Service Manual
020-001586-01

DS Series

LWU900-DS, LHD878-DS, LWU755-DS

CHRISTIE®

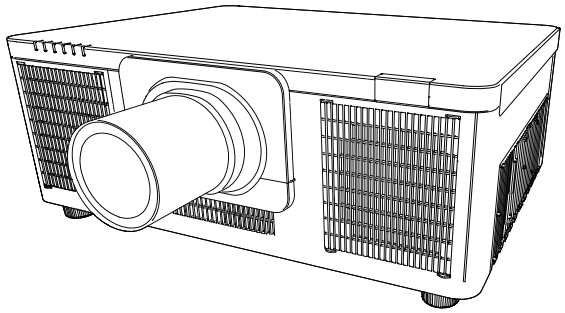
CHRISTIE®

SERVICE MANUAL

LWU900-DS
LHD878-DS
LWU755-DS

⚠ Warning

The technical information and parts shown in this manual are not to be used for: the development, design, production, storage or use of nuclear, chemical, biological or missile weapons or other weapons of mass destruction; or military purposes; or purposes that endanger global safety and peace. Moreover, do not sell, give, or export these items, or grant permission for use to parties with such objectives. Forward all inquiries to the supplier.



Caution

Be sure to read this manual before servicing. To assure safety from fire, electric shock, injury, harmful radiation and materials, various measures are provided in this Multimedia Projector.
Be sure to read cautionary items described in the manual to maintain safety before servicing.

Service Warning

1. This projector is provided with a high voltage circuit. Do not touch the electric parts of power unit (circuit), after turn on the projector.
2. Do not touch the exhaust fan, during operation.
3. If replacing to the LCD PRISM assembly, do not hold the FPC of the LCD module assembly.
4. Use the cables which are included with the projector or specified.

Required tools

1. Cross-head screwdriver (Size #1, #2)
2. Hexagonal nut driver (opposite side distance: 5mm)
3. Torque driver
4. Antistatic mat
5. Antistatic strap

Contents

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

Multimedia LCD Projector

CAUTION FOR SAFETY

Please read this page before the repair work. This page explains the indications of the following items to keep safety and prevent an accident.

● **Entries with graphical symbol explanation**

⚠ WARNING	This entry warns of a risk of personal serious injury or even death.
⚠ CAUTION	This entry warns of a risk of personal injury, physical or property damage.

● **Typical graphical symbols explanation**

This symbol indicates warnings and cautions.	This symbol indicates hazard of high voltage.	This symbol indicates mandatory actions.
This symbol indicates hazard of explosion.	This symbol indicates hazard of hand crush.	This symbol indicates coercing to unplug.
This symbol indicates hazard of high temperature.		This symbol indicates prohibited actions.

⚠ WARNING

Follow the instructions.
The warning labels or markings are on the parts which need special attention. Follow those notes and the User's Manual - Safety Guide.

Never disassemble the laser light source unit.

Avoid electric shock.
Be careful and unplug the power cord as far as possible during the work. Be sure to unplug when disassembling or assembling.
The projector has high voltage portion and possibly charged portion. If you touch such a place or other live part, it cause electric shock and may lead to death.

Use specified or recommended components.
Use the components which have same characteristic especially about incombustibility and voltage proof as previous for keeping safety and reliability. Be particularly sure to use the components marked with ⚠ in the replacement parts list and circuit diagram. Using un-specified or non-recommended components may cause electric shock or fire.

Keep same style of wiring and components.
This product uses insulating tapes or tubes, and has some components assembled keeping distance from particular portion to keep safety and reliability. Also the cables are wired so that they keep away from high temperature or voltage part.
Be sure to restore them to prevent an electric shock and a fire after you have changed them.

Do safety inspection after repair work.
Check if the all is restored (removed parts and wiring are same condition as previous) after repair work. Also check if any damage are around the repaired or replaced part. Measure the insulation resistance with megohmmeter after visual inspection. If the resistance is less than 4M ohm, it may cause electric shock and fire.

⚠ CAUTION

Take care of LCD panels.
Hold by the frame when disassembling the component including LCD panel. If you hold it by the FPC cable or the surface of the panel, it may get damaged.

Do not touch the fan motor while it is rotating.
Do not touch the fan motors when you have turned on the projector with the UPPER CASE removed. It may injure you.

1. Features

> Advanced Network Functions
Not only can you control and monitor the projectors via LAN connection, but also project still or moving images from one or more networked computers.

> Wireless Network Capability
You can use the wireless network by connecting the projector to a PC using the optional USB wireless adapter.

> Instant Stack
Two projectors of same model can project an image on the same screen using the Instant Stack feature. They can be operated simultaneously to make the image brighter, moreover, can work alternately by themselves, and once one projector has an accident the other voluntarily starts to work to keep your presentation going.

> LENS MEMORY
The projector is capable of storing the lens shift position.

> Flexible installation
It is possible to install the projector for any vertical direction(*) with specified mounting accessories.
*: The side planes of the projector should be kept vertical.

> Picture by Picture, Picture in Picture
You can project two images from different input ports on one screen at the same time. With the remote control, it is easy to turn on/off this function and select the input source for the main and sub areas.

> eClarity
eClarity is a function to improve the legibility so that it helps to read small letters.

> HDCR
Advanced feature which is the image stabilizer for a clearer image.

> HDBaseT™ covered
Gives one more digital interface to get clearer pictures on a screen.

> PJLink™
This projector's network supports the PJLink™ standard. PJLink™ is a unified standard for operating and controlling data projectors. For specifications of PJLink™, see the web site of the PJLink™.

2. Specifications

Liquid crystal panel	Drive system		TFT active matrix
	Panel size		LWU900-DS/LWU755-DS: 1.9cm (0.76" type) LHD878-DS: 1.9cm (0.74" type)
	Number of pixels		LWU900-DS/LWU755-DS: 1920(H) x 1200(V) LHD878-DS: 1920(H) x 1080(V)
Light Source			Laser Diode
Digital audio/video signal	HDMI	1	Type: T.M.D.S Signal level: DC 3.3V±5%, AC 0.15-1.56Vp-p Audio signal: Linear PCM format, Sampling frequency 48kHz, 44.1kHz, 32kHz
		2	
	DisplayPort		Data Rate: 2.7Gbps or 1.62Gbps per lane Lane Count: 4-, 2-, or 1-lane Audio Signal: Linear PCM format, Sampling frequency 48kHz, 44.1kHz, 32kHz
	3G-SDI (LWU900-DS, LHD878-DS only)		SD-SDI, Single link HD-SDI, 3G-SDI Level-A
Computer signal	COMPUTER IN	(Dsub)	Video: Analog 0.7Vp-p (75Ω termination) H/V. sync.: TTL level (positive/negative) Composite sync.: TTL level
	MONITOR OUT		Video:Analog 0.7Vp-p, 75Ω output impedance (positive) H/V. sync.: TTL level (positive/negative) Composite sync.: TTL level
Video signal	VIDEO		1.0Vp-p (75Ω termination)
HDBaseT* (RJ45)			Signal type: PAM16 Differential signal level: 1.9~2.1V
Audio signal	AUDIO IN	1	Input impedance 47kΩ or more (max. 2Vrms)
		2 (L/R)	
	AUDIO OUT (L/R)		Output impedance 1kΩ (max. 2Vrms)
RS-232C			Input: Hi: Max. 20V, Min. 2.6V Lo: Typ. –20.0V, Max. 0.8V Output: Hi: Typ. 8.0V, Min. 5.0V Lo: Typ. –7.0V, Max. –5.0V
USB	TYPE A (wireless LAN ***)	I/O Level Amplitude of differential signal	(D+)-(D-)>0.2V and D+>2.0V or (D-)-(D+)>0.2V and D->2.0V
		I/O Level Amplitude of signal	INPUT: “L” 0.8V or less, “H” 2.0V or more OUTPUT: “L” 0.3V or less, “H” 2.8V~3.6V
	USB Mini B ** (Service port)	I/O Level Amplitude of differential signal	(D+)-(D-)>0.2V and D+>2.0V or (D-)-(D+)>0.2V and D->2.0V
		I/O Level Amplitude of signal	INPUT: “L” 0.8V or less, “H” 2.0V or more OUTPUT: “L” 0.3V or less, “H” 2.8V~3.6V
Wired LAN	HDBaseT* (RJ45)		System: 100Base-T Differential signal level: 1.9~2.1V (100Ω termination)
	LAN* (RJ45)		System: 100Base-TX / 10Base-T Differential signal level: 1.9~2.1V (100Ω termination)
Wireless LAN ***	IEEE802.11a/b/g/n/ac		See the user's manual of the optional USB wireless adapter.
Power supply			LWU755-DS : AC100V-120V/5.2A, AC220V-240V/2.5A LWU900-DS/LHD878-DS : AC100V-120V/5.9A, AC220V-240V/2.9A
Power consumption			LWU755-DS : AC100V-120V/510W, AC220V-240V/500W LWU900-DS/LHD878-DS : AC100V-120V/580W, AC220V-240V/560W
Dimensions			585 (W) x 232 (H) x 444 (D) mm 582 (W) x 205 (H) x 431 (D) mm (Not including protruding parts)
Weight			approx. 18.2 kg
Temperature range	Operating		Operating Temperature range : 0~Under 5,249ft Normal mode 0~45° 35~45°(The brightness of the light source is reduced automatically.) Quietmode 0~45° 5,249~Under 10,000ft Normal mode 0~40° 30~40°(The brightness of the light source is reduced automatically.) Quietmode 0~40° Operating Humidity range : 10% to 80% (non-condensing) Operating altitude range : 0 to 10,000ft
	Non-Operating		Storage Temperature range : -15 to +60°C Storage Humidity range : 5% to 85% (non-condensing) Storage altitude range : 0 to 10,000ft
Accessories			Remote control x1 / User’s manual x 1 / Computer cable x 1 Security label x 1 / Power cord x 1 or 3 / Terminal cover x 1 Adapter cover x 1 / HDMI-DVI cable x 1 / HDMI cable holder x 2 Cable tie x 2

* DC power cannot be provided from these ports.
** The service mini USB port is hidden behind the rear panel (mini USB COVER).
*** Wireless network function requires the optional USB wireless adapter. The communication speed (and standard) is restricted depending on circumstances like encryption, communication mode and so on.

Laser precautions

“No direct exposure to the beam shall be permitted”

As with any bright source, do not stare into the direct beam, RG2 IEC 62471-5:2015.

Hazard distance (for non-US installs)

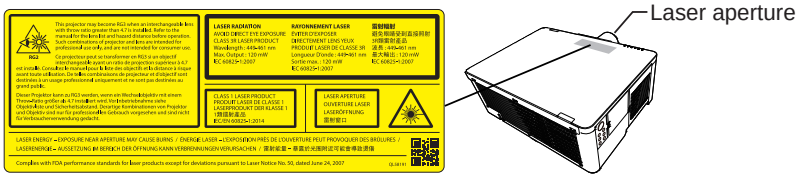
Refer to the table T-1 in Supplement (at the back of this manual). The table shows the hazard distance in which the beam strength described in IEC 62471 - 5 (Photobiological safety of lamps and lamp systems – Part 5: Image projectors) is categorized as RG3.

For the combination of the lens and projector for which a value is shown in the table, when the projection distance is the value or shorter the beam strength is categorized as RG3, and is a hazard.

When applying the combination shown in the table, “operators shall control access to the beam within the hazard distance or install the product at the height that will prevent exposures of spectators’ eyes within the hazard distance”.

Refer to the F-9 in Supplement (at the back of this manual).

Laser aperture and Laser caution label



The positions of the laser aperture (⚠) and the laser caution label are shown in figure.

Laser evaluation standard

IEC60825-1: 2007, IEC60825-1: 2014, EN60825-1: 2014

Internal Laser Specifications

This product is equipped with 2 Laser Diodes.

1. LWU900-DS/LHD878-DS
Internal Laser 1 : 71W, Wave Length: 449 - 461nm
Internal Laser 2 : 95W, Wave Length: 449 - 461nm

2. LWU755-DS
Internal Laser 1 : 71W, Wave Length: 449 - 461nm
Internal Laser 2 : 71W, Wave Length: 449 - 461nm

LASER ENERGY - EXPOSURE NEAR APERTURE MAY CAUSE BURNS

- This projector is classified as a class 1 laser product (for non-US installs) that complies with IEC60825-1:2014 and JIS C 6802:2014, and as a class 3R laser product (for US installs) that complies with IEC60825-1:2007.
  Improper handling may cause injury. Be careful of the following.
- If an abnormality occurs in the projector, turn it off immediately, unplug the power cord from the outlet, and consult your dealer or service company. If you continue to use it, it may cause not only electric shock or fire but also vision disorder.
- Do not disassemble or modify the projector. The projector has a high-power laser device inside. It may cause serious injury.
- Do not look into the beam while projecting an image. Do not look into the lens through optical devices such as magnifiers or telescopes. It may cause vision disorder.
- Make sure that nobody is looking into the lens when you turn on the projector by remote control away from the projector.
- Do not let children operate the projector. If children could possibly operate the projector, they must be accompanied by an adult.
- Do not expose optical devices such as magnifiers or reflection mirrors to a projected image. It may cause bad effects on the human body if you continue to use it. It may also cause fire or accidents.
- Do not disassemble the projector when you dispose of it. Dispose of it according to laws and regulations of each country or region.

⚠CAUTION

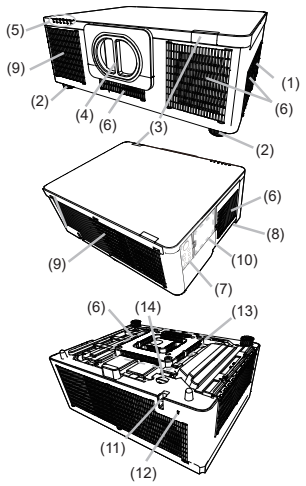
►Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

3. Names of each part

Part names

Projector

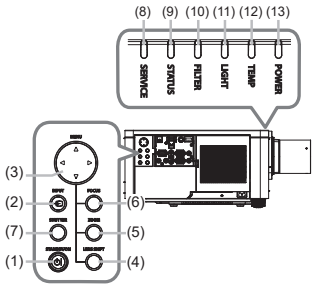
(1) Filter cover
The air fi lter and intake vent are inside.
(2) Elevator feet (x2)
(3) Remote sensors (x2)
(4) Lens hole cover
(5) Indicators
(6) Intake vents
(7) Control panel
(8) **AC** (AC inlet)
(9) Exhaust vents
(10) Ports
(11) Security bar
(12) Security slot
(13) Safety bar
(14) Battery cover



⚠WARNING ►Do not open or remove any portion of the projector, unless the manuals direct it.
►Do not subject the projector to unstable conditions.
►Do not apply a shock or pressure to this projector. Remove all the attachments including the power cord and cables, from the projector when carrying the projector.
►Do not look into the lens and the openings on the projector while the light source is on as the projection ray may cause a trouble on your eyes.
►Keep any object away from concentrated projection light beam. Blocking the beam causes high temperature and could result in fire or smoke.
⚠CAUTION ►Do not touch around the exhaust vents during use or just after use, since it is too hot.
►Do not attach anything onto the lens except the lens cover of this projector because it could damage the lens, such as melting the lens.

Control panel and Indicators

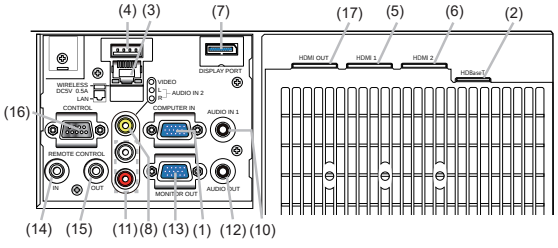
(1) **STANDBY/ON** button
(2) **INPUT** button
(3) **MENU** button
(4) **LENS SHIFT** button
(5) **ZOOM** button
(6) **FOCUS** button
(7) **SHUTTER** button
(8) **SERVICE** indicator
(9) **STATUS** indicator
(10) **FILTER** indicator
(11) **LIGHT** indicator
(12) **TEMP** indicator
(13) **POWER** indicator



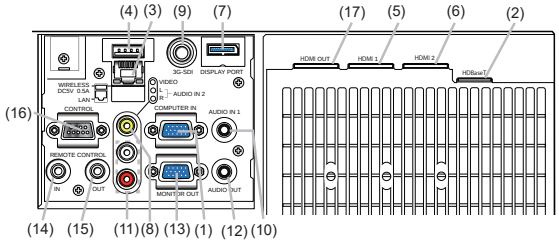
Ports

(1) **COMPUTER IN** port
(2) **HDBaseT** port
(3) **LAN** port
(4) **WIRELESS** port
(5) **HDMI 1** port
(6) **HDMI 2** port
(7) **DisplayPort** port
(8) **VIDEO** port
(9) **3G-SDI** port (LWU900-DS/LHD878-DS)
(10) **AUDIO IN1** port
(11) **AUDIO IN2** (**L, R**) ports
(12) **AUDIO OUT** port
(13) **MONITOR OUT** port
(14) **REMOTE CONTROL IN** port
(15) **REMOTE CONTROL OUT** port
(16) **CONTROL** port
(17) **HDMI OUT** port

LWU755-DS

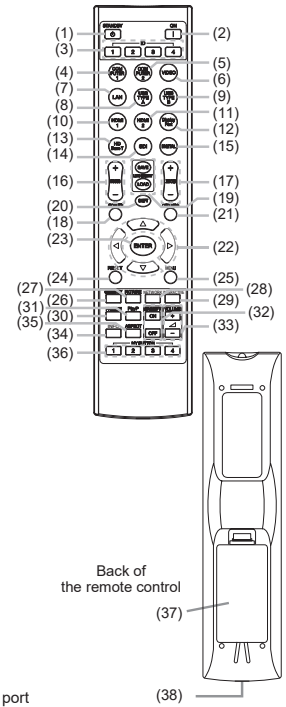


LWU900-DS/LHD878-DS



Remote control

(1) **STANDBY** button
(2) **ON** button
(3) **ID - 1 / 2 / 3 / 4** buttons
(4) **COMPUTER 1** button
(5) **COMPUTER 2** button *1
(6) **VIDEO** button
(7) **LAN** button
(8) **USB TYPE A** button *1
(9) **USB TYPE B** button *1
(10) **HDMI 1** button
(11) **HDMI 2** button
(12) **DisplayPort** button
(13) **HDBaseT** button
(14) **SDI** button
(Supported only for LWU900-DS/LHD878-DS)
(15) **DIGITAL** button *1
(16) **FOCUS + / -** buttons
(17) **ZOOM + / -** buttons
(18) **AV MUTE** button
(19) **LENS MEMORY LOAD / SAVE** buttons
(20) **SHIFT** button
(21) **OSD MSG** button
(22) ▲/▼/◄/►cursor buttons
(23) **ENTER** button
(24) **RESET** button
(25) **MENU** button
(26) **GEOMETRY** button
(27) **PICTURE** button
(28) **NETWORK** button
(29) **INTERACTIVE** button *2
(30) **FREEZE** button
(31) **PbyP** button
(32) **MAGNIFY ON** / **OFF** buttons
(33) **VOLUME +** / **-** buttons
(34) **INFO** button (35) **ASPECT** button
(36) **MY BUTTON - 1 / 2 / 3 / 4** buttons
(37) Battery cover (38) Wired remote control port



NOTE • When you press the button marked with *1, the input signal selection menu is displayed.
• Any button marked with *2 is not supported on this projector.
• Each time you press any button (except **ID** buttons), the **ID** button of current selected ID number lights.

4. Install/Maintenance

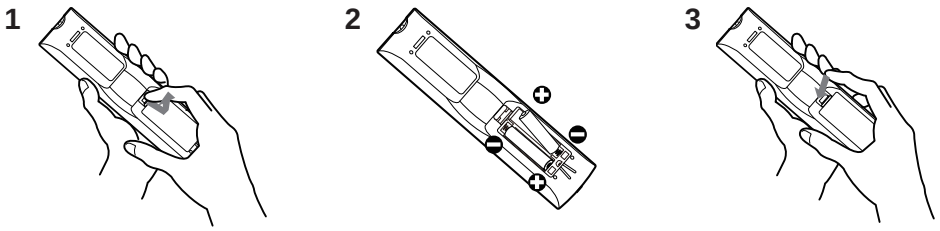
■ Installing the Batteries

⚠ WARNING

Always handle the batteries with care and use them only as directed. Improper use may result in battery explosion, cracking or leakage, which could result in fire, injury and/or pollution of the surrounding environment.
• Be sure to use only the batteries specified. Do not use batteries of different types at the same time. Do not mix a new battery with used one.
• Make sure the plus and minus terminals are correctly aligned when loading a battery.
• Keep a battery away from children and pets.
• Do not recharge, short circuit, solder or disassemble a battery.
• Do not place a battery in a fire or water. Keep batteries in a dark, cool and dry place.
• If you observe battery leakage, wipe out the leakage and then replace a battery. If the leakage adheres to your body or clothes, rinse well with water immediately.
• Obey the local laws on disposing the battery.

Insert the batteries into the remote control before using it. If the remote control starts to malfunction, replace the batteries. If not using the remote control for long period, remove the batteries from the remote control and store them in a safe place.

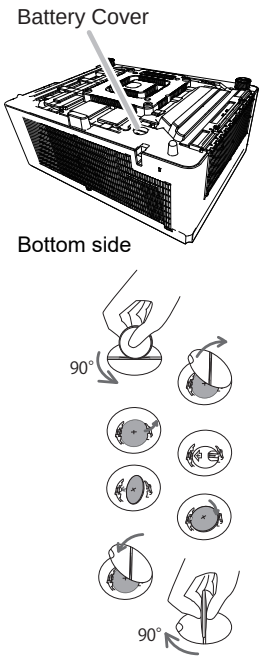
1. Holding the hook part of the battery cover, remove it.
2. Align and insert the two AA batteries according to their plus and minus terminals as indicated in the remote control. (Use the appropriate AA carbon-zinc or alkaline batteries (non-rechargeable) according to laws and regulations.)
3. Replace the battery cover in the direction of the arrow and snap it back into place.



■ Replacing the internal clock battery

Replace a battery according to the following procedure.

1. Turn the projector off, and unplug the power cord. Allow the projector to cool sufficiently.
2. After making sure that the projector has cooled adequately, slowly turn over the projector, so that the bottom is facing up.
3. Turn the battery cover fully in the direction indicated “OPEN” using a coin, and pick the cover up to remove it.
4. Pry up the battery using a flathead screwdriver to take it out. While prying it up, put a finger lightly on the battery as it may pop out of the holder.
5. Replace the battery with a new MAXELL, Part No.CR2032 or CR2032H. Slide the battery in under the plastic claw, and push it into the holder until it clicks.
6. Replace the battery cover in place, then turn it in the direction indicated “CLOSE” using a coin.

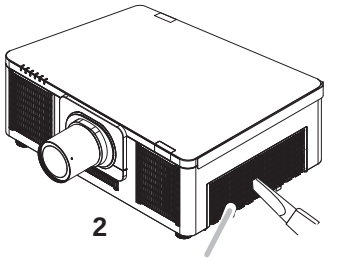


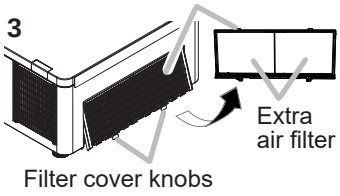
■ Air filter

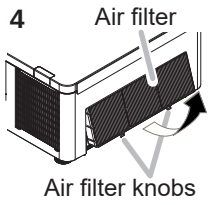
Cleaning and replacing the air filter

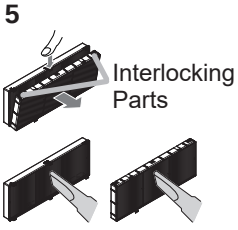
Check and clean the air filter periodically. When the indicators or a message prompts you to clean the air filter, comply with it as soon as possible.

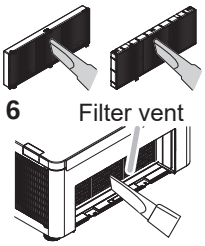
1. Turn the projector off, and unplug the power cord. Allow the projector to sufficiently cool down.
2. Use a vacuum cleaner on and around the filter cover.
3. Pick and pull up the filter cover knobs to take it off.
4. Press up slightly the bottom side knobs to unlock the bottom side of the air filter, and take it off.
5. The air filter consists of two parts. Press down around the interlocking parts to unlock, then separate the two parts.
   Use a vacuum cleaner for both sides of the air filter.
   If the air filter is damaged or heavily soiled, replace it with the new one. Request for an air filter with the following type number from your dealer when purchasing a new one.
   Type number: **003-006607-01**
6. Use a vacuum cleaner for the filter vent of the projector.
7. Put back the air filter and filter cover into their place.
8. Turn the projector on and reset the filter hours using the FILTER HOURS item in the EASY MENU.
   (1) Press the **MENU** button to display a menu.
   (2) Point at the FILTER HOURS using the ▲/▼ buttons, then press the ► button. A dialog will appear.
   (3) Press the ► button to select “OK” on the dialog. It performs resetting the filter hours.











⚠WARNING ► Before taking care of the air filter, make sure the power cable is not plugged in, then allow the projector to cool sufficiently.
►Use only the air filter of the specified type. Do not use the projector without the air filter or the filter cover. It could result in a fire or malfunction to the projector.
►Clean the air filter periodically. If the air filter becomes clogged by dust or the like, internal temperatures rise and could cause a fire, a burn or malfunction to the projector.

NOTE • Replace the air filter when it is damaged or heavily soiled.
• Reset the filter hours only when you have cleaned or replaced the air filter, for a suitable indication about the air filter.
• The projector may display the message such as the “CHECK THE AIR FLOW” or turn off the projector, to prevent the internal heat level rising.

■ Other care

⚠ WARNING

Before caring, make sure the power cable is not plugged in, and then allow the projector to cool sufficiently. The care in a high temperature state of the projector could cause a burn and/or malfunction to the projector.
Avoid wetting the projector or inserting liquids in the projector. It could result in a fire, an electric shock, and/or malfunction to the projector.
• Don't put a container containing water, cleaner or chemicals near the projector.
• Don't use aerosols or sprays.

⚠ CAUTION

Please take right care of the projector according to the following. Incorrect care could cause not only an injury but adverse influence such as discoloration, peeling paint, etc.
• Do not use cleaner or chemicals other than those listed below.
• Do not polish or wipe with hard objects.

● Inside of the projector

In order to ensure the safe use of the projector, it needs to clean and inspect the projector about once a year.

● Caring for the lens

If the lens is flawed, soiled or fogged, it could cause deterioration of display quality. Please take care of the lens, being cautions of the handling.

1. Turn the projector off, and unplug the power cord. Allow the projector to cool sufficiently.
2. After making sure that the projector is cool adequately, lightly wipe the lens with a commercially available lens-cleaning wipe. Do not touch the lens directly with your hand.

• Use commercially available lens tissue to clean the lens (used to clean cameras, eyeglasses, etc.).
• If the lens is heavily soiled, wipe it with a cloth moistened with little water.
• Never use polishing agents, detergents, chemicals, or solvents such as benzine or thinner.
• Excepting for lens, use a soft cloth to clean. When excessively soiled, dilute a neutral detergent in water, wet and wring out the soft cloth.

● Caring for the cabinet and remote control

Incorrect care could have adverse influence such as discoloration, peeling paint, etc.

1. Turn the projector off, and unplug the power cord. Allow the projector to cool sufficiently.
2. After making sure that the projector is cool adequately, lightly wipe with gauze or a soft cloth. If soiling is severe, dip soft cloth in water or a neutral cleaner dilute in water, and wipe lightly after wringing well. Then, wipe lightly with a soft, dry cloth.

5. Troubleshooting

5-1 Notice of AUTO adjustment

Use of AUTO adjustment with the image through analog RGB input optimizes V_POSI, H_POSI, and H_PHASE automatically.
In case that display image has dark tone around its peripheral, AUTO operation sometimes makes artifacts in the image, shifts capture area and so on. Those failures are caused by period of image data is not exactly distinguished to period of blanking on signal processing.
To avoid such phenomena, AUTO function should be used with the full size picture that has bright tone on its peripheral.

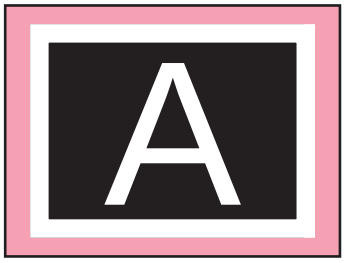


Image when AUTO operates correctly

Image when AUTO fails.
- Noting image of top or bottom lines.
- Shift of the image to East or West.
- Artifacts on image. Etc.

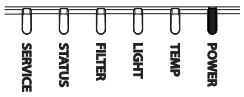
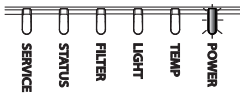
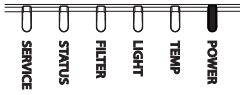
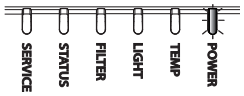
NOTE:
- The phenomenon of the failure of AUTO adjustment depends on resolution of input source, scene of picture etc.
- There is no above failure of AUTO with video source through VIDEO port. The reason is recognition of input signal's standard does not need to search the capture range from input signal itself.

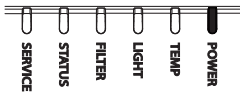
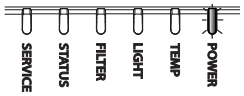
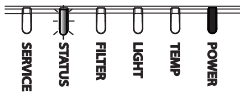
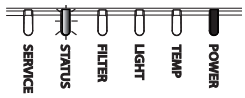
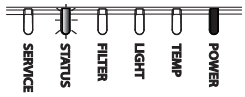
5-2 Regarding the indicator lamps

The indicators may differ from the usual, check and deal with it according to the following table.

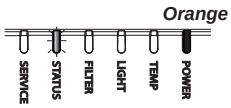
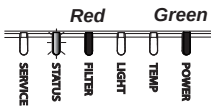
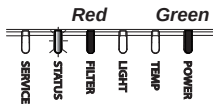
The indicators are described as below.

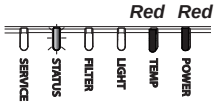
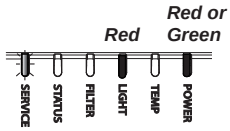
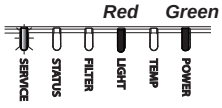
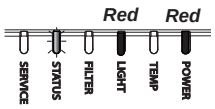
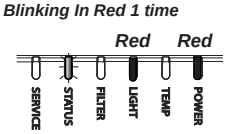
		
Lit Steady light	Blinking	Off

Indicator Status	Description
Orange 	**The projector is in a standby state.** Refer to the section “Power on/off”.
Green 	**The projector is warming up.** Wait for the projector to warm up.
Green 	**The projector is in an on state.** Ordinary operations may be performed.
Orange 	**The projector is cooling down.** Wait for the projector to cool down.

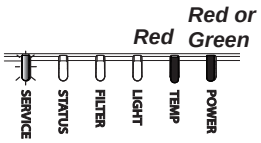
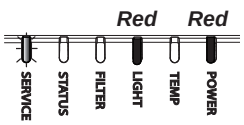
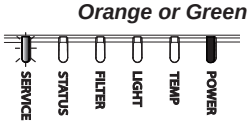
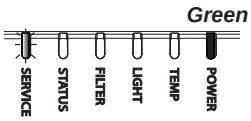
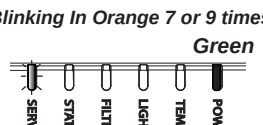
Indicator Status	Description
Blinking In Green 1 time 	**At least 1 "Power ON" schedule is saved to the projector.** Please refer to **Schedule Settings** section of **User’s Manual - Network Guide.**
Normally lighting in Orange. Blinking In Green 2 times for approx. 3 seconds. 	**STANDBY MODE is set to QUICK START.** Refer to STANDBY MODE.
Blinking In Green 2 times *Green* 	**Blank(black) or AV Mute(black) is on.** Press any button on the remote control or on the control panel to disable Blank or AV Mute.
Blinking In Green 3 times *Green* 	**The temporarily shading the screen is enabled.** Press the **SHUTTER** button on the remote control or on the control panel to disable temporarily shading the screen.
Green *Green* 	**The projector received the remote control signal when ALL is selected for REMOTE CONTROL in KEY LOCK.** CONTROL PANEL was operated when ALL is selected for CONTROL PANEL in KEY LOCK.

(continued on next page)

Indicator Status	Description
Blinking In Green 1 time 	**PIN LOCK or TRANSITION DETECTOR function is active.** Please refer to the section How to inactivate the security functions and PIN LOCK System, or the chapter SECURITY menu in the User's Manual.
Blinking In Red 1 time 	**It is time to clean the air filter.** Turn the power off immediately, and clean or change the air filter referring to the section **Cleaning and replacing the air filter**. After cleaning or changing the air filter, reset the filter hours. After the remedy, restart the projector.
Blinking In Red 2 ~ 3 times 	**The air filter is clogged or dirty.** Check and clean the air filter. Make sure the power cable is not plugged in, then allow the projector to cool sufficiently. See the section "The interior portion has become heated". NOTE • The **FILTER** indicator might light up in red when something blocks the intake vents even though the air filter is clean. • The **FILTER** indicator might light up differently from other indicators or display messages related to cleaning the air filter. Follow the prompt that is displayed earlier.
Blinking In Red 1 time 	**The internal temperature is rising.** Turn the power off, and allow the projector to cool down at least 20 minutes. After having confirmed the following items, please turn the power on again. • Is there blockage of the air passage aperture? • Is the air filter dirty? • Does the peripheral temperature exceed 45°C?

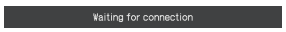
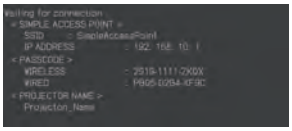
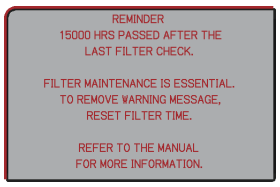
Indicator Status	Description
Blinking In Red 2 ~ 6 times 	**The interior portion has become heated.** Turn the power off, and allow the projector to cool down at least 20 minutes. After the projector has sufficiently cooled down, confirm the following items, and then turn the power on again. • Is there blockage of the air passage aperture? • Is the air filter dirty? • Does the peripheral temperature exceed 45°C? • Is the setting for ALTITUDE appropriate? • Is the exhaust air (hot/cold) from peripheral equipment blowing against the ventilation opening of projector? For details on ALTITUDE, refer to ALTITUDE of SERVICE in the OPTION menu. If the projector is used with a wrong setting, it may cause damage to the projector itself or the parts inside.
Blinking In Red 1 ~ 5 times 	**All or part of light sources are not lighting.** Turn off the projector and unplug the power cord, and then turn on the projector again.
Blinking In Red 6 or 8 times 	**The illuminance sensor measures irregular value.** Make sure the connection of illuminance sensor and illuminance sensor (Duration) calibration is executed. Please refer to the section LD MENU in chapter Adjustment.
Blinking In Red 4 times 	**The upper case is not attached correctly.** Make sure the upper case is attached.
Blinking In Red 1 time 	**Lens unit is not installed.** Make sure that the lens unit is installed correctly, and turn on the projector again.

(continued on next page)

Indicator Status	Description
Blinking In Red 1 ～ 11 times 	**The cooling fan is not operating.** Turn the power off, and allow the projector to cool down at least 20 minutes. After the projector has sufficiently cooled down, confirm that no foreign matter has become caught in the fan, and so on and then turn the power on again.
Blinking In Red 9 times 	**The phosphor wheel is not operating correctly.** Check the connection of the phosphor wheel cable or replace the light source unit that includes phosphor wheel.
Blinking In Orange 1 time 	**Lens shift does not work correctly.** Turn off the projector and install the lens unit correctly. Remove obstacles if they are around the lens.
Blinking In Orange 2 ～ 6 times 	**The temperature sensor is loose.** Check the connection of each temperature sensor according to the number of SERVICE blinks. 2: Inside temp sensor 3: Outside temp sensor 4: LD1 temp sensor 5: LD2 temp sensor 6: PW temp sensor
Blinking In Orange 7 or 9 times 	**The illuminance sensor is loose.** Check the connection of each illuminance sensor according to the number of SERVICE blinks. 7: Light sensor R 9: Light sensor B

5-3 Related Messages

When some messages appear, check and deal with it according to the following table. Although these messages automatically disappear after several minutes, they reappear when the power is turned on.

Message	Description
	**There is no input signal.** Confirm the signal input connection, and the status of the signal source.
 	**Projector is waiting for an image file.** Check the hardware connection, settings on the projector and network-related settings. The computer-Projector network connection might be disconnected. Re-connect them.
	**The horizontal or vertical frequency of the input signal is not within the specified range.** Confirm the specs for your projector or the signal source specs.
	**An improper signal is input.** Confirm the specs for your projector or the signal source specs.
	**The internal temperature is rising.** Turn the power off, and allow the projector to cool down at least 20 minutes. After having confirmed the following items, turn the power ON again. • Is there blockage of the air passage aperture? • Is the air filter dirty? • Use the unit within the usage temperature parameters (0°C to 40°C or 45°C). • Is the setting for ALTITUDE appropriate? • Is the exhaust air (hot/cold) from peripheral equipments blowing against the ventilation opening of projector? For details of ALTITUDE, refer to ALTITUDE of SERVICE in the OPTION menu. If the projector is used with a wrong setting, it may cause damage to the projector itself or the parts inside.
	**A note of precaution when cleaning the air filter.** Immediately turn the power off, and clean or change the air filter referring to the **Cleaning and replacing the air filter** section of this manual. After you have cleaned or changed the air filter, reset the filter timer.
	The button operation is not available. Check the button you want to use.

■ Troubleshooting for other Network problems

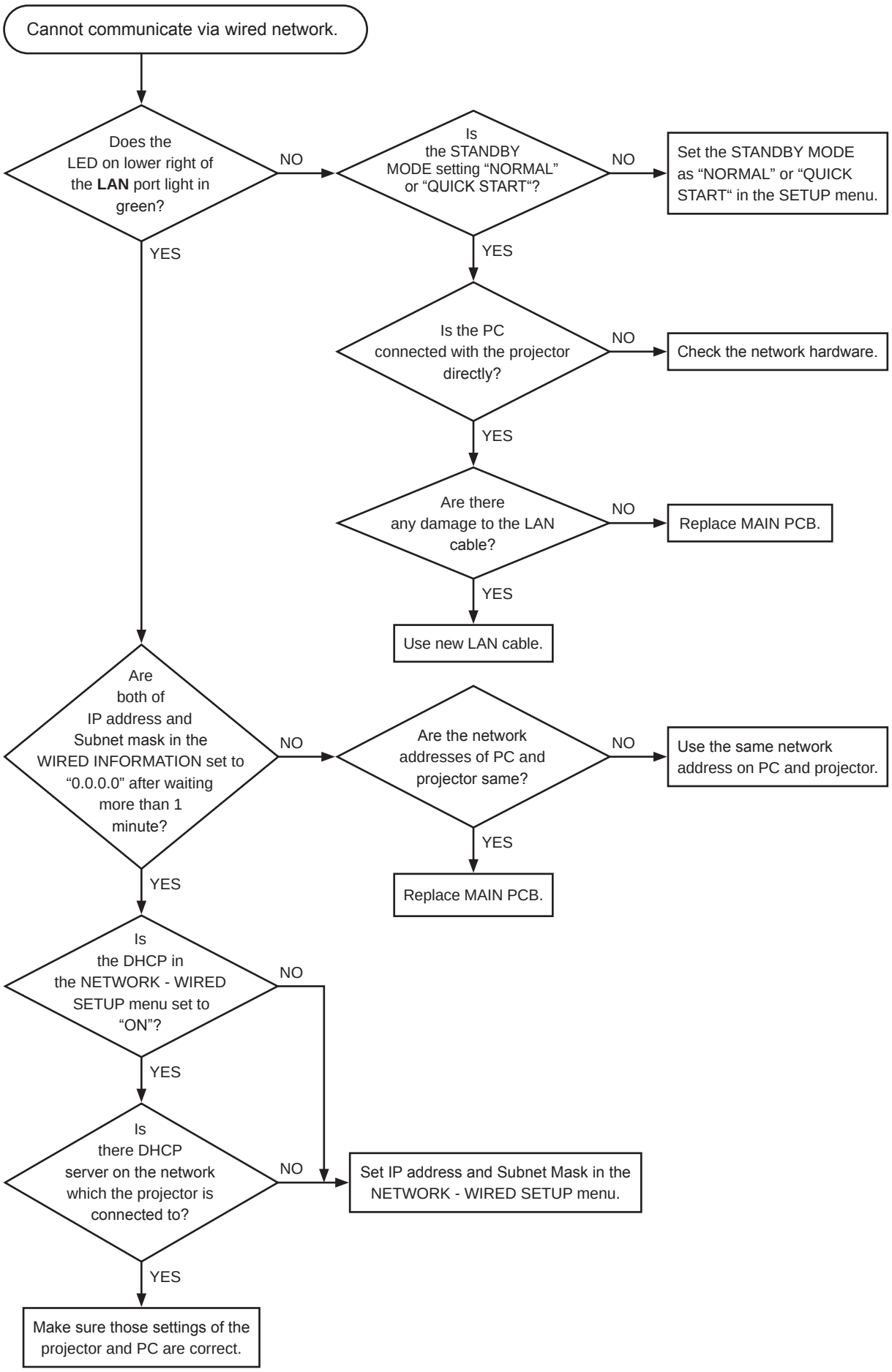
Problem		Likely Cause	Things to Check
No image		The projector is not turned on.	Is the projector's light source on?
		The projector's input source isn't switched properly.	Is the proper input channel is selected? LAN: PC screen display via wired/wireless LAN
Projector does not work when the network cable is connected.		The network packet congestion is occurred.	Check the cable connection diagram making sure no "ring" or "loop" connection is made in the network that the projector is connected to.
Time is not displayed correctly.		The time has not been configured.	Set the Date and Time in the OPTION - SCHEDULE menu of the projector.
		The projector displays "2015/1/1 0:00" as the Date and Time in the Network Info after the AC power is cut off because the projector has no battery for the internal clock.	Set the Date and Time in the OPTION - SCHEDULE menu of the projector every time the projector is turned on.
		The time is not adjusted by the Daylight Saving Time correctly.	Configure the Daylight Saving Time in the Date/Time Settings with a web browser.
		The projector cannot get the time from SNTP server.	Check the projector is connected to the network correctly. Configure the correct SNTP server address in the Date/Time Settings with a web browser.
		The Time Difference is not configured correctly.	Configure the Time Difference, and then do the Date and the Time in the Date/Time Settings with a web browser.
Connection to the Network	The projector that you want to connect to is nowhere to be found on the list of available projectors.	The PC and/or projector's network settings are not configured correctly.	Check the network configurations of the PC and projector. If you change the projector's settings, turn off the projector's AC power and then turn it on again. If you simply put the projector in STANDBY power mode and then turn it on again, the new settings might not take effect.
		Firewall software other than Windows Firewall is installed in your PC.	Refer to the manual for the firewall software and take one of the following actions: - Exclude the "LiveViewer" from blocking item list - Disable the firewall while using the "LiveViewer"
	Can't communicate	The PC and/or projector's network settings are not configured correctly.	Check the network configurations of the PC and projector.
		An access point is used, and your PC is connected to the access point via wireless LAN.	Use network utilities that may come with your PC or wireless LAN card to establish wireless network connection. For detail, refer to the manual of the PC or the card.
		Security software is blocking network communication.	Change the security setting to allow "LiveViewer" to use.
		The number of PC connection exceeds the limit (max. 50).	Try again after one of session is disconnected. (finish "LiveViewer" application)

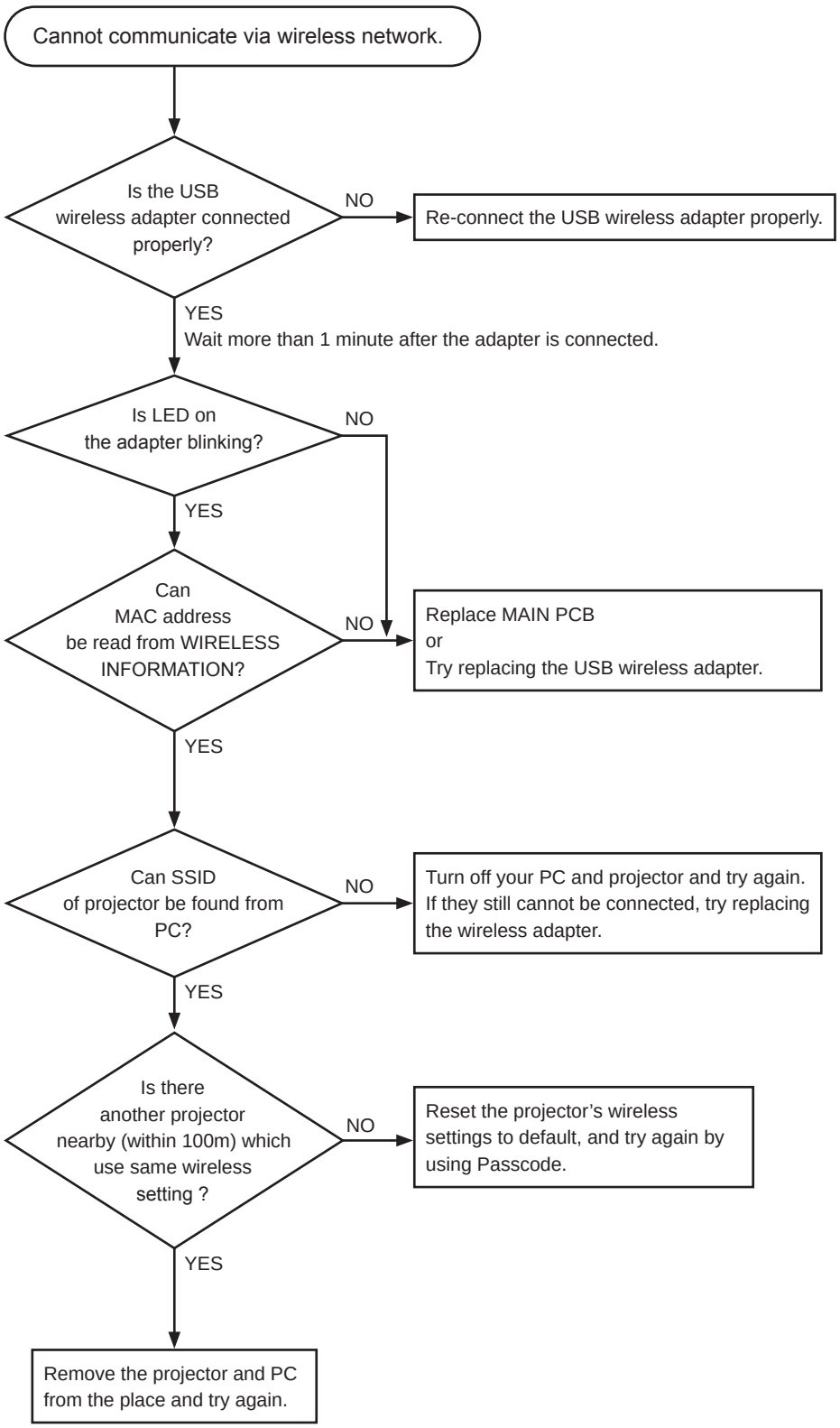
(continued on next page)

Troubleshooting for other Network problems (continued)

	Problem	Likely Cause	Things to Check
Network Presentation	Can't Install "LiveViewer"	The "LiveViewer" does not work on Windows Vista without any Service Pack.	Apply the latest Service Pack to your PC.
	The projected image is rather slow compared to that of the PC.	The projector isn't capable of relaying dynamic images such as PowerPoint® animation at full speed.	Switching the priority to 'Transmission Speed' under the options menu may help to improve speed.
		The compression rate being used for transferring the images is too low.	Switching the priority to 'Transmission Speed' under the options menu may help to improve speed.
	No Image	Using screensaver with password.	The "LiveViewer" cannot send PC screen data while using screensaver with password.
	Can't display the movies correctly.	In some combinations of PC's video card and application software, the true image, especially movies played by media player, might not be transferred to the projector with the "LiveViewer".	If there is a video acceleration level adjustment function in your application, please try to adjust it. Refer your application manual in detail.
		The LiveViewer can't transfer movie when DFMirage driver was installed.	Remove DFMirage driver when you need to display movie with LiveViewer.
	Network connection between the PC and projector is disconnected when PC screen resolution is changed during Network Presentation.	The PC-Projector network connection might be disconnected when PC screen resolution is changed while displaying picture. Please re-connect them.	"Connect button" after changing PC screen resolution, or change display resolution before connecting with the "LiveViewer".
	Images contain lots of interference.	The compression rate being used for transferring the images is too high.	Try setting the priority to 'Image Quality' in the "LiveViewer" Option menu. You may experience a drop in speed.
	Neither transparency nor translucency effects (Glass)	Using the "LiveViewer" with Windows Aero® mode.	The "LiveViewer" does not support these features of Windows Aero.

NOTE:
It is recommended to refer the section "Troubleshooting" in the latest version of User's Manual - Operating Guide, Network Guide and the User's manual of "LiveViewer" from web site.


Cannot communicate via wired network.
Does the LED on lower right of the LAN port light in green?
NO
Is the STANDBY MODE setting "NORMAL" or "QUICK START"?
NO
Set the STANDBY MODE as "NORMAL" or "QUICK START" in the SETUP menu.
YES
YES
Is the PC connected with the projector directly?
NO
Check the network hardware.
YES
Are there any damage to the LAN cable?
NO
Replace MAIN PCB.
YES
Use new LAN cable.
Are both of IP address and Subnet mask in the WIRED INFORMATION set to "0.0.0.0" after waiting more than 1 minute?
NO
Are the network addresses of PC and projector same?
NO
Use the same network address on PC and projector.
YES
Replace MAIN PCB.
YES
Is the DHCP in the NETWORK - WIRED SETUP menu set to "ON"?
NO
YES
Is there DHCP server on the network which the projector is connected to?
NO
Set IP address and Subnet Mask in the NETWORK - WIRED SETUP menu.
YES
Make sure those settings of the projector and PC are correct.

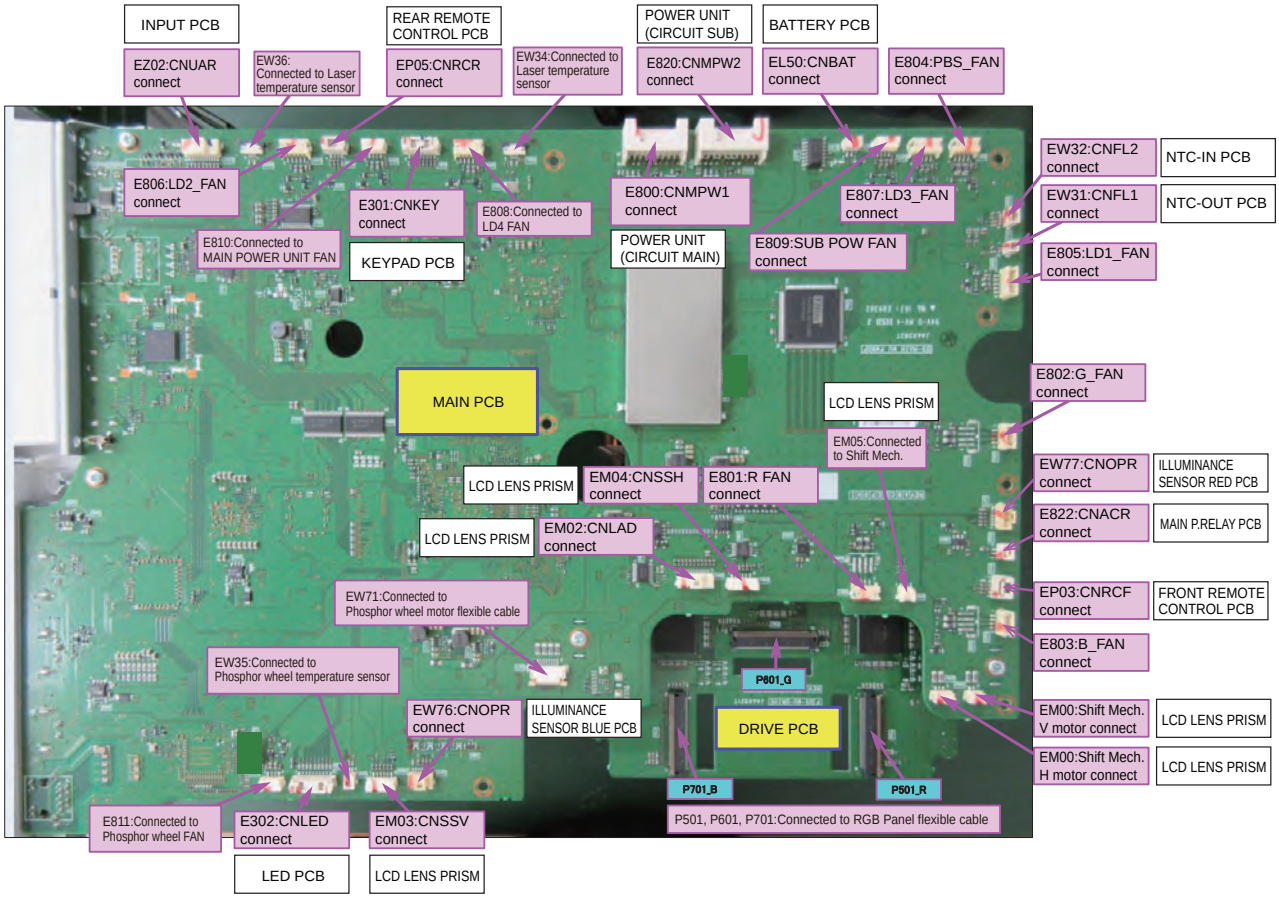

Cannot communicate via wireless network.
Is the USB wireless adapter connected properly?
NO
Re-connect the USB wireless adapter properly.
YES
Wait more than 1 minute after the adapter is connected.
Is LED on the adapter blinking?
NO
YES
Can MAC address be read from WIRELESS INFORMATION?
NO
Replace MAIN PCB or Try replacing the USB wireless adapter.
YES
Can SSID of projector be found from PC?
NO
Turn off your PC and projector and try again. If they still cannot be connected, try replacing the wireless adapter.
YES
Is there another projector nearby (within 100m) which use same wireless setting ?
NO
Reset the projector's wireless settings to default, and try again by using Passcode.
YES
Remove the projector and PC from the place and try again.

6. Diagnosis

⚠ WARNING

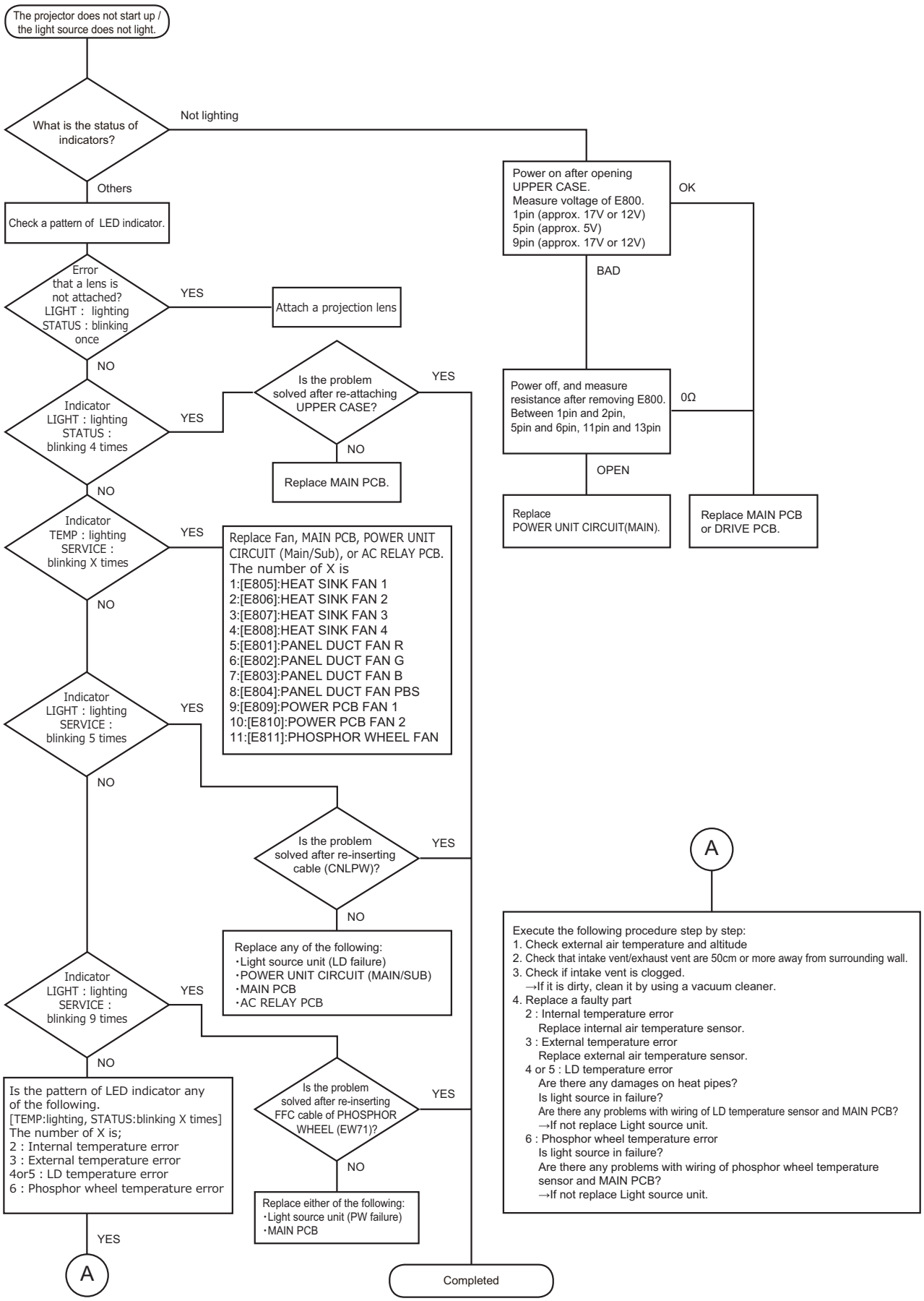
Do not light the light source with the upper case opened because this projector is equipped with a laser light source.

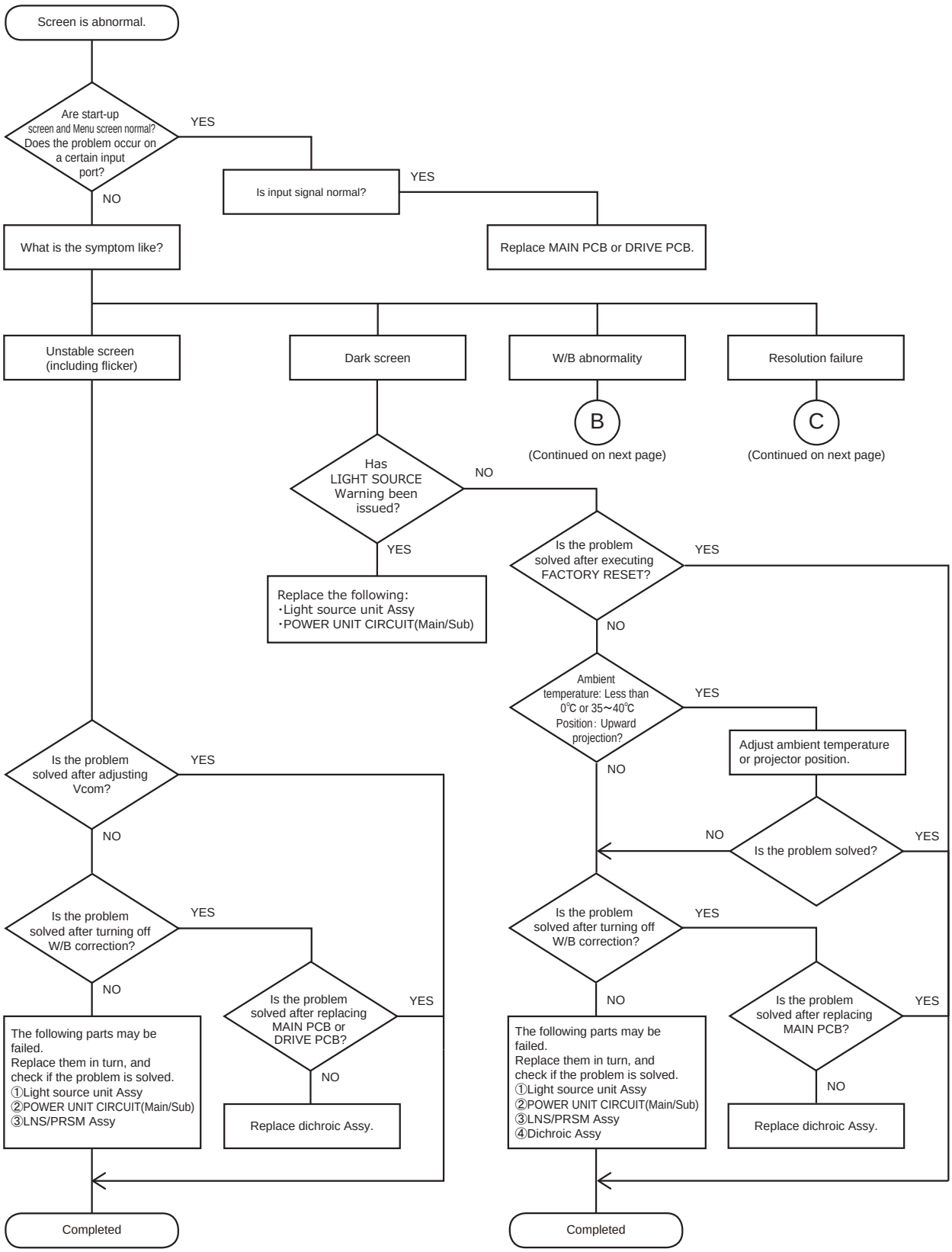
■ Check points

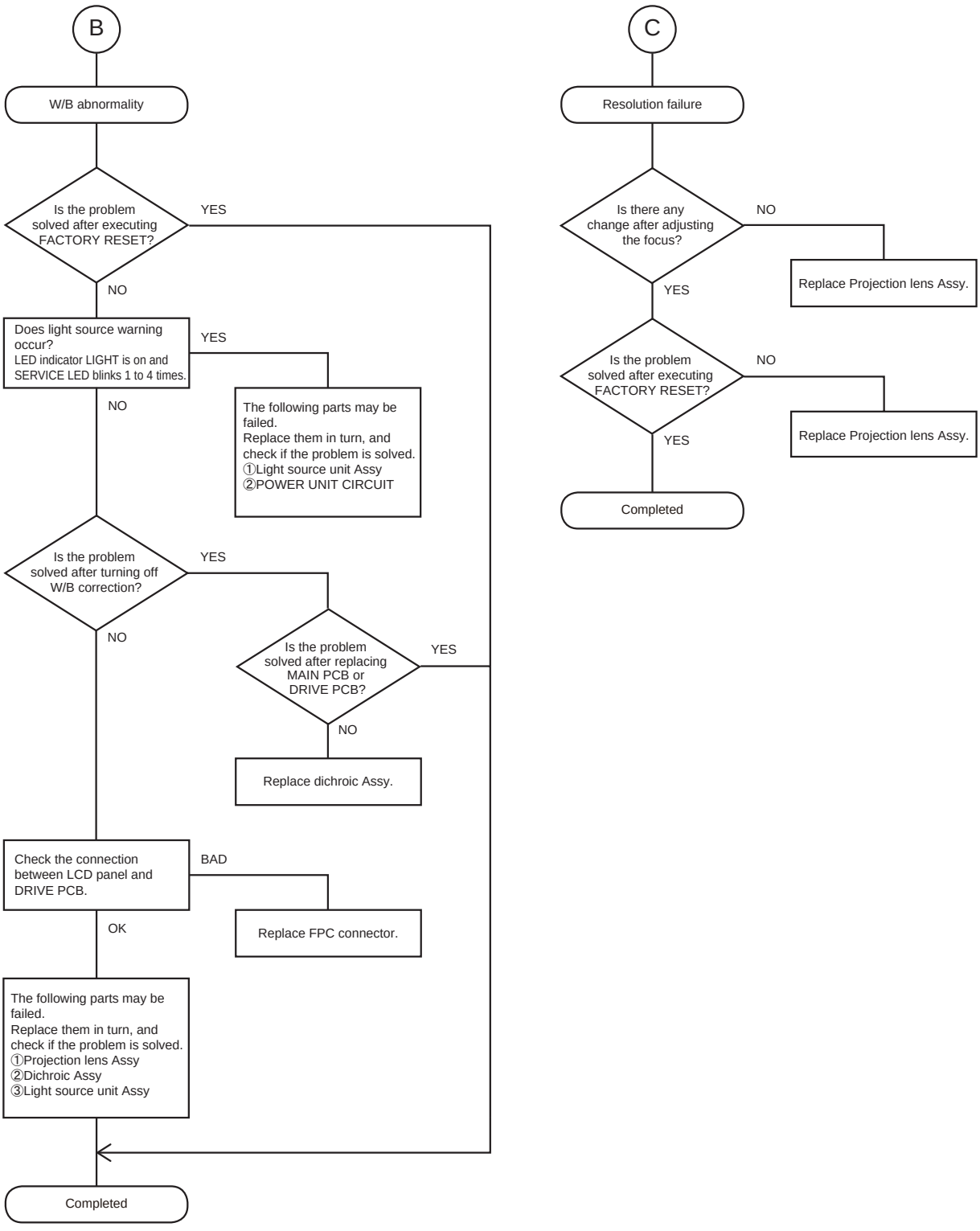


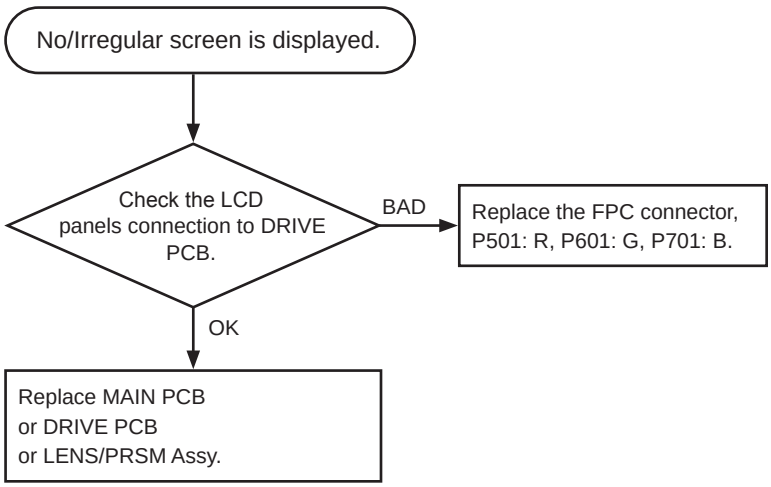
NOTE:

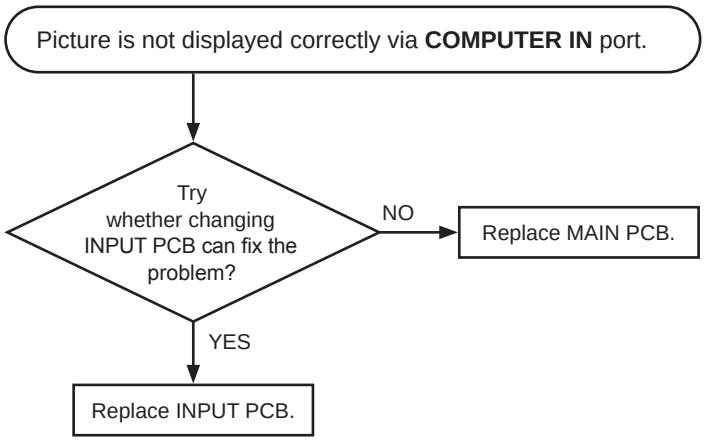
1) The picture above shows the inside of the projector after the UPPER CASE is removed.
   To access the components of the INPUT PCB shown in the picture, you need to detach the block including the MAIN PCB and to separate the I/O PANEL and the I/O METAL from the block.
2) Wiring shown in this picture may differ from mass-products. Refer the chapter of "***Wiring diagram***" to check the proper wiring.
3) The component IV01 is located on the reverse side of MAIN PCB.

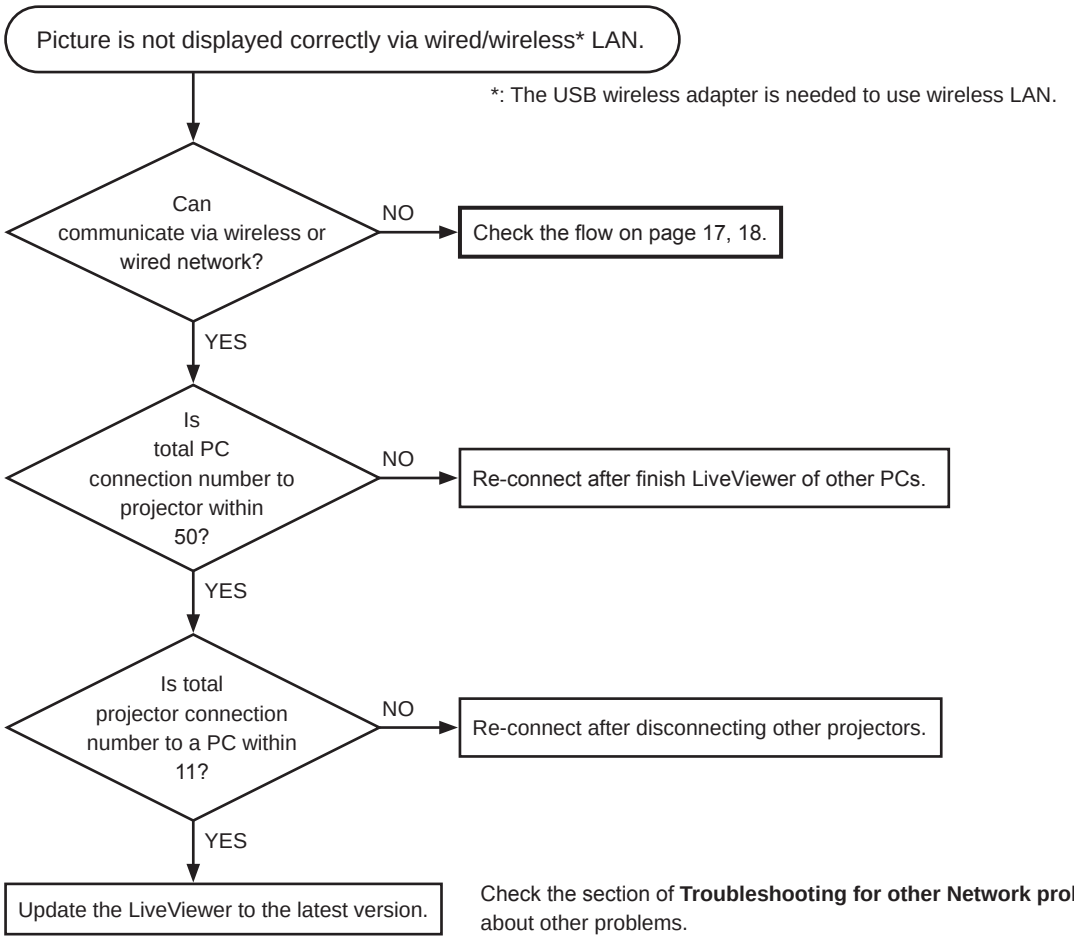

The projector does not start up / the light source does not light.
What is the status of indicators?
Not lighting
Others
Check a pattern of LED indicator.
Error that a lens is not attached? LIGHT : lighting STATUS : blinking once
YES
Attach a projection lens
NO
Indicator LIGHT : lighting STATUS : blinking 4 times
YES
Is the problem solved after re-attaching UPPER CASE?
YES
NO
Replace MAIN PCB.
NO
Indicator TEMP : lighting SERVICE : blinking X times
YES
Replace Fan, MAIN PCB, POWER UNIT CIRCUIT (Main/Sub), or AC RELAY PCB.
The number of X is
1:[E805]:HEAT SINK FAN 1
2:[E806]:HEAT SINK FAN 2
3:[E807]:HEAT SINK FAN 3
4:[E808]:HEAT SINK FAN 4
5:[E801]:PANEL DUCT FAN R
6:[E802]:PANEL DUCT FAN G
7:[E803]:PANEL DUCT FAN B
8:[E804]:PANEL DUCT FAN PBS
9:[E809]:POWER PCB FAN 1
10:[E810]:POWER PCB FAN 2
11:[E811]:PHOSPHOR WHEEL FAN
NO
Indicator LIGHT : lighting SERVICE : blinking 5 times
YES
Is the problem solved after re-inserting cable (CNLPW)?
YES
NO
Replace any of the following:
・Light source unit (LD failure)
・POWER UNIT CIRCUIT (MAIN/SUB)
・MAIN PCB
・AC RELAY PCB
NO
Indicator LIGHT : lighting SERVICE : blinking 9 times
YES
Is the problem solved after re-inserting FFC cable of PHOSPHOR WHEEL (EW71)?
YES
NO
Replace either of the following:
・Light source unit (PW failure)
・MAIN PCB
NO
Is the pattern of LED indicator any of the following.
[TEMP:lighting, STATUS:blinking X times]
The number of X is;
2 : Internal temperature error
3 : External temperature error
4or5 : LD temperature error
6 : Phosphor wheel temperature error
YES
A
Completed
Power on after opening UPPER CASE.
Measure voltage of E800.
1pin (approx. 17V or 12V)
5pin (approx. 5V)
9pin (approx. 17V or 12V)
OK
BAD
Power off, and measure resistance after removing E800.
Between 1pin and 2pin,
5pin and 6pin, 11pin and 13pin
0Ω
OPEN
Replace POWER UNIT CIRCUIT(MAIN).
Replace MAIN PCB or DRIVE PCB.
A
Execute the following procedure step by step:
1. Check external air temperature and altitude
2. Check that intake vent/exhaust vent are 50cm or more away from surrounding wall.
3. Check if intake vent is clogged.
→If it is dirty, clean it by using a vacuum cleaner.
4. Replace a faulty part
2 : Internal temperature error
Replace internal air temperature sensor.
3 : External temperature error
Replace external air temperature sensor.
4 or 5 : LD temperature error
Are there any damages on heat pipes?
Is light source in failure?
Are there any problems with wiring of LD temperature sensor and MAIN PCB?
→If not replace Light source unit.
6 : Phosphor wheel temperature error
Is light source in failure?
Are there any problems with wiring of phosphor wheel temperature sensor and MAIN PCB?
→If not replace Light source unit.


