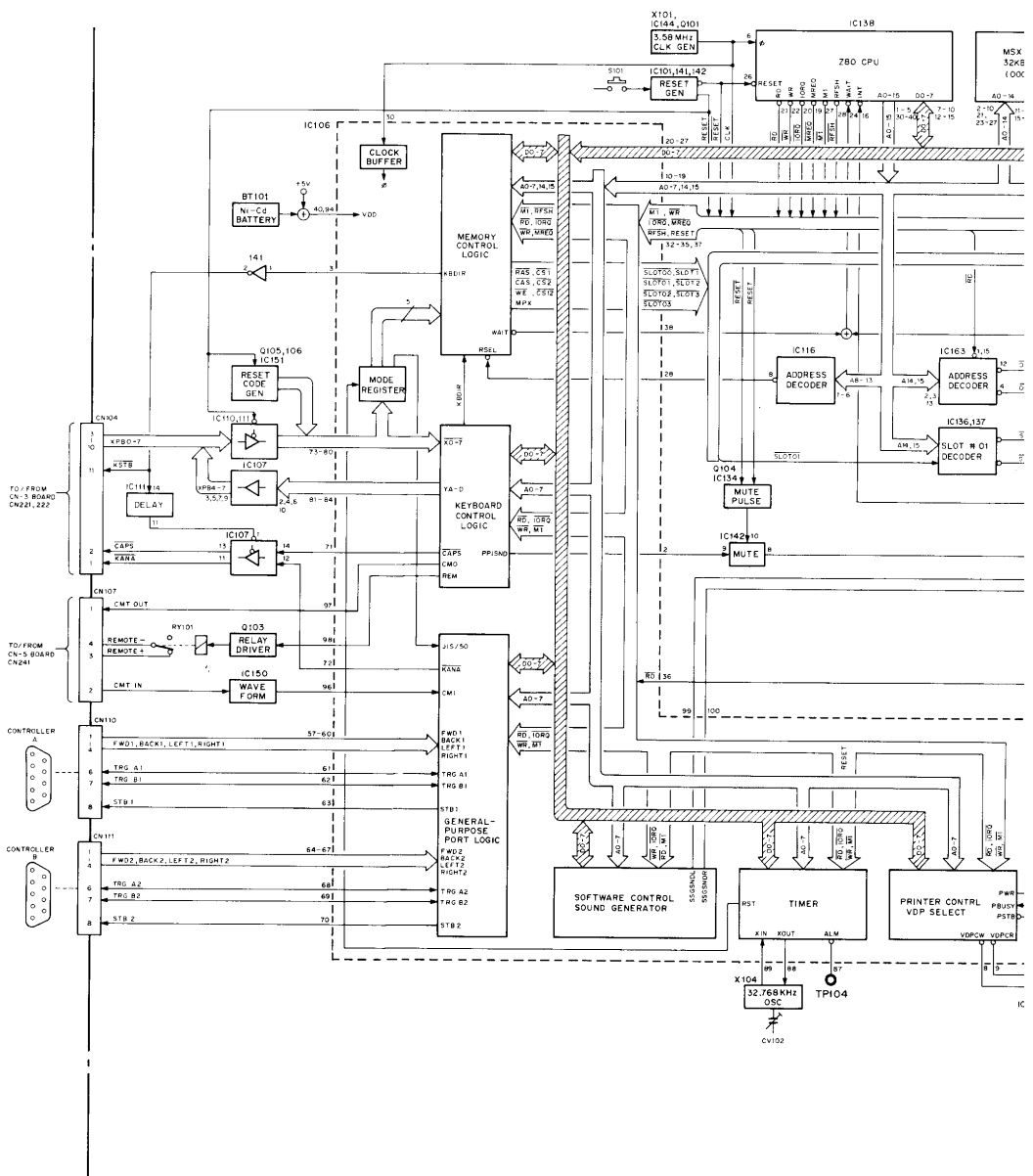


Part 2
Scanned and converted to PDF by HansO, 2001
Original by Bas Kornalijnslijper, MCWF

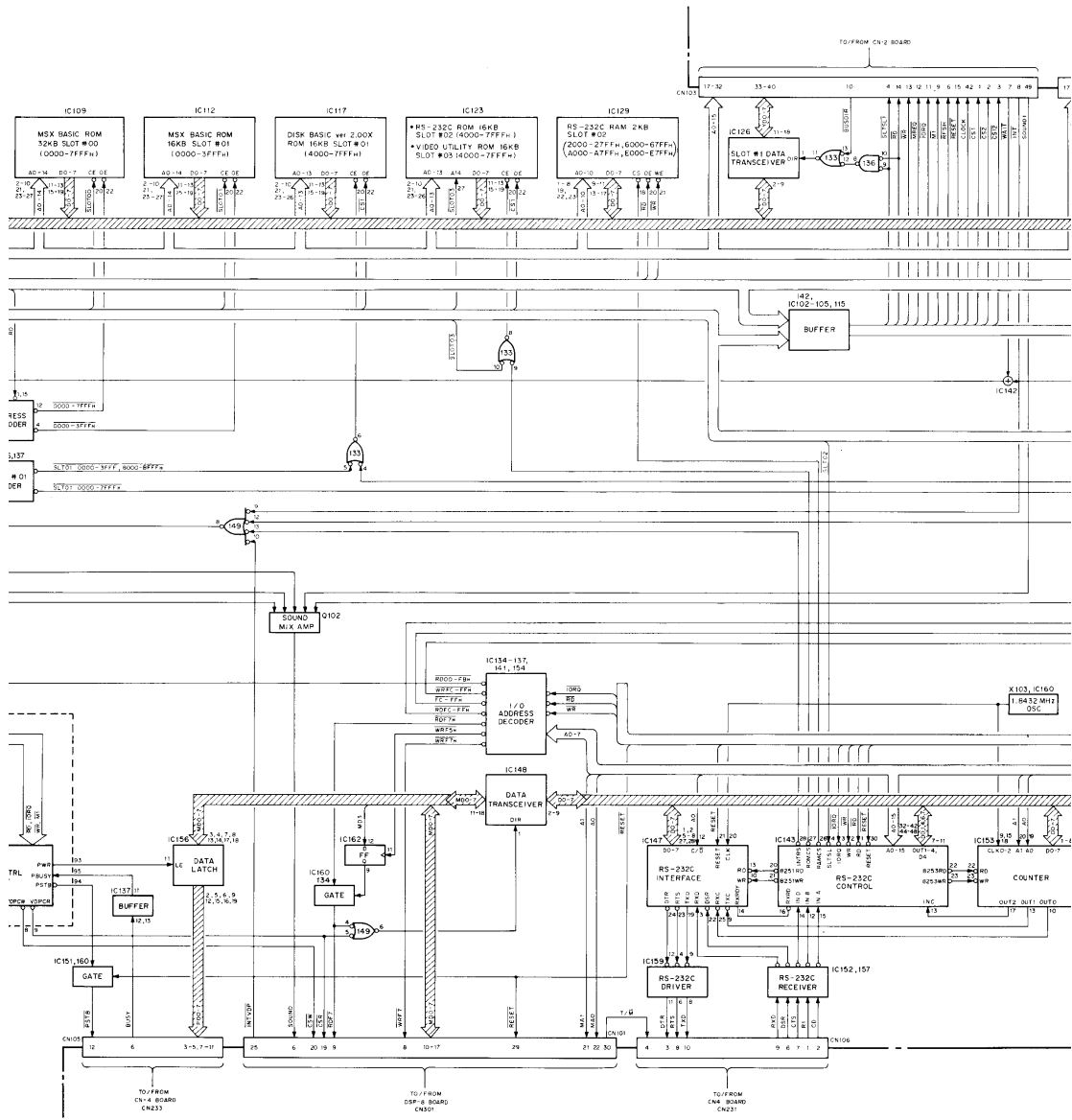
HB-G900AP

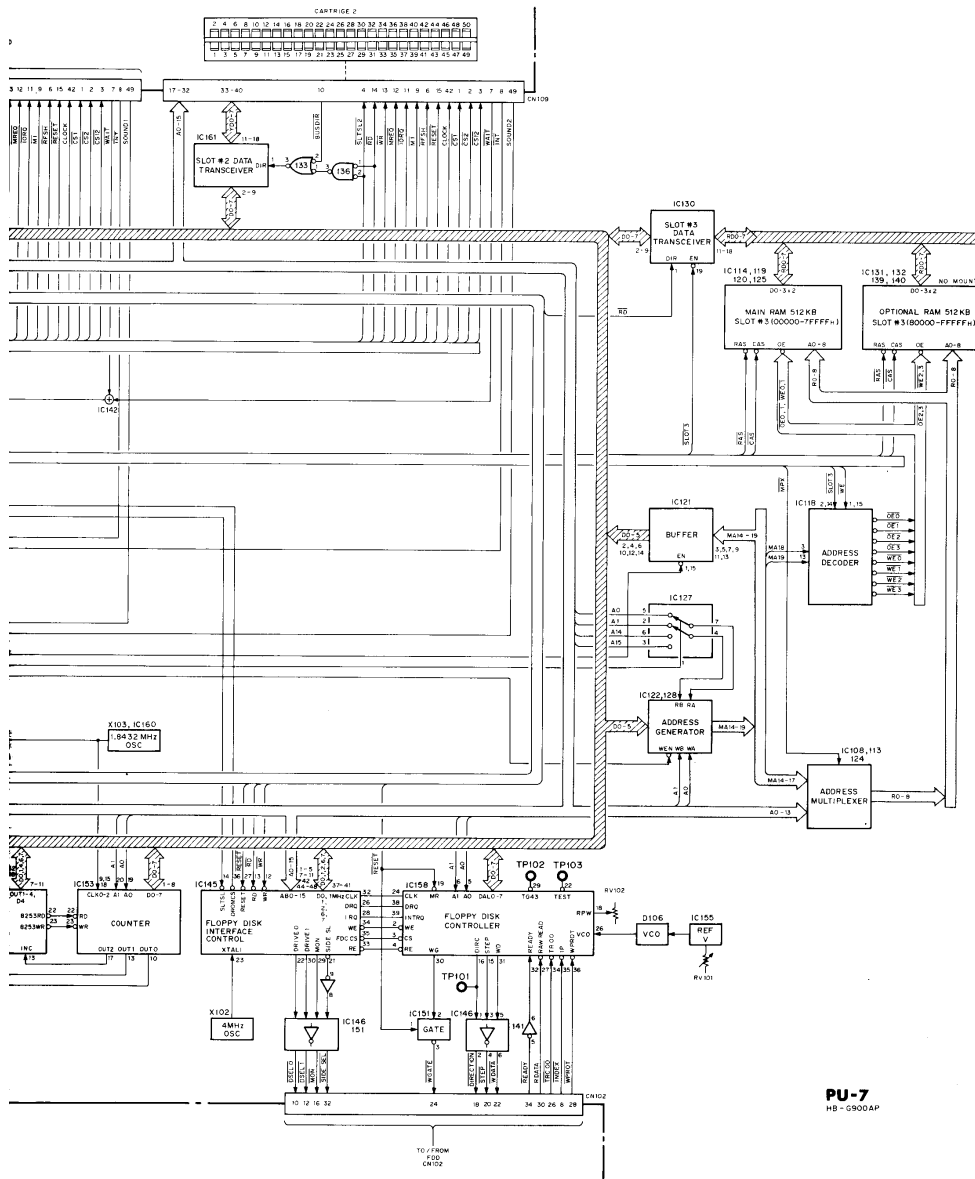
SECTION 4
BLOCK DIAGRAMS

4-1. PU-7

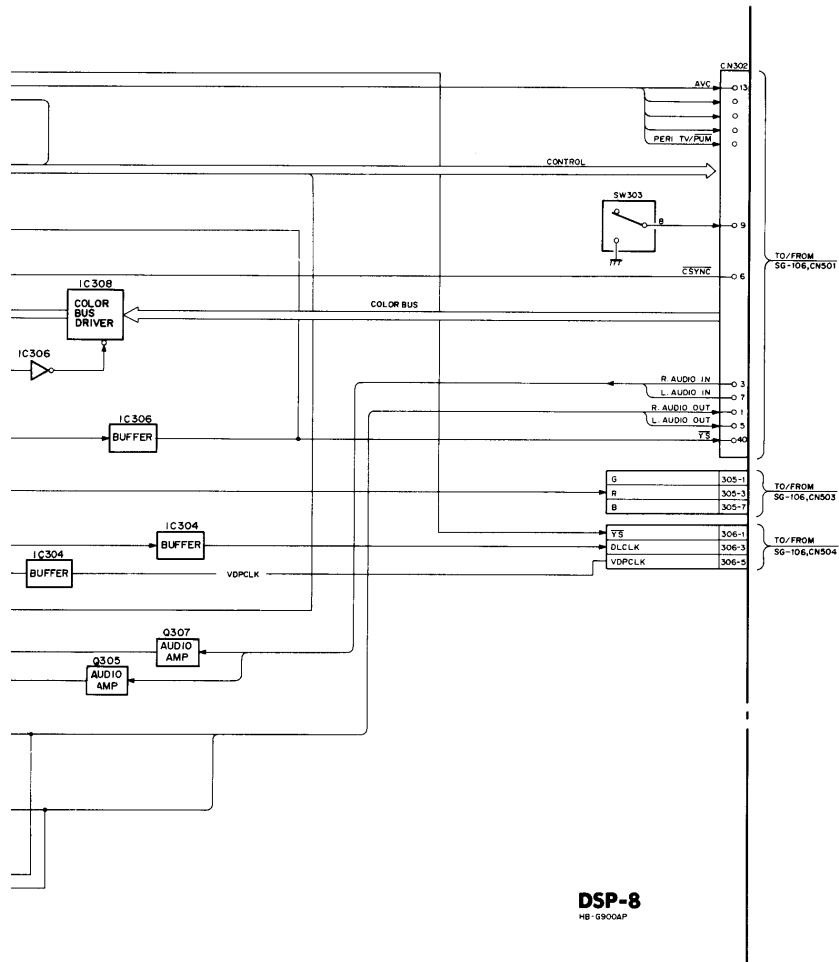


AP HB-G900AP



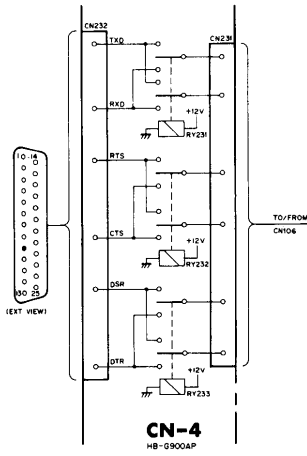
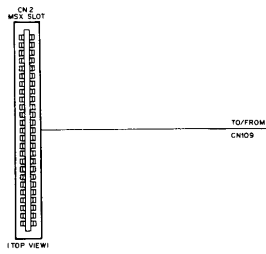
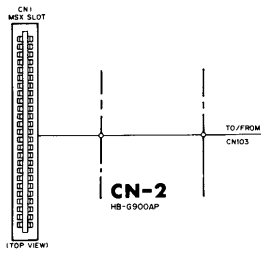


PU-7
HB-G900AP



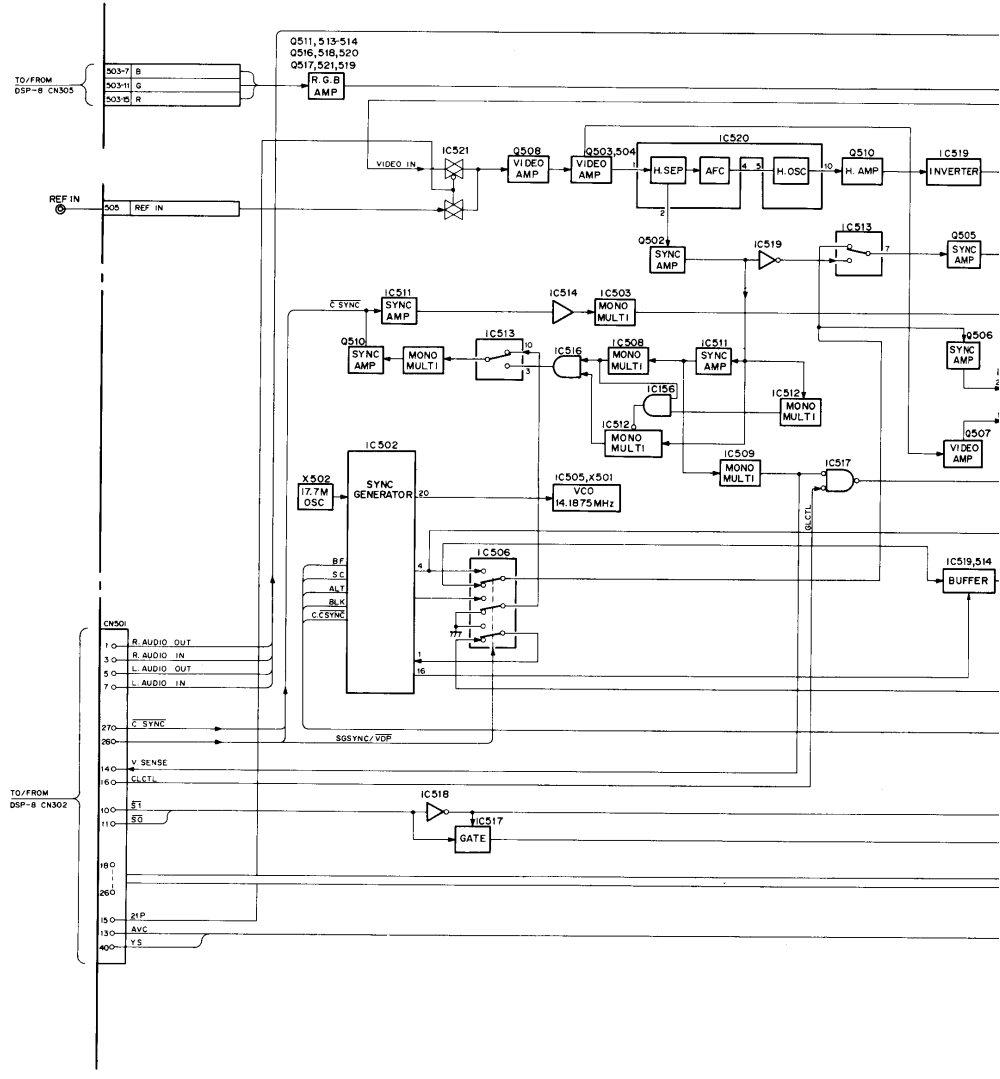
DSP-8
HB-G900AP

HB-G900AP

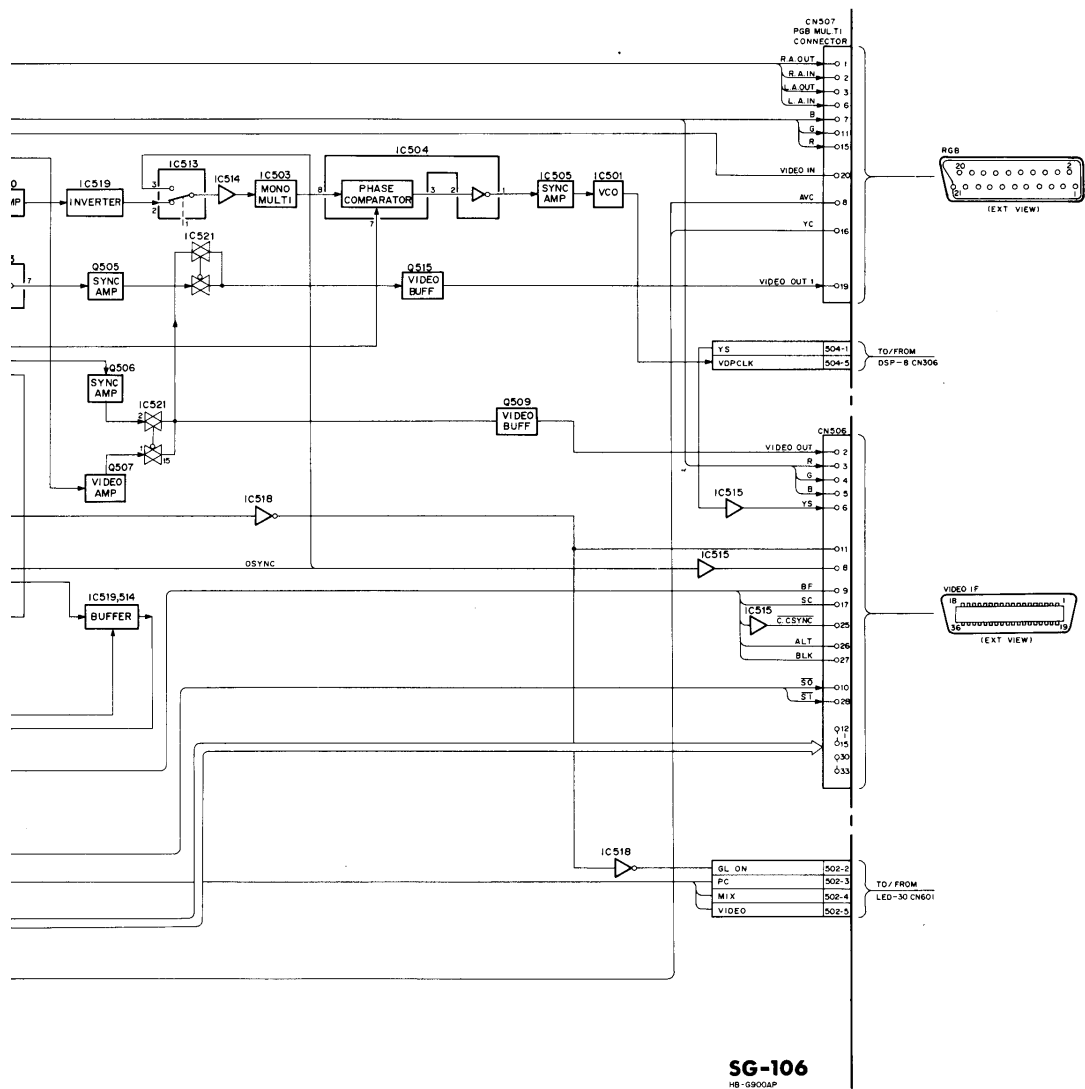


HB-G900AP

4-3. SG-106



DOAP HB-G900AP



**SECTION 5
ALIGNMENT**

SG-106 BOARD ALIGNMENT

5-1. ADJUSTMENT

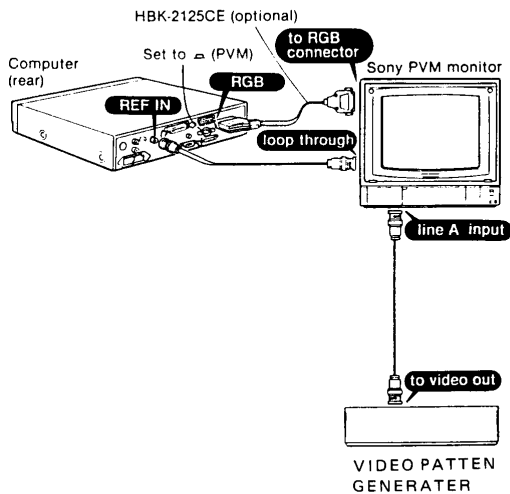
- (1) VDP clock adjustment (RV501 and RV502)
 - (2) Subcarrier adjustment (CV501)
 - (3) RGB level adjustment (RV506, RV507, and RV508)
 - (4) AFC adjustment (RV504)
 - (5) First field detector adjustment (RV503)
 - (6) H-position (RV505)
2. Outline of Adjustment

5-1-1 VDP clock Adjustment (RV501 and RV502)

Equipment required: Oscilloscope, Frequency counter

- 1) Adjust RV501 (VCO (74LS62B) range control) so that the level at TP502 (check land and test pin provided) is $3.3\text{ V} \pm 0.1\text{ V}$
- 2) Short-circuit between TP505 and GND (one input signal from the PLL circuit is masked).
- 3) Adjust RV502 (V,CENT: offset) so that the counter value at TP501 is $20.4 \pm 0.1\text{ MHz}$.
- 4) Short-circuit between TP507 and GND (the other input signal from the PLL circuit is masked). Adjust RV501 so that the counter value at TP501 is $22.4 \pm 0.1\text{ MHz}$.
- 5) Short-circuit between TP505 and GND.
- 6) Readjust as in. Step 3.

Connection



5-2. PREPARATION

5-2-1. The Programming Example for Adjustment (BASIC)

```

1000 '-----
1010 ' CHECK PROG for HB-G900
1020 ' C(c):COMPUTOR-MODE
1030 ' S(s):SUPERINFOSE-MODE
1040 ' V(v):VIDEO-MODE
1050 ' M(m):MIX-MODE
1060 ' W(w):ALL-WHITE-MODE
1070 ' K(k):ALL-BLACK-MODE
1080 ' B(b):ALL-BLUE
1090 ' D(d):VIDEOTIZE-THROUGH
1100 ' L(l):SFLI COLOR-BAR
1110 ' O(o):GENLOCK ON
1120 ' F(f):GENLOCK OFF
1130 ' (Sf):DRAW COLOR-BAR
1140 '-----
1150
1160 SCREEN 5
1170 SET VIDEO 0,,1,,1
1180 '
1190 COLOR=(15,7,7)
1200 COLOR=(10,5,5,0)
1210 COLOR=( 7,0,5,5)
1220 COLOR=( 2,0,5,0)
1230 COLOR=(13,5,0,5)
1240 COLOR=( 5,5,0,0)
1250 COLOR=( 4,0,0,5)
1260 COLOR=( 1,0,0,0)
1270 '
1280 '-----
1290 ' DRAW COLOR-BAR
1300 '-----
1310 COLOR ,0,0
1320 RESTORE I300
1330 SET PAGE 0,0
1340 FOR I=0 TO 7
1350 READ C
1360 LINE(I*32,0)-(I*32+31,211),C,BF
1370 NEXT I
1380 DATA 15,10,7,2,13,8,4,1
1390 '
1400 '-----
1410 ' GET COMMAND
1420 '-----
1430 A$=INKEY$:IF A$="" THEN GOTO 1430
1440 IF (A$="C" OR A$="c") THEN SET VIDEO 0,,1,,1
1450 IF (A$="S" OR A$="s") THEN SET VIDEO 2,,1,,1
1460 IF (A$="V" OR A$="v") THEN SET VIDEO 3,,1,,1
1470 IF (A$="M" OR A$="m") THEN SET VIDEO 2,,1,,1:OUT MHF7,51C
1480 IF (A$="W" OR A$="w") THEN SCREEN 5:COLOR=(15,7,7):COLOR15,15,15
1490 IF (A$="K" OR A$="k") THEN SCREEN 5:COLOR=(1,0,0,0):COLOR 1,1,1
1500 IF (A$="B" OR A$="b") THEN SCREEN 5:COLOR=(4,0,0,7):COLOR 4,4,4
1510 IF (A$="D" OR A$="d") THEN GOTO 1660
1520 IF (A$="L" OR A$="l") THEN GOTO 1580
1530 IF (A$="O" OR A$="o") THEN SET VIDEO ,,,1
1540 IF (A$="F" OR A$="f") THEN SET VIDEO ,,,0
1550 IF (A$=" ") THEN GOTO 1190
1560 GOTO 1430
1570 '
1580 '-----
1590 ' SFLIT COLOR-BAR
1600 '-----
1610 FOR I=0 TO 8
1620 LINE(I*32-5,0)-(I*32+5,211),0,BF
1630 NEXT I
1640 GOTO 1430
1650 '
1660 '-----
1670 ' HB-G900P VIDEOTIZE
1680 ' T(t):VIDEOTIZE(THROUGH)
1690 ' F(f):FREEZE
1700 '-----
1710 SCREEN 8
1720 SET VIDEO ,,1:VDP(?)=MFF:COPY SCREEN
1730 '
1740 A$=INKEY$:IF A$="" THEN GOTO 1740
1750 IF (A$="O" OR A$="o") THEN SET VIDEO ,,0:GOTO 1160
1760 IF (A$="T" OR A$="t") THEN SET VIDEO ,,1:COPY SCREEN
1770 IF (A$="F" OR A$="f") THEN SET VIDEO ,,1:COPY SCREEN:SET VIDEO ,,0
1780 GOTO 1740

```

5-2-2. Set the Program given above to run Condition

HB-G900AP

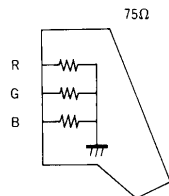
5-2-3 Subcarrier Adjustment (CV501)

Equipment required: Frequency Counter

- 1) Connect a counter to TP506.
- Adjust CV501 so that the level at TP506 is $4,433,618 \pm 10$ Hz.

