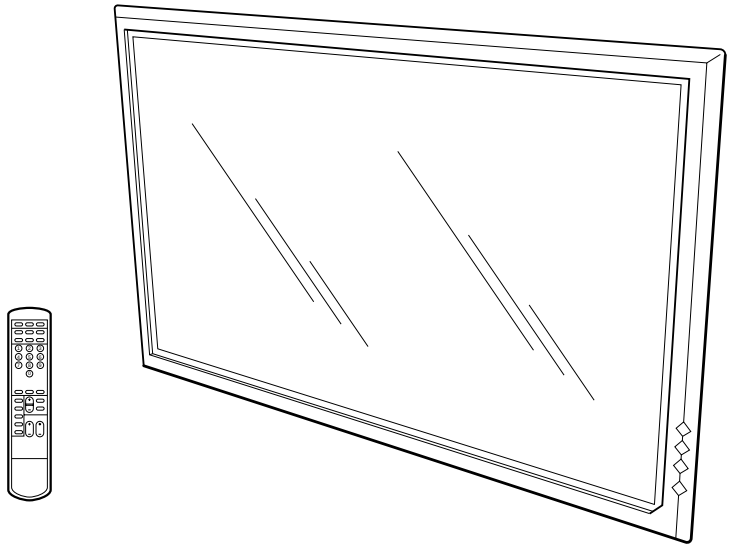
SERVICE MANUAL

MODEL	DEST.	CHASSIS NO.
PFM-42B1	US/CND/E	
PFM-42B1E	AEP	

MODEL	DEST.	CHASSIS NO.
BKM-B10	AEP	
RM-42B		



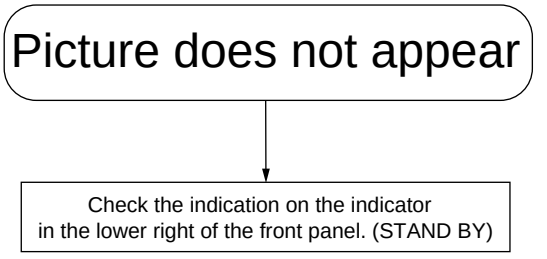
FLAT PANEL MONITOR

SONY

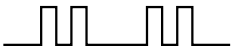
Section 4
Trouble Shooting

4-1. Judging Method When Image Does Not Appear

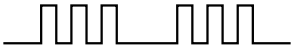
1. Flow chart



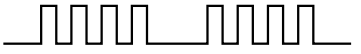
STBY LED flashes



2 times X SUS TEMP (DD CON)

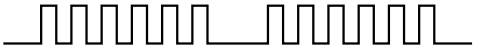


3 times Y SUS TEMP (I/O Block)

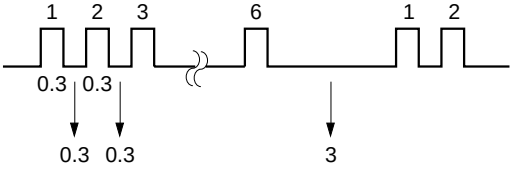


4 times Center TEMP

5 times Digital 5V



6 times PANEL FAIL (PDP)



When the STBY LED does not flash, the power supply circuit is defective.

2. How to find PDP unit trouble

1) The power must be supplied normally to the PDP unit. This power is supplied through two black 8-pin connectors from the power unit. The kinds of power supply are 160 V line, 60 V line, and 5 V line.

2) As input signals, H.SYNC (negative polarity), V.SYNC (negative polarity), BLANKING (negative polarity), CLOCK and RGB digital data (8 bit × 3) must be entered normally and DISPEN must be “high”.

   If no images appears through the above conditions are satisfied, the PDP unit will be defective.

4-2. Self Diagnosis Function

4-2-1. Outline

The PFM-42B1/B1E has the self diagnosis function using A/D converter to detect the power supply analog voltages, 8 channels of temperature sensor, fan operations, power unit temperature, DC voltage status, and to check the EEPROM and the watch register. When any abnormality occurs or defect is detected, the standby indicator on the control panel flashes and the detected data is displayed on the service menu [STATUS/TEST] block. If the abnormal status exceeds the allowable limit, the PFM-42B1/B1E is forced to shut down.

The detection items are shown as follows.

1. Increase and decrease of the panel DC voltage Vs is detected.
2. Increase and decrease of the panel DC voltage Va is detected.
3. Increase of temperature at the I/O block on top of the panel is detected. Shut down of machine.
4. Increase of temperature at the center in the top of the panel is detected. Shut down of machine.
5. Increase of temperature at the DC-DC converter on top of the panel is detected. Shut down of machine.
6. Temperature at the left side of the panel is detected.
7. Detection of fan stop and that of drive circuit failure.
   * Two fans at the bottom of the panel and the four fans for power supply circuit. One fan in the I/O block.
8. Detection of temperature rise in the power supply block.
9. Shut down when the 5 V for internal digital circuit has abnormality.
10. Detection of failure of the EEPROM.
11. Detection of abnormality in communication with scan converter.
12. Detection of failure in the ON/OFF control of power supply.
13. Detection of decreased backup power supply voltage for watch and detection of abnormality in oscillator.
14. Detection of PDP failure using the combination of the voltage detection and shut down of the machine.

4-2-2. Criteria for Judgment of Abnormality

1. Increase and decrease of the panel DC voltage Vs is detected.
   (Name of this function on the service menu : POWER SUPPLY - PDP VS)

   The normal operating range is + 160 V + 24 V/− 22 V.
   Warning of increase of the voltage Vs when 184 V or more.
   Warning of decrease of the voltage Vs when 138 V or less.

2. Increase and decrease of the panel DC voltage Va is detected.
   (Name of this function on the service menu : POWER SUPPLY - PDP VA)
   The normal operating range is + 60 V + 15 V/− 14 V.
   Warning of increase of the voltage Va when 75 V or more.
   Warning of decrease of the voltage Va when 46 V or less.

3. Increase of temperature at the top of the I/O block in the top of the panel is detected and shut down of the machine.
   (Name of this function on the service menu : TEMPERATURE - I/O BLOCK TOP)
   The normal operating range is up to 79 °C.
   Warning of high temperature when 80 °C or higher.
   Shut down at the temperature of 85 °C or higher .

4. Increase of temperature at the center in the top of the panel is detected and shut down of the machine.
   (Name of this function on the service menu : TEMPERATURE - CENTER)
   The normal operating range is up to 74 °C.
   Warning of high temperature when 75 °C or higher.
   Shut down at the temperature of 80 °C or higher .

5. Increase of temperature at the rear of the PDP and DC-DC converter block is detected.
   (Name of this function on the service menu : TEMPERATURE - DD CON TOP)
   The normal operating range is up to 84 °C.
   Warning of high temperature when 85 °C or higher .
   Shut down at the temperature of 90 °C or higher.

6. Detection of at the left side of panel temperature
(Name of this function on the service menu : TEMPERATURE - PANEL SIDE)
Occurrence of abnormality and fault is judged solely from the internal temperature of the PFM-42B1/B1E. Measurement of the ambient temperature aims mainly at the confirmation of the operating environment. Therefore, there is no chance to indicate this warning message.
Warning of high temperature at 85 °C or higher.

7. Detection of fan stop and that of drive circuit failure.
• Detection if fan is stopped or not.
(Name of this function on the service menu : FAN)
Status of the respective fans are displayed as OK or NG on the service menu STATUS.

```
FAN
  DRIVE CIRCUIT      : OK
  • B BOARD          : OK
  • P/S BLOCK TOP    : OK
  • P/S BLOCK MID    : OK
  • P/S BLOCK LOW L  : OK
  • P/S BLOCK LOW R  : OK
  • DD CON SIDE      : OK
  • I/O BLOCK SIDE   : OK
```

• Detection of fan drive circuit failure
(Name of this function on the service menu : FAN - DRIVE CIRCUIT)
The warning when the fan drive data is 6 V or more and the actual drive voltage is 2 V or less : warning

8. Detection of temperature rise in the power supply block.
(Name of this function on the service menu : TEMPERATURE - P/S INTERNAL)
Warning of high temperature when temperature of the heat sink for main converter inside the power supply unit exceeds the allowable limit : warning

WARNING at 90 °C
Shut-down at 95 °C

9. Shut down when the 5 V for internal digital circuit has abnormality.
(Name of this function on the service menu : POWER SUPPLY - DIGITAL 5V)
The voltage that is input to pin-62 of the system controller (IC252) is detected.
Shut down when there is no input voltage :

10. Detection of failure of the EEPROM.
(Name of this function on the service menu : OTHERS)
Warning when communication with EEPROM cannot be performed normally.
• EEPROM ID code error : EEP ROM ID
• EEPROM data write error : EEP ROM SAVE
• EEPROM data read error : EEP ROM LOAD
• EEPROM failure : EEP ROM ACK

11. Detection of abnormality in communication with scan converter.
(Name of this function on the service menu : OTHERS)
Warning when communication with scan converter cannot be performed normally.
PW164ACK

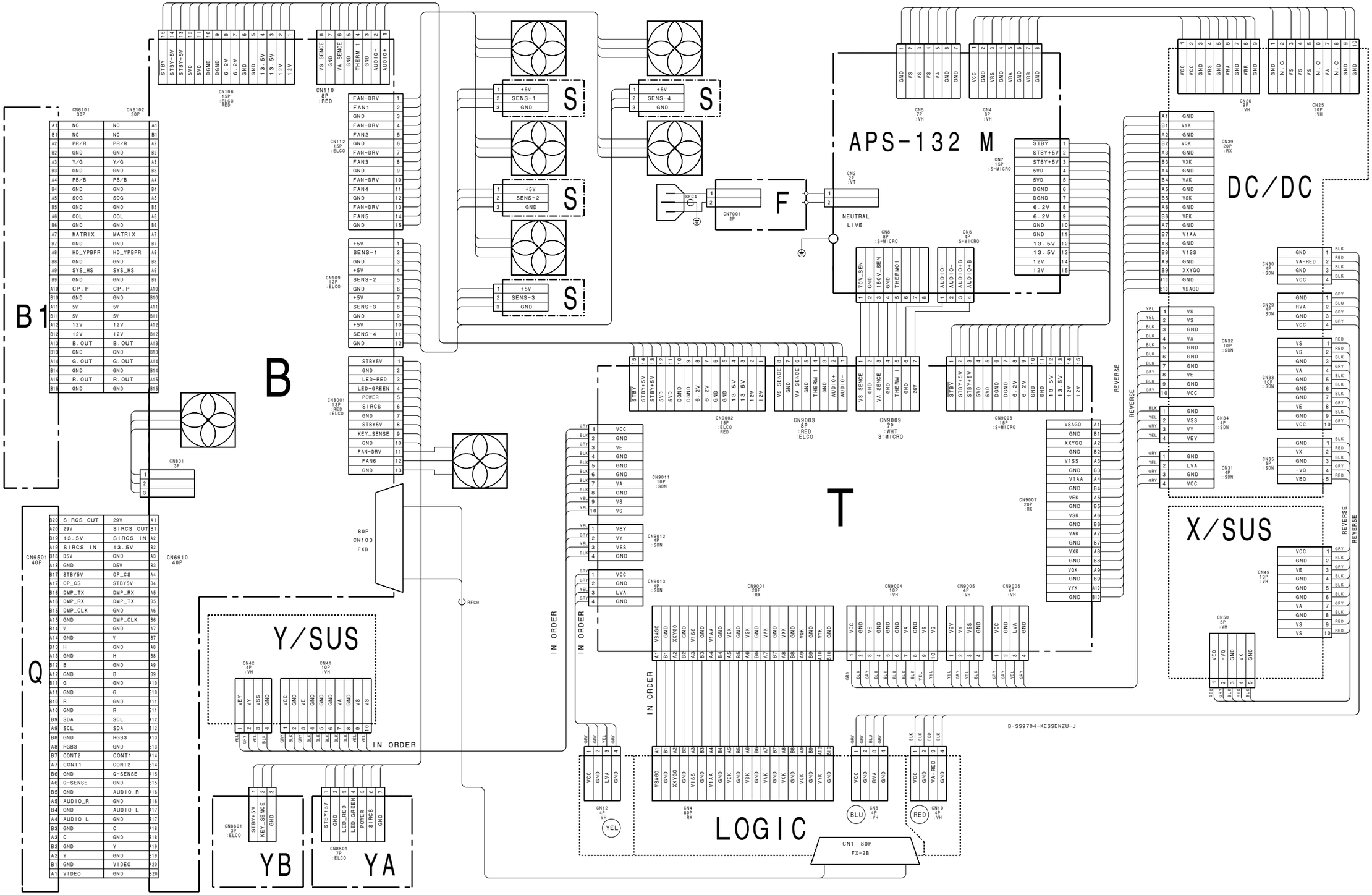
12. Detection of failure in the ON/OFF control of power supply.
(Name of this function on the service menu : Nil)
When the digital 5 V power does not decrease even in the STBY state, the machine enters the POWER ON state automatically.

13. Detection of decreased voltage of the backup power supply for watch and detection of abnormality of oscillator.
(Name of this function on the service menu : OTHERS)
Normal/abnormal is detected from the register value inside the watch IC.
• Initialization of time due to abnormal register value : RTC INITIALIZE
• Warning of low voltage of backup power supply : RTC BATTERY
• Warning that crystal oscillator for watch has stopped : RTC XTAL

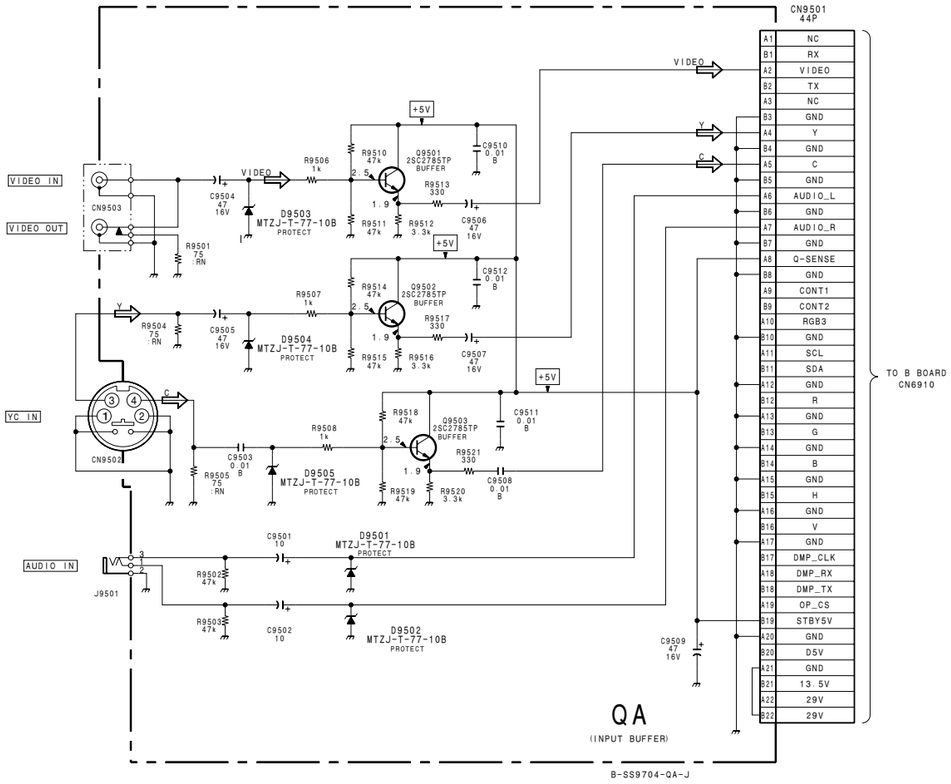
14. Detection of PDP failure.
(Name of this function on the service menu : Nil)
PDP is suspected to be defective when DIGITAL 5 V is normal among the voltages (VS, VA, DIGITAL 5 V) required to drive PDP while both VS and VA are not inputted.
When all the following conditions are satisfied, the machine enters once to the STANDBY mode then turn the main power back on again.
    1) DC 180 V power is 40 V or less.
    2) DC 70 V power is 20 V or less.
    3) DIGITAL 5 V is normal.

The above-described operation is repeated three times. If the above three conditions are still satisfied, the PDP is judged to be faulty and the main power is shut down.

