DSC-H5

MANUAL DE SERVIÇO

LEVEL 3

Brazilian Model

Instruções de Acrobat Reader

Memória Interna na PLACA

Link

- NOTA DE SERVIÇO
- PLACAS DE CIRCUITO IMPRESSO
- DIAGRAMAS ESQUEMÁTICOS
- LISTA DE PEÇAS PARA REPARO

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

DIGITAL STILL CAMERA

SONY®

DSC-H5_L3
9-852-117-11

Sony EMCS Co.- Sony Brasil Ltda

2006F1600-1

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SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350°C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

CAUTION :
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

ÍNDICE

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1. NOTA DE SERVIÇO

1-1. MÉTODO PARA A COPIAR OU APAGAR O DADO DA MEMÓRIA INTERNA

The data can be copied/erased by the operations on the Setup screen. (When erasing the data, execute formatting the internal memory.)

Note: 1 When replacing the SY-150 board, erase the data in internal memory of the board before replacement.
Note: 2 When replacing the SY-150 board or the IC202 on the SY-150 board, execute formatting and initialize the internal memory after replacement.

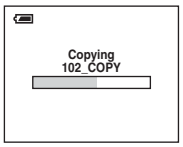
Method for copying the data in internal memory

Copy

Copies all images in the internal memory to a “Memory Stick Duo”.

	OK	See the following procedure.
✓	Cancel	Cancels the copying.

① Insert a “Memory Stick Duo” having 32 MB or larger capacity.
② Select [OK] with ▲ on the control button, then press ●.
The message “All data in internal memory will be copied Ready?” appears.
③ Select [OK] with ▲, then press ●.
Copying starts.



- Use a fully charged Nickel-Metal Hydride battery or the AC Adaptor (not supplied). If you attempt to copy image files using a batteries with little remaining charge, the batteries may run out, causing copying to fail or possibly corrupting the data.
- You cannot copy individual images.
- The original images in the internal memory are retained even after copying. To delete the contents of the internal memory, remove the “Memory Stick Duo” after copying, then execute the [Format] command in (Internal Memory Tool).
- You cannot select a folder copied on a “Memory Stick Duo”.
- Even if you copy data, a (Print order) mark is not copied.

Method for formatting the internal memory

This item does not appear when a “Memory Stick Duo” is inserted in the camera.
The default settings are marked with ✓.

Format

Formats the internal memory.

- Note that formatting irrevocably erases all data in the internal memory, including even protected images.

	OK	See the following procedure.
✓	Cancel	Cancels the formatting.

① Select [OK] with ▲ on the control button, then press ●.
The message “All data in internal memory will be erased Ready?” appears.
② Select [OK] with ▲, then press ●.
The format is complete.

• PROCESS AFTER FIXING FLASH ERROR

When “FLASH error” (Self-diagnosis Code E : 91 : **) occurs, to prevent any abnormal situation caused by high voltage, setting of the flash is changed automatically to disabling charge and flash setting.
After fixing, this setting needs to be deactivated. Flash error code can be initialized by the operations on the Setup screen.

Method for Initializing the Flash Error Code

Initialize

Initializes the setting to the default setting.

	OK	See the following procedure.
✓	Cancel	Cancels the resetting.

① Select [OK] with ▲ on the control button, then press ●.
The message “Initialize all settings Ready?” appears.
② Select [OK] with ▲, then press ●.
The settings are reset to the default setting.
Make sure that the power is not disconnected during resetting.

4-2. DIAGRAMAS ESQUEMÁTICOS

Link

- PLACA SY-150 (1/8) (LENS DRIVE)
- PLACA SY-150 (2/8) (CAMERA A/D CONV., TIMING GENERATOR)
- PLACA SY-150 (3/8) (CAMERA DSP, SYSTEM CONTROL)
- PLACA SY-150 (4/8) (256Mbit SDRAM, BURST FLASH MEMORY, ONE NAND FLASH MEMORY)
- PLACA SY-150 (5/8) (A/V AMP, A/V, USB JACK RELAY)
- PLACA SY-150 (6/8) (STEADY SHOT CONTROL)
- PLACA SY-150 (7/8) (CONNECTOR)
- PLACA SY-150 (8/8) (DC/DC CONVERTER)
- PLACA CH-199 (CCD SIGNAL PROCESS)
- NOTA COMUM PARA DIAGRAMAS ESQUEMÁTICOS

4-2. DIAGRAMAS ESQUEMÁTICOS

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

(For schematic diagrams)

- All capacitors are in μ F unless otherwise noted. pF : μ μ F. 50 V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted. kΩ=1000 Ω, MΩ=1000 kΩ.
- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example C541 L452
22U 10UH
TA A 2520

Kinds of capacitor
Temperature characteristics
External dimensions (mm)

- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used. In such cases, the unused circuits may be indicated.
- Parts with * differ according to the model/destination. Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B– Line
- : IN/OUT direction of (+,–) B LINE.
- : adjustment for repair.

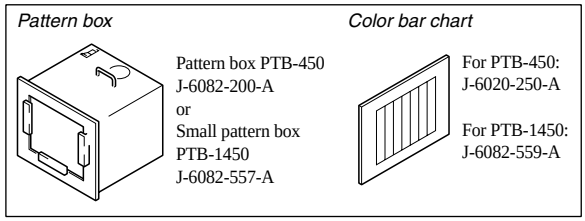
(Measuring conditions voltage)

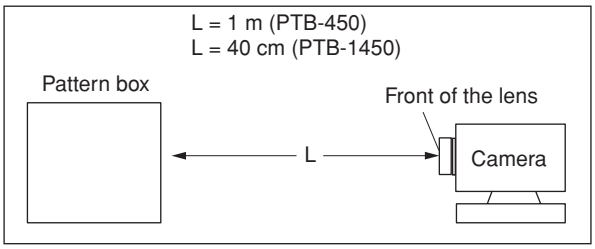
- Voltages are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values. (VOM of DC 10 MΩ input impedance is used)
- Voltage values change depending upon input impedance of VOM used.)

Precautions for Replacement of imager

- If the imager has been replaced, carry out all the adjustments for the camera section.
- As the imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC. In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

1. Connection





2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

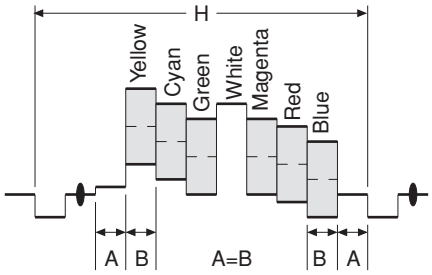


Fig. a (Video output terminal output waveform)

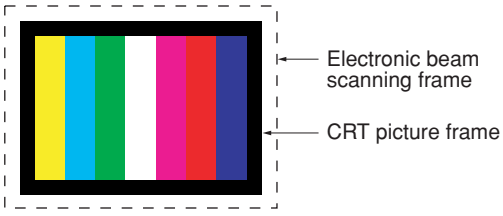
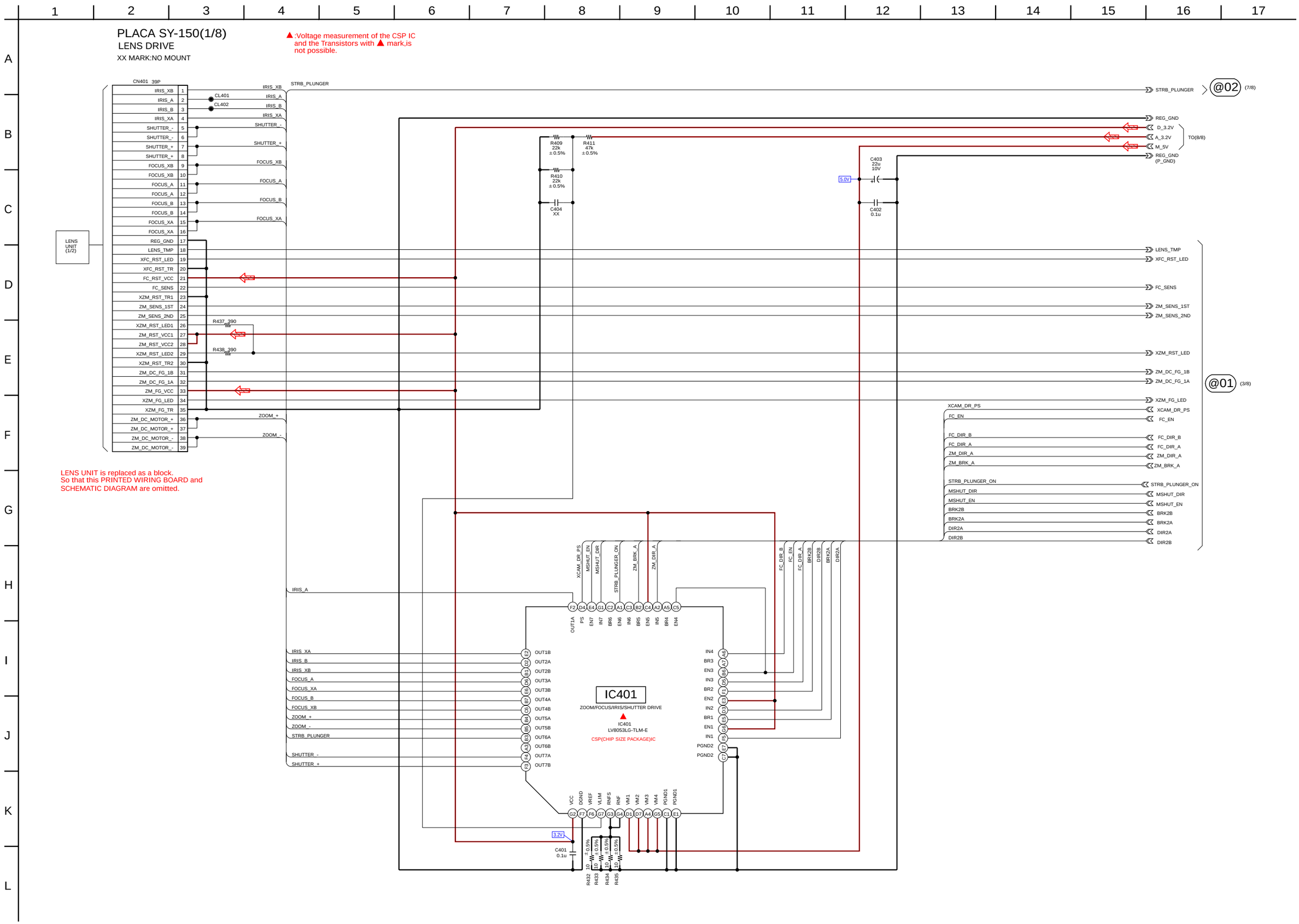


Fig.b (Picture on monitor TV)

When indicating parts by reference number, please include the board name.

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


PLACA SY-150(1/8)
LENS DRIVE
XX MARK:NO MOUNT
▲:Voltage measurement of the CSP IC and the Transistors with ▲ mark,is not possible.
LENS UNIT is replaced as a block.
So that this PRINTED WIRING BOARD and SCHEMATIC DIAGRAM are omitted.
CN401 39P
LENS UNIT (1/2)
CL401
CL402
R437 390
R438 390
R409 22k ±0.5%
R411 47k ±0.5%
R410 22k ±0.5%
C404 XX
C403 22u 10V
C402 0.1u
5.0V
IC401
ZOOM/FOCUS/IRIS/SHUTTER DRIVE
IC401
LV8053LG-TLM-E
CSP(CHIP SIZE PACKAGE)IC
C401 0.1u
3.2V
R432 10 ±0.5%
R433 10 ±0.5%
R434 10 ±0.5%
R435 10 ±0.5%
REG_GND
D_3.2V
A_3.2V
M_5V
REG_GND (P_GND)
TO(8/8)
@02 (7/8)
@01 (3/8)
STRB_PLUNGER
LENS_TMP
XFC_RST_LED
FC_SENS
ZM_SENS_1ST
ZM_SENS_2ND
XZM_RST_LED
ZM_DC_FG_1B
ZM_DC_FG_1A
XZM_FG_LED
XCAM_DR_PS
FC_EN
FC_DIR_B
FC_DIR_A
ZM_DIR_A
ZM_BRK_A
STRB_PLUNGER_ON
MSHUT_DIR
MSHUT_EN
BRK2B
BRK2A
DIR2A
DIR2B

PLACA SY-150(2/8)

CAMERA A/D CONV.TIMING GENERATOR

XX MARK:NO MOUNT

▲ :Voltage measurement of the CSP IC and the Transistors with ▲ mark,is not possible.

