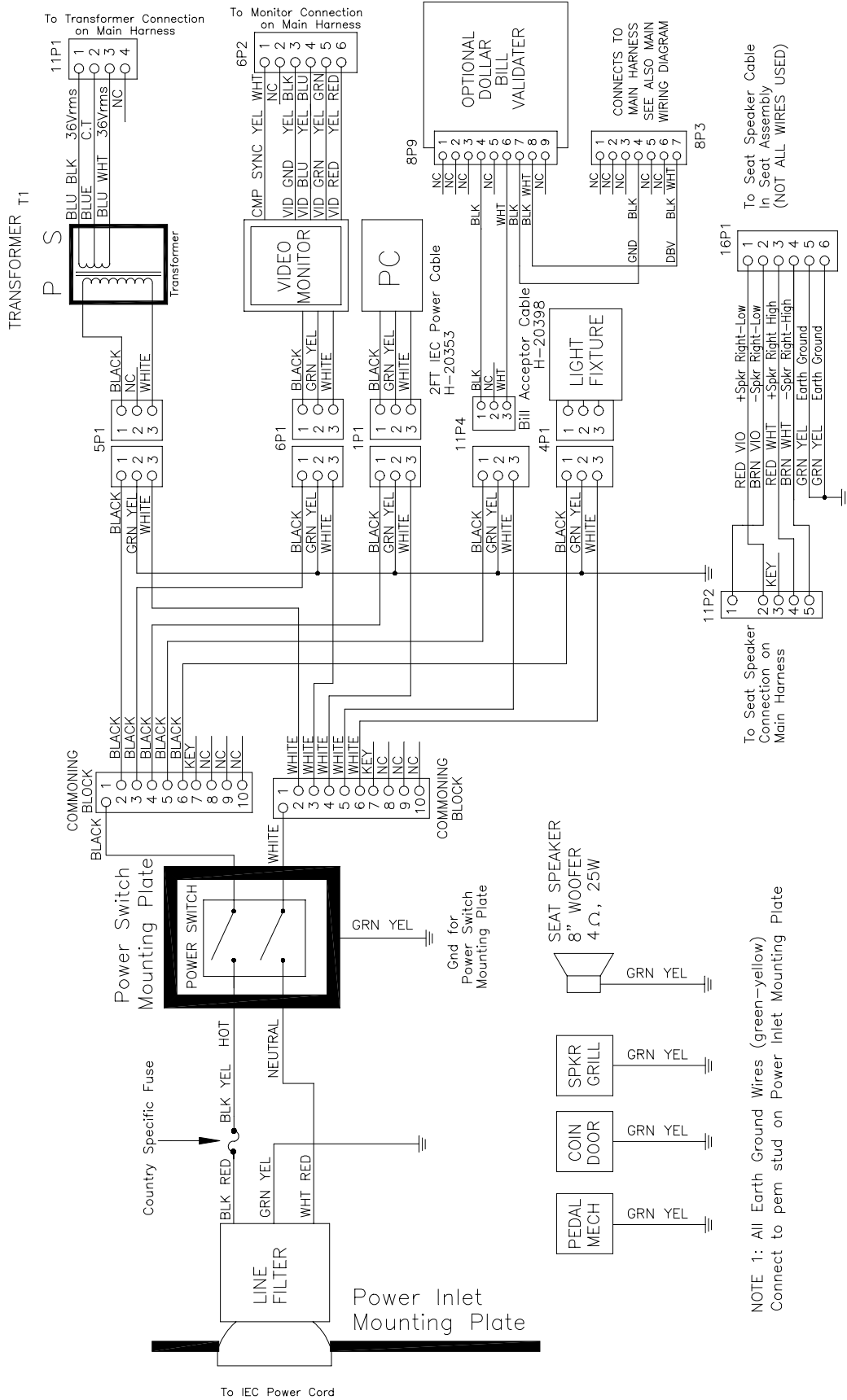
Prefix	Connector Location	Example
1	Arcade Computer	1P1
2	--	--
3	MagicBus™ Interface Board	3P1
4	Fluorescent Lamp	4P1
5	Power Supply	5P1
6	Video Monitor	6P1
7	Wheel Driver Board	7P1
8	Coin Door Area	8P1
9	BB12 Audio Board	9P1
10	LED Interconnect Board	10P1
11	Cabinet	11P1
12	Optional Overhead Marquee	12P1
13	Dashboard	13P1
14	Gas Pedal & Brake	14P1
15	Upper Speakers	15P1
16	Seat Speaker	16P1
17	Dash LED Board	17P1