Screen is abnormal.
Are start-up screen and Menu screen normal? Does the problem occur on a certain input port?
YES
Is input signal normal?
YES
Replace MAIN PCB or DRIVE PCB.
NO
What is the symptom like?
Unstable screen (including flicker)
Dark screen
W/B abnormality
Resolution failure
B
(Continued on next page)
C
(Continued on next page)
Has LIGHT SOURCE Warning been issued?
NO
YES
Replace the following:
・Light source unit Assy
・POWER UNIT CIRCUIT(Main/Sub)
Is the problem solved after executing FACTORY RESET?
YES
NO
Ambient temperature: Less than 0℃ or 35～40℃ Position: Upward projection?
YES
Adjust ambient temperature or projector position.
NO
Is the problem solved?
NO
YES
Is the problem solved after adjusting Vcom?
YES
NO
Is the problem solved after turning off W/B correction?
YES
NO
Is the problem solved after replacing MAIN PCB or DRIVE PCB?
YES
NO
The following parts may be failed.
Replace them in turn, and check if the problem is solved.
①Light source unit Assy
②POWER UNIT CIRCUIT(Main/Sub)
③LNS/PRSM Assy
Replace dichroic Assy.
Completed
Is the problem solved after turning off W/B correction?
YES
NO
Is the problem solved after replacing MAIN PCB?
YES
NO
The following parts may be failed.
Replace them in turn, and check if the problem is solved.
①Light source unit Assy
②POWER UNIT CIRCUIT(Main/Sub)
③LNS/PRSM Assy
④Dichroic Assy
Replace dichroic Assy.
Completed

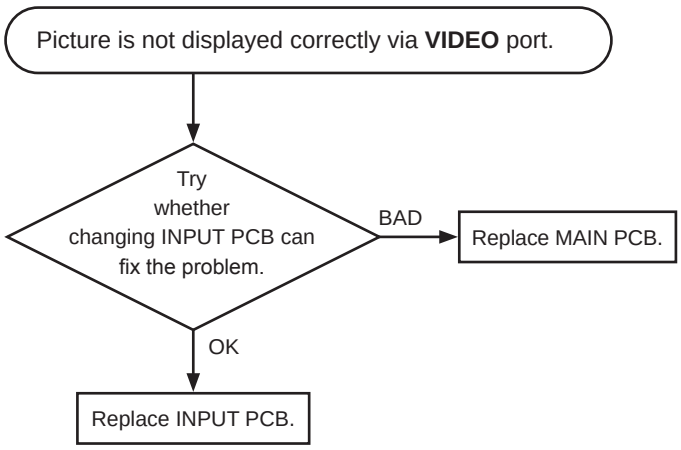

B
W/B abnormality
Is the problem solved after executing FACTORY RESET?
YES
NO
Does light source warning occur?
LED indicator LIGHT is on and SERVICE LED blinks 1 to 4 times.
YES
NO
The following parts may be failed.
Replace them in turn, and check if the problem is solved.
①Light source unit Assy
②POWER UNIT CIRCUIT
Is the problem solved after turning off W/B correction?
YES
NO
Is the problem solved after replacing MAIN PCB or DRIVE PCB?
YES
NO
Replace dichroic Assy.
Check the connection between LCD panel and DRIVE PCB.
BAD
OK
Replace FPC connector.
The following parts may be failed.
Replace them in turn, and check if the problem is solved.
①Projection lens Assy
②Dichroic Assy
③Light source unit Assy
Completed
C
Resolution failure
Is there any change after adjusting the focus?
NO
YES
Replace Projection lens Assy.
Is the problem solved after executing FACTORY RESET?
NO
YES
Replace Projection lens Assy.
Completed

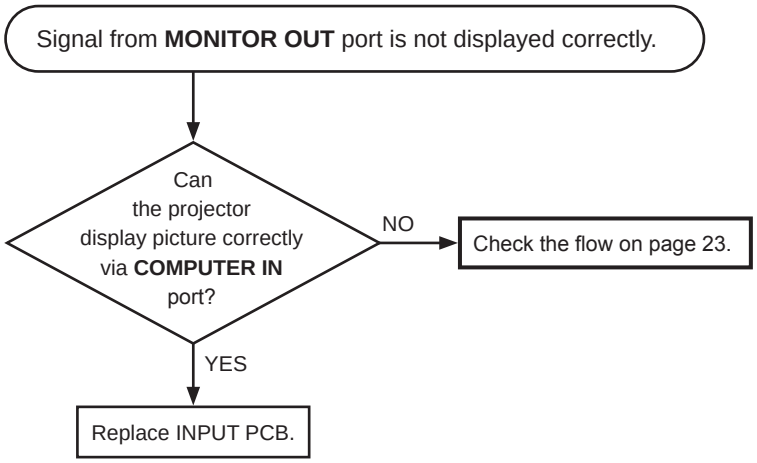


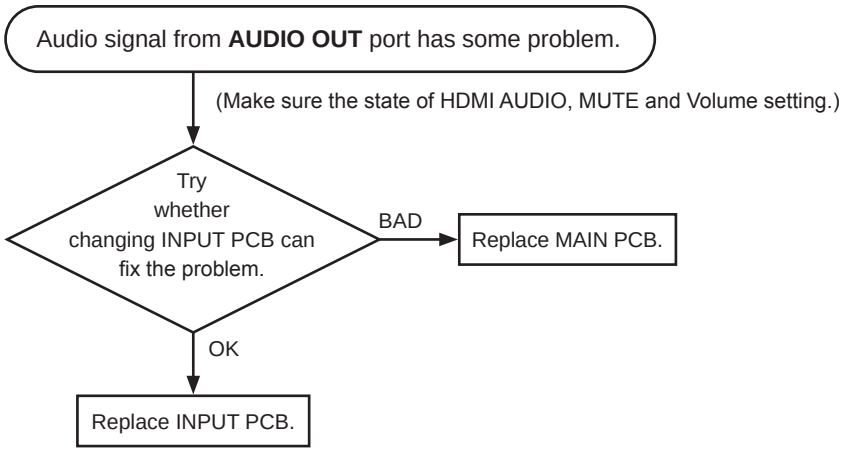


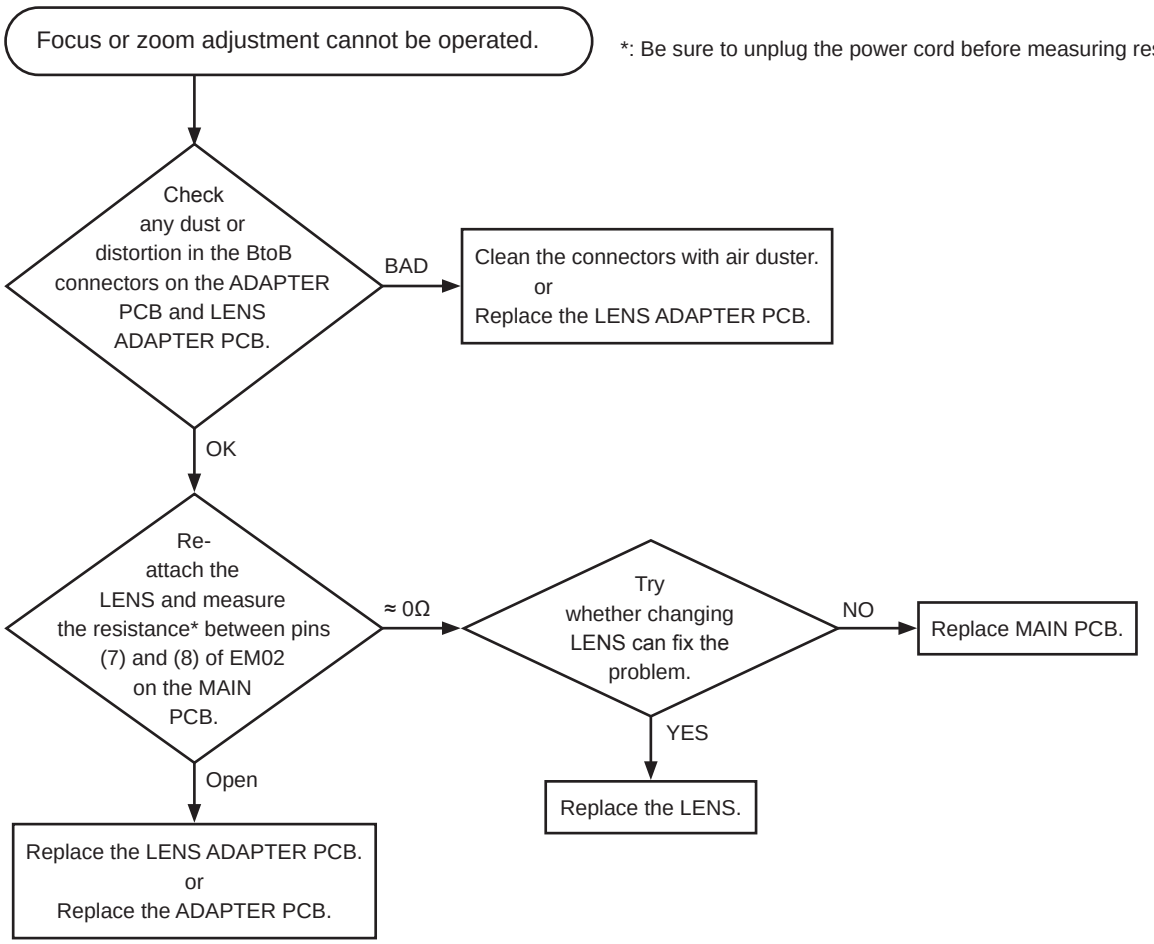


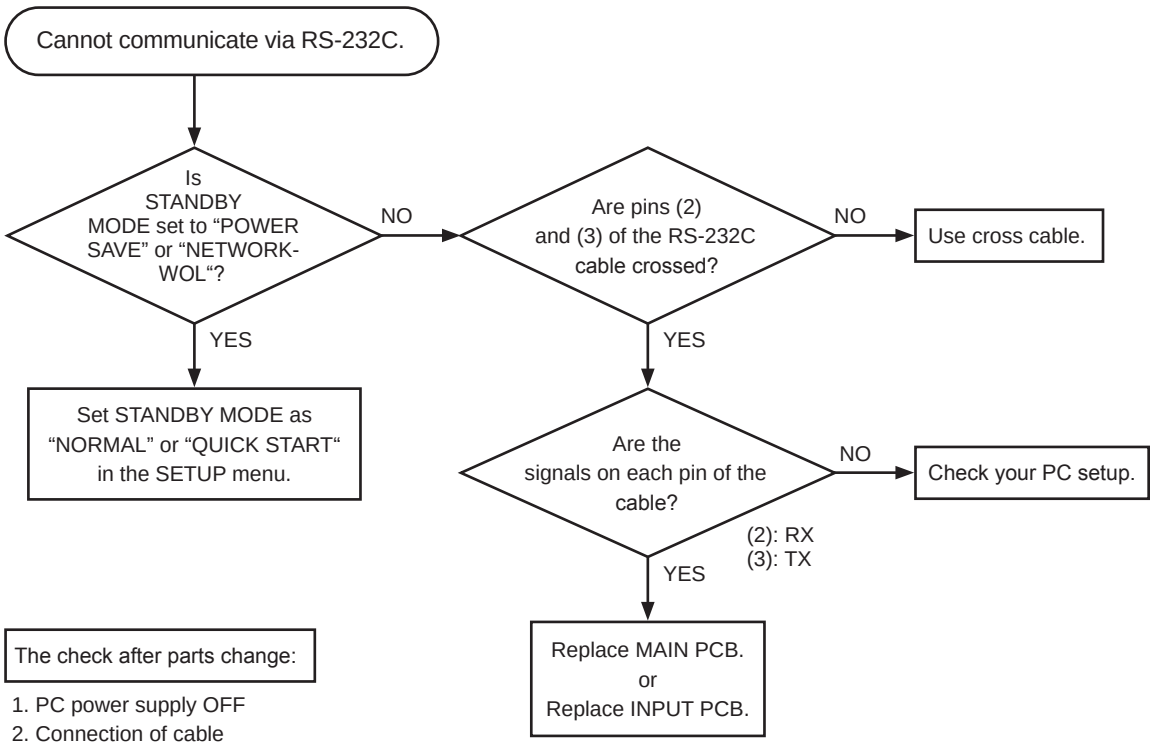
Check the section of **Troubleshooting for other Network problems** about other problems.


Picture is not displayed correctly via **VIDEO** port.
Try whether changing INPUT PCB can fix the problem.
BAD
Replace MAIN PCB.
OK
Replace INPUT PCB.


Signal from **MONITOR OUT** port is not displayed correctly.
Can the projector display picture correctly via **COMPUTER IN** port?
NO
Check the flow on page 23.
YES
Replace INPUT PCB.


Audio signal from **AUDIO OUT** port has some problem.
(Make sure the state of HDMI AUDIO, MUTE and Volume setting.)
Try whether changing INPUT PCB can fix the problem.
BAD
Replace MAIN PCB.
OK
Replace INPUT PCB.


Focus or zoom adjustment cannot be operated.
*: Be sure to unplug the power cord before measuring resistance.
Check any dust or distortion in the BtoB connectors on the ADAPTER PCB and LENS ADAPTER PCB.
BAD
Clean the connectors with air duster.
or
Replace the LENS ADAPTER PCB.
OK
Re-attach the LENS and measure the resistance* between pins (7) and (8) of EM02 on the MAIN PCB.
≈ 0Ω
Try whether changing LENS can fix the problem.
NO
Replace MAIN PCB.
YES
Replace the LENS.
Open
Replace the LENS ADAPTER PCB.
or
Replace the ADAPTER PCB.



The check after parts change:

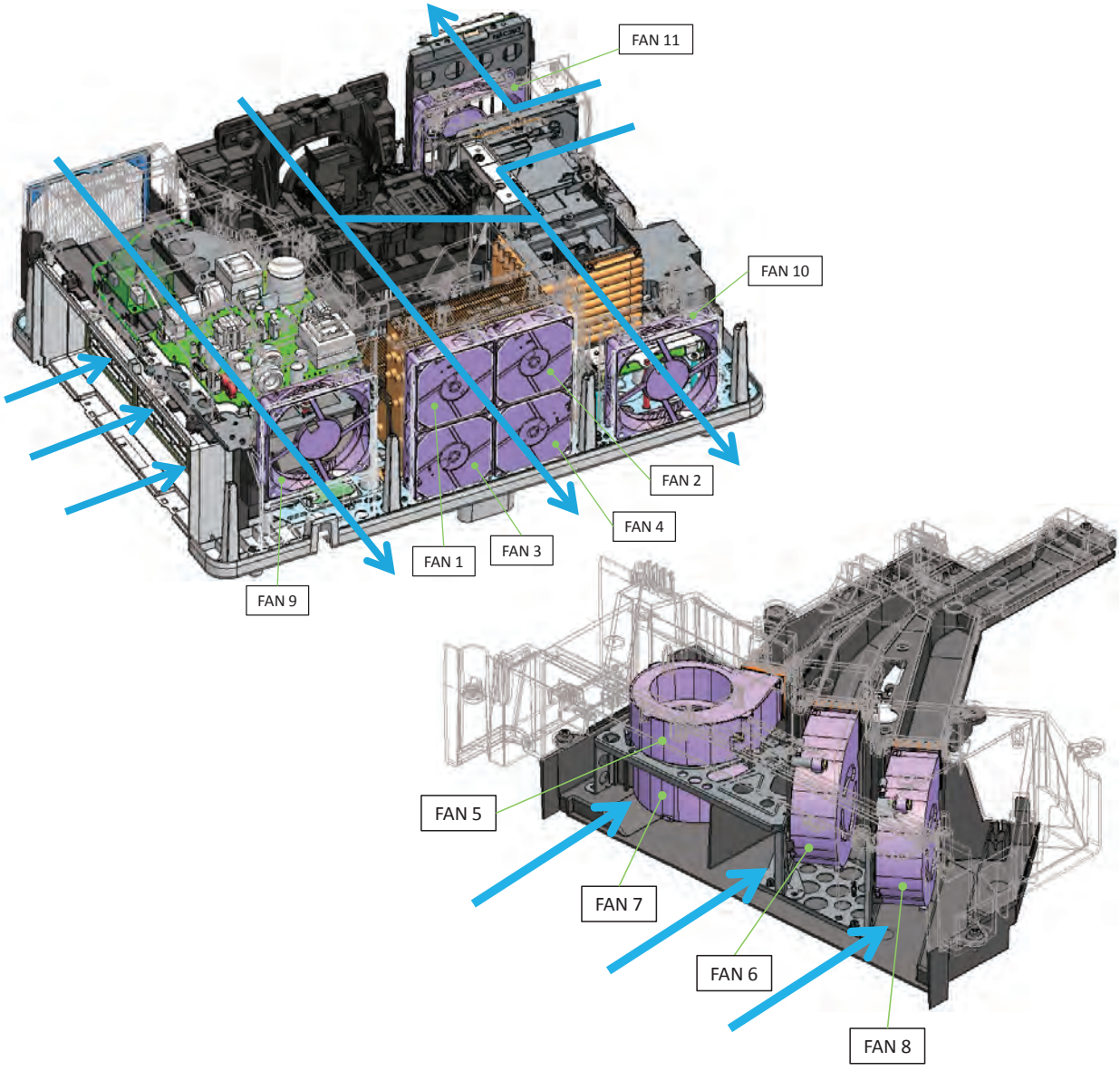
1. PC power supply OFF
2. Connection of cable
3. Projector starting
4. PC starting

* When not operating: PC set up change or cable change.

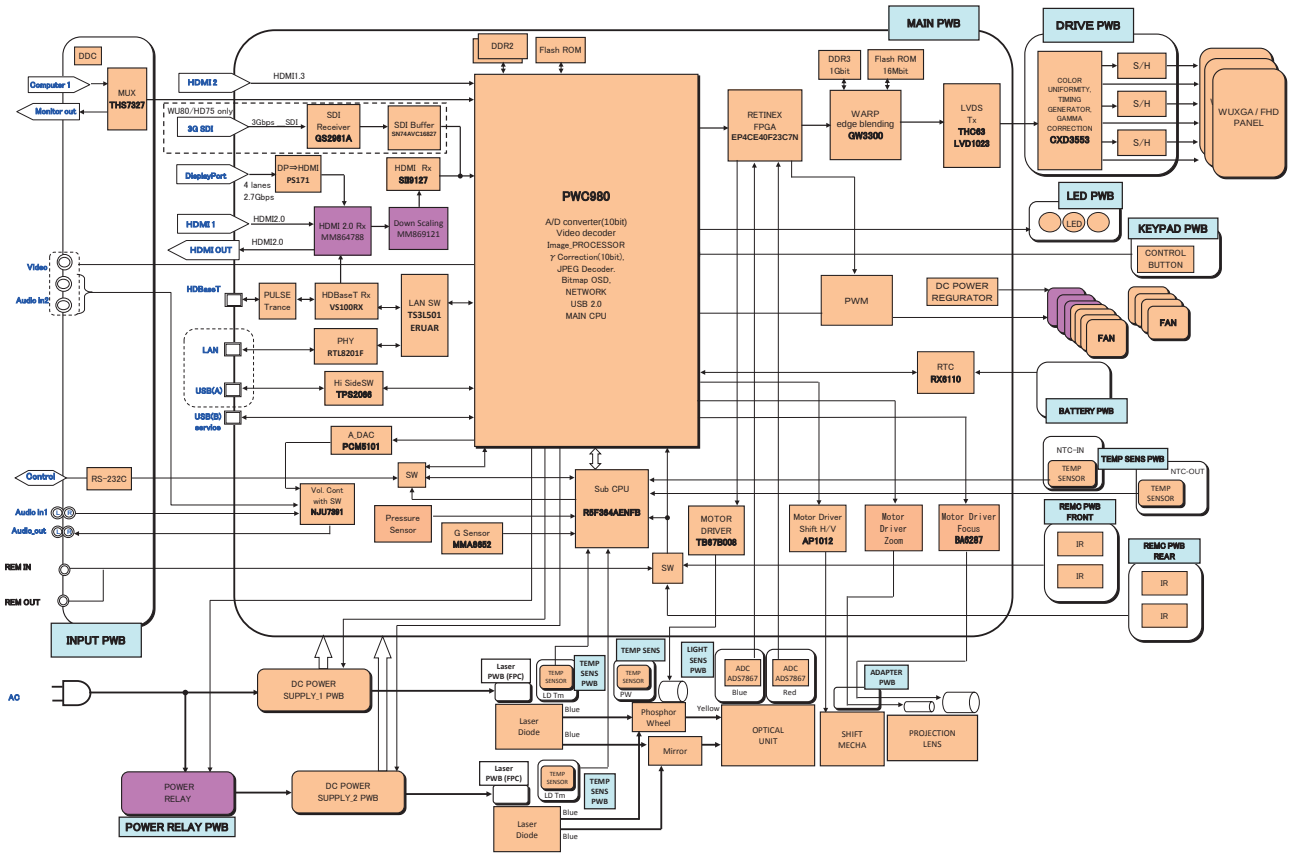
7. Internal System

7-1 FAN system

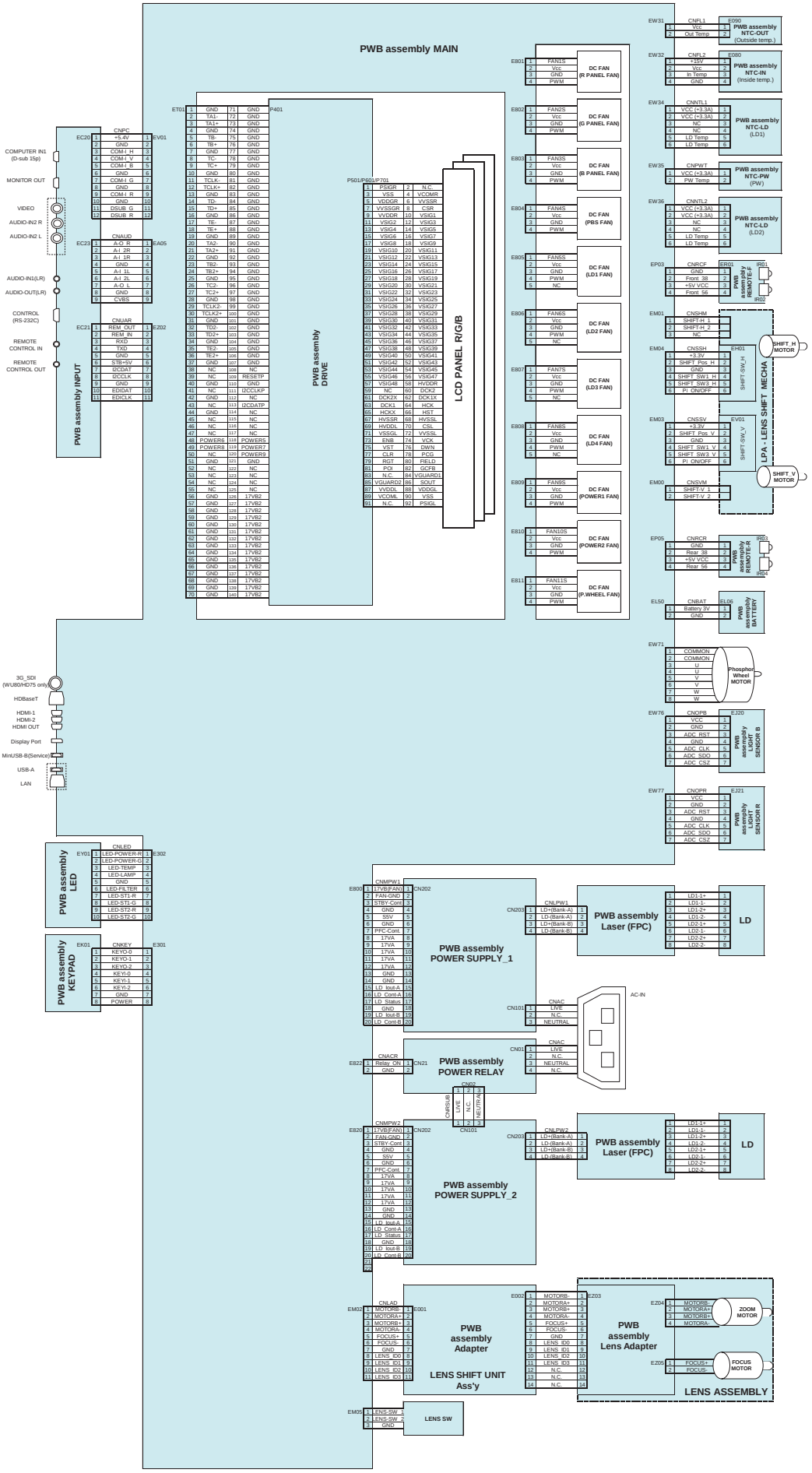
Fan number table for error		Replacement parts list		
		Symbol No.	Parts No.	Description
Fan 1	HEAT SINK FAN 1	15	GS02751	D3 HP FAN ASS'Y
Fan 2	HEAT SINK FAN 2			
Fan 3	HEAT SINK FAN 3			
Fan 4	HEAT SINK FAN 4			
Fan 5	PANEL DUCT FAN R	17	GS02753	D3 PNL FAN ASS'Y
Fan 6	PANEL DUCT FAN G			
Fan 7	PANEL DUCT FAN B			
Fan 8	PANEL DUCT FAN PBS			
Fan 9	POWER PCB FAN 1	16	GS02752	D3 105 FAN ASS'Y
Fan 10	POWER PCB FAN 2			
Fan 11	PHOSPHOR WHEEL FAN			



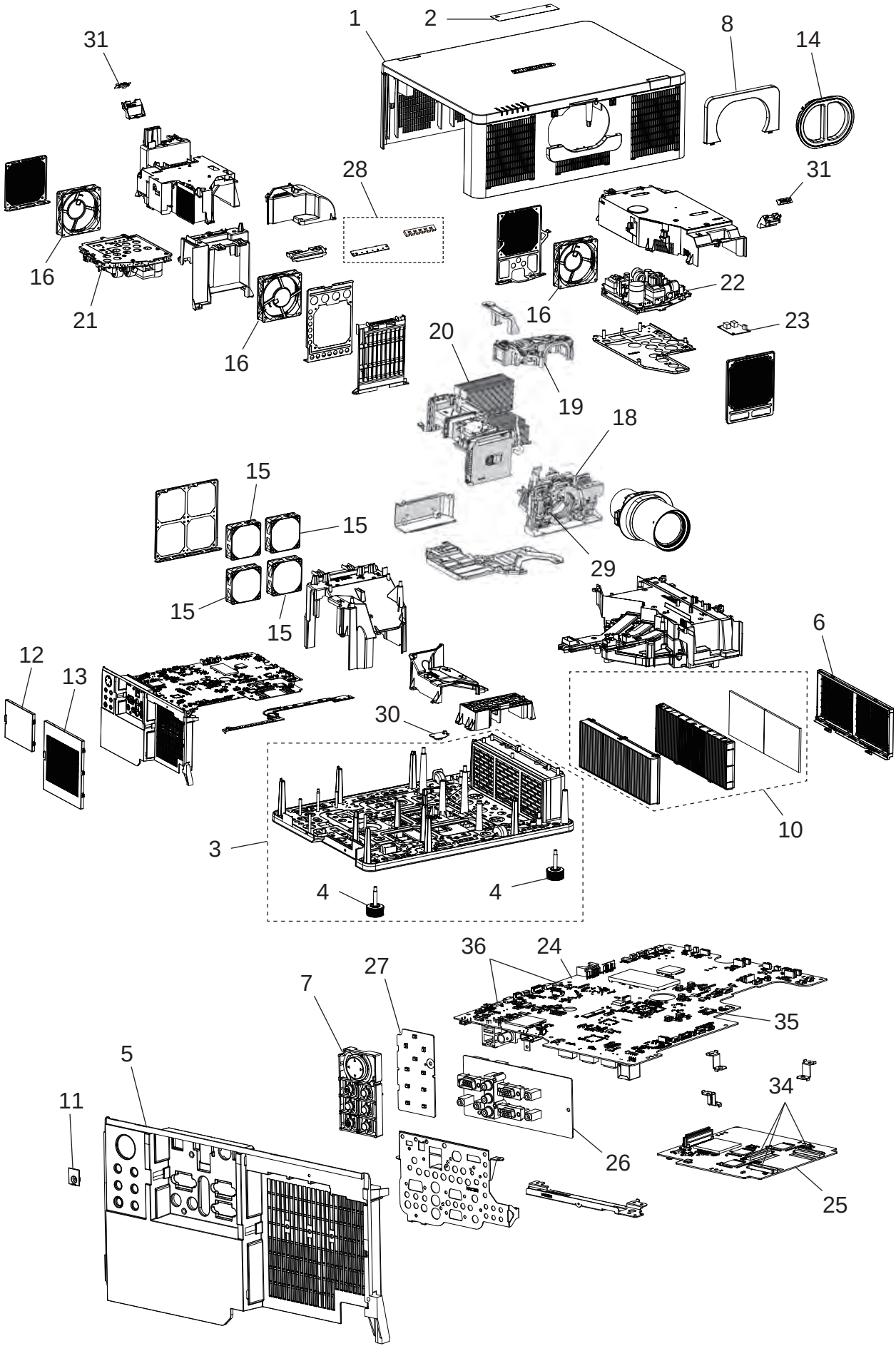
7-2 Block diagram

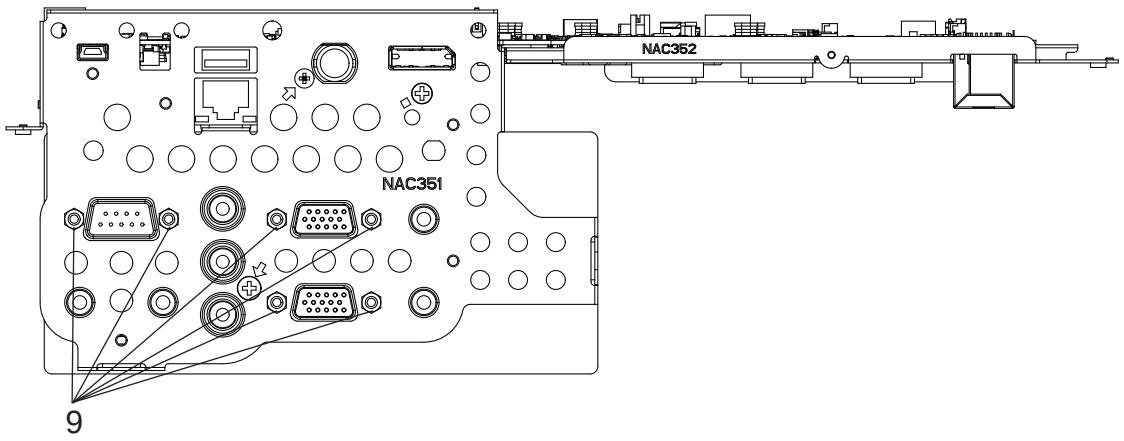


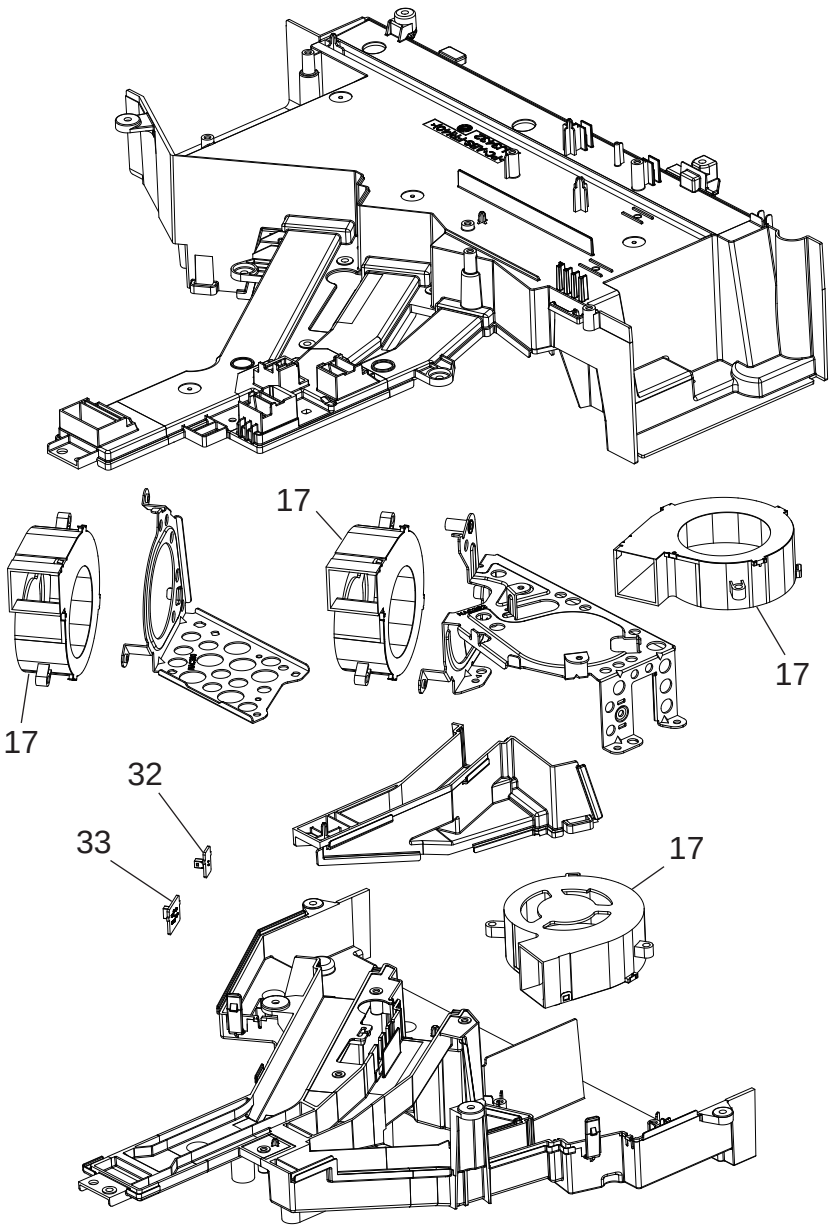
7-3 Connector connection diagram



7-4 Disassembly diagram



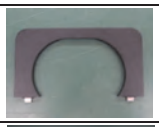
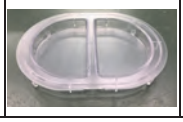

NAC352
NAC351
9

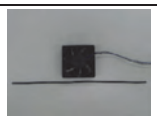
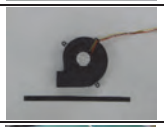

17
17
17
32
33
17

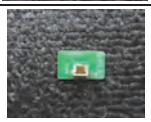
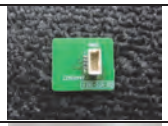
8. Replacement Parts list

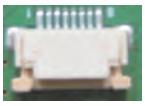
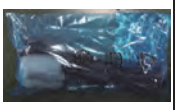
PRODUCT SAFETY NOTE:
Components marked with a ⚠ have special characteristics important to safety. Don't degrade the safety of the projector through improper servicing.
The figures in the "SYMBOL No." column correspond to those in the drawings of the chapter ***Disassembly diagram***.

Symbol No.	Part No.	Description	Part Picture	LWU900-DS (121-058104-01) (121-064101-01)	LHD878-DS (121-056102-01) (121-061108-01)	LWU755-DS (121-057103-01) (121-063100-01)	LWU755-DS (121-062109-01)
							
1	003-006745-01 (QD85321)	Cover Upper (UPPER CASE ASS'Y D3C)		✔	✔	✔	–
	003-006796-01 (QD85322)	Cover Upper (UPPER CASE ASS'Y D3C-WU80)		-	-	-	✔
2	003-006746-01 (QL58191)	Label Laser (LASER LABEL D3C-WU80)		✔ *1	✔ *1	✔ *1	✔
	003-006747-01 (QL58622)	Label Laser (LASER LABEL D3C CDS CN)		✔ *2	✔ *2	✔ *2	–
3	003-006748-01 (QD85331)	Cover Bottom (BOTTOM CASE ASS'Y D3C)		✔	✔	✔	–
	003-006749-01 (QD85332)	Cover Bottom (BOTTOM CASE ASS'Y D3C-WU80)		-	-	-	✔
4	003-005003-01 (QJ07071)	Foot Adjust (ADJUST FOOT ASS'Y DD1)		✔	✔	✔	–
	003-004960-01 (QJ07072)	Foot Adjust (ADJUST FOOT ASS'Y DD1)		-	-	-	✔
5	003-006750-01 (QD85341)	Cover SUBIO (IO COVER ASS'Y D3C)		✔	✔	-	-
	003-006751-01 (QD85343)	Cover SUBIO (IO COVER ASS'Y D3C-WU70)		-	-	✔	
	003-006752-01 (QD85344)	Cover SUBIO (IO COVER ASS'Y D3C-WU70)		-	-	-	✔
6	003-006753-01 (PH52571)	Cover Filter Black (FILTER COVER D3)		✔	✔	✔	–
	003-006754-01 (PH52572)	Cover Filter White (FILTER COVER ASS'Y D3)		-	-	-	✔

Symbol No.	Part No.	Description	Part Picture	LWU900-DS (121-058104-01) (121-064101-01) 	LHD878-DS (121-056102-01) (121-061108-01) 	LWU755-DS (121-057103-01) (121-063100-01) 	LWU755-DS (121-062109-01) 
7	003-006755-01 (PC08921)	Button Control (CONTROL BUTTON D3)		✔	✔	✔	-
	003-006756-01 (PC08922)	Button Control (CONTROL BUTTON D3)		-	-	-	✔
8	003-006757-01 (QD85761)	Cover Front Upper (LENS COVER ASS'Y D3)		✔	✔	✔	-
	003-006758-01 (QD85762)	Cover Front Upper White (LENS COVER D3)		-	-	-	✔
9	003-002451-01 (MJ02872)	ASSY D-SUB Screw (DSUB Hex screw 13mm)		✔	✔	✔	✔
10	003-006607-01 (UX43481)	Filter Set (AIR FILTER ASS'Y D3)		✔	✔	✔	✔
11	003-005397-01 (PH51922)	Cover USB (USB MINI COVER D2)		✔	✔	✔	-
	003-005615-01 (PH51921)	Cover USB White (USB MINI COVER D2)		-	-	-	✔
12	003-006760-01 (QD84771)	Cover Terminal (TERMINAL COVER ASS'Y D3)		✔	✔	✔	-
	003-006761-01 (QD84772)	Cover Terminal (TERMINAL COVER D3)		-	-	-	✔
13	003-006762-01 (QD84781)	Cover Seamless (SEAMLESS COVER ASS'Y D3)		✔	✔	✔	-
	003-006763-01 (QD84782)	Cover Seamless (SEAMLESS COVER D3)		-	-	-	✔
14	003-006764-01 (PH52581)	Cover Lens (LENS COVER D3)		✔	✔	✔	✔

Symbol No.	Part No.	Description	Part Picture	LWU900-DS (121-058104-01) (121-064101-01) 	LHD878-DS (121-056102-01) (121-061108-01) 	LWU755-DS (121-057103-01) (121-063100-01) 	LWU755-DS (121-062109-01) 
15	003-006765-01 (GS02751)	Fan (FAN ASS'Y HP D3)		✔	✔	✔	✔
16	003-006766-01 (GS02752)	Fan (FAN ASS'Y 105 D3)		✔	✔	✔	✔
17	003-006767-01 (GS02753)	Fan (FAN ASS'Y PNL D3)		✔	✔	✔	✔
18	003-006768-01 (UX43611)	LCD Lens Prism (LCD/LENS PRISM ASS'Y D3C-WU80)		✔	-	✔	✔
	003-006769-01 (UX43612)	LCD Lens Prism (LCD/LENS PRISM ASS'Y D3-HD)		-	✔	-	–
19	003-006770-01 (UX43621)	Dichroic Optics Unit (DICHROIC OPTICS UNIT D3C-WU80)		✔	-	-	–
	003-006771-01 (UX43623)	Dichroic Optics Unit (DICHROIC OPTICS UNIT D3C-HD75)		-	✔	-	–
	003-006772-01 (UX43622)	Dichroic Optics Unit (DICHROIC OPTICS UNIT D3C-WU70)		-	-	✔	✔
20	003-006773-01 (UX43721)	Laser (LASER MID ASS'Y D3)		✔	✔	-	–
	003-006774-01 (UX43722)	Laser (LASER LOW ASS'Y D3)		-	-	✔	✔
21	003-006726-01 (HA03991)	Power Unit Circuit (POWER UNIT (CIRCUIT) A9)		✔	✔	-	–
	003-006776-01 (HA04061)	Power Unit Circuit (POWER UNIT (CIRCUIT) A9)		-	-	✔	✔
22	003-006776-01 (HA04061)	Power Unit Circuit (POWER UNIT (CIRCUIT) A9)		✔	✔	✔	✔
23	003-006778-01 (JT26221)	PCB Main P.Relay (PWB ASS'Y MAIN P.RELAY D3)		✔	✔	✔	✔

Symbol No.	Part No.	Description	Part Picture	LWU900-DS (121-058104-01) (121-064101-01) 	LHD878-DS (121-056102-01) (121-061108-01) 	LWU755-DS (121-057103-01) (121-063100-01) 	LWU755-DS (121-062109-01) 
24	003-006779-01 (JP92901)	PCB Main (PWB ASS'Y MAIN LWU900-DS)		✔	-	-	–
	003-006780-01 (JP92921)	PCB Main (PWB ASS'Y MAIN LHD878-DS)		-	✔	-	–
	003-006781-01 (JP92911)	PCB Main (PWB ASS'Y MAIN LWU755-DS)		-	-	✔	✔
25	003-006782-01 (JP92721)	PCB Drive (PWB ASS'Y DRIVE D3)		✔	-	✔	✔
	003-006783-01 (JP92722)	PCB Drive (PWB ASS'Y DRIVE D3-HD)		-	✔	-	–
26	003-006784-01 (JP92732)	PCB Input (PWB ASS'Y INPUT D3)		✔	✔	✔	✔
27	003-006785-01 (JP92733)	PCB Keypad (PWB ASS'Y KEYPAD D3)		✔	✔	✔	✔
28	003-006786-01 (JP92734)	PCB LED (PWB ASS'Y LED D3)		✔	✔	✔	✔
29	003-006787-01 (JP92737)	PCB Adapter (PWB ASS'Y ADAPTER D3)		✔	✔	✔	✔
30	003-006788-01 (JP92854)	PCB Battery (PWB ASS'Y BATTERY D3)		✔	✔	✔	✔
31	003-006789-01 (JP92853)	PCB Remote Control (PWB ASS'Y REMOTE CONTROL D3)		✔	✔	✔	✔
32	003-006790-01 (JP92851)	PCB NTC-Out (PWB ASS'Y NTC-OUT D3)		✔	✔	✔	✔
33	003-006791-01 (JP92852)	PCB NTC-In (PWB ASS'Y NTC-IN D3)		✔	✔	✔	✔
34	003-006399-01 (EA06942R)	Connecter CPC92 (CONNECTOR CPC92)		✔	✔	✔	✔

Symbol No.	Part No.	Description	Part Picture	LWU900-DS (121-058104-01) (121-064101-01) 	LHD878-DS (121-056102-01) (121-061108-01) 	LWU755-DS (121-057103-01) (121-063100-01) 	LWU755-DS (121-062109-01) 
35	003-006792-01 (EA21521R)	Connecter CPC8 (CONNECTOR CPC8)		✔	✔	✔	✔
36	003-006716-01 (EA21421R)	Connnector CPC06 (CONNECTOR CPC06)		✔	✔	✔	✔
A	003-006793-01 (HL02806)	Remote Control (REMOTE CONTROL UNIT)		✔	✔	✔	✔
B	003-005420-02 (EW08914)	Cable COE-RGB (COE-RGB CABLE)		✔	✔	✔	✔
C	003-005421-01 (EV02174)	Cord Power US (POWER SUPPLY CORD(USA TYPE) W/CORE)		✔ *1	✔ *1	✔ *1	✔
C	003-005422-01 (EV02196)	Cord Power EU (POWER SUPPLY CORD(EUROPE TYPE) W/CORE)		✔ *1	✔ *1	✔ *1	✔
C	003-005423-01 (EV02186)	Cord Power UK (POWER SUPPLY CORD(UK TYPE) W/CORE)		✔ *1	✔ *1	✔ *1	✔
C	003-005471-01 (EV02206)	Cord Power CH (POWER SUPPLY CORD(CHINA TYPE) W/CORE)		✔ *2	✔ *2	✔ *2	-
D	003-004366-01 (EW09741)	ASSY Cable HDMI-DVI (HDMI-DVI CABLE)		✔	✔	✔	✔
E	003-006794-01 (QT58821)	Instruction Manual (INSTRUCTION MANUAL ASS'Y)		✔	✔	✔	✔
F	003-006795-01 (UX43681)	Snap Tie (SNAP TIE ASS'Y D3)		✔	✔	✔	✔

✔: Applicable, -: Not applicable *1: Only for W/W model *2: Only for China model

9. Disassemble/Assemble

9-1 Lead free solder [CAUTION]

This product uses lead free solder (unleaded) to help preserve the environment. Please read these instructions before attempting any soldering work.

⚠ CAUTION
Always wear safety glasses to prevent fumes or molten solder from getting into the eyes. Lead free solder can splatter at high temperatures (600˚C).

● Lead free solder indicator

Printed circuit boards using lead free solder are engraved with an "F" or "LF".

● Properties of lead free solder

The melting point of lead free solder is 40-50˚C higher than leaded solder.

● Servicing solder

Solder with an alloy composition of Sn-3.0Ag-0.5Cu or Sn-0.7Cu is recommended.
Although servicing with leaded solder is possible, there are a few precautions that have to be taken. (Not taking these precautions may cause the solder to not harden properly, and lead to consequent malfunctions.)

● Precautions when using leaded solder

- Remove all lead free solder from soldered joints when replacing components.
- If leaded solder should be added to existing lead free joints, mix in the leaded solder thoroughly after the lead free solder has been completely melted (do not apply the soldering iron without solder).

● Servicing soldering iron

A soldering iron with a temperature setting capability (temperature control function) is recommended.
The melting point of lead free solder is higher than leaded solder. Use a soldering iron that maintains a high stable temperature (large heat capacity), and that allows temperature adjustment according to the part being serviced, to avoid poor servicing performance.

● Recommended soldering iron:

Soldering iron with temperature control function (temperature range: 320-450˚C)

● Recommended temperature range per part:

Part	Soldering iron temperature
Mounting (chips) on mounted PCB	320˚C±30˚C
Mounting (chips) on empty PCB	380˚C±30˚C
Chassis, metallic shield, etc.	420˚C±30˚C

9-2 Articles necessary to your maintenance and repair works

In this projector, adhesive tapes and cable ties are used for the purpose of fastening and tying the wires. Once you remove the tapes or unfasten the cable ties, you may not reuse them. We recommend you to prepare such articles, in advance.

ATTENTION

This projector is compliant with RoHS. Therefore, it is recommended to use the articles compliant with RoHS in the maintenance and repair works. Be sure to use the articles with similar performances to the original.

Adhesive tape recommended for your works

Item	Product
Acetate cloth tape (black)	NITTO tape no.5 (W=9mm)
	NITTO tape no.5 (W=20mm)
Glass cloth tape (white)	NITTO tape no.188UL (W=15mm)

Use cable ties W≈2.5mm with 94HB or upper grade of UL 94 flame rating.
Recommended material is as below;

- Zytel 101, E. I. du Pont de Nemours & Company (Inc)
- Leona 1300S, Asahi Kasei Chemicals Corporation

9-3 Before Replacing the LCD Prism Shift mech. assembly

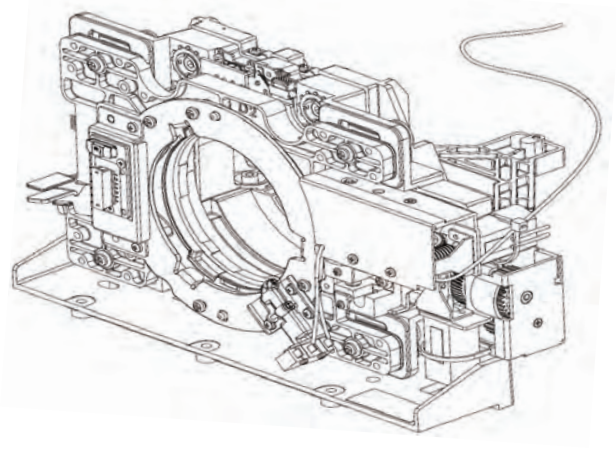
⚠ WARNING

Never disassemble the laser light source unit.

⚠ CAUTION

Make sure not to let a screwdriver touch LCD panels when you replace a LCD Prism Shift mech. assembly with a new one.

You should not replace separately the parts of the LCD Prism Shift mech. assembly. In case of a failure in any parts of LCD Prism Shift mech. assembly, replace the whole unit.



Do not disassemble the unit because replacement of separate parts is not possible.

9-4 Cleaning the dust off the panels and optical filters

1. Preparation

   Please prepare cleaning tools and materials as follows. And prepare relatively clean room not to work in additional dust, while removing operation.

   • Swab for cleaning : NX32451, COTTON STICK BB-014
   • Air duster (Dust blower, spray can)
   • Vacuum cleaner

2. Disassembling and setting up

   1) Turn off the projector and unplug the power cord. Wait at least 45 minutes for cooling down.
   2) Remove the FRONT COVER, LENS and UPPER CASE in accordance with the instructions for the chapter ***Disassembly diagram***.
   3) Disconnect the LCD panel flexible cables and all the other cables from the MAIN PCB, and take it off from the projector.
   4) Remove the OPTICAL UNIT from the projector, and separate the LCD Prism Shift mech. assembly by loosen three screws. (Figure 1)

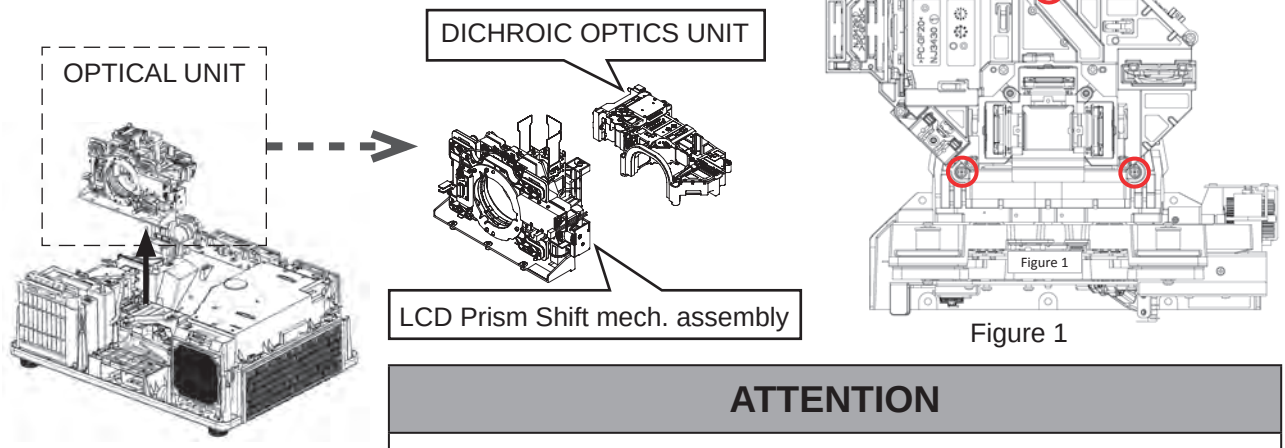


Figure 1

ATTENTION

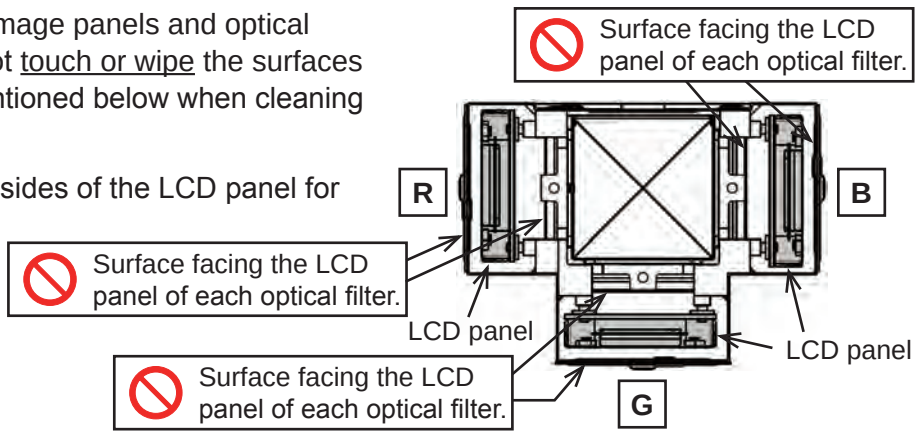
Make sure to see the instructions of "**OPTICAL UNIT**" in the chapter ***Disassembly diagram*** before these works.
Never remove any screws other than the specified. Otherwise, the optical performance may become worse.

3. Cleaning the panels and optical filters

⚠ CAUTION

Pay attention not to damage panels and optical filters. Especially, do not touch or wipe the surfaces of the optical filters mentioned below when cleaning the LCD panels.

• Optical filters on both sides of the LCD panel for R, G, and B colors.

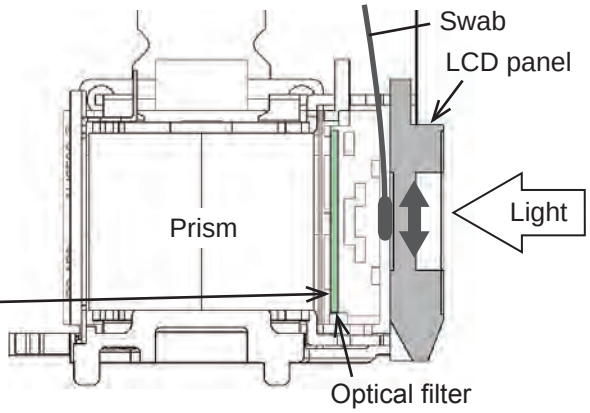


Blow the dust off from LCD panels and optical filters using an air duster.
If you cannot remove the dust on LCD panels with an air blower, wipe the surface of LCD panels with a swab according the following procedure.

● **Cleaning the exit-side (prism-side) of LCD panel**

Insert a swab between the LCD panel and the optical filter located on the exit-side of LCD panel with special care.

Cross section of LCD/prism



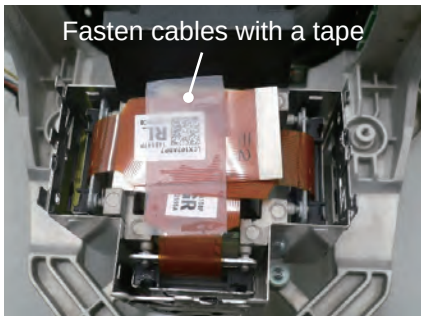
Never touch or wipe the LCD panel side of the optical filters located on the R, B, and G light paths.

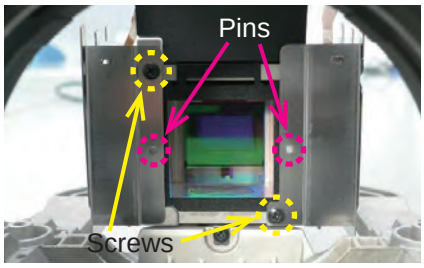
● **Cleaning the entry-side of LCD panel**

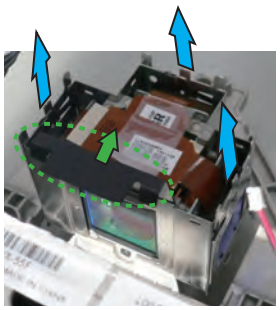
Remove the entry-side optical filter, and then wipe the entry-side surface of LCD panel.

⚠ CAUTION

Disassemble and re-assemble with care to avoid touching the optical filters with finger and touching the inner side of optical filters on R, B, and G color paths with any parts. Check that any of finger print, dirt or scratch is not on the surfaces of optical parts after the work.





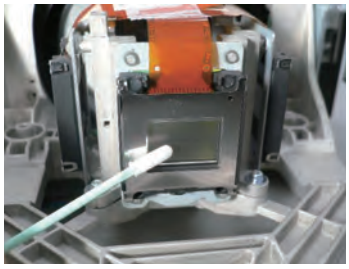


1) Fold and fasten the panel flexible cables with weakly adhesive tape as shown in the picture. This work is important in order to prevent the entry-side optical filters from touching the flexible cables when removing the entry-side optical filter block.
2) Remove two screws.
(M2.5x10, black, tightening torque: 0.15±0.03 N·m)

ATTENTION

Pay attention not to damage optical parts with screwdriver or removed screws.

3) Slightly shift the ends of the entry-side optical filter to the lens-hole side to release it from two pins.
4) Pressing the sheet attached to LPA, lift and separate the entry-side optical filter from the other carefully.
5) Wipe the entry-side surface of LCD panel with a swab to clean up.
6) Re-assemble the LCD prism Shift mech. assembly in reverse order.



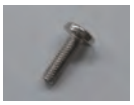
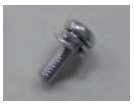
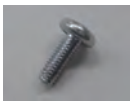
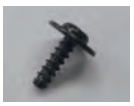
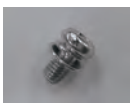
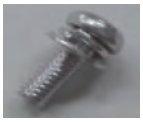
4. Re-assembly
   1) Combine the LCD Prism Shift mech. assembly with the DICHROIC OPTICS UNIT, and attach it to the projector by tightening three screws. (tightening torque: 0.6~0.7 N·m).
   2) Screw down the MAIN PCB, and re-connect all of the cables to it.
   3) Clean the air filter by using a vacuum cleaner, and re-assemble the projector unit.

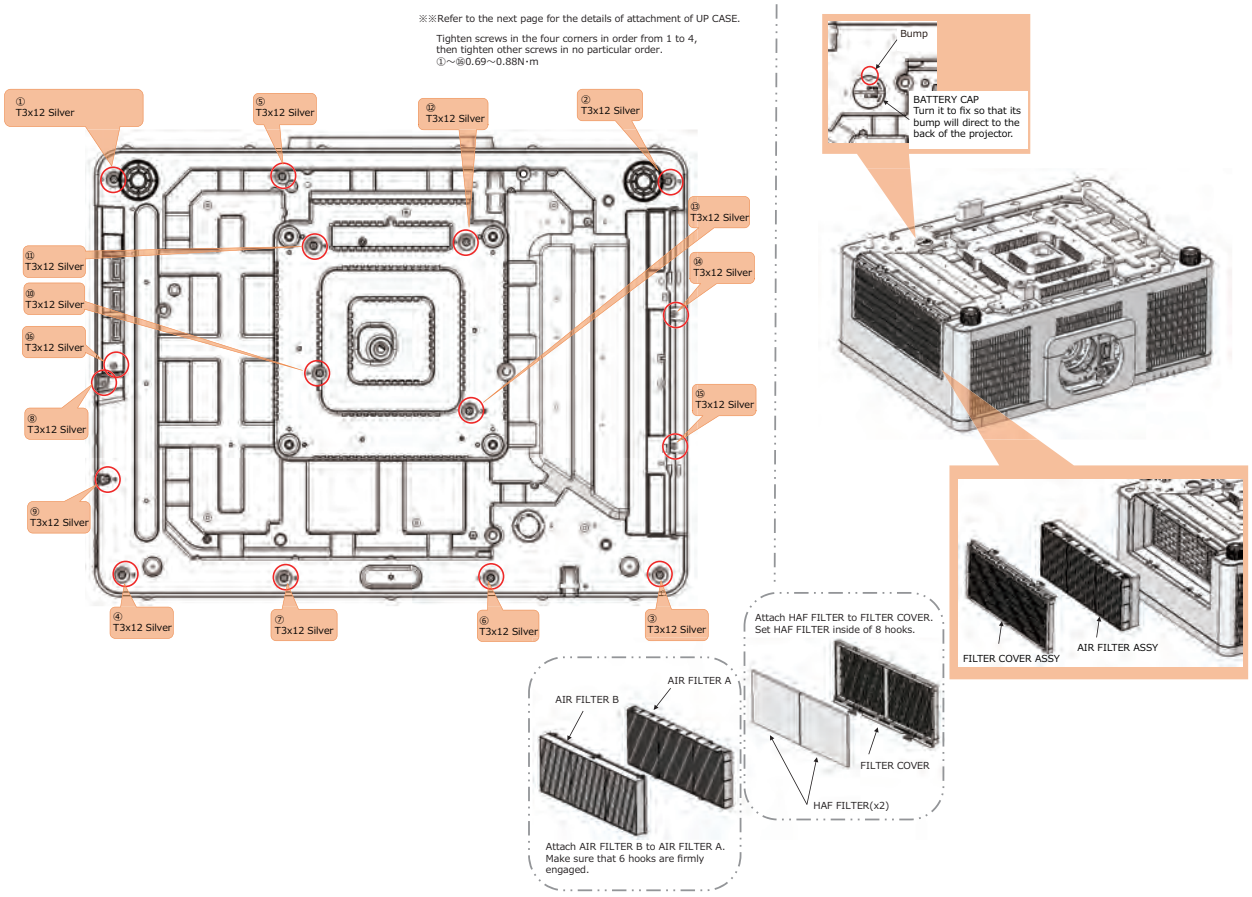
9-5 Jig

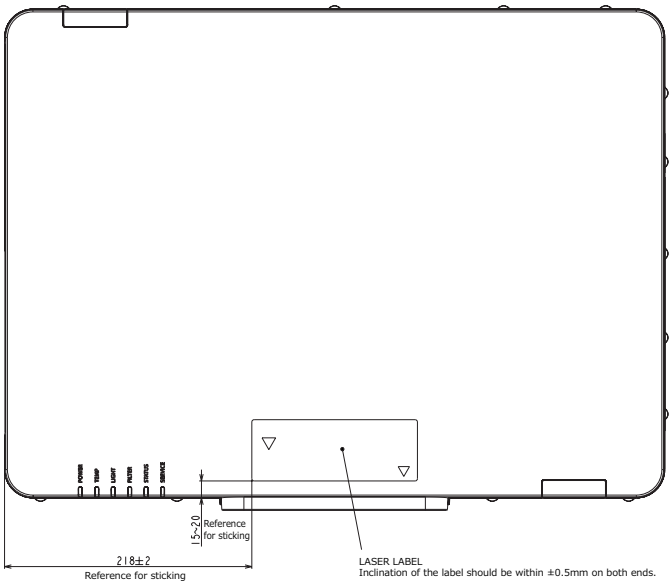
ATTENTION
Be sure to use a holder jig at the time of disassembling and assembling.

Jig Parts No.:NX38141

9-6 Screws

No.	Screw Name	Photo
1	T3x8 Black	
2	T3x12 Silver	
3	M3x10 Silver	
4	M3x8-W Silver	
5	M3x8 Silver	
6	M3x12-W Silver	
7	M4x8-T Silver	
8	D-sub Silver	
9	T3x10-F Black	
10	M3x29-W Silver	
11	M3x6-W Silver	
12	T2.6x8 Black	
13	T3x16 Silver	
14	M3x10-W Silver	


※※Refer to the next page for the details of attachment of UP CASE.
Tighten screws in the four corners in order from 1 to 4, then tighten other screws in no particular order.
①～④0.69～0.88N･m
① T3x12 Silver
⑤ T3x12 Silver
⑫ T3x12 Silver
② T3x12 Silver
⑬ T3x12 Silver
⑭ T3x12 Silver
⑮ T3x12 Silver
⑪ T3x12 Silver
⑩ T3x12 Silver
⑲ T3x12 Silver
⑧ T3x12 Silver
⑨ T3x12 Silver
④ T3x12 Silver
⑦ T3x12 Silver
⑥ T3x12 Silver
③ T3x12 Silver
Bump
BATTERY CAP
Turn it to fix so that its bump will direct to the back of the projector.
FILTER COVER ASSY
AIR FILTER ASSY
Attach HAF FILTER to FILTER COVER. Set HAF FILTER inside of 8 hooks.
FILTER COVER
HAF FILTER(x2)
AIR FILTER A
AIR FILTER B
Attach AIR FILTER B to AIR FILTER A. Make sure that 6 hooks are firmly engaged.


15~20
Reference for sticking
218±2
Reference for sticking
LASER LABEL
Inclination of the label should be within ±0.5mm on both ends.

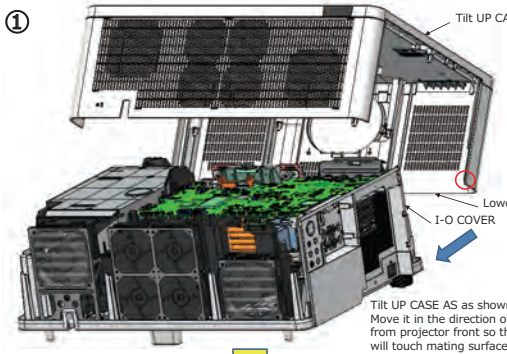
Use a specified jig.

Use a specified jig to assemble the UPPER CASE.
It prevents the projector from being bent or being damaged to its appearance when assembling it.

Details of assembling UP CASE AS

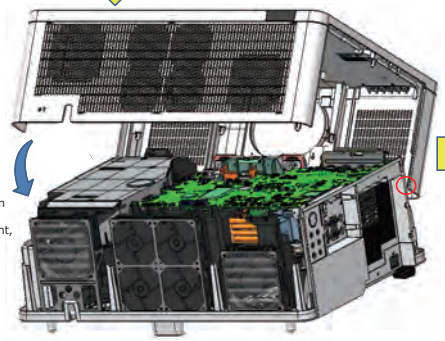
Attach the case in order from 1 to 4.

①



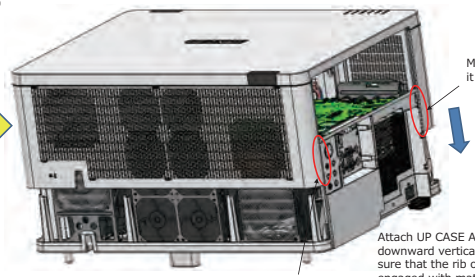
Tilt UP CASE AS as shown in the figure.
Move it in the direction of an arrow mark from projector front so that an red circle will touch mating surface of I-O COVER.
Move it until the lower end touches the projector.

②



Turn UP CASE AS in the direction of an arrow mark with making the lower edge a supporting point, then cover the projector by UP CASE AS.

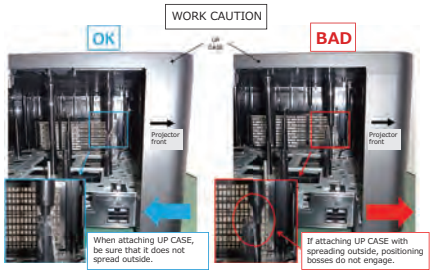
③



Attach UP CASE AS by moving it downward vertically after making sure that the rib of UP CASE AS is engaged with mating surface of front and back of I-O COVER.

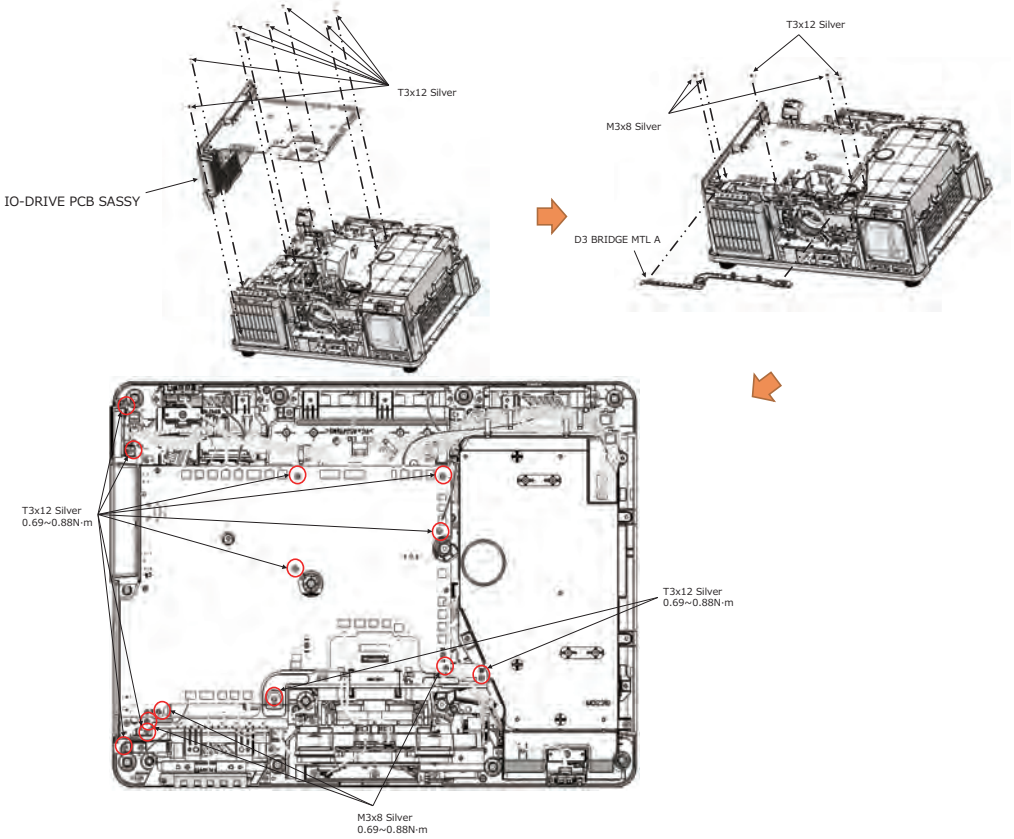
④

WORK CAUTION



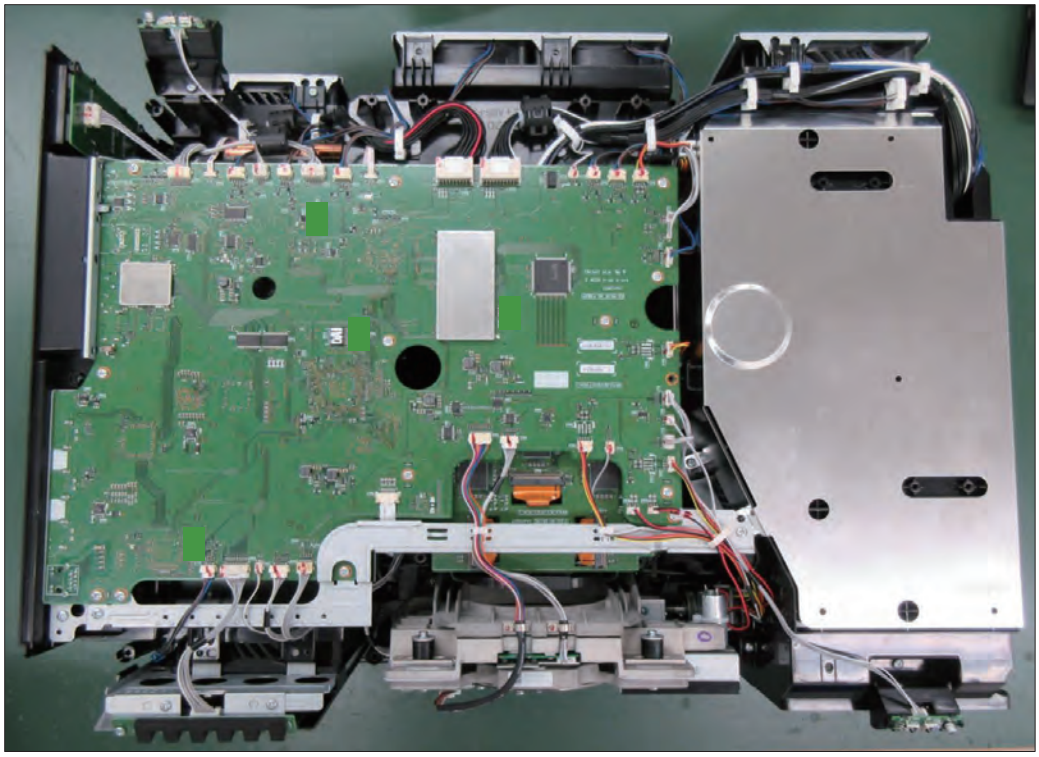
Use a specified jig.

Use a specified jig to assemble the BOTTOM CASE.
It prevents the projector from being bent or being damaged to its appearance when assembling it.



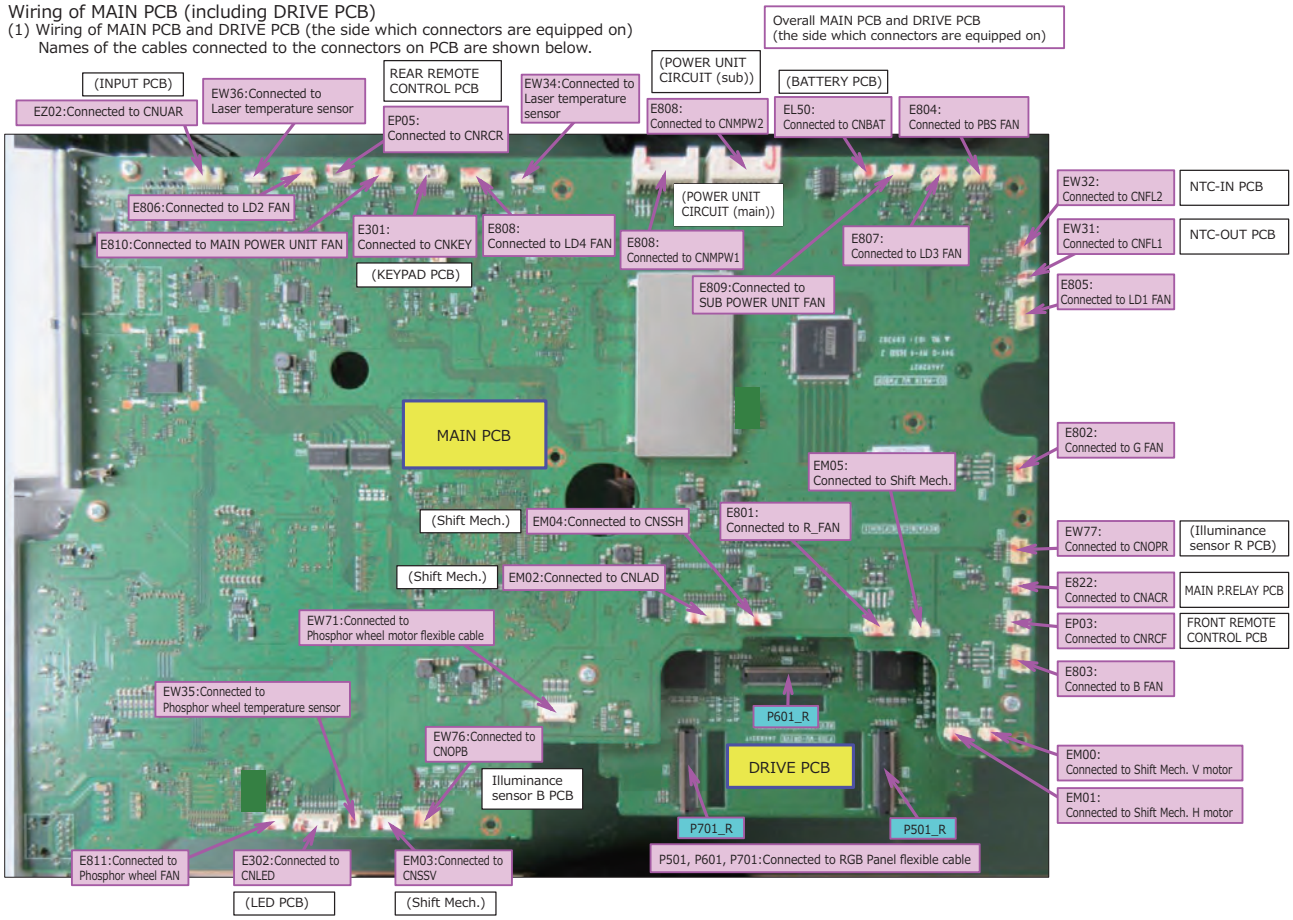
Completion of overall wiring of the projector

IO-DRIVE PCB SASSY

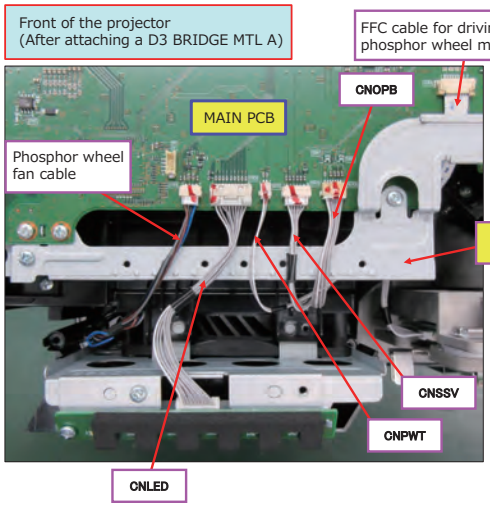


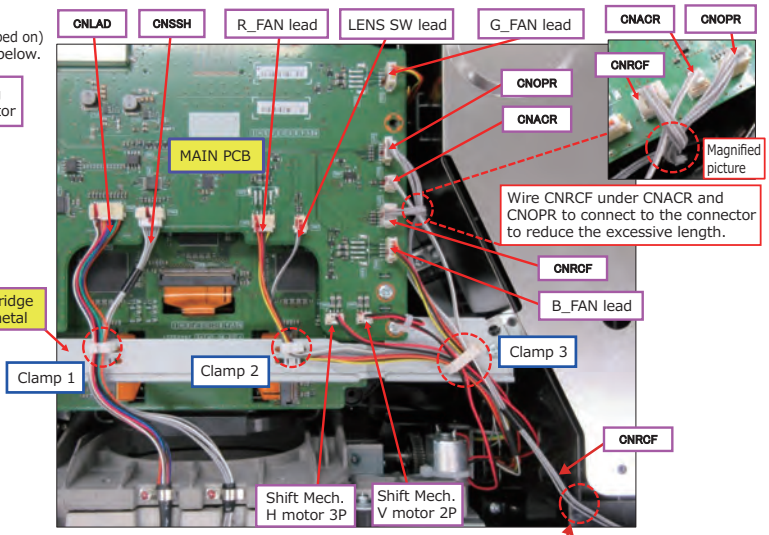
Wiring of MAIN PCB (including DRIVE PCB)

(1) Wiring of MAIN PCB and DRIVE PCB (the side which connectors are equipped on)
Names of the cables connected to the connectors on PCB are shown below.



Wiring of MAIN PCB (including DRIVE PCB)
(2) Wiring of MAIN PCB and DRIVE PCB (the side which connectors are equipped on) Wiring after attaching bridge metal (D3 BRIDGE MTL A) is shown below.





NOTE

Wire cables other than FFC cable for driving phosphor wheel motor above (not under) a D3 BRIDGE MTL A after attaching it.

Clamp 1

Pass CNSSH and CNLAD through it.

Clamp 2

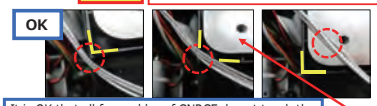
Pass R FAN lead and Lens SW lead through it.

Clamp 3

Close the clamp after passing CNRCF, CNACR, B FAN lead, R FAN lead, Shift Mech. H motor cable (3 pins), Shift Mech. V motor cable (2 pins), Lens SW lead through it.

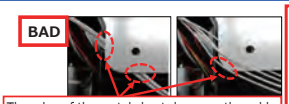
NOTE

Wire CNRCF as shown in the picture below.



It is OK that all four cables of CNRCF do not touch the metal sheet at all or they pass over the metal sheet.

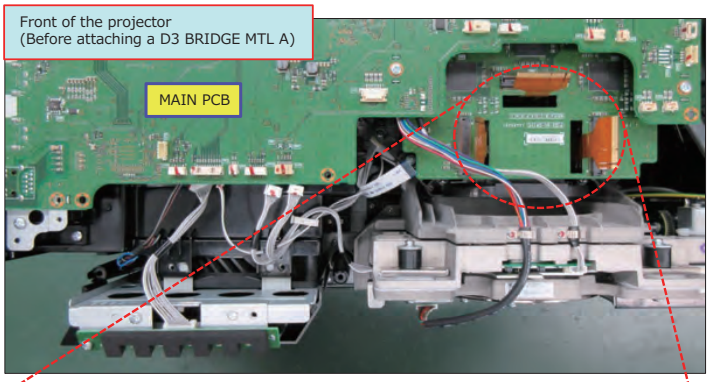
Metal sheet



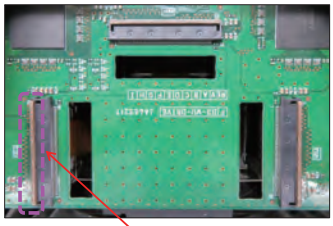
The edge of the metal sheet damages the cable.

It is not allowed that even one cable of CNRCF is pinched under the metal sheet or hooked by the edge of the metal sheet.

Wiring of MAIN PCB (including DRIVE PCB)
(3) Wiring of MAIN PCB and DRIVE PCB (the side which connectors are equipped on)
Connect panel flexible cables before attaching a D3 BRIDGE MTL A.
(Because it is difficult to connect them after attaching a D3 BRIDGE MTL A.)

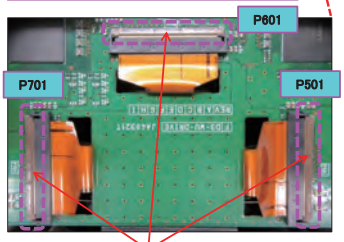


Before panel flexible cable connected



Open the stopper (marked with a dotted line) upwards before inserting panel flexible cable.

After panel flexible cable connected

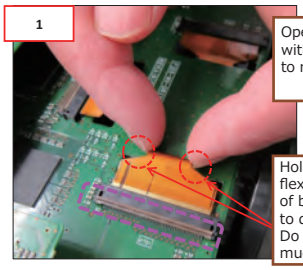


Tilt the stopper (marked with a dotted line) to fix after inserting panel flexible cable.

[NOTE]
Handle panel flexible cable with care because it is fragile.
Do not bend it in order not to disconnect.

