

HCD-MG510AV

SERVICE MANUAL


US Model

Ver 1.0 2001.04



HCD-MG510AV are the Amplifier, CD player, Tape Deck and Tuner section in MHC-MG510AV.

This stereo system is equipped with the Dolby* Pro Logic Surround decoder.

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CD Section	Model Name Using Similar Mechanism	HCD-MG310AV
	CD Mechanism Type	CDM64-K1BD44A
	Base Unit Name	BU-K1BD44A
	Optical Pick-up Name	KSM-213BFN
TAPE Section	Model Name Using Similar Mechanism	HCD-MG310AV
	Tape Transport Mechanism Type	CM8L6Z511A

SPECIFICATIONS

Amplifier section

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

with 8 ohm loads both channels driven, from 120 – 10,000 Hz; rated 75 watts per channel minimum RMS power, with no more than 10% total harmonic distortion from 250 milliwatts to rated output.

Front speaker:

Continuous RMS power output

75 + 75 watts
(8 ohms at 1 kHz,
10% THD)

Total harmonic distortion less than 0.09%
(8 ohms at 1 kHz,
40 watts)

Center speaker:

Continuous RMS power output

45 watts
(8 ohms at 1 kHz,
10% THD)

Rear speaker:

Continuous RMS power output

45 + 45 watts
(8 ohms at 1 kHz,
10% THD)

Sub woofer:

Continuous RMS power output

45 watts
(8 ohms at 100 Hz,
10% THD)

Inputs

VIDEO/MD IN (phono jacks):

voltage 250 mV/450 mV,
impedance 47 kilohms

5.1CH:

FRONT (phono jacks):

voltage 450 mV,
impedance 47 kilohms

REAR (phono jacks):

voltage 450 mV,
impedance 47 kilohms

CENTER (phono jack):

voltage 450 mV,
impedance 47 kilohms

SUB WOOFER (phono jack):

voltage 450 mV,
impedance 47 kilohms

Outputs

PHONES (stereo phone jack):

accepts headphones of
8 ohms or more

FRONT SPEAKER: accepts impedance of 8 to 16 ohms

SURROUND SPEAKER REAR: accepts impedance of 8 to 16 ohms

SURROUND SPEAKER CENTER: accepts impedance of 8 ohms

SURROUND SPEAKER SUB WOOFER: accepts impedance of 8 ohms

CD player section

System

Compact disc and digital audio system
Semiconductor laser
($\lambda = 780 \text{ nm}$)

Laser

Emission duration: continuous
2 Hz – 20 kHz ($\pm 0.5 \text{ dB}$)
780 – 790 nm
More than 90 dB
More than 90 dB

Frequency response

Wavelength

Signal-to-noise ratio

Dynamic range

OPTICAL OUT (CD)

(Square optical connector jack, rear panel)

Wavelength

Output Level

660 nm
-18 dBm

Tape player section

Recording system

Frequency response

4-track 2-channel stereo
40 – 13,000 Hz ($\pm 3 \text{ dB}$),
using Sony TYPE I
cassette

Wow and flutter

$\pm 0.15\%$ W.Peak (IEC)
0.1% W.RMS (NAB)
 $\pm 0.2\%$ W.Peak (DIN)

