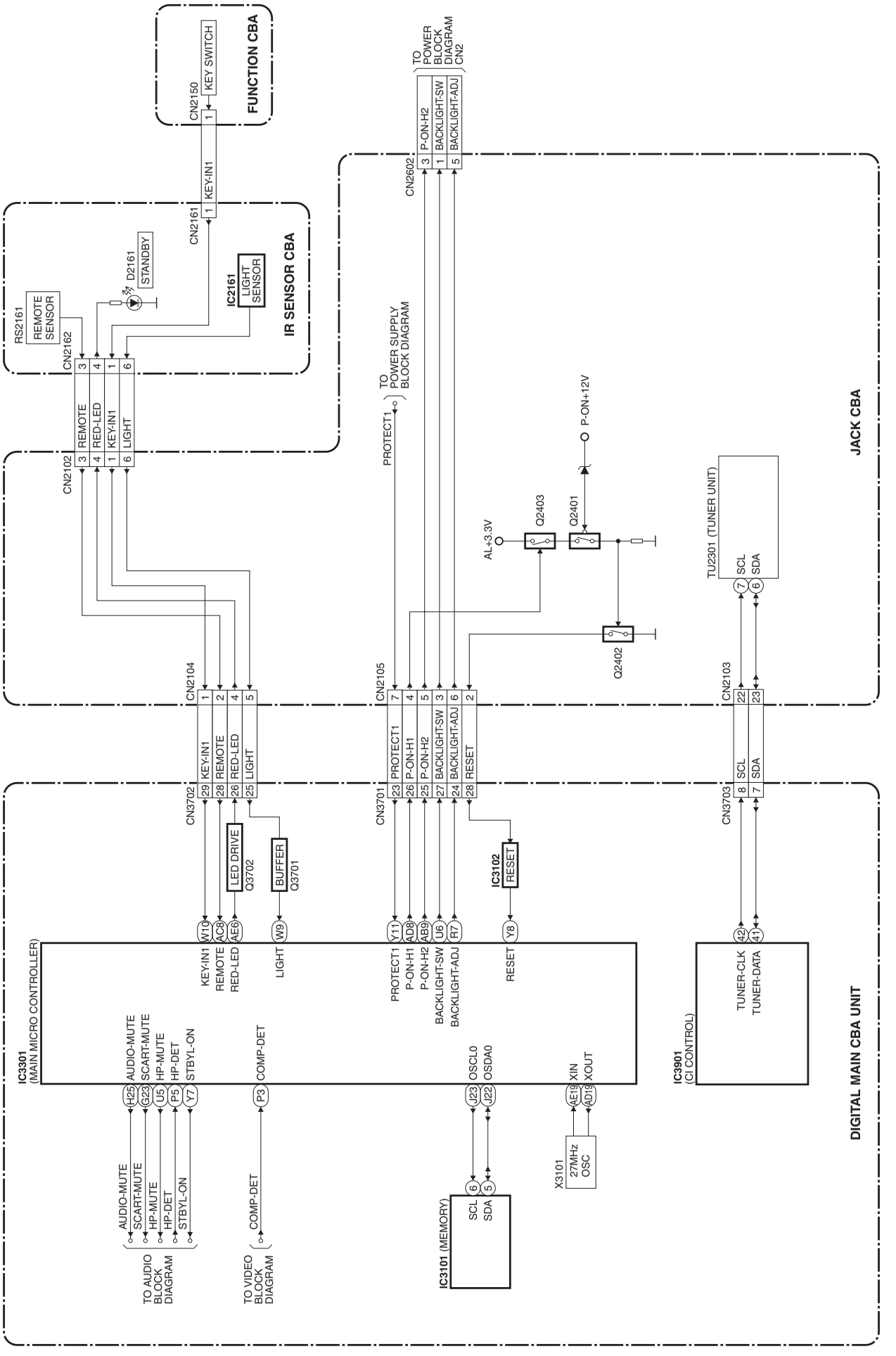
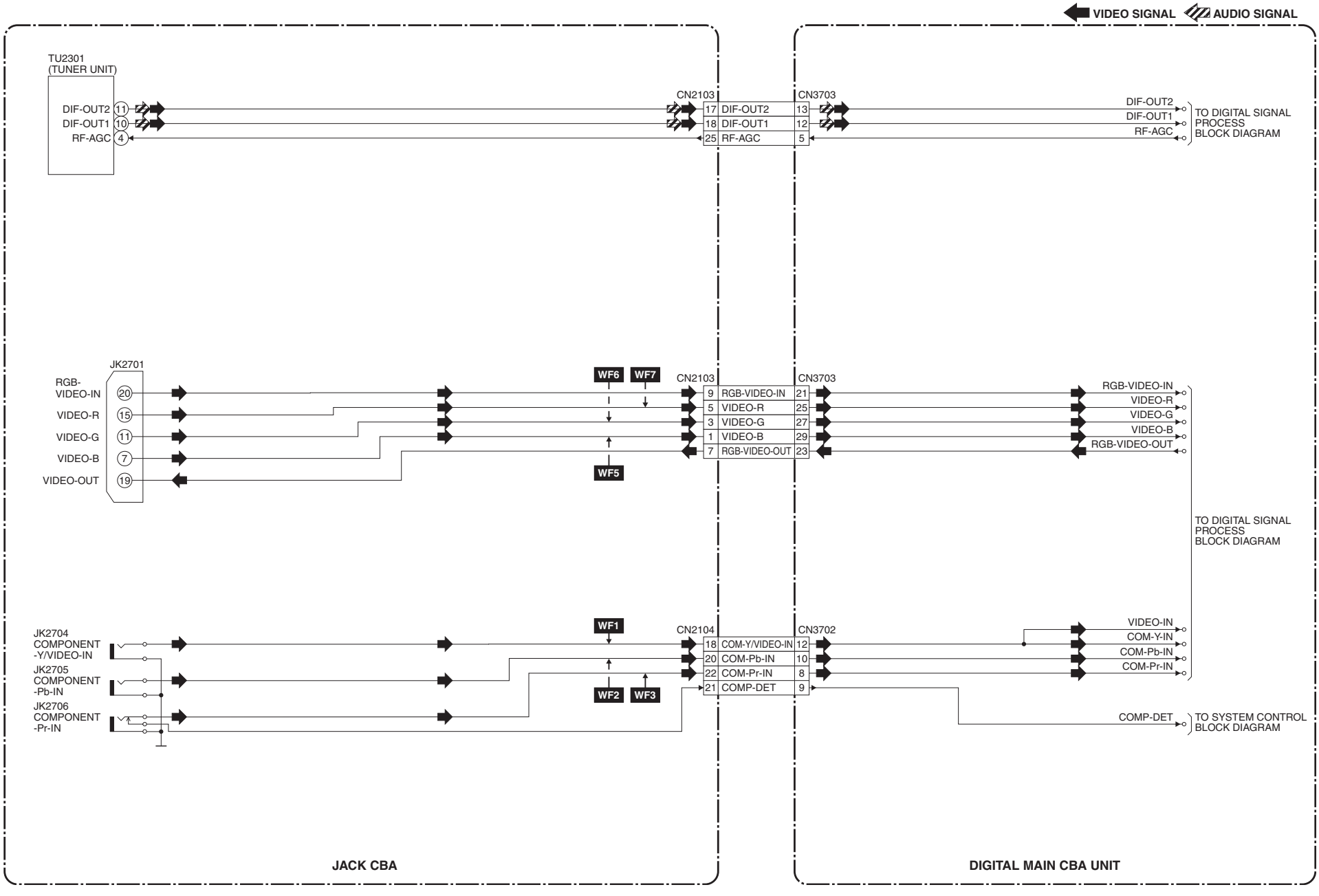
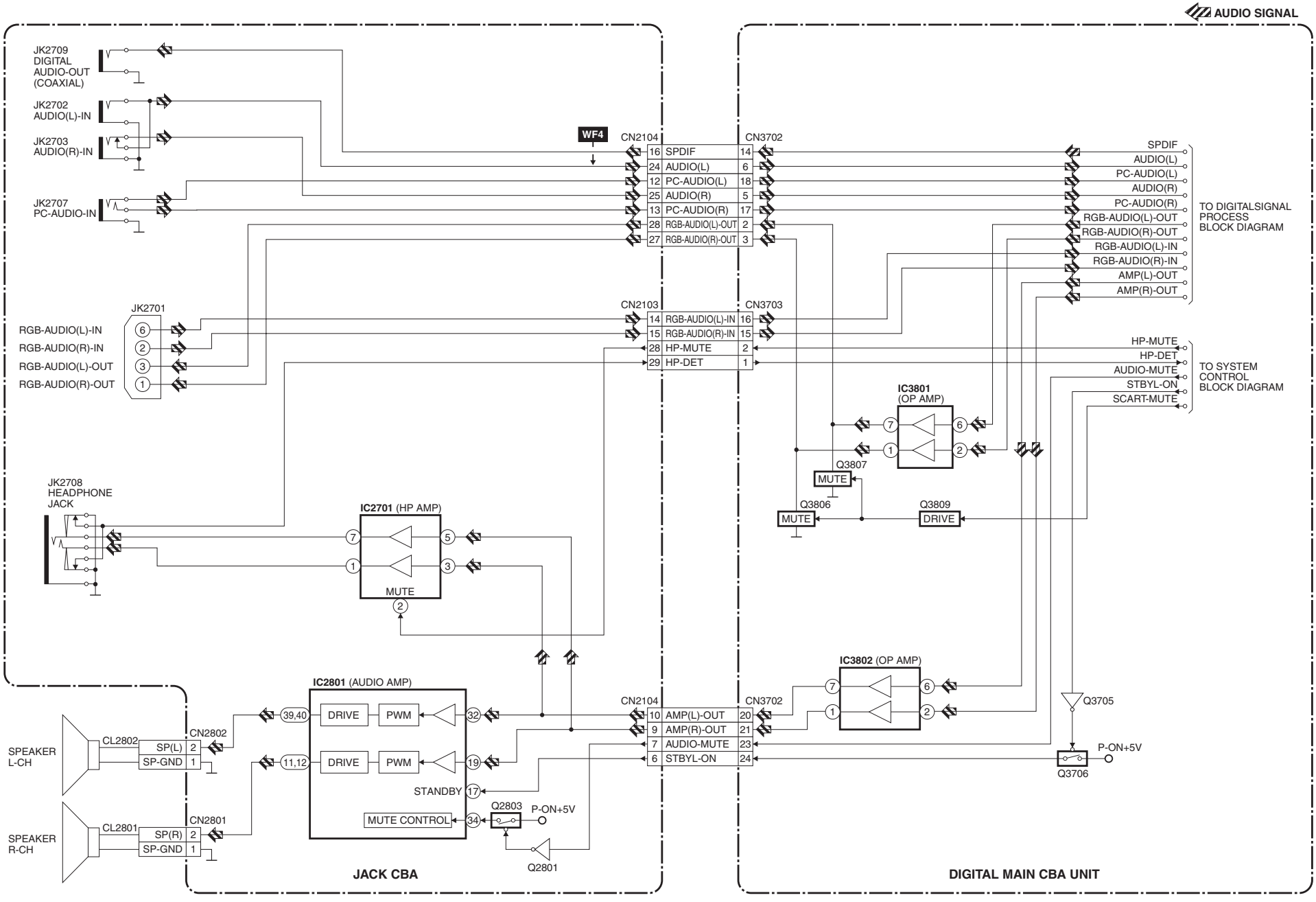
# BLOCK DIAGRAMS