5-2-4 RGB Level Adjustment (RV506, RV507, and RV508)

Equipment required: Oscilloscope, 21-pin 75-ohm terminator



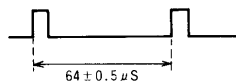
- 1) Connect a 75-ohm terminator to the 21-pin connector.
- 2) key in "W" (screen appears white.)
- 3) Adjust RV506 so that the level at TP512 is 0.7 ± 0.02 V. (B level)
- 4) Adjust RV507 so that the level at TP513 is 0.7 ± 0.02 V. (R level)
- 5) Adjust RV508 so that the level at TP514 is 0.7 ± 0.02 V. (G level)

5-2-5 AFC Adjustment (RV504)

The frequency is adjusted when μ PC1377 is free running.

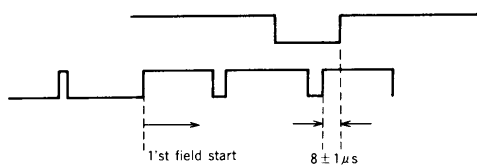
Equipment required: Oscilloscope

- 1) Connect an oscilloscope CH1 to TP510.
- 2) Adjust RV504 (H-FREQ) so that the level at TP510 is $64 \pm 0.5 \mu$ s.



5-2-6 First Field Detector Adjustment (RV503)

Equipment required: Signal generator, oscilloscope

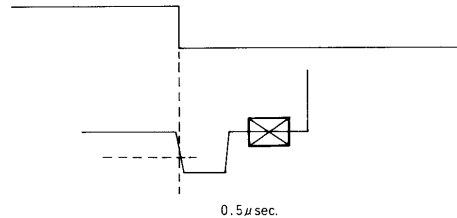


- 1) key in "S" (superimpose mode)
- 2) Connect an oscilloscope CH1 to TP 508 and CH2 to TP509 (triggerable).
- 3) Adjust RV503 (V-POSITION) so that the level at TP508 and TP509 is $8 \pm 1 \mu$ sec.

5-2-7 H-Position (RV505)

Equipment required: Oscilloscope, signal generator

- 1) key in "S" (superimpose mode)
- 2) Connect an oscilloscope CH1 to TP501 and CH2 to TP511 (triggerable).



- 3) Adjust RV505 (H-POSITION) so that each trailing edge is the same.

PU-7 BOARD ALIGNMENT

• VCO ADJ

Equipment required: Frequency counter

Condition: POWER switch to ON and after 3 minutes, Connect jumper between TP103 and GROUND

Check point: TP-101

Specification: $250 \text{ kHz} \pm 1.25 \text{ kHz}$

ADJ point: RV101

Note: after adjustment, Remove the jumper

• Read pulse width ADJ

Equipment required: Oscilloscope

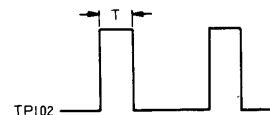
Condition: POWER switch to ON and after 3 minutes, Connect jumper between TP103 and GROUND

Check point: TP102

Specification: $T = 0.5 \mu\text{s} \pm 10 \text{ nS}$

ADJ point: RV102

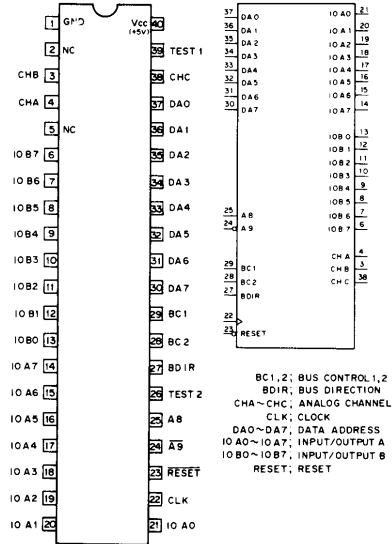
Note: after adjustment, Remove the jumper



SECTION 6
SCHEMATIC DIAGRAMS AND PRINTED CIRCUIT

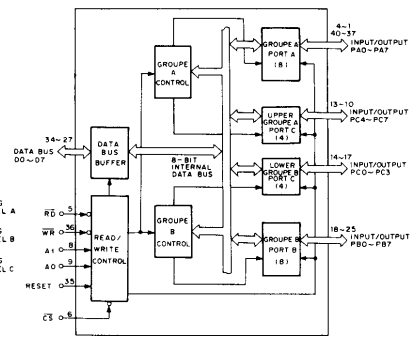
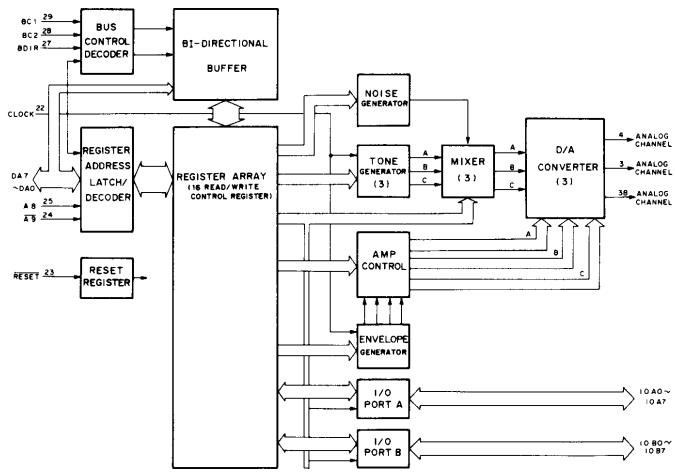
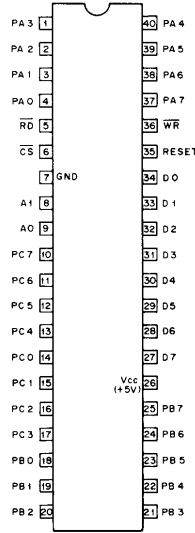
6-1. SEMICONDUCTOR PIN ASSIGNMENT

AY-3-8910 (GENERAL INSTRUMENT)
YM-2149 (YAMAHA)
PROGRAMMABLE SOUND GENERATOR
— TOP VIEW —



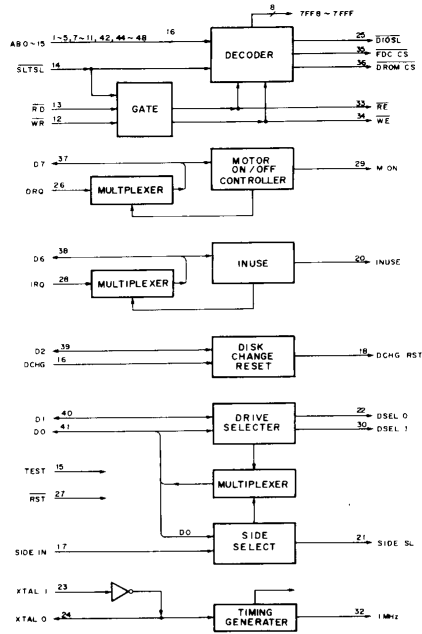
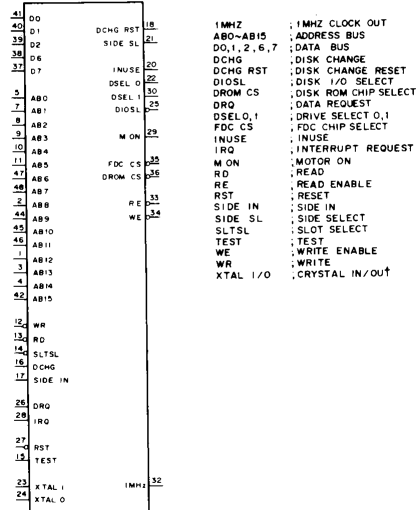
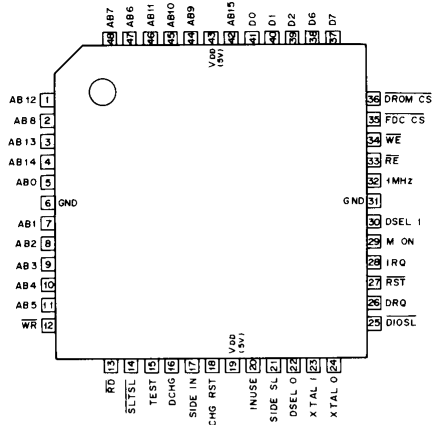
BC1,2; BUS CONTROL 1,2
BDIR; BUS DIRECTION
CHA~CHC; ANALOG CHANNEL
CLK; CLOCK
DA0~DA7; DATA ADDRESS
IOA0~IOA7; INPUT/OUTPUT A
IOB0~IOB7; INPUT/OUTPUT B
RESET; RESET

UPD8255AC-5 (NEC)
PROGRAMMABLE PERIPHERAL INTERFACE
— TOP VIEW —



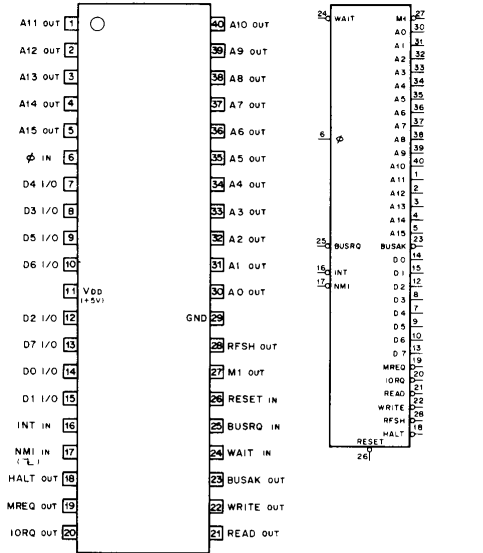
HB-G900AP

CXD1032Q (SONY)
C-MOS MSX FLOPPY DISK INTERFACE CONTROLLER
— TOP VIEW —

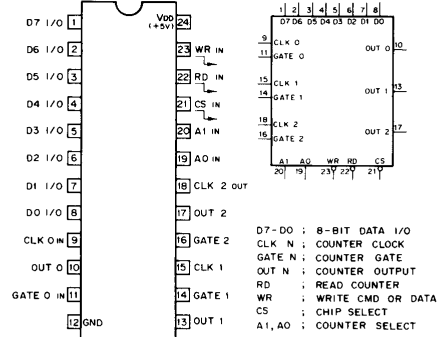


HB-G900AP

LH0080 (SHARP)
 uPD780C (NEC)
 N-MOS 8-BIT MICROPROCESSOR
 - TOP VIEW -



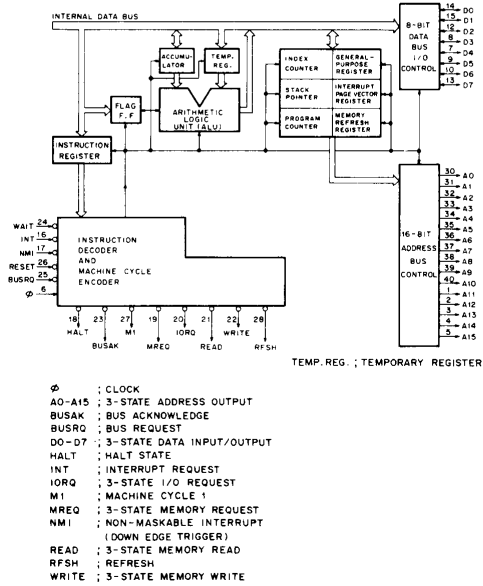
uPD8253C (NEC)
 M5L8253P (MITSUBISHI)
 N-MOS PROGRAMABLE INTERVAL TIMER
 - TOP VIEW -



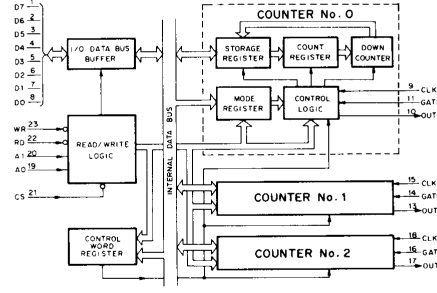
FUNCTION TABLE

INPUTS		FUNCTION
CS	RD WR A1 A0	
0	1 0 0 0	Load Counter No. 0
0	1 0 0 1	Load Counter No. 1
0	1 0 1 0	Load Counter No. 2
0	1 0 1 1	Control Word
0	0 1 0 0	Read Counter 0
0	0 1 0 1	Read Counter 1
0	0 1 1 0	Read Counter 2
0	0 1 1 1	No-Operation (HI-Z)
1	X X X X	Disable (HI-Z)
0	1 1 X X	No-Operation (HI-Z)

0: LOW LEVEL
 1: HIGH LEVEL
 X: DONT CARE
 HI-Z: HIGH IMPEDANCE



- phi : CLOCK
- A0-A15 : 3-STATE ADDRESS OUTPUT
- BUSAK : BUS ACKNOWLEDGE
- BUSRQ : BUS REQUEST
- DO-D7 : 3-STATE DATA INPUT/OUTPUT
- HALT : HALT STATE
- INT : INTERRUPT REQUEST
- INT : INTERRUPT REQUEST
- IORQ : 3-STATE I/O REQUEST
- M1 : MACHINE CYCLE 1
- MREQ : 3-STATE MEMORY REQUEST
- NMI : NON-MASKABLE INTERRUPT (DOWN EDGE TRIGGER)
- READ : 3-STATE MEMORY READ
- RFSH : REFRESH
- WRITE : 3-STATE MEMORY WRITE

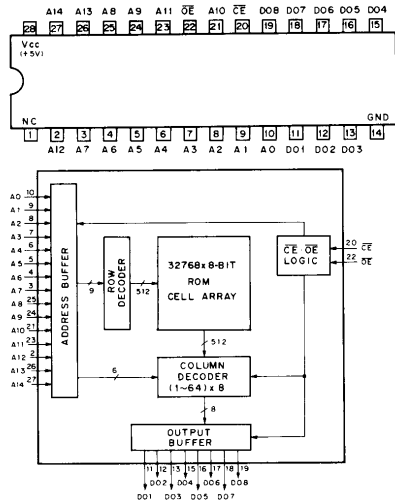


CONTROL WORD FORMAT

D7	D6	D5	D4	D3	D2	D1	D0
SC1	SC0	RL1	RL0	M2	M1	M0	BCD
OPERATION							
0	0	0	0	0	0	0	0
0	0	0	1	1	1	1	1
X	1	0	0	2			
X	1	1	1	3			
1	0	0	0	4			
1	0	1	1	5			
OPERATION							
0	0	COUNTER LATCHING					
0	1	READ/LOAD LSB ONLY					
1	0	READ/LOAD MSB ONLY					
1	1	LSB FIRST THEN MSB					
SELECTED COUNTER							
0	0	COUNTER No. 0					
0	1	COUNTER No. 1					
1	0	COUNTER No. 2					
1	1	ILLEGAL					

HB-G900AP

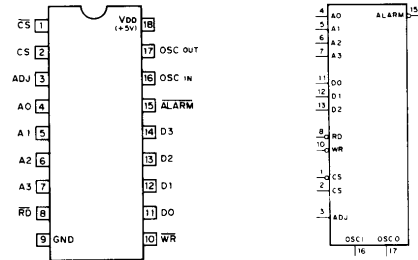
MB83256 (FUJITSU)
C-MOS MASK ROM
— TOP VIEW —



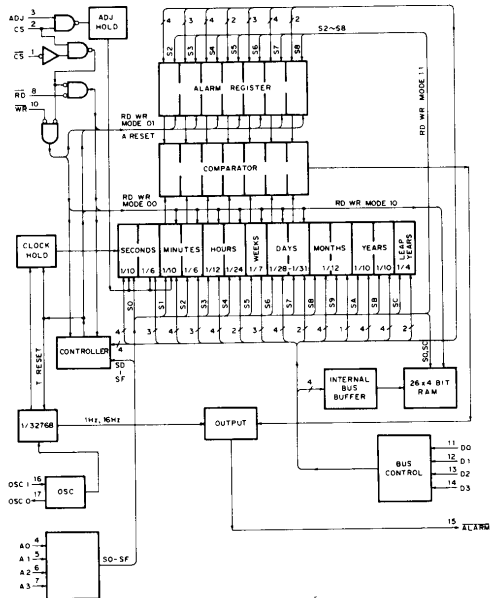
CE	OE	DATA OUTPUT
1	X	HIGH-Z
0	1	HIGH-Z
0	0	OUTPUT DATA

1, HIGH LEVEL
 0, LOW LEVEL
 X, DON'T CARE
 HIGH-Z, HIGH IMPEDANCE

RP5C01 (RICOH)
C-MOS REAL TIME CLOCK
— TOP VIEW —

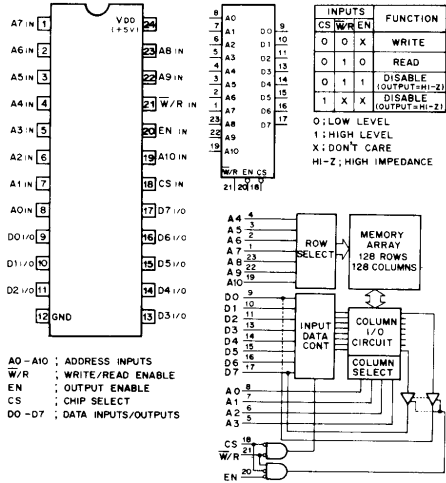


AO-A3, ADDRESS BUS
 ADJ, ADJUSTMENT IN
 ALARM, ALARM OUT
 CS, CS, CHIP SELECT
 D0-D3, DATA BUS
 OSC IN/OUT, CLOCK IN/OUT
 RD, READ IN
 WR, WRITE IN

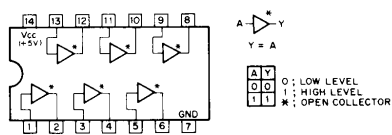


HB-G900AP

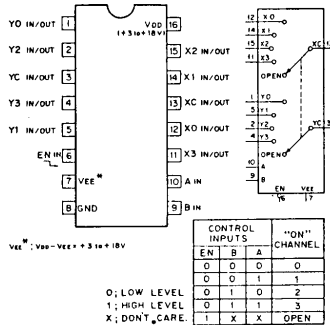
MB8416A-15 (FUJITSU) (ACCESS TIME = 150 nS)
C-MOS 16384(2048x8)-BIT HIGH SPEED STATIC RAM
— TOP VIEW —



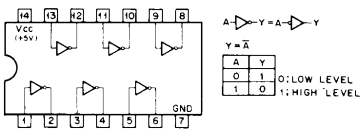
SN7407N (TI)
TTL BUFFER/DRIVER WITH OPEN-COLLECTOR
— TOP VIEW —



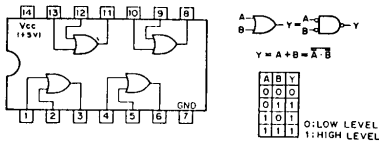
TC4052BP (TOSHIBA)
MC4052BP (MOTOROLA)
μPD4052BC (NEC)
HD14052BP (HITACHI)
C-MOS 4-CHANNEL MULTIPLEXER/DEMULTIPLEXER
— TOP VIEW —



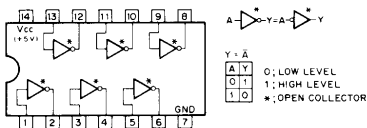
SN7404N (TI)
SN74LS04N (TI)
M74LS04P (MITSUBISHI)
MB74LS04 (FUJITSU)
HD74LS04P (HITACHI)
TTL INVERTER
— TOP VIEW —



M74LS32P (MITSUBISHI)
NB74LS32 (FUJITSU)
HD74LS32P (HITACHI)
SN74LS32N (TI)
TTL2 INPUT POSITIVE-OR GATE
— TOP VIEW —

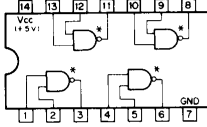


SN7406N (TI)
HD7406P (HITACHI)
TTL INVERTER BUFFER/DRIVER WITH OPEN-COLLECTOR
— TOP VIEW —



HB-G900AP

SN7438N (TI)
TTL 2-INPUT POSITIVE-NAND GATE BUFFER WITH OPEN-COLLECTOR
— TOP VIEW —



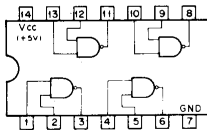
$$A \text{---} B \text{---} Y = A \cdot B$$

$$Y = A \cdot B = \overline{\overline{A} + \overline{B}}$$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0; LOW LEVEL
1; HIGH LEVEL
*; OPEN COLLECTOR

SN74LS00N (TI)
TTL 2-INPUT POSITIVE-NAND GATE
— TOP VIEW —



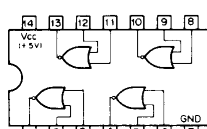
$$A \text{---} B \text{---} Y = A \cdot B$$

$$Y = A \cdot B = \overline{\overline{A} + \overline{B}}$$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0; LOW LEVEL
1; HIGH LEVEL

SN74LS02N (TI)
TTL 2-INPUT POSITIVE-NOR GATE
— TOP VIEW —



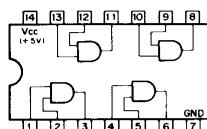
$$A \text{---} B \text{---} Y = \overline{A + B}$$

$$Y = \overline{A + B} = \overline{A} \cdot \overline{B}$$

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

0; LOW LEVEL
1; HIGH LEVEL

HD74LS08P (HITACHI)
M74LS08 (MITSUBISHI)
M74LS08P (MITSUBISHI)
SN74LS08N (TI)
TTL 2-INPUT POSITIVE-AND GATE
— TOP VIEW —



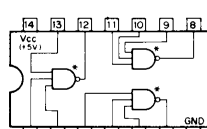
$$A \text{---} B \text{---} Y = A \cdot B$$

$$Y = A \cdot B = \overline{\overline{A} + \overline{B}}$$

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

0; LOW LEVEL
1; HIGH LEVEL

SN74LS12N (TI)
TTL 3-INPUT POSITIVE-NAND GATE WITH OPEN-COLLECTOR OUTPUT
— TOP VIEW —



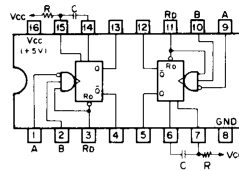
$$A \text{---} B \text{---} C \text{---} Y = A \cdot B \cdot C$$

$$Y = A \cdot B \cdot C = \overline{\overline{A} + \overline{B} + \overline{C}}$$

A	B	C	Y
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

0; LOW LEVEL
1; HIGH LEVEL

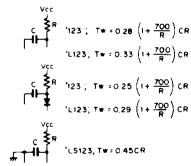
SN74LS123N (TI)
TTL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR WITH DIRECT RESET
— TOP VIEW —



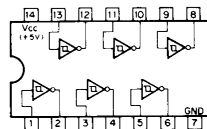
INPUTS	OUTPUTS
Rd	Q
0	X
X	1
X	0
X	X

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

OUTPUT PULSE WIDTH



M74LS14P (MITSUBISHI)
MB74LS14 (FUJITSU)
HD74LS14P (HITACHI)
SN74LS14N (TI)
TTL SCHMITT TRIGGER INVERTER
— TOP VIEW —



$$A \text{---} Y = \overline{A}$$

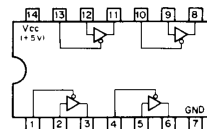
$$V_{IN} \text{---} V_{OUT}$$

A	Y
0	1
1	0

0; LOW LEVEL
1; HIGH LEVEL

SN7414N----0.9-1.7V
SN74LS14N----0.8-1.6V

MB74LS125A (FUJITSU)
HD74LS125AP (HITACHI)
SN74LS125AN (TI)
TTL BUS BUFFER DRIVERS WITH 3-STATE OUTPUT
— TOP VIEW —

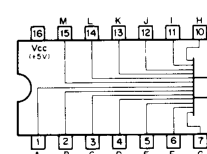


$$G \text{---} A \text{---} Y$$

G	A	Y
0	0	0
0	1	1
1	X	HI-Z

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE
HI-Z; HIGH IMPEDANCE

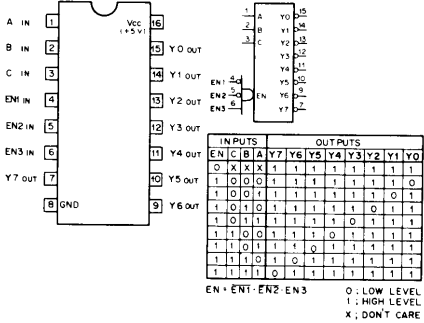
SN74ALS133N (TI)
TTL 13-INPUT NAND GATE
— TOP VIEW —



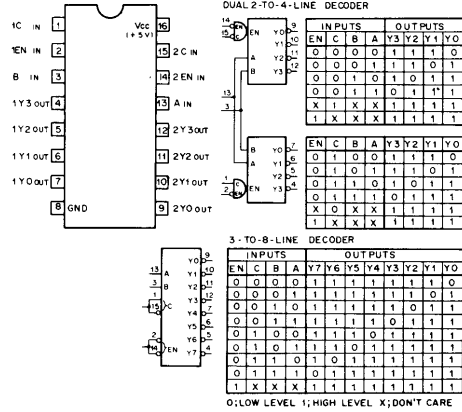
$$Y = A \cdot B \cdot C \cdot D \cdot E \cdot F \cdot G \cdot H \cdot I \cdot J \cdot K \cdot L \cdot M$$

HB-G900AP

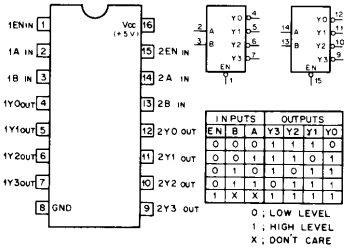
M74LS138P (MITSUBISHI)
 MB74LS138 (FUJITSU)
 HD74LS138P (HITACHI)
 SN74LS138N (TI)
 TTL 3-TO-8-LINE DECODER/DEMULTIPLEXER
 -TOP VIEW-



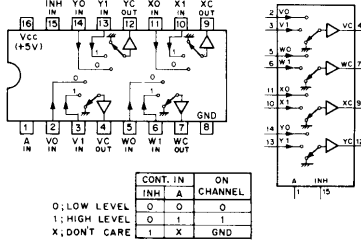
M74LS156P (MITSUBISHI)
 MB74LS155 (FUJITSU)
 HD74LS156P (HITACHI)
 SN74LS155N (TI)
 TTL DUAL 2-TO-4-LINE DECODER/DEMULTIPLEXER
 -TOP VIEW-



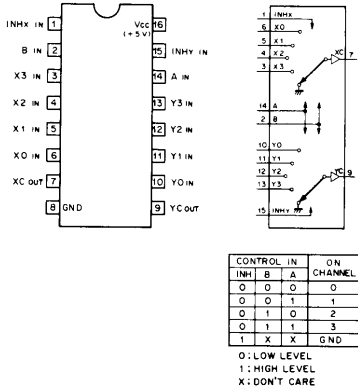
M74LS139P (MITSUBISHI)
 MB74LS139 (FUJITSU)
 HD74LS139P (HITACHI)
 SN74LS139N (TI)
 TTL 2-TO-4-LINE DECODER/DEMULTIPLEXER
 -TOP VIEW-



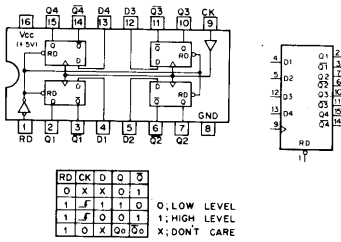
M74LS167P (MITSUBISHI)
 MB74LS157 (FUJITSU)
 HD74LS157P (HITACHI)
 SN74LS157N (TI)
 TTL 2-LINE-TO-1-LINE DATA SELECTOR/MULTIPLEXER
 -TOP VIEW-