– Continued on next page –

COMPACT DISC DECK RECEIVER

9-873-812-11

2001D0500-1

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Sony Corporation

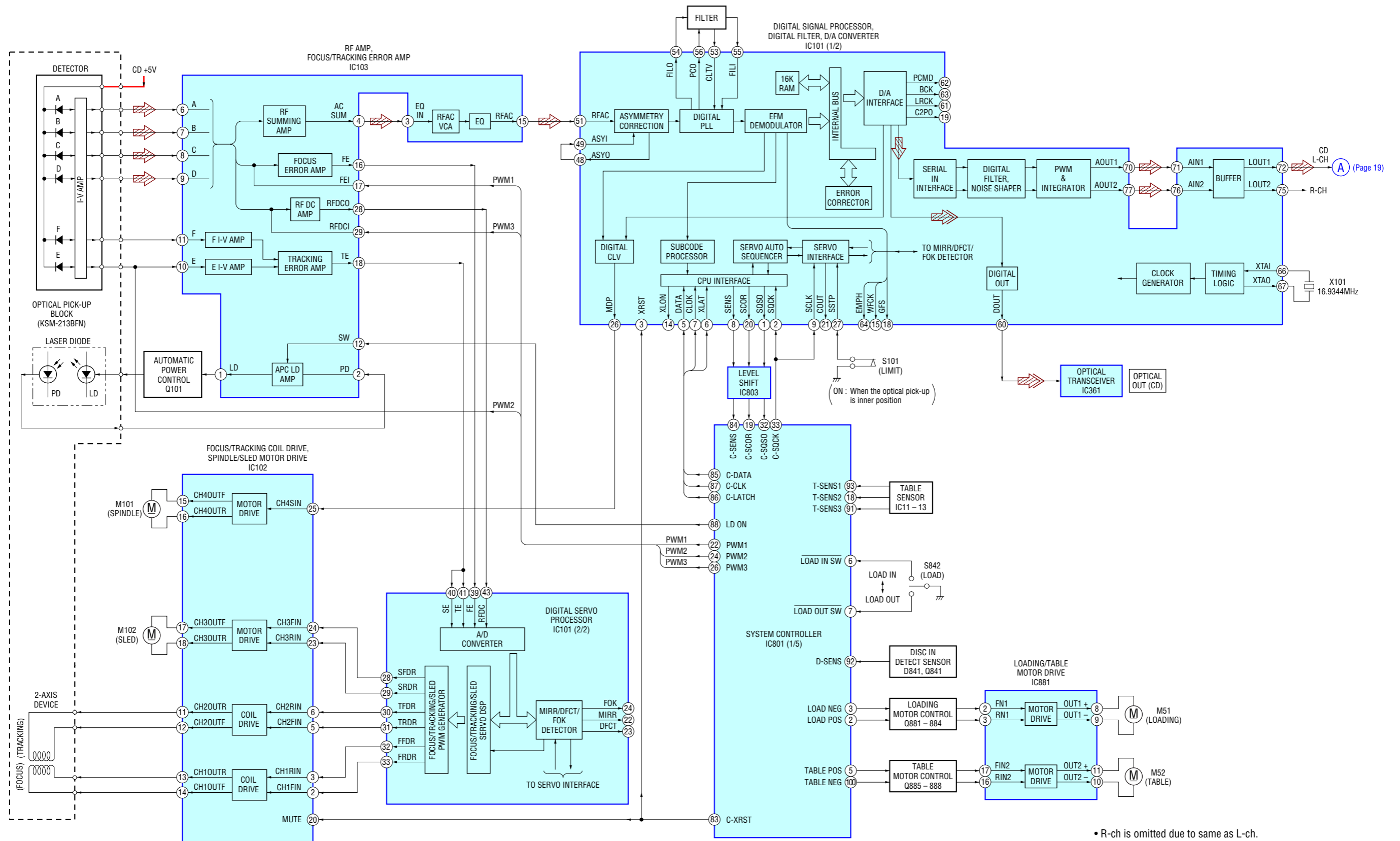
Home Audio Company

Shinagawa Tec Service Manual Production Group

SONY®

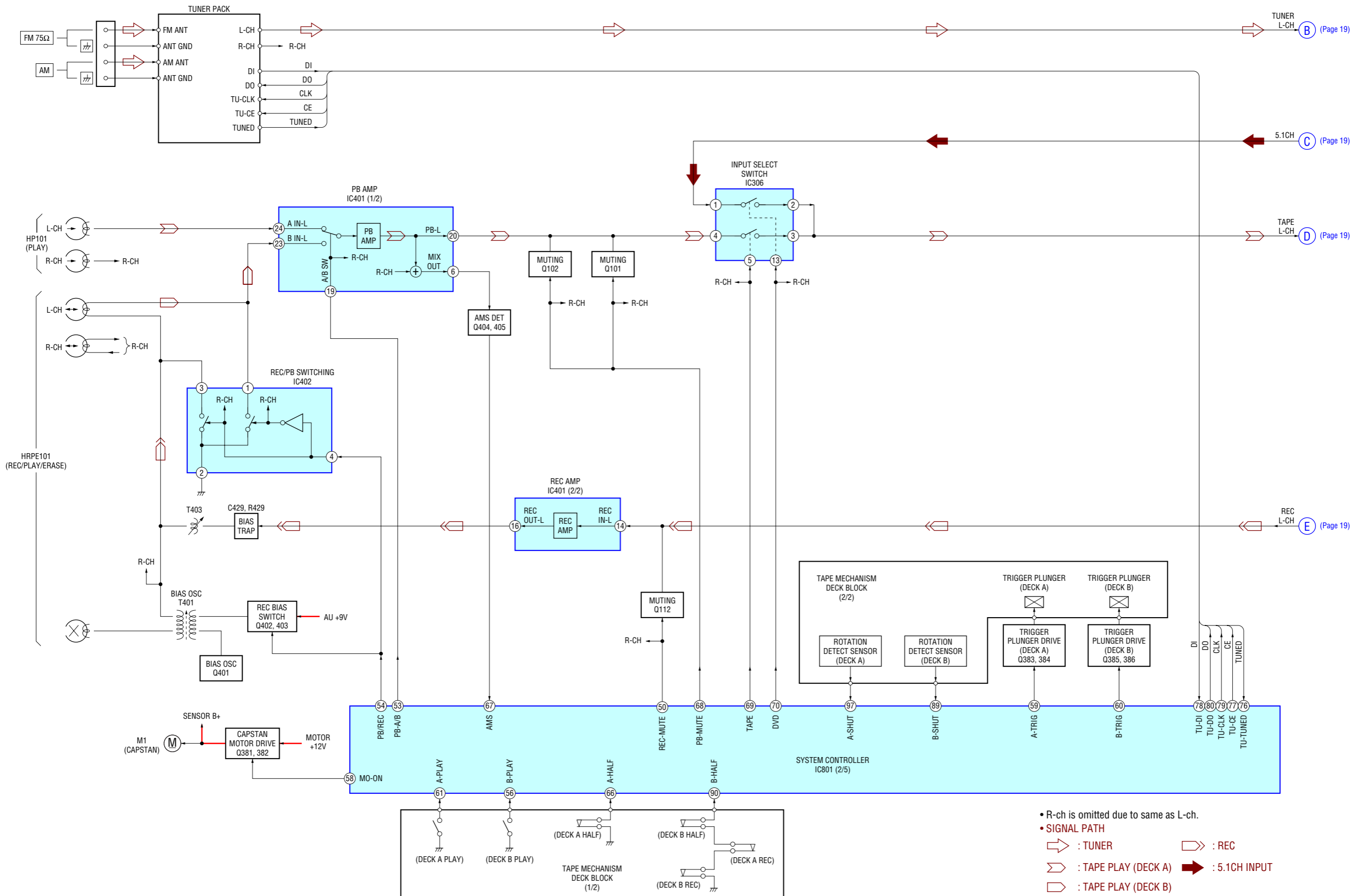
SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM – CD SERVO Section –

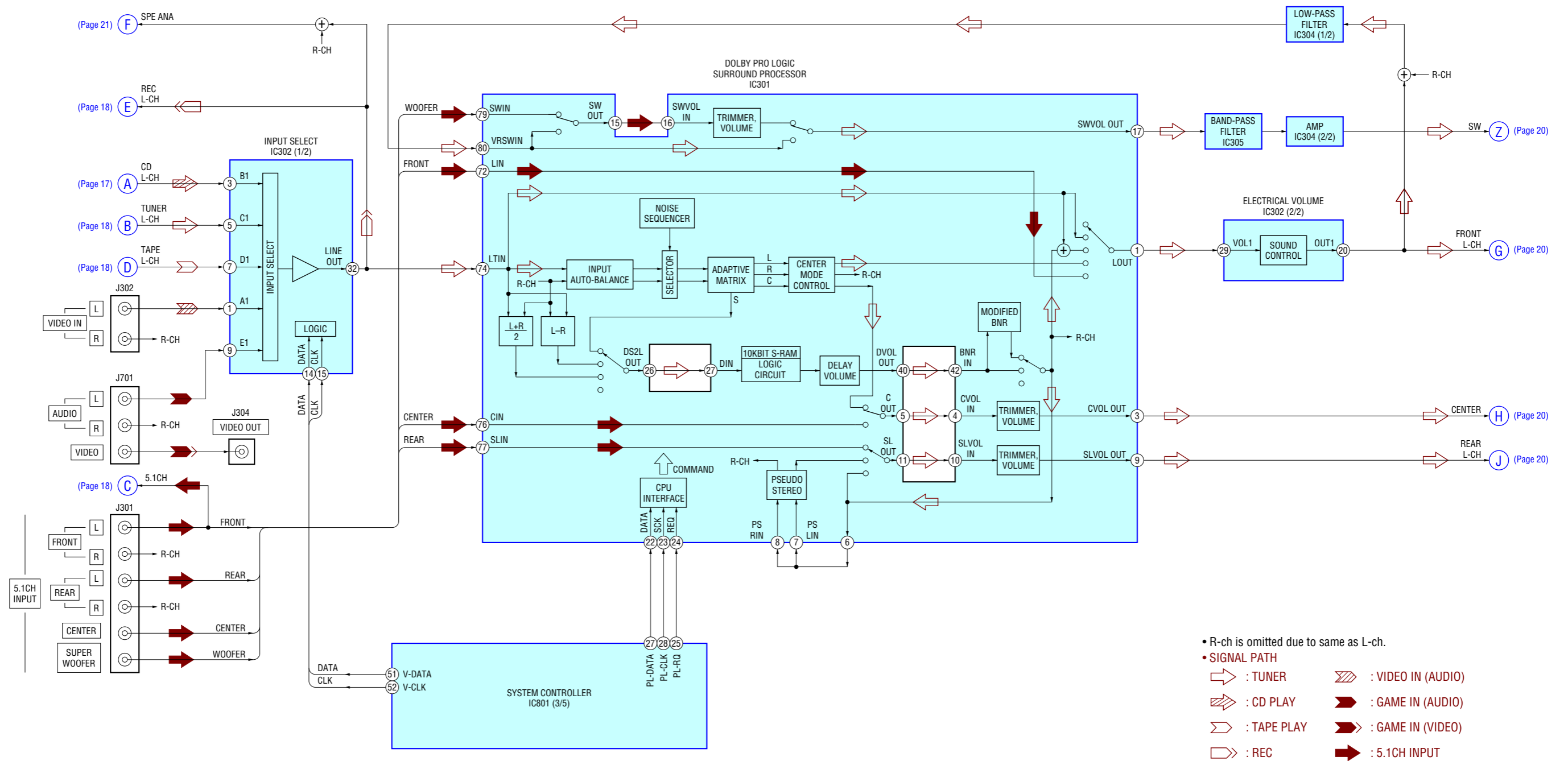


• R-ch is omitted due to same as L-ch.
 • SIGNAL PATH
 : CD PLAY (ANALOG)
 : CD PLAY (DIGITAL OUT)