## System Control Block Diagram

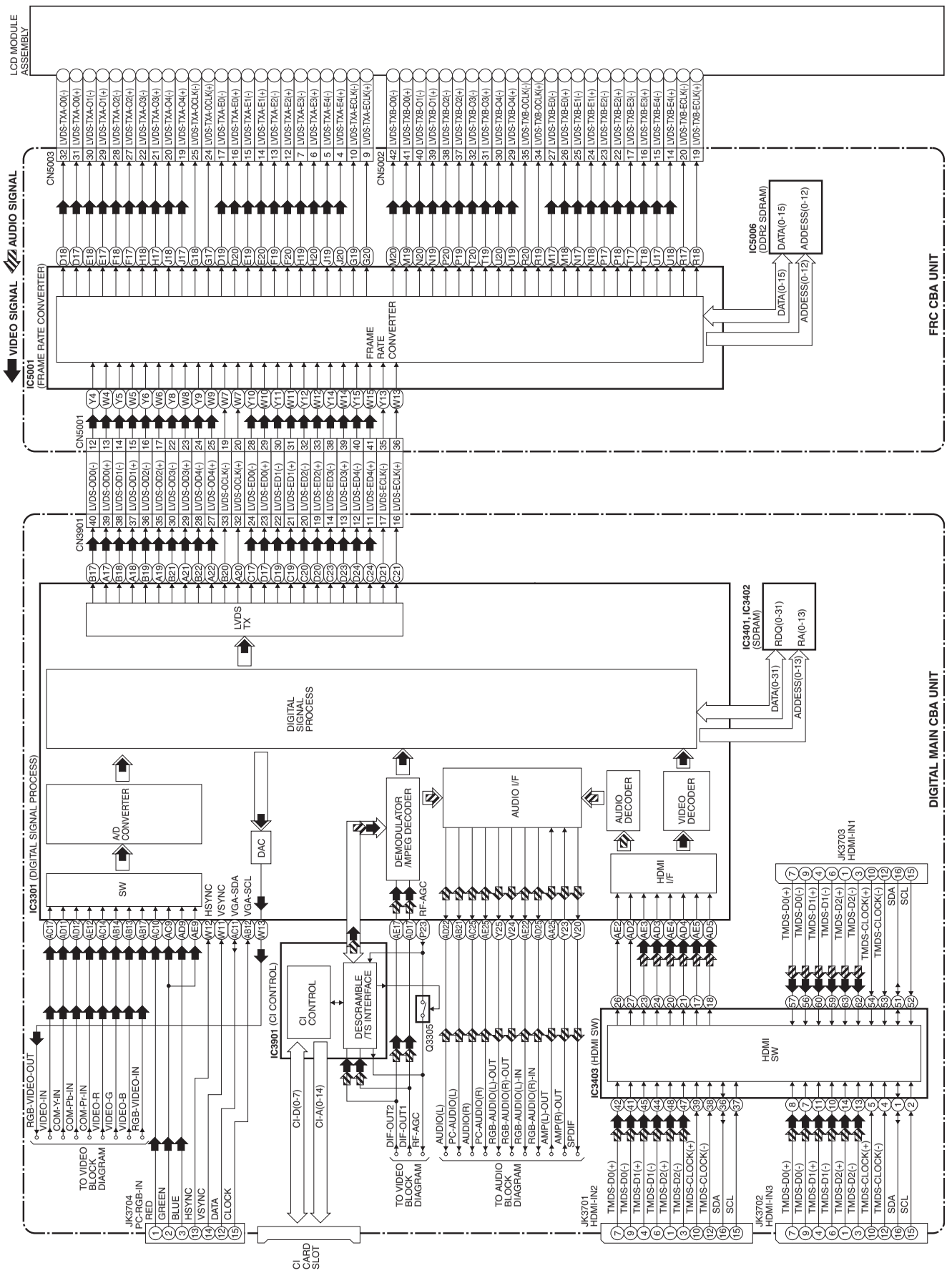



VIDEO SIGNAL
AUDIO SIGNAL
TU2301
(TUNER UNIT)
DIF-OUT2 11
DIF-OUT1 10
RF-AGC 4
CN2103
17 DIF-OUT2
18 DIF-OUT1
25 RF-AGC
CN3703
13
12
5
DIF-OUT2
DIF-OUT1
RF-AGC
TO DIGITAL SIGNAL PROCESS BLOCK DIAGRAM
JK2701
RGB-VIDEO-IN 20
VIDEO-R 15
VIDEO-G 11
VIDEO-B 7
VIDEO-OUT 19
WF6
WF7
WF5
CN2103
9 RGB-VIDEO-IN
5 VIDEO-R
3 VIDEO-G
1 VIDEO-B
7 RGB-VIDEO-OUT
CN3703
21
25
27
29
23
RGB-VIDEO-IN
VIDEO-R
VIDEO-G
VIDEO-B
RGB-VIDEO-OUT
TO DIGITAL SIGNAL PROCESS BLOCK DIAGRAM
JK2704
COMPONENT
-Y/VIDEO-IN
JK2705
COMPONENT
-Pb-IN
JK2706
COMPONENT
-Pr-IN
WF1
WF2
WF3
CN2104
18 COM-Y/VIDEO-IN
20 COM-Pb-IN
22 COM-Pr-IN
21 COMP-DET
CN3702
12
10
8
9
VIDEO-IN
COM-Y-IN
COM-Pb-IN
COM-Pr-IN
COMP-DET
TO SYSTEM CONTROL BLOCK DIAGRAM
JACK CBA
DIGITAL MAIN CBA UNIT

# Audio Block Diagram



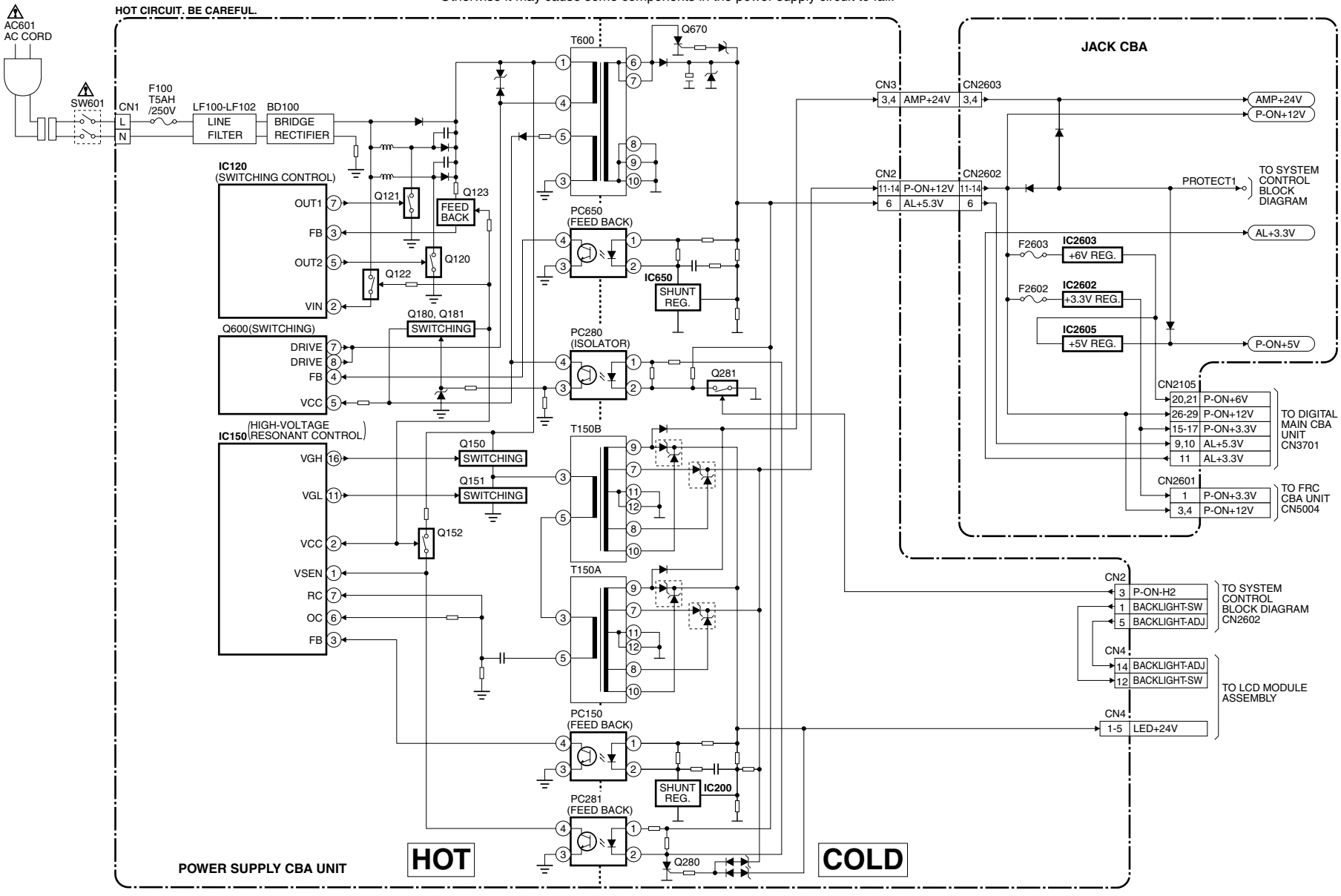
# Digital Signal Process Block Diagram



**CAUTION !**
For continued protection against fire hazard, replace only with the same type fuse.

**CAUTION !**
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F100) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

**NOTE:**
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



# SCHEMATIC DIAGRAMS / CBA AND TEST POINTS

## Standard Notes

### WARNING

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark "⚠" in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

### Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K = 10^3$, $M = 10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P = 10^{-6}$ μF).
5. All voltages are DC voltages unless otherwise specified.
6. Electrical parts such as capacitors, connectors, diodes, IC's, transistors, resistors, switches, and fuses are identified by four digits. The first two digits are not shown for each component. In each block of the diagram, there is a note such as shown below to indicate these abbreviated two digits.

## LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

### 1. CAUTION:

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.

### 2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.

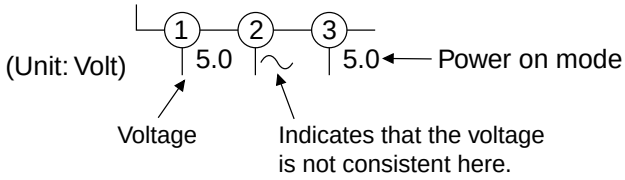
If Main Fuse (F100) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

### 3. Note:

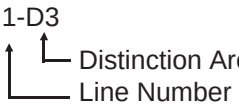
1. Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

### 4. Voltage indications on the schematics are as shown below:

Plug the TV power cord into a standard AC outlet.:

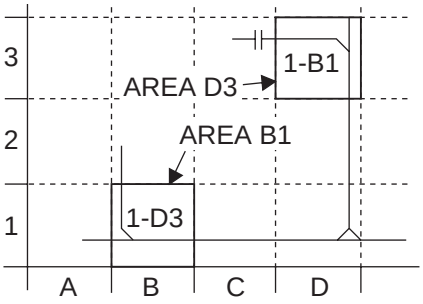



### 5. How to read converged lines




Examples:

1. "1-D3" means that line number "1" goes to the line number "1" of the area "D3".
2. "1-B1" means that line number "1" goes to the line number "1" of the area "B1".




### 6. Test Point Information

: Indicates a test point with a jumper wire across a hole in the PCB.

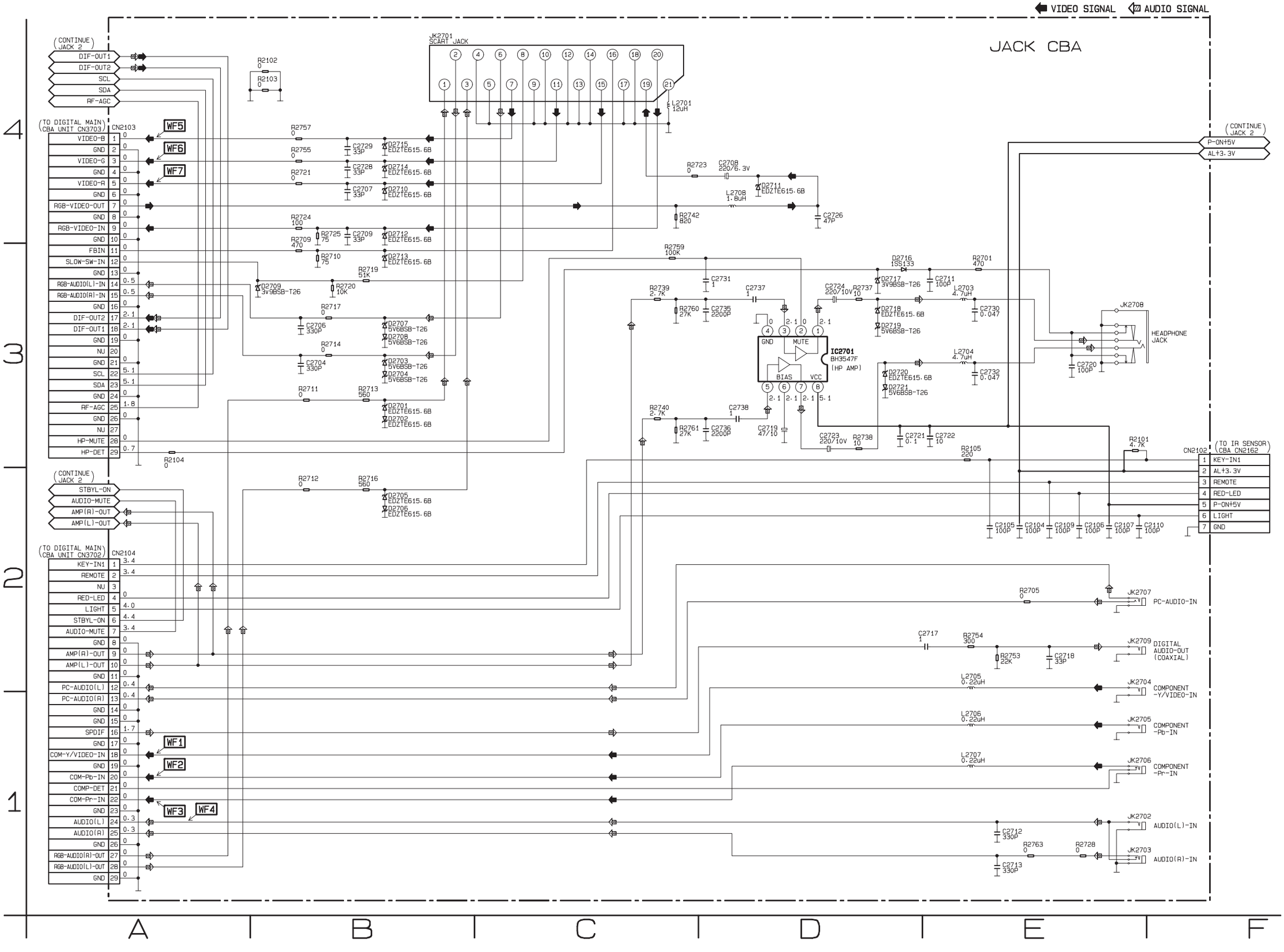
: Used to indicate a test point with a component lead on foil side.

: Used to indicate a test point with no test pin.

