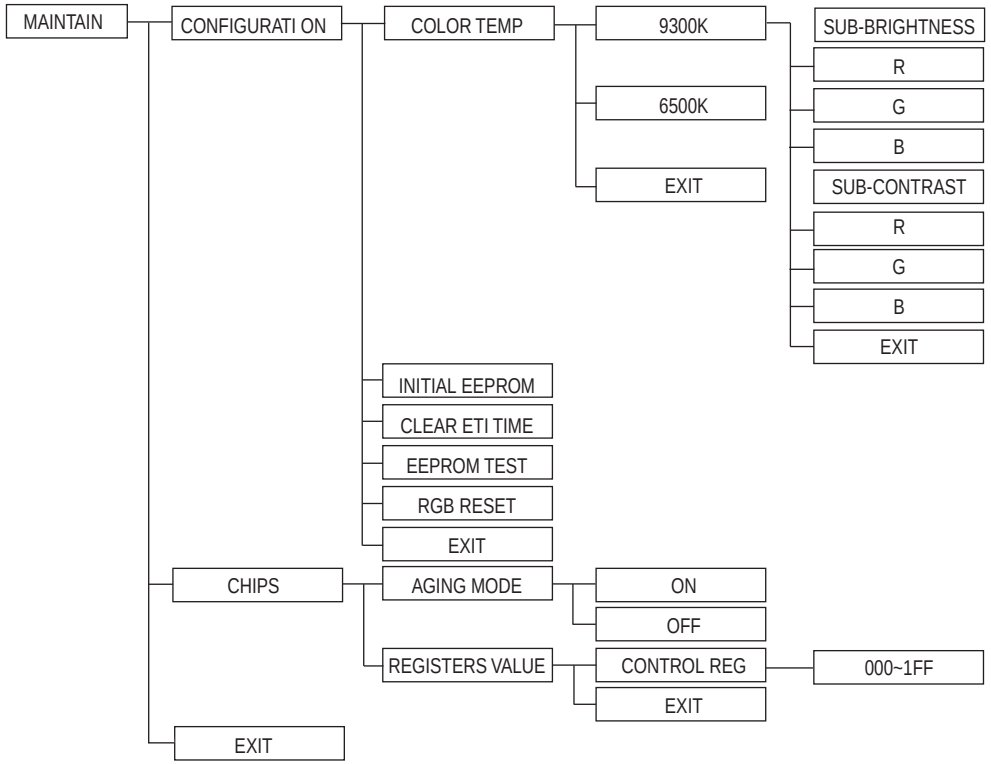
2-2. Uses of Service Mode

1. Turn off the power with the POWER button in the front panel. The red POWER LED lights on.
2. Press the POWER button in the front panel with pressing the UP (↑) and DOWN (↓) buttons, and the system enters the service mode.
   When no signal is input to the selected input terminal, the following functions are disabled.
3. Press the MENU button, and the main menu is displayed. Then go to page 2 of the main menu with the UP (↑) or DOWN (↓) button, then select the MAINTAIN icon on the bottom line, and then press the OK button.
4. In this menu screen, the version number and released date of the internal software can be checked.
5. The structure of the MAINTAIN menu is shown below.



The operation procedure is basically same as that of the ordinary user controls. The function of each menu is explained in next section.

2-3. Functions of Service Mode

1. COLOR TEMP
   This is used for the white balance adjustment at color temperature 9300 K and 6500 K. The adjustment requires to be done for every input (INPUT1: DVI-D, INPUT1: HD15, or INPUT2: HD15) by switching the input. The adjustment data is stored into the register for respective inputs.

2. INITIAL EEPROM
   This sets the data of the EEPROM to the default data. This operation is not required usually.

3. CLEAR ETI TIME
   This resets the ETI (Elapsed Time Indicator) counter to 00000 H.

4. EEPROM TEST
   This tests writing and reading of the EEPROM.

5. RGB RESET
   This adjust the offset and gain of the input AD converter for the analog inputs (INPUT1: HD15 and INPUT2:HD15). As these adjustments are common to both inputs, perform them for either input. It is unnecessary for another input.
   Execute the adjustments under the condition where the signal specified in "White Balance Adjustment" is input.

6. AGING IN MODE
   This sets and clears the NO SYNC AGING flag.
   AGING MODE = ON: Sets the NO SYNC AGING flag.
   AGING MODE = OFF: Clears the NO SYNC AGING flag.
   When the NO SYNC AGING flag is set and the input with no input signal is selected, the system goes into the AGING MODE. The NO SYNC AGING flag is held until it is cleared. To clear the NO SYNC AGING flag, go into the service mode and then set the AGINGN MODE to OFF, or execute the all mode recall.

7. CONTROL REG.
   This can check the data of the internal registers. This operation is not required usually.

2-4. White Balance Adjustment

< Preparation >

(1) Measurement point : Center of screen
(2) Measurement distance : 50 cm
(3) Measurement angle : 90°
(4) Color analyzer (Minolta CS-1000 or equivalent)
(5) Signal generator (Astro Design VG-828D or equivalent)
Be sure to calibrate the analog RGB output level with 75Ω termination.

1. Service mode setting
   Enter the service mode referring to step 1 and 2 of Section 2-2.

2. Aging
   Set the AGING MODE in the service mode to ON. Disconnect the signal input terminal or select the input with no signal input, and the system goes into the AGING MODE.
   Execute aging for 30 minutes or more.

3. User control setting
   Feed a signal to the selected input, and then execute reset in the menu screen. Then, move the menu display position to avoid the measurement point. Or, set the following for respective inputs.

   BACKLIGHT (Brightness of backlight) = 100
   CONTRAST = 70
   BRIGHTNESS = 50
   Menu display position = not center of screen (Avoid the measurement point.)
   (The setting of the menu display position is common to respective inputs.)
   ECO = OFF (The setting of ECO is common to respective inputs.)

   Do not change the above setting until the white balance adjustment is completed.

4. Analog RGB white balance adjustment

(1) Feed the signal listed below to INPUT2: HD15, and then select INPUT2: HD15. Then execute RGB RESET in the service mode menu.

Signal timing	Pattern	Input level
VESA 1280 * 1024 / 60Hz	Gray scale	0.73 Vp-p

(2) Feed the signal listed below to INPUT2: HD15.

Signal timing	Pattern	Pattern
VESA 1280 * 1024 / 60Hz	All gray	30 IRE (0.21 Vp-p)

(3) Select COLOR TEMP → 9300K in the service mode menu, and set the data listed below as initial data for adjustment.

SUB-BRIGHTNESS			SUB-CONTRAST		
R	G	B	R	G	B
40	40	40	148	148	143

(4) Adjust SUB-BRIGHTNESS: R, G, and B. Specifications are listed below.

x	y	Brightness (cd/m2)
0.283 ± 0.003	0.298 ± 0.003	12± 0.7

(5) Select COLOR TEMP → 6500K in the service mode menu, and set the data listed below as initial data for adjustment.

SUB-BRIGHTNESS			SUB-CONTRAST		
R	G	B	R	G	B
40	40	40	145	143	138

(6) Adjust the SUB-BRIGHTNESS: R, G, and B. Specifications are listed below.

x	y	Brightness (cd/m2)
0.313 ± 0.003	0.329 ± 0.003	10± 0.7

(7) After adjusting (4) and (6), write down the value of SUB-CONTRAST and SUB-BRIGHTNESS.
(8) Feed the signal to INPUT1: HD15, and then select INPUT1: HD15. Select COLOR TEMP → 9300K then 6500K in the service mode menu, and enter the value written down in step (7) respectively.

5. Digital RGB white balance adjustment

(1) Feed the signal listed below to INPUT1: DVI-D.

Signal timing	Pattern	Input level
VESA 1280 * 1024 / 60Hz	All gray	30 IRE

(2) Select COLOR TEMP → 9300K in the service mode menu, and set the data listed below as initial data for adjustment.