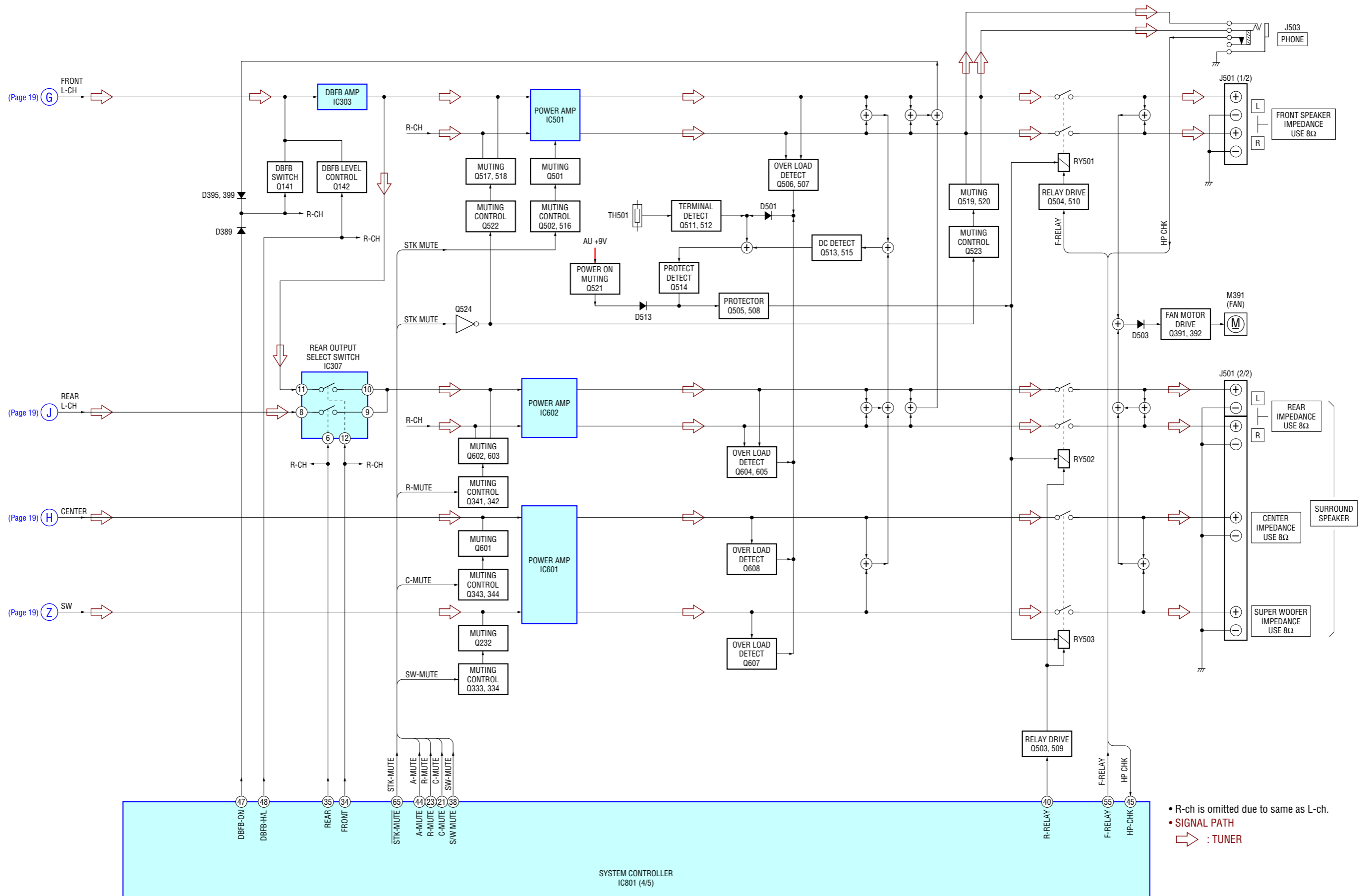
5-2. BLOCK DIAGRAM – TUNER/TAPE DECK Section –



