

# DVP-S325/S525D/S725D

## RMT-D1080/D108P/D109P/D1110/D111P

### SERVICE MANUAL

*Self Diagnosis*  
Supported model



Photo: DVP-S725D

*AEP Model*  
DVP-S325/S525D/S725D

*East European Model*  
*North European Model*  
DVP-S325/S525D/S725D

*Russian Model*  
DVP-S325/S525D/S725D

*Australian Model*  
DVP-S525D/S725D

### SPECIFICATIONS

#### CD/DVD player

**Laser** Semiconductor laser  
**Signal format system** PAL/(NTSC)

#### Audio characteristics

**Frequency response** DVD (PCM 96 kHz): 2 Hz to 44 kHz (±1 dB)\* (S325/S525D)  
DVD (PCM 96 kHz): 2 Hz to 44 kHz (±0.5 dB)\* (S725D)  
DVD (PCM 48 kHz): 2 Hz to 22 kHz (±0.5 dB)  
CD: 2 Hz to 20 kHz (±0.5 dB)  
**Signal-to-noise ratio** More than 110 dB (LINE OUT (AUDIO) connectors only) (S325/S525D)  
More than 110 dB (AUDIO OUT connector only) (S725D)  
**Harmonic distortion** Less than 0.0025%  
**Dynamic range** More than 100 dB (DVD)  
More than 98 dB (CD)  
**Wow and flutter** Less than detected value (±0.001% W PEAK)

#### Outputs and inputs

	Jack type	Output level	Load impedance
LINE OUT (AUDIO) (S325/S525D)	Phono jacks	2 Vrms (at 50 kilohms)	Over 10 kilohms
AUDIO OUT (S725D)	Phono jacks	2 Vrms (at 50 kilohms)	Over 10 kilohms
DIGITAL OUT (OPTICAL)	Optical output connector	-18 dBm	Wave length: 660 nm
DIGITAL OUT (COAXIAL)	Phono jack	0.5 Vp-p	75 ohms terminated
LINE OUT (VIDEO) (S325/S525D)	Phono jacks	1.0 Vp-p	75 ohms, sync negative

VIDEO OUT (1, 2) (S725D)	Phono jacks	1.0 Vp-p	75 ohms, sync negative
S VIDEO OUT (S325/S525D)	4-pin mini DIN	Y: 1.0 Vp-p	75 ohms, sync negative
S VIDEO OUT (1, 2) (S725D)		C: 0.3 Vp-p (PAL) C: 0.286 Vp-p (NTSC)	75 ohms terminated
COMPONENT VIDEO OUT (Y, Cb/B-Y, Cr/R-Y) (S725D)	phono jacks	Y: 1.0 Vp-p Cb/B-Y, Cr/R-Y: 0.7 Vp-p	75 ohms, sync negative
PHONES (EXCEPT S325)	Phone jack	12 mW	32 ohms
5.1CH OUTPUT (EXCEPT S325)	Phono jacks	2 Vrms (at 50 kilohms)	Over 10 kilohms

#### General

**Power requirements** 220 – 240 V AC, 50/60 Hz  
**Power consumption** 16 W (S325)  
17 W (S525D)  
22 W (S725D)  
**Dimensions (approx.)** 430 × 95 × 305 mm (w/h/d) incl. projecting parts  
**Mass (approx.)** 3.3 kg (S325)  
3.4 kg (S525D)  
4.0 kg (S725D)  
**Operating temperature** 5°C to 35°C

– Continued on next page –



**CD/DVD PLAYER**

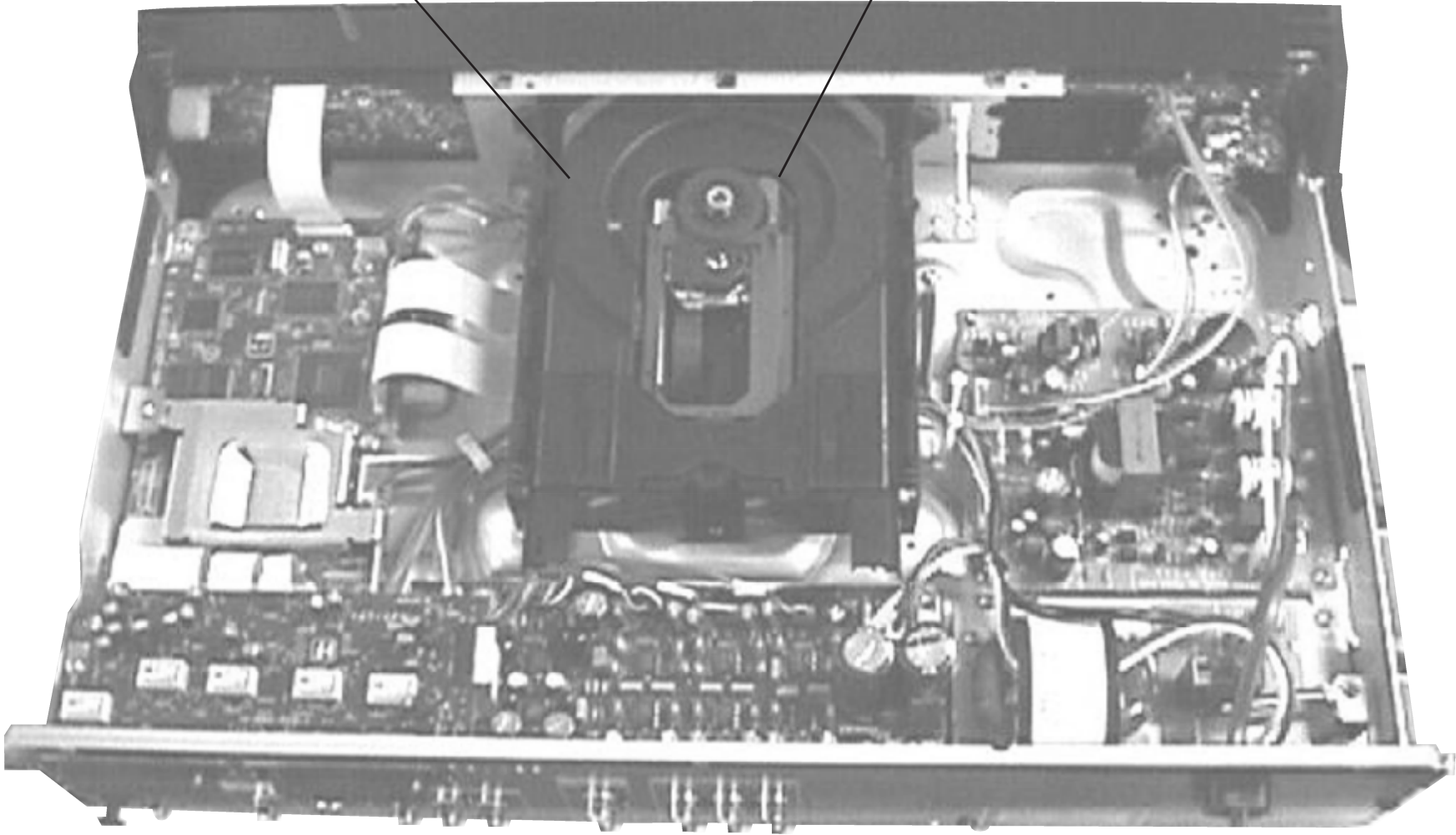


# SONY®

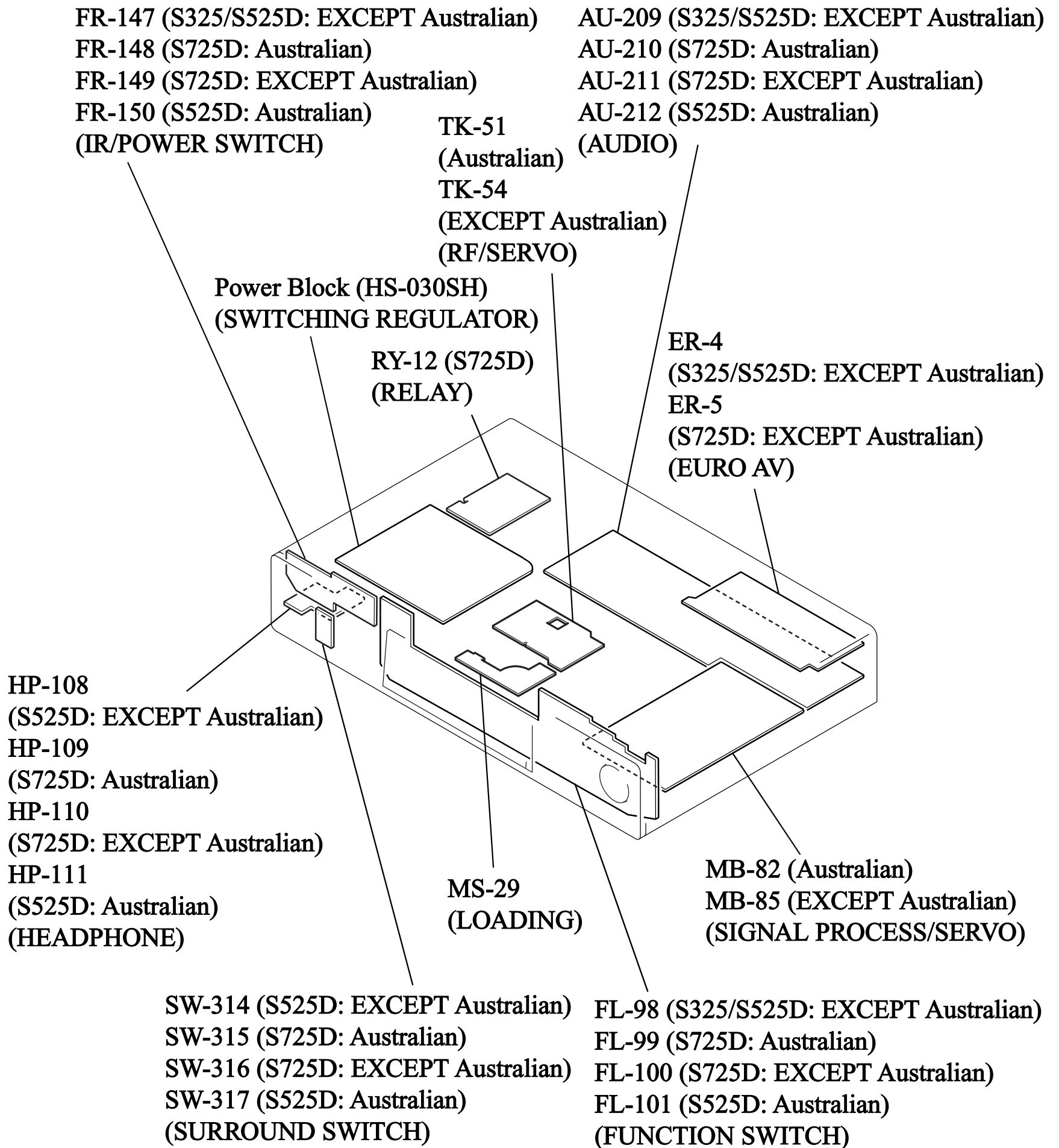
## 2-13. INTERNAL VIEWS

DC motor (loading)  
1-541-632-11

Optical pick-up (KHM-220AAA/J1RP)  
8-820-081-03

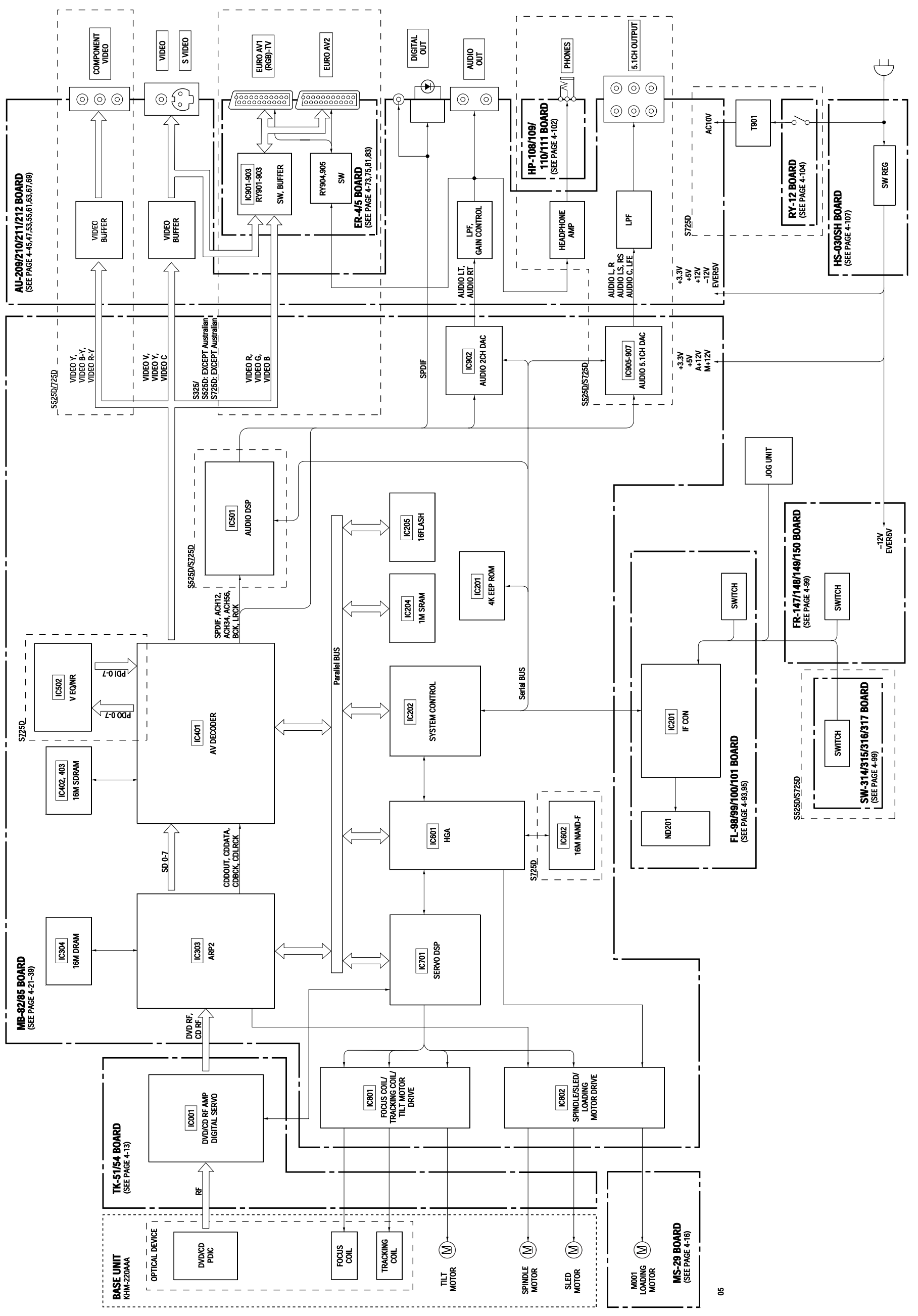


**2-14. CIRCUIT BOARDS LOCATION**



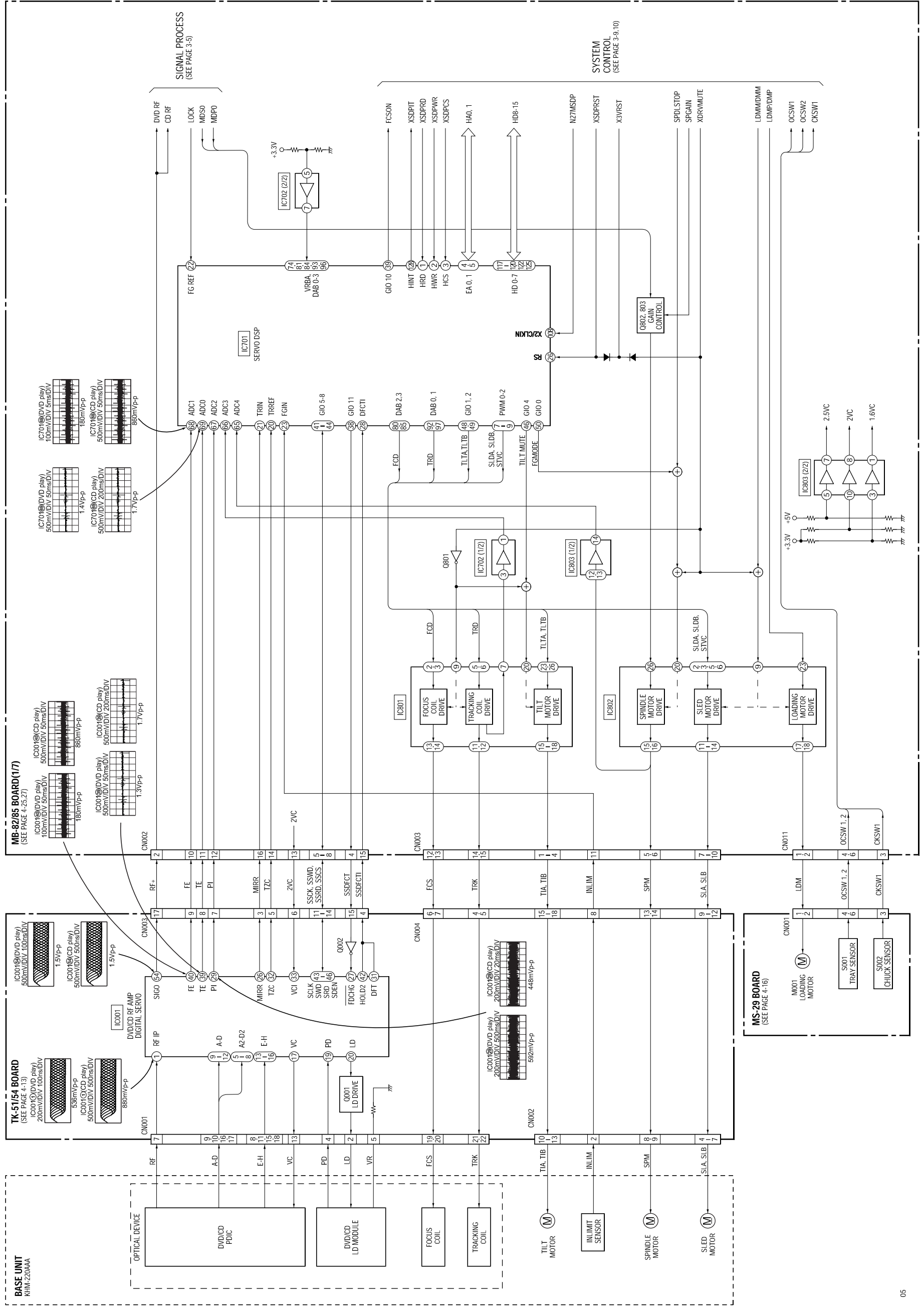
SECTION 3  
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM

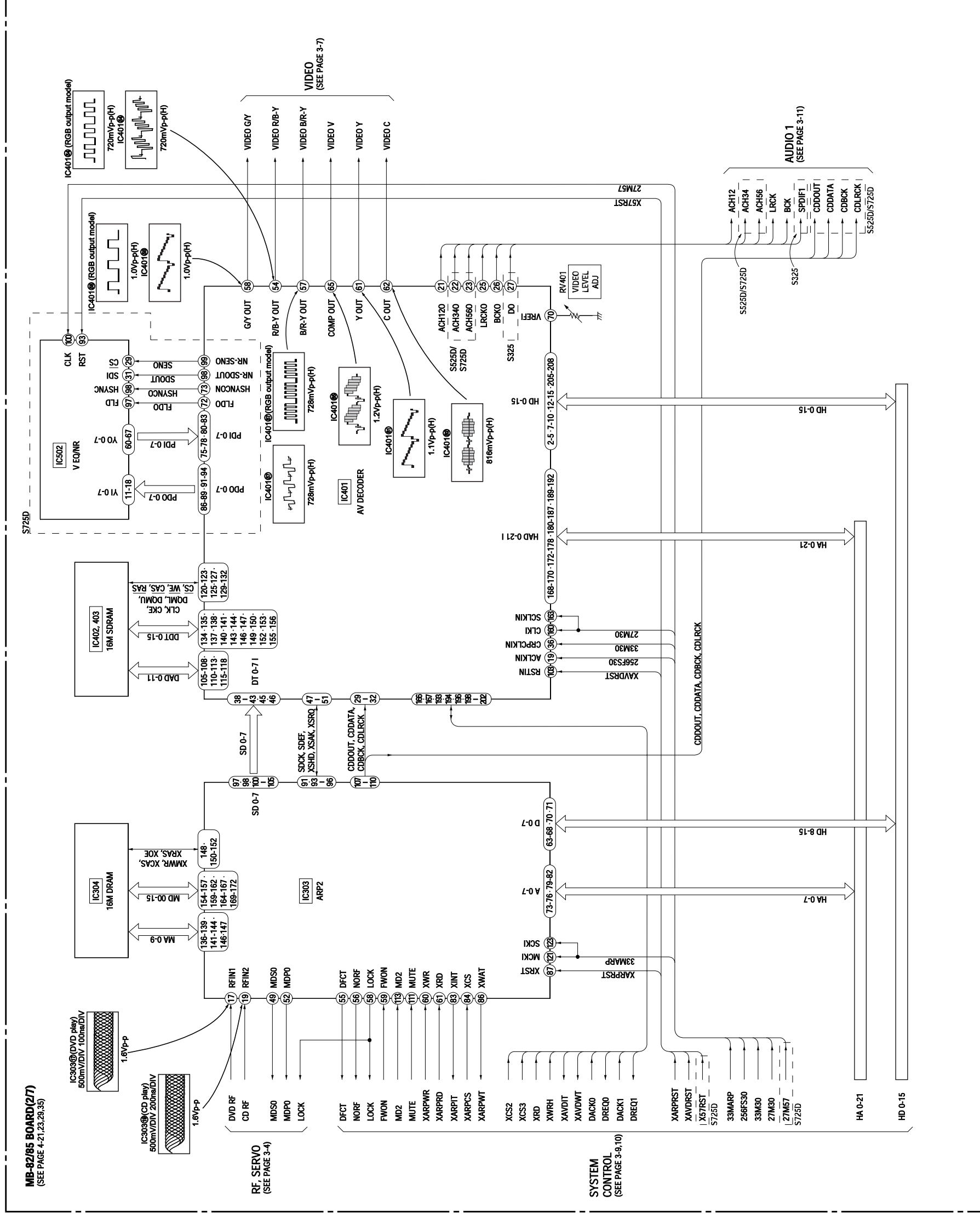


05

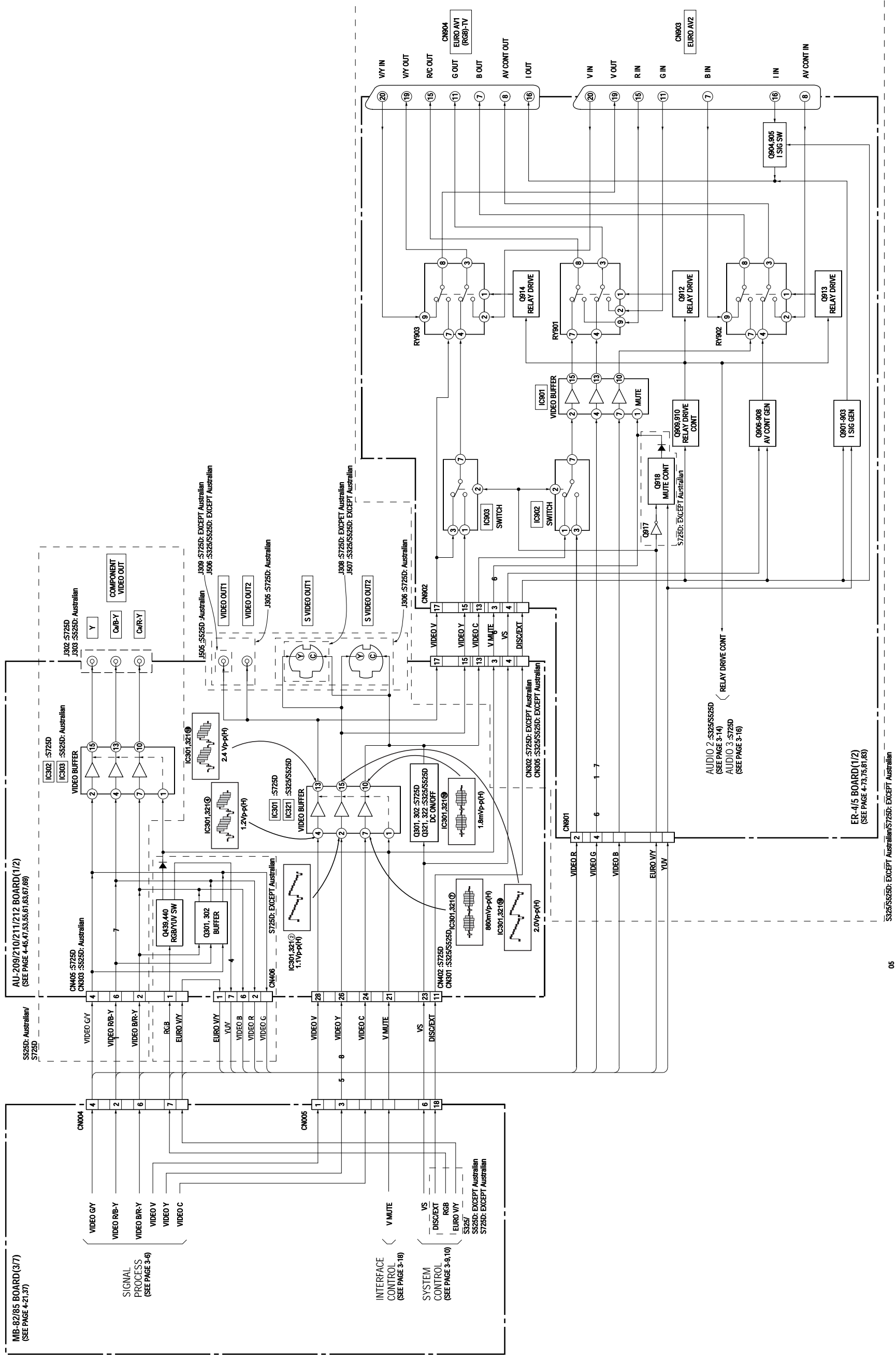
3-2. RF/SERVO BLOCK DIAGRAM



3-3. SIGNAL PROCESS BLOCK DIAGRAM



3-4. VIDEO BLOCK DIAGRAM



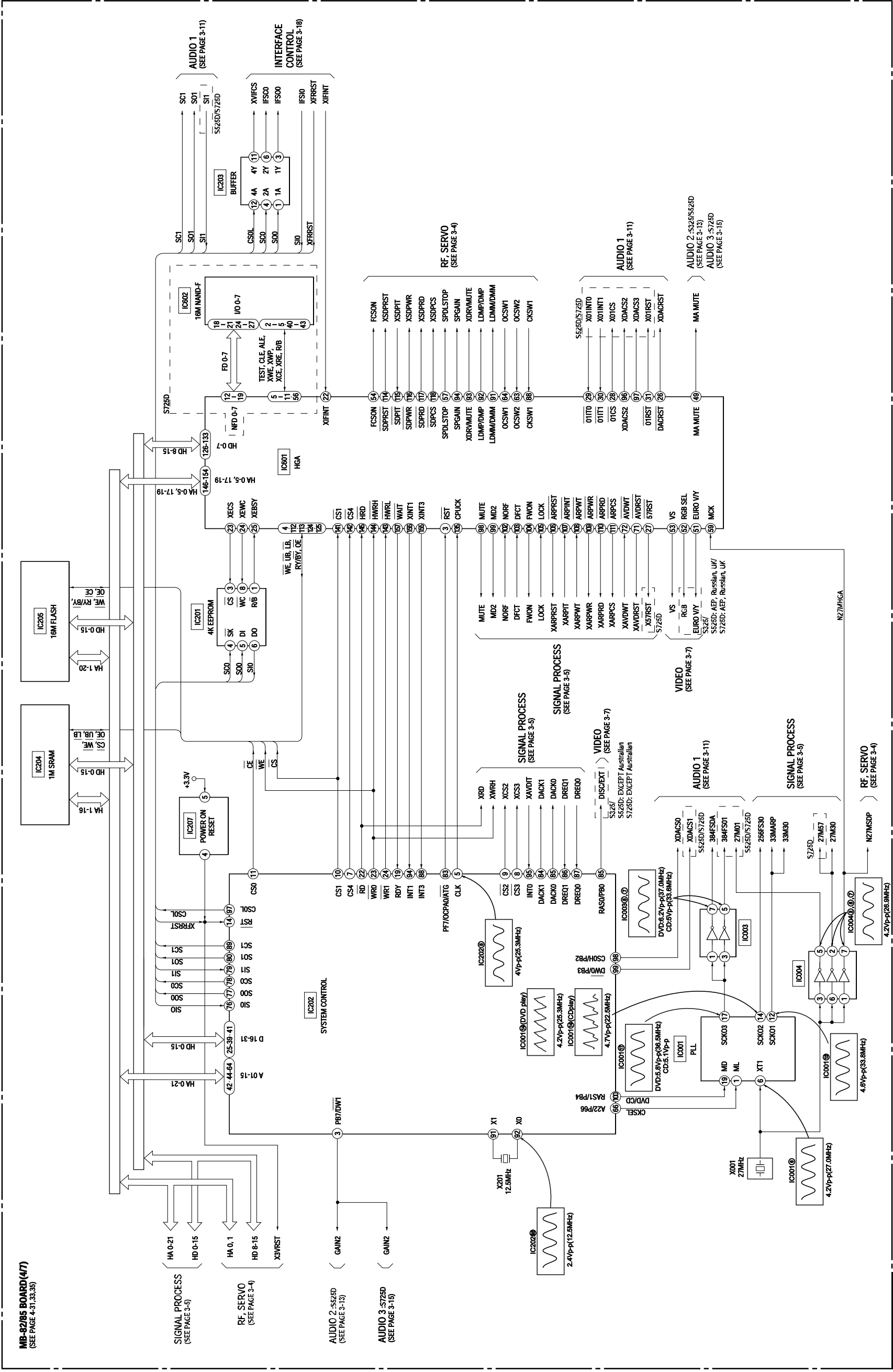
05

ER-4/5 BOARD (1/2)  
(SEE PAGE 4-73, 75, 81, 83)

AUDIO 2 : S325/S525D  
(SEE PAGE 3-14)  
AUDIO 3 : S725D  
(SEE PAGE 3-16)