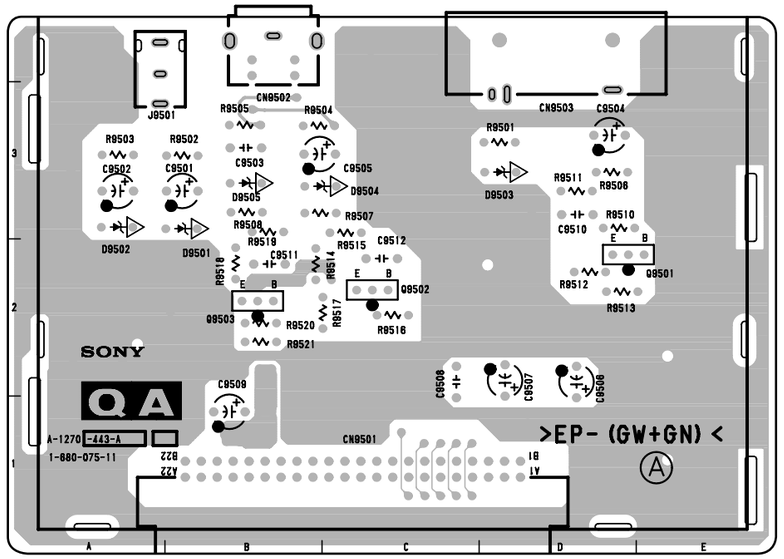
8-1. Frame Schematic Diagram



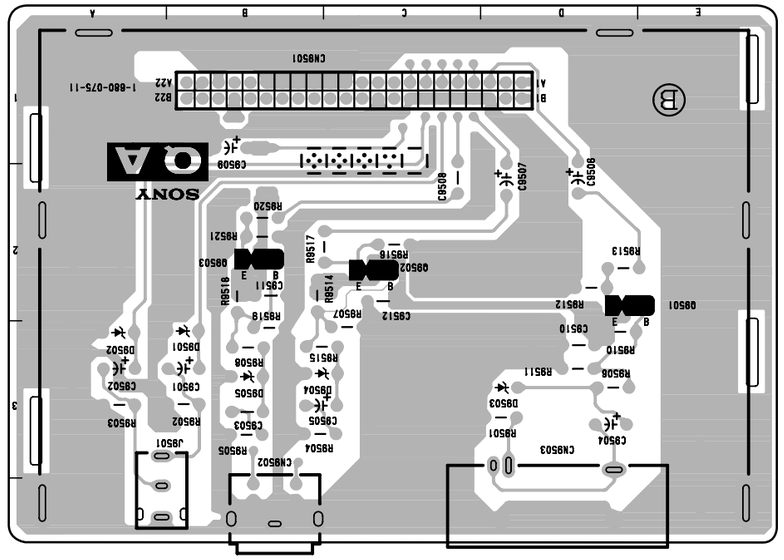
8-2. Schematic Diagrams and Printed Wiring Boards



BKM-B10 is available separately for AEP model.



