MEX-5DI

SERVICE MANUAL

Ver 1.0 2002. 04

US Model
Canadian Model
AEP Model
UK Model
E Model

• The tuner and CD sections have no adjustments.

Model Name Using Similar Mechanism	CDX-MP70
CD Drive Mechanism Type	MG-550T-156
Optical Pick-up Name	DAX-23E

SPECIFICATIONS

CD player section

Signal-to-noise ratio	95 dB
Frequency response	10 – 20,000 Hz
Wow and flutter	Below measurable limit

MS section

Signal-to-noise ratio	90 dB
Frequency response	10 – 20,000 Hz

Tuner section

FM

Tuning range	87.5 – 107.9 MHz (US, Canadian Model) 87.5 – 108.0 MHz (AEP, UK, E Model)
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz/450 kHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	66 dB (stereo), 72 dB (mono)
Harmonic distortion at 1 kHz	0.6% (stereo), 0.3% (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz

AM (US, Canadian Model)

Tuning range	530 – 1,710 kHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz/450 kHz
Sensitivity	30 µV

MW/LW (AEP, UK, E Model)

Tuning range	MW : 531 – 1,602 kHz LW : 153 – 279 kHz
Aerial terminal	External aerial connector
Intermediate frequency	10.7 MHz/450 kHz
Sensitivity	MW : 30 µV LW : 40 µV

General

Outputs	Audio outputs (front/rear) Subwoofer output (mono) Power antenna relay control terminal Power amplifier control terminal
Inputs	Telephone ATT control terminal Illumination control terminal BUS control input terminal BUS audio input/AUX IN terminal Antenna input terminal
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Loudness	+8 dB at 100 Hz +2 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 178 × 50 × 178 mm (7 1/8 × 2 × 7 1/8 in.) (w/h/d)
Mounting dimensions	Approx. 182 × 53 × 157 mm (7 1/4 × 2 1/8 × 6 1/4 in.) (w/h/d)

– Continued on next page –

MG-MS/FM/AM COMPACT DISC PLAYER

US, Canadian Model

MG-MS/FM/MW/LW COMPACT DISC PLAYER

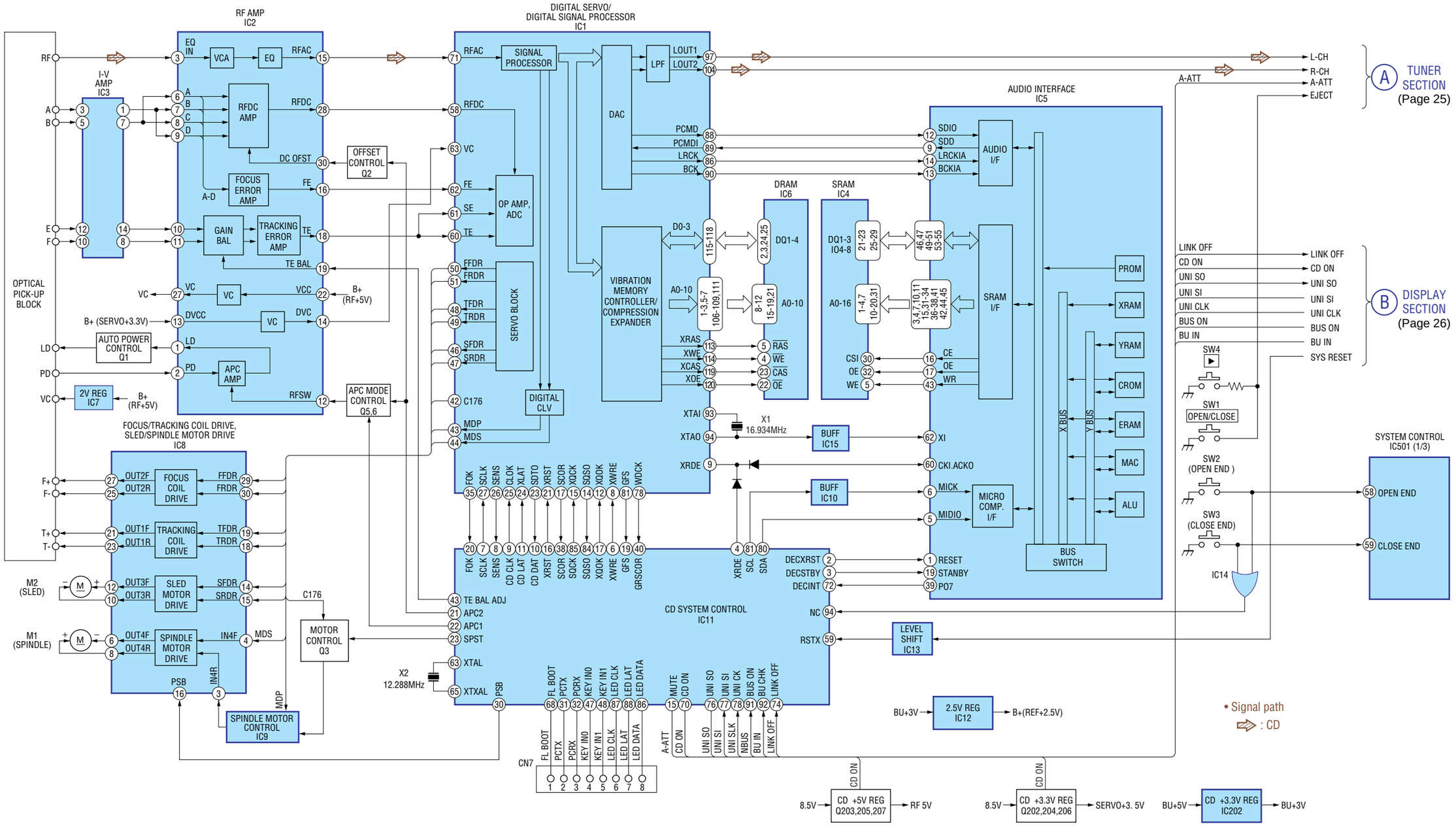
AEP, UK, E Model

9-874-009-01
2002D0400-1

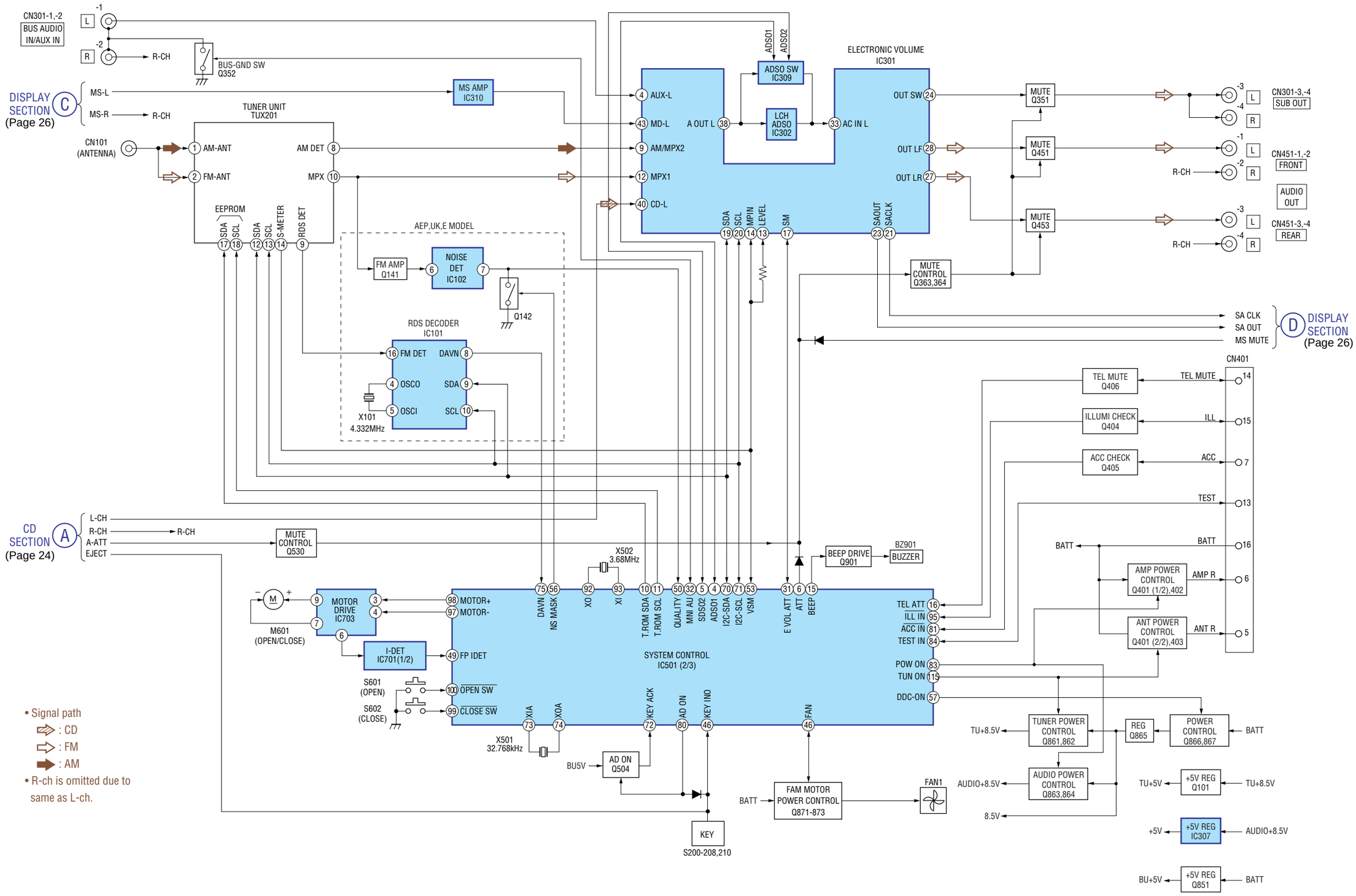
Sony Corporation
e Vehicle Company
Published by Sony Engineering Corporation

