Film-Tech

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SONY

SDDS Player System

DIGITAL FILM SOUND DECODER

DFP-D2000

DIGITAL FILM SOUND READER

DFP-R2000

SDDS

Sony Dynamic Digital Sound

MAINTENANCE MANUAL

1st Edition

SAFETY CHECK-OUT

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

Check the metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 3.5 mA. Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 5.25 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 20 V AC range are suitable. (See Fig. A)

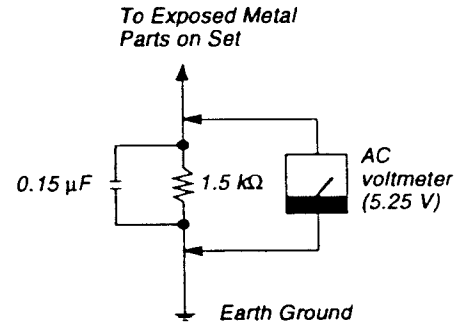


Fig. A. Using an AC voltmeter to check AC leakage.

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Vorsicht!

Explosionsqefahr bei unsachgemäßen Austaush der Batterie.

Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ. Entsorgung gebrauchter Batterien mach Angaben des Herstellers.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.

Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

DIGITAL FILM SOUND DECODER

DFP-D2000

TABLE OF CONTENTS

SECTION 1
SERVICE OVERVIEW

1-1. INSTALLATION

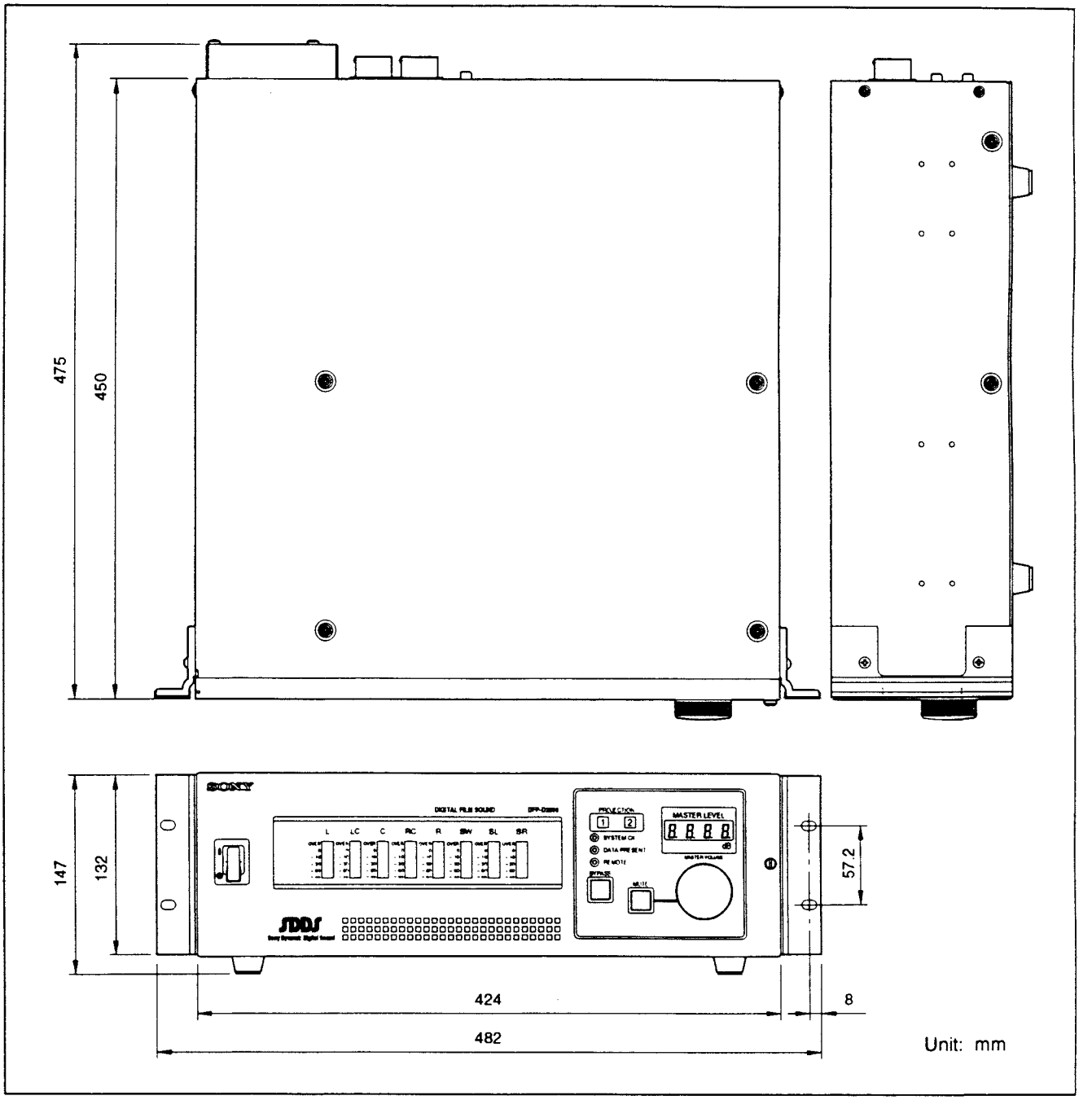
1-1-1. Installation Conditions

Operating temperature : 5 °C to 40 °C
Operating humidity : 10 % to 90 %
(relative humidity)
Storage temperature : –20 °C to +60 °C
Mass (Weight) : 14.5 kg

Locations to avoid

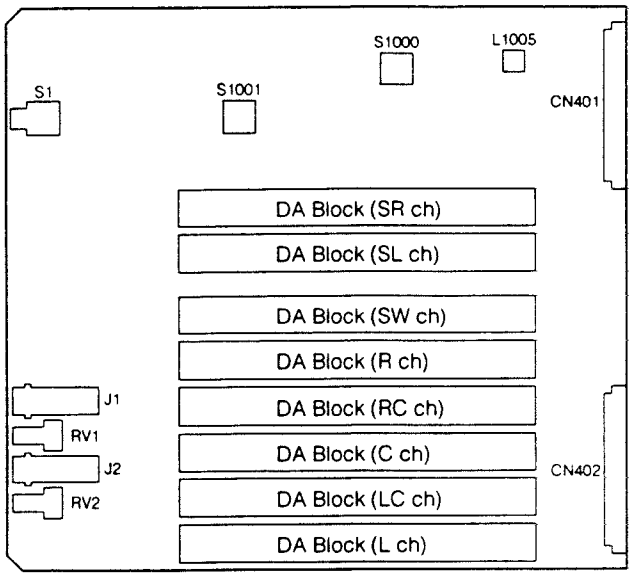
- Areas where the unit will be exposed to direct sunlight of any other strong lights.
- Dusty areas or areas where it is subject to vibration.
- Areas with strong electric or magnetic fields.
- Areas near heat sources.
- Areas where is subjected to electricity noise.
- Areas where is subjected to static electricity noise.

1-1-2. Dimensions



1-1-3. Switch/Volume Settings on Boards

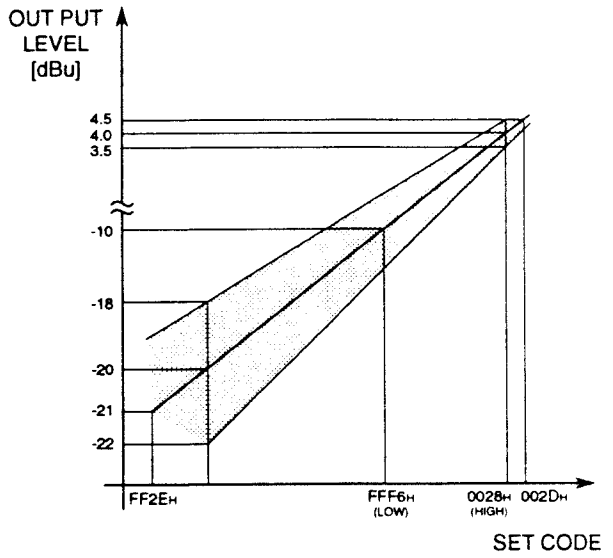
APR-6 Board



ARP-6 BOARD (A SIDE)

Switch

S1: Reference level selector switch



Factory setting

S1 switch: HIGH Level side

Connector

J1: Monitor head phone jack
Used for monitoring DSP-61 points.
J2: Lip sink adjustment head phone jack
Used for matching the phase with analog signals.
L: Analog (C ch)
R: SDDS (C ch)

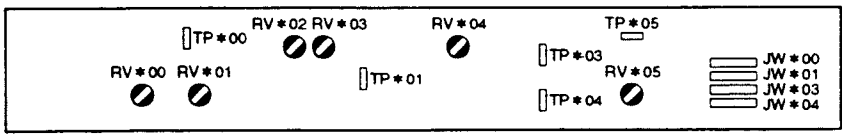
Volume

RV1: Monitor head phone volume
RV2: Lip sink adjustment head phone volume

Factory setting

RV1: Turned fully to the left.
RV2: Turned fully to the left.

DA BLOCK



Note: The figures marked with an asterisk (*) indicate channels as shown below.
1; L-ch, 2; LC-ch, 3; C-ch, 4; RC-ch
5; R-ch, 6; SW-ch, 7; SL-ch, 8; SR-ch

Volume

RV*00: D/A Output Level Adjustment
RV*01: VCA Distortion Rate Adjustment
RV*02: VCA Gain Minimum Level Adjustment
RV*03: VCA Gain Maximum Level Adjustment
RV*04: Unbalance/Balance Circuit Level Difference Adjustment
RV*05: Analog Input Signal Level Adjustment
For details of adjustment, refer to "2. ELECTRICAL ALIGNMENT."

Jumper Socket

JW*00, JW*01, JW*03, JW*04
Used for changing XLR output format.

Jumper Socket				XLR Output Format	
JW*00	JW*01	JW*03	JW*04		
○	○	○	○	1pin: GND, 2pin: HOT, 3pin: COLD	←Factory setting
×	×	×	×	1pin: GND, 2pin: COLD, 3pin: HOT	

Remarks: ○ : With socket
× : Without socket

PLL BLOCK

Switch

S1000: Main PLL (1024fs) lead-in time setting rotary switch

S1000	Function	
0	CPU Control ON (Constant for follow mode V50400 - Every 18 Hz)	
1	CPU Control OFF (Constant for follow mode V50400 - Every 18 Hz)	
2	CPU Control OFF (Follow Mode OFF)	
3	MAIN PLL (By-pass Mode)	
4	Not used.	
5	Not used.	
6	Not used.	
7	Not used.	
8	Same function as "0".	Adapt to the projector (For installation)
9	"8" (Constant for follow mode) × 1/2	
A	"8" (Constant for follow mode) × 1/4	
B	"8" (Constant for follow mode) × 1/8	
C	"8" (Constant for follow mode) × 16	
D	"8" (Constant for follow mode) × 32	
E	"8" (Constant for follow mode) × 64	
F	"8" (Constant for follow mode) × 128	

Factory setting

S1000 Switch: "0"

S1001: 96 Hz free run frequency adjusting rotary switch

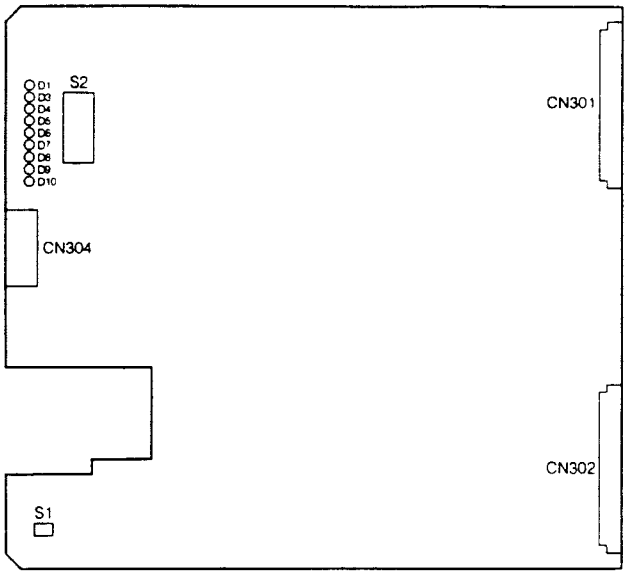
It must be readjusted after replacing the crystal oscillator (×1000).

S1001	Function
0	−13.23 PPM × 8
1	−13.23 PPM × 7
2	−13.23 PPM × 6
3	−13.23 PPM × 5
4	−13.23 PPM × 4
5	−13.23 PPM × 3
6	−13.23 PPM × 2
7	−13.23 PPM
8	Center ±0 PPM
9	+13.23 PPM
A	+13.23 PPM × 2
B	+13.23 PPM × 3
C	+13.23 PPM × 4
D	+13.23 PPM × 5
E	+13.23 PPM × 6
F	+13.23 PPM × 7

L1005: 1024fs free run frequency adjusting trimmer

Adjust it to be 2.2 ± 0.2 V with TP11.

DSP-61 Board



DSP-61 BOARD (A SIDE)

Indicator

D1(Red) : CPU OK indicator
It remains lit while the CPU is operating normally.

D3(Red) : Film Error Rate Display (P side) indicator
It displays the result of error correction.
Lit : No error
Unlit : Error

D4(Red) : Film Error Rate Display (S side) indicator
It displays the result of error correction.
Lit : No error
Unlit : Error

D5(Red) : Not used

D6(Red) : It blinks by 1-second intervals while the CPU is operating normally and the system timer is functioning.

D7(Red) : It remains lit during serial communications.

D8(Red) : It indicates the same information as Data Presents on the front panel.
Blinking: The film running speed is within the specified speed ±5%.
Lit : SDDS signals are input normally.

D9(Red) : It blinks during ECC interruption.

D10(Red) : It blinks during ATRAC interruption.

Switch

S1: CPU Reset Switch
Used for resetting the CPU.

S2: Mode Set Switch

S2-1: FLASH/CARD mode selector switch

S2-1	Setting
OFF	Normal operation mode
ON	Software version update mode Refer to "1-6. Software Version Updating Using IC Card".

S2-2: Debug mode 0
Do not change the factory setting.

S2-2	Setting
OFF	Normal operation mode
ON	Can not be selected (Not used)

S2-3: Debug mode 1
Do not change the factory setting.

S2-3	Setting
OFF	Normal operation mode
ON	Can not be selected (Not used)

S2-4: TBC check mode setting

S2-4	Setting
OFF	Normal operation mode
ON	Displays TBC control state with the LEVEL indicator.

S2-5: Not used (Do not change the factory setting.)

S2-6: Not used (Do not change the factory setting.)

S2-7: Mode used during manufacturing.
Do not change the factory setting (OFF).

S2-8: SRAM initialization

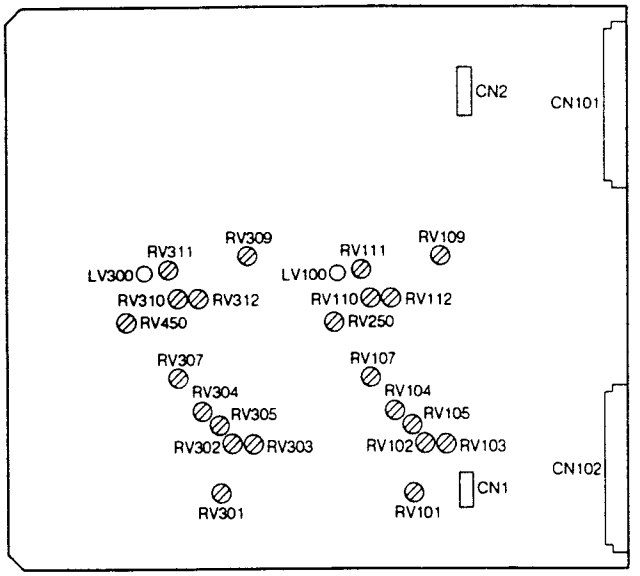
S2-8	Setting
OFF	Battery backup
ON	Reset to the factory setting.

Note: When S2-8 is set to "ON" (factory setting), the hours meters are reset to 0.

Factory setting

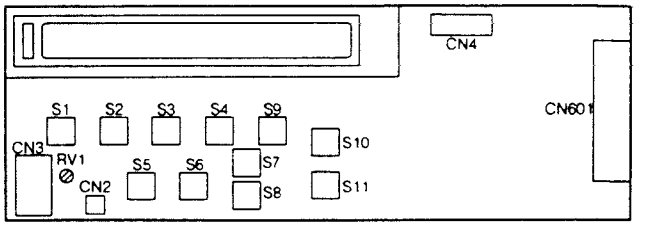
S2-1 to S2-8 switch: OFF

EQ-53 Board



EQ-53 BOARD (A SIDE)

KY-314 Board



KY-314 BOARD (A SIDE)

Indicator

LDC Display Panel
Refer to "1-7. LCD Display Panel Operation."

Switch

S1 to S11: LCD Display Panel Operation Switch
Refer to "1-7. LCD Display Panel Operation."

Volume

RV1: LCD Contrast (Density) Adjustment

Volumes

RV101: S ch Signal Input Level Adjustment
RV102: S ch EQ Bost Level Adjustment
RV103: S ch EQ Frequency Adjustment
RV105: S ch AGC Gain Adjustment
RV107: S ch Comparator Slice Level Adjustment
RV110: S ch Tracking Adjustment
RV111: S ch Tracking Loop Gain Adjustment
RV112: S ch Tracking Offset Adjustment
RV250: S ch AFC Offset Adjustment
RV251: S ch Comparator Input Level Adjustment
(Applied to board No. 1-653-126-12 and higher)

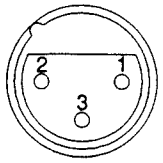
RV301: P ch Signal Input Level Adjustment
RV302: P ch EQ Bost Level Adjustment
RV303: P ch EQ Frequency Adjustment
RV305: P ch AGC Gain Adjustment
RV307: P ch Comparator Slice Level Adjustment
RV310: P ch Tracking Adjustment
RV311: P ch Tracking Loop Gain Adjustment
RV312: P ch Tracking Offset Adjustment
RV450: P ch AFC Offset Adjustment
RV451: P ch Comparator Input Level Adjustment
(Applied to board No. 1-653-126-12 and higher)

1-1-4. Input/Output Signals of the Connectors

Name	Input/Output	Signal Level	Signal Format	Impedance	Used Connector
PROJ 1, 2	I/O		SDDS CAMERA	—	FEMALE
SDDS REMOTE	I/O	RS-422	SDDS REMOTE	—	D-sub 15P, MALE
RS-232C	I/O	RS-232C	Asynchronous serial I/F 9600 boud, 8 bit, Even parity (1), Stop bit (1)	—	D-sub 9P, FEMALE
AUTOMATION I/O	I/O	Photo Capura Input O. C. Output	—	—	D-sub 37P, MALE
AUX-IN	I	Max +24 dBV (Balanced input) Max +18 dBV (Unbalanced input)	—	100 Ω or more	D-sub 25P, FEMALE
AUX-OUT	O	Max +24 dBV (Balanced input) Max +18 dBV (Unbalanced input)	—	100 Ω or more	D-sub 25P, MALE
BYPASS INPUTS	I	Max +24 dBV (Balanced input) Max +18 dBV (Unbalanced input)	—	10 kΩ or more	XLR 3P, FEMALE
SYSTEM OUTPUTS	O	Max +24 dBV (Balanced input) Max +18 dBV (Unbalanced input)	—	Less than 100 Ω	XLR 3P, MALE

BYPASS INPUTS (XLR 3P, FEMALE)

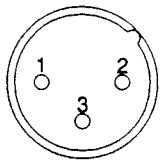
- OUTSIDE VIEW -



Pin No.	Input/Output	Signal Name	Signal Level	Description
1	—	GND	—	GND
2	I	HOT	Reference +4 dBu Max +24 dBu	Bypass Signal Balanced Input (HOT)
3	I	COLD	Reference +4 dBu Max +24 dBu	Bypass Signal Balanced Input (COLD)

SYSTEM OUTPUT (XLR 3P, MALE)

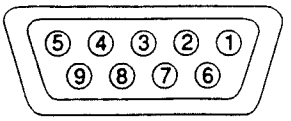
- OUTSIDE VIEW -



Pin No.	Input/Output	Signal Name	Signal Level	Description
1	—	GND	—	GND
2	O	HOT	Reference +4 dBu Max +24 dBu	Audio Signal Balanced Input (HOT)
3	O	COLD	Reference +4 dBu Max +24 dBu	Audio Signal Balanced Input (COLD)

RS-232C (D-sub 9P, FEMALE)

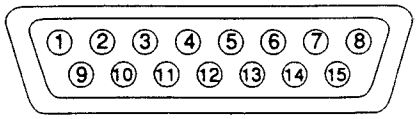
- OUTSIDE VIEW -



Pin No.	Input/Output	Signal Name	Signal Level	Description
1	—	NC	RS-232C	Not connection
2	I	RXD	RS-232C	Receive Data
3	O	TXD	RS-232C	Transmit Data
4	O	DTR	RS-232C	Data Terminal Ready
5	—	GND	RS-232C	Ground
6	—	NC	RS-232C	Not connection
7	0	RTS	RS-232C	Request to Send
8	I	CTS	RS-232C	Clear to Send
9	—	NC	RS-232C	Not connection

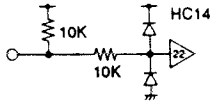
SDDS REMOTE (D-sub 15P, MALE)

- OUTSIDE VIEW -



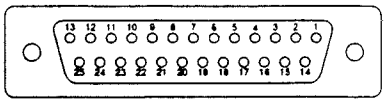
Pin No.	Input/Output	Signal Name	Signal Level	Description
1	—	D_GND	—	Ground
2	O	DISP_LATCH –	RS422	Display Latch –
3	O	DISP_CLK –	RS422	Display Clock –
4	O	DISP_DATA –	RS422	Display data –
5	—	D_GND	—	Ground
6	I	DEC_SW	CMOS	DEC MASTER VOLUME
7	I	BYPASS_SW	CMOS	BYPASS SW
8	—	24 V	—	DC 24 V
9	O	DISP_LATCH +	RS422	Display Latch +
10	O	DISP_CLK +	RS422	Display Clock +
11	O	DISP_DATA +	RS422	Display data +
12	—	D_GND	—	Ground
13	I	INC_5W	CMOS	INC MASTER VOLUME
14	I	MUTE_SW	CMOS	MUTE SW
15	—	24 V	—	DC 24 V

C MOS Level Input
Equivalent Circuit



AUX-IN (D-sub 25P, FEMALE)

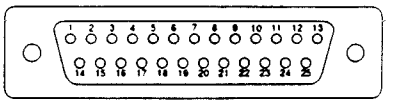
- OUTSIDE VIEW -



Pin No.	Input/Output	Description
1	I	Left Shld
2	I	Left Hi
3	I	Left Center Low
4	I	Center Shld
5	I	Center Hi
6	I	Right Center Low
7	I	Right Shld
8	I	Right Hi
9	I	Left Surround Shld
10	I	Left Surround Low
11	I	Surround Right Low
12	I	Sub Woofer Low
13	I	Sub Woofer Shld
14	I	Left Low
15	I	Left Center Shld
16	I	Left Center Hi
17	I	Center Low
18	I	Right Center Shld
19	I	Right Center Hi
20	I	Right Low
21	—	NC (Not connection)
22	I	Surround Right Shld
23	I	Left Surround Hi
24	I	Surround Right Hi
25	I	Sub Woofer Hi

AUX-OUT (D-sub 25P, MALE)

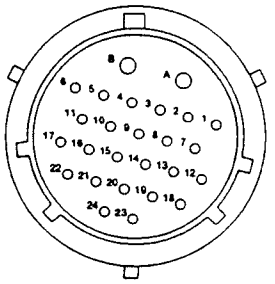
- OUTSIDE VIEW -



Pin No.	Input/Output	Description
1	O	Left Shld
2	O	Left Hi
3	O	Left Center Low
4	O	Center Shld
5	O	Center Hi
6	O	Right Center Low
7	O	Right Shld
8	O	Right Hi
9	O	Left Surround Shld
10	O	Left Surround Low
11	O	Surround Right Low
12	O	Sub Woofer Low
13	O	Sub Woofer Shld
14	O	Left Low
15	O	Left Center Shld
16	O	Left Center Hi
17	O	Center Low
18	O	Right Center Shld
19	O	Right Center Hi
20	O	Right Low
21	—	NC (Not connection)
22	O	Surround Right Shld
23	O	Left Surround Hi
24	O	Surround Right Hi
25	O	Sub Woofer Hi

PROJ 1, 2 (ROUND TYPE (F) 26P, FEMALE)

- OUTSIDE VIEW -



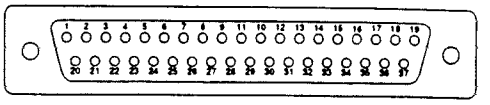
Pin No.	Input/Output	Signal Name	Signal Level	Description
A	O	DC 24 V	+24 V	Power Supply
A	—	GND	—	Ground
1	IN	CCD DATA	75 Ω/1 V	CCD DATA S ch
2	—	GND	—	CCD DATA S ch (Ground)
3	—	GND	—	TRACKING S ch (Ground)
4	O	TRACKING	75 Ω/1 V	TRACKING S ch
5	O	CCD CLOCK	75 Ω/1 V	CCD CK 8 MHz
6	—	GND	—	CCD CK 8 MHz (Ground)
7	I	FG	75 Ω/1 V	FG
8	—	GND	—	FG (Ground)
9	—	NC	—	Not connection
10	O	STROBE	75 W/1 V	STROBE for SERIAL COMMUNICATION
11	—	GND	—	STROBE (Ground)
12	I	MODE 1	GND	MODE DISCRIMINATION for PROCESSOR CONNECTION
13	O	SCK	75 Ω/1 V	CLOCK for SERIAL COMMUNICATION
14		READER	—	OPTION
15	—	GND	—	Ground
16	—	GND	—	CCD DATA P ch (Ground)
17	—	GND	—	SERIAL COMMUNICATION DATA (Ground)
18		TRACKING		TRACKING P ch
19	—	GND	—	TRACKING P ch (Ground)
20	I	P. TRACKING	75 Ω/1 V	TRACKING for PROCESSOR CONNECTION
21	I	CCD DATA	75 Ω/1 V	CCD DATA P ch
22	—	GND	—	Ground
23	I	SERIAL DATA	75 Ω/1 V	SERIAL COMMUNICATION DATA
24	O	STROBE	75 Ω/1 V	STROBE for SERIAL COMMUNICATION
SHELL	—	GND	—	Ground for 13 and 20 pins

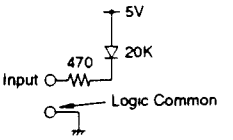
AUTOMATION I/O (D-sub 37P, MALE)

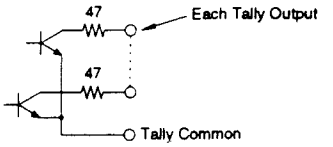
Pin No.	Input/ Output	Signal Name	Signal Level	Description
1	—	CHASSI GND	P. C	Chassis Ground
2	I	CHANGE TLY	P. C	Projector2 (Changeover) Sheet
3	I	ECM MUTE	P. C	External Channel Master Mute
4	I	L MUTE	P. C	External Channel Left Mute
5	I	LC MUTE	P. C	External Channel Left/Center Mute
6	I	C MUTE	P. C	External Channel Center Mute
7	I	RC MUTE	P. C	External Channel Right/Cenyer Mute
8	I	R MUTE	P. C	External Channel Right Mute
9	I	SW MUTE	P. C	External Channel Sub Mute
10	I	SL MUTE	P. C	External Channel Left Surround Mute
11	I	SR MUTE	P. C	External Channel Right Surround Mute
12	I	BYPASS	P. C	External Bypass
13	I	REMOTE DISABLE	P. C	SDDS Remote Disable
14	—	LOGIC CMN		Logic Common
15	—	LOGIC CMN		Logic Common
16	—	TLY CMN		Tally Common Shown in the figure
17	—	TLY CMN		Tally Common Shown in the figure
18	—	TLY CMN		Tally Common Shown in the figure
19	—	TLY CMN		Tally Common Shown in the figure
20	O	PROJ1 TLY	O. C	Projector 1 Tally
21	O	PROJ2 TLY	O. C	Projector 2 Tally
22	O	M MUTE TLY	O. C	Master Mute Tally
23	O	L MUTE TLY	O. C	Left Mute Tally
24	O	LC MUTE TLY	O. C	Left/Denter Mute Tally
25	O	C MUTE TLY	O. C	Center Mute Tally
26	O	RC MUTE TLY	O. C	Right/Center Mute Tally
27	O	R MUTE TLY	O. C	Right Mute Tally
28	O	SW MUTE TLY	O. C	Sub Mute Tally
29	O	SL MUTE TLY	O. C	Left Surround Mute Tally
30	O	SR MUTE TLY	O. C	Right Surround Mute Tally
31	O	BYPASS TLY	O. C	Bypass Tally
32	O	B P TLY	O. C	SDDS Data Presence Tally
33	O	ALARM TLY	O. C	System Alarm Tally
34	I	OPTION IN1	P. C	Lip Sync Plus Control
35	I	OPTION IN2	P. C	Lip Sync Minus Control
36	O	OPTION OUT1	O. C	Spare
37	O	OPTION OUT2	O. C	Spare

P. C : Photo coupler input
O. C: Open corrector output

- OUTSIDE VIEW -







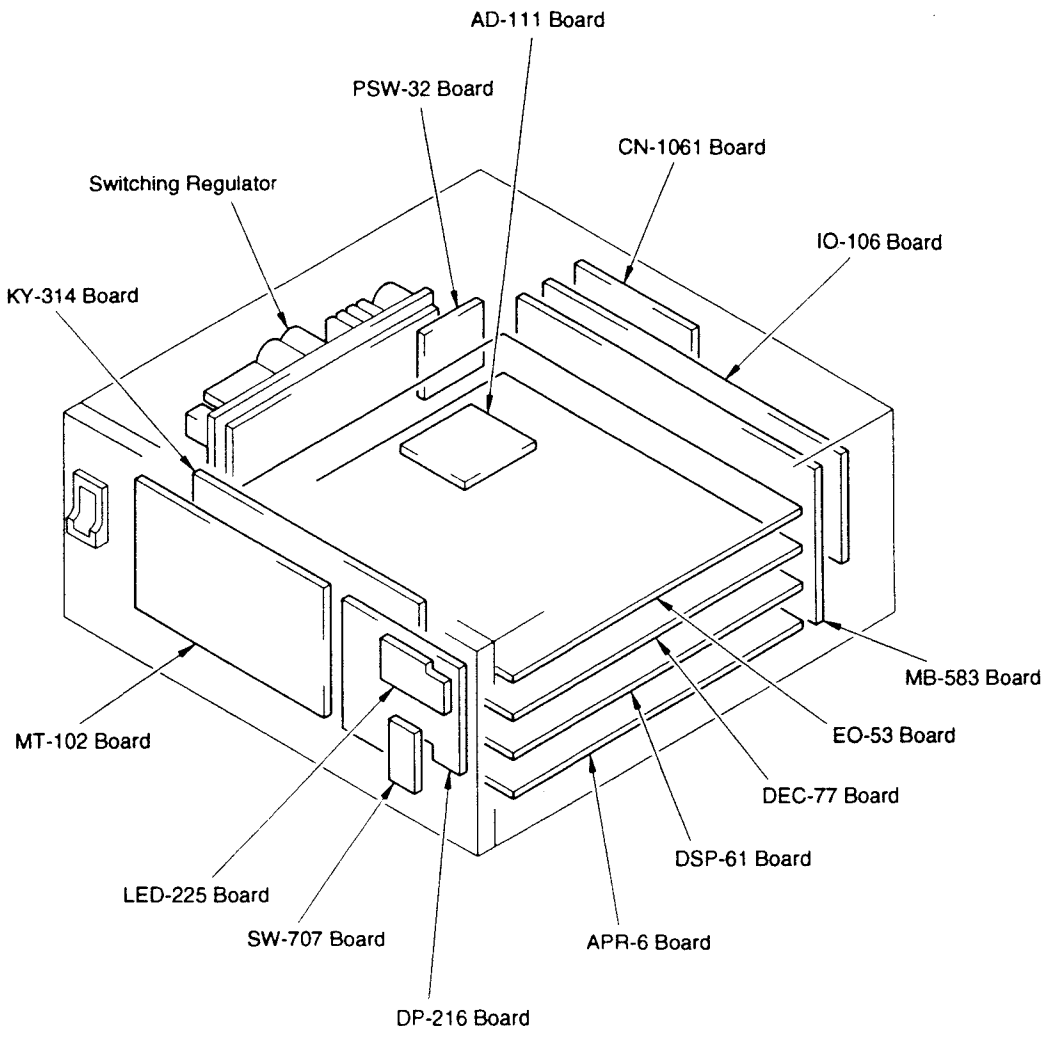
1-1-5. Connection Connector and Cable

When connecting cable to the connectors on the connector panel, use the connectors/ Cable equivalent with each other as listed below.

