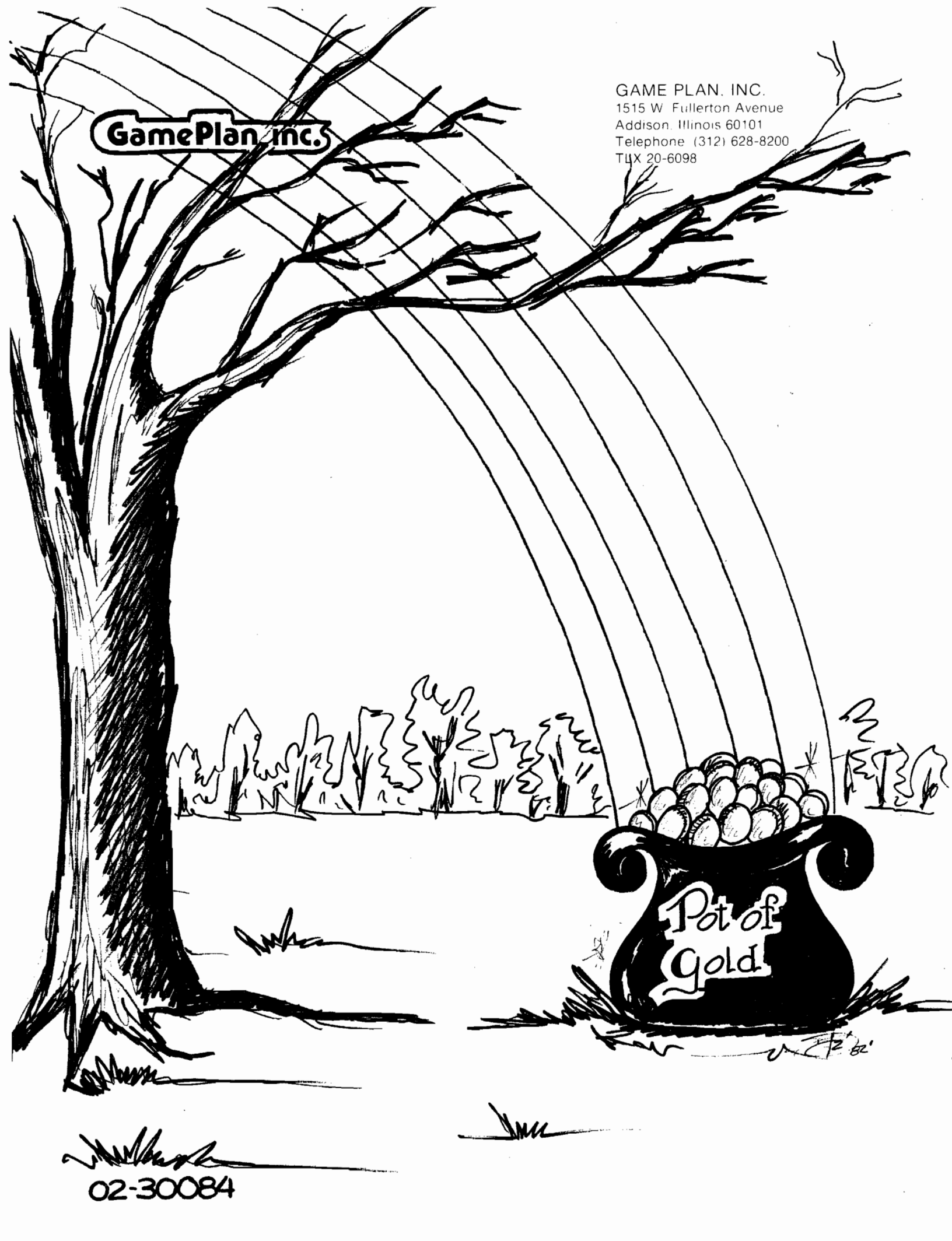

GamePlan, inc.
GAME PLAN, INC.
1515 W. Fullerton Avenue
Addison, Illinois 60101
Telephone (312) 628-8200
TLX 20-6098
Pot of Gold
02-30084

WARNING

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, may cause interference to radio communications. As temporarily permitted by regulation it has not been tested for compliance [with the limits for Class A computing devices] pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. 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.

1.0 INTRODUCTION

POT-OF-GOLD is a 19" full color, one or two player game that will capture and prolong player interest, as well as provide a constant challange. It has a joystick control for the sleuth movement.

To allow the player to move the sleuth to intercept the POT-OF-GOLD

1.1 UNPACKING INSPECTION

To ensure the equipment incurred no damage in shipment, inspect the container prior to acceptance from the carrier. If no immediate cabinet damage is evident, perform the following visual inspection:

1. Open the rear of the game with the appropriate packaged key.
2. Examine each major and electrical component throughly for scrapes, broken or missing parts and loose or missing screws.
3. Check for loose cable connectors.
4. Visually verify that all the integrated circuit devices (IC's) plugged into sockets are properly seated and that no IC pins are bent or misaligned.

If you find any damage during this inspection, file a claim with the freight carrier, and send a complete report of the damage to GAME PLAN, INC.

1.2 INSTALLATION

Planning the location of the game should involve both physical and electrical consideration. Physical considerations concern the placement of the equipment with respect to clearances, AC cable and eviromental conditions such as ventilation, temperature, weight support and accessibility (although your game has the durability to endure nearly every type of physical hazard). Electrical considerations include availability of the correct voltage and frequency.

In planning this installation, consideration must also be given to working space required for personnel involved with operation or maintenance of this system.

NOTE: The cabinet must be within six feet of an AC outlet. Be certain that a ground jack or terminal is available at the outlet.

CAUTION: DO NOT remove the AC ground prong from the plug.

A. Install 4 provided levelers to bottom of cabinet and level cabinet.

B. The power is controlled by a switch located on top of the cabinet plug into A.C. only 115 volt 60 cycle.

CAUTION:

1. Do not install this game in places directly exposed to sunlight of excessive heat, to prevent rising internal temperatures.

2. High voltage runs the monitor. Therefore only persons familiar with safety measures should make any adjustments.

3. As with any solid state games the power should be turned off before replacing any parts or disconnecting any plugs.

4. Always take boards to distributor for repair, do not attempt to make any repairs with volt-ohmmeter or other test equipment as the internal voltage of such equipment may damage the circuitry.

1.3 PRELIMINARY CHECKOUT PROCEDURE

After properly installing POT-OF-GOLD we suggest checking it's operation in following procedure:

1. Plug the AC jack into the AC outlet.
2. Allow one to two minutes for CRT to warm up.
3. Observe the TV monitor display to assure the correct attract mode is present on the screen, as explained in Section 2.2.
4. If the POT-OF-GOLD display is incorrect, correct immediately.
5. Insert a quarter into the coin slot.
6. Continue to play the game and verify that all screen images are displayed, once again, discribed in the Normal Operation procedure.

If repairs are necessary, contact your distributor or GAME PLAN, INC.

2.0 GAME DESCRIPTION

The following paragraphs describe the video images, sound effects, game strategy.

2.1 RESET MODE

ATTRACT MODE

Whenever power is applied, the game will start to sequence thru the attract mode.

1. POT-OF-GOLD
2. LEPRECHAUN LORE (w/score displayed)
3. TREE SCORES (w/score displayed.
4. SIMULATED GAME PLAY(sequenced through forests but without naming forests.
5. POT-OF-GOLD HALL OF FAME (high scores since last power-up)

NOTE: Whenever the slam switch is activated, the game generates a signal. This sound alerts the operator, it will even serve to discourage tampering by its psychological effect.

2.2 COIN INPUT MODE

At all times, while power is on, regardless of the game conditions or the operator options, the computer will accept a coin input, generate a unique sound, and increment the coin counter. However, the credits will only be incremented if they are not already at the maximum (10,20,30, or 40-operator selectable) and they will be displayed only during the attract modes.

2.3 GAME START MODE

The computer scans the game-start switches only during the attract and game over modes and only then if the credit-count is not zero. When a start switch is activated, the computer compares the operator selected credit option against the credit-count and ignores the switch if enough credits are not available. If there are sufficient credits, the computer subtracts the price of the selected game, resets the player scores to zero, generates the game-in play (GIP) sound, and displays the GIP message.

2.4 GAME START MODE

The game-play sequence in POT-OF-GOLD consists of 3 or 4 turns (operator selectable) each of which lasts as long as the player can skillfully maneuver his sleuth to avoid the Leprechaun, while attempting to touch the POT-OF-GOLD. Also touching trees will increase the pots value and increase the players score.

NOTE: when the Leprechaun touches the trees, the pot value will decrease, but the players score will not.

When the player loses a man by being caught by the Leprechaun, the G.I.P message reappears (stating whose turn it is, which forest it is by name, and how many sleuths are left. After the last man is lost the game-over message is displayed.

Assuming a 3 man game, game play begins with the message player 1 up, somewhere in the forest of KELLS, and 3 sleuths displayed, then the forest will appear, complete with Leprechaun, and POT-OF-GOLD, then the sleuth will appear-it should be noted that the sleuth and the Leprechaun always appear in the same place, while the POT-OF-GOLD is placed randomly in the forest. The Leprechaun will try to ;catch you and keep you from hitting trees or getting the pot. The player uses his joysitck control to move his sleuth through the forest, hitting as many of the various trees, because for every tree the sleuth hits, the value of the pot increases, as well as the players score increases.

Whenever a sleuth hits a tree a distinctive sound is heard and his score and the pots value is increased. When the sleuth gets close to the pot, the Leprechaun will abandon chasing the sleuth and attempt to beat the sleuth to the pot in order to move it to a different position. During this time the sleuth is immune from being destroyed by the Leprechaun. When the sleuth touches the pot, a different distinctive sound is heard, and the sleuth dives into the pot causing the gold to overflow, and the players score to increase.After the players score is increased the G.I.P message re-appears stating player 1-up somewhere in the forest of CONNEMARA and the total number of sleuths left.When the sleuth is finally caught by the Leprechaun the man and Leprechaun will disappear, the trees will change back to their original color and the G.I.P message will reappear stating player 1-up somewhere in the forest of _____(the same forest where the sleuth was just caught) and all trees in their original color.

The pot starts with a value of 1000 pts. and is increased by 500 pts each succeeding forest to a max of 7500 pts.

Forest name KELLS, forest #1,9,17, etc.
Forest name CONNEMARA forest #2,10,18, etc.
Forest name CORK forest # 3,11,19, etc.
Forest name LIMERICK forest # 4,12,20, etc.
Forest name MUNSTER forest # 5,13,21, etc.
Forest name DINGLE forest # 6,14,22, etc.
Forest name DONEGAL forest #7,15,23, etc.
Forest name TRALEE forest #8,16,24, etc.

2.4 SINGLE PLAYER GAME CON'T

In addition after every 4th screen there is a display depicting the sleuth walking down the rainbow into a POT-OF-GOLD. In every forest the Leprechaun is slightly faster then in the previous forest, also the speed of the Leprechaun is updated every 30 sec. (approx) during each forest, to prevent a player from only skillfully evading the Leprechaun and only hitting trees and thereby greatly increasing game played time.

2.5 TWO-PLAYER MODE

The play of POT-OF-GOLD in a two-player game is identical to single-play with the players alternating turns. On the Upright version, the players use one common set of control. On the cocktail version there are two sets of controls on opposite sides of the table. The computer activates control alternately between 1 and 2 and flip-flops the screen image so that it is oriented to the player in control.

The G.I.P message, which appears after each turn, clearly indicates which player is up,this allows time for the players to position themselves at the controls, but is brief enough to avoid unnecessary "dead-time".

2.6 GAME OVERMODE

After the players have lost their last sleuth the game-over message will be displayed. At that time the computer will scan the players score along with the existing score, should the players score be high enough to be listed a screen will be displayed explaining the method used to enter the players initials (3 max.), after this is done the POG HALL of FAME is displayed showing where the players score is ranked since the last interruption of power.

3.0 COMPUTER SYSTEM

The Computer System consists of 2 printed circuit assemblies which perform the functions illustrated in Figure I. A self-contained switching regulated power supply provides reliable DC voltages to enhance the overall computer system reliability.

The Game Computer Board controls the game sequence, image generation, system-level diagnostics (accessed by test - EPROM and switch) audio and peripheral interface; thus keeping interconnections to a minimum.

The Video Computer Board contains the display RAM and timing circuits to interface with any standard RGB raster-scan color monitor. The Video Computer also contains unique input timing circuits which permit vector graphic writing to the video RAM.

3.1 POWER SUPPLY

The computer system power is provided by a high efficiency, very reliable, switching-regulated, power supply. It eliminates the hot, bulky transformers required by old-fashioned supplies and the high efficiency permits it to run cool at extreme of input line voltage variations.

The computer system uses -5, +5, and +12 VDC. The primary power is +5 VDC for the TTL and MOS devices. The ROM's can be either triple-voltage or single-voltage. The dynamic video RAM's use all 3 voltages. The audio amplifier uses +12 VDC. The coin door lamps and meters use +5 VDC.

DC voltage distribution form the power supply to the four circuit boards is multiply-redundant to enhance reliability. Each voltage is carried by two wires to each board. All four power connectors are identical, are keyed, and are symmetrical, so that only intentional abuse could result in faulty power connections. Each of the three voltages is current-limited by the supply to provide protection against short-circuits.

