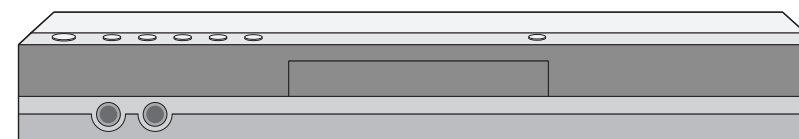


SERVICE MANUAL MODEL: DKS-5500/DKS-5600



# DVD KARAOKE SYSTEM **SERVICE MANUAL**



**MODEL: DKS-5500/DKS-5600**

2005

LG Electronics Inc.

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# SECTION 1. GENERAL

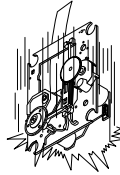
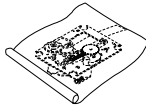
## □ SERVICING PRECAUTIONS

### NOTES REGARDING HANDLING OF THE PICK-UP

#### 1. Notes for transport and storage

- 1) The pick-up should always be left in its conductive bag until immediately prior to use.
- 2) The pick-up should never be subjected to external pressure or impact.

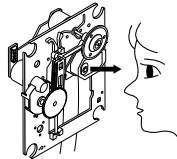
Storage in conductive bag



Drop impact

#### 2. Repair notes

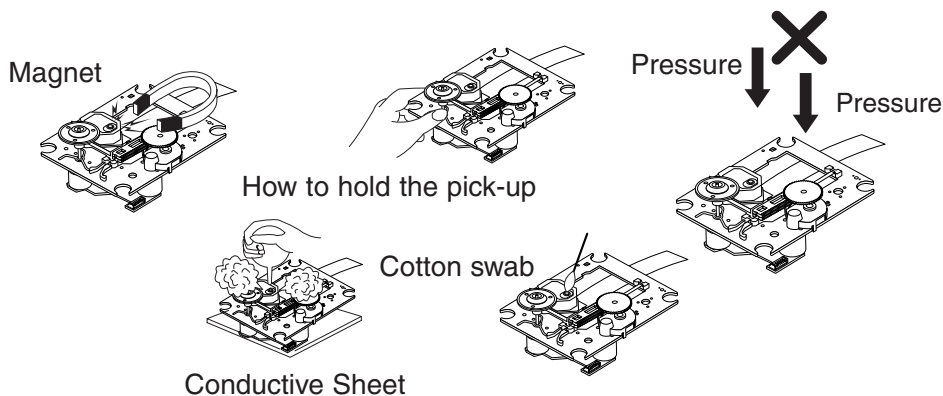
- 1) The pick-up incorporates a strong magnet, and so should never be brought close to magnetic materials.
- 2) The pick-up should always be handled correctly and carefully, taking care to avoid external pressure and impact. If it is subjected to strong pressure or impact, the result may be an operational malfunction and/or damage to the printed-circuit board.
- 3) Each and every pick-up is already individually adjusted to a high degree of precision, and for that reason the adjustment point and installation screws should absolutely never be touched.
- 4) Laser beams may damage the eyes!  
Absolutely never permit laser beams to enter the eyes!  
Also NEVER switch ON the power to the laser output part (lens, etc.) of the pick-up if it is damaged.



NEVER look directly at the laser beam, and don't let contact fingers or other exposed skin.

#### 5) Cleaning the lens surface

If there is dust on the lens surface, the dust should be cleaned away by using an air bush (such as used for camera lens). The lens is held by a delicate spring. When cleaning the lens surface, therefore, a cotton swab should be used, taking care not to distort this.



#### 6) Never attempt to disassemble the pick-up.

Spring by excess pressure. If the lens is extremely dirty, apply isopropyl alcohol to the cotton swab. (Do not use any other liquid cleaners, because they will damage the lens.) Take care not to use too much of this alcohol on the swab, and do not allow the alcohol to get inside the pick-up.

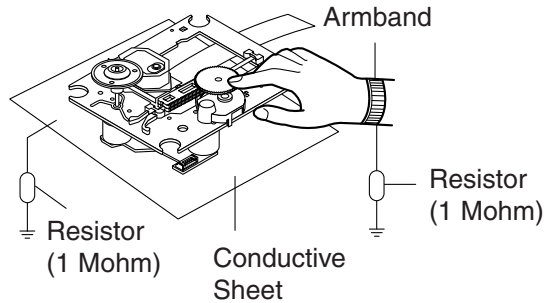
# NOTES REGARDING COMPACT DISC PLAYER REPAIRS

## 1. Preparations

- 1) Compact disc players incorporate a great many ICs as well as the pick-up (laser diode). These components are sensitive to, and easily affected by, static electricity. If such static electricity is high voltage, components can be damaged, and for that reason components should be handled with care.
- 2) The pick-up is composed of many optical components and other high-precision components. Care must be taken, therefore, to avoid repair or storage where the temperature or humidity is high, where strong magnetism is present, or where there is excessive dust.

## 2. Notes for repair

- 1) Before replacing a component part, first disconnect the power supply lead wire from the unit
- 2) All equipment, measuring instruments and tools must be grounded.
- 3) The workbench should be covered with a conductive sheet and grounded.  
When removing the laser pick-up from its conductive bag, do not place the pick-up on the bag. (This is because there is the possibility of damage by static electricity.)
- 4) To prevent AC leakage, the metal part of the soldering iron should be grounded.
- 5) Workers should be grounded by an armband (1M  $\Omega$ )
- 6) Care should be taken not to permit the laser pick-up to come in contact with clothing, in order to prevent static electricity changes in the clothing to escape from the armband.
- 7) The laser beam from the pick-up should NEVER be directly facing the eyes or bare skin.



## CLEARING MALFUNCTION

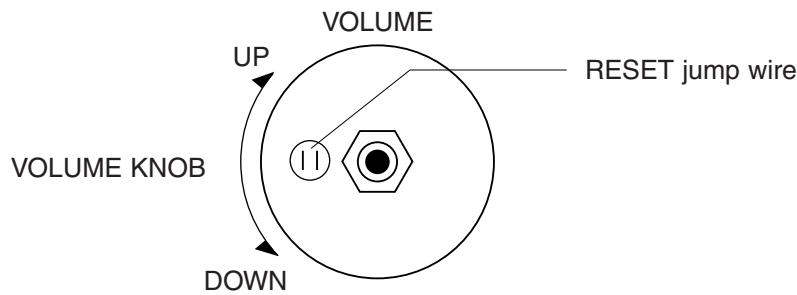
You can reset your unit to initial status if malfunction occur(button malfunction, display, etc.).

Using a pointed good conductor(such as driver), simply short the RESET jump wire on the inside of the volume knob for more than 3 seconds.

If you reset your unit, you must reenter all its settings(stations, clock, timer)

**NOTE:** 1. To operate the RESET jump wire, pull the volume rotary knob and release it.

2. If you wish to operate the RESET jump wire, it is necessary to unplug the power cord.





## □ ESD PRECAUTIONS

### Electrostatically Sensitive Devices (ESD)



Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive Devices (ESD). Examples of typical ESD devices are integrated circuits and some field-effect transistors and semiconductor chip components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ESD devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ESD devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESD devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESD devices.
6. Do not remove a replacement ESD device from its protective package until immediately before you are ready to install it. (Most replacement ESD devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive materials).
7. Immediately before removing the protective material from the leads of a replacement ESD device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

**CAUTION : BE SURE NO POWER IS APPLIED TO THE CHASSIS OR CIRCUIT, AND OBSERVE ALL OTHER SAFETY PRECAUTIONS.**

8. Minimize bodily motions when handling unpackaged replacement ESD devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ESD device).

### CAUTION. GRAPHIC SYMBOLS

	THE LIGHTNING FLASH WITH APROWHEAD SYMBOL. WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK.
	THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF IMPORTANT SAFETY INFORMATION IN SERVICE LITERATURE.

# □ SPECIFICATIONS

## **General**

Power requirements	AC 110-240V , 50/60 Hz
Power consumption	14W
Dimensions (approx.)	430 X 43 X 256 mm (w x h x d)
Mass (approx.)	2.54 kg
Operating temperature	5°C to 35°C (41°F to 95°F)
Operating humidity	5 % to 90 %

## **System**

Laser	Semiconductor laser, wavelength 650 nm
Signal system	PAL/NTSC/AUTO
Frequency response	DVD (PCM 96 kHz): 8 Hz to 44 kHz DVD (PCM 48 kHz): 8 Hz to 22 kHz CD: 8 Hz to 20 kHz
Signal-to-noise ratio	More than 100dB (ANALOG OUT connectors only)
Harmonic distortion	Less than 0.008%
Dynamic range	More than 100 dB (DVD) More than 95 dB (CD)

## **Outputs**

VIDEO OUT	1 Vp-p 75 $\Omega$ , sync negative, RCA jack x 1
Audio output (optical audio)	3 V (p-p), 75 $\Omega$ , Optical connector x 1
Audio output (analog audio)	2.0 Vrms (1 KHz, 0 dB), 600 $\Omega$ , RCA jack (L, R) x 1

- Design and specifications are subject to change without notice.

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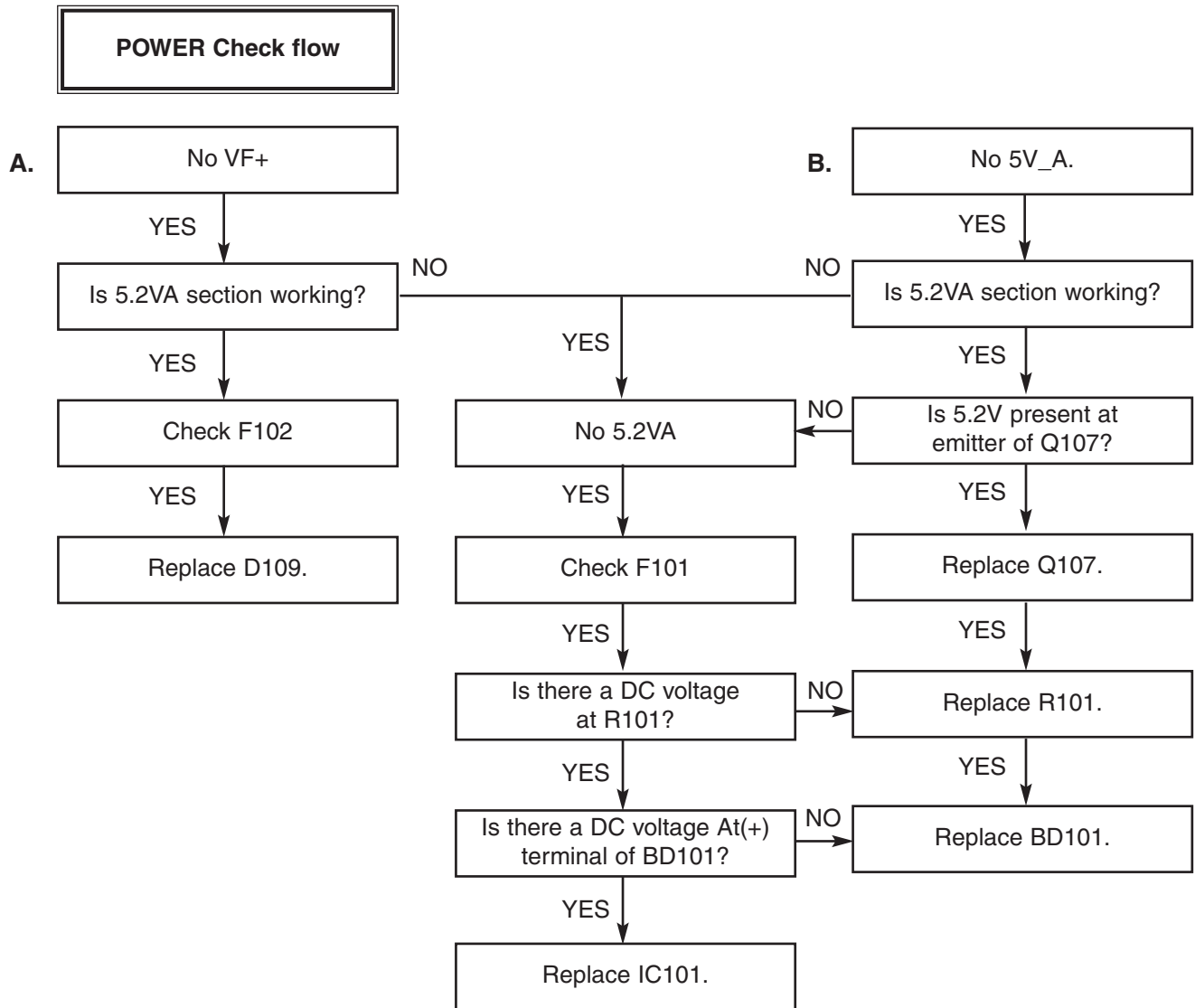
DTS and DTS Digital Surround are registered trademarks of Digital Theater Systems, Inc.

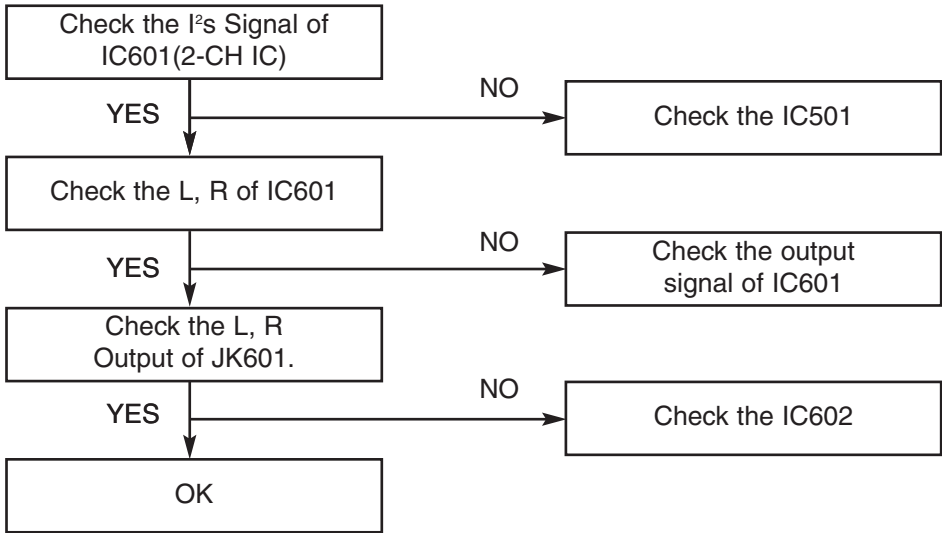
# MEMO

A series of horizontal dotted lines for writing.

