



SERVICE NOTES

Issued by RJA

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Revice Infomation

July. 14. 2008 Corrected errors in the "10: IN/OUT TEST." (p. 19)



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Cautionary Notes

Before beginning the procedure, please read through this document. The matters described may differ according to the model.

Back Up User Data!

User data may be lost during the course of the procedure. Refer to **Saving and Loading Data**(p. 16) in the Service Notes and save the data. After completing the procedure, restore the backed-up data to the product.

Part Replacement

When replacing components near the power-supply circuit or a heatgenerating circuit (such as a circuit provided with a heat sink or including a cement resistor), carry out the procedure according to the instructions with respect to the part number, direction, and attachment position (mounting so as to leave an air gap between the component and the circuit board, etc.).

Parts List

A component whose part code is ***** cannot be supplied as a service part because one of the following reasons applies.

- Because it is supplied as an assembled part (under a different part code).
- Because a number of circuit boards are grouped together and supplied as a single circuit board (under a different part code).
- Because supply is prohibited due to copyright restrictions.
- Because reissuance is restricted.
- Because the part is made to order (at current market price).

Circuit Diagram

In the circuit diagram, "NIU" is an abbreviation for "Not in Use," and "UnPop" is an abbreviation for "Unpopulated." They both mean non-mounted components. The circuit board and circuit board diagram show silk-screened indications, but no components are mounted.

Main Specifications

V-8: 8-Channel Video Mixer

Video Format

Video	NTSC or PAL (ITU601)
PC-RGB	640x480/120 Hz, 800x600/120 Hz, 832x624/75 Hz, 1024x768/80 Hz, 1152x864/80 Hz, 1152x870/75 Hz, 1280x1024/75 Hz, 1600x1200/60 Hz (RGB VH: positive/negative logic)

* VESA DMT Version 1.0 Revision 10 conform.

* The refresh rate is the maximum value of each resolution.

Video Sampling Rate

Video	4:2:2 (Y:B-Y:R-Y), 8 bits, 13.5 MHz
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Frame Synchronizer

2 systems

Input Level and Impedance

Video (composite)	1.0 Vp-p, 75 ohms
S-video	
• Luminance signal:	1.0 Vp-p, 75 ohms
• Chrominance signal:	0.286 mVp-p, 75 ohms (NTSC)/ 0.3 mVp-p, 75 ohms (PAL)
PC-RGB	0.7 Vp-p, 75 ohms (H, V: 5 V TTL)

Output Level and Impedance

Video (composite)	1.0 Vp-p, 75 ohms
S-video	
• Luminance signal:	1.0 Vp-p, 75 ohms
• Chrominance signal:	0.286 mVp-p, 75 ohms (NTSC)/ 0.3 mVp-p, 75 ohms (PAL)

Connectors

Input

Video (composite):	BNC type x 7 jacks (Ch 1-7)
S-video:	4-pin mini DIN type x 4 jacks (Ch 5-8)
PC-RGB:	D-SUB 15pin Shrink Type x 2 jacks (Ch 8: PC1 / PC2)

* Inputs 5-8; however if S-video is simultaneously input to 5-8, S-video takes priority

Output

Video (composite):	BNC type x 2 jacks
S-video:	4-pin mini DIN type x 1 jacks
Preview Output Video (composite):	BNC type x 1 jack (OSD Menu)
Monitor Output Video (composite):	BNC type x 8 jacks (Ch 1-8)

Remote Control Interfaces

MIDI IN:	5-pin DIN type x 1 jack
MIDI OUT/THRU:	5-pin DIN type x 1 jack

Transition effects

Dissolve:	Mix, Nam, Fam
Wipe:	Hard edge wipe, Soft edge wipe, Key, Slide, Stretch, User Transition (more than 200 types)

Video effects

Still, Strobe, Afterimage, Feedback, Shake, Negative, Colorize, Finedge, Silhouette, Monocolor, Emboss, Posterize, Colorpass, Luminance key, Chroma key, Flip, Multi, Mirror, Picture-in-picture

Power Supply

DC9V (AC Adaptor: PSB-1U)

Current Draw

2A (AC Adaptor: PSB-1U)

Dimensions

238 (W) x 315 (D) x 134 (H) mm
9-3/8 (W) x 12-7/16 (D) x 5-5/16 (H) inches

Weight

3.2 kg
7 lbs 1 oz

Accessories

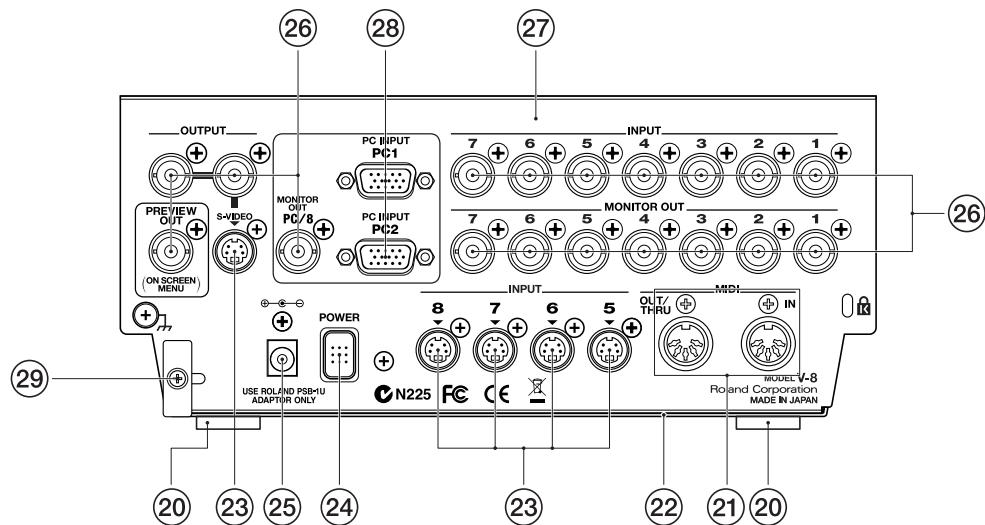
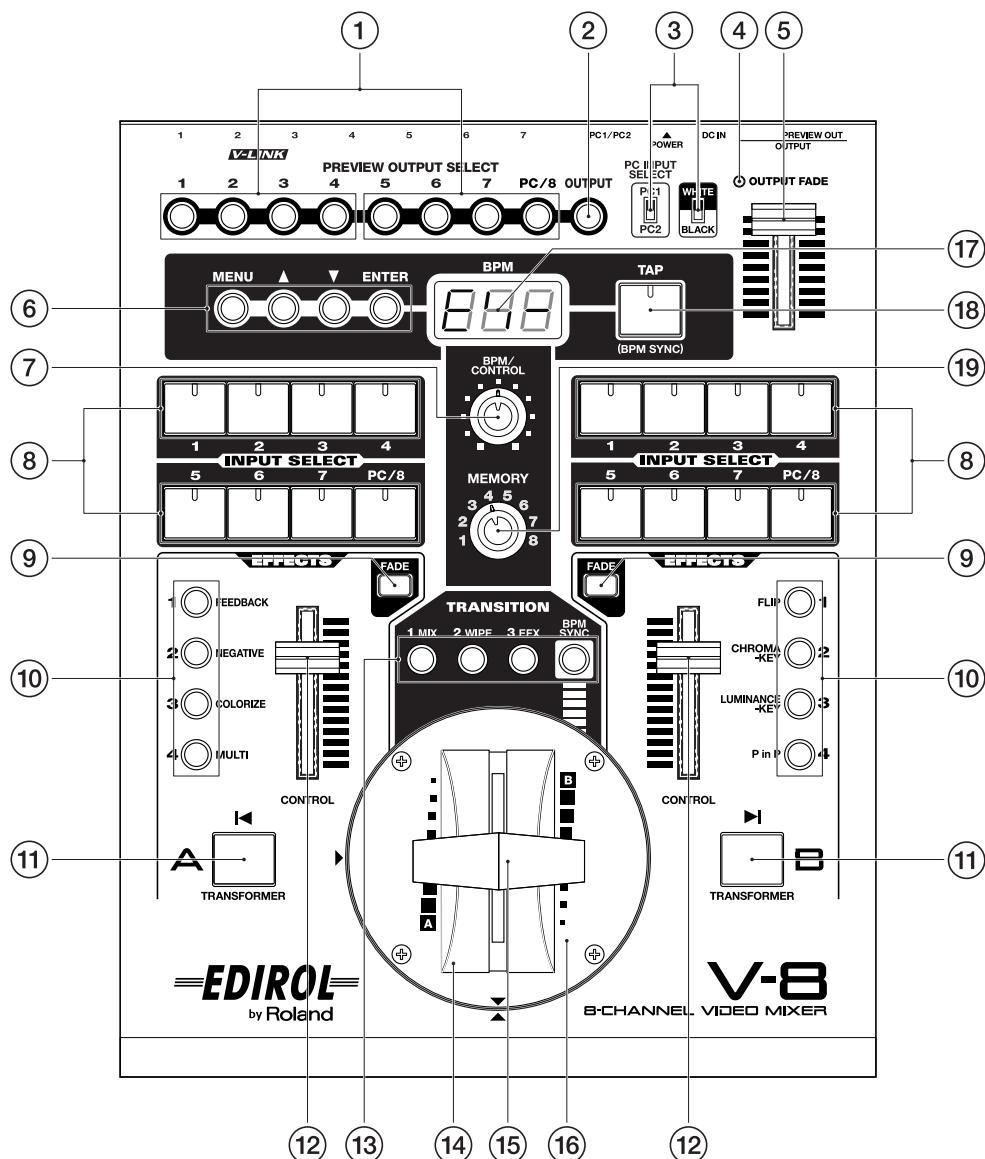
Owner's Manual English (#73895934)	
AC Adaptor (PSB-1U) (#04236101)	
Power Code	for 120 V (#02562456) for 230 V (#01903356) for 240 V A (#03785590)
Euro Converter Plug ECP01-5A	for 230 V E (#00905234)
BNC to RCA video adapter (#03459390)	x 4
Mount screw for video fader (#40560534)	x 4

