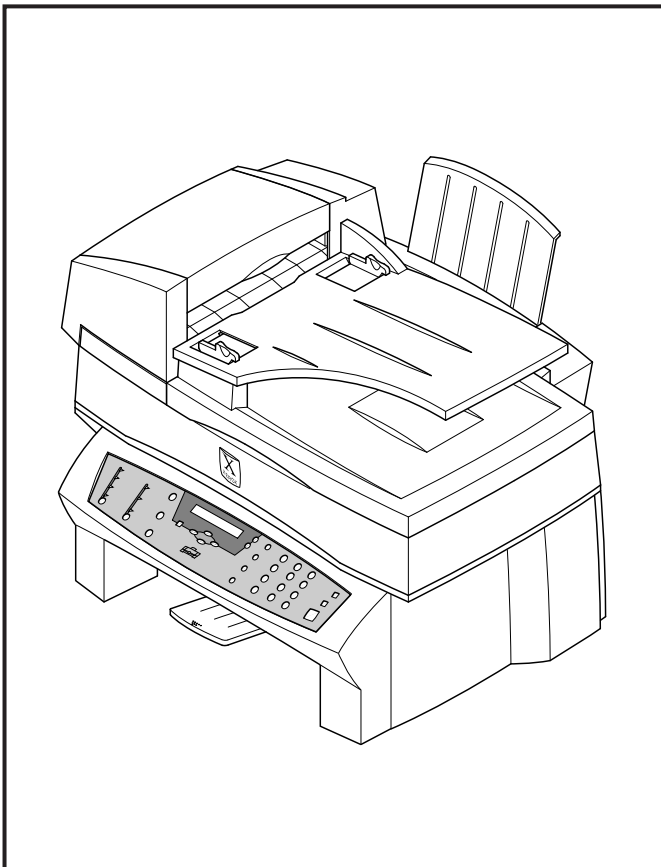


INKJET PRINTER

WorkCentre XK50cx

SERVICE *Manual*

INKJET PRINTER



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2. Specifications
3. Disassembly and Reassembly
4. Circuit
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1. Precautions

Follow these safety, ESD, and servicing precautions to prevent personal injury and equipment damage.

1-1 Safety Precautions

1. Be sure that all built-in protective devices are in place. Restore any missing protective shields.
2. Make sure there are no cabinet openings through which people- particularly children- might insert fingers or objects and contact dangerous voltages.
3. When re-installing chassis and assemblies, be sure to restore all protective devices, including control knobs and compartment covers.
4. Design Alteration Warning:
Never alter or add to the mechanical or electrical design of this equipment, such as auxiliary connectors, etc. Such alternations and modifications will void the manufacturer's warranty.
5. Components and parts damaged should be replaced with parts which meet the original specifications. Always determine the cause of damage and correct any potential hazards.
6. Observe the original lead dress, especially near sharp edges, and AC power supply. Always inspect for pinched, out-of-place, or frayed wiring. Do not change the spacing between components and the printed circuit board.
7. Product Safety Notice:
Some electrical and mechanical parts have special safety-related characteristics which might not be obvious from visual inspection. These safety features and the protection they provide could be lost if a replacement component differs from the original. This holds true, even though the replacement may be rated for higher voltage, wattage, etc.

Components critical for safety are indicated in the parts list with symbols ▲ ▲. Use only replacement components that have the same ratings, especially for flame resistance and dielectric specifications. A replacement part that does not have the same safety characteristics as the original may create shock, fire, or other safety hazards.

1-2 ESD Precautions

Certain semiconductor devices and CIS (Contact Image Sensor) can be easily damaged by static electricity. Such components are commonly called “Electrostatically Sensitive Devices”, or ESDs. Examples of typical ESDs are: integrated circuits, some field effect transistors, semiconductor “chip” components, and the CIS in scanner. The techniques outlined below should be followed to help reduce the incidence of component damage caused by static electricity.

⚠ CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

1. Immediately before handling a semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, employ a commercially available wrist strap device, *which should be removed for your personal safety reasons prior to applying power to the unit under test.*
2. After removing an electrical assembly equipped with ESDs, place the assembly on a conductive surface, such as aluminum or copper foil, or conductive foam, to prevent electrostatic charge buildup in the vicinity of the assembly.
3. Use only a grounded tip soldering iron to solder or desolder ESDs.
4. Use only an “anti-static” solder removal device. Some solder removal devices not classified as “anti-static” can generate electrical charges sufficient to damage ESDs.
5. Do not use Freon-propelled chemicals. When sprayed, these can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective packaging until immediately before installing it. Most replacement ESDs are packaged with all leads shorted together by conductive foam, aluminum foil, or a comparable conductive material.
7. Immediately before removing the protective shorting material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.
8. Maintain continuous electrical contact between the ESD and the assembly into which it will be installed, until completely plugged or soldered into the circuit.
9. Minimize bodily motions when handling unpackaged replacement ESDs. Normal motions, such as the brushing together of clothing fabric and lifting one’s foot from a carpeted floor, can generate static electricity.

2. Specifications

2-1 Copier

Scanner Type	Flat-bed without ADF (Automatic Document Feeder)
Maximum Original Size	A4/Letter
Maximum Paper Size	A4/Letter/Legal
Maximum Scan Width	216 mm
Optical Resolution (HxV)	600 x 600 dpi
Copy Quality	Fast, Normal, Best
Paper Type Selection	Plain, Coated, Glossy, Transparency
Mono Copy Speed ⁽¹⁾	Fast: 3cpm, Normal : 1.5cpm
Color Copy Speed ⁽¹⁾	Fast: 1.5cpm, Normal : 0.8cpm
Effective Print-edge Margin	Top: 3.4mm, Bottom: 19.05mm, Each Side: 6.5mm
Multicopy	50 pages (Memory Multicopy: Mono Fast Mode Only)
Zoom Rate	25 % ~ 400 % (1 % Step)
Fixed R/E Settings	100 %, Autofit, Clone
Contrast Control	3 Steps
Ink Saver Mode	Use Fast Mode (<20 % Savings)
Auto Sensing	Check Paper Jam , Low Ink
FCOT Cold/Warm	About 55 sec for Default Mode Copy

Note:

(1) Speed claims based on the test chart: Printed spdtst.sam(mono), Printed spdtstc2.sam(color)/Letter size

2-2 Printer

Technology		Color Thermal Inkjet
Engine Type		2-Pen (K and CMY)
Operating System		Win 3.1x, Windows 95/98/2000/NT 4.0
Interface		IEEE 1284 (ECP Support), USB (without HUB Mode)
Emulation		HBP(GDI)
Print Speed ⁽²⁾	Mono	10ppm Draft / 8ppm Normal
	Color	5ppm Draft / 2ppm Normal
Print Resolution (H x V)	Quick	300 x 600 dpi
	Normal	600 x 600 dpi
	High Quality	1200 x 1200 dpi (Addressable)
Maximum Paper Size		A4, Letter, Legal
Effective Printing Width		8.0" (203 ± 1mm)
Feeding Method	Automatic	100 Sheets (Maximum stacking height : 9mm)
	Manual Tray	No
Output Tray Capacity		Maximum 50 sheets
Maximum Cable Length		6 ft of standard IEEE 1284 ⁽³⁾

Note:

(2) Speed claims based on the test files: spdtst.sam(mono), spdtstc2.sam(color)/Letter size

(3) Non-standard cable can cause misoperations.

2-3 Scanner

Operation System	Windows 95/98/2000/NT 4.0
Interface	IEEE 1284 (ECP Support), USB (without HUB Mode)
Compatibility	TWAIN
Device	Platen Color CCD
Scan Width	Max.: 8.5" (216 mm), Effective: 8.2" (210 mm)
Color Depth	Internal 36 bit, External 24 bit
Optical Resolution (H x V)	600 x 600 dpi
Interpolation Resolution	Max. 4800 dpi
Pre-scan Mode	Yes, 75 dpi
Scan Speed	about 2'45 sec/A4 Color (Pentium II 300M, 64MB Memory, 300dpi)

2-4 Ink-head

	Mono Cartridge	Color Cartridge
Head	Babbage 208 nozzles	Birch 192 nozzles
Ink type	Pigment	Dye
Ink Color	Black	Color (CMY)
Ink Yield	High yield : 1075 pages Standard yield : 600 pages	200 pages

2-5 Power Supply

Rated AC Input Voltage	110 ~ 240 VAC (Universal)
Rated Input Frequency	50 ~ 60 Hz
Minimum/Maximum AC Input	90 VAC/265 VAC
Maximum Input Current	3A
DC Channels ⁽⁴⁾	+5V $\pm$ 5%, +12V $\pm$ 2%, +30V $\pm$ 5%
External Power On/Off Switch 	System reset switch (It does not cut the primary powerinput off)

Note:

(4) No load condition.

2-6 Dimension

Machine Size (W x D x H)	17.4 x 18.1 x 8.5 Inch
Machine Weight	About 8.1 Kg (Machine itself)

2-7 Packaging

Power Cord	1EA (USA Standard, Ivory)
IEEE 1284 Cable	No
USB Cable	1EA
CD-ROM	1EA
Ink Cartridge	Mono 1EA, Color 1EA
Manual	1vol.

2-8 Environmental Condition

Absolute Storage Temperature ⁽⁵⁾		-20°C ~ 55°C
Absolute Storage Humidity ⁽⁵⁾ 15% RH ~ 85% RH		
Recommended Operating Condition	Temperature	16°C ~ 32°C
	Humidity	40% RH ~ 70% RH

Note:

(5) Packing Condition

2-9 Machine Life

Product Life in Time	3 Years
Life Time in Pages	20,000 Printing Pages
Maximum Monthly Duty Cycle	1,200 Printing Pages except Ink-head

3. Disassembly and Reassembly

3-1 General Precautions on Disassembly

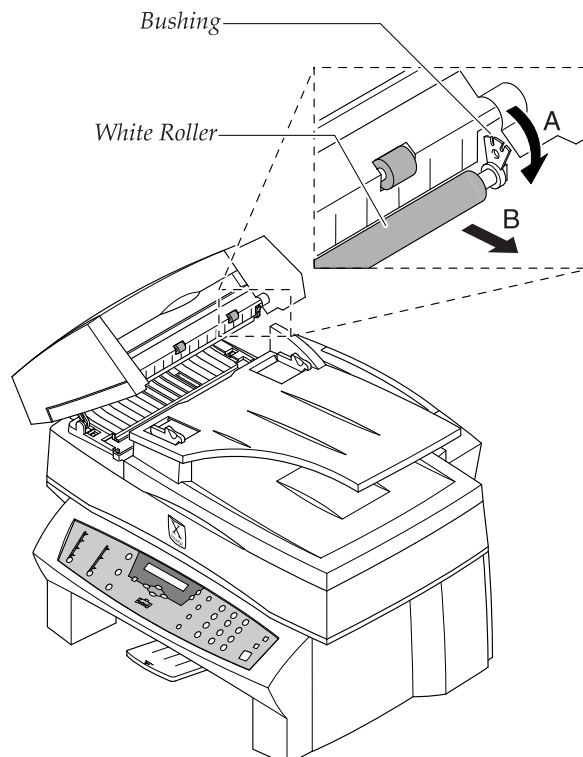
When you disassemble and reassemble components, you must use extreme caution. The close proximity of cables to moving parts makes proper routing a must. If components are removed or replaced, any cables disturbed by the procedure must be replaced as close as possible to their original positions. Before removing any component from the machine, note the cable routing that will be affected.

Whenever servicing the machine, you must perform as follows:

1. Check to verify that documents are not stored in memory.
2. Unplug the power cord.
3. Use a flat and clean surface.
4. Replace only with authorized components.
5. Do not force to remove or platen plastic-material components.
6. Make sure all components are in their proper position.

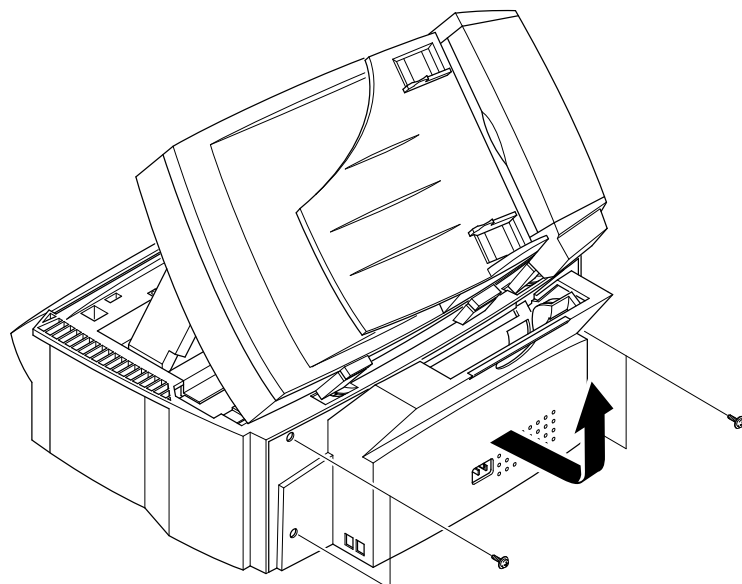
3-2 White Roller

1. Lift the ADF unit
2. Push the bushing on both ends of the roller slightly inward, then rotate it until it reaches the slot. Then lift the the roller out.



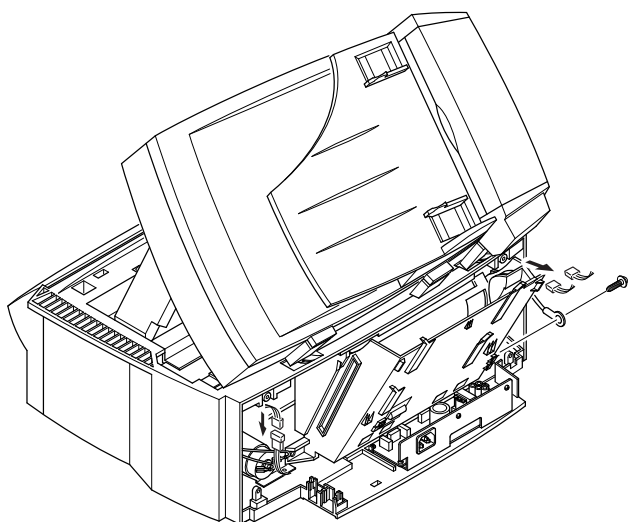
3-3 Rear Cover

1. Remove four screws securing the rear cover.
Separate the rear cover from the main cover.

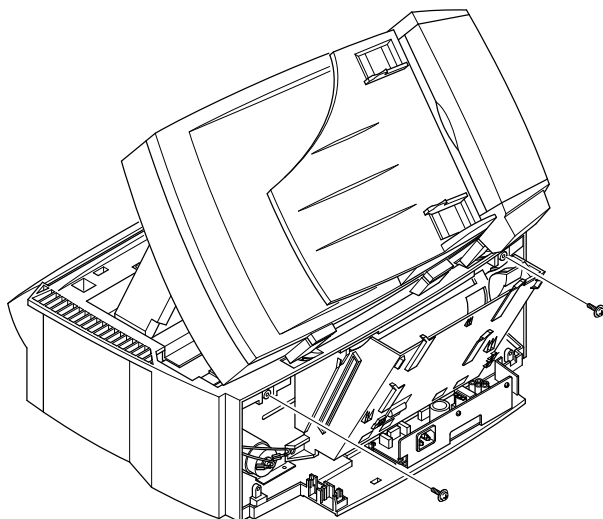


3-4 ADF Scanner Unit Assembly

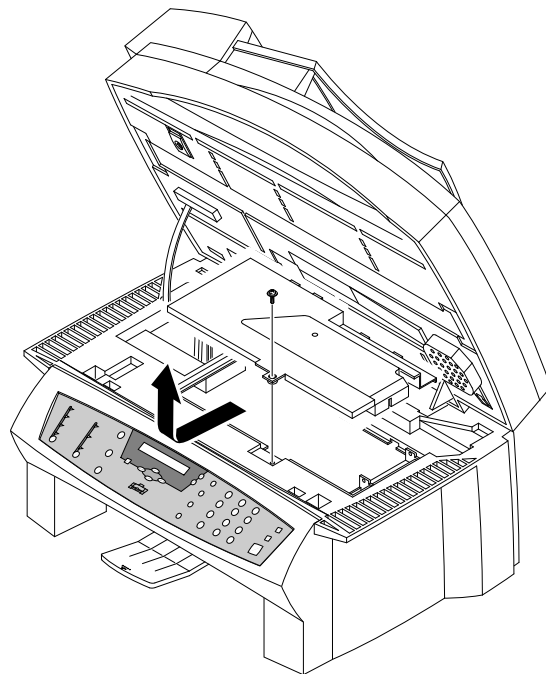
1. Before you disassemble the scanner unit assembly, you should remove
Rear cover (See page 3-2)
2. Unplug three connector and remove the one
screw securing the ground wire to the bracket.



3. Remove two screws securing scanner unit
assembly.

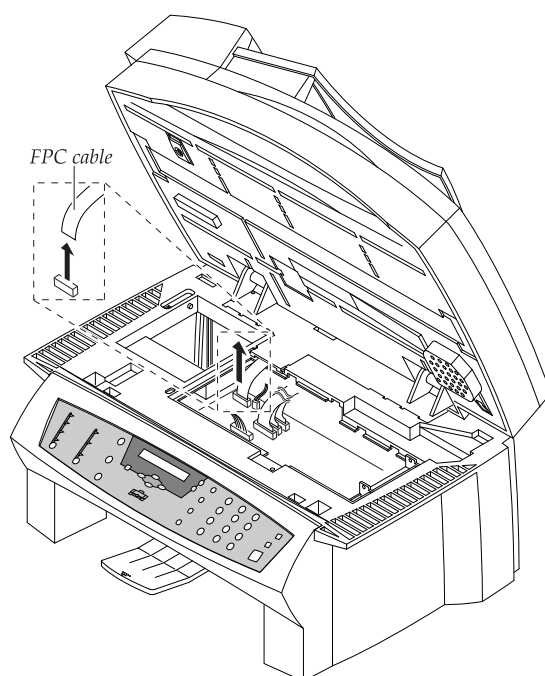


4. Remove one screw and take out the PCB cover.



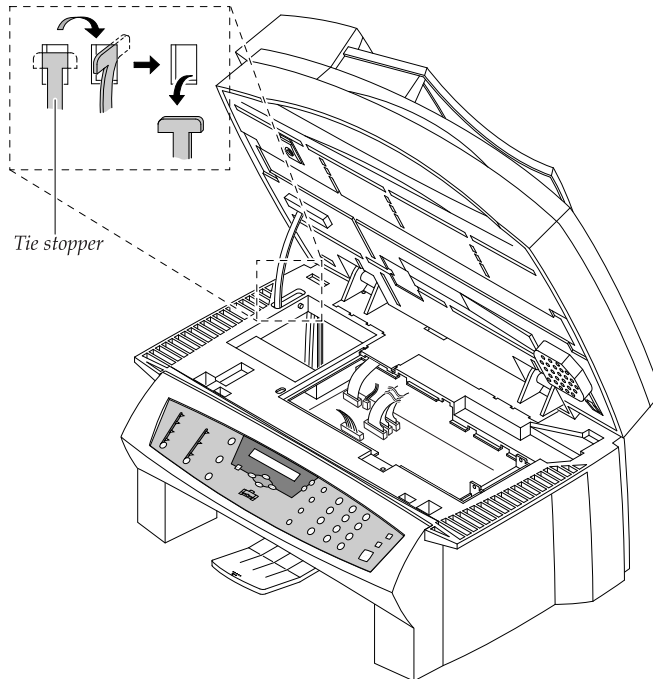
5. Unplug the harness from the main PBA.

⚠ You should connect or remove the FPC cable vertically to avoid the FPC cable pin damage.

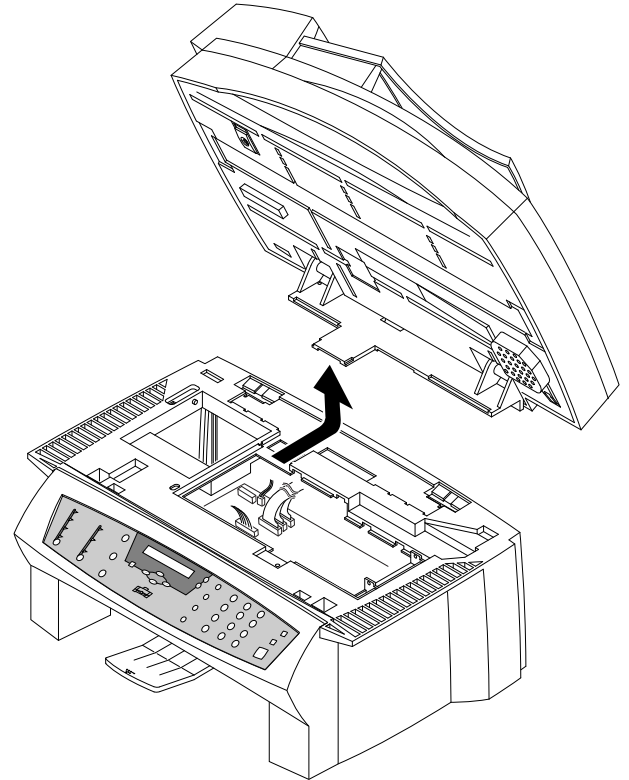


Disassembly and Reassembly

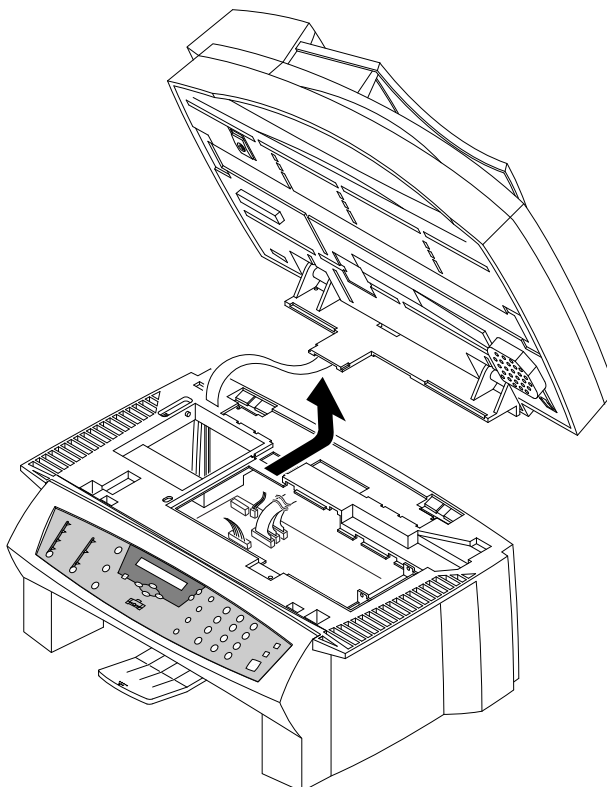
6. Rise the levers to an upright position, then take them out.



8. Lift the scanner unit assembly slightly, then pull it backward. Remove the assembly from the main cover.



7. Unlatch the harness cover by pushing on the bottom of the tabs upward, then remove the cover.



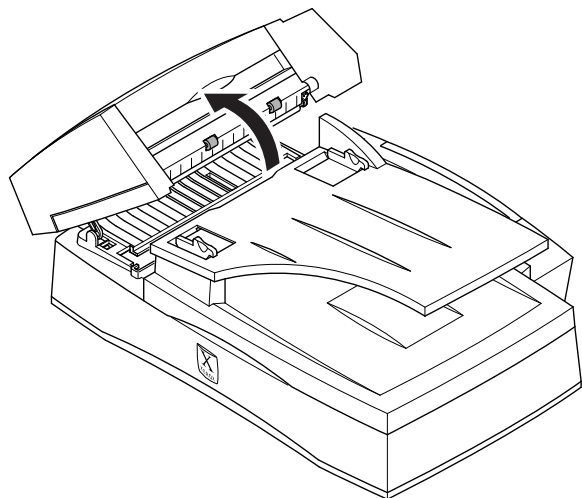
3-5 ADF Unit

1. Before you disassemble the scanner, you should remove:

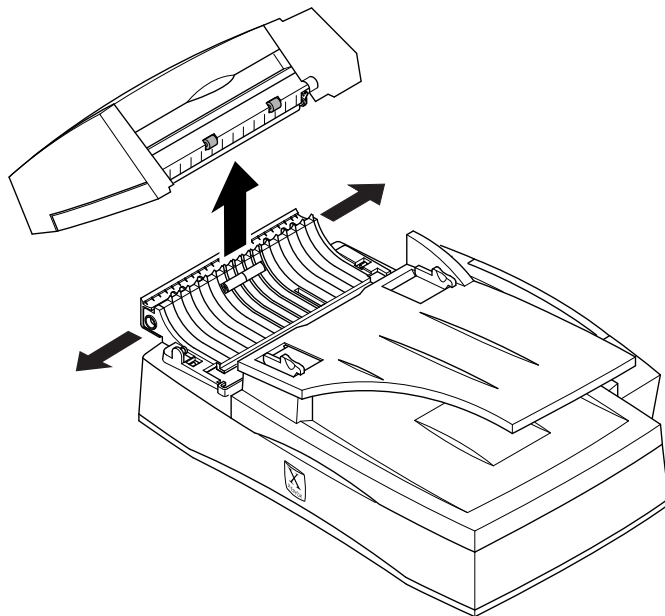
ADF Scanner unit assembly (See page 3-3)

⚠ Before you assemble or disassemble the scanner, you should take on the wrist strap device for ESD protection. (See 1-2 ESD precautions)

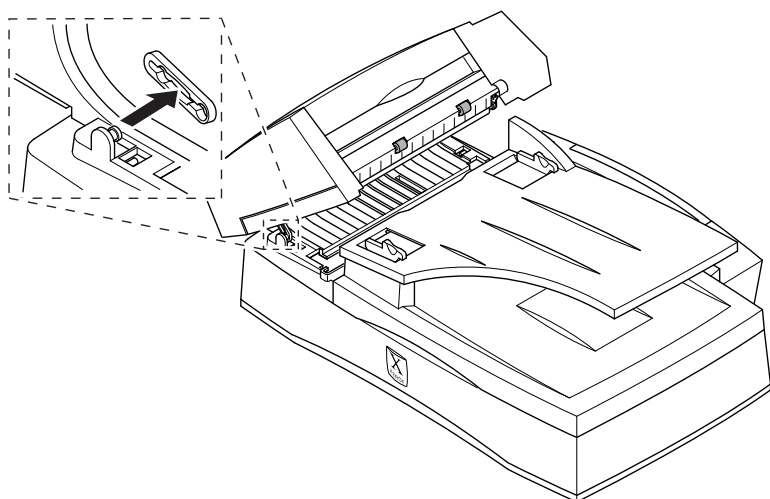
2. Lift the ADF unit.



4. Unlatch the bottom ends and remove the ADF unit as shown below.

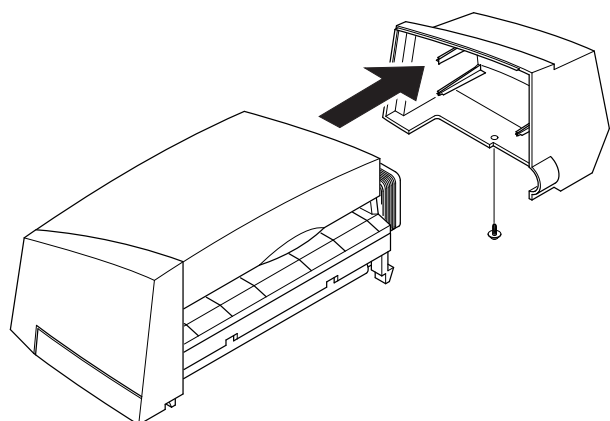


3. Remove the stopper securing the ADF unit.
To remove the stopper, slide it until it reaches the slot at the center, then pull it out.

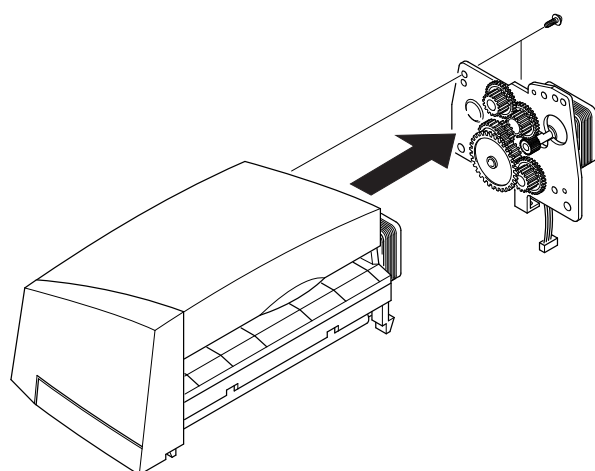


3-6 ADF Motor Assembly

1. Before you disassemble the scanner, you should remove:
ADF unit assembly (See page 3-5)
2. Remove one screw shown below and take out the ADF motor assembly cover.



3. Remove two screws and take out the ADF motor assembly.



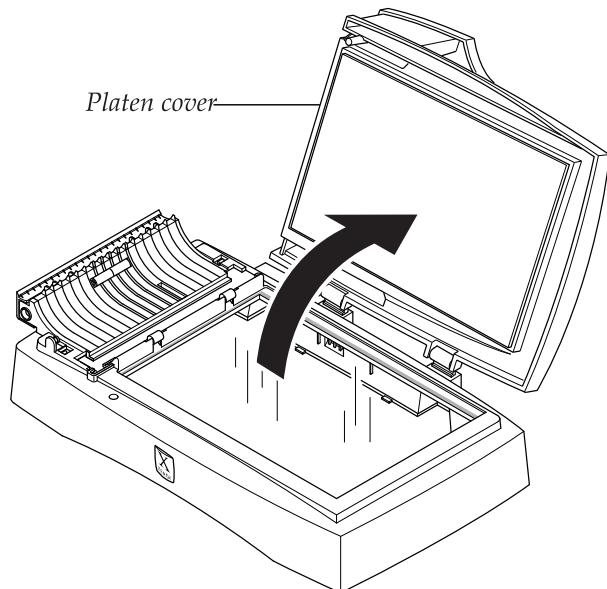
3-7 Scanner Unit

1. Before you disassemble the scanner, you should remove:

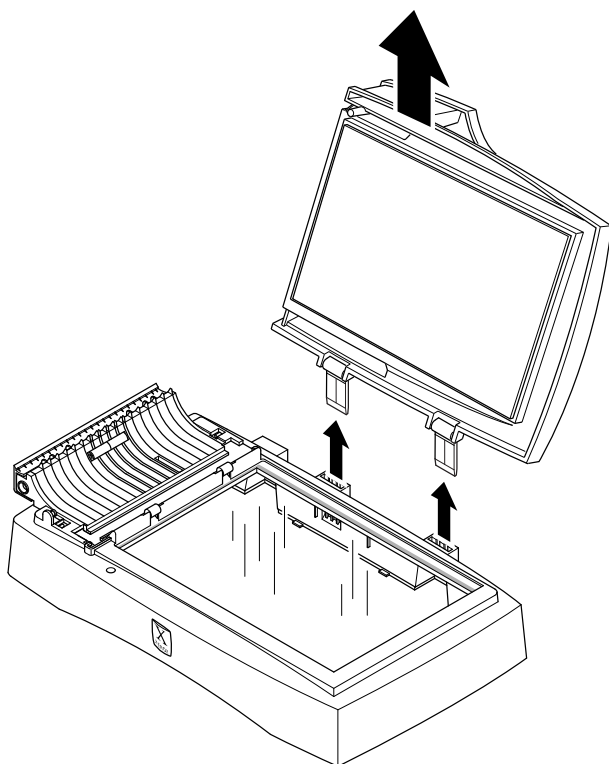
ADF Scanner unit assembly (See page 3-3)

⚠ Before you assemble or disassemble the scanner, you should take on the wrist strap device for ESD protection. (See 1-2 ESD precautions)

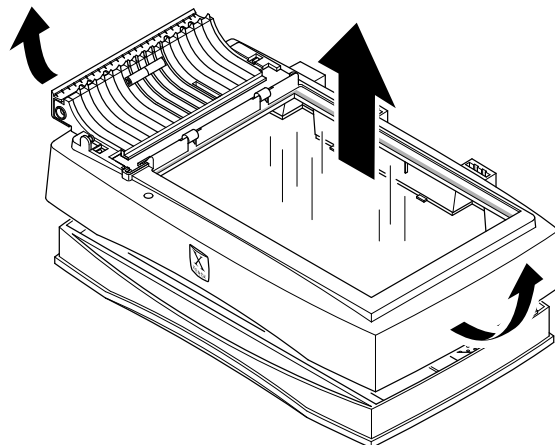
2. Lift and open the platen cover.



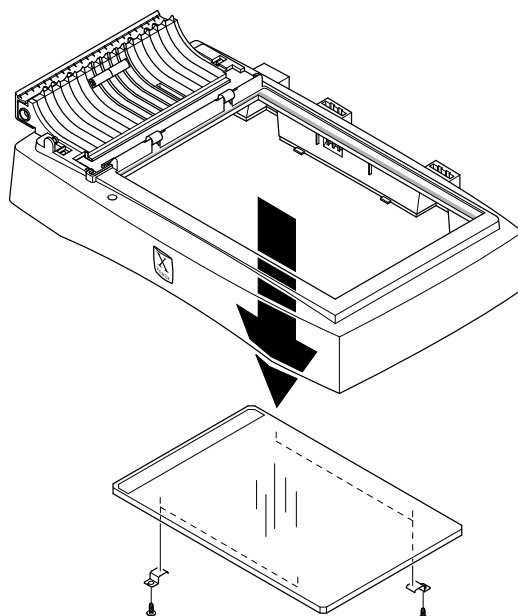
3. Pull the cover upward and remove it.



4. Unlatch the frame securing the glass and remove it.

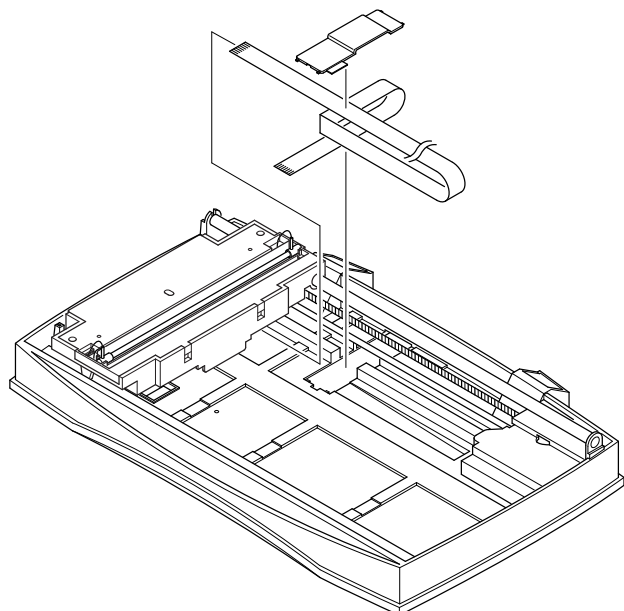


5. Remove four screws and take out the glass from the scan upper cover.

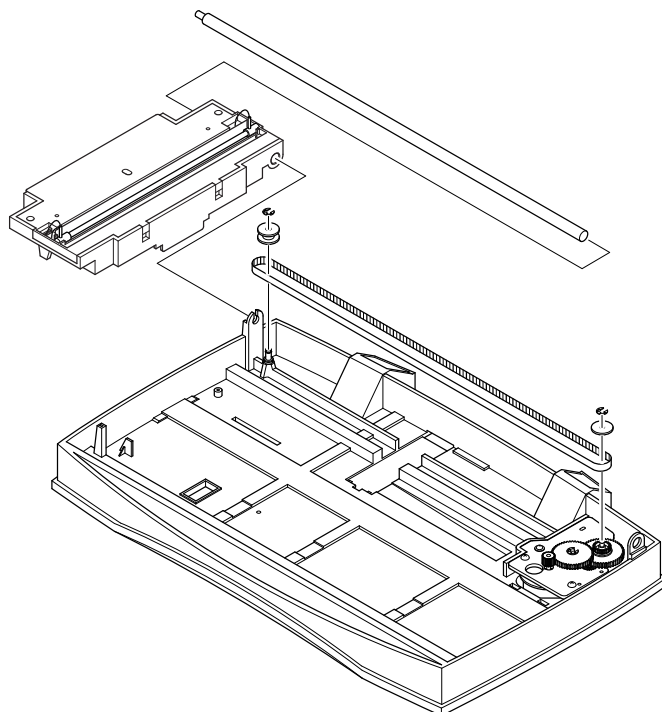


Disassembly and Reassembly

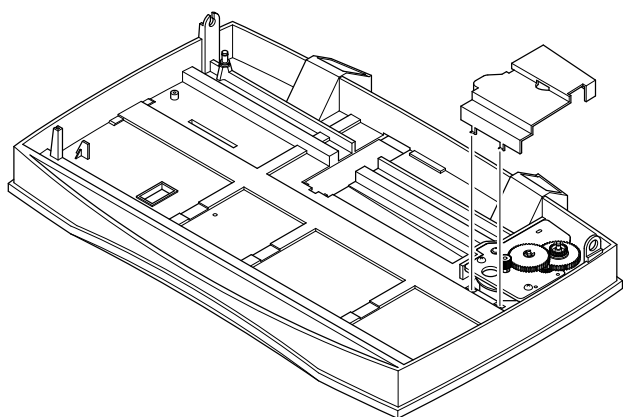
6. Remove the cover of CCD cable.



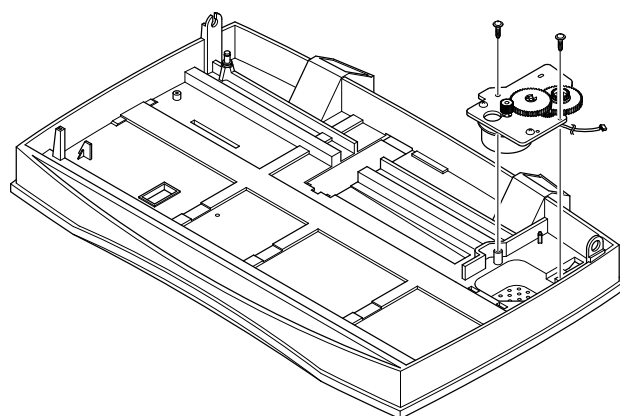
8. Remove two screws and cover of the motor bracket.



7. Remove E-rings and lift holder pulleys and then lift the CCD unit with belt.

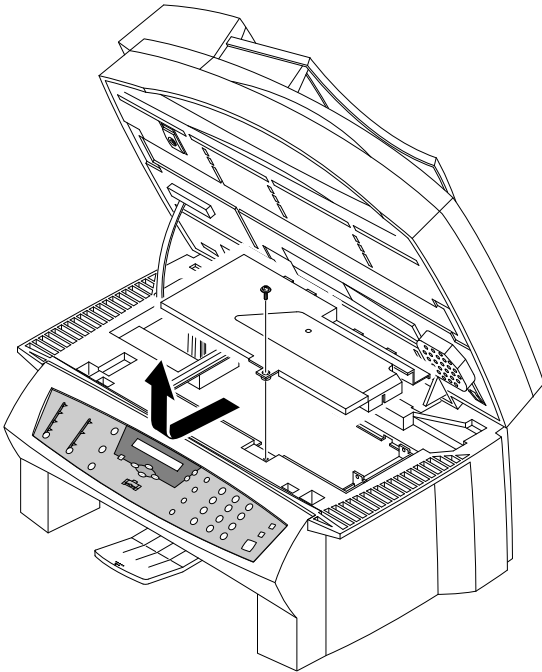


9. Remove two screws and take out the motor bracket.

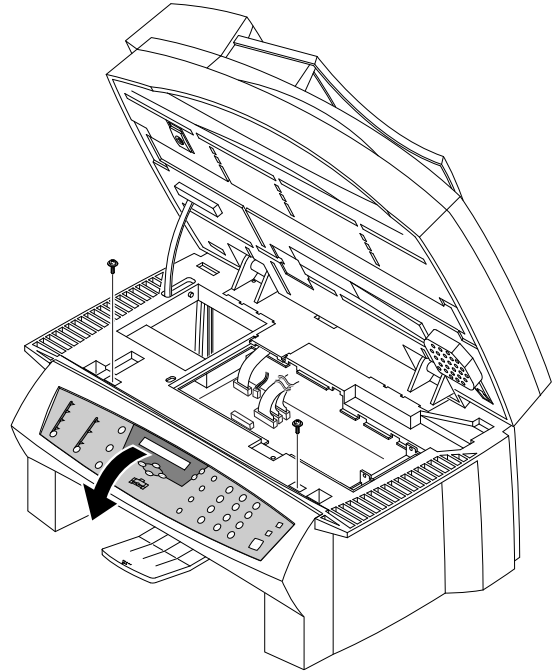


3-8 Control Panel Assembly

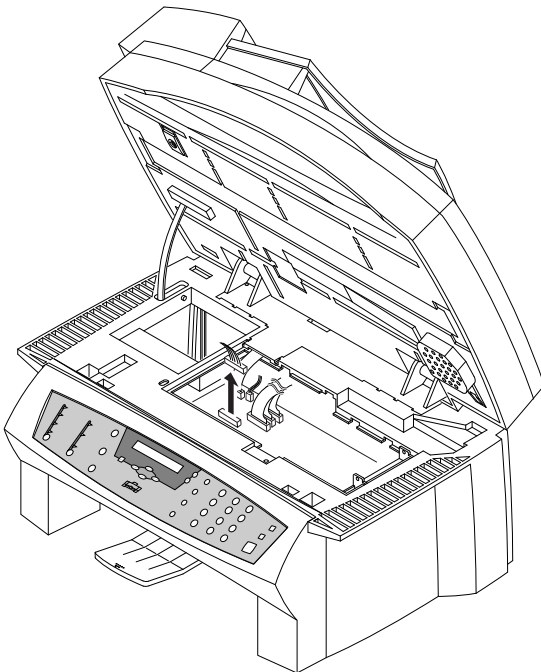
1. Remove one screw securing the PCB cover to the main cover. Take out the PCB cover.