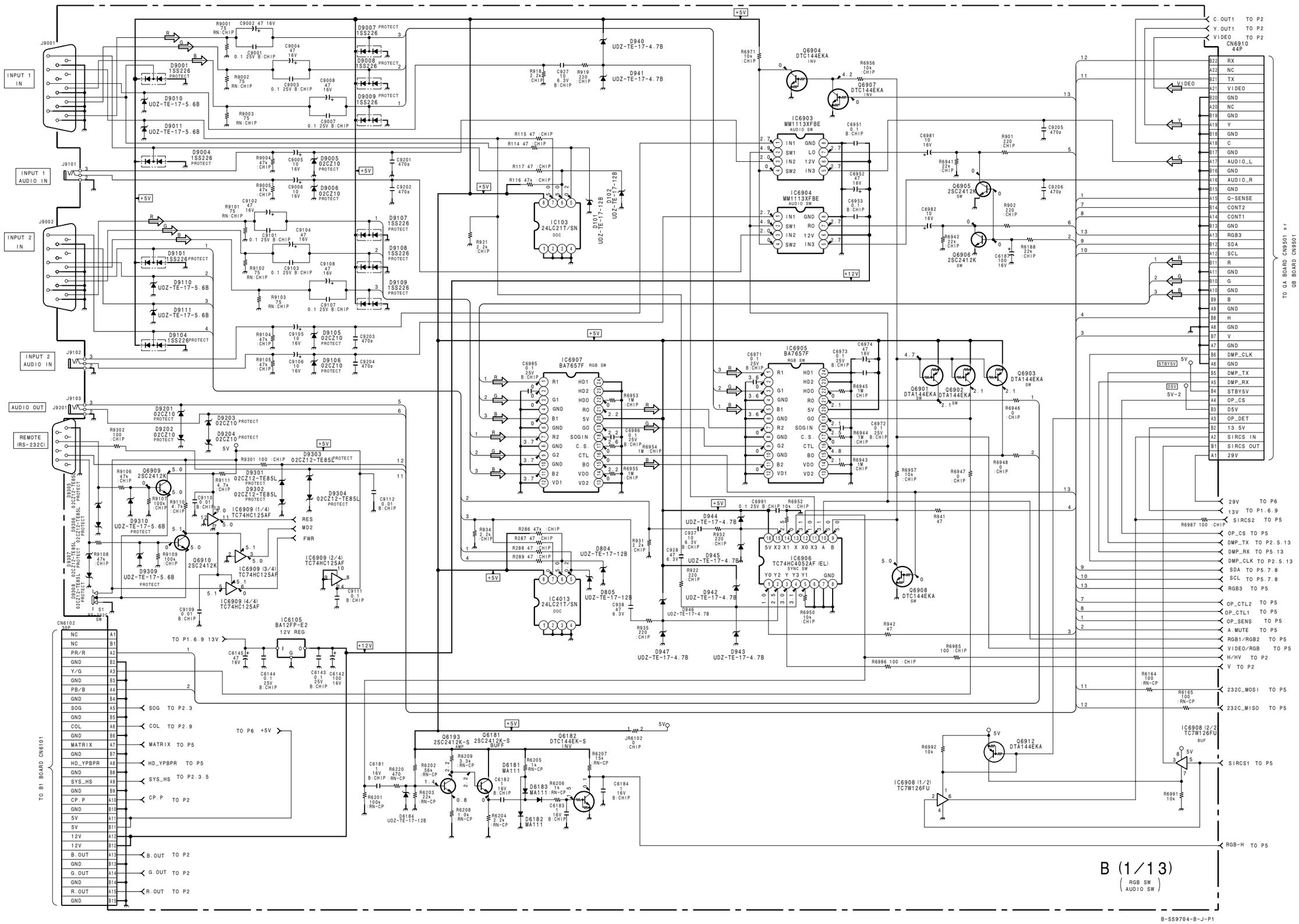
QA -A SIDE-
SUFFIX: -11

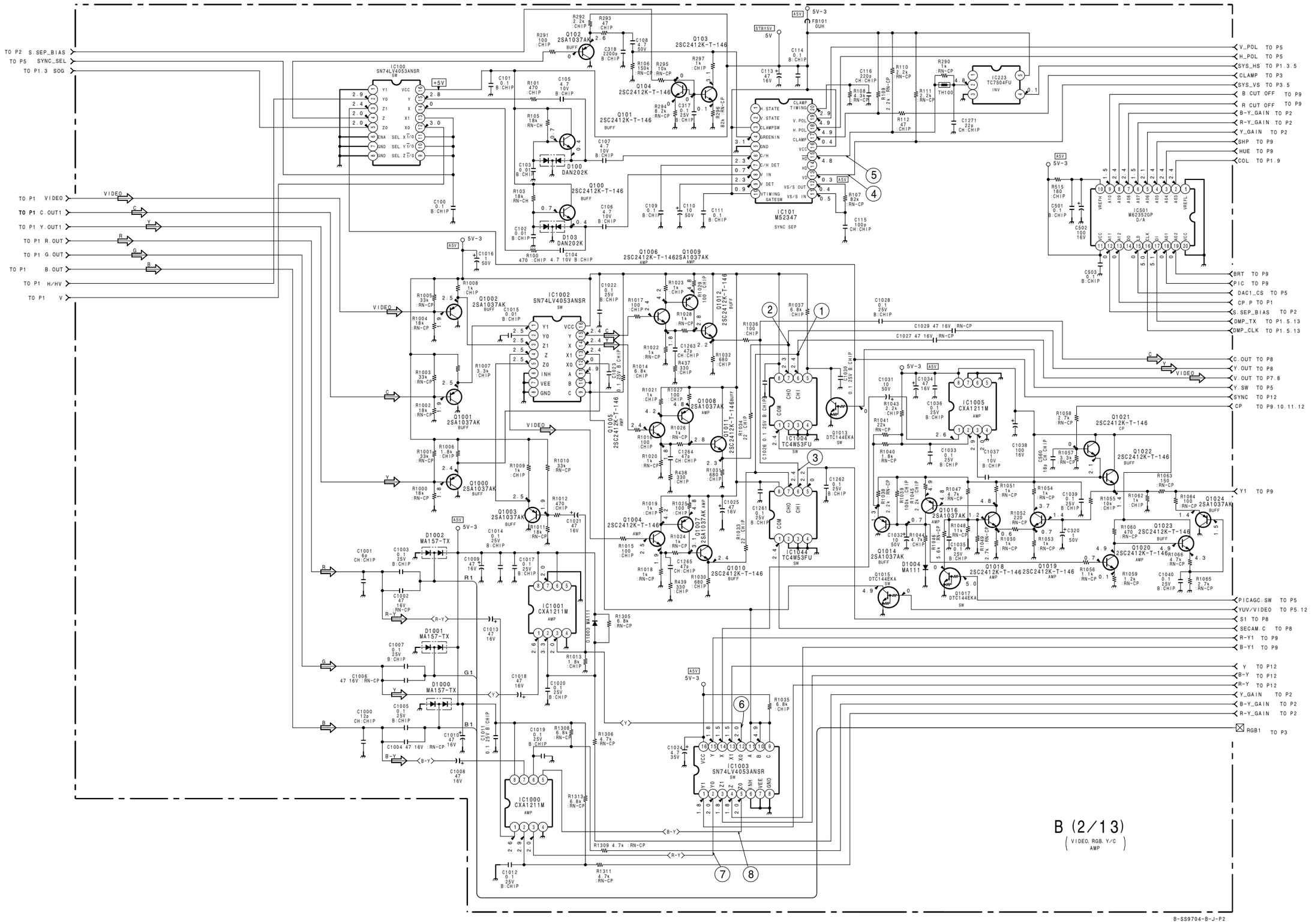


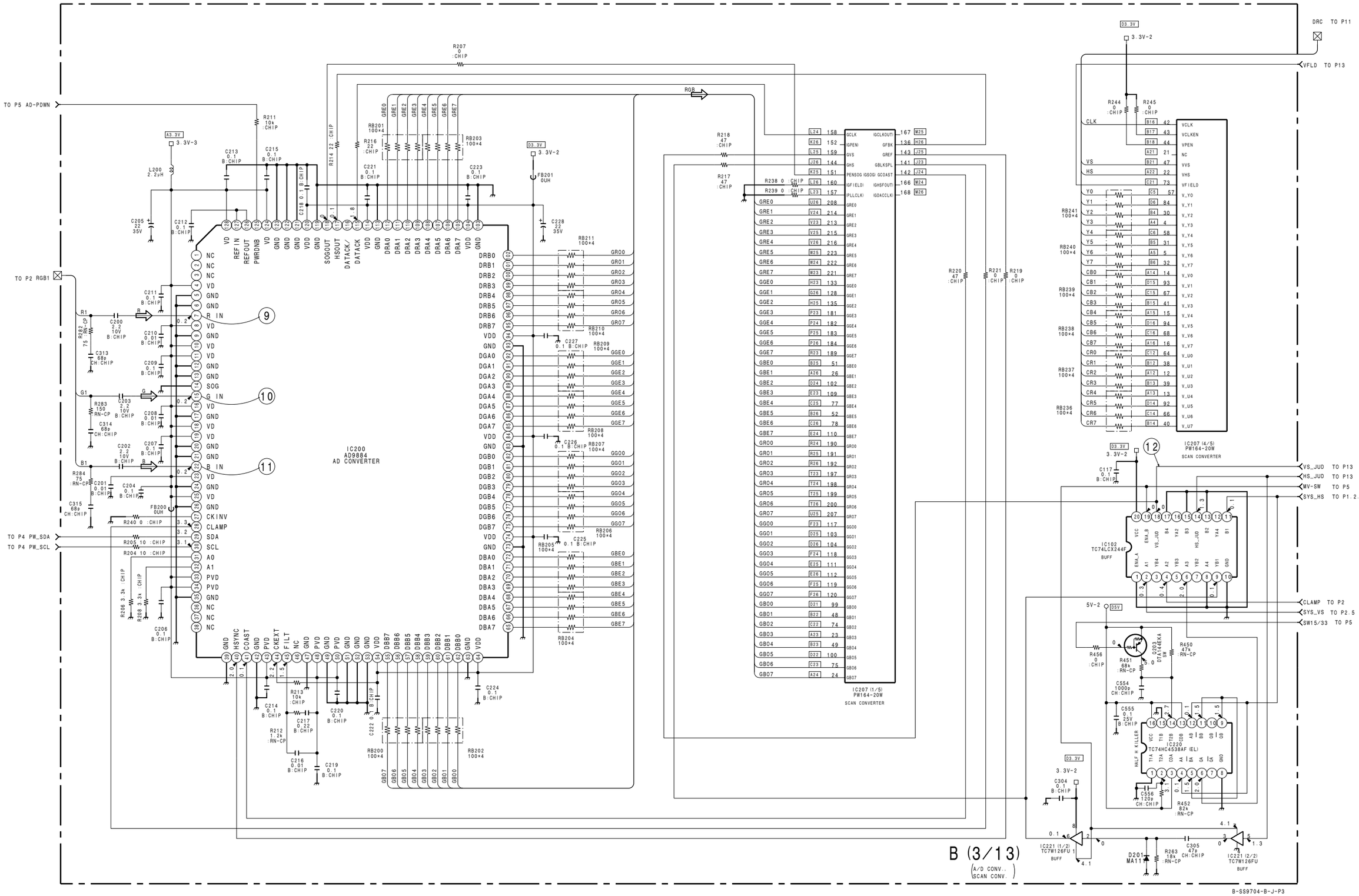
QA -B SIDE-
SUFFIX: -11

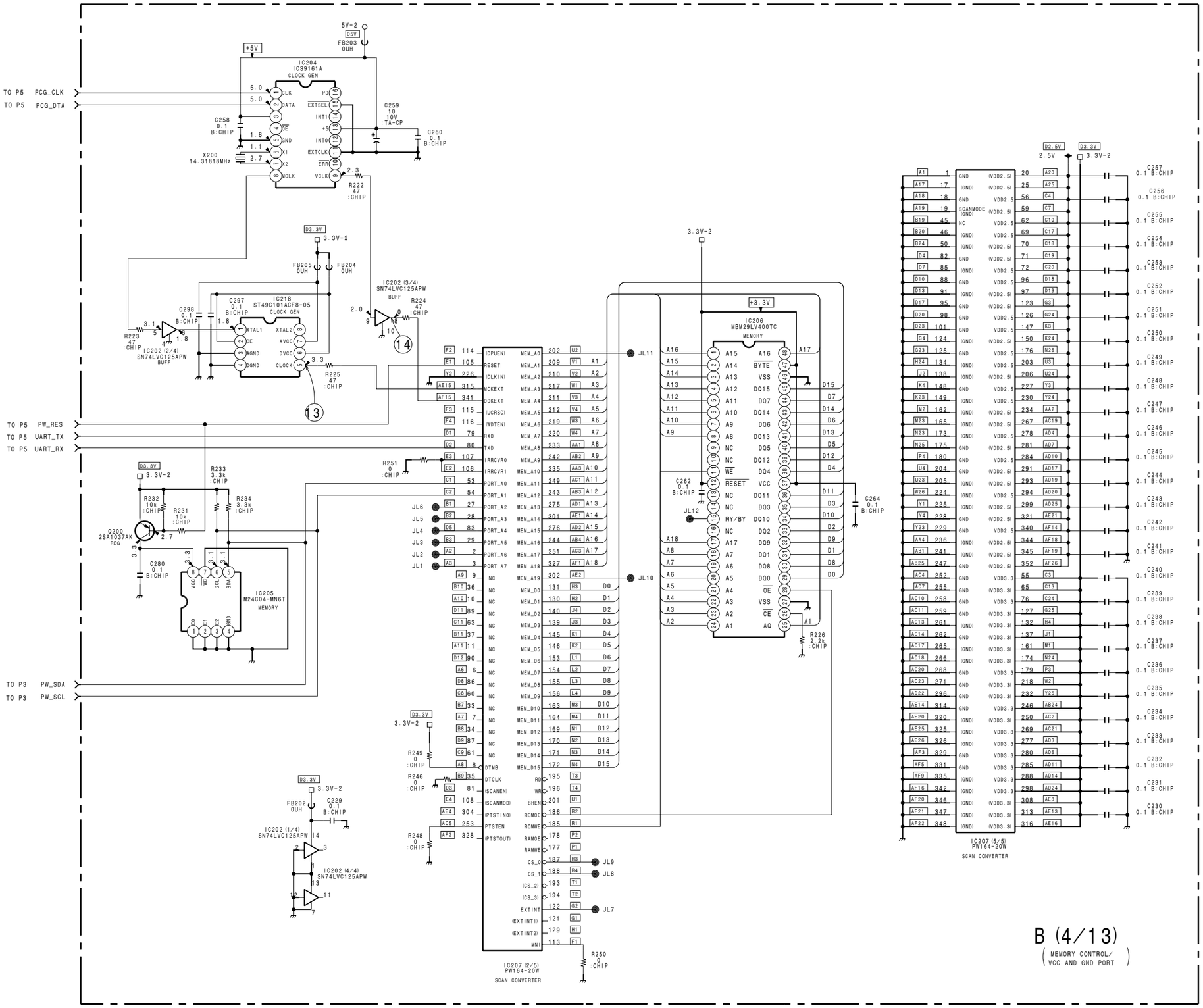
QA BOARD

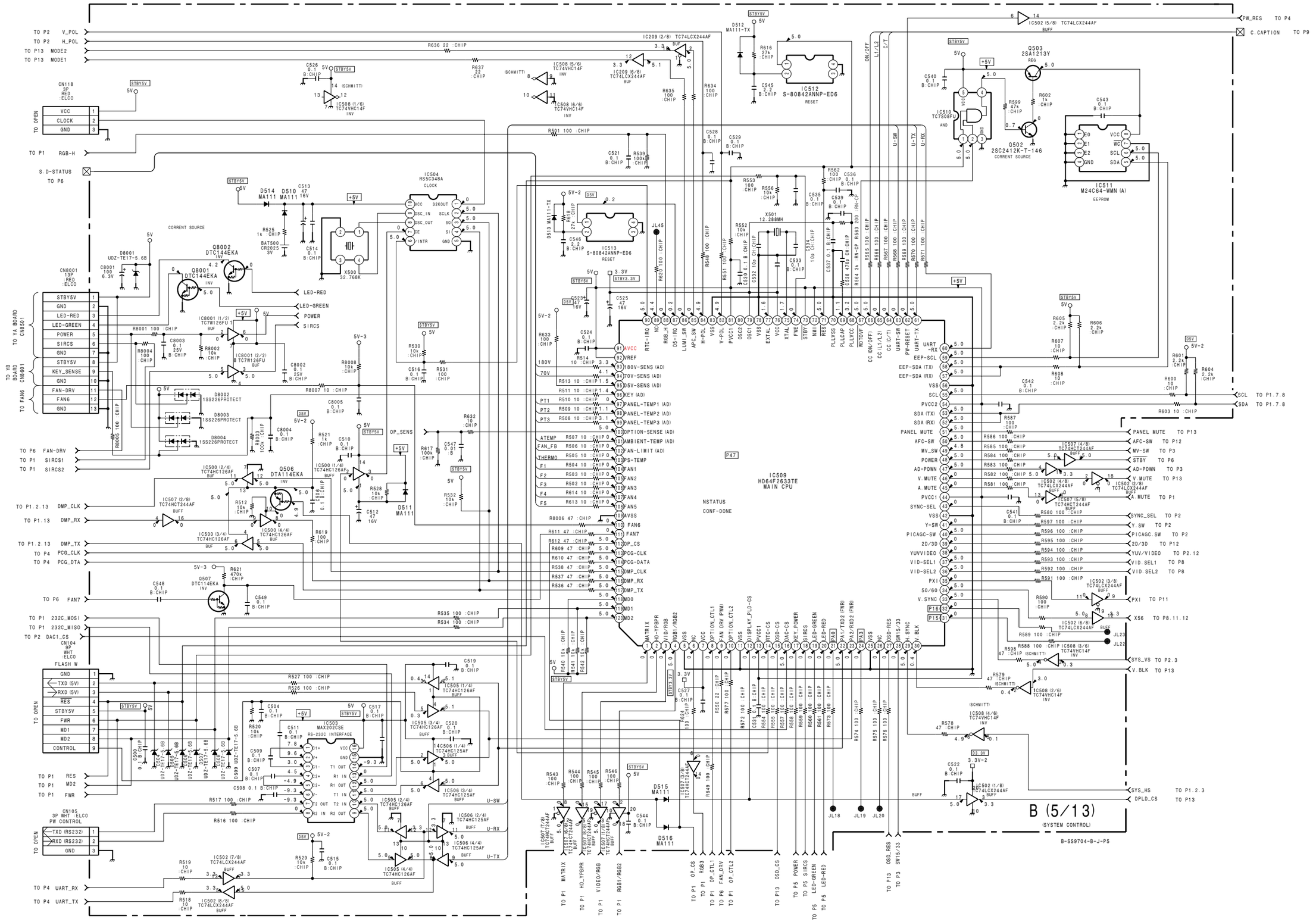
D9501	B-3
D9502	A-3
D9503	D-3
D9504	C-3
D9505	B-3
Q9501	E-2
Q9502	C-2
Q9503	B-2

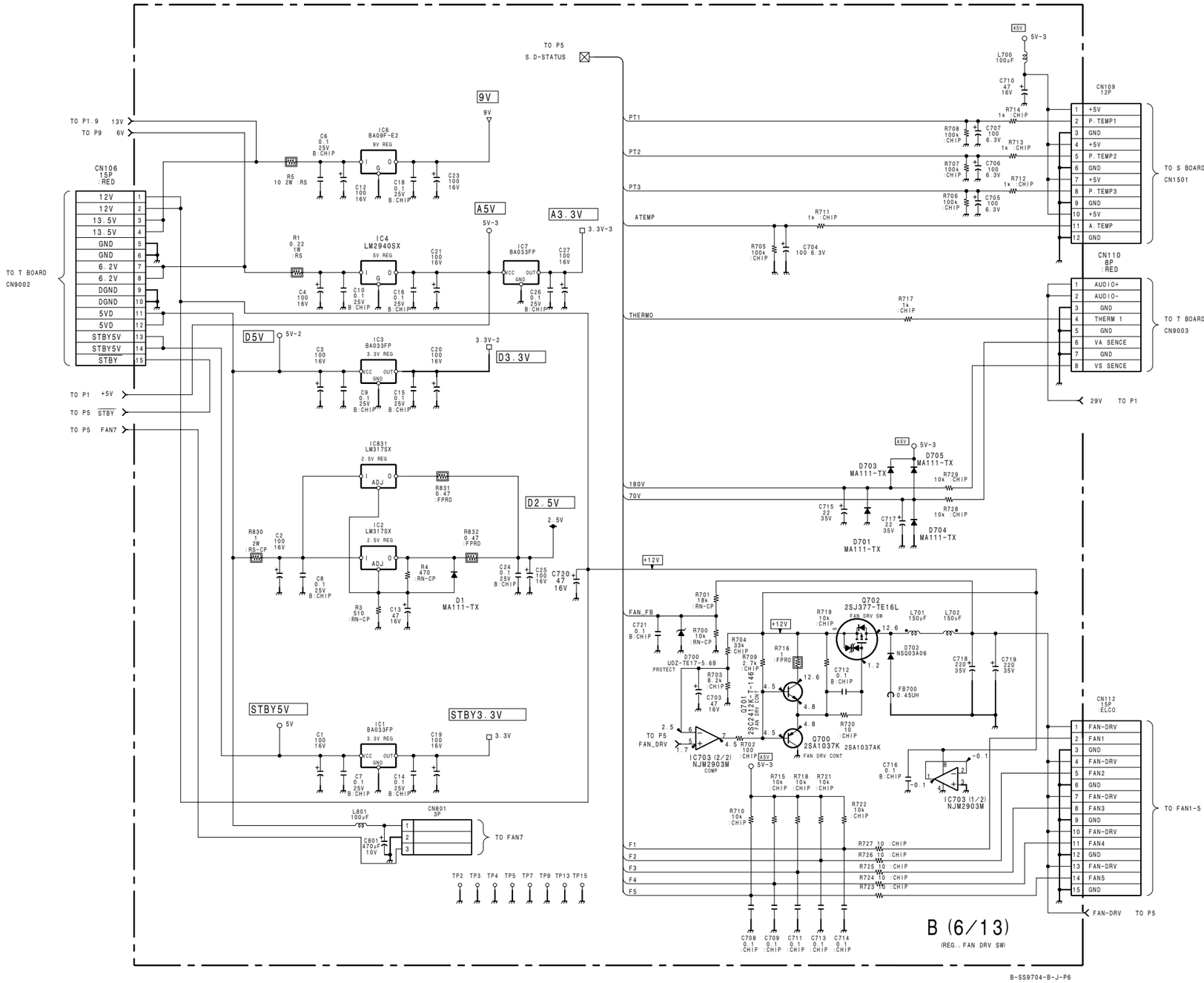

INPUT 1 IN
INPUT 1 AUDIO IN
INPUT 2 IN
INPUT 2 AUDIO IN
AUDIO OUT
REMOTE (RS-232C)
J9001
J9002
J9101
J9102
J9103
J9201
CN6102 30P
TO B1 BOARD CN6101
IC6903 MM1113XFBE AUDIO SW
IC6904 MM1113XFBE AUDIO SW
IC6905 BA7657F RGB SW
IC6907 BA7657F RGB SW
IC6906 TC74HC4052AF (EL) SYNC SW
IC6909 (1/4) TC74HC125AF
IC6909 (2/4) TC74HC125AF
IC6909 (3/4) TC74HC125AF
IC6909 (4/4) TC74HC125AF
IC6105 BA12FP-E2 12V REG
IC6908 (1/2) TC7W126FU
IC6908 (2/2) TC7W126FU
IC103 24LC21T/SN
IC4013 24LC21T/SN
CN6910 44P
TO 0A BOARD CN9501 or 0B BOARD CN9501
SOG TO P2.3
COL TO P2.9
MATRIX TO P5
HD_YPBPR TO P5
SYS_HS TO P2.3.5
CP.P TO P2
B.OUT TO P2
G.OUT TO P2
R.OUT TO P2
RES
MD2
FWR
SRCS1 TO P5
SRCS2 TO P5
RGB-H TO P5
B (1/13)
(RGB SW AUDIO SW)
B-SS9704-B-J-P1

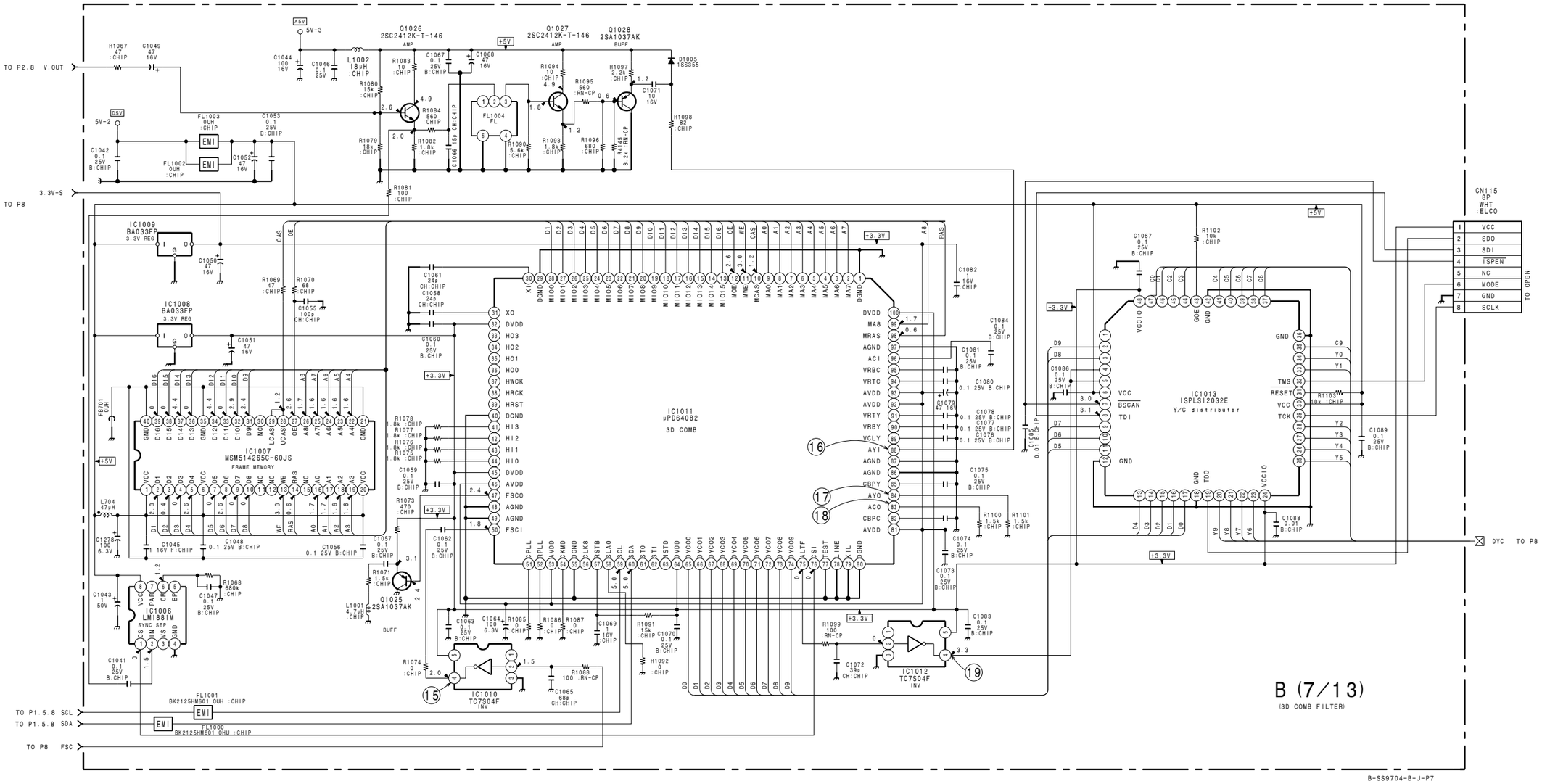

TO P2 S.SEP_BIAS
TO P5 SYNC_SEL
TO P1.3 SOG
TO P1 VIDEO
TO P1 C.OUT1
TO P1 Y.OUT1
TO P1 R.OUT
TO P1 G.OUT
TO P1 B.OUT
TO P1 H/HV
TO P1 V
V_POL TO P5
H_POL TO P5
SYS_HS TO P1.3.5
CLAMP TO P3
SYS_VS TO P3.5
B CUT OFF TO P9
R CUT OFF TO P9
B-Y_GAIN TO P2
R-Y_GAIN TO P2
Y_GAIN TO P2
SHP TO P9
HUE TO P9
COL TO P1.9
BRT TO P9
PIC TO P9
DAC1_CS TO P5
CP.P TO P1
S.SEP_BIAS TO P2
DMP_TX TO P1.5.13
DMP_CLK TO P1.5.13
C.OUT TO P8
Y.OUT TO P8
V.OUT TO P7.8
Y.SW TO P5
SYNC TO P12
CP TO P9.10.11.12
Y1 TO P9
PICAGC.SW TO P5
YUV/VIDEO TO P5.12
S1 TO P8
SECAM.C TO P8
R-Y1 TO P9
B-Y1 TO P9
Y TO P12
B-Y TO P12
R-Y TO P12
Y_GAIN TO P2
B-Y_GAIN TO P2
R-Y_GAIN TO P2
RGB1 TO P3
IC100 SN74LV4053ANSR SW
IC1001 CXA1211M AMP
IC1002 SN74LV4053ANSR SW
IC1000 CXA1211M AMP
IC1003 SN74LV4053ANSR SW
IC1004 TC4W53FU SW
IC1005 CXA1211M AMP
IC1044 TC4W53FU SW
IC101 M52347 SYNC SEP
IC501 M62352GP D/A
IC223 TC7S04FU INV
D100 DAN202K
D103 DAN202K
D1000 MA157-TX
D1001 MA157-TX
D1002 MA157-TX
D1003 MA111
D1004 MA111
FB101 0UH
TH100
B (2/13)
(VIDEO, RGB, Y/C AMP)
B-SS9704-B-J-P2