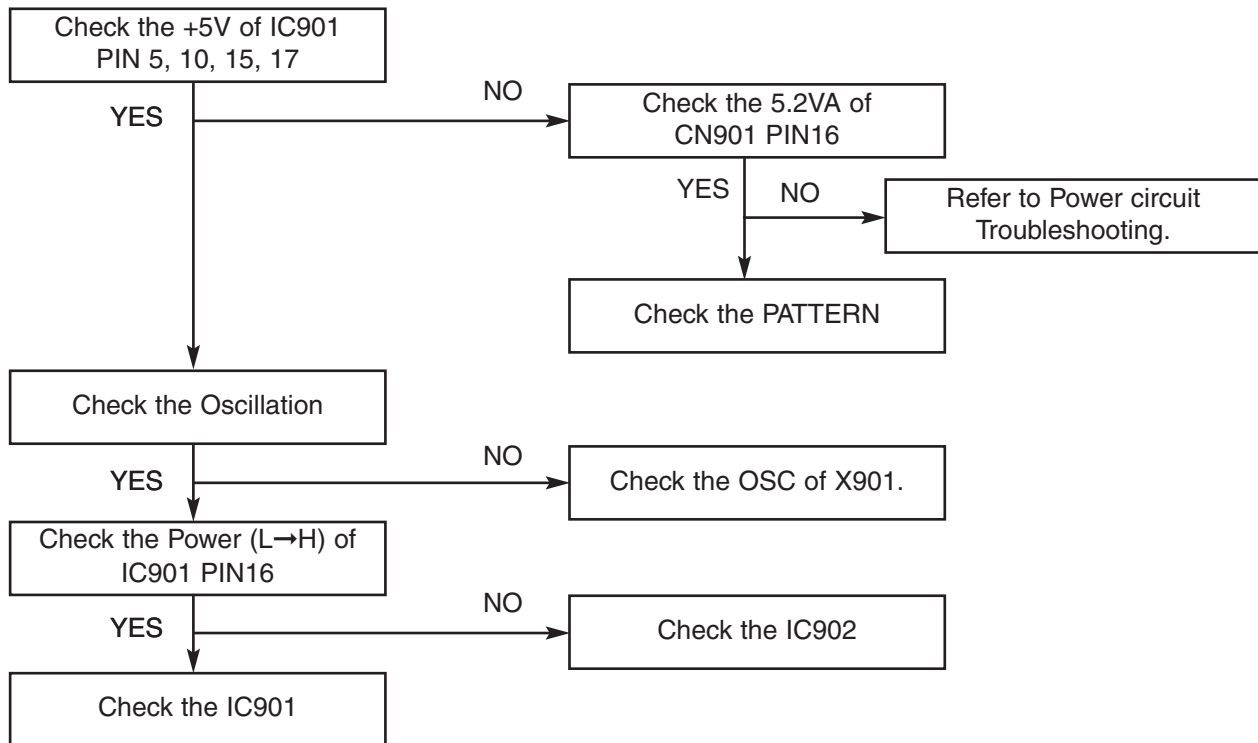
# SECTION 2. ELECTRICAL

## □ ELECTRICAL TROUBLESHOOTING GUIDE

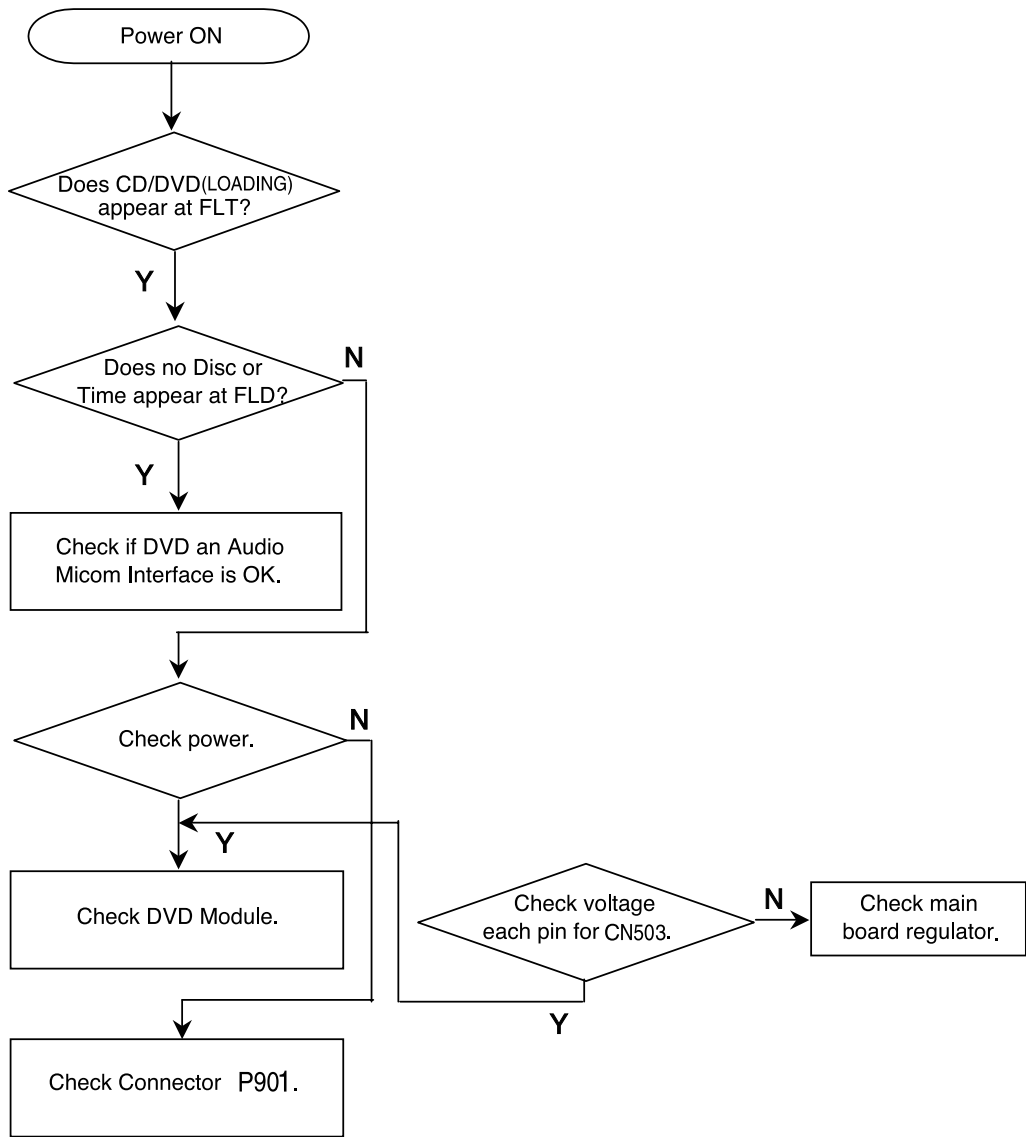




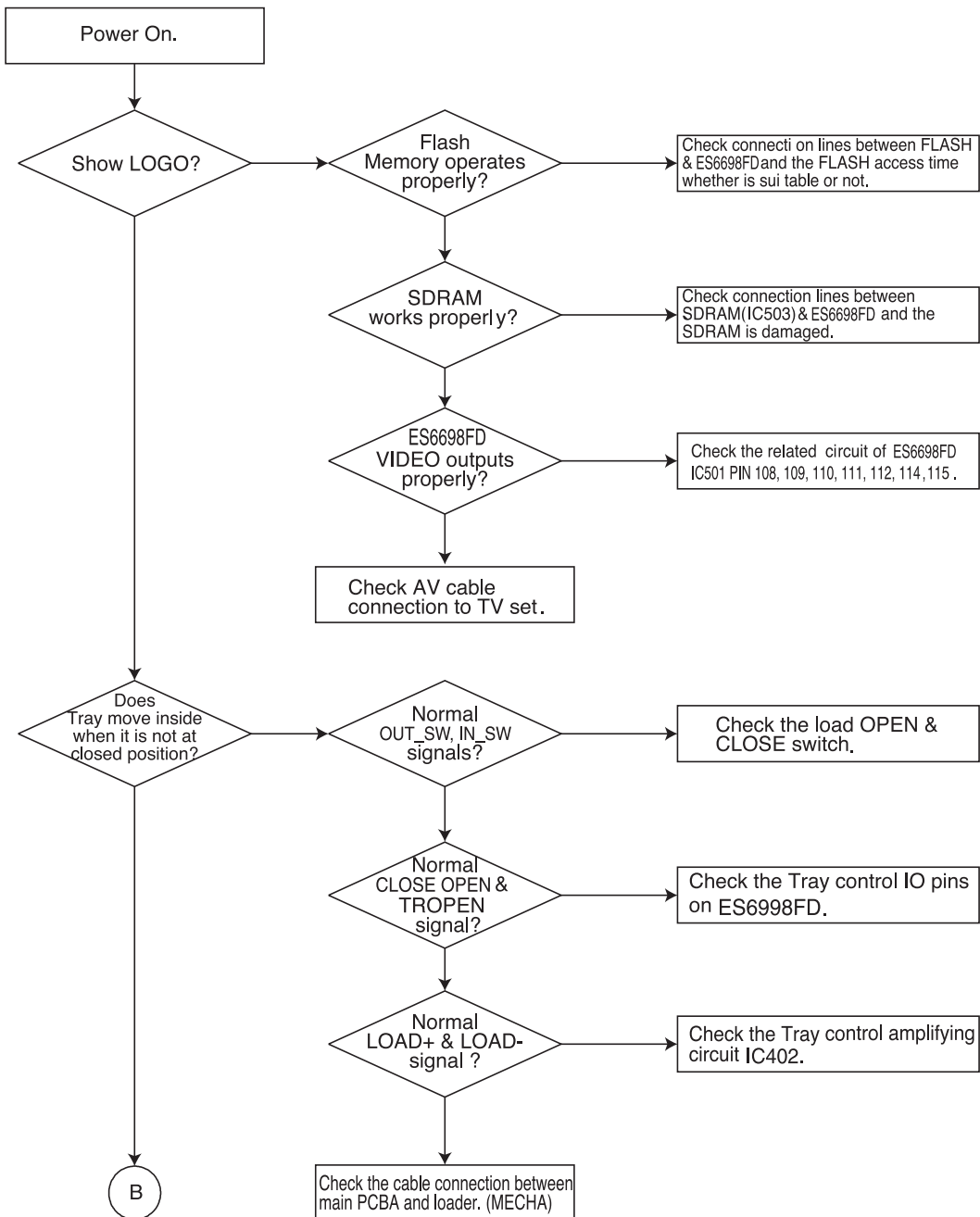
**IC901 U-COM IC TROUBLESHHOTING**

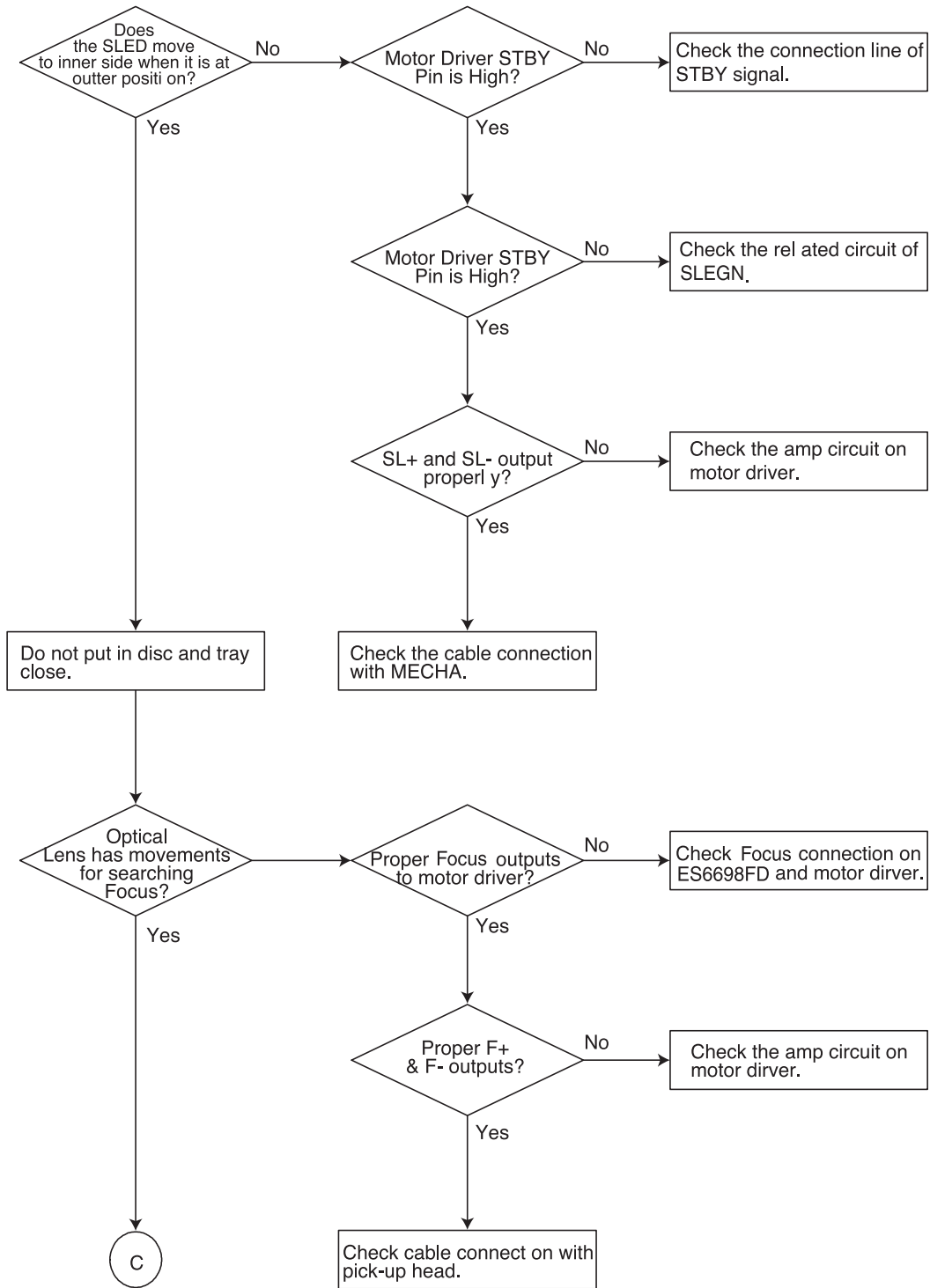


# 1. Power check flow

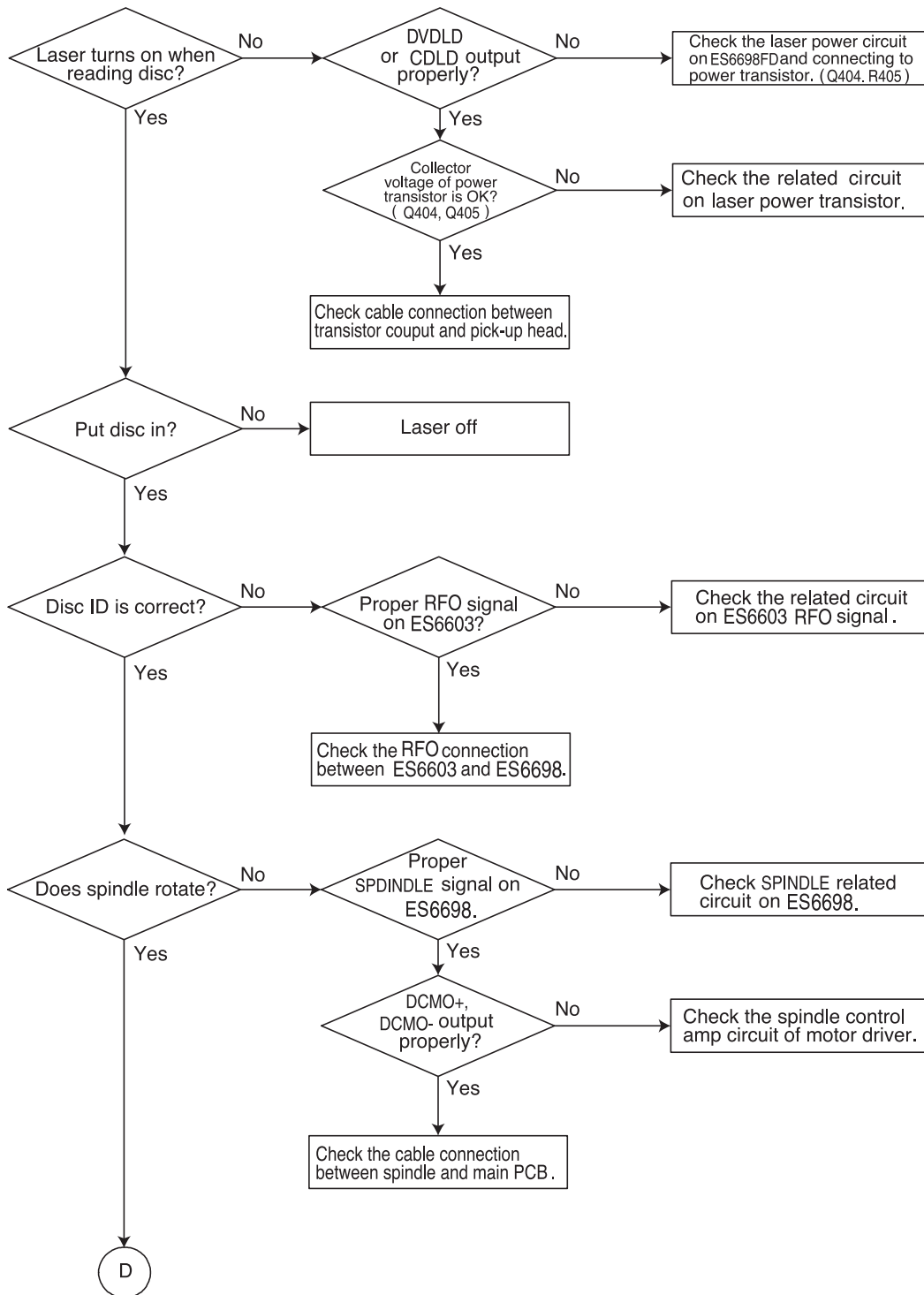


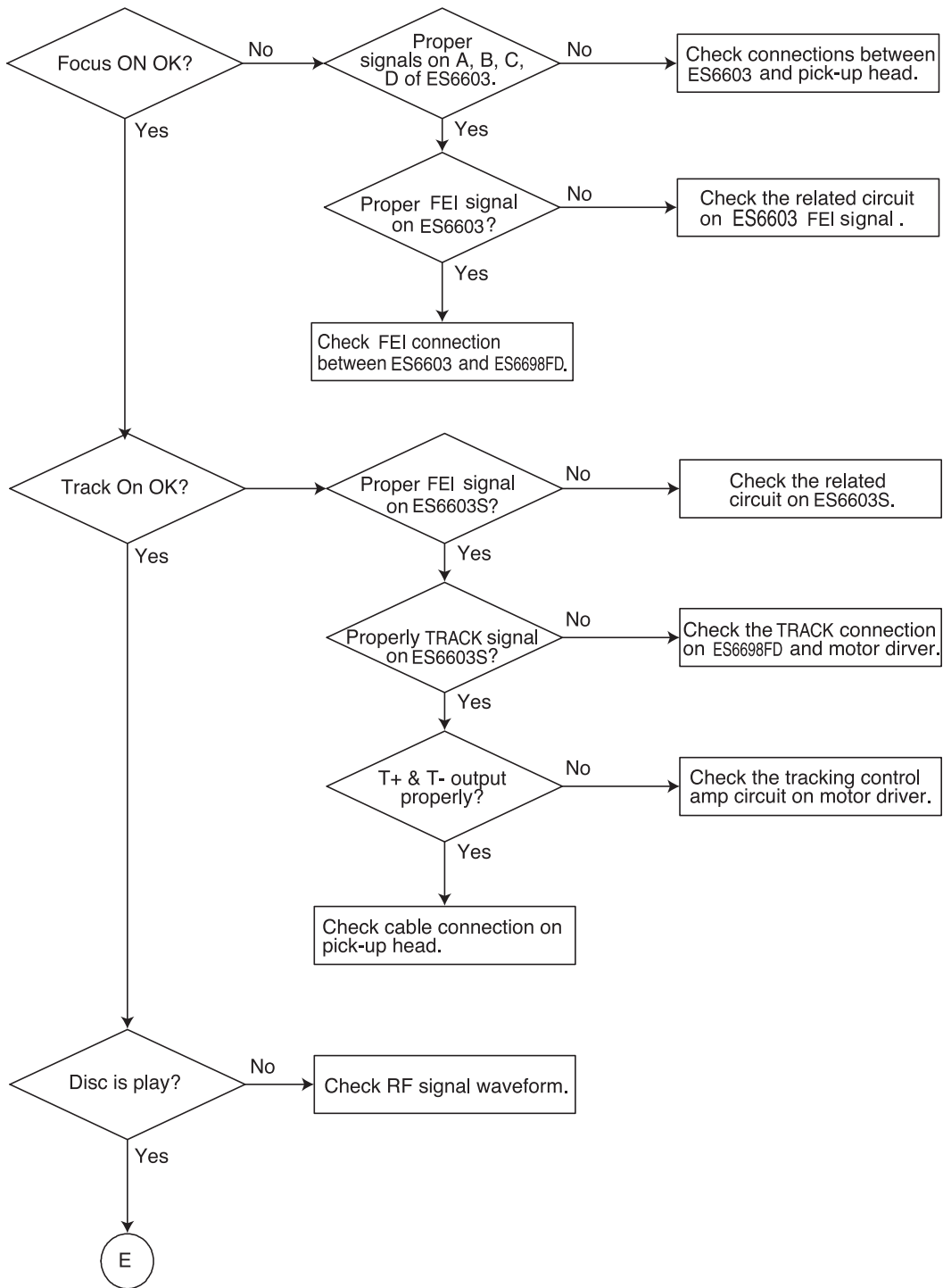