Options

Crossfader: V-4CF

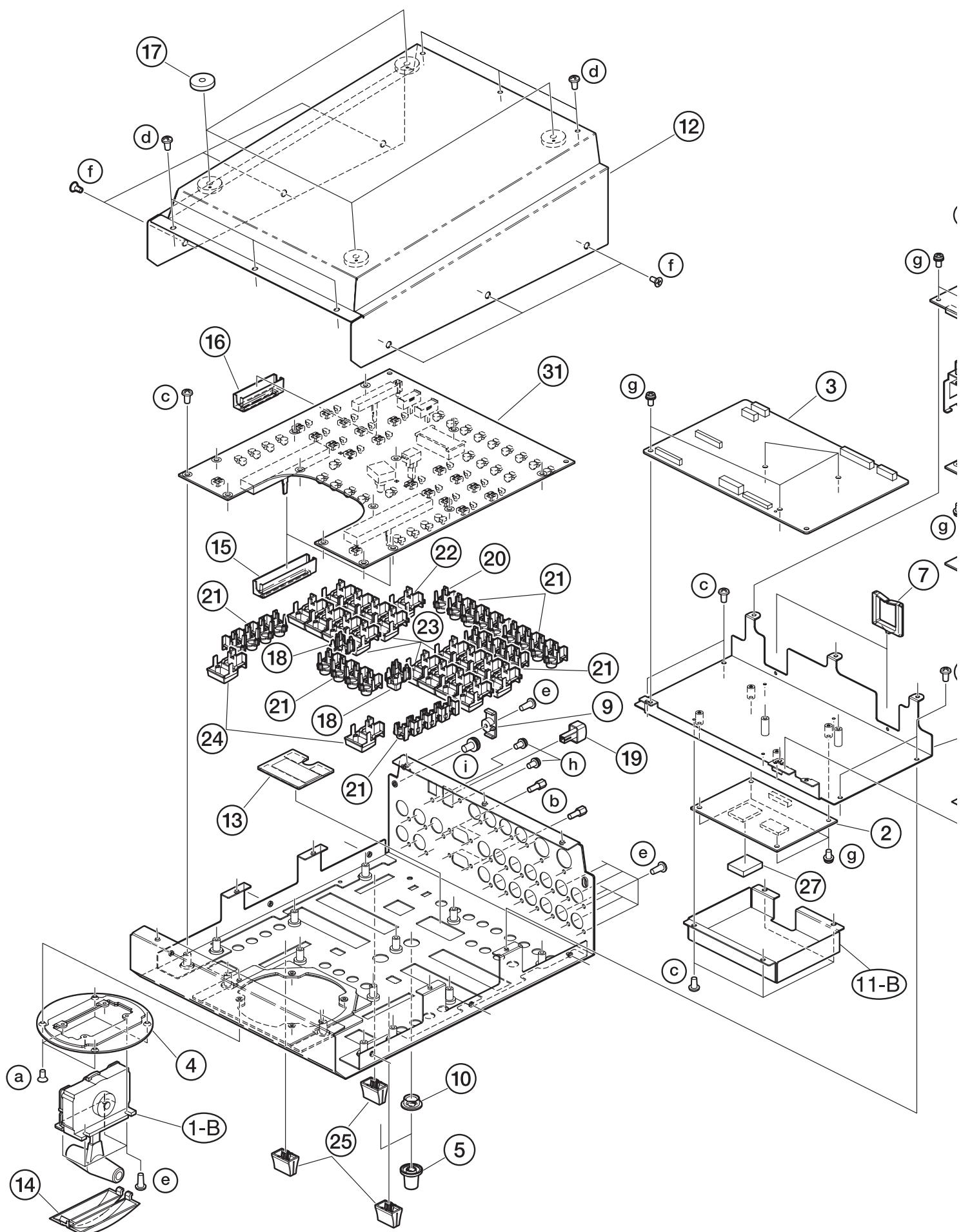
* In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.

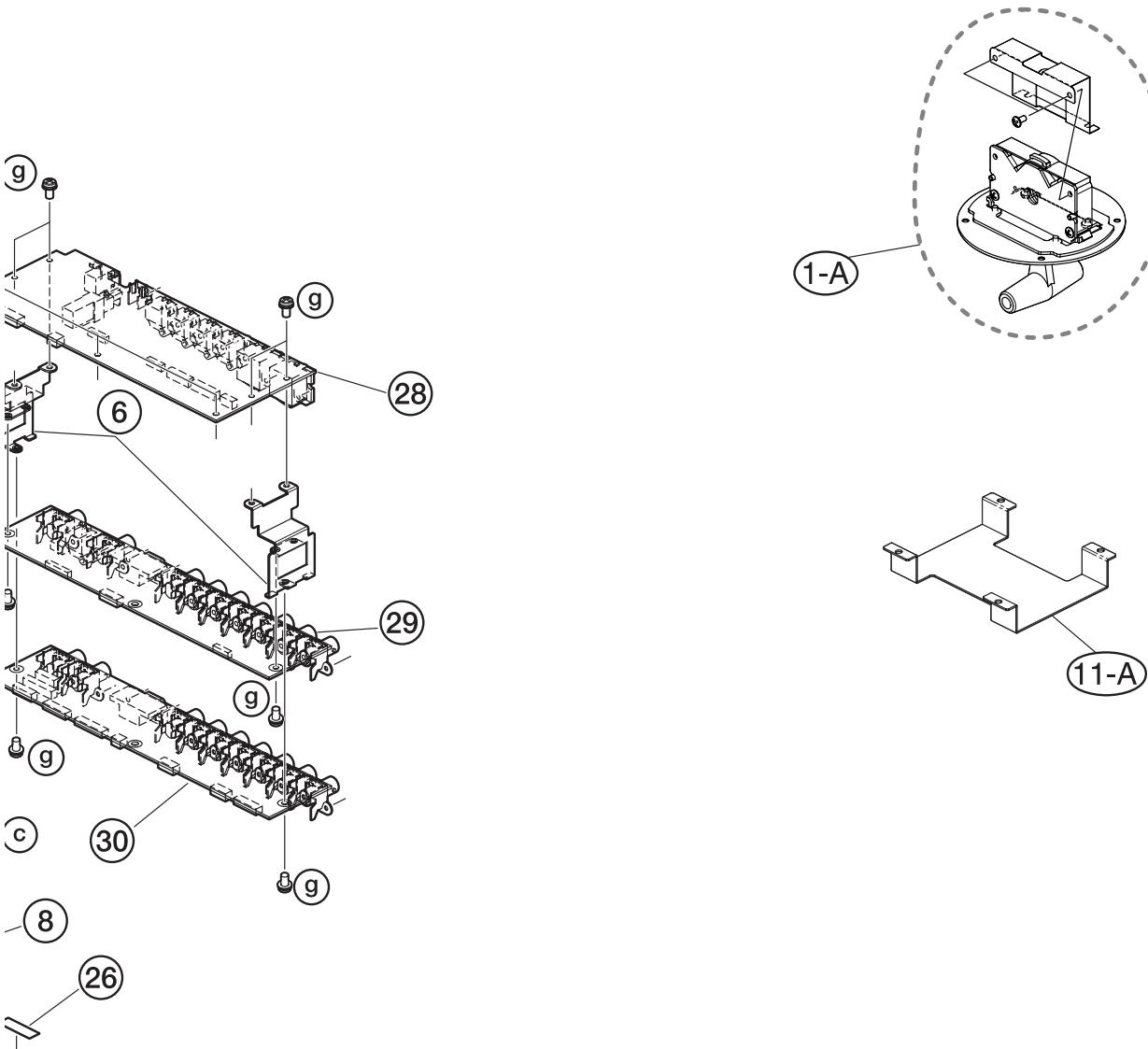
Location of Controls



Location of Controls Parts List

No.	Part Code	Parts Name	Description	Q'ty
1	02450201	Y C-KEYTOP	MX4H CLR	2
	01787045	LED (ORANGE)	SLR-325DCT31	8
	02781634	TACT SWITCH	SKRGAED010	8
2	02450190	Y C-KEYTOP	MX1H CLR	1
	01787045	LED (ORANGE)	SLR-325DCT31	1
	02781634	TACT SWITCH	SKRGAED010	1
3	04903634	SLIDE SWITCH SSSU012200		2
4	00785856	LED (RED)	SLR-342VR3F	1
5	05010723	ZH S-KNOB L BLK/LCG		1
	05010745	ESCUTCHEON	ZH S-ESCT LX1H BLK L=30	1
	04903856	SLIDE POT. RS30111A4019		1
6	02450201	Y C-KEYTOP	MX4H CLR	1
	00348490	LED (RED)	SLR-325VCT31	1
	04907256	LED SLR-325YCT31		2
	01787045	LED (ORANGE)	SLR-325DCT31	1
	02781634	TACT SWITCH	SKRGAED010	4
7	04909423	CORD BUSHING EDS-2323U		1
	03565234	J R-KNOB	SF-ELA BLK/SLV	1
8	02784578	Y S-KEYTOP	LD4H LCG	2
	01787045	LED (ORANGE)	SLR-325DCT31	16
	00125590	TACT SWITCH	EVQ QJJ 05Q	16
9	03126867	D S-KEYTOP	SX1H-B CLR	2
	00348490	LED (RED)	SLR-325VCT31	2
	02781634	TACT SWITCH	SKRGAED010	2
10	02450201	Y C-KEYTOP	MX4H CLR	2
	04907256	LED SLR-325YCT31		8
	02781634	TACT SWITCH	SKRGAED010	8
11	04906767	Y S-KEYTOP LX1H MCG		2
	00125590	TACT SWITCH	EVQ QJJ 05Q	2
12	05010723	ZH S-KNOB L BLK/LCG		2
	05010734	ESCUTCHEON	ZH S-ESCT LX1H BLK L=45	2
	03898578	SLIDE POT. RS4511SA4A02		2
13	02450201	Y C-KEYTOP	MX4H CLR	1
	04907256	LED SLR-325YCT31		3
	00348490	LED (RED)	SLR-325VCT31	1
	02781634	TACT SWITCH	SKRGAED010	3
14	03780389	T-BAR ESCUTCHEON		1
15	*****	T-BAR ASSY	Serial No.: Å`ZW90699	1
	71789367	T-BAR ASSY	Serial No.: ZX00700Å`	1
16	73895656	T-BAR PANEL ASSY		1
17	04903745	DISPLAY COVER		1
	04676401	LED	BA56-11EWA	1
18	02016478	Y S-KEYTOP	LD1H MCG	1
	00348490	LED (RED)	SLR-325VCT31	1
	00125590	TACT SWITCH	EVQ QJJ 05Q	1
19	04909423	CORD BUSHING EDS-2323U		1
	03565234	J R-KNOB	SF-ELA BLK/SLV	1
20	01235378	FOOT		4
21	13429676	MIDI CONNECTOR	YKF51-5048N (TWIN)	1
22	04903401	BOTTOM COVER		1
23	03459023	DIN CONNECTOR	YKF51-5508	5
24	32490595	P S-KEY	MX BLK	1
25	13449720	DC JACK	HEC2305-01-250	1
26	04349201	JACK	YKC31-0193	19
27	73895667	TOP CASE ASSY		1
28	01238856	CONNECTOR	YKF42-8020 (TO PC DISPLAY OUT)	2
29	22365714	CORD HOOK		1

Exploded View



Important Notes When Replacing the T-Bar

The T-bar Assembly (#71789367) is available as an older type (**1-A** in the figure) and a new type (**1-B**). The older type has a back fitting attached. Similarly, the Shield Cover (#05121512) is also available as an older type (**11-A**) and a new type (**11-B**). The older type has a wider opening.

When replacing the older-type T-bar Assembly (**1-A**) with the new type (**1-B**), be sure to also replace the older-type Shield Cover (**11-A**) with the new type (**11-B**).

That is to say, the new type of T-bar Assembly (**1-B**) must not be used in combination with the older type of Shield Cover (**11-A**). Refer to the following chart for the specific combinations that are acceptable.