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE

CN301 39P

TO CD-621 FLEXIBLE BOARD (PAGE 4-12 of LEVEL 2)

VSUB 1, CSUB 2, REG_GND 3, RAMDOM_TRIGGER 4, REG_GND 5, H2A 6, REG_GND 7, H2B 8, REG_GND 9, H1B 10, REG_GND 11, H1A 12, REG_GND 13, RG 14, REG_GND 15, REG_GND 16, REG_GND 17, CAM_-7.5V_CD 18, REG_GND 19, CCD_OUT 20, REG_GND 21, CAM_15V_CD 22, REG_GND 23, REG_GND 24, REG_GND 25, V5A 26, V9 27, V5B 28, V7 29, VHLD 30, V8 31, V2 32, V6 33, V3A 34, V1 35, V3B 36, VST 37, V10 38, V4 39

R302 3300, R301 1800, R8.7/P0, Q301 RN1904FE(TPLR3) VSUB

VSUB_CONT_POST, VSUB_CONT_PRE

D301 MA2S111-(K8).SO

C301 0.1u 50V, R304 100k, C303 1u 35V BJ, C302 10u 10V TA A

L301 100uH (12.1V), C304 3.3u 35V TA B

C307 0.1u, FB309 0uH, R310 22, R311 0, R312 0, R313 0, R314 0

R309 0, R318 0, R319 0, R320 0, R321 0

V5T 19, V10 18, V3B 17, V2A 16, V2 15, V5B 14, V5A 13, V4 12, V1 11, V6 10, V8 9, V7 8, V9 7, RG 6, CCD_OUT 5, (H2B)H4 4, (H2A)H2 3, (H1B)H3 2, (H1A)H1 1

(V5T)V9, V8/V10, V7B/V3B, V7A/V3A, V6/V2, V5B, V5A, V4, V3B/V1, V3A/V6, V2/V8, V1B/V7, V1A/V7B, CCD_OUT, RG, (H2B)H4, (H2A)H2, (H1B)H3, (H1A)H1

V10(VHLD) 20, SUSCK(SUB) 21, D0 22, D1 23, D2 24, D3 25, D4 26, D5 27, D6 28, D7 29, D8 30, D9 31, D10 32, D11 33, D12 34, D13 35, SYNC 36, MSHUT 37

CA_AD00, CA_AD01, CA_AD02, CA_AD03, CA_AD04, CA_AD05, CA_AD06, CA_AD07, CA_AD08, CA_AD09, CA_AD10, CA_AD11, CA_AD12, CA_AD13

JL303, JL304

V5A, V9, V5B, V7, V8, V2, V6, V3A, V1, V3B, VST, V10, V4

CP301

A/D CONV.S/H,TIMING GENERATOR

▲CP301
1.2mmP-74P
CSP(CHIP SIZE PACKAGE)IC
CP301(CH-199 BOARD) (PAGE 4-22)

Note: The pin numbers of the CP301 on the SY-150 board corresponds to the numbers from CL001 to CL074 on the CH-199 board.

Note: CP301 (CH-199 board) is included in SY-150 complete board.

DRVSS 74, GND 73, GND 72, RGVDD 71, NC 70, GND 69, GND 68, NC 67, GND 66, GND 65, GND 64, GND 63, GND 62, GND 61, GND 60, NC 59, TCVSS 58, TCVDD 57

C313 XX, C314 0.1u, C315 100u 6.3V, C316 47u 6.3V, C317 47u 6.3V

R322 XX

STROB 38, SL 39, SDATA 40, SCK 41, RST 42, VSUB 43, NC 44, CA_HR 45, CA_VR 46, TG_CKI 47, NC 48, CAM_-7.5V 49, VM 50, CAM_15V 51, TG3V 52, FE3V 53, HVDD 54, HVDD 55, DRVDD 56

C305 0.1u, JL305, JL301, JL302, R307 1k, R316 0

C309 XX, C310 XX, C311 XX

L302 10uH, FB308 0uH, L303 100uH, L304 10uH

2.9V, 3.2V

XCS_FE, SAN1_SO, XSAN1_SCK, XSAN_RST_OUT, CA_HD, CA_FD, CLKTGO

C306 22u 16V TA B, R308 100k, FB301 0uH (-7.5V)

C308 3.3u 35V TA B, FB302 0uH (12.2V)

IC301

3.3V REG

IC301 R1114Q331D-TR-FA: CE 1, VSS 2, VIN 4, VOUT 3 (5.1 / 3.3)

C318 1u B 10V, C319 1u B 10V

CAM_2.9V, CAM_3.2V, ST_5V, CAM_15V, CAM_-7.5V, REG_GND

(8/8)

CA_AD00, CA_AD01, CA_AD02, CA_AD03, CA_AD04, CA_AD05, CA_AD06, CA_AD07, CA_AD08, CA_AD09, CA_AD10, CA_AD11, CA_AD12, CA_AD13 → @03 (3/8)

CA_HD → @04 (3/8,5/8,7/8)

XCS_FE, SAN1_SO, XSAN1_SCK → @04

CLKTGO, VSUB_CONT_POST, VSUB_CONT_PRE → @03

XSAN_RST_OUT → @05 (3/8,4/8,6/8,7/8)

CA_FD → @06 (3/8,6/8)

PLACA SY-150(3/8)

CAMERA DSP,SYSTEM CONTROL

XX MARK:NO MOUNT

▲:Voltage measurement of the CSP IC and the Transistors with ▲ mark,is not possible.

IC101

CAMERA DSP,SYSTEM CONTROL

▲ IC101
CXD3199GG-T6
CSP(CHIP SIZE PACKAGE)IC

@01 (1/8)
@03 (2/8)
@04 (2/8,5/8,7/8)
@05 (2/8,4/8, 6/8,7/8)
@06 (2/8,6/8)
@07 (6/8,8/8)
@08 (8/8)
@09 (6/8)
@10 (4/8,6/8)
@11 (4/8)
@12 (7/8)
@13 (5/8)

JTAG

(NOT USE)

PLACA SY-150(4/8)

256Mbit SDRAM, BURST FLASH MEMORY, ONE NAND FLASH MEMORY

XX MARK:NO MOUNT

▲:Voltage measurement of the CSP IC and the Transistors with ▲ mark,is not possible.

IC201

BURST FLASH MEMORY

▲ IC201

PH28F320W30TD70-A02

CSP(CHIP SIZE PACKAGE)IC

Note: A service for IC201 is not available because an adjustment is required before replacement.

IC202

ONE NAND FLASH MEMORY

▲ IC202

KFG5616U1A-DIBST

CSP(CHIP SIZE PACKAGE)IC

IC203

256Mbit SDRAM

▲ IC203

K4M56323PG-HG75T

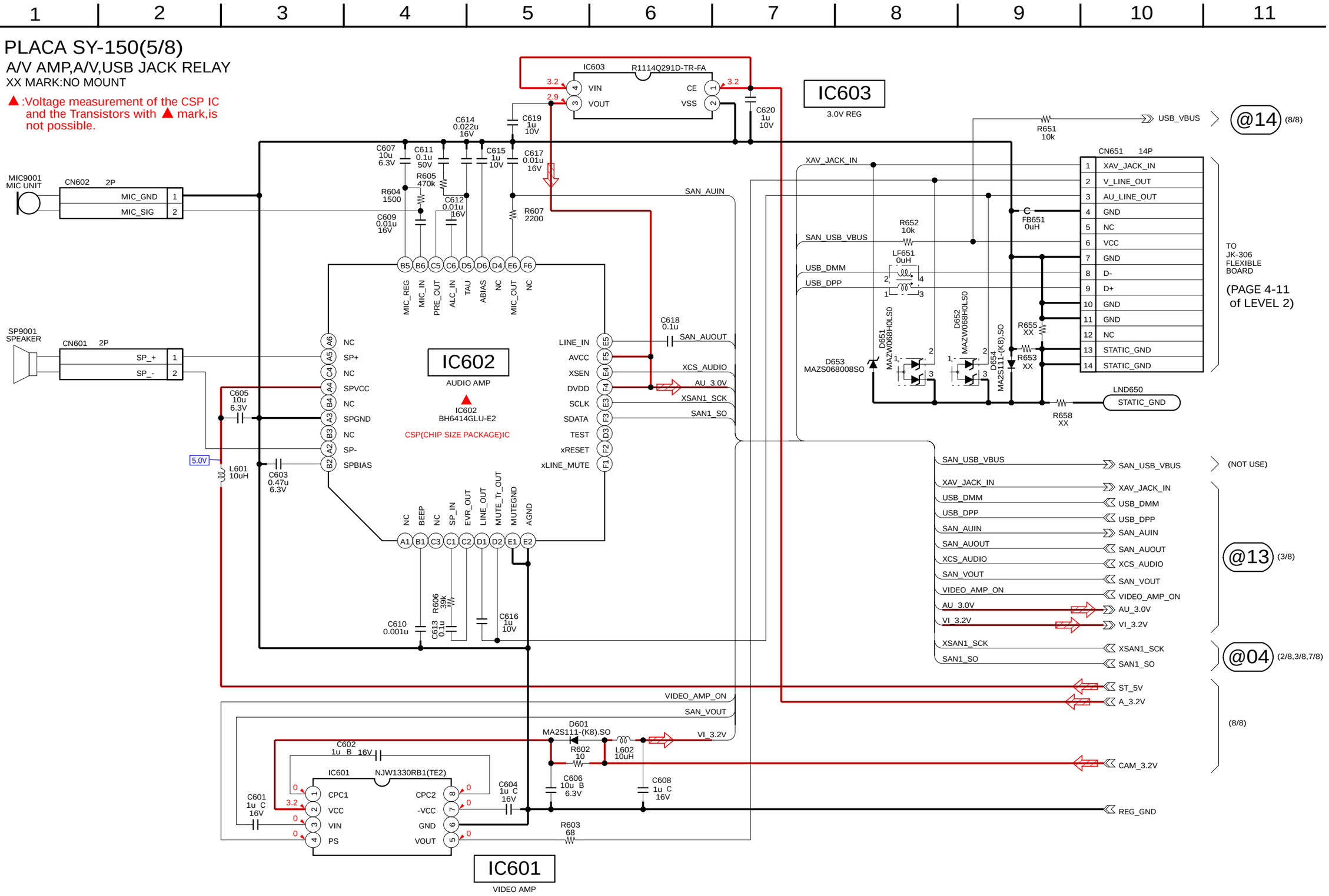
CSP(CHIP SIZE PACKAGE)IC

PLACA SY-150(5/8)

A/V AMP,A/V,USB JACK RELAY

XX MARK:NO MOUNT

▲:Voltage measurement of the CSP IC and the Transistors with ▲ mark,is not possible.



PLACA SY-150(6/8)

STEADY SHOT CONTROL

XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE

▲:Voltage measurement of the CSP IC and the Transistors with ▲ mark,is not possible.

IC507
8.5V REG

IC505
1.5V REG

IC501
DC/DC CONV.

IC504
STEADY SHOT CONTROL
IC504
R2J30500LG
CSP(CHIP SIZE PACKAGE)IC

IC506
PITCH/YAW SENSOR AMP
IC506
UPC6756GR-8JG-E2

IC503
2.9V REG

SE501
(PITCH SENSOR)

SE502
(YAW SENSOR)

Q503
EMH2-T2R
BUFFER

CN501 14P

14	NC
13	YAW-
12	YAW+
11	PITCH+
10	PITCH-
9	REG_GND
8	PITCH_HALLBAIS-
7	PITCH_HALL+
6	PITCH_HALL-
5	PITCH_HALLBAIS+
4	YAW_HALLBAIS-
3	YAW_HALL+
2	YAW_HALL-
1	YAW_HALLBAIS+

LENS UNIT (2/2)

LENS UNIT is replaced as a block.
So that this PRINTED WIRING BOARD and SCHEMATIC DIAGRAM are omitted.

PLACA SY-150(7/8)

CONNECTOR

XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE

EVF UNIT is replaced as a block.
So that this PRINTED WIRING BOARD and SCHEMATIC DIAGRAM are omitted.

CN704 14P
MODE_DIAL0 14
A_3.2V 13
MODE_DIAL1 12
JOG_A 11
JOG_B 10
XAE_LOCK_SW 9
KEY_AD2 8
REG_GND 7
XSHUTTER_SW 6
XPWR_LED 5
D_3.2V 4
XPWR_ON 3
KEY_BONO 2
XPLAY_SW 1

TO CONTROL SWITCH BLOCK (MODE DIAL) (PAGE 4-10 of LEVEL 2)

CN706 12P
REG_GND 12
REG_GND 11
MS_VCC 10
REG_GND 9
MS_SCLK 8
MS_D3 7
XMS_IN 6
MS_D2 5
MS_D0 4
MS_D1 3
MS_BS 2
REG_GND 1

TO MS-030 FLEXIBLE FLAT CABLE (PAGE 4-13 of LEVEL 2)

CN701 12P
REG_GND 12
REG_GND 11
REG_GND 10
REG_GND 9
ST_5V 8
STRB_CHG 7
XSTRB_FULL 6
STRB_CHG_CONT 5
STRB_ON 4
ST_UNREG 3
ST_UNREG 2
ST_UNREG 1

TO ST-003 FLEXIBLE FLAT CABLE (PAGE 4-13 of LEVEL 2)

CN705 10P
REG_GND 10
REG_GND 9
STRB_PLUNGER 8
STRB_PLUNGER 7
REG_GND 6
XSTRB_POPUP 5
XAF_LED 4
D_3.2V 3
REG_GND 2
XLENS_COVER_SENSE 1

TO AF-105 FLEXIBLE BOARD (PAGE 4-11 of LEVEL 2)

C704 0.1u B
Q702 UPC4216008SO STRB CONT
R751 100k
R752 220
C718 XX
C717 XX
R749 0
R750 XX
R748 XX
IC702 XX
IC701 R1114Q251D-TR-FA
C701 22u C
C706 0.1u
C707 10u 6.3V B
L701 0
L702 10uH
C716 22u 10V TA
C702 XX
C705 0.01u
IC701 2.5V REG
FB701 0uH
JL701
C

CN703 22P
2.5V 22
GND 21
NRESET 20
CLOCK 19
HSYNC 18
VSYNC 17
VALID 16
DATA0 15
DATA1 14
DATA2 13
DATA3 12
LED5V 11
DARA4 10
DATA5 9
DATA6 8
DATA7 7
SDAT 6
NC 5
SCLK 4
SEN 3
GND 2
5.0V

LCD9002 EVF UNIT

CN702 33P
BL_L 33
BL_L 32
BL_H 31
BL_H 30
NC 29
NC 28
REG_GND 27
NC 26
REG_GND 25
NC 24
REG_GND 23
NC 22
NC 21
REG_GND 20
REG_GND 19
NC 18
REG_GND 17
REG_GND 16
NC 15
NC 14
NC 13
NC 12
NC 11
NC 10
REG_GND 9
KEY_AD0 8
KEY_AD1 7
D_3.2V 6
REG_GND 5
NC 4
REG_GND 3
REG_GND 2
XACCESS_LED 1

TO SW-478 FLEXIBLE BOARD (PAGE 4-12 of LEVEL 2)

CN707 29P
GND 1
GND 2
VCC1 3
VCC2 4
4.2VADJ 5
VBRT 6
COMAC 7
COMDC(H) 8
COMDC(L) 9
VD 10
HD 11
DCK 12
D7 13
D6 14
D5 15
D4 16
D3 17
D2 18
D1 19
D0 20
XCS 21
SI 22
SCLK 23
RESET 24
POFF 25
VSSG 26
PVDD 27
GND 28
COM 29

TO CK-161 FLEXIBLE BOARD (PAGE 4-7 of LEVEL 2)

L704 10uH
L705 10uH
C714 10u 10V B
C715 4.7u 6.3V B
C709 0.1u
C711 22u 6.3V TA
C712 4.7u 6.3V B
R715 100K
L703 0
C713 1u B 16V
R716 100K
C710 1u 16V C
D701 MAZS056008S0
R714 1M
Q701 2SB1462J-QR(K8).SO DISCHARGE
R713 120K
C708 1u B 10V

@17 (8/8)
@05 (2/8,3/8, 4/8,6/8)
@04 (2/8,3/8, 5/8)
@12 (3/8)
@02 (1/8)
@15 (6/8)

• Refer to page 4-3 for mark ⚠.