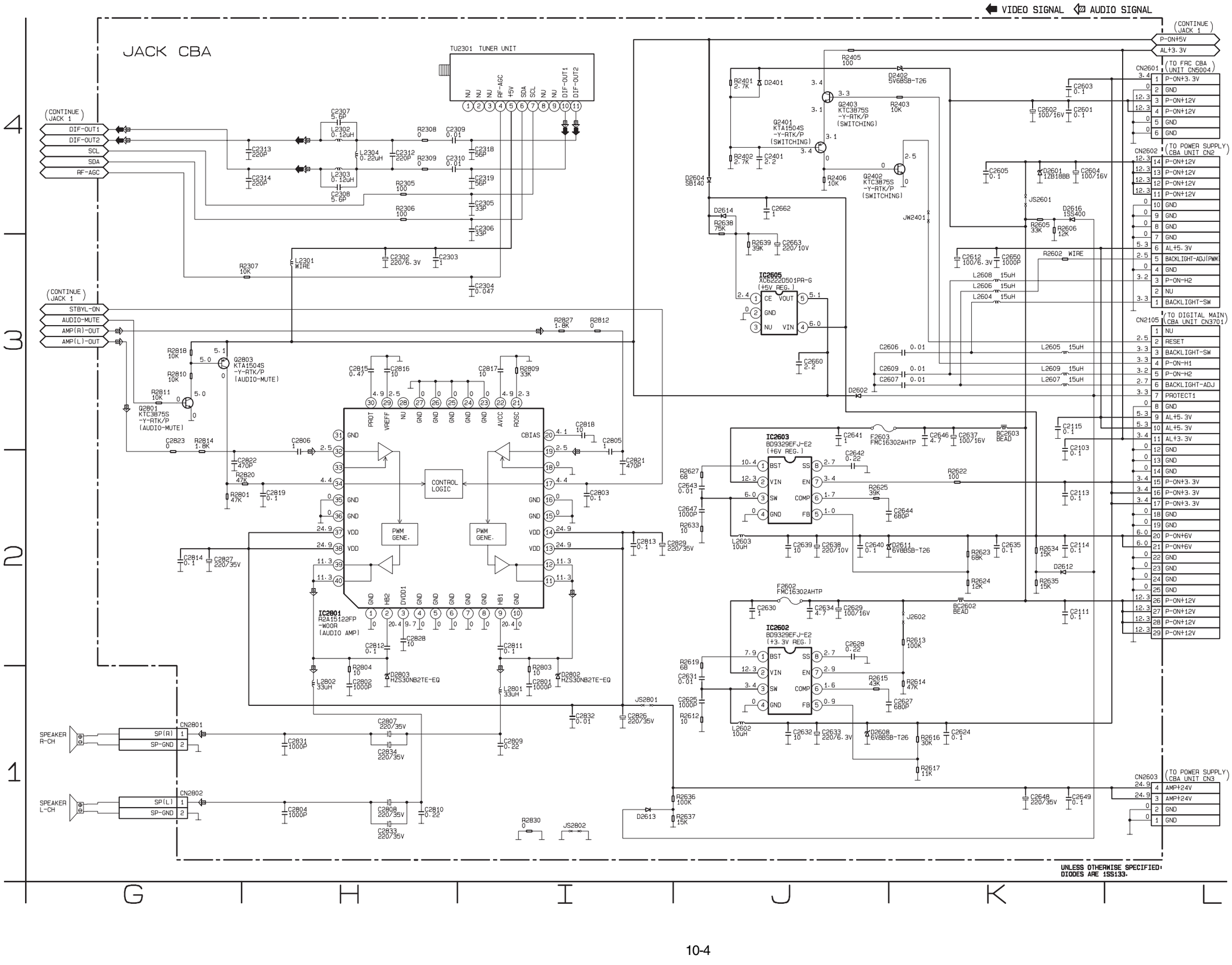
: Used to indicate a test point with a test pin.

The reference number of parts on Schematic Diagrams/CBA, except for the Power Supply CBA Unit, can be retrieved by application search function.

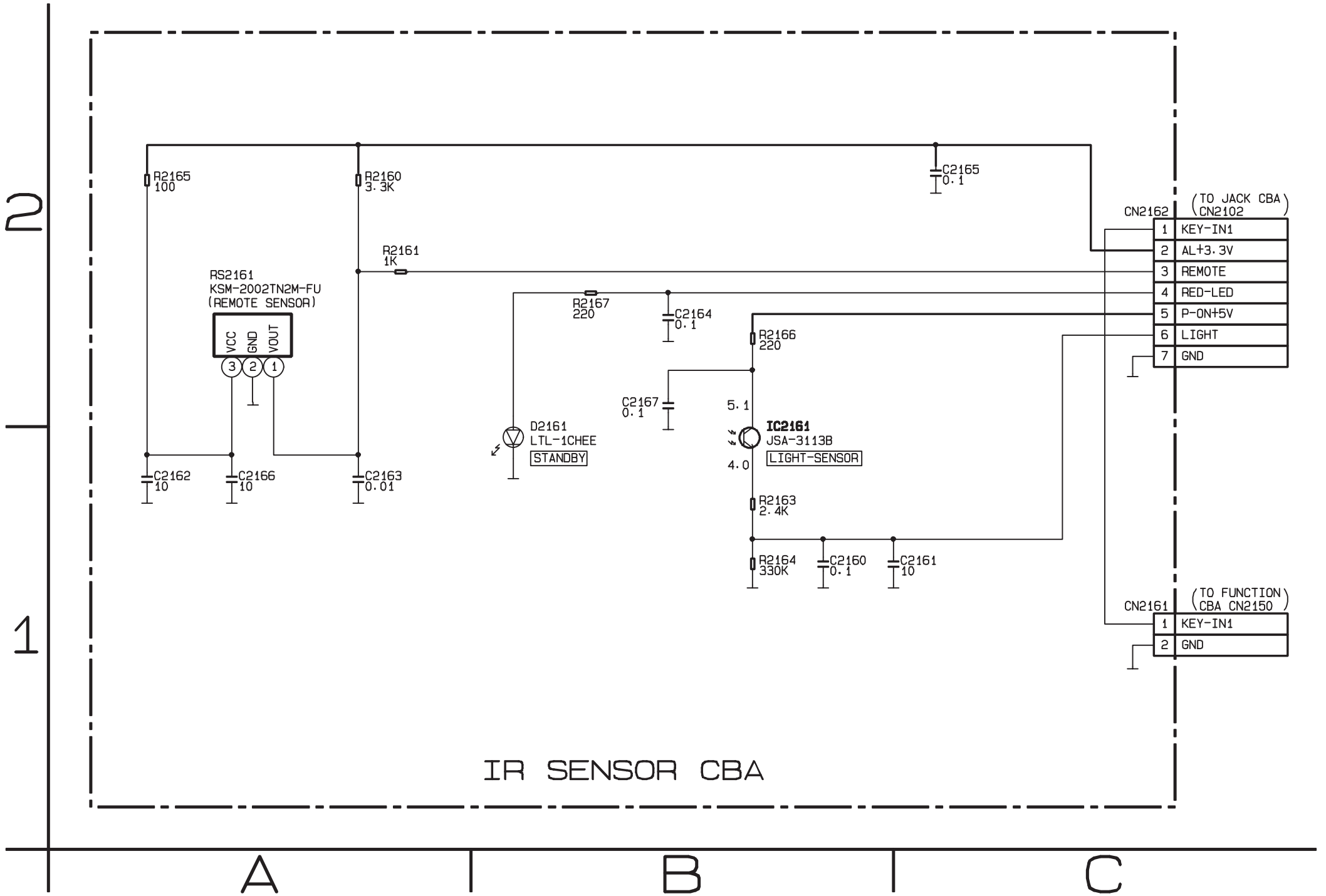
# Jack 1 Schematic Diagram



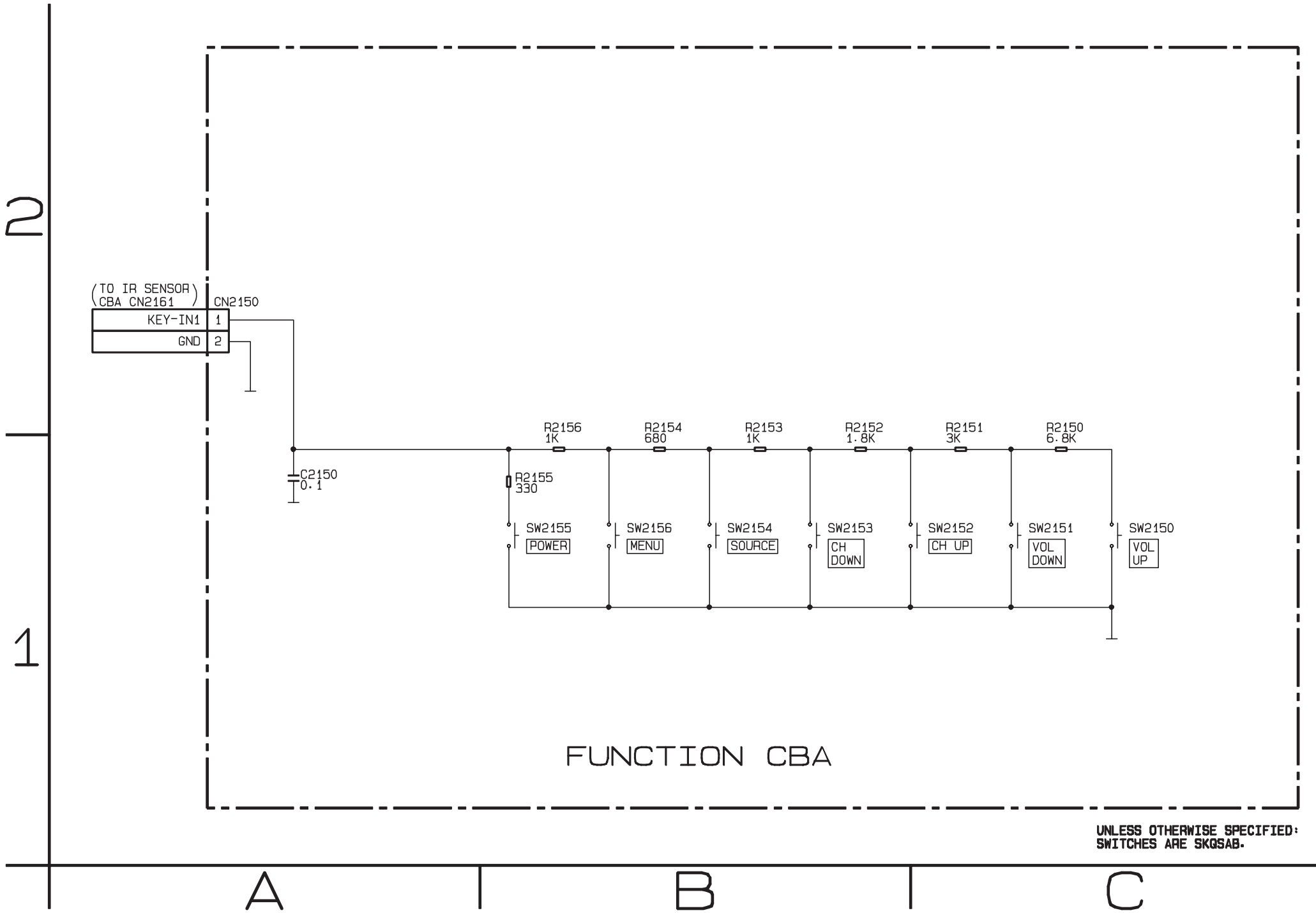
# Jack 2 Schematic Diagram



## IR Sensor Schematic Diagram



## Function Schematic Diagram

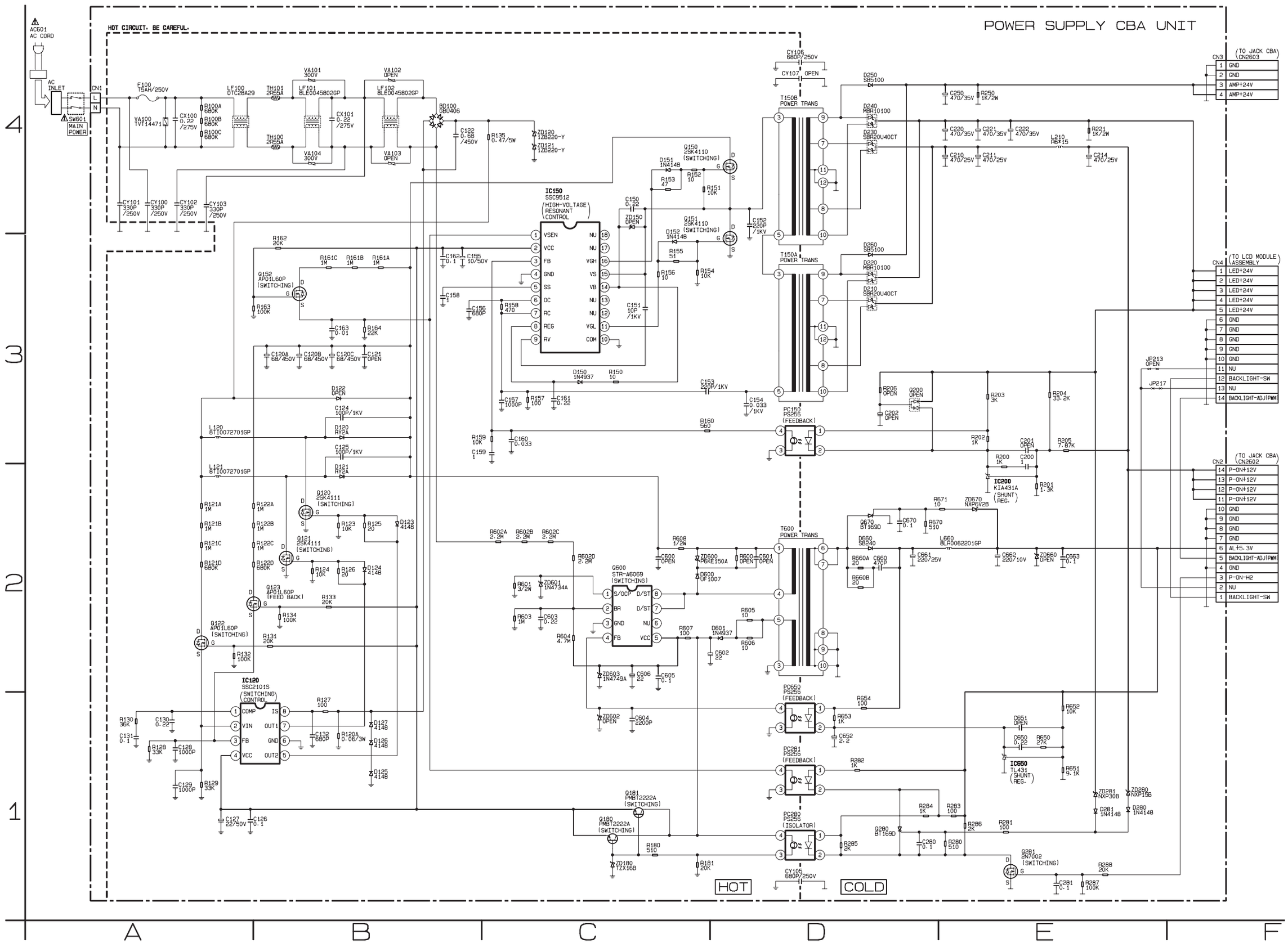


# Power Supply Schematic Diagram

**CAUTION !**
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F100) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