## 2. Test & debug flow

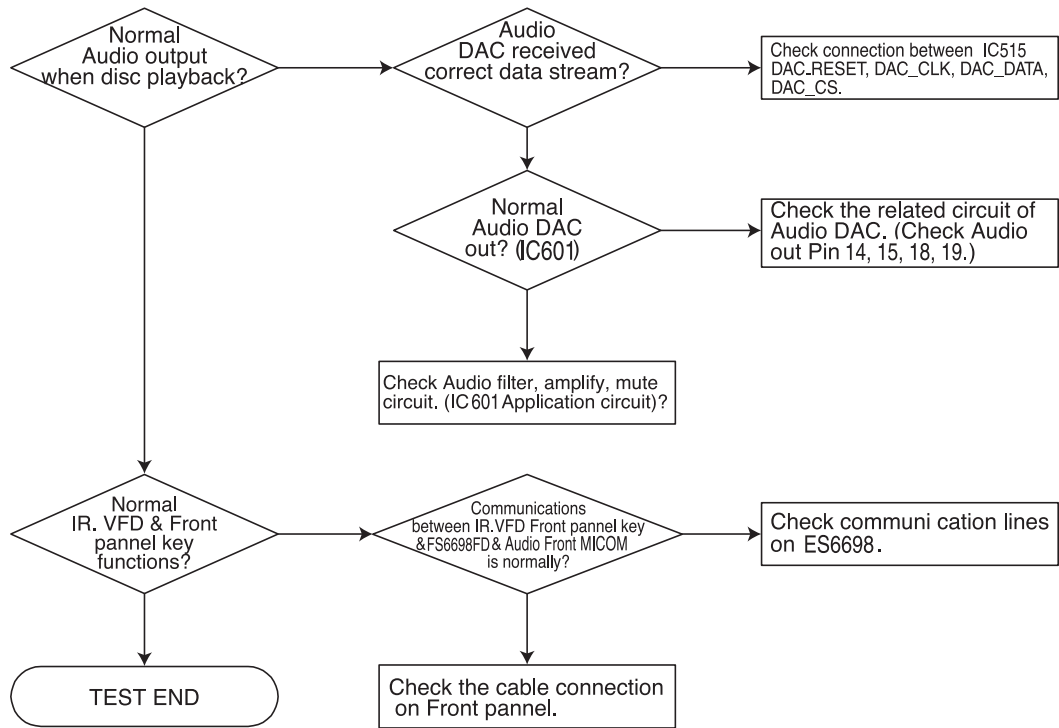






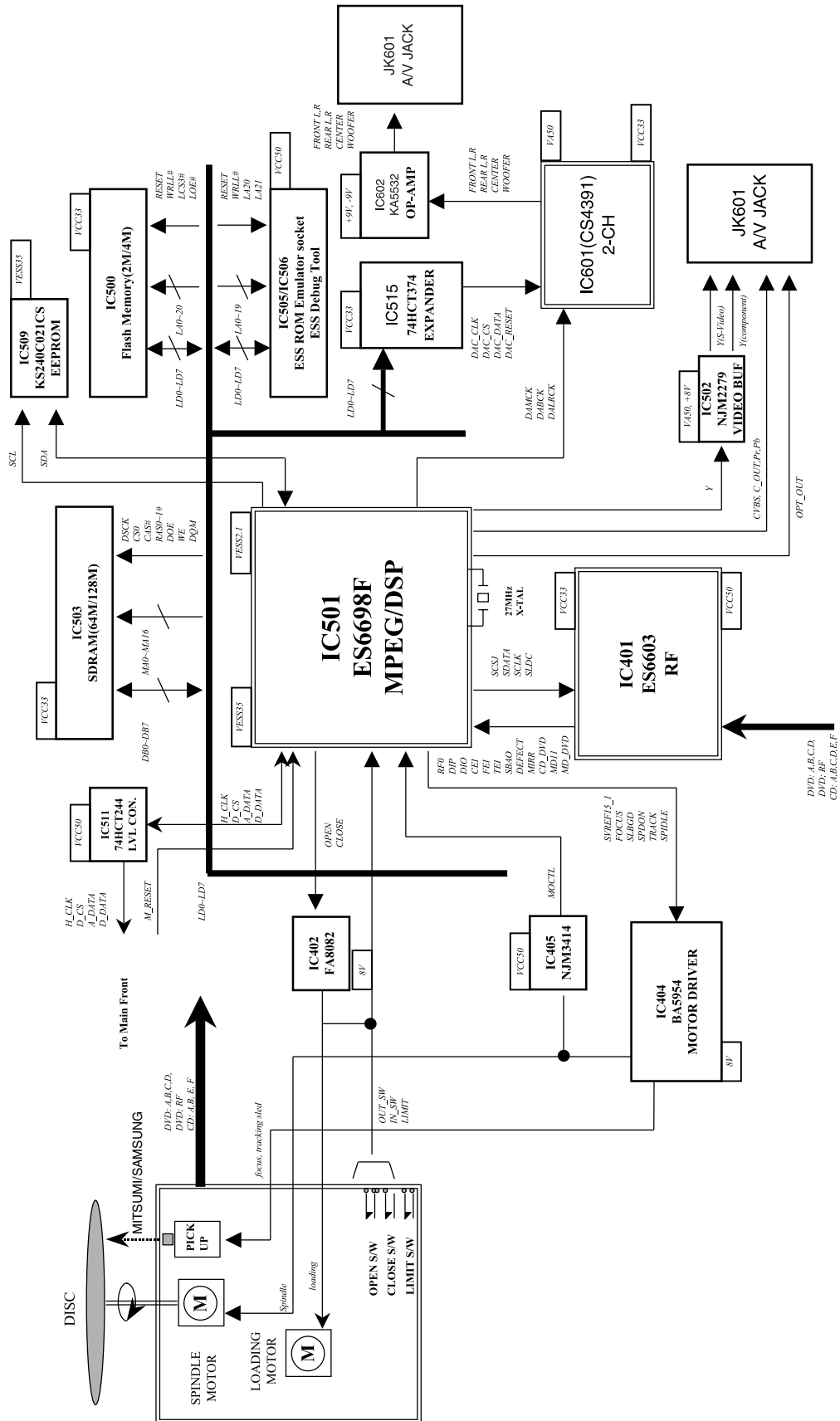




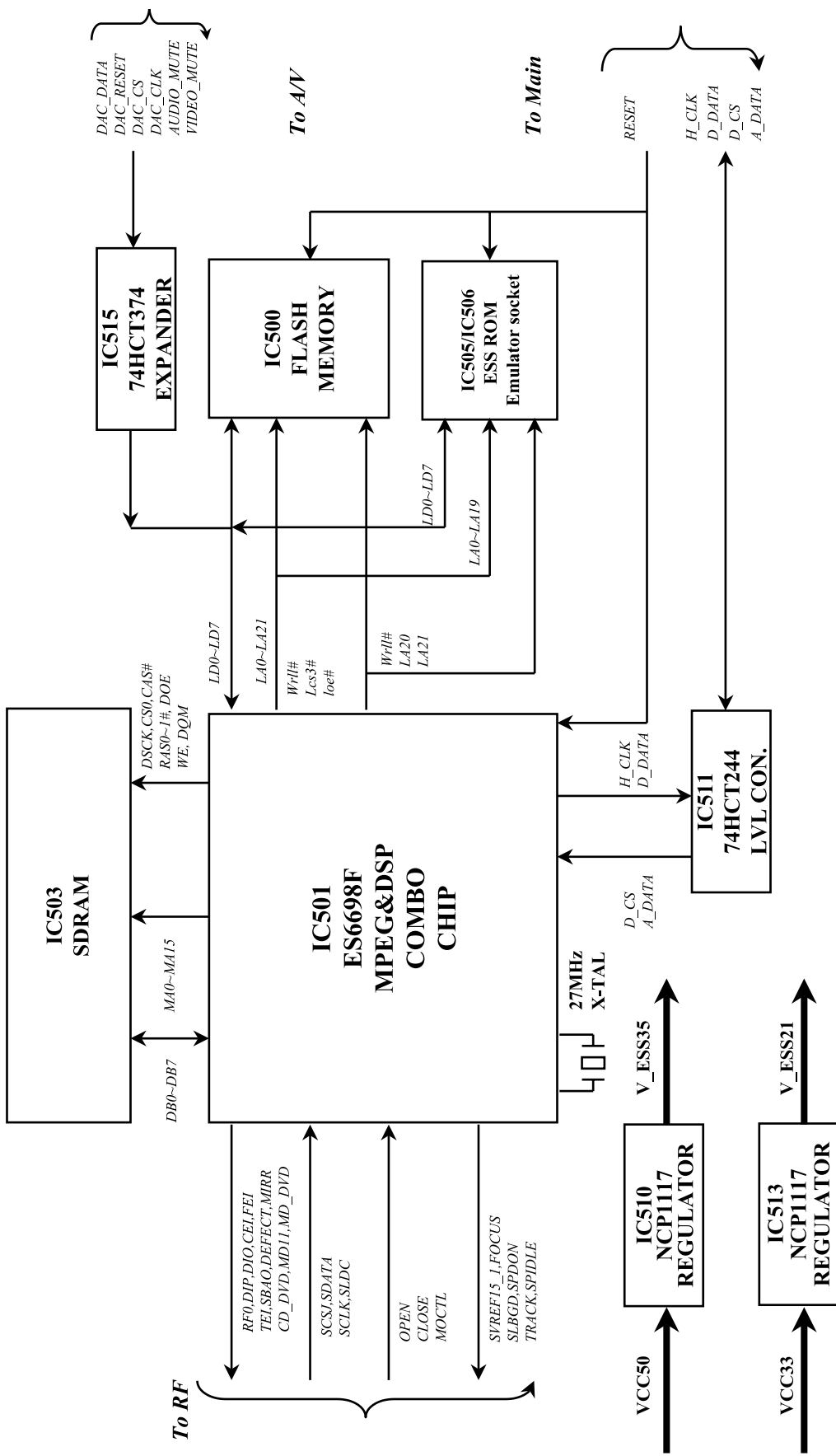


# □ BLOCK DIAGRAM

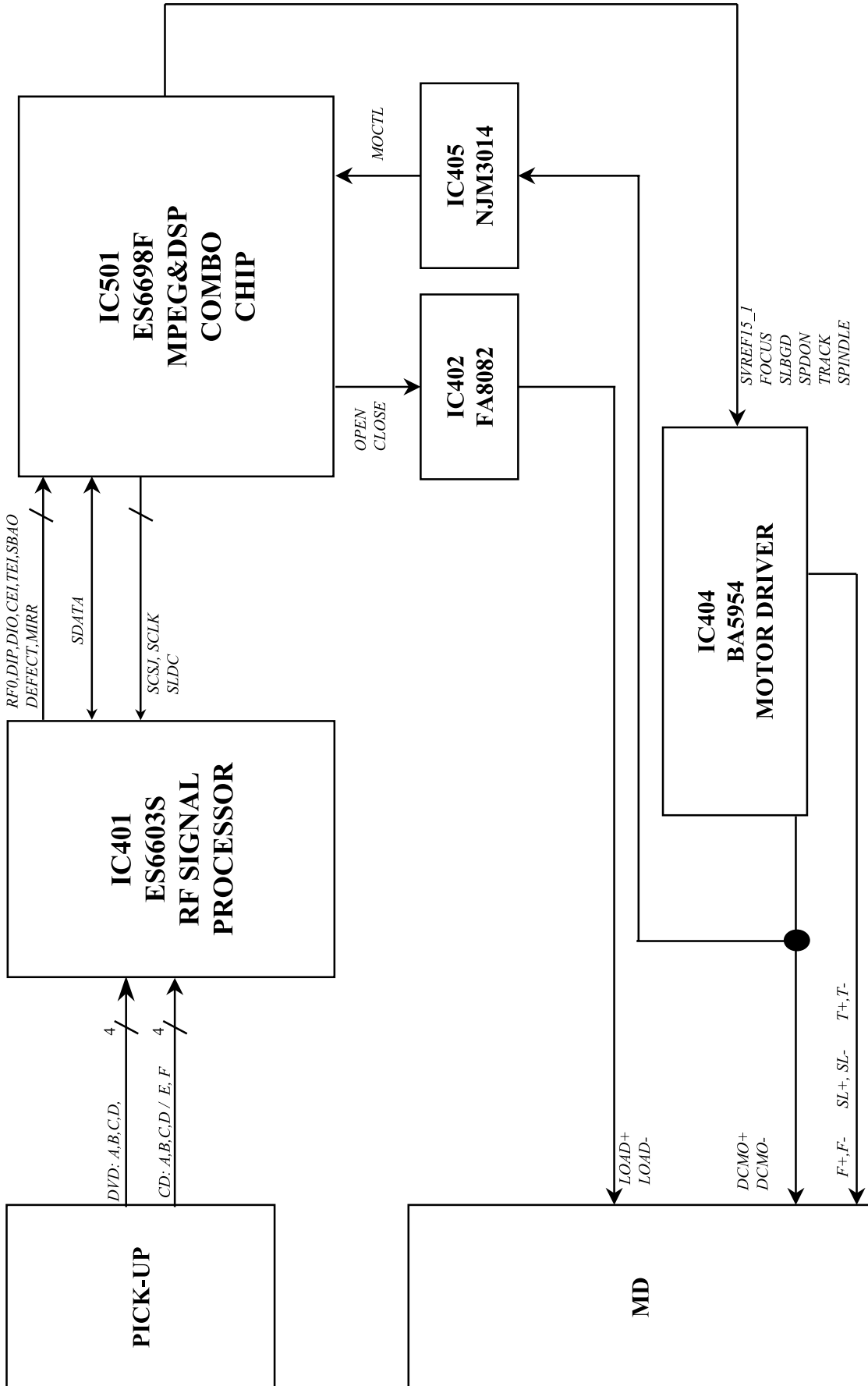
## • SYSTEM BLOCK DIAGRAM



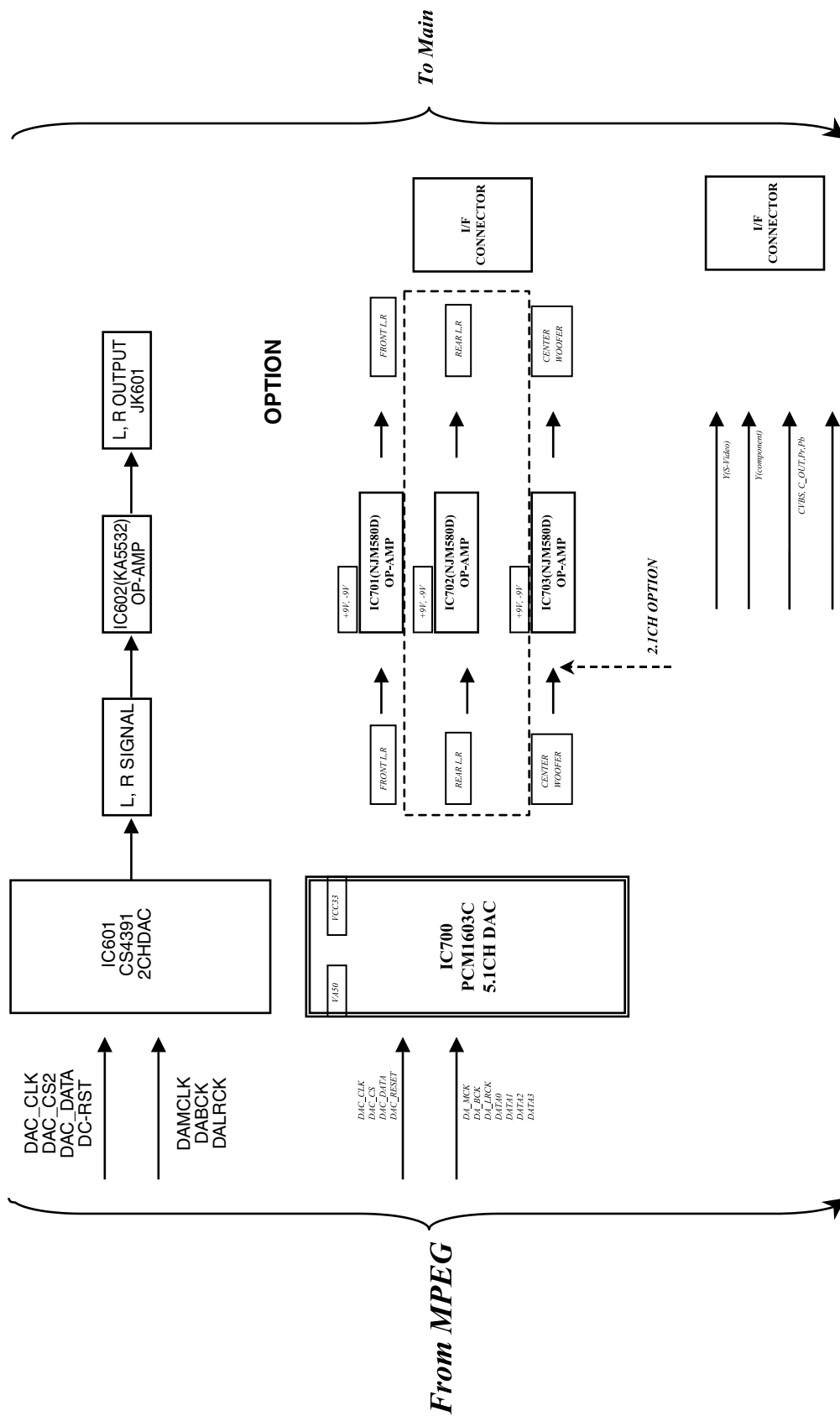
• MEMORY & HOST I/F BLOCK DIAGRAM



• SERVO & MOTOR BLOCK DIAGRAM