**NOTICE:** Look for the connector prefix on wiring diagrams. The prefix shows you where you'll find the connector.

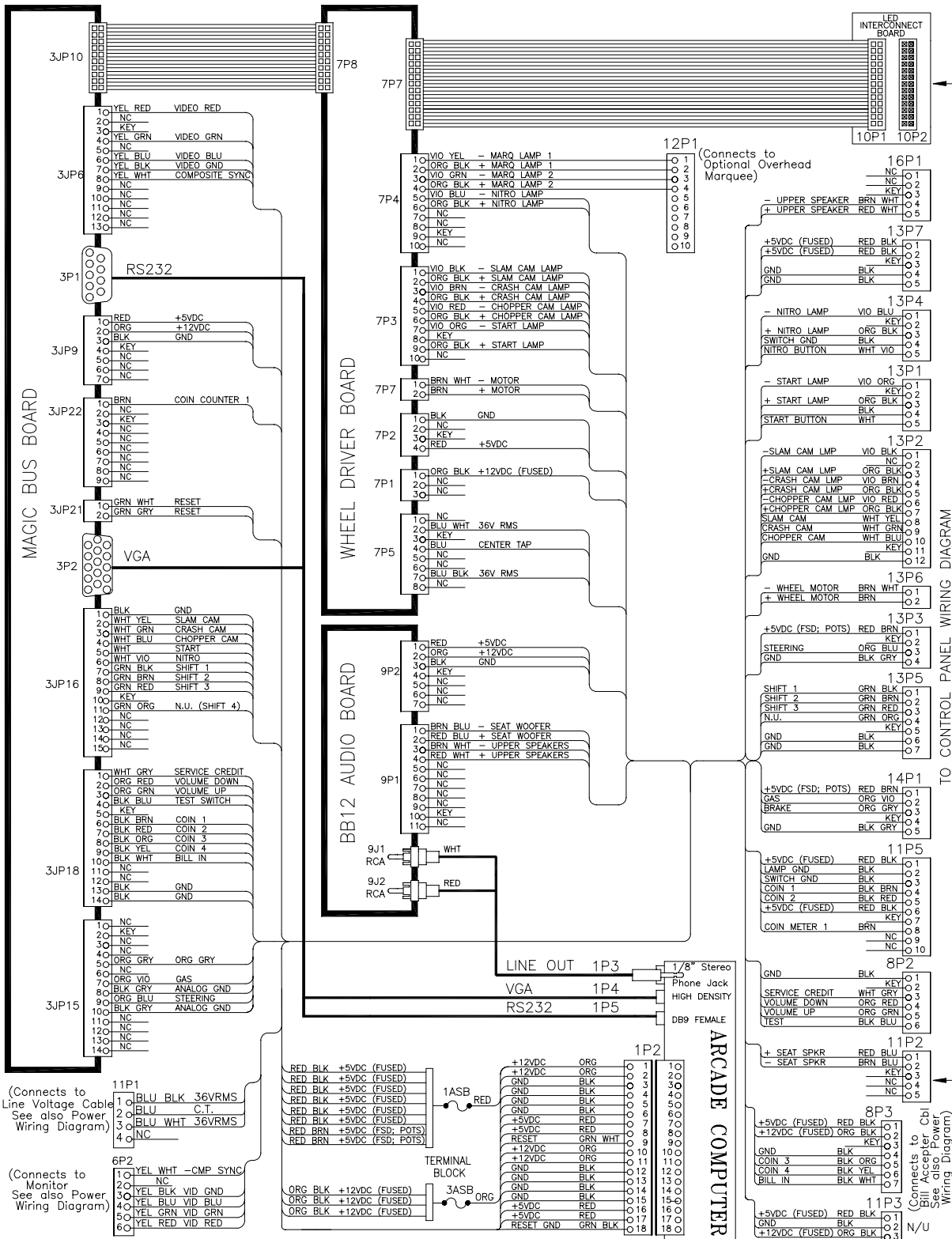


LINE VOLTAGE ASSY  
A-23384

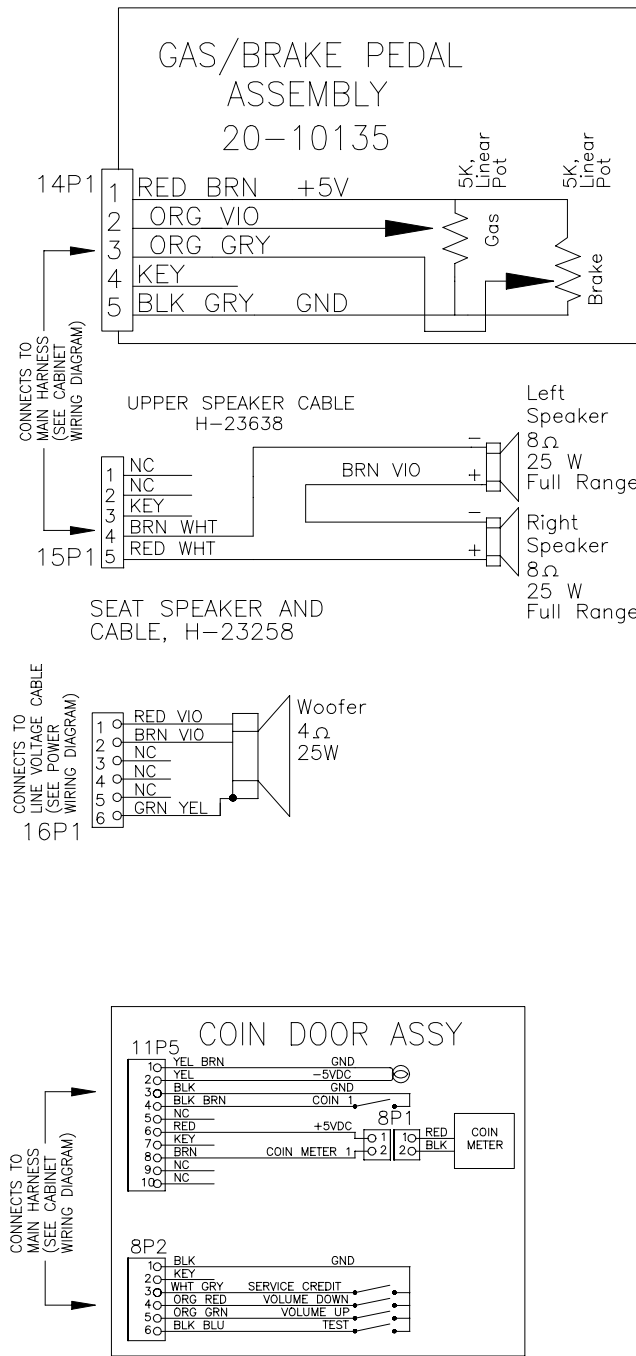
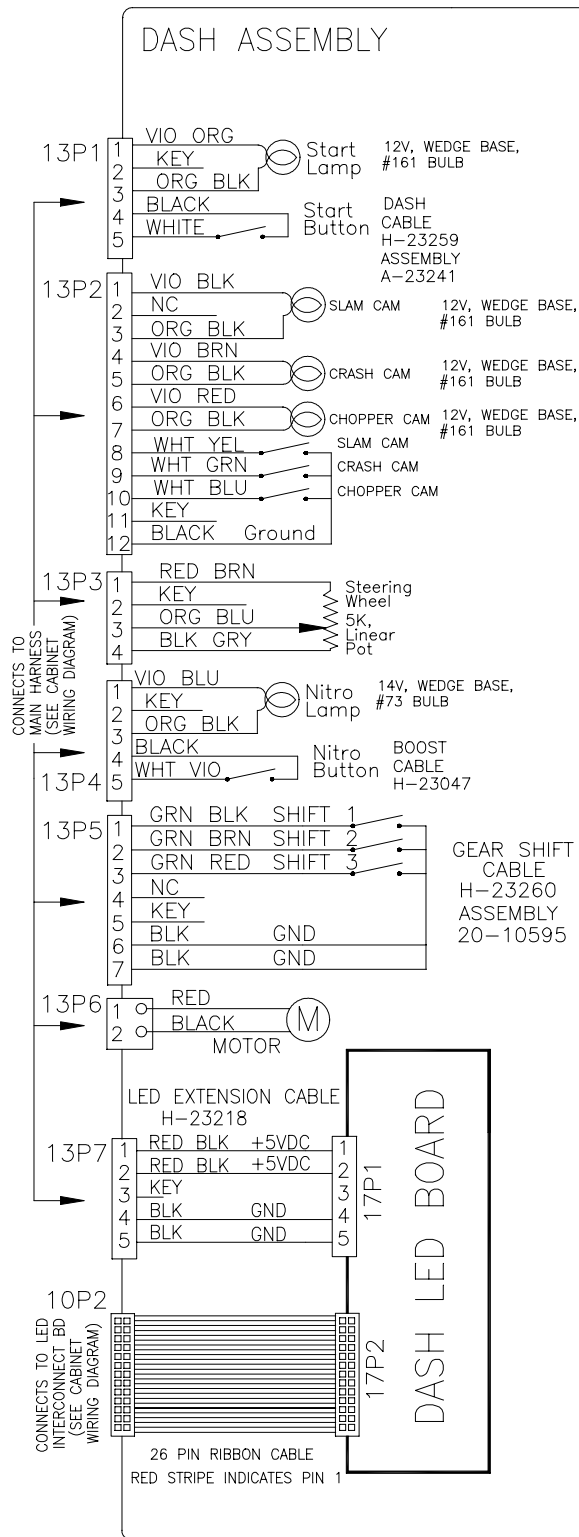


NOTE 1: All Earth Ground Wires (green-yellow) Connect to pem stud on Power Inlet Mounting Plate