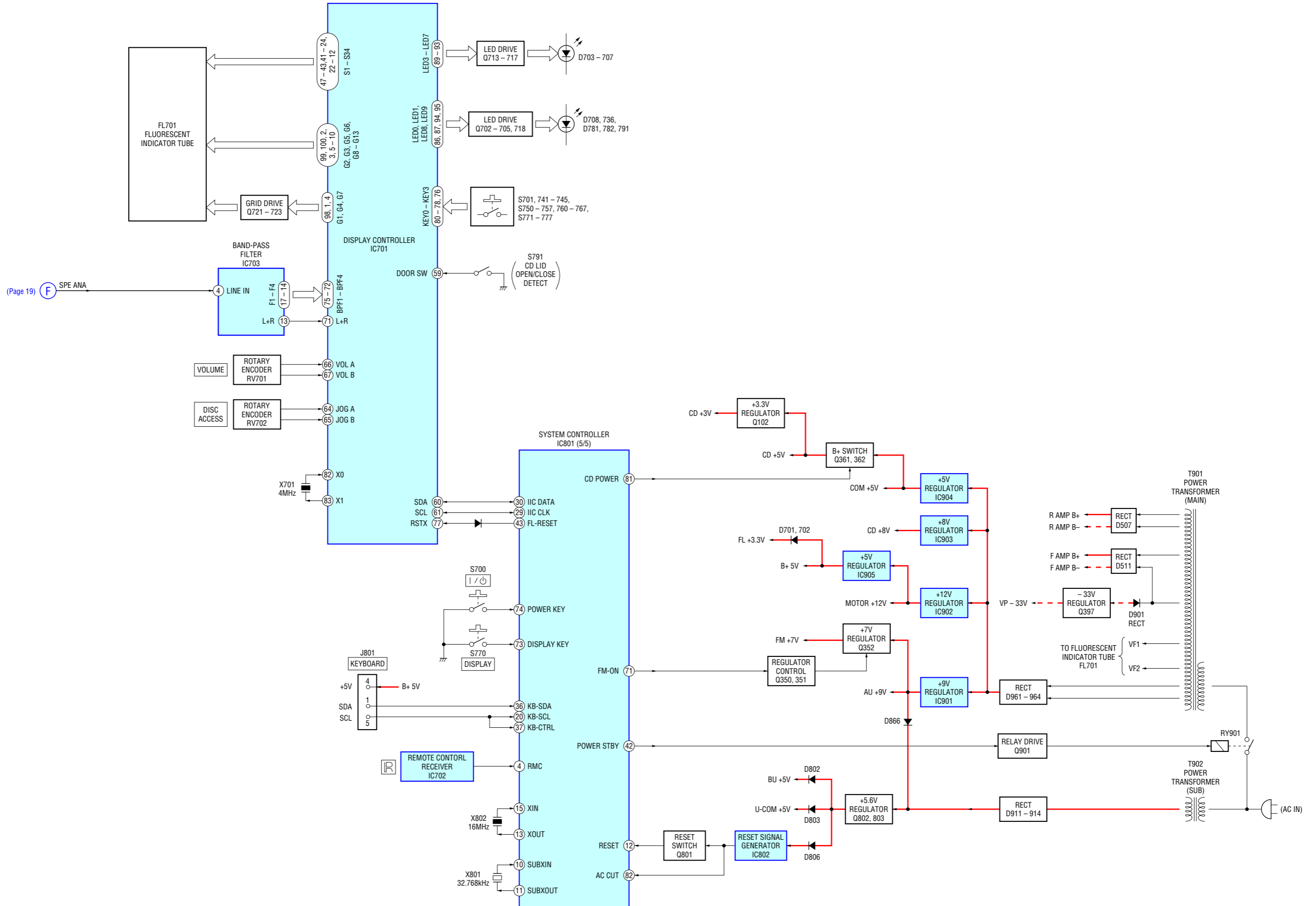
5-3. BLOCK DIAGRAM – SURROUND Section –



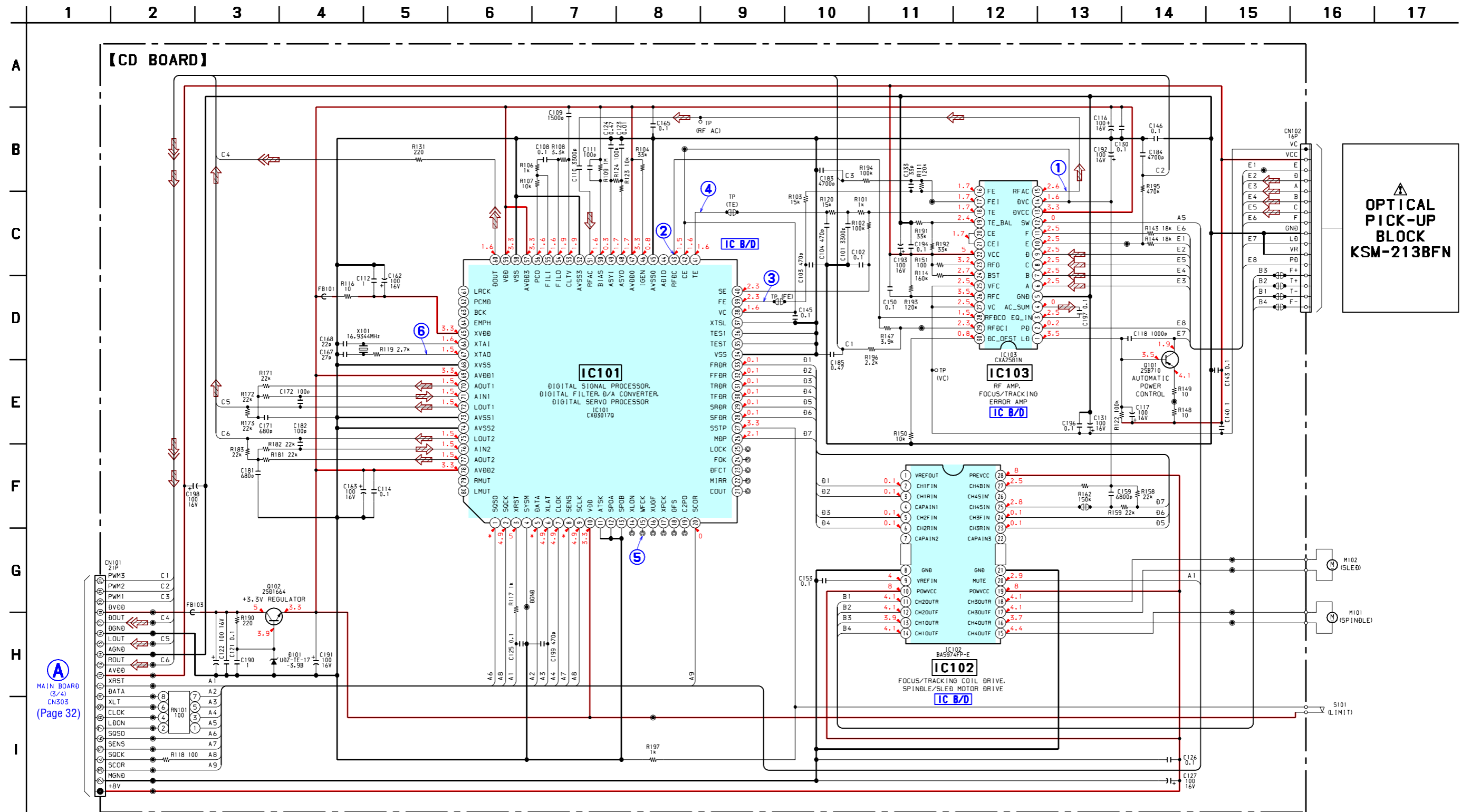
5-4. BLOCK DIAGRAM – AMP Section –



5-5. BLOCK DIAGRAM – DISPLAY/POWER SUPPLY Section –



5-7. SCHEMATIC DIAGRAM – CD Section – • See page 35 for Waveforms. • See page 23 for IC Block Diagrams.

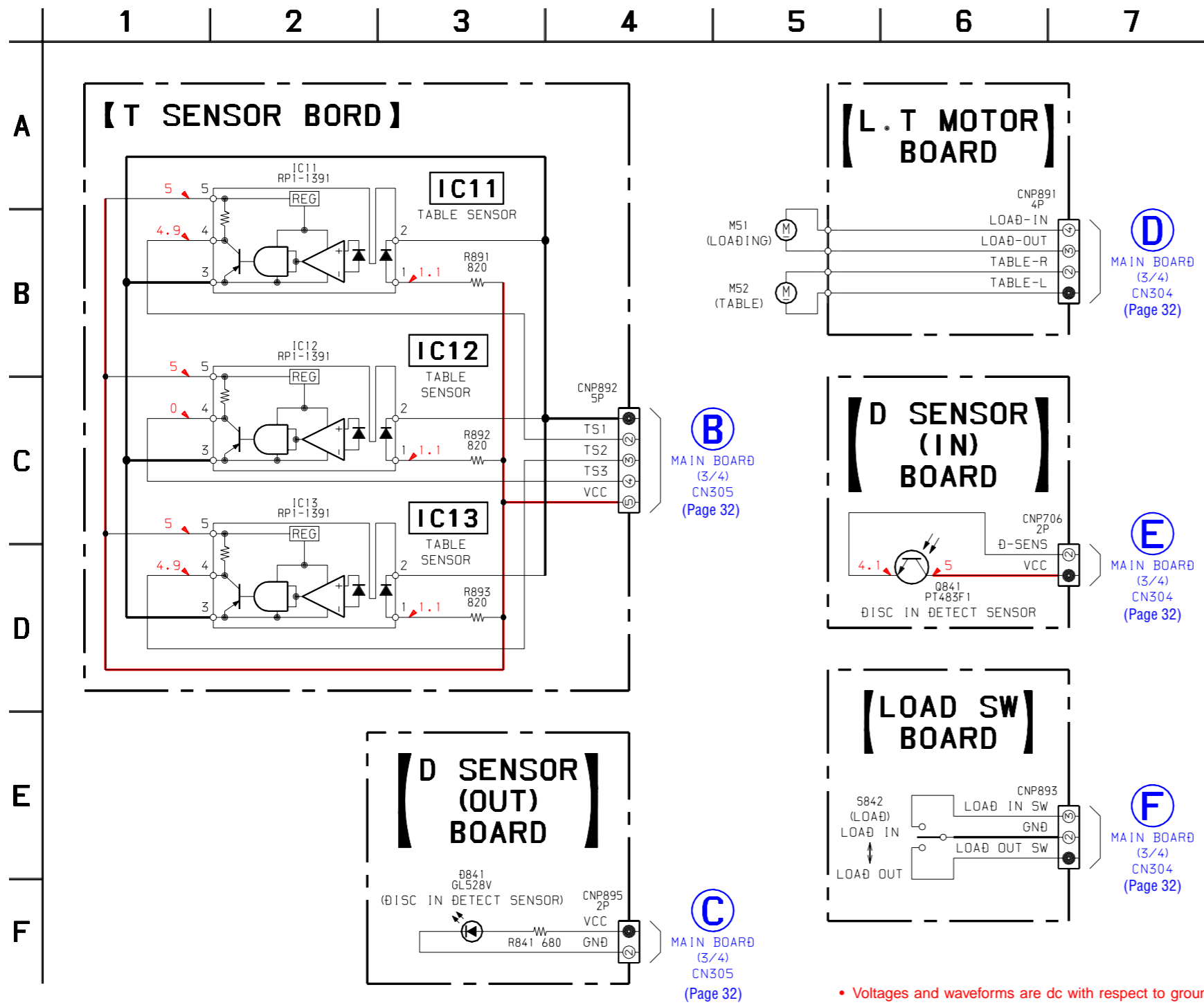


A
MAIN BOARD
(5/4)
CN303
(Page 32)

• Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark : CD PLAY
* : Impossible to measure

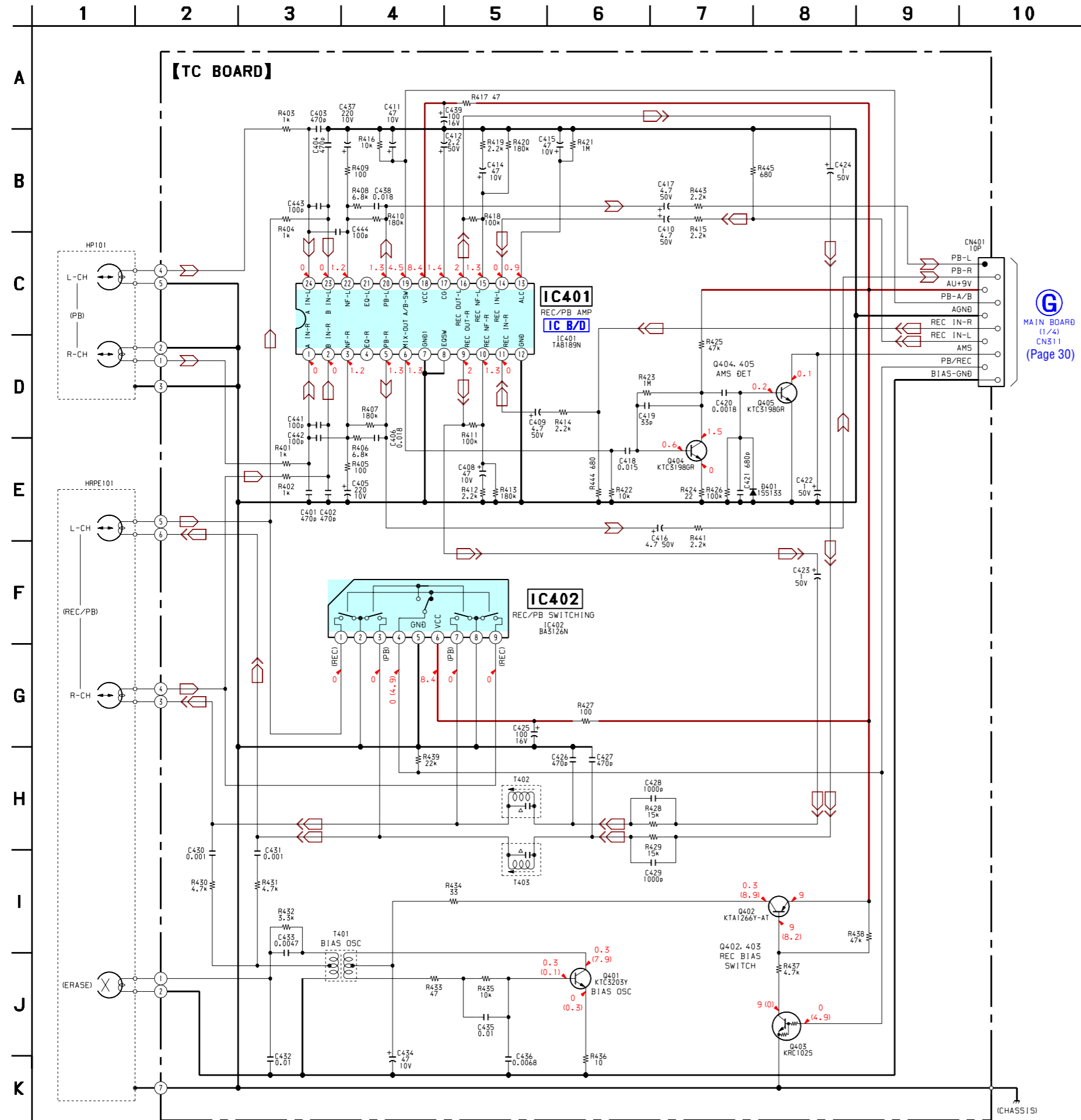
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