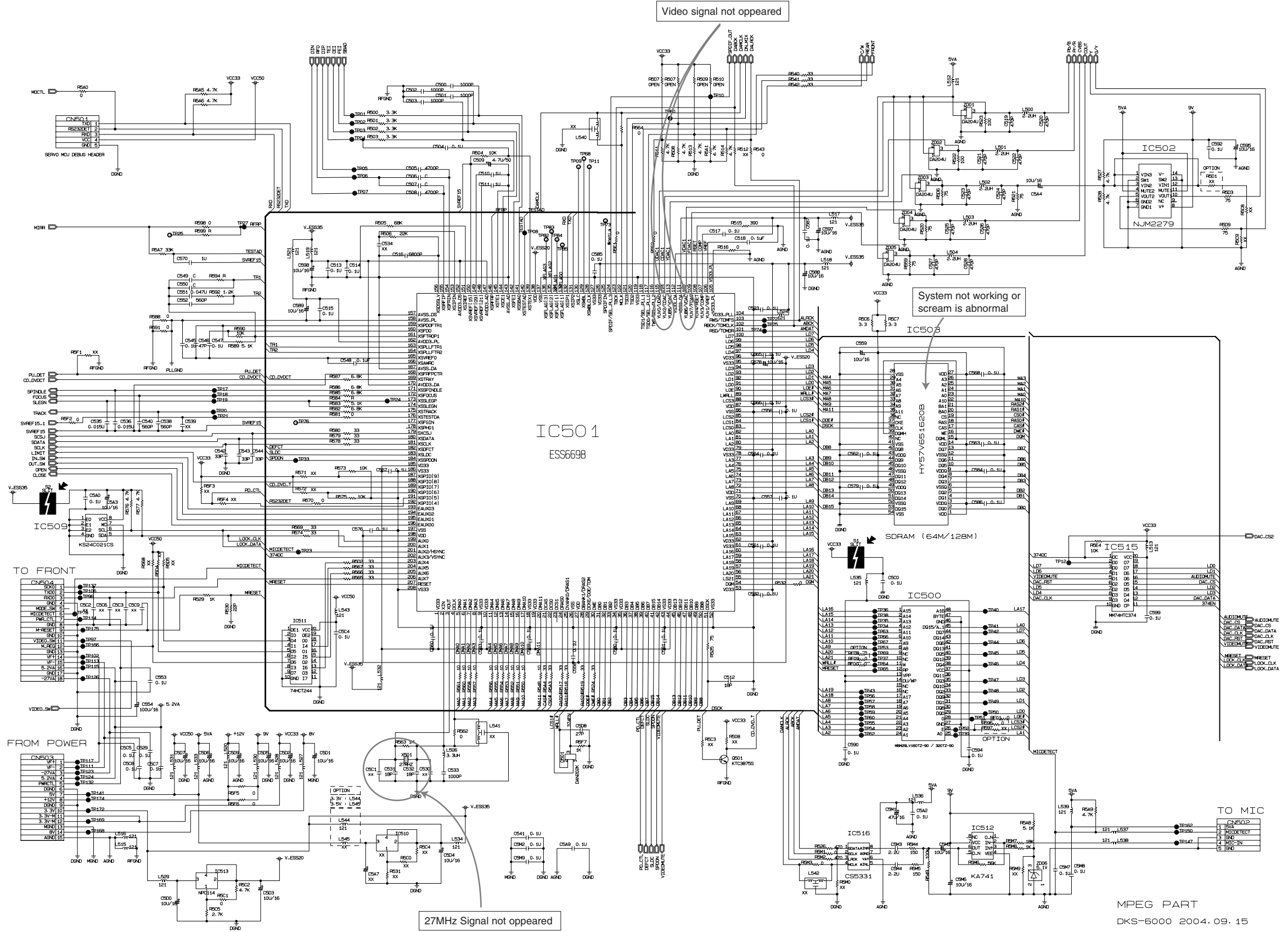


# • A/V SYSTEM BLOCK DIAGRAM



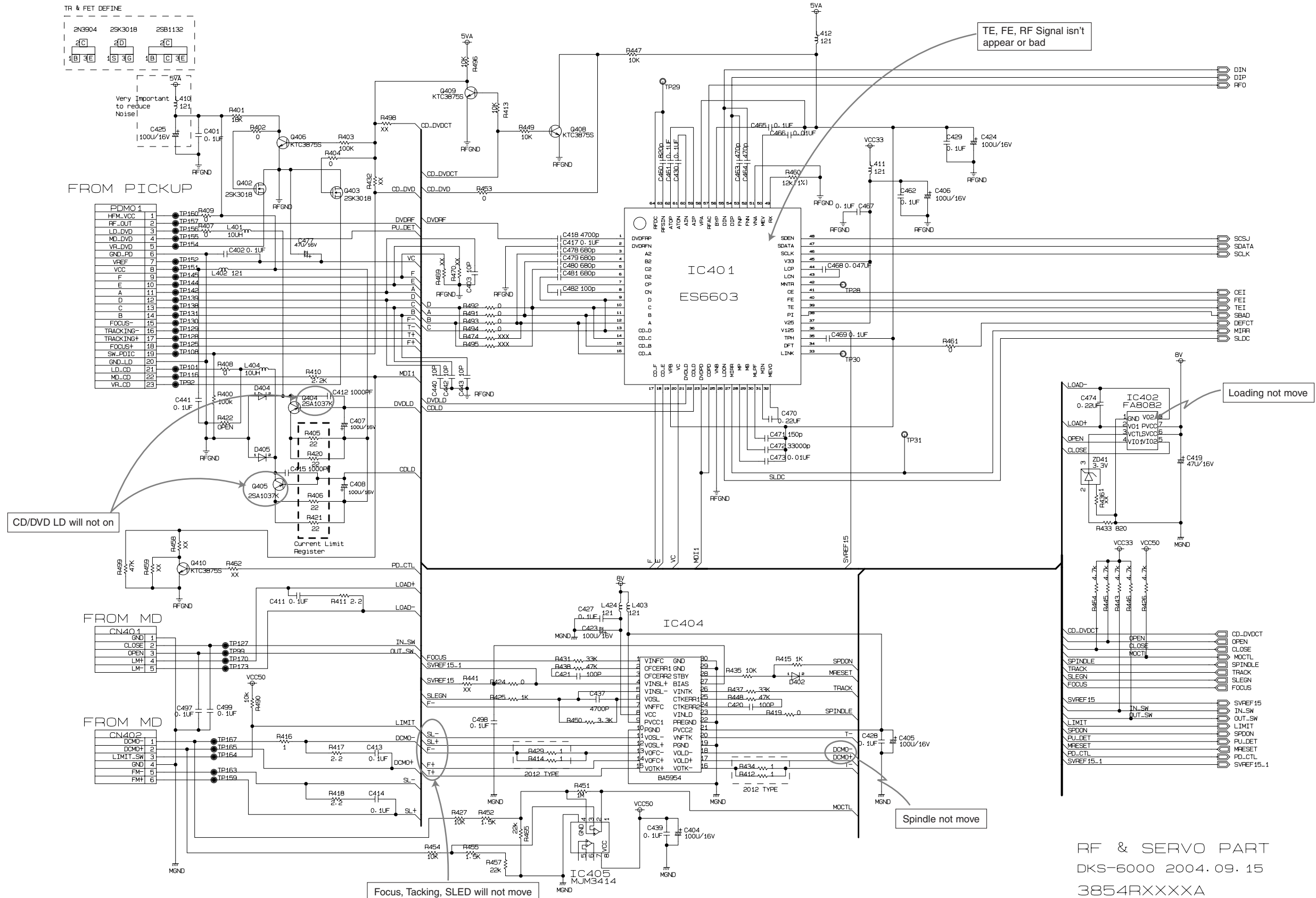
# SCHEMATIC DIAGRAMS

## 1. MPEG SCHEMATIC DIAGRAM

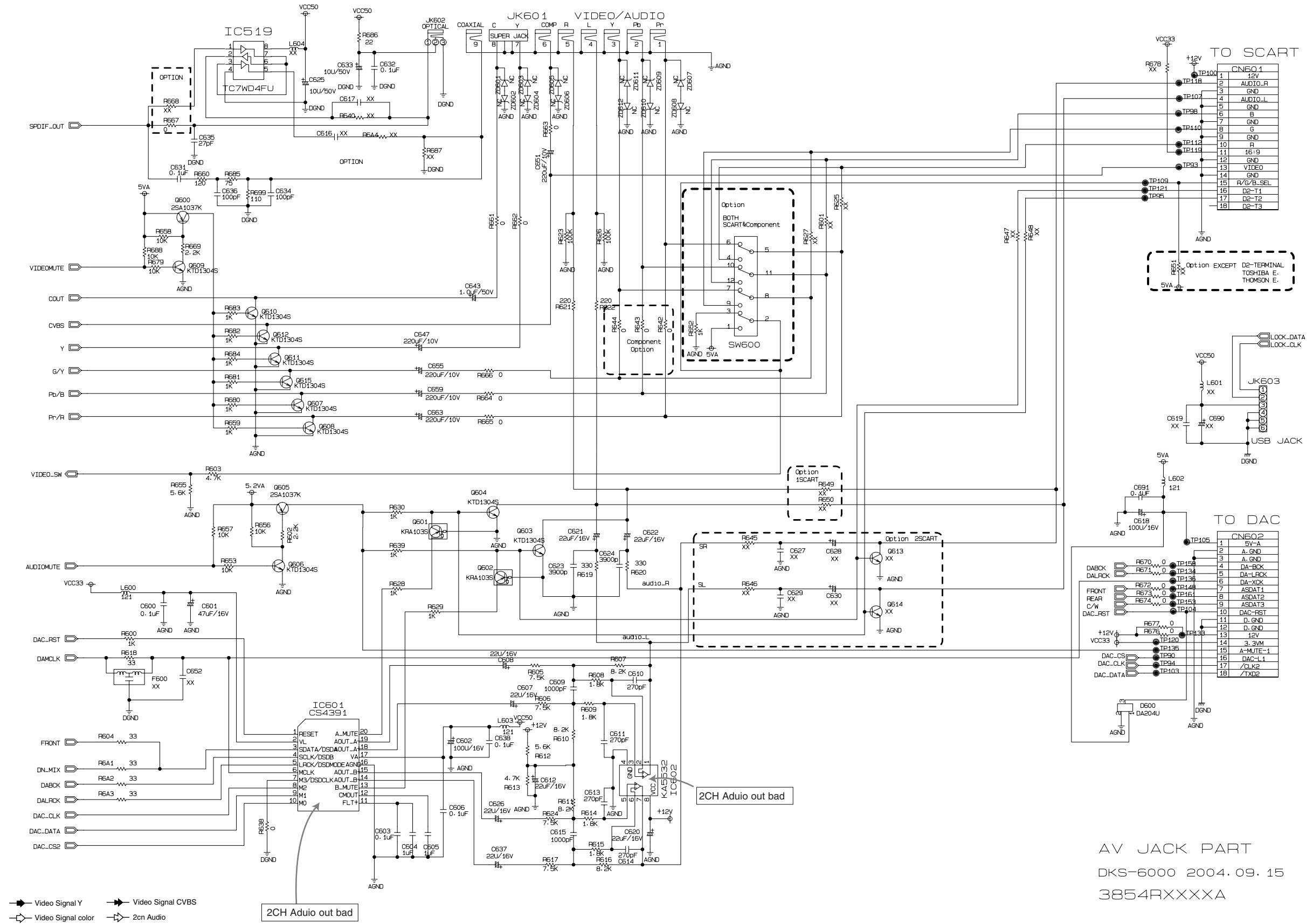




## 2. RF & SERVO SCHEMATIC DIAGRAM

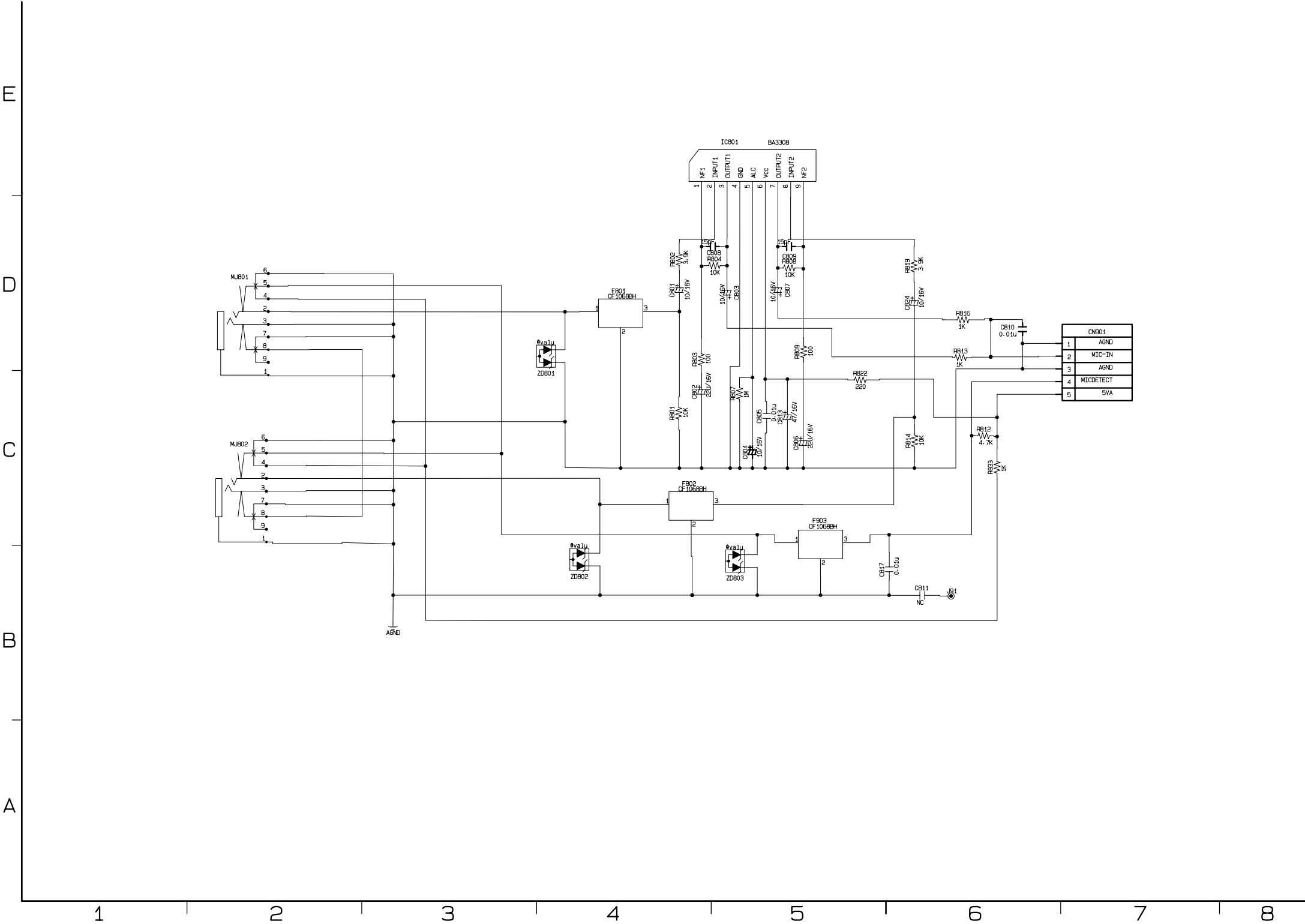


### 3. AV JACK SCHEMATIC DIAGRAM

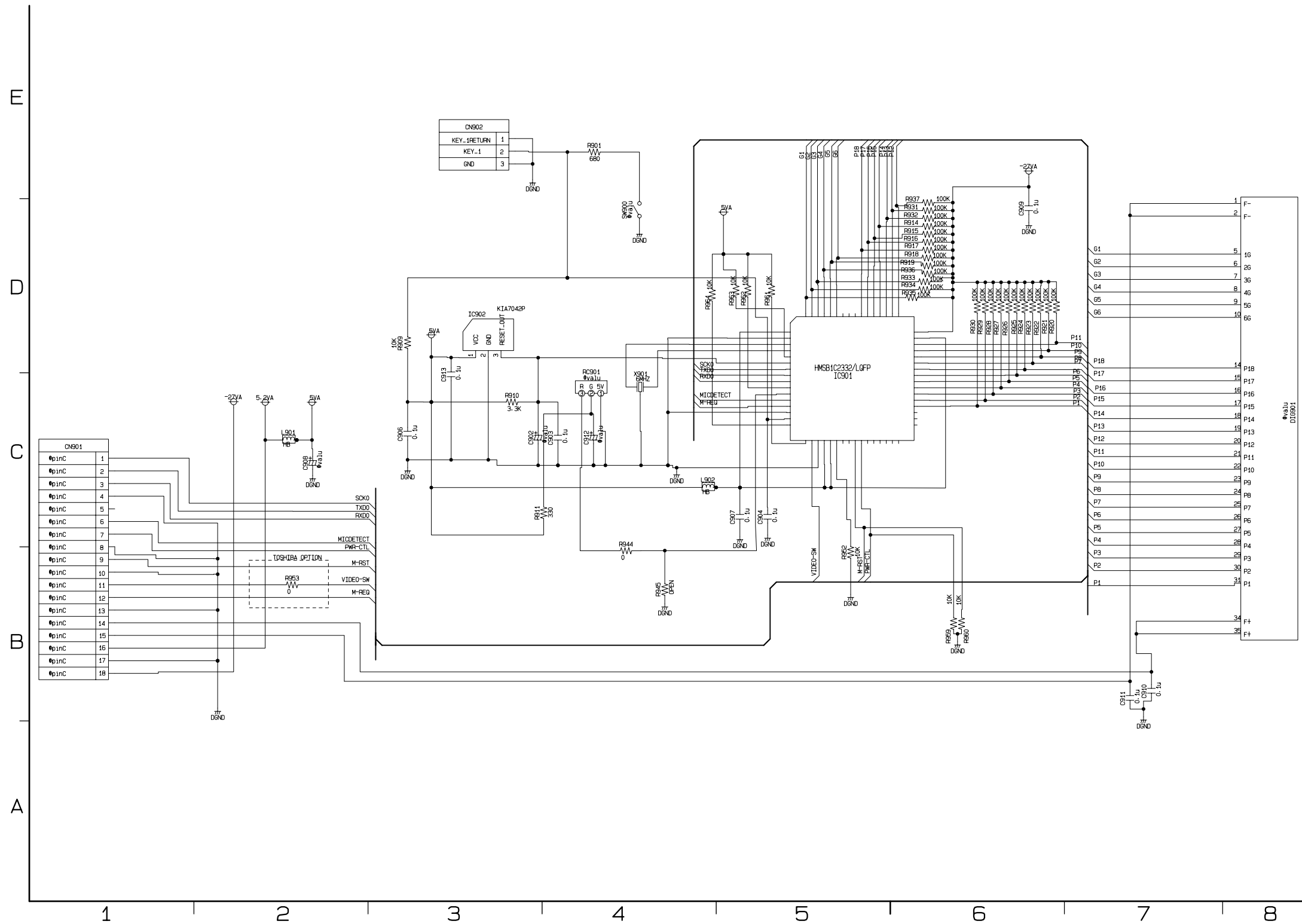