T-bar Assembly	Shield Cover	Production numbers of products where used
1-A	11-A	Through ZW90699
1-B	11-B	ZX00700 and after

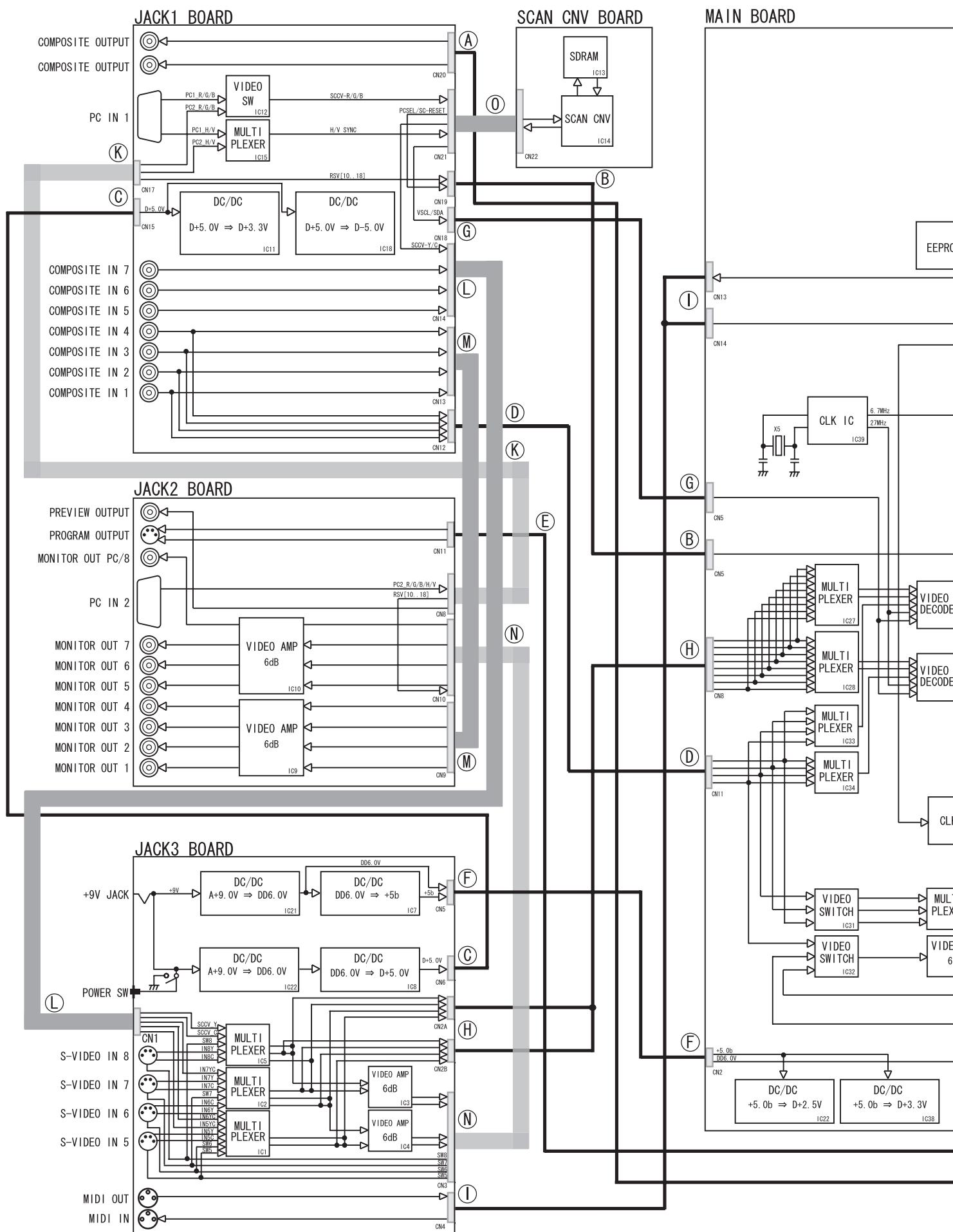
T-bar Assembly	Shield Cover	Combination possible
1-A	11-A	Good
1-A	11-B	Good
1-B	11-A	Not good
1-B	11-B	Good

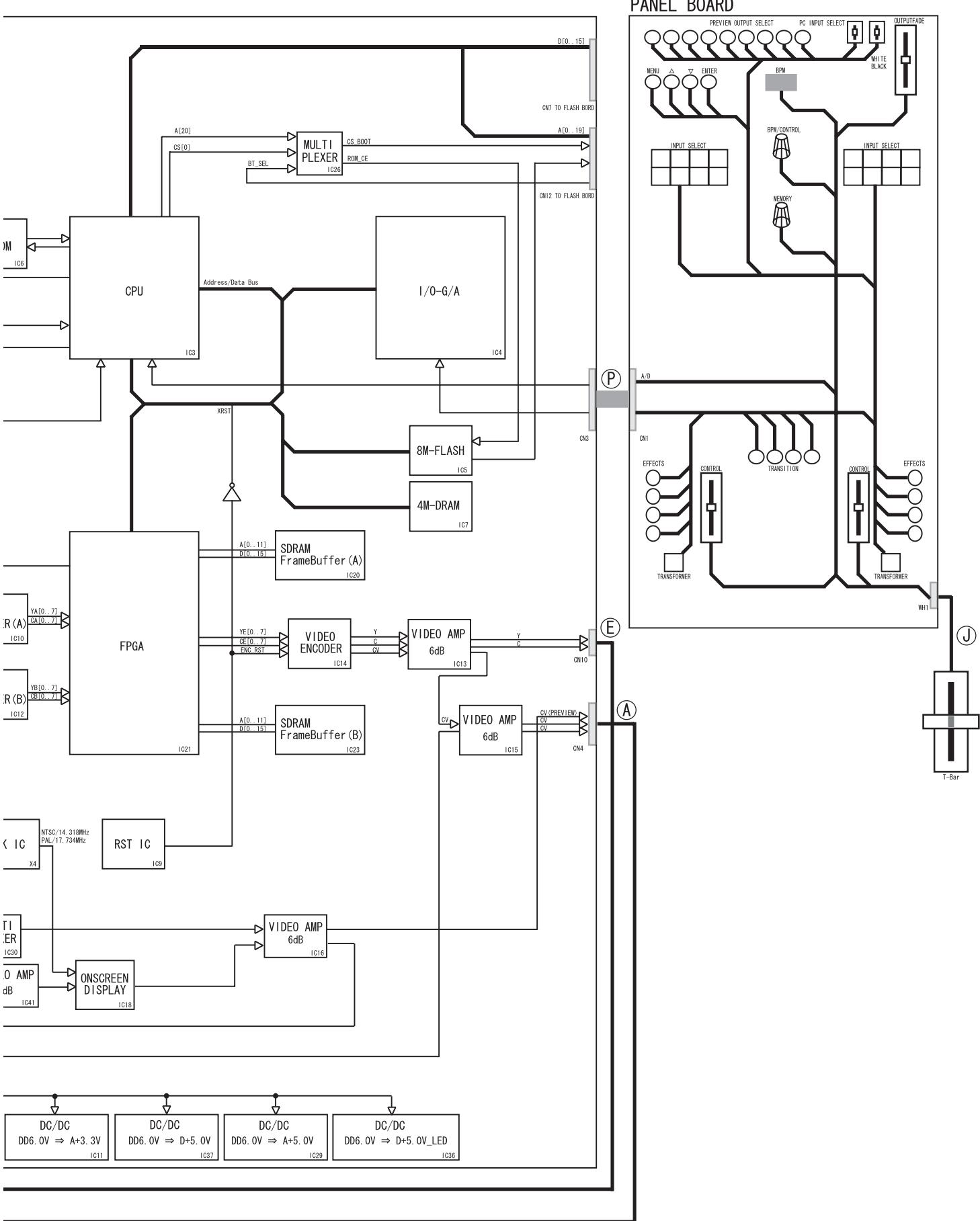
* Only the new types (**1-B** and **11-B**) are supplied as service parts.

Exploded View Parts List

No.	Part Code	Part Name	Description	Q'ty
1-A	*****	T-BAR ASSY	Serial No.: Å`ZW90699	1
1-B	71789367	T-BAR ASSY	Serial No.: ZX00700Å`	1
2	73895601	SCAN CNV BOARD ASSY		1
3	73895645	MAIN BOARD ASSY		1
4	73895656	T-BAR PANEL ASSY		1
5	03565234	J R-KNOB	SP-ELA BLK/SLV	2
6	04903423	BOARD ANGLE		2
7	04909423	CORD BUSHING EDS-2323U		1
8	04903412	SUB CHASSIS		1
9	22365714	CORD HOOK		1
10	03895301	COLLAR		2
11-A	*****	SHIELD COVER	Serial No.: Å`ZW90699	1
11-B	05121512	SHIELD COVER	Serial No.: ZX00700Å`	1
12	04903401	BOTTOM COVER		1
13	04903745	DISPLAY COVER		1
14	03780389	T-BAR ESCUTCHEON		1
15	05010734	ESCUTCHEON	ZH S-ESCT LX1H BLK L=45	2
16	05010745	ESCUTCHEON	ZH S-ESCT LX1H BLK L=30	1
17	01235378	FOOT		4
18	03126867	D S-KEYTOP	SX1H-B CLR	2
19	32490595	P S-KEY	MX BLK	1
20	02450190	Y C-KEYTOP	MX1H CLR	1
21	02450201	Y C-KEYTOP	MX4H CLR	2
22	02016478	Y S-KEYTOP	LD1H MCG	1
23	02784578	Y S-KEYTOP	LD4H LCG	4
24	04906767	Y S-KEYTOP LX1H MCG		2
25	05010723	ZH S-KNOB L BLK/LCG		3
26	05014934	INSULATING SHEET		1
27	05015456	RADIATING SHEET		1
28	73895567	JACK3 BOARD ASSY		1
29	73895578	JACK2 BOARD ASSY		1
30	73895589	JACK1 BOARD ASSY		1
31	73895612	PANEL SHEET ASSY		1
a	40560534	SCREW M3X6	FLAT MACHINE SUS	4
b	40344134	SCREW M4-40X7.9	HEX SOCKET NI	4
c	40011056	SCREW 3X6	BINDING TAPITITE B ZC	22
d	40011090	SCREW 3X6	BINDING TAPITITE B BZC	6
e	40011101	SCREW 3X8	BINDING TAPITITE B BZC	30
f	40011156	SCREW 3X8	FLAT TAPITITE B BZC	6
g	40013056	SCREW M3X6	PAN MACHINE W/SW+PW(S) ZC	20
h	40237101	SCREW M3X8	PAN MACHINE W/SW+SMALL PW BZC	2
i	40458345	SCREW M4X8	PAN MACHINE W/SW+SMALL PW NI	1

Block Diagram/Wiring Diagram





Wiring Parts List

No.	Part Code	Part Name	Connection	Type	Q'ty
A	05010601	WIRING	WH 6X150-PHR-SAN-S	WIRE	1
B	05010590	WIRING	WH 10X200-PHR-SAN	WIRE	1
C	04120545	WIRING	2X100-P2.5-XHP-SCN	WIRE	1
D	05010578	WIRING	WH 8X90-PHR-SAN-S	WIRE	1
E	05010612	WIRING	WH 4X150-PHR-SAN-S	WIRE	1
F	05010712	WIRING	WH 8X200-XHP-SCN	WIRE	1
G	05010589	WIRING	WH 6X200-PHR-SAN	WIRE	1
H	05010690	WIRING	WH 16X80-PHR-SAN-S	WIRE	1
I	05010701	WIRING	WH 4X300-PHR-SAN	WIRE	1
J	03125978	WIRING W3		WIRE	1
K	05010534	WIRING	FWR-P=1.00-K-16-40	FFC	1
L	04451178	BAN CARD	FWR-P=1.00-K-10-60	FFC	1
M	04451178	BAN CARD	FWR-P=1.00-K-10-60	FFC	1
N	05010523	WIRING	FWR-P=1.00-K-12-40	FFC	1
O	05010556	WIRING	FWR-P=1.00-K-20-60	FFC	1
P	05010567	WIRING	FWR-P=1.00-K-26-140	FFC	1

Parts List

SAFETY PRECAUTIONS:
The parts marked Δ have safety-related characteristics. Use only listed parts for replacement.