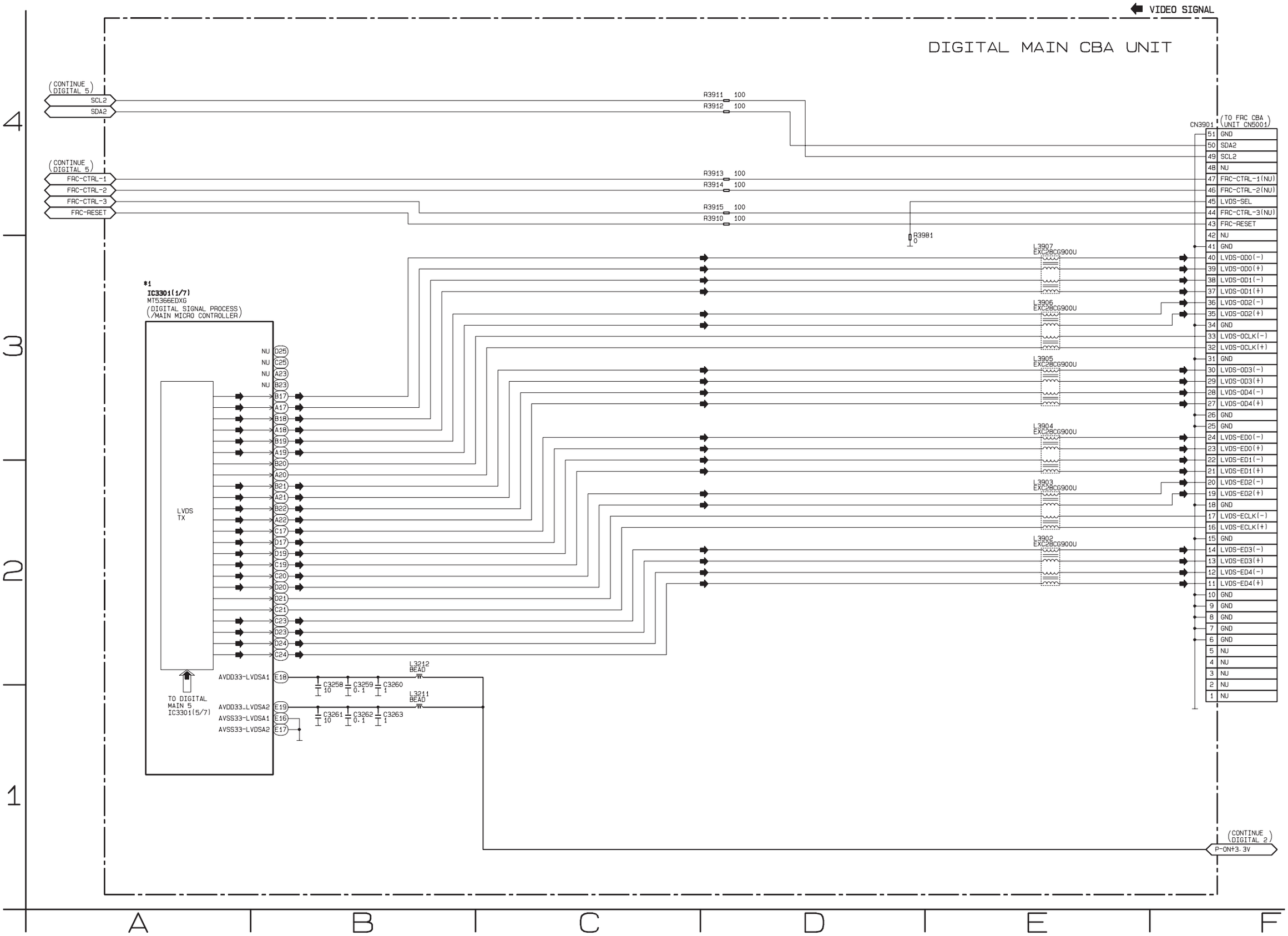
**NOTE:**
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

**CAUTION !**
For continued protection against fire hazard, replace only with the same type fuse.



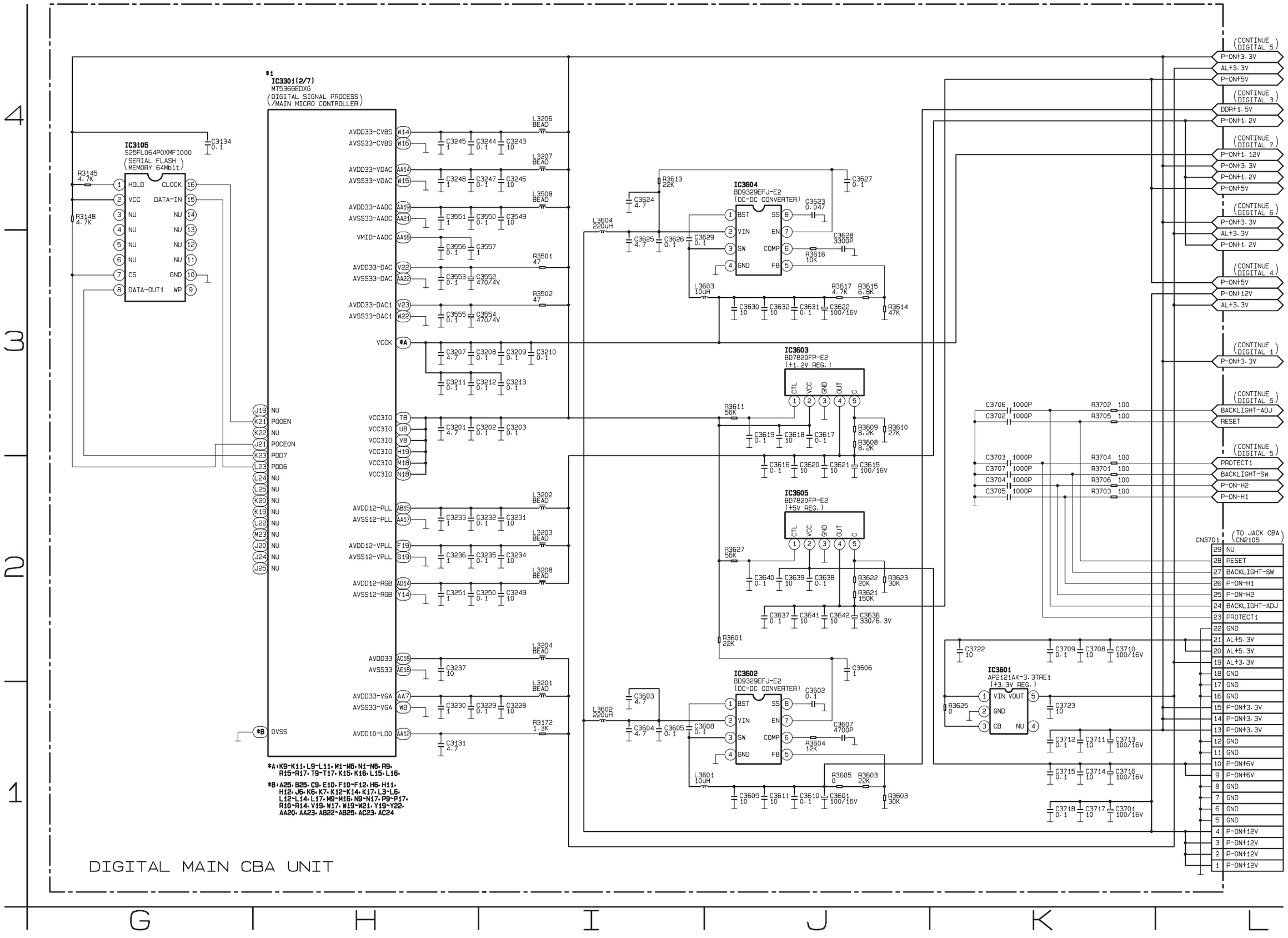
# Digital Main 1 Schematic Diagram

∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC3301.
IC3301 is divided into seven and shown as IC3301 (1/7) ~ IC3301 (7/7) in this Digital Main Schematic Diagram Section.



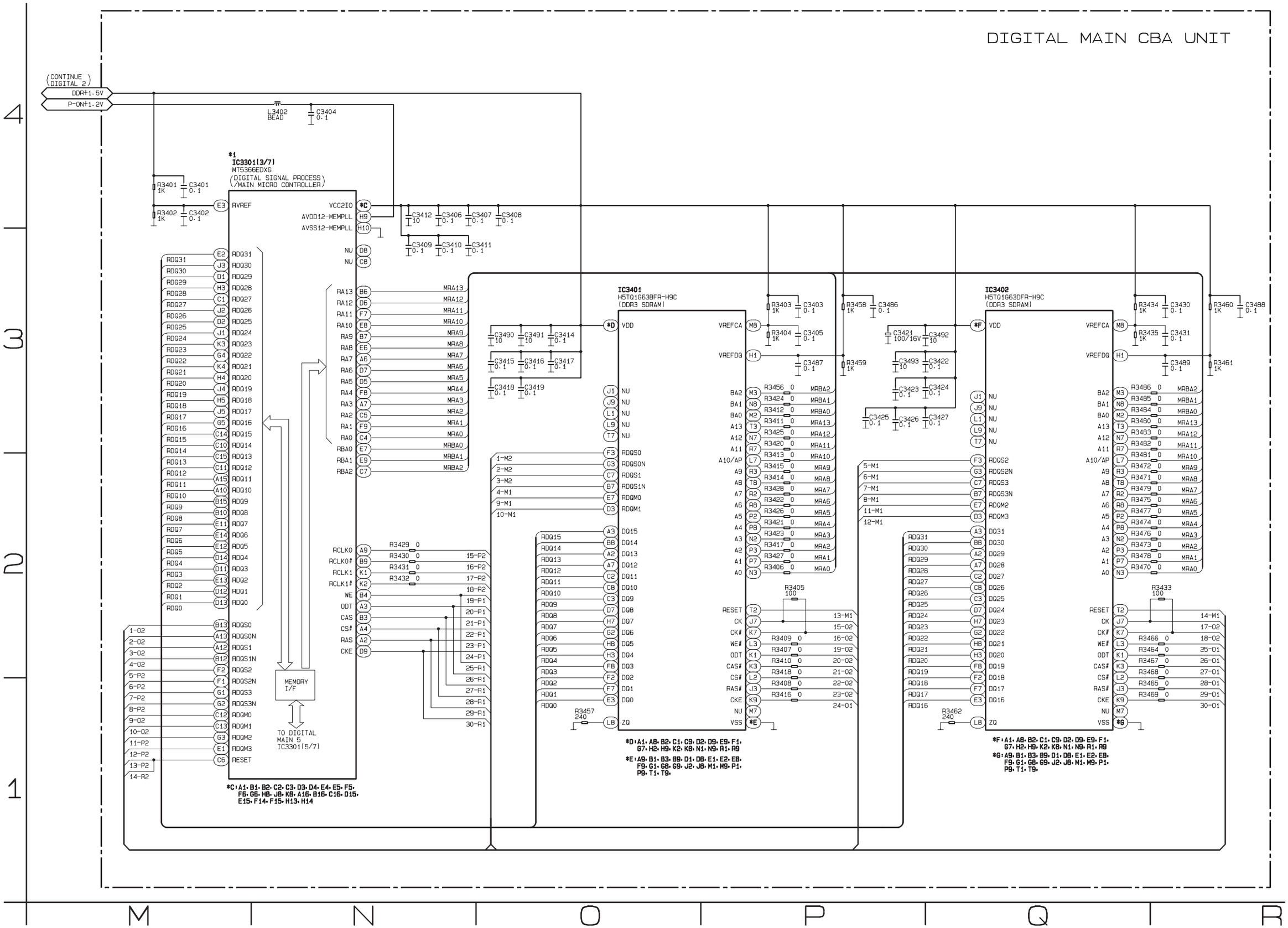
# Digital Main 2 Schematic Diagram

∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC3301.
IC3301 is divided into seven and shown as IC3301 (1/7) ~ IC3301 (7/7) in this Digital Main Schematic Diagram Section.