Procedure for removing panel flexible cable

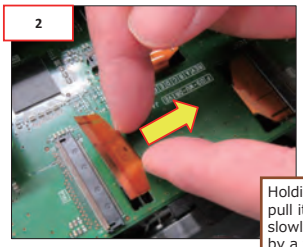
1



Open the stopper (marked with a dotted line) upwards to remove panel flexible cable.

Hold both edges of panel flexible cable with fingers of both hands. Be careful not to damage the cable.
Do not bend it by applying too much force.

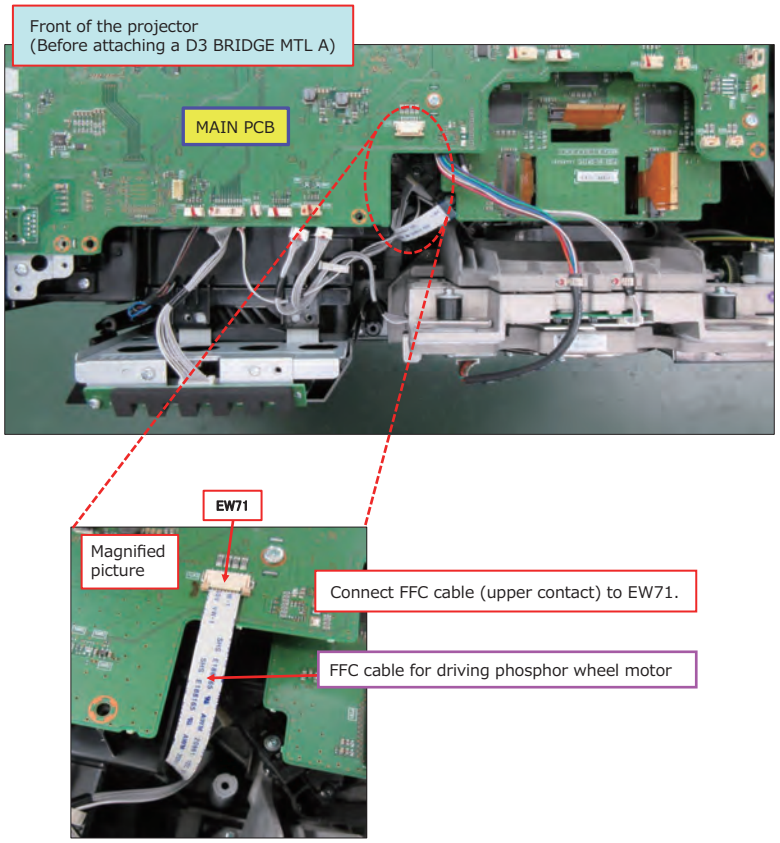
2



Holding the panel flexible cable, pull it out from a connector slowly to the direction indicated by a yellow arrow.
Do the same for other 2 cables.

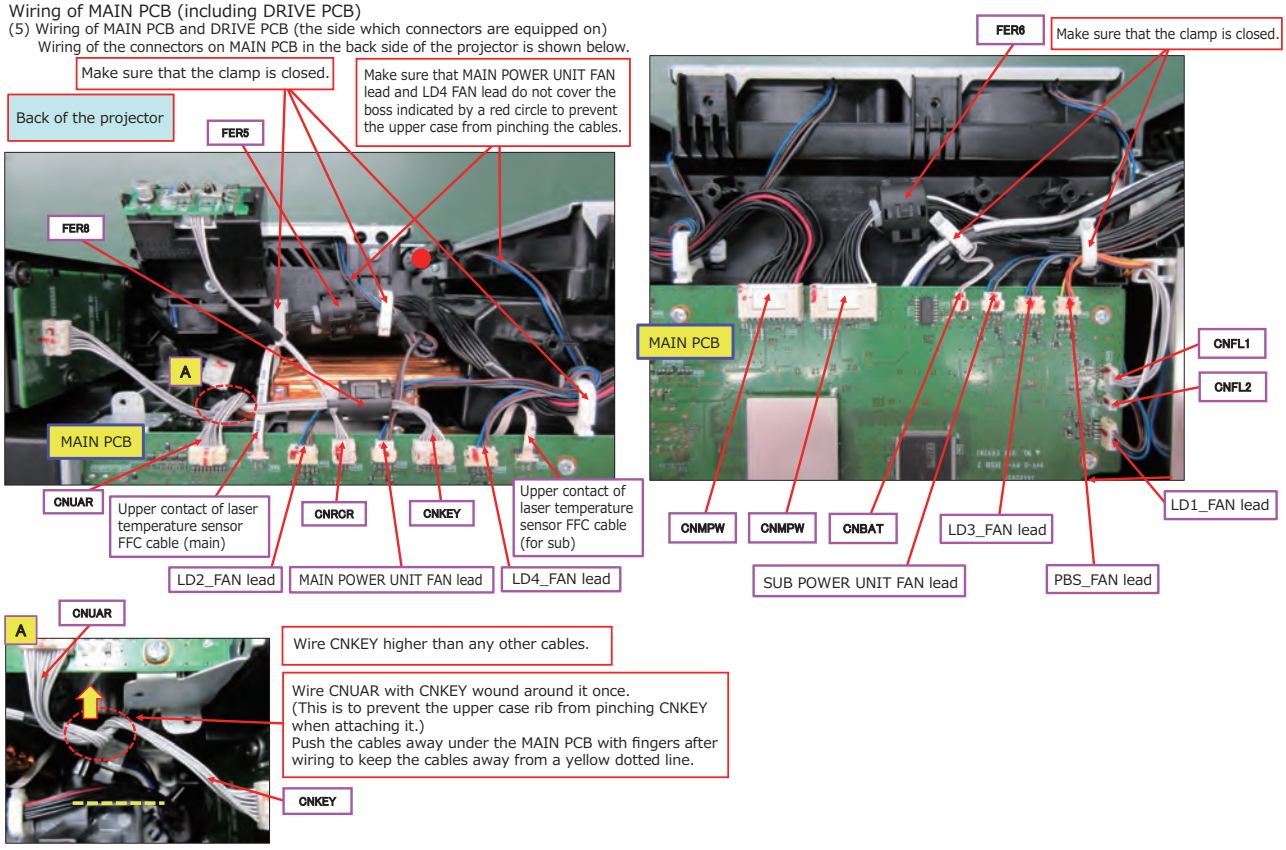
Wiring of MAIN PCB (including DRIVE PCB)

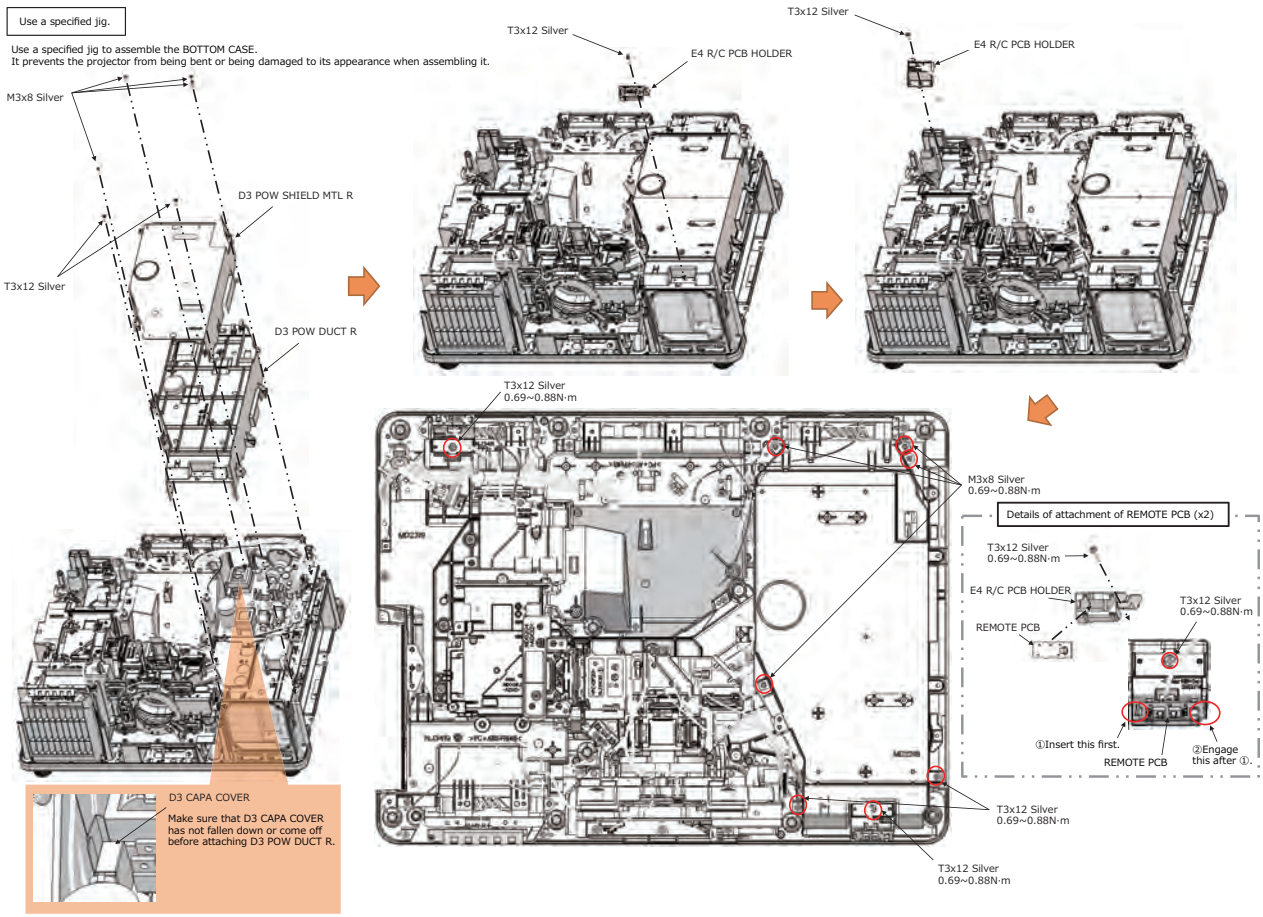
(4) Wiring of MAIN PCB and DRIVE PCB (the side which connectors are equipped on)
Connect FFC cable before attaching a D3 BRIDGE MTL A.
(Because it is difficult to connect it after attaching a D3 BRIDGE MTL A.)



Wiring of MAIN PCB (including DRIVE PCB)

(5) Wiring of MAIN PCB and DRIVE PCB (the side which connectors are equipped on)
Wiring of the connectors on MAIN PCB in the back side of the projector is shown below.

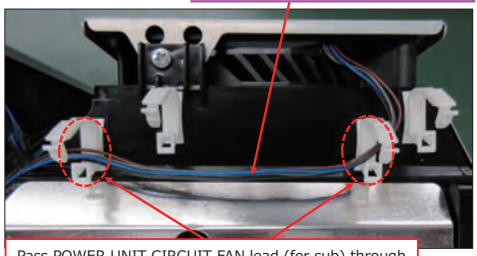


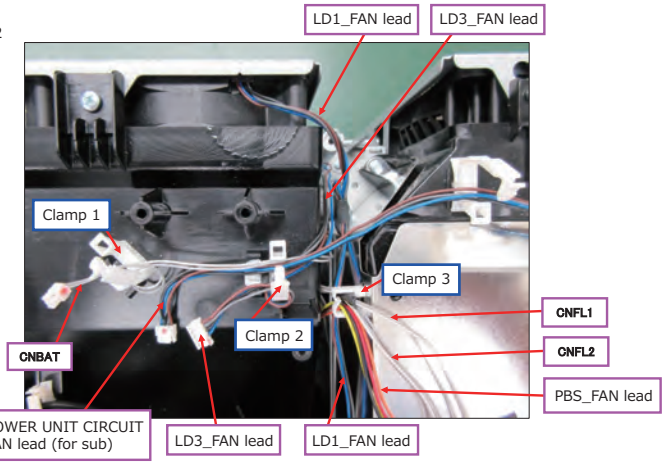

Use a specified jig.
Use a specified jig to assemble the BOTTOM CASE.
It prevents the projector from being bent or being damaged to its appearance when assembling it.
M3x8 Silver
D3 POW SHIELD MTL R
T3x12 Silver
D3 POW DUCT R
D3 CAPA COVER
Make sure that D3 CAPA COVER has not fallen down or come off before attaching D3 POW DUCT R.
T3x12 Silver
E4 R/C PCB HOLDER
T3x12 Silver
E4 R/C PCB HOLDER
T3x12 Silver
0.69~0.88N·m
M3x8 Silver
0.69~0.88N·m
Details of attachment of REMOTE PCB (x2)
T3x12 Silver
0.69~0.88N·m
E4 R/C PCB HOLDER
REMOTE PCB
T3x12 Silver
0.69~0.88N·m
①Insert this first.
REMOTE PCB
②Engage this after ①.
T3x12 Silver
0.69~0.88N·m
T3x12 Silver
0.69~0.88N·m

Wiring around POWER UNIT CIRCUIT (sub) (1)

※The following is the wiring before attaching CNMPW2 and CNLPW2 for an easy explanation.

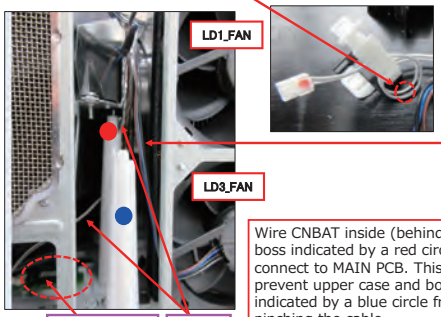
After attaching D3 POW DUCT R/D3 POW SHIELD MTL R





CNBAT

Wire it from BATTERY PCB attached to the bottom of BOTTOM CASE. Pass it through clamp 2, then through clamp 1. Wind it around the clamp 1 once.



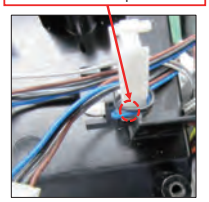
Wire CNBAT inside (behind) the boss indicated by a red circle to connect to MAIN PCB. This is to prevent upper case and boss indicated by a blue circle from pinching the cable.

POWER UNIT CIRCUIT FAN lead (for sub)

Pass it through clamp 2 after finishing the wiring in the upper left picture.

LD3_FAN lead

Wire the lead almost vertically without excessive length from LD3 FAN. Pass the lead through clamp 2 with wound around the clamp once.



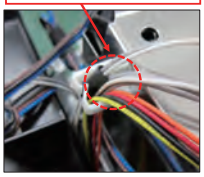
LD1_FAN lead

Pass the lead that taping has been done under clamp 3.

CNFL1 **CNFL2**

PBS_FAN lead

Pass CNFL1/CNFL2/lead connected to external air sensor PCB/internal air sensor PCB/PBS FAN through clamp 3.

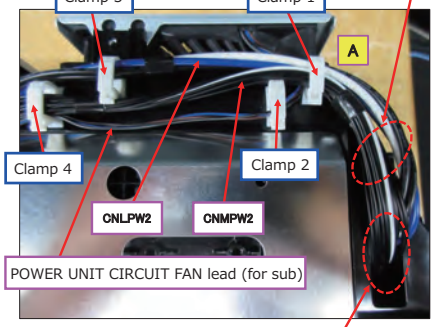


Wiring around POWER UNIT CIRCUIT (sub) (2)

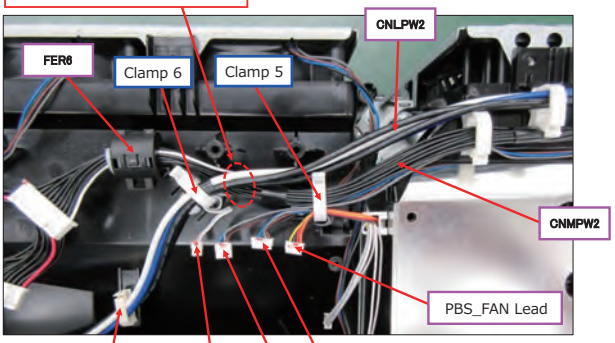
The following is the wiring after attaching CNMPW2 and CNLPW2.

After attaching D3 POW DUCT R / D3 POW SHIELD MTL R

Wire CNMPW2 and CNLPW2 in parallel so that they will not overlap. Wire them to make a little slack, not stretching them strongly.



Wire CNMPW2 under CNLPW2.

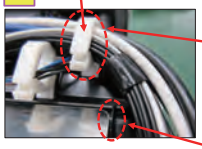


NOTE

Draw out CNMPW2 and CNLPW2 from an opening of D3 POW DUCT R.
Pass them through the opening downward because the cores (FER3/4/6) have been attached to the cables. (The cables with the cores cannot pass through the opening upward.)

Clamp 1

A



Wire CNMPW2 inside and CNLPW2 outside as shown in the picture when closing clamp 1. (If they are overlapped, clamp 1 cannot be closed.)

Make sure that CNMPW2 is not on a rib indicated by a red dotted circle. (If it is on the rib, it interferes the attachment of upper case.)

Clamp 1
Close the clamp after passing CNLPW2 and CNMPW2 through it.

Clamp 2
Close the clamp after passing POWER UNIT CIRCUIT FAN lead (for sub) through it.

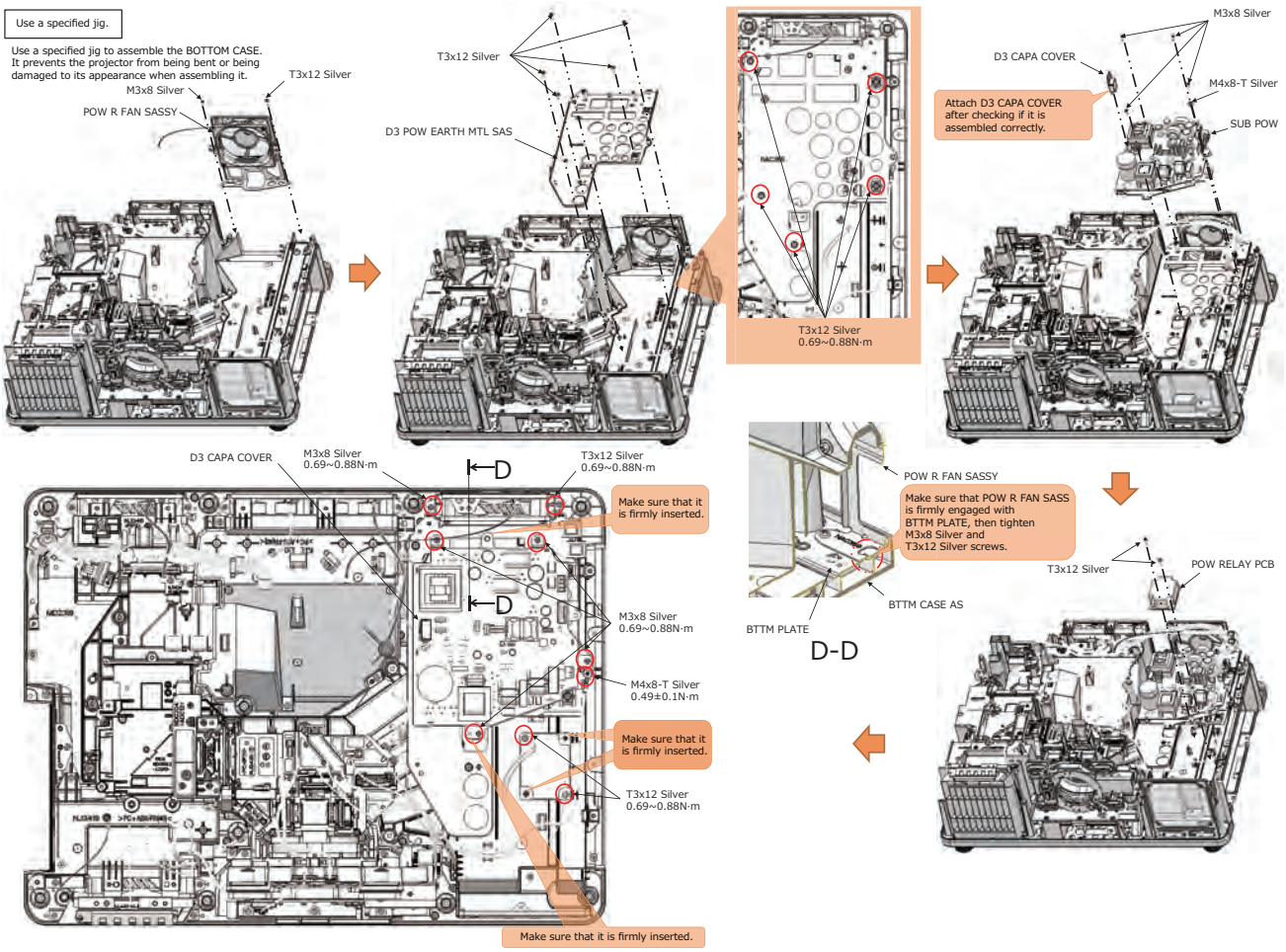
Clamp 3
Close the clamp after passing CNLPW2 through it.

Clamp 4
Close the clamp after passing CNMPW2 and POWER UNIT CIRCUIT FAN lead (for sub) through it.

Clamp 5
Close the clamp after passing CNBAT, POWER UNIT CIRCUIT FAN lead (for sub), LD3 FAN lead, PBS FAN lead, CNMPW2 through it.

Clamp 6
Close the clamp after passing CNLPW2 and CNBAT through it.

Clamp 7
Close the clamp after passing CNLPW2 through it.


Use a specified jig.
Use a specified jig to assemble the BOTTOM CASE. It prevents the projector from being bent or being damaged to its appearance when assembling it.
M3x8 Silver
T3x12 Silver
POW R FAN SASSY
T3x12 Silver
D3 POW EARTH MTL SAS
T3x12 Silver
0.69~0.88N·m
M3x8 Silver
D3 CAPA COVER
M4x8-T Silver
SUB POW
Attach D3 CAPA COVER after checking if it is assembled correctly.
D3 CAPA COVER
M3x8 Silver
0.69~0.88N·m
T3x12 Silver
0.69~0.88N·m
D
D
Make sure that it is firmly inserted.
M3x8 Silver
0.69~0.88N·m
M4x8-T Silver
0.49±0.1N·m
Make sure that it is firmly inserted.
T3x12 Silver
0.69~0.88N·m
Make sure that it is firmly inserted.
POW R FAN SASSY
Make sure that POW R FAN SASS is firmly engaged with BTTM PLATE, then tighten M3x8 Silver and T3x12 Silver screws.
T3x12 Silver
POW RELAY PCB
BTTM CASE AS
BTTM PLATE
D-D

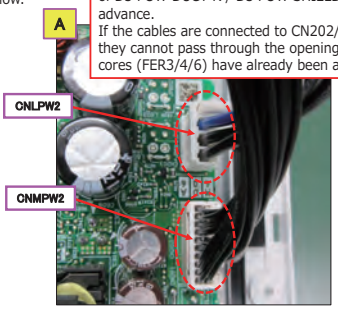
Wiring around POWER UNIT CIRCUIT (sub) (3)

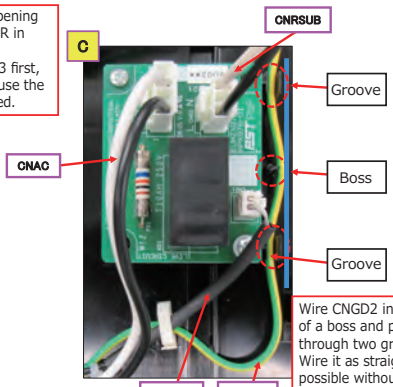
Wiring of POWER UNIT CIRCUIT (sub) and RELAY PCB is shown below.

(a) Wiring of CNAC
(b) Wiring of CNLPW2
(c) Wiring of CNMPW2
(d) Wiring of CNGD2
(e) Wiring of CNRSUB
(f) Wiring of CNACR

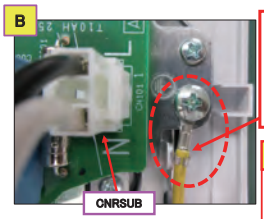
Before attaching D3 POW DUCT R / D3 POW SHIELD MTL R

Draw out CNMPW2 and CNLPW2 from an opening of D3 POW DUCT R / D3 POW SHIELD MTL R in advance.
If the cables are connected to CN202/CN203 first, they cannot pass through the opening because the cores (FER3/4/6) have already been attached.





Wire CNGD2 in the right of a boss and pass it through two grooves. Wire it as straight as possible without excessive length as indicated by a blue line in the picture.

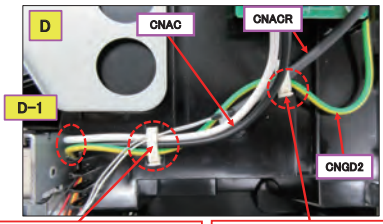


Get the round terminal of earth cable touched the detent of fixing metal of POWER UNIT, and screw it down to the fixing metal.

NOTE

Do not overlap Black and white CNAC cables and CNGD2 cable in the gap between the corner of metal fittings of Shift Mech. and the corner of black-colored duct as shown in the picture. (This is to prevent stress on the cables.) Wire the cables lower than a gap indicated by a red dotted line as shown in the "OK" picture.

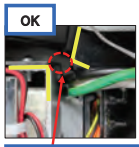
D–1



Close the clamp after passing CNAC, CNGD2, and CNACR through it.

Close the clamp after passing CNGD2 and CNACR through it.

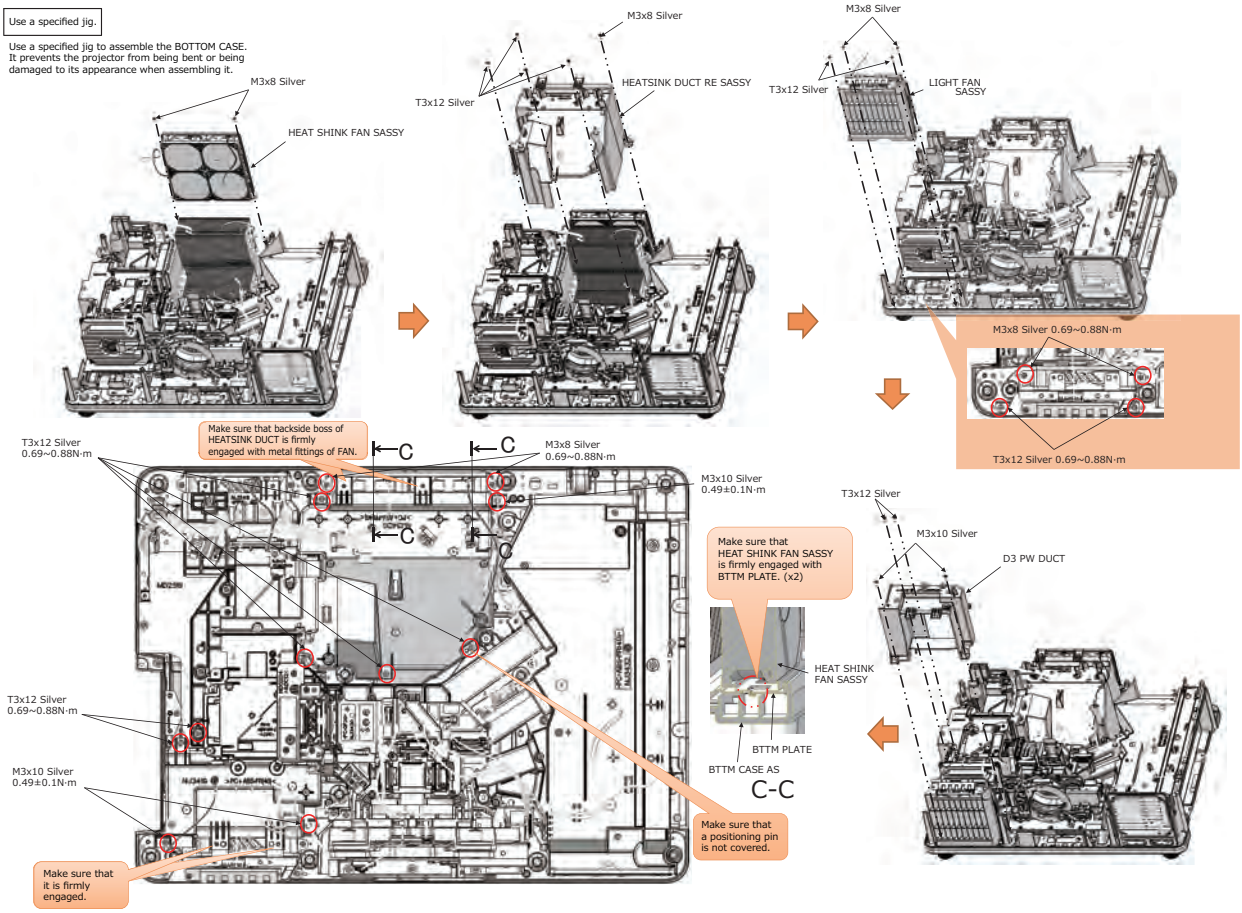
OK



Cables do not overlap in the gap indicated by a dotted red circle. (There is no stress on the cables.)

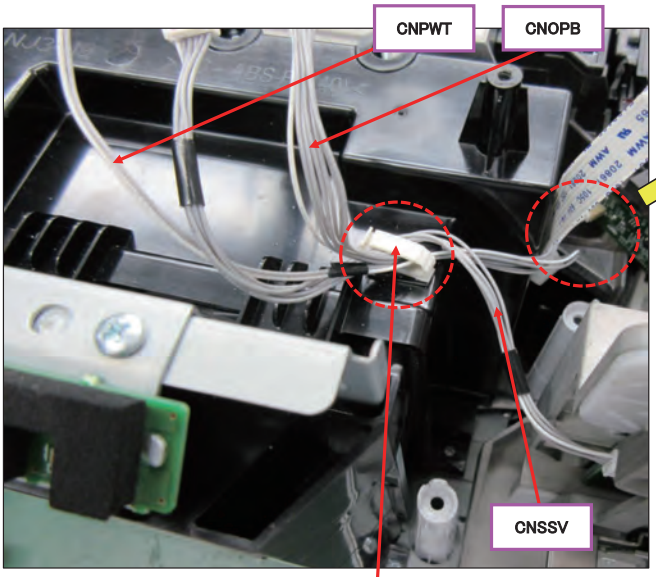
BAD

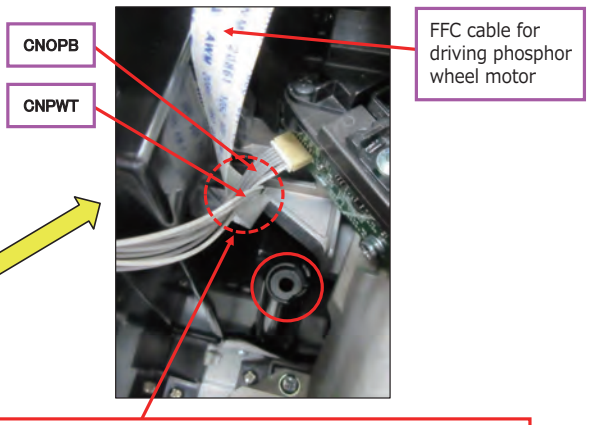
Black and white cables overlap in the gap indicated by a dotted red circle. (There is stress on the cables.)


Use a specified jig.
Use a specified jig to assemble the BOTTOM CASE. It prevents the projector from being bent or being damaged to its appearance when assembling it.
M3x8 Silver
HEAT SHINK FAN SASSY
M3x8 Silver
T3x12 Silver
HEATSINK DUCT RE SASSY
M3x8 Silver
T3x12 Silver
LIGHT FAN SASSY
M3x8 Silver 0.69~0.88N·m
T3x12 Silver 0.69~0.88N·m
T3x12 Silver 0.69~0.88N·m
Make sure that backside boss of HEATSINK DUCT is firmly engaged with metal fittings of FAN.
C
C
C
C
M3x8 Silver 0.69~0.88N·m
M3x10 Silver 0.49±0.1N·m
T3x12 Silver 0.69~0.88N·m
M3x10 Silver 0.49±0.1N·m
Make sure that it is firmly engaged.
Make sure that HEAT SHINK FAN SASSY is firmly engaged with BTTM PLATE. (x2)
HEAT SHINK FAN SASSY
BTTM PLATE
BTTM CASE AS
C-C
Make sure that a positioning pin is not covered.
T3x12 Silver
M3x10 Silver
D3 PW DUCT

PHOSPHOR WHEEL

Wiring after the attachment of duct D3 PW DUCT to phosphor wheel part is shown below.

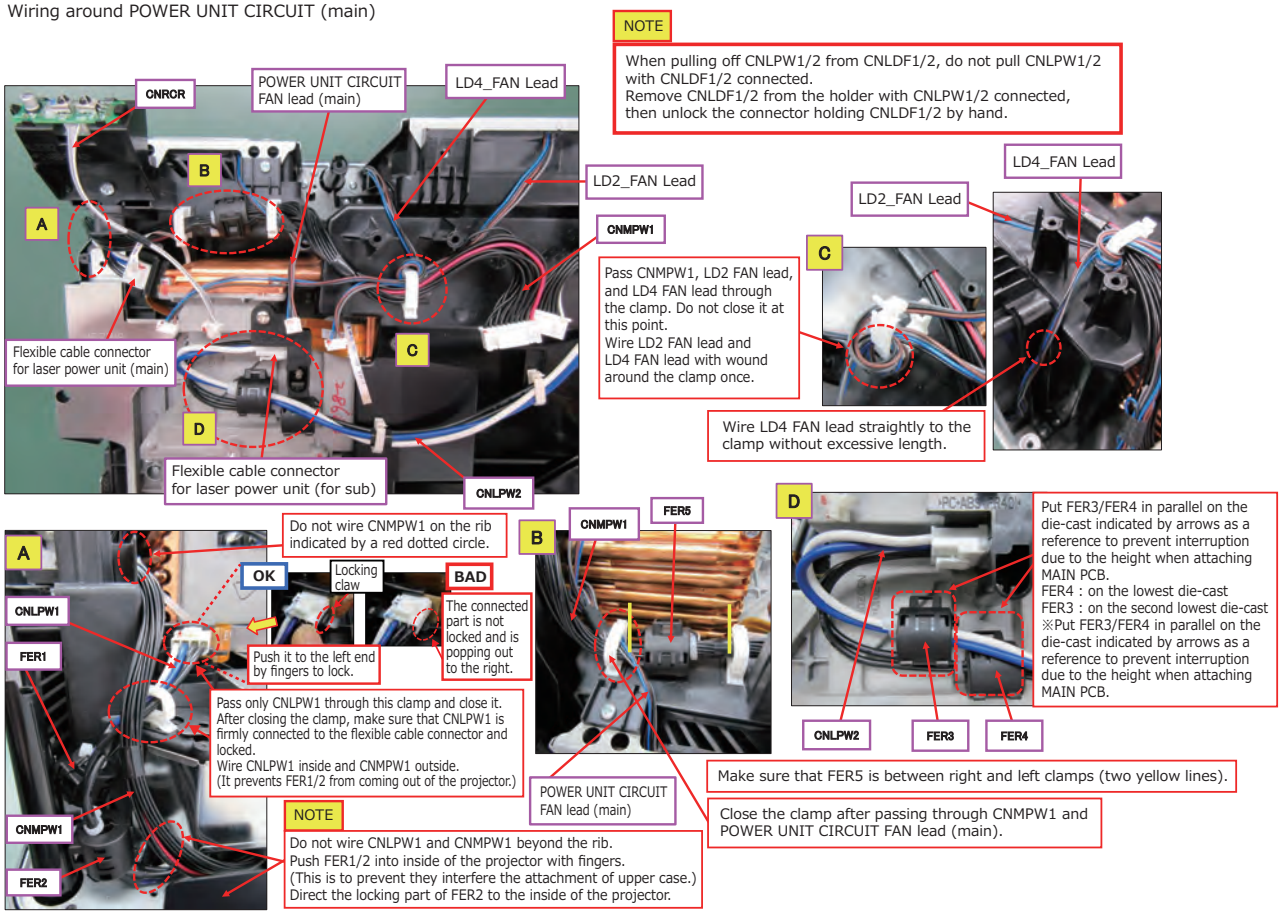


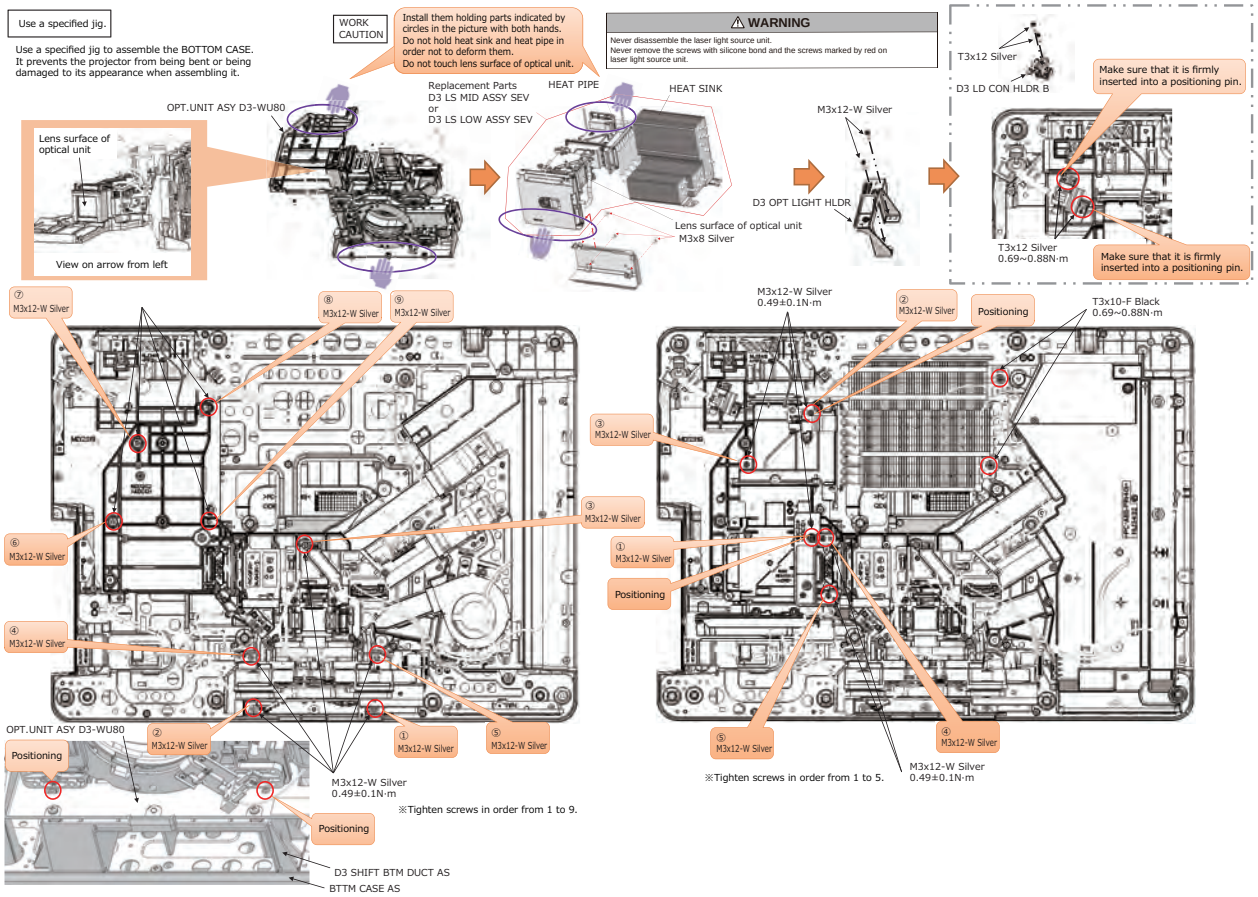


[NOTE]
Wire FFC cable in the left of CNOPB and CNPWT as indicated by a dotted red circle. (This is to prevent it from interrupting a boss indicated by a red circle.)
Connect CNOPB and CNPWT to MAIN PCB without excessive length so that they will keep FFC cable to the left.

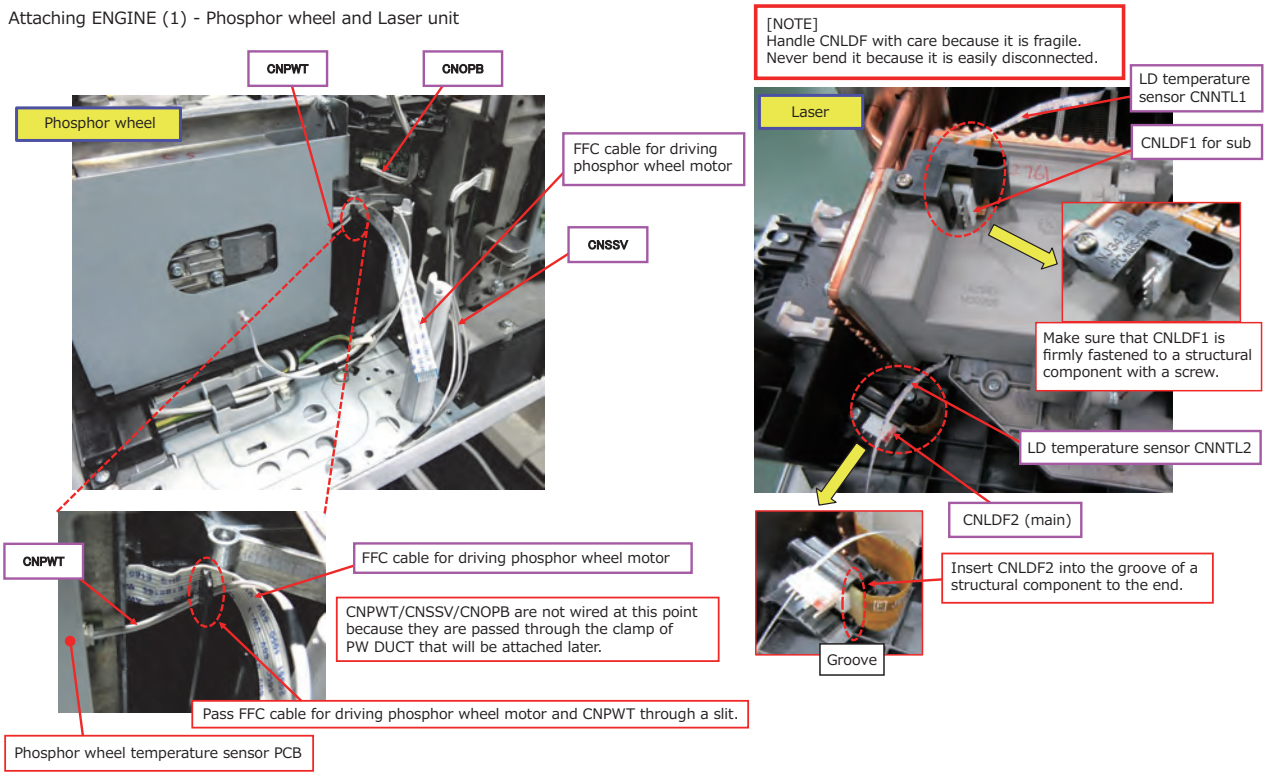
Close the clamp(WIRE CLAMP LWSM0511) after passing CNPWT/CNSSV/CNOPB through it.

Wiring around POWER UNIT CIRCUIT (main)



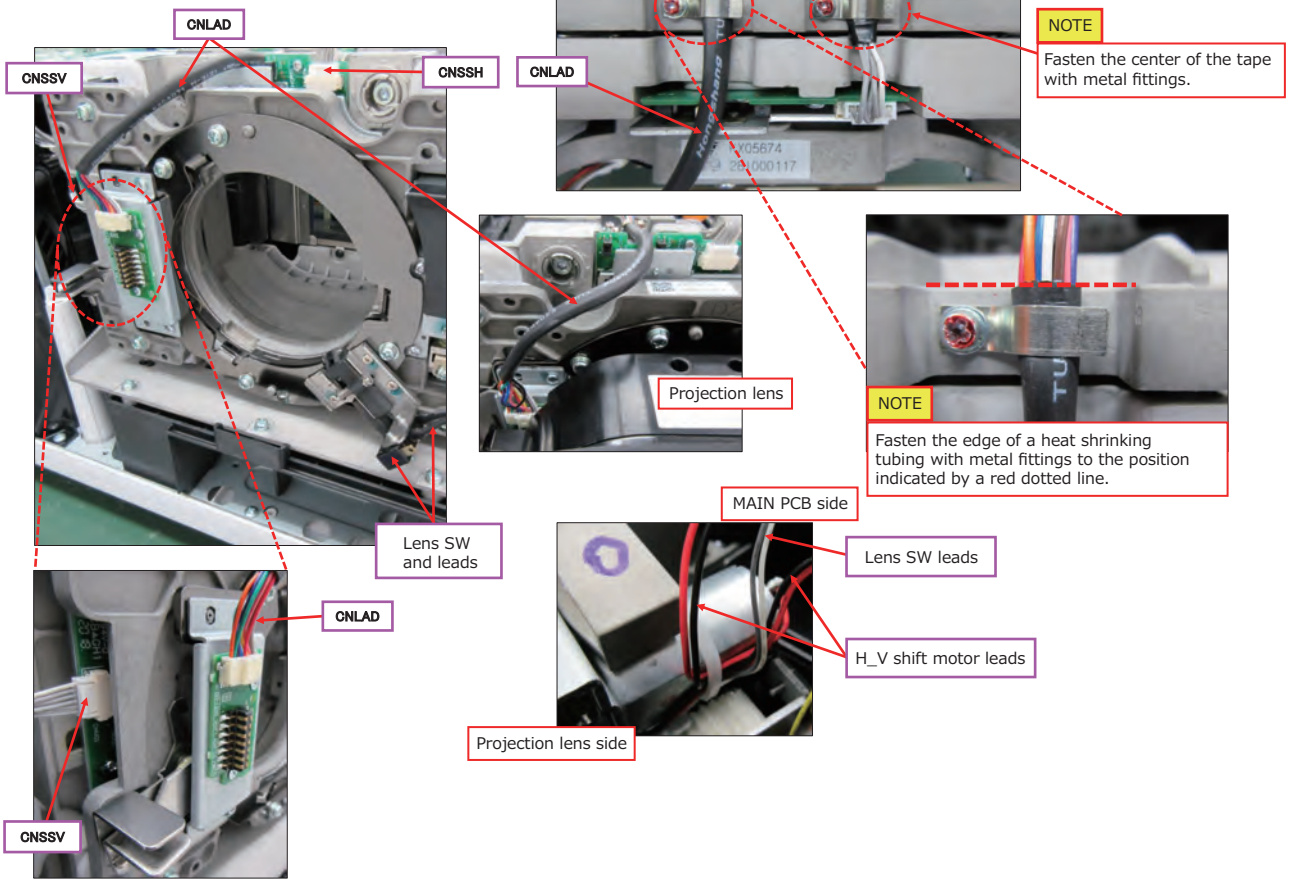

Use a specified jig.
Use a specified jig to assemble the BOTTOM CASE.
It prevents the projector from being bent or being damaged to its appearance when assembling it.
WORK CAUTION
Install them holding parts indicated by circles in the picture with both hands.
Do not hold heat sink and heat pipe in order not to deform them.
Do not touch lens surface of optical unit.
WARNING
Never disassemble the laser light source unit.
Never remove the screws with silicone bond and the screws marked by red on laser light source unit.
OPT.UNIT ASY D3-WU80
Lens surface of optical unit
View on arrow from left
Replacement Parts
D3 LS MID ASSY SEV
or
D3 LS LOW ASSY SEV
HEAT PIPE
HEAT SINK
Lens surface of optical unit
M3x8 Silver
M3x12-W Silver
D3 OPT LIGHT HLDR
T3x12 Silver
D3 LD CON HLDR B
T3x12 Silver
0.69~0.88N·m
Make sure that it is firmly inserted into a positioning pin.
Make sure that it is firmly inserted into a positioning pin.
⑦ M3x12-W Silver
⑧ M3x12-W Silver
⑨ M3x12-W Silver
⑥ M3x12-W Silver
④ M3x12-W Silver
③ M3x12-W Silver
OPT.UNIT ASY D3-WU80
Positioning
② M3x12-W Silver
① M3x12-W Silver
⑤ M3x12-W Silver
M3x12-W Silver
0.49±0.1N·m
※Tighten screws in order from 1 to 9.
Positioning
D3 SHIFT BTM DUCT AS
BTTM CASE AS
M3x12-W Silver
0.49±0.1N·m
② M3x12-W Silver
Positioning
T3x10-F Black
0.69~0.88N·m
③ M3x12-W Silver
① M3x12-W Silver
Positioning
⑤ M3x12-W Silver
④ M3x12-W Silver
※Tighten screws in order from 1 to 5.
M3x12-W Silver
0.49±0.1N·m

Attaching ENGINE (1) - Phosphor wheel and Laser unit



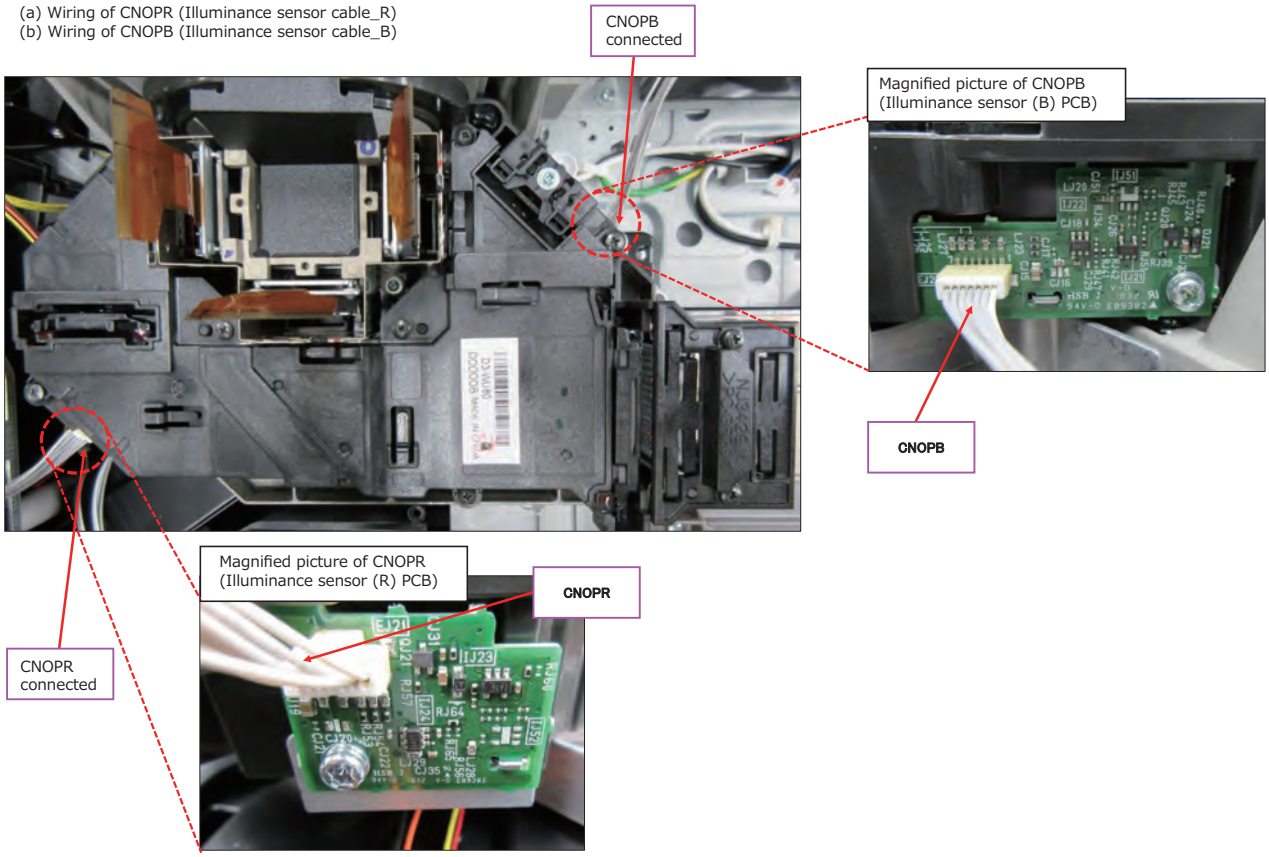
Attaching ENGINE (2) - Shift Mech.

Connect CNLAD, CNSSV, and CNSSH to Shift Mech.



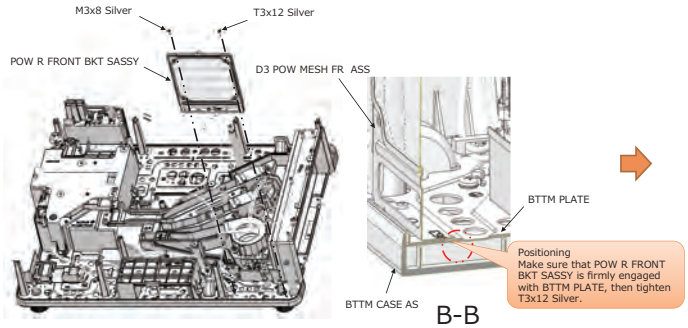
Attaching ENGINE (3) - Dichroic optics unit (Illuminance sensor R/B)

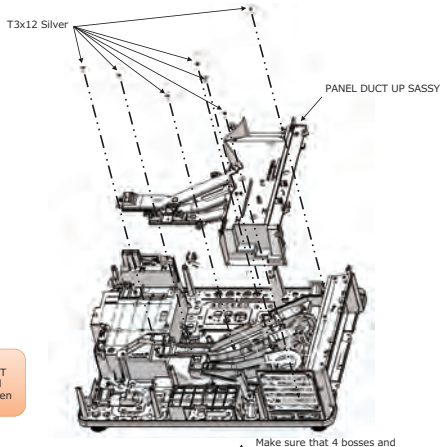
(a) Wiring of CNOPR (Illuminance sensor cable_R)
(b) Wiring of CNOPB (Illuminance sensor cable_B)

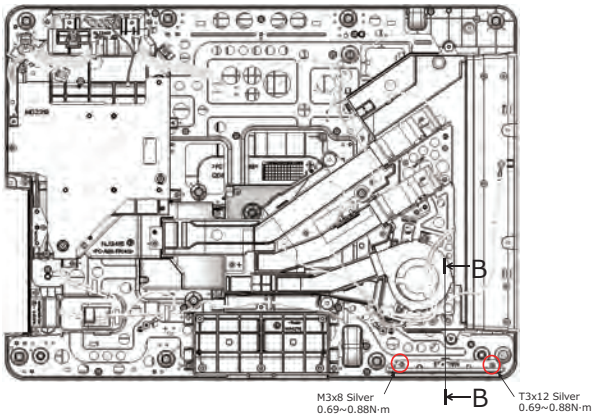


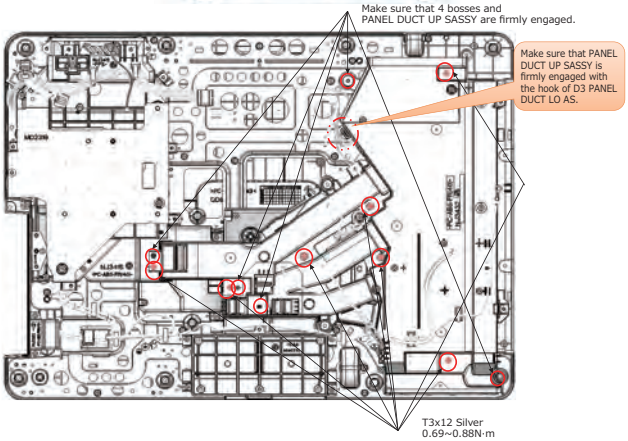
Use a specified jig.

Use a specified jig to assemble the BOTTOM CASE.
It prevents the projector from being bent or being damaged to its appearance when assembling it.



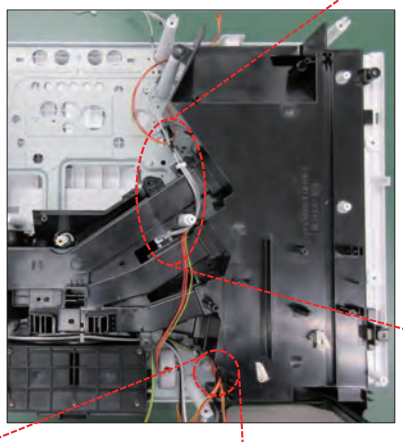


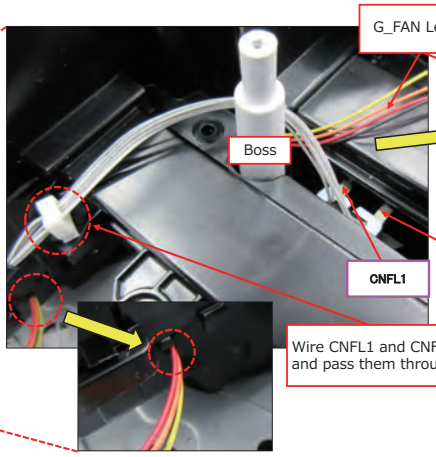


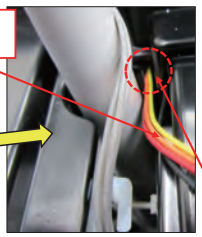


Wiring of PANEL FAN

Wiring after D3 PNL DUCT is attached is shown below.
(a) Wiring of R/G/B/PBS FAN
(b) Wiring of CNFL1 (External air sensor)/
CNFL2 (Internal air sensor)



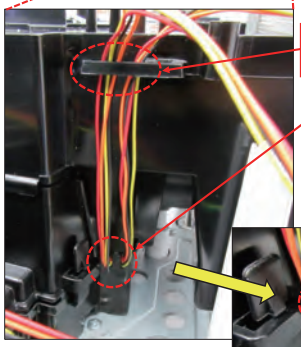




Make sure that G_FAN lead comes out from the slit and it is not pinched by D3 PNL DUCT.

Wire CNFL1 and CNFL2 behind the boss and pass them through this clamp.

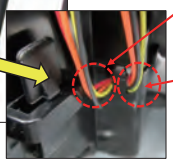
Make sure that PBS_FAN lead comes out from the slit and it is not pinched by PANEL DUCT UP.



Pass R_FAN and B_FAN leads taken out from the slit through this hook.

Put the ends of wired cables and leads outside the projector in order not to interfere the attachment of the engine.

Make sure that R_FAN lead comes out from the two slits and it is not pinched by D3 PNL DUCT.

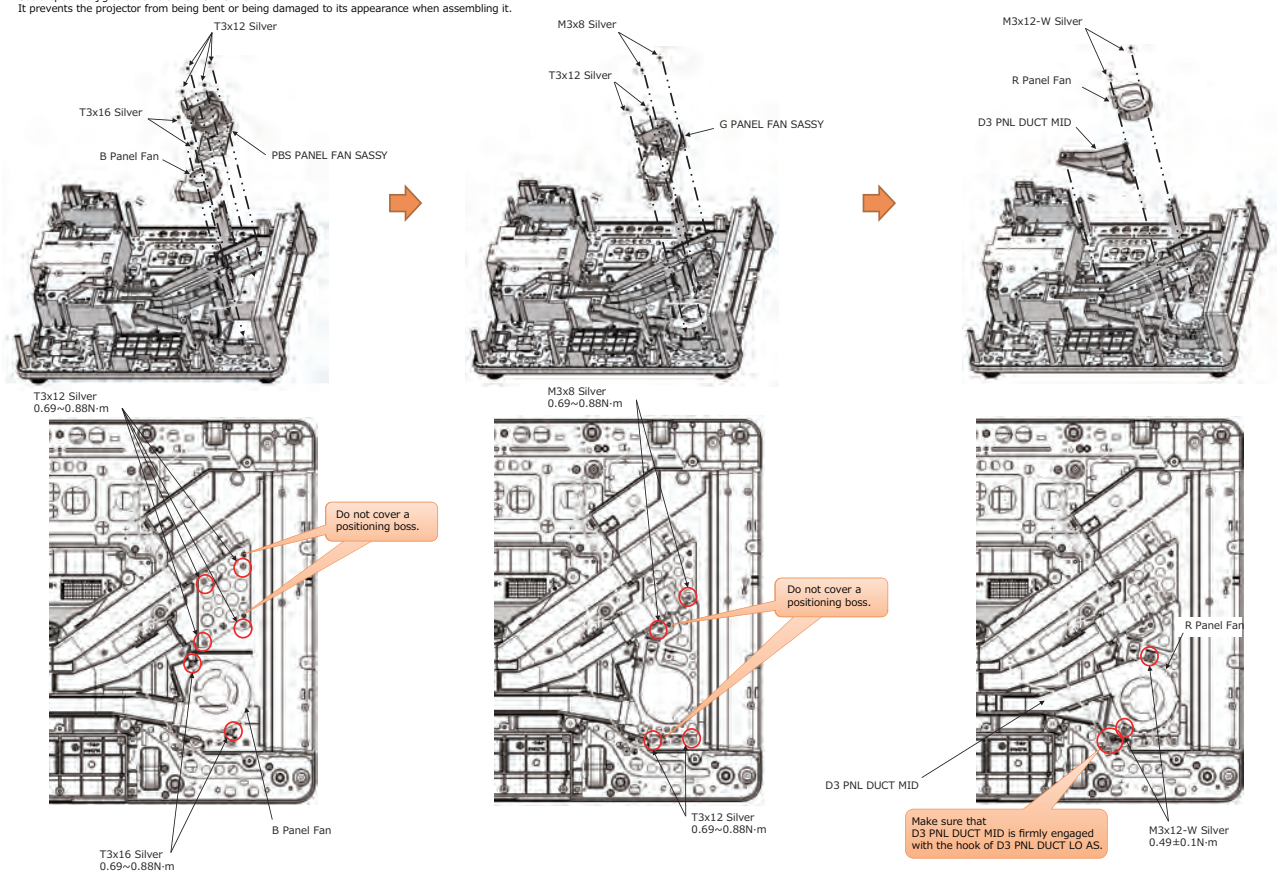


Left slit: R_FAN lead

Right slit: B_FAN lead

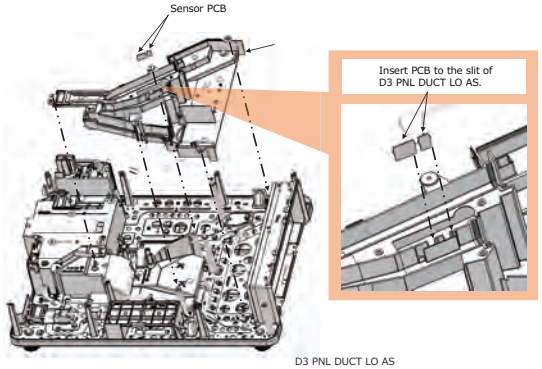
Use a specified jig.

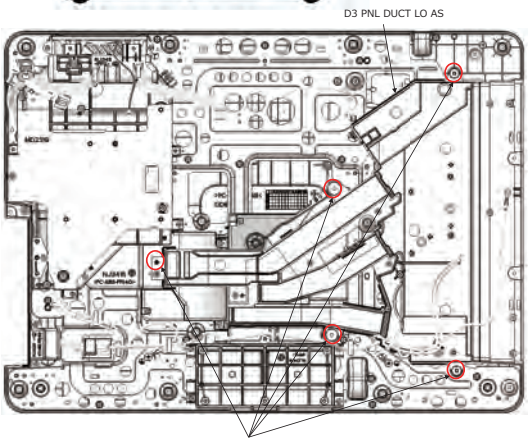
Use a specified jig to assemble the BOTTOM CASE.
It prevents the projector from being bent or being damaged to its appearance when assembling it.



Use a specified jig.

Use a specified jig to assemble the BOTTOM CASE.
It prevents the projector from being bent or being damaged to its appearance when assembling it.





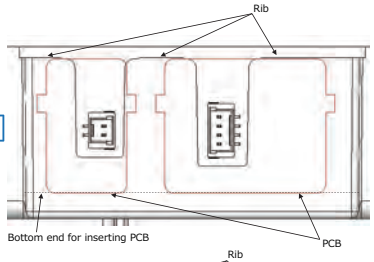
Make sure that 5 bosses and D3 PNL DUCT LO AS are firmly engaged.

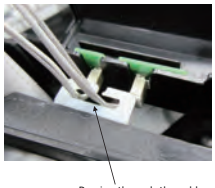
Attachment condition of SENSOR PCB

WORK CAUTION

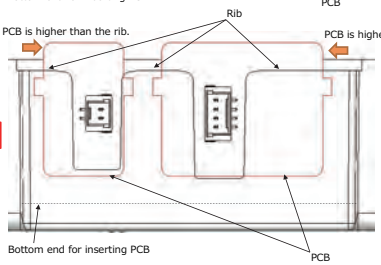
Insert both ends of PCB into slit of D3 PNL DUCT LO AS until PCB touches to the bottom.
Make sure that the sensor PCB is as high as the height of the rib of D3 PNL DUCT LO AS after wiring.
If PCB is higher than the rib or is turning, insert PCB again and check that PCB is as high as the height of the rib.

OK



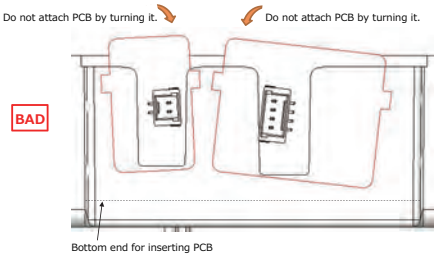


BAD



WORK CAUTION

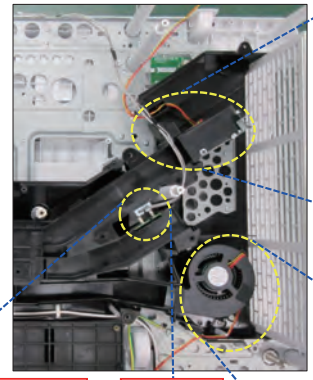
If PCB is higher than the rib, check if foreign objects are inside or D3 PNL DUCT LO AS deforms.
If PCB sticks out from the rib due to tolerance of each component, 0.5mm or less is OK.



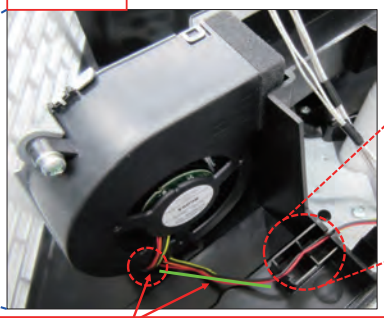
BAD

Wiring of PANEL FAN (1)

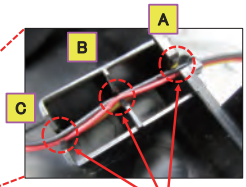
The attachment of PBS FAN and B FAN
(a) Wiring of B/PBS FAN.
(b) Wiring of CNFL1/CNFL2.



PBS_FAN

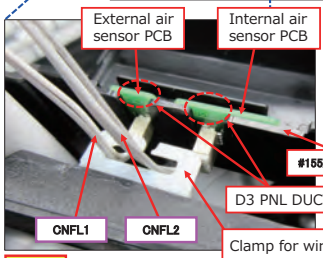


Put leads passing through the slit out of the projector so that it will not interfere the attachment of ENGINE.

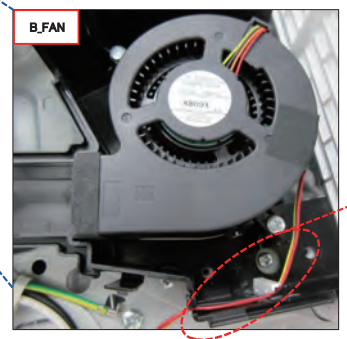


Pass PBS FAN lead through the slit A/B/C. Insert the leads into the bottom of the slit. Although it is desirable that they pass in the slit B/C, it is OK even if they fall of from the slit B/C.

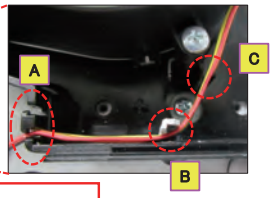
Make sure that four leads are not falling off from the hook of FAN. Do not stretch the leads too strong. Wire them almost straight.



B_FAN



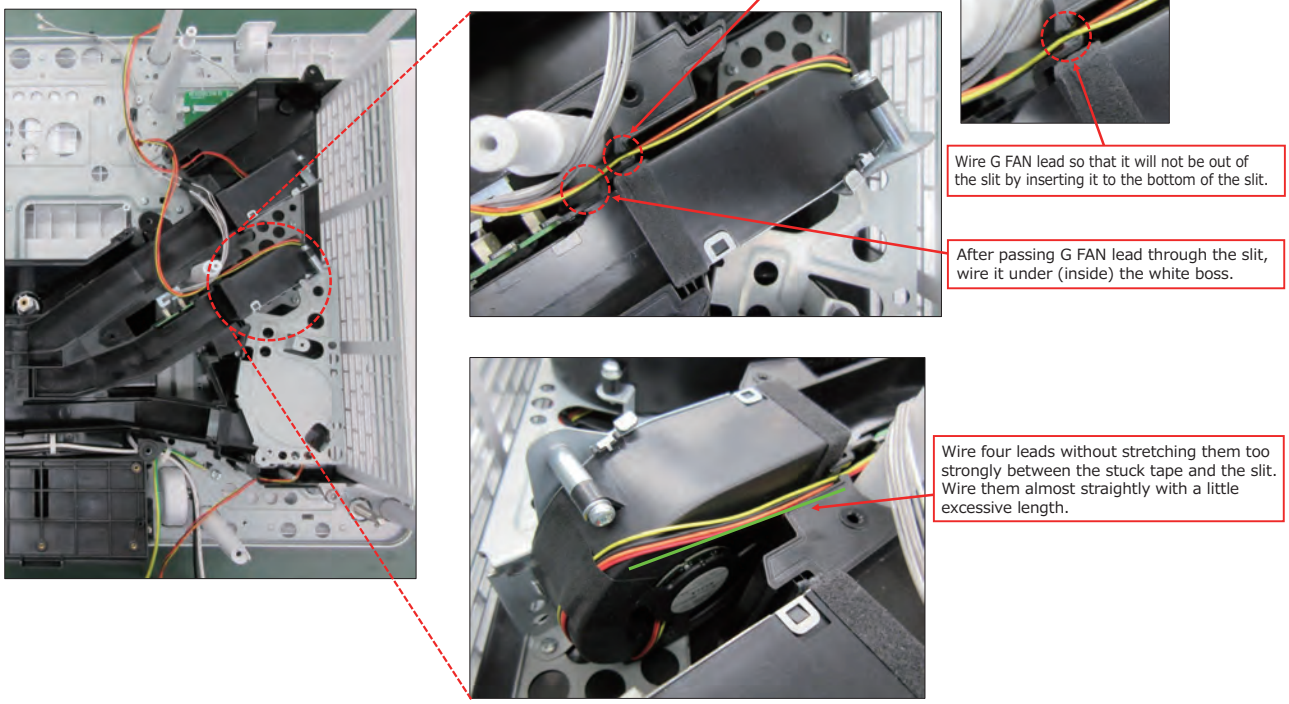
Pass the leads through the slit A/B/C below.
・Pass the leads through the lower slit of A. (The upper one is for R FAN leads.)
・Although it is desirable that the leads pass in the slit C, it is OK even if they fall of from the slit.
・Insert the leads into the bottom of the slit A/B so that they will not come off.



NOTE

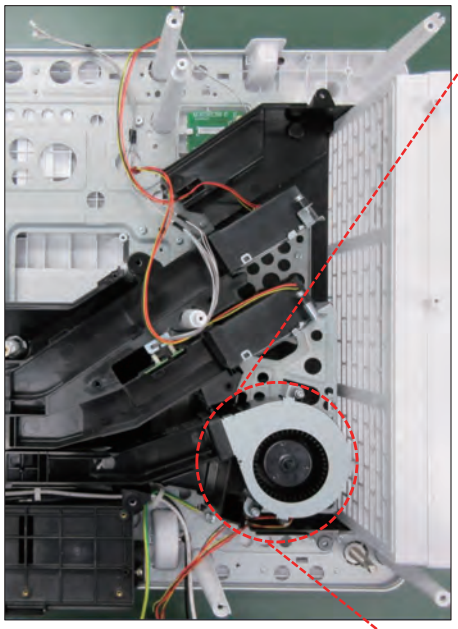
1. Insert Internal air sensor PCB and External air sensor PCB into the slits of D3 PNL DUCT LO AS until PCBs touch to the bottom.
2. After inserting two sensor PCBs into the slits of D3 PNL DUCT LO AS, pass CNFL1 and CNFL2 through the clamps shown in the picture.
3. Make sure that two PCBs are as high as the height of the rib of D3 PNL DUCT LO AS after finishing 1 and 2.
   If one PCB is higher than the rib or inserted obliquely, insert PCB straight again and check that PCB is as high as the height of the rib.
   ※If PCB is higher than the rib, check if foreign objects are inside or D3 PNL DUCT LO AS deforms.
4. Make sure that CNFL1 and CNFL2 are not falling off from the connectors of SENSOR PCBs by visual confirmation.

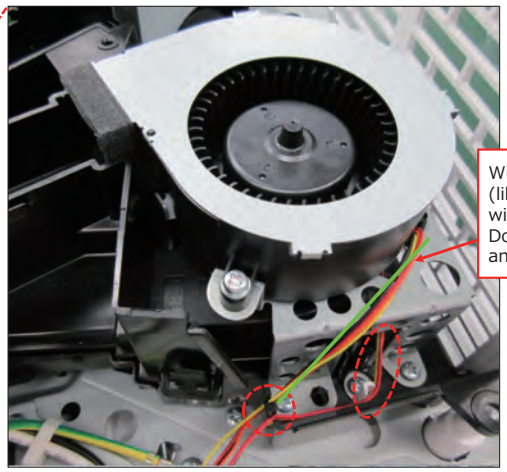
Wiring of PANEL FAN (2)
Attachment of G FAN
(a) Wiring of G FAN.



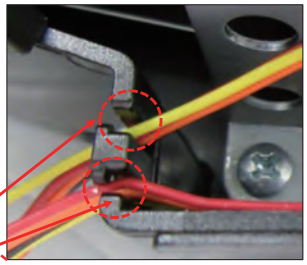
Wiring of PANEL FAN

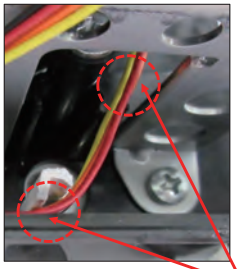
Attachment of R FAN





Wire R FAN lead straightly (like a green line in the picture) with a little excessive length. Do not put tension on the lead and stretch it too strongly.

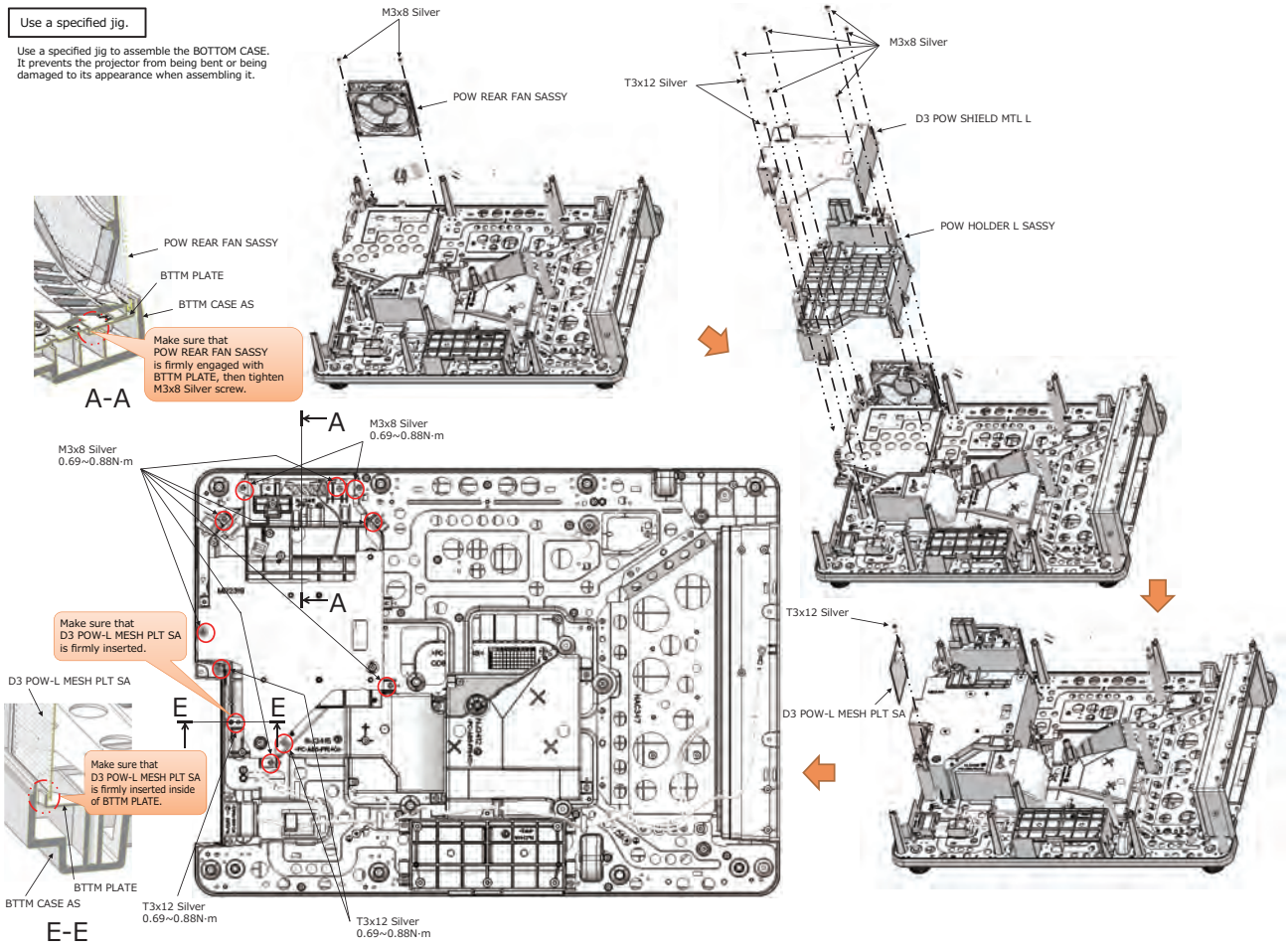


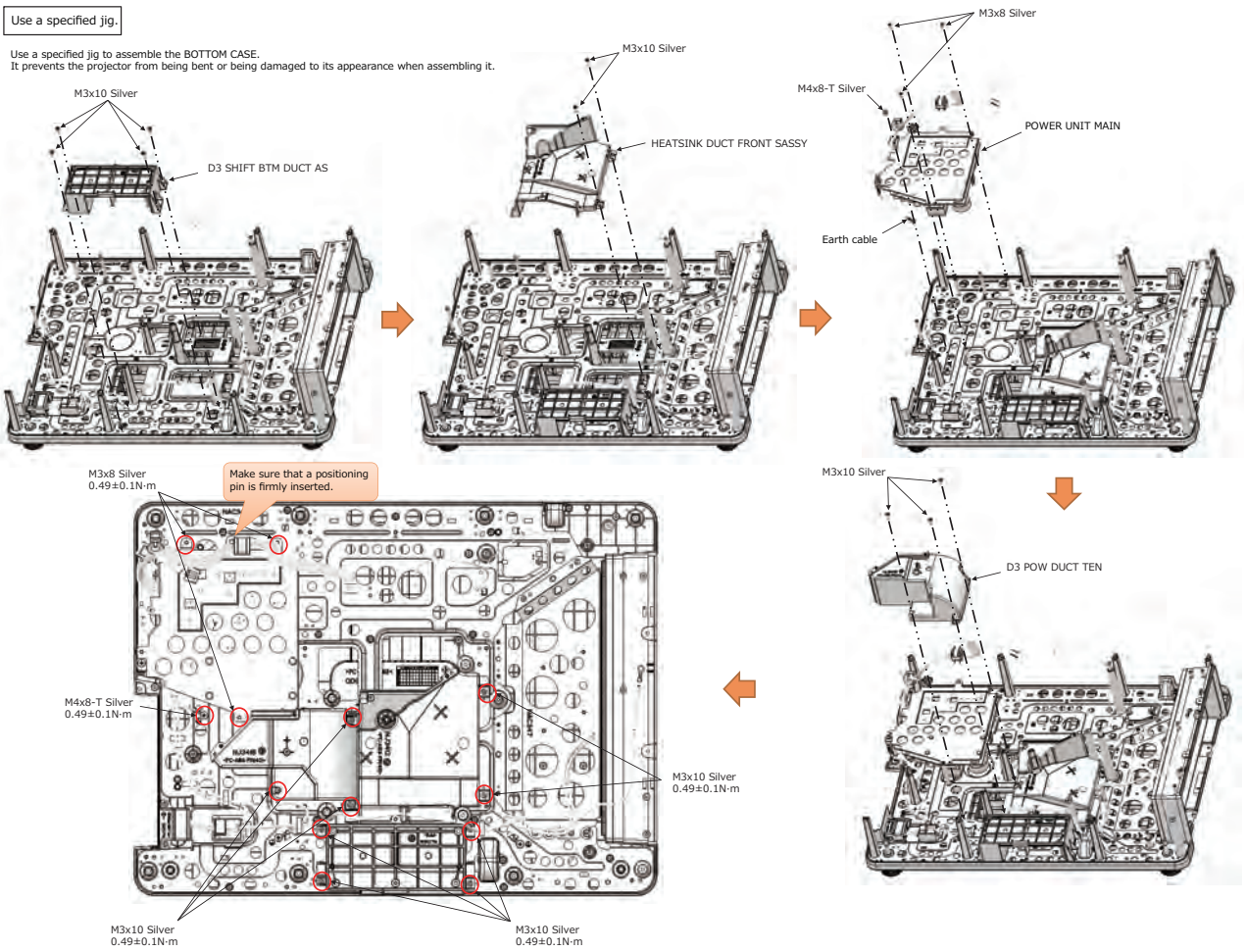


Wire R FAN lead and B FAN lead separately in two slits.
・Upper slit: R FAN
・Lower slit: B FAN

Do not insert two FAN leads into one slit.
Insert lead into a slit so that it will not fall off from the slit.
Make sure that lead is not falling off from the slit by visual confirmation.