Due to one or more of the following reasons, parts with parts code ***** cannot be supplied as service parts.

- Part supplied only as a component in a complete assembly
- Copyright does not permit the part to be supplied
- Part is sold commercially

NOTE: The parts marked # are new. (initial parts) The description "Q'TY" means a necessary number of the parts per one product.

CASING

05010734	ESCUTCHEON	ZH S-ESCT LX1H BLK L=45	2
05010745	ESCUTCHEON	ZH S-ESCT LX1H BLK L=30	1
04903401	BOTTOM COVER		1
04903745	DISPLAY COVER		1
05121512	SHIELD COVER		1
03780389	T-BAR ESCUTCHEON		1

CHASSIS

04903423	BOARD ANGLE		2
04903445	DC JACK HOLDER		1
04903412	SUB CHASSIS		1
04125878	T-BAR ANGLE		1
04125890	VR HOLDER		1

KNOB & ABUTTON

03126867	D S-KEYTOP	SX1H-B CLR	2
03565234	J R-KNOB	SF-ELA BLK/SLV	2
02450201	Y C-KEYTOP	MX4H CLR	6
02450190	Y C-KEYTOP	MX1H CLR	1
32490595	P S-KEY	MX BLK	1
02784578	Y S-KEYTOP	LD4H LCG	4
02016478	Y S-KEYTOP	LD1H MCG	1
04906767	Y S-KEYTOP LX1H MCG		2
05010723	ZH S-KNOB L BLK/LCG		3

SWITCH

02784678	ROTARY SWITCH	SRBV181000	1
Δ 13129369	PUSH SWITCH	SPUN192800	1
02781634	TACT SWITCH	SKRGAED010	27
00125590	TACT SWITCH	EVQ QJJ 05Q	19
04903634	SLIDE SWITCH SSSU012200		2

JACK & EXT TERMINAL

03459390	PLUG CONNECTOR	YKV11-0322	4
03459023	DIN CONNECTOR	YKF51-5508	4
13429676	MIDI CONNECTOR	YKF51-5048N (TWIN)	1
13449720	DC JACK	HEC2305-01-250	1
04349201	JACK	YKC31-0193	19
01238856	CONNECTOR	YKF42-8020 (TO PC DISPLAY OUT)	2

DISPLAY UNIT

04676401	LED	BA56-11EWA	1
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PWB ASSY

#	73895589	JACK1 BOARD ASSY	1
#	73895578	JACK2 BOARD ASSY	1
#	73895567	JACK3 BOARD ASSY	1
#	73895645	MAIN BOARD ASSY	1
#	73895612	PANEL SHEET ASSY	1
#	73895601	SCAN CNV BOARD ASSY	1
#	71789367	T-BAR ASSY	1
#	73895656	T-BAR PANEL ASSY	1
#	73895667	TOP CASE ASSY	1

IC

05011089	IC(DRAM)	MSM514265E-60J3-R1	IC7 on Main Board	1
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DIODE			
00785856	LED (RED)	SLR-342VR3F	1
00348490	LED (RED)	SLR-325VCT31	5
01787045	LED (ORANGE)	SLR-325DCT31	26
04907256	LED SLR-325YCT31		13
POTENTIOMETER			
02455223	9M/M ROTARY POTENTIOMETER	EVUF2KFK4B14	1
04232023	ROTARY POT. RK09Y11L0002		1
04903856	SLIDE POT. RS30111A4019		1
03898578	SLIDE POT. RS4511SA4A02		2
INDUCTORÅACOILÅAFILTER			
04564812	CHOKE COIL	SC-02-20G	1
12449347	FERRITE-BEAD	EXC ELDR35V	2
WIRINGÅACABLE			
05010601	WIRING	WH 6X150-PHR-SAN-S	1
05010590	WIRING	WH 10X200-PHR-SAN	1
05010589	WIRING	WH 6X200-PHR-SAN	1
05010612	WIRING	WH 4X150-PHR-SAN-S	1
05010578	WIRING	WH 8X90-PHR-SAN-S	1
05010712	WIRING	WH 8X200-XHP-SCN	1
05010701	WIRING	WH 4X300-PHR-SAN	1
05010690	WIRING	WH 16X80-PHR-SAN-S	1
05010567	WIRING	FWR-P=1.00-K-26-140	1
05010556	WIRING	FWR-P=1.00-K-20-60	1
05010534	WIRING	FWR-P=1.00-K-16-40	1
05010523	WIRING	FWR-P=1.00-K-12-40	1
04451178	BAN CARD	FWR-P=1.00-K-10-60	2
04120545	WIRING	2X100-P2.5-XHP-SCN	1
03125978	WIRING W3		1
SCREWS			
40458345	SCREW M4X8	PAN MACHINE W/ SW+SMALL PW NI	1
40237101	SCREW M3X8	PAN MACHINE W/ SW+SMALL PW BZC	2
40013056	SCREW M3X6	PAN MACHINE W/SW+PW(S) ZC	20
40344134	SCREW M4-40X7.9	HEX SOCKET NI	4
40011156	SCREW 3X8	FLAT TAPTITE B BZC	6
40560534	SCREW M3X6	FLAT MACHINE SUS	4
40011278	SCREW 3X8	BINDING TAPTITE P FE ZC	4
40011056	SCREW 3X6	BINDING TAPTITE B ZC	22
40011090	SCREW 3X6	BINDING TAPTITE B BZC	6
40011101	SCREW 3X8	BINDING TAPTITE B BZC	30
PACKING			
04903712	ACCESSORY PAD	PACKING PAD	1
05012989	BOTTOM PAD	PACKING PAD	1
04903690	PACKING PAD F	PACKING PAD	1
04903701	PACKING PAD R	PACKING PAD	1
05012990	TOP PAD	PACKING PAD	1
05012734	OUTER PACKING CASE		2
04903689	PACKING CASE		1
MISCELLANEOUS			
12199584	GROUNDING TERMINAL	M1698	1
12169406	LED SPACER	LDS-100Y 10MM	1
03895301	COLLAR		1
04909423	CORD BUSHING EDS-2323U		2
22365714	CORD HOOK		1
01235378	FOOT		4
05014934	INSULATING SHEET		1
05015456	RADIATING SHEET		1
40122612	NITTO ACETATE TAPE #5	BLACK W10MM 30M 20P	1

ACCESSORIES

		Standard		
△	04236101	AC ADAPTOR WITHOUT AC CORD	PSB-1U(S) UNIVERSAL	1
△	01903334	AC CORD SET PSE	100V 1.0M FOR PSB-1U	1
△	02562456	AC CORD SET	120V 1.0M (NON POLAR)	1
△	01903356	AC CORD SET	230V 1.0M FOR PSB	4
△	03785590	AC CORD SET	SC-078-NA05 240VA	1
△	00905234	EURO CONVERTER PLUG	ECP01-5A	1
#	73895689	OWNER'S MANUAL SET	JAPANESE	1
#	73895934	OWNER'S MANUAL SET	ENGLISH	1
	40232334	WARRANTY CARD	MOCHIKOMI JAPAN ONLY	1
	40560534	SCREW M3X6	FLAT MACHINE SUS	4

Verifying the Version Number

1. Using a video cable, connect the **PREVIEW OUT** jack on the V-8 to the video input jack on the television monitor.
 2. Hold down the **[MENU]** and **[ENTER]** buttons and press the **[POWER]** switch.
- * Continue to hold down the **[MENU]** and **[ENTER]** buttons until the Test Mode menu screen appears.

V-8 Test Mode appears on the television monitor, and the version number is displayed on the right side of the top line.

Saving and Loading Data

Saving Data

You save the setting data stored on the unit to an external MIDI sequencer or computer installed with a MIDI-sequencing program ("MIDI sequencer") by sending the setting data to it as MIDI data (bulk dump).

- * When you're using an external MIDI sequencer, set the device IDs for the V-8 and the external MIDI sequencer to the same value. To set the device ID for the V-8, go to the **MIDI Setup** menu and make the setting for **Device ID**.
1. Connect the MIDI OUT/THRU connector on the V-8 and the MIDI IN connector on the MIDI sequencer.
 2. Operate the MIDI sequencer to enable it to receive MIDI data.
 3. Press the **[MENU]** button to display the menu, choose **MIDI Setup**, then press the **[ENTER]** button.
 4. Use **[▲]** or **[▼]** to choose **MIDI Bulk Dump**, then press the **[ENTER]** button.
 5. Start recording on the MIDI sequencer.
 6. Use **[▲]** or **[▼]** to choose **Yes**, then press the **[ENTER]** button. The MIDI data is sent from the V-8.
- * To cancel, either press the **[MENU]** button, or select **No** and press the **[ENTER]** button.
7. Stop recording on the MIDI sequencer.
 8. Press the **[MENU]** button several times to make the menu disappear.

Loading Data

This imports setting data saved on a MIDI sequencer into the V-8.

- * When you're using the V-8 with an external MIDI sequencer, check to make sure that the device IDs for both are using the same setting. To set the device ID for the V-8, go to the **MIDI Setup** menu and make the setting for **Device ID**.
- * Under **Utility**, set **Memory Protect** to **OFF**.

1. Connect the **MIDI IN** connector on the V-8 with the **MIDI OUT** connector on the MIDI sequencer.
2. Start playback on the MIDI sequencer. MIDI data is sent from the MIDI sequencer. When the V-8 receives the MIDI data, the settings are overwritten.
3. Stop playback on the MIDI sequencer.

Performing a Factory Reset

Hold down the **EFFECTS-A** [1 FEEDBACK] and [4 MULTI] buttons and press the **[POWER]** switch.

FAC appears on the display and a factory reset is executed. When the factory reset finishes, the V-8 starts up.

* The Test Mode settings **01: Tbar SET**(p. 18) and **02: Contrast SET**(p. 18) and the color system (NTSC or PAL) are not initialized. For each, the setting in effect before the factory reset is retained.

How to Initialize



Unlike a factory reset, performing initialization initializes the Test mode **01: Tbar SET**(p. 18) and **02: Contrast SET**(p. 18) settings. Also, the color system is set to **NTSC**.

* When the circuit board has been replaced, be sure to execute initialization.

To perform initialization, hold down the **[1 MIX]**, **[BPM SYNC]**, and **[TRANSFORMER B]** buttons and press the **[POWER]** switch.

Int appears on the display for several seconds, after which **ntSC** is displayed, and the V-8 starts up.

* To ensure correct operation of the V-8's video faders, after initialization, execute the Test Mode's **01: Tbar SET**(p. 18) and **02: Contrast SET**(p. 18).

Changing the Color System

At powerup, the V-8's display shows the color system.

When the color system is NTSC, the characters **ntSC** are displayed, scrolling from right to left.

When the color system is PAL, **PAL** is displayed.

After the color system is displayed, the V-8 starts up.

To change the color system, hold down the **PREVIEW OUTPUT SELECT** [1] and **[OUTPUT]** buttons and press the **[POWER]** switch.

If the color system before powerup was NTSC, **PAL** is displayed, the color system is set to PAL, and the unit starts up.

If the color system before powerup was PAL, **ntSC** is displayed, the color system is set to NTSC, and the unit starts up.

How to Update the System

The system can be updated by receiving the update data containing the programming (SMF format) as MIDI data.