5-10. SCHEMATIC DIAGRAM – CD MOTOR/SENSOR Section –



• Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark : CD

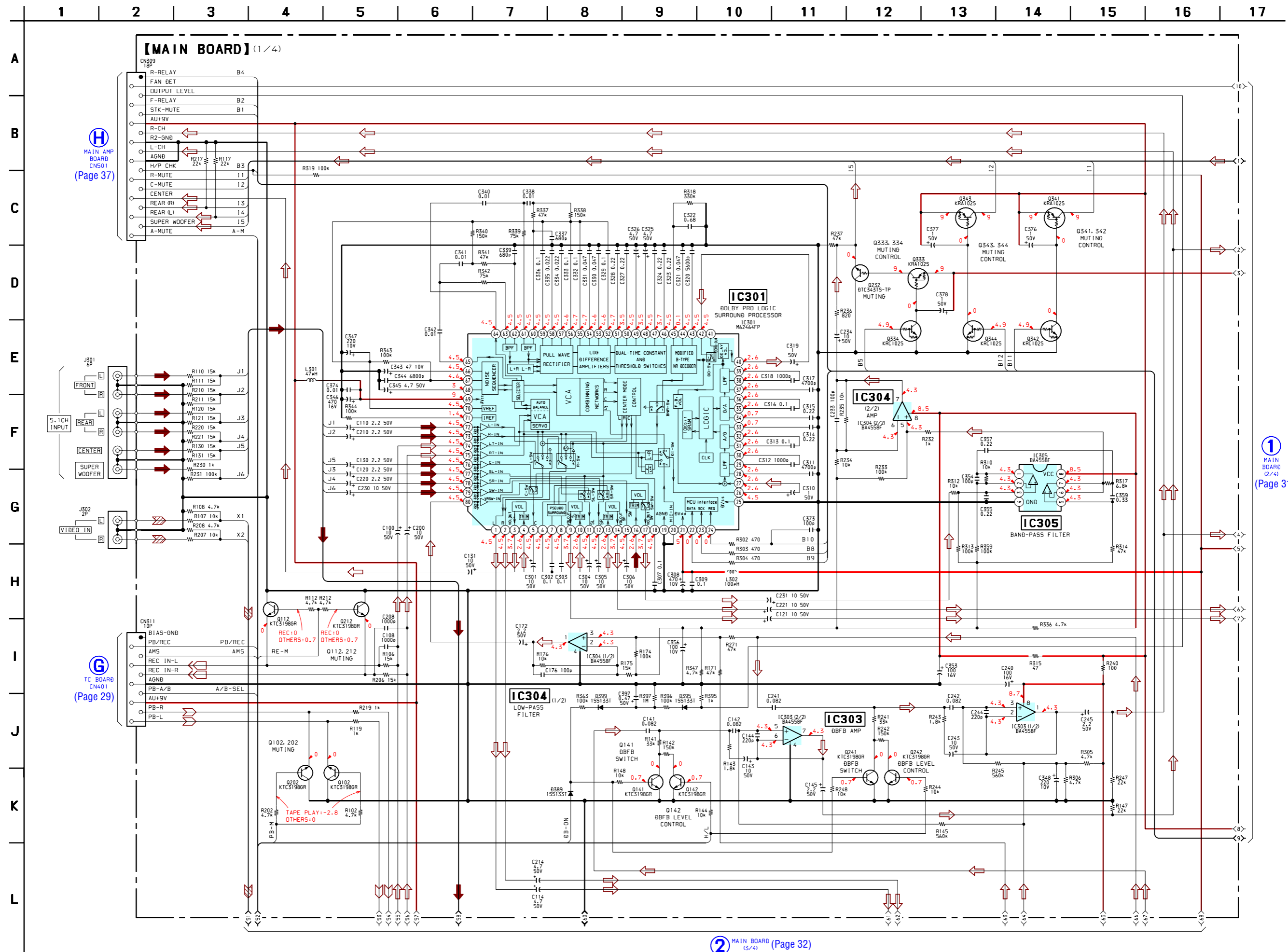
5-12. SCHEMATIC DIAGRAM – TC Section – • See page 39 for IC Block Diagram.



Ⓞ MAIN BOARD (1/4) CN311 (Page 30)

• Voltages and waveforms are dc with respect to ground under no-signal conditions.
 no mark : TAPE PLAY
 () : REC

5-13. SCHEMATIC DIAGRAM – MAIN Section (1/4) –



H MAIN AMP BOARD CN501 (Page 37)

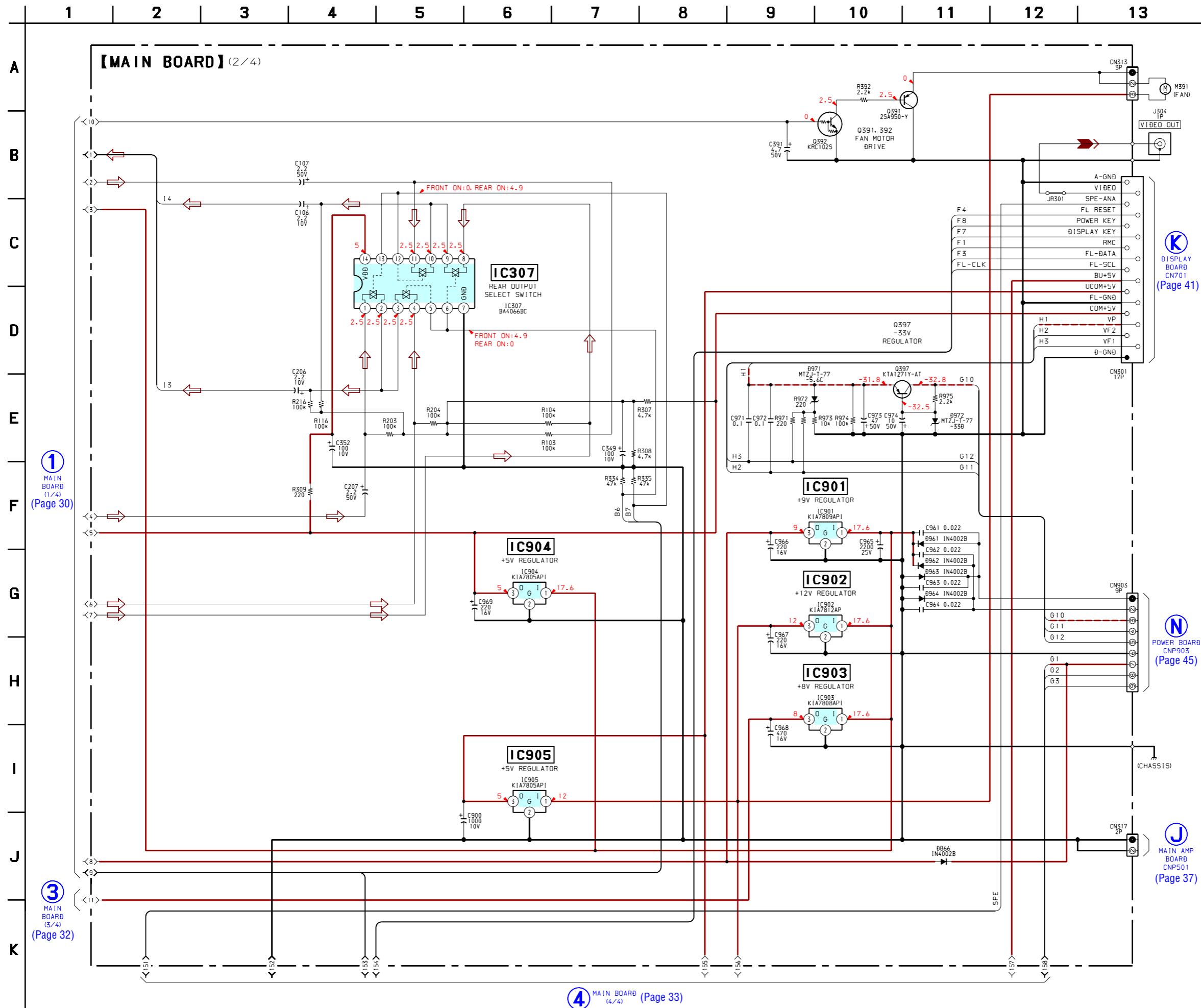
G TC BOARD CN401 (Page 29)