SUB-BRIGHTNESS			SUB-CONTRAST		
R	G	B	R	G	B
40	40	40	132	132	132

(3) Adjust the SUB-BRIGHTNESS: R, G, and B. Specifications are listed below.

x	y	Brightness (cd/m2)
0.283 ± 0.003	0.298 ± 0.003	12± 0.7

(4) Select COLOR TEMP → 6500K in the service mode menu, and set the data listed below as initial data for adjustment.

SUB-BRIGHTNESS			SUB-CONTRAST		
R	G	B	R	G	B
40	40	40	132	132	132

(5) Adjust the SUB-BRIGHTNESS: R, G, and B. Specifications are listed below.

x	y	Brightness (cd/m2)
0.313 ± 0.003	0.329 ± 0.003	12± 0.7

6. Setting for shipping

Turn off the power with the POWER button in the front panel. Check that the red POWER LED lights on, and then execute the all mode recall. (press the POWER button with pressing the OK button in the power-off state)

2-5. Action after Replacing the LCD Panel and Board

1. After replacing the LCD panel
   (1) White balance adjustment. (Refer to Section 2-4.)
   (2) CLEAR ETI TIME. (Refer to Section 2-3 step 3.)
   (3) Check of picture and sound.

2. After replacing the A board
   (1) White balance adjustment. (Refer to Section 2-4.)
   (2) EDID writing.
   As the write protection is not applied in this unit, it is possible to write data with an ordinary writing fixture.
   It is required to be written for INPUT1: DVI-D, INPUT1: HD15, and INPUT2: HD15 respectively.
   Take care that the data for DVI-D and HD15 terminals are different from each other.
   (3) EDID copy to the EEPROM and ETI clear. (Refer to Section 2-1 step 6.)
   Be sure to perform them after EDID writing. After executing, check that the correct model information is displayed. (Refer to Section 2-1 step 1.)
   (4) Operation check of buttons and LED's in the front panel, and Check of picture and sound for respective inputs.

3. After replacing the I board
   (1) White balance adjustment. (Refer to Section 2-4.)
   (2) Check of picture and sound.

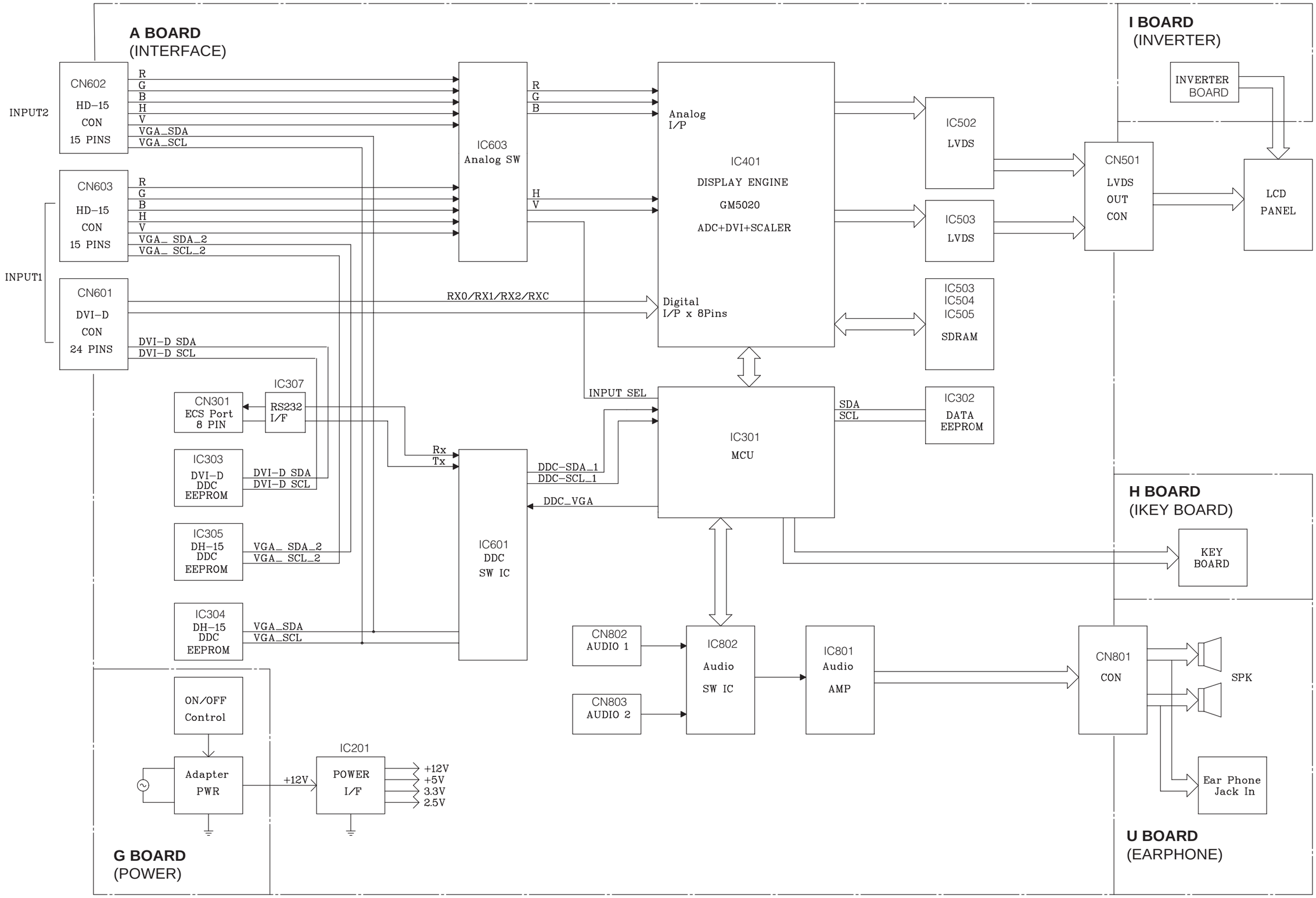
4. After replacing the G board
   (1) Operation check of the MAIN POWER switch.
   (2) Check of picture and sound.