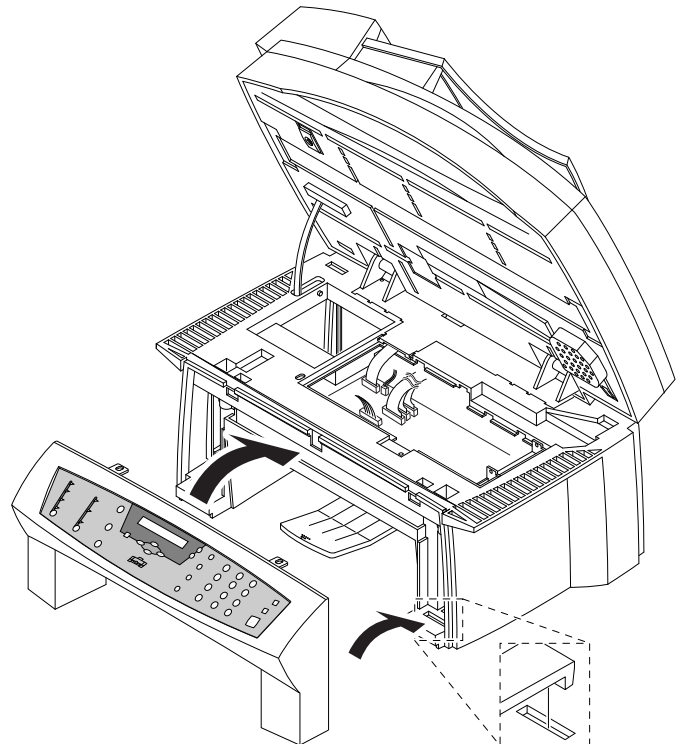
3. Unlatch the front cover by inserting a sharp tool to release the cover into the holes as shown. Then, take out the cover.



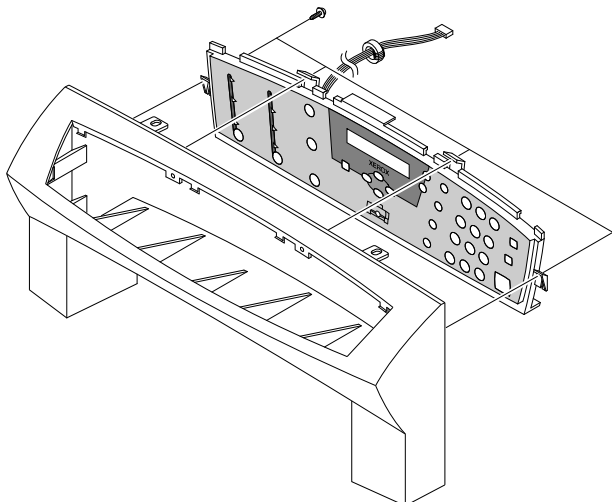
2. Unplug one connectors from the PCB.



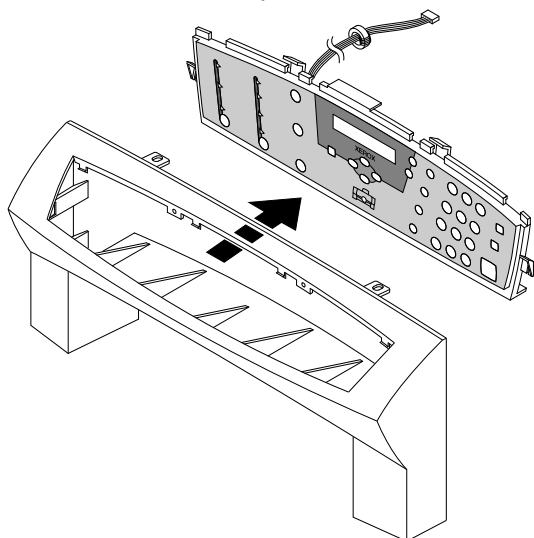
Note: When you reassemble the front cover, make sure the tabs on the cover fit in place.



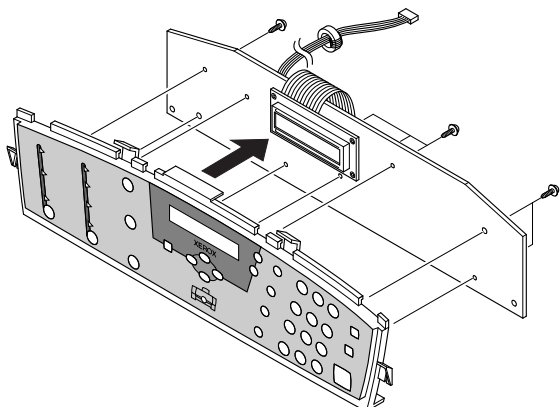
4. Remove two screws securing the OPE unit to the main cover. Unlatch the OPE unit.



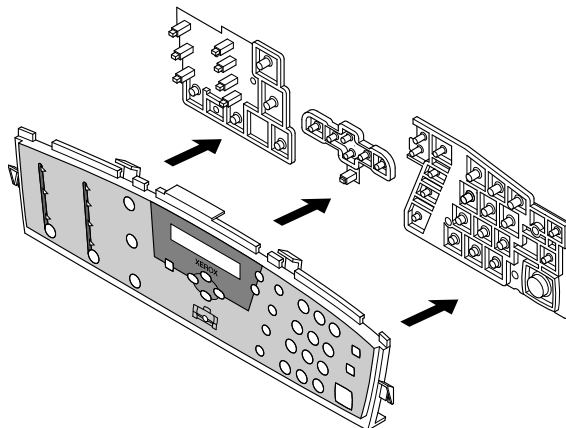
Then, remove the OPE panel.



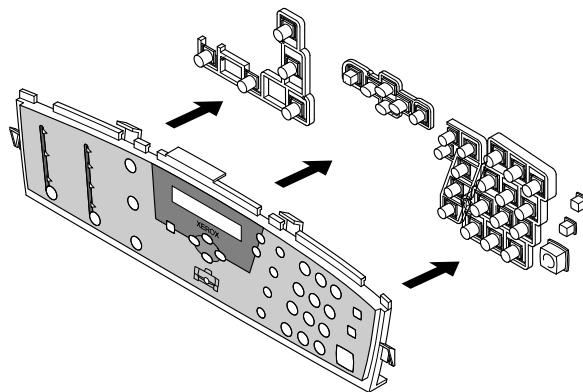
5. Remove eight screws securing the OPE PBA to the OPE panel.



6. Remove the contact rubber from the unit.



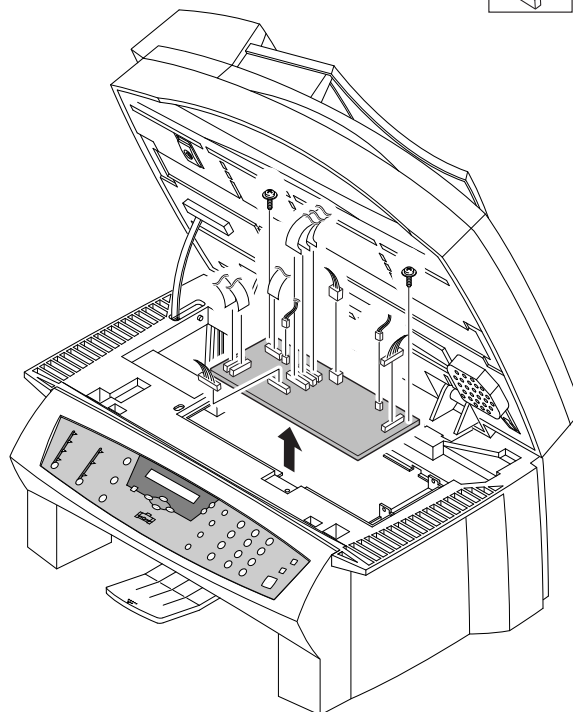
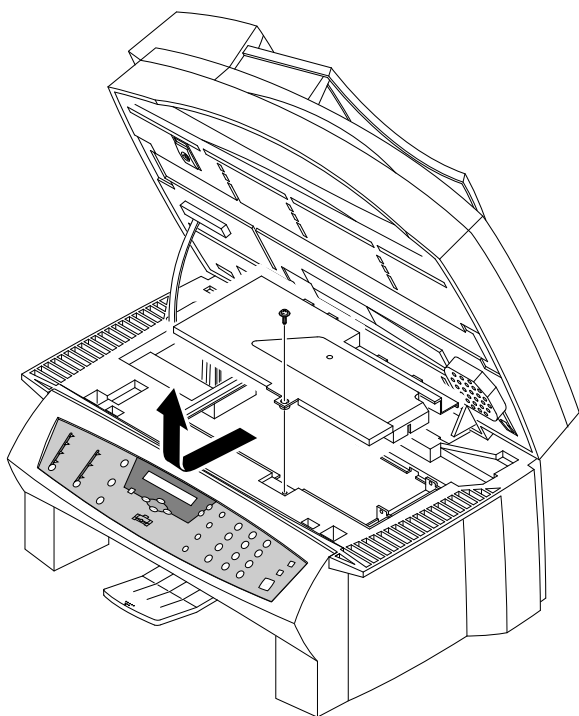
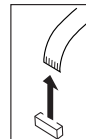
7. Remove the key pad from the unit.



3-9 Main PBA

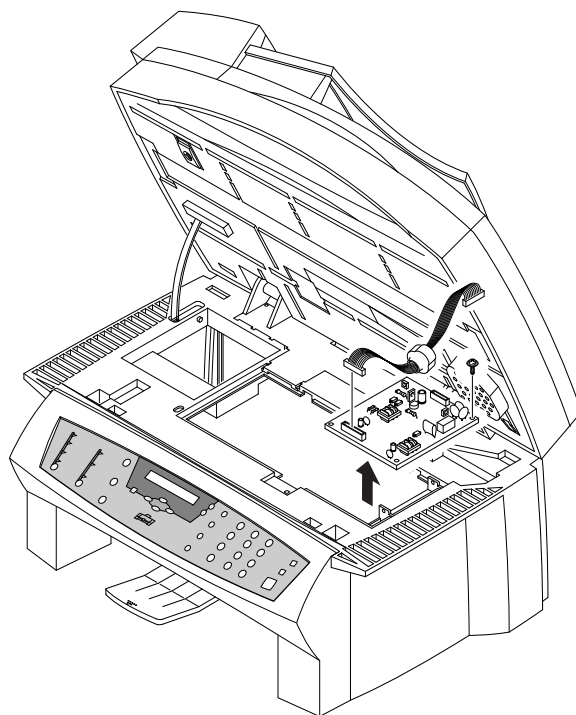
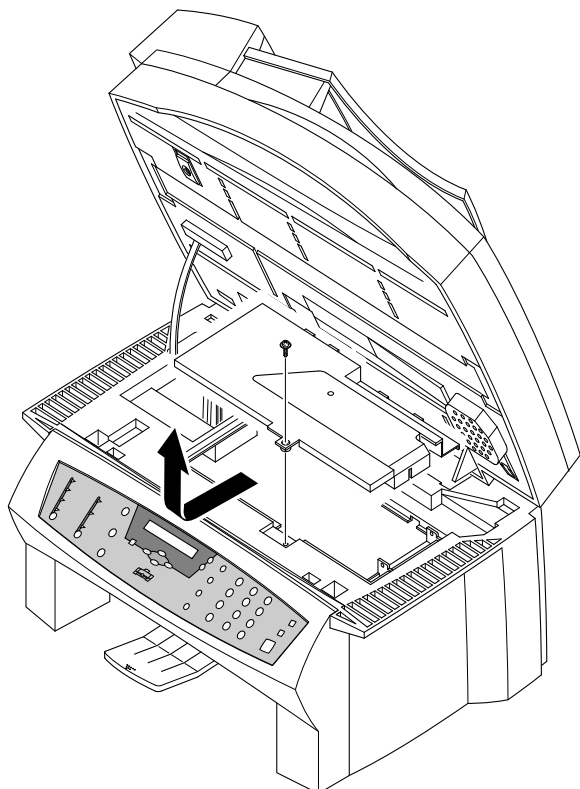
1. Open the scanner unit.
2. Remove one screw securing the PCB cover.
Take out the cover from the main cover.
3. Remove two screws securing the main PBA to the main cover and unplug all connectors. Take out the main PBA.

 You should connect or remove the FPC cable vertically to avoid the FPC cable pin damage.



3-10 LIU PBA

1. Open the scanner unit.
2. Remove one screw securing the PCB cover.
Take out the cover from the main cover.
3. Remove two screws securing the LIU PBA to the main cover and unplug all connectors. Take out the LIU PBA.



3-11 Drive PBA

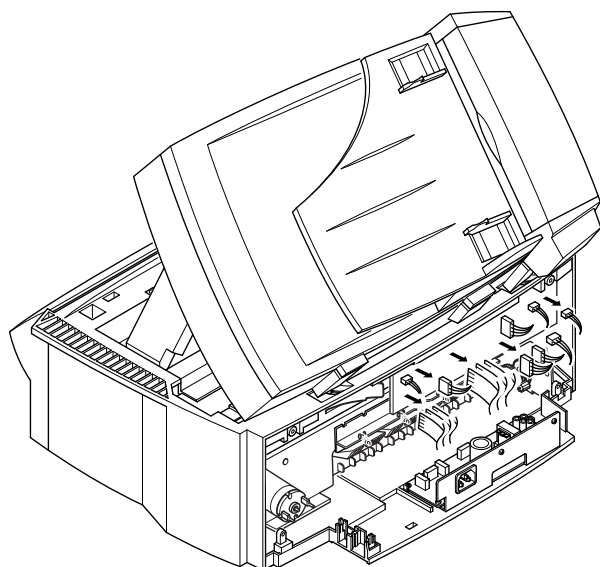
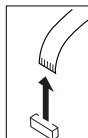
1. Before you disassemble the Drive PBA, you should remove:

Rear cover. (See page 3-2)

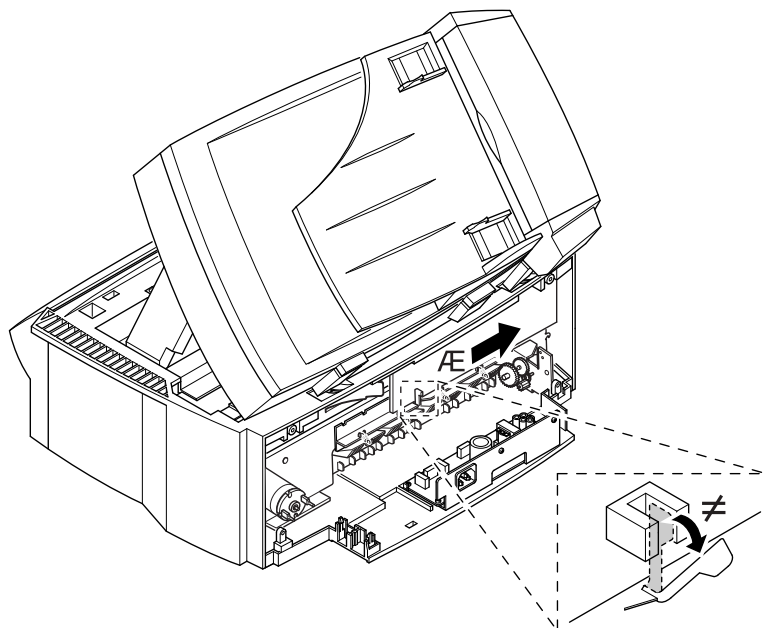
ASF unit. (See page 3-16)

2. Unplug all connectors from the Drive PBA.

 You should connect or remove the FPC cable vertically to avoid the FPC cable pin damage.

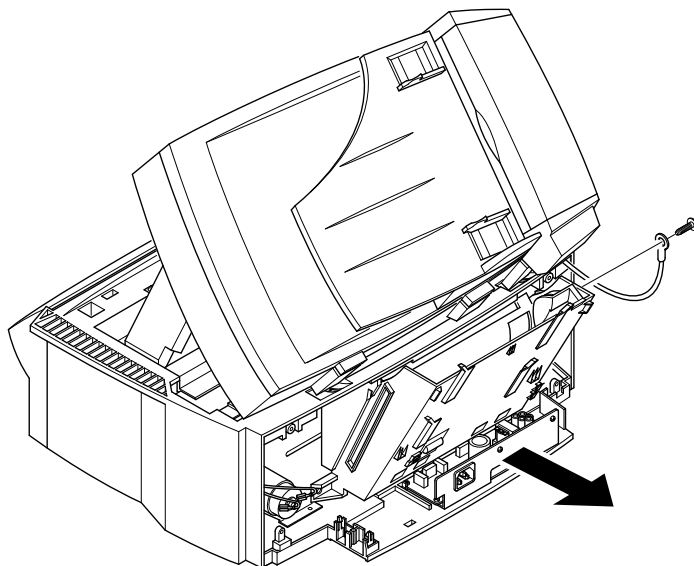
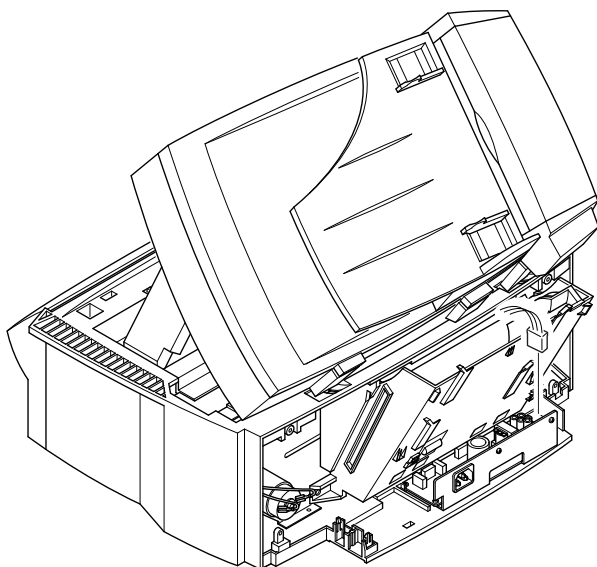


3. Pull the sensor actuator $\neq$ out, then slide the drive PBA in the direction of $\nearrow$.

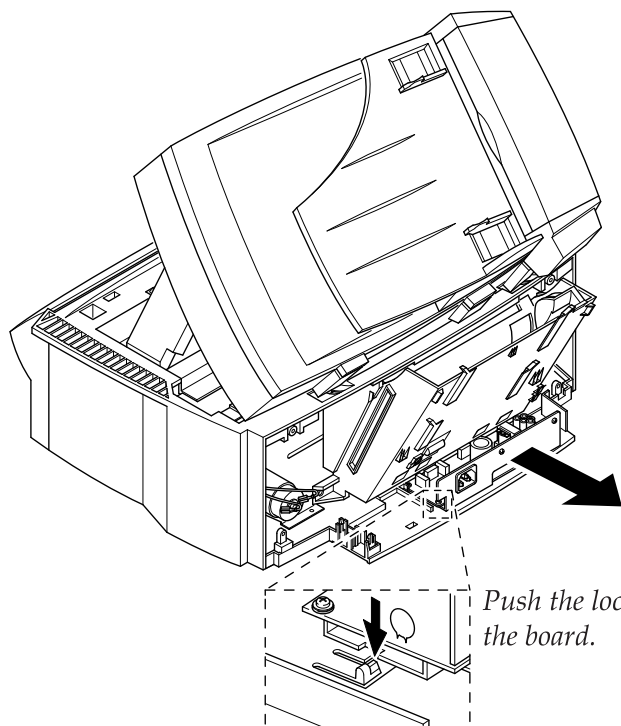


3-12 SMPS

1. Before you disassemble the Drive PBA, you should remove:
Rear cover. (See page 3-2)
2. Unplug one connector from the SMPS.
4. Remove one ground screw securing the SMPS to the main cover, then remove the SMPS.



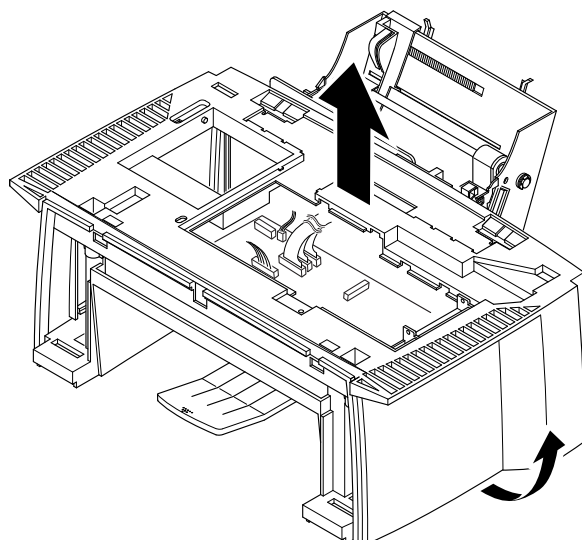
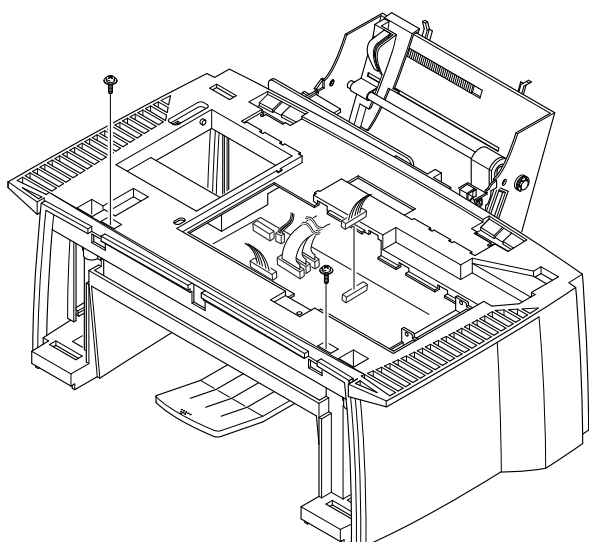
3. Unlatch the SMPS, and pull it toward you.



Push the locker to unlatch the board.

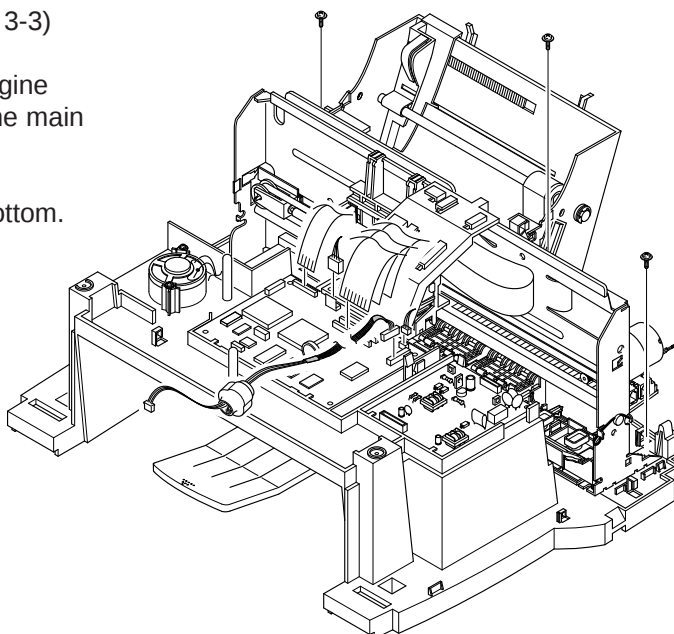
3-13 Main Cover

1. Before you disassemble the main cover, you should remove:
 - Rear cover (See page 3-2)
 - ADF Scanner unit assembly (See page 3-3)
 - Control Panel assembly (See page 3-9)
2. Remove two screws securing the main cover to the main frame and unplug one connector from the main PBA.
3. Pull the bottom ends on both sides apart to unlatch the cover from the main cover, then lift it up.



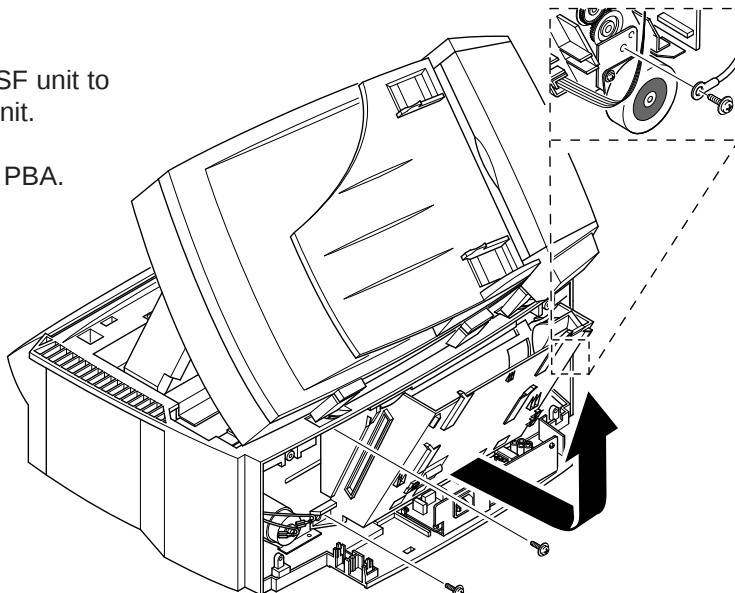
3-14 Engine Unit

1. Before you disassemble the engine unit, you should remove:
 - All covers (See page 3-2, 3-9)
 - ADF Scanner unit assembly (See page 3-3)
2. Remove the three screws securing the engine unit, and unplug all the connectors from the main PBA.
3. Take out the engine unit from the cover bottom.



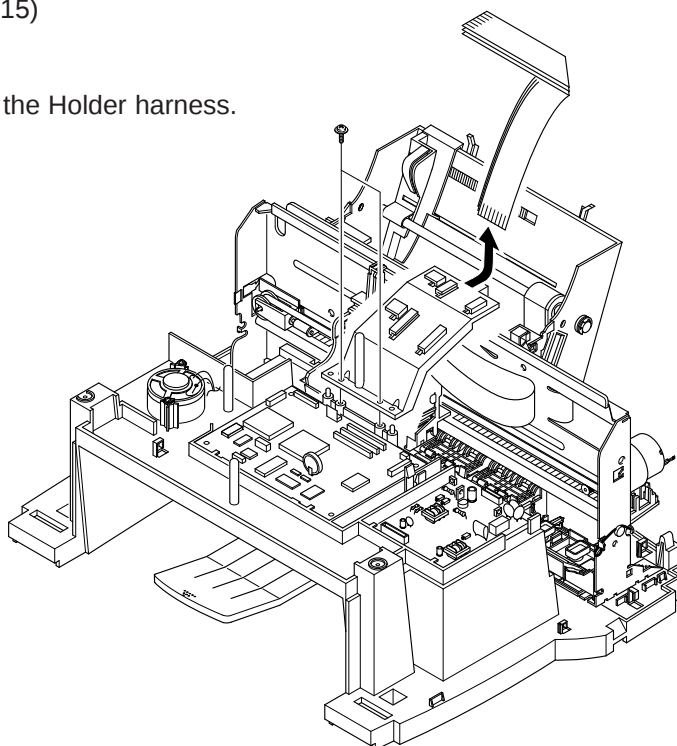
3-15 ASF Unit

1. Before you disassemble the ASF unit, you should remove:
Rear cover (See page 3-2)
2. Remove three screws securing the ASF unit to the cover bottom. Take out the ASF unit.
3. Unplug all connectors from the DHve PBA. Take the ASF unit.



3-16 Holder harness

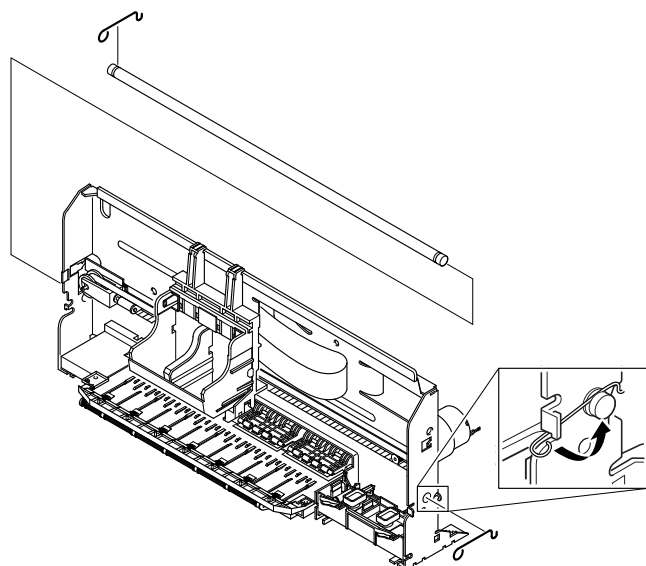
1. Before you disassemble the ASF unit, you should remove:
Rear cover (See page 3-2)
ADF Scanner unit assembly (See page 3-3)
Control Panel assembly (See page 3-9)
Main cover (See page 3-15)
2. Unplug all connectors from the Holder harness.
3. Remove two screws the Holder harness to the cover bottom.
Take out the Holder harness.



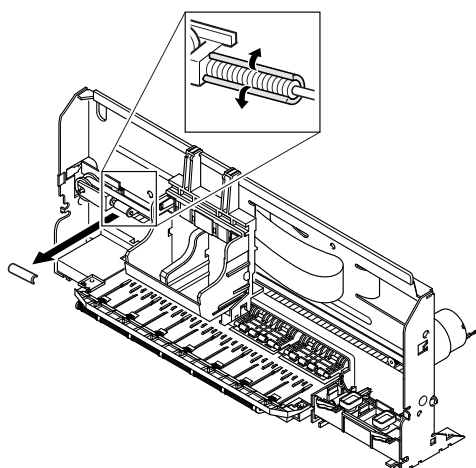
3-17 Cartridge Assembly

1. Before you disassemble the FPC cable you should remove:
 - All covers (See page 3-2, 3-9)
 - ADF Scanner unit assembly (See page 3-3)
 - Engine unit (See page 3-15)
 - ASF unit (See page 3-16)
 - Holder harness (See page 3-16)

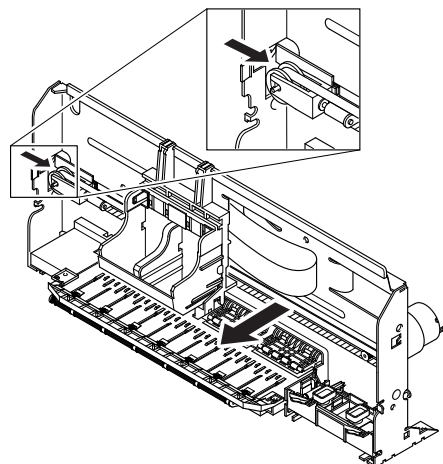
2. Rotate to remove both springs securing the carrier shaft. Then take out the carrier shaft.



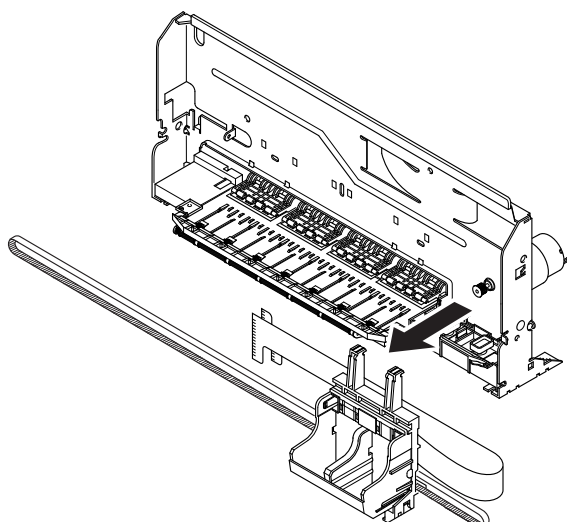
3. Remove the C-cab.



4. Push the holder pulley to the right and take out the belt.



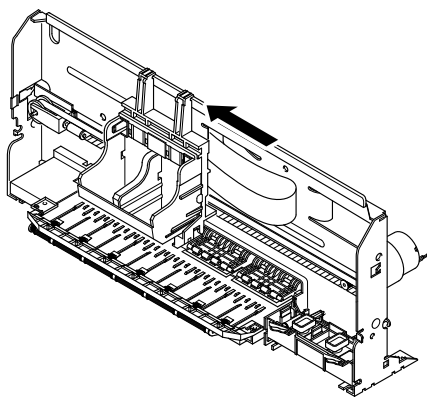
5. Take out the cartridge carrier from the main frame.



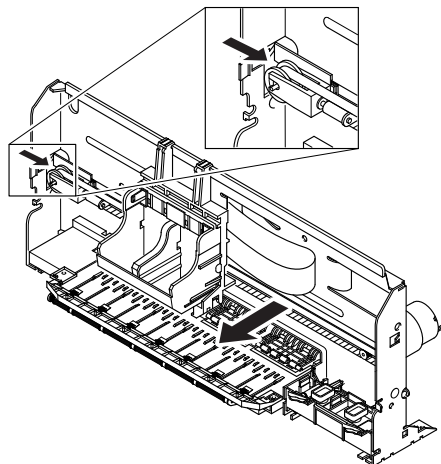
3-18 Carrier Motor

1. Before you disassemble the carrier motor you should remove:
 - All covers (See page 3-2, 3-9)
 - ADF Scanner unit assembly (See page 3-3)
 - Engine unit (See page 3-15)
 - ASF unit (See page 3-16)
 - Holder harness (See page 3-16)

2. Push the cartridge carrier to the direction of arrow.

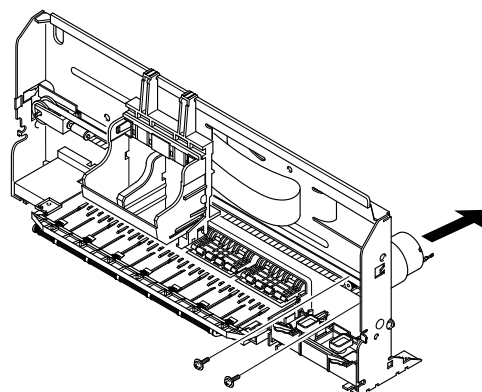
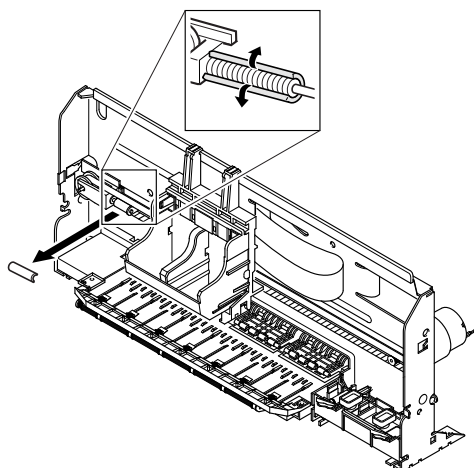


4. Push the holder pulley and remove the belt only.



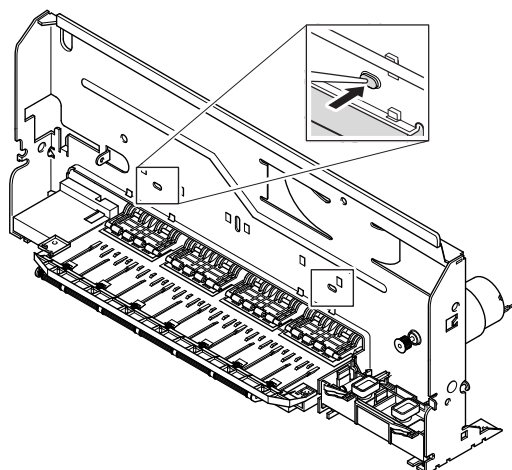
5. Remove two screws securing the carrier motor and take out the motor from the main frame.

3. Remove the C-cab.

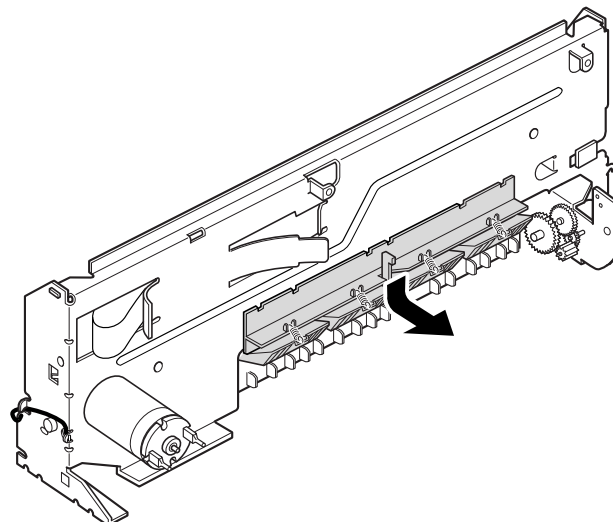


3-19 Roller Holder

- Before you disassemble the FPC cable you should remove:
 - All covers (See page 3-2, 3-9)
 - ADF Scanner unit assembly (See page 3-3)
 - Engine unit (See page 3-15)
 - ASF unit (See page 3-16)
 - Holder harness (See page 3-16)
 - Cartridge assembly (See page 3-18)
- Unlatch the holder by pushing the parts hooked to the main frame using a sharp tool.

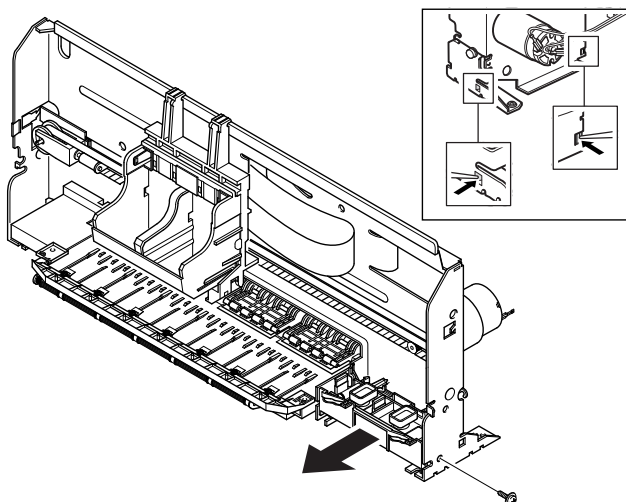


- Pull the holder downward and take it out from the main frame.



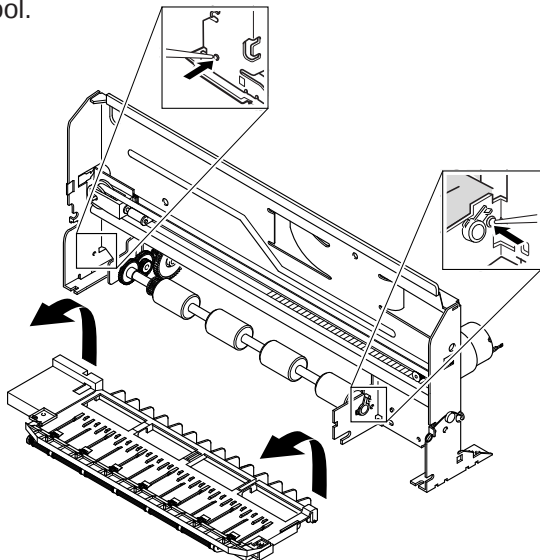
3-20 Home Ass'y

- Before you disassemble the ASF unit you should remove:
 - All covers (See page 3-2, 3-9)
 - ADF Scanner unit assembly (See page 3-3)
 - Engine unit (See page 3-15)
 - ASF unit (See page 3-16)
 - Holder harness (See page 3-16)
- Remove one screw securing the home ass'y.
- Unlatch the home assembly by pushing the parts hooked to the main frame using a sharp tool. Take out the home assembly from the main frame.