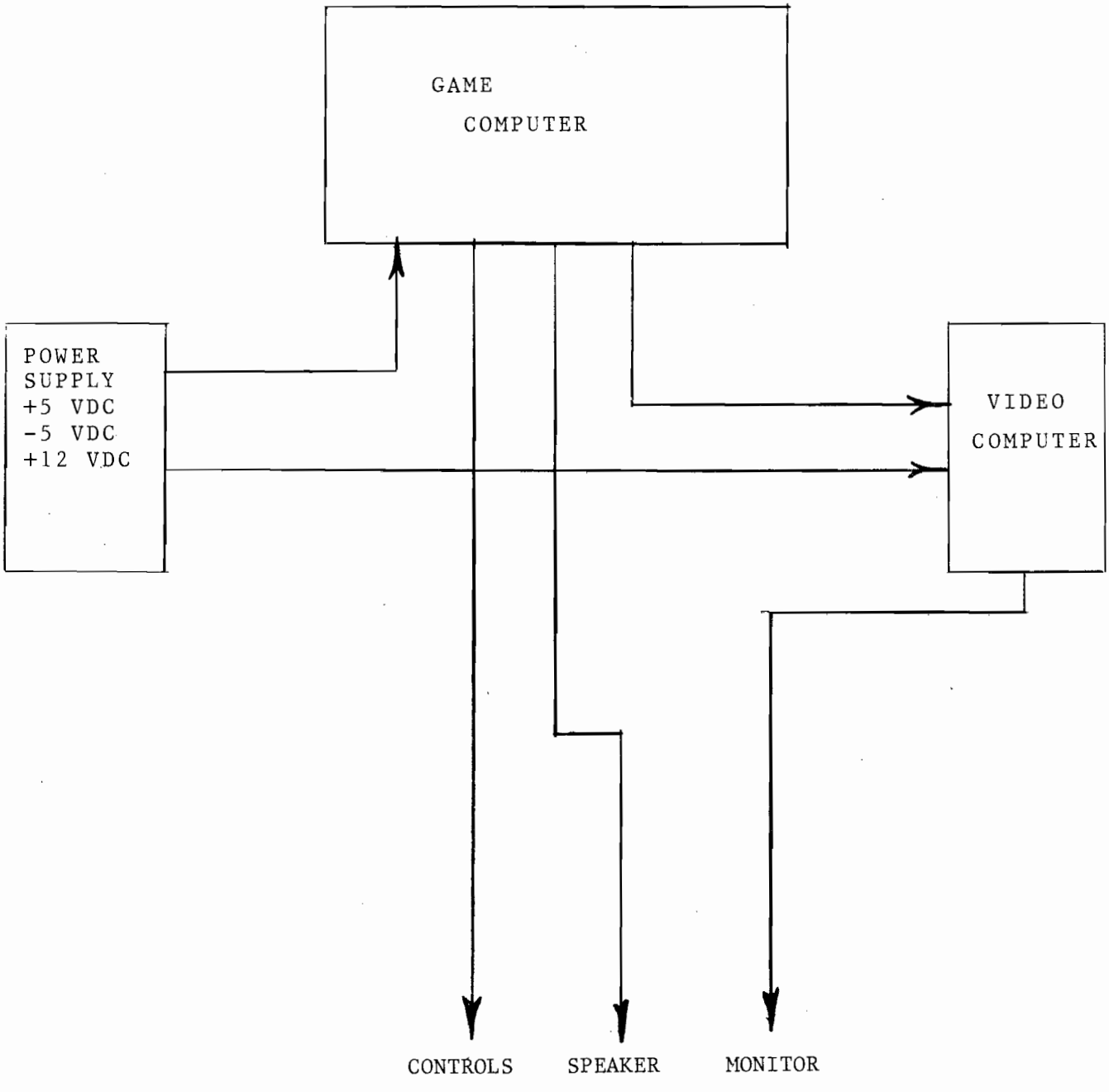


FIG - I

GAME BLOCK DIAGRAM

3.2 GAME COMPUTER

The Game Computer uses a 6502 central processor in a conventional computer architecture containing ROM, RAM, and I/O ports (FIG. 2). The computer clock uses a standard 4.00 megahertz crystal which is divided by 4 to provide a CPU clock of 1 megahertz.

The computer contains a unique power-on reset circuit which requires a positive feedback response from the computer to disable the reset circuit. Therefore, an initial power-on software program must successfully complete a specific set of operations or else the circuit continuously resets the computer. This technique assures that the computer is operating properly before continuing but does not require the software overhead of "watchdog" circuits.

Conventional TTL address decoding generates signals to select one of eight (8) ROM's or two (2) RAM's. Program and image storage is provided by eight (8) -4K x 3 - 2732 E PROM's. Computer scratch-pad RAM is either two (2) 1 K x 4 - 2114's or two (2) 256 x 4 - 2101's.

Port 1 provides an 8-Bit video data byte on port 1A and a 4-Bit video control address on Port 1B to write data into the video RAM. In addition, port 2B receives video timing signals which are used to synchronize the game program with the video display.

Interface Portion uses port 2A and 2B to create a 6 x 8 switch matrix for scanning up to 48 switches. Two (2) columns of the matrix are used to scan two 8-position DIP switches providing operator options. The remaining switches provide signals for driving coin meters and other peripheral devices. In addition, Port 2 is linked to the power-on reset circuit so that the computer can enable or disable the reset signal.

Audio Section of the board transmits game sounds thru Port 3.

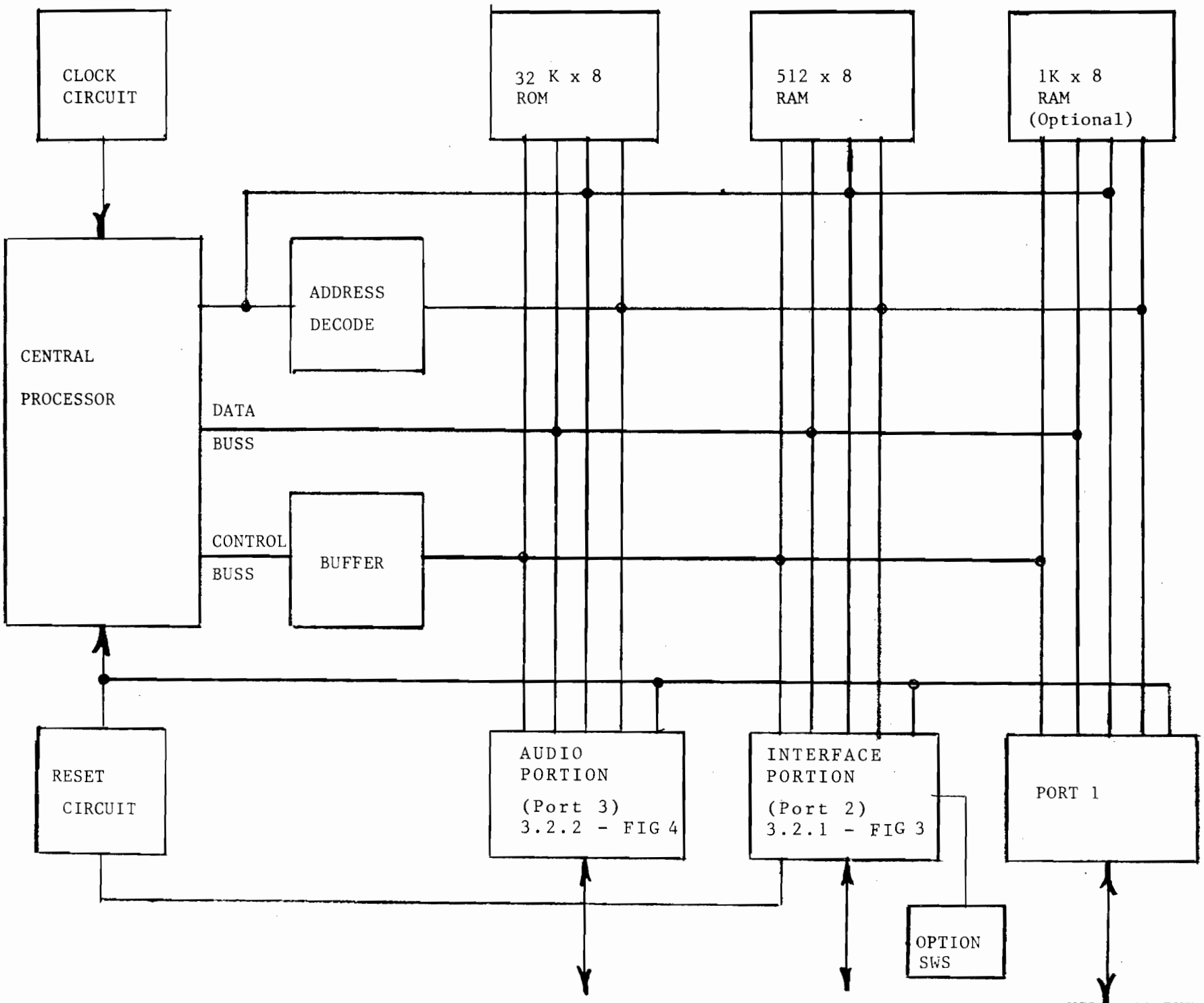


FIG. 2
BLOCK DIAGRAM COMPUTER BOARD

3.2.1 PERIPHERAL INTERFACE PORTION

The Peripheral Interface Portion provides buffers and drivers for protective isolation of the electronics. Up to 32 switches can be handled by 4 columns of a switch matrix, as illustrated in figure 3. Each switch is "diode-isolated" to provide "n-key rollover". The potential problems of ghost-switches is also eliminated by putting all critical, non-player-accessable switches in a single column.

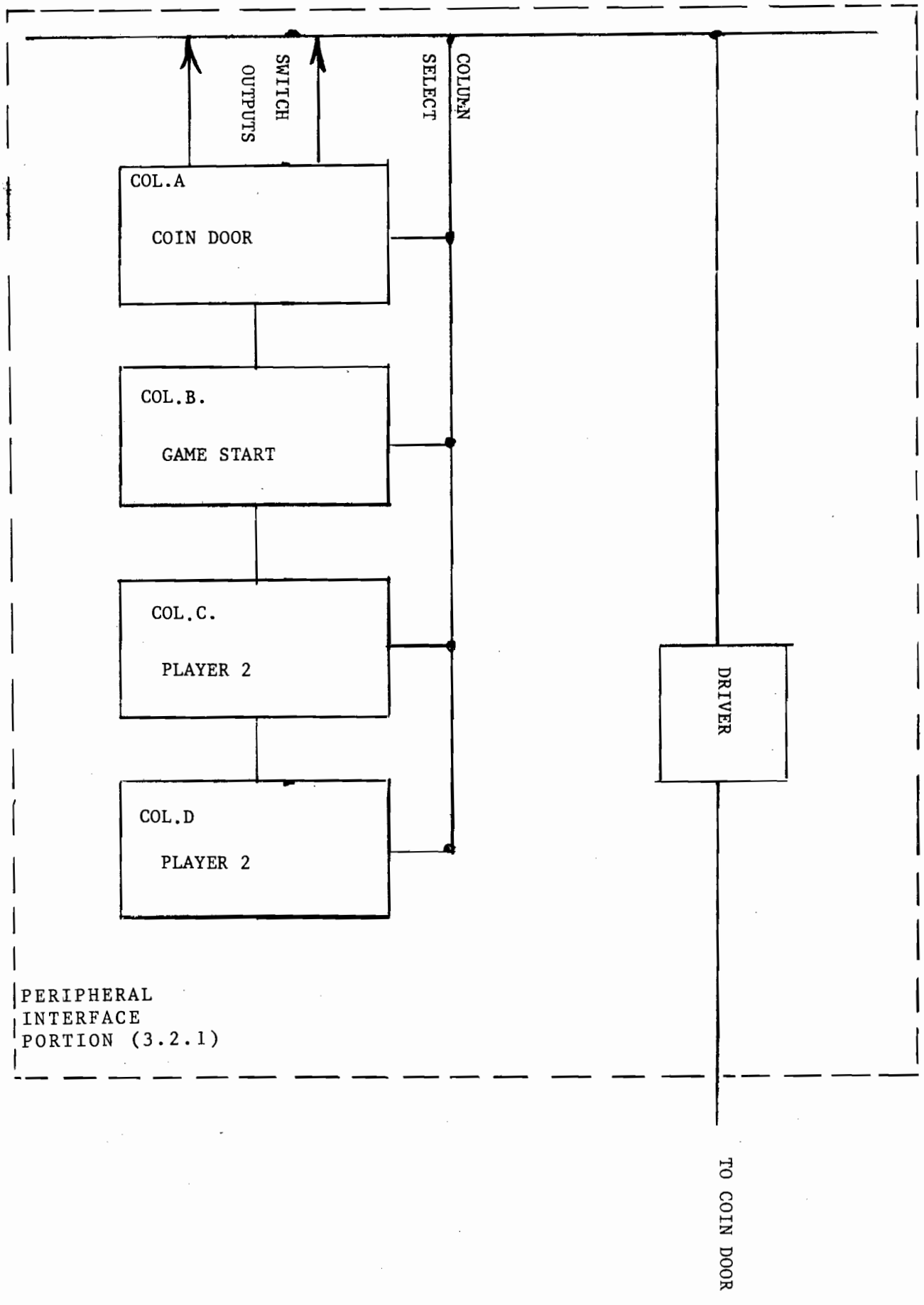


FIG. 3

PERIPHERAL INTERFACE (BLOCK DIAGRAM)

3.2.2 AUDIO COMPUTER

The Audio Computer also uses a 6502 central processor chip as illustrated in figure 4 and it also uses a standard TV color-burst crystal to generate a computer clock slightly less than 900 kilohertz. However, Port 5 uses a 6532 which provides dual 8-Bit bi-directional data-bus buffers plus 128 bytes of RAM. Program storage is provided by a single 2K x 8, 2716 EPROM or 2316 ROM.

