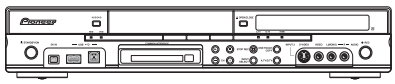
Pioneer sound.vision.soul

Service Manual



DVR-LX61D

ORDER NO.
RRV3761

HDD/DVD RECORDER

DVR-LX61D
DVR-560HX-S
DVR-560HX-K

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Region No.	Serial No. Please Confirm 3rd & 4th alphabetical letters.
DVR-LX61D	WVXK5	AC 220 V to 240 V	2	&&UK######$$
DVR-LX61D	WYXK5	AC 220 V to 240 V	2	&&UK######$$
DVR-560HX-S	WVXK5	AC 220 V to 240 V	2	&&UK######$$
DVR-560HX-S	WYXK5	AC 220 V to 240 V	2	&&UK######$$
DVR-560HX-K	WVXK5	AC 220 V to 240 V	2	&&UK######$$
DVR-560HX-K	WYXK5	AC 220 V to 240 V	2	&&UK######$$

For details, refer to "Important Check Points for good servicing".

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
ⓒ**PIONEER CORPORATION 2008**

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SAFETY INFORMATION

■ LABEL CHECK

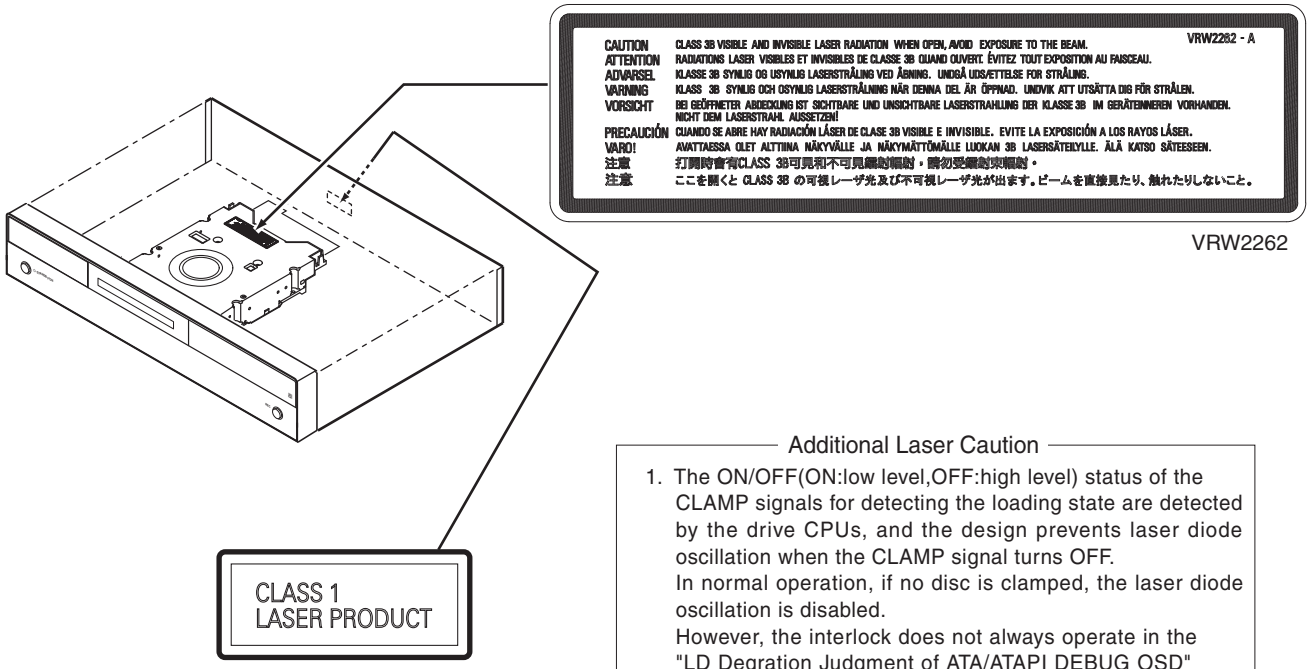
WARNING!

The laser component is capable of emitting radiation exceeding the limit for CLASS 1. A specially instructed person should do servicing operation of the apparatus.

Laser Pickup specifications and Laser characteristics

For CD
- Wave length : 785 nm
- Operating output :
  - Read mode : 1.07 mW (CW), Class1
- Maximum output : Class1M

For DVD
- Wave length : 660 nm
- Operating output :
  - Read mode : 1.08 mW, Class1
  - Write mode : 21.89 mW (Pulse), Class1M
- Maximum output : Class2M



VRW2262

Additional Laser Caution

1. The ON/OFF(ON:low level,OFF:high level) status of the CLAMP signals for detecting the loading state are detected by the drive CPUs, and the design prevents laser diode oscillation when the CLAMP signal turns OFF.
   In normal operation, if no disc is clamped, the laser diode oscillation is disabled.
   However, the interlock does not always operate in the "LD Degration Judgment of ATA/ATAPI DEBUG OSD" and "LD POWER ADJUSTMENT"*.

2. When the cover is opened, close viewing of the objective lens with the naked eye will cause exposure to a Class 3A laser beam.

* Refer to Pages 54 and 89.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

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1. SERVICE PRECAUTIONS

●When servicing this model, some service procedures may reset the customer settings to the factory default settings. Make sure to explain this to the customer.

●An HDD (Hard Disc Drive) is mounted in this product.
When an HDD becomes defective and inoperable, restoration of the user's data recorded on the HDD, or copying of the user's recorded data to other media (such as a new HDD) is totally impossible.
Before servicing, OBTAIN THE USER'S PRIOR CONSENT to that effect.
The user must be made aware that all recorded data are deleted if the HDD is intialized.

1.1 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
  Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.

- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 ºC.
  Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 ºC in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Do NOT use a soldering iron whose tip temperature cannot be controlled.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:
- Parts numbers of lead-free solder:
  GYP1006 1.0 in dia.
  GYP1007 0.6 in dia.
  GYP1008 0.3 in dia.

1.2 NOTES ON HANDLING THE HDD

[1] Cautions on Handling the HDD

- The HDD is very sensitive to shocks and vibrations. Care must be taken especially during operation (when the power is on).
- The HDD is very sensitive to electrostatic charges.
- Rapid change in temperature or humidity may cause deterioration of the HDD.

Note: After receiving damage caused by any above-mentioned factors, the HDD may operate normally for dozens or some hundreds of hours but then suddenly crash. If you are certain you have damaged a new repair part (HDD) while making repairs, do not use the part.

The HDD is about 10 times as sensitive to shock during operation than during nonoperation.

Reference: Main specifications on damage to the HDD

	During operation	During noperation
Shock G (acceleration)	<approx. 20 G	<approx. 200 G
Temperature change	< 20°C/hour	
Moisture change	< 20%/hour	

Reference: Estimate value of falling distance vs. shock (G) when the HDD is dropped without protection

Falling distance \ Landing surface	Granite surface	Concrete floor	Synthetic-resin-coated table	Antistatic sponge
0.5 inch / 12.7 mm	387	217	200	26
1.0 inch / 25.4 mm	595	457	310	37
2.0 inch / 50.8 mm	1133	600	680	70
4.0 inch / 101.6 mm	1795	1040	1050	267

[2] Cautions on handling the product on which the HDD is mounted or the HDD as a repair part, and examples of dangerous handling

[Cautions on handling the product on which the HDD is mounted]

- While the unit is turned on, the HDD is always in operation. Be sure NOT to impart shock to the unit.

● Examples of dangerous handling: while the power is on

- Bumping on the bonnet
- Dropping an object, such as a small screwdriver or remote control unit, onto the bonnet, or bumping an object against the cabinet
- Moving the unit by dragging
- Stacking another product on the unit

Note: Be sure NOT to impart shock, such as bumping or hitting a screwdriver against the HDD, during diagnosis with the bonnet open.

● Examples of dangerous handling: while the power is off

- Imparting strong shock, although the HDD is more resistant to shock when the power is off
- Dropping the unit from a height of several centimeters, or after lifting one side of the unit up, then letting the unit drop.

- Do NOT move the unit immediately after the power is turned off. Wait at least 30 seconds after the indication on the FL display changed from POWER OFF to the clock indication before moving the unit. If the AC power cord is accidentally disconnected before turning the unit off, wait at least for one minute before moving it. In this case, damage to the HDD caused by sudden shutoff may be small, because the emergency relief mechanism is activated. However, if sudden shutoff occurrs during recording or playback, recorded data may be damaged. Be sure to check operations.

[Cautions on handling the HDD as a repair part]

1. Handle the HDD in a safe environment:
   - Handle the HDD over an antistatic pad that can also absorb shock.
   - Wear wrist bands to prevent electrostatic charges generated in your body from affecting the HDD.

2. The following must be observed when handling the HDD:
   - Handle one HDD at a time. Do NOT hold several HDDs at the same time.
   - Grip the HDD on both sides so that you do not touch its terminals or circuit boards.
   - Do NOT stack one HDD onto another HDD (even if the HDDs are protected in antistatic bags).
   - Do NOT bump the HDDs against one another.
   - Do NOT bump any tool, such as a screwdriver, or other hard object against the HDD.
   - When a repair part (HDD) is transported and there is a large temperature difference between outdoors and indoors, to the indoor, leave it in its package for about a half day to gradually cool or warm the HDD to room temperature before unpacking it.

[Notes on packing for shipment]

- When returning a defective HDD for analysis, handle with care as if it were a good product. Otherwise, the results of analysis may not be correct.
- When packing, use the antistatic bag and packing materials in which the repair part for service was delivered. Attach a copy of the slip for service or a memo stating symptoms in as much detail as possible.

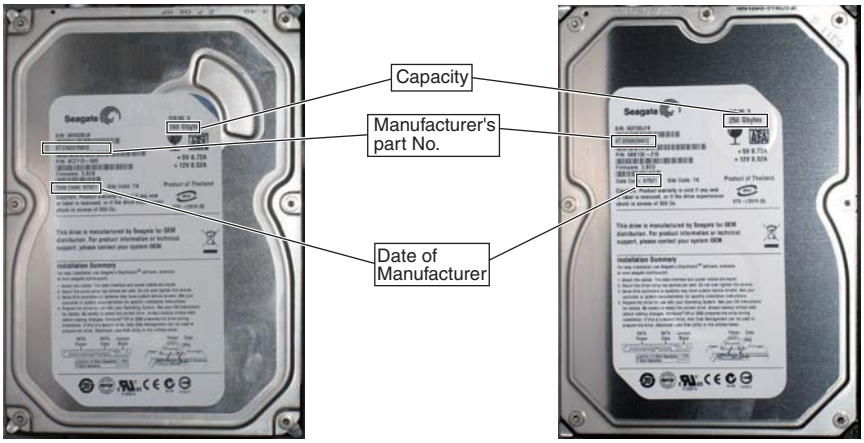
[3] Outline and part No. of the HDDs

*Pioneer's part No. is not stamped.

Model Name	Capacity	SEAGATE	
		Pioneer's Part No. (for service)	Manufacture's Part No.
DVR-LX61D	250GB	VXF1131	ST3250820SCE
DVR-560HX-S DVR-560HX-K	160GB	VXF1152	ST3160215SCE

- When replacing the HDD, carefully check the capacity and manufacturer's part No. on the part label to avoid replacing with a similar but inappropriate product. You can also check the model No. of the mounted HDD on the Service mode screen.
- Do NOT use repair parts, such as commercially available HDDs, other than those designated above, as their functions, performance or reliability cannot be guaranteed.

Seagate(160GB)



Seagate(250GB)

1.3 NOTES ON REPLACEMENT OF THE SDRAM

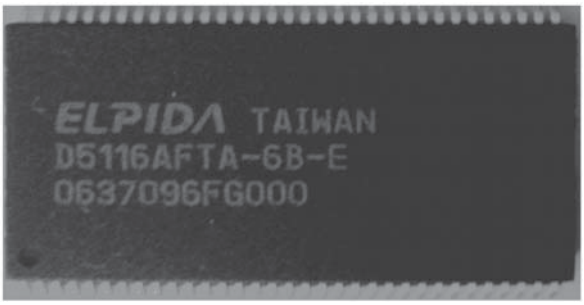
Note when replacing the SDRAM

When replacement of the SDRAM (IC1201 or IC1221) on the MAIN Assy is required, identify the manufacturer of the SDRAM.
If the SDRAM that needs replacement was manufactured by ELPIDA, both IC1201 and IC1221 must be replaced at the same time.
SDRAMs for service are manufactured by SAMSUNG.

• How to identify the manufacturer

Confirm the name of the manufacturer stamped on the surface of the part.

By ELPIDA (replacement of both SDRAMs required)



By SAMSUNG (replacement of only the defective SDRAM possible)

• Measures to be taken

1. If the SDRAM that needs replacement was manufactured by ELPIDA:
   Replace both IC1201 and IC1221 at the same time.
2. If the SDRAM that needs replacement was manufactured by SAMSUNG:
   Replacement of only the defective SDRAM (IC1201 or IC1221) is possible.

• Possible malfunctions

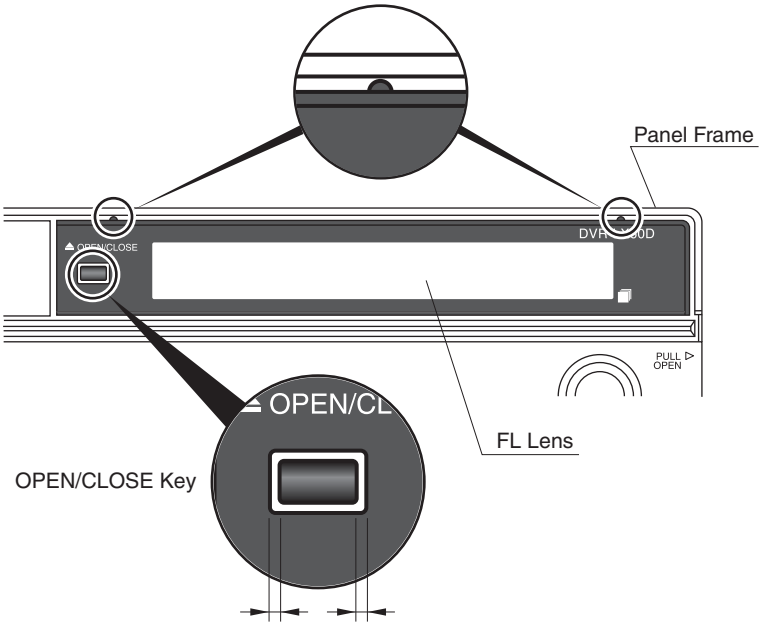
If SDRAMs made by different manufacturers are mounted on the MAIN Assy, the following malfunctions may occur:
1. The power does not come on.
2. High-speed dubbing disabled
3. Other malfunctions related to the SDRAM

1.4 NOTES ON REPLACEMENT OF THE FL LENS (DVR-LX61D ONLY)

The Panel Frame, FL Lens, and FL Filter are attached to the chassis with two-sided (double-back) tape.
If one of these parts has to be replaced, replace all three parts at the same time.
To replace the FL Lens, follow the procedures described below:

Procedures for replacement of the FL Lens

1. Lightly attach the FL Lens so that the two projections on the upper side of the panel touch the Panel Frame and that the clearances between the OPEN/CLOSE key and the cutout for that key on the FL Lens will be the same on the left and right sides.
2. After confirming that the FL Lens is properly aligned, strongly push the black part of the FL Lens to firmly attach it. Be careful not to press the OPEN/CLOSE key while attaching the FL Lens.

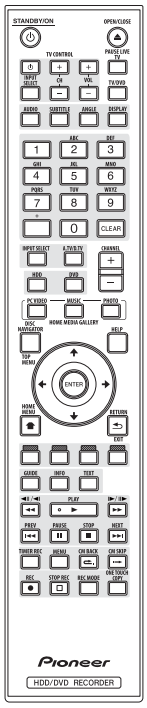


1.5 NOTE ON PC CARDS

If ejection of the PC card cannot be accomplished by your pressing the EJECT key, the PC card may have been inserted incorrectly. In such a case, remove the front panel, following the disassembly procedures, then manually remove the PC card.

2. SPECIFICATIONS
2.1 ACCESSORIES

• Remote control ×1
(VXX3284 : DVR-LX61D)
(VXX3285 : DVR-560HX-S)
(VXX3292 : DVR-560HX-K)



• Operating Instructions (English)
(VRB1487: DVR-LX61D/WVXK5)
(VRB1486: DVR-560HX-S, 560HX-K/WVXK5)

• Operating Instructions (French)
(VRC1458: DVR-LX61D/WYXK5)
(VRC1457: DVR-560HX-S, 560HX-K/WYXK5)

• Operating Instructions (German)
(VRC1463: DVR-LX61D/WYXK5)
(VRC1462: DVR-560HX-S, 560HX-K/WYXK5)

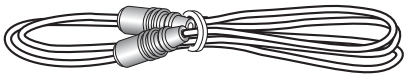
• Operating Instructions (Italian)
(VRC1467: DVR-LX61D/WYXK5)
(VRC1466: DVR-560HX-S, 560HX-K/WYXK5)

• Operating Instructions (Dutch)
(VRC1470: DVR-LX61D/WYXK5)
(VRC1469: DVR-560HX-S, 560HX-K/WYXK5)

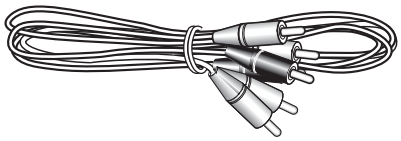
• Operating Instructions (Spanish)
(VRC1474: DVR-LX61D/WYXK5)
(VRC1473: DVR-560HX-S, 560HX-K/WYXK5)

• Warranty Card

• RF antenna cable(PAL) ×2
(VDE1095 ×1)
(VDE1075 ×1)

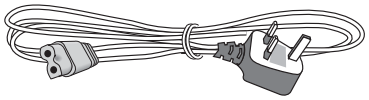


• Audio / Video cable(1.5m) ×1
(red/white/yellow)
(VDE1077)

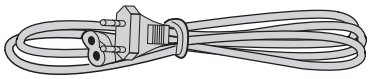


• G-Link™ Cable (3m) ×1
(VDX1010)

• Power cable ×1
(ADG7077 : WVXK5 type)



(ADG1127 : WYXK5 type)



• Dry cell batteries ×2
(AA/R6P)

2.2 SPECIFICATIONS

[1] For DVR-LX61D

General

Power requirements . . . . . 220 V to 240 V, 50 Hz/60 Hz
Power consumption . . . . . .58 W
Power consumption in standby mode. . . . . 0.69 W
(Front panel display: off)
Weight . . . . . .4.7 kg
Dimensions
. . . . . .420 mm (W) x 77 mm (H) x 288 mm (D)

Operating temperature. . . . . +5 °C to +35 °C
Operating humidity . . . 5 % to 85 % (no condensation)
TV system . . . NTSC (external input only)/PAL/SECAM

Readable discs
DVD-Video, DVD-RW, DVD-R, DVD+R, DVD+RW, DVD-RAM, Video CD, Super VCD, CD, CD-R/-RW (CD-DA, WMA, MP3, MPEG-4 AAC, JPEG, DivX)

Recording discs and formats
DVD-R/-RW: VR mode and Video mode
DVD+R/+RW: +VR mode
DVD-RAM: VR mode
DVD-R DL: VR mode and Video mode
DVD+R DL: +VR mode

Video recording format
Sampling frequency . . . . . 13.5 MHz
Compression format . . . . . .MPEG

Audio recording format
Sampling frequency . . . . . 48 kHz
Compression format . . . . Dolby Digital or Linear PCM (uncompressed)

Recording time
HDD (250 GB)
XP+ . . . . . Approx. 36 h
Fine (XP). . . . . Approx. 53 h
Standard Play (SP) . . . . . Approx. 106 h
Long Play (LP) . . . . . Approx. 212 h
Extended Play (EP) . . . . . Approx. 319 h
Super Long Play (SLP) . . . . . Approx. 425 h
Super Extended Play (SEP). . . . . Approx. 532 h
Manual Mode (MN). . . . . Approx. 36 h to 711 h

DVD-R/-RW, DVD+R/+RW, DVD-RAM
Fine (XP). . . . . Approx. 1 h
Standard Play (SP) . . . . . Approx. 2 h
Long Play (LP) . . . . . Approx. 4 h
Extended Play (EP) . . . . . Approx. 6 h
Super Long Play (SLP) . . . . . Approx. 8 h
Super Extended Play (SEP). . . . . Approx. 10 h
(DVD-R/-RW, DVD-RAM only)
Manual Mode (MN)
DVD-R/-RW/-RAM . . . . . Approx. 1 h to 13 h
DVD+R/+RW . . . . . Approx. 1 h to 8 h

DVD-R DL/DVD+R DL
Fine (XP) . . . . . Approx. 1 h 51 m
Standard Play (SP). . . . . Approx. 3 h 35 m
Long Play (LP) . . . . . Approx. 7 h 11 m
Extended Play (EP). . . . . Approx. 10 h 46 m
Super Long Play (SLP)
. . . . . .Approx. 14 h 21 m (DVD-R DL)
. . . . . .Approx. 14 h 4 m (DVD+R DL)
Super Extended Play (SEP) . . . . . Approx. 17 h 57 m
(DVD-R DL only)
Manual Mode (MN)
DVD-R DL . . . . . Approx. 1 h 51 m to 24 h
DVD+R DL . . . . . Approx. 1 h 51 m to 14 h 4 m

Timer

Programmes. . . . . 1 month/32 programmes
Clock . . . . . Quartz lock (24-hour digital display)

Tuner (analog)

Receivable channels

	SECAM B/G PAL B/G		PAL I	
	Frequency	Channel	Frequency	Channel
VHF (low)	47 MHz to 89 MHz	E2 to E4 X to Z	44 MHz to 89 MHz	A to C X to Z
VHF (high)	104 MHz to 300 MHz	E5 to E12 S1 to S20 M1 to M10 U1 to U10	104 MHz to 300 MHz	D to J 11, 13 S1 to S20
Hyper	302 MHz to 470 MHz	S21 to S41	302 MHz to 470 MHz	S21 to S41
UHF	470 MHz to 862 MHz	E21 to E69	470 MHz to 862 MHz	E21 to E69

	SECAM L		SECAM D/K PAL D/K	
	Frequency	Channel	Frequency	Channel
VHF (low)	49 MHz to 65 MHz	FB, FC1, FC	49 MHz to 94 MHz	R1 to R5
VHF (high)	104 MHz to 300 MHz	F1 to F6 B to Q	104 MHz to 300 MHz	R6 to R12 S1 to S20
Hyper	300 MHz to 470 MHz	S21 to S41	302 MHz to 470 MHz	S21 to S41
UHF	470 MHz to 862 MHz	21 to 69	470 MHz to 862 MHz	E21 to E69

STEREO
B/G - A2
I - NICAM
L - NICAM
B/G - NICAM
D/K - NICAM

Tuner (digital)

Receiving system . . . . . DVB-T (2 K/8 K COFDM)
Tuner VHF/UHF
. . . . . .VHF band III (174 MHz to 230 MHz)
. . . . . UHF band IV, V (470 MHz to 862 MHz)
Auto Channel Preset . . . . . 999 ch, Auto Preset, Auto Label, Auto Sort
Audio. . . . . Stereo MPEG layer I/II
Audio Decoder
. . . . . Sampling frequencies: 32 kHz, 44.1 kHz, 48 kHz

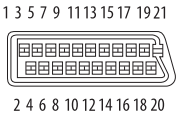
This product's digital tuner has been confirmed for use in the following countries: Belgium, France, Germany, Italy, Spain, Denmark, Finland, Netherlands, Sweden, Switzerland, UK, Austria, Czech Republic.

Input/Output

Antenna
.... 75 Ω IEC 169-2 connector for VHF/UHF in/out (analog)
.....75 Ω IEC 169-2 connector for VHF/UHF in/out (digital)
Video input.....AV2 (Input 1), Input 2 (front), Input 3 (rear)
Input level .....1 Vp-p (75 Ω)
Jacks ..... AV connector (Input 1), RCA jacks (Input 2, Input 3)
Video output.....AV1, Output
Output level .....1 Vp-p (75 Ω)
Jacks .....AV connector (AV1), RCA jack (Output)
S-Video input .....AV2 (Input 1), Input 2 (front), Input 3 (rear)
Y (luminance) - Input level.....1 Vp-p (75 Ω)
C (colour) - Input level ..... 300 mVp-p (75 Ω)
Jacks ..... AV connector (Input 1), 4-pin mini DIN (Input 2, Input 3)
S-Video output.....AV1, Output
Y (luminance) - Output level .....1 Vp-p (75 Ω)
C (colour) - Output level..... 300 mVp-p (75 Ω)
Jacks .....AV connector (AV1), 4-pin mini DIN (Output)
Component video output
Output level ..... Y: 1.0 Vp-p (75 Ω)
P_B, P_R: 0.7 Vp-p (75 Ω)
Jacks ..... RCA jacks
RGB input.....AV2 (Input 1)
Input level ..... 0.7 Vp-p (75 Ω)
Jacks .....AV connector (Input 1)
RGB output AV1
Output level ..... 0.7 Vp-p (75 Ω)
Jacks ..... AV connector (AV1)
Audio input .....AV2 (Input 1), Input 2 (front), Input 3 (rear) L/R
During audio input..... 2 V rms (Input impedance: more than 22 kΩ)
Jacks ..... AV connector (Input 1), RCA jacks (Input 2, Input 3)
Audio output ..... AV1, Output L/R
During audio output ..... 2 V rms (Output impedance: less than 1.5 kΩ)
Jacks .....AV connector (AV1), RCA jacks (Output)
Control input ..... Mini jack
Digital audio output .....Coaxial
G-LINK™..... Mini jack
Common Interface ..... CA module
DV input .....4-pin (front) (i.LINK/IEEE 1394 standard)
USB ..... Type A (front), Type B (front)
HDMI output 19-pin
LAN.....Ethernet jack (10BASE-T/100BASE-TX)

AV Connectors (21-pin connector assignment)

AV connector input/output ..... 21-pin connector
This connector provides the video and audio signals for connection to a compatible colour TV or monitor.



PIN no.	AV1 (RGB)-TV / AV2 (INPUT 1/DECODER)
1	Audio 2/R out / Audio 2/R out
2	– / Audio 2/R in
11	G out / G in
3	Audio 1/L out / Audio 1/L out
6	– / Audio 1/L in
15	R or C out / R or C in
4	GND
17	GND
7	B out / B in
19	Video out or Y out / Video out
20	– / Video in or Y in
8	Status
21	GND

Supplied accessories

Remote control 1
Dry cell batteries (AA/R6P).....2
Audio/Video cable (red/white/yellow).....1
G-LINK™ cable.....1
RF antenna cable.....2
Power cable 1
Operating Instructions
Warranty card 1

Note: The specifications and design of this product are subject to change without notice, due to improvement.

[2] For DVR-560HX-S,-K

General

Power requirements . . . . . 220 V to 240 V, 50 Hz/60 Hz
Power consumption . . . . . .51 W
Power consumption in standby mode. . . . . 0.69 W
(Front panel display: off)
Weight . . . . . .4.5 kg
Dimensions
. . . . . .420 mm (W) x 75 mm (H) x 288 mm (D)

Operating temperature. . . . . +5 °C to +35 °C
Operating humidity . . . 5 % to 85 % (no condensation)
TV system . . . NTSC (external input only)/PAL/SECAM

Readable discs
DVD-Video, DVD-RW, DVD-R, DVD+R, DVD+RW, DVD-RAM, Video CD, Super VCD, CD, CD-R/-RW (CD-DA, WMA, MP3, JPEG, DivX)

Recording discs and formats
DVD-R/-RW: VR mode and Video mode
DVD+R/+RW: +VR mode
DVD-RAM: VR mode
DVD-R DL: VR mode and Video mode
DVD+R DL: +VR mode

Video recording format
Sampling frequency . . . . . 13.5 MHz
Compression format . . . . . .MPEG

Audio recording format
Sampling frequency . . . . . 48 kHz
Compression format . . . . Dolby Digital or Linear PCM
(uncompressed)

Recording time
HDD (160 GB)
XP+ . . . . . Approx. 23 h
Fine (XP). . . . . Approx. 34 h
Standard Play (SP) . . . . . Approx. 68 h
Long Play (LP) . . . . . Approx. 136 h
Extended Play (EP) . . . . . Approx. 204 h
Super Long Play (SLP) . . . . . Approx. 272 h
Super Extended Play (SEP). . . . . Approx. 340 h
Manual Mode (MN). . . . . Approx. 23 h to 455 h

DVD-R/-RW, DVD+R/+RW, DVD-RAM
Fine (XP). . . . . Approx. 1 h
Standard Play (SP) . . . . . Approx. 2 h
Long Play (LP) . . . . . Approx. 4 h
Extended Play (EP) . . . . . Approx. 6 h
Super Long Play (SLP) . . . . . Approx. 8 h
Super Extended Play (SEP). . . . . Approx. 10 h
(DVD-R/-RW, DVD-RAM only)
Manual Mode (MN)
DVD-R/-RW/-RAM . . . . . Approx. 1 h to 13 h
DVD+R/+RW . . . . . Approx. 1 h to 8 h

DVD-R DL/DVD+R DL
Fine (XP) . . . . . Approx. 1 h 51 m
Standard Play (SP). . . . . Approx. 3 h 35 m
Long Play (LP) . . . . . Approx. 7 h 11 m
Extended Play (EP). . . . . Approx. 10 h 46 m
Super Long Play (SLP)
. . . . . Approx. 14 h 21 m (DVD-R DL)
. . . . . Approx. 14 h 4 m (DVD+R DL)
Super Extended Play (SEP) . . . . . Approx. 17 h 57 m
(DVD-R DL only)
Manual Mode (MN)
DVD-R DL . . . . . Approx. 1 h 51 m to 24 h
DVD+R DL . . . . . Approx. 1 h 51 m to 14 h 4 m

Timer

Programmes. . . . . 1 month/32 programmes
Clock . . . . . Quartz lock (24-hour digital display)

Tuner (analog)

Receivable channels

	SECAM B/G PAL B/G		PAL I	
	Frequency	Channel	Frequency	Channel
VHF (low)	47 MHz to 89 MHz	E2 to E4 X to Z	44 MHz to 89 MHz	A to C X to Z
VHF (high)	104 MHz to 300 MHz	E5 to E12 S1 to S20 M1 to M10 U1 to U10	104 MHz to 300 MHz	D to J 11, 13 S1 to S20
Hyper	302 MHz to 470 MHz	S21 to S41	302 MHz to 470 MHz	S21 to S41
UHF	470 MHz to 862 MHz	E21 to E69	470 MHz to 862 MHz	E21 to E69

	SECAM L		SECAM D/K PAL D/K		
	Frequency	Channel	Frequency	Channel	
VHF (low)	49 MHz to 65 MHz	FB, FC1, FC	49 MHz to 94 MHz	R1 to R5	
VHF (high)	104 MHz to 300 MHz	F1 to F6 B to Q	104 MHz to 300 MHz	R6 to R12 S1 to S20	STEREO B/G - A2 I - NICAM L - NICAM B/G - NICAM D/K - NICAM
Hyper	300 MHz to 470 MHz	S21 to S41	302 MHz to 470 MHz	S21 to S41	
UHF	470 MHz to 862 MHz	21 to 69	470 MHz to 862 MHz	E21 to E69	

Tuner (digital)

Receiving system . . . . . DVB-T (2 K/8 K COFDM)
Tuner VHF/UHF
. . . . . VHF band III (174 MHz to 230 MHz)
. . . . . UHF band IV, V (470 MHz to 862 MHz)
Auto Channel Preset . . . . . 999 ch, Auto Preset, Auto Label, Auto Sort
Audio. . . . . Stereo MPEG layer I/II
Audio Decoder
. . . . . Sampling frequencies: 32 kHz, 44.1 kHz, 48 kHz

This product's digital tuner has been confirmed for use in the following countries: Belgium, France, Germany, Italy, Spain, Denmark, Finland, Netherlands, Sweden, Switzerland, UK, Austria, Czech Republic.

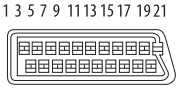
http://getMANUAL.com

Input/Output

Antenna
.... 75 Ω IEC 169-2 connector for VHF/UHF in/out (analog)
.....75 Ω IEC 169-2 connector for VHF/UHF in/out (digital)
Video input.....AV2 (Input 1), Input 2 (front), Input 3 (rear)
Input level.....1 Vp-p (75 Ω)
Jacks.....AV connector (Input 1), RCA jacks (Input 2, Input 3)
Video output.....AV1, Output
Output level.....1 Vp-p (75 Ω)
Jacks.....AV connector (AV1), RCA jack (Output)
S-Video input.....AV2 (Input 1), Input 2 (front), Input 3 (rear)
Y (luminance) - Input level.....1 Vp-p (75 Ω)
C (colour) - Input level.....300 mVp-p (75 Ω)
Jacks.....AV connector (Input 1), 4-pin mini DIN (Input 2, Input 3)
S-Video output.....AV1, Output
Y (luminance) - Output level.....1 Vp-p (75 Ω)
C (colour) - Output level.....300 mVp-p (75 Ω)
Jacks.....AV connector (AV1), 4-pin mini DIN (Output)
Component video output
Output level.....Y: 1.0 Vp-p (75 Ω)
P_B, P_R: 0.7 Vp-p (75 Ω)
Jacks.....RCA jacks
RGB input.....AV2 (Input 1)
Input level.....0.7 Vp-p (75 Ω)
Jacks.....AV connector (Input 1)
RGB output.....AV1
Output level.....0.7 Vp-p (75 Ω)
Jacks.....AV connector (AV1)
Audio input.....AV2 (Input 1), Input 2 (front), Input 3 (rear) L/R
During audio input.....2 V rms (Input impedance: more than 22 kΩ)
Jacks.....AV connector (Input 1), RCA jacks (Input 2, Input 3)
Audio output.....AV1, Output L/R
During audio output.....2 V rms (Output impedance: less than 1.5 kΩ)
Jacks.....AV connector (AV1), RCA jacks (Output)
Control input.....Mini jack
Digital audio output.....Coaxial
G-LINK™.....Mini jack
Common Interface.....CA module
DV input.....4-pin (front) (i.LINK/IEEE 1394 standard)
USB.....Type A (front), Type B (front)
HDMI output.....19-pin

AV Connectors (21-pin connector assignment)

AV connector input/output.....21-pin connector
This connector provides the video and audio signals for connection to a compatible colour TV or monitor.



PIN no.	AV1 (RGB)-TV / AV2 (INPUT 1/DECODER)
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2	– / Audio 2/R in
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15	R or C out / R or C in
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RF antenna cable.....2
Power cable.....1
Operating Instructions
Warranty card.....1

Note: The specifications and design of this product are subject to change without notice, due to improvement.

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The contents of the Gracenote data in both the recorder and the dedicated server are not 100% guaranteed.

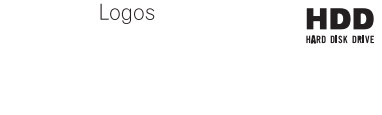
The supply of the Gracenote data in the dedicated server may be stopped without prior notice for the reason of maintenance, etc.

The Gracenote data communication service of the dedicated server may be stopped without the consent of the users in case the required content cannot be collected or for other reason that hinders provision of the service.

2.3 DISC/CONTENT FORMAT

HDD/DVD Recording and playback compatibility

This recorder can play and record all widely-used DVD disc types, and additionally provides HDD functionality. The table below shows some specific compatibility differences between the different disc types.

	HDD	DVD-R		DVD-RW		DVD+R	DVD +RW	DVD -RAM
Marks used in this manual	HDD	DVD (VR) *1	DVD (Video)	DVD (VR) *1	DVD (Video) *2	DVD+R	DVD+RW	DVD-RAM *13, 16
Logos								
Re-recordable/ Erasable	●	*3	*3	●	●	*3	*14	●
Editing of recorded programmes	●	●	*4	●	*4	*4	*4	●
Recording of Copy-once protected material	●	*12		*12				*12
Playback in other players/recorders	n/a	*5	*6	*7	*6	*6, 15	*8	*9
Chase play	●							
16:9 and 4:3 programme recording	●	●		●				●
Bilingual broadcast recording of both audio channels	*10, 11	*11		*11				*11

Notes to table

*1 Must be initialized for VR mode recording.
*2 Must be initialized for Video mode recording.
*3 Erasable, but free space does not increase.
*4 Cannot erase sections, edit chapters or use playlist editing.
*5 Must be compatible with DVD-R (VR) playback.
*6 Finalize using this recorder (may not playback in some units).
*7 Must be compatible with DVD-RW (VR) playback.
*8 Must be compatible with DVD+RW playback.
*9 Must be compatible with DVD-RAM playback.
*10 Only when HDD Recording Format is set to Video Mode Off.
*11 Only when the recording mode is not set to LPCM.
*12 CPRM-compatible discs only.
*13 Take the disc out of the cartridge before use. Only Panasonic and Maxell discs have been tested to work reliably with this recorder. Discs from other makers may become unusable when recorded or edited.
*14 Erasing a title does not increase the available recording time, nor increase the number of recordable titles left.
*15 Must be compatible with DVD+R playback.
*16 Depending on the disc, it may have to be initialized before it can be recorded. In this case, initialization may take over one hour.

is a trademark of DVD Format/Logo Licensing Corporation.

Using DVD-R DL/DVD+R DL discs

DVD-R DL (Dual-Layer) and DVD+R DL (Double-Layer) discs contain two recordable layers on a single side, giving about 1.8 times the recording capacity of a conventional single-layer disc. This unit can record to both DVD-R DL and DVD+R DL discs.

- If you intend to play DVD-R DL (Video mode) or DVD+R DL discs recorded on this unit on other DVD recorders/players, you must finalize them. (Note that some DVD recorders/players may not play even finalized DL discs.)
- This logo indicates that the disc is a DVD-R DL or DVD+R DL disc:

Correct operation has been confirmed for DL discs:

- DVD-R DL ver. 3.0/2x to 4x
  Mitsubishi Kagaku Media (Verbatim)
- DVD-R DL ver. 3.0/2x to 8x
  Mitsubishi Kagaku Media (Verbatim)
  That's
  JVC
- DVD+R DL 2.4x
  Mitsubishi Kagaku Media (Verbatim)
  RICOH
- DVD+R DL 2.4x to 8x
  Mitsubishi Kagaku Media (Verbatim)
  RICOH

About DualDisc playback

A DualDisc is a new two -sided disc, one side of which contains DVD content – video, audio, etc. – while the other side contains non-DVD content such as digital audio material.

The non-DVD, audio side of the disc is not compliant with the CD audio specification and therefore may not play.

It is possible that when loading or ejecting a DualDisc, the opposite side to that being played will be scratched. Scratched discs may not be playable.

The DVD side of a DualDisc plays in this product. DVD-Audio content will not play.

For more detailed information on the DualDisc specification, please refer to the disc manufacturer or disc retailer.

Other disc compatibility

In addition to DVD, this recorder is compatible with a wide range of disc types (media) and formats. Playable discs will generally feature one of the logos on the disc and/or disc packaging shown below. Note however that some disc types, such as recordable CD (and DVD), may be in an unplayable format — see below for further compatibility information.

CD-R/-RW compatibility

This recorder cannot record CD-R or CD-RW discs.

- Readable formats: CD audio, Video CD/ Super VCD, ISO 9660 CD-ROM* containing MP3, WMA, MPEG-4 AAC, JPEG or DivX files
  ** ISO 9660 Level 1 or 2 compliant. CD physical format: Mode1, Mode2 XA Form1. Romeo and Joliet file systems are both compatible with this recorder.*
- Multi-session playback: Yes (except CD audio and Video CD/Super VCD)
- Unfinalized disc playback: CD audio only

Compressed audio compatibility

- Compatible media: DVD-ROM, DVD-R/-RW, DVD+R/+RW, DVD-RAM, CD-ROM, CD-R, CD-RW, USB
- Compatible formats: MPEG-1 Audio Layer 3 (MP3), Windows Media Audio (WMA), MPEG-4 AAC

- Sampling rates (MP3/WMA): 32 kHz, 44.1 kHz or 48 kHz
- Sampling rates (MPEG-4 AAC): 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz or 48 kHz
- Bit-rates: Any (128 kbps or higher recommended)
- Variable bit-rate (VBR) WMA/MP3/MPEG-4 AAC playback: Yes[1]
- WMA encoder compatibility: Windows Media Codec 8 *(files encoded using Windows Media Codec 9 may be playable but some parts of the specification are not supported; specifically, Pro, Lossless, Voice and VBR)*
- DRM (Digital Rights Management)[2] file playback: No
- File extensions: .mp3, .wma, .m4a (these must be used for the recorder to recognize MP3, WMA and MPEG-4 AAC files – do not use for other file types)
- File structure: The recorder can load up to 99 folders/999 files at one time *(if there are more files/folders that this on the disc then more can be reloaded)*

About MPEG-4 AAC

Advanced Audio Coding (AAC) is at the core of the MPEG-4 AAC standard, which incorporates MPEG-2 AAC, forming the basis of the MPEG-4 audio compression technology. The file format and extension used depend on the application used to encode the AAC file. This unit plays back AAC files encoded by iTunes® bearing the extension '**.m4a**'. DRM-protected files will not play, and files encoded with some versions of iTunes® may not play, or filenames may display incorrectly.

Apple and iTunes are trademarks of Apple Inc., registered in the U.S. and other countries.

WMA (Windows Media™ Audio) content

This recorder can playback Windows Media Audio content.

WMA is an acronym for Windows Media Audio and refers to an audio compression technology developed by Microsoft Corporation.

Windows Media is a trademark of Microsoft Corporation.

This product includes technology owned by Microsoft Corporation and cannot be used or distributed without a license from Microsoft Licensing, Inc.

DivX video compatibility

DivX is a compressed digital video format created by the DivX® video codec from DivX, Inc. Keeping the same terminology as DVD-Video, individual DivX video files are called "Titles". When naming files/titles on a disc prior to burning, keep in mind that by default they will be played in alphabetical order.

- Official DivX® Certified product.
- Plays all versions of DivX® video (including DivX® 6) with standard playback of DivX® media files.
- File extensions: .avi and .divx (these must be used for the recorder to recognize DivX video files). *Note that all files with the .avi extension are recognized as MPEG4, but not all of these are necessarily DivX video files and therefore may not be playable on this recorder.*
- File structure: Up to 99 folders or 999 files.

Note

1 The elapsed playing time may not be displayed properly.

2 DRM (digital rights management) copy protection is a technology designed to prevent unauthorized copying by restricting playback, etc. of compressed audio files on devices other than the PC (or other recording equipment) used to record it. For detailed information, please see the instruction manuals or help files that came with your PC and/or software.

DivX, DivX Certified, and associated logos are trademarks of DivX, Inc. and are used under license.

DivX® VOD content

In order to play DivX VOD (video on demand) content on this recorder, you first need to register the recorder with your DivX VOD content provider. You do this by generating a DivX VOD registration code, which you submit to your provider.

Some DivX VOD content may only be playable a fixed number of times. When you load a disc containing this type of DivX VOD content, the remaining number of plays is shown on-screen and you then have the option of playing the disc (thereby using up one of the remaining plays), or stopping. If you load a disc that contains expired DivX VOD content (for example, content that has zero remaining plays), the message **Rental Expired** is displayed.

If your DivX VOD content allows an unlimited number of plays, then you may load the disc into your recorder and play the content as often as you like, and no message will be displayed.

Important

- DivX VOD content is protected by a DRM system. This restricts playback of content to specific, registered devices.
- If you load a disc that contains DivX VOD content not authorized for this recorder, the message **Authorization Error** is displayed and the content will not play.
- Resetting the recorder will not cause you to lose your registration code.

JPEG file compatibility

- Compatible formats: Baseline JPEG and EXIF 2.2* still image files
  **File format used by digital still cameras*
- Sampling ratio: 4:4:4, 4:2:2, 4:2:0
- Horizontal resolution: 160 to 5120 pixels
- Vertical resolution: 120 to 3840 pixels
- Progressive JPEG compatible: No
- File extensions: .jpg, .jpeg, .jpe, .jif, .jfif (must be used for the recorder to recognize JPEG files – do not use for other file types)
- File structure: The recorder can load up to 99 folders/999 files at one time *(if there are more files/folders that this on the disc then more can be reloaded)*

PC-created disc compatibility

Discs recorded using a personal computer may not be playable in this unit due to the setting of the application software used to create the disc. In these particular instances, check with the software publisher for more detailed information.

Discs recorded in packet write mode (UDF format) are not compatible with this recorder.

Check the DVD-R/-RW or CD-R/-RW software disc boxes for additional compatibility information.

Dolby Digital

Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

DTS

Manufactured under license under U.S. Patent #: 5,451,942 & other U.S. and worldwide patents issued & pending. DTS and DTS Digital Out are registered trademarks and the DTS logos and Symbol are trademarks of DTS, Inc. © 1996-2007 DTS, Inc. All Rights Reserved.

DVB

The Digital Video Broadcasting Project, or DVB for short, is a set of open standards for digital broadcasting, covering terrestrial, cable and satellite broadcasts.

Based around the MPEG-2 coding system, these open standards ensure that compliant systems are able to work together, independent of manufacturer.

DVB is extremely flexible, being able to deliver virtually any kind of digital content to the home, including High Definition and Standard Definition TV, broadband multimedia content and interactive services.

DVB is a registered trademark of the DVB Project.

About the internal hard disk drive

The internal hard disk drive (HDD) is a fragile piece of equipment. When used without the proper care or in the wrong conditions, it is possible that recorded contents may be damaged or lost entirely, in some cases making even normal playback or recording impossible. Please understand that in the event of repair or replacement of the HDD or related components, all your HDD recordings will be lost.

Please use the recorder following the guidelines below to protect against possible HDD failure.

The HDD should not be regarded as a place to store recordings permanently. We recommend that you back up your important recordings onto DVD discs in order to protect against accidental loss.

Pioneer cannot under any circumstances accept responsibility for any direct or indirect loss arising from any inconvenience or loss of recorded material resulting from HDD failure.

- Do not move the recorder while it is on (this includes during EPG download when the front panel display shows **EPG**).
- Install and use the recorder on a stable, level surface.
- Do not block the rear vent/cooling fan.
- Do not use the recorder in excessively hot or humid places, or in places that may be subject to sudden changes in temperature. Sudden changes in temperature can cause condensation to form inside the recorder. This can be a cause of HDD failure.
- While the recorder is switched on (including during EPG download when the front panel display shows **EPG**), do not unplug from the wall socket or switch the electricity off from the breaker switch.
- Do not move the recorder immediately after switching it off. If you need to move the recorder, please follow the steps below:

  1 After the message **POWER OFF** is shown on the front panel display, wait at least two minutes.

  2 Unplug from the wall socket.

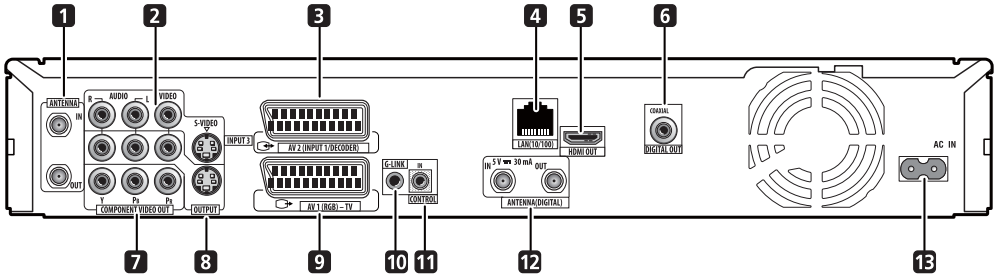
  3 Move the recorder.
- If there's a power failure while the recorder is on there is a chance that some data on the HDD will be lost.
- The HDD is very delicate. If used over time in an improper manner or in an unsuitable environment, it is possible that the HDD will fail. Signs of problems include playback unexpectedly freezing and noticeable block noise (mosaic) in the picture. However, sometimes there will be no warning signs of HDD failure. If the HDD fails, no playback of recorded material will be possible. In this case it will be necessary to replace the HDD unit.

Optimizing HDD performance

As you record and edit material on the HDD, the data on the disk becomes fragmented, eventually affecting the recorder's performance. Before this happens, the recorder will warn you that it is time to optimize the HDD.

2.4 PANEL FACILITIES

[1] Rear Panel



1 ANTENNA IN (RF IN)/OUT
Connect your TV antenna to the **ANTENNA IN (RF IN)** jack. The signal is passed through to the **ANTENNA OUT** jack for connection to your TV.

2 INPUT 3
Stereo analog audio, video and S-Video inputs for connection to a VCR or other source component.

3 AV2 (INPUT 1/DECODER) AV connector
Audio/video input/output SCART-type AV connector for connecting to a VCR, or other equipment with a SCART connector. The input accepts video, S-Video and RGB.

4 LAN (10/100) (DVR-LX61D Only)
Ethernet port for 10BASE-T (10 Mbps)/ 100BASE-TX (100 Mbps) network connection.

5 HDMI OUT
HDMI output for high quality digital audio and video.

6 DIGITAL AUDIO OUT (COAXIAL)
Coaxial digital audio jack for connecting to an AV amplifier/receiver, Dolby Digital/DTS/ MPEG decoder or other equipment with a digital input.

7 COMPONENT VIDEO OUT
A high-quality video output for connecting to a TV or monitor with a component video input.

8 OUTPUT
Stereo analog audio, video and S-Video outputs for connection to a TV or AV amplifier/receiver.

9 AV1 (RGB)-TV AV connector
Audio/video output SCART-type AV connector for connecting to a TV or other equipment with a SCART connector. The video output is switchable between video, S-Video and RGB.

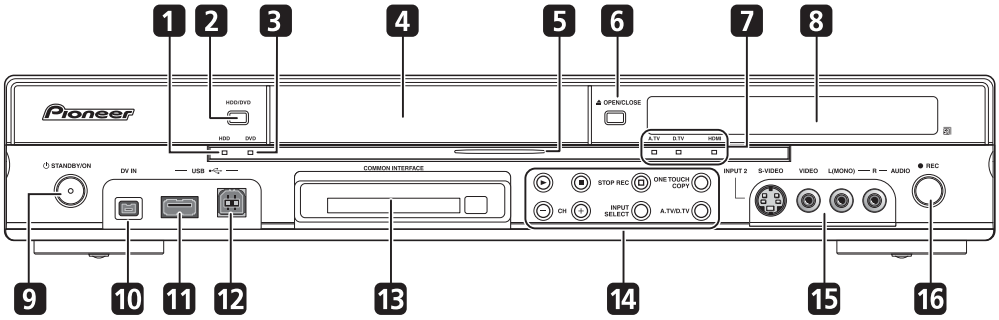
10 G-LINK™
Use to connect the supplied G-LINK™ cable to enable GUIDE Plus+® to control an external satellite receiver, etc.

11 CONTROL IN
Use to control this recorder from the remote sensor of another Pioneer component with a **CONTROL OUT** terminal and bearing the Pioneer mark. Connect the **CONTROL OUT** of the other component to the **CONTROL IN** of this recorder using a mini-plug cord.

12 ANTENNA (DIGITAL) IN/OUT
Connect your DTV antenna to the **ANTENNA (DIGITAL) IN** jack. The signal is passed through to the **ANTENNA (DIGITAL) OUT** jack for connection to your TV.

13 AC IN – Power inlet
Connect to a power outlet using the supplied power cable after making all other connections.

[2] Front Panel (for DVR-LX61D)



1 HDD indicator
Lights when the hard disk (HDD) is selected.

2 HDD/DVD
Press to switch between HDD and DVD for recording and playback.

3 DVD indicator
Lights when the DVD drive is selected.

4 Disc tray

5 Blue Illumination
Lights when the recorder's power is turned on.

6 ⏏ OPEN/CLOSE
Press to open/close the disc tray.

7 A.TV indicator
Lights when analog TV is selected.

D.TV indicator
Lights when digital TV is selected.

HDMI indicator
Lights when this recorder is connected to HDMI (HDCP) compatible component.

8 Front panel display and IR remote sensor

9 ⏻ STANDBY/ON
Press to switch the recorder on/into standby. When the recorder's power is on, the indicator at the center of the button lights blue.

10 DV IN
A DV input i.LINK connector, suitable for connecting a DV camcorder.

11 USB port (Type A)
USB port for connecting an HDD camcorder, digital camera, keyboard or other USB device.

12 USB port (Type B)
USB port for connecting a PictBridge-compatible printer or PC.

13 COMMON INTERFACE slot
Slot for CA module and smart card used to decode scrambled D.TV channels.

14 ►

Press to start or restart playback.

■

Press to stop playback.

□ **STOP REC**

Press to stop recording.

ONE TOUCH COPY

Press to start One Touch Copy of the currently playing title to DVD or the HDD.

CH +/–

Use to change channels, skip chapters/tracks, etc.

INPUT SELECT

Press to change the input used for recording.

A.TV/D.TV

Switches between analog TV antenna input and digital TV antenna input. The **A.TV** and **D.TV** indicators show which is selected.

15 INPUT 2

Audio/video input (stereo analog audio; composite and S-Video), especially suitable for camcorders, game consoles, portable audio, etc.

16 ● **REC**

Press to start recording. Press repeatedly to set the recording time in 30 minute blocks.

Common Interface

To receive scrambled D.TV channels you will need a CA module and smart card provided by your service provider.

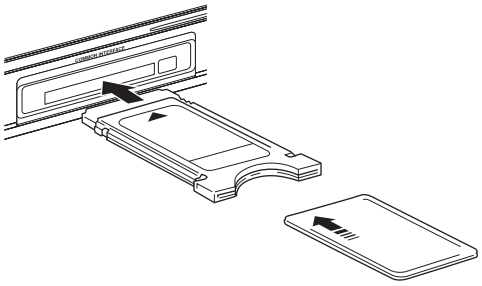
Different CA modules support different encryption systems. This recorder is designed to work with modules that support the DVB standard. Contact your service provider to obtain the right kind of CA module.

Note that neither CA modules nor smart cards are supplied or sold by Pioneer.

Inserting a CA module

The Common Interface card slot is located on the front panel of the recorder.

- **Insert the CA module into the card slot as far as it will go.**



The Common Interface card slot accepts Type I and Type II PC Cards (PCMCIA cards).

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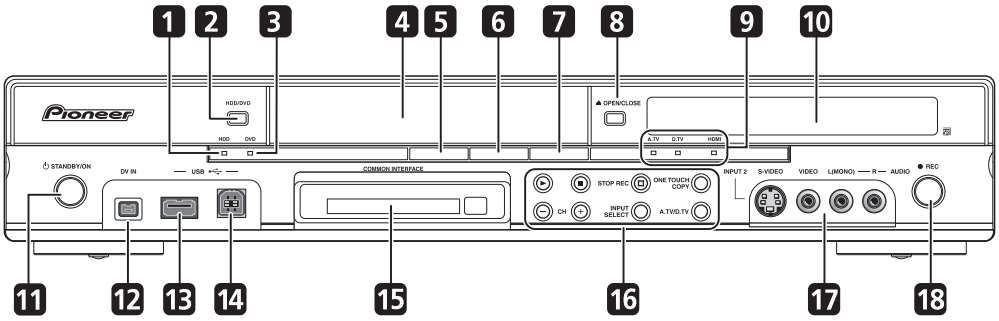
[3] Front Panel (for DVR-560HX-S,-K)



1 HDD indicator
Lights when the hard disk (HDD) is selected.

2 HDD/DVD
Press to switch between HDD and DVD for recording and playback.

3 DVD indicator
Lights when the DVD drive is selected.

4 Disc tray

5 PC VIDEO
Press to play DivX files you have not yet viewed.

6 MUSIC
Press to play music files in random order.

7 PHOTO
Press to play JPEG files in random order.

8 ⏏ OPEN/CLOSE
Press to open/close the disc tray.

9 A.TV indicator
Lights when analog TV is selected.

D.TV indicator
Lights when digital TV is selected.

HDMI indicator
Lights when this recorder is connected to HDMI (HDCP) compatible component.

10 Front panel display and IR remote sensor

11 ⏻ STANDBY/ON
Press to switch the recorder on/into standby.

12 DV IN
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13 USB port (Type A)
USB port for connecting an HDD camcorder, digital camera, keyboard or other USB device.

14 USB port (Type B)
USB port for connecting a PictBridge-compatible printer or PC.

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Slot for CA module and smart card used to decode scrambled D.TV channels.

16 ►

Press to start or restart playback.

■

Press to stop playback.

□ STOP REC

Press to stop recording.

ONE TOUCH COPY

Press to start One Touch Copy of the currently playing title to DVD or the HDD.

CH +/–

Use to change channels, skip chapters/tracks, etc.

INPUT SELECT

Press to change the input used for recording.

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Switches between analog TV antenna input and digital TV antenna input. The **A.TV** and **D.TV** indicators show which is selected.

17 INPUT 2

Audio/video input (stereo analog audio; composite and S-Video), especially suitable for camcorders, game consoles, portable audio, etc.

18 ● REC

Press to start recording. Press repeatedly to set the recording time in 30 minute blocks.

Common Interface

To receive scrambled D.TV channels you will need a CA module and smart card provided by your service provider.

Different CA modules support different encryption systems. This recorder is designed to work with modules that support the DVB standard. Contact your service provider to obtain the right kind of CA module.

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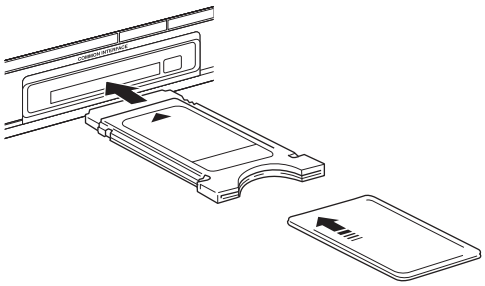
Inserting a CA module

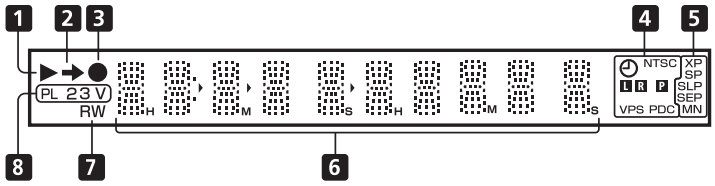
The Common Interface card slot is located on the front panel of the recorder.

- **Insert the CA module into the card slot as far as it will go.**



The Common Interface card slot accepts Type I and Type II PC Cards (PCMCIA cards).

[4] Display



1 ▶
Lights during playback; blinks when playback is paused.

2 ➡
Lights when copying.

3 ●
Lights during recording; blinks when recording is paused.

4 🕘
Lights when a timer recording has been set. (Indicator blinks if the timer has been set to DVD but there isn't a recordable disc loaded, or the timer has been set to record to the HDD but the HDD is not recordable.)

NTSC
Lights when the video output signal format is NTSC.

L R
Indicates which channels of a bilingual broadcast are recorded.

P
Lights when the component video output is set to progressive scan.

VPS/PDC
Lights when receiving a VPS/PDC broadcast during a VPS/PDC-enabled timer recording.

5 Recording quality indicators

XP
Lights when the recording mode is set to **XP** (high quality).

SP
Lights when the recording mode is set to **SP** (standard play).

LP/SLP
Lights when the recording mode is set to **LP** (long play) or **SLP** (super-long play).

EP/SEP
Lights when the recording mode is set to **EP** (extended play) or **SEP** (super-extended play).

MN
Lights when the recording mode is set to **MN** (manual recording level) mode.

6 Character display

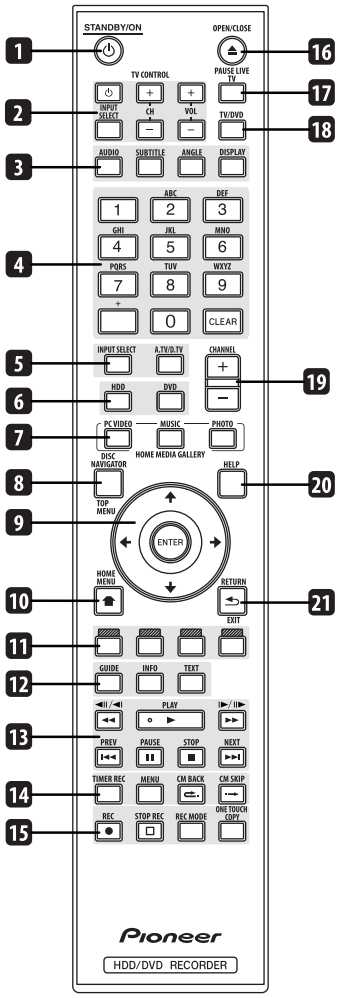
7 R/RW
Lights when a recordable DVD-R or DVD-RW disc is loaded.

8 PL
Lights when a VR mode disc is loaded and the recorder is in Play List mode.

2 3
Shows the remote control mode (if nothing is displayed, the remote control mode is 1).

V
Lights when an unfinalized Video mode disc is loaded.

[5] Remote Control Unit



1 ⏻ STANDBY/ON

Press to switch the recorder on/into standby.

2 TV CONTROL buttons

After setting up, use these controls to control your TV.

3 AUDIO

Press to change the audio language or channel. (When the recorder is stopped, press to change the tuner audio.)

SUBTITLE

Press to display/change the subtitles included in multilingual DVD-Video discs.

While watching D.TV, press to change the D.TV subtitles.

ANGLE

Press to switch camera angles on discs with multi-angle scenes.

DISPLAY

Displays/changes the on-screen information displays.

4 Number buttons, CLEAR, +

Use the number buttons for track/chapter/title selection; channel selection, and so on. The same buttons can also be used to enter names for titles, discs and so on.

Use **CLEAR** to clear an entry and start again.

5 INPUT SELECT

Press to change the input to use for recording.

A.TV/D.TV

Press to switch between analog TV antenna input and digital TV antenna input. The **A.TV** and **D.TV** indicators on the front panel show which is selected.

6 HDD

Press to select the hard disk (HDD) for recording and playback.

DVD

Press to select DVD for recording and playback.

7 HOME MEDIA GALLERY

Files stored on the HDD can easily be played using these buttons.

PC VIDEO

Press to play DivX files you have not yet viewed.

MUSIC

Press to play music files in random order.

PHOTO

Press to play JPEG files in random order.

8 DISC NAVIGATOR / TOP MENU

Press to display the Disc Navigator screen, or the top menu if a DVD-Video or finalized DVD-R/-RW (Video) disc is loaded.

9 ⬆/⬇/⬅/➡ and ENTER

Used to navigate all on-screen displays. Press **ENTER** to select the currently highlighted option.

While watching D.TV press **ENTER** to display the Channel List screen.

10 HOME MENU

Press to display the Home Menu, from which you can navigate all the functions of the recorder.

11 Colour buttons (RED, GREEN, YELLOW, BLUE)

Use when an EPG screen is displayed or when tuned to a data channel of a digital broadcast. The function of each button will be described on-screen, and changes depending on the screen being displayed.

12 GUIDE

Press to display the EPG screen; press again to exit.

INFO

While watching D.TV, press to display the information banner.

Press to see additional information for the highlighted item in the EPG.

TEXT

Press to display Teletext information (in European countries except the UK) or to start the MHEG application display (UK only) if available during digital broadcasts.

13 Playback controls

◄◄ ►►

Press to start reverse or forward scanning. Press again to change the speed.

◄II/◄I I►/II►

While paused, press and hold to start slow-motion playback. Press repeatedly to change the playback speed.

While paused, press to advance a single frame in either direction.

When GUIDE Plus+® is displayed, use to display the previous/next day.

► PLAY

Press to start playback.

I◄◄ PREV ►►I NEXT

Press to skip to the previous or next title/chapter/track; or to display the previous or next menu page.

When GUIDE Plus+® is displayed, use to display the previous/next page.

II PAUSE

Press to pause playback or recording.

■ STOP

Press to stop playback.

14 TIMER REC

Press to set a timer recording.

MENU

Press to display the disc menu if a DVD-Video, finalized DVD-R/-RW (Video mode) or finalized DVD+R/+RW disc is loaded.

When in the GUIDE Plus+® system, use to jump directly to the Menu bar.

CM BACK (commercial back)

Press repeatedly to skip progressively backward through the video playing.

CM SKIP (commercial skip)

Press repeatedly to skip progressively forward through the video playing.

15 Recording controls

● REC

Press to start recording. Press repeatedly to set the recording time in blocks of 30 mins.

When the **RED** Action button is visible in a GUIDE Plus+® screen, use for One-Button-Record.

□ STOP REC

Press to stop recording.

REC MODE
Press repeatedly to change the recording mode (picture quality).

ONE TOUCH COPY
Press to start One Touch Copy of the currently playing title to DVD or the HDD.

16 ⏏ OPEN/CLOSE
Press to open/close the disc tray.

17 PAUSE LIVE TV
Press to start recording the current TV channel, but with playback paused, effectively pausing the broadcast.

18 TV/DVD
Press to switch between 'TV mode', in which you get the picture and sound from the TV's tuner, and 'DVD mode', in which you get picture and sound from the recorder's tuner (or an external input).

19 CHANNEL +/–
Press to change the channel of the built-in TV tuner.

20 HELP
Press for help on how to use the current GUI screen.

21 RETURN/EXIT
Press to go back one level in the on-screen menu or display.

Also press to exit the MHEG application.

3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

To keep the product quality after servicing, confirm recommended check points shown below.

No.	Procedures	Item to be checked
1	Confirm the firmware version on the first screen on Service Mode. Also check the compatibility of each firmware (OK or NG).	The version of each firmware must be the latest. All of firmware compatibility must be "OK". Update firmware to the latest one, if it is not the latest or the compatibility is "NG".
2	Confirm whether the customer complain has been solved. If the customer complain occurs with the specific disc, use it for the operation check.	The customer complain must not be reappeared. Video, audio and operations must be normal.
3	Perform the HDD physical test (Self-Test on HDD check mode).	"NG" must not be appeared.
4	Confirm playback error rates at the innermost and outermost tracks by using the following disc. DVD test disc (GGV1025)	The error rates must be less than 8.0e-4.
5	Record from the tuner (or an external source) to the HDD for 1 minute. After that, play back the content.	Video, audio and operations must be normal.
6	Copy the recorded content on the HDD in the previous step to a DVD-RW disc. After that, play back the disc.	Video, audio and operations must be normal.
7	Confirm the user setting, and whether the test-recorded content have been deleted.	Be sure to delete the test-recorded content on the HDD.
8	Check the appearance of the product.	No scratches or dirt on its appearance after receiving it for service.

See the table below for the items to be checked regarding video and audio:

Items to be checked regarding video	Item to be checked regarding audio
Block noise	Distortion
Horizontal noise	Noise
Dot noise	Volume too low
Disturbed image (video jumpiness)	Volume too high
Too dark	Volume fluctuating
Too bright	Sound interrupted
Mottled color	

[1] Cleaning

Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

Position to be cleaned	Cleaning tools
Pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

Position to be cleaned	Cleaning tools
Fans	Cleaning paper : GED-008

[2] Necessary Procedure List When Replacing Assys

Following is the surely necessary procedures and the product state after changing, when replacing next ASSYs.

Replaced ASSY	Necessary setting	State after replacing	
		User setting	HDD contents
MAIN ASSY	1. Model setting 2. LD power adjustment 3. CPRM setting 4. Firmware update	×	○
TUSB ASSY	1. Model setting 2. CPRM setting 3. Firmware update	×	○
LOADER ASSY	1. LD power adjustment	○	○
HDD	1. CPRM setting 2.Gracenote Database update	○	×

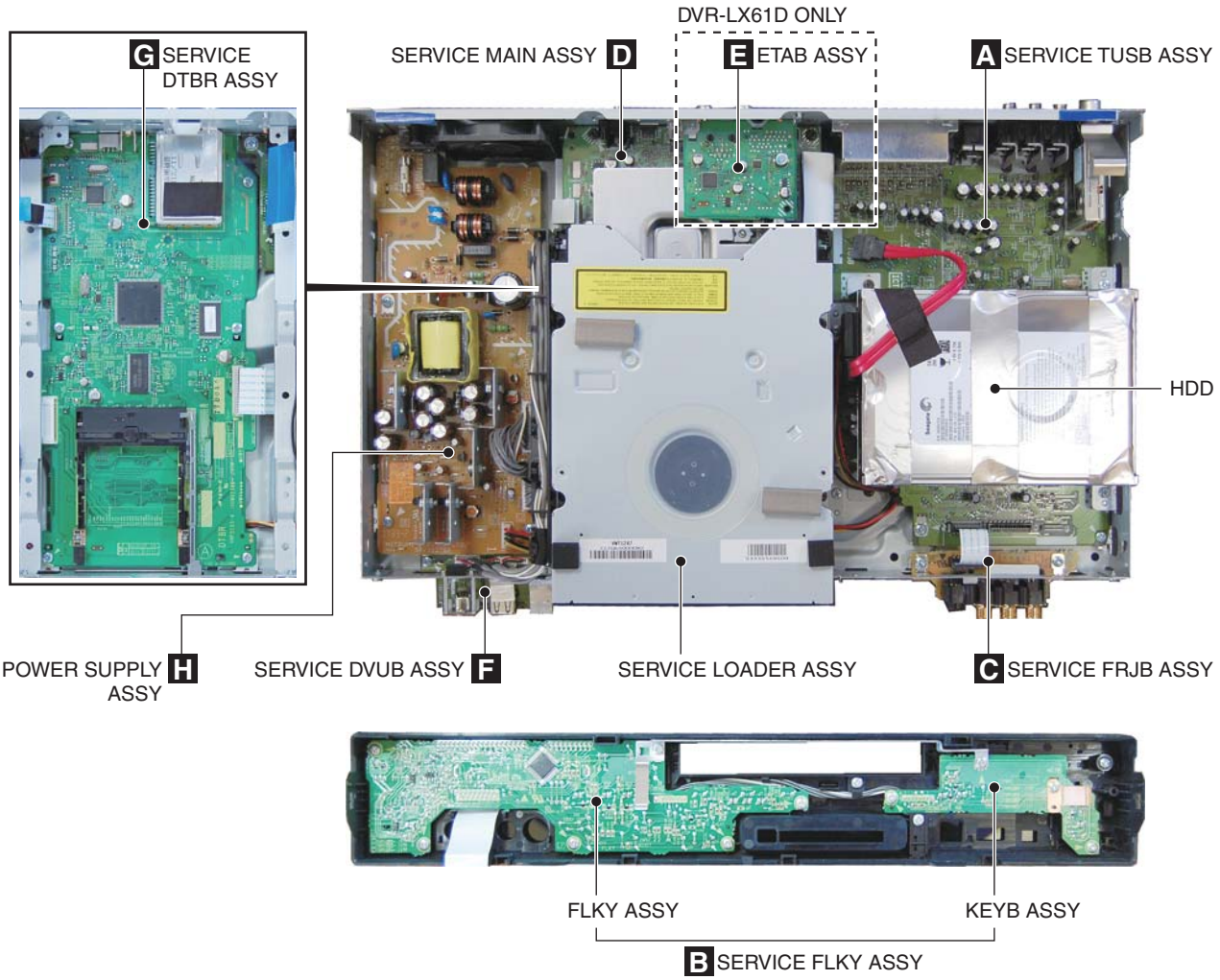
3.2 QUICK REFERENCE

Description of work	Procedure	Jigs
LD power adjustment	[ESC]+[CX]+[1]+[0]	GGF1381 : Service Remote Control Unit
		GGV1054 : CD-ROM (CDT-313)
		GGV1036 : DVD-ROM DL (DVDT-002)
		GGV1278 : Blank DVD-R (That's DR-C12WTY5PA)
		GGV1282 : Blank DVD-RW (JVC VD-W120XH5)
		GGV1284 : Blank DVD-RAM (maxell DRM120C.1P5S)
ID input	[ESC]+[STEREO]	GGF1381 : Service Remote Control Unit
		GGV1321 : ID disc
Firmware update	[REC STOP]+[PLAY]	Update disc
Version check	[ESC]+[DISP]	GGF1381 : Service Remote Control Unit
Error Rate Measurement	[ESC]+[DISP]+[DIG/ANA] × twice	GGF1381 : Service Remote Control Unit
		Operation check disc (See remarks)
HDD Check Mode	[ESC]+[CX]+[0]+[1]	GGF1381 : Service Remote Control Unit
Indication of VR-playback-related error log	[ESC]+[DISP]+[5]+[DIG/ANA]	GGF1381 : Service Remote Control Unit
Indication of VR-recording-related error log	[ESC]+[DISP]+[4]+[DIG/ANA] × 3times	GGF1381 : Service Remote Control Unit

Remarks

Disc for check of recording/playback operations (Note) When judging the drive quality, make sure to use the operation check disc.	Operation check discs (manufacturers and model numbers)	Error rate threshold
	GGV1278 : Blank DVD-R (That's DR-C12WTY5PA)	3.3e-3 or below
	GGV1279 : Blank DVD-R DL (MCM VHR21YD1)	L0 : 3.3e-3 or below
		L1 : 3.3e-3 or below
	GGV1280 : Blank DVD+R (That's DR+120TY5PA)	3.3e-3 or below
	GGV1281 : Blank DVD+R DL (MCM VTR21N1)	L0 : 3.3e-3 or below
		L1 : 3.3e-3 or below
	GGV1189 : Blank DVD-RW (JVC VD-W120N10)	3.3e-3 or below
	GGV1282 : Blank DVD-RW [RW2] (JVC VD-W120XH5)	3.3e-3 or below
	GGV1283 : Blank DVD+RW (RICOH D4RWV-S3CW)	3.3e-3 or below
	GGV1284 : Blank DVD-RAM (maxell DRM120C.1P5S)	3.3e-3 or below
	GGV1036 : DVD-ROM DL (DVDT-002)	L0/L1 : 8.0e-4 or below
How to read error rate	X.Xe-Y Y: The bigger the better, X X: The smaller the better	
How to exit from Service Mode	[ESC]	

3.3 PCB LOCATIONS



NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
• For DVR-LX61D model			
	1	ETAB ASSY	VWV2344
NSP	1	TUJB ASSY	YWM1001
	2	SERVICE DVUB ASSY	YXX1001
	2	SERVICE TUSB ASSY	YXX1002
NSP	1	FLKB ASSY	YWM1004
	2	SERVICE FRJB ASSY	YXX1027
	2	SERVICE FLKY ASSY	YXX1006
NSP	1	DTBR ASSY	VWV2346
	2	SERVICE DTBR ASSY	VXX3319
NSP	1	SERVICE LOADER MAIN	VXU1016
	2	SERVICE MAIN ASSY	VXX3320
	2	SERVICE LOADER ASSY	VXX3306
⚠	1	POWER SUPPLY ASSY	VWR1405
	1	HDD	VXF1131

Mark	No.	Description	Part No.
• For DVR-560HX model			
NSP	1	TUJB ASSY	YWM1001
	2	SERVICE DVUB ASSY	YXX1001
	2	SERVICE TUSB ASSY	YXX1002
NSP	1	FLKB ASSY	YWM1003
	2	SERVICE FRJB ASSY	YXX1004
	2	SERVICE FLKY ASSY	YXX1005
NSP	1	DTBR ASSY	VWV2346
	2	SERVICE DTBR ASSY	VXX3319
NSP	1	SERVICE LOADER MAIN	VXU1015
	2	SERVICE MAIN ASSY	VXX3321
	2	SERVICE LOADER ASSY	VXX3306
⚠	1	POWER SUPPLY ASSY	VWR1405
	1	HDD	VXF1152

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3.4 JIGS LIST

[1] Jigs List

Name	Jig No.	Remarks
Service Remote Control Unit	GGF1381	Adjustment, diagnosis
DVD Test Disc (DVD-Video)	GGV1025	Check of DVD-Video
DVD Recorder Data Disc Type2	———— (*)	Diagnosis (ID data setting)
FFC Cable (40p)	GGD1436	Diagnosis of MAIN Assy
FFC Cable (24p)	GGD1421	Diagnosis of MAIN Assy
CD-ROM	GGV1054	LD Power Adjustment
DVD-ROM DL	GGV1036	LD Power Adjustment
Blank DVD-R	GGV1278	LD Power Adjustment
Blank DVD-RW	GGV1282	LD Power Adjustment
Blank DVD-RAM	GGV1284	LD Power Adjustment
Disc Ejection Rod	GGF1529	Emergency Disc Ejection
USB Cable	GGD1445	USB Check Mode
RS-232C I/F Jig	GGF1348	Serial Update
FFC Cable (7P)	VDA1681	Serial Update

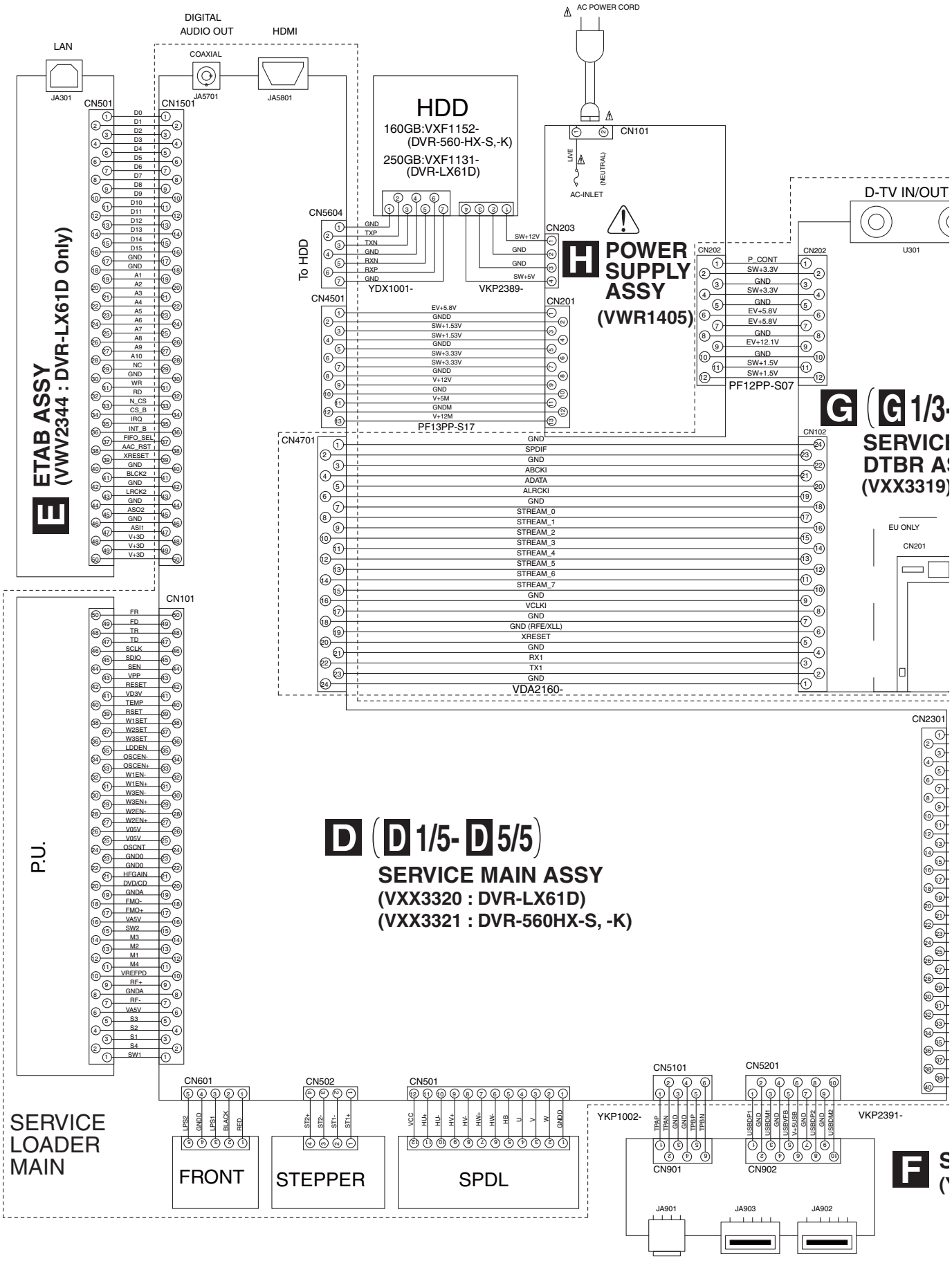
(*) Be sure to use the latest disc (Type 2).
In Apr, 2008, the latest disc is GGV1321.

[2] Lubricants and Glues List

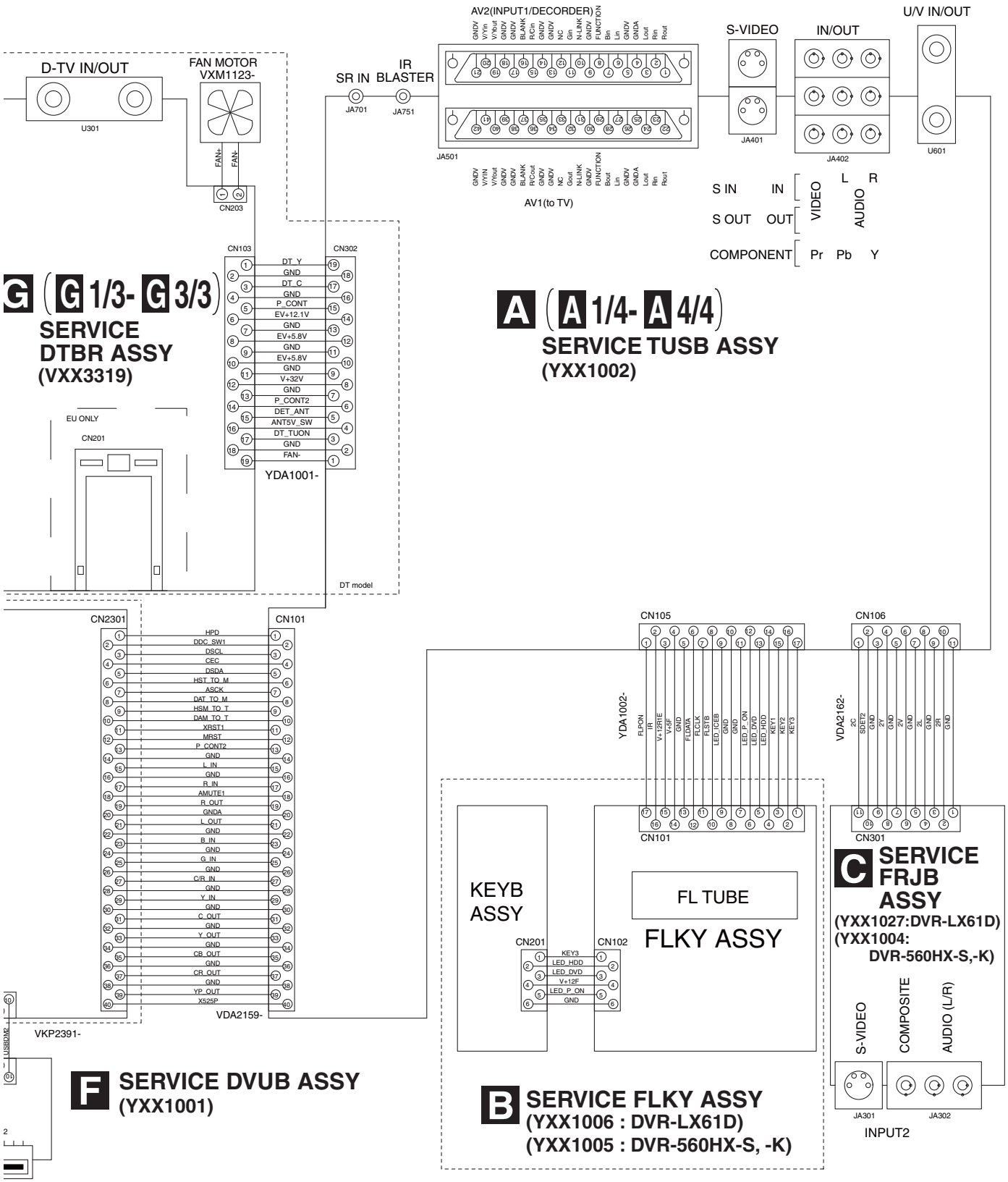
Name	Lubricants and Glues No.	Remarks
Hanarl	GEM1041	refer to "FRONT PANEL SECTION"

4. BLOCK DIAGRAM

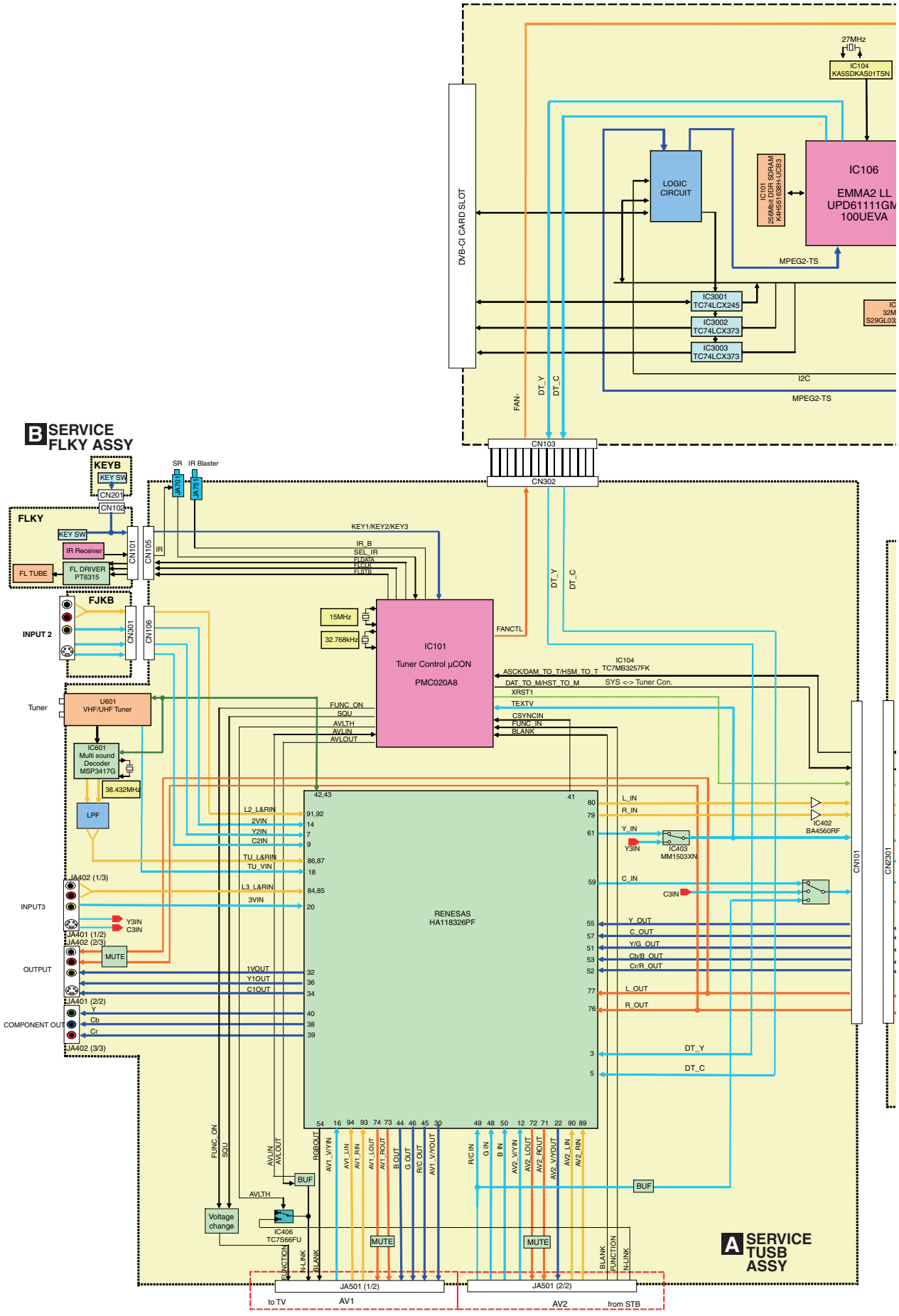
4.1 OVERALL WIRING DIAGRAM

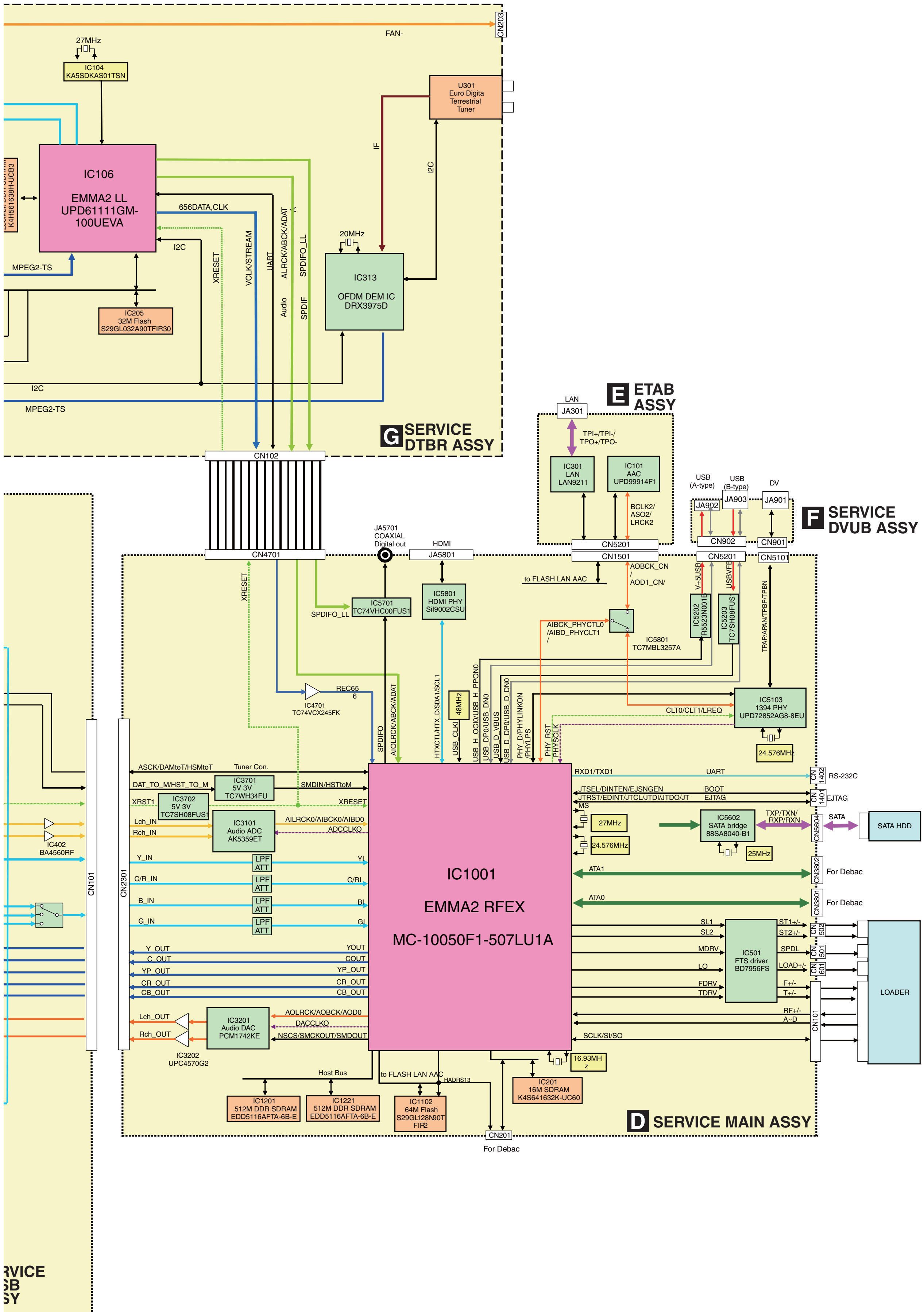


When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
: The power supply is shown with the marked box.