DFP-D2000 Side Connector		Matching Connector/Cable	
Panel Indication	**Type**	**Type**	**Sony Part No.**
BYPASS INPUT	XLR 3P, FEMALE	XLR 3P, MALE	1-508-084-11 (CANNON XLR-3-12C or equivalent)
SYSTEM OUTPUTS	XLR 3P, MALE	XLR 3P, FEMALE	1-508-083-11 (CANNON XLR-3-11C or equivalent)
AUX-IN	D-sub 25P, FEMALE	D-sub 25P, MALE Connection Cable (3 m)	1-564-747-11 (D-sub 25P, MALE with Shield) 1-558-116-11
AUX-OUT	D-sub 25P, MALE	D-sub 25P, FEMALE Connection Cable (3 m)	1-506-510-11 (D-sub 25P, FEMALE with Shield) 1-558-116-11
READER I/O PROJ 1 PROJ 2	Round type 26PIN, FE-MALE	CCZ-A25 Cable	Supplied accessory of DFP-R2000 or Optional accessory
SDDS REMOTE	D-sub 15P, MALE	D-sub 15P, FEMALE	
RS-232C	D-sub 9P, FEMALE	D-sub 9P, MALE RCC5G, 10G, 15G (Cable)	1-560-651-00 (Connector) 1-561-749-00 (Shell) Optional accessory
AUTOMATION I/O	D-sub 37P, MALE	D-sub 37P, FEMALE	

1-1-6. Rack Mounting

1-2. MAIN PARTS LOCATION



1-3. CIRCUIT CONFIGURATION

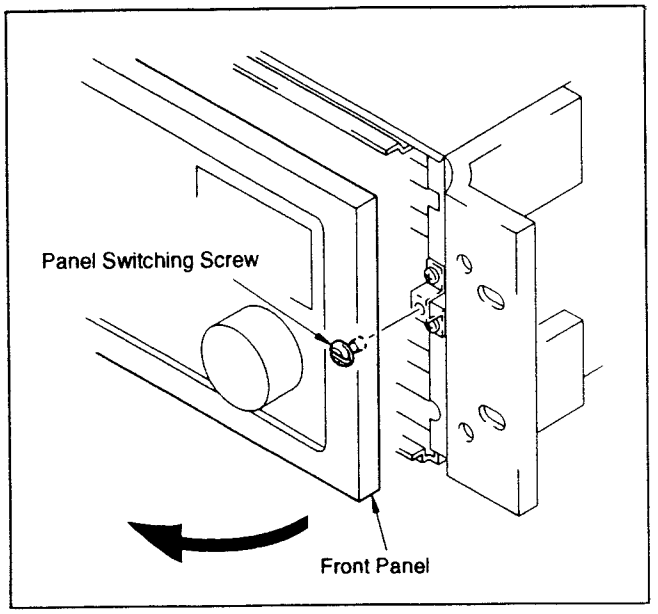
Board Name	Function
AD-111	ATRAC DECODE BOARD
APR-6	D/A CONVERTOR/LINE AMP/ CLOCK GEN BOARD
CN-1061	I/O CONNECTOR BOARD
DEC-77	ID DECODE/SHUFFLE/ECC DECODE/ DESCRAMBLE/TBC/SYSTEM DELAY/ ATRAC CONTROL BOARD
DP-216	SYSTEM CONTROL, AUDIO PROCESSING BOARD
DSP-61	INDICATOR BOARD

Board Name	Function
DUS-794	KEY I/F BOARD
DUS-810	BPF/COMPARATOR BOARD
EQ-53	PB·RF•EQ/AGC/RF•COMPARATOR/ AFC BOARD
IO-106	I/O I/F, AUDIO I/O CONNECTOR BOARD
KY-314	FRONT PANEL I/F, LCD KEY BOARD
LED-225	MASTER LEVEL DISPLAY BOARD
MB-583	MOTHER BOARD
MT-102	LED LEVEL METER BOARD
PSW-32	± 15 V CONTROL BOARD

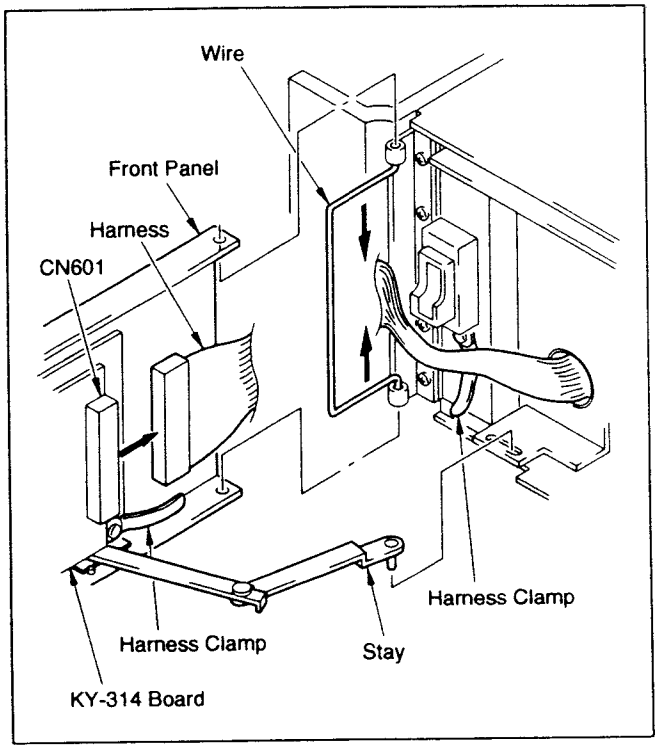
1-4. REMOVAL OF CABINET

1-4-1. Front Panel Removal

1. Loosen the Panel Switching Screw and open the Front Panel.

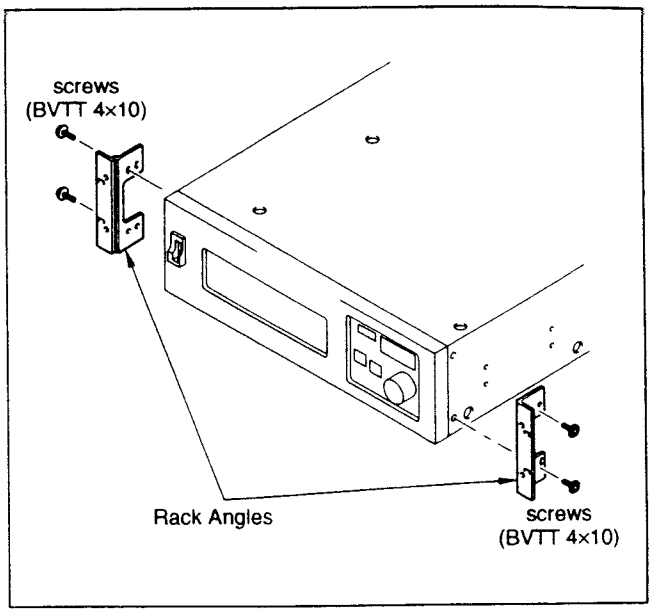


2. Remove the harness from the wire holders and disconnect connector CN601 from the KY-314 board. Press the wire of a front hinge in the direction of the arrows and pull up a stay form the hole to remove Front Panel.

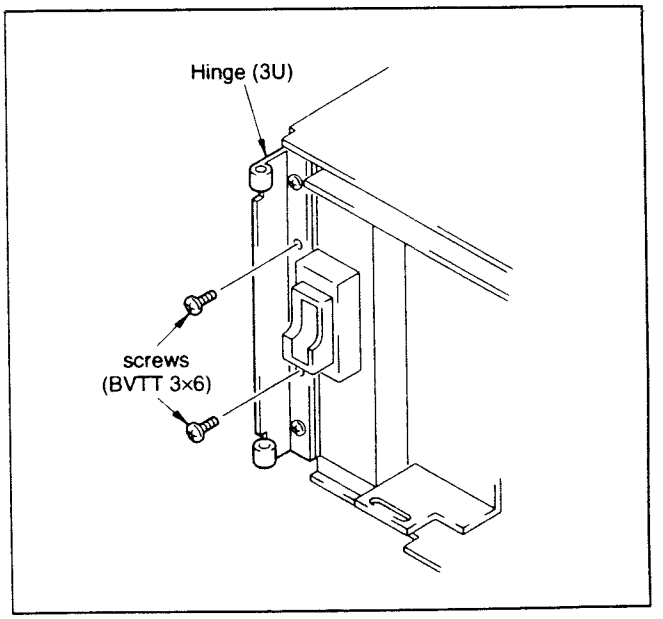


1-4-2. Chassis (Upper) Removal

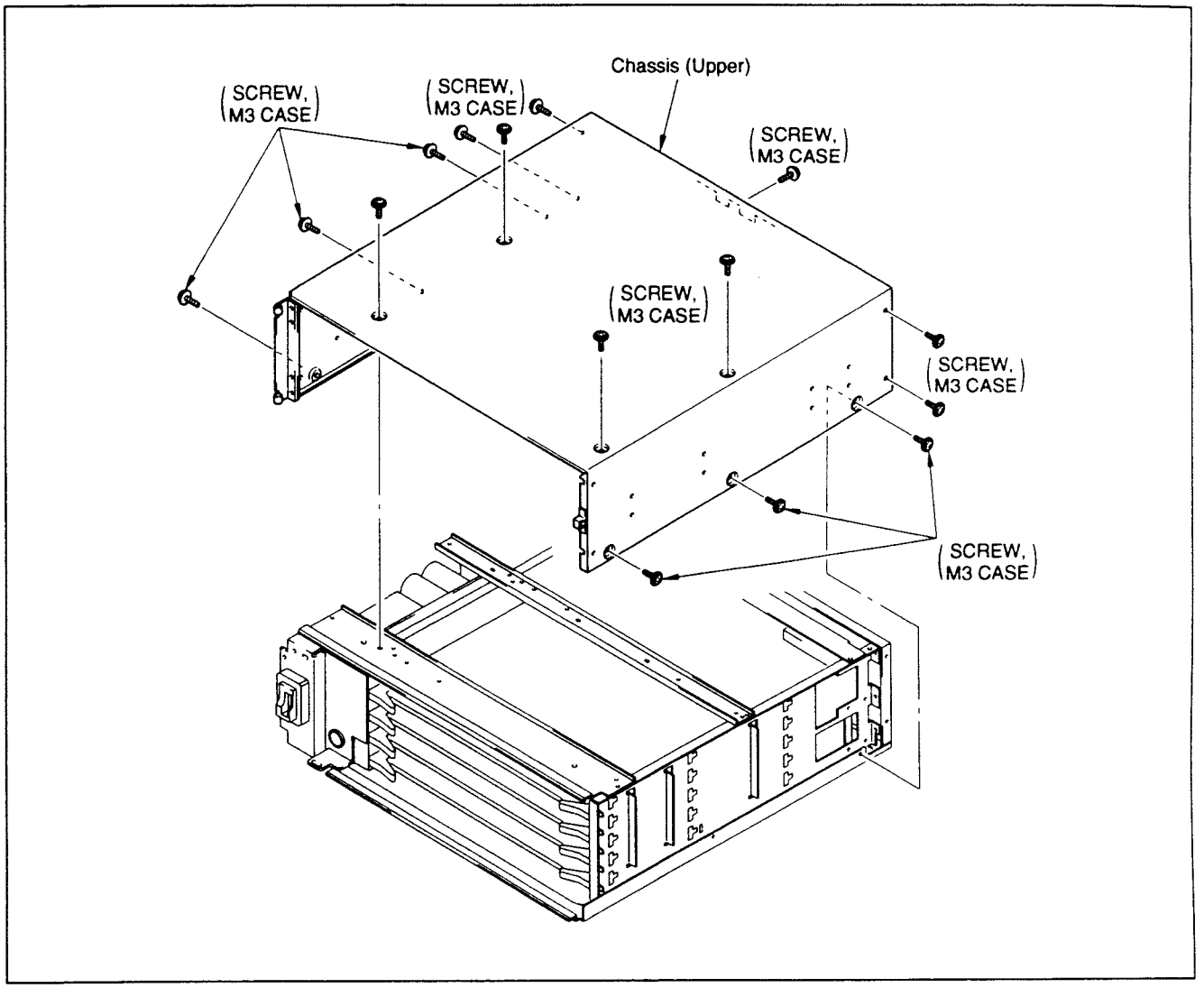
1. Remove the two screws (BVTT 4×10) to remove the Rack Angle.



2. Remove the Front Panel. (Referring to Section 1-4-1.)
3. Remove the four screws (BVTT 3×6) to remove the HINGE (3U).



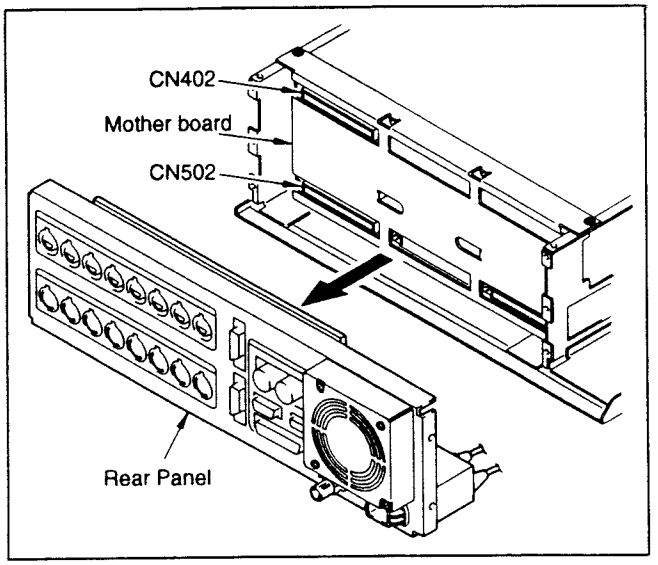
4. Remove the fifteen screws (SCREW, M3 CASE) to remove the Chassis (Upper).



1-4-3. Rear Panel Removal

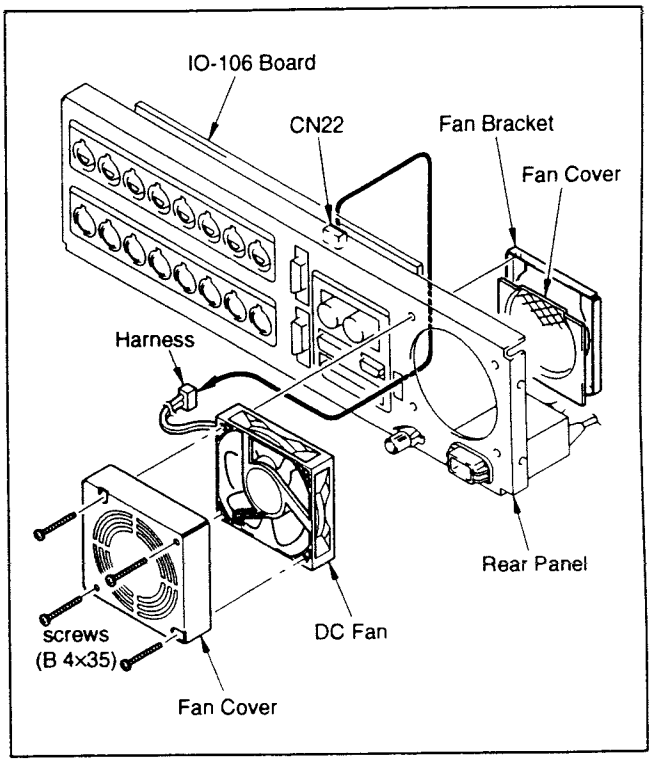
1. Remove the Front Panel. (Referring to Section 1-4-1.)
2. Remove the Chassis (Upper). (Referring to Section 1-4-2.)
3. Disconnect the harnesses from the connectors (CN4, CN5 and CN21) of the rear panel.
4. Disconnect the connectors (CN17 and CN18) of the rear panel from the connectors (CN402 and CN502) on the mother board, and remove the rear panel to the direction by the arrow.

Note: Some harness are connected to the unit. Do not pull the Rear Panel by force.



1-4-4. DC Fan Motor Replacement

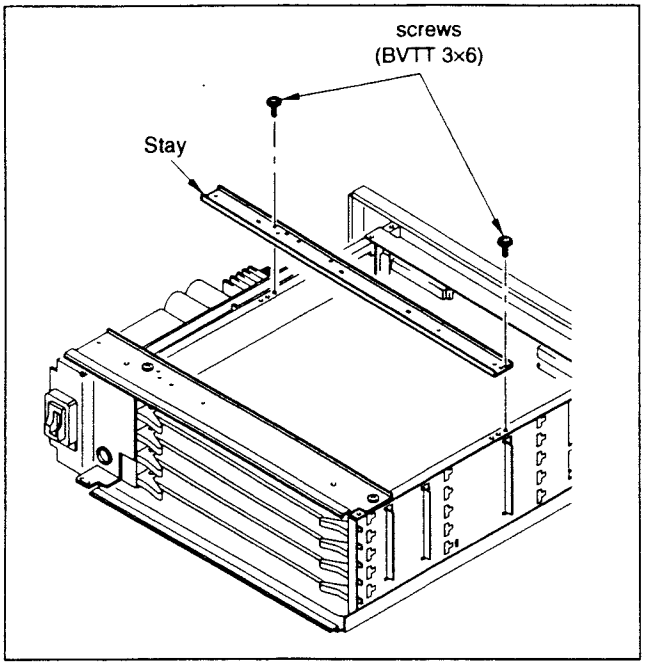
1. Remove the Front Panel. (Referring to Section 1-4-1.)
2. Remove the Chassis (Upper). (Referring to Section 1-4-2.)
3. Remove the Rear Panel. (Referring to Section 1-4-3.)
4. Disconnect the harness from the connector (CN22) on the IO-106 board.
5. Remove the four screws (B4×35), pull out the harness from the rear panel, and remove the DC fan.
6. After replacement is completed, mount the new DC fan in the reverse procedure of steps (1) to (5).



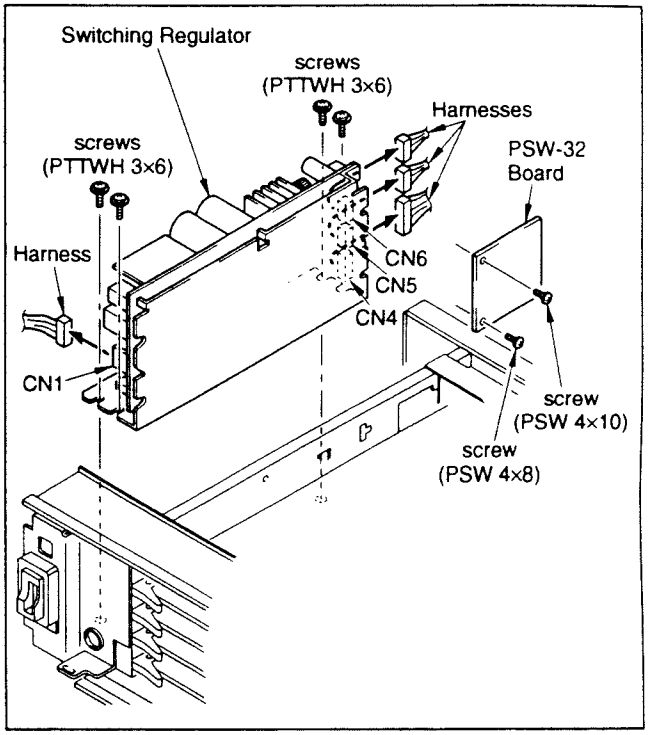
1-5. POWER UNIT REMOVAL

Note: Be sure to turn off the POWER and disconnect the power cable before replacing.

1. Remove the Front Panel. (Referring to Section 1-4-1.)
2. Remove the Chassis (Upper). (Referring to Section 1-4-2.)
3. Remove the two screws (BVTT 3×6) to remove the Stay.



4. Remove the four screws (PTTWH 3×6). Disconnect the harnesses from the four connectors (CN1, CN4, CN5 and CN6) to remove the Switching Regulator.
5. Remove the screws (PSW 4×10 and PSW 4×8), and remove the PSW-32 board from the switching regulator.



6. After replacement is completed, mount the new switching regulator in the reverse procedure of steps (1) to (5).

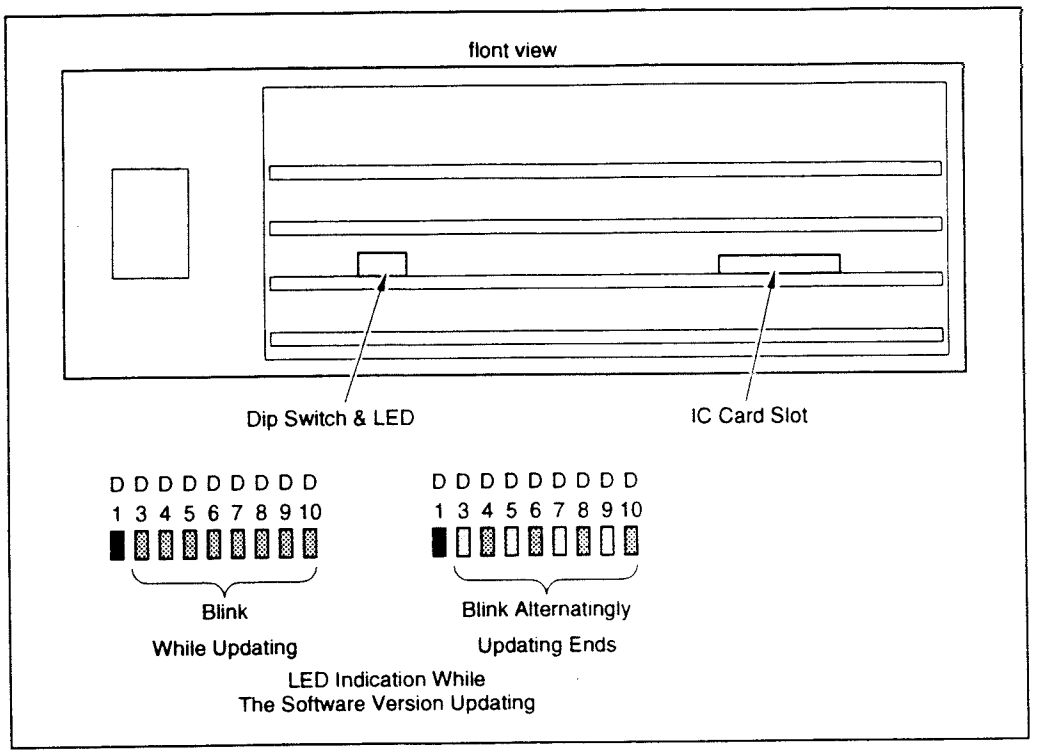
1-6. SOFTWARE VERSION UPDATING USING IC CARD

The version of the SDDS control software can be updated on the DSP-61 board of the DFP-D2000 by using IC card.

Note: Some internal parts of the DFP-D2000 can be easily destroyed by static electricity. Be sure to prevent static electricity in working with internal parts.

Procedure:

(1) Turn off the power of DFP-D2000.
(2) Open the front panel after taking measures for preventing static electricity.
(3) Insert the IC card to the IC card slot of the DSP-61 board (card slot No. 4).
(4) Set dip switch S2-1 on the DSP-61 board to "ON".
(5) Turn on the power of DFP-D2000. After a while, the LEDs (D3 to D10) on the DSP-61 board will blink and the program will start.
(6) When version updating ends, the LEDs (D1 and D10) on the DSP-61 board will blink alternatingly.



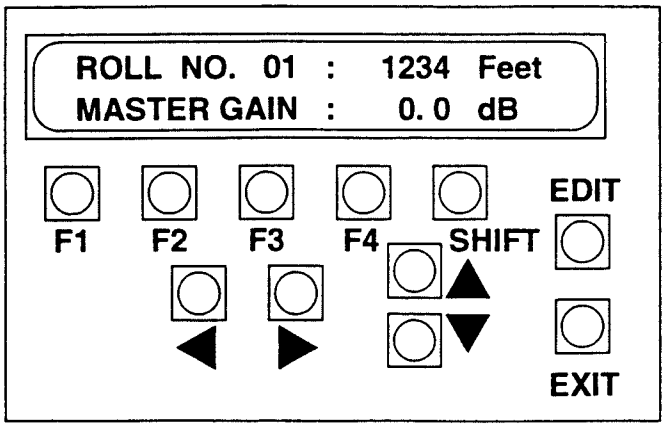
(7) Turn off the power of DFP-D2000.
(8) Set dip switch S2-1 to "OFF" and take out the IC card from the slot.
(9) Turn on the power of DFP-D2000 and check that version updating has been executed on the LCD panel.

Note: Set the timer calendar again after version updating.

1-7. LCD PANEL OPERATION

Operate the LCD panel (KY-314 board) in the DFP-D2000 according to the following instructions.

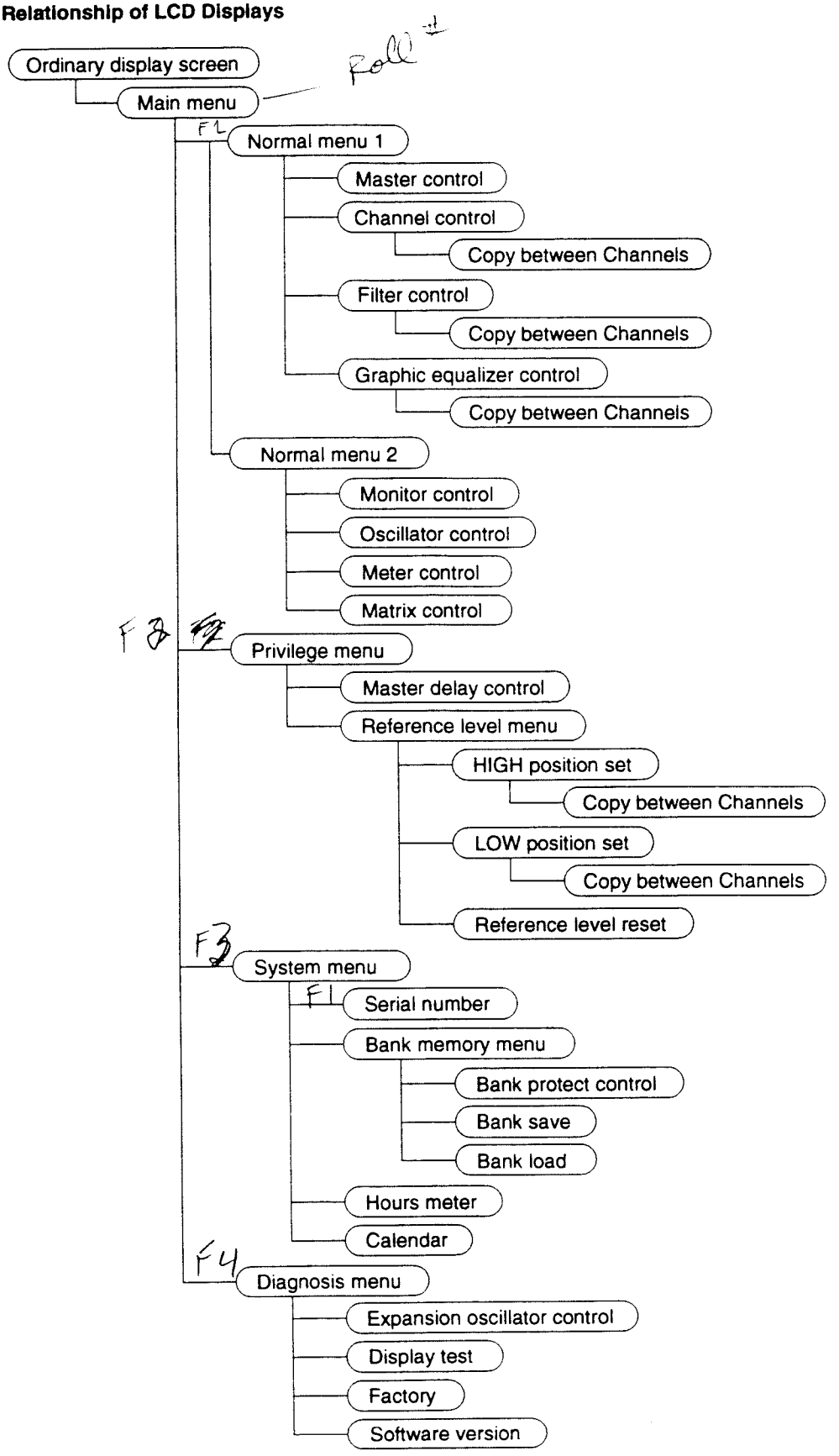
LCD Panel (KY-314 Board)



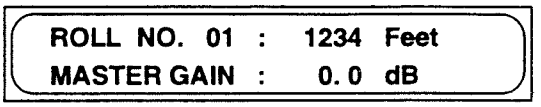
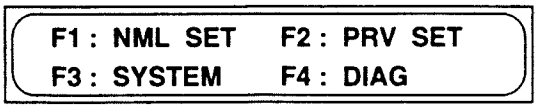
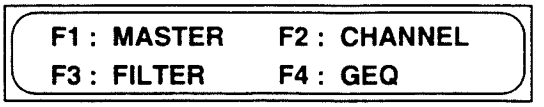
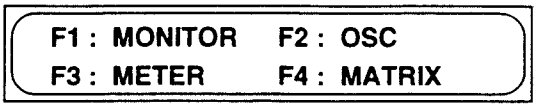
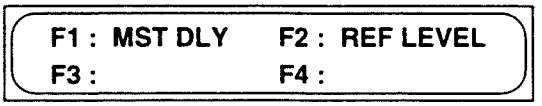
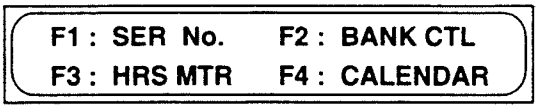
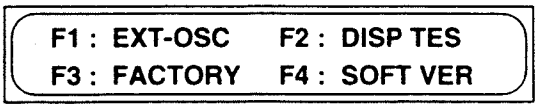
Functions of Keys

Key Name	Description
EDIT	Use this key for moving from an ordinary display screen to the main menu or for moving from any non-ordinary display screen to an ordinary display screen.
EXIT	Use this key for going back to the previous screen.
F1	Use these keys for selecting corresponding items on menus.
F2	Use these keys for selecting corresponding items on menus.
F3	Use these keys for selecting corresponding items on menus.
F4	Use these keys for selecting corresponding items on menus.
SHIFT	Use this key for moving to the next selection item on a control screen or for changing from Normal Menu 1 to Normal Menu 2 or vice versa.
▶	Use this key for moving to the next selection item on a control screen.
◀	Use this key for moving to the preceding selection item on a control screen.
▲	Use this key for incrementing the numerical value or the contents of the selected item.
▼	Use this key for decrementing the numerical value or the contents of the selected item.