The small amount of RAM and ROM is sufficient for this system because of the use of a unique programmable sound generator chip (AY-3-8910 PSG). This device contains 3 sets of tone generators, a pseudo-noise generator, and 3 channels with a variety of amplitude controls-all under stored-program control. In addition, the PSG contains two 8-Bit ports which are used to read two DIP switches that can be used to manually program the PSG for test purposes.

Access to the Audio Computer is through Port 5A which interrupts the processor when a sound-request is made. The computer stores the sound request data-byte and then re-transmits it on Port 5B. Thus the Game Computer can verify that a requested sound has been processed and, if this verification is not received, force a reset of the Audio Computer.

The 3 audio channel outputs of the PSG are amplified by an industry-standard, reliable LM 380. The amplifier operates with regulated 12 VDC which provides sufficient audio volume for noisy arcades, and yet is only 60% of the rated voltage to provide another margin of reliability.

A volume control is located on the Computer Board. Individual game sound volumes are programmed to balance the overall audio effect.

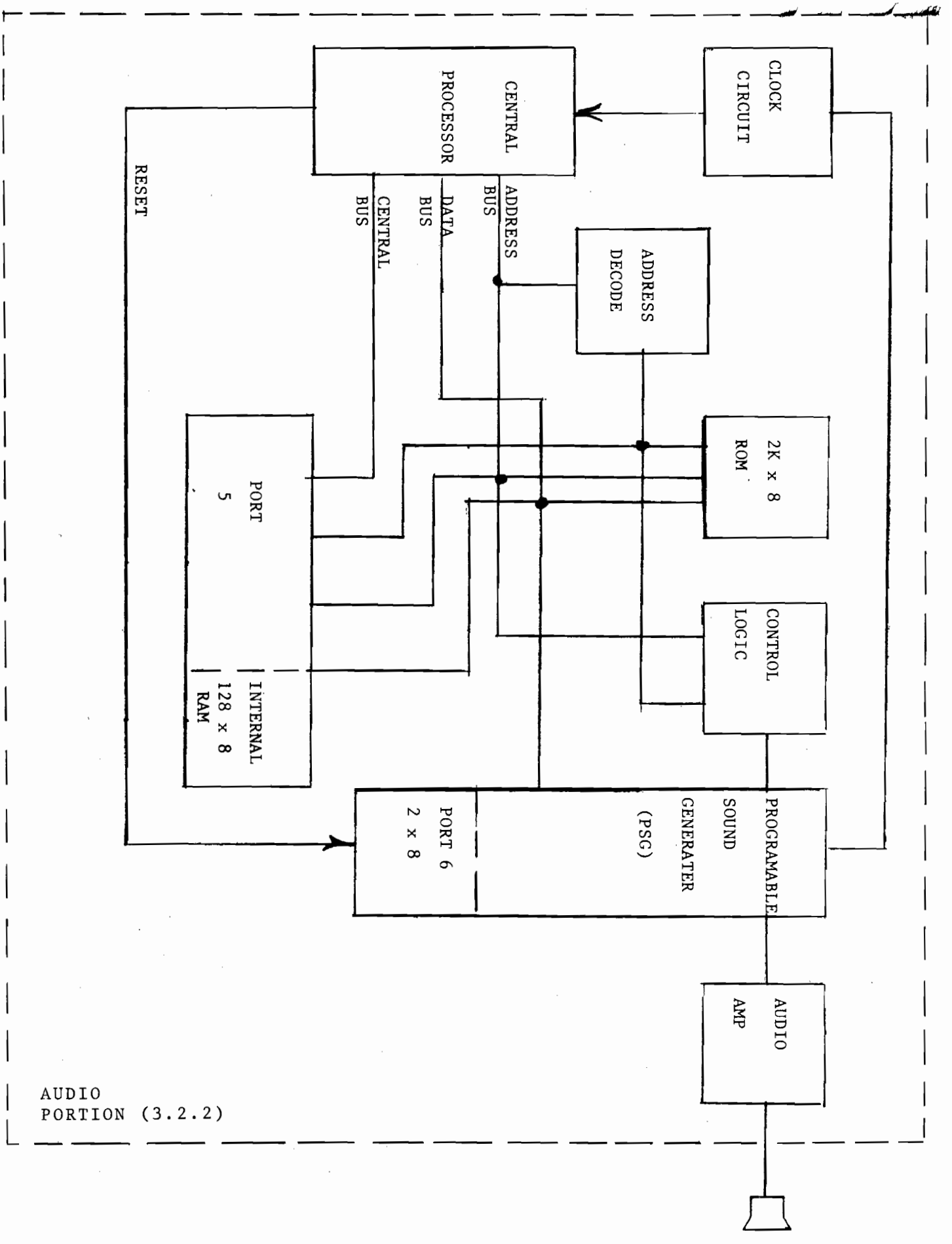


FIG. 4

AUDIO COMPUTER (BLOCK DIAGRAM)

3.3 VIDEO COMPUTER

The Video System uses a RAM intensive, dot-oriented technique. What this means is that the circuit board contains sufficient memory to store an entire CRT screen image and that each bit in this RAM array can be individually addressed.

The large memory array is comprised of low-cost MOS dynamic RAM's which are ideally suited for video display. The repetitive reading of the memory for raster scan display automatically takes care of the refresh timing required to retain dynamic memory. On the other hand, dynamic RAM's are notoriously unreliable (by digital computer standards) but occasional bit errors are tolerable (in fact, often invisible) on a CRT screen. Some systems use part of the video RAM for computer scratch-pad but the video computer apperar to the game computer as a "write-only" devise.

As illustrated in figure **5**, the Video Computer contains 3 seperate RAM arrays for each of the 3 spectral primary colors; red, green, and blue. Two independent sets of counters generate read and write addresses that access the 3 arrays in parallel to generate color dots (pixels). The read-address counters perform the dual function fo generating horizontal and vertical timing signals for synchronization of the CRT monitor and the Game Computer image generation.

The write-address counters are parallel-load, up,-down devices which provide 2 modes of writing to the display memory. In the first mode, the write-counters can be loaded with a 8-bit X-address and an 8-bit Y-address to locate the bigining of a line bector. The second mode involves incrementing or decrementing the counters to move the write-address along a desired vector. Each time a write-address is changed, the Video Computer automatically writes the specified color bits into that RAM location.

A Write-request to the Video computer is no-synchronous so timing buffers interface the read and write functions. In addition, the timing buffers generate "wait" signals to let the Game Computer know when each write operation is completed.

The 8-bit X-Y addressing generates a 256 x 256 screen image (256 dots per line and 256 lines per game screen. This symmetrical display combined with the vector graphic writing technique provides simple software control of the screen image orientation. Thus the system provides switch selection to use vertical or horizontal monitors, inverted screen for cocktail flipflop of 2-player games, and reversed images for mirrored games.

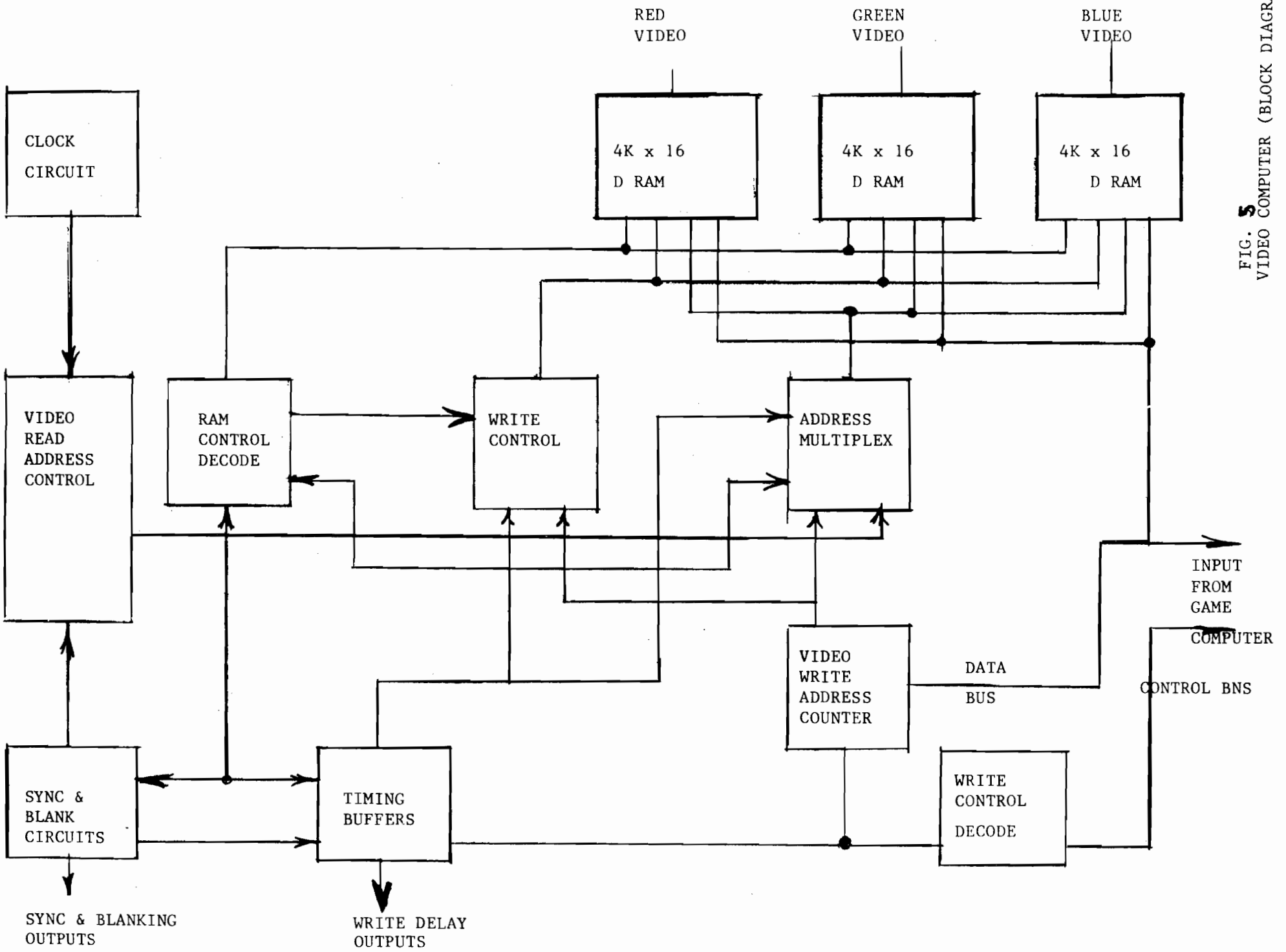


FIG. 5
VIDEO COMPUTER (BLOCK DIAGRAM)

GamePlan, inc.

GAME PLAN, INC.
1515 W Fullerton Avenue
Addison, Illinois 60101
Telephone (312) 628-8200
TLX 20-6098

February 17, 1982

DIP SWITCH SETTINGS FOR POT-OF-GOLD

NOTE: O = OPEN, C = CLOSED

DSB:

BONUS SLEUTH
SWS 1 & 2

1	2	BONUS SLEUTH
O	O	NO BONUS
C	O	BONUS MAN @ 30,000
O	C	BONUS MAN @ 60,000
C	C	BONUS MAN @ 90,000

NUMBER OF SLEUTH @ START
SW 3

3	NUMBER OF SLEUTH
O	3
C	4

SOUND DURING ATTRACT MODE
SW 4

4	ATTRACT MODE SOUND
O	SOUND OFF
C	SOUND ON

SWITCHES 5, 6, 7 & 8 NOT USED

GamePlan, inc.

