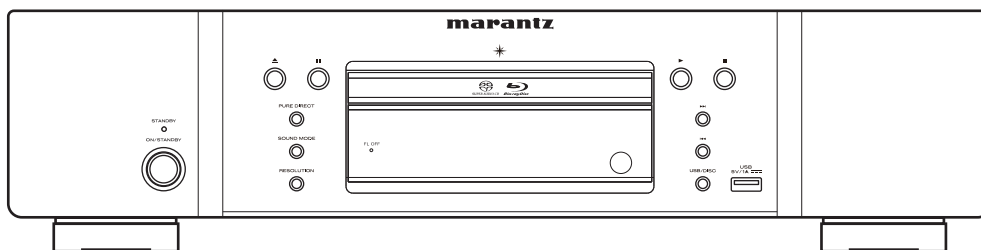


Service Manual

UD5005 /N1SG/N1B/U1B/K1B

S1SG/S1B/R1B

**SUPER AUDIO CD/
BLU-RAY DISC PLAYER**



• For purposes of improvement, specifications and design are subject to change without notice.

• Please use this service manual with referring to the operating instructions without fail.

• Some illustrations using in this service manual are slightly different from the actual set.

marantz®

UD5005

Ver. 8

Please refer to the
MODIFICATION NOTICE.

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, **marantz** company has created the ultimate in stereo sound. Only original **marantz** parts can insure that your **marantz** product will continue to perform to the specifications for which it is famous.

Parts for your **marantz** equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS :

Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order :

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature : any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

USA

MARANTZ AMERICA, INC
100 CORPORATE DRIVE
MAHWAH, NEW JERSEY 07430
USA

EUROPE / TRADING

D&M EUROPE B. V.
P. O. BOX 8744, BUILDING SILVERPOINT
BEEMDSTRAAT 11, 5653 MA EINDHOVEN
THE NETHERLANDS
PHONE : +31 - 40 - 2507844
FAX : +31 - 40 - 2507860

CANADA

D&M Canada Inc.
5-505 APPLE CREEK BLVD.
MARKHAM, ONTARIO L3R 5B1
CANADA
PHONE : 905 - 415 - 9292
FAX : 905 - 475 - 4159

JAPAN

D&M Holdings Inc.
D&M BUILDING, 2-1 NISSHIN-CHO,
KAWASAKI-KU, KAWASAKI-SHI,
KANAGAWA, 210-8569 JAPAN

株式会社 ディーアンドエムホールディングス

本 社 〒210-8569
神奈川県川崎市川崎区日進町2-1 D&Mビル

KOREA

D&M SALES AND MARKETING KOREA LTD.
2F, YEON BLDG.,
88-5, BANPO-DONG, SEOCHO-GU,
SEOUL KOREA
PHONE : +82 - 2 - 715 - 9041
FAX : +82 - 2 - 715 - 9040

CHINA

D&M SALES AND MARKETING SHANGHAI LTD.
ROOM.808 SHANGHAI AIRPORT CITY TERMINAL
NO.1600 NANJING (WEST) ROAD, SHANGHAI,
CHINA. 200040
TEL : 021 - 6248 - 5151
FAX : 021 - 6248 - 4434

NOTE ON SAFETY :

Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol ⚠.

Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意 :

⚠がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard No. 60065.

In case of difficulties, do not hesitate to contact the Technical
Department at above mentioned address.

SAFETY PRECAUTIONS

The following items should be checked for continued protection of the customer and the service technician.

LEAKAGE CURRENT CHECK

Before returning the set to the customer, be sure to carry out either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 460 kohms, the set is defective.

Be sure to test for leakage current with the AC plug in both polarities, in addition, when the set's power is in each state (on, off and standby mode), if applicable.

CAUTION Please heed the following cautions and instructions during servicing and inspection.

◎ **Heed the cautions!**

Cautions which are delicate in particular for servicing are labeled on the cabinets, the parts and the chassis, etc. Be sure to heed these cautions and the cautions described in the handling instructions.

◎ **Cautions concerning electric shock!**

- (1) An AC voltage is impressed on this set, so if you touch internal metal parts when the set is energized, you may get an electric shock. Avoid getting an electric shock, by using an isolating transformer and wearing gloves when servicing while the set is energized, or by unplugging the power cord when replacing parts, for example.
- (2) There are high voltage parts inside. Handle with extra care when the set is energized.

◎ **Caution concerning disassembly and assembly!**

Through great care is taken when parts were manufactured from sheet metal, there may be burrs on the edges of parts. The burrs could cause injury if fingers are moved across them in some rare cases. Wear gloves to protect your hands.

◎ **Use only designated parts!**

The set's parts have specific safety properties (fire resistance, voltage resistance, etc.). Be sure to use parts which have the same properties for replacement. The burrs have the same properties. In particular, for the important safety parts that are indicated by the $\triangle$ mark on schematic diagrams and parts lists, be sure to use the designated parts.

◎ **Be sure to mount parts and arrange the wires as they were originally placed!**

For safety reasons, some parts use tapes, tubes or other insulating materials, and some parts are mounted away from the surface of printed circuit boards. Care is also taken with the positions of the wires by arranging them and using clamps to keep them away from heating and high voltage parts, so be sure to set everything back as it was originally placed.

◎ **Make a safety check after servicing!**

Check that all screws, parts and wires removed or disconnected when servicing have been put back in their original positions, check that no serviced parts have deteriorate the area around. Then make an insulation check on the external metal connectors and between the blades of the power plug, and otherwise check that safety is ensured.

(Insulation check procedure)

Unplug the power cord from the power outlet, disconnect the antenna, plugs, etc., and on the power. Using a 500V insulation resistance tester, check that the insulation resistance value between the inplug and the externally exposed metal parts (antenna terminal, headphones terminal, input terminal, etc.) is 1M Ω or greater. If it is less, the set must be inspected and repaired.

CAUTION Concerning important safety parts

Many of the electric and the structural parts used in the set have special safety properties. In most cases these properties are difficult to distinguish by sight, and the use of replacement parts with higher ratings (rated power and withstand voltage) does not necessarily guarantee that safety performance will be preserved. Parts with safety properties are indicated as shown below on the wiring diagrams and the parts list in this service manual. Be sure to replace them with the parts which have the designated part number.

- (1) Schematic diagrams.....Indicated by the $\triangle$ mark.
- (2) Parts lists.....Indicated by the $\triangle$ mark.

The use of parts other than the designated parts could cause electric shocks, fires or other dangerous situations.

NOTE FOR SCHEMATIC DIAGRAM

WARNING:

Parts indicated by the $\triangle$ mark have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

CAUTION:

Before returning the set to the customer, be sure to carry out either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 460 kohms, the set is defective.

WARNING:

DO NOT return the set to the customer unless the problem is identified and remedied.

NOTICE:

ALL RESISTANCE VALUES IN OHM. k=1,000 OHM / M=1,000,000 OHM

ALL CAPACITANCE VALUES ARE EXPRESSED IN MICRO FARAD, UNLESS OTHERWISE INDICATED. P INDICATES MICRO-MICRO FARAD. EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION. CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

NOTE FOR PARTS LIST

- Parts indicated by "nsp" on this table cannot be supplied.
- When ordering a part, make a clear distinction between "1" and "l" (i) to avoid mis-supplying.
- A part ordered without specifying its part number can not be supplied.
- Part indicated by "★" mark is not illustrated in the exploded view.
- General-purpose Carbon Film Resistor in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)
- General-purpose Carbon Chip Resistors are not included in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING: Parts indicated by the $\triangle$ mark have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

● Resistors

Ex.:	RN	14K	2E	182	G	FR
	Type	Shape and performance	Power	Resistance	Allowable error	Others
	↓		↓	↓	↓	↓
RD : Carbon		2B : 1/8 W		F : ±1%		P : Pulse-resistant type
RC : Composition		2E : 1/4 W		G : ±2%		NL : Low noise type
RS : Metal oxide film		2H : 1/2 W		J : ±5%		NB : Non-burning type
RW : winding		3A : 1 W		K : ±10%		FR : Fuse-resistor
RN : Metal film		3D : 2 W		M : ±20%		F : Lead wire forming
RK : Metal mixture		3F : 3 W				
		3H : 5 W				

* Resistance

$\frac{1}{\uparrow} \frac{8}{\uparrow} \frac{2}{\uparrow} \Rightarrow 1800\text{ohm}=1.8\text{kohm}$
 Indicates number of zeros after effective number.
 2-digit effective number.

$\frac{1}{\uparrow} \frac{R}{\uparrow} \frac{2}{\uparrow} \Rightarrow 1.2\text{ohm}$
 1-digit effective number.
 2-digit effective number, decimal point indicated by R.
 : Units: ohm

● Capacitors

Ex.:	CE	04W	1H	3R2	M	BP
	Type	Shape and performance	Dielectric strength	Capacity	Allowable error	Others
	↓	↓	↓	↓	↓	↓
CE :	Aluminum foil electrolytic		0J : 6.3 V	F : $\pm 1\%$		HS : High stability type
CA :	Aluminium solid electrolytic		1A : 10 V	G : $\pm 2\%$		BP : Non-polar type
CS :	Tantalum electrolytic		1C : 16 V	J : $\pm 5\%$		HR : Ripple-resistant type
CQ :	Film		1E : 25 V	K : $\pm 10\%$		DL : For charge and discharge
CK :	Ceramic		1V : 35 V	M : $\pm 20\%$		HF : For assuring high frequency
CC :	Ceramic		1H : 50 V	Z : $\pm 80\%$		U : UL part
CP :	Oil		2A : 100 V	: -20%		C : CSA part
CM :	Mica		2B : 125 V	P : +100%		W : UL-CSA part
CF :	Metallized		2C : 160 V	C : $\pm 0.25\text{pF}$		F : Lead wire forming
CH :	Metallized		2D : 200 V	D : $\pm 0.5\text{pF}$		
			2E : 250 V	= : Others		
			2H : 500 V			
			2J : 630 V			

* Capacity (electrolyte only)

$\frac{2}{\uparrow} \frac{2}{\uparrow} \frac{2}{\uparrow} \Rightarrow 2200 \mu\text{F}$
 Indicates number of zeros after effective number.
 2-digit effective number.
 • Units: μF .

$\frac{2}{\uparrow} \frac{R}{\uparrow} \frac{2}{\uparrow} \Rightarrow 2.2 \mu\text{F}$
 1-digit effective number.
 2-digit effective number, decimal point indicated by R
 • Units: μF .

* Capacity (except electrolyte)

$\frac{2}{\uparrow} \frac{2}{\uparrow} \frac{2}{\uparrow} \Rightarrow 2200\text{pF}=0.0022 \mu\text{F}$
 Indicates number of zeros after effective number. (More than 2)
 2-digit effective number.
 • Units:pF

$\frac{2}{\uparrow} \frac{2}{\uparrow} \frac{1}{\uparrow} \Rightarrow 220\text{pF}$
 Indicates number of zeros after effective number. (0 or 1)
 2-digit effective number.
 • Units:pF

• When the dielectric strength is indicated in AC,"AC" is included after the dielectric strength value.

WARNING AND LASER SAFETY INSTRUCTIONS

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

ESD



(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor elektrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met apparaat.
Houd componenten en hulpmiddelen ook op hetzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semiconducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le braceleterti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle IC und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unvorsichtige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern.
Sorgen sie dafür, das Sie im Reparaturfall dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls über ein Pulsarmband mit Widerstand mit auf diesem Potential.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(NL)

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt terug gebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne."

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

(D)

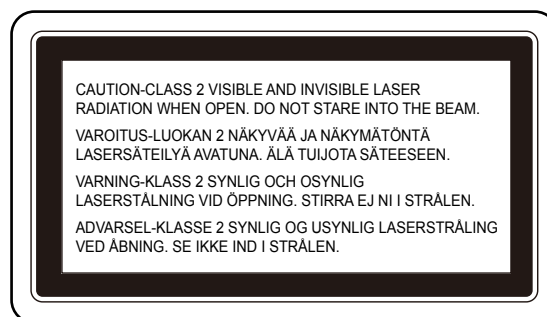
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten.
Der Originalzustand des Gerats darf nicht verändert werden.
Für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambio idetici a quelli specificati.

LASER SAFETY

This unit employs a laser. Only a qualified service person should remove the cover or attempt to service this device, due to possible eye injury.



USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURE OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

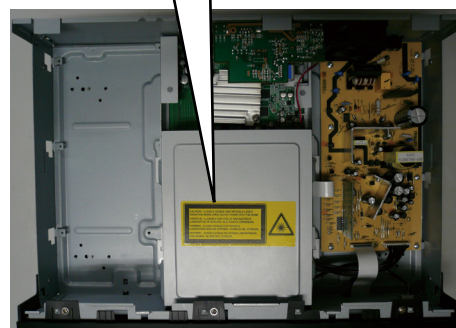
AVOID DIRECT EXPOSURE TO BEAM

WARNING

The use of optical instruments with this product will increase eye hazard.
Repair handling should take place as much as possible with a disc loaded inside the player

WARNING LOCATION: INSIDE ON LASER COVERSIELD

CAUTION VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
ADVARSEL SYNLIIG OG USYNLIIG LASERSTRÄLNING VED ÅBNING UNDGA UDSÆTTELSE FOR STRÄLNING
ADVARSEL SYNLIIG OG USYNLIIG LASERSTRÄLNING NÄR DEKSEL Å PNES UNNGÄ EKSPONERING FOR STRÄLEN
VARNING SYNLIIG OCH OSYNLIIG LASERSTRÄLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÄLEN
VARO! AVATT AESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASER SÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN
VORSICHT SICHTBARE UND UNSICHTBARE LASERSTRÄHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRÄHL AUSSETSEN
DANGER VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID DIRECT EXPOSURE TO BEAM
ATTENTION RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU FAISCEAU



INSTRUCTIONS FOR HANDLING SEMI-CONDUCTORS AND OPTICAL UNIT

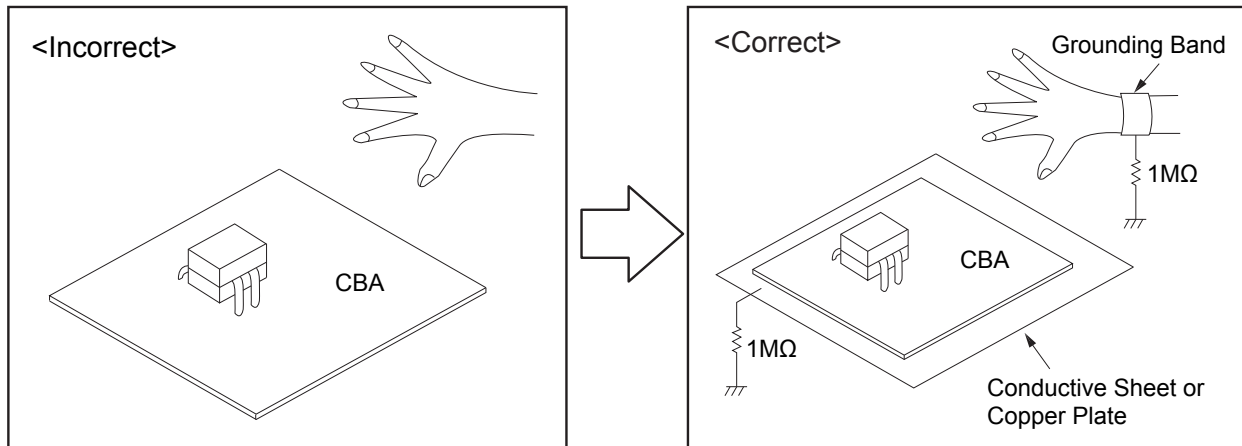
Electrostatic breakdown of the semi-conductors or optical pickup may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

1. Ground for Human Body

Be sure to wear a grounding band ($1\text{ M}\Omega$) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding ($1\text{ M}\Omega$) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing



TECHNICAL SPECIFICATIONS

□ Audio performance

Signal format : NTSC, PAL

Applicable discs /memory device :

- (1) BD-Video disc :
12 cm, 1 side, 1 layer; 12 cm, 1 side, 2 layers
- (2) DVD-Video / DVD-Audio disc :
12 cm, 1 side, 1 layer; 12 cm, 1 side, 2 layers /
12 cm, 2 sides, 2 layers (1 side, 1 layer)
8 cm, 1 side, 1 layer; 8 cm, 1 side, 2 layers /
8 cm, 2 sides, 2 layers (1 side, 1 layer)
- (3) Super Audio CD :
12 cm, 1 layer / 12 cm, 2 layer / 12 cm, Hybrid
- (4) Compact Disc (CD-DA) :
12 cm, / 8 cm, disc
- (5) Memory device :
USB memory device

Video output :

Output level : 1Vp-p (75 Ω)

Output terminal : Pin-jack, 1 set

Component video output :

Y output level : 1Vp-p (75 Ω)

Pb/Cb output level / Pr/Cr output level : 0.648 Vp-p (75 Ω)

Output terminal : Pin-jack, 1 set

HDMI output :

Output terminal : 19-pin HDMI terminals, 1 set

HDMI ver. 1.4a

(Deep Colour, Dolby Digital Plus, Dolby TrueHD, DTS-HD, 3D Ready)

Analog audio output :

Output level : 2 Vrms (10 k Ω)

2 channels output terminal : Pin-jack, 1 set

Audio output characteristics :

(1) Frequency response

- ① BD (Linear PCM) : 2Hz ~ 22kHz (48kHz sampling)
: 2Hz ~ 44kHz (96kHz sampling)
: 2Hz ~ 88kHz (192kHz sampling)

- ② DVD (Linear PCM) : 2Hz ~ 22kHz (48kHz sampling)
: 2Hz ~ 44kHz (96kHz sampling)
: 2Hz ~ 88kHz (192kHz sampling)

- ③ Super Audio CD : 2Hz ~ 40kHz

- ④ CD : 2Hz ~ 20kHz

(2) S/N ratio : 115dB

(3) Total harmonic distortion : 1kHz 0.0025%(BD)

(4) Dynamic range : 100dB(BD)

Digital audio output : Coaxial digital output: Pin-jack, 1 set

□ General

Power supply : AC 120 V, 60 Hz (for U)

AC 110-240 V, 50/60 Hz (for N, S, R)

AC 220 V, 50 Hz (for K)

Power consumption : 25 W (for U)

27 W (for N, S, K, R)

"Power Saving"

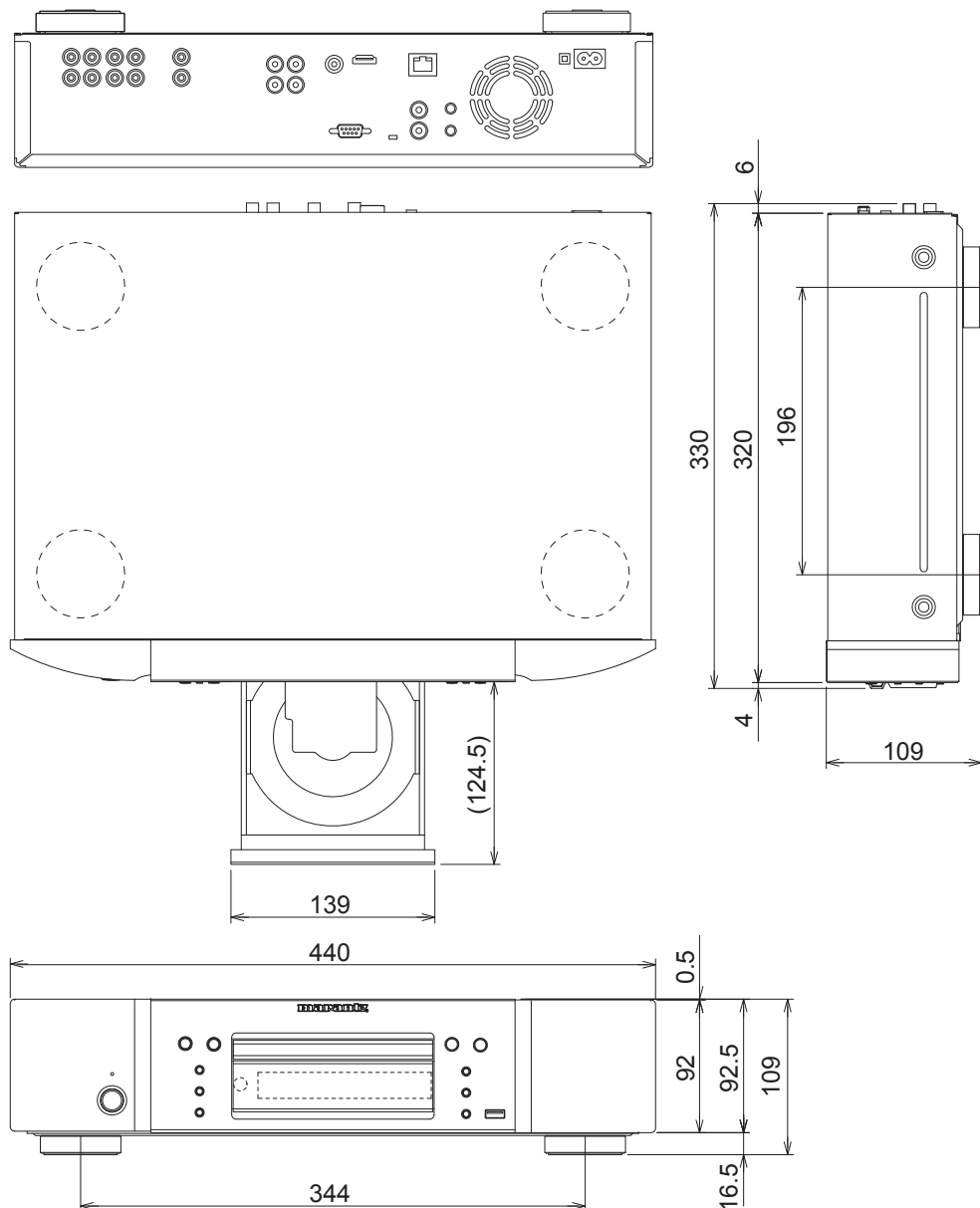
• When in Power Saving Standby : 0.3 W

• When in Normal Standby : 0.5 W

Maximum external dimensions : 440 (W) x 109 (H) x 330 (D) mm

Weight : 4.3kg

DIMENSION



CAUTION IN SERVICING

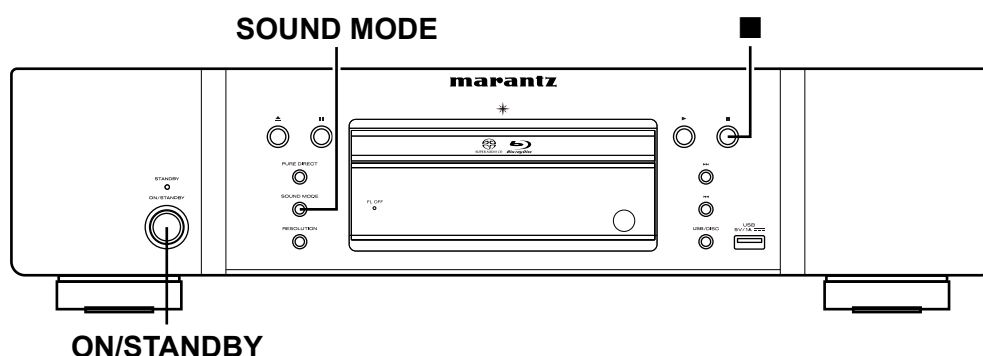
Initializing BD player

Initialize the BD player when μ com, peripheral parts of μ com, or MAIN P.W.B. unit has been replaced in servicing.

1. Turn on this model's power. "NO DISC" is displayed on the FL tube.
2. Press the this model's  and SOUND MODE buttons simultaneously. "INITIALIZING" is displayed on the FL tube.
3. The display on the FL tube switches to "INITIALIZED", the "NO DISC" display reappears and initialization is completed.

Note:

- If step 3 does not work, start over from step 1.
- All user settings will be lost and this factory setting will be recovered when this initialization mode. So make sure to memorize your setting for restoring after the initialization.



Service tools

Measuring Disc: CD/TCD-784
DVD/VT502 or TDV-520A
BD/ABD-520 or BLX-108

* Refer to "MEASURING METHOD AND WAVEFORMS".

When you repair the BD MECHA UNIT, you can use the following JIG.

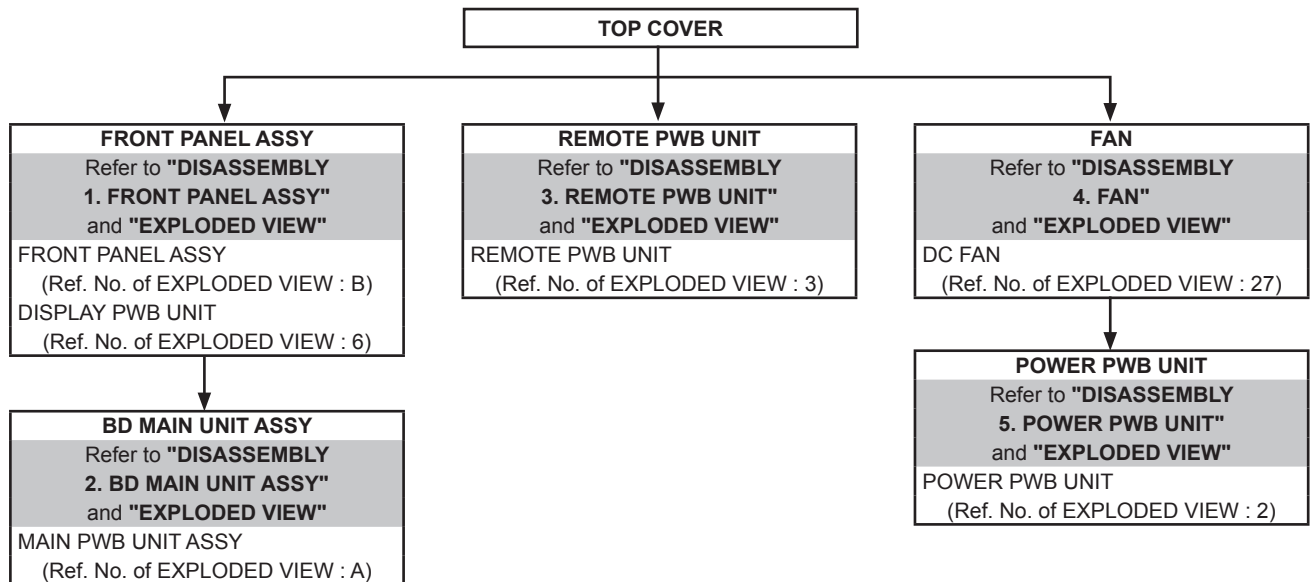
Please order to marantz Official Service Distributor in your region if necessary.