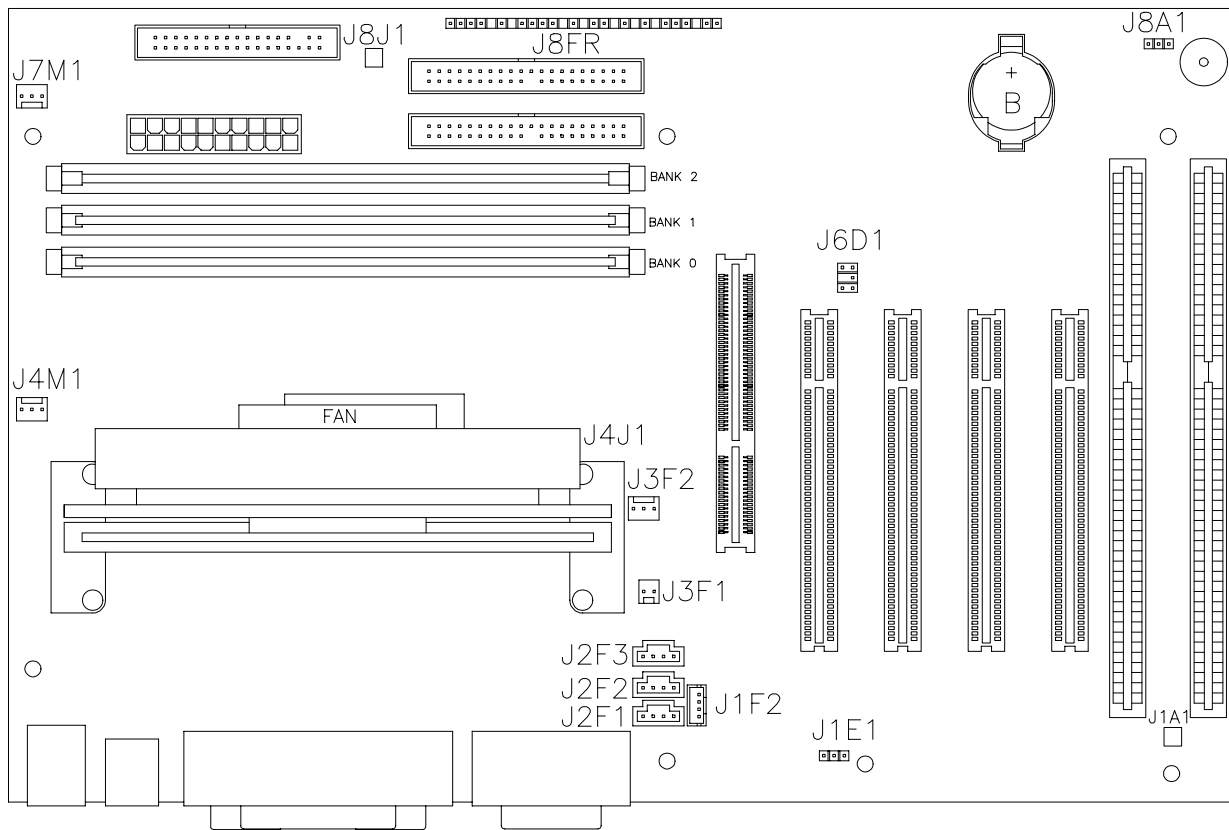
# Cabinet Wiring Diagram



# Player Panel Wiring Diagram




# Computer Motherboard Assembly 20-10554



## MOTHERBOARD CONNECTOR AND JUMPER STATUS

(NOTES FOR TABLE ON FOLLOWING PAGE)

	<p><b>NOTICE:</b> The term VGM refers to the video game machine.</p>
---	--

### NOTES:

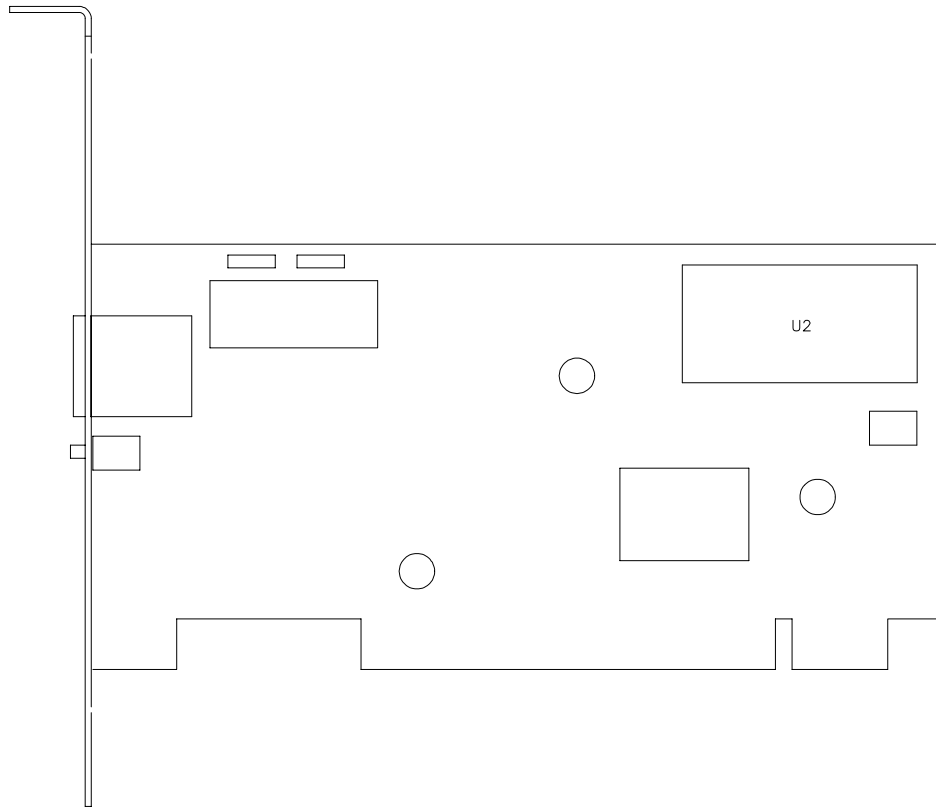
1. VGM doesn't require jumper or telephone connection.
2. VGM doesn't require jumper. VGM uses proprietary network for game linking.
3. VGM doesn't require connections. VGM has no ATAPI devices (CD ROMs).
4. VGM doesn't require jumper. Tamper-detection security feature isn't installed.
5. Connect processor module fan to this jack. Computer may become unreliable if processor overheats.
6. Connect processor module to this jack. 242-pin socket accepts single microprocessor modules.
7. VGM doesn't require connections. Case cooling fans connect directly to power supply.
8. VGM doesn't require connections. VGM doesn't use SCSI devices (Hard Drives).
9. Connect reset cable from Filter Board to this jack. VGM doesn't use front-panel devices.
10. Jumper must be set over pins 1 & 2 for this VGM. VGM won't run with incorrect or missing jumper.

\* Replacement Motherboards may not include this jumper. Refer to Parts to order extra shunt jumpers.

## Motherboard Connector and Jumper Status Table

Designation	Location	Function	Meaning	Setting	Default
J1A1 (Note 1)	Lower Right Near Board Expansion Slot	Wake On Ring	Not Used In This VGM (No Telephone)	Open	■
				1 & 2	
J1E1 (Note 2)	Lower Center Near Board Expansion Slot	Wake On LAN	Not Used In This VGM (No PC LAN)	Open	■
J1F2 (Note 3)	Lower Center Near Board Expansion Slot	CD Audio Input Circuit	Not Used In This VGM (No CD Player)	Open	■
J2F1 (Note 3)	Lower Center Near Board Expansion Slot	CD Data Input Circuit	Not Used In This VGM (No CD Player)	Open	■
J2F2 (Note 1)	Lower Center Near Board Expansion Slot	Telephony Input Circuit	Not Used In This VGM (No Telephone)	Open	■
J2F3 (Note 3)	Lower Center Near Board Expansion Slot	Auxiliary Input Circuit	Not Used In This VGM (No Aux Devices)	Open	■
J3F1 (Note 4)	Middle Center Near CPU And Fan	Chassis Intrusion Circuit	Not Used In This VGM (No Intrusion)	Open	■
				1 & 2	
J3F2 (Note 5)	Middle Center Near CPU And Fan	Processor Fan Circuit	Two Speed Fan For Processor Cooling	Open	
				1, 2, & 3	■
J4J1 (Note 6)	Center Left Module With Fan Assembly	System Micro- Processor	System Micro- Processor	Open	
				Filled	■
J4M1 (Note 7)	Center Left Near CPU Module	Processor Fan Circuit	Controlled Fan For Processor Cooling	Open	■
				1, 2, & 3	
J7M1 (Note 7)	Upper Left Near Power & Floppy Jacks	Case Fan Circuit	Controlled Fan For Hard Disk Drive Cooling	Open	■
				1, 2, & 3	
J8J1 (Note 8)	Upper Left Between Hard & Floppy Jacks	SCSI Drive Indicator	Not Used In This VGM (No SCSI Drives)	Open	■
				1 & 2	
J8FR (Note 9)	Upper Center Near Hard Disk Drive Jacks	Front Panel Devices	Only Reset Pins Are Used In This VGM	Open	■
				1 & 2	
J8A1 (Note 10)	Upper Right Near Battery And Speaker	Configur- ation Select	Starts System Setup Routine or Operation	Open	
				1 & 2	■
				2 & 3	