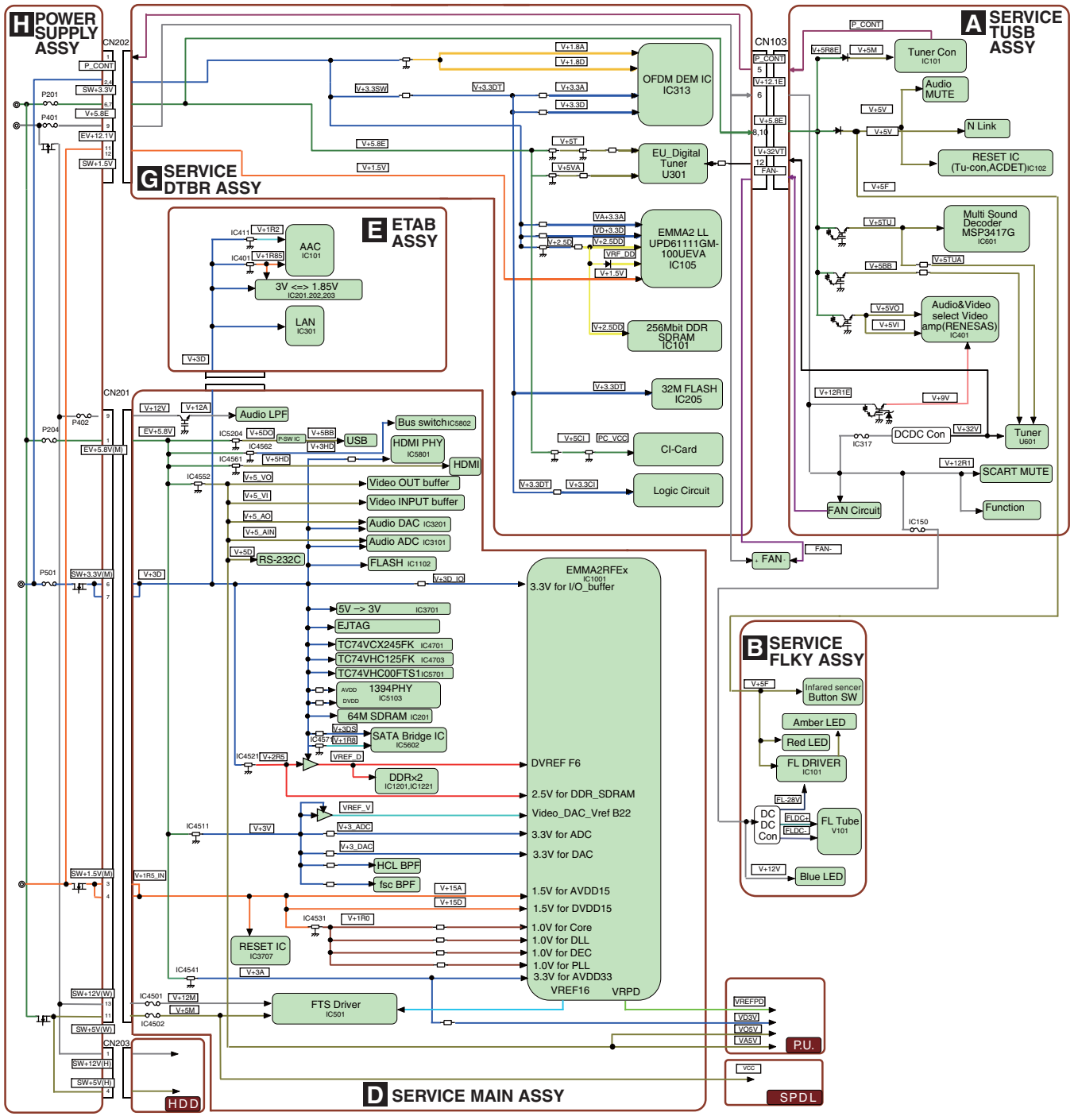
4.2 OVERALL BLOCK DIAGRAM





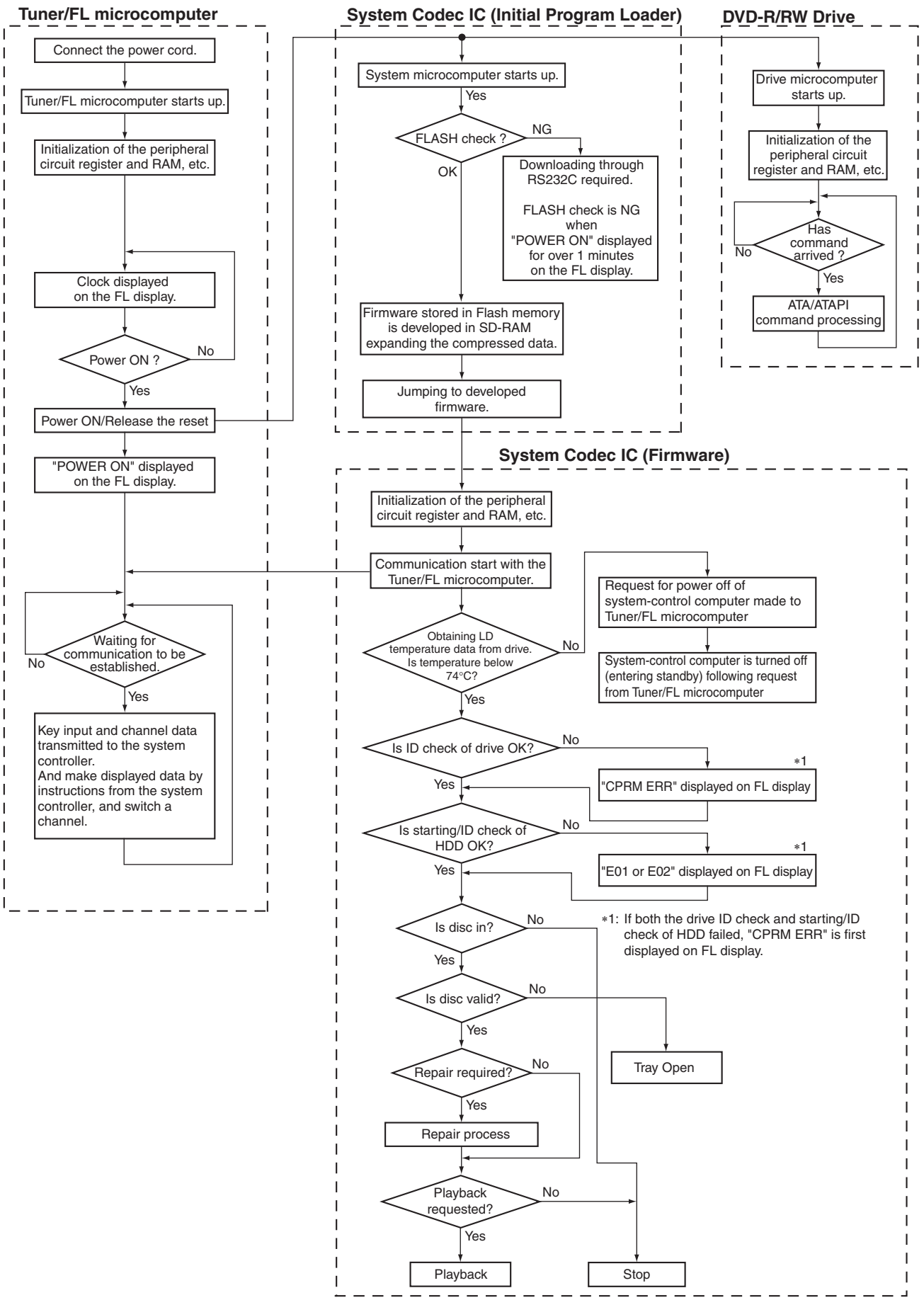
G SERVICE DTBR ASSY
IC106
EMMA2 LL
UPD61111GM-100UEVA
IC104
KA5SDKAS01TSN
27MHz
U301
Euro Digita Terrestrial Tuner
IC313
OFDM DEM IC
DRX3975D
20MHz
IC205
32M Flash
S29GL032A90TFIR30
FAN-
CN203
IF
I2C
656DATA,CLK
MPEG2-TS
XRESET
VCLK/STREAM
UART
ALRCK/ABCK/ADAT
SPDIFO_LL
Audio
SPDIF
CN102
CN4701
E ETAB ASSY
LAN
JA301
TPI+/TPI-/
TPO+/TPO-
IC301
LAN
LAN9211
IC101
AAC
UPD99914F1
BCLK2/
ASO2/
LRCK2
CN5201
CN1501
F SERVICE DVUB ASSY
USB (A-type)
USB (B-type)
DV
JA902
JA903
JA901
CN902
CN901
CN5201
CN5101
JA5701
COAXIAL
Digital out
HDMI
JA5801
IC5701
TC74VHC00FUS1
SPDIFO_LL
IC5801
HDMI PHY
SiI9002CSU
to FLASH LAN AAC
AOBCK_CN
AOD1_CN/
AIBCK_PHYCTL0
/AIBD_PHYCLT1
IC5801
TC7MBL3257A
IC5202
R5523N001B
IC5203
TC7SH08FUS
V+5USB
USBVFB
TPAP/APAN/TPBP/TPBN
IC5103
1394 PHY
UPD72852AG8-8EU
CLT0/CLT1/LREQ
24.576MHz
IC4701
TC74VCX245FK
REC656
XRESET
SPDIFO
AIOLRCK/ABCK/ADAT
HTXCTL/HTX_D/SDA1/SCL1
USB_CLK
48MHz
USB_H_OC0/USB_H_PPON0
USB_DP0/USB_DN0
USB_D_VBUS
USB_D_DP0/USB_D_DN0
PHY_D/PHYLINKON
/PHYLPS
PHY_RST
PHYSCLK
IC1001
EMMA2 RFEX
MC-10050F1-507LU1A
ASCK/DAMtoT/HSMtoT
Tuner Con.
DAT_TO_M/HST_TO_M
IC3701
5V 3V
TC7WH34FU
SMDIN/HSTtoM
XRST1
IC3702
5V 3V
TC7SH08FUS1
XRESET
Lch_IN
Rch_IN
IC3101
Audio ADC
AK5359ET
AILRCK0/AIBCK0/AIBD0
ADCCLK0
IC402
BA4560RF
Y_IN
C/R_IN
B_IN
G_IN
LPF ATT
YI
C/RI
BI
GI
Y_OUT
C_OUT
YP_OUT
CR_OUT
CB_OUT
YOUT
COUT
YP_OUT
CR_OUT
CB_OUT
CN101
CN2301
Lch_OUT
Rch_OUT
IC3201
Audio DAC
PCM1742KE
AOLRCK/AOBCK/AOD0
DACCLK0
NSCS/SMCKOUT/SMDOUT
IC3202
UPC4570G2
Host Bus
to FLASH LAN AAC
HADRS13
IC1201
512M DDR SDRAM
EDD5116AFTA-6B-E
IC1221
512M DDR SDRAM
EDD5116AFTA-6B-E
IC1102
64M Flash
S29GL128N90T
FIR2
IC201
16M SDRAM
K4S641632K-UC60
16.93MHz
CN201
For Debac
RXD1/TXD1
UART
CN1402
RS-232C
JTSEL/DINTEN/EJSNGEN
JTRST/EDINT/JTCL/JTDI/JTDO/JT
MS
BOOT
EJTAG
CN1401
27MHz
24.576MHz
IC5602
SATA bridge
88SA8040-B1
25MHz
TXP/TXN/
RXP/RXN
SATA
CN5604
SATA HDD
ATA1
CN3802
For Debac
ATA0
CN3801
For Debac
SL1
SL2
MDRV
LO
FDRV
TDRV
IC501
FTS driver
BD7956FS
ST1+/-
ST2+/-
SPDL
LOAD+/-
F+/-
T+/-
RF+/-
A~D
CN502
CN501
CN601
CN101
LOADER
SCLK/SI/SO
D SERVICE MAIN ASSY

4.3 POWER BLOCK DIAGRAM

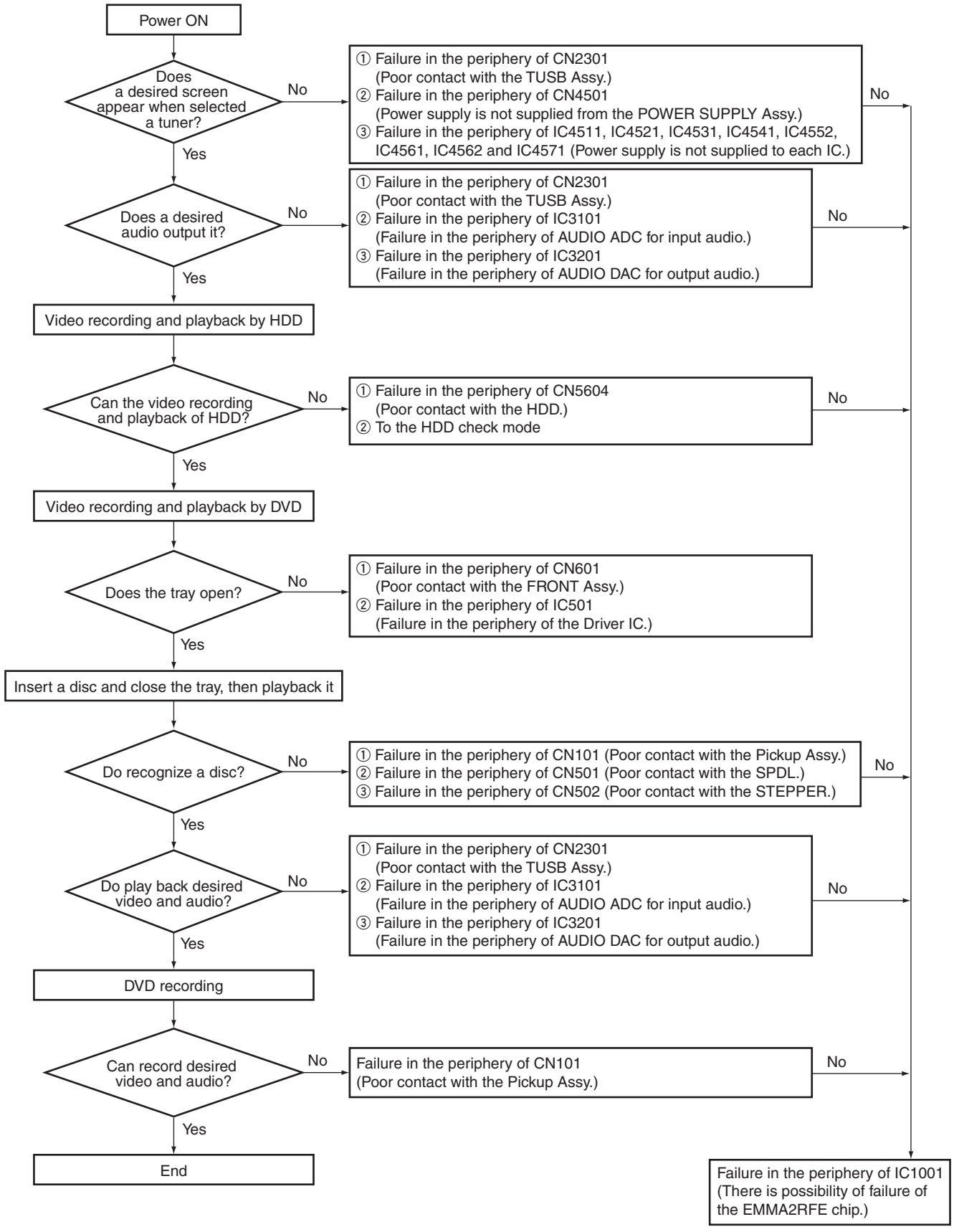


5. DIAGNOSIS

5.1 SETUP SEQUENCE



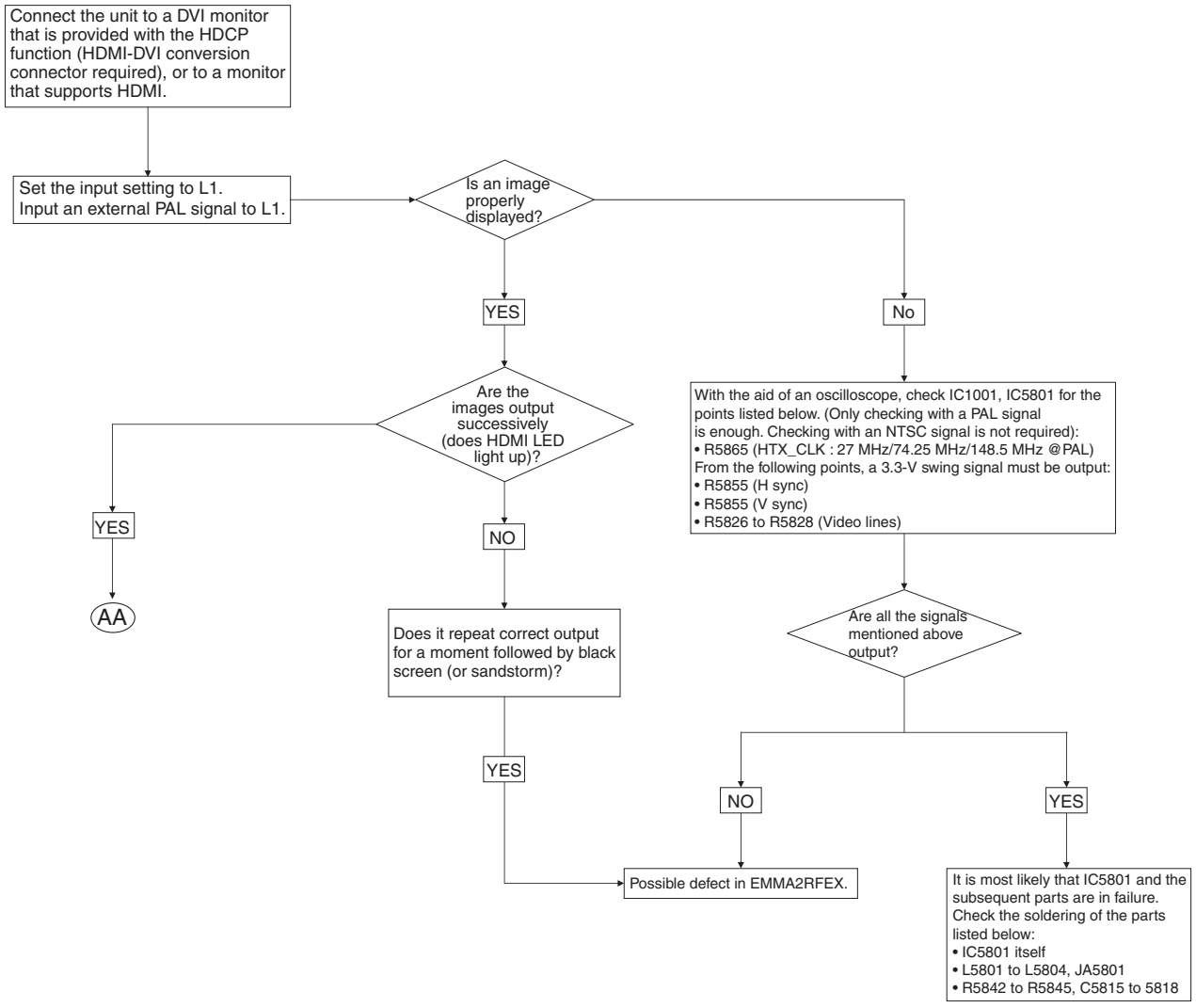
5.2 DIAGNOSIS OF THE MAIN ASSY

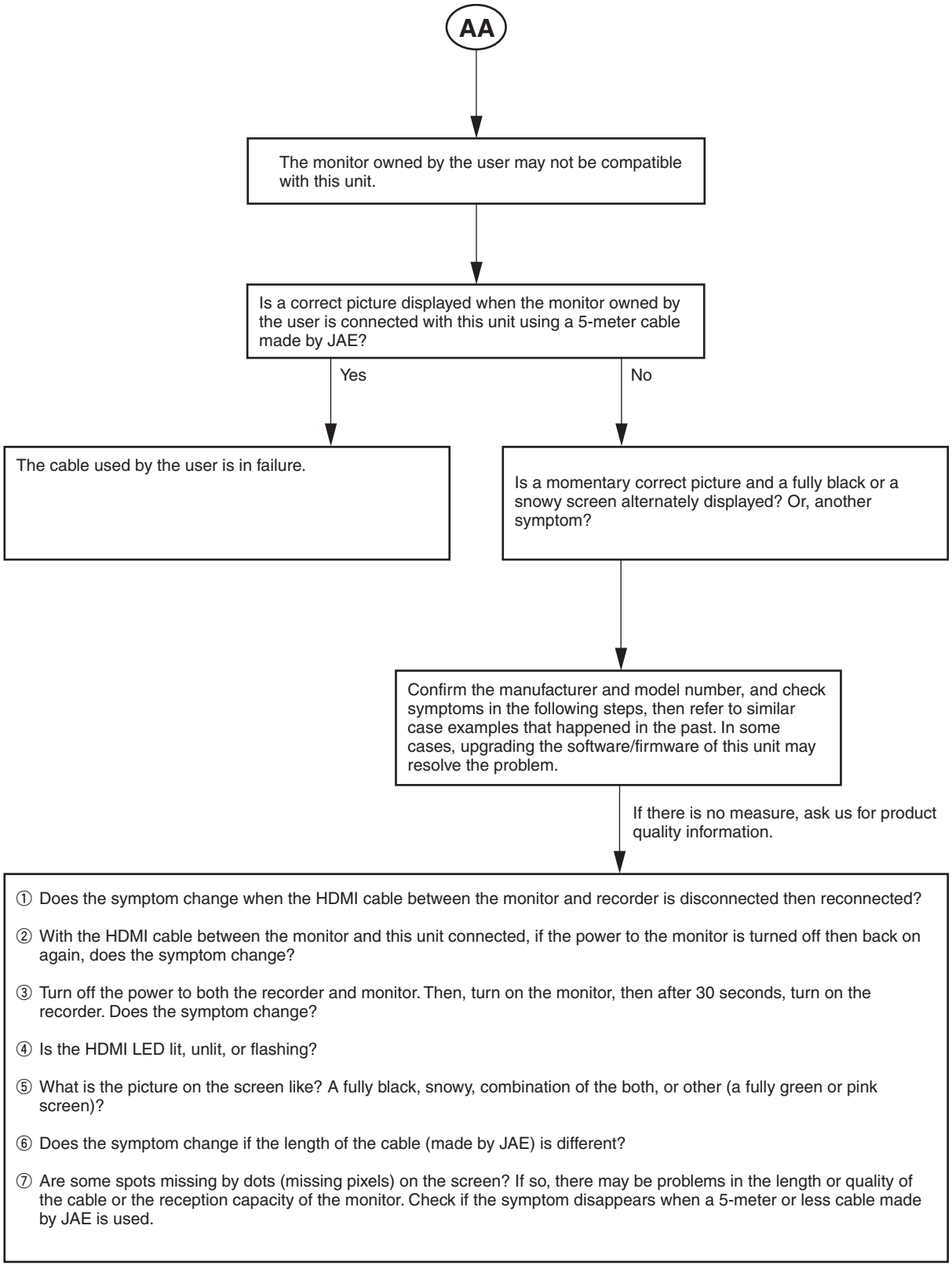


[1] Diagnosis of the HDMI Block

1. In a case when only the HDMI video is not outputted

*This flowchart shows how to confirm the output from the HDMI block on the basis that an external input signal to the L1 connector is through-output from the analog output connector properly.




AA
The monitor owned by the user may not be compatible with this unit.
Is a correct picture displayed when the monitor owned by the user is connected with this unit using a 5-meter cable made by JAE?
Yes
No
The cable used by the user is in failure.
Is a momentary correct picture and a fully black or a snowy screen alternately displayed? Or, another symptom?
Confirm the manufacturer and model number, and check symptoms in the following steps, then refer to similar case examples that happened in the past. In some cases, upgrading the software/firmware of this unit may resolve the problem.
If there is no measure, ask us for product quality information.
① Does the symptom change when the HDMI cable between the monitor and recorder is disconnected then reconnected?
② With the HDMI cable between the monitor and this unit connected, if the power to the monitor is turned off then back on again, does the symptom change?
③ Turn off the power to both the recorder and monitor. Then, turn on the monitor, then after 30 seconds, turn on the recorder. Does the symptom change?
④ Is the HDMI LED lit, unlit, or flashing?
⑤ What is the picture on the screen like? A fully black, snowy, combination of the both, or other (a fully green or pink screen)?
⑥ Does the symptom change if the length of the cable (made by JAE) is different?
⑦ Are some spots missing by dots (missing pixels) on the screen? If so, there may be problems in the length or quality of the cable or the reception capacity of the monitor. Check if the symptom disappears when a 5-meter or less cable made by JAE is used.

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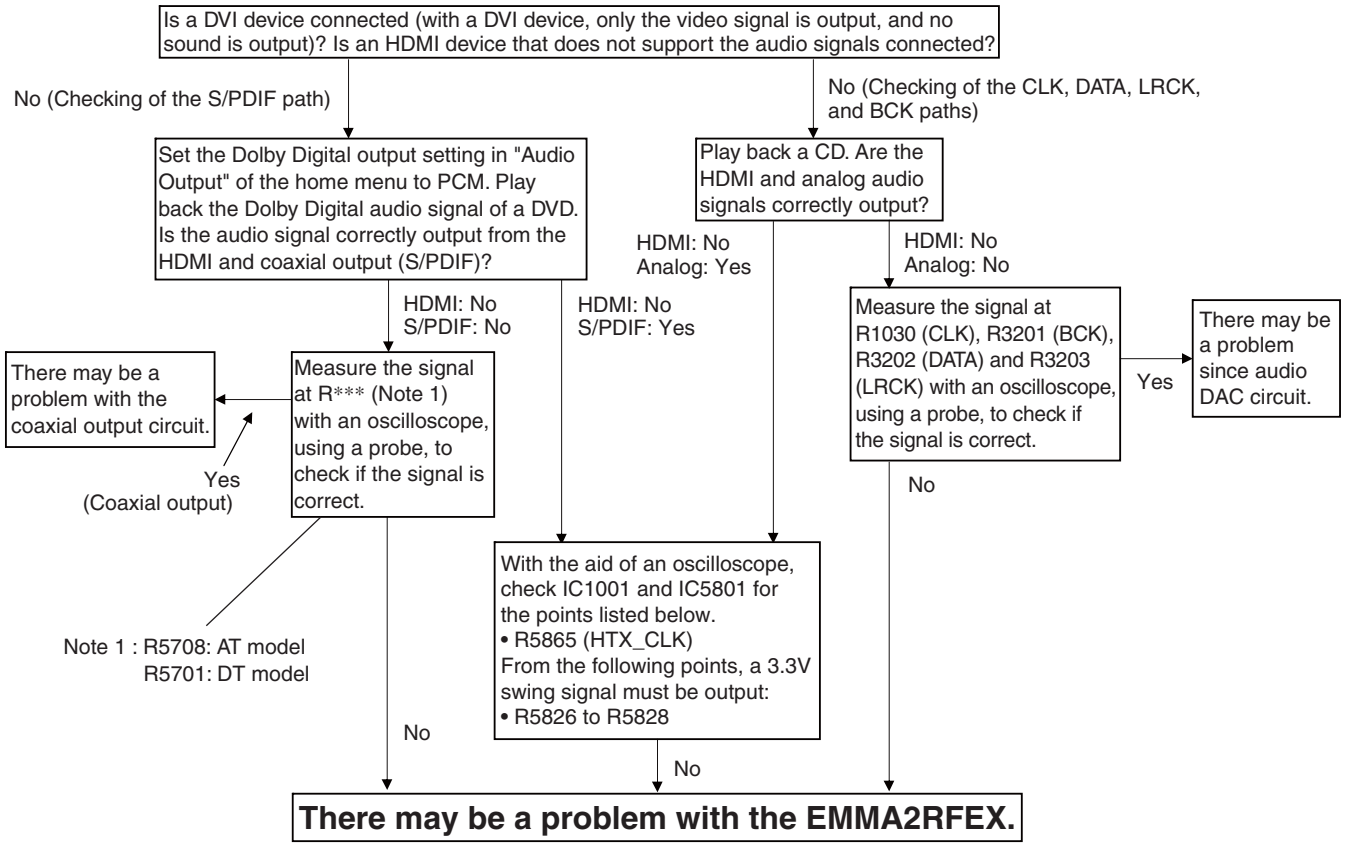
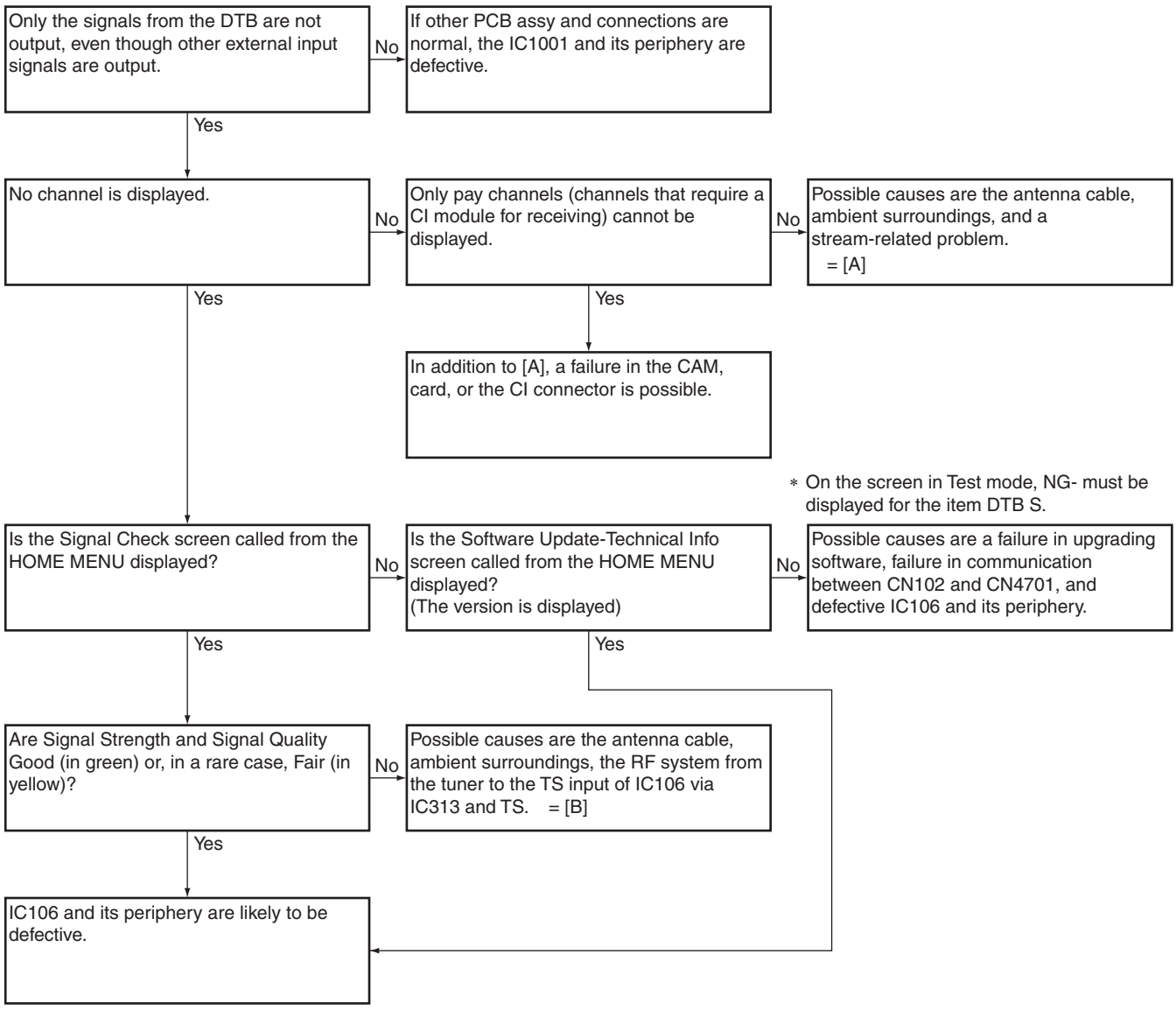
2. In a case when only the HDMI audio is not outputted



5.3 DIAGNOSIS OF THE DTBR ASSY

1. The DTB (Digital Terrestrial Block) does not function



- Except when the local regulator is in failure, a power failure (blown a fuse, etc.) makes other input systems abnormal.
- If mosaic images are often displayed, check the items in [B].

6. SERVICE MODE

◆ Overview and Purposes

To be used to check the status of the product and to collect the information for failure diagnosis.
The following information to be used for servicing is displayed:
[1] First screen : Version, HDD information, etc.
[2] Second screen : ATA/ATAPI debug screen (Writer information)
[4] Fourth screen : VR-recording-related error logs
[5] Fifth screen : VR-playback-related error logs

Each screen has sublevel screens.

[Note] After entering any Service mode screen, to shift to another Service mode screen, first quit that Service mode screen then enter another Service mode screen.

◆ Service Mode Map

Category	Mode	Procedure	Necessary When
Adjustment	Model Setting	Automatically start up when necessary	After replacing M/B or T/B
Adjustment	LD Power Adjustment	[ESC] + [CX] + [1] + [0]	After replacing M/B or Loader
Adjustment	CPRM ID Number/Data Setting	[ESC] + [STEREO]	After replacing M/B or HDD
Adjustment	Firmware Update	[REC STOP] + [OPEN/CLOSE]	After replacing M/B or T/B
Adjustment	Gracenote Database Update	[REC STOP] + [OPEN/CLOSE]	After replacing HDD
Adjustment	Video Adjustment for Specific Area	[ESC] + [CHP/TIM]	As needed
Adjustment	OSD Filter Setting	[ESC] + [DISP] + [DIG/ANA] x4	As needed
Diagnosis	Version Info, etc.	[ESC] + [DISP]	
Diagnosis	RF Level	[ESC] + [DISP] + [DIG/ANA]	
Diagnosis	Error Rate	[ESC] + [DISP] + [DIG/ANA] x2	
Diagnosis	HDD Info	[ESC] + [DISP] + [DIG/ANA] x3	
Diagnosis	Writer Maintenance Info	[ESC] + [DISP] + [2] + [DIG/ANA] x2 + [SEARCH]	
Diagnosis	LD Degradation Check	[ESC] + [DISP] + [2] + [DIG/ANA] x3 + [SEARCH]	
Diagnosis	DV Info	[ESC] + [DISP] + [3]	
Diagnosis	VR Recording Error Log	[ESC] + [DISP] + [4] + [DIG/ANA] x3	
Diagnosis	VR Playback Error Log	[ESC] + [DISP] + [5] + [DIG/ANA]	
Diagnosis	EPG Info	[ESC] + [DISP] + [7]	Europe model only
Diagnosis	AAC Info	[ESC] + [DISP] + [+10] + [1]	
Diagnosis	HDMI Info	[ESC] + [DISP] + [+10] x2 + [4]	
Diagnosis	Ethernet Info	[ESC] + [DISP] + [+10] x2 + [7]	
Diagnosis	HDD Check	[ESC] + [CX] + [0] + [1]	
Diagnosis	USB Check	[ESC] + <TIMER/REC>	
Diagnosis	DVD Aging Mode	<DVD> + [ESC] + [REP.B] + [PLAY]	
Diagnosis	HDD Aging Mode	<HDD> + [ESC] + [REP.B] + [PLAY]	

6.1 VERSION INFORMATION, ETC. (FIRST SCREEN)

[Purposes]

To check the versions of the system control computer, TUNER microcomputer, and firmware for the drive, simple measurement of the RF level for the U/V tuner, results of the simple error rate measurement, HDD information, and OSD Filter setting

[Tools to be used]

Remote control unit for servicing (GGF1381)

Aluminum-coated test disc (GGV1025)

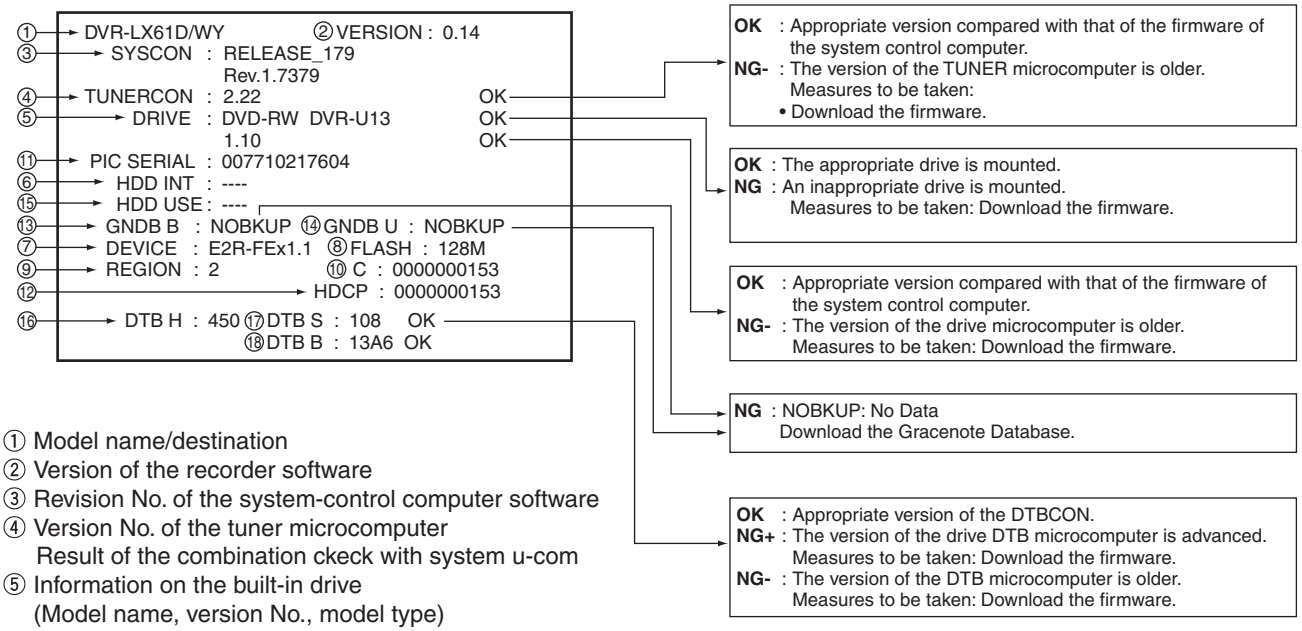
[How to enter] While the GUI screen is not displayed, press the ESC then DISP keys.

How to enter and change subscreens of the first screen: While the first screen is displayed, press the DIG/ANA key repeatedly until your desired subscreen is displayed. The subscreens change cyclically.

[How to quit] Press the ESC key.

[Description]

(1) First screen



① Model name/destination
② Version of the recorder software
③ Revision No. of the system-control computer software
④ Version No. of the tuner microcomputer
Result of the combination ckeck with system u-com
⑤ Information on the built-in drive
(Model name, version No., model type)
⑥ Physical capacity of the HDD
⑦ DEVICE information (EMMA type, ES No.)
⑧ FLASH ROM information
⑨ Region No.
⑩ CPRM information (CPRM key No.)
⑪ PICUP SERIAL No.
⑫ HDCP information (HDMI authentication key)
Same number as that for CPRM.
⑬ Gracenote Database information
⑭ Gracenote Database Update information
⑮ Operating capacity of the HDD
⑯ DTB hardware information (Version)
08EU : 450
⑰ DTB u-com information (Version)
⑱ DTB software information (Check Sum)

• Details on HDD data are described below:

HDD : WDC10234564 # 160

- Capacity of the HDD (unit: Gbytes)
- HDD identification error indication
- Name of manufacturer, part No. by manufacturer

If any abnormality exists in HDD connection, the indications shown in Table 1 below are displayed.

Table 1: HDD recognition status represented by the HDD data display

HDD identification conditions	Example of HDD data to be displayed	Remarks
Failure in physical identification of HDD (no connection, defective HDD, interface error)	Blank space	• Check the connection to the SATA connector. • Replace the SATA flexible cable and connector. • Replace the HDD. • Replace the resistor in the SATA communication line.
Physical identification of HDD possible, but not identified (CPRM ID is not input.)	WDC 10234564 # 160	• Input the CPRM ID.
Physical identification of HDD possible, HDD identified, but failure in logical formatting	WDC 10234564 ! 160	"!" represents an HDD-recognition error. • Initialize the HDD or erase all titles.
Physical identification of HDD possible, HDD identified, and correct logical formatting (HDD correctly identified)	WDC 10234564 160	

If an error indication in the HDD data does not disappear even after the above measures were taken, refer to another sheet of "HDD Service Mode."

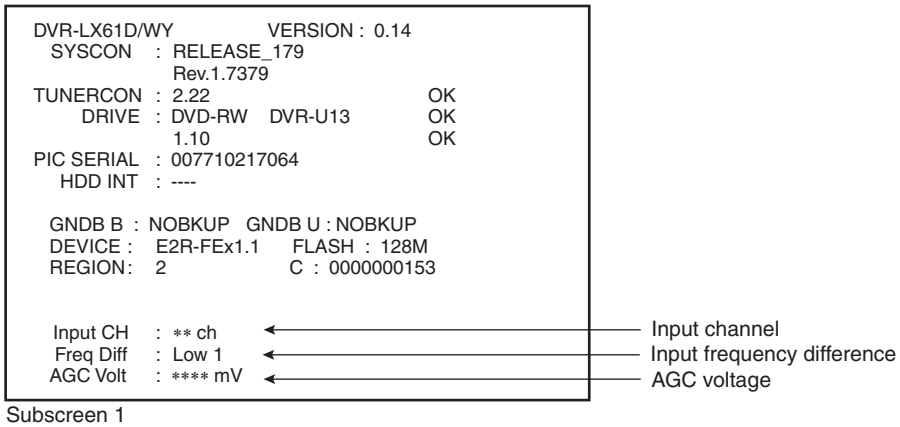
[1] Simple Diagnosis of the RF Level (Subscreen 1)

[Purposes] To check the RF signal of the U/V tuner by checking the input frequency difference and AGC voltage in this debug mode

[How to enter] While the User Setting display is displayed, press the ESC, DISP, then DIG/ANA keys, in that order.

[How to quit] Press the ESC key.

[Description]



Subscreen 1

1) Frequency Difference (Freq Diff)

How much tuning is off is monitored, as shown below:

Input Frequency	Display
Faraway	High 7
High (within 200kHz)	High 1~5
Just Tune	Center
Low (within 200kHz)	Low 1~5
Low (over 200kHz)	Low 7

2) AGC voltage (AGC Volt)

The gain controlled by the tuner is monitored to infer the input electric field intensity.
(The accuracy of inference differs depending on the product.)

	Field Intensity	AGC VOL
Intense field area (Clear image)	70 dBμ or more	3100 mV or less
Less intense field area (Noise may be generated.)	50 dBμ or more 70 dBμ or less	3100 - 4400mV
Weak field area (Much noise. EPG/VPS/PDC sometimes cannot be obtained.)	30 dBμ or more 50 dBμ or less	4400 mV or more (It is unable to discriminate under the weak field area.)
Very weak field area (Image damaged. EPG/VPS/PDC cannot be obtained.)	30 dBμ or less	4400 mV or more (It is unable to discriminate.)

Tips:

For good reception, the field intensity must be 50 dBμ or more (AGC Volt 4400 mV or less).
For accurate measurement, use a field intensity meter.

[2] Simple Error Rate Measurement (Subscreen 2)

[How to enter]
- While the User Operation screen is displayed, press the ESC then DISP keys, then the DIG/ANA key twice, in that order.
- While subscreen 1 of the first screen is displayed, press the DIG/ANA key.

[How to quit] Press the ESC key.

[Measurement procedures]

① Display subscreen 2.
② Load the Test disc (GGV1025).
③ Judge the results of the error rate measurement by referring to Table 1.

ERR RATE : *.*e-*

Subscreen 2

[Tips]

During VR mode playback, the average value of the past 10 VOBUs is displayed. During DVD-Video or Video mode playback, the average value of the past 256 sectors is displayed.
During VR mode playback, the speed ratio of the drive (/: normal, no indication: double speed) is also displayed.

Table 1: Thresholds when determining OK or Error

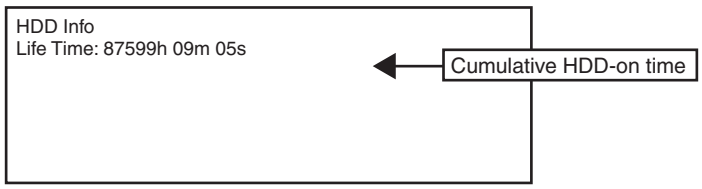
Disc type	Recording mode	Finalized or not finalized	Reference value
DVD-VIDEO	-	-	8.0×10^{-4}
DVD-R	Video mode	Finalized	3.3×10^{-3}
		Not finalized	3.3×10^{-3}
DVD-RW	Video mode	Finalized	3.3×10^{-3}
		Not finalized	3.3×10^{-3}

[3] HDD Information (Subscreen 3)

[How to enter]
- While the User Operation screen is displayed, press the ESC then DISP keys, then the DIG/ANA key three times, in that order.
- While subscreen 2 of the first screen is displayed, press the DIG/ANA key.

[How to quit] Press the ESC key.

[Mode description]



Subscreen 3

[Tips]

- **How the data on cumulative HDD-on time are processed in memory**

  Storage place:
  FLASH ROM

  Timing of referring to the data on cumulative HDD-on time:
  When the power is turned on, fails, the FLASH ROM is referred to.

  Timing of updating the data on cumulative HDD-on time:
  While the HDD is on, the data on cumulative HDD-on time in the RAM is updated every 3 seconds, and every time updating is executed the data are stored in the Backup SRAM. When the power is turned off, the data are stored in the FLASH ROM.

- **How to clear the data on cumulative HDD-on time**

  FLASH ROM:
  When the HDD Identification Setting is performed, the data on cumulative HDD-on time are automatically cleared. The HDD Identification Setting is automatically performed when the CPRM setting is performed on the CPRM setting screen (to display the CPRM setting screen, press the ESC then the STEREO keys).

  Notes:
  - The data on cumulative HDD-on time are not cleared when resetting to factory-preset values is performed.
  - The data on cumulative HDD-on time are not cleared when the system-control computer software is downloaded.

[4] OSD Filter Setting (Subscreen 4)

[Purpose] Depending on the monitor used, the character flicker on the OSD may stand out.
If a system, such as character flicker, appears on the monitor, select the filter response.

[Tools to be used]

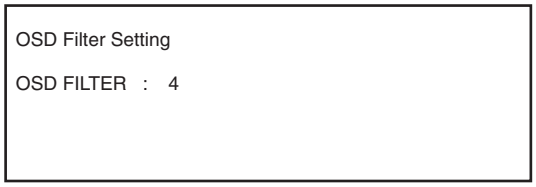
Remote control unit for servicing
(GGF1381)

[How to enter]
- While the User Operation screen is displayed, press the ESC then DISP keys, then the DIG/ANA key four times, in that order.
- While subscreen 3 of the first screen is displayed, press the DIG/ANA key.

[How to quit] Press the ESC key.

[Setting procedures]

① Display subscreen 4.
② Select the setting from the key operation table.



Subscreen 4

[Tips]

As the setting value becomes greater, jitter is reduced on a CRT display. However, as lines for characters appear thick, complex characters may become difficult to read. On the contrary, as the setting value becomes smaller, jitter increases on a CRT display. However, as lines for characters become sharper, complex characters become more legible.

Note: Use the remote control unit for servicing.
Note: A new setting becomes active as soon as it is made. As a new setting is stored in nonvolatile memory, it will be retrieved when the unit it turned on the next time.
Note: After the factory-preset values are downloaded, the setting value for the OSD Filter will be the default value (4).

[(Table 2) Key operation of OSD Filter setting]

Key	Operation	Setting value	Remarks
[Rev x 3], [SPEED+] [x 3 Fwd], [SPEED-]	Changing the setting value for the OSD Filter	0 - 4 (Default value: 4)	[Rev x 3], [SPEED+] : The setting value increases by 1. [x 3 Fwd], [SPEED-] : The setting value decreases by 1.
[CLEAR]	The setting value is reset to default.	–	
[ESC]	To exit the OSD Filter Setting and clear the screen (Appears the tuner screen.)	–	–

6.2 ATA/ATAPI DEBUG SCREEN (SECOND SCREEN)

[Purposes]

To be used as a rough guide to judge whether the pickup unit is all right or not

- Dirt on the pickup lens
- Degradation of the laser diodes for reading CDs and reading/writing to/from DVDs

[Tools to be used]

Remote control unit for servicing (GGF1381)

Aluminum-coated test disc (GGV1025)

[How to enter]

- While the User Operation display is displayed, press the ESC, DISP, then 2 keys, in that order.
- While any subscreen of the second screen is displayed, press the DIG/ANA key repeatedly. The subscreens change cyclically.

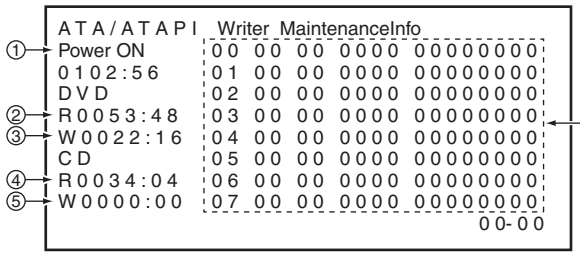
[How to quit] Press the ESC key.

[1] Writer Maintenance Information of ATA/ATAPI DEBUG OSD (Subscreen 3)

[How to enter] • While the User Operation screen is displayed, press the ESC, DISP then 2 keys, then the DIG/ANA key twice, in that order.

[How to quit] Press the ESC key.

[Procedures] Update the display by pressing the SEARCH key while subscreen 3 is displayed.



Error log for the Writer (Not for Service)

① Power-on time/cumulative power-on time
② Duration of emission of the laser diode (LD) for DVD-R/DVD while reading
③ Duration of emission of the LD for DVD-W/DVD while writing
④ Duration of emission of the LD for CD-R/CD while reading
⑤ Duration of emission of the LD for CD-W/CD while writing (This function is not used for this model.)

② If the total hours of duration of emission of the laser diode (LD) for DVDs while reading ② and that of emission of the LD for DVDs while writing ③ exceed 4,700 hours, the LDs may be degraded. Perform an LD degradation judgment, using subscreen 4.

[Tips]

MTTF hours for each LD
DVD: 4,700 hours
CD: 11,000 hours
The ATA/ATAPI Writer Maintenance Info is obtained each time the power is turned on. Thereafter, the data on the subscreen is updated each time the SEARCH key is pressed (the updating command is sent) while this subscreen is displayed. Care must be taken when updating this subscreen, because an undesired command is inserted if it is executed while recording, etc.
[Note on lighting time data for each LD]
Since data on lighting time of each laser diode (LD) are stored in the flash ROM on the MAIN Assy, after the MAIN Assy is replaced, the data will be cleared. However, after the LOADER Assy is replaced, data on lighting time of each LD will be retained in the MAIN Assy. Therefore, before either the MAIN Assy or LOADER Assy is to be replaced, it is recommended that you write down the lighting time data.

[2] LD Degration Judgment of ATA/ATAPI DEBUG OSD (Subscreen 4)

[How to enter]
- While the User Operation screen is displayed, press the ESC, DISP then 2 keys, then the DIG/ANA key three times, in that order.

[How to quit] Press the ESC key.

[Notes]
- For correct measurement of items ① to ④ indicated in the display below, leave the unit at room temperature (25˚C) for a while before turning it on, and do not load a disc.
- For RF measurement (item ⑤), it is recommended to use the Test disc (GGV1025).
  As the RF level differs depending on the characteristics of the pickup from product to product, it cannot be used for judging degradation of the LD. Use the RF level as a rough guide to know the difference between before and after lens cleaning.

[Procedures] To update the value for each item, press the SEARCH key while subscreen 4 is displayed.
For details on each item and the conditions of updating the values, see Table 2 below.

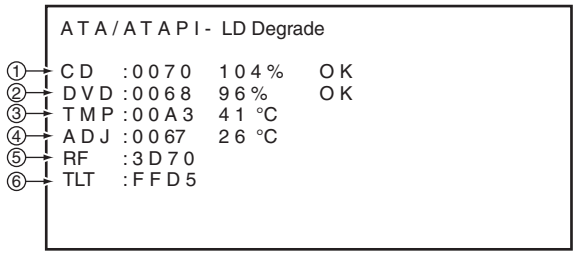


Table 2: Description of each item and conditions for updating data

No.	Item	Description	Conditions for updating by pressing the SEARCH key
①	CD	Degradation judgment of LD for CD. Regarded as NG when the value is 120% or higher (same standard as for the PC drive)	No disc inserted in the disc tray
②	DVD	Degradation judgment of LD for DVD. Regarded as NG when the value is 120% or higher (same standard as for the PC drive)	No disc inserted in the disc tray
③	TMP	Current temperature inside the Writer	No disc inserted in the disc tray
④	ADJ	Temperature (approx. 25°C) inside the Writer during adjustment	No disc inserted in the disc tray
⑤	RF	RF level (16-bit data, proportional calculation performed using the actual RF level value with 2.5 V = 0xFFFF as the maximum value, displayed in 4-digit hexadecimal)	During playback of disc medium (GGV1025)
⑥	TLT	Writer adjustment data for straight (non-HDD) model (FFFF is diplayed when the writer is not adjusted.)	No condition

If the results of degradation of the LDs for CDs or DVDs are NG, replace the drive.

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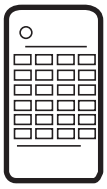
6.3 VR-RECORDING-RELATED ERROR LOGS (FOURTH SCREEN)

[Purposes]

To roughly determine in which category shown below a symptom that is difficult to reproduce belongs.
For details on the categories of error logs displayed, see "Table 1: Description of VR-recording-related errors."

- Errors related to the MPEG Encoder
- Errors related to the drive system
- Errors related to copying
- Errors related to others
- Errors related to the HDD

[Tool to be used]



Remote control unit for servicing
(GGF1381)

[How to enter]

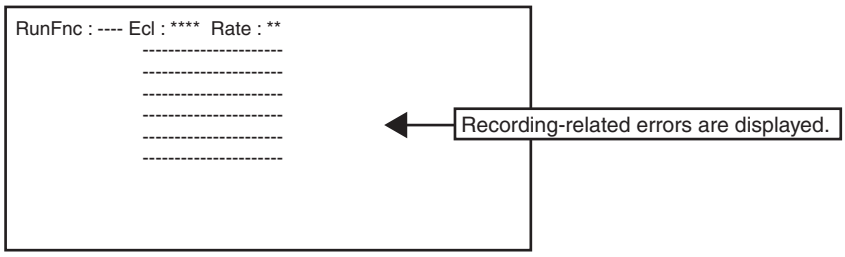
- While the User Operation display is displayed, press the [ESC], [DISP], then [4] keys, in that order.
- While any subscreen of the fourth screen is displayed, press the [DIG/ANA] key repeatedly.
  The subscreens change cyclically.

[How to quit] Press the [ESC] key.

[Description of each subscreen]

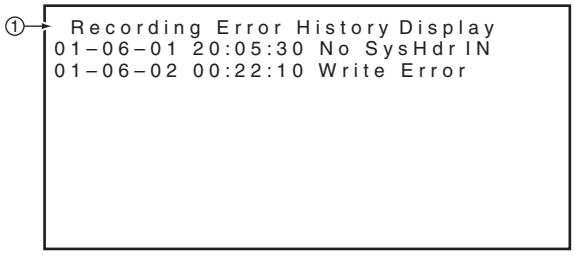
(1) VR-Recording-Related Error Logs (Subscreen 1)

- Errors related to recording are displayed on the lines "Rec Err:," as shown below.
  For details on errors, see "Table 1: Description of VR-recording-related errors."



(2) Subscreen 2 and 3 (These subscreens are not for service use.)

(3) VR-Recording-Related Error Logs (Subscreen 4)



① There are two error-log screens, on which up to 9 logs per screen are displayed.
(generation time [year-month-day, hour:minute:second], error data in simplified description)

[Tips]

- The two error-log screens can be switched by pressing the [SPEED+] or [SPEED-] key.
- For details on error messages, see Table 1 "Description of VR-recording-related errors".

(4) Subscreen 5 to 12 (These subscreens are not for service use.)

[1] Description of VR-Recording-Related Errors

Any error message marked with * is displayed "RecErr : ---------" on the Subscreen 1 of the fourth screen.

● Error Related to MPEG Encoder

Error Message	Description	Cause
AVEnc Hang	AVEncoder failed	Defective engine or software-related problem
IN Encode *	Changes cannot be made in the process of encoding	
No SysHdr IN	System packet is not input periodically	Defective engine or software-related problem
Stm Start NG	Failure to start encoding (reasons not clear)	Defective engine or software-related problem
Stream NG	Inappropriate input stream data	Defective engine or software-related problem
Strm Start NG	Timeout waiting for system packet input at the beginning	Defective engine or software-related problem

● Error Related to Drive System

In a case of an error in the drive system, scratches or dirt on a disc, or a problem of the drive itself (dirty pickup) may be suspected.

Error Message	Description	Cause
Bdr Cls NG	Close Border failed	Defective disc
Bdr Opn NG	Open Border failed	Defective disc
BUF Overflow	Overflow of the Stream Buffer	Software-related problem
CLS Rzon Fail	Video Mode Close Rzone failure	Defective disc
Drive Hang	The Drive is hung up.	Defective disc or drive
Drv Err	General error of the drive	Defective disc or drive
Drv Hard Err	Abnormality in the drive hardware or firmware	Defective disc or drive
Drv TimeOut	Timeout waiting for drive operation	Defective disc or drive
Fail Repair	Repair failed	
Format NG	Format failed	Defective disc
May Be V mode	Although TMP_VMGI is not written, it may be Video Mode disc.	
Mech No Res	No response from the mechanical-control computer	Defective disc or drive
MKB Invalid	MKB reading error	Defective disc
NWA Exhaust	NWA surpassed and impossible to use	Defective disc
OPC NG	OPC failed	Defective disc
PCA Full	PCA has been used up.	
Read Err	Reading failed, ECC failed, etc.	Defective disc
ReadOnly DISC *	Because some data are invalid, data cannot be written	
RMA Full	RMA has been used up.	
Rzn Cls NG	Close RZone failed	Defective disc
Rzn Rpr NG	Repair RZone failed	Defective disc
Rzn Rsv NG	Reserve RZone failed	Defective disc
TMP-VMG WrErr	Video Mode TMP VMGI Write Error	Defective disc
VTSI_B Wr Err	Video Mode VTSI BUP Write Error	Defective disc
VTSI_B2 Wr Err	Video Mode VTSI BUP Write Error (After Layer Change)	Defective disc
VTSI Wr Err	Video Mode VTSI Write Error	Defective disc
VTSI2 Wr Err	Video Mode VTSI Write Error (After Layer Change)	Defective disc
Write Err	The Drive failed to write and could not be recovered.	Defective disc
May Be PVR	May be +VR disc, but no RSAT	
V Final fail	Abnormal process occurred when finalizing Video mode	Software-related problem
DLVR trace NG	Close Rzone failed at dual layer disc	Defective disc

RSAT : Reserved Space Allocation Table

● Error Related to Dubbing

Error Message	Description	Cause
H2D CP SomeNG	Other NG HDD -> DVD copy	
Mem get NG	Video Mode Copy Memory has not ensured.	
Strm TransfNG	Video Mode Copy Stream Transfer NG	
Tracon Trn NG	Video Mode Copy Tracon transfer has not been completed.	
VC Cell Max	Maximum number for Video Mode copy Cells exceeded	
VC CopyCancel	Video Mode Copy Copy Cancel	
VC FlushC NG	Video Mode Copy Flush Cache NG	
VC HDD C Err	Obtaining Video Mode Copy HDD Cell information failed	
VC HDD Inf NG	No information on Video Mode Copy HDD	
VC HDD Info NG	Format failed	
VC Idling NG	Video Mode Copy idling NG	
VC Pck Anl NG	Analizing Video Mode Copy Pack failed	

● Error Related to Dubbing (Continued)

Error Message	Description	Cause
VC Transf Stp	Video Mode Copy Transfer Stop	
VC TSO BLK NG	Video Mode Copy TSO Block transfer has not been completed.	
VC VOBU SizeE	Video Mode Copy VOBU Size NG	
V Rsv RzoneNG	Video Mode Copy Reserve Rzone failed	Defective disc
V2H APP FL NG	VR → HDD APP FLG is OFF	
V2H Aud Ch NG	VR → HDD Audio Channel NG	
V2H Aud Md NG	VR → HDD Audio Mode NG	
V2H Aud Stm N	VR → HDD Audio Stream number NG	
V2H SRC Prot	VR → HDD copy prohibited material	
V2H Unknown	VR → HDD other NG	
V2H VOBU TMNG	VR → HDD Play back time of each VOBU is different	
V2H V Reso NG	VR → HDD Video resolution NG	
H2D CP NoSpac	HDD → DVD insufficient free space for copy	
H2D TO HDDRD	HDD → DVD (VR) TimeOut at HDD playing side	
H2D TO SPRO	HDD → DVD (VR) TimeOut at internal processing	
H2D TO DVDWR	HDD → DVD (VR) TimeOut at HDD recording side	
C2H LOG (XXX)	HDD CAM → HDD operation log (XXX is a process code.)	
C2H ERR (XXX)	HDD CAM → HDD NG (XXX is a process code.)	

● Other Errors

Error Message	Description	Cause
Abort *	Cancellation	
Already open	Extension file is already opened.	
BK BATT Down	Backup RAM data has been erased.	
BK FSYS Dirty	Backup RAM data has not been written on the File Sys.	
BUG	Some bugs	
BusReset Done	Bus Reset has been executed.	
Cell Close NG	Cell Close NG	
CPRM IC NG	Inappropriate CPRM IC	Defective engine
Dir Depth Err	Tree of Directory is too deep.	
Disc Full	No further data can be written because the disc is full.	
DRAM CLR Err	Video Mode DRAM (Stream Buffer) Clear failure	
DRAM NG	Abnormality in access to the Work DRAM	
Drive Destroy	The drive has crashed.	Defective engine, drive, or HDD
EncModul Hang	Encoder routine is hung up.	Defective engine or software-related problem
F Alrdy Exst	Extension file is already exist.	
File cancel	Extension file is canceled.	
FileNot Exist	Extension file is not exist.	
Format Excec	Formatting has been executed.	
Invalid Disc *	The disc cannot be recognized.	Problem in the logical structure of the disc
Invalid Param *	Invalid parameter	
Invalid TMVMG	Invalid TMP_VMGI content	Problem in the logical structure of the disc
Invalid UDF *	Invalid UDF content	Problem in the logical structure of the disc
Invalid VMG *	Invalid VMG content	Problem in the logical structure of the disc
Invalid VTSI	VTSI information of +VR is unusual.	Problem in the logical structure of the disc
Irr Action *	Incorrect action	
MKB REVOKED	Error in gaining data	
Limit Over *	Standard maximum limit exceeded	
No More Info *	No more space in the internal work-management area	Software-related problem
No Permission *	No permission to write to the disc	
No Video	No video input (not locked)	
Now Busy *	In the process of the emergency processing	
NV Pck DMA Er	Inappropriate NaviPack DMA	
NV Pck MK Err	Error in creating NaviPack	
Ourob Strm NG	Inappropriate stream data to the Ouroboros input	
Over Heat	Abnormal temperatute	
PARAM NO ACCP	Recording parameter is not matched.	
Process Over	Process is overfull.	
Protect Src *	Source to be recorded is copy-protected.	
Rec Pause *	No operation permitted during recording pause	
Relocation Do	VR-recording data was relocated	

● Other Errors (continued)

Error Message	Description	Cause
Repair Excec	Repairing has been executed.	
Something *	Undetermined error	
SRAM NG	Abnormality in access to the backup work SRAM	
Status NG *	Abnormality in change of statuses	
SW PVR	Switch to +VR playback process	
SW Vpb mode *	Switching to video playback routine is required.	
SW Vrec mode *	Switching to video recording routine is required.	
Unmatch Stamp *	Impossible to modify because of nonmatching time stamp	Problem in the logical structure of the disc
VBR-SRAM NG	Abnormality in VBR SRAM	
V Categ ID NG	Inappropriate Category ID	
V Cate Inf NG	Inappropriate Category information	
V Ext MAX Ovr	Count Max exceeded	
V ExtToo Big	The extension file is too large.	
V Ext TY NG	Type NG	
Virgin DISC	Virgin Disc	
VOBU Info NG	Inappropriate VOBU information	
WaterMark Det	Watermark detected	
WM Cracked	WM Cracked	
Param Short	Editing Error (Clear A-B)	
Invalid VRMI	Information of +VR is NG. (VRMI)	Problem in the logical structure of the disc
Heap Mem NG	Failure in securing the necessary amount of memory	Soft-related problem
Heap Mem RETY	Reattempting to secure the necessary amount of memory	

● Error Related to HDD

Error Message	Description	Cause
Do nothing	Do nothing for demand.	
ESFSYS CORUPT	easyfsys error	
ESFSYS INIT	easyfsys initializing	
HDD Buff High	High-level process executed for the HDD Buffer	
HDD DEF DONE	HDD deflag finished	
HDD DEF ERR	HDD deflag error	
HDD Destroy	HDD is not recognized on the bus.	Defective HDD, engine
HDD INFO BAD	Incorrect HDD Management Data	Defective HDD or software-related problem
HDD Initialize	HDD initialized	
HDD IRRG POFF	Abnormal power off	
HDD MBR NG	Inconsistent MBR data	Defective HDD
HDDReset Done	HDD Reset executed	
HDD ROMSUM NG	Rom-code check sum NG	
HDD SIG NG	Inconsistent HDD Management Data Magic	Defective HDD
HDD SMART NG	Inappropriate HDD SMART	Defective HDD
HDD Trans Err	DMA error in HDD copy transfer	
HDD unauthor	Inconsistent HDD serial No.	
HDD Zero WR	MBR was written	
Task No Activ	Task has not been activated.	
TT Rec Over	Title recording time full	
HDD WRONG TGT	Invalid HDD target No. is directed.	
extHDD Ignore	External HDD is dismounted.	
HDD PFile NG	Program file installed in HDD is NG.	
HDD DEL TT	Delete the title by HDD recovery.	
HDD DEL PL	Delete the dubbing list by HDD recovery.	
HDD DEL OC TT	Delete the title moving on the way inside HDD	
HDD Aging NG	Error generated in HDD Test mode	
HDD TFD INIT	Gracenote Database deleted	
HDD DWNLD NG	Error generated while Gracenote Database was being downloaded	
HDD TFD WR NG	File development of Gracenote Database failed.	
HDD TFD CL NG	File deletion of Gracenote Database failed.	
HDD TFD NON	Gracenote Database not downloaded	
HDD CDDB NG	Problem in Gracenote Database	
GN API NG	File operation of Gracenote Database failed.	

● **No Error**

Error Message	Description	
Non Err *	Normal	

Abbreviations:

ECC = 4 byte Code for Error Correction
UDF = Universal Disc Format
PCA = Power Calibration Area
OPC = Optimum Power Control
NWA = Next Writable Address
VMG = Video Manager
RMA = Recording Management Area
MKB = Media Key Block
TMP_VMGI = Temporary Video Manager Information
Border = from Lead-in to Lead-out
RSAT = Reserved Space Allocation Table

6.4 VR-PLAYBACK-RELATED ERROR LOGS (FIFTH SCREEN)

[Purposes]

It can be inferred that an operation that caused an error in the drive was performed or that a failure occurred in the drive if any of the error logs shown in "Table 2: Description of VR-playback-related errors" is recorded on this screen.

[Tool to be used]

Remote control unit for servicing
(GGF1381)

[How to enter]

- While the User Operation display is displayed, press the ESC, DISP, then 5 keys, in that order.
- While any subscreen of the fifth screen is displayed, press the DIG/ANA key repeatedly. The subscreens change cyclically.

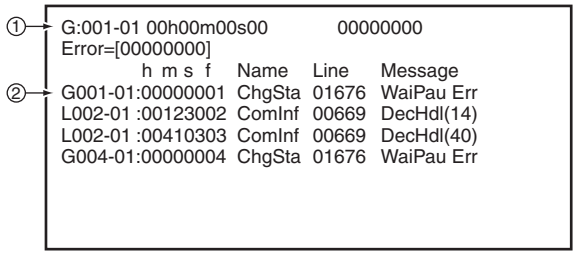
[How to quit] Press the ESC key.

[Description of each subscreen]

(1) Subscreen 1 (This subscreen is not for service use.)

(2) VR-Playback Error Logs (Subscreen 2)

- For details on error messages, see Table 2 "Description of VR-playback-related errors".
- If a VR-playback-related error is generated, a problem in data reading from the disc may be suspected. (The possibility of a problem on the drive side is high.)



① Information on display position
Original / Play list (G/L), Title No., Chapter No. [X:XXX-XX]
Display time (hour, minute, second & frame) [XXhXXmXXsXX]
Logic address for playback (ID) [XXXXXXXX]
Number of entries to error log [XXXXXXXX]

② Error message log
Original / Play list (G/L), Title No., Time of occurrence (min & sec) [XXX:XXXX]
Location of occurrence (this data is used for development), Name: Name of module where the error occurred, Line: Number of line where error occurred
Playback-system errors that occurred in 13 times of playback in past [XXX:XXXXXXX]
* For details of error information, refer to the Appendix Table 1.
* If information on errors which occurred on days earlier than the current day is contained on the screen, the information that follows the information which are displayed with "^" between “Time of occurrence”, “Name”, “Line” and “Message” indicates the errors that occurred on the current day.

[1] Description of VR-Playback-Related Errors

Error Message	Details of error
AudioPB Err	Audio initialization error
WaiPau Err	Pause was disabled though tried. (Pause-wait timeout)
CC_OS_ERR	CC output processing error
Tr:NullBlk	No valid data in the first block
Tr:NaviErr	Navigation pack error
Tr:ReadErr	Data read error
Dec:PicDisp	Not played up to final PTS
Dec:Size	horizontal/vertical_size in sequence header is 0 or above 720 × 576.
Dec:PicTyp	picture_coding_type in picture header is neither of the I, P, nor B picture type.
Dec:Struct	picture_structure in picture coding extension is neither top/bottom_field or frame picture.
Dec:Syntax	Header size is insufficient or does not match with markerbit.
Dec:NoHead	No picture header exists between picture data.
Dec:SqErr	Detected sequence_error_code.
Dec:Refrenc	In Field structure, top_field and bottom_field of temporal_reference in picture header does not match.
Dec:Profile	profile_and_level_indication in sequence extension header is exceeding MP@ML.
DecHdl(**)	Decoder command execution timeout. (**) is replaced by No. of command which was to be executed. The Nos. and names of commands are as follows. /* DECODER system command */ 0 HANDLER_DECODER_INIT, 1 HANDLER_DECODER_INIT_STARTUP, 2 HANDLER_DECODER_INIT_PLAY, 3 HANDLER_DECODER_INIT_RTR_PLAY, 4 HANDLER_DECODER_INIT_AUDIO, 5 HANDLER_DECODER_EXIT, 6 HANDLER_DECODER_BLACK_BACK, 7 HANDLER_DECODER_SET_DISP_FMT, 8 HANDLER_DECODER_SET_ASPECT_MODE, 9 HANDLER_DECODER_DISP_BITRATE, /* DVD command */ 10 HANDLER_DEC_DVD_VIDEO_PLAY, 11 HANDLER_DEC_DVD_VIDEO_PLAY_LIST, 12 HANDLER_DEC_DVD_AUDIO_PLAY, 13 HANDLER_DEC_DVD_STOP, 14 HANDLER_DEC_DVD_PAUSE, 15 HANDLER_DEC_DVD_PAUSE_STILL_MODE, 16 HANDLER_DEC_DVD_STEP, 17 HANDLER_DEC_DVD_REWSTEP, 18 HANDLER_DEC_DVD_PAUSE_OFF, 19 HANDLER_DEC_DVD_FF, 20 HANDLER_DEC_DVD_REW, 21 HANDLER_DEC_DVD_SLOW, 22 HANDLER_DEC_DVD_REWSLOW, 23 HANDLER_DEC_DVD_SCAN_OFF, 24 HANDLER_DEC_DVD_SLOW_OFF, 25 HANDLER_DEC_DVD_REWSLOW_OFF, 26 HANDLER_DEC_DVD_REWSKIP_TO_REWSLOW, 27 HANDLER_DEC_DVD_REWPAUSE, 28 HANDLER_DEC_DVD_PLAY_LIST_END_CHECK, 29 HANDLER_DEC_DVD_SET_CAPTION_SW_OFF, 30 HANDLER_DEC_DVD_SET_CAPTION_SW_ON, 31 HANDLER_DEC_DVD_REWPAUSE_TO_REWSLOW,

Error Message	Details of error
	32 HANDLER_DEC_DVD_REGIST_TRICK_CALLBACK, 33 HANDLER_DEC_DVD_TRICK_DATA_END, 34 HANDLER_DEC_DVD_AUDIO_STOP, /* management information */ 35 HANDLER_DEC_INIT_NV_PCK, 36 HANDLER_DEC_INIT_RDI_PCK, 37 HANDLER_DEC_READ_NV_PCK_POINT, 38 HANDLER_DEC_READ_RDI_PCK_POINT, 39 HANDLER_DEC_READ_STC, 40 HANDLER_DEC_READ_PTS, 41 HANDLER_DEC_HLI_ENABLE, 42 HANDLER_DEC_COMMAND_PLAY, 43 HANDLER_DEC_COMMAND_PAUSE, 44 HANDLER_DEC_COMMAND_RSLOW_VOBU_STOP, 45 HANDLER_DEC_INIT_VIDEO_MODE, 46 HANDLER_DEC_SET_VIDEO_MODE, 47 HANDLER_DEC_CHECK_VIDEO_OUTPUT, 48 HANDLER_DEC_CHECK_VIDEO_ERROR, 49 HANDLER_DEC_DISPLAY_SUBPICTURE, 50 HANDLER_DEC_SET_SUBPICTURE_PALLET, 51 HANDLER_DEC_IPB_REVERSE, 52 HANDLER_DEC_SET_AUDIO_SYNC, 53 HANDLER_DEC_COMPULSION_OUTPUT_SUBPICTURE, 54 HANDLER_DEC_CLEAR_LAST_NV_PCK_POINT, 55 HANDLER_DEC_CLEAR_LAST_RDI_PCK_POINT, 56 HANDLER_DEC_GET_PICTURE_PARAM, 57 HANDLER_DEC_CHECK_BUFFER_EMPTY, 58 HANDLER_DEC_CHECK_TRICK_END, 59 HANDLER_DEC_READ_VCD_PTS, /* still picture */ 60 HANDLER_DEC_DVD_STILL_NOTIFY, 61 HANDLER_DEC_DVD_STILL_PLAY, 62 HANDLER_DEC_DVD_STILL_FF, 63 HANDLER_DEC_DVD_STILL_FF_OFF, 64 HANDLER_DEC_DVD_STILL_SLOW, 65 HANDLER_DEC_DVD_STILL_SLOW_OFF, 66 HANDLER_DEC_DVD_STILL_PAUSE, 67 HANDLER_DEC_DVD_STILL_PAUSE_OFF, 68 HANDLER_DEC_DVD_STILL_DATA, 69 HANDLER_DEC_DVD_STILL_GET_COUNT, 70 HANDLER_DEC_DVD_RDI_NOTIFY, /* closed caption */ 71 HANDLER_DEC_CAPTION_NOTIFY, 72 HANDLER_DEC_CAPTION_BUFFER_RESET, 73 HANDLER_DEC_CAPTION_SET_INPUT_USER_DATA, 74 HANDLER_DEC_CAPTION_SET_INPUT_FRAME_DATA, 75 HANDLER_DEC_CAPTION_SEND_FRAME_DATA, 76 HANDLER_DEC_FRAME_CHANGE_NOTIFY

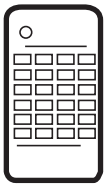
6.5 DV SERVICE MODE

[1] DV Debug

[Purpose]

To check whether communication between a DV device and the unit is normal when a DV device is connected

[Tools to be used]



Remote control unit for servicing (GGF1381)

- DV device
- DV cable

[How to enter] Press the ESC , DISP then 3 keys, in that order.

[How to quit] Press the ESC key.

[Mode description]

```
①→ (DV/1394) Init:OK AV:02 DV:01

②→ [Recorder] GUID:00E0360006100001  IRM
③→ iPCR:C03F0000
④→ [DV]       GUID:0080880303480E96
⑤→ VN:VICTOR     MN:GR-D50K
⑥→ TM:C3 TS:75 CT:32 WP:01 PS:FF OS:00
⑦→ CA:A000002020 MD:VTR
⑧→ [DVdecode:Yes]                    LineSys:525-60
⑨→ TC:00h20m35s    RD:02/02/05 RT:10h34m50s
⑩→ ASPECT:4:3       CGMS:000000 APSTB:00 DEC:525-60
⑪→ SF:32KHz QU:12bit AMODE:4) Stereo
```

Boldface alphanumerics : Fixed indications
Nonboldface alphanumerics : Variable indications

No.	Item	Description	Remarks
①	Init	Whether the initialization of 1394 LINK and DV decoder inside EMMA2RFEX has been completed (OK) or not (NG)	
	AV	Number of AV devices recognizing connection	Identification number of AV devices including D-VHS, Digital Tuner, etc other than DV devices.
	DV	Number of DV devices recognizing connection	If the number does not become 01 even if a DV device is connected, identification of that device fails.
②	GUID	GUID set in ConfigROM of the unit	GUID : Global Unique ID (Specific ID for DV devices) If the unit is ROOT (IRM), IRM is displayed at the side position of GUID display.

No.	Item	Description	Remarks
③	iPCR	iPCR value of the unit	
④	GUID	GUID set in ConfigROM of the connected DV device	Data are displayed only if one DV device is identified. If the connected DV device is ROOT (IRM), IRM is displayed at the side position of GUID display.
⑤	VN	Vendor name set in ConfigROM of the connected DV device	Data are displayed only if one DV device is identified. (Depending on the device, the vendor name may not be set in ConfigROM.)
	MN	Model name set in ConfigROM of the connected DV device	Data are displayed only if one DV device is identified. (Depending on the device, the model name may not be set in ConfigROM.)
⑥	TM	Transport Mode data obtained from the DV device	Data are displayed only if one DV device is identified.
	TS	Transport State data obtained from the DV device	
	CT	Cassette Type data obtained from the DV device	
	WP	Write-protection data obtained from the DV device	
	PS	Power-state data obtained from the DV device	
	OS	Output signal mode data obtained from the DV device	
⑦	CA	Connect AV data obtained from the DV device	Data are displayed only if one DV device is identified.
	MD	DV device mode	Camera or VTR is displayed only if one DV device is identified.
⑧	[DVdecode:XXX]	Whether Yes (in the process of requesting DV input) or No is indicated in XXX	Normally, Yes is indicated only when CH is set to DV.
	LineSys	Input Line System setting	
⑨	TC	Time-code data of the DVdecode Stream, or response data of the Time Code command	Stream time-code data are obtained when the tape is played in forward direction. Otherwise, time-code data are obtained through an AV/C command.
	RD	Rec Date of DVdecode Stream	
	RT	Rec Time of DVdecode Stream	
⑩	ASPECT	Aspect Ratio of DVdecode Stream	
	CGMS	CGMS of DVdecode Stream (from left to right, CGMS data of bits 5-4: Audio ch 2, bits 3-2: Audio ch 1, and bits 1-0: Video)	*CGMS (Copy Generation Management System): The two-digit codes added to broadcast programs represent the following: 00: Copy freely, 10: Once copy, 11: Never copy
	APSTB	APS trigger bit of DVdecode stream	
	DEC	With/without DVdecode stream input	With input: Signal type (525-60, 625-50, 1125-60, 1250-50, or Invalid) is indicated, Without input: "No" is indicated.
⑪	SF	Sampling Frequency of DVdecode Stream	If SF is 44 kHz, it is considered that 44.1-kHz audio is input, and sound is muted on the unit.
	QU	QUANTIZATION of DVdecode Stream	
	AMODE	AUDIO MODE of DVdecode Stream	

http://getMANUAL.com

[2] Simple Diagnosis of DV

Symptoms		Location in the Debug Screen	Items to be Checked, and Conditions	Possible causes
No operation for DV input	1	DV ①	Check the Init indication: OK: Initialization of 1394 LINK and DV decoder inside EMMA2RFEX appropriately completed. NG: Initialization of 1394 LINK and DV decoder inside EMMA2RFEX has not been completed properly.	Defective IC1001(EMMA2RFEX)/ IC5103(1394PHY), improper connection between IC1001 / IC5103, defective soldering, defective power supply, etc.
	2	DV ①	Check the number of DV devices when one DV device is connected to the recorder: 01 : The connected DV device is correctly identified. Other than 01 : The connected DV device is not correctly identified.	Defective DV terminals, improper connection of the DV-terminal board, defective IC5103(1394PHY), defective cables, an IEEE 1394 device other than the DV device connected.
No picture nor sound for DV input	1	DV ⑧	Check of DV decoding when the recorder channel is set to DV: Yes: The recorder is in the process of a DV input operation No: The recorder is not executing a DV input operation	Defective IC1001(EMMA2RFEX), defective soldering, defective power supply, etc.
	2	DV ⑩	Check DEC: 525-60: An NTSC DV signal is input from the DV device. 625-50: A PAL DV signal is input from the DV device. No: No DV signal is input from the DV device.	Defective DV terminals, improper connection of the DV-terminal board, defective source device defective IC1001(EMMA2RFEX), IC5103(1394PHY) **Note:** As to a model having the Input Line System setting, if the setting and the actual input signal system do not match, no picture appears.
DV input recording impossible	1	DV ⑩	Check CGMS:	Recording cannot be performed for a copy-protected source.
No sound for DV input	1	DV ⑪	Check SF: 32 khz: An audio signal with 32-kHz sampling frequency is being input. 48 khz: An audio signal with 48-kHz sampling frequency is being input. 44 khz: An audio signal with 44.1-kHz sampling frequency is being input.	An audio signal with 44.1-kHz sampling frequency is muted.