SONY®

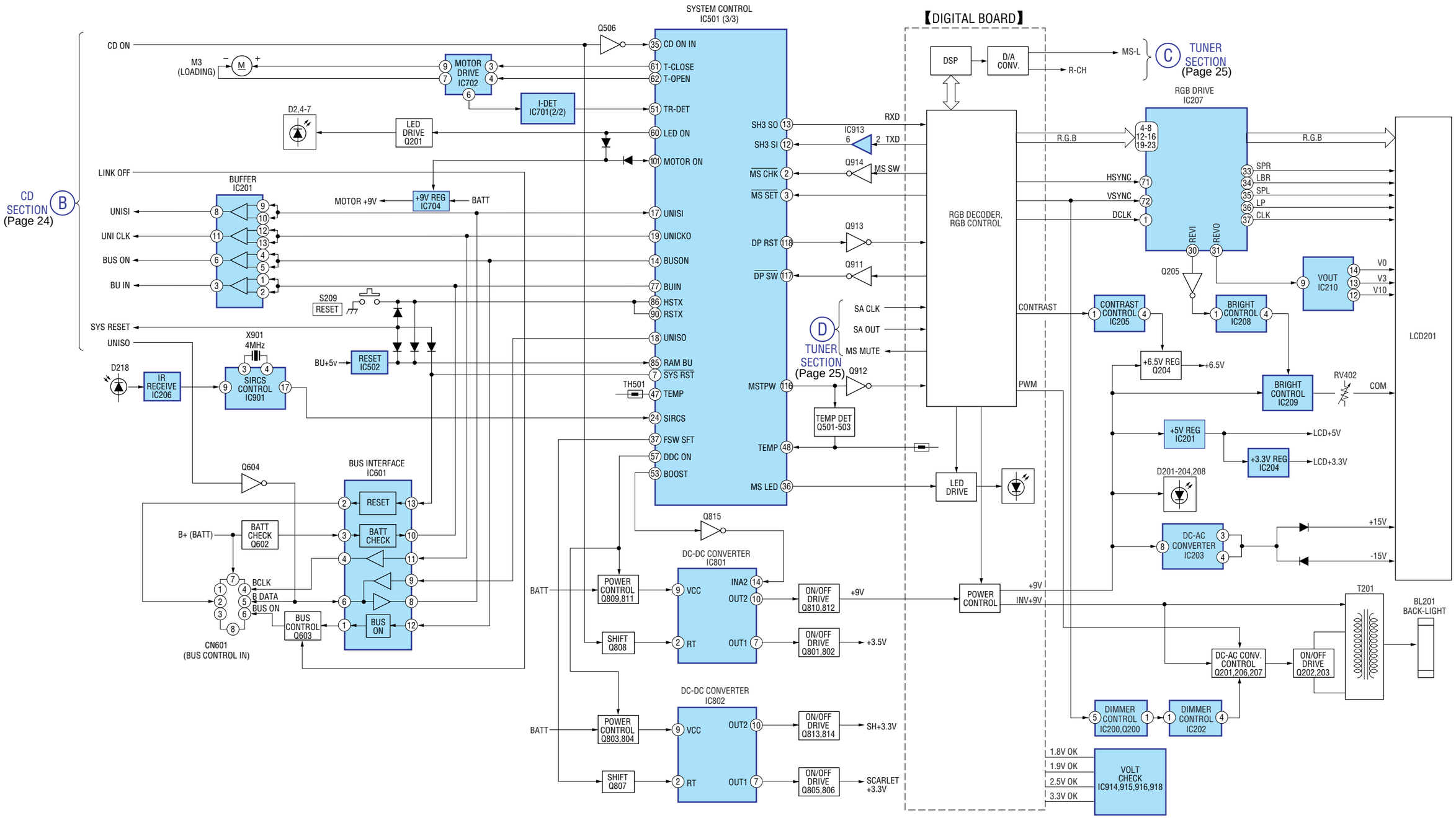
4-3. BLOCK DIAGRAM — CD SECTION —



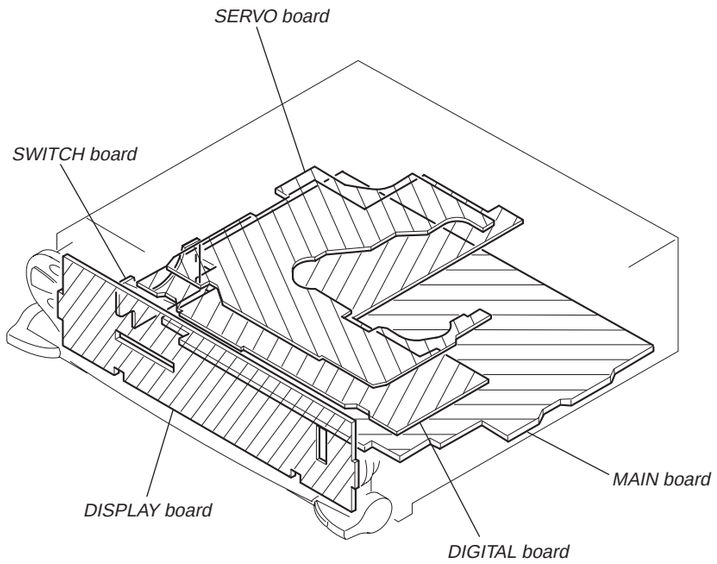
4-4. BLOCK DIAGRAM — TUNER SECTION —



4-5. BLOCK DIAGRAM — DISPLAY SECTION —



4-6. CIRCUIT BOARDS LOCATION



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

for schematic diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▭ : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- ▬ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - ⇨ : FM
  - ➡ : AM/MW/LW
  - ⇨ : CD

for printed wiring boards:

- ○——: parts extracted from the component side.
- ——: parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ○ : Through hole.
- ▬ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:
Pattern face side: (Side B) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A) Parts on the parts face side seen from the parts face are indicated.

• Waveforms

— Servo Board —

(MODE: CD PLAY)

① 0.7Vp-p
IC2 (15) (RFAC)

② 0V, Approx. 200mVp-p
IC2 (16) (FE)

③ 0V, Approx. 600mVp-p
IC2 (18) (TE)

④ 3.3Vp-p, 7.6µsec
IC1 (43) (MDP)

⑤ 3.5Vp-p, 22.7µsec
IC1 (86) (LRCK)

⑥ 3.8Vp-p, 474msec
IC1 (90) (BCK)

⑦ 3Vp-p, 16.9344MHz
IC1 (94) (XTAO)

⑧ 2.2Vp-p, 12.288MHz
IC11 (65) (XTXAL)

— Main Board —

① 2.8Vp-p, 4.332MHz
IC101 (4) (OSCO)