5. After replacing the H board
   (1) Operation check of buttons and LED's in the front panel.

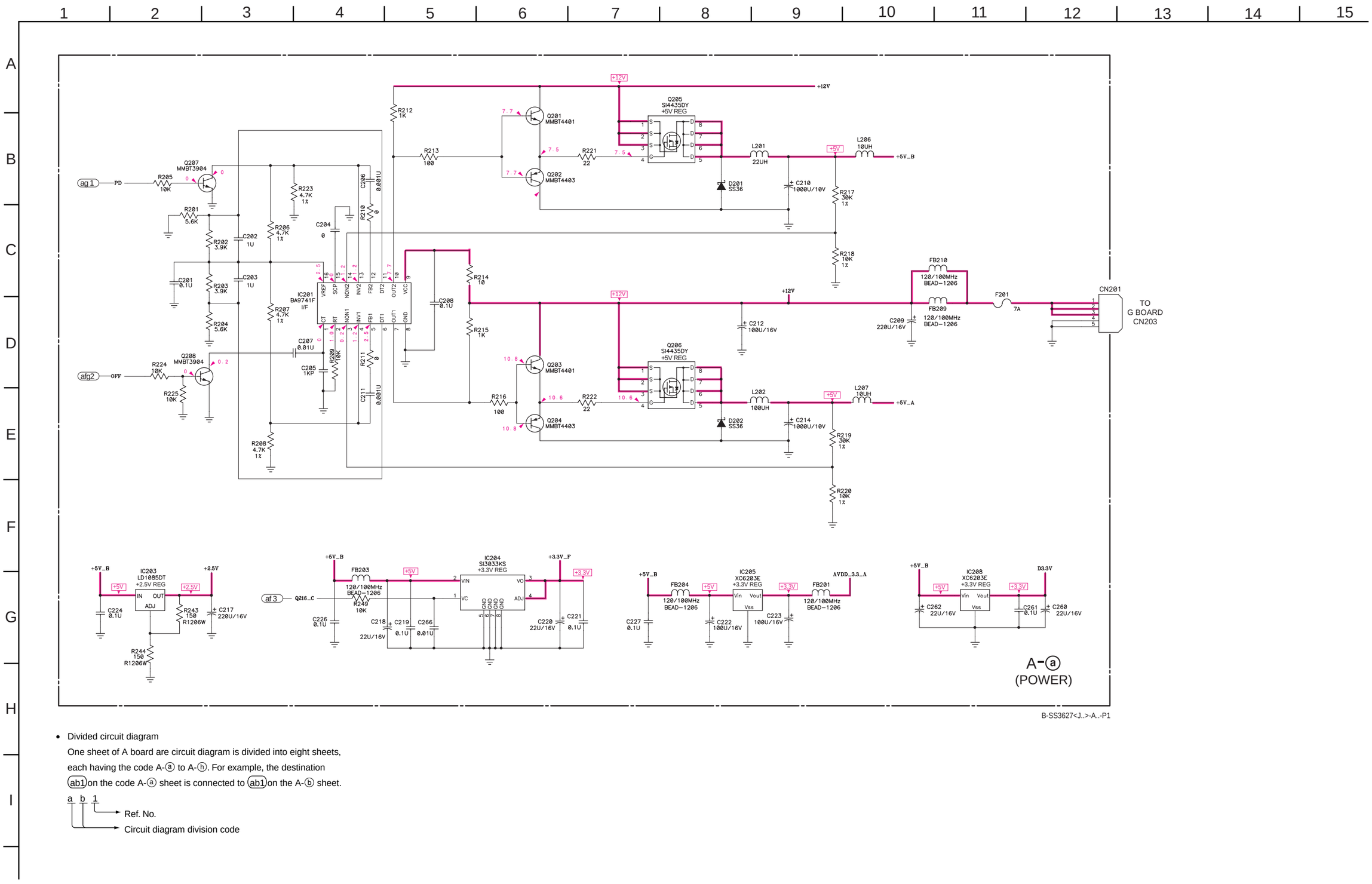
6. After replacing the U board
   (1) Check of speaker sound.
   (2) Check of headphone jack sound.
   When connecting a plug to the headphone jack, confirm no sound from the speakers.

SECTION 3
DIAGRAMS

3-1. BLOCK DIAGRAMS



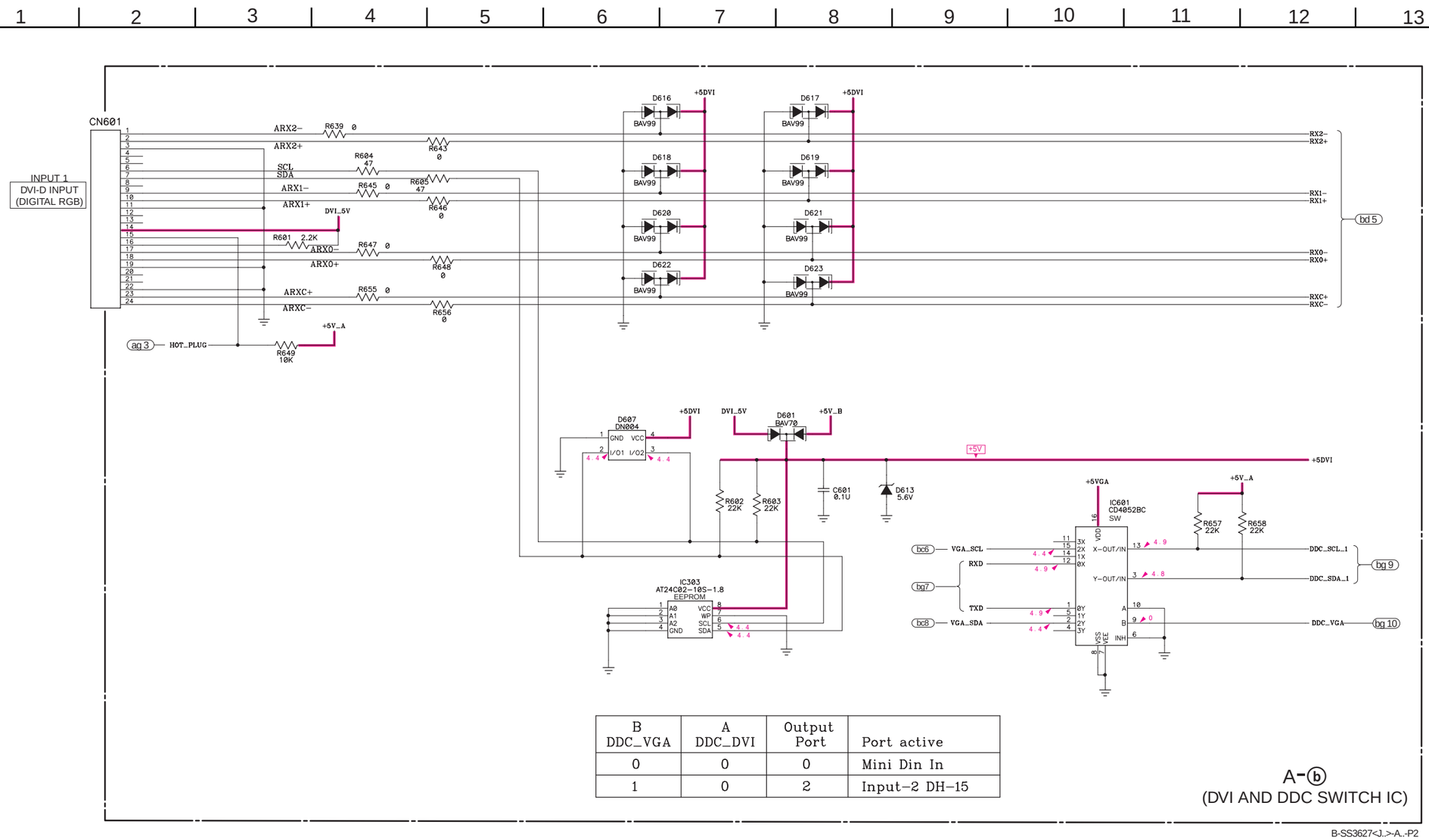
(1) Schematic Diagrams of A (ⓐ, ⓑ, ⓒ, ⓓ, ⓔ, ⓕ, ⓖ, ⓗ) Board



B-SS3627<J..>-A..-P1

- Divided circuit diagram
  One sheet of A board are circuit diagram is divided into eight sheets, each having the code A-ⓐ to A-ⓗ. For example, the destination (ab1) on the code A-ⓐ sheet is connected to (ab1) on the A-ⓑ sheet.