M74LS153P (MITSUBISHI)
 MB74LS153 (FUJITSU)
 HD74LS153P (HITACHI)
 SN74LS153N (TI)
 TTL 4-LINE-TO-1-LINE DATA SELECTOR/MULTIPLEXER
 -TOP VIEW-

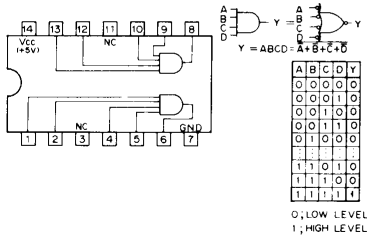


M74LS175P (MITSUBISHI)
 MB74LS175 (FUJITSU)
 HD74LS175P (HITACHI)
 SN74LS175N (TI)
 TTL D-TYPE FLIP-FLOP WITH CLEAR
 -TOP VIEW-

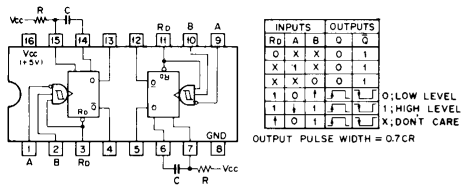


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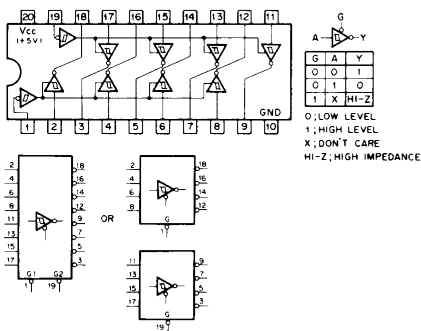
M74LS21P (MITSUBISHI)
 MB74LS21 (FUJITSU)
 HD74LS21P (HITACHI)
 SN74LS21N (TI)
 TTL 4-INPUT POSITIVE AND GATE
 -TOP VIEW-



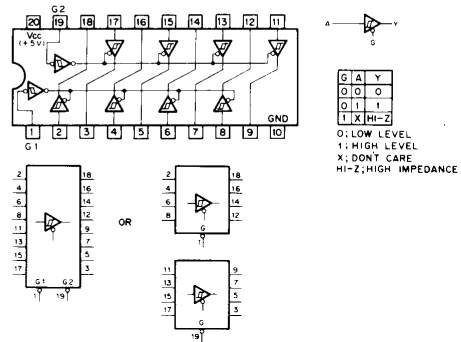
MB74LS221 (FUJITSU)
 HD74LS221P (HITACHI)
 SN74LS221N (TI)
 TTL MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT
 -TOP VIEW-



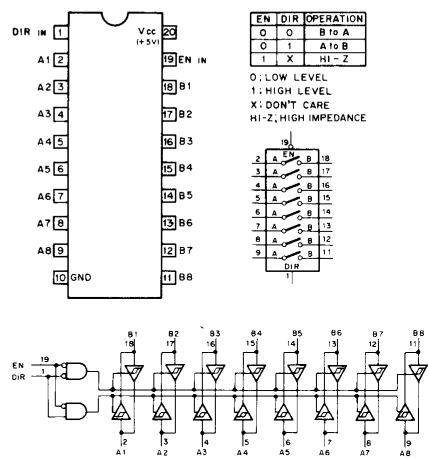
M74LS240P (MITSUBISHI)
 HD74LS240P (HITACHI)
 SN74LS240N (TI)
 TTL 3-STATE SCHMITT TRIGGER INVERTER LINE DRIVER
 -TOP VIEW-



SN74LS244N (TI)
 M74LS244P (MITSUBISHI)
 HD74LS244P (HITACHI)
 MB74LS244 (FUJITSU)
 TTL 3-STATE SCHMITT TRIGGER BUFFER DRIVER
 -TOP VIEW-

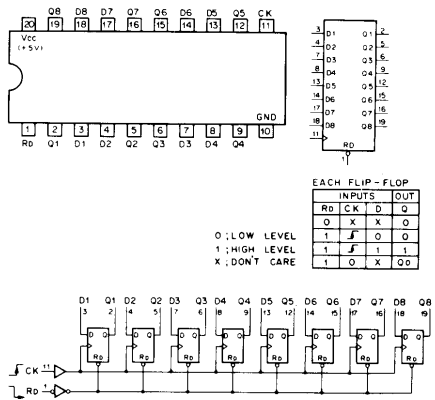


MB74LS245 (FUJITSU)
 HD74LS245P (HITACHI)
 SN74LS245N (TI)
 TTL BILATERAL SCHMITT TRIGGER BUS TRANSCEIVERS WITH 3-STATE OUTPUT
 -TOP VIEW-

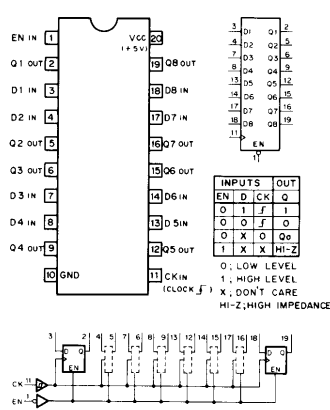


HB-G900AP

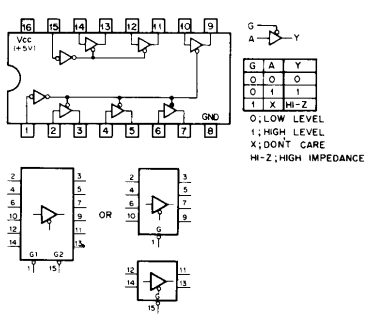
M74LS273P (MITSUBISHI)
 HD74LS273P (HITACHI)
 SN74LS273N (TI)
 TTL D-TYPE FLIP-FLOP WITH DIRECT RESET
 -TOP VIEW-



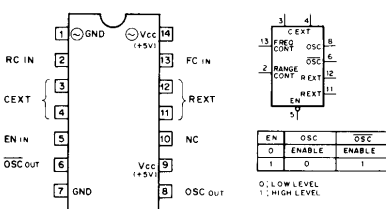
M74LS74AP (MITSUBISHI)
 MB74LS74A (FUJITSU)
 HD74LS74AP (HITACHI)
 SN74LS74AN (TI)
 TTL 3-STATE OUTPUT OCTAL D-TYPE FLIP-FLOP
 -TOP VIEW-



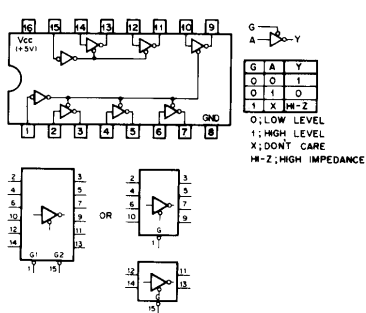
M74LS367AP (MITSUBISHI)
 MB74LS367A (FUJITSU)
 HD74LS367AP (HITACHI)
 SN74LS367AN (TI)
 TTL BUS DRIVER WITH 3-STATE OUTPUTS
 -TOP VIEW-



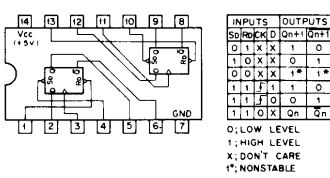
SN74LS628N (TI)
 TTL VOLTAGE-CONTROLLED OSCILLATOR
 -TOP VIEW-



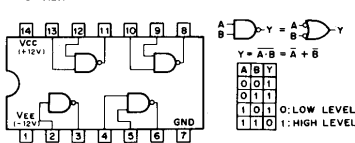
SN74LS368AN (TI)
 HD74LS368A (HITACHI)
 MB74LS368A (FUJITSU)
 TTL BUS INVERTER WITH 3-STATE OUTPUTS
 -TOP VIEW-



MB74LS74A (FUJITSU)
 HD74LS74AP (HITACHI)
 SN74LS74AN (TI)
 TTL D-TYPE FLIP-FLOP WITH DIRECT SET-RESET
 -TOP VIEW-

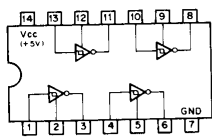


SN75188N (TI)
 2-INPUT (1-INPUT) POSITIVE-NAND LINE DRIVER
 -TOP VIEW-

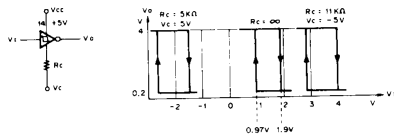


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SN75189AN (TI)
QUADRUPLE LINE RECEIVER
— TOP VIEW —



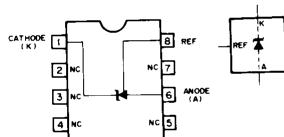
INPUT THRESHOLD SHIFTING



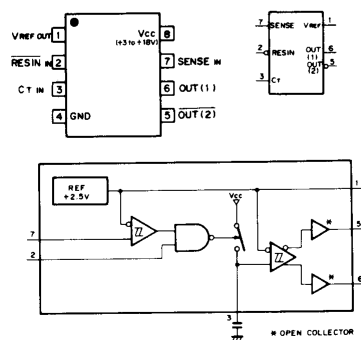
INPUT NOISE FILTERING



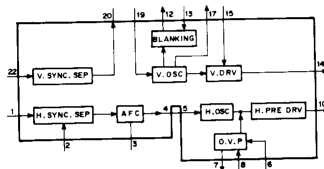
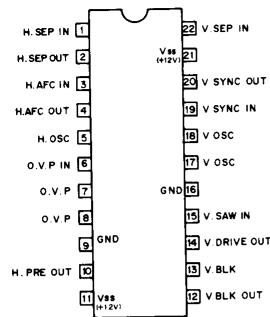
TL431CP (TI)
ADJUSTABLE PRECISION SHUNT REGULATOR
— TOP VIEW —



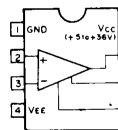
TL7705CP (TI)
POWER VOLTAGE SUPERVISOR
— TOP VIEW —



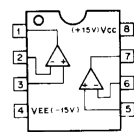
uPC1377C (NEC)
SYNCHRONIZATION SIGNAL PROCESSOR
— TOP VIEW —



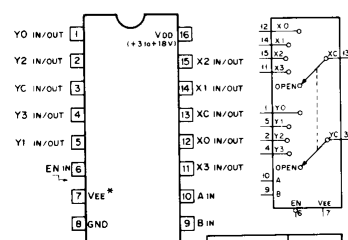
uPC311C (NEC)
VOLTAGE COMPARATOR
— TOP VIEW —



uPC4558C (NEC)
OPERATIONAL AMPLIFIER
— TOP VIEW —



uPD4052BC (NEC)
C-MOS 4-CHANNEL MULTIPLEXER/DEMULTEPLEXER
— TOP VIEW —



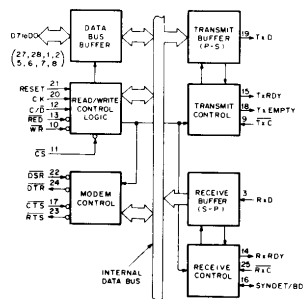
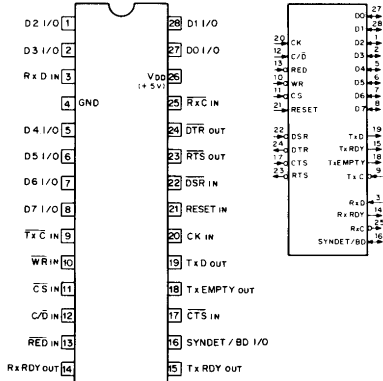
VEE*: V_{DD} - V_{EE} = 3 to +18V

0: LOW LEVEL
1: HIGH LEVEL
X: DON'T CARE

CONTROL INPUTS			"ON" CHANNEL
EN	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	OPEN

HB-G900AP

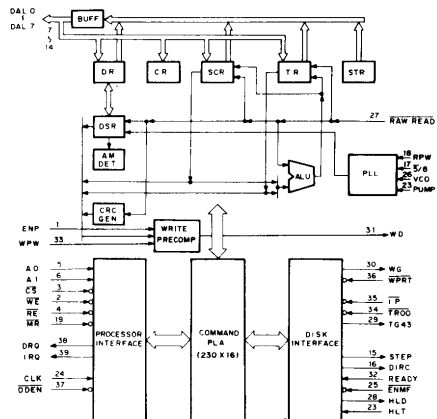
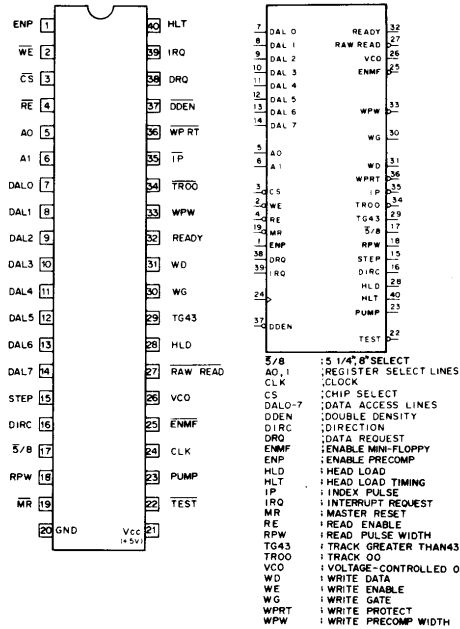
uPD8251AFC (NEC)
N-MOS PROGRAMMABLE COMMUNICATION INTERFACE
— TOP VIEW —



PIN NAMES

- DOH07 : DATA BUS
- C/D : CONTROL of DATA IS TO BE WRITTEN or READ
- RED : READ DATA COMMAND
- WR : WRITE DATA or CONTROL COMMAND
- CS : CHIP ENABLE
- CK : CLOCK PULSE
- RESET : RESET
- TxC : TRANSMITTER CLOCK
- TxD : TRANSMITTER DATA
- RxC : RECEIVER CLOCK
- RxD : RECEIVER DATA
- RxDY : RECEIVER READY
- TxDY : TRANSMITTER READY
- DSR : DATA SET READY
- DTR : DATA TERMINAL READY
- SYNDET/BD : SYNC DETECT/BREAK DETECT
- RTS : REQUEST TO SEND DATA
- CTS : CLEAR TO SEND DATA
- TEMPTY : TRANSMITTER EMPTY

WD2793A-PL02 (WESTERN DIGITAL)
TMS2793N (TI)
N CHANNEL E D MOD FLOPPY DISK FORMATTER CONTROLLER
TOP VIEW



- CR : COMMAND REGISTER
- DR : DATA REGISTER
- DSR : DATA SHIFT REGISTER
- SCR : SECTOR REGISTER
- TR : TRACK REGISTER
- STR : STATUS REGISTER

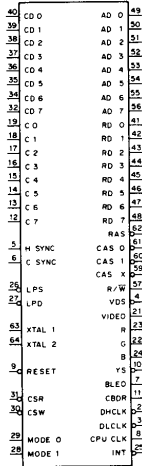
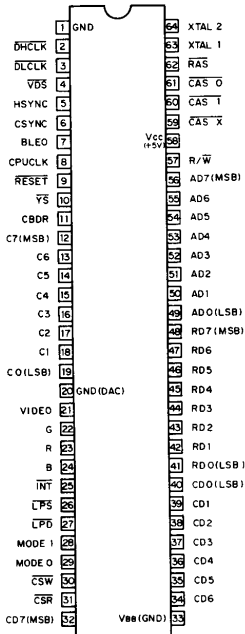
REGISTER SELECTION

CS	A1	A0	RE = 0	WE = 0
1	X	X	NON SELECT	DAL#H-Z
0	0	0	STR	CR
0	0	1	TR	TR
0	1	0	SCR	SCR
0	1	1	DR	DR

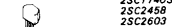
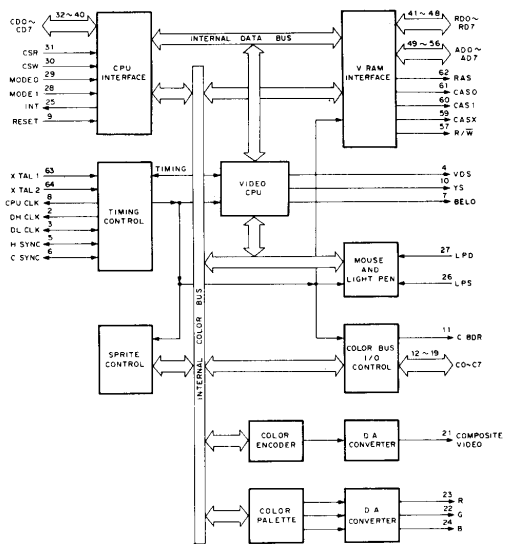
- 0 : LOW LEVEL
- 1 : HIGH LEVEL
- X : DON'T CARE
- H-Z : HIGH IMPEDANCE

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V9938 (YAMAHA)
C MOS VIDEO DISPLAY PROCESSOR
— TOP VIEW —



AD0 ~ AD7 , VRAM ADDRESS BUS
B , BLUE SIGNAL
BLEO , BLANKING
C0 ~ C7 , COLOR BUS
CAS 0 , VRAM COLUMN ADDRESS STORBE (EXPANSION VRAM)
CAS 1 , VRAM COLUMN ADDRESS STORBE (EXPANSION VRAM)
CAS X , VRAM COLUMN ADDRESS STORBE (EXPANSION VRAM)
CBDR , COLOR BUS DIRECTION
CD0 ~ CD7 , CPU DATA BUS
CPU CLK , CPU CLOCK
CSR , CPU READ STORBE
CSW , CPU WRITE STORBE
CSYNC , COMPOSITE SYNC
DHCLK , DOT CLOCK 10.74MHz
DLCLK , DOT CLOCK 5.37 MHz
G , GREEN SIGNAL
H SYNC , HORIZONTAL SYNC
INT , CPU INTERRUPT OUTPUT
LPD , LIGHT PEN SW INPUT
LPS , LIGHT PEN RAY DETECT
MODE 0 , CPU INTERFACE MODE SELECT 0
MODE 1 , CPU INTERFACE MODE SELECT 1
R , RED SIGNAL
RAS , VRAM ROW ADDRESS STROBE
RD0 ~ RD7 , VRAM READ DATA BUS
RESET , RESET IN
VDS , VRAM DATA SELECT
VIDEO , COMPOSITE VIDEO OUTPUT
R/W , VRAM READ / WRITE
XTAL 1,2 , CRYSTAL INPUT
YS , SWITCHING



TYPE NO
PRINTED

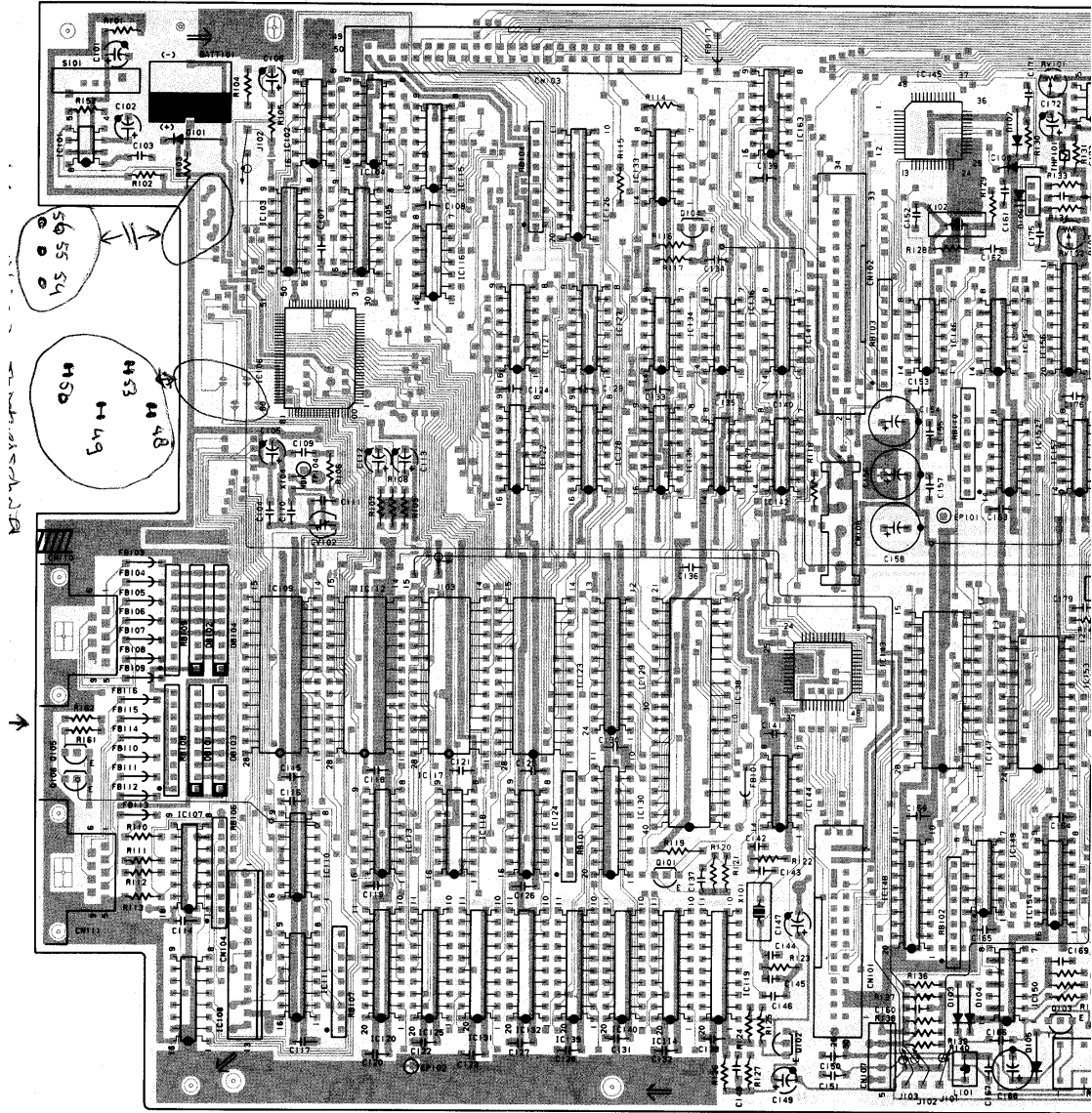


SVC203

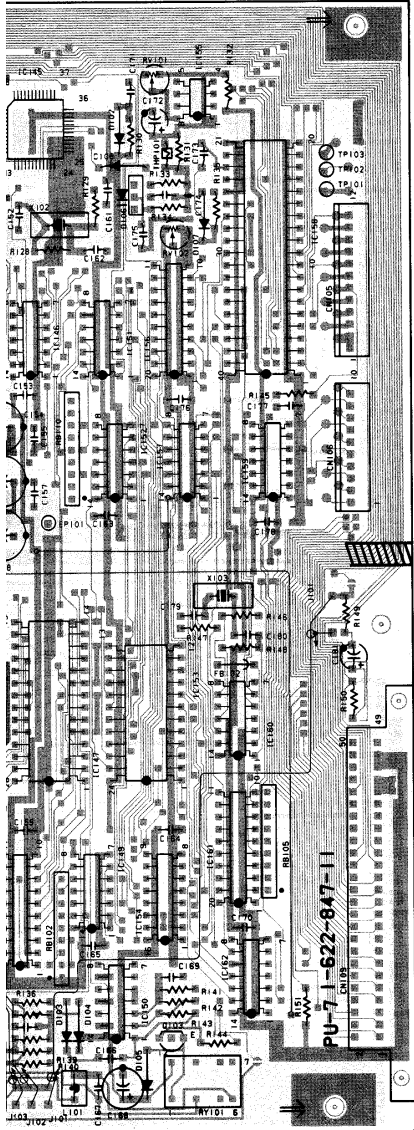


GL-1EG101

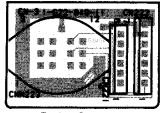
6-2. PU-7, CN-2, CN-3, CN-4, CN-5 BOARDS



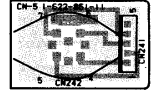
AP HB-G900AP



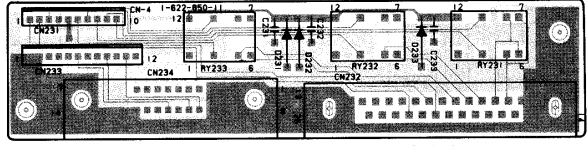
PU-7 -COMPONENT SIDE-
1-622-847-11
HB-G900AP



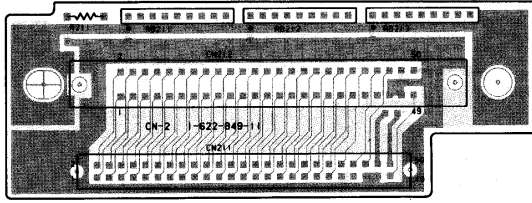
CN-3 -COMPONENT SIDE-
1-622-849-11
HB-G900AP