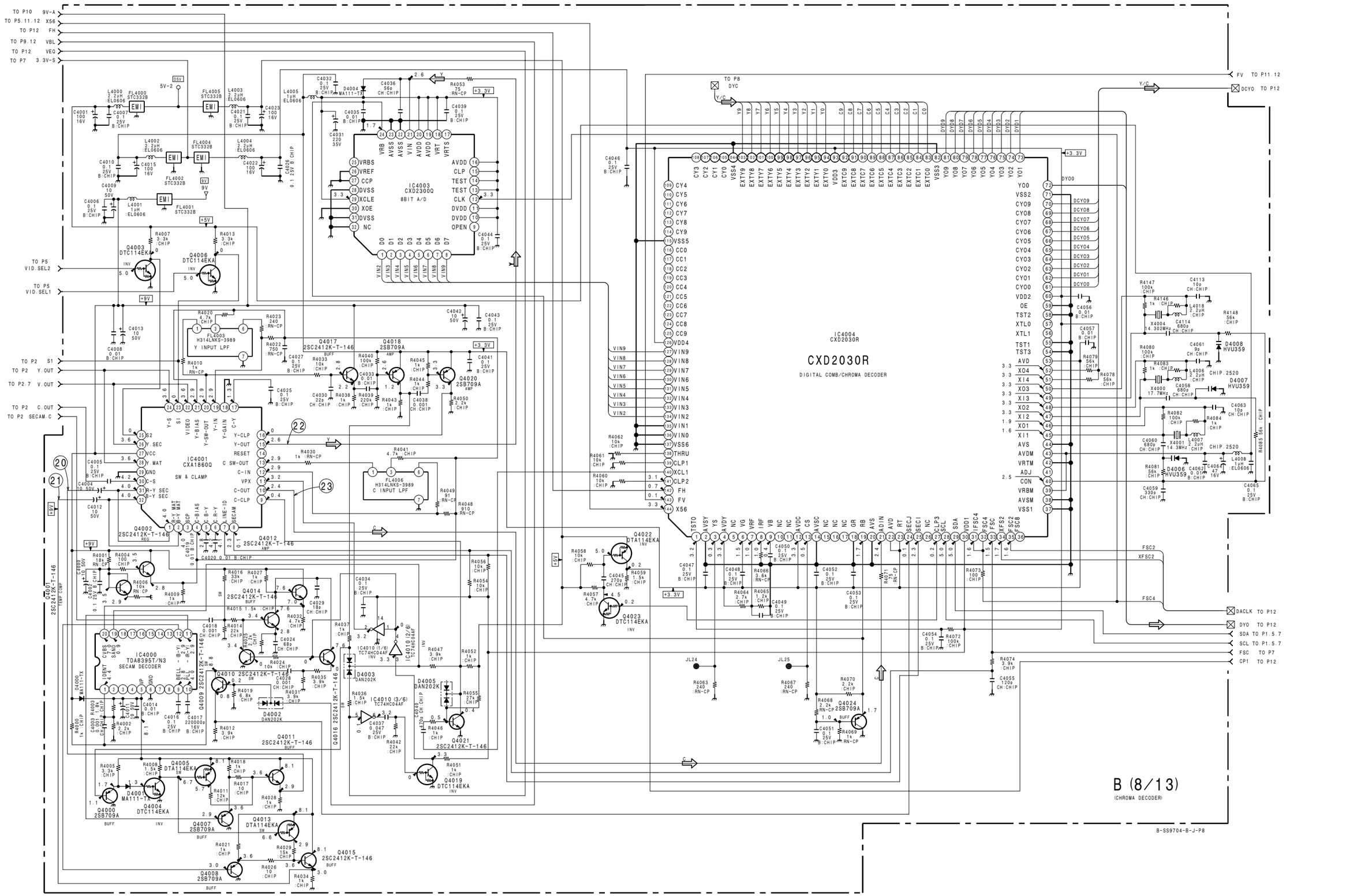

TO P5 AD-PDWN
TO P2 RGB1
TO P4 PW_SDA
TO P4 PW_SCL
IC200
AD9884
AD CONVERTER
IC207 (1/5)
PW164-20W
SCAN CONVERTER
IC207 (4/5)
PW164-20W
SCAN CONVERTER
IC102
TC74LCX244F
BUFF
IC220
TC74HC4538AF (EL)
HALF H KILLER
IC221 (1/2)
TC7W126FU
BUFF
IC221 (2/2)
TC7W126FU
BUFF
DRC TO P11
VFLD TO P13
VS_JUD TO P13
HS_JUD TO P13
MV-SW TO P5
SYS_HS TO P1,2,5
CLAMP TO P2
SYS_VS TO P2,5
SW15/33 TO P5
B (3/13)
A/D CONV.,
SCAN CONV.
B-SS9704-B-J-P3

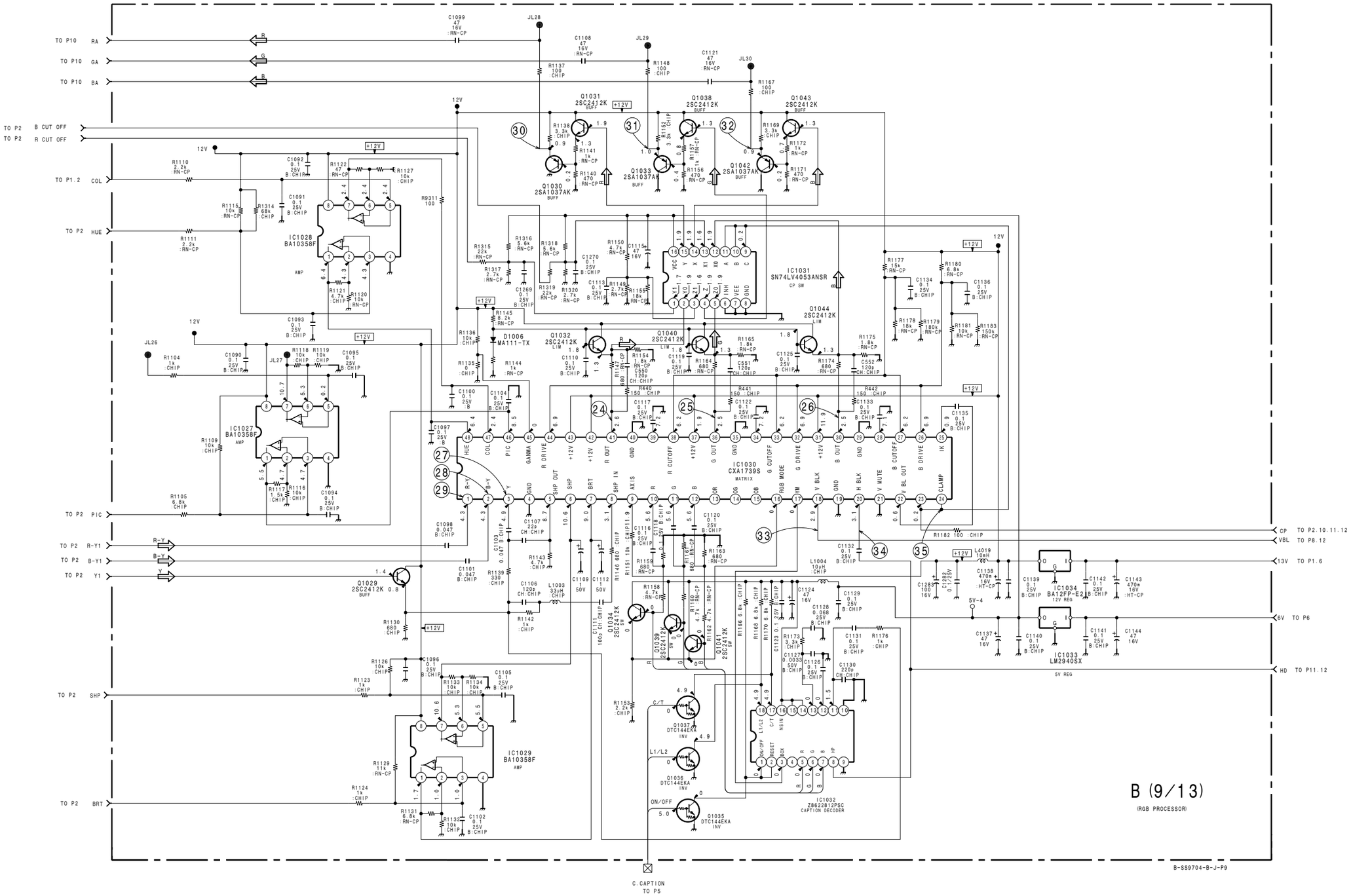

IC204 ICS9161A CLOCK GEN
IC218 ST49C101ACF8-05 CLOCK GEN
IC202 (3/4) SN74LVC125APW BUFF
IC202 (2/4) SN74LVC125APW BUFF
IC202 (1/4) SN74LVC125APW
IC202 (4/4) SN74LVC125APW
IC206 MBM29LV400TC MEMORY
IC205 M24C04-MN6T MEMORY
IC207 (2/5) PW164-20W SCAN CONVERTER
IC207 (5/5) PW164-20W SCAN CONVERTER
X200 14.31818MHz
Q200 2SA1037AK REG
TO P5 PCG_CLK
TO P5 PCG_DTA
TO P5 PW_RES
TO P5 UART_TX
TO P5 UART_RX
TO P3 PW_SDA
TO P3 PW_SCL
B (4/13)
MEMORY CONTROL/ VCC AND GND PORT
B-SS9704-B-J-P4

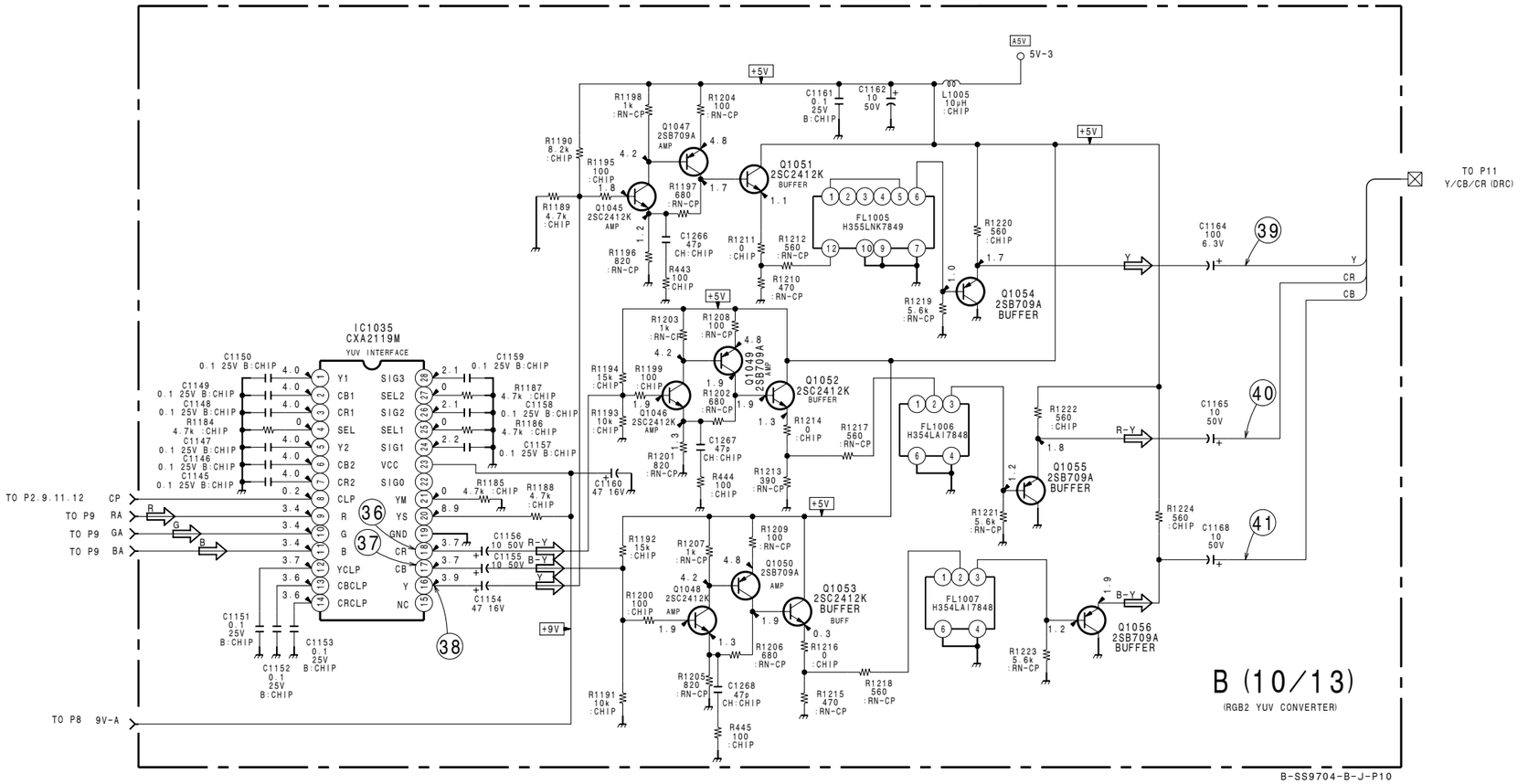

IC509
HD64F2633TE
MAIN CPU
NSTATUS
CONF-DONE
P47
B (5/13)
(SYSTEM CONTROL)
B-SS9704-B-J-P5
CORRENT SOURCE
EEPROM
RESET
CLOCK
INV
BUFF
AND
REG
TO P1 V_POL
TO P2 H_POL
TO P13 MODE2
TO P13 MODE1
TO P1 RGB-H
S.D-STATUS
TO P6
TO OPEN
TO YA BOARD CN8501
TO YB BOARD CN8601
TO FAN6 CN8601
LED-RED
LED-GREEN
POWER
SIRCS
OP_SENS
PW_RES TO P4
C.CAPTION TO P9
SCL TO P1.7.8
SDA TO P1.7.8
PANEL MUTE TO P13
AFC-SW TO P12
MV-SW TO P3
STBY TO P6
AD-PDWN TO P3
V.MUTE TO P13
A.MUTE TO P1
SYNC_SEL TO P2
V.SW TO P2
PICAGC.SW TO P2
2D/3D TO P12
YUV/VIDEO TO P2.12
VID.SEL1 TO P8
VID.SEL2 TO P8
PXI TO P11
X56 TO P8.11.12
SYS_VS TO P2.3
V.BLK TO P13
SYS_HS TO P1.2.3
DPLD_CS TO P13
TO P6 FAN-DRV
TO P1 SIRCS1
TO P1 SIRCS2
TO P1.2.13 DMP_CLK
TO P1.13 DMP_RX
TO P1.2.13 DMP_TX
TO P4 PCG_CLK
TO P4 PCG_DTA
TO P6 FAN7
TO P1 232C_MOSI
TO P1 232C_MISO
TO P2 DAC1_CS
TO P1 RES
TO P1 MD2
TO P1 FWR
TO P4 UART_RX
TO P4 UART_TX
TO P1 MATRIX
TO P1 HD_YPBPR
TO P1 VIDEO/RGB
TO P1 RGB1/RGB2
TO P1 OP_CS
TO P1 RGB3
TO P1 OP_CTL1
TO P6 FAN_DRV
TO P1 OP_CTL2
TO P13 OSD_CS
TO P5 POWER
TO P5 SIRCS
TO P5 LED-GREEN
TO P5 LED-RED
TO P13 OSD_RES
TO P3 SW15/33
CN118 3P RED ELCO
CN8001 13P RED ELCO
CN8104 9P WHT ELCO
CN105 3P WHT ELCO PW CONTROL
FLASH W
IC504 RS5C348A
IC513 S-80842ANNP-ED6
IC512 S-80842ANNP-ED6
IC511 M24C64-WMN (A)
IC503 MAX202CSE
RS-232C INTERFACE
IC509 HD64F2633TE
Q503 2SA1213Y
Q502 2SC2412K-T-146
Q8002 DTC144EKA
Q8001 DTC144EKA
Q506 DTA114EKA
Q507 DTC114EKA
X500 32.768K
X501 12.288MH
D8001 UDZ-TE17-5.6B
D514 MA111
D510 MA111
D512 MA111-TX
D513 MA111-TX
D515 MA111
D516 MA111
D511 MA111
D8002 1SS226PROTECT
D8003 1SS226PROTECT
D8004 1SS226PROTECT
IC8001 (1/2) TC7W126FU
IC8001 (2/2) TC7W126FU
IC500 (2/4) TC74HC126AF
IC500 (1/4) TC74HC126AF
IC500 (3/4) TC74HC126AF
IC500 (4/4) TC74HC126AF
IC505 (1/4) TC74HC126AF
IC505 (2/4) TC74HC126AF
IC505 (3/4) TC74HC126AF
IC505 (4/4) TC74HC126AF
IC506 (1/4) TC74HC125AF
IC506 (2/4) TC74HC125AF
IC506 (3/4) TC74HC125AF
IC506 (4/4) TC74HC125AF
IC507 (1/8) TC74HC244AF
IC507 (2/8) TC74HCT244AF
IC507 (3/8) TC74HCT244AF
IC507 (4/8) TC74HCT244AF
IC507 (5/8) TC74HCT244AF
IC507 (6/8) TC74HCT244AF
IC507 (7/8) TC74HCT244AF
IC507 (8/8) TC74HCT244AF
IC508 (1/6) TC74VHC14F
IC508 (2/6) TC74VHC14F
IC508 (3/6) TC74VHC14F
IC508 (4/6) TC74VHC14F
IC508 (5/6) TC74VHC14F
IC508 (6/6) TC74VHC14F
IC502 (1/8) TC74LCX244AF
IC502 (2/8) TC74LCX244AF
IC502 (3/8) TC74LCX244AF
IC502 (4/8) TC74LCX244AF
IC502 (5/8) TC74LCX244AF
IC502 (6/8) TC74LCX244AF
IC502 (7/8) TC74LCX244AF
IC502 (8/8) TC74LCX244AF
IC510 TC7S08FU
IC507 (4/8) TC74HCT244AF
STBY5V
STBY3.3V
+5V
5V
3.3V
5V-2
5V-3
D3.3V
D5V
AVCC
VREF
180V-SENS (AD)
70V-SENS (AD)
D5V-SENS (AD)
KEY (AD)
PANEL-TEMP1 (AD)
PANEL-TEMP2 (AD)
PANEL-TEMP3 (AD)
OPTION-SENSE (AD)
AMBIENT-TEMP (AD)
FAN-LIMIT (AD)
PS-TEMP
FAN1
FAN2
FAN3
FAN4
FAN5
AVSS
FAN6
FAN7
OP_CS
PCG-CLK
PCG-DATA
DMP_CLK
DMP_RX
DMP_TX
MD0
MD1
MD2
LED-RED
LED-GREEN
POWER
SIRCS
CONTROL
UART-RX
EEP-SCL
EEP-SDA (TX)
EEP-SDA (RX)
UART-TX
PW-RESET
SW15/33
V_BLK
SYNC-SEL
PICAGC-SW
2D/3D
YUVVIDEO
VID-SEL1
VID-SEL2
PXI
50/60
V.SYNC
ON/OFF
L1/L2
C/T
U-SW
U-TX
U-RX