GAME PLAN, INC.
1515 W Fullerton Avenue
Addison, Illinois 60101
Telephone (312) 628-8200
TLX 20-6098

February 17, 1982

DIP SWITCH SETTINGS FOR POT-OF-GOLD

NOTE: O = OPEN, C = CLOSED

DSA:

COIN CHUTE NO. 1
(SWS 1 & 2)

1	2	CREDITS/COIN	
O	O	1	1
C	O	2	1
O	C	3	1
C	C	4	1

COIN CHUTE NO. 2
(SWS 3 & 4)

3	4	CREDITS/COIN	
O	O	1	1
C	O	5	1
O	C	6	1
C	C	7	1

MAX CREDITS
(SWS 5 & 6)

5	6	MAX CREDITS
O	O	10
C	O	20
O	C	30
C	C	40

FREE PLAY
(SW7)

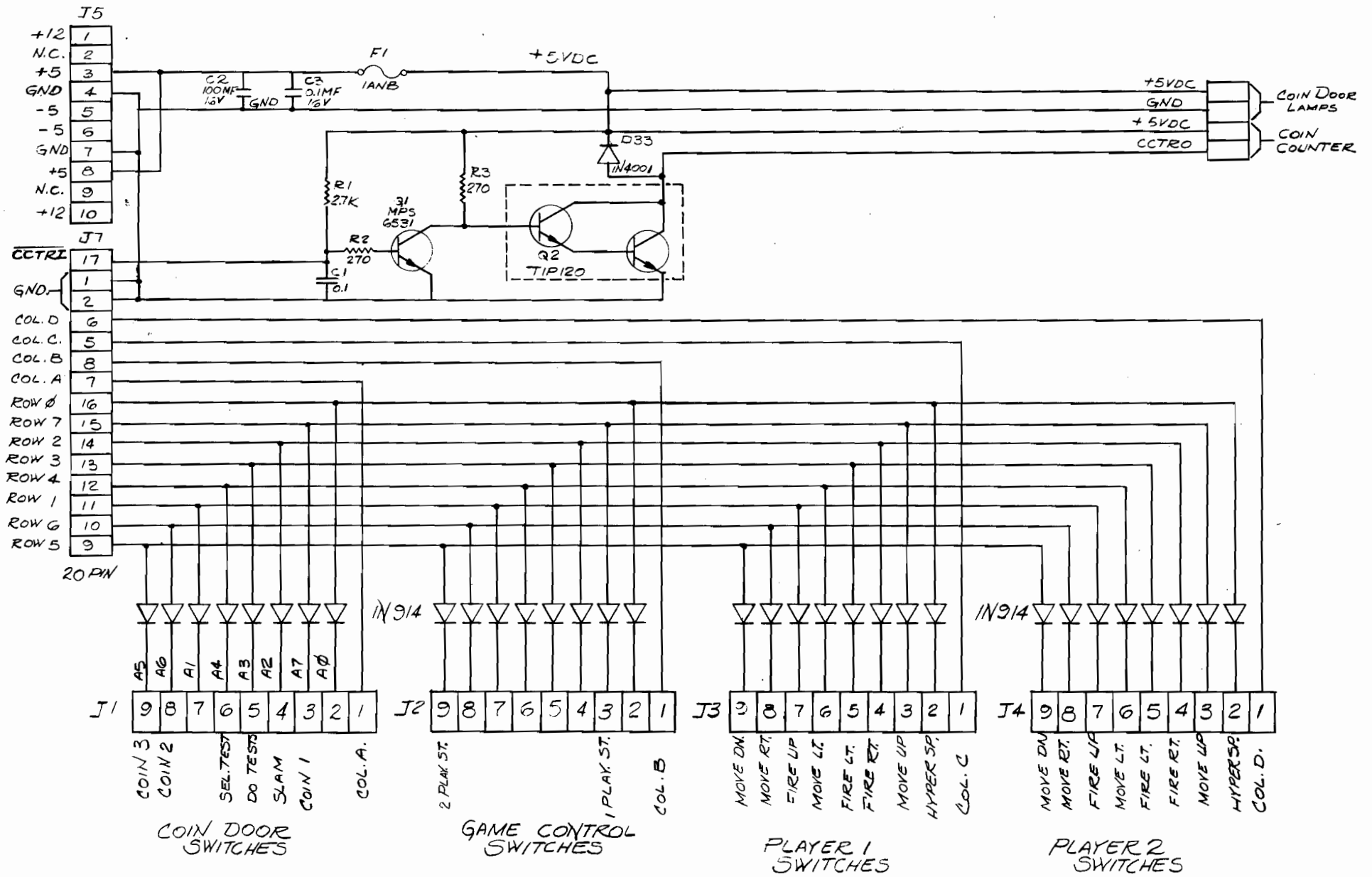
5 W 7	
O	NORMAL
C	FREE PLAY

COCKTAIL/UPRIGHT
(SW8)

8	GAME STYLE
O	UPRIGHT
C	COCKTAIL

B&M INDUSTRIES

Drawing Number 02-7008IC



COIN DOOR SWITCHES

GAME CONTROL SWITCHES

PLAYER 1 SWITCHES

PLAYER 2 SWITCHES

NOTE:
ON UPRIGHT GAME, PLAYER 1 & 2 SWITCHES ARE COMMON AND ARE BOTH WIRED TO J3 — J4 USED ON COCKTAIL TABLE ONLY.

ISSUE	CHANGE	DATE

Used On KAOS A

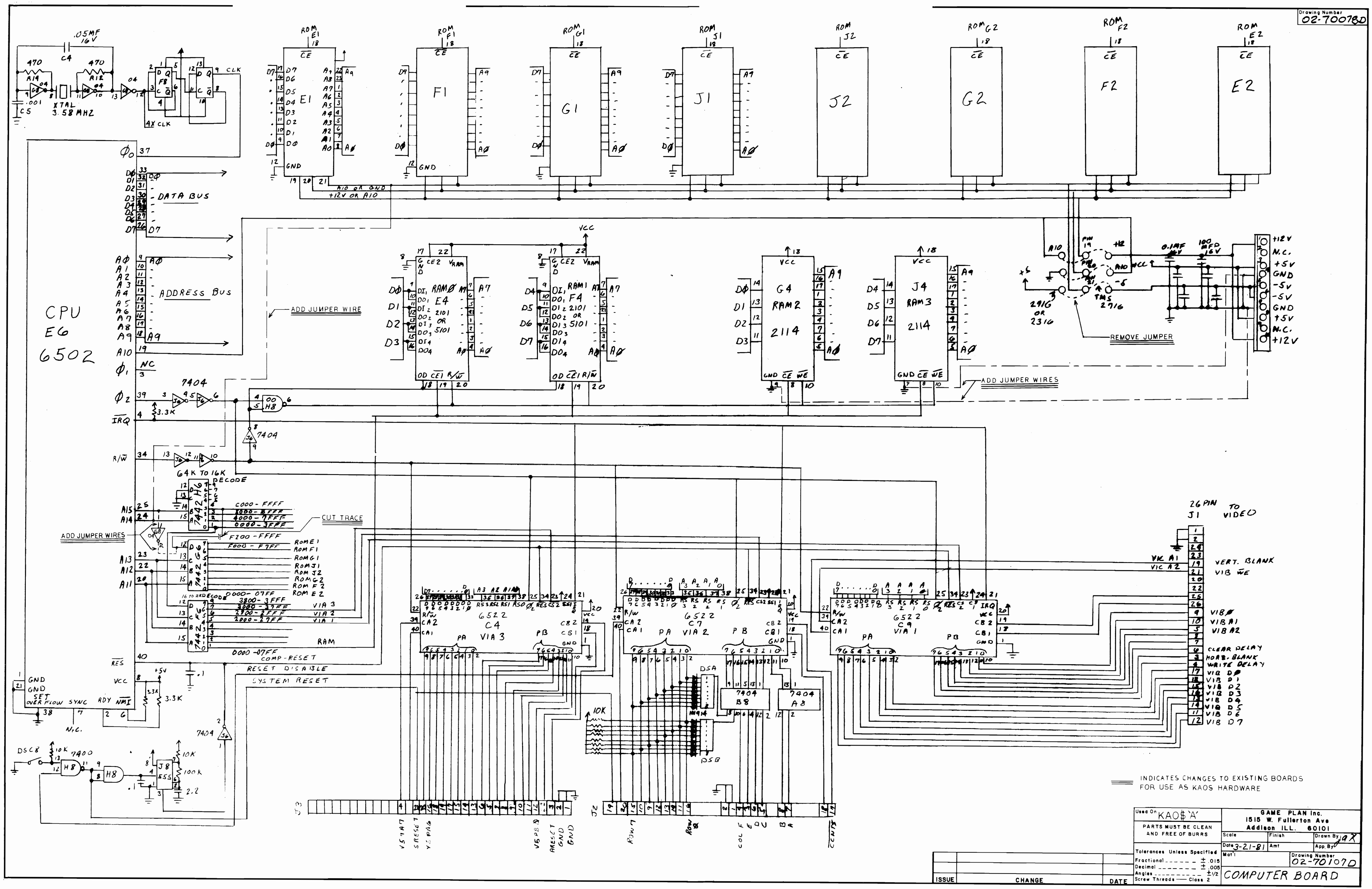
PARTS MUST BE CLEAN AND FREE OF BURRS

Tolerances Unless Specified
Fractional ± .015
Decimal ± .005
Angles ±1/2
Screw Threads — Class 2

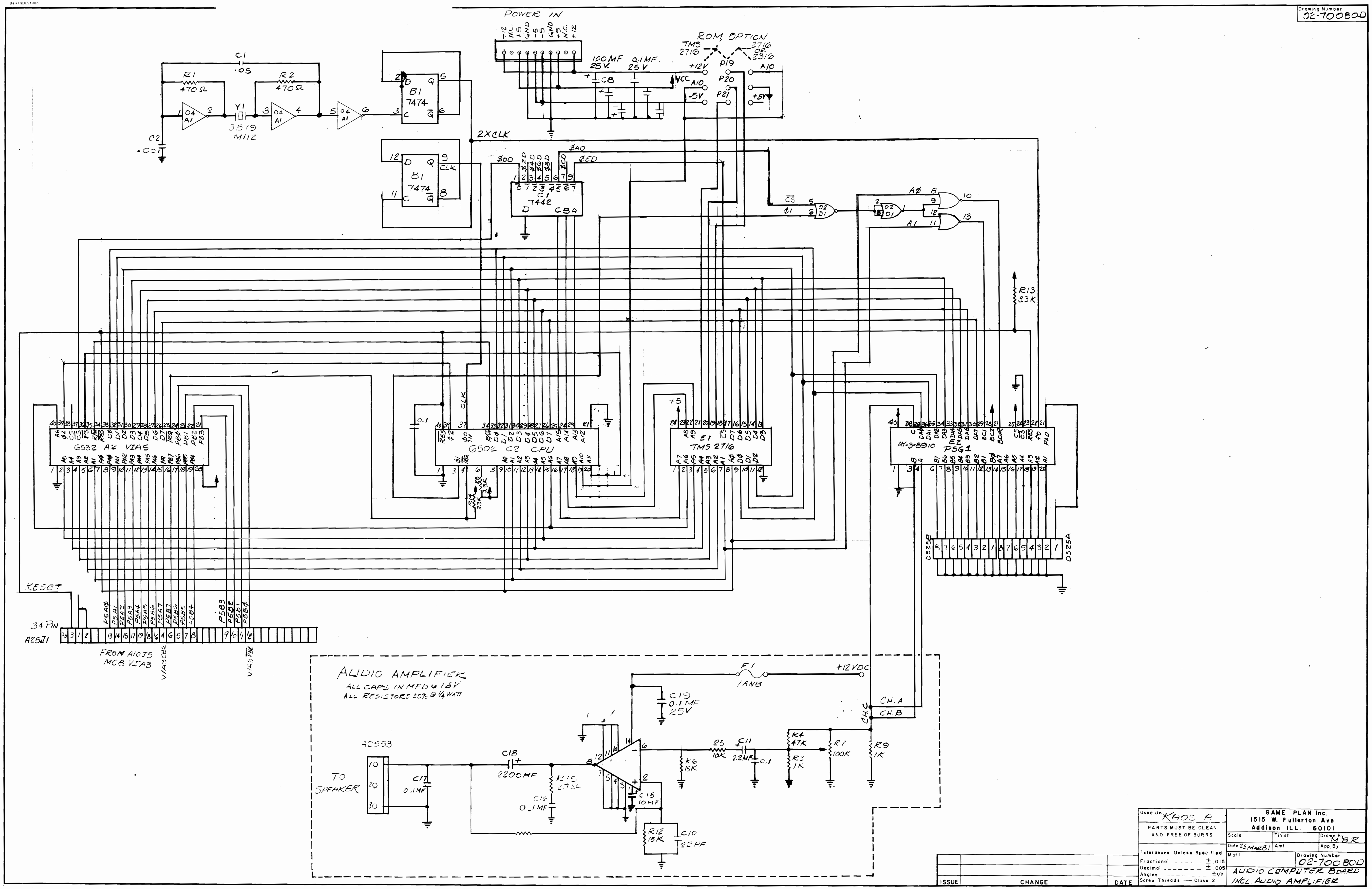
GAME PLAN Inc.
1515 W. Fullerton Ave
Addison ILL. 60101

Scale	Finish	Drawn By MAL
Date 26 MAR 81	Amt	App. By
Mat'l		Drawing Number 02-7008IC