Do not supply it :	2-Dimensional Bar Code Reader (DS6708 made by Symbol Co. etc.)	: 1 Set
Do not supply it :	232C (TTL) – USB conversion jig (Model: DUT-06635 by Geeetech)	: 1 Set
Part No. :61205000300AS	4P RE-PH CONN CORD (1000mm)::	1 Set

* Refer to "HOW TO REPLACE THE MECHA UNIT (TRAVERSE)".

DISASSEMBLY

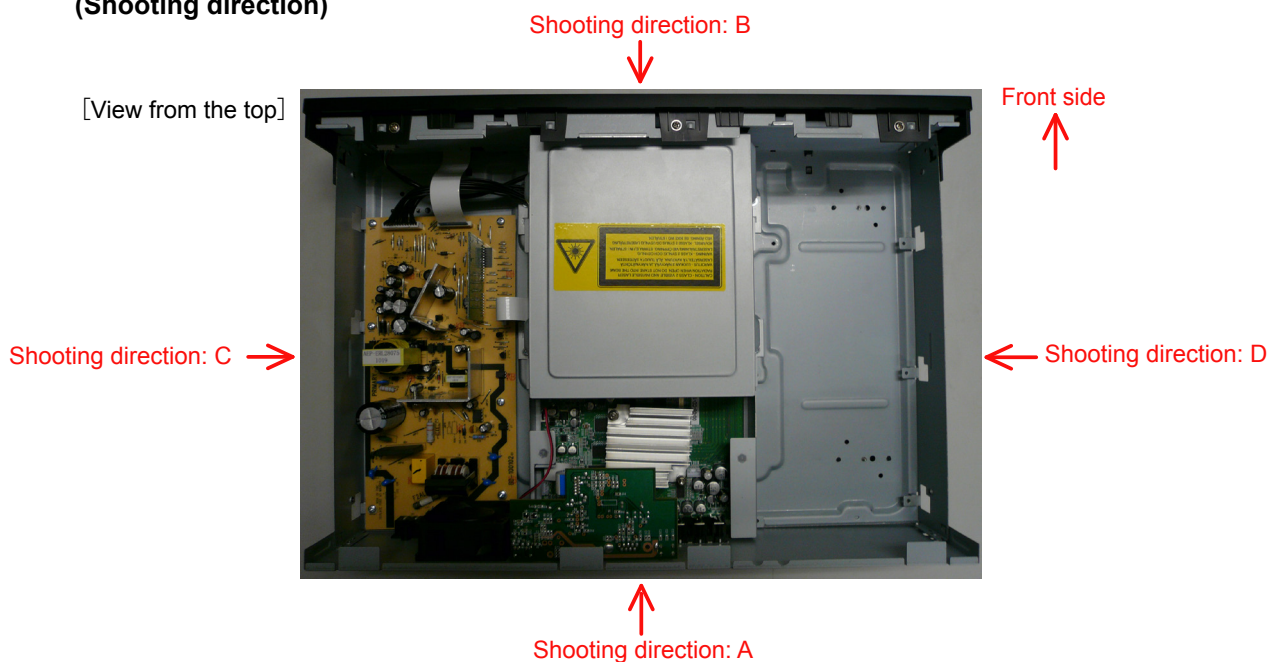
- Disassemble in order of the arrow in the following figure.
- In the case of the re-assembling, assemble it in order of the reverse of the following flow.
- In the case of the re-assembling, observe "attention of assembling".
- If wire bundles are untied or moved to perform adjustment or replace parts etc., be sure to rearrange them neatly as they were originally bundled or placed afterward.
Otherwise, incorrect arrangement can be a cause of noise generation.



About the photos used for "descriptions of the DISASSEMBLY" section

- The shooting direction of each photograph used herein is indicated on the left side of the respective photograph as "Shooting direction: ***".
- Refer to the diagram below about the shooting direction of each photograph.
- Photographs with no shooting direction indicated were taken from the top of the set.

The viewpoint of each photograph (Shooting direction)



1. FRONT PANEL ASSY

Proceeding : **TOP COVER** → **FRONT PANEL ASSY**

- (1) Detach the LOADER PANEL.

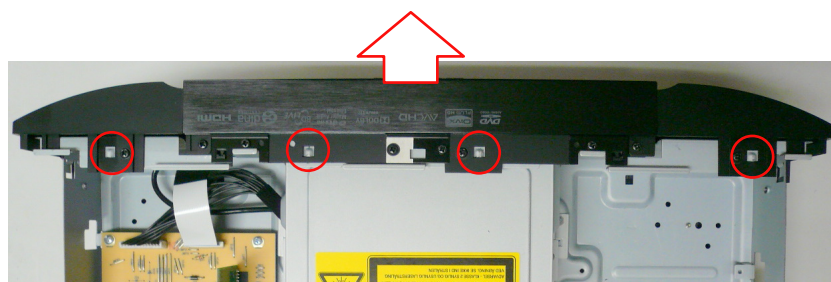
Shooting direction: B



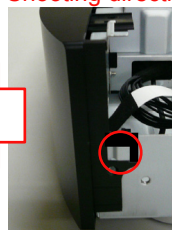
- (2) Disconnect the FFC cable.



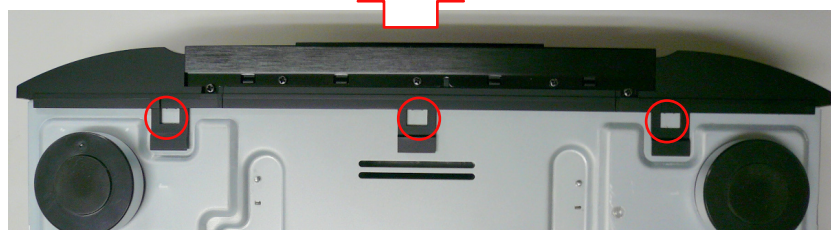
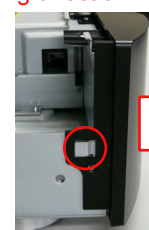
- (3) Lift up to unhook the claw and move in the direction of arrow to gradually pull out the assembly.



Shooting direction: C



Shooting direction: D



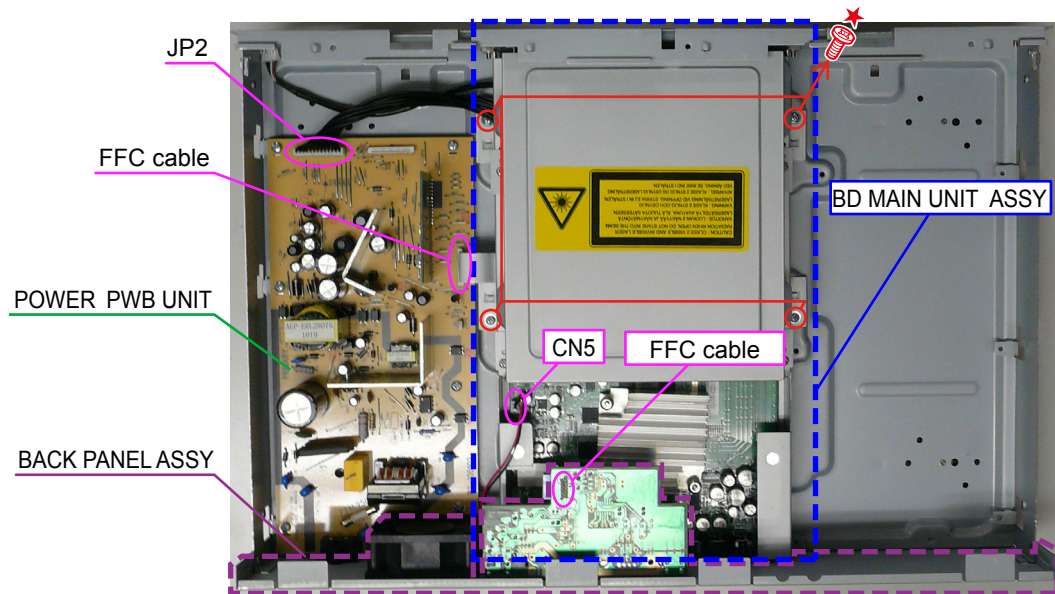
View from the bottom

Please refer to "EXPLODED VIEW" for the disassembly method of each P.W.B included in FRONT PANEL ASSY.

2. BD MAIN UNIT ASSY

Proceeding : **TOP COVER** → **FRONT PANEL ASSY** → **BD MAIN UNIT ASSY**

- (1) Disconnect the connector wires and FFC cables, then remove the screws.



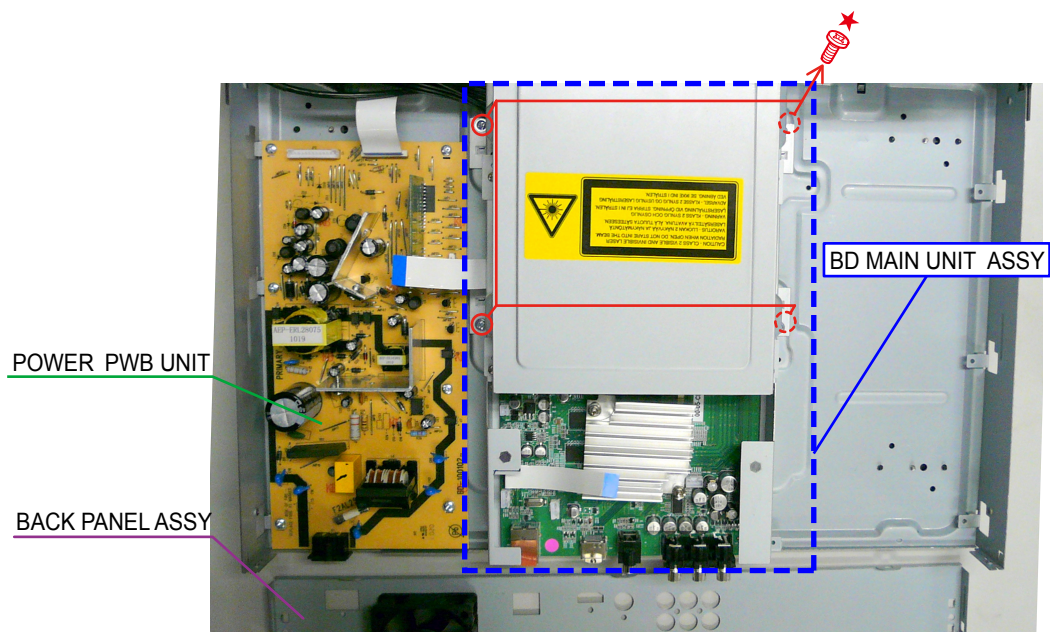
- (2) Remove the screws.



- (3) Remove the screw.



(4) Remove the screws.



Please refer to "EXPLODED VIEW" for the disassembly method of MAIN P.W.B included in BD MAIN UNIT

3. REMOTE PWB UNIT

Proceeding : **TOP COVER** → **REMOTE PWB UNIT**

Please refer to "EXPLODED VIEW" for the disassembly method of REMOTE PWB UNIT.

4. FAN

Proceeding : **TOP COVER** → **FAN**

Please refer to "EXPLODED VIEW" for the disassembly method of FAN.

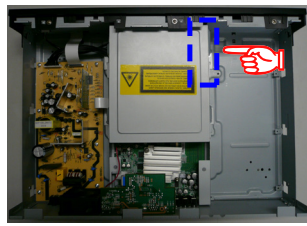
5. POWER PWB UNIT

Proceeding : **TOP COVER** → **FAN** → **POWER PWB UNIT**

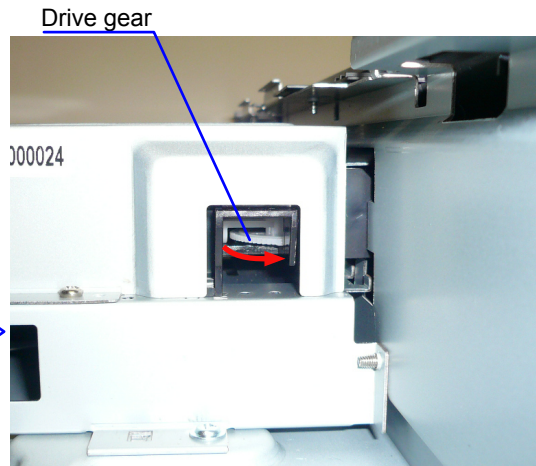
Please refer to "EXPLODED VIEW" for the disassembly method of POWER PWB UNIT.

REMOVING DISCS

- (1) Remove the Top Cover.
- (2) Open the CD tray by turning the Drive gear counterclockwise.



Shooting direction: D



DIAGNOSTICS OF OPTICAL PICKUP 5

Make failure diagnostics of the Optical Pickup as follows.

- ①If the laser drive current (lop) becomes more than BD : ± 6 [mA], DVD or CD : ± 12 [mA] of the initial value, the Optical Pickup should be replaced.
The laser drive current initial value is checked by "lop checked Method" of next page.
- ②Load five times of following disc again and playing it for one minute. It becomes the aim of the Optical Pickup exchange when it cannot play.

BD-RE	ABD-RE540W(made by ALMEDIO)
-------	-----------------------------

In case of replacing the Pickup, change the whole part of the BD MAIN UNIT (including the MAIN PWB UNIT) or BD MECHA UNIT ASSY.

No mechanical adjustment is necessary after the replacement. (HOW TO REPLACE THE BD MAIN UNIT OR BD MECHA UNIT ASSY (page 16))

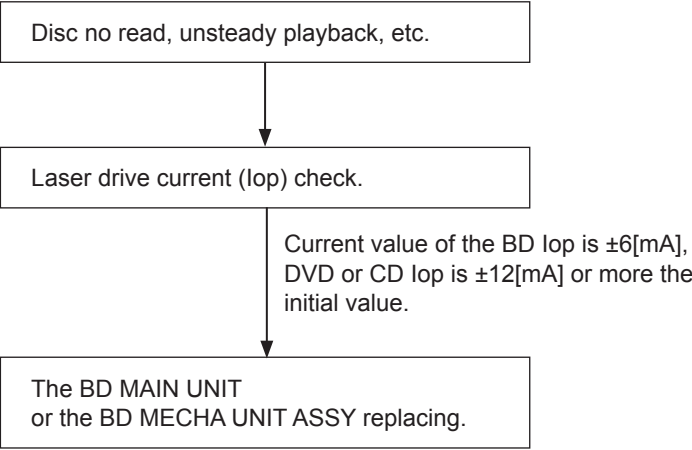
Laser drive current initial value:

FL Display (The display part of 13 digits)													
	1	2	3	4	5	6	7	8	9	10	11	12	13
CD :	T	2	1	:	n	n	n	n	:	n	n	n	n

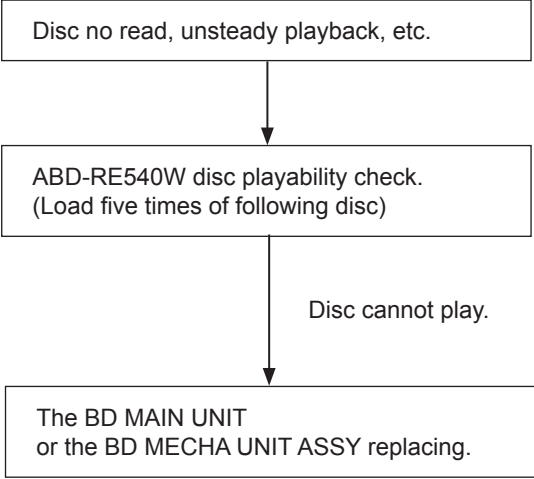
FL Display (The display part of 13 digits)													
	1	2	3	4	5	6	7	8	9	10	11	12	13
DVD :	T	2	2	:	n	n	n	n	:	n	n	n	n

FL Display (The display part of 13 digits)													
	1	2	3	4	5	6	7	8	9	10	11	12	13
BD(SL) :	T	2	3	:	n	n	n	n	:	n	n	n	n

①Check the laser drive current value



②Check the playability disc



1. IOP checked Method

Select the laser ON/OFF(CD/DVD/BD)mode of the test mode, and check the IOP value of CD laser, DVD laser or BD laser. (Refer to "6. Test mode")

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	2		L	a	s	e	r	O	n	O	f	f

Laser current check

Press the ◀◀ or ▶▶ button to display the laser current value, and then select [X].
Check the current value of IOP (nnnn)

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	2	X	=	n	n	n	n	=	n	n	n	n

(X=1 : CD laser mode, 2 : DVD laser mode, 3 : BD(SL) laser mode
(mmmm[mA] : Initial value, nnnn[mA] : Current value)

2. To clear the accumulated laser on time

Press the ▶ button while the accumulated laser on time is displayed ("TC1", "TC2", "TC3") until "TC4 * clear??" appears at the display. If the ▶ button is pressed, the accumulated laser on time of CD, DVD and BD is cleared

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	C	4	*	-	-	c	l	e	a	r	?	?

When "TC1", "TC2" or "TC3" is selected with the ◀◀ or ▶▶ button, "mmmmmm" is displayed as "0" so you can check.

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	C	Y	-	-	-	n	n	n	n	n	n	h

(Y=1 : CD, 2 : DVD , 3 : BD, mmmmmm : Time)

HOW TO REPLACE THE BD MAIN UNIT OR BD MECHA UNIT ASSY

NOTE: The light pick-up laser diode (LD) is instantly degraded or damaged by static electricity or a power surge.
When handling the BD MECHA UNIT, always be sure to earth yourself, and use an earth mat on the workbench and floor for grounding.

- **BD MECHA UNIT Replacement Conditions**

If the laser amperage (Iop) exceeds the stipulated range (see the laser on/off mode in test mode (page 26)), replace the BD MECHA UNIT ASSY or replace the BD MAIN UNIT (including the MAIN PWB UNIT). If other problems occur, replace the BD MAIN UNIT (including the MAIN PWB UNIT).

Stipulated range: For BD, within ± 6 [mA] of the initial value; for DVD/CD, within ± 12 [mA] of the initial value.

- **The following two parts are specified as service parts for the MECHA UNIT.**

1. BD MAIN UNIT(UD5005) (including the MAIN PWB UNIT) : (Part No. : 972304000520S)
2. BD MECHA UNIT ASSY : (Part No. : 963309100070S)

1. How to Replace the BD MAIN UNIT (including the MAIN PWB UNIT)

- (1) Refer to the removal procedure, and remove and replace the BD MAIN UNIT(UD5005). (see "DISASSEMBLY")
- (2) Follow the firmware update procedure, and update the firmware to the latest version.
(see "VERSION UPGRADE PROCEDURE OF FIRMWARE")

2. How to Replace the BD MECHA UNIT ASSY

2.1. Devices Used

1. PC
2. 2-Dimensional Bar Code Reader (DS6708 made by Symbol Co. etc.) (Do not supply)
3. USB - 232C (TTL) conversion jig (Model: DUT-06635 by Geeetech) (Do not supply)
4. 4P RE-PH CONN CORD (1000mm) (Part No. : 61205000300AS)
5. Write software (D&M ScanBarcode Rpower 2.16.60(KES460)_MP function.zip)

2.2. BD MECHA UNIT ASSY Replacement Overview

- (1) Before replacing the BD MECHA UNIT ASSY, write all of the BD MECHA UNIT ASSY data of the unit to be replaced onto the set.
- (2) After performing (1), replace the BD MECHA UNIT ASSY.
- (3) Configure the settings for the set in which the BD MECHA UNIT ASSY was replaced.

2.3. Before replacing the BD MECHA UNIT ASSY

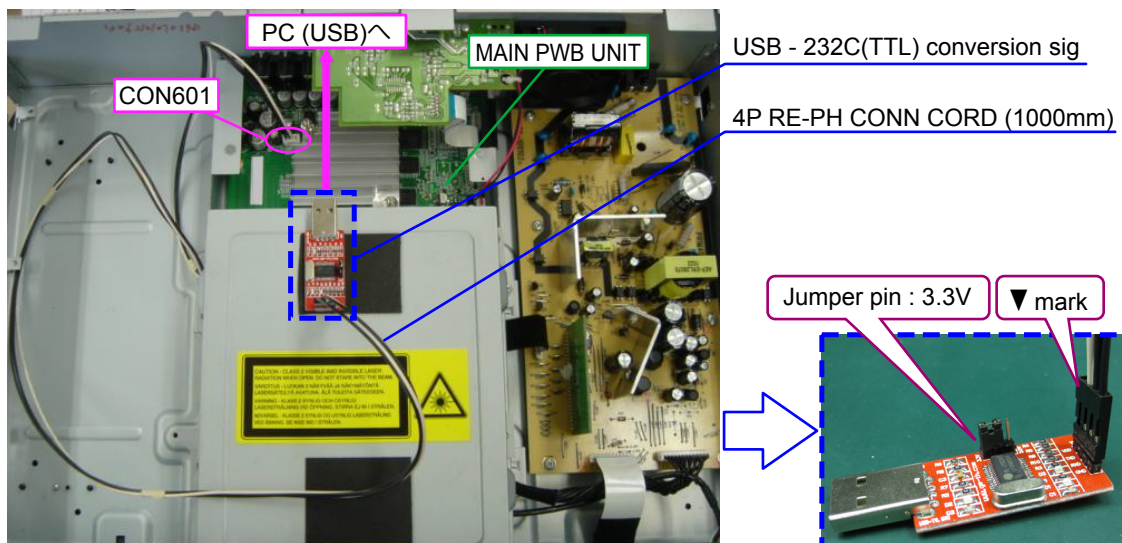
[Preparation]

1. Set unit before replacing the BD MECHA UNIT ASSY
2. PC with write software (D&M ScanBarcode Rpower 2.16.60(KES460)_MP function.zip) installed
3. 2-Dimensional Bar Code Reader
4. USB - 232C (TTL) conversion jig
5. BD MECHA UNIT ASSY for replacement

NOTE : Be sure not to mistake the light pick-up bar code data settings with data from a different pick-up.
Writing incorrect data will cause laser degradation.

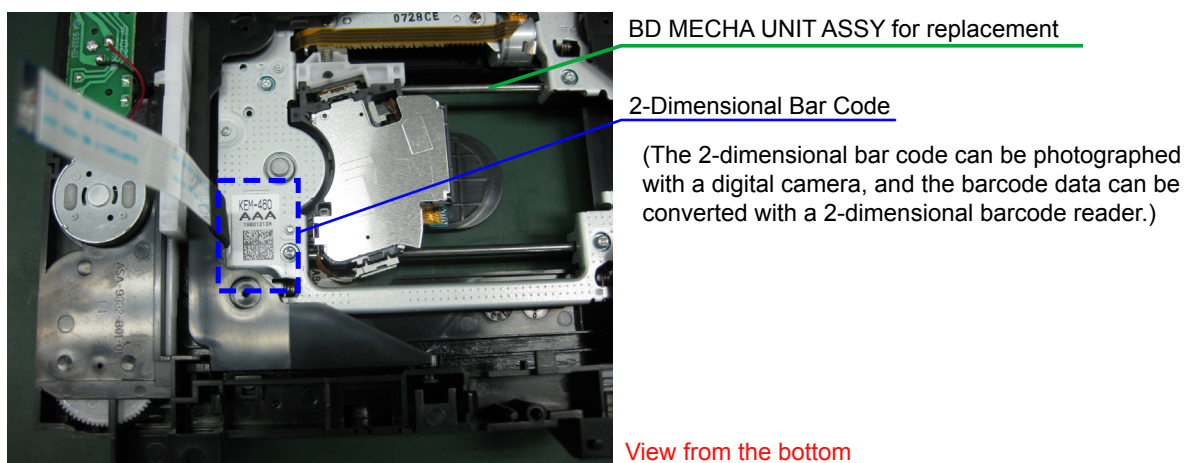
[Connection]

- (1) Connect the PC and bar code reader.
- (2) Connect the 232C (TTL) side 4P PH connector of the USB - 232C (TTL) conversion jig to the MAIN PWB UNIT (CON601) of the set.
- (3) Connect the USB side of the USB - 232C (TTL) conversion jig to the PC.



[Writing new light pick-up data]

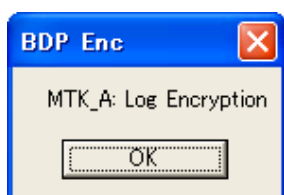
- Barcode position of light pick-up unit



- (1) Switch on the power on of the set before the BD MECHA UNIT ASSY is replaced.
- (2) Decompress the D&M ScanBarcode Rpower 2.16.60(KES460) _ MP function.zip folder and start the "Rpower.exe".
- (3) A pop-up is displayed. Click "OK".



- (4) Click "OK".



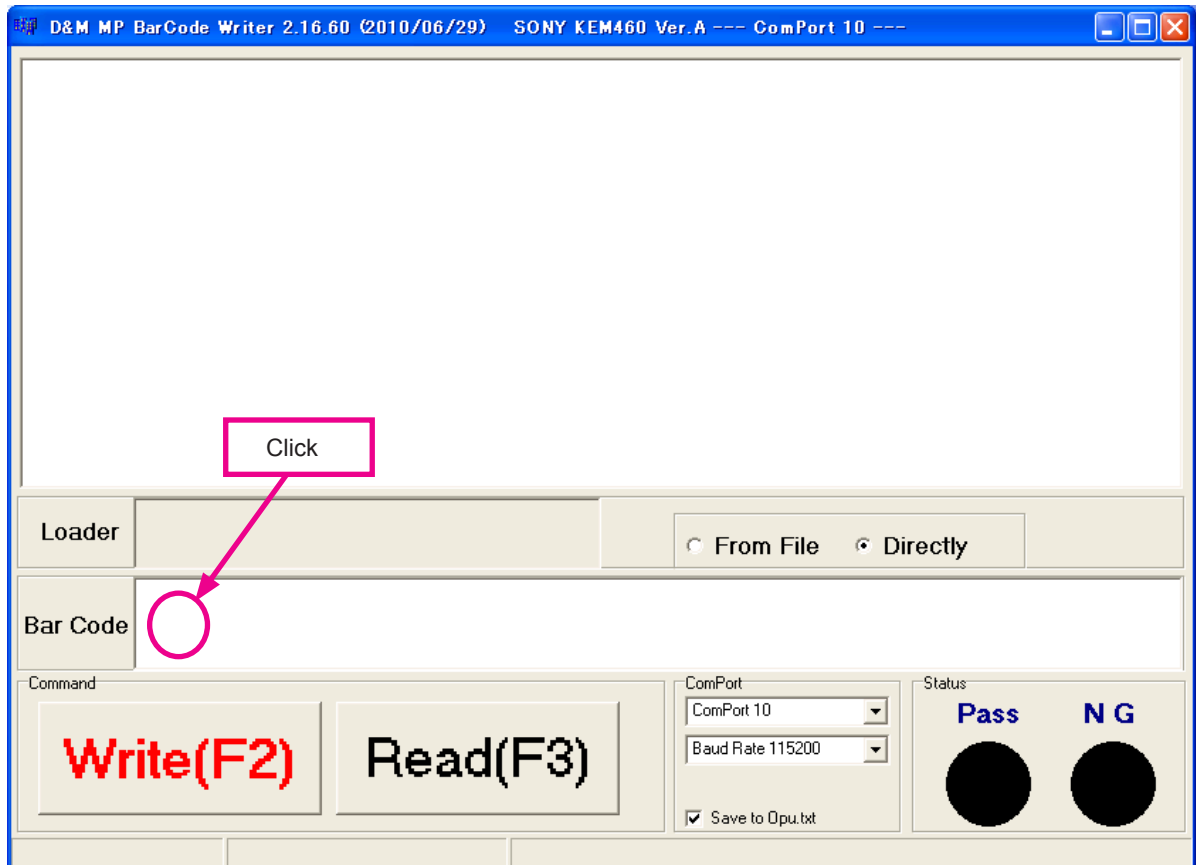
- (5) On the screen below, select "ComPort XX".
Select the USB - 232C (TTL) conversion jig port.