AV JACK PART  
 DKS-6000 2004.09.15  
 3854RXXXXA

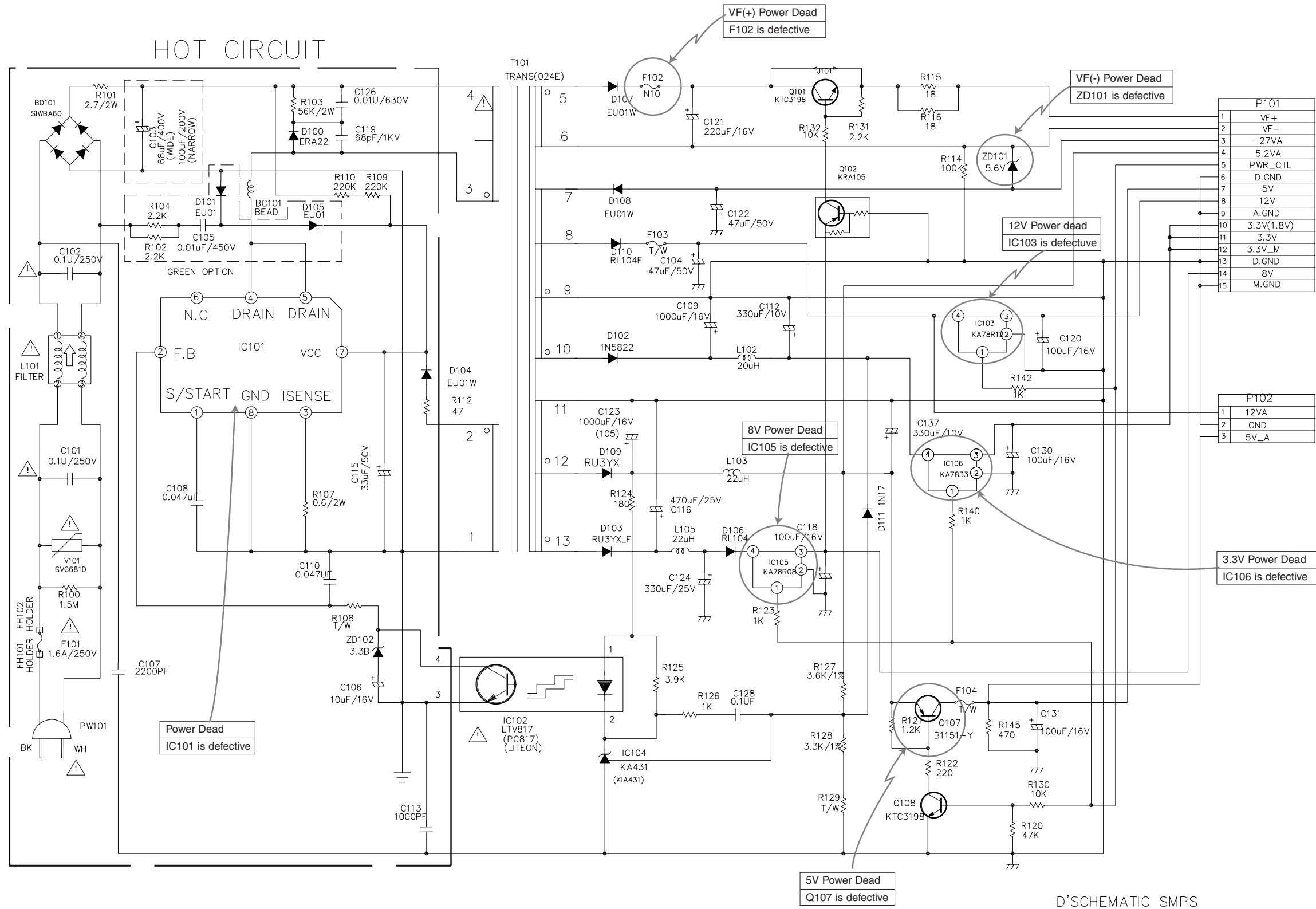
# 4. MIC SCHEMATIC DIAGRAM



# 5. FRONT TIMER SCHEMATIC DIAGRAM



# 6. SMPS SCHEMATIC DIAGRAM



P101

1	VF+
2	VF-
3	-27VA
4	5.2VA
5	PWR_CTL
6	D.GND
7	5V
8	12V
9	A.GND
10	3.3V(1.8V)
11	3.3V
12	3.3V_M
13	D.GND
14	8V
15	M.GND

P102

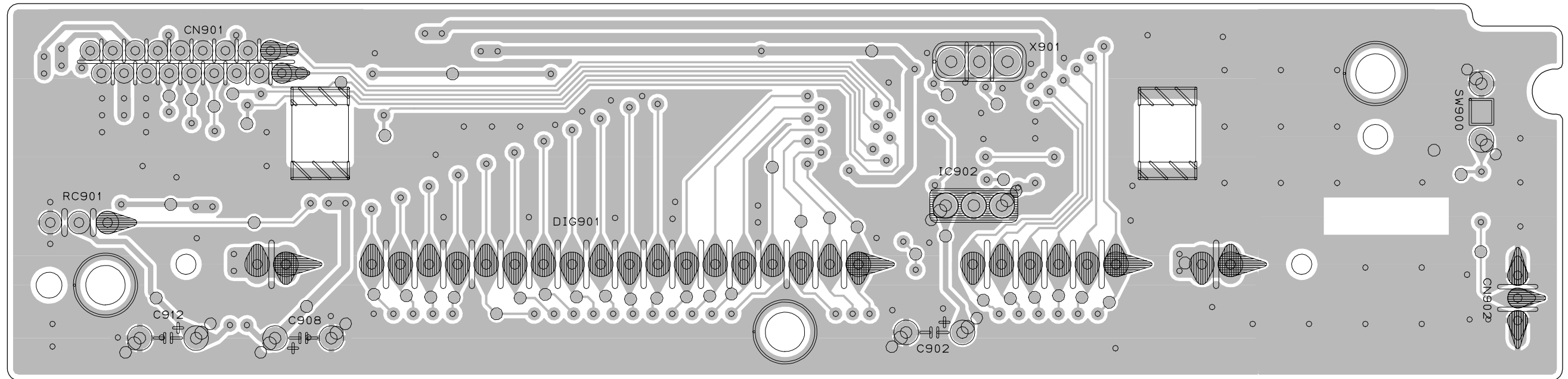