Items Required

- Computer installed with a MIDI sequencer (UpdSMF, etc.)
- USB-MIDI interface (UM-1EX, etc.)
- MIDI cable and USB cable
- Update data (obtained via Service Net)

Procedure

1. Copy the update data to the computer.
The update data is made up of files like the following.
V-8_01.mid, V-8_02.mid,..., V-8_16.mid
* *The number of files may vary, depending on the version.*
2. Connect the computer and the V-8 via the USB-MIDI interface.
3. Set the [MEMORY] control on the V-8 to 1.
4. Hold down the [TRANSFORMER A], [1 MIX], and [TRANSFORMER B] buttons at the same time and press the [POWER] switch.
The [ENTER] button flashes and **fld** is displayed.
5. Press the [ENTER] button.
Ers is displayed, and after a short while, the display changes to **---**.
6. On the MIDI sequencer, play back the update files in numerical order (V-8_01.mid, V-8_02.mid,..., V-8_16.mid).
The display shows **000**, and this value is then incremented.
Updating the system takes approximately **6** minutes.
When the update finishes, **CnP** is displayed.
7. Switch off the power to the V-8.
* *When you have updated the system after replacing the circuit board, be sure to execute initialization. Also, execute the Test Mode and make the settings for **01: Tbar SET**(p. 18) and **02: Contrast SET**(p. 18). The color system is set to NTSC after initialization. If necessary, change this to **PAL**.*
* *When only a system update has been performed, carry out only a factory reset, without executing initialization.*

Test Mode

Items Required

- Video cameras: 1 to 7 (for INPUT use; digital video cameras with S-Video output connectors are recommended)
 - Computer: 1
 - Signal generator: 1 (for INPUT use)
 - Television monitor: 1 (for PREVIEW OUT use)
 - Television monitor: 1 (for OUTPUT and OUTPUT S-VIDEO use; equipped with an S-Video input connector)
- * *For the foregoing video cameras and television monitors, use devices compatible with the color system to be used for testing (NTSC or PAL).*
- S-connector cables: 4 to 5
 - Video cables: 7 to 9
 - D-Sub 15-pin cable: 1
 - MIDI cable: 1

Starting the Test Program

1. Using a video cable, connect the **PREVIEW OUT** jack on the V-8 to the video input jack on a television monitor.
Using a video cable, connect the output jack on a video camera to the **INPUT 1** jack on the V-8.
Using a video cable and S-Video cable, connect the **OUTPUT** jack and **OUTPUT S-VIDEO** jack on the V-8 to the input jack and S-VIDEO input jack on the television monitor.
2. Hold down the [MENU] and [ENTER] buttons and press the [POWER] switch.
* *Continue to hold down the [MENU] and [ENTER] buttons until the Test Mode menu screen appears.*

V-8 Test Mode appears on the television monitor, and the version number is displayed on the right side of the top line.

Test Items

- 01: Tbar SET**(p. 18)
- 02: Contrast SET**(p. 18)
- 03: Sw/LED TEST**(p. 18)
- 04: Volume TEST**(p. 18)
- 05: 4M-DRAM TEST**(p. 18)
- 06: 16Kbit-EEPROM**(p. 18)
- 07: SCAN CNV TEST**(p. 19)
- 08: MIDI-In/Out**(p. 19)
- 09: PREVIEW OUT**(p. 19)
- 10: IN/OUT TEST**(p. 19)
- 11: FPGA LOAD**(p. 20)

Selecting and Executing Test Items

While the Test Mode menu screen is displayed, use the [▲] and [▼] buttons to select the test item you want, then press the [ENTER] button.

Quitting a Test Item

At the screen for executing the test item, hold down the [MENU] button and press the [ENTER] button.

01: Tbar SET

1. Move the video fader toward **A**, then press the [Transformer A] button. The value of **A** is set.
* Move the video fader all the way toward **A**.
2. Move the video fader toward **B**, then press the [Transformer B] button. The value of **B** is set.
* Move the video fader all the way toward **B**.
3. Hold down the [MENU] button and press the [ENTER] button. **Tbar SET OK** is displayed, "Tbar SET" ends, and the Test Mode menu screen appears. Move the cursor to the [Contrast SET] item.

02: Contrast SET

1. From the signal generator, input a raster (all white) still picture to **INPUT 1**.
2. Compare the brightness of the A bus (down from the screen center) and the B bus (up from the screen center).
3. Use the [▲] and [▼] buttons to select the brighter of the two buses (the A or B screen), then press the [ENTER] button.
4. Use the [▲] and [▼] buttons to increase the parameter value. Increasing the value makes the screen darker. Adjust so that the onscreen wipe can no longer be seen.
5. Hold down the [MENU] button and press the [ENTER] button. **Contrast SET OK** is displayed. "Contrast SET" ends, and the Test Mode menu screen appears. Move the cursor to the [Sw/Led TEST] item.

03: Sw/LED TEST

1. Verify that all LEDs light up correctly.

PREVIEW OUT SELECT 1 through 8/PC, and OUTPUT: Orange	
MENU:	Red
[▲] and [▼]	Yellow
ENTER:	Orange
BPM:	Red (three 8-segment LEDs)
TAP:	Red
OUTPUT FADE:	Red
INPUT SELECT A 1 through 8:	Orange
EFFECTS A 1 through 4:	Yellow
INPUT SELECT B 1 through 8:	Orange
EFFECTS B 1 through 4:	Yellow
FADE:	Red
1 MIX, 2 WIPE, and 3 EFX:	Yellow
BPM SYNC:	Red

2. Press the switches indicated below and verify that the LEDs go dark.

PREVIEW OUT SELECT 1 through 8/PC, and OUTPUT	
TAP	
INPUT SELECT A 1 through 8	
EFFECTS A 1 through 4	
INPUT SELECT B 1 through 8	
EFFECTS B 1 through 4	
FADE	
1 MIX, 2 WIPE, and 3 EFX	
BPM SYNC	

3. Press each of the switches indicated below, and verify that the LED goes dark and the corresponding indication on the monitor flashes.

MENU:	MENU
[▲]:	UP
[▼]:	DOWN
ENTER:	ENTER
TRANSFORMER A:	TRANA
TRANSFORMER B:	TRANB

4. Operate each of the slider switches indicated below and verify that the corresponding indication on the monitor flashes.

PC <-> PC
WHITE <-> BLACK

5. Turn the [MEMORY] control from **1** to **8**, then return it to **1**. The BPM display (three 8-segment LEDs) goes dark one segment at a time.(The three characters go dark in the same way.) Also, the [OUTPUT FADE] LED goes dark when the control is turned to 8.
6. After the BPM display has gone dark completely, verify that the onscreen **[00000000]** is flashing.
7. Hold down the [MENU] button and press the [ENTER] button. **Sw/Led TEST OK** is displayed, "Sw/LED TEST" ends, and the Test Mode menu screen appears. Move the cursor to the [Volume TEST] item.

04: Volume TEST

The A/D values for VR1 through VR5 are displayed. VR1 through VR5 correspond respectively to the following controls.

VR1:	OUTPUT FADE
VR2:	CONTROL B
VR3:	BPM/CONTROL
VR4:	CONTROL A
VR5:	VIDEO FADER

1. Operate each control. The maximum and minimum values of each control are detected correctly, and "*" is displayed to the left and right of the A/D values.
2. Hold down the [MENU] button and press the [ENTER] button. **Volume TEST OK** is displayed, "Volume TEST" ends, and the Test Mode menu screen appears. Move the cursor to the [4M-DRAM TEST] item.

05: 4M-DRAM TEST

1. At the Test Mode menu screen, select **4M-DRAM TEST**, then press the [ENTER] button. The test is executed the moment the [ENTER] button is pressed. If **OK** appears, operation is correct.
2. Hold down the [MENU] button and press the [ENTER] button. **4M-DRAM TEST OK** is displayed, "4M-DRAM TEST" ends, and the Test Mode menu screen appears. Move the cursor to the [16Kbit-EEPROM] item.

06: 16Kbit-EEPROM

1. At the Test Mode menu screen, select **16Kbit-EEPROM**, then press the [ENTER] button. The test is executed the moment the [ENTER] button is pressed. If **OK** is displayed after a short while, operation is correct.
2. Hold down the [MENU] button and press the [ENTER] button. **16Kbit EEPROM OK** is displayed, "16Kbit EEPROM" ends, and the Test Mode menu screen appears. Move the cursor to the [SCAN CNV TEST] item.

07: SCAN CNV TEST

1. At the Test Mode menu screen, select **SCAN CNV TEST**, then press the [ENTER] button.
The test is executed the moment the [ENTER] button is pressed.
If **OK** appears, operation is correct.
2. Hold down the [MENU] button and press the [ENTER] button.
SCAN CNV TEST OK is displayed, "SCAN CNV TEST" ends, and the Test Mode menu screen appears. Move the cursor to the [Midi-In/Out] item.

08: MIDI-In/Out

1. Using a MIDI cable, connect the MIDI IN jack and the MIDI OUT/THRU jack.
2. At the Test Mode menu screen, select **Midi-In/Out**, then press the [ENTER] button.
The test is executed the moment the [ENTER] button is pressed.
If **OK** appears, operation is correct.
3. Hold down the [MENU] button and press the [ENTER] button.
Midi-In/Out OK is displayed, "MIDI-In/Out TEST" ends, and the Test Mode menu screen appears. Move the cursor to the [PREVIEW OUT] item.

09: PREVIEW OUT

1. Input a video signal to **INPUT 1**.
* Be sure to input a video signal to **INPUT 1**. When nothing is input to **INPUT 1**, the video output from the **PREVIEW OUT** jack is a black screen.
2. Verify that **INPUT 1**, **INPUT 2**, **INPUT 3**, **INPUT 4**, **INPUT 5**, **INPUT 6**, **INPUT 7**, **INPUT 8**, and **Master** are displayed, and that the picture input to **INPUT 1** is displayed.
3. Input a video signal to **INPUT 2**.
4. Press [▼] and select **INPUT 2** or **PREVIEW OUT SELECT 2**.
5. Verify that the picture input to **INPUT 2** is displayed.
6. In the same way, verify that video input to **INPUT 3** through **INPUT 8** is displayed.
7. Press [▼] and select **Master**.
8. Verify that the V-8's built-in color bar is displayed.
9. Hold down the [MENU] button and press the [ENTER] button.
PREVIEW OUT OK is displayed, "PREVIEW OUT TEST" ends, and the Test Mode menu screen appears. Move the cursor to the [IN-OUT TEST] item.

10: IN/OUT TEST

At the IN-OUT TEST screen, initially, **DecA-Inp1 [C]** is selected.

1. Input video to **INPUT 1**.
1a. Verify that the picture that is input is displayed on the television monitor connected to the **MONITOR OUT 1** jack.
2. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.
3. Connect a television monitor to the other **OUTPUT** jack, and verify in the same way that the picture is displayed.
4. In the same way, connect the television monitor to the **OUTPUT S-VIDEO** jack, switch the television-monitor input to S-Video, and verify that the picture is displayed.
5. Press [▼] and select **DecA-Inp2 [C]** or **INPUT SELECT A2**.
6. Input video to **INPUT 2**.
6a. Verify that the picture that is input is displayed on the television monitor connected to the **MONITOR OUT 2** jack.
7. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.
8. Press [▼] and select **DecA-Inp3 [C]** or **INPUT SELECT A3**.

9. Input video to **INPUT 3**.
9a. Verify that the picture that is input is displayed on the television monitor connected to the **MONITOR OUT 3** jack.
10. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.