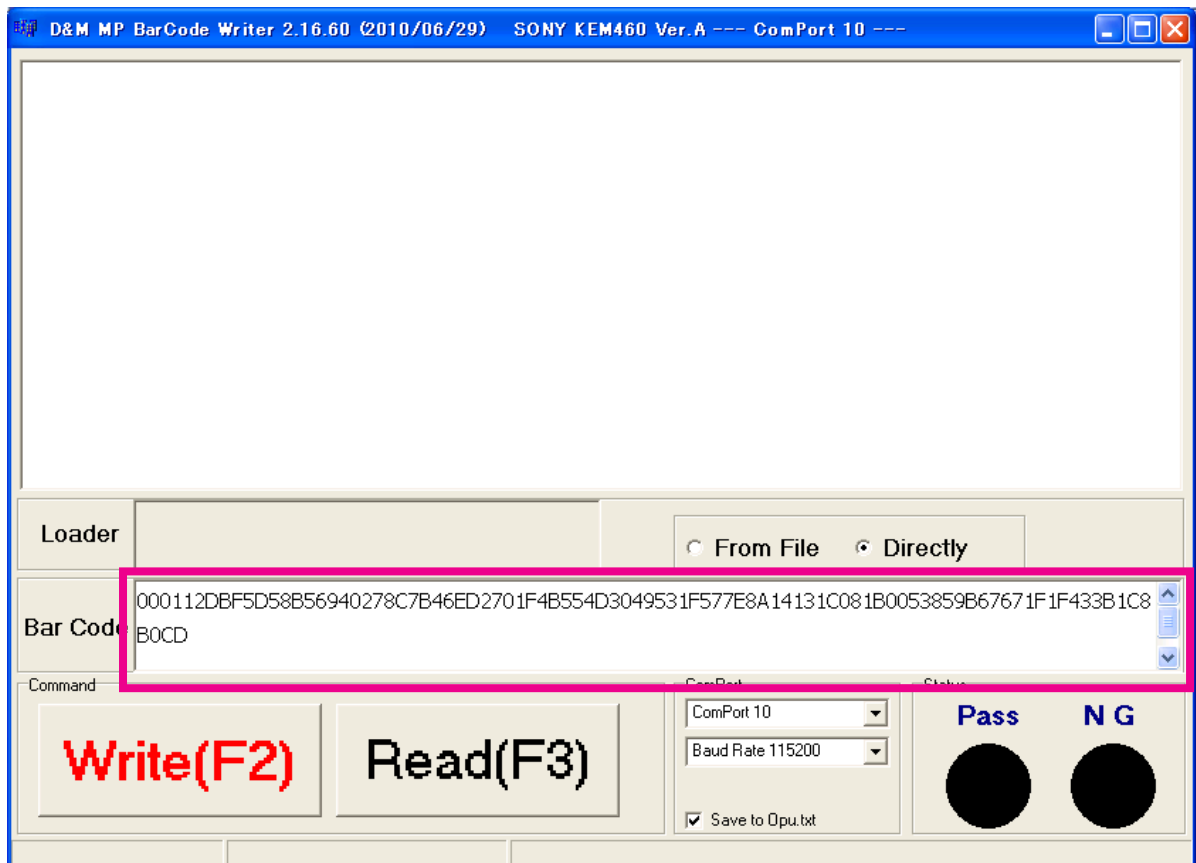
- (6) Check "Directly".



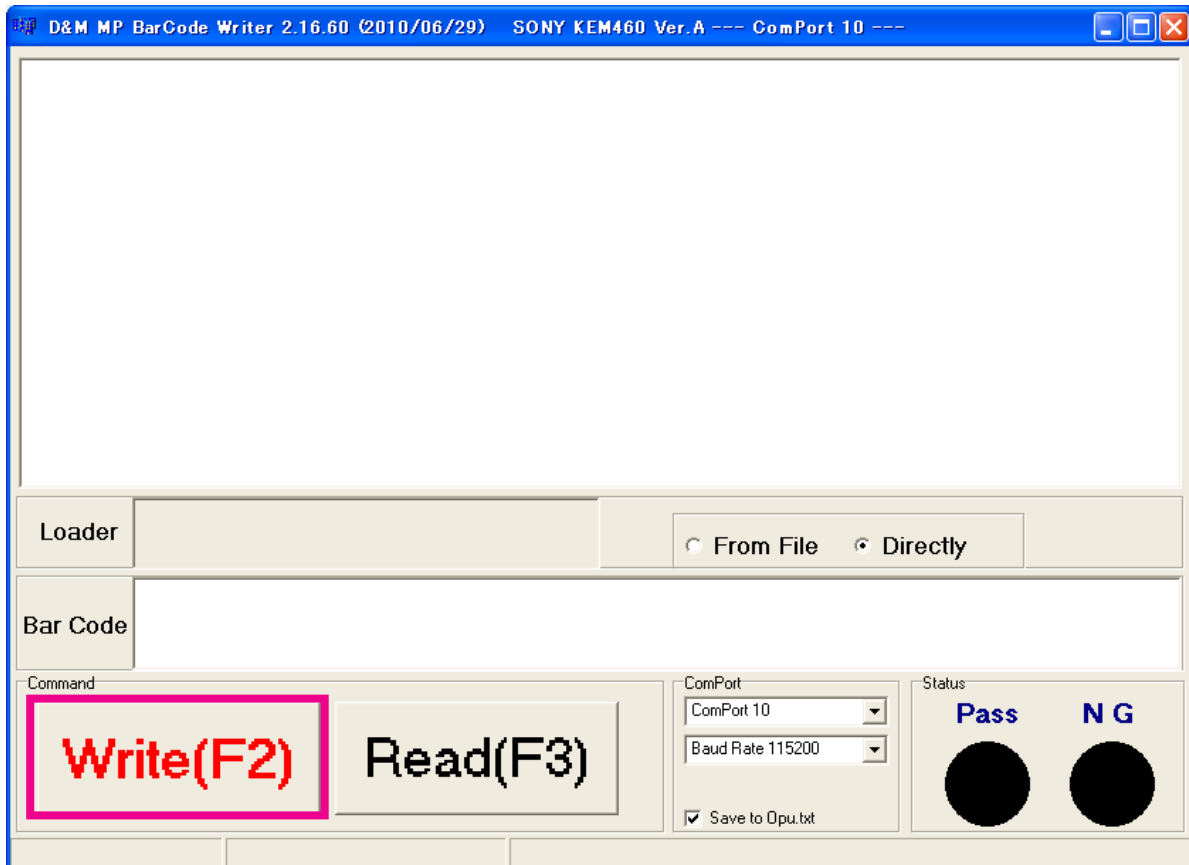
- (7) Click the left edge of the "Bar Code" window, and the cursor begins to flash.



- (8) Place the bar code reader over the bar code attached to the replacement BD MECHA UNIT ASSY. When the reader has finished reading the barcode, the read data is displayed.
- ※ If the 2-dimensional barcode data has already been read by the 2-dimensional barcode reader, and the converted data obtained, copy the data from the data file, and paste it into this section.
- NOTE : Be sure not to mistake the light pick-up bar code data settings with data from a different pick-up. Writing incorrect data will cause laser degradation.**



(9) Click Write(F2).



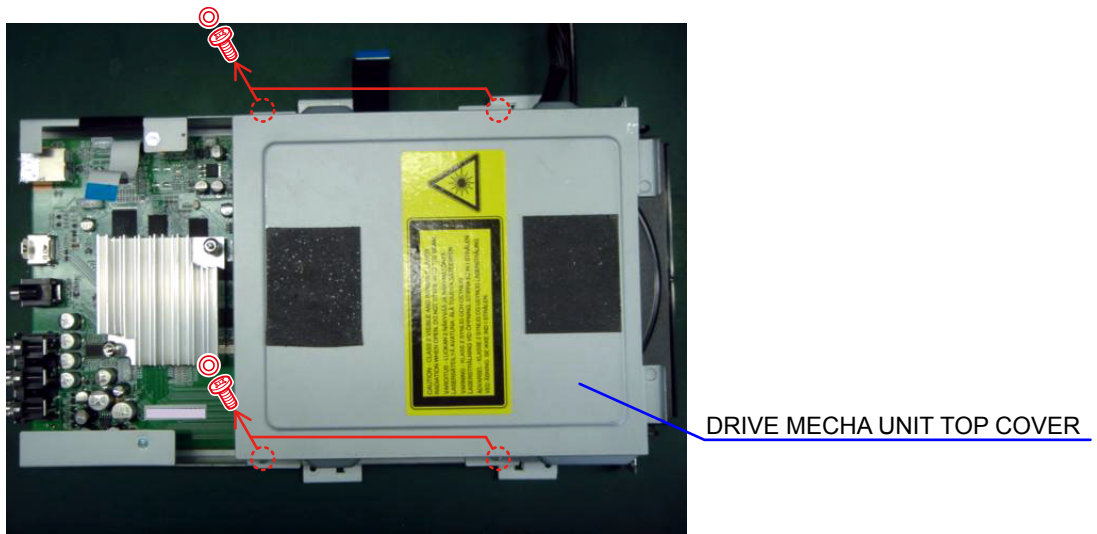
(10) When "Pass" changes to green, writing to the Flash ROM of the MAIN PWB UNIT is complete.



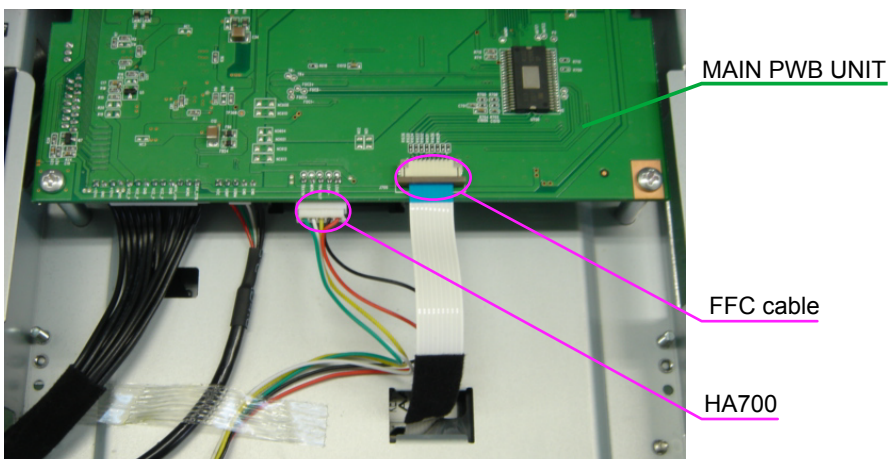
(11) Switch off the set unit power, and remove the 232C (TTL) side 4P PH connector of the USB - 232C (TTL) conversion jig from the MAIN PWB UNIT (CON601).

2.4. Replace the BD MECHA UNIT ASSY

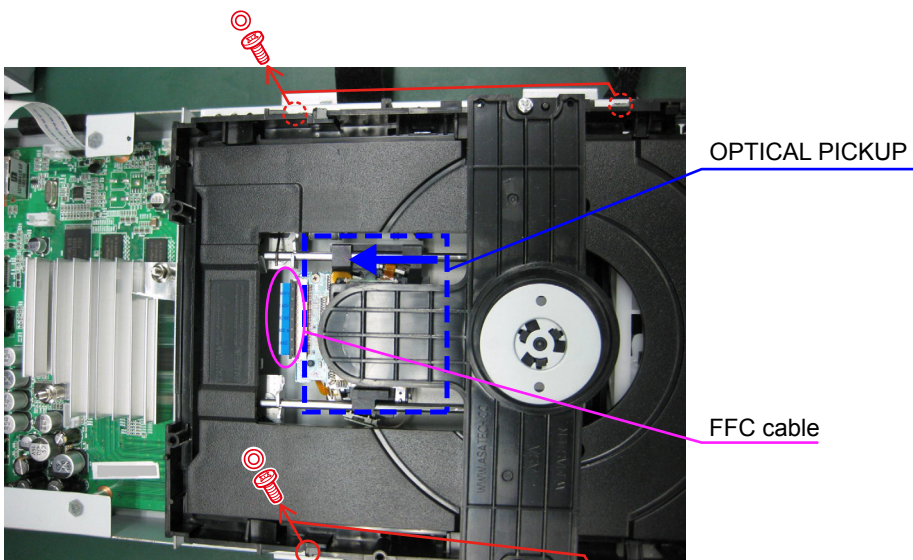
- (1) Remove the old BD MAIN UNIT from the set unit (see "DISASSEMBLY").
- (2) Remove the MECHA COVER.



- (3) Disconnect the connector wire and FFC cable.



- (4) Move the optical pickup to the outer circumference, remove the FFC Cable, and remove the screws.



- (5) Attach the BD MECHA UNIT ASSY for replacement to the set unit. (When assembling the unit, perform the steps in reverse order.)
- (6) Check that the 45P-FFC, 9P-FFC and 5P-PH connector cords have been connected.

2.4. Configure the settings of the set that contains the new BD MECHA UNIT

- (1) Check the laser amperage (see laser on/off mode in the test mode (page 26)).
Check that the values are ± 6 [mA] from the initial value for BD, and ± 12 [mA] from the initial value for DVD/CD.
- (2) Clear the total laser usage time (see the procedure for clearing the accumulated laser on time in test mode (page 27)).
- (3) Check BD, DVD, and CD media playback.
- (4) If there are no problems with playback, remove the disc, press the ON/STANDBY button to switch to standby status, and remove the AC plug from the AC socket.
- (5) Attach the top cover, and this completes the replacement procedure.

SERVICE MODE

1. Initial setting mode

1.1. preparation

- (1) Equipment used: None
- (2) Unit setting: No spec other than the following procedure.

1.2. procedure

- ※ Initialize the BD player when μ com, peripheral parts of μ com, or MAIN P.W.B. unit has been replaced in servicing.
 - ※ All user setting will be lost and its factory setting will be restored when this initialization is made. Be sure to memorize your setting for restoring again after the initialization.
- (1) Turn on this model's power. "NO DISC" is displayed on the fluorescent tube.
 - (2) Press the this model's  and SOUND MODE buttons simultaneously. "INITIALIZING" is displayed on the fluorescent tube.
 - (3) The display on the fluorescent tube switches to "INITIALIZED", the "NO DISC" display reappears and initialization is completed.

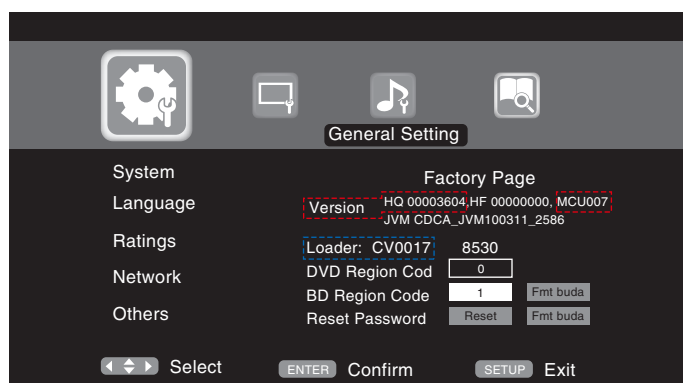
2. Firmware version check mode

2.1. preparation

- (1) Equipment used: None
- (2) Unit setting: No spec other than the following procedure.

2.2. procedure

- ※ Front-end and Back-end and SYS com version check mode.
- (1) Press the SETUP button on the remote controller to display the SETUP menu.
 - (2) Press remote contraller "3265".
 - (3) The version is displayed on the TV screen as follows.



Version HQ 0000xxxx
↓
Back-end version
MCUxxx
↓
SYS com version

Loader : CV00xx
↓
Front-end version

3. Tray lock mode

3.1. preparation

- (1) Equipment used: None
- (2) Unit setting: No spec other than the following procedure.

3.2. procedure

[Setting]

- (1) Pressing the ► and ◀◀ buttons for simultaneously, plug the AC cord into a power outlet.
- (2) "TRAY LOCK" is displayed on the FL tube and tray opening/closing is invalidated.

[Cancel]

- (1) Unplug this model's AC cord from the power outlet.
 - (2) Pressing the ► and ◀◀ buttons for simultaneously, plug the AC cord into a power outlet.
 - (3) "PLEASE WAIT" is displayed on the FL tube and tray opening/closing is enabled.
- ※ The tray lock mode is also canceled when the product is initialized.

4. Remote lock mode

4.1. preparation

- (1) Equipment used: None
- (2) Unit setting: No spec other than the following procedure.

4.2. procedure

[Setting]

- (1) Pressing the PURE DIRECT and ■■ buttons for simultaneously.
- (2) "Lock-On" is displayed on the FL tube, and operations with the remote control and the REMOTE CONTROL input terminal on the back of the UD5005 are disabled.

[Cancel]

- (1) Pressing the PURE DIRECT and ■■ buttons for simultaneously.
- (2) "Lock-Off" is displayed on the fluorescent tube and remote lock mode is made canceled.

5. All Lit / All Off mode for the FL tube

5.1. preparation

- (1) Equipment used: None
- (2) Unit setting: No spec other than the following procedure.

5.2. procedure

[Setting]

- (1) Pressing the USB/DISC and ► buttons for simultaneously, plug the AC cord into a power outlet.
If All Lit / All Off mode is set for the FL tube, the FL tube's display area is fully lit.
- (2) Press the PURE DIRECT button to switch between 'all lit' and 'all off' display.

[Cancel]

- (1) Remove the power cable for 5 seconds or more to cancel All Lit / All Off mode for the FL tube.

6. Test mode

6.1. Entering the test mode

The test mode is entered by pressing the  and  buttons simultaneously, plug the AC cord into a power outlet. When the test mode is set, the "▶" and "■" indicators light.

FL tube display when test mode entered

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
		T	E	S	T		M	O	D	E		

When the test mode is set, the choice screen of the mode appears on the monitor.

6.2. Selecting the mode

- The following modes are available.

- (1) Laser on/off (CD/DVD/BD) mode : T2
- (2) Error rate (skew) measurement mode : T7
- (3) Accumulated laser on time display mode : TC
- (4) Picking up No. display mode : TG
- (5) OPU Change mode : Please do not use this mode.
In the case of OPU change, please cope according to an exchange method of "2. How to Replace the BD MECHA UNIT ASSY" (page 16).
- ※ When choose OPU change mode and press the ▶ button, press the ■ button, and please cancel a mode.
- (6) Test mode cancel : TI

- ① When the  button is pressed after entering the test mode, the display switches in the order: "T2, T7, TC, TG, TI, T2 ..."

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	2		L	a	s	e	r	O	n	O	f	f

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	7		E	r	r	o	r		R	a	t	e

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	C		L	a	s	e	r	O	n	T	i	m

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	G		O	P	U		N	u	m	b	e	r

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
		O	P	U		C	h	a	n	g	e	

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	I		T	e	s	t		E	x	i	t	

- ② When the  button is pressed, the display switches in the opposite order from ① above, starting from the current position (for example, if currently at "TC", it switches as follows: "T7, T2 ").

6.3. About each mode

- With the mode selected, press the ► button to set that mode.

(1) Laser on/off (CD/DVD/BD) mode

Press the ◀◀ or ▶▶ button to select [X] and press the ► button to set it.
Laser on/off control is executed and the laser current is displayed.

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	2	X	:	n	n	n	n	:	n	n	n	n

(X=1 : CD laser mode, 2 : DVD laser mode, 3 : BD(SL) laser mode)

(mmmm[mA] : Stored data, nnnn[mA] : Current value)

- ※ When the current value is more that BD: ± 6 [mA], DVD or CD: ± 12 [mA] of saved data, it becomes the pickup transducer's target.

In this case, replace the mechanism unit.

When the ■ button is pressed, the layer above the current layer is displayed. See "6.4 Stopping the mode".

(2) Error rate measurement mode

Press the ◀◀ or ▶▶ button to select [YY] .

Refer to [Table 1 - Error rate details].

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	Y	Y	F	F	F	F	F	F	F	F	F	F

(YY : measurement mode, F : Address and error rate (When not set, "F" is displayed.)

Press the ► button to begin error rate measurement. The address and error rate are displayed.

For a description of the displayed measurement results, see "Table 1: Error rate details".

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	Y	Y	m	m	m	m	m	m				

(YY : selection mode [71 to 94], m : address [PBA][HEX], | : error rate [COUNT/SEC] [DEC])

(Note) CD (4x-speed) : Renewal of data is carried out for every 300 frame.

Error rate of 75 frames is displayed.

DVD (1.6x-speed) : Renewal of data is carried out for every 80ECC block.

Error rate of 8ECC block is displayed.

BD (1.6x-speed) : Renewal of data is carried out for every 136LDC clusters block.

Error rate of 8LDC clusters block is displayed.

The mode chosen when selection mode was changed into the trace execution and the ► button was pressed is performed from the beginning.

When the ► button is pressed without changing selection mode, the mode under selection is performed from the beginning.

(If the ► button is pressed, the address corresponding to the chosen mode will be searched again.)

The pause mode is set after tracing is completed.

When the ■ button is pressed, the layer above the current layer is displayed. See "6.4 Stopping the mode".

(3) Accumulated laser on time display mode

Press the ◀◀ or ▶▶ button to select [Y] and press the ▶ button to set it.
The accumulated laser on time is displayed.

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	C	Y				m	m	m	m	m	m	h

(Y=1 : CD, 2 : DVD , 3 : BD, mmmmmm : Time(Fractions of hours are counted up one hour on the display.)

When the ■ button is pressed, the layer above the current layer is displayed. See "6.4 Stopping the mode".

---To clear the accumulated laser on time---

Press the ▶ button while the accumulated laser on time is displayed ("TC1", "TC2", "TC3") until "TC4 * clear??" appears at the display.

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	C	4	*			c	l	e	a	r	?	?

If the ▶ button is pressed, the accumulated laser on time of CD, DVD and BD is cleared.

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	C	1									0	h

When "TC1", "TC2" or "TC3" is selected with the ◀◀ or ▶▶ button, "mmmmmm" is displayed as "0" so you can check.

(4) Picking up No. display mode

Press the ◀◀ or ▶▶ button to switch to the pickup number display.
The pickup number is a 15-digit number, so it is displayed in two sections.

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	G	X		Y	Y	Y	Y	Y	Y	Y	Y	

(X (display position) = 1 : Lower digits, 2 : Upper digits. YYYYYYYY: Pickup number)

When the ■ button is pressed, the layer above the current layer is displayed. See "6.4 Stopping the mode".

(5) Test mode cancel

A confirmation message is displayed. Press the ▶ button to set, canceling the test mode.

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	I	1		R	e	a	l	i	y	?		

When the ■ button is pressed, the layer above the current layer is displayed. See "6.4 Stopping the mode".

6.4. Stopping the mode

When the  button is pressed, the layer above the current layer is displayed. The relationship between the different modes and the display of the different layers is shown on the table below.

Mode	1 layer	2 layer	3 layer
Laser on/off (CD/DVD/BD) mode	T2 LaserOnOff	T2X mmmm nnnn	Non
Error rate measurement mode	T7 Error Rate	TTYFFFFFFFFF	TTYmmmmmmlll
Accumulated laser on time display mode	TC LaserOnTim	TCY mmmmmmh	TC4* clear??
Picking up No. display mode	TG OPU Number	TGX YYYYYYY	Non
Test mode cancel	TI Test Exit	TI1 Really?	Non

6.5. About the OPEN/CLOSE () button

Even during the test mode, the tray is opened and closed when the  button is pressed.

6.6. Test mode detailed table

Table 1: Error rate details

YY	Measurement position	Error rate display details for each media type			Remarks
		BD	DVD	CD	
71	The inner circumference of 1-layer	BIS error detection signed number	It is invalid.	It is invalid.	When this is selected for DVD or CD, T71 FFFFFFFFFF display.
72	The inner circumference of 1-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T72 FFFFFFFFFF display.
73	The inner circumference of 1-layer	LDC error detection signed number	PI error detection number	C1 error detection number	
74	The inner circumference of 1-layer	It is invalid.	It is invalid.	C2 uncorrectable error number	When this is selected for BD or DVD, T74 FFFFFFFFFF display.
75	The central circumference of 1-layer	BIS error detection signed number	It is invalid.	It is invalid.	When this is selected for DVD or CD, T75 FFFFFFFFFF display.
76	The central circumference of 1-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T76 FFFFFFFFFF display.
77	The central circumference of 1-layer	LDC error detection signed number	PI error detection number	C1 error detection number	
78	The central circumference of 1-layer	It is invalid.	It is invalid.	C2 uncorrectable error number	When this is selected for BD or DVD, T78 FFFFFFFFFF display.
79	The outer circumference of 1-layer	BIS error detection signed number	It is invalid.	It is invalid.	When this is selected for DVD or CD, T79 FFFFFFFFFF display.
80	The outer circumference of 1-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T80 FFFFFFFFFF display.
81	The outer circumference of 1-layer	LDC error detection signed number	PI error detection number	C1 error detection number	
82	The outer circumference of 1-layer	It is invalid.	It is invalid.	C2 uncorrectable error number	When this is selected for BD or DVD, T82 FFFFFFFFFF display.
83	The inner circumference of 2-layer	BIS error detection signed number	It is invalid.	It is invalid.	When this is selected for DVD or CD, T83 FFFFFFFFFF display.