Relationship of LCD Displays



Description of Menu Screens

Menu Screens	Description
Ordinary display screen  	• This screen displays the Roll No. of the film being reproduced, the reproduction position, and master gain. • This screen is displayed when power is turned on. This screen can be displayed from any other screen by pressing the [EDIT] key.
Main menu  	• This screen is displayed by pressing the [EDIT] key from the ordinary display screen. • Select the Normal Menu, Privilege Menu, System Menu, or Diagnosis Menu from this screen.
Normal menu Normal menu 1  Normal menu 2  	• The Normal Menu screen is displayed by pressing the [F1] key from the main menu. • Normal Menu 1 and Normal Menu 2 are selected alternatingly by pressing the [SHIFT] key. • From Normal Menu 1, the Master Control [F1], Channel Control [F2], Filter Control [F3] or Graphic Equalizer Control [F4] screen can be selected using the [F1] to [F4] keys. • From Normal Menu 2, the Monitor Control [F1], Oscillator Control [F2], Meter Control [F3] or Matrix Control [F4] screen can be selected using the [F1] to [F4] keys.
Previlege menu  	• This screen is displayed by pressing the [F2] key from the main menu. • The Master Delay Control [F1] or [F2] Reference Level Control screen can be selected from this menu using the [F1] and [F2] keys.
System menu  	• This screen is displayed by pressing the [F3] key from the main menu. • From this menu, the Serial Number Display [F1], Bank Memory Control [F2], Hours Meter Display [F3] or Calendar Display [F4] screen can be selected using the [F1] to [F4] keys.
Diagnosis menu  	• This screen is displayed by pressing the [F4] key from the main menu. • From this menu, the Extended Oscillator Control [F1], Display Check [F2], Factory Use [F3] or Software Version [F4] screen can be selected using the [F1] to [F4] keys.

1-8. REPLACING BACKUP BATTERY

The following boards are provided with a RAM backup battery. When replacing a RAM backup battery, be sure to use the battery listed in the parts list.
The replacement procedures are described below:

DSP-61 board: CR2025 (B1).
When the battery on DSP-61 board runs down, the SYSTEM OK LED on the control panel will be light off, hence it is necessary to replace this battery periodically. The standard replacement interval is 2 or 3 years after you purchased the PLAYER.
Replace the battery using the following procedures:

(1) Turn the power ON, and after three minutes turn it OFF again and then remove the board.
(2) When replacing the battery, take care not to touch any conductive parts other than the battery.
Even after the battery has been removed, the data will be retained for several days, however the battery should be replaced with a new one as quickly as possible.

Note: Unless the above procedures are followed, all of the RAM data will be lost.

SECTION 2
ELECTRICAL ALIGNMENT

This section explains the adjustment procedures required when the following circuit boards are repaired or maintained.

ARP-6 board
EQ-53 board

2-1. Preparations

2-1-1. Equipment, and Tools Required

Equipment

Name	Specifications (minimum)	Model
Audio analyzer	• Oscillator • Level meter • Distortion meter	TEKTORONIX SG505, AA501 or equivalent
Oscilloscope	Frequency range: DC to 100 MHz 2 phenomena Sensitivity: 5 mV/div or more	————
Frequency counter	Effective digits: 10 digits or more	————

Tools

Name	Parts No.	Remarks
Extension board EX-459	A-8314-385-A	————
RF adjusting tool	Pending	For EQ-53 board adjustment
Film running tool	Pending	For EQ-53 board adjustment
SONY CCZ-A2/A5/A10 (2 m/5 m/10 m)	Optional accessory	For EQ-53 board adjustment
Alignment film	Pending	For EQ-53 board adjustment

2-1-2. Switch and Control Initial Settings

DFP-D2000

Front Panel

MASTER VOLUME control : Any setting
MUTE switch : OFF (Unlit)
BYPASS switch : OFF (Unlit)

ARP-6 board

S1 switch : HIGH level
RV1, RV2 : Turn fully to the counter-clockwise direction.
JW*00, JW*03 : With jumper socket
JW*01, JW*04 : Without jumper socket
*: 1 to 7
S1000 switch : Current setting
S1001 switch : Current setting

DSP-61 board

S2-1 to S2-8 switch : ALL OFF

2-2. ARP-6 Board Adjustment

2-2-1. PLL Block Adjustment

The procedure for adjusting the PLL block of the ARP-6 board is explained here.

Equipment and Tools

Frequency counter
Oscilloscope
Extension board EX-459

Switch and control settings

Same as section "2-1-2. Switch and Control Initialy Settings" except the following settings.

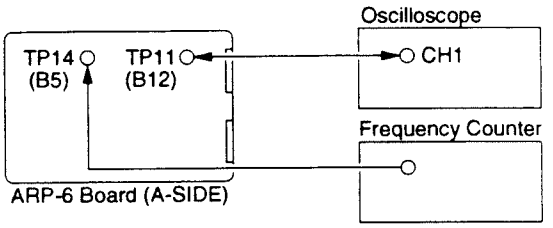
ARP-6 board

S1000 switch: "2"
S1001 switch: "8"
S1 switch : HIGH level

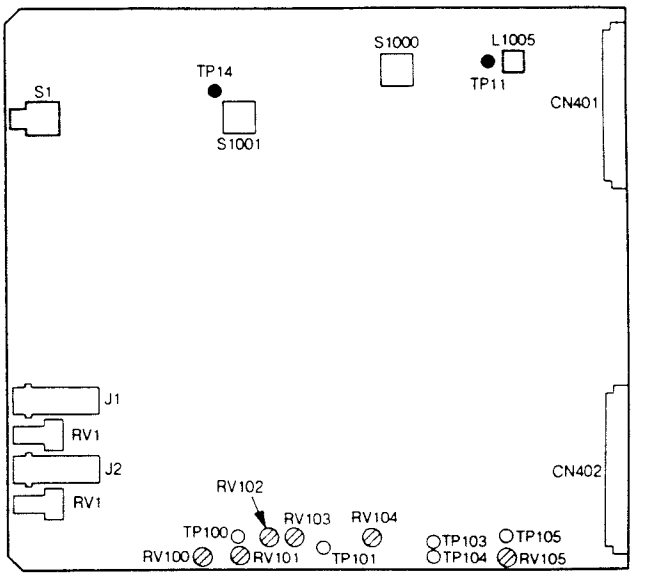
Preparation

- Extend the ARP-6 board using the extension board EX-459.

Connection



Adjustment Location



ARP-6 BOARD (A-SIDE)

Adjustment

Item	Adjustment Conditions	Specifications	Adjustment
Step 1: VCO center adjustment.	• Connect the oscilloscope to the TP11/ARP-6 board.	Voltage at TP11: 2.2 ± 0.2 V	⊘L1005 (B12)
Step 2: Reference 96 Hz free run frequency adjustment.	• Connect the frequency counter to the TP14/ARP-6 board.	Frequency (period measurement) at TP14: 10416.7 ± 0.1 µs	Turn the S1001 rotary switch 1 step at a time.

2-2-2. D/A Block Adjustment

The procedure for adjustment the D/A block of the ARP-6 board is explained here.

Equipment and Tools

Audio analyzer
Oscilloscope
Extension board EX-459

Switch and control settings

Same as section "2-1-2. Switch and Control Initial Settings" except the following settings.

Front Panel

MASTER LEVEL control : 0.0 dB (MASTER LEVEL indication)

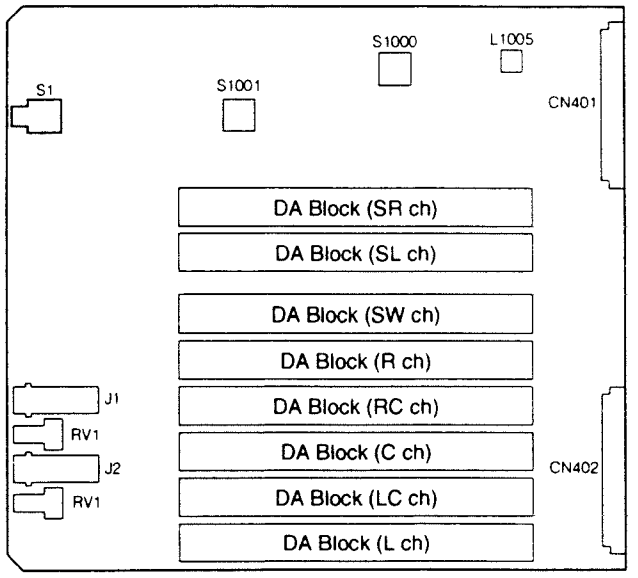
ARP-6 board

S1 switch : HIGH level side

Preparation

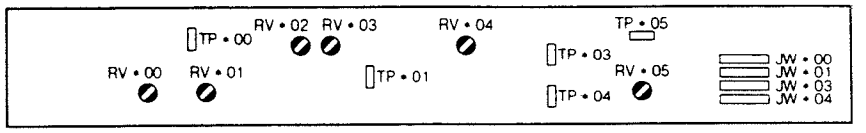
- Extend the ARP-6 board using the extension board EX-459 and perform the adjustment after aging for 20 minutes.

Adjustment Location



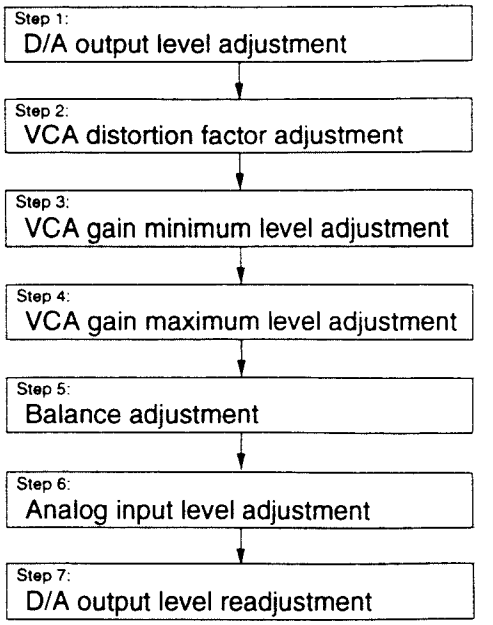
ARP-6 BOARD (A-SIDE)

D/A Block



- Adjust each D/A block by the following adjustment procedure.

Adjusting Procedure



Note : The * mark indicates the following figures (1-7).

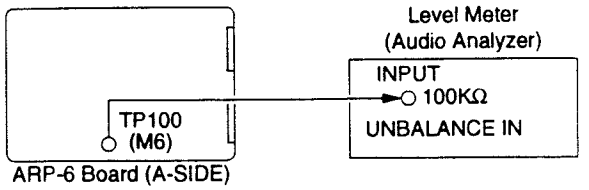
1; L-ch (Ref No. 100's), 2; LC-ch (Ref No. 200's), 3; C-ch (Ref No. 300's), 4; RC-ch (Ref No. 400's), 5; R-ch (Ref No. 500's), 6; SW-ch(Ref No. 600's), 7; CL-ch(Ref No. 700's), 8; SR-ch(Ref No. 800's)

1. D/A Block (Lch) Adjustment

Note : Perform the following adjustment in the order of step number.

Step 1: D/A output level adjustment

Connection

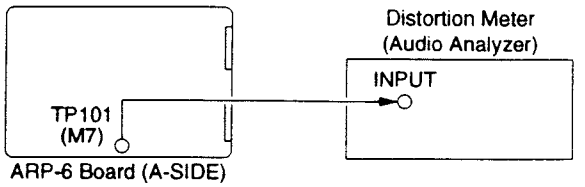


Adjustment

Adjustment Conditions	Specifications	Adjustment
• Set the built-in oscillator (OSC) of the DFP-D 2000 to 1 kHz, –20 dBFS. **Setting the oscillator (OSC)** Open the front panel, select "Normal Menu 2: OSC" on the LCD panel, and set the oscillator as follows. (refer to 1-7, "LCD Panel Operation," as needed) (1) Press the [◁] and [▷] keys to move the arrow to CHANNEL. (2) Press the [△] and [▽] keys to select ALL CHANNEL or the channel you want. (3) Press the [◁] and [▷] keys to move the arrow to TYPE. (4) Press the [△] and [▽] keys to select 1 KHz. (5) Press the [◁] and [▷] keys to move the arrow to GAIN. (6) Press the [△] and [▽] keys to select –20 dB (–20 dBFS). • Connect the level meter (audio analyzer) to the TP100/ARP-6 board.	Level meter indication: –1.5 dBu ± 0.5 dB (0 dBu = 0.775 Vrms)	⊘RV100 (M5)

Step 2: VCA distortion factor adjustment

Connection

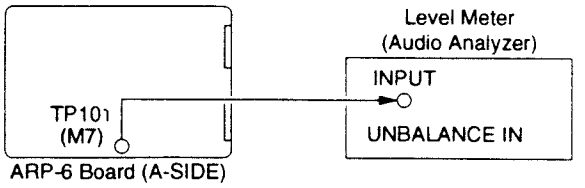


Adjustment

Adjustment Conditions	Specifications	Adjustment
• Set the built-in oscillator (OSC) of the DFP-D 2000 to 1 kHz, –20 dBFS. (Same as Step 1.) • Connect the distortion meter (audio analyzer) to the TP101/ARP-6 board.	Distortion factor: 0.07% or less	⊘RV101 (M6)

Step 3: VCA gain minimum level adjustment

Connection

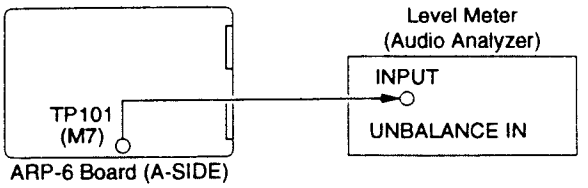


Adjustment

Adjustment Conditions	Specifications	Adjustment
• Set the built-in oscillator (OSC) and the reference level (REF LEVEL) on the LCD panel of the DFP-D2000 as follows: 1. Oscillator (OSC): 1 kHz, –20 dBFS 2. Reference level (REF LEVEL): –21.0 dBu **1. Setting the oscillator (OSC)** Same as step 1. **2. Setting the reference level (REF LEVEL)** Select "Privilege Menu REF LEVEL" screen on the LCD panel and take the following Steps (1) to (4): (1) Press the [F1] key to select HIGH. Check that the S1/ARP-6 board is set to HIGH. (2) Press the [△] and [▽] keys to select CHANNEL. (3) Press the [◁] and [▷] keys to move the arrow to ** dBu. **Note:** "**" indicates a numerical value. (4) Holding the [▽] key down, set the reference level to –21.0 dBu. • Connect the level meter (audio analyzer) to the TP101/ARP-6 board.	Level meter indication: –27.0 dBu ± 0.3 dB (0 dBu = 0.775 Vrms)	⊘RV102 (M6)

Step 4: VCA gain maximum level adjustment

Connection



Adjustment

Adjustment Conditions	Specifications	Adjustment
• Set the built-in oscillator (OSC) and the reference level (REF LEVEL) on the LCD panel of the DFP-D2000 as follows: 1. Oscillator (OSC): 1 kHz, –20 dBFS 2. Reference level (REF LEVEL): +4.5 dBu **1. Setting the oscillator (OSC)** Same as step 1. **2. Setting the reference level (REF LEVEL)** Set the reference level to +4.5 dBu by referring to "2. Setting the reference level (REF LEVEL)," of "Step 3. VCA gain minimum level adjustment". Set by holding the [△] key down. • Connect the level meter (audio analyzer) to the TP101/ARP-6 board.	Level meter indication: –1.5 dBu ± 0.1 dB (0 dBu = 0.775 Vrms)	⊘RV103 (M7)

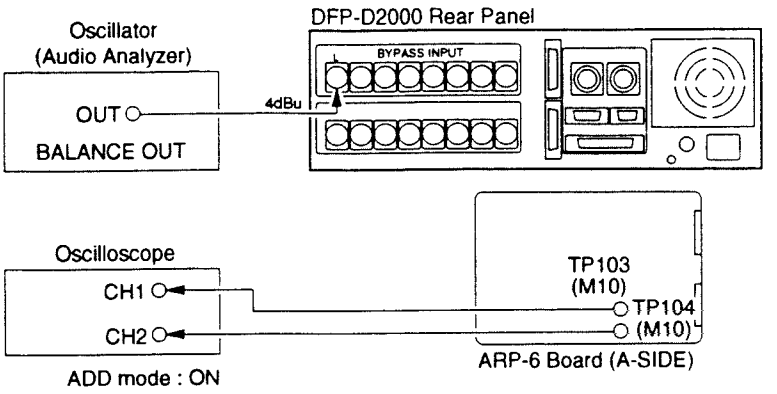
Note : After Step 4 adjustment is completed, perform the followings (1 and 2).

1. Set the reference level (REF LEVEL) to the default value again.
   (1) Press the [EXIT] key.
   (2) Press the [F3] (RESET) key.
   (3) Press the [F1] (EXEC) key. (The reference level has been set to the default value.)

2. Set the oscillator (OSC) to OFF.
   (1) Press the [EXIT] key several times to return to the initial screen.
   (2) Set the oscillator (OSC) to OFF by following the instructions in "Setting the oscillator (OSC)" of "Step 1. D/A output level adjustment".
   (3) Press the [EXIT] key several times to return to the initial screen.

Step 5: Balance adjustment

Connection

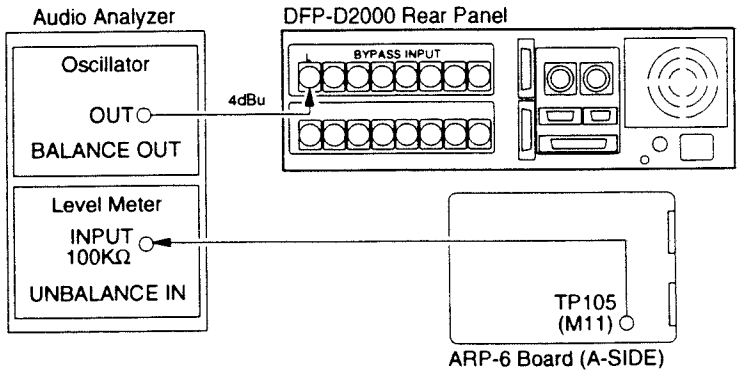


Adjustment

Adjustment Conditions	Specifications	Adjustment
• Input 1 kHz, +4 dBu analog signals to the BYPASS INPUT L connector from the oscillator (audio analyzer). • Turn on the BYPASS switch on the front panel. • Connect the oscilloscope to the following terminals of the ARP-6 board. Oscilloscope → ARP-6 board CH1 → TP103 CH2 → TP104 ADD mode: ON	Oscilloscope output waveform: Flat waveform	⊘RV104 (M8)

Step 6: Analog input level adjustment

Connection

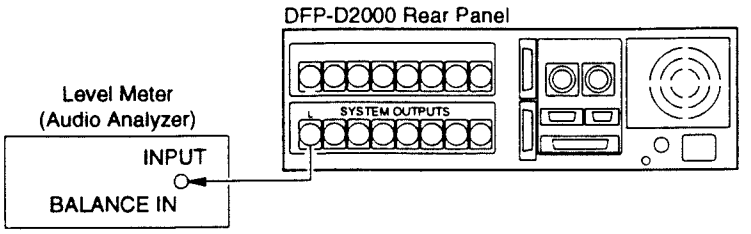


Adjustment

Adjustment Conditions	Specifications	Adjustment
• Input 1 kHz, 4 dBu analog signals to the BYPASS INPUT L connector from the oscillator (audio analyzer). • Turn on the BYPASS switch on the front panel. • Connect the level meter (audio analyzer) to the TP105/ARP-6 board.	Level meter indication: −2.0 dBu ± 0.5 dB (0 dBu = 0.775 Vrms)	⊘RV105 (M11)

Step 7: D/A output level readjustment

Connection



Adjustment

Adjustment Conditions	Specifications	Adjustment
1. • Connect the level meter (audio analyzer) to the SYSTEM OUTPUTS L connector. • Turn off the BYPASS switch. • S1 switch: HIGH level	Level meter indication: +4.0 dBu ± 0.5 dB (0 dBu = 0.775 Vrms)	⊘RV100 (M5)
2. • Set the S1 switch to LOW level side.	Confirm Level meter indication: −10 dBu ± 1 dB	———

2. Adjust the D/A block (LC), D/A block (C), D/A block (RC), D/A block (R), D/A block (SW), D/A block (SL) and D/A block (SR) by following the instructions in "1. D/A block (L) Adjustment", but changing the adjustment and measurement parts according to the following table.

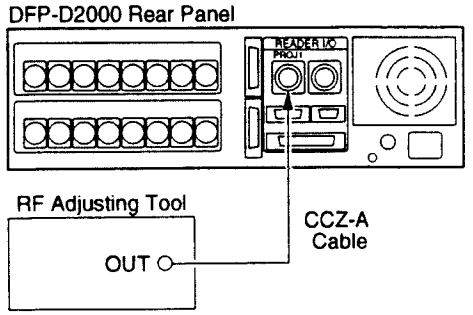
Adjustment item	Measurement/ Adjustment	D/A block							
		L	LC	C	RC	R	SW	SL	SR
Step 1: D/A output level adjustment	Measurement	TP100	TP200	TP300	TP400	TP500	TP600	TP700	TP800
	Adjustment	RV100	RV200	RV300	RV400	RV500	RV600	RV700	RV800
Step 2: VCA distortion factor adjustment	Measurement	TP101	TP201	TP301	TP401	TP501	TP601	TP701	TP801
	Adjustment	RV101	RV201	RV301	RV401	RV501	RV601	RV701	RV801
Step 3: VCA gain minimum level adjustment	Measurement	TP101	TP201	TP301	TP401	TP501	TP601	TP701	TP801
	Adjustment	RV102	RV202	RV302	RV402	RV502	RV602	RV702	RV802
Step 4: VCA gain maximum level adjustment	Measurement	TP101	TP201	TP301	TP401	TP501	TP601	TP701	TP801
	Adjustment	RV103	RV203	RV303	RV403	RV503	RV603	RV703	RV803
Step 5: Analog input level adjustment	Signal input connector	BYPASS INPUTS (Rear Panel)							
		L	LC	C	RC	R	SW	SL	SR
	Measurement	TP105	TP205	TP305	TP405	TP505	TP605	TP705	TP805
	Adjustment	RV105	RV205	RV305	RV405	RV505	RV605	RV705	RV805
Step 6: Balance adjustment	Signal input connector	BYPASS INPUTS (Rear Panel)							
		L	LC	C	RC	R	SW	SL	SR
	Measurement	TP103/ TP104	TP203/ TP204	TP303/ TP304	TP403/ TP404	TP503/ TP504	TP603/ TP604	TP703/ TP704	TP803/ TP804
	Adjustment	RV104	RV204	RV304	RV404	RV504	RV604	RV704	RV804
Step 7: D/A output level readjustment	Measurement	SYSTEM OUTPUTS (Rear Panel)							
		L	LC	C	RC	R	SW	SL	SR
	Adjustment	RV100	RV200	RV300	RV400	RV500	RV600	RV700	RV800

2-3. EQ-53 Board Adjustment

Equipment, and tools

Oscilloscope
RF adjusting tool
Extension board EX-459
CCZ-A cable
Alignment film
Film running tool

Connection



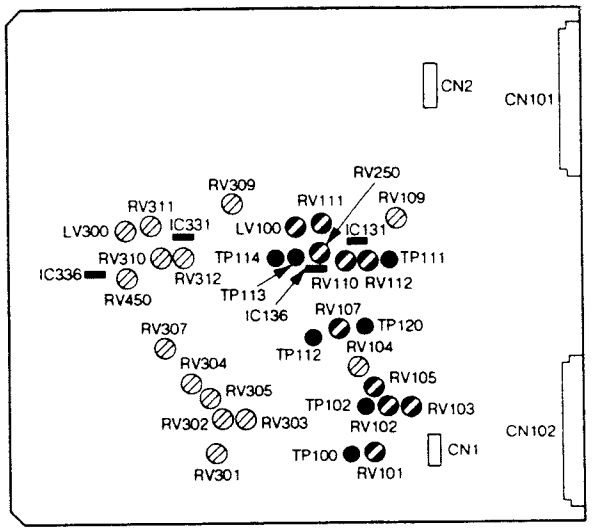
Switch and control settings

Same as section "2-1-2. Switch and Control Initial settings".

Preparation

1. Extend the EQ-53 board using the extension board EX-459.
2. RF adjusting tool setting.
   BYPASS/ERR. MIX switch: BYPASS
   ERROR LEVEL switch : BYPASS side
   NORMAL/A16 switch : NORMAL
   NORMAL/A17 switch : NORMAL

Adjustment Location

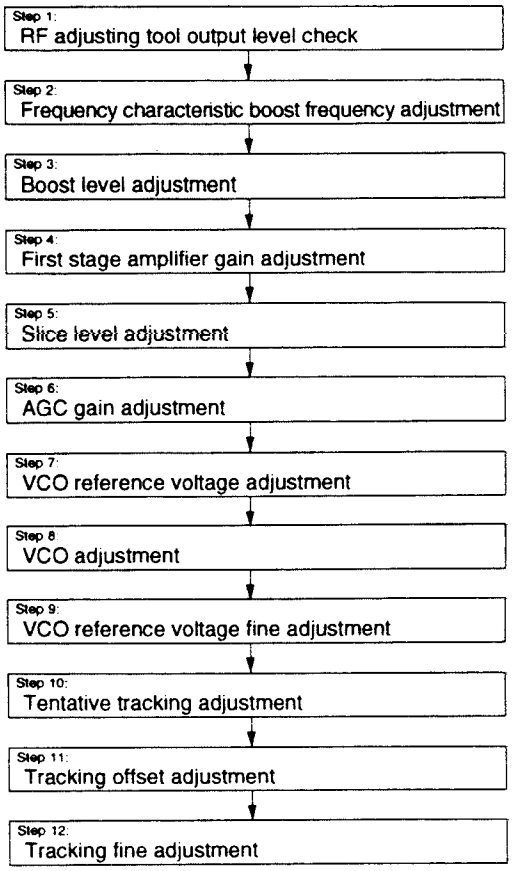


EQ-53 BOARD (A-SIDE) Board No. 1-653-126-11

Note : Since RV104, RV109, RV304, and RV309 are not functioning, they need not be adjusted.

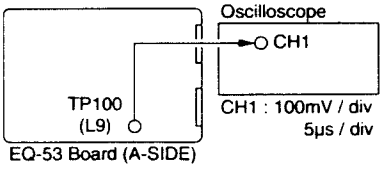
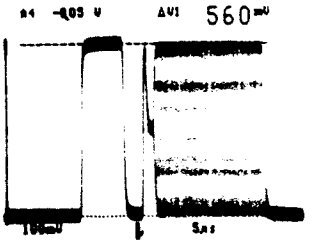
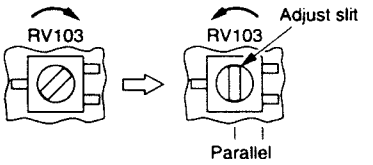
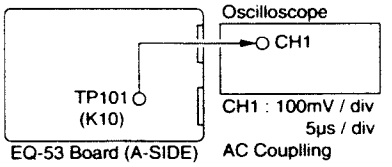
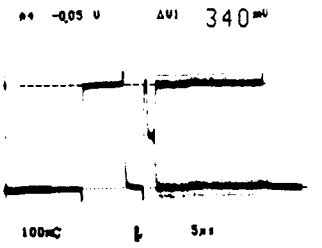
- Adjust the S-channel and P-channel separately by the following adjustment procedure.

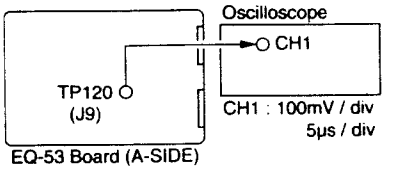
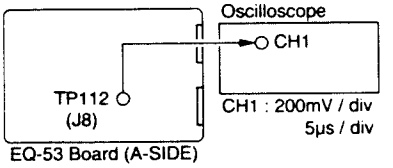
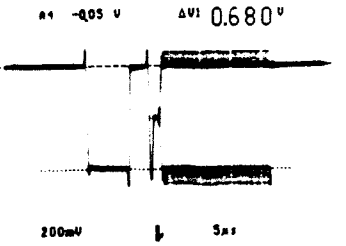
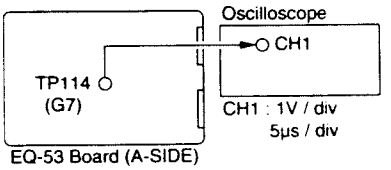
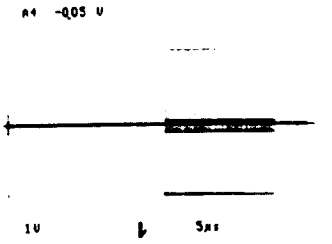
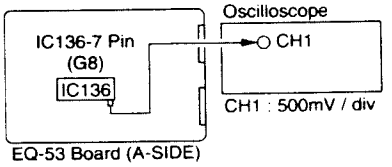
Adjusting Procedure

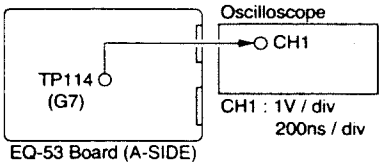
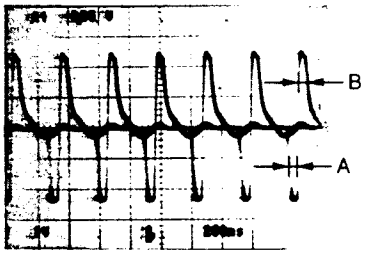
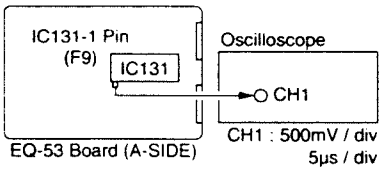
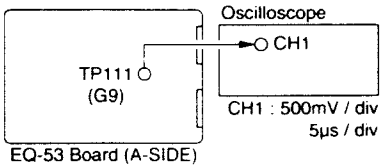


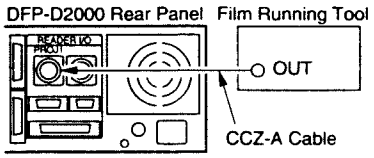
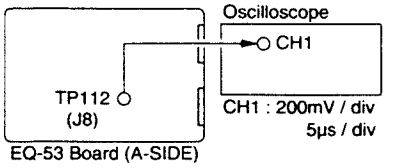
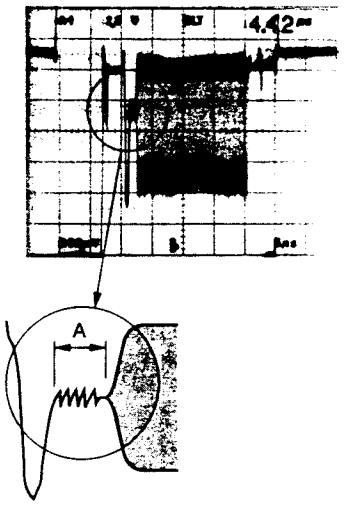
1. S-Channel Adjustment

Note : Preform the following adjustment item in the order of step number.