  a b 1
  - 1 → Ref. No.
  - a → Circuit diagram division code

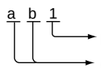


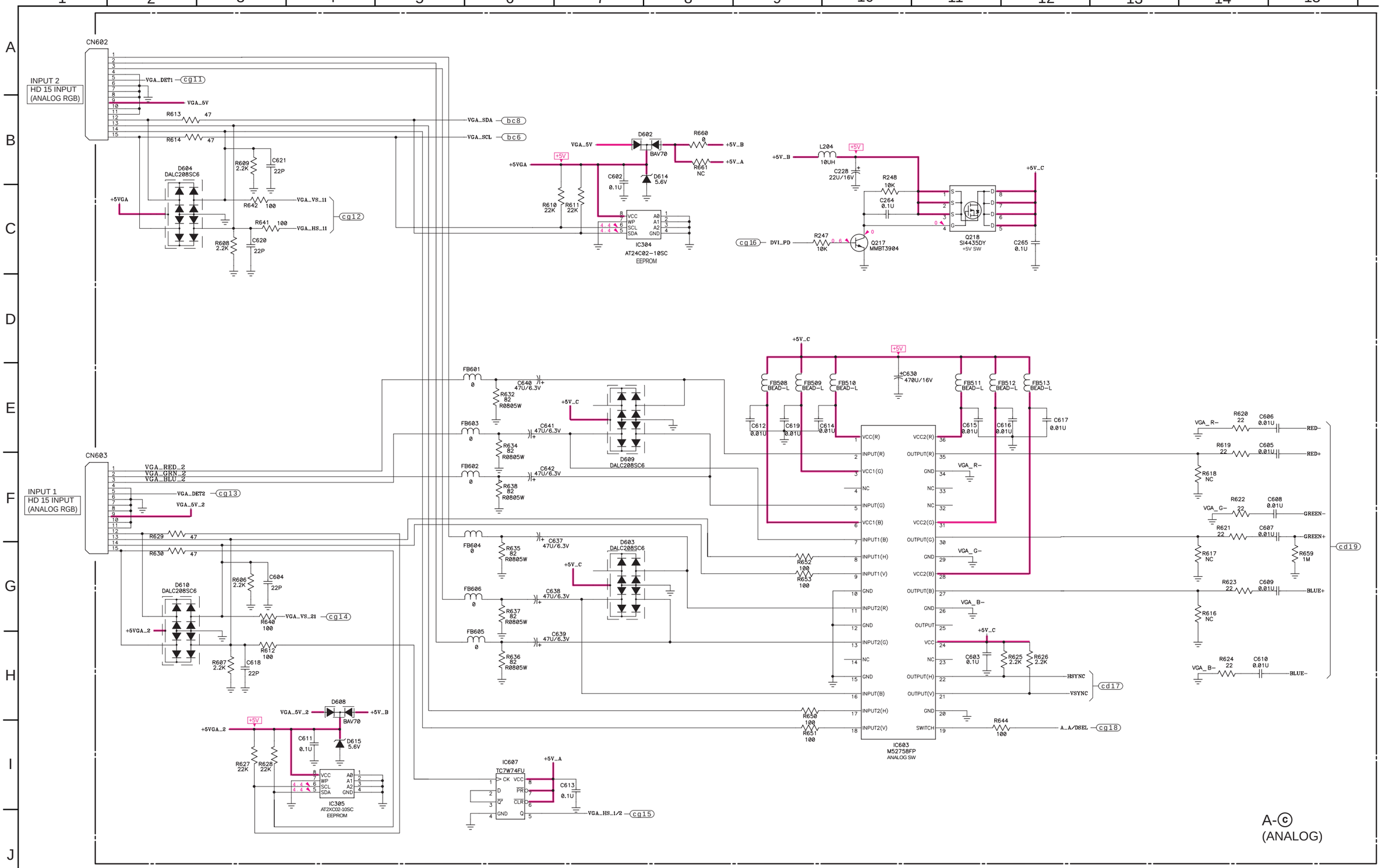
B DDC_VGA	A DDC_DVI	Output Port	
0	0	0	Mini Din In
1	0	2	Input−2 DH−15

A-ⓑ
(DVI AND DDC SWITCH IC)

B-SS3627<J.>-A.-P2

- Divided circuit diagram
  One sheet of A board are circuit diagram is divided into eight sheets, each having the code A-ⓐ to A-ⓗ. For example, the destination ab1 on the code A-ⓐ sheet is connected to ab1 on the A-ⓑ sheet.



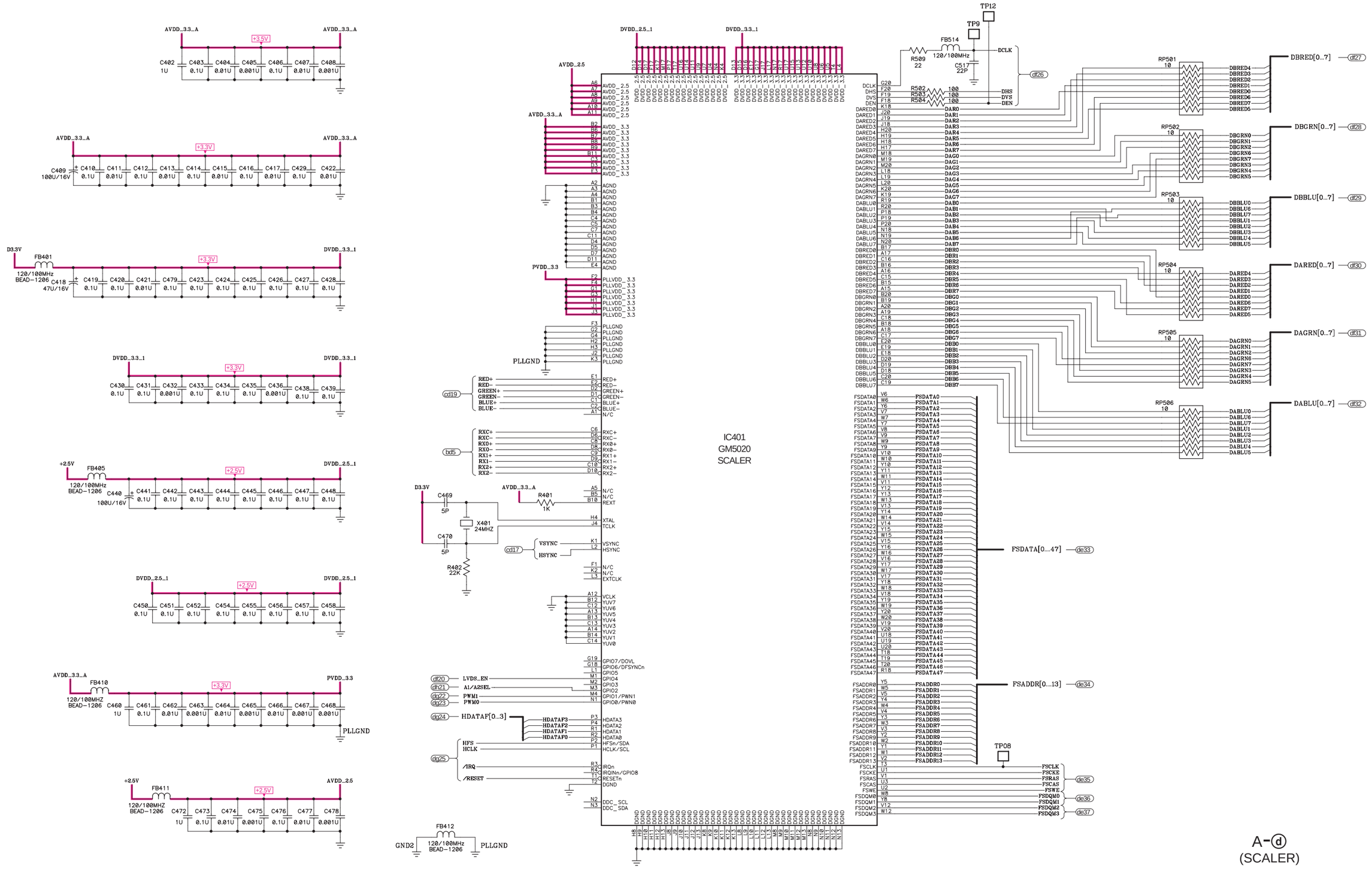


B-SS3627<J..>-A..-P3

- Divided circuit diagram

  One sheet of A board are circuit diagram is divided into eight sheets, each having the code A-ⓐ to A-ⓗ. For example, the destination (ab1) on the code A-ⓐ sheet is connected to (ab1) on the A-ⓑ sheet.