Pull out B FAN lead between sheet metal of G PANEL FAN LEAD. Make sure that it passes rib and BTM (D3 PNL DUCT LO AS) case.

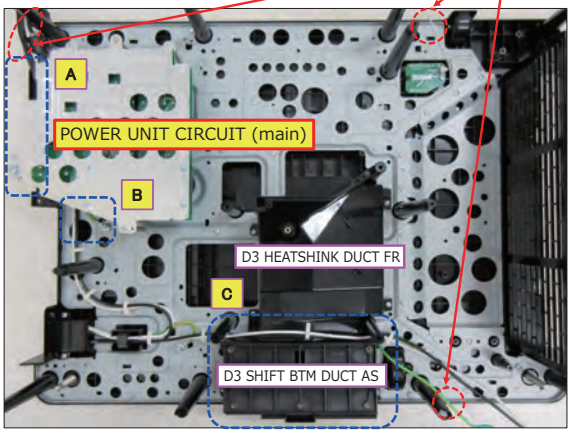

Use a specified jig.
Use a specified jig to assemble the BOTTOM CASE. It prevents the projector from being bent or being damaged to its appearance when assembling it.
M3x8 Silver
POW REAR FAN SASSY
T3x12 Silver
M3x8 Silver
D3 POW SHIELD MTL L
POW HOLDER L SASSY
POW REAR FAN SASSY
BTTM PLATE
BTTM CASE AS
Make sure that POW REAR FAN SASSY is firmly engaged with BTTM PLATE, then tighten M3x8 Silver screw.
A-A
A
M3x8 Silver 0.69~0.88N·m
M3x8 Silver 0.69~0.88N·m
A
T3x12 Silver
D3 POW-L MESH PLT SA
Make sure that D3 POW-L MESH PLT SA is firmly inserted.
D3 POW-L MESH PLT SA
E
E
Make sure that D3 POW-L MESH PLT SA is firmly inserted inside of BTTM PLATE.
BTTM PLATE
BTTM CASE AS
T3x12 Silver 0.69~0.88N·m
T3x12 Silver 0.69~0.88N·m
E-E


Use a specified jig.
Use a specified jig to assemble the BOTTOM CASE.
It prevents the projector from being bent or being damaged to its appearance when assembling it.
M3x10 Silver
D3 SHIFT BTM DUCT AS
M3x10 Silver
HEATSINK DUCT FRONT SASSY
M3x8 Silver
M4x8-T Silver
POWER UNIT MAIN
Earth cable
M3x10 Silver
D3 POW DUCT TEN
M3x8 Silver
0.49±0.1N·m
Make sure that a positioning pin is firmly inserted.
M4x8-T Silver
0.49±0.1N·m
M3x10 Silver
0.49±0.1N·m
M3x10 Silver
0.49±0.1N·m
M3x10 Silver
0.49±0.1N·m

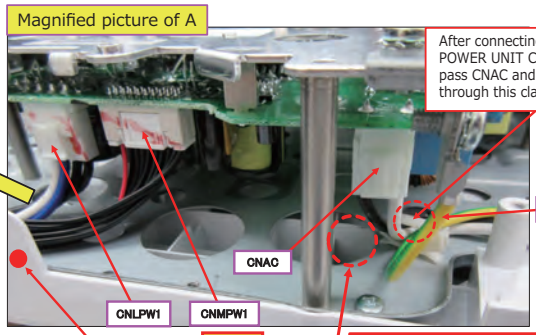
Wiring of POWER UNIT CIRCUIT (main) (1)

(a) Wiring of CNAC
(b) Wiring of CNLPW1
(c) Wiring of CNMPW1
(d) Wiring of CNGD1

Put the cables out of the projector so that it will not interfere other structural components or wiring until ENGINE/MAIN PCB is attached.



Magnified picture of A



After connecting CNAC to POWER UNIT CIRCUIT, pass CNAC and CNGD1 together through this clamp and close it.

Wire CNLPW1 and CNMPW1 so that they will not go over the rib (indicated by a red circle). Wire them in the direction of a yellow arrow. Put them out of the projector to avoid interruption until ENGINE/MAIN PCB are attached.

NOTE

Do not insert CNAC into a hole on bottom base indicated by an arrow after connecting CNAC to the connector of POWER UNIT CIRCUIT (main). (The edge of the hole damage the cable.) Wire the cable as shown in the "OK" picture.

OK

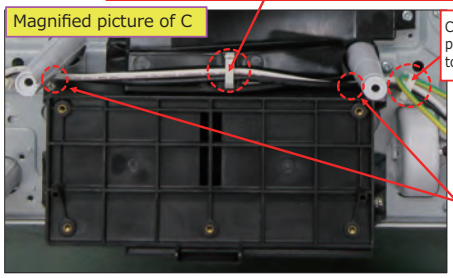
Black and white cables do not touch the edge of a hole, so they are not damaged.

BAD

Black and white cables touch the edge of a hole, o they will be damaged.

After attaching D3 SHIFT BTM DUCT AS and D3 HEATSHINK DUCT FR, pass CNAC through the clamp and close it.

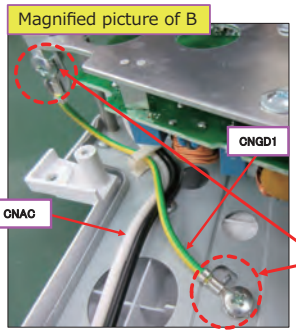
Magnified picture of C



Close the clamp after passing CNAC and CNGD1 together through the clamp.

Wire CNAC between two bosses and D3 SHIFT BTM DUCT AS.

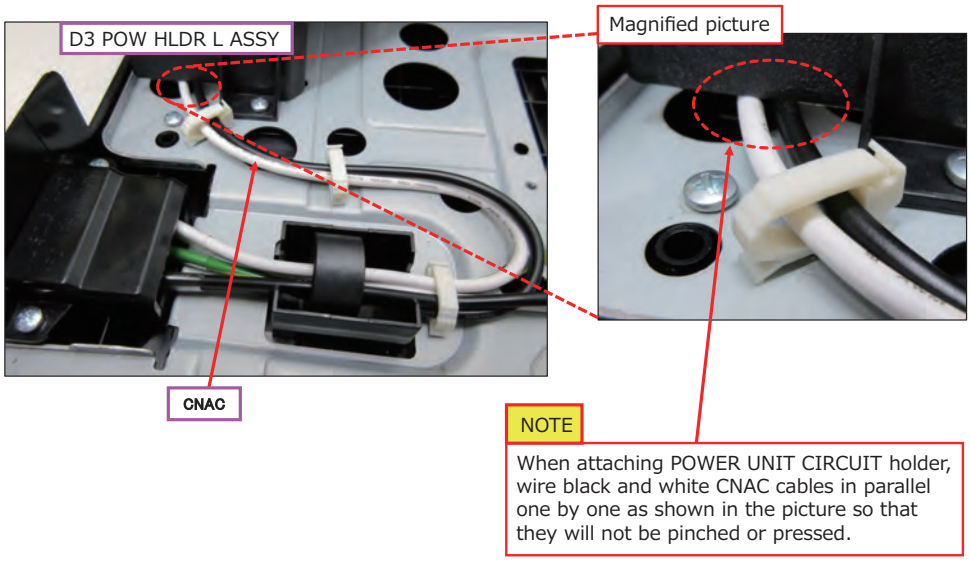
Magnified picture of B



Get the round terminals of earth cable of CNGD1 touched the detent of fixing metal of POWER UNIT and the detent of bottom base, and screw them down.

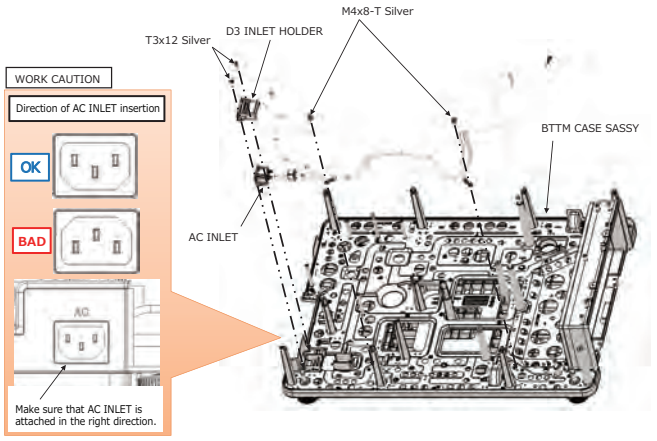
Wiring of POWER UNIT CIRCUIT (main) (2)

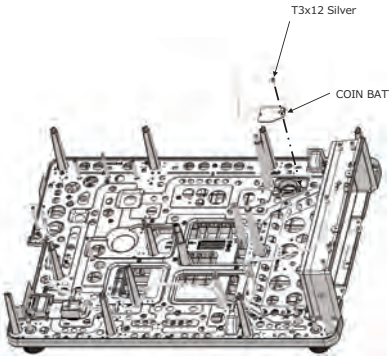
When attaching POWER UNIT CIRCUIT holder, be careful so that CNAC will not be pinched or pressed.

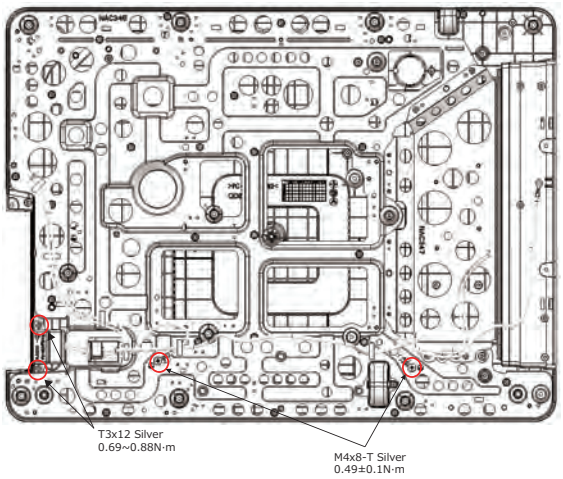


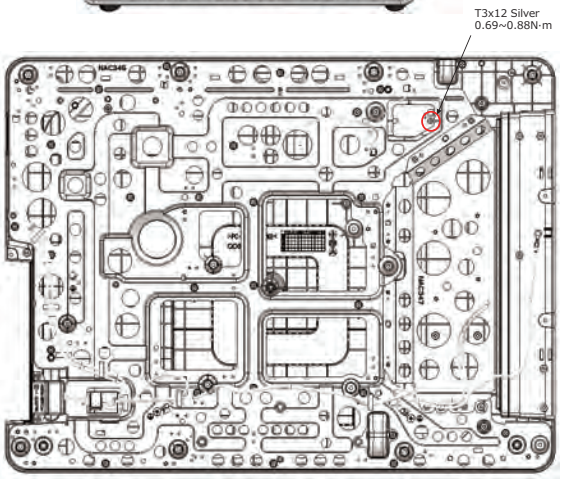
Use a specified jig.

Use a specified jig to assemble the BOTTOM CASE.
It prevents the projector from being bent or being damaged to its appearance when assembling it.



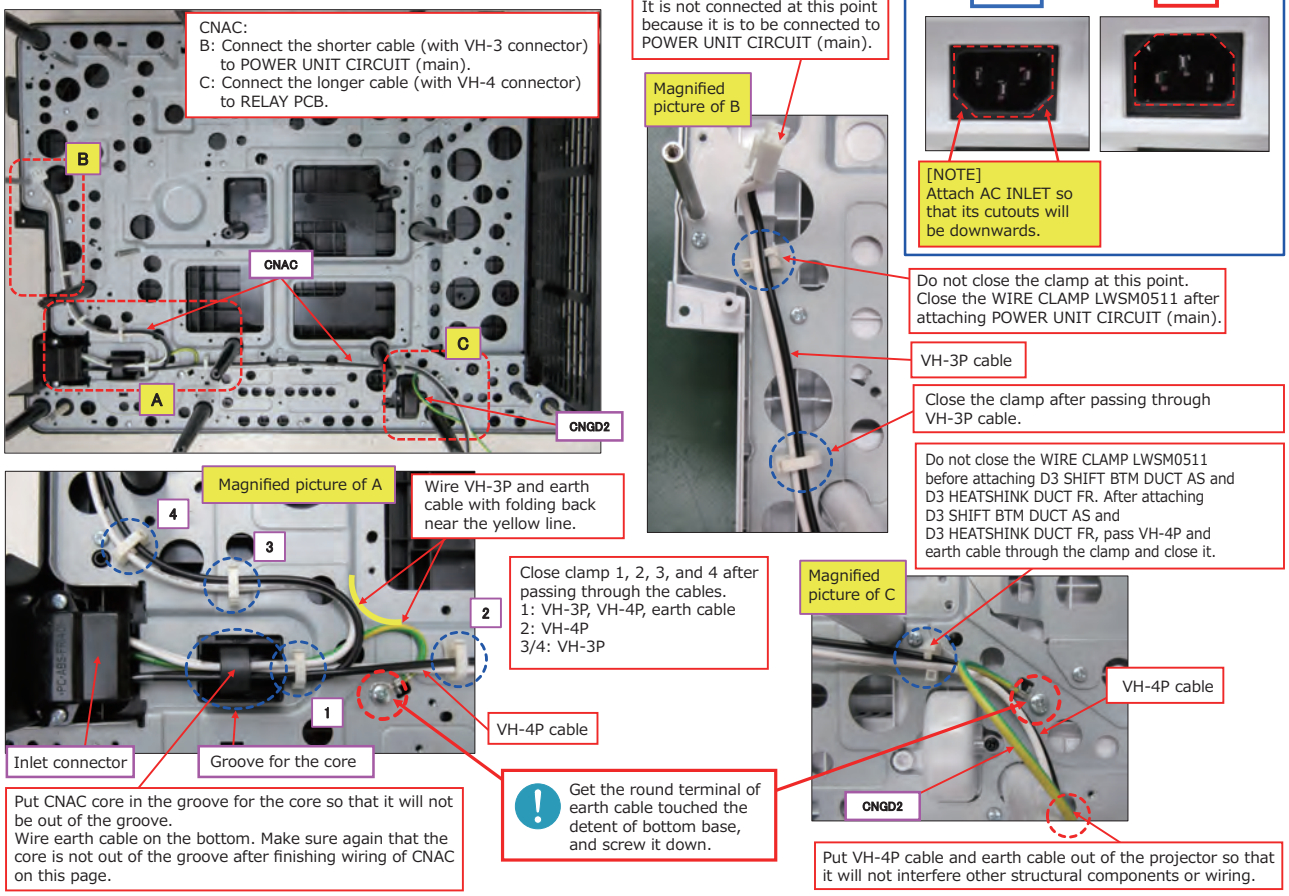






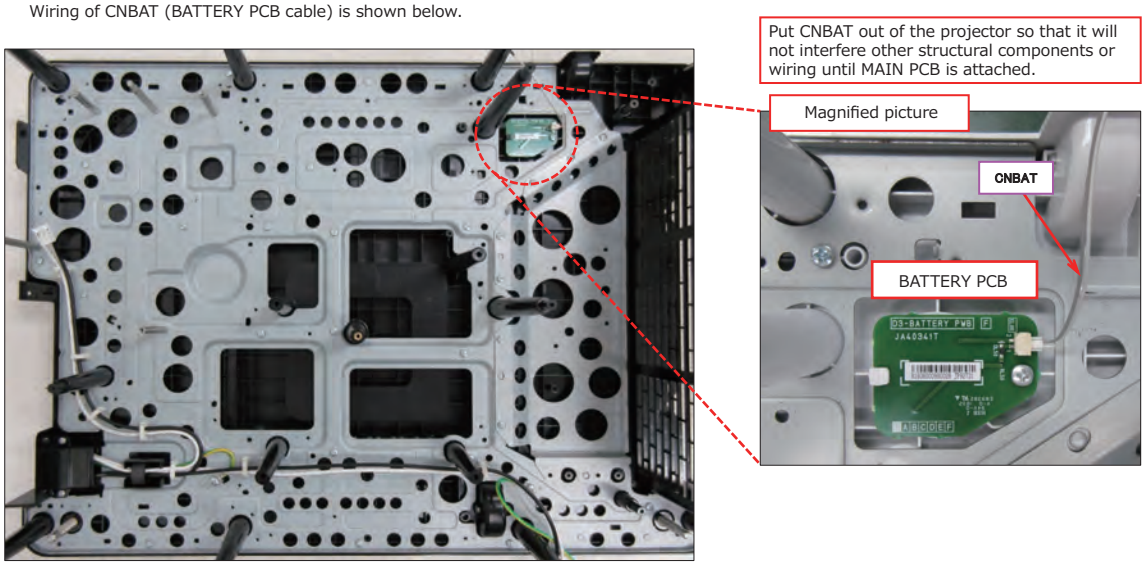
Wiring of AC INLET cable and earth cable

Wiring of CNAC (AC INLET cable) and CNGD2 (earth cable) is shown below.

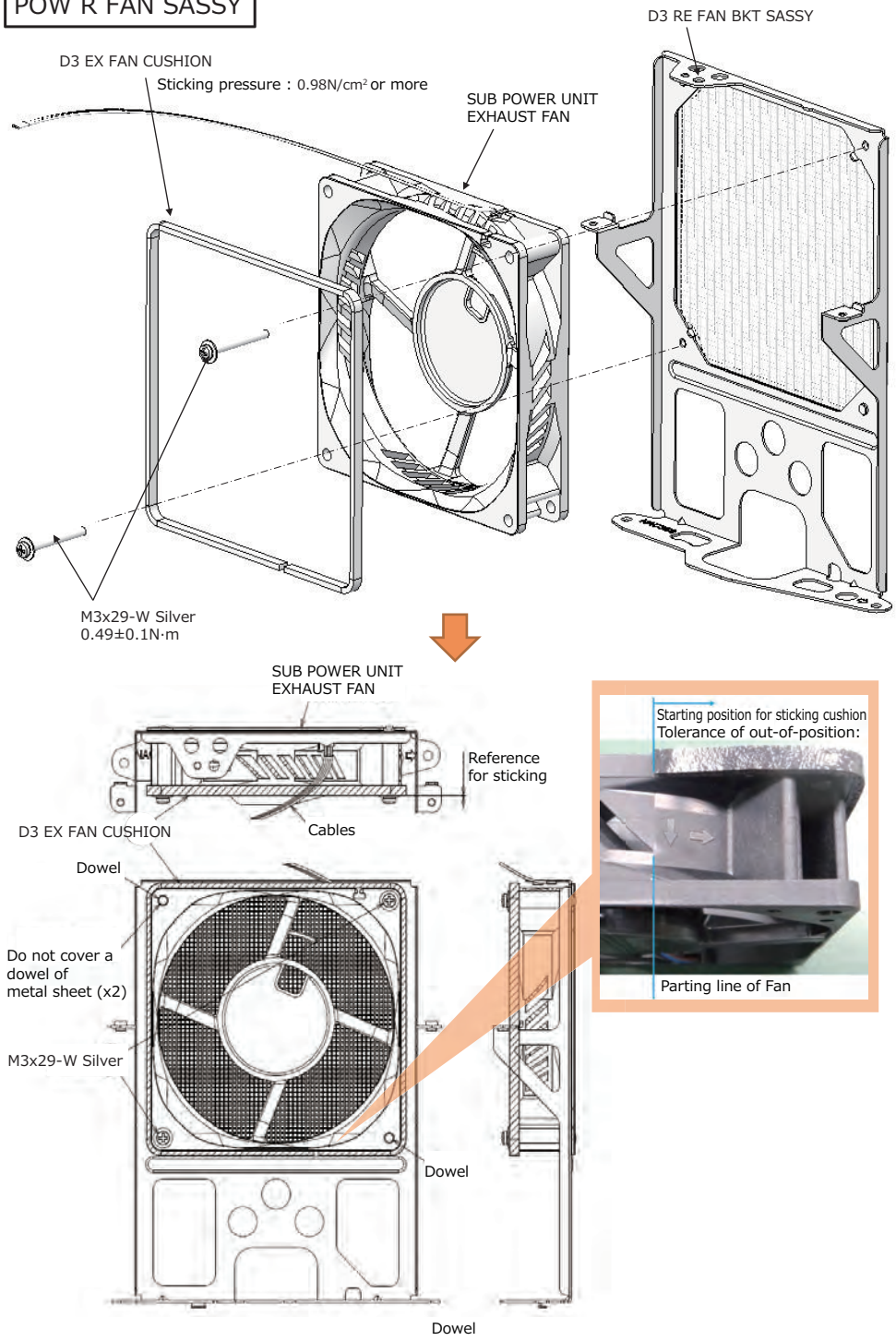


Wiring of BATTERY PCB

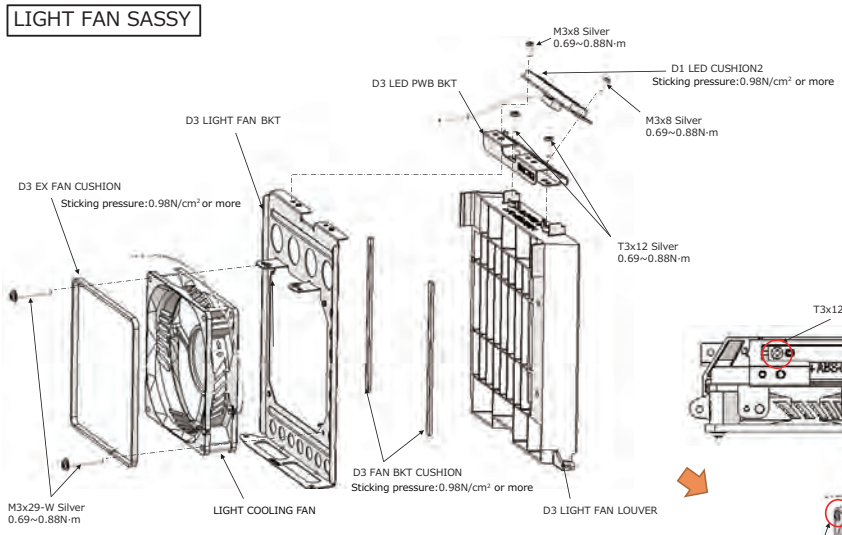
Wiring of CNBAT (BATTERY PCB cable) is shown below.

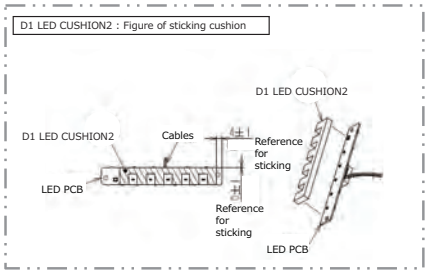


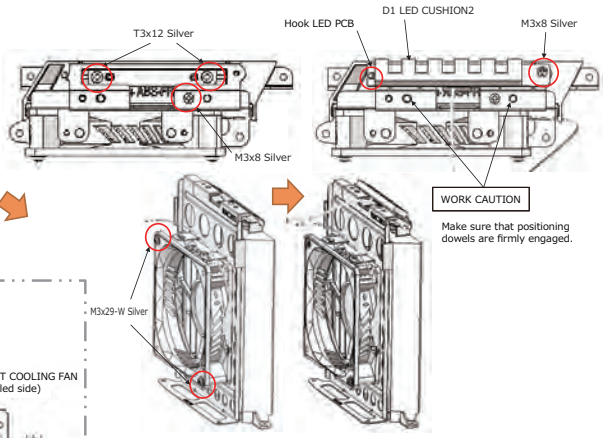
POW R FAN SASSY

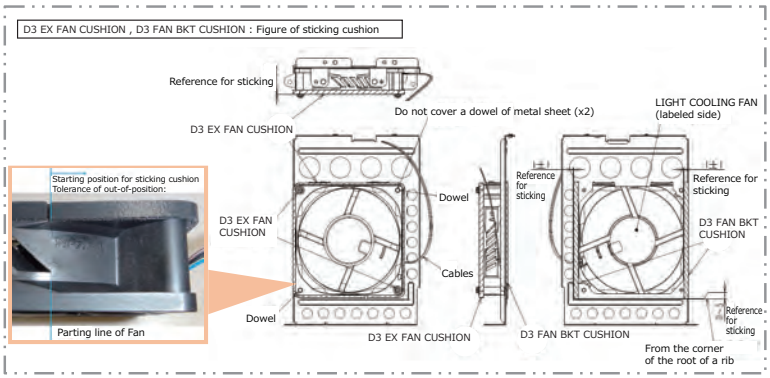


LIGHT FAN SASSY





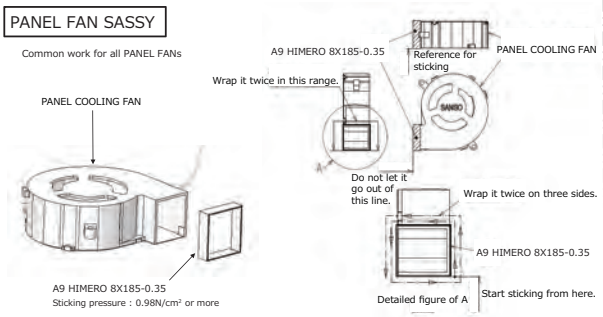




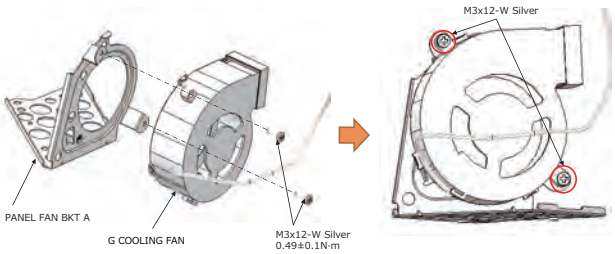
Assembling procedure

1. Stick D3 EX FAN CUSHION to LIGHT COOLING FAN.
2. Stick D3 FAN BKT CUSHION to D3 LIGHT FAN BKT.
3. Stick D1 LED CUSHION2 to LED PCB.
4. Attach LIGHT COOLING FAN to D3 LIGHT FAN BKT, and screw it down with M3x29-W Silver.
5. Attach D3 LIGHT FAN LOUVER to D3 LIGHT FAN BKT.
6. Attach D3 LED PWB BKT to D3 LIGHT FAN LOUVER and D3 LIGHT FAN BKT, and screw it down with T3x12 Silver and M3x8 Silver.
7. Attach LED PCB to D3 LED PWB BKT, and screw it down with M3x8 Silver.

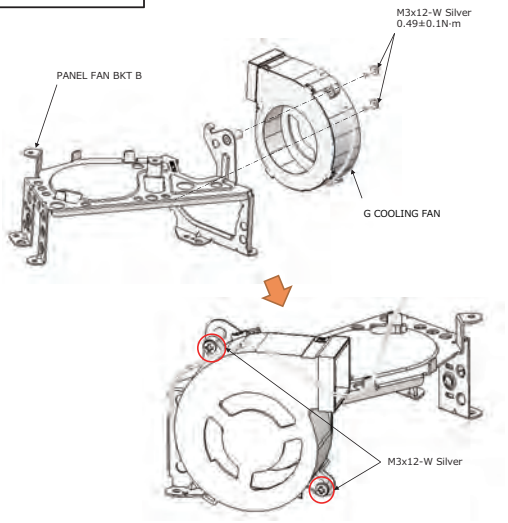
PANEL FAN SASSY



PBS PANEL FAN SASSY



G PANEL FAN SASSY



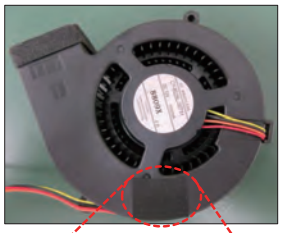
Preparation

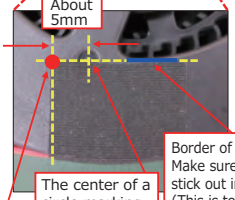
Adjust the length of the lead by tape as shown below.
(1) Adjusting the length of the lead of PANEL FAN R/G/B/PBS by tape

R_FAN :
Sticking a tape is not necessary.

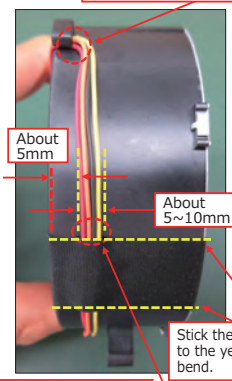
NOTE
・Stick the tape so that it will not have wrinkles or air in it.
・Stick the tape straightly so that it will not bend.

1. B_FAN Sticking a tape





Make sure that the lead is not coming off from the hook.



Stick the tape straightly according to the yellow line so that it will not bend.

Border of impeller and cover (blue line)
Make sure that a stuck tape does not stick out in impeller space.
(This is to prevent the tape from being caught by a blade.)

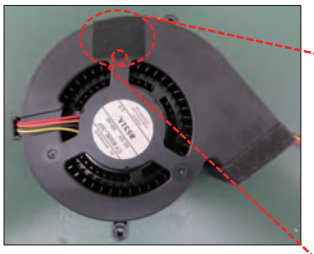
The center of a circle marking

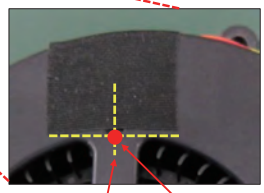
When sticking the tape, wire four leads in the width of 5-10 mm away from the left edge of the FAN (a red dotted line) without gaps.
(Red, orange, black, and yellow tape from the left in order.)

Stick a tape from the position of a red circle.
・The red circle is positioned 5mm to the left from the center of a circle marking.
・Stick the tape from the red circle straight to the right, passing in the border of impeller and cover (blue line).

・Use ZTP01 (NITTO tape No.5 W20mm x L40mm).

2. G_FAN Sticking a tape

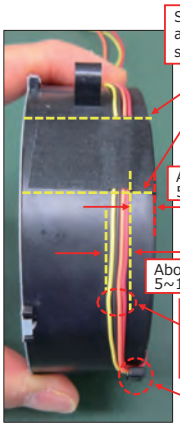




The center of a circle marking

Stick the tape straightly according to the yellow line so that it will not bend.

Stick a tape from the position of a red circle.
(The red circle is almost in the center of the tape.)
Make sure that stuck tape does not stick out in impeller space.
(This is to prevent the tape from being caught by a blade.)



When sticking the tape, wire four leads in the width of 5-10 mm away from the right edge of the FAN (a red dotted line) without gaps. (Red, orange, black, and yellow tape from the right in order.)

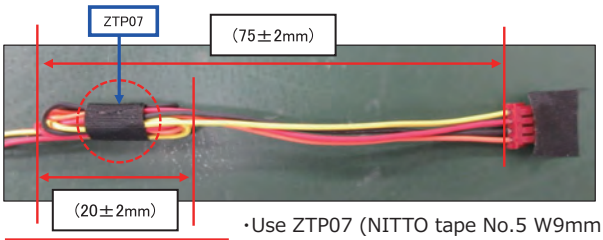
Make sure that the lead is not coming off from the hook.

・Use ZTP06 (NITTO tape No.5 W20mm x L40mm).

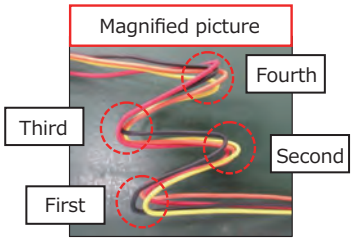
Preparation

Adjust the length of the lead by tape as shown below.
(1) Adjusting the length of the lead of PANEL FAN R/G/B/PBS by tape

3. PBS_FAN : Adjusting the length of the lead by tape

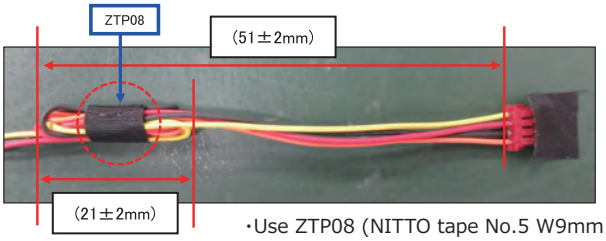


・Use ZTP07 (NITTO tape No.5 W9mm x L30mm).

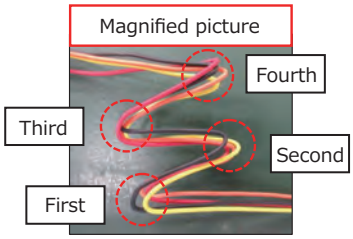


Fold back the cable four times according to the length shown above.
Wind a tape tightly at the center of the folded cable.

4. G_FAN : Adjusting the length of the lead by tape

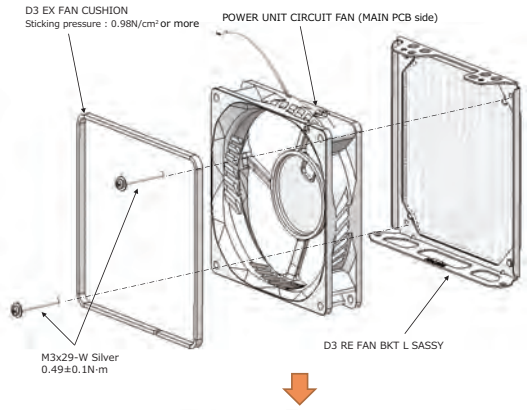


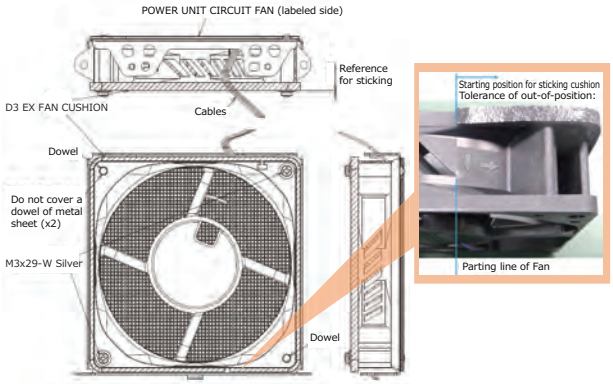
・Use ZTP08 (NITTO tape No.5 W9mm x L30mm).



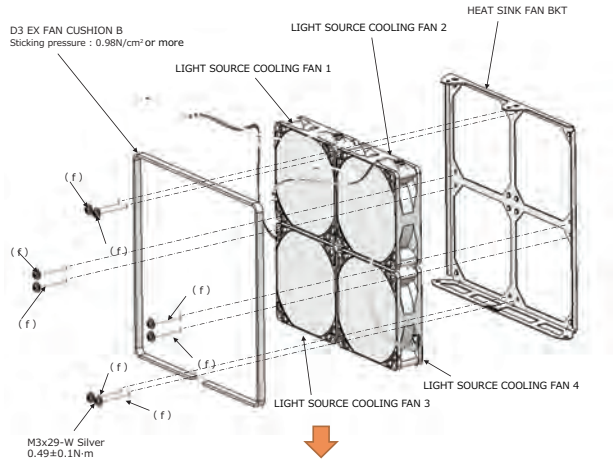
Fold back the cable four times according to the length shown above.
Wind a tape tightly at the center of the folded cable.

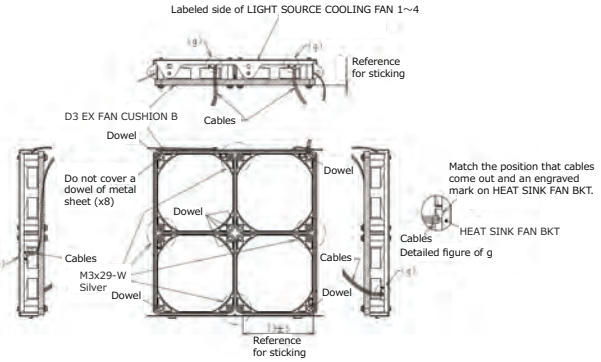
POW REAR FAN SASSY





HEAT SINK FAN SASSY



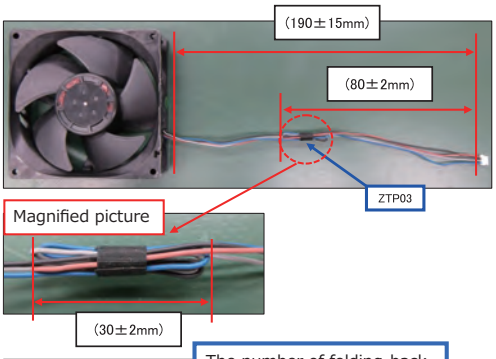


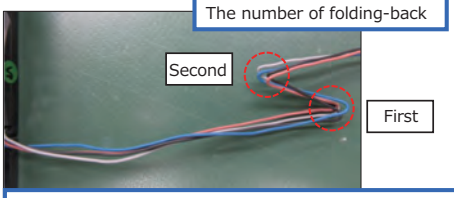
Preparation

Adjust the length of the lead by tape as shown below.
(2) POWER UNIT CIRCUIT FAN (main/sub) / PHOSPHOR WHEEL FAN

1. POWER UNIT CIRCUIT FAN (sub):
   No need to adjust the length of the lead by tape.
   Wire it the same length as delivered (250mm).

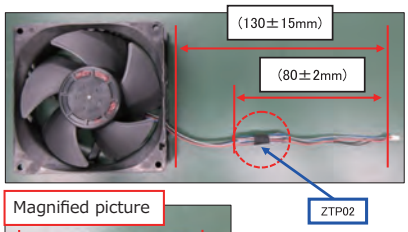
2. Adjust the length of two PHOSPHOR WHEEL FANs as shown below.
   Use ZTP03 (NITTO tape No.5 W9mm x L30mm).

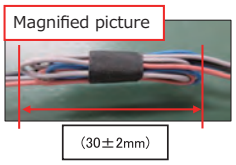


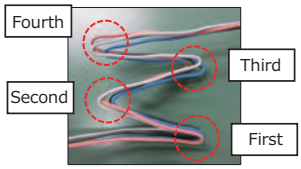


Fold back the cable twice according to the length shown above.
Wind a tape tightly at the center of the folded cable.

3. POWER UNIT CIRCUIT FAN (R, main)
   Use ZTP02 (NITTO tape No.5 W9mm x L30mm).







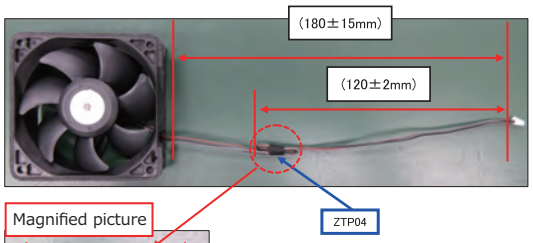
Fold back the cable four times according to the length shown above.
Wind a tape tightly at the center of the folded cable.

Preparation

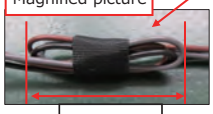
Adjust the length of the lead by tape as shown below.
(3) Adjusting the length of the leads of four LD FANs
LD1 FAN
LD2 FAN
LD3 FAN
LD4 FAN

1. LD_2/LD_3/LD_4 FAN:No need to adjust the length of the lead by tape.
Wire it the same length as delivered (220mm).

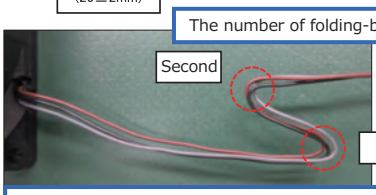
2. Adjust the length of LD_1 FAN as shown below.



Magnified picture

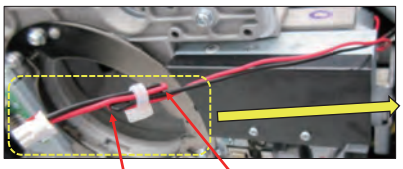


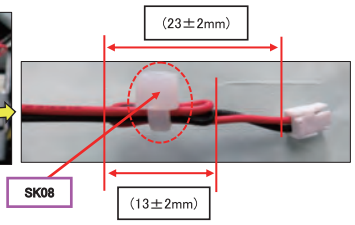
・Use ZTP04 (NITTO tape No.5 W9mm x L30mm).



Fold back the cable twice according to the length shown above.
Wind a tape tightly at the center of the folded cable.

(4) Lead of shift motor (only 2 pins)



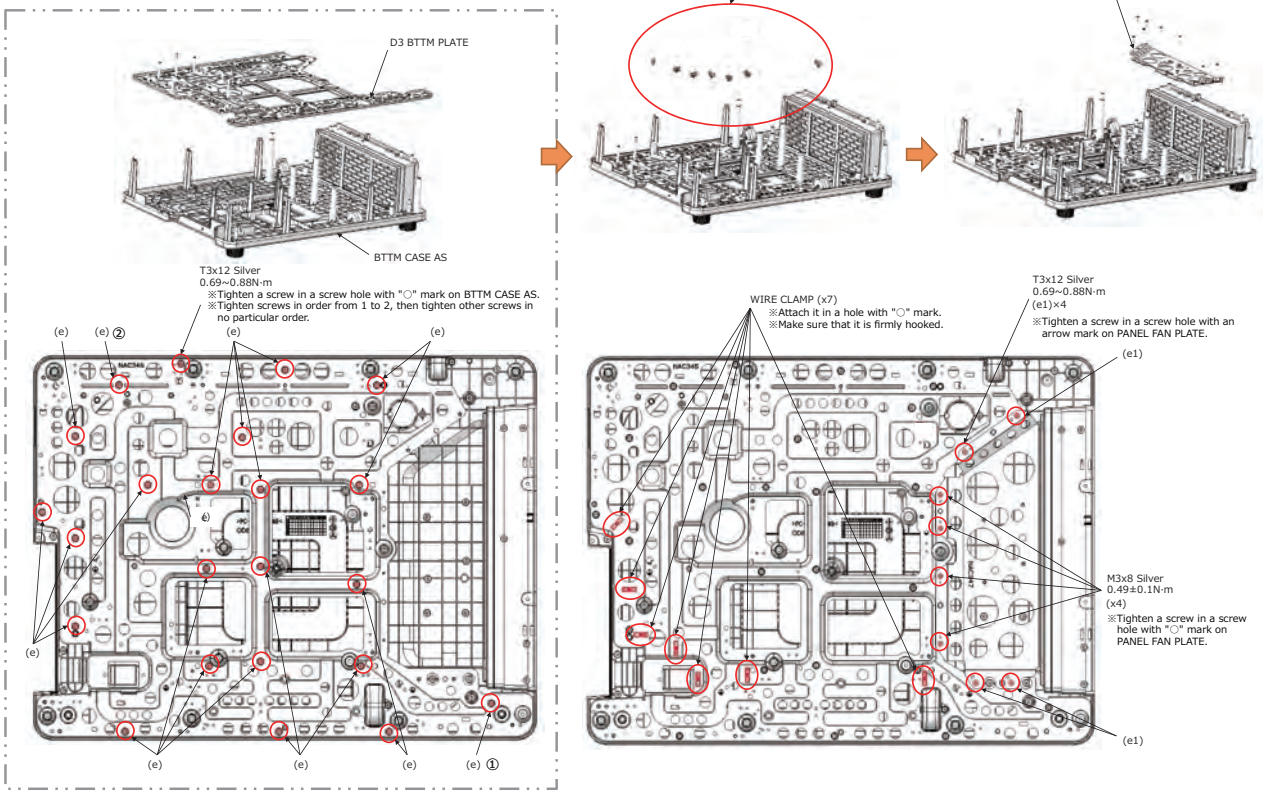


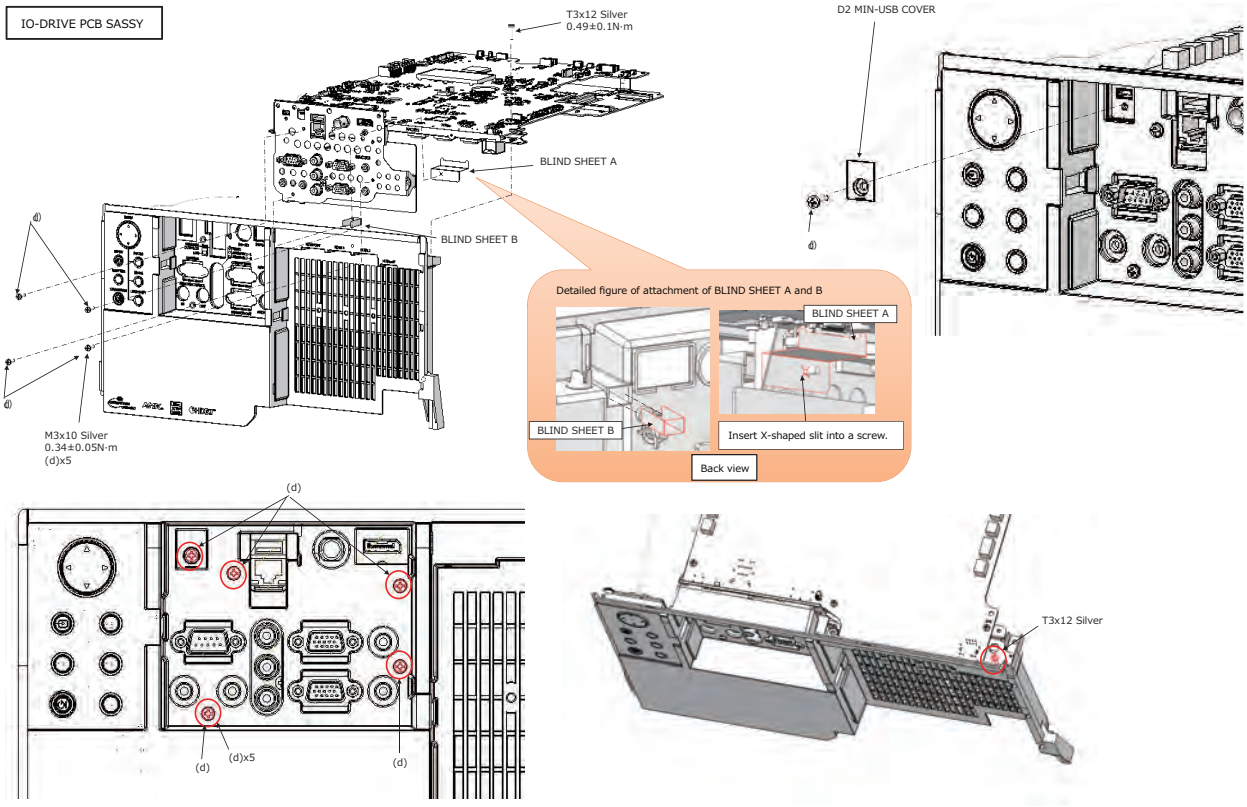
Fold back the cable twice according to the length shown above.
Wind SK08 (cable tie) tightly at the center of the folded cable, and cut the excessive length of the tie.

BTTM CASE SASSY

Use a specified jig.

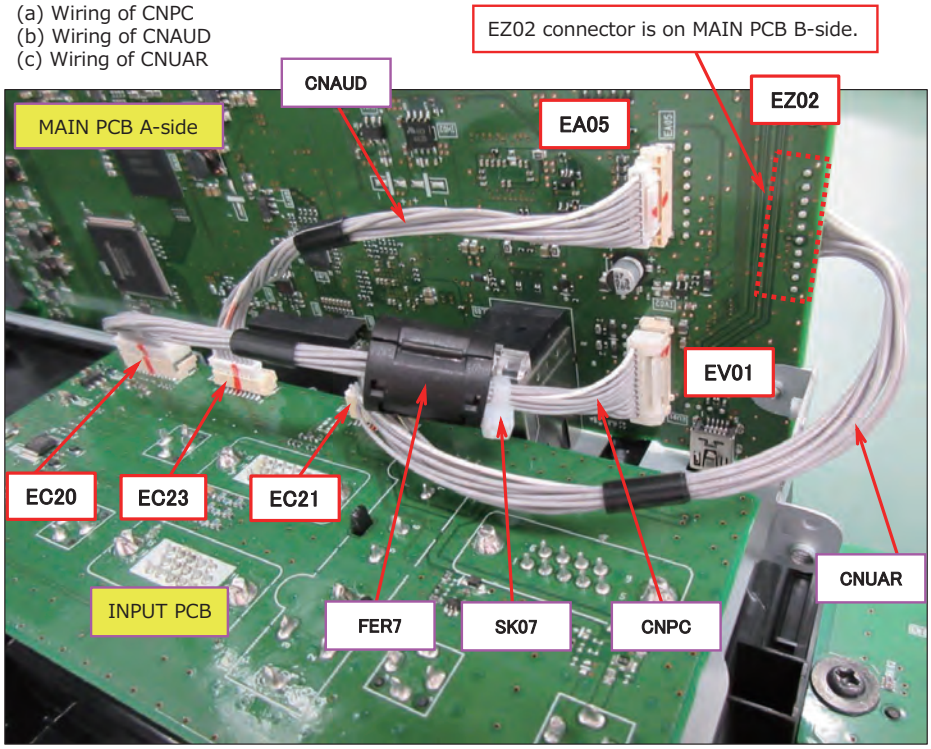
Use a specified jig to assemble the BOTTOM CASE.
It prevents the projector from being bent or being damaged to its appearance when assembling it.




IO-DRIVE PCB SASSY
T3x12 Silver
0.49±0.1N·m
BLIND SHEET A
BLIND SHEET B
M3x10 Silver
0.34±0.05N·m
(d)x5
D2 MIN-USB COVER
Detailed figure of attachment of BLIND SHEET A and B
BLIND SHEET A
BLIND SHEET B
Insert X-shaped slit into a screw.
Back view
(d)
(d)x5
T3x12 Silver

I-O DRIVE (INPUT) PCB - Connecting cables in advance

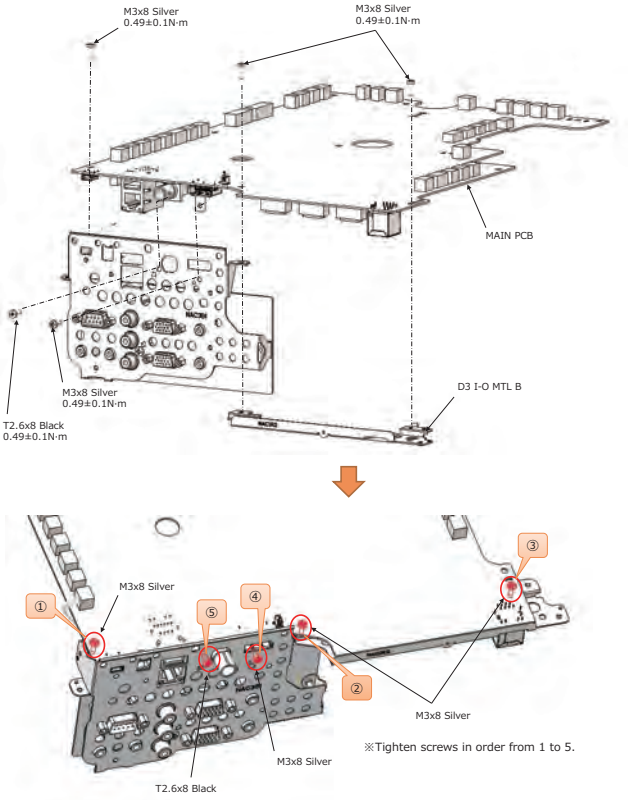
(a) Wiring of CNPC
(b) Wiring of CNAUD
(c) Wiring of CNUAR



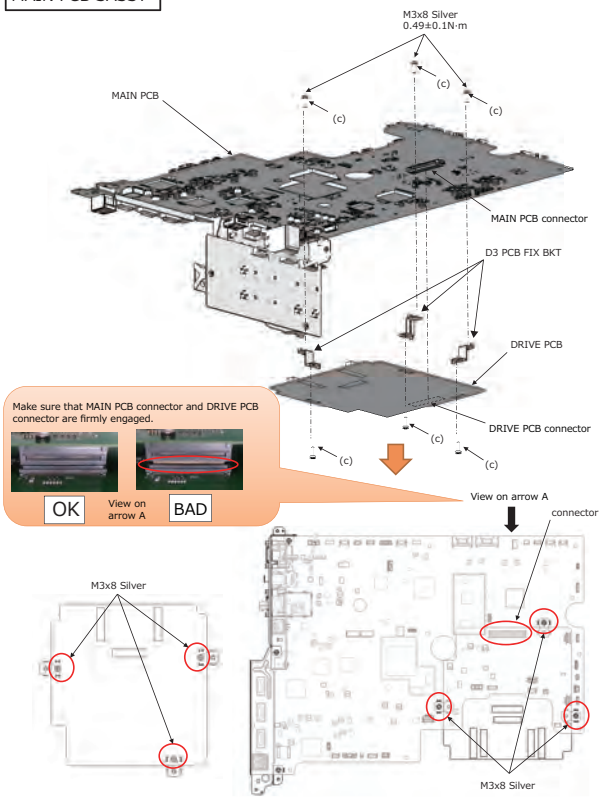
Cable	MAIN PCB		INPUT PCB	Pin
CNPC :	EV01	–	EC20	12 pins
CNAUD :	EA05	–	EC23	9 pins
CNUAR :	EZ02	–	EC21	11 pins

MAIN PCB SASSY

[For LWU900 / LHD878]

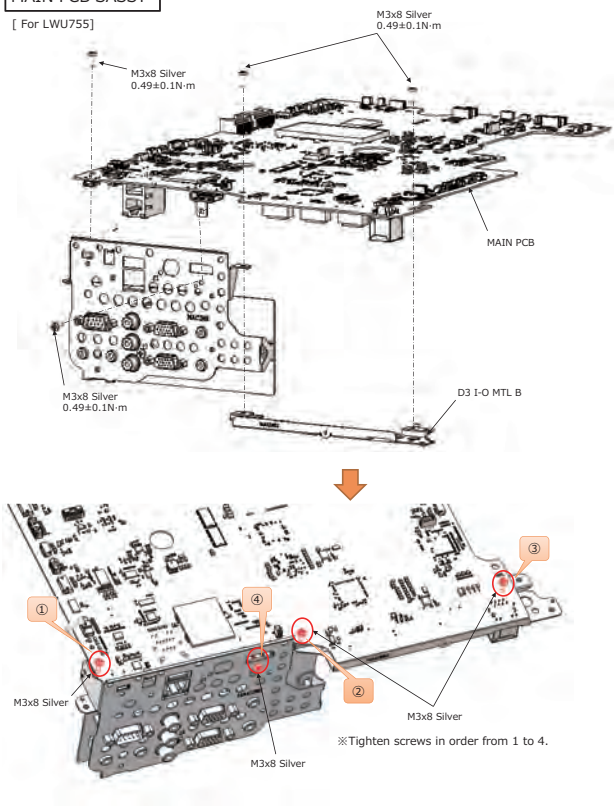


MAIN PCB SASSY

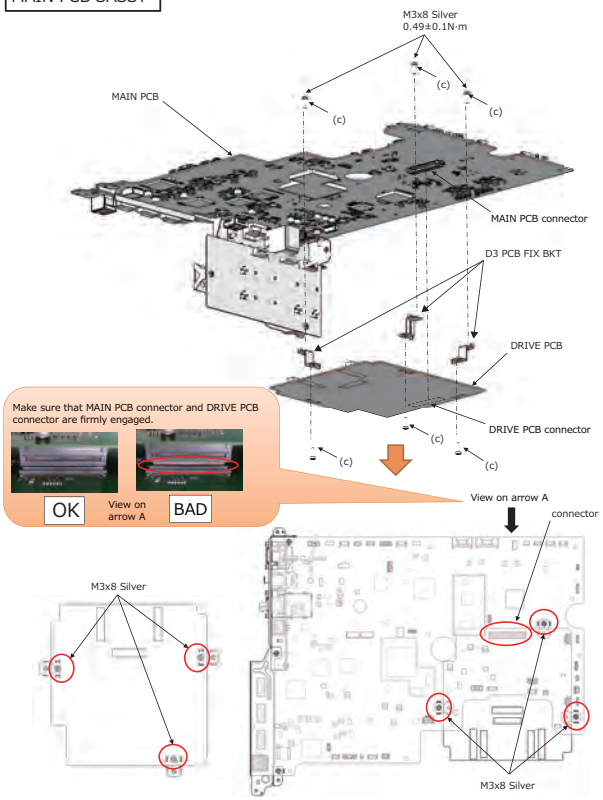


MAIN PCB SASSY

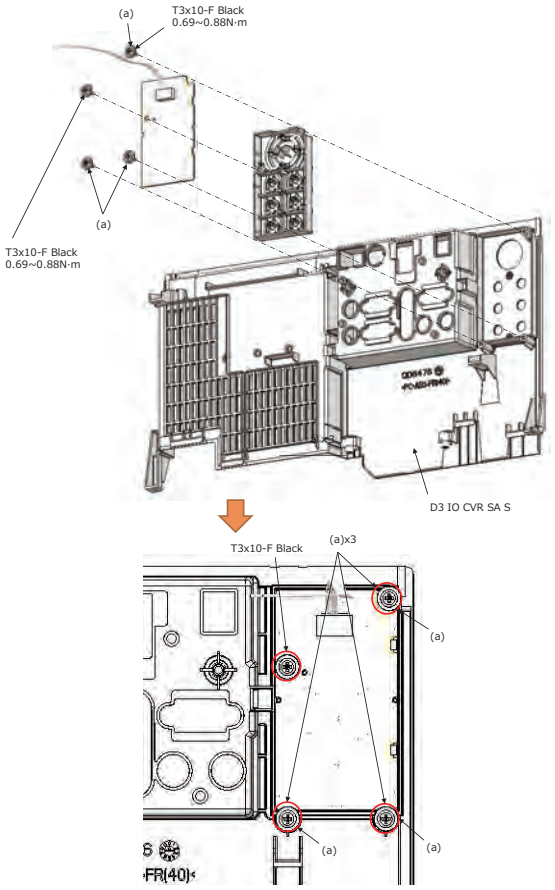
[For LWU755]



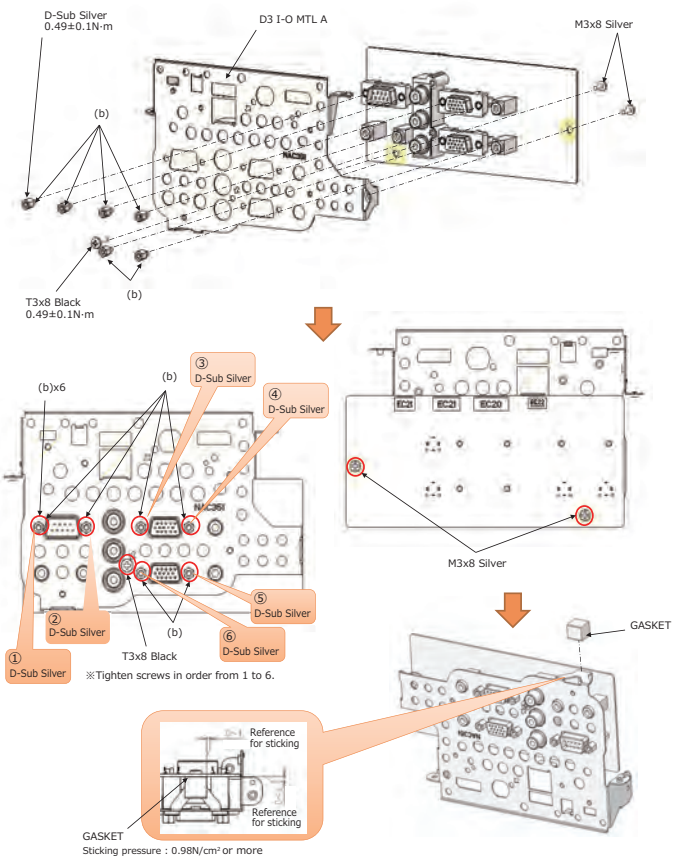
MAIN PCB SASSY



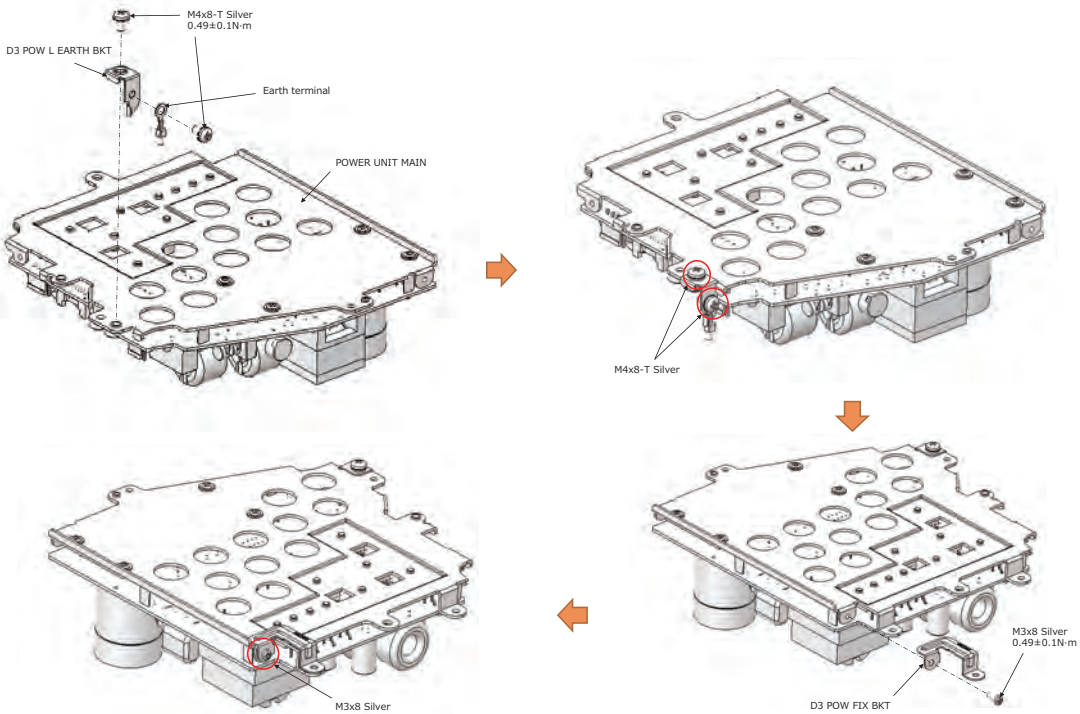
IO COVER SASSY



INPUT PCB SASSY



POW Main SASSY



POWER UNIT CIRCUIT (main/sub) - Connecting cables in advance (1)

(a) Connect CNLPW1/CNMPW1/CNGD1 to POWER UNIT CIRCUIT (main) in advance.

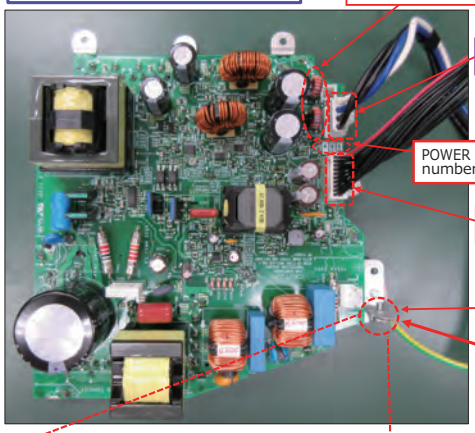
(b) No cables to be connected to POWER UNIT CIRCUIT (sub) in advance.
Connect CNLPW2/CNMPW2/CNGD2 when attaching POWER UNIT CIRCUIT.

D3-WU80/D3-HD75

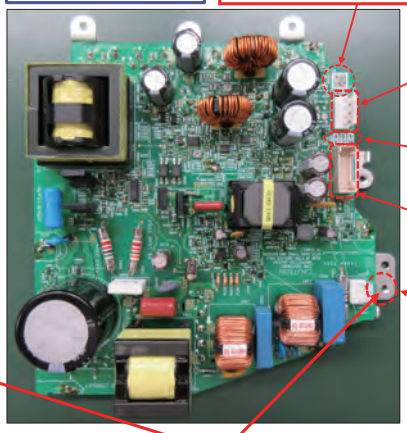
[CONFIRMATION]
Confirm "DATA Matrix Code" of POWER UNIT CIRCUIT (sub).
Confirm that MDA (a code meaning POWER UNIT CIRCUIT for 15LD) includes "IXHT976MDAZ...." by reading a 2D barcode indicated by an arrow.
Do not use POWER UNIT CIRCUIT that MDA cannot be confirmed, and replace it.
Confirm the above when attaching POWER UNIT CIRCUIT (sub) (Wiring around POWER UNIT CIRCUIT (sub) (2) (P.56)).

POWER UNIT CIRCUIT (main) - top

Component equipped only on POWER UNIT CIRCUIT (main)

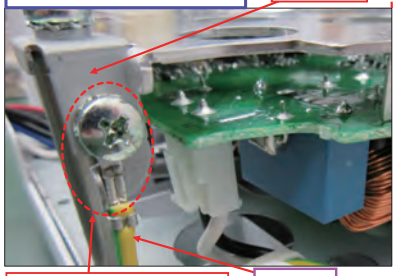


POWER UNIT CIRCUIT (sub) - top



CNGD1 seen from the bottom of POWER UNIT CIRCUIT

D3 POW L EARTH BKT



Caution for POWER UNIT CIRCUIT (main)

WU80/HD75 :
Use POWER UNIT CIRCUIT for 20LD.

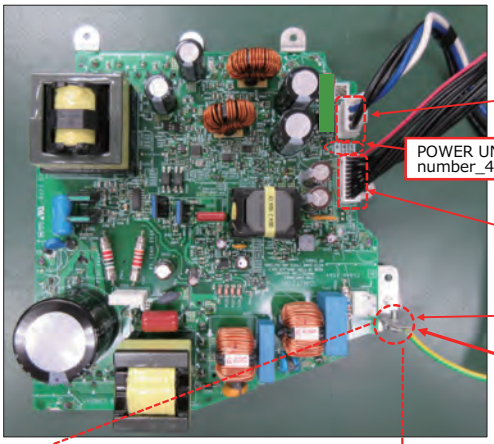
Get the round terminal of earth cable touched the detent of fixing metal of POWER UNIT, and screw it down to the fixing metal.

POWER UNIT CIRCUIT (main/sub) - Connecting cables in advance (2)

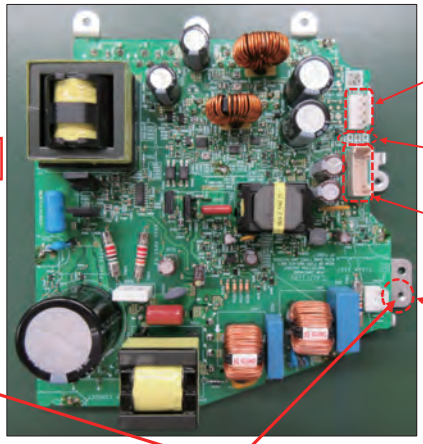
(a) Connect CNLPW1/CNMPW1/CNGD1 to POWER UNIT CIRCUIT (main) in advance.
(b) No cables to be connected to POWER UNIT CIRCUIT (sub) in advance.
Connect CNLPW2/CNMPW2/CNGD2 when attaching POWER UNIT CIRCUIT.

D3-WU70

POWER UNIT CIRCUIT (main) - top

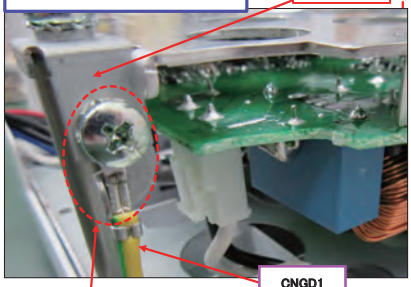


POWER UNIT CIRCUIT (sub) - top



CNGD1 seen from the bottom of POWER UNIT CIRCUIT

D3 POW L EARTH BKT



Screw it down with the terminal touched the detent.

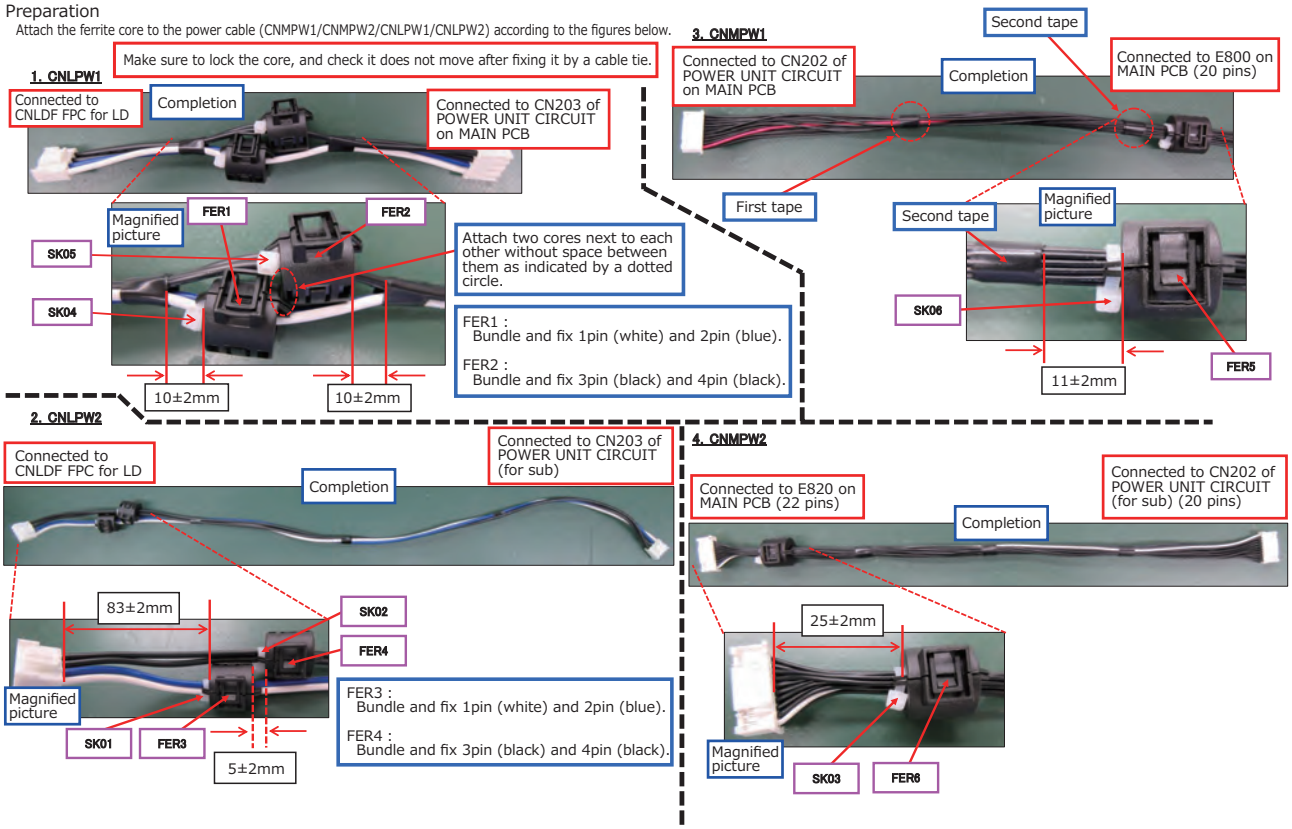
Caution for POWER UNIT CIRCUIT (main)

WU70 :
Use POWER UNIT CIRCUIT for 15LD.

Get the round terminal of earth cable touched the detent of fixing metal of POWER UNIT, and screw it down to the fixing metal.

Preparation

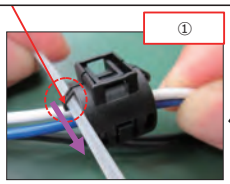
Attach the ferrite core to the power cable (CNMPW1/CNMPW2/CNLPW1/CNLPW2) according to the figures below.



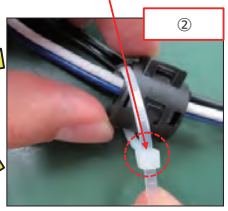
Preparation

Supplement of the previous page - How to fix the core (FER1~6) with a cable tie

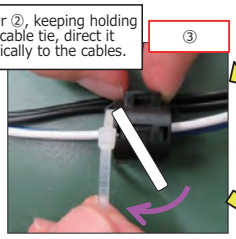
Pass a cable tie obliquely through a hole so that it can pass easily.



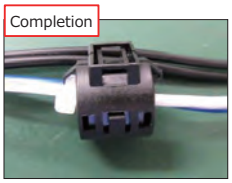
Keeping the cable tie passing obliquely, fasten it to the extent shown in the picture.



After ②, keeping holding the cable tie, direct it vertically to the cables.



Completion



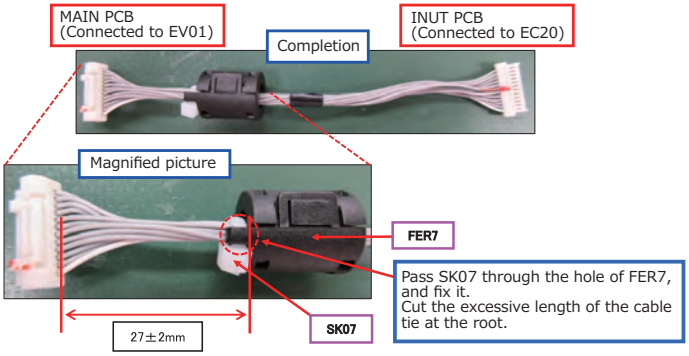
Checking the position to fix the core (FER3/4), fasten the cable tie until FER3/4 is locked.

Cut the excessive length of the cable tie at the root.

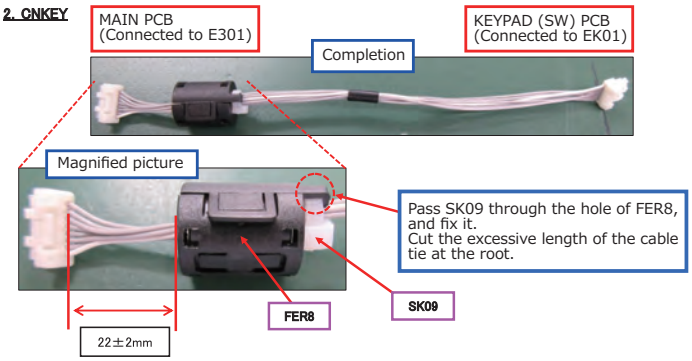
Attach the ferrite core to the cable according to the figures below.

1. CNPC

Make sure to lock the core, and check it does not move after fixing it by a cable tie.