11. Press [▼] and select **DecA-Inp4 [C]** or **INPUT SELECT A4**.
12. Input video to **INPUT 4**.
12a. Verify that the picture that is input is displayed on the television monitor connected to the **MONITOR OUT 4** jack.
13. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.

Thereafter, for **INPUT 5** through **INPUT 7**, verify picture display at both the **INPUT S-VIDEO** jack and the **INPUT** jack.

14. Press [▼] and select **DecA-Inp5 [S/C]** or **INPUT SELECT A5**.
15. Input video to **INPUT S-VIDEO 5**.
15a. Verify that the picture that is input is displayed on the television monitor connected to the **MONITOR OUT 5** jack.
16. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.
17. Disconnect the S-connector cable connected to **INPUT S-VIDEO 5**.
18. Input video to **INPUT 5**.
19. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.
20. Press [▼] and select **DecA-Inp6 [S/C]** or **INPUT SELECT A6**.
21. Input video to **INPUT S-VIDEO 6**.
21a. Verify that the picture that is input is displayed on the television monitor connected to the **MONITOR OUT 6** jack.
22. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.
23. Disconnect the S-connector cable connected to **INPUT S-VIDEO 6**.
24. Input video to **INPUT 6**.
25. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.

26. Press [▼] and select **DecA-Inp7 [S/C]** or **INPUT SELECT A7**.
27. Input video to **INPUT S-VIDEO 7**.
27a. Verify that the picture that is input is displayed on the television monitor connected to the **MONITOR OUT 7** jack.
28. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.
29. Disconnect the S-connector cable connected to **INPUT S-VIDEO 7**.
30. Input video to **INPUT 7**.
31. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.
32. Press [▼] and select **DecA-Inp8 [PC1/S]** or **INPUT SELECT A8**.
33. Input video to **INPUT S-VIDEO 8**.
33a. Verify that the picture that is input is displayed on the television monitor connected to the **MONITOR OUT PC/8** jack.
34. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.
35. Disconnect the S-connector cable connected to **INPUT S-VIDEO 8**.
36. Input video to **PC1**.
37. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.

38. Press [▼] and select **DecB-Inp1 [C]** or **INPUT SELECT B1**.
39. Input video to **INPUT 1**.
40. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.

41. Press [▼] and select **DecB-Inp2 [C]** or **INPUT SELECT B2**.
42. Input video to **INPUT 2**.
43. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.

44. Press [▼] and select **DecB-Inp3 [C]** or **INPUT SELECT B3**.
45. Input video to **INPUT 3**.
46. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.

47. Press [▼] and select **DecB-Inp4 [C]** or **INPUT SELECT B4**.
48. Input video to **INPUT 4**.
49. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.

Thereafter, for **INPUT 5** through **INPUT 7**, verify picture display at both the **INPUT S-VIDEO** jack and the **INPUT** jack.

50. Press [▼] and select **DecB-Inp5 [S/C]** or **INPUT SELECT B5**.
51. Input video to **INPUT S-VIDEO 5**.
52. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.
53. Disconnect the S-connector cable connected to **INPUT S-VIDEO 5**.
54. Input video to **INPUT 5**.
55. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.

56. Press [▼] and select **DecB-Inp6 [S/C]** or **INPUT SELECT B6**.
57. Input video to **INPUT S-VIDEO 6**.
58. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.
59. Disconnect the S-connector cable connected to **INPUT S-VIDEO 6**.
60. Input video to **INPUT 6**.
61. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.

62. Press [▼] and select **DecB-Inp7 [S/C]** or **INPUT SELECT B7**.
63. Input video to **INPUT S-VIDEO 7**.
64. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.
65. Disconnect the S-connector cable connected to **INPUT S-VIDEO**.
66. Input video to **INPUT 7**.
67. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.

68. Press [▼] and select **DecB-Inp8 [PC2/S]** or **INPUT SELECT B8**.
69. Input video to **INPUT S-VIDEO 8**.
70. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.
71. Disconnect the S-connector cable connected to **INPUT S-VIDEO 8**.
72. Input video to **PC2**.

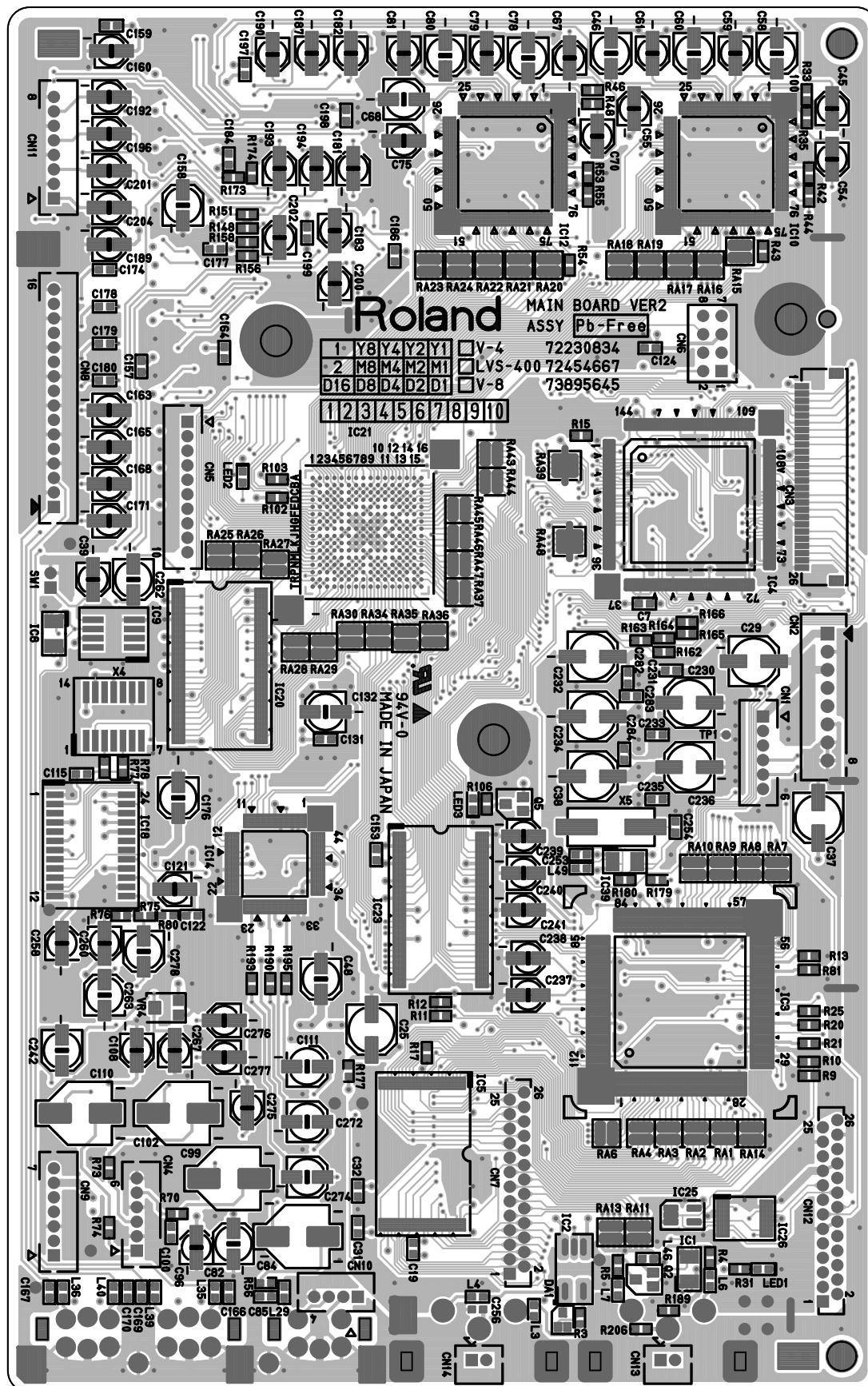
73. Verify that the picture that is input is displayed on the television monitor connected to the **OUTPUT** jack.

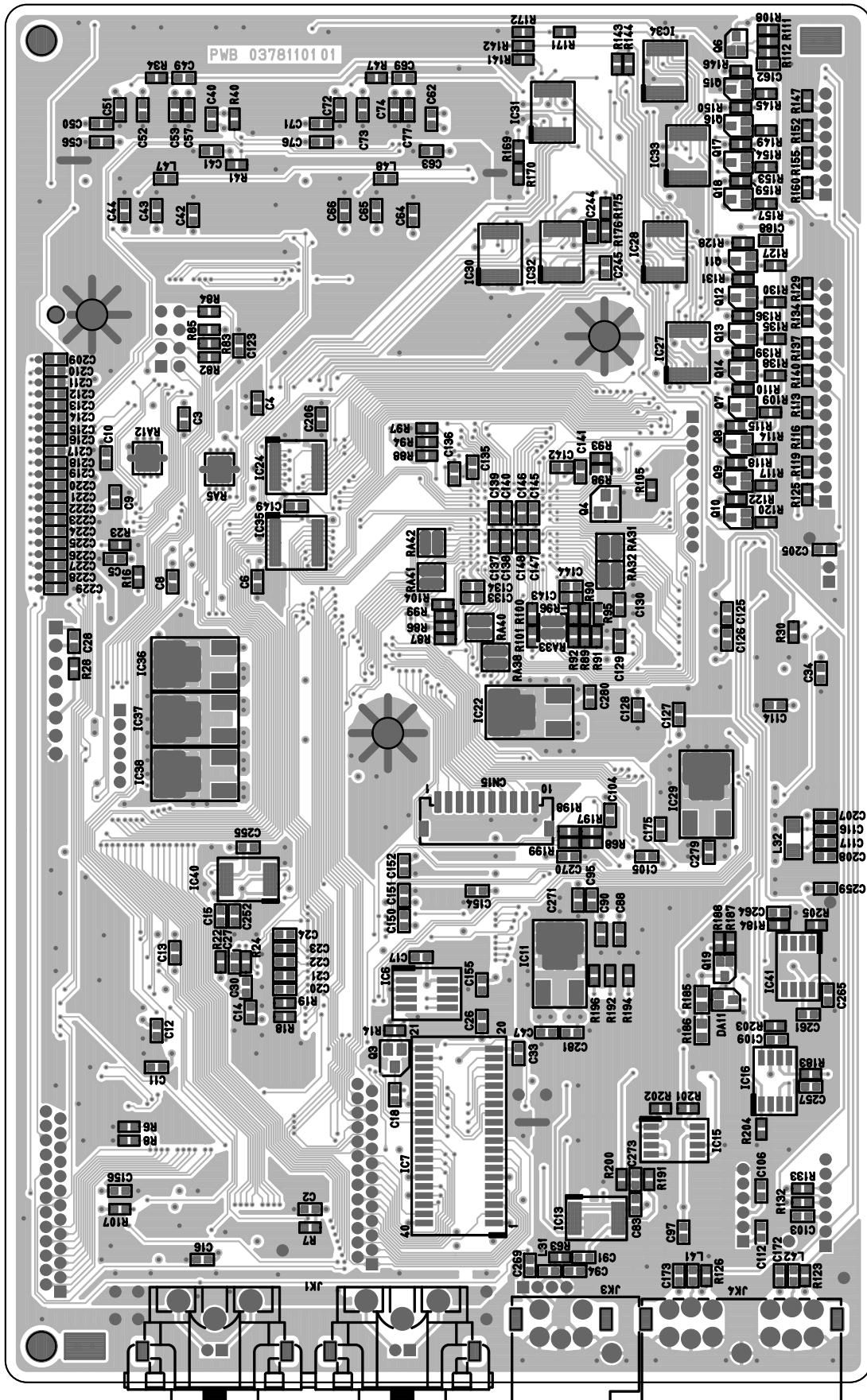
74. Hold down the **[MENU]** button and press the **[ENTER]** button.
IN-OUT TEST OK is displayed, "IN/OUT TEST" ends, and the Test Mode menu screen appears. Move the cursor to the **[FPGA LOAD]** item.