YY	Measurement position	Error rate display details for each media type			Remarks
		BD	DVD	CD	
84	The inner circumference of 2-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T84 FFFFFFFFFF display.
85	The inner circumference of 2-layer	LDC error detection signed number	PI error detection number	It is invalid.	When this is selected for 1-layer DVD or CD, T85 FFFFFFFFFF display.
86	The inner circumference of 2-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T86 FFFFFFFFFF display.
87	The central circumference of 2-layer	BIS error detection signed number	It is invalid.	It is invalid.	When this is selected for DVD or CD, T87 FFFFFFFFFF display.
88	The central circumference of 2-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T88 FFFFFFFFFF display.
89	The central circumference of 2-layer	LDC error detection signed number	PI error detection number	It is invalid.	When this is selected for DVD 1-layer or CD, T89 FFFFFFFFFF display.
90	The central circumference of 2-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T90 FFFFFFFFFF display.
91	The outer circumference of 1-layer	BIS error detection signed number	It is invalid.	It is invalid.	When this is selected for DVD or CD, T91 FFFFFFFFFF display.
92	The outer circumference of 1-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T92 FFFFFFFFFF display.
93	The outer circumference of 1-layer	LDC error detection signed number	PI error detection number	It is invalid.	When this is selected for DVD 1-layer or CD, T93 FFFFFFFFFF display.
94	The outer circumference of 1-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T94 FFFFFFFFFF display.

* The inner circumference of the layer refers to the physical inner circumference for DVD parallel, the physical outer circumference for the opposite case.

* The inner circumference of the layer refers to the physical outer circumference for DVD parallel, the physical inner circumference for the opposite case.

VERSION UPGRADE PROCEDURE OF FIRMWARE 3

You can update by downloading the latest firmware from the Internet.

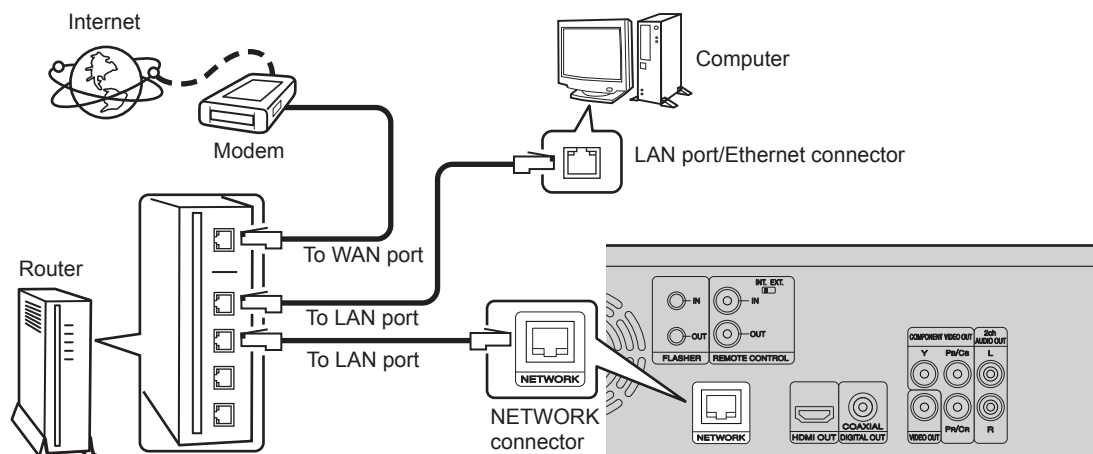
1. Update from the Internet

1.1. preparation

(1) System Requirement

- Internet Connection by Broadband Circuit
- Modem
- Router
- Ethernet cable (CAT-5 or greater recommended)

(2) Setting



1.2. Check for Update and Update

Check if the latest firmware exists. You can also check approximately how long it will take to complete an update.

- (1) Press the SETUP button on the remote control to display the GUI menu.
- (2) Use the cursor buttons to select "General Setting" → "System" → "Firmware Update" → "Update check".
- (3) Press the ENTER button.
 - The latest version of the firmware uploaded to the web is displayed.
 - If the latest firmware version is on the web, proceed to (4).
 - If the latest firmware is already installed, press the **◀◀** button to return to SETUP menu.
- (4) Use the Cursor buttons to select "Update", then press the ENTER button.
 - When updating is completed, return to normal status about 20 seconds later.

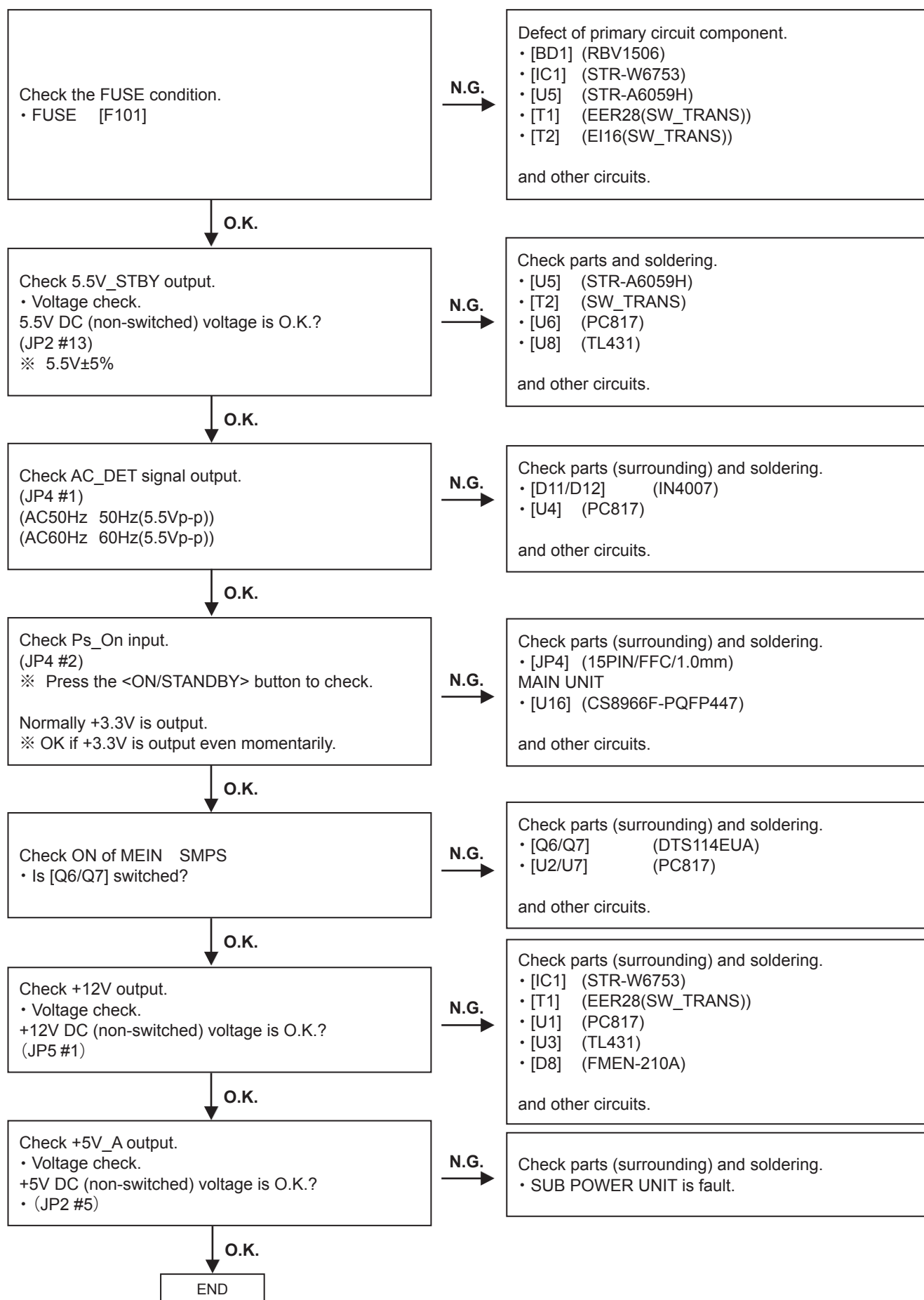
--- Cautions on Firmware Update ---

- In order to update the firmware, you must have the correct system requirements and settings for a broadband Internet connection.
- Do not turn off the power until updating is completed.
- Once updating starts, normal operations on this unit cannot be performed until updating is completed. Also, setting items of the GUI menu of this unit or setting items of the image adjustment may be initialized. Note down of the settings before updating, and set them again after updating.

TROUBLE SHOOTING

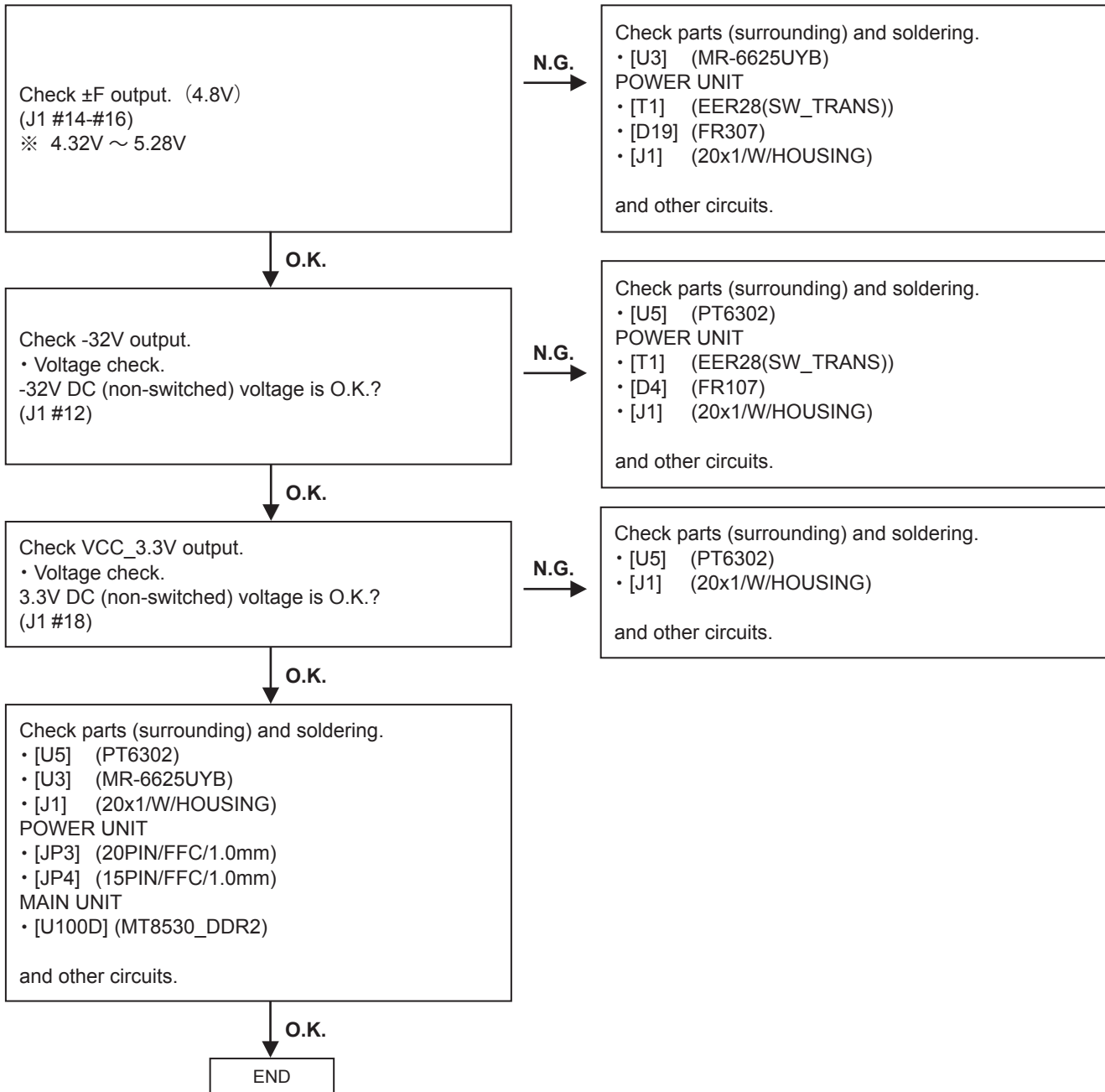
1. POWER UNIT

The power cannot be turned on.



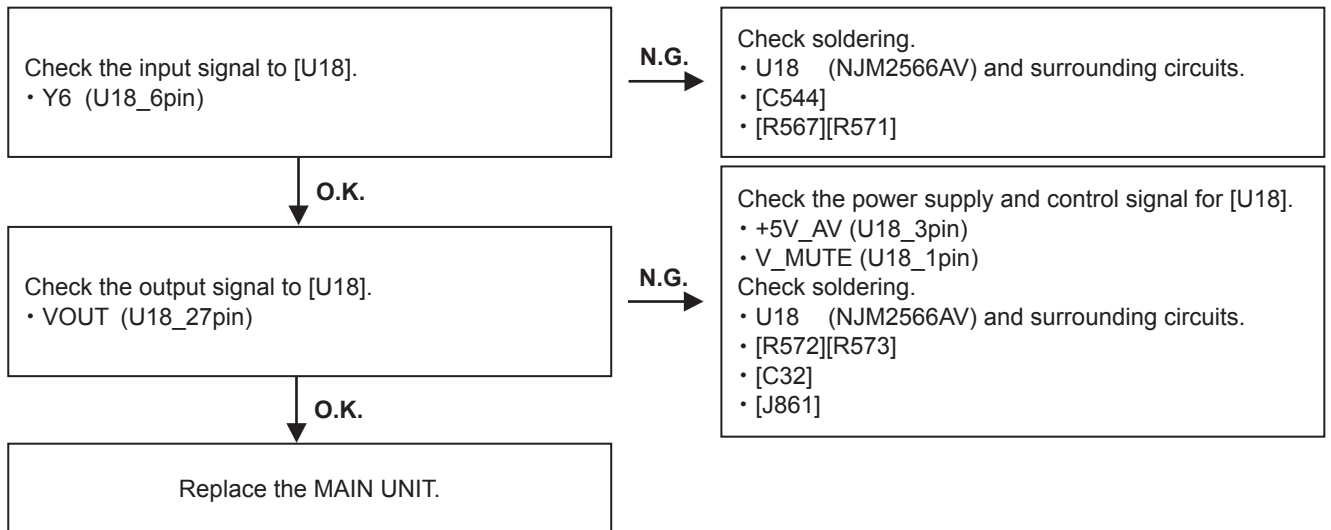
2. DISPLAY UNIT

2.1. FL TUBE doesn't light.

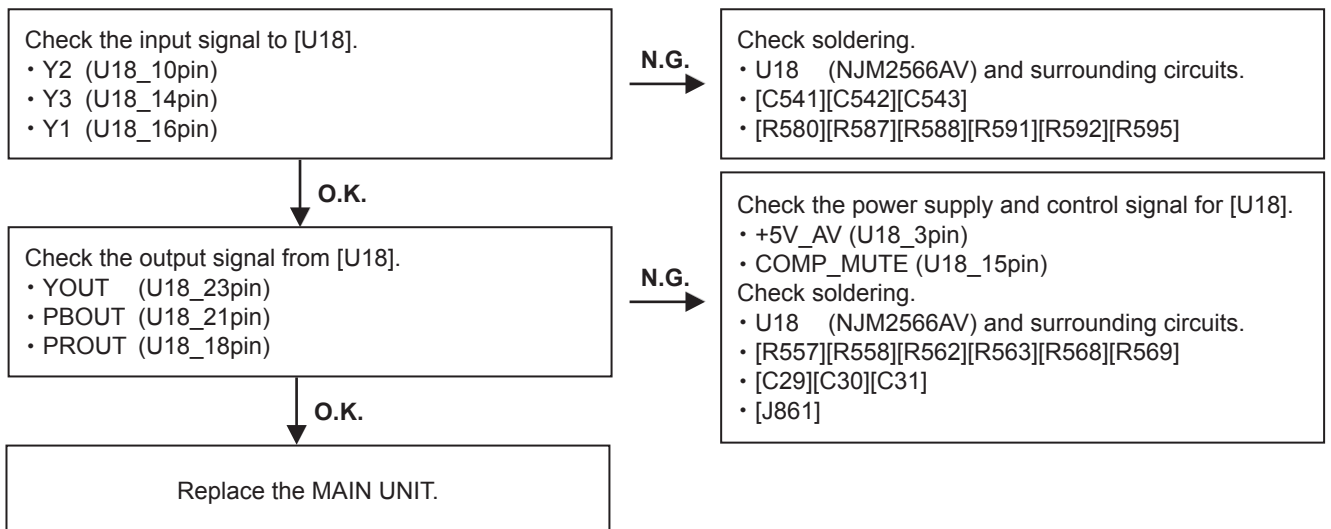


3. MAIN UNIT

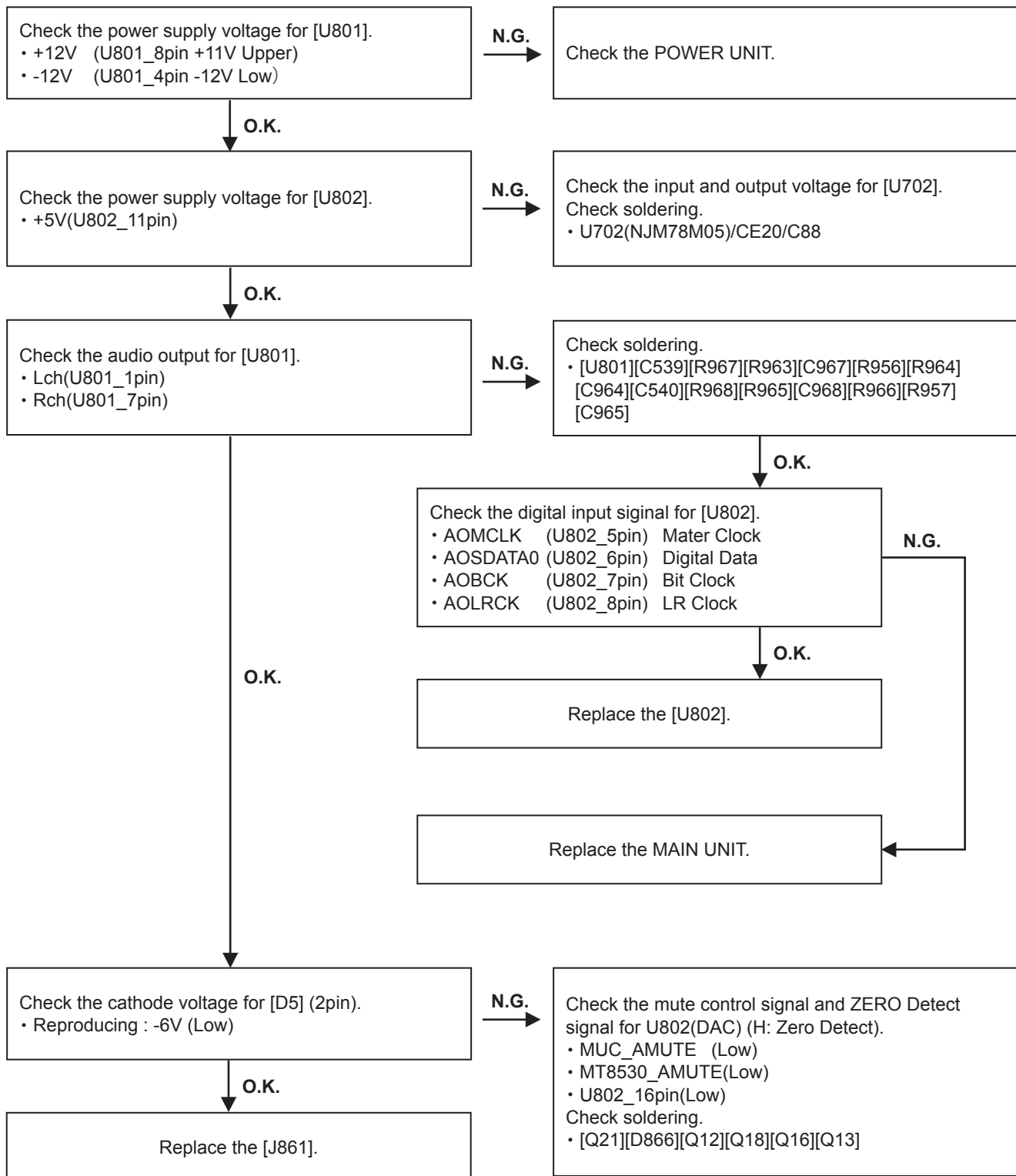
3.1 Video out doesn't output.



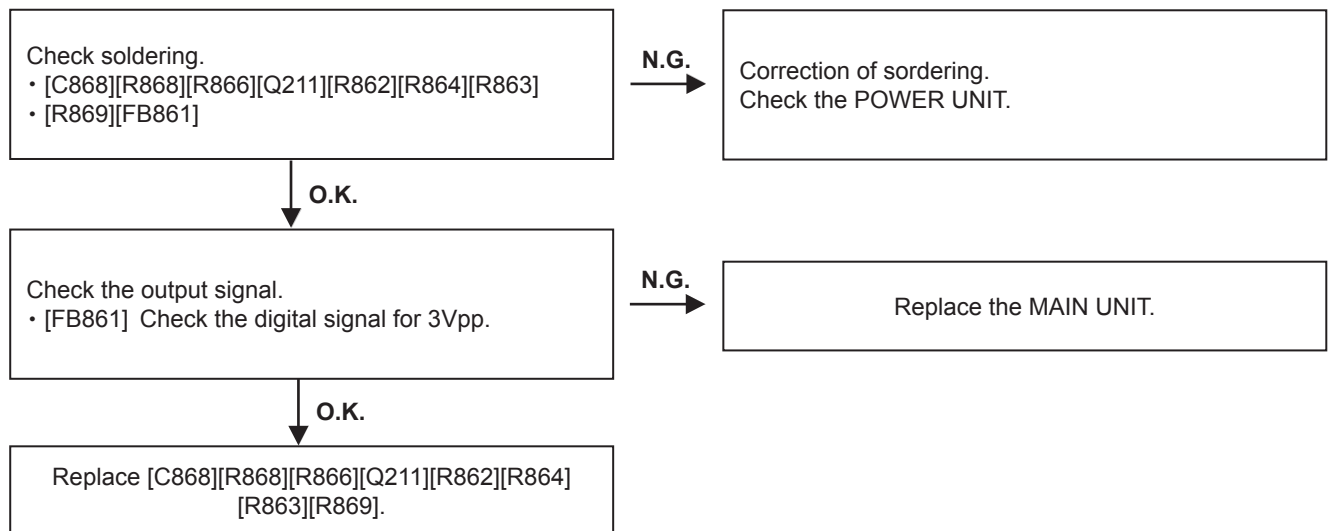
3.2. Component out doesn't output.



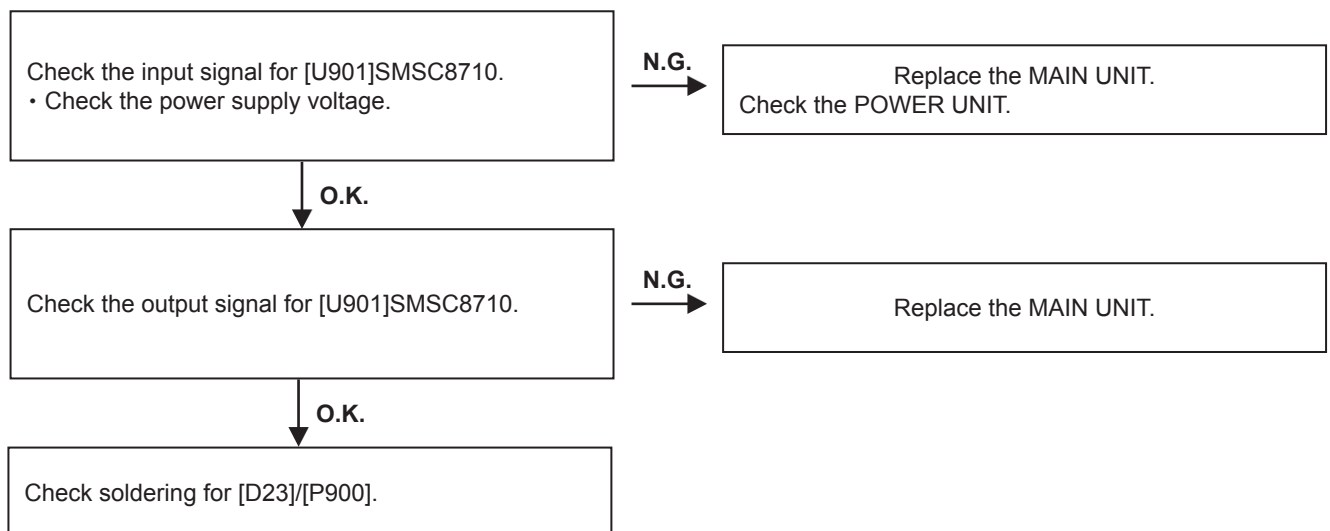
3.3. Analog audio doesn't output.



3.4 Digital Out(COAX) doesn't output.



3.5. Ether is not connection.



MEASURING METHOD AND WAVEFORMS

1. VIDEO section

To check the waveforms(VIDEO) on the MAIN UNIT, the GND (-) probe to "⑤CE30" point.

Measuring Disc: VIDEO/BLX-104 (Blu-ray disc)

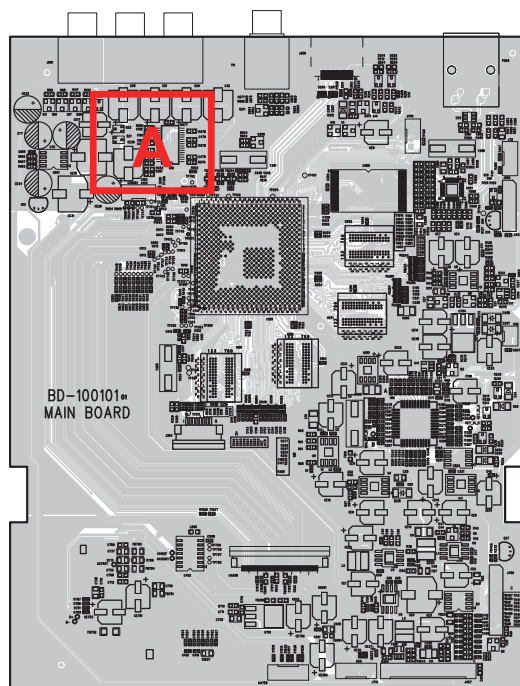
Playback Content : Title 1 , chapter 1 Color Bar 100% (Main Menu → 59.94Hz 1080i 1.Video signal → 1.Color Bar 100%)

Component output resolution : 1080i

(It is better to use wires for extending between the probe and test points.)