Adjustment Item	Adjustment Conditions	Specifications	Adjustment
Step 1: RF adjusting tool output level check	• Connect an oscilloscope to the TP100/EQ-53 board. Connection  	Check that the output level of TP100 is 560 ± 10 mV.  	———
Step 2: Frequency characteristic boost frequency adjustment	———	1. Turn RV103 fully to the clockwise direction. 2. Mechanically turn RV103 slightly to the counter-clockwise direction to make its adjusting groove to be parallel to the side.  	
Step 3: Boost level adjustment	———	Turn RV102 fully to the counterclockwise direction.	———
Step 4: First stage amplifier gain adjustment	• Connect an oscilloscope to the TP101/EQ-53 board. Connection  	Output level of TP101: 340 ± 5 mV  	⊘RV101 (L10)

Adjustment Item	Adjustment Conditions	Specifications	Adjustment
Step 5: Slice level adjustment	• Connect an oscilloscope to the TP120/EQ-53 board. Connection  	DC level of TP120: −360 ± 5 mVdc	⊘RV107 (J9)
Step 6: AGC gain adjustment	• Connect an oscilloscope to the TP112/EQ-53 board. Connection  	Voltage level of TP112: 680 ± 5 mV 	⊘RV105 (K10)
Step 7: VCO reference voltage adjustment	• Connect an oscilloscope to the TP114/EQ-53 board. Connection  	Adjust TP114 output waveform to be as plain as shown below. 	⊘RV250 (on the IC136 (G8))
Step 8: VCO adjustment	• Connect an oscilloscope to the IC136-7pin/EQ-53 board. Connection  	Voltage level of IC136-7 pin: −1.25 ± 0.05 V	⊘LV100 (F8)

Adjustment Item	Adjustment Conditions	Specifications	Adjustment
Step 9: VCO reference voltage fine adjustment	• Connect an oscilloscope to the TP114/EQ-53 board. Connection  	Adjust the oscilloscope waveform until A and B have the same width.  	⊘RV250 (on the IC136 (G8))
Step 10: Tentative tracking adjustment	• Turn RV111 fully to the clockwise direction. • Connect an oscilloscope to the IC131-1 pin/EQ-53 board. Connection  	DC voltage of IC131-1 pin: 0 ± 0.05 Vdc	⊘RV110 (G9)
Step 11: Tracking offset adjustment	• Connect an oscilloscope to the TP111/EQ-53 board. Connection  	DC voltage of TP111: 1.0 ± 0.05 Vdc	⊘RV112 (G9)

Adjustment Item	Adjustment Conditions	Specifications	Adjustment
Step 12: Tracking fine adjustment	• Disconnect the CCZ-A cable from the RF adjusting tool and connect it the film running tool. Connection  • Run the alignment film. • Turn RV111 fully to the clockwie direction. • Connect an ascilloscope to the TP112/EQ-53 board.  	Adjust TP112 output waveform until the tracking part (A) becomes flat.  	⊘RV110 (G9)

2. P-Channel Adjustment

Adjust P-channel by following the instructions in "1. S-Channel Adjustment", but changing the adjustment and measurement parts as shown below.

	S-channel		P-channel
Adjustment :	RV101	→	RV301
	RV102	→	RV302
	RV103	→	RV303
	RV105	→	RV306
	RV107	→	RV307
	RV110	→	RV310
	RV111	→	RV311
	RV112	→	RV312
	LV100	→	LV300
	RV250	→	RV450 (on the IC336 (G3))
Measurement :	TP100	→	TP300
	TP101	→	TP301
	TP111	→	TP311
	TP112	→	TP312
	TP114	→	TP314
	TP120	→	TP320
	IC131-1 pin	→	IC331-1 pin
	IC136-7 pin	→	IC336-7 pin

SECTION 3
BLOCK DIAGRAM AND DESCRIPTIONS

概要

DFP-D2000は、次の基板から構成されている。

メイン基板　　: APR-6 Board, DEC-77 Board, DSP-61 Board, EQ-53 Board
フロントパネル部: KY-314 Board, MT-102 Board, SW-707 Board
リアパネル部　　: CN-1061 Board, IO-106 Board

DFP-R2000において、映画フィルムから読みだされた信号は、まず、DFP-D2000のEQ-53基板に入力される。
EQ-53基板において、入力信号は波形等化後デジタル化されると同時に、ライン同期タイミングおよびDEC-77基板 (ECCブロック) へのデーター転送クロックも生成される。
なお、チェンジ・オーバー対応時、2台のDFP-R2000からの入力信号はこのEQ-53基板上でスイッチされる。
DEC-77基板では、エラー検出/訂正処理が行われるほか、入力系のクロックと非同期の関係にある後段のデジタルオーディオ用のサンプリング・クロックとのTBC処理も行われる。
TBC処理をされたデーター (被圧縮データー) は、この基板内のATRACデコーダー・ブロックでリニアPCM信号に変換される。
次にリニアPCM信号は、DSP-61基板でグラフィック/イコライザー、フィルター、レベル調整などのデジタル信号処理をされ、APR-6基板でアナログ信号に変換され、SDDS信号として出力される。

DESCRIPTIONS

The DFP-D2000 consists of the following boards.

Main board　　: APR-6 board, DEC-77 board, DSP-61 board, and EQ-53 board
Front panel block : KY-314 board, MT-102 board, and SW-707 board
Rear panel block : CN-1061 board and IO-106 board

The signal read from a cinema film in the DFP-R2000 is first input to the EQ-53 board of the DFP-D2000.
On the EQ-53 board, the input signal is digitized after waveform equalization, and simultaneously, a line sync timing pulse and a data transfer clock to the DEC-77 board (ECC block) are also generated.
During correspondence to the changeover, the input signals from two DFP-R2000s are switched on this EQ-53 board.
The DEC-77 board does not only detect and correct an error, but also processes a digital audio sampling clock in the later stage, that is asynchronous with an input clock, as a time-base corrector (TBC).
The TBC-processed data (compressed data) is converted into a linear PCM signal by the ATRAC decoder block on this DEC-77 board.
Next, the linear PCM signal is processed as a digital signal (e.g., graphic/equalizer, filter, and level adjustments) by the DSP-61 board, converted into an analog signal by the APR-6 board, and output as an SDDS signal.

これらの基板の主な機能を以下に示す。

メイン基板

APR-6 Board

DA部: 8倍オーバーサンプリング20 bit D/A コンバーター (8CH + 2CH)
CK部: READER DFP-R2000のFG信号より各種クロックの生成

DEC-77 Board

デ・シャッフル、ECC、デ・スクランブル、TBC、
ATRAC DECODE

DSP-61 Board

DSP部: クロス・フェーダー、マトリックス ミキサー、リップシンク調整、グラフィック イコライザー、フィルター、レベル/コントロール、メーター
CPU部: 全体のシステムコントロール、信号補間コントロール、PC I/F、自己診断

EQ-53 Board

波形等化 (EQ)、AGC、AFC、データー抜き取り、ライン同期タイミングチェンジ・オーバー対応用切り換え機能

MB-583 Board

マザーボード

フロントパネル部

KY-314 Board

サブ・コントロールパネル用スイッチ

MT-102 Board

レベルメーター等の表示およびフロントパネル スイッチ

SW-707 Board

マスターボリューム用ロータリーエンコーダー

リアパネル部

CN-1061 Board

AUX AUDIO IN (×1), AUX AUDIO OUT (×1),
READER I/F コネクター (×2), リモートコネクター (×1),
RS-232C コネクター (×1), オートメーション I/F コネクター (×1)

IO-106 Board

XLR入出力コネクター (各8個)、オートメーションI/F用回路

The major functions of these boards are described below.

Main board

APR-6 board

D/A block: 20-bit oversampling D/A converter multiplied by eight (8 channels + 2 channels)
CK block : Generates various clocks from the FG signal of reader DFP-R2000.

DEC-77 board

De-shuffling, ECC, de-scrambling, TBC, and ATRAC decoding

DSP-61 board

DSP block: Cross fader, matrix mixer, rip sync adjustment, graphic equalizer, filter, level control, and meter
CPU block: Overall system control, signal interpolation control, personal computer interface, and self diagnosis

EQ-53 board

Waveform equalization (EQ), AGC, AFC, data sampling, and selection function corresponding to line sync timing changeover

MB-583 board

Motherboard

Front panel block

KY-314 board

Sub-control panel switch

MT-102 board

Level meter display and front panel switch

SW-707 board

Rotary encoder for master volume control

Rear panel block

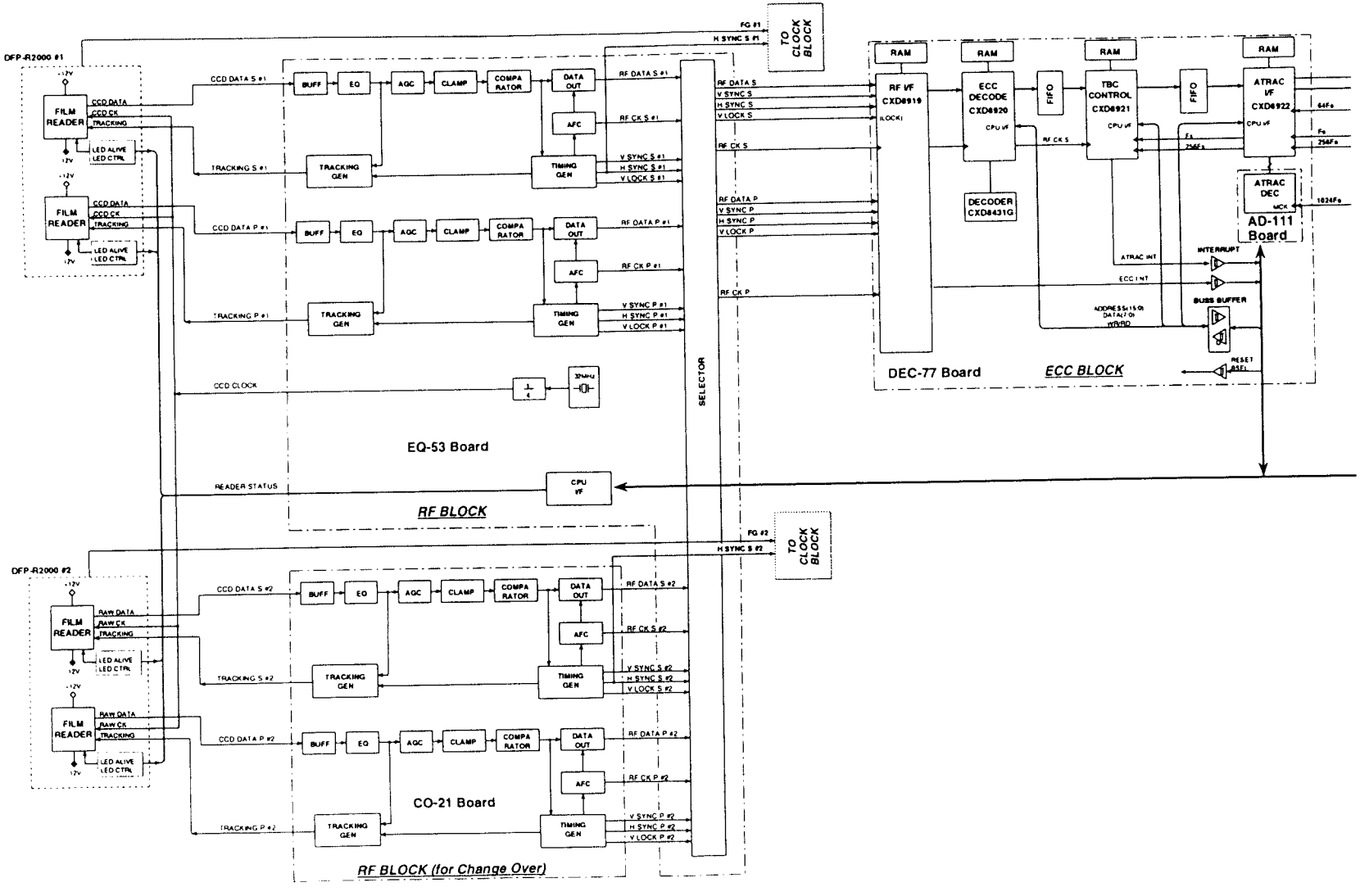
CN-1061 board

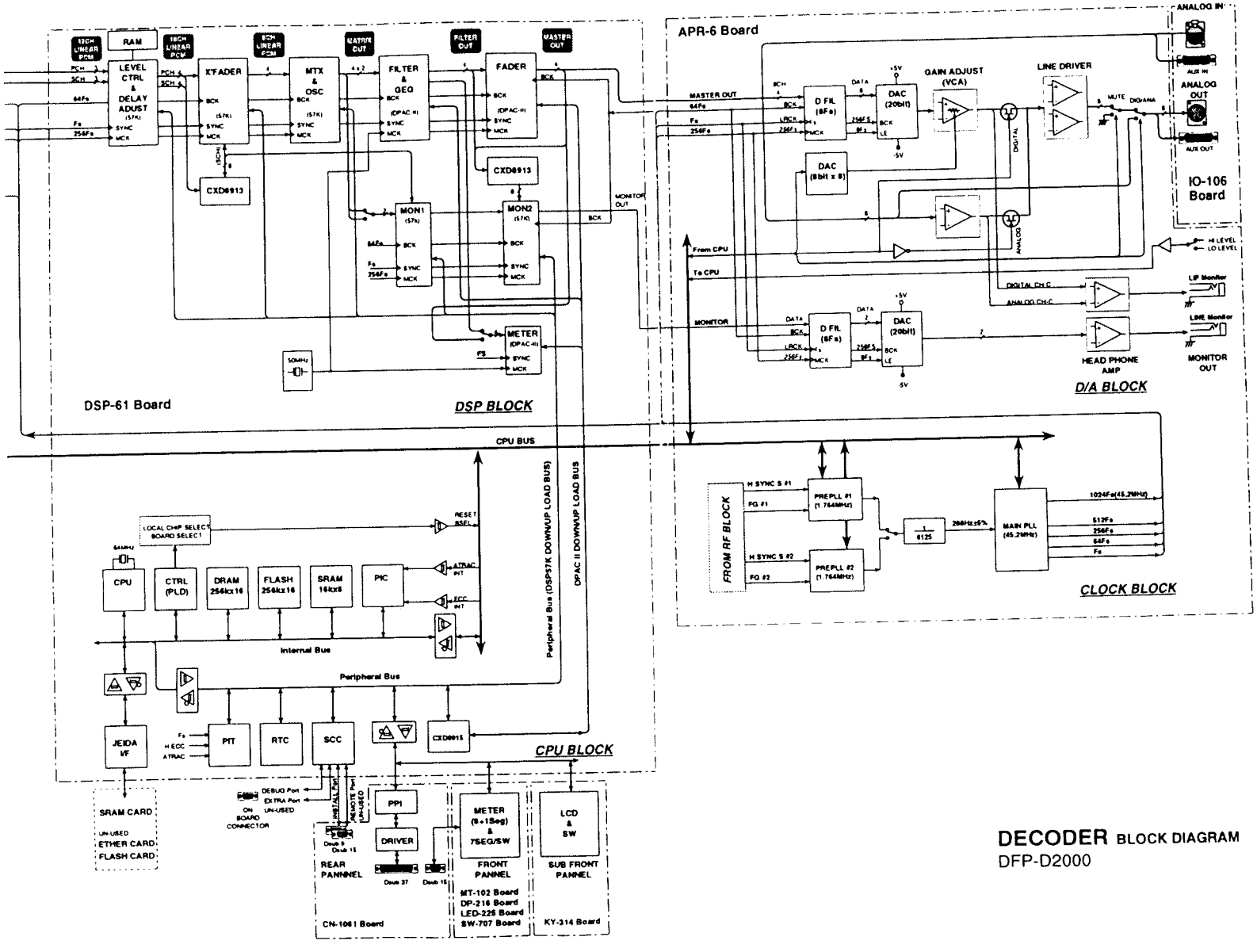
AUX AUDIO IN (×1) connector, AUX AUDIO OUT (×1) connector, reader interface connector (×2), remote connector (×1), RS-232C connector (×1), and automation interface connector (×1)

IO-106 board

XLR input/output connectors (each eight) and automation interface circuit

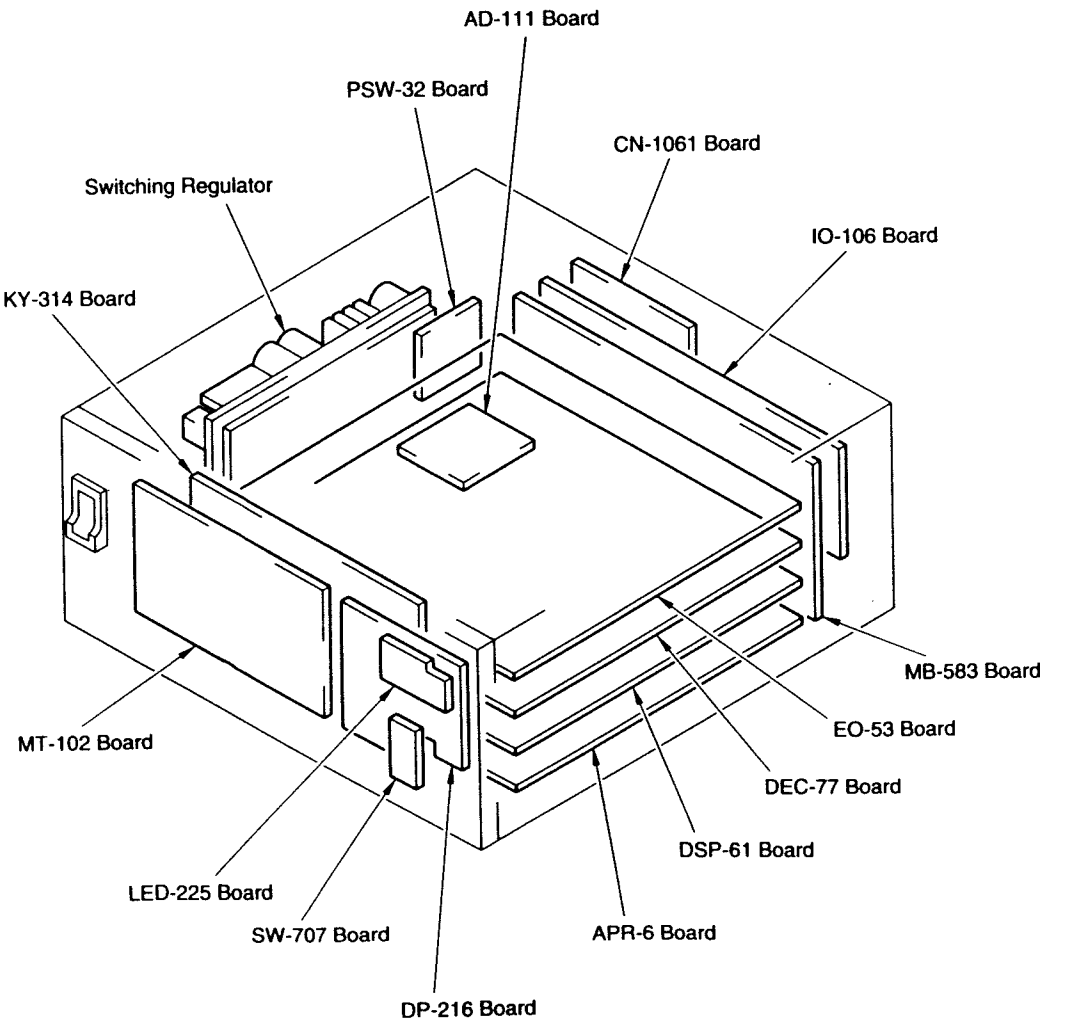
3 - 1


DFP-R2000 #1
FILM READER
CCD DATA
CCD CK
TRACKING
LED ALIVE
LED CTRL
+12V
12V
CCD DATA S #1
BUFF
EQ
AGC
CLAMP
COMPA RATOR
DATA OUT
AFC
TIMING GEN
TRACKING GEN
TRACKING S #1
RF DATA S #1
RF CK S #1
V SYNC S #1
H SYNC S #1
V LOCK S #1
CCD DATA P #1
TRACKING P #1
RF DATA P #1
RF CK P #1
V SYNC P #1
H SYNC P #1
V LOCK P #1
CCD CLOCK
32MHz
EQ-53 Board
READER STATUS
CPU I/F
RF BLOCK
FG #1
H SYNC S #1
TO CLOCK BLOCK
SELECTOR
RF DATA S
V SYNC S
H SYNC S
V LOCK S
RF CK S
RF DATA P
V SYNC P
H SYNC P
V LOCK P
RF CK P
RAM
RF I/F CXD8919
(LOCK)
ECC DECODE CXD8920
DECODER CXD8431G
FIFO
TBC CONTROL CXD8921
ATRAC I/F CXD8922
ATRAC DEC
AD-111 Board
ATRAC INT
ECC INT
INTERRUPT
BUSS BUFFER
RESET
DEC-77 Board
ECC BLOCK
DFP-R2000 #2
RAW DATA
RAW CK
CO-21 Board
RF BLOCK (for Change Over)
FG #2
H SYNC S #2

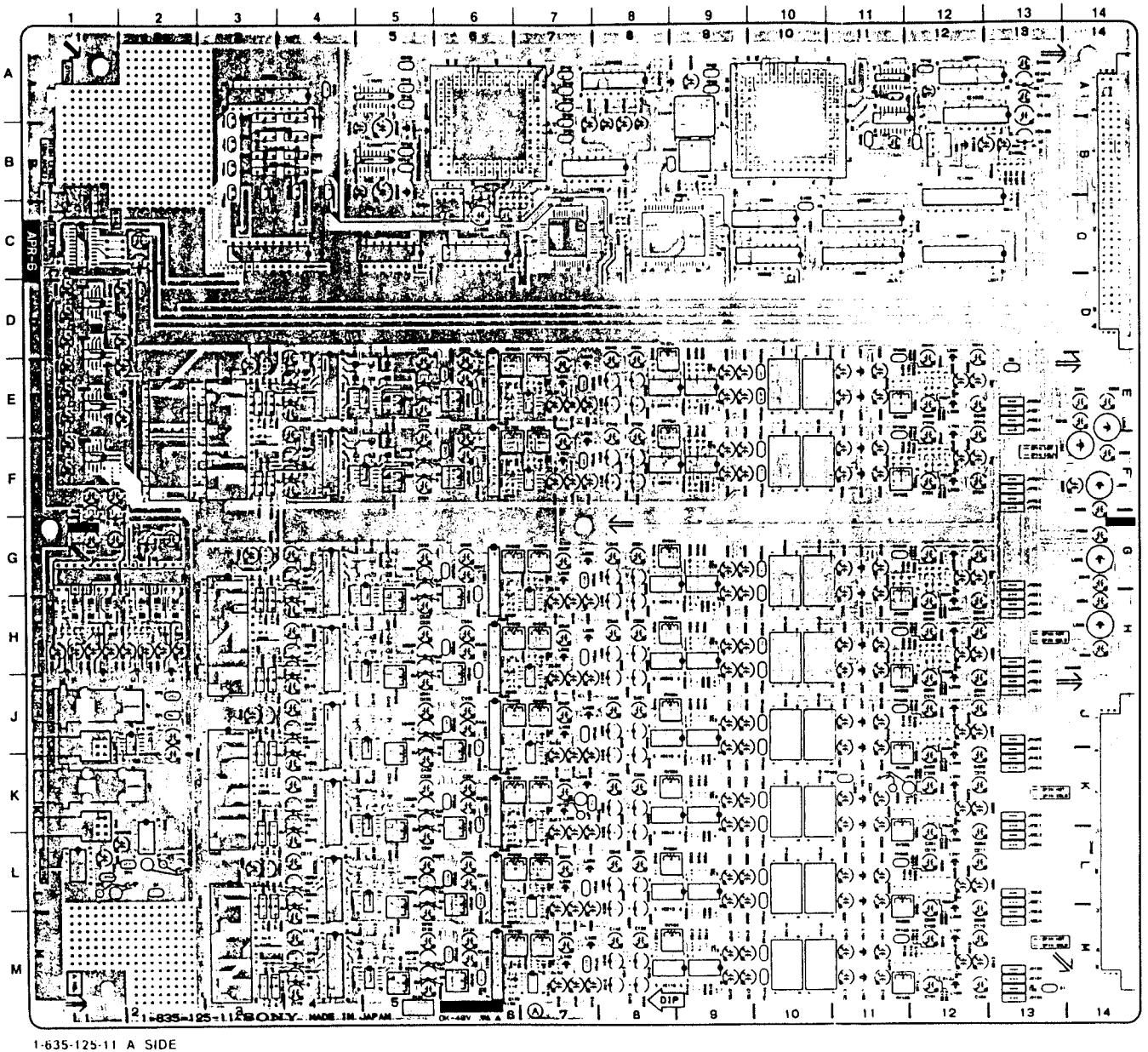


DECODER BLOCK DIAGRAM
DFP-D2000

SECTION 4
BOARD LAYOUTS



APR-6; D/A CONVERTOR/LINE AMP/CLOCK GEN BOARD



1-635-125-11 A SIDE

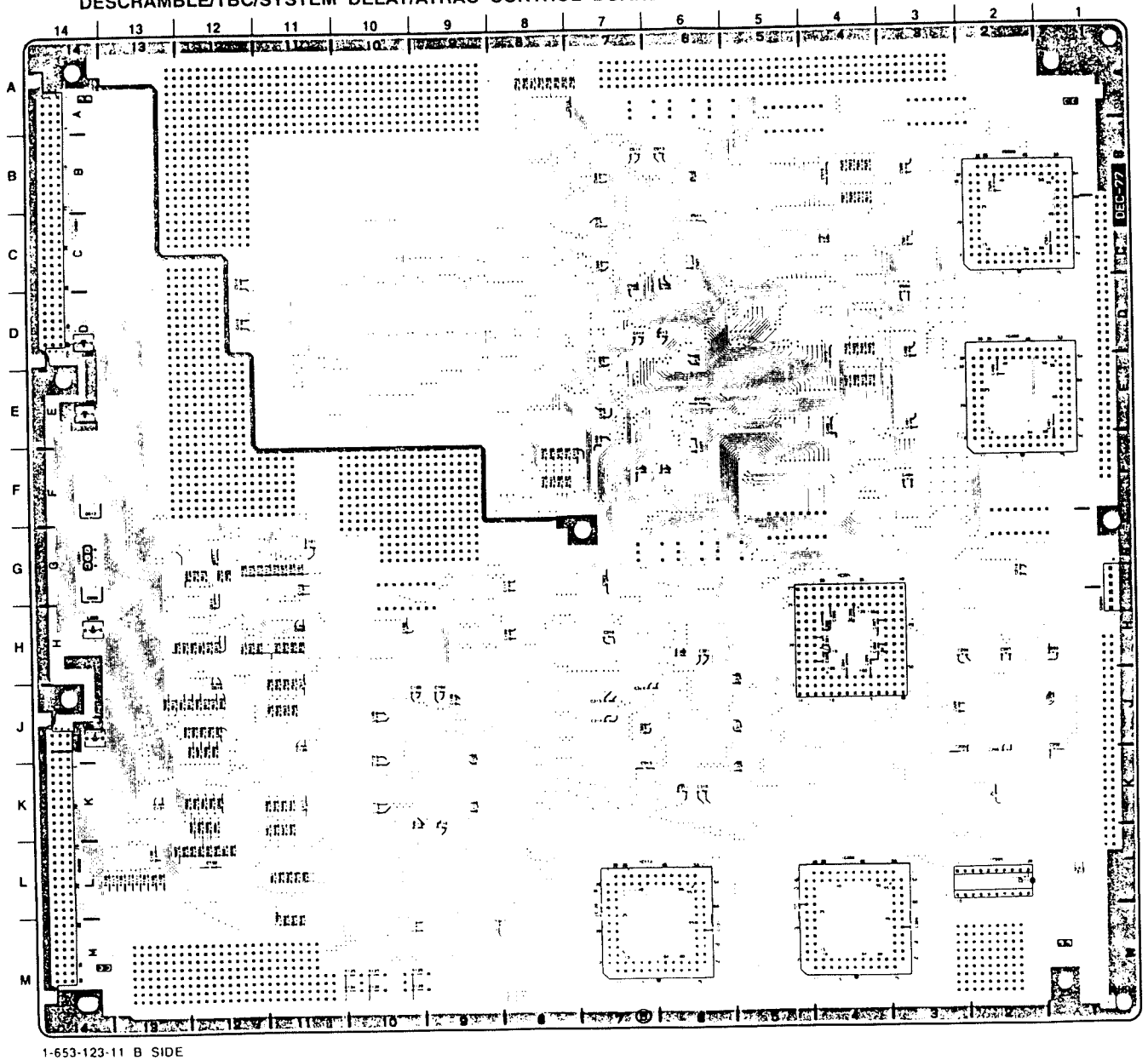
A Side is the same as Component Side.