S325/S525D: EXCEPT Australian/S725D: EXCEPT Australian

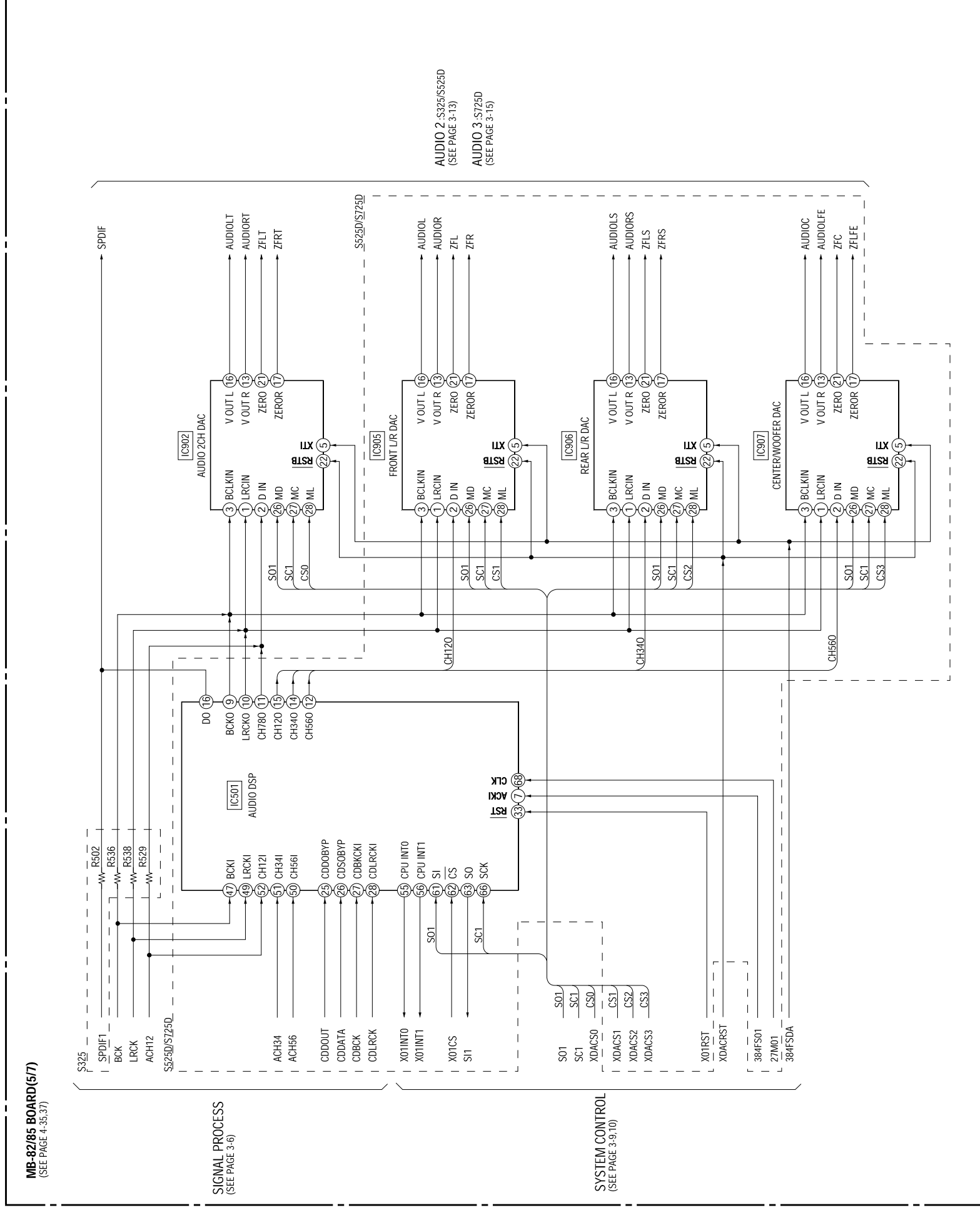
3-5. SYSTEM CONTROL BLOCK DIAGRAM



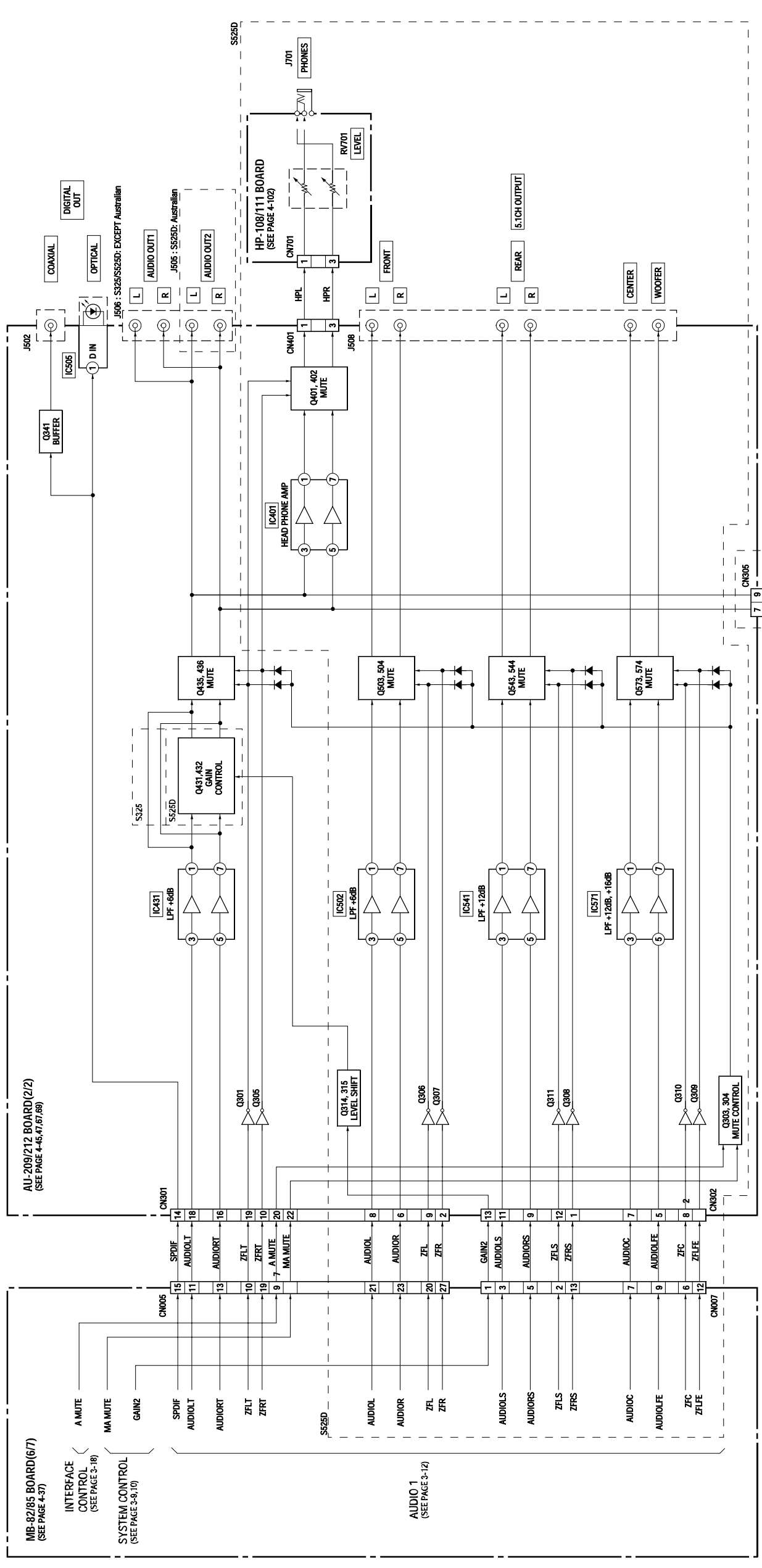
MB-8285 BOARD(477)  
(SEE PAGE 4-31,33,35)



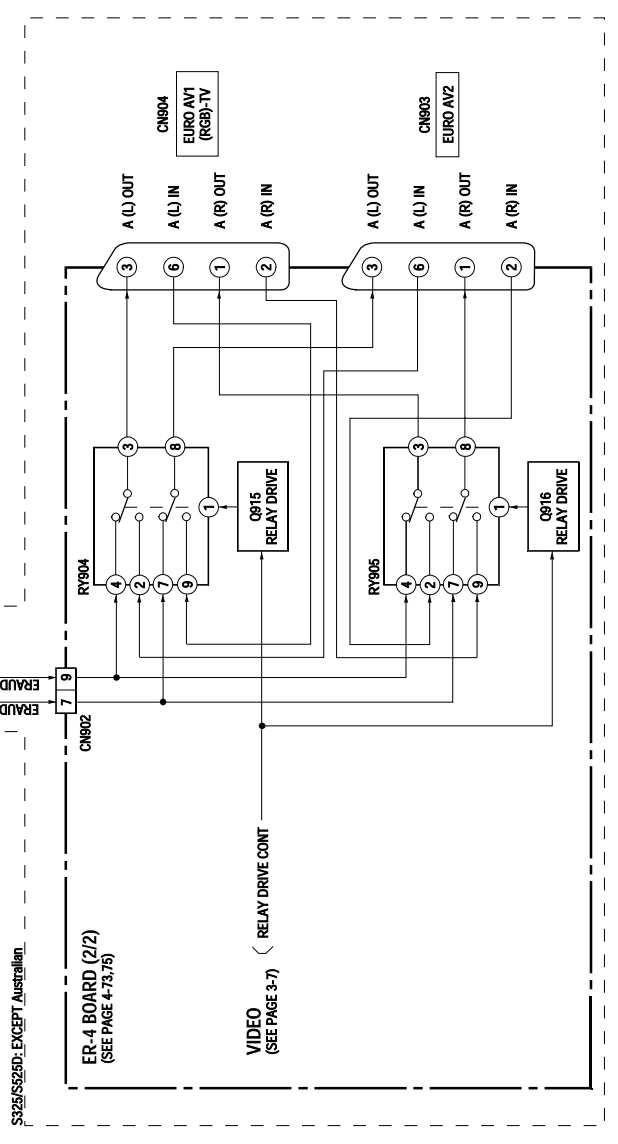
3-6. AUDIO (1) BLOCK DIAGRAM



3-7. AUDIO (2) BLOCK DIAGRAM  
 - DVP-S325/S525D -



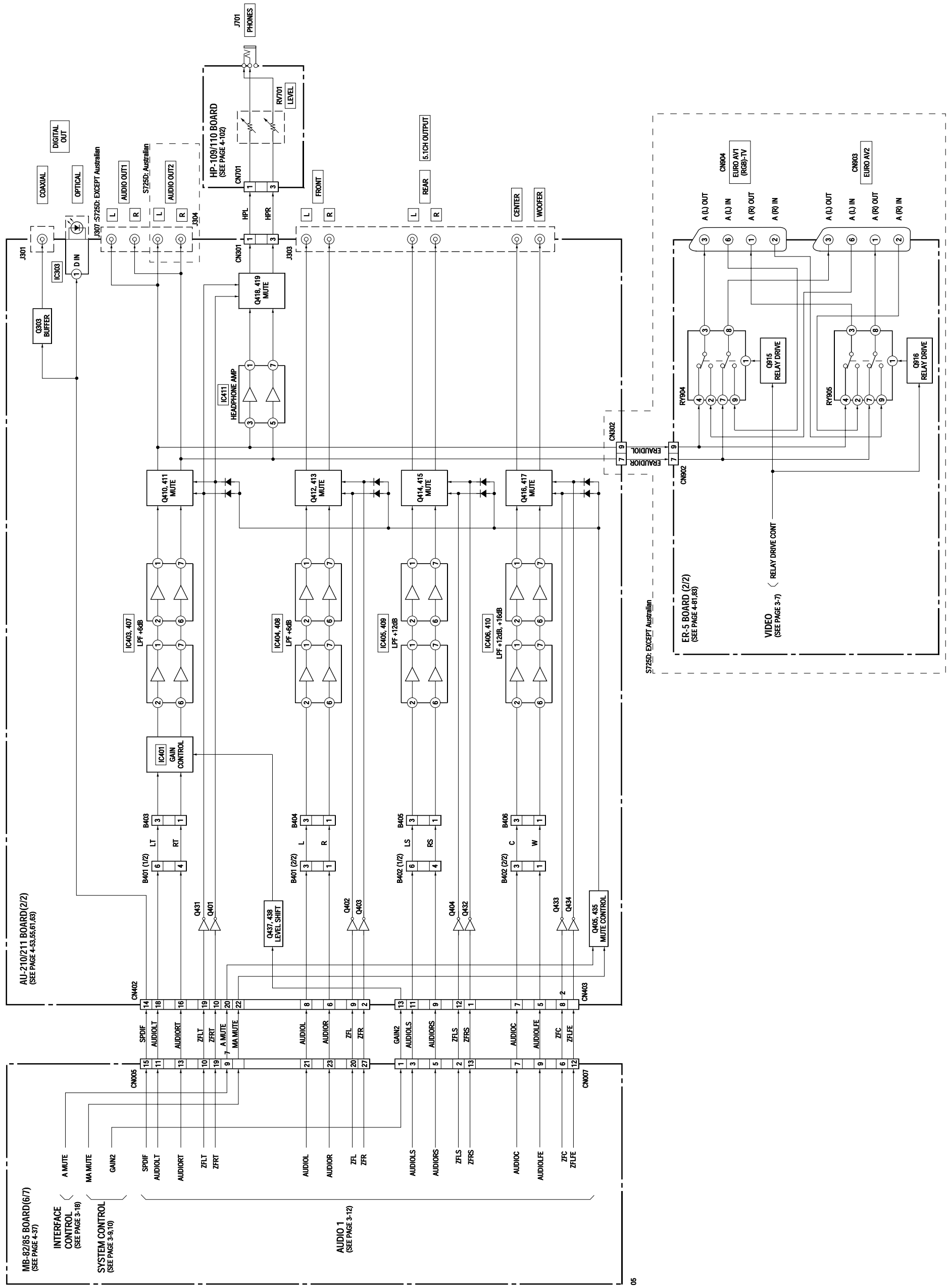
05



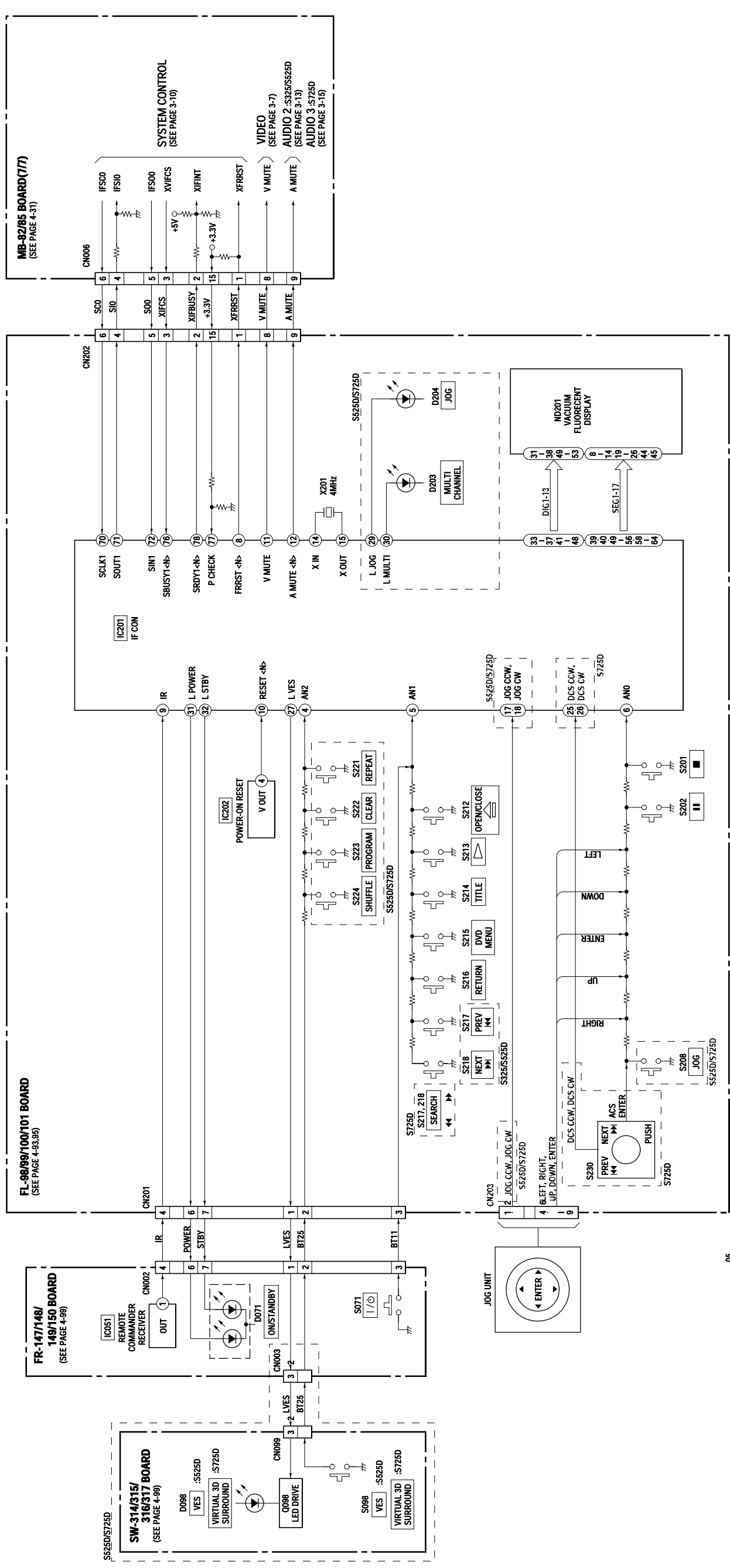
3-13

3-14

3-8. AUDIO (3) BLOCK DIAGRAM  
- DVP-S725D -

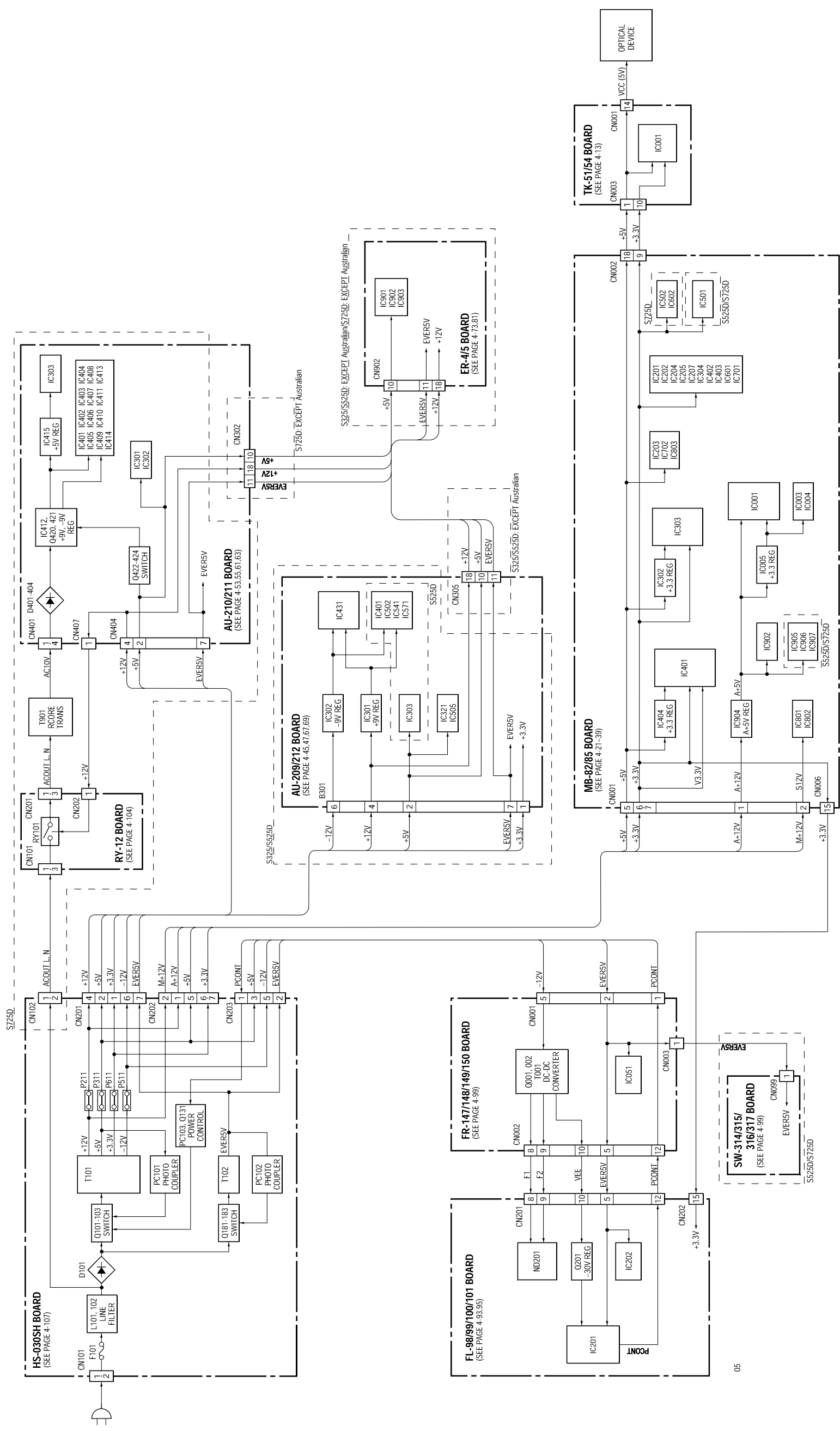


3-9. INTERFACE CONTROL BLOCK DIAGRAM



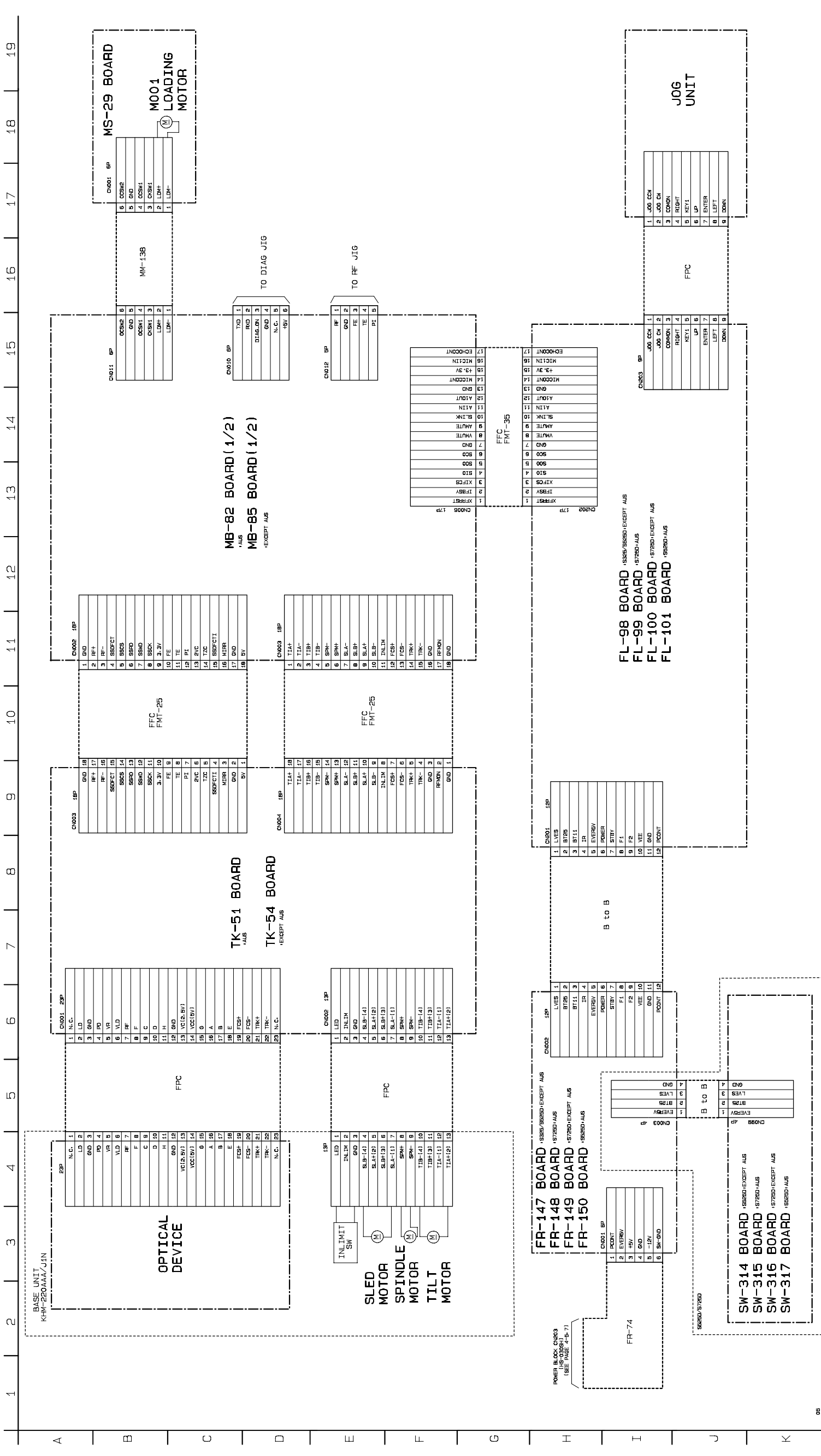
05

3-10. POWER BLOCK DIAGRAM



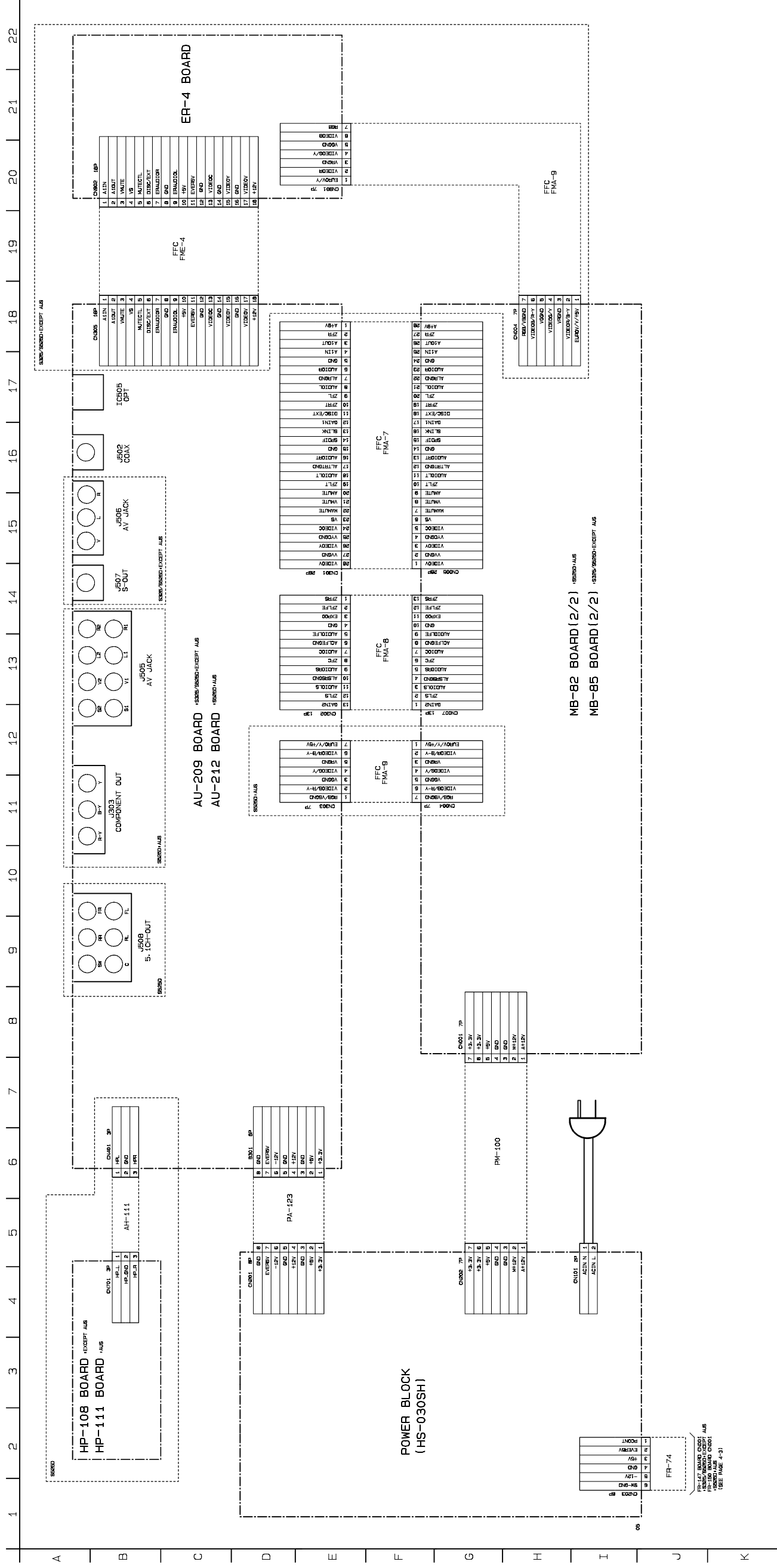
05

4-1. FRAME SCHEMATIC DIAGRAMS  
FRAME (1) SCHEMATIC DIAGRAM

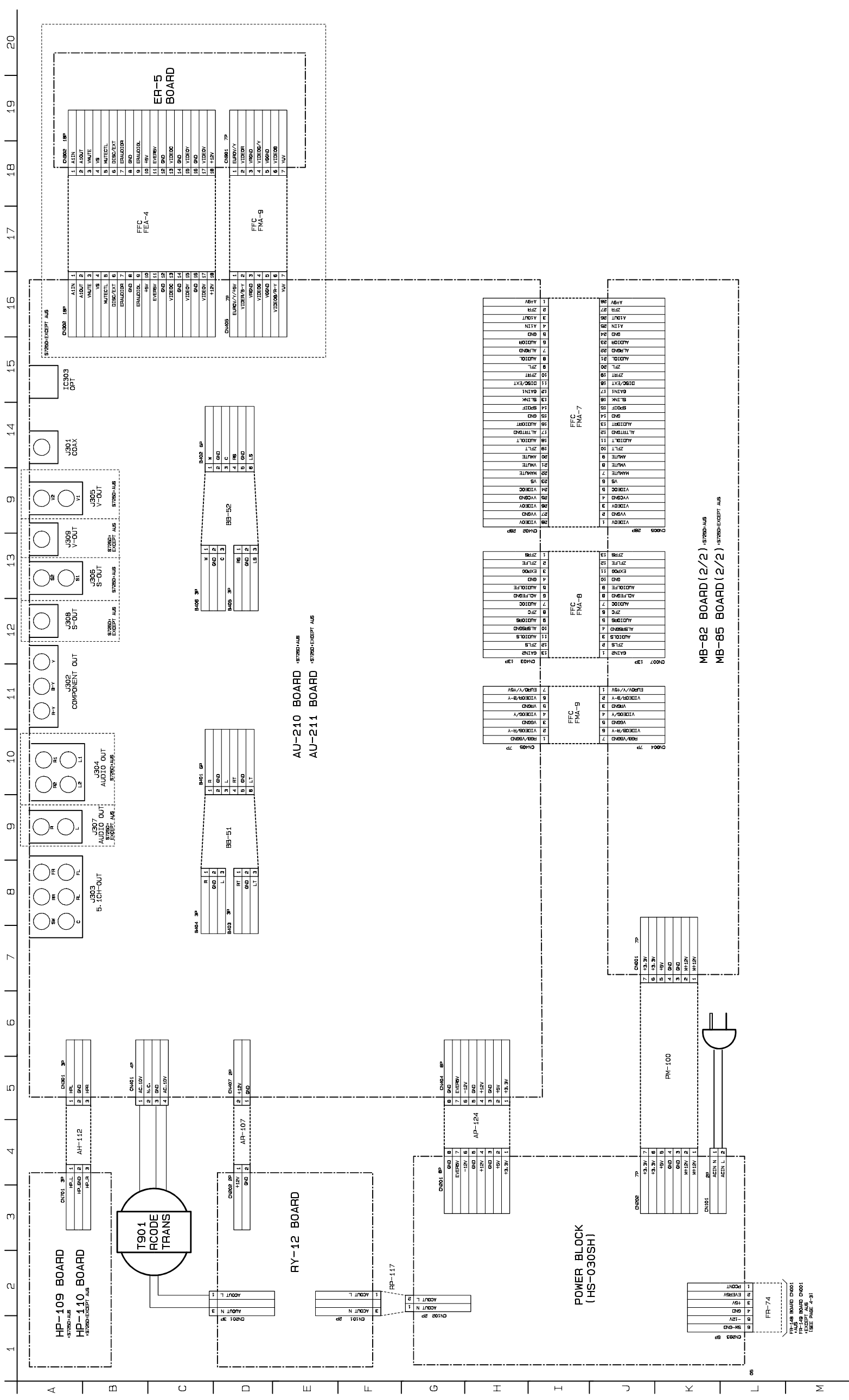


05

FRAME (2) SCHEMATIC DIAGRAM  
 - DVP-S325/S525D -



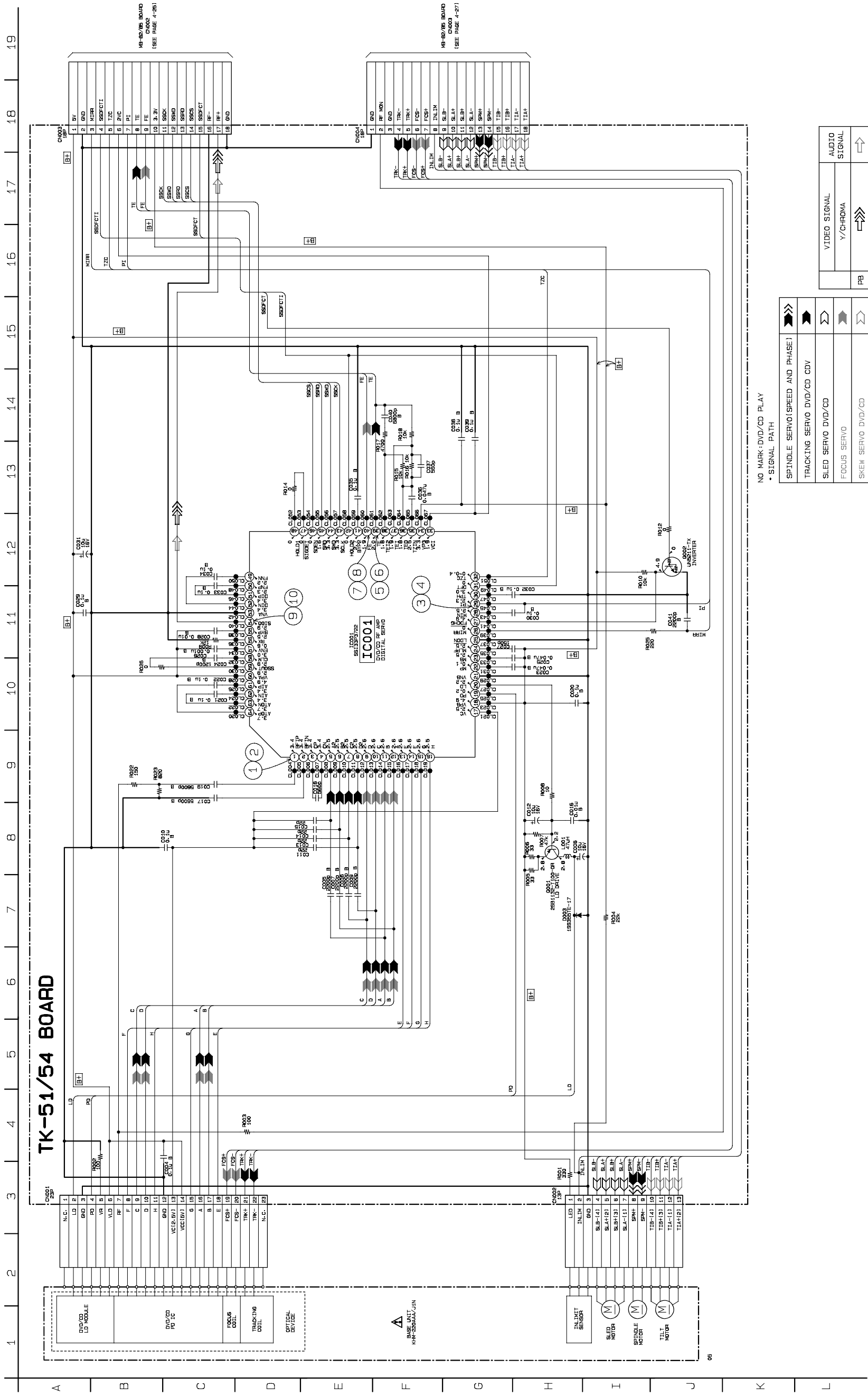
FRAME (3) SCHEMATIC DIAGRAM  
-- DVP-S725D --





TK-51/54 (RF/SERVO) SCHEMATIC DIAGRAM • See page 4-9 for printed wiring board and page 4-12 for waveforms.