1 MAIN BOARD (2/4) (Page 31)

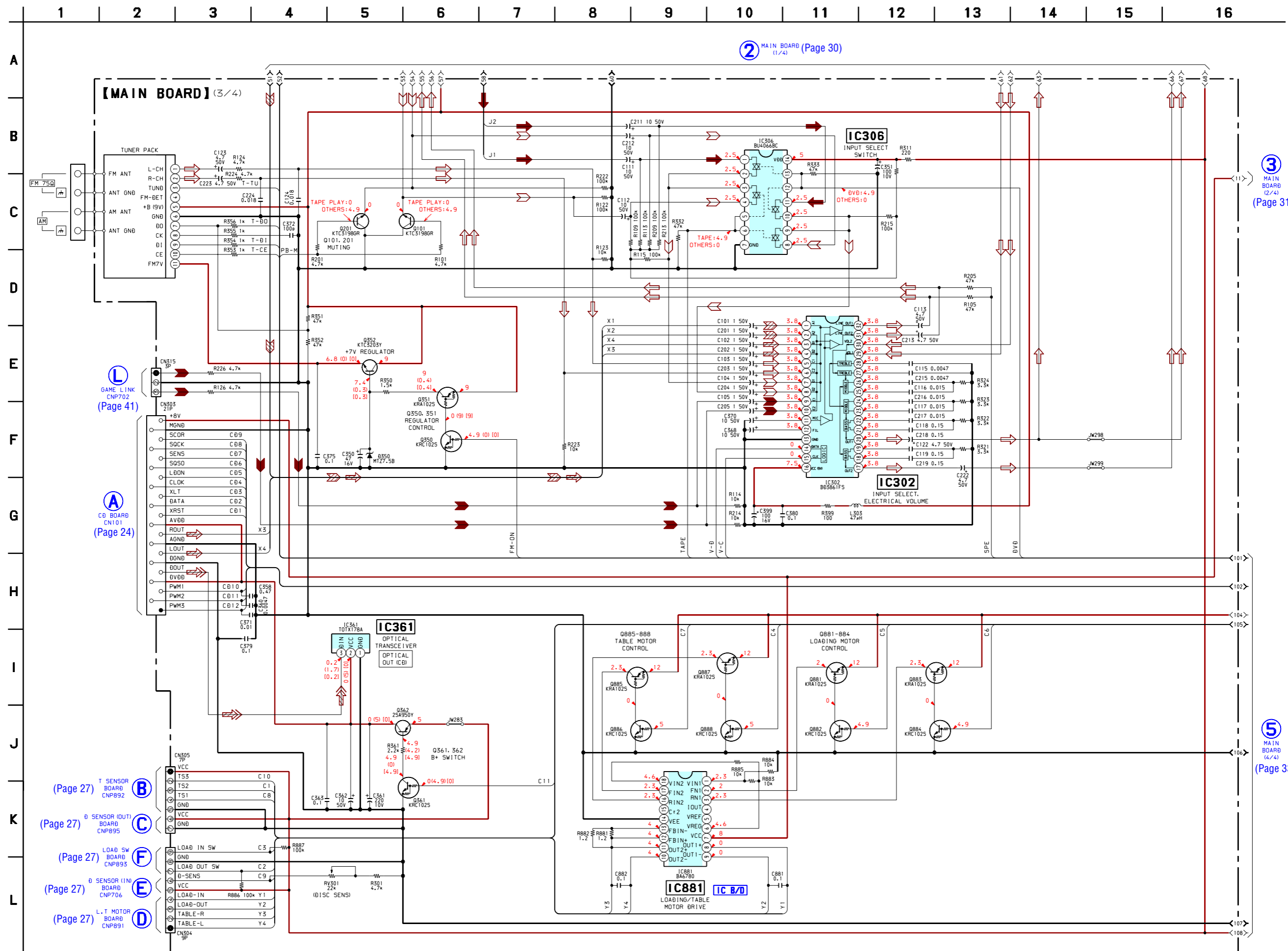
2 MAIN BOARD (3/4) (Page 32)

• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM

5-14. SCHEMATIC DIAGRAM – MAIN Section (2/4) –

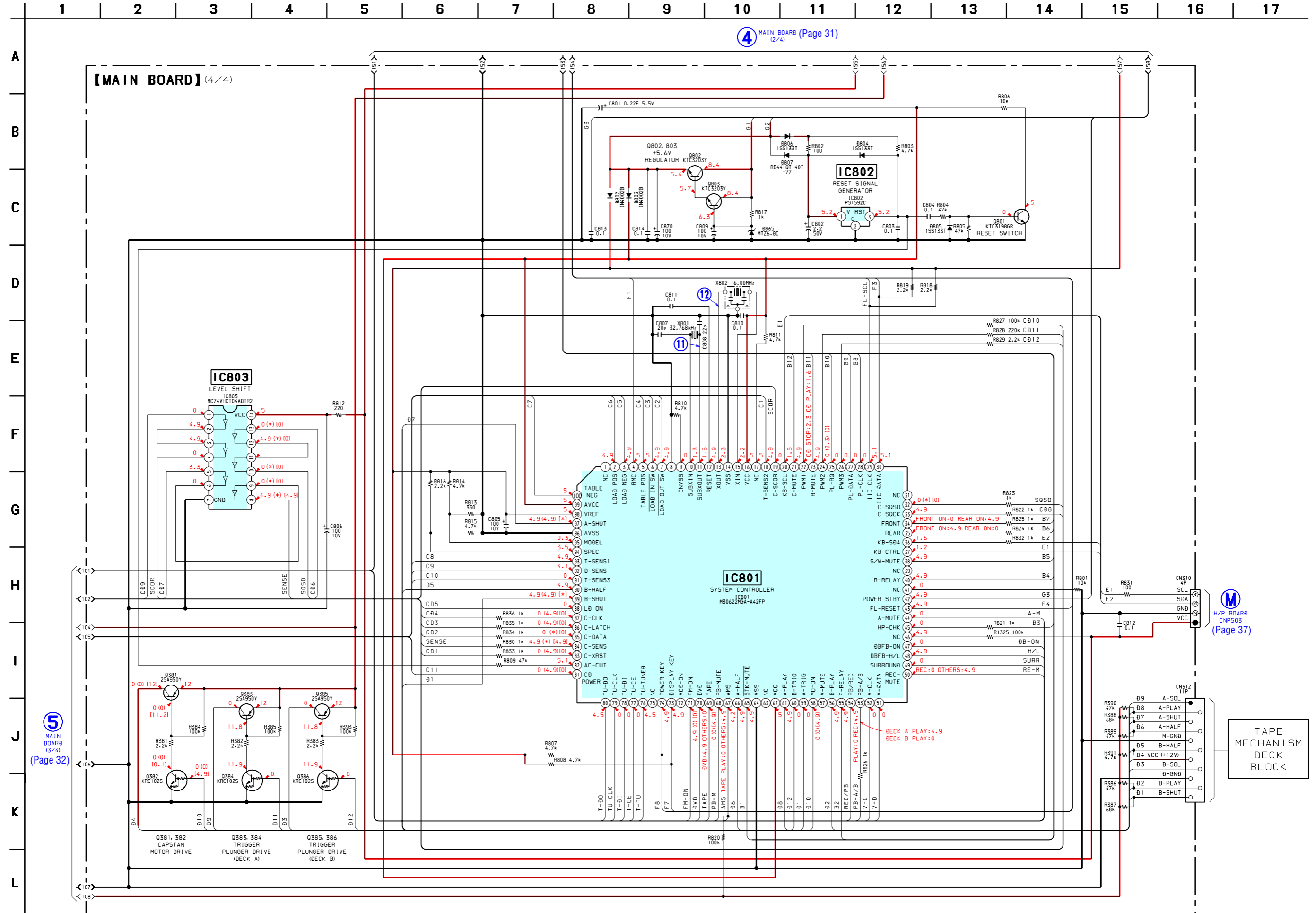


- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions. no mark : FM



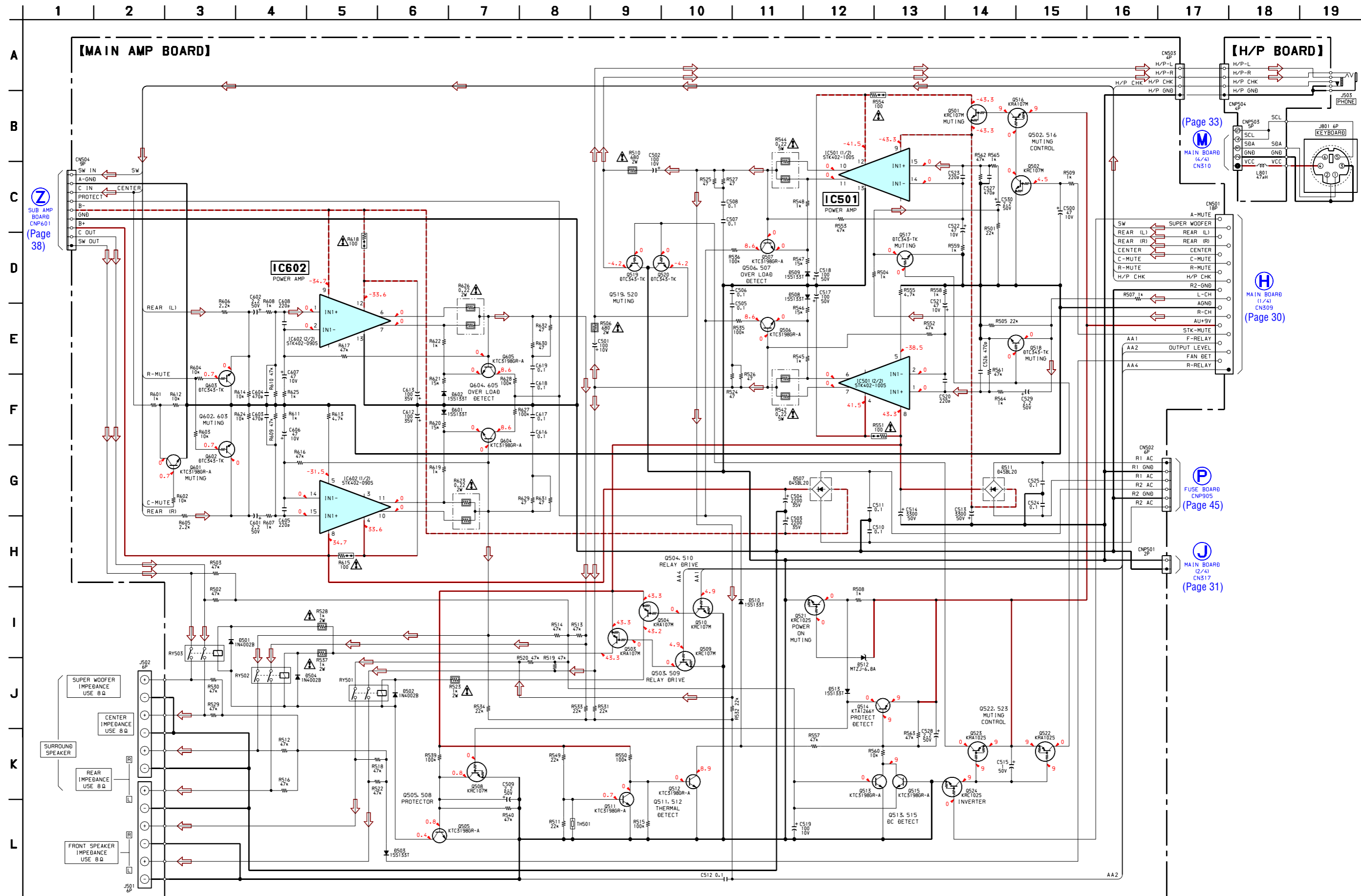
• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM
() : CD PLAY
[] : TAPE PLAY

5-16. SCHEMATIC DIAGRAM – MAIN Section (4/4) – • See page 35 for Waveforms.



• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
 no mark : FM
 () : CD PLAY
 [] : TAPE PLAY
 * : Impossible to measure

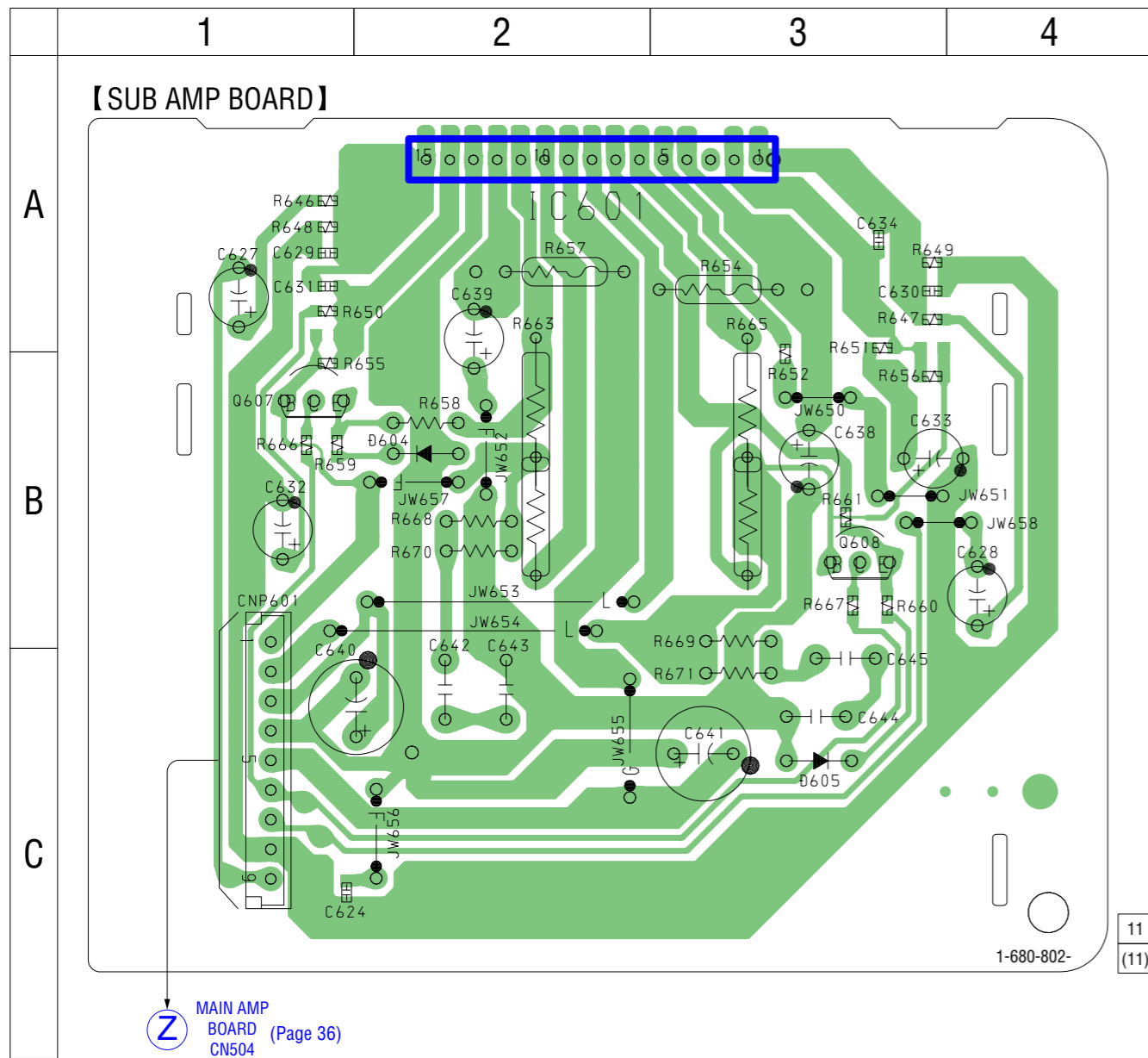
5-19. SCHEMATIC DIAGRAM – MAIN AMP Section –



• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM

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

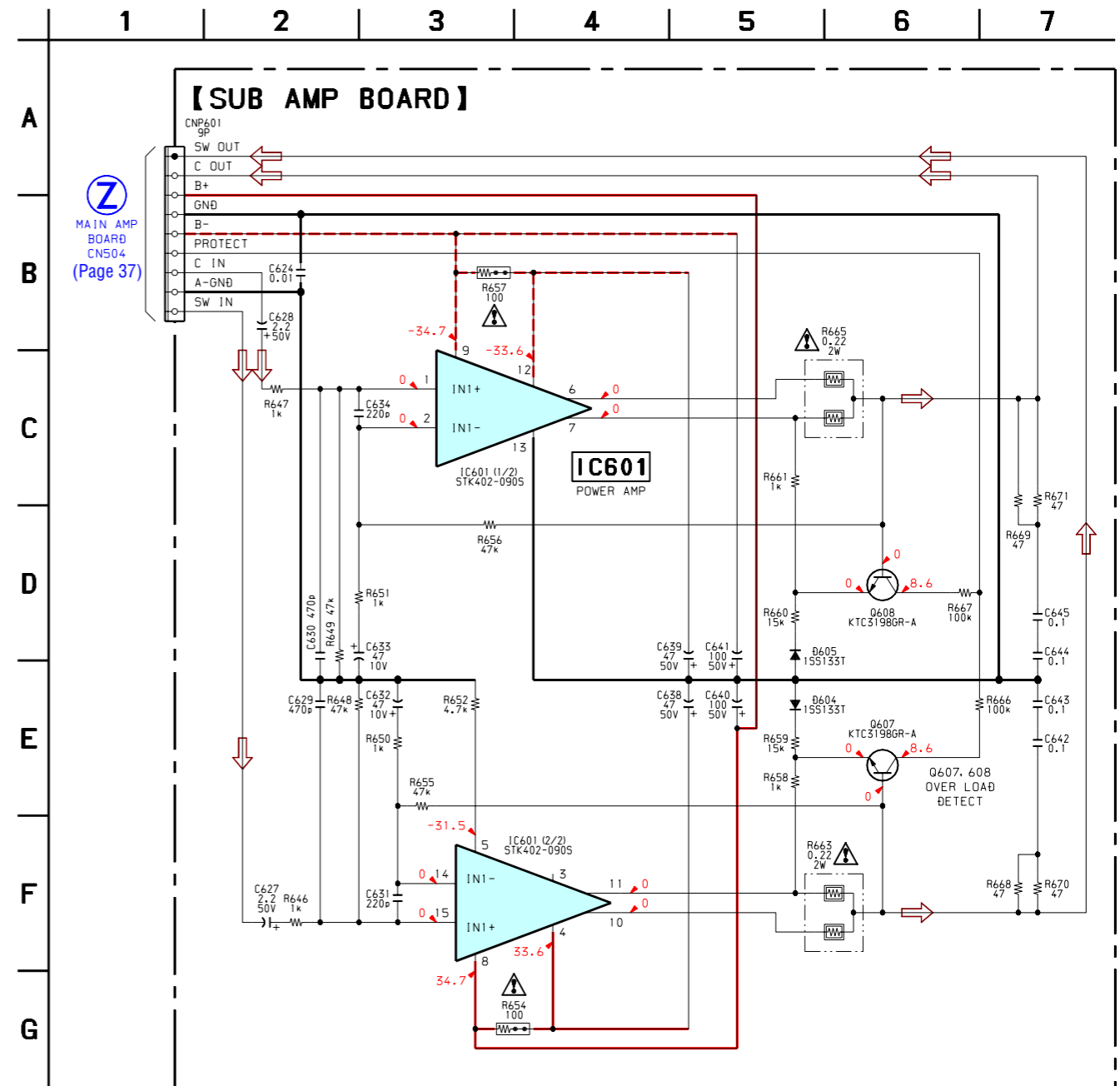
5-20. PRINTED WIRING BOARD – SUB AMP Section – • See page 22 for Circuit Boards Location.



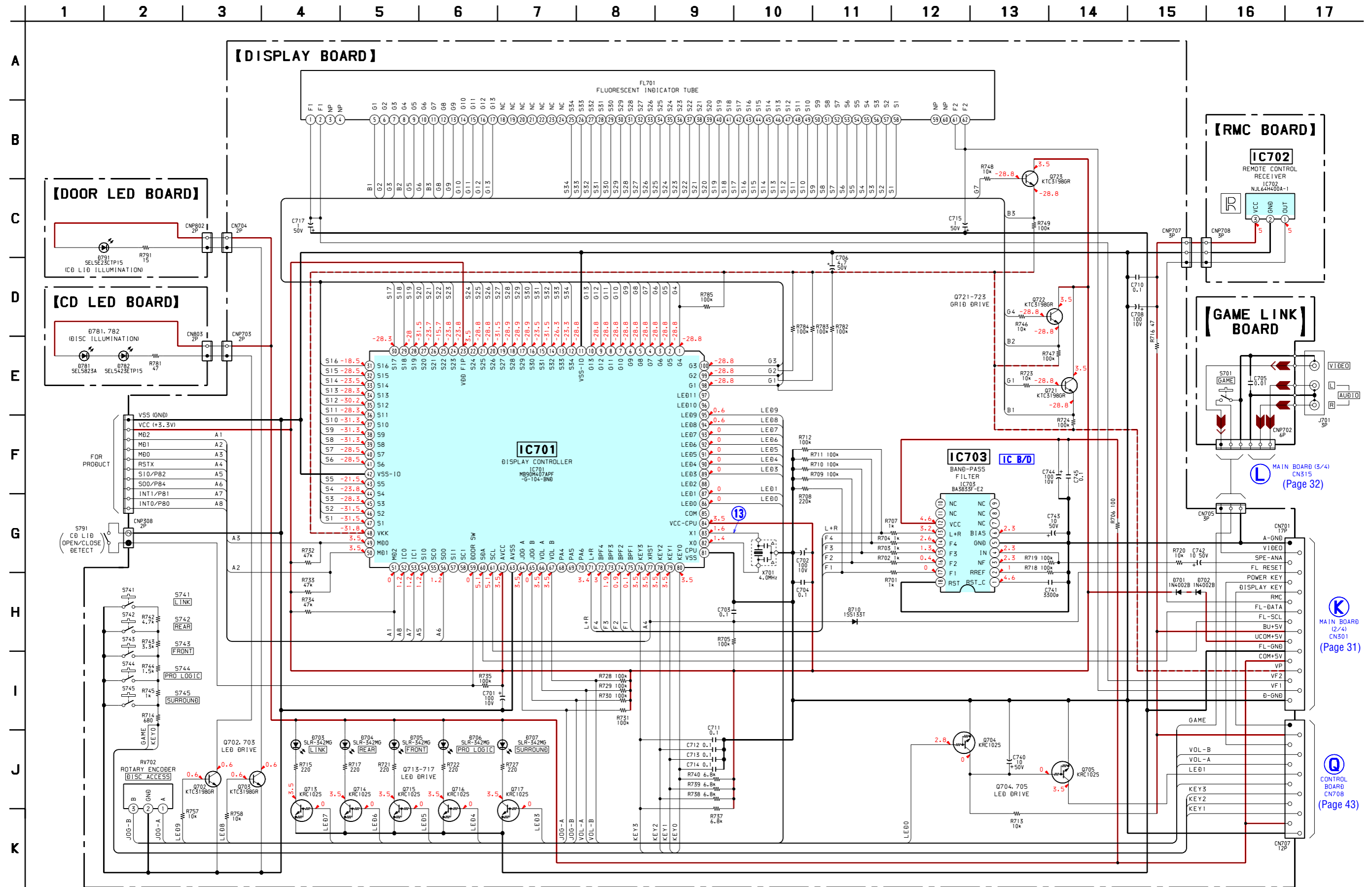
• Semiconductor Location

Ref. No.	Location
D604	B-2
D605	C-3
IC601	A-2
Q607	B-1
Q608	B-3

5-21. SCHEMATIC DIAGRAM – SUB AMP Section –



5-23. SCHEMATIC DIAGRAM – DISPLAY Section – • See page 35 for Waveform. • See page 39 for IC Block Diagram.



• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions. no mark : FM