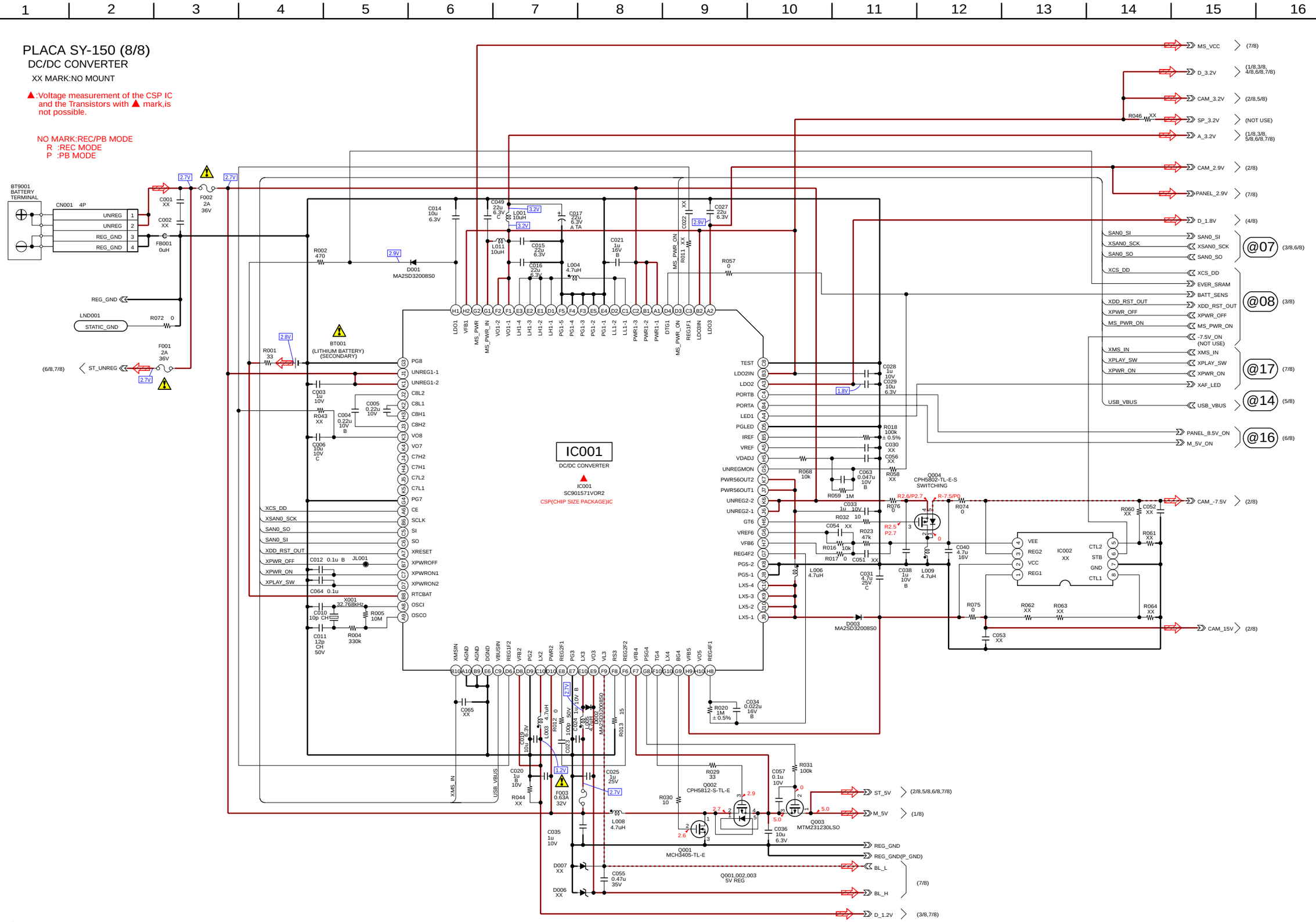
PLACA SY-150 (8/8)

DC/DC CONVERTER

XX MARK:NO MOUNT

▲:Voltage measurement of the CSP IC and the Transistors with ▲ mark,is not possible.

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE



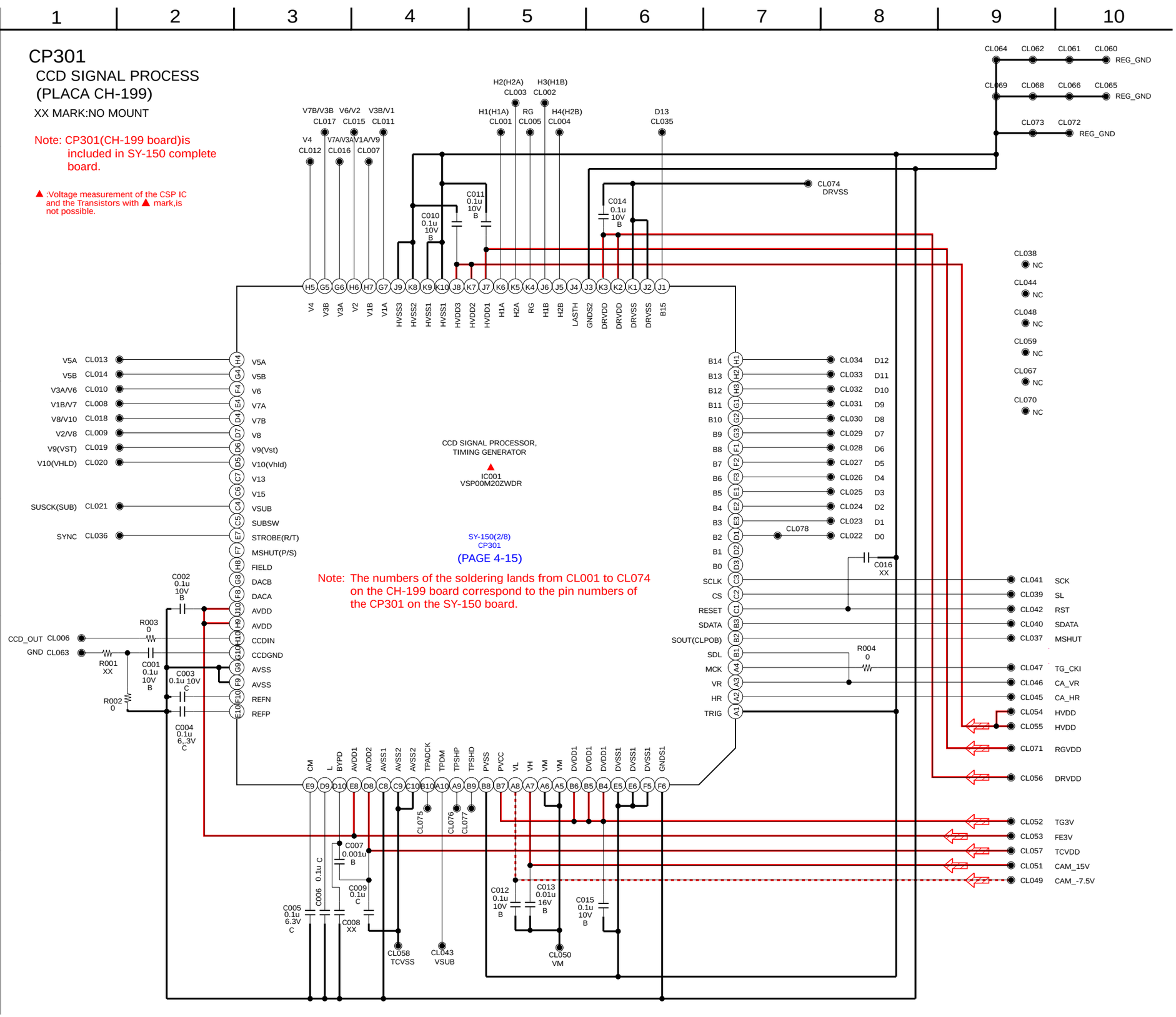
CP301

CCD SIGNAL PROCESS (PLACA CH-199)

XX MARK:NO MOUNT

Note: CP301(CH-199 board)is included in SY-150 complete board.

▲ :Voltage measurement of the CSP IC and the Transistors with ▲ mark,is not possible.



Note: The numbers of the soldering lands from CL001 to CL074 on the CH-199 board correspond to the pin numbers of the CP301 on the SY-150 board.

4-3. PLACAS DE CIRCUITO IMPRESSO

Link

- PLACA SY-150(SIDE A)
- PLACA SY-150 (SIDE B)
- PLACA CH-199
- NOTAS COMUNS PARA PLACAS DE CIRCUITO IMPRESSO
- LOCALIZAÇÃO DAS PECAS MONTADAS

4-3. PLACAS DE CIRCUITO IMPRESSO

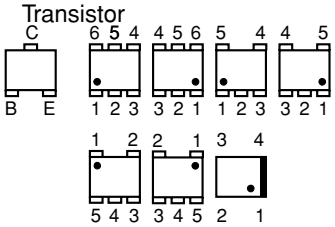
THIS NOTE IS COMMON FOR WIRING BOARDS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)

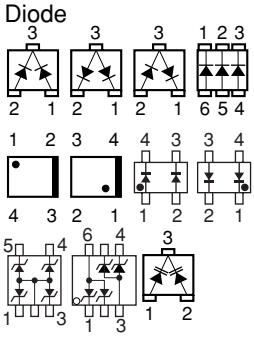
- : Uses unleaded solder.
- : Pattern from the side which enables seeing. (The other layers' patterns are not indicated)
- Through hole is omitted.
- There are a few cases that the part printed on diagram isn't mounted in this model.
- : panel designation

- Chip parts.