— Ref. No.: TK-51/54 board; 2,000 series —

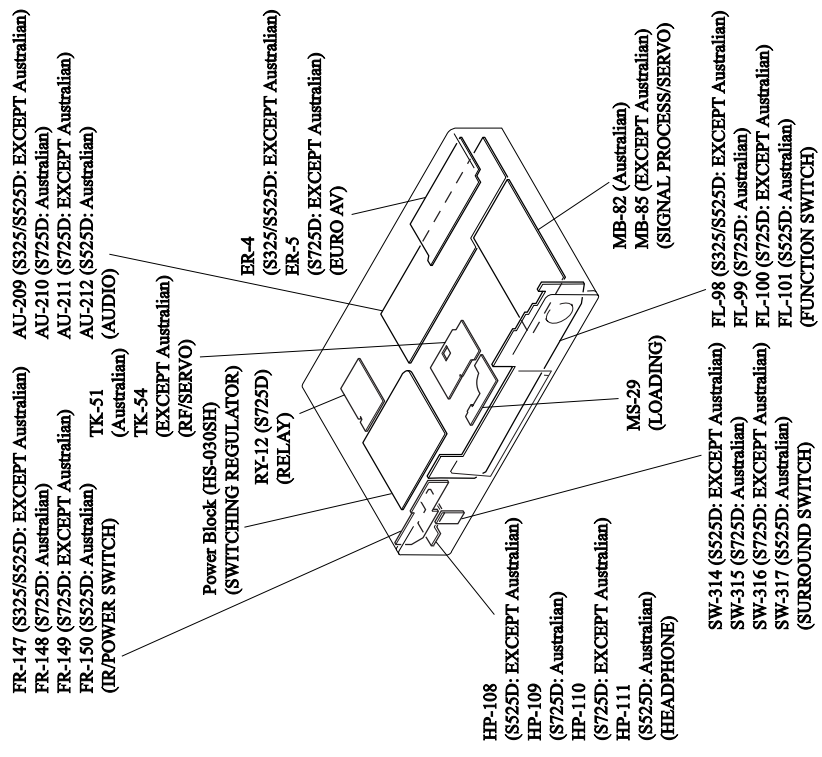
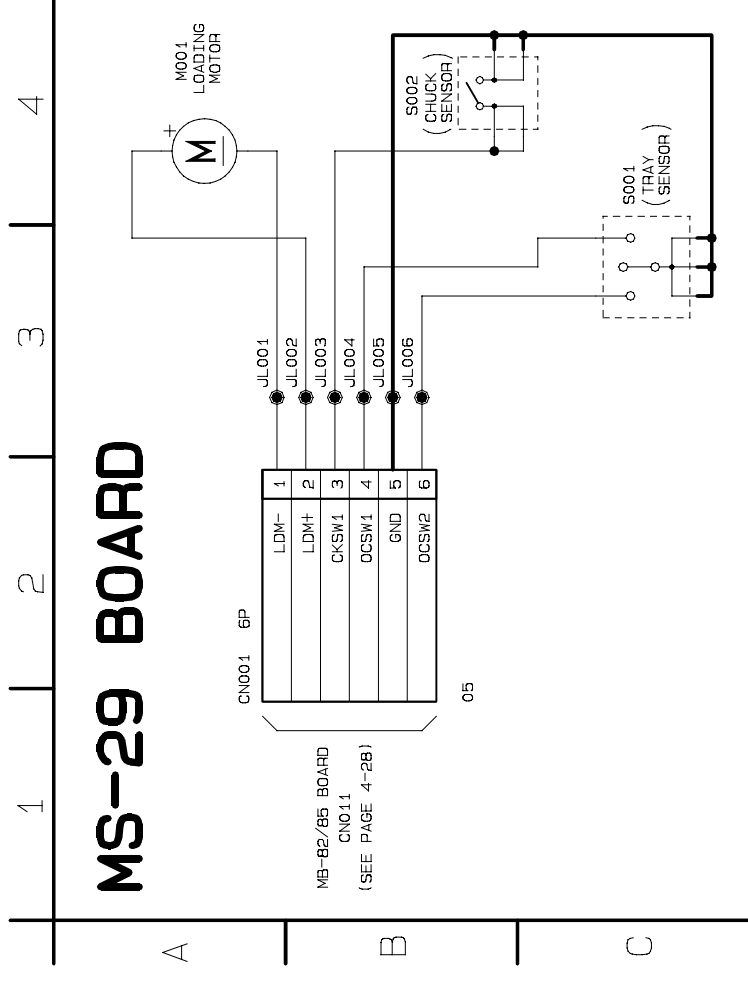
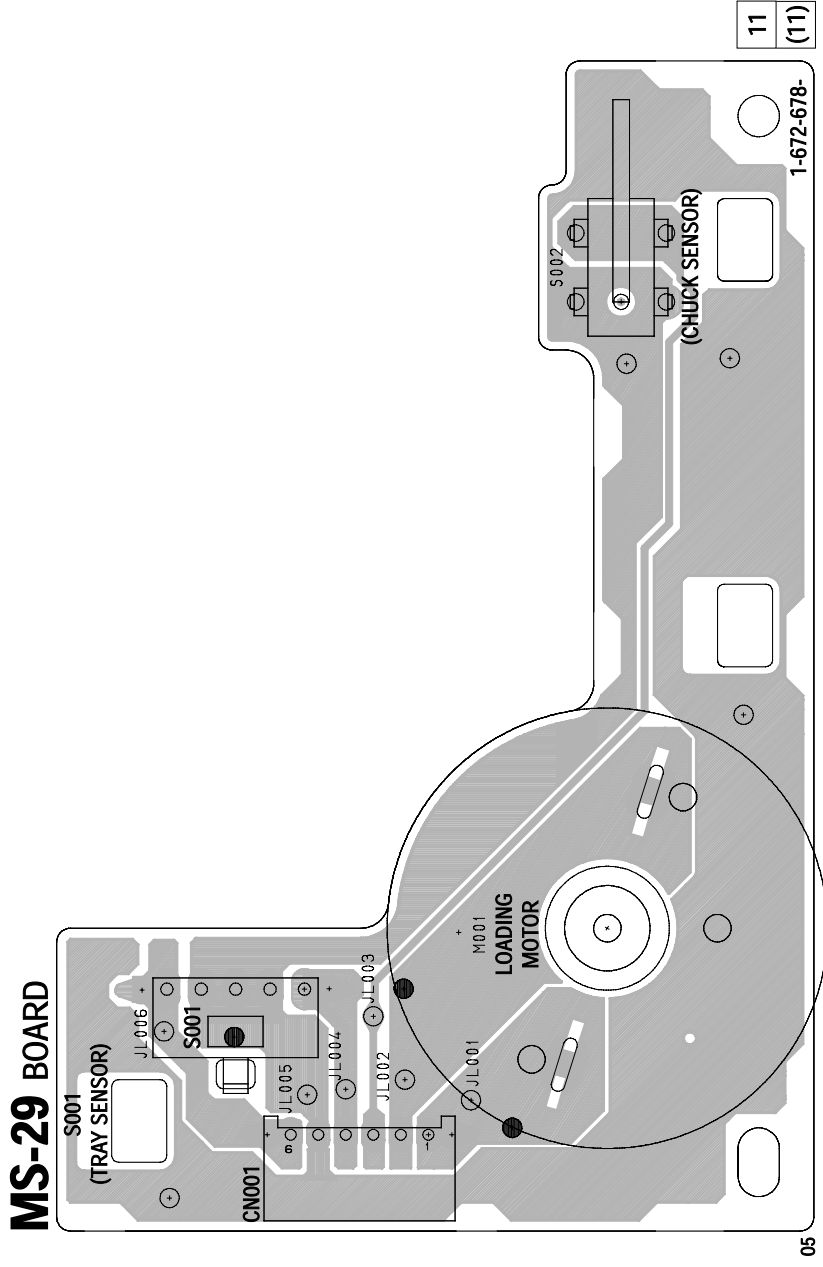


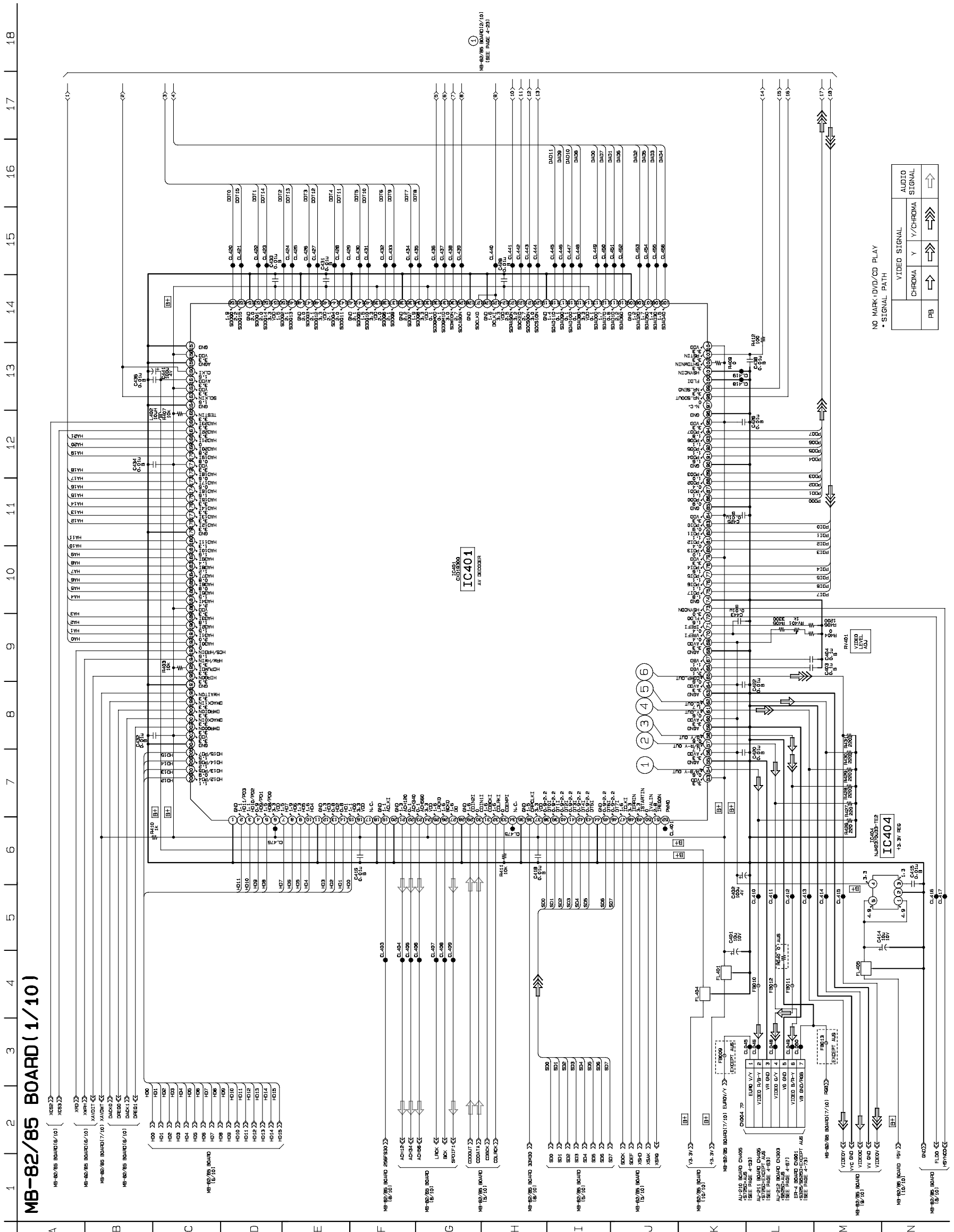
Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

**MS-29 (LOADING) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM**

— Ref. No.: MS-29 board; 3,000 series —

There are few cases that the part isn't mounted in this model is printed on this diagram.

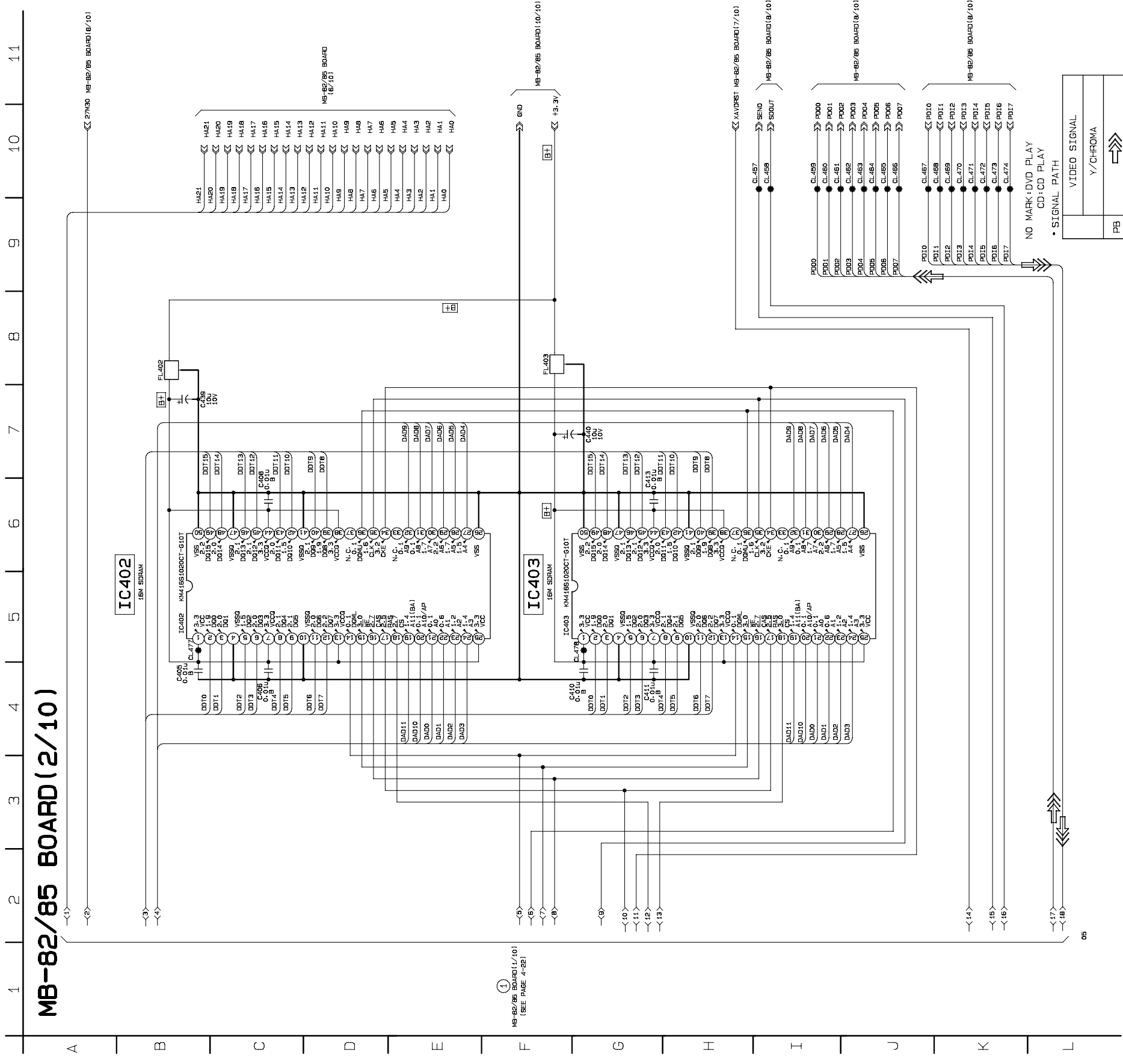




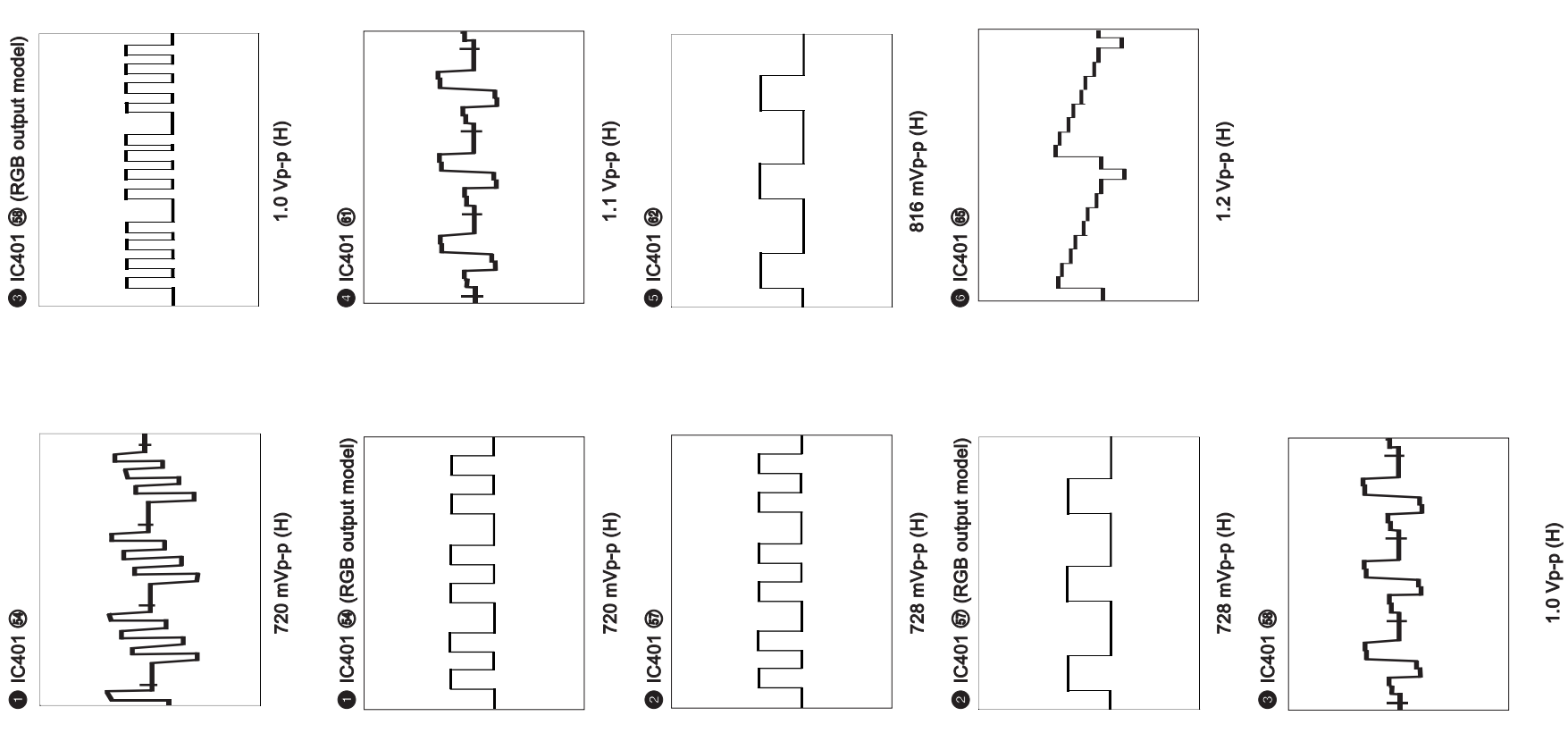
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

**MB-82/85 (SDRAM) SCHEMATIC DIAGRAM • See page 4-17 for printed wiring board.**

– Ref. No.: MB-82/85 board; 1,000 series –

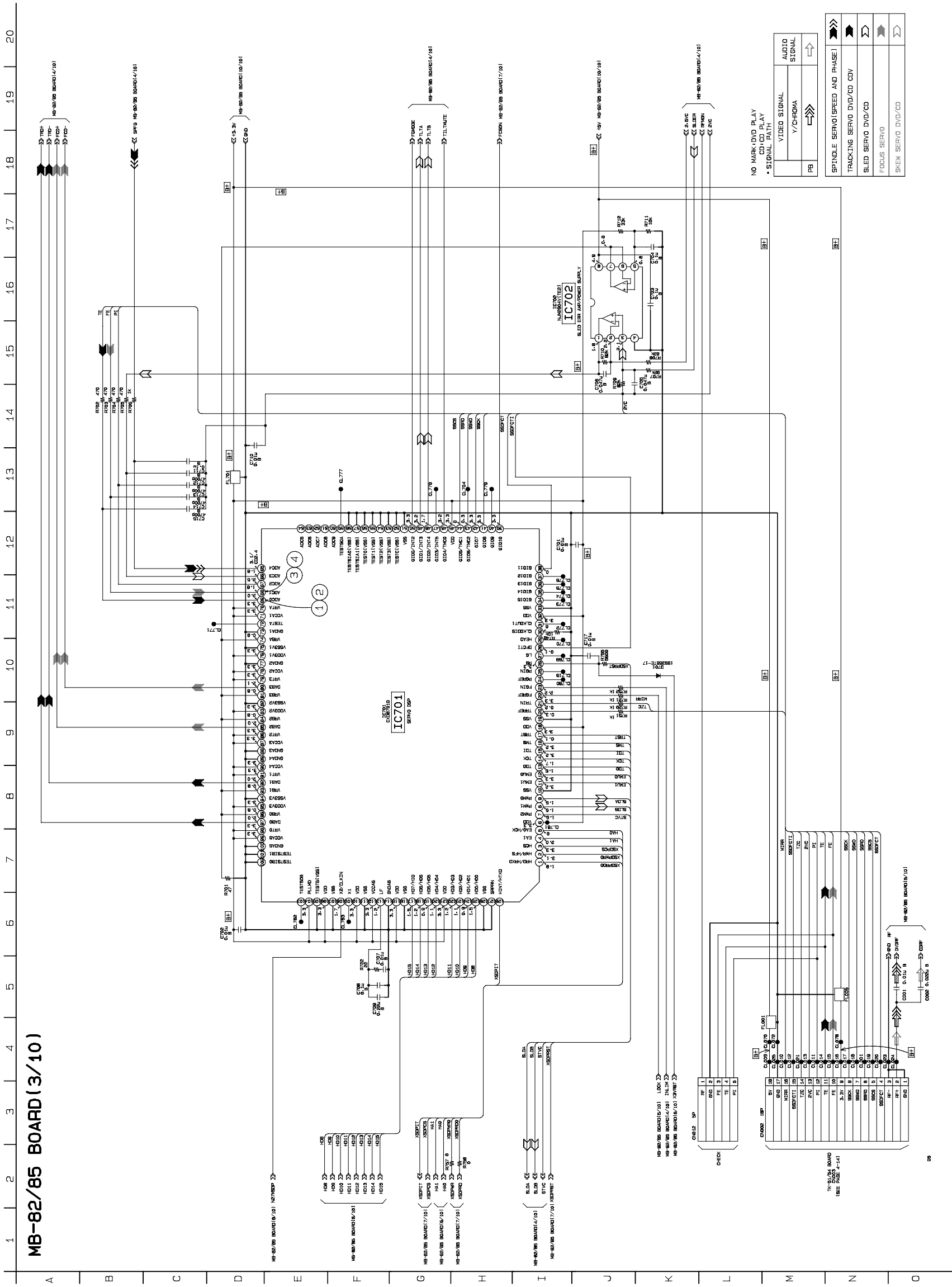


**• Waveforms**



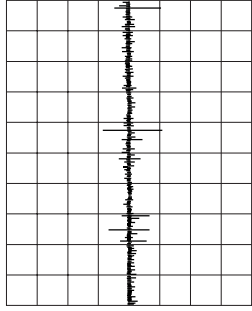
MB-82/85 (SERVO DSP) SCHEMATIC DIAGRAM • See page 4-17 for printed wiring board.

— Ref. No.: MB-82/85 board; 1,000 series —



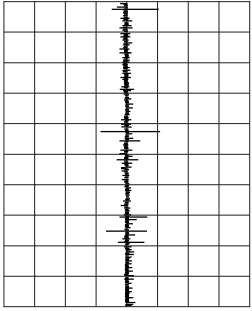
• Waveforms

① IC701 (DVD play)  
500 mV/DIV 50 ms/DIV



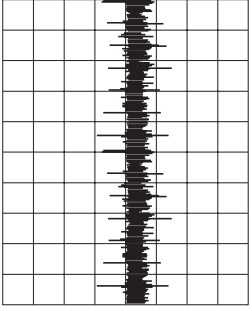
1.4 Vp-p

② IC701 (CD play)  
500 mV/DIV 200 ms/DIV



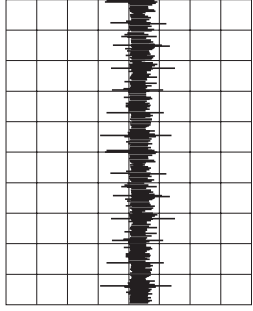
1.7 Vp-p

③ IC701 (DVD play)  
100 mV/DIV 5 ms/DIV



180 mVp-p

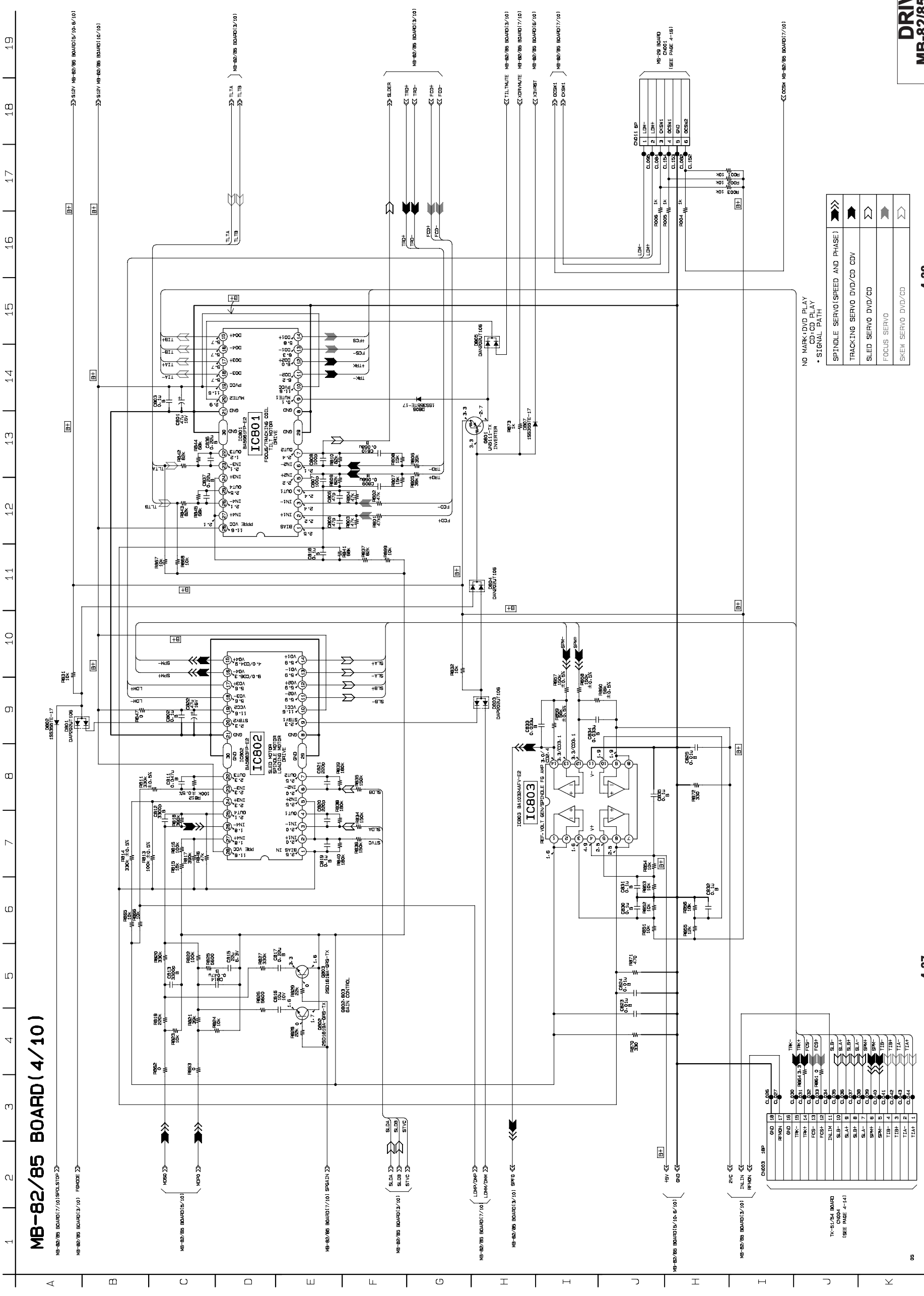
④ IC701 (CD play)  
500 mV/DIV 50 ms/DIV



860 mVp-p

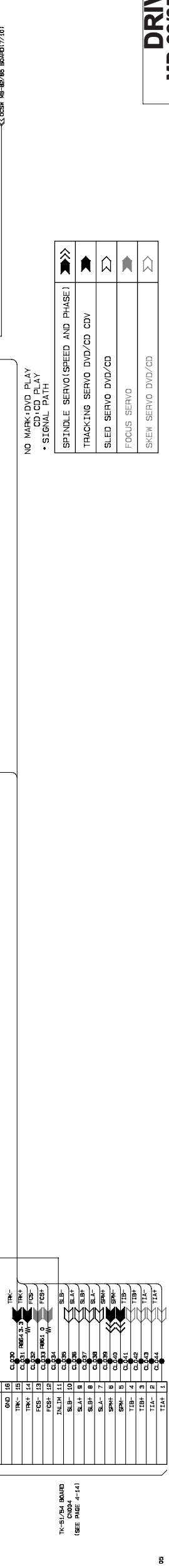
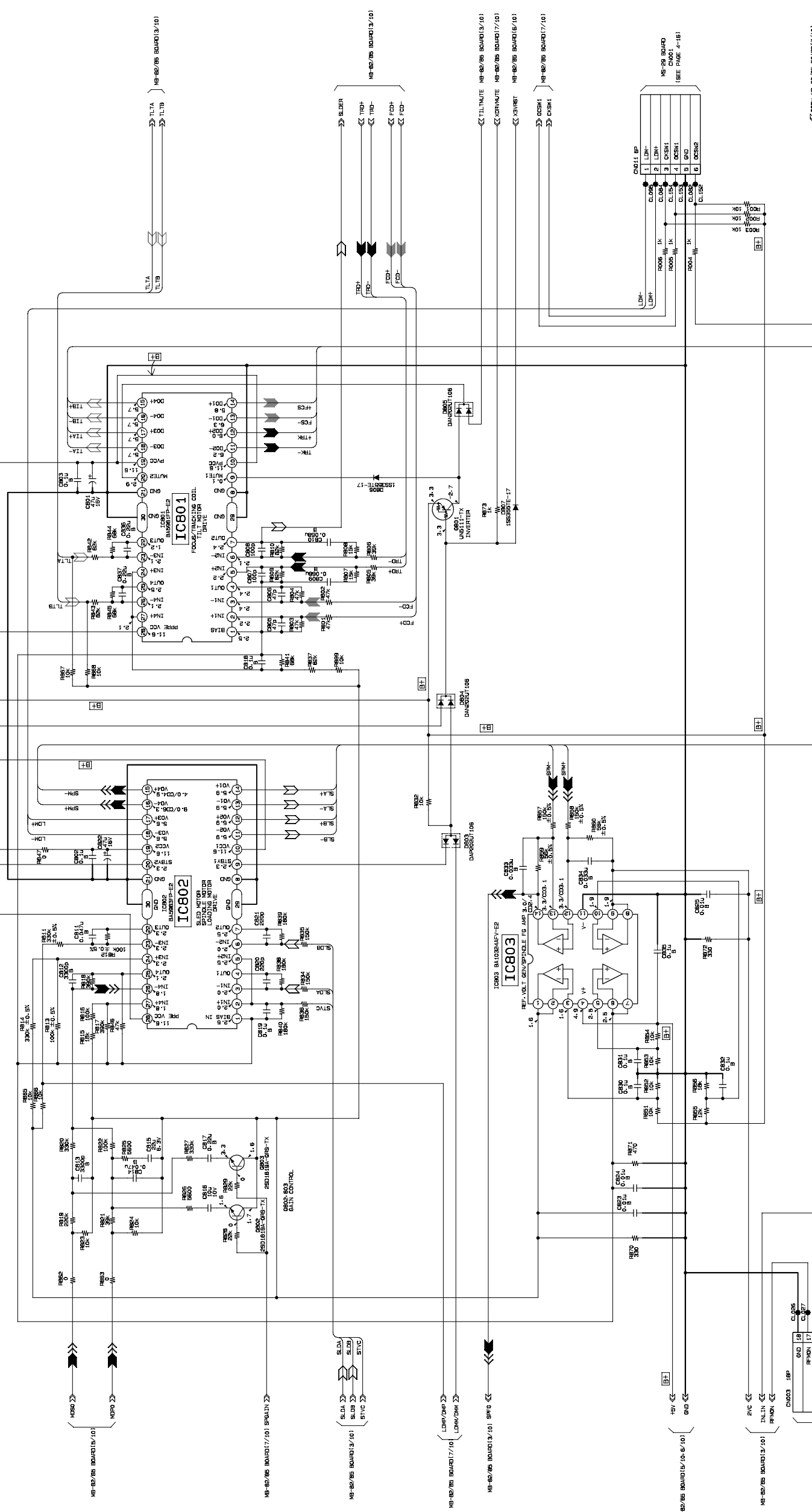
MB-82/85 (DRIVE) SCHEMATIC DIAGRAM • See page 4-17 for printed wiring board.