APR-6 (1-635-125-11)

*Soldering Side

CN401	C-14	D700	F-12	IC306	K-4	IC908	C-1	RV105	M-11	TP19	A-7
CN402	L-14	D702	F-12	IC307	K-5	IC910	C-2	RV200	L-5	TP20	B-7
		D706	F-4	IC308	K-5	IC912	F-1	RV201	L-6	TP21	B-7
D1	G-2	D707	F-4	IC309	K-5	IC913	E-1	RV202	L-6	TP22	A-8
D2	G-2	D708	F-4	IC310	K-7	IC914	D-1	RV203	L-7	TP23	A-9
D3	G-2	D710	F-8	IC311	K-6	IC915	D-1	RV204	L-8	TP100	M-6
D4	G-1	D711	F-8	IC312	K-9	IC916	C-4	RV205	L-11	TP101	M-7
D5	G-1	D712	F-8	IC313	K-9	IC917	C-6	RV300	L-5	TP102	M-8
D6	G-1	D713	F-8	IC400	J-12	IC1000	B-13	RV301	K-6	TP103	M-10
D100	M-12	D714	F-9	IC401	J-3	IC1001	B-6	RV302	K-6	TP104	M-10
D102	M-12	D716	F-9	IC402	J-12	IC1002	A-8	RV303	K-7	TP105	M-11
D106	M-4	D718	F-10	IC403	J-4	IC1003	B-6	RV304	K-8	TP200	L-6
D107	M-4	D719	F-10	IC404	J-4	IC1004	B-5	RV305	L-11	TP201	L-7
D108	M-4	D800	E-12	IC405	J-4	IC1005	A-5	RV400	K-5	TP202	L-8
D110	M-8	D802	E-12	IC406	J-4	IC1006	B-10	RV401	J-6	TP203	L-10
D111	M-8	D806	E-4	IC407	J-5	IC1007	A-11	RV402	J-6	TP204	L-10
D112	M-8	D807	E-4	IC408	J-5	IC1008	B-13	RV403	J-7	TP205	L-11
D113	M-8	D808	E-4	IC409	J-5	IC1009	A-13	RV404	J-9	TP300	K-6
D114	M-9	D810	E-8	IC410	J-7	IC1010	A-13	RV405	K-11	TP301	K-7
D116	M-9	D811	E-8	IC411	J-6	IC1011	A-11	RV500	J-5	TP302	K-8
D118	M-10	D812	E-8	IC412	J-9	IC1012	A-13	RV501	J-6	TP303	K-10
D119	M-10	D813	E-8	IC413	J-9	IC1014	B-8	RV502	H-6	TP304	K-10
D200	L-12	D816	E-9	IC500	G-3			RV503	H-7	TP305	K-11
D202	L-12	D817	E-9	IC501	H-12	Q100	M-8	RV504	H-8	TP400	J-6
D206	L-4	D818	E-10	IC502	H-12	Q101	M-8	RV505	J-11	TP401	J-7
D207	L-4	D819	E-10	IC503	H-4	Q102	M-8	RV600	H-5	TP402	J-8
D208	M-4	D1000	A-8	IC504	H-4	Q103	M-8	RV601	H-6	TP403	J-10
D210	L-8	D1002	A-8	IC505	H-4	Q104	M-3	RV602	G-6	TP404	J-10
D211	L-8	D1004	A-12	IC506	H-4	Q105	M-3	RV603	G-7	TP405	J-11
D212	M-8			IC507	H-5	Q200	L-8	RV604	G-8	TP500	H-6
D213	M-8	E1	M-13	IC508	H-5	Q201	L-8	RV605	H-11	TP501	H-7
D216	L-9	E2	E-13	IC509	H-5	Q202	M-8	RV700	F-5	TP502	H-8
D217	L-9	E3	D-2	IC510	H-7	Q203	M-8	RV701	F-6	TP503	H-10
D218	L-10	E4	L-2	IC511	H-6	Q204	L-3	RV702	F-6	TP504	H-10
D219	L-10	E100	C-10	IC512	H-9	Q205	L-3	RV703	F-7	TP505	H-11
D300	K-12	E101	A-4	IC513	H-9	Q300	K-8	RV704	F-8	TP600	G-6
D302	K-12	E200	A-5	IC600	G-12	Q301	K-8	RV705	F-11	TP601	G-7
D306	K-4	E201	B-9	IC601	G-3	Q302	L-8	RV800	E-5	TP602	H-8
D307	K-4	E202	B-11	IC602	G-12	Q303	L-8	RV801	E-6	TP603	G-10
D308	L-4			IC603	G-4	Q304	L-3	RV802	E-6	TP604	H-10
D310	K-8	IC1	E-2	IC604	G-4	Q305	L-3	RV803	E-7	TP605	G-11
D311	K-8	IC2	G-2	IC605	G-4	Q400	J-8	RV804	E-8	TP700	F-6
D312	L-8	IC3	G-2	IC606	G-4	Q401	J-8	RV805	E-11	TP701	F-7
D313	L-8	IC4	G-1	IC607	G-5	Q402	K-8			TP702	F-6
D314	L-9	IC5	F-1	IC608	G-5	Q403	K-8	RY100	M-10	TP703	F-10
D316	K-9	IC6	F-1	IC609	G-5	Q404	K-3	RY101	M-10	TP704	F-10
D318	K-10	IC9	H-2	IC610	G-7	Q405	K-3	RY200	L-10	TP705	F-11
D319	K-10	IC10	H-1	IC611	G-6	Q500	H-8	RY201	L-10	TP800	E-6
D400	J-12	IC11	H-2	IC612	G-9	Q501	H-8	RY300	K-10	TP801	E-7
D402	J-12	IC12	H-1	IC613	G-9	Q502	J-8	RY301	K-10	TP802	E-6
D406	J-4	IC13	J-1	IC700	E-3	Q503	J-8	RY400	J-10	TP803	E-10
D407	J-4	IC14	L-1	IC701	F-12	Q504	J-3	RY401	J-10	TP804	E-10
D408	K-4	IC15	K-2	IC702	F-12	Q505	J-3	RY500	H-10	TP805	E-11
D410	J-8	IC100	L-3	IC703	E-4	Q600	G-8	RY501	H-10	TP900	B-4
D411	J-8	IC101	M-12	IC704	F-4	Q601	G-8	RY600	G-10	TP901	B-3
D412	K-8	IC102	M-12	IC705	F-4	Q602	H-8	RY601	G-10	TP904	B-4
D413	K-8	IC103	M-4	IC706	F-4	Q603	H-8	RY700	F-10	TP905	B-3
D416	J-9	IC104	M-4	IC707	E-5	Q604	H-3	RY701	F-10	TP906	B-3
D417	K-9	IC105	M-4	IC708	F-5	Q605	H-3	RY800	E-10	TP907	B-3
D418	J-10	IC106	M-4	IC709	F-5	Q700	F-8	RY801	E-10	TP908	A-3
D419	J-10	IC107	M-5	IC710	F-7	Q701	F-8				
D500	H-12	IC108	M-5	IC711	E-6	Q702	F-8	S1	C-1	x1000	A-9
D502	H-12	IC109	M-5	IC712	F-9	Q703	F-8	S1000	B-3		
D506	H-4	IC110	M-7	IC713	F-9	Q704	F-3	S1001	C-5		
D507	H-4	IC111	M-6	IC800	E-12	Q705	F-3				
D508	J-4	IC112	M-9	IC801	E-3	Q800	E-8	TH100	M-7		
D510	H-8	IC113	M-9	IC802	E-12	Q801	E-8	TH200	L-7		
D511	H-8	IC200	L-12	IC803	E-4	Q802	E-8	TH300	K-7		
D512	J-8	IC201	L-3	IC804	E-4	Q803	E-8	TH400	J-7		
D513	J-8	IC202	L-12	IC805	E-4	Q804	E-3	TH500	H-7		
D514	J-9	IC203	L-4	IC806	E-4	Q805	E-3	TH600	G-7		
D516	H-9	IC204	L-4	IC807	E-5	Q900	A-4	TH700	F-7		
D518	H-10	IC205	L-4	IC808	E-5	Q901	A-3	TH800	E-7		
D519	H-10	IC206	L-4	IC809	E-5	Q902	B-4				
D600	G-12	IC207	L-5	IC810	E-7	Q903	B-3	TP1	J-2		
D602	G-12	IC208	L-5	IC811	E-6	Q904	B-4	TP2	J-2		
D606	G-4	IC209	L-5	IC812	E-9	Q905	B-4	TP3	L-1		
D607	G-4	IC210	L-7	IC813	E-9	Q906	B-3	TP4	L-2		
D608	H-4	IC211	L-6	IC900	C-11	Q907	B-3	TP10	A-11		
D610	G-8	IC212	L-9	IC901	C-13			TP11	B-12		
D611	G-8	IC213	L-9	IC902	C-5	RV1	J-1	TP12	A-12		
D612	H-8	IC300	J-3	IC903	C-11	RV2	K-1	TP13	B-5		
D613	H-8	IC301	K-12	IC904	C-10	RV100	M-5	TP14	B-5		
D616	G-9	IC302	K-12	IC905	C-10	RV101	M-6	TP15	A-5		
D617	H-9	IC303	K-4	IC906	C-9	RV102	M-6	TP16	A-5		
D618	G-10	IC304	K-4	IC907	C-7	RV103	M-7	TP17	A-7		
D619	G-10	IC305	K-4	IC908	A-4	RV104	M-8	TP18	A-7		

DEC-77; ID DECODE/DC SHUFLLE/ECC DECODE/ DESCRAMBLE/TBC/SYSTEM DELAY/ATRAC CONTROL BOARD



1-653-123-11 B SIDE

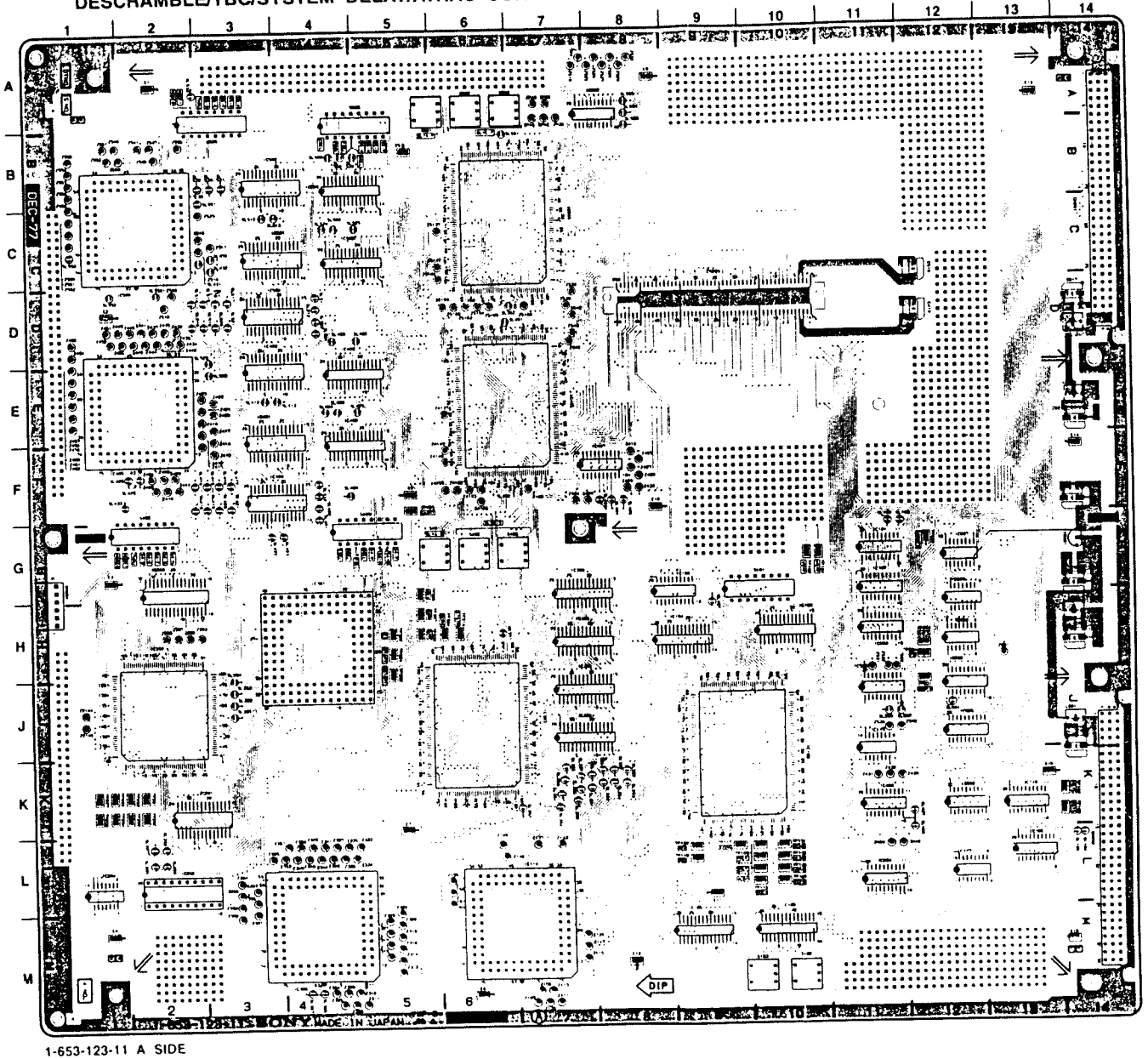
B Side is the same as Soldering Side.

DEC-77 (1-653-123-11)

* Soldering Side

CN201	C-14	IC803	H-11	SL414	F-2	TP107	L-10
CN202	L-14	IC804	L-11	SL415	F-3	TP108	K-14
CN203	D-9	IC805	J-12	SL416	F-3	TP109	L-10
CN204	G-1	IC806	J-12	SL417	F-3	TP111	L-10
		IC807	G-12	SL418	F-2	TP113	L-10
E1	A-2	IC808	H-12	SL419	F-3	TP115	L-10
E2	D-1	IC809	H-12	SL420	F-3	TP117	L-9
E3	G-1			SL421	F-3	TP119	L-9
E4	M-1	S101	G-10	SL422	G-3	TP120	L-9
E5	B-5	S102	M-10	SL423	G-4	TP200	K-2
E6	F-5	S103	M-10	SL424	E-4	TP201	K-2
E7	K-5	S401	G-5	SL425	E-5	TP202	K-2
E8	M-6	S402	G-6	SL426	D-5	TP203	K-2
E9	A-8	S403	G-6	SL428	F-2	TP204	K-1
E10	F-8	S405	G-2	SL429	F-2	TP205	K-1
E11	L-9	S406	G-5	SL430	C-3	TP206	K-1
E12	M-8	S501	A-5	SL431	C-3	TP207	K-1
E13	A-13	S502	A-6	SL432	C-3	TP301	H-5
E14	F-14	S503	A-8	SL433	F-2	TP302	H-5
E15	K-13	S505	A-3	SL460	F-4	TP303	H-5
E16	M-14	S506	A-5	SL461	D-6	TP304	H-8
				SL462	F-6	TP305	G-5
IC101	G-11	SL101	H-9	SL501	D-4	TP307	H-5
IC102	L-13	SL102	G-11	SL502	D-4	TP308	H-5
IC103	H-10	SL103	G-11	SL503	A-8	TP314	H-6
IC104	H-8	SL104	L-14	SL504	A-8	TP401	F-5
IC105	M-9	SL105	L-14	SL505	A-8	TP601	J-12
IC106	M-10	SL201	J-3	SL506	J-11	TP602	G-12
IC107	H-11	SL202	J-3	SL507	J-11	TP603	H-12
IC108	K-9	SL203	J-3	SL508	C-4	TP604	H-12
IC109	H-8	SL204	J-3	SL509	B-4		
IC114	M-6	SL205	L-2	SL510	D-4		
IC115	K-11	SL206	L-2	SL511	D-4		
IC116	K-13	SL207	L-2	SL512	C-3		
IC117	L-12	SL208	L-2	SL513	C-4		
IC201	K-2	SL311	H-6	SL514	D-2		
IC202	J-2	SL350	K-7	SL515	D-3		
IC203	H-2	SL351	K-7	SL516	D-3		
IC204	L-1	SL352	K-8	SL517	D-3		
IC205	L-2	SL353	K-8	SL518	D-2		
IC301	H-4	SL354	K-8	SL519	D-3		
IC302	J-7	SL355	K-8	SL520	D-3		
IC303	J-6	SL356	K-7	SL521	D-3		
IC304	J-7	SL357	K-7	SL522	D-3		
IC305	H-7	SL358	K-7	SL523	E-3		
IC306	H-7	SL359	K-7	SL524	C-4		
IC308	M-4	SL360	K-7	SL525	C-5		
IC401	F-3	SL361	K-7	SL526	B-5		
IC402	E-3	SL362	K-8	SL530	B-3		
IC403	F-4	SL363	K-8	SL531	B-3		
IC404	F-3	SL364	K-7	SL532	B-3		
IC405	E-6	SL365	K-7	SL533	A-2		
IC406	E-4	SL366	M-4	SL550	D-2		
IC407	F-7	SL367	M-4	SL551	B-3		
IC408	K-11	SL401	F-4	SL552	D-1		
IC409	E-2	SL402	F-4	SL553	C-1		
IC501	C-3	SL403	F-8	SL560	B-4		
IC502	B-3	SL404	F-8	SL561	B-6		
IC503	C-4	SL405	F-8	SL562	D-6		
IC504	D-3	SL406	K-12	SL601	J-12		
IC505	C-6	SL407	K-12				
IC506	B-4	SL408	E-4	TP101	L-10		
IC507	A-7	SL409	D-4	TP102	G-10		
IC508	J-11	SL410	F-4	TP103	L-10		
IC509	C-2	SL411	F-4	TP104	G-10		
IC601	G-14	SL412	E-3	TP105	L-10		
IC602	K-12	SL413	E-4	TP106	K-14		

DEC-77; ID DECODE/DC SHUFLLE/ECC DECODE/ DESCRAMBLE/TBC/SYSTEM DELAY/ATRAC CONTROL BOARD



1-653-123-11 A SIDE

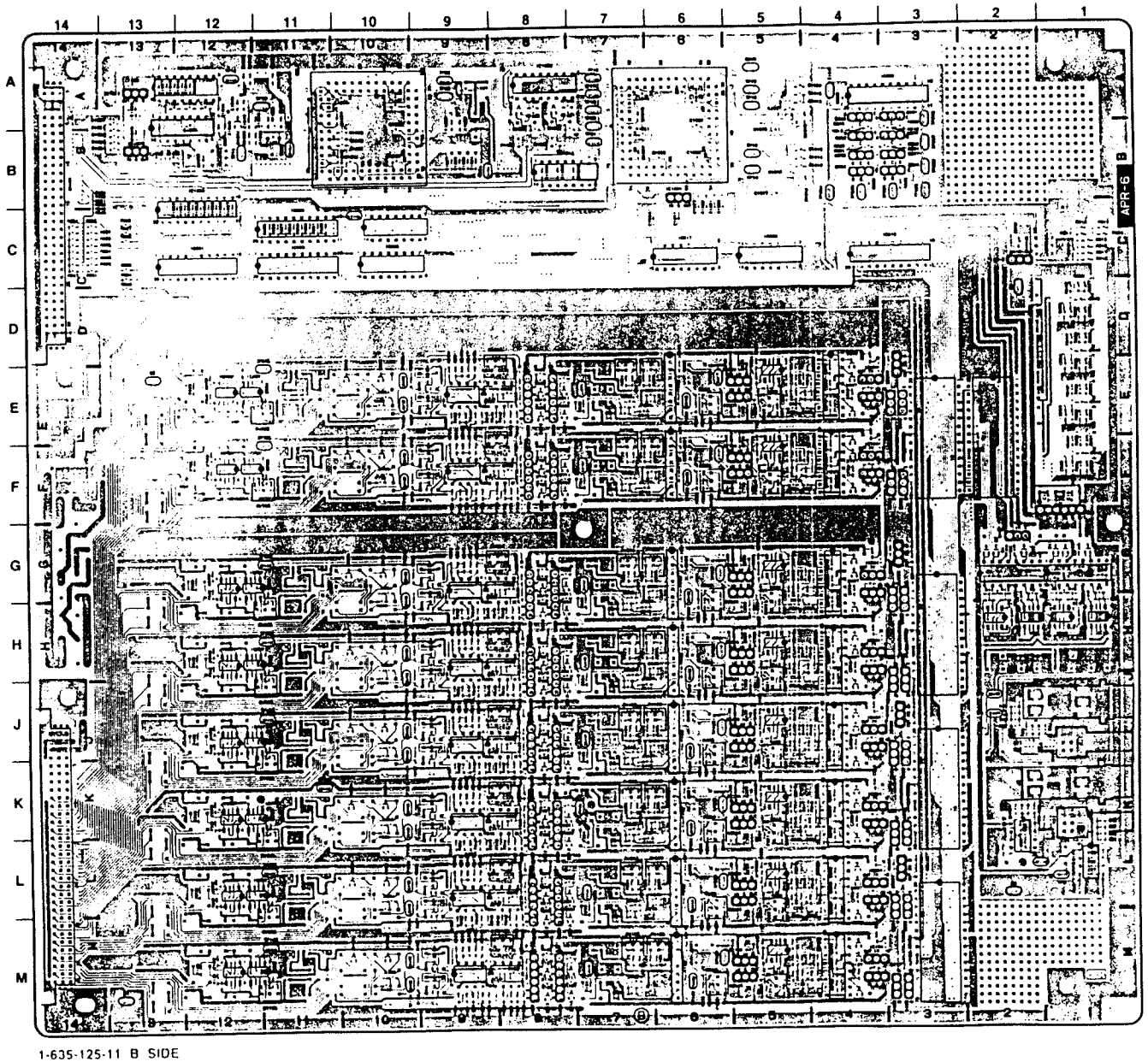
A Side is the same as Component Side.

DEC-77 (1-653-123-11)

* Soldering Side

CN201	C-14	IC803	H-11	SL414	F-2	TP107	L-10
CN202	L-14	IC804	L-11	SL415	F-3	TP108	K-14
CN203	D-9	IC805	J-12	SL416	F-3	TP109	L-10
CN204	G-1	IC806	J-12	SL417	F-3	TP111	L-10
		IC807	G-12	SL418	F-2	TP113	L-10
E1	A-2	IC808	H-12	SL419	F-3	TP115	L-10
E2	D-1	IC809	H-12	SL420	F-3	TP117	L-9
E3	G-1			SL421	F-3	TP119	L-9
E4	M-1	S101	G-10	SL422	G-3	TP120	L-9
E5	B-5	S102	M-10	SL423	G-4	TP200	K-2
E6	F-5	S103	M-10	SL424	E-4	TP201	K-2
E7	K-5	S401	G-5	SL425	E-5	TP202	K-2
E8	M-6	S402	G-6	SL426	D-5	TP203	K-2
E9	A-8	S403	G-6	SL428	F-2	TP204	K-1
E10	F-8	S405	G-2	SL429	F-2	TP205	K-1
E11	L-9	S406	G-5	SL430	C-3	TP206	K-1
E12	M-8	S501	A-5	SL431	C-3	TP207	K-1
E13	A-13	S502	A-6	SL432	C-3	TP301	H-5
E14	F-14	S503	A-6	SL433	F-2	TP302	H-5
E15	K-13	S505	A-3	SL460	F-4	TP303	H-5
E16	M-14	S506	A-5	SL461	D-6	TP304	H-6
				SL462	F-6	TP305	G-5
IC101	G-11	SL101	H-9	SL501	D-4	TP307	H-5
IC102	L-13	SL102	G-11	SL502	D-4	TP309	H-5
IC103	H-10	SL103	G-11	SL503	A-8	TP314	H-6
IC104	H-8	SL104	L-14	SL504	A-8	TP401	F-5
IC105	M-9	SL105	L-14	SL505	A-8	TP801	J-12
IC106	M-10	SL201	J-3	SL506	J-11	TP802	G-12
IC107	H-11	SL202	J-3	SL507	J-11	TP803	H-12
IC108	K-9	SL203	J-3	SL508	C-4	TP804	H-12
IC109	H-8	SL204	J-3	SL509	B-4		
IC114	M-6	SL205	L-2	SL510	D-4		
IC115	K-11	SL206	L-2	SL511	D-4		
IC116	K-13	SL207	L-2	SL512	C-3		
IC117	L-12	SL208	L-2	SL513	C-4		
IC201	K-2	SL311	H-6	SL514	D-2		
IC202	J-2	SL350	K-7	SL515	D-3		
IC203	H-2	SL351	K-7	SL516	D-3		
IC204	L-1	SL352	K-8	SL517	D-3		
IC205	L-2	SL353	K-8	SL518	D-2		
IC301	H-4	SL354	K-8	SL519	D-3		
IC302	J-7	SL355	K-8	SL520	D-3		
IC303	J-6	SL356	K-7	SL521	D-3		
IC304	J-7	SL357	K-7	SL522	D-3		
IC305	H-7	SL358	K-7	SL523	E-3		
IC306	H-7	SL359	K-7	SL524	C-4		
IC308	M-4	SL360	K-7	SL525	C-5		
IC401	F-3	SL361	K-7	SL526	B-5		
IC402	E-3	SL362	K-8	SL530	B-3		
IC403	F-4	SL363	K-8	SL531	B-3		
IC404	F-3	SL364	K-7	SL532	B-3		
IC405	E-6	SL365	K-7	SL533	A-2		
IC406	E-4	SL366	M-4	SL550	D-2		
IC407	F-7	SL367	M-4	SL551	B-3		
IC408	K-11	SL401	F-4	SL552	D-1		
IC409	E-2	SL402	F-4	SL553	C-1		
IC501	C-3	SL403	F-8	SL560	B-4		
IC502	B-3	SL404	F-8	SL561	B-6		
IC503	C-4	SL405	F-8	SL562	D-6		
IC504	D-3	SL408	K-12	SL801	J-12		
IC505	C-6	SL407	K-12				
IC506	B-4	SL408	E-4	TP101	L-10		
IC507	A-7	SL409	D-4	TP102	G-10		
IC508	J-11	SL410	F-4	TP103	L-10		
IC509	C-2	SL411	F-4	TP104	G-10		
IC801	G-14	SL412	E-3	TP105	L-10		
IC802	K-12	SL413	E-4	TP106	K-14		

APR-6; D/A CONVERTOR/LINE AMP/CLOCK GEN BOARD



1-635-125-11 B SIDE

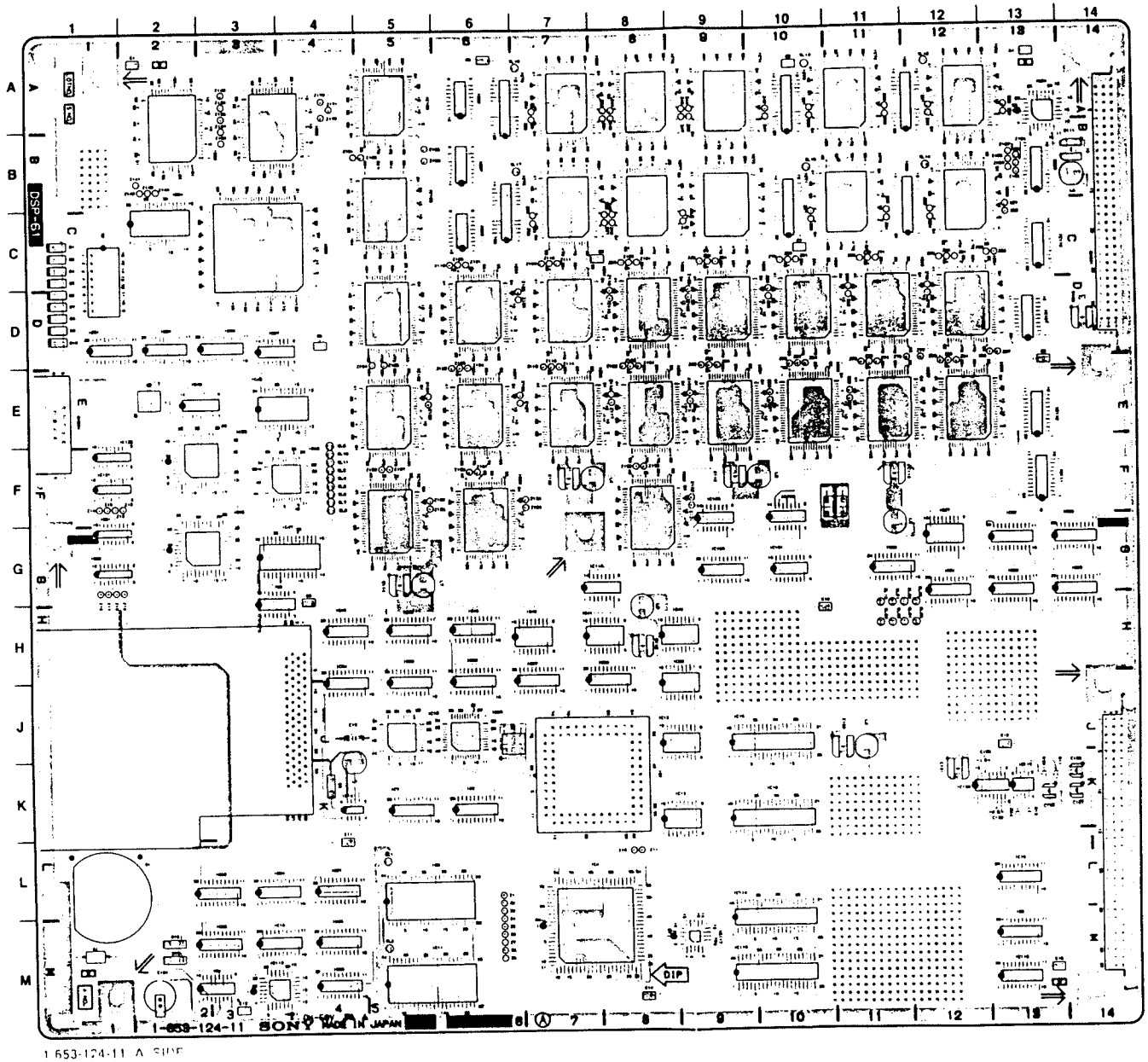
B Side is the same as Soldering Side.