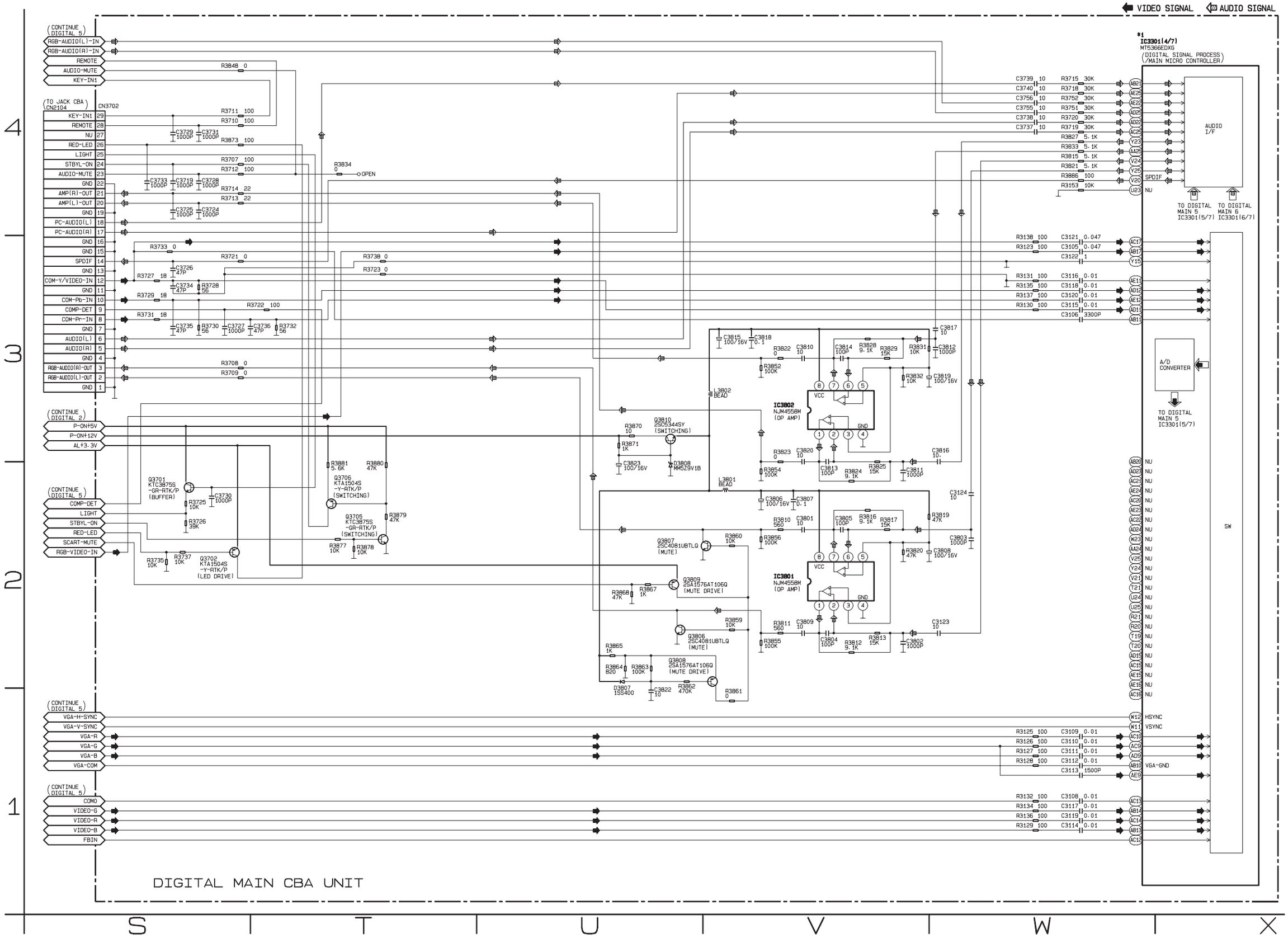
# Digital Main 3 Schematic Diagram

∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC3301.
IC3301 is divided into seven and shown as IC3301 (1/7) ~ IC3301 (7/7) in this Digital Main Schematic Diagram Section.



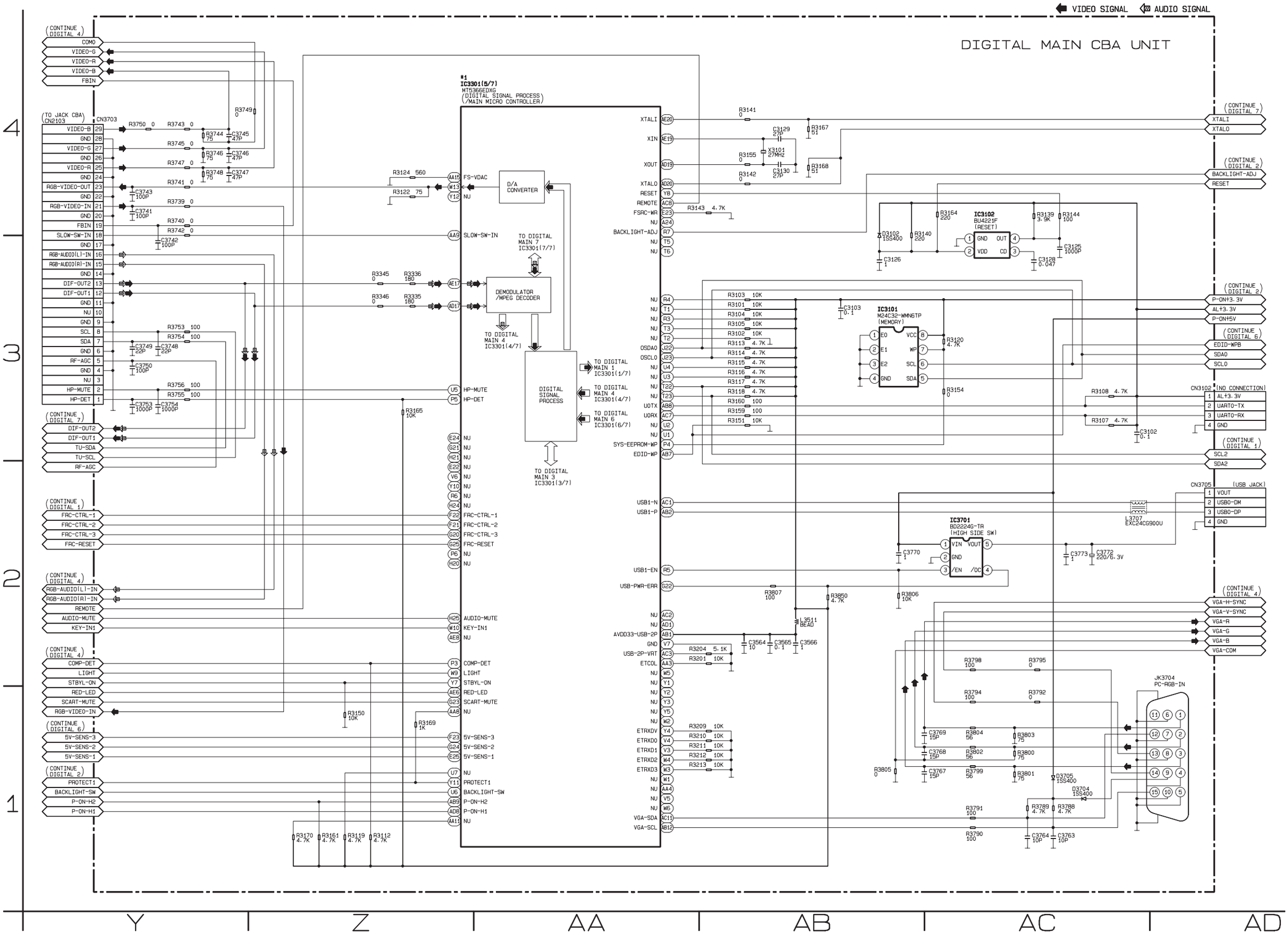
# Digital Main 4 Schematic Diagram

∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC3301.
IC3301 is divided into seven and shown as IC3301 (1/7) ~ IC3301 (7/7) in this Digital Main Schematic Diagram Section.



# Digital Main 5 Schematic Diagram

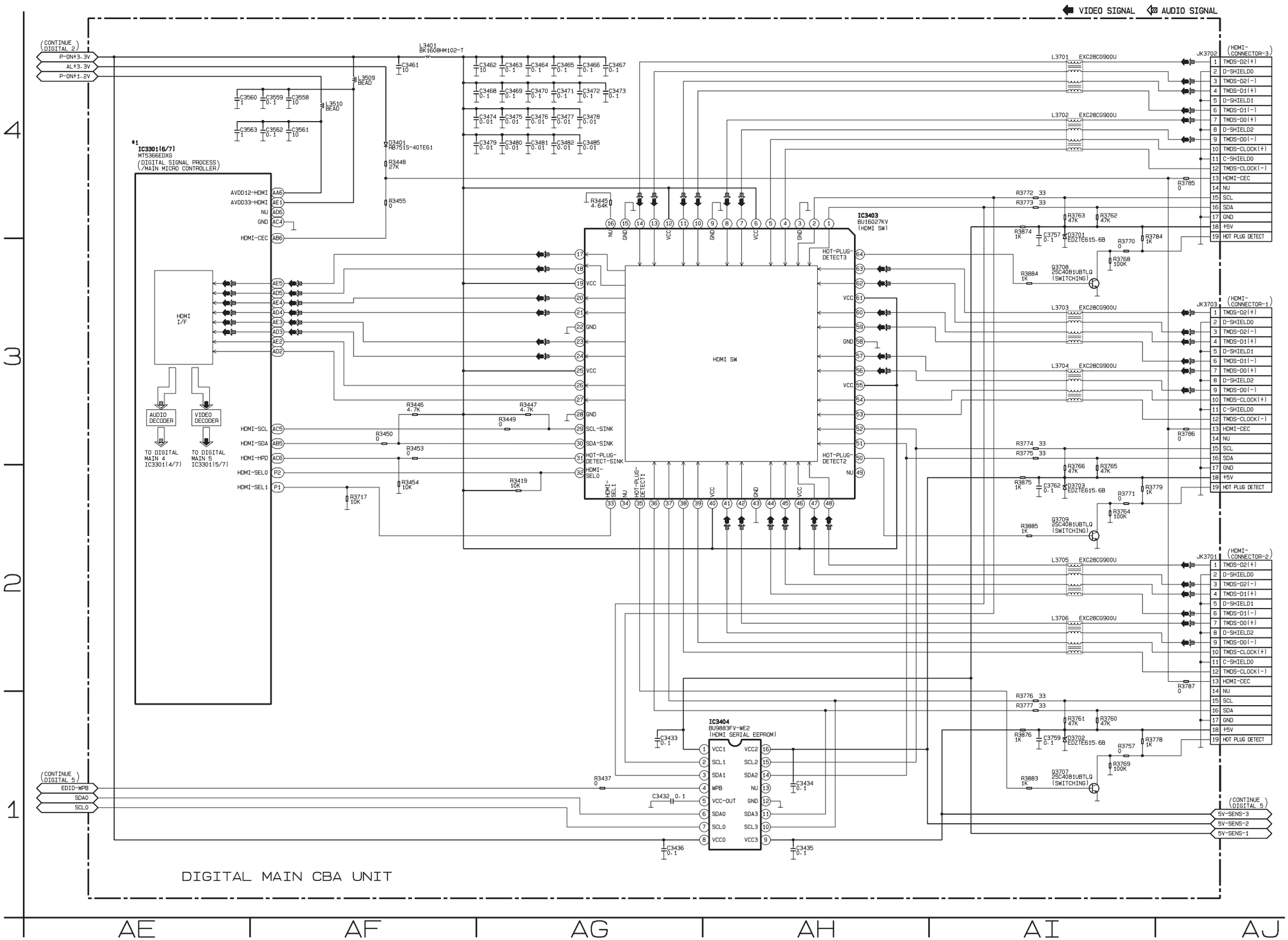
**∗1 NOTE:**
The order of pins shown in this diagram is different from that of actual IC3301.
IC3301 is divided into seven and shown as IC3301 (1/7) ~ IC3301 (7/7) in this Digital Main Schematic Diagram Section.



# Digital Main 6 Schematic Diagram

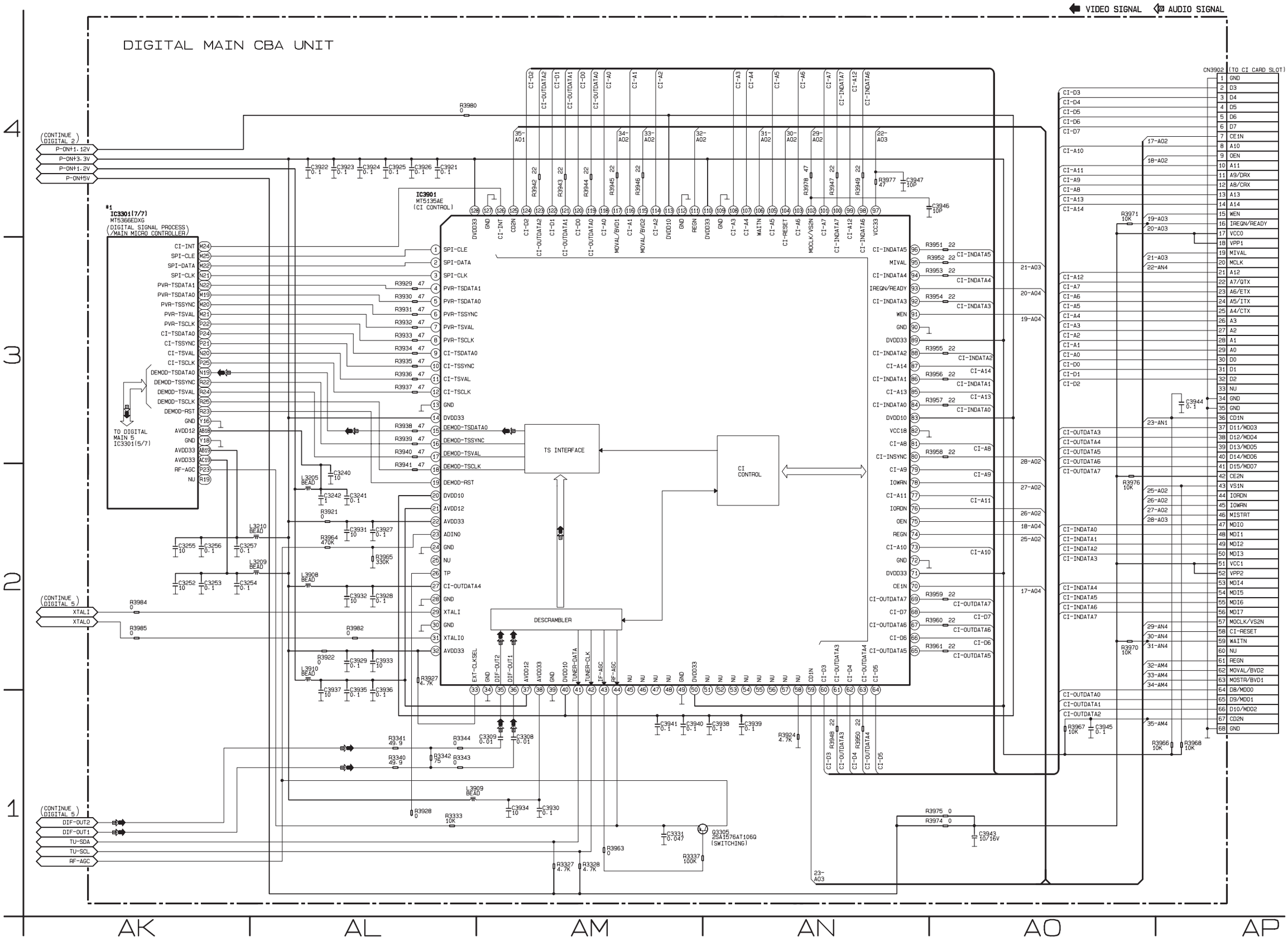
**∗1 NOTE:**

The order of pins shown in this diagram is different from that of actual IC3301.
IC3301 is divided into seven and shown as IC3301 (1/7) ~ IC3301 (7/7) in this Digital Main Schematic Diagram Section.