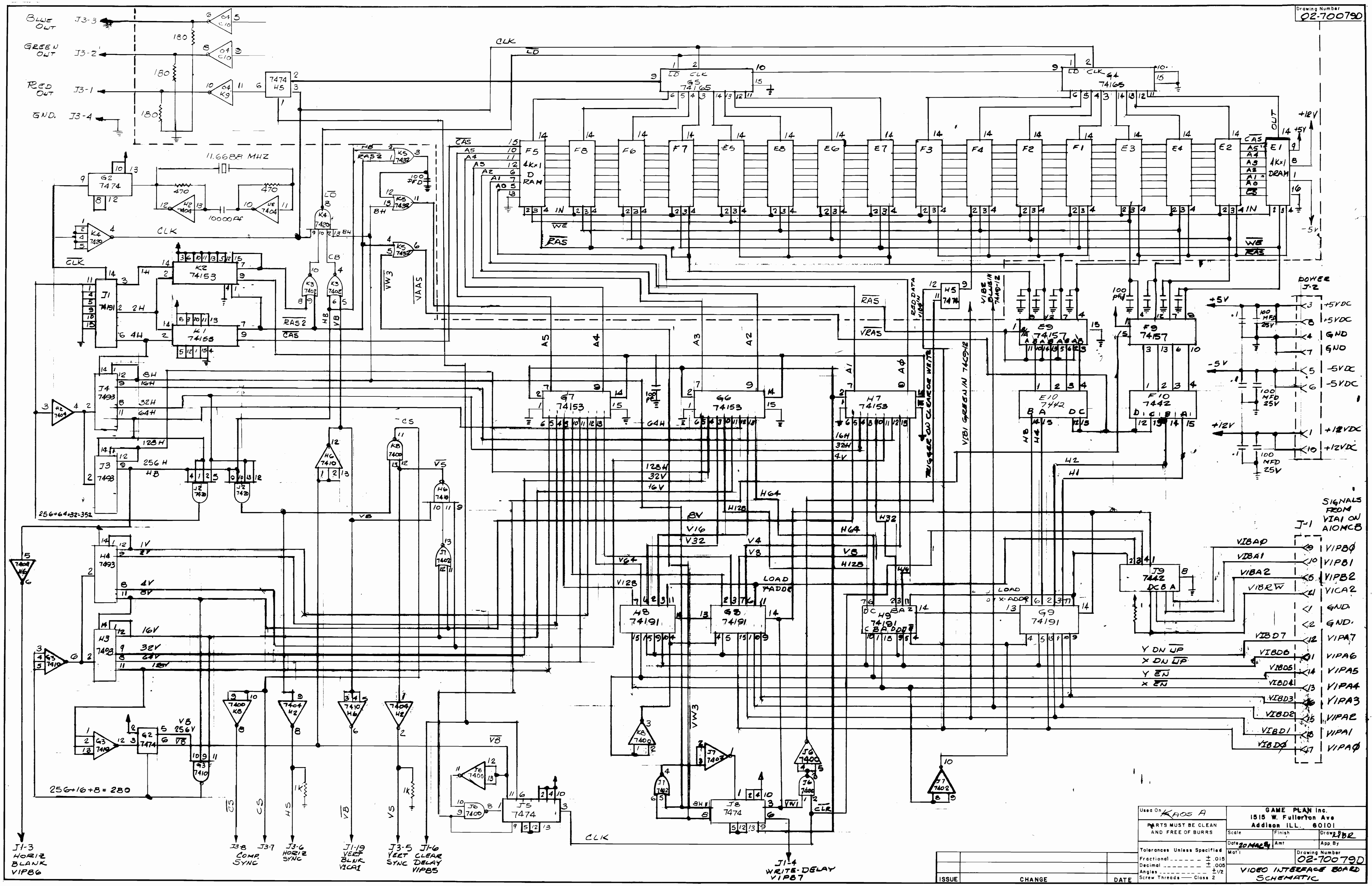
PERIPHERAL INTERFACE BOARD



02-70078D
ROM E1
ROM F1
ROM G1
ROM J1
ROM J2
ROM G2
ROM F2
ROM E2
.05MF 16V
470
XTAL 3.58 MHZ
4X CLK
CLK
DATA BUS
ADDRESS BUS
CPU E6 6502
ADD JUMPER WIRE
RAM0 E4 2101 OR 5101
RAM1 F4 2101 OR 5101
G4 RAM2 2114
J4 RAM3 2114
2916 OR 2316
TMS 2716
REMOVE JUMPER
ADD JUMPER WIRES
+12V
N.C.
+5V
GND
-5V
-5V
GND
+5V
N.C.
+12V
7404
64K TO 16K DECODE
C000 - FFFF
8000 - BFFF
4000 - 7FFF
0000 - 3FFF
CUT TRACE
F200 - FFFF
F000 - F7FF
ROM E1
ROM F1
ROM G1
ROM J1
ROM J2
ROM G2
ROM F2
ROM E2
VIA 3
VIA 2
VIA 1
RAM
0000 - 07FF
COMP-RESET
RESET DISABLE
SYSTEM RESET
6522 C4 VIA 3
6522 C7 VIA 2
6522 C9 VIA 1
DSA
DSB
7404 B8
7404 A8
10K
26 PIN J1 TO VIDEO
VERT. BLANK
VIB WE
VIB0
VIB A1
VIB A2
CLEAR DELAY
HORZ. BLANK
WRITE DELAY
VIB D0
VIB D1
VIB D2
VIB D3
VIB D4
VIB D5
VIB D6
VIB D7
DSC8
7400
555
INDICATES CHANGES TO EXISTING BOARDS FOR USE AS KAOS HARDWARE
J3
J2
Used On KAOS 'A'
PARTS MUST BE CLEAN AND FREE OF BURRS
GAME PLAN Inc.
1515 W. Fullerton Ave
Addison ILL. 60101
Date 3-21-81
Drawing Number 02-70107D
COMPUTER BOARD
ISSUE
CHANGE
DATE



Drawing Number 02-700800
POWER IN
+12 N.C. +5 GND -5 -5 GND +5 N.C. +12
ROM OPTION
TMS 2716
2716 OR 2316
100MF 25V
0.1MF 25V
C8
VCC
+12V
A10
-5V
P19
P20
P21
+5V
C1 .05
R1 470Ω
R2 470Ω
Y1 3.579 MHZ
C2 .001
B1 7474
E1 7474
CLK
2XCLK
C1 7442
$00
$A0
$E0
CS
Φ1
A0
A1
D1
R13 33K
G532 A2 VIAS
G502 C2 CPU
E1 TMS 2716
AY-3-8910 PSG1
DS25B
DS25A
RESET
34 PIN
A25J1
FROM A10J5
MCB VIA3
VIA3CB2
VIA3PB6
AUDIO AMPLIFIER
ALL CAPS IN MFD @ 16V
ALL RESISTORS ±5% @ 1/4 WATT
F1 1AMP
+12VDC
C19 0.1MF 25V
CH.A
CH.B
CH.C
A2553
TO SPEAKER
C17 0.1MF
C18 2200MF
R15 2.7Ω
C16 0.1MF
C15 10MF
R12 15K
C10 22PF
R6 15K
R5 10K
C11 2.2MF
R4 47K
R3 1K
R7 100K
R9 1K
Used On KHOS_A
PARTS MUST BE CLEAN AND FREE OF BURRS
GAME PLAN Inc.
1515 W. Fullerton Ave
Addison ILL. 60101
Scale
Finish
Drawn By MBR
Date 25 Mar 81
Amt
App By
Tolerances Unless Specified
Fractional ± .015
Decimal ± .005
Angles ± 1/2
Screw Threads — Class 2
Mat'l
Drawing Number 02-700800
AUDIO COMPUTER BOARD
INCL AUDIO AMPLIFIER
ISSUE
CHANGE
DATE



Drawing Number 02-700790
BLUE OUT J3-3
GREEN OUT J3-2
RED OUT J3-1
GND. J3-4
11.6688 MHZ
CLK
POWER J-2
+5VDC
GND
-5VDC
+12VDC
SIGNALS FROM VIA1 ON AIOMCB
J-1
J1-3 HORIZ BLANK VIPB6
J3-8 COMP. SYNC
J3-7
J3-6 HORIZ SYNC
J1-19 VERT BLNK V1CA1
J3-5 VERT SYNC
J1-6 CLEAR DELAY VIPB5
J1-4 WRITE-DELAY VIPB7
256+64+32=352
256+16+8=280
Used On KAOS A
GAME PLAN Inc.
1515 W. Fullerton Ave
Addison ILL. 60101
PARTS MUST BE CLEAN AND FREE OF BURRS
Tolerances Unless Specified
Fractional ± .015
Decimal ± .005
Angles ± 1/2
Screw Threads — Class 2
ISSUE
CHANGE
DATE
Scale
Finish
Date 30 MAR 81
Amt
Mat'l
App By
Drawing Number 02-700790
VIDEO INTERFACE BOARD SCHEMATIC

MONITOR
SERVICE INSTRUCTIONS

02-30073

K4600 IMPORTANT SERVICE SAFETY INFORMATION

WARNING: An isolation transformer must be used between the AC supply and the AC plug of the monitor before servicing or testing is performed since the chassis and the heat-sink are directly connected to one side of the AC line which could present a shock hazard.
The chassis of the monitor should never be connected to the ground. Before servicing is performed, read all the precautions labelled on the CRT and chassis.

X-RAY RADIATION WARNING NOTICE

WARNING: PARTS WHICH INFLUENCE X-RAY RADIATION IN HORIZONTAL DEFLECTION, HIGH VOLTAGE CIRCUITS AND PICTURE TUBE ETC. ARE INDICATED BY (★) IN THE PARTS LIST FOR REPLACEMENT PURPOSES. USE ONLY THE TYPE SHOWN IN THE PARTS LIST.

PRODUCT SAFETY NOTICE

WARNING: FOR CONTINUED SAFETY REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER RECOMMENDED PARTS. THESE PARTS ARE IDENTIFIED BY SHADING AND BY (△) ON THE SCHEMATIC DIAGRAM.

AVERTISSEMENT: POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

For replacement purposes, use the same type or specified type of wire and cable, ensuring that the positioning of the wires is followed (especially for H.V. and power supply circuits). Use of alternative wiring or positioning could result in damage to the monitor or in a shock or fire hazard.

The picture tube used, employs integral implosion protection and should be replaced with a tube of the same type number for continued safety.

When handling the CRT, shatter-proof goggles must be worn after completely discharging the high voltage circuit. Do not lift the picture tube by the neck.

PERFORMANCE AND OPERATING DATA

1. Apply a suitable power source to the monitor through an isolation transformer.
2. Apply a suitable signal source to the monitor PCB by means of P205.
3. Set up Controls.
   All controls are preset at the factory, but may be adjusted to suit program material.

1.0 Supply

Voltage	108 VAC - 132 VAC
Frequency	50 Hz - 60 Hz

Note: Apply supply voltage through an isolation transformer with 1 Amp. capability.

2.0 High Voltage (EHT)

For 19"V models	25.5 ± 0.8 K.V. at 0 Beam

Note: Condition for above 1(beam) = 0
A.C. = 120V

3. **Service Set-Up Controls**

A. V. Adjustment VR501 set for 127V DC
B. Vertical Size Cont = VR302
C. Vertical Hold Cont = VR301
D. Horizontal Hold Cont = VR351
E. Horizontal Width Cont = L702
F. Focus Control = VR702
G. Screen Control = VR406
H. Video Drive Controls - Red Drive = VR401
Green Drive = VR402
I. CRT Cut Off Controls - Red Cutoff = VR403
Green Cutoff = VR404
Blue Cutoff = VR405

SERVICE INSTRUCTIONS

FOCUS

Adjust the Focus control (VR702), located on the HV unit (T701), for maximum over-all definition and fine picture detail.

+127V ADJUSTMENT (See Fig. 1)

The + 127V adj. control (VR501) is adjusted at the factory. However, if readjustment should be required, proceed as follows.

1. Operate monitor for at least 15 minutes at 120V AC line.
2. Connect Positive lead of V.T.V.M. to blue lead of TR502 negative lead to chassis ground.
3. Adjust VR501 to obtain + 127V reading.
4. After adjustment VR501 must be locked with a sealing varnish.

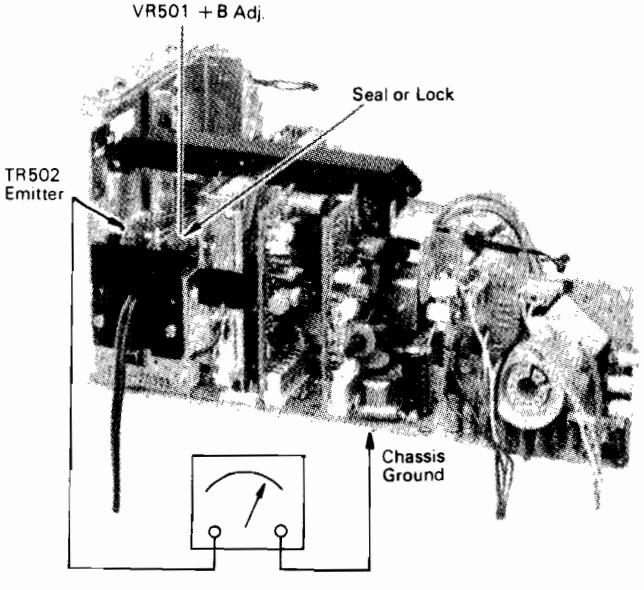


FIGURE 1

BLACK LEVEL CONTROL ADJUSTMENT

This control has been set at the factory and should not need further attention. If however when the game is connected a slight adjustment of VR201 may be necessary to obtain the proper black level (the black portion of the picture just extinguished).

VERTICAL SIZE (HEIGHT)

The vertical height control is a screw-driver adjustment. Location of this control is shown in Fig. 3. This control must be adjusted slowly, if necessary, until the picture or test pattern attains the correct vertical proportions.

CIRCUIT PROTECTION

A 3.0A pigtail fuse, mounted on the Main Board has been provided to protect the Power Output Circuit.

HORIZONTAL OSC. ALIGNMENT (See Fig. 2)

A warm-up period of at least five minutes should be allowed before alignment is carried out. Set VR351 to center position.

Adjust L351 after grounding R328 plug. (TP32 of Vert/Horiz. P.C. Board) through a 1uF/50V capacitor. Adjust L351 to obtain normal picture.

After adjustment, remove 1uF/50V capacitor.