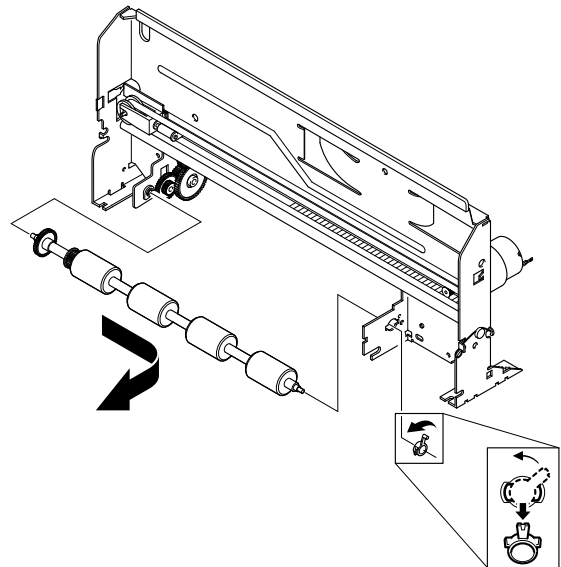


3-21 Base Frame and Feed Roller

1. Before you disassemble the FPC cable you should remove:
 - All covers (See page 3-2, 3-9)
 - ADF Scanner unit assembly (See page 3-3)
 - Engine unit (See page 3-15)
 - ASF unit (See page 3-16)
 - Holder harness (See page 3-16)
 - Cartridge assembly (See page 3-18)
 - Home ass'y (See page 3-19)
2. Unlatch the base frame assembly by pushing the parts hooked to the main frame using a sharp tool.

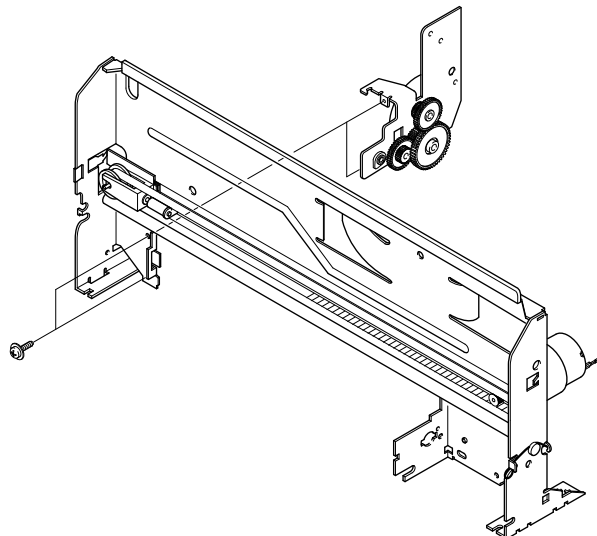


3. Turn the bearing feed counterclockwise and take out the base frame and feed roller from the main frame.



3-22 Line Feed Bracket Assembly

1. Before you disassemble the FPC cable you should remove:
 - All covers (See page 3-2, 3-9)
 - ADF Scanner unit assembly (See page 3-3)
 - Engine unit (See page 3-15)
 - ASF unit (See page 3-16)
 - Holder harness (See page 3-16)
 - Cartridge assembly (See page 3-18)
 - Home ass'y (See page 3-19)
 - Base frame and feed roller (See above)
2. Remove two screws and take out the LF bracket ass'y from the main frame.



4. Circuit

4-1 Main PBA

4-1-1 Summary

The main circuit that consists of CPU, MFP controller (built-in 32bit RISC processor core: ARM7TDMI) including various I/O device drivers, system memory, scanner, printer, motor

driver, modem and PC I/F controls the whole system. The entire structure of the main circuit is as follows:

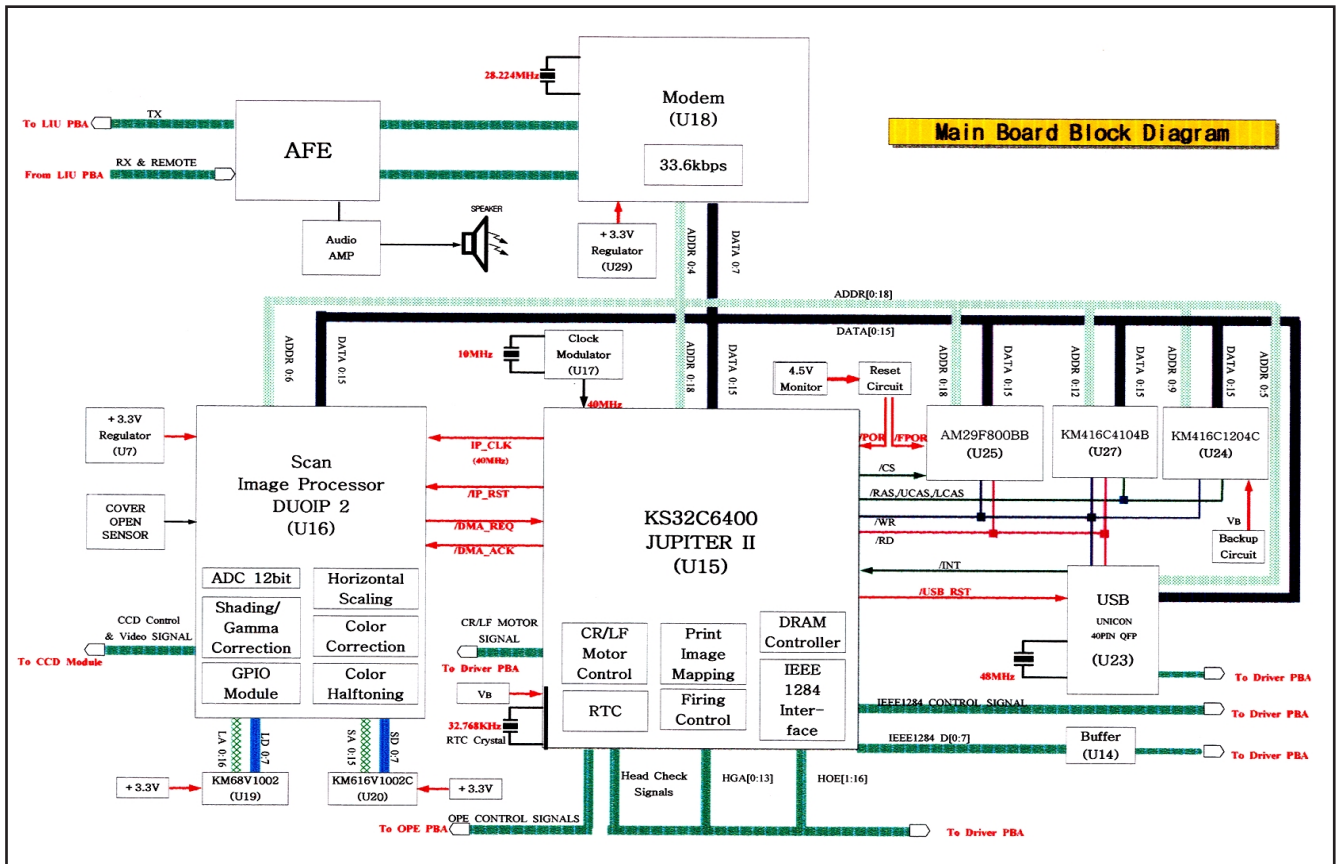


Fig.4-1-1 Entire Structure of Main PBA Circuit

4-1-2 MFP Controller (KS32C6400 : U15)

MFP Controller consists of CPU (ARM7TDMI RISC processor), 4K-byte cache, data and address buses, print head controller, parallel port interface, external DMA part to receive data from external color image processor (DUOIP2 : U16), LF/CR motor controller and I/O controller.

SYSTEM CLOCK

IP-CLK : U15 - 151

The internal clock frequency is 40MHz. 40MHz system clock (MCLK) supplied from the outside is used without being divided inside.

DATA & ADDRESS BUS CONTROL

- /RD & /WR : U15 - 112 & U15 - 113 or U16 - 8 & 9, U27 - 36 & 13, U25 - 28 & 11, U23 - 33 & 32, /RD & /WR signals are synchronized with MCLK(40MHz) and become LOW ACTIVE. These signals are strobe signals used to read and write data when each CHIP SELECT is connected with /RD and /WR pin of RAM, ROM and the outside devices and becomes active.

- CHIP SELECT(/IP_CS, /ROM_CS1, /IUSB_CS, /MCS)
 - /IP_CS : U15 - 119 or U16 - 7, DUOIP CHIP SELECT (LOW ACTIVE)
 - /ROMCS : U15 - 105 or U25 - 26, FLASH MEMORY CHIP SELECT (LOW ACTIVE)
 - /USB_CS : U15 - 118 or U23 - 31, USB CHIP SELECT (LOW ACTIVE)
 - /RAS :U15 - 108 or U27 - 14,
 - /MCS : U15 -117or U18 -5, MODEM CHIP SELECT (LOW ACTIVE)

When each CHIP SELECT is low, data can be read or written.

- D0 - D15 : U15 - 63 ~ 67, 72 ~ 79
 - 16bit data bus
- A0 - A17 : U15 - 81 ~ 91, 93 ~ 100
 - ADDRESS BUS (A19 - A21 are reserved.)

EXTERNAL DMA

It brings data from an external device (DUOIP:U16) using DMA channel 0. DMA REQUEST (U15 - 137 or U16 - 4) sent from an DUOIP2(U16) to KS32C6400 activates DMA ACKNOWLEDGE (U15 - 138 or U16 - 3) signal and drives DMA channel 0 to produce CHIP SELECT and READ STROBE (/RD) at the external device and bring data from it. It generates address of destination memory, CHIP SELECT and WRITE STROBE (/WR) in order to move this data into destination memory, and then stores the data.

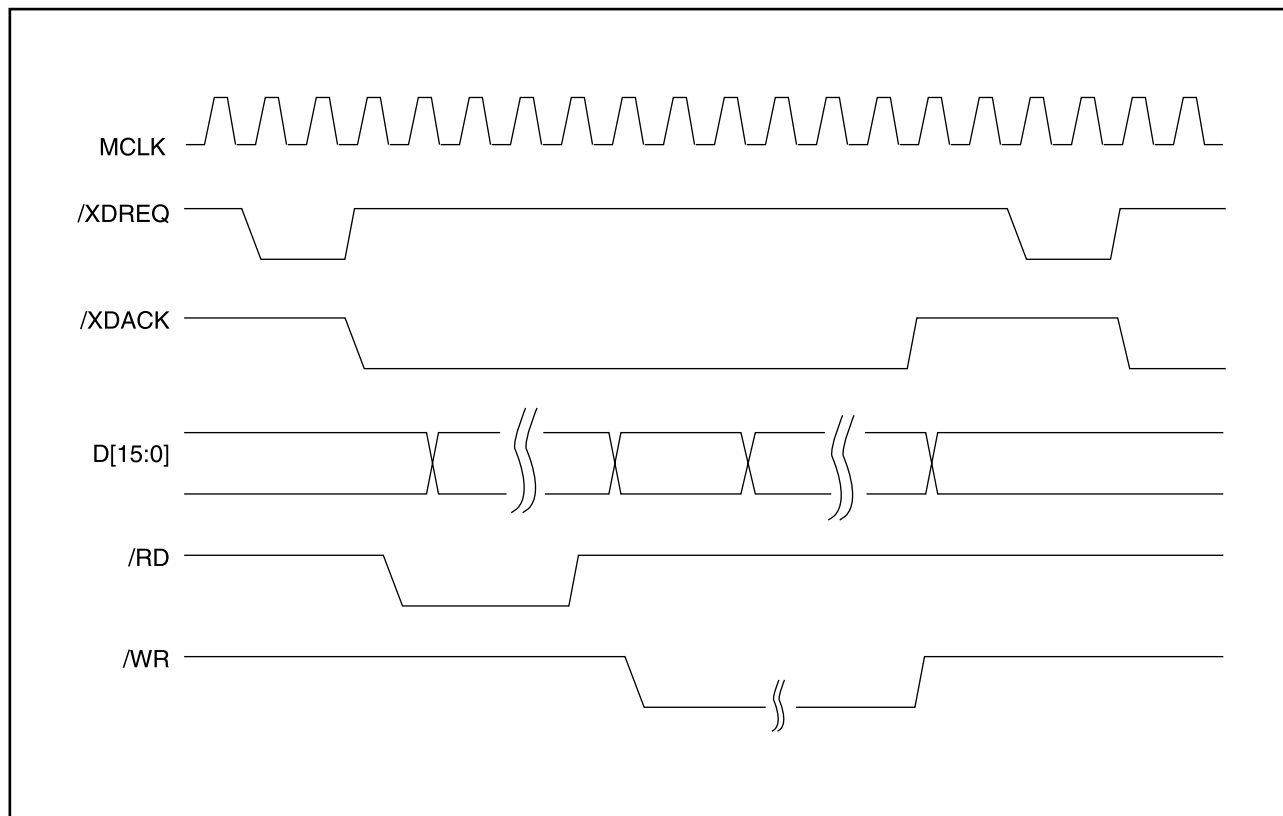


Fig.4-1-2 EXTERNAL DMA TIMING DIAGRAM

DRAM CONTROLLER

As KS32C6400 has DRAM controller in it, DRAM can be connected with external memory. The control mode of DRAM controller enabling EARLY WRITE, NORMAL READ, PAGE MODE, and BYTE/HALF WORD ACCESS supports EDO DRAM as well as normal DRAM. DRAM READ/WRITE signals are /RD and /WR signals used to control system buses. It supports CAS BEFORE RAS for DRAM REFRESH and self-refresh mode for DRAM backup. Connected with common /LCAS, /UCAS and /RAS, it consists of 2 banks. Though each may be connected with up to 1M - 4M halfword, one of 64bit is connected for this product.

PARALLEL PORT INTERFACE

This part connected with the computer through the centronics connector makes possible parallel interface with the computer. Data is transmitted according to the standard of IEEE P1284. This MFP controller supports compatibility mode the traditional way to transmit print data, nibble mode (4bit data) to upload data to the computer, and duplex high-speed transmission with the computer ECP (Extended Capabilities Port: 8bit data transmission) all together.

It enables PC data to be printed and scanned data to be uploaded quickly to the computer. Besides, various data transmission and reception with the computer such as uploading received fax data, downloading fax data to be sent, and monitoring system control signals and system conditions are carried out here.

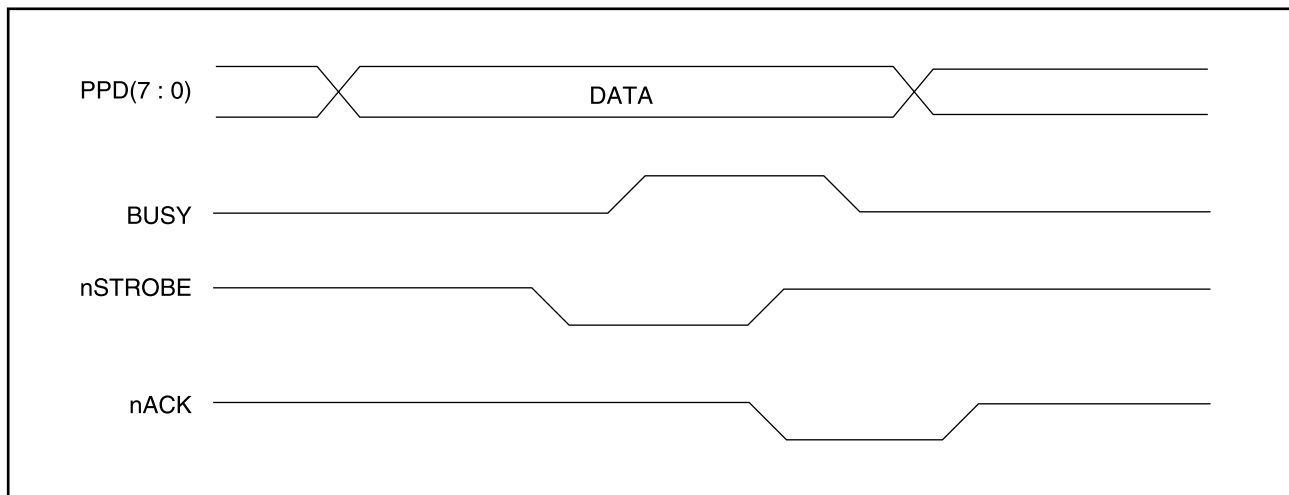


Fig.4-1-3 Compatibility Hardware handshaking Timing

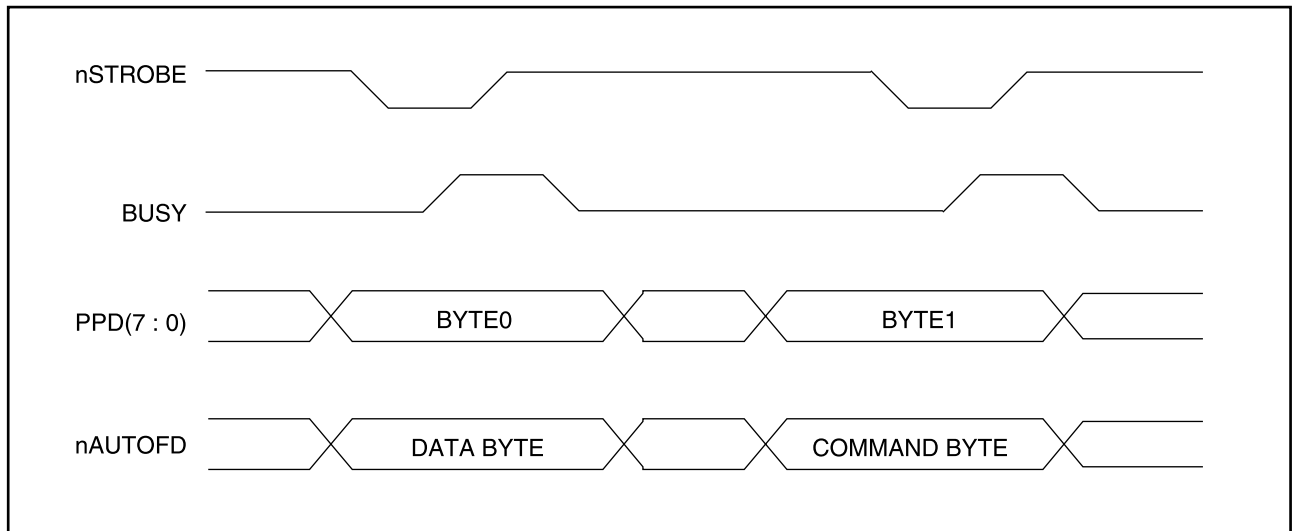


Fig.4-1-4 ECP Hardware Handshaking Timing (forward)

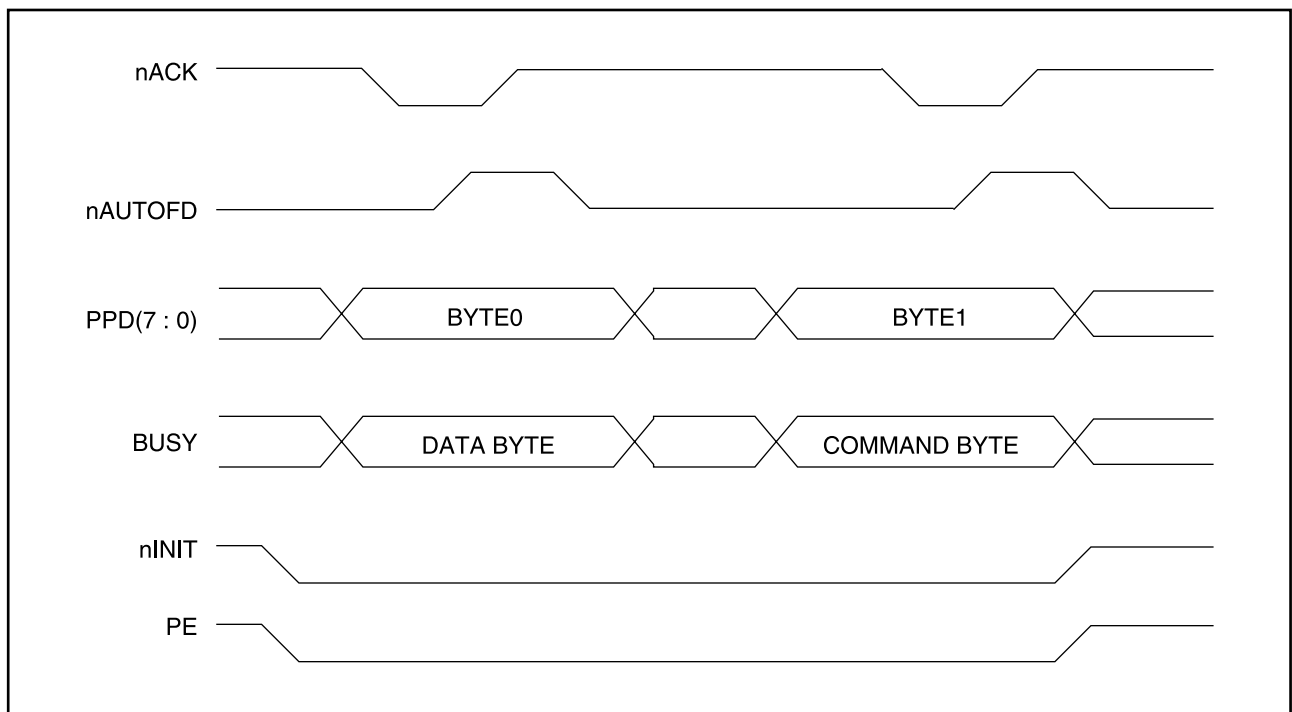


Fig.4-1-5 ECP Hardware Handshaking Timing (reverse)

INKJET HEAD CONTROLLER

- HGA [13:1] : U15 - 1 ~ 11,159,160, Gate Address, Active Low
- HOE [16:1] : U25 - 13 ~ 29, Head Enable, Active High.
- /FAULT-TEST : U16 - 127, Head Fault Test, Active Low
- /M_HEAD_EN : U16 - 129, Mono Head Enable, Active Low
- /C_HEAD_EN : U16 - 128, Color Head Enable, Active Low

This part produces major control signals used to drive INKJET head. It consists of signals to drive head nozzles, /HGA[13:1], HOE[16:1], /FAULT-TEST, /M_HEAD-EN, and C_HEAD-EN, and consists of signals to check the status of the head, HEAD-DATA.

It has double height print head, system 208 nozzles for mono and 192 nozzles for color, and uses /HGA[13:1], HOE[16:1] signals and /HEAD-EN to drive these nozzles. Fig.4-1-6 is timing diagram of each signal.

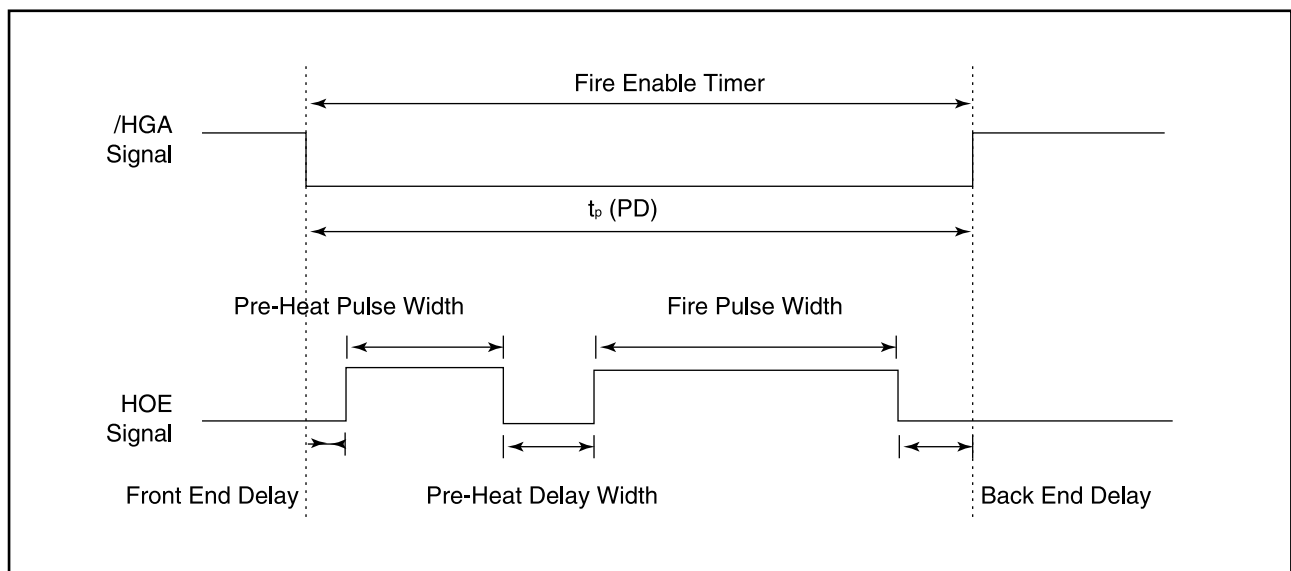


Fig.4-1-6 Timing Diagram to Drive Head

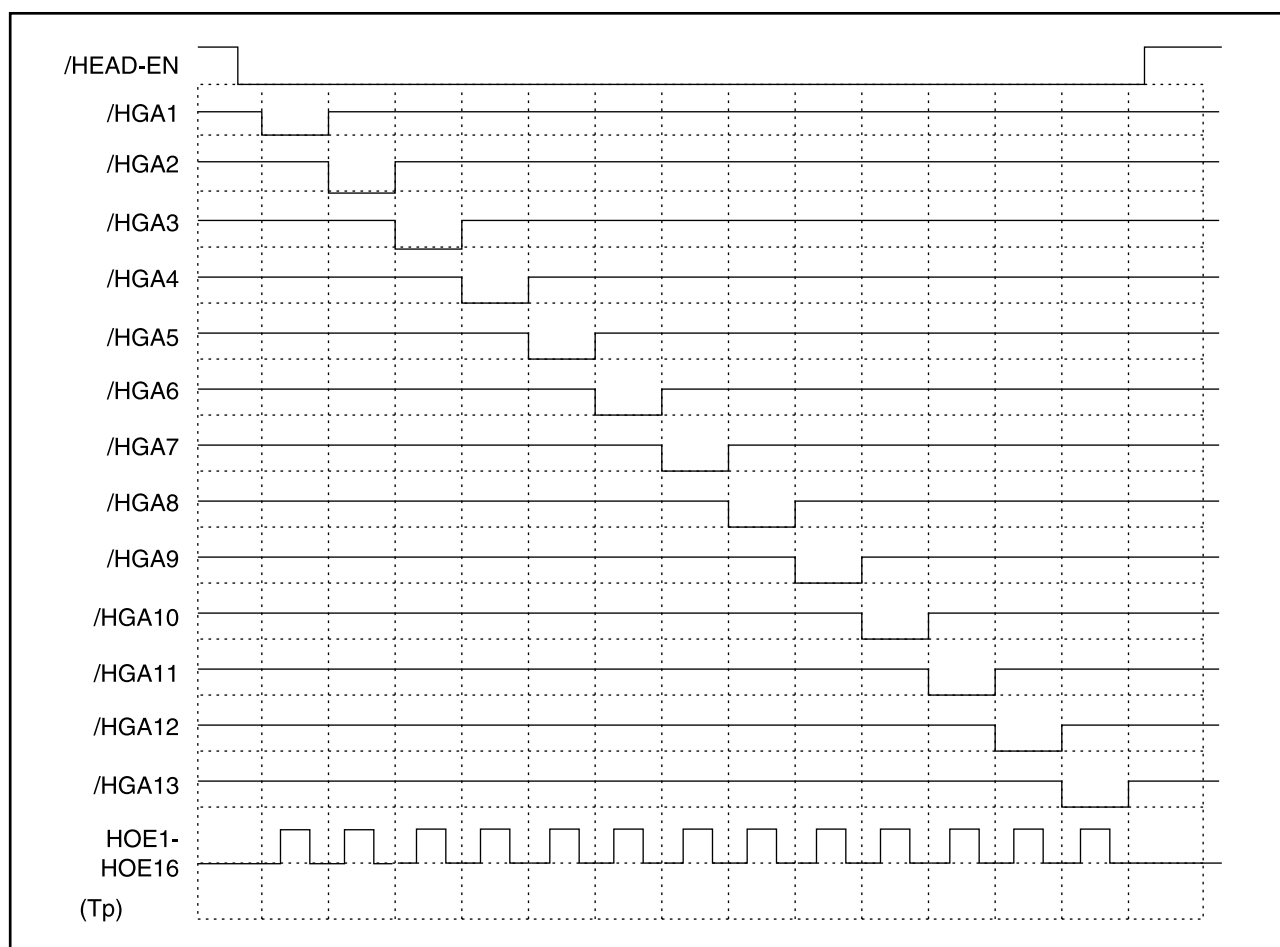


Fig.4-1-7 Timing Diagram for Each Nozzle

The above control signals are sent to head driver and the head driver converts these signals to the level (+12V) to drive head nozzles.

PRINTER MOTOR CONTROLLER

- DIR : U15 - 34, Rotation Direction
- PWM : U15 - 32, Pulse Width Modulation Output, Active High
- LFPHA : U15 - 140, LF Motor Phase A
- LFPHB : U15 - 143, LF Motor Phase B
- LFIA0, 1 : U15 - 139, 141, LF Motor Phase A Current Mode
- LFIB0, 1 : U15 - 142, 144, LF Motor Phase B Current Mode

MFP Controller (KS32C6400:U15) supports both DC motor and stepper motors. It controls CR (Carriage Return) motor used to print documents and LF (Line Feed) motor used to feed and eject paper.

CR motor controller can support 75, 150, 200, 300, 600, or 1200dpi according to resolution, while LF motor controller supports uni-polar and bi-polar according to the kind of motors. Though full step, half step and software control are possible for both, CR motor is controlled half step and LF motor is controlled half step and quarter step here.

KS32C6400 Assigned I/O Ports & /Chip_SELECT Pins

* /External_Chip_Select : /ECS0 : Pin117 : /MCS : Modem Chip Select.
 : /ECS1 : Pin118 : /USB_CS : USB Chip Select.
 : /ECS2 : Pin119 : /IP_CS : DUO_IP2 Chip Select.

PORT NAME	PIN NO	I/O	SIGNAL NAME	DESCRIPTION	
				H	L
GOP0/TXD1	121	O	RESERVED	N.C	N.C
GOP1/TXD2	123	O	OPE_TXD	SERIAL DATA FROM KS32C6400 TO OPE MICOM	
GOP2/nEDACK1	138	O	/XDACK	IDLE STATE	DMA ACKNOWLEDGE TO SCAN IP
GOP3/TONE	148	O	KEYCLICK	KEYCLICK TONE	
GOP4/nRST0	149	O	WATCHDOG	WATCHDOG RESET OFF	WATCHDOG RESET
GOP5/nIOWR1	133	O	TONE_CTL	LINE MONITORING	KEYCLICK
GOP6/nIOWR2	154	O	/OPE_RST	OPE RESET OFF	OPE RESET
GOP7/nIORD1	155	O	/BIAS_ON	PRINT HEAD BIAS OFF	PRINT HEAD BIAS ON
GOP8/DRV_SDO	152	O	/IP_RST	DUO_IP2 RESET OFF	DUO_IP2 RESET ON
GOP9/CLKOUT	151	O	IP_CLK	40MHz CLOCK TO DUO_IP2	
GOP10	150	O	/USB_RST	RESET OFF : IDLE STATE	RESET ON
GOP11/nHSC	153	O	/SPK_CTL	AUDIO AMP OFF	AUDIO AMP OFF
GOP12/nEDACK2	128	O	/USB_XDACK	IDLE STATE	DMA ACKNOWLEDGE TO USB IC
GOP13/nECS3	42	O	/DRAM_EN	Disable DRAM to idle state	Enable DRAM to read state
GIP0/RXD1	122	I	RESERVED	N.C	N.C
GIP1/RXD2	124	I	OPE_RXD	SERIAL DATA FROM OPE MICOM TO KS32C6400	
GIP2/nEINT1	135	I	/MIRQ	MODEM INTERRUPT INACTIVE	MODEM INTERRUPT ACTIVE
GIP3/nEINT2	136	I	TX_INT	IDLE	TX MOTOR INTERRUPT
GIP4/nEDREQ1	137	I	/XDREQ	IDLE	DMA REQUEST FROM SCAN IP
GIP5/nEDREQ2	127	I	/USB_XDREQ	IDLE	DMA REQUEST FROM USB IC
GIP6/nEINT3	41	I	/USB_INT	IDLE	USB IC INTERRUPT
GIOP0/TCK	126	I	TCK	RESERVED TEST PIN FOR ICE(JTAG)	
GIOP1/TMS	125	I	TMS	RESERVED TEST PIN FOR ICE(JTAG)	
GIOP2/TDI	120	I	TDI	RESERVED TEST PIN FOR ICE(JTAG)	
GIOP3/nTRST	116	I	/TRST	RESERVED TEST PIN FOR ICE(JTAG)	
GIOP4/TDO	115	O	TDO	RESERVED TEST PIN FOR ICE(JTAG)	
GIOP5	103	O	/M_RST	MODEM RESET OFF : IDLE STATE	MODEM RESET ON
GIOP6	38	O	/HOOK_OFF	Ext. Phone Hook ON	Ext. Phone Hook OFF
GIOP7/nWAIT	31	O	/RING_DET	-	RING DETECTED
EEDATA	145	O	AMB_TEMP	AMBIENT TEMPERATURE DATA FROM HEAD	
EECLK	146	O	TX_CTL	RX PASS SIGNAL	TX LINE SIGNAL

RESET CIRCUIT

As for XK50CX, there are two power resets of primary reset(/F-POR) and secondary reset(/POR) and also reset by watchdog timer (/RSTO). Primary reset is used to initialize flash memory when the system is turned on, while secondary reset is used to initialize the whole system by initializing MFP controller (KS32C6400) after primary reset.

Primary reset makes flash memory wait in READ mode to fetch program codes, and secondary reset makes the main controller (KS32C6400) wake up and initialize external peripherals to operate the system. Fig.4-1-8 is Power Reset Timing Diagram.

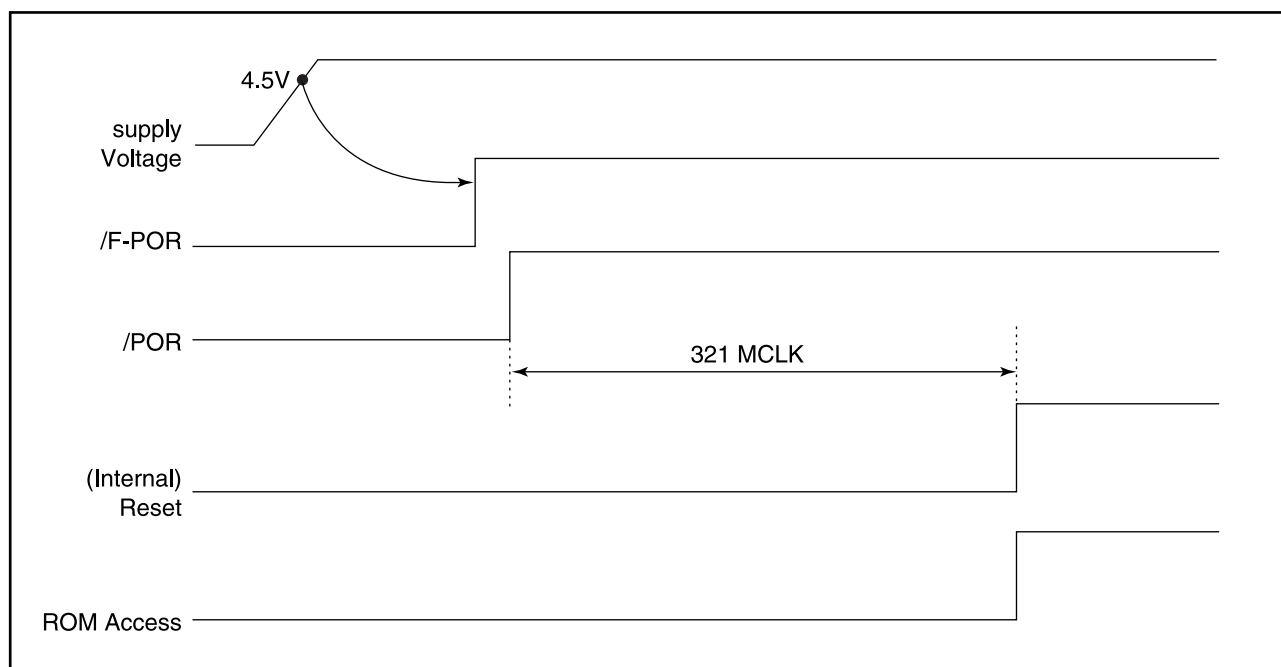


Fig.4-1-8 POWER RESET TIMING DIAGRAM

- POWER MONITOR (U13)

If +5V supplied to U13 is so unstable as to reach +4.65V - +4.35V (typically 4.5V), it will recognize it as power failure. Then XC61A-5 output terminal becomes low (0V) and the voltage is impressed to flash memory and KS32C6400, running RESET (LOW ACTIVE). Flash memory

and KS32C6400 are reset first. Thereafter, print control parts and DUOIP (Color Image Processor) linked to /RSTOUT terminal of KS32C6400 are reset as well. U13 output terminal of open drain structure is pulled up 1MΩ and put out.

4-1-3 System Memory

System memory consists of 1MB flash memory, 8MB DRAM and 2MB DRAM (back-up). Flash memory, DRAM are selected by each CHIP SELECT (/ROMCS, /RAS0, /RAS 1, /LCAS, /UCAS), and data is accessed half word (16bits) by half word.

4-1-4 Scanner

SUMMARY

This flat-bed type device to read manuscripts has 600dpi CCD as an image sensor. There is one optical sensor for detecting CCD home position and Scan-end position. The home position is detected by a optical sensor which is attached to the CCD Module. The Scan-end position is calculated by numer of motor step.

SCAN RESOLUTION

- Draft : 300 x 600 (H x V)
- Normal : 600 x 600 (H x V)
- Best : 600 x 600 (H x V)

CCD

Contact Image Sensor improves productivity and allows a compact design.

This machine uses a color CCD.

- Minimum Scan Line Time for One Color : 5mS
- Light Source Power : +11.75V
- Maximum Pixel frequency : 3MHz
- Effective Sensor Element : 5340 X 3
- Clamp Level : 0.7~0.8V
- Bright Output : MIN 0.8V

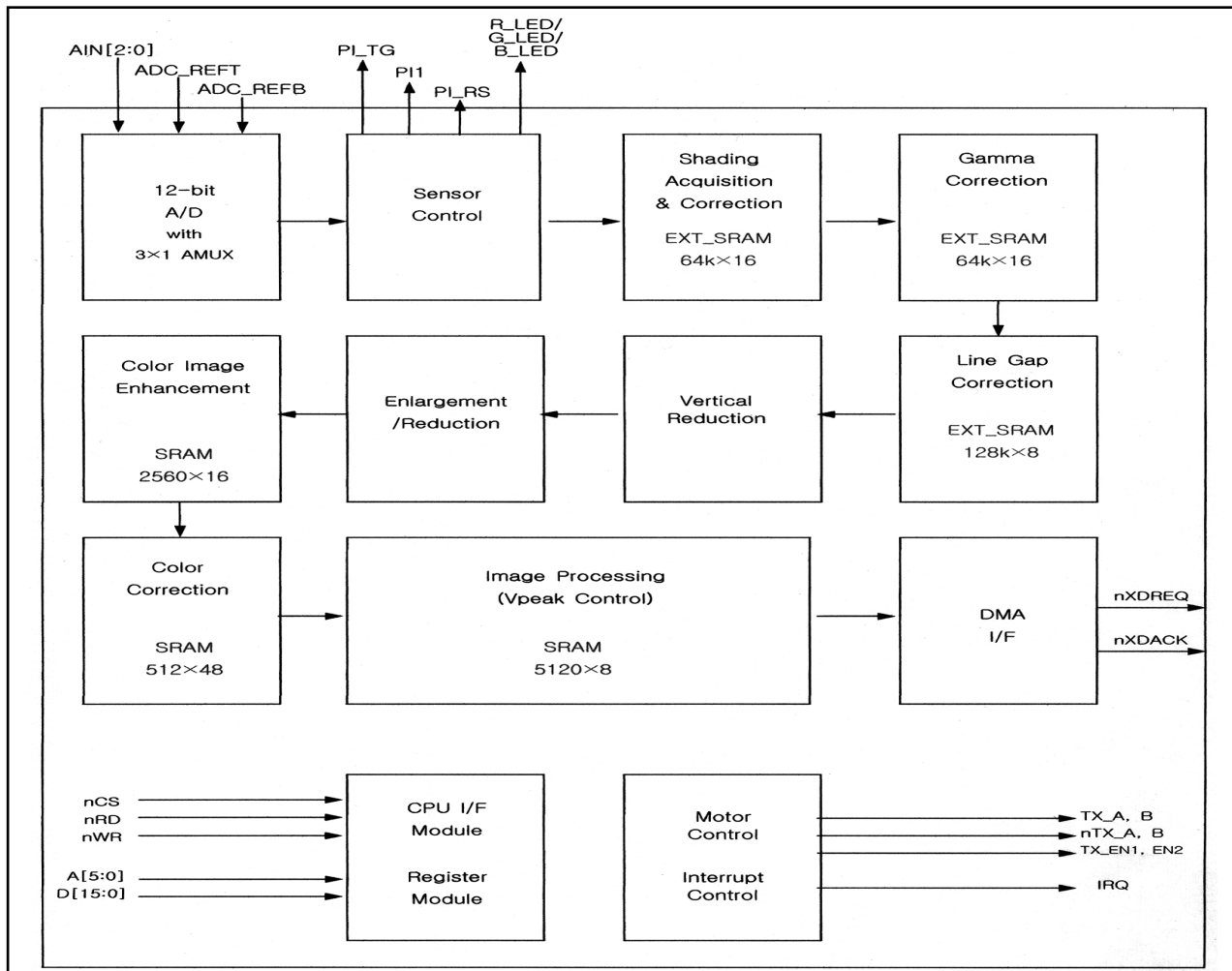


Fig.4-1-9 DUOIP2 Block Diagram

IMAGE PROCESSING

(1) Image signal input: CCD output signals are offset at 0.7V with about 2V white level. Optimum input level of DUOIP2 is 0.7V offset and 2V white level. So OP AMP is used to design interface circuit of DUOIP2.