1	12VA
2	GND
3	5V_A

3.3V Power Dead  
IC106 is defective

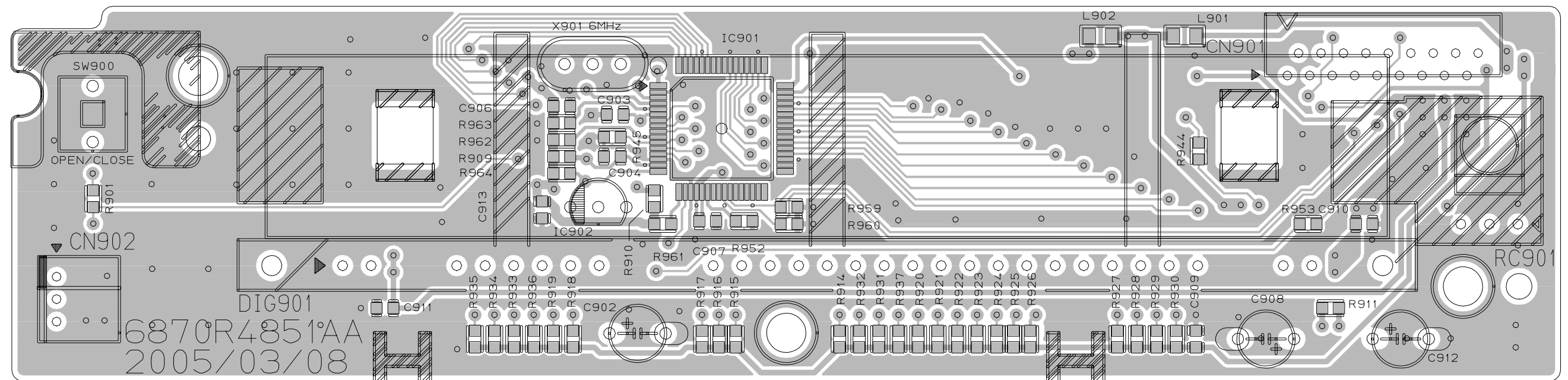
D'SCHEMATIC SMPS  
DV7000'S MTK  
VD 3854R16006A

□ PRINTED CIRCUIT DIAGRAM

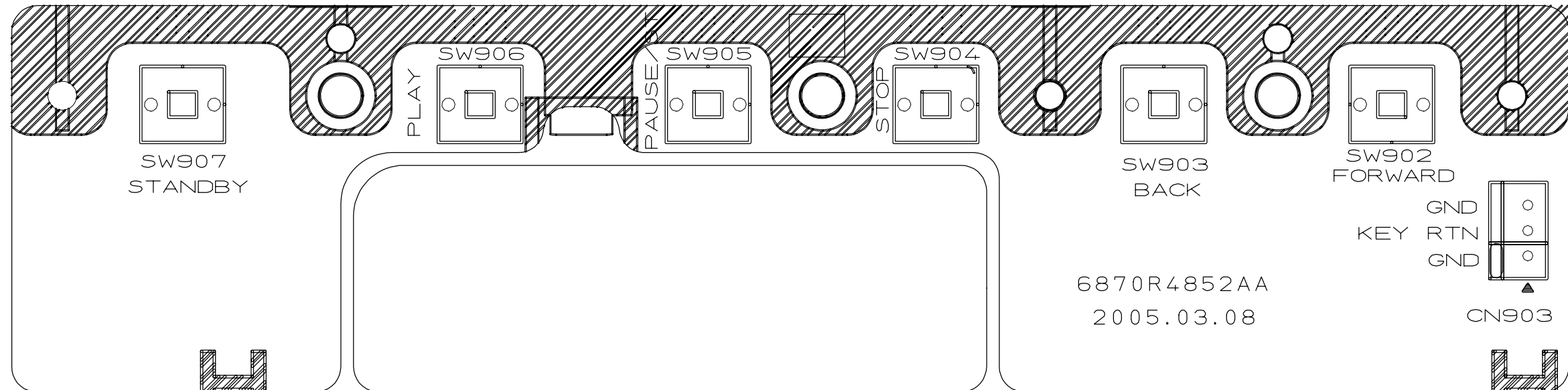
• FRONT P.C BOARD DIAGRAM (SOLDER SIDE)



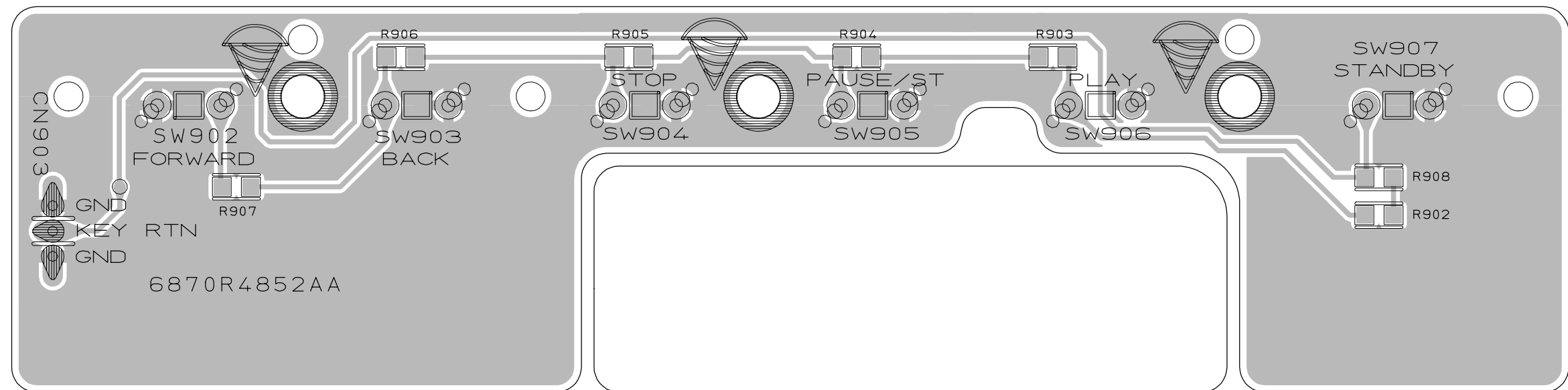
• FRONT P.C BOARD DIAGRAM (COMPONENT SIDE)