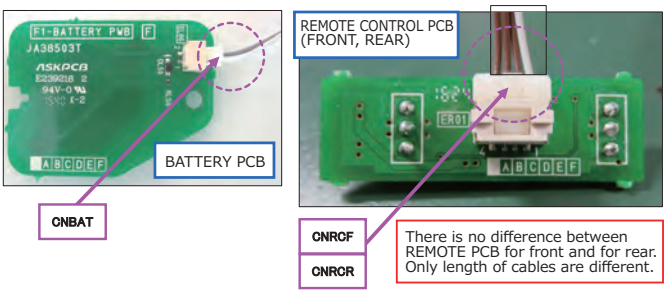


2. CNKEY

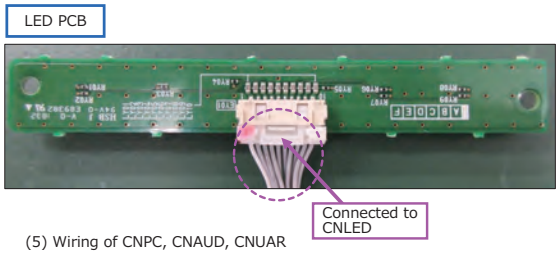


Cable connection of sub PCB

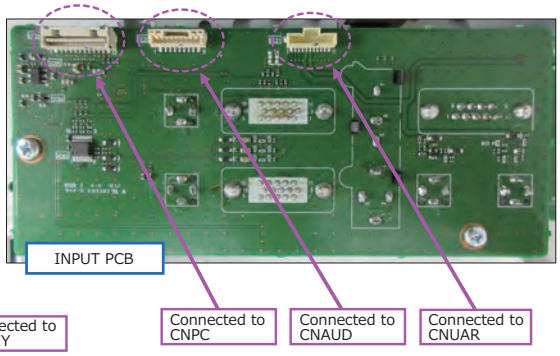
(1) Wiring of CNBAT, CNRCF, CNRCR



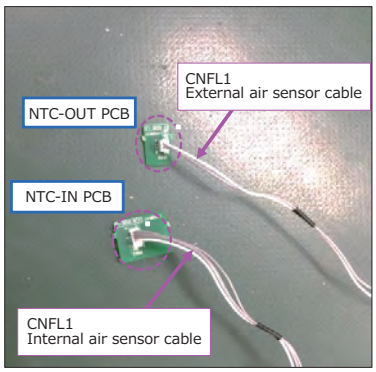
(3) Wiring of CNLED



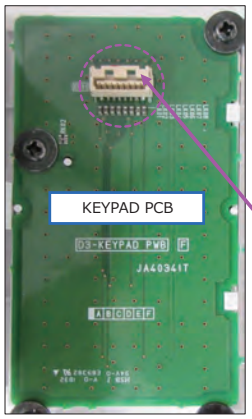
(5) Wiring of CNPC, CNAUD, CNUAR



(2) Wiring of CNFL1, CNFL2



(4) Wiring of CNKEY



10. Adjustment

10-1 Before adjusting

10-1-1 Selection of adjustment

When any parts in the table below are changed, choose the proper adjusting items with the chart. In addition, setup of the projector according to the chapter 4-8 by service engineers or users is recommended after all adjustments are done.

Relation between the replaced part and adjustment

Replaced part	Adjustment							
	AIR SENSOR (Chap.4-2)	PSIG (Chap.4-3)	Flicker (Chap.4-4)	White balance (Chap.4-5)	Color uniformity (Chap.4-6)	LENS SHIFT (Chap.4-7)	GHOST (Chap.4-8)	(Light) Sensor Calibration
DICHROIC OPTICS UNIT (DICHROIC OPTICS ASS'Y)	×	△	△	△	△	×	△	○
LCD Prism Shift mech. assembly (LCD/PRISM ASS'Y)	×	○	○	△	△	○	○	×
MAIN PCB (PWB ASS'Y MAIN)	○	○	○	△	△	○	○	○
Light Source (D3 LS MID ASSY SEV)	×	×	△	△	△	×	△	○
SENSOR-A/B PCB (PWB ASS'Y SENSOR-A/B)	○	×	×	×	×	×	×	×
R/G/B PANEL FAN (D3 PNL FAN ASSY)	○	×	×	×	×	×	×	×
BOTTOM CASE (BOTTOM CASE ASS'Y)	○	×	×	×	×	×	×	×

○ : means need for adjustment. × : means not need for adjustment. △ : means recommended.

10-1-2 Setting of condition before adjustments

1. Warming up: Turn on the light source and keep it on for more than 10 minutes before starting adjustments.
2. Set the image size: Set zoom wide to Max. and project an image more than 1 m (40 inches) in diagonal size.
3. Resetting aspect and distortion of the image: Press the **MENU** button and select EASY MENU - RESET. Press the ► or **ENTER** button to display RESET dialog and choose the OK with the ► button. Set and adjust each item in the EASY MENU again after adjustment.
4. Set all the values in ADVANCED MENU - IMAGE SETTING - PICTURE QUALITY - Advanced Color Adjustment to 0 when adjusting the following item.
   ·color uniformity
5. Displaying the FACTORY MENU: Perform all adjustments from the FACTORY MENU.

Using the remote control...

a. Press the **MENU** button and select EASY MENU - RESET. Press the ► or **ENTER** button to display RESET dialog.

b. Next, press the **RESET** button, then re-press and hold the **RESET** button for 3 seconds or longer (the FACTORY MENU will appear).

Using the control panel of the projector...

a. Press the **MENU** button and select EASY MENU - RESET. Press the ► or **ENTER** button to display RESET dialog.

b. Next, press the ▼ button first, then press and hold the ▼ and **INPUT** button for 3 seconds or longer (the FACTORY MENU will appear).

Move the cursor among the items of the menu with ▲ and ▼ buttons, and select and enter with ► or **ENTER** button.

10-2 AIR SENSOR adjustment

When you replaced the MAIN PCB, SENSOR-A/B PCB, PANEL FAN or BOTTOM CASE, or when you re-attached the PANEL DUCT to the BOTTOM CASE, make sure to carry out this adjustment after re-assembling the projector and cleaning the air filter.

A-SENS bar

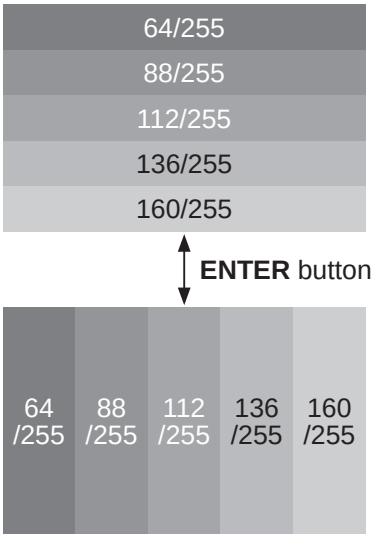
A-SENS	**>>EXE**	**1:xxxx**	**2:xxxx**	**3:xxxx**	**4:xxxx**	**END**

Adjustment procedure

1. Display the A-SENS bar with the ▲ and ▼ buttons in FACTORY MENU - VID-AD1.
2. Press the ► button to run automatic adjustment program. The cell END is highlighted in about 5 minutes after the adjustment finished.

10-3 PSIG adjustment (vertical bars adjustment)

Test patterns for the adjustment



P-SIG bar

P-SIG	**Rxxx**	**Gxxx**	**Bxxx**	

ATTENTION

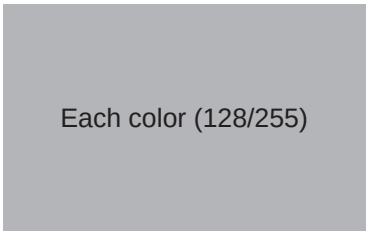
Make this adjustment work before the Flicker adjustment.

Adjustment procedure

1. Display the P-SIG bar with the ▲ and ▼ buttons in FACTORY MENU - DAC-P.
2. Select the cell R, and use the ▲ and ▼ buttons to adjust so that vertical bars are minimized.
3. In the same way, use the cells G and B in turn to adjust so that vertical bars are minimized.

10-4 Flicker adjustment (V.COM adjustment)

Test patterns for the adjustment



NOTE: The test pattern sometimes has a horizontal line across the screen.

V.COM bar

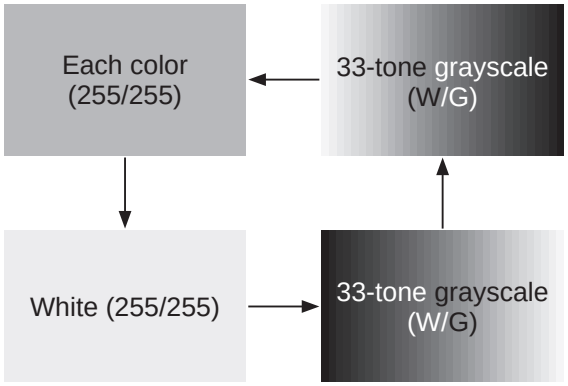
V.COM	**Rxxx**	**Gxxx**	**Bxxx**	**Wxxx**

Adjustment procedure

1. Display the V.COM bar with the ▲ and ▼ buttons in FACTORY MENU - DAC-P.
2. Select the cell R, and use the ▲ and ▼ buttons to adjust so that the flicker at the center of the screen is less than the flicker at the periphery. (When the flicker is almost same across the whole screen, adjust so that the flicker at the center of the screen is less than elsewhere.)
3. In the same way, use the cells G and B in turn to adjust the each color flicker.

10-5 White balance adjustment (visual inspection)

Test patterns for the adjustment



SB-CNT bar

SB-CNT	R+xx	G+xx	B+xx	W+xx	

SB-BRT bar

SB-BRT	R+xx	G+xx	B+xx	W+xx	

ATTENTION

Perform the followings before making this adjustment work.

- Set the WHITE BALANCE in SETUP menu - GEOMETRY CORRECTION - EDGE BLENDING - WHITE BALANCE - OFFSET and GAIN to all “+0” .
- Complete the PSIG adjustment. When only the Light source UNIT is replaced, PSIG adjustment is not required so that this adjustment work can be done after Flicker adjustment.

Adjustment procedure

1. Select GAMMA in the FACTORY MENU and press the **RESET** button to display the dialog. Select RESET to reset gamma correction.
2. Display the SB-CNT bar with the ▲ and ▼ buttons in FACTORY MENU - GAMMA.
3. Select the cell G, and change the test pattern to 33-tone grayscale in green with the **ENTER** button.
4. Use the ▲ and ▼ buttons to adjust so that brightness of 33 steps is best.
5. After completing above, display the SB-BRT bar.
6. Select the cell R or B, and change the test patterns to 33-tone grayscale with the **ENTER** button.

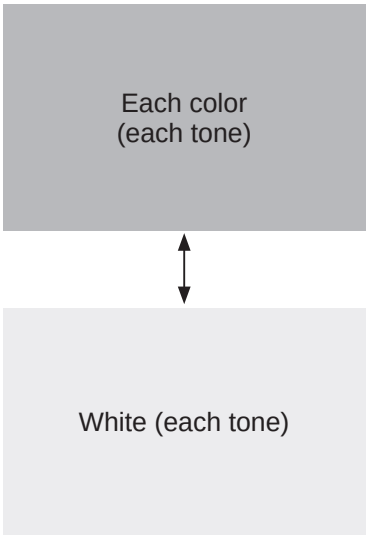
ATTENTION

Do not change the cell G of SB-BRT to keep the best contrast ratio.

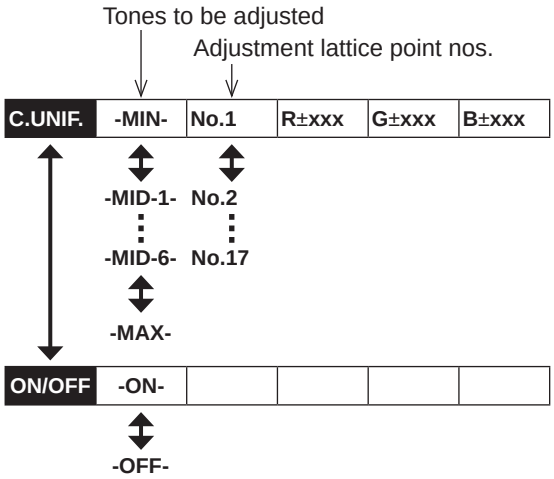
7. Use the ▲ and ▼ buttons to adjust so that low-brightness white balance is best.
8. Select the other cell and adjust in the same way.
9. Display the SB-CNT bar again.
10. Change the test patterns and adjust so that middle-brightness white balance is best at the cells R and B in the same way as low-brightness.
11. Repeat adjusting low/middle-brightness white balance with R and B color so that brightness and white balance of 33 steps is best.

10-6 Color uniformity adjustment

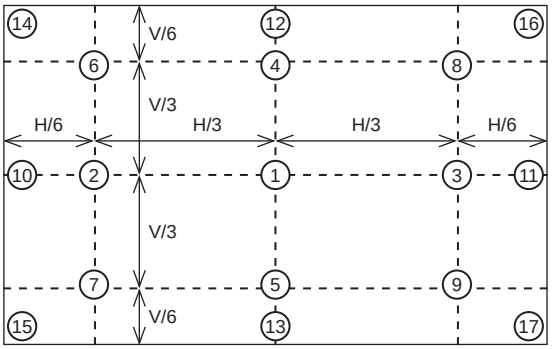
Test patterns for the adjustment



Adjust tone menu



Adjustment lattice point position



ATTENTION

Perform the followings before making this adjustment work.

- Reset COLOR UNIFORMITY in SETUP menu.
- Complete the White balance adjustment.

Preparations

1. Display the Adjust tone menu in FACTORY MENU - C.UNIF..
   Next on the right of "C.UNIF.", 2nd cell from the left shows tone to be adjusted. Use the ▲ or ▼ button to switch the tone.
   Next on the right of tones, 3rd cell from the left shows the no. of adjustment lattice point. Use the ▲ or ▼ button to switch the point.
   3 cells from the right show adjusted value of R, G and B colors. Use the ▲ and ▼ buttons to adjust each color.
2. Make color uniformity adjustments for the following 8 tones.
   -MIN- tone (approx. 0% input signal)
   -MID-1- tone (approx. 7% input signal)
   -MID-2- tone (approx. 18% input signal)
   -MID-3- tone (approx. 39% input signal)
   -MID-4- tone (approx. 50% input signal)
   -MID-5- tone (approx. 75% input signal)
   -MID-6- tone (approx. 100% input signal)
3. The adjustment lattice point nos. correspond to the point positions in the diagram. The color uniformity of the entire screen can be adjusted by adjusting the white balance for each of the points starting in order from the low numbers.
   NOTICE: Point No.1 should not be adjusted because it controls the brightness of the entire screen. Note that when adjusting a point, it affects around the point.
4. To temporarily turn correction off, place the cursor on "C.UNIF." in the Adjust tone menu, and press the ▼ button to display ON/OFF bar. Move the cursor to ON, and press the ▼ button. To turn it on again, place the cursor on OFF and press the ▲ button.
5. The following two patterns of internal signals are available for this adjustment. Use the **ENTER** button to switch it.
   • Solid monochrome adjustment color (for G color adjustment with a color differential meter).
   • Solid white (for adjustment other than above).
6. Reset values before adjustment, if necessary. Single value resets cannot be performed.
   • When resetting all values, place the cursor on C.UNIF. in FACTORY MENU, press the **RESET** button and select RESET in the dialog.
   • When resetting the values of single tone, place the cursor on the tone to be reset, press the **RESET** button and select RESET in the dialog.

(continued on next page)

Adjustment procedure 1
(When a color differential meter is used)

1. First adjust the -MID-1- tone, from G color.
2. Select G of point No.2 and change the background to solid G monochrome.
3. Measure the illumination at points No. 2, 3, 10 and 11.
   The values should be:
   No.2 = Y2 [lx], No.10 = Y10 [lx]
   No.3 = Y3 [lx], No.11 = Y11 [lx]
4. Points No.2 and No.3 have the average of Y2 and Y3.
   Y2 = (Y2 + Y3) / 2 ± 3 [%]
   Y3 = (Y2 + Y3) / 2 ± 3 [%]
5. Points No.10 and No.11 have the average of Y10 and Y11.
   Y10 = (Y10 + Y11) / 2 ± 3 [%]
   Y11 = (Y10 + Y11) / 2 ± 3 [%]
6. Then adjust R and B color of the -MID-1- tone. Change the background to solid W monochrome.
7. Measure the color coordinates of point No.1 and make a note of them.
   Assume that they are x = x1, y = y1.
   NOTE: When the CL-100 or CL-200 color and color difference meter is used, the Δ(delta) mode is convenient. When point No.1 color coordinate has been selected, set the slide switch on the side to Δ while holding down the F button on the front panel. The measurement shown after this displays the deviation from point No.1.
8. Measure the color coordinates at point No.2 and adjust R and B color of point No.2 so that the coordinates are as follows.
   x = x1 ± 0.005 , y = y1 ± 0.005 (as target)
   x = x1 ± 0.010 , y = y1 ± 0.015
9. Measure and adjust their color coordinates of points No.3 to 17 in the same way starting in order from the small number points.
   This completes adjustments required for -MID-1- tone.
   NOTE: Since excessive correction may lead to a correction data overview during internal calculations, use the following values for reference.
   No.2 to 5: ± 40 or less
   No.6 to 9: ± 50 or less
   No.10 to 13: ± 70 or less
   No.14 to 17: ± 120 or less
10. Next, adjust the other tones in order of -MIN-, -MID-3-, -MID-2-, -MID-5-, -MID-4-, -MAX- and -MID-6-.
11. Adjust each tone as follows, from G color.
    -MIN- tone : one and a half of -MID-1- tone
    -MID-3- tone : 0 (no adjustment)
    -MID-2- tone : a half of -MID-1- tone
    -MID-5- tone : 0 (no adjustment)
    -MID-4- tone : average of -MID-3- and -MID-5- tones
    -MAX- tone : 0 (no adjustment)
    -MID-6- tone : average of -MID-5- and -MAX- tones
12. Select R or B of point No.2 at -MIN- tone and change the background to solid W monochrome.
13. Measure the color coordinates at point No.1 and make a note of them. Assume that they are x = x1, y = y1.
14. Now measure the color coordinates at point No.2 and adjust R and B color of point No.2 so that the coordinates are as follows.
    x = x1 ± 0.010 , y = y1 ± 0.020 (Target)
    x = x1 ± 0.040 , y = y1 ± 0.080
15. Similarly, measure and adjust their color coordinates of points No.3 to 17 starting in order from the small number points.
16. Now make similar adjustments for R and B color of -MID-3-, -MID-5- and -MAX- tones. Adjust them in the same way as the -MIN- tone adjustments in the step 12 to 15 so that the coordinates are as follows.
    x = x1 ± 0.005 , y = y1 ± 0.005
17. Finally, set the values of the -MID-2-, -MID-4- and -MID-6- tones as follows using the values already set.
    -MID-2- tone : average of -MID-1- and -MID-3- tones
    -MID-4- tone : average of -MID-3- and -MID-5- tones
    -MID-6- tone : average of -MID-5- and -MAX- tones

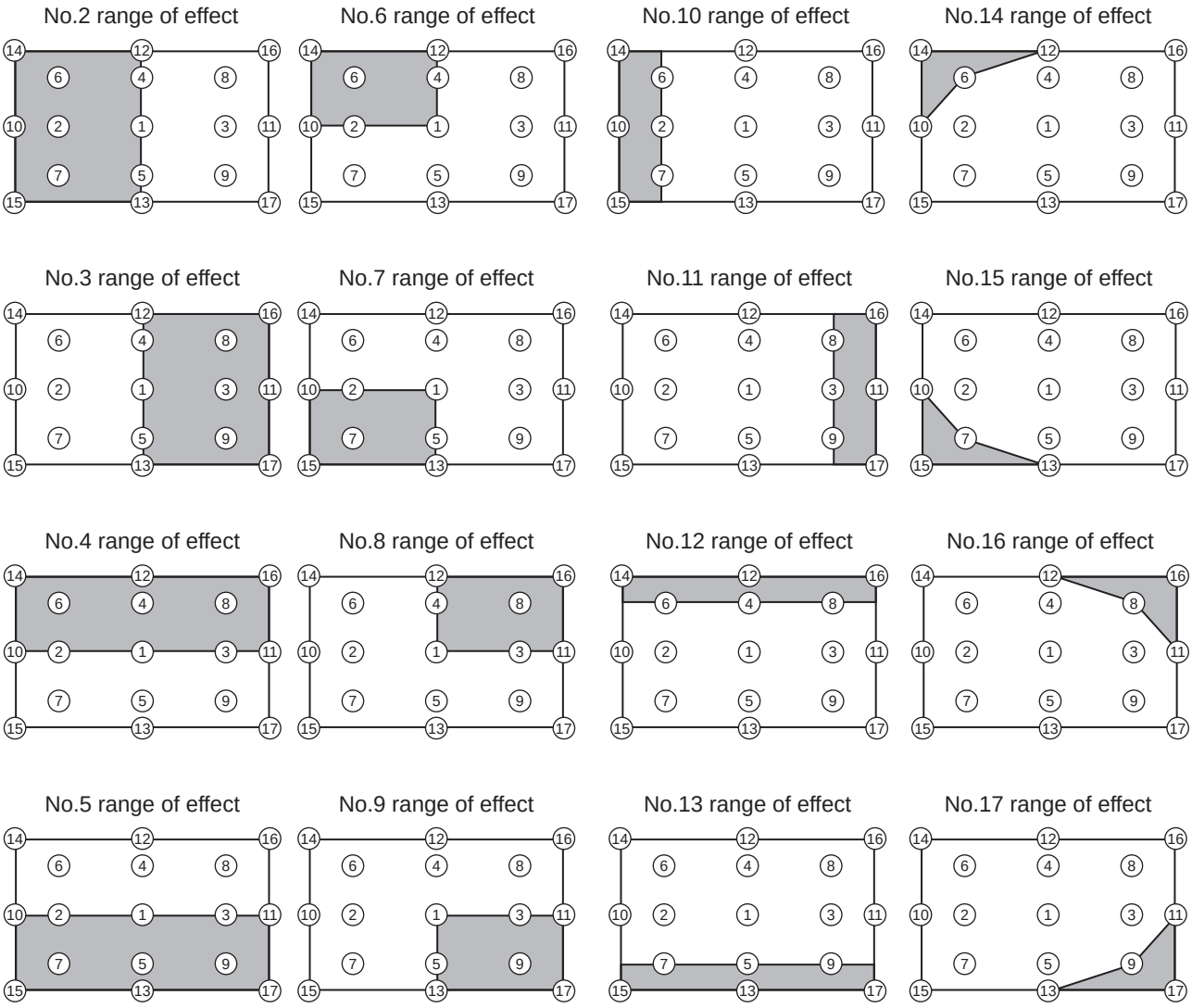
(continued on next page)

Adjustment procedure 2 (visual inspection)

1. First adjust G color of the -MIN- tone.
2. Select G of point No.2 and change the background to solid W monochrome.
3. View point No.2 and 3. Lower the G color intensity only of the color point whose G color is more intense than point No.1.
   NOTE: When adjusting a point, it affects around the point as the diagrams.
4. View point No.10 and 11. Lower the G color intensity only of the color point whose G color is more intense than point No.1, and raise the intensity of the point whose color intensity is lower than point No.1.
5. Now adjust R and B colors of the MIN tone.
6. View points No.2, 3, 10 and 11. Adjust R and B color of each point so that they have the same color as point No.1.

Adjustment technique: First, adjust B color of the point whose color is to be adjusted so that it approximates that of point No.1. If R color is low at this time, the image will have cyanish cast, in which case increase R color. On the other hand, if R color is excessive, the image will have a reddish cast, in which case decrease R color. Overall, a cyanish cast makes it easy to see color shading.

7. Next, view and make similar adjustments for points No.4, 5, 12 and 13.
8. Then adjust points No.6 to 9 and No.14 to 17. This completes the -MIN- tone adjustments.
9. Make similar adjustments for other tones as described in steps 1 to 8 above.



10-7 LENS SHIFT adjustment

When you replaced the LCD Prism Shift mech. assembly or MAIN PCB, make sure to carry out this adjustment after re-assembling the projector.

LENS_C bar

(You do not have to care the numbers in this menu.)

Example 1

LENS_C	>>EXE	T:xxx	B:xxx	L:xxx	R:xxx	NG

Example 2

LENS_C	>>EXE	T:168	B:802	L:281	R:803	OK

Example 3

LENS_C	>>EXE	T:err	B:823	L:306	R:778	NG

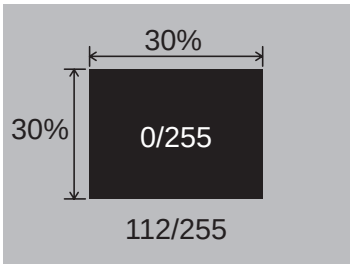
Adjustment procedure

1. Display the LENS_C bar with the ▲ and ▼ buttons in FACTORY MENU - OPTION. (Example 1)
2. Press the ► button to run automatic adjustment program.
   NOTE: During this adjustment, the lens automatically moves vertically and horizontally.
3. The right-most cell is highlighted after the adjustment finished. Check the status, OK or NG, displayed in the cell.
   OK: The adjustment was successful. (Example 2)
   NG: The adjustment was failed. Go to the next step. (Example 3)
4. Check the followings. After the confirmation or the rework, carry out the adjustment again.
   - Harnesses are firmly connected to the connectors EM00, EM01, EM03 and EM04 on the MAIN PCB.
   - None of objects or wires is pinched between the LENS SHIFT MECH and the lens.

   NOTE: Find the cell in which “err” is displayed, and read the left-most letter (T, B, L or R) in the cell. It shows the area where the adjustment was failed.
   T: Between the top side frame of LENS SHIFT MECH and lens body
   B: Between the bottom side frame of LENS SHIFT MECH and lens body
   L: Between the air-filter-side frame of LENS SHIFT MECH and lens body
   R: Between the ports-side frame of LENS SHIFT MECH and lens body

10-8 Ghost adjustment

Test pattern for the adjustment

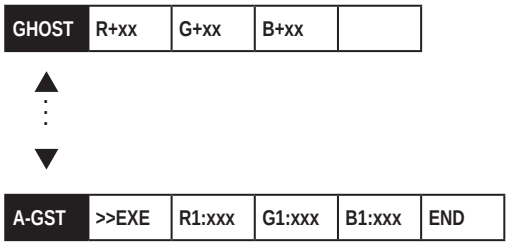


NOTICE

Be sure to do this adjustment work in a darkroom so that you do not miss a faint ghosting.

Adjustment procedure

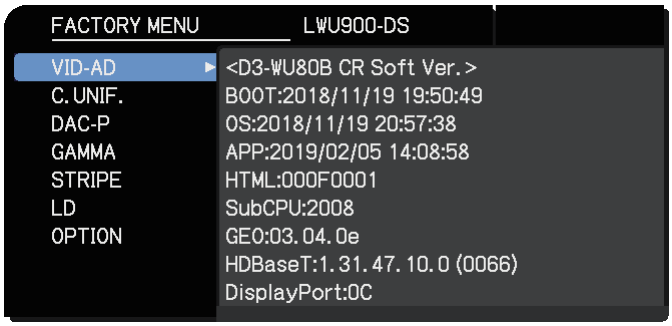
1. Make this adjustment after completing the adjustment in the section 4-4.
   Set the GHOST R, G, B in OPTION-SERVICE-GHOST Menu to 0.
2. Use DAC-P - GHOST - R: in the FACTORY MENU to optimize the setting.
   (a) Highlight the cell R of the GHOST bar, and then press the RESET button to initialize.
   (b) Check if a faint ghosting is displayed at 24 or 48 pixels away from the test pattern to the left.
   (c) If a faint ghosting is not displayed, press the ▲ (up) button one time to increase the value by 1.
   Repeat the works (b) and (c) until a faint ghosting appears.
   (d) When you find a faint ghosting, decrease the value by 6.
   Ex. The faint ghosting appears at the value X, set the value to X-6 finally.
3. In the same way, use DAC-P - GHOST-G: in the FACTORY MENU to optimize the setting.
   As for GHOST-G, change the words “to the left “ to “to the right” in the description of 2-(b).
4. In the same way, use DAC-P - GHOST-B: in the FACTORY MENU to optimize the setting.
5. After completing the GHOST adjustment above, display the A-GST bar.



6. While the cell A-GST is selected, press the ▶ (right) button to execute.
   Then, the automatic adjustment starts.
7. After the END is highlighted, read the numbers indicated in the cells R1, G1 and B1. If they all are in the range from 200 to 500, this adjustment has been succeeded.

If any of them are out of the range, re-connect the panel flexible cables to the MAIN PCB. And then, go back to the step 6 to execute the A-GST again.

10-9 LD MENU



This indicates lighting time of light source. If a light source has been replaced, initialize lighting time by moving a cursor to lighting time.
Remote control: Hold down the RESET button.
Keypad: Hold down the ↓ and INPUT button at the same time.

This menu indicates brightness of light source which is measured by light sensor. It is recommended to replace the light source unit if this value is less than 350.

This indicates max value of light source output power. If a light source has been replaced, initialize max value of light source output power. Select MaxCur and perform the following operation.
Remote control: Hold down the RESET button.
Keypad : Hold down the INPUT button.

This indicates the calibration result of duration which a sensor measures the electric charge. If a light source has been replaced, execute calibration of duration.
When you select Calib and press the → button, another window is displayed as shown above. When you press the → button again and select OK, calibration starts. Calibration finishes in about 30 seconds after it started, and a cursor moves to END.

10-10 Setup of the projector

The following contents are also described in User's manual.

● **ZOOM / FOCUS**

1. The **ZOOM** or **FOCUS** dialog will appear when you press any of the buttons from **ZOOM**, **ZOOM -**, **ZOOM +**, **FOCUS, FOCUS +** and **FOCUS -**.
2. Use the **ZOOM + / -** buttons on the remote control or **ZOOM** button and ◄/► cursor buttons on the projector to adjust the screen size.
3. Use the **FOCUS + / -** buttons on the remote control or **FOCUS** button and ◄/► cursor buttons on the projector to focus the picture.

● **LENS SHIFT**

Press the **LENS SHIFT** button on the projector or the **SHIFT** button on the remote control to display the LENS SHIFT menu. Press the ► or **ENTER** button to select LENS SHIFT, then shift the lens with the ▲/▼/◄/► buttons. Generally, better image quality can be got when the lens is set to the center.
Press the ◄ or **ENTER** button to go back to menu selection. To exit the LENS SHIFT function, press the **LENS SHIFT** button while LENS SHIFT menu is displayed.

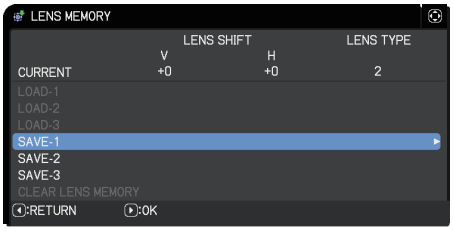
● **CENTERING**

<With the LENS SHIFT menu>
Select CENTERING in LENS SHIFT menu and press the ► or **ENTER** button to execute the CENTERING feature which adjusts the lens to the center. A message dialog is displayed for confirmation. Pressing the ►button performs CENTERING. You can also perform CENTERING in the standby mode by pressing the **INPUT** and **LENS SHIFT** buttons on the control panel for three seconds at the same time.

<In the standby mode>
Press the **LENS SHIFT** and the **INPUT** buttons for 3 seconds at the same time.

- While the lens is moving to the center, the menu disappears and an hourglass icon appears on the screen. CENTERING may take some time till the lens reaches the center.
- The projector may ignore operation by buttons while moving the lens.
- The CENTERING feature while the projector is in the standby mode is disabled if the STANDBY MODE item of SETUP menu is set to NETWORK-WOL or POWER SAVE. Perform CENTERING before the projector's power is turned off, or set the STANDBY MODE to NORMAL or QUICK START.
- The adjustable range of LENS SHIFT varies depending on the lens unit mounted on the projector to maintain picture quality. Therefore, LENS SHIFT adjustment may not reach the end of the indicator in the dialog. This is not a failure.

● **LENS MEMORY** SAVE / LOAD / CLEAR



This projector is equipped with memory functions for the lens adjustments (LENS SHIFT and LENS TYPE). Up to three sets of adjustments can be stored.
To use the lens memory feature, press the **LOAD** or **SAVE** button, or select LENS MEMORY in LENS SHIFT menu and press the ► or **ENTER** button. Then the LENS MEMORY dialog appears. The current lens adjustments are displayed on the “CURRENT” line. The adjustments already stored in the lens memory are displayed on the lines of SAVE and LOAD-1 to 3.

<SAVE>

To save the current lens adjustments, select a SAVE-(1-3) and press ► or **ENTER** button.

<LOAD>

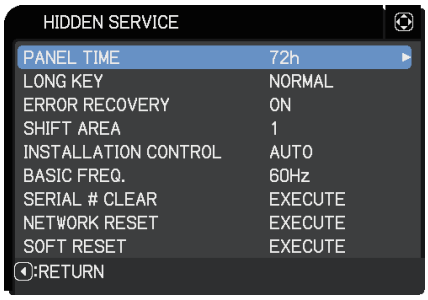
To load a saved adjustments, select the LOAD-(1-3) and press ► or **ENTER** button.

<CLEAR>

Select CLEAR LENS MEMORY and press the ► or **ENTER** button.A message dialog is displayed for confirmation. Press the button again to clear the lens memory.

11. Technical Infomation

11-1 HIDDEN SERVICE MENU



HIDDEN SERVICE menu

With the control panel	With the remote control
1. Press the **MENU** button to display the ADVANCED MENU. (If EASY MENU appears, choose ADVANCED MENU.) 2. Select the OPTION on the menu. 3. Press the ◄ button first, then press and hold the ◄ and **INPUT** buttons for 3 seconds.	1. Press the **MENU** button to display the ADVANCED MENU. (If EASY MENU appears, choose ADVANCED MENU.) 2. Select the OPTION on the menu. 3. Press the **MAGNIFY OFF** button, then re-press and hold the button for 3 seconds.

- **PANEL TIME**
  Use time of LCD panel. Reset the PANEL TIME whenever you changed the LCD prism assembly.
- **LONG KEY**
  You can select the remote control button operation mode. NORMAL ↔ LONG
  The LONG allows to control the projector with the remote control unit when you hold a button of it for about 3 seconds, and makes MY BUTTON function as LONG KEY DISABLE/LONG KEY ENABLE compulsorily. If you use these buttons to control the projector as you assigned with the MY BUTTON menu, set to the NORMAL.
- **ERROR RECOVERY**
  OFF :You need to unplug the projector's power cord to get back from the standby state with an alert of LIGHT SOURCE ERROR or TEMPERATURE ERROR.
  ON :You can get back the projector from the standby state with an alert of LIGHT SOURCE ERROR or TEMPERATURE ERROR by holding the **STANDBY/ON** button for about 3 seconds. Unplug the projector's power cord when this operation becomes ineffective.
- **SHIFT AREA**
  You can switch the size of OSD during LENS SHIFT adjustment. 1 :SMALL ↔ 2 :LARGE
- **INSTALLATION CONTROL**
  AUTO :
  Adjusts optimum settings of fan and light source automatically according to the installation conditions.
  NORMAL :
  Adjusts settings of fan and light source suitable for other than the installation conditions of portrait projection.
  Use this mode when temperature error occurs in portrait projection.
  OTHER :
  Adjusts settings of fan and light source suitable for the installation conditions of portrait projection.
- **BASIC FREQ.**
  Switches the basic vertical frequency for the output image of this projector.
  50Hz (PAL region) ←→ 60Hz (NTSC region)

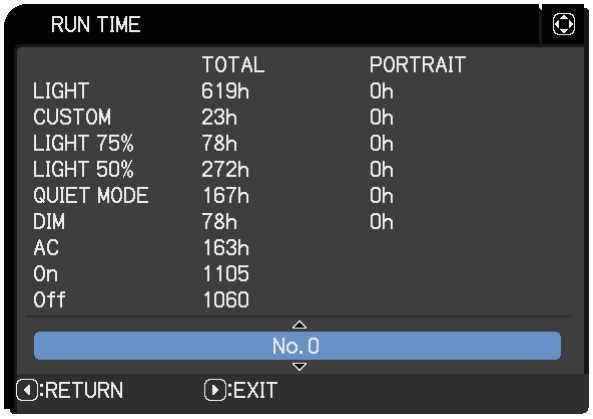
(continued on next page)

- **SERIAL # CLEAR**
  Executing this item makes the serial # in the EASY MENU disappear. It is impossible to display the serial # again once you do this operation. Do not execute this item in any cases except when you use the MAIN PCB taken from one projector for another in repair work.
- **NETWORK RESET**
  If this is executed, all of the network settings are initialized.
- **SOFT RESET**
  When this is executed, all of the user data is initialized. Never use it if not required.

11-2 RUN TIME window

- **The product operating time display method (accumulated light source hours display method)**

1. Open the ADVANCED MENU and select SETUP - LIGHT & FILTER - LIGHT SOURCE HOURS, and then press the ►, **ENTER** or **RESET** button to display the LIGHT SOURCE HOURS reset box.
2. Press the **RESET** button once, then press **GEOMETRY** button of the remote control for 3 seconds or more to display the screen shown below. The menu will close after 55 seconds if there are no further operations.
3. Use ▲/▼ buttons to select the usage status number. (The usage status is as shown below.)



RUN TIME window

← LIGHT SOURCE TIME
← LIGHT SOURCE TIME (CUSTOM)
← LIGHT SOURCE TIME (LIGHT 75%)
← LIGHT SOURCE TIME (LIGHT 50%)
← LIGHT SOURCE TIME (QUIET MODE)
← LIGHT SOURCE TIME (DIM)
← AC energizing time
← Number of times on
← Number of times off

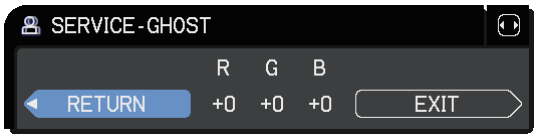
← Usage status number

0 ..... Total usage status
1 ..... Current usage status
2 ..... Usage status before first reset
3 ..... Usage status before second reset
||
9 ..... Usage status before eighth reset

11-3 DIGITAL CONVERGENCE adjustment

Preparation

1. Open the ADVANCED MENU and select OPTION → SERVICE → GHOST, and then press the ► (right) or the ENTER button to display the SERVICE_GHOST box.



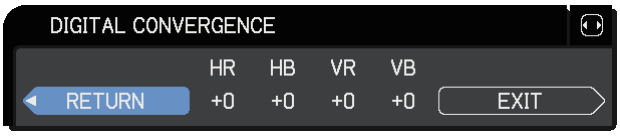
2. While the RETURN is highlighted, operate the keypad or the remote control as follows. The DIGITAL CONVERGENCE box will appear.

   Keypad

   Press the ▼ (down) button, and then hold the ▼ (down) button together with INPUT button for about 3 seconds.

   Remote control

   Press the MAGNIFY OFF button, and then hold the MAGNIFY OFF button for about 3 seconds.



3. Align the blue/red image with the green image using the HR, HB, VR and VB.

   HR shifts the red image to the left/right.

   HB shifts the blue image to the left/right.

   VR shifts the red image upward/downward.

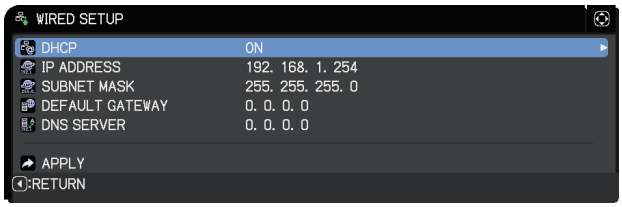
   VB shifts the blue image upward/downward.

11-4 Reset of the Network Web password / User ID

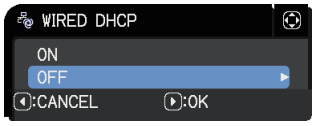
ATTENTION

Performing this operation initializes the network settings. If the projector has the customized network settings, make a note of the network settings before this operation to restore them later.

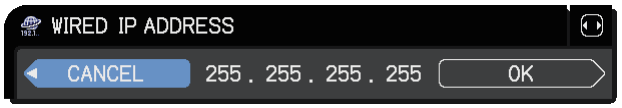
1. Display the WIRED SETUP in the NETWORK menu.



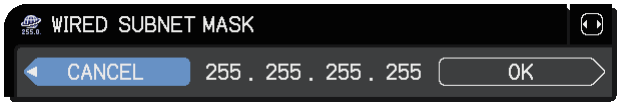
2. Select “OFF” in the item of DHCP.



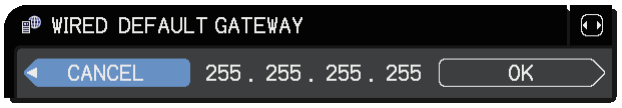
3. Enter “255.255.255.255” in the item of IP ADDRESS.



4. Enter “255.255.255.255” in the item of SUBNET MASK.



5. Enter “255.255.255.255” in the item of DEFAULT GATEWAY.



6. While NETWORK on the left column is highlighted, press the **RESET** button.

7. Select OK, and press ► button to execute reset.
   The operation described above resets not only Web User Account but also NETWORK settings.
   NOTE
   When you execute this reset operation with any other settings than above (described in the step 2 to 5), the Network Control Password, Network Presentation Password, SNTP server address, DATE AND TIME and other schedule settings are not initialized, but the network settings (DHCP, IP ADDRESS, SUBNET MASK and DEFAULT GATEWAY) are initialized.

8. If the network settings had been customized, restore them by manual operation.

11-5 How to inactivate the security functions

This projector is equipped with security functions as below.

(1) My Screen PASSWORD

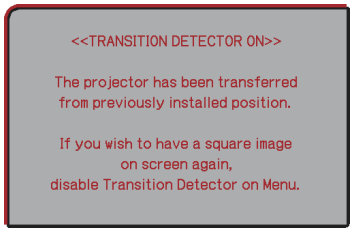
The My Screen PASSWORD function can be used to prohibit access to the My Screen function and prevent the currently registered My Screen image from being overwritten.

(2) PIN lock

PIN lock is a function which prevents the projector from being used unless a registered Code is input.

(3) Transition detector

Transition detector is a function which prevents the projector from being used if vertical angle of the projector and INSTALLATION setting is not same with recorded.



Transition Detector Alarm

(4) MY TEXT

This item allows you to display your own message (MY TEXT) on the START UP screen and INPUT_INFORMATION. It can be protected by a password to prevent it from being overwritten.

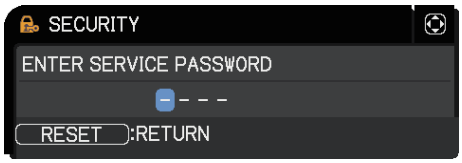
● Security function inactivation

It is possible to inactivate all security functions temporarily with the following procedures.

1. Open the ADVANCED MENU and select SECURITY - ENTER PASSWORD, and then press the ► button to display the ENTER PASSWORD box.
   (The BOX will be also displayed by pressing the **MENU** button when Transition Detector Alarm is displayed.)

ENTER PASSWORD box

2. Press the **MAGNIFY OFF** button, then re-press and hold the **MAGNIFY OFF** button for 3 second or longer to display ENTER SERVICE PASSWORD box.



ENTER SERVICE PASSWORD box

3. Enter the “Life key” (**MENU**, ▼, **GEOMETRY**, ▲). Then all security functions will be inactivated until the projector is turned off.

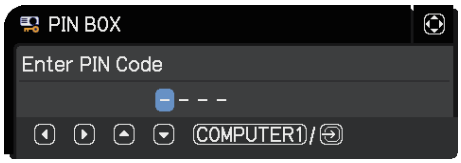
   NOTE:

   • The Life key can be used up to 30 times. The key cannot be used thereafter. If the Life key cannot be used, see the paragraph of SECURITY menu in the User’s Manual. The frequency in which Life key is input will be set to 0 after the registered code is input.

   • The SECURITY menu cannot be operated if the SECURITY PASSWORD was released by Life key.

11-6 PIN LOCK System

If the following PIN BOX menu appears after power on the projector, the PIN LOCK system has been activated. Under such a condition, key operations and signal displaying are inhibited. To open the PIN LOCK system, we need to input the correct 4 digits PIN Code. If correct PIN Code is not input in 5 min., the light source will be automatically turned off.



PIN BOX

● **Returning repaired unit**

Use the Master PIN Code (same as “Life key”, **MENU**, ▼, **GEOMETRY**, ▲). In accordance with button entry, “*” mark appears in the PIN BOX menu.

NOTE:

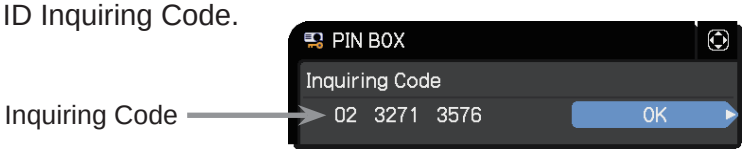
The Master PIN Code can be used up to 30 times. The codes cannot be used thereafter. If the Master PIN Code cannot be used, see the paragraph of the PIN LOCK system inactivation.

● **Swap unit/Returned unit**

Release all security systems. See the paragraph of the PIN LOCK system inactivation.

● **The PIN LOCK system inactivation**

1. When the PIN BOX menu is displayed, press **RESET** button for 3 seconds or more in order to get the ID Inquiring Code.



PIN BOX (ID Inquiring Code)

2. Send CHRISTIE servicing provider the Inquiring code (10 digits) to inquire the correct PIN code.
3. While the PIN BOX is displayed, enter the correct PIN Code that CHRISTIE servicing provider informed.
4. Open menu and select “TURN OFF” from the PIN LOCK items in the SECURITY menu. Then the PIN BOX menu appears.
   Password is required to display the SECURITY menu.
   See the SECURITY menu: User’s Manual - Operating Guide.
5. Input the correct PIN code in the PIN BOX menu.
6. And then, PIN LOCK will be set to “OFF”.
7. Inactivate the My Screen PASSWORD, Transition Detector and My Text PASSWORD as well. And re-set the Security Password to the factory default number as below.

Model	Password
LWU755-DS / LWU900-DS	7619
LHD878-DS	6019

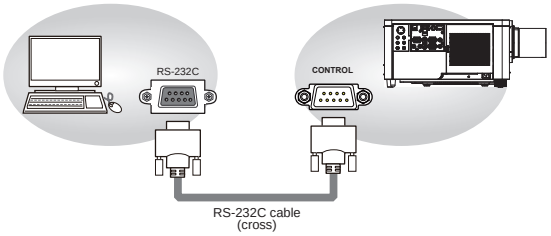
See the SECURITY menu: User’s Manual - Operating Guide.

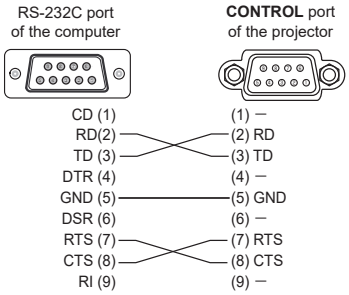
RS-232C Communication

When the projector connects to the computer by RS-232C communication, the projector can be controlled with RS-232C commands from the computer.
For details of RS-232C commands, refer to RS-232C Communication / Network command table.

Connection

1. Turn off the projector and the computer.
2. Connect the projector's **CONTROL** port and the computer's RS-232C port with a RS-232C cable (cross). Use the cable that fulfills the specification shown in figure.
3. Turn the computer on, and after the computer has started up turn the projector on.
4. Set the COMMUNICATION TYPE to OFF in the COMMUNICATION menu of the OPTION - SERVICE menu.





Communication settings

1. Protocol

19200bps, 8N1

2. Command format ("h" shows hexadecimal)

Byte Number	0	1	2	3	4	5	6	7	8	9	10	11	12
Command / Action	Header							Data					
	Header code		Packet	Data size		CRC flag		Action		Type		Setting code	
	L	H		L	H	L	H	L	H	L	H	L	H
<SET>Change setting to desired value [(cL)(cH)] by [(bL)(bH)].	BEh	EFh	03h	06h	00h	(aL)	(aH)	01h	00h	(bL)	(bH)	(cL)	(cH)
<GET>Read projector internal setup value [(bL)(bH)] .						(aL)	(aH)	02h	00h	(bL)	(bH)	00h	00h
<INCREMENT> Increment setup value [(bL)(bH)] by 1.						(aL)	(aH)	04h	00h	(bL)	(bH)	00h	00h
<DECREMENT> Decrement setup value [(bL)(bH)] by 1.						(aL)	(aH)	05h	00h	(bL)	(bH)	00h	00h
<EXECUTE> Run a command [(bL)(bH)].						(aL)	(aH)	06h	00h	(bL)	(bH)	00h	00h

[Header code] [Packet] [Data size]
Set [BEh, EFh, 03h, 06h, 00h] to byte number 0 to 4.

[CRC flag]
For byte number 5, 6, refer to RS-232C Communication / Network command table.

[Action]

Set functional code to byte number 7, 8.
<SET> = [01h, 00h], <GET> = [02h, 00h], <INCREMENT> = [04h, 00h]
<DECREMENT> = [05h, 00h], <EXECUTE> = [06h, 00h]
Refer to the Communication command table.

[Type] [Setting code]
For byte number 9 to 12, refer to RS-232C Communication / Network command table.

3. Response code / Error code ("h" shows hexadecimal)

(1) ACK reply: 06h
When the projector receives the Set, Increment, Decrement or Execute command correctly, the projector changes the setting data for the specified item by [Type], and it returns the code.

(2) NAK reply: 15h
When the projector cannot understand the received command, the projector returns the error code.
In such a case, check the sending code and send the same command again.

(3) Error reply: 1Ch + 0000h
When the projector cannot execute the received command for any reasons, the projector returns the error code.
In such a case, check the sending code and the setting status of the projector.

(4) Data reply: 1Dh + xxxxh
When the projector receives the GET command correctly, the projector returns the response code and 2 bytes of data.

NOTE • For connecting the projector to your devices, read the manual for each devices, and connect them correctly with suitable cables.
• Operation cannot be guaranteed when the projector receives an undefined command or data.
• Provide an interval of at least 40ms between the response code and any other code.
• The projector outputs test data when the power supply is switched ON, and when the light source is lit. Ignore this data.
• Commands are not accepted during warm-up.
• When the data length is greater than indicated by the data length code, the projector ignore the excess data code. Conversely when the data length is shorter than indicated by the data length code, the projector returns the error code to the computer.

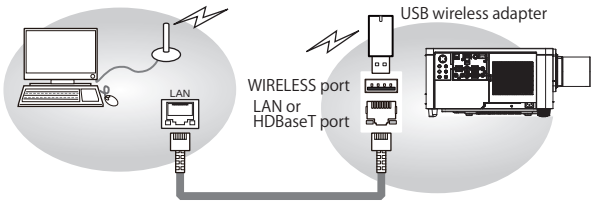
Command Control via the Network

When the projector connects network, the projector can be controlled with RS-232C commands from the computer with web browser.
For details of RS-232C commands, refer to RS-232C Communication / Network command table.

NOTE • If data is transferred using wireless and wired LAN at the same time, the projector may not be able to process the data correctly.

Connection

1. Turn off the projector and the computer.
2. If you use wired LAN, connect the projector's **LAN** or **HDBaseT**™ port to the computer's LAN or **HDBaseT** port with a LAN cable. Use the cable that fulfills the specification shown in figure. If you use wireless LAN, insert the USB wireless adapter into the **WIRELESS** port of the projector.
3. Turn the computer on, and after the computer has started up turn the projector on.



• LAN cable (CAT-5e or greater)
or
• For HDBaseT connection
- CAT-5e or greater
- shielded type (connectors included)
- straight cable
- single cable

Communication Port

The following two ports are assigned for the command control.

TCP #23
TCP #9715

Configure the following items from a web browser when command control is used.

Port Settings			
	Network Control Port1 (Port: 23)	Port open	Click the **[Enable]** checkbox to open **[Network Control Port1 (Port: 23)]** to use TCP #23. Default setting is Enable.
		Authentication	Click the **[Enable]** check box for the **[Authentication]** setting when authentication is required. Default setting is Disable.
	Network Control Port2 (Port: 9715)	Port open	Click the **[Enable]** check box to open **[Network Control Port2 (Port: 9715)]** to use TCP #9715. Default setting is Enable.
		Authentication	Click the **[Enable]** check box for the **[Authentication]** setting when authentication is required. Default setting is Enable.

When the authentication setting is enabled, the following settings are required.

Security Settings			
	Network Control	Password	Enter the required authentication password. Confirm this setting is the same for **[Network Control Port1 (Port: 23)]** and **[Network Control Port2 (Port: 9715)]**. Default setting is blank.
		Re-enter Password	

Command control settings

[TCP #23]

1. Command format

Same as RS-232C communication, refer to RS-232C Communication command format.

2. Response code / Error code ("h" shows hexadecimal)

Four of the response / error code used for TCP#23 are the same as RS-232C Communication (1)~(4). One authentication error reply (5) is added.

(1) **ACK reply : 06h**
Refer to RS-232C communication.

(2) **NAK reply : 15h**
Refer to RS-232C communication.

(3) **Error reply : 1Ch + 0000h**
Refer to RS-232C communication.

(4) **Data reply : 1Dh + xxxxh**
Refer to RS-232C communication.

(5) **Authentication error reply : 1Fh + 0400h**
When authentication error occurred, the projector returns the error code.

[TCP #9715]

1. Command format

The commands some datum are added to the head and the end of the ones of TCP#9715 are used.

Header	Data length	RS-232C command	Check sum	Connection ID
0×02	0×0D	13 bytes	1 byte	1 byte

[Header]
02, Fixed
[Data Length]
RS-232C commands byte length (0×0D, Fixed)
[RS-232C commands]
Refer to RS-232C Communication command format.
[Check Sum]
This is the value to make zero on the addition of the lower 8 bits from the header to the checksum.
[Connection ID]
Random value from 0 to 255 (This value is attached to the reply data).

NOTE • Operation cannot be guaranteed when the projector receives an undefined command or data.
• Provide an interval of at least 40ms between the response code and any other code.
• Commands are not accepted during warm-up.

2. Response code / Error code ("h" shows hexadecimal)

The connection ID is attached for the TCP#23's response / error codes are used. The connection ID is same as the sending command format.

(1) **ACK reply: 06h + ××h** (××h : connection ID)
(2) **NAK reply: 15h + ××h**
(3) **Error reply: 1Ch + 0000h + ××h**
(4) **Data reply: 1Dh + xxxxh + ××h**
(5) **Authentication error reply: 1Fh + 0400h + ××h**
(6) **Projector busy reply: 1Fh + ××××h + ××h**
When the projector is too busy to receive the command, the projector returns the error code.
In such a case, check the sending code and send the same command again.

Automatic Connection Break

The TCP connection is automatically disconnected after there is no communication for 30 seconds after being established.

Authentication

The projector does not accept commands without authentication success when authentication is enabled. The projector uses a challenge response type authentication with an MD5 (Message Digest 5) algorithm.
When the projector is connected to a LAN, a random 8 bytes is returned if authentication is enabled. Bind this received 8 bytes and the authentication password, and digest the data with the MD5 algorithm, and add it in front of the commands to send.
The following is a sample of authentication process.
Authentication password: **password** (example)
Random 8 bytes: **a572f60c** (example)

1) Select a projector and receive the random 8 bytes from the projector.
➔ "a572f60c"
2) Bind the random 8 bytes and the authentication password.
➔ "a572f60cpassword"
3) Digest this bound with MD5 algorithm.
➔ "e3d97429adffa11bce1f7275813d4bde"
4) Add this code in front of the commands and send the data.
➔ "e3d97429adffa11bce1f7275813d4bde" + [command].
5) When the sent data is correct, the command is performed and the reply data is returned. Otherwise, an authentication error is returned.

NOTE • As for the transmission of the second or subsequent commands, the authentication data can be omitted for the same connection.

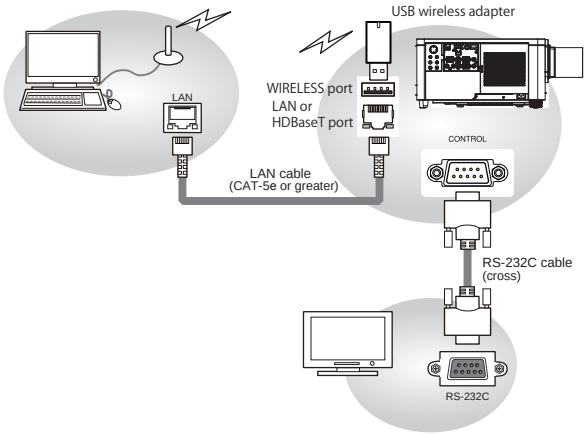
Network Bridge Communication

This projector is equipped with NETWORK BRIDGE function.
When the projector connects to the computer by wired or wireles LAN communication, an external device connected with this projector by RS-232C communication can be controlled from the computer as a network terminal.
For details, see the **7. Network Bridge** function in the **Network Guide**.

NOTE • If data is transferred using wireless and wired LAN at the same time, the projector may not be able to process the data correctly.

Connection

1. If you use wired LAN or HDBaseT, connect the computer's LAN port and the projector's **LAN** or **HDBaseT** port with a LAN cable. Use the cable that fulfills the specification shown in figure. If you use wireless LAN, insert the USB wireless adapter into the projector's **WIRELESS** port.
2. Connect the projector's **CONTROL** port and the RS-232C port of the devices that you want to control with a RS-232C cable.
3. Turn the computer on, and after the computer has started up turn the projector on.
4. Set the COMMUNICATION TYPE to NETWORK BRIDGE in the COMMUNICATION menu of the OPTION - SERVICE menu.



Network Bridge Communication

Communication settings

For communication setting, use the COMMUNICATION menu in the OPTION - SERVICE menu

Item	Condition
BAUD RATE	4800bps / 9600bps / 19200bps / 38400bps
Data length	8 bit (fixed)
PARITY	NONE/ODD/EVEN
Start bit	1 bit (fixed)
Stop bit	1 bit (fixed)
Transmission method	HALF-DUPLEX/FULL-DUPLEX

NOTE • For connecting the projector to your devices, read the manual for each devices, and connect them correctly with suitable cables.

• Turn off the power and unplug both the projector and other devices before connecting them.

RS-232C Communication / Network command table

RS-232C Communication / Network command table

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
Power	Set	Turn off	BE EF	03	06 00	2A D3	01 00	00 60	00 00
		Turn on	BE EF	03	06 00	BA D2	01 00	00 60	01 00
	Get		BE EF	03	06 00	19 D3	02 00	00 60	00 00
			[Example return] 00 00 [Off] 01 00 [On] 02 00 [Cool down]						
Input Source	Set	COMPUTER IN	BE EF	03	06 00	FE D2	01 00	00 20	00 00
		LAN	BE EF	03	06 00	CE D5	01 00	00 20	0B 00
		HDMI 1	BE EF	03	06 00	0E D2	01 00	00 20	03 00
		HDMI 2	BE EF	03	06 00	6E D6	01 00	00 20	0D 00
		HDBaseT	BE EF	03	06 00	AE DE	01 00	00 20	11 00
		VIDEO	BE EF	03	06 00	6E D3	01 00	00 20	01 00
		3G-SDI*	BE EF	03	06 00	5E DE	01 00	00 20	12 00
		DisplayPort	BE EF	03	06 00	CE DF	01 00	00 20	13 00
	Get		BE EF	03	06 00	CD D2	02 00	00 20	00 00
Error Status	Get		BE EF	03	06 00	D9 D8	02 00	20 60	00 00
			[Example return] 00 00 [Normal] 30 00 [Fan warning] 02 00 [Fan error] 03 00 [Light Source error] 04 00,5A 00,5D 00,63 00 [Temp error] 05 00 [Air flow error] 07 00,0A 00 [Cold error] 08 00 10 00 13 00,23 00,24 00,25 00, 68 00,69 00 [Filter error] [Lens Shift error] [Light Source warning] 65 00,80 00 [Other error]						
FOCUS	Increment		BE EF	03	06 00	6A 93	04 00	00 24	00 00
	Decrement		BE EF	03	06 00	BB 92	05 00	00 24	00 00
ZOOM	Increment		BE EF	03	06 00	96 92	04 00	01 24	00 00
	Decrement		BE EF	03	06 00	47 93	05 00	01 24	00 00
LENS SHIFT - V	Increment		BE EF	03	06 00	D2 92	04 00	02 24	00 00
	Decrement		BE EF	03	06 00	03 93	05 00	02 24	00 00
	Get		BE EF	03	06 00	B4 92	02 00	02 24	00 00
LENS SHIFT - H	Increment		BE EF	03	06 00	2E 93	04 00	03 24	00 00
	Decrement		BE EF	03	06 00	FF 92	05 00	03 24	00 00
	Get		BE EF	03	06 00	48 93	02 00	03 24	00 00
LENS SHIFT CENTERING	Execute		BE EF	03	06 00	B8 93	06 00	04 24	00 00
LENS MEMORY INDEX	Set	1	BE EF	03	06 00	4B 92	01 00	07 24	00 00
		2	BE EF	03	06 00	DB 93	01 00	07 24	01 00
		3	BE EF	03	06 00	2B 93	01 00	07 24	02 00
	Get		BE EF	03	06 00	78 92	02 00	07 24	00 00
LENS MEMORY LOAD	Execute		BE EF	03	06 00	E8 90	06 00	08 24	00 00
LENS MEMORY SAVE	Execute		BE EF	03	06 00	14 91	06 00	09 24	00 00
LENS MEMORY CLEAR	Execute		BE EF	03	06 00	50 91	06 00	0A 24	00 00

* Supported only for LWU900-DS/LHD878-DS

RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
LENS MEMORY LENS SHIFT - V	Get		BE EF	03	06 00	A0 91	02 00	0D 24	00 00
LENS MEMORY LENS SHIFT - H	Get		BE EF	03	06 00	E4 91	02 00	0E 24	00 00
LENS MEMORY LENS TYPE	Get		BE EF	03	06 00	18 90	02 00	0F 24	00 00
MAGNIFY	Get		BE EF	03	06 00	7C D2	02 00	07 30	00 00
	Increment		BE EF	03	06 00	1A D2	04 00	07 30	00 00
	Decrement		BE EF	03	06 00	CB D3	05 00	07 30	00 00
MAGNIFY Position H	Get		BE EF	03	06 00	C8 D7	02 00	10 30	00 00
	Increment		BE EF	03	06 00	AE D7	04 00	10 30	00 00
	Decrement		BE EF	03	06 00	7F D6	05 00	10 30	00 00
MAGNIFY Position V	Get		BE EF	03	06 00	34 D6	02 00	11 30	00 00
	Increment		BE EF	03	06 00	52 D6	04 00	11 30	00 00
	Decrement		BE EF	03	06 00	83 D7	05 00	11 30	00 00
FREEZE	Set	NORMAL	BE EF	03	06 00	83 D2	01 00	02 30	00 00
		FREEZE	BE EF	03	06 00	13 D3	01 00	02 30	01 00
	Get		BE EF	03	06 00	B0 D2	02 00	02 30	00 00
SHUTTER	Set	OFF	BE EF	03	06 00	F3 93	01 00	05 24	00 00
		ON	BE EF	03	06 00	63 92	01 00	05 24	01 00
	Get		BE EF	03	06 00	C0 93	02 00	05 24	00 00
PbyP/PIP	Set	OFF	BE EF	03	06 00	3E 26	01 00	10 23	00 00
		PbyP	BE EF	03	06 00	AE 27	01 00	10 23	01 00
		PIP	BE EF	03	06 00	5E 27	01 00	10 23	02 00
	Get		BE EF	03	06 00	0D 26	02 00	10 23	00 00
PbyP MAIN SIZE	Set	SMALL	BE EF	03	06 00	F2 07	01 00	11 23	7F 00
		MIDDLE	BE EF	03	06 00	02 46	01 00	11 23	80 00
		LARGE	BE EF	03	06 00	92 47	01 00	11 23	81 00
	Get		BE EF	03	06 00	F1 27	02 00	11 23	00 00
PbyP RIGHT SOURCE	Set	COMPUTER IN	BE EF	03	06 00	86 27	01 00	12 23	00 00
		HDMI 1	BE EF	03	06 00	76 27	01 00	12 23	03 00
		HDMI 2	BE EF	03	06 00	16 23	01 00	12 23	0D 00
		HDBaseT	BE EF	03	06 00	D6 2B	01 00	12 23	11 00
		VIDEO	BE EF	03	06 00	16 26	01 00	12 23	01 00
		3G-SDI*	BE EF	03	06 00	26 2B	01 00	12 23	12 00
		DisplayPort	BE EF	03	06 00	B6 2A	01 00	12 23	13 00
	Get		BE EF	03	06 00	B5 27	02 00	12 23	00 00
PbyP MAIN AREA	Set	LEFT	BE EF	03	06 00	7A 26	01 00	13 23	00 00
		RIGHT	BE EF	03	06 00	EA 27	01 00	13 23	01 00
	Get		BE EF	03	06 00	49 26	02 00	13 23	00 00
PbyP LEFT SOURCE	Set	COMPUTER IN	BE EF	03	06 00	F2 26	01 00	15 23	00 00
		HDMI 1	BE EF	03	06 00	02 26	01 00	15 23	03 00
		HDMI 2	BE EF	03	06 00	62 22	01 00	15 23	0D 00
		HDBaseT	BE EF	03	06 00	A2 2A	01 00	15 23	11 00
		VIDEO	BE EF	03	06 00	62 27	01 00	15 23	01 00
		3G-SDI*	BE EF	03	06 00	52 2A	01 00	15 23	12 00
		DisplayPort	BE EF	03	06 00	C2 2B	01 00	15 23	13 00
	Get		BE EF	03	06 00	C1 26	02 00	15 23	00 00

* Supported only for LWU900-DS/LHD878-DS

RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
PIP POSITION	Set	TOP LEFT	BE EF	03	06 00	02 23	01 00	01 23	00 00
		TOP RIGHT	BE EF	03	06 00	92 22	01 00	01 23	01 00
		BOTTOM LEFT	BE EF	03	06 00	62 22	01 00	01 23	02 00
		BOTTOM RIGHT	BE EF	03	06 00	F2 23	01 00	01 23	03 00
	Get		BE EF	03	06 00	31 23	02 00	01 23	00 00
PIP MAIN AREA	Set	PRIMARY	BE EF	03	06 00	32 22	01 00	05 23	00 00
		SECONDARY	BE EF	03	06 00	A2 23	01 00	05 23	01 00
	Get		BE EF	03	06 00	01 22	02 00	05 23	00 00
PIP PRIMARY SOURCE	Set	COMPUTER IN	BE EF	03	06 00	CE 23	01 00	04 23	00 00
		HDMI 1	BE EF	03	06 00	3E 23	01 00	04 23	03 00
		HDMI 2	BE EF	03	06 00	5E 27	01 00	04 23	0D 00
		HDBaseT	BE EF	03	06 00	9E 2F	01 00	04 23	11 00
		VIDEO	BE EF	03	06 00	5E 22	01 00	04 23	01 00
		3G-SDI*	BE EF	03	06 00	6E 2F	01 00	04 23	12 00
		DisplayPort	BE EF	03	06 00	FE 2E	01 00	04 23	13 00
	Get		BE EF	03	06 00	FD 23	02 00	04 23	00 00
PIP SECONDARY SOURCE	Set	COMPUTER IN	BE EF	03	06 00	46 23	01 00	02 23	00 00
		HDMI 1	BE EF	03	06 00	B6 23	01 00	02 23	03 00
		HDMI 2	BE EF	03	06 00	D6 27	01 00	02 23	0D 00
		HDBaseT	BE EF	03	06 00	16 2F	01 00	02 23	11 00
		VIDEO	BE EF	03	06 00	D6 22	01 00	02 23	01 00
		3G-SDI*	BE EF	03	06 00	E6 2F	01 00	02 23	12 00
		DisplayPort	BE EF	03	06 00	76 2E	01 00	02 23	13 00
	Get		BE EF	03	06 00	75 23	02 00	02 23	00 00
PbyP/PIP SWAP	Execute		BE EF	03	06 00	01 27	06 00	16 23	00 00
PbyP / PIP FRAME LOCK	Set	LEFT / PRIMARY	BE EF	03	06 00	4A 27	01 00	17 23	00 00
		RIGHT / SECONDARY	BE EF	03	06 00	DA 26	01 00	17 23	01 00
	Get		BE EF	03	06 00	79 27	02 00	17 23	00 00
PICTURE MODE	Set	STANDARD	BE EF	03	06 00	83 F5	01 00	BA 30	06 00
		NATURAL	BE EF	03	06 00	23 F6	01 00	BA 30	00 00
		CINEMA	BE EF	03	06 00	B3 F7	01 00	BA 30	01 00
		DYNAMIC	BE EF	03	06 00	E3 F4	01 00	BA 30	04 00
		WHITEBOARD	BE EF	03	06 00	83 EE	01 00	BA 30	22 00
		DICOM SIM.	BE EF	03	06 00	73 C6	01 00	BA 30	41 00
		HDR-CINEMA	BE EF	03	06 00	23 DE	01 00	BA 30	60 00
		HDR-BROADCAST	BE EF	03	06 00	B3 DF	01 00	BA 30	61 00
		USER-1	BE EF	03	06 00	E3 FB	01 00	BA 30	10 00
		USER-2	BE EF	03	06 00	73 FA	01 00	BA 30	11 00
		USER-3	BE EF	03	06 00	83 FA	01 00	BA 30	12 00
	Get		BE EF	03	06 00	10 F6	02 00	BA 30	00 00

* Supported only for LWU900-DS/LHD878-DS

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
BRIGHTNESS	Get		BE EF	03	06 00	89 D2	02 00	03 20	00 00
	Increment		BE EF	03	06 00	EF D2	04 00	03 20	00 00
	Decrement		BE EF	03	06 00	3E D3	05 00	03 20	00 00
BRIGHTNESS Reset	Execute		BE EF	03	06 00	58 D3	06 00	00 70	00 00
CONTRAST	Get		BE EF	03	06 00	FD D3	02 00	04 20	00 00
	Increment		BE EF	03	06 00	9B D3	04 00	04 20	00 00
	Decrement		BE EF	03	06 00	4A D2	05 00	04 20	00 00
CONTRAST Reset	Execute		BE EF	03	06 00	A4 D2	06 00	01 70	00 00
GAMMA	Set	1 DEFAULT	BE EF	03	06 00	07 E9	01 00	A1 30	20 00
		1 CUSTOM	BE EF	03	06 00	07 FD	01 00	A1 30	10 00
		2 DEFAULT	BE EF	03	06 00	97 E8	01 00	A1 30	21 00
		2 CUSTOM	BE EF	03	06 00	97 FC	01 00	A1 30	11 00
		3 DEFAULT	BE EF	03	06 00	67 E8	01 00	A1 30	22 00
		3 CUSTOM	BE EF	03	06 00	67 FC	01 00	A1 30	12 00
		4 DEFAULT	BE EF	03	06 00	F7 E9	01 00	A1 30	23 00
		4 CUSTOM	BE EF	03	06 00	F7 FD	01 00	A1 30	13 00
		5 DEFAULT	BE EF	03	06 00	C7 EB	01 00	A1 30	24 00
		5 CUSTOM	BE EF	03	06 00	C7 FF	01 00	A1 30	14 00
		6 DEFAULT	BE EF	03	06 00	57 EA	01 00	A1 30	25 00
		6 CUSTOM	BE EF	03	06 00	57 FE	01 00	A1 30	15 00
		7 DEFAULT	BE EF	03	06 00	A7 EA	01 00	A1 30	26 00
		7 CUSTOM	BE EF	03	06 00	A7 FE	01 00	A1 30	16 00
		8 DEFAULT	BE EF	03	06 00	37 EB	01 00	A1 30	27 00
		8 CUSTOM	BE EF	03	06 00	37 FF	01 00	A1 30	17 00
	Get		BE EF	03	06 00	F4 F0	02 00	A1 30	00 00
User GAMMA Point 1	Get		BE EF	03	06 00	08 FE	02 00	90 30	00 00
	Increment		BE EF	03	06 00	6E FE	04 00	90 30	00 00
	Decrement		BE EF	03	06 00	BF FF	05 00	90 30	00 00
User GAMMA Point 1 Reset	Execute		BE EF	03	06 00	58 C2	06 00	50 70	00 00
User GAMMA Point 2	Get		BE EF	03	06 00	F4 FF	02 00	91 30	00 00
	Increment		BE EF	03	06 00	92 FF	04 00	91 30	00 00
	Decrement		BE EF	03	06 00	43 FE	05 00	91 30	00 00
User GAMMA Point 2 Reset	Execute		BE EF	03	06 00	A4 C3	06 00	51 70	00 00
User GAMMA Point 3	Get		BE EF	03	06 00	B0 FF	02 00	92 30	00 00
	Increment		BE EF	03	06 00	D6 FF	04 00	92 30	00 00
	Decrement		BE EF	03	06 00	07 FE	05 00	92 30	00 00
User GAMMA Point 3 Reset	Execute		BE EF	03	06 00	E0 C3	06 00	52 70	00 00

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
User GAMMA Point 4	Get		BE EF	03	06 00	4C FE	02 00	93 30	00 00
	Increment		BE EF	03	06 00	2A FE	04 00	93 30	00 00
	Decrement		BE EF	03	06 00	FB FF	05 00	93 30	00 00
User GAMMA Point 4 Reset	Execute		BE EF	03	06 00	1C C2	06 00	53 70	00 00
User GAMMA Point 5	Get		BE EF	03	06 00	38 FF	02 00	94 30	00 00
	Increment		BE EF	03	06 00	5E FF	04 00	94 30	00 00
	Decrement		BE EF	03	06 00	8F FE	05 00	94 30	00 00
User GAMMA Point 5 Reset	Execute		BE EF	03	06 00	68 C3	06 00	54 70	00 00
User GAMMA Point 6	Get		BE EF	03	06 00	C4 FE	02 00	95 30	00 00
	Increment		BE EF	03	06 00	A2 FE	04 00	95 30	00 00
	Decrement		BE EF	03	06 00	73 FF	05 00	95 30	00 00
User GAMMA Point 6 Reset	Execute		BE EF	03	06 00	94 C2	06 00	55 70	00 00
User GAMMA Point 7	Get		BE EF	03	06 00	80 FE	02 00	96 30	00 00
	Increment		BE EF	03	06 00	E6 FE	04 00	96 30	00 00
	Decrement		BE EF	03	06 00	37 FF	05 00	96 30	00 00
User GAMMA Point 7 Reset	Execute		BE EF	03	06 00	D0 C2	06 00	56 70	00 00
User GAMMA Point 8	Get		BE EF	03	06 00	7C FF	02 00	97 30	00 00
	Increment		BE EF	03	06 00	1A FF	04 00	97 30	00 00
	Decrement		BE EF	03	06 00	CB FE	05 00	97 30	00 00
User GAMMA Point 8 Reset	Execute		BE EF	03	06 00	2C C3	06 00	57 70	00 00
COLOR TEMP	Set	1 HIGH	BE EF	03	06 00	0B F5	01 00	B0 30	03 00
		1 CUSTOM	BE EF	03	06 00	CB F8	01 00	B0 30	13 00
		2 MID-1	BE EF	03	06 00	9B F4	01 00	B0 30	02 00
		2 CUSTOM	BE EF	03	06 00	5B F9	01 00	B0 30	12 00
		3 MID-2	BE EF	03	06 00	3B F7	01 00	B0 30	04 00
		3 CUSTOM	BE EF	03	06 00	FB FA	01 00	B0 30	14 00
		4 LOW	BE EF	03	06 00	6B F4	01 00	B0 30	01 00
		4 CUSTOM	BE EF	03	06 00	AB F9	01 00	B0 30	11 00
		5 Hi-BRIGHT-1	BE EF	03	06 00	3B F2	01 00	B0 30	08 00
		5 CUSTOM	BE EF	03	06 00	FB FF	01 00	B0 30	18 00
		6 Hi-BRIGHT-2	BE EF	03	06 00	AB F3	01 00	B0 30	09 00
		6 CUSTOM	BE EF	03	06 00	6B FE	01 00	B0 30	19 00
		7 Hi-BRIGHT-3	BE EF	03	06 00	5B F3	01 00	B0 30	0A 00
		7 CUSTOM	BE EF	03	06 00	9B FE	01 00	B0 30	1A 00
	Get		BE EF	03	06 00	C8 F5	02 00	B0 30	00 00

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type	Header			CRC	Command Data		
						Action	Type	Setting code
COLOR TEMP GAIN R	Get	BE EF	03	06 00	34 F4	02 00	B1 30	00 00
	Increment	BE EF	03	06 00	52 F4	04 00	B1 30	00 00
	Decrement	BE EF	03	06 00	83 F5	05 00	B1 30	00 00
COLOR TEMP GAIN R Reset	Execute	BE EF	03	06 00	10 C6	06 00	46 70	00 00
COLOR TEMP GAIN G	Get	BE EF	03	06 00	70 F4	02 00	B2 30	00 00
	Increment	BE EF	03	06 00	16 F4	04 00	B2 30	00 00
	Decrement	BE EF	03	06 00	C7 F5	05 00	B2 30	00 00
COLOR TEMP GAIN G Reset	Execute	BE EF	03	06 00	EC C7	06 00	47 70	00 00
COLOR TEMP GAIN B	Get	BE EF	03	06 00	8C F5	02 00	B3 30	00 00
	Increment	BE EF	03	06 00	EA F5	04 00	B3 30	00 00
	Decrement	BE EF	03	06 00	3B F4	05 00	B3 30	00 00
COLOR TEMP GAIN B Reset	Execute	BE EF	03	06 00	F8 C4	06 00	48 70	00 00
COLOR TEMP OFFSET R	Get	BE EF	03	06 00	04 F5	02 00	B5 30	00 00
	Increment	BE EF	03	06 00	62 F5	04 00	B5 30	00 00
	Decrement	BE EF	03	06 00	B3 F4	05 00	B5 30	00 00
COLOR TEMP OFFSET R Reset	Execute	BE EF	03	06 00	40 C5	06 00	4A 70	00 00
COLOR TEMP OFFSET G	Get	BE EF	03	06 00	40 F5	02 00	B6 30	00 00
	Increment	BE EF	03	06 00	26 F5	04 00	B6 30	00 00
	Decrement	BE EF	03	06 00	F7 F4	05 00	B6 30	00 00
COLOR TEMP OFFSET G Reset	Execute	BE EF	03	06 00	BC C4	06 00	4B 70	00 00
COLOR TEMP OFFSET B	Get	BE EF	03	06 00	BC F4	02 00	B7 30	00 00
	Increment	BE EF	03	06 00	DA F4	04 00	B7 30	00 00
	Decrement	BE EF	03	06 00	0B F5	05 00	B7 30	00 00
COLOR TEMP OFFSET B Reset	Execute	BE EF	03	06 00	C8 C5	06 00	4C 70	00 00
COLOR	Get	BE EF	03	06 00	B5 72	02 00	02 22	00 00
	Increment	BE EF	03	06 00	D3 72	04 00	02 22	00 00
	Decrement	BE EF	03	06 00	02 73	05 00	02 22	00 00
COLOR Reset	Execute	BE EF	03	06 00	80 D0	06 00	0A 70	00 00