(2) Image processing : The scanner reads pixel data value of image sensor CCD Charge Coupled Device 600dpi lines by 600dpi lines. For mono copy mode, two kinds of algorithms are used. One is TIP algorithm for Fast copy and normal, the other is Error diffusion algorithm for Best copy.

For color copy mode, Samsung color halftoning algorithm is used for all modes. The color correction and conversion into CMY print data are certainly processed for improving image quality.

The external SRAM (1Mbit, 15ns) is used for only color halftoning process, and the other processing parameters are handled using internal SRAM. Also another external SRAM (1Mbit-15ns) is used for LGC (Line gap correction) of CCD Module.

KEY FEATURES

- (1) Target Product : Color Fax/Inkjet Digital Color Copier.
- (2) Packeg & Technology : 0.35 μ CMOS Process (TLM), 208 QFP, STD90 Library.
- (3) Maximum Action Frequency : 40Mhz
- (4) Contain ON-CHIP OSCILLATOR.
- (5) Only assist Rester Scanning Method.
- (6) Image Sensor : 300/600dpi color CIS & CCD.
- (7) A/D Converter : 12bits pipelined half-flash type contain.
- (8) Support Various Type of Scanning .
 - 1) COLOR GRAY IMAGE : each 8 bits / RGB
 - 2) MONO GRAY IMAGE : 8 bits / pixel
 - 3) COLOR BINARY IMAGE : 3 or 4 or 6 bits / pixel (for CMY/CMYK/PHOTO)
 - 4) MONO BINARY IMAGE : 1 bits / pixel (for TEXT/PHOTO)
- (9) Maximum Scanning With : A4, 600dpi (maximum 5K available by line)
- (10) Minimum Pixel Processing Time : 11 system clock (275nsec)
- (11) Ideal MSLT (A4, 600dpi Standard)
 - 1) COLOR GRAY IMAGE : 3 X 5K X 275nsec =4.125msec (2 CPM)
 - 2) MONO GRAY IMAGE : 1 X 5K X 275nsec =1.375msec (6 CPM)

3) COLOR BINARY IMAGE : 3 X 5K X 275nsec =4.125msec (2 CPM)

4) MONO BINARY IMAGE : 1 X 5K X 275nsec =1.375msec (6 CPM)

(12) Support Smart Media I/F

- For ECC, when the Host read/write the Smart Media by page, automatically generating the 3 byte of parity information on the page.

(13) Contain Step Motor Controller

- Using IRQ, updating notor pattern and interval as S/W.

- Motor pattern and interval pass by double buffering structure.

- Possible to activating and motivating the Image Sensor.

(14) Support Memory Copy Function

- Using DMA RX, printing image saved on system data memory.

(15) For the various CCD I/F, support maximum, 5 lines of LGC function.

(16) Contain SRAM BIST(Built-In Self Test) Logic.

IMAGE PROCESSING PART

(1) LAT(Local Adaptive Thresholding) for TEXT document.

- Use 5 X 5 LOCAL WINDOW

- ABC(Automatic Background Control) function (Tmin automatic change)

(2) Mixed mode processing for PHOTO or TEXT/ PHOTO mixed document.

- (MONO/COLOR) IMAGE ENHANCEMENT→ MODIFIED ERROR DIFFUSING.

- Serching the edge using directing edge algorithm as considered the visual characteristic of human then emphasize and apply the MODIFIED ERROR DIFFUSION METHOD.

(3) Color Halftoning

- MODIFIED ERROR DIFFUSION METHOD.

(Removing the worm artifact phenomenon which is problem of existing error diffusing method and preventing the overlapping color of cyan and megenta in the bright scene.)

- Normal copy : color ink(CMY) + black ink(K)
→ 3color (CMY) or 4color (CMYK)

- Photo copy : color ink(CMY) + photo ink(KLcLm)
→ 6color (CMYKLcLm)

DUO_IP2 Assigned I/O Port

PORT NAME	PIN NO	I/O	SIGNAL NAME	DESCRIPTION																																					
				H	L																																				
GPO0	121	O	LEVEL_SH	CCD LEVEL SHIFT ON	CCD LEVEL SHIFT OFF																																				
GPO1	122	O	LAMP	CCD LAMP ON	CCD LAMP OFF																																				
GPO2	123	O	DP	DIAL PULSE ON	DIAL PULSE OFF : IDLE STATE																																				
GPO3	124	O	RESERVED	-	-																																				
GPO4	127	O	/FAULT_TEST	-	TEST INK HEAD																																				
GPO5	128	O	/C_HEAD_EN	DISABLE COLOR PRINT HEAD	ENABLE COLOR PRINT HEAD																																				
GPO6	129	O	/M_HEAD_EN	DISABLE MONO PRINT HEAD	ENABLE MONO PRINT HEAD																																				
GPO7	130	O	/SRAM_CS	DISABLE DUO IP SRAM 0 & 1	ENABLE DUO IP SRAM 0 & 1																																				
GPIO10	56	O	SCAN_CTL	TX MOTOR SELECTED	ADF MOTOR SELECTED																																				
GPIO11	57	I	OK2PRINT	NO FAULT IN PRINT HEAD	FAULT IN PRINT HEAD																																				
GPIO12	58	I	MPRES	BLACK HEAD IN PLACE	NO HEAD																																				
GPIO13	59	I	C_HEADDATA	COLOR HEAD DATA																																					
GPIO14	62	I	M_HEADDATA	MONO HEAD DATA																																					
GPIO15	63	O	PREHEAT_C	PRINT HEAD PREHEATING	-																																				
GPIO16	64	I	CPRES	COLOR HEAD IN PLACE	NO HEAD																																				
GPIO17	65	O	PREHEAT_M	PRINT HEAD PREHEATING	-																																				
GPIO18	68	I	P_EMPTY	PAPER EMPTY	PAPER READY																																				
GPIO19	69	I	/P_EXIT	-	PAPER DETECTED																																				
GPIO1A	70	I	HOME	CCD IN HOME POSITION	CCD OUT OF HOME POSITION																																				
GPIO1B	71	O	CML_ON	<table><tr><th>VOL2</th><th>VOL1</th><th>VOL0</th><th>4051 OUTPUT</th></tr><tr><td>L</td><td>L</td><td>L</td><td>VOLUME LEVEL 7 : RING VOLUME MAX</td></tr><tr><td>L</td><td>L</td><td>H</td><td>VOLUME LEVEL 6 : RING VOLUME</td></tr><tr><td>L</td><td>H</td><td>L</td><td>VOLUME LEVEL 5 : RING VOLUME MIN</td></tr><tr><td>L</td><td>H</td><td>H</td><td>VOLUME LEVEL 4 : RESERVED</td></tr><tr><td>H</td><td>L</td><td>L</td><td>VOLUME LEVEL 3 : LINE MONITORING VOLUME MAX</td></tr><tr><td>H</td><td>L</td><td>H</td><td>VOLUME LEVEL 2 : LINE MONITORING VOLUME</td></tr><tr><td>H</td><td>H</td><td>L</td><td>VOLUME LEVEL 1 : LINE MONITORING VOLUME</td></tr><tr><td>H</td><td>H</td><td>H</td><td>VOLUME LEVEL 0 : LINE MONITORING VOLUME MIN</td></tr></table>		VOL2	VOL1	VOL0	4051 OUTPUT	L	L	L	VOLUME LEVEL 7 : RING VOLUME MAX	L	L	H	VOLUME LEVEL 6 : RING VOLUME	L	H	L	VOLUME LEVEL 5 : RING VOLUME MIN	L	H	H	VOLUME LEVEL 4 : RESERVED	H	L	L	VOLUME LEVEL 3 : LINE MONITORING VOLUME MAX	H	L	H	VOLUME LEVEL 2 : LINE MONITORING VOLUME	H	H	L	VOLUME LEVEL 1 : LINE MONITORING VOLUME	H	H	H	VOLUME LEVEL 0 : LINE MONITORING VOLUME MIN
VOL2	VOL1	VOL0	4051 OUTPUT																																						
L	L	L	VOLUME LEVEL 7 : RING VOLUME MAX																																						
L	L	H	VOLUME LEVEL 6 : RING VOLUME																																						
L	H	L	VOLUME LEVEL 5 : RING VOLUME MIN																																						
L	H	H	VOLUME LEVEL 4 : RESERVED																																						
H	L	L	VOLUME LEVEL 3 : LINE MONITORING VOLUME MAX																																						
H	L	H	VOLUME LEVEL 2 : LINE MONITORING VOLUME																																						
H	H	L	VOLUME LEVEL 1 : LINE MONITORING VOLUME																																						
H	H	H	VOLUME LEVEL 0 : LINE MONITORING VOLUME MIN																																						
GPIO1C	73	O	VOL0																																						
GPIO1D	74	O	VOL1																																						
GPIO1E	75	O	VOL2																																						
GPIO1F	76	I	ADF_P_DET	NO DOCUMENT	DOCUMENT DETECT																																				
GPIO20	79	O	RECALL	EARTH RECALL ON	RECALL OFF																																				
GPIO21	80	O	RX_CTL	TX LINE OR REMOTE	RX LINE																																				
GPIO22	81	I	Reserved	-	-																																				
GPIO23	82	I	ADF_P_POS	Document Loading	Document in Scan Position																																				
GPIO24	84	I	Reserved	-	-																																				
GPIO25	85	I	Reserved	-	-																																				
GPIO26	86	I	Reserved	-	-																																				
GPIO27	87	I	Reserved	-	-																																				
GPIO28	90	I	Reserved	-	-																																				
GPIO29	91	I	Reserved	-	-																																				
GPIO2A	92	I	Reserved	-	-																																				
GPIO2B	93	I	Reserved	-	-																																				
GPI 2C	106	I	Reserved	-	-																																				
GPIO2D	107	O	Reserved	-	-																																				
GPIO2E	108	O	SCAN_MOT_REF	Low Speed	Normal Speed																																				
		I	DOWNLOAD(Initial State)	NORMAL MODE	DOWNLOAD MODE																																				
GPIO2F	109	I	COVER_OPEN	COVER OPEN	COVER CLOSED																																				

4-1-5 FAX Transceiver

4-1-5-1. GENERAL

This circuit processes transmission signals of modem and between LIU and modem.

4-1-5-2. MODEM (U18)

FM336 is a single ship fax modem. It has functions of DTMF detection and DTMF signal production as well as functions of modem. TX A1, 2 is transmission output port and RX IN is received data input port. /POR signal controlled by MFP controller (U15:KS32C6400) can initialize modem (/M_RST) without turning off the system.

D0-D7 are 8-bit data buses. RS0-RS4 signals to select the register in modem chips. /RS and /WR signals control READ and WRITE respectively. /IRQ is a signal for modem interrupt.

Transmission speed of FM336 is supported up to 33.6k.

The modem is connected to LINE through transformer directly.

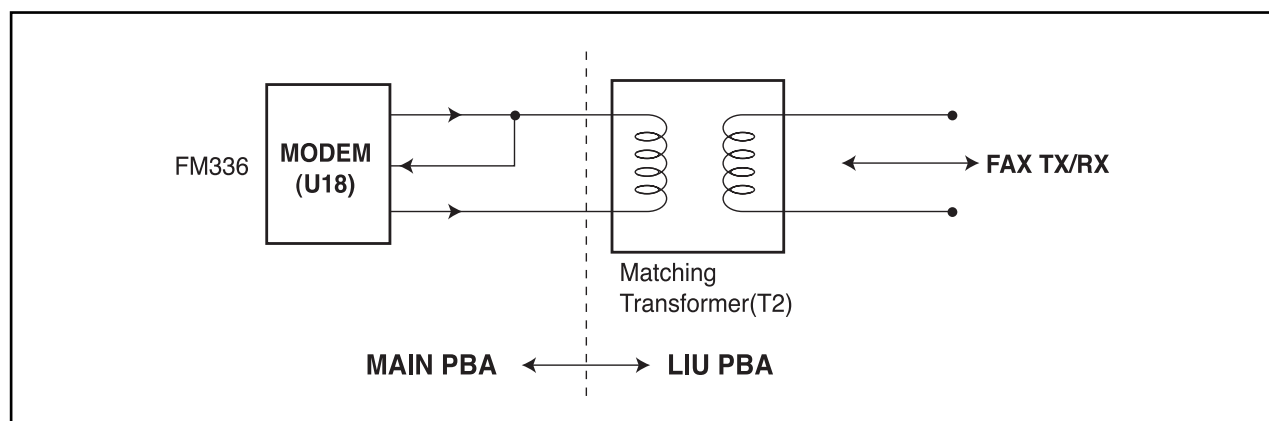


Fig.4-1-10 FAX TRANSCEIVER

4-1-6 USB CONTROLLER

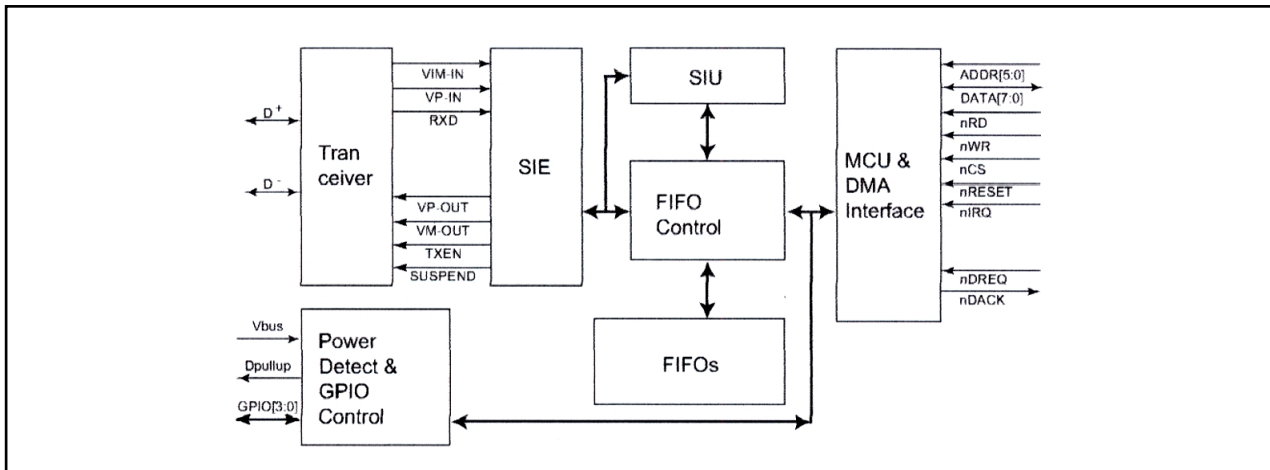
4-1-6-1. CONCEPT

USB Controller is an interface part specifically designed to support a needed protocol to transfer between the data and PC. The data can either from PC printing data and / or inputted document data from any other means.

4-1-6-2. UNICON : 23USB CONTROLLER

4-1-6-3. FEATURES

- USB SPECIFICATION VERSION 1.1 SUPPORT
- FULL SPEED DEVICE : 12MBPS
- 5V I/O PIN INTERFACE (3.3V REGULATOR BUILT-IN)
- CONTROL, INTERRUPT AND BULK TRANSFER SUPPORT
- SUPPORTS 4 ENDPOINTS
- DMA INTERFACE SUPPORT TO TRANSFER BULK ENDPOINT
- 128 BYTE RECEIVER, TRANSMIT FIFOs BUILT-IN
- DUAL-PACKET MODE(FIFO) SUPPORT



4-1-6-4. FEATURES

- /IRQ : excluding IMAGE DATA, all PROTOCOL and ERROR signals and related PROCESSES are taken care of by INTERRUPTOR.
- DMA : both input and printable IMAGE DATA will be process by DMA

4-1-6-5. INTERFACE DIAGRAM

- VBUS : UNICON VBUS INPUT PIN (U23-16) can detect and confirm with HARDWARE whether USB CABLE is properly connected by checking the presence of +5V from PC. Our main controller does not use VBUS for the current. Furthermore, If there is no current flow in the R58 and R59 (Driver PBA) then +5V will shut off to feed UNION.
- D+, D- : PC and UNICON, are Differential Data Bus, that send a Protocol and DATA signal to each other.

- SUSPEND AND REMOTE WAKE-UP CAPABILITY SUPPORT
- FREQUENCY : 48MHz
The true signal level is 3.3V peak-to-peak. In order to begin movement at FULL SPEED MODE, D+(USBDP) Pin should be set and maintained at USB CABLE's connection and movement speed conditions. R86 and R107 (Driver PBA) are there to USB IMPEDANCE MATCHING purpose
- PULLUP : If USB CABLE is connected to the main controller then UNICON can recognize the CABLE connection through CONNECTOR (CN11 : Driver PBA)'s VBUS and +3.3V becomes PULLUP PIN. In order for PC to know the FULL SPEED MODE, D+'s R85 PULLUP is and absolute necessity.
- CN114(Driver PBA) : For our main controller system, all GND should be connected as fixed wire mode to maintain the best possible condition. FGND : FRAME GROUND. SGND : FRAME GROUND POINT WITH BOLT.

4-2 Driver PBA

DRIVER PBA use CONTROL SIGNAL from MAIN PBA and activate PRINTING and MOTOR.

Main composition is HEAD CONTROL and MOTOR CONTROL and it is also composed by RESET, S/W USB, PARALLEL INTERFACE.

Power is +5V, +11.75V, +30V coming through SMPS

and supply +5V, +11.75V Power through CN15 MAIN PBA.

Following is BLOCK DIAGRAM of DRIVER PBA.

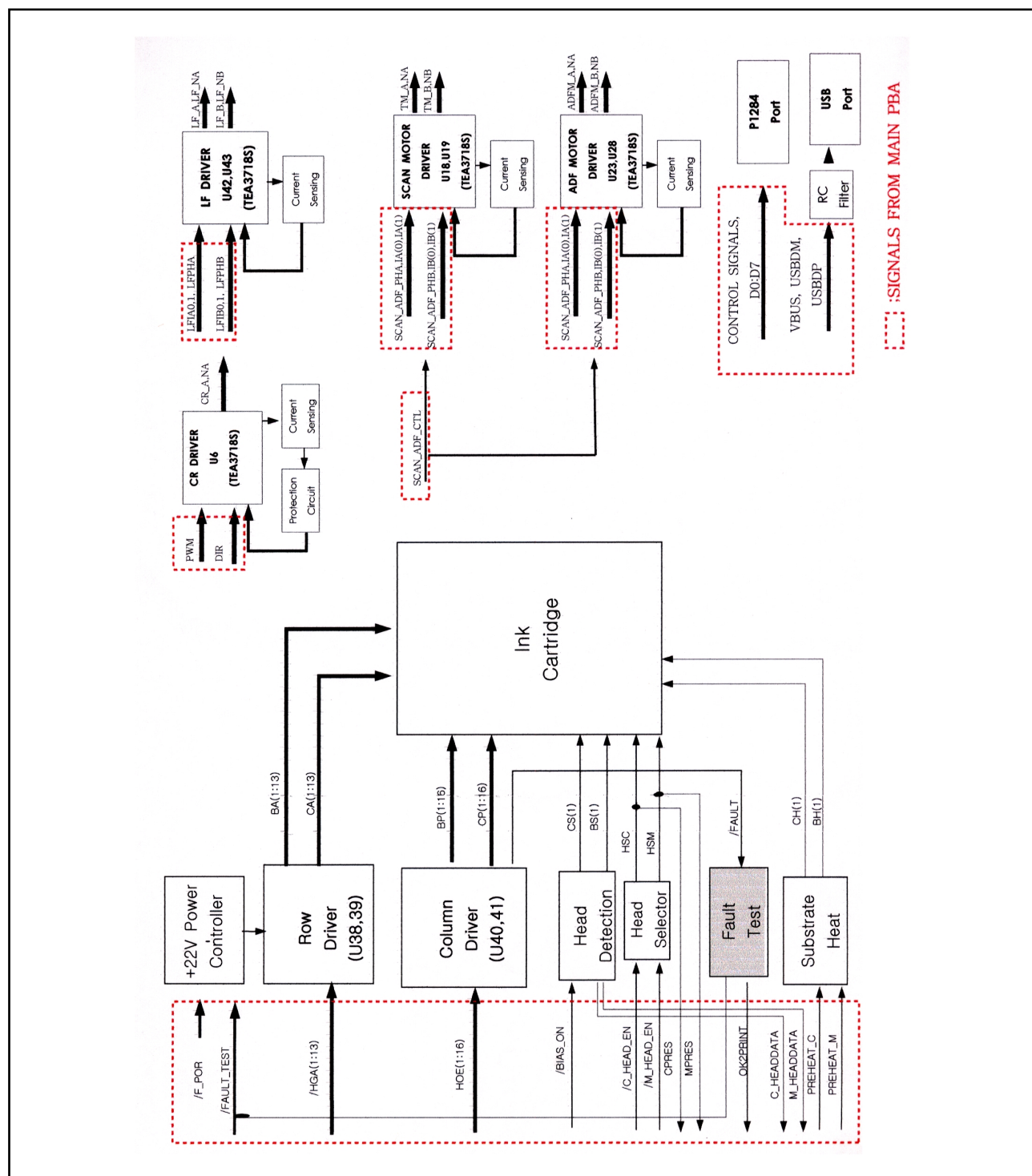


Fig.4-2-1 XK50cx DRIVER PBA BLOCK DIAGRAM

4-2-1 HEAD CONTROL PART

GENERAL

It drives inkjet head to print printing data received from the computer or copy an original. It roughly consists of head driver, head controller, and the ambient temperature sensor. Fig.4-2-1. Block Diagram of Driver PBA shows the entire structure.

HEAD CONTROLLER

This part consists of +22V Power Controller to control head driver, Fault Test, Head Detection, Substrate Heating and ambient Temperature Sensor. It checks and controls head driver and ink cartridge.

Refer to FIG 4-2-1

HEAD DRIVER (U38, U39, U40, U41)

This part drives and inks inkjet head. Color inkjet head drives 192 nozzles, while mono inkjet head drives 208 nozzles. Mono inkjet head is composed of 16 groups of 13 nozzles. As to the driver that composes each nozzle, 13 row 7-bit driver (U38, U39) selects head address and 16 column 8-bit driver (U40, U41) sends head data. Head driver converts control signals from MFP controller to +12V, the level to be able to drive the head, and provides them for the inkjet head.

- Row Driver Circuit (HD7:U38:U39)
This is a 13-line signal impressed to row drive IC through the output port of MFP controller(/HGA1 - /HGA13), used as an address to drive the head in ink cartridge. Pulse period differs according to head driving frequency. In 1200dpi (in case of Head: 19KHz) mode, timing period is 2.6usec ($1/1200 \div 16$ groups). The signal put in each driver(window time) is active "L", with the biggest driver current max 100mA and output voltage +12V.
- Column Driver Circuit (HD8:U40,U41)
It is the fire enable pulse of real head. 16 lines are put out as head driving data lines through the output port of MFP controller (HOE1 - HOE16). Enable pulse impressed to the head is put out within window time (Low). It has the function to move it forward or backward by the register in MFP controller. Besides the output signal may differ in accordance with the type of head (mono or color). If there is data, printing image is put out at "H". If not, it is put out at "L". In case of Babbage head, pulse width is always 1.3use regardless of the type of the head, with the maximum driving current 400mA and output voltage +12V.

- +22V Power Controller

Insert the power cord, then power is supplied to MAIN BOARD through DRIVER PBA CN15. /POR signal which is output through Reset Circuit activate the MAIN CONTROLLER and approve /F_POP signal which is output through MAIN PBA(U9-1) and VREFX(+2.5V) to input terminal (U30-4,11) of comparison instrument. When the comparison output(U30:1) is "HIGH", the output is +22V, when the comparison output is "LOW", it will be "OFF".(/FAULT_TEST SIGN : HIGH) Also, after /F_POR is finished, during the +22V is permitting, when you input(U30-9) /FAULT_TEST sign as "LOW", the output(U30-1) of comparison instrument become "LOW" and make the +22V TR(Q14,TIP112) OFF.

- FAULT TEST CIRCUIT

This is a signal to detect whether the head receiving the output of head column driver is in a short. After /FAULT-TEST signal is put out at "low" and +22V is turned "off", "OK2PRINT" signal is entered. The port of KS32C6400 MAIN PBA(U15) shows normal condition if "H" and a short if "L". If you make FAULT-TEST output "L" to detect fault of the head, +22V gets off. If the head is in a short (LOW), when the level of "/FAULT-TEST" signal goes "L" and final "OK2PRINT" output goes "L". KS32C6400 MAIN PBA (U15) reads this signal and

checks whether the head input receiving the driver output is in a short. Diode cathode is attached to each output transistor collector in the column driver. 8 anode terminals of diode become common as one and put out /FAULT signal, which is pulled up by bias circuit controlled by /FAULT-TEST and shows the condition by OK2PRINT through the comparator.

- SUBSTRATE HEAT CIRCUIT

Mono ink cartridge of Babbage head is 600dpi head that uses pigment ink. It is very sensitive to the temperature in and around the cartridge. In particular, the viscosity of ink affects print quality as it is inversely proportional to temperature by an exponential function. This signal used to compensate it helps you get equal inking quality by warming the ink chamber in the cartridge with aluminum pattern heater before starting to print if the surrounding temperature is lower than standard (below 35°...).(Refer to Timing Chart.) It sends PRE-HEAT signal through I/O port of DUOIP2(Color Image Main PBA:U16) and supplies +12V.

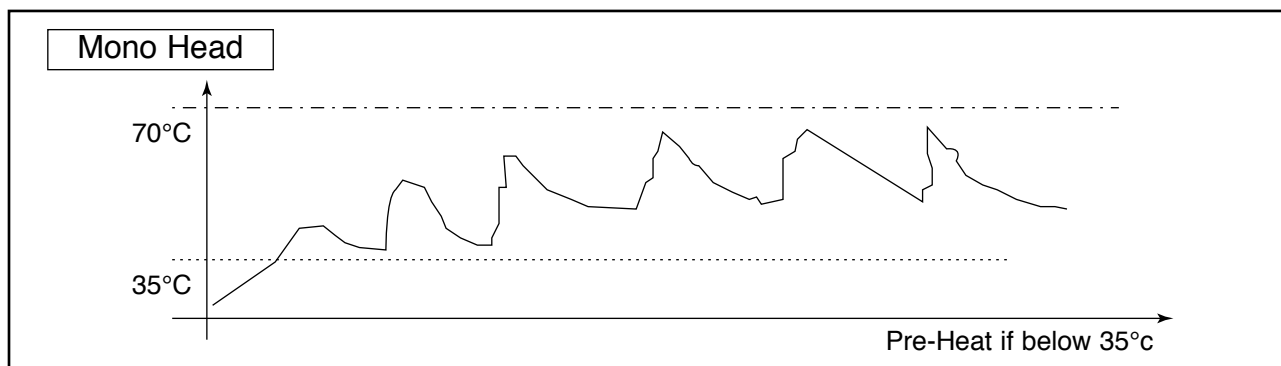


Fig.4-2-2 Temperature around Mono Head

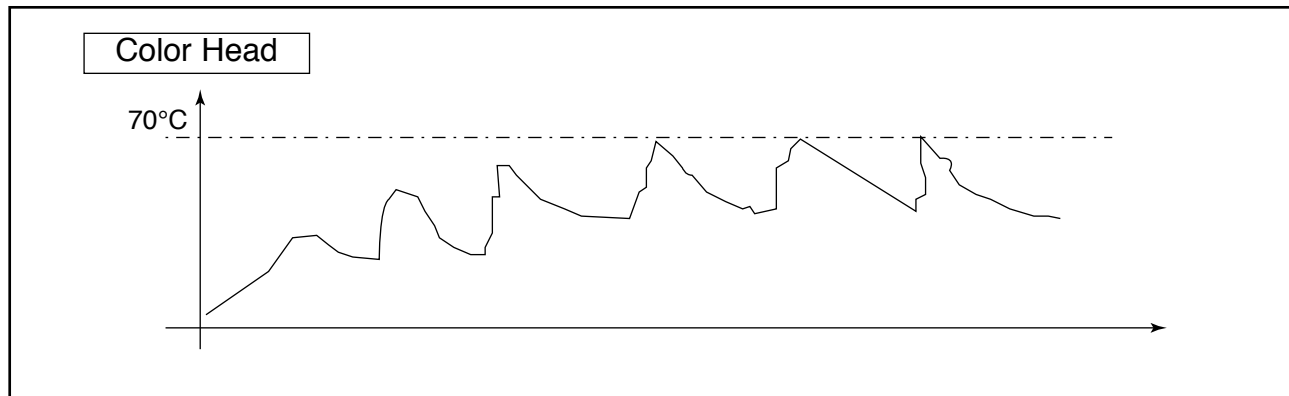


Fig.4-2-3 Temperature around Color Head

- HEAD DETECTION CIRCUIT

Ink cartridge has 8-bit mask ROM I.D. to check the type of cartridge. In order to detect the head, HSM signal is used as ENABLE signal and BA3 signal as START & STOP BIT, and BA1 and BA2 as clock signal of each bit, and ID signal in the cartridge is

put in HEAD-DATA port of KS32C6400 through BSF line. With each bit controlled, 8bit I.D data is read and STOP bit is put out of BA3(LOAD) port. Then it finishes.

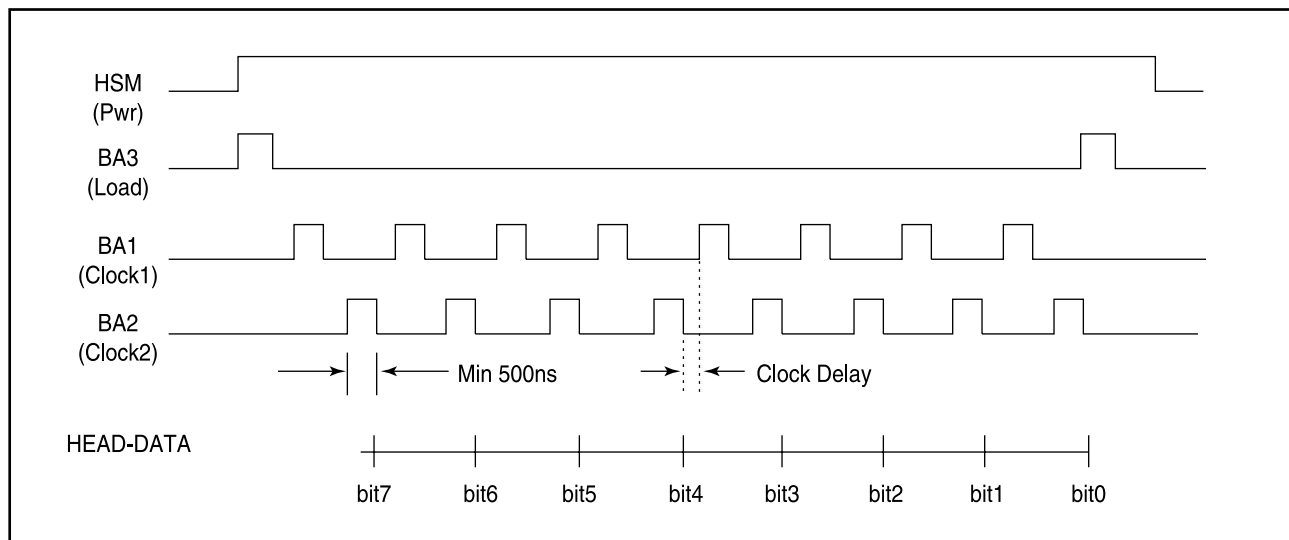


Fig.4-2-4 HEAD DETECTION TIMING DIAGRAM

- **SURROUNDING TEMPERATURE SENSOR**
DS1821(DALLAS SEMI.) is applied to read the temperature around ink cartridge. It is used to get optimum inking quality by keeping the viscosity of ink in the cartridge in the specified level. The way to read temperature is to control AMB-TEMP signal. Digital thermometer to check the surrounding temperature is assembled along with CR Encoder sensor in the frame of assembly CR. After each page is inked, it reads the surrounding temperature and heats substrate heater in the ink cartridge during the accelerating time of CR to keep the viscosity of ink in the specified level.

* This temp. sensor can be changed without notice.

HEAD DRIVING TIMING

Control signal from MFP controller (Main PBA KS32C6400:U15) enters the head driver (Driver PBA : U33, U34, U35, U36) and it becomes the level to be able to drive the head nozzles (+12V). It is depicted in the following diagram.

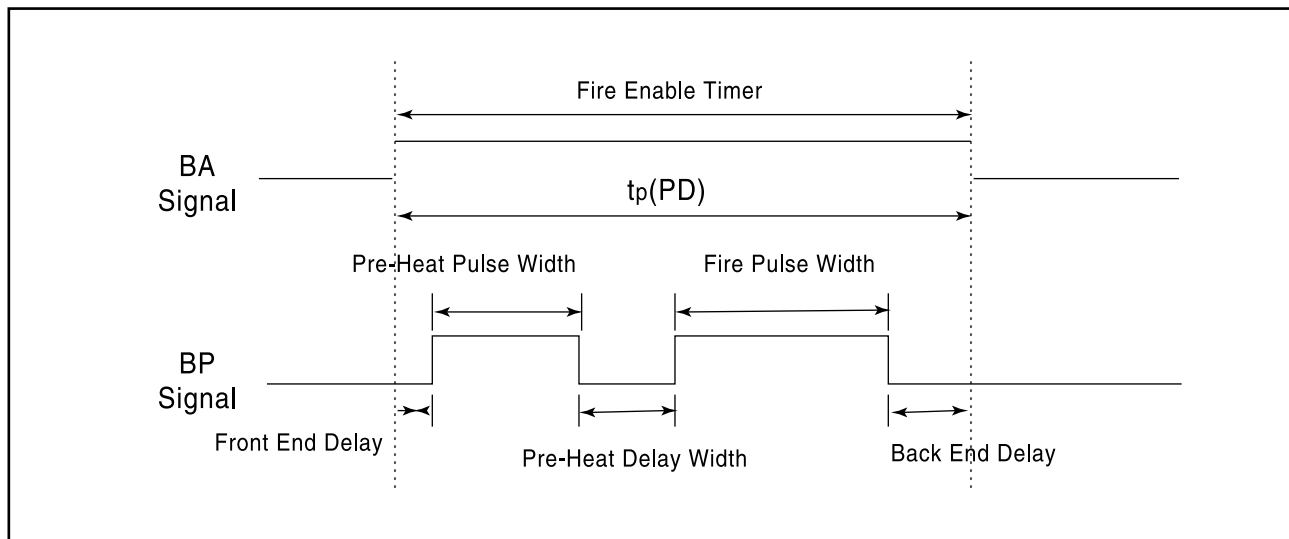


Fig.4-2-5 HEAD DRIVING TIMING DIAGRAM

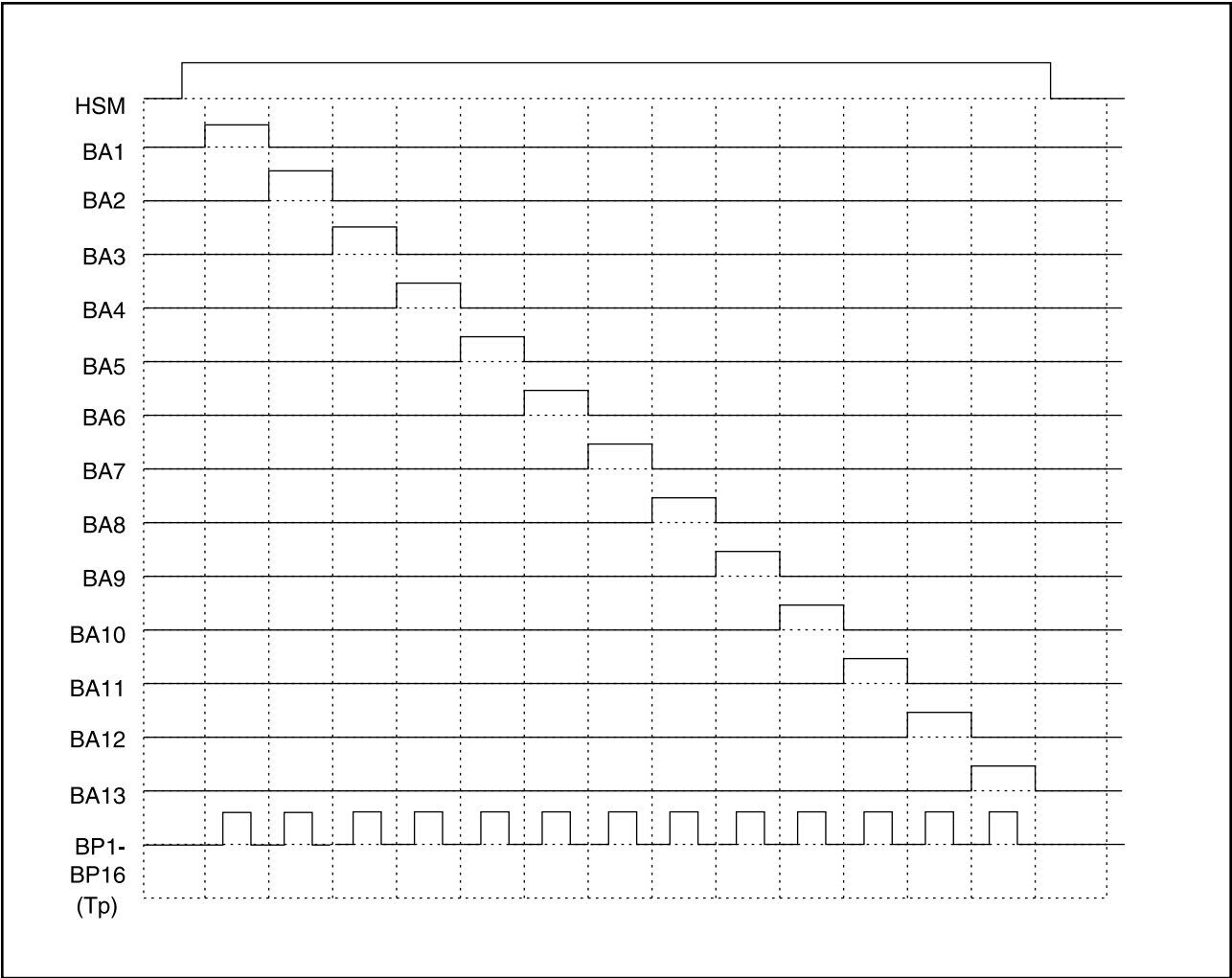


Fig.4-2-6 TIMING DIAGRAM FOR EACH NOZZLE

INK CARTRIDGE

• PIN ARRAY OF MONO INK CARTRIDGE

There are 208 heater chips in mono ink cartridge.