• KEY P.C BOARD DIAGRAM (SOLDER SIDE)

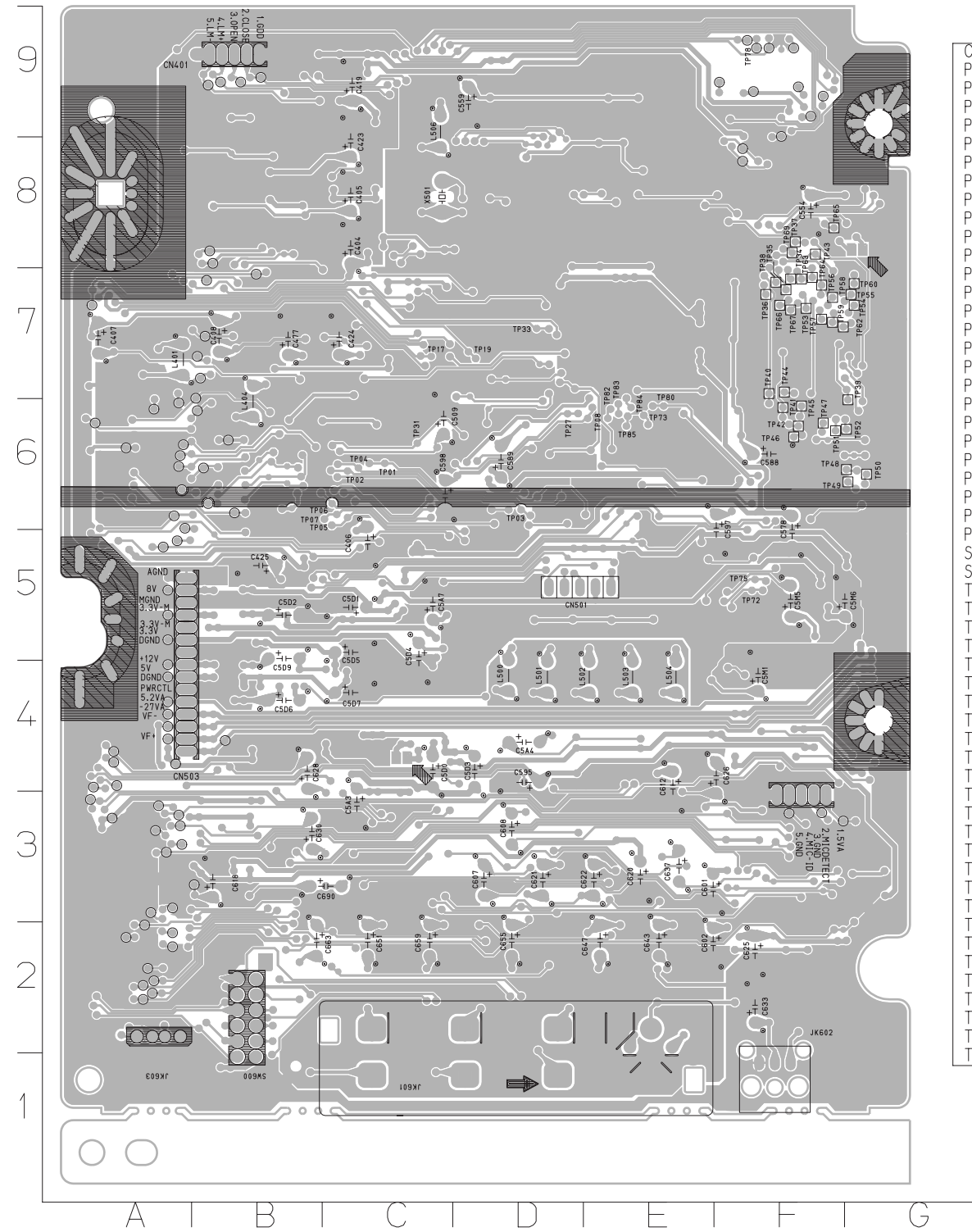


• KEY P.C BOARD DIAGRAM (COMPONENT SIDE)





• MPEG P.C BOARD DIAGRAM

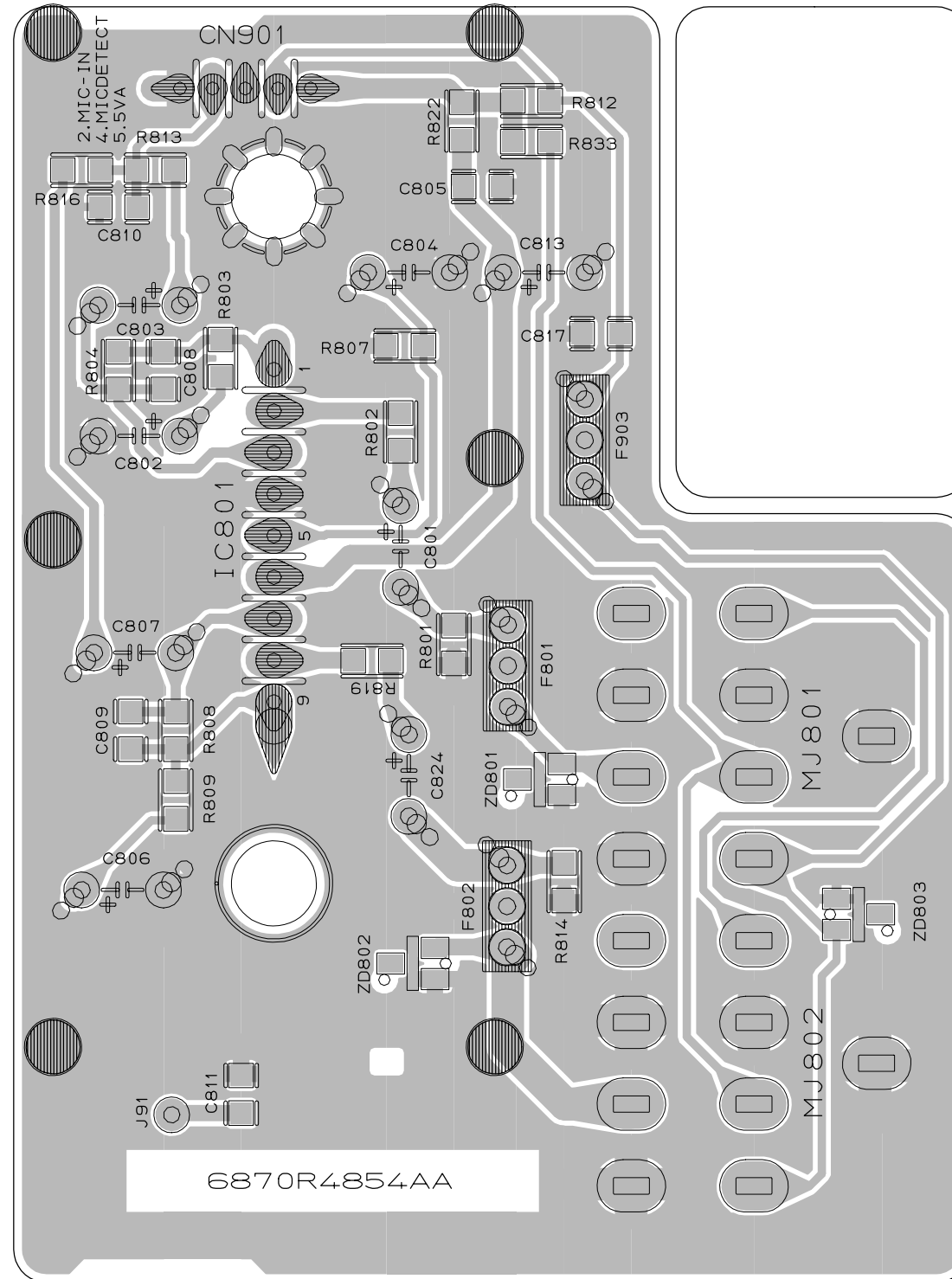


CN501	D5	TP118	A4	TP31	C6
PIN0003	F6	TP119	A3	TP33	D7
PIN0029	B6	TP120	A3	TP34	F7
PIN0031	B6	TP121	A3	TP35	F7
PIN0033	B6	TP123	A4	TP36	F7
PIN0035	B6	TP124	A4	TP37	F8
PIN0052	D6	TP125	B7	TP38	F7
PIN0053	D7	TP126	F9	TP39	G6
PIN0057	D7	TP127	B9	TP40	F7
PIN0078	G6	TP128	A6	TP41	F6
PIN0082	B8	TP129	B7	TP42	F6
PIN0099	D8	TP130	B7	TP43	F8
PIN0100	D8	TP131	B6	TP44	F7
PIN0101	D9	TP132	A4	TP45	F6
PIN0102	D8	TP133	A2	TP46	F6
PIN0165	D7	TP134	A3	TP47	F6
PIN0166	C7	TP135	A2	TP48	G6
PIN0224	F3	TP136	A2	TP49	G6
PIN0225	F3	TP137	F8	TP50	G6
PIN0231	F3	TP138	B6	TP51	F6
PIN0234	C7	TP139	B6	TP52	G6
PIN0238	E5	TP141	A4	TP53	F7
PIN0239	E6	TP142	A6	TP54	G7
PIN0240	D5	TP144	B6	TP55	G7
PIN0243	D5	TP145	A6	TP56	F7
PIN0244	D5	TP147	F3	TP57	F7
PIN0245	D5	TP148	A2	TP58	F7
S1	G8	TP150	F3	TP59	F7
S2	C4	TP151	A6	TP60	G7
TP01	C6	TP152	A6	TP62	F7
TP02	C6	TP153	A2	TP63	F7
TP03	D6	TP154	A6	TP64	F7
TP04	C6	TP155	B6	TP65	F8
TP05	C6	TP156	A6	TP66	F7
TP06	C6	TP157	B6	TP67	F7
TP07	C6	TP158	A3	TP69	F8
TP08	E6	TP159	B8	TP72	F5
TP100	A4	TP160	A6	TP73	E6
TP101	A6	TP161	A2	TP75	F5
TP102	F9	TP162	F3	TP78	F9
TP103	A2	TP163	B8	TP80	E6
TP104	A3	TP164	A7	TP82	E6
TP105	B3	TP165	B7	TP83	E6
TP106	F8	TP166	F8	TP84	E6
TP107	A4	TP167	B7	TP85	E6
TP108	A6	TP168	A5	TP90	A2
TP109	A3	TP169	A5	TP92	A5
TP110	A4	TP17	C7	TP93	A3
TP111	A4	TP170	B9	TP94	A2
TP112	A3	TP172	A5	TP95	A3
TP113	F9	TP173	B9	TP96	F9
TP114	F9	TP174	A4	TP97	F9
TP115	F9	TP175	F9	TP98	A4
TP116	A5	TP19	D7	TP99	B9
TP117	B4	TP27	D6		