Transistor

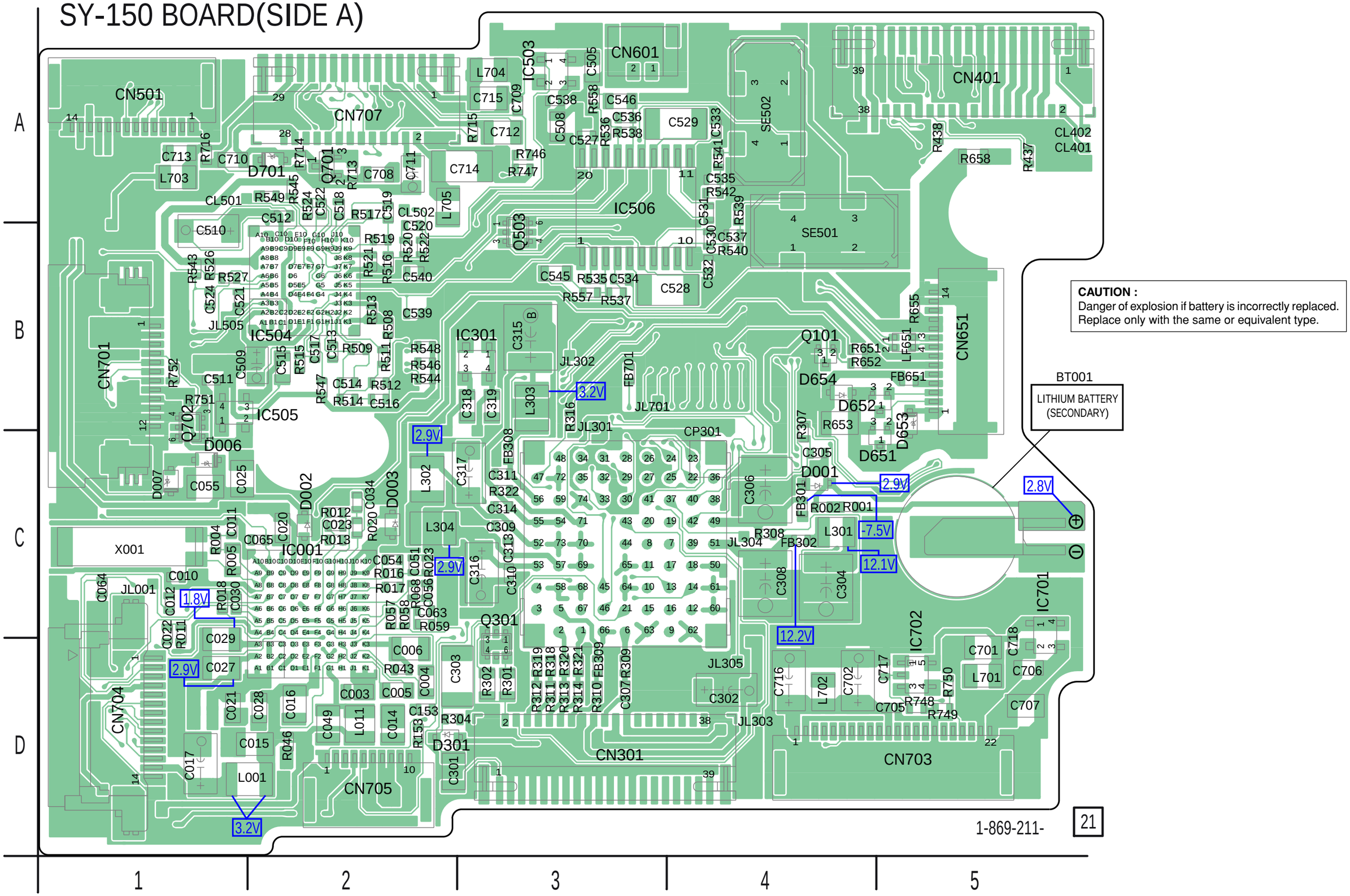


Diode

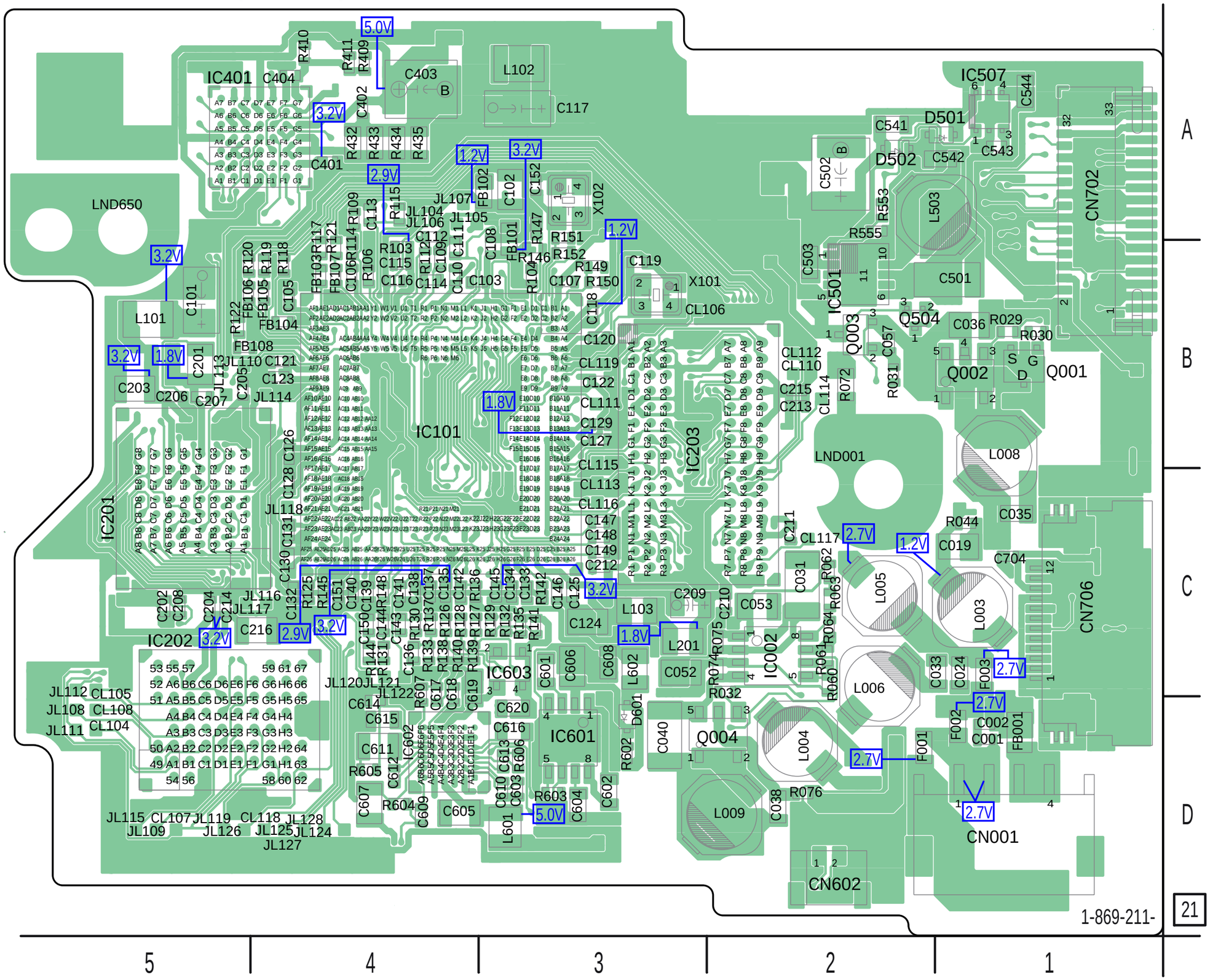


4-3. PLACAS DE CIRCUITO IMPRESSO

SY-150 (8 layers) • : Uses unleaded solder.



SY-150 BOARD(SIDE B)

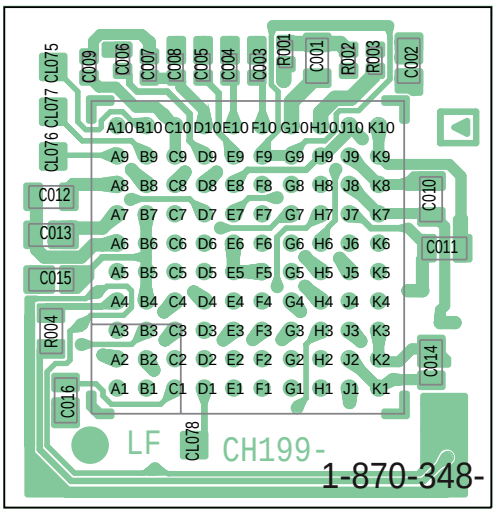


CH-199 (8 layers)

- : Uses unleaded solder.

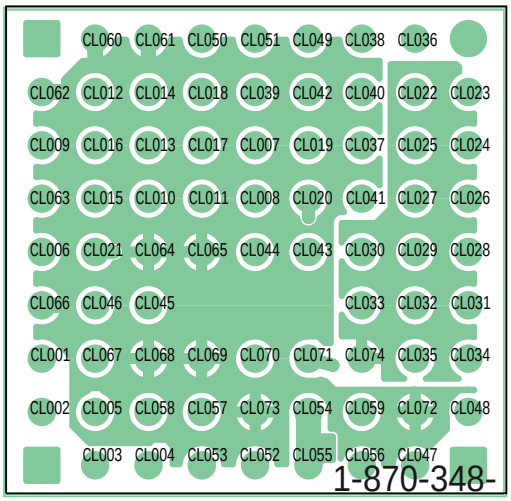
Note: CP301 (CH-199 board) is included in SY-150 complete board.

CP301 (CH-199 board) (SIDE A)



11

(SIDE B)



11

4-4. LOCALIZAÇÃO DAS PEÇAS MONTADAS

no mark : side A
* mark : side B

SY-150 BOARD

* C001	D-1	* C144	C-4	* C543	A-1	D301	D-2	* L003	C-1	* R122	B-5	R549	A-2		
* C002	D-1	* C145	C-3	* C544	A-1	* D501	A-1	* L004	D-2	* R125	C-4	* R553	A-2		
C003	D-2	* C146	C-3	C545	B-3	* D502	A-2	* L005	C-2	* R126	C-4	* R555	A-2		
C004	D-2	* C147	C-3	C546	A-3	* D601	D-3	* L006	C-2	* R127	C-4	R557	B-3		
C005	D-2	* C148	C-3	* C601	C-3	D651	C-4	* L008	B-1	* R128	C-4	R558	A-3		
C006	D-2	* C149	C-3	* C602	D-3	D652	B-4	* L009	D-2	* R129	C-3	* R602	D-3		
C010	C-1	* C150	C-4	* C603	D-3	D653	B-5	L011	D-2	* R130	C-4	* R603	D-3		
C011	C-1	* C151	C-4	* C604	D-3	D654	B-4	* L101	B-5	* R131	C-4	* R604	D-4		
C012	C-1	* C152	A-3	* C605	D-4	D701	A-2	* L102	A-3	* R132	C-3	* R605	D-4		
C014	D-2	C153	D-2	* C606	C-3			* L103	C-3	* R133	C-4	* R606	D-3		
C015	D-2	* C201	B-5	* C607	D-4	* F001	D-2	* L201	C-3	* R135	C-3	* R607	C-4		
C016	D-2	* C202	C-5	* C608	C-3	* F002	D-1	L301	C-4	* R136	C-4	R651	B-4		
C017	D-1	* C203	B-5	* C609	D-4	* F003	C-1	L302	C-2	* R137	C-4	R652	B-4		
* C019	C-1	* C204	C-5	* C610	D-3			L303	B-3	* R138	C-4	R653	B-4		
C020	C-2	* C205	B-5	* C611	D-4	* FB001	D-1	L304	C-2	* R139	C-4	R655	B-5		
C021	D-1	* C206	B-5	* C612	D-4	* FB101	A-3	* L503	A-2	* R140	C-4	R658	A-5		
C022	C-1	* C207	B-5	* C613	D-3	* FB102	A-3	* L601	D-3	* R141	C-3	R713	A-2		
C023	C-2	* C208	C-5	* C614	D-4	* FB103	B-4	* L602	C-3	* R142	C-3	R714	A-2		
* C024	C-1	* C209	C-3	* C615	D-4	* FB104	B-4	L701	D-5	* R144	C-4	R715	A-3		
C025	C-1	* C210	C-2	* C616	D-3	* FB105	B-4	L702	D-4	* R145	C-4	R716	A-1		
C027	D-1	* C211	C-2	* C617	C-4	* FB106	B-4	L703	A-1	* R146	B-3	R746	A-3		
C028	D-2	* C212	C-3	* C618	C-4	* FB107	B-4	L704	A-3	* R147	A-3	R747	A-3		
C029	C-1	* C213	B-2	* C619	C-4	* FB108	B-4	L705	A-2	* R148	C-4	R748	D-5		
C030	C-1	* C214	C-5	* C620	D-3	FB301	C-4			* R149	B-3	R749	D-5		
* C031	C-2	* C215	B-2	C701	D-5	FB302	C-4	LF651	B-5	* R150	B-3	R750	D-5		
* C033	C-2	* C216	C-4	C702	D-4	FB308	C-3			* R151	A-3	R751	B-1		
C034	C-2	C301	D-2	* C704	C-1	FB309	D-3	* LND001	B-2	* R152	B-3	R752	B-1		
* C035	C-1	C302	D-4	C705	D-5	FB651	B-5	* LND650	A-5	R153	D-2				
* C036	B-1	C303	D-2	C706	D-5	FB701	B-3			R301	D-3	SE501	B-4		
* C038	D-2	C304	C-4	C707	D-5			* Q001	B-1	R302	D-3	SE502	A-4		
* C040	D-3	C305	C-4	C708	A-2	IC001	C-2	* Q002	B-1	R304	D-2				
C049	D-2	C306	C-4	C709	A-3	* IC002	C-2	* Q003	B-2	R307	C-4	X001	C-1		
C051	C-2	C307	D-3	C710	A-1	* IC101	B-4	* Q004	D-2	R308	C-4	* X101	B-3		
* C052	C-3	C308	C-4	C711	A-2	* IC201	C-5	Q101	B-4	R309	D-3	* X102	A-3		
* C053	C-2	C309	C-3	C712	A-3	* IC202	C-5	Q301	C-3	R310	D-3				
C054	C-2	C310	C-3	C713	A-1	* IC203	B-3	Q503	B-3	R311	D-3				
C055	C-1	C311	C-3	C714	A-3	IC301	B-3	* Q504	B-2	R312	D-3				
C056	C-2	C313	C-3	C715	A-3	* IC401	A-5	Q701	A-2	R313	D-3				
* C057	B-2	C314	C-3	C716	D-4	* IC501	B-2	Q702	B-1	R314	D-3				
C063	C-2	C315	B-3	C717	D-5	IC503	A-3			R316	B-3				
C064	C-1	C316	C-3	C718	D-5	IC504	B-2	R001	C-4	R318	D-3				
C065	C-2	C317	C-3			IC505	B-2	R002	C-4	R319	D-3				
* C101	B-5	C318	B-3	* CL104	D-5	IC506	A-3	R004	C-1	R320	D-3				
* C102	A-3	C319	B-3	* CL105	C-5	* IC507	A-1	R005	C-1	R321	D-3				
* C103	B-3	* C401	A-4	* CL106	B-3	* IC601	D-3	R011	C-1	R322	C-3				
* C105	B-4	* C402	A-4	* CL107	D-5	* IC602	D-4	R012	C-2	* R409	A-4				
* C106	B-4	* C403	A-4	* CL108	D-5	* IC603	C-3	R013	C-2	* R410	A-4				
* C107	B-3	* C404	A-4	* CL110	B-2	IC701	C-5	R016	C-2	* R411	A-4				
* C108	A-3	* C501	B-1	* CL111	B-3	IC702	C-5	R017	C-2	* R432	A-4				
* C109	B-4	* C502	A-2	* CL112	B-2			R018	C-1	* R433	A-4				
* C110	B-4	* C503	B-2	* CL113	C-3	JL001	C-1	R020	C-2	* R434	A-4				
* C111	A-4	C505	A-3	* CL114	B-2	* JL104	A-4	R023	C-2	* R435	A-4				
* C112	A-4	C508	A-3	* CL115	B-3	* JL105	A-4	* R029	B-1	R437	A-5				
* C113	A-4	C509	B-1	* CL116	C-3	* JL106	A-4	* R030	B-1	R438	A-5				
* C114	B-4	C510	B-1	* CL117	C-2	* JL107	A-4	* R031	B-2	R508	B-2				
* C115	B-4	C511	B-1	* CL118	D-4	* JL108	D-5	* R032	C-2	R509	B-2				
* C116	B-4	C512	A-2	* CL119	B-3	* JL109	D-5	R043	D-2	R511	B-2				
* C117	A-3	C513	B-2	CL401	A-5	* JL110	B-4	* R044	C-1	R512	B-2				
* C118	B-3	C514	B-2	CL402	A-5	* JL111	D-5	R046	D-2	R513	B-2				
* C119	B-3	C515	B-2	CL501	A-1	* JL112	C-5	R057	C-2	R514	B-2				
* C120	B-3	C516	B-2	CL502	A-2	* JL113	B-5	R058	C-2	R515	B-2				
* C121	B-4	C517	B-2			* JL114	B-4	R059	C-2	R516	B-2				
* C122	B-3	C518	A-2	* CN001	D-1	* JL115	D-5	* R060	C-2	R517	A-2				
* C123	B-4	C519	A-2	CN301	D-3	* JL116	C-4	* R061	C-2	R519	B-2				
* C124	C-3	C520	B-2	CN401	A-5	* JL117	C-4	* R062	C-2	R520	B-2				
* C125	C-3	C521	B-1	CN501	A-1	* JL118	C-4	* R063	C-2	R521	B-2				
* C126	B-4	C522	A-2	CN601	A-3	* JL119	D-5	* R064	C-2	R522	B-2				
* C127	B-3	C524	B-1	* CN602	D-2	* JL120	C-4	R068	C-2	R524	A-2				
* C128	C-4	C527	A-3	CN651	B-5	* JL121	C-4	* R072	B-2	R526	B-1				
* C129	B-3	C528	B-4	CN701	B-1	* JL122	C-4	* R074	C-2	R527	B-1				
* C130	C-4	C529	A-4	* CN702	A-1	* JL124	D-4	* R075	C-2	R535	B-3				
* C131	C-4	C530	B-4	CN703	D-5	* JL125	D-4	* R076	D-2	R536	A-3				
* C132	C-4	C531	A-4	CN704	D-1	* JL126	D-5	* R103	B-4	R537	B-3				
* C133	C-3	C532	B-4	CN705	D-2	* JL127	D-4	* R104	B-3	R538	A-3				
* C134	C-3	C533	A-4	* CN706	C-1	* JL128	D-4	* R106	B-4	R539	A-4				
* C135	C-4	C534	B-3	CN707	A-2	JL301	B-3	* R109	A-4	R540	B-4				
* C136	C-4	C535	A-4			JL302	B-3	* R112	B-4	R541	A-4				
* C137	C-4	C536	A-3	CP301	B-4	JL303	D-4	* R114	A-4	R542	A-4				
* C138	C-4	C537	B-4			JL304	C-4	* R115	A-4	R543	B-1				
* C139	C-4	C538	A-3	D001	C-4	JL305	D-4	* R117	A-4	R544	B-2				
* C140	C-4	C539	B-2	D002	C-2	JL505	B-1	* R118	B-4	R545	A-2				
* C141	C-4	C540	B-2	D003	C-2	JL701	B-3	* R119	B-4	R546	B-2				
* C142	C-4	* C541	A-2	D006	C-1			* R120	B-4	R547	B-2				
* C143	C-4	* C542	A-1	D007	C-1	L001	D-2	* R121	A-4	R548	B-2				