# Network Interface Board Assembly 20-10550



## Network Interface LED Indicator Table

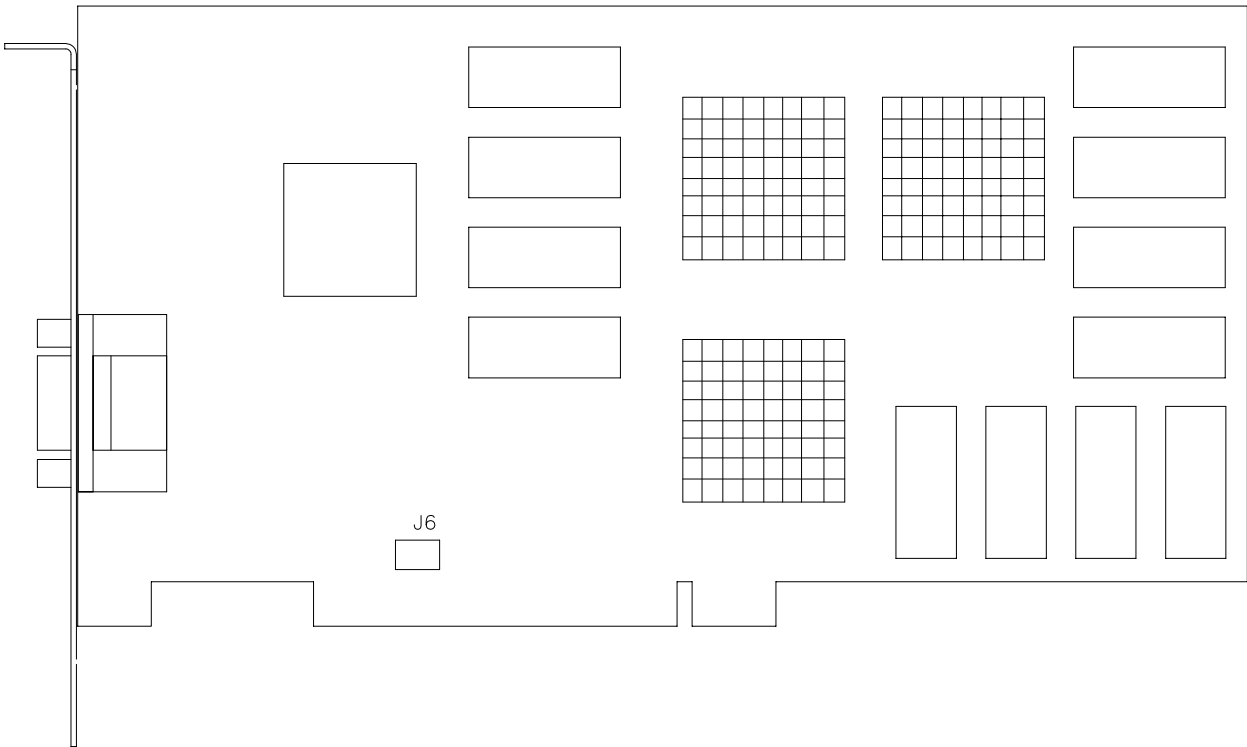
Designation	Location	Function	Color	State	Meaning
LED 1 (LNK)	Left Center Under Jack	Link Verify Indicator	Green	Off	Not In Use (No Game Link)
				On	Normal Operation
				Blinking	Link Fault (Note 1)
LED 2 (ACT)	Right Center Under Jack	Activity Indicator	Green	Off	Not In Use (No Data)
				On	Receiving Data (Note 2)
				Blinking	Normal Operation

Notes:

1. Intermittent cable or hub problems may cause blinking. Blinking must be continuous during linked operation.
2. Blinks during data packet exchange. Blinking may appear continuous during heavy network activity.



# Video Graphics Board Assembly 20-10551



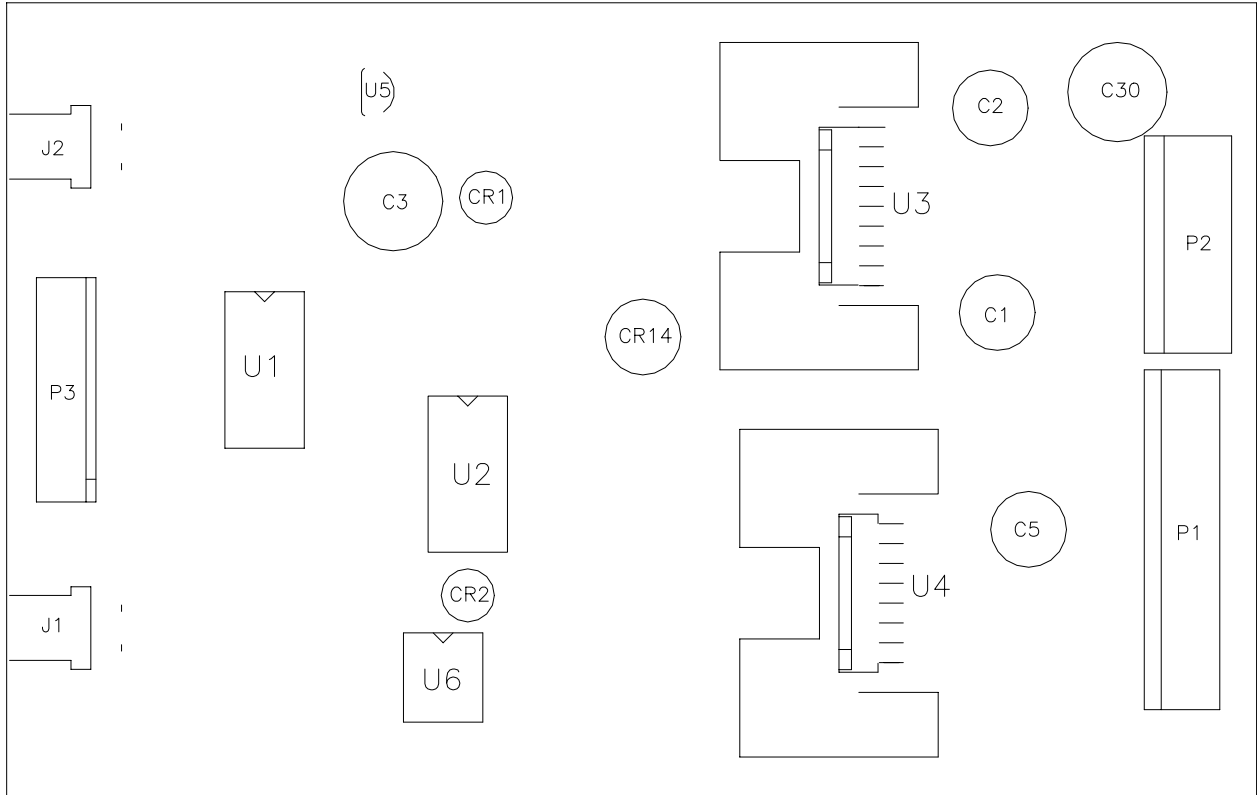
## Video Graphics Connector And Jumper Table

Designation	Location	Function	Meaning	Setting	Default
J1 (Note 1)	Left Center (DB-15 on Bracket)	Video Signal Output	Graphic Information To Interface	Open	
				1-15	■
J2-J7 (Note 2)	None	---	Not Used	Open	■
JP2 (Note 2)	None	---	Not Used	Open	■

Notes:

1. Connects to Interface Board through shielded cable. Doesn't connect directly to monitor.
2. Manufacturer option connectors and jumpers. Not required for this VGM.