11: FPGA LOAD

1. At the Test Mode menu screen, select **FPGA LOAD**, then press the **[ENTER]** button.
The test is executed the moment the **[ENTER]** button is pressed.
* During the test, the picture output from the V-8 is a black screen.

After a short while, the test ends and **OK** is displayed.
2. Hold down the **[MENU]** button and press the **[ENTER]** button.
FPGA LOAD OK is displayed, "FPGA LOAD TEST" ends, and the Test Mode menu screen is displayed again.

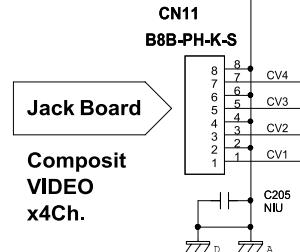
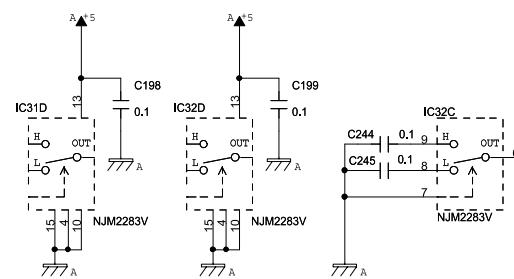
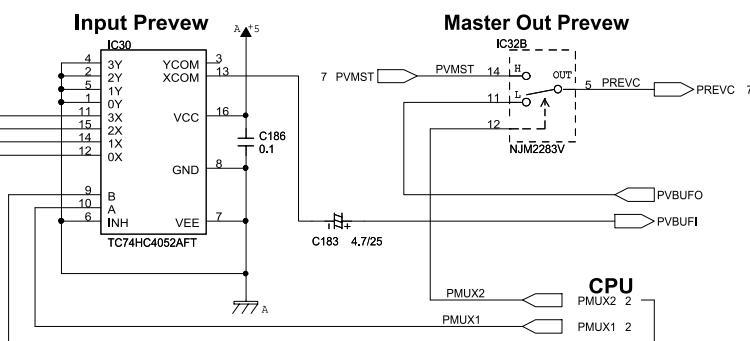
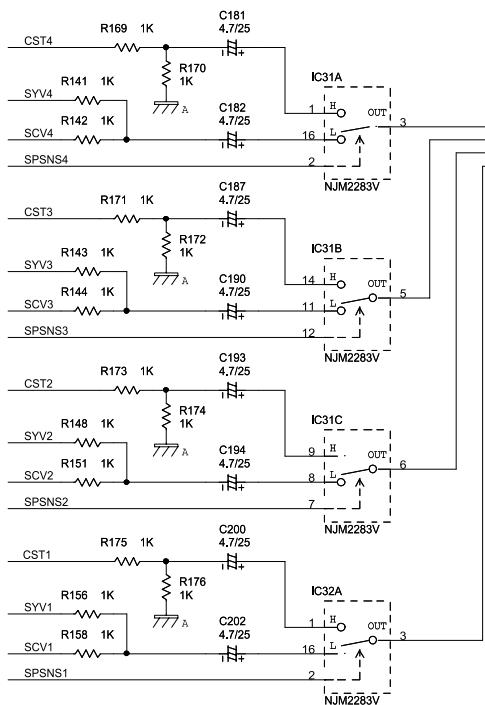
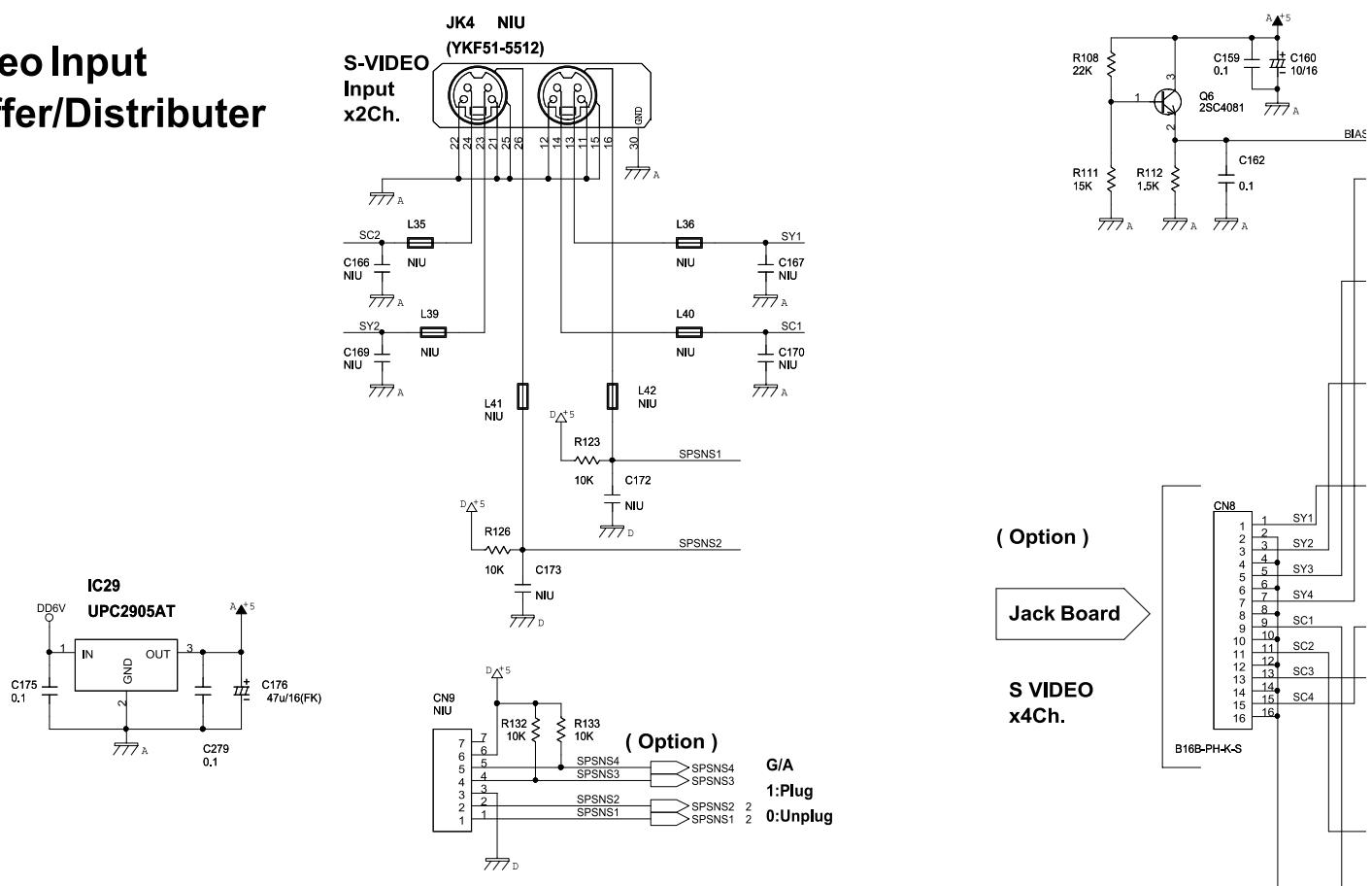
Circuit Board (Main Board: 1/2)

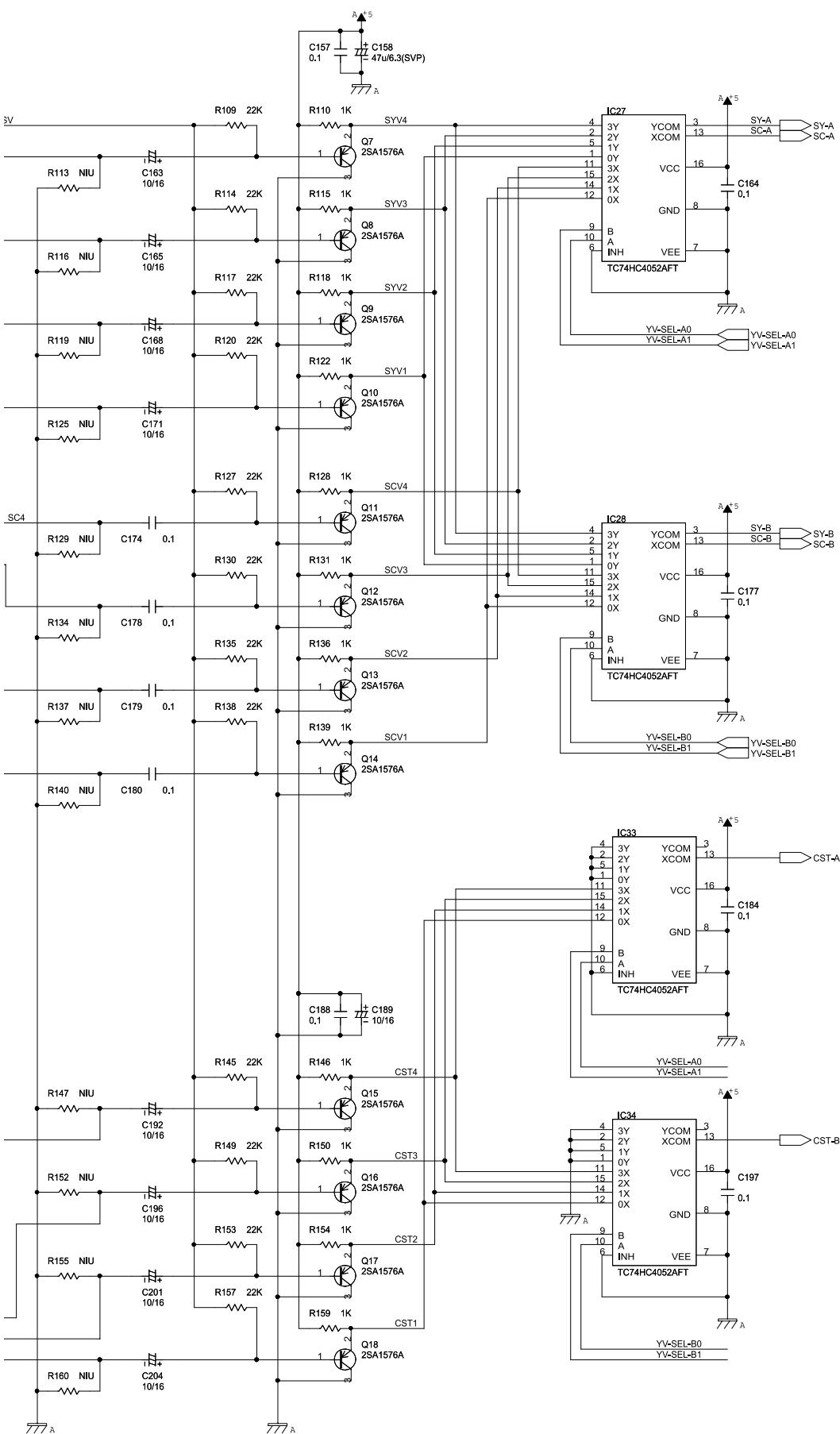
Circuit Board (Main Board: 2/2)