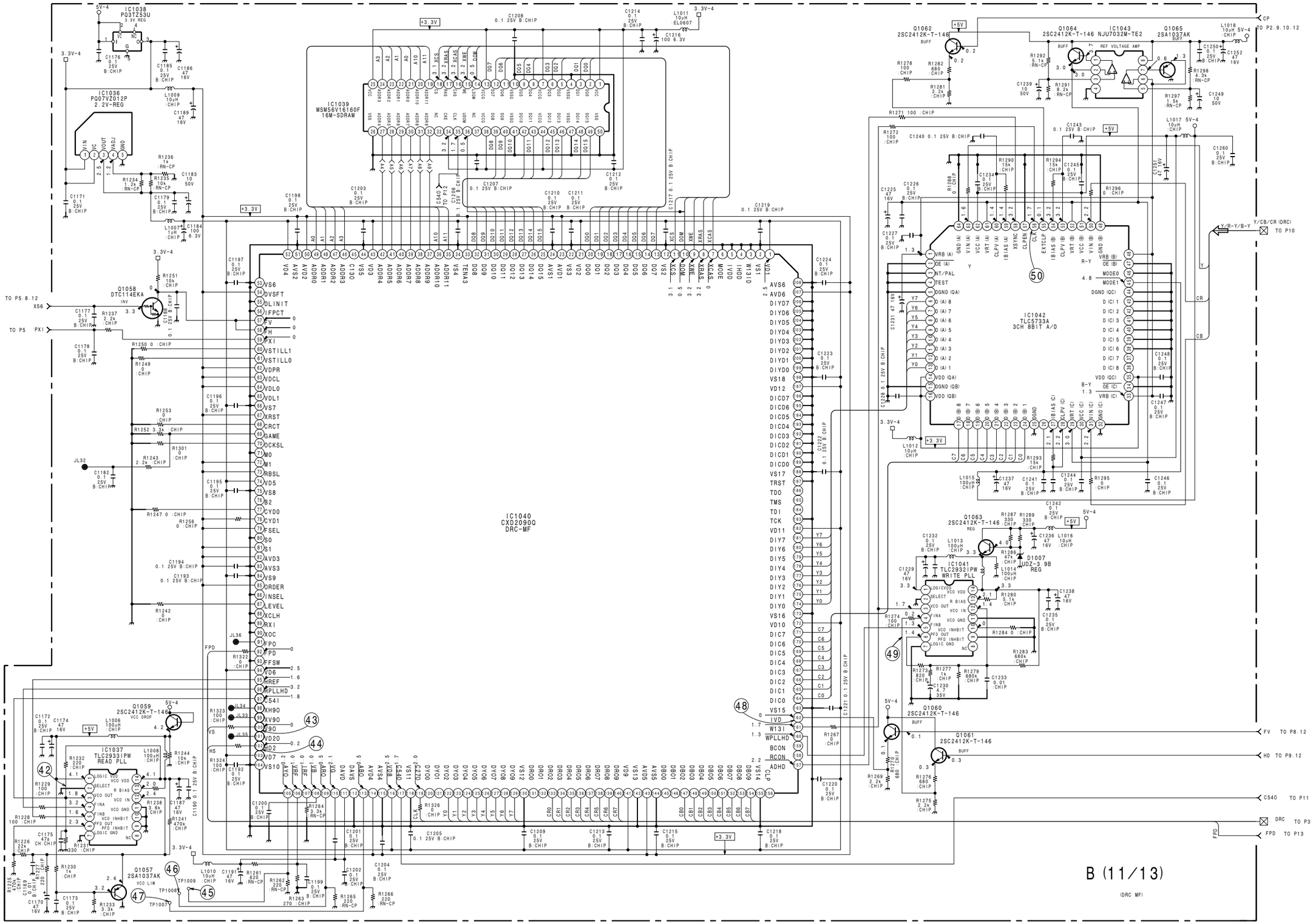

TO P5
S.D-STATUS
9V
TO P1.9 13V
TO P9 6V
CN106
15P
:RED
12V 1
12V 2
13.5V 3
13.5V 4
GND 5
GND 6
6.2V 7
6.2V 8
DGND 9
DGND 10
5VD 11
5VD 12
STBY5V 13
STBY5V 14
STBY 15
TO T BOARD
CN9002
IC6
BA09F-E2
9V REG
R5
10 2W :RS
C6
0.1
25V
B:CHIP
C12
100
16V
C18
0.1
25V
B:CHIP
C23
100
16V
A5V
5V-3
A3.3V
3.3V-3
R1
0.22
1W
:RS
IC4
LM2940SX
5V REG
C4
100
16V
C10
0.1
25V
B:CHIP
C16
0.1
25V
B:CHIP
C21
100
16V
IC7
BA033FP
VCC
OUT
GND
C27
100
16V
C26
0.1
25V
B:CHIP
D5V
5V-2
3.3V-2
D3.3V
IC3
BA033FP
3.3V REG
C3
100
16V
C9
0.1
25V
B:CHIP
C15
0.1
25V
B:CHIP
C20
100
16V
TO P1 +5V
TO P5 STBY
TO P5 FAN7
IC831
LM317SX
2.5V REG
ADJ
R831
0.47
:FPRD
D2.5V
2.5V
R830
1
2W
:RS-CP
C2
100
16V
IC2
LM317SX
2.5V REG
ADJ
R832
0.47
:FPRD
C8
0.1
25V
B:CHIP
R4
470
:RN-CP
C24
0.1
25V
B:CHIP
C25
100
16V
C720
47
16V
R3
510
:RN-CP
C13
47
16V
D1
MA111-TX
STBY5V
5V
STBY3.3V
3.3V
IC1
BA033FP
3.3V REG
C1
100
16V
C7
0.1
25V
B:CHIP
C14
0.1
25V
B:CHIP
C19
100
16V
L801
100μF
CN801
3P
C801
470pF
10V
TO FAN7
TP2 TP3 TP4 TP5 TP7 TP8 TP13 TP15
PT1
PT2
PT3
ATEMP
THERMO
R711
1k :CHIP
R705
100k
:CHIP
C704
100 6.3V
R717
1k
:CHIP
A5V
5V-3
L700
100μF
C710
47
16V
CN109
12P
R714
1k :CHIP
R713
1k :CHIP
R712
1k :CHIP
R708
100k
:CHIP
C707
100
6.3V
R707
100k
:CHIP
C706
100
6.3V
R706
100k
:CHIP
C705
100
6.3V
1 +5V
2 P.TEMP1
3 GND
4 +5V
5 P.TEMP2
6 GND
7 +5V
8 P.TEMP3
9 GND
10 +5V
11 A.TEMP
12 GND
TO S BOARD
CN1501
CN110
8P
:RED
1 AUDIO+
2 AUDIO-
3 GND
4 THERM 1
5 GND
6 VA SENCE
7 GND
8 VS SENCE
TO T BOARD
CN9003
29V TO P1
180V
70V
D703
MA111-TX
D705
MA111-TX
R729
10k :CHIP
R728
10k :CHIP
C715
22
35V
C717
22
35V
D701
MA111-TX
D704
MA111-TX
+12V
FAN_FB
R701
18k
:RN-CP
C721
0.1
B:CHIP
R700
10k
:RN-CP
R704
33k
:CHIP
R709
2.7k
:CHIP
R716
1
:FPRD
Q702
2SJ377-TE16L
FAN DRV SW
R719
10k
:CHIP
L701
150μF
L702
150μF
D702
NSQ03A06
D700
UDZ-TE17-5.6B
PROTECT
R703
8.2k
:CHIP
C703
47
16V
C712
0.1
B:CHIP
FB700
0.45UH
C718
220
35V
C719
220
35V
Q701
2SC2412K-T146
2SC2412K
FAN DRV CONT
R720
10
:CHIP
Q700
2SA1037K
2SA1037AK
FAN DRV CONT
TO P5
FAN_DRV
IC703 (2/2)
NJM2903M
COMP
IC703 (1/2)
NJM2903M
C716
0.1
B:CHIP
R715
10k
:CHIP
R718
10k
:CHIP
R721
10k
:CHIP
R722
10k
:CHIP
R710
10k
:CHIP
F1
F2
F3
F4
F5
R727 10 :CHIP
R726 10 :CHIP
R725 10 :CHIP
R724 10 :CHIP
R723 10 :CHIP
C708
0.1
:CHIP
C709
0.1
:CHIP
C711
0.1
:CHIP
C713
0.1
:CHIP
C714
0.1
:CHIP
CN112
15P
:ELCO
1 FAN-DRV
2 FAN1
3 GND
4 FAN-DRV
5 FAN2
6 GND
7 FAN-DRV
8 FAN3
9 GND
10 FAN-DRV
11 FAN4
12 GND
13 FAN-DRV
14 FAN5
15 GND
TO FAN1-5
FAN-DRV TO P5
B (6/13)
(REG., FAN DRV SW)
B-SS9704-B-J-P6

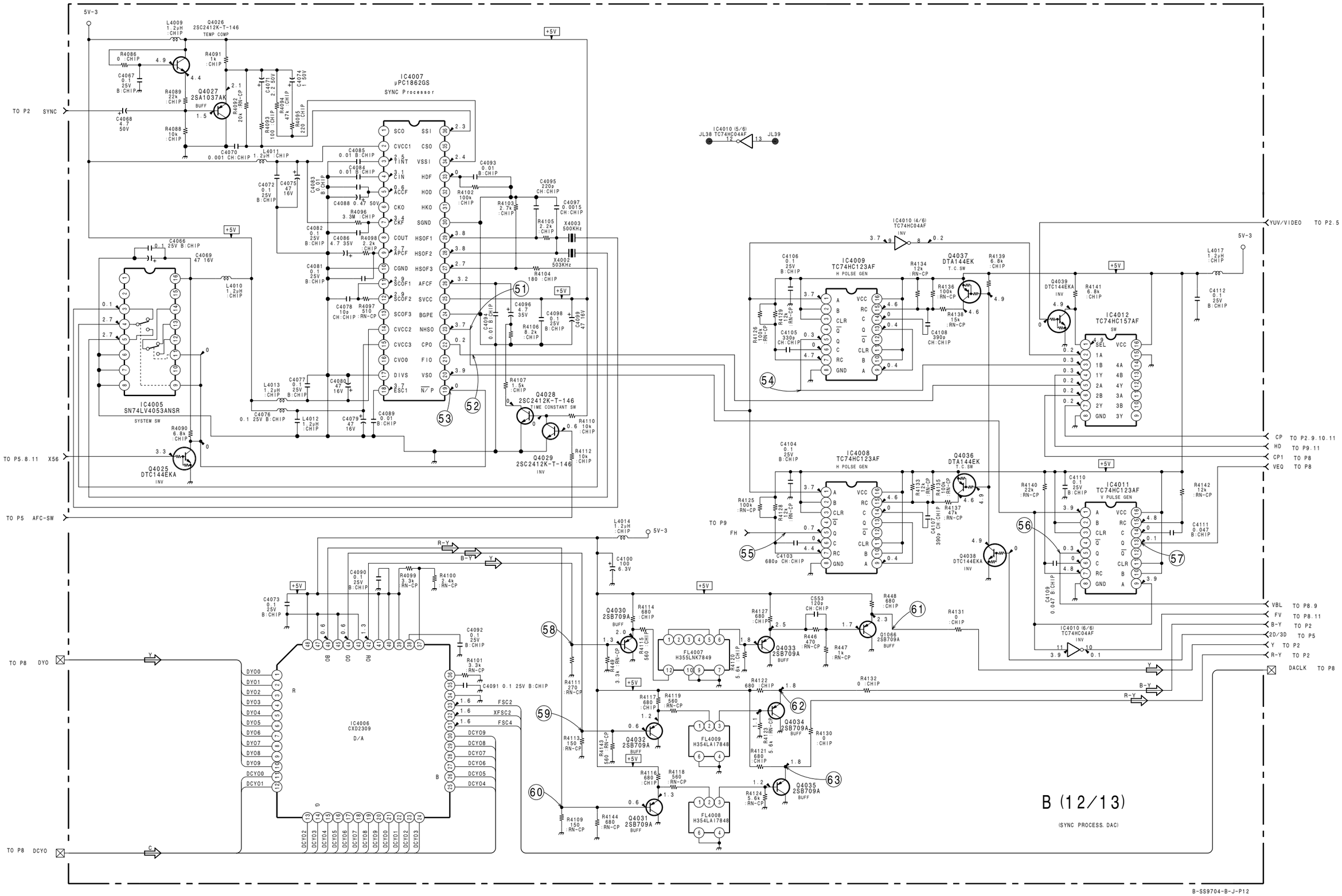

B (7/13)
(3D COMB FILTER)
B-SS9704-B-J-P7
IC1011 μPD64082 3D COMB
IC1007 MSM514265C-60JS FRAME MEMORY
IC1008 BA033FP 3.3V REG
IC1009 BA033FP 3.3V REG
IC1006 LM1881M SYNC SEP
IC1010 TC7S04F INV
IC1012 TC7S04F INV
IC1013 ISPLSI2032E Y/C distributer
Q1025 2SA1037AK BUFF
Q1026 2SC2412K-T-146 AMP
Q1027 2SC2412K-T-146 AMP
Q1028 2SA1037AK BUFF
CN115 8P WHT :ELCO
VCC
SDO
SDI
ISPEN
NC
MODE
GND
SCLK
TO OPEN
DYC TO P8
TO P2.8 V.OUT
3.3V-S
TO P8
TO P1.5.8 SCL
TO P1.5.8 SDA
TO P8 FSC