CN-5 -COMPONENT SIDE-
1-622-852-11
HB-G900AP

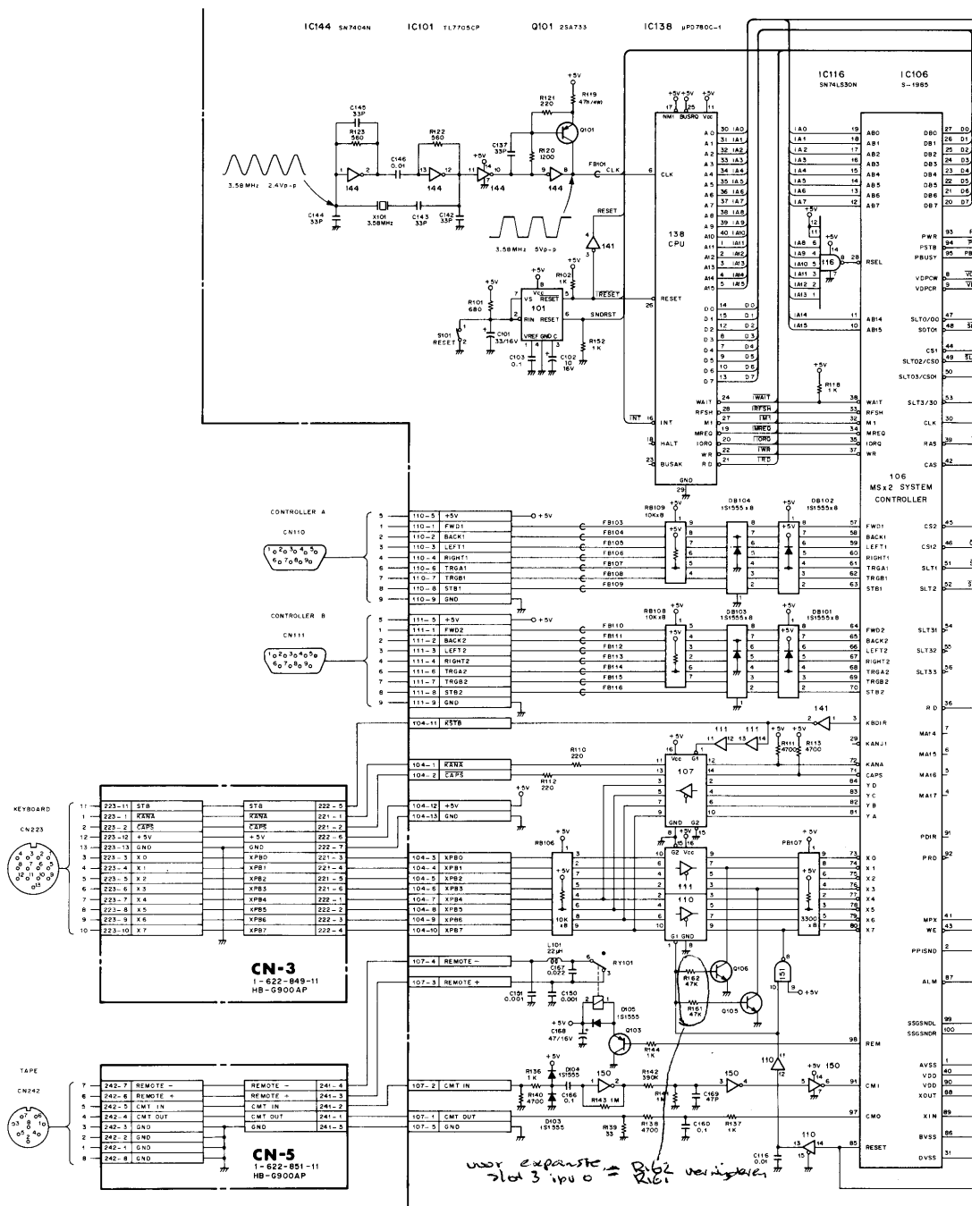


CN-4 -COMPONENT SIDE-
1-622-850-11
HB-G900AP



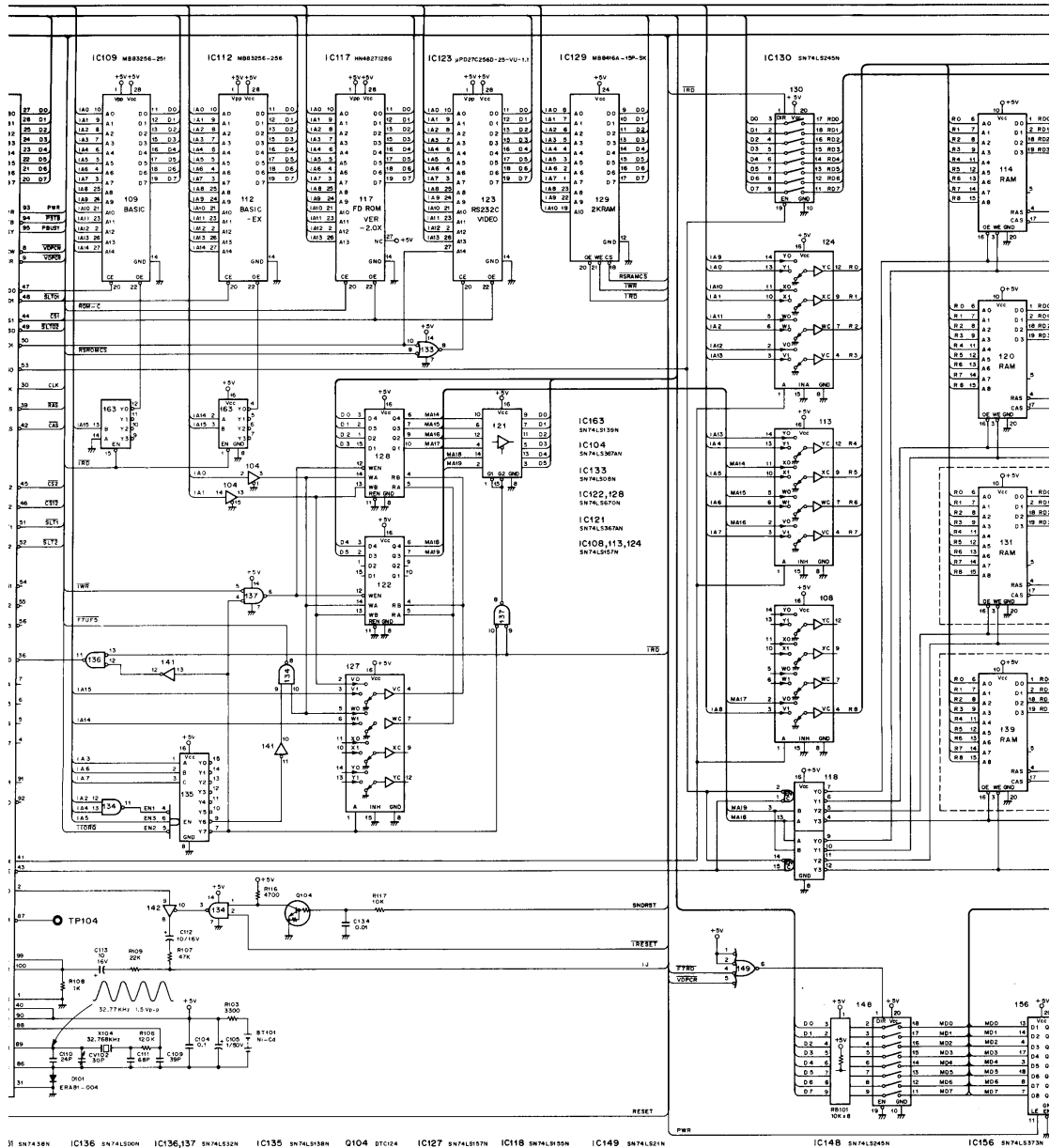
CN-2 -COMPONENT SIDE-
1-622-849-11
HB-G900AP

HB-G900AP

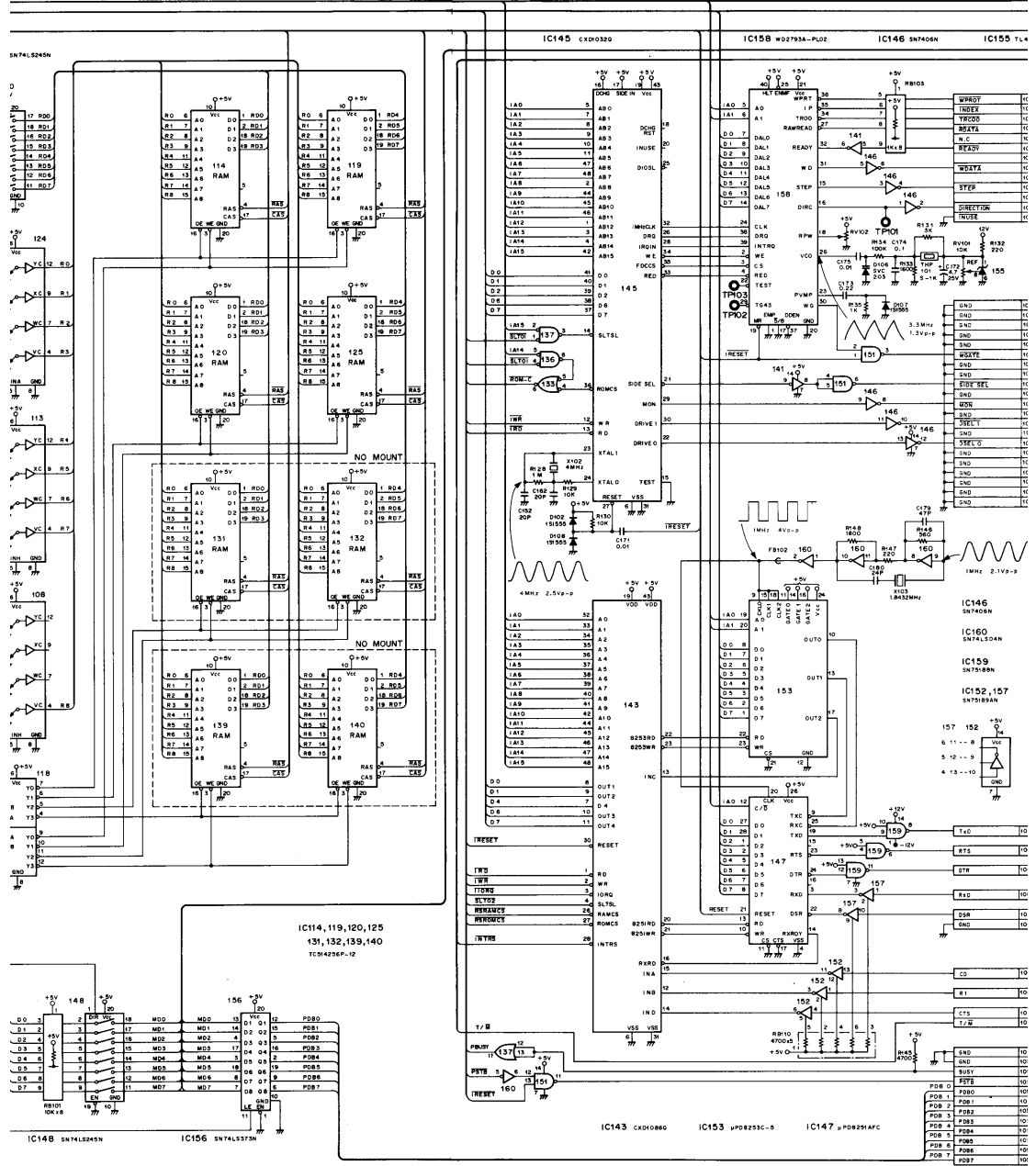


Q103 2SA753 IC107,110,111 SN74LS367AN Q105,106 2SC945 IC150 MB84069J IC141 SN74LS04N IC151 SN7438

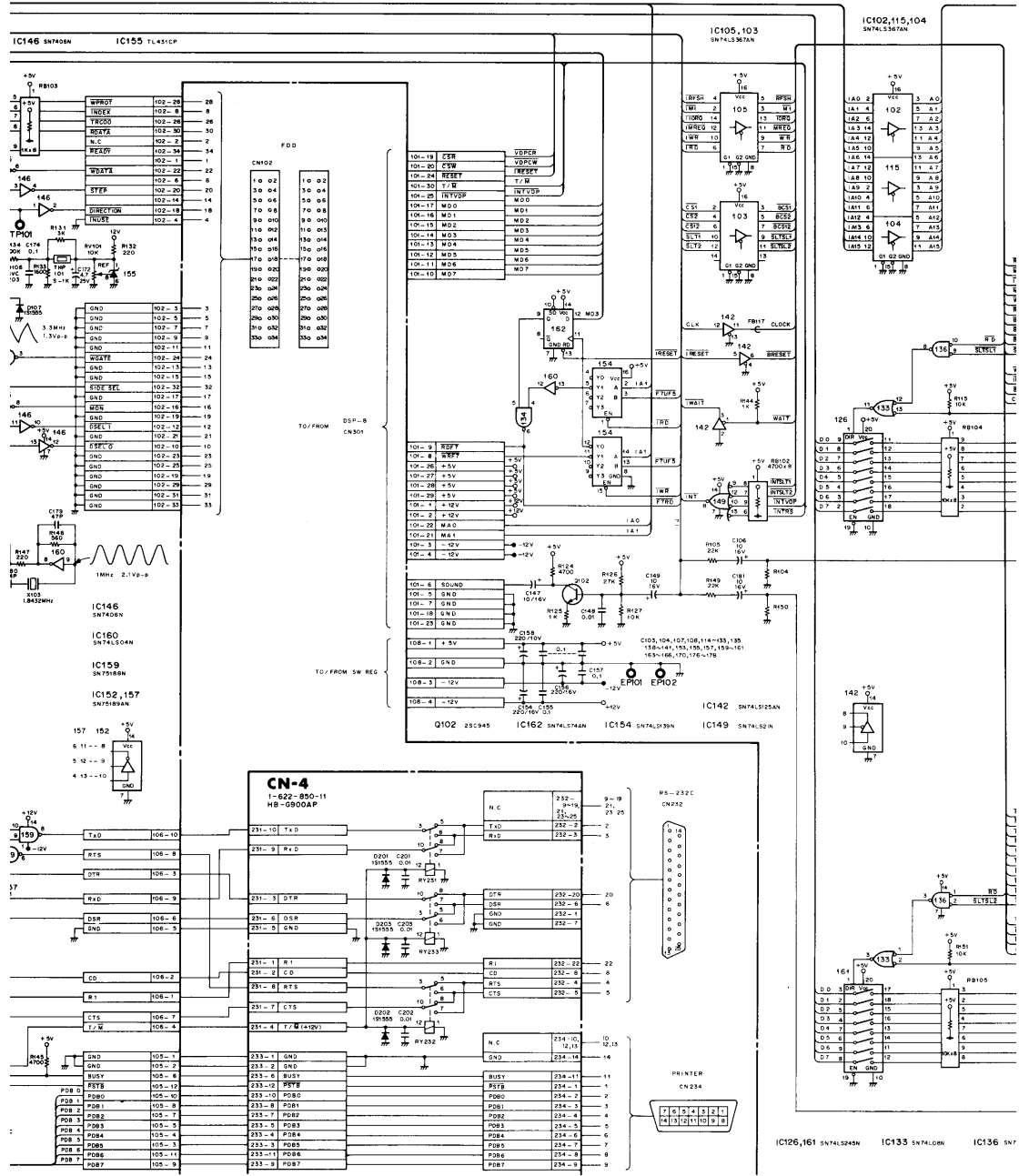
user expands slot 3 ipu o = R62 verigaten R61

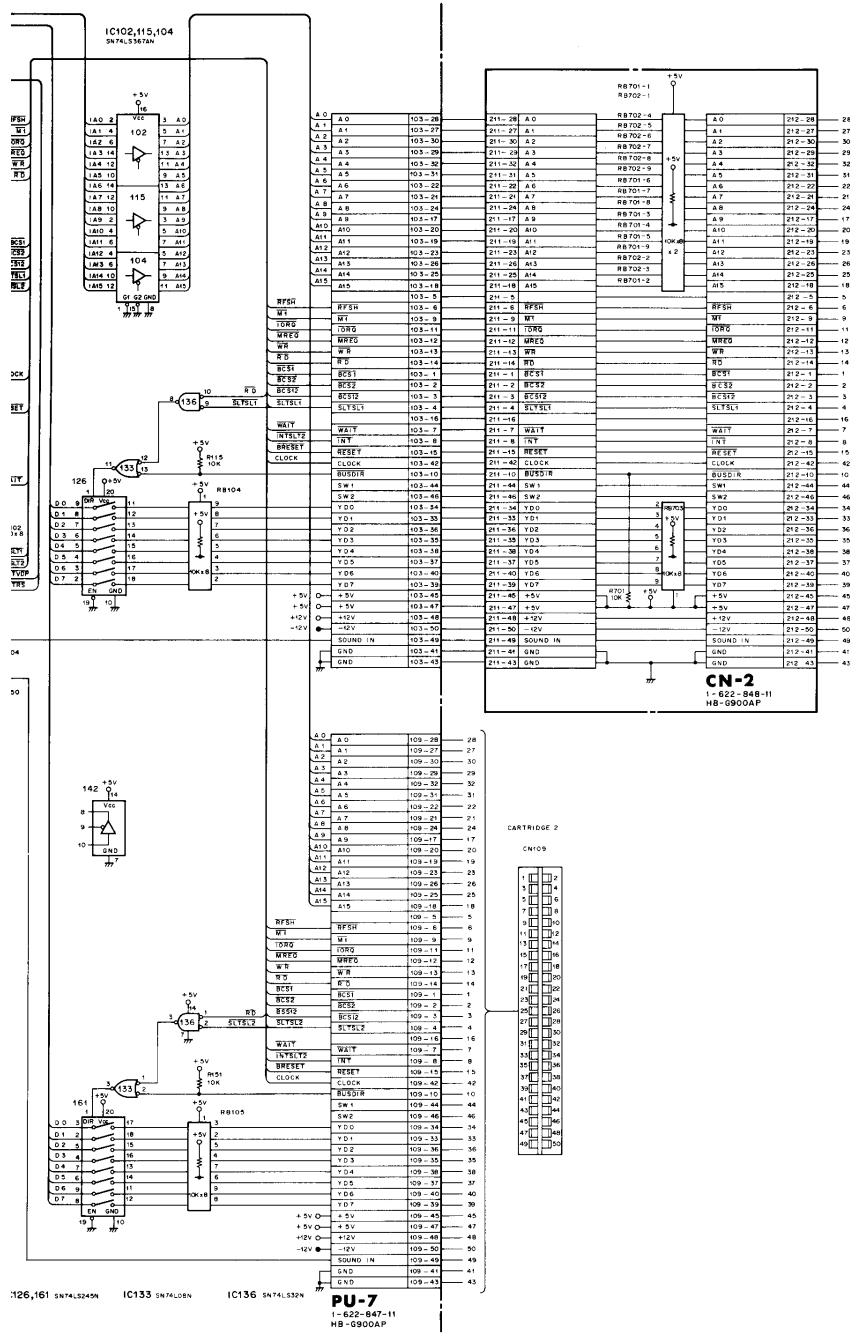


IC109 NB83256-24 IC112 NB83256-256 IC117 NB83256-256 IC123 P207C256D-25-VU-1.3 IC129 NB83256-1P-24 IC130 SN74LS259N IC136 SN74LS139N IC137 SN74LS139N IC135 SN74LS139N IC104 SN74LS139N IC133 SN74LS208N IC122,128 SN74LS670N IC121 SN74LS208N IC108,113,124 SN74LS139N IC148 SN74LS245N IC156 SN74LS139N



HB-G900AP HB-G900AP



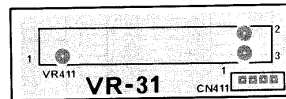
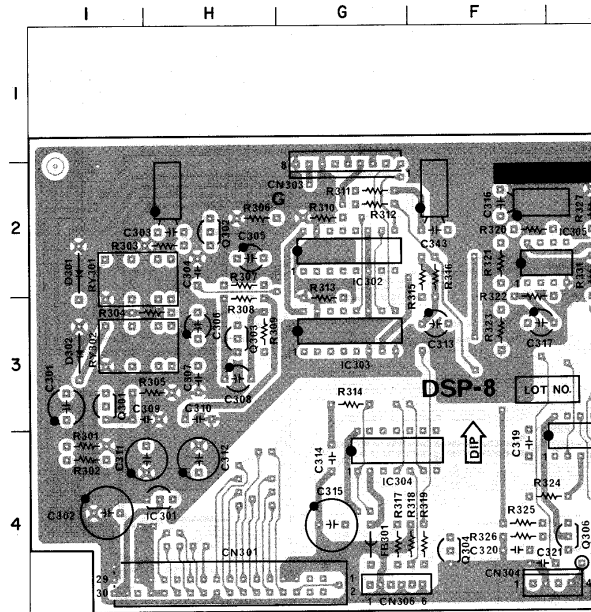


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6-3. DSP-8, VR-31 BOARDS

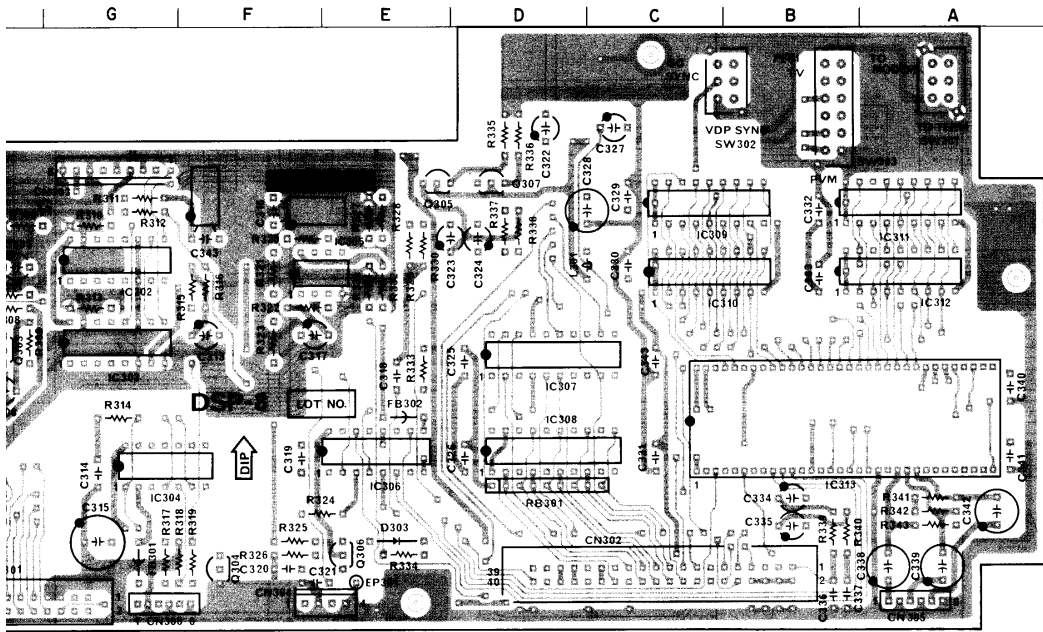
CN301	H-4	IC309	C-2
CN302	C-4	IC310	C-2
CN303	G-2	IC311	A-2
CN304	F-4	IC312	A-2
CN305	A-4	IC313	B-4
CN306	G-4	L301	D-2
D301	I-2	Q301	I-3
D302	I-3	Q302	H-2
D303	E-4	Q303	H-3
EP301	E-4	Q304	F-4
FB301	G-4	Q305	E-2
FB302	E-3	Q306	E-4
IC301	H-4	RB301	D-4
IC302	G-2	RY301	I-2
IC303	G-3	RY302	I-3
IC304	G-4		
IC305	F-2	SW301	A-1
IC306	E-4	SW302	B-1
IC307	D-3	SW303	B-1
IC308	D-4		

REF.NO	TYPE	PIN NO.				
		+12V	+5V	GND	-5V	-12V
IC301	NJM79L05A	Refer to Schematic Diagram				
IC302	MC14052BCP, TC4052BP	16	8	7		
IC303	MC14052BCP, TC4052BP	16	8	7		
IC304	SN74LS04N, SN74S04N	14	7			
IC305	μ PC4558C	Refer to Schematic Diagram				
IC306	SN74LS368AN	16	8			
IC307	TC74HC273P	20	10			
IC308	SN74LS244N	20	10			
IC309	MB81464-12	24	12			
IC310	MB81464-12	24	12			
IC311	MB81464-12	24	12			
IC312	MB81464-12	24	12			
IC313	V9938	58	1			

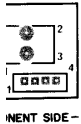


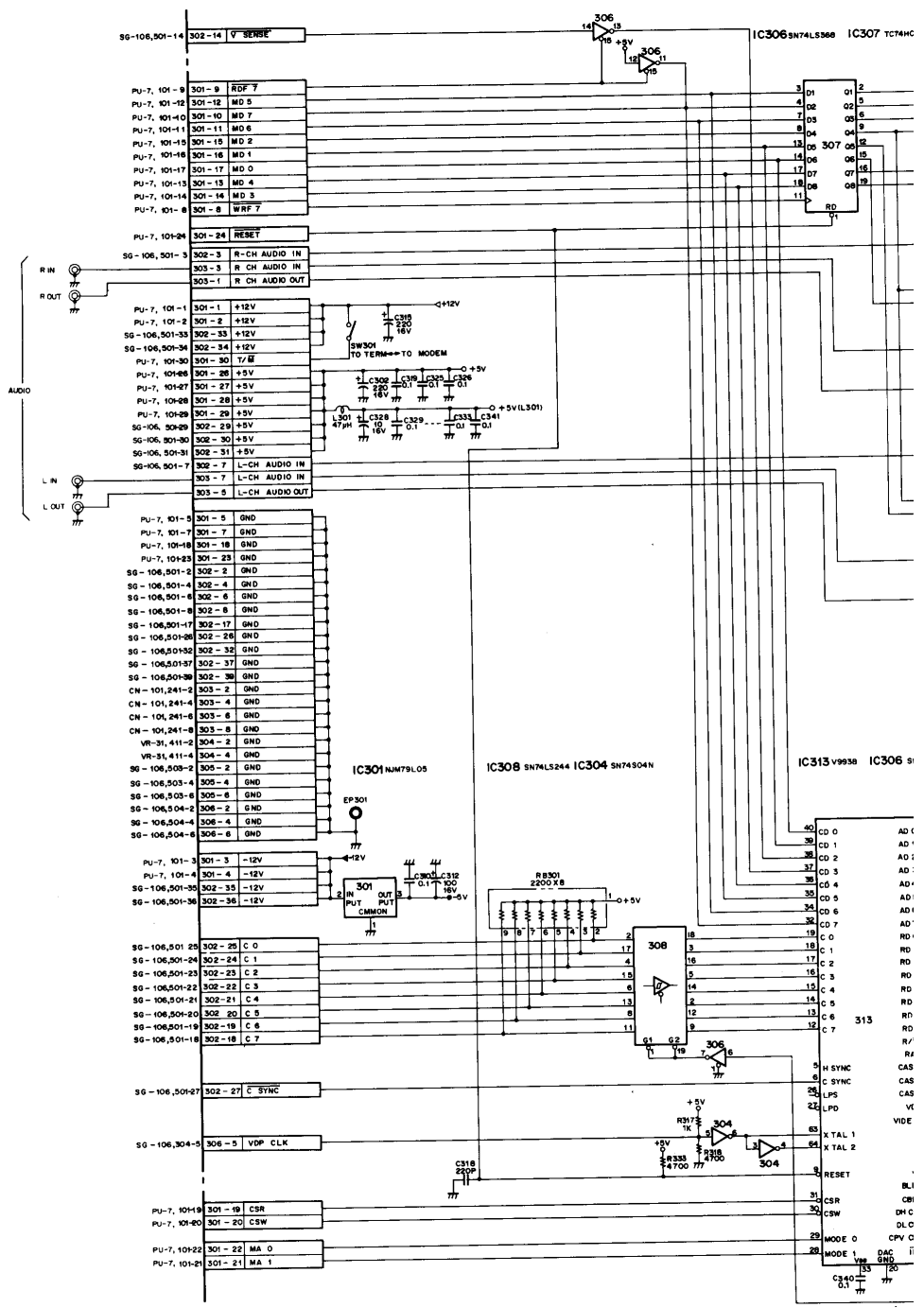
VR-31 - COMPONENT SIDE -
I-67-647-12
HB-G900AP