APR-6 (1-635-125-11)

• Soldering Side

CN401	C-14	D700	F-12	IC306	K-4	IC809	C-1	RV105	M-11	TP19	A-7
CN402	L-14	D702	F-12	IC307	K-5	IC810	C-2	RV200	L-5	TP20	B-7
		D705	F-4	IC308	K-5	IC812	F-1	RV201	L-6	TP21	B-7
D1	G-2	D707	F-4	IC309	K-5	IC813	E-1	RV202	L-6	TP22	A-9
D2	G-2	D708	F-4	IC310	K-7	IC814	D-1	RV203	L-7	TP23	A-9
D3	G-2	D710	F-8	IC311	K-6	IC815	D-1	RV204	L-8	TP100	M-6
D4	G-1	D711	F-8	IC312	K-9	IC816	C-4	RV2(	L-11	TP101	M-7
D5	G-1	D712	F-8	IC313	K-9	IC817	C-6	RV	-5	TP102	M-6
D6	G-1	D713	F-8	IC400	J-12	IC1000	B-13	F	K-6	TP103	M-10
D100	M-12	D714	F-9	IC401	J-3	IC1001	B-6		K-6	TP104	M-10
D102	M-12	D716	F-9	IC402	J-12	IC1002	A-8		K-7	TP105	M-11
D105	M-4	D718	F-10	IC403	J-4	IC1003	B-6		K-6	TP200	L-8
D107	M-4	D719	F-10	IC404	J-4	IC1004	B		L-11	TP201	L-7
D108	M-4	D800	E-12	IC405	J-4	IC1005	A		K-5	TP202	L-6
D110	M-8	D802	E-12	IC406	J-4	IC1006	E	.1	J-6	TP203	L-10
D111	M-8	D806	E-4	IC407	J-5	IC1007		.02	J-6	TP204	L-10
D112	M-8	D807	E-4	IC408	J-5	IC1008		J403	J-7	TP205	L-11
D113	M-8	D808	E-4	IC409	J-5	IC1009	A	RV404	J-6	TP300	K-6
D114	M-9	D810	E-8	IC410	J-7	IC1010	A	RV405	K-11	TP301	K-7
D116	M-9	D811	E-8	IC411	J-6	IC1011	A	RV500	J-5	TP302	K-6
D118	M-10	D812	E-8	IC412	J-9	IC1012	A	RV501	J-6	TP303	K-10
D119	M-10	D813	E-8	IC413	J-9	IC1014	B-6	RV502	H-8	TP304	K-10
D200	L-12	D816	E-9	IC500	G-3			RV503	H-7	TP305	K-11
D202	L-12	D817	E-9	IC501	H-12	Q100	M-8	RV504	H-8	TP400	J-6
D206	L-4	D818	E-10	IC502	H-12	Q101	M-8	RV505	J-11	TP401	J-7
D207	L-4	D819	E-10	IC503	H-4	Q102	M-8	RV600	H-5	TP402	J-6
D208	M-4	D1000	A-8	IC504	H-4	Q103	M-8	RV601	H-6	TP403	J-10
D210	L-8	D1002	A-8	IC505	H-4	Q104	M-3	RV602	G-6	TP404	J-10
D211	L-8	D1004	A-12	IC506	H-4	Q105	M-3	RV603	G-7	TP405	J-11
D212	M-8			IC507	H-5	Q200	L-8	RV604	G-8	TP500	H-6
D213	M-8	E1	M-13	IC508	H-5	Q201	L-8	RV605	H-11	TP501	H-7
D216	L-9	E2	E-13	IC509	H-5	Q202	M-8	RV700	F-5	TP502	H-8
D217	L-9	E3	D-2	IC510	H-7	Q203	M-8	RV701	F-6	TP503	H-10
D218	L-10	E4	L-2	IC511	H-6	Q204	L-3	RV702	F-6	TP504	H-10
D219	L-10	E100	C-10	IC512	H-9	Q205	L-3	RV703	F-7	TP505	H-11
D300	K-12	E101	A-4	IC513	H-9	Q300	K-8	RV704	F-8	TP800	G-6
D302	K-12	E200	A-5	IC600	G-12	Q301	K-8	RV705	F-11	TP801	G-7
D306	K-4	E201	B-9	IC601	G-3	Q302	L-8	RV800	E-5	TP802	H-6
D307	K-4	E202	B-11	IC602	G-12	Q303	L-8	RV801	E-6	TP803	G-10
D308	L-4			IC603	G-4	Q304	L-3	RV802	E-6	TP804	H-10
D310	K-8	IC1	E-2	IC604	G-4	Q305	L-3	RV803	E-7	TP805	G-11
D311	K-8	IC2	G-2	IC605	G-4	Q400	J-8	RV804	E-8	TP700	F-8
D312	L-8	IC3	G-2	IC606	G-4	Q401	J-8	RV805	E-11	TP701	F-7
D313	L-8	IC4	G-1	IC607	G-5	Q402	K-8			TP702	F-8
D314	L-9	IC5	F-1	IC608	G-5	Q403	K-8	RY100	M-10	TP703	F-10
D316	K-9	IC6	F-1	IC609	G-5	Q404	K-3	RY101	M-10	TP704	F-10
D318	K-10	IC9	H-2	IC610	G-7	Q405	K-3	RY200	L-10	TP705	F-11
D319	K-10	IC10	H-1	IC611	G-6	Q500	H-8	RY201	L-10	TP800	E-6
D400	J-12	IC11	H-2	IC612	G-9	Q501	H-8	RY300	K-10	TP801	E-7
D402	J-12	IC12	H-1	IC613	G-9	Q502	J-8	RY301	K-10	TP802	E-6
D406	J-4	IC13	J-1	IC700	E-3	Q503	J-8	RY400	J-10	TP803	E-10
D407	J-4	IC14	L-1	IC701	F-12	Q504	J-3	RY401	J-10	TP804	E-10
D408	K-4	IC15	K-2	IC702	F-12	Q505	J-3	RY500	H-10	TP805	E-11
D410	J-8	IC100	L-3	IC703	E-4	Q600	G-8	RY501	H-10	TP900	B-4
D411	J-8	IC101	M-12	IC704	F-4	Q601	G-8	RY600	G-10	TP901	B-3
D412	K-8	IC102	M-12	IC705	F-4	Q602	H-8	RY601	G-10	TP904	B-4
D413	K-8	IC103	M-4	IC706	F-4	Q603	H-8	RY700	F-10	TP905	B-3
D416	J-9	IC104	M-4	IC707	E-5	Q604	H-3	RY701	F-10	TP906	B-3
D417	K-9	IC105	M-4	IC708	F-5	Q605	H-3	RY800	E-10	TP907	B-3
D418	J-10	IC106	M-4	IC709	F-5	Q700	F-8	RY801	E-10	TP908	A-3
D419	J-10	IC107	M-5	IC710	F-7	Q701	F-8				
D500	H-12	IC108	M-5	IC711	E-8	Q702	F-8	S1	C-1	X1000	A-9
D502	H-12	IC109	M-5	IC712	F-9	Q703	F-8	S1000	B-9		
D505	H-4	IC110	M-7	IC713	F-9	Q704	F-3	S1001	C-6		
D507	H-4	IC111	M-6	IC800	E-12	Q705	F-3				
D508	J-4	IC112	M-9	IC801	E-3	Q800	E-8	TH100	M-7		
D510	H-8	IC113	M-9	IC802	E-12	Q801	E-8	TH200	L-7		
D511	H-8	IC200	L-12	IC803	E-4	Q802	E-8	TH300	K-7		
D512	J-8	IC201	L-3	IC804	E-4	Q803	E-8	TH400	J-7		
D513	J-8	IC202	L-12	IC805	E-4	Q804	E-3	TH500	H-7		
D514	J-9	IC203	L-4	IC808	E-4	Q805	E-3	TH600	G-7		
D516	H-9	IC204	L-4	IC807	E-5	Q900	A-4	TH700	F-7		
D518	H-10	IC205	L-4	IC808	E-5	Q901	A-3	TH800	E-7		
D519	H-10	IC206	L-4	IC809	E-5	Q902	B-4				
D600	G-12	IC207	L-5	IC810	E-7	Q903	B-3	TP1	J-2		
D602	G-12	IC208	L-5	IC811	E-8	Q904	B-4	TP2	J-2		
D606	G-4	IC209	L-5	IC812	E-9	Q905	B-4	TP3	L-1		
D607	G-4	IC210	L-7	IC813	E-9	Q906	B-3	TP4	L-2		
D608	H-4	IC211	L-6	IC900	C-11	Q907	B-3	TP10	A-11		
D610	G-8	IC212	L-9	IC901	C-13			TP11	B-12		
D611	G-8	IC213	L-9	IC902	C-5	RV1	J-1	TP12	A-12		
D612	H-8	IC300	J-3	IC903	C-11	RV2	K-1	TP13	B-5		
D613	H-8	IC301	K-12	IC904	C-10	RV100	M-5	TP14	B-5		
D616	G-9	IC302	K-12	IC905	C-10	RV101	M-6	TP15	A-5		
D617	H-9	IC303	K-4	IC906	C-9	RV102	M-6	TP16	A-5		
D618	G-10	IC304	K-4	IC907	C-7	RV103	M-7	TP17	A-7		
D619	G-10	IC305	K-4	IC908	A-4	RV104	M-6	TP18	A-7		

DSP-61; SYSTEM CONTROL, AUDIO PROCESSING BOARD



1-653-124-11 A SIDE

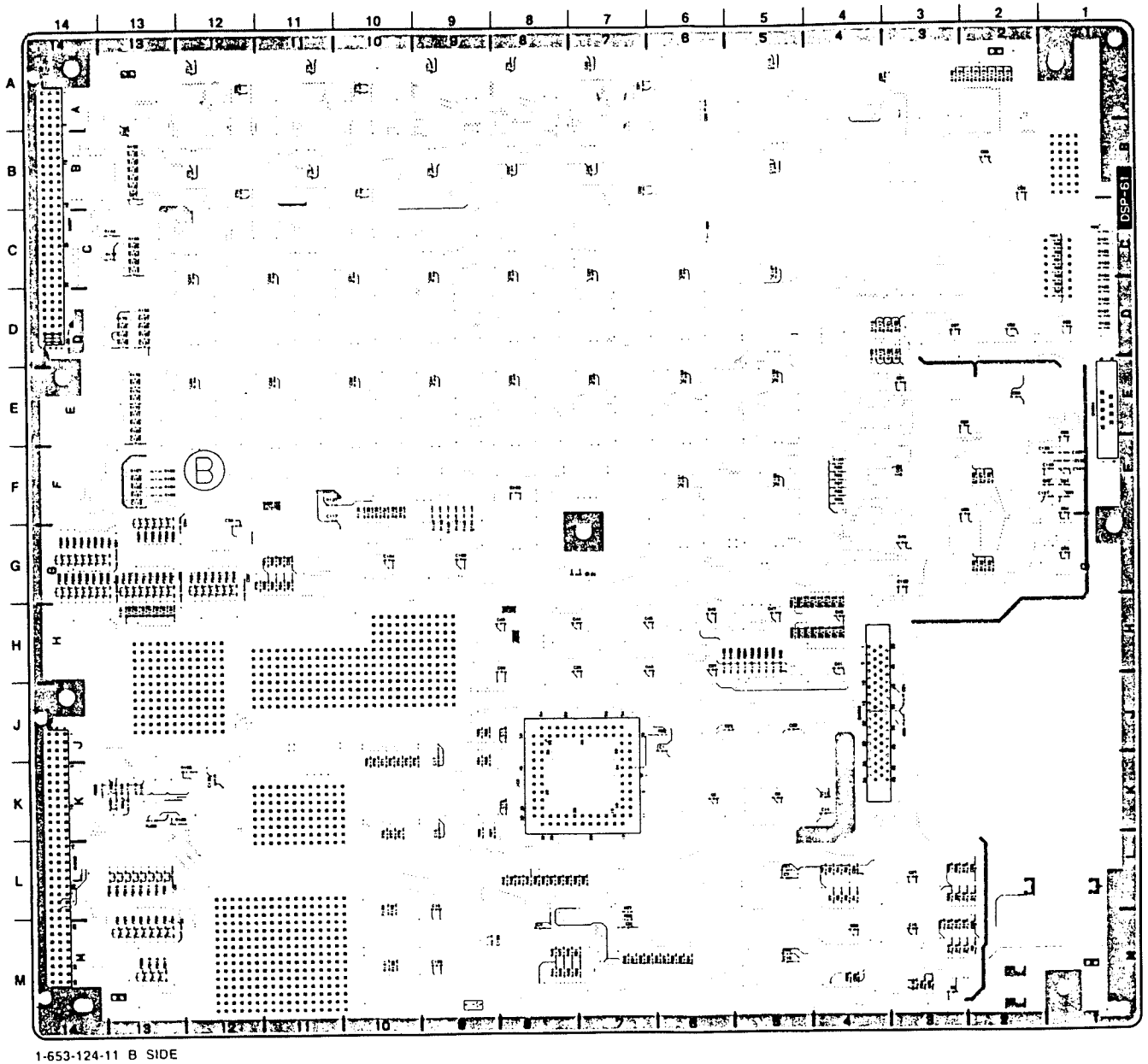
A Side is the same as Component Side

DSP-61 (1-653-124-11)

* Soldering Side

CN301	C-14	FB30	G-13	IC41	H-7	IC109	G-9
CN302	L-4	FB31	G-14	IC42	H-6	IC110	C-13
CN303	J-4	FB32	G-14	IC43	H-4	IC111	F-13
CN304	E-1	FB33	G-14	IC44	H-5	IC112	E-13
		FB34	G-14	IC45	H-6	IC113	M-3
D1	C-1	FB35	G-14	IC46	E-2	IC114	M-9
D2	K-4	FB36	G-14	IC47	G-3	IC115	M-9
D3	C-1	FB37	G-13	IC48	F-4	IC116	M-13
D4	C-1	FB38	G-13	IC49	E-3	IC117	M-9
D5	C-1	FB39	G-13	IC50	D-2	IC118	G-7
D6	D-1	FB40	G-13	IC51	D-1	IC119	K-13
D7	D-1	FB41	G-13	IC52	A-3	IC120	K-12
D8	D-1	FB42	G-13	IC53	A-2	IC121	F-1
D9	D-1	FB43	G-13	IC54	C-2	IC122	F-1
D10	D-1	FB44	G-13	IC55	C-3		
D11	K-13	FB45	G-12	IC56	D-3	S1	M-1
D12	K-13	FB46	G-12	IC57	D-3	S2	C-1
D13	K-13	FB47	G-12	IC58	G-2		
D14	K-13	FB48	G-12	IC59	F-2	SL1	L-5
D15	M-2	FB49	G-12	IC61	G-1	SL2	M-5
D16	M-2	FB50	G-12	IC62	G-1	SL3	F-4
		FB51	G-12	IC63	B-13	SL4	F-4
E1	A-2	FB52	F-13	IC64	A-13	SL5	F-4
E2	A-6	FB53	F-13	IC65	B-12	SL6	F-4
E3	A-10	FB54	F-13	IC66	C-12	SL7	F-4
E4	A-13	FB55	F-13	IC67	B-6	SL8	F-4
E5	D-4	FB56	F-13	IC68	A-12	SL9	F-4
E6	C-8	FB57	F-13	IC69	C-12	SL10	F-4
E7	C-10			IC70	B-10	SL11	F-4
E8	E-13	IC1	M-2	IC71	C-10	SL12	A-12
E9	G-4	IC2	K-7	IC72	A-11	SL13	A-10
E10	H-10	IC4	M-7	IC73	C-11	SL14	B-12
E11	L-4	IC5	H-3	IC74	A-9	SL15	B-10
E12	J-13	IC6	K-6	IC75	C-9	SL16	A-7
E13	M-3	IC7	K-5	IC76	A-8	SL17	B-7
E14	M-8	IC8	M-5	IC77	C-8	SL19	H-11
E15	M-13	IC9	M-13	IC78	B-7	SL20	H-11
		IC10	L-13	IC79	C-7	SL21	H-11
FB1	M-13	IC11	M-5	IC80	A-7	SL22	H-11
FB2	M-13	IC12	K-8	IC81	C-7	SL23	H-11
FB3	M-13	IC13	K-8	IC82	A-6	SL24	H-11
FB4	M-13	IC14	K-4	IC83	C-6	SL25	H-12
FB5	M-13	IC15	K-9	IC84	D-12	SL26	H-12
FB6	M-13	IC16	K-9	IC85	E-12		
FB7	M-13	IC18	M-3	IC86	D-11	X1	J-6
FB8	M-13	IC19	J-5	IC87	E-11	X2	E-2
FB9	L-13	IC20	J-6	IC88	D-10	X3	F-11
FB10	L-13	IC21	L-4	IC89	E-10		
FB11	L-13	IC22	M-2	IC90	D-9		
FB12	L-13	IC23	L-2	IC91	E-9		
FB13	L-13	IC24	L-3	IC92	D-8		
FB14	L-13	IC25	M-4	IC93	E-8		
FB15	L-13	IC26	M-4	IC94	D-7		
FB16	L-13	IC27	G-12	IC95	E-7		
FB17	M-13	IC28	G-13	IC96	D-6		
FB18	M-13	IC29	H-13	IC97	E-6		
FB19	M-13	IC30	H-13	IC98	F-6		
FB20	M-13	IC31	H-12	IC99	F-8		
FB21	G-13	IC32	G-13	IC100	G-9		
FB22	G-13	IC33	G-11	IC101	G-10		
FB23	G-14	IC34	J-4	IC102	E-5		
FB24	G-14	IC35	J-5	IC103	F-5		
FB25	G-14	IC36	J-6	IC104	D-5		
FB26	G-14	IC37	J-6	IC105	C-5		
FB27	G-14	IC38	J-7	IC106	A-5		
FB28	G-14	IC39	J-8	IC107	D-13		
FB29	G-13	IC40	H-8	IC108	G-10		

DSP-61; SYSTEM CONTROL, AUDIO PROCESSING BOARD



1-653-124-11 B SIDE

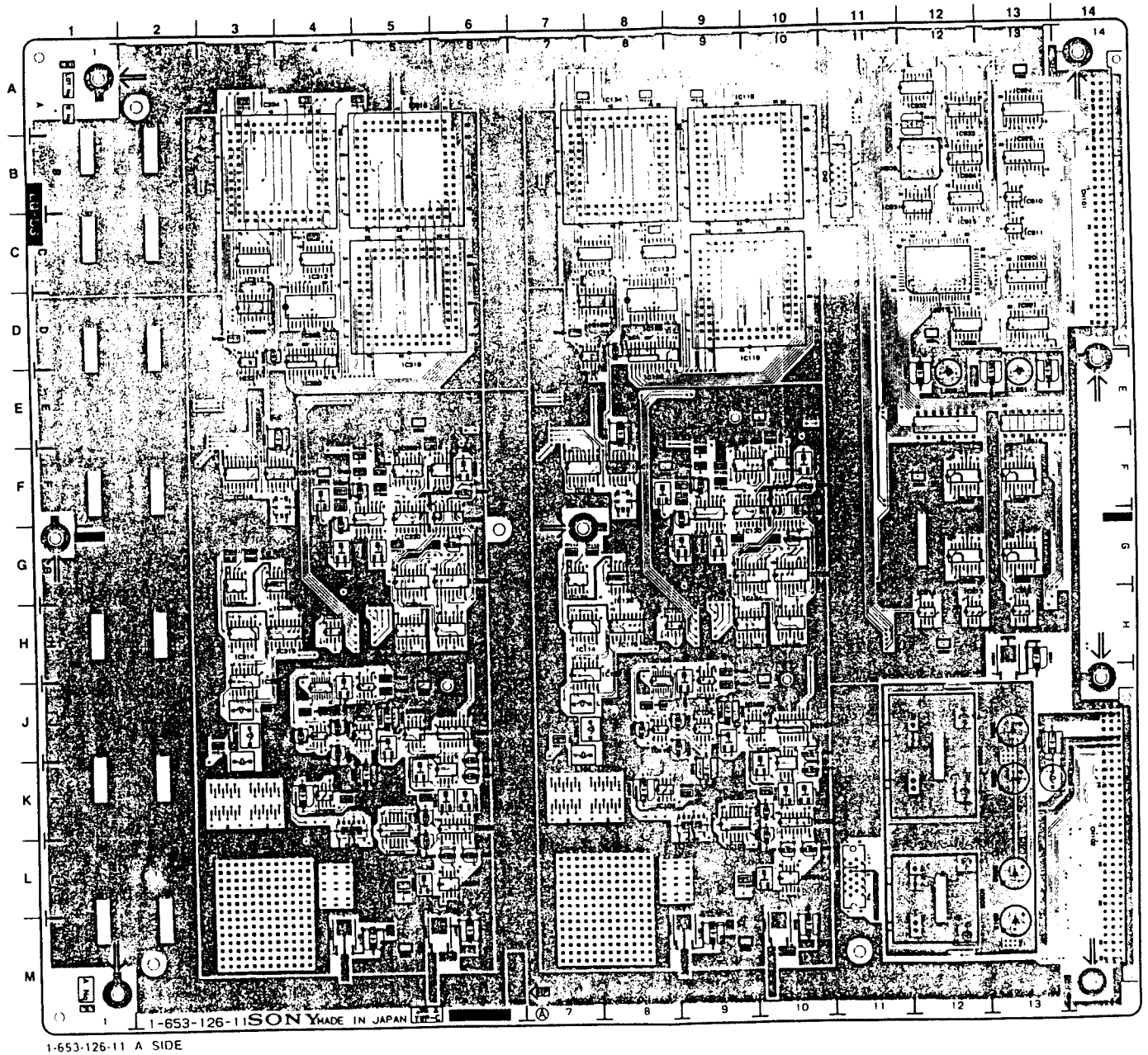
B Side is the same as Soldering Side

DSP-61 (1-653-124-11)

• Soldering Side

CN301	C-14	FB30	G-13	IC41	H-7	IC109	G-9
CN302	L-4	FB31	G-14	IC42	H-6	IC110	C-13
CN303	J-4	FB32	G-14	IC43	H-4	IC111	F-13
CN304	E-1	FB33	G-14	IC44	H-5	IC112	E-13
		FB34	G-14	IC45	H-6	IC113	M-3
D1	C-1	FB35	G-14	IC46	E-2	IC114	M-9
D2	K-4	FB36	G-14	IC47	G-3	IC115	M-9
D3	C-1	FB37	G-13	IC48	F-4	IC116	M-13
D4	C-1	FB38	G-13	IC49	E-3	IC117	M-9
D5	C-1	FB39	G-13	IC50	D-2	IC118	G-7
D6	D-1	FB40	G-13	IC51	D-1	IC119	K-13
D7	D-1	FB41	G-13	IC52	A-3	IC120	K-12
D8	D-1	FB42	G-13	IC53	A-2	IC121	F-1
D9	D-1	FB43	G-13	IC54	C-2	IC122	F-1
D10	D-1	FB44	G-13	IC55	C-3		
D11	K-13	FB45	G-12	IC56	D-3	S1	M-1
D12	K-13	FB46	G-12	IC57	D-3	S2	C-1
D13	K-13	FB47	G-12	IC58	G-2		
D14	K-13	FB48	G-12	IC59	F-2	SL1	L-5
D15	M-2	FB49	G-12	IC61	G-1	SL2	M-5
D16	M-2	FB50	G-12	IC62	G-1	SL3	F-4
		FB51	G-12	IC63	B-13	SL4	F-4
E1	A-2	FB52	F-13	IC64	A-13	SL5	F-4
E2	A-6	FB53	F-13	IC65	B-12	SL6	F-4
E3	A-10	FB54	F-13	IC66	C-12	SL7	F-4
E4	A-13	FB55	F-13	IC67	B-6	SL8	F-4
E5	D-4	FB56	F-13	IC68	A-12	SL9	F-4
E6	C-8	FB57	F-13	IC69	C-12	SL10	F-4
E7	C-10			IC70	B-10	SL11	F-4
E8	E-13	IC1	M-2	IC71	C-10	SL12	A-12
E9	G-4	IC2	K-7	IC72	A-11	SL13	A-10
E10	H-10	IC4	M-7	IC73	C-11	SL14	B-12
E11	L-4	IC5	H-3	IC74	A-9	SL15	B-10
E12	J-13	IC6	K-6	IC75	C-9	SL16	A-7
E13	M-3	IC7	K-5	IC76	A-8	SL17	B-7
E14	M-8	IC8	M-5	IC77	C-8	SL19	H-11
E15	M-13	IC9	M-13	IC78	B-7	SL20	H-11
		IC10	L-13	IC79	C-7	SL21	H-11
FB1	M-13	IC11	M-5	IC80	A-7	SL22	H-11
FB2	M-13	IC12	K-8	IC81	C-7	SL23	H-11
FB3	M-13	IC13	K-8	IC82	A-6	SL24	H-11
FB4	M-13	IC14	K-4	IC83	C-6	SL25	H-12
FB5	M-13	IC15	K-9	IC84	D-12	SL26	H-12
FB6	M-13	IC16	K-9	IC85	E-12		
FB7	M-13	IC18	M-3	IC86	D-11	X1	J-6
FB8	M-13	IC19	J-5	IC87	E-11	X2	E-2
FB9	L-13	IC20	J-6	IC88	D-10	X3	F-11
FB10	L-13	IC21	L-4	IC89	E-10		
FB11	L-13	IC22	M-2	IC90	D-9		
FB12	L-13	IC23	L-2	IC91	E-9		
FB13	L-13	IC24	L-3	IC92	D-8		
FB14	L-13	IC25	M-4	IC93	E-8		
FB15	L-13	IC26	M-4	IC94	D-7		
FB16	L-13	IC27	G-12	IC95	E-7		
FB17	M-13	IC28	G-13	IC96	D-6		
FB18	M-13	IC29	H-13	IC97	E-6		
FB19	M-13	IC30	H-13	IC98	F-6		
FB20	M-13	IC31	H-12	IC99	F-8		
FB21	G-13	IC32	G-13	IC100	G-9		
FB22	G-13	IC33	G-11	IC101	G-10		
FB23	G-14	IC34	J-4	IC102	E-5		
FB24	G-14	IC35	J-5	IC103	F-5		
FB25	G-14	IC36	J-6	IC104	D-5		
FB26	G-14	IC37	J-6	IC105	C-5		
FB27	G-14	IC38	J-7	IC106	A-5		
FB28	G-14	IC39	J-8	IC107	D-13		
FB29	G-13	IC40	H-8	IC108	G-10		

EQ-53; PB·RF·EQ/AGC/RF·COMPARATOR/AFC BOARD



1-653-126-11 A SIDE

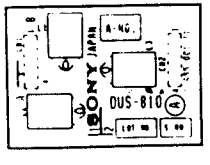
A Side is the same as Component Side.

EQ-53 (1-653-126-11)

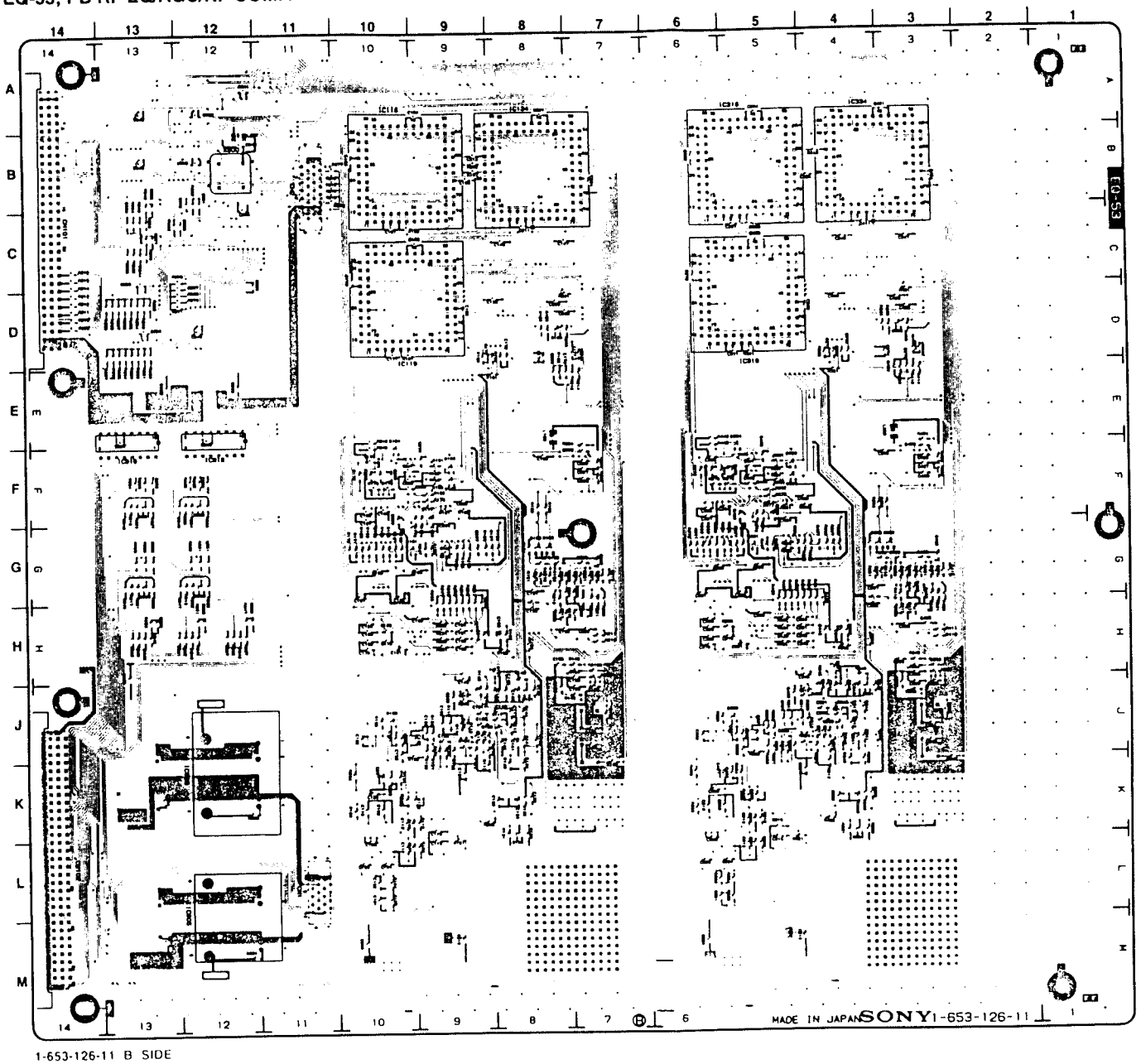
*Soldering Side

CN1	L-11	IC120	E-8	IC902	M-5	RV303	K-8
CN2	B-11	IC121	E-7	IC905	L-12	RV304	J-5
CN101	C-14	IC122	H-9	IC906	M-9	RV305	K-5
CN102	L-14	IC123	H-10	IC907	M-4	RV307	J-4
		IC124	G-9	IC910	C-13	RV309	F-6
D100	J-10	IC125	G-10	IC911	C-13	RV310	G-4
D101	G-10	IC126	G-10	IC912	H-13	RV311	F-4
D102	G-8	IC129	F-10	IC913	H-12	RV312	G-5
D103	G-8	IC130	G-9	IC914	H-12		
D104	F-10	IC131	G-9	IC915	C-12	TP100	L-9
D105	F-9	IC132	F-9	IC916	F-13	TP101	K-10
D106	F-9	IC133	D-7	IC917	C-12	TP102	K-9
D300	J-5	IC134	B-8	IC918	F-12	TP103	J-9
D301	G-5	IC135	D-8	IC920	D-13	TP104	D-7
D302	G-3	IC136	G-8	IC921	D-13	TP105	F-9
D303	G-4	IC137	J-7	IC922	D-12	TP106	F-9
D304	F-5	IC138	G-7	IC924	B-13	TP107	F-9
D305	F-5	IC300	H-4	IC925	B-13	TP108	F-9
D306	F-5	IC301	L-5	IC926	F-12	TP109	F-9
		IC302	L-5	IC927	F-13	TP110	F-9
E100	E-10	IC303	L-5	IC928	G-12	TP111	G-9
E101	F-8	IC304	J-4	IC929	G-13	TP112	J-8
E102	J-10	IC305	J-5	IC930	H-13	TP113	G-7
E103	M-9	IC306	K-5	IC931	C-12	TP114	G-7
E300	E-5	IC307	J-5	IC932	A-12	TP115	J-7
E301	F-4	IC308	K-4	IC933	B-12	TP116	A-9
E302	J-5	IC309	J-4	IC934	B-12	TP117	C-8
E303	M-5	IC310	J-4			TP118	A-8
E900	A-13	IC311	J-4	LV100	F-8	TP119	A-7
E901	D-12	IC312	C-3	LV300	F-3	TP120	J-9
E902	F-12	IC313	C-4			TP121	F-10
E903	H-12	IC314	H-3	Q100	J-8	TP300	L-5
		IC315	H-3	Q101	J-8	TP301	K-5
FL100	K-9	IC316	F-3	Q103	D-8	TP302	K-4
FL300	K-4	IC317	F-3	Q104	K-8	TP303	J-5
		IC318	B-5	Q300	J-4	TP304	D-3
IC100	H-8	IC319	D-5	Q301	J-4	TP305	F-5
IC101	L-10	IC320	E-4	Q303	D-3	TP306	F-
IC102	L-10	IC321	E-3	Q304	K-4	TP307	F-
IC103	L-9	IC322	H-5	Q900	F-12	TP308	F-5
IC104	J-9	IC323	H-5	Q901	F-13	TP309	F-5
IC105	J-9	IC324	G-5	Q902	G-12	TP310	F-5
IC106	K-10	IC325	G-5	Q903	G-13	TP311	G-5
IC107	J-10	IC328	G-5			TP312	J-4
IC108	K-8	IC329	F-5	RV101	L-10	TP313	G-3
IC109	J-8	IC330	G-5	RV102	K-10	TP314	G-3
IC110	J-8	IC331	G-4	RV103	K-10	TP315	J-3
IC111	J-9	IC332	F-5	RV104	J-9	TP316	A-5
IC112	C-7	IC333	D-3	RV105	K-10	TP317	C-4
IC113	C-8	IC334	B-4	RV107	J-9	TP318	A-4
IC114	H-7	IC335	D-4	RV109	F-10	TP319	A-3
IC115	H-8	IC336	G-3	RV110	G-9	TP320	J-5
IC116	F-7	IC337	J-3	RV111	F-8	TP321	F-5
IC117	F-8	IC338	G-3	RV112	G-9		
IC118	B-10	IC900	K-12	RV301	L-5	X900	B-12
IC119	D-10	IC901	M-10	RV302	K-6		

DUS-810; BPF COMPARATOR BOARD



EQ-53; PB·RF·EQ/AGC/RF·COMPARATOR/AFC BOARD



1-653-126-11 B SIDE

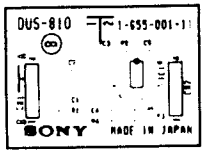
B Side is the same as Soldering Side.