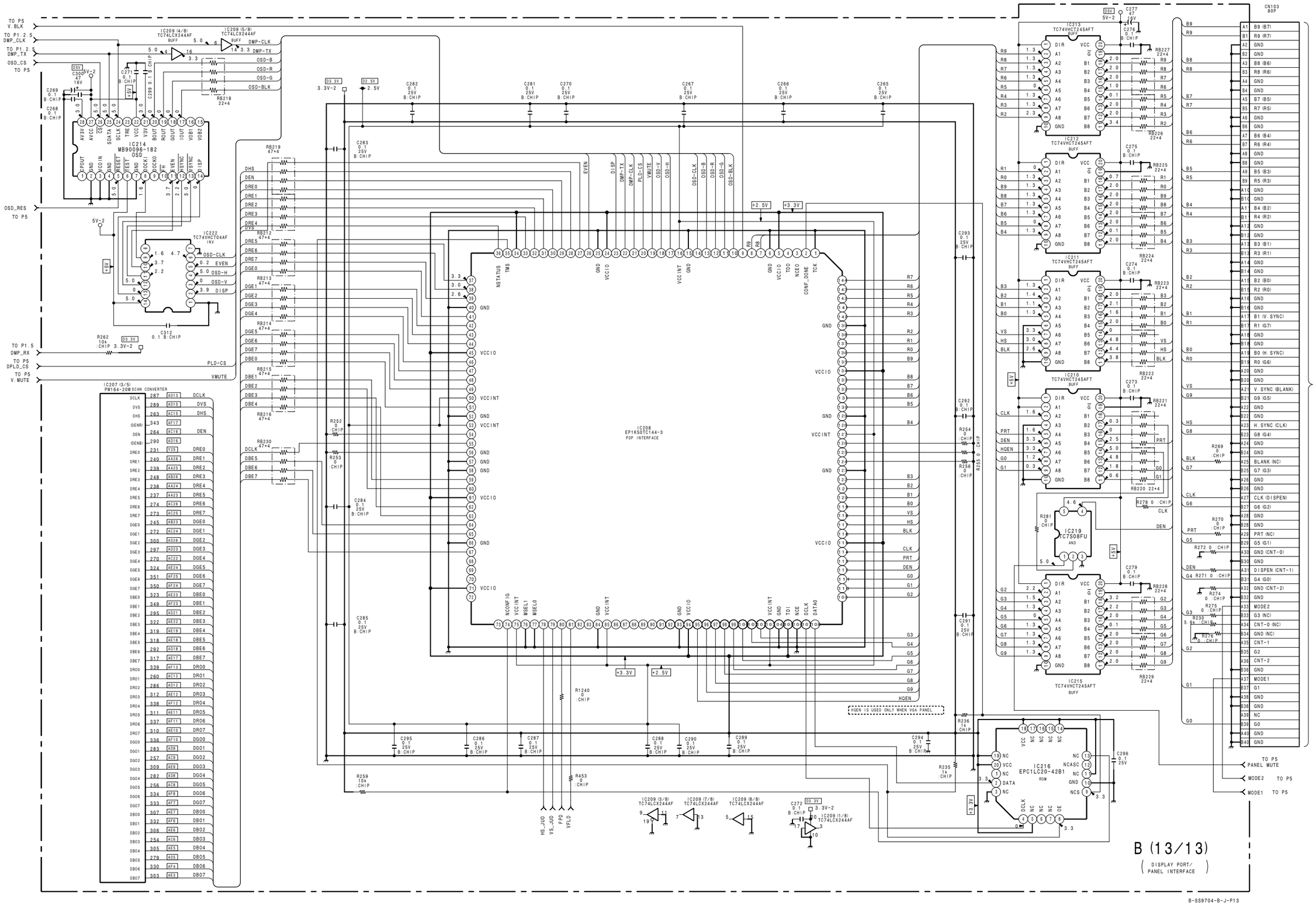

IC4004
CXD2030R
CXD2030R
DIGITAL COMB/CHROMA DECODER
B (8/13)
(CHROMA DECODER)
B-SS9704-B-J-P8
IC4003
CXD2300Q
8BIT A/D
IC4001
CXA1860Q
SW & CLAMP
IC4000
TDA8395T/N3
SECAM DECODER
TO P10 9V-A
TO P5.11.12 X56
TO P12 FH
TO P9.12 VBL
TO P12 VEQ
TO P7 3.3V-S
TO P8 DYC
FV TO P11.12
DCYO TO P12
TO P5 VID.SEL2
TO P5 VID.SEL1
TO P2 S1
TO P2 Y.OUT
TO P2.7 V.OUT
TO P2 C.OUT
TO P2 SECAM.C
FSC2
XFSC2
FSC4
DACLK TO P12
DYO TO P12
SDA TO P1.5.7
SCL TO P1.5.7
FSC TO P7
CP1 TO P12
Q4001 2SC2412K-T-146 TEMP COMP
Q4002 2SC2412K-T-146 REG
Q4003 DTC114EKA
Q4004 DTC114EKA
Q4005 DTA114EKA
Q4006 DTC114EKA
Q4007 2SB709A
Q4008 2SB709A
Q4009 2SC2412K-T-146
Q4010 2SC2412K-T-146
Q4011 2SC2412K-T-146
Q4012 2SC2412K-T-146
Q4013 DTA114EKA
Q4014 2SC2412K-T-146
Q4015 2SC2412K-T-146
Q4016 2SC2412K-T-146
Q4017 2SC2412K-T-146
Q4018 2SB709A
Q4019 DTC114EKA
Q4020 2SB709A
Q4021 2SC2412K-T-146
Q4022 DTA114EKA
Q4023 DTC114EKA
Q4024 2SB709A
D4001 MA111-TX
D4002 DAN202K
D4003 DAN202K
D4004 MA111-TX
D4005 DAN202K
D4006 HVU359
D4007 HVU359
D4008 HVU359
FL4000 STC332B
FL4001 STC332B
FL4002 STC332B
FL4003 H314LNKS-3989 Y INPUT LPF
FL4004 STC332B
FL4005 STC332B
FL4006 H314LNKS-3989 C INPUT LPF
5V-2
9V
+5V
+9V
+3.3V
X4004 14.302MHz
X4000 17.7MHz
X4001 14.3MHz


B (9/13)
(RGB PROCESSOR)
B-SS9704-B-J-P9
IC1030 CXA1739S MATRIX
IC1031 SN74LV4053ANSR CP SW
IC1027 BA10358F AMP
IC1028 BA10358F AMP
IC1029 BA10358F AMP
IC1032 Z86Z812PSC CAPTION DECODER
IC1033 LM2940SX 5V REG
IC1034 BA12FP-E2 12V REG
TO P10 RA
TO P10 GA
TO P10 BA
TO P2 B CUT OFF
TO P2 R CUT OFF
TO P1.2 COL
TO P2 HUE
TO P2 PIC
TO P2 R-Y1
TO P2 B-Y1
TO P2 Y1
TO P2 SHP
TO P2 BRT
CP TO P2.10.11.12
VBL TO P8.12
13V TO P1.6
6V TO P6
HD TO P11.12
C.CAPTION TO P5

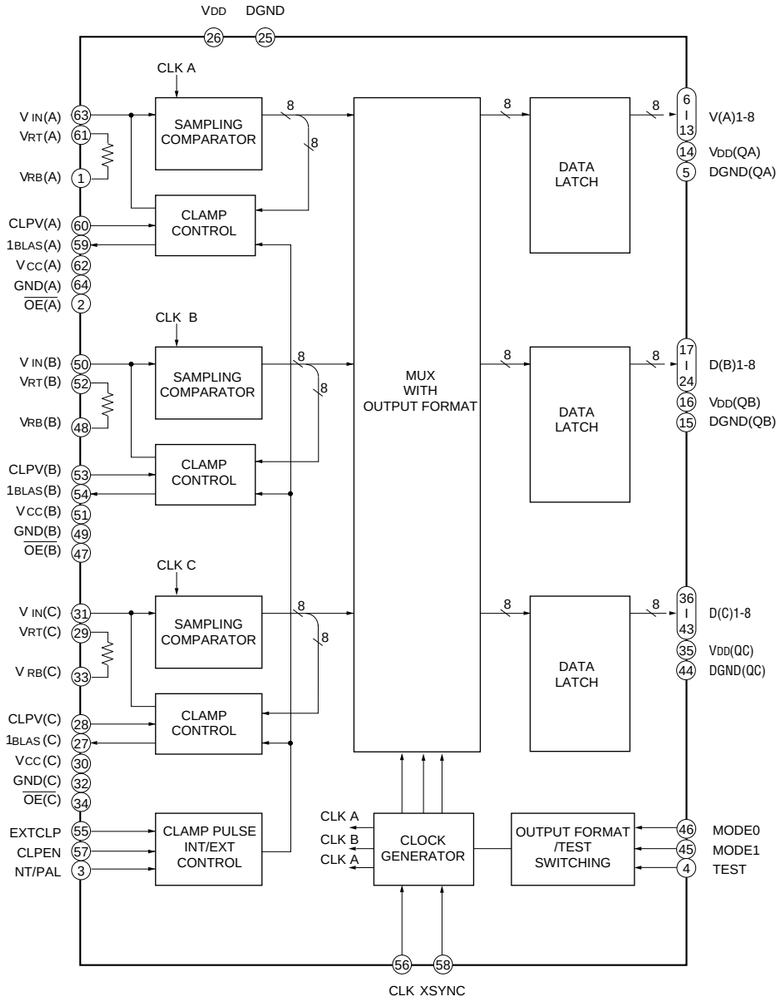

IC1035
CXA2119M
YUV INTERFACE
Y1
CB1
CR1
SEL
Y2
CB2
CR2
CLP
R
G
B
YCLP
CBCLP
CRCLP
SIG3
SEL2
SIG2
SEL1
SIG1
VCC
SIG0
YM
YS
GND
CR
CB
Y
NC
TO P2.9.11.12 CP
TO P9 RA
TO P9 GA
TO P9 BA
TO P8 9V-A
+5V
A5V
5V-3
+9V
Q1047 2SB709A AMP
Q1051 2SC2412K BUFFER
Q1045 2SC2412K AMP
Q1054 2SB709A BUFFER
Q1049 2SB709A AMP
Q1052 2SC2412K BUFFER
Q1046 2SC2412K AMP
Q1055 2SB709A BUFFER
Q1050 2SB709A AMP
Q1053 2SC2412K BUFFER
Q1048 2SC2412K AMP
Q1056 2SB709A BUFFER
FL1005 H355LNK7849
FL1006 H354LA17848
FL1007 H354LA17848
L1005 10µH :CHIP
TO P11 Y/CB/CR (DRC)
B (10/13)
(RGB2 YUV CONVERTER)
B-SS9704-B-J-P10


IC1038 P03TZ53U 3.3V REG
IC1036 PQ07VZ012P 2.2V-REG
IC1039 MSM56V16160F 16M-SDRAM
IC1040 CXD2090Q DRC-MF
IC1042 TLC5733A 3CH 8BIT A/D
IC1041 TLC2932IPW WRITE PLL
IC1037 TLC2933IPW READ PLL
Q1062 2SC2412K-T-146
Q1064 2SC2412K-T-146 NJU7032M-TE2
Q1065 2SA1037AK
Q1063 2SC2412K-T-146
Q1060 2SC2412K-T-146
Q1061 2SC2412K-T-146
Q1059 2SC2412K-T-146
Q1058 DTC114EKA
Q1057 2SA1037AK
D1007 UDZ-3.9B
REF VOLTAGE AMP
TO P2.9.10.12
TO P10
TO P5.8.12
TO P5
FV TO P8.12
HD TO P9.12
C540 TO P11
DRC TO P3
FPD TO P13
B (11/13)
(DRC MF)
B-SS9704-B-J-P11


IC4007
μPC1862GS
SYNC Processor
IC4005
SN74LV4053ANSR
SYSTEM SW
IC4006
CXD2309
D/A
IC4008
TC74HC123AF
H POLSE GEN
IC4009
TC74HC123AF
H POLSE GEN
IC4011
TC74HC123AF
V PULSE GEN
IC4012
TC74HC157AF
SW
Q4025
DTC144EKA
INV
Q4027
2SA1037AK
BUFF
Q4028
2SC2412K-T-146
TIME CONSTANT SW
Q4029
2SC2412K-T-146
INV
Q4030
2SB709A
BUFF
Q4031
2SB709A
BUFF
Q4032
2SB709A
BUFF
Q4033
2SB709A
BUFF
Q4034
2SB709A
BUFF
Q4035
2SB709A
BUFF
Q4036
DTA144EK
T.C.SW
Q4037
DTA144EK
T.C.SW
Q4038
DTC144EKA
INV
Q4039
DTC144EKA
INV
Q1066
2SB709A
BUFF
FL4007
H355LNK7849
FL4009
H354LAI7848
FL4008
H354LAI7848
IC4010 (5/6)
TC74HC04AF
IC4010 (4/6)
TC74HC04AF
IC4010 (6/6)
TC74HC04AF
TO P2 SYNC
TO P5 AFC-SW
TO P5.8.11 X56
TO P8 DYO
TO P8 DCYO
TO P9 FH
YUV/VIDEO TO P2.5
CP TO P2.9.10.11
HD TO P9.11
CP1 TO P8
VEQ TO P8
VBL TO P8.9
FV TO P8.11
B-Y TO P2
2D/3D TO P5
Y TO P2
R-Y TO P2
DACLK TO P8
B (12/13)
(SYNC PROCESS. DAC)
B-SS9704-B-J-P12

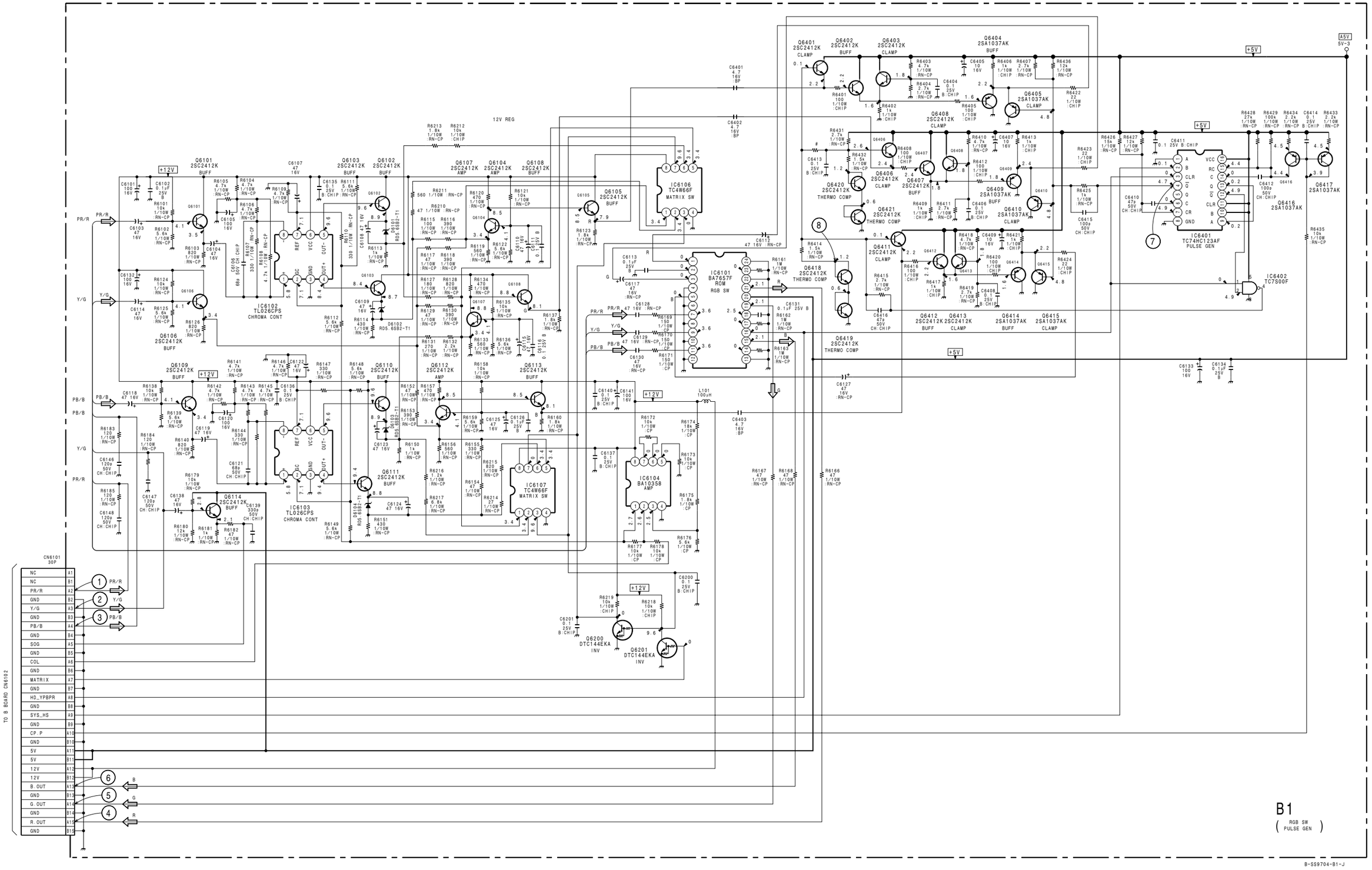

TO P5 V.BLK
TO P1.2.5 DMP_CLK
TO P1.2.5 DMP_TX
OSD_CS TO P5
OSD_RES TO P5
TO P1.5 DMP_RX
TO P5 DPLD_CS
TO P5 V.MUTE
PLD-CS
VMUTE
IC209 (4/8) TC74LCX244AF BUFF
IC209 (5/8) TC74LCX244AF BUFF
DMP-CLK
DMP-TX
OSD-B
OSD-R
OSD-G
OSD-BLK
IC214 MB90096-182 OSD
IC222 TC74VHCT04AF INV
OSD-CLK
EVEN
OSD-H
OSD-V
DISP
IC207 (3/5) PW164-20W SCAN CONVERTER
DCLK
DVS
DHS
DEN
DRE0
DRE1
DRE2
DRE3
DRE4
DRE5
DRE6
DRE7
DGE0
DGE1
DGE2
DGE3
DGE4
DGE5
DGE6
DGE7
DBE0
DBE1
DBE2
DBE3
DBE4
DBE5
DBE6
DBE7
DRO0
DRO1
DRO2
DRO3
DRO4
DRO5
DRO6
DRO7
DGO0
DGO1
DGO2
DGO3
DGO4
DGO5
DGO6
DGO7
DBO0
DBO1
DBO2
DBO3
DBO4
DBO5
DBO6
DBO7
IC208 EP1K50TC144-3 PDP INTERFACE
NSTATUS
TMS
TCK
TDO
TDI
NCONFIG
MSEL1
MSEL0
DCLK
DATA0
CONF_DONE
NCE
NCEO
HQEN
HQEN IS USED ONLY WHEN VGA PANEL
IC213 TC74VHCT245AFT BUFF
IC212 TC74VHCT245AFT BUFF
IC211 TC74VHCT245AFT BUFF
IC210 TC74VHCT245AFT BUFF
IC219 TC7S08FU AND
IC215 TC74VHCT245AFT BUFF
IC216 EPC1LC20-42B1 ROM
CN103 80P
TO LOGIC BLOCK CN1
TO P5 PANEL MUTE
MODE2 TO P5
MODE1 TO P5
B (13/13)
(DISPLAY PORT/ PANEL INTERFACE)
B-SS9704-B-J-P13