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
TINT	Get		BE EF	03	06 00	49 73	02 00	03 22	00 00
	Increment		BE EF	03	06 00	2F 73	04 00	03 22	00 00
	Decrement		BE EF	03	06 00	FE 72	05 00	03 22	00 00
TINT Reset	Execute		BE EF	03	06 00	7C D1	06 00	0B 70	00 00
SHARPNESS	Get		BE EF	03	06 00	F1 72	02 00	01 22	00 00
	Increment		BE EF	03	06 00	97 72	04 00	01 22	00 00
	Decrement		BE EF	03	06 00	46 73	05 00	01 22	00 00
SHARPNESS Reset	Execute		BE EF	03	06 00	C4 D0	06 00	09 70	00 00
Dynamic Black	Set	OFF	BE EF	03	06 00	FE 5A	01 00	80 22	00 00
		ON	BE EF	03	06 00	6E 5B	01 00	80 22	01 00
	Get		BE EF	03	06 00	CD 5A	02 00	80 22	00 00
eClarity	Get		BE EF	03	06 00	5D 70	02 00	0C 22	00 00
	Increment		BE EF	03	06 00	3B 70	04 00	0C 22	00 00
	Decrement		BE EF	03	06 00	EA 71	05 00	0C 22	00 00
eClarity Reset	Execute		BE EF	03	06 00	C8 DB	06 00	2C 70	00 00
HDCR	Get		BE EF	03	06 00	A1 71	02 00	0D 22	00 00
	Increment		BE EF	03	06 00	C7 71	04 00	0D 22	00 00
	Decrement		BE EF	03	06 00	16 70	05 00	0D 22	00 00
HDCR Reset	Execute		BE EF	03	06 00	34 DA	06 00	2D 70	00 00
MY MEMORY Load	Set	1	BE EF	03	06 00	0E D7	01 00	14 20	00 00
		2	BE EF	03	06 00	9E D6	01 00	14 20	01 00
		3	BE EF	03	06 00	6E D6	01 00	14 20	02 00
		4	BE EF	03	06 00	FE D7	01 00	14 20	03 00
MY MEMORY Save	Set	1	BE EF	03	06 00	F2 D6	01 00	15 20	00 00
		2	BE EF	03	06 00	62 D7	01 00	15 20	01 00
		3	BE EF	03	06 00	92 D7	01 00	15 20	02 00
		4	BE EF	03	06 00	02 D6	01 00	15 20	03 00

RS-232C Communication / Network command table (continued)

Names	Operation Type	Header			CRC	Command Data		
						Action	Type	Setting code
Advanced Color Adjustment HUE R	Get	BE EF	03	06 00	0C 63	02 00	00 27	00 00
	Increment	BE EF	03	06 00	6A 63	04 00	00 27	00 00
	Decrement	BE EF	03	06 00	BB 62	05 00	00 27	00 00
Advanced Color Adjustment HUE R Reset	Execute	BE EF	03	06 00	98 EB	06 00	D0 70	00 00
Advanced Color Adjustment HUE Y	Get	BE EF	03	06 00	F0 62	02 00	01 27	00 00
	Increment	BE EF	03	06 00	96 62	04 00	01 27	00 00
	Decrement	BE EF	03	06 00	47 63	05 00	01 27	00 00
Advanced Color Adjustment HUE Y Reset	Execute	BE EF	03	06 00	64 EA	06 00	D1 70	00 00
Advanced Color Adjustment HUE G	Get	BE EF	03	06 00	B4 62	02 00	02 27	00 00
	Increment	BE EF	03	06 00	D2 62	04 00	02 27	00 00
	Decrement	BE EF	03	06 00	03 63	05 00	02 27	00 00
Advanced Color Adjustment HUE G Reset	Execute	BE EF	03	06 00	20 EA	06 00	D2 70	00 00
Advanced Color Adjustment HUE C	Get	BE EF	03	06 00	48 63	02 00	03 27	00 00
	Increment	BE EF	03	06 00	2E 63	04 00	03 27	00 00
	Decrement	BE EF	03	06 00	FF 62	05 00	03 27	00 00
Advanced Color Adjustment HUE C Reset	Execute	BE EF	03	06 00	DC EB	06 00	D3 70	00 00
Advanced Color Adjustment HUE B	Get	BE EF	03	06 00	3C 62	02 00	04 27	00 00
	Increment	BE EF	03	06 00	5A 62	04 00	04 27	00 00
	Decrement	BE EF	03	06 00	8B 63	05 00	04 27	00 00
Advanced Color Adjustment HUE B Reset	Execute	BE EF	03	06 00	A8 EA	06 00	D4 70	00 00
Advanced Color Adjustment HUE M	Get	BE EF	03	06 00	C0 63	02 00	05 27	00 00
	Increment	BE EF	03	06 00	A6 63	04 00	05 27	00 00
	Decrement	BE EF	03	06 00	77 62	05 00	05 27	00 00
Advanced Color Adjustment HUE M Reset	Execute	BE EF	03	06 00	54 EB	06 00	D5 70	00 00
Advanced Color Adjustment SATURATION R	Get	BE EF	03	06 00	CC 67	02 00	10 27	00 00
	Increment	BE EF	03	06 00	AA 67	04 00	10 27	00 00
	Decrement	BE EF	03	06 00	7B 66	05 00	10 27	00 00
Advanced Color Adjustment SATURATION R Reset	Execute	BE EF	03	06 00	F8 E9	06 00	D8 70	00 00

RS-232C Communication / Network command table (continued)

Names	Operation Type	Header			CRC	Command Data		
						Action	Type	Setting code
Advanced Color Adjustment SATURATION Y	Get	BE EF	03	06 00	30 66	02 00	11 27	00 00
	Increment	BE EF	03	06 00	56 66	04 00	11 27	00 00
	Decrement	BE EF	03	06 00	87 67	05 00	11 27	00 00
Advanced Color Adjustment SATURATION Y Reset	Execute	BE EF	03	06 00	04 E8	06 00	D9 70	00 00
Advanced Color Adjustment SATURATION G	Get	BE EF	03	06 00	74 66	02 00	12 27	00 00
	Increment	BE EF	03	06 00	12 66	04 00	12 27	00 00
	Decrement	BE EF	03	06 00	C3 67	05 00	12 27	00 00
Advanced Color Adjustment SATURATION G Reset	Execute	BE EF	03	06 00	40 E8	06 00	DA 70	00 00
Advanced Color Adjustment SATURATION C	Get	BE EF	03	06 00	88 67	02 00	13 27	00 00
	Increment	BE EF	03	06 00	EE 67	04 00	13 27	00 00
	Decrement	BE EF	03	06 00	3F 66	05 00	13 27	00 00
Advanced Color Adjustment SATURATION C Reset	Execute	BE EF	03	06 00	BC E9	06 00	DB 70	00 00
Advanced Color Adjustment SATURATION B	Get	BE EF	03	06 00	FC 66	02 00	14 27	00 00
	Increment	BE EF	03	06 00	9A 66	04 00	14 27	00 00
	Decrement	BE EF	03	06 00	4B 67	05 00	14 27	00 00
Advanced Color Adjustment SATURATION B Reset	Execute	BE EF	03	06 00	C8 E8	06 00	DC 70	00 00
Advanced Color Adjustment SATURATION M	Get	BE EF	03	06 00	00 67	02 00	15 27	00 00
	Increment	BE EF	03	06 00	66 67	04 00	15 27	00 00
	Decrement	BE EF	03	06 00	B7 66	05 00	15 27	00 00
Advanced Color Adjustment SATURATION M Reset	Execute	BE EF	03	06 00	34 E9	06 00	DD 70	00 00
Advanced Color Adjustment LUMINANCE R	Get	BE EF	03	06 00	CC 68	02 00	20 27	00 00
	Increment	BE EF	03	06 00	AA 68	04 00	20 27	00 00
	Decrement	BE EF	03	06 00	7B 69	05 00	20 27	00 00
Advanced Color Adjustment LUMINANCE R Reset	Execute	BE EF	03	06 00	98 E4	06 00	E0 70	00 00
Advanced Color Adjustment LUMINANCE Y	Get	BE EF	03	06 00	30 69	02 00	21 27	00 00
	Increment	BE EF	03	06 00	56 69	04 00	21 27	00 00
	Decrement	BE EF	03	06 00	87 68	05 00	21 27	00 00
Advanced Color Adjustment LUMINANCE Y Reset	Execute	BE EF	03	06 00	64 E5	06 00	E1 70	00 00
Advanced Color Adjustment LUMINANCE G	Get	BE EF	03	06 00	74 69	02 00	22 27	00 00
	Increment	BE EF	03	06 00	12 69	04 00	22 27	00 00
	Decrement	BE EF	03	06 00	C3 68	05 00	22 27	00 00
Advanced Color Adjustment LUMINANCE G Reset	Execute	BE EF	03	06 00	20 E5	06 00	E2 70	00 00

RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
Advanced Color Adjustment LUMINANCE C	Get		BE EF	03	06 00	88 68	02 00	23 27	00 00
	Increment		BE EF	03	06 00	EE 68	04 00	23 27	00 00
	Decrement		BE EF	03	06 00	3F 69	05 00	23 27	00 00
Advanced Color Adjustment LUMINANCE C Reset	Execute		BE EF	03	06 00	DC E4	06 00	E3 70	00 00
Advanced Color Adjustment LUMINANCE B	Get		BE EF	03	06 00	FC 69	02 00	24 27	00 00
	Increment		BE EF	03	06 00	9A 69	04 00	24 27	00 00
	Decrement		BE EF	03	06 00	4B 68	05 00	24 27	00 00
Advanced Color Adjustment LUMINANCE B Reset	Execute		BE EF	03	06 00	A8 E5	06 00	E4 70	00 00
Advanced Color Adjustment LUMINANCE M	Get		BE EF	03	06 00	00 68	02 00	25 27	00 00
	Increment		BE EF	03	06 00	66 68	04 00	25 27	00 00
	Decrement		BE EF	03	06 00	B7 69	05 00	25 27	00 00
Advanced Color Adjustment LUMINANCE M Reset	Execute		BE EF	03	06 00	54 E4	06 00	E5 70	00 00
ASPECT	Set	NORMAL	BE EF	03	06 00	5E DD	01 00	08 20	10 00
		4:3	BE EF	03	06 00	9E D0	01 00	08 20	00 00
		16:9	BE EF	03	06 00	0E D1	01 00	08 20	01 00
		16:10	BE EF	03	06 00	3E D6	01 00	08 20	0A 00
		14:9	BE EF	03	06 00	CE D6	01 00	08 20	09 00
		NATIVE	BE EF	03	06 00	5E D7	01 00	08 20	08 00
		ZOOM	BE EF	03	06 00	9E C4	01 00	08 20	30 00
	Get		BE EF	03	06 00	AD D0	02 00	08 20	00 00
OVER SCAN	Get		BE EF	03	06 00	91 70	02 00	09 22	00 00
	Increment		BE EF	03	06 00	F7 70	04 00	09 22	00 00
	Decrement		BE EF	03	06 00	26 71	05 00	09 22	00 00
OVER SCAN Reset	Execute		BE EF	03	06 00	EC D9	06 00	27 70	00 00
V POSITION	Get		BE EF	03	06 00	0D 83	02 00	00 21	00 00
	Increment		BE EF	03	06 00	6B 83	04 00	00 21	00 00
	Decrement		BE EF	03	06 00	BA 82	05 00	00 21	00 00
V POSITION Reset	Execute		BE EF	03	06 00	E0 D2	06 00	02 70	00 00

RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
H POSITION	Get		BE EF	03	06 00	F1 82	02 00	01 21	00 00
	Increment		BE EF	03	06 00	97 82	04 00	01 21	00 00
	Decrement		BE EF	03	06 00	46 83	05 00	01 21	00 00
H POSITION Reset	Execute		BE EF	03	06 00	1C D3	06 00	03 70	00 00
H PHASE	Get		BE EF	03	06 00	49 83	02 00	03 21	00 00
	Increment		BE EF	03	06 00	2F 83	04 00	03 21	00 00
	Decrement		BE EF	03	06 00	FE 82	05 00	03 21	00 00
H SIZE	Get		BE EF	03	06 00	B5 82	02 00	02 21	00 00
	Increment		BE EF	03	06 00	D3 82	04 00	02 21	00 00
	Decrement		BE EF	03	06 00	02 83	05 00	02 21	00 00
H SIZE Reset	Execute		BE EF	03	06 00	68 D2	06 00	04 70	00 00
AUTO IMAGE	Execute		BE EF	03	06 00	91 D0	06 00	0A 20	00 00
PROGRESSIVE	Set	OFF	BE EF	03	06 00	4A 72	01 00	07 22	00 00
		TV	BE EF	03	06 00	DA 73	01 00	07 22	01 00
		FILM	BE EF	03	06 00	2A 73	01 00	07 22	02 00
	Get		BE EF	03	06 00	79 72	02 00	07 22	00 00
VIDEO NR	Set	LOW	BE EF	03	06 00	26 72	01 00	06 22	01 00
		MID	BE EF	03	06 00	D6 72	01 00	06 22	02 00
		HIGH	BE EF	03	06 00	46 73	01 00	06 22	03 00
	Get		BE EF	03	06 00	85 73	02 00	06 22	00 00
COLOR SPACE	Set	AUTO	BE EF	03	06 00	0E 72	01 00	04 22	00 00
		RGB	BE EF	03	06 00	9E 73	01 00	04 22	01 00
		SMPTE240	BE EF	03	06 00	6E 73	01 00	04 22	02 00
		REC2020	BE EF	03	06 00	5E 71	01 00	04 22	05 00
		REC709	BE EF	03	06 00	FE 72	01 00	04 22	03 00
		REC601	BE EF	03	06 00	CE 70	01 00	04 22	04 00
	Get		BE EF	03	06 00	3D 72	02 00	04 22	00 00
C-VIDEO FORMAT	Set	AUTO	BE EF	03	06 00	A2 70	01 00	11 22	0A 00
		NTSC	BE EF	03	06 00	C2 74	01 00	11 22	04 00
		PAL	BE EF	03	06 00	52 75	01 00	11 22	05 00
		SECAM	BE EF	03	06 00	52 70	01 00	11 22	09 00
		NTSC4.43	BE EF	03	06 00	62 77	01 00	11 22	02 00
		M-PAL	BE EF	03	06 00	C2 71	01 00	11 22	08 00
		N-PAL	BE EF	03	06 00	32 74	01 00	11 22	07 00
	Get		BE EF	03	06 00	31 76	02 00	11 22	00 00
DIGITAL SIGNAL FORMAT - HDMI 1	Set	2K COMPATIBLE	BE EF	03	06 00	02 3D	01 00	61 23	00 00
		4K STANDARD	BE EF	03	06 00	92 3C	01 00	61 23	01 00
		4K ENHANCED	BE EF	03	06 00	62 3C	01 00	61 23	02 00
	Get		BE EF	03	06 00	31 3D	02 00	61 23	00 00
DIGITAL SIGNAL FORMAT - DisplayPort	Set	2K COMPATIBLE	BE EF	03	06 00	9E 3E	01 00	68 23	00 00
		4K STANDARD	BE EF	03	06 00	0E 3F	01 00	68 23	01 00
	Get		BE EF	03	06 00	AD 3E	02 00	68 23	00 00
DIGITAL SIGNAL FORMAT - HDBaseT	Set	2K COMPATIBLE	BE EF	03	06 00	76 3C	01 00	66 23	00 00
		4K STANDARD	BE EF	03	06 00	E6 3D	01 00	66 23	01 00
	Get		BE EF	03	06 00	45 3C	02 00	66 23	00 00

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
HDMI 1 RANGE	Set	AUTO	BE EF	03	06 00	86 D8	01 00	22 20	00 00
		NORMAL	BE EF	03	06 00	16 D9	01 00	22 20	01 00
		ENHANCED	BE EF	03	06 00	E6 D9	01 00	22 20	02 00
	Get		BE EF	03	06 00	B5 D8	02 00	22 20	00 00
HDMI 2 RANGE	Set	AUTO	BE EF	03	06 00	7A D9	01 00	23 20	00 00
		NORMAL	BE EF	03	06 00	EA D8	01 00	23 20	01 00
		ENHANCED	BE EF	03	06 00	1A D8	01 00	23 20	02 00
	Get		BE EF	03	06 00	49 D9	02 00	23 20	00 00
HDBaseT RANGE	Set	AUTO	BE EF	03	06 00	86 EB	01 00	D2 20	00 00
		NORMAL	BE EF	03	06 00	16 EA	01 00	D2 20	01 00
		ENHANCED	BE EF	03	06 00	E6 EA	01 00	D2 20	02 00
	Get		BE EF	03	06 00	B5 EB	02 00	D2 20	00 00
3G-SDI RANGE*	Set	NORMAL	BE EF	03	06 00	16 E5	01 00	E2 20	01 00
		ENHANCED	BE EF	03	06 00	E6 E5	01 00	E2 20	02 00
	Get		BE EF	03	06 00	B5 E4	02 00	E2 20	00 00
DisplayPort RANGE	Set	AUTO	BE EF	03	06 00	46 E0	01 00	F2 20	00 00
		NORMAL	BE EF	03	06 00	D6 E1	01 00	F2 20	01 00
		ENHANCED	BE EF	03	06 00	26 E1	01 00	F2 20	02 00
	Get		BE EF	03	06 00	75 E0	02 00	F2 20	00 00
COMPUTER IN	Set	AUTO	BE EF	03	06 00	CE D6	01 00	10 20	03 00
		SYNC ON G OFF	BE EF	03	06 00	5E D7	01 00	10 20	02 00
	Get		BE EF	03	06 00	0D D6	02 00	10 20	00 00
FRAME LOCK - COMPUTER IN	Set	OFF	BE EF	03	06 00	3B C2	01 00	50 30	00 00
		ON	BE EF	03	06 00	AB C3	01 00	50 30	01 00
	Get		BE EF	03	06 00	08 C2	02 00	50 30	00 00
FRAME LOCK - HDMI 1	Set	OFF	BE EF	03	06 00	7F C2	01 00	53 30	00 00
		ON	BE EF	03	06 00	EF C3	01 00	53 30	01 00
	Get		BE EF	03	06 00	4C C2	02 00	53 30	00 00
FRAME LOCK - HDMI 2	Set	OFF	BE EF	03	06 00	97 C0	01 00	5D 30	00 00
		ON	BE EF	03	06 00	07 C1	01 00	5D 30	01 00
	Get		BE EF	03	06 00	A4 C0	02 00	5D 30	00 00
FRAME LOCK - HDBaseT	Set	OFF	BE EF	03	06 00	C2 EB	01 00	D1 20	00 00
		ON	BE EF	03	06 00	52 EA	01 00	D1 20	01 00
	Get		BE EF	03	06 00	F1 EB	02 00	D1 20	00 00

* Supported only for LWU900-DS/LHD878-DS

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
FRAME LOCK - 3G-SDI*	Set	OFF	BE EF	03	06 00	C2 E4	01 00	E1 20	00 00
		ON	BE EF	03	06 00	52 E5	01 00	E1 20	01 00
	Get		BE EF	03	06 00	F1 E4	02 00	E1 20	00 00
FRAME LOCK - DisplayPort	Set	OFF	BE EF	03	06 00	02 E0	01 00	F1 20	00 00
		ON	BE EF	03	06 00	92 E1	01 00	F1 20	01 00
	Get		BE EF	03	06 00	31 E0	02 00	F1 20	00 00
PICTURE POSITION V	Set	TOP	BE EF	03	06 00	02 D0	01 00	09 20	02 00
		MIDDLE	BE EF	03	06 00	62 D1	01 00	09 20	00 00
		BOTTOM	BE EF	03	06 00	F2 D0	01 00	09 20	01 00
	Get		BE EF	03	06 00	51 D1	02 00	09 20	00 00
PICTURE POSITION H	Set	RIGHT	BE EF	03	06 00	46 D5	01 00	1E 20	01 00
		MIDDLE	BE EF	03	06 00	D6 D4	01 00	1E 20	00 00
		LEFT	BE EF	03	06 00	B6 D5	01 00	1E 20	02 00
	Get		BE EF	03	06 00	E5 D4	02 00	1E 20	00 00
GEOMETRIC MODE	Set	KEYSTONE	BE EF	03	06 00	6B 8C	01 00	30 31	01 00
		3D KEYSTONE	BE EF	03	06 00	9B 8C	01 00	30 31	02 00
		WARPING	BE EF	03	06 00	3B 8F	01 00	30 31	04 00
	Get		BE EF	03	06 00	C8 8D	02 00	30 31	00 00
KEYSTONE V	Get		BE EF	03	06 00	B9 D3	02 00	07 20	00 00
	Increment		BE EF	03	06 00	DF D3	04 00	07 20	00 00
	Decrement		BE EF	03	06 00	0E D2	05 00	07 20	00 00
KEYSTONE V Reset	Execute		BE EF	03	06 00	08 D0	06 00	0C 70	00 00
KEYSTONE H	Get		BE EF	03	06 00	E9 D0	02 00	0B 20	00 00
	Increment		BE EF	03	06 00	8F D0	04 00	0B 20	00 00
	Decrement		BE EF	03	06 00	5E D1	05 00	0B 20	00 00
KEYSTONE H Reset	Execute		BE EF	03	06 00	98 D8	06 00	20 70	00 00
3D KEYSTONE Left Top - H	Get		BE EF	03	06 00	31 89	02 00	21 21	00 00
	Increment		BE EF	03	06 00	57 89	04 00	21 21	00 00
	Decrement		BE EF	03	06 00	86 88	05 00	21 21	00 00
3D KEYSTONE Left Top - V	Get		BE EF	03	06 00	75 89	02 00	22 21	00 00
	Increment		BE EF	03	06 00	13 89	04 00	22 21	00 00
	Decrement		BE EF	03	06 00	C2 88	05 00	22 21	00 00
3D KEYSTONE Right Top - H	Get		BE EF	03	06 00	89 88	02 00	23 21	00 00
	Increment		BE EF	03	06 00	EF 88	04 00	23 21	00 00
	Decrement		BE EF	03	06 00	3E 89	05 00	23 21	00 00
3D KEYSTONE Right Top - V	Get		BE EF	03	06 00	FD 89	02 00	24 21	00 00
	Increment		BE EF	03	06 00	9B 89	04 00	24 21	00 00
	Decrement		BE EF	03	06 00	4A 88	05 00	24 21	00 00

* Supported only for LWU900-DS/LHD878-DS

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type	Header			CRC	Command Data		
						Action	Type	Setting code
3D KEYSTONE Left Bottom - H	Get	BE EF	03	06 00	01 88	02 00	25 21	00 00
	Increment	BE EF	03	06 00	67 88	04 00	25 21	00 00
	Decrement	BE EF	03	06 00	B6 89	05 00	25 21	00 00
3D KEYSTONE Left Bottom - V	Get	BE EF	03	06 00	45 88	02 00	26 21	00 00
	Increment	BE EF	03	06 00	23 88	04 00	26 21	00 00
	Decrement	BE EF	03	06 00	F2 89	05 00	26 21	00 00
3D KEYSTONE Right Bottom - H	Get	BE EF	03	06 00	B9 89	02 00	27 21	00 00
	Increment	BE EF	03	06 00	DF 89	04 00	27 21	00 00
	Decrement	BE EF	03	06 00	0E 88	05 00	27 21	00 00
3D KEYSTONE Right Bottom - V	Get	BE EF	03	06 00	AD 8A	02 00	28 21	00 00
	Increment	BE EF	03	06 00	CB 8A	04 00	28 21	00 00
	Decrement	BE EF	03	06 00	1A 8B	05 00	28 21	00 00
3D KEYSTONE All Corners Reset	Execute	BE EF	03	06 00	D5 8A	06 00	29 21	00 00
3D KEYSTONE Left Side Distortion	Get	BE EF	03	06 00	31 97	02 00	41 21	00 00
	Increment	BE EF	03	06 00	57 97	04 00	41 21	00 00
	Decrement	BE EF	03	06 00	86 96	05 00	41 21	00 00
3D KEYSTONE Right Side Distortion	Get	BE EF	03	06 00	75 97	02 00	42 21	00 00
	Increment	BE EF	03	06 00	13 97	04 00	42 21	00 00
	Decrement	BE EF	03	06 00	C2 96	05 00	42 21	00 00
3D KEYSTONE Top Side Distortion	Get	BE EF	03	06 00	FD 97	02 00	44 21	00 00
	Increment	BE EF	03	06 00	9B 97	04 00	44 21	00 00
	Decrement	BE EF	03	06 00	4A 96	05 00	44 21	00 00
3D KEYSTONE Bottom Side Distortion	Get	BE EF	03	06 00	01 96	02 00	45 21	00 00
	Increment	BE EF	03	06 00	67 96	04 00	45 21	00 00
	Decrement	BE EF	03	06 00	B6 97	05 00	45 21	00 00
3D KEYSTONE All Sides Reset	Execute	BE EF	03	06 00	3D 96	06 00	47 21	00 00
3D KEYSTONE Memory Save-1	Execute	BE EF	03	06 00	29 95	06 00	48 21	00 00
3D KEYSTONE Memory Save-2	Execute	BE EF	03	06 00	D5 94	06 00	49 21	00 00
3D KEYSTONE Memory Save-3	Execute	BE EF	03	06 00	91 94	06 00	4A 21	00 00
3D KEYSTONE Memory Load-1	Execute	BE EF	03	06 00	6D 95	06 00	4B 21	00 00
3D KEYSTONE Memory Load-2	Execute	BE EF	03	06 00	19 94	06 00	4C 21	00 00
3D KEYSTONE Memory Load-3	Execute	BE EF	03	06 00	E5 95	06 00	4D 21	00 00

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
EDGE BLENDING MODE	Set	OFF	BE EF	03	06 00	6B 94	01 00	4C 31	00 00
		MANUAL	BE EF	03	06 00	FB 95	01 00	4C 31	01 00
		CAMERA	BE EF	03	06 00	0B 95	01 00	4C 31	02 00
	Get		BE EF	03	06 00	58 94	02 00	4C 31	00 00
EDGE BLENDING REGION Reset	Execute		BE EF	03	06 00	8C 96	06 00	40 31	00 00
EDGE BLENDING LEVEL	Increment		BE EF	03	06 00	92 96	04 00	41 31	00 00
	Decrement		BE EF	03	06 00	43 97	05 00	41 31	00 00
	Get		BE EF	03	06 00	F4 96	02 00	41 31	00 00
EDGE BLENDING LEFT	Get		BE EF	03	06 00	68 95	02 00	48 31	00 00
	Increment		BE EF	03	06 00	0E 95	04 00	48 31	00 00
	Decrement		BE EF	03	06 00	DF 94	05 00	48 31	00 00
EDGE BLENDING RIGHT	Get		BE EF	03	06 00	94 94	02 00	49 31	00 00
	Increment		BE EF	03	06 00	F2 94	04 00	49 31	00 00
	Decrement		BE EF	03	06 00	23 95	05 00	49 31	00 00
EDGE BLENDING TOP	Get		BE EF	03	06 00	D0 94	02 00	4A 31	00 00
	Increment		BE EF	03	06 00	B6 94	04 00	4A 31	00 00
	Decrement		BE EF	03	06 00	67 95	05 00	4A 31	00 00
EDGE BLENDING BOTTOM	Get		BE EF	03	06 00	2C 95	02 00	4B 31	00 00
	Increment		BE EF	03	06 00	4A 95	04 00	4B 31	00 00
	Decrement		BE EF	03	06 00	9B 94	05 00	4B 31	00 00

RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
CROPPING MODE	Set	OFF	BE EF	03	06 00	FB 93	01 00	50 31	00 00
		ON	BE EF	03	06 00	6B 92	01 00	50 31	01 00
	Get		BE EF	03	06 00	C8 93	02 00	50 31	00 00
CROPPING SETUP X	Get		BE EF	03	06 00	A8 91	02 00	58 31	00 00
	Increment		BE EF	03	06 00	CE 91	04 00	58 31	00 00
	Decrement		BE EF	03	06 00	1F 90	05 00	58 31	00 00
CROPPING SETUP Y	Get		BE EF	03	06 00	54 90	02 00	59 31	00 00
	Increment		BE EF	03	06 00	32 90	04 00	59 31	00 00
	Decrement		BE EF	03	06 00	E3 91	05 00	59 31	00 00
CROPPING SETUP W	Get		BE EF	03	06 00	10 90	02 00	5A 31	00 00
	Increment		BE EF	03	06 00	76 90	04 00	5A 31	00 00
	Decrement		BE EF	03	06 00	A7 91	05 00	5A 31	00 00
CROPPING SETUP H	Get		BE EF	03	06 00	EC 91	02 00	5B 31	00 00
	Increment		BE EF	03	06 00	8A 91	04 00	5B 31	00 00
	Decrement		BE EF	03	06 00	5B 90	05 00	5B 31	00 00
CROPPING Apply	Execute		BE EF	03	06 00	B0 93	06 00	51 31	00 00
CROPPING Reset	Execute		BE EF	03	06 00	F4 93	06 00	52 31	00 00
WARPING MODE	Set	OFF	BE EF	03	06 00	FB 9C	01 00	60 31	00 00
		MODE-1	BE EF	03	06 00	6B 9D	01 00	60 31	01 00
		MODE-2	BE EF	03	06 00	9B 9D	01 00	60 31	02 00
		MODE-3	BE EF	03	06 00	0B 9C	01 00	60 31	03 00
	Get		BE EF	03	06 00	C8 9C	02 00	60 31	00 00
WHITE BALANCE OFFSET R	Get		BE EF	03	06 00	0C 72	02 00	50 27	00 00
	Increment		BE EF	03	06 00	6A 72	04 00	50 27	00 00
	Decrement		BE EF	03	06 00	BB 73	05 00	50 27	00 00
WHITE BALANCE OFFSET R Reset	Execute		BE EF	03	06 00	38 E2	06 00	F8 70	00 00
WHITE BALANCE OFFSET G	Get		BE EF	03	06 00	F0 73	02 00	51 27	00 00
	Increment		BE EF	03	06 00	96 73	04 00	51 27	00 00
	Decrement		BE EF	03	06 00	47 72	05 00	51 27	00 00
WHITE BALANCE OFFSET G Reset	Execute		BE EF	03	06 00	C4 E3	06 00	F9 70	00 00
WHITE BALANCE OFFSET B	Get		BE EF	03	06 00	B4 73	02 00	52 27	00 00
	Increment		BE EF	03	06 00	D2 73	04 00	52 27	00 00
	Decrement		BE EF	03	06 00	03 72	05 00	52 27	00 00
WHITE BALANCE OFFSET B Reset	Execute		BE EF	03	06 00	80 E3	06 00	FA 70	00 00

RS-232C Communication / Network command table (continued)

Names	Operation Type	Header			CRC	Command Data		
						Action	Type	Setting code
WHITE BALANCE GAIN R	Get	BE EF	03	06 00	3C 73	02 00	54 27	00 00
	Increment	BE EF	03	06 00	5A 73	04 00	54 27	00 00
	Decrement	BE EF	03	06 00	8B 72	05 00	54 27	00 00
WHITE BALANCE GAIN R Reset	Execute	BE EF	03	06 00	08 E3	06 00	FC 70	00 00
WHITE BALANCE GAIN G	Get	BE EF	03	06 00	C0 72	02 00	55 27	00 00
	Increment	BE EF	03	06 00	A6 72	04 00	55 27	00 00
	Decrement	BE EF	03	06 00	77 73	05 00	55 27	00 00
WHITE BALANCE GAIN G Reset	Execute	BE EF	03	06 00	F4 E2	06 00	FD 70	00 00
WHITE BALANCE GAIN B	Get	BE EF	03	06 00	84 72	02 00	56 27	00 00
	Increment	BE EF	03	06 00	E2 72	04 00	56 27	00 00
	Decrement	BE EF	03	06 00	33 73	05 00	56 27	00 00
WHITE BALANCE GAIN B Reset	Execute	BE EF	03	06 00	B0 E2	06 00	FE 70	00 00
BLACK LEVEL R	Get	BE EF	03	06 00	CC 76	02 00	40 27	00 00
	Increment	BE EF	03	06 00	AA 76	04 00	40 27	00 00
	Decrement	BE EF	03	06 00	7B 77	05 00	40 27	00 00
BLACK LEVEL R Reset	Execute	BE EF	03	06 00	68 E1	06 00	F4 70	00 00
BLACK LEVEL G	Get	BE EF	03	06 00	30 77	02 00	41 27	00 00
	Increment	BE EF	03	06 00	56 77	04 00	41 27	00 00
	Decrement	BE EF	03	06 00	87 76	05 00	41 27	00 00
BLACK LEVEL G Reset	Execute	BE EF	03	06 00	94 E0	06 00	F5 70	00 00
BLACK LEVEL B	Get	BE EF	03	06 00	74 77	02 00	42 27	00 00
	Increment	BE EF	03	06 00	12 77	04 00	42 27	00 00
	Decrement	BE EF	03	06 00	C3 76	05 00	42 27	00 00
BLACK LEVEL B Reset	Execute	BE EF	03	06 00	D0 E0	06 00	F6 70	00 00
BLACK LEVEL W	Get	BE EF	03	06 00	88 76	02 00	43 27	00 00
	Increment	BE EF	03	06 00	EE 76	04 00	43 27	00 00
	Decrement	BE EF	03	06 00	3F 77	05 00	43 27	00 00
BLACK LEVEL W Reset	Execute	BE EF	03	06 00	2C E1	06 00	F7 70	00 00

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
LIGHT OUTPUT	Set	NORMAL	BE EF	03	06 00	3B 37	01 00	00 33	30 00
		QUIET MODE	BE EF	03	06 00	AB 22	01 00	00 33	01 00
		LIGHT 75%	BE EF	03	06 00	6B 20	01 00	00 33	05 00
		LIGHT 50%	BE EF	03	06 00	9B 20	01 00	00 33	06 00
	Get		BE EF	03	06 00	08 23	02 00	00 33	00 00
LIGHT OUTPUT NORMAL POWER	Get		BE EF	03	06 00	C4 23	02 00	05 33	00 00
	Increment		BE EF	03	06 00	A2 23	04 00	05 33	00 00
	Decrement		BE EF	03	06 00	73 22	05 00	05 33	00 00
INSTALLATION	Set	FRONT / DESKTOP	BE EF	03	06 00	C7 D2	01 00	01 30	00 00
		REAR / DESKTOP	BE EF	03	06 00	57 D3	01 00	01 30	01 00
		REAR / CEILING	BE EF	03	06 00	A7 D3	01 00	01 30	02 00
		FRONT / CEILING	BE EF	03	06 00	37 D2	01 00	01 30	03 00
	Get		BE EF	03	06 00	F4 D2	02 00	01 30	00 00
STANDBY MODE	Set	QUICK START	BE EF	03	06 00	16 DF	01 00	01 60	10 00
		NORMAL	BE EF	03	06 00	D6 D2	01 00	01 60	00 00
		NETWORK-WOL	BE EF	03	06 00	B6 D3	01 00	01 60	02 00
		POWER SAVE	BE EF	03	06 00	46 D3	01 00	01 60	01 00
	Get		BE EF	03	06 00	E5 D2	02 00	01 60	00 00
COLOR UNIFORMITY LEVEL	Set	1	BE EF	03	06 00	AF 6D	01 00	30 27	01 00
		2	BE EF	03	06 00	5F 6D	01 00	30 27	02 00
		3	BE EF	03	06 00	CF 6C	01 00	30 27	03 00
		4	BE EF	03	06 00	FF 6E	01 00	30 27	04 00
	Get		BE EF	03	06 00	0C 6C	02 00	30 27	00 00
COLOR UNIFORMITY AREA	Set	Top Left	BE EF	03	06 00	C3 6D	01 00	31 27	00 00
		Top	BE EF	03	06 00	53 6C	01 00	31 27	01 00
		Top Right	BE EF	03	06 00	A3 6C	01 00	31 27	02 00
		Left	BE EF	03	06 00	03 AC	01 00	31 27	00 01
		All	BE EF	03	06 00	93 AD	01 00	31 27	01 01
		Right	BE EF	03	06 00	63 AD	01 00	31 27	02 01
		Bottom Left	BE EF	03	06 00	02 EC	01 00	31 27	00 02
		Bottom	BE EF	03	06 00	92 ED	01 00	31 27	01 02
		Bottom Right	BE EF	03	06 00	62 ED	01 00	31 27	02 02
	Get		BE EF	03	06 00	F0 6D	02 00	31 27	00 00
COLOR UNIFORMITY R	Get		BE EF	03	06 00	B4 6D	02 00	32 27	00 00
	Increment		BE EF	03	06 00	D2 6D	04 00	32 27	00 00
	Decrement		BE EF	03	06 00	03 6C	05 00	32 27	00 00
COLOR UNIFORMITY R Reset	Execute		BE EF	03	06 00	58 E0	06 00	F0 70	00 00

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
COLOR UNIFORMITY G	Get		BE EF	03	06 00	48 6C	02 00	33 27	00 00
	Increment		BE EF	03	06 00	2E 6C	04 00	33 27	00 00
	Decrement		BE EF	03	06 00	FF 6D	05 00	33 27	00 00
COLOR UNIFORMITY G Reset	Execute		BE EF	03	06 00	A4 E1	06 00	F1 70	00 00
COLOR UNIFORMITY B	Get		BE EF	03	06 00	3C 6D	02 00	34 27	00 00
	Increment		BE EF	03	06 00	5A 6D	04 00	34 27	00 00
	Decrement		BE EF	03	06 00	8B 6C	05 00	34 27	00 00
COLOR UNIFORMITY B Reset	Execute		BE EF	03	06 00	E0 E1	06 00	F2 70	00 00
COLOR UNIFORMITY ALL Reset	Execute		BE EF	03	06 00	1C E0	06 00	F3 70	00 00
COLOR UNIFORMITY PATTERN	Set	OFF	BE EF	03	06 00	B7 6C	01 00	36 27	00 00
		ON	BE EF	03	06 00	27 6D	01 00	36 27	01 00
	Get		BE EF	03	06 00	84 6C	02 00	36 27	00 00
VOLUME - COMPUTER IN	Get		BE EF	03	06 00	CD CC	02 00	60 20	00 00
	Increment		BE EF	03	06 00	AB CC	04 00	60 20	00 00
	Decrement		BE EF	03	06 00	7A CD	05 00	60 20	00 00
VOLUME - LAN	Get		BE EF	03	06 00	E9 CE	02 00	6B 20	00 00
	Increment		BE EF	03	06 00	8F CE	04 00	6B 20	00 00
	Decrement		BE EF	03	06 00	5E CF	05 00	6B 20	00 00
VOLUME - HDMI 1	Get		BE EF	03	06 00	89 CC	02 00	63 20	00 00
	Increment		BE EF	03	06 00	EF CC	04 00	63 20	00 00
	Decrement		BE EF	03	06 00	3E CD	05 00	63 20	00 00
VOLUME - HDMI 2	Get		BE EF	03	06 00	61 CE	02 00	6D 20	00 00
	Increment		BE EF	03	06 00	07 CE	04 00	6D 20	00 00
	Decrement		BE EF	03	06 00	D6 CF	05 00	6D 20	00 00
VOLUME - HDBaseT	Get		BE EF	03	06 00	C1 EA	02 00	D5 20	00 00
	Increment		BE EF	03	06 00	A7 EA	04 00	D5 20	00 00
	Decrement		BE EF	03	06 00	76 EB	05 00	D5 20	00 00
VOLUME - VIDEO	Get		BE EF	03	06 00	31 CD	02 00	61 20	00 00
	Increment		BE EF	03	06 00	57 CD	04 00	61 20	00 00
	Decrement		BE EF	03	06 00	86 CC	05 00	61 20	00 00
VOLUME - 3G-SDI*	Get		BE EF	03	06 00	C1 E5	02 00	E5 20	00 00
	Increment		BE EF	03	06 00	A7 E5	04 00	E5 20	00 00
	Decrement		BE EF	03	06 00	76 E4	05 00	E5 20	00 00
VOLUME - DisplayPort	Get		BE EF	03	06 00	01 E1	02 00	F5 20	00 00
	Increment		BE EF	03	06 00	67 E1	04 00	F5 20	00 00
	Decrement		BE EF	03	06 00	B6 E0	05 00	F5 20	00 00
VOLUME - STANDBY	Get		BE EF	03	06 00	D9 CF	02 00	6F 20	00 00
	Increment		BE EF	03	06 00	BF CF	04 00	6F 20	00 00
	Decrement		BE EF	03	06 00	6E CE	05 00	6F 20	00 00
VOLUME - ALL	Get		BE EF	03	06 00	CD C3	02 00	50 20	00 00
	Increment		BE EF	03	06 00	AB C3	04 00	50 20	00 00
	Decrement		BE EF	03	06 00	7A C2	05 00	50 20	00 00

* Supported only for LWU900-DS/LHD878-DS

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
MUTE	Set	OFF	BE EF	03	06 00	46 D3	01 00	02 20	00 00
		ON	BE EF	03	06 00	D6 D2	01 00	02 20	01 00
	Get		BE EF	03	06 00	75 D3	02 00	02 20	00 00
AV MUTE	Set	OFF	BE EF	03	06 00	FE F0	01 00	A0 20	00 00
		ON	BE EF	03	06 00	6E F1	01 00	A0 20	01 00
	Get		BE EF	03	06 00	CD F0	02 00	A0 20	00 00
AUDIO SOURCE - COMPUTER IN	Set	AUDIO IN1	BE EF	03	06 00	6E DC	01 00	30 20	01 00
		AUDIO IN2	BE EF	03	06 00	9E DC	01 00	30 20	02 00
		OFF	BE EF	03	06 00	FE DD	01 00	30 20	00 00
	Get		BE EF	03	06 00	CD DD	02 00	30 20	00 00
AUDIO SOURCE - LAN	Set	AUDIO IN1	BE EF	03	06 00	4A DE	01 00	3B 20	01 00
		AUDIO IN2	BE EF	03	06 00	BA DE	01 00	3B 20	02 00
		AUDIO LAN	BE EF	03	06 00	8A D3	01 00	3B 20	11 00
		OFF	BE EF	03	06 00	DA DF	01 00	3B 20	00 00
	Get		BE EF	03	06 00	E9 DF	02 00	3B 20	00 00
AUDIO SOURCE - HDMI 1	Set	AUDIO IN1	BE EF	03	06 00	2A DC	01 00	33 20	01 00
		AUDIO IN2	BE EF	03	06 00	DA DC	01 00	33 20	02 00
		AUDIO HDMI 1	BE EF	03	06 00	7A C4	01 00	33 20	20 00
		OFF	BE EF	03	06 00	BA DD	01 00	33 20	00 00
	Get		BE EF	03	06 00	89 DD	02 00	33 20	00 00
AUDIO SOURCE - HDMI 2	Set	AUDIO IN1	BE EF	03	06 00	C2 DE	01 00	3D 20	01 00
		AUDIO IN2	BE EF	03	06 00	32 DE	01 00	3D 20	02 00
		AUDIO HDMI 2	BE EF	03	06 00	02 C7	01 00	3D 20	21 00
		OFF	BE EF	03	06 00	52 DF	01 00	3D 20	00 00
	Get		BE EF	03	06 00	61 DF	02 00	3D 20	00 00
AUDIO SOURCE - HDBaseT	Set	AUDIO IN1	BE EF	03	06 00	9E EA	01 00	D4 20	01 00
		AUDIO IN2	BE EF	03	06 00	6E EA	01 00	D4 20	02 00
		AUDIO HDBaseT	BE EF	03	06 00	0E F0	01 00	D4 20	24 00
		OFF	BE EF	03	06 00	0E EB	01 00	D4 20	00 00
	Get		BE EF	03	06 00	3D EB	02 00	D4 20	00 00
AUDIO SOURCE - 3G-SDI*	Set	AUDIO IN1	BE EF	03	06 00	9E E5	01 00	E4 20	01 00
		AUDIO IN2	BE EF	03	06 00	6E E5	01 00	E4 20	02 00
		OFF	BE EF	03	06 00	0E E4	01 00	E4 20	00 00
	Get		BE EF	03	06 00	3D E4	02 00	E4 20	00 00
AUDIO SOURCE - DisplayPort	Set	AUDIO IN1	BE EF	03	06 00	5E E1	01 00	F4 20	01 00
		AUDIO IN2	BE EF	03	06 00	AE E1	01 00	F4 20	02 00
		AUDIO DisplayPort	BE EF	03	06 00	AE FA	01 00	F4 20	26 00
		OFF	BE EF	03	06 00	CE E0	01 00	F4 20	00 00
	Get		BE EF	03	06 00	FD E0	02 00	F4 20	00 00

* Supported only for LWU900-DS/LHD878-DS

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
AUDIO SOURCE - VIDEO	Set	AUDIO IN1	BE EF	03	06 00	92 DD	01 00	31 20	01 00
		AUDIO IN2	BE EF	03	06 00	62 DD	01 00	31 20	02 00
		OFF	BE EF	03	06 00	02 DC	01 00	31 20	00 00
	Get		BE EF	03	06 00	31 DC	02 00	31 20	00 00
LAN SOUND ENABLE	Set	Disable	BE EF	03	06 00	BA F0	01 00	A3 20	00 00
		Enable	BE EF	03	06 00	2A F1	01 00	A3 20	01 00
	Get		BE EF	03	06 00	89 F0	02 00	A3 20	00 00
LANGUAGE	Set	ENGLISH	BE EF	03	06 00	F7 D3	01 00	05 30	00 00
		FRANÇAIS	BE EF	03	06 00	67 D2	01 00	05 30	01 00
		DEUTSCH	BE EF	03	06 00	97 D2	01 00	05 30	02 00
		ESPAÑOL	BE EF	03	06 00	07 D3	01 00	05 30	03 00
		ITALIANO	BE EF	03	06 00	37 D1	01 00	05 30	04 00
		NORSK	BE EF	03	06 00	A7 D0	01 00	05 30	05 00
		NEDERLANDS	BE EF	03	06 00	57 D0	01 00	05 30	06 00
		PORTUGUÊS	BE EF	03	06 00	C7 D1	01 00	05 30	07 00
		日本語	BE EF	03	06 00	37 D4	01 00	05 30	08 00
		簡体中文	BE EF	03	06 00	A7 D5	01 00	05 30	09 00
		繁體中文	BE EF	03	06 00	37 DE	01 00	05 30	10 00
		한국어	BE EF	03	06 00	57 D5	01 00	05 30	0A 00
		SVENSKA	BE EF	03	06 00	C7 D4	01 00	05 30	0B 00
		РУССКИЙ	BE EF	03	06 00	F7 D6	01 00	05 30	0C 00
		SUOMI	BE EF	03	06 00	67 D7	01 00	05 30	0D 00
		POLSKI	BE EF	03	06 00	97 D7	01 00	05 30	0E 00
		TÜRKÇE	BE EF	03	06 00	07 D6	01 00	05 30	0F 00
	Get		BE EF	03	06 00	C4 D3	02 00	05 30	00 00

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
MENU POSITION V	Get		BE EF	03	06 00	40 D7	02 00	16 30	00 00
	Increment		BE EF	03	06 00	26 D7	04 00	16 30	00 00
	Decrement		BE EF	03	06 00	F7 D6	05 00	16 30	00 00
MENU POSITION V Reset	Execute		BE EF	03	06 00	A8 C7	06 00	44 70	00 00
MENU POSITION H	Get		BE EF	03	06 00	04 D7	02 00	15 30	00 00
	Increment		BE EF	03	06 00	62 D7	04 00	15 30	00 00
	Decrement		BE EF	03	06 00	B3 D6	05 00	15 30	00 00
MENU POSITION H Reset	Execute		BE EF	03	06 00	DC C6	06 00	43 70	00 00
BLANK	Set	My Screen	BE EF	03	06 00	FB CA	01 00	00 30	20 00
		ORIGINAL	BE EF	03	06 00	FB E2	01 00	00 30	40 00
		BLUE	BE EF	03	06 00	CB D3	01 00	00 30	03 00
		WHITE	BE EF	03	06 00	6B D0	01 00	00 30	05 00
		BLACK	BE EF	03	06 00	9B D0	01 00	00 30	06 00
	Get		BE EF	03	06 00	08 D3	02 00	00 30	00 00
BLANK On/Off	Set	OFF	BE EF	03	06 00	FB D8	01 00	20 30	00 00
		ON	BE EF	03	06 00	6B D9	01 00	20 30	01 00
	Get		BE EF	03	06 00	C8 D8	02 00	20 30	00 00
AUTO BLANK	Set	BLUE	BE EF	03	06 00	67 D1	01 00	0D 30	03 00
		WHITE	BE EF	03	06 00	C7 D2	01 00	0D 30	05 00
		BLACK	BE EF	03	06 00	37 D2	01 00	0D 30	06 00
	Get		BE EF	03	06 00	A4 D1	02 00	0D 30	00 00
START UP	Set	My Screen	BE EF	03	06 00	CB CB	01 00	04 30	20 00
		ORIGINAL	BE EF	03	06 00	0B D2	01 00	04 30	00 00
		OFF	BE EF	03	06 00	9B D3	01 00	04 30	01 00
	Get		BE EF	03	06 00	38 D2	02 00	04 30	00 00

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
My Screen Lock	Set	OFF	BE EF	03	06 00	3B EF	01 00	C0 30	00 00
		ON	BE EF	03	06 00	AB EE	01 00	C0 30	01 00
	Get		BE EF	03	06 00	08 EF	02 00	C0 30	00 00
OSD MESSAGE	Set	OFF	BE EF	03	06 00	8F D6	01 00	17 30	00 00
		ON	BE EF	03	06 00	1F D7	01 00	17 30	01 00
		HIDE	BE EF	03	06 00	EF D7	01 00	17 30	02 00
	Get		BE EF	03	06 00	BC D6	02 00	17 30	00 00
TEMPLATE	Set	TEST PATTERN	BE EF	03	06 00	43 D9	01 00	22 30	00 00
		DOT-LINE 1	BE EF	03	06 00	D3 D8	01 00	22 30	01 00
		DOT-LINE 2	BE EF	03	06 00	23 D8	01 00	22 30	02 00
		DOT-LINE 3	BE EF	03	06 00	B3 D9	01 00	22 30	03 00
		DOT-LINE 4	BE EF	03	06 00	83 DB	01 00	22 30	04 00
		STACK	BE EF	03	06 00	83 C0	01 00	22 30	20 00
	Get		BE EF	03	06 00	70 D9	02 00	22 30	00 00
TEMPLATE On/Off	Set	OFF	BE EF	03	06 00	BF D8	01 00	23 30	00 00
		ON	BE EF	03	06 00	2F D9	01 00	23 30	01 00
	Get		BE EF	03	06 00	8C D8	02 00	23 30	00 00
Closed Caption C. C. - DISPLAY	Set	OFF	BE EF	03	06 00	FA 62	01 00	00 37	00 00
		ON	BE EF	03	06 00	6A 63	01 00	00 37	01 00
		AUTO	BE EF	03	06 00	9A 63	01 00	00 37	02 00
	Get		BE EF	03	06 00	C9 62	02 00	00 37	00 00
Closed Caption C. C. - MODE	Set	CAPTIONS	BE EF	03	06 00	06 63	01 00	01 37	00 00
		TEXT	BE EF	03	06 00	96 62	01 00	01 37	01 00
	Get		BE EF	03	06 00	35 63	02 00	01 37	00 00
Closed Caption C. C. - CHANNEL	Set	1	BE EF	03	06 00	D2 62	01 00	02 37	01 00
		2	BE EF	03	06 00	22 62	01 00	02 37	02 00
		3	BE EF	03	06 00	B2 63	01 00	02 37	03 00
		4	BE EF	03	06 00	82 61	01 00	02 37	04 00
	Get		BE EF	03	06 00	71 63	02 00	02 37	00 00
SEARCH SKIP - COMPUTER IN	Set	NORMAL	BE EF	03	06 00	FE 78	01 00	20 22	00 00
		SKIP	BE EF	03	06 00	6E 79	01 00	20 22	01 00
	Get		BE EF	03	06 00	CD 78	02 00	20 22	00 00
SEARCH SKIP - LAN	Set	NORMAL	BE EF	03	06 00	DA 7A	01 00	2B 22	00 00
		SKIP	BE EF	03	06 00	4A 7B	01 00	2B 22	01 00
	Get		BE EF	03	06 00	E9 7A	02 00	2B 22	00 00
SEARCH SKIP - HDMI 1	Set	NORMAL	BE EF	03	06 00	BA 78	01 00	23 22	00 00
		SKIP	BE EF	03	06 00	2A 79	01 00	23 22	01 00
	Get		BE EF	03	06 00	89 78	02 00	23 22	00 00
SEARCH SKIP - HDMI 2	Set	NORMAL	BE EF	03	06 00	52 7A	01 00	2D 22	00 00
		SKIP	BE EF	03	06 00	C2 7B	01 00	2D 22	01 00
	Get		BE EF	03	06 00	61 7A	02 00	2D 22	00 00
SEARCH SKIP - HDBaseT	Set	NORMAL	BE EF	03	06 00	B6 EA	01 00	D6 20	00 00
		SKIP	BE EF	03	06 00	26 EB	01 00	D6 20	01 00
	Get		BE EF	03	06 00	85 EA	02 00	D6 20	00 00

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
SEARCH SKIP - VIDEO	Set	NORMAL	BE EF	03	06 00	02 79	01 00	21 22	00 00
	Set	SKIP	BE EF	03	06 00	92 78	01 00	21 22	01 00
	Get		BE EF	03	06 00	31 79	02 00	21 22	00 00
SEARCH SKIP 3G-SDI*	Set	NORMAL	BE EF	03	06 00	B6 E5	01 00	E6 20	00 00
	Set	SKIP	BE EF	03	06 00	26 E4	01 00	E6 20	01 00
	Get		BE EF	03	06 00	85 E5	02 00	E6 20	00 00
SEARCH SKIP DisplayPort	Set	NORMAL	BE EF	03	06 00	76 E1	01 00	F6 20	00 00
	Set	SKIP	BE EF	03	06 00	E6 E0	01 00	F6 20	01 00
	Get		BE EF	03	06 00	45 E1	02 00	F6 20	00 00
AUTO SEARCH	Set	OFF	BE EF	03	06 00	B6 D6	01 00	16 20	00 00
	Set	ON	BE EF	03	06 00	26 D7	01 00	16 20	01 00
	Get		BE EF	03	06 00	85 D6	02 00	16 20	00 00
DIRECT POWER ON	Set	OFF	BE EF	03	06 00	3B 89	01 00	20 31	00 00
	Set	ON	BE EF	03	06 00	AB 88	01 00	20 31	01 00
	Get		BE EF	03	06 00	08 89	02 00	20 31	00 00
AUTO POWER ON - COMPUTER IN	Get		BE EF	03	06 00	08 A4	02 00	B0 31	00 00
AUTO POWER ON - VIDEO	Get		BE EF	03	06 00	F4 A5	02 00	B1 31	00 00
AUTO POWER ON - HDMI 2	Get		BE EF	03	06 00	A4 A6	02 00	BD 31	00 00
AUTO POWER OFF	Get		BE EF	03	06 00	08 86	02 00	10 31	00 00
	Increment		BE EF	03	06 00	6E 86	04 00	10 31	00 00
	Decrement		BE EF	03	06 00	BF 87	05 00	10 31	00 00
SHUTTER TIMER	Set	1h	BE EF	03	06 00	27 92	01 00	06 24	01 00
	Set	3h	BE EF	03	06 00	47 93	01 00	06 24	03 00
	Set	6h	BE EF	03	06 00	17 90	01 00	06 24	06 00
	Get		BE EF	03	06 00	84 93	02 00	06 24	00 00
LIGHT SOURCE HOURS Lower Bytes	Get		BE EF	03	06 00	C2 FF	02 00	90 10	00 00
LIGHT SOURCE HOURS Higher Bytes	Get		BE EF	03	06 00	2A FD	02 00	9E 10	00 00
FILTER HOURS Lower Bytes	Get		BE EF	03	06 00	C2 F0	02 00	A0 10	00 00
FILTER HOURS Higher Bytes	Get		BE EF	03	06 00	D6 FC	02 00	9F 10	00 00
FILTER HOURS Reset	Execute		BE EF	03	06 00	98 C6	06 00	40 70	00 00

* Supported only for LWU900-DS/LHD878-DS

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
MY BUTTON 1	Set	MY IMAGE	BE EF	03	06 00	5A 3D	01 00	00 36	16 00
	Set	MESSENGER	BE EF	03	06 00	AA 29	01 00	00 36	25 00
	Set	SHUTTER	BE EF	03	06 00	5A 26	01 00	00 36	32 00
	Set	INFORMATION	BE EF	03	06 00	FA 3E	01 00	00 36	10 00
	Set	MY MEMORY	BE EF	03	06 00	9A 3F	01 00	00 36	12 00
	Set	PICTURE MODE	BE EF	03	06 00	0A 3E	01 00	00 36	13 00
	Set	FILTER RESET	BE EF	03	06 00	3A 3C	01 00	00 36	14 00
	Set	TEMPLATE	BE EF	03	06 00	CA 39	01 00	00 36	1B 00
	Set	MUTE	BE EF	03	06 00	FA 20	01 00	00 36	38 00
	Set	PbyP/PIP SWAP	BE EF	03	06 00	5A 38	01 00	00 36	1A 00
	Set	PIP POSITION	BE EF	03	06 00	3A 22	01 00	00 36	3C 00
	Set	BLANK	BE EF	03	06 00	FA 02	01 00	00 36	40 00
	Set	RESOLUTION	BE EF	03	06 00	9A 3A	01 00	00 36	1E 00
	Set	LIGHT OUTPUT	BE EF	03	06 00	0A 25	01 00	00 36	37 00
	Set	eClarity	BE EF	03	06 00	9A 21	01 00	00 36	3A 00
	Set	HDCR	BE EF	03	06 00	5A 23	01 00	00 36	3E 00
	Set	MY BUTTON	BE EF	03	06 00	CA 72	01 00	00 36	FF 00
	Get		BE EF	03	06 00	09 33	02 00	00 36	00 00
MY BUTTON 2	Set	MY IMAGE	BE EF	03	06 00	A6 3C	01 00	01 36	16 00
	Set	MESSENGER	BE EF	03	06 00	56 28	01 00	01 36	25 00
	Set	SHUTTER	BE EF	03	06 00	A6 27	01 00	01 36	32 00
	Set	INFORMATION	BE EF	03	06 00	06 3F	01 00	01 36	10 00
	Set	MY MEMORY	BE EF	03	06 00	66 3E	01 00	01 36	12 00
	Set	PICTURE MODE	BE EF	03	06 00	F6 3F	01 00	01 36	13 00
	Set	FILTER RESET	BE EF	03	06 00	C6 3D	01 00	01 36	14 00
	Set	TEMPLATE	BE EF	03	06 00	36 38	01 00	01 36	1B 00
	Set	MUTE	BE EF	03	06 00	06 21	01 00	01 36	38 00
	Set	PbyP/PIP SWAP	BE EF	03	06 00	A6 39	01 00	01 36	1A 00
	Set	PIP POSITION	BE EF	03	06 00	C6 23	01 00	01 36	3C 00
	Set	BLANK	BE EF	03	06 00	06 03	01 00	01 36	40 00
	Set	RESOLUTION	BE EF	03	06 00	66 3B	01 00	01 36	1E 00
	Set	LIGHT OUTPUT	BE EF	03	06 00	F6 24	01 00	01 36	37 00
	Set	eClarity	BE EF	03	06 00	66 20	01 00	01 36	3A 00
	Set	HDCR	BE EF	03	06 00	A6 22	01 00	01 36	3E 00
	Set	MY BUTTON	BE EF	03	06 00	36 73	01 00	01 36	FF 00
	Get		BE EF	03	06 00	F5 32	02 00	01 36	00 00

CHRISTIE
RS-232C Communication / Network command table (continued)

Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
MY BUTTON 3	Set	MY IMAGE	BE EF	03	06 00	E2 3C	01 00	02 36	16 00
		MESSENGER	BE EF	03	06 00	12 28	01 00	02 36	25 00
		SHUTTER	BE EF	03	06 00	E2 27	01 00	02 36	32 00
		INFORMATION	BE EF	03	06 00	42 3F	01 00	02 36	10 00
		MY MEMORY	BE EF	03	06 00	22 3E	01 00	02 36	12 00
		PICTURE MODE	BE EF	03	06 00	B2 3F	01 00	02 36	13 00
		FILTER RESET	BE EF	03	06 00	82 3D	01 00	02 36	14 00
		TEMPLATE	BE EF	03	06 00	72 38	01 00	02 36	1B 00
		MUTE	BE EF	03	06 00	42 21	01 00	02 36	38 00
		PbyP/PIP SWAP	BE EF	03	06 00	E2 39	01 00	02 36	1A 00
		PIP POSITION	BE EF	03	06 00	82 23	01 00	02 36	3C 00
		BLANK	BE EF	03	06 00	42 03	01 00	02 36	40 00
		RESOLUTION	BE EF	03	06 00	22 3B	01 00	02 36	1E 00
		LIGHT OUTPUT	BE EF	03	06 00	B2 24	01 00	02 36	37 00
		eClarity	BE EF	03	06 00	22 20	01 00	02 36	3A 00
		HDCR	BE EF	03	06 00	E2 22	01 00	02 36	3E 00
		MY BUTTON	BE EF	03	06 00	72 73	01 00	02 36	FF 00
	Get		BE EF	03	06 00	B1 32	02 00	02 36	00 00
MY BUTTON 4	Set	MY IMAGE	BE EF	03	06 00	1E 3D	01 00	03 36	16 00
		MESSENGER	BE EF	03	06 00	EE 29	01 00	03 36	25 00
		SHUTTER	BE EF	03	06 00	1E 26	01 00	03 36	32 00
		INFORMATION	BE EF	03	06 00	BE 3E	01 00	03 36	10 00
		MY MEMORY	BE EF	03	06 00	DE 3F	01 00	03 36	12 00
		PICTURE MODE	BE EF	03	06 00	4E 3E	01 00	03 36	13 00
		FILTER RESET	BE EF	03	06 00	7E 3C	01 00	03 36	14 00
		TEMPLATE	BE EF	03	06 00	8E 39	01 00	03 36	1B 00
		MUTE	BE EF	03	06 00	BE 20	01 00	03 36	38 00
		PbyP/PIP SWAP	BE EF	03	06 00	1E 38	01 00	03 36	1A 00
		PIP POSITION	BE EF	03	06 00	7E 22	01 00	03 36	3C 00
		BLANK	BE EF	03	06 00	BE 02	01 00	03 36	40 00
		RESOLUTION	BE EF	03	06 00	DE 3A	01 00	03 36	1E 00
		LIGHT OUTPUT	BE EF	03	06 00	4E 25	01 00	03 36	37 00
		eClarity	BE EF	03	06 00	DE 21	01 00	03 36	3A 00
		HDCR	BE EF	03	06 00	1E 23	01 00	03 36	3E 00
		MY BUTTON	BE EF	03	06 00	8E 72	01 00	03 36	FF 00
	Get		BE EF	03	06 00	4D 33	02 00	03 36	00 00

CHRISTIE
RS-232C Communication / Network command table (continued)

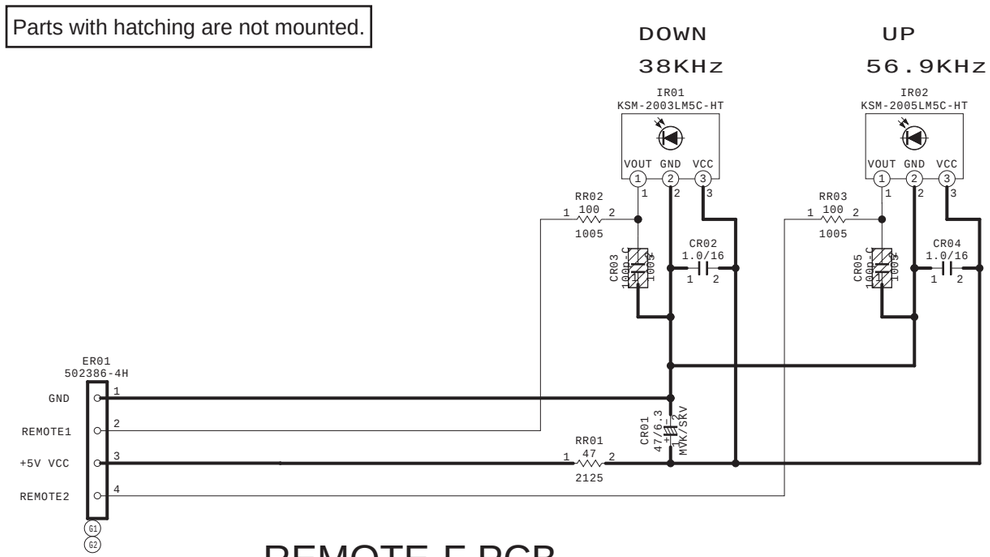
Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
REMOTE RECEIV. FRONT	Set	Off	BE EF	03	06 00	FF 32	01 00	00 26	00 00
		On	BE EF	03	06 00	6F 33	01 00	00 26	01 00
	Get		BE EF	03	06 00	CC 32	02 00	00 26	00 00
REMOTE RECEIV. REAR	Set	Off	BE EF	03	06 00	03 33	01 00	01 26	00 00
		On	BE EF	03	06 00	93 32	01 00	01 26	01 00
	Get		BE EF	03	06 00	30 33	02 00	01 26	00 00
REMOTE RECEIV.HDBaseT	Set	Off	BE EF	03	06 00	BB 32	01 00	03 26	00 00
		On	BE EF	03	06 00	2B 33	01 00	03 26	01 00
	Get		BE EF	03	06 00	88 32	02 00	03 26	00 00
REMOTE FREQ. NORMAL	Set	OFF	BE EF	03	06 00	FF 3D	01 00	30 26	00 00
		ON	BE EF	03	06 00	6F 3C	01 00	30 26	01 00
	Get		BE EF	03	06 00	CC 3D	02 00	30 26	00 00
REMOTE FREQ. HIGH	Set	OFF	BE EF	03	06 00	03 3C	01 00	31 26	00 00
		ON	BE EF	03	06 00	93 3D	01 00	31 26	01 00
	Get		BE EF	03	06 00	30 3C	02 00	31 26	00 00
REMOTE ID	Set	ALL	BE EF	03	06 00	9F 30	01 00	08 26	00 00
		1	BE EF	03	06 00	0F 31	01 00	08 26	01 00
		2	BE EF	03	06 00	FF 31	01 00	08 26	02 00
		3	BE EF	03	06 00	6F 30	01 00	08 26	03 00
		4	BE EF	03	06 00	5F 32	01 00	08 26	04 00
	Get		BE EF	03	06 00	AC 30	02 00	08 26	00 00
MY IMAGE	Set	OFF	BE EF	03	06 00	3A C3	01 00	00 35	00 00
		IMAGE-1	BE EF	03	06 00	AA C2	01 00	00 35	01 00
		IMAGE-2	BE EF	03	06 00	5A C2	01 00	00 35	02 00
		IMAGE-3	BE EF	03	06 00	CA C3	01 00	00 35	03 00
		IMAGE-4	BE EF	03	06 00	FA C1	01 00	00 35	04 00
	Get		BE EF	03	06 00	09 C3	02 00	00 35	00 00
MY IMAGE IMAGE-1 Delete	Execute		BE EF	03	06 00	71 C3	06 00	01 35	00 00
MY IMAGE IMAGE-2 Delete	Execute		BE EF	03	06 00	35 C3	06 00	02 35	00 00
MY IMAGE IMAGE-3 Delete	Execute		BE EF	03	06 00	C9 C2	06 00	03 35	00 00
MY IMAGE IMAGE-4 Delete	Execute		BE EF	03	06 00	BD C3	06 00	04 35	00 00
REMOTE OUT - REMOTE CONTROL	Set	OFF	BE EF	03	06 00	47 3C	01 00	32 26	00 00
		ON	BE EF	03	06 00	D7 3D	01 00	32 26	01 00
	Get		BE EF	03	06 00	74 3C	02 00	32 26	00 00
REMOTE OUT - HDBaseT	Set	OFF	BE EF	03	06 00	BB 3D	01 00	33 26	00 00
		ON	BE EF	03	06 00	2B 3C	01 00	33 26	01 00
	Get		BE EF	03	06 00	88 3D	02 00	33 26	00 00
AMX for LAN	Set	Off	BE EF	03	06 00	33 AC	01 00	30 1B	00 00
		On	BE EF	03	06 00	A3 AD	01 00	30 1B	01 00
	Get		BE EF	03	06 00	00 AC	02 00	30 1B	00 00
CRESTRON	Set	Off	BE EF	03	06 00	33 B2	01 00	50 1B	00 00
		On	BE EF	03	06 00	A3 B3	01 00	50 1B	01 00
	Get		BE EF	03	06 00	00 B2	02 00	50 1B	00 00

RS-232C Communication / Network command table (continued)

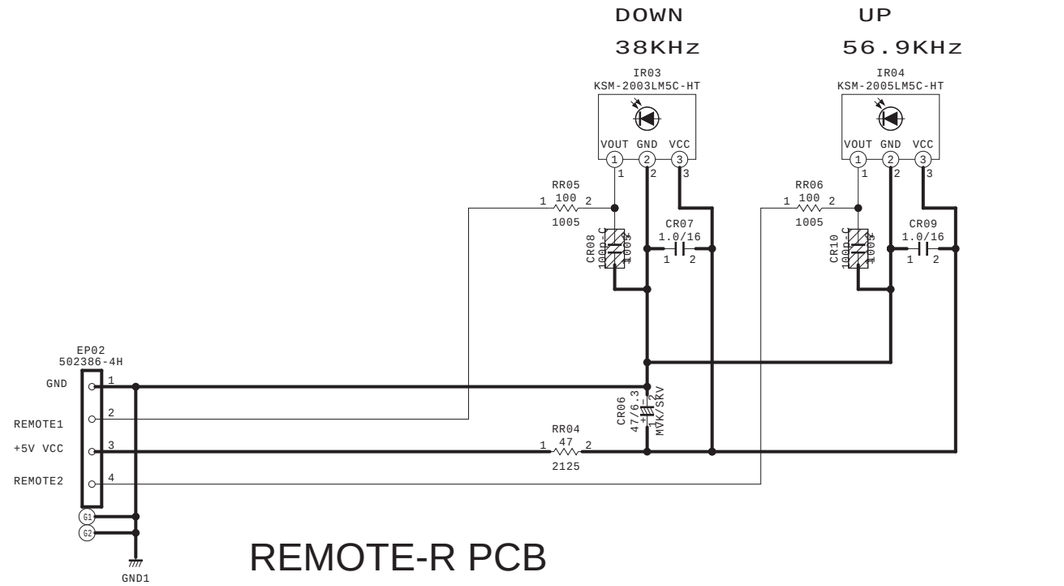
Names	Operation Type		Header			CRC	Command Data		
							Action	Type	Setting code
EXTRON for HDBaseT	Set	Off	BE EF	03	06 00	33 BD	01 00	60 1B	00 00
		On	BE EF	03	06 00	A3 BC	01 00	60 1B	01 00
	Get		BE EF	03	06 00	00 BD	02 00	60 1B	00 00
HDMI OUT RESOLUTION	Set	EXTERNAL DEVICE	BE EF	03	06 00	46 EF	01 00	C2 20	00 00
		PROJECTOR	BE EF	03	06 00	D6 EE	01 00	C2 20	01 00
	Get		BE EF	03	06 00	75 EF	02 00	C2 20	00 00
STANDBY OUTPUT - AUDIO OUT	Set	OFF	BE EF	03	06 00	EA DE	01 00	3F 20	00 00
		AUDIO IN1	BE EF	03	06 00	7A DF	01 00	3F 20	01 00
		AUDIO IN2	BE EF	03	06 00	8A DF	01 00	3F 20	02 00
		HDMI 1	BE EF	03	06 00	2A C7	01 00	3F 20	20 00
		HDMI 2	BE EF	03	06 00	BA C6	01 00	3F 20	21 00
		HDBaseT	BE EF	03	06 00	EA C5	01 00	3F 20	24 00
		DisplayPort	BE EF	03	06 00	8A C4	01 00	3F 20	26 00
	Get		BE EF	03	06 00	D9 DE	02 00	3F 20	00 00
STANDBY OUTPUT - MONITOR OUT	Set	COMPUTER IN	BE EF	03	06 00	2A F7	01 00	BF 20	00 00
		OFF	BE EF	03	06 00	DA B6	01 00	BF 20	FF 00
	Get		BE EF	03	06 00	19 F7	02 00	BF 20	00 00
STANDBY OUTPUT - HDMI OUT	Set	HDMI 1	BE EF	03	06 00	F2 EF	01 00	C1 20	03 00
		HDBaseT	BE EF	03	06 00	52 E3	01 00	C1 20	11 00
		OFF	BE EF	03	06 00	F2 AE	01 00	C1 20	FF 00
	Get		BE EF	03	06 00	31 EF	02 00	C1 20	00 00
HDMI OUTPUT Enable	Set	OFF	BE EF	03	06 00	02 2C	01 00	31 23	00 00
		ON	BE EF	03	06 00	92 2D	01 00	31 23	01 00
	Get		BE EF	03	06 00	31 2C	02 00	31 23	00 00
HDMI OUTPUT - COMPUTER IN	Set	HDMI 1	BE EF	03	06 00	CE 37	01 00	40 23	03 00
		HDBaseT	BE EF	03	06 00	6E 3B	01 00	40 23	11 00
	Get		BE EF	03	06 00	0D 37	02 00	40 23	00 00
HDMI OUTPUT - VIDEO	Set	HDMI	BE EF	03	06 00	32 36	01 00	41 23	03 00
		HDBaseT	BE EF	03	06 00	92 3A	01 00	41 23	11 00
	Get		BE EF	03	06 00	F1 36	02 00	41 23	00 00
HDMI OUTPUT - HDMI 1	Get		BE EF	03	06 00	49 37	02 00	43 23	00 00
HDMI OUTPUT - LAN	Set	HDMI 1	BE EF	03	06 00	EA 35	01 00	4B 23	03 00
		HDBaseT	BE EF	03	06 00	4A 39	01 00	4B 23	11 00
	Get		BE EF	03	06 00	29 35	02 00	4B 23	00 00
HDMI OUTPUT - HDMI 2	Set	HDMI 1	BE EF	03	06 00	62 35	01 00	4D 23	03 00
		HDBaseT	BE EF	03	06 00	C2 39	01 00	4D 23	11 00
	Get		BE EF	03	06 00	A1 35	02 00	4D 23	00 00
HDMI OUTPUT - HDBaseT	Get		BE EF	03	06 00	31 32	02 00	51 23	00 00
HDMI OUTPUT - 3G-SDI *	Set	HDMI 1	BE EF	03	06 00	B6 32	01 00	52 23	03 00
		HDBaseT	BE EF	03	06 00	16 3E	01 00	52 23	11 00
	Get		BE EF	03	06 00	75 32	02 00	52 23	00 00

* Supported only for LWU900-DS/LHD878-DS

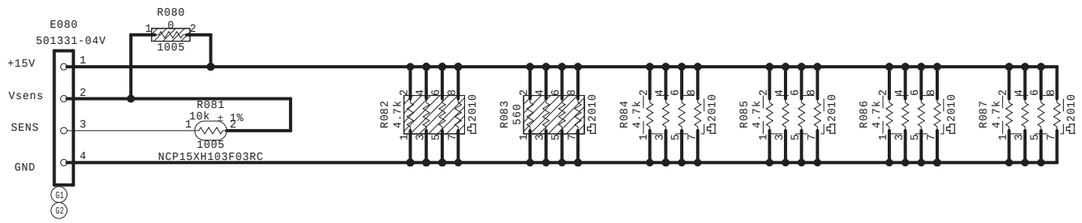
Parts with hatching are not mounted.