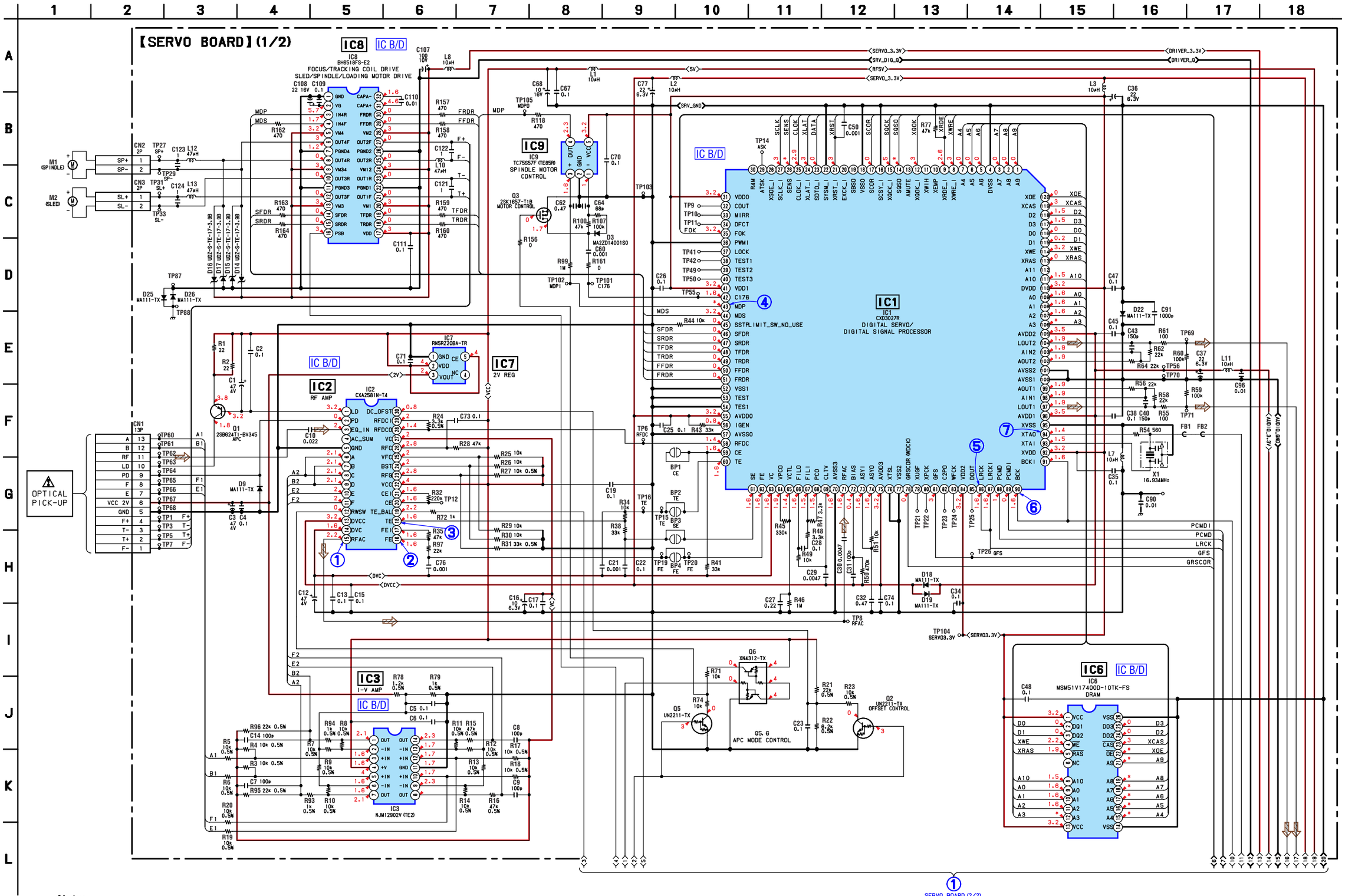
② 2.2Vp-p, 32.768kHz
IC501 (74) (X0A)

③ 2.8Vp-p, 3.68MHz
IC501 (92) (X0)

④ 3.5Vp-p, 4MHz
IC901 (4) (XOUT)

4-8. SCHEMATIC DIAGRAM — CD MECHANISM SECTION (1/2) —

• Refer to page 27 for Waveforms.
• Refer to page 40 for IC Block Diagrams.

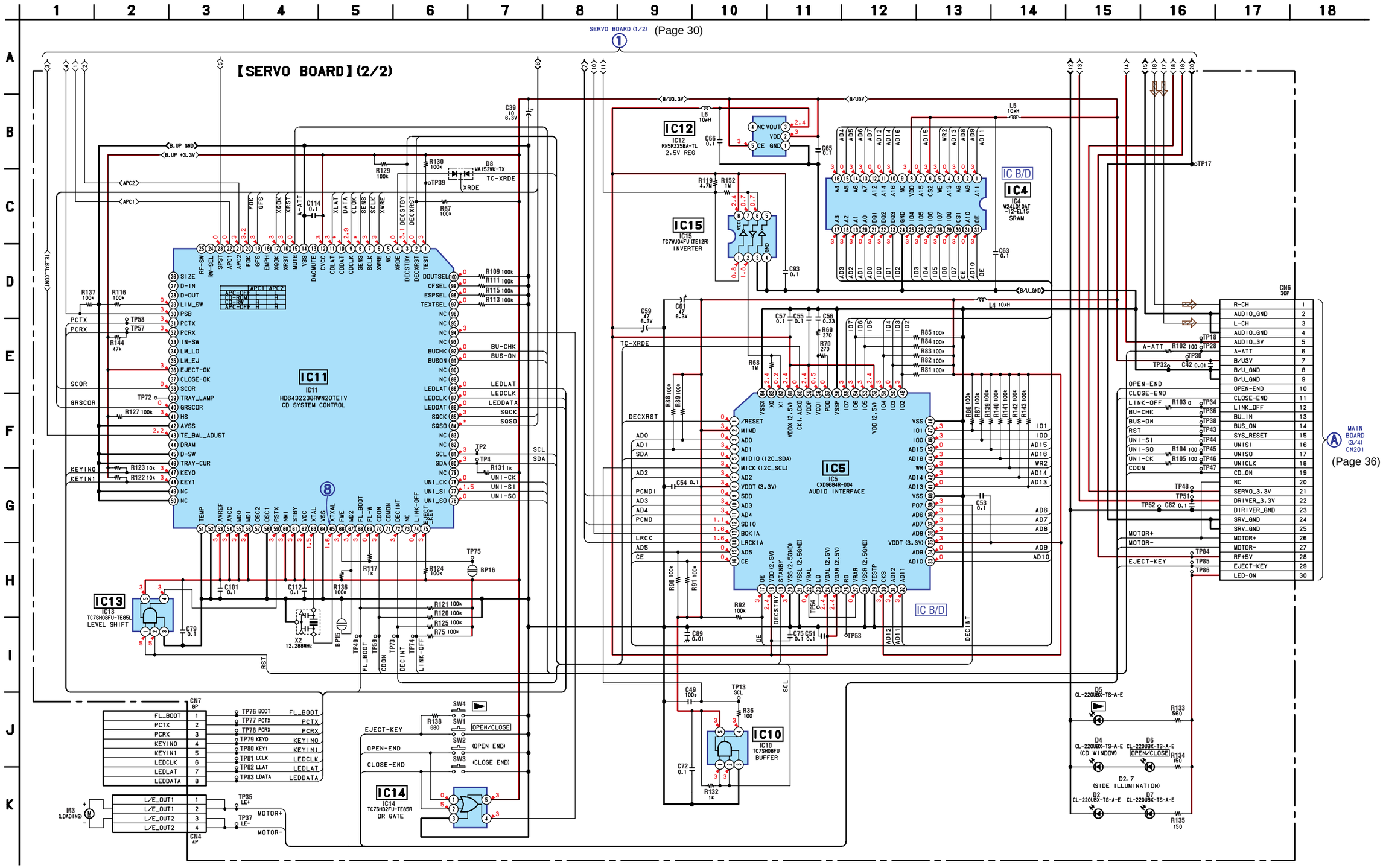


Note:

- Voltage is dc with respect to ground under no-signal conditions.
  no mark : CD PLAY
  ＊ : Impossible to measure

4-9. SCHEMATIC DIAGRAM — CD MECHANISM SECTION (2/2) —

• Refer to page 27 for Waveform.
• Refer to page 42 for IC Block Diagrams.