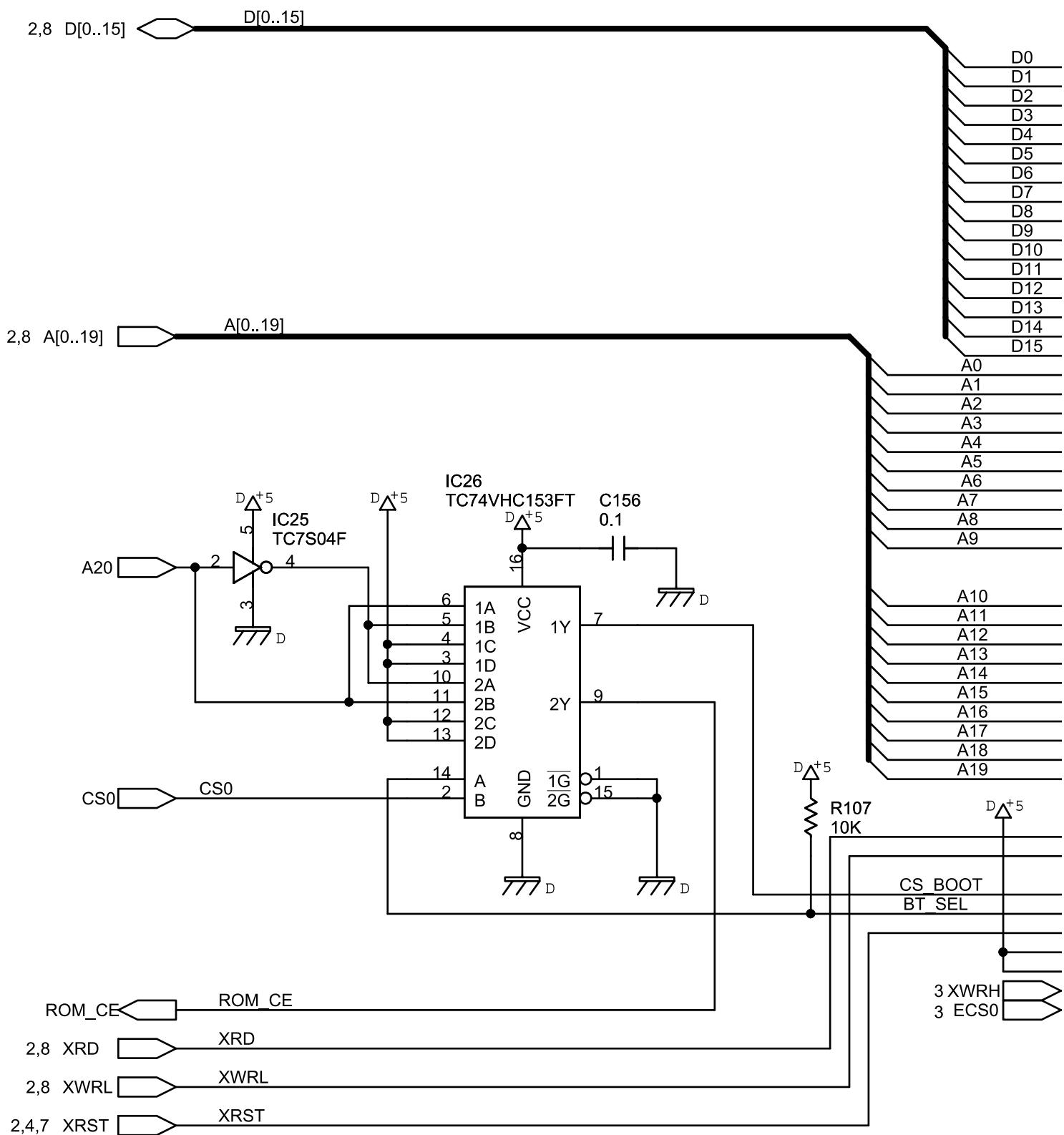
PWB 03781101 01

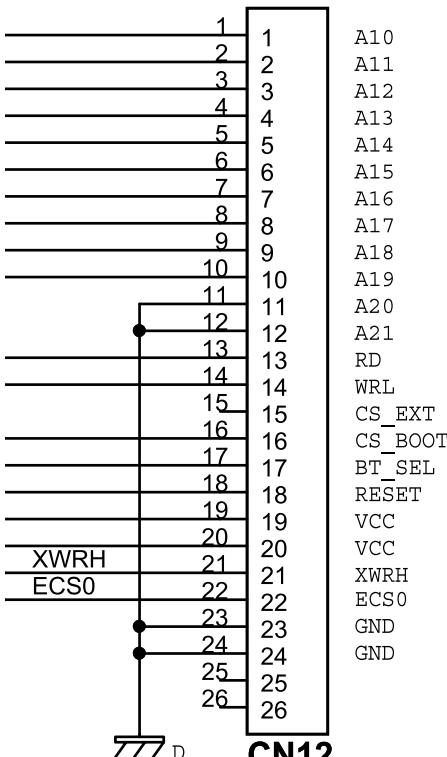
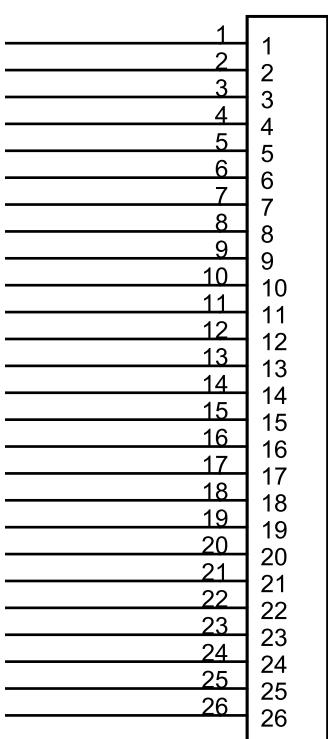
Circuit Diagram (Main Board: 1/6)

Video Input Buffer/Distributer

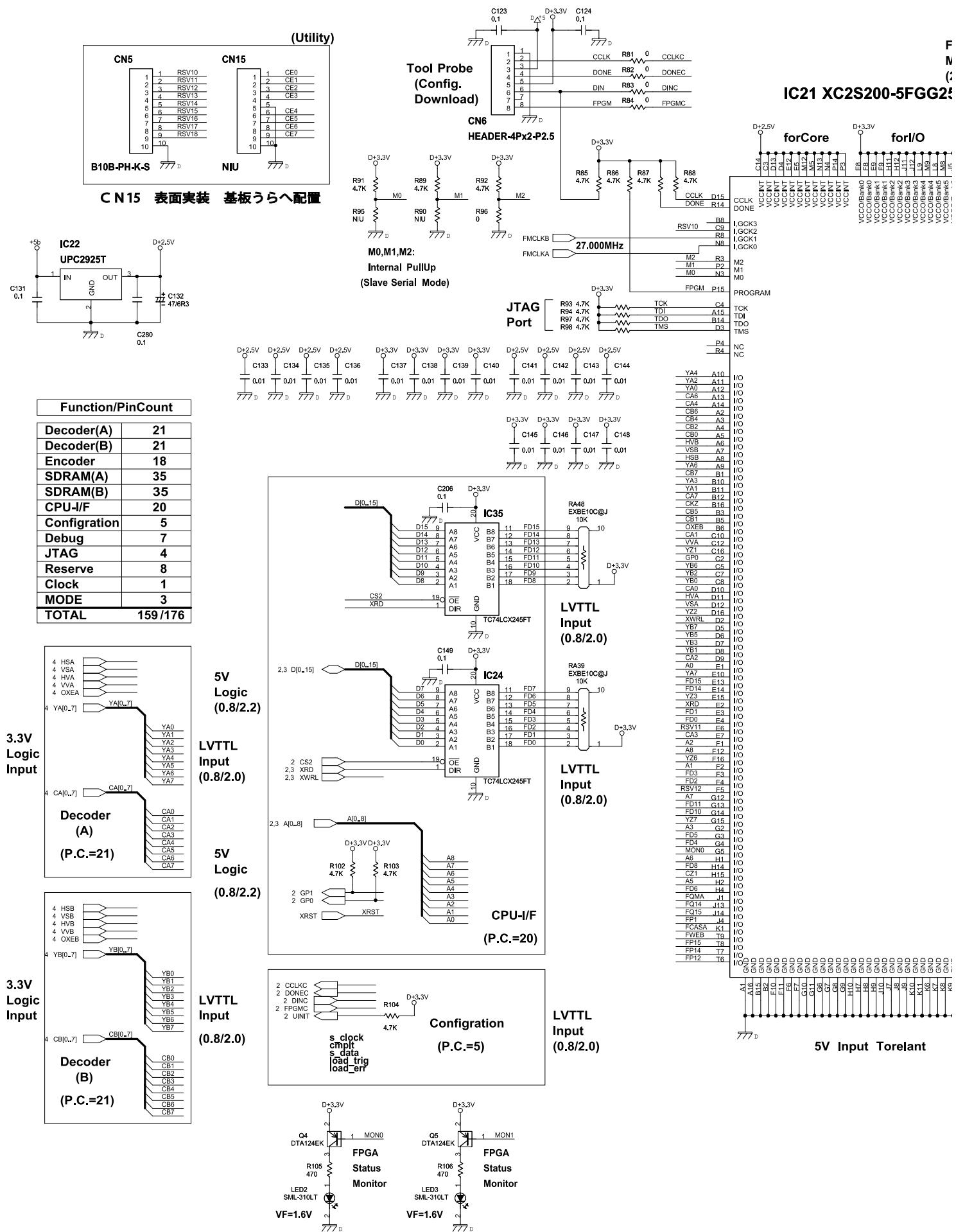




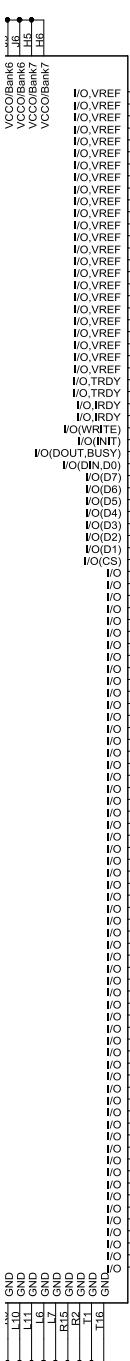
Circuit Diagram (Main Board: 2/6)

CN7**26FMN-BTK-A****26FMN-BTK-A**

Circuit Diagram (Main Board: 3/6)



'inePitch-BGA
MaxI/O=176
256P)
56C



IC20
M12L64164A-7TG

FrameBuffer(A)
(P.C.=35)

LVTTL
Input (0.8/2.0)
Output (0.4/2.4)

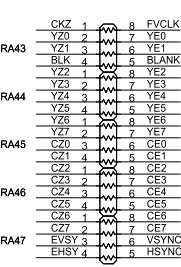
IC23
M12L64164A-7TG

Frame Buffer(B)
(P.C.=35)

LVTTL
Input (0.8/2.0)
Output(0.4/2.4)

64M-SDRAM
(54P-TSOP)

Reset



Encoder
(P.C.=19)

VSYNC → VSYNC
HSYNC → HSYNC
BLANK → BLANK
FVCLK → FVCLK

Encoder
27,000MHz

Circuit Diagram (Main Board: 4/6)