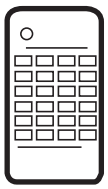
6.6 EPG SERVICE MODE

[Purposes]

Reasons for the following malfunctions can be inferred by checking the conditions for obtaining the past EPG data:

① EPG data cannot be obtained.
② Some EPG data obtained are missing.

[Tool to be used]



Remote control unit for servicing
(GGF1381)

[How to enter] • Press the [ESC], [DISP], [7] keys, in that order.

[How to quit] Press the [ESC] key.

[Description of the mode]

1. Summary screen

```
    0         1         2         3         4
    01234567890123456789012345678901234567890123456789
00  (EPG EURO)
01  Next Data  Download Time : 14:00
02             Duration      : 01h30m
03  Gemster Data  Fail Count : 00
04
05
06
07  EPG Data Receive Err Summary
08  Date  Start  End   MD  CH  RcvPkt   TotalErr
09  03/31 13:00 13:30 DL  03  001853   000000
10  03/31 09:00 11:00 DL  03  001192   000000
11  03/31 08:00 08:05 HS  --  000645   000000
12  03/31 00:00 00:00         000000   000000
13  03/31 00:00 00:00         000000   000000
14  03/31 00:00 00:00         000000   000000
```

Lines 01-02	The next download starting time for the EPG data is displayed. Next Data Download Time: Starting time Duration: Duration required for acquiring the EPG data
Lines 03	The Gemster EPG data cannot be found. Number times of Host Scan and Schedule Download, DT models only (Always 00 except DT model)
Lines 09-14	The 6 latest error logs when EPG data were received are displayed, with the latest one at the top.

Date	: Month/day when reception started
Start	: Time when reception started
End	: Time when reception ended
MD	: Method for acquiring the EPG data (HS: Host scanning process, DL: Downloading process of the EPG data)
CH	: Data-receiving channel
RcvPkt	: Total number of received packages. A number 999,999 or greater is displayed as "999999."
Total Err	: Total errors during reception. The sum of Hamming Err, Trans Err and InvLine Err numbers indicated on the Detail screen. A number 999,999 or greater is displayed as "999999."

[Tips] In a case where only "HS" is displayed in the MD column of the logs, the host channel has not been found. It is necessary to check the country and postal-code settings in the user settings.

2. Detail screen

[How to enter] Press the DIG/ANA key while the Summary screen is displayed. Up to 6 detail screens (1 to 6) are displayed, one each time the DIG/ANA key is pressed. Each detail screen 1 to 6 corresponds with the EPG reception error logs from the top on the Summary screen.

[How to quit] Press the ESC key.

[Description of the Detail screens]

```
      0         1         2         3         4
      01234567890123456789012345678901234567890123456789
00    (EPG EURO)
01    EPG Data Receive Err Details - 1
02
03    Date : 03/31
04    Start Time : 13:00   END Time  : 13:30
05    Host CH    : 03      P-ON Kind : Download
06
07    Data Receive Info   Total Err  : 000000
08    Pkt Rcv Num  : 001853  Pkt Snd Num : 001853
09    Inv Line Err : 000000
10    Slice Cont : Auto   EQ : OFF   LV : -h
11
12    Temporary  Buffer  Information
13    Pool  Num   : 000000  Max  Store  : 000000
14    Discard Pkt  : 000000
```

Line	Display item	Description	Remarks
Line 01	EPG Data Receive Err Details-X	The rightmost figure represents the number of the current detail screen. This number corresponds to the order of the EPG reception error log from the top.	
Lines 03-05, Reception conditions	Date Start Time END Time Host CH P-ON Kind	: Month/day when reception started : Time when reception started : Time when reception ended : Data-receiving channel : Methods for acquiring the EPG data (host scanning and downloading)	Only during initialization, host scanning is automatically executed to find the host broadcast.
Lines 07-10, details on errors during reception	Total Err	: Total numbers of errors during reception. The total number of Hamming Err, Trans Err and InvLine Err indicated on the Detail screen. A number 999,999 or greater is displayed as "999999."	Total Errors: If the total number of errors reaches two digits or greater, it is likely that EPG data acquisition failed. Display subscreen 1 of the first screen and check the electric field intensity from the AGC level.
	Pkt Rcv Num Pkt Snd Num	: Total number of received packages. A number 999,999 or greater is displayed as "999999." : Total number of packages that were sent to the application program among all the received packages. A number 999,999 or greater is displayed as "999999."	If the total number of received packages is 0, it is likely that the country and postal-code settings are wrong.
	InvLine Err	: Total number of errors that were generated by receiving data from invalid lines. A number 999,999 or greater is displayed as "999999."	
	Slice Cont	: Slice level control Auto-Tu Con, Manual - Syscon.	
	EQ	: Equalizer setting (ON, OFF)	
	LV	: Slice level (10~30 hex) (Only when the slice Count is Manual.)	

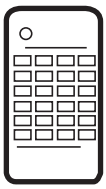
Note: The data on lines 12-14 are for software development, not for service use.

6.7 HDMI SERVICE MODE

[Purposes]

To check the statuses of the connected HDMI devices.

[Tool to be used]



Remote control unit for servicing (GGF1381)

- HDMI device
- HDMI cable

[How to enter] • Press the ESC, DISP then +10, +10 , 4 keys, in that order.

Note: Do not press any key on the remote control unit supplied with the unit or for servicing while the HDMI debug screen is displayed.

[How to quit] Press the ESC key.

[Description of the mode]

1. HDMI MAIN information screen (First screen)

```
00 [HDMI]                                1/6
01  Connect:***   Reso :*********    Audio:***
02  DevType:****  Color:**********   APath:*****
03  TMDS  :***   HDCP :** : **      Fs  :***
                          SType:
[Video Check]
  Pic_Asp   :
  Active_Asp :
[Copyright Control Check]
  ACP_Type:       (Actual send:      )
  ChSts0:  ChSts1:  (C: , L: )
[Digital Tuner]
  HDMI Out: AC3 32kHz
  LL SPDIF: AC3 32kHz   DAC: 32kHz
```

(*1) [Tips]
Because all the data on connection and authenti-cation are canceled once the function of the connected HDMI device is set to a position other than HDMI, all the debugging data in Table 1 are deleted.

Table 1: Description of the items on the HDMI main information screen

Line	Item	Description	Remark
1	Connect	Connection status of the HDMI device	See Table 2.
	Reso	Output resolution	See Table 3.
	Audio	HDMI audio output status	See Table 4.
2	DevType	Type of connected device	See Table 5.
	Color	Output color	See Table 6.
3	TMDS	TMDS (video stream) signal output status	See Table 7.
	HDCP	HDCP Authentication status	See Table 8.
	Fs	Output audio Fs	See Table 9.

Table 2: Connection status of the HDMI device

Indication	Description
ON	Connected
HtPlg	Not connected but Hot plug is ON.
OFF	Not connected

Table 3: Output resolution

Indication	Description
480i NTSC	720x480i NTSC
480p NTSC	720x480p NTSC
720p NTSC	1280x720p NTSC
1080i NTSC	1920x1080i NTSC
1080p NTSC	1920x1080p NTSC
576i PAL	720x576i PAL
576p PAL	720x576p PAL
720p PAL	1280x720p PAL
1080i PAL	1920x1080i PAL
1080p PAL	1920x1080p PAL
----------	TMDS Off

[Description of the Main screen] (Continued)

Table 4: HDMI audio output status

Indication	Description
OFF	Output: Off
ON	Output: On

When the unit is connected to DVI device (refer to Table 5), the Audio is not outputted.

Table 5: Type of the connected device

Indication	Description
------	Not connected
HDMI	It has been confirmed that an HDMI device supporting HDCP is connected.
DVI	It has been confirmed that a DVI device supporting HDCP is connected.

When the unit is connected to device with no HDCP support, this display is "HDMI-" or "DVI-".

Table 6: Output color

Indication	Description
YCbCr4:2:2	Component 12 bits (YCbCr4:2:2)
YCbCr4:4:4	Component (YCbCr4:4:4)
RGB(0-255)	RGB full range (0-255)
RGB(16-235)	RGB (16-235)
----------	TMDS Off

Table 7: TMDS signal output status

Indication	Description
OFF	Output: Off
ON	Output: On

Table 8: HDCP

Left side : HDCP Authentication Status

Indication	Description
--	If an device supporting HDCP is connected, HDCP authentication is in progress.
OK	HDCP authentication succeeded.

Refer to this item only when HDMI or DVI is displayed for the item for the type of the connected device (Table 5).
If OK is not displayed although HDMI or DVI is displayed, it means that the HDCP authentication failed.

Right side : Check Revocation list

Indication	Description
--	Checking that the connected device (all downstream devices) is not registered to the Revocation list, or so.
OK	The connected device (all downstream devices) is not registered to the Revocation list.

Refer to this item only when HDMI or DVI is displayed for the item for the type of the connected device (Table 5).
When there is also no valid SRM (include Revocation list), "--" is displayed here.

Table 9: Fs

Indication	Description
32k	32kHz
44k	44.1kHz
48k	48kHz
96k	96kHz
96k/2	48kHz (original data of 96kHz is down-sampled.)
---	Audio Off

6.8 AGING MODE

[Purposes]

If symptoms regarding recording/ playback of discs and/or the HDD that your customer claimed are difficult to reproduce, they can be reproduced with a long-time test in Aging mode.

[Tools to be used]

Remote control unit for servicing (GGF1381)

Remote control unit supplied with the unit

Commercially available, recordable DVD-R/+R and DVD-RW/+RW/ -RAM discs

[Notes]

- When aging for the DVD-RW/+RW/-RAM and HDD is executed, all recorded data on them will be erased.
- Commands from the remote control unit are accepted during Aging mode.
- If Aging mode is quit using the ESC key, indications on the FL display will return to normal display.
- Cancel timer settings before entering Aging mode.
- Set the recording rate beforehand. It cannot be changed during Aging mode.

[How to enter]

① Press the DVD key to switch to DVD.
② Load a recordable disc.
③ Select the input function of a recordable source.
④ After disc detection is performed, press the ESC then REP.B, and then PLAY keys on the remote control unit for servicing to enter Aging mode.

[How to quit]

Press the ESC key on the remote control unit for servicing to quit Aging mode and return to Normal mode.

Notes:

- If during recording: Recording is stopped.
- If during playback: Playback is paused.
- If during initialization: The unit stops after initialization is finished. ← (aging for ±RW/-RAM only)
- If the tray is being opened/closed: The unit stops after the tray is opened/closed. ←

[Description of operation] **Aging for the DVD-RW/DVD-R**

Aging for the DVD-RW/+RW/-RAM	Aging for the DVD-R/+R
During Aging mode, the following operations are repeated in the order shown below. ①The tray opens. ②The tray closes. ③Initialization ④Recording for 60 minutes ⑤Playback for 45 minutes <DVD-RW> The initialization process in step 3 follows the setting specified in "Disc setting--Basic--Auto initialization of a DVD-RW." <DVD+RW> The initialization process in step 3 is the same as that described in "Disc setting--Initialization--Initialization of a DVD+RW." <DVD-RAM> In the initialization process in step 3, physical formatting is performed, if required. During Aging, the number of loops is indicated on the FL display, as shown below. [AGING 0001] If an error is generated, the aging operation stops. **Note:** Indications on the FL display are retained, and this information is also retained as an OSD.	During Aging mode, the following operations are repeated in the order shown below. ①The tray opens. ②The tray closes. ③Recording for 1 minute ④Recording pause for 6 minutes ⑤Recording stops. ⑥Playback for 1 minute ⑦Playback pause for 6 minutes ⑧Playback stops. **Note:** A continuous test of the above operations is possible for approximately 23 hours. After ② the tray closes, disc detection is performed, <DVD-R> In step 2, if the disc is judged to have recorded up to 99 titles, the operation stops at that point. <DVD+R> If the disc is judged to have recorded up to 49 titles, the operation stops at that point. On the FL display, the number of loops is retained. On the OSD display, the error indication is retained. During Aging, the number of loops is indicated on the FL display, as shown below. [AGING 0001] If an error is generated, the aging operation stops. **Note:** Indications on the FL display are retained, and this information is also retained as an OSD. **Note:** Recording time depends on the recording rate set. For example, if the recording rate is MN32, only up to 60 titles can be registered. Check the setting for recording rate before performing aging.

[Aging for the HDD]

[How to enter]

① Press the HDD key to switch to HDD.
② Press the ESC key then the REP.B, and then the PLAY keys on the remote control unit for servicing to enter Aging mode.

[How to quit]

Press the ESC key on the remote control unit for servicing to quit Aging mode and return to Normal mode.

Notes:

- If during recording: Recording is stopped.
- If during playback: Playback is paused.
- If during erasure of all memory data from the HDD, the unit stops after all memory data have been erased.

[Description of operation]

During Aging mode, the following operations are repeated in the order shown below.
① Erasure of all the memory data from the HDD
② Recording for 60 minutes
③ Playback for 60 minutes

* Take caution as all recorded data of the HDD is deleted.

[Tips]

During Aging, the number of loops is indicated on the FL display, as shown below.
[AGING 0001]

If an error is generated, the aging operation stops.

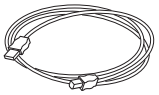
Note:
Indications on the FL display are retained, and this information is also retained as an OSD.

6.9 USB CHECK MODE

[Purposes]

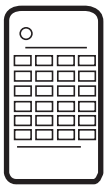
As this unit is provided with two USB ports, operation checks of these ports are possible by connecting them (loop connection).

[Tools to be used]



USB cable (GGD1445)

Remote control unit supplied with the unit



Remote control unit for servicing (GGF1381)

[How to enter this mode]

1. Connect Connector A (at the front panel) and Connector B (at the front panel), using a USB cable.
2. Enter USB Check mode.
   Press the ESC key on the remote control unit for servicing then press the TIMER REC key on the remote control unit supplied with this unit.

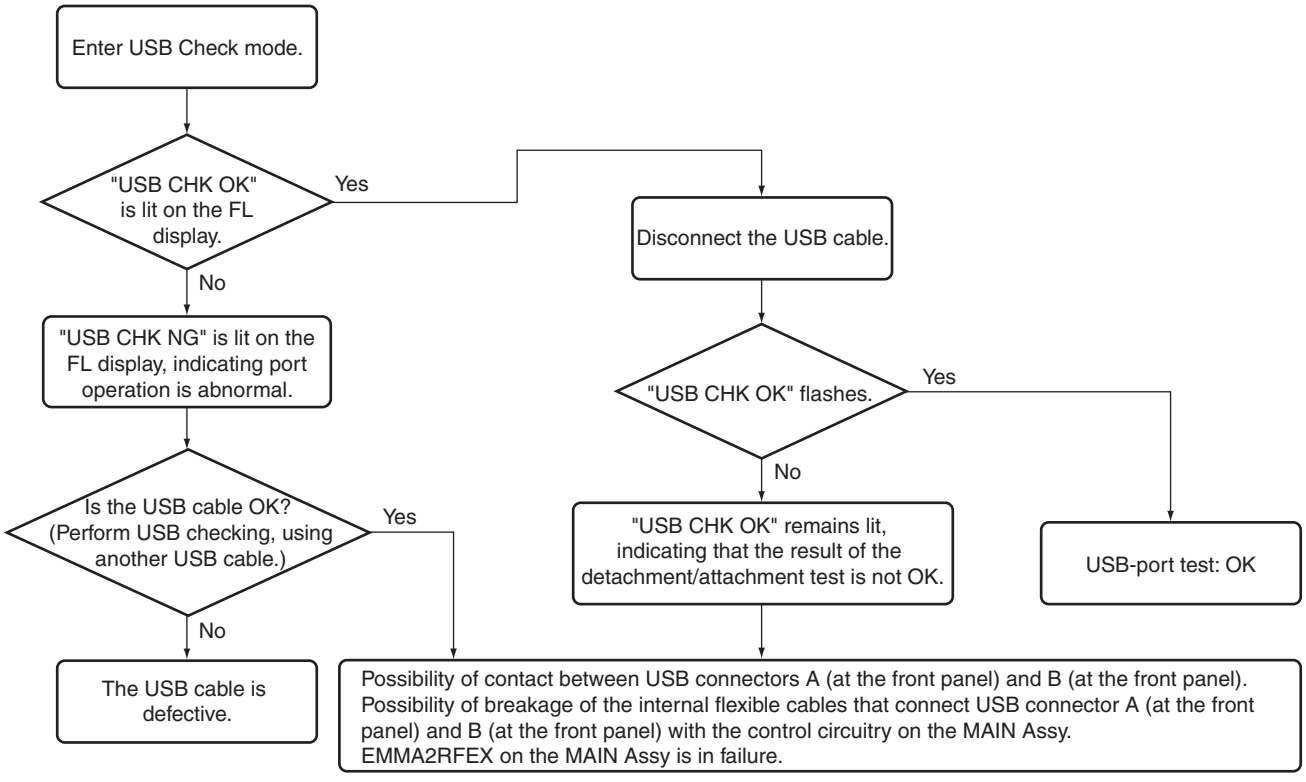
[How to quit] To quit while the ports are operating properly ("USB CHK OK" is lit.): Press the ESC key or the clear key.
To quit while port operation is abnormal: Turn the power off then back on.

[Procedures]

1. Check the indication on the FL display.
   When the two ports are operating properly: "USB CHK OK" is lit.
   When port operation is abnormal: "USB CHK NG" is lit.

2. When "USB CHK OK" is lit in Step 1, disconnect the USB cable in order to perform the detachment/attachment test.
   The indication on the FL display will change, as follows:
   If the result is OK: "USB CHK OK" will flash.
   If the result is not OK: "USB CHK OK" will remain lit.

[Troubleshooting]



6.10 HDD CHECK MODE

[1] How to Diagnose Failure of the Hard Disc Drive (HDD)

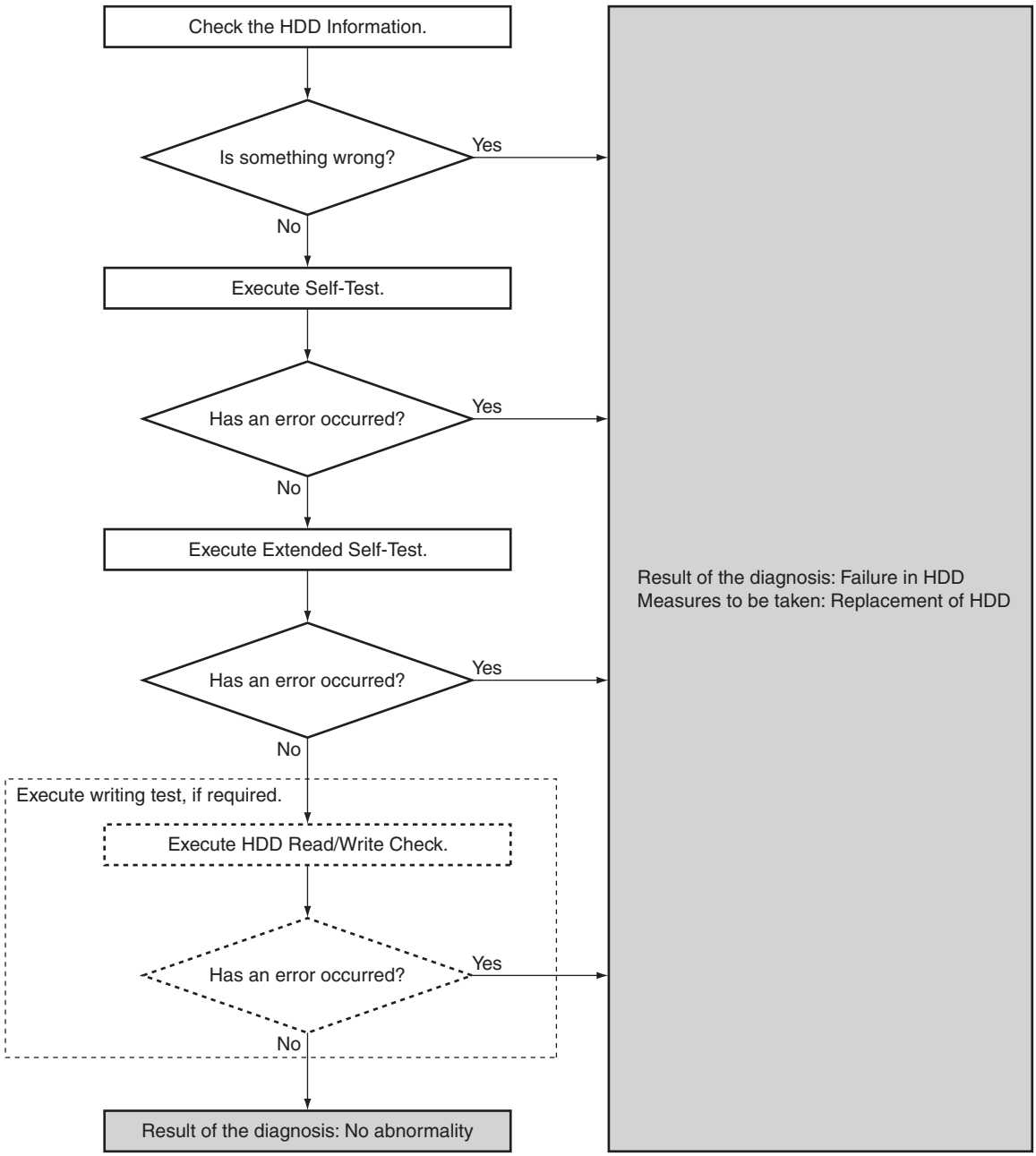
Purpose:
With use of the HDD-diagnostic program contained in the product itself, physical errors on the HDD can be diagnosed. Use this program to diagnose whether or not the HDD is in failure when one of the symptoms indicated below is recognized, or when a failure in the HDD is suspected.

Symptoms of failure in HDD:
(1) HDD Error
(2) Failure in HDD recording or playback
(3) HDD not recognized

Tool to be used:
Remote control unit for servicing (GGF1381)

[2] Flow of HDD Diagnosis

(1) Flowchart of HDD diagnosis



(2) Overview of the diagnosis items

HDD Information	This is a display for checking the HDD information, such as the model name of the HDD, continuous power-on time, authentication status, and results of the diagnosis on the end of service life.
SELF TEST	This is a simplified diagnosis for the HDD. A serious failure in the HDD can be detected with this test. Time required for testing: Approx. 60 sec.
EXTENDED SELF TEST	This is a reading test across all sectors of the HDD. Data recorded on the HDD will not be erased, because no writing operation is performed. Time required for testing: Approx. 2.5 hours/500 GB 1.3 hours/250 GB
HDD Read / Write Check	This is a writing, reading, and comparing test across all sectors of the HDD. **All data recorded on the HDD will be erased**, because all the data are to be overwritten. **Be sure to obtain your client's consent beforehand.** Time required for testing: Approx. 15 hours/500 GB 8 hours/250 GB
	You must redownload Gracenote DB data, because Gracenote DB data are to be over written too.

[3] How to Start or Terminate the Diagnostic Program

How to start/terminate the diagnostic program

Use the remote control unit for servicing.

How to start: Press the "ESC", "CX", "0", and "1" keys simultaneously.

How to terminate: Press the "ESC" key.

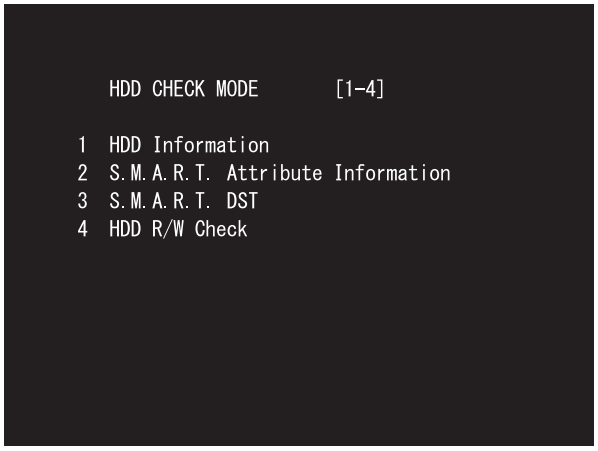
Do NOT perform other operations on the unit while the HDD diagnosis is in progress. Although the diagnostic program is designed to function independently from the unit's functions, an operation on the unit during a diagnosis may cause a malfunction.

The status of the unit recommended during diagnosis is as follows: All stop, no timer recording (including auto-recording), and Input selection to L1-L3.

http://getMANUAL.com

[4] Diagnosis Procedures

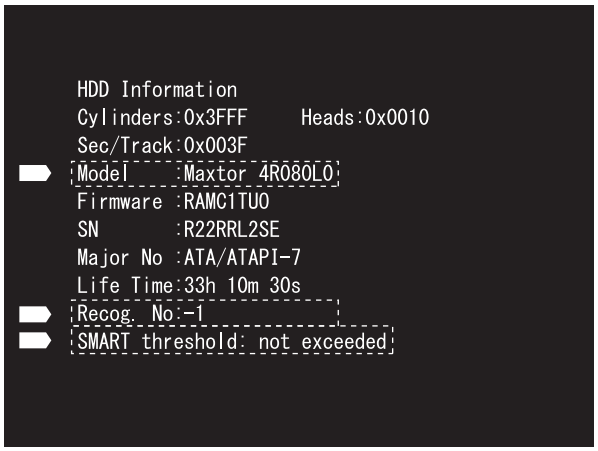
① Display the menu on the screen.
The menu indicated below is displayed when the diagnostic program is started. To enter each mode, press the corresponding key "1"-"4" on the remote control unit for servicing.



Tests to be executed
① HDD Information:
Check of the HDD information
② S.M.A.R.T. DST:
Executing a simplified test or a reading test of all data
③ HDD R/W Check:
Executing a writing/reading test of all data. All data on the HDD will be erased if this test is executed.

Note: "2. S.M.A.R.T. Attribute . . ." is not to be used.

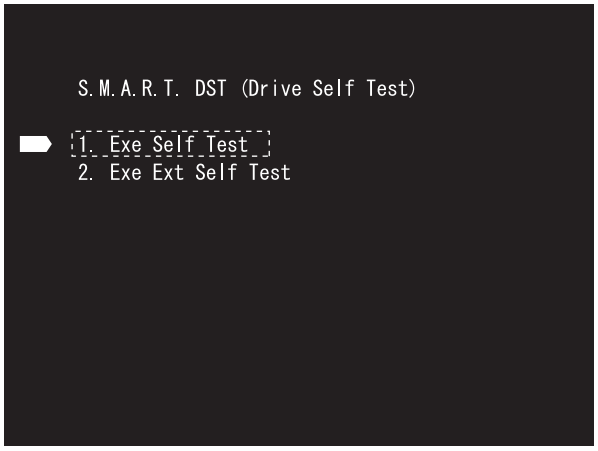
② Check the HDD information.
Press the "1" key on the remote control unit for servicing. Check the following data:
Model: Is the correct model name of the HDD displayed?
Recog. No: Is a positive value displayed?
SMART threshold: Is "not exceeded" displayed?

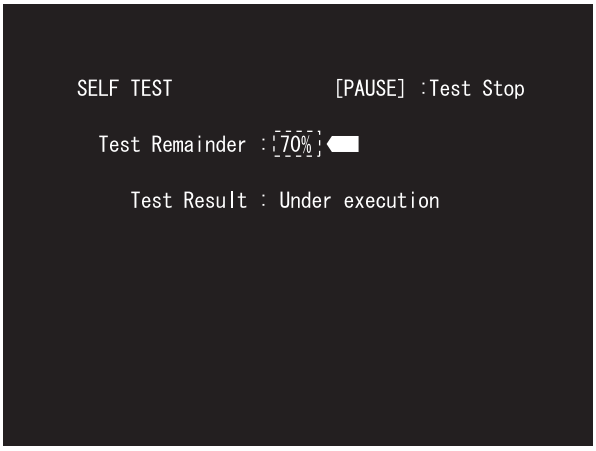


Detailed description
① Model:
For the correct model name, refer to the display of the unit.
② Recog. No:
Positive value: The HDD has been authenticated.
Negative value: The HDD has not been authenticated.
③ SMART threshold:
exceeded: The HDD has come to the end or near the end of its service life.
not exceeded: The HDD has not reached the end of its service life.

To return to the menu screen, press the "Clear" key.

③ Execute Self-Test.
Press the "3" key on the remote control unit for servicing while the menu screen is displayed.
When the following screen is displayed, press the "1" key to start the Self-Test.



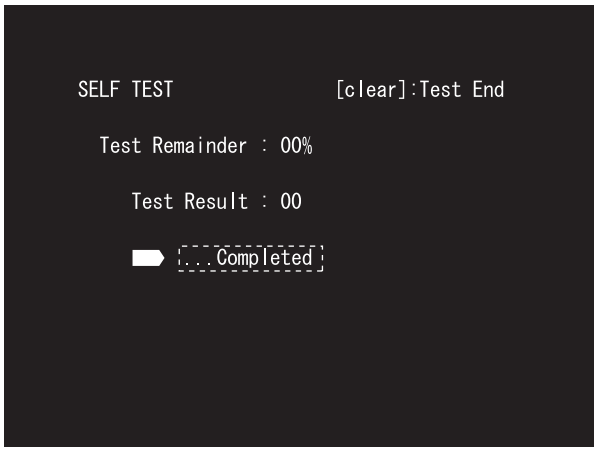


The progress of the test is displayed on the screen. The percentage remaining of the test is displayed on the screen, and the test is terminated when the percentage reaches 00%.
Check whether or not an error has occurred after the test is finished.

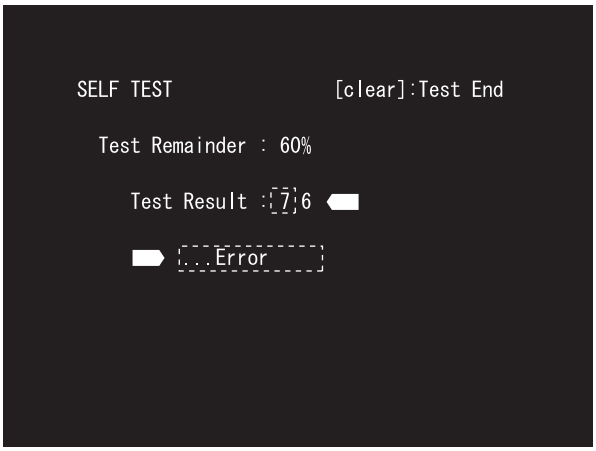
Diagnosis results
- Without an error: ". . . Completed" is displayed.
  Then, proceed to the Extended Self-Test.
- With an error: ". . . Error" is displayed. Look at the number in Test Result.
  If the place value for tens is 1 or 2, execute the Self-Test again.
  If it is from 3 to 7, the HDD must be replaced.

Note: If the result of the second test is the same, replacement of the HDD is required.

Example: No error

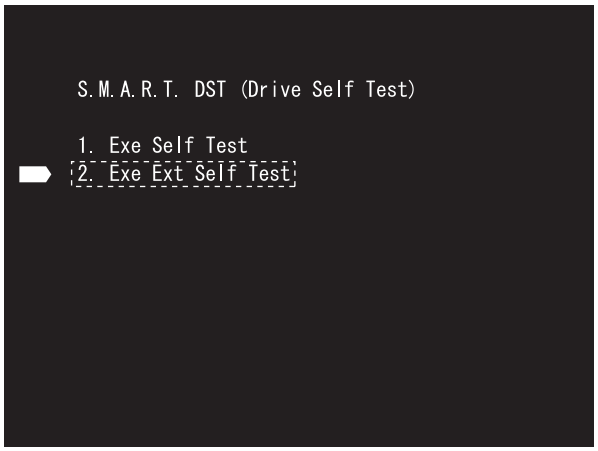


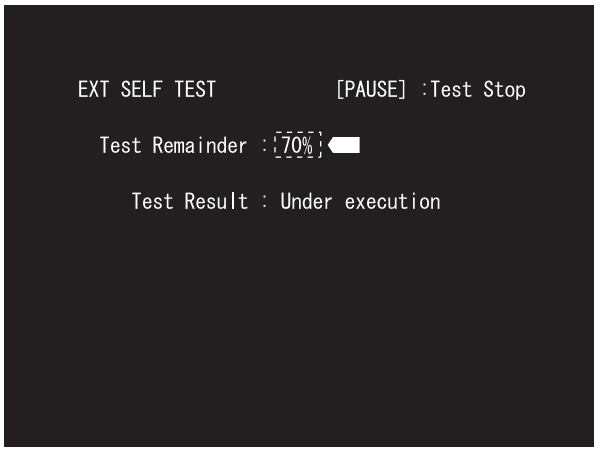
Example: With an error



To return to the menu screen, press the "Clear" key.

④ Execute the Ext (Extended) Self-Test.



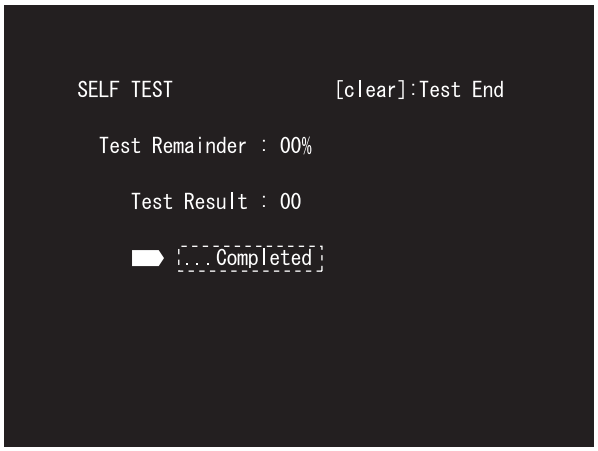


Press the "3" key while the menu screen is displayed, then the "2" key on the remote control unit for servicing. The Extended Self-Test starts. The percentage remaining of the test is displayed on the screen, and the test is terminated when the percentage reaches 00%. Check whether or not an error has occurred after the test is finished.

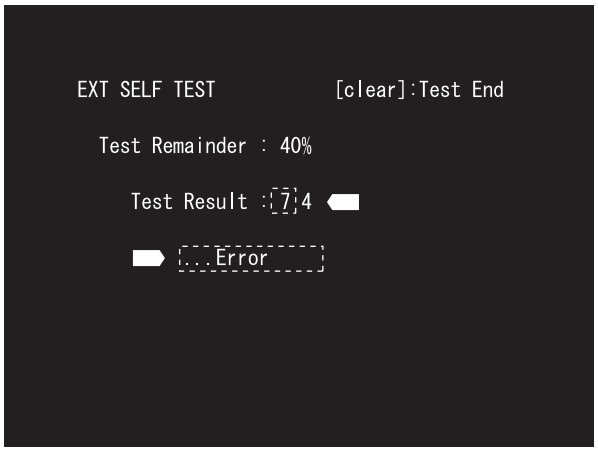
Diagnosis results
- Without an error: ". . . Completed" is displayed.
  If no error occurs up until this stage, HDD operations are normal except for writing operations.
  If the unit has a failure in HDD playback, a block other than the HDD may be in failure.
  If the unit's failure is in HDD recording, however, the next HDD Read/Write Check must be executed to test writing operations.
- With an error: ". . . Error" is displayed.
  Look at the number in Test Result.
  If the place value for tens is 1 or 2, execute the Ext Self-Test again.
  If it is from 3 to 7, the HDD must be replaced.

Note: If the result of the second test is the same, replacement of the HDD is required.

Example: No error



Example: With an error



To return to the menu screen, press the "Clear" key.

⑤ Execute the HDD R/W Check.

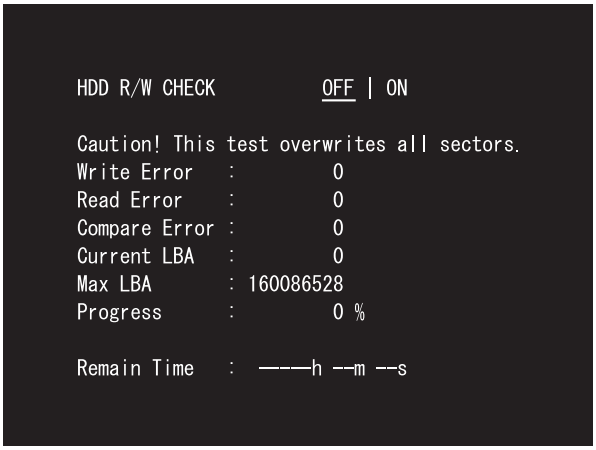
Before executing this test, **be sure to obtain your client's consent for erasure of HDD data**.

Press the "4" key while the menu screen is displayed then the "SKIP ►►I" key to start the HDD R/W Check.

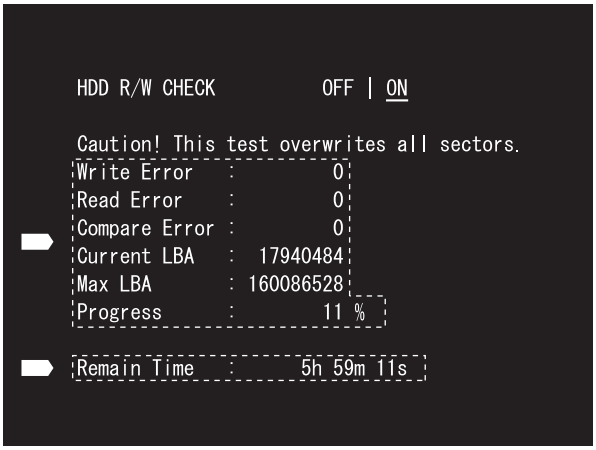
NOTE

Be sure to press the "SKIP I◄◄" key to complete this test after the progress reaches 100% or cancel this test (OFF) while it's in progress.

Do not press "ESC" key without pressing "SKIP I◄◄" key, otherwise this test is not completed and it causes unexpected errors on the HDD.



The display on the left indicates the progress of the test.
The percentage of the test progress is displayed on the screen, and the test is finished when the percentage reaches 100%.



Detailed description on each item on the screen

- Write Error: Number of write errors
- Read Error: Number of read errors
- Compare Error: Number of comparison errors
- Current LBA: The address during testing
- Max LBA: Highest address number of the HDD
- Progress: Percentage of test progress (%)
- Remain Time: Estimated time required for finishing the test across all sectors.
  Estimated time: 15 hours/500 GB
  8 hours/250 GB

Diagnosis results

- If no error occurs in any of the Write/Read/Compare items, the HDD is in normal condition and is not required to be replaced. A block other than the HDD is in failure.
- If any error occurs, the HDD must be replaced.

When the status is OFF

To terminate the diagnostic program, press the "ESC" key.

When the status is ON

The status becomes OFF when the test is interrupted by pressing the "SKIP I◄◄" key or when "Progress" reaches 100%.

6.11 DIAGNOSTIC PROCEDURES WHEN AAC DECODING HAS FAILED

[1] AAC information

[Purpose]

AAC Error Information

[How to Enter]

Press [ESC], [DISP], [+10], then [1], in that order. The first screen is displayed.
To switch screens, press [DIG/ANA].

First screen

```
[CD Media Debug Information]

Total Track:**(DA:** ROM:**)  Session:******

Application:
   External:—  (Note 1)
```

Note 1: Startup status (OK/NG) of the external decoder
If the external decoder starts up normally, OK is displayed. If it fails to start up, NG is displayed. With NG, playback of any AAC file will fail.

Possible causes for failure of startup and how to diagnose

Possible cause 1: No reset signal is input to IC101.
How to diagnose: Check whether a high signal is input to Pin AAC_RESET_B of IC101.

Possible cause 2: Communication failure between IC101 and IC1001 on the MAIN ASSY.
How to diagnose: Check whether high and low signals are alternately input to Pins AAC_D0 to AAC_D15, AAC_A0 to AAC_A10, AAC_RD_B, AAC_WR_B, and AAC_CS_B for communication.

Possible cause 3: Failure in IC101
How to diagnose: Check whether a low signal is output from Pin AAC_INT_B in response to the reply from IC101

Possible cause 4: Failure in IC101 that cannot be diagnosed

The flow of startup processes is as follows:
(1) A high signal is input to Pin AAC_RESET_B.
(2) Communication starts, using Pins AAC_D0 to AAC_D15, AAC_A0 to AAC_A10, AAC_RD_B, AAC_WR_B, and AAC_CS_B.
(3) In response to the process in step (2) above, a low signal is output from Pin AAC_INT_B.
(4) Steps (2) and (3) are repeated until the startup process is completed.

Second screen: Information on playback of MUSIC files

```
[MUSIC] [*ch  ****Kbps  **KHz-**Bit]  SRC:****
HEAD:[ AAC-xxxx(xxxx) FS:xx(xx) STSS:[xxx x]      ]

CurStat:*********   TgtStat:*********
ERROR; ******** (                                 )
       (Note 2) (                                 )
ADDRESS; NOW  :0x00000000   TOP  :0x00000000
         START:0x00000000   END  :0x00000000
         ENTRY:0x00000000
TIME ;   NOW  :**.**.**   TOTAL:**.**.**

FMODE; AREA:[*** *]  MODE:*****  ERR:**** CPR:****

FILE ;  CurNo:****_**  TgtNo:****_**   Total:****
        Name :
FOLDER; CurNo:****(****)  TgtNo:****(****)  Total:****
        Name :
```

Note 2:
ERROR information

If any error code is indicated in parentheses, a playback error has been generated. Each error code is displayed in its fixed position. (The duration of error-code indication is short, because when an error is generated, playback of the next file is automatically attempted.)

Description of error codes

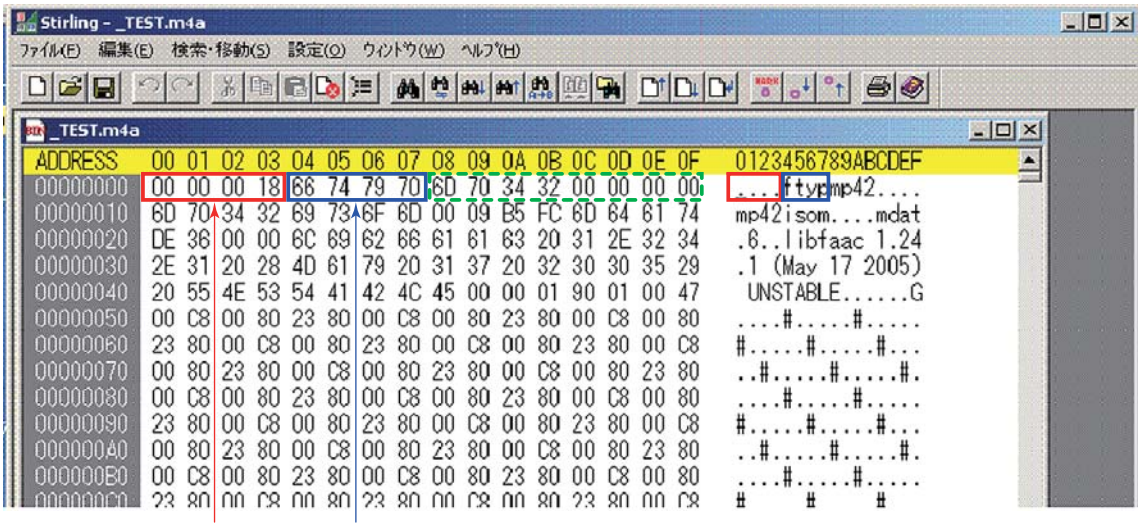
FMT : The file cannot be recognized as having an MP4 file format.
DEC : Although the file is recognized as playable, the decoder could not decode the data of the file correctly.
CH : The number of channels is not supported.
QNT : The quantization bit rate is not supported.
BPS : The bit rate is not supported.
FS : The sampling frequency is not supported.
BOX : The file format is judged to be not supported upon analysis of the MP4 file.
PRF : The Advanced Audio Codec (AAC) is judged to be not playable.
MEM : The system failed to secure the amount of memory required for playback.

Possible causes for errors and how to diagnose

Possible causes for an FMT error
Possible cause 1: Impossible box size for the first box of an MP4 format file
How to diagnose: Check the binary data of the file with which an FMT error was generated. Consider the first 4 bytes at the beginning of the file as the box size and check if the size is 0 or a value that exceeds the file size.
If the box size is 1, consider the 8 bytes from the 8th byte from the beginning as the box size. Check if the size is 0 or a value that exceeds the file size.

How to check the box size:

For checking the binary data of the file, use the Binary Editor of the PC tools.
The figure below shows the binary data of an MPEG4 file:



With this file, the first box is an "ftyp" box, and its size is 0x18 bytes (the figure in the frame in red).
In a case of an FMT error, the first box size is 0 or a value that exceeds the file size (impossible value for the MPEG4 file format).
If the box size is 1, the data that are framed in dotted green lines in the above figure are treated as the box size.

Possible cause 2: Failure in data reading during file analysis
How to diagnose: Check the ATA error log on the Debug screen.

How to check the ATA error log:

Display the ATA error log page by pressing [ESC], [DISP], [2], then [DIG/ANA], in that order.
The first 4 digits denote date, and the next 6 digits denote time. Check if the date and time match those when an error was generated during AAC playback.
You can switch between Writer and HDD data, using [FRM/TIM]. Switch according to the type of medium being played back.
For USB, there is no log for reading errors.

Possible causes for a DEC error
Possible cause 1: An error notification was issued by the decoder, because there was an error in the stream.
How to diagnose: Play back the file on the PC to check if an error is generated.

Possible cause 2: Data reading failed while the data were being transmitted to the decoder.
How to diagnose: Check the ATA error log on the Debug screen.
* See "How to check the ATA error log," above.

A "CH" error does not occur during AAC playback.

Possible causes for a QNT error
Possible cause 1: The encoding method is not 16-bit quantization.
How to diagnose: Check the number of quantization bits, using a PC analysis tool.

Possible cause 2: After data reading failed, an erroneous number of quantization bits was obtained.
How to diagnose: Check the ATA error log on the Debug screen.
* See "How to check the ATA error log," above.

Possible causes for a BPS error
Possible cause 1: The average bit rate exceeded 480 Kbps.
How to diagnose: Check the average bit rate, using a PC analysis tool.

Possible cause 2: After data reading failed, an erroneous average bit rate was obtained.
How to diagnose: Check the ATA error log on the Debug screen.
* See "How to check the ATA error log," above.

Possible causes for an FS error
Possible cause 1: The sampling frequency was less than 8 KHz or greater than 96 KHz.
How to diagnose: Check the sampling frequency, using a PC analysis tool.

Possible cause 2: After data reading failed, an erroneous sampling frequency was obtained.
How to diagnose: Check the ATA error log on the Debug screen.
* See "How to check the ATA error log," above.

Possible causes for a BOX error
Possible cause 1: An impossible box size was obtained during box analysis.
How to diagnose: Check the box size, using a PC analysis tool.

Possible cause 2: Data necessary for playback could not be obtained.
How to diagnose: Analyze the file, using a PC analysis tool, and check that SAMPLE DESCRIPTION BOX, TIME TO SAMPLE BOX, SAMPLE SIZE BOX (SAMPLE SIZE 2 BOX), SAMPLE TO CHUNK BOX, CHUNK OFFSET BOX (64BIT CHUNK OFFSET BOX) exist.

Possible cause 3: SAMPLE DESCRIPTION BOX, which signifies that audio streams are contained, did not exist.
How to diagnose: Check the binary data of the file with which this error was generated and confirm that the 20th byte does not indicate "mp4a." (A DRM file may also have this error.)

Possible cause 4: "AudioSpecificConfig" was not described in "SAMPLE DESCRIPTION BOX," which should show that an audio stream is contained.
How to diagnose: Check AudioSpecificConfig, using a PC analysis tool.

Possible cause 5: Data reading failed during file analysis.
How to diagnose: Check the ATA error log on the Debug screen.
* See "How to check the ATA error log," above.

Possible causes for a PRF error
Possible cause 1: Audio streams were not contained in "AAC LC" and "High Efficiency AAC Profile."
How to diagnose: Check the type of audio stream in AudioObjectType of AudioSpecificConfig, using a PC analysis tool.

Possible cause 2: After data reading failed, erroneous AudioObjectType data were obtained.
How to diagnose: Check the ATA error log on the Debug screen.
* See "How to check the ATA error log," above.

Possible causes for an MEM error
Possible cause 1: The shared memory region for the system was fragmented, and the memory region of 4,096 bytes that was necessary for file analysis could not be ensured.
How to diagnose: After setting the unit to Standby mode, turn the unit back on and check if an MEM error is generated. If it is, the system memory may be defective.

6.12 DIAGNOSTIC PROCEDURES WHEN CONNECTING THE LAN

[Purpose]
Diagnose based on Ethernet connection information.

[How to Enter]
Press [ESC], [DISP], [+10], [+10], then [7], in that order.

[1] Specifications of the Ether Debug Screen

```
① (Ether) Init:OK Link:UP

  [Recorder]
② MAC:00-E0-36-9A-8A-0C DHCP:ON DNS:ON PRX:IP
③ IP:192.168.1.50       SM:255.255.255.0
④ DG:192.168.1.1
⑤ DP:192.168.1.1        DS:0.0.0.0
⑥ PR:121.10.119.10      PT:80
⑦ SPEED:100BASE-TX full
```

In bold print: Fixed indications
In regular print: Variable indications

No.	Name	Descriptions	Remarks
①	Init	Whether initialization of LAN9211 (Ethernet Controller) has been completed successfully (OK) or not (NG)	In a case of NG, communication between the LAN9211 and EMMA2RFEx may have failed.
	Link	Whether the unit is connected to equipment that can communicate through Ethernet and has established links (UP) or not (DOWN)	
②	MAC	MAC address that is set for the unit	
	DHCP	Setting for automatic acquisition of an IP address	
	DNS	Setting for automatic acquisition of a DNS server	
	PRX	Proxy setting	With the Proxy setting ON, when the server assignment method is server name or IP address, NAME or IP is indicated, respectively.
③	IP	IP address that is set for the unit	
	SM	Subnet mask that is set for the unit	
④	DG	Default gateway that is set for the unit	
⑤	DP	DNS server primary address	
	DS	DNS server secondary address	
⑥	PR	With the Proxy setting ON, the server name or IP address is displayed.	With the Proxy setting OFF, - - - is displayed.
	PT	With the Proxy setting ON, the port number is displayed.	With the Proxy setting OFF, - - - is displayed.
⑦	SPEED	Display the communication speed and Duplex mode.	

[2] Simple diagnostic procedures

Sympton: Neither CDDBonline search nor ConnectPC (Ethernet) function.

No.	Screen Position	Check Items and Unit Status	Possible Cause
1	Ether ①	Init indication: OK: Initialization of the Ethernet-associated LSI (IC301) has been successfully completed. NG: Poor communication between the Ethernet-associated LSI (IC301) and HOST microcomputer (IC1001). Initialization of the Ethernet-associated LSI (IC301) has failed.	With NG: Failure in IC301 (the Ethernet Controller). Failure in communication between IC301 and IC1001, defective solder, or failure in power supply.
2	Ether ①	Link indication: UP: The unit is connected to equipment that can communicate through Ethernet and has established links. DOWN: The links are not established.	With DOWN: Defective LAN terminal, poor connection of the ETAB board, defective LAN cable, the router's power is OFF, or the connected equipment cannot communicate through Ethernet.
3	Ether ②	IP indication: Is the IP address set within the ranges shown below? CLASS A: 10.0.0.1 to 10.255.255.254 CLASS B: 172.16.0.1 to 172.31.255.254 CLASS C: 192.168.0.1 to 192.168.255.254	With an IP address that is out of the range described on the left: If automatic acquisition of an IP address is set to ON, check the setting of the router.

7. DISASSEMBLY

Note 1: Do NOT look directly into the pickup lens. The laser beam may cause eye injury.
Note 2: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

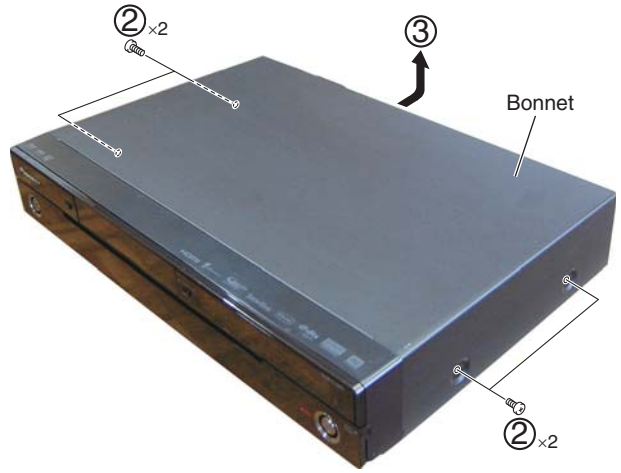
Diagnosis

1 Bonnet

① Remove the five screws.

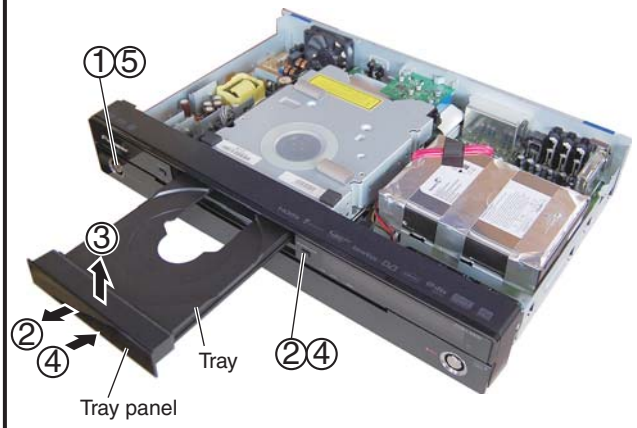
• **Rear view**

② Remove the four screws.
③ Remove the bonnet.



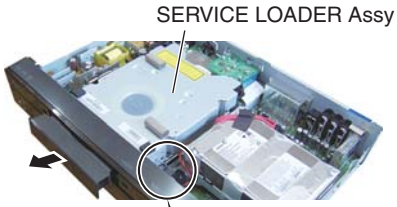
2 Tray Panel

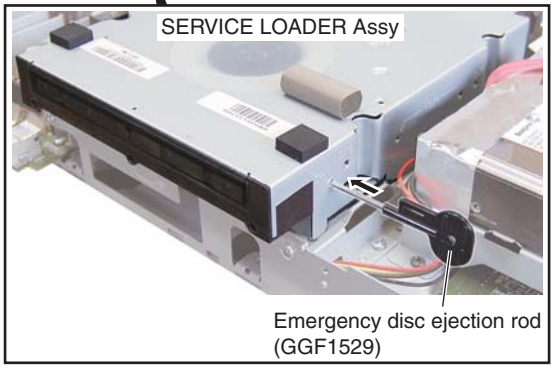
① Press the ⏻ STANDBY/ON button to turn on the power.
② Press the ⏏ OPEN/CLOSE button to open the tray.
③ Remove the tray panel.
④ Press the ⏏ OPEN/CLOSE button to close the tray.
⑤ Press the ⏻ STANDBY/ON button to turn off the power.



● How to open the tray when the power cannot be turned on

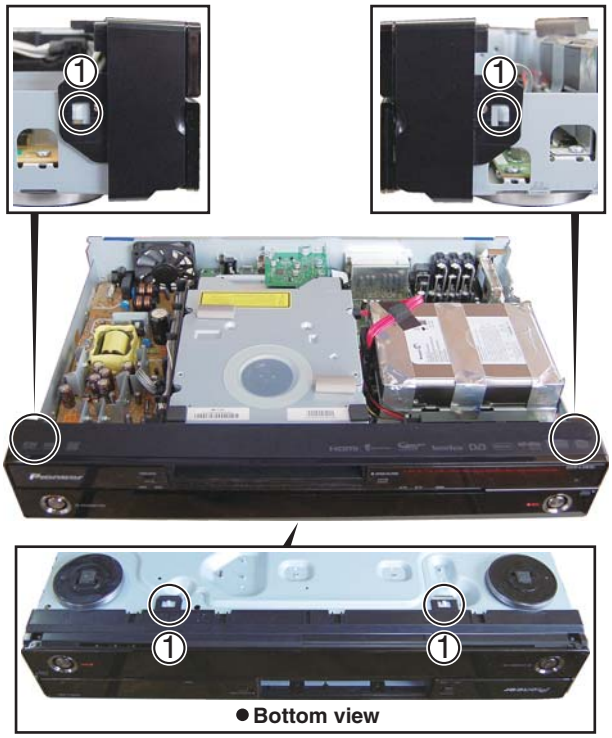
When the tray cannot be opened because the power cannot be turned on, it can be opened using the emergency disc ejection rod (GGF1529). (A long, thin rod about 1 mm in diameter can be used in place of the rod.)





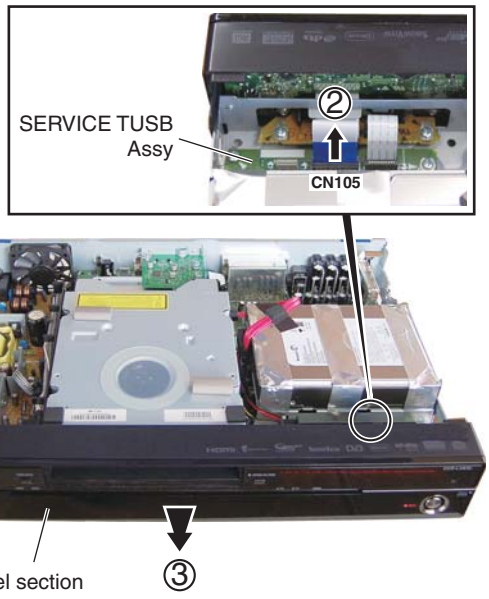
3 Front Panel Section

① Unhook the four hooks.



② Disconnect the one flexible cable.

③ Remove the front panel section.

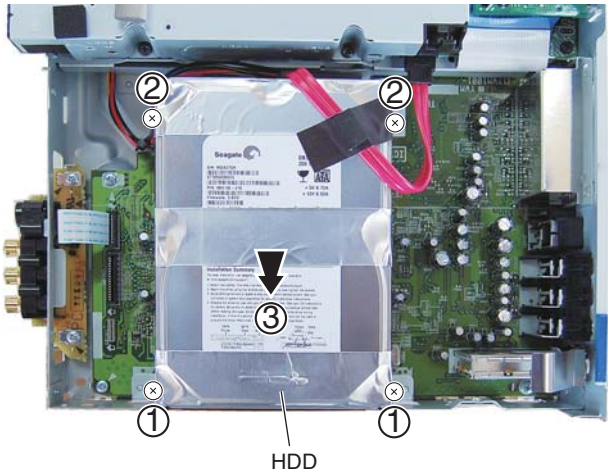


4 HDD

① Remove the two screws.

② Remove the two screws.

③ Remove the HDD with the HDD stay.



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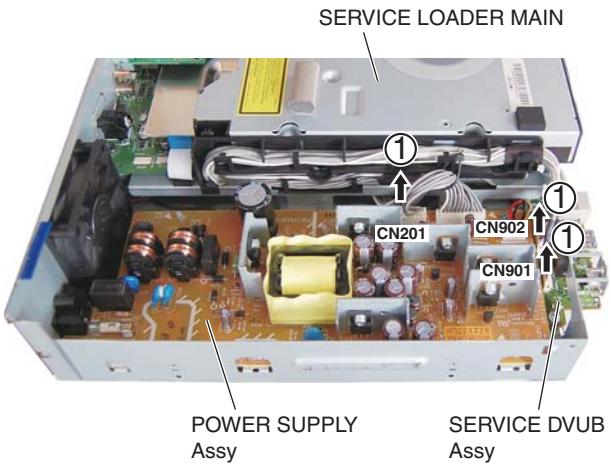
5 SERVICE LOADER MAIN

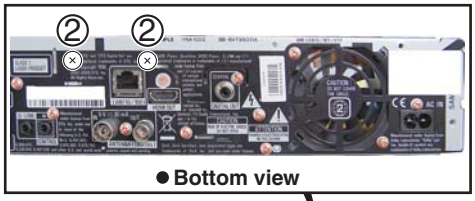
① Disconnect the three connectors.



DVR-LX61D Only

② Remove the two screws.

③ Remove the ETAB Assy while disconnecting the B to B connector.



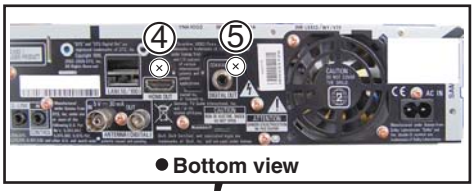
④ Remove the one screw.

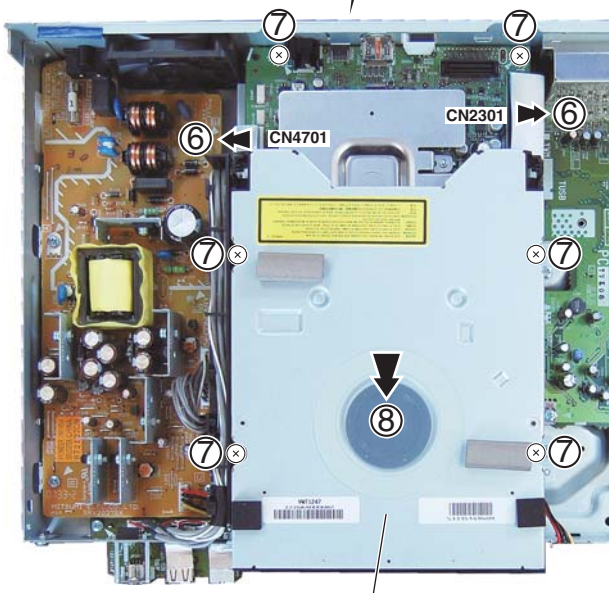
⑤ Remove the one screw.

⑥ Disconnect the two flexible cables.

⑦ Remove the six screws.

⑧ Remove the SERVICE LOADER MAIN.

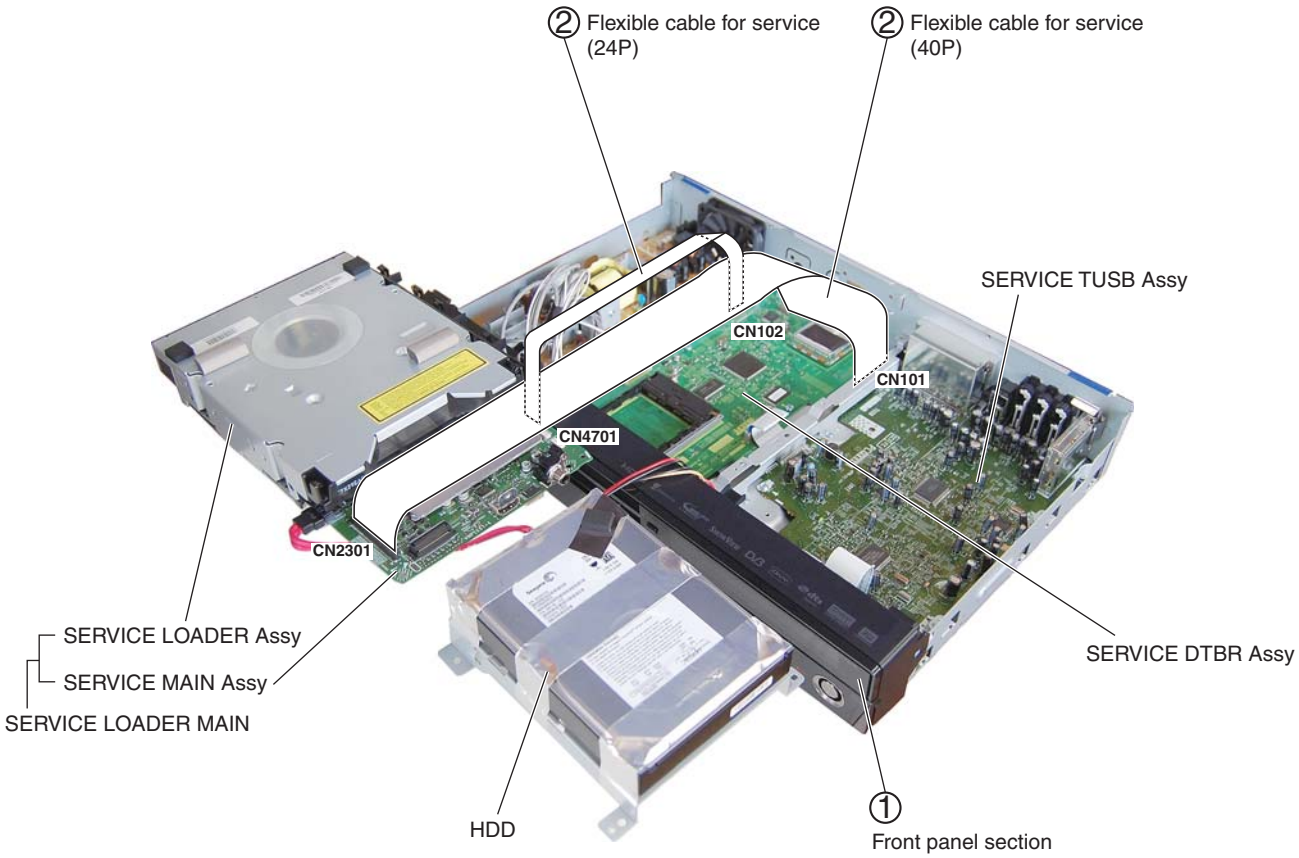




6 Diagnosis

① Reassembling the front panel section.
② Connect the two flexible cables for service.
③ Arrange the unit as shown in the photo below.

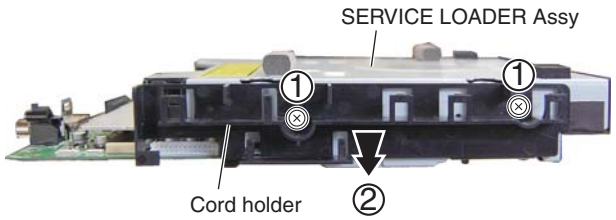
Diagnosis



Access to the SERVICE MAIN Assy, Cleaning the Pickup Lens

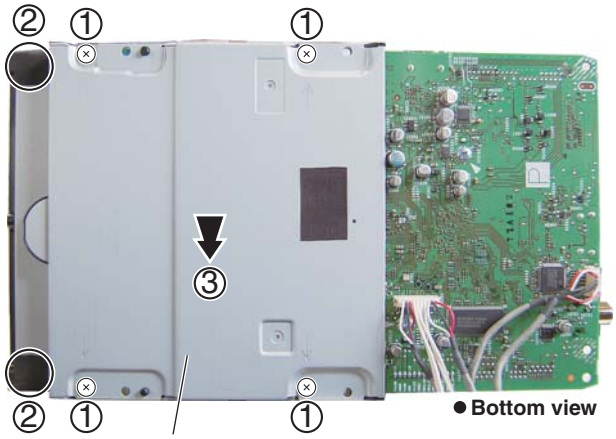
● Cord Holder

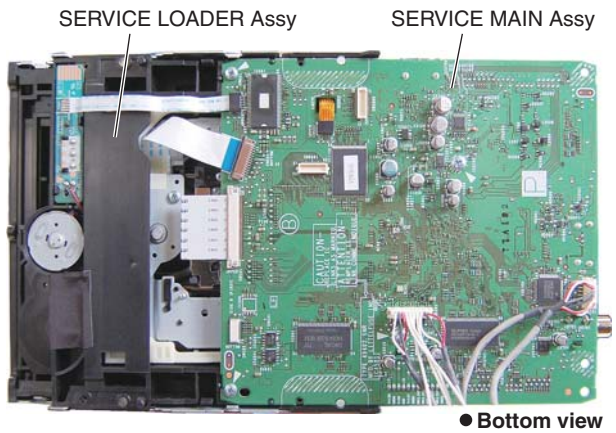
① Remove the two screws.
② Remove the cord holder.



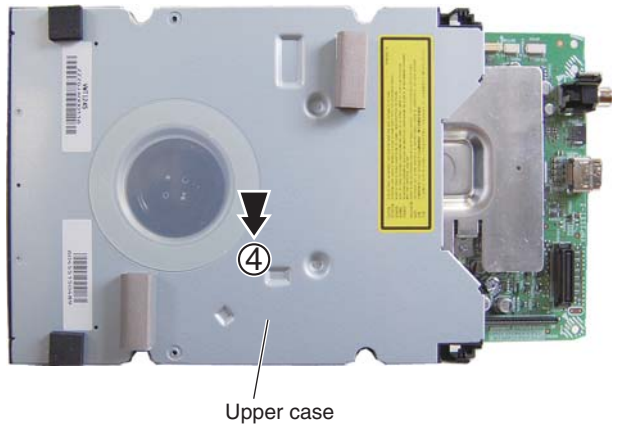
● Low Case U11, Upper Case

① Remove the four screws.
② Remove the two tapes.
③ Remove the low case U11.



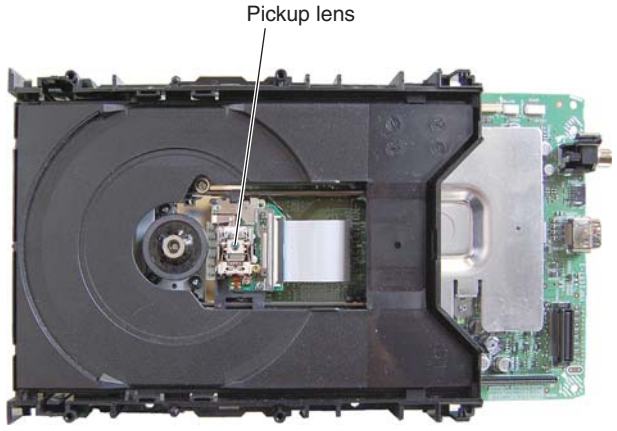


④ Remove the Upper case.



Before shipment, be sure to clean the pickup lens, using the following cleaning materials:

Cleaning liquid : GEM1004
Cleaning paper : GED-008



8. EACH SETTING AND ADJUSTMENT

8.1 MODEL SETTING

[Purposes]

When the MAIN Assy and/or TUJB Assy that are(is) commonly used with another model are(is) replaced, they(it) must recognize the model of this unit.

Items to be set: The model number, destination, and region No. must be set.

[Tool to be used]

Remote control unit for servicing
(GGF1381)

[Notes]

- Once the setting has been made, it can never be changed. Be sure to make the setting correctly.
- As this setting resets the Assy(s) in question to the factory-preset status, it is recommended that you obtain the customer's consent beforehand.

[Procedures]

① After the unit is turned on, the model name for the original equipment manufacturer is displayed on the TV monitor screen. Input "9696" on the remote control unit for service to change it to the model name for Pioneer.

```
[Recorder's Model Setting]
Input the number using the remote for Service

> ----

Input No.  No. Model          Input No.  No. Model
[ 0116 :  1  MRX-1725/EC1 ] [ 0318 :  7  MRX-1750/EC2 ]
[ 0216 :  2  MRX-1735/EC1 ] [ 0418 :  8  MRX-1795/EC2 ]
[ 0316 :  3  MRX-1755/EC1 ] [ 0220 :  9  MRX-1730/CEK ]
[ 0416 :  4  MRX-1799/EC1 ] [ 0222 : 10  MRX-1730/RU3 ]
[ 0118 :  5  MRX-1720/EC2 ] [ 0322 : 11  MRX-1750/RU3 ]
[ 0218 :  6  MRX-1730/EC2 ] [ 0422 : 12  MRX-1795/RU3 ]
```

② The following screen is displayed on TV monitor. Press four digits properly by using the remote control unit for service, according to the screen information.

```
[Recorder's Model Setting]
Input the number using the remote for Service

> ----

Input No.    Model
[0102 : DVR-560HX/WY ]
[0202 : DVR-LX61D/WY ]
[0104 : DVR-560HX/WV ]
[0204 : DVR-LX61D/WV ]
[0106 : DVR-560HX/WY/RE ]
[0206 : DVR-LX61D/WY/RE ]
[0109 : DVR-560HX/WPW ]
[0209 : DVR-LX61D/WPW ]
```

③ Disconnect then reconnect the AC power cord of the unit. Be careful not to impart vibration to the unit immediately after the AC power cord is disconnected.

```
DVR-LX61D/WY              VERSION : 0.14
   SYSCON  : RELEASE_179
             Rev.1.7379
TUNERCON   : 2.22                    OK
     DRIVE : DVD-RW  DVR-U13         OK
             1.10                    OK
 PIC SERIAL : 007710217604
   HDD INT  : ----
   HDD USE  : ----

  GNDB B  : NOBKUP     GNDB U  : NOBKUP
  DEVICE  : E2R-FEx1.1   FLASH : 128M
  REGION  : 2              C   : 0000000153
                         HDCP  : 0000000153
    DTB H : 450          DTB S : 108   OK
                         DTB B : 13A6  OK
```

④ Reset the recorder to all its factory settings.
(Make sure that the recorder is on. Press and hold ■ (STOP) key and press ⏻ (STANDBY/ON) key on the front panel.)
The recorder turns off with all settings reset.

⑤ Press [ESC] then [DISP] keys by using the remote control unit for servicing, and then confirm each Model Name.

⑥ End

8.2 LD POWER ADJUSTMENT

[Purposes]

If a combination of a main board and PU is changed, the LD power adjustment and adjustment for disc judgment needs to be made for a new combination of the main board and PU since the adjusted LD-power value becomes inappropriate for the new combination and stable playback and recording to disc becomes impossible.

[Tools to be used]

GGF1381 : Service Remote Control Unit
GGV1054 : CD-ROM (CDT-313)
GGV1036 : DVD-ROM DL (DVDT-002)
GGV1278 : Blank DVD-R (That's DR-C12WTY5PA)
GGV1282 : Blank DVD-RW (JVC VD-W120XH5)
GGV1284 : Blank DVD-RAM (maxell DRM120C.1P5S)

[Notes] Never turn the power off while any of the following operations is in progress:
- While laser diode (LD) power adjustment is being performed normally by the unit
- While adjustment for disc judgment is being performed

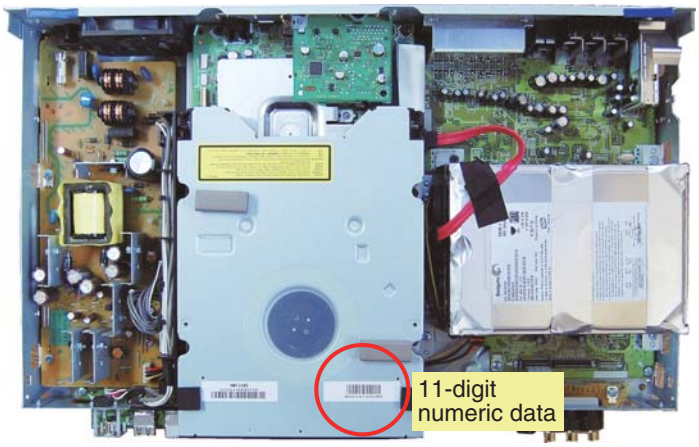
[Explanation on each adjustment mode]

- Drive Adjustment Mode

  This mode is used to select each mode for LD power adjustment.
  In this mode, you can confirm an 11-digit number provided for the LD power adjustment.
  The 11-digit number is stored in FLASH (IC1102) of the main board.

- PU Data Setting Mode

  This mode is used to enter an 11-digit number provided for the LD power adjustment.
  If you have changed a combination of the main board and PU, enter an 11-digit number marked on the case of a loader which is provided in pairs with PU.
  The LD power adjustment is made by using this 11-digit number.



- Power Adjustment Mode

  This mode is used to execute the LD power adjustment and to check the progress of the adjustment.
  In case an error occurs during the adjustment, you can also check the error details in this mode.

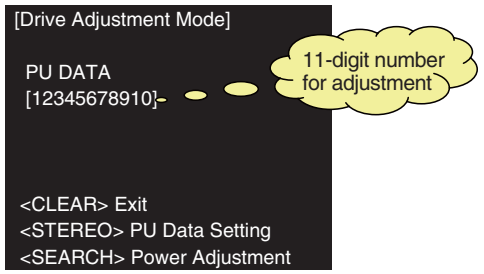
[How to enter Drive Adjustment Mode]

To enter the Drive Adjustment Mode, press [ESC]+[CX]+[1]+[0] on the remote control unit for service.

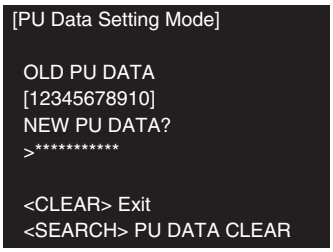
Though the LD power adjustment can be executed irrespective of the product functions, do not operate the product during the LD power adjustment to prevent misadjustment.

[Operation procedure]

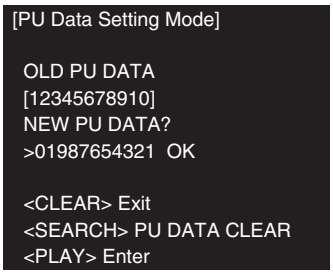
1. When you enter the Drive Adjustment Mode, the following screen is displayed. On this screen, you can check 11-digit numeric data stored in FLASH of MAIN Assy, and can also switch over between each mode.



2. To enter the PU Data Setting Mode, press [STEREO] on the remote control unit for service.
   Entering the PU Data Setting Mode displays the following screen.

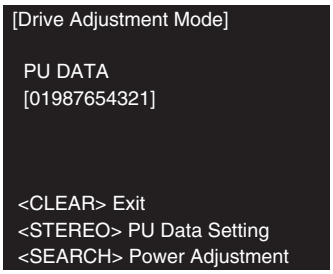


3. By pressing [0] to [9] keys on the remote control unit for service, enter an 11-digit number marked on the case of a loader provided in pairs with PU.
   Entering the 11-digit number displays the following screen.



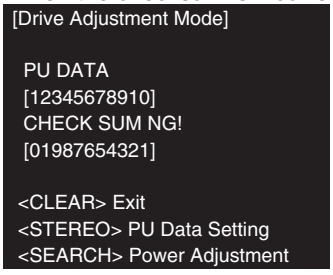
4. To enter the 11-digit number, press [PLAY] on the remote control unit for service.
   The 11-digit number contains 2-digit checksum data to prevent input errors.
   The screens displayed for the correct/incorrect check sum are as follows.

When the checksum is correct



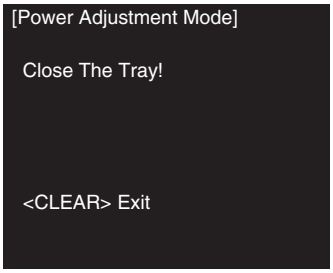
When the checksum is correct
Enter the Power Adjustment Mode and execute the LD power adjustment, as described in 5.

When the checksum is incorrect



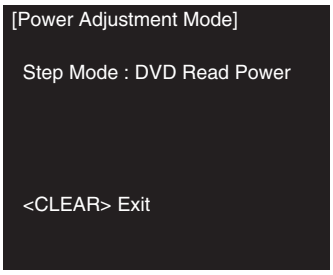
When the checksum is incorrect
The input data may be incorrect.
Return to 2 and enter the PU Data Setting Mode to re-enter the 11-digit number.

5. When the checksum is correct, enter the Power Adjustment Mode and execute the LD power adjustment.
   To enter the Power Adjustment Mode, press [SEARCH] on the remote control unit for service.
   Entering the Power Adjustment Mode displays the following screen and opens the tray automatically.



When the tray does not open
- Check if flexible cables and wire rods are connected properly.
- Errors in the loader, main board, or power source board are suspected.

6. Close the tray manually to execute the LD power adjustment mode.
   You can check the progress of adjustment in the following screen.

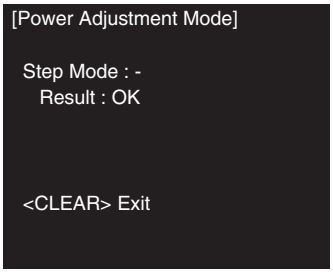


Explanation on Step Mode (time needed)
- DVD Read Power (approx. 10 sec.)
  Adjustment of DVD playback power
- RAM Read Power (approx. 20 sec.)
  Adjustment of RAM playback power
- DVD Write Power (approx. 40 sec.)
  Adjustment of DVD recording power
- CD Read Power (approx. 10 sec.)
  Adjustment of CD playback power
- DVD Disc Judgment (approx. 30 sec.)
  Adjustment for DVD disc judgment
- CD Disc Judgment (approx. 30 sec.)
  Adjustment for CD disc judgment

7. When DVD Disc Judgment is displayed in the Step Mode, the tray opens automatically.
   Place DVDT-002 in the tray. The tray closes after 15 seconds from the time it opened.
   If the adjustment for DVD disc judgment is completed successfully, CD Disc Judgment is displayed in the Step Mode.

If the adjustment for DVD disc judgment is not completed successfully
- A disc other than DVDT-002 may have been placed.
  Place DVDT-002 in the tray.

8. When CD Disc judgment is displayed in the Step Mode, the tray opens automatically.
   Place CDT-313 in the tray. The tray closes after 15 seconds from the time it opened.
   If the adjustment for CD disc judgment is completed successfully, the following screen is displayed.
   Since the judgment is completed successfully, press [CLEAR] on the remote control unit for service and exit from the adjustment mode.

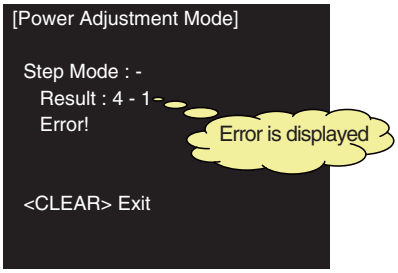


If the adjustment for CD disc judgment is not completed successfully
- A disc other than CDT-313 may have been placed.
  Place CDT-313 in the tray.

9. Turn off the power.

[Error information]

In case of errors in the Power Adjustment Mode, the following screen is displayed.



About error indication

[Left number]

The left number indicates the Step Mode in which the error has occurred.

- 2: Adjustment of DVD playback power
- 3: Adjustment of RAM playback power
- 4: Adjustment of DVD recording power
- 5: Adjustment of CD playback power
- 6: Adjustment for DVD disc judgment
- 7: Adjustment for CD disc judgment

[Right number]

The right number indicates the error information.

1 or 2: Error in the adjustment process

(Details of error)

- The PU flexible cables may not have been connected.
- TM or main board error is suspected.

3: Forced termination

This number is displayed when you pressed [CLEAR] on the remote control unit for service and executed forced termination.

[Contents to check]

1. Record the data to a designated disc (DVD-R / DVD-RW / DVD-RAM) in real time.
2. Measure an error rate at a place where recording is executed.
   Measurement method: Refer to the simplified error rate measurement method in the Service Mode.
3. Check that the error rate is 3.3e-3 or below.

If the error rate is out of specification

- Check if there is any defect or fingerprint on the disc. If you find any problem with the disc, change the disc and try the check again.
- The power adjustment may have been unsuccessful.
  Try the power adjustment again.

If the above two do not solve the problem, a defect with MAIN Assy or PU is suspected.

8.3 CPRM ID NUMBER AND DATA SETTING

[Purposes]

For the DVD recorder,it is necessary with the recoding/playback of DVD-RW disc to set an individual number (ID number) and ID data to each recorder. If the number and data are not set correctly with the following procedure, cannot work with residual quantity 0:00 or operations in the future may not be guaranteed with RW disc. You will find the ID number to be set on the ID label on the rear panel.

The Input is Necessary When:

- " CPRM ERR" is displayed on the FL display immediately after the power is turned on or in Stop mode.
- When the MAIN ASSY or the HDD is exchanged.

[Tools to be used]

Remote control unit supplied with the unit

Remote control unit for servicing (GGF1381)

DVD Recorder Data Disc (Type 2)

Be sure to use the latest disc (Type 2).
In Apr. 2008, the latest disc is GGV1321.

[Notes]

Important: If no ID label is found on the rear panel, write down the specified ID number by checking it according to "How to confirm the ID number" shown below.

- Input the ID number while the unit is in Stop mode.
- After the data are read from the data disc (Type 2), the disc will automatically be unloaded.

[1] Input Flow of the ID No. and ID Data When Exchanging HDD or MAIN Assy

• When exchanging HDD or MAIN Assy, or both exchanged

When displayed "CPRM ERR"

Power → ON

When displayed following message at Power on
FL Tube : [E01]
CRT display :
An error occured. Please consult the service center. Note that contents on the HDD may be erased when servicing this unit.

When displayed following message at Power on
FL Tube : [CPRM ERR]
CRT display :
CPRM information is not correct.

■ Confirmation of the CPRM ID No.

■ Deletion of the CPRM ID No.(when ID No. is registered.)

■ Input of the CPRM ID No. and ID data

Power → OFF → ON
Normal operation mode

End

● New HDD/when there is error on recorded contents

When displayed following message at Power on
FL Tube : [E02]
CRT display :
HDD information is not correct. Execute HDD Initialize from the Disc Setup menu.

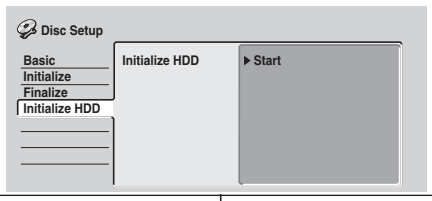
● Exchanging to the original HDD(when there is no error on the recorded contents.)