Column Data(BPx)	Address (BA1_ ~ BA13_)												
	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1	21	15	9	3	23	17	11	5	25	19	13	7
2	20	14	8	2	22	16	10	4	24	18	12	6	26
3	27	47	41	35	29	49	43	37	31	52	45	39	33
4	46	40	34	28	49	42	36	30	50	44	38	32	52
5	53	73	67	61	55	75	69	63	57	77	71	65	59
6	72	66	60	54	74	68	62	56	76	70	64	58	78
7	79	99	93	87	81	101	95	89	83	103	97	91	85
8	98	92	86	80	100	94	88	82	102	96	90	84	104
9	105	125	119	113	107	127	121	115	109	129	123	117	111
10	124	118	112	106	126	120	114	108	128	122	116	110	130
11	131	151	145	139	133	153	147	141	135	155	149	143	137
12	150	144	138	132	152	146	140	134	154	148	142	136	156
13	157	177	171	165	159	179	173	167	161	181	175	169	163
14	176	170	164	158	178	172	166	160	180	174	168	162	182
15	183	203	197	191	185	205	199	193	187	207	201	195	189
16	202	196	190	184	204	198	192	186	206	200	194	188	208

- PIN ARRAY OF COLOR INK CARTRIDGE

There are 192 heater chips in mono ink cartridge. One cartridge has 64 Cyan, 64 Magenta, 64 Yellow heaters and (64 x 3 colors) 192 nozzles.

Column Data(BPx)	Address (BA1_ ~ BA13_)												
	1	2	3	4	5	6	7	8	9	10	11	12	13
1	-	19	13	7	11	21	15	9	3	23	17	11	5
2	15	12	6	-	20	14	8	2	22	16	10	4	24
3	25	45	39	33	27	47	41	35	29	49	43	37	31
4	44	38	32	26	46	40	34	28	48	42	36	30	50
5	51	71	65	59	53	73	67	61	55	75	69	63	57
6	70	64	58	52	72	66	60	54	74	68	62	56	76
7	77	97	91	85	79	99	93	87	81	101	95	89	83
8	96	90	84	78	98	92	86	80	100	94	88	82	102
9	103	123	117	111	105	125	119	113	107	127	121	115	109
10	122	166	110	104	124	118	112	106	126	120	114	108	128
11	129	149	143	137	131	151	145	139	133	153	147	141	135
12	148	142	136	130	150	144	138	132	152	146	140	134	154
13	155	175	169	163	157	177	171	165	159	179	173	167	161
14	174	168	162	156	176	170	164	158	178	172	166	160	180
15	181	-	-	189	183	-	-	191	185	-	-	-	187
16	-	-	188	182	-	-	190	184	-	-	192	186	-

4-2-2 MOTOR CONTROL PART

GENERAL

This part use 1 dc motor and 2 stepper motors, i.e. CR(Cartridge Return) motor and LF(Line Feed) motor, SCAN motor.

CR motor moves left and right all-in-one carriage of inkjet head. It helps the printer print accurately on the paper. LF motor is driven to feed and eject paper for printing and to feed and eject documents to read for scanning. CR dc motor is controlled dc control block, while LF motor half step and quarter step at maximum 6ips.

CR(CARRIAGE RETURN) MOTOR DRIVING CIRCUIT

CR motor moves the carriage left and right when ink cartridge prints something on paper.

- Motor Type : PMDC Motor
- Driving Voltage : +30V
- Winding Resistance : $11\Omega \pm 2\Omega$

CR driving circuit has a protection circuit which is enabled at 550mA and cut off the motor current.

As shown in the table below, current in each mode is adjusted by voltage of driver(U5) PIN12 input. If the PWM signal controlled by MFP controller(Main PBA U15) is "high".

It becomes the standard of the driver, resulting in high current drive mode. If PWM is "low", it results in no current in the motor.

Motor Driver	OFF	ON	OFF	ON
DIR	L	L	H	H
PWM	L	H	L	H
CURRENT DIRECTION	X	B > A outB > out A	X	outA > out B A > B
OPERATION	STOP	RIGHT DIRECTION	STOP	LEFT DIRECTION

LF(Line Feed) Motor Driving Circuit

LF motor is driven to feed and eject documents and paper.

- Motor Type : stepper motor, bi-polar
- Driving Voltage : +30V
- Winding Resistance : $12\Omega \pm 10\%$

LFIA (1)	L	L	X
LFIA (0)	L	H	H
CURRENT(mA)	670	400	0
OPERATION	When feeding document/paper	When ejecting document/paper	No current

SCAN Motor Driving circuit

SCAN Motor is driven at maximum 1600pps

- Motor Type: stepper motor
- Driving Voltage : +30V
- Winding Resistance : $4.6\Omega \pm 10\%$
- Step Degree : 7.5 deg/step

TM_IA (1)	L	H	H
TM_IA (0)	L	L	H
CURRENT(mA)	450	150	0
OPERATION	SCAN	Standby	Power save

ADF Motor Driving Circuits

TX Motor is driver at maximum 1200pps when feeding or ejecting sheets.

- Motor Type : stepper motor
- Driving Voltage : +30V
- Winding Resistance : $4.6\Omega \pm 10\%$
- Step Regree : 7.5deg/step

TM_IA (1)	L	H
TM_IA (0)	L	H
CURRENT(mA)	670	0
OPERATION	Quick Scan/Fine/Supper fine	Standby

Driving speed for each mode

MODE	CURRENT (mA)	OPERATION
QUICK SCAN	1-2 phase	2400pps
FINE/ SUPER FINE	1-2 phase	800pps

4-3 OPE PBA

4-3-1. SUMMARY

OPE Board is separated functionally from the main board and operated by the micom (HT48R50) in the board. OPE and the main use UART (universal asynchronous receiver / transmitter) channel to exchange information. OPE reset can be controlled by the main. OPE micom controls key-scanning and LCD and LED display.

If there occurs an event in OPE (such as key touch and sensor level change), it sends specific codes to the main to respond to the situation and the main analyzes these codes and operates the system. For example, if the main is to display messages in OPE, the main transmits data through UART line to OPE according to the designated format and OPE displays this on LCD, LED. OPE's sensing is also transmitted to the main through UART line and then the main drives necessary operation.

4-3-2.

OPE PBA consists of U1 (MICON, HT48R50), LCD, key matrix, LED indicators.

Refer to OPE Schematic Diagram and Wiring Diagram sections of this manual.

- Signals from the key matrix are delivered to U1X/Y input pin group (P1-x).
- U1 pin 48 (TX DATA) is the UART code sent to MAIN PBA.
- Display from the controller is received at U1 PIN 47.
- LCD drive signals are sent from U1 P2-x pin group, P3-4~P3-6 pins.
- Machine status LED drive signals are sent from U1 P0-x pin group.

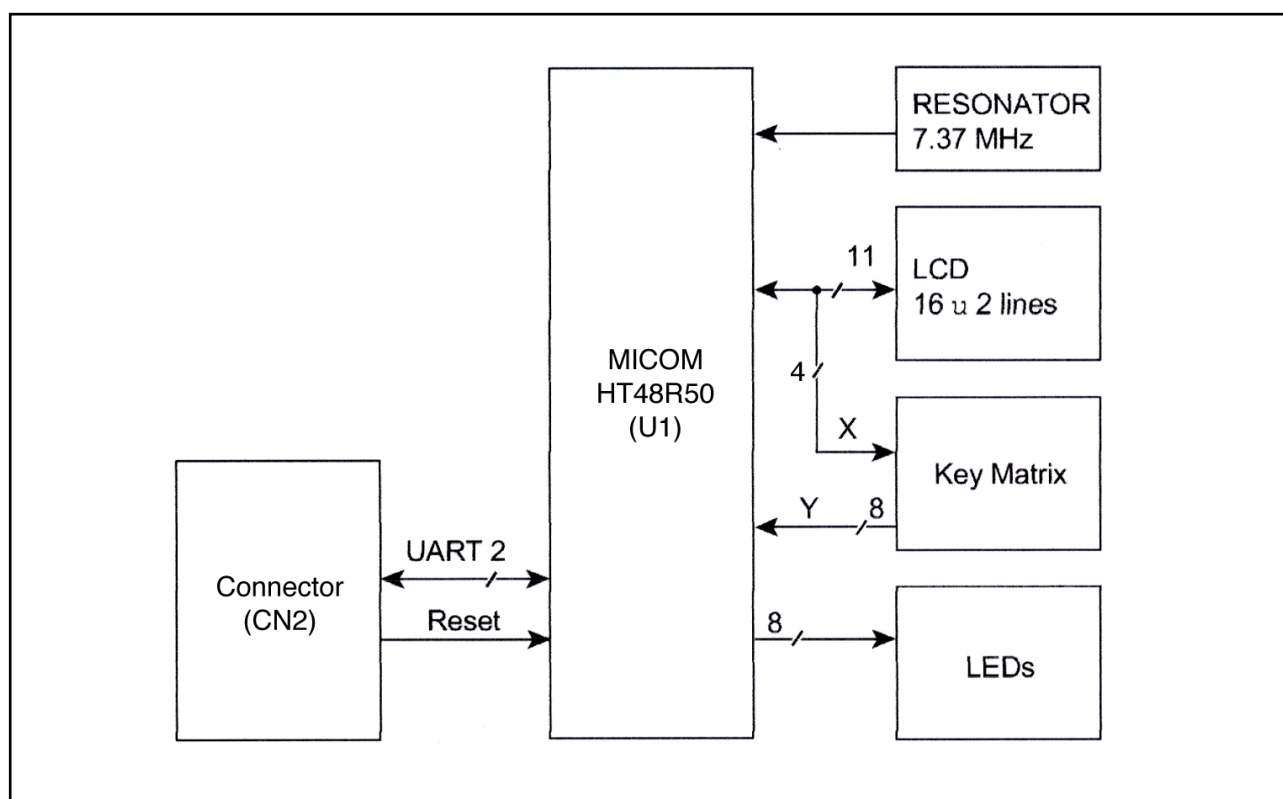


Fig.4-3-1 OPE Block Diagram

4-4 LIU PBA

4-4-1. SUMMARY

LIU WIRE CONNECTS Main B'D's MODEM AND LINE PARTS, AND IMPEDANCE MATCHING (AC, DC), RING DETECTION PART and LINE SEIZURE (DIALER).

4-4-2. DC MATCHING PART

Normal movement range of LIU is 12mA ~ 9mA.

Adapting CTR21 standard, the regulation limits to 60mA CURRENT flow through the terminal.

Therefore, select (*:for EU PIT) Option to connect necessary items then the current through LIU will not exceed 60mA.

- CTR21 Standard(Europe) : 12mA~60mA
- OTHER Standard (U.S.) : 12mA~90mA

DC has a character to pass through the LINE. And with Q1 (VN2410) GATE section's LINE INPUT current and Q1 Source connection to R20, can be decided as follows :

- $-V_{DCR} = V_{L1} + I_{LINE} \times R20$
(V_{DCR} : Tip-Ring CD Voltage, I_{LINE} : Current flow)
 V_{L1} :Line Input Voltage, $V_{L1}=V_{BD1}+V_{CE}(Q2)+V_{DS}(Q1)$

4-4-3. AC MATCHING PART

Basic LIU's AC IMPEDANCE is 600 and uses R47. 48. C36 to possibly control combined IMPEDANCE.

- U.S. Usage : A terminal IMPEDANCE → 600Ω(±30%)
- CTR21 : A Terminal IMPEDANCE → 270+750Ω//150nF

4-4-4. DIALER PART

*MF DIAL

DTMF Dialing is controlled by MODEM and should be selected by appropriate LEVEL and On-off Time output based on each countries' own National specification.

- Freq. Tolerance : ±1.5%
High Group : 1209, 1336, 1477, 1633Hz
Low Group : 697, 770, 852, 941 Hz

	U.S. Usage	CTR21
High Freq Level	-7.0 +1.0/-2.0	-9.0+2.0/-2.5
Low Freq Level	-9.0+1.0/-2.0	-11.0+2.5/-2.0

*DP DIAL

Controls from MAIN through / DP-Terminal.

for U.S.Usage, set time to DF signal of 40:60 M/B. DP signal is made of U6 (pcb817). The DC current which flows thru Q2 Base is regulated by On/Off switch and turns to DP dial signal with a COUPLER.

- CTR 21 does not have telephone capability but has the number 3 and 4 Line Connection. No DP condition but possibility to get approval only on DTMF Dial based terminal.

4-4-5. RING DETECTION PART

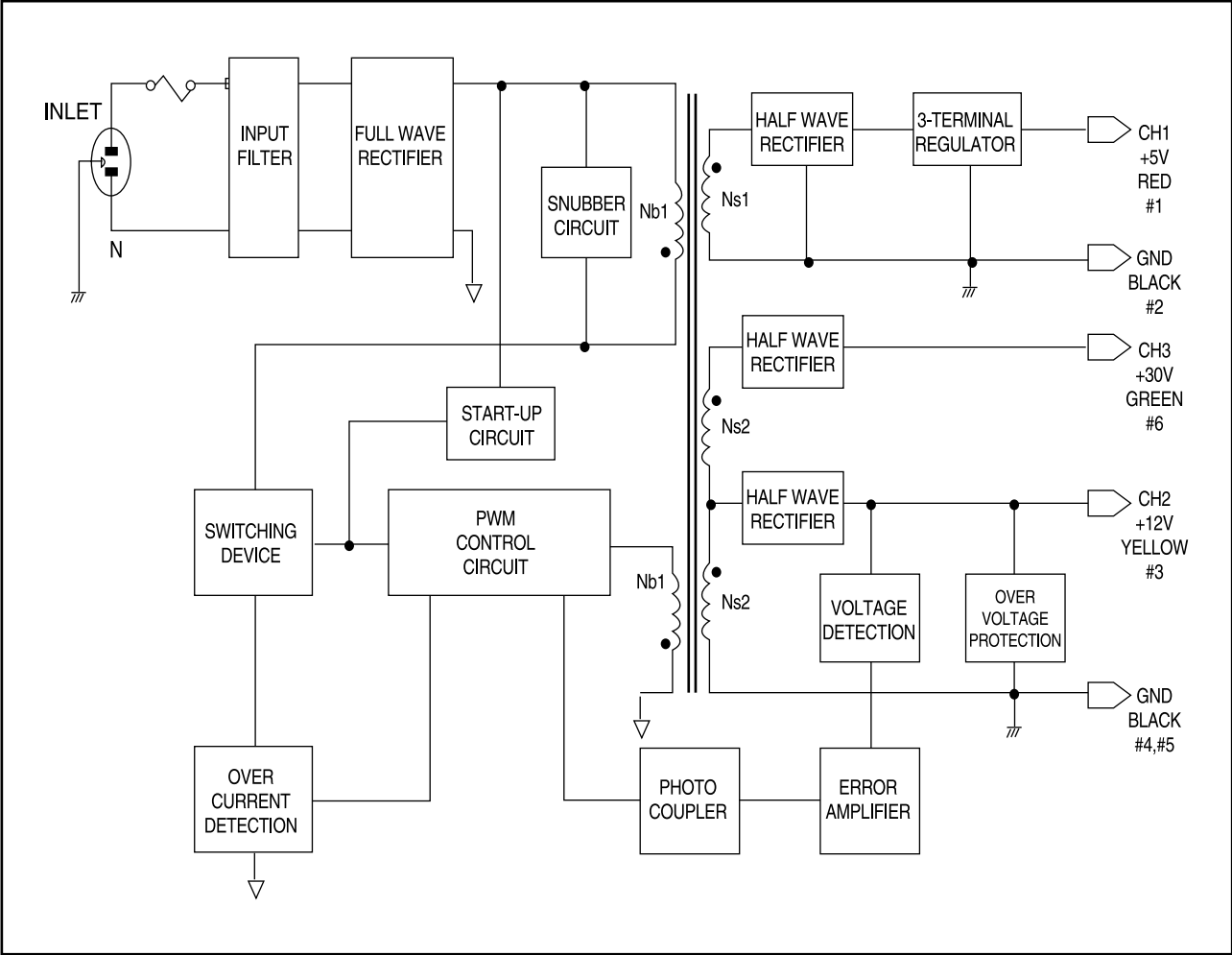
RING SIGNALS from the LINE section (TIP, RING)are further passed through C5, R3, ZD1, and ZD2 and ends up at U9, (PC 814). U9 then detects above RING SIGNAL and passes the output to MAIN B'D. The wire diagram's C5 is RINGER CAPACITOR and it normally uses 1UF/250V.

A R3 limits AC current and controls upper and lower REN meter.

4-5 SMPS

4-5-1 Block Diagram of Power Circuit

Refer to the following block diagram.



4-5-2 Specifications of Power Circuit

INPUT CONDITIONS

		Free Voltage
1	Input Rated Voltage	AC110–240Vac
2	Input Voltage Turning Range	AC90–265Vac
3	Rated Frequency	50–60Hz
4	Frequency Range	47–63Hz
5	Input Current	0.5Arms

OUTPUT CONDITIONS

NO	1	2	3	4
ITEM	RATED OUTPUT VOLTAGE	RATED OUTPUT CURRENT	MAXIMUM LOAD CURRENT	LOAD CHANGE RANGE
CH1	+5.0V	0.5A	0.8A	0.1 ~ 0.8A
CH2	+12V	0.8A	1.3A	0.03 ~ 1.3A
H3	+30V	0.5A	0.76A	0.05 ~ 0.76A

4-5-3 Power Circuit

INPUT

This product is equipped with a three-wire grounding-type power inlet. Insulation is class 1. When a power device part breaks down or some trouble in this circuit causes a short, excess current runs through a fuse and blows it to protect power devices and the system from excess current and prevent a fire.

Input filter of power input terminal removes line noise flown in from outside and reduces noise which is made in power circuit and logic part and conducted or radiated through power cords. AC input voltage is rectified by bridge diode of full wave rectifier, is converted to DC voltage by smoothing circuit, and switches the power device of this voltage.

As switching is in RCC(Ringing Choke Converter) mode, switching frequency changes from about 50KHz to 100KHz.

PWM(Pulse Width Modulation) Control Circuit adjusts the duty of the switching device by sensing the change of output voltage, and protects this product from excess current by receiving signals from excess current detecting circuit.

DRIVING CIRCUIT (START-UP CIRCUIT)

If you insert a power plug into AC outlet, full-wave rectified DC output voltage is generated at input electrolysis condenser and supplied to the gate of a switching device through driving resistance. This voltage drives the switching device. Once it is driven, it continues to switch via PWM control circuit with power supplied by auxiliary coil Nb.

SWITCHING CIRCUIT (VOLTAGE STABILIZATION)

12V of 2nd voltage is detected by voltage detector and feeds back through photo coupler to 1st PWM Control Circuit signals compared by error amplifier. PWM Control Circuit controls the gate of power transistor according to the feedback voltage so as to supply load with stable output voltage.

OCP CIRCUIT (OVER CURRENT PROTECTIVE CIRCUIT)

If a short in secondary load terminal or a short inside power device causes excess current, power consumption increases. Then it increases current of power transistor.

The current of power transistor increases linearly when it is on. This current is detected by sensing resistance and is impressed to excess voltage protective circuit of PWM control circuit through RC integration circuit where over current protection is built in.

If this voltage becomes bigger than V_{be} of excess current control transistor, the potential of power transistor gate falls immediately and it stops driving power transistor to protect it from excess current.

OVP CIRCUIT (OVER VOLTAGE PROTECTIVE CIRCUIT)

If the main power of power device 12V increases abnormally, this excess voltage is detected by OVP detecting circuit and 12V output terminal shifts to a state similar to a short.

If 12V output terminal shorts, over current runs on over current detecting terminal and OCP circuit operates to prevent a fire in power device.

+5V OUTPUT TERMINAL

Square wave voltage generated by Ns1 produces DC voltage rectified and smoothed by half-wave rectifier. This voltage put in to a three-wire regulator generates stable DC power of +5V.

+30V OUTPUT TERMINAL

Square wave voltage generated by Ns2 is rectified and smoothed by half-wave rectifier and supplies load with output voltage without separate regulation.

+12V OUTPUT TERMINAL

Square wave voltage generated by Ns3 is rectified and smoothed by half-wave rectifier, and then detected by voltage detector. Signals compared by error amplifier are fed back to primary PWM control circuit through photo coupler. PWM control circuit controls the voltage of power transistor gate driver according to the voltage to supply load with stable output voltage.

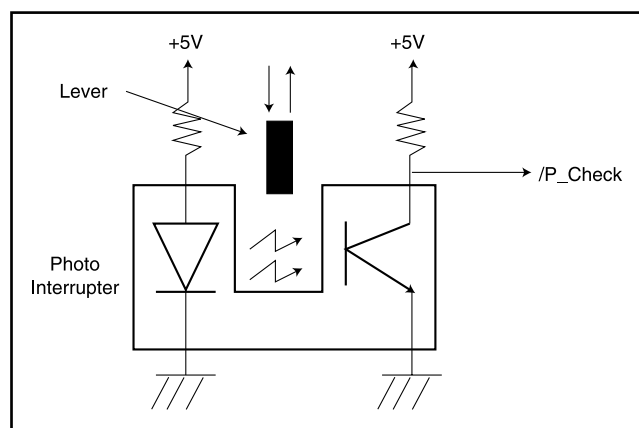
4-6 Others

4-6-1. Paper Sensing Circuit

This circuit senses whether there is paper or not, and whether the paper is fed or not.

If LF motor picks up a paper, the lever will be lifted and output "/P_Check" will become "Low".

If the "/P_Check" is not low after picking up, the "Paper Check" LED will be turned on.



4-6-2. Document Sensing Circuits (Document Detecting Sensor/Scan Position Sensor)

This circuit senses whether document is detected or not. If a document is detected by ADF_P_DET sensor, copy operation is ready. If the document is detected by ADF_P_DET sensor, copy operating is ready. If the document is detected by ADF_P_POS sensor, scanning is performed.

Document sensing operation is similar to paper sensing circuit's operation.

4-6-3 Home Sensing Circuit

This circuit checks whether carriage is at home or not. A encoder sensor is used as a home sensor to detect home position. This encoder sensor uses a encoder strip, attached to a main frame, to detect current position and moving direction. A encoder sensor outputs CHY and CHX signal to main controller (Main PBA: U15 - 33 & 36). U15 uses these two signals to sense the carriage's position.

4-6-4 Temp IC Driving Circuit

TEMP IC(DC1821 Digital, Thermometer) mounted on the sensor card on the back of the carriage is used to read the temperature around ink cartridge.

This IC converts the temperature around IC package into digital value and sends the temperature data serially to a main controller (Main PBA: U15) to calculate the temperature around the head.

It senses temperature so that the temperature of the head can be the optimum when the machine prints something.

The above IC sends data serially into DUOIP2 (Main PBA: U16).

5. Troubleshooting

5-1 SCANNER

5-1-1 COPY

PROBLEM	ITEMS TO BE CHECKED	HOW TO SOLVE
White copy	• Check the scan-cover open.	• Room light can transit a thin original.
	• Check shading profile.	• Remake shading profile in the tech mode.
	• Check white/black reference voltage in Main PBA.	• Replace U16 if it is defective. - U16-97 = 3.3V - U16-98 = 0V
	• Check the CCD problem in Main PBA.	• If the CIS is defective, replace it. - CN6-1 is 5.8V when white original copying for R, B and 3.5V for G.
Black copy	• Check turning the CCD Lamp on when operating.	• Check the CIS harness contact.
	• Check shading profile.	• Remake shading profile in the tech mode.
	• Check white/black reference voltage in Main PBA.	• Replace U2 or U12 if it is defective. - U2-1 or U12-78 = 3.2V - U2-7 or U12-79 = 1.9V
	• Check the CCD problem in Main PBA.	• If the CIS is defective, replace it. - Cn6-1 is 7.3V when idle for R, B, and 5V for G.
Defective image quality	• Check shading profile.	• Remake shading profile in the tech mode.
	• Check the gap between original and scanner glass.	• The gap above 0.5mm can cause a blurred image.
	• Check printing quality.	• See "Print" troubleshooting.
Abnormal noise	• Check the scanner glass and any mechanical disturbance.	• Check the right position of the scanner glass, and check the any mechanical disturbance in the CCD carrying part.
	• Check the motor driver in Driver PBA.	• If any driver is defective, replace it. - U19 or U18-1, 19 = 0V to 30V swing signal when operating.

5-1-2 PC-Scan

PROBLEM	ITEMS TO BE CHECKED	HOW TO SOLVE
Scanning error	• Check the printer cable installed.	• Check correct installation, and use standard IEEE1284 cable.
	• Check how TWAIN driver is installed.	• Remove any other scanner driver. • Reboot after reinstallation of the TWAIN driver.
	• Check harness contact.	• Check CN4 contact in Main PBA, CN1 contact in Driver PBA whether each connection is tight.
	• Check the IEEE1284 signal level.	• If any signal level is defective, replace Driver PBA. - U15-43~51 in Main PBA = 0.8V to 2.4V TTL signal. • Otherwise, replace Main PBA.
Defective image quality	• Check shading profile.	• Remake shading profile in the tech mode.
	• Check the gap between original and scanner glass.	• The gap above 0.5mm can cause a blurred image.
Abnormal noise	• Check the scanner glass and any mechanical disturbance.	• Check the right position of the scanner glass, and check the any mechanical disturbance in the CCD carrying part.
	• Check the motor driver in Driver PBA.	• If any driver is defective, replace it. - U19 or U18-19 = 0V to 30V swing signal when operating.

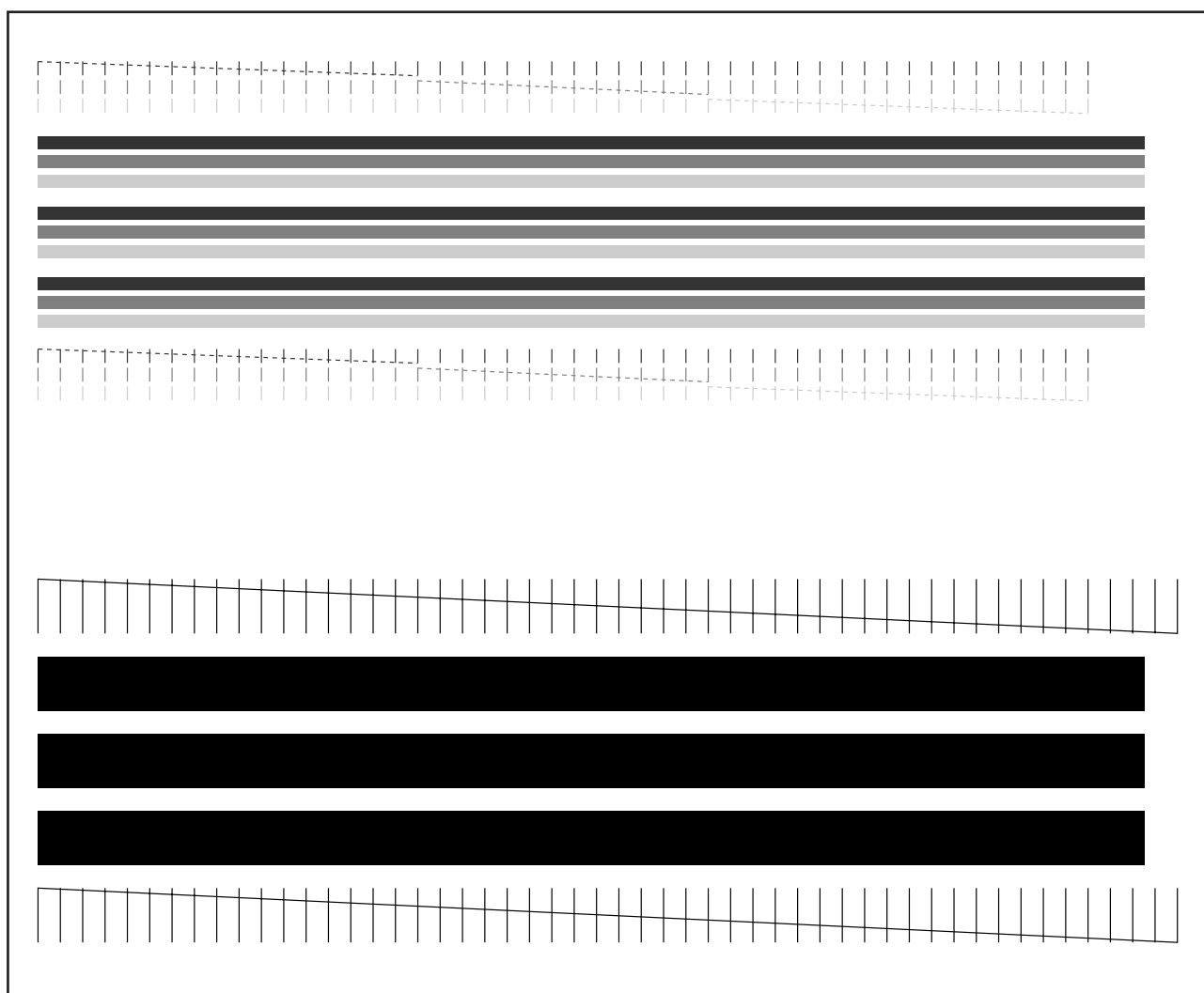
5-2 Printer

5-2-1 White lines on letters or graphics.

- Cause

If nozzles in print head has a problem, white lines are marked on the print.

'CARTRIDGE MAINT' will let you know if nozzles have fallen problems.

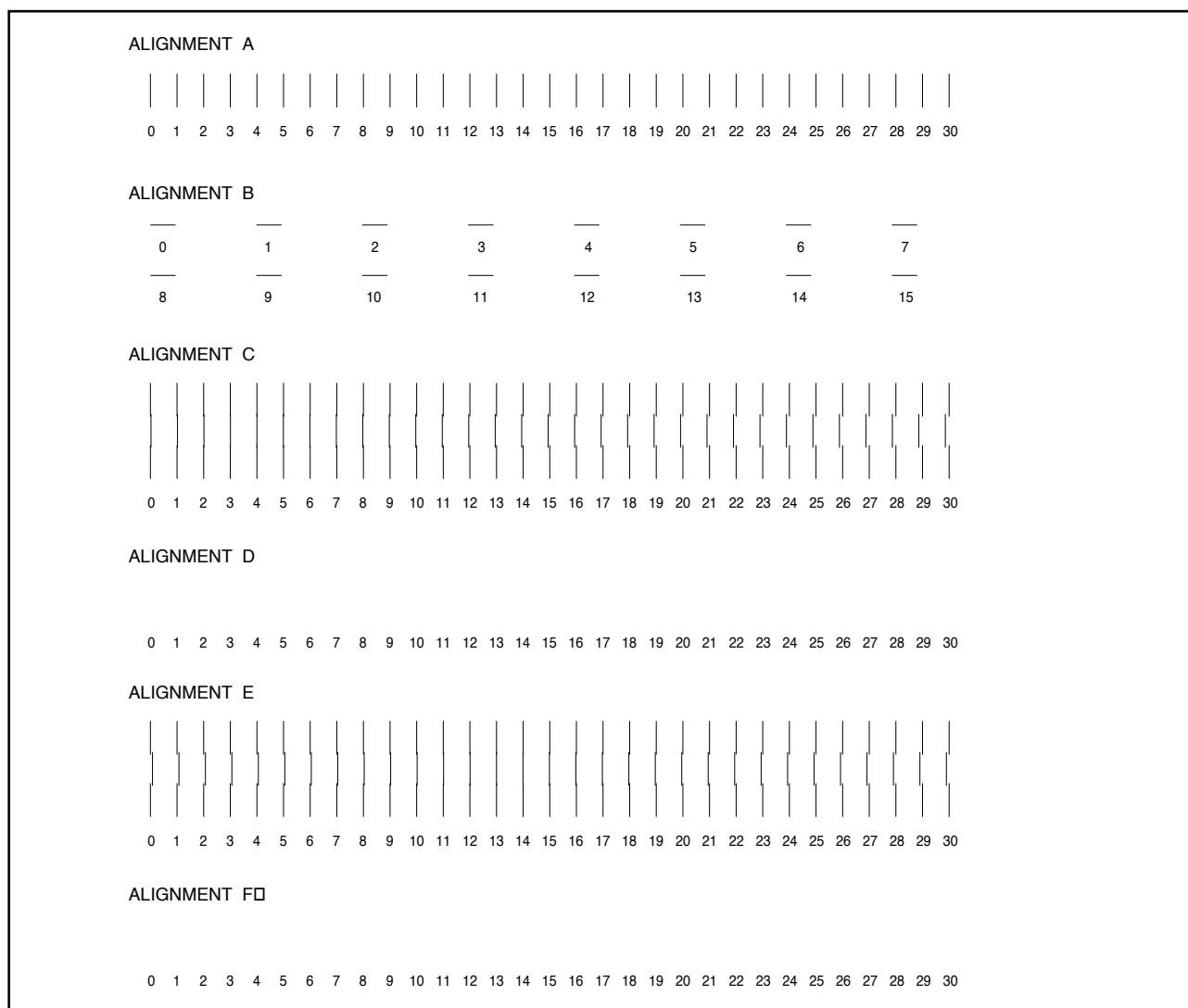


- Solution

- 1) Run print control panel' to "clean print nozzles" and check if nozzles have been blocked.
- 2) Wipe with soft cloth the contact surfaces of ink cartridge and carriage, and check if nozzles have been cleaned properly.
- 3) Separate ink cartridge from carriage and combine them. Repeat it about 5 to 6 times and check if connection is proper.
- 4) Replace ink cartridge and check whether there's a problem with the head.
- 5) Check if head cable is inserted well into the main circuit board and then check if nozzles have problems.
- 6) Check if head cable is broken or torn and then check if nozzles have problems.
- 7) Replace the main circuit board with a new one and check if nozzles have problems.

5-2-2 When Vertical lines are printed crookedly

- Cause : Vertical lines are printed crookedly if you do not “align Vertical lines” on the printer.
- Solution
 - 1) Run print control panel to “align Cartridges”.
 - 2) Select the best one of the above samples and enter the number.
 - 3) This function to align Vertical lines is available both for mono and color cartridges.



5-2-3 When ink spreads on transparent film

- Cause : You selected a wrong medium on the driver or you did not use transparent film designated for inkjet.
- Solution
 - 1) Use only transparent film designated for inkjet when you print on transparent film by an inkjet printer.
 - 2) Run “Windows driver” and select “transparency” as the kind of paper if you print on Windows.

5-2-4 Print Error

PROBLEM	ITEMS TO BE CHECKED	HOW TO SOLVE
Can't Print	• Check the cartridge empty status.	• If there is no cartridge installed, install a cartridge properly. • Make sure that you have installed an authorized cartridge.
	• Check the printer cable installed.	• Check correct installation, and use standard IEEE1284 cable.
	• Check what printer driver is installed.	• Remove the driver. • Reboot after reinstallation of the print driver.
	• Check harness contact.	• Check CN1,CN2,CN3 contact in Main PBA,CN10,CN13,CN16 contact in Driver PBA whether each connection is tight.
	• Check the IEEE1284 signal level.	• If any signal level is defective, replace Driver PBA. - U15-47~50 in Main PBA = 0.8V to 2.4V TTL signal. • Otherwise, replace Main PBA.

5-2-5 Paper Feed

PROBLEM	ITEMS TO BE CHECKED	HOW TO SOLVE
ASF feeds paper but paper is not supplied to the engine.	• Check if actuator feed operates perfectly.	• Replace actuator-feed, spring, or other defective parts.
	• Check if paper sensor is normal.	• Replace the paper sensor.
ASF cannot feed paper.	• Check if too much paper has been supplied.	• Supply appropriate amount of paper(100 sheets of normal copying paper).
	• Check if pickup roller rubber of the ASF is worn out.	• Replace pickup roller rubber.
Tilted printing	• Check if paper guide of the ASF is adjusted to the size of paper.	• Adjust paper guide to the size of paper.

* ASF: Automatic Sheet Feeder

5-3 FAX

5-3-1 FAX/TELEPHONE Precautions

PROBLEM	ITEMS TO BE CHECKED	HOW TO SOLVE
TEL LINE CANNOT BE ENGAGED (NO DIAL TONE)	- When you press "OHD" key: a) Check line cord connection. b) Check MAIN LIU harness, and P1(LIU PBA). c) Check relay operation of LIU PBA : Is the control signal of CN8-7(main) low?	a) insert it correctly into the connection jack called "line". b) Replace defective parts. c) Replace main PBA IF the control signal of CN8-7(main) is high. Replace LIU PBA if high but phone line cannot be connected.
Cannot MF dial	Check CN8 (main PBA), MAIN-LIU harness, and P1 (LIU PBA)	Replace defective parts.
MF dial is possible but not DP dial.	Check DP control signal of CN8-11 of MAIN PBA and the circuit around R15. U6 and Q2 of Liu PBA.	Replace LIU PBA.
Defective fax transmission	- Check CN8 (main PBA), MAIN LIU harness, and P1(LIU PBA). a) Is the external phone hooked off? b) Is the output of US-4(LIU PBA) low? - Check 'hook off' : Refer to 'TEL LINE CANNOT BE ENGAGED' above. - Check the control signals of CN8-11. - Check transmission path : Check output of CN8-3.4 and T2-4(LIU PBA). - Check reception path : Check output P1-1 (LIU PBA) and input of CN8-1(main PBA).	- Replace defective parts. a) Hook on the external phone correctly. b) Replace LIU PBA if low. - Refer to 'TEL LINE CANNOT BE ENGAGED' above. - Replace main PBA, if the signals of CN8-11 (MAIN PBA) is low. - Replace main PBA, if abnormal. - Replace LIU PBA if P1-1(LIU PBA) is not confirmed. Replace main PBA if CN8-1(MAIN PBA) is not confirmed.
Defective automatic fax reception	- Is the ring checked? Check ring pattern at U9-4 (LIU PBA). CN 8-9. - Refer to 'Defective Transmission.'	- Replace LIU PBA if it cannot be checked. - Refer to 'Defective Transmission'.

5-4 Defective Operation

PROBLEM	ITEMS TO BE CHECKED	HOW TO SOLVE
Open at on panel does not operate	Powered up ?	- Check power.(SMPS) a) Check if the cord is properly connected. b) Check each power channel. (+5V, +11.75V, +30V)
	- VCC(+5V) M+4.5V? - Is the level of U15-127(_POR) high (more than =4V)? - Check Main to OPE harness and CN11(main). - Is the level of U15-54 (GP06) high (more than +4V)? - Check control signals of U15-123, 124(OPE_TXD, OPE_RXD).	- Check power harness. - Check the circuit around U13. - Replace defective parts. - Check the state of data bus of U15.: Replace the main PBA. - If signals of OPE_TXD are defective, replace the main PBA. If signals of OPE_RXD is defective, replace OPE PBA. (Refer to circuit explanation.)
	Check OPE key contacts.	Replace OPE.
LF motor does not operate	Check the harness contact.	Check CN1 contact in Main PBA, CN10 contact in Driver PBA, and CN17 in Driver PBA whether each connection is tight.
	Check the control signals of U15-139-144 in Main PBA.	If these CMOS signals are defective when the other functions normal, replace the Main PBA.
	Check the motor signals of U42-1, 19 and U43-1, 19 in Driver PBA.	If these 30V signals are defective when the other functions normal, replace the Driver PBA.
SCAN motor does not operate	Check the harness contact.	Check CN1 contact in Main PBA, CN10 contact in Driver PBA, and CN3 in Driver PBA whether each connection in tight.
ADF motor does not operate	Check the harness contact.	Check CN1 contact in MAIN PBA, CN 10 contact in Driver PBA, and CN4 in Driver PBA whether each connection in tight.
	Check the control signals of U16-50~55 in Main PBA.	If these CMOS signals are defective when the other functions normal, replace the Main PBA.
	Check the motor signals of U18-1, 19 and U19-1, 19 in Driver PBA. Check the motor signals of U23-1, 19 and U28-1, 19 in Driver PBA	If these 30V signals are defective when the other functions normal, replace the Driver PBA.
CR motor does not operate	Check the harness contact.	Check CN2,CN3 contact in Main PBA,CN13, CN16 Driver PBA, and CN2 in Driver PBA whether each connection is tight.
	Check the control signals of U15-32-34 in Main PBA.	If these CMOS signals are defective when the other functions normal, replace the Main PBA.
	Check the motor signals of U6-1, 19 in Driver PBA.	If these 30V signals are defective when the other functions normal, replace the Driver PBA.
Check paper	Check the paper jamming.	Check the real jammming in paper path, and remove it.
	Check the ASF.	Check the ASF according the "Paper Feed".
	Check the sensor output in Main PBA.	Check 5V of U16-68 when the sensor lever is interrupted, and 0V of U16-68 when the sensor lever is lifted. If the sensor is defected, replace it.
	Otherwise	Replace the Main PBA.