HB-G900AP HB-G900AP

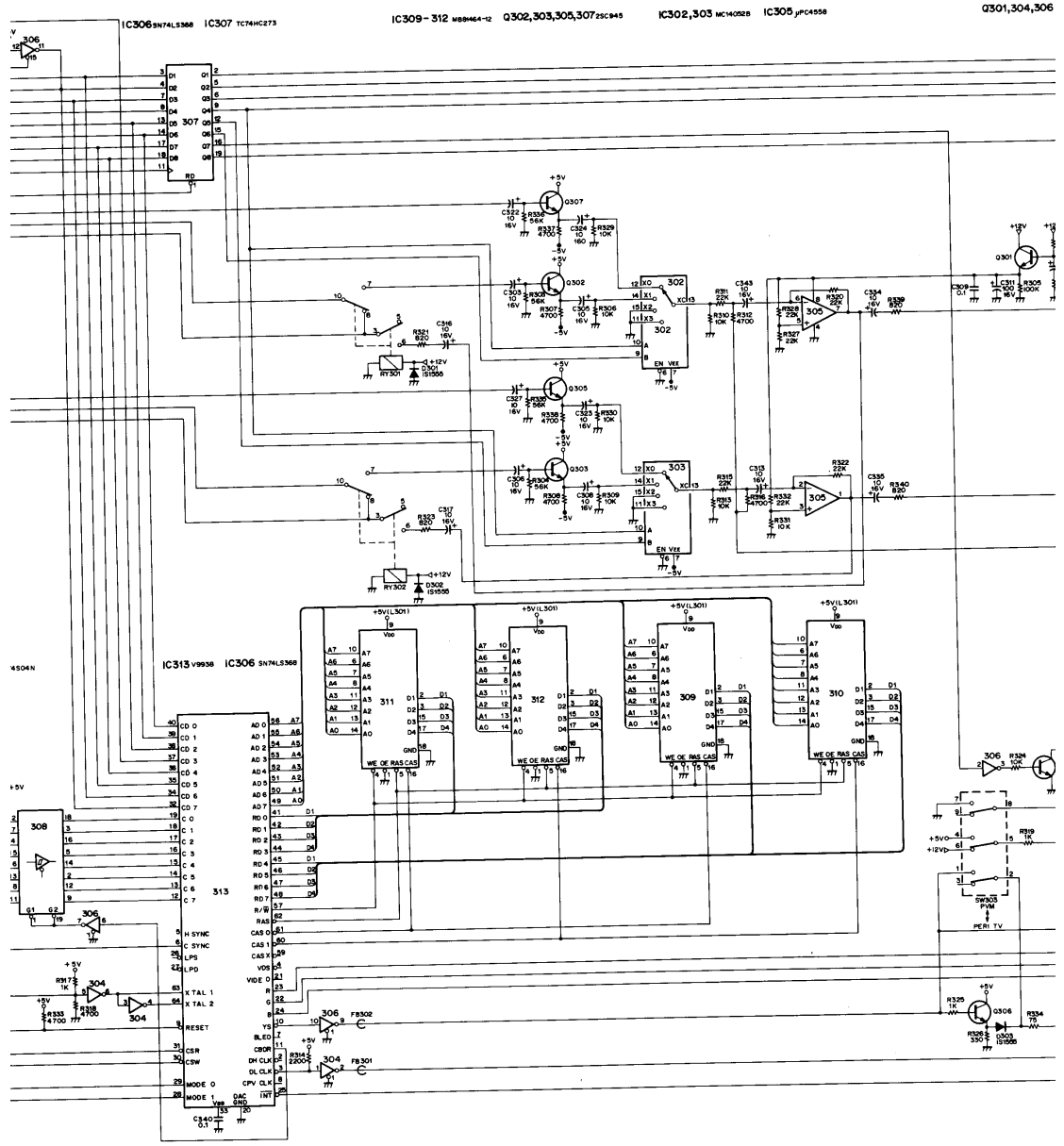


DSP-8 - COMPONENT SIDE -
1-67-645-02
 HB-G900AP

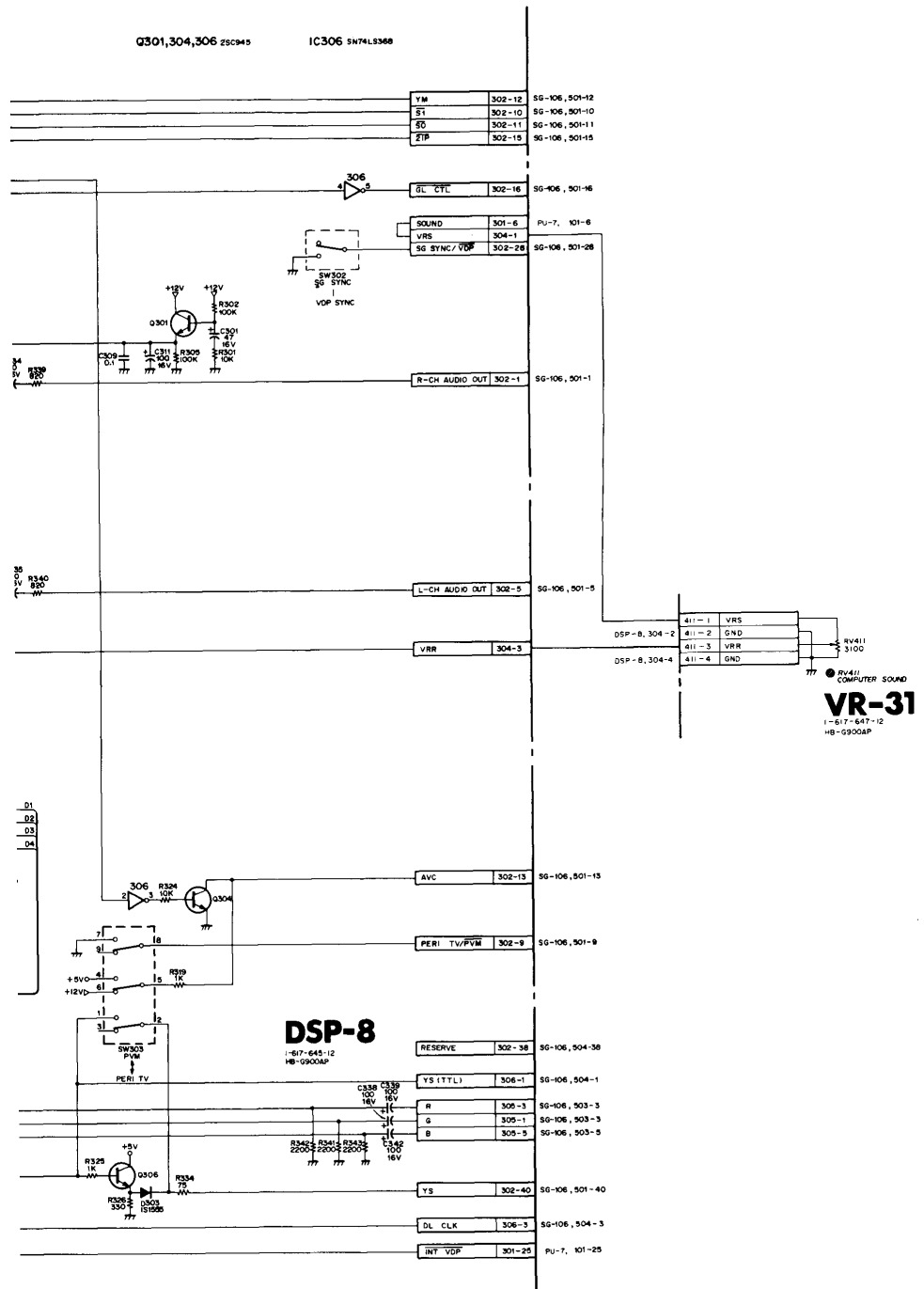




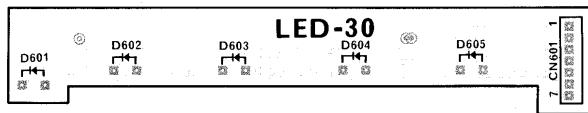
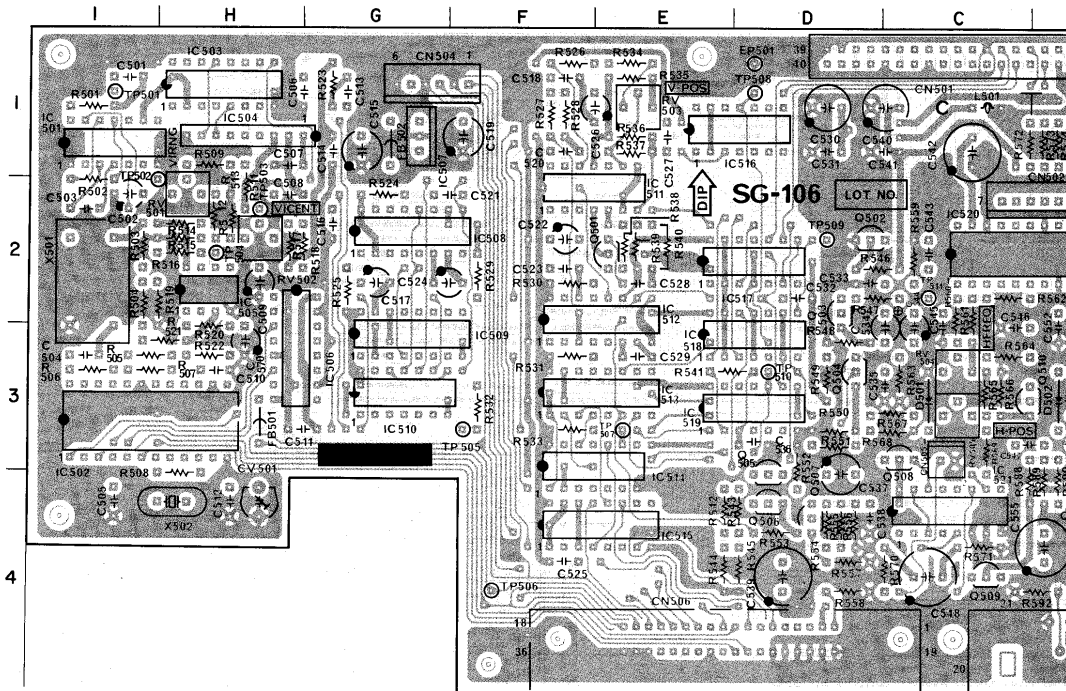
HB-G900AP HB-G900



P HB-G900AP



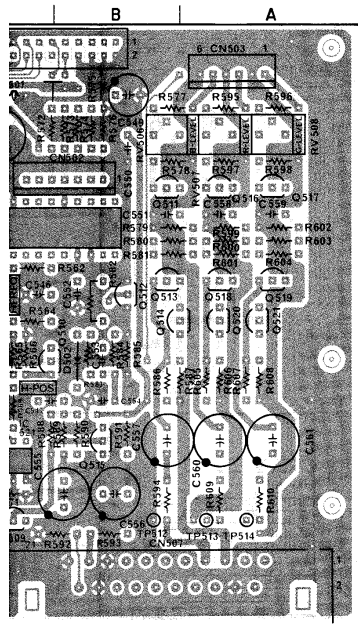
6-4. SG-106, LED-30 BOARDS



LED-30 - COMPONENT SIDE -
I-617-648-11
HB-G900AP

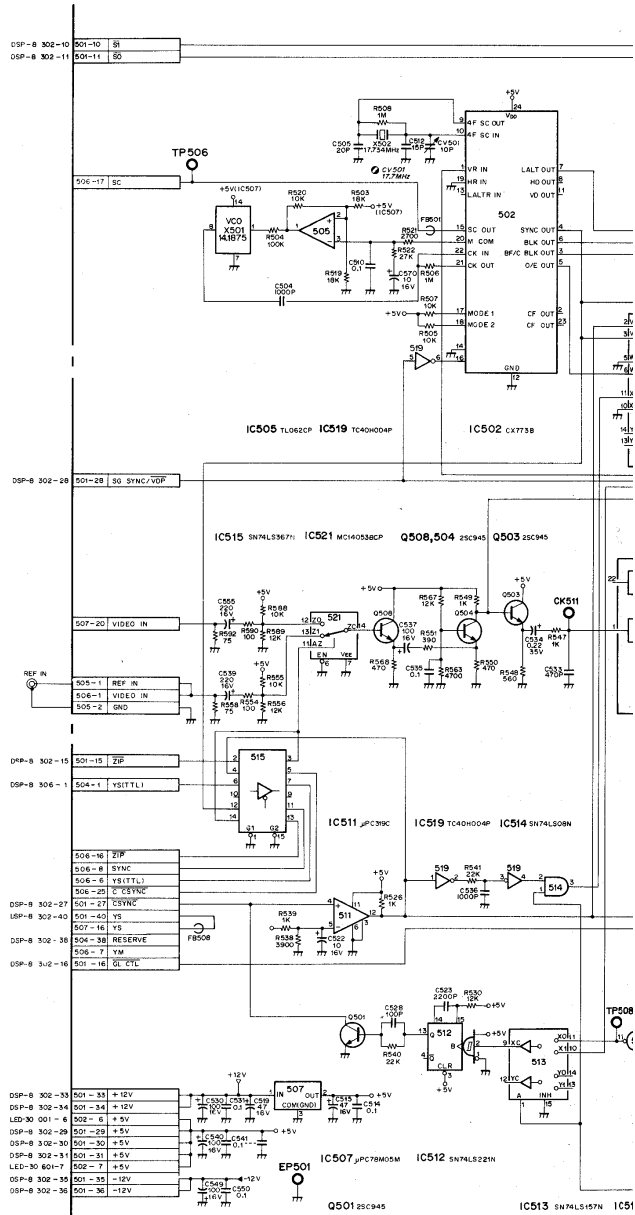
CN501	C-1	Q515	B-4
CN502	B-2	Q516	A-2
CN503	A-1	Q517	A-2
CN504	G-1	Q518	A-2
CN505	C-3	Q519	A-2
CN506	E-4	Q520	A-3
CN507	B-4	Q521	A-3
CV501	H-4	RV501	H-2
		RV502	H-2
D501	C-3	RV503	E-1
D502	B-3	RV504	C-3
		RV505	C-3
EP501	D-1	RV506	B-1
		RV507	A-1
FB501	H-3	RV508	A-1
FB502	G-1		
		TP501	I-1
IC501	I-1	TP502	I-2
IC502	I-3	TP503	H-2
IC503	H-1	TP504	H-2
IC504	H-1	TP505	F-3
IC505	H-2	TP506	F-4
IC506	H-3	TP507	E-3
IC507	G-1	TP508	D-1
IC508	G-2	TP509	D-2
IC509	G-3	TP510	D-3
IC510	G-3	TP511	C-2

OAP HB-G900AP

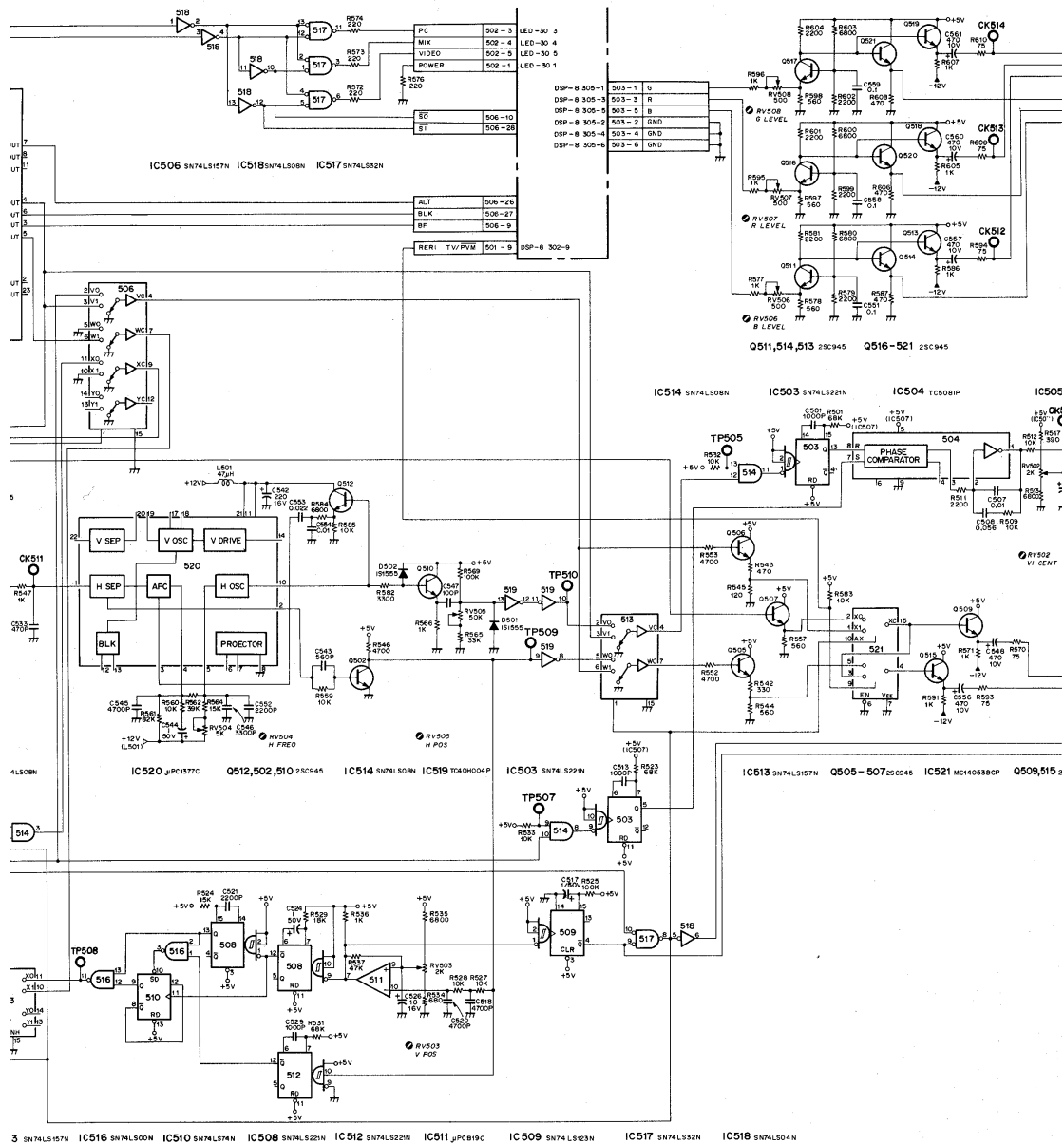


SG-106 - COMPONENT SIDE -
 I-617-646-11
 HB-G900AP

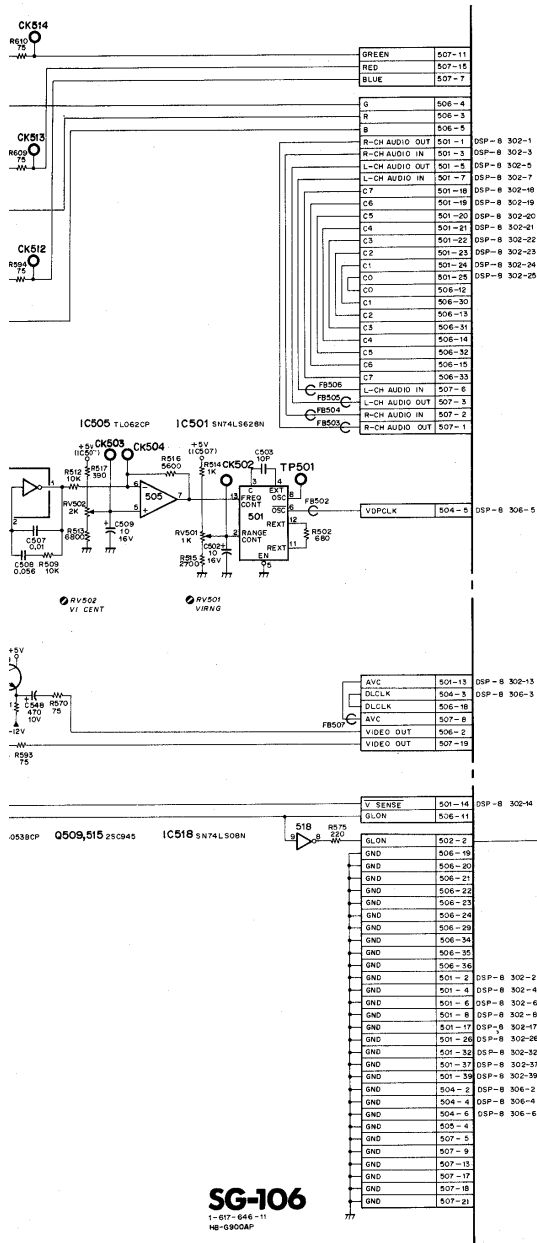
515	B-4	IC511	E-2	TP512	B-4
516	A-2	IC512	E-2	TP513	A-4
517	A-2	IC513	E-3	TP514	A-4
518	A-2	IC514	E-4		
519	A-2	IC515	E-4	X501	I-2
520	A-3	IC516	D-1	X502	H-4
521	A-3	IC517	D-2		
		IC518	E-3		
501	H-2	IC519	E-3		
502	H-2	IC520	C-2		
503	E-1	IC521	C-4		
504	C-3				
505	C-3	L501	C-1		
506	B-1				
507	A-1	Q501	E-2		
508	A-1	Q502	D-2		
		Q503	D-2		
501	I-1	Q504	D-3		
502	I-2	Q505	D-4		
503	H-2	Q506	D-4		
504	H-2	Q507	D-4		
505	F-3	Q508	C-3		
506	F-4	Q509	C-4		
507	E-3	Q510	C-3		
508	D-1	Q511	B-2		
509	D-2	Q512	B-2		
510	D-3	Q513	B-2		
511	C-2	Q514	B-3		



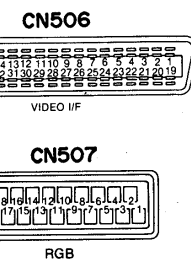
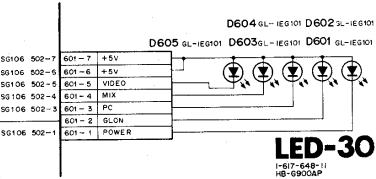
HB-G900AP



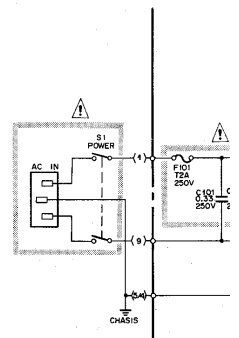
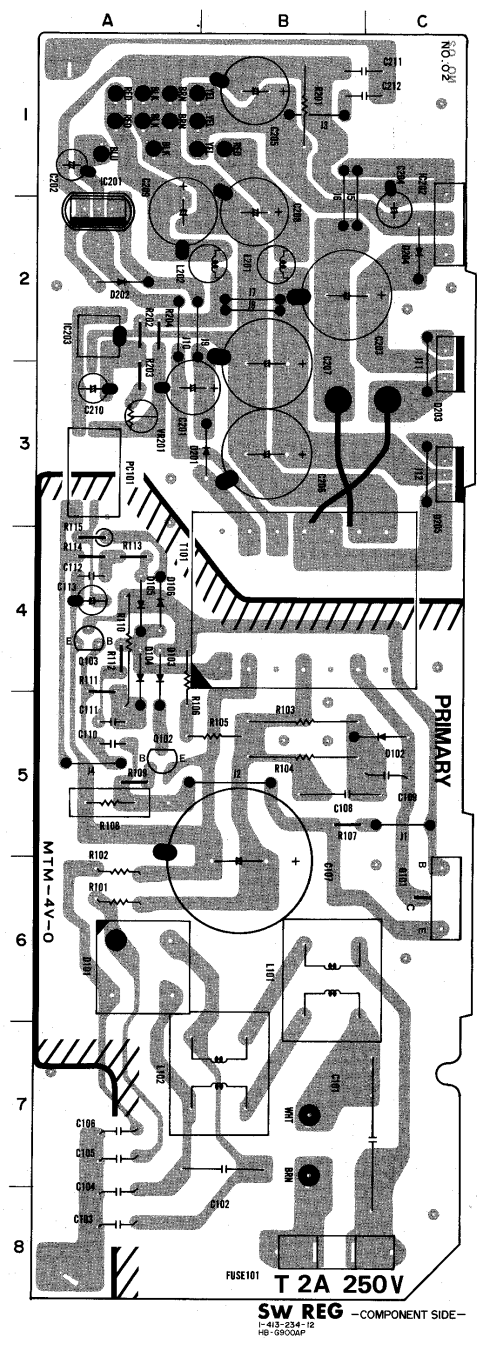
JAP HB-G900AP



REF.NO	TYPE	PIN NO.				
		+12V	+5V	GND	-5V	-12V
IC501	SN74LS628N		9, 14	7		
IC502	CX773B		24	12		
IC503	SN74LS221N, SN74221N		16	8		
IC504	TC5081AP, TC5081P	Refer to Schematic Diagram				
IC505	TL062CP		8	4		
IC506	SN74LS157N, SN74157N		16	8		
IC507		Refer to Schematic Diagram				
IC508	SN74LS221N, SN74221N		16	8		
IC509	SN74LS123N, SN74123N		16	8		
IC510	SN7474N, SN74LS74AN		14	7		
IC511	μPC319C		11	3, 8		
IC512	SN74LS221N, SN74221N		16	8		
IC513	SN74LS157N, SN74157N		16	8		
IC514	SN7408N, SN74LS08N		14	7		
IC515	SN74LS367AN, SN74367AN		16	8		
IC516	SN74LS00N, SN7400N		14	7		
IC517	SN74LS32N, SN7432N		14	7		
IC518	SN74LS04N, SN7404N		14	7		
IC519	TC40H004P		14	7		
IC520	μPC1377C	Refer to Schematic Diagram				
IC521	MC14053BCP		16	8		

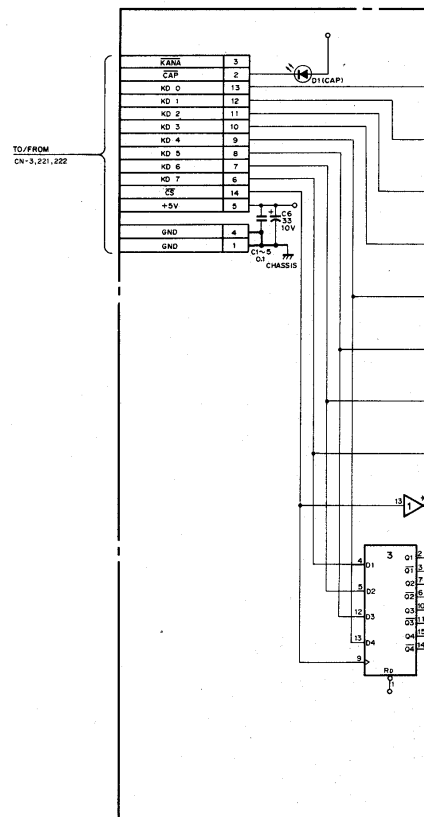
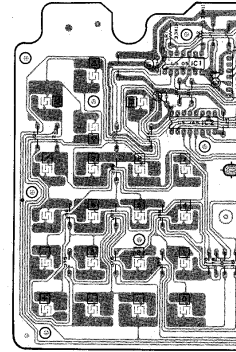
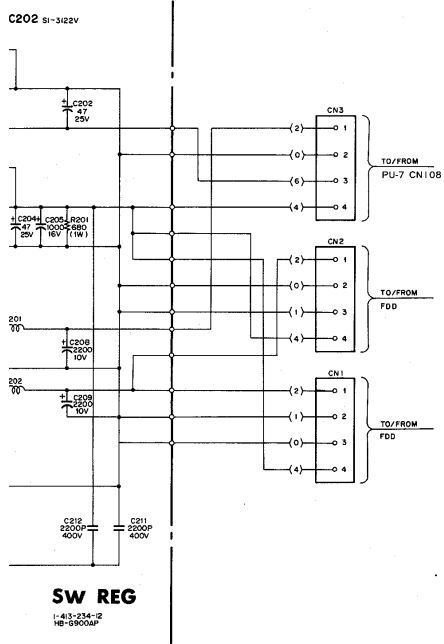


6-5. SW REG BOARD

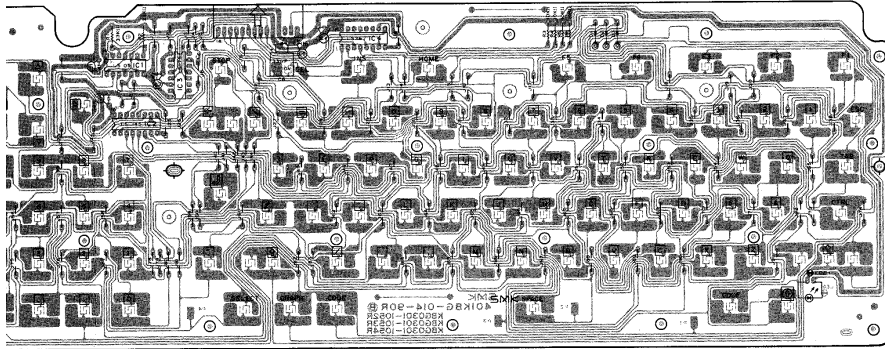


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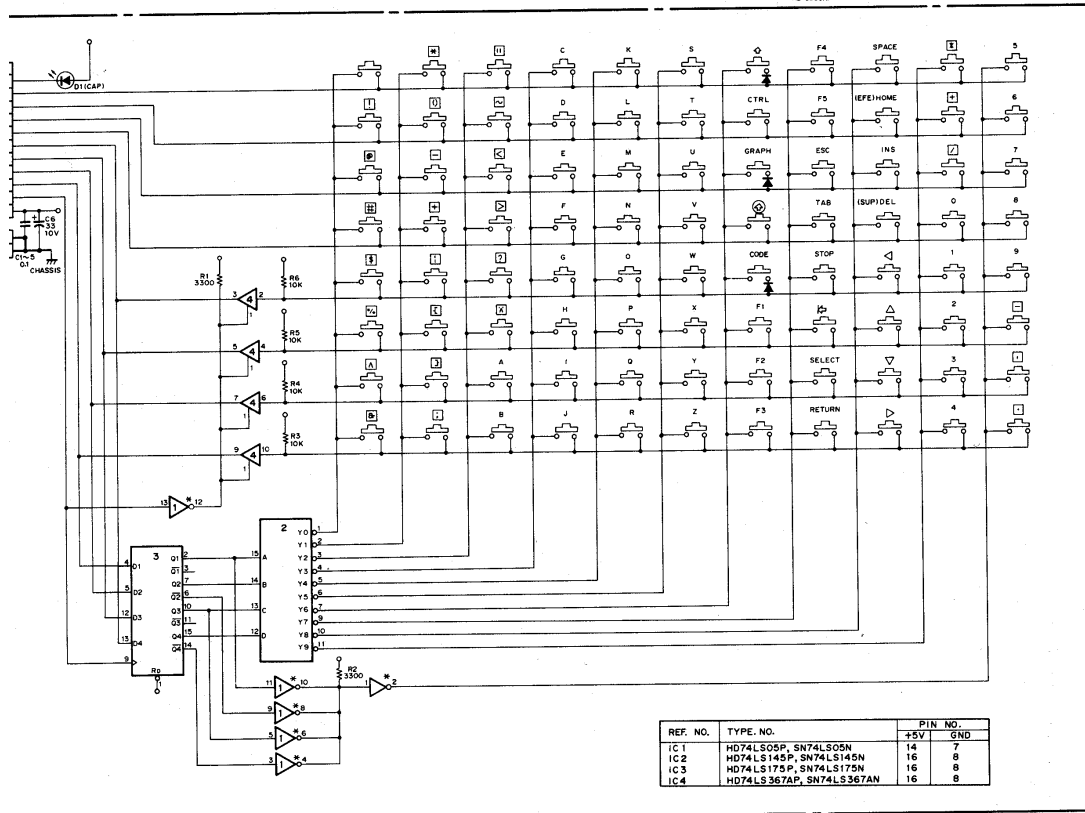
6-6. KEY BOARD