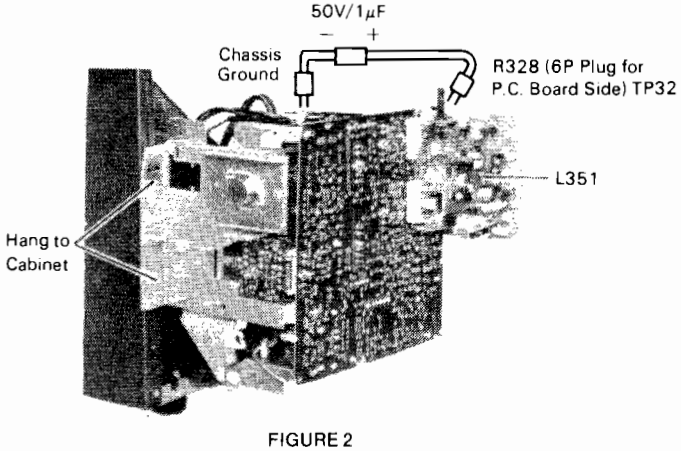


FIGURE 2

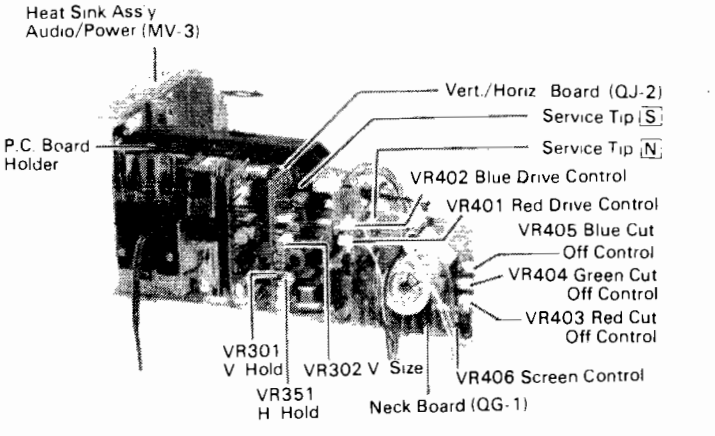
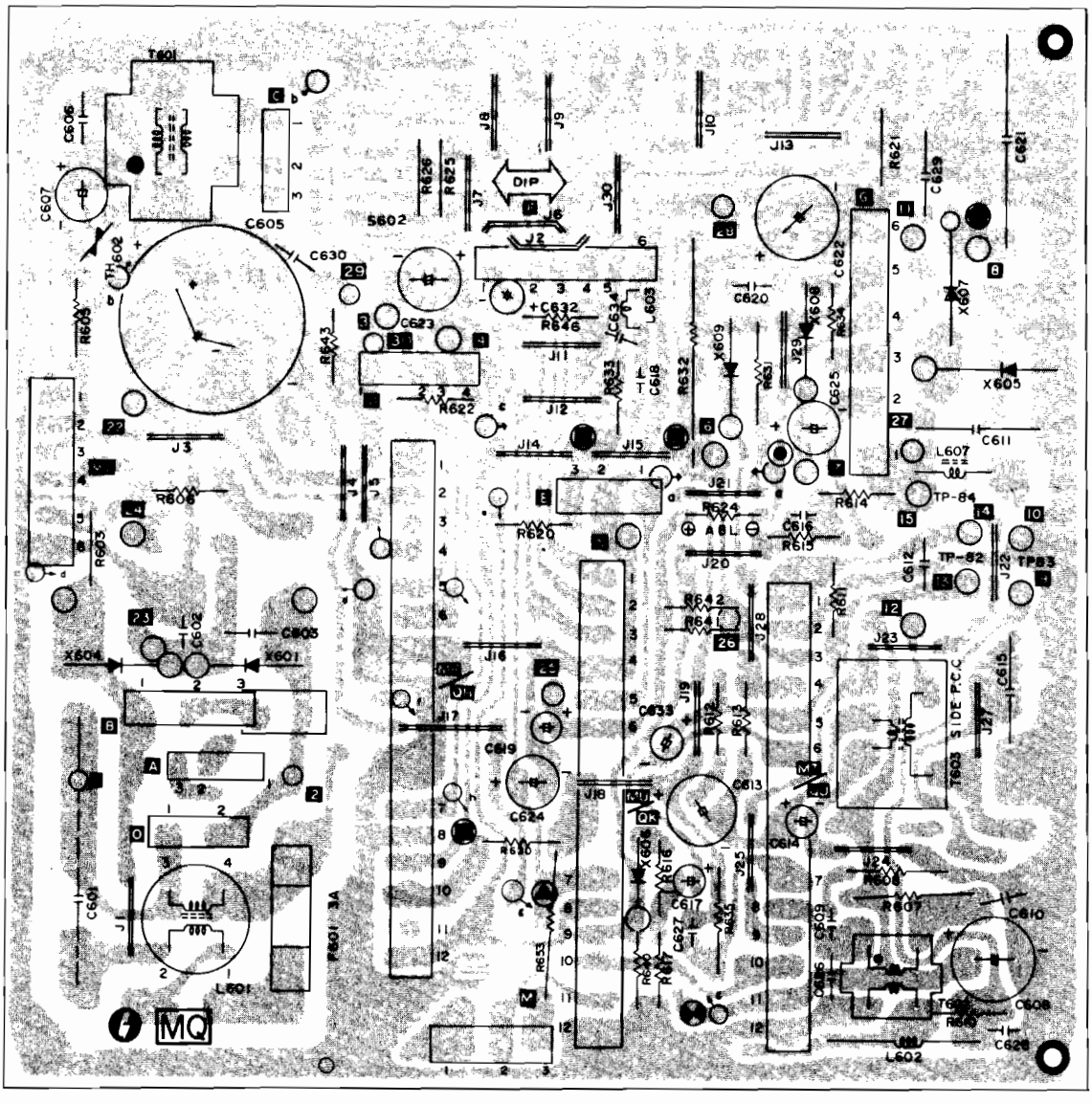


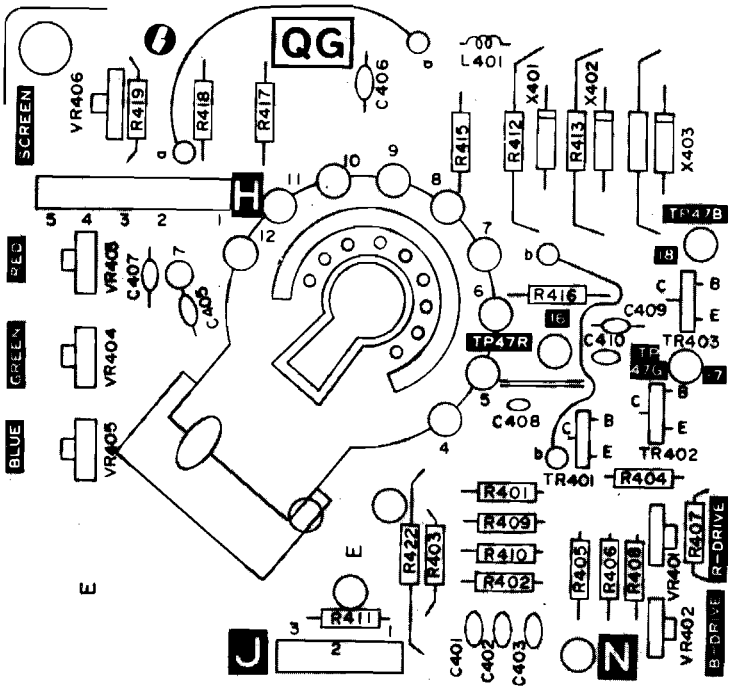
FIGURE 3

P.C. BOARD LAYOUT

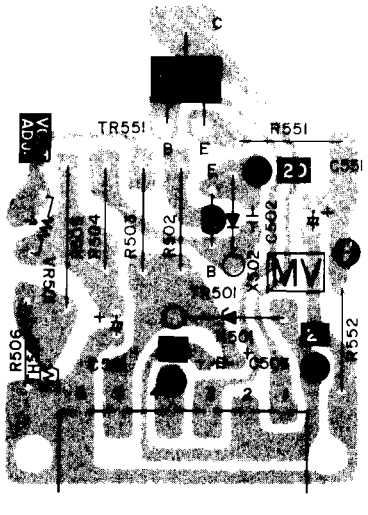


. MAIN P.C. BOARD MQ-29

P.C. BOARD LAYOUT

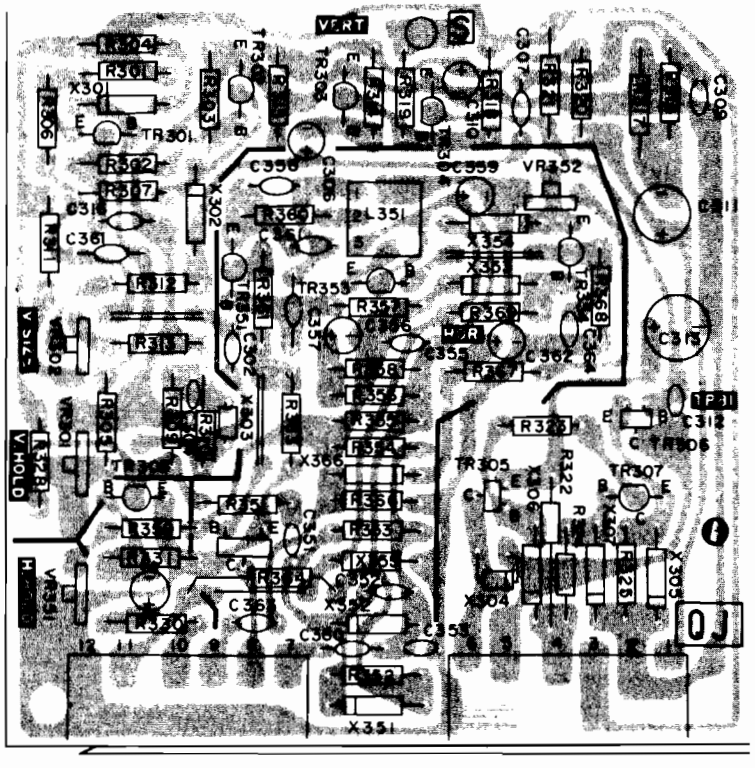


NECK P.C. BOARD MS/QG



POWER PC BOARD MV

P.C. BOARD LAYOUT



HORIZ/VERT P.C. BOARD MT/QJ

REPLACEMENT PARTS LIST

△★ SAFETY CRITICAL PARTS LIST

This receiver contains circuits and components included specifically for safety purposes.

For continued protection no changes should be made to the original design, and components shown in shaded areas of schematic, or △★ on parts list should be replaced with exact factory replacement parts.

The use of substitute parts may create a shock, fire, x-radiation or other hazard. Service should be performed by qualified personnel only.

MAIN BOARD (MQ-29)

RESISTORS

Ref. No.	Part No.	Description
R603	340X3334-944	330k Ohm, ±10%, 1/2W Carbon
R605	203X9014-584	1k Ohm, ±5%, 1W M.O.
R606	204X1425-021	470 Ohm, ±10%, 5W W.W.
△★ R607	204X1450-508	2.7k Ohm, ±10%, 5W W.W.
R608	203X9014-603	1.2k Ohm, ±5%, 1W M.O.
R610	203X6500-246	22 Ohm, ±5%, 1/8W Carbon
R611	203X6700-562	1k Ohm, ±5%, 1/2W Carbon
R612	340X3471-944	470 Ohm, ±10%, 1/2W Carbon
R613	203X9010-757	1.2k Ohm, ±5%, 1W M.O.
R614	203X5202-320	680k Ohm, ±5%, 1/2W Comp.
R615	203X5602-156	270k Ohm, ±5%, 1/2W Comp.
R616	203X6500-741	2.7k Ohm, ±5%, 1/8W Carbon
R617	203X6501-088	68k Ohm, ±5%, 1/8W Carbon
R620	203X6500-508	270 Ohm, ±5%, 1/8W Carbon
R622	203X6500-689	1.5k Ohm, ±5%, 1/8W Carbon
R624	203X6205-843	1k Ohm, ±5%, 1/2W Carbon
R630	203X5601-906	68k Ohm, ±5%, 1/2W Carbon
R631	203X9015-087	2.2 Ohm, ±10%, 5W M.O.
R632	340X8121-731	120 Ohm, ±5%, 5W Carbon
R634	203X6000-002	2.2 Ohm, ±5%, 1/8W Carbon
R635	340X3682-944	6.8k Ohm, ±5%, 1/2W Carbon
R636	203X6500-645	1k Ohm, ±5%, 1/8W Carbon
R640	203X6500-762	3.3k Ohm, ±5%, 1/8W Carbon
R641	203X6501-002	33k Ohm, ±5%, 1/8W Carbon
R642	203X6500-927	15k Ohm, ±5%, 1/8W Carbon
R643	203X5602-648	3.9M Ohm, ±5%, 1/2W Comp.
R646	203X6500-468	180 Ohm, ±5%, 1/8W Carbon
R647	340X5150-841	15 Ohm, ±10%, 2W Carbon
R648	340X2225-934	2.2M Ohm ±5%, 1/4W Carbon
R649	340X3182-944	1.8k Ohm, ±10%, 1/2W Carbon
R650	340X3271-944	270 Ohm, ±10%, 1/2W Carbon
R651	340X5241-743	240 Ohm, ±10%, 2W Carbon
R652	340X3682-944	6.8k Ohm, ±10%, 1/2W Carbon

SEMICONDUCTORS

TR601	200X3189-304	Transistor, 2SC1893
X601	201X3130-109	Rectifier, (SI) RM-2AV 600V
X602	66X0023-009	Rectifier, Power (S1) 500V PIV
X603	66X0023-009	Rectifier, Power (S1) 500V PIV
X604	66X0023-009	Rectifier, Power (S1) 500V PIV
X605	200X8130-171	Diode (HS) SB-2CGL 1200V min.
X606	201X2010-144	Diode (SI) IS2473-772
X607	201X2100-119	Diode (HS) RC-2V 0.8 US
X608	201X2130-234	Diode (HS) RU-2V
X609	201X2130-234	Diode (HS) RU-2V
X610	66X0023-009	Rectifier, Power (SI) 500V PIV
X611	66X0023-009	Rectifier, Power (SI) 500V PIV
X612	66X0023-009	Rectifier, Power (S1) 500V PIV