REMOTE-F PCB

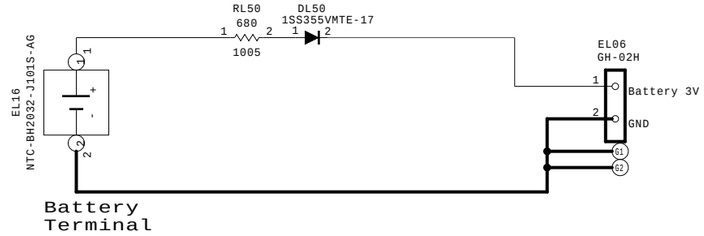


REMOTE-R PCB

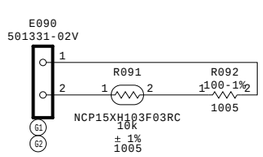


NTC-IN PCB

CONFIDENTIAL



BATTERY PCB



NTC-OUT PCB

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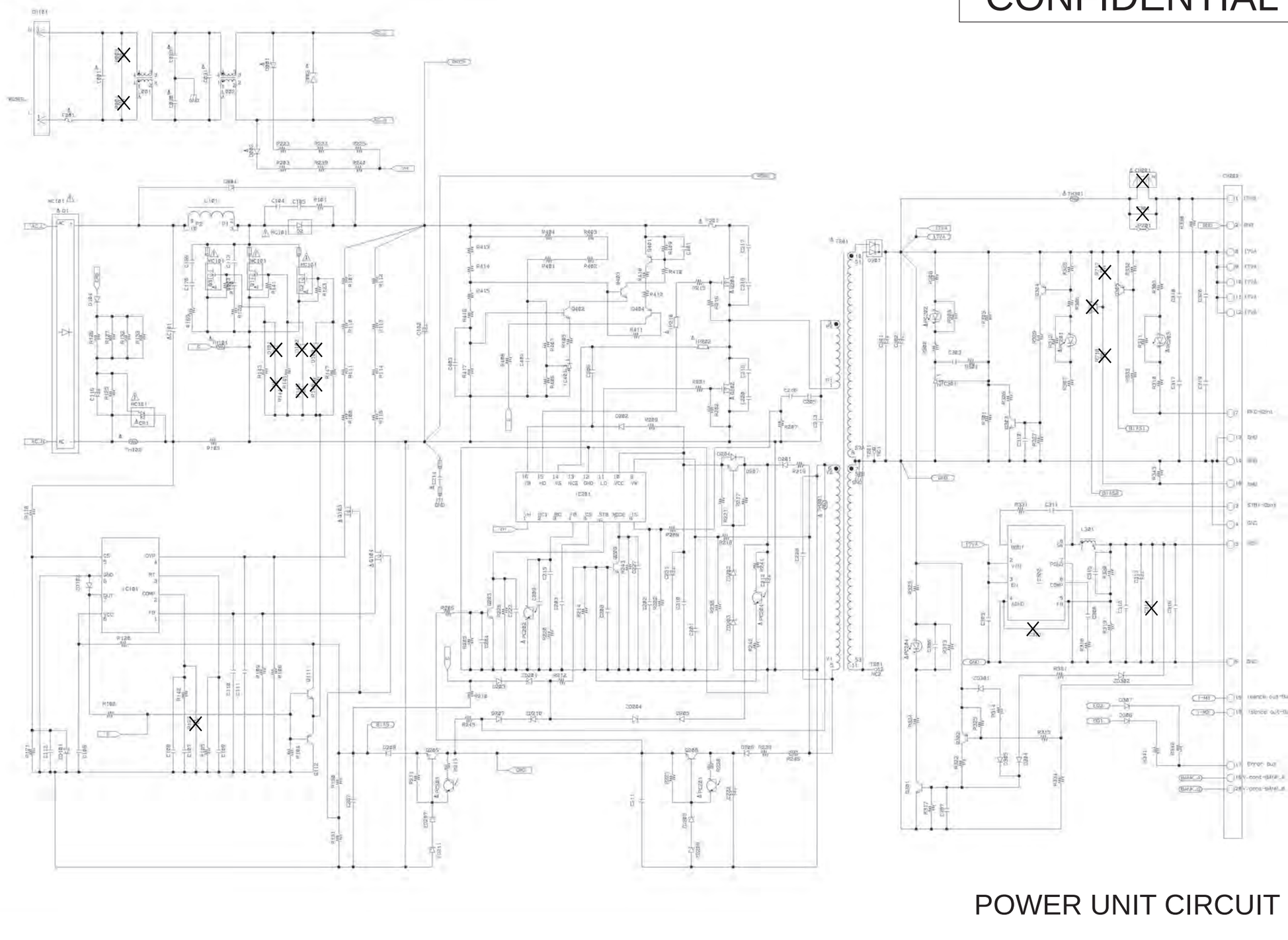
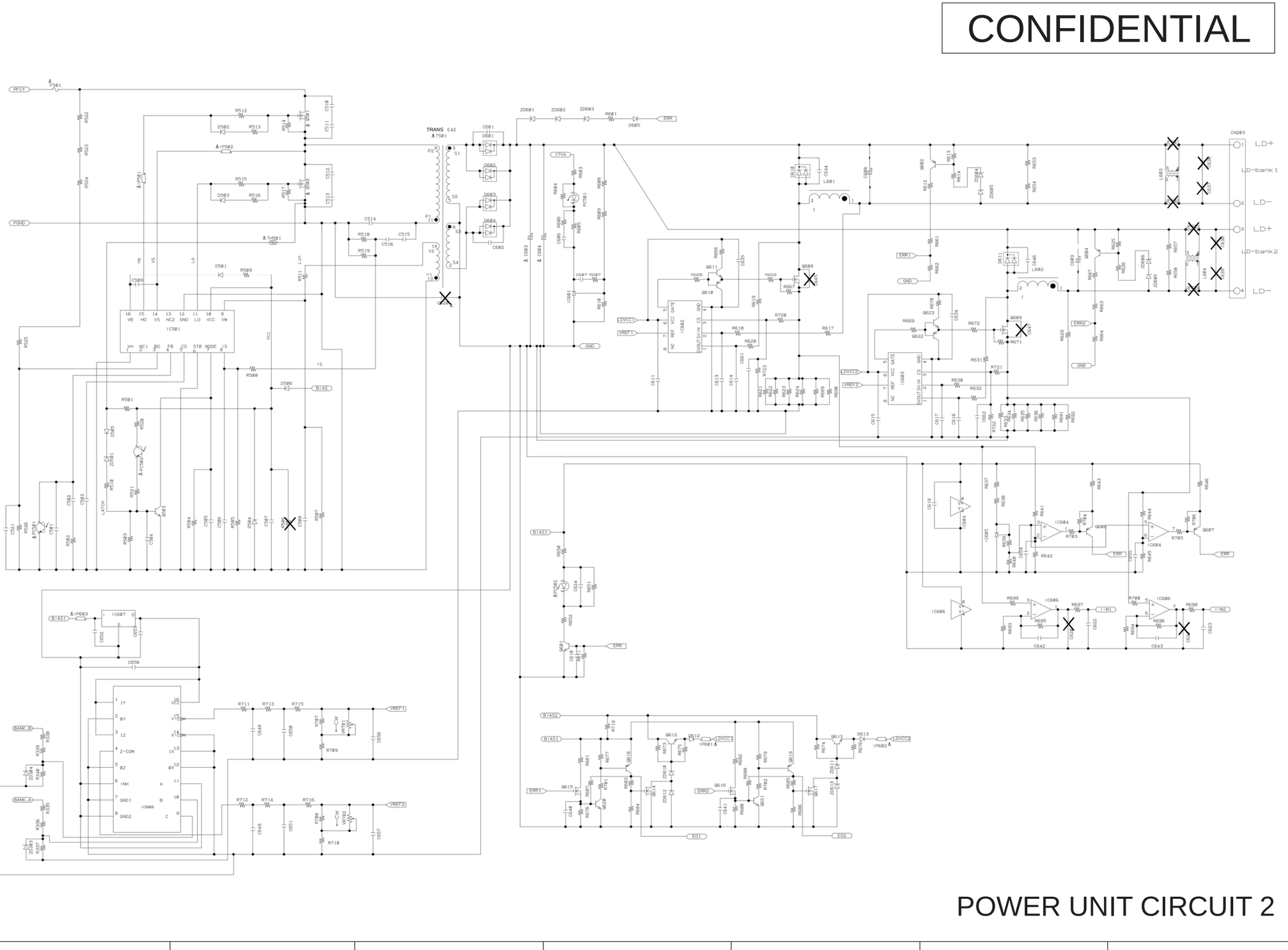


POWER UNIT CIRCUIT 1

CONFIDENTIAL



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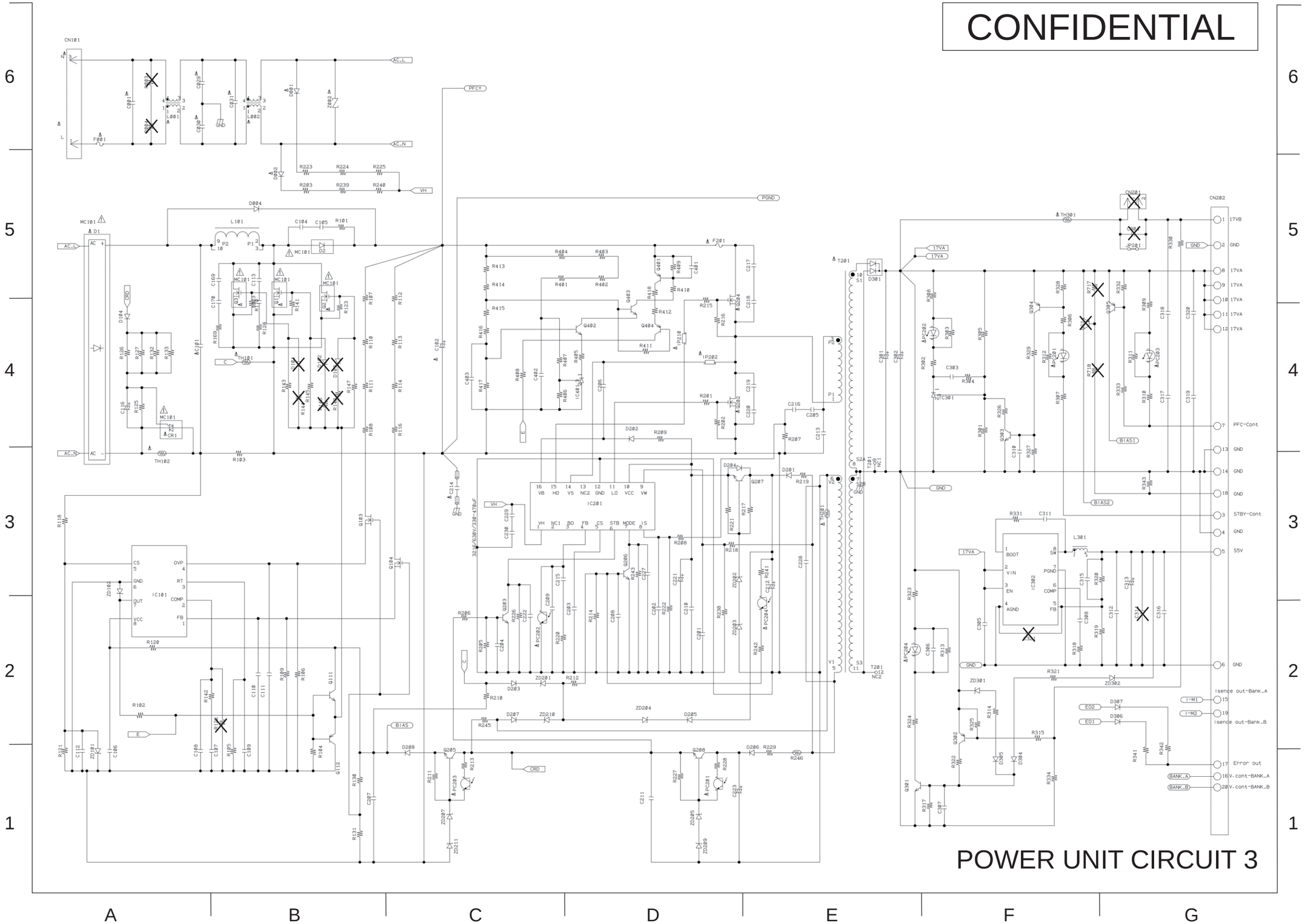

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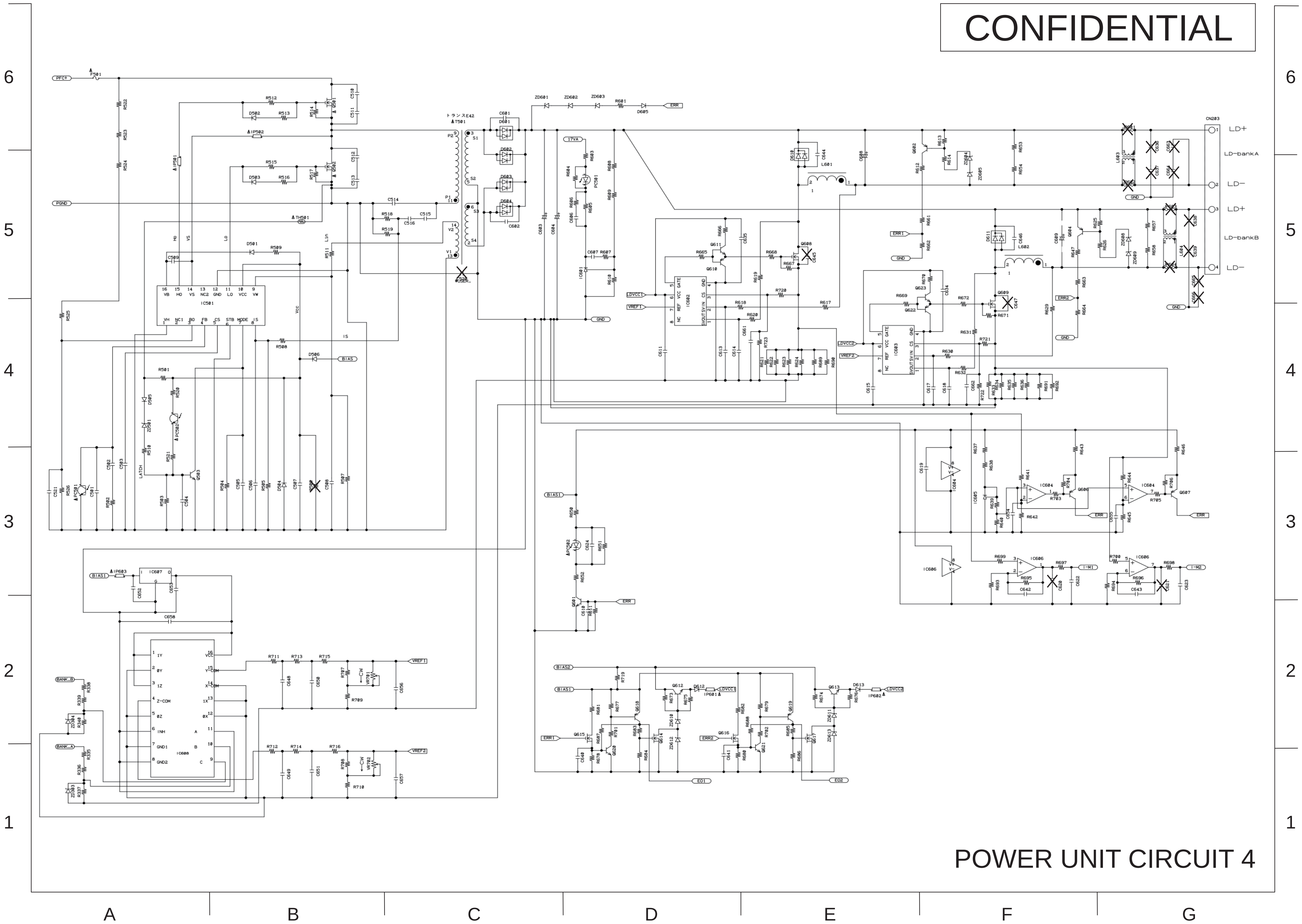

POWER UNIT CIRCUIT 4

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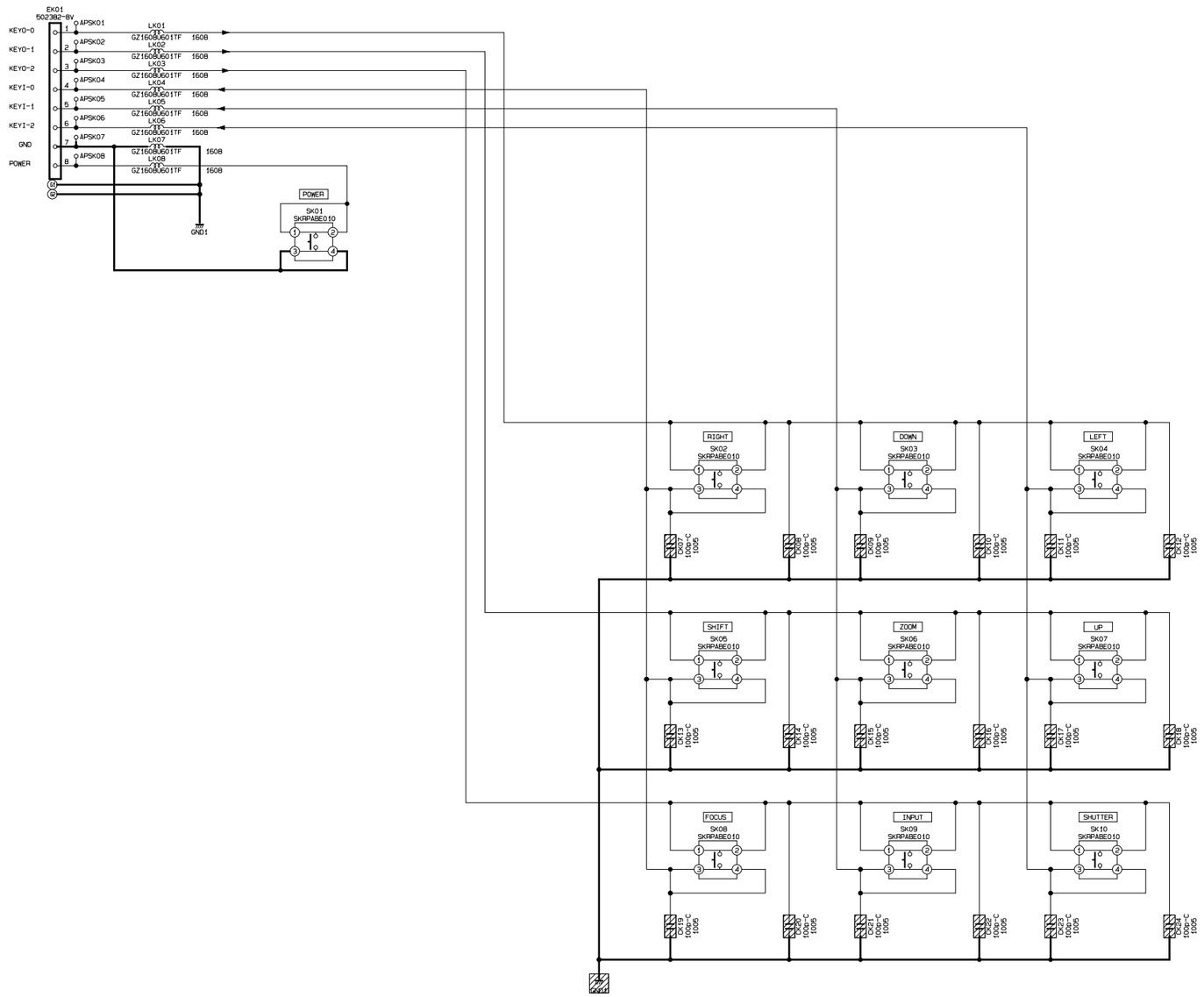

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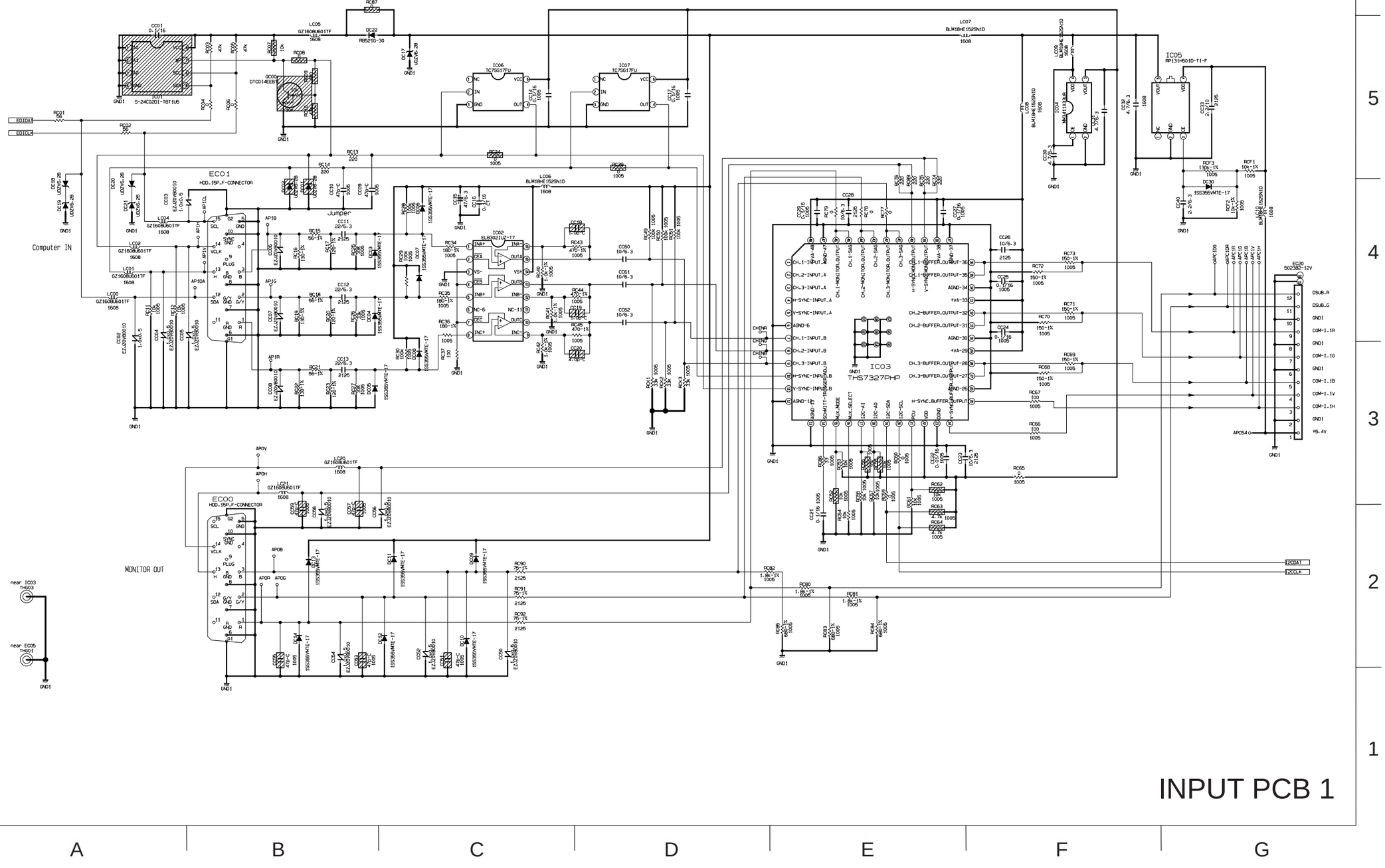

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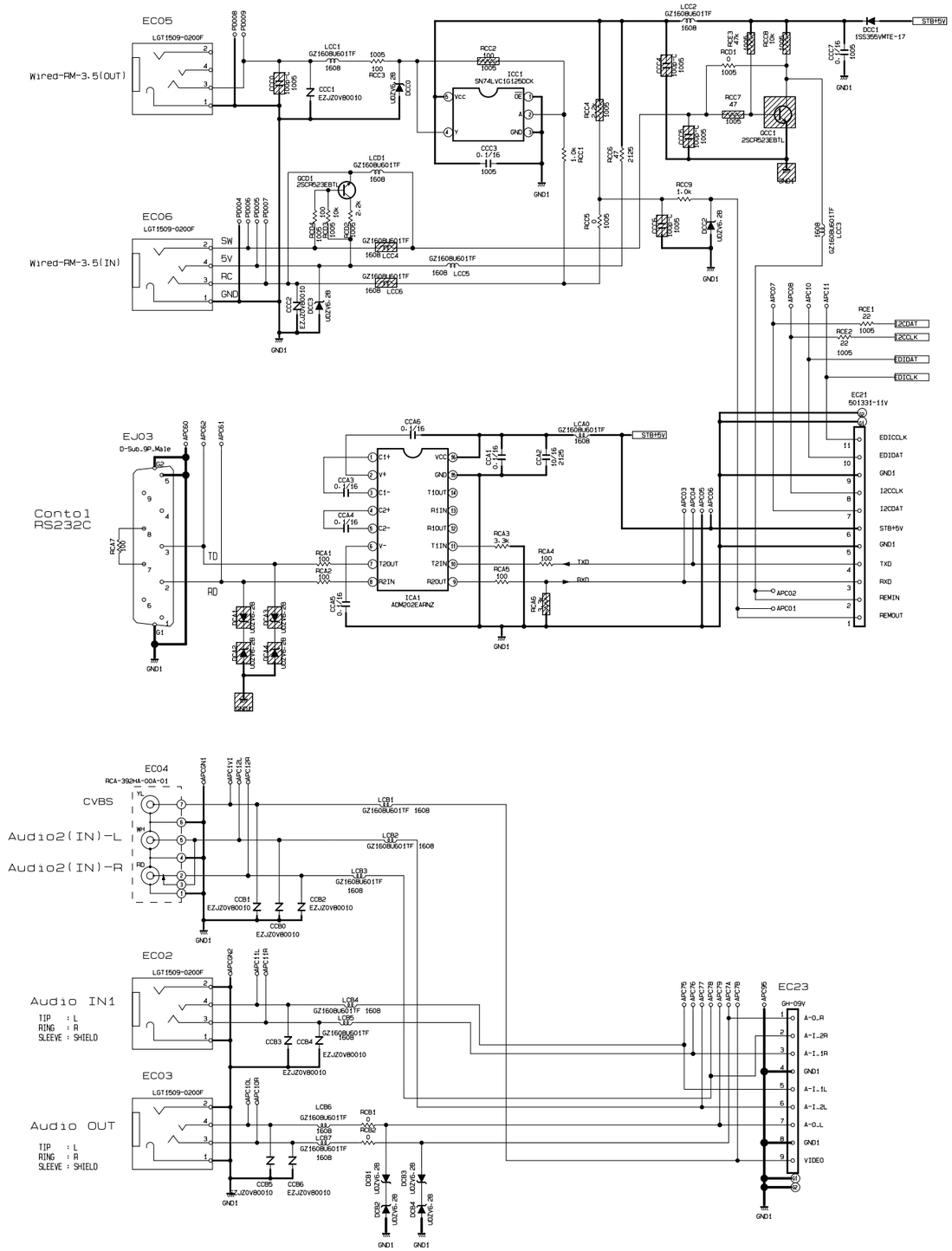
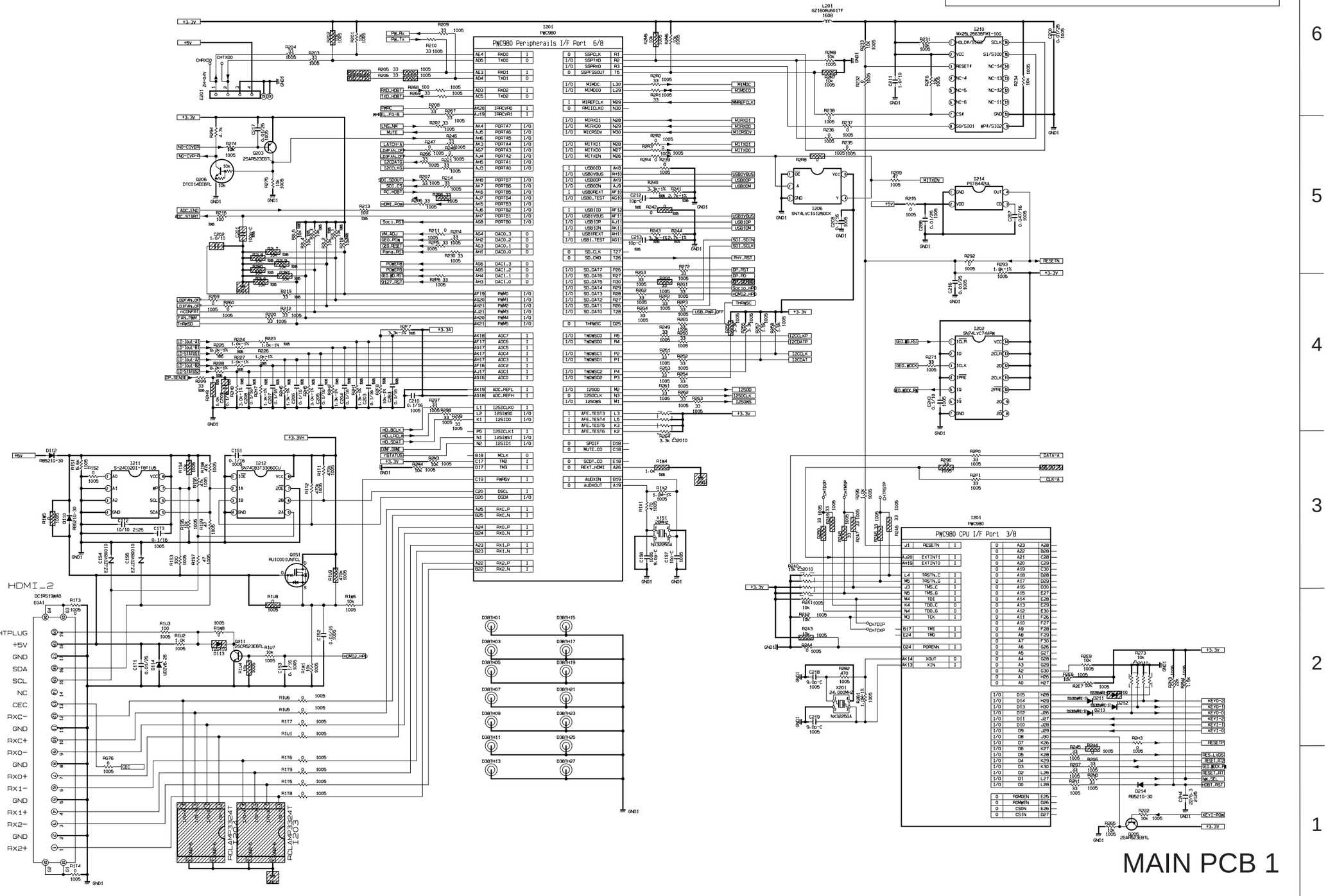


INPUT PCB 2

CONFIDENTIAL



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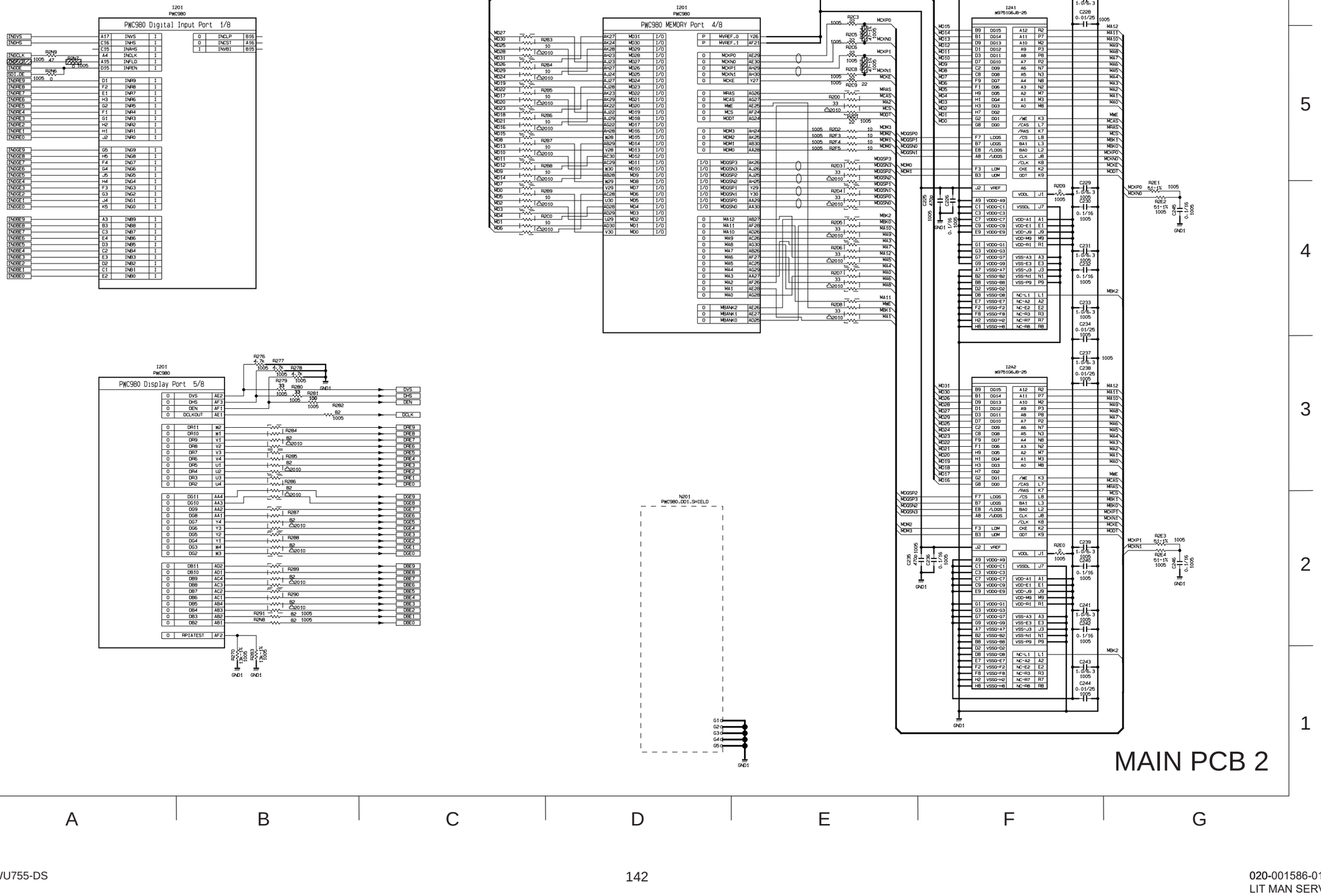

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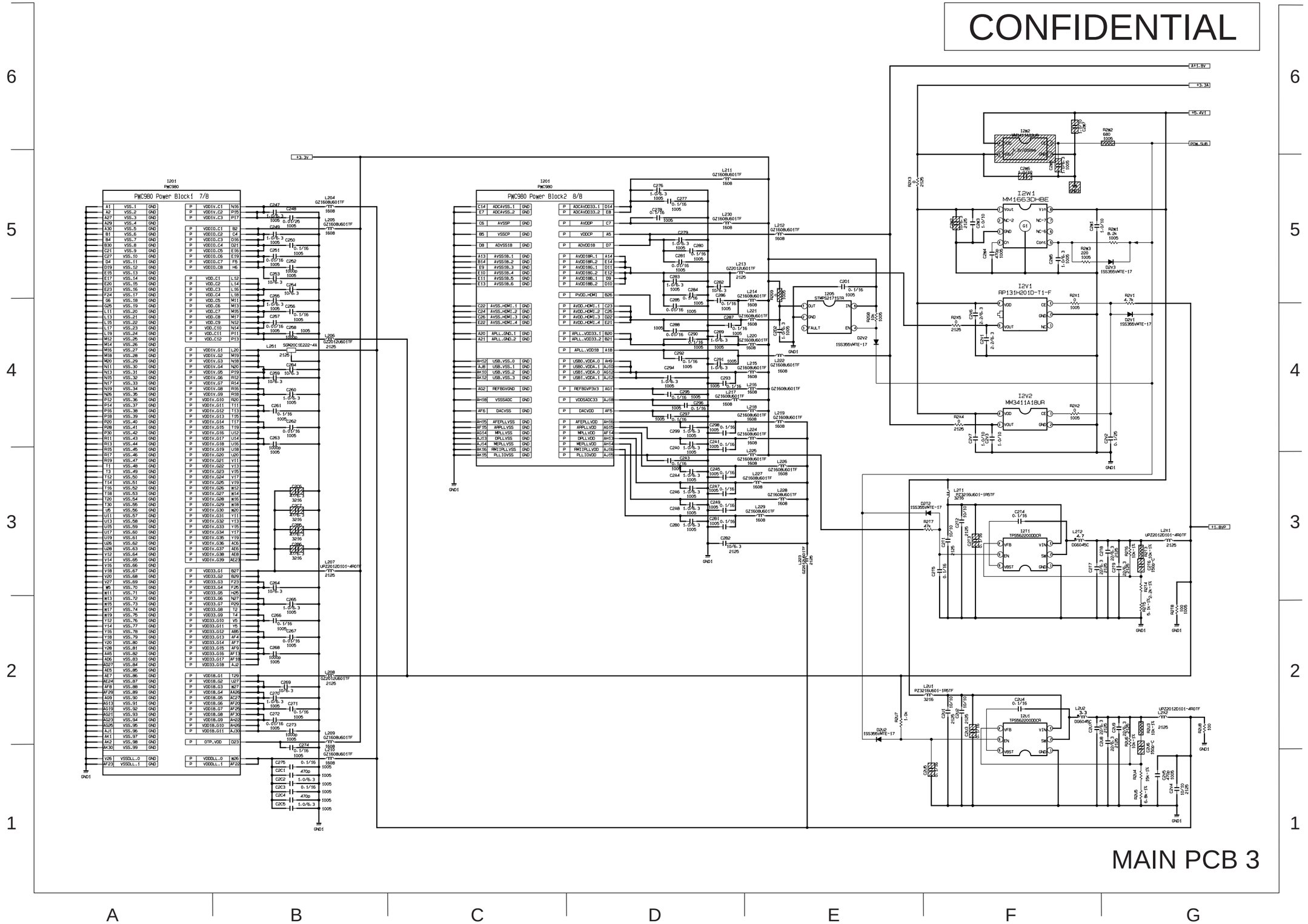

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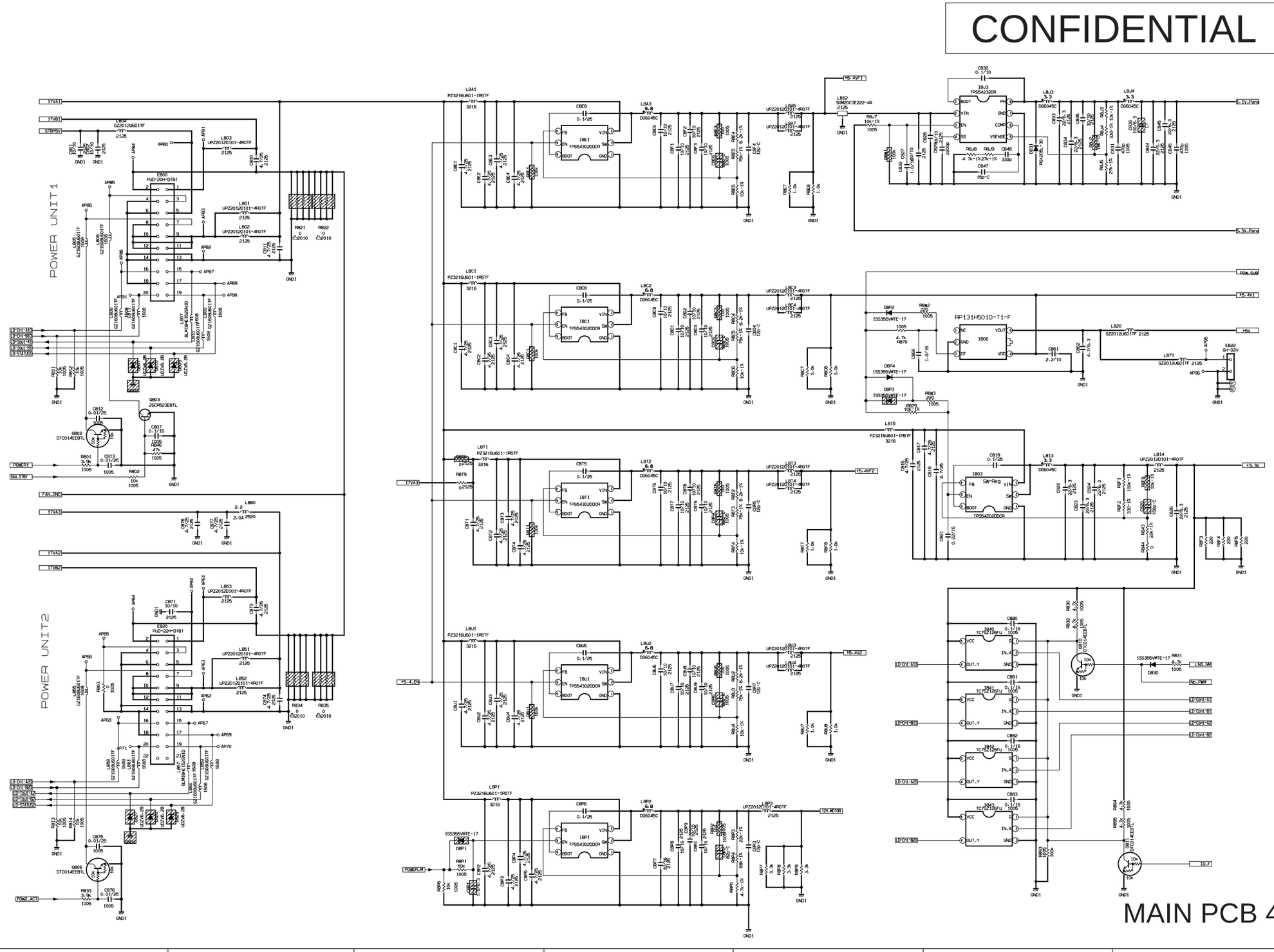

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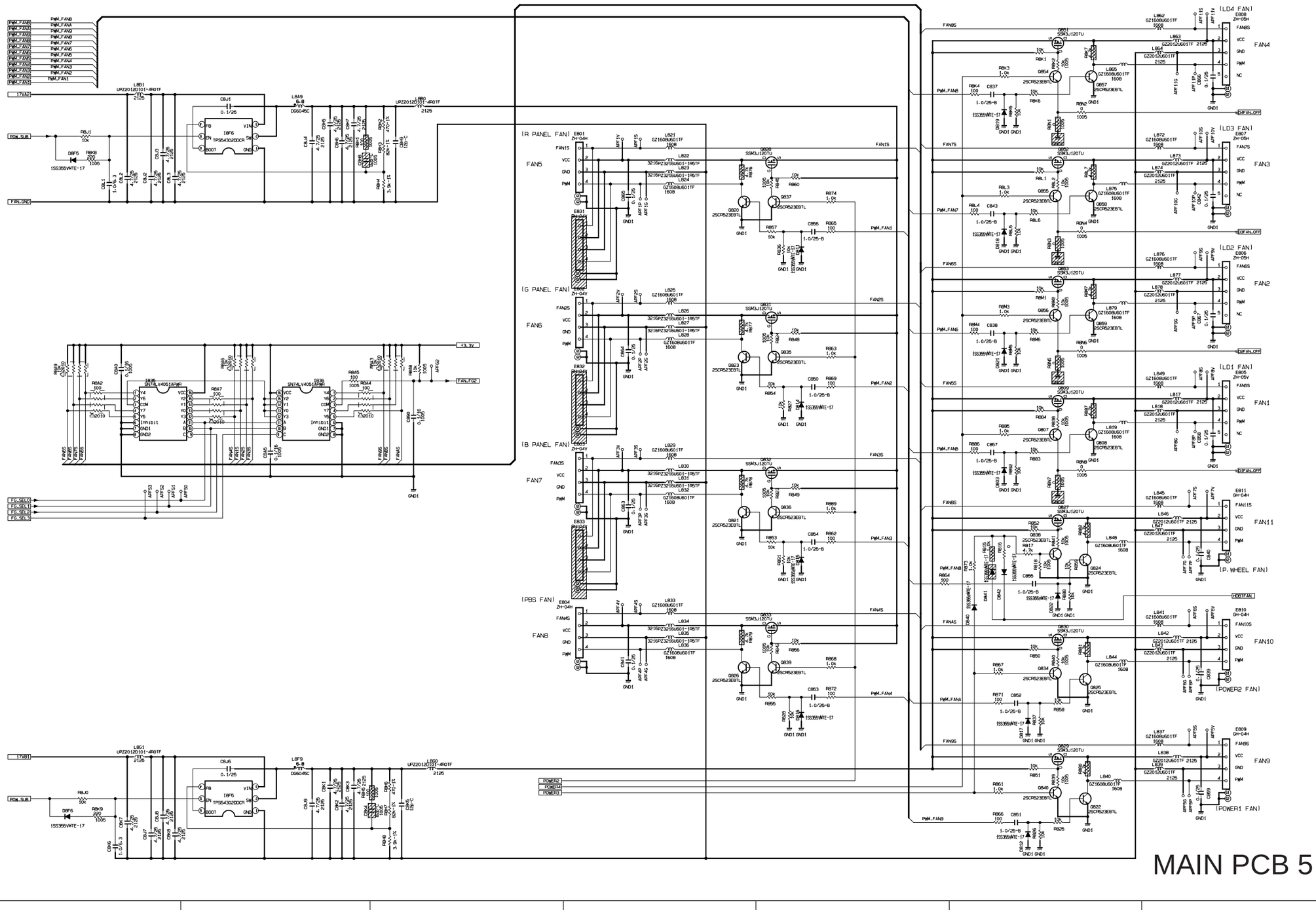

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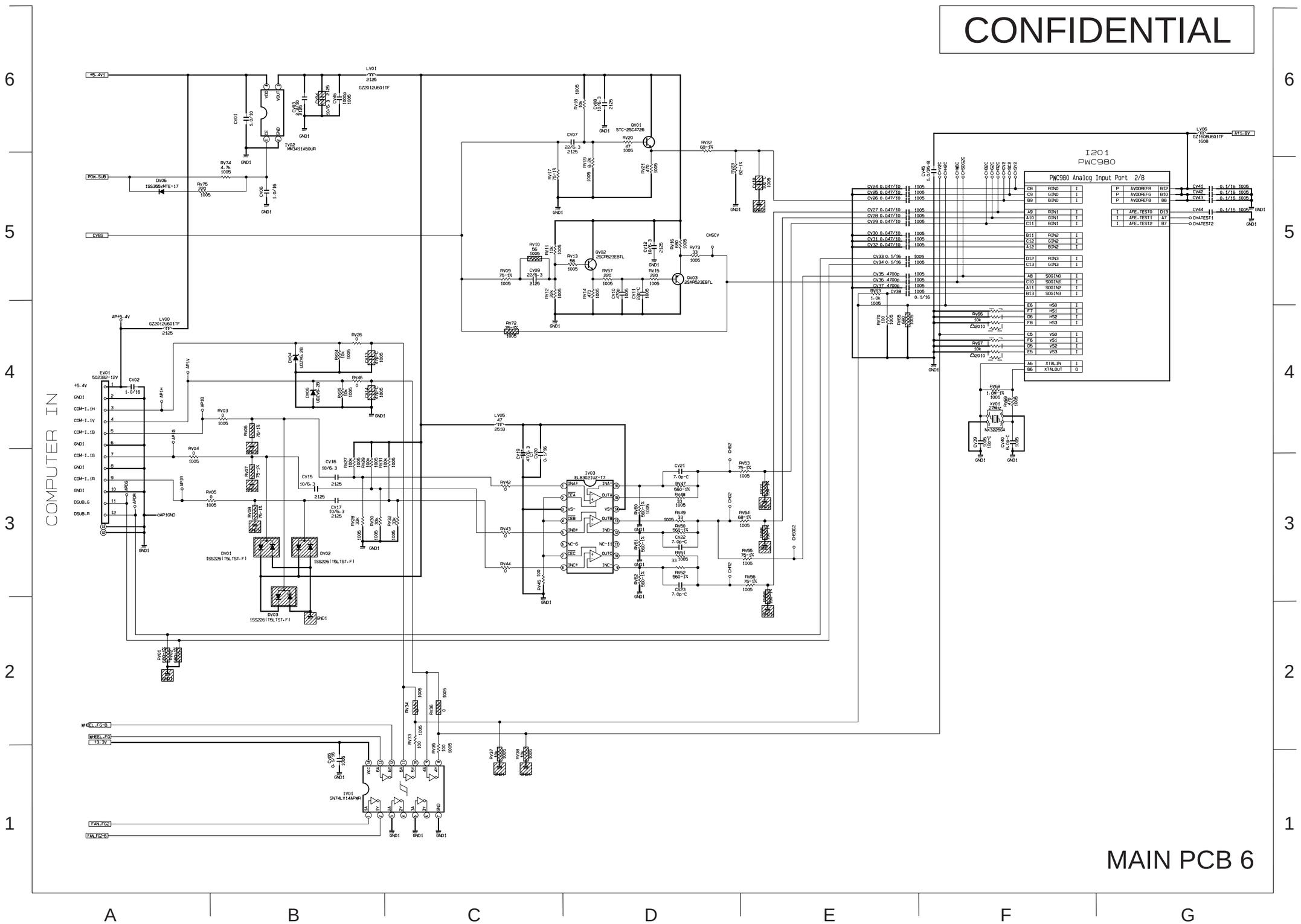

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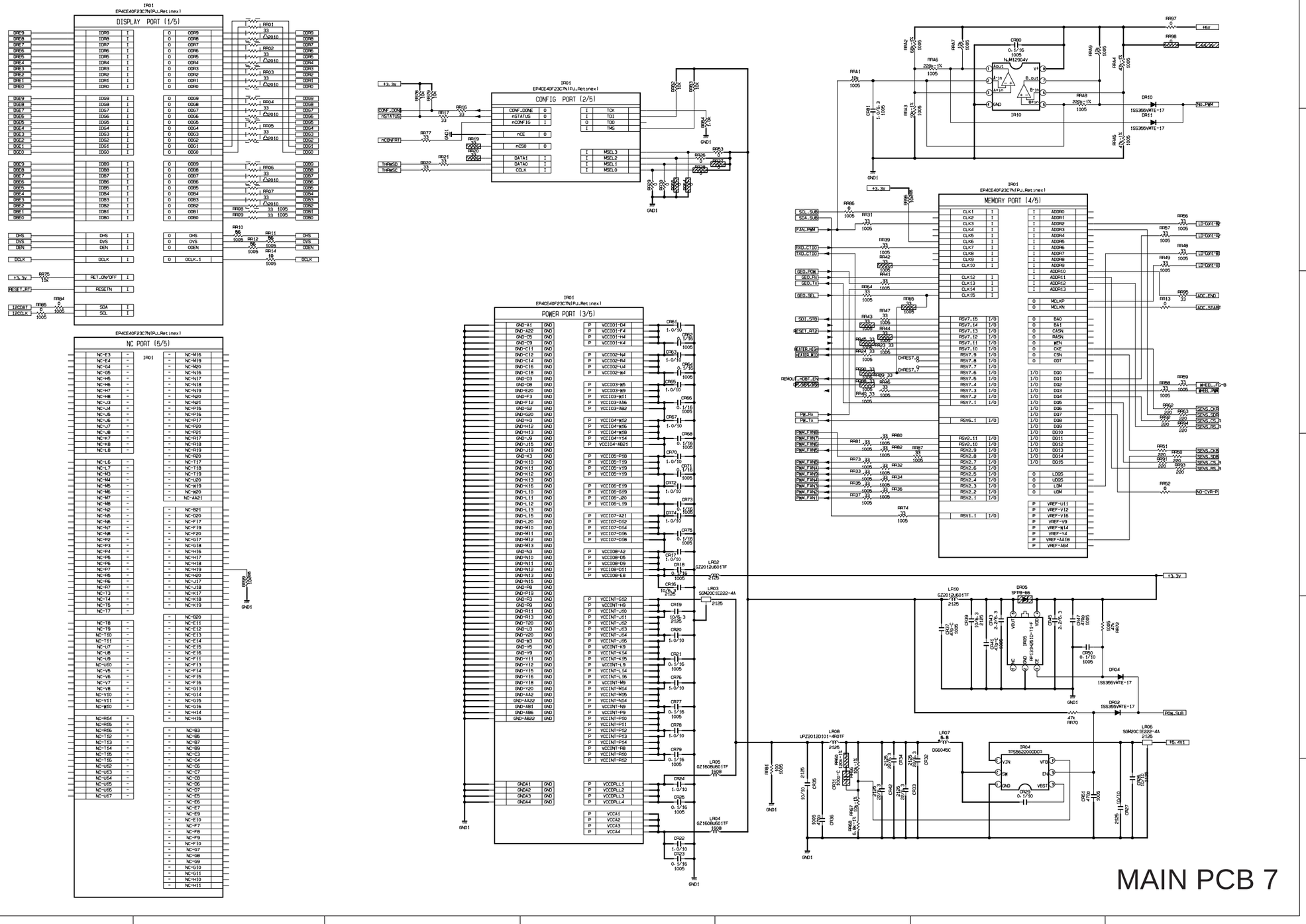

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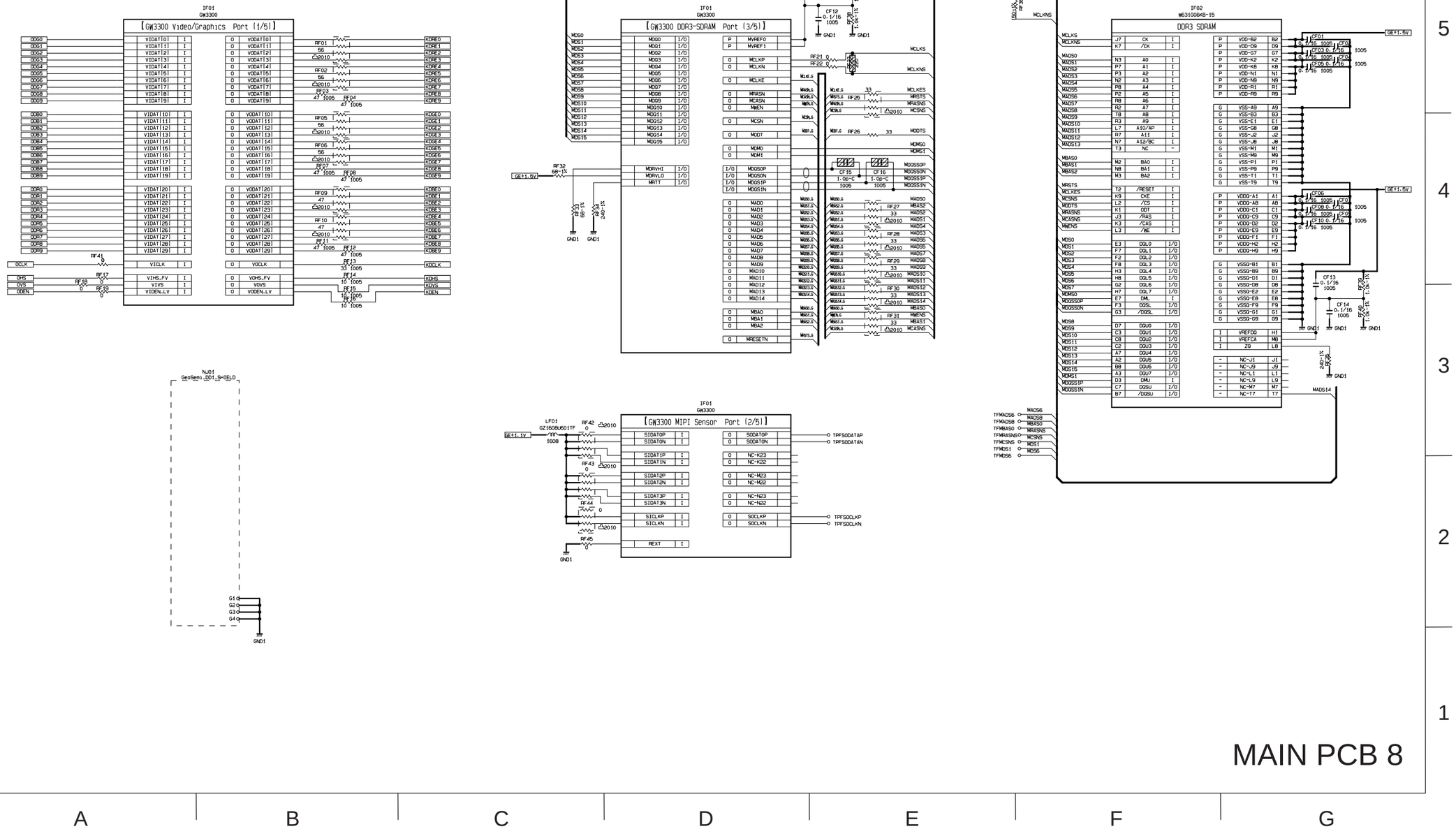

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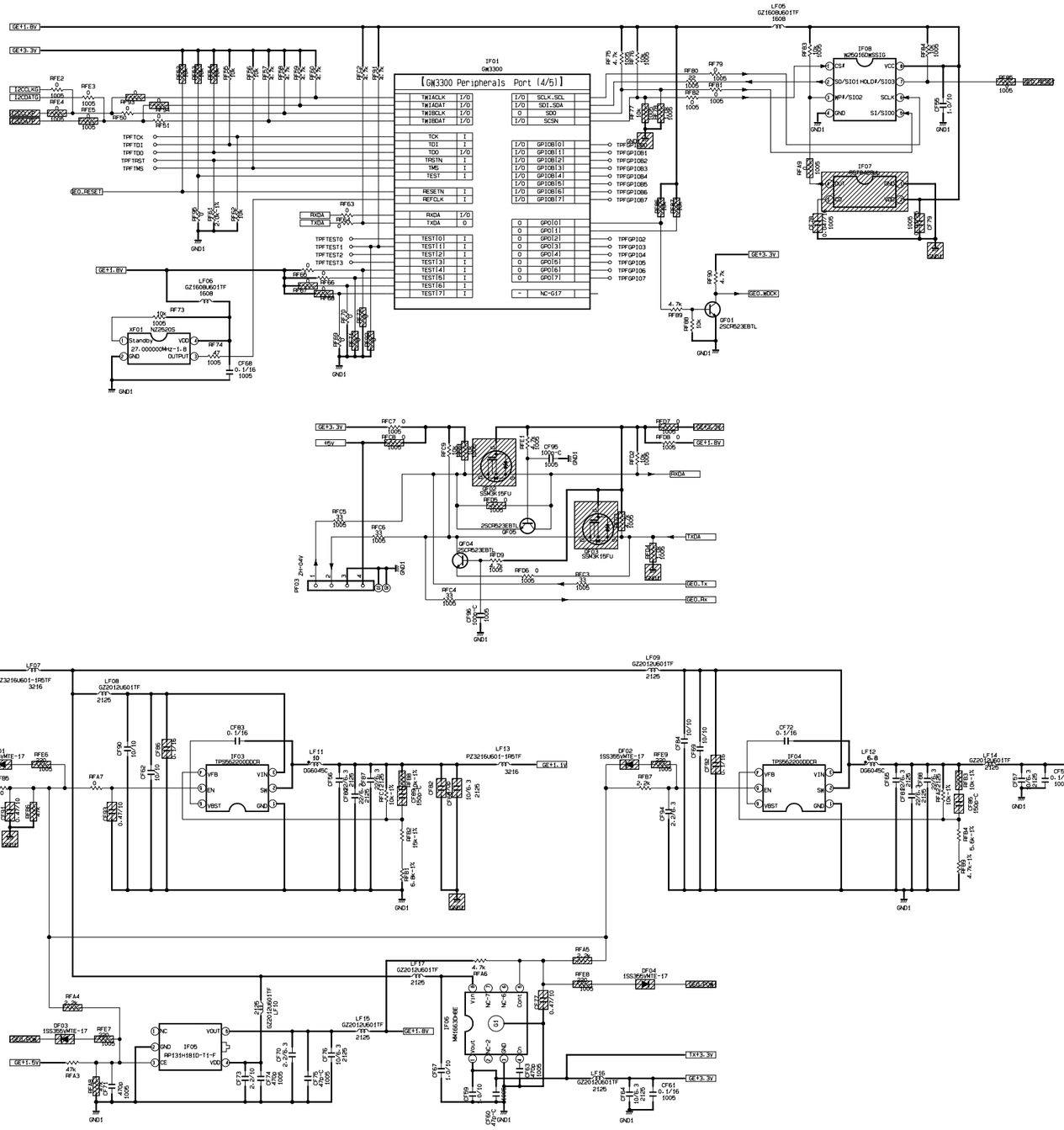

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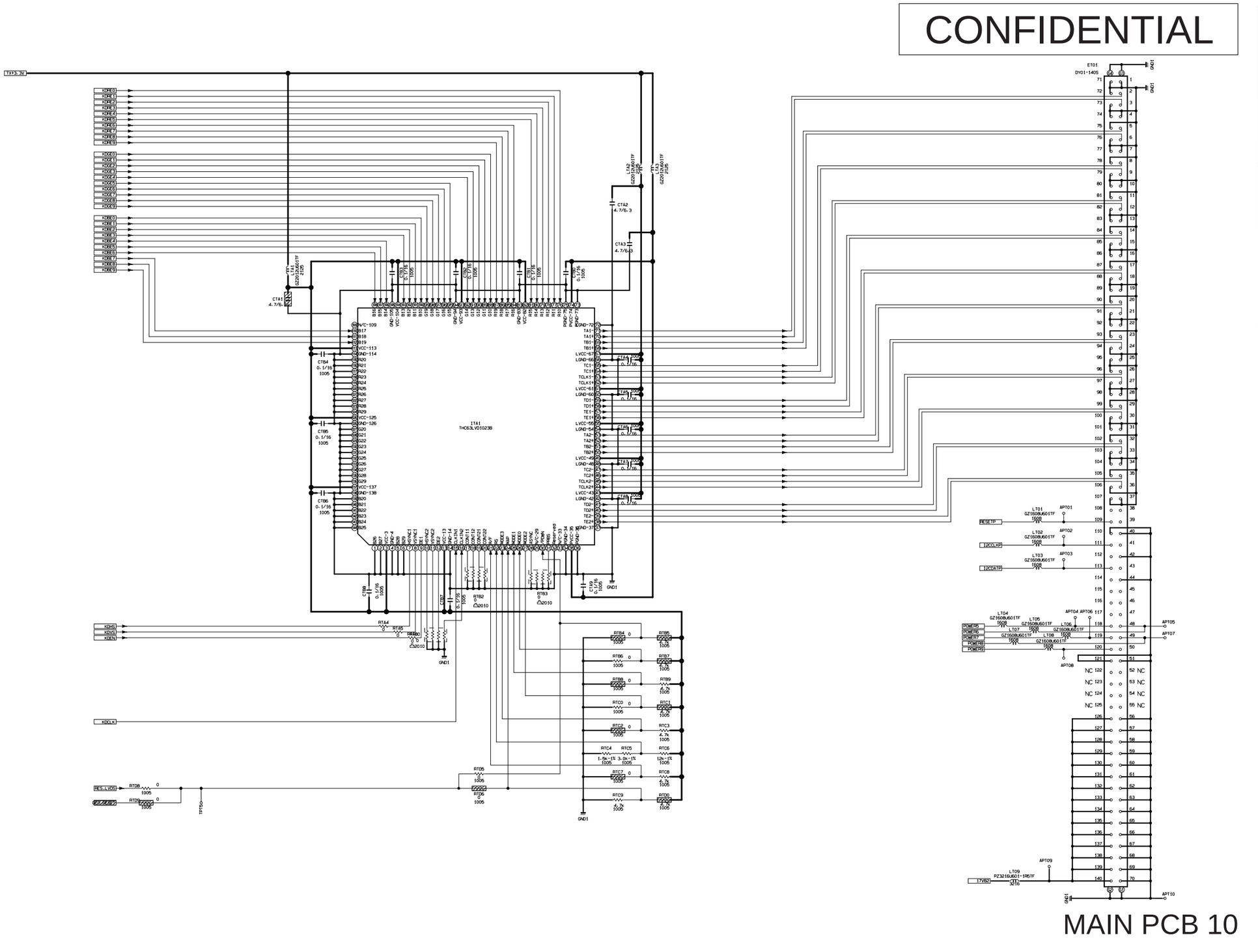

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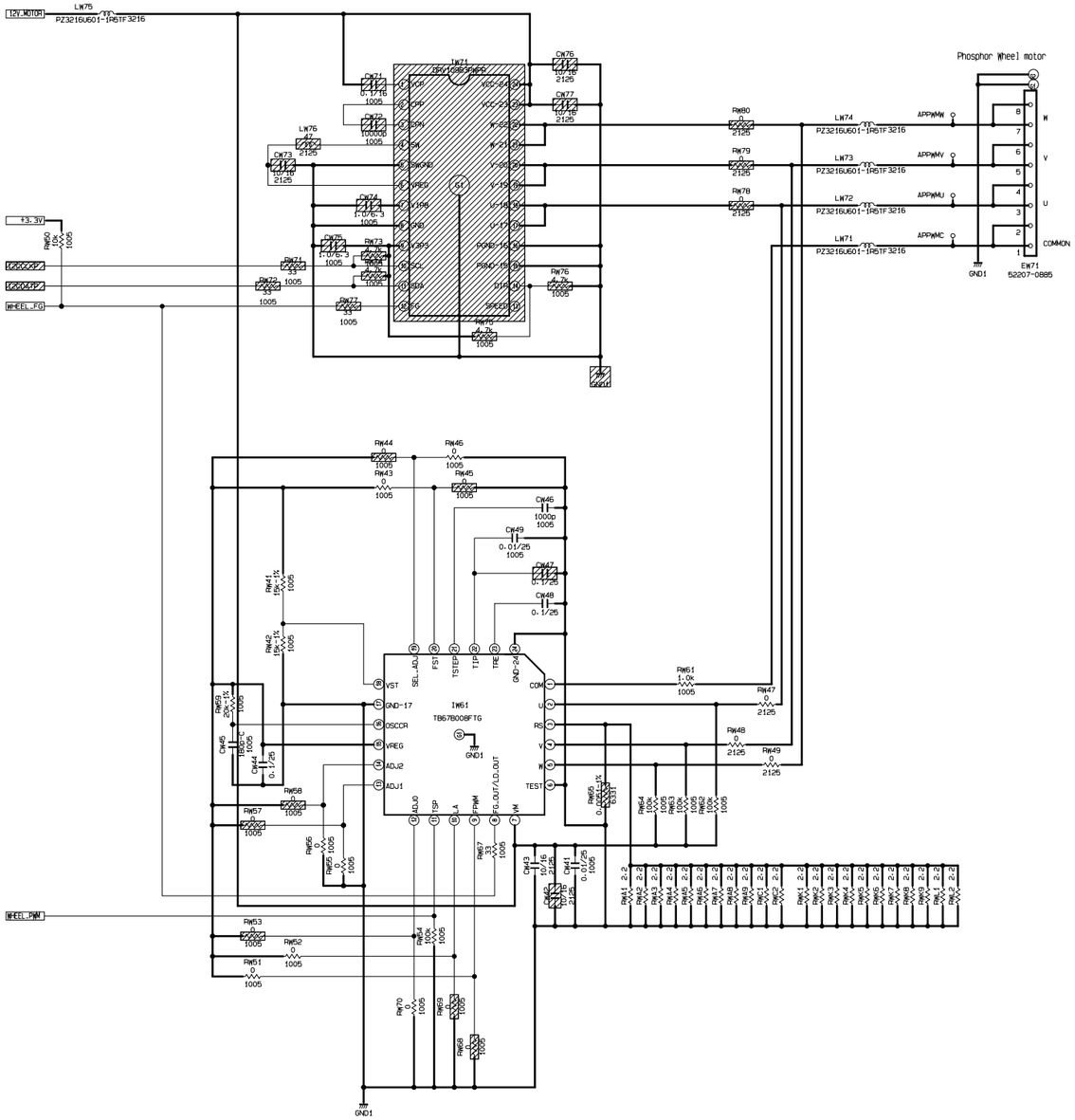

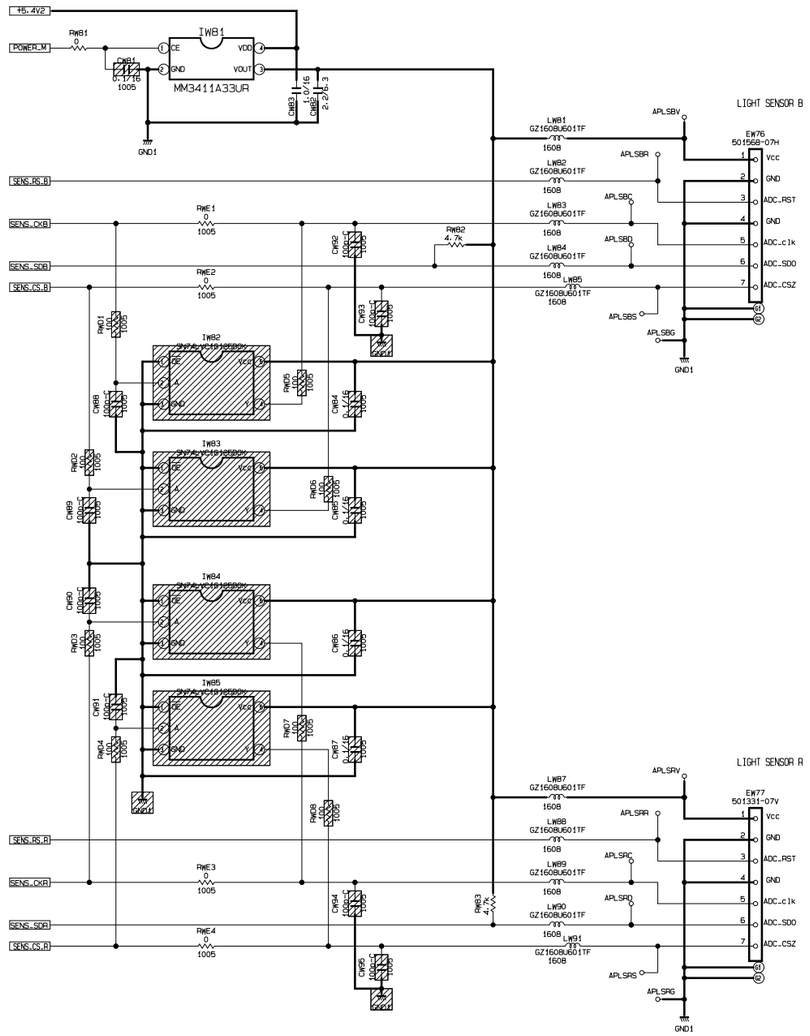

MAIN PCB 11

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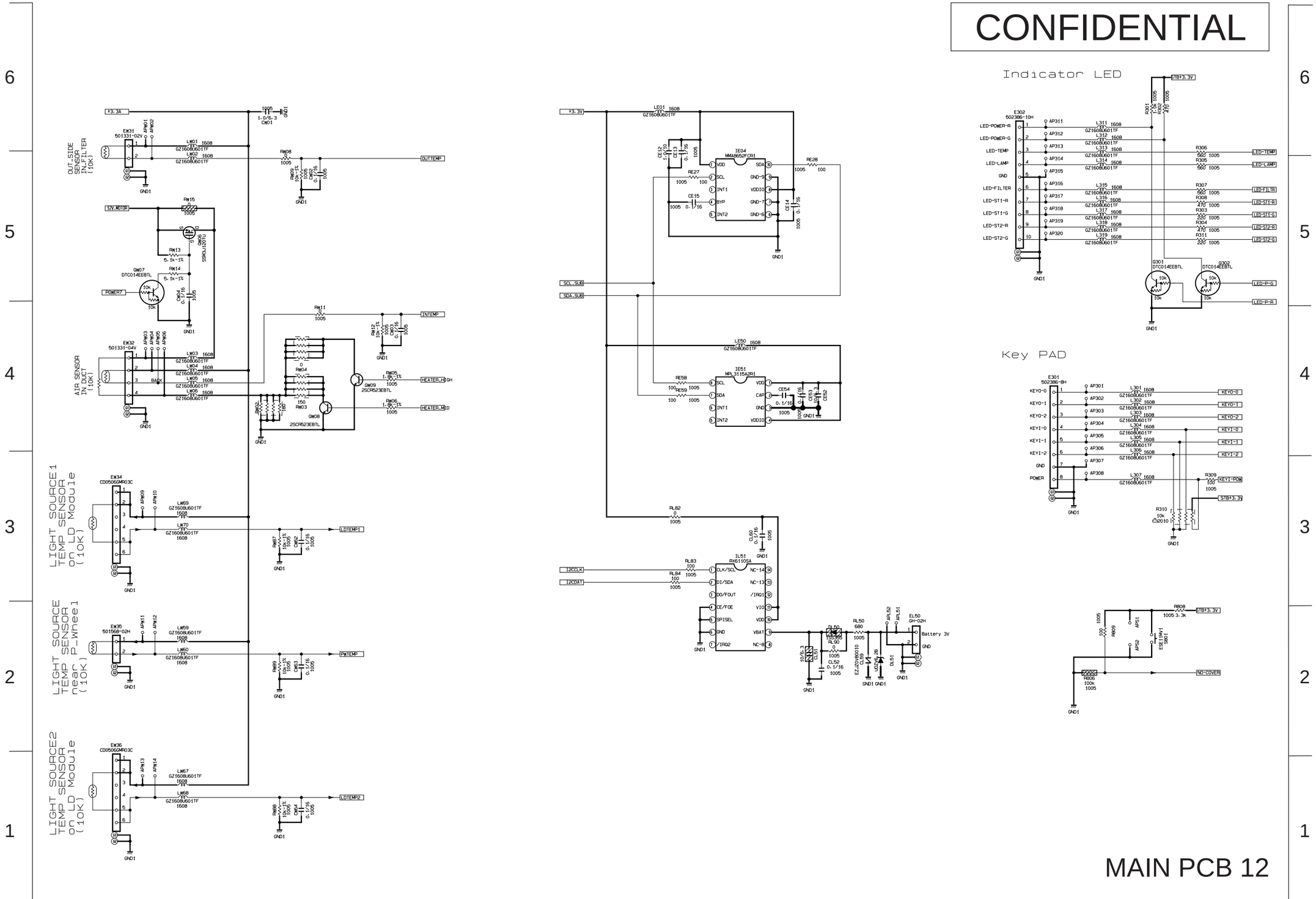

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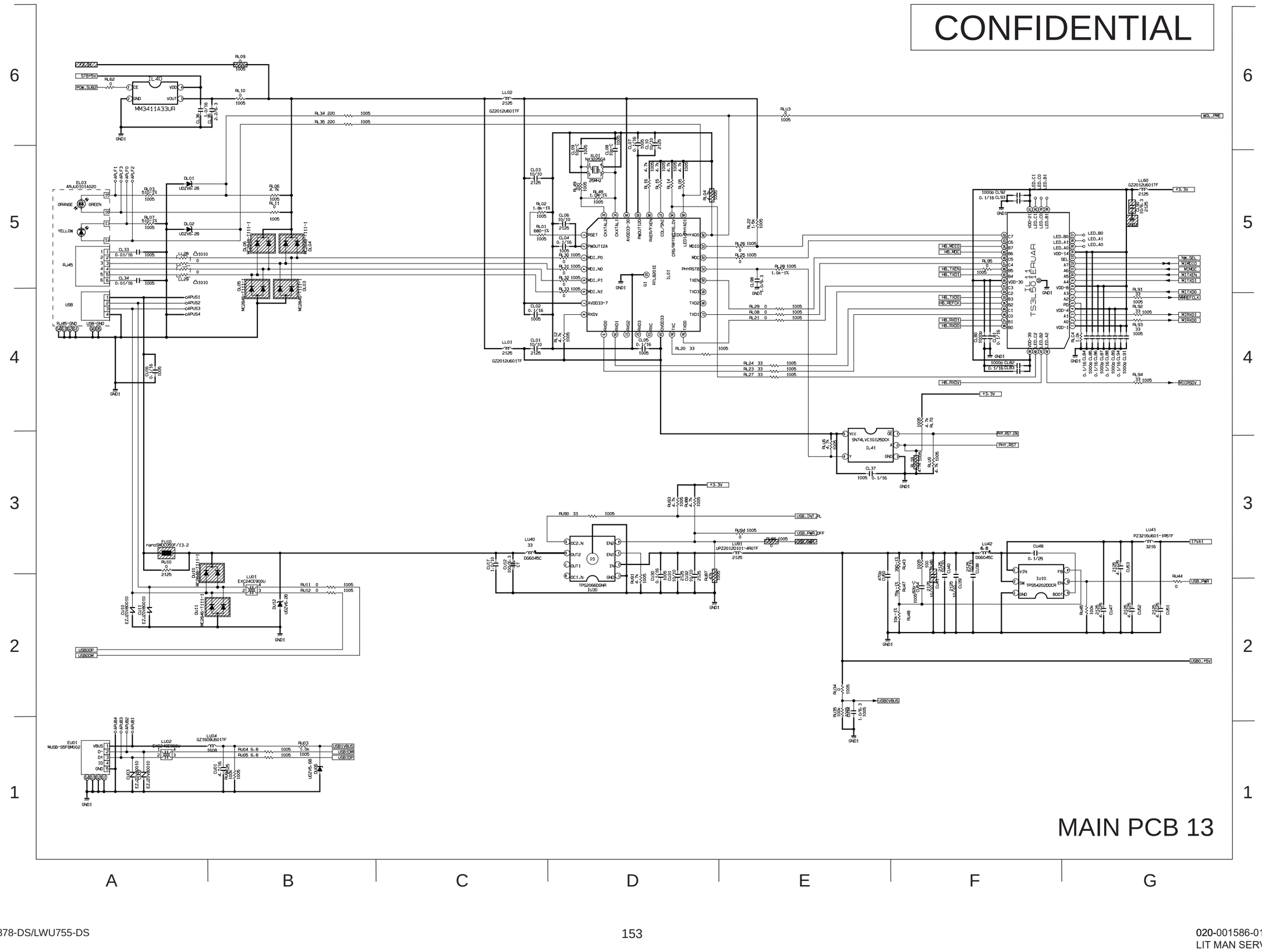

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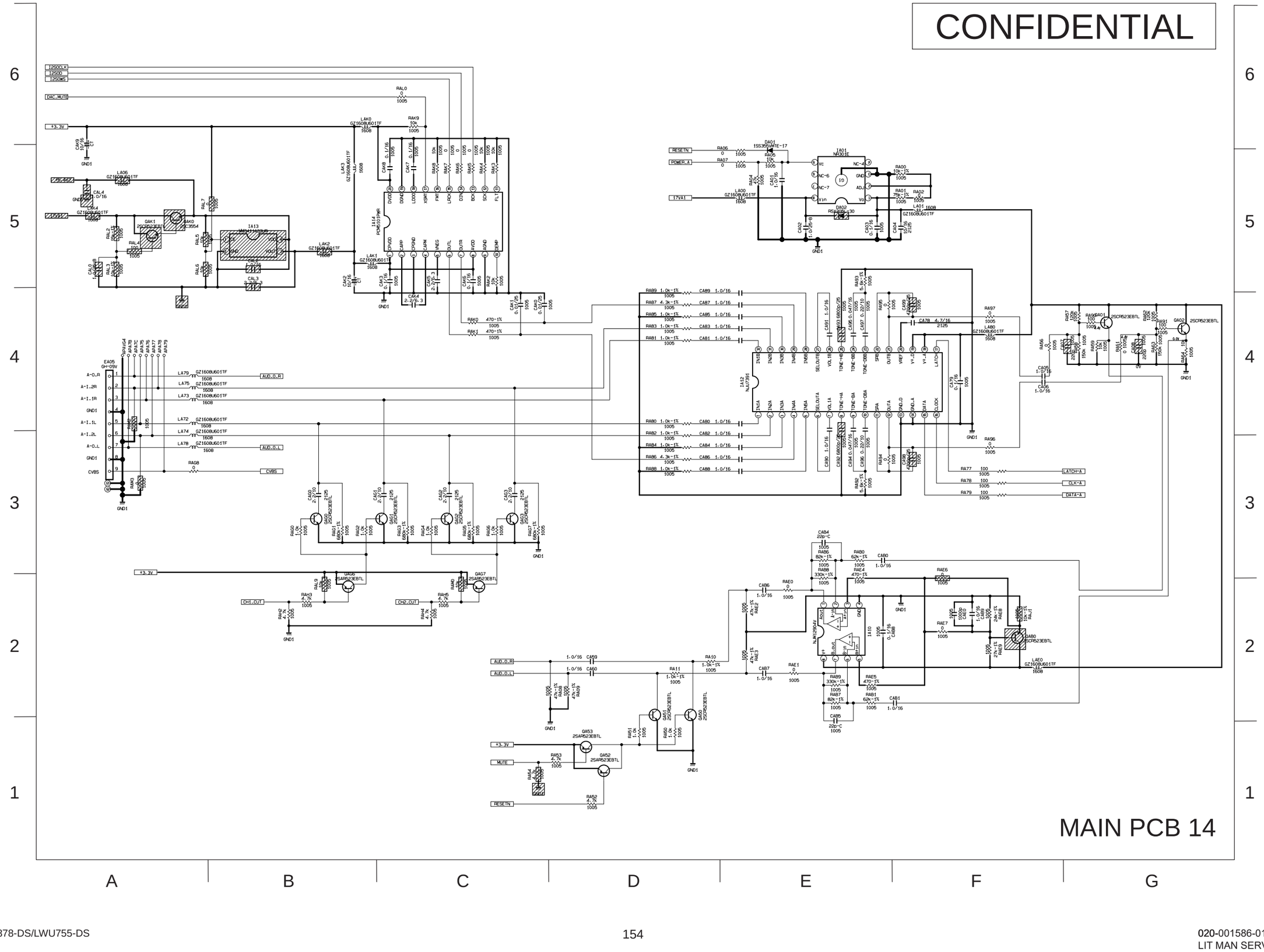