[CAUTION]

All recorded data are deleted if the HDD is intialized.
Take care that restoration of the user's data recorded on the HDD is totally impossible.
Before servicing, **OBTAIN THE USER'S PRIOR CONSENT** to that effect.

*Use Remote Control of the unit

Execute
HOME MENU → Setup → Disc Setup → Intialize HDD → Initialize HDD → Start



*Goes to normal operation with no caution

End

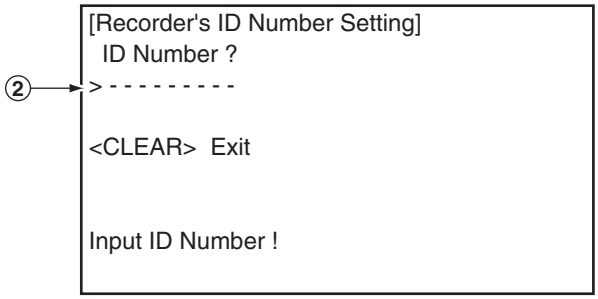
After OSD displaying "Finished" after initilaization, reboot.

http://getMANUAL.com

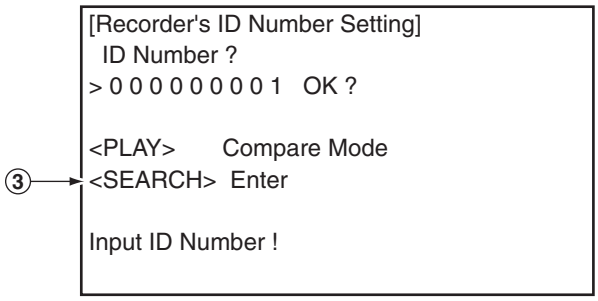
[2] How to Input the ID Number and ID Data

① To enter the input mode, press ESC + STEREO keys sequentially in a status with no ID number set, such as after FLASH-ROM downloading.

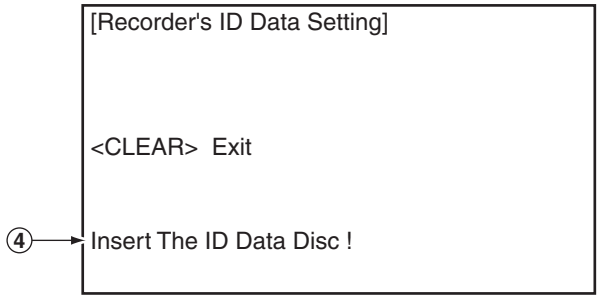
② As number input is enabled when the unit enters the input mode, input the 9-digit ID number.
(The entered number is also displayed on the FL display.)



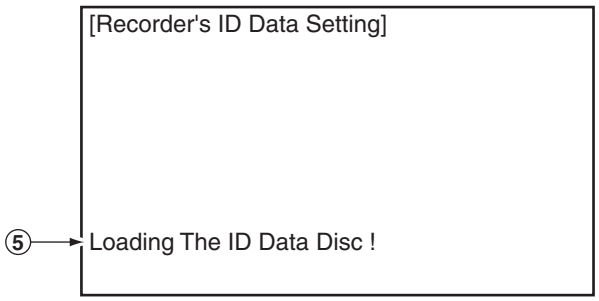
③ After inputting the number, press SEARCH keys to register the ID number.



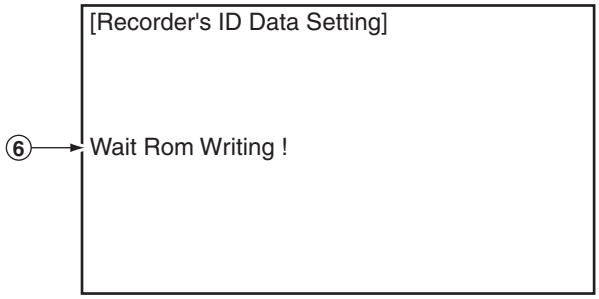
④ When the ID number has been registered, the unit enters the ID data input mode. (The FL display indicates "INSERT ID.")
In this condition, place the ID data disc on the tray and close the tray using the CLOSE key "■/⏏" on the player.



⑤ While the data are being read, the message shown in the figure at left is displayed on the screen.
(The FL display indicates "LOAD ID.")

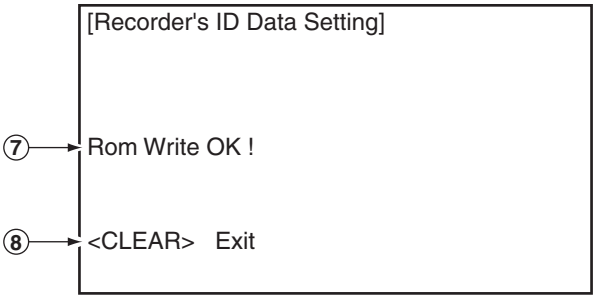


⑥ When the ID data have been read, the data are written to the FLASH-ROM.
(The FL display indicates "WRITE ID.")



⑦ When the ID data have been written to the FLASH-ROM, the message "Rom Write OK" is displayed on the screen.
(The FL display indicates "ID OK.")

⑧ After confirming this message, press CLEAR key to exit the input mode.

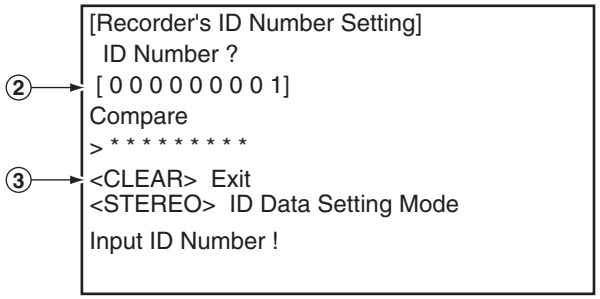


[How to Confirm the ID Number]

① Press ESC + STEREO keys sequentially with an ID number already set, and the unit enters the ID number confirmation mode.

② The set ID number is displayed on the screen (and on the FL display), permitting you to confirm it.

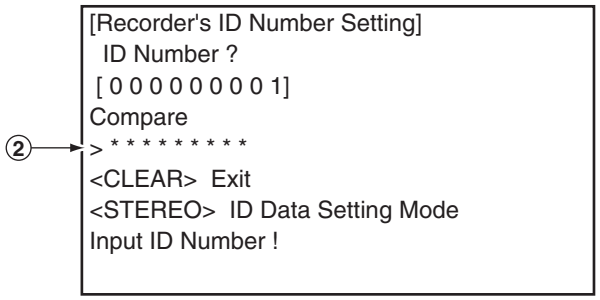
③ To exit this mode, press CLEAR key.



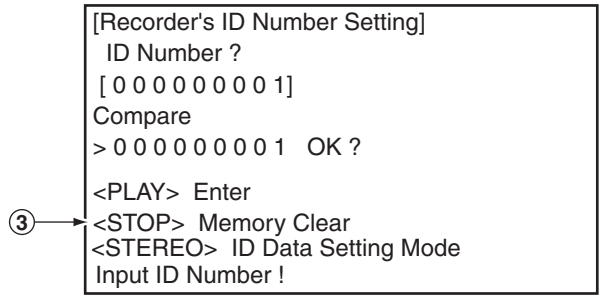
[How to Clear the ID Number]

① Press ESC + STEREO keys sequentially with an ID number already set, and the unit enters the ID number confirmation mode.

② Input the same number as the ID number you have set.



③ After inputting the number, press STOP key.
Only when the entered number matches the set ID number, the ID number is cleared and the unit exits this mode.
If the numbers do not match, you must return to step ②.
(STOP key is not accepted until 9 digits are entered.)



8.4 FIRMWARE UPDATE METHOD

[Purposes]

1. When the main board is replaced, the firmware versions for the system control computer, drive, and the TUFL microcomputer do not match, and operations of the unit may be destabilized.
   To match the versions for the above three, firmware downloading is necessary in the following cases:
   ① After the model setting
   ② When NG is displayed on the first screen (version information, etc.) of Service mode
   ③ After changing MAIN Assy or TUSB Assy

2. Rewriting the firmware to the latest version may ameliorate the symptoms claimed by the customer.

There are the following two methods for update: disc update and serial update

[1] Disc Update

[Tools to be used]

Remote control unit
for servicing
(GGF1381)

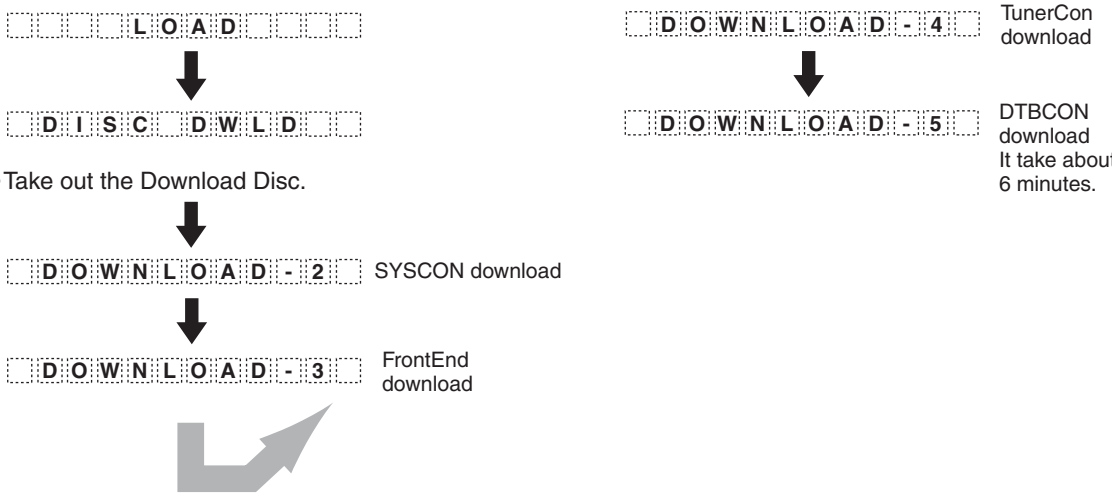
Firmware Update Disc
(Refer to Page 99.)

[Notes]

Be sure NOT to turn off the unit during update.
If the unit is turned off during update, the SYSCON, TUNERCON, DRIVE programs may not be properly rewritten, in which case the unit may not be able to initialize itself normally when turned on again.

[Procedure] ① Open a disc tray by pressing the "OPEN/CLOSE" button.
② Put the update disc on the tray. Press a " OPEN/CLOSE " button while pressing a "Record Stop" button on the frontpanel.
* The disc tray closes automatically and the disc is loaded.
* The disc tray opens automatically after loading.

FL display



* After update is completed, the power turns off, and a disc tray closes automatically.
* It takes for about 7-8 minutes until update is completed.

④ The power turns on and press a " ESC " button, then press " DISP " button on the remote control unit for servicing.
⑤ Confirm a firmware release version.
⑥ Press " ESC " button on the remote control unit for servicing in order to exit the test mode.

[Tips]

(1) If the power is not correctly turned on or when the power is shut off during update, proceed as follows before performing update again:

- In a case where update was incorrectly terminated while "DOWNLOAD-2" was displayed on the FL display:
  The SYSCON program will not function correctly.
  If the program cannot be update from the disc or through serial communication, replace the MAIN Assy.
- In a case where update was incorrectly terminated while "DOWNLOAD-3" was displayed on the FL display:
  The DRIVE program will not function correctly.
  If the program cannot be update from the disc, replace the MAIN Assy.
- In a case where update was incorrectly terminated while "DOWNLOAD-4" was displayed on the FL display
  The program for the tuner microcomputer will not function correctly.
  If the program cannot be update from the disc, replace the TUNERCON microcomputer (IC101 : TUSB Assy).
- In a case where downloading was incorrectly terminated while "DOWNLOAD-5" was displayed on the FL display
  The program for the IDTB microcomputer will not function correctly.
  If the program cannot be downloaded from the disc, replace the DTB microcomputer (DTBR Assy).

[2] Serial Update

[Purposes]

1. This method is used when disc update fails.

[Tools to be used]

* PC with serial port
* RS-232C straight cable
* RS-232C I/F jig (GGF1348)
* 7P FFC (VDA1681)
* Update program (UFU.exe)
* Firmware

[Connection]

Connect as follows:

[Procedures]

① Connect the 232C I/F jigs above way.

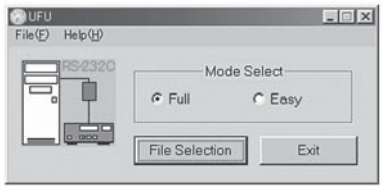
② Turn on the PC and start the " UFU.exe ".

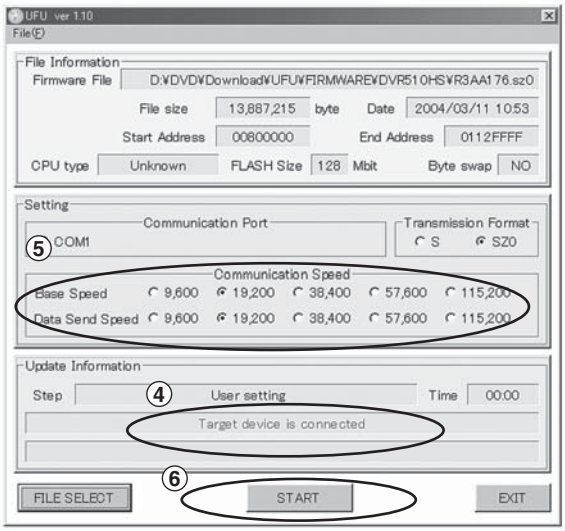
③ Select the Firmware file. ("sz0" file)

④ Turn the DVD recorder on and start the update program.
" Target Device is connected " is appeared on the screen.

⑤ Select the Communication Speed (Baud Rate)
a) Base Speed 115,200
b) Data Send Speed 115,200

⑥ START
- Even if you click "START" button, sometimes "Communication Error" may come out one to twice, and update may fail.
  In this case, please click "START" again.
- Other factors can be considerd if update fails 3 times or more.
- And it takes about 40 minutes for updating the firmware.





■ HOW TO PRODUCE A DISC FOR UPDATING

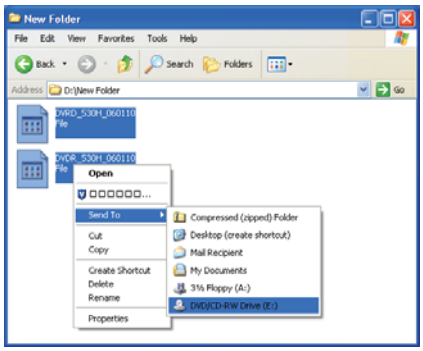
Items necessary for producing a disc (CD-R or CD-RW) for updating

- CD-R/RW drive
- CD-R/RW writing software
- Blank CD-R or CD-RW disc
- Supported OS: Windows 98/98SE/ME/2000/XP *

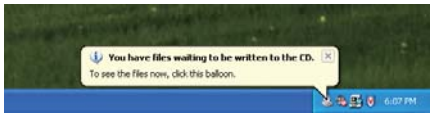
* Other OS's, such as Linux and MacOS, cannot be used.

How to produce a disc for updating

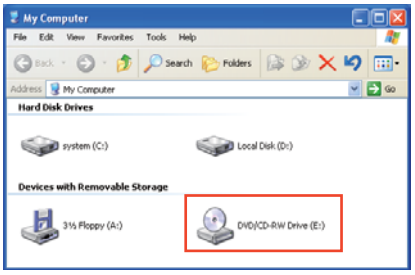
1. Right-click on the icon of the file for updating that you downloaded to any folder and select "Send To" in order to send the file to the drive to be used for writing to the disc.
   * Do NOT change the filename.



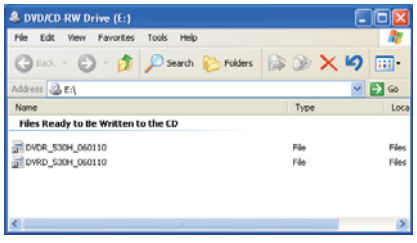
2. An icon appears at the right of the taskbar on the bottom of the screen. Click on it.



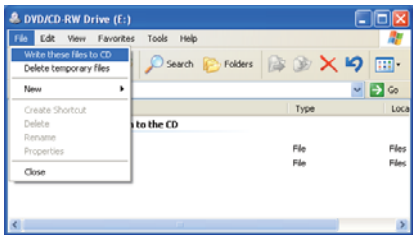
   * If the icon does not appear, select the drive to be used for writing to the disc from My Computer.



   When the PC is ready for writing, the window shown will be displayed.



3. Load a CD-R/RW disc in the drive. Select File then "Write these files to CD" * Be sure to use a blank disc.
   * Scratches or dirt on the disc may result in a failure in writing.



4. The Writing to CD Wizard will be displayed. Click on Next to start writing.

5. When writing is finished, the disc will be ejected. Production of the disc for updating is completed.

8.5 GRACENOTE DATABASE UPDATE METHOD

[Purposes]

1. Gracenote DB should be stored in build-in HDD to search for audio CD titles.
   After replacing the HDD, it is necessary to download the Gracenote DB.

2. While the GUI screen is not displayed, press the ESC then DISP keys.
   When “NOBKUP” was displayed on the first screen (version information, etc.), update the latest Gracenote Database (GNDB) information.

3. Rewriting the database to the latest version may ameliorate the symptoms claimed by the customer.
   (Confirm that the GNDB B and GNDB U are latest version.)

[1] Disc Update

[Tools to be used]

Remote control unit
for servicing
(GGF1381)

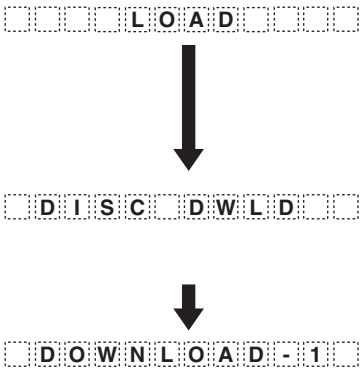
Gracenote DB
Update Disc
(Refer to Page 99.)

[Notes]

Be sure NOT to turn off the unit during update.
If the unit is turned off during update, the GNDB programs may not be properly rewritten, in which case the unit may not be able to initialize itself normally when turned on again.

[Procedure] ① Open a disc tray by pressing the "OPEN/CLOSE" button.
② Put the update disc on the tray. Press a " OPEN/CLOSE " button while pressing a "Record Stop" button on the frontpanel.
* The disc tray closes automatically and the disc is loaded.

FL display



GNDB download

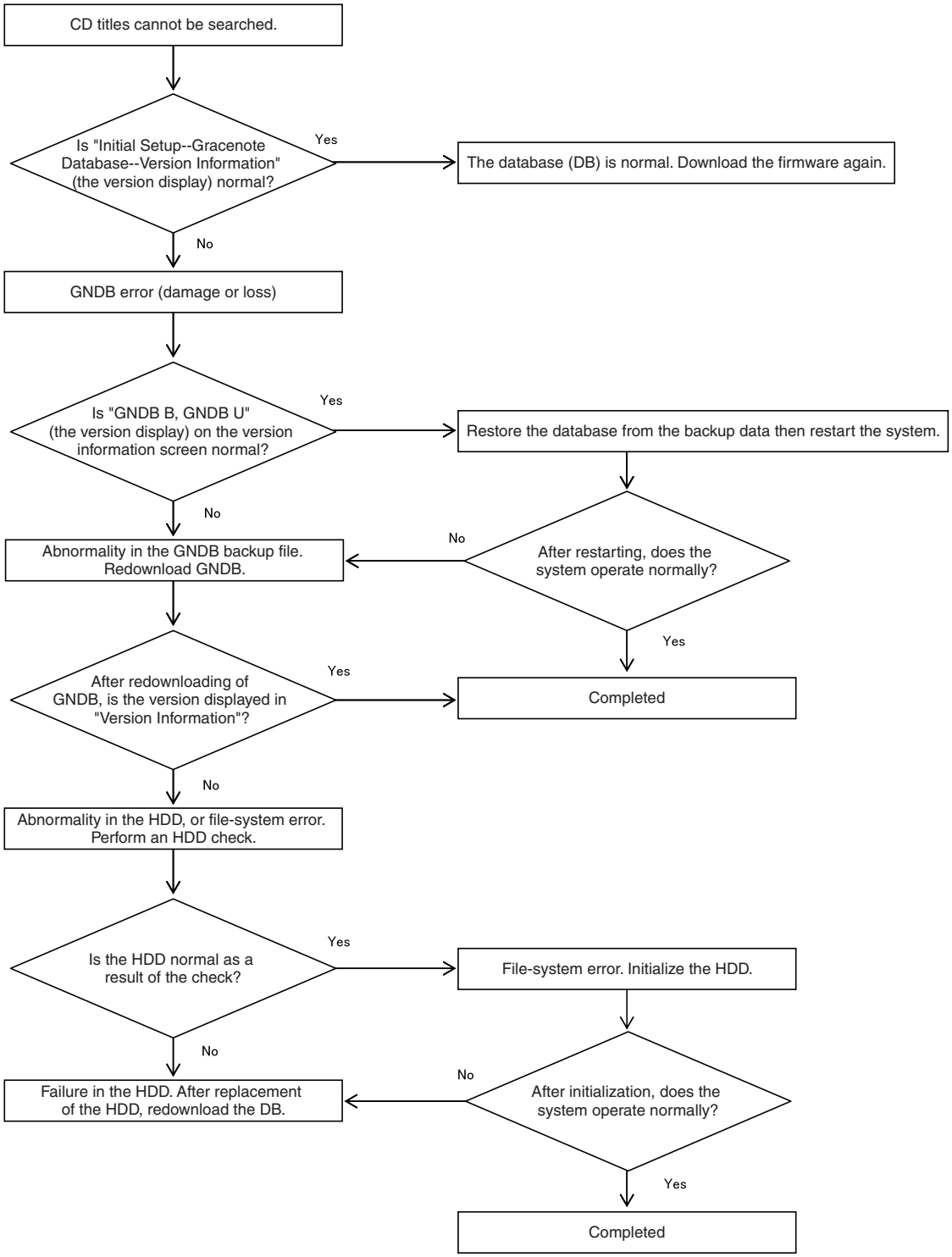
*After update is completed, the disc tray opens automatically.
At this time, "DOWNLOAD-1" or "CLOCK" is displayed on the FL display.
*It takes for about 15 minutes until update is completed.

③Take out the Update Disc.
④The power turns off. (An effective key is "STANDBY/ON" key.)
⑤The power turns on and press a " ESC " button, then press " DISP " button on the remote control unit for servicing.
⑥Confirm a GNDB B and GNDB U version.
⑦Press " ESC " button on the remote control unit for servicing in order to exit the test mode.

[Tips]

Note: If the AC power fails during updating, the HDD may be damaged.

[Diagnosis Flowchart]



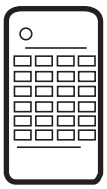
8.6 VIDEO ADJUSTMENT FOR SPECIFIC AREA

[Purposes]

Depending on the area, if a flicker may appear in a picture received by the tuner, it can be corrected or reduced with this setting.

[Tools to be used]

Remote control unit supplied with the unit



Remote control unit for servicing (GGF1381)

[1] Specific-Channel Setting Mode

In this mode, specific settings can be made for up to 12 channels.
For channels that do not have specific settings, the settings of General Setting mode are applied.

[How to enter this mode]

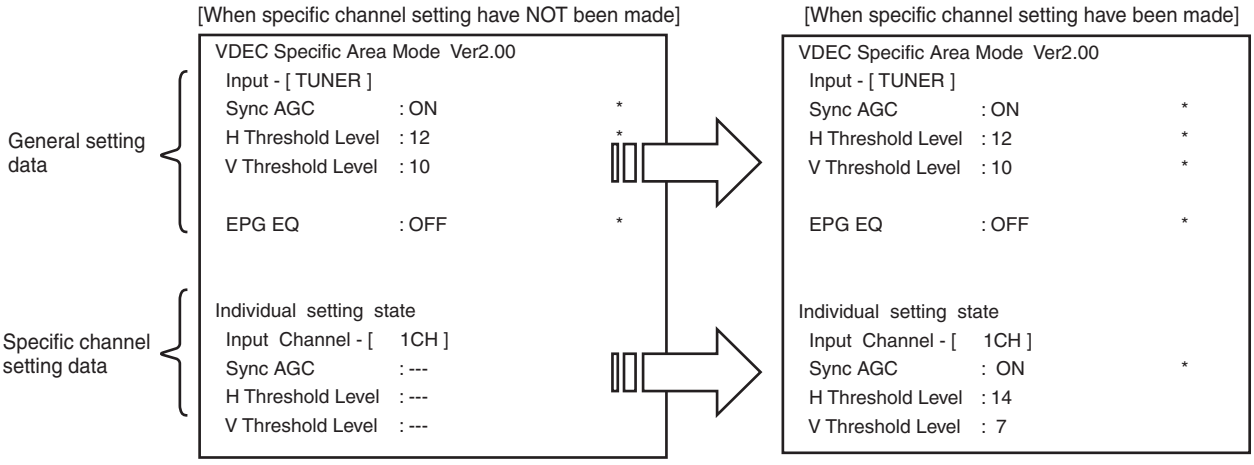
① Select a channel or line input (L1-L3) on which a specific setting is to be made.
② Press the ESC then CHP/TIM keys on the remote control unit for servicing. "General Setting mode" is displayed.
③ Press the DIG/ANA key in General Setting mode. Specific-Channel Setting mode is entered.

[How to exit] Press the ESC key on the remote control unit for servicing to return the Normal mode.

[Note] Setting is in effect only during recording/playback stop.

[Setting examples]

The setting examples in Specific-Channel Setting mode are shown below.
For details on each setting item, see "Table 1: Key operations in Specific-Area Setting mode."



[Tips]

- If a channel that does not have specific settings is displayed, the setting figures are displayed as hyphens (- -).
- If the setting figures are not displayed as hyphens, those settings have been specifically set even if they are identical to the default settings or those of General Setting mode.
- The setting indicated with an asterisk (*) is the default.
- The channels to be indicated for "Input Channel" are as shown below:
  Line inputs: L1-L3, DV (DV is not valid for specific-area settings.)
  Tuner channels: Channels received by the tuner (channels to be set in Specific-Channel Setting mode, etc.)

[Tips]

- Indication when the maximum number (12) of channels have individual settings
  If a channel that does not have specific settings is currently selected, the indication will be as shown below, and individual data items cannot be set for that channel. To set individual data items for the currently selected channel, you must clear any specific-channel settings for one or more channels.

```
Specific Area Mode
  Input - [ TUNER ]
  Sync AGC          : ON          *
  H Threshold Level : 12          *
  V Threshold Level : 10          *

  EPG EQ            : OFF         *

Individual setting state
  Sorry !
  You can store only 12 channels
  for Specific Area mode.
```

[H Threshold Level]
The slice level setting for the horizontal(H)-sync separation circuit can be changed. By your changing the slice level, horizontal sync disturbance may be ameliorated. Set the slice level to a value with which the least sync disturbance is seen.

[V Threshold Level]
The slice level setting for the vertical(V)-sync separation circuit can be changed. By your changing the slice level, vertical sync disturbance may be ameliorated. Set the slice level to a value with which the least sync disturbance is seen.

[Receiver sensitivity setting for an electronic program guide (EPG)]
The sensitivity when receiving an electronic program guide can be selected. Set the sensitivity to "High" only if reception is unstable.

[2] General Setting Mode

[How to enter this mode]

- To shift from Specific-Channel Setting mode:
  Each time the DIG/ANA key is pressed, Specific-Channel Setting mode and General Setting mode are alternately selected.

- To shift from Normal mode (recording/playback stop):
  Press the ESC then CHP/TIM keys.

[How to exit] Press the ESC key to return the normal mode.

[Setting examples]

Show setting example on the General Setting mode screen to the following.
Regarding setting of actual each item, refer to table 1 (key operations in specific-area setting mode).

[General Setting mode screen]

```
Specific Area Mode
  Input - [ TUNER ]
  Sync AGC          : ON          *
  H ThresholdLevel  : 12          *
  V Threshold Level : 10          *

  EPG EQ            : OFF         *
```

*: Setting is the default.

[Display in General Setting mode when the channel currently displayed has specific settings]

```
Specific Area Mode
  Input - [ TUNER ]
  Sync AGC          : ON          *
  H ThresholdLevel  : 12          *
  V Threshold Level : 10          *

  EPG EQ            : OFF         *

This channel is set up
  individually.
```

[Tips]

- General Setting mode can be entered only during recording/playback stop.
- The currently selected input mode (TUNER or LINE) is displayed for "Input."
- If L1, L2, L3, or DV is selected for input, general settings for the line input can be made (DV is not valid for specific-area settings), and if TUNER is selected, general settings for the tuner input can be made.

Table 1: key operations in specific-Area setting mode (1/2)

Key operations in Specific Area Setting mode of the remote control units are shown in the table below (the keys are of the remote control unit for servicing unless otherwise stated):

Key	Operation	Switching (*: Default)	Remarks	Used in Specific-Channel Setting mode	Used in General Setting mode
[DIG/ANA]	Switches General setting mode and Specific setting mode.	–	–	○	○
[INPUT SELECT], [CHANNEL +/-] (Remote control unit supplied with this unit)	Switches inputs or channels.	–	–	○	○
[SIDE A] , [SIDE B]	Sets SyncAGC.	ON(*) / OFF	ON : The sync level is set to an appropriate value. OFF : Cancel the Sync AGC.	○	○
[Rev ×3], [×3 Fwd]	Sets H Threshold.	0 – 15 (Default : 12)	[Rev ×3] : Decreasing 1 by 1 in the range 0 to 15. (Cyclic operation) [×3 Fwd] : Increasing 1 by 1 in the range 0 to 15. (Cyclic operation)	○	○
[Rev CHAPTER SKIP] [CHAPTER SKIP Fwd]	Sets V Threshold Level.	0 – 15 (Default : 10)	[Rev CHAPTER SKIP] : Decreasing 1 by 1 in the range 0 to 15. (Cyclic operation) [CHAPTER SKIP Fwd] : Increasing 1 by 1 in the range 0 to 15. (Cyclic operation)	○	○

Table 1: key operations in specific-Area setting mode (2/2)

Key	Operation	Switching (*: Default)	Remarks	Used in Specific-Channel Setting mode	Used in General Setting mode
[PLAY]	All channels that have specific setting data will be canceled, and the specific data will be initialized.	–	The General Setting data will not be changed.	○	×
[CLEAR]	Specific-Channel Setting mode: If the currently selected channel has its specific setting, that setting will be canceled. (By canceling the specific setting for that channel, the number of remaining channels that can have specific settings will be increased by one.) General Setting mode: Settings of General Setting mode are initialized.	–	Specific-Channel Setting mode: All specific data are initialized. The General Setting data will not be changed. General Setting mode: All general setting data are reset to default. The specific setting data will not be changed (will be retained).	○	○
[PAUSE]	The specific-channel-setting data for the currently selected channel are reset to default.	–	The General Setting data will not be changed (will be retained).	○	×
[ESC]	To quit Setting mode for a specific area and clear the on-screen display.	–	–	○	○

Notes:
• Each key listed in Table 1 above is active only while the tuner is completely stopped.
• The setting values will not be reset to default even if resetting to the state at the time of shipment is performed.

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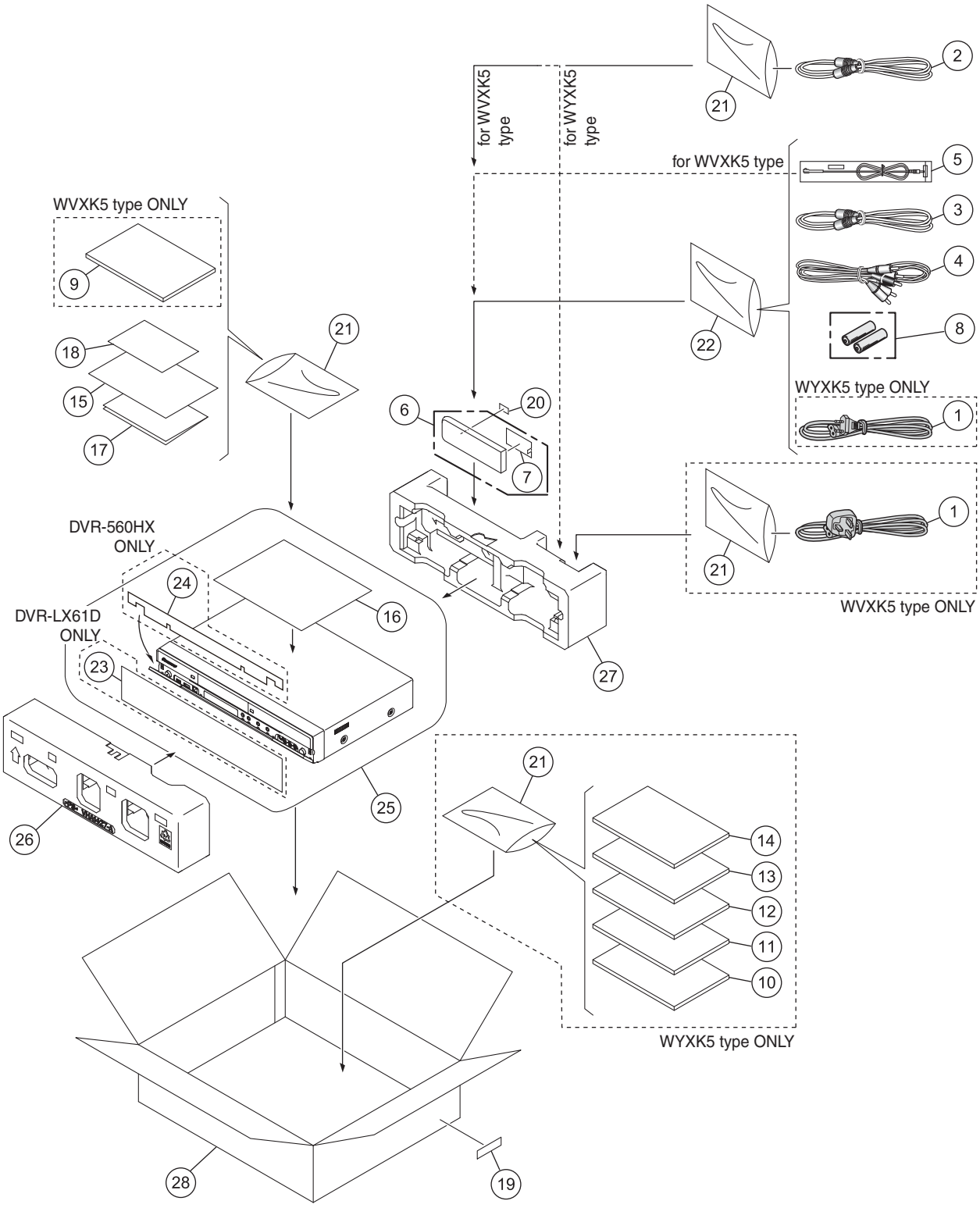
9. EXPLODED VIEWS AND PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *Screws adjacent to ▼ mark on product are used for disassembly.*
● *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

9.1 PACKING SECTION



(1) PACKING SECTION PARTS LIST

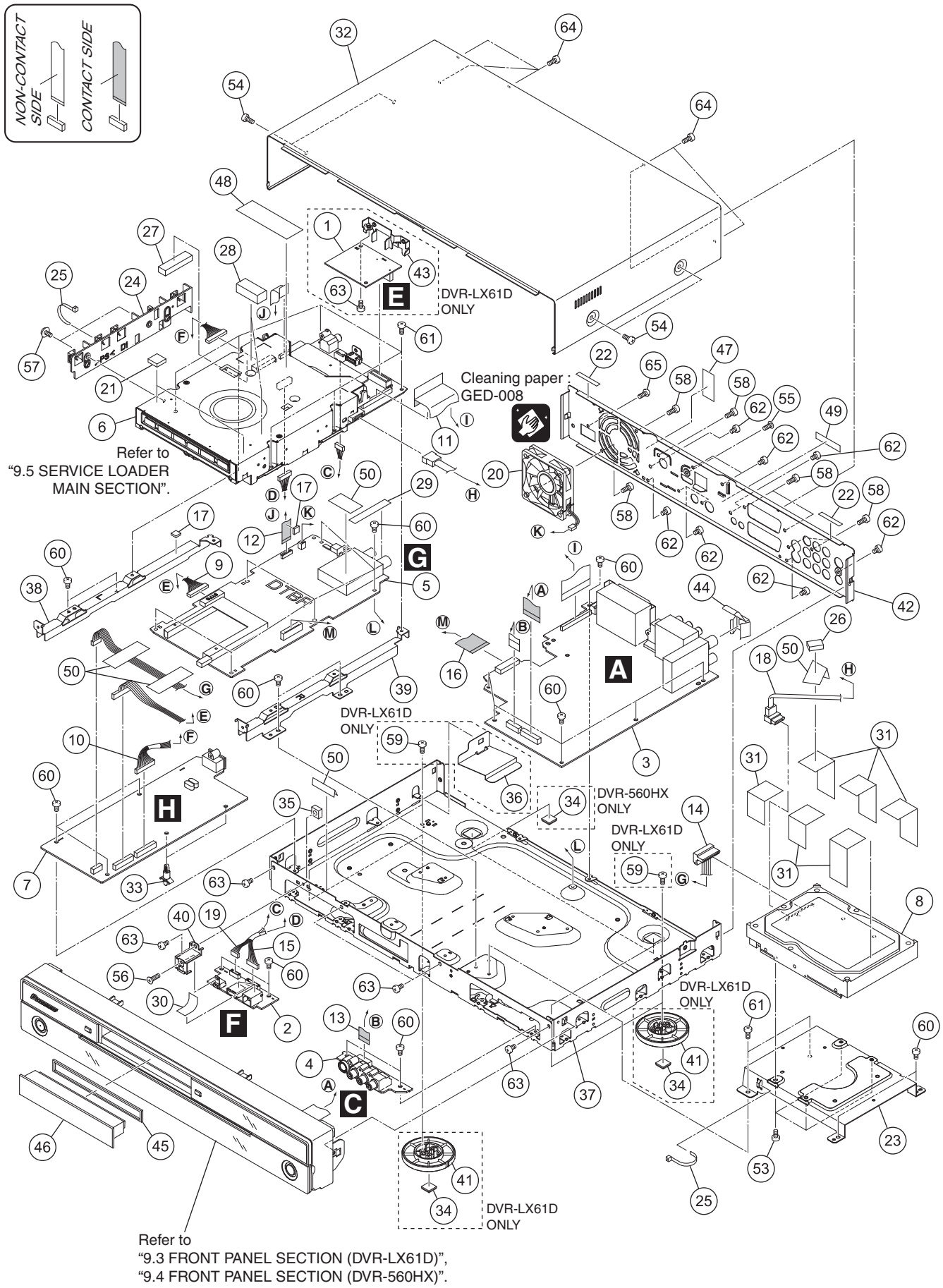
Mark	No.	Description	Part No.
⚠	1	Power Cable	See Contrast table (2)
	2	RF Antenna Cable (PAL)	VDE1095
	3	RF Antenna Cable (PAL)	VDE1075
	4	Audio / Video Cable (1.5 m) (red/white/yellow)	VDE1077
	5	G-Link™ Cable (3 m)	VDX1010
	6	Remote Control	See Contrast table (2)
	7	Battery Cover	VZN1025
NSP	8	Dry Cell Batteries (AA/R6P)	VEM1010
	9	Operating Instructions (English)	See Contrast table (2)
	10	Operating Instructions (French)	See Contrast table (2)
	11	Operating Instructions (German)	See Contrast table (2)
	12	Operating Instructions (Italian)	See Contrast table (2)
	13	Operating Instructions (Dutch)	See Contrast table (2)
	14	Operating Instructions (Spanish)	See Contrast table (2)
	15	HDD Caution 8L	VRR1072
	16	HDD Caution 8L B	VRR1077
NSP	17	Warranty Card	ARY7112
NSP	18	Caution Card	VRR1095
NSP	19	Serial Label S	VRW2017
	20	WEEE Label	VRW2231
	21	Polyethylene Bag B5	VHL1051
	22	Polyethylene Bag B5	VHL1088
	23	Nonwoven Cloth Cover	See Contrast table (2)
	24	Mirror Sheet	See Contrast table (2)
	25	Mirror Mat	VHL1095
	26	Front Pad	VHA1425
	27	Rear Pad	VHA1426
	28	Packing Case	See Contrast table (2)

(2) CONTRAST TABLE

DVR-LX61D/WVXK5, WYXK5, DVR-560HX-S/WVXK5, WYXK5, DVR-560HX-K/WVXK5 and WYXK5 are constructed the same except for the following:

Mark	No.	Symbol and Description	DVR-LX61D /WVXK5	DVR-LX61D /WYXK5	DVR-560HX-S /WVXK5	DVR-560HX-S /WYXK5	DVR-560HX-K /WVXK5	DVR-560HX-K /WYXK5
⚠	1	Power Cable	ADG7077	ADG1127	ADG7077	ADG1127	ADG7077	ADG1127
	6	Remote Control	VXX3284	VXX3284	VXX3285	VXX3285	VXX3292	VXX3292
	9	Operating Instructions (English)	VRB1487	Not used	VRB1486	Not used	VRB1486	Not used
	10	Operating Instructions (French)	Not used	VRC1458	Not used	VRC1457	Not used	VRC1457
	11	Operating Instructions (German)	Not used	VRC1463	Not used	VRC1462	Not used	VRC1462
	12	Operating Instructions (Italian)	Not used	VRC1467	Not used	VRC1466	Not used	VRC1466
	13	Operating Instructions (Dutch)	Not used	VRC1470	Not used	VRC1469	Not used	VRC1469
	14	Operating Instructions (Spanish)	Not used	VRC1474	Not used	VRC1473	Not used	VRC1473
	23	Nonwoven Cloth Cover	YHL1001	YHL1001	Not used	Not used	Not used	Not used
	24	Mirror Sheet	Not used	Not used	VHL1117	VHL1117	VHL1117	VHL1117
	28	Packing Case	YHG1023	YHG1024	YHG1025	YHG1026	YHG1027	YHG1028

9.2 EXTERIOR SECTION



(1) EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	ETAB Assy	See Contrast table (2)
	2	SERVICE DVUB Assy	YXX1001
	3	SERVICE TUSB Assy	YXX1002
	4	SERVICE FRJB Assy	See Contrast table (2)
	5	SERVICE DTBR Assy	VXX3319
NSP	6	SERVICE LOADER MAIN	See Contrast table (2)
⚠	7	POWER SUPPLY Assy	VWR1405
	8	HDD	See Contrast table (2)
	9	Connector Assy	PF12PP-S07
	10	Connector Assy	PF13PP-S17
	11	Flexible Cable (40P)	VDA2159
	12	Flexible Cable (24P)	VDA2160
	13	Flexible Cable (11P)	VDA2162
	14	Housing Assy (4P)	VKP2389
	15	Housing Assy (10P)	VKP2391
	16	Flexible Cable (19P)	YDA1001
	17	Rubber Spacer	VEB1398
	18	SATA Cable	YDX1001
	19	Housing Assy (6P)	YKP1002
	20	DC Fan Motor 60	VXM1123
	21	Spacer Cushion	VEB1400
	22	Cushion	VEB1401
NSP	23	HDD Stay	VNE2450
	24	Cord Holder	VNL1971
NSP	25	Binder (BK-1)	ZCA-BK1
	26	Rubber Spacer	VEB1378
	27	Rubber Spacer	VEB1408
	28	Gasket 30 x 10T	VEC2522
	29	Aluminum Tape 8 x 50	VEF1067
	30	Aluminum Tape 13 x 25	VEF1068
	31	Aluminum Tape 70 x 19	YEF1001
	32	Bonnet S	See Contrast table (2)
	33	PCB Support	AEC1215
	34	Rubber Foot	VEB1349
	35	Screw Guard	VEB1399
	36	Barrier	See Contrast table (2)
NSP	37	Base Chassis	VNB1057
NSP	38	Writer Stay L	VNE2448
NSP	39	Writer Stay R	VNE2449
	40	DV Angle	See Contrast table (2)
	41	Insulator H.S.	See Contrast table (2)
	42	Rear Panel	See Contrast table (2)
	43	LAN Angle	See Contrast table (2)
	44	Earth Plate TU	VBK1173
	45	Tray Sheet	VEC2551
	46	Tray Panel	YNK1038
NSP	47	ID Label Assy	See Contrast table (2)
	48	Laser Caution Label	VRW2262
NSP	49	Serial Label S	VRW2017
NSP	50	Tape	ZTA-156A-19
	51	•••••	
	52	•••••	
	53	#6-32 Screw	DBA1125
	54	Screw	See Contrast table (2)
	55	Screw M3 x 8	See Contrast table (2)
	56	Screw M3 x 8	VBA1088
	57	Screw	AMZ30P060FTC
	58	Screw	See Contrast table (2)
	59	Screw	BPZ30P080FTC
	60	Screw	BSR30P060FTC
	61	Screw	BSR30P080FTB
	62	Screw	See Contrast table (2)
	63	Screw	BSZ30P040FTC
	64	Screw	See Contrast table (2)
	65	Screw	See Contrast table (2)

(2) CONTRAST TABLE

DVR-LX61D/WVXK5, WYXK5, DVR-560HX-S/WVXK5, WYXK5, DVR-560HX-K/WVXK5 and WYXK5 are constructed the same except for the following:

Mark	No.	Symbol and Description	DVR-LX61D /WVXK5	DVR-LX61D /WYXK5	DVR-560HX-S /WVXK5	DVR-560HX-S /WYXK5	DVR-560HX-K /WVXK5	DVR-560HX-K /WYXK5
	1	ETAB Assy	VWV2344	VWV2344	Not used	Not used	Not used	Not used
	4	SERVICE FRJB Assy	YXX1027	YXX1027	YXX1004	YXX1004	YXX1004	YXX1004
NSP	6	SERVICE LOADER MAIN	VXU1016	VXU1016	VXU1015	VXU1015	VXU1015	VXU1015
	8	HDD	VXF1131	VXF1131	VXF1152	VXF1152	VXF1152	VXF1152
	32	Bonnet S	YXX1009	YXX1009	YXX1010	YXX1010	YXX1009	YXX1009
	36	Barrier	VEC2548	VEC2548	Not used	Not used	Not used	Not used
	40	DV Angle	VNE2474	VNE2474	VNE2453	VNE2453	VNE2474	VNE2474
	41	Insulator H.S.	VNK6329	VNK6329	Not used	Not used	Not used	Not used
	42	Rear Panel	YNA1038	YNA1038	YNA1040	YNA1040	YNA1028	YNA1028
	43	LAN Angle	YNE1001	YNE1001	Not used	Not used	Not used	Not used
NSP	47	ID Label Assy	VXW1019	VXW1019	VXW1015	VXW1015	VXW1015	VXW1015
	54	Screw	VBA1112	VBA1112	BSZ30P060FTC	BSZ30P060FTC	BSZ30P060FBN	BSZ30P060FBN
	55	Screw	YBA1001	YBA1001	VBA1088	VBA1088	VBA1088	VBA1088
	58	Screw	BPZ30P080FCC	BPZ30P080FCC	BPZ30P080FTC	BPZ30P080FTC	BPZ30P080FTC	BPZ30P080FTC
	62	Screw	BSZ30P040FCC	BSZ30P040FCC	BSZ30P040FTC	BSZ30P040FTC	BSZ30P040FTC	BSZ30P040FTC
	64	Screw	BSZ30P060FCC	BSZ30P060FCC	BSZ30P060FTC	BSZ30P060FTC	BSZ30P060FBN	BSZ30P060FBN
	65	Screw	PPZ30P080FCC	PPZ30P080FCC	PBZ30P080FTC	PBZ30P080FTC	PBZ30P080FTC	PBZ30P080FTC

A

B

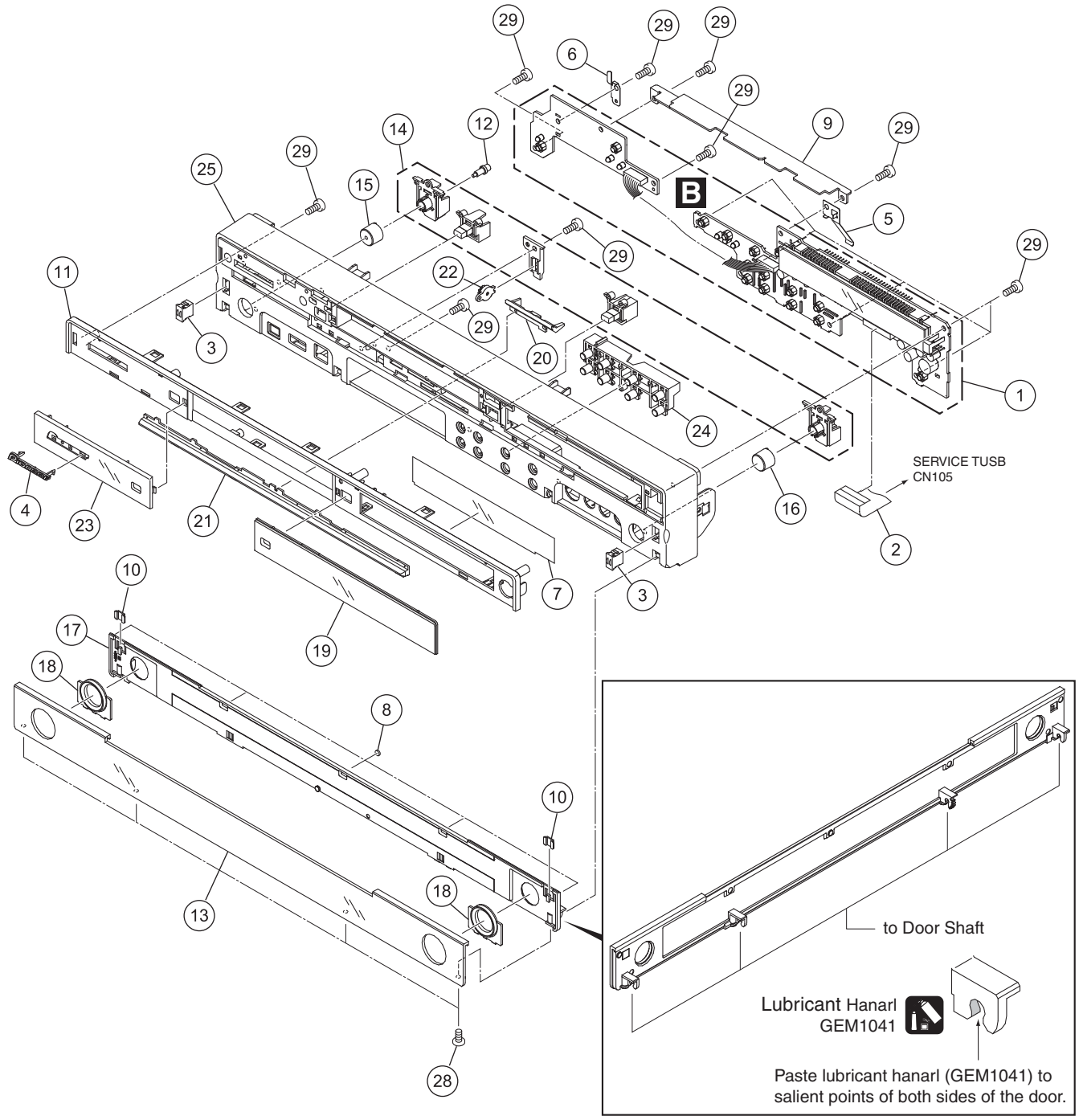
C

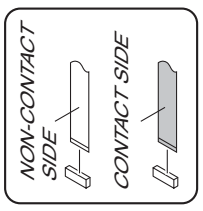
D

E

F

9.3 FRONT PANEL SECTION (DVR-LX61D)





(1) FRONT PANEL SECTION (DVR-LX61D) PARTS LIST

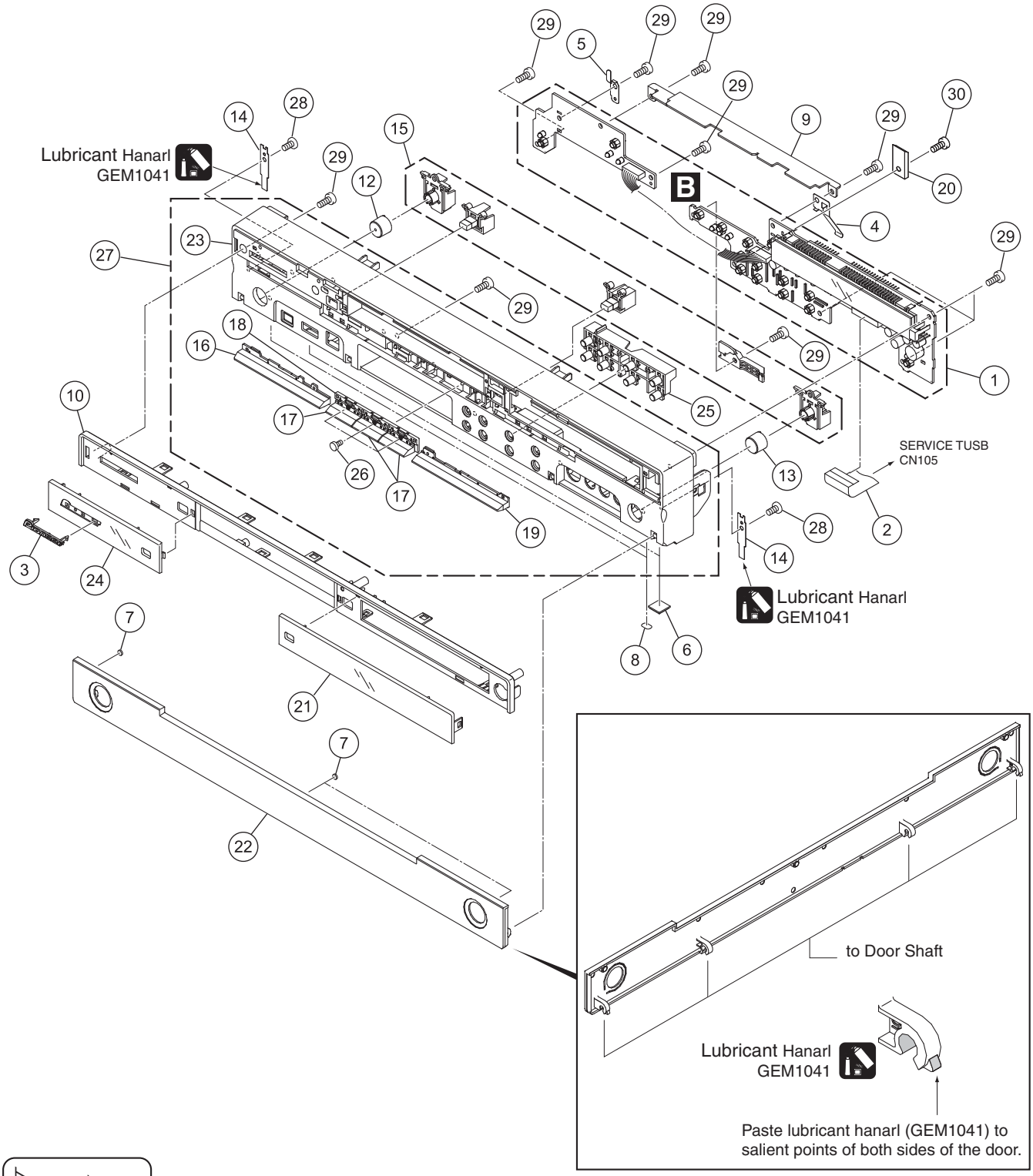
Mark	No.	Description	Part No.
	1	SERVICE FLKY Assy	YXX1006
	2	Flexible Cable (17P)	YDA1002
	3	Magnet Holder Assy	AEC1077
	4	Pioneer Name Plate	VAM1158
	5	Earth Plate FLKY	VBK1176
	6	Earth Plate	VBK1179
	7	FL Filter	VEC2544
	8	Door Pad	VEC2562
	9	FP Bridge	VNE2464
	10	Magnet Catcher B	VNE2482
	11	Panel Frame	VNK6149
	12	LED Lens	VNK6290
	13	Door Panel	YAH1001
	14	Main Key	YNK1004
	15	Key Top PW	YNK1005
	16	Key Top REC	YNK1006
	17	Door Base	YNK1011
	18	Door Ring	YNK1013
	19	FL Lens	YNK1025
	20	Optical Lens	YNK1035
	21	Center Lens	YNK1034
	22	Damper Assy	YXA1001
	23	Sub Panel PTD	YXA1010
	24	Function Key PTD	YXA1054
	25	Front Panel PTD	See Contrast table (2)
	26	•••••	
	27	•••••	
	28	Flat Head Screw	VBA1113
	29	Screw	BPZ30P080FTC

(2) CONTRAST TABLE

DVR-LX61D/WVXK5 and DVR-LX61D/WYXK5 are constructed the same except for the following:

Mark	No.	Symbol and Description	DVR-LX61D /WVXK5	DVR-LX61D /WYXK5
	25	Front Panel PTD	YXA1044	YXA1025

9.4 FRONT PANEL SECTION (DVR-560HX-S, -K)



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(1) FRONT PANEL SECTION (DVR-560HX) PARTS LIST

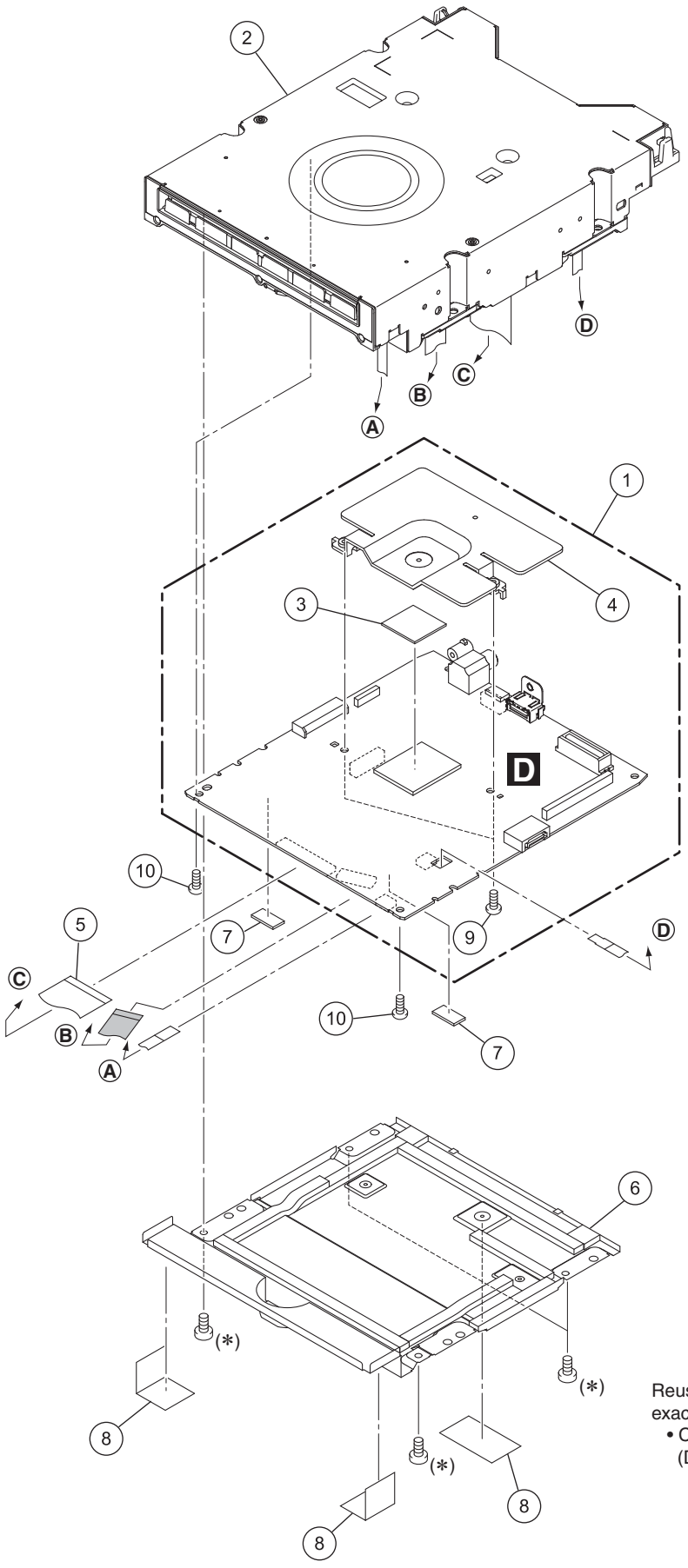
Mark	No.	Description	Part No.
	1	SERVICE FLKY Assy	YXX1005
	2	Flexible Cable (17P)	YDA1002
	3	Pioneer Name Plate	See Contrast table (2)
	4	Earth Plate FLKY	VBK1176
	5	Earth Plate	VBK1179
	6	Rubber Foot	VEB1349
	7	Rubber Sheet	VEB1396
	8	Door Cushion	VEC2561
	9	FP Bridge	VNE2464
	10	Panel Frame	VNK6149
	11	•••••	
	12	Key Top PW	See Contrast table (2)
	13	Key Top REC	See Contrast table (2)
	14	Door Spring	YBK1001
	15	Main Key	YNK1004
NSP	16	Lens L	YNK1007
NSP	17	Key Lens	YNK1009
NSP	18	Key Base	YNK1010
NSP	19	Lens R	YNK1008
	20	FLKB Holder 2	YNK1043
	21	FL Lens PTD	YXA1012
	22	Door PTD	See Contrast table (2)
NSP	23	Front Panel PTD	See Contrast table (2)
	24	Sub Panel PTD	YXA1027
	25	Function Key PTD	See Contrast table (2)
NSP	26	Tray Screw	DBA1327
	27	Front Panel Assy S	See Contrast table (2)
	28	Flat Head Screw	VBA1113
	29	Screw	BPZ30P080FTC
	30	Screw	BPZ30P120FTB

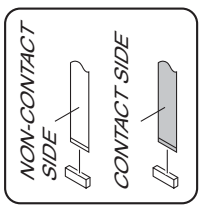
(2) CONTRAST TABLE

DVR-560HX-S/WVXK5, WYXK5, DVR-560HX-K/WVXK5 and WYXK5 are constructed the same except for the following:

Mark	No.	Symbol and Description	DVR-560HX-S /WVXK5	DVR-560HX-S /WYXK5	DVR-560HX-K /WVXK5	DVR-560HX-K /WYXK5
	3	Pioneer Name Plate	VAM1148	VAM1148	VAM1153	VAM1153
	12	Key Top PW	VNK6359	VNK6359	VNK6239	VNK6239
	13	Key Top REC	VNK6361	VNK6361	VNK6240	VNK6240
	22	Door PTD	YXA1013	YXA1013	YXA1034	YXA1034
NSP	23	Front Panel PTD	YXA1045	YXA1026	YXA1046	YXA1033
	25	Function Key PTD	YXA1053	YXA1053	YXA1054	YXA1054
	27	Front Panel Assy S	YXA1072	YXA1071	YXA1075	YXA1074

9.5 SERVICE LOADER MAIN SECTION





Reuse (∗) marked parts when exachanging SERVICE LOADER Assy.
- Case Screw S (DBA1250) x2

(1) SERVICE LOADER MAIN SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	SERVICE MAIN Assy	See Contrast table (2)
	2	SERVICE LOADER Assy	VXX3306
	3	Radiation Sheet (Silicon)	VEB1360
	4	Heatsink	VNH1079
	5	FFC U11	DDX1208
	6	Low Case U11	DNC1761
	7	Silicon Sheet R9B	DEB1726
NSP	8	Tape	•••••
	9	Screw	BBZ30P060FTC
	10	Screw	DBA1220

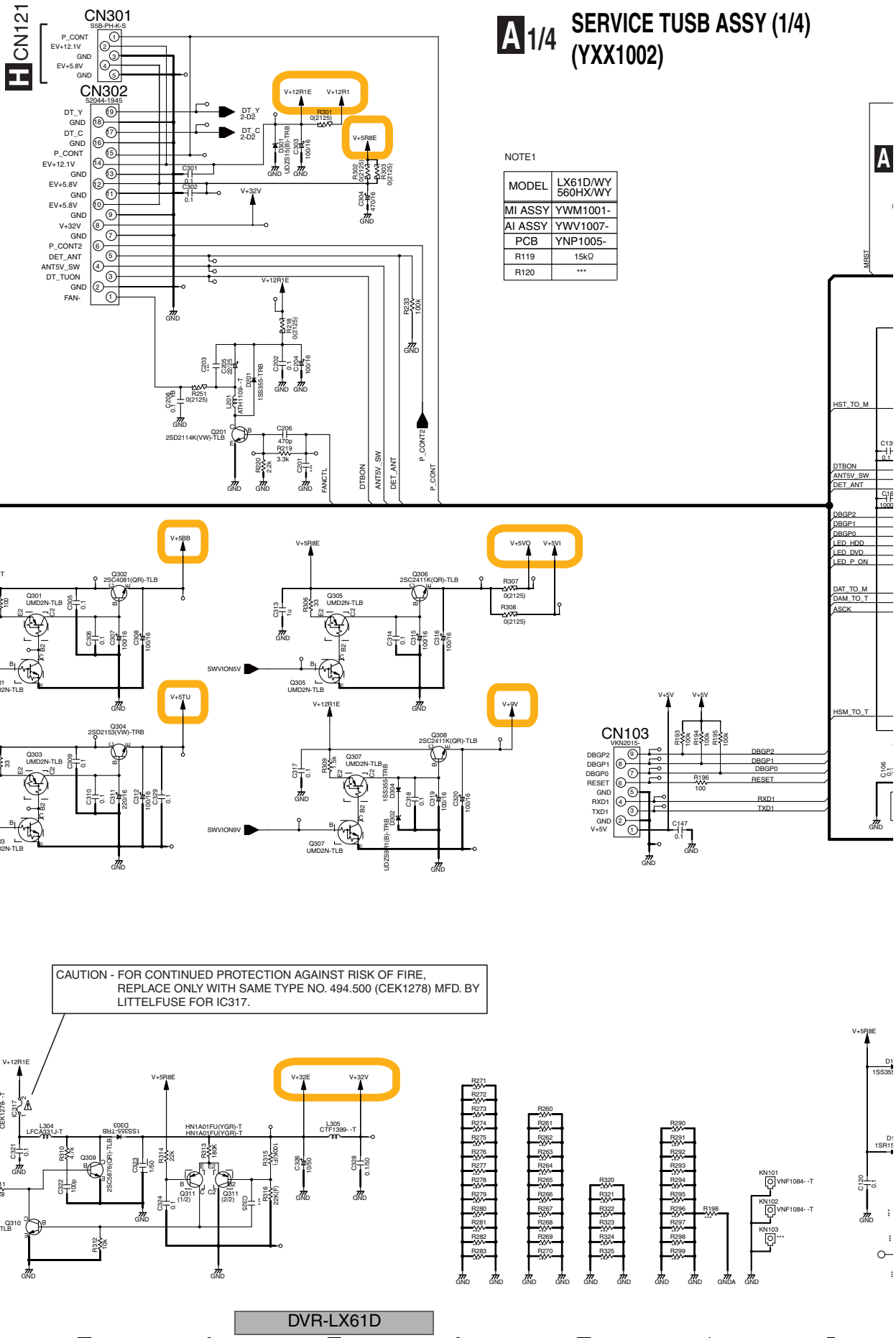
(2) CONTRAST TABLE

DVR-LX61D/WVXK5, WYXK5, DVR-560HX-S/WVXK5, WYXK5, DVR-560HX-K/WVXK5 and WYXK5 are constructed the same except for the following:

Mark	No.	Symbol and Description	DVR-LX61D /WVXK5	DVR-LX61D /WYXK5	DVR-560HX-S /WVXK5	DVR-560HX-S /WYXK5	DVR-560HX-K /WVXK5	DVR-560HX-K /WYXK5
	1	SERVICE MAIN Assy	VXX3320	VXX3320	VXX3321	VXX3321	VXX3321	VXX3321

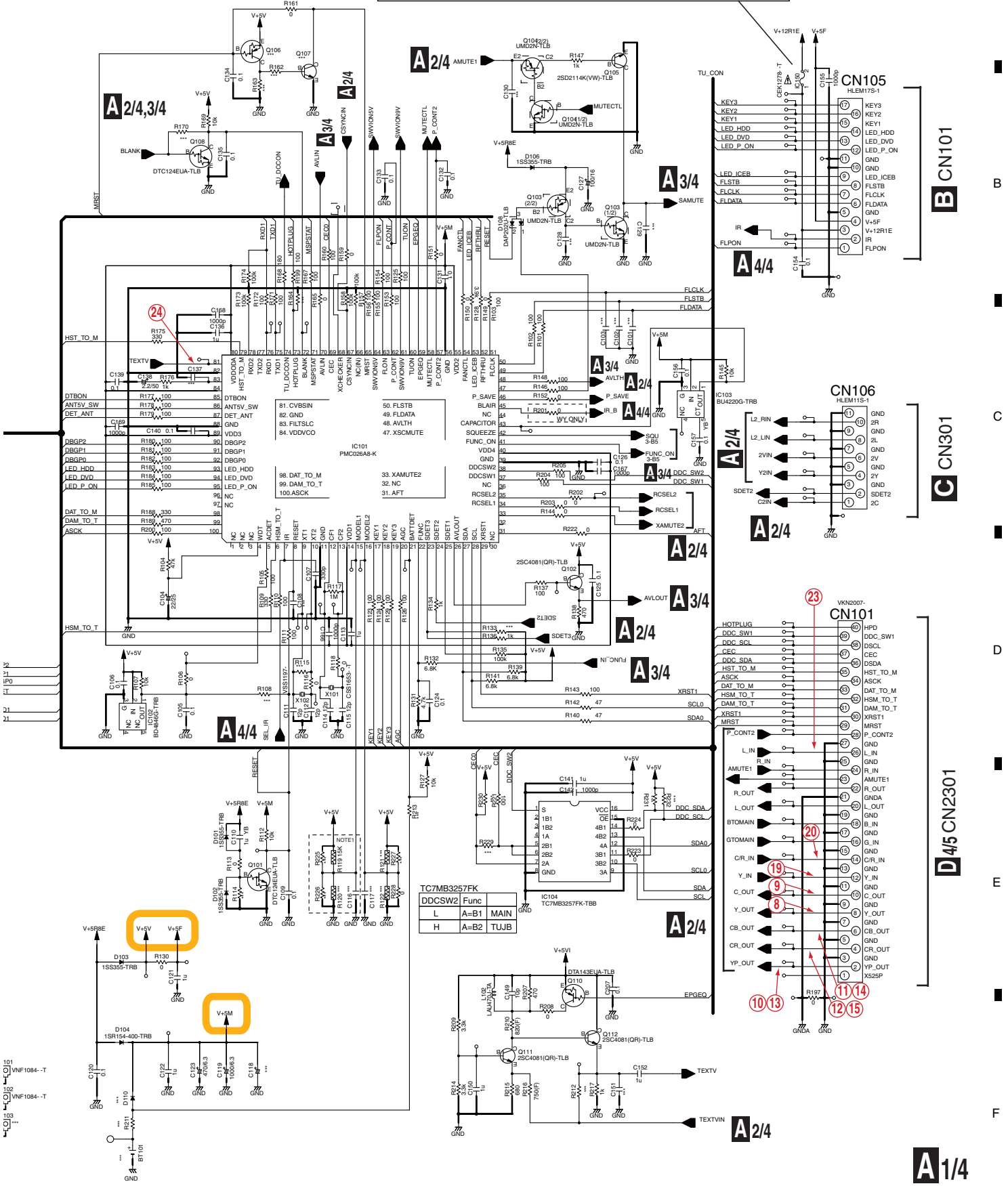
10. SCHEMATIC DIAGRAM

10.1 SERVICE TUSB ASSY (1/4)



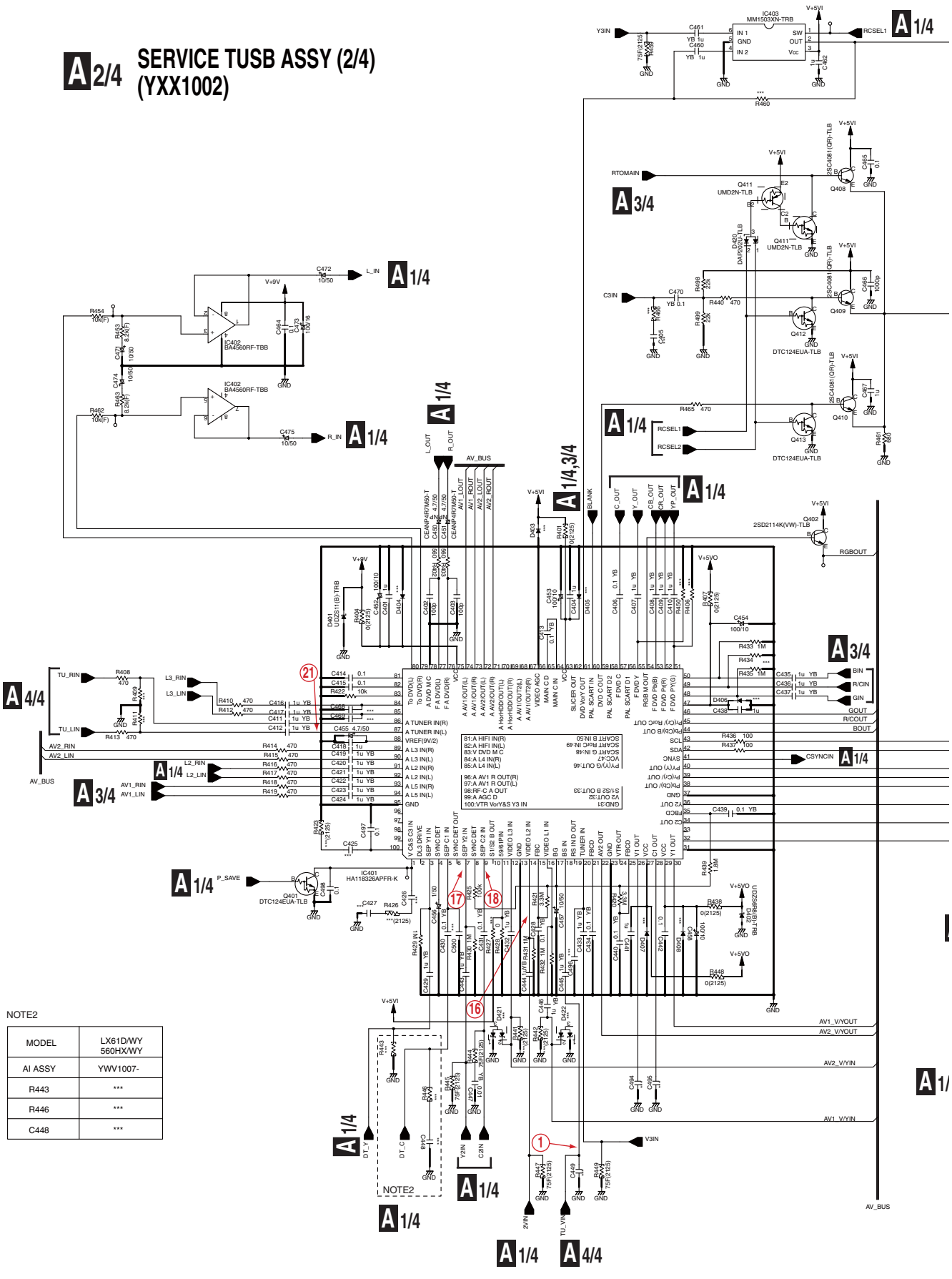
(1/4)

CAUTION- FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. 494.500 (CEK1278) MFD. BY LITTELFUSE INC. FOR IC150.