— Ref. No.: MB-82/85 board; 1,000 series —



MB-82/85 BOARD (4/10)

MB-82/85 BOARD(17/10) SPULSTOP >>> B12V MB-82/85 BOARD(15/10) 6/6/101 >>> B12V MB-82/85 BOARD(10/10) >>> B12V MB-82/85 BOARD(13/10) >>> B12V MB-82/85 BOARD(16/10) >>> B12V MB-82/85 BOARD(17/10)

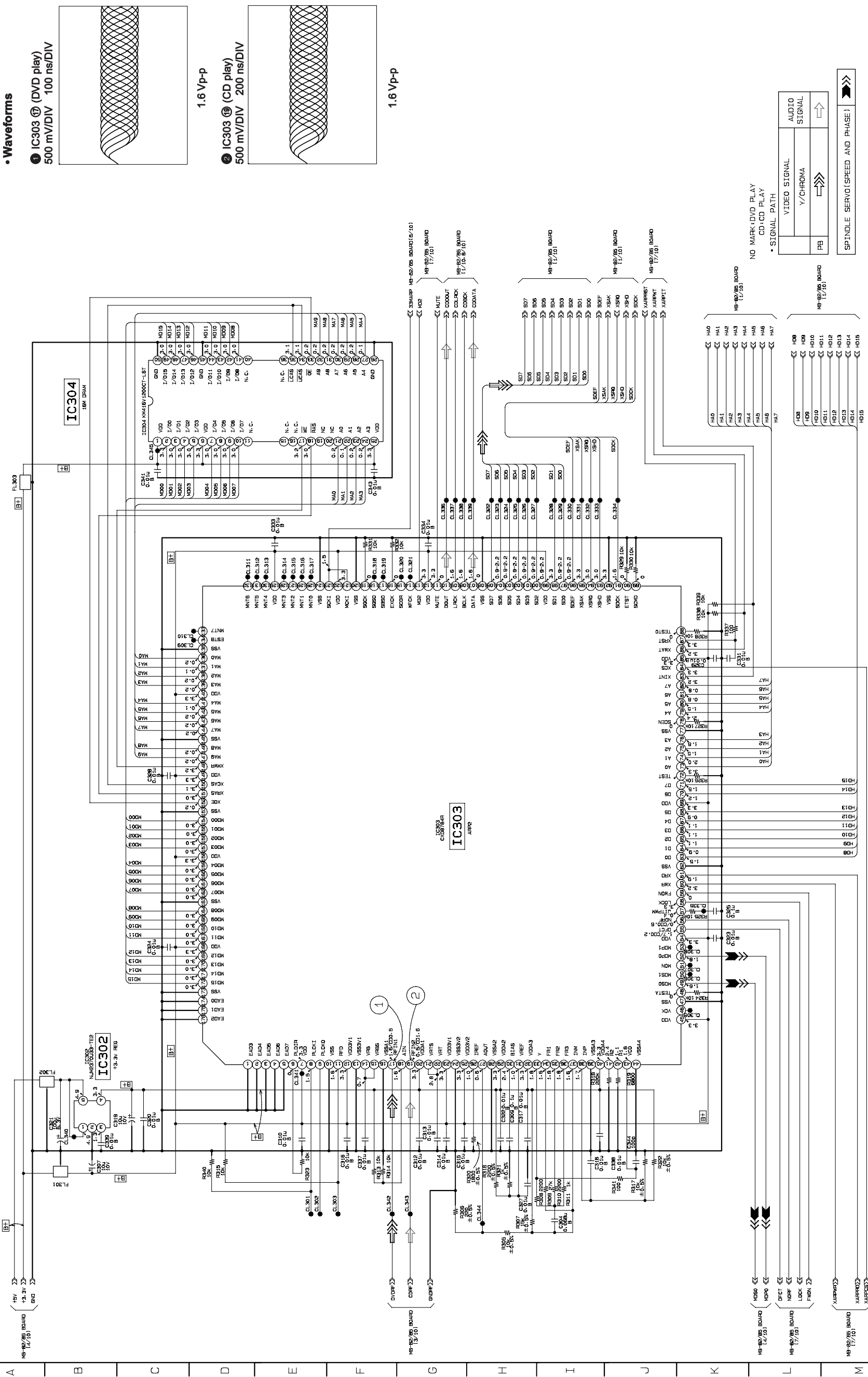


NO MARK/DVD PLAY  
CD PLAY  
• SIGNAL PATH

SPINDLE SERVO (SPEED AND PHASE)	▶▶▶
TRACKING SERVO DVD/CD CDV	▶▶
SLID SERVO DVD/CD	▶
FOCUS SERVO	▶
SKEW SERVO DVD/CD	▶

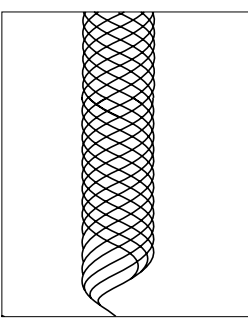
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

**MB-82/85 BOARD (5/10)**

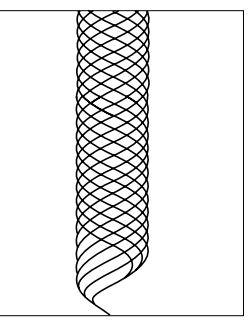


**• Waveforms**

① IC303 (DVD play)  
500 mV/DIV 100 ns/DIV

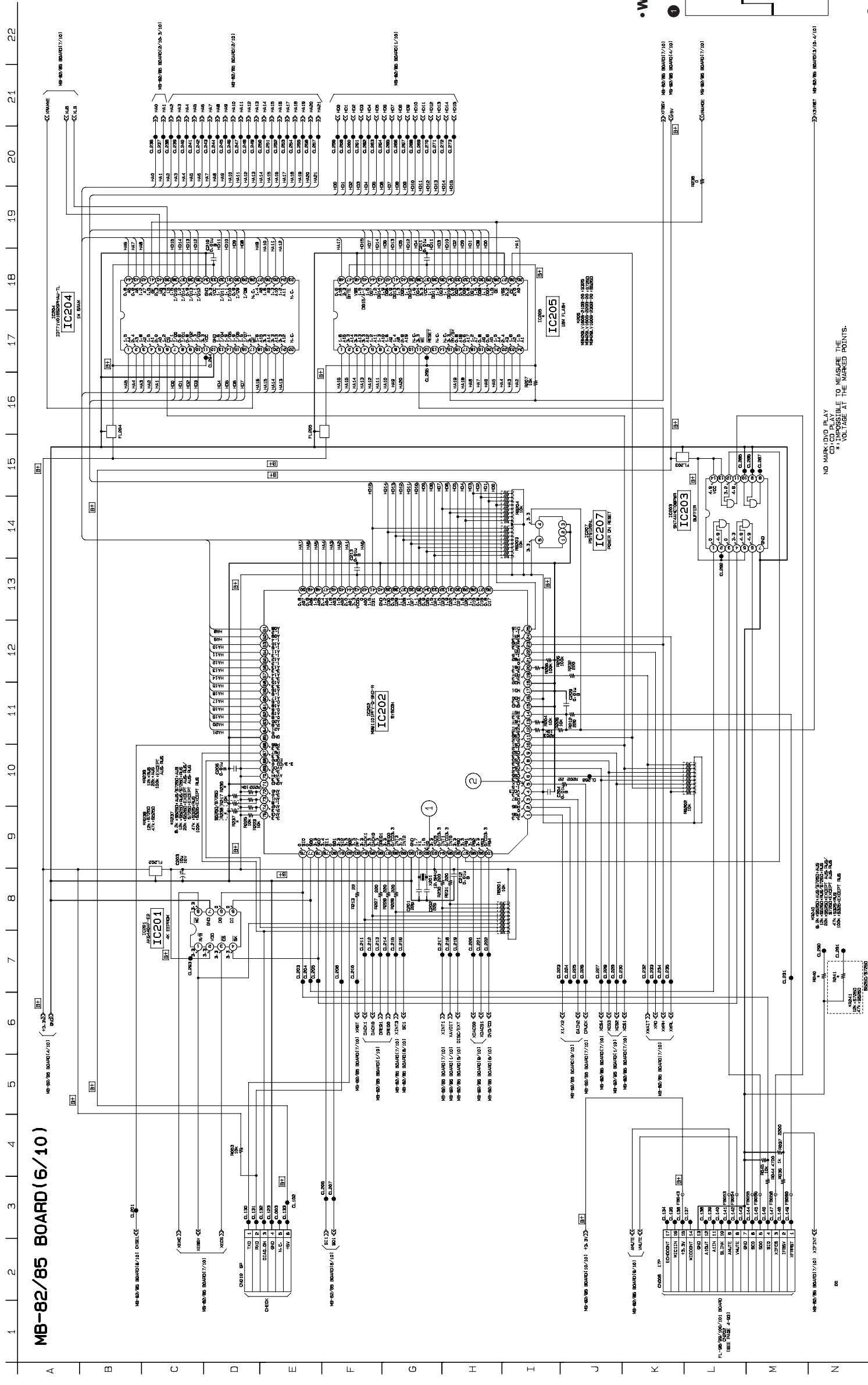


② IC303 (CD play)  
500 mV/DIV 200 ns/DIV



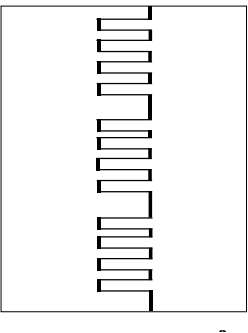
MB-82/85 (SYSTEM CONTROL) SCHEMATIC DIAGRAM • See page 4-17 for printed wiring board.

— Ref. No.: MB-82/85 board; 1,000 series —



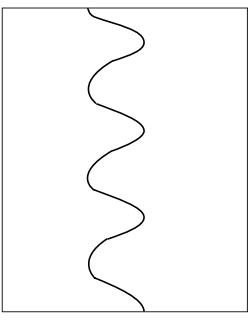
• Waveforms

① IC202



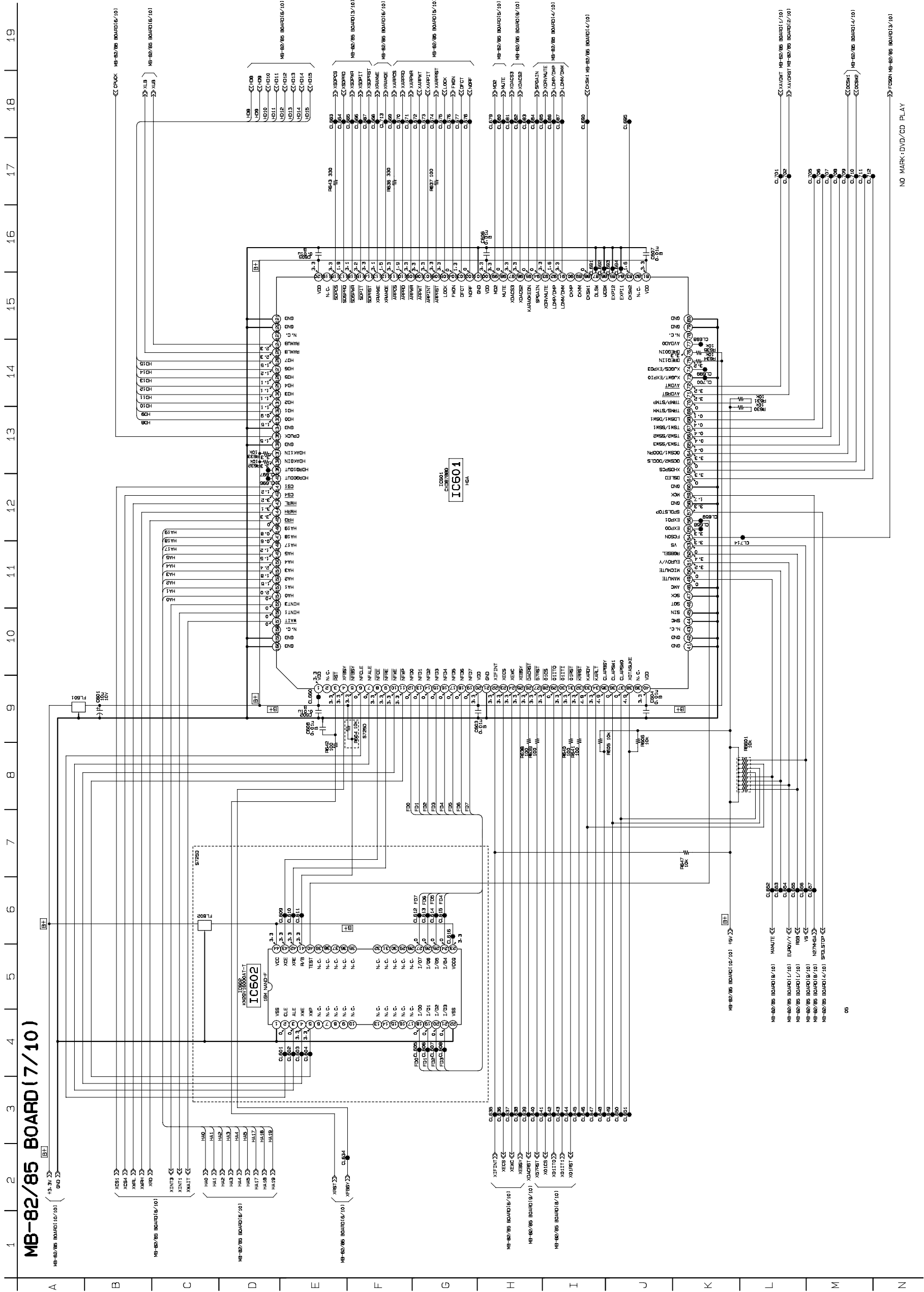
2.4 Vp-p (12.5 MHz)

② IC202



4 Vp-p (25.3 MHz)

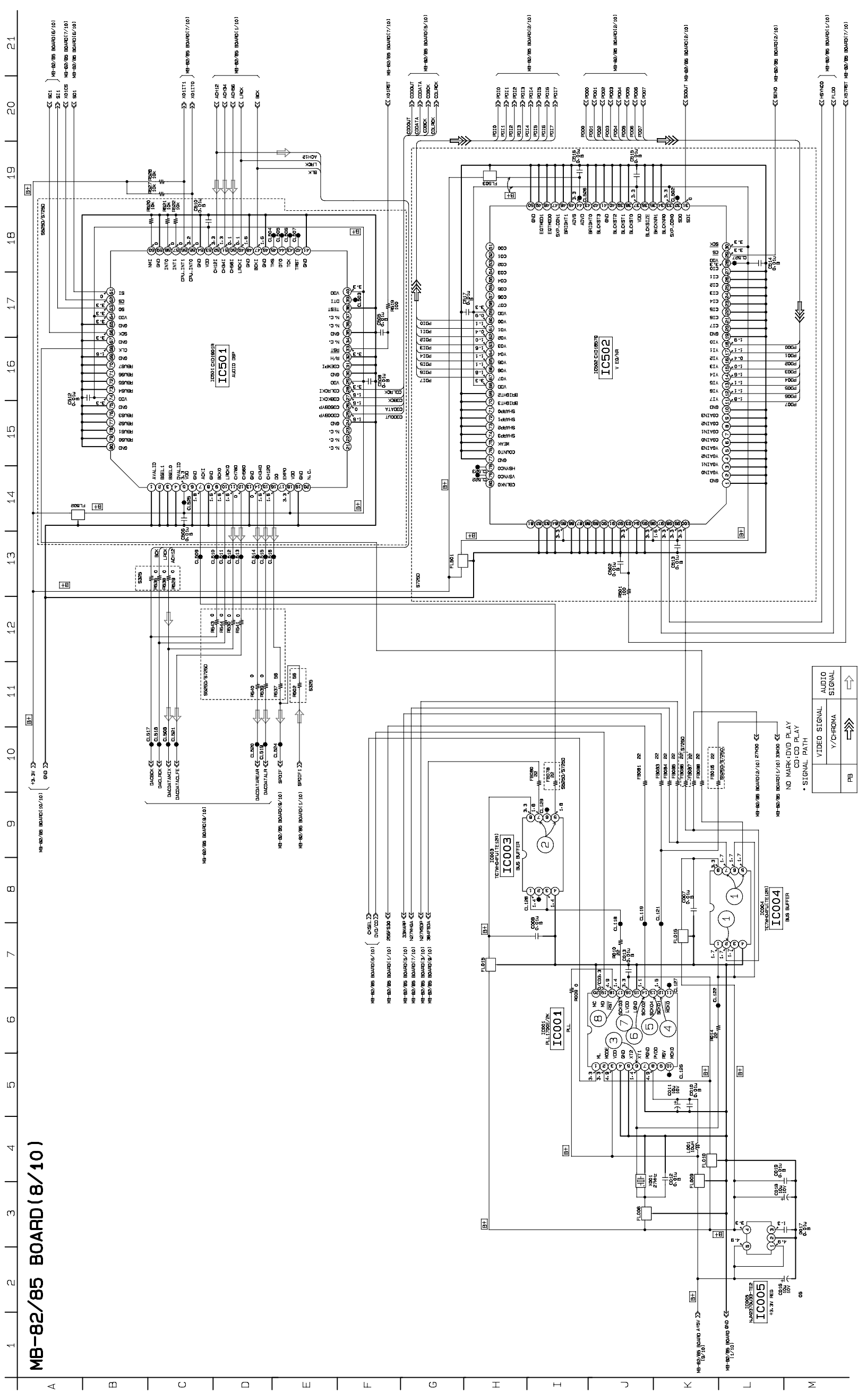




NO MARK-DVD/CD PLAY

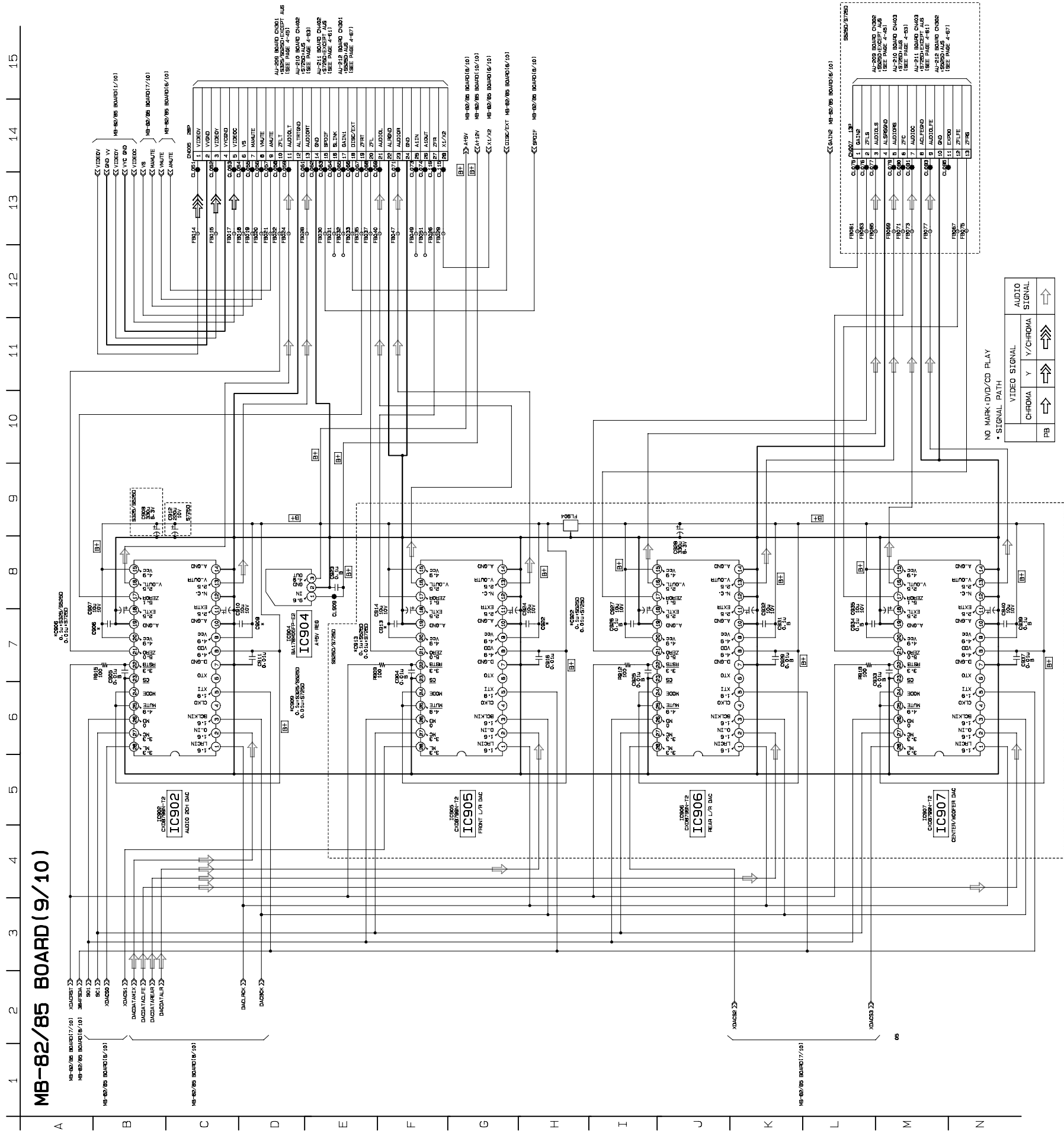
MB-82/85 (CLOCK GENERATOR, AUDIO DSP, V EQ/NR) SCHEMATIC DIAGRAM • See page 4-17 for printed wiring board and page 4-40 for waveforms.

—Ref. No.: MB-82/85 board; 1,000 series —



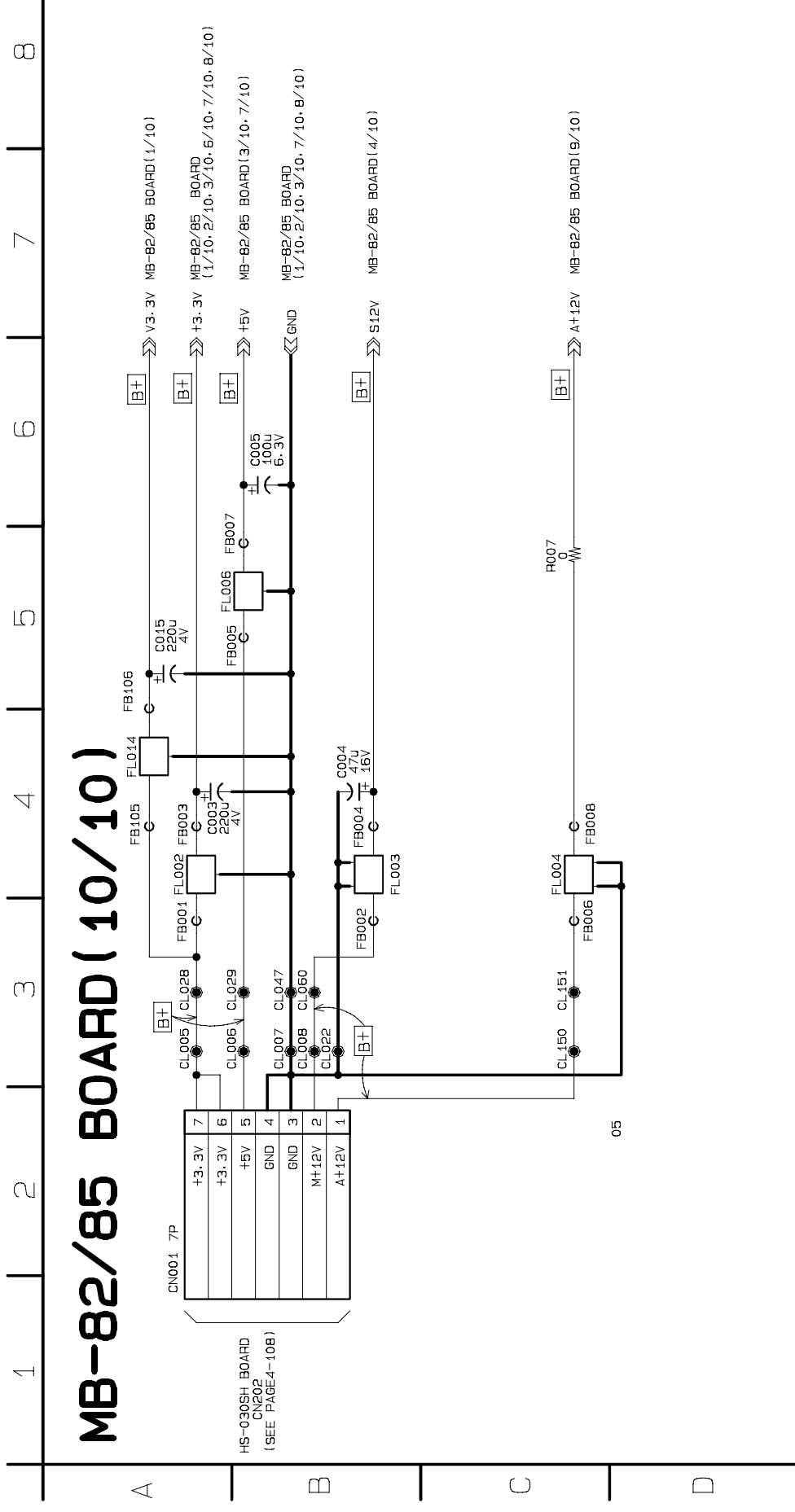
MB-82/85 (DAC) SCHEMATIC DIAGRAM • See page 4-17 for printed wiring board.

— Ref. No.: MB-82/85 board; 1,000 series —

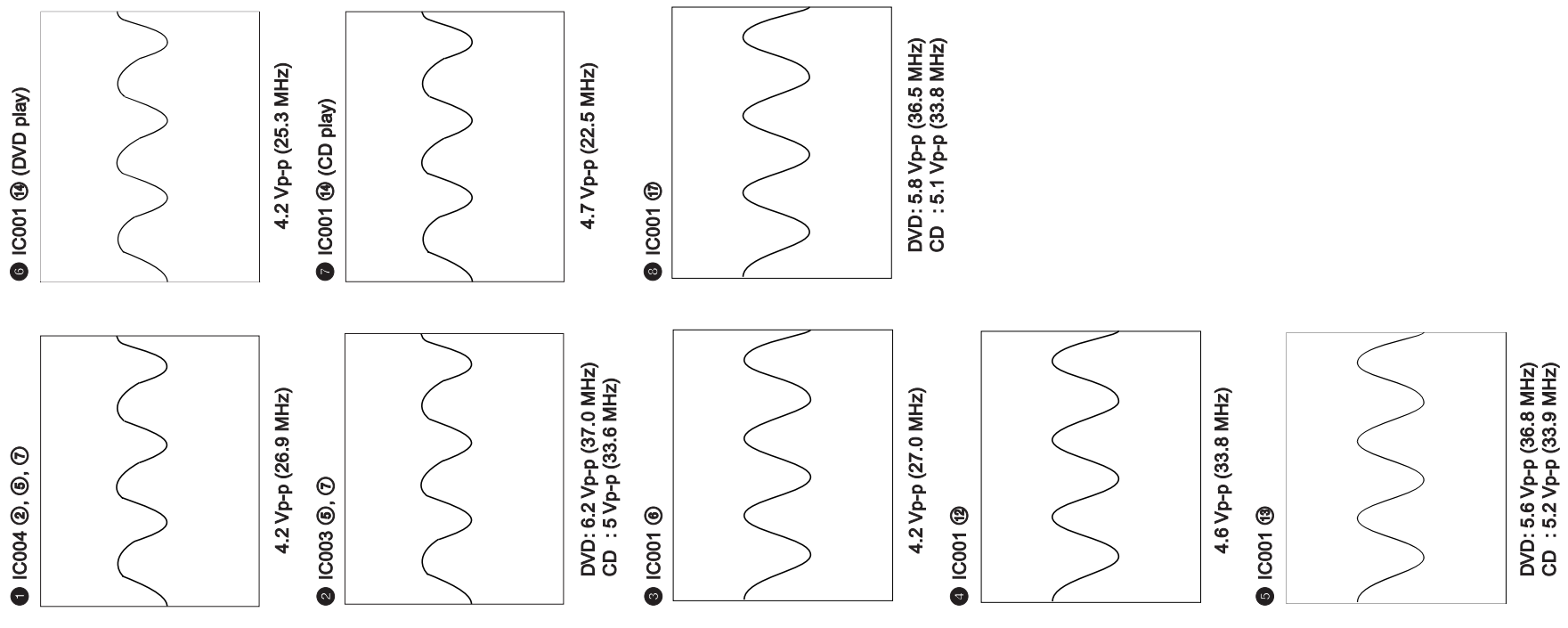


**MB-82/85 (BIAS) SCHEMATIC DIAGRAM • See page 4-17 for printed wiring board.**

— Ref. No.: MB-82/85 board; 1,000 series —

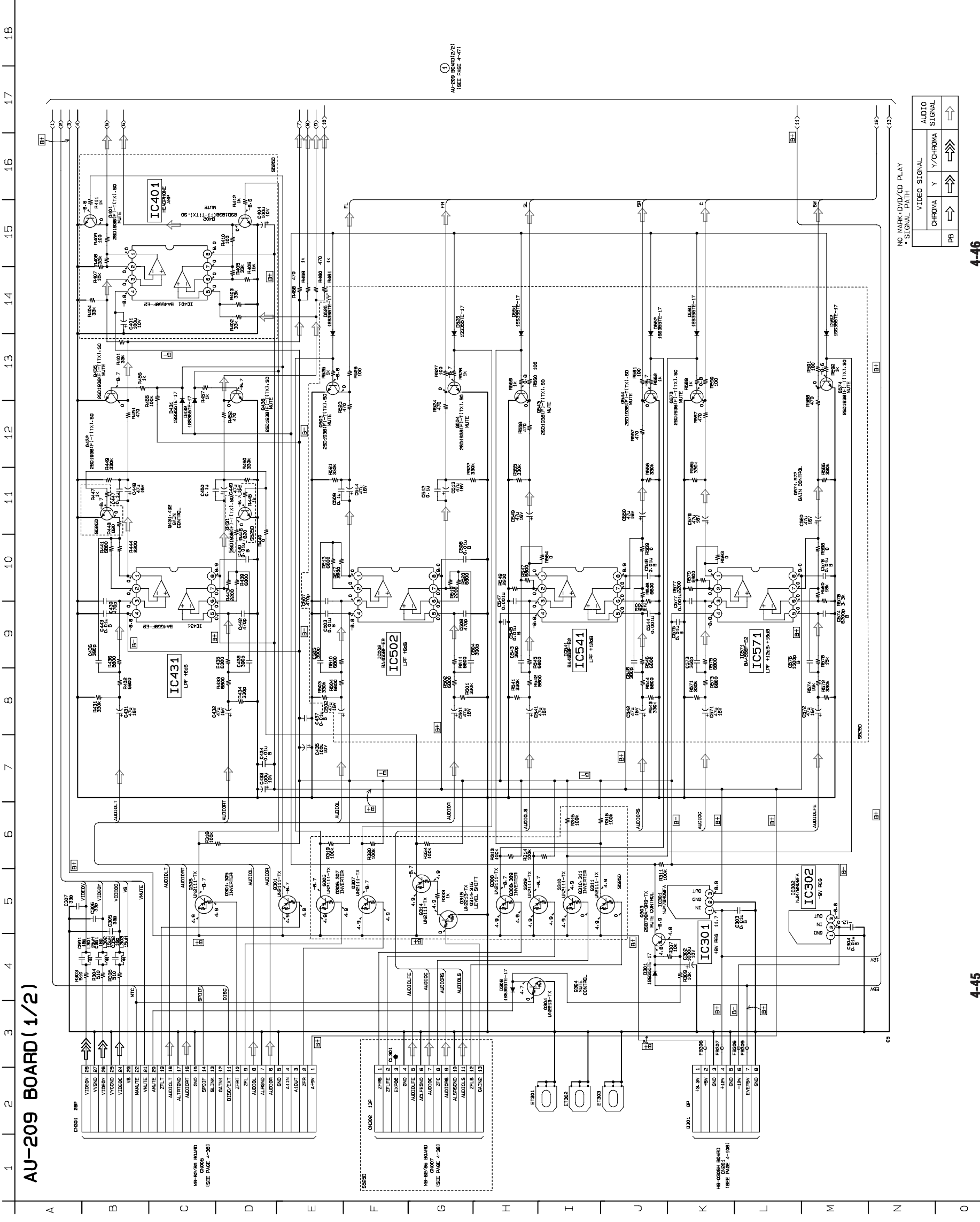


• Waveforms



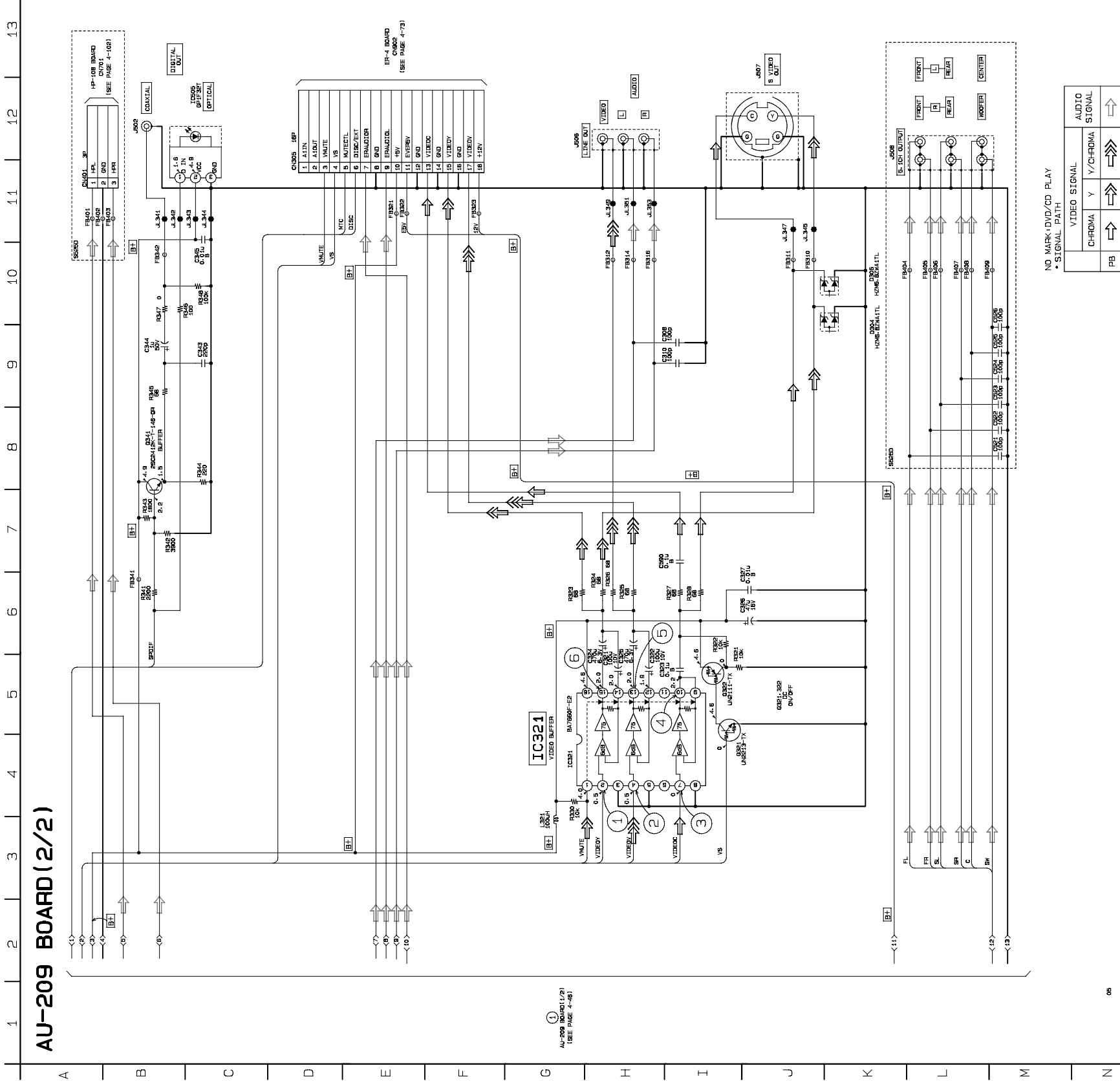
AU-209 (AUDIO) SCHEMATIC DIAGRAM • See page 4-43 for printed wiring board.

