

# QUARTET 2

CONVERSION KIT FOR  
HORIZONTAL MONITOR GAMES

INSTALLATION MANUAL



**Sun Corporation Of America**

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Developed by SEGA

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"QUARTET 2" REQUIRES TWO (2) 8-WAY JOY STICKS (PROVIDED)  
PLEASE MAKE SURE YOUR JOY STICKS ARE SET TO THE 8-WAY  
POSITION.

MAKE SURE TO FOLLOW THE CONTROL PANEL LAYOUT DIAGRAM IN  
THIS MANUAL FOR PROPER GAME OPERATION.

# KIT CONTENTS

SWITCHING POWER SUPPLY

PC Boards

Joysticks (2)

Buttons (6)

Wiring Harness

FCC Enclosure

Marquee

Monitor Graphic

Control Panel Overlay

Control Panel Instruction Decals

## **USER INFORMATION**

# **WARNING**

## **F.C.C. REGULATION COMPLIANCE**

THE P.C. BOARD CAGE SUPPLIED WITH THIS CONVERSION KIT MUST BE UTILIZED AND TERMINATED TO GROUND AT THE TIME OF INSTALLATION.

THIS IS TO AVOID RADIO FREQUENCY RADIATION AND COMPLY WITH THE LIMITS FOR A CLASS "A" COMPUTING DEVICE PURSUANT TO SUBPART "J" OF PART 15 OF F.C.C. RULES, WHICH ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST SUCH INTERFERENCE WHEN OPERATED IN A COMMERCIAL ENVIRONMENT.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE INTERFERENCE — IN WHICH CASE, THE USER AT HIS OWN EXPENSE, WILL BE REQUIRED TO TAKE WHATEVER MEASURES MAY BE REQUIRED TO CORRECT THE INTERFERENCE.

# Introduction to QUARTET 2

QUARTET 2 is a two-player game. The two players select any two of the four characters available. A second player can join the game anytime after the first player starts or finishes a game. A player can "buy-in" after his game is over and continue play with the same character or a different character.

## Conversion Instructions

Sun Corporation's QUARTET 2 will convert any cabinet with a horizontally-mounted raster scan monitor. A switching power supply is provided with the kit to accommodate the substantial current requirements of the printed circuit boards, which draw 7.5 amps on the +5v line and 1 amp on the +12v line. The switching power supply provided with this kit will deliver this current.

Before you proceed with the conversion, be certain that the printed circuit board will fit into the cabinet! The main board measures 14" x 18".

**TO CONVERT:** Remove the old game wiring harness and power supply. Leave the AC wiring harness to the monitor, transformer, fluorescent light, etc. In addition, DO NOT remove the isolation transformer to the monitor or the old game transformer IF it has an isolation winding to the monitor.

Remove old side decals and perform necessary cabinet repairs. Remove all old game buttons and joysticks. Refer to the "Suggested Control Panel" layout and modify the control panel to match. Tests on-location have proven that this particular layout increases profitability of the game. Apply the QUARTET 2 control panel overlay and cut out the holes for the buttons and joysticks. Install the new buttons and joysticks and apply new button labels and control panel graphics.

Mount the QUARTET 2 wiring harness inside the cabinet. Note that the power supply wires are heavier gauge than all the other wires. This is to insure optimum power distribution for best board function. It is IMPORTANT that all these heavy-gauge wires go to the power supply.

Install the switching power supply into the game cabinet and mount securely. Tie the 120v AC wires to the AC inputs on the power supply. Tie the green earth-ground wire to the FG (frame ground) terminal. Tie the heavy-gauge power supply wires to the +5v, +12v, and ground wires to the appropriate terminals on the power supply. Use the lighter-gauge blackwires for switch and monitor grounds. Tie any unused ground wires to the ground terminal on the power supply. Doublecheck the wiring before applying AC to the game. If there is a -5v terminal on the power supply, it is NOT USED.

The SYNC wire to the monitor goes to BOTH the negative horizontal and negative vertical sync inputs. In all likelihood the game cabinet is already wired this way. Wire the control panel and mount the QUARTET 2 printed circuit boards securely to the inside wall of the cabinet.

A number of ground wires are provided for the control panel buttons, joysticks, coin switch ground, and monitor ground. In the event that this is more than needed, tie all unused ground wires to the power supply ground terminal.

Cut the QUARTET 2 marquee to size and install.

## INITIAL CHECKS

### BEFORE YOU POWER THE GAME UP:

- Doublecheck the wiring to the switching power supply. Be sure the correct color-coded wires go to the correct output terminals. The wire ends should be tightened securely beneath the power supply terminal screws.
- Be sure that the edge connector housing is attached to the printed circuit board correctly. The "1" label on the edge connector housing should be above or near the number "1" printed on the board near the edge connector.
- Check that the "piggyback" EPROM board is PLUGGED SECURELY AND CORRECTLY INTO THE MAIN BOARD.