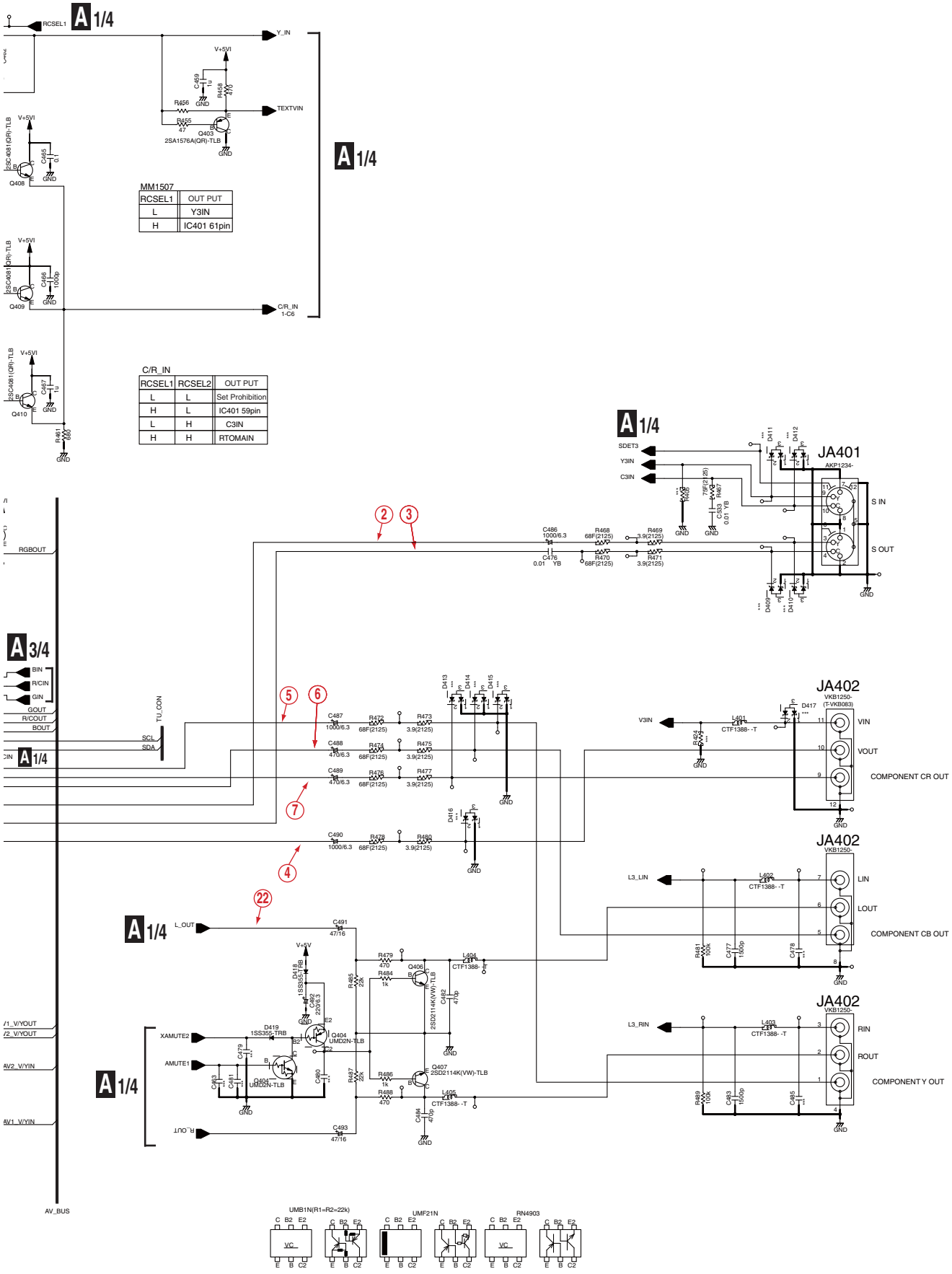
10.2 SERVICE TUSB ASSY (2/4)

A2/4 SERVICE TUSB ASSY (2/4)
(YXX1002)



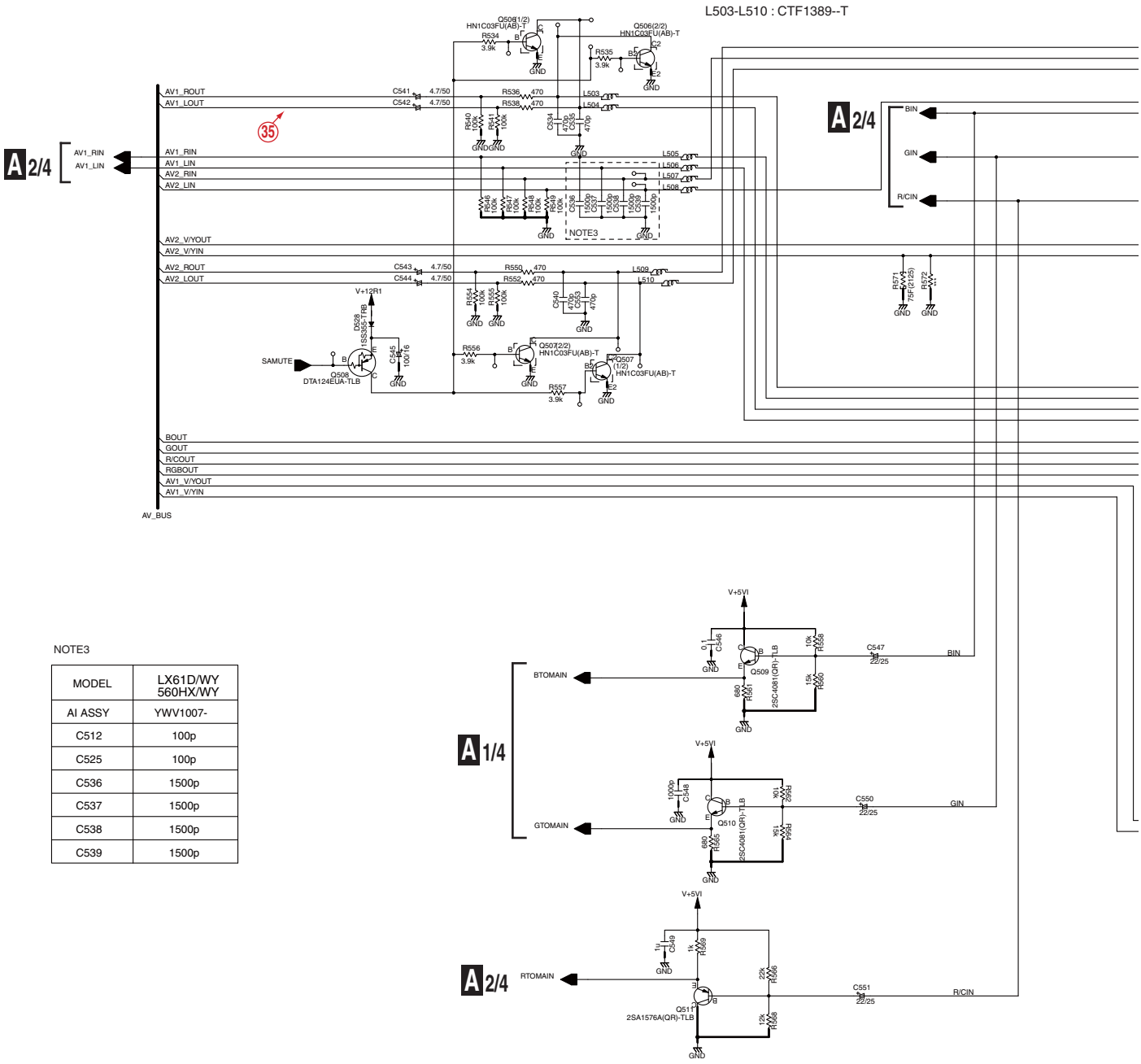
NOTE2

MODEL	LX61D/WY 560HX/WY
AI ASSY	YWV1007-
R443	***
R446	***
C448	***


A 1/4
RCSEL1
Y_IN
V+5VI
C459
1u
R458
470
R456
47
GND
TEXTVIN
R455
47
Q403
2SA1576A(QR)-TLB
2SC4081(QR)-TLB
C465
0.1u
Q408
C466
1000p
Q409
C/R_IN
1-C6
C467
1u
Q410
R461
680
MM1507
RCSEL1 | OUT PUT
L | Y3IN
H | IC401 61pin
C/R_IN
RCSEL1 | RCSEL2 | OUT PUT
L | L | Set Prohibition
H | L | IC401 59pin
L | H | C3IN
H | H | RTOMAIN
A 1/4
SDET3
Y3IN
C3IN
JA401
AKP1234-
S IN
S OUT
C486
1000/6.3
C476
0.01 YB
R468
68F(2125)
R469
3.9(2125)
R470
68F(2125)
R471
3.9(2125)
R467
75F(2125)
C533
0.01 YB
D411
D412
D408
D410
A 3/4
BIN
R/CIN
GIN
GOUT
R/COUT
BOUT
TU_CON
SCL
SDA
A 1/4
RGBOUT
2
3
5
6
7
4
22
C487
1000/6.3
C488
470/6.3
C489
470/6.3
C490
1000/6.3
R475
68F(2125)
R473
3.9(2125)
R474
68F(2125)
R475
3.9(2125)
R476
68F(2125)
R477
3.9(2125)
R478
68F(2125)
R480
3.9(2125)
D413
D414
D415
D416
JA402
VKB1250-
(T-VKB083)
VIN
VOUT
COMPONENT CR OUT
V3IN
L401
CTF1388- -T
R424
JA402
VKB1250-
LIN
LOUT
COMPONENT CB OUT
L3_LIN
L402
CTF1388- -T
R481
100k
C477
1500p
C478
JA402
VKB1250-
RIN
ROUT
COMPONENT Y OUT
L3_RIN
L403
CTF1388- -T
R409
100k
C483
1500p
C485
A 1/4
L_OUT
C491
47/16
V+5V
D418
1SS355-TRB
R485
22k
R479
470
R484
1k
Q406
UMD2N-TLB
L404
CTF1388- -T
C482
470p
2SD2114K(VW)-TLB
XAMUTE2
AMUTE1
D419
1SS355-TRB
Q404
UMD2N-TLB
C479
C463
C481
Q404
UMD2N-TLB
C480
R487
22K
R486
1k
R488
470
Q407
2SD2114K(VW)-TLB
L405
CTF1388- -T
C484
470p
C493
47/16
R_OUT
/1_V/YOUT
/2_V/YOUT
AV2_V/YIN
AV1_V/YIN
AV_BUS
UMB1N(R1=R2=22k)
UMF21N
RN4903
VC
A 2/4

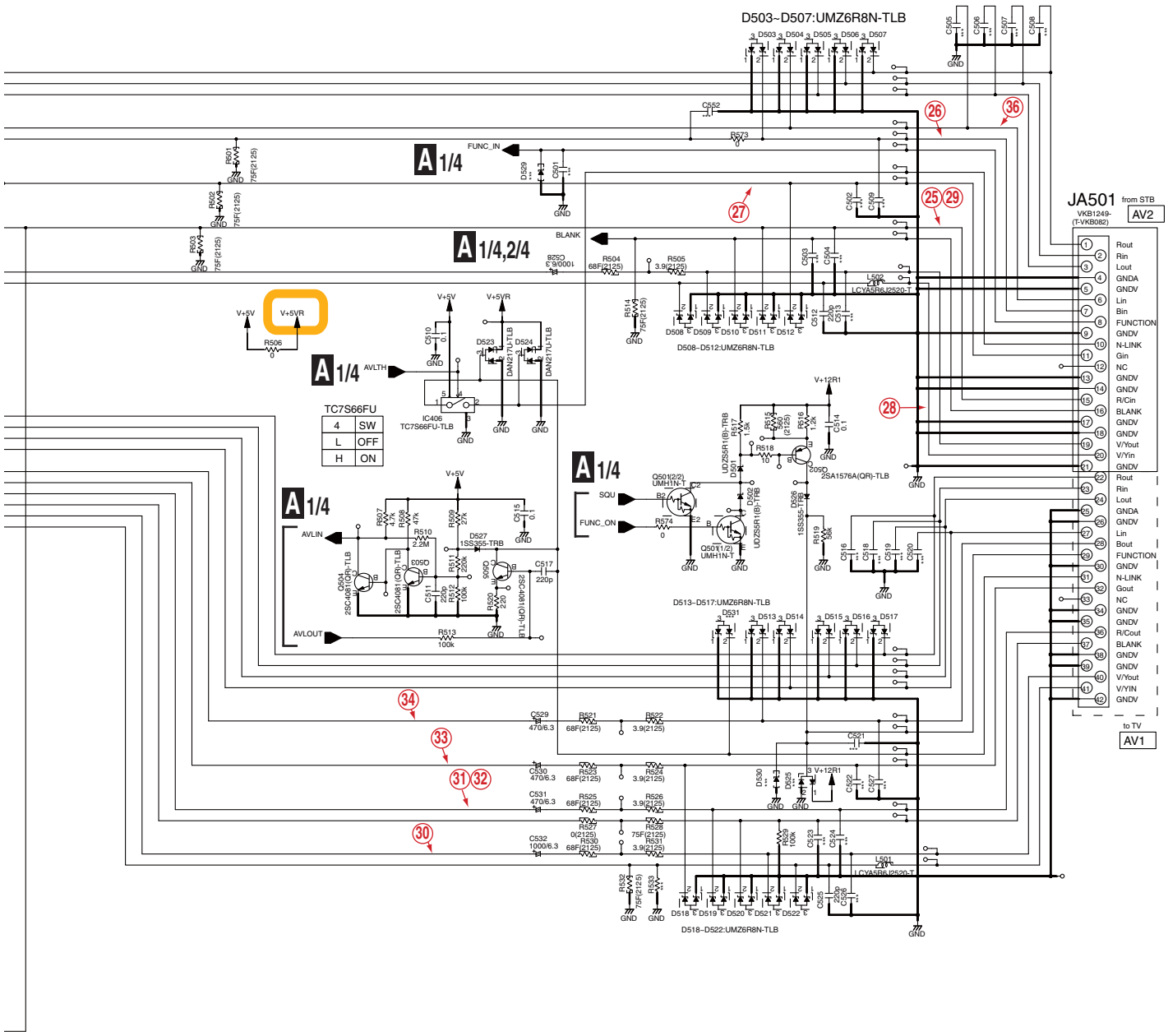
10.3 SERVICE TUSB ASSY (3/4)

A 3/4 SERVICE TUSB ASSY (3/4) (YXX1002)

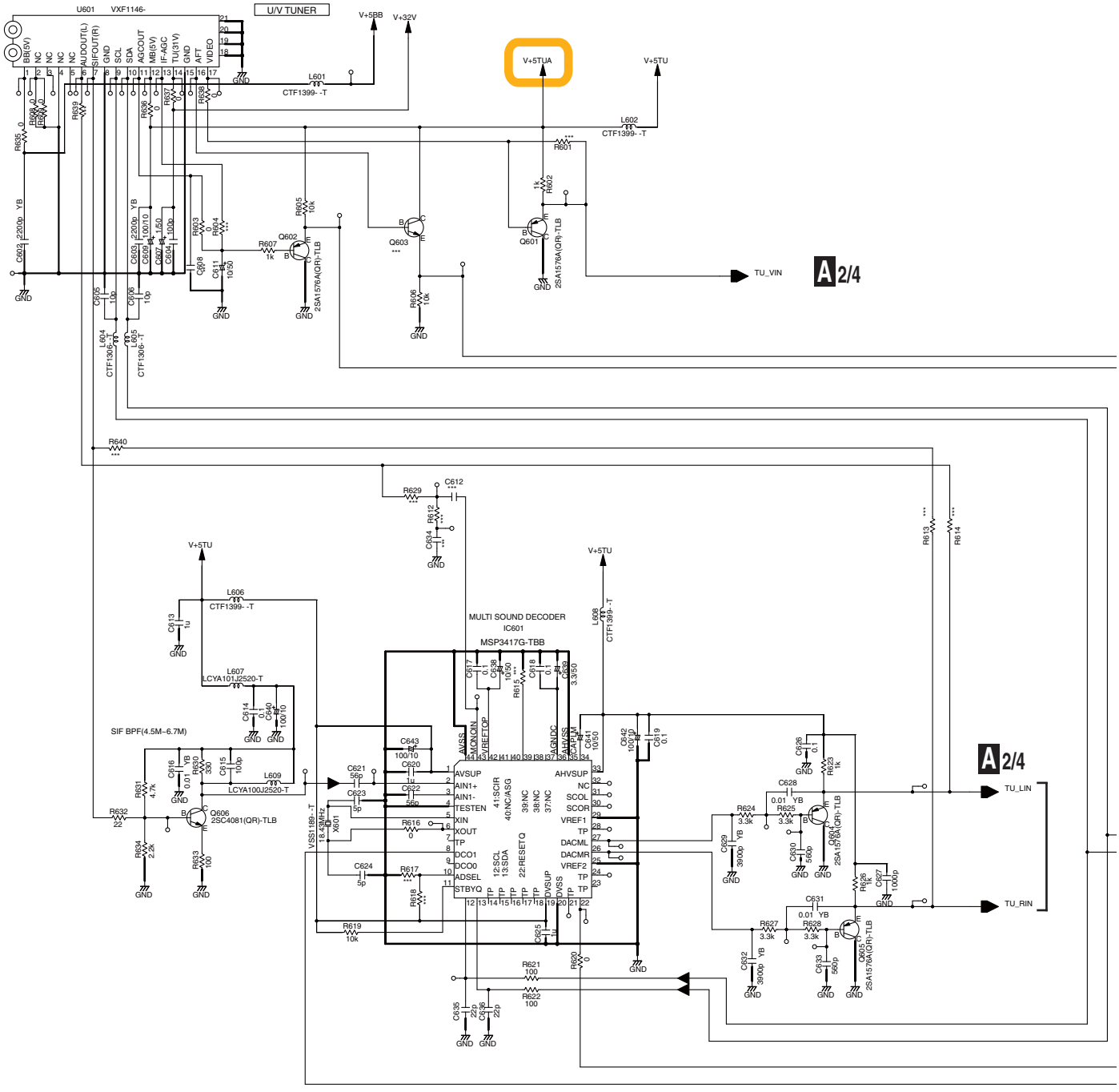


NOTE3

MODEL	LX61D/WY 560HX/WY
AI ASSY	YWV1007-
C512	100p
C525	100p
C536	1500p
C537	1500p
C538	1500p
C539	1500p


D503~D507:UMZ6R8N-TLB
JA501
from STB
VKB1249-
(T-VKB082)
AV2
to TV
AV1
FUNC_IN
BLANK
AVLTH
AVLIN
AVLOUT
SQU
FUNC_ON
TC7S66FU
4 SW
L OFF
H ON
D508~D512:UMZ6R8N-TLB
D513~D517:UMZ6R8N-TLB
D518~D522:UMZ6R8N-TLB
Rout
Rin
Lout
GNDA
GNDV
Lin
Bin
FUNCTION
N-LINK
Gin
NC
R/Cin
BLANK
V/Yout
V/Yin
Bout
Gout
R/Cout

A 4/4 SERVICE TUSB ASSY (4/4) (YXX1002)



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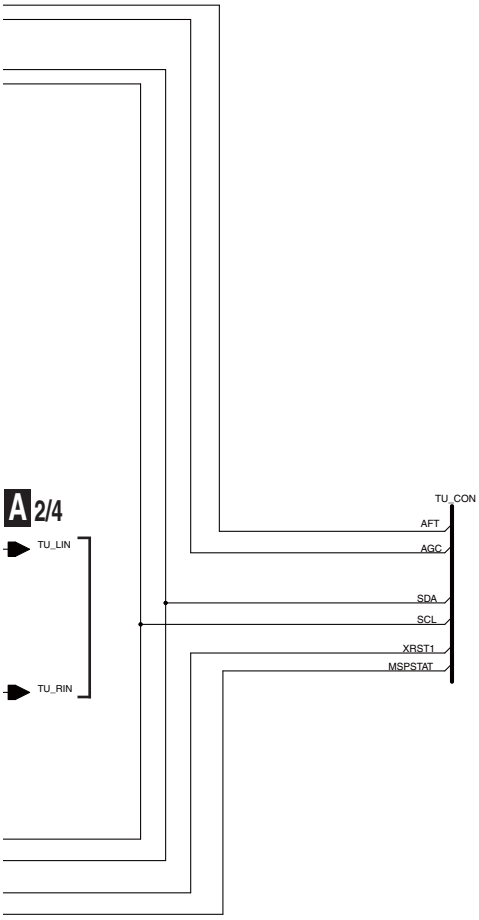
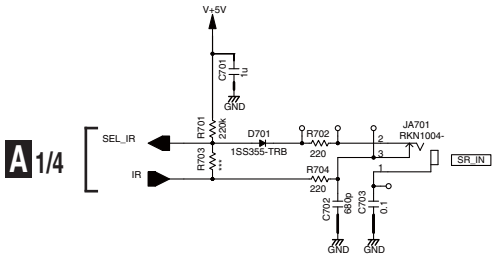
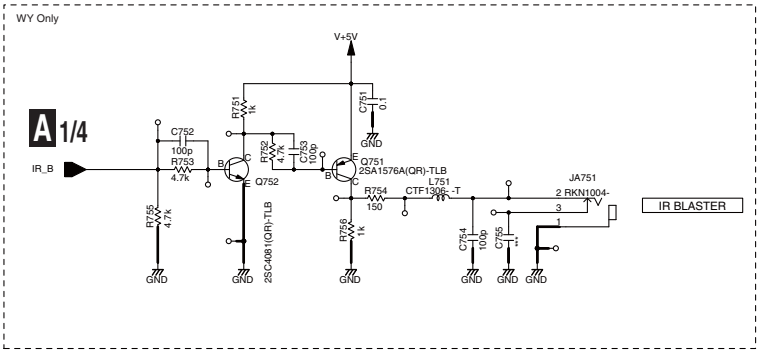
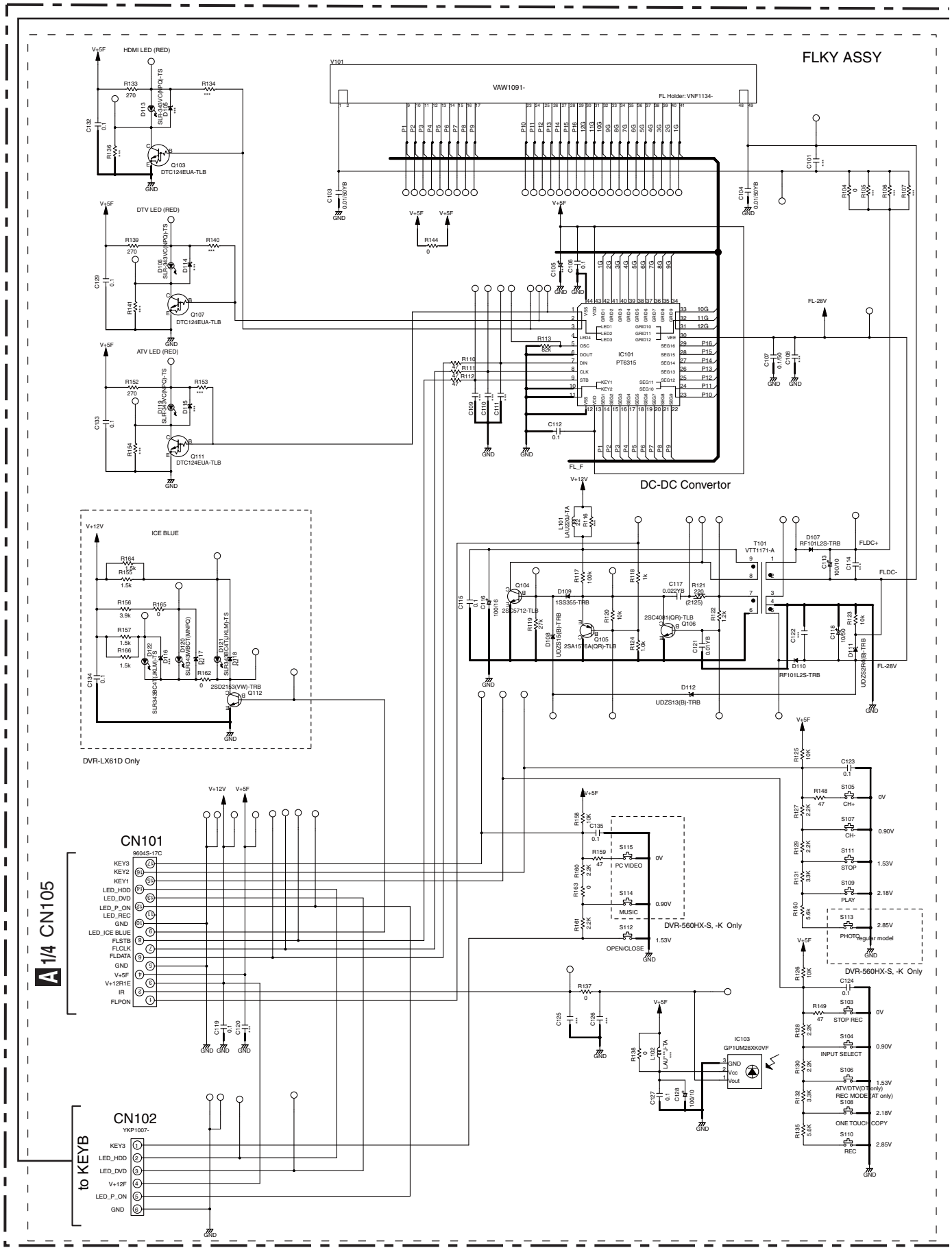


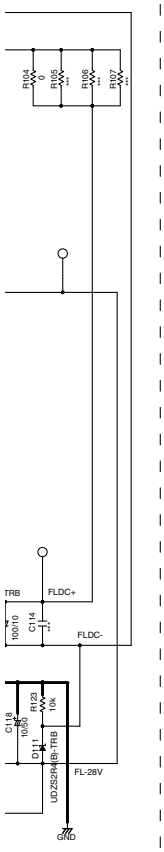




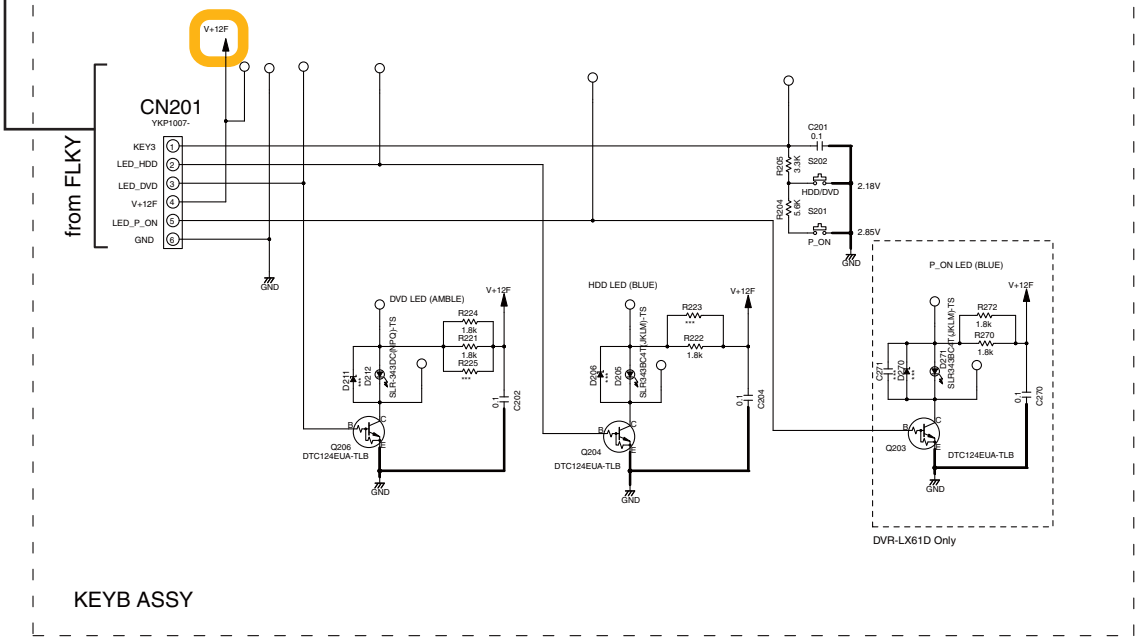
10.5 SERVICE FLKY and SERVICE FRJB ASSYS



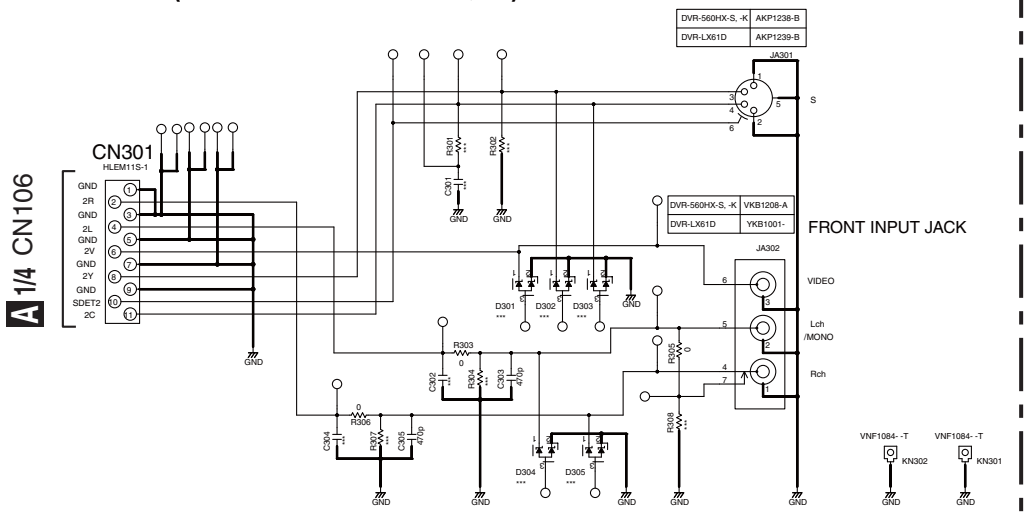
Y ASSY



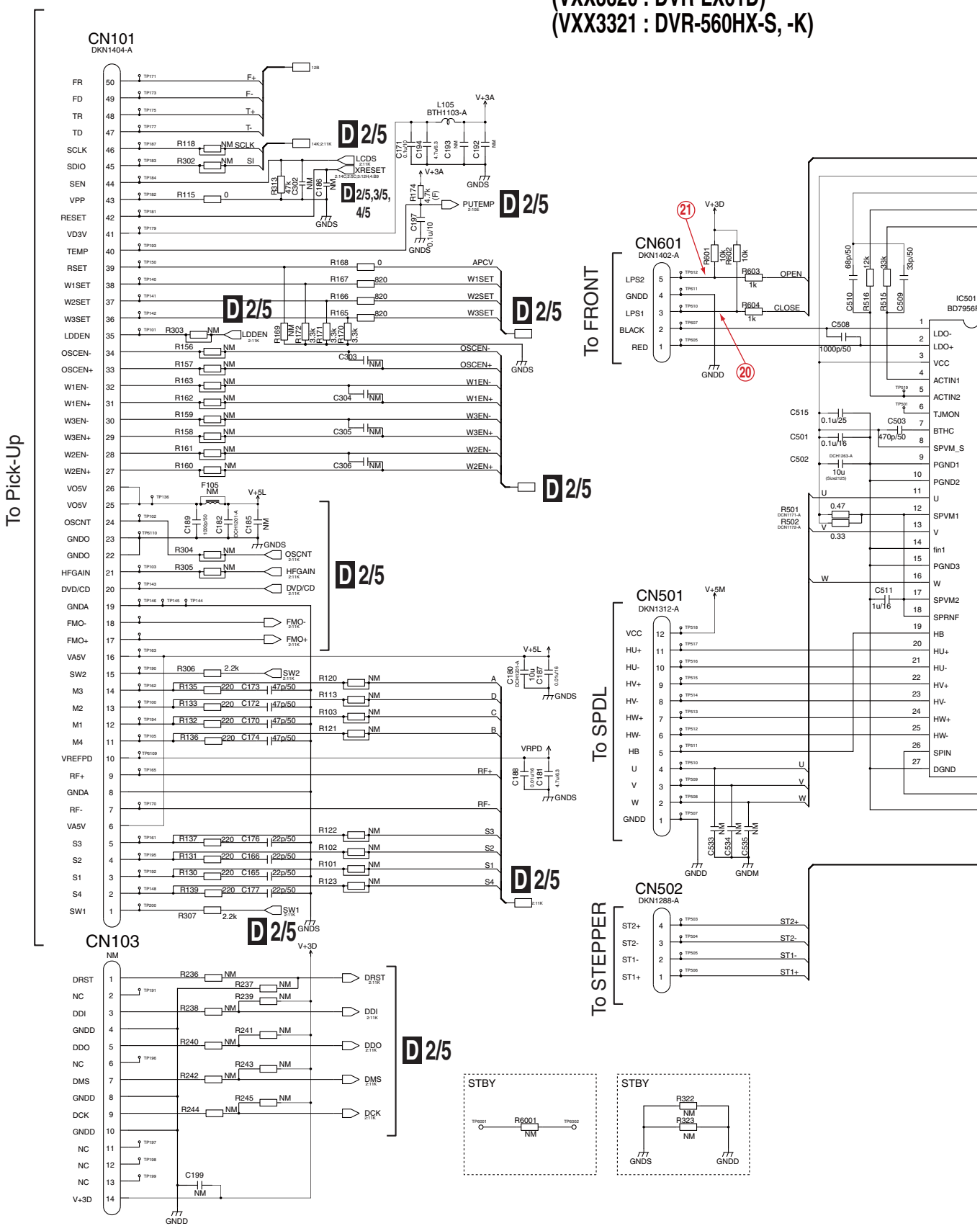
B SERVICE FLKY ASSY (YXX1006 : DVR-LX61D) (YXX1005 : DVR-560HX-S, -K)

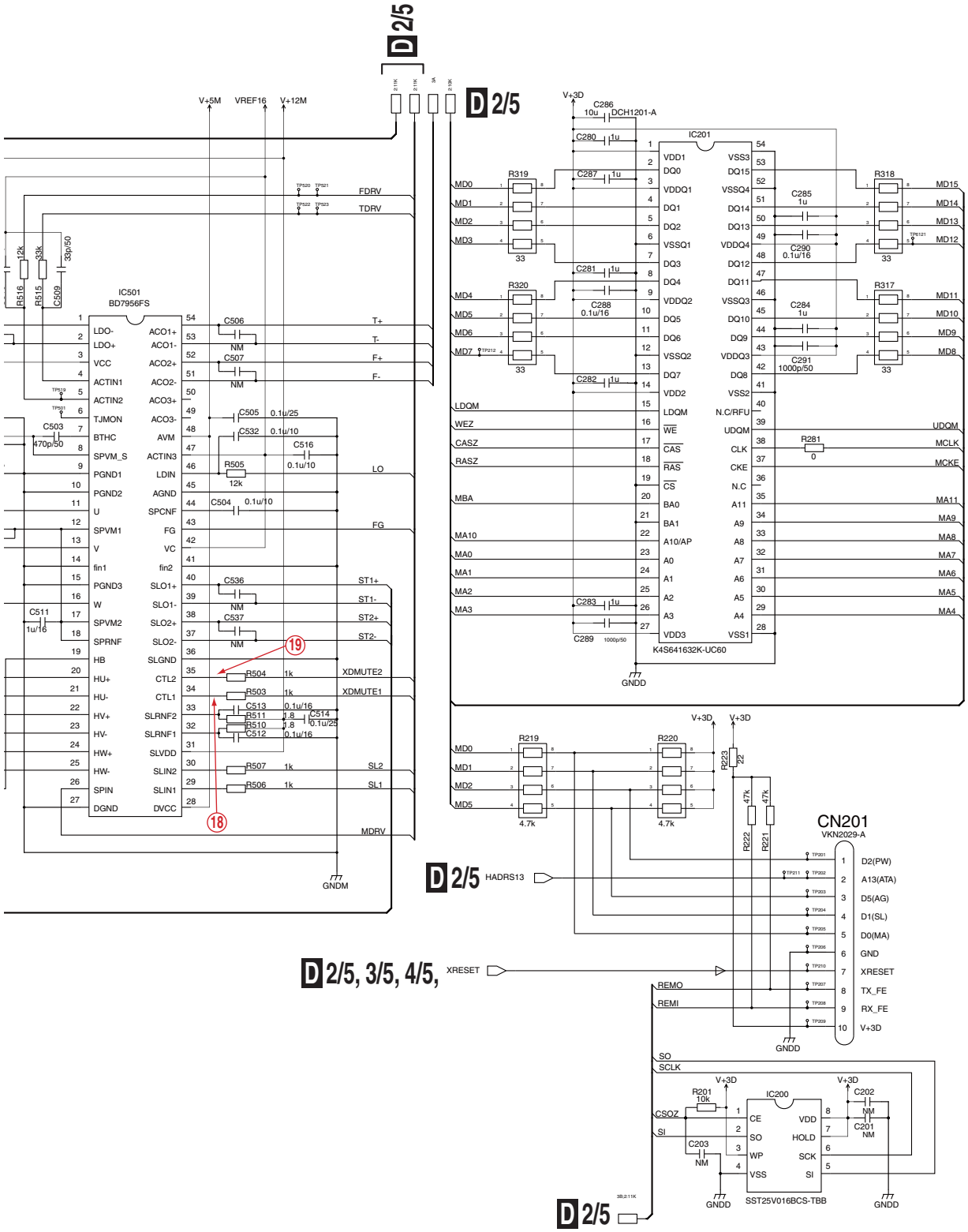


C SERVICE FRJB ASSY (YXX1027:DVR-LX61D) (YXX1004:DVR-560HX-S, -K)

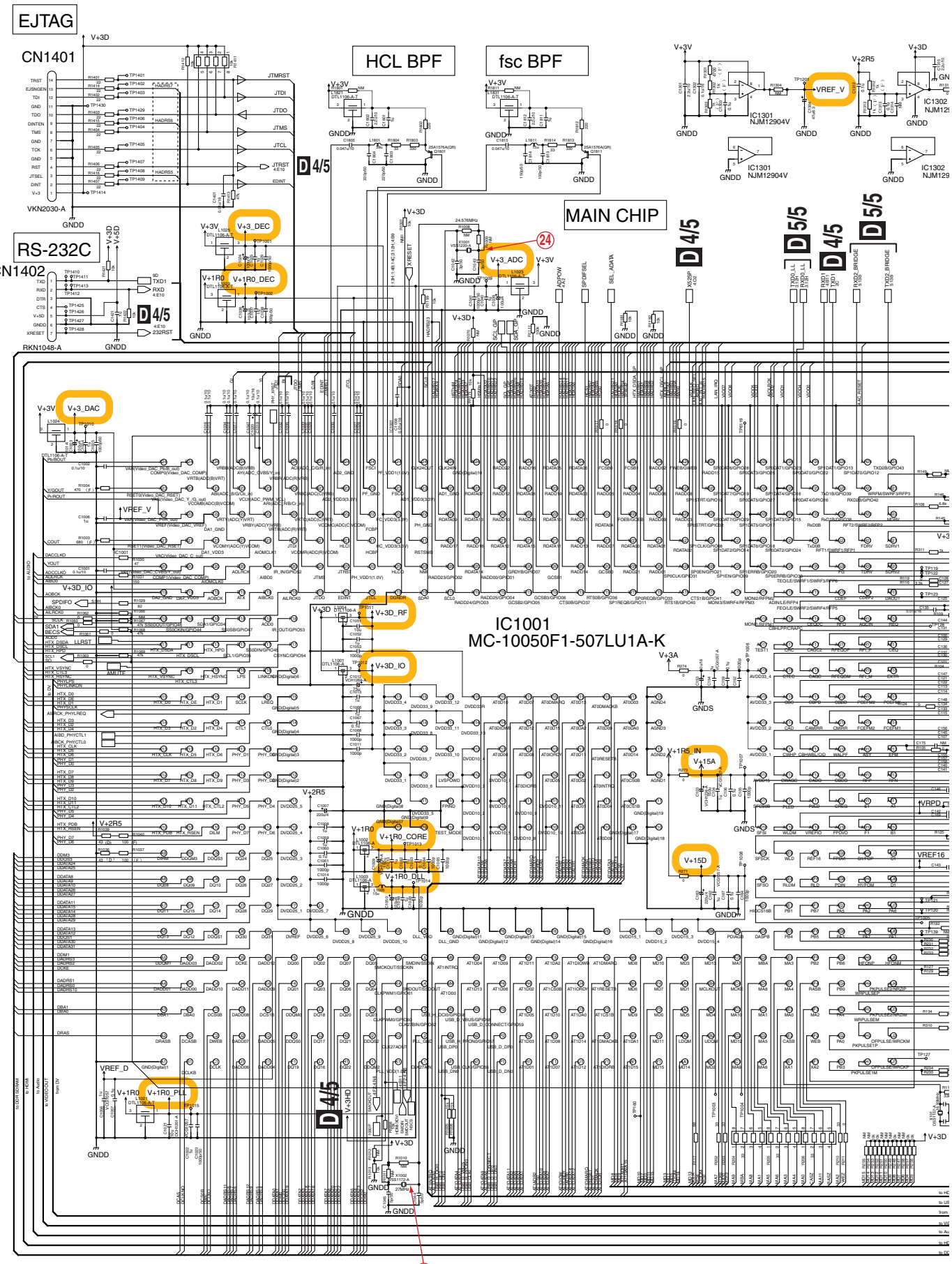


D 1/5 SERVICE MAIN ASSY (1/5)
(VXX3320 : DVR-LX61D)
(VXX3321 : DVR-560HX-S, -K)

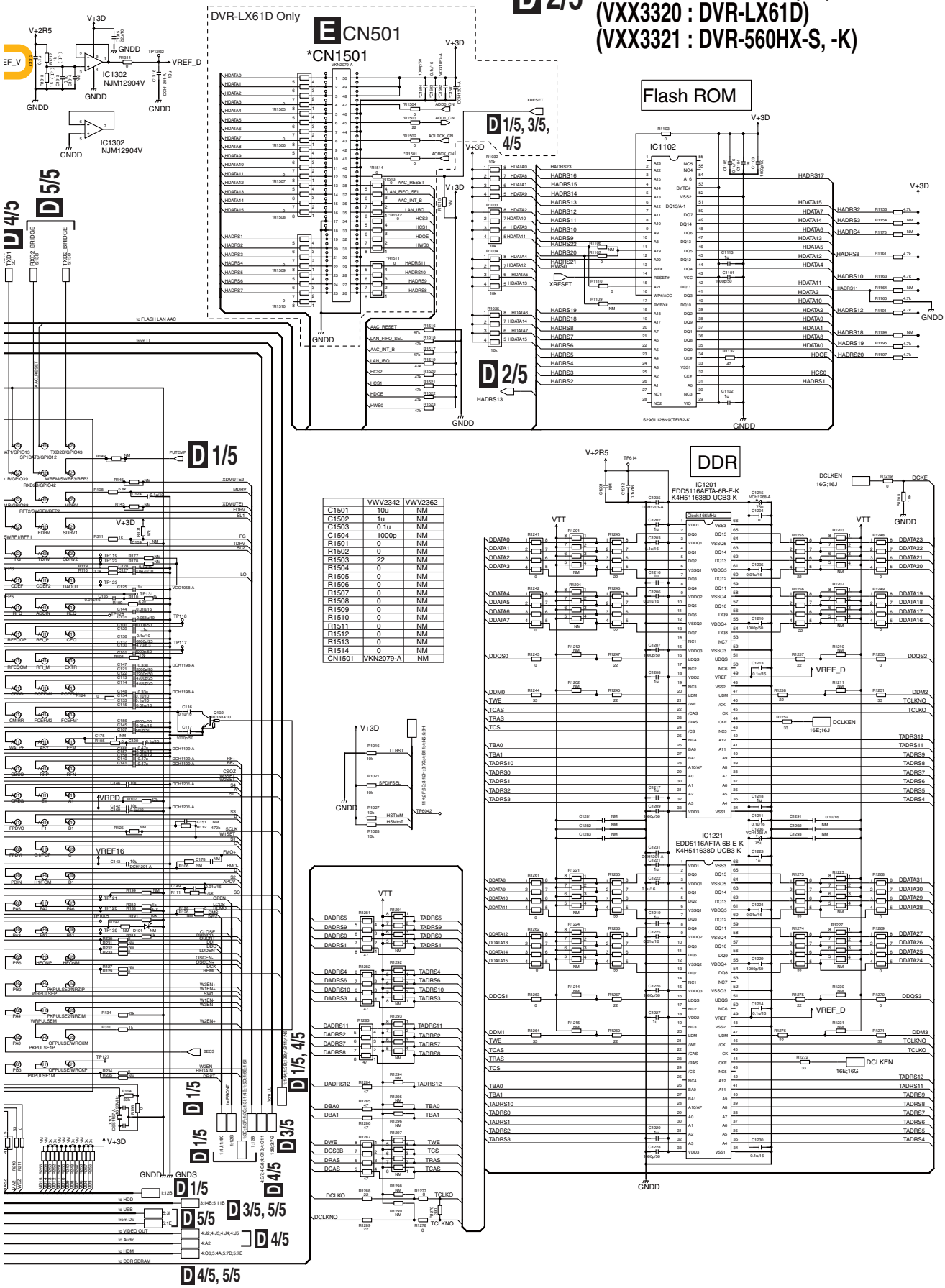



D 2/5
V+5M
VREF16
V+12M
FDRV
TDRV
IC501
BD7956FS
T+
T-
F+
F-
LO
FG
ST1+
ST1-
ST2+
ST2-
XDMUTE2
XDMUTE1
SL2
SL1
MDRV
GNDM
IC201
K4S641632K-UC60
MD0
MD1
MD2
MD3
MD4
MD5
MD6
MD7
MD8
MD9
MD10
MD11
MD12
MD13
MD14
MD15
UDQM
MCLK
MCKE
MA0
MA1
MA2
MA3
MA4
MA5
MA6
MA7
MA8
MA9
MA10
MA11
MBA
LDQM
WEZ
CASZ
RASZ
GNDD
D 2/5 HADRS13
CN201
VKN2029-A
D2(PW)
A13(ATA)
D5(AG)
D1(SL)
D0(MA)
GND
XRESET
TX_FE
RX_FE
V+3D
REMO
REMI
D 2/5, 3/5, 4/5, XRESET
SO
SCLK
CSOZ
SI
IC200
SST25V016BCS-TBB
D 2/5

10.7 SERVICE MAIN ASSY (2/5)

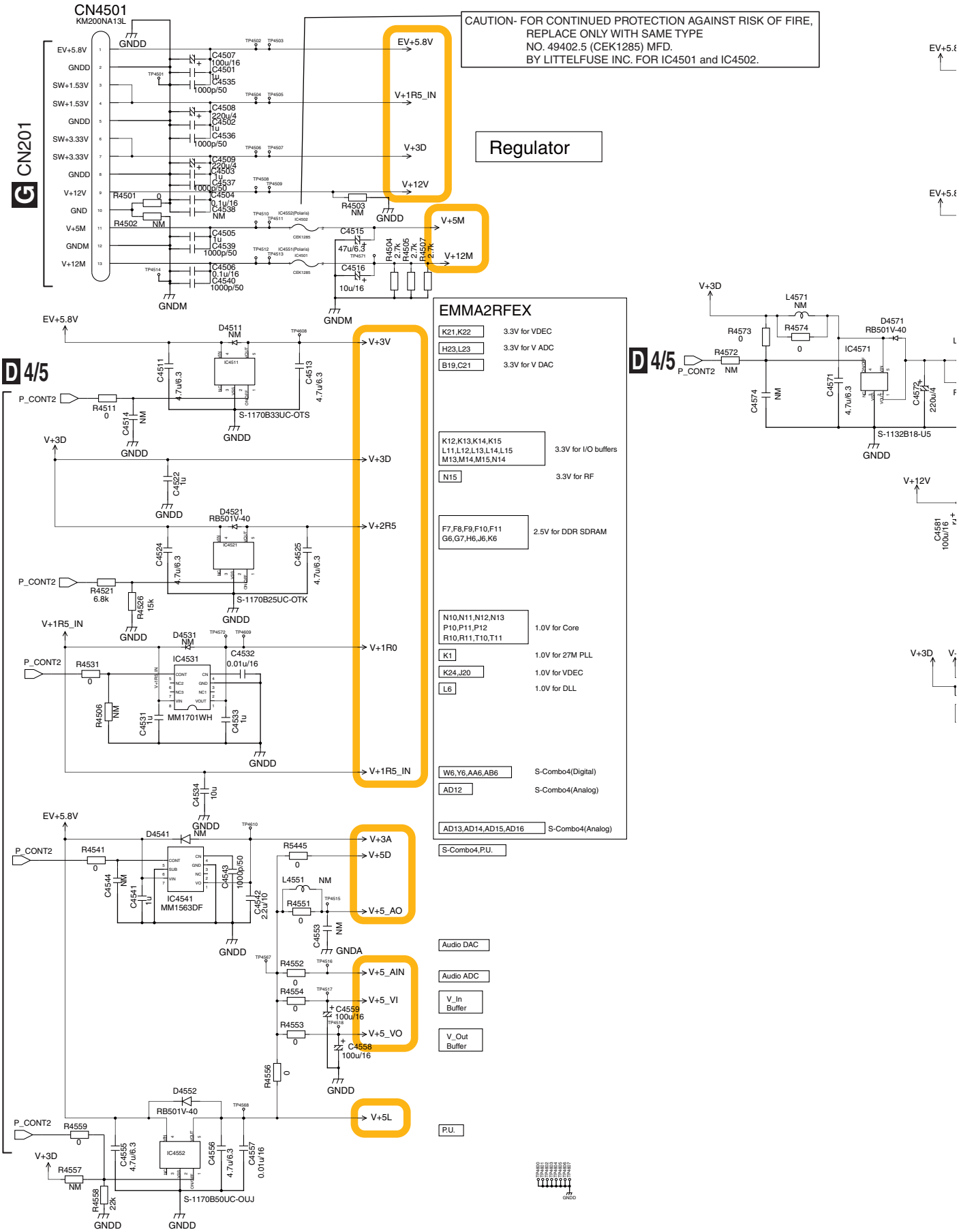


D 2/5 SERVICE MAIN ASSY (2/5)
(VXX3320 : DVR-LX61D)
(VXX3321 : DVR-560HX-S, -K)

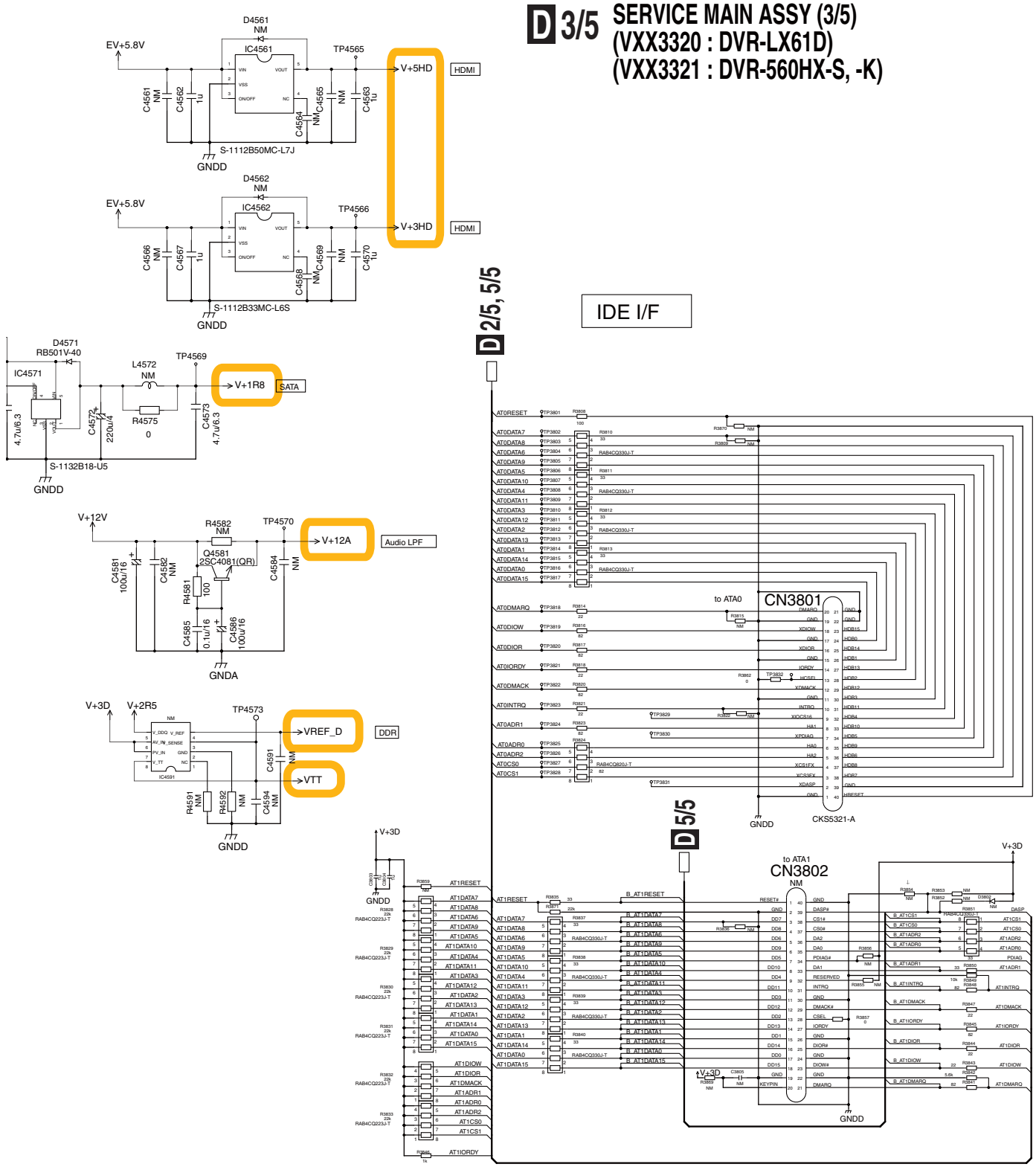


	VWV2342	VWV2362
C1501	10u	NM
C1502	1u	NM
C1503	0.1u	NM
C1504	1000p	NM
R1501	0	NM
R1502	0	NM
R1503	22	NM
R1504	0	NM
R1505	0	NM
R1506	0	NM
R1507	0	NM
R1508	0	NM
R1509	0	NM
R1510	0	NM
R1511	0	NM
R1512	0	NM
R1513	0	NM
R1514	0	NM
CN1501	VKN2079-A	NM

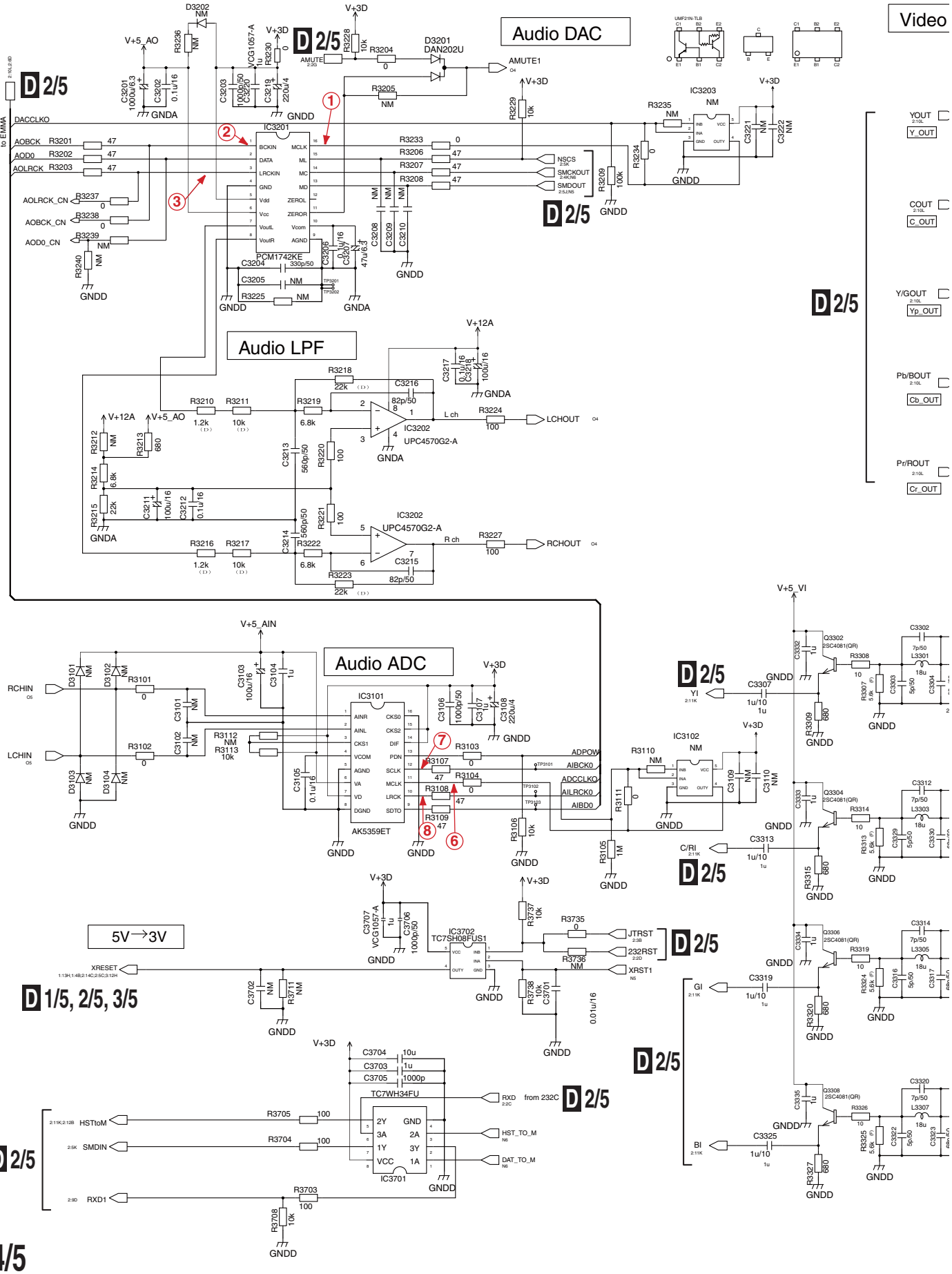
10.8 SERVICE MAIN ASSY (3/5)



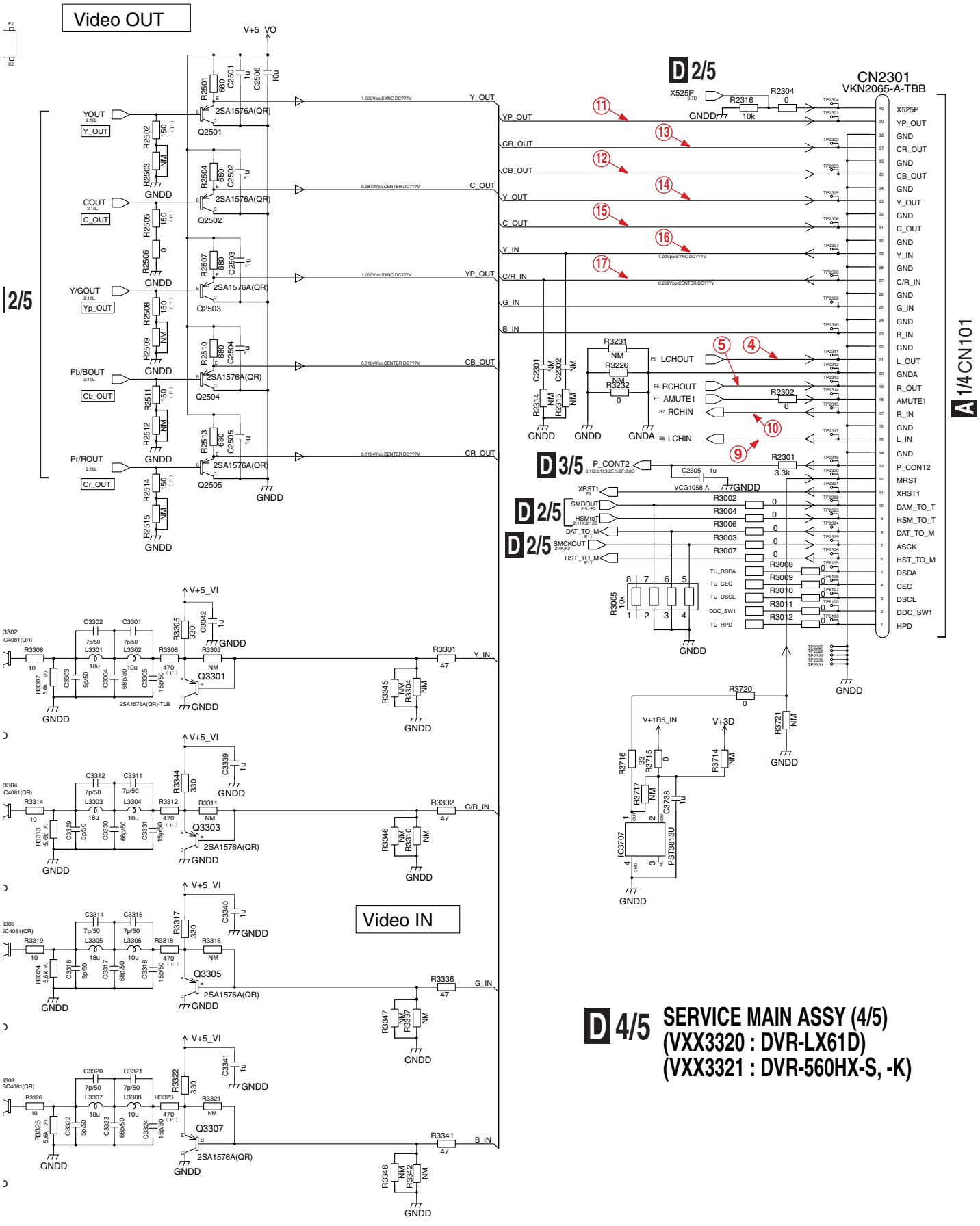
SERVICE MAIN ASSY (3/5)
(VXX3320 : DVR-LX61D)
(VXX3321 : DVR-560HX-S, -K)



10.9 SERVICE MAIN ASSY (4/5)

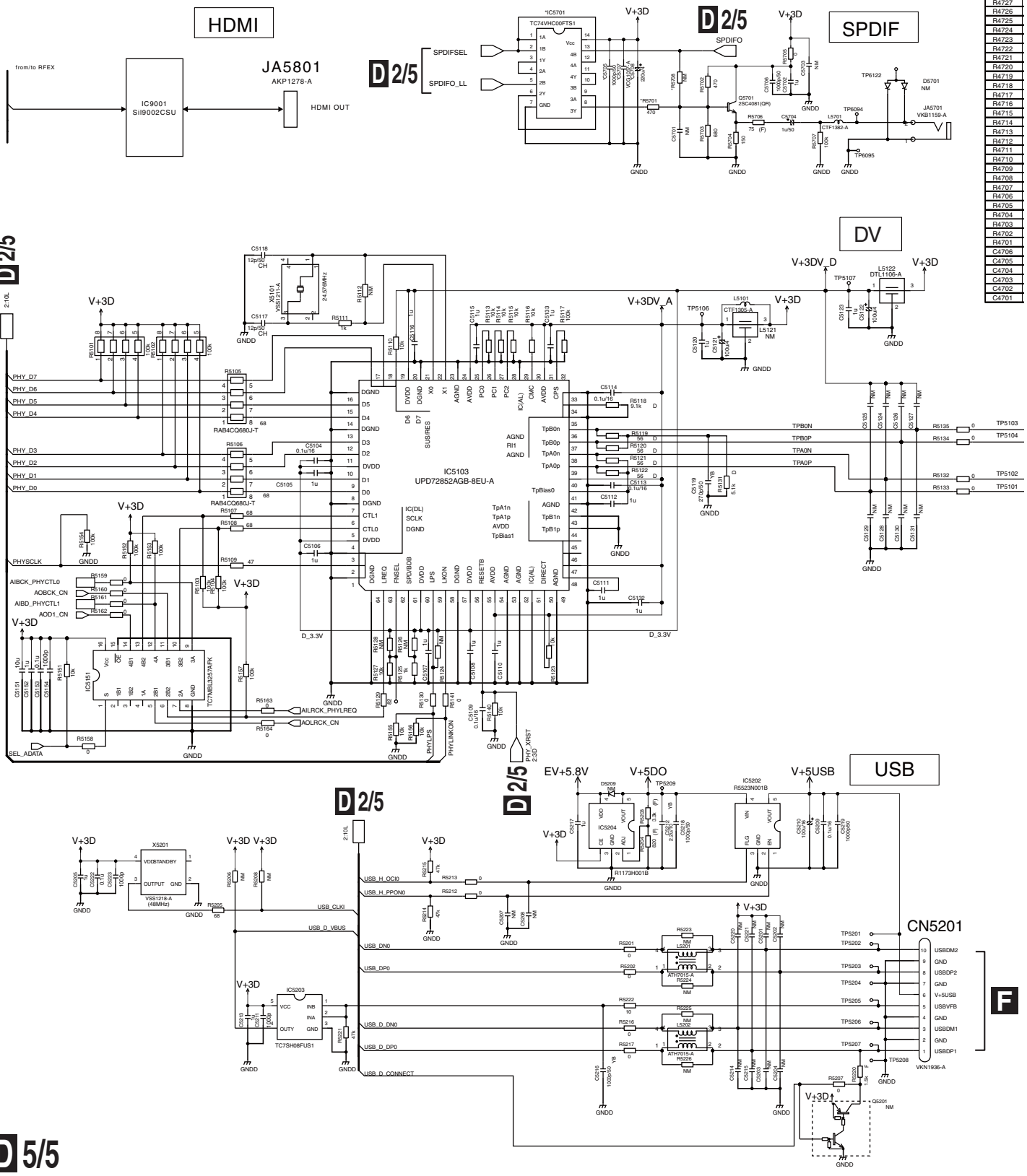


http://getMANUAL.com



10.10 SERVICE MAIN ASSY (5/5)

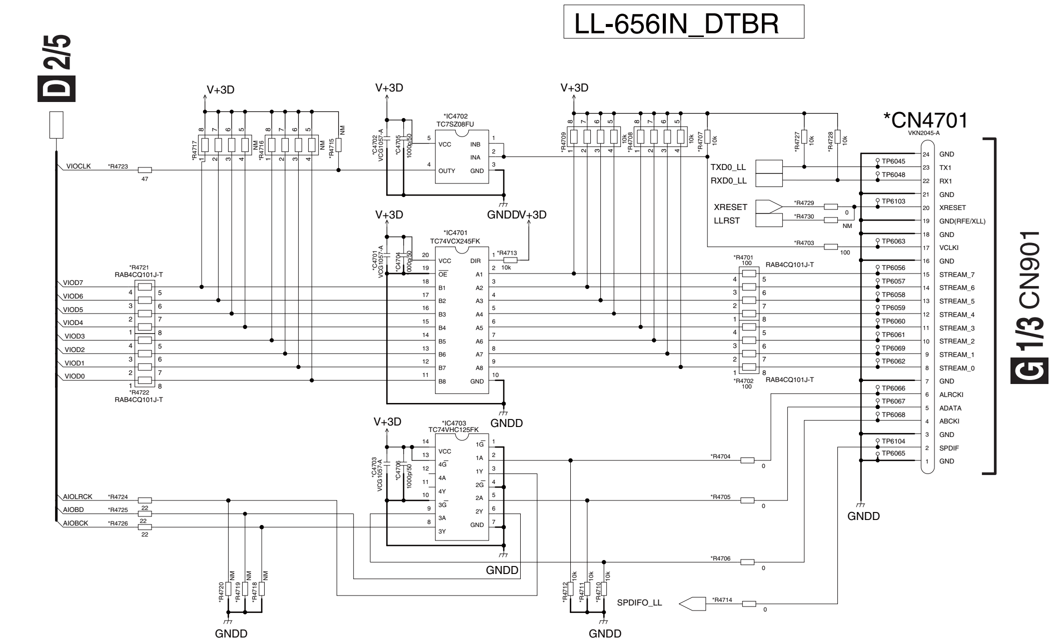
D 5/5 SERVICE MAIN ASSY (5/5) (VXX3320 : DVR-LX61D) (VXX3321 : DVR-560HX-S, -K)



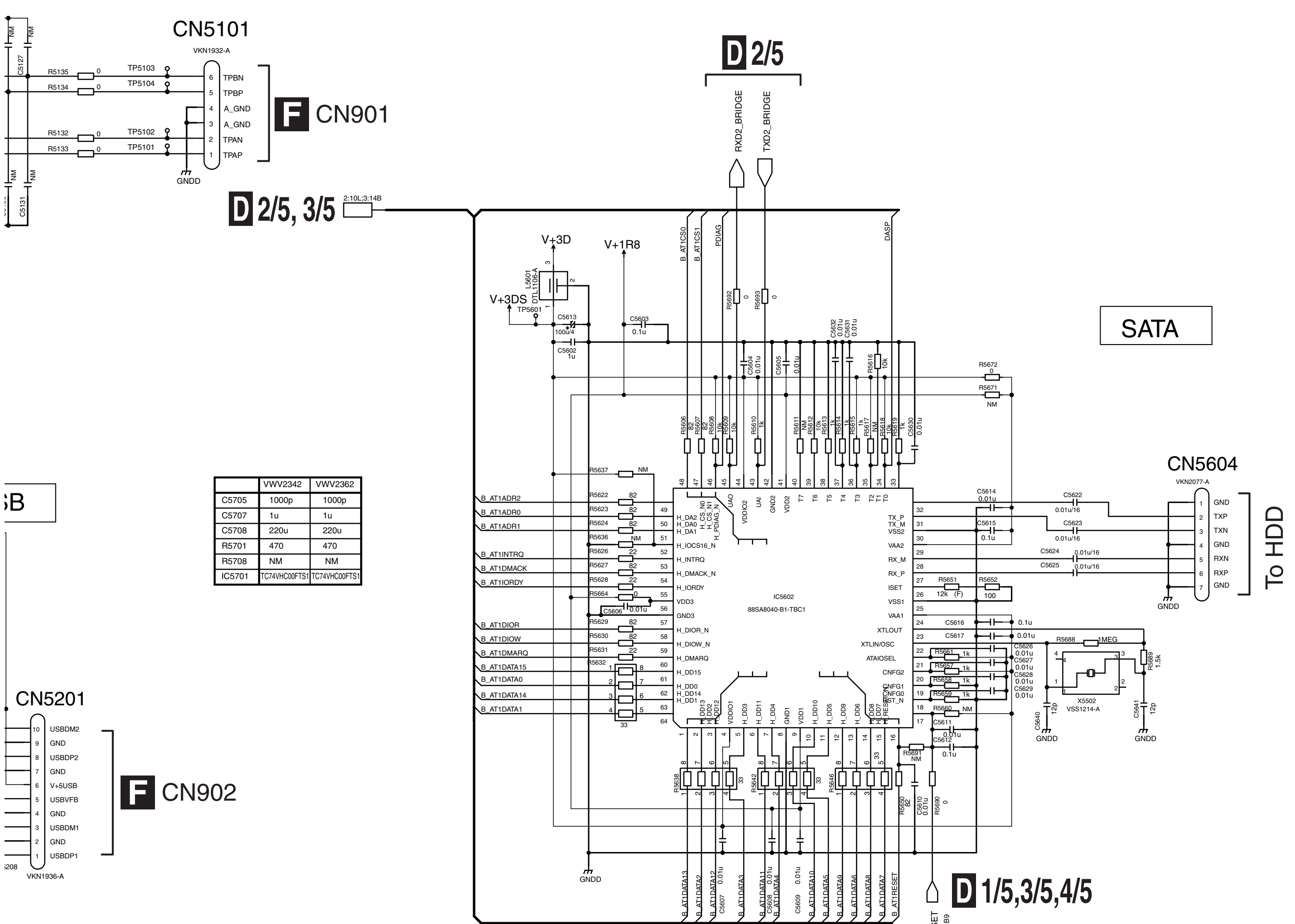
CN4701
IC4703
IC4702
IC4701
R4730
R4729
R4728
R4727
R4726
R4725
R4724
R4723
R4722
R4721
R4720
R4719
R4718
R4717
R4716
R4715
R4714
R4713
R4712
R4711
R4710
R4709
R4708
R4707
R4706
R4705
R4704
R4703
R4702
R4701
C4706
C4705
C4704
C4703
C4702
C4701

LL-656IN_DTBR

	VWV2342	VWV2362
CN4701	VKN2045A	VKN2045A
IC4703	TC74VHC125FK	TC74VHC125FK
IC4702	TC7SZ08FU	TC7SZ08FU
IC4701	TC74VCX245FK	TC74VCX245FK
R4730	NM	NM
R4729	0	0
R4728	10k	10k
R4727	10k	10k
R4726	22	22
R4725	22	22
R4724	22	22
R4723	47	47
R4722	100	100
R4721	100	100
R4720	NM	NM
R4719	NM	NM
R4718	NM	NM
R4717	NM	NM
R4716	NM	NM
R4715	NM	NM
R4714	0	0
R4713	10k	10k
R4712	10k	10k
R4711	10k	10k
R4710	10k	10k
R4709	10k	10k
R4708	10k	10k
R4707	10k	10k
R4706	0	0
R4705	0	0
R4704	0	0
R4703	100	100
R4702	100	100
R4701	100	100
C4706	1000p	1000p
C4705	1000p	1000p
C4704	1000p	1000p
C4703	1u	1u
C4702	1u	1u
C4701	1u	1u



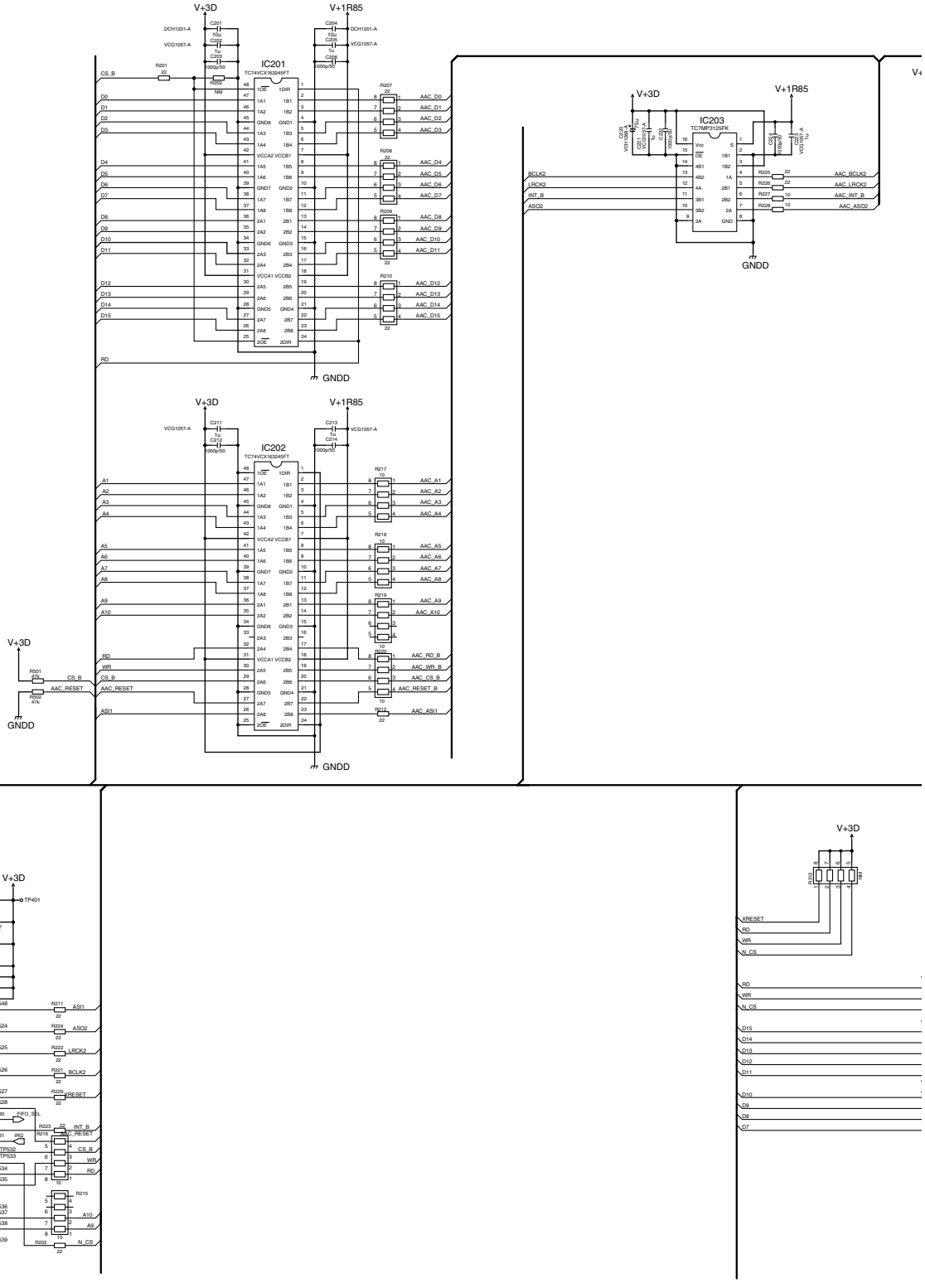
	VWV2342	VWV2362
C5705	1000p	1000p
C5707	1u	1u
C5708	220u	220u
R5701	470	470
R5708	NM	NM
IC5701	TC74VHC00FTS1	TC74VHC00FTS1



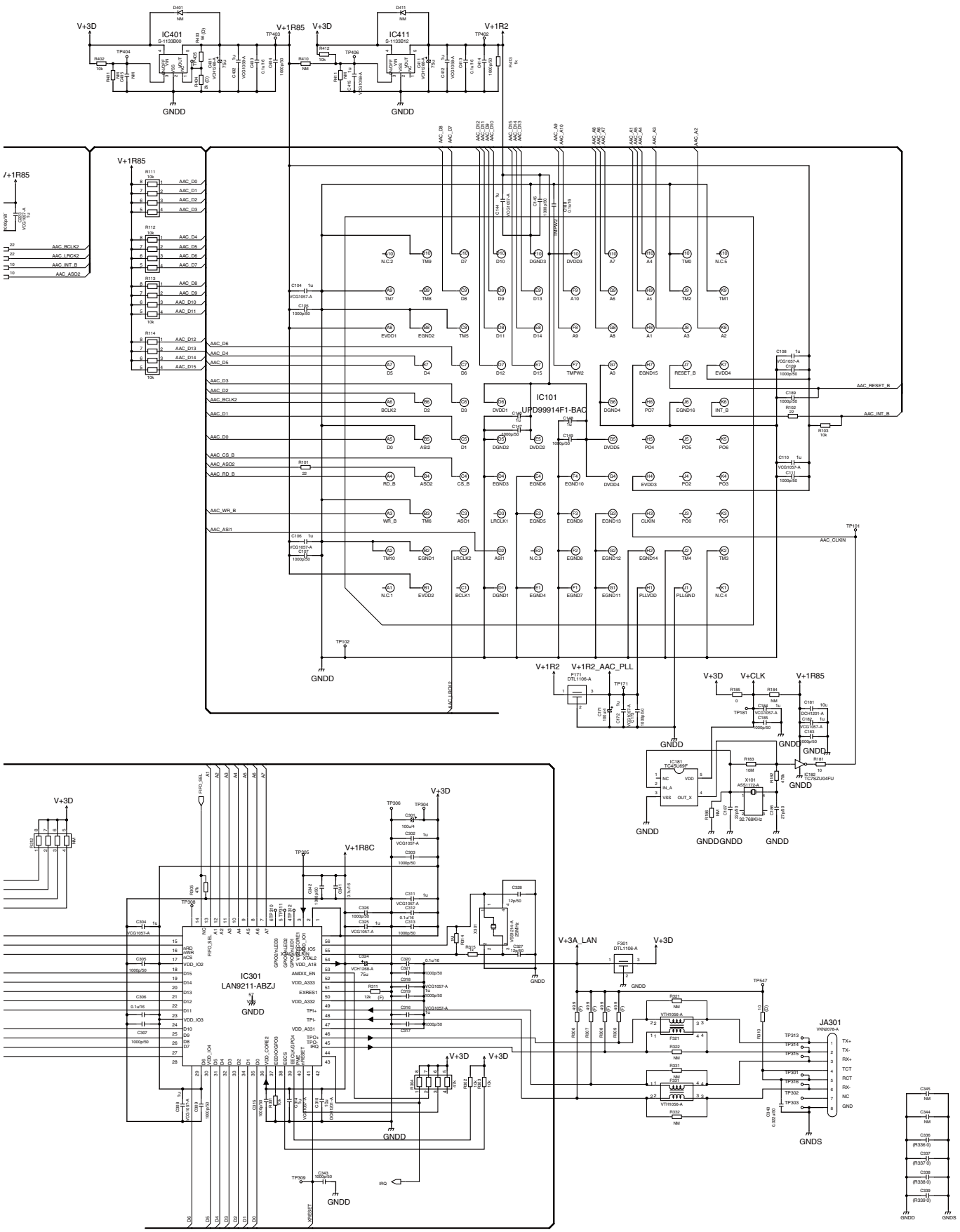
D 5/5

10.11 ETAB ASSY (DVR-LX61D ONLY)

E ETAB ASSY (VWV2344 : DVR-LX61D Only)

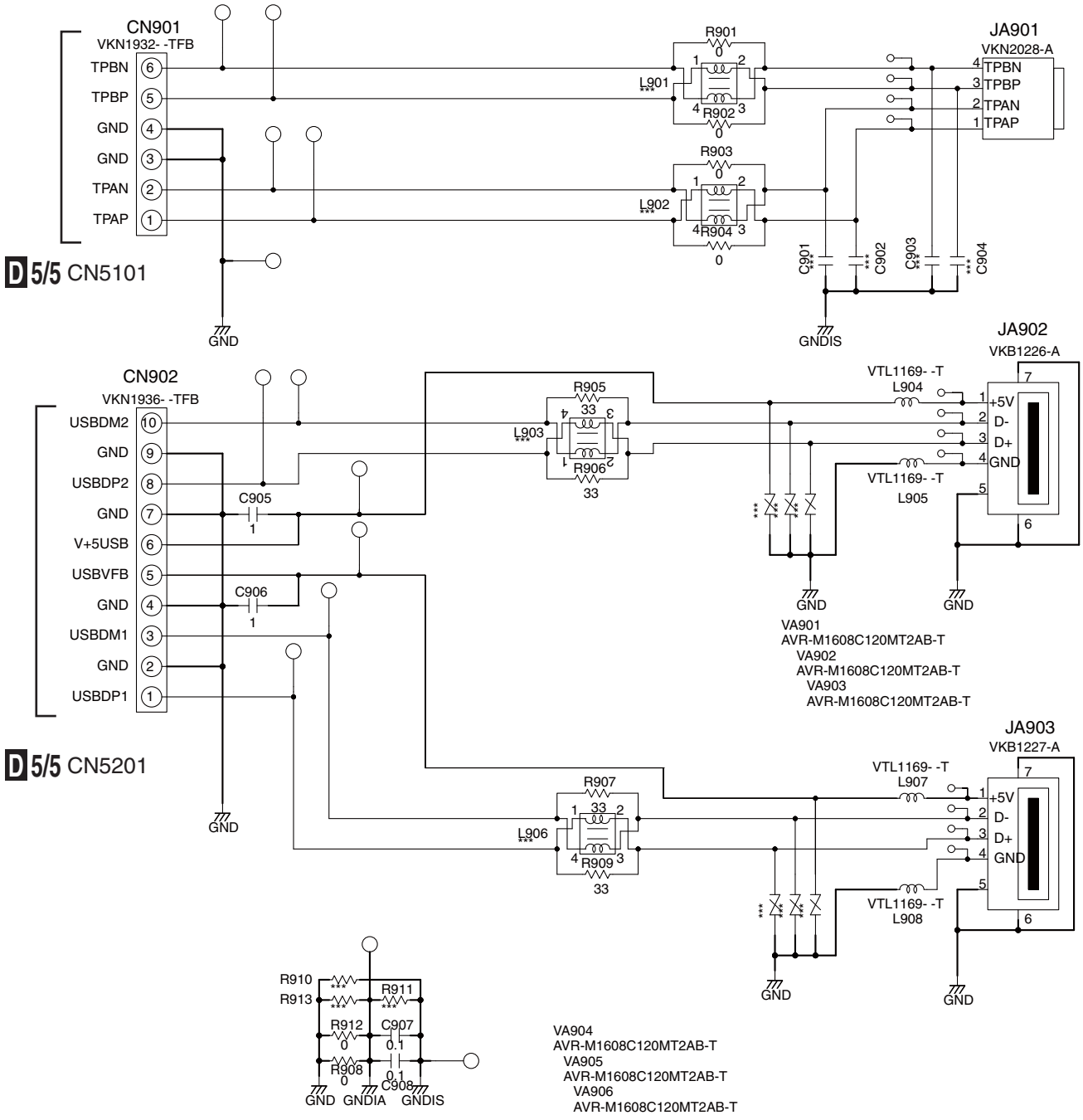


D 2/5 CN1501


IC401
S-1133B00
IC411
S-1133B12
V+3D
V+1R85
V+1R2
GNDD
IC101
UPD99914F1-BAC
IC301
LAN9211-ABZJ
V+1R8C
V+3A_LAN
V+1R2_AAC_PLL
V+CLK
AAC_CLKIN
AAC_RESET_B
AAC_INT_B
AAC_BCLK2
AAC_LRCK2
AAC_ASO2
AAC_ASI1
AAC_WR_B
AAC_RD_B
AAC_CS_B
IRQ
JA301
GNDS

10.12 SERVICE DVUB ASSY

F SERVICE DVUB ASSY (YXX1001)



A

B

C

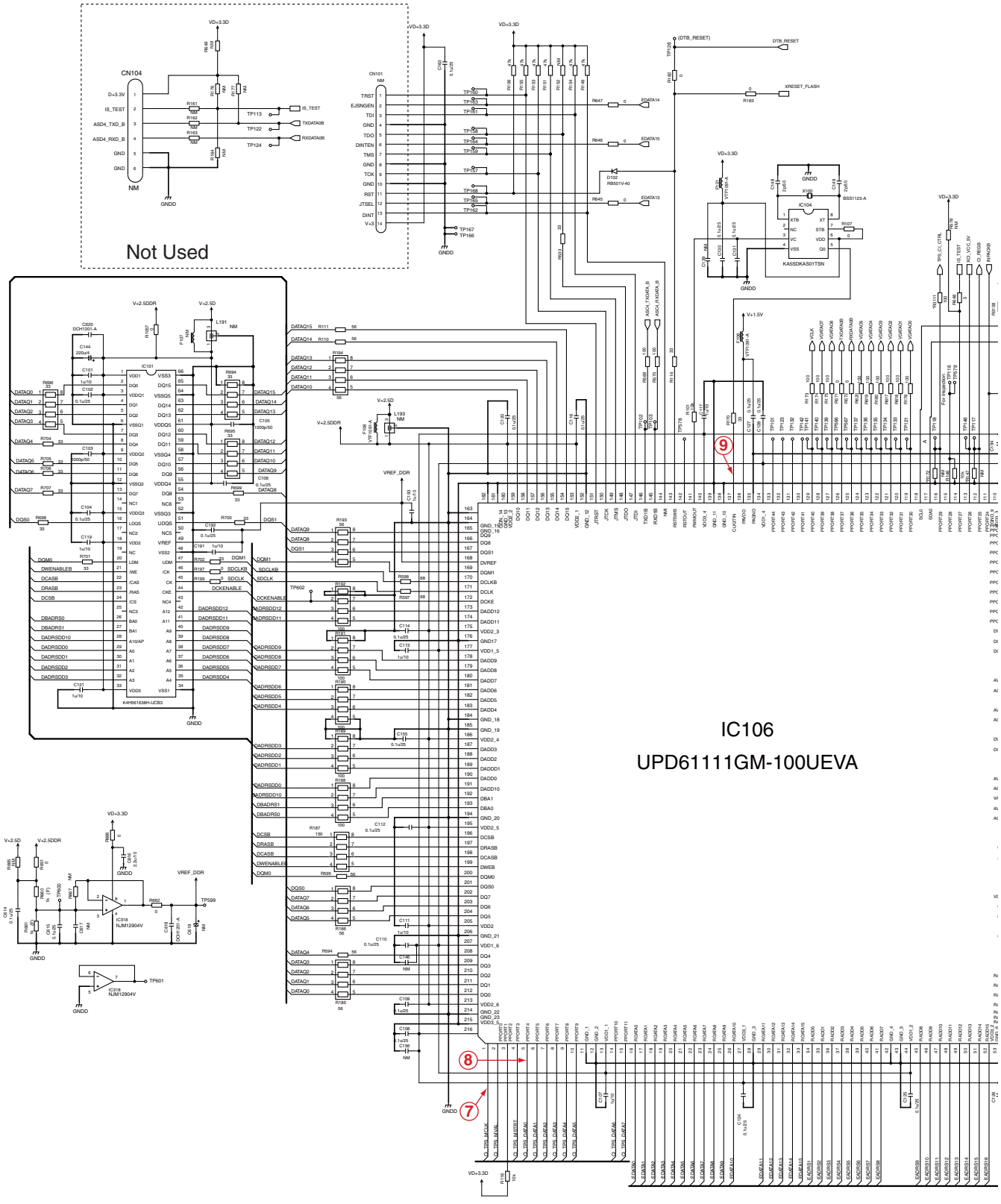
D

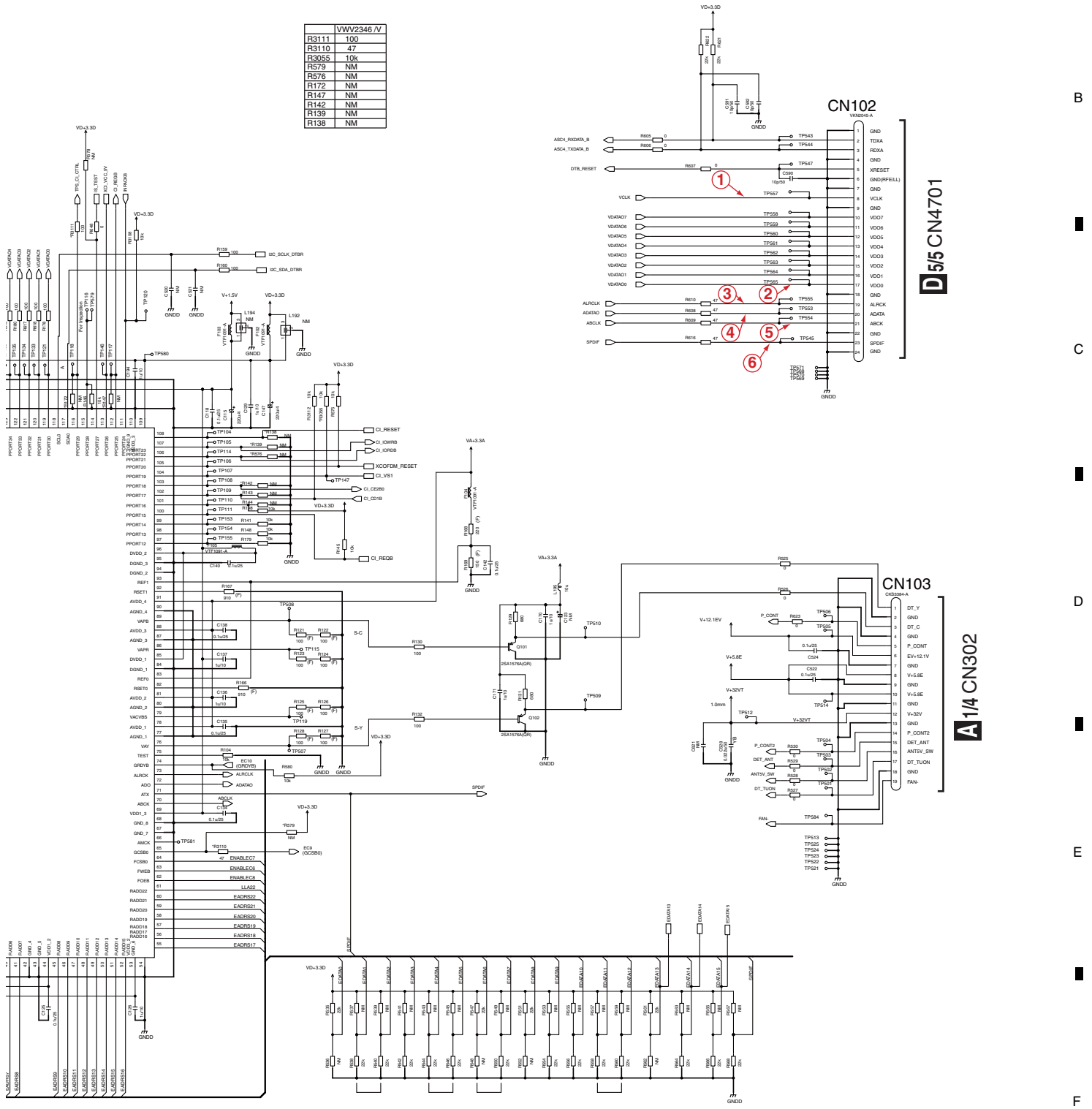
E

F

10.13 SERVICE DTBR ASSY (1/3)

G1/3 SERVICE DTBR ASSY (1/3) (VXX3319)