5-5 Service Mode

5-5-1 How to enter service mode

In service (tech) mode, the technician can check the machine and perform various tests to isolate the cause of a malfunction.

To enter the service mode, press MENU, # 1, 9, 3, 4 in sequence, and LCD displays 'T', the machine has entered service (Tech) mode.

While in service mode, the machine still performs all normal operations. To return to normal user mode, press MENU, # 1, 9, 3, 4 in sequence again, or turn the power off, then on by unplugging and plugging the power cord.

Options changed while in service mode do not remain changed unless you clear the machine's memory.

5-5-2 Setting-up System

5-5-2-1 Options

Options in User Mode	Item	Default Status
RINGER VOLUME DEFAULT SETTING 1. Quality 2. Lighter / Darken 3. Reduce / Enlarge 4. Color / B & W 5. Paper Type	[OFF/LOW/MED/HIGH] [BEST/NORMAL/DRAFT] [DARKEN/NORMAL/LIGHTEN/FAX PHOTO] [CLONE/100%/AUTO-FIT] [COLOR/B&W] [PLAIN/PREMIUM/GLOSSY/TRANS PAIENCY]	MED NORMAL 100% B&W PLAIN
SOUND CONTROL E ALARM E KEY SELECT LANGUAGE	SOUND ON/OFF SOUND ON/OFF 1.ENGLISH 1.ENGLISH 2.FRENCH 2.GERMAN 3. FRENCH 4.ITALIAN 5.SPENISH 6. PORTUGUESE 7. DUTCH	NO NO ENGLISH
Options in Tech Mode	Item	Default Status
1. MODEM TEST 2. DTMF TEST 3. SCANNER TEST 4. ROM TEST 5. AGING TEST	FSK/2400/4800/72000/9600/12000/14400 /21600/26400/28800/31200/33600 bps CIS SHADING	

5-5-2-2 Options In System Setup

MODEM TEST

The modem will send various transmit signals on the telephone line you can check the following :

- FSK test
- Tones : 1100Hz, 1650Hz, 1850Hz, 2100Hz
- G3 training : 14400, 12000, 9600, 7200, 4800, 2400, 21600, 26400, 28800, 31200, 33600 bpi

DTMF

DTMF (Dual Tone Multiple Frequency) signal can be checked.

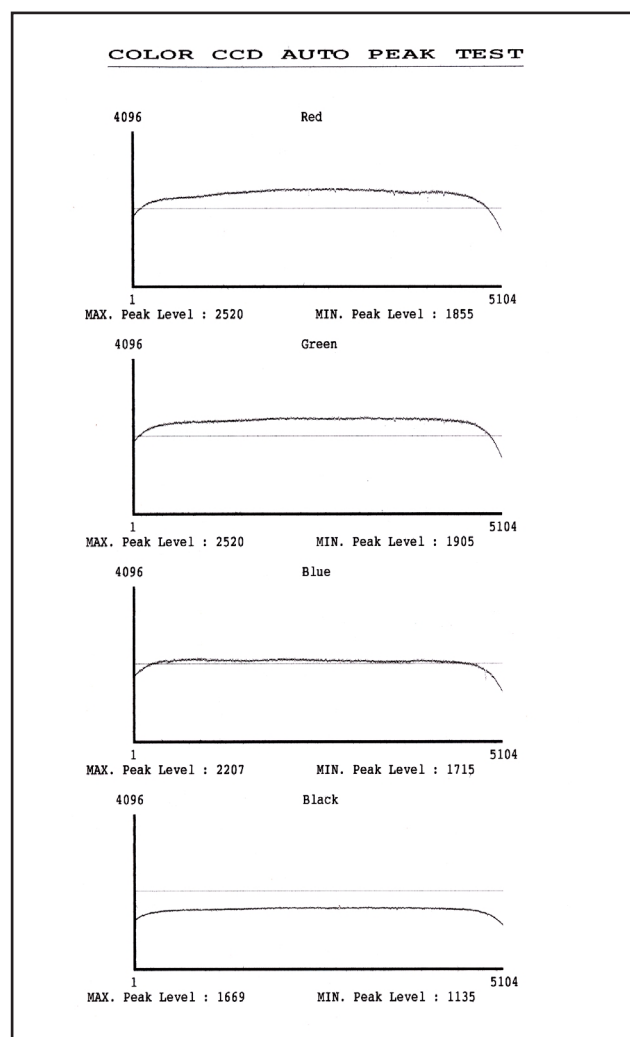
- 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, *, #

SCANNER TEST

- It is used to adjust the amount of light of CCD. It is already set at CCD TEST to get optimum quality.

WARNING!

- Shading profile MUST be made after Downloading a new Firmware.
- If not system will not work properly.
- When you test CCD, make sure that the cover is closed.



ADJUST SEQUENCES

1. Enter 'Tech Mode'
2. Push Start Key when a message appears as "MENU 04 [System Setup]" from Menu option. Use Up/Down Key to select "SCANNER TEST" mode and push Start Key.
3. LCD will display 'SHADING..'
4. After scanning, shading Waveform will be printed out.

5-5-3 Changing System data

5-5-3-1 Selectable System data

System data in User Mode	Item	Default Status
PAPER SIZE	[LTR/A4/LGL]	LTR
MESSAGE CONFIRMAT	[ON/OFF/ERR]	ERR
AUTO JO URINAL	[ON/OFF]	ON
REMOTE RCV CODE	[0-9]	<*9*>
DIAL MODE	[TON/PULSE]	tone
ECM MODE	[ON/OFF]	ON
RX REDUCTION	[ON/OFF]	ON
DISCARD SIZE	[ON/OFF/ON(-V)]	<11>
REDIAL INTERVAL	[00-30]	<03>
REDIALS	[01-15]	2
ANSWER ON RINGS	[012]	1
SEND FROM MEMORY	[1234567]	ON
LOCAL ID.	[ON/OFF]	OFF
CON POLL REPORT	[ON/OFF]	OFF
FAX PRINT QUALITY	[ON/OFF]	LQ
CLOCK MODE	[LQ/DRAFT]	12
USB MODE	[12/24 HOUR]	FAST
DRPD MODE LEARN	[FAST/SLOW]	OFF
System data in User Mode	Item	Default Status
MODEM SPEED	[33.6/28.8/14.4/12/9.6/9.2/4.8/2.4 kbps]	33.6KBPS
SET TX LEVEL	[0-15]	-12dBm
SET RX LEVEL	[40-50]	-43dBm
PAUSE TIME	[1-9]	3sec
ERROR RATE	[5%/10%/20%]	5%
Make break Ratio	[40/60,33/66]	40/60
CNG DETECT CNT	[1-4]	2
Autodial Timeout	[30/35/40/45/50/55/60/65/70]	55
Dial Mode Loc.	[USER/TECH]	USER

5-5-3-2 SYSTEM DATA

MODEM SPEED

Default = 33600 bps

Select baud rate of 33600, 28800, 14400, 12000, 9600, 7200, 4800, or 2400 bps. The lower the baud rate, the larger the acceptable error rate. T30 protocol has a fixed speed of 300 bps in the protocol mode. When the TX speed is set to 33600 or 28800 bps, the RX speed will be either V.17 or V.34.

When the TX speed is set to 14400 or 12000 bps, the TX speed will be either V.17 or V.33. When the TX speed is set to 9600 or 7200 bps, the RX speed will be either V.29 or V.27 ter. When the TX speed is set to 4800 or 2400 bps, the RX speed will be V.27 ter.

FAX TX LEVEL

Default = -12 dBm

FCC requires that the transmission level be less than -9 dBm. from -9 dBm to -15 dBm is acceptable.

You can set the transmission level between - and -15 dBm in 1 dBm steps using the control panel keypad. Accuracy is +0/-3 dBm.

FAX RX LEVEL

Default = -43 dBm

Reception level may be too low due to cable losses. If set to -43 dBm, reception sensitivity will be between 0 and -43 dBm.

PAUSE TIME

Default = 3.0 seconds

This sets the length of the pause time from 1 through 9 seconds, when the pause button is pressed.

ERROR RATE

Default = 5%

Error rate of "RTN send" during transmission.

MAKE BREAK RATIO

Default = 40/60

DP dial

CNG DETECT CNT

Default = 2 times

After detecting the chosen CNG Tone, Ans/Fax Mode (1 to 4 times)

AUTO DIAL TIME OUT

Default = 55 seconds

T1 Time out default opting during transmission (possible to choose between 30 to 70)

DIAL MODE LOCATION

Default = User Mode

Use Dial Mode Option to change between User Mode or Tech Mode.(User/Tech)

5-5-3-3. CHANGING SYSTEM DATA

Press MENU and when "MENU 01 [System Data]" message displayed on the LCD then press start or select.

When the desired system data appears, enter the corresponding information to change the status of the selected function. Press STOP to return to the date and time display.

6. Exploded Views and Parts List

6-1 Main Exploded View & Parts List

6-2 MEC Cover Main Exploded View & Parts List

6-3 Scanner Exploded View & Parts List

6-4 Engine Exploded View & Parts List

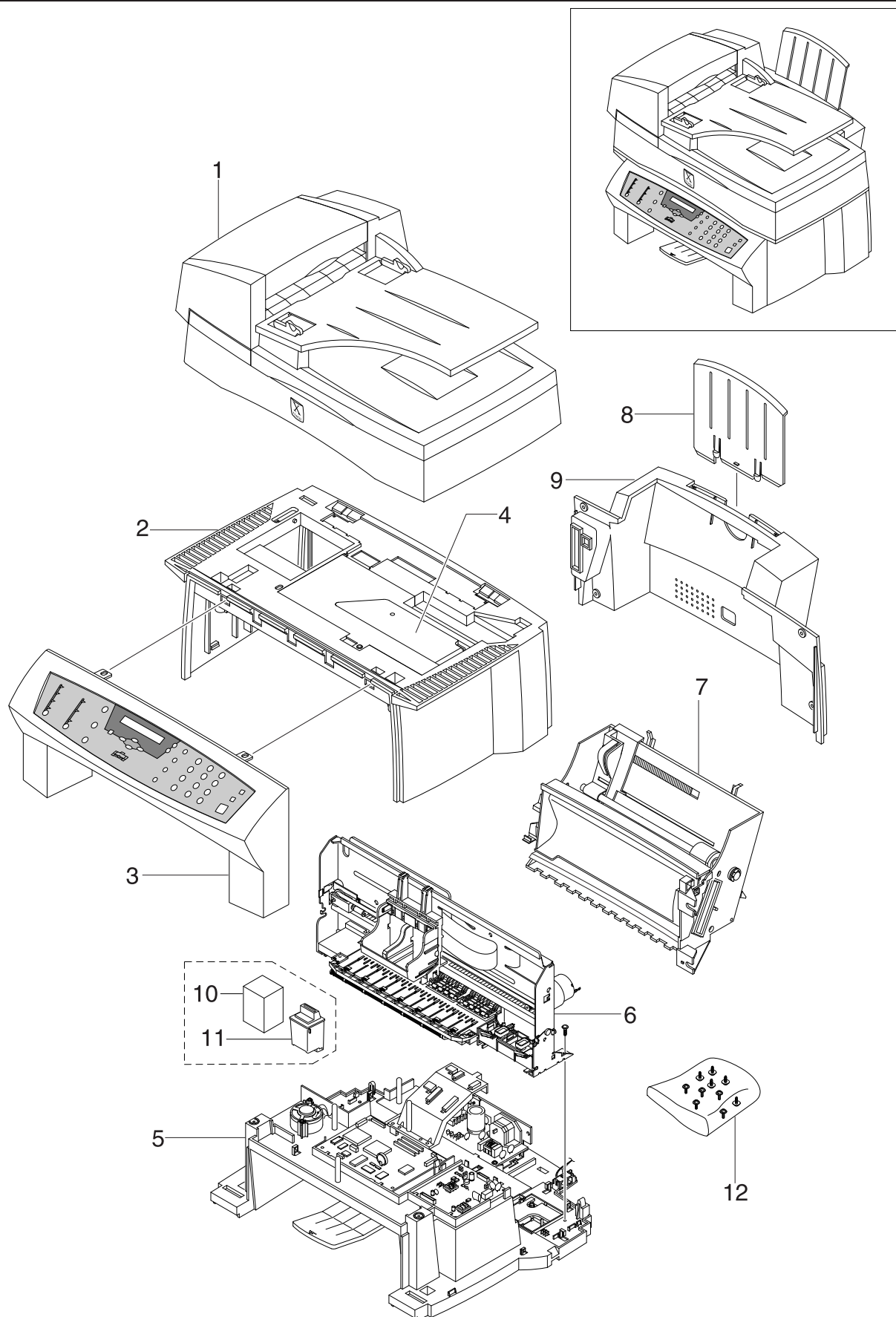
6-5 MEC-Feeder Exploded View & Parts List

6-6 MEC-Cover Bottom Exploded View & Parts List

6-7 OPE Exploded View & Parts List

6-8 Packing & Parts List

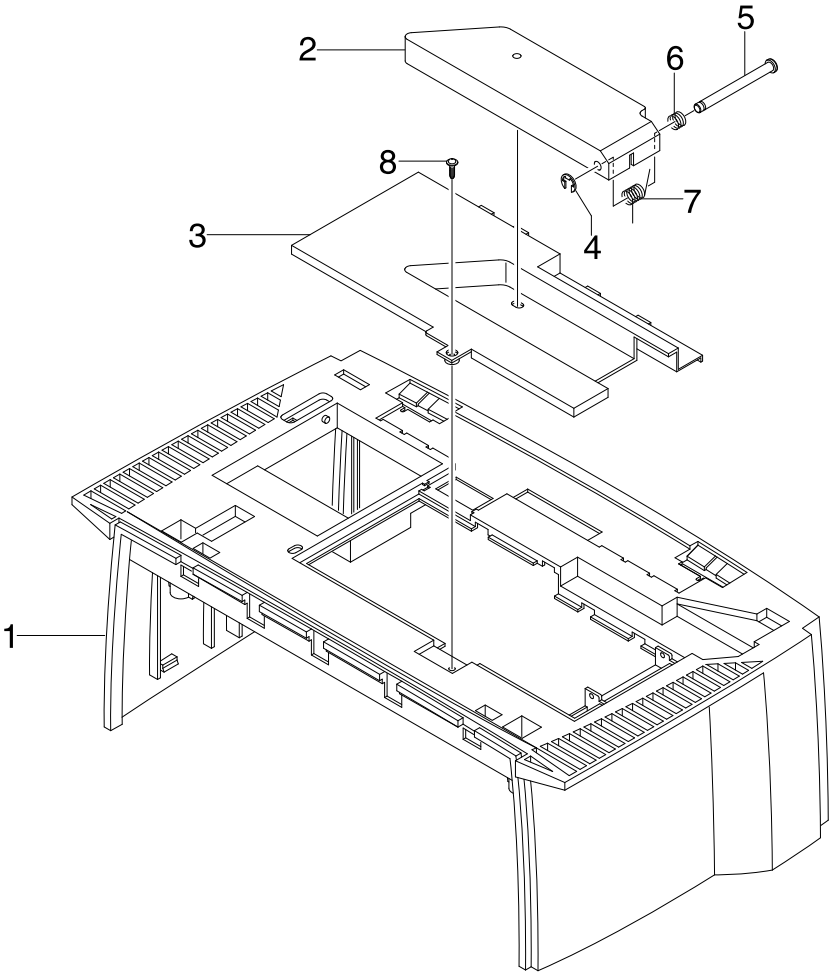
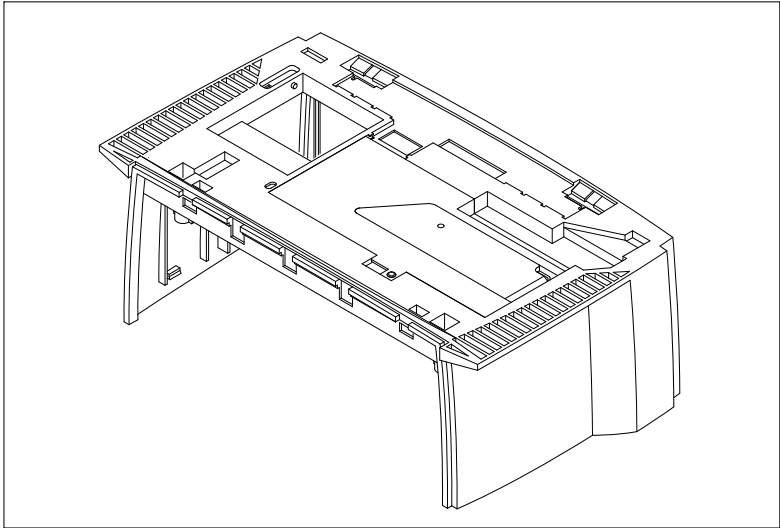
6-1 Main Exploded View & Parts List



- Main Parts List

NO	DESCRIPTION	SEC. CODE	Q'TY	A/S
1	ELA•UNIT-ADF SCANNER	JB96-01220A	1	O
2	MEC-COVER MAIN	JB75-00273B	1	O
3	MEC-CONT PNL ASS'Y	JB75-00306A	1	O
4	SCANNER SUPPORTER	TBD	1	
5	MEC-COVER BOTTOM	JB75-00275A	1	
6	ELA UNIT-ENGINE ASS'Y	-	1	O
7	MEC-FEEDER(SEC)	JB75-00308A	1	O
8	PMO-GUIDE EXTENSION	JB72-00304A	1	O
9	PMO-COVER REAR	JB72-00755B	1	O
10	PRINT HEAD INK-COLOR	JB47-00014A	1	
11	PRINT HEAD INK-MONO	JB47-00015A	1	
12	HARDWARE-KIT	JB82-00001A	1	O

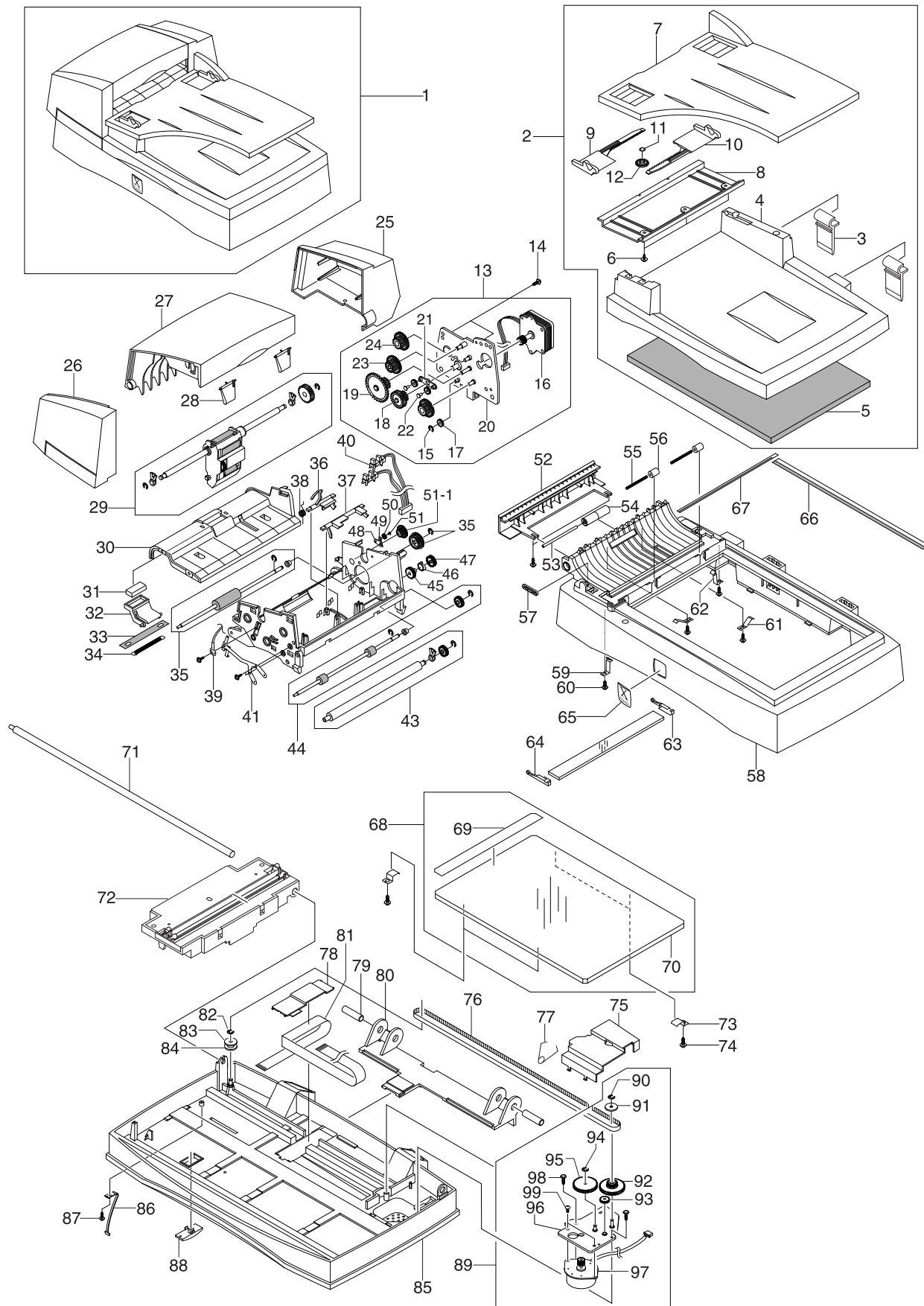
6-2 MEC-Cover Main Exploded View & Parts List



- MEC Cover Main Parts List

NO	DESCRIPTION	SEC. CODE	Q'TY	A/S
1	PMO-COVER MAIN	JB72-00756A	1	
2	SUPPORT SCANNER	TBD	1	
3	COVER PCB	TBD	1	
4	E-RING	TBD	1	
5	SHAFT	TBD	1	
6	SPRING (A) PIN	TBD	1	
7	SPRING (B) PIN	TBD	1	
8	SCREW (M3X10)	6003-000196	1	

6-3 Scanner Exploded View & Parts List



- Scanner Parts List

NO	DESCRIPTION	SEC. CODE	Q'TY	A/S
1	ELA UNIT-ADF/SCANNER(CC2-F)	JB96-01220A	1	
2	MEC-COVER PLATEN ASS'Y	JB75-00302A	1	
3	HINGE-PLATEN	JB61-00062A	2	
4	PMO-COVER PLATEN	JB72-00829A	1	
5	MPR-SHEET W/ SPONGE	JB74-00036A	1	
6	SCREW-TAPPING	6002-000175	3	
7	PMO-TX STACKER	JB72-00830A	1	
8	PMO-TX COVER	JB72-00847A	1	
9	PMO-GUIDE DOC(L)	JC72-41335A	1	
10	PMO-GUIDE DOC(R)	JC72-41336A	1	
11	IPR-WASHER SPRING CU	JF70-10616A	1	
12	GEAR-PINION	JG66-40003A	1	
13	ELA ETC-MOTOR ASS'Y(CC2-F)	JB96-01240A	1	O
14	SCREW-TAPTITE	6003-000269	2	
15	RING-C	6044-000159	3	
16	MOTOR-STEP 3.75(CC2-F)	JB31-00018A	1	
17	GEAR-IDLE SWING12(0.8)	JB66-00053A	1	
18	GEAR-DOUBLE 13/36	JB66-00096A	1	
19	GEAR-DOUBLE 20/54	JB66-00097A	1	
20	IPR-BRKT MOTOR ADF(3.75)	JB70-00162A	1	
21	PMO-ARM SWING GEAR 2X12	JB72-00818A	1	
22	PMO-CLUTCH ARM PIN	JB72-40995A	2	
23	GEAR-IDLE20/33	JG66-40038A	1	
24	GEAR-IDLE17/35	JG66-40039A	2	
25	PMO-COVER SIDE(L)	JB72-00841A	1	
26	PMO-COVER SIDE(R)	JB72-00840A	1	
27	PMO-COVER OPEN	JB72-00839A	1	
28	PMO-GUIDE PAPER	JB72-00843A	2	
29	MEC-PICK UP ASS'Y	JB75-00297A	1	O
30	PMO-ADF UPPER	JB72-00838A	1	
31	RMO-ADF RUBBER	JB73-00052A	1	O
32	PMO-HOLDER ADF	JB72-00825A	1	
33	RPR-SPONGE ADF	JB73-10913A	1	
34	SPRING-ADF	JB61-00009A	1	
35	MEC-ROLLER DRIVE ASS'Y	JB75-00295A	1	
36	PMO-ACTUATOR SENSOR DOC	JB72-00837A	1	
37	PMO-ACTUATOR SENSOR SCAN	JB72-00836A	1	
38	SPRING-TORSION DOC(CC2-F)	JB61-00076A	1	
39	CBF HARNESS-SCAN GND	JB39-00102A	1	
40	ELA M/M-SCAN SENSER	JB96-01232A	1	O
41	NPR-SPRING GND	JB71-00035A	1	

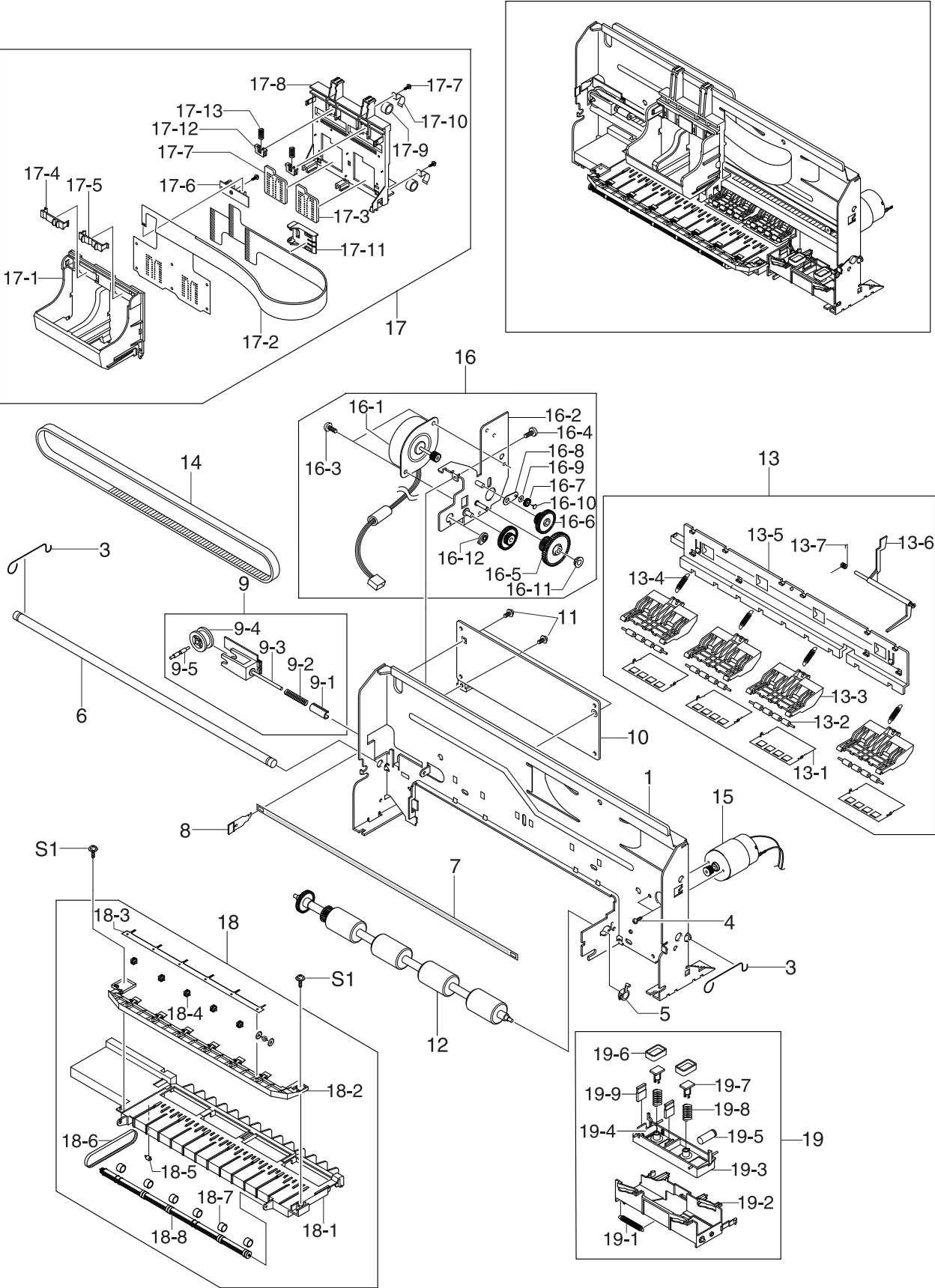
- Scanner Parts List

NO	DESCRIPTION	SEC. CODE	Q'TY	A/S
42	PMO-ADF LOWER	JB72-00827A	1	
43	MEC-ROLLER WHITE ASS'Y	JB75-00296A	1	O
44	MEC-ROLLER EXIT ASS'Y	JB75-00291A	1	
45	GEAR-CLUTCH 29	JB66-00101A	1	
46	PMO-WHITE CLUTCH SUB 29	JB72-00844A	1	
47	GEAR-CLUTCH IDLE 29	JB66-00100A	1	
48	PMO-ARM(SWING GEAR1X12)	JB72-00493A	1	
49	IPR-WASHER WAVE	JB70-00070A	1	
50	GEAR-IDLE SWING12(0.8)	JB66-00053A		
51	PMO-CLUTCH ARM PIN	JB72-40995A	1	
51-1	GEAR-DOUBLE 20/14(0.8)	JB66-00056A	1	
52	PMO-COVER DUMMY	JB72-00842A	1	
53	ICT-SHAFT PINCH	JF70-40521B	1	
54	PMO-ROLL PINCH	JG72-40663A	1	
55	SPRING-SHAFT PINCH EXIT	JB61-00073A	2	
56	MEC-ROLLER PINCH EXIT	JB75-00305A	2	
57	PMO-STOPPER ADF	JB72-00835A	1	
58	PMO-COVER SCAN UPPER	JB72-00828A	1	
59	NPR-SPRING LOCK	JB71-00036A	2	
60	SCREW-TAPPING	6002-000175	6	
61	NPR-SPRING PINCH DRIVE	JB71-00038A	2	
62	NPR-SPRING ADF GLASS	JB71-00037A	2	
63	PMO-HOLDER GLASS(L)	JB72-00833A	1	
64	PMO-HOLDER GLASS(R)	JB72-00834A	1	
65	RMO-BADGE LOGO	JB73-00042A	1	
66	LABEL(R)-REGISTRATION EDGE(R)	JB68-00089A	1	
67	LABEL(R)-REGISTRATION EDGE(L)	JB68-00469A	1	
68	MEC-OPTICAL GLASS	JB75-00271A	1	O
69	LABEL(P)-SHEET SHADING	JB68-00419A	1	
70	MCT-GLASS SCANNER	JB74-00031A	1	
71	ICT-SHAFT CCD	JB70-00145A	1	
72	ELEC/MECH-SCANNER MODULE	JB96-01175A	1	O
73	IPR-HOLDER GLASS	JB70-00148A	4	
74	SCREW-TAPPING	6002-000175	3	
75	PMO-COVER MOTOR	JB72-00751A	1	
76	BELT-TIMING GEAR	6602-001067	1	O
77	SPRING-BELT	JB61-00059A	1	
78	PMO-COVER HARNESS	JB72-00753A	1	
79	ICT-SHAFT PIN	JB70-00147A	2	O
80	HINGE-FRAME	JB61-00061A	1	
81	CBF SIGNAL-CCD MODULE	JB39-00097A	1	

- Scanner Parts List

NO	DESCRIPTION	SEC. CODE	Q'TY	A/S
82	RING-E	6044-000125	1	
83	PMO-HOLDER BELT	JB72-00764A	1	
84	PMO-PULLEY	JB72-00763A	1	
85	PMO-COVER SCAN LOWER	JB72-00760A	1	
86	PMO-TIE STOPPER	JG72-40717A	1	
87	SCREW-TAPPING	6002-000175	1	
88	PMO-HOLDER CCD	JB72-00759A	1	
89	MEA UNIT-MOTOR BRACKET	JB97-01450A	1	O
90	RING-E	6044-000125	1	
91	PMO-HOLDER BELT	JB72-00764A	1	
92	GEAR-TIMING	JB66-00082A	1	
93	GEAR-IDLE	JB66-00083A	1	
94	RING-E	6044-000125	1	
95	GEAR-REDUCTION	JB66-00084A	1	
96	IPR-BRACKET MOTOR	JB70-00144A	1	
97	MOTOR-SCAN	JB31-00011A	1	
98	SCREW-TAPPING	6002-000175	2	
99	SCREW-TAPTITE	6003-000269	2	

6-4 Engine Exploded View & Parts List



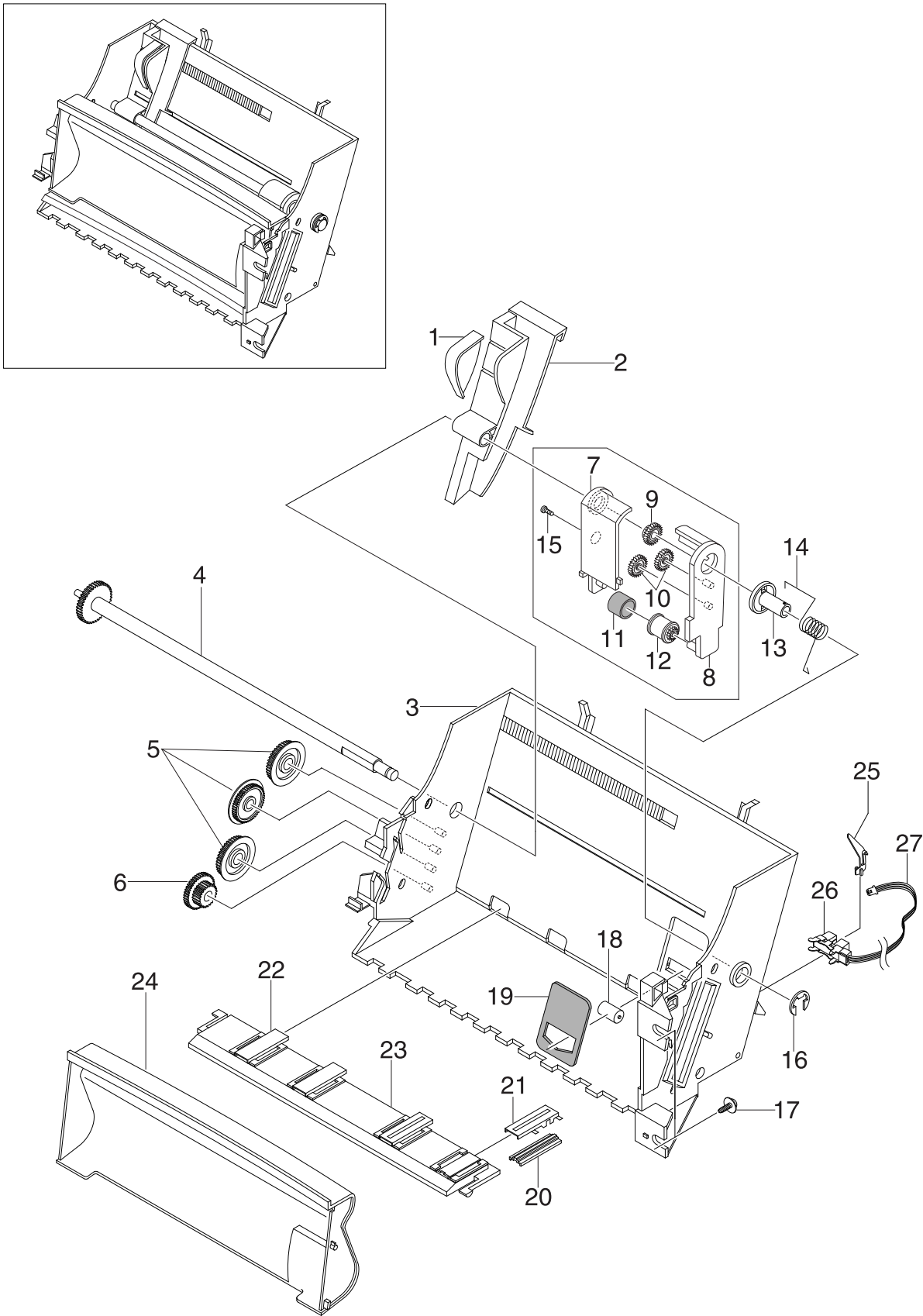
- Engine Parts List

NO	DESCRIPTION	SEC. CODE	Q'TY	A/S
1	IPR-FRAME MAIN	JB70-00058A	1	
2	MOTOR-DC CARRIAGE	JB31-00005A	1	
3	SPRING-SHAFT CR	JB61-70913A	2	O
4	SCREW-MACHINE	6001-000485	2	
5	VEARING-FEEDR	JB66-10002A	1	O
6	ICT-SHAFT CR	JB70-40906A	1	O
7	PPR-ENCODER STRIP(V)	JB72-00662A	1	O
8	SPRING-PS ENCODER	JB61-70917A	1	
9	PULLY IDLE ASS'Y	JB75-11110A	1	O
9-1	PMO-STOPPER PULLEY	JB72-41212A	1	
9-2	SPRING-CS PULLEY	JB61-70914A	1	
9-3	PMO-HOLDER IDLE	JB72-41412A	1	
9-4	PMO-PULLEY IDLE	JB72-41411A	1	
9-5	MEL PULLEY IDLE	JB75-11110A	1	
10	PBA SUB-DRIVER PBA	JB92-01119A	1	O
11	SCREW-TAPTITE	6003-001062	2	
12	MEL-ROLLER FEED	JB75-11112A	1	O
13	HOLDER ROLLER ASS'Y	JB75-11111A	1	O
13-1	IPR-DEFLECTOR	JB70-10916A	4	
13-2	ICT-FRICTION ROLLER	JB70-40910A	4	
13-3	PMO-HOLDER F/R	JB72-41420A	4	
13-4	SPRING-ES FRICTION	JB61-70918A	4	
13-5	PMO-HOLDER ROLLER	JB72-41339A	1	
13-6	PMO-ACTUATOR FEED	JB72-40993A	1	
13-7	SPRING-ES ACTUATOR	JB61-70919A	1	
14	BELT-CARRIER	JB66-20908A	1	
15	CBF HARNESS-DC MOTOR	JB39-00094A	1	
16	BRKT LF ASS'Y	JB75-00210A	1	O
16-1	MOTOR-STEP LF(V)	JB31-00007A	1	
16-2	MEA UNIT-BRKT LF	JB97-00988A	1	
16-3	SCREW-TAPTITE	6003-000269	2	
16-4	SCREW-TAPTITE	6003-000269	2	
16-5	GEAR-LF IDLE 75	JB66-40910A	1	
16-6	GEAT-LF IDLE 51	JB66-40909A	2	
16-7	GEAT-CLUTCH	JB66-40911A	1	
16-8	PMO-CLUTCH ARM	JB72-40994A	1	
16-9	SPRING-CLUTCH	JB61-70922A	1	
16-10	PMO-CLUTCH ARM PIN	JB72-40995A	1	
16-11	PMO-RETAINER GEAR	JB72-41023A	1	
16-12	BEARING-FEED L	JB66-10001A	1	
17	UNIT CARRIAGE ASS'Y	JB96-01172A	1	O

Exploded Views and Parts List

NO	DESCRIPTION	SEC. CODE	Q'TY	A/S
17-1	PMO-FRAME CARRIER	JB72-41328A	1	
17-2	PCB-FPC	JB41-10531A	1	
17-3	PMO-HOLDER FPC	JB72-40289A	1	
17-4	PMO-KEY HEAD COLOR "AC"	JB72-00195A	1	
17-5	PMO-KEY HEAD G	JB72-41110A	1	
17-6	PBA MAIN-ENCODER PBA	JB92-01088A	1	
17-7	SCREW-TAPPING	6002-001065	3	
17-8	PMO-CRADDLE HEAD	JB72-40282A	1	
17-9	BEARING-CLAMP	JB66-10902A	2	
17-10	IPR-BEARING CLAMP	JB70-10914A	2	
17-11	RPR-RUBBER CONTACT	JB73-10901A	2	
17-12	PMO-LATCH HEAD	JB72-41403A	2	
17-13	SPRING-LATCH HEAD	JB61-70941A	2	
18	FRAME BASE PRT	JB75-00170A	1	O
18-1	PMO-HOLDER WHEEL	JB72-41342A	1	
18-2	PMO-HOLDER WHEEL	JB72-00394A	1	
18-3	IPR-SPRING WHEEL	JB70-10917A	1	
18-4	MEA UNIT-WHEEL STAR	JB97-00968A	6	
18-5	PMO-ROLLER PINCH	JB72-41341A	1	
18-6	BELT-EXIT	JB66-20906A	1	
18-7	REX-EXIT ROLLER	JB73-20002A	6	
18-8	PMO-ROLLER EXIT	JB72-00395A	1	
19	HOME ASS'Y	JB75-00174A	1	O
19-1	SPRING-CS PULLEY	JB61-70914A	1	
19-2	PMO-HOLDER PULLEY	JB72-41412A	1	
19-3	PMO-FRAME HOME	JB72-00396A	1	
19-4	PMO-PULLEY IDLE	JB7241411A	1	
19-5	ICT-SHAFT PULLEY IDLE	JB70-40921A	1	
19-6	RPR-RUBBER CAP HEAD	JB73-10903A	2	
19-7	PMO-HOLDER CAP	JB72-41337A	2	
19-8	SPRING-CS	6107-000014	2	
19-9	RPR-RUBBER WIPE HEAD	JB73-10902A	2	
S1	SCREW-TAPPING	6002-000101	2	