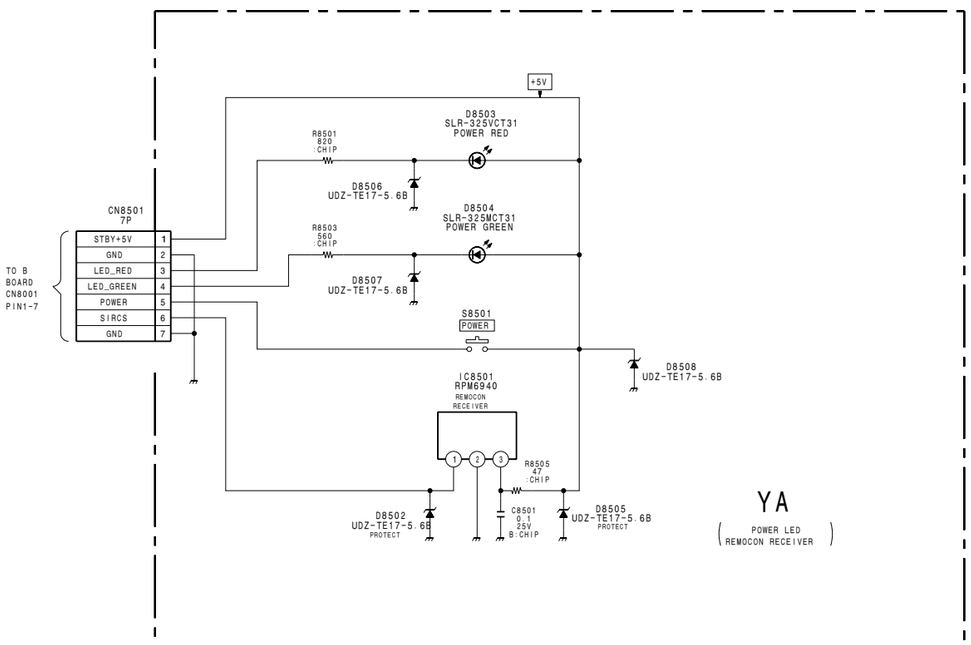
TLC5733A (IC1042)

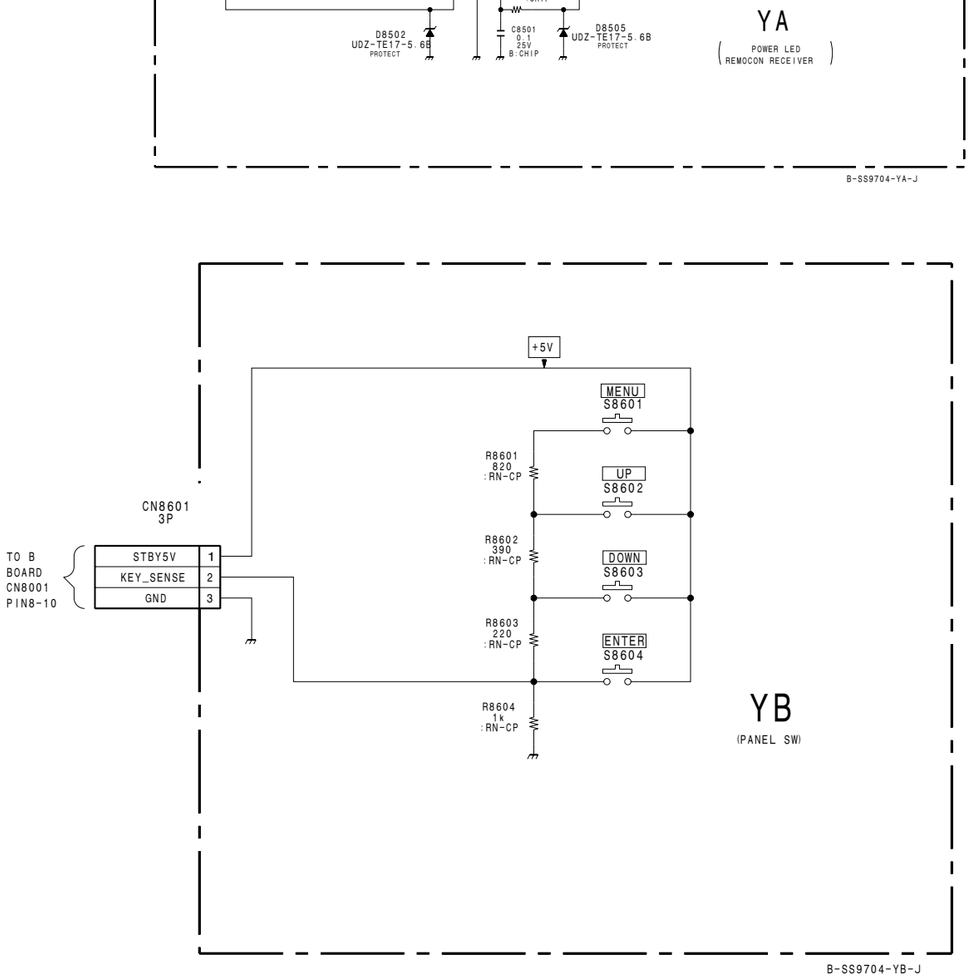


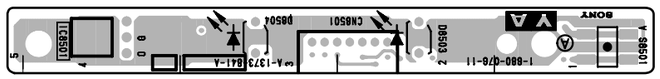
B Board Waveforms

① LINE 1.7Vp-p (H)	⑪ 580mVp-p (H)	㉑ SECAM 1.3Vp-p (2H)	㉛ YUV 620mVp-p (H)	㊶ YUV 1.2Vp-p (H)	㊶ Y/C 3.9Vp-p (H)	㊶ Y/C 720mVp-p (H)
② Y/C 1.7Vp-p (H)	⑫ 3.0Vp-p (V)	㉒ Y/C 920mVp-p (H)	㉜ YUV 600mVp-p (H)	㊷ YUV 2.3Vp-p (86MHz)	㊷ Y/C 4.2Vp-p (H)	㊷ Y/C 720mVp-p (H)
③ Y/C 1.8Vp-p (H)	⑬ 3.4Vp-p (148.7MHz)	㉓ Y/C 950mVp-p (H)	㉝ 5.0Vp-p (V)	㊸ YUV 3.2Vp-p (V)	㊸ Y/C 3.9Vp-p (V)	㊸ Y/C 600mVp-p (H)
④ 4.6Vp-p (V)	⑭ 3.8Vp-p (78MHz)	㉔ YUV 3.3Vp-p (H)	㉞ 5.0Vp-p (H)	㊹ YUV 3.2Vp-p (H)	㊹ Y/C 4.9Vp-p (H)	
⑤ 4.8Vp-p (H)	⑮ 4.4Vp-p (3.6MHz)	㉕ YUV 3.3Vp-p (H)	㉟ 4.8Vp-p (H)	㊺ YUV 700mVp-p (H)	㊺ Y/C 4.9Vp-p (H)	
⑥ YUV 880mVp-p (H)	⑯ LINE 960mVp-p (H)	㉖ YUV 3.3Vp-p (H)	㊱ YUV 740mVp-p (H)	㊻ YUV 700mVp-p (H)	㊻ Y/C 4.9Vp-p (V)	
⑦ YUV 600mVp-p (H)	⑰ LINE 560mVp-p (H)	㉗ YUV 800mVp-p (H)	㊲ YUV 700mVp-p (H)	㊼ YUV 840mVp-p (H)	㊼ Y/C 4.2Vp-p (V)	
⑧ YUV 740mVp-p (H)	⑱ LINE 500mVp-p (H)	㉘ YUV 760mVp-p (H)	㊳ YUV 1.2Vp-p (H)	㊽ YUV 2.2Vp-p (V)	㊽ Y/C 1.3Vp-p (H)	
⑨ 580mVp-p (H)	⑲ LINE 4.7Vp-p (14.285MHz)	㉙ YUV 600mVp-p (H)	㊴ YUV 980mVp-p (H)	㊾ YUV 3.3Vp-p (H)	㊾ Y/C 800mVp-p (H)	
⑩ 800mVp-p (H)	⑳ SECAM 1Vp-p (2H)	㉚ YUV 640mVp-p (H)	㊵ YUV 1.2Vp-p (H)	㊿ YUV 4.6Vp-p (13.3MHz)	㊿ Y/C 680mVp-p (H)	

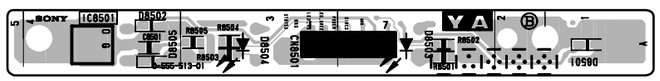

IC6102 TL026CPS CHROMA CONT
IC6103 TL026CPS CHROMA CONT
IC6106 TC4W66F MATRIX SW
IC6101 BA7657F ROM RGB SW
IC6107 TC4W66F MATRIX SW
IC6104 BA10358 AMP
IC6401 TC74HC123AF PULSE GEN
IC6402 TC7S00F
CN6101 30P
TO B BOARD CN6102
B1 (RGB SW PULSE GEN)
B-SS9704-B1-J







YA -A SIDE-
SUFFIX: -11



YA -B SIDE-
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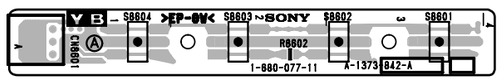

YB -A SIDE-
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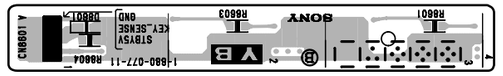

YB -B SIDE-
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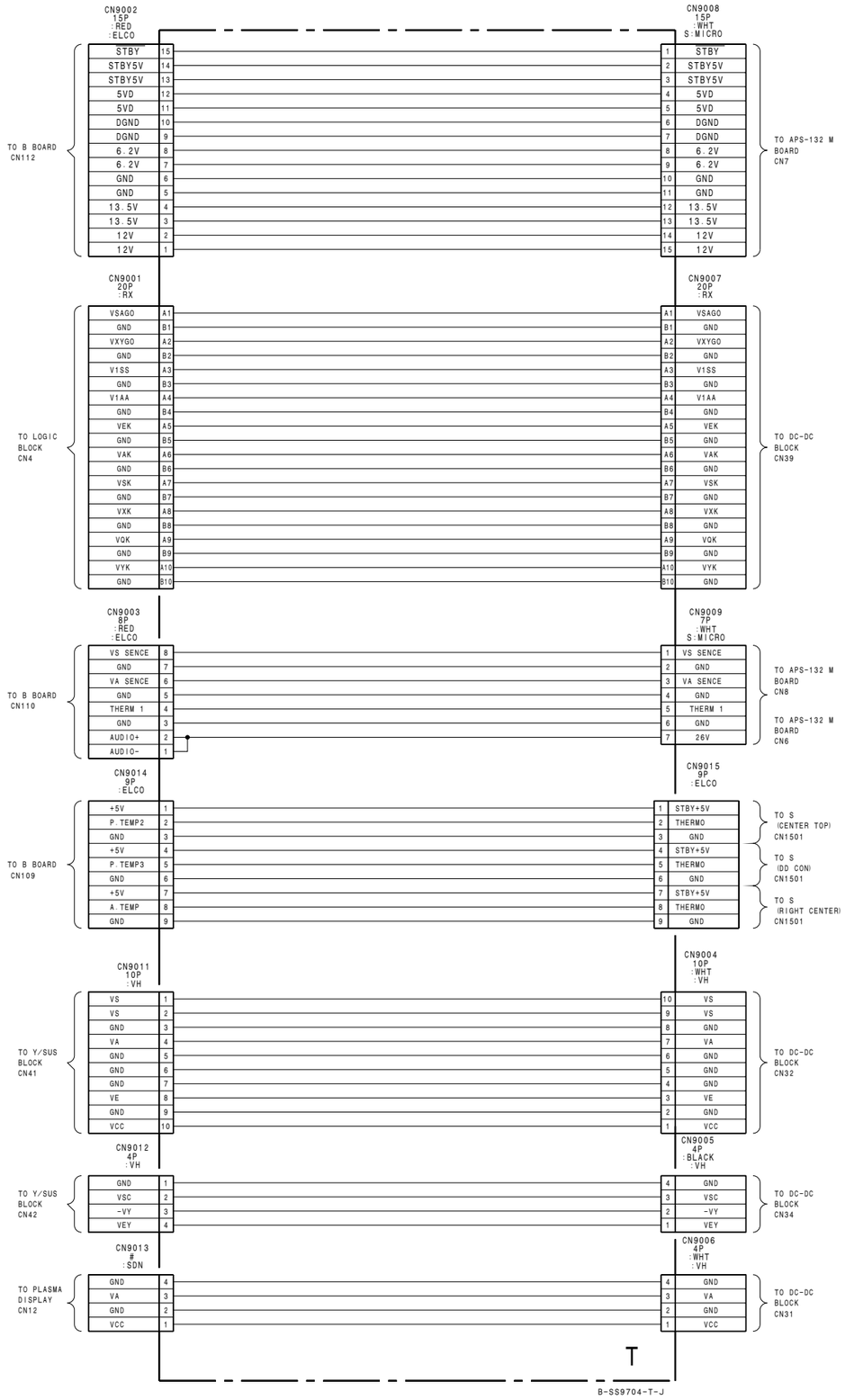
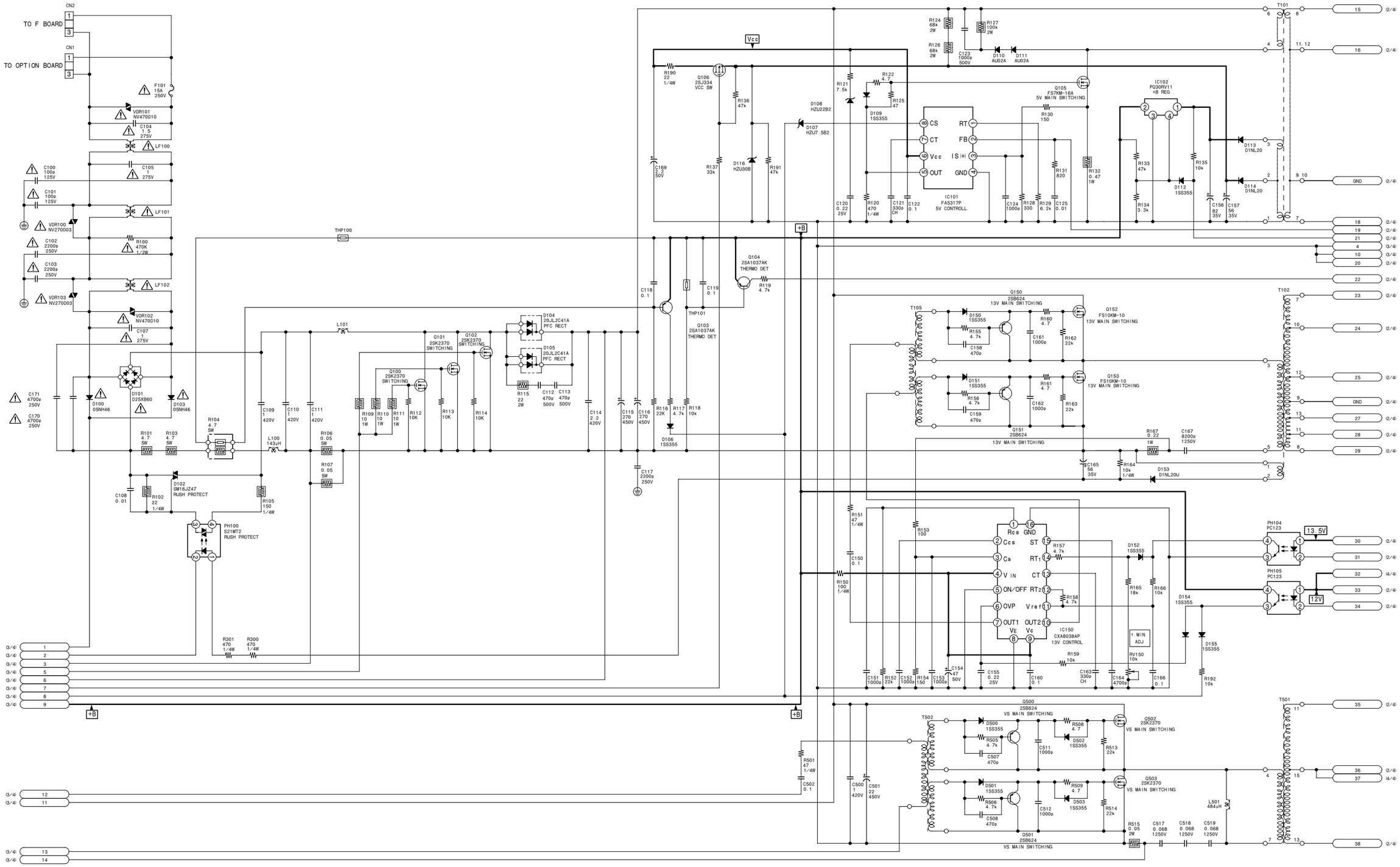
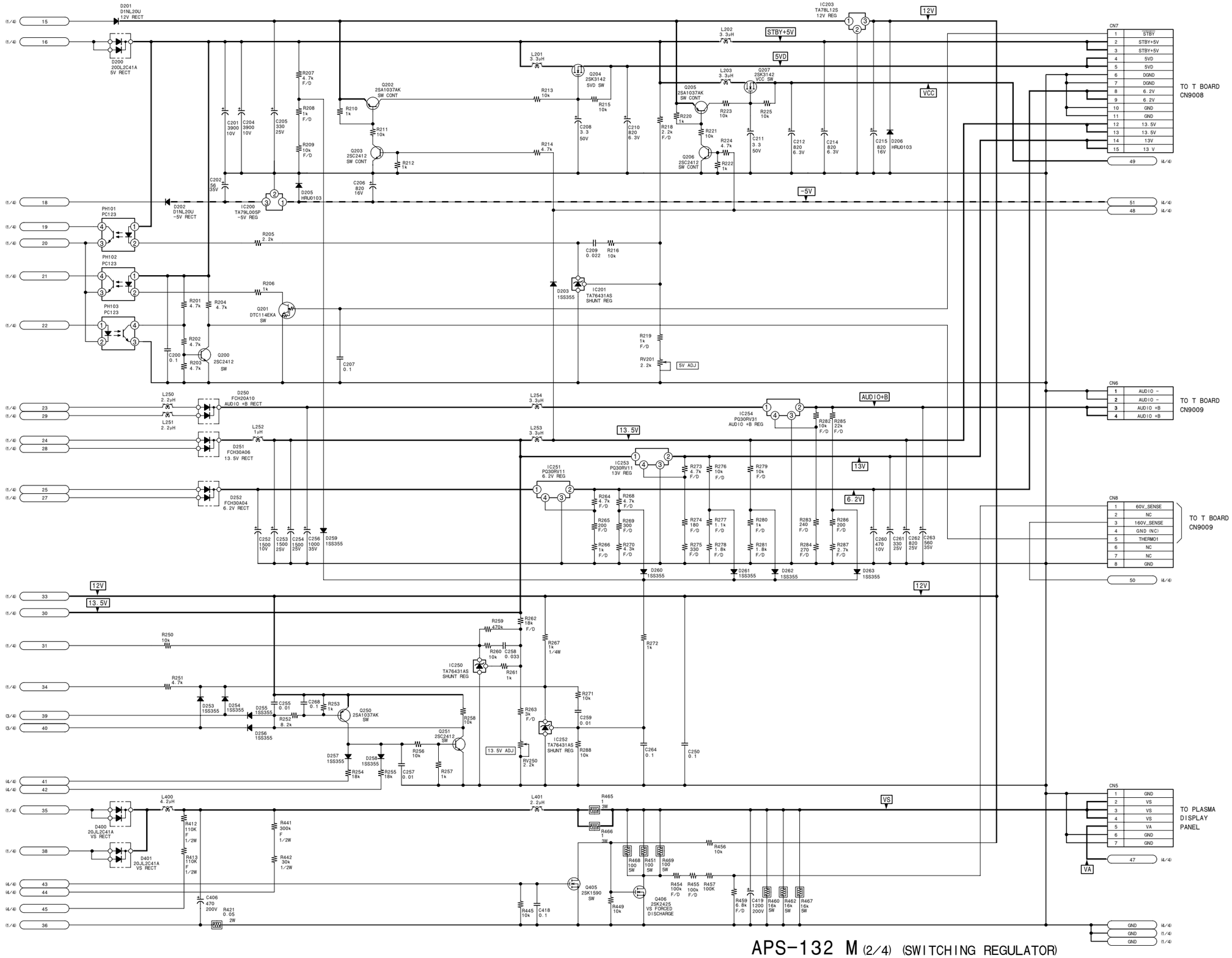