# BB12 Audio Amplifier Board Assembly 04-12529.1



## BB12 Audio Amplifier LED Indicator Table

Designation	Location	Function	Color	State	Meaning
LED 1 (CR1)	Upper Center Near C3	Fault Indicator	Red	Off	Normal Operation
				On	Locked Up (Note 1)
				Blinking	Overload (Note 2)
LED 2 (CR2)	Lower Center Near U2 & U6	Fault Indicator	Red	Off	Normal Operation
				On	Locked Up (Note 1)
				Blinking	Overload (Note 2)

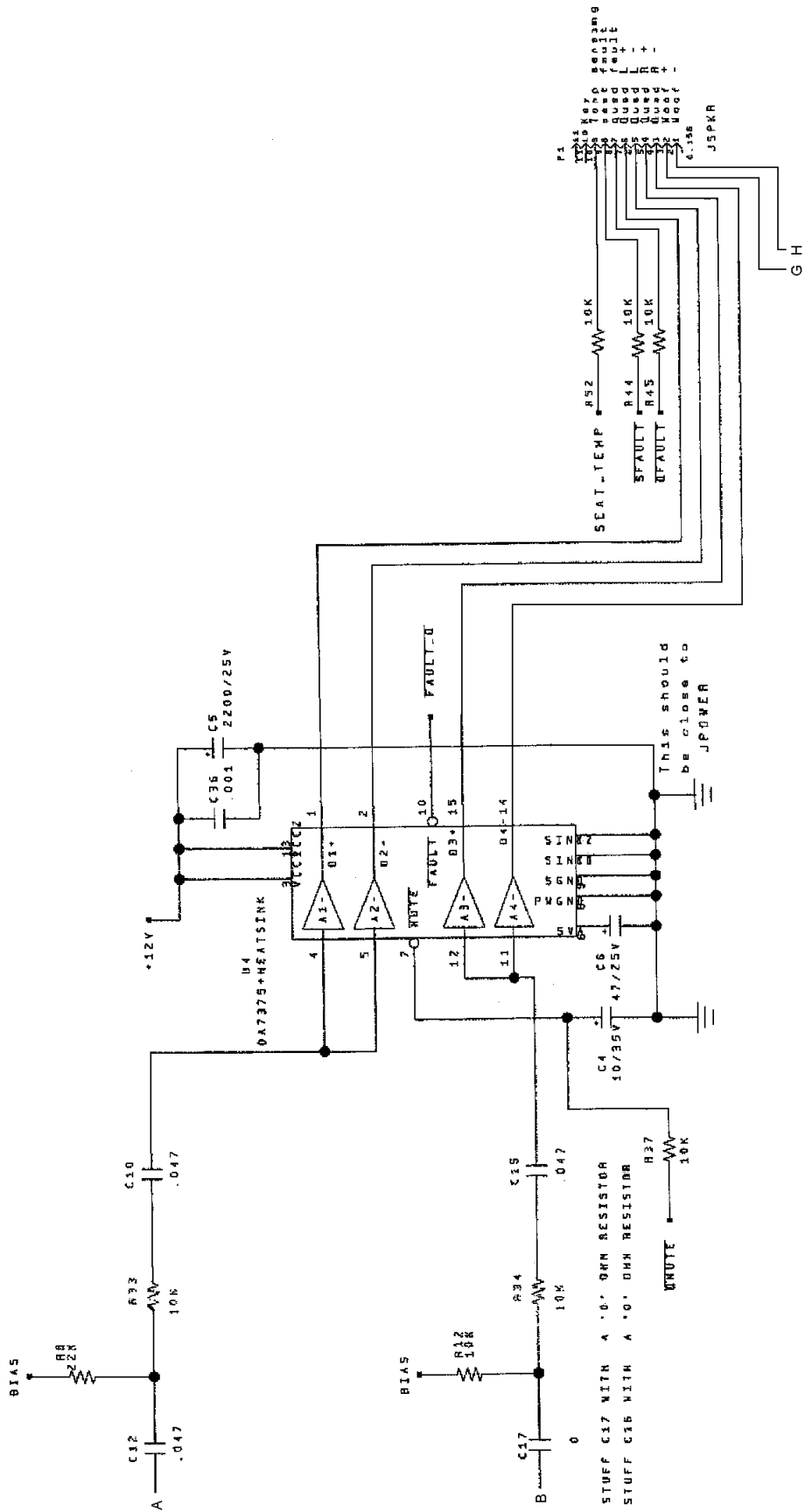
### NOTES:

1. Active output protection circuit. Attempt to reset circuit by clearing fault and removing power.
2. Intermittent audio overload or overheating may cause blinking. LED should flash only during startup.



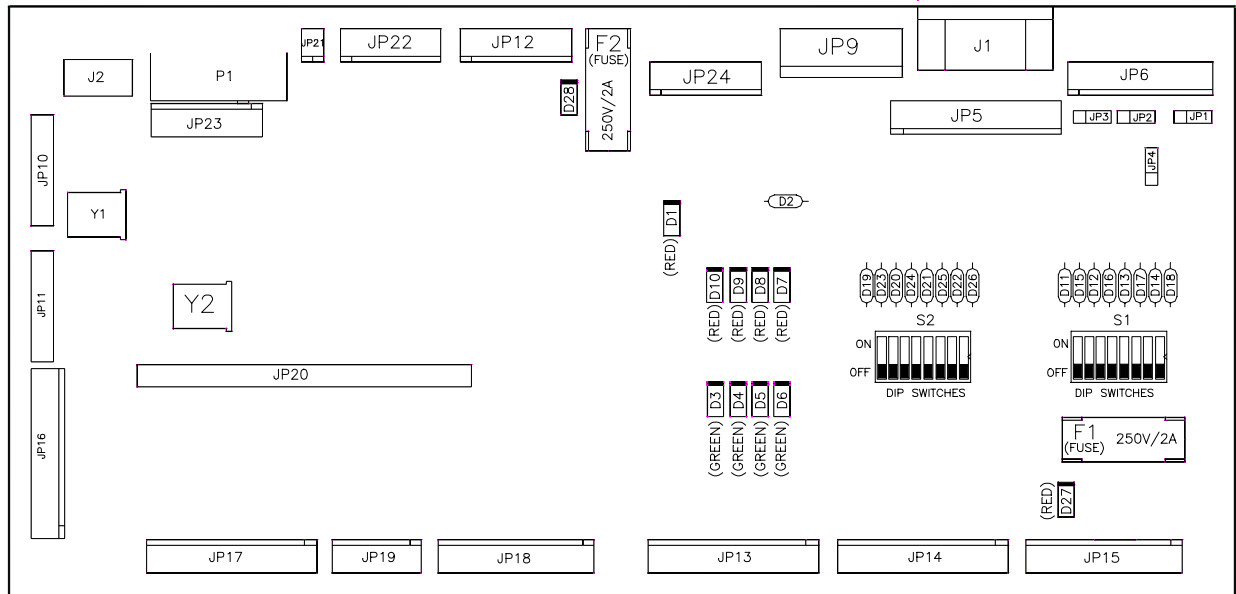


# BB12 Audio Amplifier Board Schematic, 3/4





# MagicBus™ Interface Board Assembly 04-12697.3



## MagicBus™ Interface Board Switches

Designation	Location	Function	Positions	State	Meaning
S1-7	Right Center Near D19 – D26	USB / UART Mode Selector	2	Off	UART Mode
				On	USB Mode
S1-8	Right Center Near D19 – D26	Host Watchdog Reset	2	Off	Watchdog Enabled
				On	Watchdog Disabled

### Notes:

1. Bank 1, Switch 8 should be off for *Offroad Thunder*. See the table above.
2. Bank 1, Switch 7 should be off for *Offroad Thunder*. This switch selects USB or UART Mode. This video game machine doesn't support USB Mode.
3. Bank 1, switches 1 through 6 have no assigned function. Leave these switches off.
4. Bank 2, switch 1 through 8 have no assigned function. Leave these switches off.