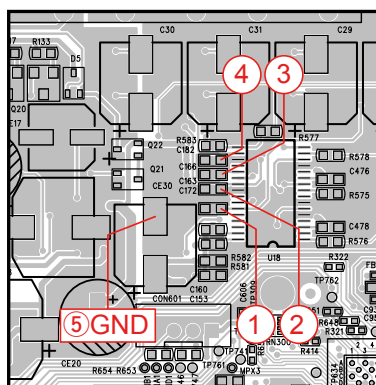
Since there are no test points for locations ① to ④, confirm the signals at the land of a chip resistor.

MAIN UNIT : TEST POINT AND WAVEFORMS

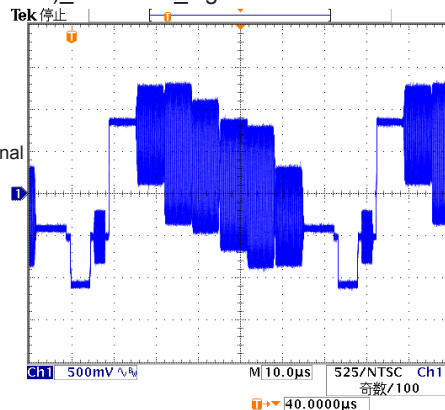


Component side

Detail A

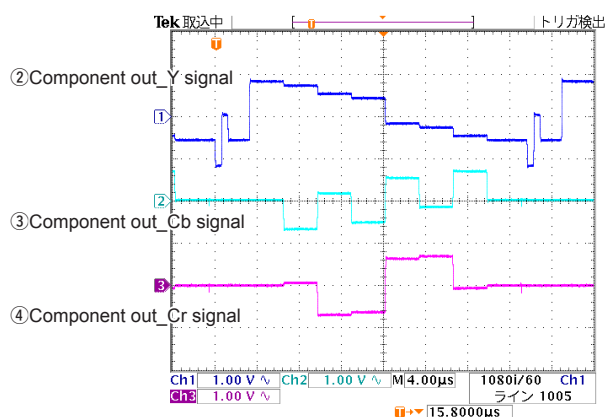


①U18 (NJM2566)_Video out_signal



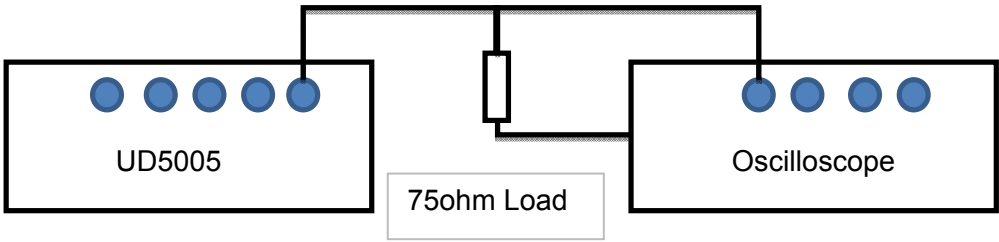
①Video out_signal

②-④U18 (NJM2566)_Component out_Y/Cb/Cr signal

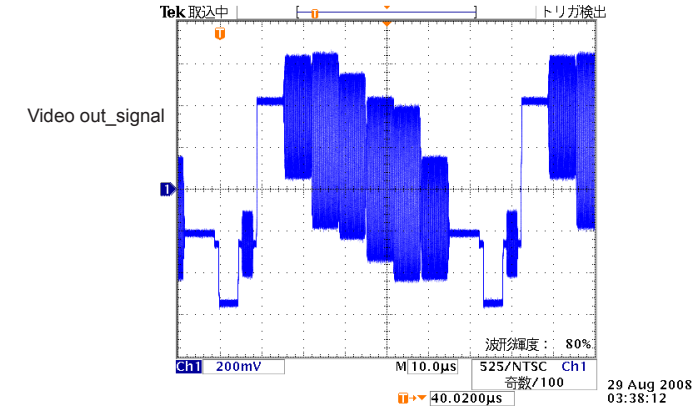


Terminal output check

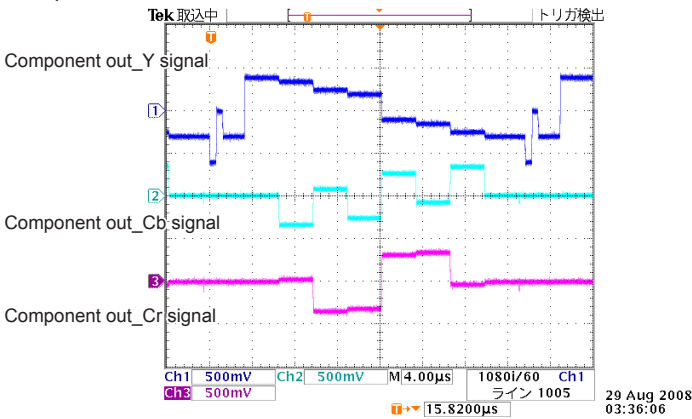
Signal: Color Bar 100%



Video out terminal check

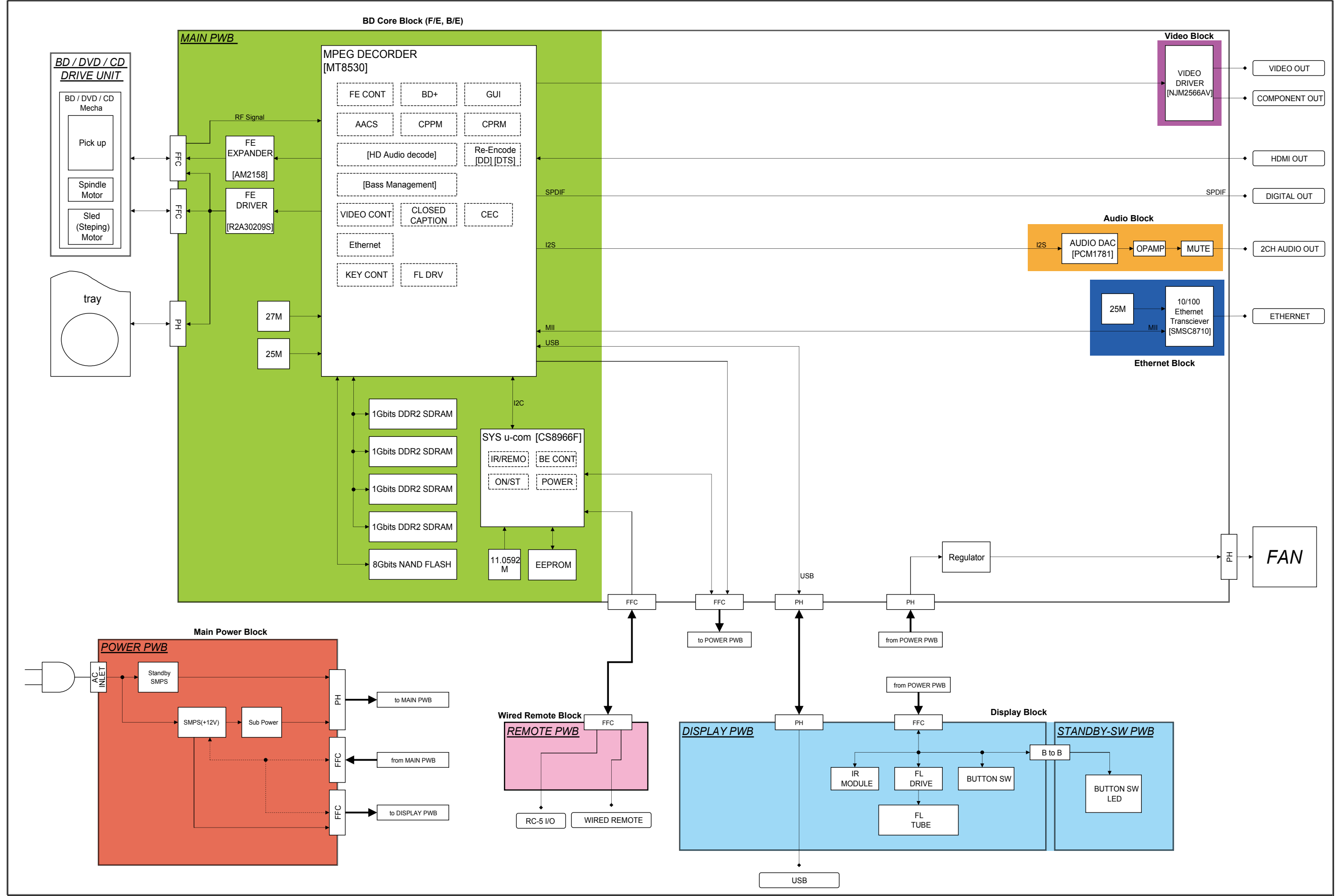


Component out terminal check

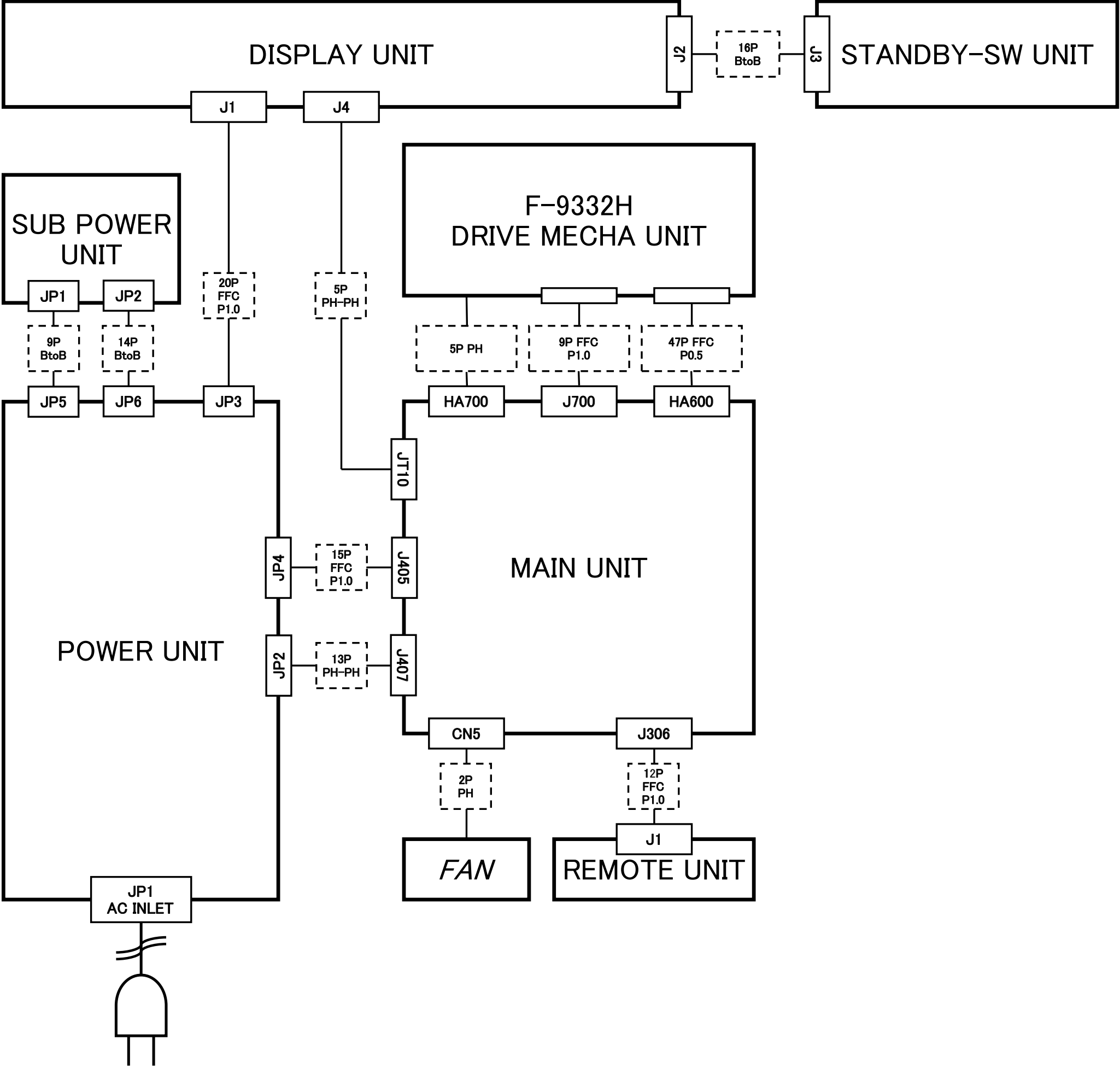


This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

BLOCK DIAGRAM

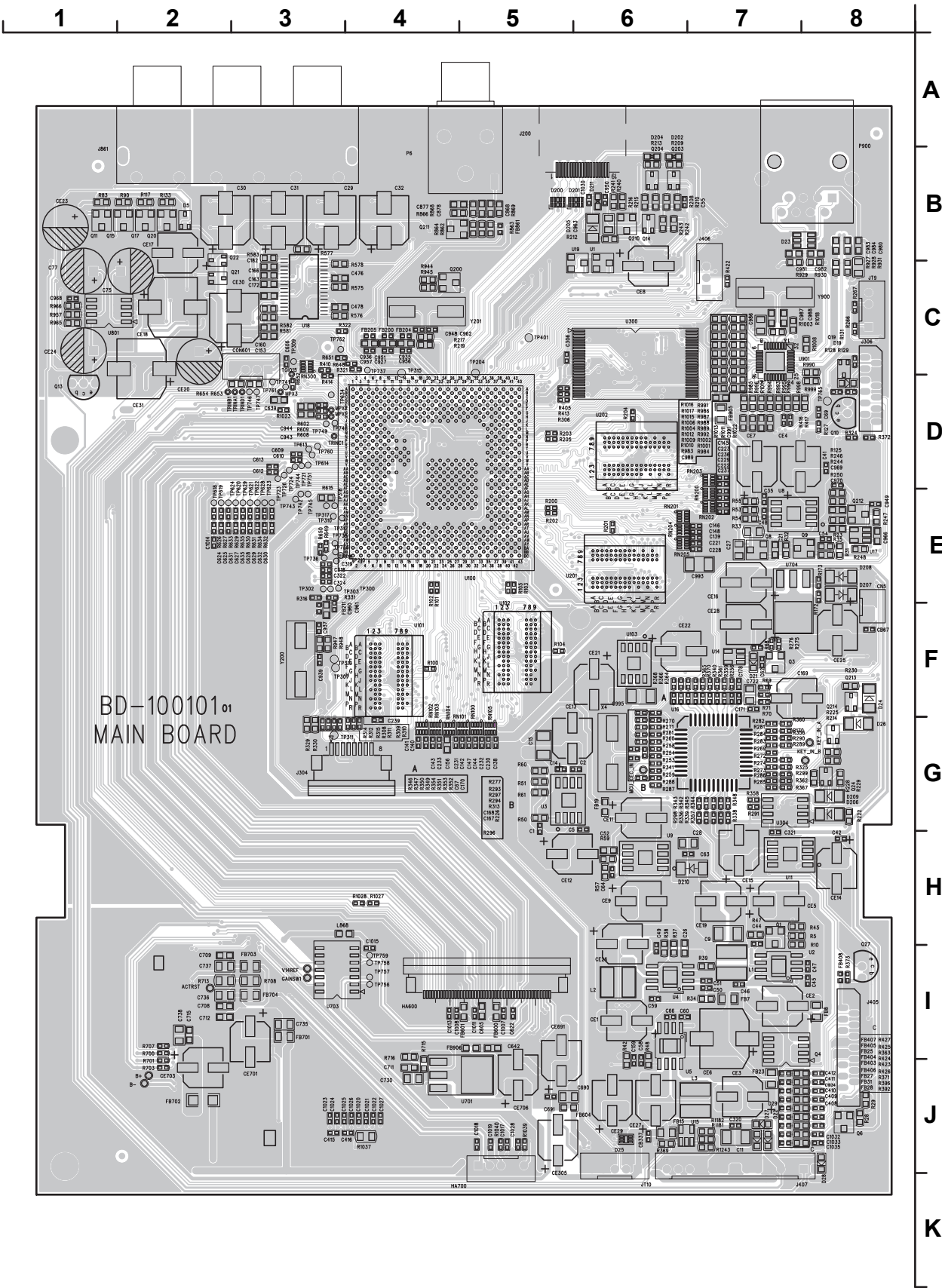


WIRING DIAGRAM

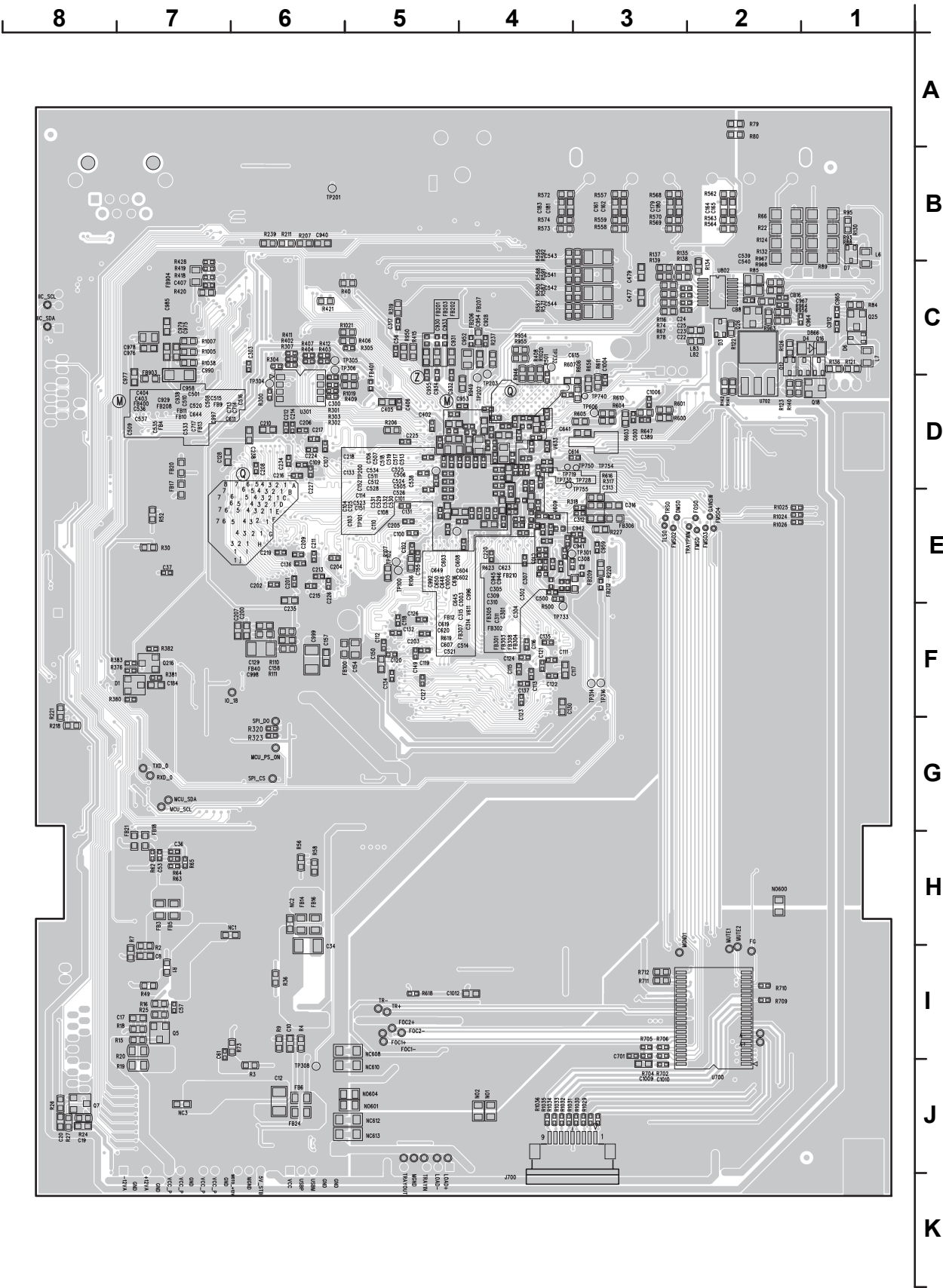


PRINTED WIRING BOARDS

MAIN (COMPONENT SIDE)



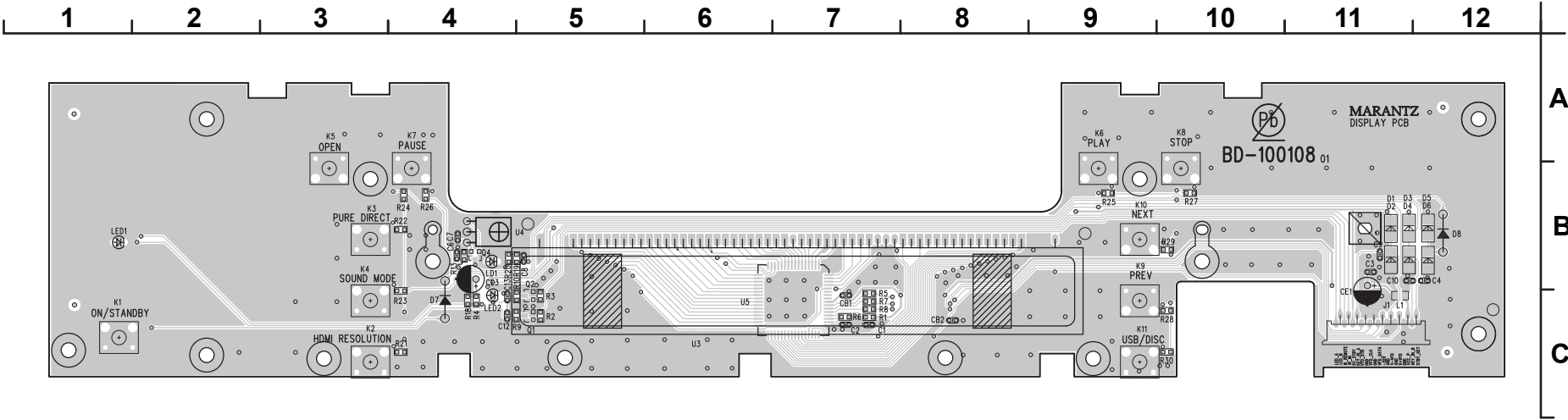
MAIN (FOIL SIDE)



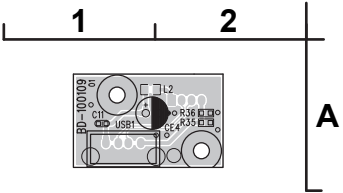
鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

Lead-free Solder
When soldering, use the Lead-free Solder (Sn-Ag-Cu).

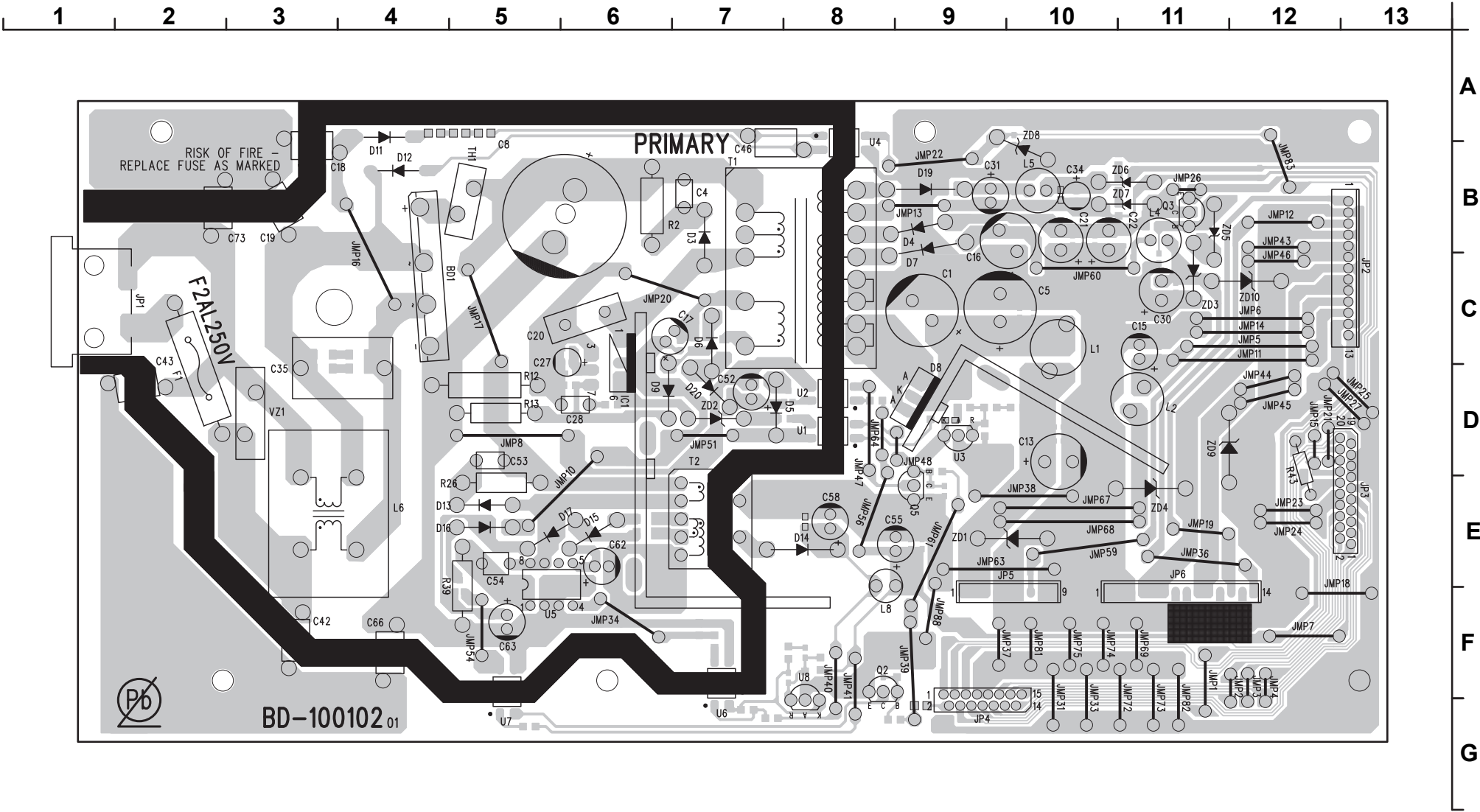
DISPLAY (COMPONENT SIDE)



USB (COMPONENT SIDE)



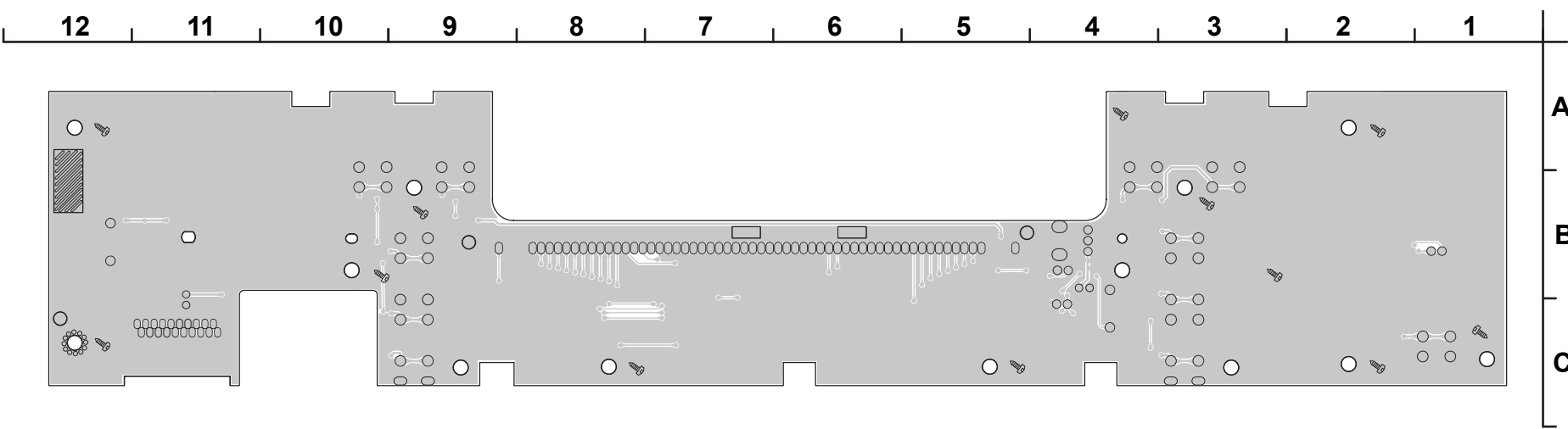
POWER (COMPONENT SIDE)



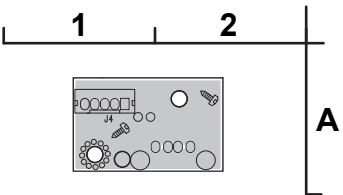
鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

Lead-free Solder
When soldering, use the Lead-free Solder (Sn-Ag-Cu).