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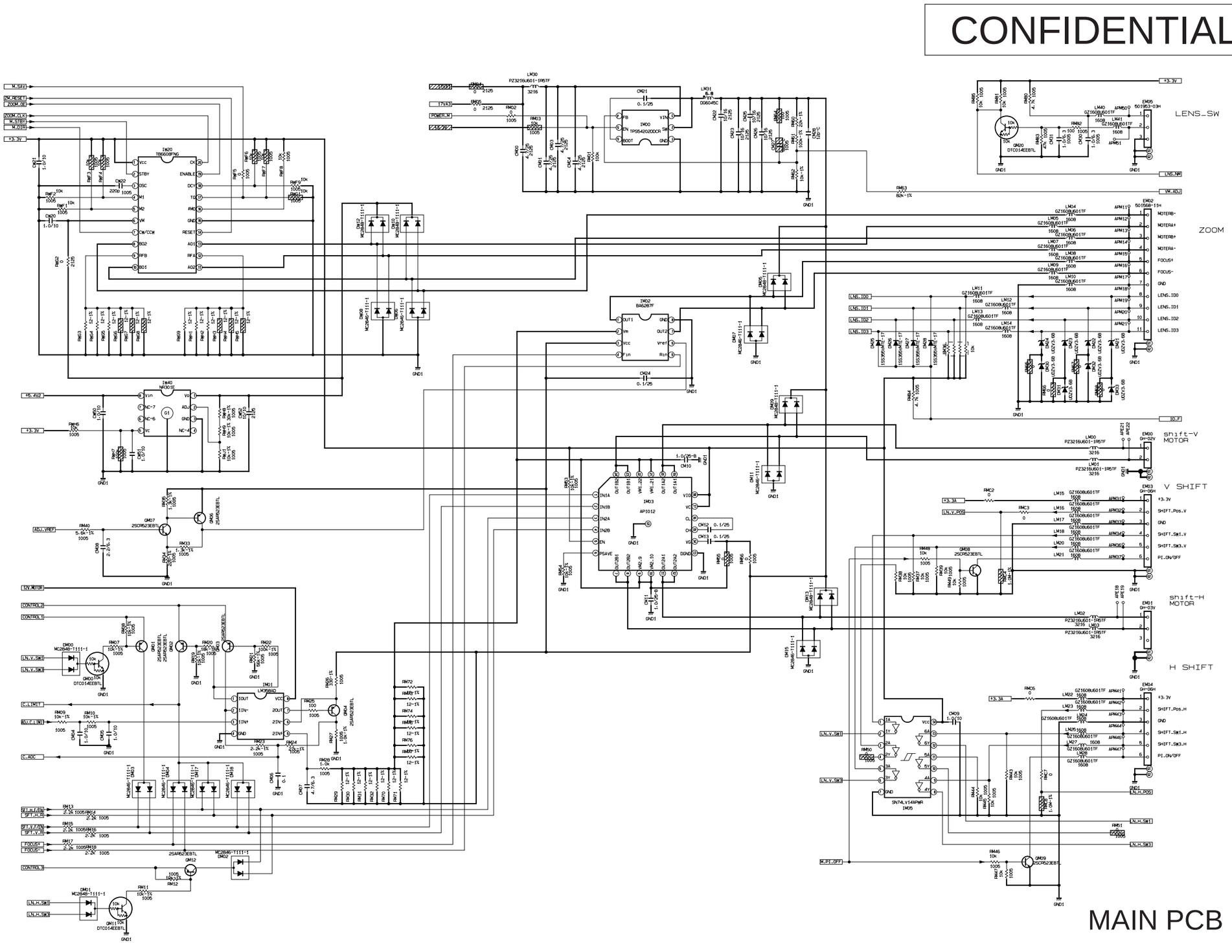

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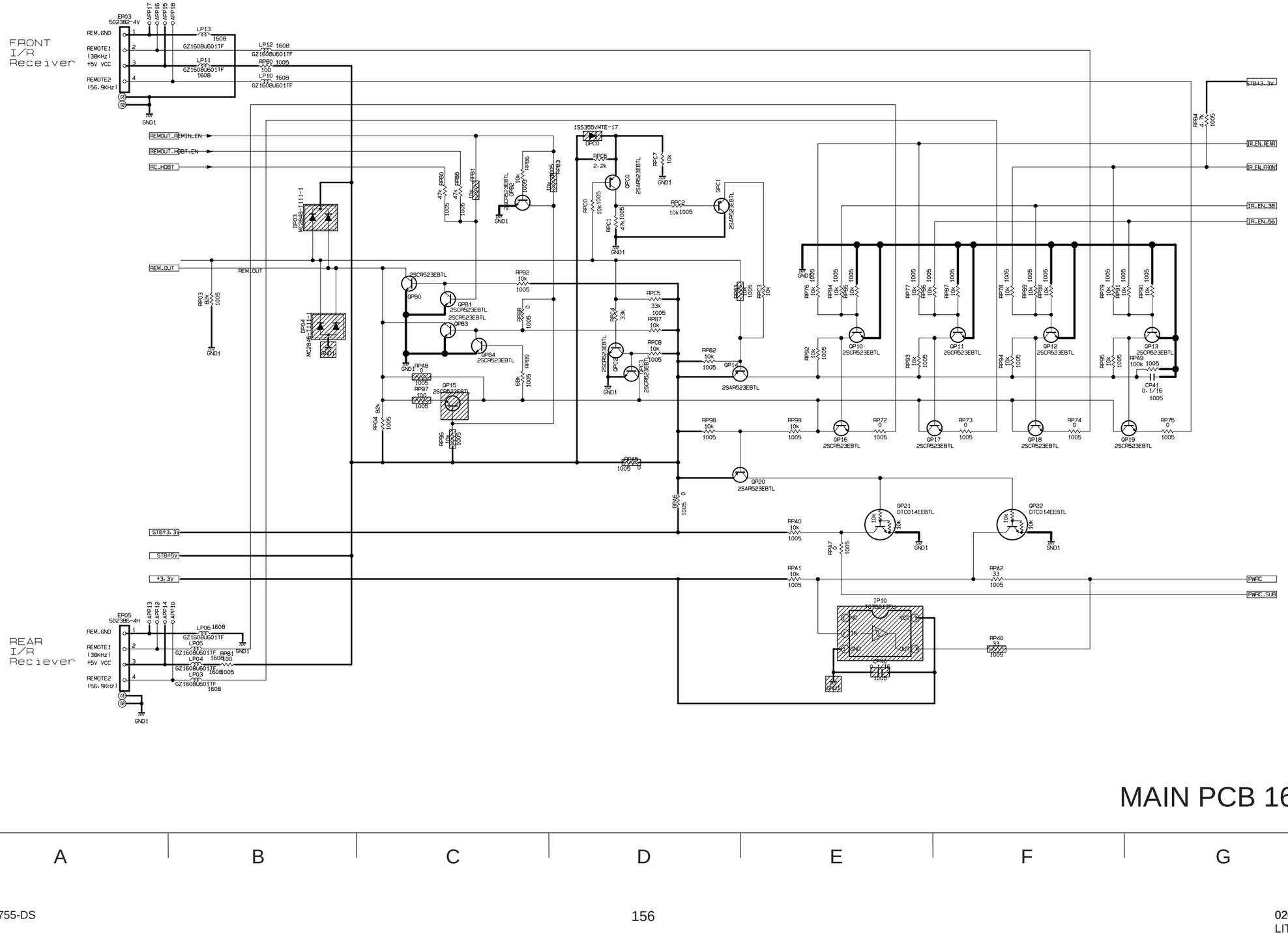

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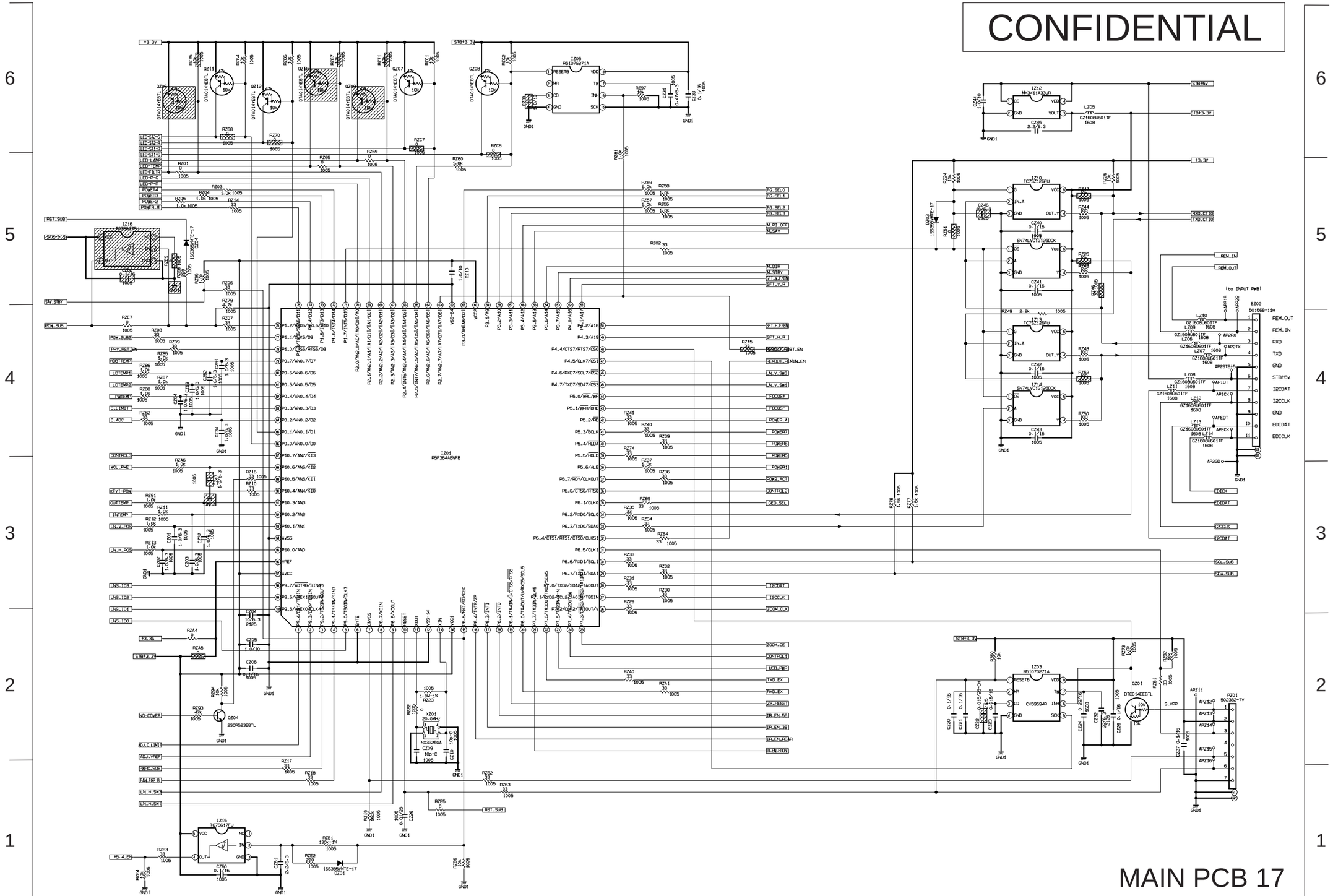

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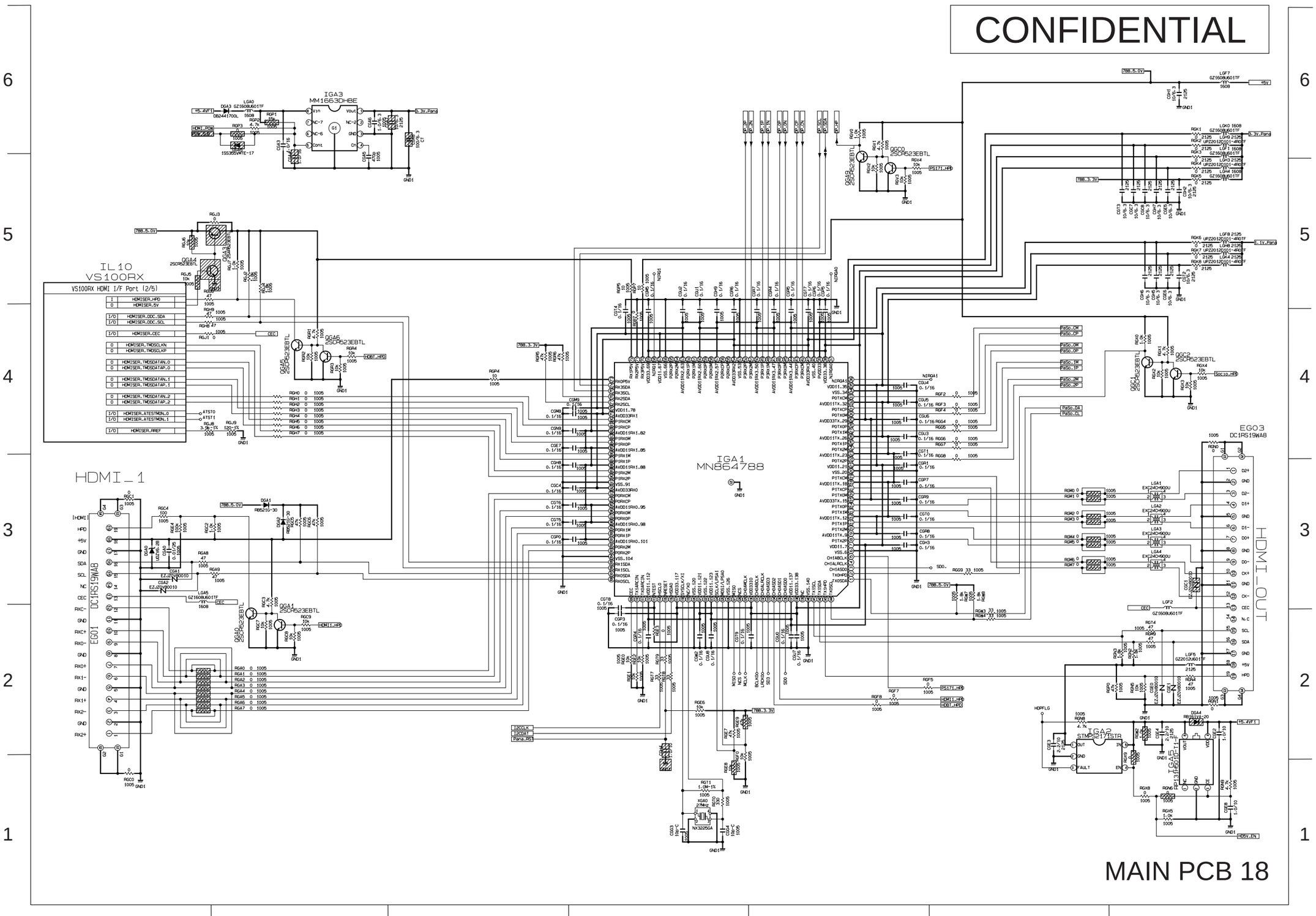

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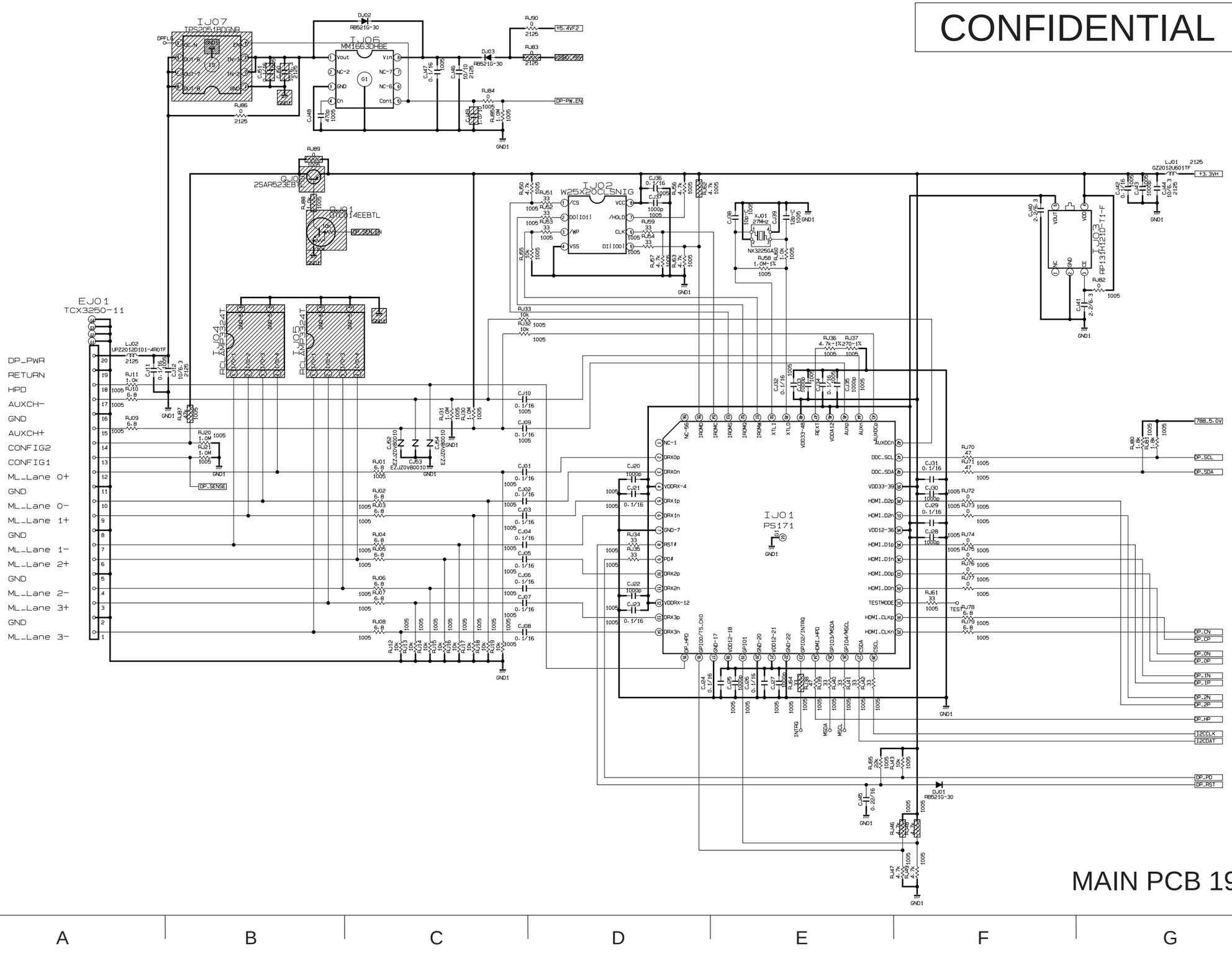

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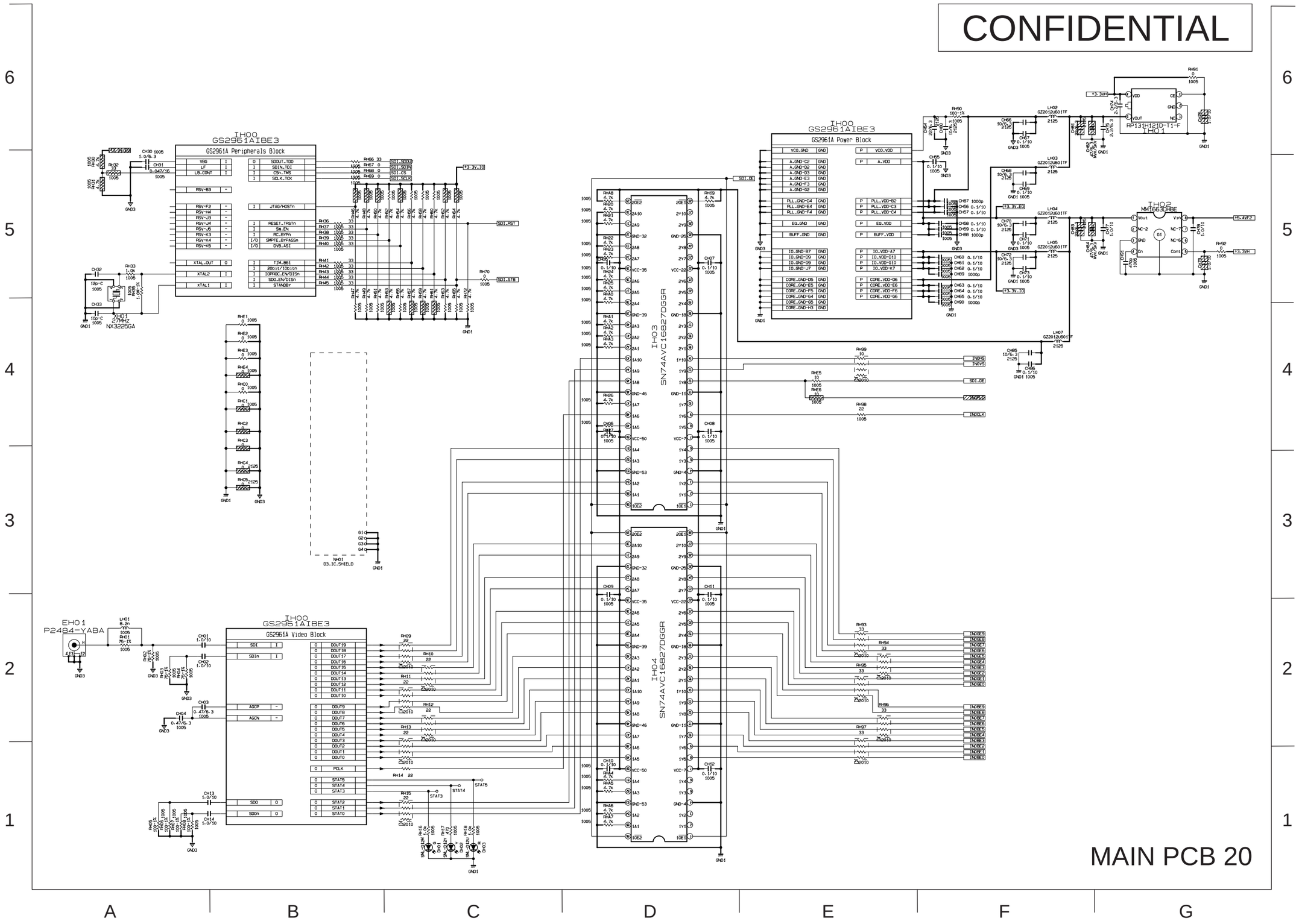

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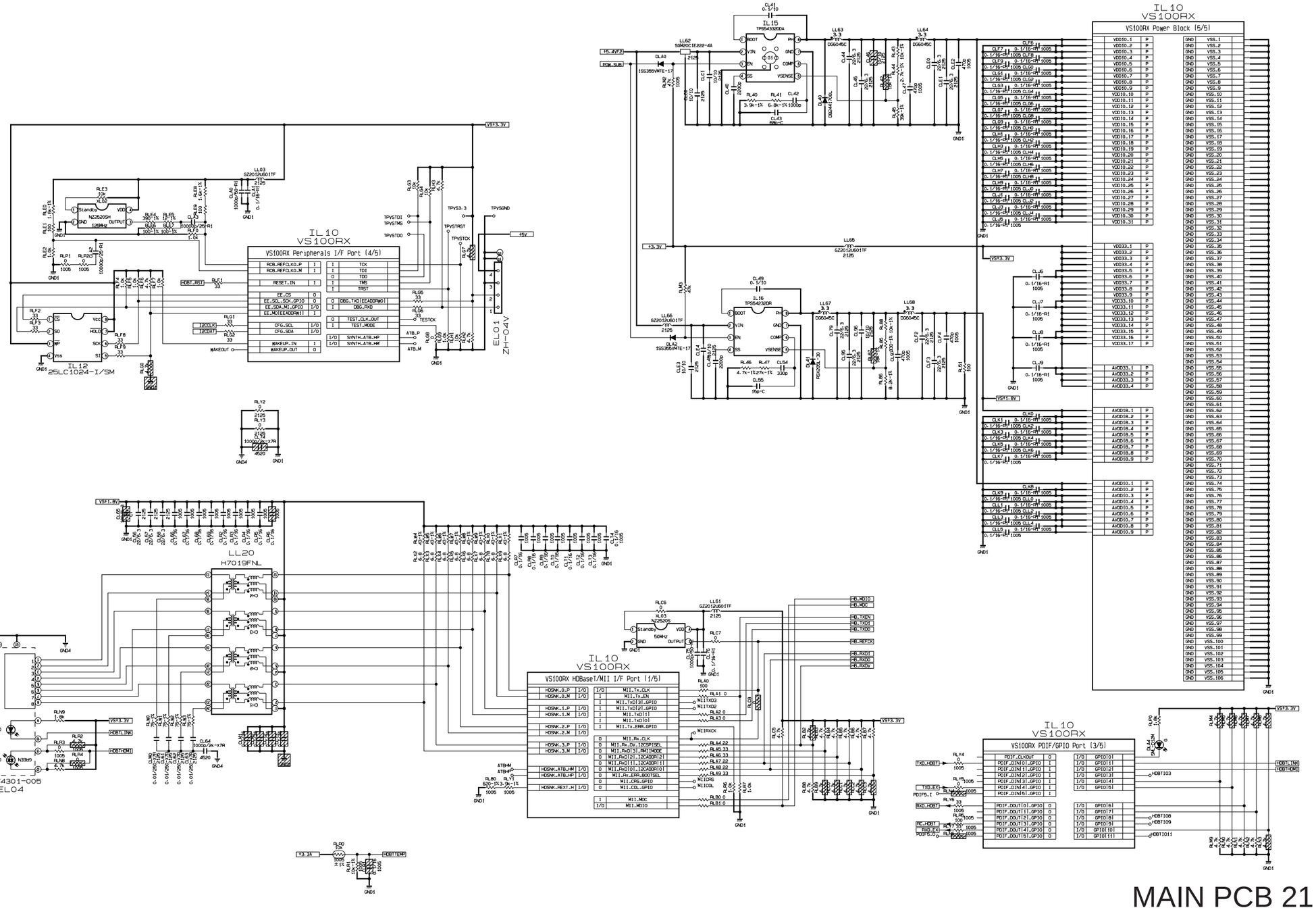

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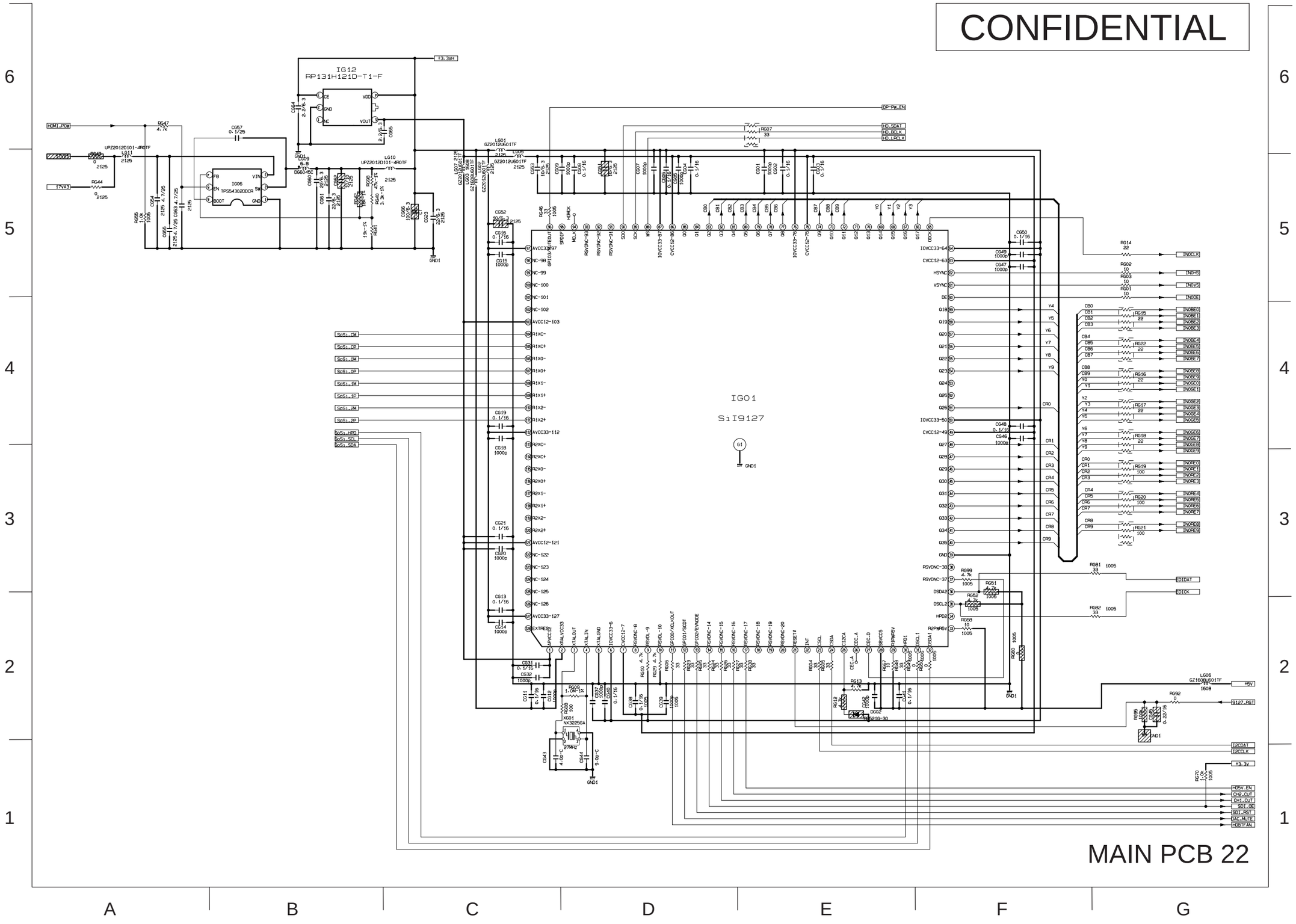

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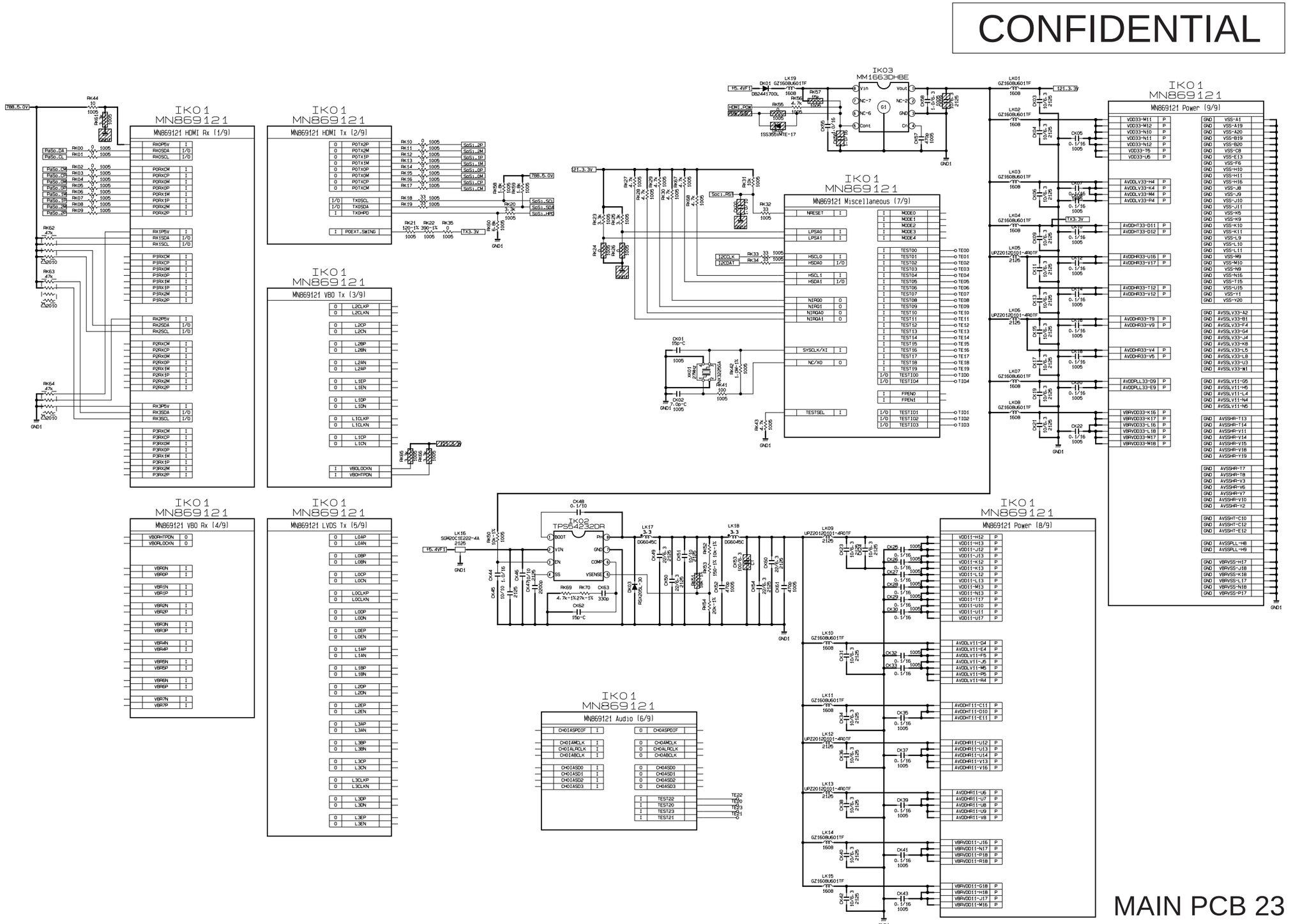

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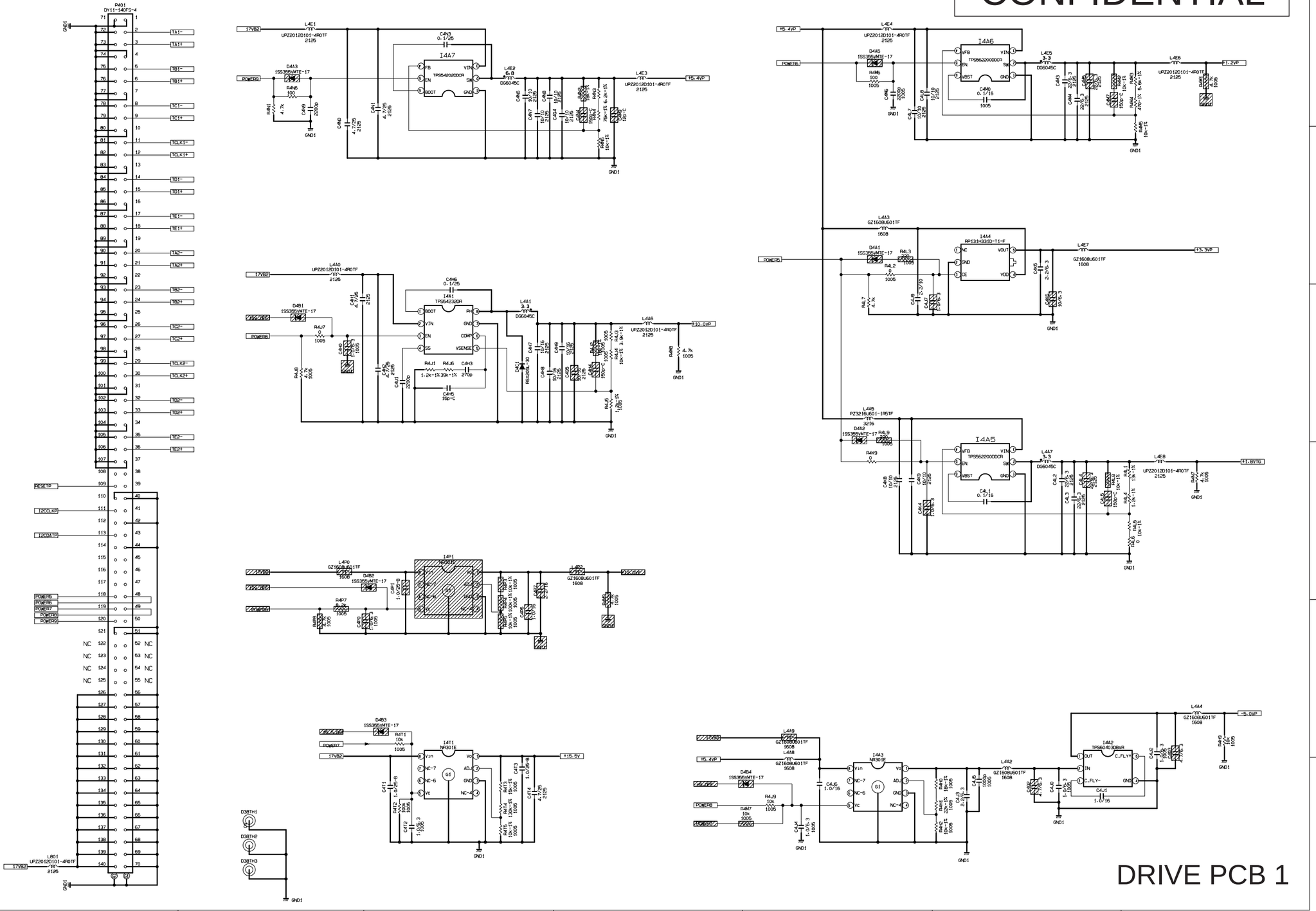

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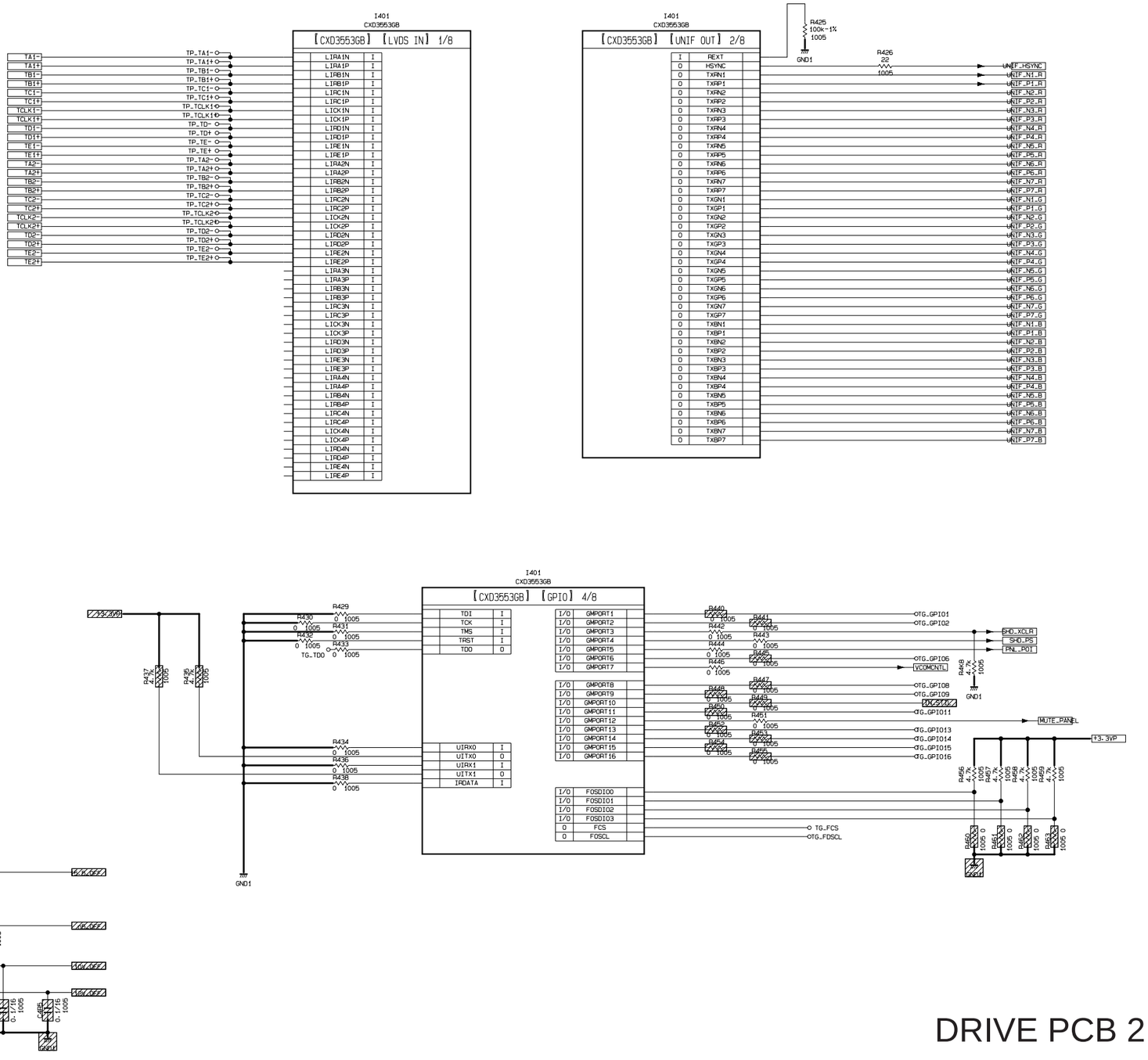

DRIVE PCB 2

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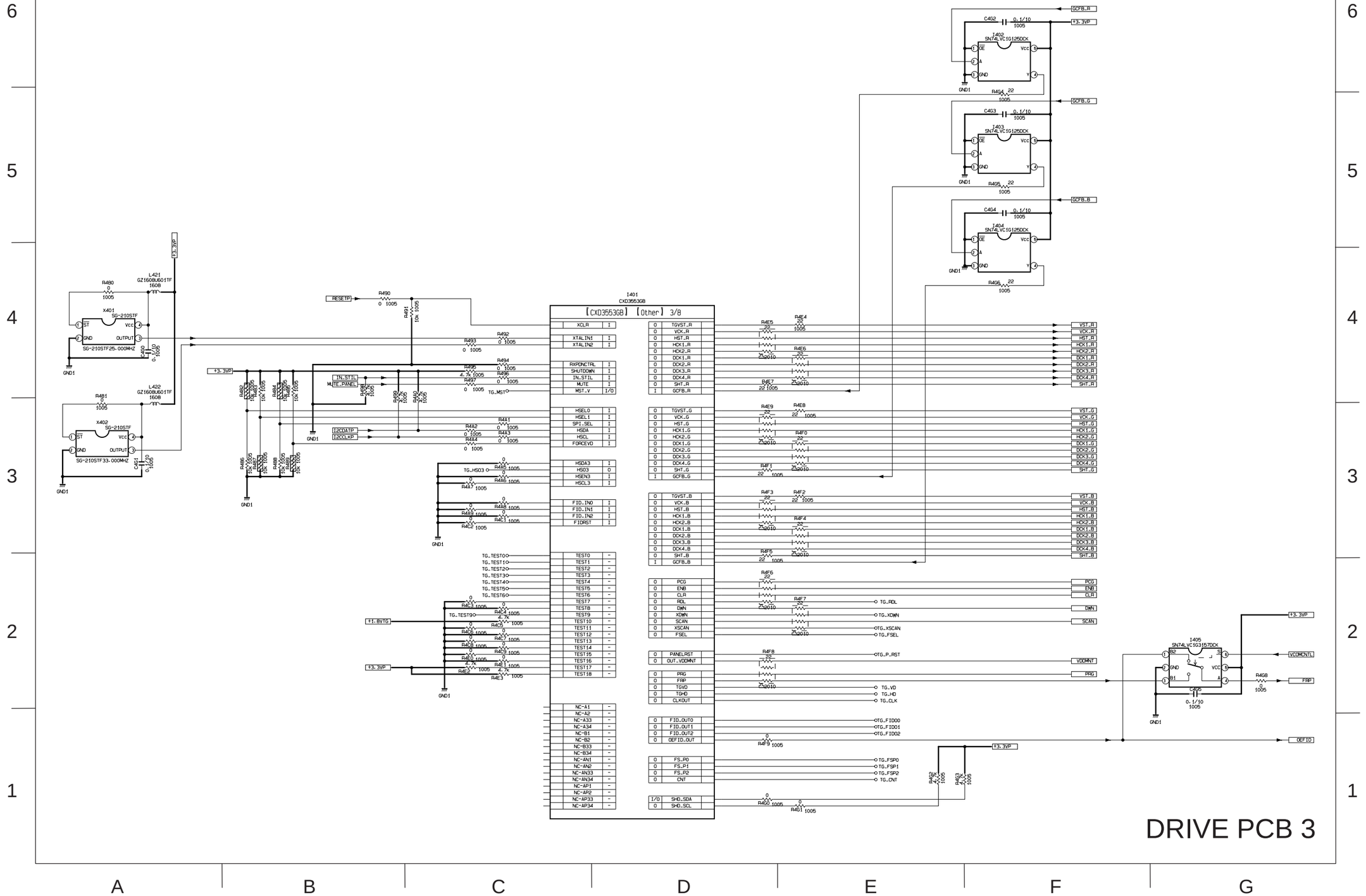

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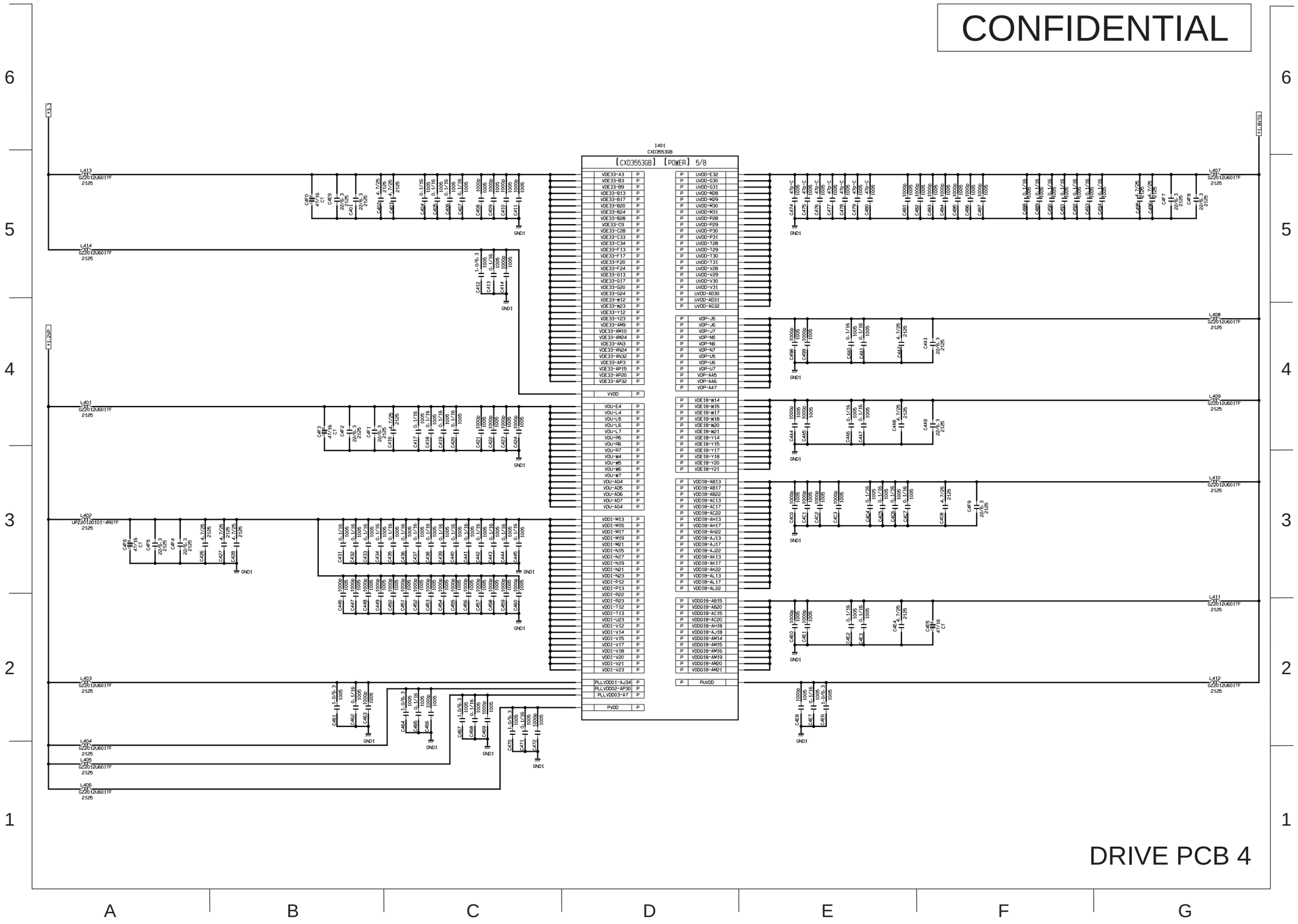

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I401
CXD3553GB

【CXD3553GB】【GND】 6/8

VSS-A4	GND	GND	VSS-AF6
VSS-A5	GND	GND	VSS-AF7
VSS-A6	GND	GND	VSS-AF28
VSS-A8	GND	GND	VSS-AF29
VSS-A9	GND	GND	VSS-AF30
VSS-A13	GND	GND	VSS-AF31
VSS-A17	GND	GND	VSS-AG5
VSS-A20	GND	GND	VSS-AG6
VSS-A24	GND	GND	VSS-AG7
VSS-A30	GND	GND	VSS-AG28
VSS-A31	GND	GND	VSS-AG29
VSS-A32	GND	GND	VSS-AG30
VSS-B4	GND	GND	VSS-AG31
VSS-B5	GND	GND	VSS-AH5
VSS-B6	GND	GND	VSS-AH6
VSS-B8	GND	GND	VSS-AH7
VSS-B30	GND	GND	VSS-AH8
VSS-B31	GND	GND	VSS-AH9
VSS-B32	GND	GND	VSS-AH10
VSS-C4	GND	GND	VSS-AH11
VSS-C5	GND	GND	VSS-AH12
VSS-C6	GND	GND	VSS-AH14
VSS-C7	GND	GND	VSS-AH15
VSS-C13	GND	GND	VSS-AH16
VSS-C17	GND	GND	VSS-AH19
VSS-C20	GND	GND	VSS-AH20
VSS-C24	GND	GND	VSS-AH21
VSS-C30	GND	GND	VSS-AH23
VSS-C31	GND	GND	VSS-AH24
VSS-C32	GND	GND	VSS-AH25
VSS-D4	GND	GND	VSS-AH26
VSS-D5	GND	GND	VSS-AH27
VSS-D6	GND	GND	VSS-AH28
VSS-D7	GND	GND	VSS-AH29
VSS-D13	GND	GND	VSS-AH30
VSS-D17	GND	GND	VSS-AH31
VSS-D20	GND	GND	VSS-AJ1
VSS-D24	GND	GND	VSS-AJ2
VSS-D29	GND	GND	VSS-AJ3
VSS-D30	GND	GND	VSS-AJ4
VSS-D31	GND	GND	VSS-AJ5
VSS-D32	GND	GND	VSS-AJ6
VSS-D33	GND	GND	VSS-AJ7
VSS-E5	GND	GND	VSS-AJ8
VSS-E6	GND	GND	VSS-AJ9
VSS-E7	GND	GND	VSS-AJ10
VSS-E8	GND	GND	VSS-AJ11
VSS-E12	GND	GND	VSS-AJ12
VSS-E13	GND	GND	VSS-AJ14
VSS-E17	GND	GND	VSS-AJ15
VSS-E20	GND	GND	VSS-AJ16
VSS-E24	GND	GND	VSS-AJ19
VSS-E27	GND	GND	VSS-AJ20
VSS-E28	GND	GND	VSS-AJ21
VSS-E29	GND	GND	VSS-AJ23
VSS-E30	GND	GND	VSS-AJ24
VSS-E31	GND	GND	VSS-AJ25
VSS-F6	GND	GND	VSS-AJ26
VSS-F7	GND	GND	VSS-AJ27
VSS-F8	GND	GND	VSS-AJ28
VSS-F9	GND	GND	VSS-AJ29
VSS-F25	GND	GND	VSS-AJ30
VSS-F26	GND	GND	VSS-AJ31
VSS-F27	GND	GND	VSS-AJ32
VSS-F28	GND	GND	VSS-AK1
VSS-F29	GND	GND	VSS-AK2
VSS-F30	GND	GND	VSS-AK3
VSS-G7	GND	GND	VSS-AK4
VSS-G8	GND	GND	VSS-AK5
VSS-G9	GND	GND	VSS-AK6
VSS-G10	GND	GND	VSS-AK7
VSS-G26	GND	GND	VSS-AK8
VSS-G27	GND	GND	VSS-AK9
VSS-G28	GND	GND	VSS-AK10
VSS-G29	GND	GND	VSS-AK11
VSS-H28	GND	GND	VSS-AK12
VSS-M12	GND	GND	VSS-AK14
VSS-M14	GND	GND	VSS-AK15
VSS-M16	GND	GND	VSS-AK16
VSS-M18	GND	GND	VSS-AK18
VSS-M20	GND	GND	VSS-AK19
VSS-M22	GND	GND	VSS-AK20
VSS-M23	GND	GND	VSS-AK21

GND1 GND1

I401
CXD3553GB

【CXD3553GB】【GND】 7/8

VSS-N12	GND	GND	VSS-AK23
VSS-N13	GND	GND	VSS-AK24
VSS-N14	GND	GND	VSS-AK25
VSS-N16	GND	GND	VSS-AK26
VSS-N18	GND	GND	VSS-AK27
VSS-N20	GND	GND	VSS-AK28
VSS-N22	GND	GND	VSS-AK29
VSS-P14	GND	GND	VSS-AK30
VSS-P15	GND	GND	VSS-AK31
VSS-P16	GND	GND	VSS-AK32
VSS-P17	GND	GND	VSS-AK33
VSS-P18	GND	GND	VSS-AK34
VSS-P19	GND	GND	VSS-AL1
VSS-P20	GND	GND	VSS-AL2
VSS-P21	GND	GND	VSS-AL3
VSS-P22	GND	GND	VSS-AL4
VSS-P23	GND	GND	VSS-AL5
VSS-R12	GND	GND	VSS-AL6
VSS-R13	GND	GND	VSS-AL7
VSS-R14	GND	GND	VSS-AL8
VSS-R15	GND	GND	VSS-AL9
VSS-R16	GND	GND	VSS-AL10
VSS-R17	GND	GND	VSS-AL11
VSS-R18	GND	GND	VSS-AL12
VSS-R19	GND	GND	VSS-AL14
VSS-R20	GND	GND	VSS-AL15
VSS-R21	GND	GND	VSS-AL16
VSS-T14	GND	GND	VSS-AL18
VSS-T15	GND	GND	VSS-AL19
VSS-T16	GND	GND	VSS-AL20
VSS-T17	GND	GND	VSS-AL21
VSS-T18	GND	GND	VSS-AL23
VSS-T19	GND	GND	VSS-AL24
VSS-T20	GND	GND	VSS-AL25
VSS-T21	GND	GND	VSS-AL26
VSS-T22	GND	GND	VSS-AL27
VSS-T23	GND	GND	VSS-AL28
VSS-U12	GND	GND	VSS-AL29
VSS-U13	GND	GND	VSS-AL30
VSS-U14	GND	GND	VSS-AL31
VSS-U15	GND	GND	VSS-AL33
VSS-U16	GND	GND	VSS-AM1
VSS-U17	GND	GND	VSS-AM2
VSS-U18	GND	GND	VSS-AM3
VSS-U19	GND	GND	VSS-AM4
VSS-U20	GND	GND	VSS-AM5
VSS-U21	GND	GND	VSS-AM6
VSS-U22	GND	GND	VSS-AM7
VSS-V13	GND	GND	VSS-AM8
VSS-V16	GND	GND	VSS-AM11
VSS-V19	GND	GND	VSS-AM12
VSS-V22	GND	GND	VSS-AM13
VSS-W13	GND	GND	VSS-AM17
VSS-W16	GND	GND	VSS-AM18
VSS-W19	GND	GND	VSS-AM22
VSS-W22	GND	GND	VSS-AM23
VSS-Y13	GND	GND	VSS-AM25
VSS-Y16	GND	GND	VSS-AM27
VSS-Y19	GND	GND	VSS-AM28
VSS-Y22	GND	GND	VSS-AM29
VSS-AA12	GND	GND	VSS-AM30
VSS-AA13	GND	GND	VSS-AM31
VSS-AA14	GND	GND	VSS-AM32
VSS-AA15	GND	GND	VSS-AM33
VSS-AA16	GND	GND	VSS-AM34
VSS-AA17	GND	GND	VSS-AN4
VSS-AA18	GND	GND	VSS-AN5
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VSS-AA20	GND	GND	VSS-AN10
VSS-AA21	GND	GND	VSS-AN15
VSS-AA22	GND	GND	VSS-AN16
VSS-AA23	GND	GND	VSS-AN19
VSS-AB12	GND	GND	VSS-AN20
VSS-AB14	GND	GND	VSS-AN25
VSS-AB16	GND	GND	VSS-AN27
VSS-AB18	GND	GND	VSS-AN28
VSS-AB19	GND	GND	VSS-AN29
VSS-AB21	GND	GND	VSS-AN31
VSS-AB23	GND	GND	VSS-AP4
VSS-AC12	GND	GND	VSS-AP5
VSS-AC14	GND	GND	VSS-AP6
VSS-AC16	GND	GND	VSS-AP16
VSS-AC18	GND	GND	VSS-AP19
VSS-AC19	GND	GND	VSS-AP24
VSS-AC21	GND	GND	VSS-AP26
VSS-AC23	GND	GND	VSS-AP27
VSS-AE28	GND	GND	VSS-AP29
VSS-AE29	GND	GND	VSS-AP31
VSS-AE30	GND		

GND1 GND1

I401
CXD3553GB

【CXD3553GB】【GND】 8/8

VSU-C1	GND	GND	UGND-E33
VSU-C2	GND	GND	UGND-E34
VSU-C3	GND	GND	UGND-F31
VSU-D3	GND	GND	UGND-F32
VSU-E3	GND	GND	UGND-G32
VSU-F3	GND	GND	UGND-H29
VSU-F4	GND	GND	UGND-H30
VSU-F5	GND	GND	UGND-H31
VSU-G3	GND	GND	UGND-H32
VSU-G4	GND	GND	UGND-J28
VSU-G5	GND	GND	UGND-J29
VSU-G6	GND	GND	UGND-J30
VSU-H3	GND	GND	UGND-J31
VSU-H4	GND	GND	UGND-J32
VSU-H5	GND	GND	UGND-K28
VSU-H6	GND	GND	UGND-K29
VSU-H7	GND	GND	UGND-K30
VSU-J3	GND	GND	UGND-K31
VSU-J4	GND	GND	UGND-K32
VSU-K3	GND	GND	UGND-L28
VSU-K4	GND	GND	UGND-L29
VSU-K5	GND	GND	UGND-L30
VSU-K6	GND	GND	UGND-L31
VSU-K7	GND	GND	UGND-L32
VSU-L3	GND	GND	UGND-M32
VSU-M3	GND	GND	UGND-N28
VSU-M4	GND	GND	UGND-N29
VSU-M5	GND	GND	UGND-N30
VSU-M6	GND	GND	UGND-N31
VSU-M7	GND	GND	UGND-N32
VSU-N3	GND	GND	UGND-P32
VSU-N4	GND	GND	UGND-R28
VSU-P3	GND	GND	UGND-R29
VSU-P4	GND	GND	UGND-R30
VSU-P5	GND	GND	UGND-R31
VSU-P6	GND	GND	UGND-R32
VSU-P7	GND	GND	UGND-T32
VSU-R3	GND	GND	UGND-U28
VSU-R4	GND	GND	UGND-U29
VSU-T3	GND	GND	UGND-U30
VSU-T4	GND	GND	UGND-U31
VSU-T5	GND	GND	UGND-U32
VSU-T6	GND	GND	UGND-V32
VSU-T7	GND	GND	UGND-W28
VSU-U3	GND	GND	UGND-W29
VSU-U4	GND	GND	UGND-W30
VSU-V3	GND	GND	UGND-W31
VSU-V4	GND	GND	UGND-W32
VSU-V5	GND	GND	UGND-Y28
VSU-V6	GND	GND	UGND-Y29
VSU-V7	GND	GND	UGND-Y30
VSU-W3	GND	GND	UGND-Y31
VSU-Y3	GND	GND	UGND-Y32
VSU-Y4	GND	GND	UGND-AA29
VSU-Y5	GND	GND	UGND-AA30
VSU-Y6	GND	GND	UGND-AA31
VSU-Y7	GND	GND	UGND-AA32
VSU-AA3	GND	GND	UGND-AB29
VSU-AA4	GND	GND	UGND-AB30
VSU-AB3	GND	GND	UGND-AB31
VSU-AB4	GND	GND	UGND-AB32
VSU-AB5	GND	GND	UGND-AC30
VSU-AB6	GND	GND	UGND-AC31
VSU-AB7	GND	GND	UGND-AC32
VSU-AC3	GND	GND	UGND-AD32
VSU-AC4	GND	GND	UGND-AE31
VSU-AC5	GND	GND	UGND-AE32
VSU-AC6	GND	GND	UGND-AF32
VSU-AC7	GND	GND	UGND-AG33
VSU-AD3	GND	GND	UGND-AG34
VSU-AE3	GND		
VSU-AE4	GND	GND	PLLVSS01-AJ33
VSU-AE5	GND	GND	PLLVSS02-AN30
VSU-AE6	GND	GND	PLLVSS03-B7
VSU-AE7	GND		
VSU-AF3	GND	GND	VGND-AC29
VSU-AF4	GND	GND	PGND-AA28
VSU-AF5	GND	GND	PUGND-AD28
VSU-AG3	GND		
VSU-AH1	GND		
VSU-AH2	GND		
VSU-AH3	GND		
VSU-AH4	GND		

GND1 GND1

DRIVE PCB 5

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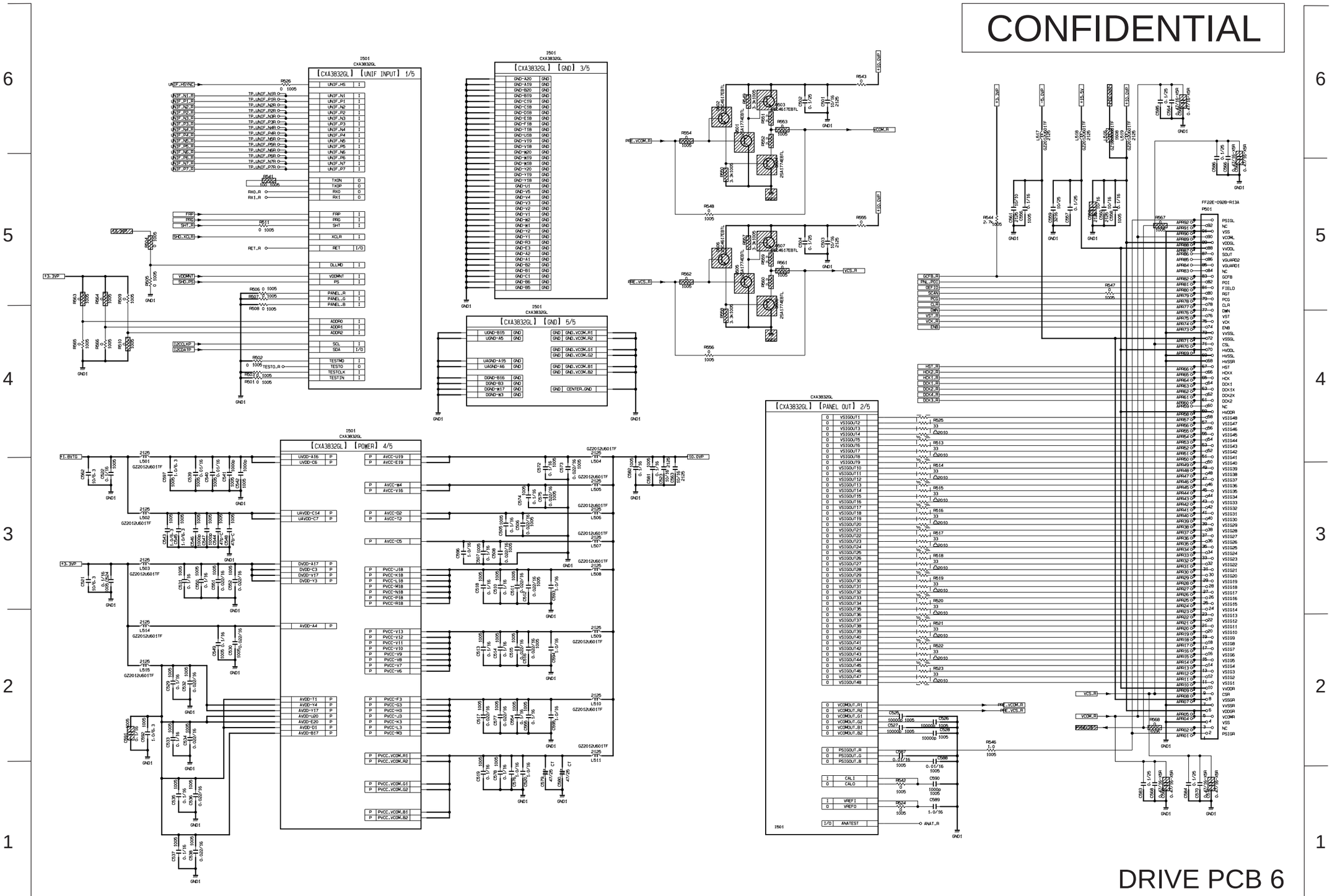

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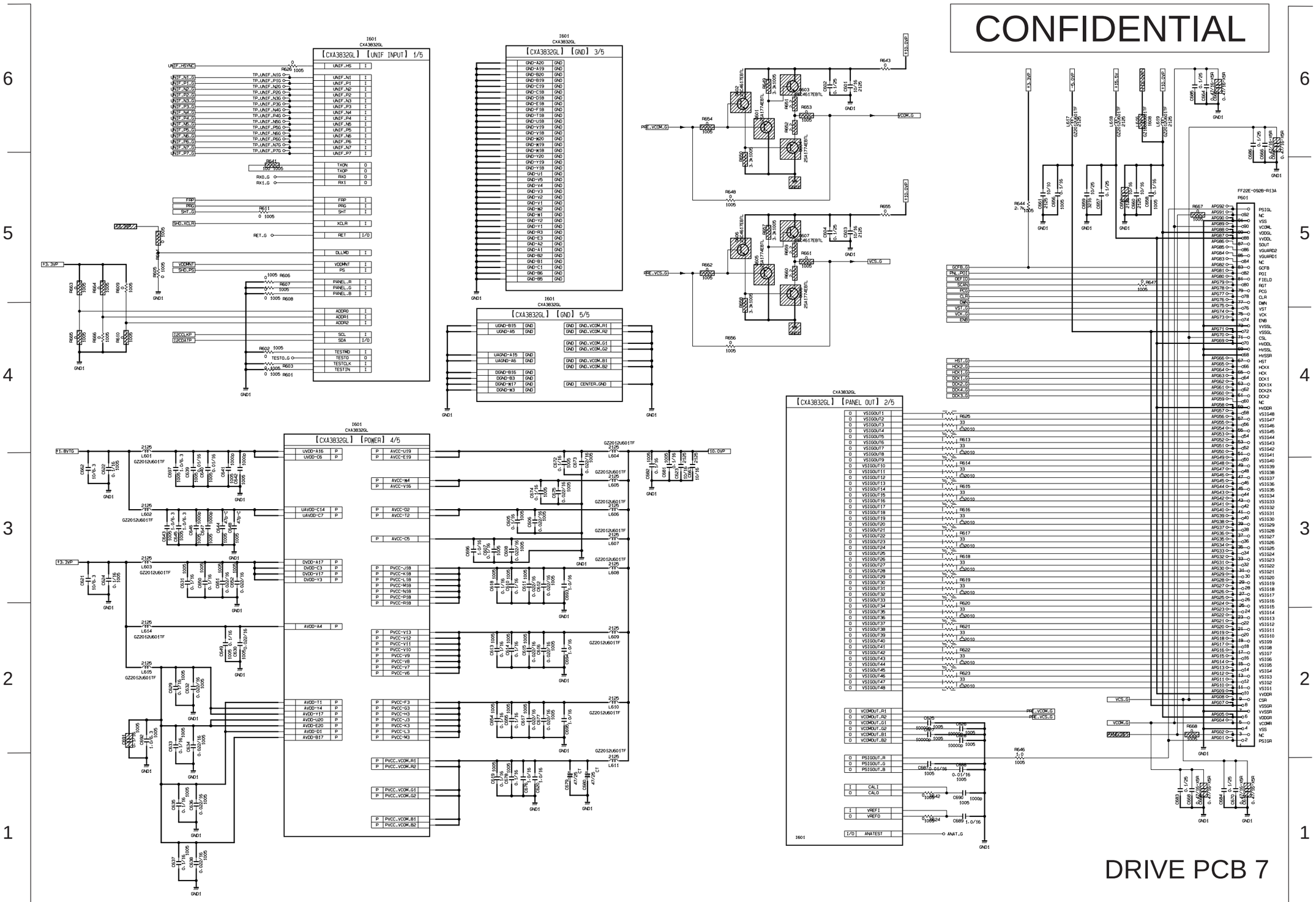

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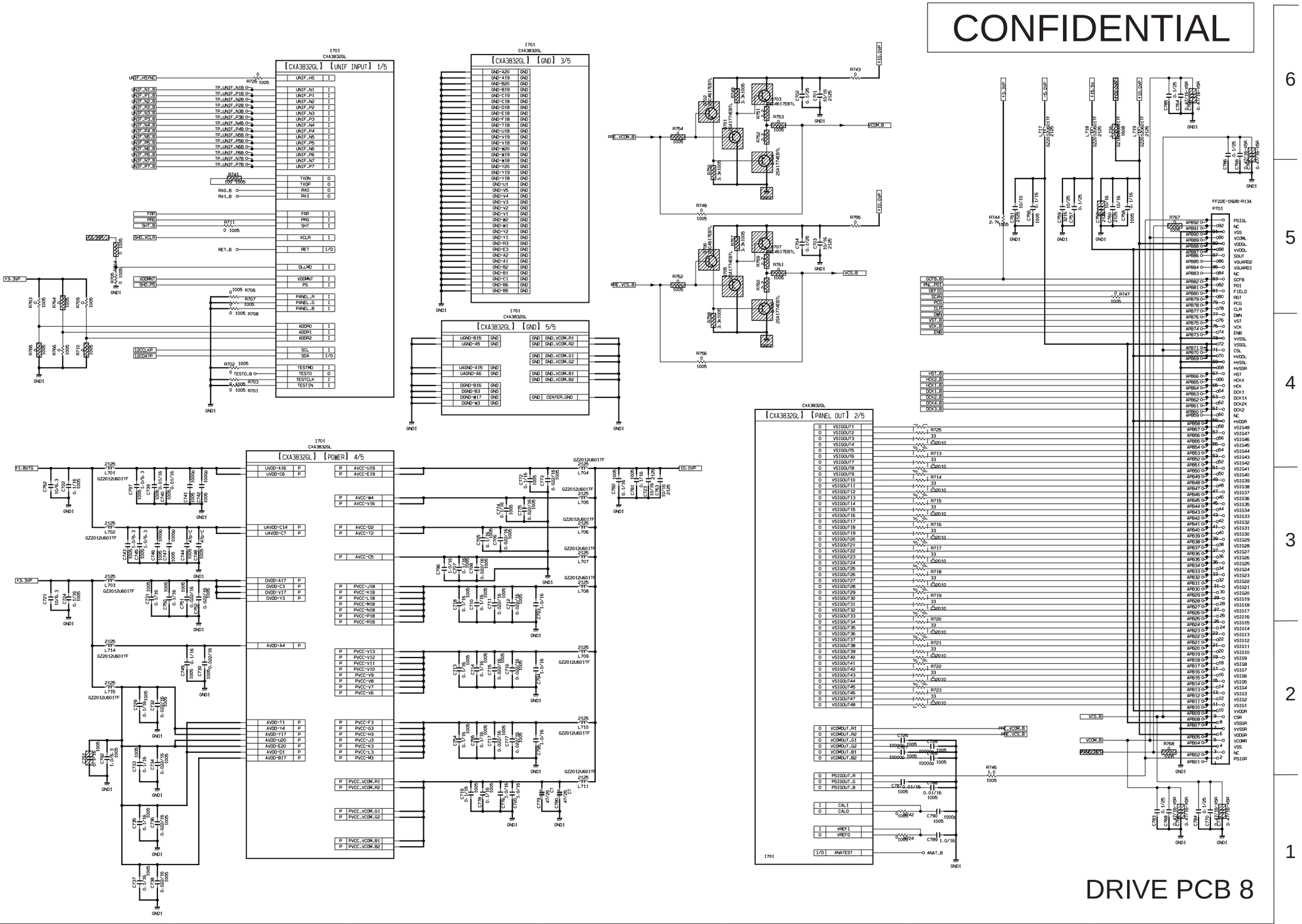

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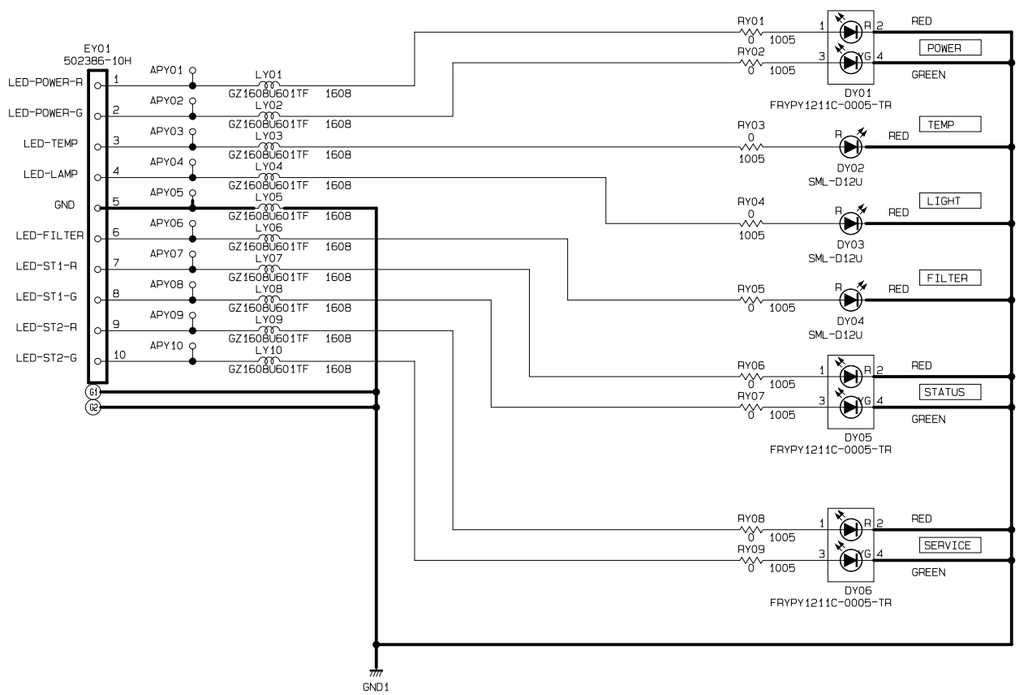
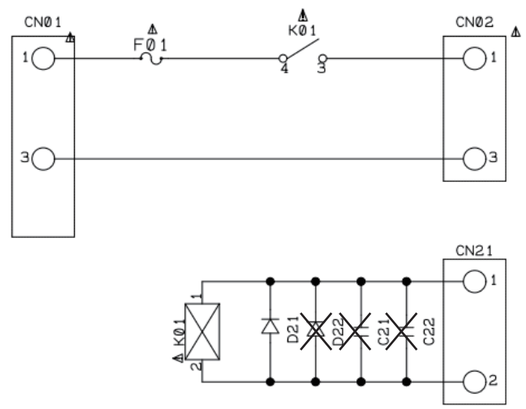


LED PCB



AC RELAY PCB

Basic circuit diagram list

REMOTE-F PCB
REMOTE-R PCB
BATTERY PCB
NTC-OUT PCB
NTC-IN PCB
POWER UNIT CIRCUIT 1
POWER UNIT CIRCUIT 2
POWER UNIT CIRCUIT 3
POWER UNIT CIRCUIT 4
KEYPAD PCB
INPUT PCB 1
INPUT PCB 2
MAIN PCB 1
MAIN PCB 2
MAIN PCB 3
MAIN PCB 4
MAIN PCB 5
MAIN PCB 6
MAIN PCB 7
MAIN PCB 8
MAIN PCB 9
MAIN PCB 10
MAIN PCB 11
MAIN PCB 12
MAIN PCB 13
MAIN PCB 14
MAIN PCB 15
MAIN PCB 16
MAIN PCB 17
MAIN PCB 18
MAIN PCB 19
MAIN PCB 20
MAIN PCB 21
MAIN PCB 22
MAIN PCB 23
DRIVE PCB 1
DRIVE PCB 2
DRIVE PCB 3
DRIVE PCB 4
DRIVE PCB 5
DRIVE PCB 6
DRIVE PCB 7
DRIVE PCB 8
LED PCB
AC RELAY PCB

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