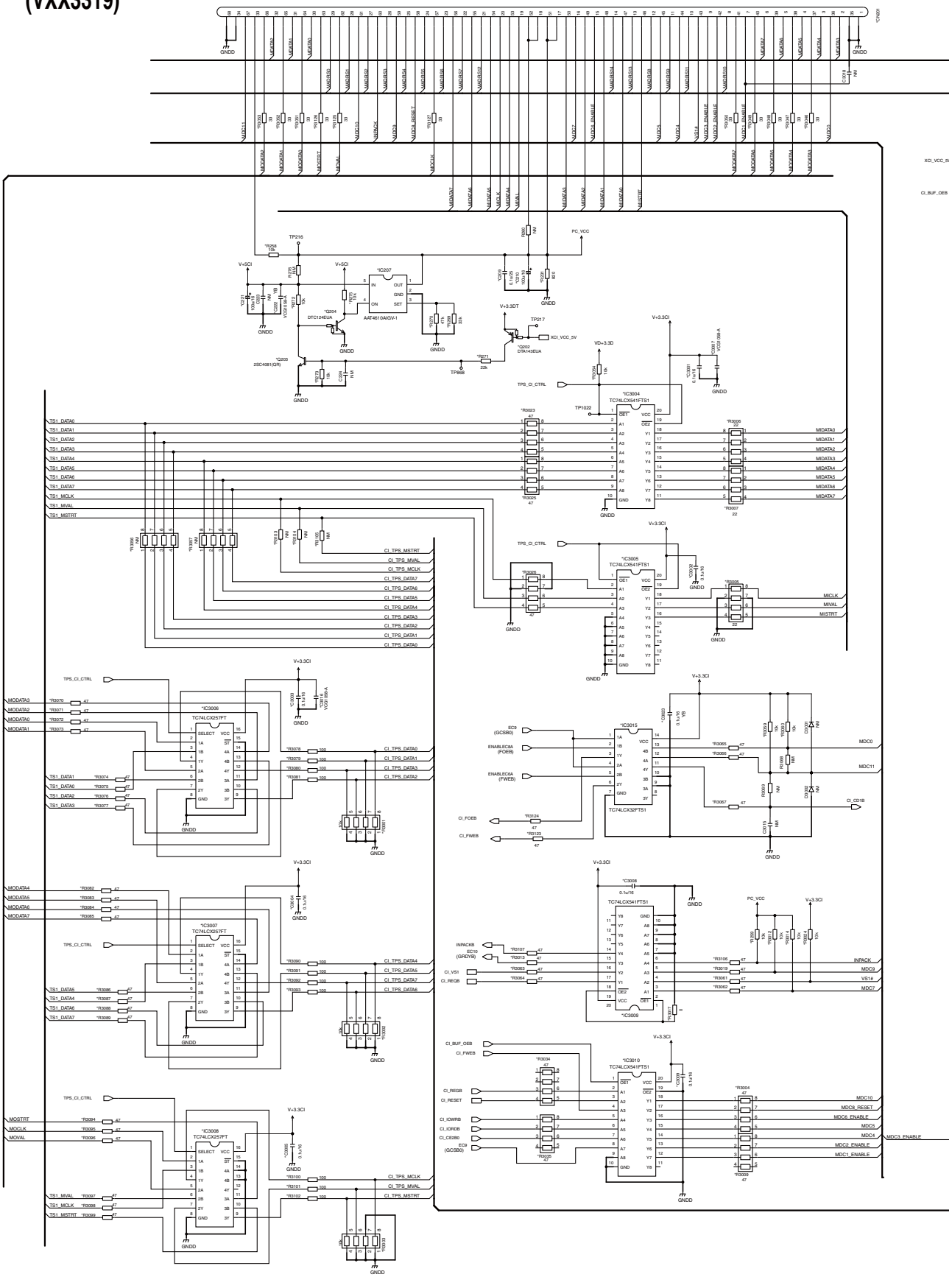




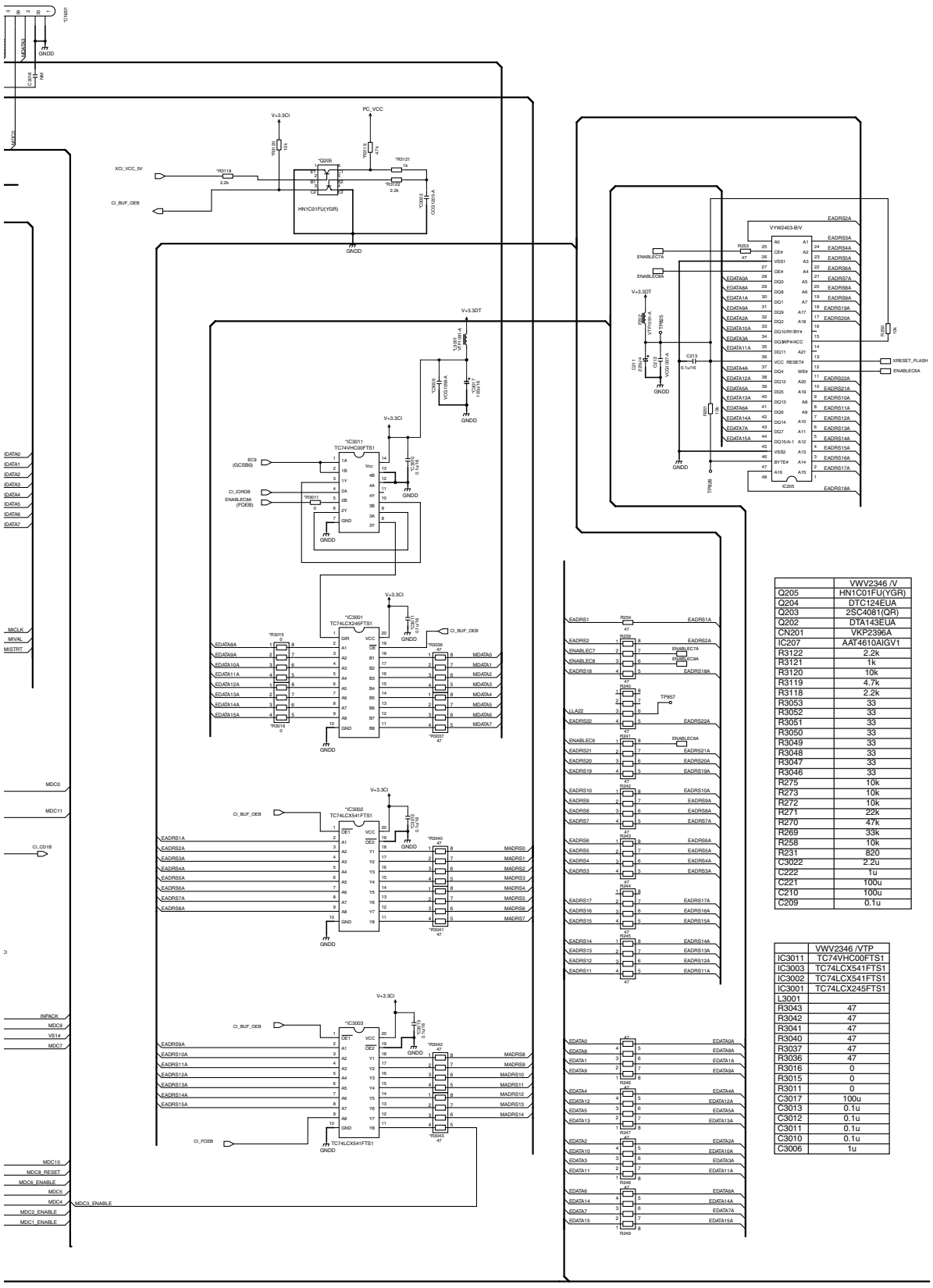
	VWV2346 /V
R3111	100
R3110	47
R3055	10k
R579	NM
R576	NM
R172	NM
R147	NM
R142	NM
R139	NM
R138	NM

10.14 SERVICE DTBR ASSY (2/3)

G2/3 SERVICE DTBR ASSY (2/3) (VXX3319)



http://getMANUAL.com



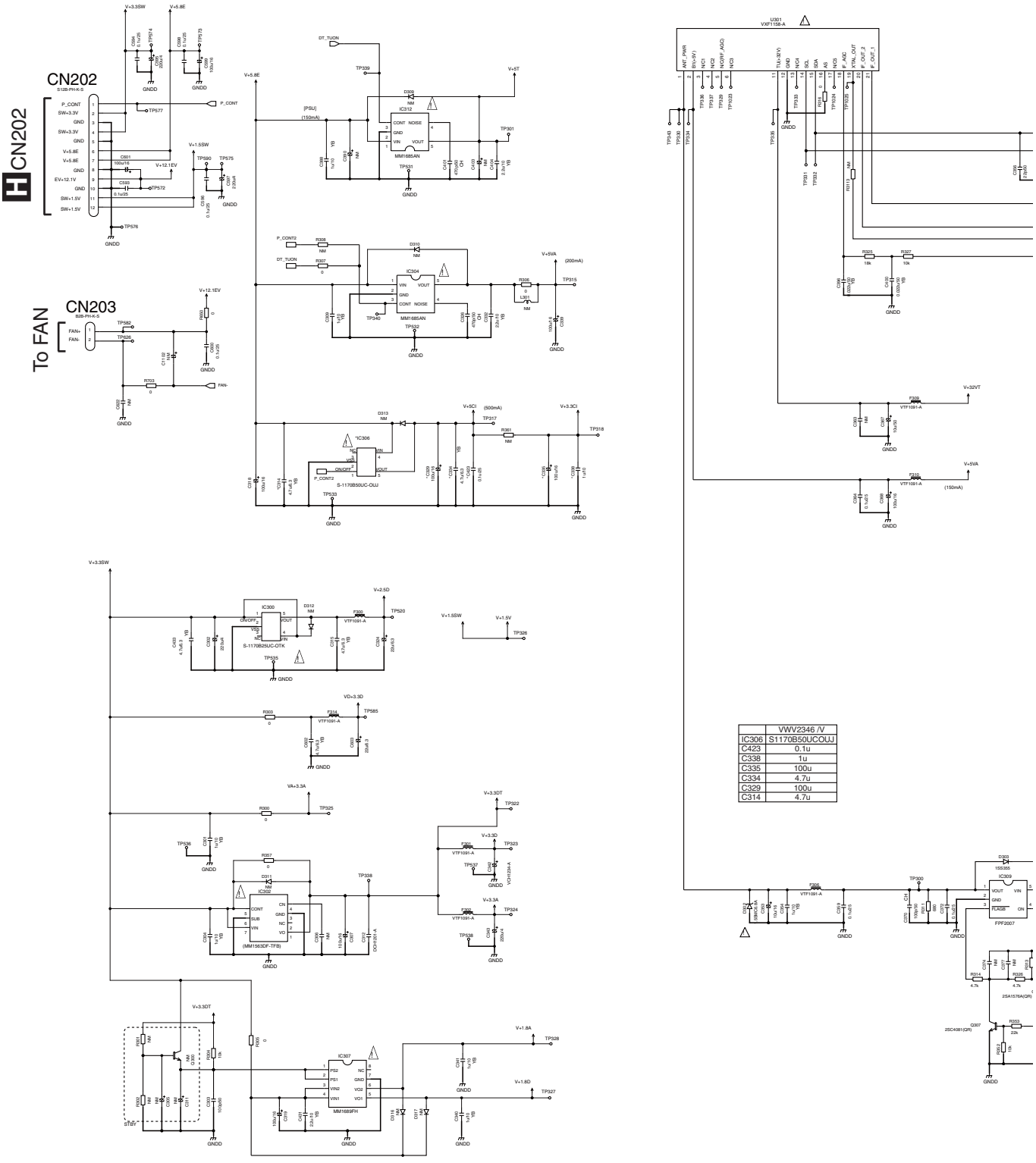
	VWV2346 /V
IC3015	TC74LCX32FTS1
IC3010	TC74LCX541FTS1
IC3009	TC74LCX541FTS1
IC3008	TC74LCX257FT
IC3007	TC74LCX257FT
IC3006	TC74LCX257FT
IC3005	TC74LCX541FTS1
IC3004	TC74LCX541FTS1
R3124	47
R3123	47
R3107	47
R3106	47
R3105	NM
R3104	NM
R3103	NM
R3102	100
R3101	100
R3100	100
R3099	47
R3098	47
R3097	47
R3096	47
R3095	47
R3094	47
R3093	100
R3092	100
R3091	100
R3090	100
R3089	47
R3088	47
R3087	47
R3086	47
R3085	47
R3084	47
R3083	47
R3082	47
R3081	100
R3080	100
R3079	100
R3078	100
R3077	47
R3076	47
R3075	47
R3074	47
R3073	47
R3072	47
R3071	47
R3070	47
R3067	47
R3066	47
R3065	47
R3064	47
R3063	47
R3062	47
R3061	47
R3060	10k
R3059	10k
R3057	NM
R3056	NM
R3054	10k
R3035	47
R3034	47
R3026	47
R3025	47
R3024	10k
R3023	47
R3019	47
R3017	0
R3014	10k
R3013	47
R3012	10k
R3009	47
R3007	22
R3006	22
R3005	22
R3004	47
R3003	10k
R3002	10k
R3001	10k
R259	10k
C3023	0.1u
C3016	1u
C3009	0.1u
C3008	0.1u
C3007	1u
C3005	0.1u
C3004	0.1u
C3003	0.1u
C3002	0.1u
C3001	0.1u

	VWV2346 /V
Q205	HN1C01FU(YGR)
Q204	DTC124EUA
Q203	2SC4081(QR)
Q202	DTA143EUA
CN201	VKP2396A
IC207	AAT4610AIGV1
R3122	2.2k
R3121	1k
R3120	10k
R3119	4.7k
R3118	2.2k
R3053	33
R3052	33
R3051	33
R3050	33
R3049	33
R3048	33
R3047	33
R3046	33
R275	10k
R273	10k
R272	10k
R271	22k
R270	47k
R269	33k
R258	10k
R231	820
C3022	2.2u
C222	1u
C221	100u
C210	100u
C209	0.1u

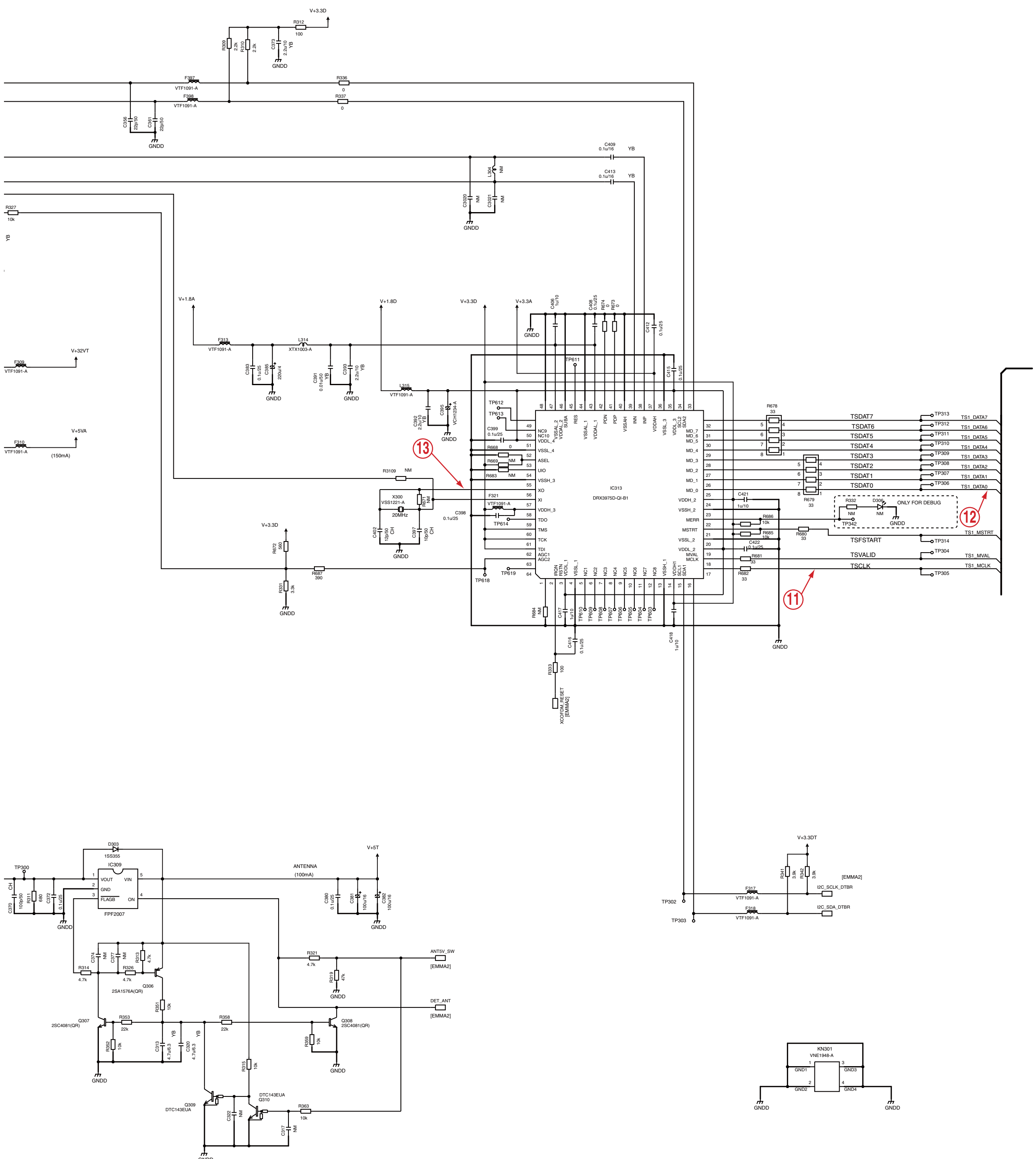
	VWV2346 /VTP
IC3011	TC74VHC00FTS1
IC3003	TC74LCX541FTS1
IC3002	TC74LCX541FTS1
IC3001	TC74LCX245FTS1
L3001	
R3043	47
R3042	47
R3041	47
R3040	47
R3037	47
R3036	47
R3016	0
R3015	0
R3011	0
C3017	100u
C3013	0.1u
C3012	0.1u
C3011	0.1u
C3010	0.1u
C3006	1u

10.15 SERVICE DTBR ASSY (3/3)

G3/3 SERVICE DTBR ASSY (3/3) (VXX3319)

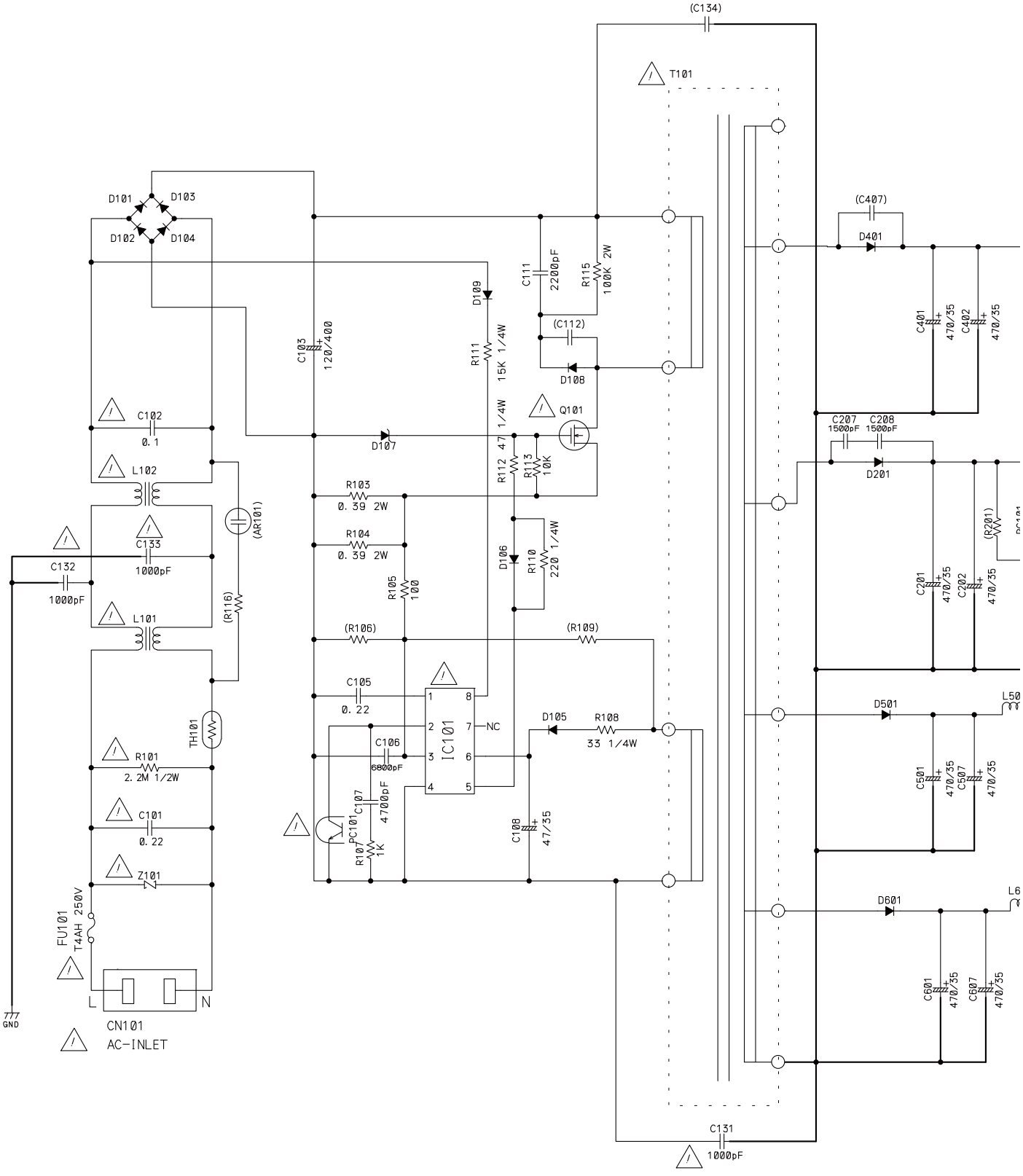


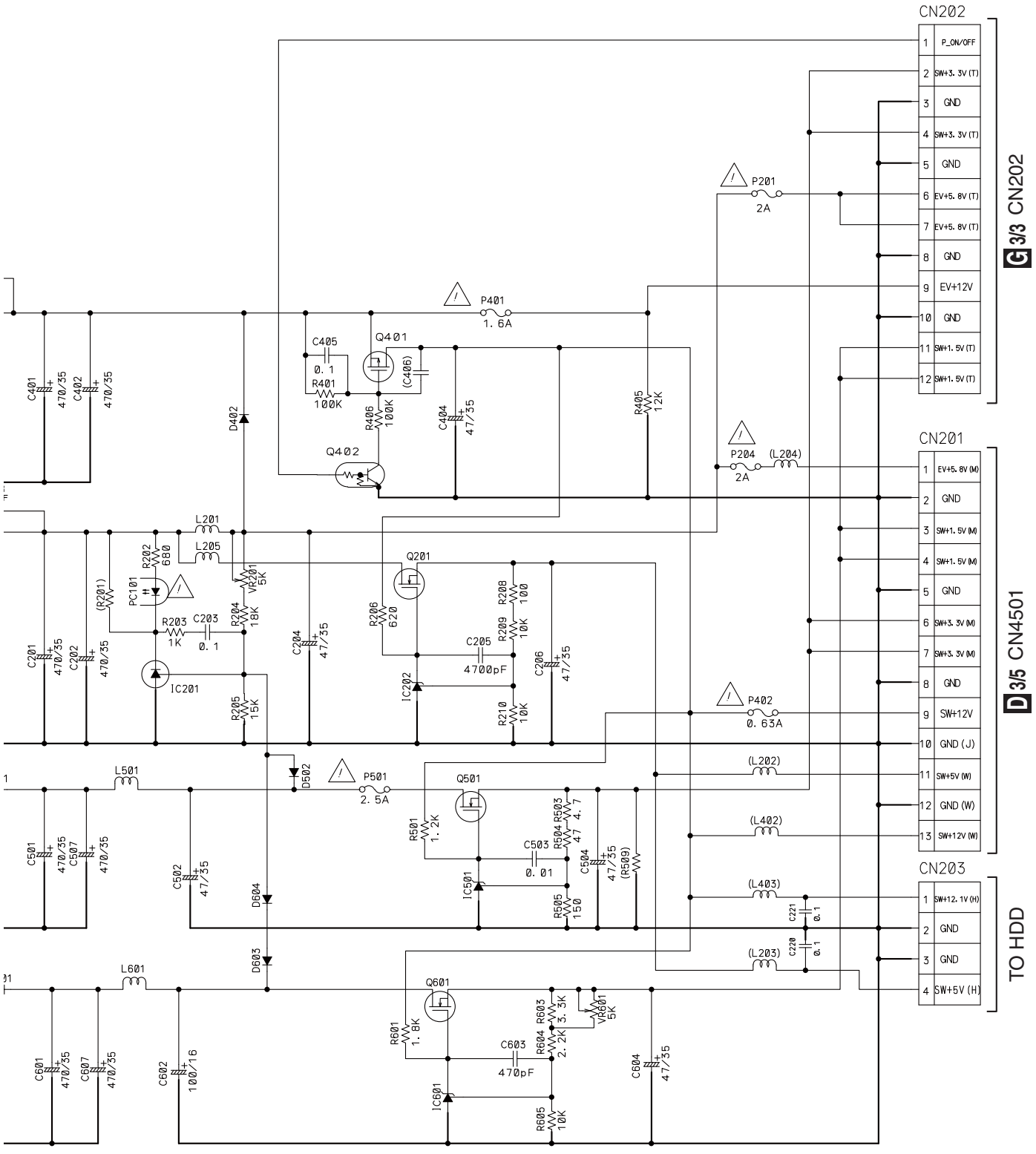
	VWV2346 /V
IC306	S1170B50UCOUJ
C423	0.1u
C338	1u
C335	100u
C334	4.7u
C329	100u
C314	4.7u


V+3.3D
R312
100
F397
VTF1091-A
F398
R336
0
R337
GNDD
C409
0.1u/16
YB
C413
L304
NM
R327
10k
V+1.8A
V+1.8D
V+3.3A
F313
L314
XTX1003-A
V+32VT
F309
V+5VA
F310
(150mA)
TP611
TP612
TP613
R678
33
TSDAT7
TSDAT6
TSDAT5
TSDAT4
TSDAT3
TSDAT2
TSDAT1
TSDAT0
TP313
TP312
TP311
TP310
TP309
TP308
TP307
TP306
TS1_DATA7
TS1_DATA6
TS1_DATA5
TS1_DATA4
TS1_DATA3
TS1_DATA2
TS1_DATA1
TS1_DATA0
IC313
DRX3975D-QI-B1
X300
VSS1221-A
20MHz
R3109
NM
F321
VTF1091-A
TP614
TP618
TP619
R687
390
R672
560
R331
3.3k
R679
33
R332
D305
ONLY FOR DEBUG
TP342
TS1_MSTRT
TSFSTART
TP314
TSVALID
TP304
TS1_MVAL
TSCLK
TP305
TS1_MCLK
R680
33
R681
R682
R685
R686
10k
C421
C422
C418
C416
R333
100
XCOFDM_RESET
[EMMA2]
13
11
12
V+3.3DT
R341
R342
[EMMA2]
F317
F318
I2C_SCLK_DTBR
I2C_SDA_DTBR
TP302
TP303
D303
1SS355
IC309
FPF2007
TP300
VOUT
VIN
GND
FLAGB
ON
ANTENNA
(100mA)
V+5T
R321
4.7k
ANT5V_SW
[EMMA2]
DET_ANT
[EMMA2]
R314
4.7k
R326
4.7k
Q306
2SA1576A(QR)
Q307
2SC4081(QR)
R353
22k
R358
22k
Q308
2SC4081(QR)
Q309
DTC143EUA
Q310
DTC143EUA
R363
10k
KN301
VNE1948-A
GND1
GND2
GND3
GND4

10.16 POWER SUPPLY ASSY

H POWER SUPPLY ASSY (VWR1405)





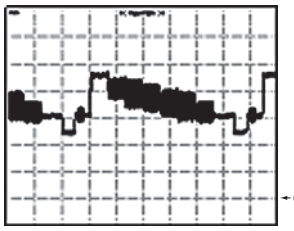
Unit	Resistor	Ω/W (under 1/4W for no direction W)
	Capacitor	μF/V (under 50V for no direction V)

10.17 WAVEFORMS

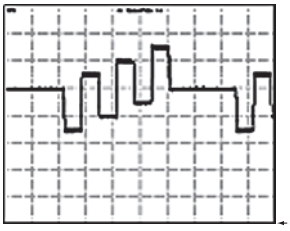
Note : The encircled numbers denote measuring point in the schematic diagram.

A SERVICE TUSB ASSY

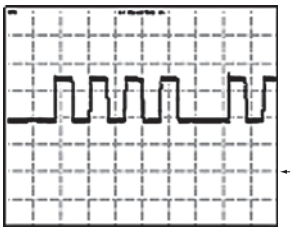
1 IC401-pin18 (TU-VIN)
(Function : Tuner 9ch)
V:500mV/div. H:10μsec/div.



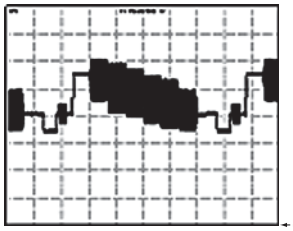
6 C488+side (CbOUT)
(Function : DVD play)
V:500mV/div. H:10μsec/div.



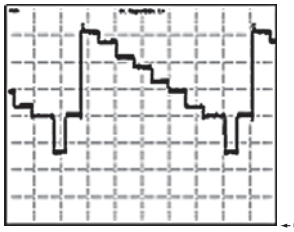
11 CN101-pin6 (Cb_OUT MtoT)
(Function : DVD play)
V:500mV/div. H:10μsec/div.



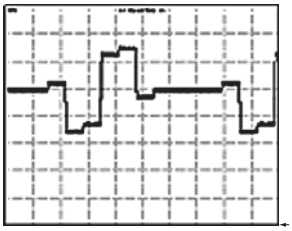
16 IC401-pin14 (2VIN)
(Function : LINE2 IN)
V:500mV/div. H:10μsec/div.



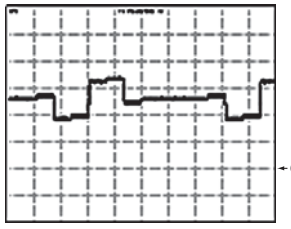
2 C486+side (Y2OUT)
(Function : DVD play)
V:500mV/div. H:10μsec/div.



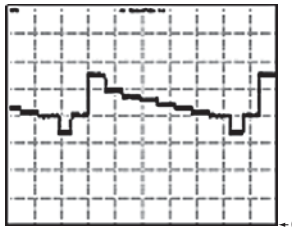
7 C489+side (CrOUT)
(Function : DVD play)
V:500mV/div. H:10μsec/div.



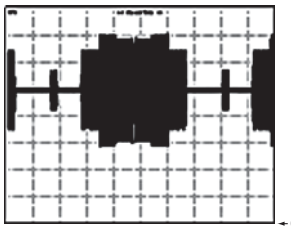
12 CN101-pin4 (Cr_OUT MtoT)
(Function : DVD play)
V:500mV/div. H:10μsec/div.



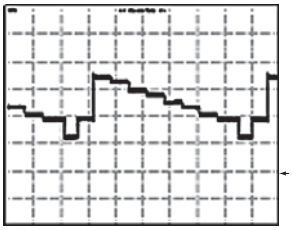
17 IC401-pin7 (Y2IN)
(Function : LINE2 IN)
V:500mV/div. H:10μsec/div.



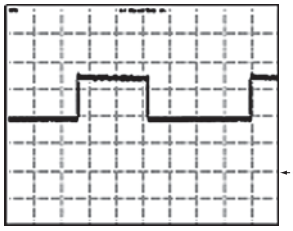
3 IC401-pin34 (C2OUT)
(Function : DVD play)
V:500mV/div. H:10μsec/div.



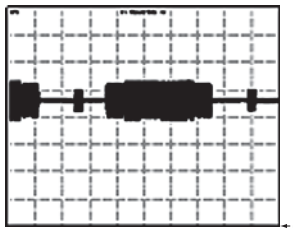
8 CN101-pin8 (Y_OUT MtoT)
(Function : Tuner 9ch)
V:500mV/div. H:10μsec/div.



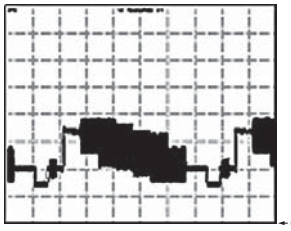
13 CN101-pin2 (Y/G_OUT MtoT)
(Function : DVD play)
V:500mV/div. H:10μsec/div.



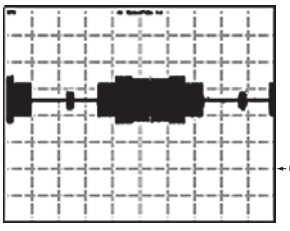
18 IC401-pin9 (C2IN)
(Function : LINE2 IN)
V:500mV/div. H:10μsec/div.



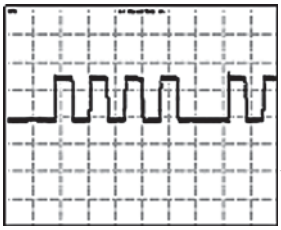
4 C490+side (V1OUT)
(Function : DVD play)
V:1V/div. H:10μsec/div.



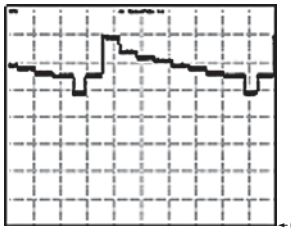
9 CN101-pin10 (C_OUT MtoT)
(Function : DVD play)
V:500mV/div. H:10μsec/div.



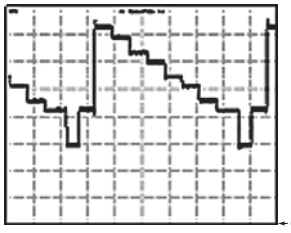
14 CN101-pin6 (Cb/B_OUT MtoT)
(Function : DVD play)
V:500mV/div. H:10μsec/div.



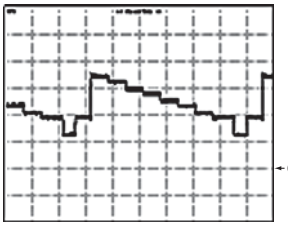
19 CN101-pin12 (Y_IN TtoM)
(Function : LINE2 IN)
V:500mV/div. H:10μsec/div.



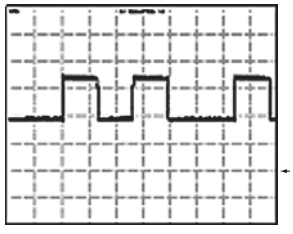
5 C487+side (YOUT)
(Function : DVD play)
V:500mV/div. H:10μsec/div.



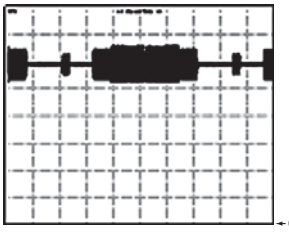
10 CN101-pin2 (Yp_OUT MtoT)
(Function : DVD play)
V:500mV/div. H:10μsec/div.



15 CN101-pin4 (Cr/R_OUT MtoT)
(Function : DVD play)
V:500mV/div. H:10μsec/div.



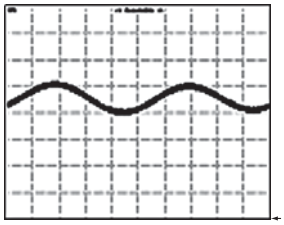
20 CN101-pin14 (C_IN TtoM)
(Function : LINE2 IN)
V:500mV/div. H:10μsec/div.



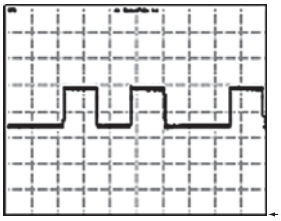
A SERVICE TUSB ASSY

Measurement Condition :

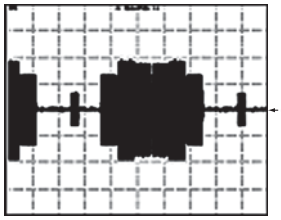
21 **IC401-pin87 (TU-LIN)**
(Function : Tuner 9ch)
V:500mV/div. H:10μsec/div.



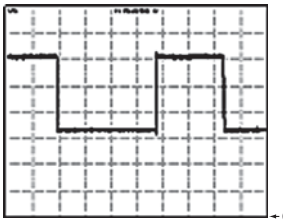
25 **JA501-pin15 (R/C IN)**
(Function : LINE1 IN)
V:500mV/div. H:10μsec/div.



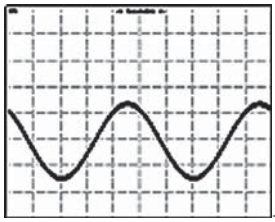
29 **JA501-pin15 (R/C IN)**
(Function : LINE1 IN)
V:500mV/div. H:10μsec/div.



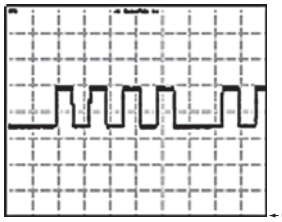
33 **C530+side (AV1_G_OUT)**
(Function : DVD play)
V:500mV/div. H:10μsec/div.



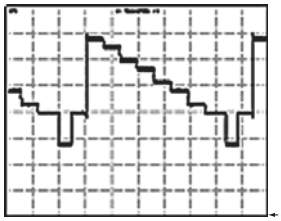
22 **C491+side (L_OUT)**
Function : DVD play)
V:500mV/div. H:10μsec/div.



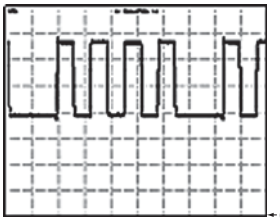
26 **JA501-pin7 (BIN)**
(Function : LINE1 IN)
V:500mV/div. H:10μsec/div.



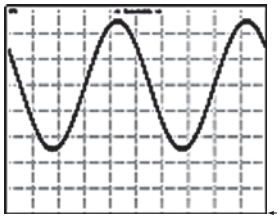
30 **C532+side (AV1_V/Y_OUT)**
(Function : DVD play)
V:500mV/div. H:10μsec/div.



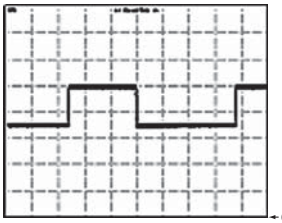
34 **C529+side (AV1_B_OUT)**
(Function : DVD play)
V:500mV/div. H:10μsec/div.



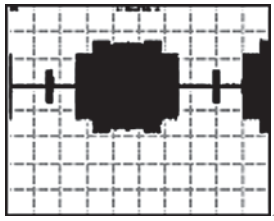
23 **CN101-pin26 (L_IN)**
(Function : LINE2 IN)
V:500mV/div. H:10μsec/div.



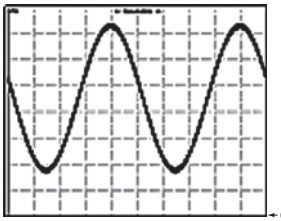
27 **JA501-pin11 (G IN)**
(Function : LINE1 IN)
V:500mV/div. H:10μsec/div.



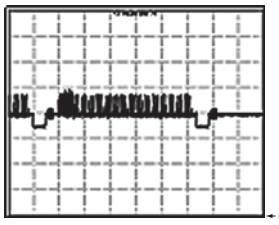
31 **C531+side (AV1_R/C_OUT)**
(Function : DVD play)
V:500mV/div. H:10μsec/div.



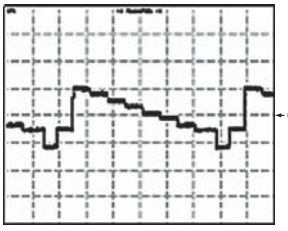
35 **C542+side (AV1_L_OUT)**
(Function : DVD play)
V:500mV/div. H:10μsec/div.



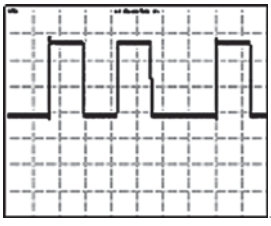
24 **IC101-pin81 (TEXTV)**
(Function : RF IN)
V:1V/div. H:10μsec/div.



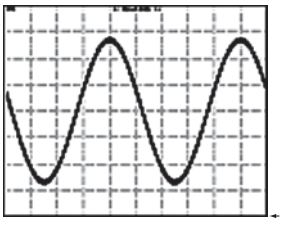
28 **JA501-pin20 (AV2_V/Y IN))**
(Function : LINE1 IN)
V:1V/div. H:10μsec/div.



32 **C531+side (AV1_R/C_OUT)**
(Function : DVD play)
V:500mV/div. H:10μsec/div.



36 **JA501-pin6 (AV2_L_IN)**
(Function : LINE1 IN)
V:1V/div. H:10μsec/div.

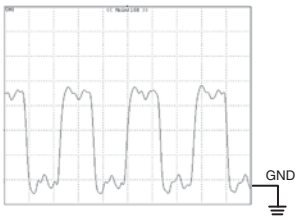


D SERVICE MAIN ASSY

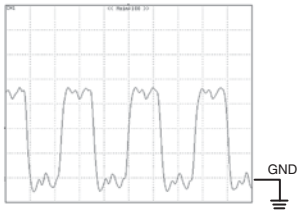
Measurement Condition :

No.1 - 8 : EBU Color Bar (100 / 0 / 75 / 0)

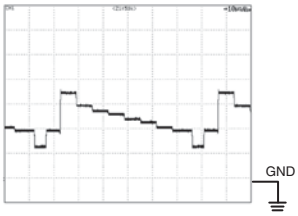
1 **IC3201 Pin16 (DACMCK)**
V: 1V/div. H: 20ns/div.



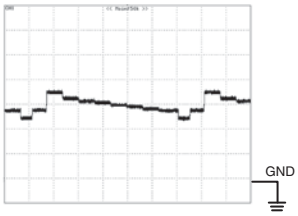
6 **IC3101 Pin11 (ADCCLK0)**
V: 1V/div. H: 20ns/div.



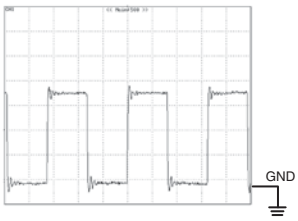
11 **CN2301 Pin39 (YP)**
V: 0.5V/div. H: 10us/div.



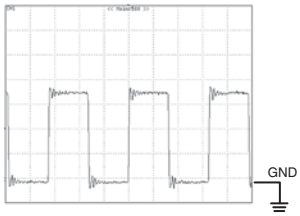
16 **CN2301 Pin29 (S_Y)**
V: 1V/div. H: 10us/div.



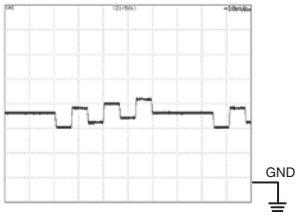
2 **IC3201 Pin1 (DACBCK)**
V: 1V/div. H: 100ns/div.



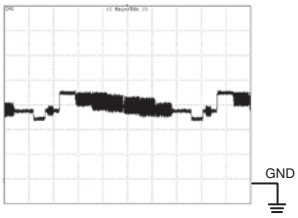
7 **IC3101 Pin12 (AD_BCK)**
V: 1V/div. H: 100ns/div.



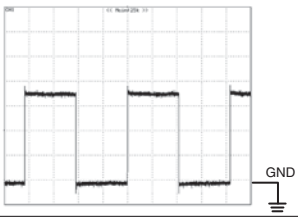
12 **CN2301 Pin35 (CB)**
V: 0.5V/div. H: 10us/div.



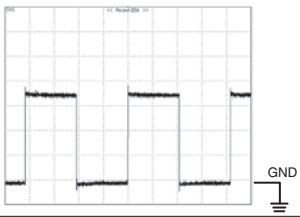
16 **CN2301 Pin29 (CVBS)**
V: 1V/div. H: 10us/div.



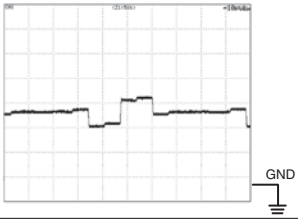
3 **IC3201 Pin3 (DACLRCK)**
V: 1V/div. H: 5us/div.



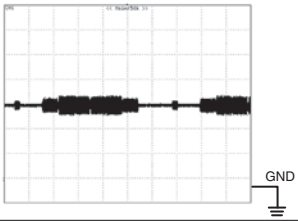
8 **IC3101 Pin10 (AD_LRCK)**
V: 1V/div. H: 5us/div.



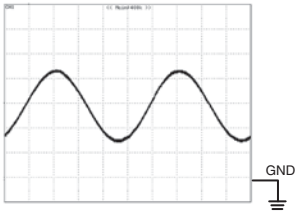
13 **CN2301 Pin37 (CR)**
V: 0.5V/div. H: 10us/div.



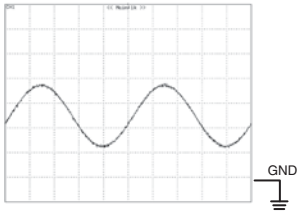
17 **CN2301 Pin27 (S_C)**
V: 1V/div. H: 10us/div.



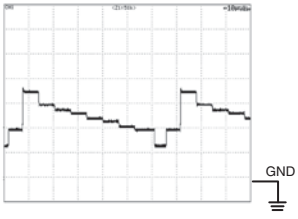
4 **CN2301 Pin21 (LCHOUT)**
V: 2V/div. H: 200us/div.



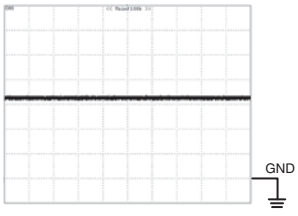
9 **CN2301 Pin15 (LCHIN)**
V: 1V/div. H: 200us/div.



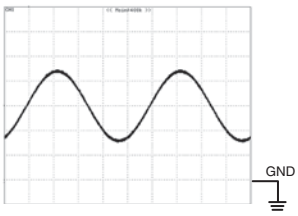
14 **CN2301 Pin33 (Y)**
V: 0.5V/div. H: 10us/div.



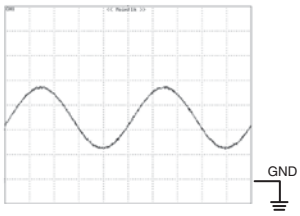
18 **IC501 Pin34 (XDMUTE1)**
V: 1V/div. H: 20us/div.



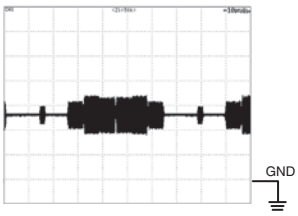
5 **CN2301 Pin19 (RCHOUT)**
V: 2V/div. H: 200us/div.



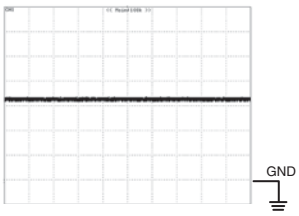
10 **CN2301 Pin17 (RCHIN)**
V: 1V/div. H: 200us/div.



15 **CN2301 Pin31 (C)**
V: 0.5V/div. H: 10us/div.

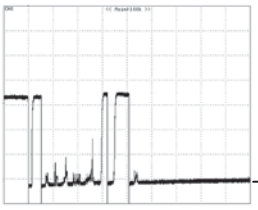


19 **IC501 Pin35 (XDMUTE2)**
V: 1V/div. H: 20us/div.

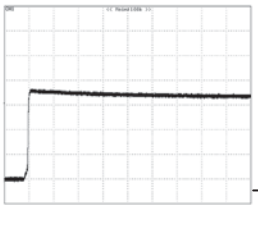


D SERVICE MAIN ASSY

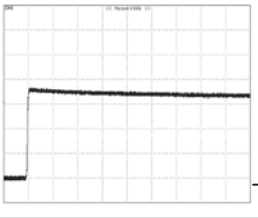
20 **CN601 Pin3 (CLOSE)**
open → close
V: 1V/div. H: 20us/div.



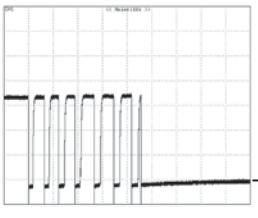
20 **CN601 Pin3 (CLOSE)**
close → open
V: 1V/div. H: 20us/div.



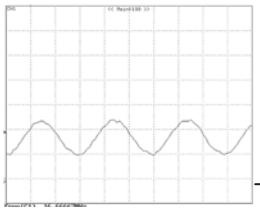
21 **CN601 Pin5 (OPEN)**
open → close
V: 1V/div. H: 20us/div.



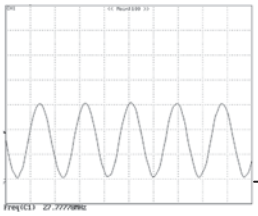
21 **CN601 Pin5 (OPEN)**
close → open
V: 1V/div. H: 20us/div.



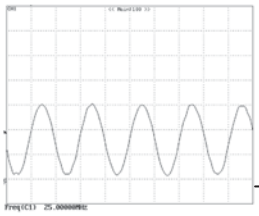
22 **X101 (16.66667 MHz)**
V: 1V/div. H: 20ns/div.



23 **X1002 (27.77778 MHz)**
V: 1V/div. H: 20ns/div.



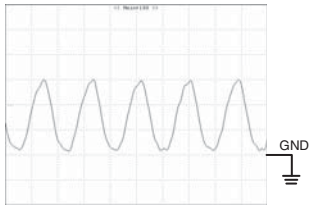
24 **X1001 (25 MHz)**
V: 1V/div. H: 20ns/div.



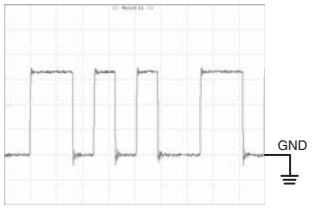
G SERVICE DTBR ASSY

Measurement Condition :

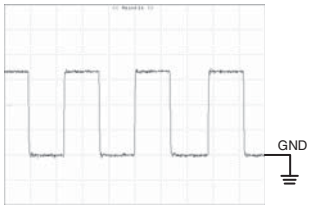
1 **CN102 Pin8 (VCLK)**
V: 1V/div. H: 20ns/div.



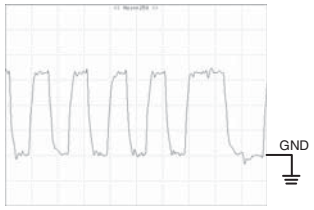
6 **CN102 Pin23 (SPDIF)**
V: 1V/div. H: 200ns/div.



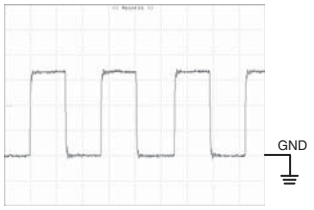
11 **IC313 Pin17 (TSCLK)**
V: 1V/div. H: 200ns/div.



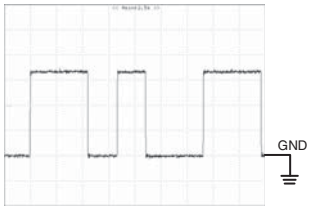
2 **CN102 Pin17 (VDO0)**
V: 1V/div. H: 50ns/div.



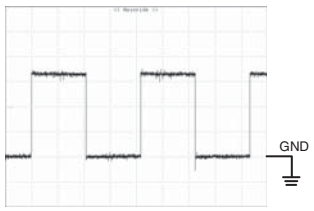
7 **IC106 Pin1 (CI_TPS_MCLK)**
V: 1V/div. H: 200ns/div.



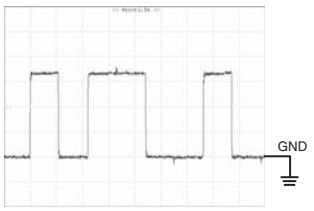
12 **IC313 Pin25 (TS1_DATA0)**
V: 1V/div. H: 500ns/div.



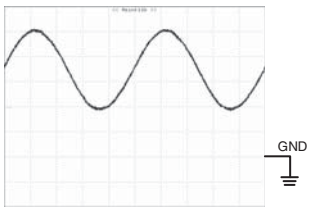
3 **CN102 Pin19 (ALRCK)**
V: 1V/div. H: 5us/div.



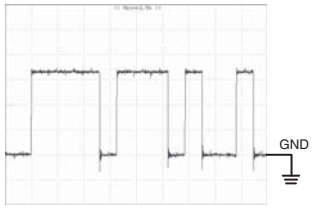
8 **IC106 Pin5 (CI_TPS_DATA0)**
V: 1V/div. H: 500ns/div.



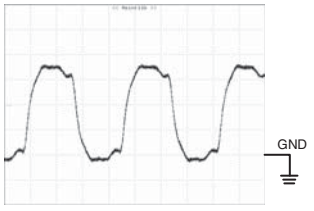
13 **IC313 Pin56 (XO)**
V: 0.5V/div. H: 10ns/div.



4 **CN102 Pin20 (ADATA)**
V: 1V/div. H: 500ns/div.



9 **IC106 Pin137 (CLK27IN)**
V: 1V/div. H: 10ns/div.



5 **CN102 Pin21 (ABCK)**
V: 1V/div. H: 200ns/div.

http://getMANUAL.com

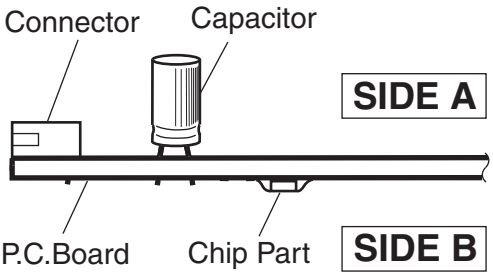
11. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

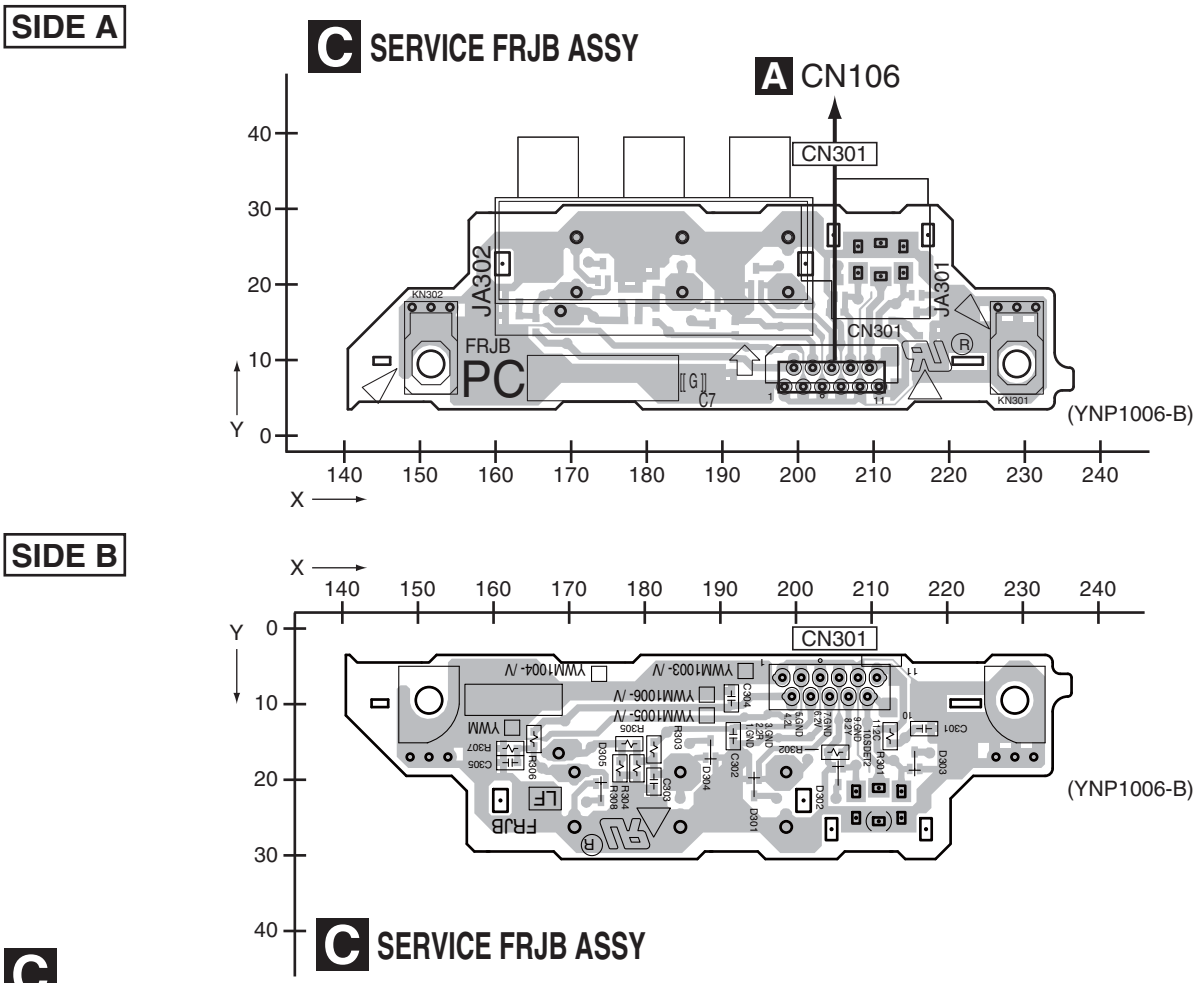
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

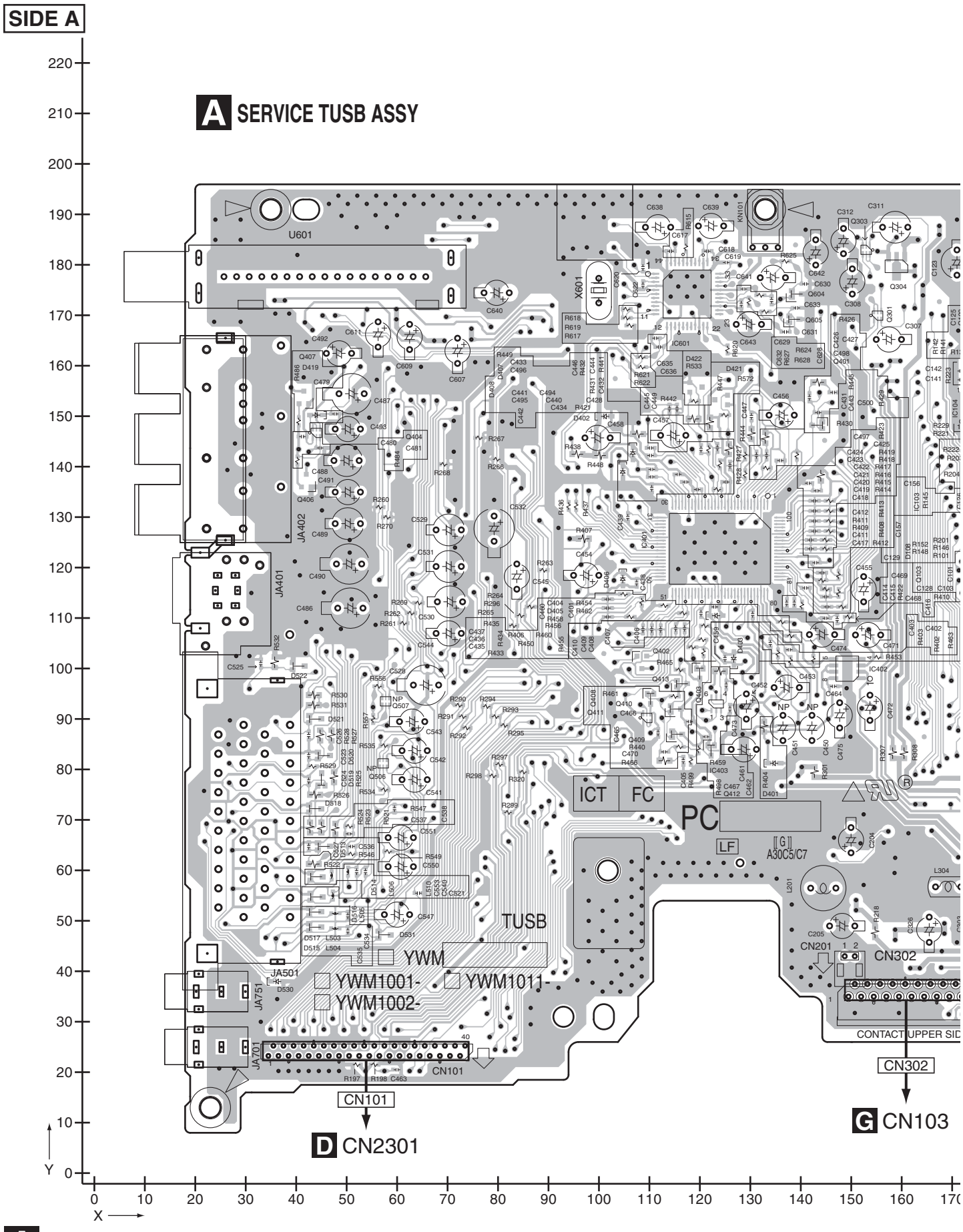
3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



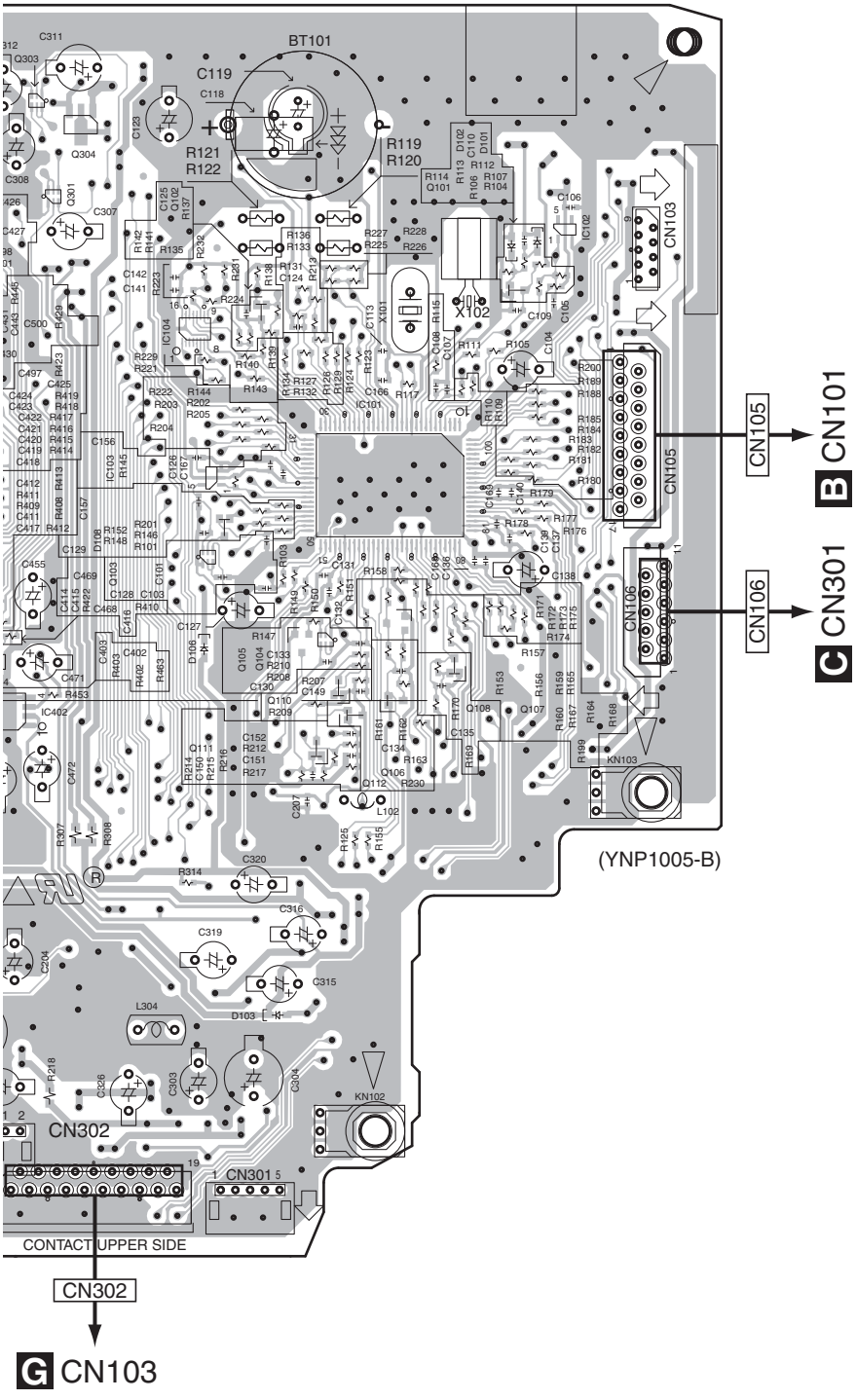
11.1 SERVICE FRJB ASSY



11.2 SERVICE TUSB ASSY



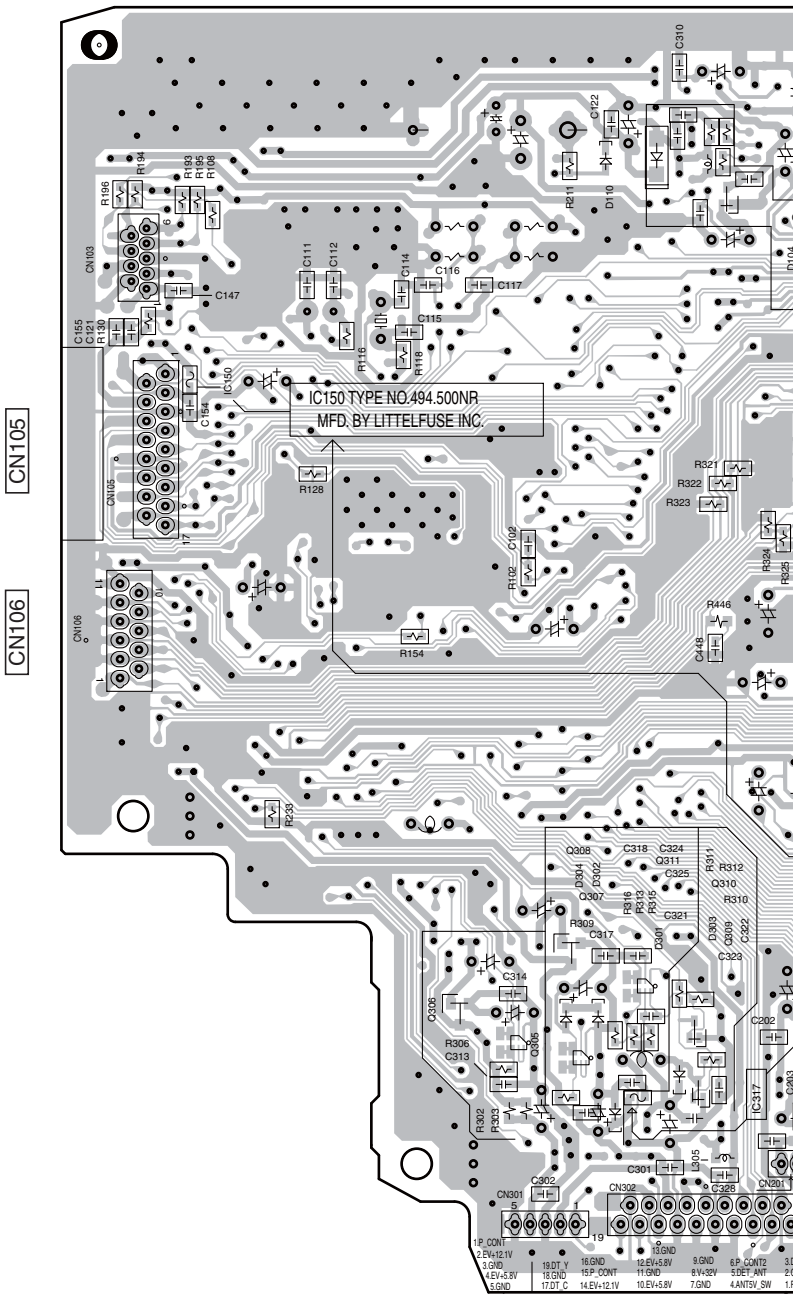
SIDE A



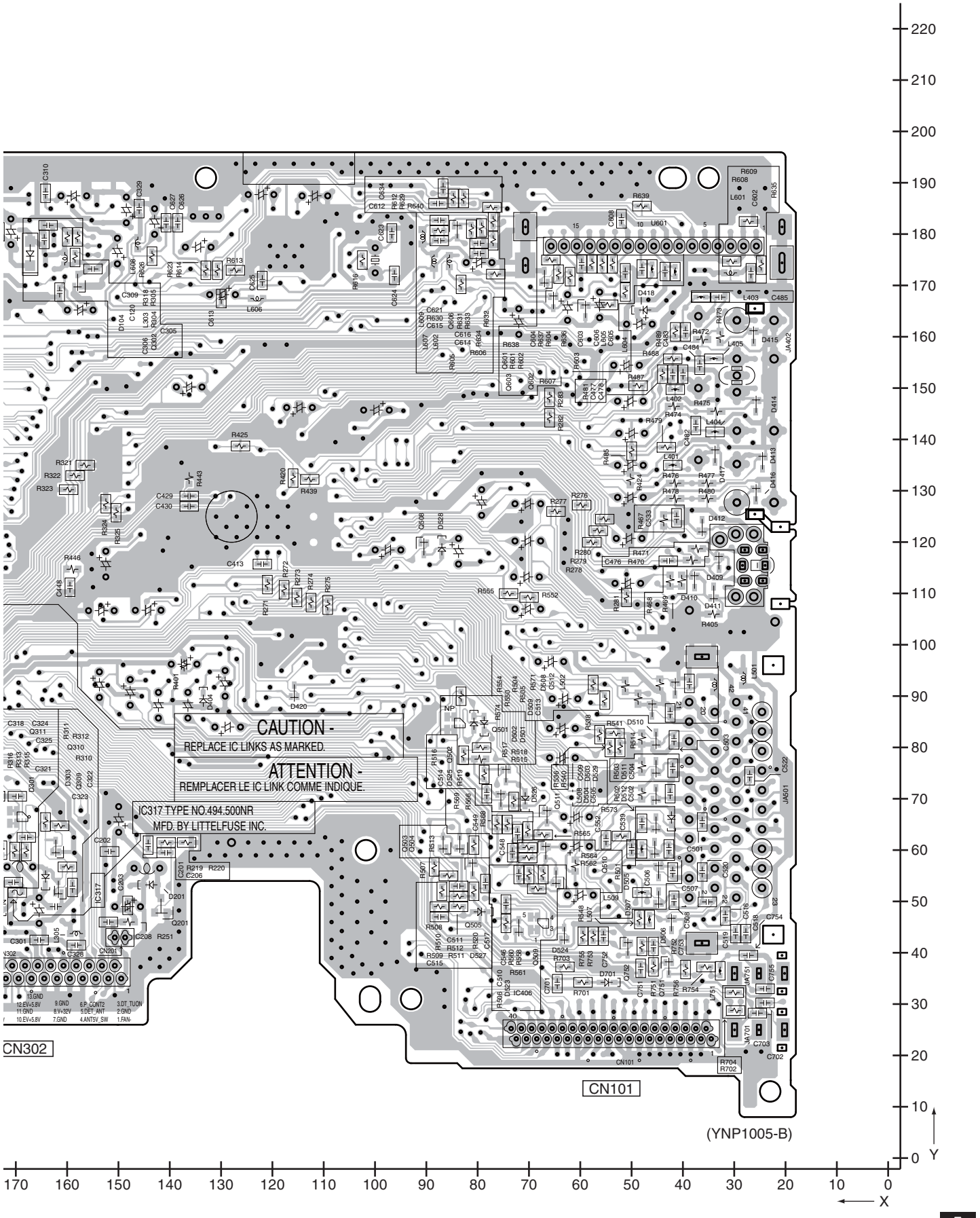
150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320

SIDE B

A SERVICE TUSB ASSY

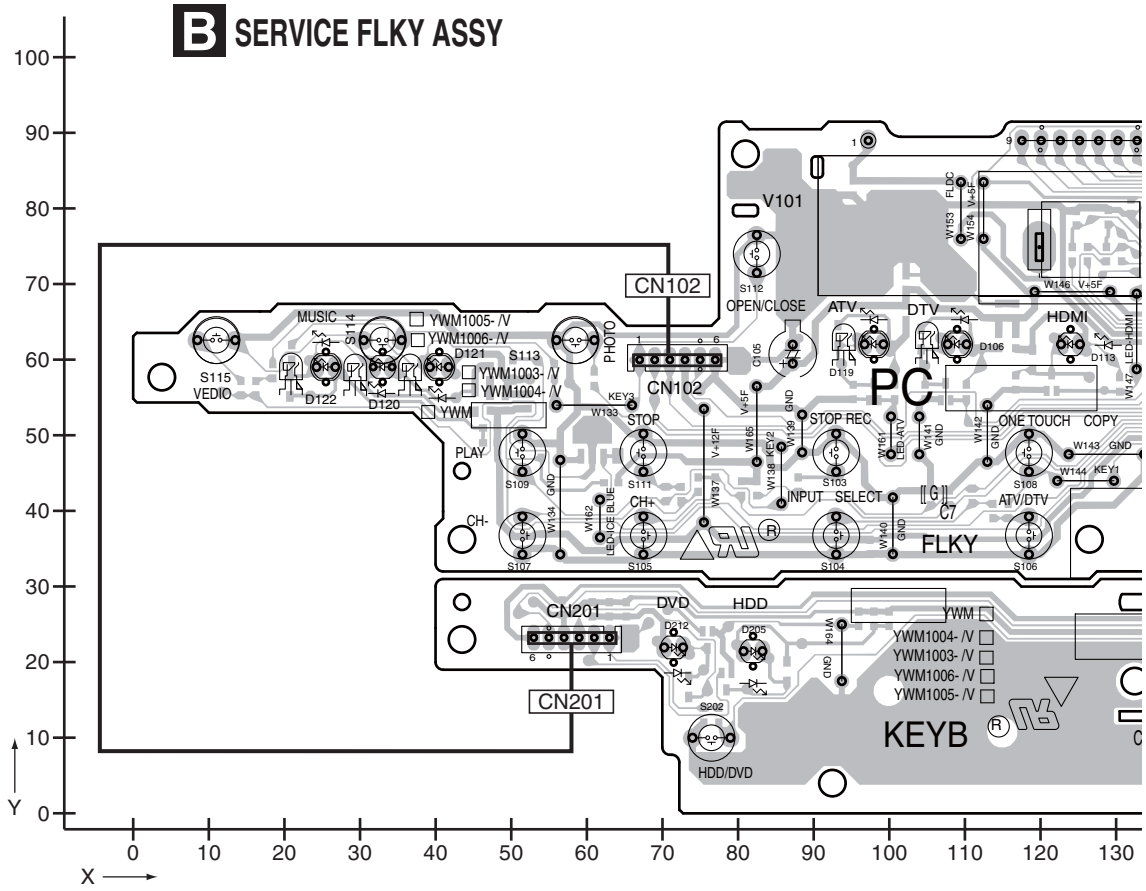


SIDE B

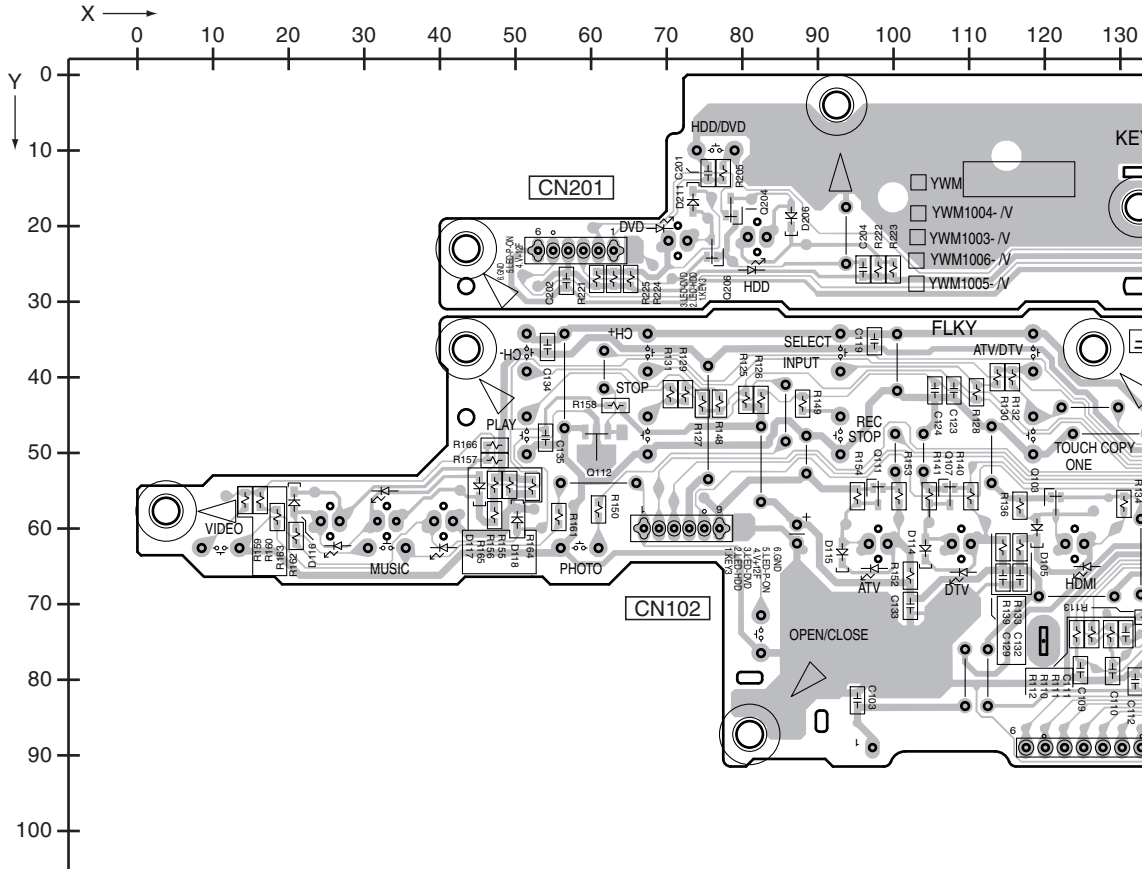

CAUTION -
REPLACE IC LINKS AS MARKED.
ATTENTION -
REMPLACER LE IC LINK COMME INDIQUE.
IC317 TYPE NO.494.500NR
MFD. BY LITTELFUSE INC.
CN302
CN101
(YNP1005-B)
A
B
C
D
E
F
X
Y

11.3 SERVICE FLKY ASSY

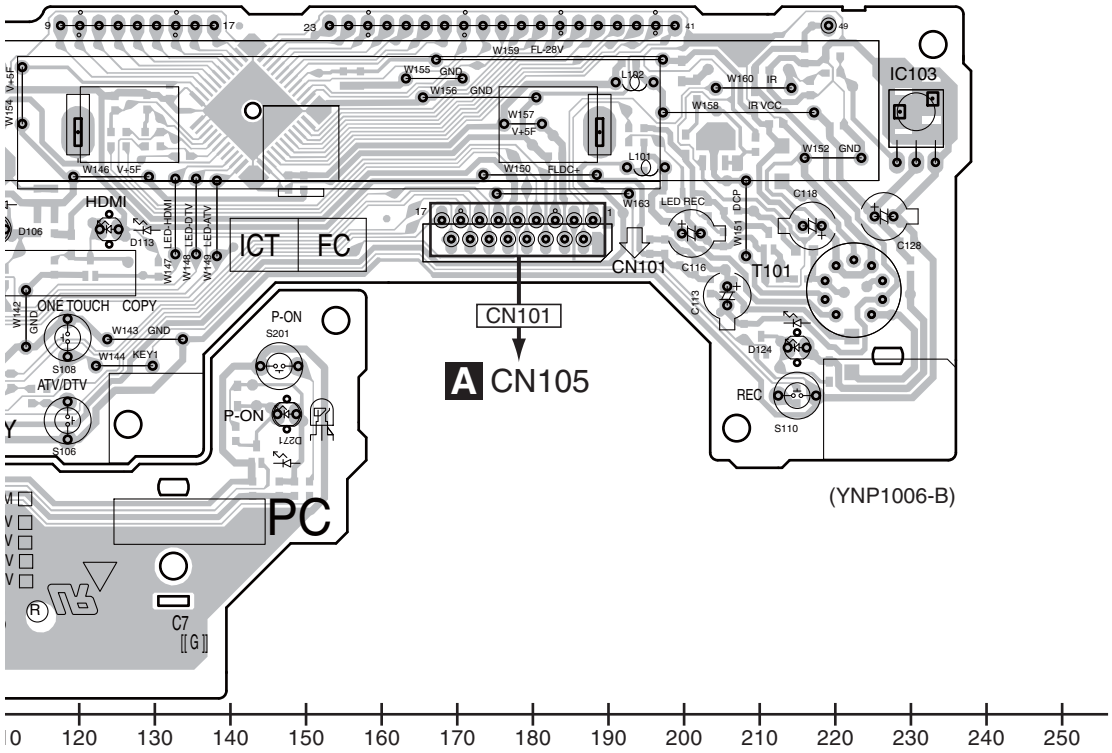
SIDE A

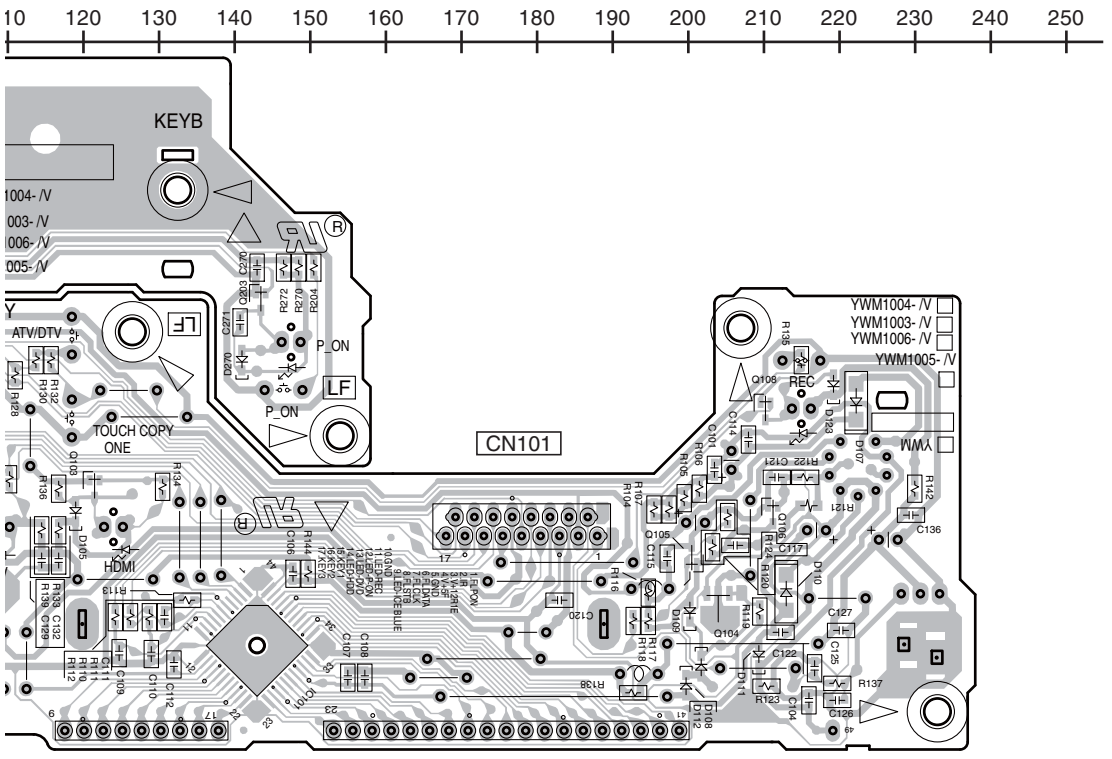


SIDE B



SIDE A


W159 FL-28V
W155 GND
W156 GND
W157 V+5F
W146 V+5F
W150 FLDC+
W160 IR
W158 IR VCC
W152 GND
IC103
L102
L101
HDMI
D106
D113
LED-HDMI
LED-DTV
LED-ATV
ICT
FC
CN101
W163
LED REC
W161 DCP
C118
C128
C116
C117
T101
D124
REC
S110
ONE TOUCH COPY
W142 GND
W143 GND
W144 KEY1
S108
ATV/DTV
S106
P-ON
S201
P-ON
D271
CN101
A CN105
PC
C7
[G]
(YNP1006-B)


KEYB
YWM1004- /V
YWM1003- /V
YWM1006- /V
YWM1005- /V
ATV/DTV
P_ON
LF
P_ON
TOUCH COPY
ONE
CN101
HDMI
REC
(YNP1006-B)

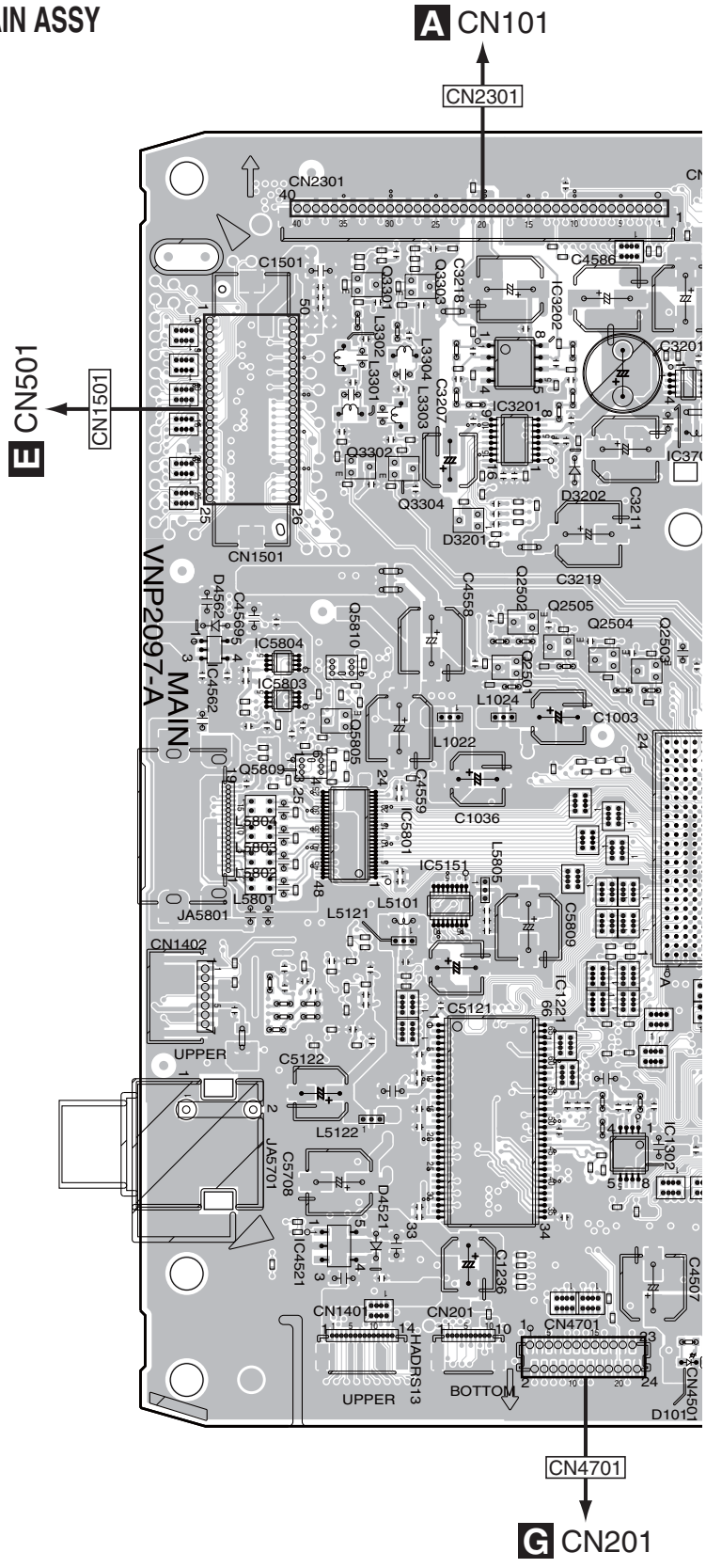
SIDE B

11.4 SERVICE MAIN ASSY

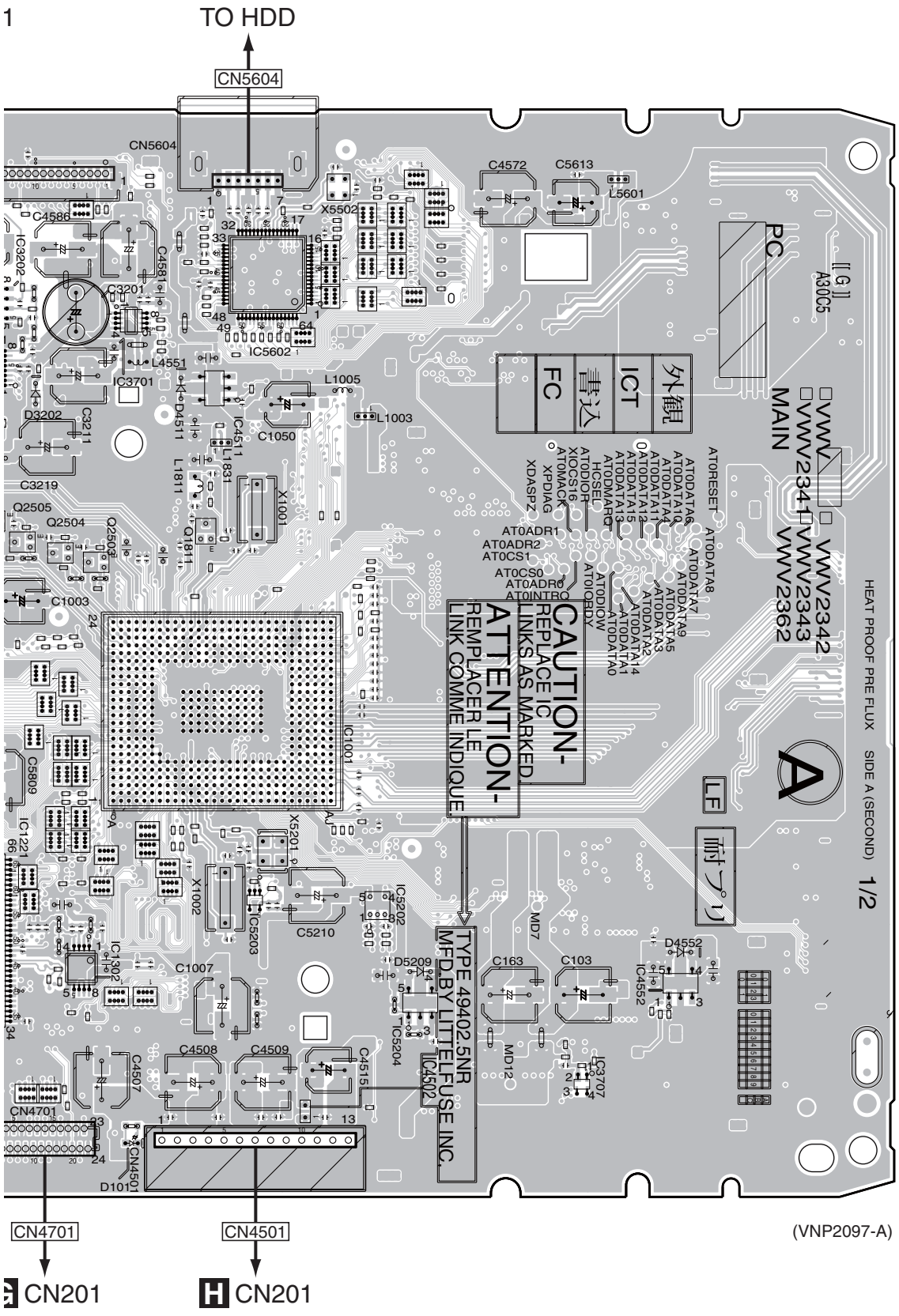
SIDE A

D SERVICE MAIN ASSY

IC	Q
	Q3301 Q3303
IC3202	
IC3201 IC5602	
IC3701	Q3302
	Q3304
IC4511	
	Q2502
	Q2505
	Q2504 Q5810
IC5804	Q1811 Q2503
	Q2501
IC4562 IC5803	
	Q5805
	Q5809
IC5801	
IC5151	
IC1001	
IC1221	
IC5202	
IC5203	
IC1302	
IC4552	
IC5204	
IC4521	
IC3707 IC4502	