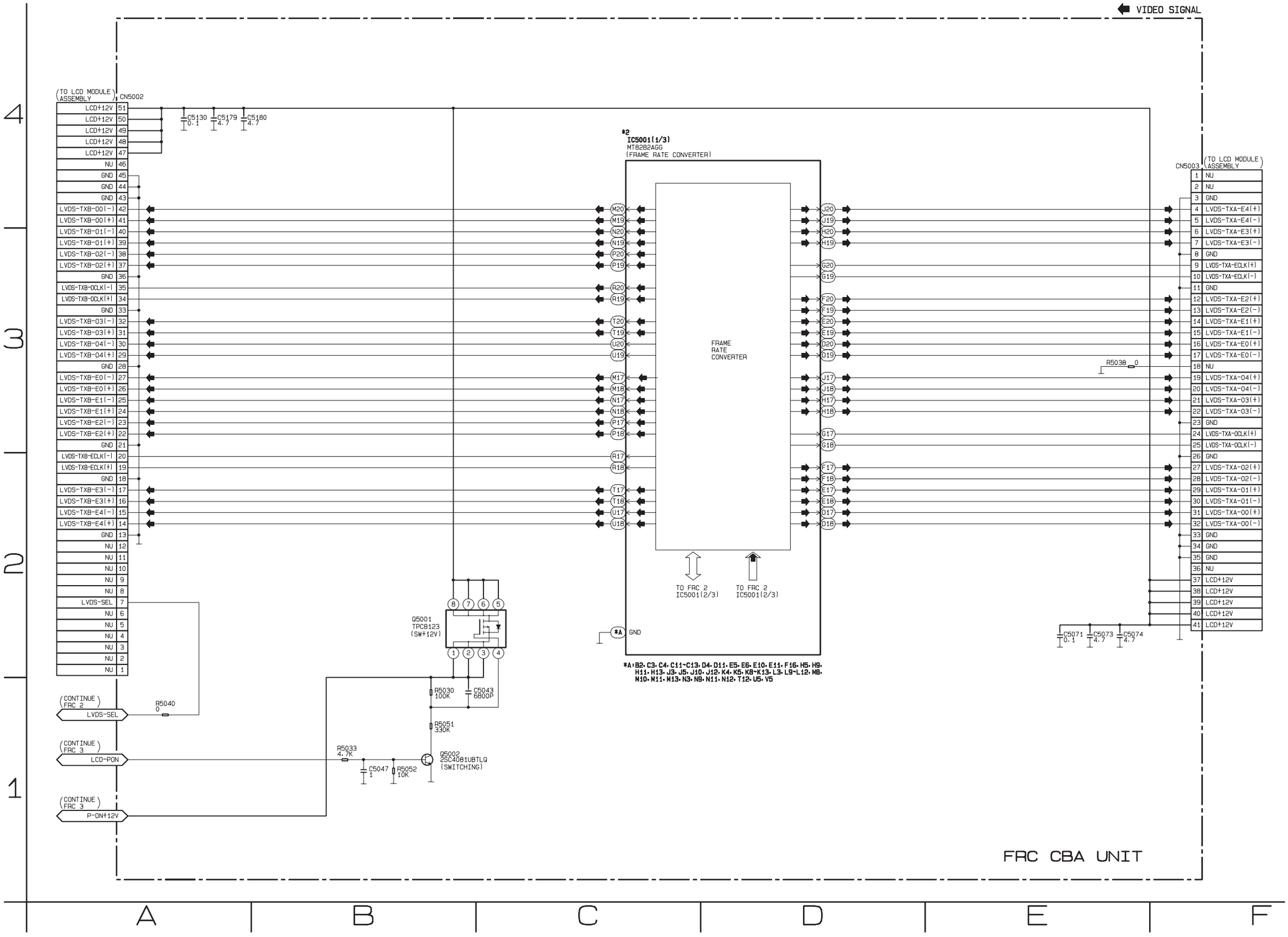
# Digital Main 7 Schematic Diagram

**∗1 NOTE:**
The order of pins shown in this diagram is different from that of actual IC3301.
IC3301 is divided into seven and shown as IC3301 (1/7) ~ IC3301 (7/7) in this Digital Main Schematic Diagram Section.



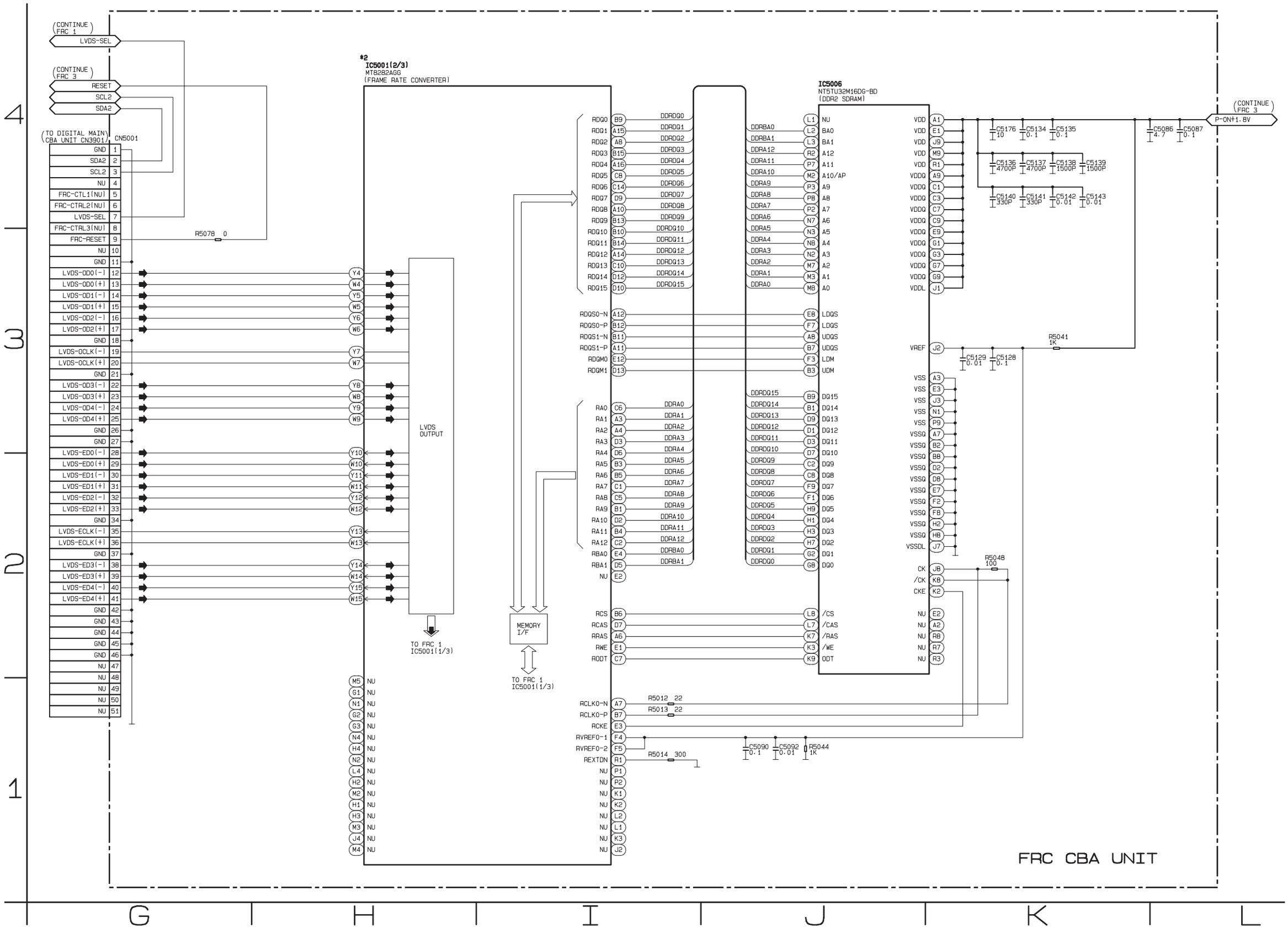
# FRC 1 Schematic Diagram

**∗2 NOTE:**
The order of pins shown in this diagram is different from that of actual IC5001.
IC5001 is divided into three and shown as IC5001 (1/3) ~ IC5001 (3/3) in this FRC Schematic Diagram Section.



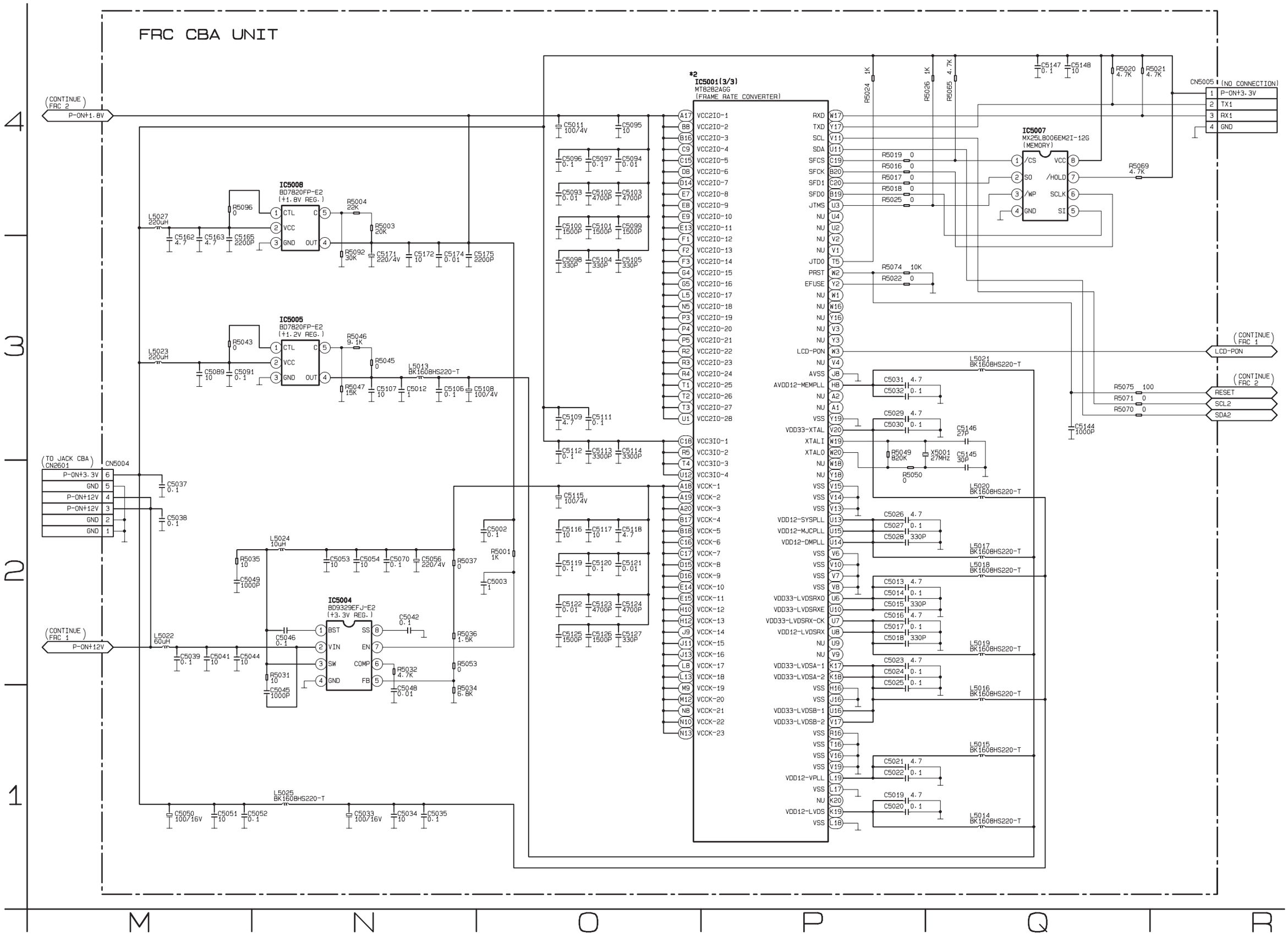
# FRC 2 Schematic Diagram

**∗2 NOTE:**
The order of pins shown in this diagram is different from that of actual IC5001.
IC5001 is divided into three and shown as IC5001 (1/3) ~ IC5001 (3/3) in this FRC Schematic Diagram Section.