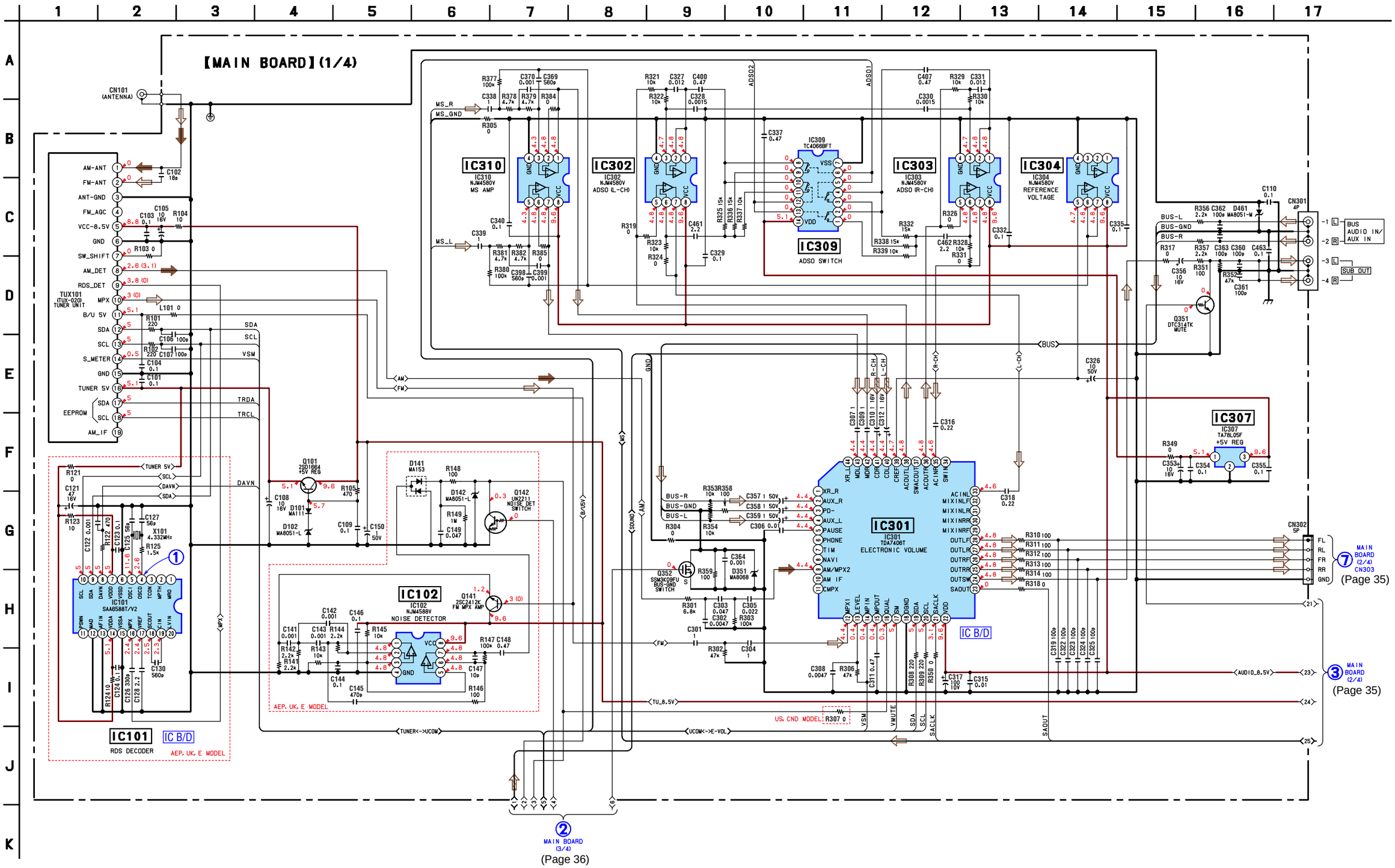


Note:

- Voltage is dc with respect to ground under no-signal conditions.
  no mark : CD PLAY
  ∗ : Impossible to measure

4-11. SCHEMATIC DIAGRAM — MAIN SECTION (1/4) —

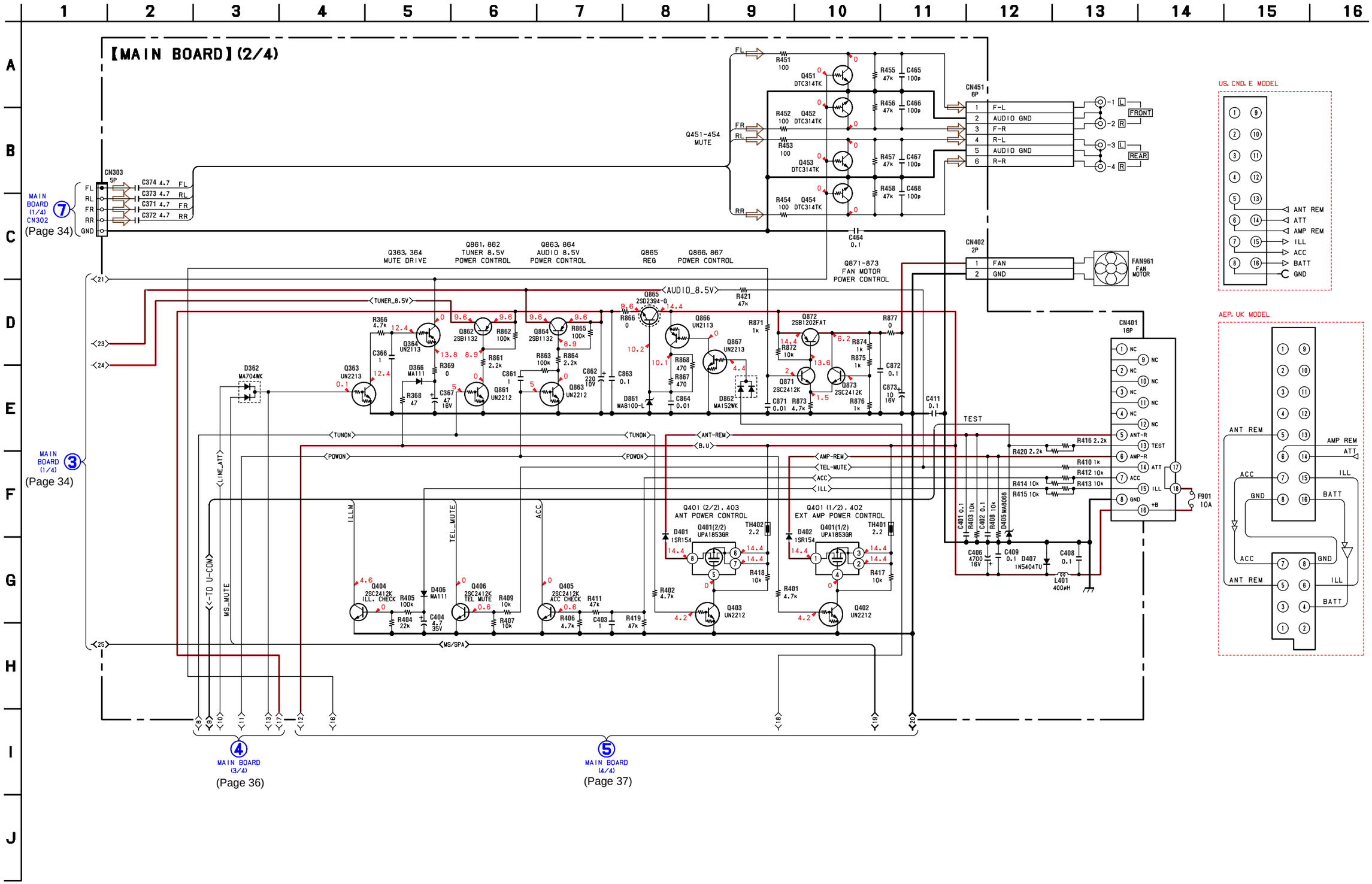
• Refer to page 27 for Waveform.
• Refer to page 43 for IC Block Diagrams.



Note:

- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
  ( ) : AM/MW/LW

4-12. SCHEMATIC DIAGRAM — MAIN SECTION (2/4) —

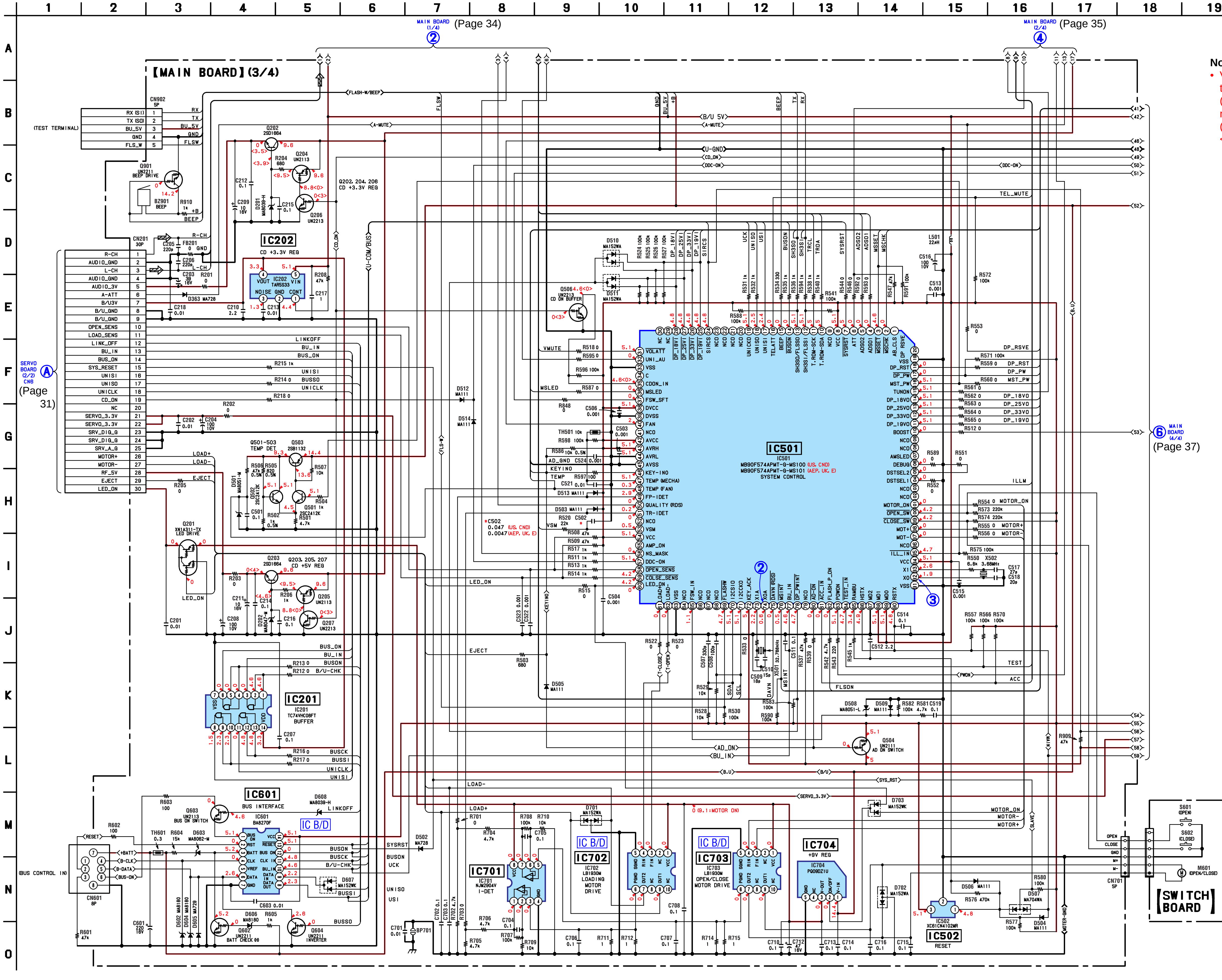


Note:

- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM

4-13. SCHEMATIC DIAGRAM — MAIN SECTION (3/4) —

• Refer to page 27 for Waveforms.
• Refer to page 45 for IC Block Diagrams.

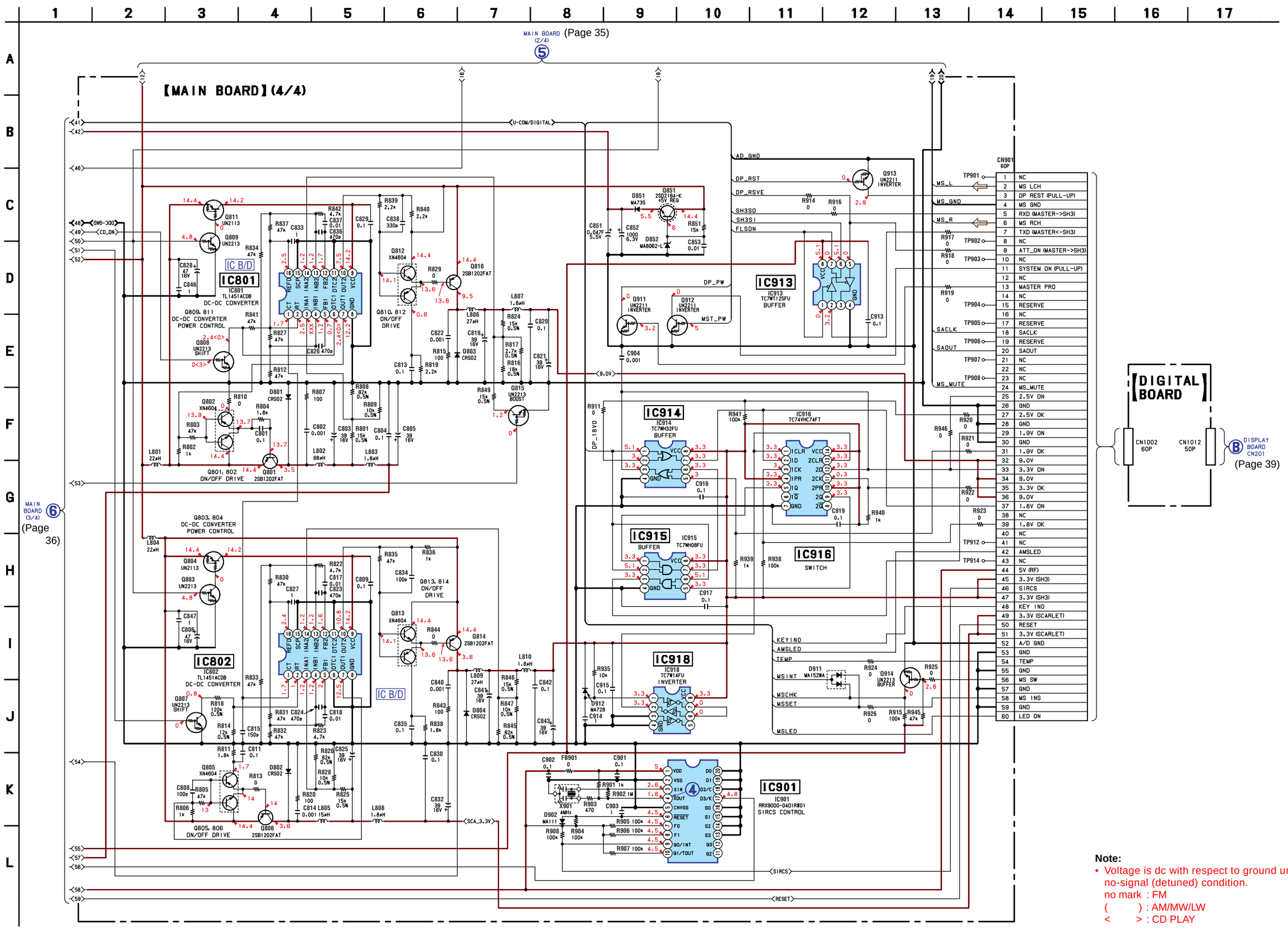


Note:
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
  (   ) : AM/MW/LW
  <   > : CD PLAY

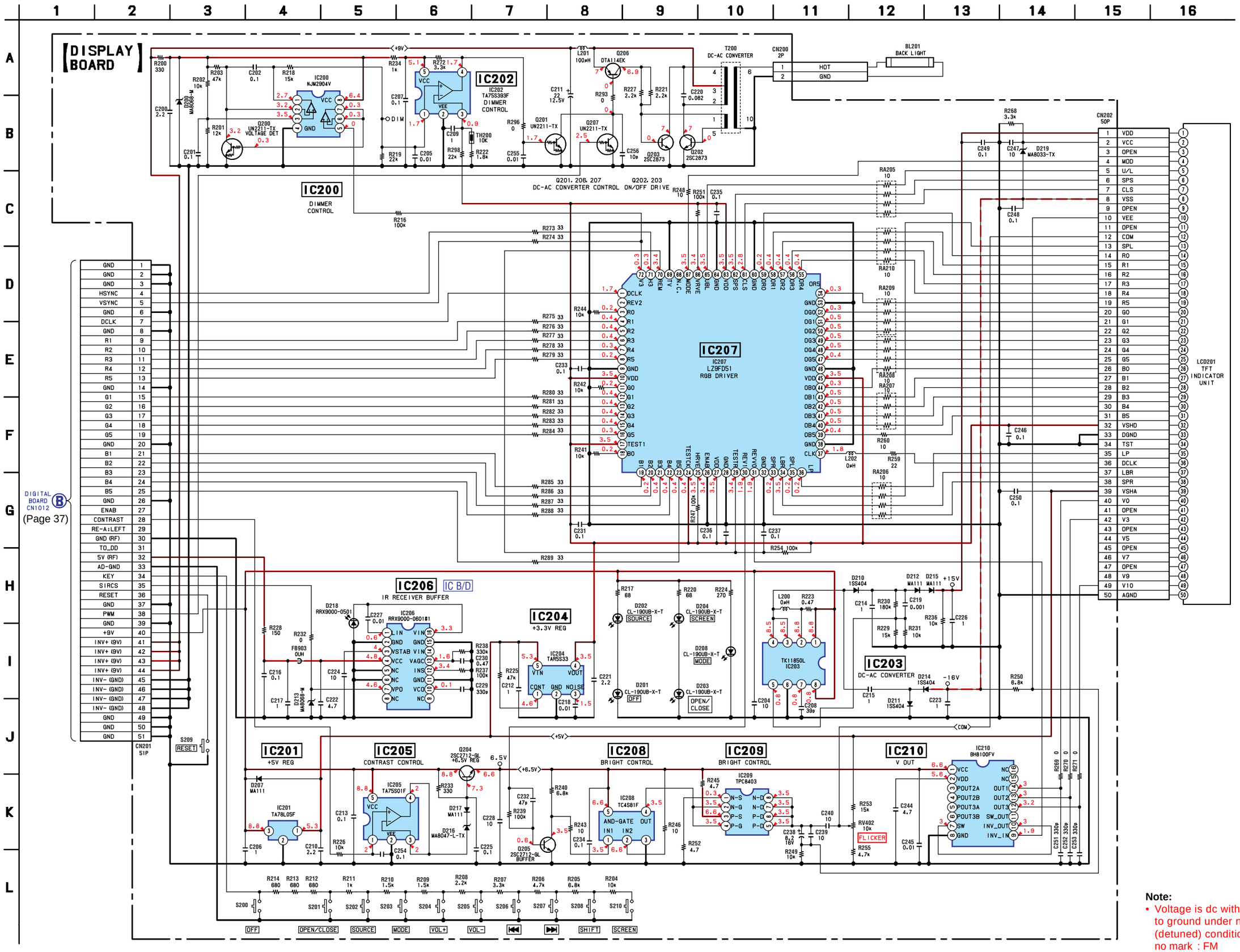
• Refer to page 27 for Waveform.