EQ-53 (1-653-126-11)

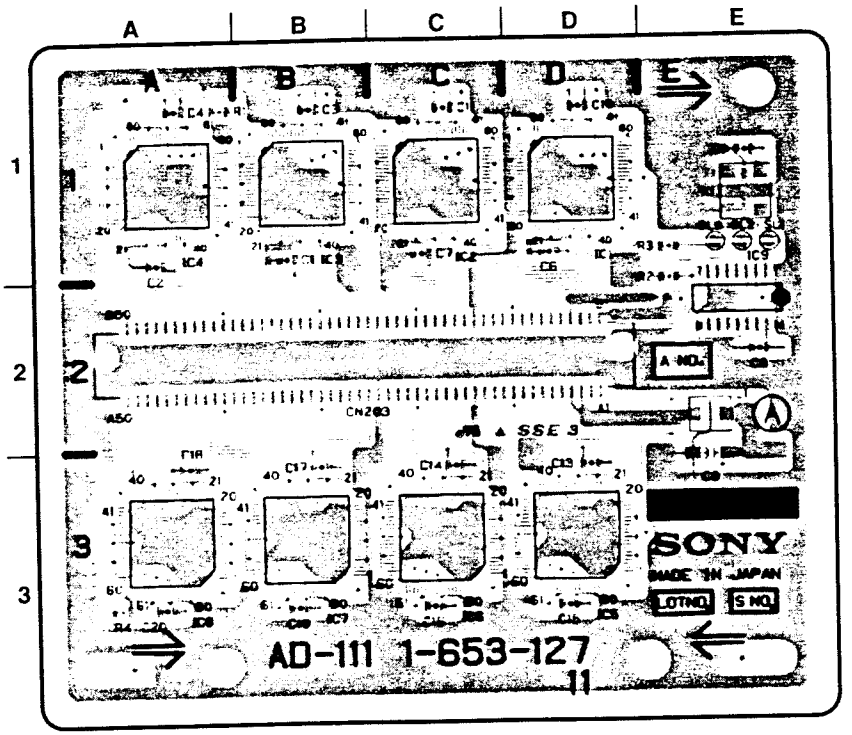
* Soldering Side

CN1	L-11	IC120	E-8	IC902	M-5	RV303	K-6
CN2	B-11	IC121	E-7	IC905	L-12	RV304	J-5
CN101	C-14	IC122	H-9	IC906	M-9	RV305	K-5
CN102	L-14	IC123	H-10	IC907	M-4	RV307	J-4
		IC124	G-9	IC910	C-13	RV309	F-6
D100	J-10	IC125	G-10	IC911	C-13	RV310	G-4
D101	G-10	IC126	G-10	IC912	H-13	RV311	F-4
D102	G-8	IC129	F-10	IC913	H-12	RV312	G-5
D103	G-8	IC130	G-9	IC914	H-12		
D104	F-10	IC131	G-9	IC915	C-12	TP100	L-9
D105	F-9	IC132	F-9	IC916	F-13	TP101	K-10
D106	F-9	IC133	D-7	IC917	C-12	TP102	K-9
D300	J-5	IC134	B-8	IC918	F-12	TP103	J-9
D301	G-5	IC135	D-8	IC920	D-13	TP104	D-7
D302	G-3	IC136	G-8	IC921	D-13	TP105	F-9
D303	G-4	IC137	J-7	IC922	D-12	TP106	F-9
D304	F-5	IC138	G-7	IC924	B-13	TP107	F-9
D305	F-5	IC300	H-4	IC925	B-13	TP108	F-9
D306	F-5	IC301	L-5	IC926	F-12	TP109	F-9
		IC302	L-5	IC927	F-13	TP110	F-9
E100	E-10	IC303	L-5	IC928	G-12	TP111	G-9
E101	F-8	IC304	J-4	IC929	G-13	TP112	J-8
E102	J-10	IC305	J-5	IC930	H-13	TP113	G-7
E103	M-9	IC306	K-5	IC931	C-12	TP114	G-7
E300	E-5	IC307	J-5	IC932	A-12	TP115	J-7
E301	F-4	IC308	K-4	IC933	B-12	TP116	A-9
E302	J-5	IC309	J-4	IC934	B-12	TP117	C-8
E303	M-5	IC310	J-4			TP118	A-8
E900	A-13	IC311	J-4	LV100	F-8	TP119	A-7
E901	D-12	IC312	C-3	LV300	F-3	TP120	J-9
E902	F-12	IC313	C-4			TP121	F-10
E903	H-12	IC314	H-3	Q100	J-8	TP300	L-5
		IC315	H-3	Q101	J-8	TP301	K-5
FL100	K-9	IC316	F-3	Q103	D-8	TP302	K-4
FL300	K-4	IC317	F-3	Q104	K-8	TP303	J-5
		IC318	B-5	Q300	J-4	TP304	D-3
IC100	H-8	IC319	D-5	Q301	J-4	TP305	F-5
IC101	L-10	IC320	E-4	Q303	D-3	TP306	F-4
IC102	L-10	IC321	E-3	Q304	K-4	TP307	F-4
IC103	L-9	IC322	H-5	Q900	F-12	TP308	F-5
IC104	J-9	IC323	H-5	Q901	F-13	TP309	F-5
IC105	J-9	IC324	G-5	Q902	G-12	TP310	F-5
IC106	K-10	IC325	G-5	Q903	G-13	TP311	G-5
IC107	J-10	IC326	G-5			TP312	J-4
IC108	K-8	IC329	F-5	RV101	L-10	TP313	G-3
IC109	J-8	IC330	G-5	RV102	K-10	TP314	G-3
IC110	J-8	IC331	G-4	RV103	K-10	TP315	J-3
IC111	J-9	IC332	F-5	RV104	J-9	TP316	A-5
IC112	C-7	IC333	D-3	RV105	K-10	TP317	C-4
IC113	C-8	IC334	B-4	RV107	J-9	TP318	A-4
IC114	H-7	IC335	D-4	RV109	F-10	TP319	A-3
IC115	H-8	IC336	G-3	RV110	G-9	TP320	J-5
IC116	F-7	IC337	J-3	RV111	F-8	TP321	F-5
IC117	F-8	IC338	G-3	RV112	G-9		
IC118	B-10	IC900	K-12	RV301	L-5	X900	B-12
IC119	D-10	IC901	M-10	RV302	K-6		

DUS-810; BPF COMPARATOR BOARD



AD-111; ATRAC DECODE BOARD



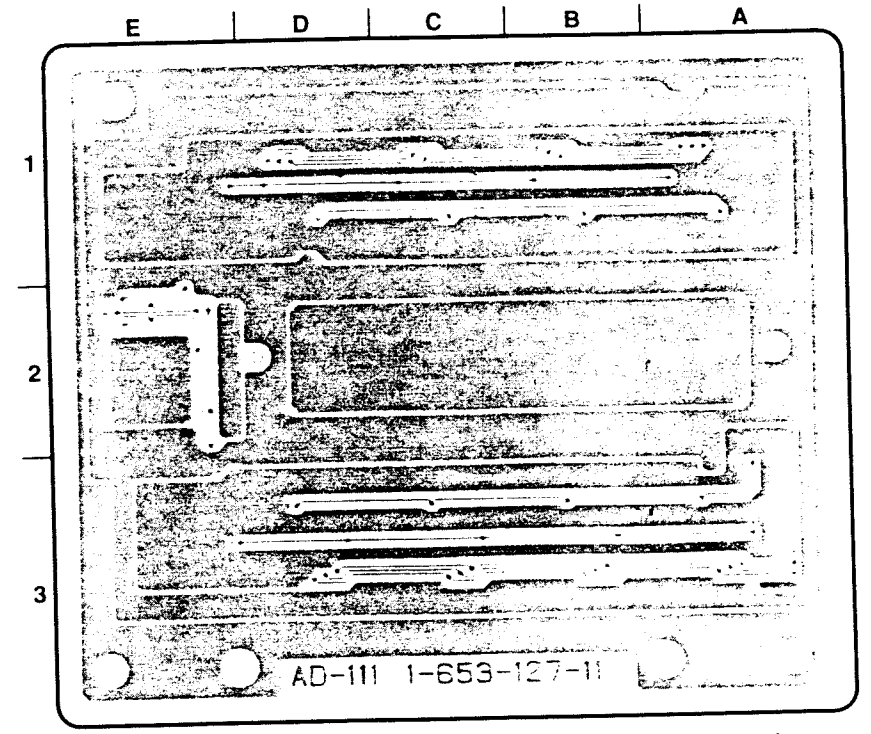
1-653-127-11 A SIDE

A Side is the same as Component Side.

AD-111 (1-653-127-11)

*Soldering Side

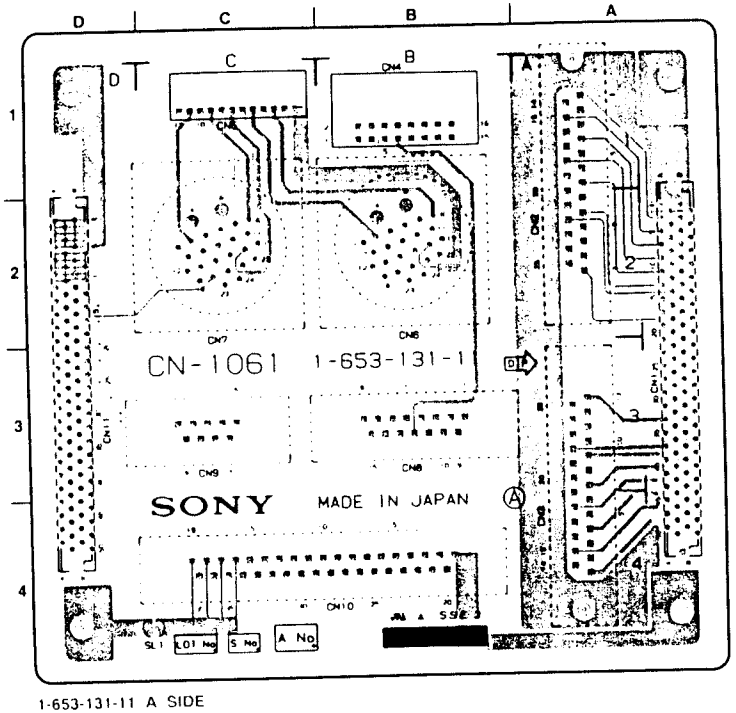
CN203	B-2
IC1	D-1
IC2	C-1
IC3	B-1
IC4	A-1
IC5	D-3
IC6	C-3
IC7	B-3
IC8	A-3
IC9	E-1
SL1	E-1
SL2	E-1
SL3	E-1
X1	E-1



1-653-127-11 B SIDE

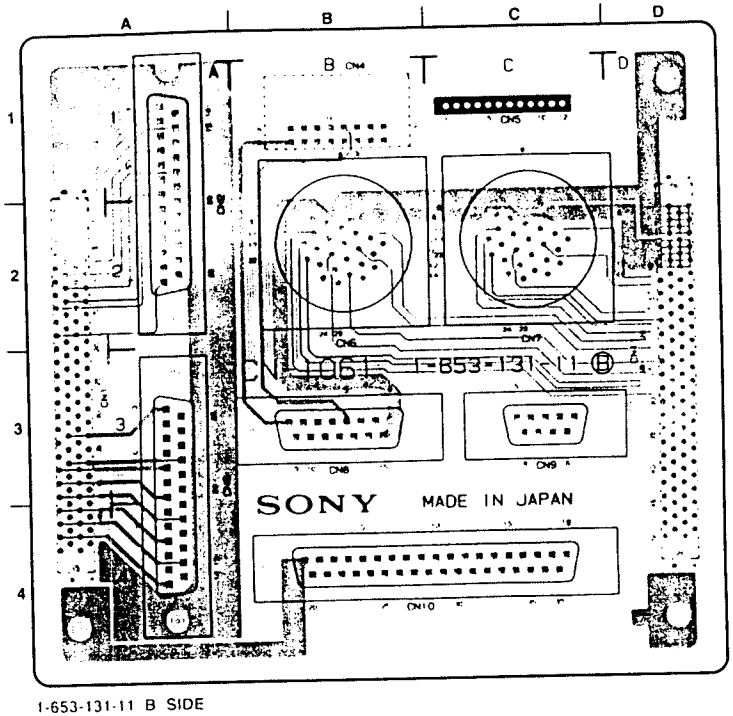
B Side is the same as Soldering Side.

CN-1061; I/O CONNECTOR BOARD



1-653-131-11 A SIDE

A Side is the same as Component Side



1-653-131-11 B SIDE

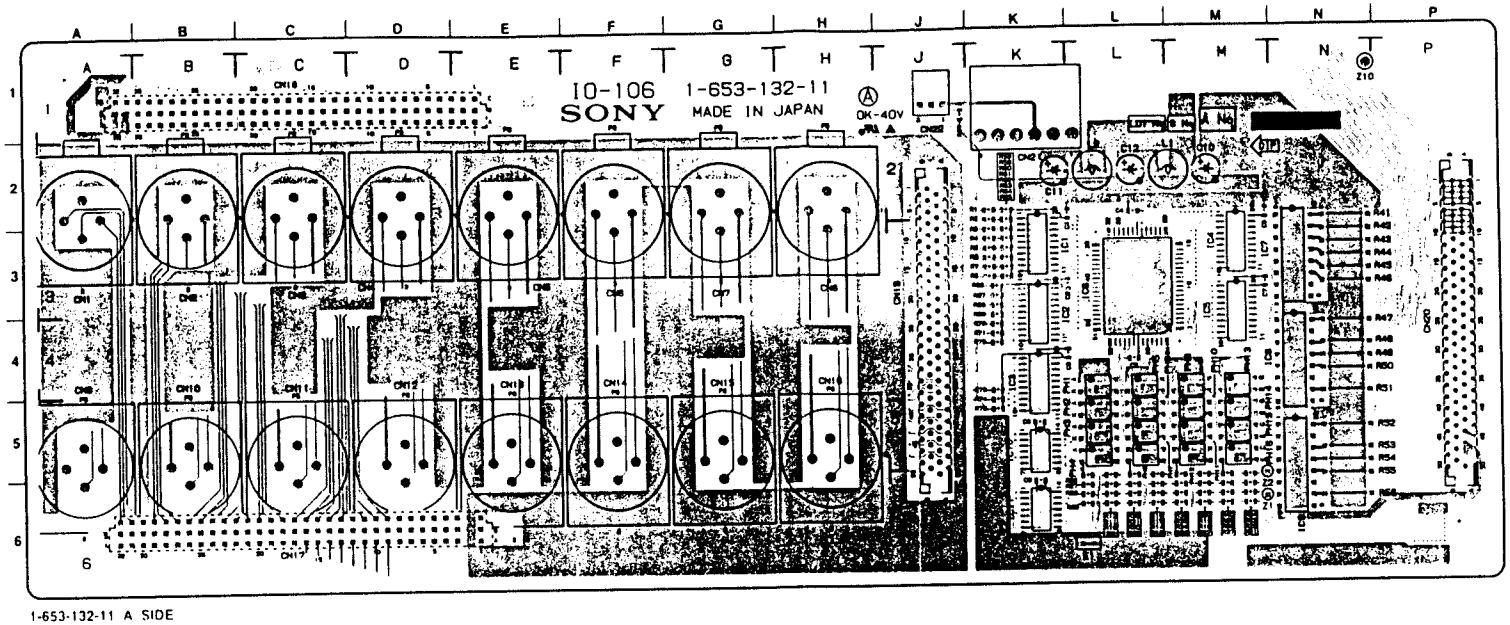
B Side is the same as Soldering Side

CN-1061 (1-653-131-11)

* Soldering Side

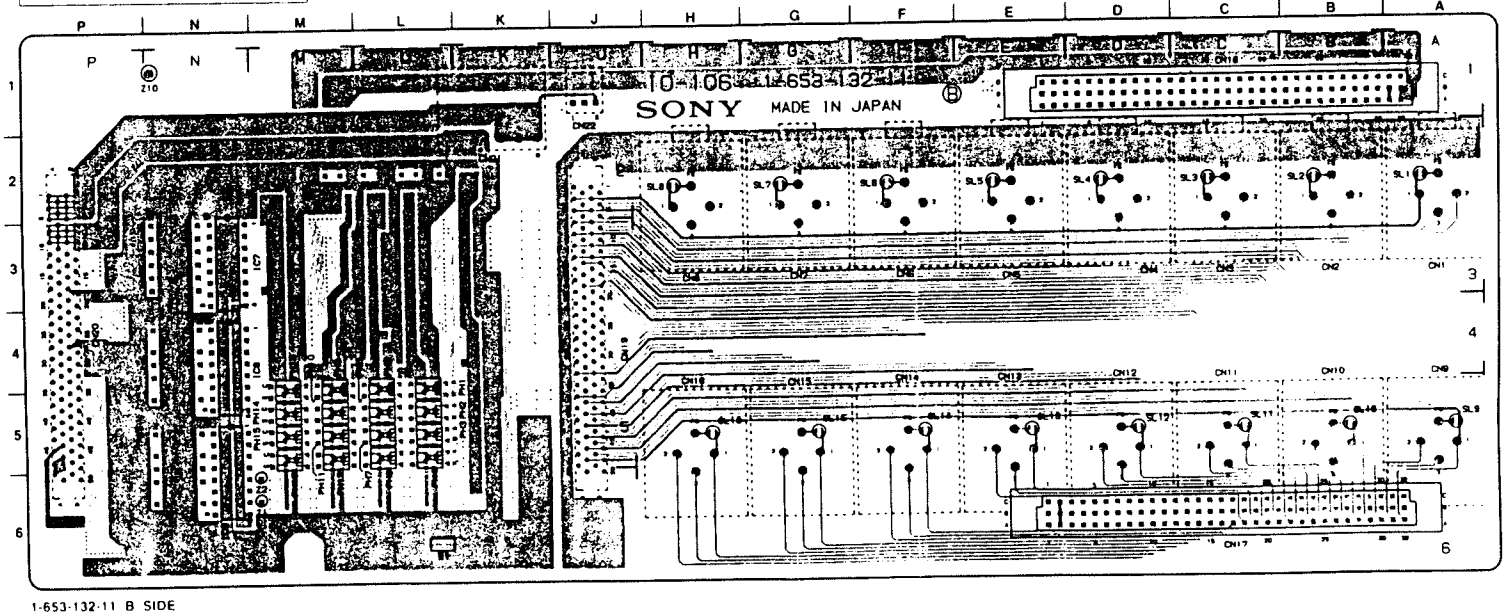
CN1	A-3
CN2	A-1
CN3	A-3
CN4	B-1
CN5	C-1
CN6	B-2
CN7	C-2
CN8	B-3
CN9	C-3
CN10	C-4
CN11	D-3
SL1	C-4

IO-106; I/O I/F, AUDIO I/O CONNECTOR BOARD



1-653-132-11 A SIDE

A Side is the same as Component Side



1-653-132-11 B SIDE

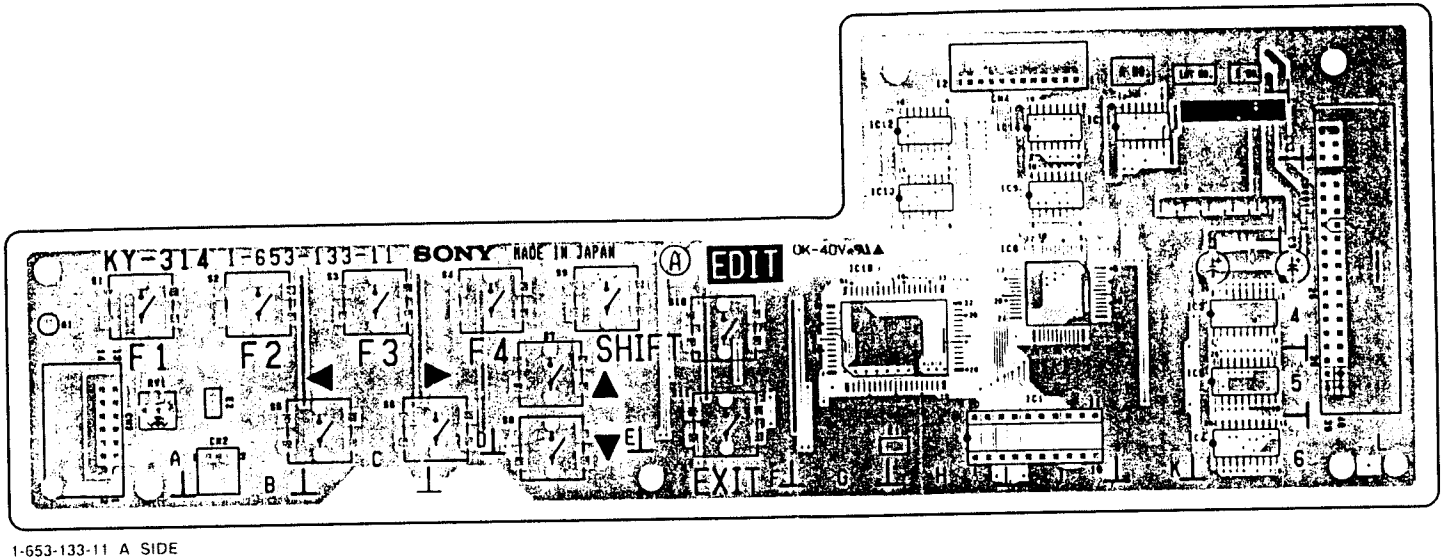
B Side is the same as Soldering Side

IO-106 (1-653-132-11)

* Soldering Side

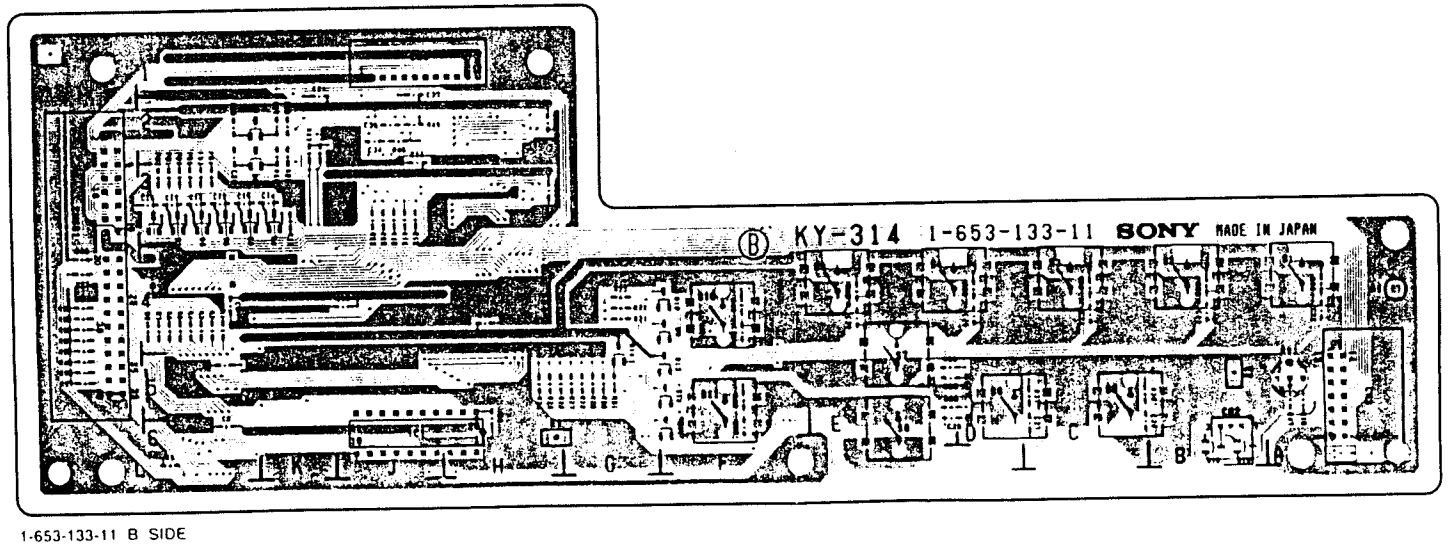
CN1	A-2	SL14	F-5
CN2	B-2	SL15	G-5
CN3	C-2	SL16	H-5
CN4	D-2		
CN5	E-2	Z1	M-6
CN6	F-2	Z2	M-6
CN7	G-2	Z10	N-1
CN8	H-2		
CN9	A-5		
CN10	B-5		
CN11	C-5		
CN12	D-5		
CN13	E-5		
CN14	F-5		
CN15	G-5		
CN16	H-5		
CN17	C-6		
CN18	C-1		
CN19	J-4		
CN20	P-4		
CN21	L-2		
CN22	J-1		
E1	L-6		
IC1	K-2		
IC2	K-3		
IC3	K-4		
IC4	M-2		
IC5	M-3		
IC6	L-3		
IC7	N-2		
IC8	N-4		
IC9	N-5		
IC10	K-5		
IC11	K-6		
PH1	L-4		
PH2	L-5		
PH3	L-5		
PH4	L-5		
PH5	L-4		
PH6	L-5		
PH7	L-5		
PH8	L-5		
PH9	M-4		
PH10	M-5		
PH11	M-5		
PH12	M-5		
PH13	M-4		
PH14	M-5		
PH15	M-5		
PH16	M-5		
SL1	A-2		
SL2	B-2		
SL3	C-2		
SL4	D-2		
SL5	E-2		
SL6	F-2		
SL7	G-2		
SL8	H-2		
SL9	A-5		
SL10	B-5		
SL11	C-5		
SL12	D-5		
SL13	E-5		

KY-314; FRONT PANEL I/F, LCD KEY BOARD



1-653-133-11 A SIDE

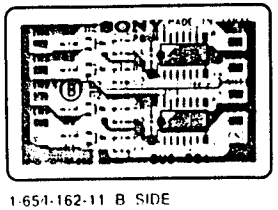
A Side is the same as Component Side.



1-653-133-11 B SIDE

B Side is the same as Soldering Side

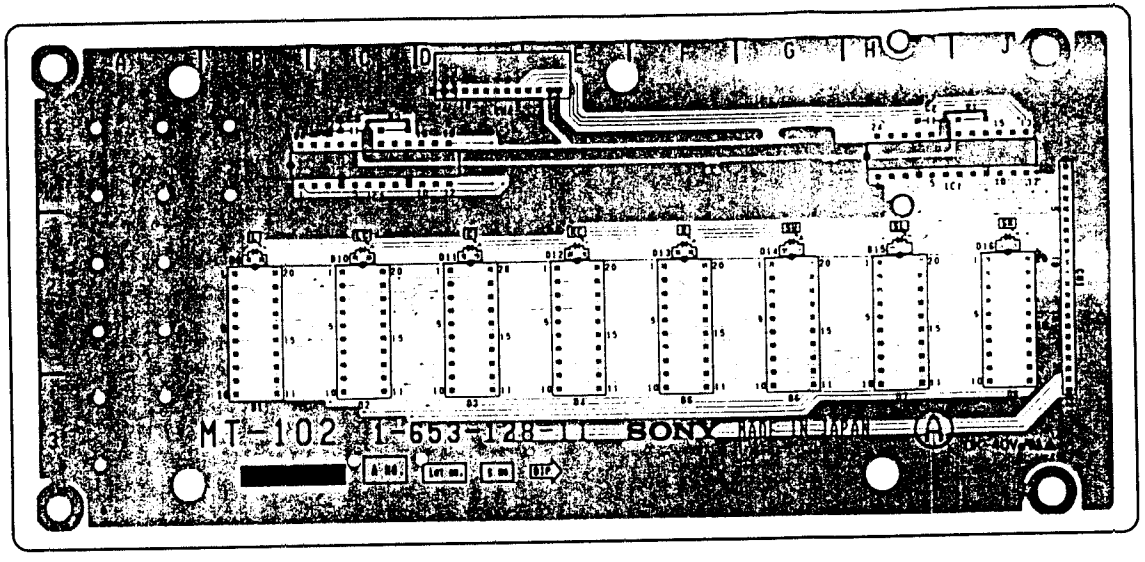
DUS-794; KEY I/F BOARD



1-654-162-11 B SIDE

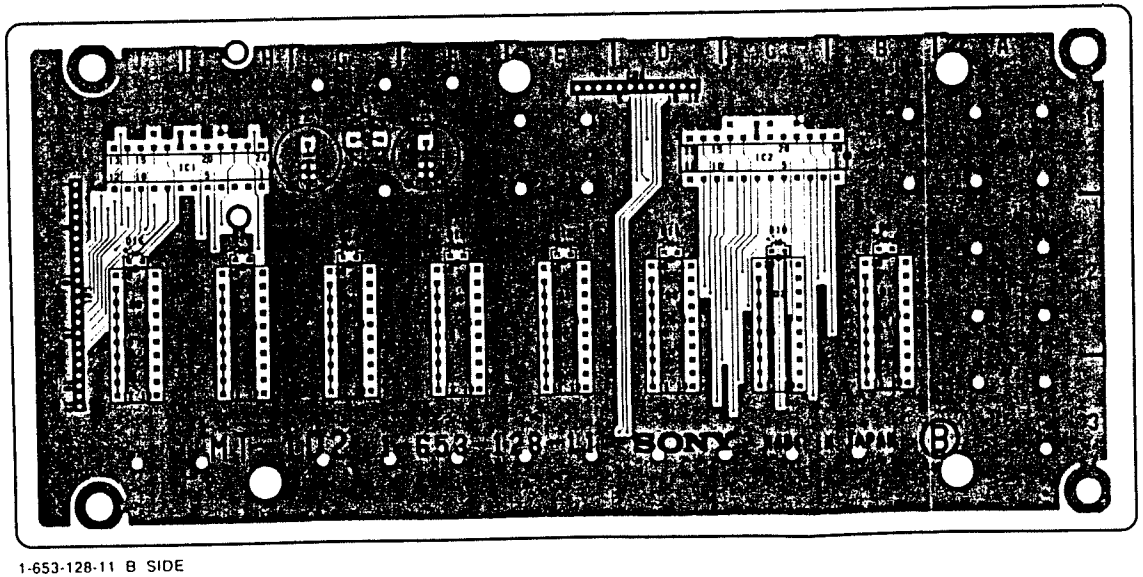
B Side is the same as Soldering S

MT-102; LED LEVEL METER BOARD



1-653-128-11 A SIDE

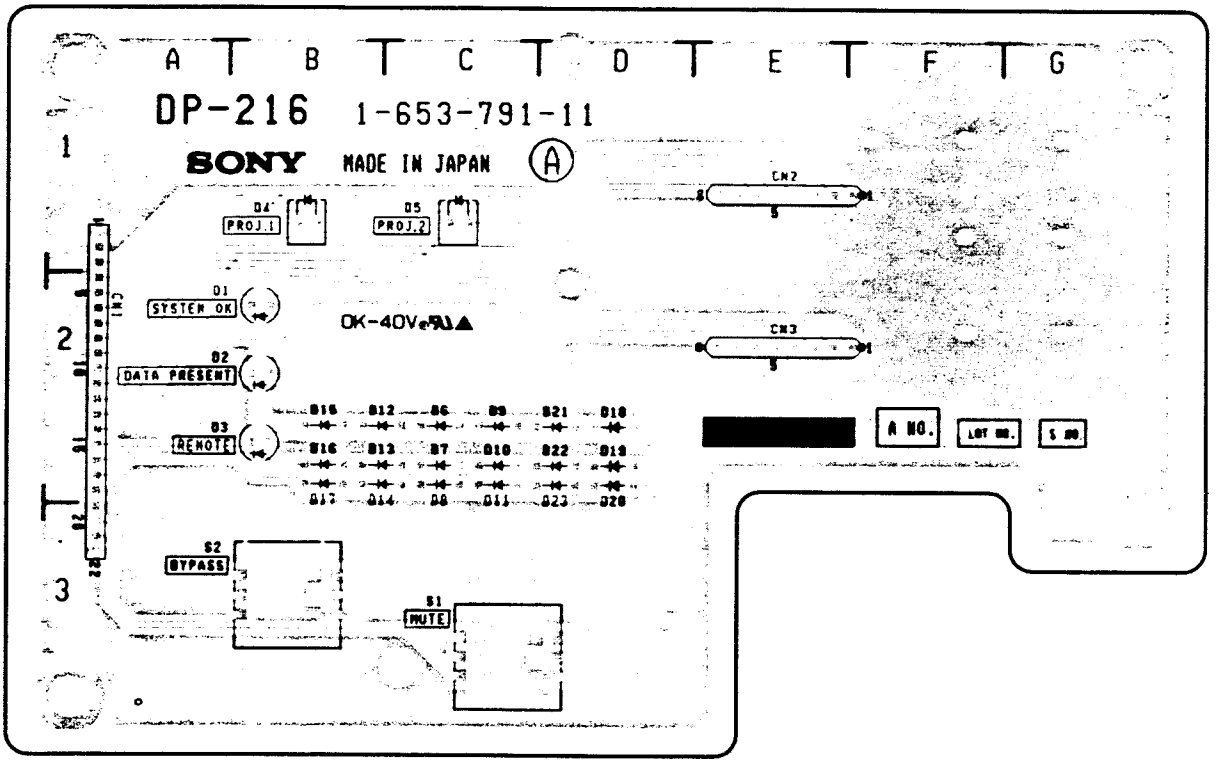
A Side is the same as Component Side.