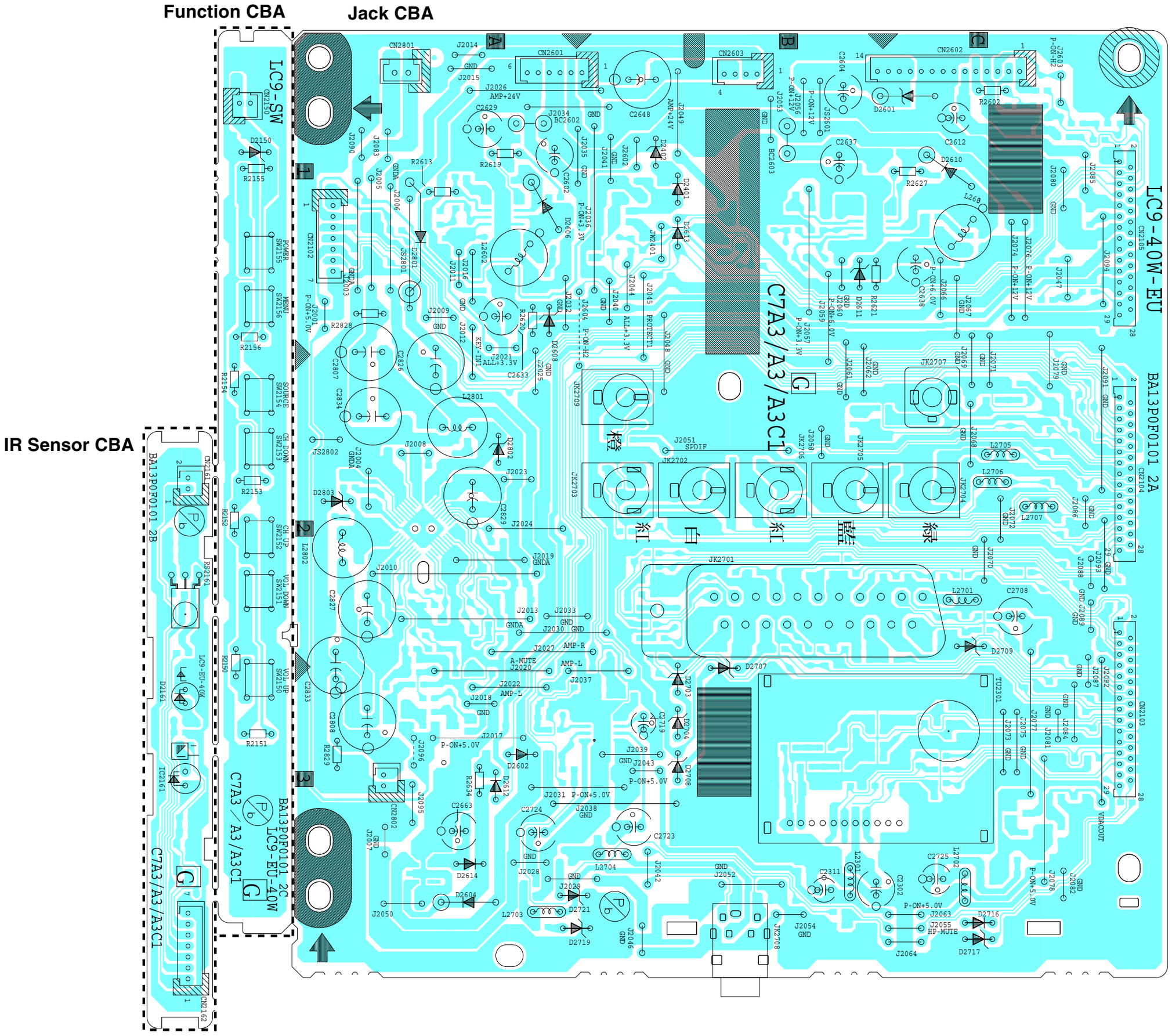


# FRC 3 Schematic Diagram

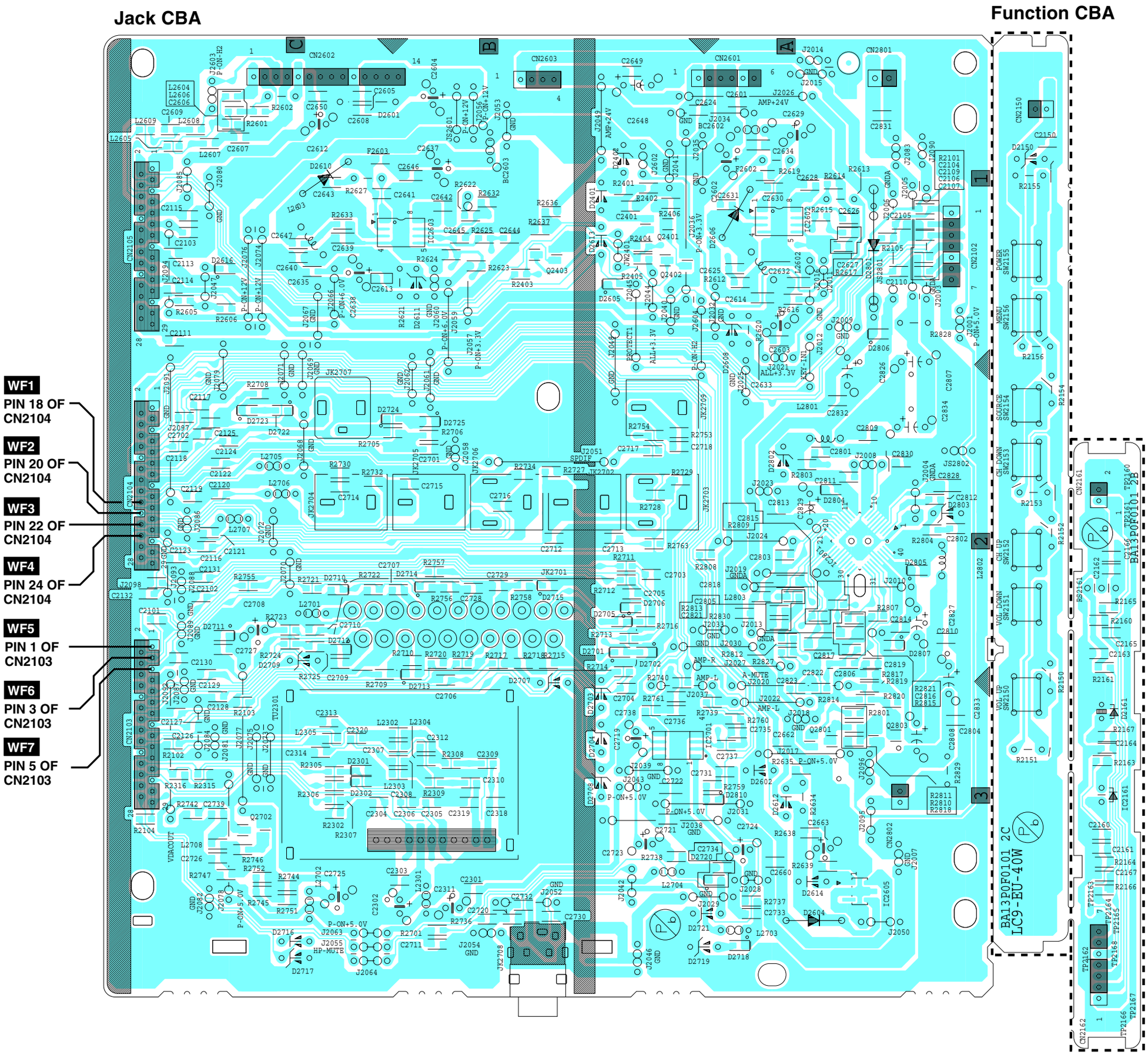
**∗2 NOTE:**
The order of pins shown in this diagram is different from that of actual IC5001.
IC5001 is divided into three and shown as IC5001 (1/3) ~ IC5001 (3/3) in this FRC Schematic Diagram Section.



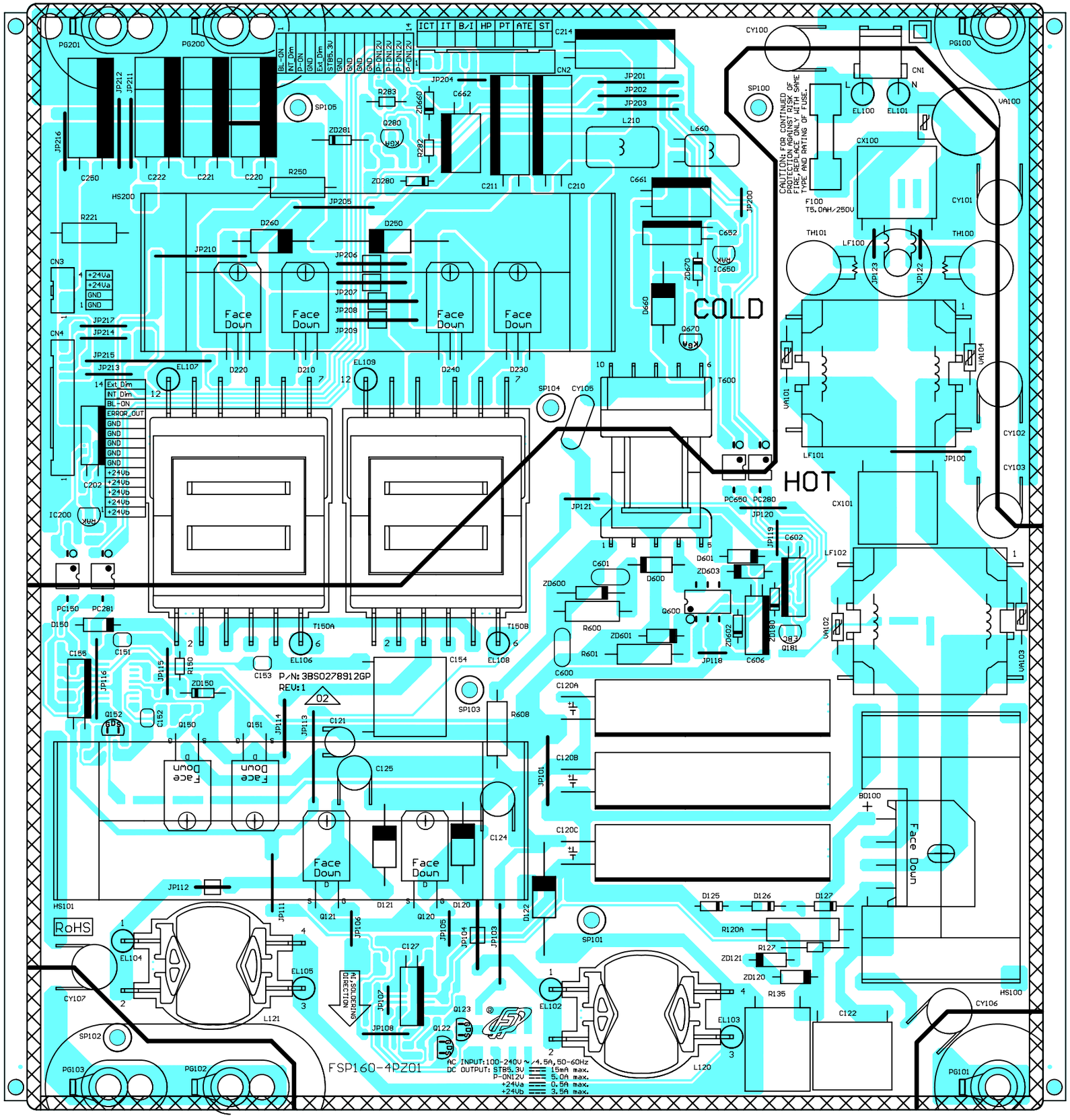
## Jack CBA, IR Sensor CBA & Function CBA Top View



# Jack CBA, IR Sensor CBA & Function CBA Bottom View



# Power Supply CBA Top View



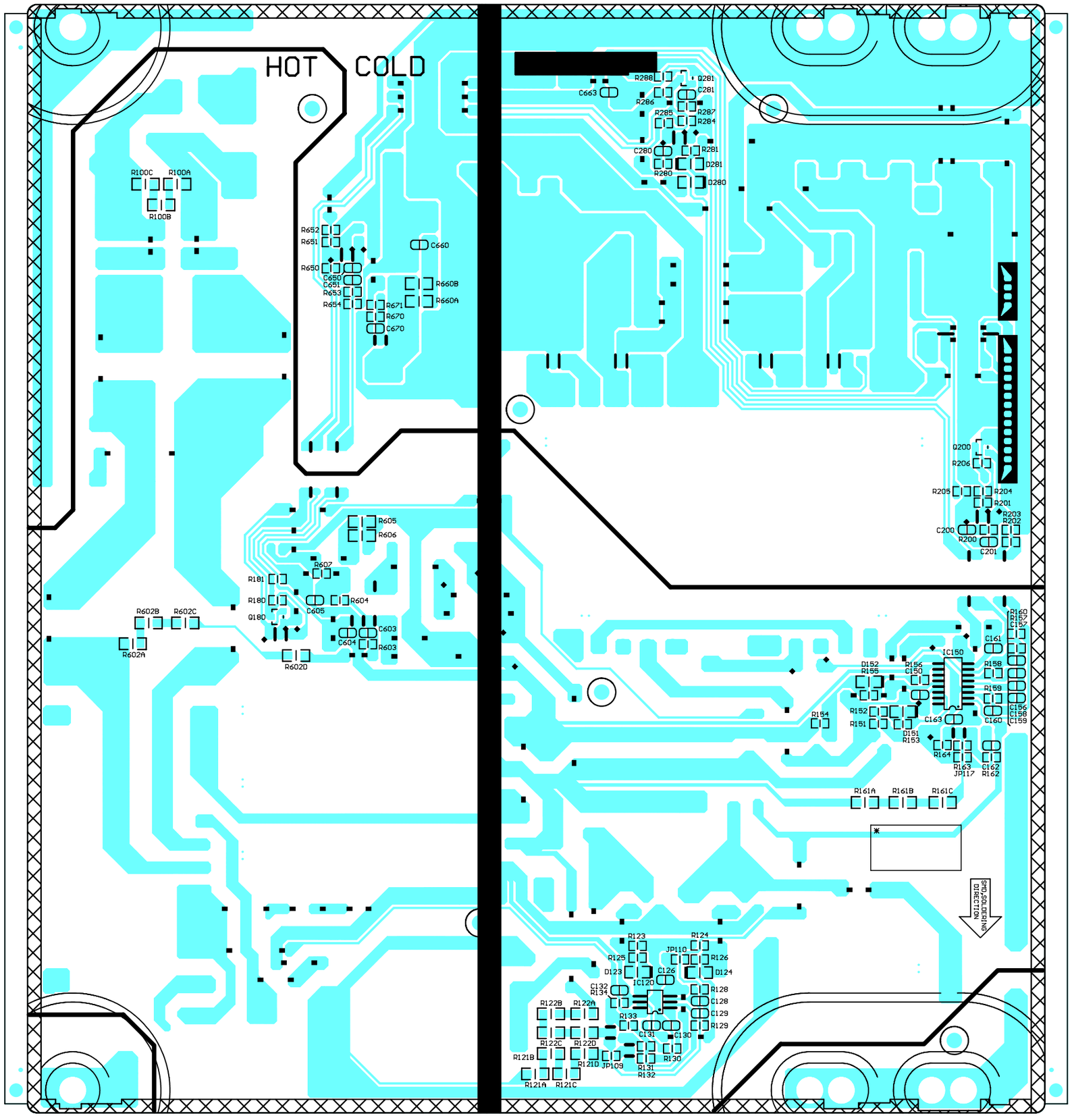

**Because a hot chassis ground is present in the power supply circuit, an isolation transformer must be used when repairing. Also, in order to have the ability to increase the input slowly, when troubleshooting this type of power supply circuit, a variable isolation transformer is required.**