### AFTER YOU POWER THE GAME UP:

- If there is a "chirping" noise from the power supply, SHUT THE POWER OFF IMMEDIATELY and disconnect the edge connector housing. Recheck the power supply wiring. If this is correct, power the game up with the edge connector housing REMOVED from the board. If chirping persists, the +5v supply is too high (should be 5.5v max) OR the power supply is bad. Reconnect edge connector housing and try again. If it still chirps, edge connector housing is on backwards or else PC board is bad.
- If the screen comes up randomly filled with small colored blocks, check "piggyback" board to make sure it is plugged in securely. In addition, check the +5v supply. It may be too low.
- If the screen comes up inverted, it will be necessary to alter the yoke wiring on the monitor.
- If the picture comes up but none of the switch inputs work, check that the +5v supply wire at position D on the edge connector housing is there and that it goes to the +5v terminal on the power supply.
- If there are fine wavy lines or a "herringbone" pattern on the screen, the ground connections need to be improved. Be sure BOTH heavy-gauge ground wires from the edge connector housing are there and go to the power supply ground terminal. If this is OK, try a jumper wire (at least 18 gauge) from the DC ground terminal on the power supply to the FG terminal on the power supply. Be sure that the FG terminal is actually tied to earth ground on the AC line cord.

RAM and ROM tests are performed by the board on powerup. Grounding pin 22 on the edge connector will give you a handy input test for checking switches. It also provides an indication of dipswitch settings and an audio test.

Lastly, adjust the volume to suit the game's surroundings. Adjust the monitor for proper centering and size. Correct the brightness and black level control, if present, on the monitor.

# QUARTER 2

## COIN/CREDIT OPTION SWITCH SETTING

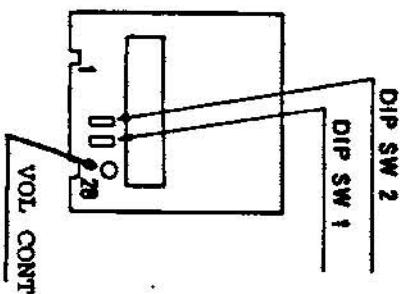
OPTION	DIP SWITCH #1								
	1	2	3	4	5	6	7	8	9
1 COIN 1 CREDIT	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1 COIN 2 CREDITS	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1 COIN 3 CREDITS	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1 COIN 4 CREDITS	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
1 COIN 5 CREDITS	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
1 COIN 6 CREDITS	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF
1 COIN 7 CREDITS	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF
1 COIN 8 CREDITS	ON	ON	ON	ON	ON	ON	ON	OFF	OFF
1 COIN 9 CREDITS	ON	ON	ON	ON	ON	ON	ON	ON	OFF
2 COINS 1 CREDIT	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2 COINS 2 CREDITS	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
2 COINS 3 CREDITS	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
2 COINS 4 CREDITS	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF
2 COINS 5 CREDITS	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF
2 COINS 6 CREDITS	ON	ON	ON	ON	ON	ON	ON	OFF	OFF
2 COINS 7 CREDITS	ON	ON	ON	ON	ON	ON	ON	ON	OFF
2 COINS 8 CREDITS	ON	ON	ON	ON	ON	ON	ON	ON	ON
2 COINS 9 CREDITS	ON	ON	ON	ON	ON	ON	ON	ON	ON

## OPTION SWITCH SETTING

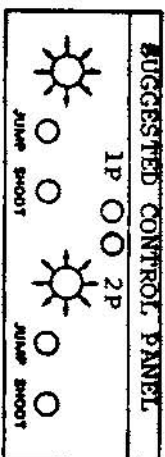
OPTION	1	2	3	4	5	6	7	8
ADVERTISE	ON	ON	OFF					
ROUND	OFF	OFF						
1 CREDIT	POWER ON	OFF	OFF					
2 CREDIT	POWER ON	ON	OFF					
3 CREDIT	POWER ON	ON	ON					
4 CREDIT	POWER ON	ON	ON	ON				
5 CREDIT	POWER ON	ON	ON	ON	ON			
6 CREDIT	POWER ON	ON	ON	ON	ON	ON		
7 CREDIT	POWER ON	ON	ON	ON	ON	ON	ON	
8 CREDIT	POWER ON	ON	ON	ON	ON	ON	ON	ON
9 CREDIT	POWER ON	ON	ON	ON	ON	ON	ON	ON
STANDARD DIFFICULTY HANDS	ON	ON	ON	ON	ON	ON	ON	ON

## DIP SWITCH #2

### FACTORY RECOMMENDED SETTINGS



COMPONENT SIDE	SOLDER SIDE
GND	GND BLK
BLK	GND BLK
RED	COMP SYNC WHT
RED	GREEN GRN
VIO (+) SPEAKER SERVICE	SPEAKER (-) VIO-WHT
TEST	NOT USED
COIN 2	2P START GRN-YEL
GRY COIN 1	1P START GRN-WHT
NOT USED	NOT USED
NOT USED	NOT USED
NOT USED	NOT USED
NOT USED	NOT USED
YEL-BRN 1P LEFT	2P LEFT YEL-RED
YEL-WHT 1P RIGHT	2P RIGHT YEL-BLK
YEL-BLU 1P UP	2P UP YEL-GRY
YEL 1P DOWN	2P DOWN YEL-GRN
NOT USED	NOT USED
WHT-YEL 1P SHOOT	2P SHOOT WHT-BRN
WHT-BLU 1P JUMP	2P JUMP WHT-BLK
NOT USED	NOT USED
NOT USED	NOT USED
COIN METER 1	COIN METER 2
ORG +12V	+12V
RED-WHT +5V	+5V RED-WHT
+5V	+5V
GND	GND
BLK	GND BLK



SUPPLY VOLTAGES & CURRENT	
VOLTAGE	CURRENT
DC5V	7.5A
DC12V	1.0A