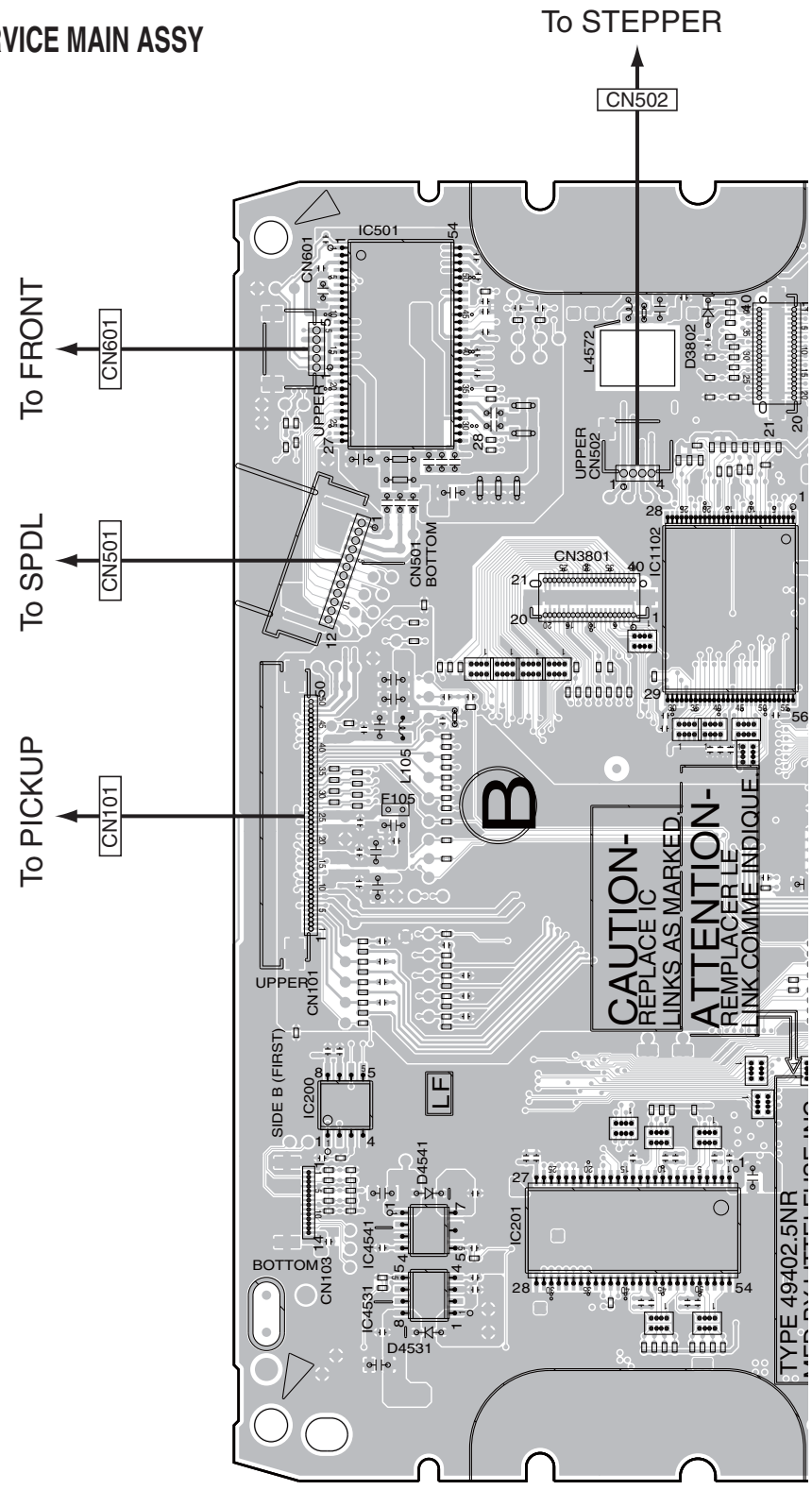


SIDE A


TO HDD
CN5604
CN4701
CN4501
CN201
CN201
VWV2342
VWV2343
VWV2362
MAIN
PC
外観
ICT
書込
FC
CAUTION-
REPLACE IC
LINKS AS MARKED.
ATTENTION-
REMPLACER LE
LINK COMME INDIQUE.
TYPE 49402.5NR
MFD.BY LITTELFUSE INC.
HEAT PROOF PRE FLUX
SIDE A (SECOND)
1/2
LF
(VNP2097-A)

SIDE B

D SERVICE MAIN ASSY

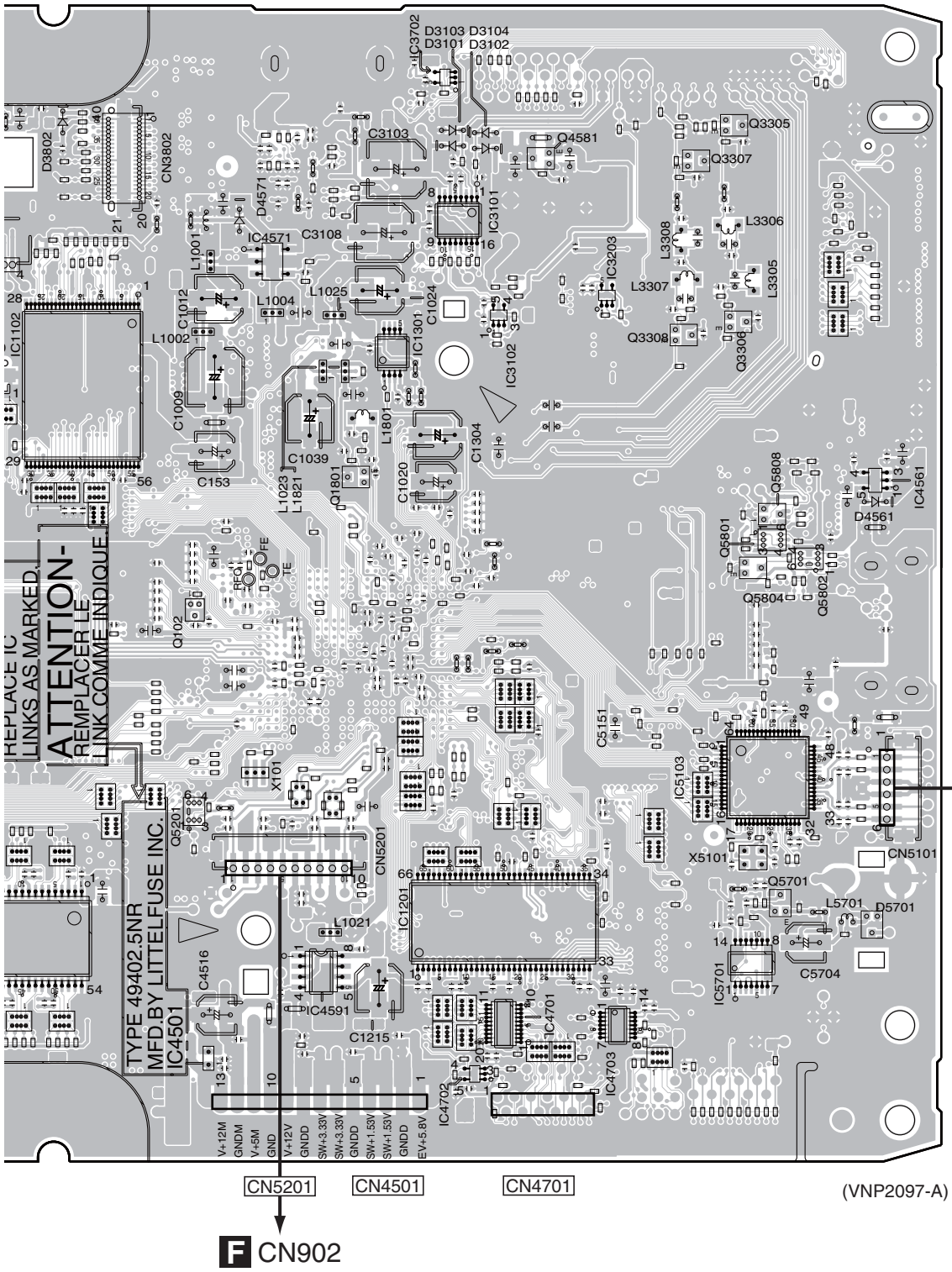


http://getMANUAL.com

SIDE B

PPER

502



11.5 ETAB ASSY (DVR-LX61D ONLY)

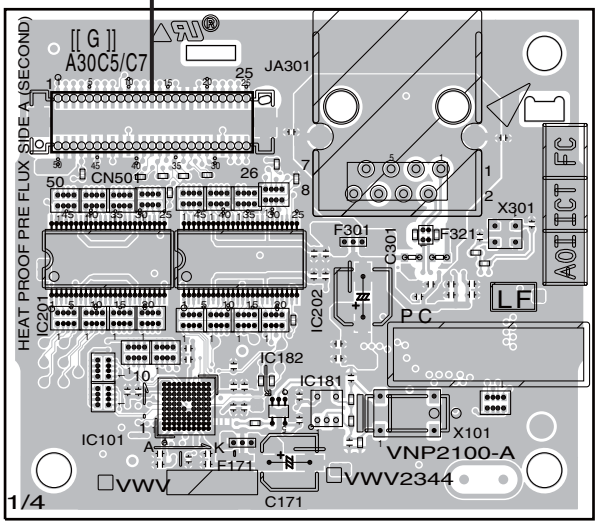
SIDE A **SIDE A**

E ETAB ASSY

D CN1501

IC Q

IC201 IC202
IC182
IC181
IC101



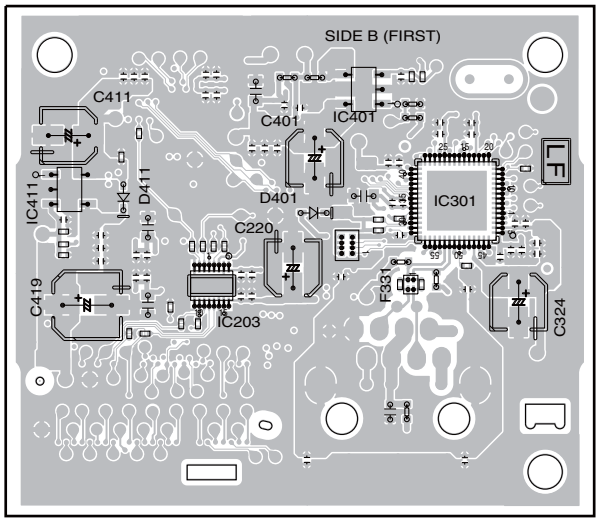
(VNP2100-A)

SIDE B **SIDE B**

E ETAB ASSY

IC Q

IC401
IC411
IC301

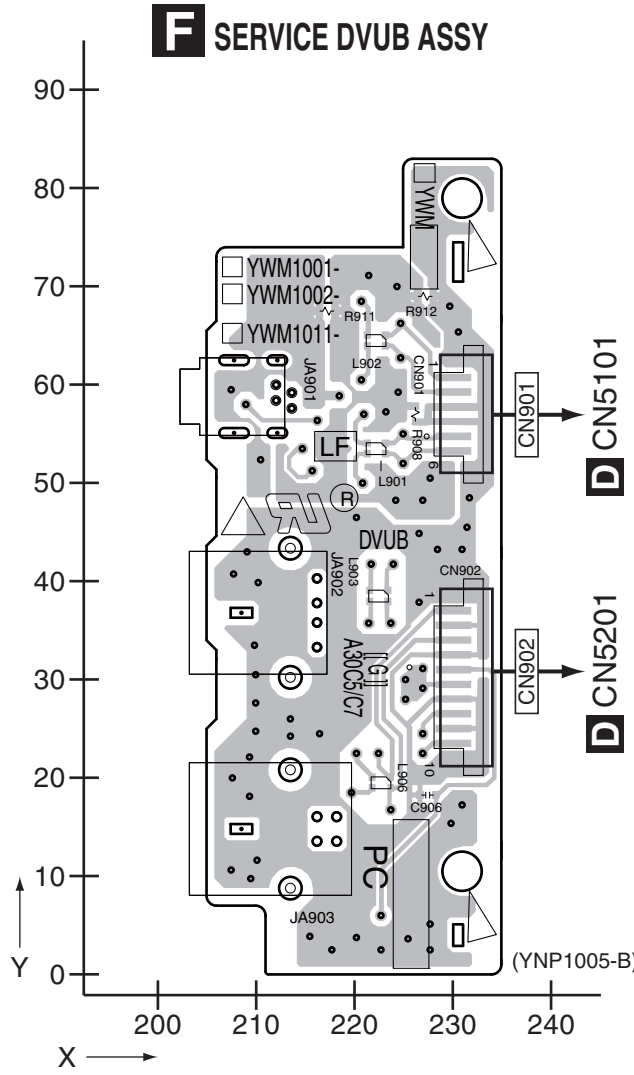


(VNP2100-A)

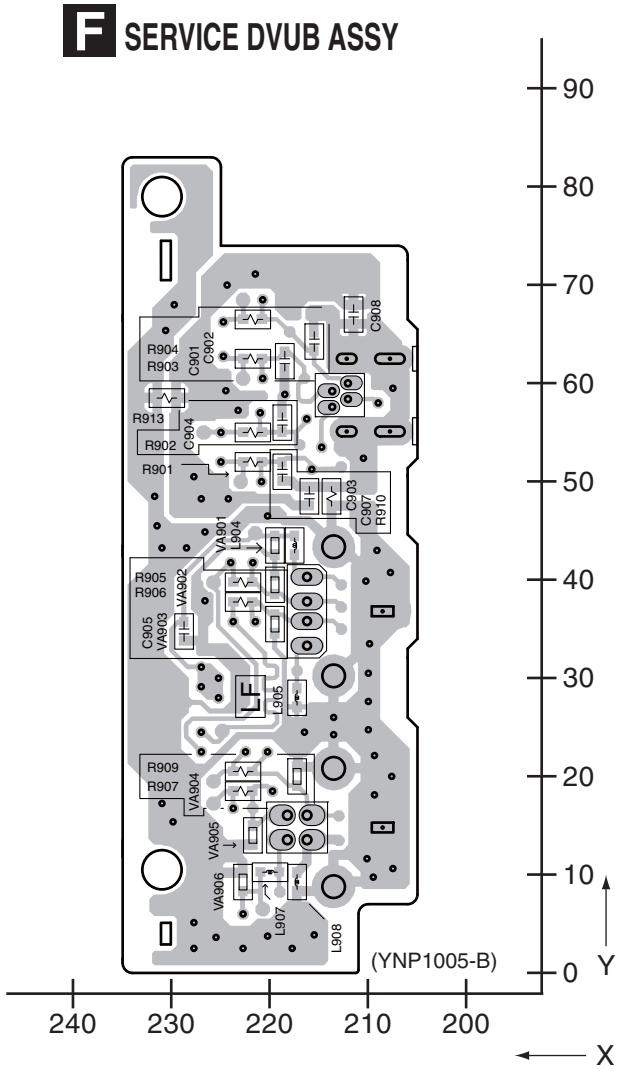
E **E**

11.6 SERVICE DVUB ASSY

SIDE A

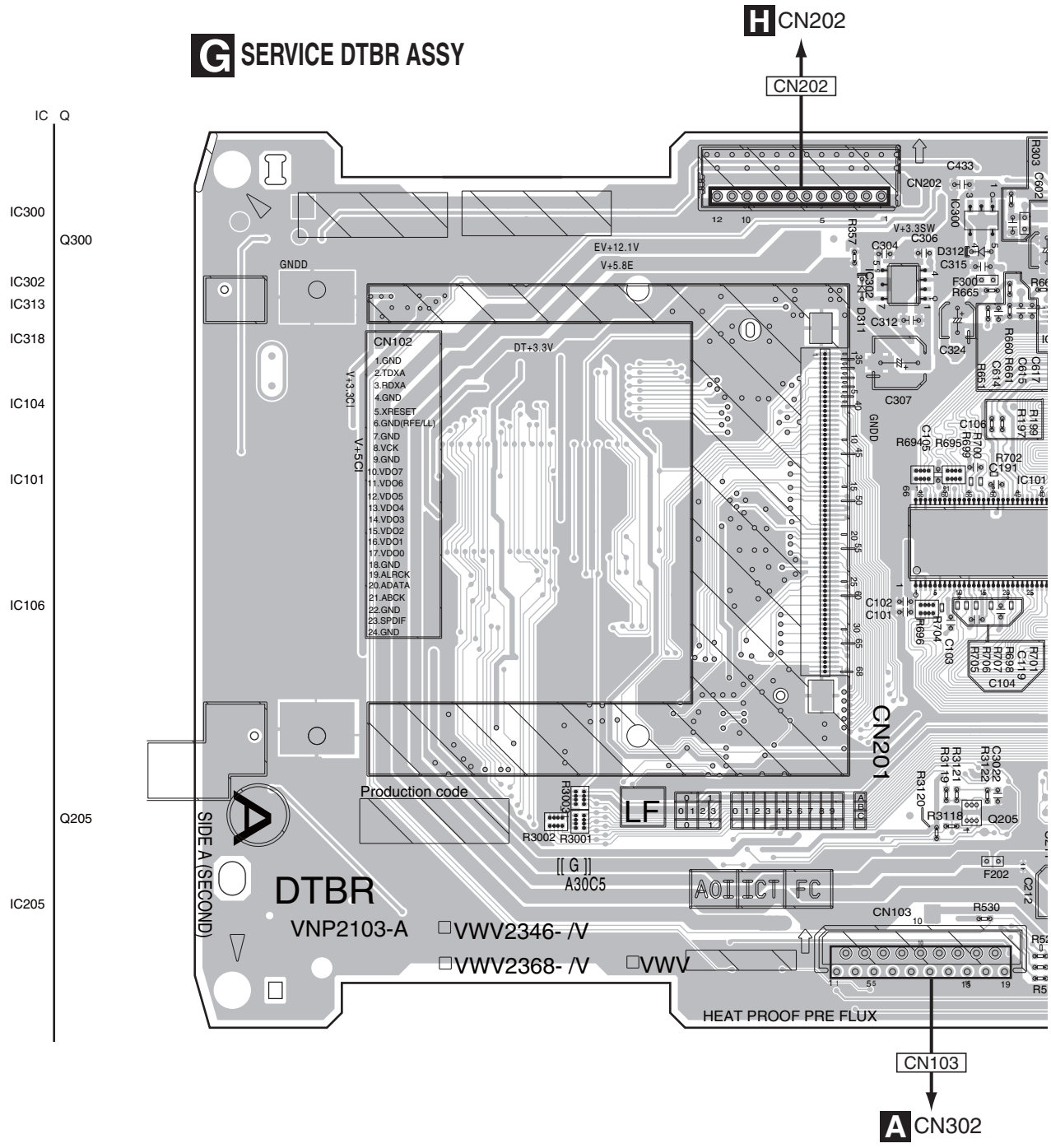


SIDE B

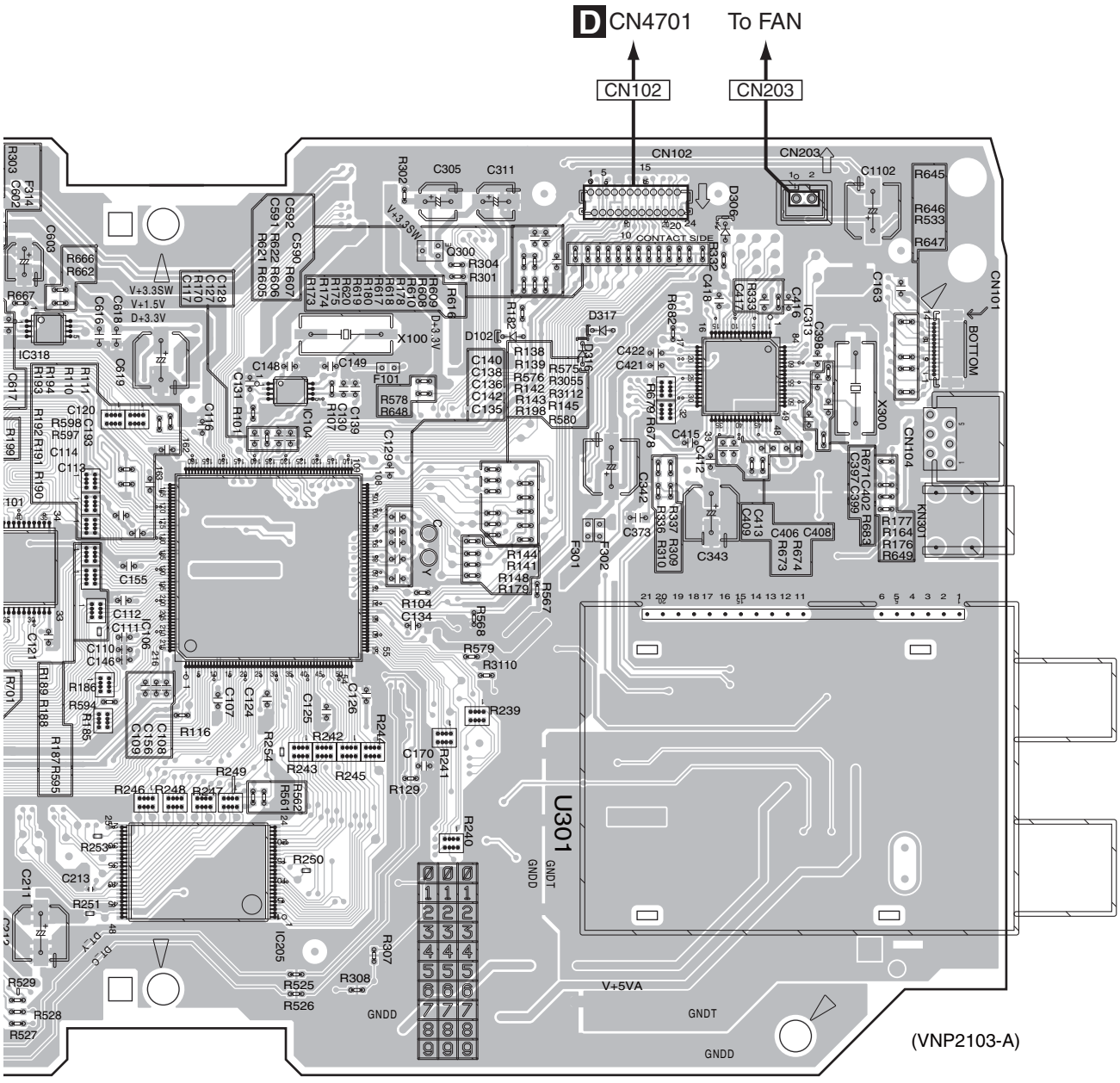


11.7 SERVICE DTBR ASSY

SIDE A



SIDE A


D CN4701 To FAN
CN102
CN203
CN102
CN203
CONTACT SIDE
BOTTOM
U301
GNDD
GNDT
V+5VA
V+3.3SW
V+1.5V
D+3.3V
X100
IC318
IC205
(VNP2103-A)

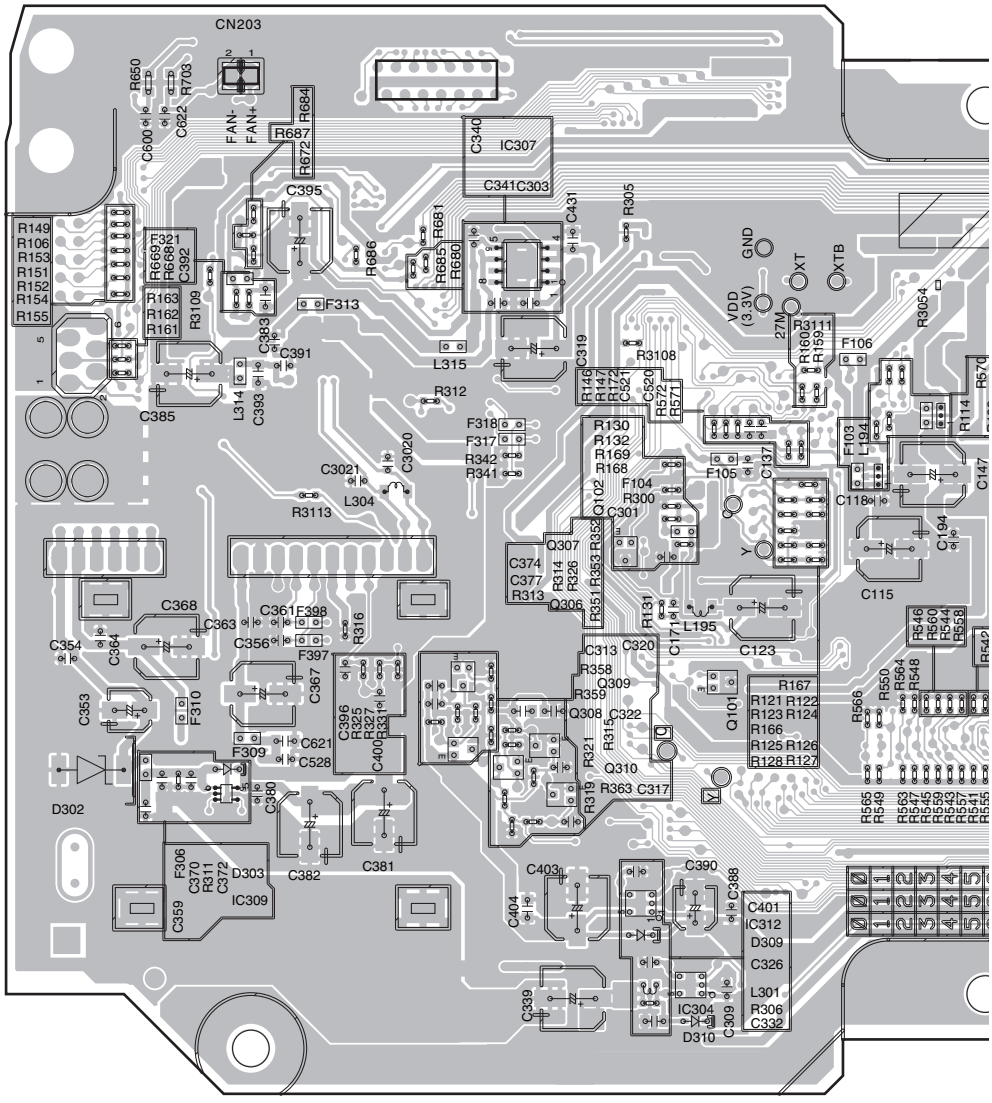
SIDE B

G SERVICE DTBR ASSY

CN203 CN102

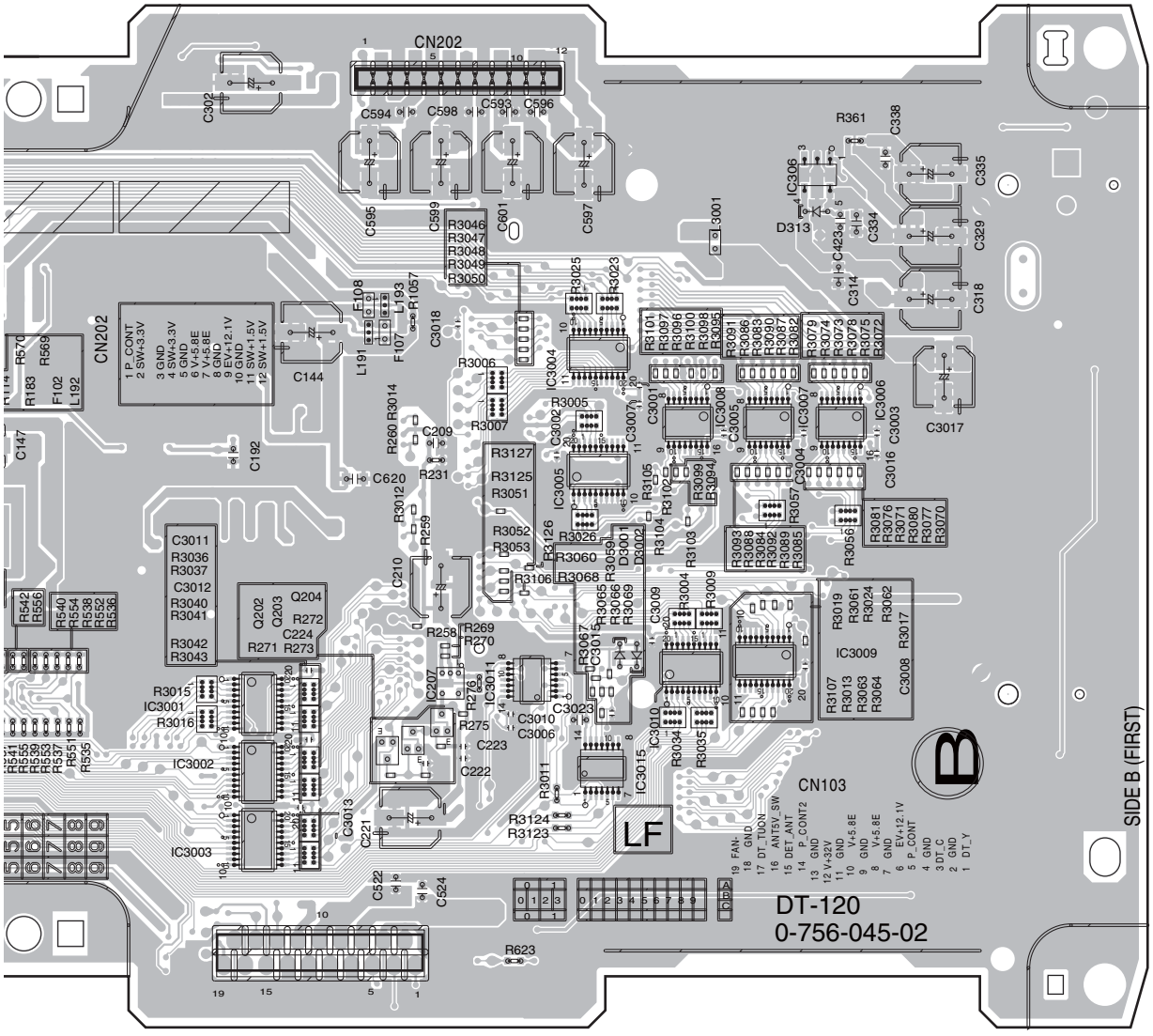
IC Q

IC307
IC306
IC3004
IC3008 IC3007 IC3006
Q102
IC3005
Q307
Q306
Q204
Q202 Q203
IC3009 Q309
IC207 IC3011 Q308 Q101
IC3001
IC3010 Q310
IC3002 IC3015
IC309 IC3003
IC312
IC304



SIDE B

CN202



CN103

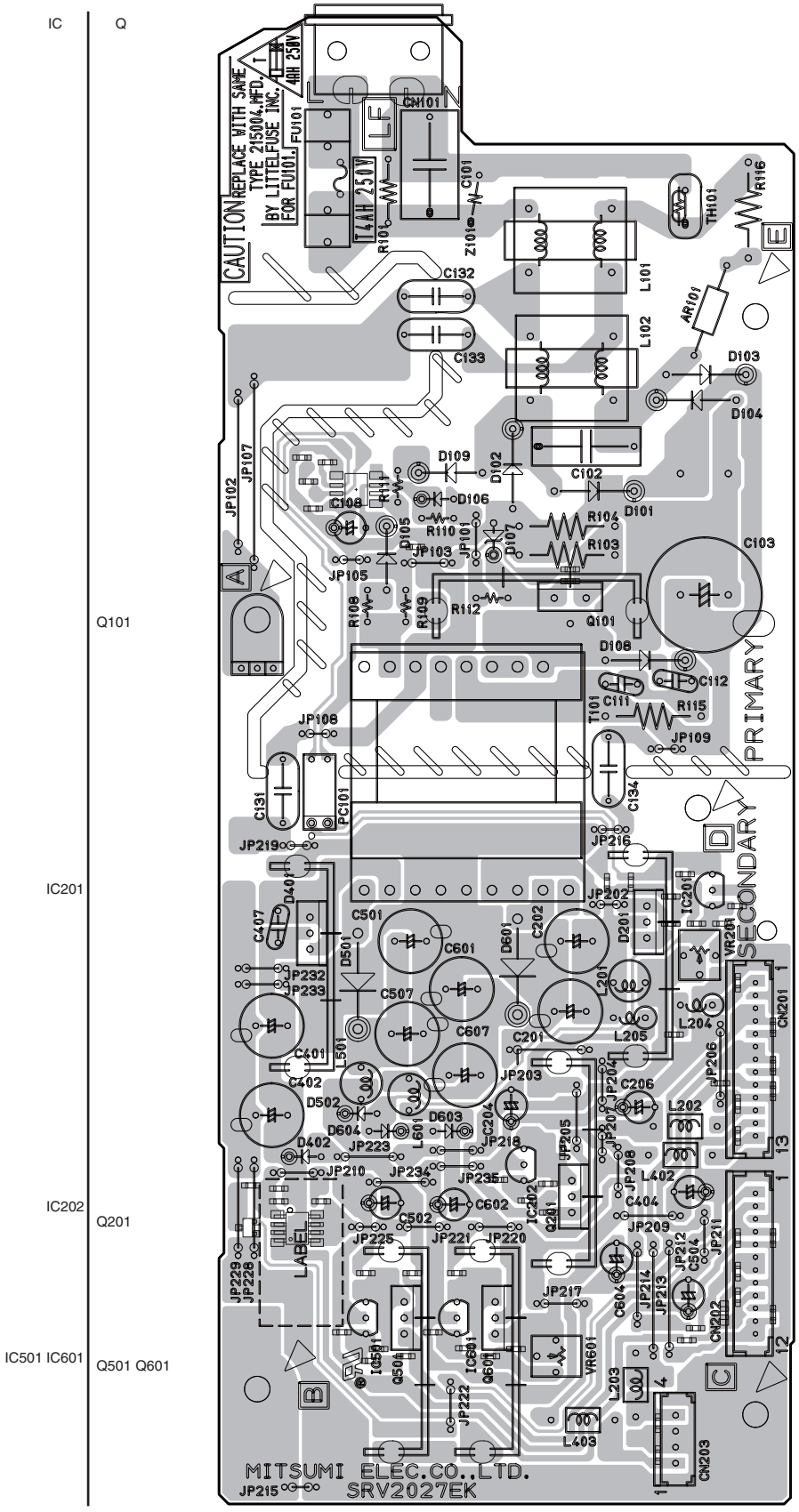
(VNP2103-A)

11.8 POWER SUPPLY ASSY

SIDE A

H POWER SUPPLY ASSY

SIDE A



SIDE B

SIDE B

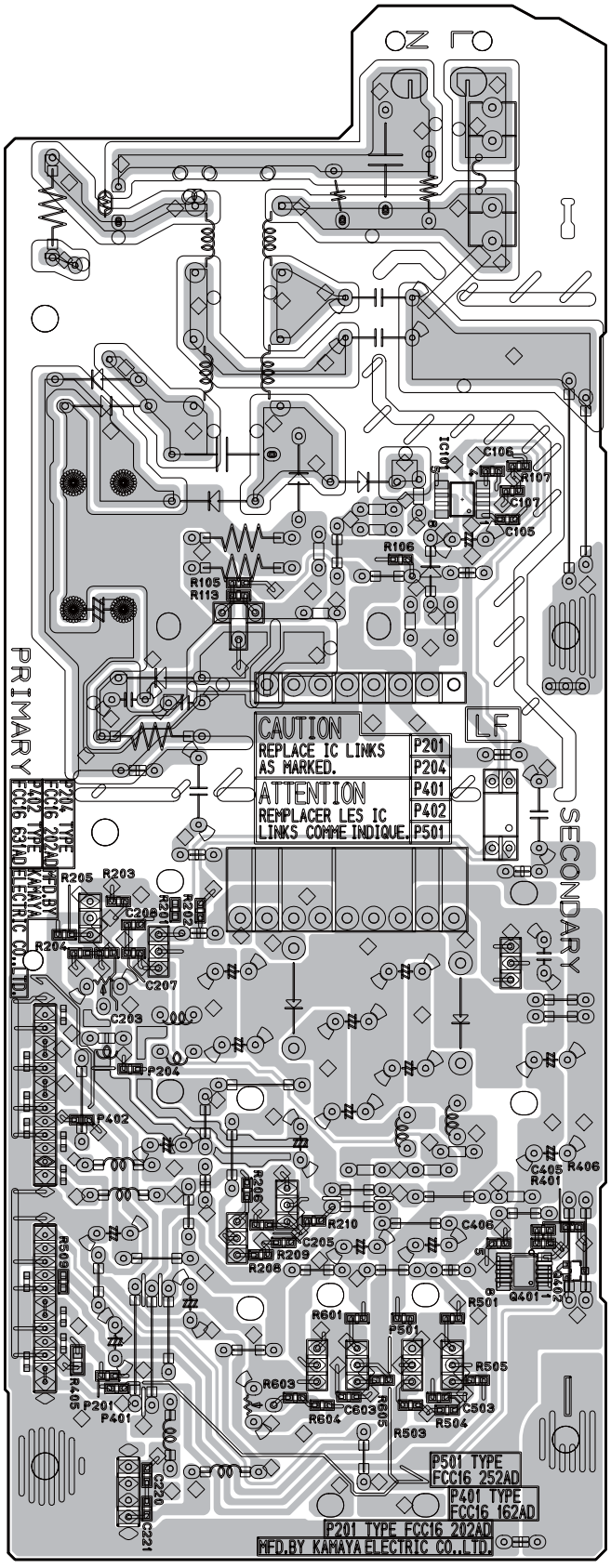
H POWER SUPPLY ASSY

IC

Q

IC101

Q402
Q401



H

H

12. PCB PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*

● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

● *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 x 10¹ → 561 ····· RD1/4PU 5 6 1 J
47k Ω → 47 x 10³ → 473 ····· RD1/4PU 4 7 3 J
0.5 Ω → R50 ····· RN2H R 5 0 K
1 Ω → 1R0 ····· RS1P 1 R 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 x 10¹ → 5621 ····· RN1/4PC 5 6 2 1 F

● *Meaning of the figures and others in the parentheses in the parts list.*

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
	1	..ETAB ASSY (DVR-LX61D only)	VWV2344
NSP	1	..DTBR ASSY	VWV2346
	2	..SERVICE DTBR ASSY	VXX3319
NSP	1	..TUJB ASSY	YWM1001
	2	..SERVICE DVUB ASSY	YXX1001
	2	..SERVICE TUSB ASSY	YXX1002
NSP	1	..FLKB ASSY (DVR-LX61D)	YWM1004
NSP	1	..FLKB ASSY (DVR-560HX-S,DVR-560HX-K)	YWM1003
	2	..SERVICE FLKY ASSY (DVR-LX61D)	YXX1006
	2	..SERVICE FLKY ASSY (DVR-560HX-S,DVR-560HX-K)	YXX1005
	2	..SERVICE FRJB ASSY (DVR-LX61D)	YXX1027
	2	..SERVICE FRJB ASSY (DVR-560HX-S,DVR-560HX-K)	YXX1004
NSP	1	..SERVICE LOADER MAIN (DVR-LX61D)	VXU1016
NSP	1	..SERVICE LOADER MAIN (DVR-560HX-S,DVR-560HX-K)	VXU1015
	2	..SERVICE MAIN ASSY (DVR-LX61D)	VXX3320
	2	..SERVICE MAIN ASSY (DVR-560HX-S,DVR-560HX-K)	VXX3321
NSP	2	..MAIN ASSY (DVR-LX61D)	VWV2342
NSP	2	..MAIN ASSY (DVR-560HX-S,DVR-560HX-K)	VWV2362
⚠	1	..POWER SUPPLY ASSY	VWR1405

A SERVICE TUSB ASSY

MISCELLANEOUS

Mark	No.		Description	Part No.
	IC	101	(A,201,131) MICROCOMPUTER IC	PMC026A8
	IC	102	(A,225,166) RESET IC	BD4846G
	IC	103	(A,177,132) RESET IC	BU4220G
	IC	104	(A,175,152) IC	TC7MB3257FK
⚠	IC	150	(B,229,147) FUSE	CEK1278
⚠	IC	317	(B,170,52) FUSE	CEK1278
	IC	401	(A,124,124) IC FOR DVD REC	HA118326APFR
	IC	402	(A,149,100) OP-AMP IC	BA4560RF
	IC	403	(A,123,93) VIDEO SW IC	MM1503XN
	IC	406	(B,67,46) IC	TC7S66FU
	IC	601	(A,118,174) MULTI SOUND DECODER	MSP3417G
	Q	101	(A,218,157) DIGITAL TRANSISTOR	DTC124EUA
	Q	102	(A,184,154) TRANSISTOR	2SC4081
	Q	103	(A,176,121) TRANSISTOR	UMD2N
	Q	104	(A,192,110) TRANSISTOR	UMD2N
	Q	105	(A,189,109) TRANSISTOR	2SD2114K
	Q	108	(A,210,106) DIGITAL TRANSISTOR	DTC124EUA
	Q	110	(A,194,103) DIGITAL TRANSISTOR	DTA143EUA
	Q	111	(A,191,95) TRANSISTOR	2SC4081
	Q	112	(A,196,100) TRANSISTOR	2SC4081
	Q	201	(B,142,49) TRANSISTOR	2SD2114K
	Q	301	(A,155,170) TRANSISTOR	UMD2N
	Q	302	(B,158,171) TRANSISTOR	2SC4081
	Q	303	(A,153,183) TRANSISTOR	UMD2N
	Q	304	(A,159,180) TRANSISTOR	2SD2153
	Q	305	(B,186,59) TRANSISTOR	UMD2N
	Q	306	(B,193,63) TRANSISTOR	2SC2411K
	Q	307	(B,177,57) TRANSISTOR	UMD2N
	Q	308	(B,179,71) TRANSISTOR	2SC2411K
	Q	309	(B,162,53) TRANSISTOR	2SC5876
	Q	310	(B,162,61) TRANSISTOR	2SC4081
	Q	311	(B,169,67) CHIP TRANSISTOR	HN1A01FU
	Q	401	(A,143,148) DIGITAL TRANSISTOR	DTC124EUA
	Q	402	(A,109,101) TRANSISTOR	2SD2114K
	Q	403	(A,120,99) TRANSISTOR	2SA1576A
	Q	404	(A,44,147) TRANSISTOR	UMD2N
	Q	406	(A,42,137) TRANSISTOR	2SD2114K
	Q	407	(A,42,154) TRANSISTOR	2SD2114K
	Q	408	(A,110,94) TRANSISTOR	2SC4081
	Q	409	(A,116,87) TRANSISTOR	2SC4081
	Q	410	(A,115,92) TRANSISTOR	2SC4081
	Q	411	(A,110,90) TRANSISTOR	UMD2N
	Q	412	(A,122,84) DIGITAL TRANSISTOR	DTC124EUA
	Q	413	(A,117,97) DIGITAL TRANSISTOR	DTC124EUA
	Q	501	(B,84,85) TRANSISTOR	UMH1N
	Q	502	(B,75,75) TRANSISTOR	2SA1576A
	Q	503	(B,87,62) TRANSISTOR	2SC4081
	Q	504	(B,84,62) TRANSISTOR	2SC4081

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Mark	No.	Description	Part No.
Q	505	(B,81,56) TRANSISTOR	2SC4081
Q	506	(A,57,81) DUAL CHIP TRANSISTOR	HN1C03FU
Q	507	(A,58,94) DUAL CHIP TRANSISTOR	HN1C03FU
Q	508	(B,91,119) CHIP DIGITAL TRANS.	DTA124EUA
Q	509	(B,65,55) TRANSISTOR	2SC4081
Q	510	(B,67,60) TRANSISTOR	2SC4081
Q	511	(B,67,67) TRANSISTOR	2SA1576A
Q	601	(B,67,172) TRANSISTOR	2SA1576A
Q	602	(B,59,165) TRANSISTOR	2SA1576A
Q	604	(A,139,174) TRANSISTOR	2SA1576A
Q	605	(A,139,169) TRANSISTOR	2SA1576A
Q	606	(B,84,181) TRANSISTOR	2SC4081
Q	751	(B,43,37) TRANSISTOR	2SA1576A
Q	752	(B,51,41) TRANSISTOR	2SC4081
D	101	(A,221,164) DIODE	1SS355
D	102	(A,218,163) DIODE	1SS355
D	103	(A,186,59) DIODE	1SS355
D	104	(B,167,176) DIODE	1SR154-400
D	106	(A,176,109) DIODE	1SS355
D	108	(A,179,125) DIODE	DAP202U
D	201	(B,144,53) DIODE	1SS355
D	301	(B,173,50) DIODE	UDZS15(B)
D	302	(B,175,62) DIODE	UDZS9R1(B)
D	303	(B,164,55) DIODE	1SS355
D	304	(B,179,62) DIODE	1SS355
D	401	(A,135,81) DIODE	UDZS11(B)
D	402	(A,101,150) DIODE	UDZS6R8(B)
D	418	(B,48,165) DIODE	1SS355
D	419	(A,44,150) DIODE	1SS355
D	420	(B,116,91) DIODE	DAP202U
D	501	(B,79,85) DIODE	UDZS5R1(B)
D	502	(B,81,85) DIODE	UDZS5R1(B)
D	503	(B,45,65) DIODE	UMZ6R8N
D	504	(B,46,61) DIODE	UMZ6R8N
D	505	(B,45,56) DIODE	UMZ6R8N
D	506	(B,42,46) DIODE	UMZ6R8N
D	507	(B,45,51) DIODE	UMZ6R8N
D	508	(B,42,92) DIODE	UMZ6R8N
D	509	(B,46,87) DIODE	UMZ6R8N
D	510	(B,45,82) DIODE	UMZ6R8N
D	511	(B,45,76) DIODE	UMZ6R8N
D	512	(B,45,71) DIODE	UMZ6R8N
D	513	(A,46,65) DIODE	UMZ6R8N
D	514	(A,44,59) DIODE	UMZ6R8N
D	515	(A,44,49) DIODE	UMZ6R8N
D	516	(A,44,55) DIODE	UMZ6R8N
D	517	(A,44,52) DIODE	UMZ6R8N
D	518	(A,44,72) DIODE	UMZ6R8N
D	519	(A,45,78) DIODE	UMZ6R8N
D	520	(A,46,83) DIODE	UMZ6R8N
D	521	(A,44,90) DIODE	UMZ6R8N
D	522	(A,41,101) DIODE	UMZ6R8N
D	523	(B,72,45) DIODE	DAN217U
D	524	(B,63,44) DIODE	DAN217U
D	526	(B,71,70) DIODE	1SS355
D	527	(B,80,48) DIODE	1SS355
D	528	(B,87,119) DIODE	1SS355
D	701	(B,55,34) DIODE	1SS355
L	102	(A,200,88) AXIAL INDUCTOR	LAU470J

Mark	No.	Description	Part No.
L	201	(A,147,57) RADIAL INDUCTOR	ATH1109
L	303	(B,161,175) INDUCTOR	CTF1399
L	304	(A,167,57) RADIAL INDUCTOR	LFCA331J
L	305	(B,158,44) INDUCTOR	CTF1399
L	401	(B,42,135) INDUCTOR	CTF1388
L	402	(B,42,150) INDUCTOR	CTF1388
L	403	(B,37,168) INDUCTOR	CTF1388
L	404	(B,34,142) INDUCTOR	CTF1388
L	405	(B,34,156) INDUCTOR	CTF1388
L	501	(B,28,94) CHIP COIL	LCYA5R6J2520
L	502	(B,34,92) CHIP COIL	LCYA5R6J2520
L	503	(A,48,52) INDUCTOR	CTF1389
L	504	(A,48,49) INDUCTOR	CTF1389
L	505	(A,47,55) INDUCTOR	CTF1389
L	506	(A,47,59) INDUCTOR	CTF1389
L	507	(B,47,47) INDUCTOR	CTF1389
L	508	(B,48,60) INDUCTOR	CTF1389
L	509	(B,48,52) INDUCTOR	CTF1389
L	510	(A,50,60) INDUCTOR	CTF1389
L	601	(B,31,173) INDUCTOR	CTF1399
L	602	(B,86,175) INDUCTOR	CTF1399
L	604	(B,42,173) INDUCTOR	CTF1306
L	605	(B,46,173) INDUCTOR	CTF1306
L	606	(B,123,168) INDUCTOR	CTF1399
L	607	(B,89,175) COIL	LCYA101J2520
L	608	(B,146,178) INDUCTOR	CTF1399
L	609	(B,91,180) INDUCTOR	LCYA100J2520
L	751	(B,33,37) INDUCTOR	CTF1306
JA	402	(A,17,146) 9P PIN JACK	VKB1250
JA	501	(A,18,70) RGB CONNECTOR	VKB1249
JA	701	(A,18,25) JACK	RKN1004
JA	751	(A,18,36) JACK	RKN1004
KN	101	(A,131,184) WRAPPING TERMINAL	VNF1084
KN	102	(A,192,46) WRAPPING TERMINAL	VNF1084
X	101	(A,204,157) CRYSTAL OSCILLATOR	CSS1653
X	102	(A,210,156) CRYSTAL RESONATOR (32 KHz)	VSS1197
X	601	(A,100,173) CERAMIC RESONATOR (18.432 MHZ)	VSS1189
CN	101	(A,35,23) 40P CONNECTOR	VKN2007
CN	103	(A,235,159) 9P CONNECTOR	VKN2015
CN	105	(A,232,148) CONNECTOR	HLEM17S-1
CN	106	(A,238,107) CONNECTOR	HLEM11S-1
CN	302	(A,150,35) 19P CONNECTOR	52044-1945
U	601	(A,26,178) TV TUNER PACK	VXF1146
	401	2P 4PIN MINIDIN(S)	AKP1234

RESISTORS

R	101	(A,187,125)	RS1/16S101J
R	102	(B,184,121)	RS1/16S101J
R	103	(A,187,118)	RS1/16S101J
R	104	(A,224,158)	RS1/16S473J
R	105	(A,215,149)	RS1/16S101J
R	106	(A,221,158)	RS1/16S0R0J
R	107	(A,224,159)	RS1/16S103J
R	109	(A,212,144)	RS1/16S331J
R	110	(A,211,144)	RS1/16S101J
R	111	(A,212,149)	RS1/16S101J
R	112	(A,222,161)	RS1/16S103J
R	113	(A,219,161)	RS1/16S0R0J
R	116	(B,208,153)	RS1/16S0R0J

Mark	No.		Description	Part No.
	R	117	(A,204,145)	RS1/16S105J
	R	118	(B,201,150)	RS1/16S0R0J
	R	119	(A,192,167) CARBON FILM RESISTOR	RD1/4PU153J
	R	123	(A,197,148)	RS1/16S101J
	R	124	(A,195,148)	RS1/16S101J
	R	125	(A,196,83)	RS1/16S101J
	R	126	(A,192,148)	RS1/16S101J
	R	127	(A,192,151)	RS1/16S103J
	R	128	(B,213,134)	RS1/16S392J
	R	129	(A,194,148)	RS1/16S101J
	R	130	(B,235,155)	RS1/16S0R0J
	R	131	(A,189,154)	RS1/16S472J
	R	132	(A,190,149)	RS1/16S682J
	R	134	(A,187,148)	RS1/16S102J
	R	135	(A,185,152)	RS1/16S104J
	R	136	(A,189,158)	RS1/16S102J
	R	137	(A,186,155)	RS1/16S101J
	R	138	(A,183,160)	RS1/16S471J
	R	139	(A,184,149)	RS1/16S682J
	R	140	(A,182,148)	RS1/16S470J
	R	141	(A,182,151)	RS1/16S682J
	R	142	(A,181,151)	RS1/16S470J
	R	143	(A,183,145)	RS1/16S101J
	R	144	(A,184,140)	RS1/16S0R0J
	R	145	(A,180,131)	RS1/16S103J
	R	146	(A,187,126)	RS1/16S101J
	R	147	(A,191,112)	RS1/16S102J
	R	148	(A,184,126)	RS1/16S101J
	R	149	(A,188,119)	RS1/16S0R0J
	R	150	(A,190,117)	RS1/16S0R0J
	R	151	(A,194,117)	RS1/16S0R0J
	R	152	(A,184,127)	RS1/16S0R0J
	R	153	(A,198,113)	RS1/16S101J
	R	154	(B,199,113)	RS1/16S101J
	R	155	(A,198,83)	RS1/16S101J
	R	156	(A,201,116)	RS1/16S101J
	R	157	(A,202,118)	RS1/16S104J
	R	158	(A,202,119)	RS1/16S104J
	R	159	(A,205,117)	RS1/16S0R0J
	R	160	(A,206,114)	RS1/16S101J
	R	161	(A,201,108)	RS1/16S0R0J
	R	165	(A,206,117)	RS1/16S0R0J
	R	167	(A,207,114)	RS1/16S101J
	R	168	(A,211,112)	RS1/16S181J
	R	169	(A,207,101)	RS1/16S103J
	R	171	(A,215,114)	RS1/16S101J
	R	172	(A,216,114)	RS1/16S101J
	R	173	(A,218,113)	RS1/16S104J
	R	174	(A,217,111)	RS1/16S104J
	R	175	(A,219,113)	RS1/16S331J
	R	176	(A,220,124)	RS1/16S102J
	R	177	(A,222,126)	RS1/16S101J
	R	178	(A,219,127)	RS1/16S101J
	R	179	(A,222,128)	RS1/16S101J
	R	180	(A,221,132)	RS1/16S101J
	R	181	(A,217,133)	RS1/16S101J
	R	182	(A,220,134)	RS1/16S101J
	R	183	(A,217,134)	RS1/16S101J
	R	184	(A,220,135)	RS1/16S101J
	R	185	(A,220,137)	RS1/16S101J
	R	188	(A,221,140)	RS1/16S331J
	R	189	(A,221,142)	RS1/16S471J
	R	193	(B,230,171)	RS1/16S104J
	R	194	(B,236,171)	RS1/16S104J
	R	195	(B,228,171)	RS1/16S104J
	R	196	(B,238,171)	RS1/16S101J
	R	197	(A,52,22)	RS1/16S0R0J
	R	199	(A,209,110)	RS1/16S101J
	R	200	(A,221,144)	RS1/16S101J
	R	201	(A,187,128)	RS1/16S0R0J
	R	202	(A,184,138)	RS1/16S0R0J
	R	203	(A,181,139)	RS1/16S0R0J
	R	204	(A,181,137)	RS1/16S101J
	R	205	(A,185,136)	RS1/16S101J
	R	207	(A,197,104)	RS1/16S471J
	R	208	(A,197,106)	RS1/16S0R0J
	R	209	(A,191,101)	RS1/16S332J
	R	210	(A,197,108)	RS1/16S8200F
	R	214	(A,189,91)	RS1/16S332J
	R	215	(A,192,91)	RS1/16S681J
	R	216	(A,194,94) CHIP RESISTOR	RS1/16S7500F
	R	217	(A,196,93)	RS1/16S102J
	R	218	(A,155,48)	RS1/10S0R0J
	R	219	(B,141,62)	RS1/16S332J
	R	220	(B,137,62)	RS1/16S222J
	R	221	(A,178,145)	RS1/16S101J
	R	222	(A,181,141)	RS1/16S0R0J
	R	223	(A,174,157)	RS1/16S0R0J
	R	224	(A,177,156)	RS1/16S0R0J
	R	228	(A,196,160)	RS1/16S0R0J
	R	233	(B,218,89)	RS1/16S104J
	R	251	(B,148,46)	RS1/10S0R0J
	R	301	(A,143,80)	RS1/10S0R0J
	R	302	(B,187,50)	RS1/10S0R0J
	R	303	(B,185,50)	RS1/10S0R0J
	R	304	(B,159,176)	RS1/16S101J
	R	305	(B,158,180)	RS1/16S330J
	R	306	(B,188,56)	RS1/16S330J
	R	307	(A,158,83)	RS1/10S0R0J
	R	308	(A,161,83)	RS1/10S0R0J
	R	309	(B,179,52)	RS1/16S152J
	R	310	(B,160,57)	RS1/16S472J
	R	311	(B,164,66)	RS1/16S821J
	R	312	(B,162,65)	RS1/16S103J
	R	313	(B,170,60)	RS1/16S184J
	R	314	(A,174,77)	RS1/16S223J
	R	315	(B,168,60)	RS1/16S1003F
	R	316	(B,173,60)	RS1/16S2202F
	R	318	(B,160,180)	RS1/16S0R0J
	R	401	(B,137,96)	RS1/10S0R0J
	R	402	(A,138,102)	RS1/16S561J
	R	403	(A,136,103)	RS1/16S561J
	R	404	(A,133,89)	RS1/10S0R0J
	R	407	(A,97,126)	RS1/10S0R0J
	R	408	(A,148,115)	RS1/16S471J
	R	410	(A,150,110)	RS1/16S471J
	R	412	(A,148,112)	RS1/16S471J
	R	413	(A,148,119)	RS1/16S471J

Mark	No.	Description	Part No.
R	414	(A,145,124)	RS1/16S471J
R	415	(A,145,126)	RS1/16S471J
R	416	(A,146,127)	RS1/16S471J
R	417	(A,146,129)	RS1/16S471J
R	418	(A,146,131)	RS1/16S471J
R	419	(A,146,133)	RS1/16S471J
R	420	(B,116,133) CHIP RESISTOR	RS1/16S335J
R	421	(A,124,136) CHIP RESISTOR	RS1/16S335J
R	422	(A,140,113)	RS1/16S103J
R	425	(B,126,139)	RS1/16S104J
R	428	(A,129,139)	RS1/16S0R0J
R	429	(A,139,142)	RS1/16S105J
R	430	(A,133,140)	RS1/16S105J
R	431	(A,124,141)	RS1/16S105J
R	432	(A,122,144)	RS1/16S105J
R	433	(A,106,110)	RS1/16S105J
R	435	(A,105,115)	RS1/16S105J
R	436	(A,94,132)	RS1/16S101J
R	437	(A,96,132)	RS1/16S101J
R	438	(A,96,143)	RS1/10S0R0J
R	439	(B,113,132)	RS1/16S185J
R	440	(A,116,85)	RS1/16S471J
R	444	(A,130,147)	RS1/10S75R0F
R	445	(A,133,146)	RS1/10S75R0F
R	447	(A,122,149)	RS1/10S75R0F
R	448	(A,100,142)	RS1/10S0R0J
R	449	(A,108,147)	RS1/10S75R0F
R	453	(A,155,102)	RS1/16S8201F
R	454	(A,136,109)	RS1/16S1002F
R	455	(A,121,103)	RS1/16S470J
R	458	(A,121,109)	RS1/16S471J
R	459	(A,124,100)	RS1/10S75R0F
R	461	(A,115,95)	RS1/16S681J
R	462	(A,138,107)	RS1/16S1002F
R	463	(A,143,102)	RS1/16S8201F
R	465	(A,116,100)	RS1/16S471J
R	467	(B,44,124)	RS1/10S75R0F
R	468	(B,43,113) CHIP TYPE RESISTOR	RS1/10S68R0F
R	469	(B,40,113)	RS1/10S3R9J
R	470	(B,38,117) CHIP TYPE RESISTOR	RS1/10S68R0F
R	471	(B,37,119)	RS1/10S3R9J
R	472	(B,36,160) CHIP TYPE RESISTOR	RS1/10S68R0F
R	473	(B,33,160)	RS1/10S3R9J
R	474	(B,42,147) CHIP TYPE RESISTOR	RS1/10S68R0F
R	475	(B,34,146)	RS1/10S3R9J
R	476	(B,42,132) CHIP TYPE RESISTOR	RS1/10S68R0F
R	477	(B,35,132)	RS1/10S3R9J
R	478	(B,42,129) CHIP TYPE RESISTOR	RS1/10S68R0F
R	479	(B,43,139)	RS1/16S471J
R	480	(B,35,129)	RS1/10S3R9J
R	481	(B,44,153)	RS1/16S104J
R	484	(A,40,141)	RS1/16S102J
R	485	(B,50,138)	RS1/16S223J
R	486	(A,41,149)	RS1/16S102J
R	487	(B,49,151)	RS1/16S223J
R	488	(B,42,156)	RS1/16S471J
R	489	(B,42,161)	RS1/16S104J
R	498	(A,120,84)	RS1/16S223J
R	499	(A,118,82)	RS1/16S223J

Mark	No.	Description	Part No.
R	501	(B,61,57)	RS1/10S75R0F
R	502	(B,48,71)	RS1/10S75R0F
R	503	(B,48,76)	RS1/10S75R0F
R	504	(B,51,92) CHIP TYPE RESISTOR	RS1/10S68R0F
R	505	(B,49,90)	RS1/10S3R9J
R	506	(B,75,46)	RS1/16S0R0J
R	507	(B,89,57)	RS1/16S472J
R	508	(B,86,55)	RS1/16S473J
R	509	(B,88,49)	RS1/16S273J
R	510	(B,87,52)	RS1/16S225J
R	511	(B,84,49)	RS1/16S224J
R	512	(B,84,51)	RS1/16S104J
R	513	(B,81,61)	RS1/16S104J
R	514	(B,48,82)	RS1/10S75R0F
R	515	(B,80,78)	RS1/10S561J
R	516	(B,79,75)	RS1/16S122J
R	517	(B,83,79)	RS1/16S152J
R	518	(B,79,80)	RS1/16S100J
R	519	(B,73,70)	RS1/16S563J
R	520	(B,81,52)	RS1/16S221J
R	521	(A,48,68) CHIP TYPE RESISTOR	RS1/10S68R0F
R	522	(A,44,61)	RS1/10S3R9J
R	523	(A,45,69) CHIP TYPE RESISTOR	RS1/10S68R0F
R	524	(A,43,69)	RS1/10S3R9J
R	525	(A,48,79) CHIP TYPE RESISTOR	RS1/10S68R0F
R	526	(A,44,75)	RS1/10S3R9J
R	527	(A,47,87)	RS1/10S0R0J
R	528	(A,45,87)	RS1/10S75R0F
R	529	(A,43,81)	RS1/16S104J
R	530	(A,44,95) CHIP TYPE RESISTOR	RS1/10S68R0F
R	531	(A,44,93)	RS1/10S3R9J
R	532	(A,36,101)	RS1/10S75R0F
R	534	(A,58,76)	RS1/16S392J
R	535	(A,58,85)	RS1/16S392J
R	536	(B,54,80)	RS1/16S471J
R	538	(B,56,83)	RS1/16S471J
R	540	(B,52,80)	RS1/16S104J
R	541	(B,53,83)	RS1/16S104J
R	546	(A,51,63)	RS1/16S104J
R	547	(A,51,69)	RS1/16S104J
R	548	(B,49,47)	RS1/16S104J
R	549	(A,58,64)	RS1/16S104J
R	550	(B,55,89)	RS1/16S471J
R	552	(B,70,109)	RS1/16S471J
R	554	(B,58,92)	RS1/16S104J
R	555	(B,74,110)	RS1/16S104J
R	556	(A,56,97)	RS1/16S392J
R	557	(A,55,90)	RS1/16S392J
R	558	(B,67,55)	RS1/16S103J
R	560	(B,70,55)	RS1/16S153J
R	561	(B,69,53)	RS1/16S681J
R	562	(B,70,59)	RS1/16S103J
R	564	(B,70,61)	RS1/16S153J
R	565	(B,67,63)	RS1/16S681J
R	566	(B,74,65)	RS1/16S223J
R	568	(B,70,64)	RS1/16S123J
R	569	(B,76,65)	RS1/16S102J
R	571	(B,45,92)	RS1/10S75R0F
R	573	(B,52,63)	RS1/16S0R0J
R	574	(B,83,90)	RS1/16S0R0J

Mark	No.		Description	Part No.
R	602	(B,62,172)		RS1/16S102J
R	603	(B,51,169)		RS1/16S0R0J
R	605	(B,83,170)		RS1/16S103J
R	606	(B,77,172)		RS1/16S103J
R	607	(B,55,166)		RS1/16S102J
R	608	(B,31,175)		RS1/16S0R0J
R	609	(B,27,183)		RS1/16S0R0J
R	616	(B,103,175)		RS1/16S0R0J
R	619	(A,106,170)		RS1/16S103J
R	620	(A,126,163)		RS1/16S0R0J
R	621	(A,109,162)		RS1/16S101J
R	622	(A,109,160)		RS1/16S101J
R	623	(B,133,173)		RS1/16S102J
R	624	(A,132,174)		RS1/16S332J
R	625	(A,137,181)		RS1/16S332J
R	626	(B,144,176)		RS1/16S102J
R	627	(A,130,173)		RS1/16S332J
R	628	(A,133,171)		RS1/16S332J
R	630	(B,88,181)		RS1/16S331J
R	631	(B,81,181)		RS1/16S472J
R	632	(B,77,183)		RS1/16S220J
R	633	(B,79,181)		RS1/16S101J
R	634	(B,77,179)		RS1/16S222J
R	635	(B,25,174)		RS1/16S0R0J
R	636	(B,54,174)		RS1/16S0R0J
R	637	(B,58,174)		RS1/16S0R0J
R	638	(B,66,175)		RS1/16S0R0J
R	701	(B,60,34)		RS1/16S224J
R	702	(B,30,29)		RS1/16S221J
R	704	(B,30,32)		RS1/16S221J
R	751	(B,46,37)		RS1/16S102J
R	752	(B,48,41)		RS1/16S472J
R	753	(B,58,43)		RS1/16S472J
R	754	(B,36,37)		RS1/16S151J
R	755	(B,60,43)		RS1/16S472J
R	756	(B,40,37)		RS1/16S102J

CAPACITORS

C	104	(A,216,147)		CEAT220M25
C	105	(A,223,156)		CKSRYF104Z25
C	106	(A,226,169)		CKSRYF104Z25
C	107	(A,209,144)		CCSRCH331J50
C	109	(A,218,155)		CKSRYF104Z25
C	110	(A,219,164)		CKSRYB105K10
C	111	(B,214,159)		CCSRCH120J50
C	112	(B,210,159)		CCSRCH120J50
C	113	(A,200,149)		CKSRYF105Z10
C	114	(B,201,158)		CCSRCH120J50
C	115	(B,200,153)		CCSRCH120J50
C	119	(A,189,183)	ELECT. CAPACITOR	CEAT102M6R3
C	120	(B,165,179)		CKSRYF104Z25
C	121	(B,237,153)		CKSRYF105Z10
C	122	(B,173,181)		CKSRYF105Z10
C	123	(A,171,178)	ELECT. CAPACITOR	CEAT471M6R3
C	124	(A,189,152)		CKSRYF104Z25
C	125	(A,182,154)		CKSRYF104Z25
C	126	(A,185,134)		CKSRYF104Z25
C	127	(A,178,114)		CEAT101M16

Mark	No.		Description	Part No.
C	131	(A,192,119)		CKSRYF104Z25
C	132	(A,193,116)		CKSRYF104Z25
C	133	(A,197,109)		CKSRYF104Z25
C	134	(A,203,106)		CKSRYF104Z25
C	135	(A,208,104)		CKSRYF104Z25
C	136	(A,214,121)		CKSRYF105Z10
C	138	(A,222,119)		CEAT2R2M50
C	139	(A,216,126)		CKSRYF104Z25
C	140	(A,218,130)		CKSRYF104Z25
C	141	(A,172,157)		CKSRYF105Z10
C	142	(A,172,159)		CCSRCH102J50
C	147	(B,231,159)		CKSRYF104Z25
C	149	(A,197,103)		CCSRCH100D50
C	150	(A,191,91)		CKSRYF105Z10
C	152	(A,196,97)		CKSRYF105Z10
C	154	(B,229,143)		CKSRYF104Z25
C	155	(B,239,153)		CCSRCH102J50
C	156	(A,175,135)		CKSRYF104Z25
C	157	(A,175,129)		CKSRYB104K16
C	166	(A,200,145)		CCSRCH102J50
C	167	(A,187,132)		CCSRCH102J50
C	168	(A,213,121)		CCSRCH102J50
C	169	(A,216,130)		CCSRCH102J50
C	202	(B,152,60)		CKSRYF104Z25
C	204	(A,150,64)		CEAT101M16
C	205	(A,146,49)		CEAT220M25
C	206	(B,141,60)		CCSRCH471J50
C	207	(A,190,88)		CKSRYF104Z25
C	208	(B,152,46)		CKSRYB104K16
C	301	(B,166,43)		CKSRYF104Z25
C	302	(B,182,39)		CKSRYF104Z25
C	303	(A,175,47)		CEAT101M16
C	304	(A,183,48)		CEAT471M16
C	305	(B,155,173)		CKSRYF104Z25
C	306	(B,162,169)		CKSRYF104Z25
C	307	(A,155,165)		CEAT101M16
C	308	(A,150,174)		CEAT101M16
C	309	(B,164,182)		CKSRYF104Z25
C	310	(B,164,188)		CKSRYF104Z25
C	311	(A,161,188)		CEAT221M16
C	312	(A,149,182)		CEAT101M16
C	313	(B,188,54)		CKSRYF105Z10
C	314	(B,186,66)		CKSRYF104Z25
C	315	(A,189,63)		CEAT101M16
C	316	(A,192,70)		CEAT101M16
C	317	(B,177,50)		CKSRYF104Z25
C	318	(B,174,71)		CKSRYF104Z25
C	319	(A,180,66)		CEAT101M16
C	320	(A,180,77)		CEAT101M16
C	321	(B,171,54)		CKSRYF104Z25
C	322	(B,159,53)		CCSRCH101J50
C	323	(B,162,49)	CERAMIC CAPACITOR	CKSQYF105Z50
C	324	(B,170,71)		CKSRYF104Z25
C	326	(A,166,51)		CEAT100M50
C	328	(B,158,42)		CKSRYF104Z50
C	329	(B,146,185)		CKSRYF104Z25
C	401	(A,131,111)		CKSRYF105Z10
C	402	(A,138,104)		CCSRCH101J50
C	403	(A,134,105)		CCSRCH101J50
C	404	(A,123,112)		CKSRYF105Z10

Mark	No.		Description	Part No.
C	406	(A,117,108)		CKSRYB104K16
C	407	(A,115,108)		CKSRYB105K10
C	408	(A,112,108)		CKSRYB105K10
C	409	(A,111,108)		CKSRYB105K10
C	410	(A,109,108)		CKSRYB105K10
C	411	(A,145,114)		CKSRYB105K10
C	412	(A,144,119)		CKSRYB105K10
C	413	(B,122,116)		CKSRYB104K16
C	414	(A,137,113)		CKSRYF104Z25
C	415	(A,139,113)		CKSRYF104Z25
C	416	(A,147,110)		CKSRYB105K10
C	417	(A,145,112)		CKSRYB105K10
C	418	(A,143,121)		CKSRYF105Z10
C	419	(A,142,124)		CKSRYB105K10
C	420	(A,142,126)		CKSRYB105K10
C	421	(A,143,127)		CKSRYB105K10
C	422	(A,143,129)		CKSRYB105K10
C	423	(A,143,131)		CKSRYB105K10
C	424	(A,143,133)		CKSRYB105K10
C	428	(A,125,137)		CKSRYB104K16
C	429	(B,136,129)		CKSRYB105K10
C	430	(B,136,127)		CKSRYB104K16
C	431	(A,131,142)		CKSRYB104K16
C	432	(A,126,140)		CKSRYB105K10
C	433	(A,110,144)		CKSRYB105K10
C	434	(A,120,136)		CKSRYB104K16
C	435	(A,102,110)		CKSRYB105K10
C	436	(A,102,112)		CKSRYB105K10
C	437	(A,102,114)		CKSRYB105K10
C	438	(A,108,117)		CKSRYF105Z10
C	439	(A,106,130)		CKSRYB104K16
C	440	(A,117,137)		CKSRYB104K16
C	441	(A,111,140)		CKSRYF105Z10
C	442	(A,111,136)		CKSRYF104Z25
C	443	(A,133,142)		CKSRYB105K10
C	444	(A,124,144)		CKSRYB105K10
C	445	(A,114,152)		CKSRYB105K10
C	446	(A,120,144)		CKSRYB105K10
C	447	(A,130,150)		CKSRYB103K50
C	450	(A,142,91)		CEANP4R7M50
C	451	(A,137,91)		CEANP4R7M50
C	452	(A,129,95)		CEAT101M10
C	453	(A,135,96)		CEAT101M10
C	454	(A,100,119)		CEAT101M10
C	455	(A,153,118)		CEAT4R7M50
C	456	(A,139,150)		CEAT1R0M50
C	457	(A,117,146)		CEAT100M50
C	458	(A,97,146)		CEAT101M10
C	459	(A,125,102)		CKSRYF105Z10
C	460	(A,120,111)		CKSRYB105K10
C	461	(A,125,97)		CKSRYB105K10
C	462	(A,126,92)		CKSRYF105Z10
C	464	(A,147,97)		CKSRYF104Z25
C	465	(A,112,87)		CKSRYF104Z25
C	466	(A,118,90)		CCSRCH102J50
C	467	(A,121,87)		CKSRYF105Z10
C	470	(A,113,84)		CKSRYB104K16
C	471	(A,151,107)		CEAT100M50
C	472	(A,154,95)		CEAT100M50
C	473	(A,131,84)		CEAT101M16
C	474	(A,142,107)		CEAT100M50
C	475	(A,148,93)		CEAT100M50
C	476	(B,43,116)		CKSRYB103K50
C	477	(B,42,153)		CCSRCH152J50
C	482	(B,38,143)		CCSRCH471J50
C	483	(B,40,161)		CCSRCH152J50
C	484	(B,37,155)		CCSRCH471J50
C	486	(A,53,112)	ELECT. CAPACITOR	CEAT102M6R3
C	487	(A,54,155)	ELECT. CAPACITOR	CEAT102M6R3
C	488	(A,53,141)	ELECT. CAPACITOR	CEAT471M6R3
C	489	(A,53,129)	ELECT. CAPACITOR	CEAT471M6R3
C	490	(A,53,121)	ELECT. CAPACITOR	CEAT102M6R3
C	491	(A,53,135)		CEAT470M16
C	492	(A,46,163)		CEAT221M6R3
C	493	(A,53,148)		CEAT470M16
C	497	(A,142,137)		CKSRYF104Z25
C	498	(A,144,151)		CKSRYF104Z25
C	510	(B,75,50)		CKSRYF104Z25
C	511	(B,84,53)		CCSRCH221J50
C	512	(B,39,93)		CCSRCH221J50
C	514	(B,78,71)		CKSRYF104Z25
C	515	(B,88,47)		CKSRYF104Z25
C	517	(B,79,54)		CCSRCH221J50
C	525	(A,33,101)		CCSRCH221J50
C	528	(A,68,97)	ELECT. CAPACITOR	CEAT102M6R3
C	529	(A,73,128)	ELECT. CAPACITOR	CEAT471M6R3
C	530	(A,73,113)	ELECT. CAPACITOR	CEAT471M6R3
C	531	(A,73,120)	ELECT. CAPACITOR	CEAT471M6R3
C	532	(A,79,130)	ELECT. CAPACITOR	CEAT102M6R3
C	533	(B,41,125)		CKSRYB103K50
C	534	(A,50,51)		CCSRCH471J50
C	535	(A,50,48)		CCSRCH471J50
C	536	(A,51,65)		CCSRCH152J50
C	537	(A,51,67)		CCSRCH152J50
C	538	(A,60,72)		CCSRCH152J50
C	539	(B,50,60)		CCSRCH152J50
C	540	(A,54,60)		CCSRCH471J50
C	541	(A,66,78)		CEAT4R7M50
C	542	(A,66,84)		CEAT4R7M50
C	543	(A,66,90)		CEAT4R7M50
C	544	(A,73,107)		CEAT4R7M50
C	545	(A,84,121)		CEAT101M16
C	546	(B,72,55)		CKSRYF104Z25
C	547	(A,63,51)		CEAT220M25
C	548	(B,73,60)		CCSRCH102J50
C	549	(B,72,63)		CKSRYF105Z10
C	550	(A,63,61)		CEAT220M25
C	551	(A,63,67)		CEAT220M25
C	553	(A,52,60)		CCSRCH471J50
C	602	(B,27,173)		CKSRYB222K50
C	603	(B,51,173)		CKSRYB222K50
C	604	(B,60,174)		CCSRCH101J50
C	605	(B,44,173)		CCSRCH100D50
C	606	(B,48,173)		CCSRCH100D50
C	607	(A,72,166)		CEAT1R0M50
C	609	(A,63,168)		CEAT101M10
C	611	(A,56,169)		CEAT470M16
C	613	(B,130,168)		CKSRYF105Z10

Mark	No.	Description	Part No.
C	614	(B,80,176)	CKSRYF104Z25
C	615	(B,88,179)	CCSRCH101J50
C	616	(B,80,178)	CKSRYB103K50
C	617	(A,114,183)	CKSRYF104Z25
C	618	(A,122,183)	CKSRYF104Z25
C	619	(A,125,181)	CKSRYF104Z25
C	620	(A,109,180)	CKSRYF105Z10
C	621	(B,88,183)	CCSRCH560J50
C	622	(A,109,176)	CCSRCH560J50
C	623	(B,97,180)	CCSRCH5R0C50
C	624	(B,96,172)	CCSRCH5R0C50
C	625	(B,122,171)	CKSRYF105Z10
C	626	(B,139,182)	CKSRYF104Z25
C	627	(B,141,182)	CCSRCH102J50
C	628	(A,134,173)	CKSRYB103K50
C	629	(A,129,175)	CKSRYB392K50
C	630	(A,141,176)	CCSRCH561J50
C	631	(A,137,167)	CKSRYB103K50
C	632	(A,128,172)	CKSRYB392K50
C	633	(A,139,172)	CCSRCH561J50
C	635	(A,111,166)	CCSRCH220J50
C	636	(A,112,164)	CCSRCH220J50
C	638	(A,114,188)	CEAT100M50
C	639	(A,120,188)	CEAT3R3M50
C	640	(A,82,175)	CEAT101M10
C	641	(A,132,178)	CEAT100M50
C	642	(A,143,180)	CEAT101M10
C	643	(A,127,168)	CEAT101M10
C	701	(B,65,34)	CKSRYF105Z10
C	702	(B,26,28)	CCSRCH681J50
C	703	(B,24,30)	CKSRYF104Z25
C	751	(B,48,37)	CKSRYF104Z25
C	752	(B,56,43)	CCSRCH101J50
C	753	(B,46,41)	CCSRCH101J50
C	754	(B,27,40)	CCSRCH101J50

B SERVICE FLKY ASSY (DVR-LX61D)

MISCELLANEOUS

Mark	No.	Description	Part No.
IC	101	(B,143,78) FL DRIVER IC	PT6315
Q	103	(B,122,57) DIGITAL TRANSISTOR	DTC124EUA
Q	104	(B,204,73) TRANSISTOR	2SC5712
Q	105	(B,201,66) TRANSISTOR	2SA1576A
Q	106	(B,211,61) TRANSISTOR	2SC4081
Q	107	(B,108,56) DIGITAL TRANSISTOR	DTC124EUA
Q	111	(B,98,56) DIGITAL TRANSISTOR	DTC124EUA
Q	112	(B,61,49) TRANSISTOR	2SD2153
Q	203	(B,144,32) DIGITAL TRANSISTOR	DTC124EUA
Q	204	(B,79,18) DIGITAL TRANSISTOR	DTC124EUA
Q	206	(B,76,23) DIGITAL TRANSISTOR	DTC124EUA
D	106	(A,108,62) LED(RED)	SLR-343VC(NPQ)
D	107	(B,222,46) DIODE	RF101L2S
D	108	(B,202,81) DIODE	UDZS15(B)
D	109	(B,200,73) DIODE	1SS355
D	110	(B,213,71) DIODE	RF101L2S
D	111	(B,209,79) DIODE	UDZS2R4(B)
D	112	(B,200,83) DIODE	UDZS13(B)
D	113	(A,123,62) LED(RED)	SLR-343VC(NPQ)
D	119	(A,97,62) LED(RED)	SLR-343VC(NPQ)
D	120	(A,32,59) LED(WHITE)	SLR343WBCT(MNPQ)
D	121	(A,39,59) LED(BLUE)	SLR343BC4T(JKLM)
D	122	(A,24,59) LED(BLUE)	SLR343BC4T(JKLM)
D	205	(A,83,21) LED(BLUE)	SLR343BC4T(JKLM)
D	212	(A,73,22) LED(ORANGE)	SLR-343DC(NPQ)
D	271	(A,146,38) LED(BLUE)	SLR343BC4T(JKLM)
L	101	(A,198,70) AXIAL INDUCTOR	LAU220J
V	101	(A,97,89) FLUORESCENT TUBE	VAW1091
S	103	(A,93,45) SWITCH	VSG1024
S	104	(A,93,39) SWITCH	VSG1024
S	105	(A,68,39) SWITCH	VSG1024
S	106	(A,119,39) SWITCH	VSG1024
S	107	(A,52,39) SWITCH	VSG1024
S	108	(A,119,45) SWITCH	VSG1024
S	109	(A,52,45) SWITCH	VSG1024
S	110	(A,213,40) SWITCH	VSG1024
S	111	(A,68,45) SWITCH	VSG1024
S	112	(A,83,72) SWITCH	VSG1024
S	201	(A,149,44) SWITCH	VSG1024
S	202	(A,79,10) SWITCH	VSG1024
T	101	(A,223,54) TRANSFORMER	VTT1171
CN	101	(A,188,63) CONNECTOR	9604S-17C
	102	HOUSING ASS'Y(6P)	YKP1007
	103	REMOTE RECEIVER UNIT	GP1UM28XK0VF

RESISTORS

R	104	(B,196,60)	RS1/16S0R0J
R	110	(B,126,74)	RS1/16S470J
R	111	(B,129,74)	RS1/16S470J
R	112	(B,124,74)	RS1/16S470J
R	113	(B,134,72)	RS1/16S823J
R	117	(B,195,75)	RS1/16S104J
R	118	(B,193,75)	RS1/16S102J
R	119	(B,210,73)	RS1/16S273J
R	120	(B,203,65)	RS1/16S103J
R	121	(B,216,59)	RS1/10S221J
R	122	(B,216,56)	RS1/16S122J
R	123	(B,210,83)	RS1/16S103J
R	124	(B,205,61)	RS1/16S102J
R	125	(B,81,43)	RS1/16S103J
R	126	(B,83,43)	RS1/16S103J
R	127	(B,75,44)	RS1/16S222J
R	128	(B,111,42)	RS1/16S222J
R	129	(B,73,42)	RS1/16S222J
R	130	(B,114,40)	RS1/16S222J
R	131	(B,71,42)	RS1/16S332J
R	132	(B,116,40)	RS1/16S332J
R	133	(B,117,63)	RS1/16S271J
R	135	(B,215,40)	RS1/16S562J
R	137	(B,220,83)	RS1/16S0R0J
R	138	(B,193,84)	RS1/16S0R0J
R	139	(B,115,63)	RS1/16S271J
R	144	(B,150,68)	RS1/16S0R0J
R	148	(B,77,44)	RS1/16S470J
R	149	(B,88,44)	RS1/16S470J
R	150	(B,61,58)	RS1/16S562J
R	152	(B,102,66)	RS1/16S271J
R	155	(B,49,54)	RS1/16S152J
R	156	(B,47,54)	RS1/16S392J
R	157	(B,47,51)	RS1/16S152J