  a b 1
  - Ref. No.
  - Circuit diagram division code

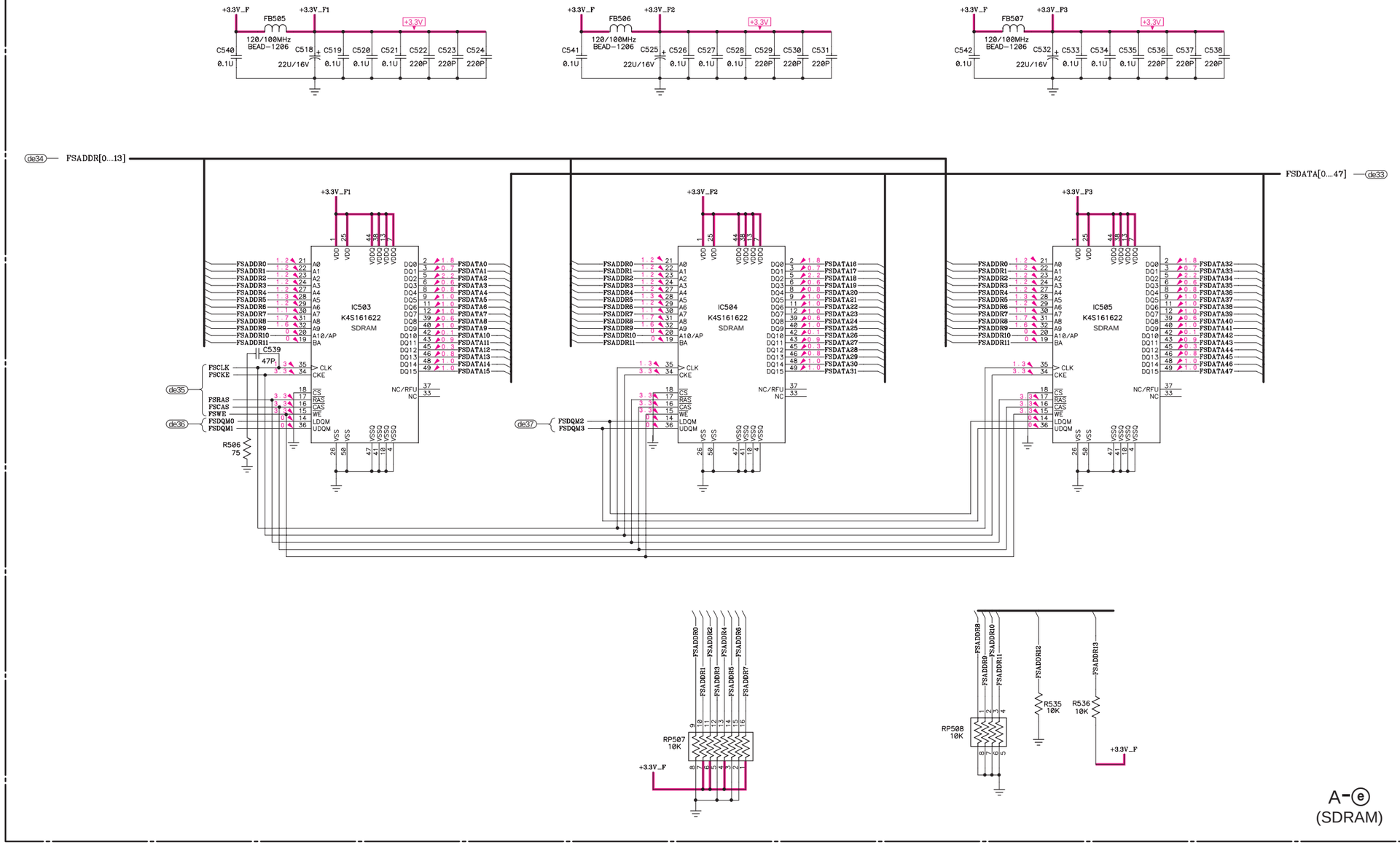


- Divided circuit diagram

  One sheet of A board are circuit diagram is divided into eight sheets, each having the code A-ⓐ to A-ⓗ. For example, the destination (ab1) on the code A-ⓐ sheet is connected to (ab1) on the A-ⓑ sheet.

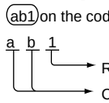
  a b 1
  - Ref. No.
  - Circuit diagram division code

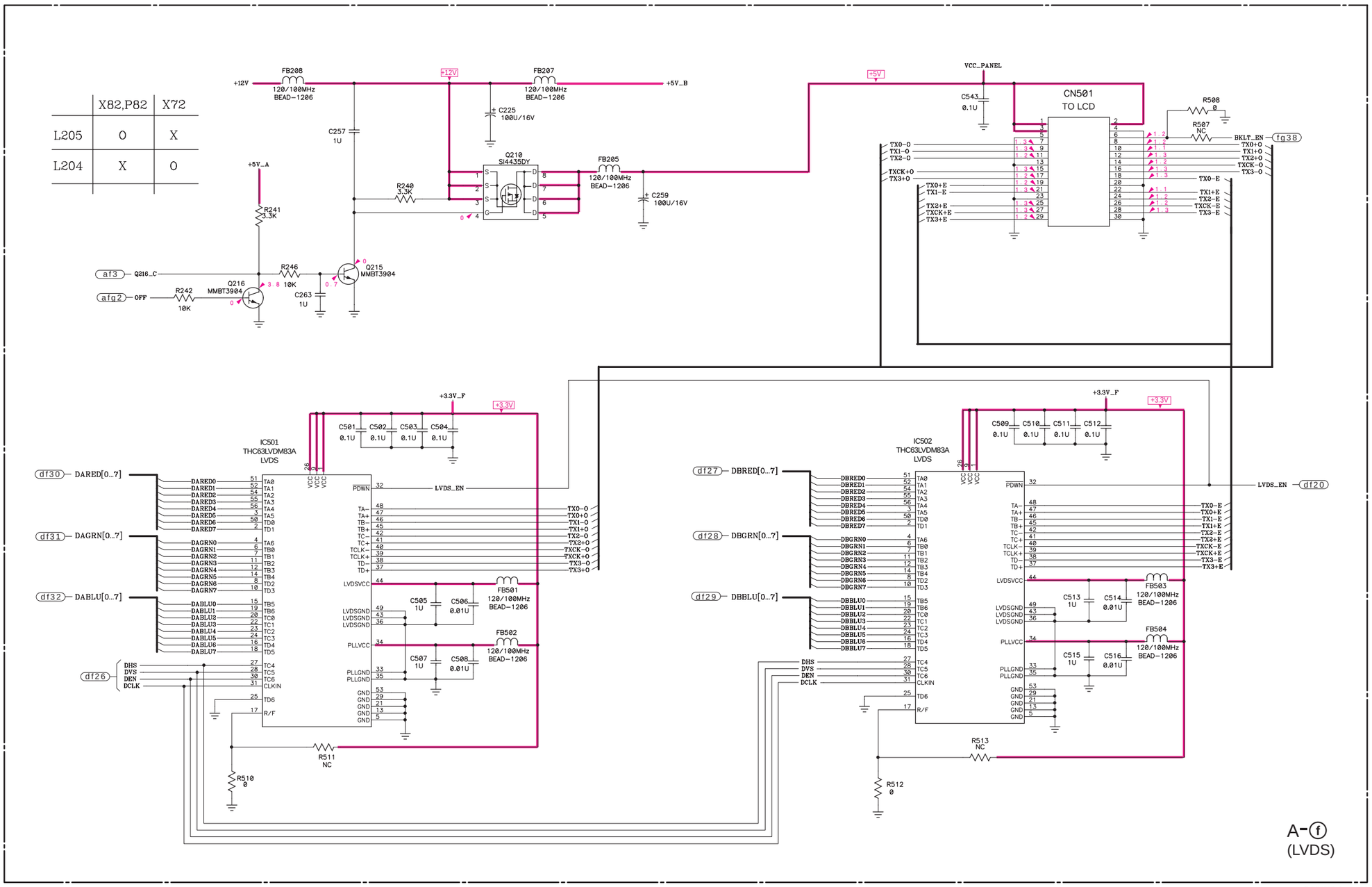
B-SS3627<J..>-A..-P4



B-SS3627<J..>-A..-P5

- Divided circuit diagram
  One sheet of A board are circuit diagram is divided into eight sheets, each having the code A-ⓐ to A-ⓗ. For example, the destination ab1 on the code A-ⓐ sheet is connected to ab1 on the A-ⓑ sheet.