— Ref. No.: AU-209 board; 2,000 series —  
 — DVP-S325/S525D; EXCEPT AUS —

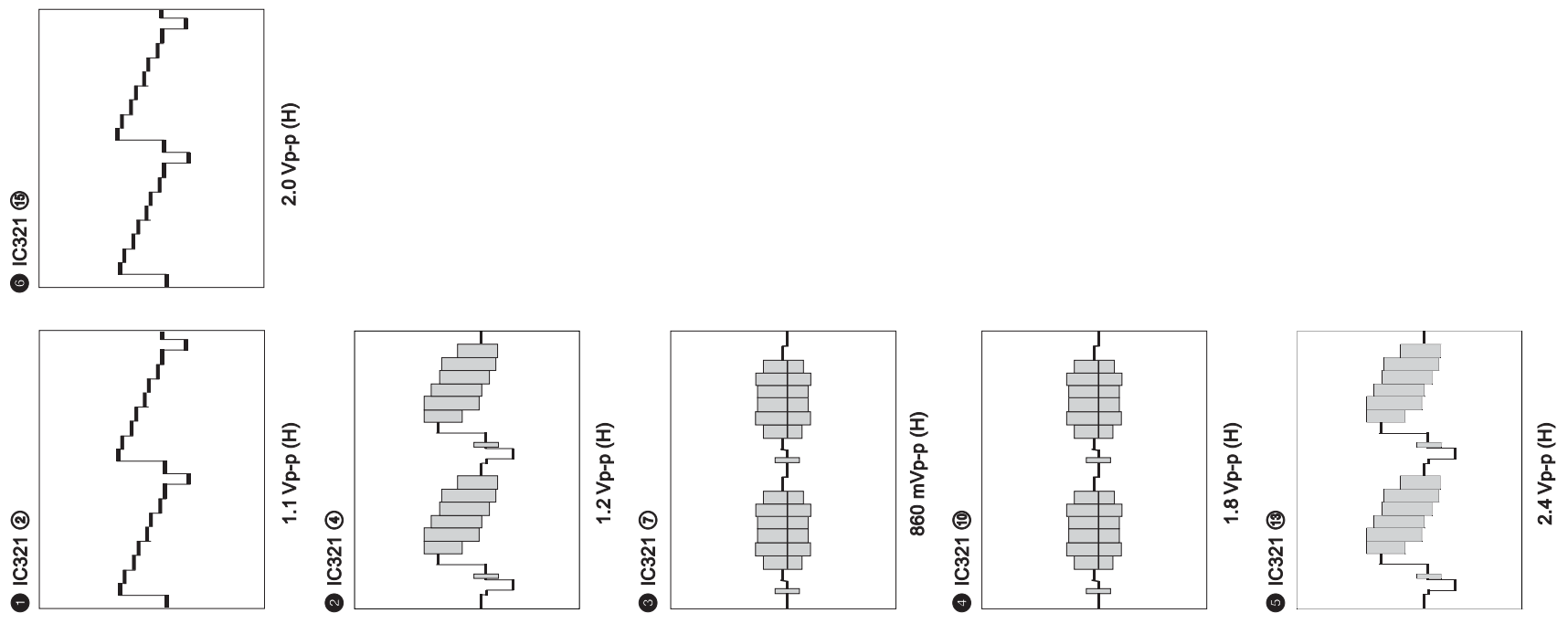


**AU-209 (VIDEO BUFFER) SCHEMATIC DIAGRAM • See page 4-43 for printed wiring board.**

– Ref. No.: AU-209 board; 2,000 series –  
– DVP-S325/S525D: EXCEPT AUS –



• Waveforms



DVP-S325/S525D/S725D

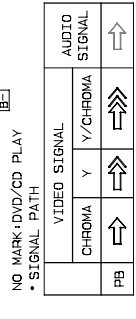
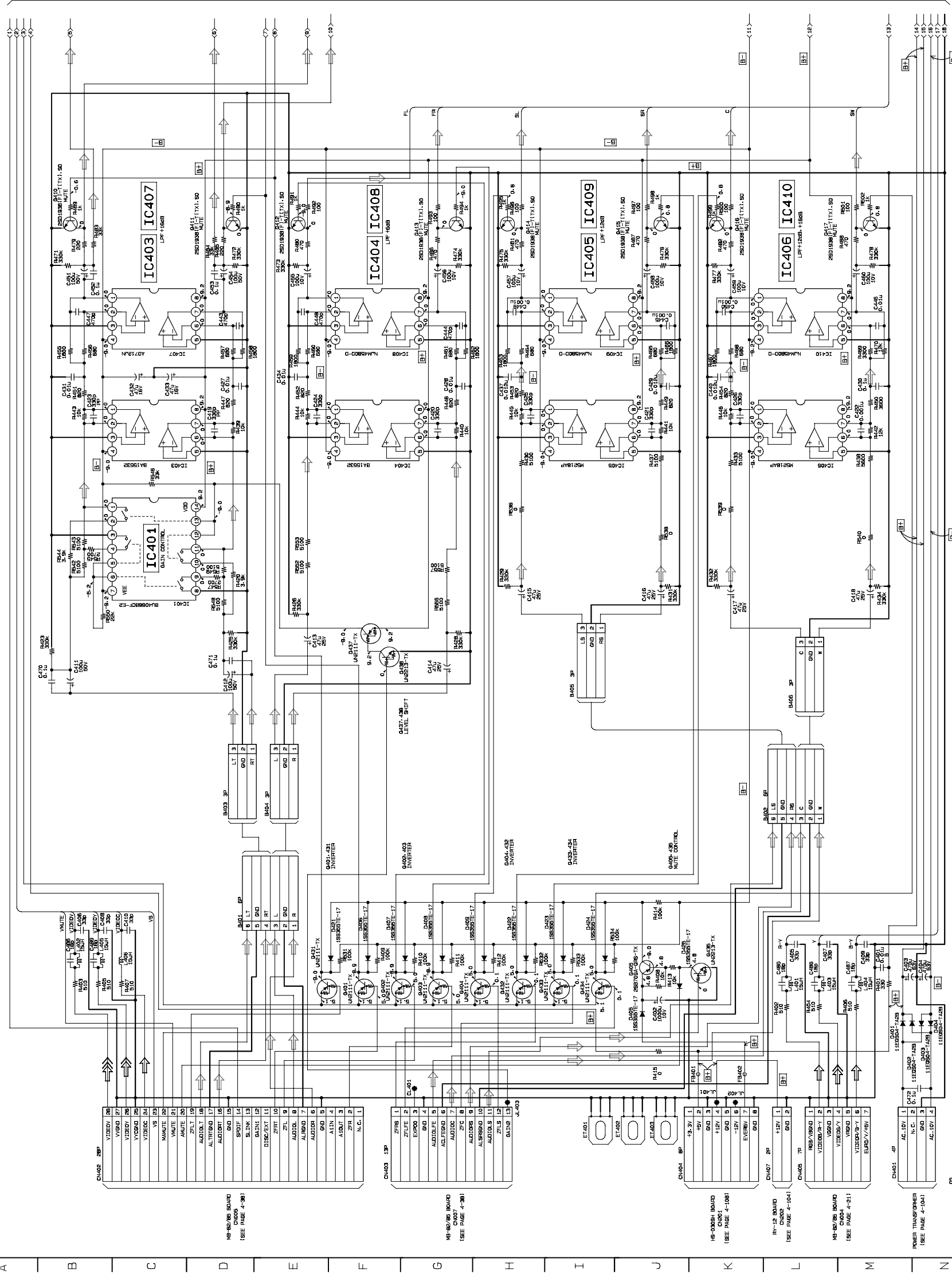
AU-210 (AUDIO) SCHEMATIC DIAGRAM • See page 4-49 for printed wiring board.

– Ref. No.: AU-210 board; 3,000 series –

– DVP-S725D: AUS –

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

AU-210 BOARD (1/2)

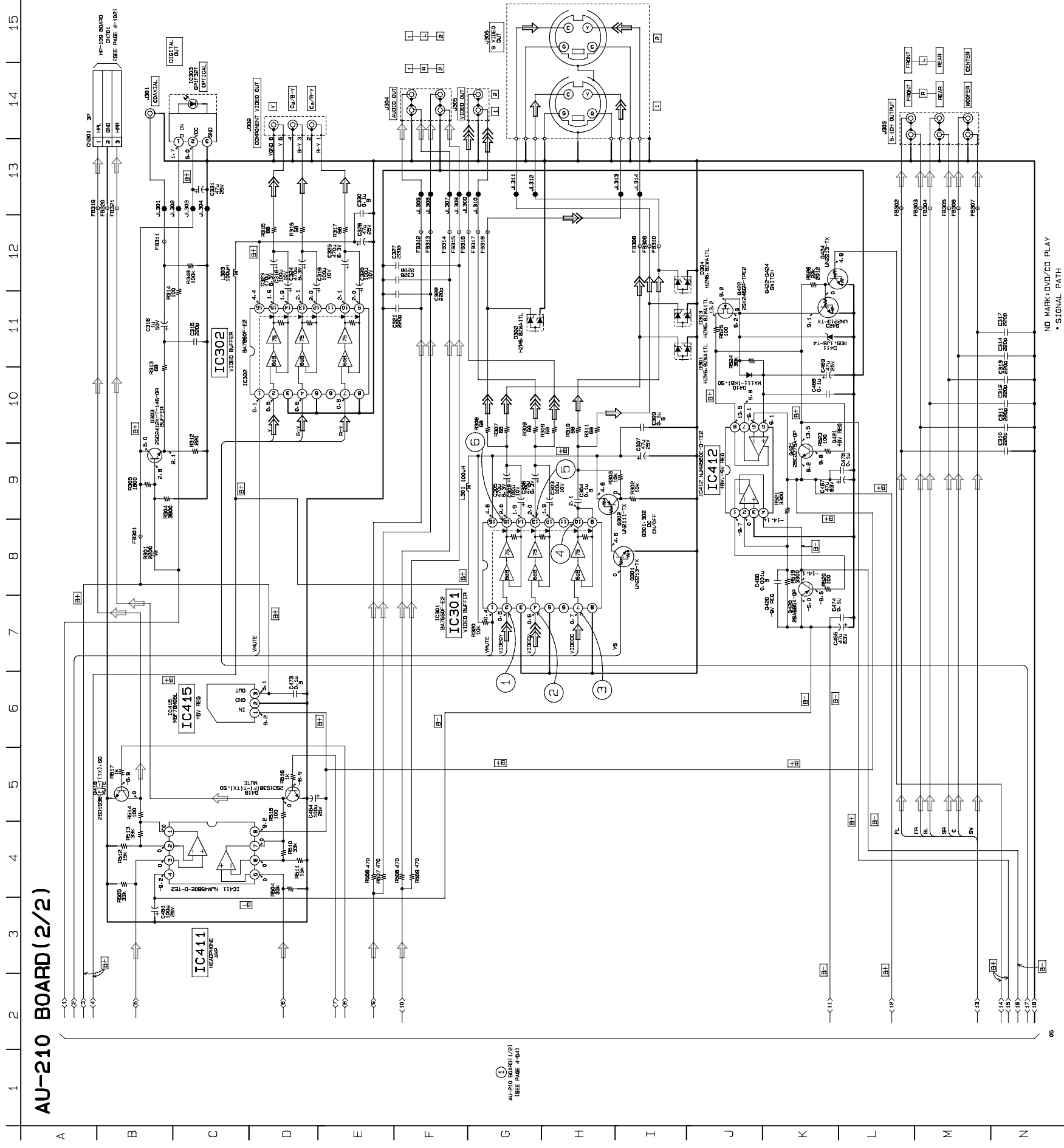


①  
AU-210 (1/2)  
(SEE PAGE 4-50)

**AU-210 (VIDEO BUFFER) SCHEMATIC DIAGRAM** • See page 4-49 for printed wiring board.

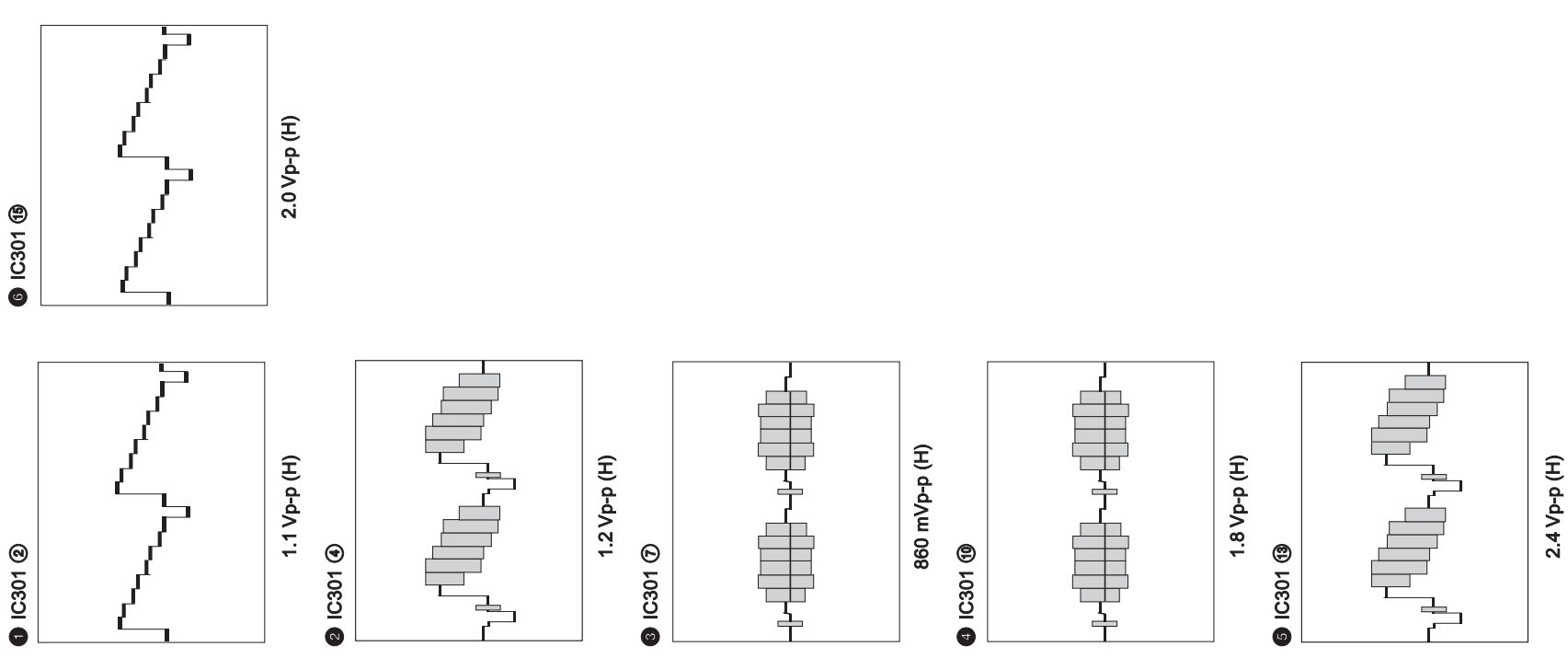
– Ref. No.: AU-210 board; 3,000 series –

– DVP-S725D: AUS –



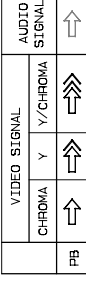
① AU-210 BOARD(1/2)  
SEE PAGE 4-54

• Waveforms



NO MARK: DVD/CD PLAY

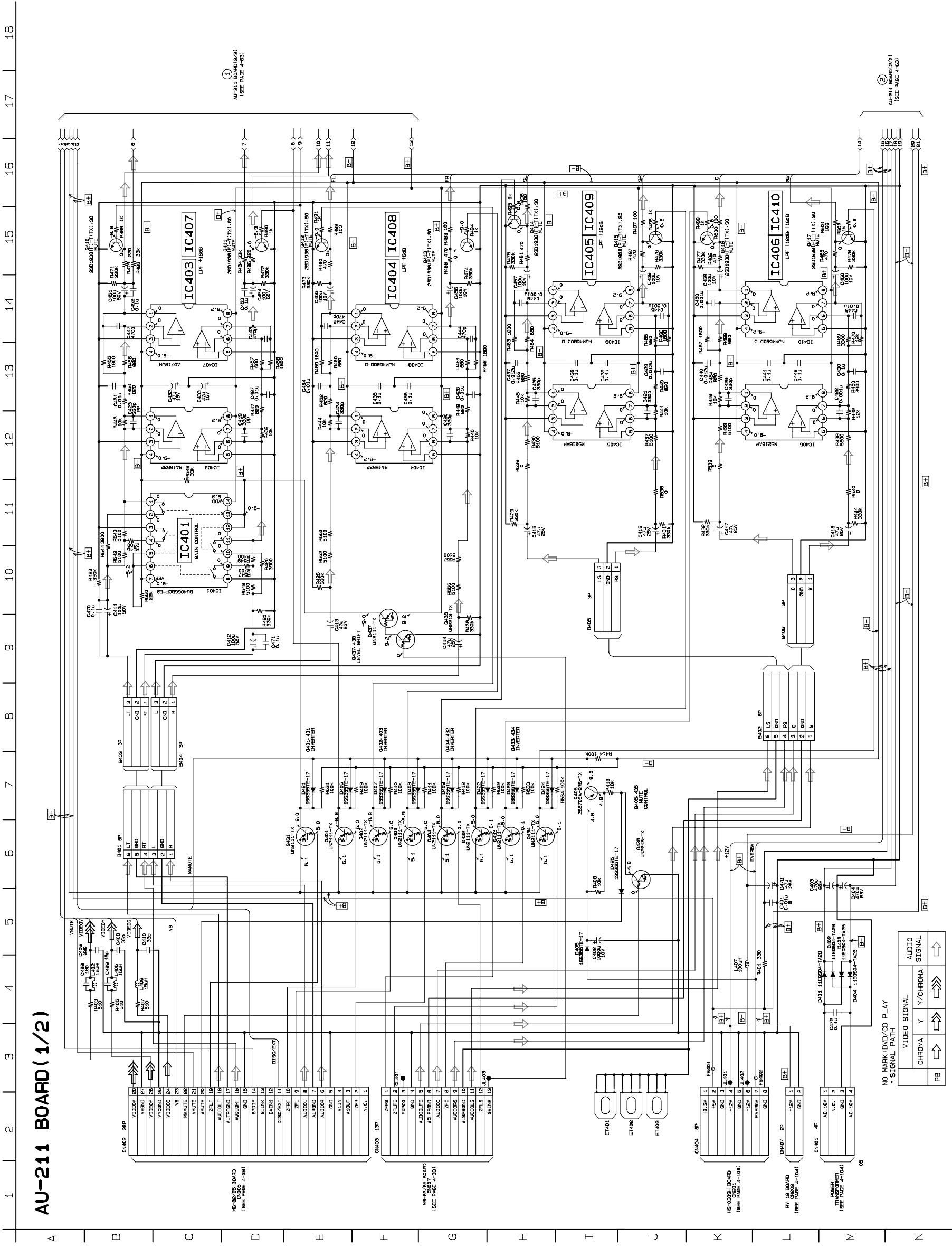
• SIGNAL PATH





AU-211 (AUDIO) SCHEMATIC DIAGRAM • See page 4-57 for printed wiring board.

— Ref. No.: AU-211 board; 3,000 series —  
— DVP-S725D; EXCEPT AUS —



AU-211 BOARD (1/2)

①  
AU-211 BOARD (S1)  
(SEE PAGE 4-61)

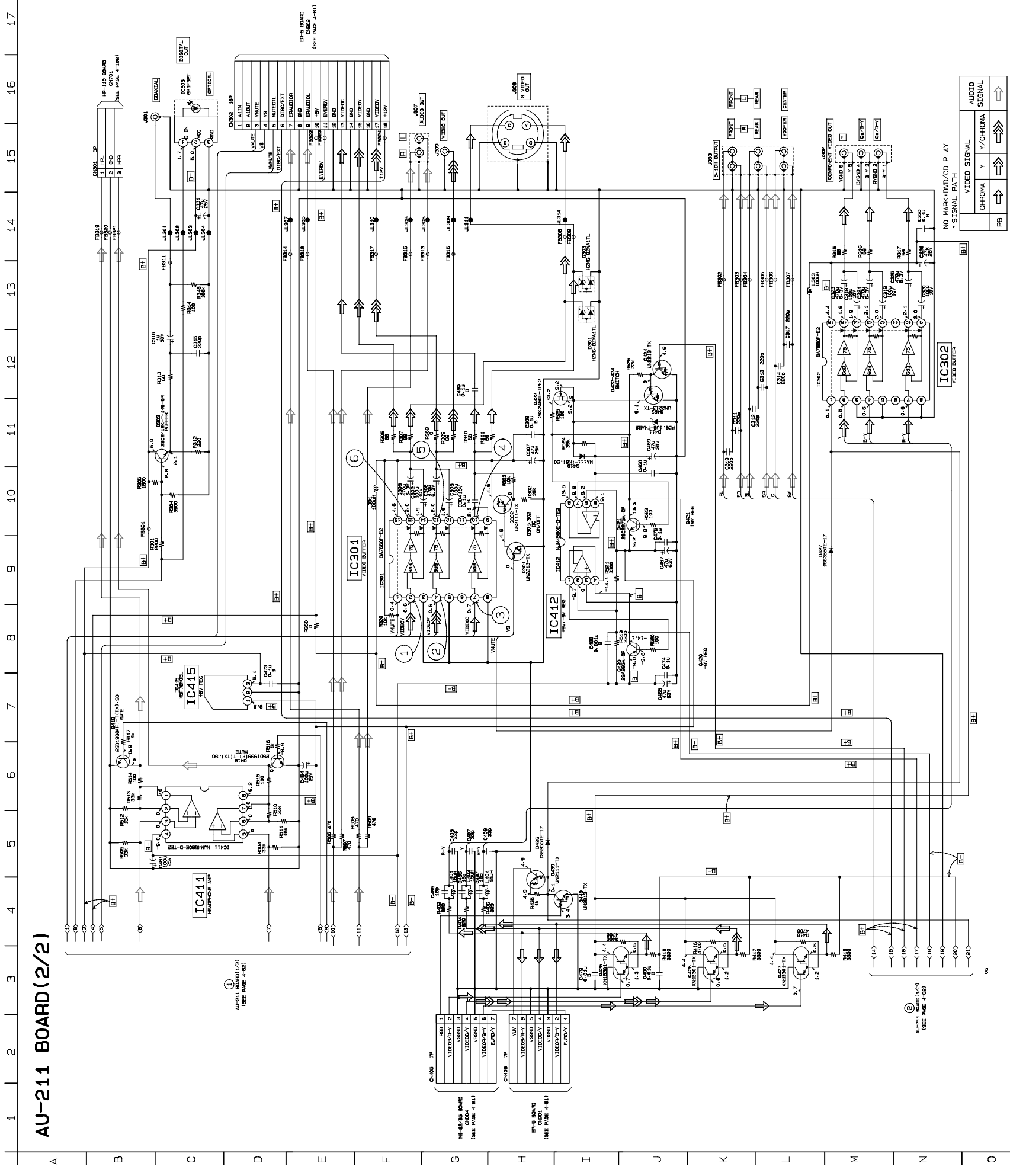
②  
AU-211 BOARD (S2)  
(SEE PAGE 4-61)

NO MARK+DVD/CD PLAY  
\* SIGNAL PATH

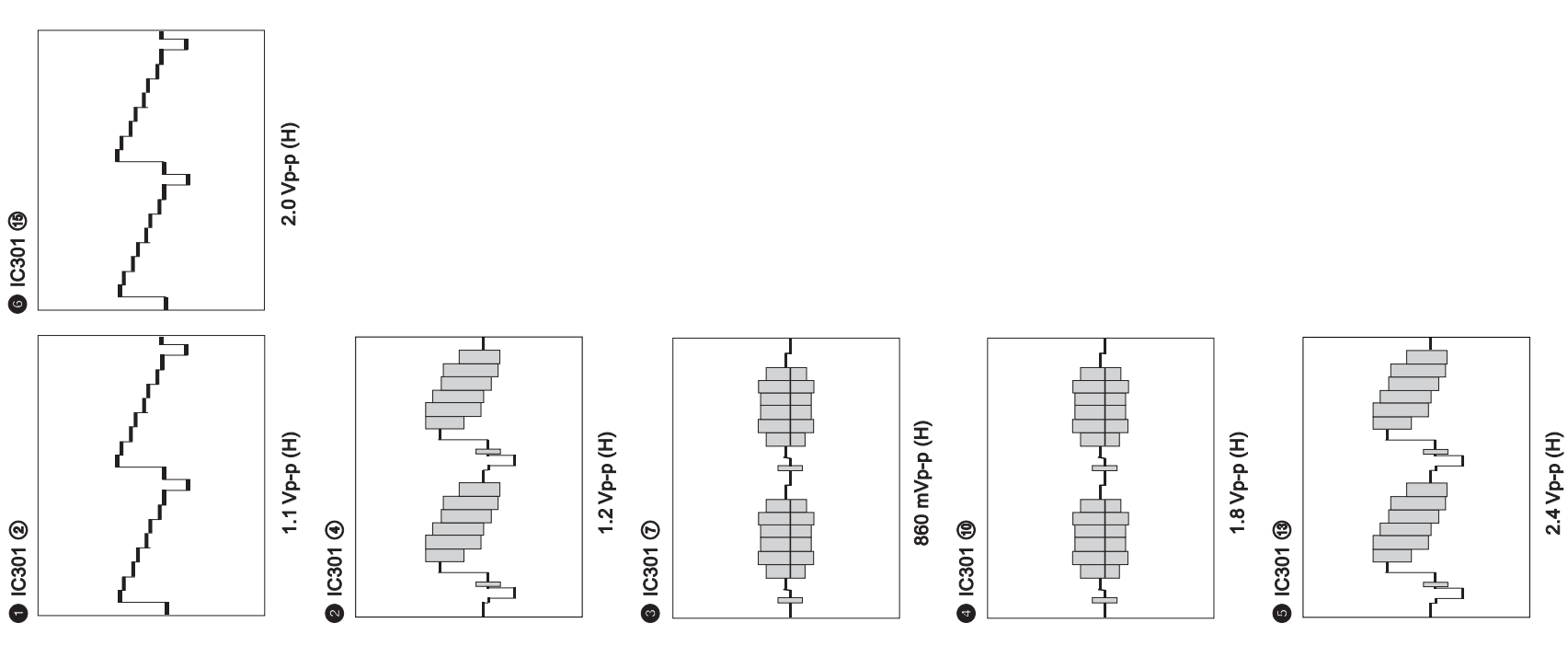


**AU-211 (VIDEO BUFFER) SCHEMATIC DIAGRAM** • See page 4-57 for printed wiring board.

– Ref. No.: AU-211 board; 3,000 series –  
 – DVP-S725D: EXCEPT AUS –



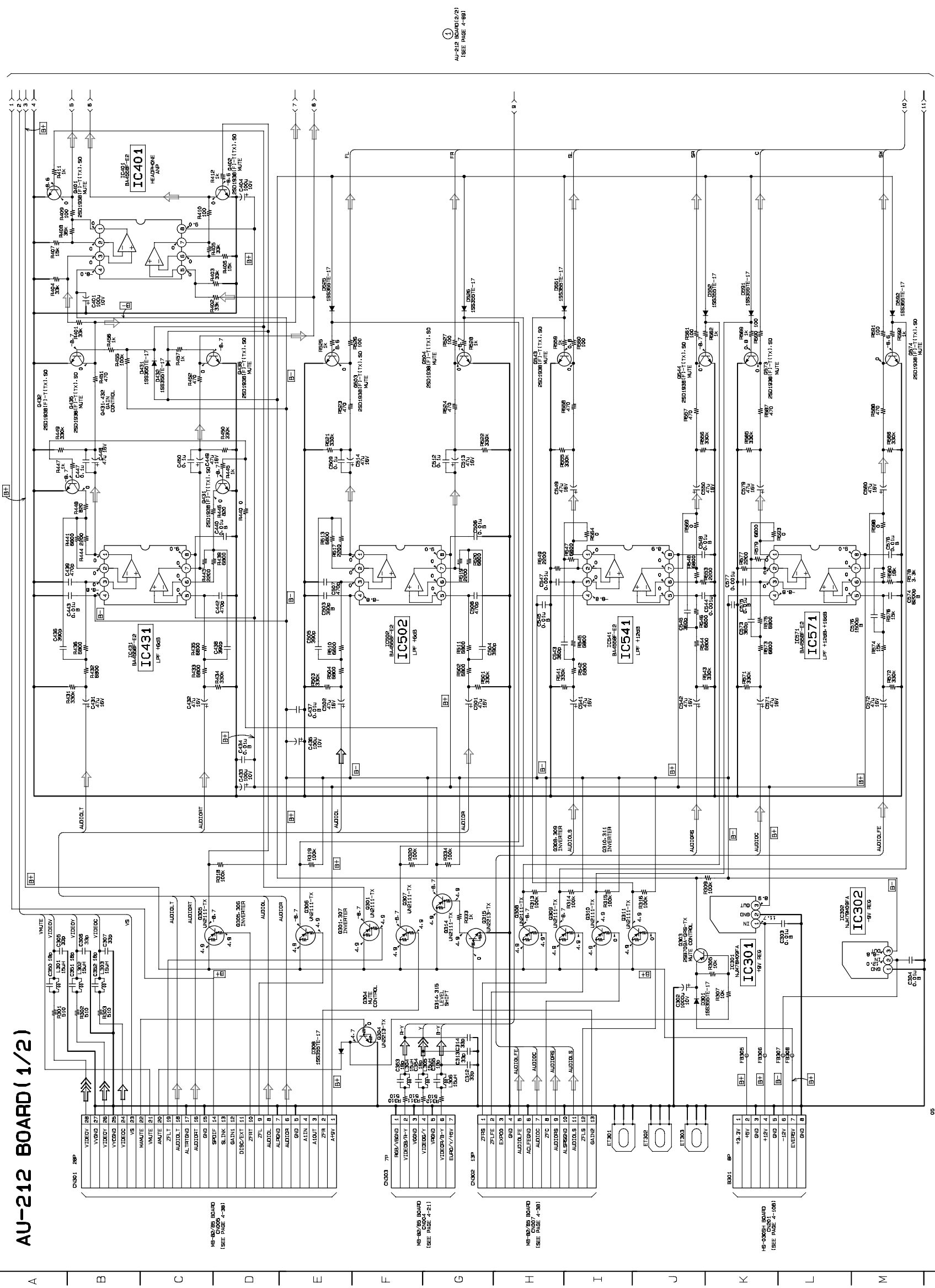
• Waveforms



**AU-212 (AUDIO) SCHEMATIC DIAGRAM**  
 - Ref. No.: AU-212 board; 2,000 series -  
 - DVP-S525D: AUS -

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

**AU-212 BOARD (1/2)**



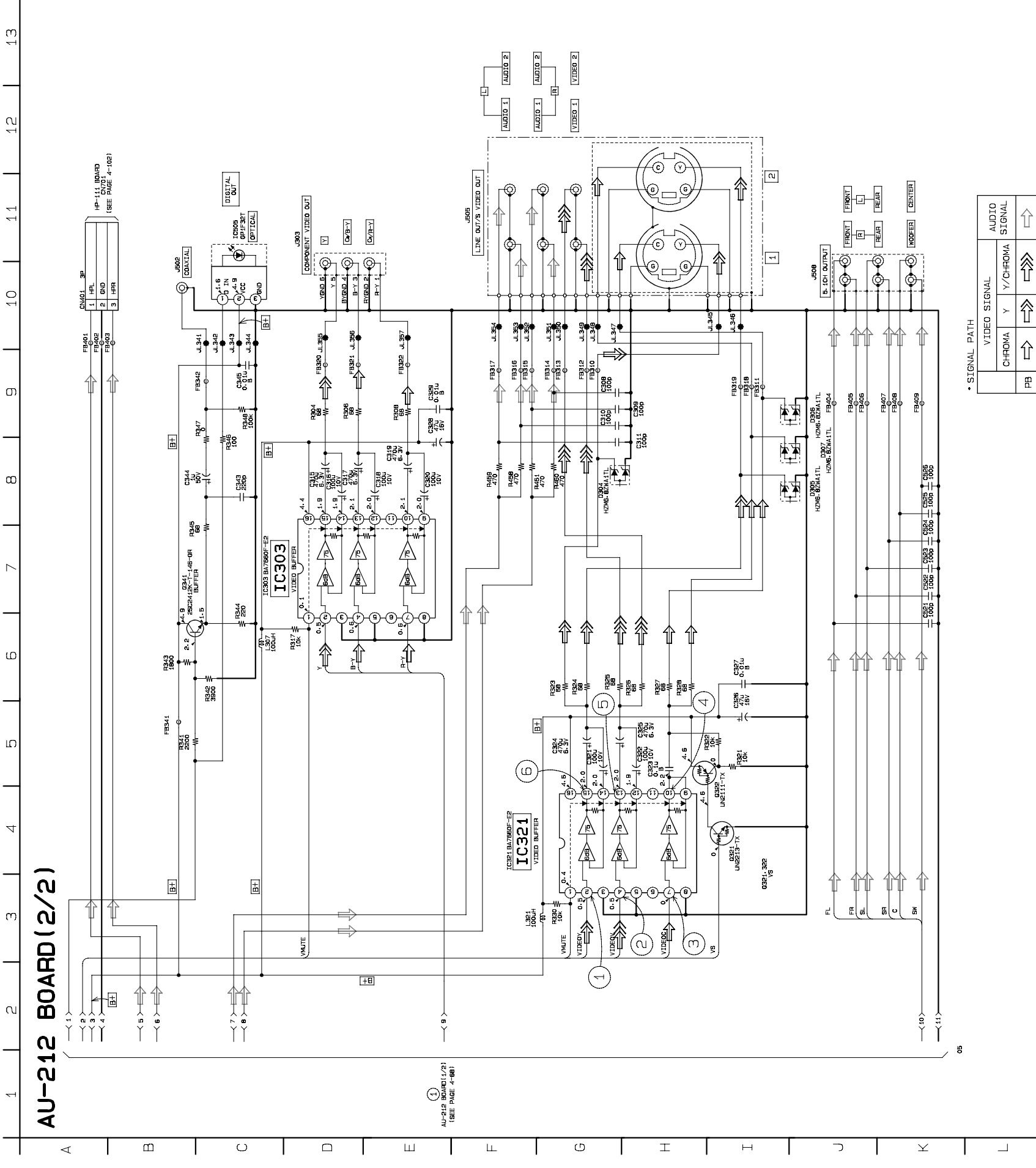
①  
 AU-212 BOARD (1/2)  
 (SEE PAGE 4-68)