TRANSFORMERS & COILS

△ L601	201X6000-112	Coil, Line Filter R-3
L602	201X4600-042	Coil, Filter, 10 uH
L603	201X4100-024	Coil, Peaking, 22 uH
L607	201X4710-134	Coil, R-F Choke
T601	201X9500-337	Transformer, Audio Output
T602	201X1300-080	Transformer, Hor. Drive
T603	202X1210-191	Transformer, Side PC
L702	9A2795-001	Width Coil

CAPACITORS

Ref. No.	Part No.	Description
△C601	203X1800-451	0.1 uF, 125V, ±20% MM
C602	80X0096-038	2200 pF, ±10%, Z5F
△C603	202X7810-214	2200 pF, 125V Ceramic
C604	80X0096-038	2200 pF, ±10%, Z5F
C608	203X0220-043	330 uF, 200V Electrolytic
C605	203X1205-165	.0068 uF, 600V, ± 10% PP
C607	203X0040-020	10 uF, 160V Electrolytic
C608	203X0040-052	47 uF, 160V Electrolytic
C609	202X7050-366	.0033 uF, 500V, ± 10% Ceramic
C610	202X7050-483	.01 uF, 500V, ± 10% Ceramic
C611	202X8140-022	100 pF, 3KV, ± 10% Ceramic
C612	203X1201-047	.022 uF, 200V, ± 10% PP
C613	203X0015-035	220 uF, 25V Electrolytic
C614	203X0015-006	33 uF, 25V Electrolytic
C615	203X1201-288	0.39 uF, 200V, ± 10% PP
C616	202X8065-499	47 pF, 500V Ceramic
C617	203X0025-019	1 uF, 50V Electrolytic
C618	202X8000-577	82 pF, 50V, ± 5% Ceramic
C619	203X0025-019	1 uF, 50V Electrolytic
C620	203X1107-038	0.1 uF, 100V, ± 10% Mylar
C621	202X9040-155	0.1 uF, 1.5KV, ± 20% Paper
C622	203X0020-099	1000 uF, 35V Electrolytic
C623	203X0015-053	470 uF, 25V Electrolytic
C624	203X0015-021	100 uF, 25V Electrolytic
C625	203X0040-020	10 uF, 160V Electrolytic
C626	202X7050-009	100 pF, 500V, ± 10% Ceramic
C627	202X8065-461	39 pF, 500V, ± 10% Ceramic
C628	202X7000-327	2200 pF, 50V, ± 10% Ceramic
★C629	203X1270-470	6900 pF, 1.5KV, ± 5% PP
C630	202X7810-214	2200, pF, 125V Ceramic
C632	203X0005-029	470 uF, 6.3V Electrolytic
C633	203X0315-033	2.2 uF, 50V Electrolytic
C634	202X8000-164	6 pF, 50V, ± 0.5 pF Ceramic
C637	202X8105-014	3 pF, 2 kV, ± 0.5 pF Ceramic
C638	342X5632-040	.056 uF, 10% Mylar

MISCELLANEOUS

△F601	204X7120-062	Fuse (UL/CSA) 3A-125
J607	206X5003-960	Socket, 6 Pin
P602	204X9600-260	Plug, 3 Pin (GT)
P603	204X9600-254	Plug, 3 Pin (NM)
P604	204X9600-298	Plug, 4 Pin (NM)
P606	204X9600-351	Plug, 6 Pin (NM)
P607	204X9600-380	Plug, 6 Pin (GT)
P608	204X9600-254	Plug, 3 Pin (NM)
P610	204X9600-249	Plug, 2 Pin (GT)
P611	204X9600-670	Plug, 2 Pin (NM)
TH601	201X011-034	Thermistor
TH602	201X022-007	Varistor
J03	206X5019-207	Socket, 4 Pin
P201	204X9601-195	Plug, 6 Pin
P202	204X9601-195	Plug, 6 Pin

VERT/HOR BOARD (MT/QJ)

Ref. No.	Part No.	Description
RESISTORS		
R301	203X6500-628	820 Ohm, ± 5%, 1/8W Carbon
R302	203X6500-902	12k Ohm, ± 5%, 1/8W Carbon
R303	203X6500-927	15k Ohm, ± 5%, 1/8W Carbon
R304	203X6500-886	10k Ohm, ± 5%, 1/8W Carbon
R305	203X6501-241	330k Ohm, ± 5%, 1/8W Carbon
R306	203X6500-645	1k Ohm, ± 5%, 1/8W Carbon
R307	203X6500-689	1.5k Ohm, ± 5%, 1/8W Carbon
R309	203X6500-724	2.2k Ohm, ± 5%, 1/8W Carbon
R310	203X6501-285	470k Ohm, ± 5%, 1/8W Carbon
R311	203X6501-065	56k Ohm, ± 5%, 1/8W Carbon
R312	203X6501-126	100k Ohm, ± 5%, 1/8W Carbon
R313	203X6001-326	10k Ohm, ± 5%, 1/8W Carbon
R314	203X6501-044	47k Ohm, ± 5%, 1/8W Carbon
R315	203X6500-628	820 Ohm, ± 5%, 1/8W Carbon
R316	203X6500-420	120 Ohm, ± 5%, 1/8W Carbon
R317	203X6206-441	2.2 Ohm, ± 5%, 1/2W Carbon
R319	203X6500-169	100 Ohm, ± 5%, 1/8W Carbon
R320	203X6500-927	15k Ohm, ± 5%, 1/8W Carbon
R321	203X6700-509	560 Ohm, ± 5%, 1/2W Carbon
R322	203X9100-121	22 Ohm, ± 5%, 2W M.O.
R323	203X6500-689	1.5K Ohm, ±5%, 1/8W Carbon
R324	203X6500-988	27k Ohm, ± 5%, 1/8W Carbon
R325	203X6500-326	47 Ohm, ± 5%, 1/8W Carbon
R328	203X6500-628	820 Ohm, ± 5%, 1/8W Carbon
R330	203X6500-886	10k Ohm, ± 5%, 1/8W Carbon
R331	203X6501-209	220k Ohm, ± 5%, 1/8W Carbon
R351	203X6500-724	2.2k Ohm, ± 5%, 1/8W Carbon
R352	203X6500-927	15k Ohm, ± 5%, 1/8W Carbon
R353	203X6500-944	18k Ohm, ± 5%, 1/8W Carbon
R354	203X6500-783	3.9k Ohm, ± 5%, 1/8W Carbon
R355	203X6500-902	12k Ohm, ± 5%, 1/8W Carbon
R356	203X6500-561	470 Ohm, ± 5%, 1/8W Carbon
R357	203X6500-724	2.2k Ohm, ± 5%, 1/8W Carbon
R358	203X6500-666	1.2k Ohm, ± 5%, 1/8W Carbon
R359	203X6501-088	68k Ohm, ± 5%, 1/8W Carbon
R360	203X5500-471	27 Ohm, ± 5%, 1/4W Comp.
R361	203X6000-998	1.2k Ohm, ± 5%, 1/8W Carbon
R363	203X6500-666	1.2k Ohm, ± 5%, 1/8W Carbon
R364	203X9014-988	47k Ohm, ± 5%, 1W M.O.
R365	203X6700-989	56k Ohm, ± 5%, 1/2W Carbon
R366	203X6001-148	3.3k Ohm, ±5%, 1/8W Carbon
R367	340X2222-734	2.2k Ohm, ± 5%, 1/2W Carbon
R368	203X6500-785	3.9k Ohm, ± 5%, 1/8W Carbon
R369	203X6500-762	3.3k Ohm, ± 5%, 1/4W Carbon
R370	302X6100-961	1k Ohm, ± 5%, 1/4W Carbon
R371	203X6104-751	2.7k Ohm, ± 5%, 1/4W Carbon
R383	340X2222-934	2.2k Ohm, ±5%, 1/4W Carbon
R384	340X2822-934	8.2k Ohm, ±5%, 1/4W Carbon
VR301	204X2122-093	Varistor, 250K Ohm, Vert. Hold
VR302	204X2114-065	Varistor, 20K Ohm, Vert. Size
VR351	204X2114-059	Varistor, 50K Ohm, Hor. Hold
CAPACITORS		
C301	203X1100-928	0.15 uF, 50V, ± 10% Mylar
C302	203X1100-573	0.022 uF, 50V, ± 10% Mylar
C304	203X1100-858	0.1 uF, 50V, ± 10% Mylar
C306	203X0025-026	2.2 uF, 50V, Electrolytic
C307	203X1100-928	0.15 uF, 50V, ± 10% Mylar
C309	203X1100-858	0.1 uF, 50V, ± 10% Mylar
C310	203X0010-011	22 uF, 16V Electrolytic
C311	203X0020-099	1000 uF, 35V Electrolytic
C312	202X7000-469	0.0082 uF, 50V, ± 10% Ceramic

Ref. No.	Part No.	Description
CAPACITORS (CONT.)		
C313	203X0025-087	47 uF, 50V Electrolytic
C315	203X0015-082	10 uF, 25V Electrolytic
C316	203X1100-220	3300 uF, 50V, ± 10% Mylar
C317	202X8000-616	100 pF, 50V, ± 10% Ceramic
C351	202X7000-281	1500 pF, 50V, ± 10% Ceramic
C352	202X7000-247	1000 pF, 50V, ± 10% Ceramic
C353	203X1100-573	0.022 uF, 50V, ± 10% Mylar
C355	203X1100-858	0.1 uF, 50V, ± 10% Mylar
C356	203X0015-105	4.7 uF, 25V Electrolytic
C357	203X1201-013	0.015uF, 200V ± 10% PP
C358	203X1201-034	0.018 uF, 200V, ± 10% PP
C359	203X0040-013	4.7 uF, 160V Electrolytic
C360	202X7000-482	0.01 uF, 50V, ± 10% Ceramic
C361	203X1100-509	0.015 uF, 50V, ± 10% Mylar
C362	203X0025-058	10 uF, 50V Electrolytic
C363	203X1205-487	0.01 uF, 630V, ± 10% PP
C364	202X7000-482	0.01 uF, 50V, ± 10% Ceramic
SEMICONDUCTORS		
TR301	200X4082-614	Transistor, 2SA826Q
TR302	200X3174-006	Transistor, 2SC1740Q
TR303	200X3174-006	Transistor, 2SA1740Q
TR304	200X3174-006	Transistor, 2SC1740Q
TR305	200X4049-081	Transistor, 2SA490YLBGLI
TR306	200X3162-538	Transistor, 2SC1625YLBGLI
TR307	200X3174-014	Transistor, 2SC1740R
TR308	200X3174-006	Transistor, 2SC1740Q
TR351	200X4085-415	Transistor, 2SA854Q
TR352	200X3172-208	Transistor, 2SC1722BKS
TR353	200X3174-006	Transistor, 2SC1740Q
TR354	200X4082-614	Transistor, 2SA826Q
X301	201X2010-144	Diode, (SI) IS2473-T72
X302	201X2010-144	Diode, (SI) IS2473-T72
X303	200X8000-026	Diode, (GE), IN60TVGL
X304	200X8010-165	Diode (SI) ISS81
X305	201X2010-165	Diode (SI) ISS81
X306	201X2010-165	Diode (SI) ISS81
X307	200X8010-102	Diode (SI) MA26W
X308	200X8010-094	Diode (SI) IS2473
X351	201X2010-144	Diode (SI) IS2473-T72
X352	201X2010-144	Diode (SI) IS2473-T72
X353	201X2010-144	Diode (SI) IS2473-T72
X354	201X2010-144	Diode (SI) IS2473-T72
X355	200X8220-851	Diode (Zener) RD10EBI
X366	200X8100-130	Diode (HS) RU-1 0.3 US
MISCELLANEOUS		
J301	204X9300-958	Socket, 6 Pin
J302	204X9300-958	Socket, 6 Pin
P301	204X9601-195	Plug, 6 Pin
P302	204X9601-195	Plug, 6 Pin
TH301	201X0000-534	Thermistor
TRANSFORMERS & COILS		
L351	201X5200-091	Coil, Horiz. Osc.