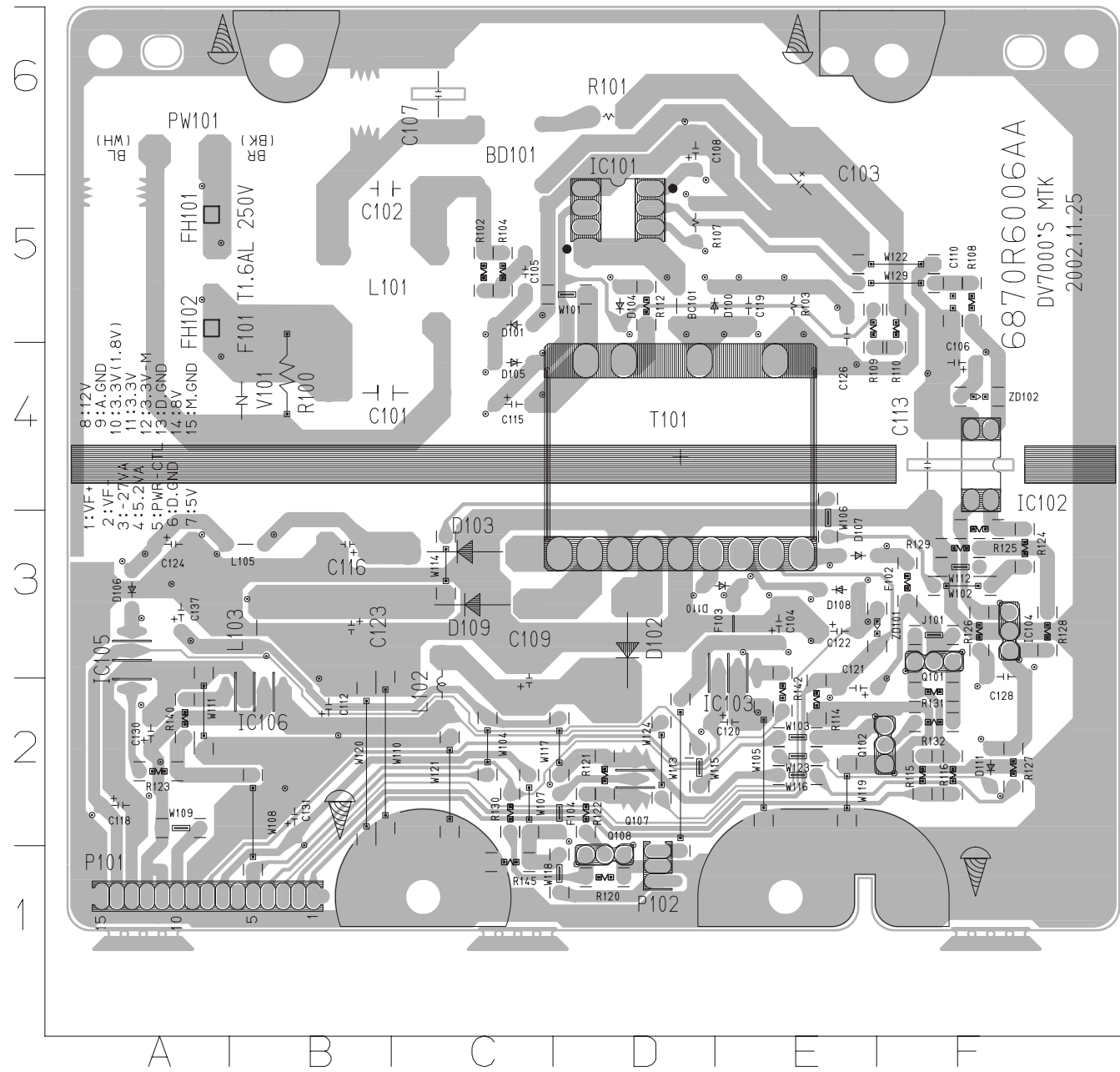




• MIC P.C BOARD DIAGRAM




• SMPS P.C BOARD DIAGRAM

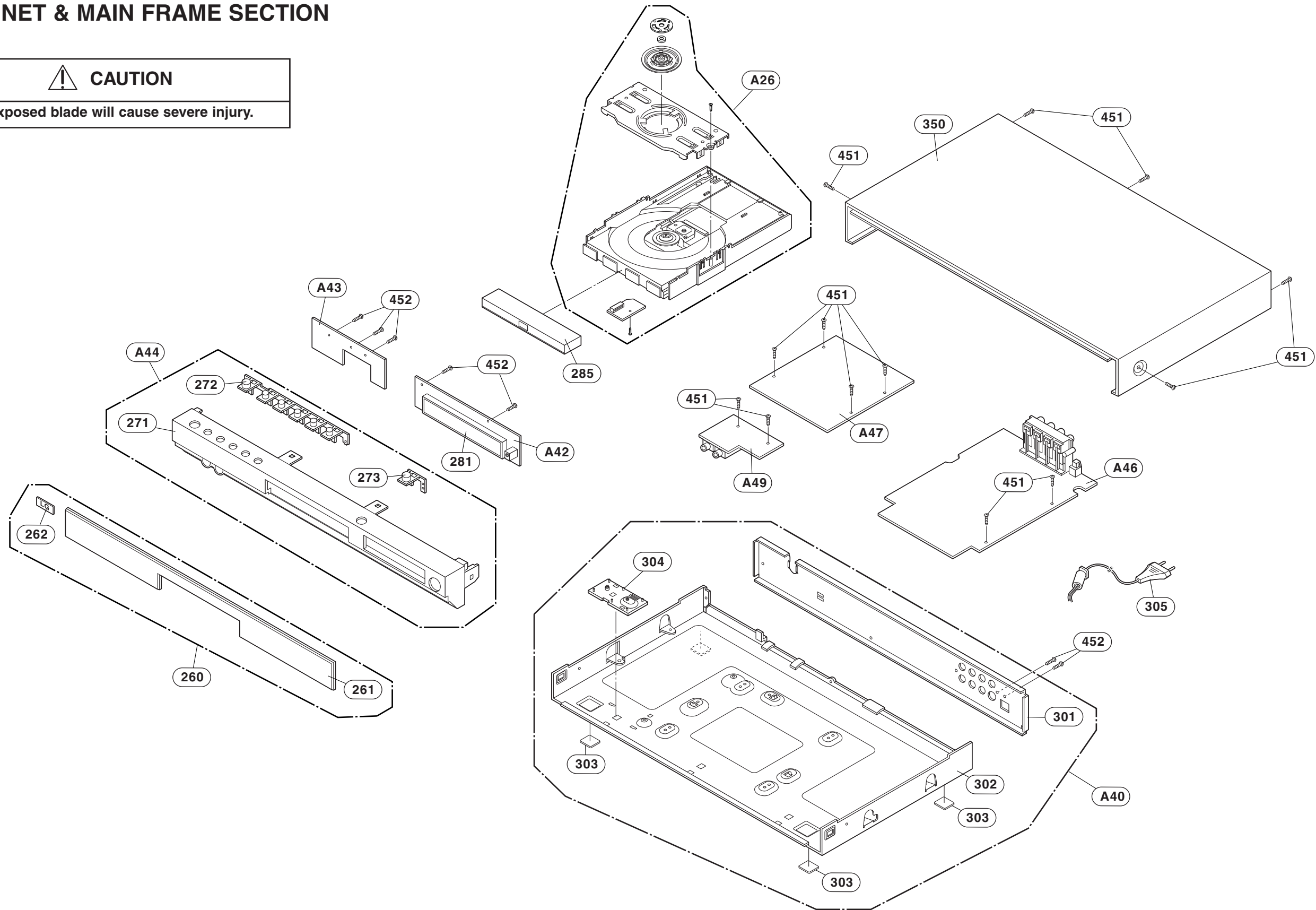


BC101	D5	D104	D5	R101	D6
BD101	C6	D105	C4	R102	C5
C101	B4	D106	A3	R103	E5
C102	B5	D107	E3	R104	C5
C103	E5	D108	E3	R107	D5
C104	E3	D109	C3	R108	F5
C105	C5	D110	E3	R109	E5
C106	F4	D111	F2	R110	F5
C107	C6	F102	F3	R112	D5
C108	D6	F103	E3	R114	E2
C109	C2	F104	D2	R115	F2
C110	F5	FH101	A5	R116	F2
C112	B2	FH102	A5	R120	D1
C113	F4	IC101	D5	R121	D2
C115	C4	IC102	F4	R122	D2
C116	B3	IC103	D3	R123	A2
C118	A2	IC104	F3	R124	F3
C119	E5	IC105	A3	R125	F3
C120	E2	IC106	B2	R126	F3
C121	E2	J101	F3	R127	F2
C122	E3	L101	B5	R128	G3
C123	B3	L102	C2	R129	F3
C124	A3	L103	B3	R130	C2
C126	E5	L105	B3	R131	F2
C128	F3	P101	B1	R132	F2
C130	A2	P102	D1	R140	A2
C131	B2	PW101	A6	R142	E2
C137	A3	Q101	F3	R145	C1
D100	D5	Q102	F2	T101	D4
D101	C5	Q107	D2	V101	B4
D102	D3	Q108	D1	ZD101	F3
D103	C3	R100	B4	ZD102	F4

# SECTION 3. EXPLODED VIEWS

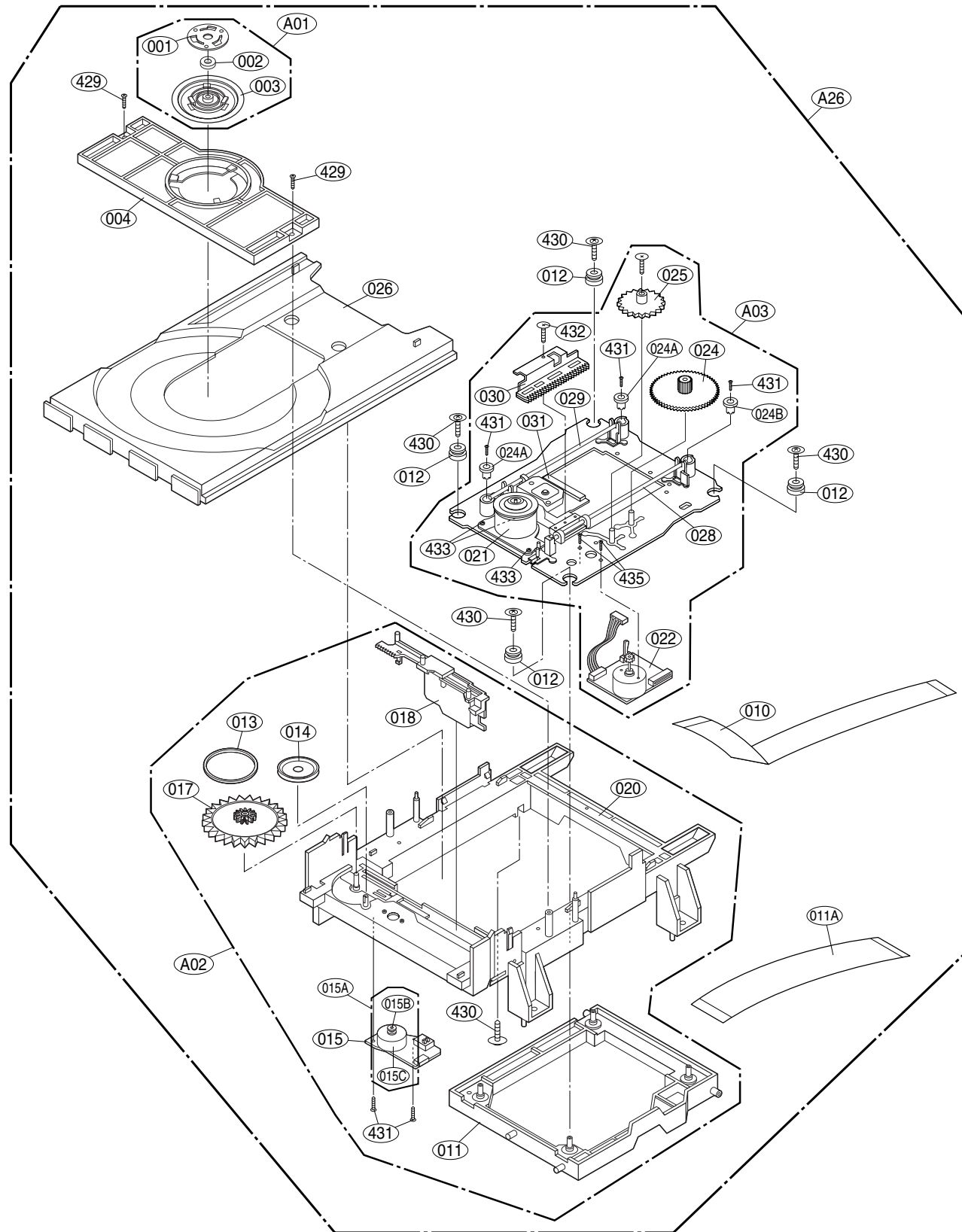
## • CABINET & MAIN FRAME SECTION

 **CAUTION**  
Exposed blade will cause severe injury.





• Deck Mechanism Exploded View



LOCA. NO.	PART NO.	DESCRIPTION	SPECIFICATION
A26	6721RJ0372E	DECK ASSEMBLY,VIDEO	DECK/MECHA DP-7 (43MM)-ESS-MIT
A01	4861R-0016B	CLAMP ASSEMBLY	DISC DP7 - SH
A02	3041R-M009D	BASE ASSEMBLY	MAIN DP-7 (43) HZ
A03	3041R-M002M	BASE ASSEMBLY	SLED DP-7 (MIT VA9)-ESS-HZ
001	3300R-0547A	PLATE	CLAMP
002	5016H-1016B	MAGNET	CLAMP(LDM-R608,10*5,1*1.5T)
003	4860R-0021A	CLAMP	UPPER DP7
004	4930R-0365A	HOLDER	CLAMP DP7
010	6850R-GF10B	CABLE,FLAT	P=1.0 FFC UL2896(0.05X0.65) 6
011	3210R-M001A	FRAME	UP/DOWN DP7 MOLD
011A	6850R-JW24Y	CABLE,FLAT	P=1.0 FFC UL2896(0.035X0.7) 23
012	5040R-0075D	RUBBER	DAMPER DP7 (YAMAUCHI 30)
013	4400H-1009A	BELT	GM-RT1332A
014	4470R-0055A	GEAR	PULLEY
015	6871R-9248D	PWB(PCB) ASSEMBLY,TOTAL	DP-7 LOADING - HZ
015A	4681R-A003D	MOTOR ASSEMBLY	DECK/MECHA LOADING DP-7 HZ
015B	4560R-0008A	PULLEY	MOTOR
015C	4680R-E007A	MOTOR(MECH)	FEEDING BCZ3B01 SANKYO FOR DVD
017	4470R-0056A	GEAR	LOADING
018	4974R-0046A	GUIDE	UP/DOWN(DP-7)
020	3040R-M005A	BASE	MAIN (DP7-43MM) MOLD
021	4680R-C010A	MOTOR(MECH)	SPINDLE JCL9B78 SANKYO FOR DVD
022	4681R-B005D	MOTOR ASSEMBLY	DECK/MECHA FEEDING DP-7 HZ
022A	4680R-E008A	MOTOR(MECH)	FEEDING RF-300EA-1D390 MABUCHI
023	4470R-0119A	GEAR	FEED MOTOR
024	4470R-0124A	GEAR	PINION DP7
024A	5006R-0040A	CAP	SKREW (T) DP7
024B	5006R-0039A	CAP	SKREW (R) DP7
025	4470R-0122A	GEAR	MIDDLE A DP7
026	3390R-0015A	TRAY	DISC DP7
027	4470R-0123A	GEAR	MIDDLE B DP7
028	4370R-0083A	SHAFT	DECK/MECHA DP7 OTHER PU-T
029	4370R-0075A	SHAFT	PU
030	4471R-0010A	GEAR ASSEMBLY	RACK DP7
031	6716DPH005B	PICK UP,DVD	PVR-502W R52 0219 MITSUMI PLAY
032	6871R-9243D	PWB(PCB) ASSEMBLY,TOTAL	DP7 FEEDING - HZ
430	1SZZR-0046A	SCREW,DRAWING	+ 1 D2.0 L6.0 SWRCH16A/FZY
431	1SZZH-1007B	SCREW,DRAWING	+ D2.0 6MM SWRCH16A/ZNBK 4MM 1
433	1SZZR-0050A	SCREW,DRAWING	+ 1 D2.0 L4.5 SWRCH16A/ZNY S-T
434	1SZZR-0023B	SCREW,DRAWING	+ 1 D1.7 L6.0 SWRCH16A/FZY RAC
435	1SZZR-0011A	SCREW,DRAWING	MACHINE
436	1SZZR-0047A	SCREW,DRAWING	+ 1 D1.4 L4.5 SWRCH16A/FZY TAP