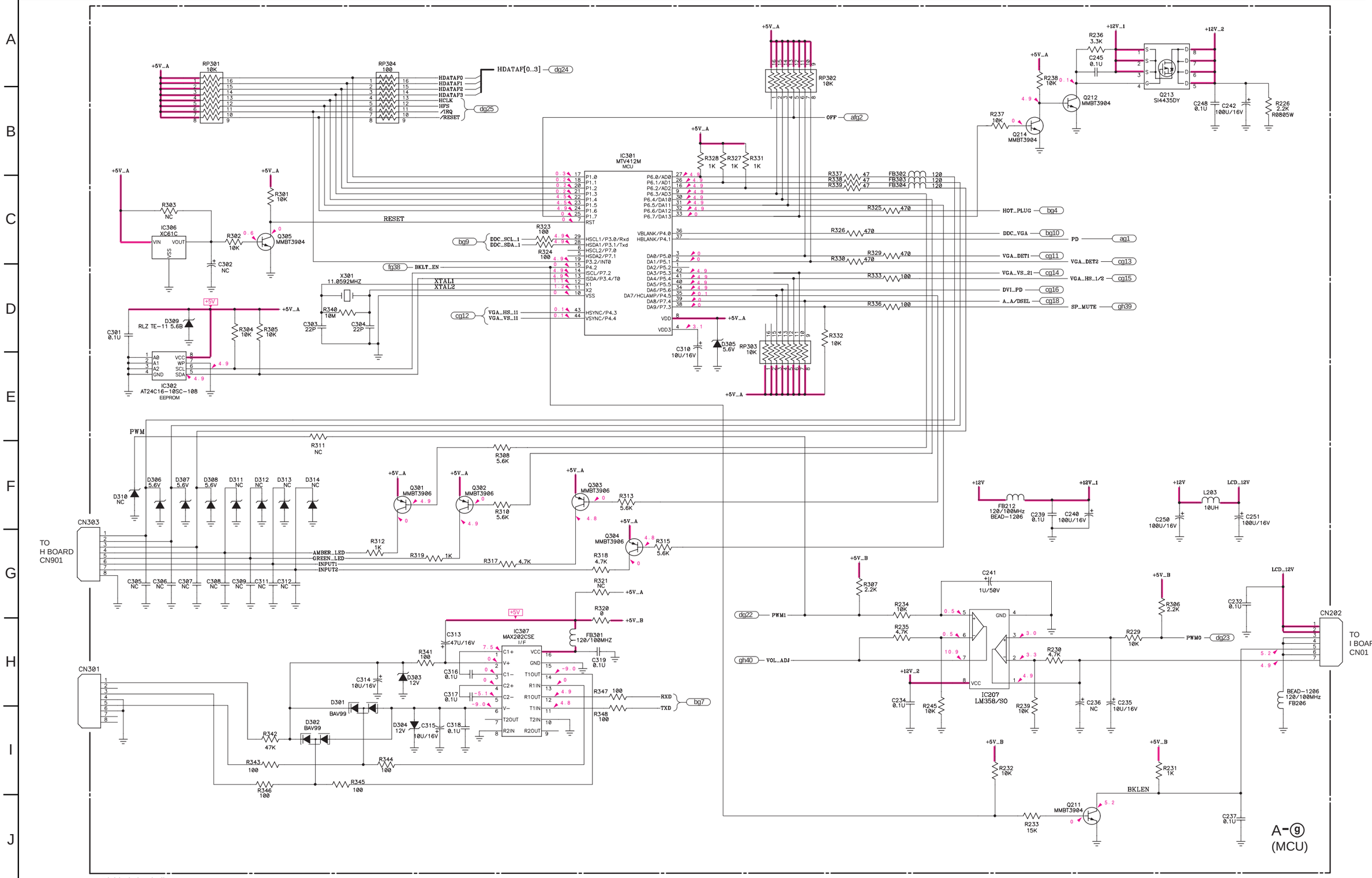




B-SS3627<J..>A..-P6

- Divided circuit diagram
  One sheet of A board are circuit diagram is divided into eight sheets, each having the code A-ⓐ to A-ⓗ. For example, the destination ab1 on the code A-ⓐ sheet is connected to ab1 on the A-ⓑ sheet.

  a b 1
  - 1 → Ref. No.
  - a b → Circuit diagram division code

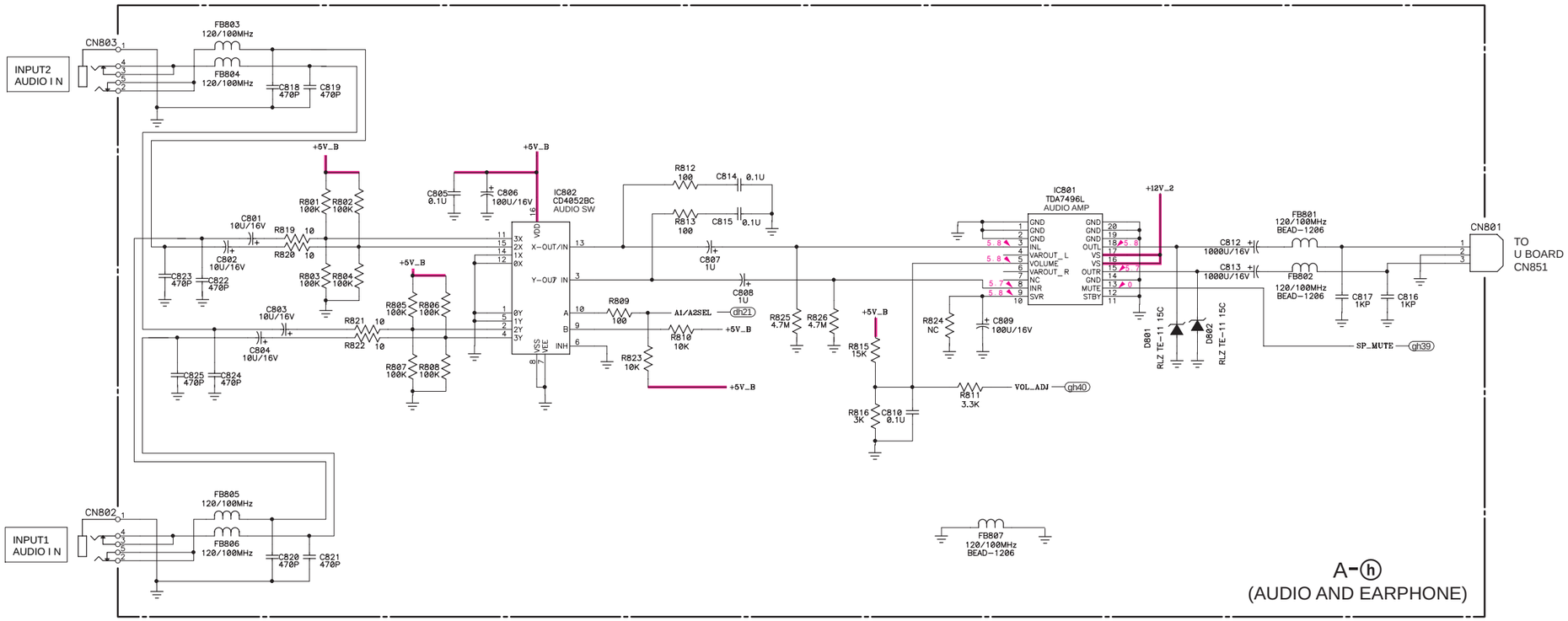


- Divided circuit diagram

  One sheet of A board are circuit diagram is divided into eight sheets, each having the code A-ⓐ to A-ⓗ. For example, the destination (ab1) on the code A-ⓐ sheet is connected to (ab1) on the A-ⓑ sheet.