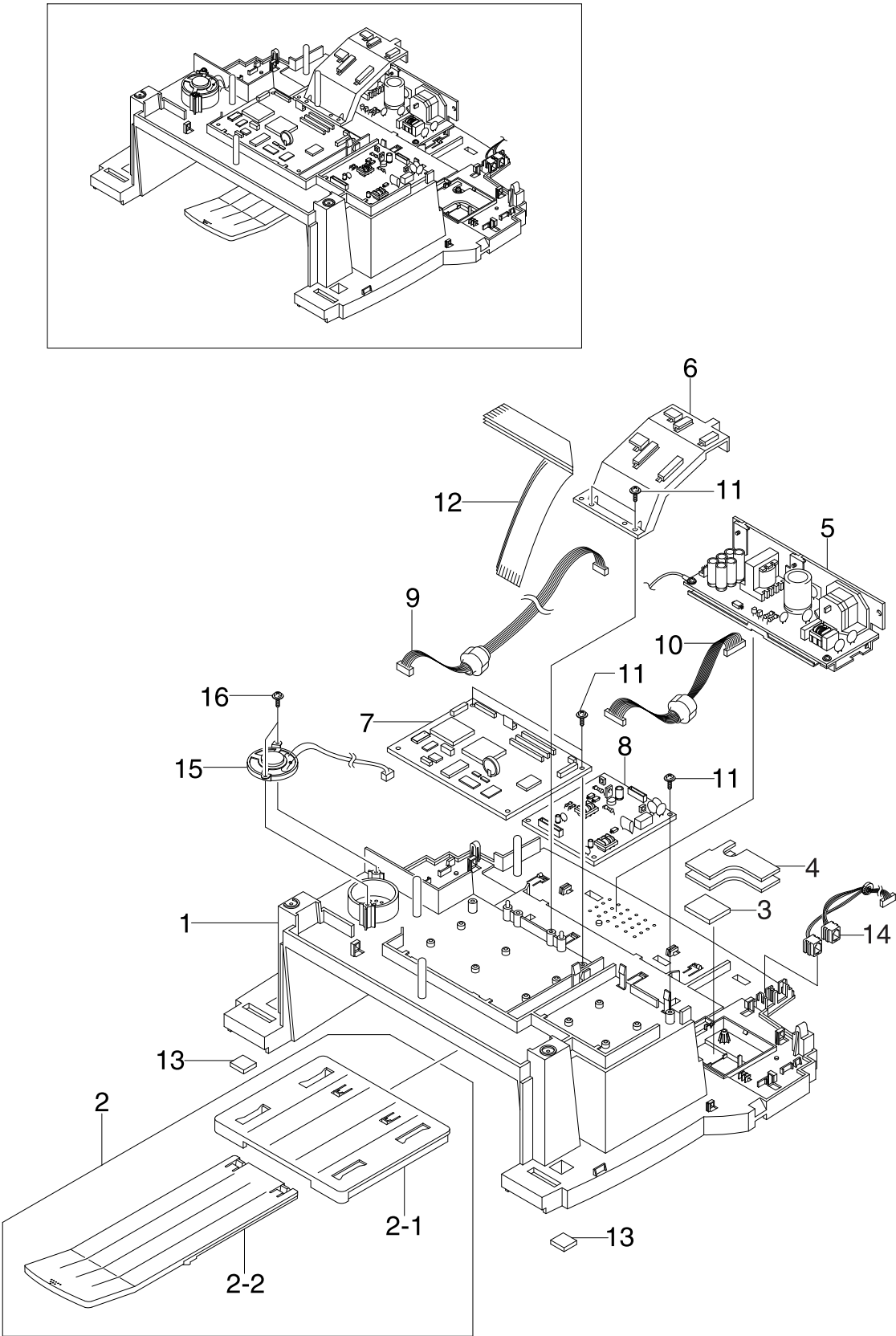
6-5 MEC-Feeder Exploded View & Parts List



- MEC-Feeder Parts List

NO	DESCRIPTION	SEC. CODE	Q'TY	A/S
1	PMO-CAP LEFT EDGE	JB72-00269A	1	
2	PMO-GUIDE SIDE PAPER	JB72-00303A	1	
3	PMO-FRAME ASF	JB72-00301A	1	
4	PMO-SHAFT PICKUP	JB72-41331B	1	
5	GEAR-IDLER ASF	JB72-40927A	3	
6	GEAR-DRIVER ASF	JB66-40928A	1	
7	PMO-HOUSING R	JB72-40982A	1	
8	PMO-MOUSING L	JB72-40985A	1	
9	GEAR-drive PICKUP	JB66-40907A	1	
10	GEAR-PICKUP IDLER	JB66-40906A	2	
11	RMO-PICKUP RUBBER	JB73-40903	1	
12	PMO-PICKUP ROLL	JB72-40983A	1	
13	PMO-PAPER CAPACITY	JB72-41016A	1	
14	SPRING-TORSION AC	JB61-70921A	1	
15	SCREW-TAPPING	6002-000308	1	
16	RING-E	6044-000231	1	
17	SCREW-TAPTITE	6003-000269	2	
18	PMO-ROLLER IDLER	JB72-41332A	1	
19	MPR-PAD FRICTION	JB74-10915A	1	
20	RMO-BUCKLER FRICTION	JB73-40905A	2	
21	IPR-BRKT RIB	JB70-10920A	2	
22	IPR-BRKT BUCKLER	JB70-10919A	2	
23	PMO-DAM FRICTION	JB72-41037A	1	
24	PMO-COVER ASF	JB72-00750A	1	
25	PMO-ACTUATOR PE	JB72-00443A	1	O
26	PHOTO-INTERRUPTER	0604-001050	1	O
27	CBF HARNESS-PES	JB39-40504A	1	O

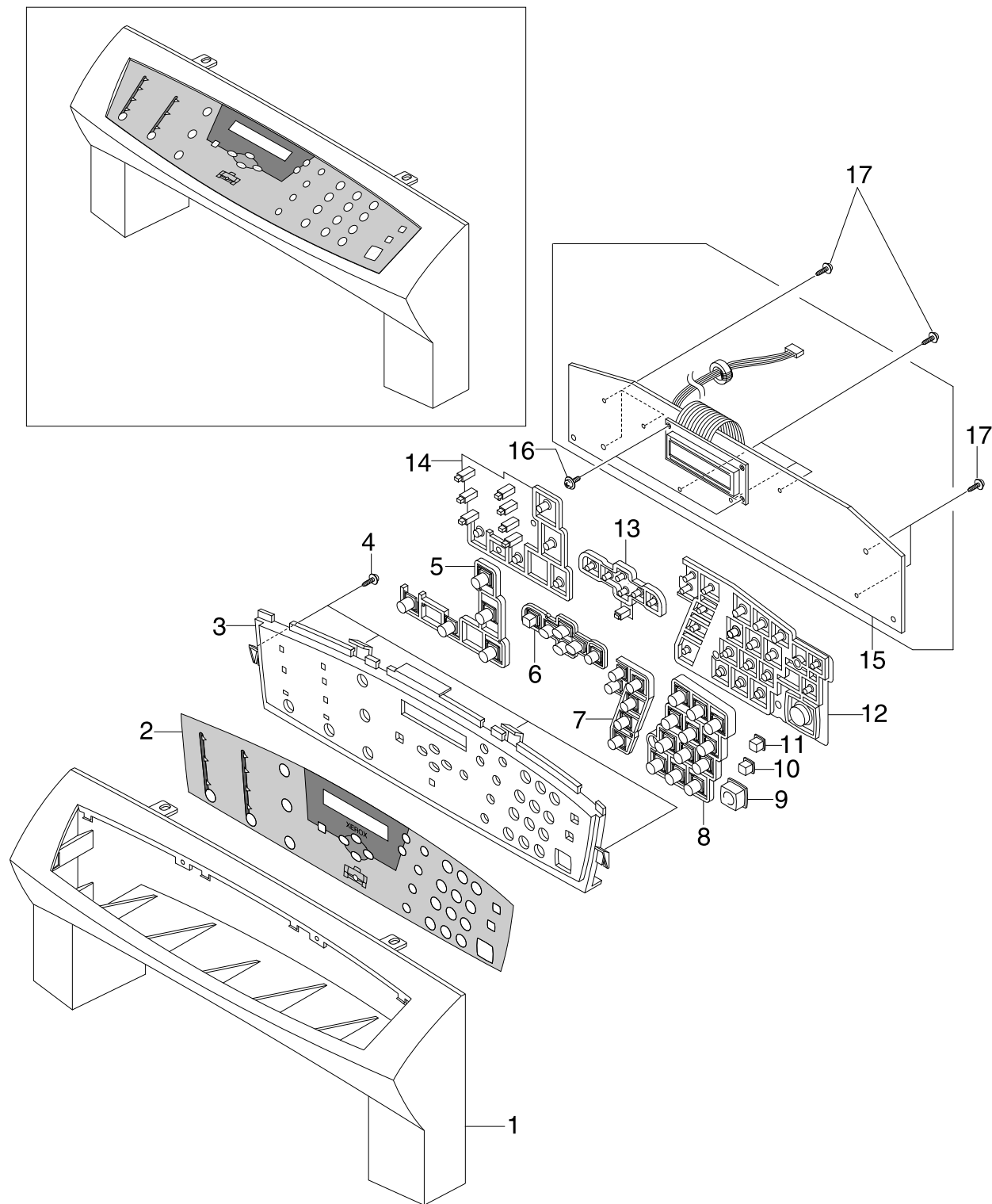
6-6 MEC-Cover Bottom Exploded View & Parts List



- MEC-Cover Bottom Parts List

NO	DESCRIPTION	SEC. CODE	Q'TY	A/S
1	PMO-COVER BOTTOM	JB72-00757A	1	
2	RX STACKER	JB75-00117A	1	O
2-1	PMO-STACKER R¥1	JB72-00286A	1	
2-2	PMO-STACKER R¥2	JB72-00287A	1	
3	MPR-FELT LOWER	JB74-00015A	1	O
4	MPR-FELT UPPER	JB74-00014A	2	O
5	ELA PWR-SMPS	JB96-01176A	1	O
6	PMO-HOLDER HARNESS	JB72-00765A	1	O
7	PBA SUB-MAIN PBA	JB92-01118A	1	O
8	PBA LIU	JB92-01142A	1	O
9	CBF HARNESS USB	JB39-00075A	1	
10	CBF HARNESS-LIU	JB39-00104A	1	
11	SCREW-TAPPING	6003-000196	2	
12	CBF SIGNAL-MAIN DRIVER	JB39-00079A	3	O
13	FOOT-RUBBER	JB61-40901A	2	O
14	CBF HARNESS-MODULAR	JB39-00105A	1	
15	SPEAKER ASS'Y	JB96-01203A	1	
16	M3XL10 SCREW	6003-000196	1	

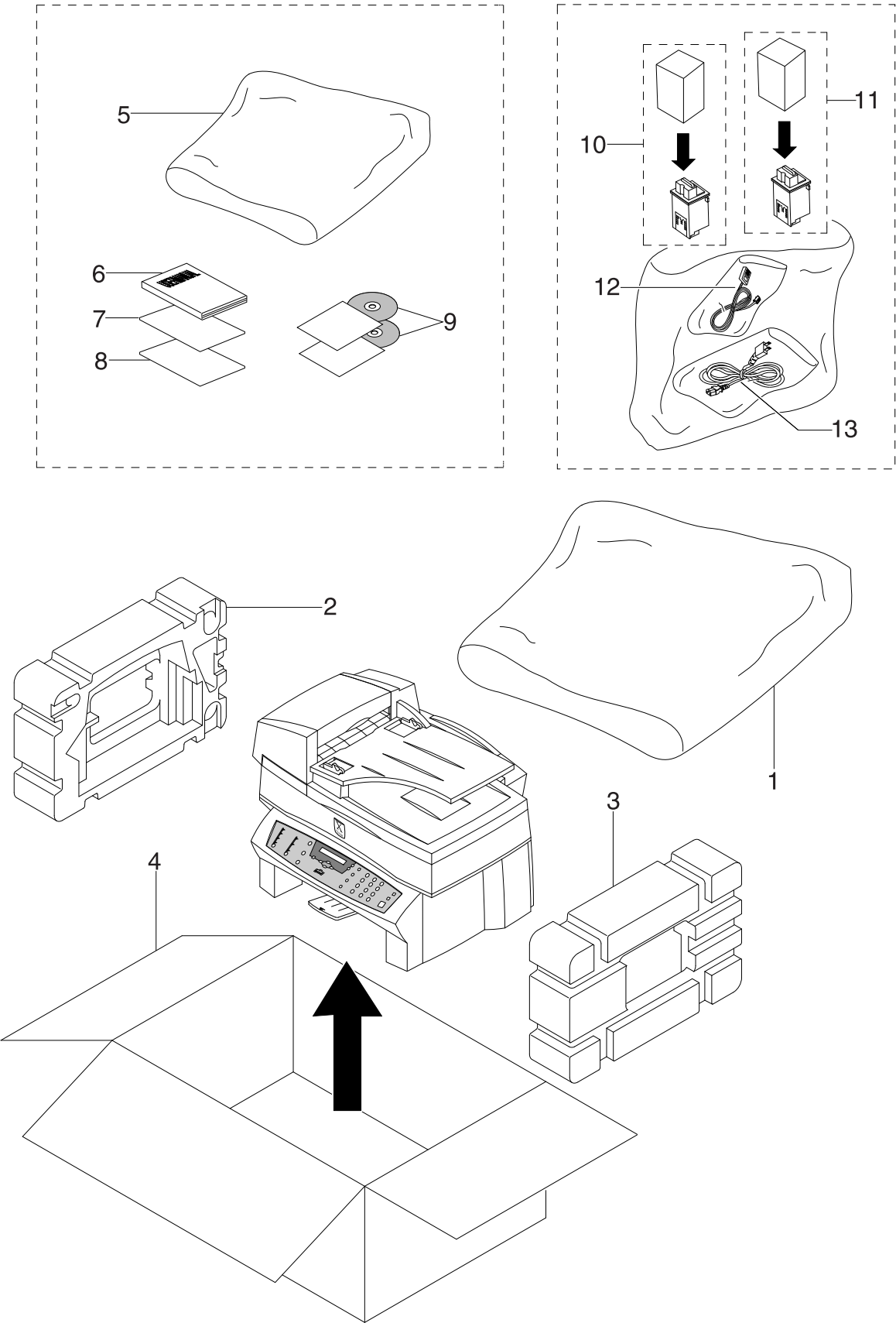
6-7 Control Panel Ass'y Exploded View & Parts List



- Control Panel Ass'y Parts List

NO	DESCRIPTION	SEC. CODE	Q'TY	A/S
1	PMO-COVER FRONT	JB72-00831A	1	
2	PPR-OVER LAY	JB72-00850A	1	
3	PMO-OPE PANEL	JB72-00832A	1	
4	SCREW, M3XL8	6002-000175	2	
5	PMO-KEY FUNCTION(A)	JC72-00454A	1	
6	PMO-KEY SCROLL	JC72-00453A	1	
7	PMO-KEY FUNCTION(B)	JC72-00455A	1	
8	PMO-KEY TEL	JC72-00452A	1	
9	PMO-KEY START	JC72-00450A	1	
10	PMO-KEY STOP	JC72-00451A	1	
11	PMO-KEY REPORT	JC72-00457A	1	
12	RMO-RUBBER TEL	JC73-00043A	1	
13	RMO-RUBBER SCROLL	JC73-00044A	1	
14	R,MO-RUBBER FUNCTION	JC73-00045A	1	
15	PBA OPE	JB92-01133A	1	O
16	SCREW, M3XL5	6002-001065	2	
17	SEREW, M3XL8	6002-000175	8	

6-8 Packing & Parts List

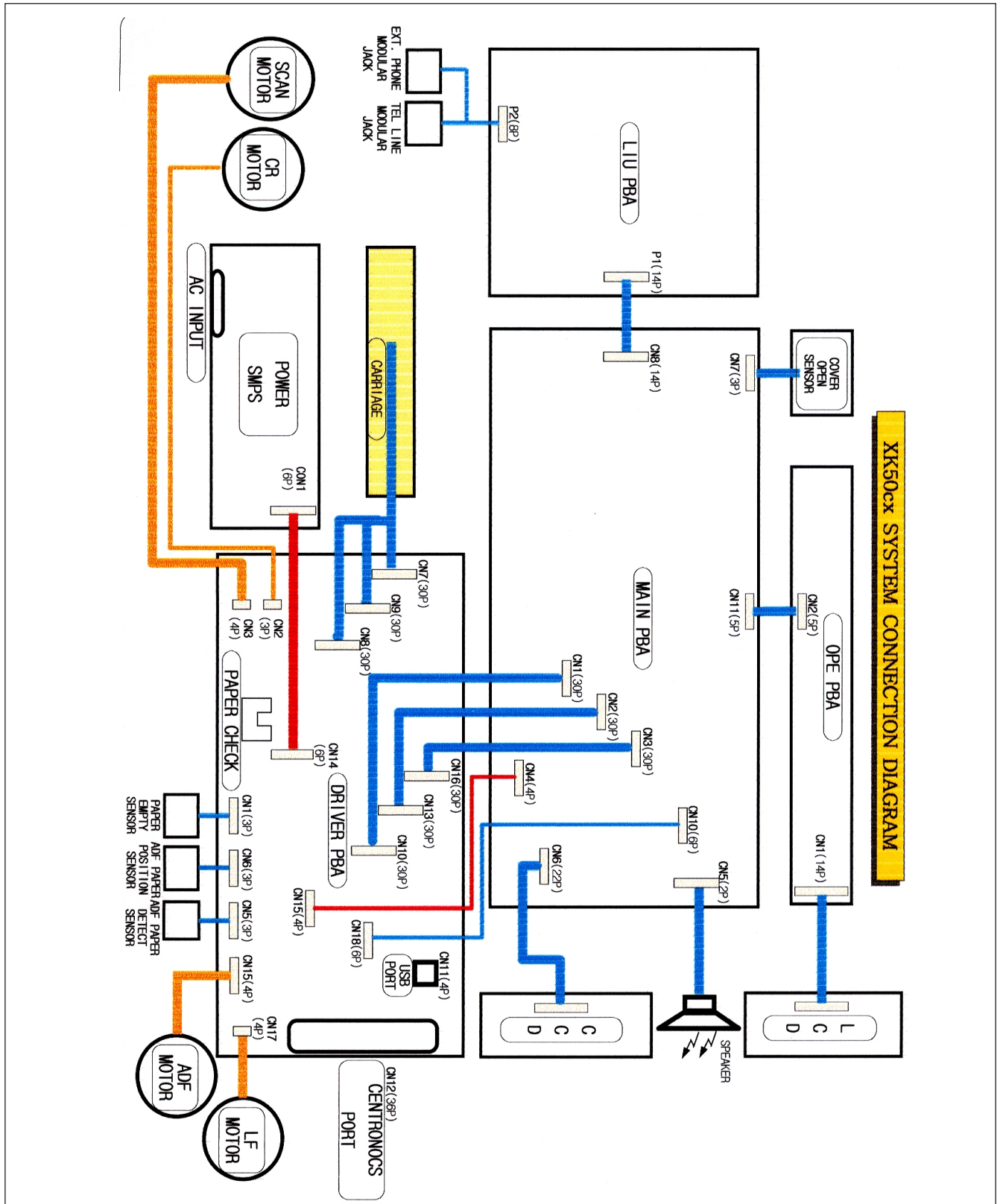


- Packing Parts List

NO	DESCRIPTION	SEC. CODE	Q'TY	A/S
1	BAG-PE SET	JK69-30101A	1	
2	CUSHION-L	JB69-00118A	1	
3	CUSHION-R	JB69-00118A	1	
4	BOX(P)-MAIN	JB69-00117A	1	O
5	BAG-PE(Accessory)	JC69-00031C	1	
6	MAN(BOOK)-QRG	-	1	O
7	MAN(CARD)-WARRANTY	-	1	
8	MAN(CARD)-QRC	-	1	O
9	S/W-UTILITY CD-ROM1,2	-	1	
10	PRINT HEAD INK-COLOR	JB47-00014A	1	
11	PRINT HEAD INK-MONO	JB47-00015A	1	
12	CBF-INTERFACE-USB	JC39-00001A	1	O
13	POWER CORD-SF-4705	JB39-00001A	1	O

8. Block Diagrams

8-1 System Interconnection Diagram



7. Electrical Parts List

7-1 Main PBA

Sec Code	Description	Spec	Location No	Q'ty
JB92-01141A	PBA SUB-MAIN	"SCX-1110F,XEROX,USA,MAIN,FAX,-,-,-"		1
0401-000116	DIODE-SWITCHING	"MMSD914T1,100V,200mA,225mW,4nS"	D2	1
0401-000116	DIODE-SWITCHING	"MMSD914T1,100V,200mA,225mW,4nS"	D4	1
0401-000116	DIODE-SWITCHING	"MMSD914T1,100V,200mA,225mW,4nS"	D6	1
0404-000112	DIODE-SCHOTTKY	"RB420D,25V,100mA,SOT-23,TP"	D1	1
0404-000112	DIODE-SCHOTTKY	"RB420D,25V,100mA,SOT-23,TP"	D5	1
0501-000279	TR-SMALL SIGNAL	"KSA1182-Y,PNP,150mW,SOT-23,TP,"	Q10	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q1	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q11	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q12	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q3	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q4	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q6	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q7	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q9	1
0501-000545	TR-SMALL SIGNAL	"KTA1663,PNP,500mW,SOT-89,TP,16"	Q5	1
0801-000888	IC-CMOS LOGIC	"74HCT04,INVERTER,SOP,14P,150MI"	U28	1
0801-000921	IC-CMOS LOGIC	"74HCT244,BUFFER/DRIVER,SOP,20P"	U4	1
0801-001055	IC-CMOS LOGIC	"74VHC08,AND GATE,SOP,14P,150MI"	U21	1
0801-001056	IC-CMOS LOGIC	"74VHC32,OR GATE,SOP,14P,150MIL"	U22	1
0803-000916	IC-TTL	"74LS245,TRANSCEIVER,SOP,20P,30"	U14	1
1001-000170	IC-ANALOG SWITCH	"MC14051BD,SPDT CMOS,SOP,16P,15"	U5	1
1001-000171	IC-ANALOG SWITCH	"MC14053BD,SPDT CMOS,SOP,16P,15"	U6	1
1105-001213	IC-DRAM	"416C1204,1Mx16BIT,SOJ,42P,400M"	U24	1
1105-001252	IC-DRAM	"416C4104,4MX16BIT,TSOP,50P,400MIL,50NS,5V,10%,PLASTIC,0TO+70C,2MA,CMOS,ST"	U27	1
1106-001327	IC-SRAM	"6R1016,64Kx16Bit,TSOP,44P,400MIL,15nS,3.3V,10%,PLASTIC,0to+70C,5mA,CMOS,TR"	U20	1
1106-001332	IC-SRAM	"6R1008,128Kx8Bit,SOJ,32P,400MIL,15nS,3.3V,10%,PLASTIC,0to+70C,5mA,CMOS,ST"	U19	1
1107-001248	IC-FLASH MEMORY	"29F800,1Mx8/512Kx16Bit,TSOP,48P,724MIL,55nS,5V,10%,PLASTIC,0to+70C,1mA,CMOS,TR"	U25	1
1201-000105	IC-AUDIO AMP	"34119,SOP,8P,150MIL,SINGLE,-,P"	U1	1
1201-000167	IC-OP AMP	"358,SOP,8P,150MIL,DUAL,100V/mV"	U11	1
1201-000167	IC-OP AMP	"358,SOP,8P,150MIL,DUAL,100V/mV"	U12	1
1201-001589	IC-OP AMP	"15420,SOP,TP,8P,150MIL,DUAL,5.9dB,PLASTIC,14V,400mW,-20to+80C,-,-,15uA,-"	U10	1
1201-001589	IC-OP AMP	"15420,SOP,TP,8P,150MIL,DUAL,5.9dB,PLASTIC,14V,400mW,-20to+80C,-,-,15uA,-"	U3	1
1201-001589	IC-OP AMP	"15420,SOP,TP,8P,150MIL,DUAL,5.9dB,PLASTIC,14V,400mW,-20to+80C,-,-,15uA,-"	U8	1
1202-000164	IC-VOLTAGE COMP.	"393,SOP,8P,150MIL,DUAL,36V,CMO"	U9	1
1203-001026	IC-POSIFIXED REG.	"33269,DPAK,3P,265MIL,PLASTIC,3.37/3.33V,-,40TO+150C,800MA,-,ST"	U29	1
1203-001026	IC-POSIFIXED REG.	"33269,DPAK,3P,265MIL,PLASTIC,3.37/3.33V,-,40TO+150C,800MA,-,ST"	U7	1
1203-002002	IC-VOL. DETECTOR	"61FN4512,SOT-89,3P,98MIL,PLASTIC,4.41/4.59,500mW,-30to+80C,50mA,-,TP"	U13	1
1205-001896	IC-MODEM	"FM336R6719-12,QFP,100P,-,PLASTIC,3.6V,250mW,0to+70C,TR,-"	U18	1
2007-000026	R-CHIP	"200OHM,5%,1/10W,DA,TP,2012"	L10	1
2007-000026	R-CHIP	"200OHM,5%,1/10W,DA,TP,2012"	L11	1
2007-000026	R-CHIP	"200OHM,5%,1/10W,DA,TP,2012"	L7	1
2007-000026	R-CHIP	"200OHM,5%,1/10W,DA,TP,2012"	L8	1
2007-000026	R-CHIP	"200OHM,5%,1/10W,DA,TP,2012"	L9	1
2007-000029	R-CHIP	"0OHM,5%,1/10W,DA,TP,2012"	R155	1
2007-000033	R-CHIP	"0OHM,5%,1/8W,DA,TP,3216"	L1	1
2007-000033	R-CHIP	"0OHM,5%,1/8W,DA,TP,3216"	L2	1
2007-000033	R-CHIP	"0OHM,5%,1/8W,DA,TP,3216"	R226	1
2007-000033	R-CHIP	"0OHM,5%,1/8W,DA,TP,3216"	R227	1

Electrical Parts List

Sec Code	Description	Spec	Location No	Q'ty
2007-000033	R-CHIP	"0OHM,5%,1/8W,DA,TP,3216"	R236	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R118	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R123	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R156	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R173	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R180	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R194	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R195	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R207	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R216	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R217	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R218	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R219	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R220	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R221	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R222	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R223	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R224	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R225	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R45	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R50	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R65	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R88	1
2007-000071	R-CHIP	"22ohm,5%,1/16W,DA,TP,1608"	R22	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R136	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R137	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R139	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R140	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R144	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R151	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R162	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R164	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R167	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R168	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R170	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R172	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R174	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R178	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R181	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R184	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R185	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R187	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R188	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R212	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R228	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R102	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R108	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R109	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R115	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R116	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R12	1

Sec Code	Description	Spec	Location No	Q'ty
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R121	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R124	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R145	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R146	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R147	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R148	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R150	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R153	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R17	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R199	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R2	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R200	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R36	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R41	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R54	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R59	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R63	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R66	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R67	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R71	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R72	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R77	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R78	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R83	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R85	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R86	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R90	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R97	1
2007-000080	R-CHIP	"2Kohm,5%,1/16W,DA,TP,1608"	R52	1
2007-000082	R-CHIP	"3.3Kohm,5%,1/16W,DA,TP,1608"	R149	1
2007-000084	R-CHIP	"4.7Kohm,5%,1/16W,DA,TP,1608"	R196	1
2007-000084	R-CHIP	"4.7Kohm,5%,1/16W,DA,TP,1608"	R197	1
2007-000084	R-CHIP	"4.7Kohm,5%,1/16W,DA,TP,1608"	R33	1
2007-000084	R-CHIP	"4.7Kohm,5%,1/16W,DA,TP,1608"	R34	1
2007-000084	R-CHIP	"4.7Kohm,5%,1/16W,DA,TP,1608"	R43	1
2007-000084	R-CHIP	"4.7Kohm,5%,1/16W,DA,TP,1608"	R48	1
2007-000084	R-CHIP	"4.7Kohm,5%,1/16W,DA,TP,1608"	R61	1
2007-000084	R-CHIP	"4.7Kohm,5%,1/16W,DA,TP,1608"	R74	1
2007-000084	R-CHIP	"4.7Kohm,5%,1/16W,DA,TP,1608"	R75	1
2007-000084	R-CHIP	"4.7Kohm,5%,1/16W,DA,TP,1608"	R79	1
2007-000088	R-CHIP	"7.5Kohm,5%,1/16W,DA,TP,1608"	R87	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R1	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R10	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R131	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R157	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R158	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R159	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R160	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R161	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R163	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R165	1

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Sec Code	Description	Spec	Location No	Q'ty
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R166	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R186	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R191	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R193	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R198	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R21	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R213	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R214	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R23	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R24	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R25	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R27	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R28	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R4	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R56	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R9	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R92	1
2007-000092	R-CHIP	"15Kohm,5%,1/16W,DA,TP,1608"	R100	1
2007-000094	R-CHIP	"22Kohm,5%,1/16W,DA,TP,1608"	R32	1
2007-000094	R-CHIP	"22Kohm,5%,1/16W,DA,TP,1608"	R42	1
2007-000096	R-CHIP	"30Kohm,5%,1/16W,DA,TP,1608"	R57	1
2007-000097	R-CHIP	"47Kohm,5%,1/16W,DA,TP,1608"	R38	1
2007-000097	R-CHIP	"47Kohm,5%,1/16W,DA,TP,1608"	R47	1
2007-000097	R-CHIP	"47Kohm,5%,1/16W,DA,TP,1608"	R5	1
2007-000097	R-CHIP	"47Kohm,5%,1/16W,DA,TP,1608"	R58	1
2007-000097	R-CHIP	"47Kohm,5%,1/16W,DA,TP,1608"	R62	1
2007-000100	R-CHIP	"68Kohm,5%,1/16W,DA,TP,1608"	R176	1
2007-000102	R-CHIP	"100Kohm,5%,1/16W,DA,TP,1608"	R51	1
2007-000103	R-CHIP	"120Kohm,5%,1/16W,DA,TP,1608"	R35	1
2007-000103	R-CHIP	"120Kohm,5%,1/16W,DA,TP,1608"	R89	1
2007-000104	R-CHIP	"150Kohm,5%,1/16W,DA,TP,1608"	R19	1
2007-000106	R-CHIP	"220Kohm,5%,1/16W,DA,TP,1608"	R189	1
2007-000106	R-CHIP	"220Kohm,5%,1/16W,DA,TP,1608"	R46	1
2007-000109	R-CHIP	"1Mohm,5%,1/16W,DA,TP,1608"	R105	1
2007-000109	R-CHIP	"1Mohm,5%,1/16W,DA,TP,1608"	R107	1
2007-000109	R-CHIP	"1Mohm,5%,1/16W,DA,TP,1608"	R201	1
2007-000109	R-CHIP	"1Mohm,5%,1/16W,DA,TP,1608"	R55	1
2007-000109	R-CHIP	"1Mohm,5%,1/16W,DA,TP,1608"	R70	1
2007-000113	R-CHIP	"33ohm,5%,1/16W,DA,TP,1608"	R202	1
2007-000116	R-CHIP	"120ohm,5%,1/16W,DA,TP,1608"	R11	1
2007-000116	R-CHIP	"120ohm,5%,1/16W,DA,TP,1608"	R229	1
2007-000116	R-CHIP	"120ohm,5%,1/16W,DA,TP,1608"	R230	1
2007-000120	R-CHIP	"680ohm,5%,1/16W,DA,TP,1608"	R20	1
2007-000123	R-CHIP	"1.5Kohm,5%,1/16W,DA,TP,1608"	R179	1
2007-000131	R-CHIP	"91Kohm,5%,1/16W,DA,TP,1608"	R94	1
2007-000132	R-CHIP	"180Kohm,5%,1/16W,DA,TP,1608"	R175	1
2007-000132	R-CHIP	"180Kohm,5%,1/16W,DA,TP,1608"	R190	1
2007-000133	R-CHIP	"330Kohm,5%,1/16W,DA,TP,1608"	R73	1
2007-000136	R-CHIP	"300Kohm,5%,1/16W,DA,TP,1608"	R95	1
2007-000290	R-CHIP	"100OHM,5%,1/10W,DA,TP,2012"	R143	1
2007-000290	R-CHIP	"100OHM,5%,1/10W,DA,TP,2012"	R15	1

Sec Code	Description	Spec	Location No	Q'ty
2007-000290	R-CHIP	"100OHM,5%,1/10W,DA,TP,2012"	R152	1
2007-000300	R-CHIP	"10KOHM,5%,1/10W,DA,TP,2012"	R101	1
2007-000300	R-CHIP	"10KOHM,5%,1/10W,DA,TP,2012"	R119	1
2007-000305	R-CHIP	"10Mohm,5%,1/16W,DA,TP,1608"	R132	1
2007-000368	R-CHIP	"130Kohm,5%,1/16W,DA,TP,1608"	R93	1
2007-000468	R-CHIP	"1KOHM,5%,1/10W,DA,TP,2012"	R14	1
2007-000468	R-CHIP	"1KOHM,5%,1/10W,DA,TP,2012"	R76	1
2007-000468	R-CHIP	"1KOHM,5%,1/10W,DA,TP,2012"	R84	1
2007-000539	R-CHIP	"200ohm,5%,1/16W,DA,TP,1608"	R18	1
2007-000539	R-CHIP	"200ohm,5%,1/16W,DA,TP,1608"	R30	1
2007-000539	R-CHIP	"200ohm,5%,1/16W,DA,TP,1608"	R6	1
2007-000728	R-CHIP	"300OHM,5%,1/10W,DA,TP,2012"	R192	1
2007-000803	R-CHIP	"36Kohm,1%,1/16W,DA,TP,1608"	R120	1
2007-000839	R-CHIP	"39ohm,5%,1/16W,DA,TP,1608"	R13	1
2007-000842	R-CHIP	"3Kohm,1%,1/16W,DA,TP,1608"	R26	1
2007-000965	R-CHIP	"5.1Kohm,5%,1/16W,DA,TP,1608"	R103	1
2007-000965	R-CHIP	"5.1Kohm,5%,1/16W,DA,TP,1608"	R112	1
2007-000965	R-CHIP	"5.1Kohm,5%,1/16W,DA,TP,1608"	R125	1
2007-000965	R-CHIP	"5.1Kohm,5%,1/16W,DA,TP,1608"	R126	1
2007-000965	R-CHIP	"5.1Kohm,5%,1/16W,DA,TP,1608"	R29	1
2007-000965	R-CHIP	"5.1Kohm,5%,1/16W,DA,TP,1608"	R31	1
2007-000965	R-CHIP	"5.1Kohm,5%,1/16W,DA,TP,1608"	R7	1
2007-000965	R-CHIP	"5.1Kohm,5%,1/16W,DA,TP,1608"	R8	1
2007-000965	R-CHIP	"5.1Kohm,5%,1/16W,DA,TP,1608"	R96	1
2007-002436	R-CHIP	"2.7MOHM,5%,1/16W,DA,TP,1608"	R98	1
2007-007004	R-CHIP	"12Kohm,1%,1/16W,DA,TP,1608"	R128	1
2011-001093	R-NETWORK	"100ohm,5%,1/16W,L,CHIP,8P,TP"	RA16	1
2011-001093	R-NETWORK	"100ohm,5%,1/16W,L,CHIP,8P,TP"	RA17	1
2011-001093	R-NETWORK	"100ohm,5%,1/16W,L,CHIP,8P,TP"	RA2	1
2011-001093	R-NETWORK	"100ohm,5%,1/16W,L,CHIP,8P,TP"	RA3	1
2011-001093	R-NETWORK	"100ohm,5%,1/16W,L,CHIP,8P,TP"	RA4	1
2011-001093	R-NETWORK	"100ohm,5%,1/16W,L,CHIP,8P,TP"	RA5	1
2011-001093	R-NETWORK	"100ohm,5%,1/16W,L,CHIP,8P,TP"	RA6	1
2011-001094	R-NETWORK	"39ohm,5%,63mW,L,CHIP,8P,TP"	RA10	1
2011-001094	R-NETWORK	"39ohm,5%,63mW,L,CHIP,8P,TP"	RA11	1
2011-001094	R-NETWORK	"39ohm,5%,63mW,L,CHIP,8P,TP"	RA12	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C104	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C105	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C108	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C109	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C110	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C114	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C115	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C116	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C117	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C118	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C119	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C12	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C121	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C123	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C124	1

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Sec Code	Description	Spec	Location No	Q'ty
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C125	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C126	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C129	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C131	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C133	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C134	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C136	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C137	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C139	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C14	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C140	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C141	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C142	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C143	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C144	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C147	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C148	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C149	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C15	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C150	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C157	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C164	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C166	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C167	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C168	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C169	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C17	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C170	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C171	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C172	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C174	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C179	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C181	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C183	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C184	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C185	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C192	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C194	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C195	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C196	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C197	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C20	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C208	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C209	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C21	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C210	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C212	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C214	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C23	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C24	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C25	1

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2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C29	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C32	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C37	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C42	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C48	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C49	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C54	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C59	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C62	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C63	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C64	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C67	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C68	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C7	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C76	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C77	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C79	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C8	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C80	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C81	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C83	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C84	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C86	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C90	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C93	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C98	1
2203-000236	"C-CERAMIC,CHIP"	"0.1nF,5%,50V,NP0,TP,1608"	C176	1
2203-000236	"C-CERAMIC,CHIP"	"0.1nF,5%,50V,NP0,TP,1608"	C18	1
2203-000236	"C-CERAMIC,CHIP"	"0.1nF,5%,50V,NP0,TP,1608"	C180	1
2203-000236	"C-CERAMIC,CHIP"	"0.1nF,5%,50V,NP0,TP,1608"	C186	1
2203-000236	"C-CERAMIC,CHIP"	"0.1nF,5%,50V,NP0,TP,1608"	C189	1
2203-000236	"C-CERAMIC,CHIP"	"0.1nF,5%,50V,NP0,TP,1608"	C190	1
2203-000236	"C-CERAMIC,CHIP"	"0.1nF,5%,50V,NP0,TP,1608"	C34	1
2203-000236	"C-CERAMIC,CHIP"	"0.1nF,5%,50V,NP0,TP,1608"	C39	1
2203-000236	"C-CERAMIC,CHIP"	"0.1nF,5%,50V,NP0,TP,1608"	C44	1
2203-000236	"C-CERAMIC,CHIP"	"0.1nF,5%,50V,NP0,TP,1608"	C51	1
2203-000236	"C-CERAMIC,CHIP"	"0.1nF,5%,50V,NP0,TP,1608"	C56	1
2203-000257	"C-CERAMIC,CHIP"	"10nF,10%,50V,X7R,TP,1608"	C161	1
2203-000257	"C-CERAMIC,CHIP"	"10nF,10%,50V,X7R,TP,1608"	C165	1
2203-000257	"C-CERAMIC,CHIP"	"10nF,10%,50V,X7R,TP,1608"	C187	1
2203-000257	"C-CERAMIC,CHIP"	"10nF,10%,50V,X7R,TP,1608"	C191	1
2203-000257	"C-CERAMIC,CHIP"	"10nF,10%,50V,X7R,TP,1608"	C75	1
2203-000280	"C-CERAMIC,CHIP"	"0.01nF,0.5pF,50V,NP0,TP,1608"	C35	1
2203-000280	"C-CERAMIC,CHIP"	"0.01nF,0.5pF,50V,NP0,TP,1608"	C36	1
2203-000280	"C-CERAMIC,CHIP"	"0.01nF,0.5pF,50V,NP0,TP,1608"	C57	1
2203-000280	"C-CERAMIC,CHIP"	"0.01nF,0.5pF,50V,NP0,TP,1608"	C65	1
2203-000280	"C-CERAMIC,CHIP"	"0.01nF,0.5pF,50V,NP0,TP,1608"	C69	1
2203-000280	"C-CERAMIC,CHIP"	"0.01nF,0.5pF,50V,NP0,TP,1608"	C74	1
2203-000357	"C-CERAMIC,CHIP"	"0.15nF,5%,50V,NP0,TP,1608"	C198	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C100	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C11	1