Mark	No.		Description	Part No.
R	158	(B,63,44)		RS1/16S103J
R	159	(B,14,56)		RS1/16S470J
R	160	(B,16,56)		RS1/16S222J
R	161	(B,56,59)		RS1/16S222J
R	162	(B,21,61)		RS1/16S0R0J
R	163	(B,19,59)		RS1/16S0R0J
R	164	(B,52,55)		RS1/16S152J
R	165	(B,47,58)		RS1/16S0R0J
R	166	(B,47,49)		RS1/16S152J
R	204	(B,151,28)		RS1/16S562J
R	205	(B,78,13)		RS1/16S332J
R	221	(B,61,27)		RS1/16S182J
R	222	(B,98,26)		RS1/16S182J
R	224	(B,65,27)		RS1/16S182J
R	270	(B,149,28)		RS1/16S182J
R	272	(B,147,28)		RS1/16S182J

CAPACITORS

C	103	(B,95,83)		CKSRYB103K50
C	104	(B,216,85)		CKSRYB103K50
C	106	(B,148,68)		CKSRYF104Z25
C	107	(B,155,82)		CKSRYF104Z50
C	112	(B,132,80)		CKSRYF104Z25
C	113	(A,206,55)		CEAL101M10
C	115	(B,197,66)		CKSRYF104Z25
C	116	(A,200,62)		CEJQ101M16
C	117	(B,206,65)		CKSRYB223K50
C	118	(A,218,63)	ELECTR. CAPACITOR	CEAL100M50
C	119	(B,98,35)		CKSRYF104Z25
C	121	(B,212,56)		CKSRYB103K50
C	123	(B,108,42)		CKSRYF104Z25
C	124	(B,106,42)		CKSRYF104Z25
C	127	(B,220,76)		CKSRYF104Z25
C	128	(A,225,64)		CEAL101M10
C	129	(B,115,67)		CKSRYF104Z25
C	132	(B,117,67)		CKSRYF104Z25
C	133	(B,102,70)		CKSRYF104Z25
C	134	(B,54,36)		CKSRYF104Z25
C	135	(B,54,48)		CKSRYF104Z25
C	201	(B,76,13)		CKSRYF104Z25
C	202	(B,57,27)		CKSRYF104Z25
C	204	(B,96,26)		CKSRYF104Z25
C	270	(B,143,28)		CKSRYF104Z25

B SERVICE FLKY ASSY (DVR-560HX-S,DVR-560HX-K)

MISCELLANEOUS

IC	101	(B,143,78)	FL DRIVER IC	PT6315
Q	103	(B,122,57)	DIGITAL TRANSISTOR	DTC124EUA
Q	104	(B,204,73)	TRANSISTOR	2SC5712
Q	105	(B,201,66)	TRANSISTOR	2SA1576A
Q	106	(B,211,61)	TRANSISTOR	2SC4081
Q	107	(B,108,56)	DIGITAL TRANSISTOR	DTC124EUA
Q	111	(B,98,56)	DIGITAL TRANSISTOR	DTC124EUA
Q	112	(B,61,49)	TRANSISTOR	2SD2153
Q	203	(B,144,32)	DIGITAL TRANSISTOR	DTC124EUA
Q	204	(B,79,18)	DIGITAL TRANSISTOR	DTC124EUA
Q	206	(B,76,23)	DIGITAL TRANSISTOR	DTC124EUA
D	106	(A,108,62)	LED(RED)	SLR-343VC(NPQ)
D	107	(B,222,46)	DIODE	RF101L2S
D	108	(B,202,81)	DIODE	UDZS15(B)
D	109	(B,200,73)	DIODE	1SS355
D	110	(B,213,71)	DIODE	RF101L2S
D	111	(B,209,79)	DIODE	UDZS2R4(B)
D	112	(B,200,83)	DIODE	UDZS13(B)
D	113	(A,123,62)	LED(RED)	SLR-343VC(NPQ)
D	119	(A,97,62)	LED(RED)	SLR-343VC(NPQ)
D	205	(A,83,21)	LED(BLUE)	SLR343BC4T(JKLM)
D	212	(A,73,22)	LED(ORANGE)	SLR-343DC(NPQ)
L	101	(A,198,70)	AXIAL INDUCTOR	LAU220J
V	101	(A,97,89)	FLUORESCENT TUBE	VAW1091
S	103	(A,93,45)	SWITCH	VSG1024
S	104	(A,93,39)	SWITCH	VSG1024
S	105	(A,68,39)	SWITCH	VSG1024
S	106	(A,119,39)	SWITCH	VSG1024
S	107	(A,52,39)	SWITCH	VSG1024
S	108	(A,119,45)	SWITCH	VSG1024
S	109	(A,52,45)	SWITCH	VSG1024
S	110	(A,213,40)	SWITCH	VSG1024
S	111	(A,68,45)	SWITCH	VSG1024
S	112	(A,83,72)	SWITCH	VSG1024
S	113	(A,61,63)	SWITCH	VSG1024
S	114	(A,36,63)	SWITCH	VSG1024
S	115	(A,9,63)	SWITCH	VSG1024
S	201	(A,149,44)	SWITCH	VSG1024
S	202	(A,79,10)	SWITCH	VSG1024
T	101	(A,223,54)	TRANSFORMER	VTT1171
CN	101	(A,188,63)	CONNECTOR	9604S-17C
	102		HOUSING ASS'Y(6P)	YKP1007
	103		REMOTE RECEIVER UNIT	GP1UM28XK0VF

RESISTORS

R	104	(B,196,60)		RS1/16S0R0J
R	110	(B,126,74)		RS1/16S470J
R	111	(B,129,74)		RS1/16S470J
R	112	(B,124,74)		RS1/16S470J
R	113	(B,134,72)		RS1/16S823J
R	117	(B,195,75)		RS1/16S104J
R	118	(B,193,75)		RS1/16S102J
R	119	(B,210,73)		RS1/16S273J
R	120	(B,203,65)		RS1/16S103J
R	121	(B,216,59)		RS1/10S221J
R	122	(B,216,56)		RS1/16S122J
R	123	(B,210,83)		RS1/16S103J
R	124	(B,205,61)		RS1/16S102J
R	125	(B,81,43)		RS1/16S103J
R	126	(B,83,43)		RS1/16S103J
R	127	(B,75,44)		RS1/16S222J
R	128	(B,111,42)		RS1/16S222J
R	129	(B,73,42)		RS1/16S222J
R	130	(B,114,40)		RS1/16S222J
R	131	(B,71,42)		RS1/16S332J
R	132	(B,116,40)		RS1/16S332J
R	133	(B,117,63)		RS1/16S271J
R	135	(B,215,40)		RS1/16S562J
R	137	(B,220,83)		RS1/16S0R0J
R	138	(B,193,84)		RS1/16S0R0J

Mark	No.		Description	Part No.
	R	139	(B,115,63)	RS1/16S271J
	R	144	(B,150,68)	RS1/16S0R0J
	R	148	(B,77,44)	RS1/16S470J
	R	149	(B,88,44)	RS1/16S470J
	R	150	(B,61,58)	RS1/16S562J
	R	152	(B,102,66)	RS1/16S271J
	R	155	(B,49,54)	RS1/16S152J
	R	156	(B,47,54)	RS1/16S392J
	R	157	(B,47,51)	RS1/16S152J
	R	158	(B,63,44)	RS1/16S103J
	R	159	(B,14,56)	RS1/16S470J
	R	160	(B,16,56)	RS1/16S222J
	R	161	(B,56,59)	RS1/16S222J
	R	162	(B,21,61)	RS1/16S0R0J
	R	163	(B,19,59)	RS1/16S0R0J
	R	164	(B,52,55)	RS1/16S152J
	R	165	(B,47,58)	RS1/16S0R0J
	R	166	(B,47,49)	RS1/16S152J
	R	204	(B,151,28)	RS1/16S562J
	R	205	(B,78,13)	RS1/16S332J
	R	221	(B,61,27)	RS1/16S182J
	R	222	(B,98,26)	RS1/16S182J
	R	224	(B,65,27)	RS1/16S182J
	R	270	(B,149,28)	RS1/16S182J
	R	272	(B,147,28)	RS1/16S182J

CAPACITORS

	C	103	(B,95,83)	CKSRYB103K50
	C	104	(B,216,85)	CKSRYB103K50
	C	106	(B,148,68)	CKSRYF104Z25
	C	107	(B,155,82)	CKSRYF104Z50
	C	112	(B,132,80)	CKSRYF104Z25
	C	113	(A,206,55)	CEAL101M10
	C	115	(B,197,66)	CKSRYF104Z25
	C	116	(A,200,62)	CEJQ101M16
	C	117	(B,206,65)	CKSRYB223K50
	C	118	(A,218,63) ELECTR. CAPACITOR	CEAL100M50
	C	119	(B,98,35)	CKSRYF104Z25
	C	121	(B,212,56)	CKSRYB103K50
	C	123	(B,108,42)	CKSRYF104Z25
	C	124	(B,106,42)	CKSRYF104Z25
	C	127	(B,220,76)	CKSRYF104Z25
	C	128	(A,225,64)	CEAL101M10
	C	129	(B,115,67)	CKSRYF104Z25
	C	132	(B,117,67)	CKSRYF104Z25
	C	133	(B,102,70)	CKSRYF104Z25
	C	134	(B,54,36)	CKSRYF104Z25
	C	135	(B,54,48)	CKSRYF104Z25
	C	201	(B,76,13)	CKSRYF104Z25
	C	202	(B,57,27)	CKSRYF104Z25
	C	204	(B,96,26)	CKSRYF104Z25
	C	270	(B,143,28)	CKSRYF104Z25

C SERVICE FRJB ASSY (DVR-LX61D)

MISCELLANEOUS

	JA	301	(A,211,31) 4P MINIDIN SOCKET(S)	AKP1239
	JA	302	(A,181,32) JACK	YKB1001
	KN	301	(A,232,17) WRAPPING TERMINAL	VNF1084
	KN	302	(A,154,17) WRAPPING TERMINAL	VNF1084
	CN	301	(A,198,7) CONNECTOR	HLEM11S-1
			FL HOLDER (FE)	VNF1134

RESISTORS

	R	303	(B,181,16)	RS1/16S0R0J
	R	305	(B,178,15)	RS1/16S0R0J
	R	306	(B,165,15)	RS1/16S0R0J

CAPACITORS

	C	303	(B,181,20)	CCSRCH471J50
	C	305	(B,162,18)	CCSRCH471J50

C SERVICE FRJB ASSY (DVR-560HX-S,DVR-560HX-K)

MISCELLANEOUS

	JA	301	(A,211,31) 4P MINIDIN SOCKET(S)	AKP1238
	JA	302	(A,181,32) JACK	VKB1208
	KN	301	(A,232,17) WRAPPING TERMINAL	VNF1084
	KN	302	(A,154,17) WRAPPING TERMINAL	VNF1084
	CN	301	(A,198,7) CONNECTOR	HLEM11S-1
			FL HOLDER (FE)	VNF1134

RESISTORS

	R	303	(B,181,16)	RS1/16S0R0J
	R	305	(B,178,15)	RS1/16S0R0J
	R	306	(B,165,15)	RS1/16S0R0J

CAPACITORS

	C	303	(B,181,20)	CCSRCH471J50
	C	305	(B,162,18)	CCSRCH471J50

D MAIN ASSY (DVR-LX61D)

SEMICONDUCTORS

	IC	201	K4S641632K-UC60
	IC	501	BD7956FS
	IC	1001	MC-10050F1-507LU1A
	IC	1102	VYW2410
	IC	1201,1221	EDD5116AFTA-6B-E
	IC	1301,1302	NJM12904V
	IC	3101	AK5359ET
	IC	3201	PCM1742KE
	IC	3202	UPC4570G2-A
	IC	3701	TC7WH34FU
	IC	3702,5203	TC7SH08FUS1
	IC	3707	PST3813U
⚠	IC	4501,4502	CEK1285
⚠	IC	4511	S-1170B33UC-OTS
⚠	IC	4521	S-1170B25UC-OTK
⚠	IC	4531	MM1701WH
⚠	IC	4541	MM1563DF
⚠	IC	4552	S-1170B50UC-OUJ
⚠	IC	4561	S-1112B50MC-L7J
⚠	IC	4562	S-1112B33MC-L6S

Mark	No.	Description	Part No.
⚠	IC	4571	S-1132B18-U5
	IC	4701	TC74VCX245FK
	IC	4702	TC7SZ08FU
	IC	4703	TC74VHC125FK
	IC	5103	UPD72852AGB-8EU-A
	IC	5151	TC7MBL3257AFK
	IC	5202	R5523N001B
⚠	IC	5204	R1173H001B
	IC	5602	88SA8040B1-TBC1
	IC	5701	TC74VHC00FTS1
	IC	5801	SII9002CSU
	IC	5803	TC7WPB306FK
	IC	5804	TC7WB125FK
	Q	102	RT1N141U
	Q	1801,1811,2501-2505	2SA1576A
	Q	3301,3303,3305,3307	2SA1576A
	Q	3302,3304,3306,3308	2SC4081
	Q	4581,5701	2SC4081
	Q	5801	HN1C01FU
	Q	5802	UMB1N
	Q	5804	DTC124EUA
	Q	5805	2SA1576A
	Q	5808	2SK2034
	Q	5810	UMF21N
	D	3201	DAN202U
	D	4521,4552,4571	RB501V-40

MISCELLANEOUS

	L	105 CHIP COIL	BTH1103
	L	1001-1004,1021-1025 EMI FILTER	DTL1106
	L	1005 INDUCTOR	LCTC150K2125
	L	1801 CHIP COIL	LCYA390J2520
	L	1811 INDUCTOR	LCYA150J2520
	L	1821,1831,5122,5601 EMI FILTER	DTL1106
	L	3301,3303,3305,3307 CHIP COIL	LCYA180J2520
	L	3302,3304,3306,3308 INDUCTOR	LCYA100J2520
	L	5101 INDUCTOR	CTF1305
	L	5201,5202 COIL	ATH7015
	L	5701 INDUCTOR	CTF1382
	L	5801-5804 EMI FILTER	ATF1209
	L	5805 EMI FILTER	DTL1106
	JA	5701 JACK	VKB1159
	JA	5801 HDMI CONNECTOR	AKP1318
	X	101 CERAMIC RESONATOR	DSS1157
	X	1001 CRYSTAL RESONATOR	VSS1220
	X	1002 CRYSTAL RESONATOR	VSS1172
	X	5101 CRYSTAL	VSS1211
	X	5201 CRYSTAL	VSS1218
	X	5502 CRYSTAL	VSS1214
	CN	101 CONNECTOR	DKN1404
	CN	201 CONNECTOR	VKN2029
	CN	501 CONNECTOR	DKN1312
	CN	502 4P CONNECTOR	DKN1288
	CN	601 5P CONNECTOR	DKN1402
	CN	1401 CONNECTOR	VKN2030
	CN	1402 07P CONNECTOR	RKN1048
	CN	1501 50P B TO B CONNECTOR	VKN2079
	CN	2301 40P CONNECTOR	VKN2065
	CN	3801 CONNECTOR	CKS5321
	CN	4501 KR CONNECTOR	S13B-PH-K-S
	CN	4701 CONNECTOR	VKN2045
	CN	5101 CONNECTOR	VKN1932
	CN	5201 CONNECTOR	VKN1936
	CN	5604 SATA PLUG HEADER	VKN2077
		HEATSINK(AL)	VNH1079
		SCREW	BBZ30P060FTC
		RADIATION SHEET	VEB1360

RESISTORS

	R	174	RS1/16S4701F
	R	204-206,317-320	RAB4CQ330J
	R	219,220	RAB4CQ472J
	R	271,273,274,3230	RS1/10S0R0J
	R	501	DCN1171
	R	502	DCN1172
	R	510,511	RS1/10S1R8J
	R	1003	RS1/16S6800F
	R	1004,1301,3306,3312	RS1/16S4700F
	R	1032-1035,1411,3005	RAB4CQ103J
	R	1036,1039	RS1/16S43R0D
	R	1037,1040	RS1/16S1000F
	R	1241,1242,1248,1249	RAB4CQ0R0J
	R	1245,1246,1255,1256	RAB4CQ220J
	R	1261,1262,1268,1269	RAB4CQ0R0J
	R	1265,1266,1273,1274	RAB4CQ220J
	R	1281-1283,1287	RAB4CQ470J
	R	1302,1303,1312,1313	RS1/16S1001F
	R	1314,2506,4574,4575	RS1/16S0R0J
	R	1505-1513	RAB4CQ0R0J
	R	2502,2505,2508,2511	RS1/16S1500F
	R	2514	RS1/16S1500F
	R	3210,3216	RN1/16SE1201D
	R	3211,3217	RN1/16SE1002D
	R	3218,3223	RN1/16SE2202D
	R	3307,3313,3324,3325	RS1/16SS5601F
	R	3318,3323	RS1/16S4700F
	R	3810-3813,3837-3840	RAB4CQ330J
	R	3824	RAB4CQ820J
	R	3828-3833	RAB4CQ223J
	R	3851,5632,5638,5642	RAB4CQ330J
	R	4501,4551-4554,4556	RS1/10S0R0J
	R	4504,4505,4507	RS1/10S272J
	R	4701,4702,4721,4722	RAB4CQ101J
	R	4708,4709	RAB4CQ103J
	R	5101,5102	RAB4CQ104J
	R	5105,5106	RAB4CQ680J
	R	5118	RN1/16SE9101D
	R	5119-5122	RS1/16S56R0D
	R	5131	RN1/16SE5101D
	R	5203	RS1/16S3301F
	R	5204	RS1/16S8200F
	R	5220	RS1/16S1501F
	R	5445,5819,5820	RS1/10S0R0J
	R	5646	RAB4CQ330J
	R	5651	RS1/16S1202F
	R	5664,5672,5705,5830	RS1/16S0R0J
	R	5706	RS1/16S75R0F
	R	5825-5828	RAB4CQ220J
	R	5855	RAB4CQ100J

Mark	No.	Description	Part No.
		Other Resistors	RS1/16SS###J
		CAPACITORS	
	C	100,101,105,117	CKSSYB102K50
	C	103,1009	VCH1234
	C	104,154,162,1004	VCG1057
	C	106,159,167,288	CKSSYF104Z16
	C	107	CKSSYB681K50
	C	113,114	CKSSYB472K25
	C	115,135,144,145	CKSSYB103K16
	C	116,120,124,128	CKSSYB104K10
	C	121,122	CKSSYB222K50
	C	125,129,280-285	VCG1058
	C	127,1805,1815	CKSSYB473K10
	C	130,181,194,4511	CKSQYB475K6R3
	C	131	CKSSYB683K10
	C	133,134,136,169	CKSSYB104K10
	C	137	CKSSYB682K25
	C	140,141,155	DCH1199
	C	142,143,146,180	DCH1201
	C	147,148	DCH1198
	C	149,157,158,187	CKSSYB103K16
	C	152,164,189,289	CKSSYB102K50
	C	153,1020,4516	CEVW100M16
	C	156	CKSSYB182K50
	C	163,1007,3108,3219	CEVW221M4
	C	165,166,176,177	CCSSCH220J50
	C	170,172-174	CCSSCH470J50
	C	171,197,504,516	CKSSYB104K10
	C	182,286,1021,1051	DCH1201
	C	188,1058,1205,1206	CKSSYB103K16
	C	287,2305,4522,4531	VCG1058
	C	290,501,1057,1060	CKSSYF104Z16
	C	291,508,1005,1011	CKSSYB102K50
	C	502	DCH1263
	C	503	CKSRYB471K50
	C	505,514,515	CKSRYB104K25
	C	509	CCSSCH330J50
	C	510,3304,3317,3323	CCSSCH680J50
	C	511	CKSQYB105K16
	C	512,513,803,832	CKSRYF104Z16
	C	532,1001,1002	CKSSYB104K10
	C	824	CKSQYF104Z25
	C	1003,1024,1036,1039	CEVW101M4
	C	1006,1008,1010,1013	VCG1057
	C	1012,1215,1236	VCH1268
	C	1014,1023,1026,1038	CKSSYB102K50
	C	1015-1019,1027-1035	CKSSYB104K10
	C	1022,1025,1037,1040	VCG1057
	C	1041,1049,1053,1061	CKSSYB102K50
	C	1042,1043	CCSSCJ3R0C50
	C	1044,1045,3303,3316	CCSSCH5R0C50
	C	1047	CKSSYB104K10
	C	1048,1052,1056,1059	VCG1057
	C	1050,5121,5122,5613	CEVW101M4
	C	1062,1066,1102,1104	VCG1057
	C	1063,1067,1105,1203	CKSSYF104Z16
	C	1064,1065,1068,1101	CKSSYB102K50
	C	1103,1207,1209,1210	CKSSYB102K50
	C	1113,1202,1204,1208	VCG1057
	C	1211-1214,1222,1230	CKSSYF104Z16
	C	1216-1221,1223,1227	VCG1057
	C	1224,1225,1401,3701	CKSSYB103K16
	C	1226,1228,1229,1504	CKSSYB102K50
	C	1231,1235,1316,1501	DCH1201
	C	1291,1302,1303,1312	CKSSYF104Z16
	C	1301,1315,1802,1812	CKSQYB225K10
	C	1304,3207,4515	CEVW470M6R3
	C	1313,1503,3105,3202	CKSSYF104Z16
	C	1421,1502,1801,1811	VCG1057
	C	1803	CCSSCH221J50
	C	1804,3204	CKSSYB331K50
	C	1813	CCSSCH101J50
	C	1814	CCSSCH151J50
	C	2501-2505,3104,3107	VCG1057
	C	2506,3704,4534,5151	DCH1201
	C	3103,3211,3218,4507	CEVW101M16
	C	3106,3203,3705,3706	CKSSYB102K50
	C	3201	CEAT102M6R3
	C	3206,3212,3217,4504	CKSSYF104Z16
	C	3213,3214	CKSSYB561K50
	C	3215,3216	CCSSCH820J50
	C	3220,3332-3335	VCG1057
	C	3301,3302,3311,3312	CCSRCH7R0D50
	C	3305,3318,3324,3331	CCSSCH150J50
	C	3307,3313,3319,3325	CKSRYB105K10
	C	3314,3315,3320,3321	CCSRCH7R0D50
	C	3322,3329	CCSSCH5R0C50
	C	3330	CCSSCH680J50
	C	3339-3342,3703,3707	VCG1057
	C	3738,3803,3804	VCG1057
	C	4501-4503,4505	VCG1057
	C	4506,4585,5104,5109	CKSSYF104Z16
	C	4508,4509,4572,5708	CEVW221M4
	C	4513,4524,4525,4555	CKSQYB475K6R3
	C	4532,4557,5604-5611	CKSSYB103K16
	C	4533,4541,4562,4563	VCG1058
	C	4535-4537,4539,4540	CKSSYB102K50
	C	4542,5212	CKSQYB225K10
	C	4543,4704-4706,5154	CKSSYB102K50
	C	4556,4571,4573	CKSQYB475K6R3
	C	4558,4559,4581,4586	CEVW101M16
	C	4567,4570,5217	VCG1058
	C	4701-4703,5105-5108	VCG1057
	C	5110-5112,5115,5116	VCG1057
	C	5113,5114,5153,5209	CKSSYF104Z16
	C	5117,5118,5640,5641	CCSSCH120J50
	C	5119	CKSSYB271K50
	C	5120,5123,5132,5133	VCG1057
	C	5152,5205,5213,5601	VCG1057
	C	5210	CEVW101M16
	C	5211,5216,5218,5219	CKSSYB102K50
	C	5222,5603,5612,5615	CKSSYF104Z16
	C	5223,5705,5706,5802	CKSSYB102K50
	C	5602,5702,5707,5801	VCG1057
	C	5614,5617,5622-5632	CKSSYB103K16
	C	5616,5812,5813	CKSSYF104Z16
	C	5704	CEVW1R0M50
	C	5803,5805-5808,5820	VCG1057

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Mark	No.	Description	Part No.
C	5804,5819,5821-5823		CKSSYB102K50
C	5809		CEVW221M4
C	5814		CKSRYF104Z16
C	5815-5818		CKSRYB104K25
C	5824,5826		VCG1057
C	5825		CKSSYB102K50

D MAIN ASSY

(DVR-560HX-S,DVR-560HX-K)

SEMICONDUCTORS

	IC	201	K4S641632K-UC60
	IC	501	BD7956FS
	IC	1001	MC-10050F1-507LU1A
	IC	1102	VYW2410
	IC	1201,1221	EDD5116AFTA-6B-E
	IC	1301,1302	NJM12904V
	IC	3101	AK5359ET
	IC	3201	PCM1742KE
	IC	3202	UPC4570G2-A
	IC	3701	TC7WH34FU
	IC	3702,5203	TC7SH08FUS1
	IC	3707	PST3813U
⚠	IC	4501,4502	CEK1285
⚠	IC	4511	S-1170B33UC-OTS
⚠	IC	4521	S-1170B25UC-OTK
⚠	IC	4531	MM1701WH
⚠	IC	4541	MM1563DF
⚠	IC	4552	S-1170B50UC-OUJ
⚠	IC	4561	S-1112B50MC-L7J
⚠	IC	4562	S-1112B33MC-L6S
⚠	IC	4571	S-1132B18-U5
	IC	4701	TC74VCX245FK
	IC	4702	TC7SZ08FU
	IC	4703	TC74VHC125FK
	IC	5103	UPD72852AGB-8EU-A
	IC	5151	TC7MBL3257AFK
	IC	5202	R5523N001B
⚠	IC	5204	R1173H001B
	IC	5602	88SA8040B1-TBC1
	IC	5701	TC74VHC00FTS1
	IC	5801	SII9002CSU
	IC	5803	TC7WPB306FK
	IC	5804	TC7WB125FK
	Q	102	RT1N141U
	Q	1801,1811,2501-2505	2SA1576A
	Q	3301,3303,3305,3307	2SA1576A
	Q	3302,3304,3306,3308	2SC4081
	Q	4581,5701	2SC4081
	Q	5801	HN1C01FU
	Q	5802	UMB1N
	Q	5804	DTC124EUA
	Q	5805	2SA1576A
	Q	5808	2SK2034
	Q	5810	UMF21N
	D	3201	DAN202U
	D	4521,4552,4571	RB501V-40

Mark	No.	Description	Part No.

MISCELLANEOUS

	L	105 CHIP COIL	BTH1103
	L	1001-1004,1021-1025 EMI FILTER	DTL1106
	L	1005 INDUCTOR	LCTC150K2125
	L	1801 CHIP COIL	LCYA390J2520
	L	1811 INDUCTOR	LCYA150J2520
	L	1821,1831,5122,5601 EMI FILTER	DTL1106
	L	3301,3303,3305,3307 CHIP COIL	LCYA180J2520
	L	3302,3304,3306,3308 INDUCTOR	LCYA100J2520
	L	5101 INDUCTOR	CTF1305
	L	5201,5202 COIL	ATH7015
	L	5701 INDUCTOR	CTF1382
	L	5801-5804 EMI FILTER	ATF1209
	L	5805 EMI FILTER	DTL1106
	JA	5701 JACK	VKB1159
	JA	5801 HDMI CONNECTOR	AKP1318
	X	101 CERAMIC RESONATOR	DSS1157
	X	1001 CRYSTAL RESONATOR	VSS1220
	X	1002 CRYSTAL RESONATOR	VSS1172
	X	5101 CRYSTAL	VSS1211
	X	5201 CRYSTAL	VSS1218
	X	5502 CRYSTAL	VSS1214
	CN	101 CONNECTOR	DKN1404
	CN	201 CONNECTOR	VKN2029
	CN	501 CONNECTOR	DKN1312
	CN	502 4P CONNECTOR	DKN1288
	CN	601 5P CONNECTOR	DKN1402
	CN	1401 CONNECTOR	VKN2030
	CN	1402 07P CONNECTOR	RKN1048
	CN	2301 40P CONNECTOR	VKN2065
	CN	3801 CONNECTOR	CKS5321
	CN	4501 KR CONNECTOR	S13B-PH-K-S
	CN	4701 CONNECTOR	VKN2045
	CN	5101 CONNECTOR	VKN1932
	CN	5201 CONNECTOR	VKN1936
	CN	5604 SATA PLUG HEADER	VKN2077
		HEATSINK(AL)	VNH1079
		SCREW	BBZ30P060FTC
		RADIATION SHEET	VEB1360

RESISTORS

	R	174	RS1/16S4701F
	R	204-206,317-320	RAB4CQ330J
	R	219,220	RAB4CQ472J
	R	271,273,274,3230	RS1/10S0R0J
	R	501	DCN1171
	R	502	DCN1172
	R	510,511	RS1/10S1R8J
	R	1003	RS1/16S6800F
	R	1004,1301,3306,3312	RS1/16S4700F
	R	1032-1035,1411,3005	RAB4CQ103J
	R	1036,1039	RS1/16S43R0D
	R	1037,1040	RS1/16S1000F
	R	1241,1242,1248,1249	RAB4CQ0R0J
	R	1245,1246,1255,1256	RAB4CQ220J
	R	1261,1262,1268,1269	RAB4CQ0R0J
	R	1265,1266,1273,1274	RAB4CQ220J
	R	1281-1283,1287	RAB4CQ470J
	R	1302,1303,1312,1313	RS1/16S1001F
	R	1314,2506,4574,4575	RS1/16S0R0J

Mark	No.	Description	Part No.
	R	2502,2505,2508,2511	RS1/16S1500F
	R	2514	RS1/16S1500F
	R	3210,3216	RN1/16SE1201D
	R	3211,3217	RN1/16SE1002D
	R	3218,3223	RN1/16SE2202D
	R	3307,3313,3324,3325	RS1/16SS5601F
	R	3318,3323	RS1/16S4700F
	R	3810-3813,3837-3840	RAB4CQ330J
	R	3824	RAB4CQ820J
	R	3828-3833	RAB4CQ223J
	R	3851,5632,5638,5642	RAB4CQ330J
	R	4501,4551-4554,4556	RS1/10S0R0J
	R	4504,4505,4507	RS1/10S272J
	R	4701,4702,4721,4722	RAB4CQ101J
	R	4708,4709	RAB4CQ103J
	R	5101,5102	RAB4CQ104J
	R	5105,5106	RAB4CQ680J
	R	5118	RN1/16SE9101D
	R	5119-5122	RS1/16S56R0D
	R	5131	RN1/16SE5101D
	R	5203	RS1/16S3301F
	R	5204	RS1/16S8200F
	R	5220	RS1/16S1501F
	R	5445,5819,5820	RS1/10S0R0J
	R	5646	RAB4CQ330J
	R	5651	RS1/16S1202F
	R	5664,5672,5705,5830	RS1/16S0R0J
	R	5706	RS1/16S75R0F
	R	5825-5828	RAB4CQ220J
	R	5855	RAB4CQ100J
	Other Resistors		RS1/16SS###J

CAPACITORS

	C	100,101,105,117	CKSSYB102K50
	C	103,1009	VCH1234
	C	104,154,162,1004	VCG1057
	C	106,159,167,288	CKSSYF104Z16
	C	107	CKSSYB681K50
	C	113,114	CKSSYB472K25
	C	115,135,144,145	CKSSYB103K16
	C	116,120,124,128	CKSSYB104K10
	C	121,122	CKSSYB222K50
	C	125,129,280-285	VCG1058
	C	127,1805,1815	CKSSYB473K10
	C	130,181,194,4511	CKSQYB475K6R3
	C	131	CKSSYB683K10
	C	133,134,136,169	CKSSYB104K10
	C	137	CKSSYB682K25
	C	140,141,155	DCH1199
	C	142,143,146,180	DCH1201
	C	147,148	DCH1198
	C	149,157,158,187	CKSSYB103K16
	C	152,164,189,289	CKSSYB102K50
	C	153,1020,4516	CEVW100M16
	C	156	CKSSYB182K50
	C	163,1007,3108,3219	CEVW221M4
	C	165,166,176,177	CCSSCH220J50
	C	170,172-174	CCSSCH470J50
	C	171,197,504,516	CKSSYB104K10
	C	182,286,1021,1051	DCH1201
	C	188,1058,1205,1206	CKSSYB103K16
	C	287,2305,4522,4531	VCG1058
	C	290,501,1057,1060	CKSSYF104Z16
	C	291,508,1005,1011	CKSSYB102K50
	C	502	DCH1263
	C	503	CKSRYB471K50
	C	505,514,515	CKSRYB104K25
	C	509	CCSSCH330J50
	C	510,3304,3317,3323	CCSSCH680J50
	C	511	CKSQYB105K16
	C	512,513,803,832	CKSRYF104Z16
	C	532,1001,1002	CKSSYB104K10
	C	824	CKSQYF104Z25
	C	1003,1024,1036,1039	CEVW101M4
	C	1006,1008,1010,1013	VCG1057
	C	1012,1215,1236	VCH1268
	C	1014,1023,1026,1038	CKSSYB102K50
	C	1015-1019,1027-1035	CKSSYB104K10
	C	1022,1025,1037,1040	VCG1057
	C	1041,1049,1053,1061	CKSSYB102K50
	C	1042,1043	CCSSCJ3R0C50
	C	1044,1045,3303,3316	CCSSCH5R0C50
	C	1047	CKSSYB104K10
	C	1048,1052,1056,1059	VCG1057
	C	1050,5121,5122,5613	CEVW101M4
	C	1062,1066,1102,1104	VCG1057
	C	1063,1067,1105,1203	CKSSYF104Z16
	C	1064,1065,1068,1101	CKSSYB102K50
	C	1103,1207,1209,1210	CKSSYB102K50
	C	1113,1202,1204,1208	VCG1057
	C	1211-1214,1222,1230	CKSSYF104Z16
	C	1216-1221,1223,1227	VCG1057
	C	1224,1225,1401,3701	CKSSYB103K16
	C	1226,1228,1229,3106	CKSSYB102K50
	C	1231,1235,1316,2506	DCH1201
	C	1291,1302,1303,1312	CKSSYF104Z16
	C	1301,1315,1802,1812	CKSQYB225K10
	C	1304,3207,4515	CEVW470M6R3
	C	1313,3105,3202,3206	CKSSYF104Z16
	C	1421,1801,1811	VCG1057
	C	1803	CCSSCH221J50
	C	1804,3204	CKSSYB331K50
	C	1813	CCSSCH101J50
	C	1814	CCSSCH151J50
	C	2501-2505,3104,3107	VCG1057
	C	3103,3211,3218,4507	CEVW101M16
	C	3201	CEAT102M6R3
	C	3203,3705,3706	CKSSYB102K50
	C	3212,3217,4504,4506	CKSSYF104Z16
	C	3213,3214	CKSSYB561K50
	C	3215,3216	CCSSCH820J50
	C	3220,3332-3335	VCG1057
	C	3301,3302,3311,3312	CCSRCH7R0D50
	C	3305,3318,3324,3331	CCSSCH150J50
	C	3307,3313,3319,3325	CKSRYB105K10
	C	3314,3315,3320,3321	CCSRCH7R0D50
	C	3322,3329	CCSSCH5R0C50
	C	3330	CCSSCH680J50
	C	3339-3342,3703,3707	VCG1057

Mark	No.	Description	Part No.
C	3704,4534,5151		DCH1201
C	3738,3803,3804		VCG1057
C	4501-4503,4505		VCG1057
C	4508,4509,4572,5708		CEVW221M4
C	4513,4524,4525,4555		CKSQYB475K6R3
C	4532,4557,5604-5611		CKSSYB103K16
C	4533,4541,4562,4563		VCG1058
C	4535-4537,4539,4540		CKSSYB102K50
C	4542,5212		CKSQYB225K10
C	4543,4704-4706,5154		CKSSYB102K50
C	4556,4571,4573		CKSQYB475K6R3
C	4558,4559,4581,4586		CEVW101M16
C	4567,4570,5217		VCG1058
C	4585,5104,5109,5113		CKSSYF104Z16
C	4701-4703,5105-5108		VCG1057
C	5110-5112,5115,5116		VCG1057
C	5114,5153,5209,5222		CKSSYF104Z16
C	5117,5118,5640,5641		CCSSCH120J50
C	5119		CKSSYB271K50
C	5120,5123,5132,5133		VCG1057
C	5152,5205,5213,5601		VCG1057
C	5210		CEVW101M16
C	5211,5216,5218,5219		CKSSYB102K50
C	5223,5705,5706,5802		CKSSYB102K50
C	5602,5702,5707,5801		VCG1057
C	5603,5612,5615,5616		CKSSYF104Z16
C	5614,5617,5622-5632		CKSSYB103K16
C	5704		CEVW1R0M50
C	5803,5805-5808,5820		VCG1057
C	5804,5819,5821-5823		CKSSYB102K50
C	5809		CEVW221M4
C	5812,5813		CKSSYF104Z16
C	5814		CKSRYF104Z16
C	5815-5818		CKSRYB104K25
C	5824,5826		VCG1057
C	5825		CKSSYB102K50

E ETAB ASSY (DVR-LX61D only)

SEMICONDUCTORS

IC	101		UPD99914F1-BAC
IC	181		TC4SU69F
IC	182		TC7SZU04FU
IC	201,202		TC74VCX163245FT
IC	203		TC7MP3125FK
IC	301		LAN9211-ABZJ
IC	401		S-1133B00-U5
IC	411		S-1133B12-U5

MISCELLANEOUS

L	321,331	COIL	VTH1056
F	171,301	EMI FILTER	DTL1106
JA	301	RJ45 CONNECTOR TRNS	VKN2078
X	101	CRYSTAL OSCILLATOR	ASS1172
X	301	CRYSTAL	VSS1214
CN	501	50P B TO B CONNECTOR	VKN2080

RESISTORS

R	111-114		RAB4CQ103J
R	185		RS1/16S0R0J
R	203-210		RAB4CQ220J
R	213-220		RAB4CQ100J
R	304		RAB4CQ473J
R	306-309		RS1/10SR49R9F
R	310		RS1/10SR10R0F
R	311		RS1/16SS1202F
R	403		RS1/16S56R0D
R	404		RS1/16S2001D
	Other Resistors		RS1/16SS###J

CAPACITORS

C	104,106,108,110		VCG1057
C	105,107,109,111		CKSSYB102K50
C	144,146,148,172		VCG1057
C	145,147,149,173		CKSSYB102K50
C	171,301		CEVW101M4
C	181,201,204,310		DCH1201
C	182,184,202,205		VCG1057
C	183,185,189,203		CKSSYB102K50
C	186		CCSSCH270J50
C	187		CCSSCH220J50
C	188		CKSSYB104K16
C	206,212,214,222		CKSSYB102K50
C	211,213,221,223		VCG1057
C	220,324,401,411		VCH1268
C	224,303,305,307		CKSSYB102K50
C	302,304,308,311		VCG1057
C	306,312,320,341		CKSSYF104Z16
C	309,313,315,317		CKSSYB102K50
C	314,316,318,325		VCG1057
C	319,321,326,342		CKSSYB102K50
C	327,328		CCSSCH120J50
C	340		CKSRYB223K50
C	343,404,414,416		CKSSYB102K50
C	402,412,415		VCG1058
C	403,413,417		CKSSYF104Z16
C	418		VCG1057
C	419		VCH1234

F SERVICE DVUB ASSY

MISCELLANEOUS

L	904	(B,218,44)	CHIP FERRITE BEADS	VTL1169
L	905	(B,217,28)	CHIP FERRITE BEADS	VTL1169
L	907	(B,220,10)	CHIP FERRITE BEADS	VTL1169
L	908	(B,217,9)	CHIP FERRITE BEADS	VTL1169
JA	901	(A,204,59)	1394-TERMINAL	VKN2028
JA	902	(A,203,37)	USB CONNECTOR	VKB1226
JA	903	(A,220,15)	USB CONNECTOR	VKB1227
CN	901	(A,231,57)	CONNECTOR	VKN1932
CN	902	(A,231,30)	CONNECTOR	VKN1936

RESISTORS

R	901	(B,222,52)	RS1/16S0R0J
R	902	(B,222,55)	RS1/16S0R0J
R	903	(B,222,63)	RS1/16S0R0J
R	904	(B,222,67)	RS1/16S0R0J
R	905	(B,223,40)	RS1/16S330J
R	906	(B,223,38)	RS1/16S330J

Mark	No.	Description	Part No.
R	907	(B,223,19)	RS1/16S330J
R	908	(A,226,57)	RS1/16S0R0J
R	909	(B,223,21)	RS1/16S330J
R	912	(A,227,69)	RS1/16S0R0J

CAPACITORS

C	905	(B,229,35)	CKSRYF105Z10
C	906	(A,228,18)	CKSRYF105Z10
C	907	(B,216,49)	CKSRYF104Z25
C	908	(B,212,67)	CKSRYF104Z25

G SERVICE DTBR ASSY

SEMICONDUCTORS

IC	101	K4H561638H-UCB3
IC	104	KA5SDKAS01TSN
IC	106	UPD61111GM-100UEVA
IC	205	VYW2411
IC	207	AAT4610AIGV-1
⚠ IC	300	S-1170B25UC-OTK
⚠ IC	304,312	MM1685AN
⚠ IC	306	S-1170B50UC-OUJ
⚠ IC	307	MM1689FH
IC	309	FPF2007
IC	313	DRX3975D-QI-B1
IC	318	NJM12904V
IC	3001	TC74LCX245FTS1
IC	3002-3005,3009,3010	TC74LCX541FTS1
IC	3006-3008	TC74LCX257FT
IC	3011	TC74VHC00FTS1
IC	3015	TC74LCX32FTS1
Q	101,102,306	2SA1576A
Q	202	DTA143EUA
Q	203,307,308	2SC4081
Q	204	DTC124EUA
Q	205	HN1C01FU
Q	309,310	DTC143EUA
D	102	RB501V-40
D	302	1.5SMC6.8A
D	303	1SS355

MISCELLANEOUS

L	195	INDUCTOR	LCYA100J2520
L	314	CHIP FERRITE BEADS	XTX1003
L	315,3001	FERRITE CORE	VTF1091
F	101-106,108	FERRITE CORE	VTF1091
F	202,300-302	FERRITE CORE	VTF1091
F	306,309,310	FERRITE CORE	VTF1091
F	313,314,317	FERRITE CORE	VTF1091
F	318,321,397	FERRITE CORE	VTF1091
F	398	FERRITE CORE	VTF1091
KN	301	SCREW PLATE	VNE1948
X	100	CRYSTAL RESONATOR	BSS1123
X	300	CRYSTAL RESONATOR	VSS1221
CN	0	CONNECTOR GUIDE	VEC2559
CN	102	CONNECTOR	VKN2045
CN	103	CONNECTOR	CKS3384
CN	201	CONNECTOR	VKP2396
CN	203	CONNECTOR POST	B2B-PH-K-S
		SCREW	PMZ20P080FTC
U	301	DIGITAL TV TUNER EU	VXF1158

RESISTORS

R	121-128	RS1/16S1000F
R	166,167	RS1/16S9100F
R	168	RS1/16S2200F
R	169	RS1/16S1500F
R	185,186,193,194	RAB4CQ560J
R	187	RAB4CQ151J
R	188-192	RAB4CQ101J
R	239-249,3004,3009	RAB4CQ470J
R	250,251,258,259	RS1/16SS103J
R	253,254,3013,3019	RS1/16SS470J
R	269	RS1/16SS333J
R	270	RS1/16SS473J
R	271	RS1/16SS223J
R	272,273,275,3012	RS1/16SS103J
R	595	RS1/16SS560J
R	650,703	RS1/10S0R0J
R	660,661	RS1/16S1001F
R	678,679,694-696	RAB4CQ330J
R	698-702,704-707	RS1/16SS330J
R	3001-3003	RAB4CQ103J
R	3005-3007	RAB4CQ220J
R	3014,3024,3054,3059	RS1/16SS103J
R	3015,3016	RAB4CQ0R0J
R	3017	RS1/16SS0R0J
R	3023,3025,3026	RAB4CQ470J
R	3034-3037,3040-3043	RAB4CQ470J
R	3046-3053,3125-3127	RS1/16SS330J
R	3060	RS1/16SS103J
R	3061-3067,3070-3077	RS1/16SS470J
R	3078-3081,3090-3093	RS1/16SS101J
R	3082-3089,3094-3099	RS1/16SS470J
R	3100-3102	RS1/16SS101J
R	3106,3107	RS1/16SS470J
Other Resistors		RS1/16S###J

CAPACITORS

C	101,107,111,113	CKSRYF105Z10
C	102,104,106	CKSRYF104Z25
C	103,105	CKSRYB102K50
C	108-110,112,114	CKSRYF104Z25
C	115,144,147,211	CEVW221M4
C	116,118,120,124	CKSRYF104Z25
C	117,119,121,126	CKSRYF105Z10
C	125,127,128,130	CKSRYF104Z25
C	129,136,137,170	CKSRYF105Z10
C	131,134,135,138	CKSRYF104Z25
C	140,142,155,163	CKSRYF104Z25
C	148,149	CCSRCK2R0C50
C	171,191,193,194	CKSRYF105Z10
C	192,209,359,364	CKSRYF104Z25
C	210,221,307,318	CEVW101M16
C	212	VCG1057
C	213,3001-3005	CKSSYF104Z16
C	222,3006,3007,3016	VCG1058
C	301,304,309,338	CKSRYB105K10
C	302,343,385,595	CEVW221M4
C	303,370	CCSRCH101J50

Mark	No.	Description	Part No.
C	312,618,620		DCH1201
C	313-315,320,334		CKSQYB475K6R3
C	319,329,335,339		CEVW101M16
C	324,603		CEVW220M6R3
C	326,401		CCSRCH471J50
C	332,373,392,393		CKSQYB225K10
C	340,341,354,388		CKSRYB105K10
C	342,395		VCH1234
C	353		CEVW100M16
C	356,361		CCSRCH220J50
C	367		CEVW100M50
C	368,381,382,599		CEVW101M16
C	372,380,383,398		CKSRYF104Z25
C	391		CKSRYB103K50
C	396,400,528		CKSRYB223K50
C	397,590-592		CCSRCH100D50
C	399,408,412,415		CKSRYF104Z25
C	402		CCSRCH120J50
C	404,431,616		CKSQYB225K10
C	406,417,418,421		CKSRYF105Z10
C	409,413,3023		CKSRYB104K16
C	416,422,423,522		CKSRYF104Z25
C	433,602		CKSQYB475K6R3
C	524,593,594,596		CKSRYF104Z25
C	597		CEVW221M4
C	598,600,614,615		CKSRYF104Z25
C	601,3017		CEVW101M16
C	3008-3013		CKSSYF104Z16
C	3022		CCG1205

H POWER SUPPLY ASSY

POWER SUPPLY ASSY has no service part.

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Service Manual

ORDER NO.
RRV3789

HDD/DVD RECORDER

DVR-LX61D
DVR-560HX-K

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Region No.	Serial No. Please confirm 3rd & 4th alphabetical letters.
DVR-LX61D	WPWXV	AC 220 V to AC 240 V	4	&&DL######$$
DVR-560HX-K	WPWXV	AC 220 V to AC 240 V	4	&&DL######$$

This service manual should be used together with the following manual(s):

Model	Order No.	Remarks
DVR-LX61D/WVXK5	RRV3761	

For SPECIFICATIONS and PANEL FACILITIES, refer to the operating instructions.

CONTENTS

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

ⓒPIONEER CORPORATION 2008

T-ZZA-001 JUNE 2008 Printed in Japan

1. CONTRAST OF MISCELLANEOUS PARTS

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*
- *Nos. indicate the pages and Nos. in the service manual for the base model.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560Ω	→ 56 x 10^1 →	561	RD1/4PU[5][6][1]J
47kΩ	→ 47 x 10^3 →	473	RD1/4PU[4][7][3]J
0.5Ω	→ R50		RN2H[R][5][0]K
1Ω	→ 1R0		RS1P[1][R][0]K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	→ 562 x 10^1 →	5621	RN1/4PC[5][6][2][1]F

1.1 CONTRAST TABLE

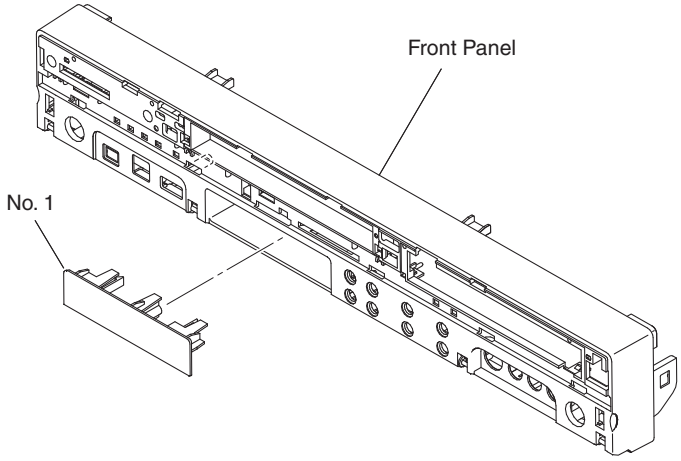
[1] For DVR-LX61D/WPWXV

DVR-LX61D/WVXK5 and DVR-LX61D/WPWXV are constructed the same except for the following:

Mark	No.	Symbol and Description	DVR-LX61D/WVXK5	DVR-LX61D/WPWXV	Remarks
		PCB ASSEMBLIES			
NSP		1.. TUJB ASSY	YWM1001	YWM1011	
	P109-3	2.. SERVICE TUSB ASSY	YXX1002	YXX1014	*1
NSP		1.. DTBR ASSY	VWV2346	VWV2368	
	P109-5	2.. SERVICE DTBR ASSY	VXX3319	VXX3323	
		PACKING SECTION			
⚠	P107-1	Power Cable	ADG7077	ADG7102	
	P107-3	RF Antenna Cable (PAL)	VDE1075	Not used	
	P107-5	G-Link™ Cable (3 m)	VDX1010	Not used	
	P107-6	Remote Control	VXX3284	VXX3290	
	P107-9	Operating Instructions (English)	VRB1487	VRB1489	
	P107-15	HDD Caution 8L	VRR1072	VRR1071	
	P107-16	HDD Caution 8L B	VRR1077	VRR1076	
NSP	P107-17	Warranty Card	ARY7112	Not used	
NSP	P107-18	Caution Card	VRR1095	Not used	
NSP	P107-19	Serial Label S	VRW2017	VRW2188	
	P107-20	WEEE Label	VRW2231	Not used	
	P107-21	Polyethylene Bag B5	VHL1051	VHL1088	
	P107-26	Front Pad	VHA1425	VHA1427	
	P107-27	Rear Pad	VHA1426	VHA1428	
	P107-28	Packing Case	YHG1023	YHG1029	
		EXTERIOR SECTION			
	P109-42	Rear Panel	YNA1038	YNA1039	
NSP	P109-49	Serial Label S	VRW2017	VRW2188	
		FRONT PANEL SECTION			
	P113-25	Front Panel PTD	YXA1044	YXA1076	
		CI Cover	Not used	YNK1026	No. 1

*1: Refer to SERVICE TUSB Assy for DVR-LX61D/WVXK5.

Exploded Views



[2] For DVR-560HX-K/WPWXV

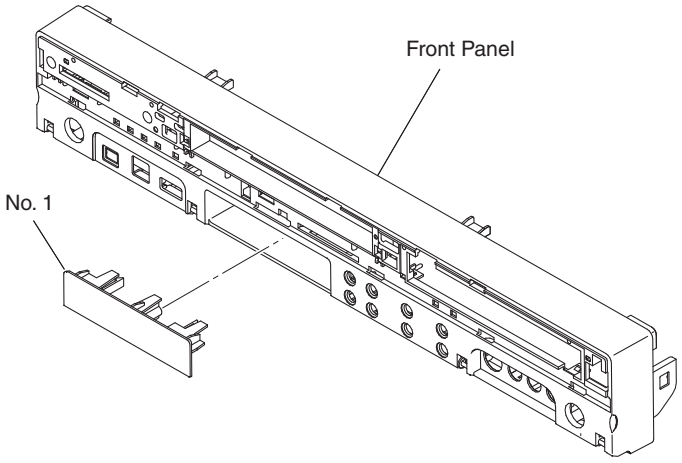
DVR-560HX-S/WVXK5 and DVR-560HX-K/WPWXV are constructed the same except for the following:

Mark	No.	Symbol and Description	DVR-560HX-S/WVXK5	DVR-560HX-K/WPWXV	Remarks
		PCB ASSEMBLIES			
NSP		1.. TUJB ASSY	YWM1001	YWM1011	
	P109-3	2.. SERVICE TUSB ASSY	YXX1002	YXX1014	*1
NSP		1.. DTBR ASSY	VWV2346	VWV2368	
	P109-5	2.. SERVICE DTBR ASSY	VXX3319	VXX3323	
		PACKING SECTION			
⚠	P107-1	Power Cable	ADG7077	ADG7102	
	P107-3	RF Antenna Cable (PAL)	VDE1075	Not used	
	P107-5	G-Link™ Cable (3 m)	VDX1010	Not used	
	P107-6	Remote Control	VXX3285	VXX3331	
	P107-9	Operating Instructions (English)	VRB1486	VRB1488	
	P107-15	HDD Caution 8L	VRR1072	VRR1071	
	P107-16	HDD Caution 8L B	VRR1077	VRR1076	
NSP	P107-17	Warranty Card	ARY7112	Not used	
NSP	P107-18	Caution Card	VRR1095	Not used	
NSP	P107-19	Serial Label S	VRW2017	VRW2188	
	P107-20	WEEE Label	VRW2231	Not used	
	P107-21	Polyethylene Bag B5	VHL1051	VHL1088	
	P107-26	Front Pad	VHA1425	VHA1427	
	P107-27	Rear Pad	VHA1426	VHA1428	
	P107-28	Packing Case	YHG1025	YHG1035	
		EXTERIOR SECTION			
	P109-32	Bonnet S	YXX1010	YXX1009	
	P109-40	DV Angle	VNE2453	VNE2474	
	P109-42	Rear Panel	YNA1040	YNA1047	
	P109-46	Tray Panel PTD	YNK1038	YXA1051	
NSP	P109-49	Serial Label S	VRW2017	VRW2188	
	P109-54	Screw	BSZ30P060FTC	BSZ30P060FBN	
	P109-64	Screw	BSZ30P060FTC	BSZ30P060FBN	
		FRONT PANEL SECTION			
	P115-3	Pioneer Name Plate	VAM1148	VAM1153	
	P115-12	Key Top PW	VNK6359	VNK6239	

Mark	No.	Symbol and Description	DVR-560HX-S/WVXK5	DVR-560HX-K/WPWXV	Remarks
	P115-13	Key Top REC	VNK6361	VNK6240	
	P115-22	Door PTD	YXA1013	YXA1078	
NSP	P115-23	Front Panel PTD	YXA1045	YXA1077	
	P115-25	Function Key PTD	YXA1053	YXA1054	
	P115-27	Front Panel Assy S	YXA1072	YXA1081	
		CI Cover	Not used	VNK6229	No. 1

*1: Refer to SERVICE TUSB Assy for DVR-LX61D/WVXK5.

Exploded Views



1.2 CONTRAST OF PCB ASSEMBLIES

A F SERVICE TUSB ASSY

YXX1002 and YXX1014 are constructed the same except for the following:

Mark	Symbol and Description	YXX1002	YXX1014	Remarks
	Q751	2SA1576A	Not used	
	Q752	2SC4081	Not used	
	L751	CTF1306	Not used	
	JA751 JACK REMOCON	RKN1004	Not used	
	R201	RS1/16S0R0J	Not used	
	R751, R756	RS1/16S102J	Not used	
	R752, R753, R755	RS1/16S472J	Not used	
	R754	RS1/16S151J	Not used	
	C751	CKSRYF104Z25	Not used	
	C752, C753, C754	CCSRCH101J50	Not used	

1.3 PCB PARTS LIST

GF SERVICE DTBR ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC	101	K4H561638H-UCB3
	IC	104	KA5SDKAS01TSN
	IC	106	UPD61111GM-100UEVA
	IC	205	VYW2411
⚠	IC	300	S-1170B25UC-OTK
⚠	IC	304,312	MM1685AN
⚠	IC	307	MM1689FH
	IC	309	FPF2007
	IC	313	DRX3975D-QI-B1
⚠	IC	318	NJM12904V
	Q	101,102,306	2SA1576A
	Q	307,308	2SC4081
	Q	309,310	DTC143EUA
	D	102	RB501V-40
	D	302	1.5SMC6.8A
	D	303	1SS355
MISCELLANEOUS			
	L	195 INDUCTOR	LCYA100J2520
	L	314 CHIP FERRITE BEADS	XTX1003
	L	315 FERRITE CORE	VTF1091
	F	101-106,108 FERRITE CORE	VTF1091
	F	202,300-302 FERRITE CORE	VTF1091
	F	306,309,310 FERRITE CORE	VTF1091
	F	313,314,317 FERRITE CORE	VTF1091
	F	318,321,397 FERRITE CORE	VTF1091
	F	398 FERRITE CORE	VTF1091
	KN	301 SCREW PLATE	VNE1948
	X	100 CRYSTAL RESONATOR (27 MHZ)	BSS1123
	X	300 CRYSTAL RESONATOR (20 MHZ)	VSS1221
	CN	101 CONNECTOR	VKN2030
	CN	102 CONNECTOR	VKN2045
	CN	103 CONNECTOR	CKS3384
	CN	104 6P CONNECTOR	52044-0645
	CN	203 CONNECTOR POST	B2B-PH-K-S
	U	301 DIGITAL TV TUNER EU	VXF1158
RESISTORS			
	R	121-128	RS1/16S1000F
	R	166,167	RS1/16S9100F
	R	168	RS1/16S2200F
	R	169	RS1/16S1500F
	R	185,186,193,194	RAB4CQ560J
	R	187	RAB4CQ151J
	R	188-192	RAB4CQ101J
	R	239-249,3056,3057	RAB4CQ470J
	R	250,251	RS1/16SS103J
	R	253,254,3103-3105	RS1/16SS470J
	R	595	RS1/16SS560J
	R	650,703	RS1/10S0R0J
	R	660,661	RS1/16S1001F
	R	678,679,694-696	RAB4CQ330J
	R	698-702,704-707	RS1/16SS330J
	Other Resistors		RS1/16S###J
CAPACITORS			
	C	101,107,111,113	CKSRYF105Z10
	C	102,104,106	CKSRYF104Z25
	C	103,105	CKSRYB102K50
	C	108-110,112,114	CKSRYF104Z25
	C	115,144,147,211	CEVW221M4
	C	116,118,120,124	CKSRYF104Z25
	C	117,119,121,126	CKSRYF105Z10
	C	125,127,128,130	CKSRYF104Z25
	C	129,136,137,170	CKSRYF105Z10
	C	131,134,135,138	CKSRYF104Z25
	C	140,142,155,163	CKSRYF104Z25
	C	148,149	CCSRCK2R0C50
	C	171,191,193,194	CKSRYF105Z10
	C	192,359,364,372	CKSRYF104Z25
	C	212	VCG1057
	C	213	CKSSYF104Z16
	C	301,304,309,340	CKSRYB105K10
	C	302,343,385,595	CEVW221M4
	C	303,370	CCSRCH101J50
	C	307,318,319,339	CEVW101M16
	C	312,618,620	DCH1201
	C	313,315,320,433	CKSQYB475K6R3
	C	324,603	CEVW220M6R3
	C	326,401	CCSRCH471J50
	C	332,373,392,393	CKSQYB225K10
	C	341,354,388	CKSRYB105K10
	C	342,395	VCH1234
	C	353	CEVW100M16
	C	356,361	CCSRCH220J50
	C	367	CEVW100M50
	C	368,381,382,599	CEVW101M16
	C	380,383,398,399	CKSRYF104Z25
	C	391	CKSRYB103K50
	C	396,400,528	CKSRYB223K50
	C	397,590-592	CCSRCH100D50
	C	402	CCSRCH120J50
	C	404,431,616	CKSQYB225K10
	C	406,417,418,421	CKSRYF105Z10
	C	408,412,415,416	CKSRYF104Z25
	C	409,413	CKSRYB104K16
	C	422,522,524,593	CKSRYF104Z25
	C	594,596,598,600	CKSRYF104Z25
	C	597	CEVW221M4
	C	601	CEVW101M16
	C	602	CKSQYB475K6R3
	C	614,615	CKSRYF104Z25

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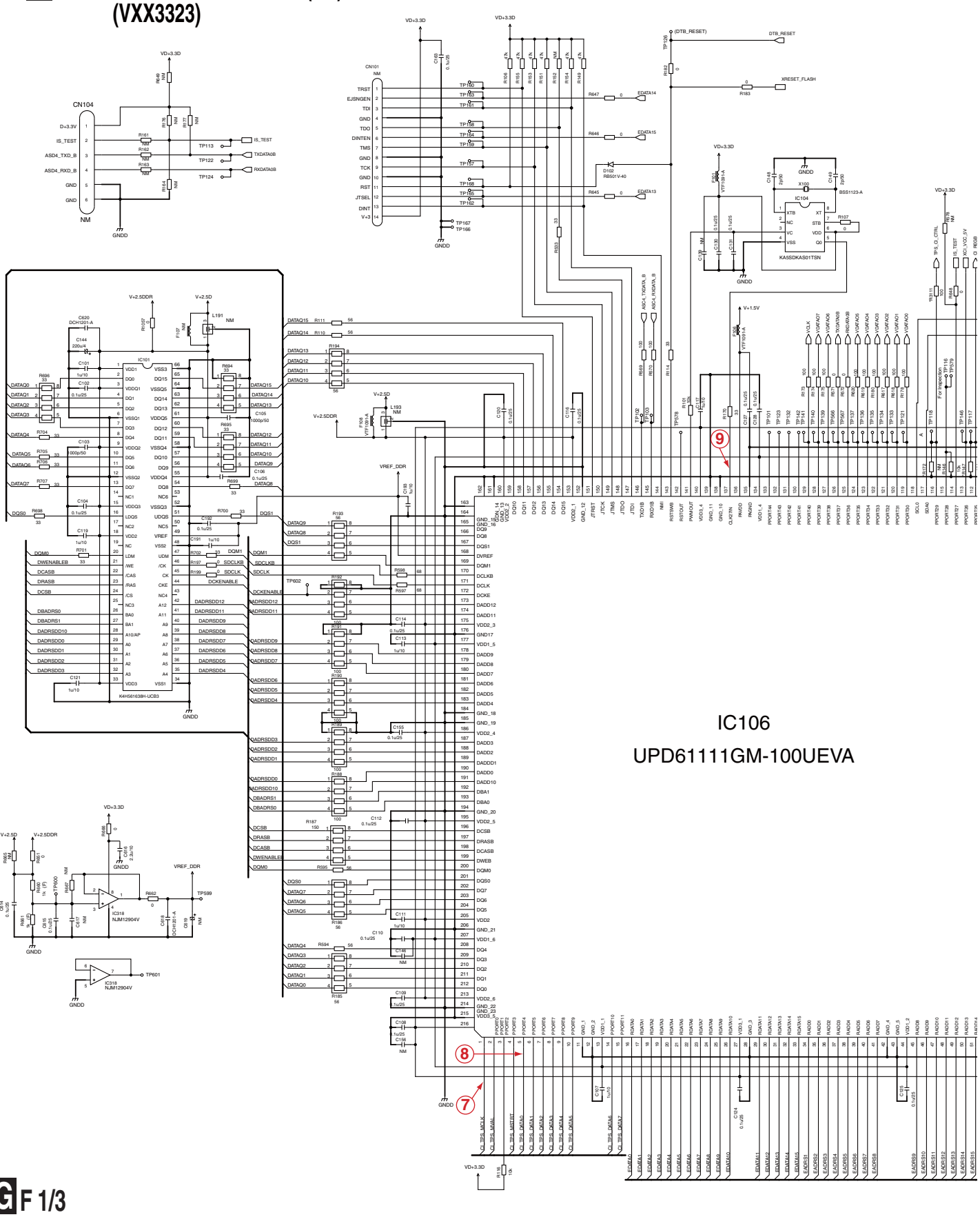
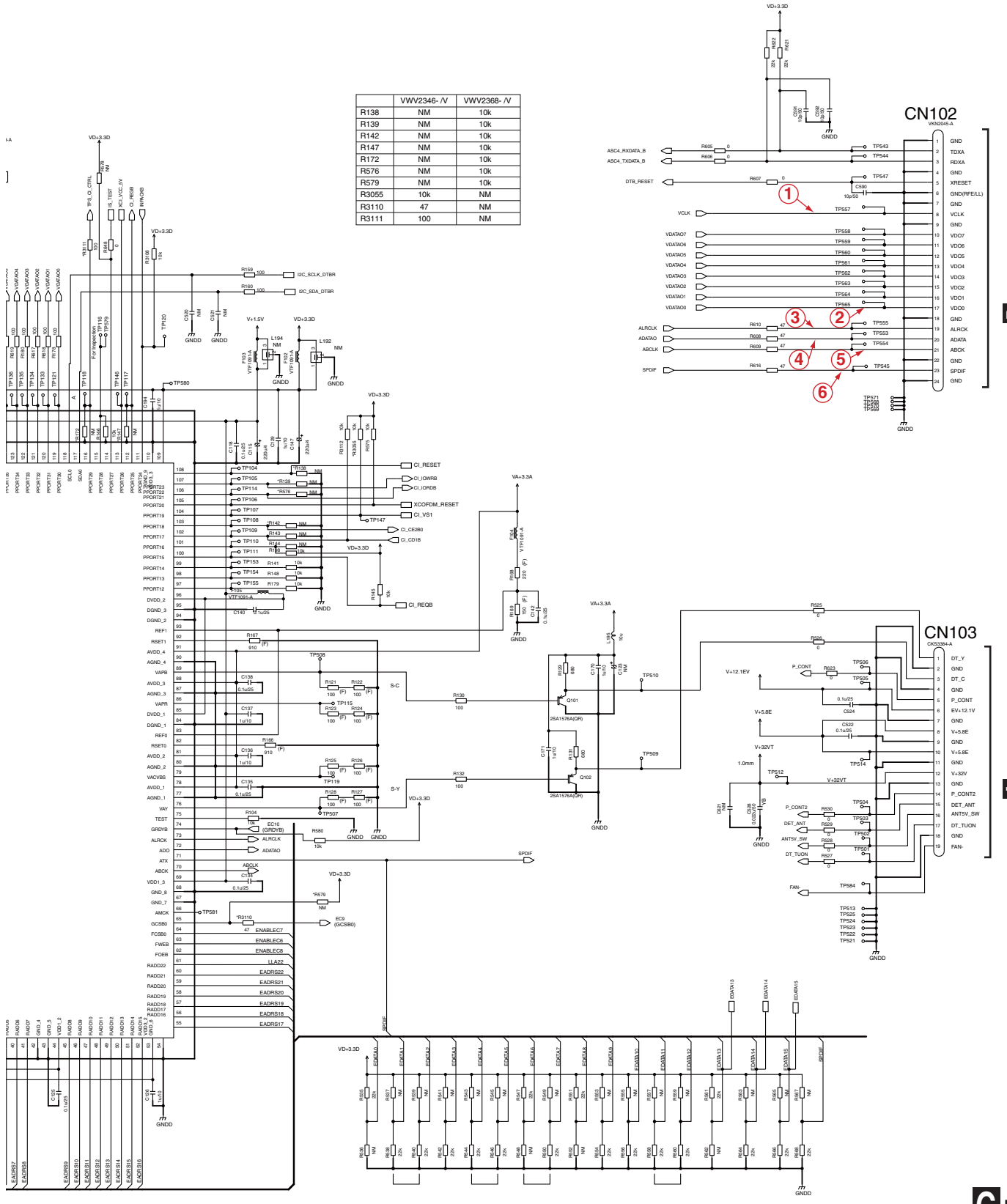
2. SCHEMATIC DIAGRAM
2.1 SERVICE DTBR ASSY (1/3)

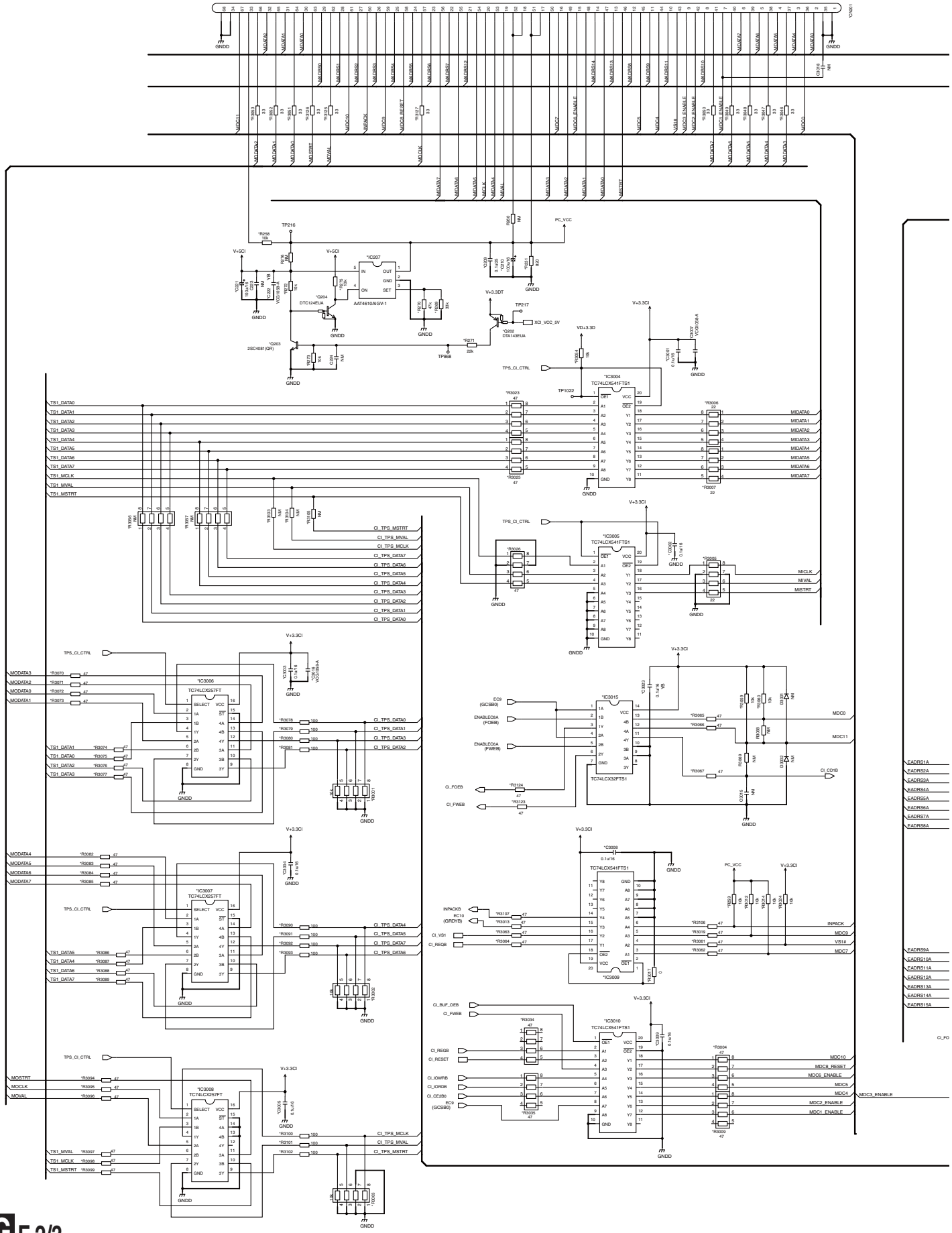
GF 1/3 SERVICE DTBR ASSY (1/3) (VXX3323)



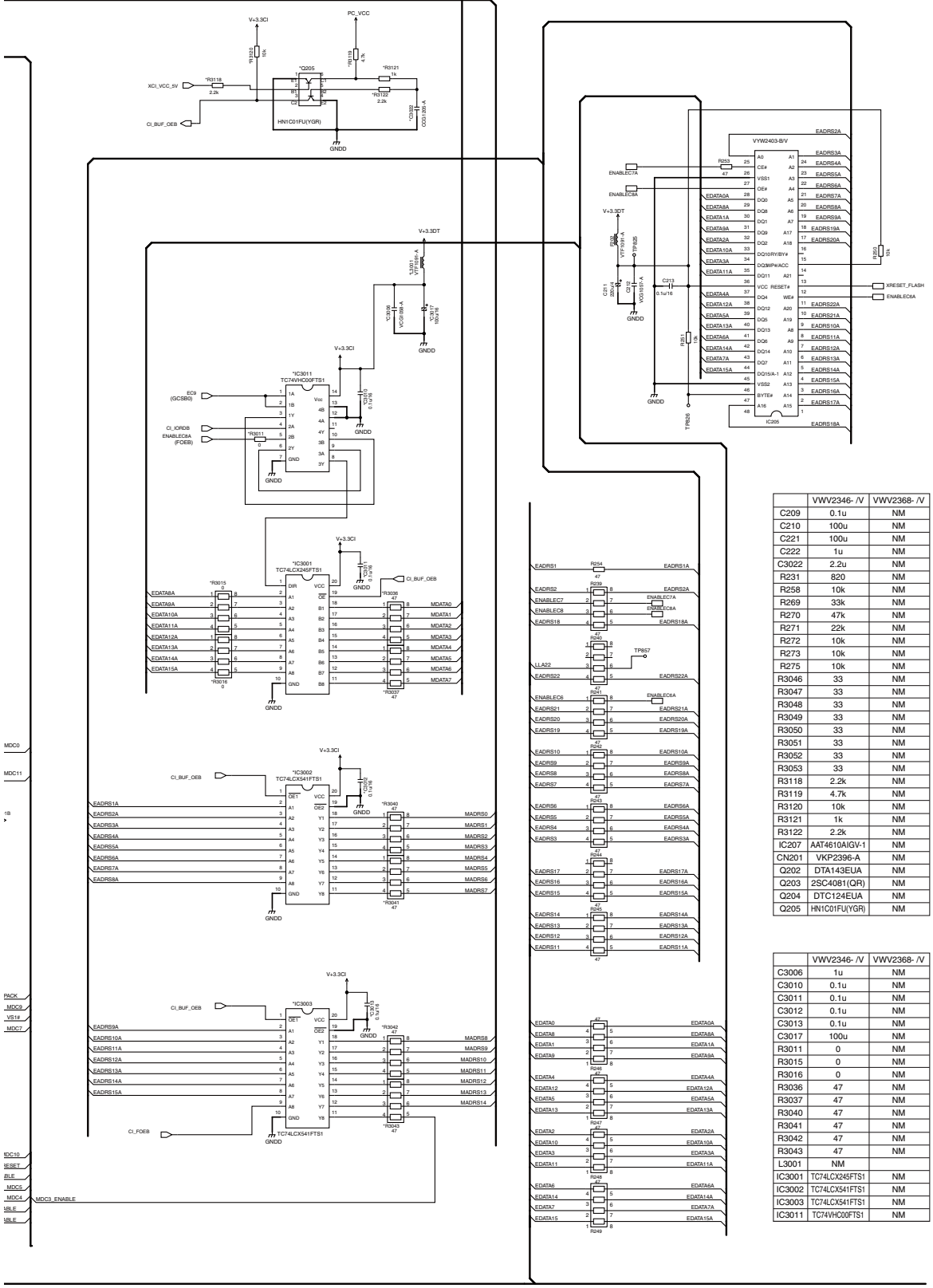
	VWV2346- /V	VWV2368- /V
R138	NM	10k
R139	NM	10k
R142	NM	10k
R147	NM	10k
R172	NM	10k
R576	NM	10k
R579	NM	10k
R3055	10k	NM
R3110	47	NM
R3111	100	NM



2.2 SERVICE DTBR ASSY (2/3)



GF 2/3 SERVICE DTBR ASSY (2/3) (VXX3323)



	VWV2346- /V	VWV2368- /V
C209	0.1u	NM
C210	100u	NM
C221	100u	NM
C222	1u	NM
C3022	2.2u	NM
R231	820	NM
R258	10k	NM
R269	33k	NM
R270	47k	NM
R271	22k	NM
R272	10k	NM
R273	10k	NM
R275	10k	NM
R3046	33	NM
R3047	33	NM
R3048	33	NM
R3049	33	NM
R3050	33	NM
R3051	33	NM
R3052	33	NM
R3053	33	NM
R3118	2.2k	NM
R3119	4.7k	NM
R3120	10k	NM
R3121	1k	NM
R3122	2.2k	NM
IC207	AAT4610AIGV-1	NM
CN201	VKP2396-A	NM
Q202	DTA143EUA	NM
Q203	2SC4081(QR)	NM
Q204	DTC124EUA	NM
Q205	HN1C01FU(YGR)	NM

	VWV2346- /V	VWV2368- /V
C3006	1u	NM
C3010	0.1u	NM
C3011	0.1u	NM
C3012	0.1u	NM
C3013	0.1u	NM
C3017	100u	NM
R3011	0	NM
R3015	0	NM
R3016	0	NM
R3036	47	NM
R3037	47	NM
R3040	47	NM
R3041	47	NM
R3042	47	NM
R3043	47	NM
L3001	NM	
IC3001	TC74LCX245FTS1	NM
IC3002	TC74LCX541FTS1	NM
IC3003	TC74LCX541FTS1	NM
IC3011	TC74VHC00FTS1	NM

	VWV2346- /V	VWV2368- /V
C3001	0.1u	NM
C3002	0.1u	NM
C3003	0.1u	NM
C3004	0.1u	NM
C3005	0.1u	NM
C3007	1u	NM
C3008	0.1u	NM
C3009	0.1u	NM
C3016	1u	NM
C3023	0.1u	NM
R259	10k	NM
R3001	10k	NM
R3002	10k	NM
R3003	10k	NM
R3004	47	NM
R3005	22	NM
R3006	22	NM
R3007	22	NM
R3009	47	NM
R3012	10k	NM
R3013	47	NM
R3014	10k	NM
R3017	0	NM
R3019	47	NM
R3023	47	NM
R3024	10k	NM
R3025	47	NM
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R3057	NM	47
R3059	10k	NM
R3060	10k	NM
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R3062	47	NM
R3063	47	NM
R3064	47	NM
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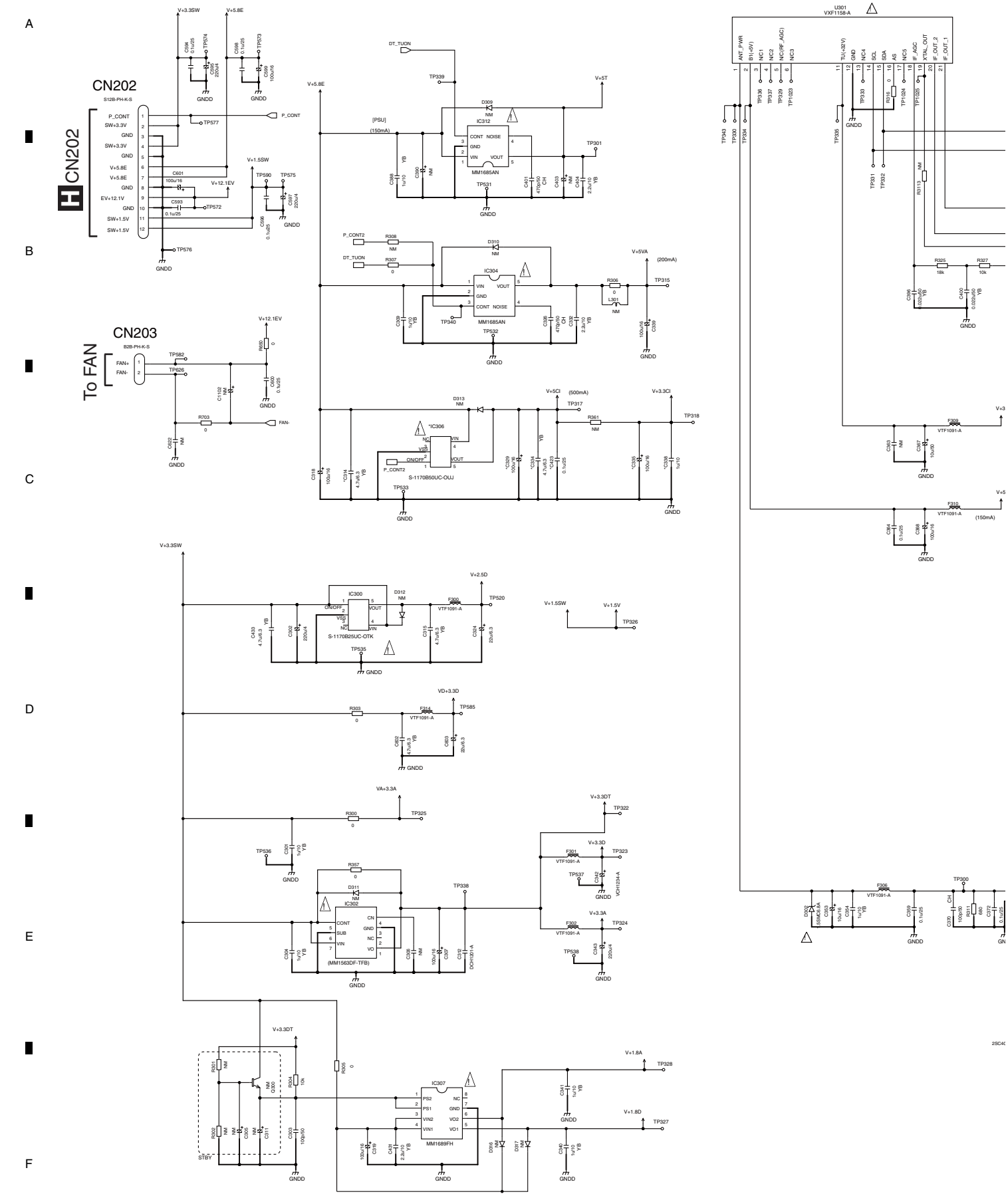
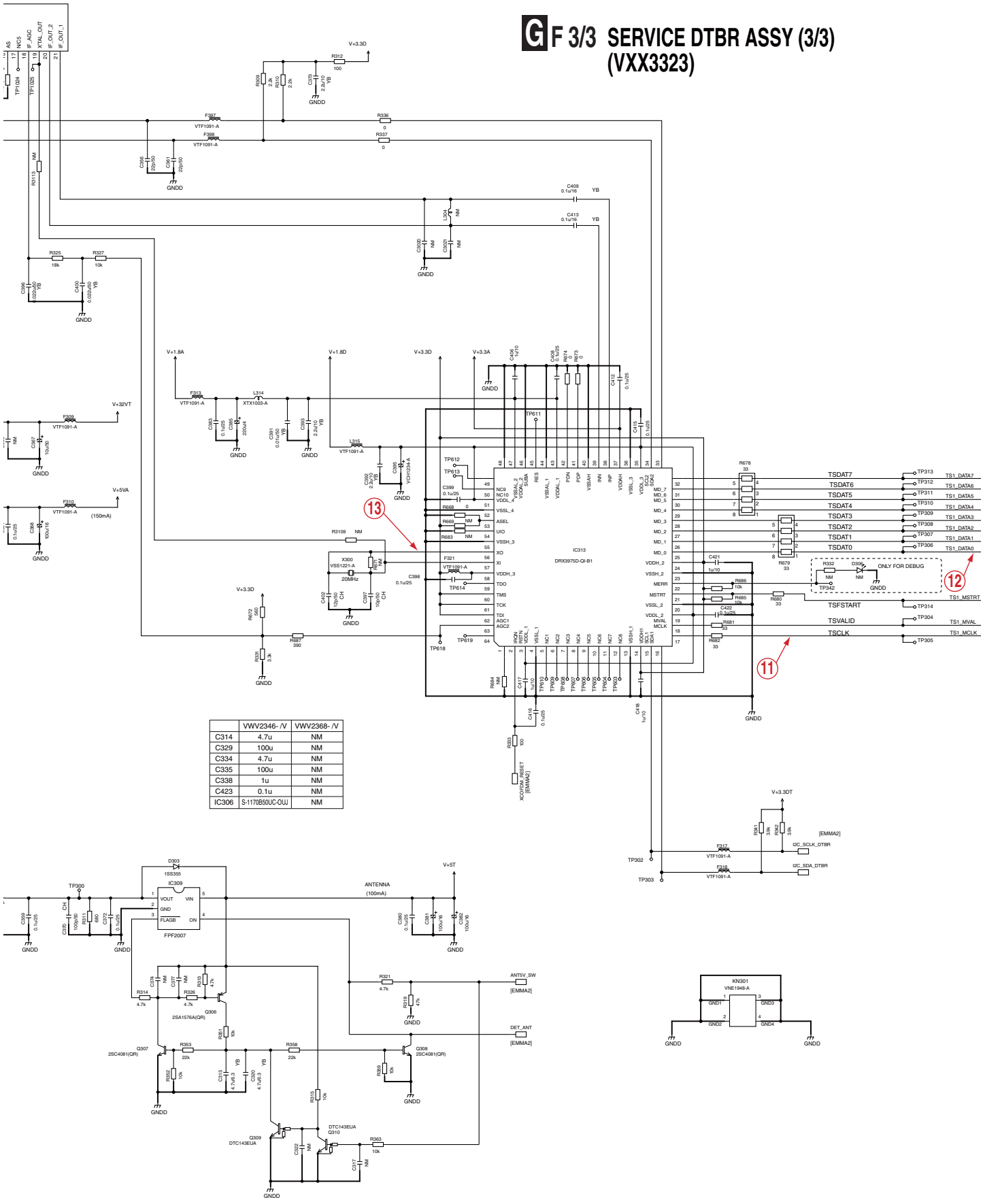
IC3005	TC74LCX541FTS1	NM
IC3006	TC74LCX257FT	NM
IC3007	TC74LCX257FT	NM
IC3008	TC74LCX257FT	NM
IC3009	TC74LCX541FTS1	NM
IC3010	TC74LCX541FTS1	NM
IC3015	TC74LCX32FTS1	NM

2.3 SERVICE DTBR ASSY (3/3)



GF 3/3 SERVICE DTBR ASSY (3/3) (VXX3323)



	VWV2346- /V	VWV2368- /V
C314	4.7u	NM
C329	100u	NM
C334	4.7u	NM
C335	100u	NM
C338	1u	NM
C423	0.1u	NM
IC306	S-1170B50UC-OUJ	NM