  a b 1
  - 1 → Ref. No.
  - b → Circuit diagram division code

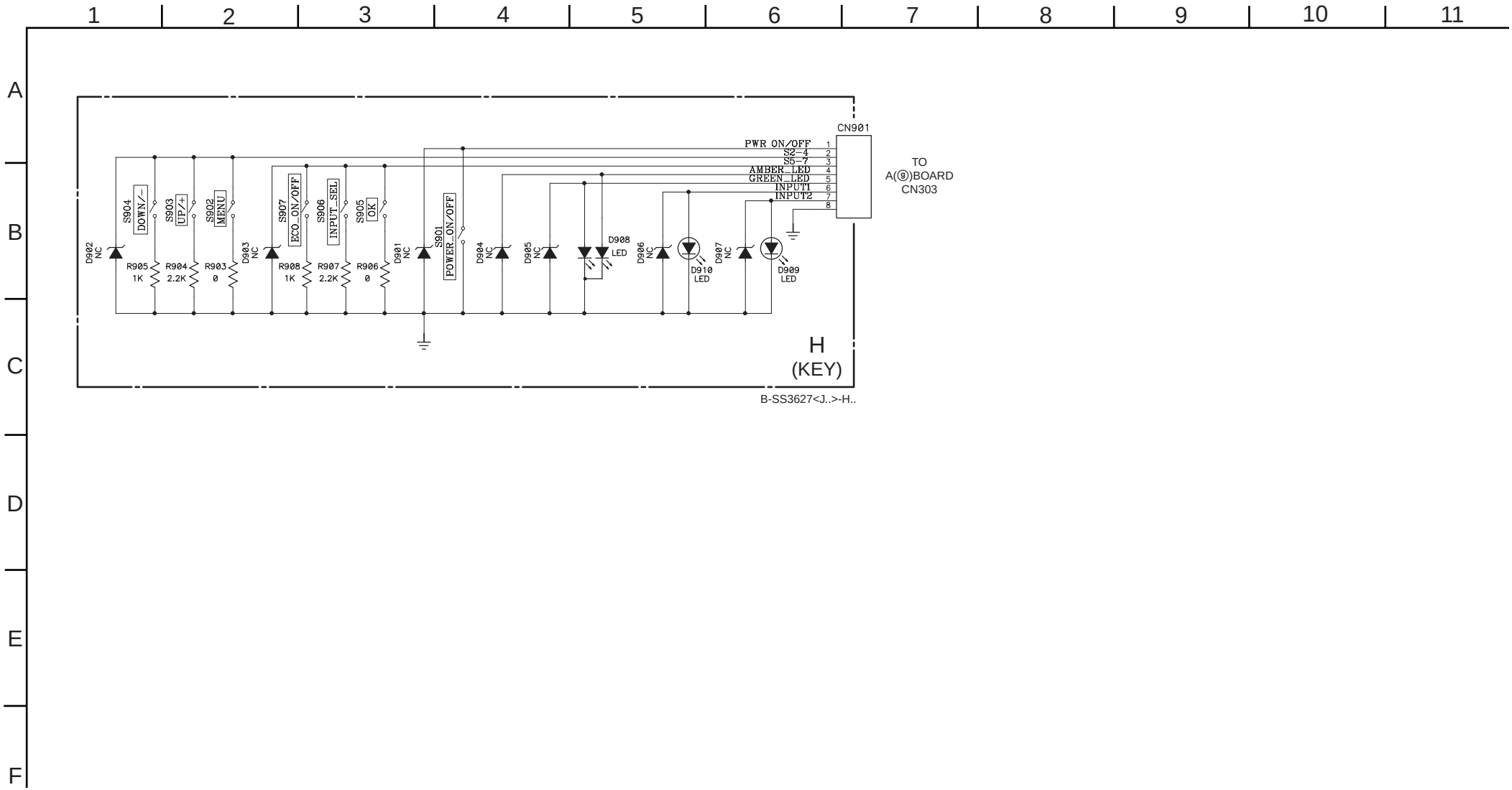
B-SS3627<J..> - A..-P7



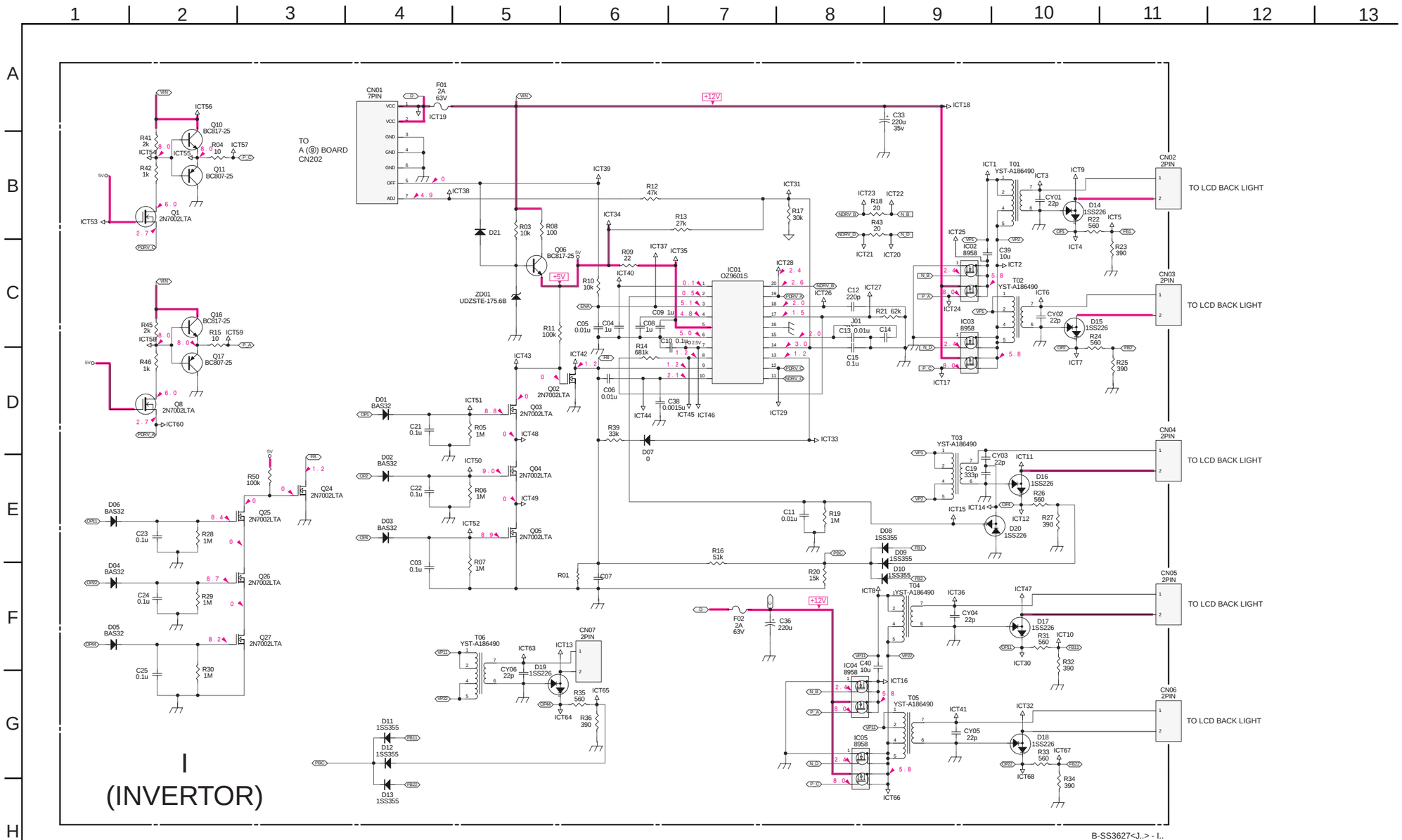
- Divided circuit diagram
  One sheet of A board are circuit diagram is divided into eight sheets, each having the code A-ⓐ to A-ⓗ. For example, the destination (ab1) on the code A-ⓐ sheet is connected to (ab1) on the A-ⓑ sheet.

  a b 1
  - 1 → Ref. No.
  - b → Circuit diagram division code
  - a → Circuit diagram division code