5. LISTA DE PEÇAS PARA REPARO

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- CAPACITORS:
  uF: µF
- COILS
  uH: µH
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Language that can be selected about SY-150 board

	Area	Japanese	English	French	German	Spanish	Italian	Portugal	Simplified Chinese	Traditional Chinese	Arabic	Dutch	Russian	Swedish	Korean	Norwegian	Danish	Finnish	Polish	Hungarian	Czech	Persian	Thai
GP1	J	●																					
GP2	US CND AUS Vietnam		●	●		●	●		●	●													
GP3	AEP UK		●	●	●	●	●	●				●	●	●		●	●	●	●	●	●		
GP4	E JE HK CH KR BR		●			●		●	●	●	●				●							●	●

- Abbreviation
  J : Japanese model
  CND : Canadian model
  AUS : Australian model
  JE : Tourist model
  HK : Hong Kong model
  CH : Chinese model
  KR : Korea model
  BR : Brazilian model

5-2. LISTA DE PEÇAS ELÉTRICAS

Ref. No.	Part No.	Description
	A-1176-928-A	SY-150 BOARD, COMPLETE (SERVICE)(GP4)
		**********
		(Refer to the table of page 5-1 about language of SY-150 board.)
		(This complete board is including CP301 (CH-199 board))
		< COMPOSITION CIRCUIT BLOCK >
CP301	A-1186-771-A	CH-199 BOARD, COMPLETE
		< BATTERY >
⚠BT001	1-756-539-21	BATTERY, LITHIUM SECONDARY
		< CAPACITOR >
C003	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C004	1-115-467-11	CERAMIC CHIP 0.22uF 10% 10V
C005	1-115-467-11	CERAMIC CHIP 0.22uF 10% 10V
C006	1-100-966-91	CERAMIC CHIP 10uF 20% 10V
C010	1-164-850-11	CERAMIC CHIP 10PF 0.5PF 50V
C011	1-164-852-11	CERAMIC CHIP 12PF 5% 50V
C012	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C014	1-137-710-11	CERAMIC CHIP 10uF 20% 6.3V
C015	1-100-611-91	CERAMIC CHIP 22uF 20% 6.3V
C016	1-100-611-91	CERAMIC CHIP 22uF 20% 6.3V
C017	1-119-750-11	TANTAL. CHIP 22uF 20% 6.3V
C019	1-137-710-11	CERAMIC CHIP 10uF 20% 6.3V
C020	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
* C021	1-112-298-91	CERAMIC CHIP 1uF 10% 16V
C023	1-164-874-11	CERAMIC CHIP 100PF 5% 50V
C024	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C025	1-100-591-91	CERAMIC CHIP 1uF 10% 25V
C027	1-100-611-91	CERAMIC CHIP 22uF 20% 6.3V
C028	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C029	1-137-710-11	CERAMIC CHIP 10uF 20% 6.3V
C031	1-100-671-11	CERAMIC CHIP 4.7uF 20% 25V
C033	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C034	1-107-819-11	CERAMIC CHIP 0.022uF 10% 16V
C035	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C036	1-137-710-11	CERAMIC CHIP 10uF 20% 6.3V
C038	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C040	1-127-820-11	CERAMIC CHIP 4.7uF 10% 16V
C049	1-100-611-91	CERAMIC CHIP 22uF 20% 6.3V
C055	1-100-565-91	CERAMIC CHIP 0.47uF 10% 35V
C057	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C063	1-119-923-11	CERAMIC CHIP 0.047uF 10% 10V
C064	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C101	1-119-750-11	TANTAL. CHIP 22uF 20% 6.3V
C102	1-137-710-11	CERAMIC CHIP 10uF 20% 6.3V
C103	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C105	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C106	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C107	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C108	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C109	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C110	1-164-939-11	CERAMIC CHIP 0.0022uF 10% 50V
C111	1-164-939-11	CERAMIC CHIP 0.0022uF 10% 50V
C114	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C115	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C116	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C117	1-119-750-11	TANTAL. CHIP 22uF 20% 6.3V
C118	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C119	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C120	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C121	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C122	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C123	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C125	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C126	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C127	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C128	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C129	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C130	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C131	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C132	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C133	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C134	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C135	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C136	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C137	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C138	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C139	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C140	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C142	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C145	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C149	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C150	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C151	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C153	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C203	1-137-710-11	CERAMIC CHIP 10uF 20% 6.3V
C204	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C205	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C206	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C207	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C208	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C209	1-100-786-91	TANTAL. CHIP 22uF 20% 6.3V
C210	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C211	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C212	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C213	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C214	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C301	1-115-339-11	CERAMIC CHIP 0.1uF 10% 50V
C302	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
C303	1-137-988-91	CERAMIC CHIP 1uF 10% 35V
C304	1-113-992-11	TANTAL. CHIP 3.3uF 20% 35V
C305	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C306	1-119-751-11	TANTAL. CHIP 22uF 20% 16V
C307	1-100-505-91	CERAMIC CHIP 0.1uF 20% 16V
C308	1-113-992-11	TANTAL. CHIP 3.3uF 20% 35V
C314	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V

Ref. No.	Part No.	Description			
C315	1-128-964-91	TANTAL. CHIP	100uF	20%	6.3V
C316	1-100-539-91	TANTAL. CHIP	47uF	20%	6.3V
C317	1-100-539-91	TANTAL. CHIP	47uF	20%	6.3V
C318	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C319	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C401	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C402	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C403	1-100-663-11	TANTAL. CHIP	22uF	20%	10V
C501	1-165-875-11	CERAMIC CHIP	10uF	10%	10V
C502	1-135-993-11	TANTAL. CHIP	33uF	20%	10V
C503	1-165-884-91	CERAMIC CHIP	2.2uF	10%	6.3V
C505	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C508	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C510	1-165-897-11	TANTAL. CHIP	22uF	20%	10V
C511	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C512	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C513	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C514	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C515	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C517	1-164-943-81	CERAMIC CHIP	0.01uF	10%	16V
C518	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C519	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C522	1-164-943-81	CERAMIC CHIP	0.01uF	10%	16V
C527	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C528	1-100-159-91	CERAMIC CHIP	22uF	10%	6.3V
C529	1-100-159-91	CERAMIC CHIP	22uF	10%	6.3V
C530	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C531	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C532	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C533	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C534	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C535	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C536	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C537	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C538	1-164-943-81	CERAMIC CHIP	0.01uF	10%	16V
C541	1-165-884-91	CERAMIC CHIP	2.2uF	10%	6.3V
C542	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C543	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C544	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C545	1-128-934-61	CERAMIC CHIP	0.33uF	10%	10V
C546	1-128-934-61	CERAMIC CHIP	0.33uF	10%	10V
C601	1-100-352-91	CERAMIC CHIP	1uF	20%	16V
C602	1-100-352-91	CERAMIC CHIP	1uF	20%	16V
C603	1-100-415-11	CERAMIC CHIP	0.47uF	10%	6.3V
C604	1-100-352-91	CERAMIC CHIP	1uF	20%	16V
C605	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C606	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C607	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C608	1-100-352-91	CERAMIC CHIP	1uF	20%	16V
C609	1-164-943-81	CERAMIC CHIP	0.01uF	10%	16V
C610	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C611	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C612	1-164-943-81	CERAMIC CHIP	0.01uF	10%	16V
C613	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C614	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C615	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C616	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C617	1-164-943-81	CERAMIC CHIP	0.01uF	10%	16V
C618	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C619	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C620	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C701	1-100-611-91	CERAMIC CHIP	22uF	20%	6.3V
C704	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C705	1-164-943-81	CERAMIC CHIP	0.01uF	10%	16V
C706	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C707	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C708	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C709	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C710	1-100-352-91	CERAMIC CHIP	1uF	20%	16V
C711	1-100-786-91	TANTAL. CHIP	22uF	20%	6.3V
C712	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C713	1-100-352-91	CERAMIC CHIP	1uF	20%	16V
C714	1-165-875-11	CERAMIC CHIP	10uF	10%	10V
C715	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C716	1-165-897-11	TANTAL. CHIP	22uF	20%	10V

< CONNECTOR >

Ref. No.	Part No.	Description
CN001	1-580-057-11	PIN, CONNECTOR (SMD) 4P
* CN301	1-816-057-51	CONNECTOR, FPC (ZIF) 39P
* CN401	1-816-057-51	CONNECTOR, FPC (ZIF) 39P
* CN501	1-816-645-51	FFC/FPC CONNECTOR (LIF) 14P
CN601	1-794-375-21	PIN, CONNECTOR 2P
CN602	1-794-375-21	PIN, CONNECTOR 2P
* CN651	1-816-645-51	FFC/FPC CONNECTOR (LIF) 14P
CN701	1-819-254-51	CONNECTOR, FFC/FPC (ZIF) 12P
* CN702	1-815-333-51	CONNECTOR, FPC (ZIF) 33P
* CN703	1-816-649-51	FFC/FPC CONNECTOR (LIF) 22P
* CN704	1-819-257-51	CONNECTOR, FFC/FPC (ZIF) 14P
* CN705	1-816-643-51	FFC/FPC CONNECTOR (LIF) 10P
CN706	1-819-254-51	CONNECTOR, FFC/FPC (ZIF) 12P
CN707	1-816-688-51	CONNECTOR, FPC (ZIF) 29P

< DIODE >

Ref. No.	Part No.	Description
D001	6-500-813-01	DIODE MA2SD32008S0
D002	6-500-813-01	DIODE MA2SD32008S0
D003	6-500-813-01	DIODE MA2SD32008S0
D301	8-719-056-23	DIODE MA2S111-(K8).SO
D501	6-500-813-01	DIODE MA2SD32008S0
D502	6-500-813-01	DIODE MA2SD32008S0
D601	8-719-056-23	DIODE MA2S111-(K8).SO
D651	6-500-776-01	DIODE MAZW068H0LS0
D652	6-500-776-01	DIODE MAZW068H0LS0
D653	8-719-056-54	DIODE MAZS068008SO
D654	8-719-056-23	DIODE MA2S111-(K8).SO
D701	6-500-941-01	DIODE MAZS056008S0

< FUSE >

Ref. No.	Part No.	Description
⚠ F001	1-576-416-21	FUSE 2A/36V
⚠ F002	1-576-416-21	FUSE 2A/36V
⚠ F003	1-576-570-21	FUSE, MICRO (1608 TYPE) 0.63A/32V

< FERRITE BEAD >

Ref. No.	Part No.	Description
FB001	1-469-324-21	INDUCTOR (EMI FERRITE) (2012)
FB101	1-500-284-21	INDUCTOR, FERRITE BEAD
FB102	1-216-864-11	SHORT CHIP 0 (Note1)
FB103	1-469-581-21	INDUCTOR, FERRITE BEAD (1005)
FB104	1-469-581-21	INDUCTOR, FERRITE BEAD (1005)

Note 1:
SHORT CHIP is mounted to the location where FB102 is printed.