## MagicBus™ Board LED Indicator Table, 1/2

LED #	Location	Function	Color	State	Meaning
LED 28 +12V Power for Output Lamps	Left Center, Near Fuse F2 & Connector JP12	Indicator	Red	Off	No +12V
				On	+12V Present
				Blinking	Intermittent +12V
LED 27 +5V Power for Analog Inputs	Right, Near DIP Fuse F1	Indicator	Red	Off	No +5V
				On	+5V Present
				Blinking	Intermittent +5V
LED 10 Communi- cation	Right Center, Near DIP Switch S1	Indicator	Red	Off	Not In Use
				On	Communication Error
				Blinking	Normal Operation
LED 9 EEPROM	Right Center, Near DIP Switch S1	Indicator	Red	Off	Not In Use
				On	EEPROM not responding
				Blinking	Normal Operation
LED 8 Security	Right Center, Near DIP Switch S1	Indicator	Red	Off	Not In Use
				On	Security error
				Blinking	Normal Operation
LED 7 MagicBus Reset	Right Center, Near DIP Switch S1	Indicator	Red	Off	Not In Use
				On	MagicBus Reset
				Blinking	Normal Operation
LED 6 MagicBus Program Running	Right Center, Near DIP Switch S1	Indicator	Green	Off	Faulty MagicBus Board
				On	Faulty MagicBus Board
				Blinking	Normal Operation
LED 5 UART / USB Mode	Right Center, Near DIP Switch S1	Indicator	Green	Off	Not In Use
				On	Faulty MagicBus Board
				Blinking	With 4 & 3: UART; Individually: USB
LED 4 UART / USB Mode	Right Center, Near DIP Switch S1	Indicator	Green	Off	Not In Use
				On	Faulty MagicBus Board
				Blinking	With 5 & 3: UART; Individually: USB



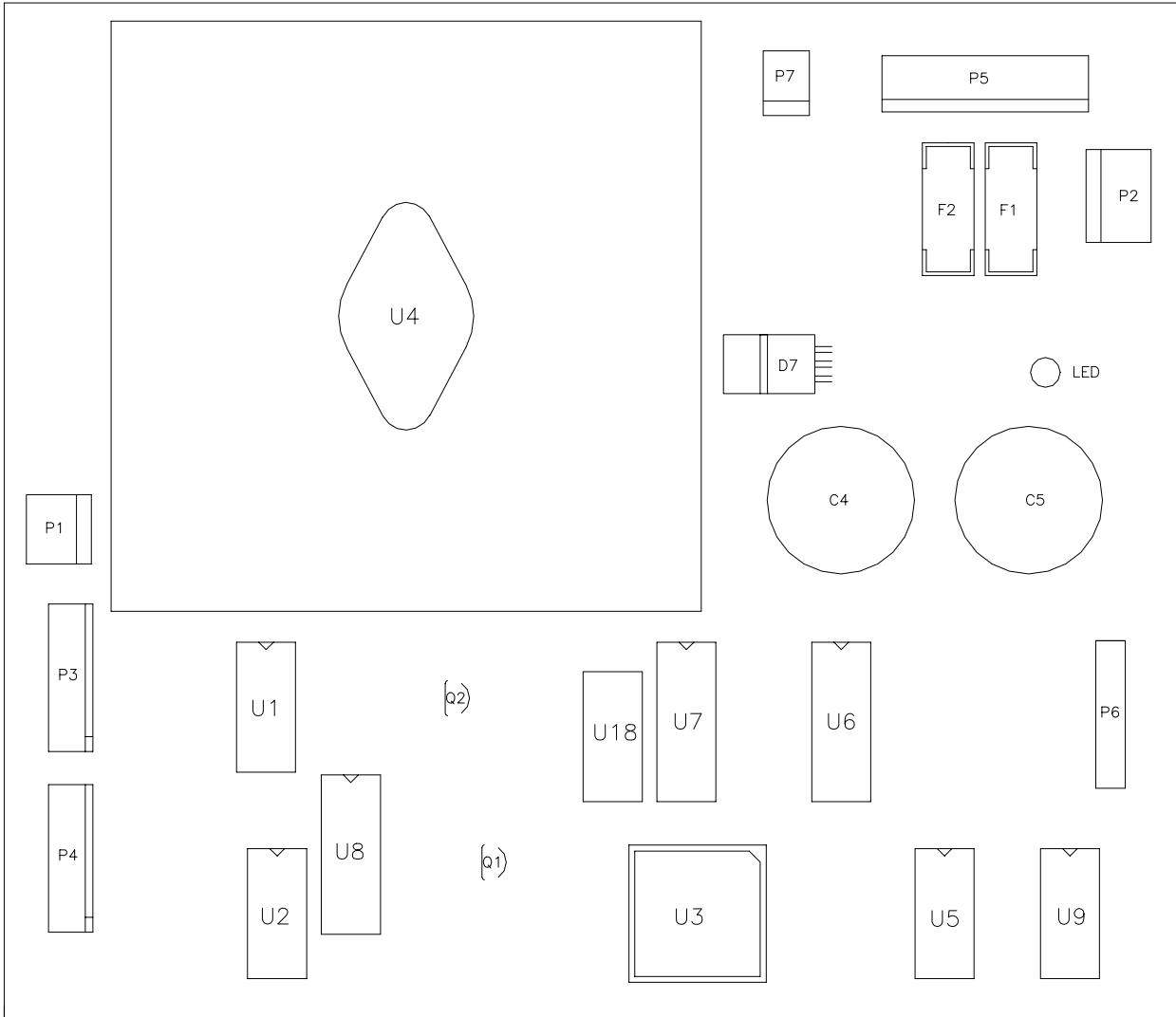
## MagicBus™ Board LED Indicator Table, 2/2

LED 3	Right Center, Near DIP Switch S1	Indicator	Green	Off	Not In Use
UART / USB Mode				On	Faulty MagicBus Board
				Blinking	With 5 & 4: UART; Individually: USB
LED 1	Center, Near Fuse F2	Indicator	Red	Off	No Power
Power to MagicBus™ Board				On	Power Present
				Blinking	Intermittent Power

## MagicBus™ Interface Connector & Jumper Table

Jumper	Location	Function	Meaning	Setting	Default
JP 1 (Note 1)	Upper Right Between JP4 and JP2	Blue Video Impedance	High Impedance Low Impedance High Impedance	Open	■
				1 & 2	
				2 & 3	
JP 2	Upper Right Between JP1 & JP3	Green Video Impedance	High Impedance Low Impedance High Impedance	Open	■
				1 & 2	
				2 & 3	
JP 3 (Note 3)	Upper Right Between JP2 & JP5	Red Video Impedance	High Impedance Low Impedance High Impedance	Open	■
				1 & 2	
				2 & 3	
JP 4 (Note 3)	Upper Right Near JP1 & JP2	Video Sync Polarity	Positive Sync Negative Sync Positive Sync	Open	
				1 & 2	■
				2 & 3	