(2) Schematic Diagram of H Board

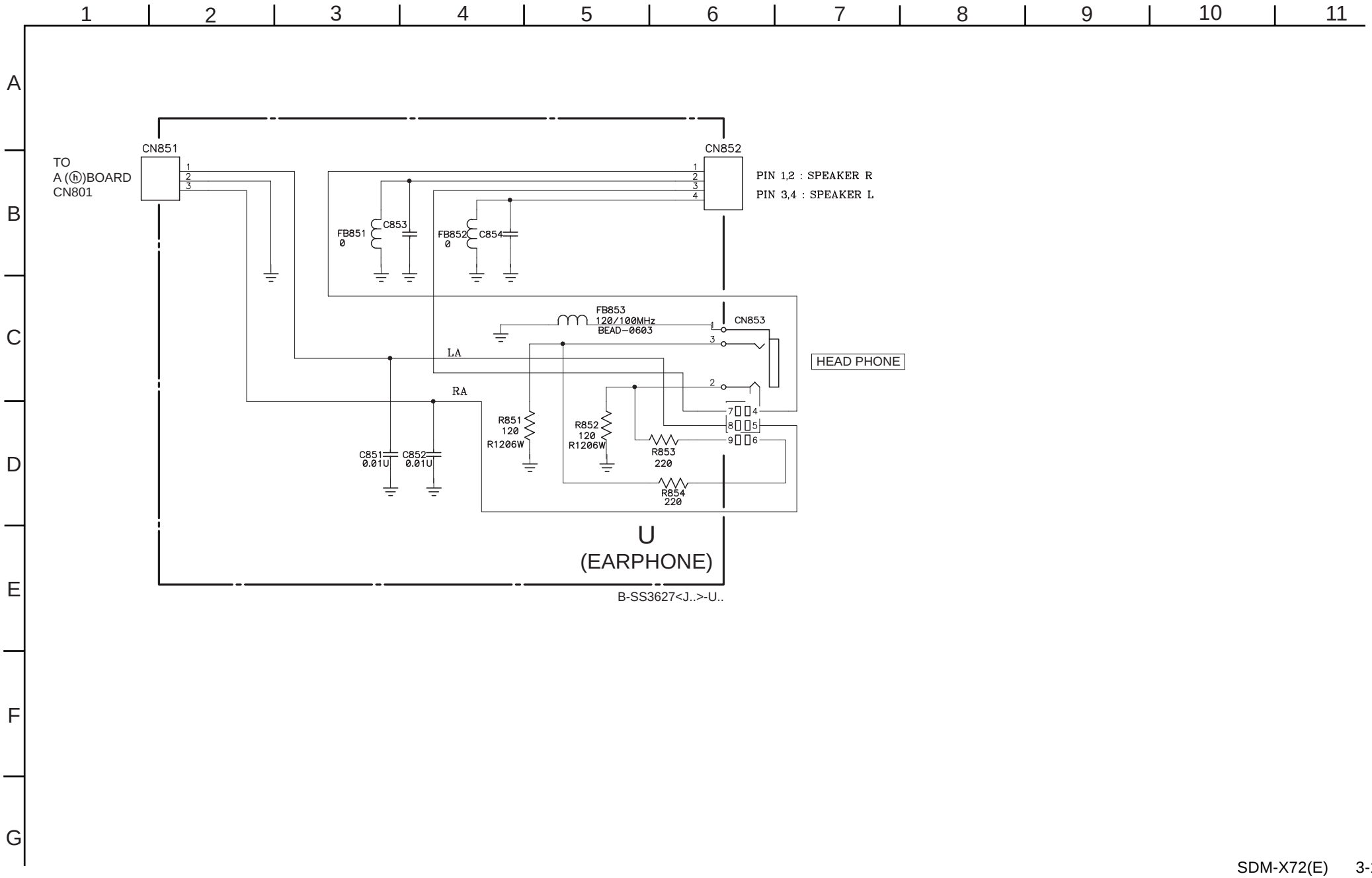


(3) Schematic Diagrams of I Board

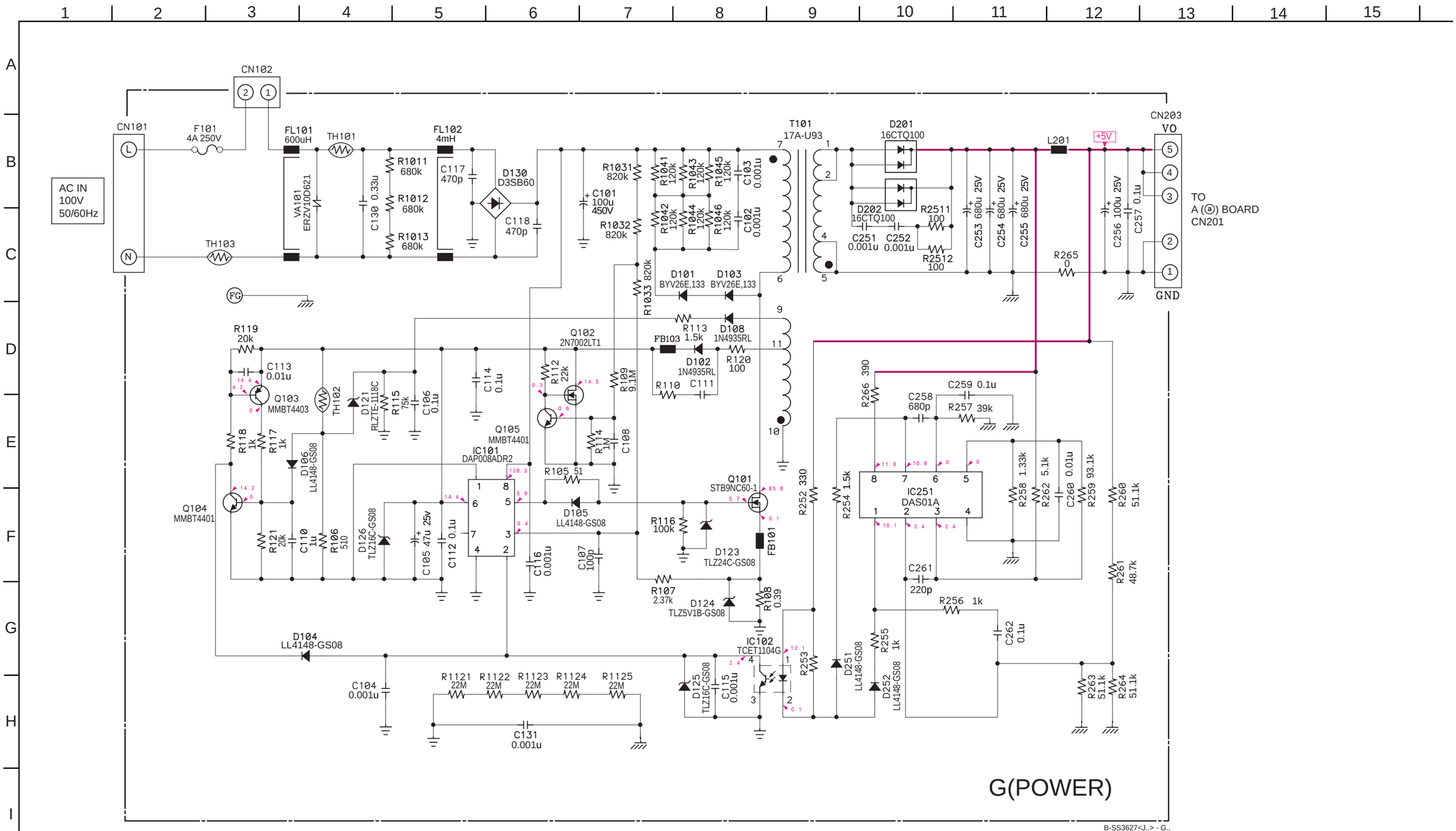


B-SS3627<J..> - I..

(4) Schematic Diagram of U Board



(5) Schematic Diagrams of G Board



B-SS3627<J..> - G..