• Refer to page 5-1 for mark ⚠.

Ref. No.	Part No.	Description
FB105	1-469-581-21	INDUCTOR, FERRITE BEAD (1005)
FB106	1-469-581-21	INDUCTOR, FERRITE BEAD (1005)
FB107	1-469-581-21	INDUCTOR, FERRITE BEAD (1005)
FB108	1-469-581-21	INDUCTOR, FERRITE BEAD (1005)
FB301	1-469-082-21	INDUCTOR, FERRITE BEAD (1005)
FB302	1-469-082-21	INDUCTOR, FERRITE BEAD (1005)
FB308	1-400-331-11	FERRITE, EMI (SMD) (1005)
FB309	1-400-620-21	INDUCTOR, FERRITE BEAD (1005)
FB651	1-469-580-11	INDUCTOR, FERRITE BEAD (1005)
FB701	1-469-580-11	INDUCTOR, FERRITE BEAD (1005)
		< IC >
* IC001	6-709-120-01	IC SC901571VOR2
* IC101	8-753-251-12	IC CXD3199GG-T6
* IC201	Not supplied	IC PH28F320W30TD70-A02 (Note1)
* IC202	6-709-151-01	IC KFG5616U1A-DIB5T
* IC203	6-708-803-01	IC K4M56323PG-HG75T
IC301	6-703-977-01	IC R1114Q331D-TR-FA
IC401	6-708-988-01	IC LV8053LG-TLM-E
IC501	6-707-643-01	IC TPS61027DRCR
* IC503	6-708-445-01	IC R1114Q291D-TR-FA
* IC504	6-709-026-01	IC R2J30500LG
* IC505	6-708-457-01	IC R1114Q151D-TR-FA
IC506	8-759-489-19	IC uPC6756GR-8JG-E2
* IC507	6-709-332-01	IC TK70685HCL-G
* IC601	6-708-096-01	IC NJW1330RB1 (TE2)
IC602	6-707-336-01	IC BH6414GLU-E2
* IC603	6-708-445-01	IC R1114Q291D-TR-FA
* IC701	6-708-464-01	IC R1114Q251D-TR-FA
		< COIL >
L001	1-469-967-21	INDUCTOR 10uH
L003	1-456-995-22	INDUCTOR 4.7uH
L004	1-456-995-22	INDUCTOR 4.7uH
L005	1-456-995-22	INDUCTOR 4.7uH
L006	1-456-995-22	INDUCTOR 4.7uH
L008	1-456-995-22	INDUCTOR 4.7uH
L009	1-456-995-22	INDUCTOR 4.7uH
L011	1-469-555-21	INDUCTOR 10uH
L101	1-469-967-21	INDUCTOR 10uH
L102	1-469-967-21	INDUCTOR 10uH
L201	1-400-588-11	INDUCTOR 10uH
L301	1-469-561-21	INDUCTOR 100uH
L302	1-469-967-21	INDUCTOR 10uH
L303	1-400-317-21	INDUCTOR 100uH
L304	1-469-967-21	INDUCTOR 10uH
L503	1-456-995-22	INDUCTOR 4.7uH
L601	1-469-555-21	INDUCTOR 10uH
L602	1-400-588-11	INDUCTOR 10uH
L701	1-216-295-91	SHORT CHIP 0 (Note2)
L702	1-412-006-31	INDUCTOR 10uH
L703	1-216-295-91	SHORT CHIP 0 (Note2)
L704	1-400-588-11	INDUCTOR 10uH
L705	1-400-588-11	INDUCTOR 10uH

Ref. No.	Part No.	Description
		< LINE FILTER >
LF651	1-456-583-11	COMMON MODE CHOKE COIL
		< TRANSISTOR >
Q001	8-729-056-01	TRANSISTOR MCH3405-TL-E
Q002	6-550-351-01	TRANSISTOR CPH5812-S-TL-E
Q003	6-551-304-01	TRANSISTOR MTM231230LSO
Q004	8-729-053-76	TRANSISTOR CPH5802-TL-E-S
Q301	8-729-053-58	TRANSISTOR RN1904FE (TPLR3)
Q503	6-550-094-01	TRANSISTOR EMH2-T2R
Q504	6-550-239-01	TRANSISTOR DTA144EMT2L
Q701	8-729-042-26	TRANSISTOR 2SB1462J-QR (K8).SO
Q702	8-729-054-52	TRANSISTOR UP04216008S0
		< RESISTOR >
R001	1-218-935-11	RES-CHIP 33 5% 1/16W
R002	1-218-949-11	RES-CHIP 470 5% 1/16W
R004	1-218-983-11	RES-CHIP 330K 5% 1/16W
R005	1-219-570-11	METAL CHIP 10M 5% 1/10W
R012	1-218-990-81	SHORT CHIP 0
R013	1-220-874-81	METAL CHIP 15 0.5% 1/16W
R016	1-208-911-11	METAL CHIP 10K 0.5% 1/16W
R017	1-218-990-81	SHORT CHIP 0
R018	1-208-935-11	METAL CHIP 100K 0.5% 1/16W
R020	1-218-989-11	RES-CHIP 1M 5% 1/16W
R023	1-208-927-11	METAL CHIP 47K 0.5% 1/16W
R029	1-218-935-11	RES-CHIP 33 5% 1/16W
R030	1-218-929-11	RES-CHIP 10 5% 1/16W
R031	1-218-977-11	RES-CHIP 100K 5% 1/16W
R032	1-218-929-11	RES-CHIP 10 5% 1/16W
R057	1-218-990-81	SHORT CHIP 0
R059	1-218-989-11	RES-CHIP 1M 5% 1/16W
R068	1-218-965-11	RES-CHIP 10K 5% 1/16W
R072	1-216-864-11	SHORT CHIP 0
R074	1-218-990-81	SHORT CHIP 0
R075	1-218-990-81	SHORT CHIP 0
R076	1-218-990-81	SHORT CHIP 0
R103	1-218-990-81	SHORT CHIP 0
R106	1-208-679-11	METAL CHIP 680 0.5% 1/16W
R109	1-218-973-11	RES-CHIP 47K 5% 1/16W
R112	1-208-683-11	METAL CHIP 1K 0.5% 1/16W
R114	1-218-985-11	RES-CHIP 470K 5% 1/16W
R115	1-208-683-11	METAL CHIP 1K 0.5% 1/16W
R117	1-218-941-81	RES-CHIP 100 5% 1/16W
R118	1-218-941-81	RES-CHIP 100 5% 1/16W
R119	1-218-941-81	RES-CHIP 100 5% 1/16W
R120	1-218-941-81	RES-CHIP 100 5% 1/16W
R121	1-218-939-11	RES-CHIP 68 5% 1/16W
R122	1-218-939-11	RES-CHIP 68 5% 1/16W
R125	1-218-965-11	RES-CHIP 10K 5% 1/16W
R126	1-218-965-11	RES-CHIP 10K 5% 1/16W
R127	1-218-965-11	RES-CHIP 10K 5% 1/16W
R128	1-218-965-11	RES-CHIP 10K 5% 1/16W
R129	1-218-965-11	RES-CHIP 10K 5% 1/16W
R130	1-218-965-11	RES-CHIP 10K 5% 1/16W

Note 1 :
A service for IC201 is not available because an adjustment is required before replacement.

Note 2:
SHORT CHIP is mounted to the location where L701 and L703 are printed.

Ref. No.	Part No.	Description			
R131	1-218-965-11	RES-CHIP	10K	5%	1/16W
R132	1-218-965-11	RES-CHIP	10K	5%	1/16W
R133	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R135	1-208-911-11	METAL CHIP	10K	0.5%	1/16W
R136	1-218-973-11	RES-CHIP	47K	5%	1/16W
R137	1-208-943-11	METAL CHIP	220K	0.5%	1/16W
R138	1-218-965-11	RES-CHIP	10K	5%	1/16W
R139	1-218-965-11	RES-CHIP	10K	5%	1/16W
R140	1-218-981-11	RES-CHIP	220K	5%	1/16W
R141	1-218-981-11	RES-CHIP	220K	5%	1/16W
R144	1-218-965-11	RES-CHIP	10K	5%	1/16W
R145	1-218-965-11	RES-CHIP	10K	5%	1/16W
R147	1-218-990-81	SHORT CHIP	0		
R148	1-218-953-11	RES-CHIP	1K	5%	1/16W
R150	1-218-990-81	SHORT CHIP	0		
R152	1-218-990-81	SHORT CHIP	0		
R153	1-218-965-11	RES-CHIP	10K	5%	1/16W
R301	1-218-853-11	METAL CHIP	1.8K	0.5%	1/10W
R302	1-218-859-11	METAL CHIP	3.3K	0.5%	1/10W
R304	1-218-977-11	RES-CHIP	100K	5%	1/16W
R307	1-218-953-11	RES-CHIP	1K	5%	1/16W
R308	1-218-977-11	RES-CHIP	100K	5%	1/16W
R309	1-218-990-81	SHORT CHIP	0		
R310	1-218-933-11	RES-CHIP	22	5%	1/16W
R311	1-218-990-81	SHORT CHIP	0		
R312	1-218-990-81	SHORT CHIP	0		
R313	1-218-990-81	SHORT CHIP	0		
R314	1-218-990-81	SHORT CHIP	0		
R316	1-218-990-81	SHORT CHIP	0		
R318	1-218-990-81	SHORT CHIP	0		
R319	1-218-990-81	SHORT CHIP	0		
R320	1-218-990-81	SHORT CHIP	0		
R321	1-218-990-81	SHORT CHIP	0		
R409	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R410	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R411	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R432	1-211-969-11	METAL CHIP	10	0.5%	1/10W
R433	1-211-969-11	METAL CHIP	10	0.5%	1/10W
R434	1-211-969-11	METAL CHIP	10	0.5%	1/10W
R435	1-211-969-11	METAL CHIP	10	0.5%	1/10W
R437	1-218-948-11	RES-CHIP	390	5%	1/16W
R438	1-218-948-11	RES-CHIP	390	5%	1/16W
R509	1-208-721-11	METAL CHIP	39K	0.5%	1/16W
R511	1-218-970-11	RES-CHIP	27K	5%	1/16W
R512	1-208-695-11	METAL CHIP	3.3K	0.5%	1/16W
R513	1-208-909-11	METAL CHIP	8.2K	0.5%	1/16W
R515	1-208-911-11	METAL CHIP	10K	0.5%	1/16W
R517	1-208-721-11	METAL CHIP	39K	0.5%	1/16W
R519	1-218-970-11	RES-CHIP	27K	5%	1/16W
R520	1-208-695-11	METAL CHIP	3.3K	0.5%	1/16W
R521	1-208-909-11	METAL CHIP	8.2K	0.5%	1/16W
R524	1-208-911-11	METAL CHIP	10K	0.5%	1/16W
R526	1-218-965-11	RES-CHIP	10K	5%	1/16W
R527	1-218-990-81	SHORT CHIP	0		
R535	1-218-989-11	RES-CHIP	1M	5%	1/16W
R536	1-218-989-11	RES-CHIP	1M	5%	1/16W
R537	1-218-965-11	RES-CHIP	10K	5%	1/16W
R538	1-218-965-11	RES-CHIP	10K	5%	1/16W
R539	1-218-969-11	RES-CHIP	22K	5%	1/16W
R540	1-218-969-11	RES-CHIP	22K	5%	1/16W

Ref. No.	Part No.	Description			
R541	1-218-969-11	RES-CHIP	22K	5%	1/16W
R542	1-218-969-11	RES-CHIP	22K	5%	1/16W
R543	1-218-977-11	RES-CHIP	100K	5%	1/16W
R544	1-218-977-11	RES-CHIP	100K	5%	1/16W
R545	1-218-977-11	RES-CHIP	100K	5%	1/16W
R546	1-218-977-11	RES-CHIP	100K	5%	1/16W
R547	1-218-977-11	RES-CHIP	100K	5%	1/16W
R548	1-218-977-11	RES-CHIP	100K	5%	1/16W
R549	1-218-977-11	RES-CHIP	100K	5%	1/16W
R553	1-218-977-11	RES-CHIP	100K	5%	1/16W
R555	1-218-985-11	RES-CHIP	470K	5%	1/16W
R557	1-218-967-11	RES-CHIP	15K	5%	1/16W
R558	1-218-967-11	RES-CHIP	15K	5%	1/16W
R602	1-218-929-11	RES-CHIP	10	5%	1/16W
R603	1-218-939-11	RES-CHIP	68	5%	1/16W
R604	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R605	1-218-985-11	RES-CHIP	470K	5%	1/16W
R606	1-218-972-11	RES-CHIP	39K	5%	1/16W
R607	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R651	1-218-965-11	RES-CHIP	10K	5%	1/16W
R652	1-218-965-11	RES-CHIP	10K	5%	1/16W
R713	1-218-978-11	RES-CHIP	120K	5%	1/16W
R714	1-218-989-11	RES-CHIP	1M	5%	1/16W
R715	1-218-977-11	RES-CHIP	100K	5%	1/16W
R716	1-218-977-11	RES-CHIP	100K	5%	1/16W
R747	1-218-990-81	SHORT CHIP	0		
R749	1-218-990-81	SHORT CHIP	0		
R751	1-218-977-11	RES-CHIP	100K	5%	1/16W
R752	1-218-945-11	RES-CHIP	220	5%	1/16W
		< SENSOR >			
SE501	1-479-022-51	SENSOR,ANGULAR VELOCITY (PITCH)			
SE502	1-479-022-61	SENSOR,ANGULAR VELOCITY (YAW)			
		< VIBRATOR >			
X001	1-767-994-23	VIBRATOR, CRYSTAL 32.768kHz			
* X101	1-813-403-21	QUARTZ CRYSTAL OSCILLATOR 12MHz			