• SIGNAL PATH

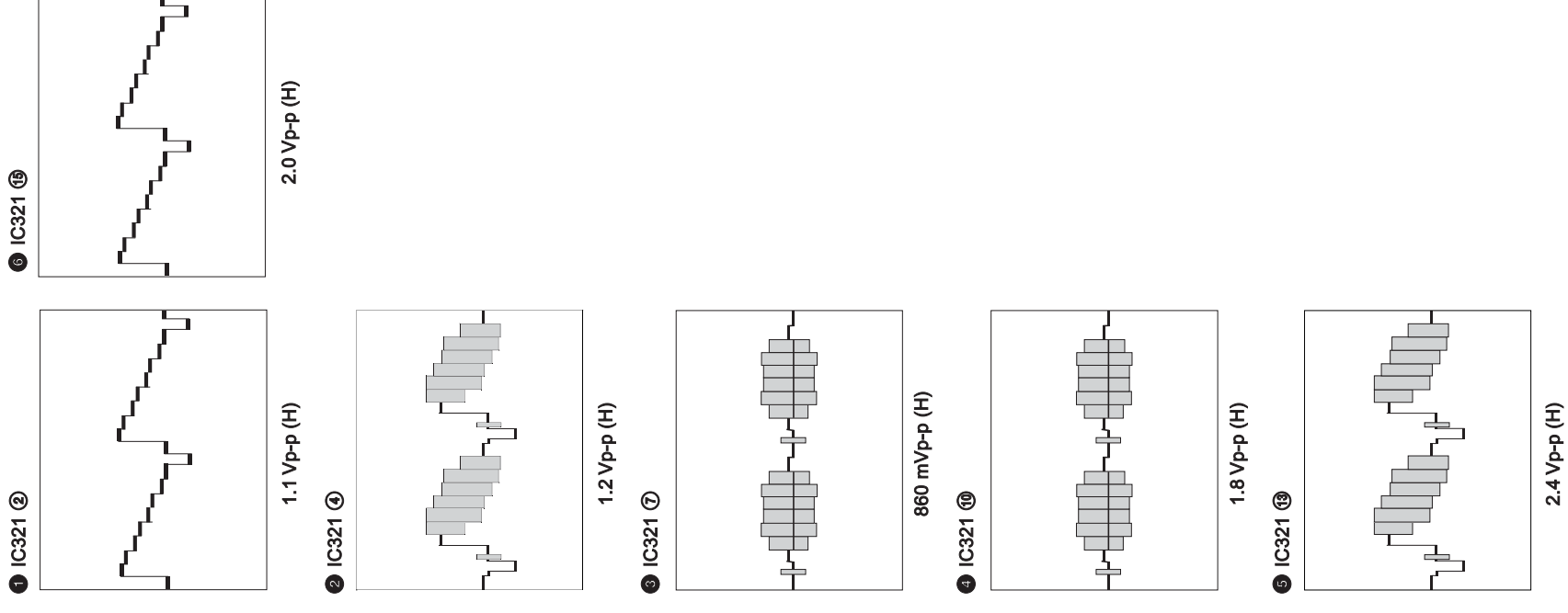
VIDEO SIGNAL	AUDIO SIGNAL
CHROMA Y	Y/CHROMA
PB	

AU-212 (VIDEO BUFFER) SCHEMATIC DIAGRAM • See page 4-65 for printed wiring board.

– Ref. No.: AU-212 board; 2,000 series –  
– DVP-S525D: AUS –

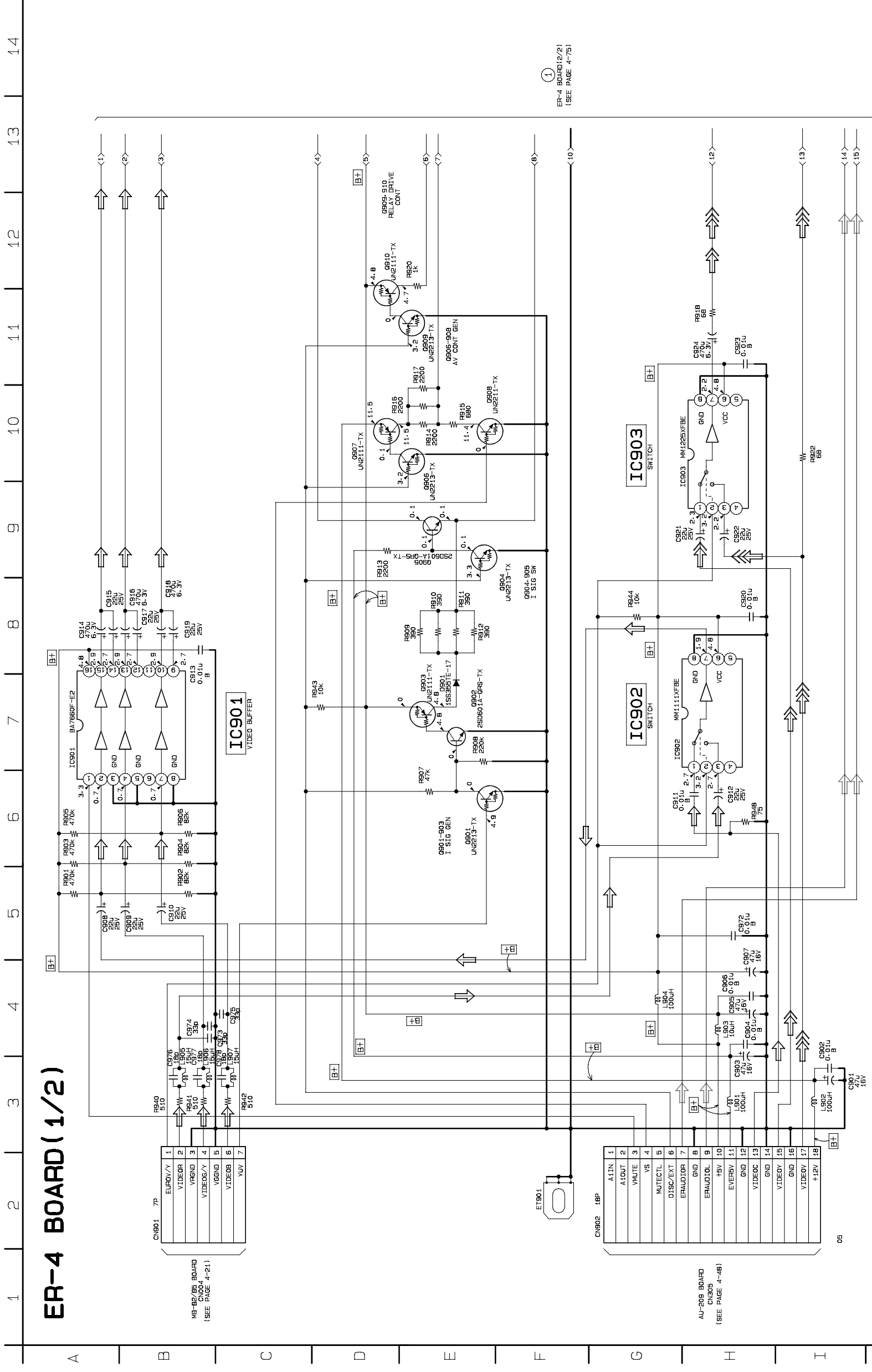


• Waveforms



ER-4 (EURO AV1) SCHEMATIC DIAGRAM • See page 4-71 for printed wiring board.

— Ref. No.: ER-4 board; 2,000 series —  
 — DVP-S325/S525D; EXCEPT AUS —



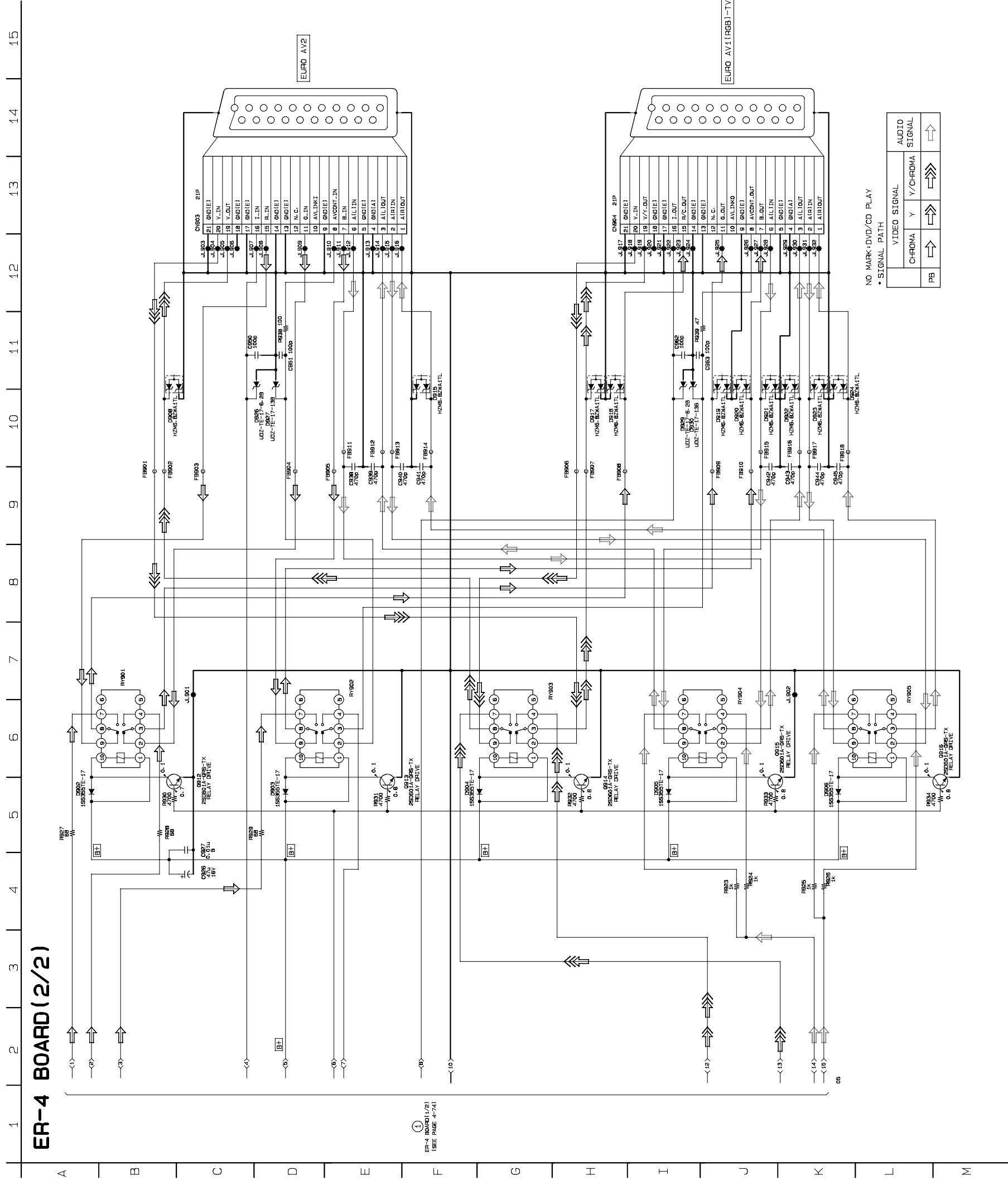
①  
 ER-4 BOARD(1/2)  
 (SEE PAGE 4-75)

NO MARK: DVD/CD PLAY  
 • SIGNAL PATH

VIDEO SIGNAL	CHROMA	↑
	Y / CHROMA	↑↑
AUDIO SIGNAL		↑↑↑
	PB	↑↑↑↑

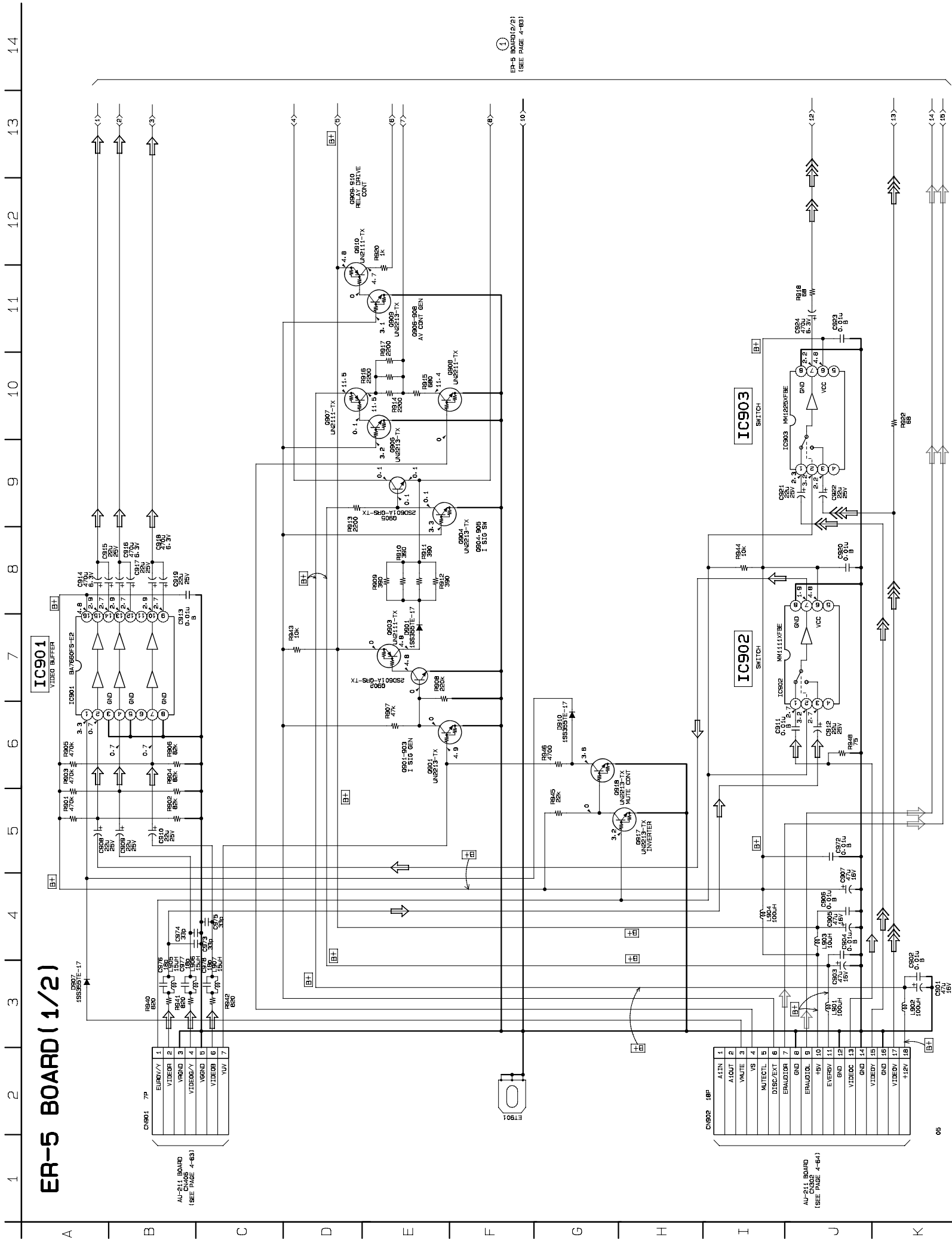
**ER-4 (EURO AV2) SCHEMATIC DIAGRAM • See page 4-71 for printed wiring board.**

— Ref. No.: ER-4 board; 2,000 series —  
 — DVP-S325/S525D: EXCEPT AUS —



NO MARK: DVD/CD PLAY  
 • SIGNAL PATH

VIDEO SIGNAL	AUDIO SIGNAL
CHROMA Y	Y/CHROMA
PB	SIGNAL



NO MARK-DVD/CD PLAY

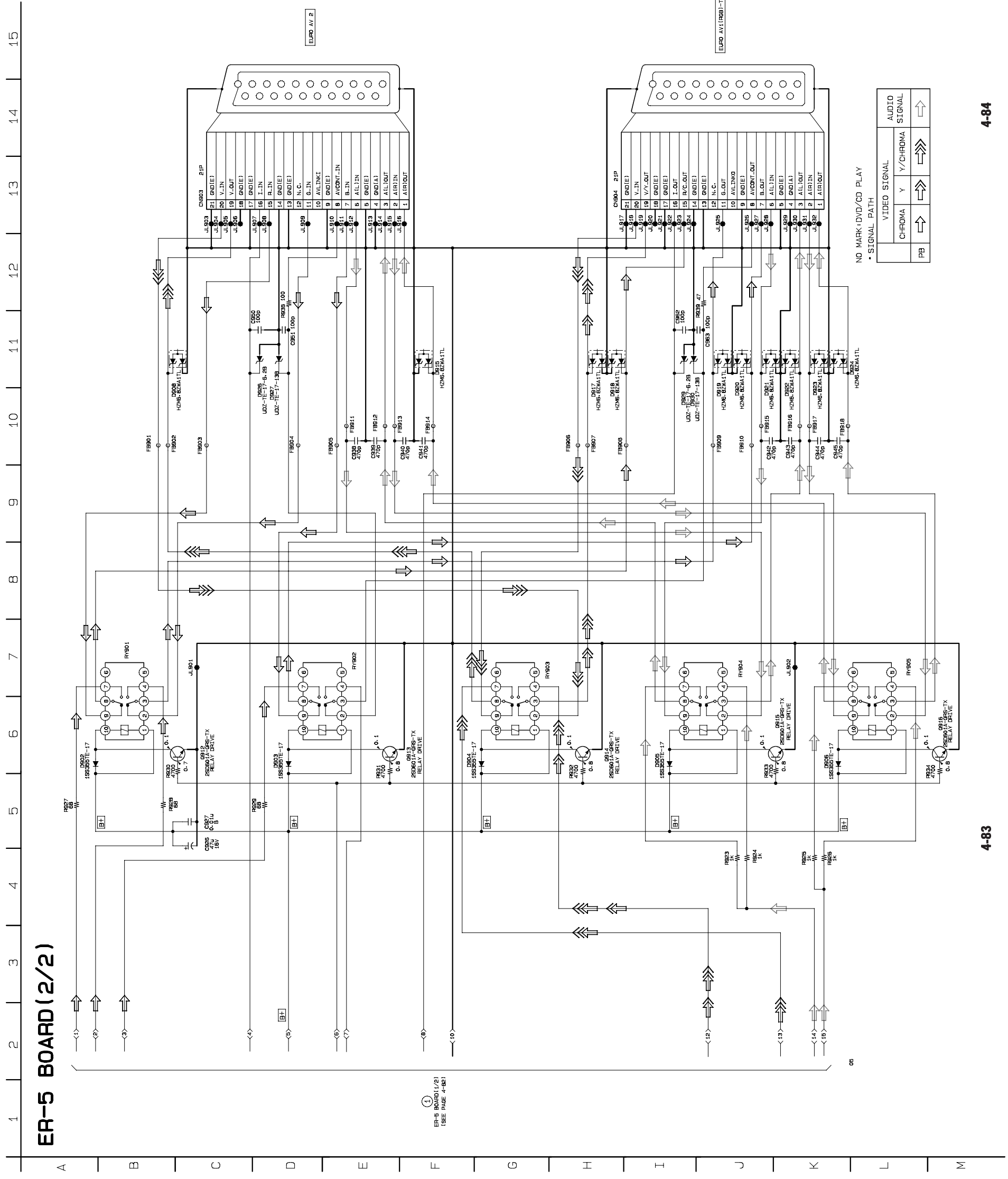
• SIGNAL PATH

	VIDEO SIGNAL	AUDIO SIGNAL
CHROMA	Y	Y/CHROMA
PB	↑	↑

ER-5 (EURO AV2) SCHEMATIC DIAGRAM • See page 4-77 for printed wiring board.

– Ref. No.: ER-5 board; 2,000 series –

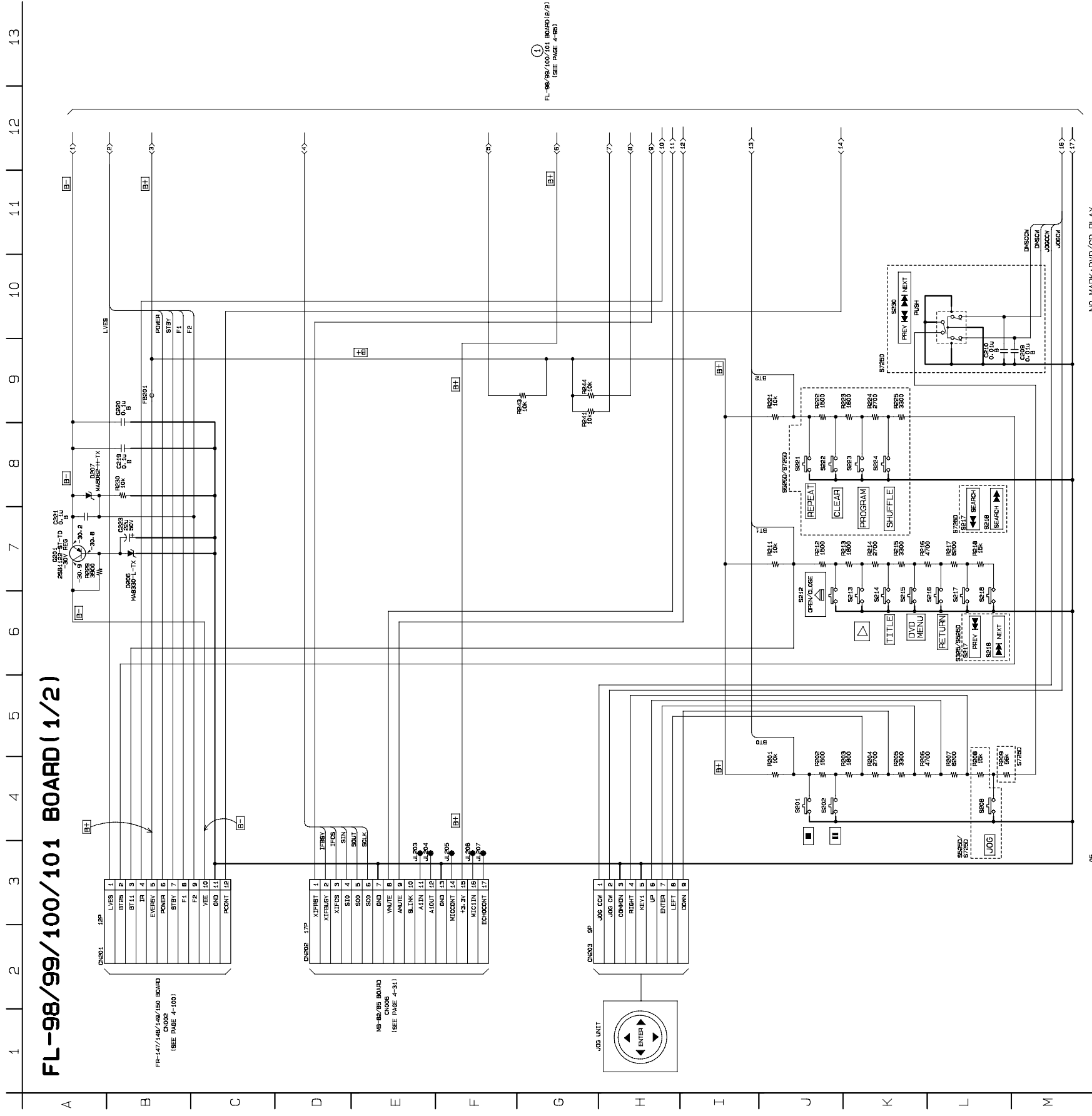
– DVP-S725D: EXCEPT AUS –





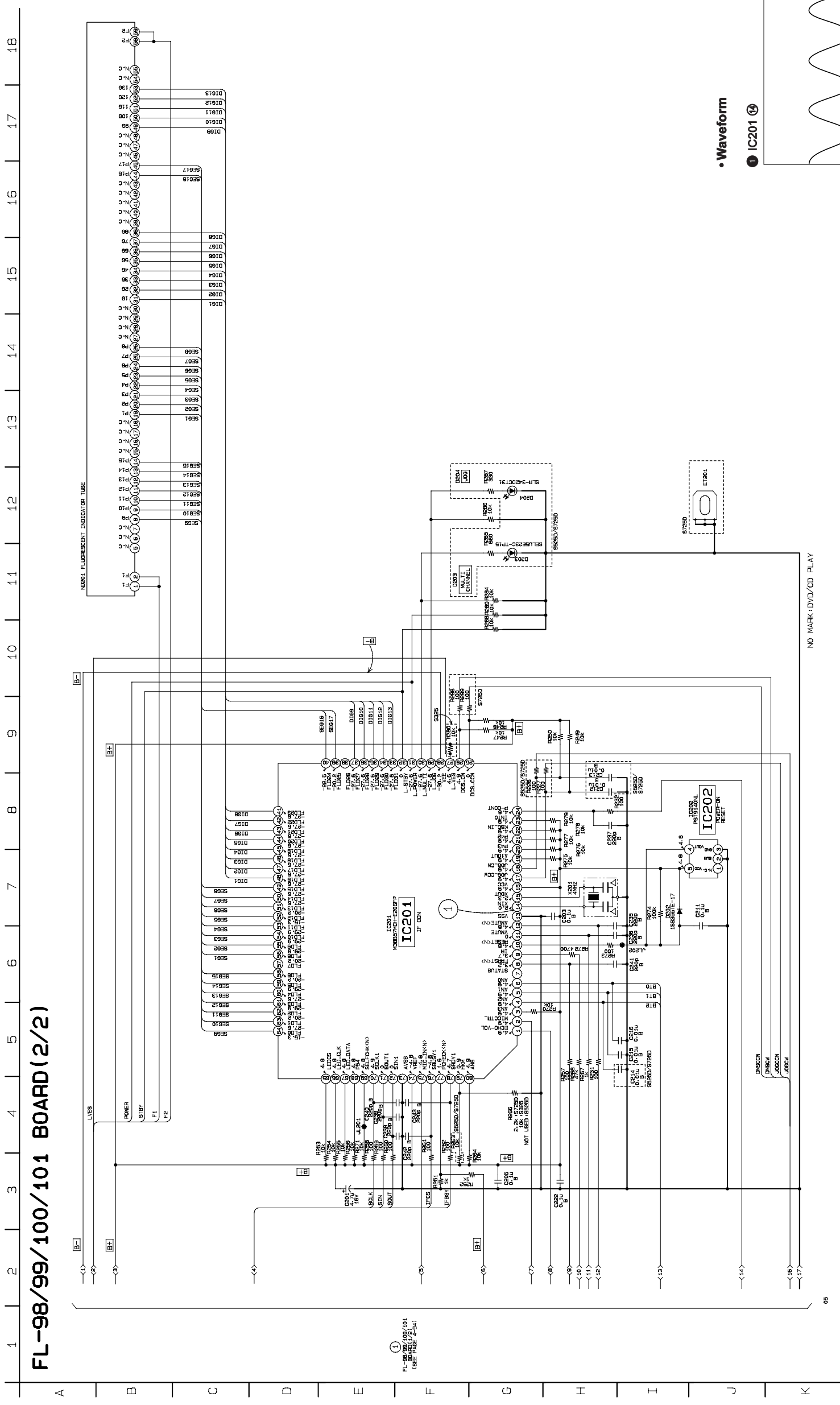
FL-98/99/100/101 (FUNCTION SWITCH) SCHEMATIC DIAGRAM • See pages 4-87 and 4-89 for printed wiring board.

— Ref. No.: FL-98/99/100/101 board; 2,000 series —



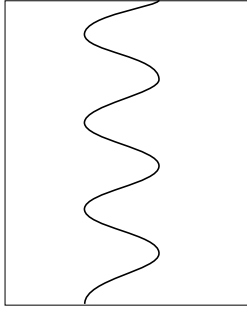
FL-98/99/100/101 (IF CON) SCHEMATIC DIAGRAM • See pages 4-87 and 4-89 for printed wiring board.

— Ref. No.: FL-98/99/100/101 board; 2,000 series —



• Waveform

① IC201



3.9 Vp-p (4 MHz)



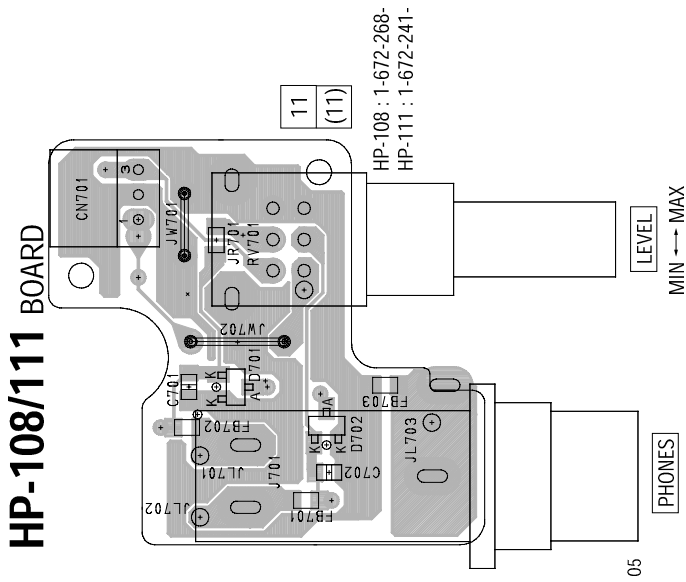
**DVP-S325/S525D/S725D**

**HP-108/109/110/111 (HEADPHONE) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM**

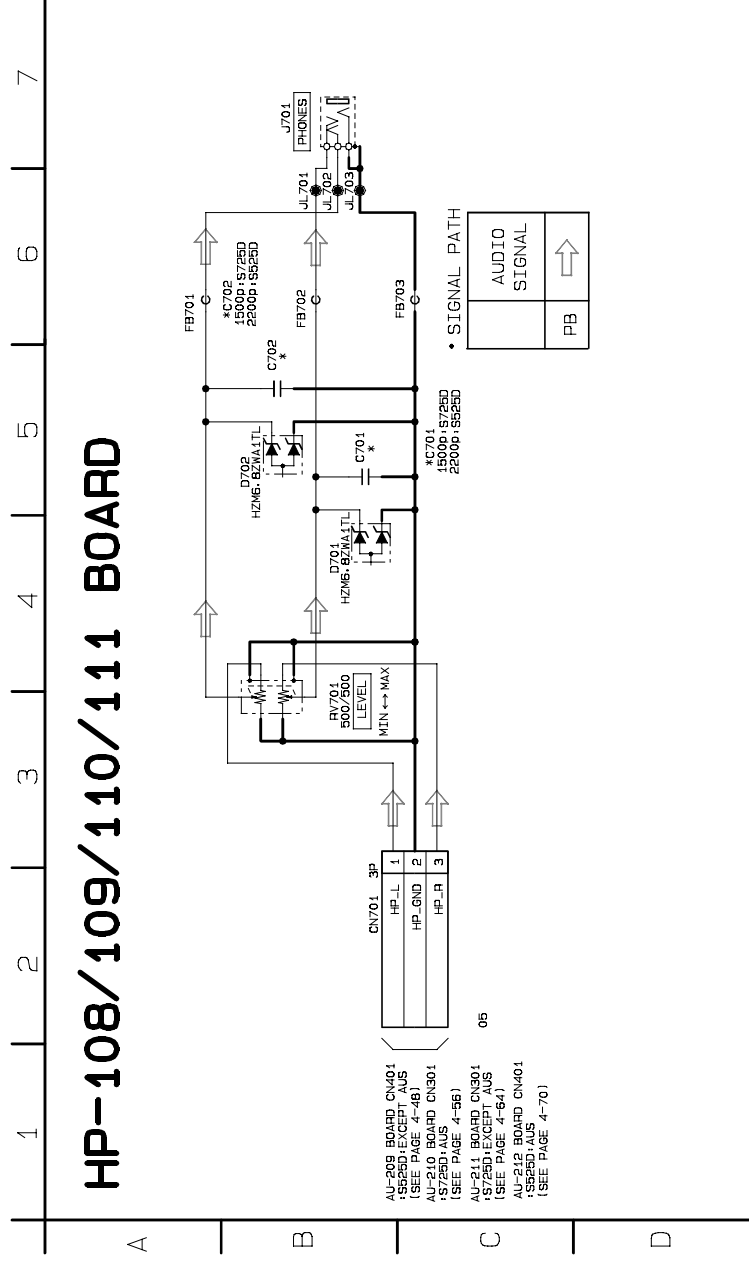
— Ref. No.: HP-108/109/110/111 board; 2,000 series —

There are few cases that the part isn't mounted in this model is printed on this diagram.