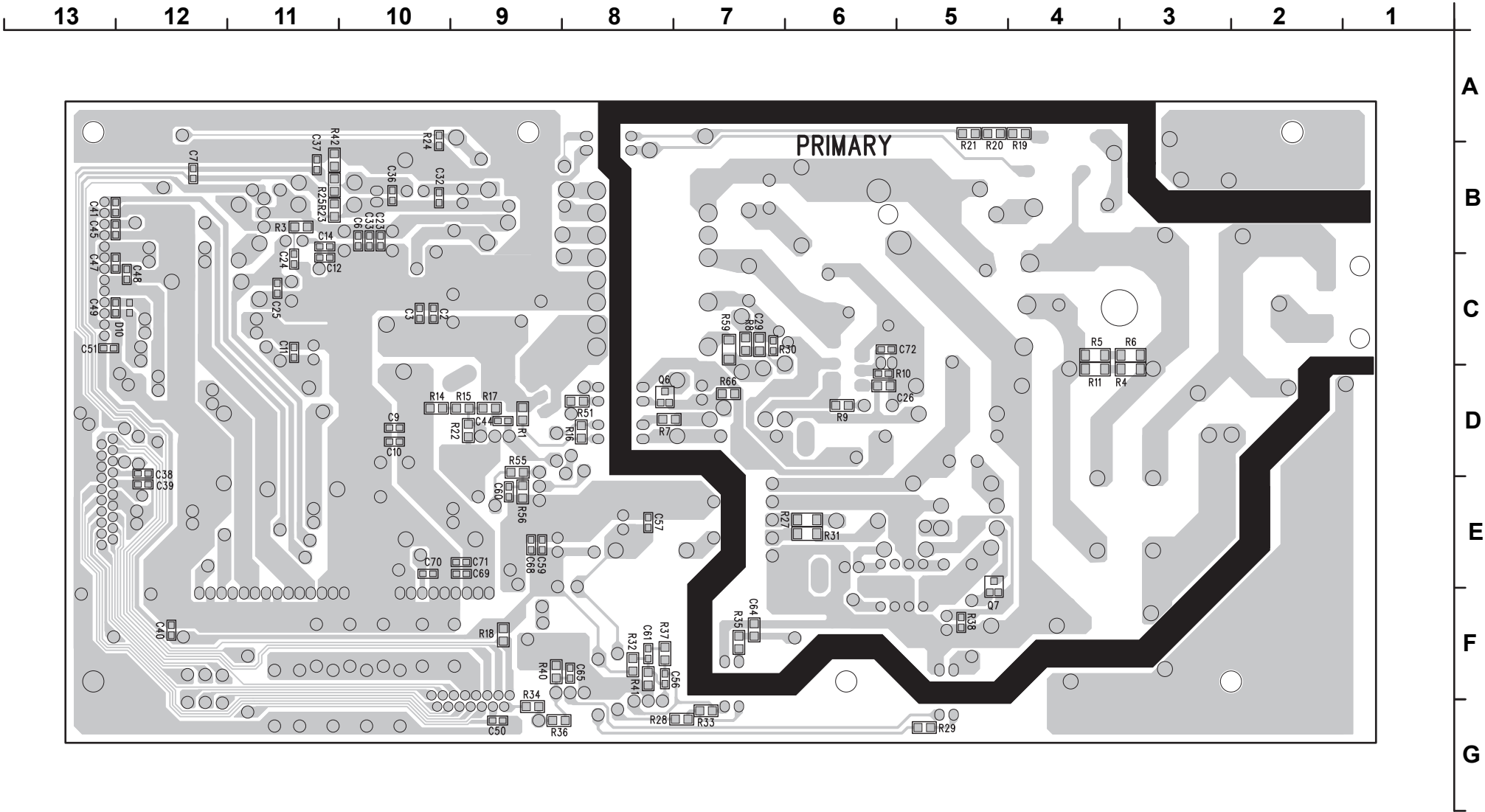
DISPLAY (FOIL SIDE)



USB- (FOIL SIDE)



POWER (FOIL SIDE)

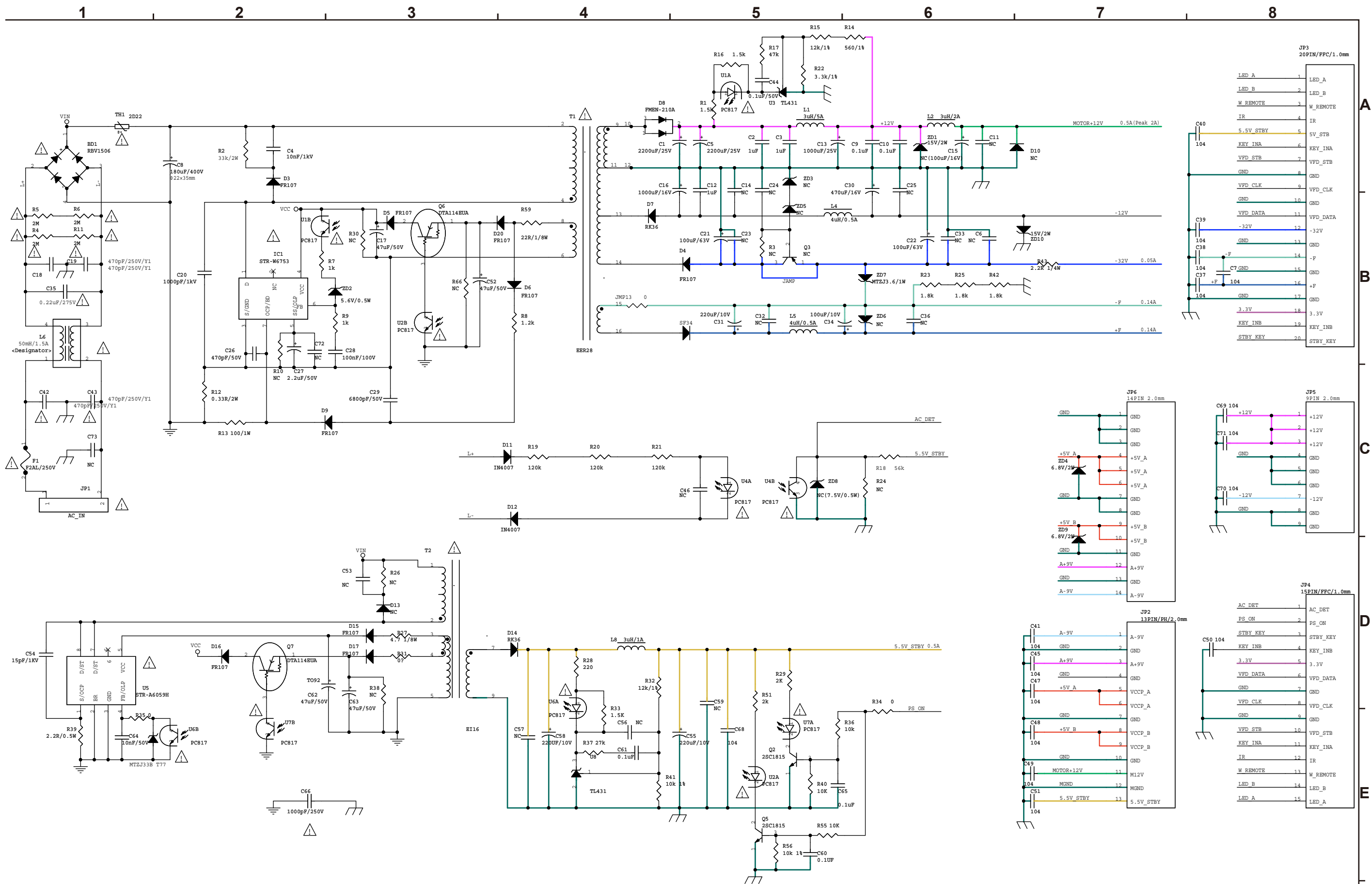


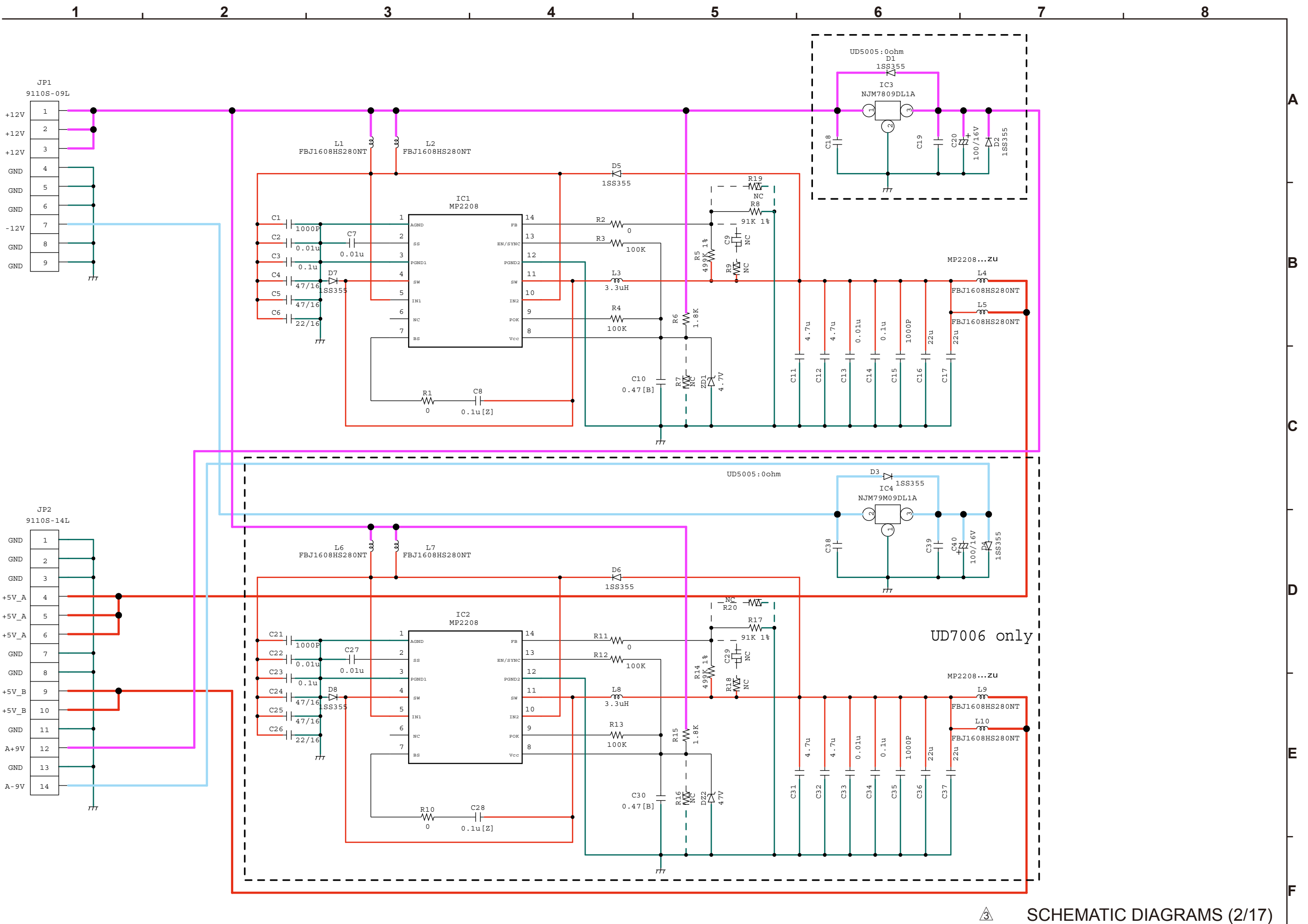
鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

Lead-free Solder
When soldering, use the Lead-free Solder (Sn-Ag-Cu).

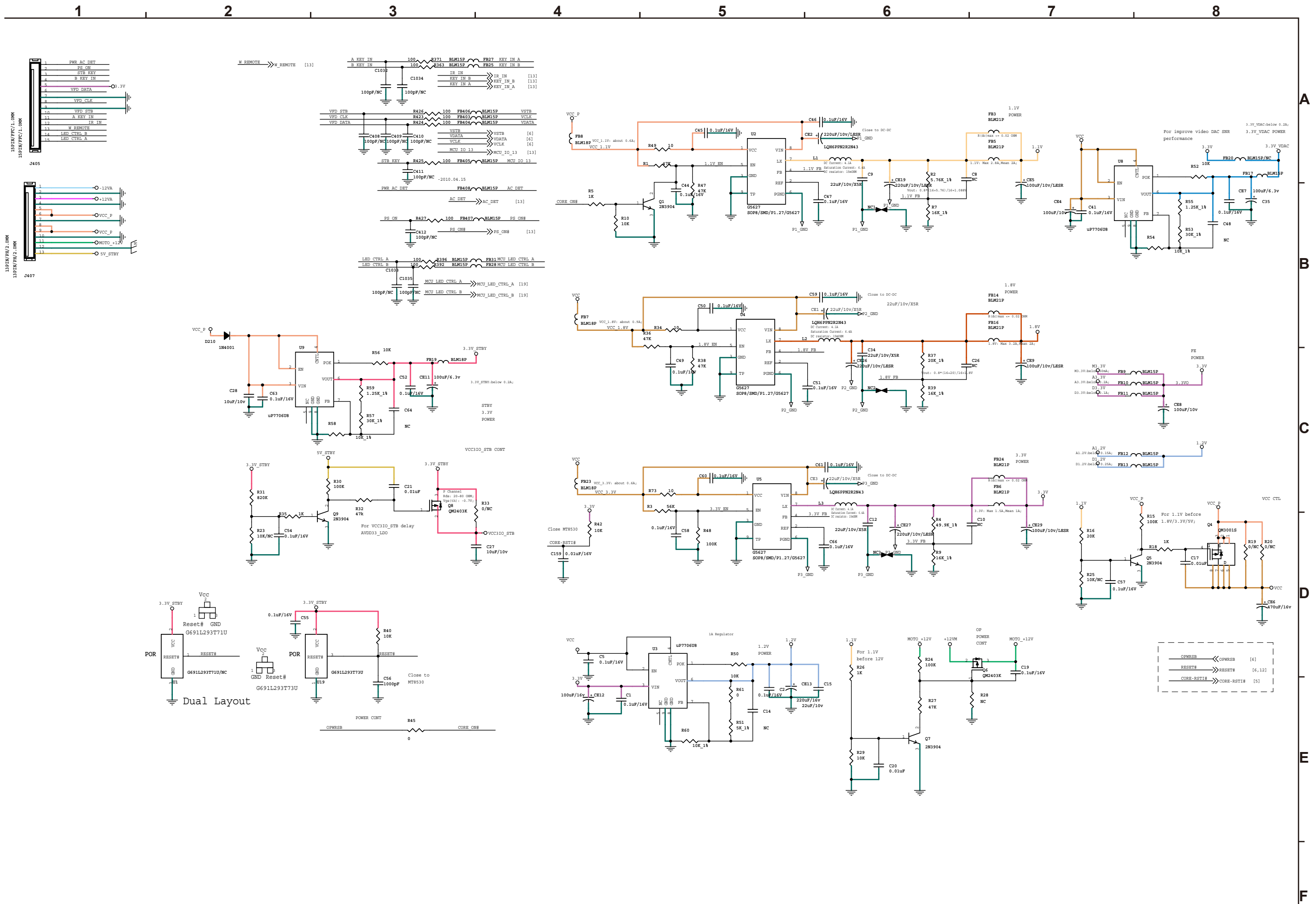
鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

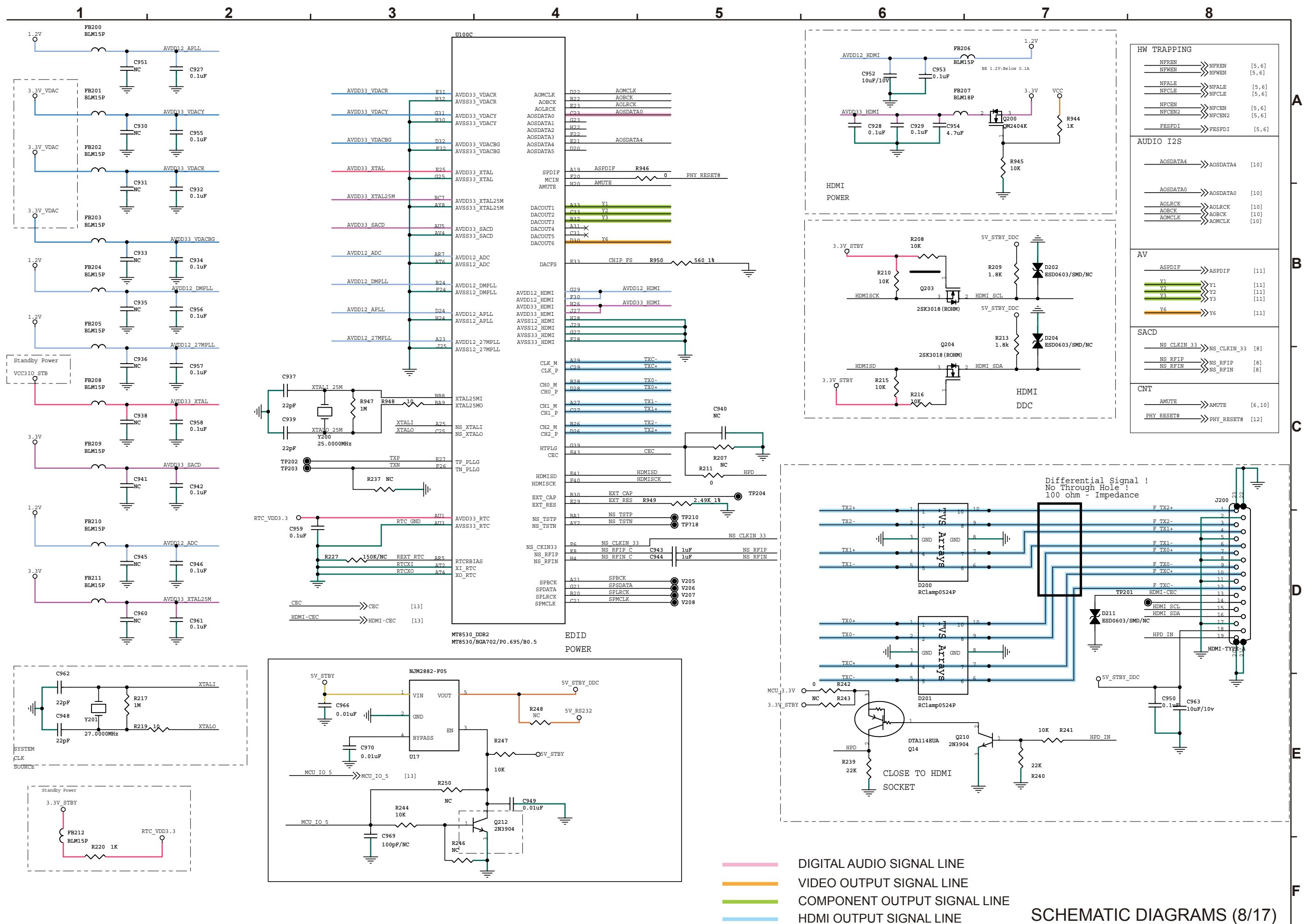
Lead-free Solder
When soldering, use the Lead-free Solder (Sn-Ag-Cu).

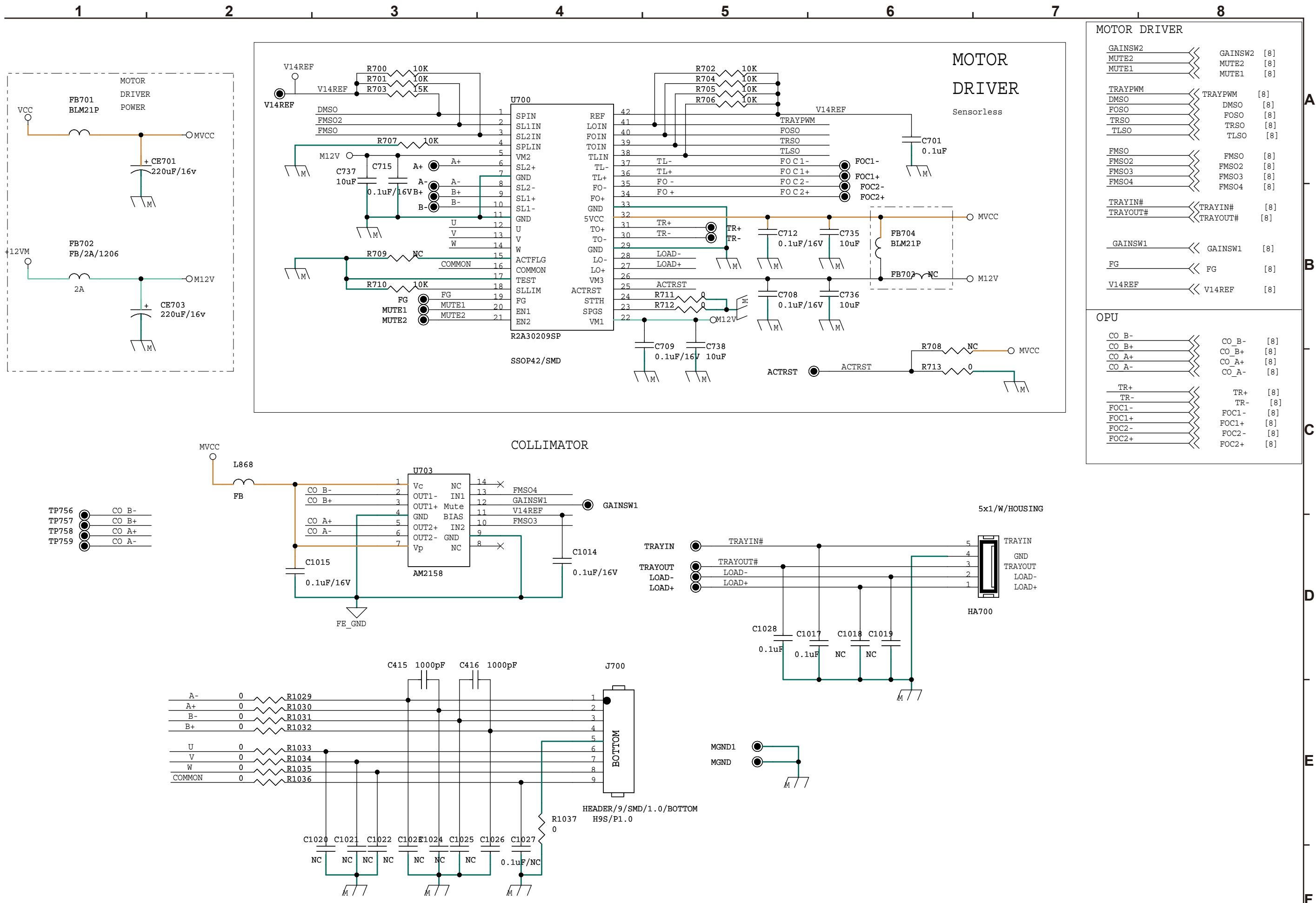




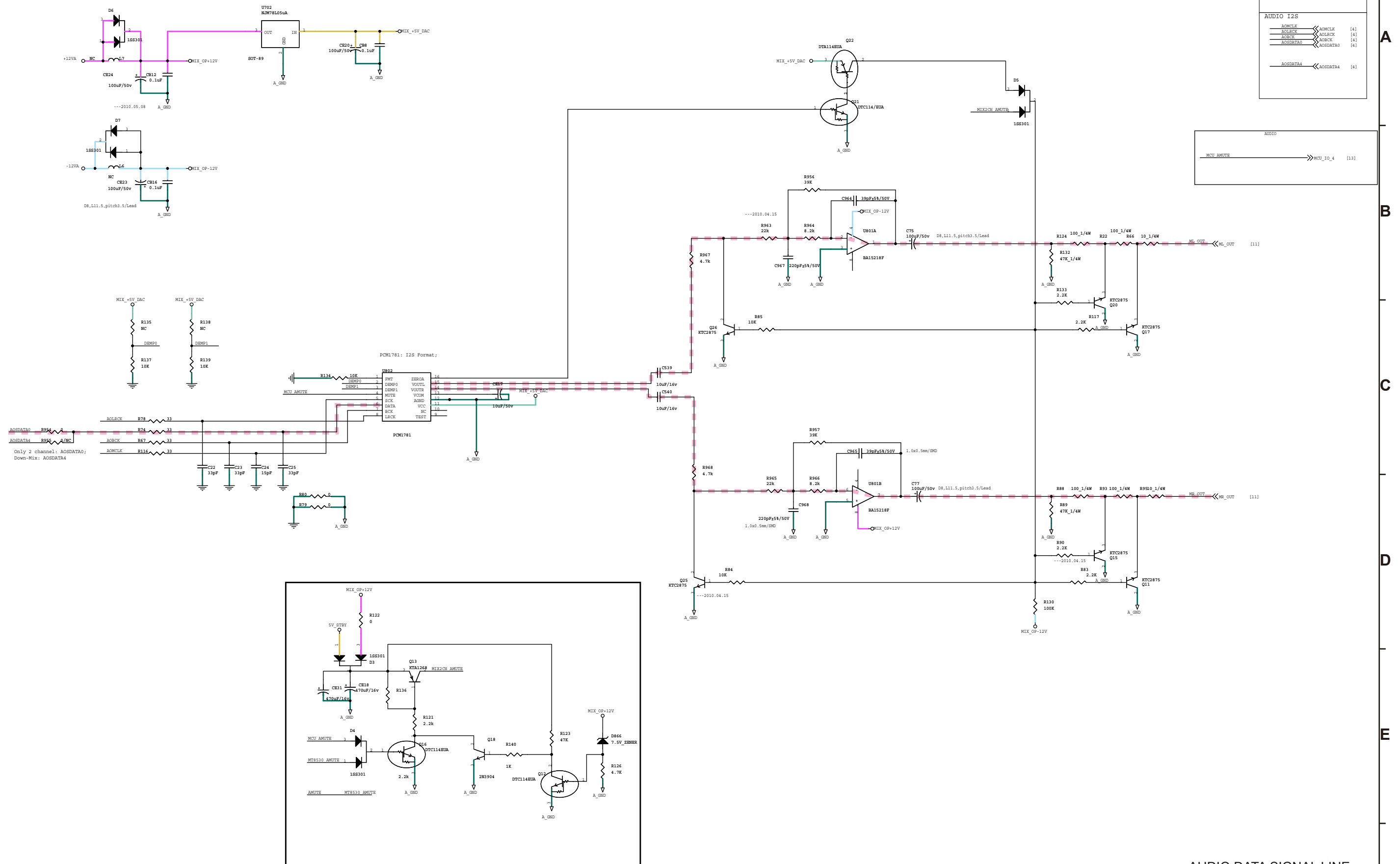
SCHEMATIC DIAGRAMS (2/17)







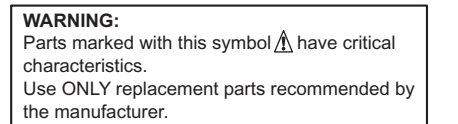
1 _____



SCHEMATIC DIAGRAMS (14/17)



3 6



PARTS LIST OF EXPLODED VIEW

*Parts for which "nsp" is indicated on this table cannot be supplied.