SONY BRASIL LTDA.
ENGENHARIA DA QUALIDADE
Julho / 2006

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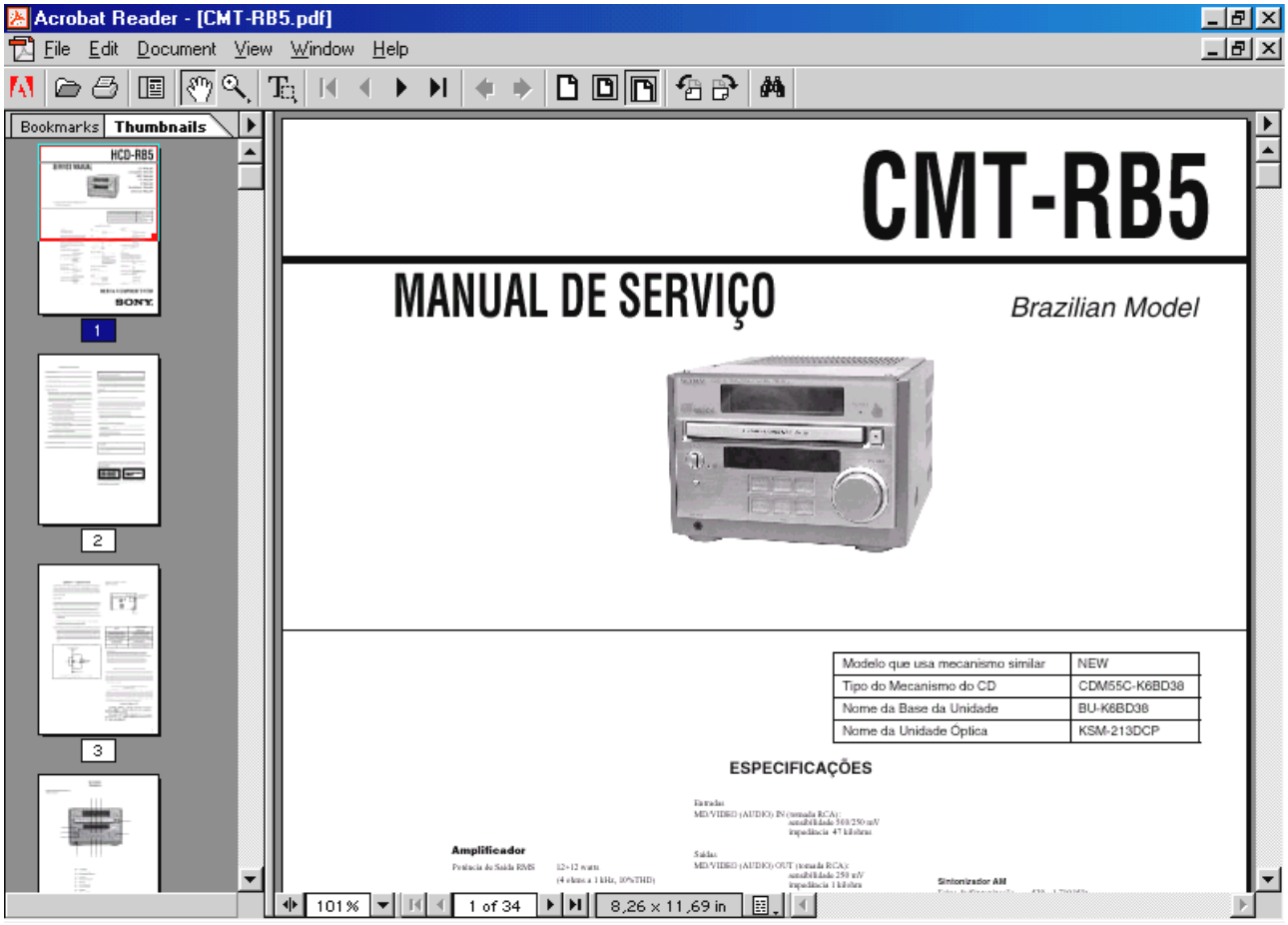
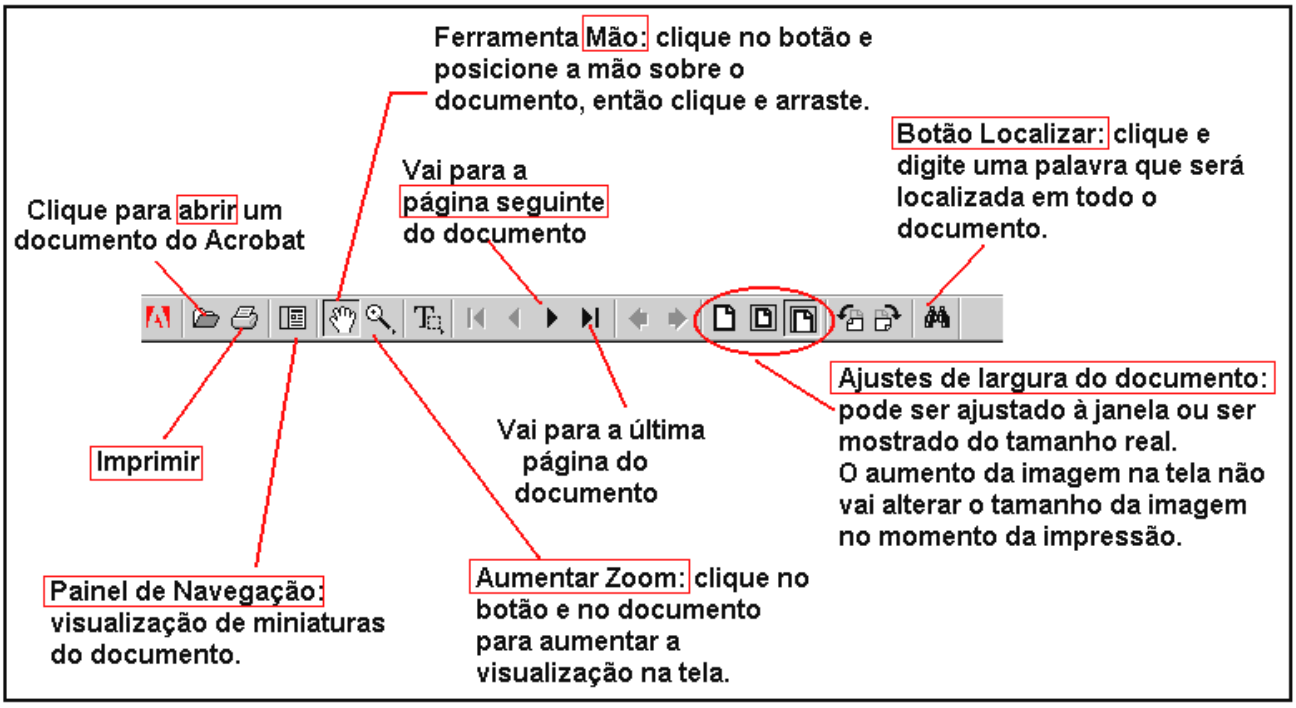
Guia de Comandos Básicos do Acrobat Reader 5.05

Adobe® Acrobat®

Esta é a tela do programa, quando se abre um manual:



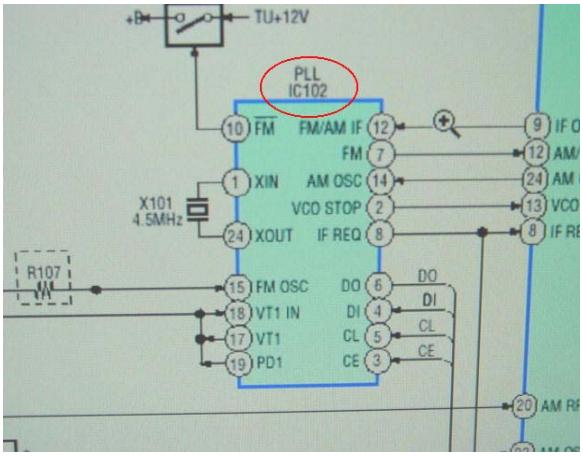
Barra de Comandos



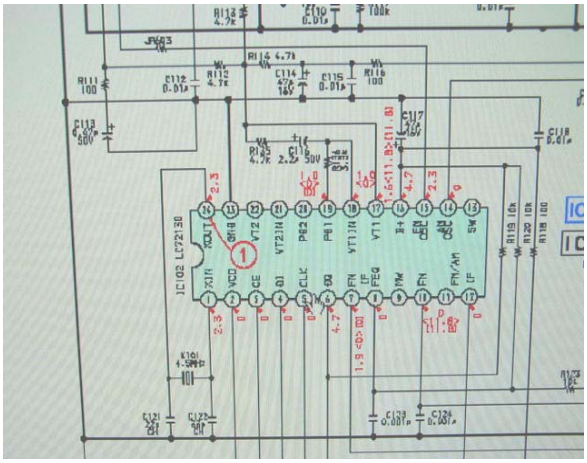
Recurso de Localização de Componentes

Alguns manuais de serviço estão habilitados com uma função que permite localizar mais facilmente um circuito integrado (IC) em seu diagrama esquemático correspondente, diagrama em blocos ou placa de circuito impresso.

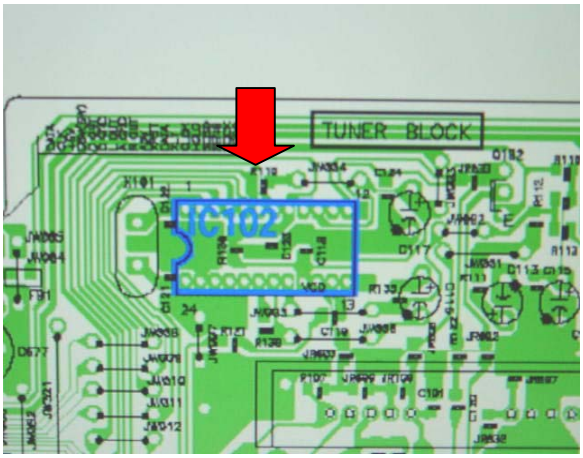
Para isso, abra um manual de serviço, por exemplo o do MHC-DX30 e visualize uma página da lista de peças elétricas, onde existam alguns IC's listados. Ao posicionar o ponteiro do mouse sobre a linha onde está um IC, sobre sua localização, ou valor, você vai verificar que aparece uma "mãozinha", na verdade, o dedo indicador que fica apontando a linha. Se você der um clique, você será levado pelo programa à pagina do diagrama esquemático onde se encontra o referido IC que você selecionou. Vamos ilustrar o que foi explicado logo a seguir:



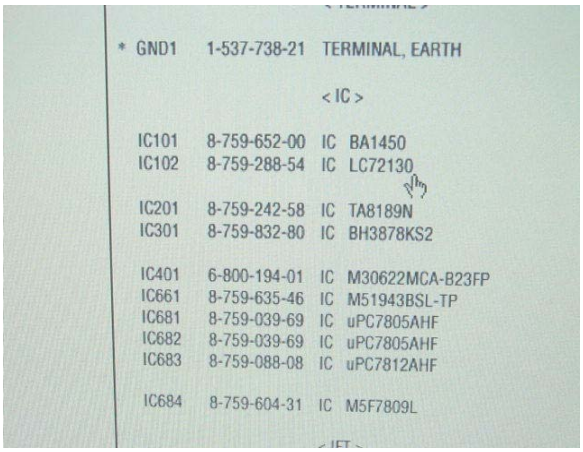
Abra a página correspondente ao diagrama em bloco e posicione o ponteiro do mouse sobre o IC escolhido . Quando o cursor tornar-se uma "mãozinha" dê um clique sobre o IC.



O programa trará você à página do diagrama esquemático correspondente que contém o IC escolhido. Clique novamente sobre o IC.



O programa trará você à página correspondente a placa de circuito impresso que contém o IC escolhido. Clique novamente sobre o IC. sobre o IC.



Por fim o programa visualiza o ponto da lista de peças onde o IC escolhido está localizado. Ao clicar novamente sobre o componente o cliclo se repete (diagrama em bloco, esquemático, placa de circuito impresso e lista de peças. Vale lembrar que nem todos os manuais de serviço possuem esse recurso.

Notas

- O tamanho da visualização do documento na tela em nada altera o tamanho de impressão. O Zoom de aumento ou de diminuição serve apenas para oferecer mais detalhes ou um aspecto geral do documento visualizado.

- O painel de navegação serve para agilizar o acesso a outras páginas que não estão sendo visualizadas. Para visualizar uma dessas miniaturas em seu tamanho normal, basta clicar duas vezes sobre ela e então esta será exibida na tela.

- Não é possível alterar texto, figuras ou qualquer item do documento no Acrobat Reader 5.0. Este programa é usado somente para visualização e impressão de documentos PDF.

- Diagramas e demais folhas do documentos PDF só poderão ser impressos em tamanho maior caso a impressora suporte papel com dimensão superior ao A4, carta ou semelhante. Do contrário só poderá ser impresso no tamanho A4 padrão.