4-14. SCHEMATIC DIAGRAM — MAIN SECTION (4/4) —

• Refer to page 45 for IC Block Diagrams.



4-16. SCHEMATIC DIAGRAM — DISPLAY SECTION — • Refer to page 45 for IC Block Diagram.

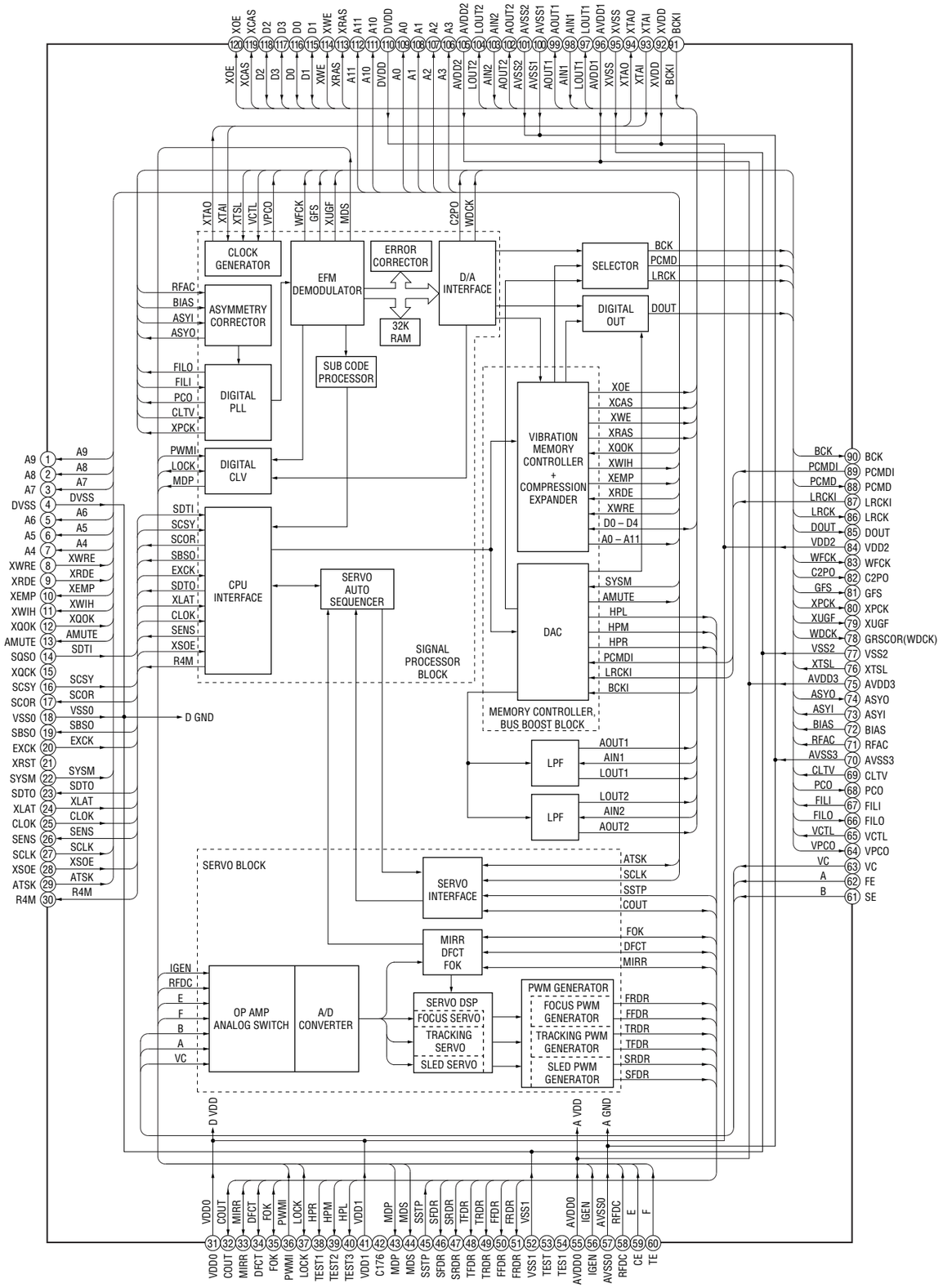


Note:

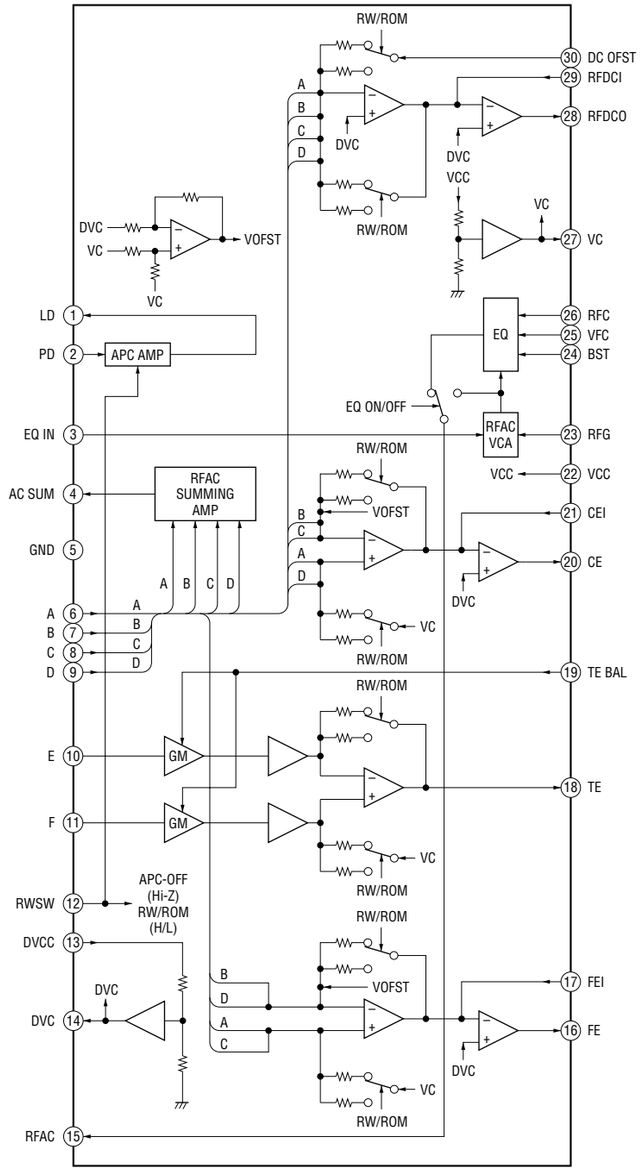
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM

• IC BLOCK DIAGRAMS

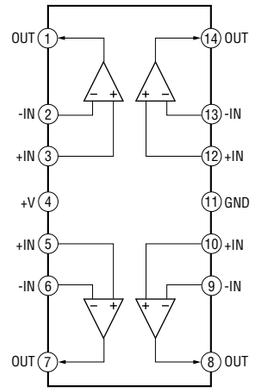
IC1 CXD3027R



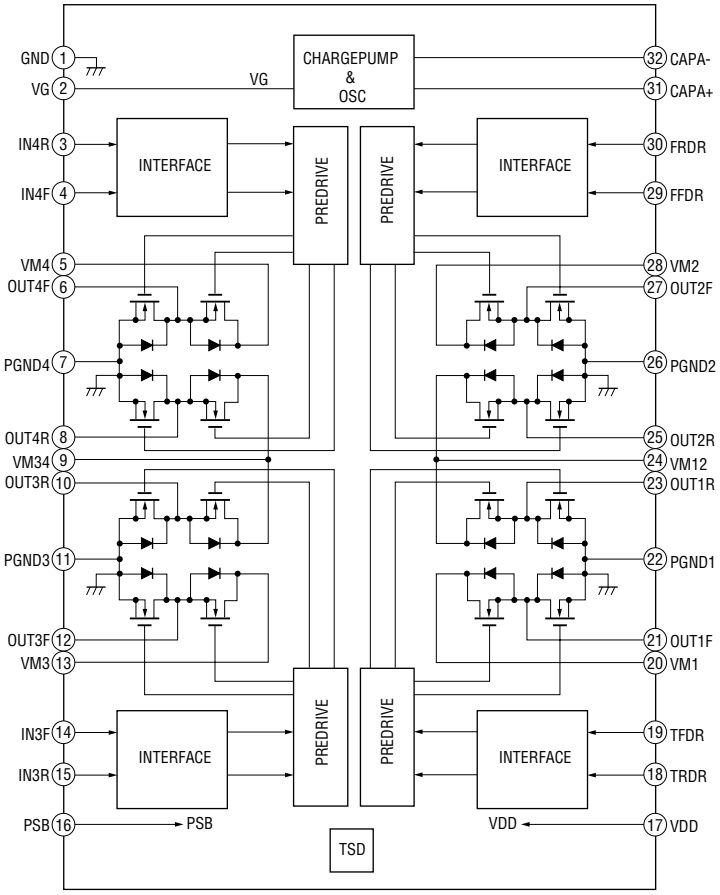
IC2 CXA2581N-T4



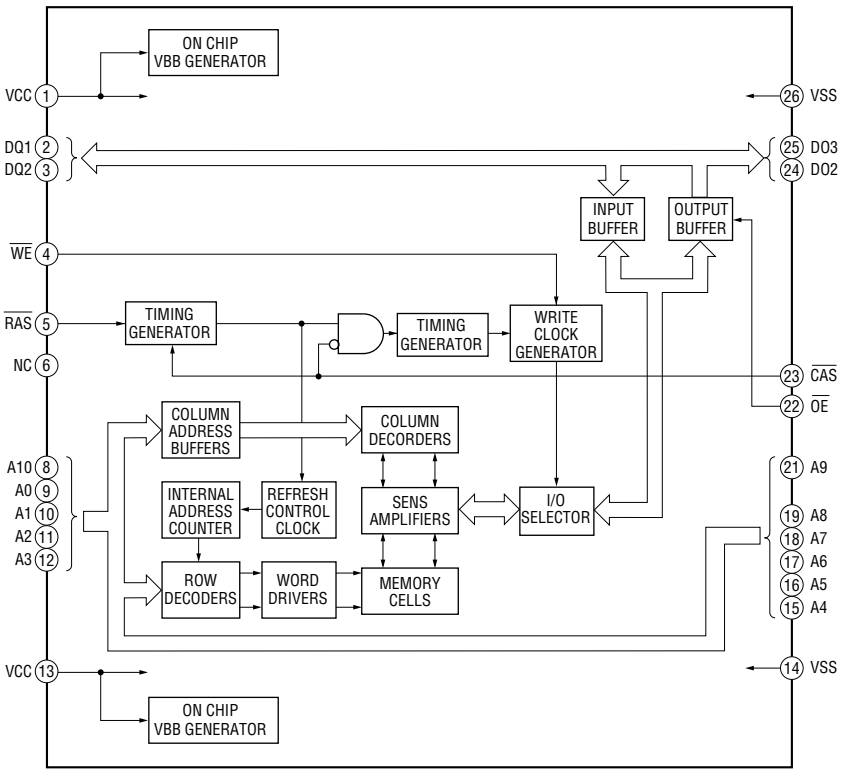
IC3 NJM12902V (TE2)