*P.W.B. ASS'Y for which "nsp" is indicated on this table cannot be supplied. When repairing the P.W.B. ASS'Y, check the board parts table and order replacement parts.

*Part indicated with the mark "★" is not illustrated in the exploded view.

*The parts listed below are for maintenance only, might differ from the parts used in the unit in appearances or dimensions.

Note: The symbols in the column "Remarks" indicate the following destinations.

B : Black model

SG : Silver Gold model

U : U.S.A. & Canada model

N : Europe model

R : Russia model

K : China model

S : Asia model

	Ref.No.	Part No.	Part Name	Remarks	Q'ty	New				
	2	972631000030S	POWER PWB UNIT		7025HV1002014	1	*			
NOTE : To replace the POWER PWB UNIT, attach the following parts before replacement, except the U model. <table><tr><td>JP1</td><td>972641000510S</td><td>AC INLET</td><td>N,S,K,R</td></tr></table>							JP1	972641000510S	AC INLET	N,S,K,R
JP1	972641000510S	AC INLET	N,S,K,R							
	3	972631000070S	REMOTE PWB UNIT		7025HV1003011	1				
NOTE : To replace the REMOTE PWB UNIT, please set a resistor according to 48 page of "Destination Setting".										
	5	963633100030S	SUB POWER PWB UNIT ASSY		7025HV1002015	1				
	6	972631000060M	DISPLAY PWB UNIT ASSY(UD5005)		7025HV1003212	1				
	4	nsp	USB PWB UNIT							
	8	nsp	CHASSIS		3200213776100S	1				
	9	nsp	LEG		4007210651000S	4				
	A	972304000520S	BD MAIN UNIT(UD5005)		7025HV1003010	1				
	1	nsp	MAIN PWB UNIT ASSY		-	1				
	11	963309100070S	BD MECHA UNIT ASSY		8038041669010S	1				
	11a	45301003200AS	CLAMPER ASS'Y for BD MECHA (F-9332H)	MZ11-138	-	1				
	★ 67	nsp	9P FFC(1.0)		N711091033810S	1				
	12	nsp	MECHA BRACKET		4010215106100S	1				
NOTE : After replace the BD MAIN UNIT,when the remote controller does not work,please use the following parts. <table><tr><td>★ 60</td><td>00MYU12090540</td><td>12P FFC</td></tr></table>							★ 60	00MYU12090540	12P FFC	
★ 60	00MYU12090540	12P FFC								
	13	nsp	DAMPER (60X10)		4050213415000S	1				
	14	nsp	DAMPER (40X35)		4050213425000S	1				
	15	nsp	DAMPER (75X35)		4050213435000S	2				
	17	nsp	HEAT SHEET (25X25 T1.5)		1210211539000S	1				
	19	nsp	HEAT SINK		2120211958000S	1				
	20	nsp	SPRING		3720210466000S	2				
	21	nsp	FRANGE NUT-M3		1520210416000S	2				
	22	nsp	MECHA COVER		4010215116000S	1				
	23	nsp	DAMPER SHEET 50X40 CGX1A418Z		4050213445000S	2				
	24	nsp	C1M LASER CAUTION		5507000004450S	1				
	43	nsp	ALUMINUM TAPE	35mm	1220210978000S	1				
	51	nsp	BUFFER 45x140x2t		-	1				
	52	nsp	BUFFER 30x140x2t		-	1				
	53	nsp	BUFFER 40x110x2t		-	2				
	★ 68	963606501720S	FFC 45P 100MM 0.5MM AD		L301101450010S	1				
	16	nsp	LICENSE LABEL		5507000005460S	1				

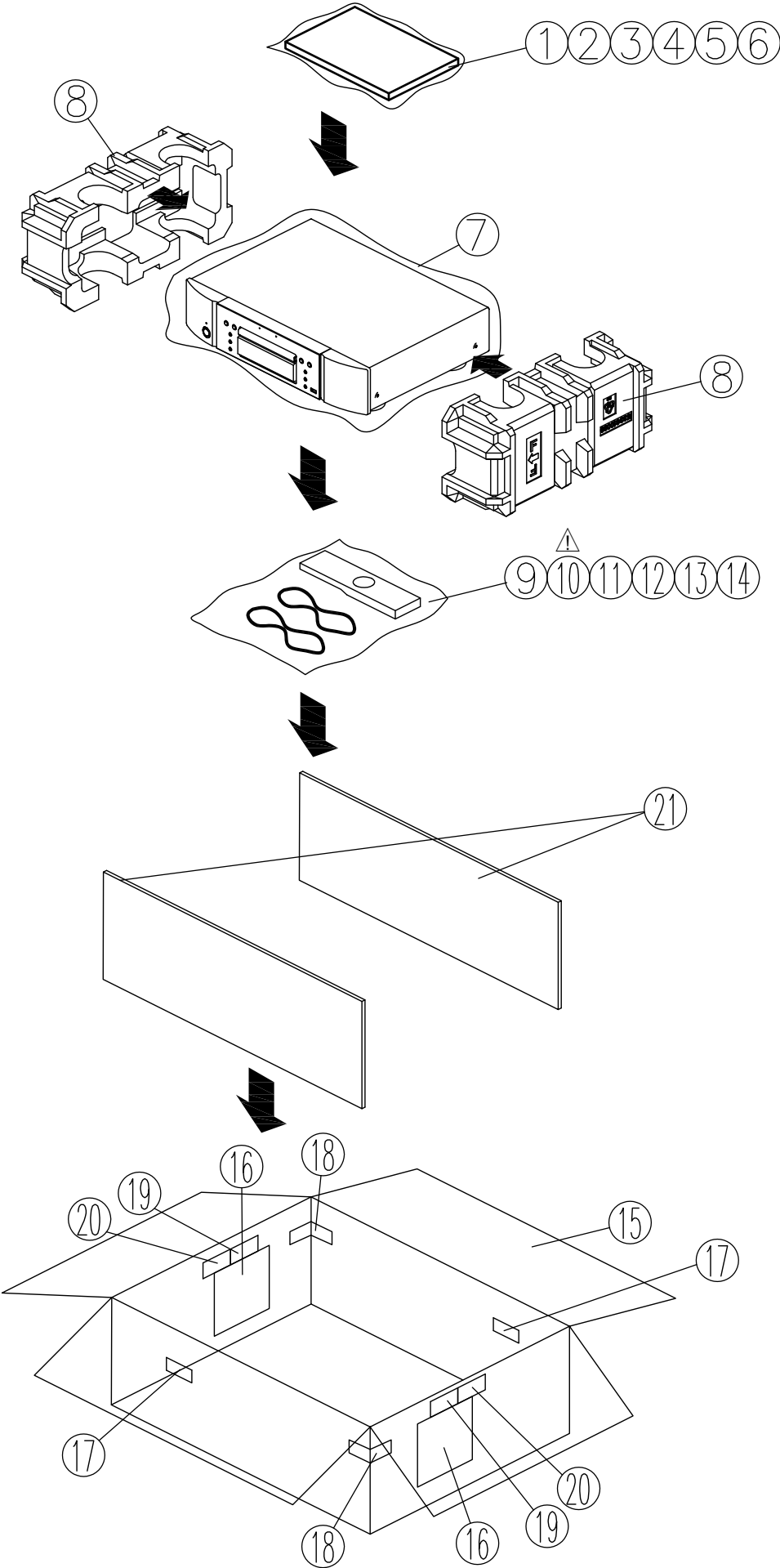
	Ref.No.	Part No.	Part Name	Remarks		Q'ty	New
	23	nsp	DAMPER SHEET 50X40 CGX1A418Z		4050213445000S	1	
	25	nsp	REAR PANEL(5005/U)	U	3207213796000S	1	*
	25	nsp	REAR PANEL(5005/N)	N,S,R	3207213796010S	1	*
	25	nsp	REAR PANEL(5005/K)	K	3207213796020S	1	
	26	nsp	RUBBER SHEET (7X10X10.5)		4050213375000S	1	
	27	963685100020S	DC FAN (RDL6025S_60X60X25)		G720602504510S	1	
	28	nsp	SPACER (D7.5X3.5XT1.0)		1530210302000S	3	
	B	972402000290M	FRONT PANEL ASSY(UD5005/B)	BK	-	1	*
	B	972402000300M	FRONT PANEL ASSY(UD5005/SG)	SG	-	1	*
	29	nsp	FRONT PANEL (5005BK)	BK	3067215188000S	1	*
	29	nsp	FRONT PANEL (5005SG)	SG	3067215188010S	1	*
	30	nsp	MARANTZ BADGE (AL) FOR M1 MODEL		5630210678000S	1	
	31	nsp	INNER PANEL (5005BK) CENTER	BK	3067215151200S	1	
	31	nsp	INNER PANEL (5005SG) CENTER	SG	3067215151300S	1	
	32	nsp	BLIND SHEET(5005)		4050213389000S	1	
	33	nsp	GASKET SHEET (5005) LEFT		4400210629000S	1	
	34	nsp	GASKET SHEET (5005) RIGHT		4400210639000S	1	
	35	nsp	INNER PANEL (5005BK) LEFT	BK	3060215161200S	1	
	35	nsp	INNER PANEL (5005SG) LEFT	SG	3060215161300S	1	
	36	nsp	INNER PANEL (5005BK) RIGHT	BK	3060215171200S	1	
	36	nsp	INNER PANEL (5005SG) RIGHT	SG	3060215171300S	1	
	37	nsp	LENS (5005/POWER)		3710211131000S	2	
	38	nsp	POWER KNOB (5005BK)	BK	5097214631000S	1	
	38	nsp	POWER KNOB (5005SG)	SG	5097214631100S	1	
	39	nsp	KNOB 2P (5005BK)	BK	5097214641000S	2	
	39	nsp	KNOB 2P (5005SG)	SG	5097214641100S	2	
	40	nsp	KNOB 3P (5005BK)	BK	5097214651000S	2	
	40	nsp	KNOB 3P (5005SG)	SG	5097214651100S	2	
	41	nsp	WINDOW (5005)		5077214631000S	1	
	42	nsp	EMIGASKET NLCG100100		4400210619000S	1	
	44	418410024006M	LOADER ESC (5005BK)	BK	4317215358000S	1	
	44	418410024013M	LOADER ESC (5005SG)	SG	4317215358100S	1	
	45	418510025008M	LOADER PANEL (5005BK)	BK	3217212161000S	1	
	45	418510025015M	LOADER PANEL (5005SG)	SG	3217212161100S	1	
	46	nsp	L/P SPRING		3720210456000S	2	
	47	418510022009D	LOADER BASE (5005BK)	BK	3217212151000S	1	
	47	418510022016D	LOADER BASE (5005SG)	SG	3217212151100S	1	
	48	972403000450S	TOP COVER (BK)	BK	3007211856000S	1	
	48	972403000460S	TOP COVER (SP)	SG	3007211856100S	1	
	49	nsp	PEF SHEET (15X50XT3.0)		4050213395000S	2	
	50	nsp	BUFFER 40x260x5t		-	1	
	54	nsp	BUFFER 20x40x10t		-	2	
	55	nsp	BUFFER 20x180x10t		-	1	
	★ 56	47401000200AS	MECHA DAMPER		-	4	
SCREW							
	101	nsp	3X8 CBTS (S)-B		B020930083B10S	21	
	102	nsp	SPECIAL SCREW		1500210606000S	2	
	103	nsp	3X6 CBTS(S)-B		B020930063B10S	9	
	104	nsp	3X6 CPTS (S) ROUND		1500210646000S	13	
	105	nsp	FIXING SCREW		B020030103B11S	6	

	Ref.No.	Part No.	Part Name	Remarks		Q'ty	New
	106	nsp	SCREW		B020030083P10S	32	
	107	nsp	3P. SWELLING SCREW BK	BK	1500210636000S	4	
	107	nsp	3P. SWELLING SCREW SP	SG	1500210636100S	4	
	108	nsp	SPECIAL SCREW		1500210626000S	2	
WIRES							
	★ 60	00MYU12090540	12P FFC (for BD MAIN PWB and REMOTE PWB connection)		-	1	
	★ 61	00MYU15080520	15P FFC		N711150833810S	1	
	★ 62	nsp	5P CON.		L002261050050S	1	
	★ 63	nsp	13P CON.		L002201130050S	1	
	★ 64	00MYU20100520	20P FFC		N711201033810S	1	

PARTS LIST OF P.W.B. UNIT

	Ref.No.	Part No.	Part Name	Remarks		Q'ty	New
POWER PWB UNIT(UD5005) : Ref.No. 2							
	F1	972652000210S	FUSE(3.15AH/250V)		G650202255510S	1	
	T1	972102000220S	SW.TRANS		8200380285020S	1	
	JP1	972641000080S	AC INLET (AC-M34U)	U	G430341535510S	1	*
	JP1	972641000510S	AC INLET (AC-M34)	N,S,K,R	G430040600020S	1	
REMOTE PWB UNIT : Ref.No. 3							
	JK1	00D2048729008	2P MINI JACK HSI1003-016010WA		G401HSJI05500S	1	
	S401	664010012008S	SWS-A SLIDE SWITCH		G060040110110S	1	
	JK3	972646000190M	2P RCA JACK MSP-242V1-24 NI FE-ABS(S191)		G601242V1240MS	1	
BD MAIN UNIT : Ref.No. 1							
	P900	972646000090S	ETHERNET TERM.		G4060RJ455510S	1	
	J200	972646000100S	HDMI Connector		L109101905510S	1	
	P6	972646000110S	COAX Connector		G600210020000S	1	
	J861	972646000120S	AV 6P JACK		G603210000000S	1	
	D25	972646000130S	USB Connector		G480250045510S	1	

PACKING VIEW



PARTS LIST OF PACKING VIEW

*Parts for which "nsp" is indicated on this table cannot be supplied.

*Part indicated with the mark "★" is not illustrated in the exploded view.

*The parts listed below are for maintenance only, might differ from the parts used in the unit in appearances or dimensions.

Note: The symbols in the column "Remarks" indicate the following destinations.

B : Black model

SG : Silver Gold model

U : U.S.A. & Canada model

N : Europe model

R : Russia model

K : China model

S : Asia model

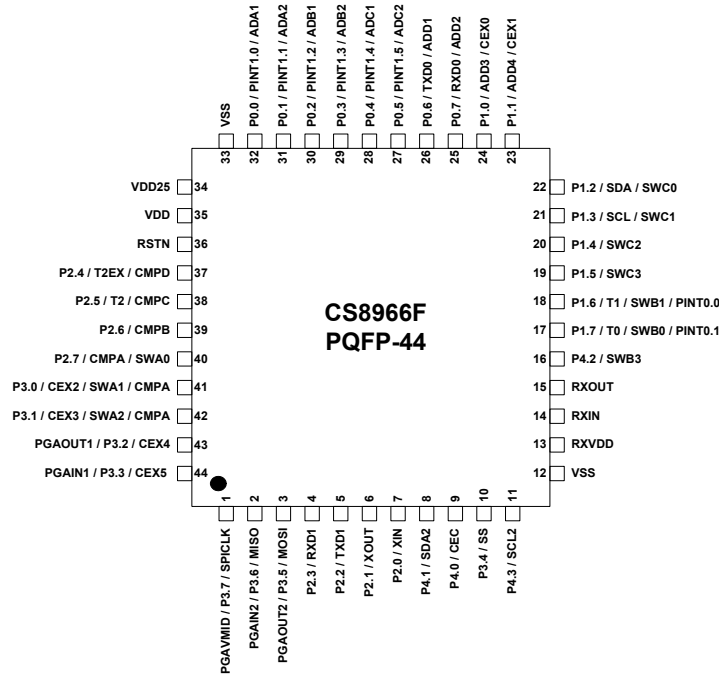
	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	1	nsp	ENVELOPE		6337040062010S	1	
	2	541110470014M	USER GUIDE(UD5005/U)	U	5707000004840S	1	*
	2	541110471017M	USER GUIDE(UD5005/N)	N	5707000005170S	1	*
	2	541110472003M	USER GUIDE(UD5005/S)	S	5707000005200S	1	*
	2	541110477008M	USER GUIDE(UD5005/R)	R	5707000005190S	1	*
	2	541110473006M	USER GUIDE(UD5005/K)	K	5707000005180S	1	*
	3	nsp	WARRANTY USA	U	5727000000111S	1	
	4	nsp	WARRANTY CANADA	U	5727041650142S	1	
	5	nsp	ADDENDUM SHEET(UPDATE_YOUTUBE)		5227000001880S	1	
	6	nsp	ADDENDUM SHEET (3D) FOR E3	U,N,S	5227000002030S	1	
	6	nsp	ADDENDUM SHEET(3D) FOR E2	N	5227000002040S	1	
	6	nsp	ADDENDUM SHEET(3D) FOR OTHER	R,K	5227000002050S	1	
	7	nsp	CABINET COVER		6327040022012S	1	
	8	972532000480M	CUSHION (5005) -L, R		6230212994000S	1	
	9	nsp	POLY COVER		6337040062010S	1	
	10	972611000410S	AC CORD 2000mm UL 7A 125V	U	L068125075550S	1	
	10	972611000420S	AC CORD 1500mm CB 2.5A 250V	N,S,R	L068250250440S	1	
	10	972611000440S	AC CORD 2000mm CCC 10A 250V	K	L068125100220S		
	11	nsp	YAF11-0745N 3PIN RCA (VIDEO&L/R) 1.5M		L063152030020S	1	
	12	nsp	TWIN SHIELDED WIRE WITH RCA PLUGS		L063102010110S	1	
	13	nsp	BATTERY(R03X2)		G670001R50220S	1	
	14	307010078008M	RC005UD REMOCON UNIT C.G.DEVELOPMENT		8300005000010S	1	
	15	972531000380M	CARTON CASE (UD5005)		6007211830020S	1	
	16	nsp	CONT. LABEL (5005/U1B) SUB ASSY	U1B	5507000007500S	1	*
	16	nsp	CONT. LABEL (5005/N1B) SUB ASSY	N1B	5507000007500S	1	*
	16	nsp	CONT. LABEL (5005/N1SG) SUB ASSY	N1SG	5507000007500S	1	*
	16	nsp	CONT. LABEL (5005/S1B) SUB ASSY	S1B	5507000007500S	1	*
	16	nsp	CONT. LABEL (5005/S1SG) SUB ASSY	S1SG	5507000007500S	1	*
	16	nsp	CONT. LABEL (5005/R1B) SUB ASSY	R1B	5507000007500S	1	*
	16	nsp	CONT. LABEL (5005/K1B) SUB ASSY	K1B	5507000007500S	1	*
	17	nsp	LABEL(NETFLIX)	U	5507000005540S	2	
	18	nsp	LABEL FOR PKG SG	N1SG,S1SG	5507000004600S	2	
	19	nsp	GOST_LABEL(CARTON)	N,R	5507000005560S	2	*
	20	nsp	LABEL(GOST_MZ)	N,R	5507000005850S	2	*
	21	nsp	PARTITION_BOARD		6240210960000S	2	

SEMICONDUCTORS

Only major semiconductors are shown, general semiconductors etc. are omitted to list.
The semiconductor which described a detailed drawing in a schematic diagram are omitted to list.

1. IC's

CS8966-PQFP44 (Main UNIT : U16)

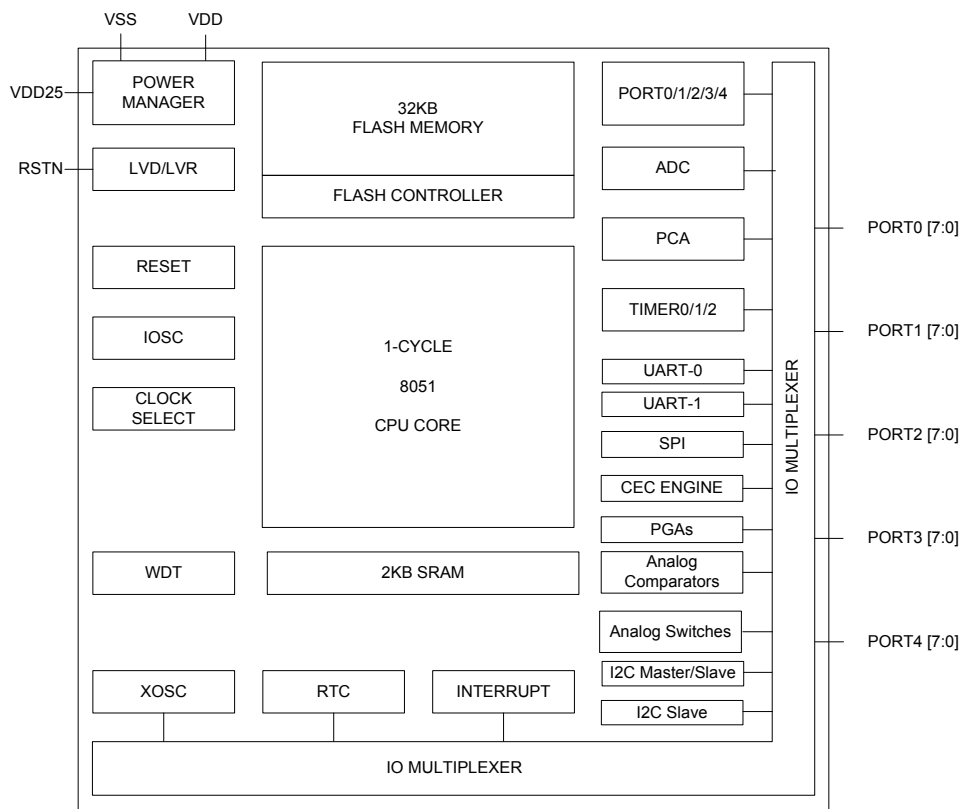


Terminal Function

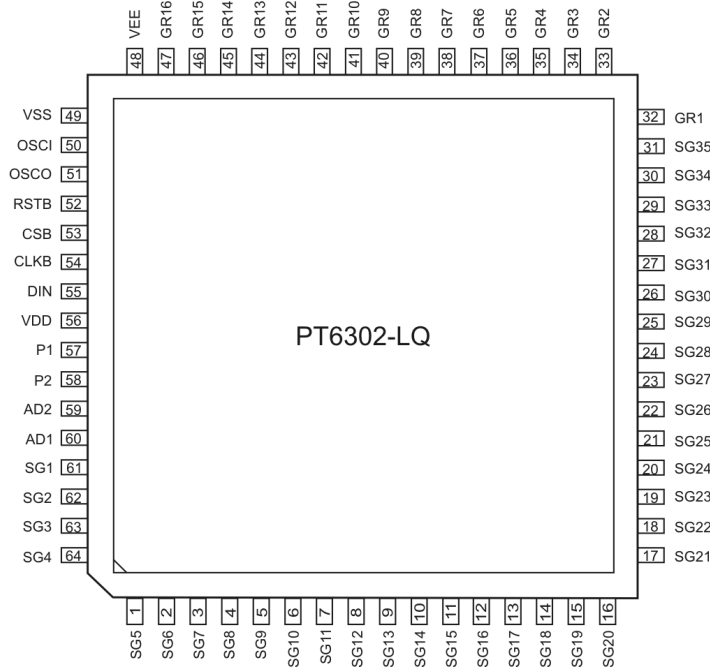
Pin#	Assignment Function	I/O Port Definition			Function Description
		I/O	Normal	OFF	
1	DC_DET	I	Low(0V)	High(3.3V)	Detection signal is for DC short circuit(3.3V;+5V and +12V).It only work in power-on mode.
2	Port 3.6 GPIO	-	Hi-Z	Hi-Z	Not use
3	MCU_SET1	I	High(3.3V) or Low(0V)	High(3.3V) or Low(0V)	MCU setting pin by externail resistance. Default is high
4	MCU_SET2	I	High(3.3V) or Low(0V)	High(3.3V) or Low(0V)	MCU setting pin by externail resistance. Default is high
5	MCU_PS_ON#	O	High(3.3V)	Hi-Z(0V)	Power enable is to control the system power on/off. High is for the system power on and low is for standby mode.
6	XOUT	O	-	-	XOUT Crystal Oscillator Output
7	XIN	I	-	-	XIN Crystal Oscillator Input
8	MCU_SDA	I/O	High(3.3V)	High(3.3V)	I2C DATA signal is for EEPRM IC (24C02).
9	MCU_CEC_IN	I	High(3.3V)	High(3.3V)	HDMI CEC signal input. It wakes-up to the system to power on when receive the CEC power command in standby mode.
10	Port 3.4 GPIO	-	Hi-Z	Hi-Z	Not use
11	MCU_SCL	O	High(3.3V)	High(3.3V)	I2C Clock signal is for EEPRM IC (24C02).
12	VSS	POWER	-	-	Ground Voltage 0V
13	RXVDD	POWER	-	-	VDD for RTC 3.3V
14	RXIN	I	-	-	Crystal IN for RTC oscillator
15	RXOUT	O	-	-	Crystal OUT for RTC oscillator
16	MCU_SET3	I	High(3.3V) or Low(0V)	High(3.3V) or Low(0V)	MCU setting pin by externail resistance. Default is high
17	MCU_AMUTE	O	Low(0V)	High(3.3V)	Muting signal for audio output. High is for muting and Low is muting off.
18	HDMI_POWER_CTRL	O	Low(0V)	High(3.3V)	Power enable is for the HDMI 5V power supply. High is for HDMI work normal. And low is for HDMI off.
19	V_MUTE	O	High(3.3V)	Hi-Z(0V)	Muting signal for CVBS output. High is for CVBS output is enabled. And low disable the CVBS output.
20	CEC_RS232_SWITCH	O	Low(0V)	High(3.3V)	Switch singal is to switch MCU receive the singal of the HDMI CEC and RS232. High is for MCU to receive the signal of HDMI CEC and low is for switch those singal input to MT8530
21	MCU_IIC_SCL	I	High(3.3V)	Hi-Z(0V)	I2C Clock signal that communicate with MT8530. (Slave mode).
22	MCU_IIC_SDA	I/O	High(3.3V)	Hi-Z(0V)	I2C Data signal that communicate with MT8530. (Slave mode).