— DVP-S525D —

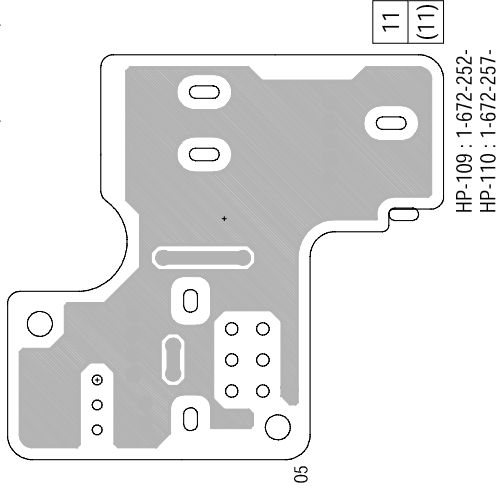


— DVP-S525D/S725D —

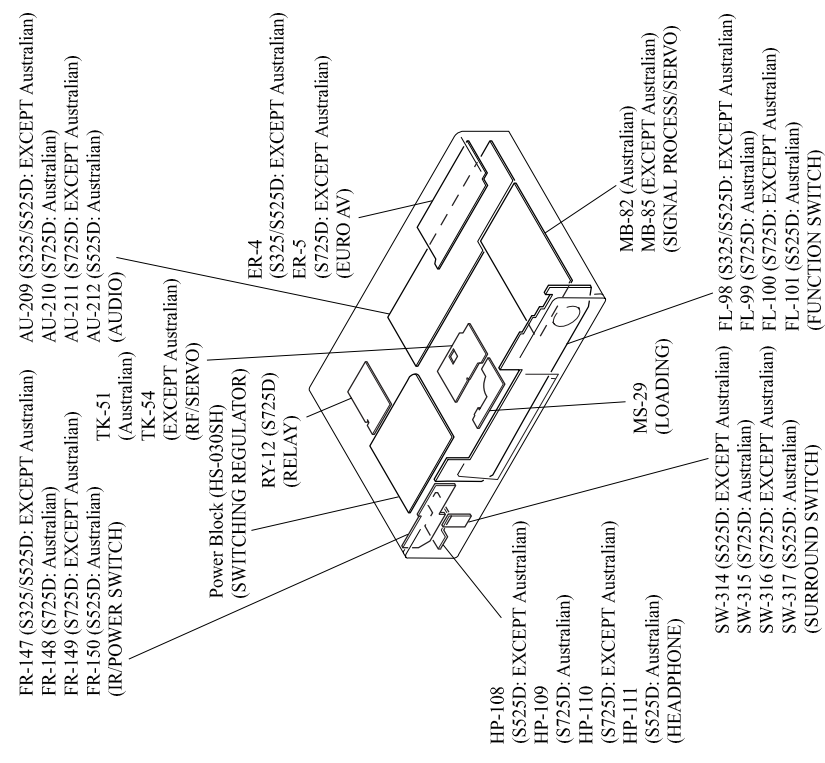
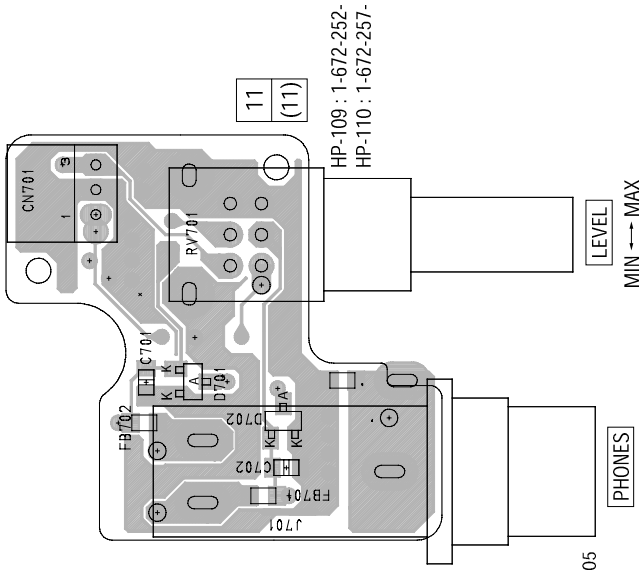


— DVP-S725D —

**HP-109/110 BOARD(SIDE A)**



**HP-109/110 BOARD(SIDE B)**



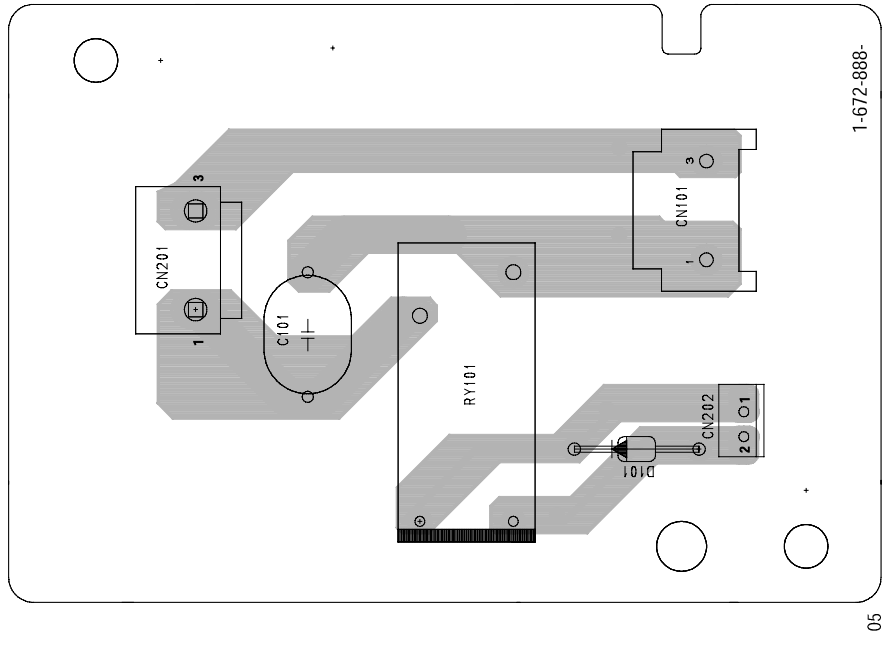
**HEADPHONE**  
**HP-108/109/110/111**

**RY-12 (RELAY) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM**

– Ref. No.: RY-12 board; 2,000 series –

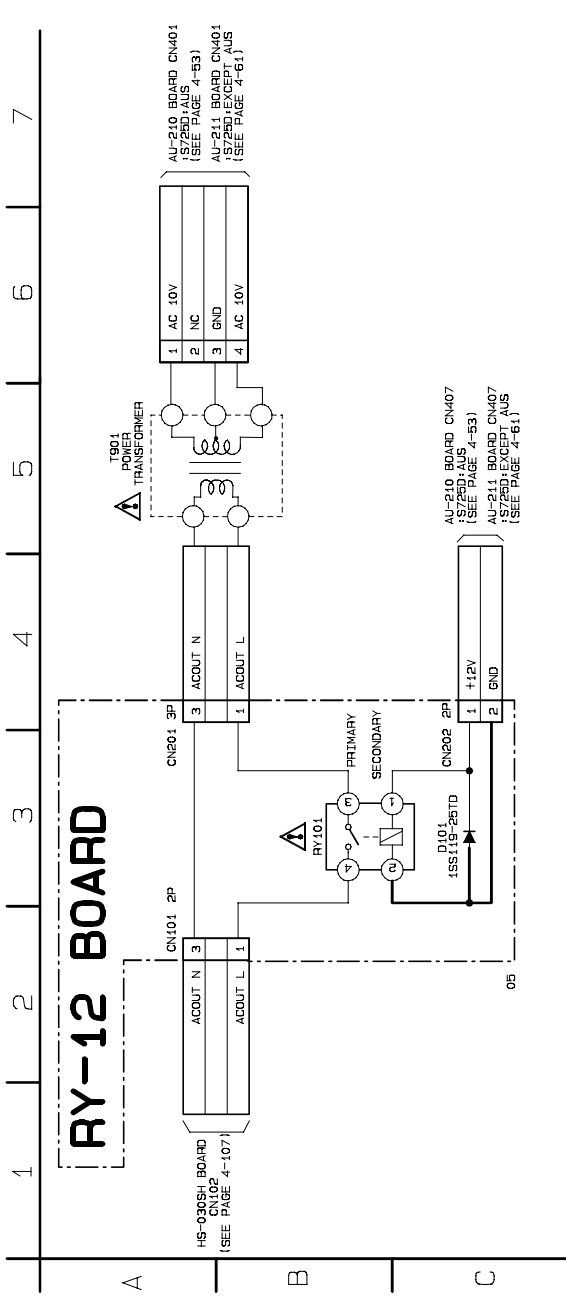
There are few cases that the part isn't mounted in this model is printed on this diagram.

**– DVP-S725D – RY-12 BOARD**



- FR-147 (S325/S525D: EXCEPT Australian)
- FR-148 (S725D: Australian)
- FR-149 (S725D: EXCEPT Australian)
- FR-150 (S525D: Australian)
- (IR/POWER SWITCH)
- TK-51 (Australian)
- TK-54 (EXCEPT Australian)
- (RF/SERVO)
- Power Block (HS-030SH) (SWITCHING REGULATOR)
- RY-12 (S725D) (RELAY)
- ER-4 (S325/S525D: EXCEPT Australian)
- ER-5 (S725D: EXCEPT Australian) (EURO AV)
- HP-108 (S525D: EXCEPT Australian)
- HP-109 (S725D: Australian)
- HP-110 (S725D: EXCEPT Australian)
- HP-111 (S525D: Australian) (HEADPHONE)
- MS-29 (LOADING)
- MB-82 (Australian)
- MB-85 (EXCEPT Australian) (SIGNAL PROCESS/SERVO)
- SW-314 (S525D: EXCEPT Australian)
- SW-315 (S725D: Australian)
- SW-316 (S725D: EXCEPT Australian)
- SW-317 (S525D: Australian) (SURROUND SWITCH)
- FL-98 (S325/S525D: EXCEPT Australian)
- FL-99 (S725D: Australian)
- FL-100 (S725D: EXCEPT Australian)
- FL-101 (S525D: Australian) (FUNCTION SWITCH)

**– DVP-S725D –**



**Note:** The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

HS-030SH (SWITCHING REGULATOR) PRINTED WIRING BOARD

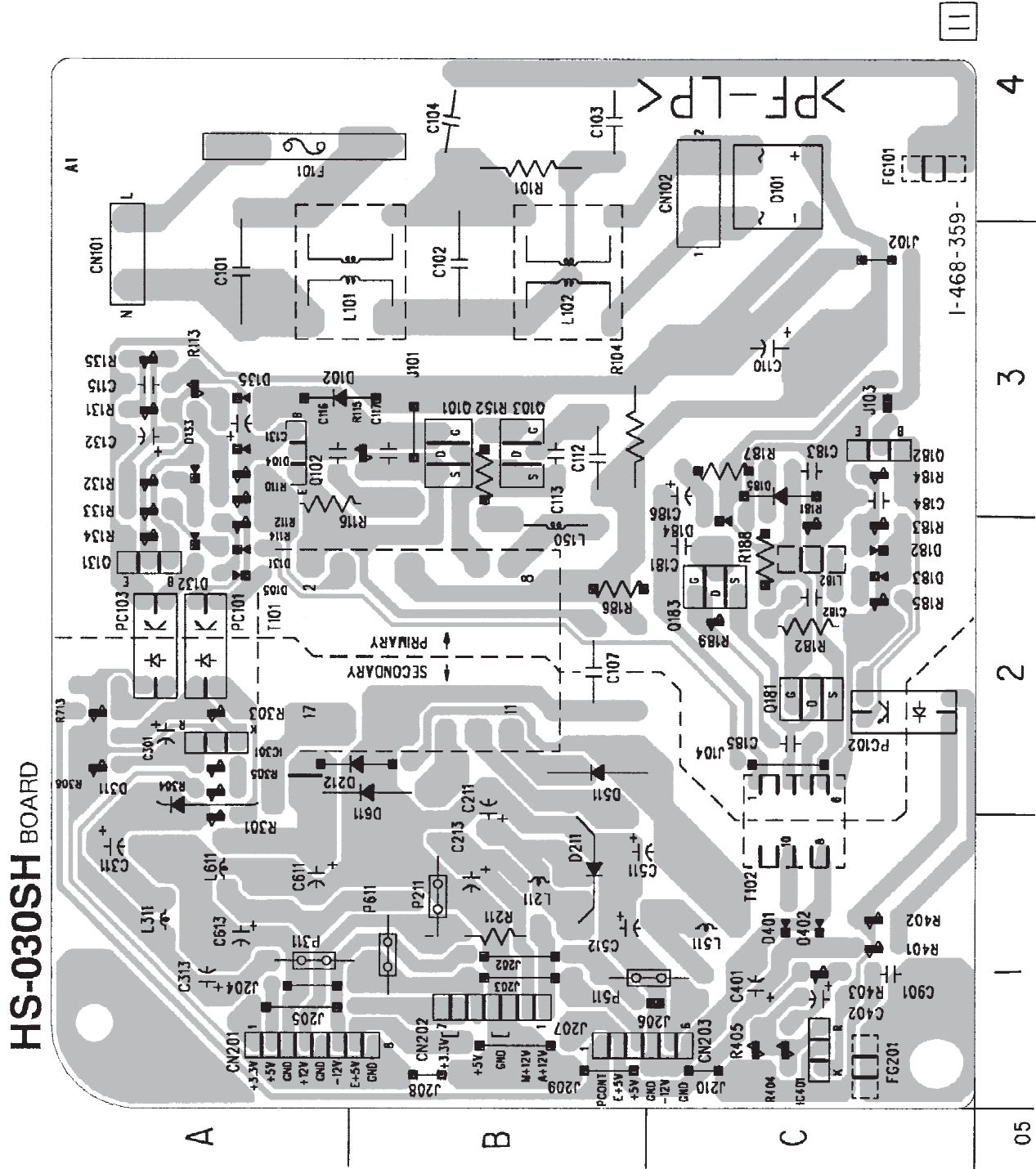
- Ref. No.: 030SH board; 6,000 series -

There are few cases that the part isn't mounted in this model is printed on this diagram.

HS-030SH BOARD

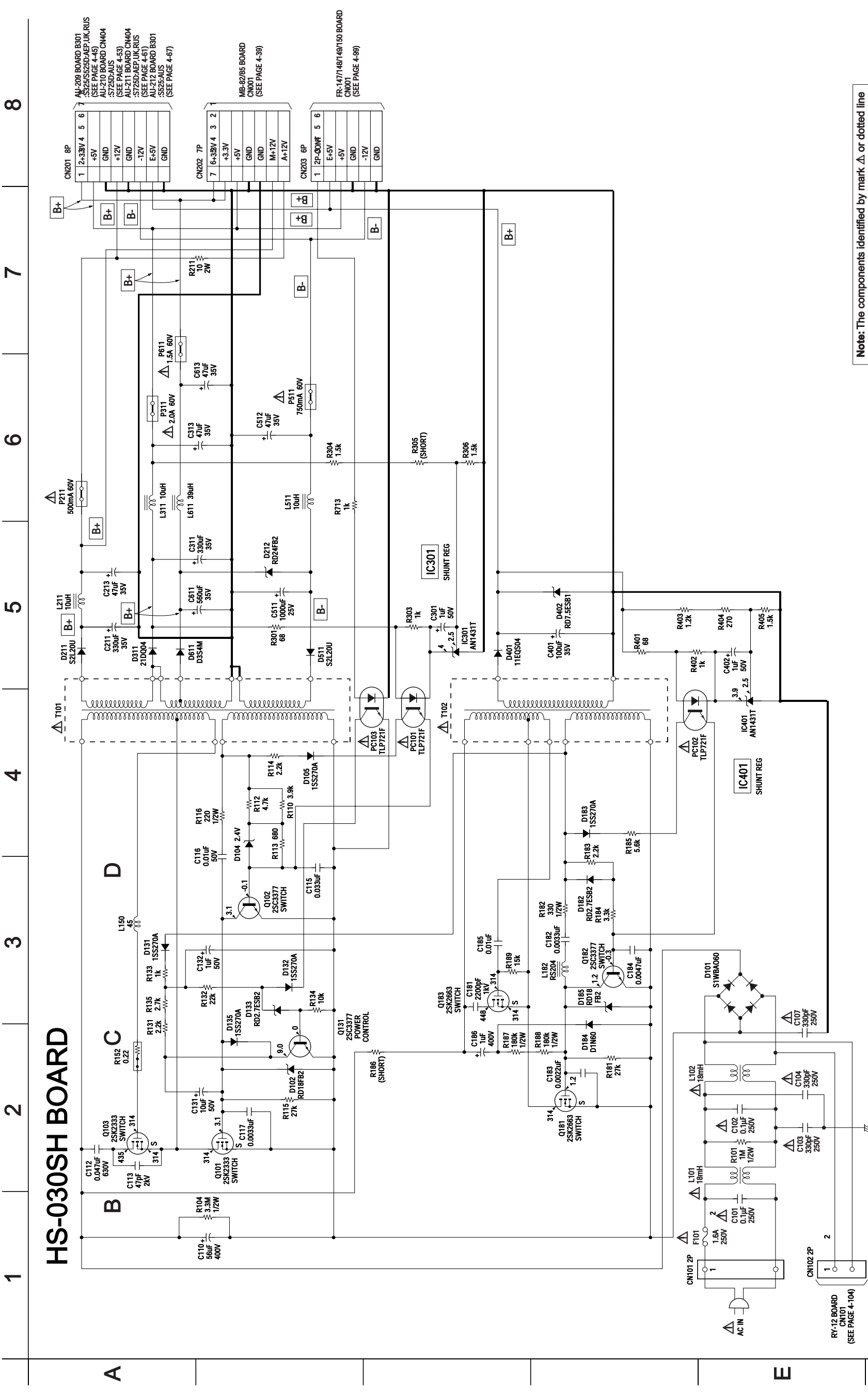
- CN101 A-3
- CN102 C-4
- CN201 A-1
- CN202 B-1
- CN203 B-1
- D101 C-4
- D102 A-3
- D104 A-3
- D105 A-2
- D131 A-2
- D132 A-2
- D133 A-3
- D135 A-3
- D182 C-2
- D183 C-2
- D184 C-2
- D185 C-3
- D211 B-1
- D212 B-2
- D311 A-2
- D401 C-1
- D402 B-2
- D511 B-2
- D611 B-2
- IC301 A-2
- IC401 C-1
- Q101 B-3
- Q102 A-3
- Q103 B-3
- Q131 A-2
- Q181 C-2
- Q182 C-3
- Q183 C-2

- FR-147 (S325/S525D: EXCEPT Australian)
- FR-148 (S725D: Australian)
- FR-149 (S725D: EXCEPT Australian)
- FR-150 (S525D: Australian)
- TK-51 (Australian)
- TK-54 (EXCEPT Australian)
- Power Block (HS-030SH) (RF/SERVO)
- RY-12 (S725D) (RELAY)
- ER-4 (S325/S525D: EXCEPT Australian)
- ER-5 (S725D: EXCEPT Australian) (EURO AV)
- MS-29 (LOADING)
- HP-108 (S525D: EXCEPT Australian)
- HP-109 (S725D: Australian)
- HP-110 (S725D: EXCEPT Australian)
- HP-111 (S525D: Australian) (HEADPHONE)
- MB-82 (Australian)
- MB-85 (EXCEPT Australian) (SIGNAL PROCESS/SERVO)
- FL-98 (S325/S525D: EXCEPT Australian)
- FL-99 (S725D: Australian)
- FL-100 (S725D: EXCEPT Australian)
- FL-101 (S525D: Australian) (FUNCTION SWITCH)
- SW-314 (S525D: EXCEPT Australian)
- SW-315 (S725D: Australian)
- SW-316 (S725D: EXCEPT Australian)
- SW-317 (S525D: Australian) (SURROUND SWITCH)



HS-030SH (SWITCHING REGULATOR) SCHEMATIC DIAGRAM

- Ref. No.: HS-030SH board; 6,000 series -



Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

## SECTION 6 TEST MODE

### 6-1. GENERAL DESCRIPTION

The Test Mode allows you to make diagnosis and adjustment easily using the remote commander and monitor TV. The instructions, diagnostic results, etc. are given on the on-screen display (OSD).

### 6-2. STARTING TEST MODE

Press **[TITLE]**, **[CLEAR]**, **[POWER]** buttons on the remote commander in this order with the power of main unit in OFF status, and the Test Mode starts, then the menu shown below will be displayed on the TV screen. At the bottom of menu screen, the model name and revision number are displayed.

To execute each function, select the desired menu and press its number on the remote commander.

To exit from the Test Mode, press the POWER button.

```
Test Mode Menu

0. Syscon Diagnosis
1. Drive Auto Adjustment
2. Drive Manual Operation
3. Mecha Aging
4. Emergency History
5. Version Information
6. Video Level Adjustment
Exit: Power Key

—
Model   : DPX12xxxx
Revision: 1.000
```

### 6-3. SYSCON DIAGNOSIS

The same contents as board detail check by serial interface can be checked from the remote commander.

On the Test Mode Menu screen, press **[0]** key on the remote commander, and the following check menu will be displayed.

```
### Syscon Diagnosis ###
      Check Menu

0. Quit
1. All
2. Version
3. Peripheral
4. Servo
5. Supply
6. AV Decoder
7. Video
8. Audio

—
```

#### 0. Quit

Quit the Syscon Diagnosis and return to the Test Mode Menu.

#### 1. All

All items continuous check

This menu checks all diagnostic items continuously. Normally, all items are checked successively one after another automatically unless an error is found, but at a certain item that requires judgment through a visual check to the result, the following screen is displayed for the key entry.

```
### Syscon Diagnosis ###

Diag All Check
No. 2 Version

2-3. ROM Check Sum
Check Sum = 2005

Press NEXT Key to Continue
Press PREV Key to Repeat

—
```

For the ROM Check, the check sum calculated by the Syscon is output, and therefore you must compare it with the specified value for confirmation.

Following the message, press **[NEXT]** key to go to the next item, or **[PREV]** key to repeat the same check again. To quit the diagnosis and return to the Check Menu screen, press **[STOP]** or **[ENTER]** key. If an error occurred, the diagnosis is suspended and the error code is displayed as shown below.

```
### Syscon Diagnosis ###

3-3. EEPROM Check
Error 03: EEPROM Write/Reed N
Address   : 00000001
Write Data: 2492
Read Data : 2490
Press NEXT Key to Continue
Press PREV Key to Repeat

—
```

Press **[STOP]** key to quit the diagnosis, or **[PREV]** key to repeat the same item where an error occurred, or **[NEXT]** key to continue the check from the item next to faulty item.

Selecting 2 and subsequent items calls the submenu screen of each item.

For example, if "5. Supply" is selected, the following submenu will be displayed.

```
### Syscon Diagnosis ###
      Check Menu
      No. 5 Supply

0. Quit
1. All
2. ARP Register Check
3. ARP to RAM Data Bus
4. ARP to RAM Address Bus
5. ARP RAM Check

—
```

#### 0. Quit

Quit the submenu and return to the main menu.

#### 1. All

All submenu items continuous check

This menu checks 2 and subsequent items successively. At the item where visual check is required for judgment or an error occurred, the checking is suspended and the message is output for key entry. Normally, all items are checked successively one after another automatically unless an error is found.



Selecting 2 and subsequent items executes respective menus and outputs the results.  
For the contents of each submenu, see “Check Items List”.

## General Description of Checking Method

### 2. Version

- (2-2) Revision  
ROM revision number is displayed.  
Error: Not detected.  
The revision number defined in the source file of ROM (IC205) is displayed with four digits.
- (2-3) ROM Check Sum  
Check sum is calculated.  
Error: Not detected.  
The 8-bit data are added at addresses 0x000F0000 ~ 0x002EFFFF of ROM (IC205) and the result is displayed with 4-digit hexadecimal number. Error is not detected. Compare the result with the specified value.
- (2-4) Model Type  
Model code is displayed.  
Error: Not detected.  
The model code read from EEPROM (IC201) is displayed with 2-digit hexadecimal number.

	Model Type	
DVP-S325 (EXCEPT Russian)	0	1
DVP-S325 (Russian)	0	2
DVP-S525D (EXCEPT Russian, Australian)	2	3
DVP-S525D (Russian)	2	4
DVP-S525D (Australian)	2	5
DVP-S725D (EXCEPT Russian, Australian)	4	3
DVP-S725D (Russian)	4	4
DVP-S725D (Australian)	4	5

- (2-5) Region  
Region code is displayed.  
Error: Not detected.  
The region code determined from the model code is displayed.

### 3. Peripheral

- (3-2) Gate Array Check  
Data write → read, and accord check  
Error 02: Gate array write/read discord  
Data 0x00~0xFF are written to the address 0xF of GA (IC601), then read and checked if they accord.
- (3-3) EEPROM Check  
Data write → read, and accord check  
Error 03: EEPROM write/read discord  
Data 0x9249, 0x2942, 0x4294 are written to addresses 0x00~0xFF of EEPROM (IC201), then read and checked. Before writing, the data are saved, then after checking, they are written to restore the contents of EEPROM.

- (3-4) NAND Flash Check  
Data clear → write → read, and accord check  
This check is conducted to the DVP-S725D only.  
Error 04: Clear error  
05: Write error  
06: Read data discord  
21: Faulty blocks exceed 10  
The data clear, write, read, and check are executed to the block 0 of Flash memory (IC602).  
In case of a faulty block, its address is displayed.  
An error is output if faulty blocks exceed 10.

### 4. Servo

- (4-2) Servo DSP Check  
Data write → read, and accord check  
Error 12: Read data discord  
Data 0x9249, 0x2942, 0x4294 are written to the address 0x602 of RAM in the Servo DSP (IC701), then read and checked.
- (4-3) DSP Driver Test  
Test signal data → DSP Driver  
Error: Not detected.  
Caution: Do not conduct this test with a mechanical deck connected.  
The maximum voltage is applied to the Servo Driver IC (IC801, IC802). If mechanical deck is connected, the motor and optics could be damaged. Disconnect mechanical deck following the output message, then enter specified 4- or 5-digit number from the remote commander, and press the **[ENTER]**. The test is conducted only when the input data accord. Check the output level, then press the **[NEXT]** to finish the test.  
This test is skipped if “All” is selected.

Supplement: How to disconnect mechanical deck  
Disconnect flat cables connected to the CN002 and CN003 of MB-82/85 board. Also, disconnect harness from the CN011.

### 5. Supply

- Caution: Do not conduct this check with a mechanical deck connected.  
An access is made to the stream supply and servo control IC (IC303) and external RAM (IC304) using check data. If mechanical deck is connected, the motor and optics could be damaged. This check is also executed by the “All” menu item.

Supplement: How to disconnect mechanical deck  
Disconnect flat cables connected to the CN002 and CN003 of MB-82/85 board. Also, disconnect harness from the CN011.

- (5-2) ARP Register Check  
Data write → read, and accord check  
Error 08: ARP register write, and read data discord  
Data 0x00 to 0xFF are written to the TMAX register (address 0xC6) in ARP (IC303), then they are read and checked.

(5-3) ARP to RAM Data Bus

Data write → read, and accord check

Error 09: ARP ↔ RAM data bus error

Data 0x0001 to 0x8000 where one bit each is set to 1 are written to the address 0 of RAM (IC304) connected to the ARP (IC303) through the bus, then they are read and checked. In case of discord, written bit pattern and read data are displayed. If data where multiple bits are 1 are read, the bits concerned may touch each other. Further, if data where certain bit is always 1 or 0 regardless of written data, the line could be disconnected or shorted.

(5-4) ARP to RAM Address Bus

Data write → other address read discord check

Error 10: ARP → RAM address bus error

Caution: Address and data display in case of an error is different from the display of other diagnosis (described later).

Before starting the test, all addresses of RAM (IC304) are cleared to 0x0000.

First, 0xA55A is written to the address 0x00000, and the address data are read and checked from addresses 0x00001 to 0x80000 while shifting 1 bit each. Next, the data at that address is cleared, and it is written to the address 0x00001, and read and checked in the same manner. This check is repeated up to the address 0x80000 while shifting the address data by 1 bit each.

If data other than 0 is read at the addresses except written address, an error is given because all addresses were already cleared to 0. In this check, the error display pattern is different from that of other diagnosis; read data, written address, and read address are displayed in this order. However, the message uses same template, and accordingly exchange Address and Data when reading. The following display, for example,

```
### Syscon Diagnosis ###

5-4. ARP to RAM Address Bus
Error 10: ARP - RAM Address B
Address      : 0000A55A
Write Data   : 00000000
Read Data    : 00080000
Press NEXT Key to Continue
Press PREV Key to Repeat
-
```

shows the data 0xA55A was read from address 0x00080000 though it was written to the address 0x00000000. This implies that these addresses are in the form of shadow. Also, if the read data is not 0xA55A, another error will be present.

(5-5) ARP RAM Check

Data write → read, and accord check

Error 11: ARP RAM read data discord

The program code data stored in ROM are copied to all areas of RAM (IC304) connected to the ARP (IC303) through the bus, then they are read and checked if they accord. If the detail check was selected initially, the data are written to all areas and read, then the same test is conducted once again with the data where all bits are inverted between 1 and 0. If discord is detected, faulty address, written data, and read data are displayed following the error code 11, and the test is suspended.

## 6. AV Decoder

(6-2) 1930 RAM

Data write → read, and accord check

Error 13: AVD RAM read data discord

The program code data stored in ROM (IC205) are copied to all areas of RAM (IC402, IC403) connected to the AVD (IC401) through the bus, then they are read and checked if they accord. Further, the same test is conducted once again with the data where all bits are inverted between 1 and 0. If discord is detected, faulty address, written data, and read data are displayed following the error code 13, and the test is suspended.

(6-3) 1930 SP

ROM → AVD RAM → Video OUT

Error: Not detected.

The data including sub picture streams in ROM (IC205) are transferred to the RAM (IC402, IC403) in AVD (IC401), and output as video signals from the AVD (IC401).

They are output from all video terminals (Composite, Y/C, Component) except EURO AV terminal.

## 7. Video

(7-2) Color Bar

AVD color bar command write → Video OUT

Error: Not detected.

The command is transferred to the AVD, and the color bar signals are output from video terminals.

They are output from all video terminals (Composite, Y/C, Component) except EURO AV terminal.

(7-3) Composite Out

EURO-AV Composite video output check

This check is executed only for European models DVP-S325/DVP-S525D (except for Australian model)/DVP-S725D (except for Australian model).

AVD color bar command write → Video (EURO-AV Composite) OUT

Error: Not detected.

With the Component of video output turned off, the color bar signals are output from the EURO-AV terminal.

(7-4) Y/C Out

EURO-AV Y/C video output check

This check is executed only for European models DVP-S325/DVP-S525D (except for Australian model)/DVP-S725D (except for Australian model).

AVD color bar command write → Video (EURO-AV Y/C) OUT

Error: Not detected.

With the Y/C of video output turned on, the color bar signals are output from the EURO-AV terminal.

(7-5) RGB Out

EURO-AV RGB video output check

This check is executed only for European models DVP-S325/DVP-S525D (except for Australian model)/DVP-S725D (except for Australian model).

AVD color bar command write → Video (EURO-AV RGB) OUT

Error: Not detected.

With the RGB of video output turned on, the color bar signals are output from the EURO-AV terminal.

- (7-6) Component Out  
 EURO-AV Component video output check  
 This check is executed only for European models DVP-S325/DVP-S525D (except for Australian model)/DVP-S725D (except for Australian model).  
 AVD color bar command write → Video (EURO-AV Component) OUT  
 Error: Not detected.  
 With the Component of video output turned on, the color bar signals are output from the EURO-AV terminal.
- (7-7) Euro AV Through  
 Euro-AV2 input check.  
 This check is executed only for European models DVP-S325/DVP-S525 (except for Australian model) /DVP-S725D (except for Australian model).  
 Check video and audio signal pass through from Euro-AV2 to Euro-AV1.  
 Error: Not detected.

## 8. Audio

- (8-2) ARP → 1930  
 Error 14 : ARP → 1930 video NG  
 15 : ARP → 1930 audio NG
- (8-3) Test Tone  
 A pink noise signal is output from the AVD (IC401) through optical coaxial digital terminal and analog audio terminal.  
 Error: Not detected.  
 For DVP-S330 (2ch models):  
 All channels → 2ch Left → 2ch Right are checked in this order.  
 For DVP-S525D/DVP-S725D (DD models):  
 All channels → 2ch Left → 2ch Right → Front Left → Front Right → Rear Left → Rear Right → Center → Sub Woofer are checked in this order.  
 Note: Sub Woofer is checked only for low-frequency components, and no sound will be heard unless a proper super woofer is connected.