OAP HB-G900AP

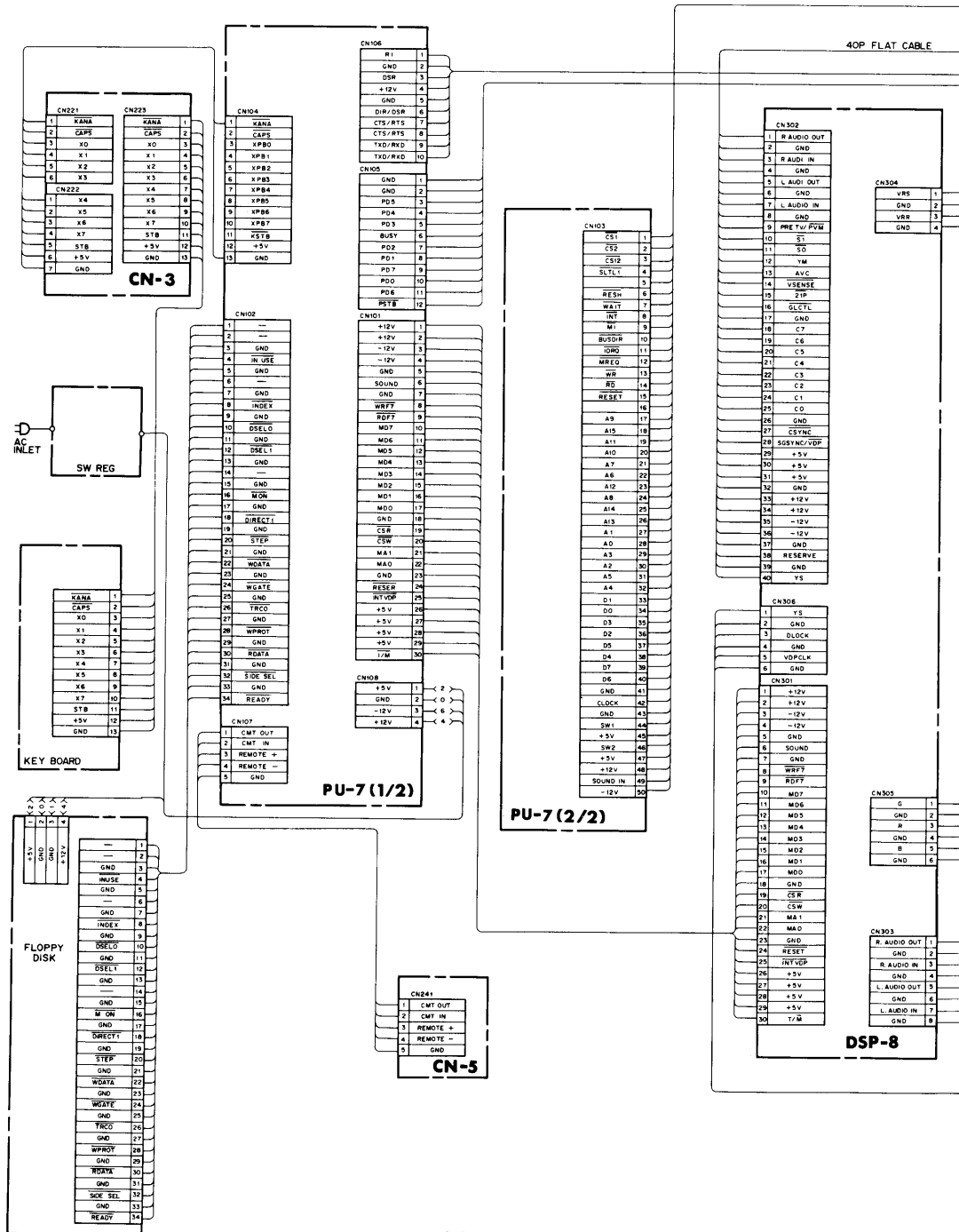


KEY - COMPONENT SIDE -
 1-64-568-22
 HB-G900AP

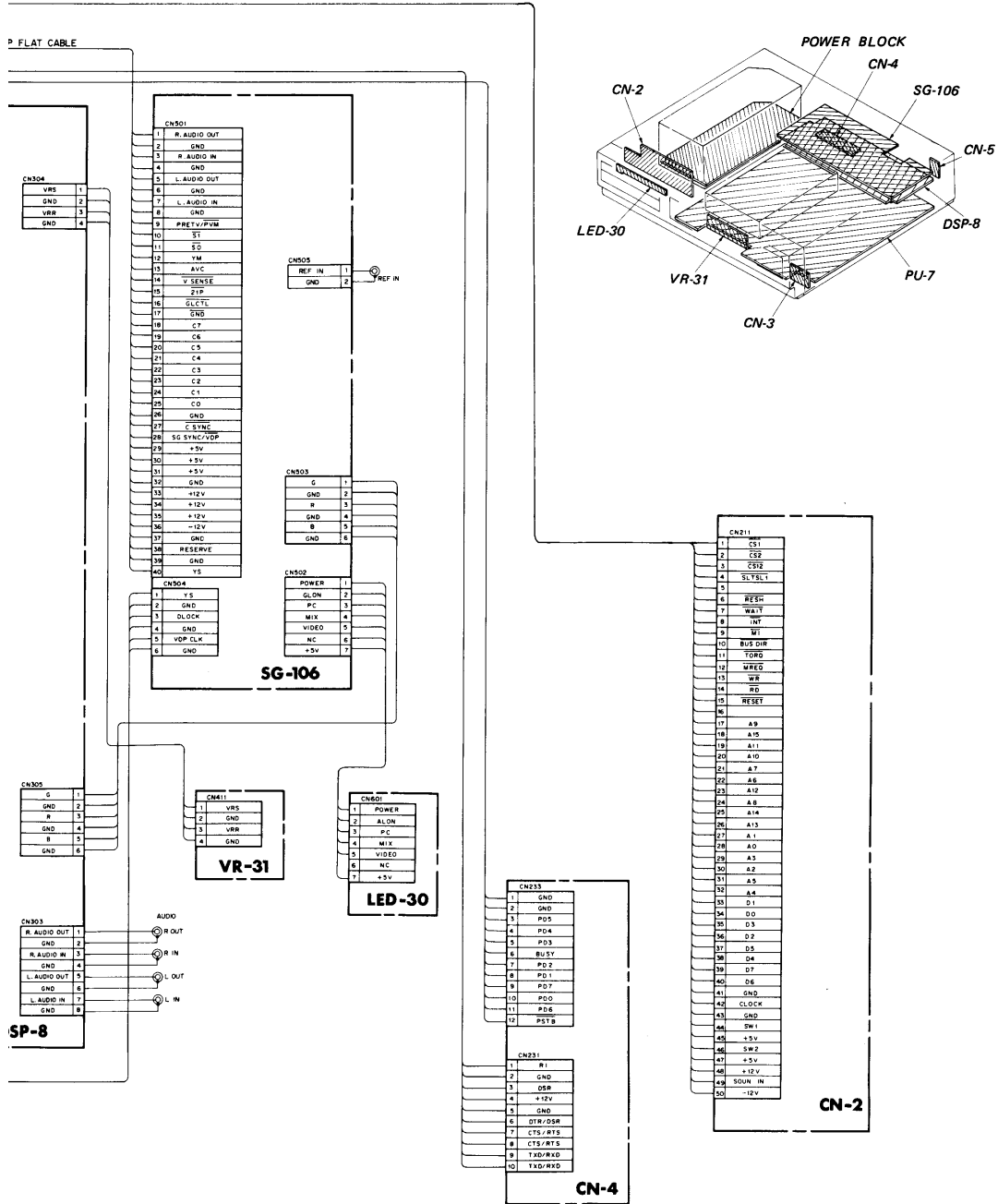


KEY
 1-64-568-22
 HB-G900AP

6-7. FRAME



OOAP HB-G900AP




SECTION 7
EXPLODED VIEWS AND PARTS LIST

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

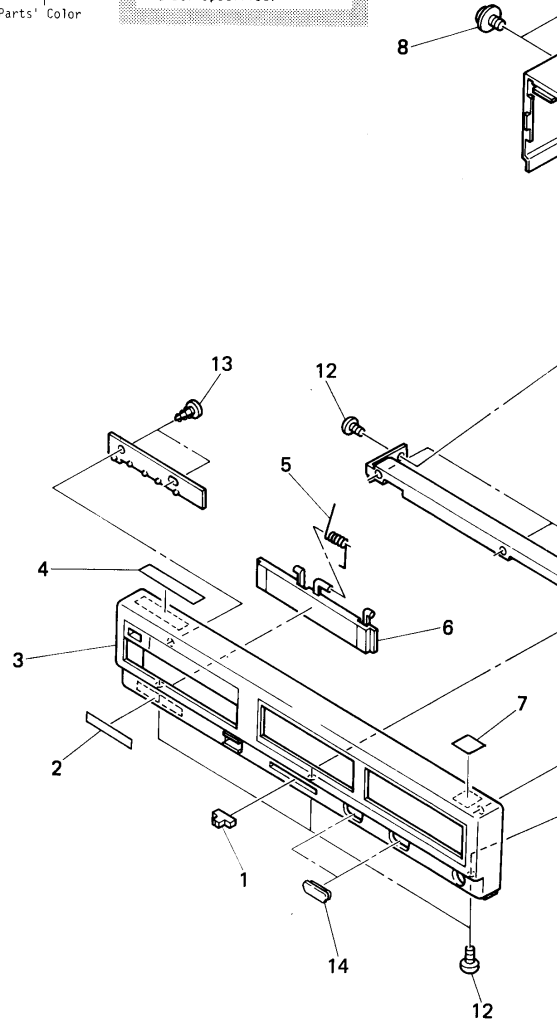
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- Color Indication of Appearance Parts
Example: (RED) KNOB, BALANCE (WHITE)
Cabinet's Color Parts' Color

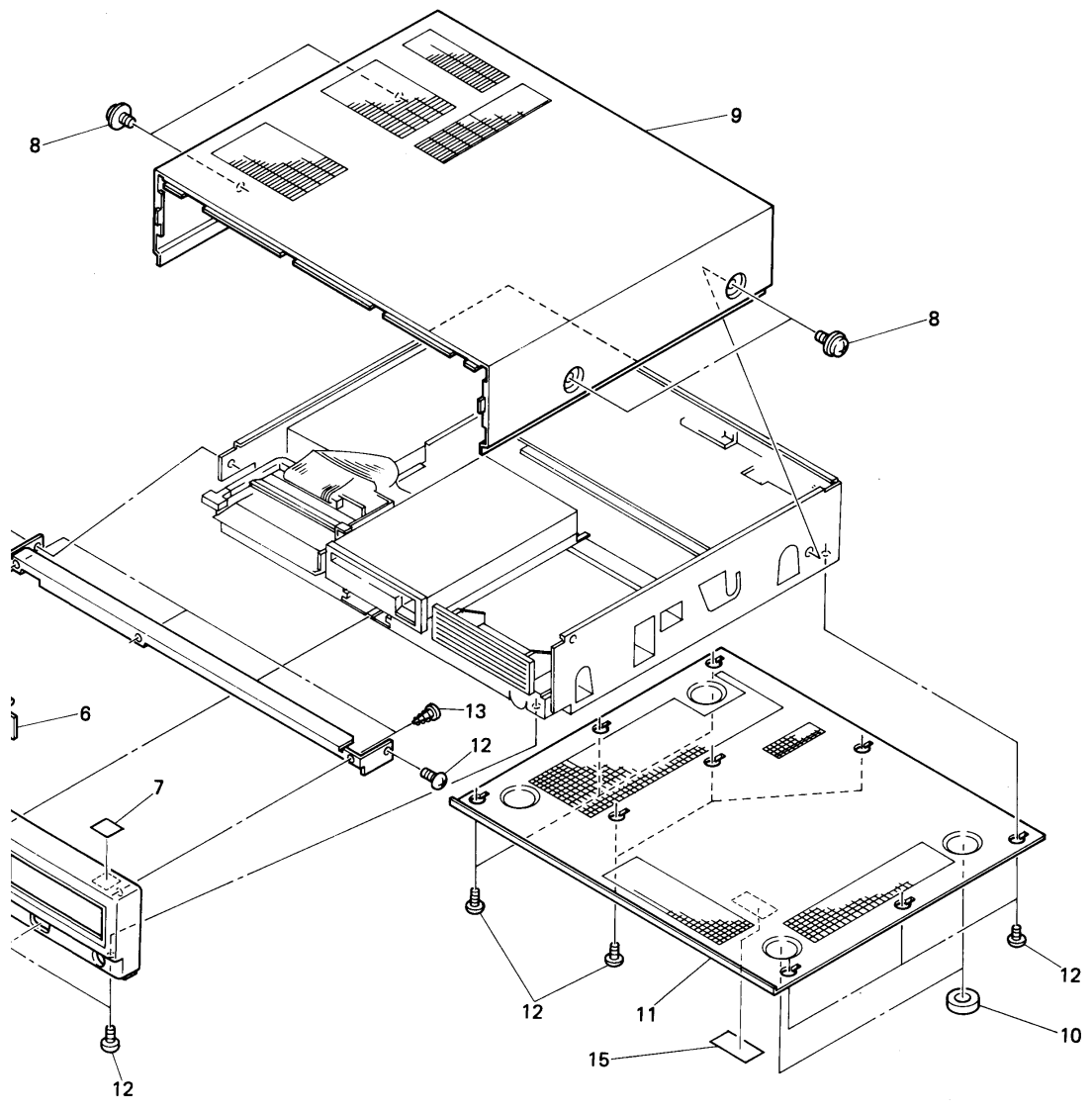
The components identified by shading and mark  are critical for safety. Replace only with part number specified.

MAIN Assembly (1)

No.	Part No.	Description	Remarks
1	4-605-606-11	KNOB, CONTROL	
2	*4-605-464-01	LABEL, CAUTION	
3	X-4604-471-1	PANEL ASSY, FRONT	
4	3-701-690-00	LABEL (MADE IN JAPAN)	
5	4-605-615-01	SPRING	
6	4-608-914-01	LID, CARTRIDGE	
7	3-703-710-01	STICKER, SONY SYMBOL (12)	
8	4-820-330-51	SCREW, BW, PLUS MINUS	
9	4-608-924-01	CASE	
10	4-838-906-01	FOOT, F	
11	*4-608-925-01	PLATE, BOTTOM	
12	7-682-147-01	SCREW +BVT 3X6 (S)	
13	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
14	*4-605-456-11	COVER, CONNECTOR	
15	*4-612-022-01	LABEL, MODEL NUMBER	



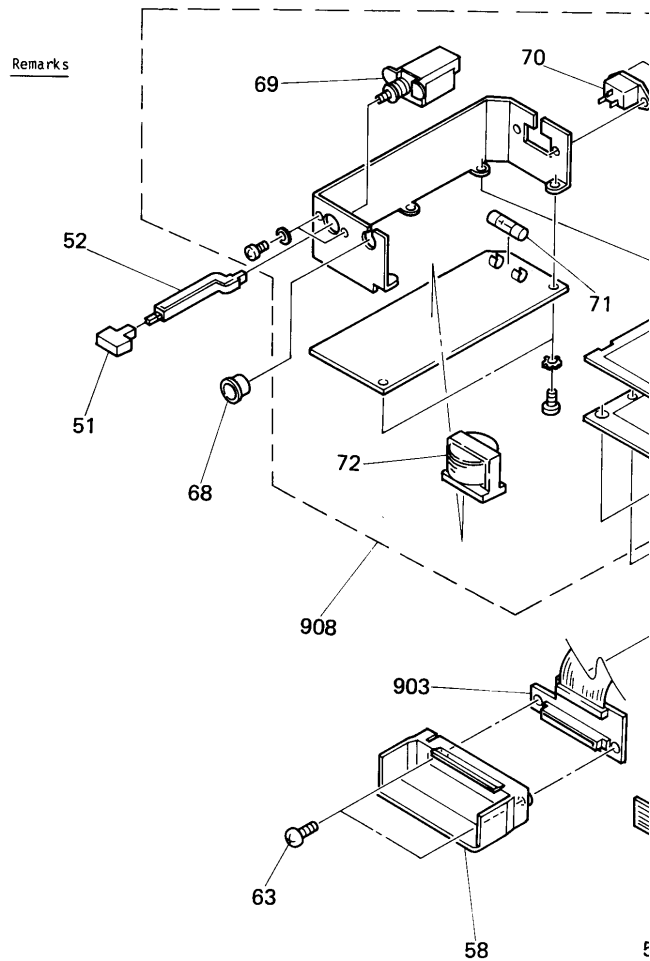
AP HB-G900AP



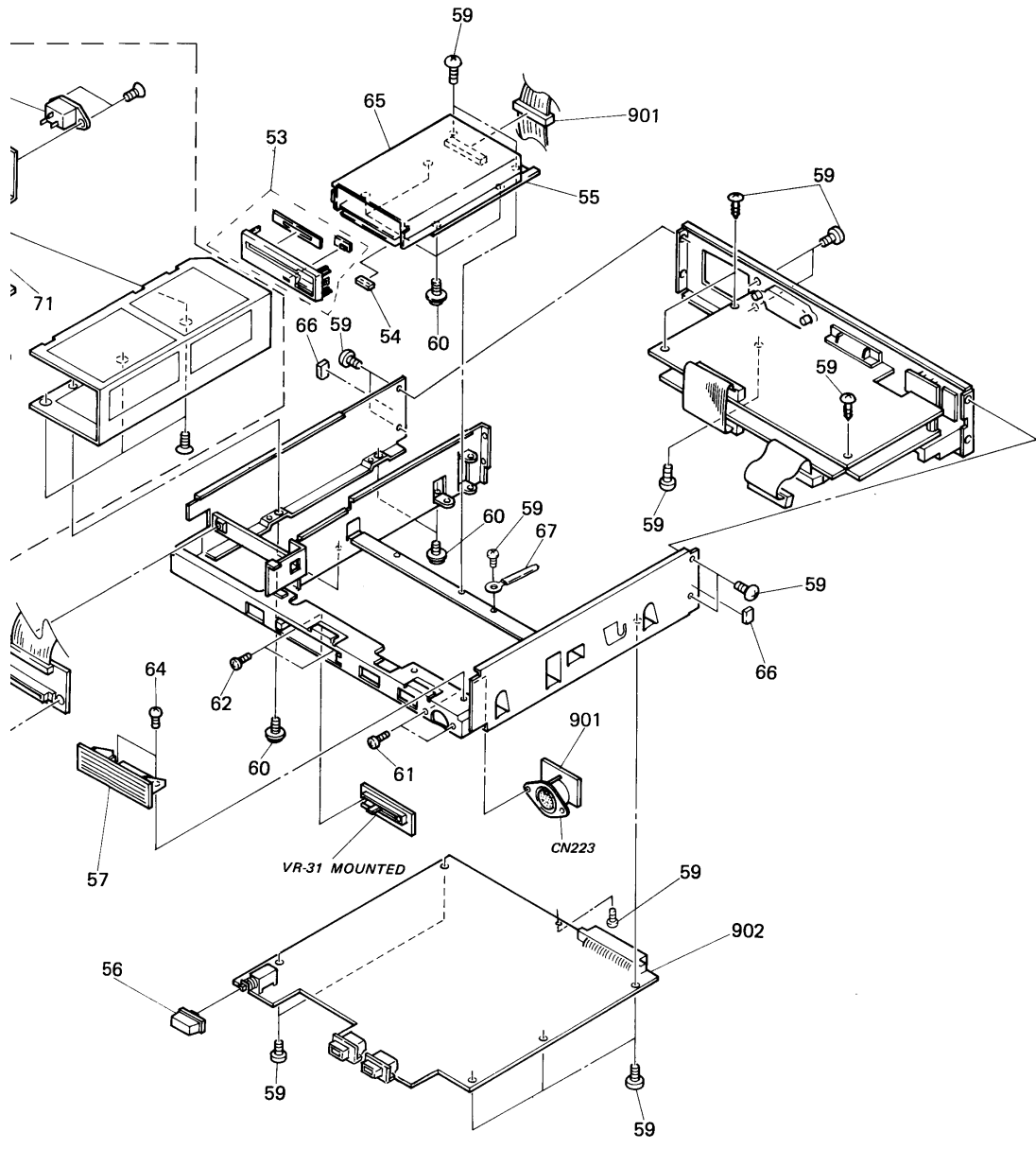
MAIN Assembly (2)

No.	Part No.	Description	Remarks
51	4-605-609-21	BUTTON, POWER	
52	4-608-619-01	ROD, PS	
53	A-8030-348-A	PANEL ASSY, FRONT	
54	4-606-087-04	BUTTON, EJECT	
55	A-8000-516-A	MFD ASSY	
56	4-608-904-01	BUTTON, RESET	
57	4-608-620-01	PLATE, BLIND	
58	4-608-915-01	HOLDER, CARTRIDGE	
59	7-682-147-01	SCREW +BVTT 3X6 (S)	
60	7-682-647-09	SCREW +PSW 3X6	
61	7-621-259-25	SCREW +P 2.6X4	
62	7-621-255-10	SCREW +B 2X3	
63	7-685-872-09	SCREW +BVTT 3X8 (S)	
64	7-682-147-09	SCREW +BVTT 3X6 (S)	
65	*4-606-097-13	COVER	
66	4-612-040-01	CUSHION	
67	*3-703-150-11	CLAMP	
68	△.9-989-668-01	BUSHING, CORD	
69	△.1-570-544-11	SWITCH POWER	
70	△.9-989-667-01	INLET, 3P	
71	△.1-532-203-11	FUSE	
72	△.9-989-666-01	TRANS	
901	*1-622-849-11	CN-3 MOUNTED	
902	*A-8080-260-A	PU-7 MOUNTED	
903	*1-622-848-11	CN-2 MOUNTED	
908	△.1-413-234-11	REGULATOR, SWITCHING (SR52)	
909	*1-558-341-11	CABLE ASSY, FLAT (FDD)	