Pin#	Assignment Function	I/O Port Definition			Function Description
		I/O	Normal	OFF	
23	AC_DET	I	High(3.3V)/50Hz or 60Hz pulse	High(3.3V)/50Hz or 60Hz pulse	Detection signal is for AC power.
24	COMP_MUTE	O	High(3.3V)	Hi-Z(0V)	Muting signal is for component video(YUV) output. High is for component video output is enabled. And low disable the component video output.
25	RXD_0	I	High(3.3V)	High(3.3V)	Not use
26	TXD_0	O	High(3.3V)	High(3.3V)	Not use
27	KEY_IN_B	I	High(3.3V)	High(3.3V)	A/D key B input signal is from key board.
28	MCU_IR_IN	I	High(3.3V)	High(3.3V)	IR signal input. Low is to activate the IR receiving.
29	KEY_IN_A	I	High(3.3V)	High(3.3V)	A/D key A input signal is from key board.
30	MCU_SET4	I	High(3.3V) or Low(0V)	High(3.3V) or Low(0V)	MCU setting pin by external resistance. Default is high
31	Port 0.1 GPIO	I	Hi-Z	Hi-Z	Not use
32	Standby key	I	High(3.3V)	High(3.3V)	Power key signal input terminal. Fall-edge is valid.
33	VSS	POWER	-	-	Ground Voltage 0V
34	VDD25	POWER	-	-	Internal Regulator Output 2.5V
35	VDD	POWER	-	-	Supply Voltage 3.8V
36	RSTN	I	High(3.3V)	High(3.3V)	Reset Low Active
37	MCU_LED_CTRL_A	O	High(3.3V)	Low(0V)	Control signal for Power On LED indication with Green color. For the blink condition: 1.)Green Led blink at 1sec intervals between power-on and boot. The LED keep the light after the boot finishing. 2.)Green Led blink at 1sec intervals before the system becomes Standby completely when the power key is pressed in power on mode.
38	MCU_LED_CTRL_B	O	Low(0V)	High(3.3V)	Control signal for the Standby LED indication with red color. The LED is light in standby mode. And turn off the LED in power on mode.
39	LPF_HD_ED	O	High(3.3V) or Low(0V)	Hi-Z(0V)	This control signal is to set the low pass filter bandwidth for Component output. High is in 720P, 1080i output mode. And low is in 480i/576i, 480P/576P output mode.
40	Port 2.7 GPIO	-	Hi-Z	Hi-Z	Not use
41	FAN_CTR	O	Hi-Z	Hi-Z	Not use
42	AMX_POWER	O	Hi-Z	Hi-Z	Not use
43	Port 3.2 GPIO	-	Hi-Z	Hi-Z	Not use
44	Port 3.3 GPIO	-	Hi-Z	Hi-Z	Not use

Block Diagram



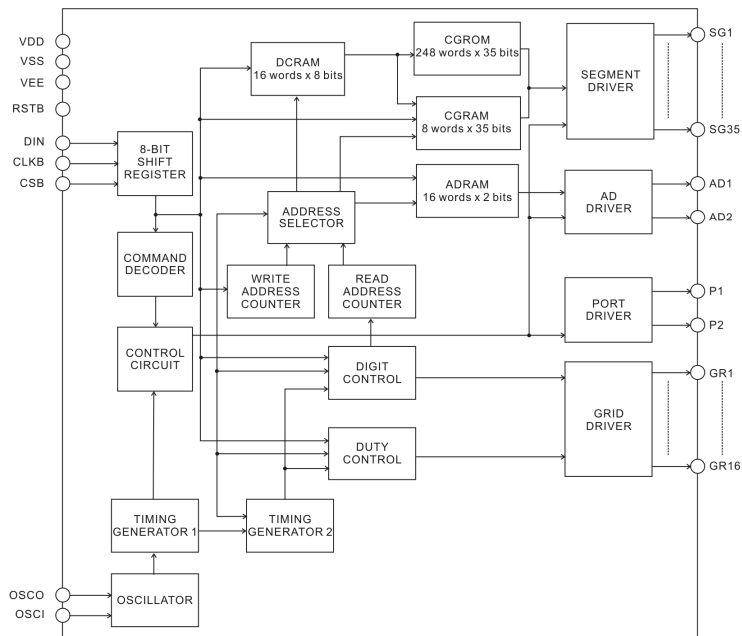
PT6302 (Display UNIT : U5)



Terminal Function

Pin Name	I/O	Description	Pin No.
SG5 to SG35 SG4 to SG1	O	Segment driver output pin	1 ~ 31 64 ~ 61
GR1 to GR16	O	Grid driver output pin	32 ~ 47
VEE	-	Power supply	48
VSS	-	Ground pin	49
OSCI	I	Oscillator input pin	50
OSCO	O	Oscillator output pin	51
RSTB	I	Reset input pin When this pin is set to "LOW", all functions are initialized.	52
CSB	I	Chip select input pin When this pin is set to "High" Level, the serial data transfer is disabled.	53
CLKB	I	Shift clock input pin The serial data is shifted at the rising edge of CLKB.	54
DIN	I	Serial data input pin	55
VDD	-	Positive power supply	56
P1 to P2	O	General purpose output pin	57 ~ 58
AD2 to AD1	O	Segment driver output pin	59 ~ 60

Block Diagram

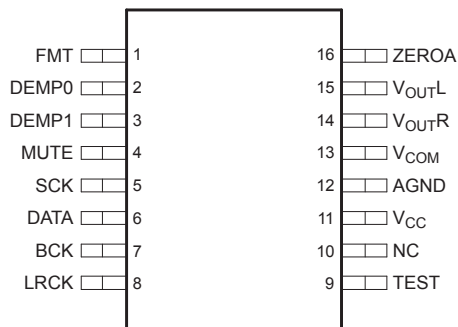


	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	R1		
A	FE_SF0		YOUT0_1		YOUT0_5		YOUT0_9						VIN03	VIN012	VIN019	OPN01		SF0R		SF0R0N		AD0D1_SF0		NS_JT_ALO	CH0_P	CH0_M	CLK_M		DACOU_T4		DACOU_T1		VCLK		UARD		ETRD0_3		ETRD0_9		ETRD0_16						
B		ESF0_5		YOUT1_1		YOUT0_6		YOUT0_10					VIN04	VIN014	VIN019	OPN03		SPLRC_4		AD0D4_T45		AD0D1_SF1		NS_JT_ALO	CH0_P	CH0_M		EXT_C_APP		DACOU_T5		DACOU_T2		VDATA		#		ETRD0_1		ETRD0_7		ETRD0_14					
C		FE_SF_CLK		FE_SF0		FE_SF0		YOUT0_8					VIN011	VIN019	OPN08		OPN03		AD0D4_T45		AD0D1_SF1		NS_JT_ALO	CH0_P	CH0_P		CLK_P		DACOU_T6		DACOU_T2		DACOU_T2		MES0_ET		ETRD0_2		ETRD0_8		ETRD0_15						
D		FE_GI_011		FE_SF0_1		FE_GI_09		YOUT0_2					VIN013	VIN019	OPN07		VIN013		AD0D4_T45		AD0D1_SF1		NS_JT_ALO	CH0_P	CH0_P		EXT_PES		DACOU_T6		DACOU_T2		DACOU_T2		VSTB		UARD		ETRD0_4		ETRD0_11		ETRD0_18				
E		FE_SF0_D01		FE_GI_02		FE_GI_09		YOUT0_2					VIN013	VIN019	OPN07		VIN013		AD0D4_T45		AD0D1_SF1		NS_JT_ALO	CH0_P	CH0_P		EXT_PES		DACOU_T6		DACOU_T2		DACOU_T2		VSTB		UARD		ETRD0_4		ETRD0_11		ETRD0_18				
F		FE_SF_GI		FE_SF0		FE_SF0		NS_CK1					VIN05	VIN019	OPN07		VIN05		AD0D4_T45		AD0D1_SF1		NS_JT_ALO	CH0_P	CH0_P		EXT_PES		DACOU_T6		DACOU_T2		DACOU_T2		VSTB		UARD		ETRD0_4		ETRD0_11		ETRD0_18				
G		FE_VR_D03		FE_FG		FE_GI_07		FE_GI_05					VIN05	VIN019	OPN07		VIN05		AD0D4_T45		AD0D1_SF1		NS_JT_ALO	CH0_P	CH0_P		EXT_PES		DACOU_T6		DACOU_T2		DACOU_T2		VSTB		UARD		ETRD0_4		ETRD0_11		ETRD0_18				
H		FE_VR_D03		FE_FG		FE_GI_07		FE_GI_05					VIN05	VIN019	OPN07		VIN05		AD0D4_T45		AD0D1_SF1		NS_JT_ALO	CH0_P	CH0_P		EXT_PES		DACOU_T6		DACOU_T2		DACOU_T2		VSTB		UARD		ETRD0_4		ETRD0_11		ETRD0_18				
I		FE_VR_D03		FE_FG		FE_GI_07		FE_GI_05					VIN05	VIN019	OPN07		VIN05		AD0D4_T45		AD0D1_SF1		NS_JT_ALO	CH0_P	CH0_P		EXT_PES		DACOU_T6		DACOU_T2		DACOU_T2		VSTB		UARD		ETRD0_4		ETRD0_11		ETRD0_18				
J		FE_VR_D03		FE_FG		FE_GI_07		FE_GI_05					VIN05	VIN019	OPN07		VIN05		AD0D4_T45		AD0D1_SF1		NS_JT_ALO	CH0_P	CH0_P		EXT_PES		DACOU_T6		DACOU_T2		DACOU_T2		VSTB		UARD		ETRD0_4		ETRD0_11		ETRD0_18				
K		FE_VR_D03		FE_FG		FE_GI_07		FE_GI_05					VIN05	VIN019	OPN07		VIN05		AD0D4_T45		AD0D1_SF1		NS_JT_ALO	CH0_P	CH0_P		EXT_PES		DACOU_T6		DACOU_T2		DACOU_T2		VSTB		UARD		ETRD0_4		ETRD0_11		ETRD0_18				
L		FE_VR_D03		FE_FG		FE_GI_07		FE_GI_05					VIN05	VIN019	OPN07		VIN05		AD0D4_T45		AD0D1_SF1		NS_JT_ALO	CH0_P	CH0_P		EXT_PES		DACOU_T6		DACOU_T2		DACOU_T2		VSTB		UARD		ETRD0_4		ETRD0_11		ETRD0_18				
M		FE_VR_D03		FE_FG		FE_GI_0																																									

The diagram illustrates the MT8530 SoC as a central yellow square. It is connected to several external components:

- OPU** (Orange Processor Unit) and **Motor Driver** (Light Blue box) are connected to the left side of the MT8530 via bidirectional arrows.
- HDMI, CVBS, Component** (Black text) is connected to the top right of the MT8530 via a single-headed arrow pointing right.
- USB 2.0** (Black text) is connected to the right side of the MT8530 via a bidirectional arrow.
- Ethernet** (Black text) is connected to the right side of the MT8530 via a bidirectional arrow.
- Audio DAC** (Light Blue box) is connected to the bottom right of the MT8530 via a single-headed arrow pointing right.
- FLASH** (Orange box) and **DRAM** (Light Blue box) are connected to the bottom of the MT8530 via bidirectional arrows.

PCM1781 (Main Unit: U802)

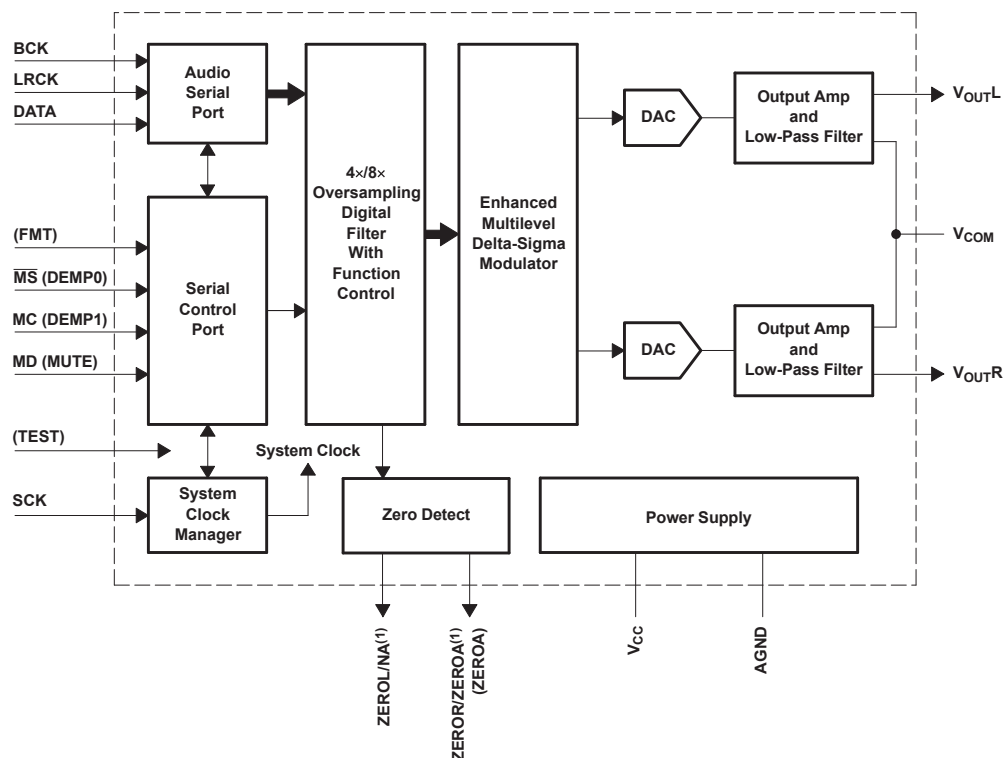


Terminal Function

TERMINAL		I/O	DESCRIPTION
NAME	NO.		
AGND	12	—	Ground
BCK	7	I	Audio data bit clock input ⁽¹⁾
DATA	6	I	Audio data digital input ⁽¹⁾
DEMP0	2	I	De-emphasis control ⁽¹⁾⁽²⁾
DEMP1	3	I	De-emphasis control ⁽¹⁾⁽²⁾
FMT	1	I	Data format select ⁽¹⁾⁽²⁾
LRCK	8	I	Audio data left and right clock input ⁽¹⁾
MUTE	4	I	Soft mute control ⁽¹⁾⁽²⁾
NC	10	—	No connection
SCK	5	I	System clock input ⁽¹⁾
TEST	9	—	Test pin for factory use. Must be LOW or open ⁽¹⁾⁽²⁾
VCC	11	—	Power supply, 5-V
VCOM	13	—	Common voltage decoupling
VOUTL	15	O	Analog output for L-channel
VOUTR	14	O	Analog output for R-channel
ZEROA	16	O	Zero flag output for L- and R-channels

- (1) Schmitt-trigger input
(2) Pulldown

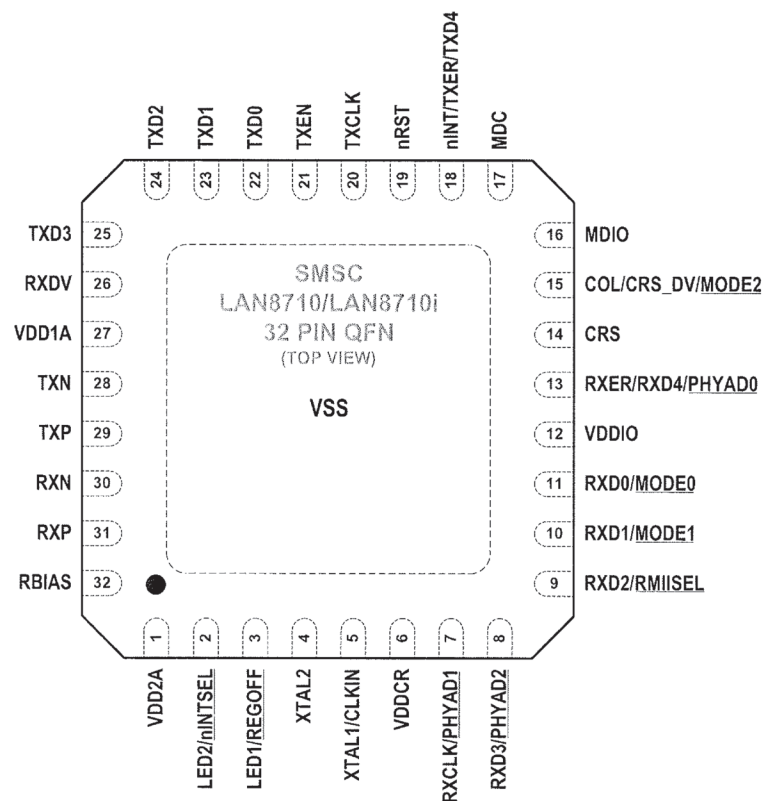
Block Diagram



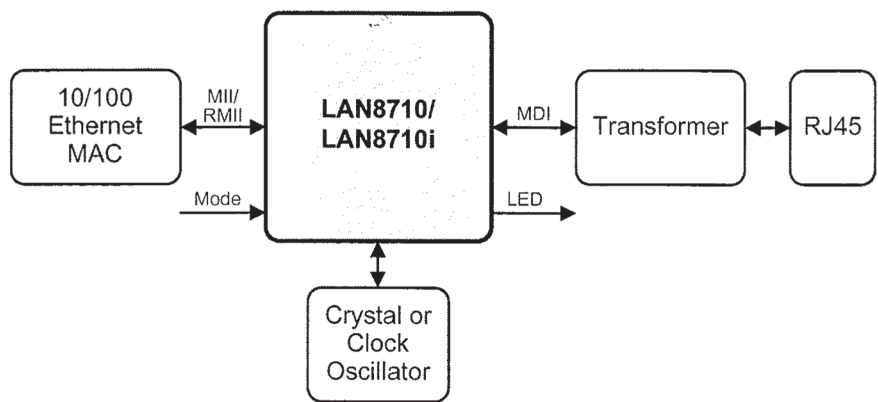
(1) Open-drain output for the PCM1782

NOTE: Signal names in parentheses () are for the PCM1781.

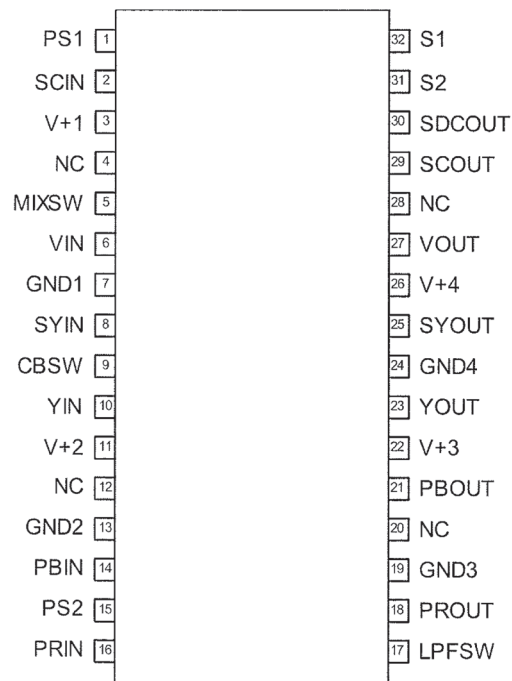
SMSC8710 (Main UNIT : U901)



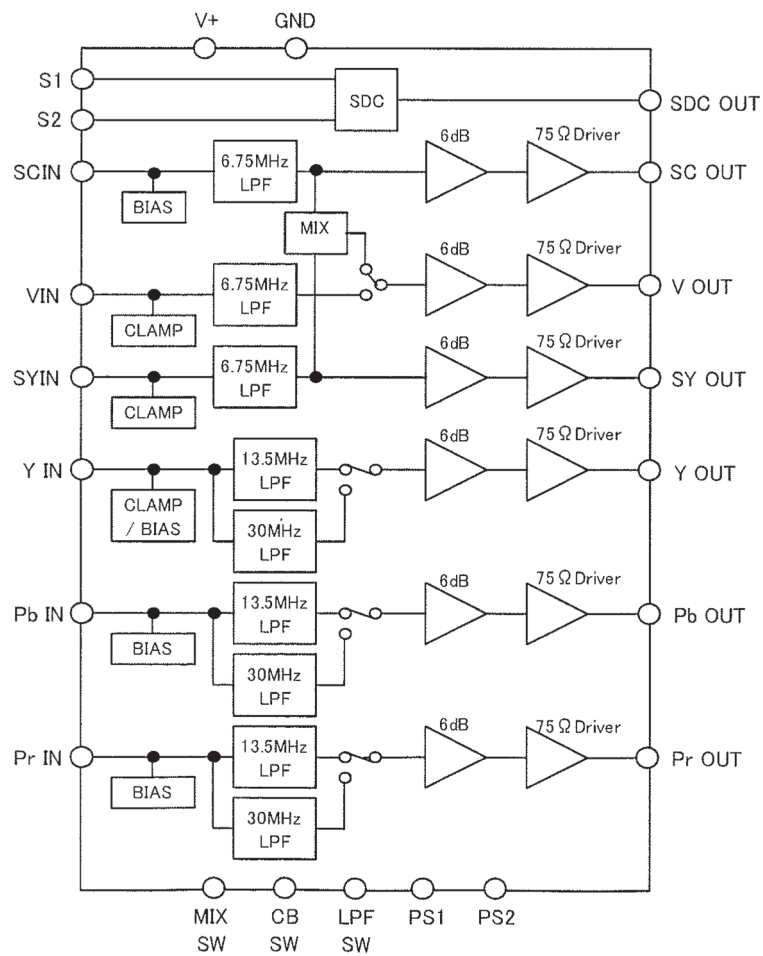
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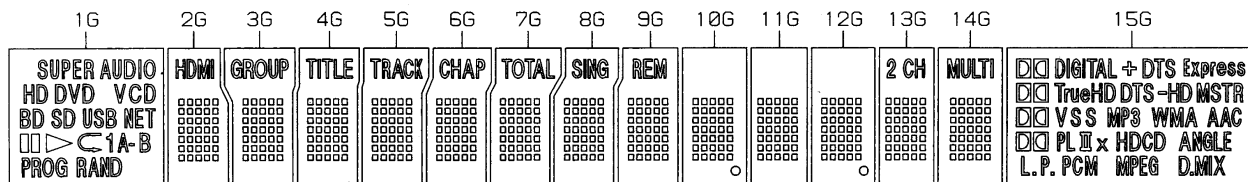
NJM2566AV (Main UNIT : U18)



Block Diagram



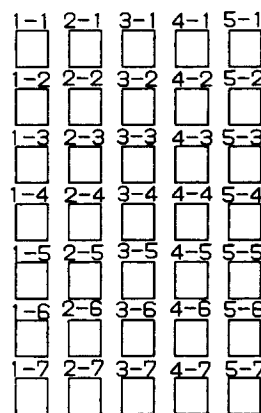
FL TUBE (15-BT-114GNK) (Display UNIT: U3)

[illegible]

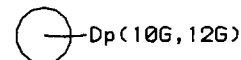
PIN NO.	62	61	60	59	58	57	56	55	54	53	52	51
CONNECTION	F-1	N-X	N-N	N-N	P-N	P-P	P-P	P-3	P-3	P-3	P-3	P-3

NOTE 1) F-, F+ --- Filament
2) NP ----- No pin
3) DL ----- Datum Line
4) 1G~15G --- Grid
5) Solder composition is Sn-3Ag-0.5Cu

- 6) NC ----- No connection
(NC pin should be electrically open on the PC board)
- 7) NX ----- No extend pin

[illegible]

(2G~14G)



This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.