**CAUTION !**
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F100) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

**NOTE:**
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

**CAUTION !**
For continued protection against fire hazard, replace only with the same type fuse.

## Power Supply CBA Bottom View




**Because a hot chassis ground is present in the power supply circuit, an isolation transformer must be used when repairing. Also, in order to have the ability to increase the input slowly, when troubleshooting this type of power supply circuit, a variable isolation transformer is required.**

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**NOTE:**
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

**CAUTION !**
For continued protection against fire hazard, replace only with the same type fuse.

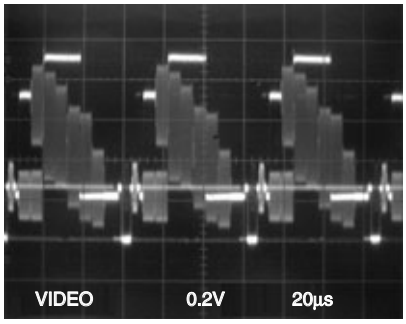
# WAVEFORMS

**WF1 ~ WF7 =** Waveforms to be observed at
Waveform check points.
(Shown in Schematic Diagram.)

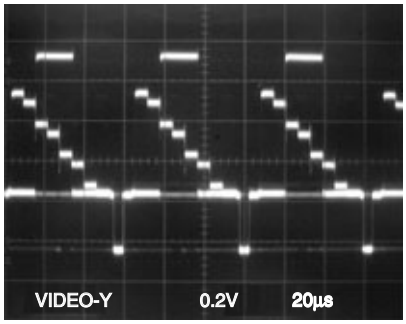
**Input:** PAL Color Bar Signal (with 1kHz Audio Signal)

**WF1** Pin 18 of CN2104

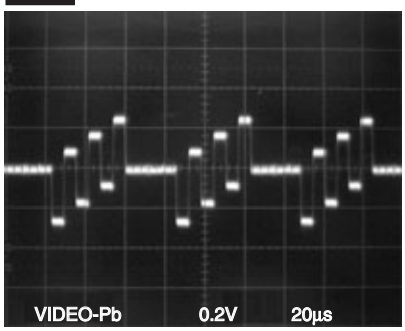
(VIDEO IN)



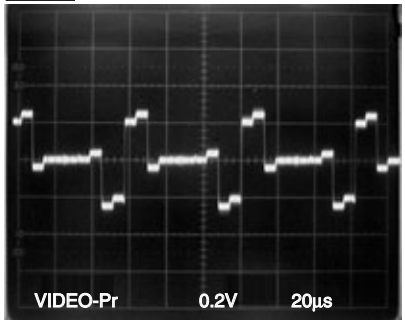

(COMPONENT IN)



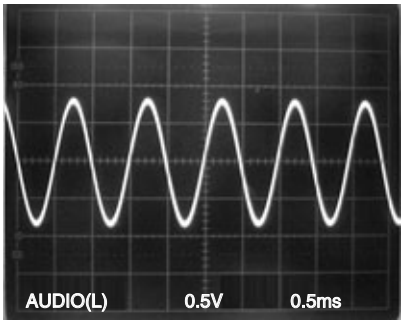

**WF2** Pin 20 of CN2104



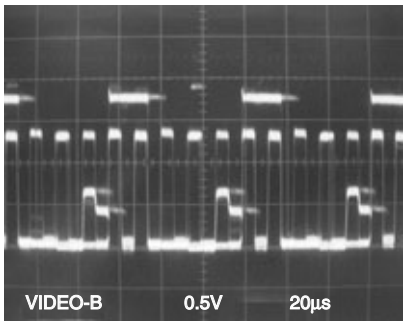

**WF3** Pin 22 of CN2104



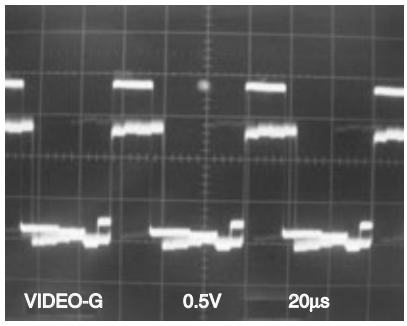

**WF4** Pin 24 of CN2104



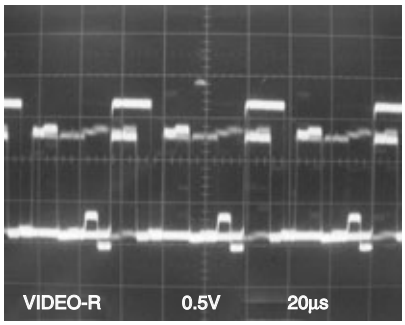

**WF5** Pin 1 of CN2103

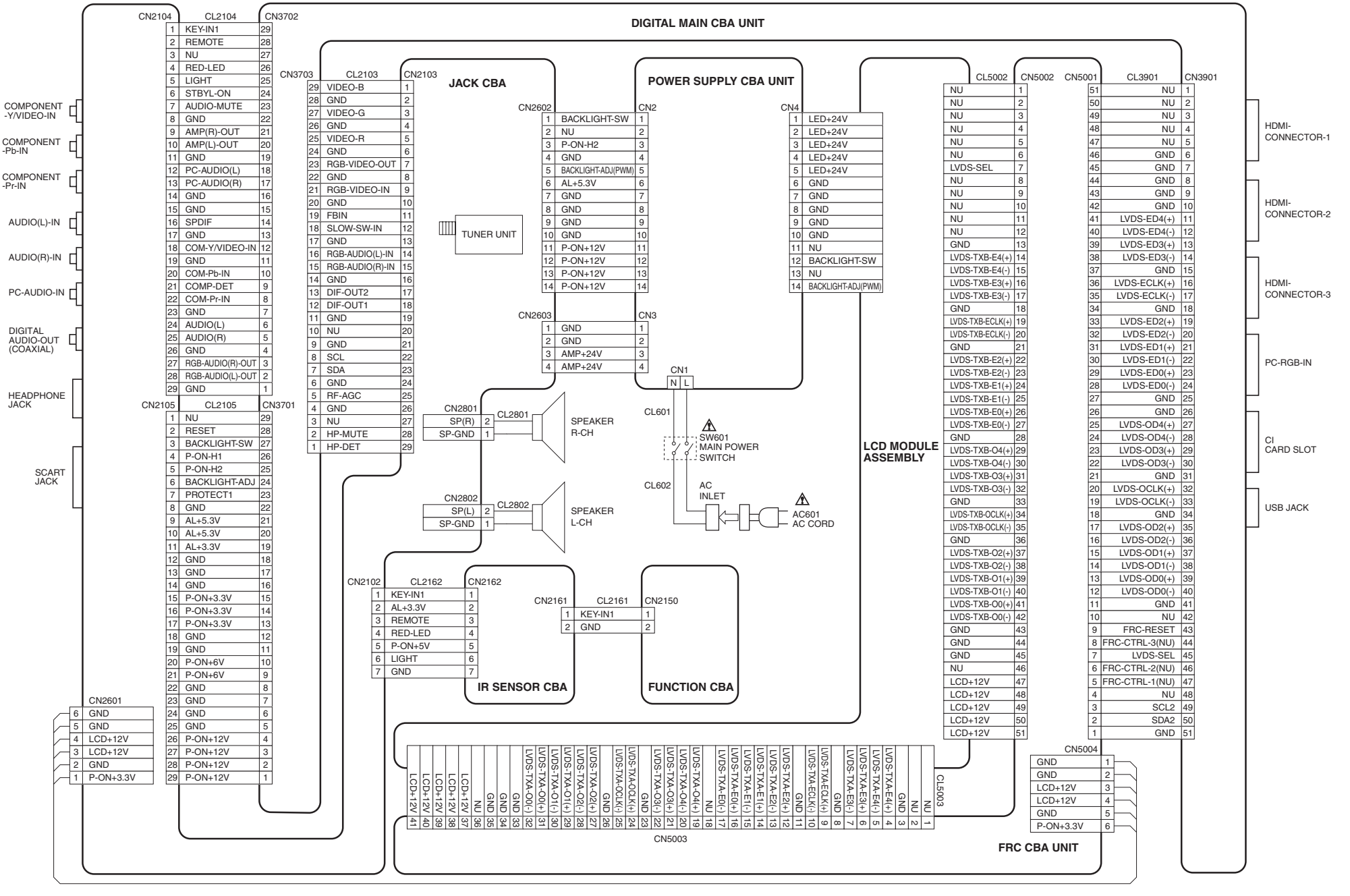



**WF6** Pin 3 of CN2103




**WF7** Pin 5 of CN2103




WIRING DIAGRAMS
DIGITAL MAIN CBA UNIT
JACK CBA
POWER SUPPLY CBA UNIT
LCD MODULE ASSEMBLY
FRC CBA UNIT
IR SENSOR CBA
FUNCTION CBA
TUNER UNIT
SPEAKER R-CH
SPEAKER L-CH
SW601 MAIN POWER SWITCH
AC INLET
AC601 AC CORD
COMPONENT -Y/VIDEO-IN
COMPONENT -Pb-IN
COMPONENT -Pr-IN
AUDIO(L)-IN
AUDIO(R)-IN
PC-AUDIO-IN
DIGITAL AUDIO-OUT (COAXIAL)
HEADPHONE JACK
SCART JACK
HDMI-CONNECTOR-1
HDMI-CONNECTOR-2
HDMI-CONNECTOR-3
PC-RGB-IN
CI CARD SLOT
USB JACK
CN2104 CL2104 CN3702
1 KEY-IN1 29
2 REMOTE 28
3 NU 27
4 RED-LED 26
5 LIGHT 25
6 STBYL-ON 24
7 AUDIO-MUTE 23
8 GND 22
9 AMP(R)-OUT 21
10 AMP(L)-OUT 20
11 GND 19
12 PC-AUDIO(L) 18
13 PC-AUDIO(R) 17
14 GND 16
15 GND 15
16 SPDIF 14
17 GND 13
18 COM-Y/VIDEO-IN 12
19 GND 11
20 COM-Pb-IN 10
21 COMP-DET 9
22 COM-Pr-IN 8
23 GND 7
24 AUDIO(L) 6
25 AUDIO(R) 5
26 GND 4
27 RGB-AUDIO(R)-OUT 3
28 RGB-AUDIO(L)-OUT 2
29 GND 1
CN3703 CL2103 CN2103
29 VIDEO-B 1
28 GND 2
27 VIDEO-G 3
26 GND 4
25 VIDEO-R 5
24 GND 6
23 RGB-VIDEO-OUT 7
22 GND 8
21 RGB-VIDEO-IN 9
20 GND 10
19 FBIN 11
18 SLOW-SW-IN 12
17 GND 13
16 RGB-AUDIO(L)-IN 14
15 RGB-AUDIO(R)-IN 15
14 GND 16
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12 DIF-OUT1 18
11 GND 19
10 NU 20
9 GND 21
8 SCL 22
7 SDA 23
6 GND 24
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4 GND 26
3 NU 27
2 HP-MUTE 28
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1 NU 29
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5 P-ON-H2 25
6 BACKLIGHT-ADJ 24
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18 GND 12
19 GND 11
20 P-ON+6V 10
21 P-ON+6V 9
22 GND 8
23 GND 7
24 GND 6
25 GND 5
26 P-ON+12V 4
27 P-ON+12V 3
28 P-ON+12V 2
29 P-ON+12V 1
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6 GND
5 GND
4 LCD+12V
3 LCD+12V
2 GND
1 P-ON+3.3V
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1 BACKLIGHT-SW 1
2 NU 2
3 P-ON-H2 3
4 GND 4
5 BACKLIGHT-ADJ(PWM) 5
6 AL+5.3V 6
7 GND 7
8 GND 8
9 GND 9
10 GND 10
11 P-ON+12V 11
12 P-ON+12V 12
13 P-ON+12V 13
14 P-ON+12V 14
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2 GND 2
3 AMP+24V 3
4 AMP+24V 4
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1 LED+24V
2 LED+24V
3 LED+24V
4 LED+24V
5 LED+24V
6 GND
7 GND
8 GND
9 GND
10 GND
11 NU
12 BACKLIGHT-SW
13 NU
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CN2801 CL2801
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SP-GND 1
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CL602
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2 AL+3.3V 2
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4 RED-LED 4
5 P-ON+5V 5
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7 GND 7
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GND 8
LVDS-TXA-E3(-) 7
LVDS-TXA-E3(+) 6
LVDS-TXA-E4(-) 5
LVDS-TXA-E4(+) 4
GND 3
NU 2
NU 1
CL5003
CN5004
GND 1
GND 2
LCD+12V 3
LCD+12V 4
GND 5
P-ON+3.3V 6