Engenharia da Qualidade – Novembro 2003

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VOLTAR

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Engenharia da Qualidade - SSP

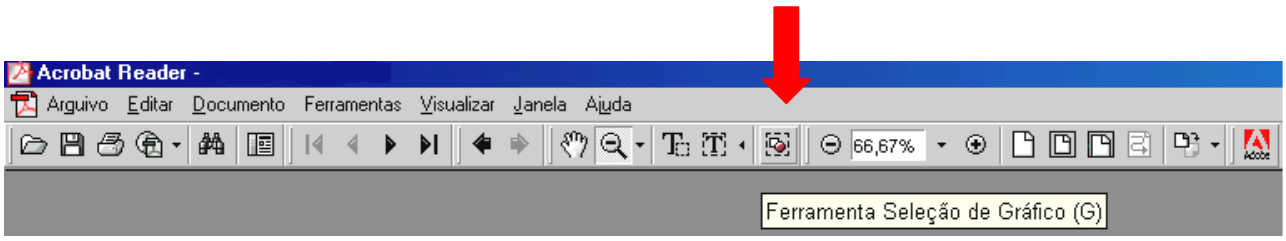
Orientação de Impressão no Acrobat Reader 5.05

É possível imprimir alguns quadros pré-selecionados de forma ampliada no Acrobat Reader. Esse comando é muito útil quando é necessária fazer a impressão de diagramas elétricos.

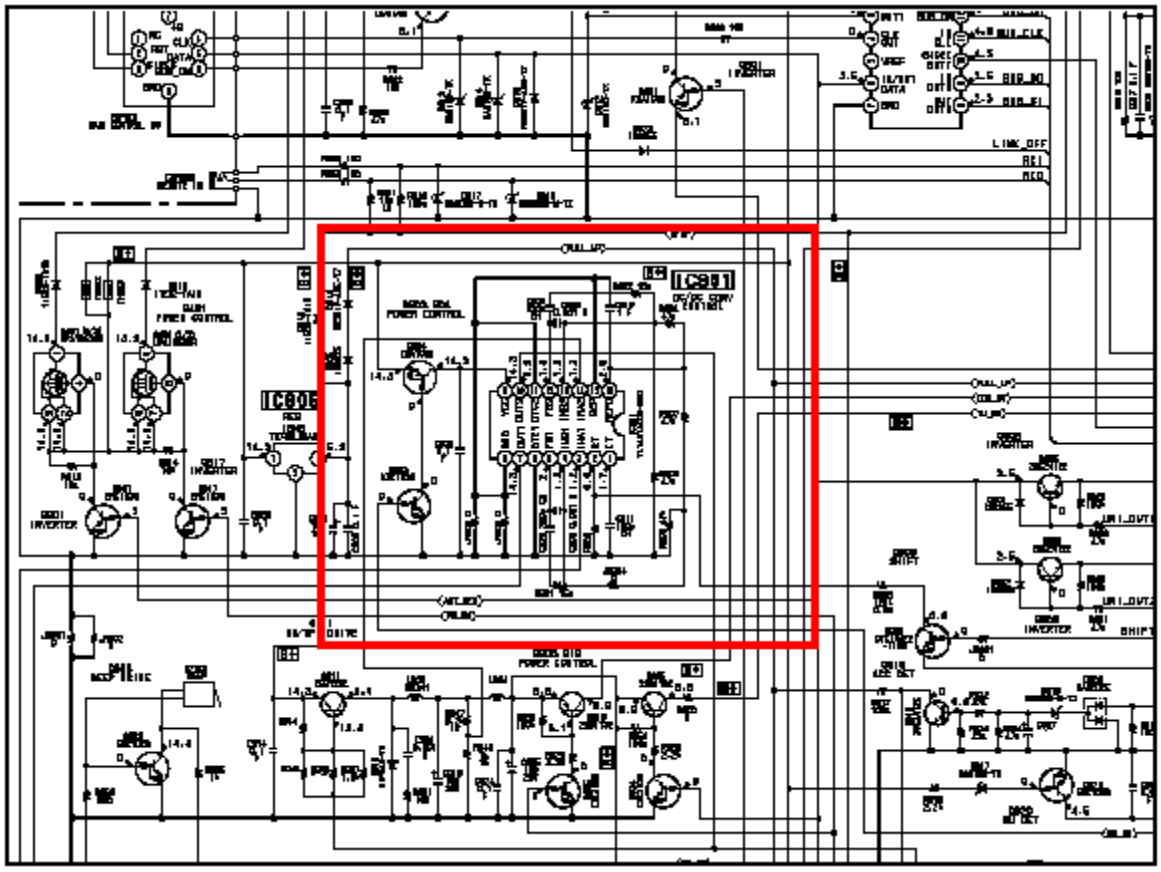
A sequência abaixo mostra, passo a passo como selecionar uma parte de uma folha qualquer (nesse exemplo usaremos um diagrama elétrico) e configurar sua impressão.

Temos no Acrobat Reader a barra abaixo. Leve o cursor do mouse até o botão indicado pela seta e fique pressionando o botão do mouse.

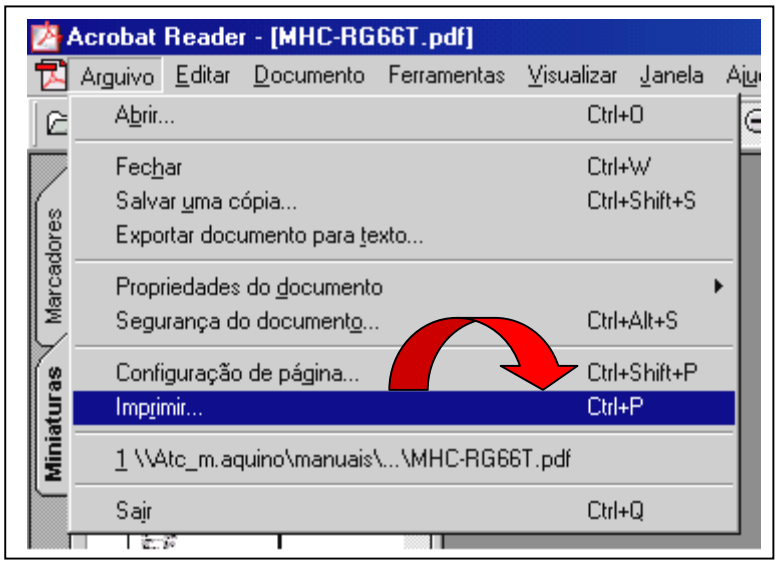
Segurando o botão uma barra oculta aparecerá, então expanda conforme abaixo. O botão final a ser clicado para que o comando seja selecionado é o da **FERRAMENTA DE SELEÇÃO DE GRÁFICO (G)**



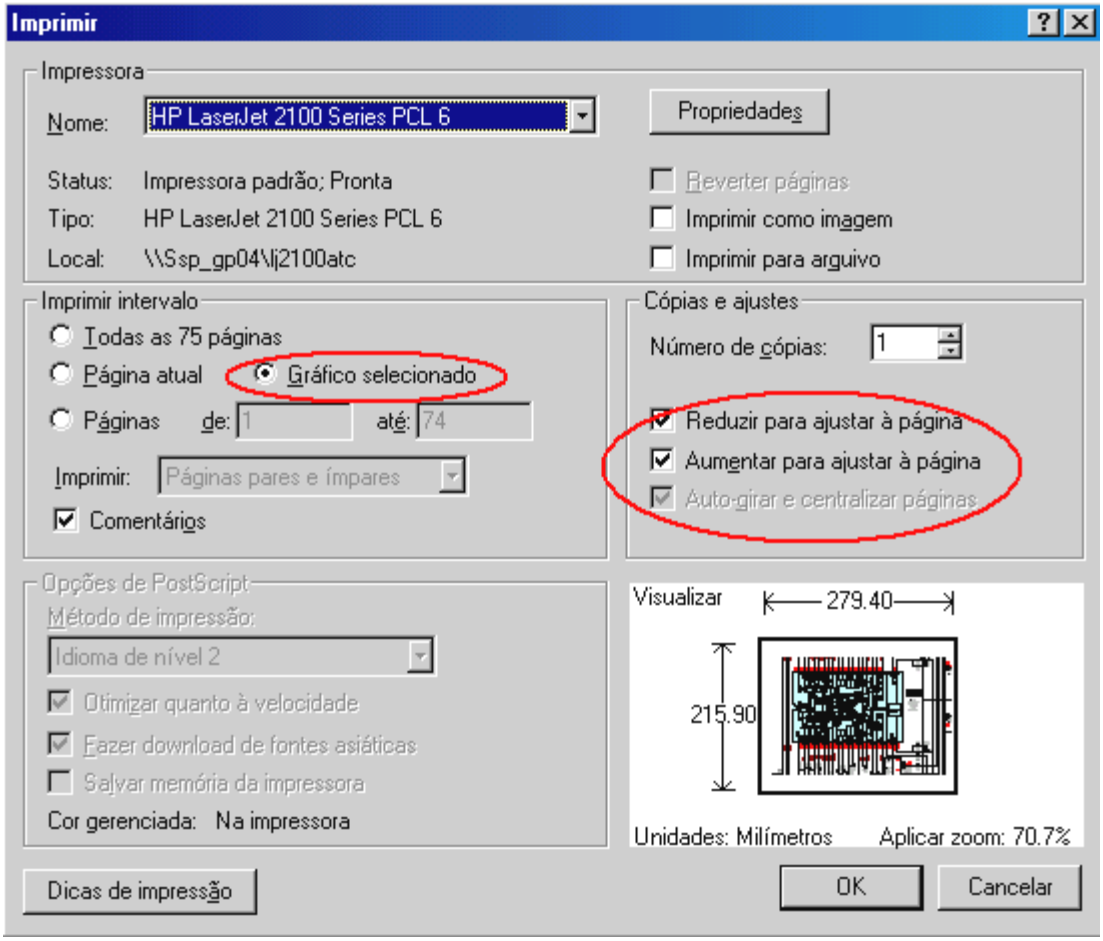
Agora com o cursor selecione uma área do diagrama que deseja imprimir de forma ampliada. A área escolhida nesse exemplo é o quadrado de linhas espessas.



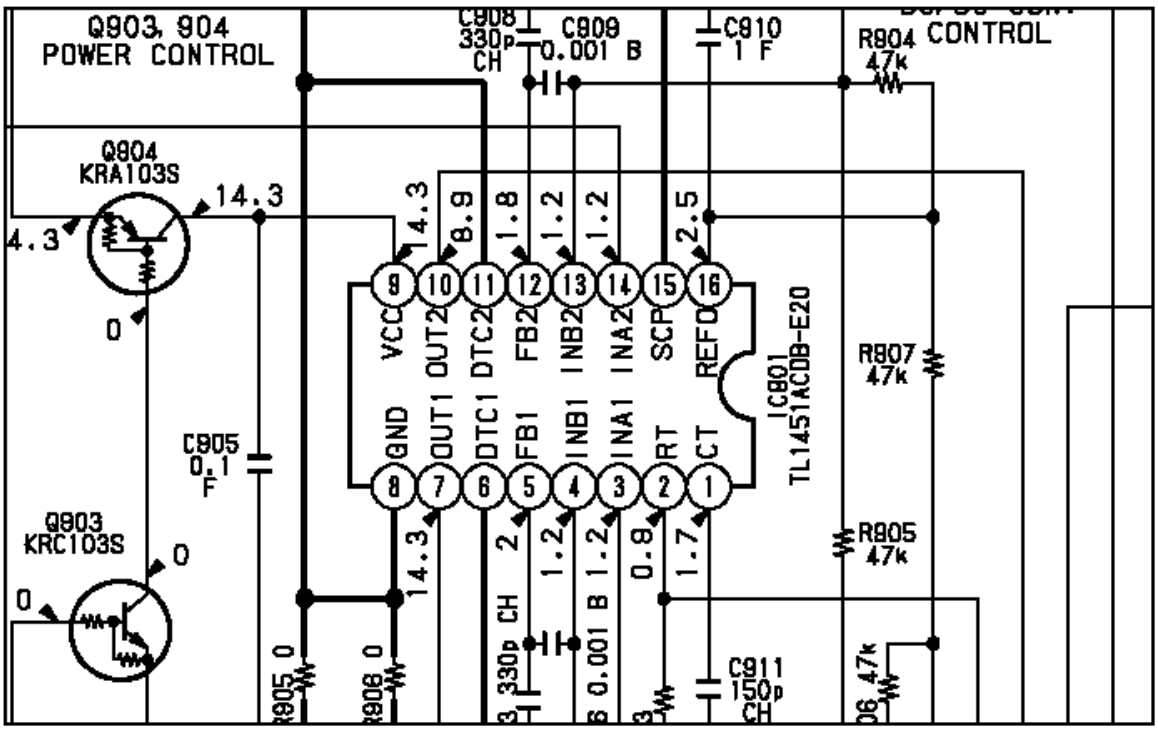
Agora vá até o menu de impressão seguindo o procedimento a seguir, clicando em **IMPRIMIR**, indicado pela seta:



Na janela que se abre verifique se as opções indicadas em vermelho (circuladas) estão habilitadas. Assim, quando imprimir a área do gráfico, esta parte será expandida por toda a folha de papel A4.



Após a impressão verificamos que o diagrama ficou realmente ampliado, conforme exemplo:



Notas

O mesmo procedimento pode ser repetido para outras páginas dos manuais, como lista de peças, bem como pode ser utilizado papel tamanho A3 (420 x 297 mm) para impressoras que suportem esse formato.

Outros comandos podem ser encontrados no **"Guia de Comandos Básicos do Acrobat Reader"**, que também consta neste CD e em anteriores.

Lembramos novamente que não é possível alterar texto, figuras ou qualquer item do documento no Acrobat Reader 5.05. Este programa é usado somente para visualização e impressão de documentos PDF.

Mais informações podem ser obtidas em "**Ajuda**".

Dúvidas e sugestões devem ser encaminhadas para **Teruaki** através do e-mails:

teruaki_nakagawa@ssp.br.sony.com