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

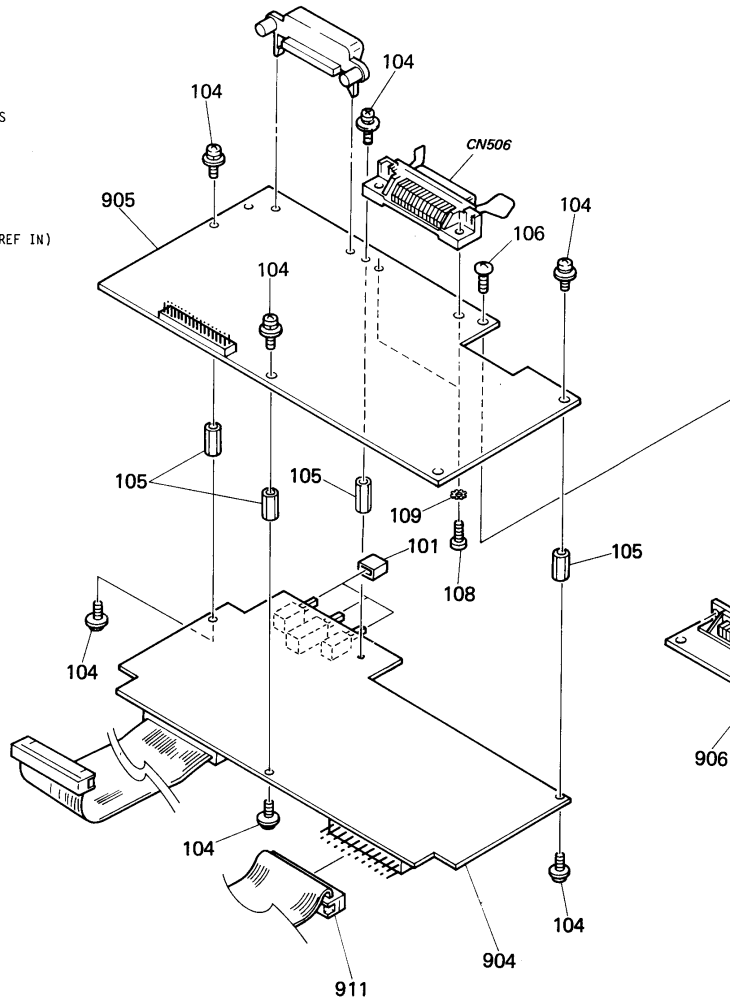


DOAP HB-G900AP

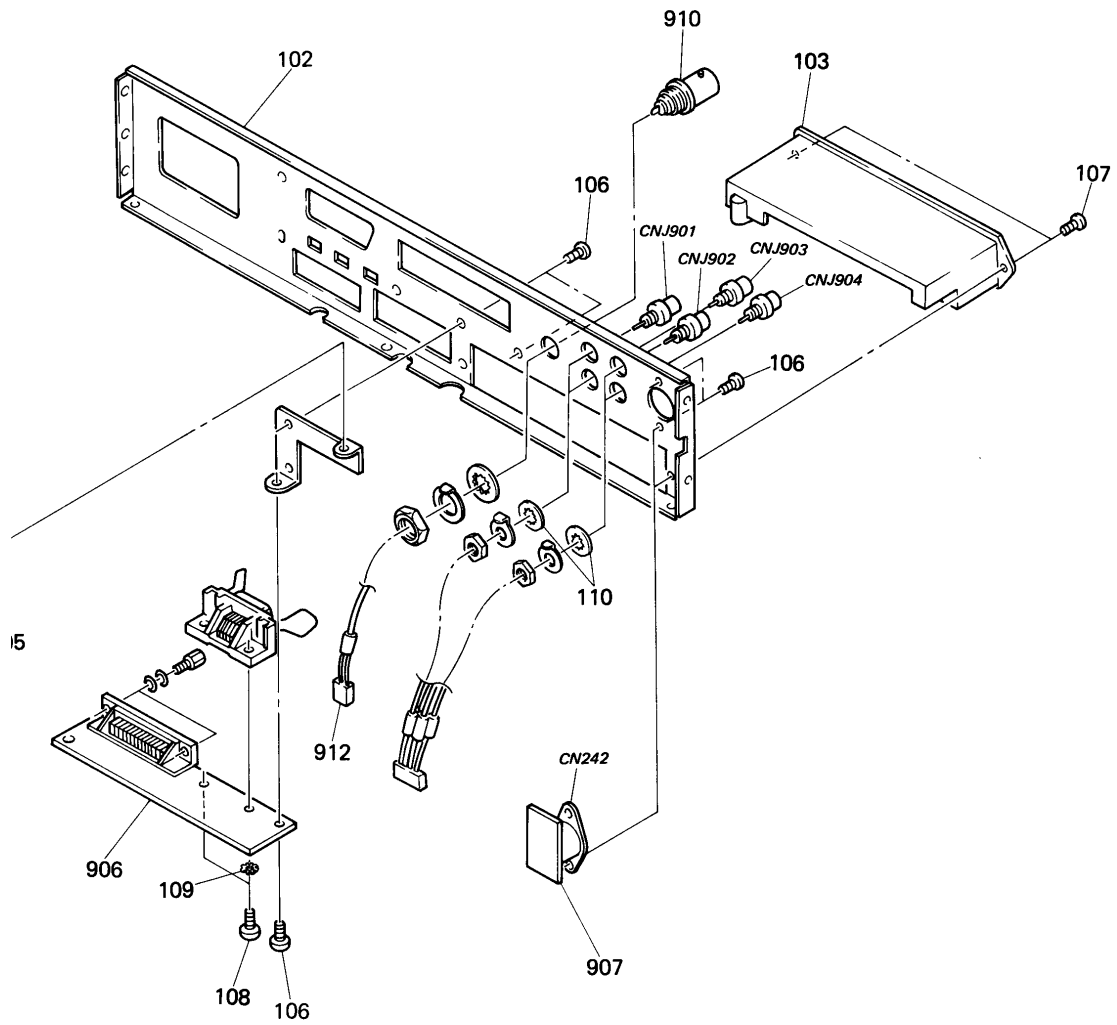


Chassis Assembly

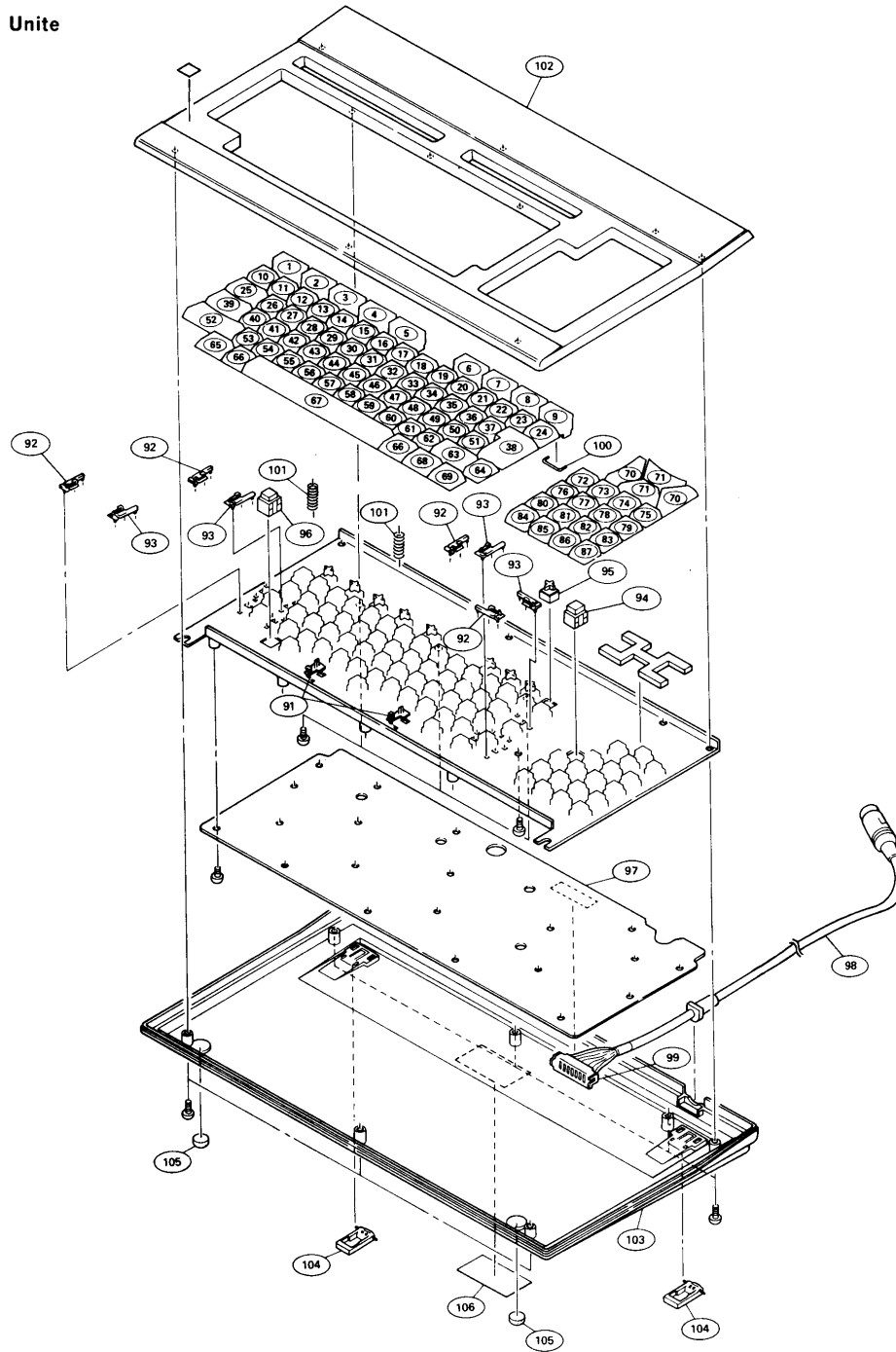
No.	Part No.	Description	Remarks
101	4-025-004-00	BUTTON, SWITCH	
102	4-608-626-03	PLATE, JACK	
103	4-608-908-01	COVER, CARTRIDGE	
104	7-682-647-09	SCREW +PSW 3X6	
105	*4-870-266-00	SUPPORT, BLOCK	
106	7-682-147-01	SCREW +BVTT 3X6 (S)	
107	7-685-872-09	SCREW +BVTT 3X8 (S)	
108	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
109	7-623-422-07	LW 3, TYPE B	
110	7-623-313-07	LW 6, TYPE (A)	
904	*A-8080-114-A	MOUNTED PCB, DSP-8	
905	*A-8080-113-A	MOUNTED PCB, SG-106	
906	*1-622-850-11	CN-4 MOUNTED	
907	*1-622-851-11	CN-5 MOUNTED	
910	*1-562-261-21	CONNECTOR, COAXIAL (BNC)(REF IN)	
911	*1-558-340-11	CABLE ASSY, FLAT 30P	
912	*1-936-891-11	HARNESS (REF)	
CNJ901	1-563-263-21	JACK, PIN 1P	
CNJ902	1-563-263-11	JACK, PIN 1P	
CNJ903	1-563-263-21	JACK, PIN 1P	
CNJ904	1-563-263-11	JACK, PIN 1P	



HB-G900AP



Key board Unite



HB-G900AP

Ref.NO	Part.NO	Discription	Ref.NO	Part.NO	Discription
1	9-989-209-01	KEY TOP F1	56	9-989-355-01	KEY TOP V
2	9-989-210-01	KEY TOP F2	57	9-989-356-01	KEY TOP B
3	9-989-211-01	KEY TOP F3	58	9-989-357-01	KEY TOP N
4	9-989-212-01	KEY TOP F4	59	9-989-358-01	KEY TOP M
5	9-989-213-01	KEY TOP F5	60	9-989-359-01	KEY TOP ,
6	9-989-214-01	KEY TOP HOME	61	9-989-360-01	KEY TOP .
7	9-989-215-01	KEY TOP INS	62	9-989-361-01	KEY TOP /
8	9-989-216-01	KEY TOP DEL	63	9-989-312-01	KEY SHIFT RIGHT ASSY
9	9-989-217-01	KEY TOP STOP	64	9-989-362-01	KEY TOP ✕
10	9-989-228-01	KEY TOP ESC	65	9-989-363-01	KEY TOP ☺
11	9-989-314-01	KEY TOP 1	66	9-989-364-01	KEY TOP CODE
12	9-989-315-01	KEY TOP 2	67	9-989-313-01	KEY SPACE ASSY
13	9-989-316-01	KEY TOP 3	68	9-989-270-01	KEY TOP GRAPH
14	9-989-317-01	KEY TOP 4	69	9-989-272-01	KEY TOP SELECT
15	9-989-318-01	KEY TOP 5	70	9-989-273-01	CURSOR KEY SNY
16	9-989-319-01	KEY TOP 6	71	9-989-274-01	CURSOR KEY SNY
17	9-989-320-01	KEY TOP 7	72	9-989-275-01	KEY TOP 7
18	9-989-321-01	KEY TOP 8	73	9-989-276-01	KEY TOP 8
19	9-989-322-01	KEY TOP 9	74	9-989-277-01	KEY TOP 9
20	9-989-323-01	KEY TOP 0	75	9-989-278-01	KEY TOP /
21	9-989-324-01	KEY TOP -	76	9-989-279-01	KEY TOP 4
22	9-989-325-01	KEY TOP =	77	9-989-280-01	KEY TOP 5
23	9-989-326-01	KEY TOP	78	9-989-281-01	KEY TOP 6
24	9-989-327-01	KEY TOP ←	79	9-989-282-01	KEY TOP ✕
25	9-989-233-01	KEY TOP TAB	80	9-989-283-01	KEY TOP 1
26	9-989-328-01	KEY TOP Q	81	9-989-284-01	KEY TOP 2
27	9-989-329-01	KEY TOP W	82	9-989-285-01	KEY TOP 3
28	9-989-330-01	KEY TOP E	83	9-989-286-01	KEY TOP -
29	9-989-331-01	KEY TOP R	84	9-989-287-01	KEY TOP 0
30	9-989-332-01	KEY TOP T	85	9-989-288-01	KEY TOP ,
31	9-989-333-01	KEY TOP Y	86	9-989-289-01	KEY TOP .
32	9-989-334-01	KEY TOP U	87	9-989-290-01	KEY TOP +
33	9-989-335-01	KEY TOP I	91	*9-989-291-01	HOOK A
34	9-989-336-01	KEY TOP O	92	*9-989-292-01	HOOK C
35	9-989-337-01	KEY TOP P	93	*9-989-293-01	HOOK D
36	9-989-338-01	KEY TOP [94	9-989-294-01	KEY SWITCH
37	9-989-339-01	KEY TOP]	95	9-989-295-01	KEY SWITCH
38	9-989-369-01	RETURN KEY ASSY	96	9-989-296-01	KEY SWITCH
39	9-989-310-01	CTRL KEY ASSY	97	*9-989-365-01	PW BOARD
40	9-989-340-01	KEY TOP A	98	9-989-366-01	CONNECTOR,CORDE ASSY
41	9-989-341-01	KEY TOP S	99	*9-989-299-01	CONNECTOR
42	9-989-342-01	KEY TOP D	100	*9-989-300-01	CRANK SHAFT
43	9-989-343-01	KEY TOP F	101	9-989-301-01	SPRING
44	9-989-344-01	KEY TOP G	102	9-989-303-01	CASE,UPPER
45	9-989-345-01	KEY TOP H	103	9-989-304-01	CASE,LOWER
46	9-989-346-01	KEY TOP J	104	9-989-305-01	BLACKET
47	9-989-347-01	KEY TOP K	105	9-989-306-01	FOOT,RUBBER
48	9-989-348-01	KEY TOP L	106	*9-989-368-01	LABEL(A) KBD-2P
49	9-989-349-01	KEY TOP ;			
50	9-989-350-01	KEY TOP '			
51	9-989-351-01	KEY TOP £			
52	9-989-311-01	KEY TOP ↑			
53	9-989-352-01	KEY TOP Z			
54	9-989-353-01	KEY TOP X			
55	9-989-354-01	KEY TOP C			

**SECTION 8
ELECTRICAL PARTS LIST**

NOTE:

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
· All resistors are in ohms.
· F : nonflammable

COILS
· MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC,
UPD...: μPD...

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
904	*A-8080-114-A	DSP-8 MOUNTED *****				D301	8-719-815-55	DIODE 1S1555			
C301	1-123-332-00	ELECT	47MF	20%	16V	D302	8-719-815-55	DIODE 1S1555			
C302	1-123-321-00	ELECT	220MF	20%	16V	D303	8-719-815-55	DIODE 1S1555			
C303	1-123-356-00	ELECT	10MF	20%	16V	FB301	1-543-274-21	BEAD, FERRITE			
C305	1-123-356-00	ELECT	10MF	20%	16V	FB302	1-543-274-21	BEAD, FERRITE			
C306	1-123-356-00	ELECT	10MF	20%	16V	FB303	1-543-274-21	BEAD, FERRITE			
C308	1-123-356-00	ELECT	10MF	20%	16V	FB304	1-543-274-21	BEAD, FERRITE			
C309	1-162-561-11	CERAMIC	0.1MF		16V	FB305	1-543-274-21	BEAD, FERRITE			
C310	1-162-561-11	CERAMIC	0.1MF		16V	FB306	1-543-274-21	BEAD, FERRITE			
C311	1-123-333-00	ELECT	100MF	20%	16V	IC301	8-759-700-65	IC NJM79L05A			
C312	1-123-333-00	ELECT	100MF	20%	16V	IC302	8-759-240-52	IC TC4052BP			
C313	1-123-356-00	ELECT	10MF	20%	16V	IC303	8-759-240-52	IC TC4052BP			
C314	1-162-561-11	CERAMIC	0.1MF		16V	IC304	8-759-900-04	IC SN74LS04N			
C315	1-123-321-00	ELECT	220MF	20%	16V	IC305	8-759-145-58	IC UPC4558C			
C316	1-123-356-00	ELECT	10MF	20%	16V	IC306	8-759-903-68	IC SN74LS368AN			
C317	1-123-356-00	ELECT	10MF	20%	16V	IC307	8-759-203-21	IC TC74HC273P			
C318	1-102-110-00	CERAMIC	220PF	10%	50V	IC308	8-759-902-44	IC SN74LS244N			
C319	1-162-561-11	CERAMIC	0.1MF		16V	IC309	8-759-922-42	IC MB81464-12			
C322	1-123-356-00	ELECT	10MF	20%	16V	IC310	8-759-922-42	IC MB81464-12			
C323	1-123-356-00	ELECT	10MF	20%	16V	IC311	8-759-922-42	IC MB81464-12			
C324	1-123-356-00	ELECT	10MF	20%	16V	IC312	8-759-922-42	IC MB81464-12			
C325	1-162-561-11	CERAMIC	0.1MF		16V	IC313	8-759-922-51	IC V9938			
C326	1-162-561-11	CERAMIC	0.1MF		16V	L301	1-408-417-00	MICRO INDUCTOR 47UH			
C327	1-123-356-00	ELECT	10MF	20%	16V	Q301	8-729-600-27	TRANSISTOR 2SC634SP			
C328	1-123-333-00	ELECT	100MF	20%	16V	Q302	8-729-600-27	TRANSISTOR 2SC634SP			
C329	1-162-561-11	CERAMIC	0.1MF		16V	Q303	8-729-600-27	TRANSISTOR 2SC634SP			
C330	1-162-561-11	CERAMIC	0.1MF		16V	Q304	8-729-600-27	TRANSISTOR 2SC634SP			
C331	1-162-561-11	CERAMIC	0.1MF		16V	Q305	8-729-600-27	TRANSISTOR 2SC634SP			
C332	1-162-561-11	CERAMIC	0.1MF		16V	Q306	8-729-600-27	TRANSISTOR 2SC634SP			
C333	1-162-561-11	CERAMIC	0.1MF		16V	Q307	8-729-600-27	TRANSISTOR 2SC634SP			
C334	1-123-356-00	ELECT	10MF	20%	16V	R301	1-249-429-11	CARBON 10K 5% 1/6W			
C335	1-123-356-00	ELECT	10MF	20%	16V	R302	1-249-441-11	CARBON 100K 5% 1/6W			
C338	1-123-333-00	ELECT	100MF	20%	16V	R303	1-249-438-11	CARBON 56K 5% 1/6W			
C339	1-123-333-00	ELECT	100MF	20%	16V	R304	1-249-438-11	CARBON 56K 5% 1/6W			
C340	1-162-561-11	CERAMIC	0.1MF		16V	R305	1-249-441-11	CARBON 100K 5% 1/6W			
C341	1-162-561-11	CERAMIC	0.1MF		16V	R306	1-249-429-11	CARBON 10K 5% 1/6W			
C342	1-123-333-00	ELECT	100MF	20%	16V	R307	1-249-425-11	CARBON 4.7K 5% 1/6W			
C343	1-123-356-00	ELECT	10MF	20%	16V	R308	1-249-425-11	CARBON 4.7K 5% 1/6W			
C344	1-162-561-11	CERAMIC	0.1MF		16V	R309	1-249-429-11	CARBON 10K 5% 1/6W			
CN301	1-563-109-11	CONNECTOR, P 30P				R310	1-249-429-11	CARBON 10K 5% 1/6W			
CN302	*1-558-387-11	CABLE ASSY, FLAT 40P				R311	1-249-433-11	CARBON 22K 5% 1/6W			
CN303	*1-560-361-00	CONNECTOR POST HEADER, ILG (8P)				R312	1-249-425-11	CARBON 4.7K 5% 1/6W			
CN304	*1-560-366-00	CONNECTOR POST HEADER, ILG (4P)				R313	1-249-429-11	CARBON 10K 5% 1/6W			
						R314	1-249-417-11	CARBON 1K 5% 1/6W			
						R315	1-249-433-11	CARBON 22K 5% 1/6W			

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Ref.No.	Part No.	Description							
R316	1-249-425-11	CARBON	4.7K	5%	1/6W				
R317	1-249-417-11	CARBON	1K	5%	1/6W				
R318	1-249-425-11	CARBON	4.7K	5%	1/6W				
R319	1-249-417-11	CARBON	1K	5%	1/6W				
R320	1-249-433-11	CARBON	22K	5%	1/6W				
R321	1-249-416-11	CARBON	820	5%	1/6W				
R322	1-249-433-11	CARBON	22K	5%	1/6W				
R323	1-249-416-11	CARBON	820	5%	1/6W				
R324	1-249-429-11	CARBON	10K	5%	1/6W				
R325	1-249-417-11	CARBON	1K	5%	1/6W				
R326	1-249-411-11	CARBON	330	5%	1/6W				
R327	1-249-433-11	CARBON	22K	5%	1/6W				
R328	1-249-433-11	CARBON	22K	5%	1/6W				
R329	1-249-429-11	CARBON	10K	5%	1/6W				
R330	1-249-429-11	CARBON	10K	5%	1/6W				
R331	1-249-433-11	CARBON	22K	5%	1/6W				
R332	1-249-433-11	CARBON	22K	5%	1/6W				
R333	1-249-425-11	CARBON	4.7K	5%	1/6W				
R334	1-215-394-00	CARBON	75	5%	1/6W				
R335	1-249-438-11	CARBON	56K	5%	1/6W				
R336	1-249-438-11	CARBON	56K	5%	1/6W				
R337	1-249-425-11	CARBON	4.7K	5%	1/6W				
R338	1-249-425-11	CARBON	4.7K	5%	1/6W				
R339	1-249-416-11	CARBON	820	5%	1/6W				
R340	1-249-416-11	CARBON	820	5%	1/6W				
R341	1-249-421-11	CARBON	2.2K	5%	1/6W				
R342	1-249-421-11	CARBON	2.2K	5%	1/6W				
R343	1-249-421-11	CARBON	2.2K	5%	1/6W				
RB301	1-235-716-11	RES, ENCAPSULATED CERMET							
RY301	1-515-519-00	RELAY							
RY302	1-515-519-00	RELAY							
S301	1-552-425-00	SWITCH, PUSH (TO MODEM/TO TERMINAL)							
S302	1-552-425-00	SWITCH, PUSH (PERI-TV/TVM)							
S303	1-553-261-00	SWITCH, PUSH (INTERLACE/NON INTERLACE)							

905	*A-8080-113-A	SG-106 MOUNTED							

C501	1-130-471-00	MYLAR	0.001MF	5%	50V				
C502	1-123-356-00	ELECT	10MF	20%	16V				
C503	1-107-202-00	MICA	10PF	5%	500V				
C504	1-102-074-00	CERAMIC	0.001MF	10%	50V				
C505	1-107-206-00	MICA	15PF	5%	500V				
C506	1-162-561-11	CERAMIC	0.1MF		16V				
C507	1-130-483-00	MYLAR	0.01MF	5%	50V				
C508	1-130-492-11	MYLAR	0.056MF	5%	50V				
C509	1-123-356-00	ELECT	10MF	20%	16V				
C510	1-162-561-11	CERAMIC	0.1MF		16V				
C511	1-162-561-11	CERAMIC	0.1MF		16V				
C512	1-107-202-00	MICA	10PF	5%	500V				
C513	1-130-471-00	MYLAR	0.001MF	5%	50V				
C514	1-162-561-11	CERAMIC	0.1MF		16V				
C515	1-123-332-00	ELECT	47MF	20%	16V				
C516	1-162-561-11	CERAMIC	0.1MF		16V				
C517	1-123-380-00	ELECT	1MF	20%	50V				
C518	1-130-479-00	MYLAR	0.0047MF	5%	50V				
C519	1-123-332-00	ELECT	47MF	20%	16V				
C520	1-130-479-00	MYLAR	0.0047MF	5%	50V				
C521	1-130-475-00	MYLAR	0.0022MF	5%	50V				
C522	1-123-356-00	ELECT	10MF	20%	16V				
C523	1-130-475-00	MYLAR	0.0022MF	5%	50V				
C524	1-123-380-00	ELECT	1MF	20%	50V				
C525	1-162-561-11	CERAMIC	0.1MF		16V				
C526	1-123-356-00	ELECT	10MF	20%	16V				
C527	1-162-561-11	CERAMIC	0.1MF		16V				
C528	1-102-973-00	CERAMIC	100PF	5%	50V				
C529	1-130-471-00	MYLAR	0.001MF	5%	50V				
C530	1-123-333-00	ELECT	100MF	20%	16V				
C531	1-162-561-11	CERAMIC	0.1MF		16V				
C532	1-162-561-11	CERAMIC	0.1MF		16V				
C533	1-102-114-00	CERAMIC	470PF	10%	50V				
C534	1-131-343-00	TANTALUM	0.22MF	10%	35V				
C535	1-162-561-11	CERAMIC	0.1MF		16V				
C536	1-130-471-00	MYLAR	0.001MF	5%	50V				
C537	1-123-333-00	ELECT	100MF	20%	16V				
C538	1-162-561-11	CERAMIC	0.1MF		16V				
C539	1-123-321-00	ELECT	220MF	20%	16V				
C540	1-123-333-00	ELECT	100MF	20%	16V				
C541	1-162-561-11	CERAMIC	0.1MF		16V				
C542	1-123-321-00	ELECT	220MF	20%	16V				
C543	1-102-115-00	CERAMIC	560PF	10%	50V				
C544	1-123-380-00	ELECT	1MF	20%	50V				
C545	1-130-479-00	MYLAR	0.0047MF	5%	50V				
C546	1-130-477-00	FILM	0.0033MF	5%	50V				
C547	1-107-169-00	MICA	100PF	5%	500V				
C548	1-123-310-00	ELECT	470MF	20%	10V				
C549	1-123-333-00	ELECT	100MF	20%	16V				
C550	1-162-561-11	CERAMIC	0.1MF		16V				
C551	1-162-561-11	CERAMIC	0.1MF		16V				
C552	1-106-351-00	MYLAR	0.0022MF	5%	50V				
C553	1-101-005-00	CERAMIC	0.022MF		50V				
C554	1-130-483-00	MYLAR	0.01MF	5%	50V				
C555	1-123-321-00	ELECT	220MF	20%	16V				
C556	1-123-310-00	ELECT	470MF	20%	10V				
C557	1-123-310-00	ELECT	470MF	20%	10V				
C558	1-162-561-11	CERAMIC	0.1MF		16V				
C559	1-162-561-11	CERAMIC	0.1MF		16V				
C560	1-123-310-00	ELECT	470MF	20%	10V				
C561	1-123-310-00	ELECT	470MF	20%	10V				
C570	1-123-356-00	ELECT	10MF	20%	16V				
C580	1-102-074-00	CERAMIC	0.001MF	10%	50V				
CN501	1-560-983-00	CONNECTOR, P (DIP TYPE) 40P							
CN502	*1-560-618-00	CONNECTOR POST HEADER, ILG 7P							
CN503	*1-560-368-00	CONNECTOR POST HEADER, ILG (6P)							
CN504	*1-560-368-00	CONNECTOR POST HEADER, ILG (6P)							
CN505	*1-560-356-00	CONNECTOR POST HEADER, ILG (2P)							
CN506	1-563-104-11	RECEPTACLE 36P (VIDEO I/F)							
CN507	1-561-534-00	SOCKET 21P (RGB)							
CV501	1-141-304-21	TRIMMER, CERAMIC							
D501	8-719-815-55	DIODE 1S1555							
D502	8-719-815-55	DIODE 1S1555							

Ref.No.	Part No.	Description
FB501	1-543-274-21	BEAD, FERRITE
FB502	1-543-274-21	BEAD, FERRITE
FB503	1-543-255-11	BEAD, FERRITE
FB504	1-543-255-11	BEAD, FERRITE
FB505	1-543-255-11	BEAD, FERRITE
FB506	1-543-255-11	BEAD, FERRITE
FB507	1-543-255-11	BEAD, FERRITE
FB508	1-543-255-11	BEAD, FERRITE
IC501	8-759-906-28	IC SN74LS628N
IC502	8-757-732-00	IC CX-773B
IC503	8-759-902-21	IC SN74LS221N
IC504	8-759-250-81	IC TC5081AP
IC505	8-759-990-62	IC TL062CP
IC506	8-759-901-57	IC SN74LS157N
IC507	8-759-170-05	IC UPC78M05H
IC508	8-759-902-21	IC SN74LS221N
IC509	8-759-901-23	IC SN74LS123N
IC510	8-759-900-74	IC SN74LS74AN
IC511	8-759-103-19	IC UPC319C
IC512	8-759-902-21	IC SN74LS221N
IC513	8-759-901-57	IC SN74LS157N
IC514	8-759-900-08	IC SN74LS08N
IC515	8-759-903-67	IC SN74LS367AN
IC516	8-759-900-00	IC SN74LS00N
IC517	8-759-900-32	IC SN74LS32N
IC518	8-759-900-04	IC SN74LS04N
IC519	8-759-220-04	IC TC40H004P
IC520	8-759-100-60	IC UPC1377C
IC521	8-759-240-53	IC TC40538P
L501	1-408-417-00	MICRO INDUCTOR 47UH
Q501	8-729-600-27	TRANSISTOR 2SC634SP
Q502	8-729-600-27	TRANSISTOR 2SC634SP
Q503	8-729-600-27	TRANSISTOR 2SC634SP
Q504	8-729-600-27	TRANSISTOR 2SC634SP
Q505	8-729-600-27	TRANSISTOR 2SC634SP
Q506	8-729-600-27	TRANSISTOR 2SC634SP
Q507	8-729-600-27	TRANSISTOR 2SC634SP
Q508	8-729-600-27	TRANSISTOR 2SC634SP
Q509	8-729-600-27	TRANSISTOR 2SC634SP
Q510	8-729-600-27	TRANSISTOR 2SC634SP
Q511	8-729-600-27	TRANSISTOR 2SC634SP
Q512	8-729-600-27	TRANSISTOR 2SC634SP
Q513	8-729-600-27	TRANSISTOR 2SC634SP
Q514	8-729-600-27	TRANSISTOR 2SC634SP
Q515	8-729-600-27	TRANSISTOR 2SC634SP
Q516	8-729-600-27	TRANSISTOR 2SC634SP
Q517	8-729-600-27	TRANSISTOR 2SC634SP
Q518	8-729-600-27	TRANSISTOR 2SC634SP
Q519	8-729-600-27	TRANSISTOR 2SC634SP
Q520	8-729-600-27	TRANSISTOR 2SC634SP
Q521	8-729-600-27	TRANSISTOR 2SC634SP
R501	1-249-439-11	CARBON 68K 5% 1/6W
R502	1-249-415-11	CARBON 680 5% 1/6W
R503	1-249-432-11	CARBON 18K 5% 1/6W
R504	1-249-441-11	CARBON 100K 5% 1/6W
R505	1-249-429-11	CARBON 10K 5% 1/6W
R506	1-215-493-00	CARBON 1M 5% 1/6W