POWER BOARD (MV)

RESISTORS		
R501	204X1725-052	180 Ohm, ± 10%, 15W WW
R502	203X6000-608	100 Ohm, ± 5%, 1/8W Carbon
R503	203X6000-960	1k Ohm, ± 5%, 1/8W Carbon
R504	203X6000-879	560 Ohm, ± 5%, 1/8W Carbon
R505	203X9014-965	39k Ohm, ± 5%, 1W M.O.
R506	203X6500-842	6.8k Ohm, ± 5%, 1/8W Carbon
R551	203X6500-420	120 Ohm, ± 5%, 1/8W Carbon
VR501	204X2050-001	Varistor Vert. Adj.
CAPACITORS		
C501	203X0040-020	10 uF, 160V Electrolytic
C502	202X7000-281	1500 pF, 50V, ± 10% Ceramic
C503	203X0010-011	22 uF, 16V Electrolytic
C551	203X0005-046	220 uF, 10V Electrolytic
SEMICONDUCTORS		
TR501	200X3174-006	Transistor, 2SC1740Q
△★TR502	200X3145-404	Transistor, 2SC1454
TR551	200X3172-305	Transistor, 2SC1723
X501	201X2230-042	Diode, (SI) Zener EQB01-06V
X502	201X2010-144	Diode, (SI) IS2473-T72
MISCELLANEOUS		
J501	204X9300-958	Socket, 6 Pin
P501	204X9601-195	Plug, 6 Pin
TH501	201X0000-618	Thermistor

NECK BOARD (MS/QG)

Ref. No.	Part No.	Description
RESISTORS		
R401	203X6500-709	1.8k Ohm ± 5% 1/8W Carbon
R402	203X6500-709	1.8k Ohm ± 5% 1/8W Carbon
R403	203X6500-709	1.8k Ohm ± 5% 1/8W Carbon
R404	203X6500-447	150 Ohm ± 5% 1/8W Carbon
R405	203X6500-481	220 Ohm ± 5% 1/8W Carbon
R406	203X6500-447	150 Ohm ± 5% 1/8W Carbon
R407	340X2271-934	270 Ohm ± 5% 1/4W Carbon
R408	203X6500-508	270 Ohm ± 5% 1/8W Carbon
R409	203X6500-800	4.7k Ohm ± 5% 1/8W Carbon
R410	203X6500-800	4.7k Ohm ± 5% 1/8W Carbon
R411	203X6500-800	4.7k Ohm ± 5% 1/8W Carbon
R412	203X9104-809	12k Ohm ± 5% 2.0W Metal Oxide
R413	203X9104-809	12k Ohm ± 5% 2.0W Metal Oxide
R414	203X9104-809	12k Ohm ± 5% 2.0W Metal Oxide
R415	203X5601-313	2.7k Ohm ± 10% 1/2W Comp.
R416	203X5601-313	2.7k Ohm ± 10% 1/2W Comp.
R417	203X5601-313	2.7k Ohm ±10% 1/2W Comp.
R418	203X5602-254	470k Ohm ± 10% 1/2W Comp.
R419	203X5602-185	330k Ohm ± 10% 1/2W Comp.
R422	203X9105-117	1.0 Ohm ± 10% 2W Metal Oxide
R423	203X5102-155	270k Ohm ± 5% 1/4W Carbon
VR401	204X2115-014	500 Ohm Varistor R Drive
VR402	204X2115-014	500 Ohm Varistor B Drive
VR403	204X2115-006	5k Ohm Varistor R Cutoff
VR404	204X2115-006	5k Ohm Varistor G Cutoff
VR405	204X2115-006	5k Ohm Varistor B Cutoff
VR406	204X2000-025	1M Ohm Varistor Screen
CAPACITORS		
C401	202X7000-247	1000 pF, 50V, 10% Ceramic
C402	202X7000-247	1000 pF, 50V, 10% Ceramic
C403	202X7000-247	1000 pF, 50V, 10% Ceramic
C404	202X7110-019	1500 pF, 2kV ± 10% Ceramic
C405	202X7150-018	100 pF, 12kV, ±10% Ceramic
C406	202X7050-483	.01 uF, 500V, ±10% Ceramic
C407	202X7110-019	1500 pF, 2kV ± 10% Ceramic
C408	202X8000-550	68 pF, 50V, ± 10% Ceramic
C409	202X8000-550	68 pF, 50V, ± 10% Ceramic
C410	202X8000-550	68 pF, 50V, ± 10% Ceramic
SEMICONDUCTORS		
TR401	200X3206-800	Transistor, 2SC2068, 2SC1514 (R output)
TR402	200X3206-800	Transistor, 2SC2068, 2SC1514 (G output)
TR403	200X3206-800	Transistor, 2SC2068, 2SC1514 (B output)
X404	201X2100-126	Diode, IS2367 (protector)
X405	201X2100-126	Diode, IS2367 (protector)
X406	201X2100-126	Diode, IS2367 (protector)
MISCELLANEOUS		
J401	206X5003-729	Socket, 5 Pin
J402	206X5003-983	Socket, 3 Pin
P401	204X9600-329	Plug, 5 Pin
P402	204X9600-254	Plug, 3 Pin

△★ 297X2000-072 HIGH VOLTAGE ASSEMBLY (T701)

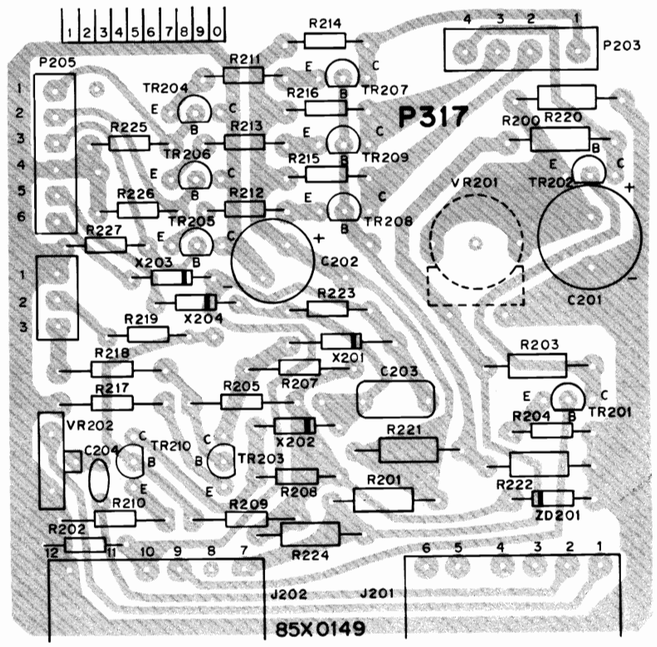
△★ R701	204X1625-058	3.3 Ohm, ± 10% 10W WW Resistor
VR702	204X3901-125	Focus Control
X701		Diode (SI HV) } Part of T701
X702		Diode (SI HV) } Part of T701
X703		Diode (SI HV) } Part of T701

FINAL ASSEMBLY PARTS

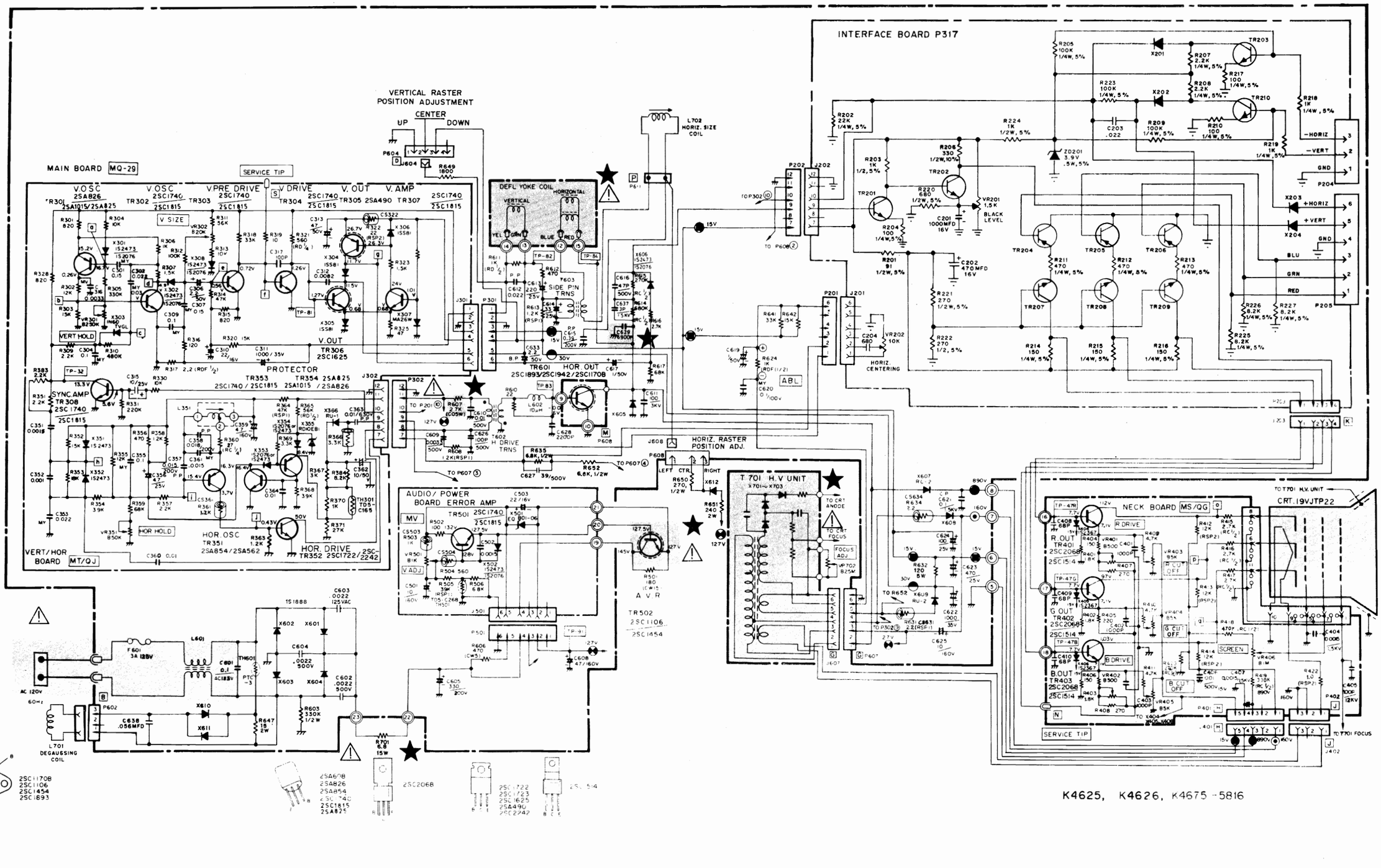
△★	88X-0129-506	19VJTP22 Pix Tube
	38A5554-000	Assy. Purity Shld/Degaussing
	205X9800-256	Lateral/Purity Assembly
△★	202X1110-810	Yoke, Deflection
	208X2000-946	CRT Socket
	297X2000-072	HV Unit (T701)
	6A0397	Plug, Line Cord
	9A2753-003	Degaussing Coil (L701)

INTERFACE BOARD (P317)

RESISTORS		
R201	340X3910-934	91 Ohm ±5%, 1/2W Carbon
R202	340X3183-944	18k Ohm ±10%, 1/2W Carbon
R203	340X3102-934	1k Ohm ±5%, 1/2W Carbon
R204	340X2101-934	100 Ohm ±5%, 1/4W Carbon
R205	340X2333-934	33k Ohm ±5%, 1/4W Carbon
R206	340X3331-944	330 Ohm ±10%, 1/2W Carbon
R207	340X3102-934	1k Ohm ±5%, 1/2W Carbon
R208	340X3102-934	1k Ohm ±5%, 1/2W Carbon
R209	340X2333-934	33k Ohm ±5%, 1/4W Carbon
R210	340X2101-934	100 Ohm ±5%, 1/4W Carbon
CAPACITORS		
C201	45X0524-038	100 uF, 16V Electrolytic
C202	45X0524-053	470 uF, 16V Lytic
C203	349X2232-109	.022 uF, 10%, 100V
C204	80X0099-020	680 pF, 10%, Z5F
SEMICONDUCTORS		
TR201	86X0121-001	Transistor (NPN) MPS-A20
TR202	86X0121-001	Transistor (NPN) MPS-A20
TR203	86X0121-001	Transistor (NPN) MPS-A20
TR204	86X0066-001	Transistor (PNP) MPS-A70
TR205	86X0066-001	Transistor (PNP) MPS-A70
TR206	86X0066-001	Transistor (PNP) MPS-A70
TR207	86X0121-001	Transistor (NPN) MPS-A20
TR208	86X0121-001	Transistor (NPN) MPS-A20
TR209	86X0121-001	Transistor (NPN) MPS-A20
TR210	86X0121-001	Transistor (NPN) MPS-A20
X201	66X0046-001	Diode Silicon FDH-444
X202	66X0046-001	Diode Silicon FDH-444
X203	66X0046-001	Diode Silicon FDH-444
X204	66X0046-001	Diode Silicon FDH-444
ZD201	66X0040-019	Diode, Zener 6.8V, 5%, 0.5W IN5235B
R211	340X2331-934	330 Ohm ±5%, 1/4W Carbon
R212	340X2331-934	330 Ohm ±5%, 1/4W Carbon
R213	340X2331-934	330 Ohm ±5%, 1/4W Carbon
R214	340X2151-934	150 Ohm ±5%, 1/4W Carbon
R215	340X2151-934	150 Ohm ±5%, 1/4W Carbon
R216	340X2151-934	150 Ohm ±5%, 1/4W Carbon
R217	340X2101-934	100 Ohm ±5%, 1/4W Carbon
R218	340X3102-934	1k Ohm ±5%, 1/2W Carbon
R219	340X3102-934	1k Ohm ±5%, 1/2W Carbon
R220	340X3681-934	680 Ohm, 5%, 1/2W Carbon
R221	340X3271-934	270 Ohm, 5%, 1/2W Carbon
R222	340X3271-934	270 Ohm, 5%, 1/2W Carbon
R223	340X2104-934	100k Ohm, 5%, 1/4W Carbon
R224	340X3102-934	1k Ohm, 5%, 1/2W Carbon
R225	340X2822-934	8.2k Ohm, 5%, 1/4W Carbon
R226	340X2822-934	8.2k Ohm, 5%, 1/4W Carbon
R227	340X2822-934	8.2k Ohm, 5%, 1/4W Carbon
VR201	40X0590-017	1.5k Ohm Black Level Control
VR202	40X0592-007	10k Ohm Horizontal Centering
MISCELLANEOUS		
J201	204X9300-958	Socket, 6 Pin
J202	204X9300-958	Socket, 6 Pin
P203	204X9600-845	Plug, 4 Pin
P204	6A393-003	Plug, 3 Pin
P205	6A0393-006	Plug, 6 Pin



19" COLOR MONITOR SCHEMATIC DIAGRAM



K4625, K4626, K4675 -5816