# Wheel Driver Board Assembly 04-12770.1



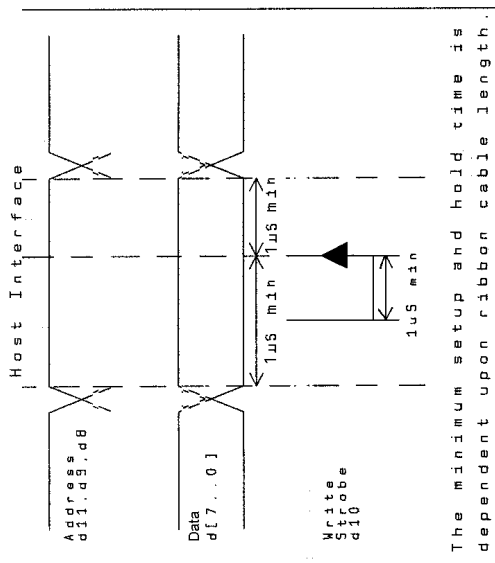
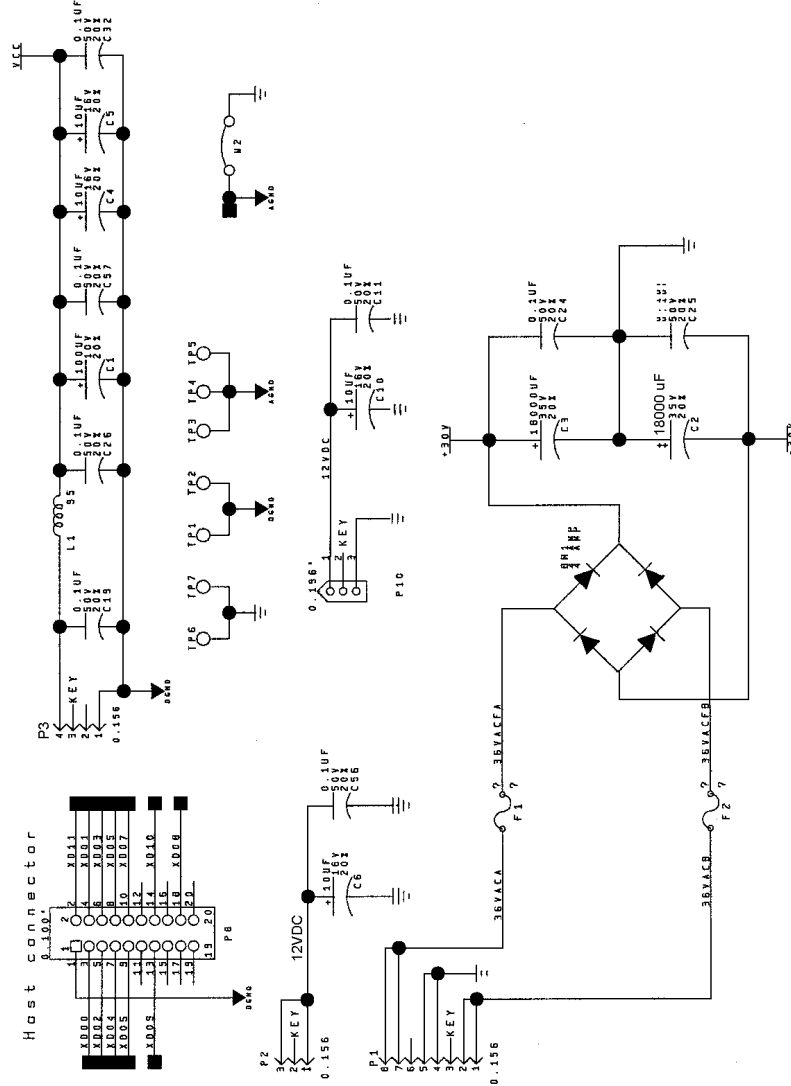
## Wheel Driver Board Led Indicator Table

Designation	Location	Function	Color	State	Meaning
LED 1	Right Center, Near C5 & P2	Indicator	Red	Off	Not In Use
				On	Normal Operation
				Blinking	Power Fault (Note 1)

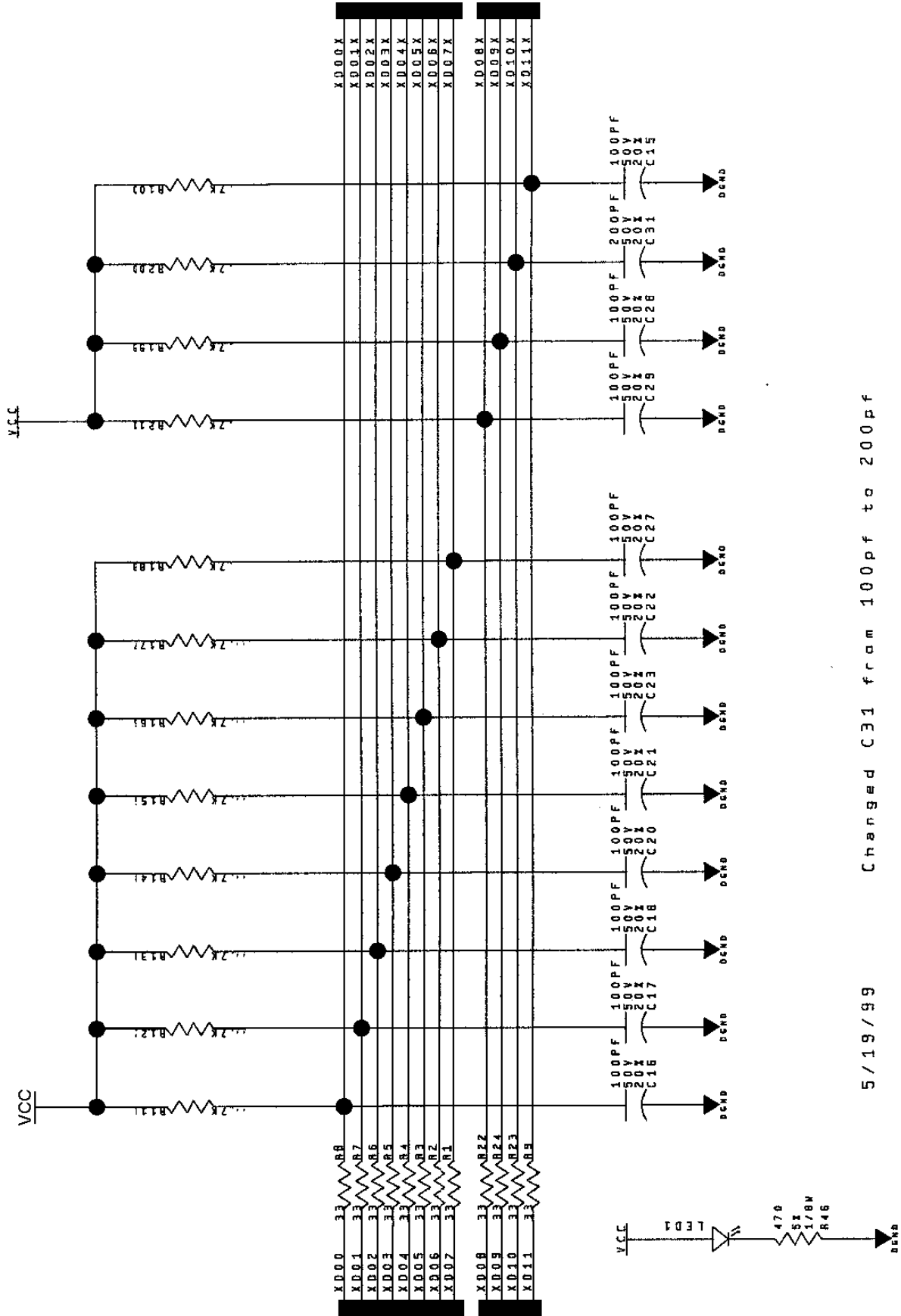
### Notes:

- LED 1 monitors regulated power supply voltage source. Must be on continuously. Flash or blinking indicates intermittent connection, power problem, circuit fault, etc.