CN9002
15P
:RED
:ELCO
STBY 15
STBY5V 14
STBY5V 13
5VD 12
5VD 11
DGND 10
DGND 9
6.2V 8
6.2V 7
GND 6
GND 5
13.5V 4
13.5V 3
12V 2
12V 1
TO B BOARD
CN112
CN9008
15P
:WHT
S:MICRO
1 STBY
2 STBY5V
3 STBY5V
4 5VD
5 5VD
6 DGND
7 DGND
8 6.2V
9 6.2V
10 GND
11 GND
12 13.5V
13 13.5V
14 12V
15 12V
TO APS-132 M
BOARD
CN7
CN9001
20P
:RX
VSAGO A1
GND B1
VXYGO A2
GND B2
V1SS A3
GND B3
V1AA A4
GND B4
VEK A5
GND B5
VAK A6
GND B6
VSK A7
GND B7
VXK A8
GND B8
VQK A9
GND B9
VYK A10
GND B10
TO LOGIC
BLOCK
CN4
CN9007
20P
:RX
A1 VSAGO
B1 GND
A2 VXYGO
B2 GND
A3 V1SS
B3 GND
A4 V1AA
B4 GND
A5 VEK
B5 GND
A6 VAK
B6 GND
A7 VSK
B7 GND
A8 VXK
B8 GND
A9 VQK
B9 GND
A10 VYK
B10 GND
TO DC-DC
BLOCK
CN39
CN9003
8P
:RED
:ELCO
VS SENCE 8
GND 7
VA SENCE 6
GND 5
THERM 1 4
GND 3
AUDIO+ 2
AUDIO- 1
TO B BOARD
CN110
CN9009
7P
:WHT
S:MICRO
1 VS SENCE
2 GND
3 VA SENCE
4 GND
5 THERM 1
6 GND
7 26V
TO APS-132 M
BOARD
CN8
TO APS-132 M
BOARD
CN6
CN9014
9P
:ELCO
+5V 1
P.TEMP2 2
GND 3
+5V 4
P.TEMP3 5
GND 6
+5V 7
A.TEMP 8
GND 9
TO B BOARD
CN109
CN9015
9P
:ELCO
1 STBY+5V
2 THERMO
3 GND
4 STBY+5V
5 THERMO
6 GND
7 STBY+5V
8 THERMO
9 GND
TO S
(CENTER TOP)
CN1501
TO S
(DD CON)
CN1501
TO S
(RIGHT CENTER)
CN1501
CN9011
10P
:VH
VS 1
VS 2
GND 3
VA 4
GND 5
GND 6
GND 7
VE 8
GND 9
VCC 10
TO Y/SUS
BLOCK
CN41
CN9004
10P
:WHT
:VH
10 VS
9 VS
8 GND
7 VA
6 GND
5 GND
4 GND
3 VE
2 GND
1 VCC
TO DC-DC
BLOCK
CN32
CN9012
4P
:VH
GND 1
VSC 2
-VY 3
VEY 4
TO Y/SUS
BLOCK
CN42
CN9005
4P
:BLACK
:VH
4 GND
3 VSC
2 -VY
1 VEY
TO DC-DC
BLOCK
CN34
CN9013
#
:SDN
GND 4
VA 3
GND 2
VCC 1
TO PLASMA
DISPLAY
CN12
CN9006
4P
:WHT
:VH
4 GND
3 VA
2 GND
1 VCC
TO DC-DC
BLOCK
CN31
T
B-SS9704-T-J

APS-132 M (1/4)



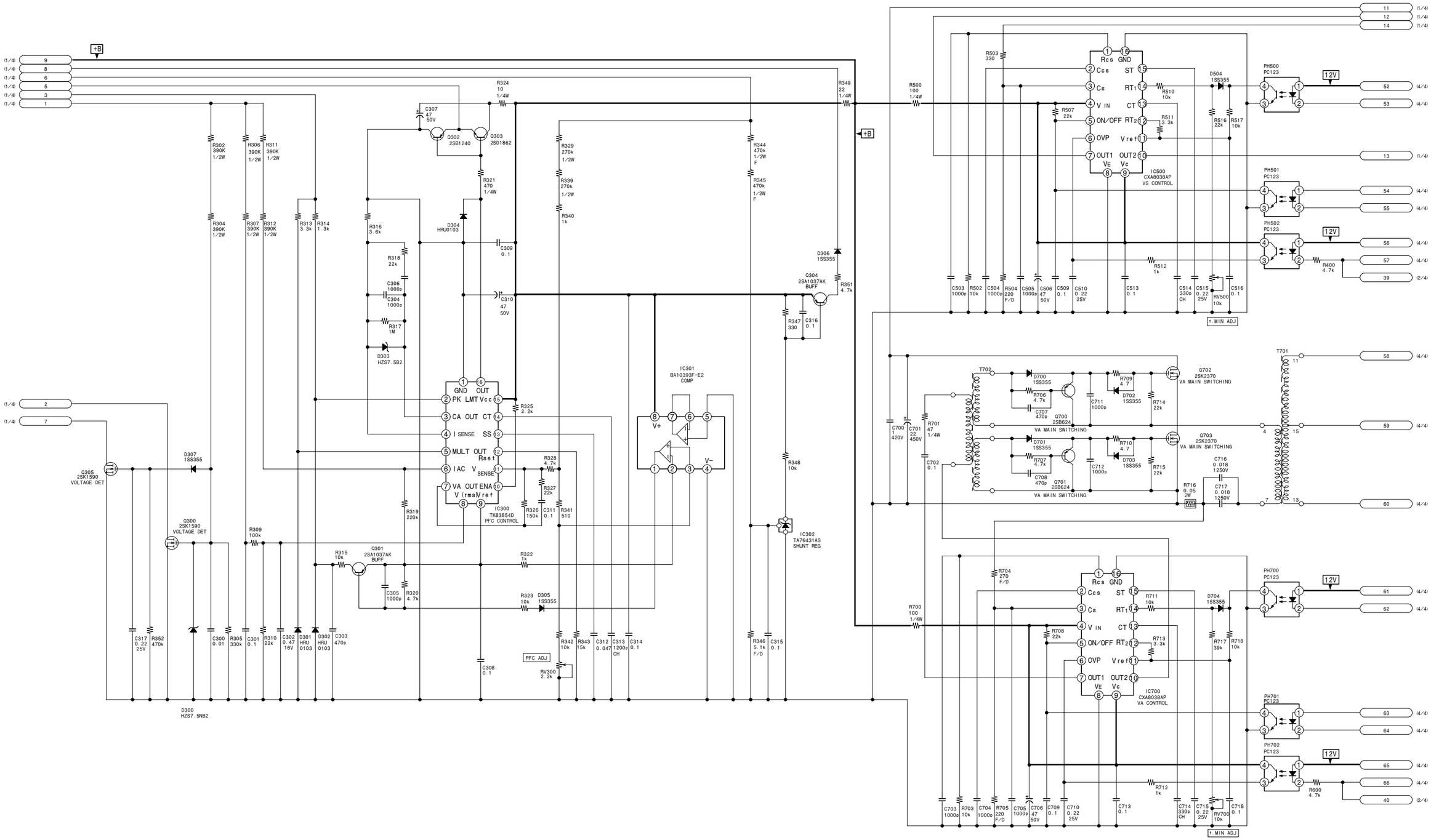
APS-132 M (1/4) (SWITCHING REGULATOR)

APS-132 M (2/4)



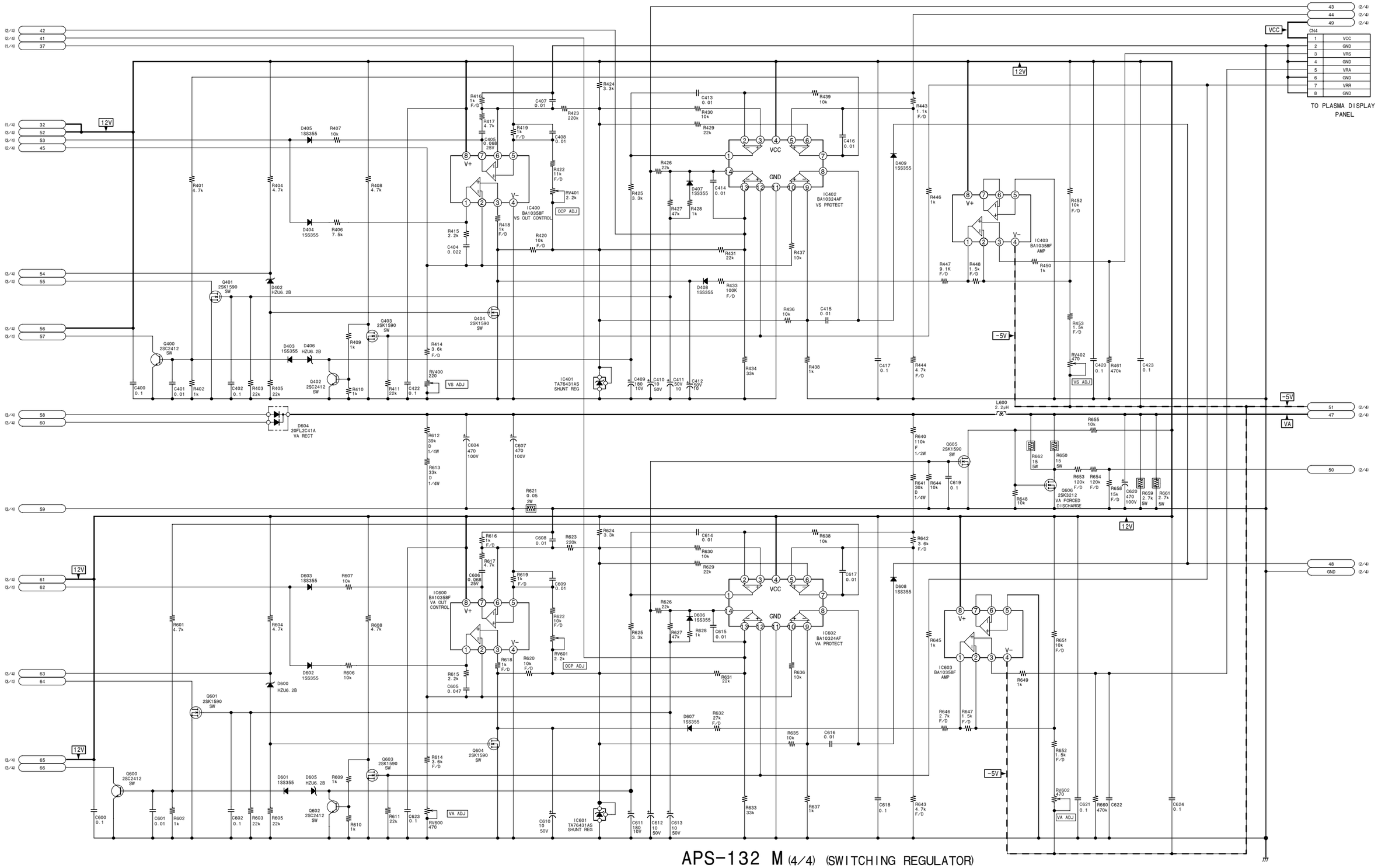
APS-132 M (2/4) (SWITCHING REGULATOR)

APS-132 M (3/4)



APS-132 M (3/4) (SWITCHING REGULATOR)

APS-132 M (4/4)



APS-132 M (4/4) (SWITCHING REGULATOR)