1-653-128-11 B SIDE

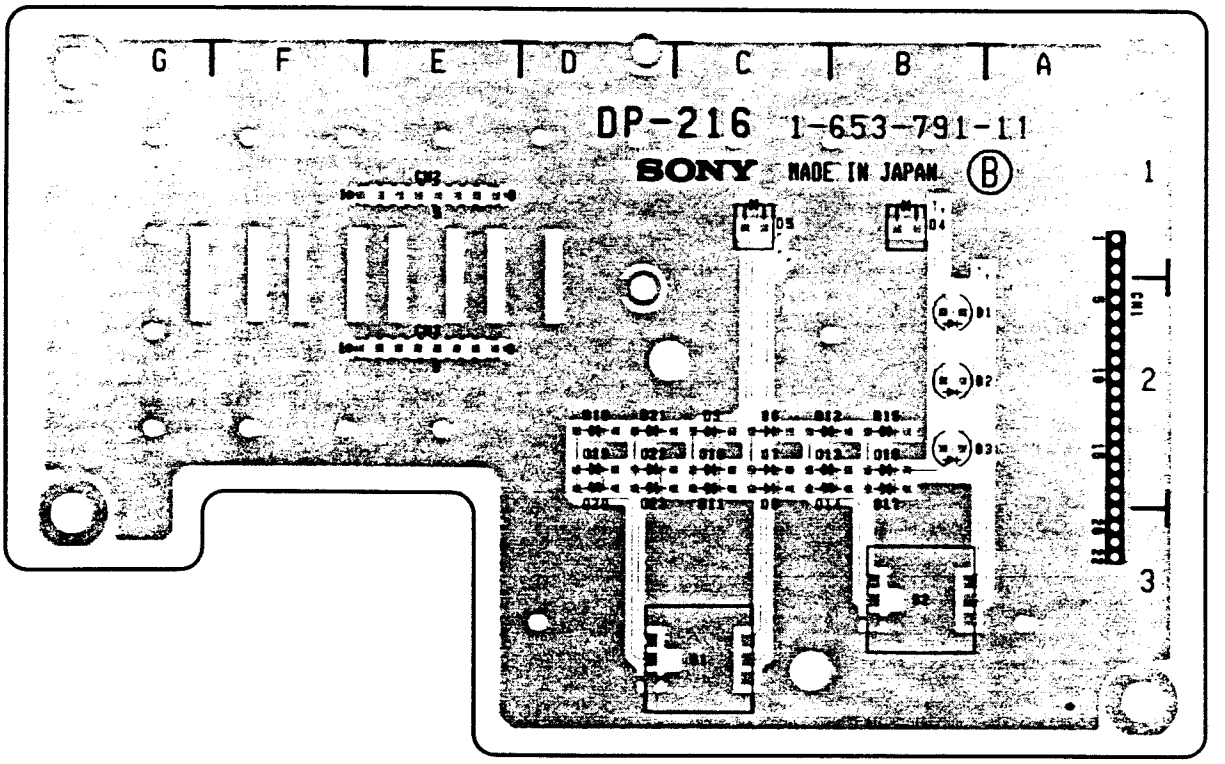
B Side is the same as Soldering Side

DP-216; INDICATOR BOARD



1-653-791-11 A SIDE

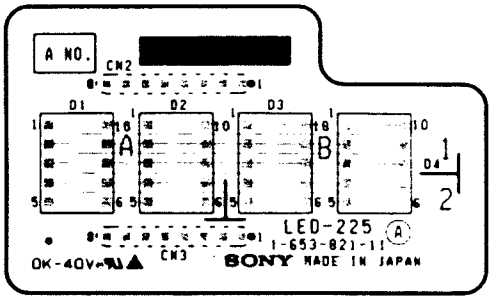
A Side is the same as Component Side.



1-653-791-11 B SIDE

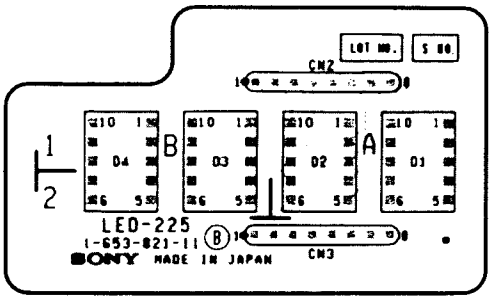
B Side is the same as Soldering Side.

LED-225; MASTER LEVEL DISPLAY BOARD



1-653-821-11 A SIDE

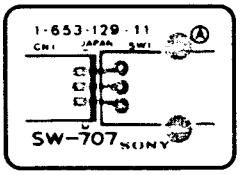
A Side is the same as Component Side.



1-653-821-11 B SIDE

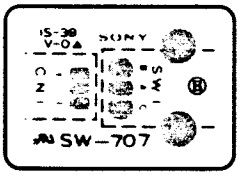
B Side is the same as Soldering Side.

SW-707; VOLUME SW BOARD



1-653-129-11 A SIDE

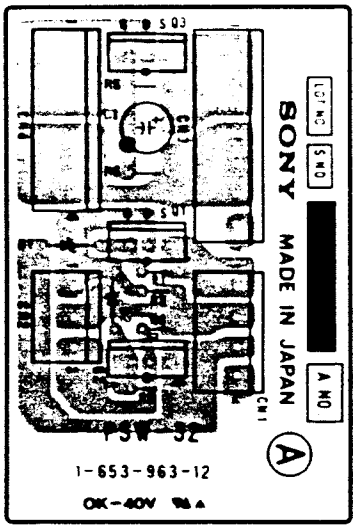
A Side is the same as Component Side.



1-653-129-11 B SIDE

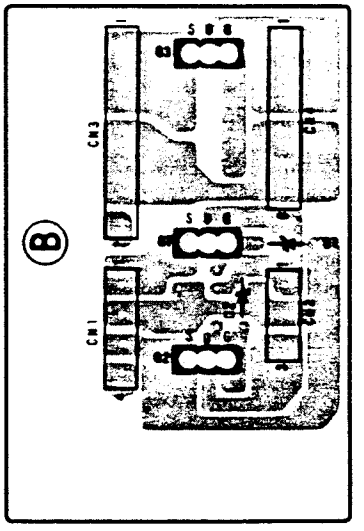
B Side is the same as Component Side.

PSW-32; ±15 V CONTROL BOARD



1-653-963-12 A SIDE

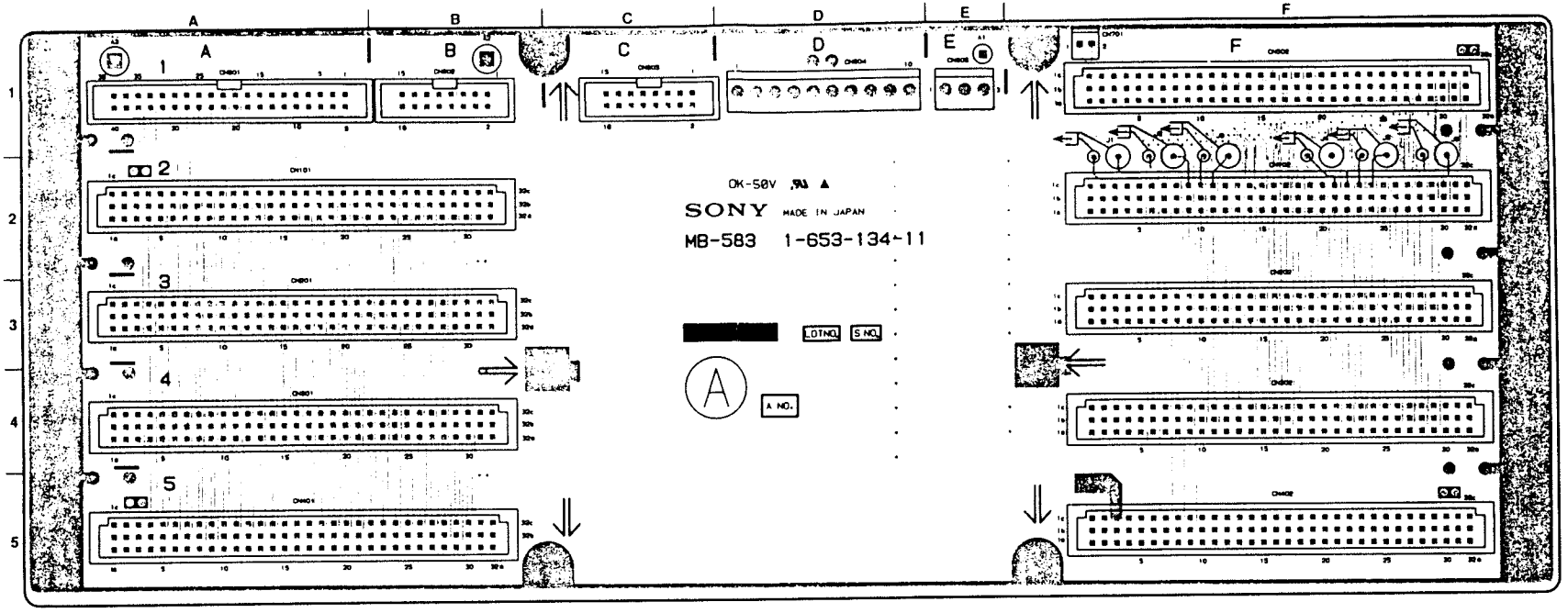
A Side is the same as Component Side.



1-653-963-12 B SIDE

B Side is the same as Soldering Side.

MB-583; MOTHER BOARD



1-653-134-11 A SIDE

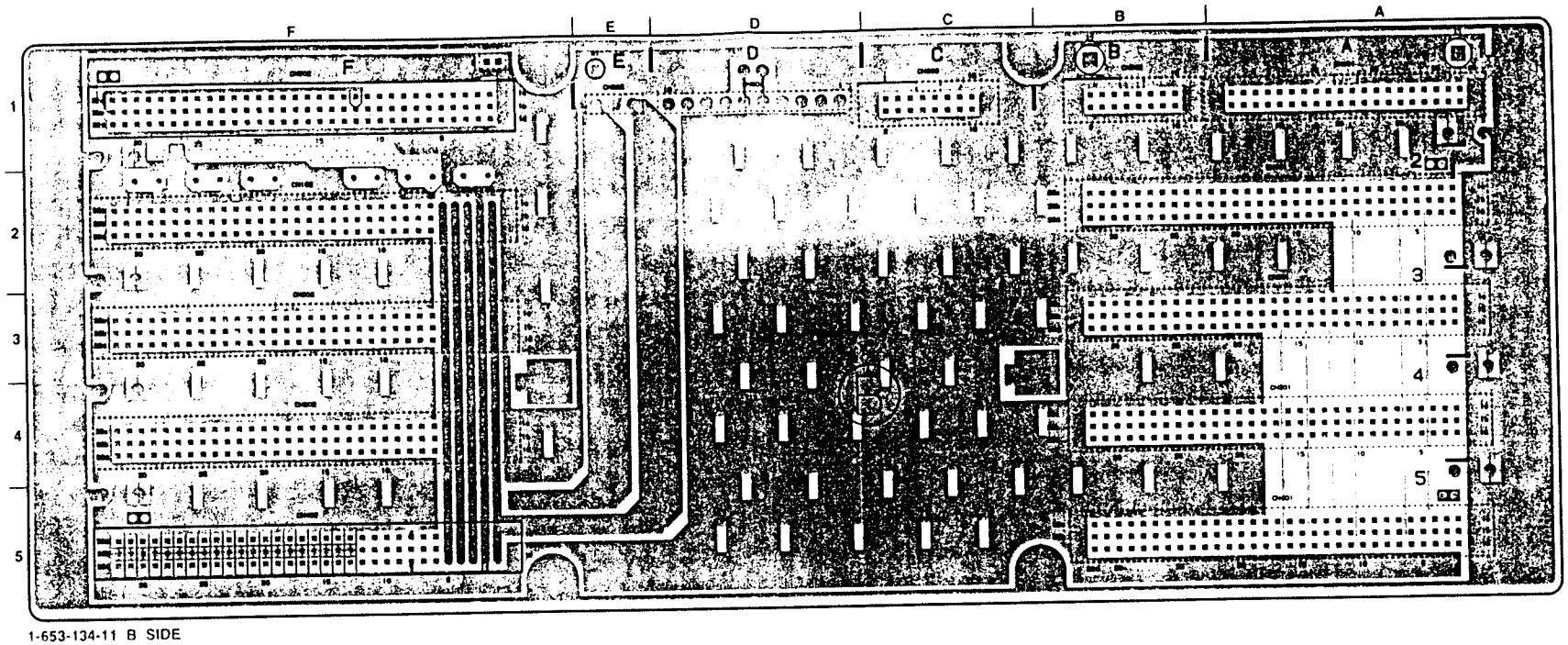
A Side is the same as Component Side.

MB-583 (1-653-134-

*Soldering Side

CN101	A - 2
CN102	F - 2
CN201	A - 3
CN202	F - 3
CN301	A - 4
CN302	F - 4
CN401	A - 5
CN402	F - 5
CN502	F - 1
CN601	A - 1
CN602	B - 1
CN603	C - 1
CN604	D - 1
CN605	E - 1
CN701	F - 1

MB-583; MOTHER BOARD



1-653-134-11 B SIDE

B Side is the same as Soldering Side.

MB-583 (1-653-134-11)

* Soldering Side

CN101	A - 2
CN102	F - 2
CN201	A - 3
CN202	F - 3
CN301	A - 4
CN302	F - 4
CN401	A - 5
CN402	F - 5
CN502	F - 1
CN601	A - 1
CN602	B - 1
CN603	C - 1
CN604	D - 1
CN605	E - 1
CN701	F - 1

SECTION 7
SPARE PARTS

7-1. NOTES ON SPARE PARTS

(1) Safety Related Components Warning

Components marked with ⚠ on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation.
Replace these components with Sony parts whose part numbers appear in this manual or in service bulletins and service manual supplements published by Sony.

(2) Standardization of Parts

Repair parts supplied from sony Parts Center may not be always identical with the parts which actually in use due to "accommodating the improved parts and/or engineering changes" or "standarzation of genuine parts".
This manual's exploded views and electrical spare parts list are indicating the part numbers of "the standardized genuine parts at present".

(3) Stock of Parts

Parts marked with "o" SP (Supply Code) column of the spare parts list are not normally required for routine service work. Orders for parts marked with "o" will be processed, but allow for additional delivery time.

(4) Units for Capacitors, Inductors and Resistors

The following units are assumed in schematic diagrams, electrical parts list and exploded views unless otherwise specified.

Capacitors : μF
Inductors : μH
Resistors : Ω

補修用部品注意事項

(1) 安全重要部品

回路図、分解図、電気部品表中、⚠印の部品は安全性を維持するために重要な部品です。従ってこれらの部品を交換するときには必ず指定の部品と交換して下さい。

(2) 部品の共通化

ソニーから供給される部品セットに実装されているものと異なることがあります。これは部品の共通化、改良等によるものです。
分解図や電気部品表には現時点での共通化された部品が記載されています。

(3) 部品の在庫

部品表のSP (Supply code) 欄にoで示される部品は交換頻度が低い部品ですので在庫していないことがあり、納期が長くなることがあります。

(4) コンデンサー、インダクター、抵抗の単位

回路図、分解図、電気部品表中、特に明記したものを除き、下記の単位は省略されています。

コンデンサー : μF
インダクター : μH
抵抗 : Ω

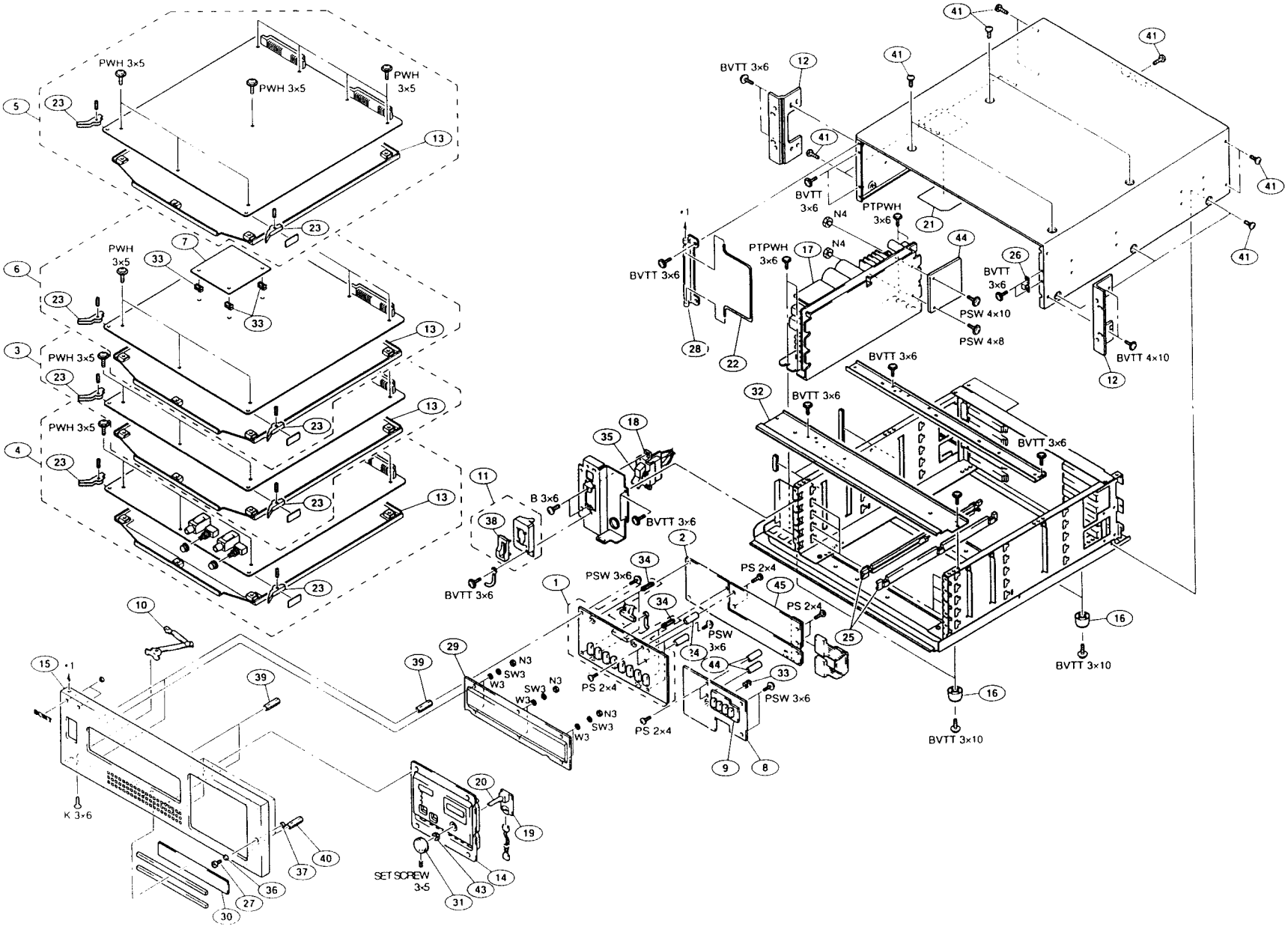
7-2. EXPLODED VIEWS

- Exploded views are composed of the following blocks
  (1) Chassis Block
  (2) Rear Panel Block

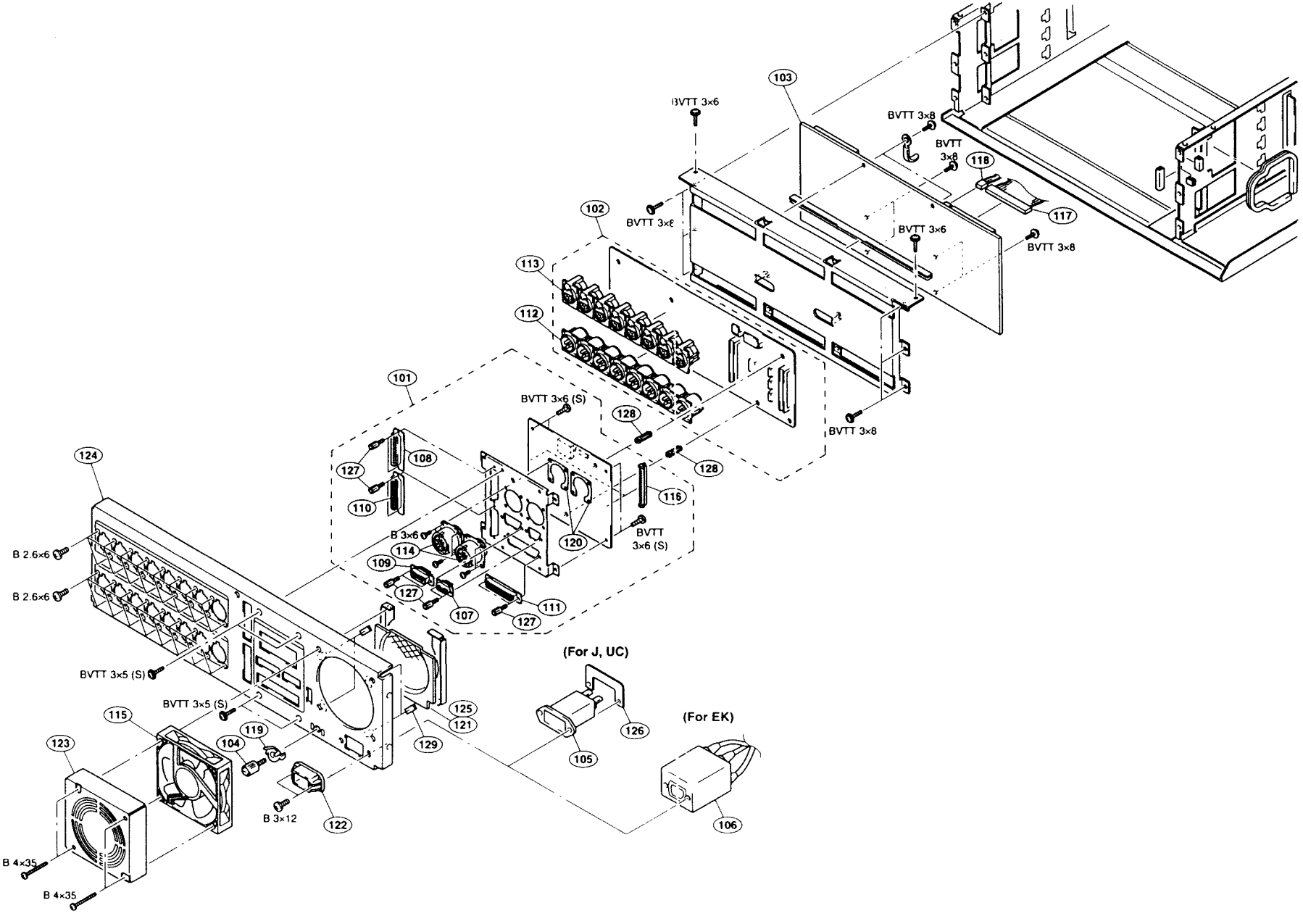
CHASSIS BLOCK

No.	Parts No.	SP	Description
1	A-8263-377-A	o	MOUNTED CIRCUIT BOARD, MT-102
2	A-8263-380-A	o	MOUNTED CIRCUIT BOARD, KY-314
3	A-8263-386-A	o	MOUNTED CIRCUIT BOARD, DSP-61
4	A-8263-388-A	o	MOUNTED CIRCUIT BOARD, APR-6
5	A-8263-390-A	o	MOUNTED CIRCUIT BOARD, EQ-53
6	A-8263-393-A	o	MOUNTED CIRCUIT BOARD, DEC-77
7	A-8263-395-A	o	MOUNTED CIRCUIT BOARD, AD-111
8	A-8314-237-A	o	MOUNTED CIRCUIT BOARD, DP-216
9	A-8314-239-A	o	MOUNTED CIRCUIT BOARD, LED-225
10	X-3166-838-1	o	STOPPER ASSY
11	X-3167-344-1	s	BRACKET ASSY, SW
12	X-3167-468-1	o	ANGLE ASSY (3U), RACK
13	X-3167-469-3	o	PLATE, SHIELD ASSY
14	X-3167-504-2	o	KEYBOARD SUB ASSY
15	X-3167-505-3	o	PANEL, SUB ASSY, FRONT
16	X-3566-109-0	s	FOOT ASSY, MF
17	1-413-983-11	s	SWITCHING REGULATOR
18	1-570-117-41	s	SWITCH, ROCKER (AC POWER)
19	1-653-129-11	o	PRINTED CIRCUIT BOARD, SW-707
20	1-692-523-11	s	SWITCH, ROTARY PULSE
21	2-118-935-01	o	SHEET, INSULATING
22	2-139-020-01	o	SHAFT (3U), HINGE
23	2-182-909-01	o	LEVER, PC BOARD
24	2-300-622-00	o	POST (B), PC BOARD
25	3-178-164-01	o	RAIL (290), PC BOARD GUIDE
26	3-182-902-02	o	BRACKET, LOCK
27	3-183-548-02	s	SCREW, PANEL SWITCHING
28	3-185-024-02	o	HINGE (3U)
29	3-185-272-02	o	COVER, LED
30	3-185-274-01	o	FILTER
31	3-185-284-02	s	KNOB, DIAL
32	3-186-088-01	o	STAY (F)
33	3-660-828-00	o	HOLDER (9), PC BOARD
34	3-663-236-00	o	HOLDER, PCB
35	3-688-814-01	s	CAP, SWITCH
36	3-701-439-11	s	WASHER
37	3-715-526-01	o	WASHER (M3)
38	4-604-107-11	o	GUARD, POWER SW
39	4-876-607-00	o	COLLER (E), PLATE, JACK
40	4-876-607-21	o	COLLER (E), PLATE, JACK
41	4-886-821-11	s	SCREW, M3 CASE
42	4-925-631-01	o	SHAFT (CASSETTE COMPONENT SW)
43	3-703-078-11	o	NUT
44	A-8265-580-A	o	MOUNTED CIRCUIT BOARD, PSW-32
45	A-8265-813-A	o	LCD ASSY

Chassis Block



Rear Panel Block



REAR PANEL BLOCK

No.	Parts No.	SP	Description
101	A-8263-382-A	o	MOUNTED CIRCUIT BOARD, CN-1061
102	A-8263-383-A	o	MOUNTED CIRCUIT BOARD, IO-106
103	A-8263-385-A	o	MOUNTED CIRCUIT BOARD, MB-583
104	X-2068-004-0	s	TERMINAL ASSY
105	1-251-148-11	s	INLET, AC (WITH FILTER) (FOR J, UC)
106	1-424-451-11	s	FILTER, NOISE (GL-2060M) (FOR EK)
107	1-563-890-21	s	SOCKET, D-SUB CONNECTOR 9P
108	1-563-891-21	s	SOCKET, D-SUB CONNECTOR 25P
109	1-566-441-11	s	PIN, D-SUB CONNECTOR 15P
110	1-566-442-11	o	PIN, D-SUB CONNECTOR 25P
111	1-566-443-11	s	PIN, D-SUB CONNECTOR 37P
112	1-573-593-11	s	CONNECTOR, XLR TYPE 3P, MALE
113	1-573-594-11	s	CONNECTOR, XLR TYPE 3P, FEMALE
114	1-695-924-11	s	CONNECTOR (ROUND TYPE) (F) 26P
115	1-698-446-11	s	MOTOR, DC FAN
116	1-766-735-11	o	CONNECTOR, BOARD TO BOARD 100P
117	1-953-664-11	o	HARNESS, SUB (MBKY)
118	1-953-665-11	o	HARNESS, SUB (MBCN)
119	2-068-008-00	s	WASHER
120	2-090-229-00	s	NUT, PLATE
121	2-252-609-11	o	COVER, FAN (FOR J, UC)
122	2-990-241-02	s	HOLDER (A), PLUG
123	3-185-025-02	o	COVER, FAN
124	3-185-038-04	o	PANEL, REAR
125	3-186-723-01	o	COVER, FAN (FOR EK)
126	3-625-620-00	s	BRACKET, AC CONNECTOR (FOR J, UC)
127	3-673-910-21	o	SCREW, CONNECTOR
128	3-682-419-01	o	HOLDER, P.C.B.
129	9-911-840-99	s	CUSHION