# Wheel Driver Board Schematic, 1/8

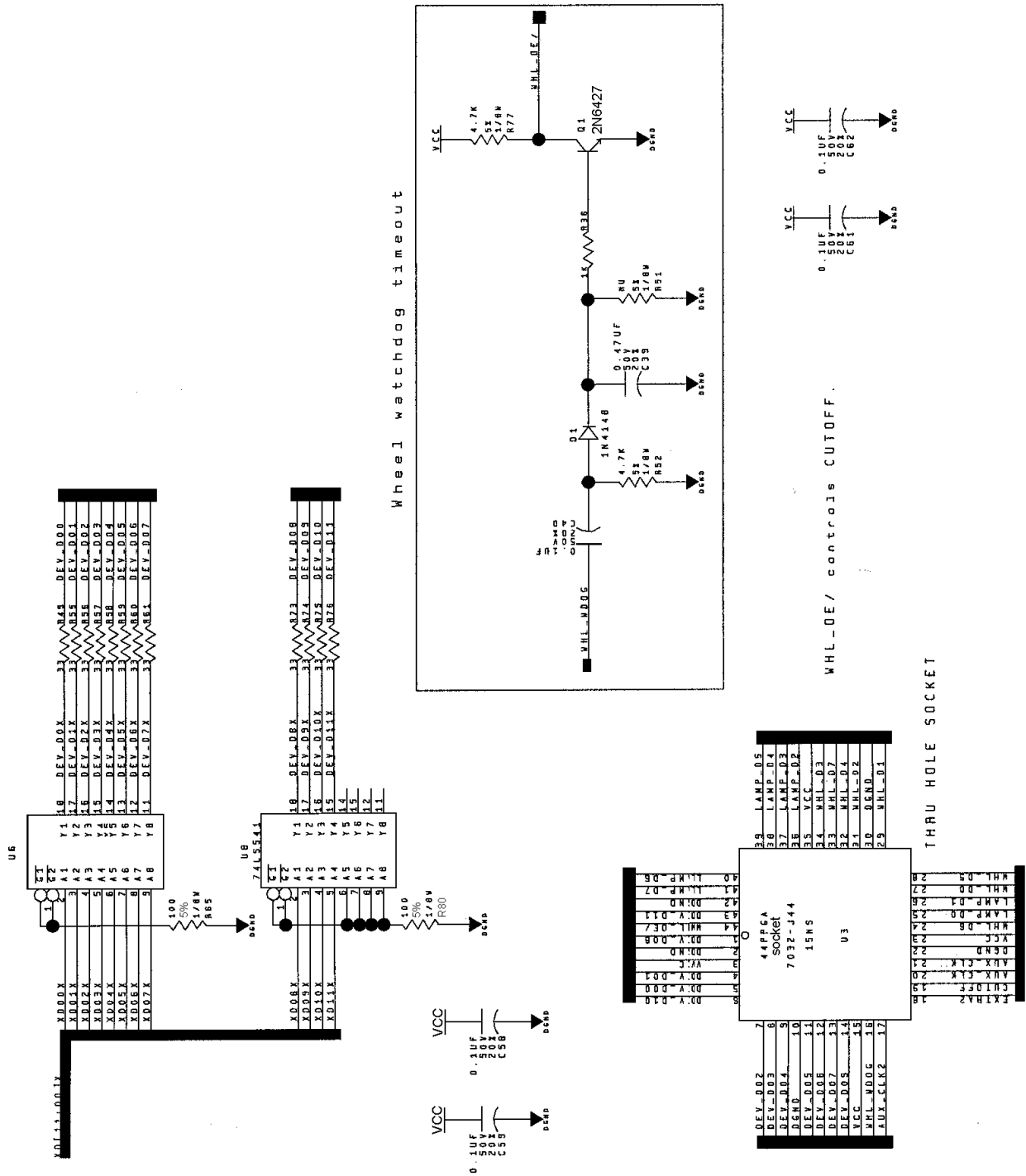


# Wheel Driver Board Schematic, 2/8



5/19/99 Changed C31 from 100pf to 200pf

# Wheel Driver Board Schematic, 3/8





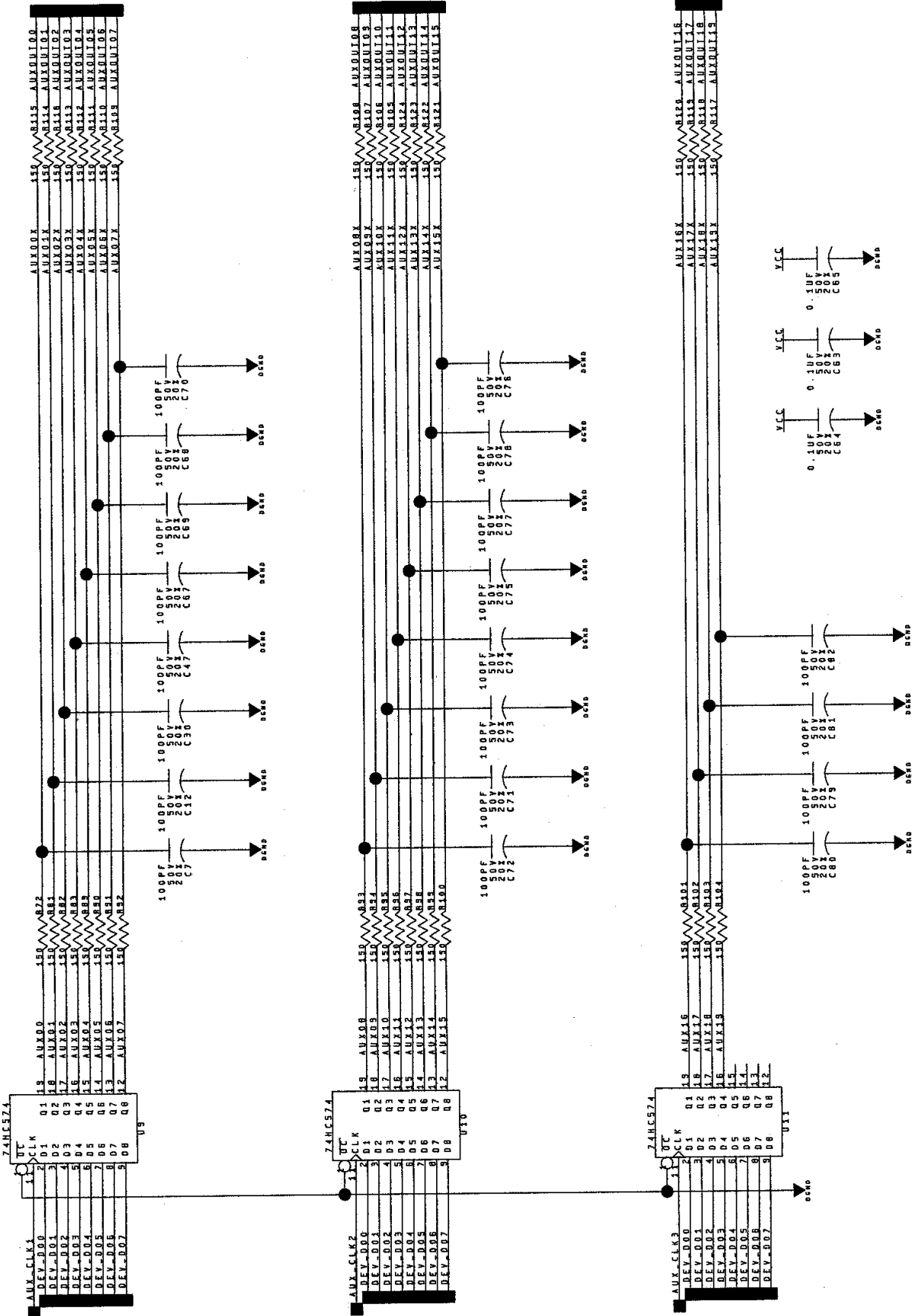






# Wheel Driver Board Schematic, 7/8

## Auxiliary Latched Outputs



# Wheel Driver Board Schematic, 8/8