### Check Items List

- 2) Version  
 (2-2) Revision  
 (2-3) ROM Check Sum  
 (2-4) Model Type  
 (2-5) Region
- 3) Peripheral  
 (3-2) Gate Array Check  
 (3-3) EEPROM Check  
 (3-4) NAND Flash Check (DVP-S725D)
- 4) Servo  
 (4-2) Servo DSP Check  
 (4-3) DSP Driver Test
- 5) Supply  
 (5-2) ARP Register Check  
 (5-3) ARP to RAM Data Bus  
 (5-4) ARP to RAM Address Bus  
 (5-5) ARP RAM Check

- 6) AV Decoder  
 (6-2) 1930 RAM  
 (6-3) 1930 SP
- 7) Video  
 (7-2) Color Bar  
 (7-3) Composite Out (DVP-S325/DVP-S525D (except for Australian model)/DVP-S725D (except for Australian model))  
 (7-4) Y/C Out (DVP-S325/DVP-S525D (except for Australian model)/DVP-S725D (except for Australian model))  
 (7-5) RGB Out (DVP-S325/DVP-S525D (except for Australian model)/DVP-S725D (except for Australian model))  
 (7-6) Component Out (DVP-S325/DVP-S525D (except for Australian model)/DVP-S725D (except for Australian model))
- 8) Audio  
 (8-2) ARP → 1930  
 (8-3) Test Tone

### Error Codes List

- 00: Error not detected  
 01: RAM write/read data discord  
 02: Gate array NG  
 03: EEPROM NG  
 04: Flash memory clear error  
 05: Flash memory write error  
 06: Flash memory read data discord  
 08: ARP register read data discord  
 09: ARP ←→ RAM data bus error  
 10: ARP ←→ RAM address bus error  
 11: ARP RAM read data discord  
 12: Servo DSP NG  
 13: 1930 SDRAM NG  
 14: ARP → 1930 video NG  
 15: ARP → 1930 audio NG  
 16: 1910 UCODE download NG  
 17: System call error (function not supported)  
 18: System call error (parameter error)  
 19: System call error (illegal ID number)  
 20: System call error (time out)  
 21: NAND Flash faulty blocks exceed 10  
 90: Error occurred  
 91: User verification NG  
 92: Diagnosis cancelled

## 6-4. DRIVE AUTO ADJUSTMENT

On the Test Mode Menu screen, press **[1]** key on the remote commander, and the drive auto adjustment menu will be displayed.

```
## Drive Auto Adjustment ##

      Adjustment Menu

0. ALL
1. DVD-SL
2. CD
3. DVD-DL
4. SACD

Exit: RETURN
```

Normally, **[0]** is selected to adjust DVD (single layer), CD, DVD (dual layer), and SACD in this order. But, individual items can be adjusted for the case where adjustment is suspended due to an error. In this mode, the adjustment can be made easily through the operation following the message displayed on the screen.

The disc used for adjustment must be the one specified for adjustment. However, for SACD disc, use the player with initial data if the disc is not available.

### 0. ALL

Select **[0]** and press **[ENTER]** key, and the servo set data in EEPROM will be initialized. Then, 1. DVD-SL disc, 2. CD disc, 3. DVD-DL disc, and 4. SACD disc are adjusted in this order. Each time one disc was adjusted, it is ejected. Replace it with the specified disc following the message. Though the message to confirm whether discs other than SACD disc are adjusted is not displayed, you can finish the adjustment if pressing the **[STOP]** button. During adjustment of each disc, the measurement for disc type judgment is made. As automatic adjustment does not judge the disc type unlike conventional models, take care not to insert wrong type discs. Also, do not give a shock during adjustment.

### 1. DVD-SL (single layer)

Select **[1]**, insert DVD single layer disc, and press **[ENTER]** key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

#### DVD Single Layer Disc Adjustment Steps

1. SLED TILT Reset
2. Disc Check Memory SL
3. Wait 300 msec
4. Set Disc Type SL
5. LD ON
6. Spdl Start
7. Wait 1 sec
8. Focus Servo ON 0
9. Auto Track Offset Adjust
10. CLVA ON
11. Wait 500 msec
12. Tracking ON
13. Wait 1 sec
14. Sled ON
15. Check CLV Lock
16. Auto LFO Adjust
17. Auto Focus Offset Adjust
18. Auto Tilt Position Adjust
19. Auto Focus Gain Adjust
20. Auto Focus Offset Adjust
21. EQ Boost Adjust
22. Auto LFO Adjust
23. Auto Track Gain Adjust, Search Check
24. 32Tj Fwd
25. 32Tj Rev
26. 500Tj Fwd
27. 500Tj Rev
  
28. All Servo Stop
29. Eep Copy Loop Filter Offset

## 2. CD

Select [2], insert CD disc, and press [ENTER] key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

### CD Adjustment Steps

1. Sled Tilt Rest
2. Disc Check Memory CD
3. Wait 500 msec
4. Set Disc Type CD
5. LD ON
6. Spdl Start
7. Wait 500 msec
8. Focus Servo ON 0
9. Auto Track Offset Adjust
10. CLVA ON
11. Wait 500 msec
12. Tracking ON
13. (TC Display Start)
14. Wait 1 sec
15. Jitter Display Start
16. Sled ON
17. Check CLV ON
18. Auto LFO Adjust
19. Auto Focus Offset Adjust
- 20.
21. Auto Focus Gain Adjust
22. Auto Focus Offset Adjust
23. Eq Boost Adjust
24. Auto LFO Adjust
25. Auto Track Gain Adjust, Search Check
26. 32Tj Fwd
27. 32Tj Rev
28. 500Tj Fwd
29. 500Tj Rev
30. All Servo Stop

## 3. DVD-DL (dual layer)

Select [3], insert DVD dual layer disc, and press [ENTER] key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

### DVD Dual Layer Disc Adjustment Steps

1. Sled Tilt Reset
2. Disc Check Memory DL
3. Wait 500 msec
4. Set Disc Type DL
5. LD ON
6. Spdl Start
7. Wait 1 sec, Layer 1 Adjust
8. Focus Servo ON 1
9. Auto Track Offset Adjust
10. Clva ON
11. Wait 500 msec
12. Tracking ON
13. Wait 500 msec
14. Sled ON
15. Check CLV Lock
16. Auto Loop Filter Offset Auto Focus Adjust
- 17.
18. Auto Focus Gain Adjust
19. Auto Focus Offset Adjust
20. Eq Boost Adjust
21. Auto Loop Filter Offset
22. Auto Track Gain Adjust, Search Check
23. 32Tj Fwd
24. 32Tj Rev
25. 500Tj Fwd
26. 500Tj Rev, Layer 0 Adjust
27. Fj (L1 -> L0)
28. Auto Track Offset Adjust L0
29. Clva ON
30. Wait 500 msec
31. Tracking ON
32. Wait 500 msec
33. Sled ON
34. Check CLV Lock
35. Auto Focus Filter Offset
36. Auto Focus Adjust
- 37.
38. Auto Focus Gain Adjust
39. Auto Focus Offset Adjust
40. Eq Boost Adjust
41. Auto Loop Filter Offset
42. Auto Track Gain Adjust, Search Check
43. 32Tj Fwd
44. 32Tj Rev
45. 500Tj fwd
46. 500Tj Rev, Layer Jump Check
47. Lj (L0 -> L1)
48. Lj (L1 -> L0)
49. All Servo Stop

#### 4. SACD

Select **[4]**, insert SACD disc, and press **[ENTER]** key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM. However, if SACD disc is not available, use the player with initial data, skipping the SACD adjustment. In this case, you can finish the adjustment if pressing the **[STOP]** button.

##### SACD Adjustment Steps

1. Sled Tilt Reset
2. Set Disc Type CD
3. LD ON
4. Spdl Start
5. Wait 500 msec
6. Focus Servo ON 0
7. Auto track Offset Adjust
- 8.
9. CLVA ON
10. Wait 500 msec
11. Tracking ON
12. Wait 1 sec
13. Sled ON
14. Check CLV ON
15. Auto Focus Offset Adjust
- 17.
18. Auto Focus Gain Adjust
19. Auto Focus Offset Adjust
20. Eq Boost Adjust
21. Auto LFO Adjust
22. Auto Track Gain Adjust
  
23. 32Tj Fwd
24. 32Tj Rev
25. 500Tj Fwd
26. 500Tj Rev
  
27. All Servo Stop \*/

#### 6-5. DRIVE MANUAL OPERATION

On the Test Mode Menu screen, select **[2]**, and the manual operation menu will be displayed. For the manual operation, each servo on/off control and adjustment can be executed manually.

```

## Drive Manual Operation ##

                Operation Menu
1. Disc type
2. Servo Control
3. Track/Layer Jump
4. Manual Adjustment
5. Auto Adjustment
6. Memory Check

0. Disc Check Memory

                Exit: Return
    
```

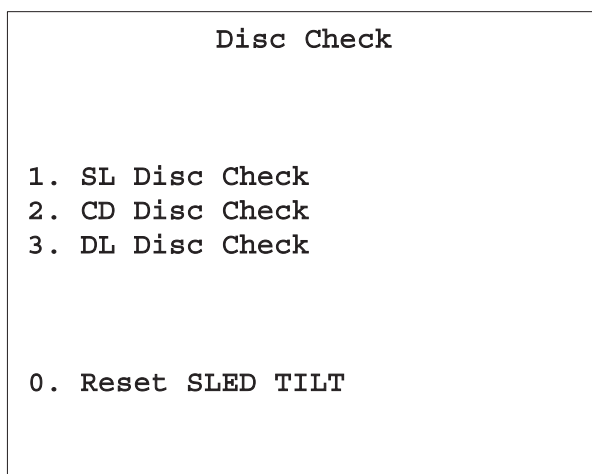
In using the manual operation menu, take care of the following points. These commands do not provide protection, thus requiring correct operation. The sector address or time code field is displayed when a disc is loaded.

1. Set correctly the disc type to be used on the Disc Type screen.  
The disc type must be set after a disc was loaded.  
The set disc type is cleared when the tray is opened.
2. After power ON, if the Drive Manual Operation was selected, first perform "Reset SLED TILT" by opening 1. Disc Type screen.
3. In case of an alarm, immediately press the **[STOP]** button to stop the servo operation, and turn the power OFF.

Basic operation (controllable from front panel or remote commander)

<b>[POWER]</b>	Power OFF
<b>[STOP]</b>	Servo stop
<b>[OPEN/CLOSE]</b>	Stop+Eject/Loading
<b>[RETURN]</b>	Return to Operation Menu or Test Mode Menu
<b>[NEXT], [PREV]</b>	Transition between sub modes of menu
<b>[1] to [9], [0]</b>	Selection of menu items
Cursor UP/DOWN	Increase/Decrease in manually adjusted value

## 0. Disc Check Memory



On this screen, the mirror time is measured to judge the disc and it is written to the EEPROM. First load DVD SL disc and press [1], next load CD disc and press [2], and finally load DVD DL disc and press [3].

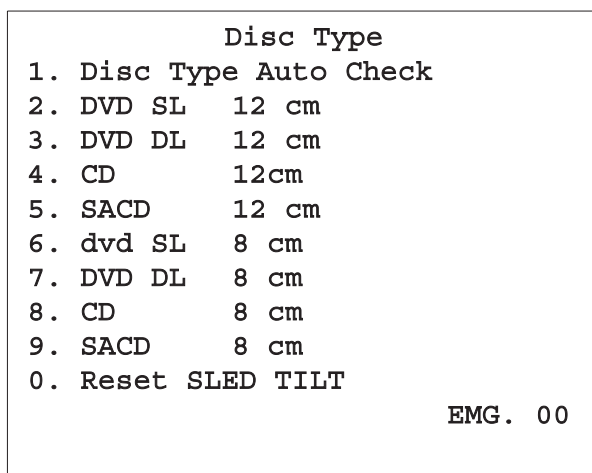
The adjustment must be executed more than once after default data were written. External vibration or shock to the player must not be given. Reference value for DVD is from 10 to 20, and for CD, from 28 to 4F.

Check that the value of CD is larger than that of DVD.

When those values are beyond a range perform this adjustment again.

From this screen, you can go to another mode by pressing [NEXT] or [PREV] key, but you cannot enter this mode from another mode. You can enter this mode from the Operation Menu screen only.

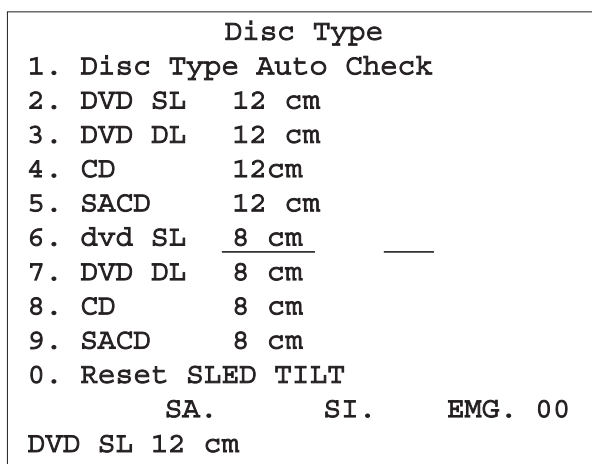
### 1. Disc Type



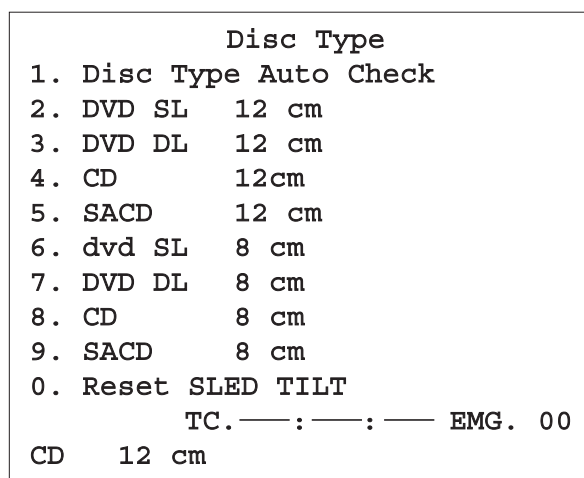
On this screen, select the disc type. To select the disc type, press the number of the loaded disc. The selected disc type is displayed at the bottom. Selecting [1] automatically selects and displays the disc type. In case of wrong display, retry "Disc Check Memory". Also, opening the tray causes the set disc type to be cleared. In this case, set the disc type again after loading.

In performing manual operation, the disc type must be set.

Once the disc type has been selected, the sector address or time code display field will appear as shown below. These values are displayed when PLL is locked.



*Display when DVD SL 12cm disc was selected*



*Display when CD 12cm disc was selected*

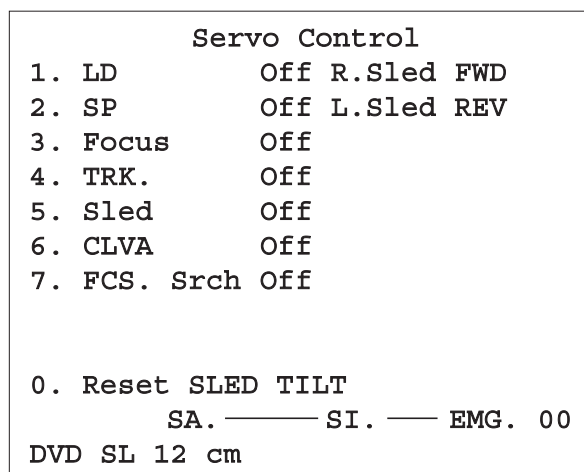
[0] Reset SLED TILT Reset the Sled and Tilt to initial position.

[1] Disk Type Check Judge automatically the loaded disc. As the judged result is displayed at the bottom of screen, make sure that it is correct.

If Disc Check Memory menu has not been executed after EEPROM default setting, the disc type cannot be judged. In this case, return to the initial menu and make a check for three types of discs (SL, DL, CD).

[2] to [9] Select the loaded disc. The adjusted value is written to the address of selected disc. No further entry is necessary if [1] was selected.

### 2. Servo Control



On this screen, the servo on/off control necessary for replay is executed. Normally, turn on each servo from 1 sequentially and when CLVA is turned on, the usual trace mode becomes active. In the trace mode, DVD sector address or CD time code is displayed. This is not displayed where the spindle is not locked.

The spindle could run overriding the control if the spindle system is faulty or RF is not present. In such a case, do not operate CLVA.

- 0 Reset SLED TILT      Reset the Sled and Tilt to initial position.
- 1 LD                      Turn ON/OFF the laser.
- 2 SP                      Turn ON/OFF the spindle.
- 3 Focus                   Search the focus and turn on the focus.
- 4 TRK                    Turn ON/OFF the tracking servo.
- 5 Sled                    Turn ON/OFF the sled servo.
- 6 CLVA                   Turn ON/OFF normal servo of spindle servo.
- 7 FCS. Srch              Apply same voltage as that of focus search to the focus drive to check the focus drive system.
- Sled FWD              Move the sled outward. Perform this operation with the tracking servo turned off.
- ← Sled REV              Move the sled inward. Perform this operation with the tracking servo turned off.
- ↑ Tilt UP                Move the tilt upward.
- ↓ Tilt DOWN             Move the tilt downward.

The following menus are normally not used.

### 3. Track/Layer Jump

### 4. Manual Adjustment

### 5. Auto Adjustment

The persons who do not know well about these menus should not use them.

## 6. Memory Check

EEPROM DATA				
	CD	- DVD -		
ID No.	00	SACD	SL	L0 L1
Focus Gain	xx xx	xx xx	xx xx	xx
TRK. Gain	xx xx	xx xx	xx xx	xx
Focus Offset	xx xx	xx xx	xx xx	xx
TRK. Offset	xx xx	xx xx	xx xx	xx
L. F. Offset	xx xx	xx xx	xx xx	xx
EQ Boost	xx xx	xx xx	xx xx	xx
Jitter	xx xx	xx xx	xx xx	xx
Mirror Time	xx xx	xx xx	xx xx	xx
- CLEAR: Default Set				

This screen displays current servo adjusted data stored in the EEPROM. Though adjusted data can be initialized with the **[CLEAR]** key, they cannot be restored after initialization.

So, before clearing, make a note of the adjusted data.

For reference, the drive has been designed so that the gain center value is 20 and offset value is 80. Other values will be in a range of 10 to 80. If extreme value such as 00 or FF is set, adjustment will be faulty. In such a case, check for disc scratch or cable disconnection, then perform adjustment again.

## 6-6. MECHA AGING

```

### Mecha Aging ###

Press OPEN key

Abort: STOP key

```

On the Test Mode Menu screen, selecting **[3]** executes the aging of mechanism. First, open the tray and load a disc. Press the **[PLAY]** key, and the aging will start. When the tray is closed, the disc type and size are judged and displayed. During aging, the repeat cycle is displayed. Aging can be aborted at any time by pressing the **[STOP]** key. After the operation has stopped, unload the disc and press again the **[STOP]** key or the **[RETURN]** key to return to the Test Mode Menu.

## 6-7. EMERGENCY HISTORY

```

### MEG. History ###

Laser Hours      CD    xxxxxxxxh
                  DVD   xxxxxxxxh

1. 00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00

2. 00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00

Select: 1 - 9    Scroll: UP/DOWN
(1: Last EMG.)   Exit: Return

```

On the Test Mode Menu screen, selecting **[4]** displays the information such as servo emergency history. The history information from last 1 up to 10 can be scrolled with **[↑]** key or **[↓]** key. Also, specific information can be displayed by directly entering that number with ten keys.

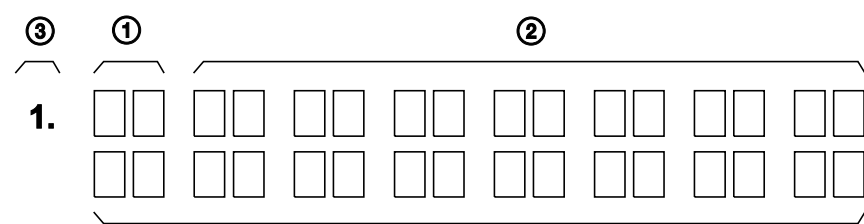
The upper two lines display the laser ON total hours. Data below minutes are omitted.

### Clearing History Information

- Clearing laser hours
  - ⊙ Press **[DISPLAY]** and **[CLEAR]** keys in this order. Both CD and DVD data are cleared.
- Clearing emergency history
  - ⊙ Press **[TITLE]** and **[CLEAR]** keys in this order.
- Initializing set up data
  - ⊙ Press **[DVD]** and **[CLEAR]** keys in this order. The data have been initialized when "Set Up Initialized" message is displayed. The EMG. History screen will be restored soon.



## How to see Emergency History



①: Emergency Code

②: Don't Care

These codes are used for verification of software designing.

③: Historical order 1 to 9

## Emergency Codes List

- 10: Communication to IC001 (TK-51/54 board) failed.
- 11: Each servo for focus, tracking, and spindle is unlocked.
- 12: Communication to EEPROM, IC201 (MB-82/85 board) failed.
- 13: Writing of hours meter data to EEPROM, IC201 (MB-82/85 board) failed.
- 14: Communication to Servo DSP IC701 (MB-82/85 board) failed, or Servo DSP is faulty.
- 20: Initialization of tilt servo and sled servo failed. They are not placed in the initial position.
- 21: Tilt servo operation error
- 22: Syscon made a request to move the tilt servo to wrong position.
- 23: Sled servo operation error
- 24: Syscon made a request to move the sled servo to wrong position.
- 30: Tracking balance adjustment error
- 31: Tracking gain adjustment error
- 32: Focus balance adjustment error
- 33: Focus bias adjustment error
- 34: Focus gain adjustment error
- 35: Tilt servo adjustment error
- 36: RF equalizer adjustment error
- 37: RF group delay adjustment error
- 38: Jitter value after adaptive servo operation is too large.
- 40: Focus servo does not operate.
- 41: With a dual layer (DL) disc, focus jump failed.50: CLV (spindle) servo does not operate.
- 51: Spindle does not stop.
- 60: With a DVD disc, Syscon made a request to seek nonexistent address.
- 61: With a CD disc, Syscon made a request to seek nonexistent address.
- 62: With a CD disc, Syscon made a request to seek nonexistent track No. and index No.
- 63: With a DVD disc, seeking of target address failed.
- 64: With a CD disc, seeking of target address failed.
- 65: With a CD disc, seeking of target index failed.
- 70: With a DVD disc, physical information data could not be read.
- 71: With a CD disc, TOC data could not be read.
- 80: Disc type judgment failed.
- 81: As disc type judgment failed, retry was repeated.
- 82: As disc type judgment failed, a measurement error occurred.
- 83: Disc type could not be judged within the specified time.
- 84: Illegal command code was received from Syscon.
- 85: Illegal command was received from Syscon.

## 6-8. VERSION INFORMATION

## Version Information ##	
IF con.	Ver. x. xxx (xxxx) Group 00
SYScon.	Ver. x. xxx (xxxx) Model xx Region 0x SW1 ?? SW2 ??
Exit: RETURN	

On the Test Mode Menu screen, selecting **[5]** displays the ROM version and region code.

The parenthesized hexadecimal number in version field is checksum value of ROM.

## 6-9. VIDEO LEVEL ADJUSTMENT

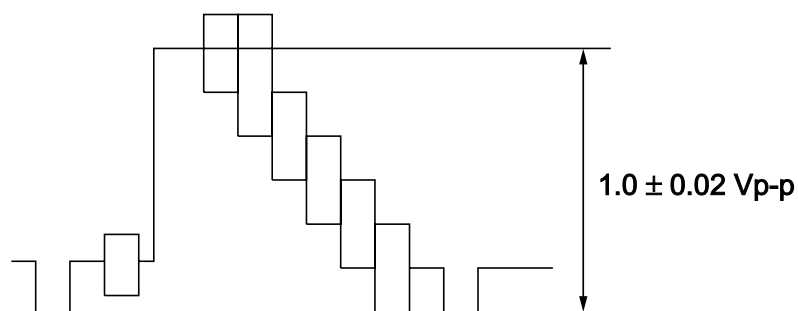
On the Test Mode Menu screen, selecting **[6]** displays color bars for video level adjustment. During display of color bars, OSD disappears but the menu screen will be restored if pressing any key.

Measurement point : LINE OUT VIDEO  
(75 Ω terminating resistance)

Measuring instrument : Oscilloscope

Adjustment device : RV401 on MB-82/85 board

Specified value :  $1.0 \pm 0.02$  Vpp



## SECTION 7 ELECTRICAL ADJUSTMENT

In making adjustment, refer to 7-3. Adjustment Related Parts Arrangement.

**Note:** During diagnostic check, the characters and color bars can be seen only with the NTSC monitor. Therefore, for diagnostic check, use the monitor that supports both NTSC and PAL modes.

Use the reference disc for PAL for check, and use the reference disc for NTSC for adjustment.

This section describes procedures and instructions necessary for adjusting electrical circuits in this set.

### Instruments required:

- 1) Color monitor TV
- 2) Oscilloscope 1 or 2 phenomena, band width over 100 MHz, with delay mode
- 3) Frequency counter (over 8 digits)
- 4) Digital voltmeter
- 5) Standard commander (RMT-D108O/D108P/D109P/D111O/D111P)
- 6) DVD reference disc  
 HLX-501 (J-6090-071-A) (dual layer) (NTSC)  
 HLX-503 (J-6090-069-A) (single layer) (NTSC)  
 HLX-504 (J-6090-088-A) (single layer) (NTSC)  
 HLX-505 (J-6090-089-A) (dual layer) (NTSC)  
 HLX-506 (J-6090-077-A) (single layer) (PAL)  
 HLX-507 (J-6090-078-A)(dual layer) (PAL)
- 7) SACD reference disc  
 HLXA-509 (J-6090-090-A)

## 7-1. POWER SUPPLY ADJUSTMENT

### 1. HS-030SH Board

Mode	E-E
Instrument	Digital voltmeter
+5 V Check	
Test point	CN202 pin ⑤
Specification	$5.0 \pm 0.2$ Vdc
+3.3 V Check	
Test point	CN202 pin ⑦
Specification	$3.3 \pm 0.2$ Vdc
EVER+5 V Check	
Test point	CN203 pin ②
Specification	$5.0 \pm 0.2$ Vdc
P_CONT Check	
Test point	CN203 pin ①
Specification	4V – 5 Vdc
A +12 V Check	
Test point	CN202 pin ①
Specification	$9.5^{+1.5}_{-0.5}$ Vdc
-12 V Check	
Test point	CN203 pin ⑤
Specification	$-12.0 \pm 1.0$ Vdc
M +12 V Check	
Test point	CN202 pin ②
Specification	$12.0 \pm 1.0$ Vdc

### Checking method:

- 1) Confirm that each voltage satisfies the specification.

## 7-2. ADJUSTMENT OF VIDEO SYSTEM

### 1. Video Level Adjustment (MB-82/85 BOARD)

#### <Purpose>

This adjustment is made to satisfy the NTSC standard, and if not adjusted correctly, the brightness will be too large or small.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	LINE OUT (VIDEO) connector (75 Ω terminated)
Instrument	Oscilloscope
Adjusting element	RV401
Specification	$1.0 \pm 0.02$ Vp-p

#### Adjusting method:

- 1) In the test mode initial menu "6" Video Level Adjustment, set so that color bars are generated.
- 2) Adjust the RV401 to attain  $1.0 \pm 0.02$  Vp-p.



Figure 7-1

### 2. S-terminal Output Check (MB-82/85 BOARD)

#### <Purpose>

Check S-terminal video output. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with a S-terminal cable.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	S VIDEO OUT (S-Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	$1.0 \pm 0.1$ Vp-p

#### Checking method:

- 1) In the test mode initial menu "6" Video Level Adjustment, set so that color bars are generated.
- 2) Confirm that the S-Y level is  $1.0 \pm 0.1$  Vp-p.



Figure 7-2

### 3. Checking Component Video Output B-Y (MB-82/85 BOARD) (DVP-S525D: Australian/S725D)

#### <Purpose>

This checks component video output B-Y. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	COMPONENT VIDEO OUT (B-Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	$700 \pm 70$ mVp-p

#### Checking method:

- 1) Confirm that the B-Y level is  $700 \pm 70$  mVp-p.

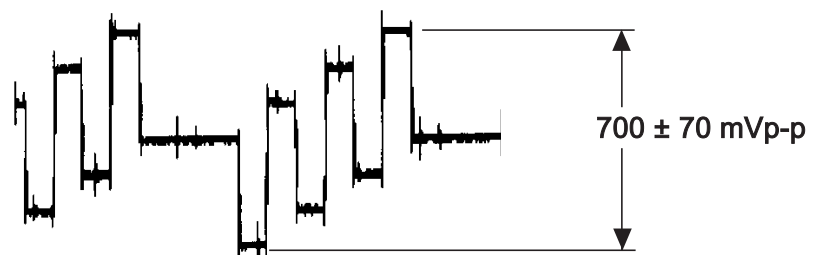


Figure 7-3

### 4. Checking Component Video Output R-Y (MB-82/85 BOARD) (DVP-S525D: Australian/S725D)

#### <Purpose>

This checks component video output R-Y. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	COMPONENT VIDEO OUT (R-Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	$700 \pm 70$ mVp-p

#### Checking method:

- 1) Confirm that the R-Y level is  $700 \pm 70$  mVp-p.

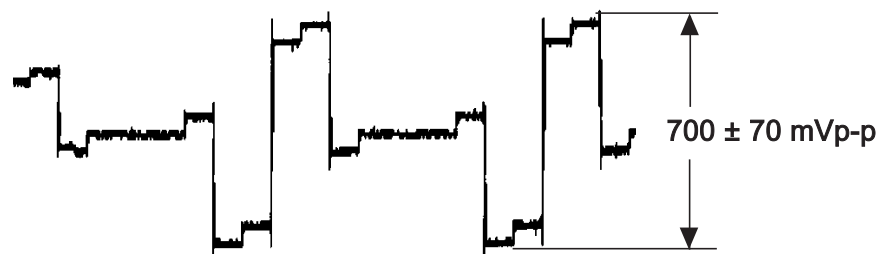


Figure 7-4

**5. Checking Component Video Output Y  
(MB-82/85 BOARD) (DVP-S525D: Australian/S725D)**

**<Purpose>**

This checks component video output Y. If it is incorrect, correct brightness will not be attained when connected to, for instance, projector.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	COMPONENT VIDEO OUT (Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.0 ± 0.1 Vp-p

**Checking method:**

- 1) Confirm that the Y level is 1.0 ± 0.1 Vp-p.

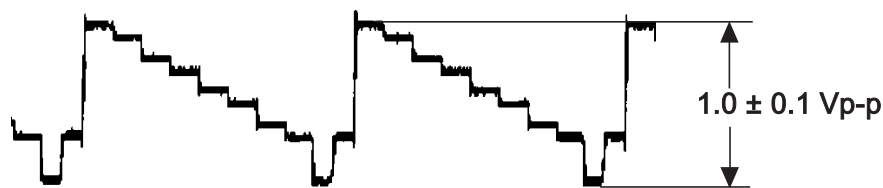


Figure 7-5

**6. Checking RGB Output R  
(MB-85 BOARD) (AEP, UK, Russian model)**

**<Purpose>**

This checks RGB output R. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with an EURO AV connecting cord.

Mode	In test mode, Push [0] for Syscon Diagnosis and push [7] for Video and push [5] for RGB out
Signal	Color bars
Test point	EURO AV 1 (RGB)-TV connector pin ⑮ (75 Ω terminated)
Instrument	Oscilloscope
Specification	700 ± 70 mVp-p

**Checking method:**

- 1) Confirm that the R level is 700 ± 70 mVp-p.

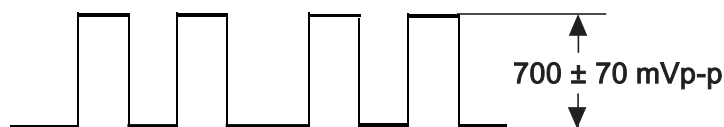


Figure 7-6

**7. Checking RGB Output G  
(MB-85 BOARD) (AEP, UK, Russian model)**

**<Purpose>**

This checks RGB output G. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with an EURO AV connecting cord.

Mode	In test mode, Push [0] for Syscon Diagnosis and push [7] for Video and push [5] for RGB out
Signal	Color bars
Test point	EURO AV 1 (RGB)-TV connector pin ⑰ (75 Ω terminated)
Instrument	Oscilloscope
Specification	700 ± 70 mVp-p

**Checking method:**

- 1) Confirm that the G level is 700 ± 70 mVp-p.

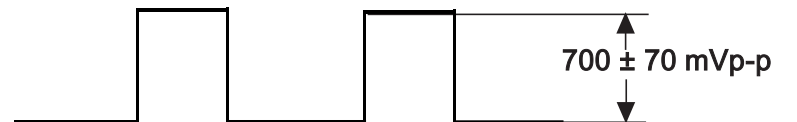


Figure 7-7

**8. Checking RGB Output B  
(MB-85 BOARD) (AEP, UK, Russian model)**

**<Purpose>**

This checks RGB output B. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with an EURO AV connecting cord.

Mode	In test mode, Push [0] for Syscon Diagnosis and push [7] for Video and push [5] for RGB out
Signal	Color bars
Test point	EURO AV 1 (RGB)-TV connector pin ⑰ (75 Ω terminated)
Instrument	Oscilloscope
Specification	700 ± 70 mVp-p

**Checking method:**

- 1) Confirm that the B level is 700 ± 70 mVp-p.

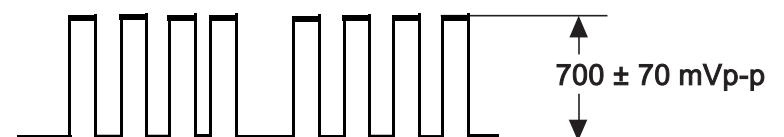


Figure 7-8

## 9. Checking S Video Output S-C (MB-82/85 BOARD)

### <Purpose>

This checks whether the S-C satisfies the NTSC Standard. If it is not correct, the colors will be too dark or light.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	S VIDEO OUT (S-C) connector (75 $\Omega$ terminated)
Instrument	Oscilloscope
Specification	286 $\pm$ 50 mVp-p (NTSC) 300 $\pm$ 100 mVp-p (PAL)

### Checking method:

- 1) In the test mode initial menu "6" Video Level Adjustment, set so that color bars are generated.
- 2) Confirm that the S-C burst is 300  $\pm$  100 mVp-p.



Figure 7-9