Ref.No.	Part No.	Description
R507	1-249-429-11	CARBON 10K 5% 1/6W
R508	1-215-493-00	CARBON 1M 5% 1/6W
R509	1-249-429-11	CARBON 10K 5% 1/6W
R511	1-249-421-11	CARBON 2.2K 5% 1/6W
R512	1-249-429-11	CARBON 10K 5% 1/6W
R513	1-249-427-11	CARBON 6.8K 5% 1/6W
R514	1-249-417-11	CARBON 1K 5% 1/6W
R515	1-249-422-11	CARBON 2.7K 5% 1/6W
R516	1-247-849-00	CARBON 5.6K 5% 1/6W
R517	1-249-412-11	CARBON 390 5% 1/6W
R518	1-249-429-11	CARBON 10K 5% 1/6W
R519	1-249-432-11	CARBON 18K 5% 1/6W
R520	1-249-429-11	CARBON 10K 5% 1/6W
R521	1-249-422-11	CARBON 2.7K 5% 1/6W
R522	1-249-434-11	CARBON 27K 5% 1/6W
R523	1-249-439-11	CARBON 68K 5% 1/6W
R524	1-249-431-11	CARBON 15K 5% 1/6W
R525	1-249-441-11	CARBON 100K 5% 1/6W
R526	1-249-417-11	CARBON 1K 5% 1/6W
R527	1-249-429-11	CARBON 10K 5% 1/6W
R528	1-249-429-11	CARBON 10K 5% 1/6W
R529	1-249-432-11	CARBON 18K 5% 1/6W
R530	1-249-430-11	CARBON 12K 5% 1/6W
R531	1-249-439-11	CARBON 68K 5% 1/6W
R532	1-249-429-11	CARBON 10K 5% 1/6W
R533	1-249-429-11	CARBON 10K 5% 1/6W
R534	1-249-415-11	CARBON 680 5% 1/6W
R535	1-249-427-11	CARBON 6.8K 5% 1/6W
R536	1-249-417-11	CARBON 1K 5% 1/6W
R537	1-249-437-11	CARBON 47K 5% 1/6W
R538	1-249-424-11	CARBON 3.9K 5% 1/6W
R539	1-249-417-11	CARBON 1K 5% 1/6W
R540	1-249-433-11	CARBON 22K 5% 1/6W
R541	1-249-433-11	CARBON 22K 5% 1/6W
R542	1-249-411-11	CARBON 330 5% 1/6W
R543	1-249-413-11	CARBON 470 5% 1/6W
R544	1-249-414-11	CARBON 560 5% 1/6W
R545	1-249-406-11	CARBON 120 5% 1/6W
R546	1-249-425-11	CARBON 4.7K 5% 1/6W
R547	1-249-415-11	CARBON 680 5% 1/6W
R548	1-249-414-11	CARBON 560 5% 1/6W
R549	1-249-417-11	CARBON 1K 5% 1/6W
R550	1-249-413-11	CARBON 470 5% 1/6W
R551	1-249-412-11	CARBON 390 5% 1/6W
R552	1-249-425-11	CARBON 4.7K 5% 1/6W
R553	1-249-425-11	CARBON 4.7K 5% 1/6W
R554	1-249-405-11	CARBON 100 5% 1/6W
R555	1-249-429-11	CARBON 10K 5% 1/6W
R556	1-249-430-11	CARBON 12K 5% 1/6W
R557	1-249-414-11	CARBON 560 5% 1/6W
R558	1-215-394-00	CARBON 75 5% 1/6W
R559	1-249-429-11	CARBON 10K 5% 1/6W
R560	1-249-429-11	CARBON 10K 5% 1/6W
R561	1-249-440-11	CARBON 82K 5% 1/6W
R562	1-249-436-11	CARBON 39K 5% 1/6W
R563	1-249-425-11	CARBON 4.7K 5% 1/6W
R564	1-249-431-11	CARBON 15K 5% 1/6W

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Ref.No.	Part No.	Description			
R565	1-249-435-11	CARBON	33K	5%	1/6W
R566	1-249-417-11	CARBON	1K	5%	1/6W
R567	1-249-430-11	CARBON	12K	5%	1/6W
R568	1-249-413-11	CARBON	470	5%	1/6W
R569	1-249-441-11	CARBON	100K	5%	1/6W
R570	1-215-394-00	CARBON	75	5%	1/6W
R571	1-249-417-11	CARBON	1K	5%	1/6W
R572	1-249-409-11	CARBON	220	5%	1/6W
R573	1-249-409-11	CARBON	220	5%	1/6W
R574	1-249-409-11	CARBON	220	5%	1/6W
R575	1-249-409-11	CARBON	220	5%	1/6W
R576	1-249-409-11	CARBON	220	5%	1/6W
R577	1-249-417-11	CARBON	1K	5%	1/6W
R578	1-249-414-11	CARBON	560	5%	1/6W
R579	1-249-421-11	CARBON	2.2K	5%	1/6W
R580	1-249-427-11	CARBON	6.8K	5%	1/6W
R581	1-249-421-11	CARBON	2.2K	5%	1/6W
R582	1-249-423-11	CARBON	3.3K	5%	1/6W
R583	1-249-429-11	CARBON	10K	5%	1/6W
R584	1-249-427-11	CARBON	6.8K	5%	1/6W
R585	1-249-429-11	CARBON	10K	5%	1/6W
R586	1-249-417-11	CARBON	1K	5%	1/6W
R587	1-249-413-11	CARBON	470	5%	1/6W
R588	1-249-429-11	CARBON	10K	5%	1/6W
R589	1-249-430-11	CARBON	12K	5%	1/6W
R590	1-249-405-11	CARBON	100	5%	1/6W
R591	1-249-417-11	CARBON	1K	5%	1/6W
R592	1-215-394-00	CARBON	75	5%	1/6W
R593	1-215-394-00	CARBON	75	5%	1/6W
R594	1-215-394-00	CARBON	75	5%	1/6W
R595	1-249-417-11	CARBON	1K	5%	1/6W
R596	1-249-417-11	CARBON	1K	5%	1/6W
R597	1-249-414-11	CARBON	560	5%	1/6W
R598	1-249-414-11	CARBON	560	5%	1/6W
R599	1-249-421-11	CARBON	2.2K	5%	1/6W
R600	1-249-427-11	CARBON	6.8K	5%	1/6W
R601	1-249-421-11	CARBON	2.2K	5%	1/6W
R602	1-249-421-11	CARBON	2.2K	5%	1/6W
R603	1-249-427-11	CARBON	6.8K	5%	1/6W
R604	1-249-421-11	CARBON	2.2K	5%	1/6W
R605	1-249-417-11	CARBON	1K	5%	1/6W
R606	1-249-413-11	CARBON	470	5%	1/6W
R607	1-249-417-11	CARBON	1K	5%	1/6W
R608	1-249-413-11	CARBON	470	5%	1/6W
R609	1-215-394-00	CARBON	75	5%	1/6W
R610	1-215-394-00	CARBON	75	5%	1/6W
RV501	1-237-515-11	RES, ADJ, CERMET	1K		
RV502	1-237-516-11	RES, ADJ, CERMET	2K		
RV503	1-237-516-11	RES, ADJ, CERMET	2K		
RV504	1-237-517-11	RES, ADJ, CERMET	5K		
RV505	1-237-520-11	RES, ADJ, CERMET	50K		
RV506	1-237-514-11	RES, ADJ, CERMET	500		
RV507	1-237-514-11	RES, ADJ, CERMET	500		
RV508	1-237-514-11	RES, ADJ, CERMET	500		
X501	1-527-729-00	OSCILLATOR, CRYSTAL	14.1875MHZ		
X502	1-567-344-21	VIBRATOR, CRYSTAL (VCO)	17.734MHZ		

Ref.No.	Part No.	Description			
LED-30 MOUNTED					

D601	8-719-937-45	DIODE	GL-1EG101	(1/0)	
D602	8-719-937-45	DIODE	GL-1EG101	(GENLOCK)	
D603	8-719-937-45	DIODE	GL-1EG101	(COMPUTER)	
D604	8-719-937-45	DIODE	GL-1EG101	(SUPERIMPOSE)	
D605	8-719-937-45	DIODE	GL-1EG101	(VIDEO)	

VR-31 MOUNTED					

RV411	1-228-882-00	RES, ADJ, SLIDE	100K	(MIN/MAX)	

903	*1-622-848-11	CN-2 MOUNTED			

CN211	*1-558-339-11	CABLE ASSY, FLAT (SLT)			
CN212	1-562-383-00	SOCKET, CONNECTOR (CARTRIDGE 1)			

907	*1-622-851-11	CN-5 MOUNTED			

CN242	1-563-103-11	JACK, DIN 8P (TAPE)			

902	*A-8080-260-A	PU-7 MOUNTED			

BAT101	1-528-171-11	BATTERY, STORAGE, NI-CD	(GB50H)		
C101	1-123-318-00	ELECT	33MF	20%	16V
C102	1-123-356-00	ELECT	10MF	20%	16V
C103	1-162-561-11	CERAMIC	0.1MF		16V
C104	1-162-561-11	CERAMIC	0.1MF		16V
C105	1-123-380-00	ELECT	1MF	20%	50V
C106	1-123-356-00	ELECT	10MF	20%	16V
C107	1-162-561-11	CERAMIC	0.1MF		16V
C108	1-162-561-11	CERAMIC	0.1MF		16V
C109	1-102-965-00	CERAMIC	39PF	5%	50V
C110	1-102-505-91	CERAMIC	24PF	5%	50V
C111	1-102-963-00	CERAMIC	33PF	5%	50V
C112	1-123-356-00	ELECT	10MF	20%	16V
C113	1-123-356-00	ELECT	10MF	20%	16V
C114	1-162-561-11	CERAMIC	0.1MF		16V
C115	1-162-561-11	CERAMIC	0.1MF		16V
C116	1-101-004-00	CERAMIC	0.01MF		50V
C117	1-162-561-11	CERAMIC	0.1MF		16V
C118	1-162-561-11	CERAMIC	0.1MF		16V
C119	1-162-561-11	CERAMIC	0.1MF		16V
C120	1-162-561-11	CERAMIC	0.1MF		16V
C121	1-162-561-11	CERAMIC	0.1MF		16V

Ref.No.	Part No.	Description			
C122	1-162-561-11	CERAMIC	0.1MF		16V
C123	1-162-561-11	CERAMIC	0.1MF		16V
C124	1-162-561-11	CERAMIC	0.1MF		16V
C125	1-162-561-11	CERAMIC	0.1MF		16V
C126	1-162-561-11	CERAMIC	0.1MF		16V
C127	1-162-561-11	CERAMIC	0.1MF		16V
C128	1-162-561-11	CERAMIC	0.1MF		16V
C129	1-162-561-11	CERAMIC	0.1MF		16V
C130	1-162-561-11	CERAMIC	0.1MF		16V
C131	1-162-561-11	CERAMIC	0.1MF		16V
C132	1-162-561-11	CERAMIC	0.1MF		16V
C133	1-162-561-11	CERAMIC	0.1MF		16V
C134	1-101-004-00	CERAMIC	0.01MF		50V
C135	1-162-561-11	CERAMIC	0.1MF		16V
C136	1-162-561-11	CERAMIC	0.1MF		16V
C137	1-102-963-00	CERAMIC	33PF	5%	50V
C138	1-162-561-11	CERAMIC	0.1MF		16V
C139	1-162-561-11	CERAMIC	0.1MF		16V
C140	1-162-561-11	CERAMIC	0.1MF		16V
C141	1-162-561-11	CERAMIC	0.1MF		16V
C142	1-107-159-00	MICA	33PF	5%	500V
C143	1-102-963-00	CERAMIC	33PF	5%	50V
C144	1-107-159-00	MICA	33PF	5%	500V
C145	1-107-159-00	MICA	33PF	5%	500V
C146	1-101-004-00	CERAMIC	0.01MF		50V
C147	1-123-356-00	ELECT	10MF	20%	16V
C148	1-101-004-00	CERAMIC	0.01MF		50V
C149	1-123-356-00	ELECT	10MF	20%	16V
C150	1-102-074-00	CERAMIC	0.001MF	10%	50V
C151	1-102-074-00	CERAMIC	0.001MF	10%	50V
C152	1-102-958-00	CERAMIC	20PF	5%	50V
C153	1-162-561-11	CERAMIC	0.1MF		16V
C154	1-123-321-00	ELECT	220MF	20%	16V
C155	1-162-561-11	CERAMIC	0.1MF		16V
C156	1-123-321-00	ELECT	220MF	20%	16V
C157	1-162-561-11	CERAMIC	0.1MF		16V
C158	1-123-321-00	ELECT	220MF	20%	16V
C159	1-162-561-11	CERAMIC	0.1MF		16V
C160	1-162-561-11	CERAMIC	0.1MF		16V
C161	1-162-561-11	CERAMIC	0.1MF		16V
C162	1-102-958-00	CERAMIC	20PF	5%	50V
C163	1-162-561-11	CERAMIC	0.1MF		16V
C164	1-162-561-11	CERAMIC	0.1MF		16V
C165	1-162-561-11	CERAMIC	0.1MF		16V
C166	1-162-561-11	CERAMIC	0.1MF		16V
C167	1-101-005-00	CERAMIC	0.022MF		50V
C168	1-123-332-00	ELECT	47MF	20%	16V
C169	1-101-880-00	CERAMIC	47PF	5%	50V
C170	1-162-561-11	CERAMIC	0.1MF		16V
C171	1-101-004-00	CERAMIC	0.01MF		50V
C172	1-123-369-00	ELECT	4.7MF	20%	25V
C173	1-130-499-00	MYLAR	0.22MF	5%	50V
C174	1-162-561-11	CERAMIC	0.1MF		16V
C175	1-101-004-00	CERAMIC	0.01MF		50V
C176	1-162-561-11	CERAMIC	0.1MF		16V
C177	1-162-561-11	CERAMIC	0.1MF		16V
C178	1-162-561-11	CERAMIC	0.1MF		16V

Ref.No.	Part No.	Description			
C179	1-101-880-00	CERAMIC	47PF	5%	50V
C180	1-102-515-00	CERAMIC	24PF	5%	50V
C181	1-123-356-00	ELECT	10MF	20%	16V
CN101	*1-566-619-11	HEADER	30P		
CN102	*1-566-620-11	HEADER	34P		
CN103	*1-506-658-11	HEADER	50P		
CN105	*1-560-363-00	CONNECTOR POST	HEADER,ILG(12P)		
CN106	*1-560-362-00	CONNECTOR POST	HEADER,ILG(10P)		
CN107	*1-560-359-00	CONNECTOR POST	HEADER,ILG (5P)		
CN108	*1-564-421-11	HEADER, SPRING (POWER)	4P		
CN109	1-562-626-11	SOCKET, CONNECTOR (CARTRIDGE 2)			
CN110	1-564-372-00	PIN, CONNECTOR 9P (CONTROLLER A)			
CN111	1-564-372-00	PIN, CONNECTOR 9P (CONTROLLER B)			
CV102	1-141-245-00	TRIMMER, CERAMIC			
D101	8-719-815-55	DIODE	1S1555		
D102	8-719-911-19	DIODE	1SS119		
D103	8-719-911-19	DIODE	1SS119		
D104	8-719-911-19	DIODE	1SS119		
D105	8-719-911-19	DIODE	1SS119		
D106	8-719-908-57	DIODE	SVC203		
D107	8-719-911-19	DIODE	1SS119		
FB101	1-543-274-21	BEAD, FERRITE			
FB102	1-543-274-21	BEAD, FERRITE			
FB103	1-543-274-21	BEAD, FERRITE			
FB104	1-543-274-21	BEAD, FERRITE			
FB105	1-543-274-21	BEAD, FERRITE			
FB106	1-543-274-21	BEAD, FERRITE			
FB107	1-543-274-21	BEAD, FERRITE			
FB108	1-543-274-21	BEAD, FERRITE			
FB109	1-543-274-21	BEAD, FERRITE			
FB110	1-543-274-21	BEAD, FERRITE			
FB111	1-543-274-21	BEAD, FERRITE			
FB112	1-543-274-21	BEAD, FERRITE			
FB113	1-543-274-21	BEAD, FERRITE			
FB114	1-543-274-21	BEAD, FERRITE			
FB115	1-543-274-21	BEAD, FERRITE			
FB116	1-543-274-21	BEAD, FERRITE			
FB117	1-543-274-21	BEAD, FERRITE			
IC101	8-759-908-35	IC	TL7705CP		
IC102	8-759-903-67	IC	SN74LS367AN		
IC103	8-759-903-67	IC	SN74LS367AN		
IC104	8-759-903-67	IC	SN74LS367AN		
IC105	8-759-903-67	IC	SN74LS367AN		
IC106	8-759-933-46	IC	S-1985		
IC107	8-759-903-67	IC	SN74LS367AN		
IC108	8-759-901-57	IC	SN74LS157N		
IC109	8-759-925-62	IC	MB83256-251		
IC110	8-759-903-67	IC	SN74LS367AN		
IC111	8-759-903-67	IC	SN74LS367AN		
IC112	8-759-925-61	IC	MB83256-256		
IC113	8-759-901-57	IC	SN74LS157N		
IC114	8-759-209-01	IC	TC514256P-12		
IC115	8-759-903-67	IC	SN74LS367AN		
IC116	8-759-900-30	IC	SN74LS30N		
IC117	8-759-777-46	IC	HN4827128G		
IC118	8-759-901-55	IC	SN74LS155N		

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Ref.No.	Part No.	Description
IC119	8-759-209-01	IC TC514256P-12
IC120	8-759-209-01	IC TC514256P-12
IC121	8-759-903-67	IC SN74LS367AN
IC122	8-759-906-70	IC SN74LS670N
IC123	8-759-778-98	IC μ PD27C256C-25-VU1.2
IC124	8-759-901-57	IC SN74LS157N
IC125	8-759-209-01	IC TC514256P-12
IC126	8-759-902-45	IC SN74LS245N
IC127	8-759-901-57	IC SN74LS157N
IC128	8-759-906-70	IC SN74LS670N
IC129	8-759-911-93	IC MB8416A-15P-SK
IC130	8-759-902-45	IC SN74LS245N
IC133	8-759-900-08	IC SN74LS08N
IC134	8-759-900-00	IC SN74LS00N
IC135	8-759-901-38	IC SN74LS138N
IC136	8-759-900-32	IC SN74LS32N
IC137	8-759-900-32	IC SN74LS32N
IC138	8-759-906-80	IC LH0080
IC141	8-759-900-04	IC SN74LS04N
IC142	8-759-901-25	IC SN74LS125AN
IC143	8-759-929-46	IC CXD1086Q
IC144	8-759-974-04	IC SN7404N
IC145	8-759-922-98	IC CXD1032Q
IC146	8-759-974-06	IC SN7406N
IC147	8-759-103-27	IC UPD8251AFC
IC148	8-759-902-45	IC SN74LS245N
IC149	8-759-900-21	IC SN74LS21N
IC150	8-759-984-69	IC MB84069UB
IC151	8-759-974-38	IC SN7438N
IC152	8-759-951-89	IC SN75189AN
IC153	8-759-182-53	IC UPD8253C-5
IC154	8-759-901-39	IC SN74LS139N
IC155	8-759-911-41	IC TL431CP
IC156	8-759-903-73	IC SN74LS373N
IC157	8-759-951-89	IC SN75189AN
IC158	8-759-974-69	IC TMS2793NL
IC159	8-759-951-88	IC SN75188N
IC160	8-759-900-04	IC SN74LS04N
IC161	8-759-902-45	IC SN74LS245N
IC162	8-759-900-74	IC SN74LS74AN
IC163	8-759-901-39	IC SN74LS139N
ICS109	1-526-834-11	SOCKET, IC 28P
ICS112	1-526-834-11	SOCKET, IC 28P
ICS117	1-526-834-11	SOCKET, IC 28P
ICS123	1-526-834-11	SOCKET, IC 28P
ICS131	1-526-718-11	SOCKET, IC (20P)
ICS132	1-526-718-11	SOCKET, IC (20P)
ICS138	1-526-835-11	SOCKET, IC 40P
ICS139	1-526-718-11	SOCKET, IC (20P)
ICS140	1-526-718-11	SOCKET, IC (20P)
L101	1-408-413-00	MICRO INDUCTOR 22UH
Q101	8-729-117-54	TRANSISTOR 2SA1175
Q102	8-729-600-27	TRANSISTOR 2SC634SP
Q103	8-729-117-54	TRANSISTOR 2SA1175
Q104	8-729-900-36	TRANSISTOR DTC124ES
Q105	8-729-600-27	TRANSISTOR 2SC634SP
Q106	8-729-600-27	TRANSISTOR 2SC634SP

Ref.No.	Part No.	Description			
R101	1-249-415-11	CARBON	680	5%	1/6W
R102	1-249-417-11	CARBON	1K	5%	1/6W
R103	1-249-423-11	CARBON	3.3K	5%	1/6W
R105	1-249-433-11	CARBON	22K	5%	1/6W
R106	1-247-881-00	CARBON	120K	5%	1/6W
R107	1-249-437-11	CARBON	47K	5%	1/6W
R108	1-249-417-11	CARBON	1K	5%	1/6W
R109	1-249-433-11	CARBON	22K	5%	1/6W
R110	1-249-409-11	CARBON	220	5%	1/6W
R111	1-249-425-11	CARBON	4.7K	5%	1/6W
R112	1-249-409-11	CARBON	220	5%	1/6W
R113	1-249-425-11	CARBON	4.7K	5%	1/6W
R114	1-249-417-11	CARBON	1K	5%	1/6W
R115	1-249-429-11	CARBON	10K	5%	1/6W
R116	1-249-425-11	CARBON	4.7K	5%	1/6W
R117	1-249-429-11	CARBON	10K	5%	1/6W
R118	1-249-417-11	CARBON	1K	5%	1/6W
R119	1-247-696-11	CARBON	47	5%	1/4W
R120	1-249-418-11	CARBON	1.2K	5%	1/6W
R121	1-249-409-11	CARBON	220	5%	1/6W
R122	1-249-414-11	CARBON	560	5%	1/6W
R123	1-249-414-11	CARBON	560	5%	1/6W
R124	1-249-425-11	CARBON	4.7K	5%	1/6W
R125	1-249-417-11	CARBON	1K	5%	1/6W
R126	1-249-434-11	CARBON	27K	5%	1/6W
R127	1-249-429-11	CARBON	10K	5%	1/6W
R128	1-215-493-00	CARBON	1M	5%	1/6W
R129	1-249-429-11	CARBON	10K	5%	1/6W
R130	1-249-429-11	CARBON	10K	5%	1/6W
R131	1-215-432-00	CARBON	3K	5%	1/6W
R132	1-249-409-11	CARBON	220	5%	1/6W
R133	1-215-426-00	CARBON	1.6K	5%	1/6W
R134	1-249-441-11	CARBON	100K	5%	1/6W
R135	1-249-417-11	CARBON	1K	5%	1/6W
R136	1-249-417-11	CARBON	1K	5%	1/6W
R137	1-249-417-11	CARBON	1K	5%	1/6W
R138	1-249-425-11	CARBON	4.7K	5%	1/6W
R139	1-249-399-11	CARBON	33	5%	1/6W
R140	1-249-425-11	CARBON	4.7K	5%	1/6W
R141	1-215-493-00	CARBON	1M	5%	1/6W
R142	1-215-483-00	CARBON	390K	5%	1/6W
R143	1-215-493-00	CARBON	1M	5%	1/6W
R144	1-249-417-11	CARBON	1K	5%	1/6W
R145	1-249-425-11	CARBON	4.7K	5%	1/6W
R146	1-249-414-11	CARBON	560	5%	1/6W
R147	1-249-409-11	CARBON	220	5%	1/6W
R148	1-249-420-11	CARBON	1.8K	5%	1/6W
R149	1-249-433-11	CARBON	22K	5%	1/6W
R151	1-249-429-11	CARBON	10K	5%	1/6W
R152	1-249-417-11	CARBON	1K	5%	1/6W
R161	1-249-437-11	CARBON	47K	5%	1/6W
R162	1-249-437-11	CARBON	47K	5%	1/6W
RB101	1-235-724-11	RES, ENCAPSULATED CERMET			
RB102	1-235-720-11	RES, ENCAPSULATED CERMET			
RB103	1-235-712-11	RES, ENCAPSULATED CERMET			
RB104	1-235-724-11	RES, ENCAPSULATED CERMET			
RB105	1-235-724-11	RES, ENCAPSULATED CERMET			
RB106	1-235-724-11	RES, ENCAPSULATED CERMET			

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Ref.No.	Part No.	Description
RB107	1-235-718-11	RES, ENCAPSULATED CERMET
RB108	1-235-724-11	RES, ENCAPSULATED CERMET
RB109	1-235-724-11	RES, ENCAPSULATED CERMET
RB110	1-235-720-11	RES, ENCAPSULATED CERMET
RV101	1-230-523-11	RES, ADJ, SOLID 10K
RV101	*3-662-075-00	COVER, CONTROL
RV102	1-230-526-11	RES, ADJ, SOLID 47K
RV102	*3-662-075-00	COVER, CONTROL
RY101	1-515-608-11	RELAY
S101	1-553-522-00	SWITCH, PUSH (RESET)
TH101	1-800-198-11	THERMISTOR S-1K
X101	1-567-505-11	CRYSTAL, OSC 3.58MHz
X102	1-527-726-00	VIBRATOR, CRYSTAL 4MHz
X103	1-567-564-11	VIBRATOR, CRYSTAL 1.8432MHz
X104	1-527-990-11	VIBRATOR, CRYSTAL 32.768kHz

906	*1-622-850-11	CN-4 MOUNTED *****
	7-623-422-07	LW 3, TYPE B
	7-682-649-09	SCREW +PSW 3X10
C231	1-101-004-00	CERAMIC 0.01MF 50V
C232	1-101-004-00	CERAMIC 0.01MF 50V
C233	1-101-004-00	CERAMIC 0.01MF 50V
CN232	1-563-161-11	CONNECTOR, D-SUB (MOUNT TYPE)25P(RS-232C)
CN234	1-563-005-31	CONNECTOR 14P (PRINTER)
D231	8-719-815-55	DIODE 1S1555
D232	8-719-815-55	DIODE 1S1555
D233	8-719-815-55	DIODE 1S1555
RY231	1-515-519-00	RELAY
RY232	1-515-519-00	RELAY
RY233	1-515-519-00	RELAY

901	*1-622-849-11	CN-3 MOUNTED *****
CN223	1-563-111-11	JACK 13P (KEY BOARD)

Ref.No.	Part No.	Description
		FRAME *****
908	*1-413-234-11	REGULATOR, SWITCHING (SR52)
909	*1-558-341-11	CABLE ASSY, FLAT (FDD)
910	*1-562-261-21	CONNECTOR, COAXIAL (BNC)(REF IN)
911	*1-558-340-11	CABLE ASSY, FLAT 30P
912	*1-936-891-11	HARNESS (REF)

ACCESSORY & PACKING MATERIAL		
	Part No.	Description
	*1-556-760-11	CORD, POWER (3 CORE)
	*3-764-300-11	CHART, REFERENCE
	*3-764-301-11	MANUAL, MSX-BASIC VERSION (2.0)
	*3-764-312-13	MANUAL, RS-232C
	3-764-331-12	MANUAL, INSTRUCTION
	3-769-087-11	MANUAL, INSTRUCTION
	3-769-087-41	MANUAL, INSTRUCTION
	*4-605-109-03	SEAL, GRAPHIC
	*4-605-110-03	SHEET, GRAPHIC
	*4-608-310-02	BOX, ACCESSORY
	4-608-311-01	CUSHION (KEYBOARD LEFT)
	4-608-312-01	CUSHION (KEYBOARD RIGHT)
	4-608-941-01	CUSHION (MAIN RIGHT)
	4-608-942-01	CUSHION (MAIN LEFT)
	4-609-321-91	INDIVIDUAL CARTON
	4-609-356-01	SHEET, PROTECTION
	4-832-728-00	SHEET, PROTECTION


The components identified by shading and mark  are critical for safety. Replace only with part number specified.

CORRECTION-1

File this correction with the Service Manual.

~~~~~ : corrected portion

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| <u>No.</u> | <u>Part No.</u>                                                                   | <u>Description</u> |
|------------|-----------------------------------------------------------------------------------|--------------------|
| 55         | A-8000-516-A                                                                      | MFD ASSY           |
|            |  |                    |
| 55         | <u>A-8040-525-A</u>                                                               | MFD ASSY (MFD-53W) |