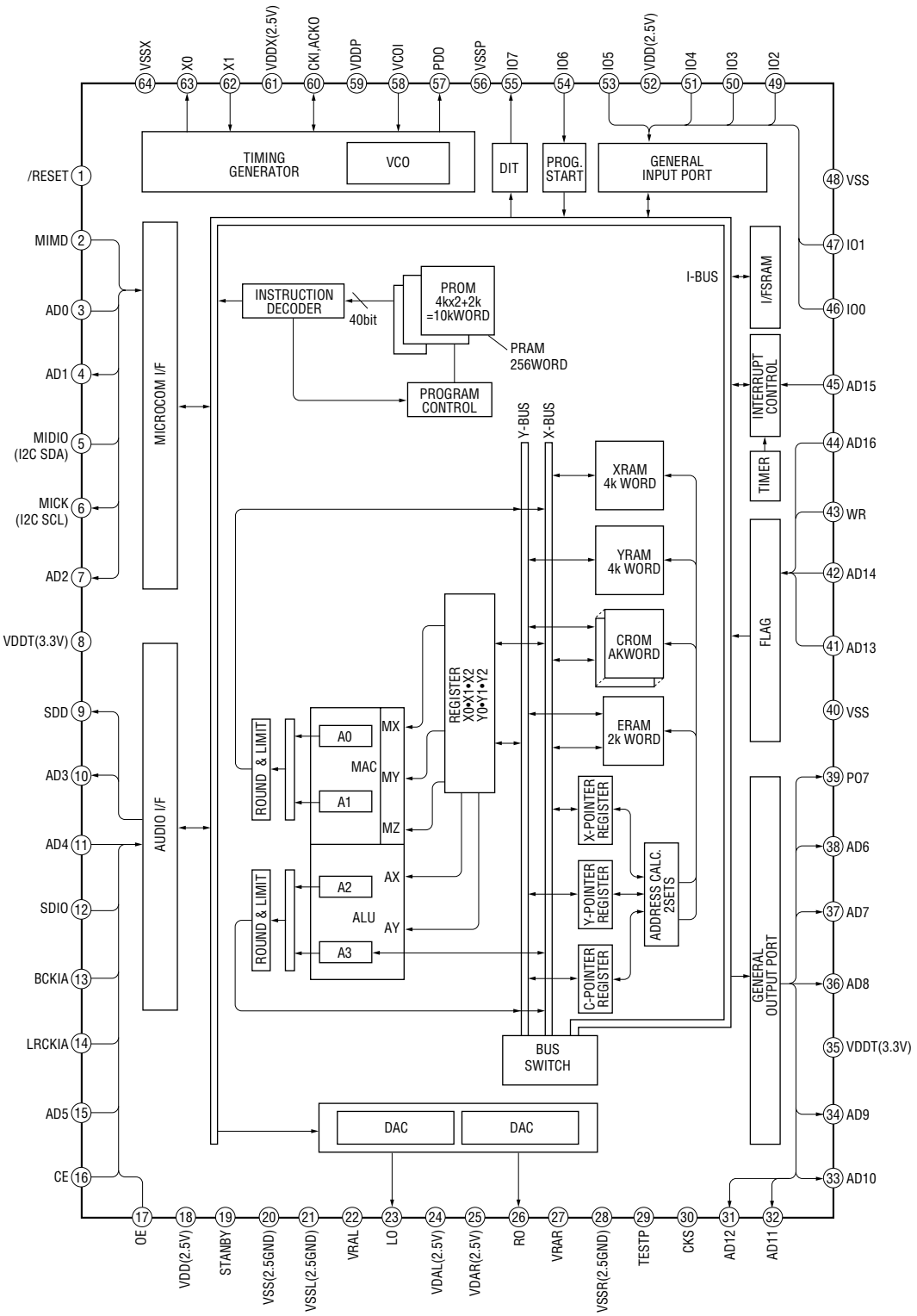
IC8 BH6518FS-E2



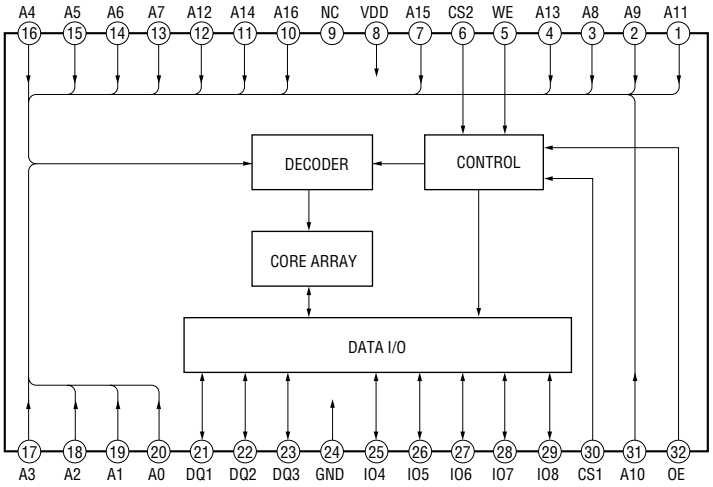
IC6 MSM51V17400D-10TK-FS



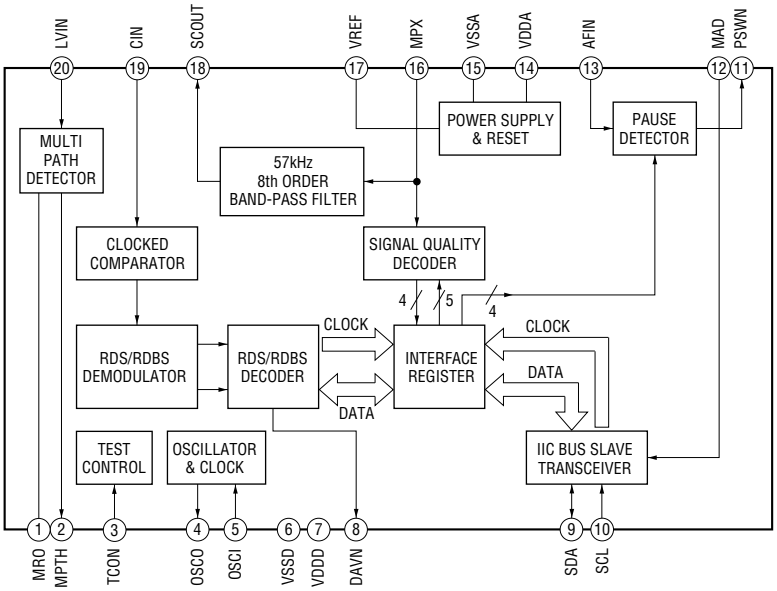
IC5 CXD9684R-004



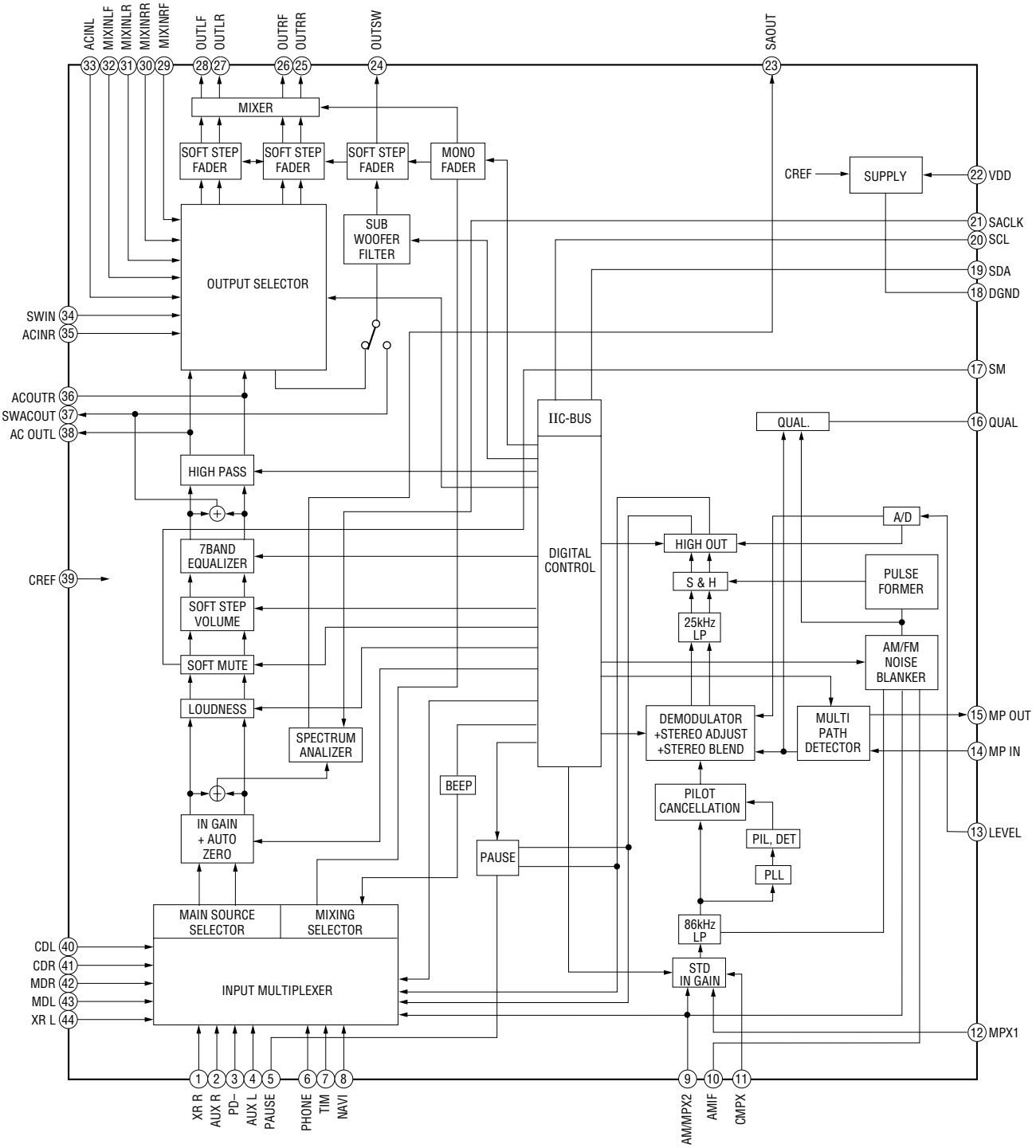
IC4 W24L010AT-12-EL15



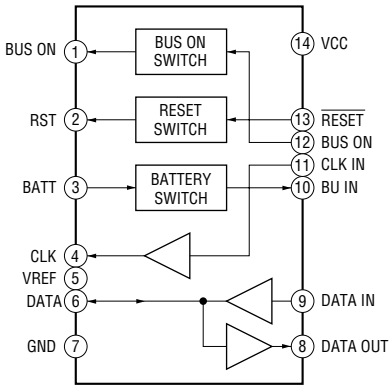
IC101 SAA6588T/V2



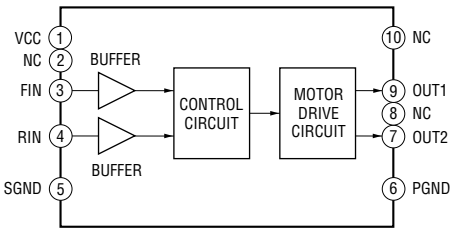
IC301 TDA7406T



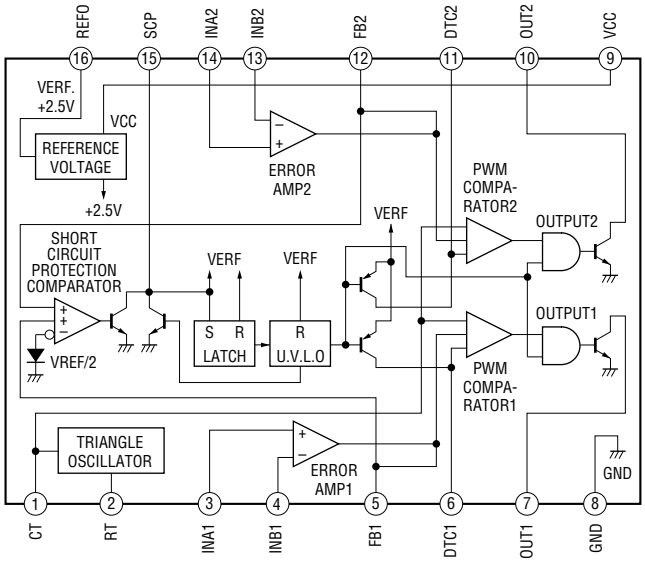
IC601 BA8270F



IC702 LB1930M
IC703 LB1930M



IC801 TL1451ACDB
IC802 TL1451ACDB



IC206 RRX9000-0601#1