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2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C122	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C2	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C215	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C46	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C47	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C52	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C53	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C60	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C66	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C70	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C71	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C72	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C85	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C88	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C89	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C91	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C92	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C94	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C95	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C96	1
2203-000440	"C-CERAMIC,CHIP"	"1nF,10%,50V,X7R,TP,1608,-"	C99	1
2203-000626	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,1608"	C107	1
2203-000626	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,1608"	C111	1
2203-000626	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,1608"	C132	1
2203-000626	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,1608"	C138	1
2203-000626	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,1608"	C162	1
2203-000626	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,1608"	C163	1
2203-000626	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,1608"	C175	1
2203-000626	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,1608"	C177	1
2203-000626	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,1608"	C178	1
2203-000626	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,1608"	C58	1
2203-000626	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,1608"	C61	1
2203-000681	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1608"	C146	1
2203-000681	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1608"	C151	1
2203-001071	"C-CERAMIC,CHIP"	"0.056nF,5%,50V,NP0,TP,1608"	C188	1
2203-001071	"C-CERAMIC,CHIP"	"0.056nF,5%,50V,NP0,TP,1608"	C193	1
2203-001222	"C-CERAMIC,CHIP"	"820pF,10%,50V,X7R,TP,1608,-"	C120	1
2203-001408	"C-CERAMIC,CHIP"	"0.27nF,5%,50V,NP0,TP,1608"	C6	1
2203-001607	"C-CERAMIC,CHIP"	"0.22nF,5%,50V,NP0,TP,1608"	C10	1
2203-001607	"C-CERAMIC,CHIP"	"0.22nF,5%,50V,NP0,TP,1608"	C22	1
2203-001607	"C-CERAMIC,CHIP"	"0.22nF,5%,50V,NP0,TP,1608"	C3	1
2203-001607	"C-CERAMIC,CHIP"	"0.22nF,5%,50V,NP0,TP,1608"	C4	1
2203-005065	"C-CERAMIC,CHIP"	"1000nF,+80-20%,10V,Y5V,TP,1608"	C128	1
2203-005065	"C-CERAMIC,CHIP"	"1000nF,+80-20%,10V,Y5V,TP,1608"	C13	1
2203-005065	"C-CERAMIC,CHIP"	"1000nF,+80-20%,10V,Y5V,TP,1608"	C40	1
2203-005065	"C-CERAMIC,CHIP"	"1000nF,+80-20%,10V,Y5V,TP,1608"	C45	1
2203-005065	"C-CERAMIC,CHIP"	"1000nF,+80-20%,10V,Y5V,TP,1608"	C5	1
2203-005065	"C-CERAMIC,CHIP"	"1000nF,+80-20%,10V,Y5V,TP,1608"	C82	1
2203-005105	"C-CERAMIC,CHIP"	"0.68nF,5%,50V,NP0,TP,1608"	C31	1
2401-000042	C-AL	"100uF,20%,16V,GP,TP,6.3x7,5"	C1	1
2401-000042	C-AL	"100uF,20%,16V,GP,TP,6.3x7,5"	C155	1

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2401-000042	C-AL	"100uF,20%,16V,GP,TP,6.3x7,5"	C182	1
2401-000042	C-AL	"100uF,20%,16V,GP,TP,6.3x7,5"	C26	1
2401-000131	C-AL	"1000uF,20%,16V,GP,TP,10x20,5"	C19	1
2401-002594	C-AL	"220uF,20%,16V,GP,TP,8x11.5,5"	C73	1
2402-000176	"C-AL,SMD"	"10uF,20%,16V,GP,TP,4.3x4.3x5.4"	C106	1
2402-000176	"C-AL,SMD"	"10uF,20%,16V,GP,TP,4.3x4.3x5.4"	C152	1
2402-000176	"C-AL,SMD"	"10uF,20%,16V,GP,TP,4.3x4.3x5.4"	C199	1
2402-000176	"C-AL,SMD"	"10uF,20%,16V,GP,TP,4.3x4.3x5.4"	C28	1
2404-000284	"C-TA,CHIP"	"10uF,20%,16V,-,TP,3528,-"	C103	1
2404-000284	"C-TA,CHIP"	"10uF,20%,16V,-,TP,3528,-"	C113	1
2404-000284	"C-TA,CHIP"	"10uF,20%,16V,-,TP,3528,-"	C153	1
2404-000300	"C-TA,CHIP"	"22UF,20%,6.3V,GP,TP,6032"	C130	1
2404-000300	"C-TA,CHIP"	"22UF,20%,6.3V,GP,TP,6032"	C135	1
2404-000300	"C-TA,CHIP"	"22UF,20%,6.3V,GP,TP,6032"	C87	1
2409-001020	C-EDL	"1F,5.5V,5V,-,BK,20.5x5,5"	C160	1
2703-000266	INDUCTOR-SMD	"220nH,10%,1.25x2x0.85mm"	L5	1
2703-000300	INDUCTOR-SMD	"1uH,10%,0.8x1.6x0.8mm"	R49	1
2703-000300	INDUCTOR-SMD	"1uH,10%,0.8x1.6x0.8mm"	R53	1
2703-000300	INDUCTOR-SMD	"1uH,10%,0.8x1.6x0.8mm"	R60	1
2703-000300	INDUCTOR-SMD	"1uH,10%,0.8x1.6x0.8mm"	R64	1
2703-000300	INDUCTOR-SMD	"1uH,10%,0.8x1.6x0.8mm"	R68	1
2801-001375	CRYSTAL-UNIT	"10MHz,20ppm,28-AAA,16pF,45ohm,BK"	Y1	1
2801-003376	CRYSTAL-UNIT	"0.032768MHz,20ppm,28-AAY,12.5p"	OSC1	1
2801-003699	CRYSTAL-UNIT	"48MHz,50ppm,28-ABM,12pF,80ohm,"	Y3	1
2801-003960	CRYSTAL-UNIT	"28.224MHz,50ppm,28-AAA,18pF,35ohm,BK"	OSC3	1
3301-000325	CORE-FERRITE BEAD	"AB,3.2x2.5x1.3mm,-,-"	B2	1
3301-000325	CORE-FERRITE BEAD	"AB,3.2x2.5x1.3mm,-,-"	L4	1
3301-000325	CORE-FERRITE BEAD	"AB,3.2x2.5x1.3mm,-,-"	L6	1
3301-000362	CORE-FERRITE BEAD	"AB,60ohm,3.2x2.5x1.3mm,1500mA,TP,-,0.05ohm"	BD1	1
3301-000362	CORE-FERRITE BEAD	"AB,60ohm,3.2x2.5x1.3mm,1500mA,TP,-,0.05ohm"	BD2	1
3301-001084	CORE-FERRITE BEAD	"AB,600ohm,2x1.25x0.9mm,200mA,TP,-,0.5ohm"	R104	1
3301-001209	CORE-FERRITE BEAD	"AB,3.2x1.6x0.8mm,-,-"	RA7	1
3301-001209	CORE-FERRITE BEAD	"AB,3.2x1.6x0.8mm,-,-"	RA8	1
3301-001209	CORE-FERRITE BEAD	"AB,3.2x1.6x0.8mm,-,-"	RA9	1
3301-001258	CORE-FERRITE BEAD	"AB,600ohm,1.6x0.8x0.8mm,100mA,TP,M,1.8ohm"	R127	1
3708-001058	CONNECTOR-FPC/FC/PIC	"30P,1.0MM,STRAIGHT,SN"	CN1	1
3708-001058	CONNECTOR-FPC/FC/PIC	"30P,1.0MM,STRAIGHT,SN"	CN2	1
3708-001058	CONNECTOR-FPC/FC/PIC	"30P,1.0MM,STRAIGHT,SN"	CN3	1
3708-001531	CONNECTOR-FPC/FC/PIC	"22P,1mm,STRAIGHT,SN"	CN6	1
3711-000225	CONNECTOR-HEADER	"1WALL,4P,1R,2.5mm,STRAIGHT,SN"	CN4	1
3711-002806	CONNECTOR-HEADER	"BOX,5P,1R,2mm,STRAIGHT,SN"	CN11	1
3711-002807	CONNECTOR-HEADER	"BOX,6P,1R,2mm,STRAIGHT,SN"	CN10	1
3711-002815	CONNECTOR-HEADER	"BOX,14P,1R,2mm,STRAIGHT,SN"	CN8	1
3711-003408	CONNECTOR-HEADER	"BOX,2P,1R,2mm,STRAIGHT,SN"	CN5	1
3711-003409	CONNECTOR-HEADER	"BOX,3P,1R,2mm,STRAIGHT,SN"	CN7	1
4701-001037	FREQ-ATTENUATOR	"6to82MHz,8dB,-,0.12W"	U17	1
JB13-00002A	IC ASIC-UNICON	"MJC-1300G,UNICON,QFP,44P,-"	U23	1
JB13-00012A	ICASIC-IMAGE PROCESSOR	"DUOIP2,SCX-1110,208,3.3V,-,QFP,TP,-,PLASTIC,IMAGE PROCESSOR"	U16	1
JB13-10508A	IC ASIC-CPU	"SF-4700,KS32C6400,SMD,160P,-"	U15	1
JB41-00045A	PCB-MAIN PCB	"SCX-1110,FR-4,4 LAYER,1.6T,120X110mm"	PCB-MAIN	1

7-2 Driver PBA

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JB92-01143A	PBA SUB-DRIVER	"SCX-1110F,XEROX,USA,DRIVER,FAX,-,-,-"		1
0401-001003	DIODE-SWITCHING	"MMBD6050LT1,70V,200mA,225mW,4n"	D1	1
0401-001003	DIODE-SWITCHING	"MMBD6050LT1,70V,200mA,225mW,4n"	D2	1
0401-001003	DIODE-SWITCHING	"MMBD6050LT1,70V,200mA,225mW,4n"	D3	1
0402-000199	DIODE-RECTIFIER	"EGL41B,100V,1A,DO-213AB,TP"	D5	1
0403-000283	DIODE-ZENER	"MMBZ5234B,6.2V,5%,225mW,SOT-23"	D4	1
0403-000287	DIODE-ZENER	"MMBZ5251B,22V,5%,225mW,SOT-23,"	ZD1	1
0407-000101	DIODE-ARRAY	"DA204K,20V,100mA,C2-3,SOT-23,T"	DA1	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q11	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q13	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q15	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q2	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q3	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q4	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q5	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q6	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q7	1
0501-000338	TR-SMALL SIGNAL	"2SC2812,NPN,200mW,SOT-23,TP,20"	Q8	1
0501-000415	TR-SMALL SIGNAL	"KSP56,PNP,625mW,TO-92,-,100"	Q10	1
0501-000415	TR-SMALL SIGNAL	"KSP56,PNP,625mW,TO-92,-,100"	Q12	1
0501-000462	TR-SMALL SIGNAL	"MMBT2907A,PNP,225mW,SOT-23,TP,"	Q1	1
0501-000462	TR-SMALL SIGNAL	"MMBT2907A,PNP,225mW,SOT-23,TP,"	Q9	1
0503-000129	TR-DARLINGTON	"TIP112,NPN,2W,TO-220AB,-,1000"	Q14	1
0604-001154	PHOTO-INTERRUPTER	"TR,0.2-1.0MA,80MW,DIP,ST"	S1	1
0801-000891	IC-CMOS LOGIC	"74HCT32,OR GATE,SOP,14P,150MIL"	U10	1
0801-000891	IC-CMOS LOGIC	"74HCT32,OR GATE,SOP,14P,150MIL"	U8	1
1003-001122	IC-MOTOR DRIVER	"TEA3718SFP,SOP,20P,300MIL,SING"	U18	1
1003-001122	IC-MOTOR DRIVER	"TEA3718SFP,SOP,20P,300MIL,SING"	U19	1
1003-001122	IC-MOTOR DRIVER	"TEA3718SFP,SOP,20P,300MIL,SING"	U23	1
1003-001122	IC-MOTOR DRIVER	"TEA3718SFP,SOP,20P,300MIL,SING"	U28	1
1003-001122	IC-MOTOR DRIVER	"TEA3718SFP,SOP,20P,300MIL,SING"	U42	1
1003-001122	IC-MOTOR DRIVER	"TEA3718SFP,SOP,20P,300MIL,SING"	U43	1
1003-001122	IC-MOTOR DRIVER	"TEA3718SFP,SOP,20P,300MIL,SING"	U6	1
1003-001137	IC-SOURCE DRIVER	"CD1603,SOP,24P,150MIL,OCTAL,40"	U40	1
1003-001137	IC-SOURCE DRIVER	"CD1603,SOP,24P,150MIL,OCTAL,40"	U41	1
1003-001138	IC-SOURCE DRIVER	"CD1602,SOP,20P,150MIL,SEVEN,10"	U38	1
1003-001138	IC-SOURCE DRIVER	"CD1602,SOP,20P,150MIL,SEVEN,10"	U39	1
1202-000170	IC-VOLTAGE COMP.	"339,SOP,14P,150MIL,QUAD,36V,-,"	U30	1
1202-000170	IC-VOLTAGE COMP.	"339,SOP,14P,150MIL,QUAD,36V,-,"	U31	1
1202-000170	IC-VOLTAGE COMP.	"339,SOP,14P,150MIL,QUAD,36V,-,"	U37	1
2001-000202	R-CARBON	"0.5OHM,5%,1/2W,AA,TP,3.3X9MM"	R25	1
2001-000202	R-CARBON	"0.5OHM,5%,1/2W,AA,TP,3.3X9MM"	R26	1
2001-000202	R-CARBON	"0.5OHM,5%,1/2W,AA,TP,3.3X9MM"	R27	1
2001-000202	R-CARBON	"0.5OHM,5%,1/2W,AA,TP,3.3X9MM"	R28	1
2007-000028	R-CHIP	"390HM,5%,1/10W,DA,TP,2012"	R110	1
2007-000028	R-CHIP	"390HM,5%,1/10W,DA,TP,2012"	R43	1
2007-000028	R-CHIP	"390HM,5%,1/10W,DA,TP,2012"	R79	1
2007-000029	R-CHIP	"00HM,5%,1/10W,DA,TP,2012"	R103	1
2007-000029	R-CHIP	"00HM,5%,1/10W,DA,TP,2012"	R125	1
2007-000029	R-CHIP	"00HM,5%,1/10W,DA,TP,2012"	R146	1
2007-000029	R-CHIP	"00HM,5%,1/10W,DA,TP,2012"	R147	1

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2007-000029	R-CHIP	"00HM,5%,1/10W,DA,TP,2012"	R148	1
2007-000029	R-CHIP	"00HM,5%,1/10W,DA,TP,2012"	R149	1
2007-000029	R-CHIP	"00HM,5%,1/10W,DA,TP,2012"	R150	1
2007-000029	R-CHIP	"00HM,5%,1/10W,DA,TP,2012"	R47	1
2007-000029	R-CHIP	"00HM,5%,1/10W,DA,TP,2012"	R87	1
2007-000029	R-CHIP	"00HM,5%,1/10W,DA,TP,2012"	R88	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	R126	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	R29	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	R32	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	R6	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	R61	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	R62	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R129	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R130	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R131	1
2007-000070	R-CHIP	"0ohm,5%,1/16W,DA,TP,1608"	R132	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R127	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R133	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R134	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R135	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R136	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R137	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R138	1
2007-000074	R-CHIP	"100ohm,5%,1/16W,DA,TP,1608"	R139	1
2007-000076	R-CHIP	"330ohm,5%,1/16W,DA,TP,1608"	R7	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R48	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R63	1
2007-000078	R-CHIP	"1Kohm,5%,1/16W,DA,TP,1608"	R89	1
2007-000083	R-CHIP	"3Kohm,5%,1/16W,DA,TP,1608"	R64	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R10	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R14	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R15	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R16	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R24	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R3	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R35	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R36	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R4	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R59	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R65	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R67	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R8	1
2007-000090	R-CHIP	"10Kohm,5%,1/16W,DA,TP,1608"	R93	1
2007-000097	R-CHIP	"47Kohm,5%,1/16W,DA,TP,1608"	R111	1
2007-000097	R-CHIP	"47Kohm,5%,1/16W,DA,TP,1608"	R30	1
2007-000097	R-CHIP	"47Kohm,5%,1/16W,DA,TP,1608"	R33	1
2007-000097	R-CHIP	"47Kohm,5%,1/16W,DA,TP,1608"	R5	1
2007-000102	R-CHIP	"100Kohm,5%,1/16W,DA,TP,1608"	R113	1
2007-000102	R-CHIP	"100Kohm,5%,1/16W,DA,TP,1608"	R92	1
2007-000104	R-CHIP	"150Kohm,5%,1/16W,DA,TP,1608"	R40	1
2007-000104	R-CHIP	"150Kohm,5%,1/16W,DA,TP,1608"	R72	1

Electrical Parts List

Sec Code	Description	Spec	Location No	Q'ty
2007-000109	R-CHIP	"1Mohm,5%,1/16W,DA,TP,1608"	R39	1
2007-000109	R-CHIP	"1Mohm,5%,1/16W,DA,TP,1608"	R68	1
2007-000123	R-CHIP	"1.5Kohm,5%,1/16W,DA,TP,1608"	R85	1
2007-000223	R-CHIP	"1.2KOHM,5%,1/8W,DA,TP,3216"	R19	1
2007-000223	R-CHIP	"1.2KOHM,5%,1/8W,DA,TP,3216"	R80	1
2007-000245	R-CHIP	"1.5KOHM,5%,1/8W,DA,TP,3216"	R101	1
2007-000245	R-CHIP	"1.5KOHM,5%,1/8W,DA,TP,3216"	R45	1
2007-000282	R-CHIP	"100KOHM,5%,1/10W,DA,TP,2012"	R58	1
2007-000290	R-CHIP	"100OHM,5%,1/10W,DA,TP,2012"	R124	1
2007-000297	R-CHIP	"10KOHM,1%,1/10W,DA,TP,2012"	R142	1
2007-000297	R-CHIP	"10KOHM,1%,1/10W,DA,TP,2012"	R46	1
2007-000297	R-CHIP	"10KOHM,1%,1/10W,DA,TP,2012"	R76	1
2007-000297	R-CHIP	"10KOHM,1%,1/10W,DA,TP,2012"	R84	1
2007-000300	R-CHIP	"10KOHM,5%,1/10W,DA,TP,2012"	R11	1
2007-000300	R-CHIP	"10KOHM,5%,1/10W,DA,TP,2012"	R37	1
2007-000303	R-CHIP	"10KOHM,5%,1/8W,DA,TP,3216"	R104	1
2007-000355	R-CHIP	"12KOHM,5%,1/10W,DA,TP,2012"	R96	1
2007-000465	R-CHIP	"1KOHM,1%,1/10W,DA,TP,2012"	R102	1
2007-000465	R-CHIP	"1KOHM,1%,1/10W,DA,TP,2012"	R118	1
2007-000465	R-CHIP	"1KOHM,1%,1/10W,DA,TP,2012"	R122	1
2007-000465	R-CHIP	"1KOHM,1%,1/10W,DA,TP,2012"	R18	1
2007-000465	R-CHIP	"1KOHM,1%,1/10W,DA,TP,2012"	R49	1
2007-000465	R-CHIP	"1KOHM,1%,1/10W,DA,TP,2012"	R52	1
2007-000465	R-CHIP	"1KOHM,1%,1/10W,DA,TP,2012"	R54	1
2007-000465	R-CHIP	"1KOHM,1%,1/10W,DA,TP,2012"	R57	1
2007-000465	R-CHIP	"1KOHM,1%,1/10W,DA,TP,2012"	R97	1
2007-000468	R-CHIP	"1KOHM,5%,1/10W,DA,TP,2012"	R21	1
2007-000468	R-CHIP	"1KOHM,5%,1/10W,DA,TP,2012"	R81	1
2007-000518	R-CHIP	"2.7KOHM,5%,1/10W,DA,TP,2012"	R141	1
2007-000542	R-CHIP	"200OHM,5%,1/8W,DA,TP,3216"	R112	1
2007-000542	R-CHIP	"200OHM,5%,1/8W,DA,TP,3216"	R31	1
2007-000542	R-CHIP	"200OHM,5%,1/8W,DA,TP,3216"	R34	1
2007-000705	R-CHIP	"3.6KOHM,5%,1/8W,DA,TP,3216"	R115	1
2007-000766	R-CHIP	"330OHM,5%,1/10W,DA,TP,2012"	R2	1
2007-000766	R-CHIP	"330OHM,5%,1/10W,DA,TP,2012"	R9	1
2007-000768	R-CHIP	"330OHM,5%,1/8W,DA,TP,3216"	R20	1
2007-000768	R-CHIP	"330OHM,5%,1/8W,DA,TP,3216"	R82	1
2007-000781	R-CHIP	"33OHM,5%,1/10W,DA,TP,2012"	R107	1
2007-000781	R-CHIP	"33OHM,5%,1/10W,DA,TP,2012"	R86	1
2007-000814	R-CHIP	"39.2KOHM,1%,1/8W,DA,TP,3216"	R114	1
2007-000872	R-CHIP	"4.7KOHM,5%,1/10W,DA,TP,2012"	R100	1
2007-000872	R-CHIP	"4.7KOHM,5%,1/10W,DA,TP,2012"	R22	1
2007-000964	R-CHIP	"5.1KOHM,5%,1/10W,DA,TP,2012"	R94	1
2007-000964	R-CHIP	"5.1KOHM,5%,1/10W,DA,TP,2012"	R95	1
2007-000964	R-CHIP	"5.1KOHM,5%,1/10W,DA,TP,2012"	R98	1
2007-000964	R-CHIP	"5.1KOHM,5%,1/10W,DA,TP,2012"	R99	1
2007-000965	R-CHIP	"5.1Kohm,5%,1/16W,DA,TP,1608"	R13	1
2007-000965	R-CHIP	"5.1Kohm,5%,1/16W,DA,TP,1608"	R41	1
2007-000965	R-CHIP	"5.1Kohm,5%,1/16W,DA,TP,1608"	R44	1
2007-000965	R-CHIP	"5.1Kohm,5%,1/16W,DA,TP,1608"	R66	1
2007-000965	R-CHIP	"5.1Kohm,5%,1/16W,DA,TP,1608"	R71	1

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2007-000965	R-CHIP	"5.1Kohm,5%,1/16W,DA,TP,1608"	R78	1
2007-000967	R-CHIP	"5.1KOHM,5%,1/8W,DA,TP,3216"	R116	1
2007-000998	R-CHIP	"510OHM,1%,1/10W,DA,TP,2012"	R56	1
2007-001002	R-CHIP	"510ohm,5%,1/16W,DA,TP,1608"	R90	1
2007-001041	R-CHIP	"56KOHM,5%,1/8W,DA,TP,3216"	R117	1
2007-001041	R-CHIP	"56KOHM,5%,1/8W,DA,TP,3216"	R12	1
2007-001041	R-CHIP	"56KOHM,5%,1/8W,DA,TP,3216"	R121	1
2007-001041	R-CHIP	"56KOHM,5%,1/8W,DA,TP,3216"	R23	1
2007-001041	R-CHIP	"56KOHM,5%,1/8W,DA,TP,3216"	R50	1
2007-001041	R-CHIP	"56KOHM,5%,1/8W,DA,TP,3216"	R53	1
2007-001041	R-CHIP	"56KOHM,5%,1/8W,DA,TP,3216"	R55	1
2007-001056	R-CHIP	"6.2Kohm,5%,1/16W,DA,TP,1608"	R91	1
2007-001143	R-CHIP	"7.5KOHM,5%,1/4W,DA,TP,3225"	R70	1
2007-001143	R-CHIP	"7.5KOHM,5%,1/4W,DA,TP,3225"	R73	1
2007-001243	R-CHIP	"91KOHM,5%,1/10W,DA,TP,2012"	R75	1
2007-001273	R-CHIP	"5.23KOHM,1%,1/10W,DA,TP,2012"	R42	1
2007-001273	R-CHIP	"5.23KOHM,1%,1/10W,DA,TP,2012"	R77	1
2007-002631	R-CHIP	"56.2KOHM,1%,1/8W,DA,TP,3216"	R69	1
2007-007029	R-CHIP	"1.33KOHM,1%,1/10W,DA,TP,2012"	R74	1
2007-007427	R-CHIP	"294OHM,1%,1/10W,DA,TP,2012"	R1	1
2007-007427	R-CHIP	"294OHM,1%,1/10W,DA,TP,2012"	R38	1
2007-007664	R-CHIP	"0.604ohm,1%,1W,DA,TP,6331"	R119	1
2007-007664	R-CHIP	"0.604ohm,1%,1W,DA,TP,6331"	R123	1
2007-007664	R-CHIP	"0.604ohm,1%,1W,DA,TP,6331"	R17	1
2011-001094	R-NETWORK	"39ohm,5%,63mW,L,CHIP,8P,TP"	RA1	1
2011-001094	R-NETWORK	"39ohm,5%,63mW,L,CHIP,8P,TP"	RA2	1
2011-001094	R-NETWORK	"39ohm,5%,63mW,L,CHIP,8P,TP"	RA3	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C10	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C15	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C20	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C26	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C3	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C32	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C35	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C39	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C4	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C40	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C5	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C61	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C7	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C78	1
2203-000189	"C-CERAMIC,CHIP"	"100nF,+80-20%,25V,Y5V,TP,1608,"	C9	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C11	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C16	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C2	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C21	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C25	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C30	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C36	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C37	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C46	1

Electrical Parts List

Sec Code	Description	Spec	Location No	Q'ty
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C48	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C51	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C52	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C58	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C60	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C64	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C66	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C70	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C71	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C72	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C73	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C74	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C75	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C76	1
2203-000192	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"	C77	1
2203-000257	"C-CERAMIC,CHIP"	"10nF,10%,50V,X7R,TP,1608"	C43	1
2203-000257	"C-CERAMIC,CHIP"	"10nF,10%,50V,X7R,TP,1608"	C44	1
2203-000634	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,2012"	C29	1
2203-000634	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,2012"	C63	1
2203-000634	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,2012"	C67	1
2203-000634	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,2012"	C8	1
2203-001222	"C-CERAMIC,CHIP"	"820pF,10%,50V,X7R,TP,1608,-"	C13	1
2203-001222	"C-CERAMIC,CHIP"	"820pF,10%,50V,X7R,TP,1608,-"	C38	1
2203-001223	"C-CERAMIC,CHIP"	"0.82nF,10%,50V,X7R,TP,2012"	C12	1
2203-001223	"C-CERAMIC,CHIP"	"0.82nF,10%,50V,X7R,TP,2012"	C14	1
2203-001223	"C-CERAMIC,CHIP"	"0.82nF,10%,50V,X7R,TP,2012"	C18	1
2203-001223	"C-CERAMIC,CHIP"	"0.82nF,10%,50V,X7R,TP,2012"	C19	1
2203-001223	"C-CERAMIC,CHIP"	"0.82nF,10%,50V,X7R,TP,2012"	C23	1
2203-001223	"C-CERAMIC,CHIP"	"0.82nF,10%,50V,X7R,TP,2012"	C24	1
2203-001223	"C-CERAMIC,CHIP"	"0.82nF,10%,50V,X7R,TP,2012"	C27	1
2203-001223	"C-CERAMIC,CHIP"	"0.82nF,10%,50V,X7R,TP,2012"	C28	1
2203-001223	"C-CERAMIC,CHIP"	"0.82nF,10%,50V,X7R,TP,2012"	C31	1
2203-001223	"C-CERAMIC,CHIP"	"0.82nF,10%,50V,X7R,TP,2012"	C62	1
2203-001223	"C-CERAMIC,CHIP"	"0.82nF,10%,50V,X7R,TP,2012"	C65	1
2203-001223	"C-CERAMIC,CHIP"	"0.82nF,10%,50V,X7R,TP,2012"	C68	1
2203-001223	"C-CERAMIC,CHIP"	"0.82nF,10%,50V,X7R,TP,2012"	C69	1
2203-001607	"C-CERAMIC,CHIP"	"0.22nF,5%,50V,NP0,TP,1608"	C33	1
2203-001607	"C-CERAMIC,CHIP"	"0.22nF,5%,50V,NP0,TP,1608"	C34	1
2203-001607	"C-CERAMIC,CHIP"	"0.22nF,5%,50V,NP0,TP,1608"	C6	1
2401-000042	C-AL	"100uF,20%,16V,GP,TP,6.3x7.5"	C59	1
2401-000172	C-AL	"1000uF,20%,35V,GP,TP,12.5x20mm"	C53	1
2401-001946	C-AL	"330uF,20%,50V,GP,TP,10x16.5mm"	C49	1
2402-000176	"C-AL,SMD"	"10uF,20%,16V,GP,TP,4.3x4.3x5.4"	C57	1
3301-000271	CORE-FERRITE BEAD	"AB,600ohm,3.2x1.6x1.1mm,200mA,-,0.9ohm"	R108	1
3301-000271	CORE-FERRITE BEAD	"AB,600ohm,3.2x1.6x1.1mm,200mA,-,0.9ohm"	R60	1
3301-000325	CORE-FERRITE BEAD	"AB,3.2x2.5x1.3mm,-,-"	B1	1
3301-000325	CORE-FERRITE BEAD	"AB,3.2x2.5x1.3mm,-,-"	B2	1
3301-000325	CORE-FERRITE BEAD	"AB,3.2x2.5x1.3mm,-,-"	B3	1
3301-000362	CORE-FERRITE BEAD	"AB,60ohm,3.2x2.5x1.3mm,1500mA,TP,-,0.05ohm"	L1	1
3301-000362	CORE-FERRITE BEAD	"AB,60ohm,3.2x2.5x1.3mm,1500mA,TP,-,0.05ohm"	L2	1
3301-000362	CORE-FERRITE BEAD	"AB,60ohm,3.2x2.5x1.3mm,1500mA,TP,-,0.05ohm"	L3	1

Sec Code	Description	Spec	Location No	Q'ty
3301-000362	CORE-FERRITE BEAD	"AB,60ohm,3.2x2.5x1.3mm,1500mA,TP,-,0.05ohm"	L4	1
3301-000362	CORE-FERRITE BEAD	"AB,60ohm,3.2x2.5x1.3mm,1500mA,TP,-,0.05ohm"	L5	1
3301-000362	CORE-FERRITE BEAD	"AB,60ohm,3.2x2.5x1.3mm,1500mA,TP,-,0.05ohm"	L6	1
3301-000362	CORE-FERRITE BEAD	"AB,60ohm,3.2x2.5x1.3mm,1500mA,TP,-,0.05ohm"	L7	1
3301-000362	CORE-FERRITE BEAD	"AB,60ohm,3.2x2.5x1.3mm,1500mA,TP,-,0.05ohm"	L8	1
3702-001133	CONNECTOR-RIBBON	"36P,FEMALE,STRAIGHT,AUF"	CN12	1
3708-001058	CONNECTOR-FPC/FC/PIC	"30P,1.0MM,STRAIGHT,SN"	CN10	1
3708-001058	CONNECTOR-FPC/FC/PIC	"30P,1.0MM,STRAIGHT,SN"	CN13	1
3708-001058	CONNECTOR-FPC/FC/PIC	"30P,1.0MM,STRAIGHT,SN"	CN16	1
3708-001058	CONNECTOR-FPC/FC/PIC	"30P,1.0MM,STRAIGHT,SN"	CN7	1
3708-001058	CONNECTOR-FPC/FC/PIC	"30P,1.0MM,STRAIGHT,SN"	CN8	1
3708-001058	CONNECTOR-FPC/FC/PIC	"30P,1.0MM,STRAIGHT,SN"	CN9	1
3711-000028	CONNECTOR-HEADER	"BOX,4P,1R,2mm,STRAIGHT,SN"	CN4	1
3711-000198	CONNECTOR-HEADER	"1WALL,3P,1R,2.5mm,STRAIGHT,SN"	CN2	1
3711-000225	CONNECTOR-HEADER	"1WALL,4P,1R,2.5mm,STRAIGHT,SN"	CN15	1
3711-000225	CONNECTOR-HEADER	"1WALL,4P,1R,2.5mm,STRAIGHT,SN"	CN17	1
3711-000255	CONNECTOR-HEADER	"1WALL,5P,1R,2.5mm,STRAIGHT,SN"	CN3	1
3711-000280	CONNECTOR-HEADER	"1WALL,6P,1R,2.5mm,STRAIGHT,SN"	CN14	1
3711-002807	CONNECTOR-HEADER	"BOX,6P,1R,2mm,STRAIGHT,SN"	CN18	1
3711-002807	CONNECTOR-HEADER	"BOX,6P,1R,2mm,STRAIGHT,SN"	CN5	1
3711-003409	CONNECTOR-HEADER	"BOX,3P,1R,2mm,STRAIGHT,SN"	CN1	1
3722-001431	JACK-USB	"4P,-,AUF,WHT,-"	CN11	1
JB41-00044A	PCB-DRIVER PCB	"SCX-1110,FR-4,2 LAYER,1.6T,230*75"	PCB-OPE	1

7-3 OPE PBA

Sec Code	Description	Spec	Location No	Q'ty
JB92-01133A	PBA SUB-OPE	"SCX-1110F,XEROX,USA,OPE,FAX,-,-,-,"		1
0401-000116	DIODE-SWITCHING	"MMSD914T1,100V,200mA,225mW,4nS"	D1	1
0401-000116	DIODE-SWITCHING	"MMSD914T1,100V,200mA,225mW,4nS"	D15	1
0401-000116	DIODE-SWITCHING	"MMSD914T1,100V,200mA,225mW,4nS"	D2	1
0401-000116	DIODE-SWITCHING	"MMSD914T1,100V,200mA,225mW,4nS"	D3	1
0401-000116	DIODE-SWITCHING	"MMSD914T1,100V,200mA,225mW,4nS"	D4	1
0501-000279	TR-SMALL SIGNAL	"KSA1182-Y,PNP,150mW,SOT-23,TP,"	Q1	1
0501-000279	TR-SMALL SIGNAL	"KSA1182-Y,PNP,150mW,SOT-23,TP,"	Q2	1
0501-000279	TR-SMALL SIGNAL	"KSA1182-Y,PNP,150mW,SOT-23,TP,"	Q3	1
0501-000279	TR-SMALL SIGNAL	"KSA1182-Y,PNP,150mW,SOT-23,TP,"	Q4	1
0501-000279	TR-SMALL SIGNAL	"KSA1182-Y,PNP,150mW,SOT-23,TP,"	Q5	1
0501-000279	TR-SMALL SIGNAL	"KSA1182-Y,PNP,150mW,SOT-23,TP,"	Q6	1
0501-000279	TR-SMALL SIGNAL	"KSA1182-Y,PNP,150mW,SOT-23,TP,"	Q7	1
0501-000279	TR-SMALL SIGNAL	"KSA1182-Y,PNP,150mW,SOT-23,TP,"	Q8	1
0601-000012	LED	"CHIP,Y-GRN,1.5x0.9mm,569nm"	LED1	1
0601-000012	LED	"CHIP,Y-GRN,1.5x0.9mm,569nm"	LED2	1
0601-000012	LED	"CHIP,Y-GRN,1.5x0.9mm,569nm"	LED3	1
0601-000012	LED	"CHIP,Y-GRN,1.5x0.9mm,569nm"	LED4	1
0601-000012	LED	"CHIP,Y-GRN,1.5x0.9mm,569nm"	LED5	1
0601-000012	LED	"CHIP,Y-GRN,1.5x0.9mm,569nm"	LED6	1
0601-000012	LED	"CHIP,Y-GRN,1.5x0.9mm,569nm"	LED7	1
0601-000014	LED	"CHIP,RED,1.5x2.9mm,630nm"	LED8	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	J1	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	J10	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	J11	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	J12	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	J13	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	J2	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	J3	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	J4	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	J5	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	J6	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	J7	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	J8	1
2007-000033	R-CHIP	"00HM,5%,1/8W,DA,TP,3216"	J9	1
2007-000303	R-CHIP	"10KOHM,5%,1/8W,DA,TP,3216"	R12	1
2007-000472	R-CHIP	"1KOHM,5%,1/8W,DA,TP,3216"	R42	1
2007-000472	R-CHIP	"1KOHM,5%,1/8W,DA,TP,3216"	R43	1
2007-000472	R-CHIP	"1KOHM,5%,1/8W,DA,TP,3216"	R44	1
2007-000472	R-CHIP	"1KOHM,5%,1/8W,DA,TP,3216"	R45	1
2007-000472	R-CHIP	"1KOHM,5%,1/8W,DA,TP,3216"	R46	1
2007-000472	R-CHIP	"1KOHM,5%,1/8W,DA,TP,3216"	R47	1
2007-000472	R-CHIP	"1KOHM,5%,1/8W,DA,TP,3216"	R48	1
2007-000472	R-CHIP	"1KOHM,5%,1/8W,DA,TP,3216"	R49	1
2007-000542	R-CHIP	"200OHM,5%,1/8W,DA,TP,3216"	R15	1
2007-000542	R-CHIP	"200OHM,5%,1/8W,DA,TP,3216"	R16	1
2007-000542	R-CHIP	"200OHM,5%,1/8W,DA,TP,3216"	R17	1
2007-000542	R-CHIP	"200OHM,5%,1/8W,DA,TP,3216"	R34	1

Sec Code	Description	Spec	Location No	Q'ty
2007-000542	R-CHIP	"200OHM,5%,1/8W,DA,TP,3216"	R35	1
2007-000542	R-CHIP	"200OHM,5%,1/8W,DA,TP,3216"	R36	1
2007-000542	R-CHIP	"200OHM,5%,1/8W,DA,TP,3216"	R37	1
2007-000542	R-CHIP	"200OHM,5%,1/8W,DA,TP,3216"	R38	1
2007-000542	R-CHIP	"200OHM,5%,1/8W,DA,TP,3216"	R39	1
2007-000542	R-CHIP	"200OHM,5%,1/8W,DA,TP,3216"	R40	1
2007-000542	R-CHIP	"200OHM,5%,1/8W,DA,TP,3216"	R41	1
2007-000589	R-CHIP	"22KOHM,5%,1/8W,DA,TP,3216"	R1	1
2007-000589	R-CHIP	"22KOHM,5%,1/8W,DA,TP,3216"	R11	1
2007-000589	R-CHIP	"22KOHM,5%,1/8W,DA,TP,3216"	R2	1
2007-000589	R-CHIP	"22KOHM,5%,1/8W,DA,TP,3216"	R21	1
2007-000589	R-CHIP	"22KOHM,5%,1/8W,DA,TP,3216"	R26	1
2007-000589	R-CHIP	"22KOHM,5%,1/8W,DA,TP,3216"	R27	1
2007-000589	R-CHIP	"22KOHM,5%,1/8W,DA,TP,3216"	R28	1
2007-000589	R-CHIP	"22KOHM,5%,1/8W,DA,TP,3216"	R29	1
2007-000589	R-CHIP	"22KOHM,5%,1/8W,DA,TP,3216"	R30	1
2007-000589	R-CHIP	"22KOHM,5%,1/8W,DA,TP,3216"	R31	1
2007-000589	R-CHIP	"22KOHM,5%,1/8W,DA,TP,3216"	R32	1
2007-000589	R-CHIP	"22KOHM,5%,1/8W,DA,TP,3216"	R33	1
2007-001121	R-CHIP	"680OHM,5%,1/8W,DA,TP,3216"	R14	1
2203-000208	"C-CERAMIC,CHIP"	"100nF,10%,50V,X7R,TP,3216"	C14	1
2203-000208	"C-CERAMIC,CHIP"	"100nF,10%,50V,X7R,TP,3216"	C2	1
2203-000208	"C-CERAMIC,CHIP"	"100nF,10%,50V,X7R,TP,3216"	C3	1
2203-000242	"C-CERAMIC,CHIP"	"0.1nF,5%,50V,NP0,TP,3216"	C10	1
2203-000242	"C-CERAMIC,CHIP"	"0.1nF,5%,50V,NP0,TP,3216"	C11	1
2203-000242	"C-CERAMIC,CHIP"	"0.1nF,5%,50V,NP0,TP,3216"	C9	1
2203-000636	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,3216"	C6	1
2203-000636	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,3216"	C7	1
2203-000636	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,3216"	C8	1
2203-001005	"C-CERAMIC,CHIP"	"0.047nF,5%,50V,NP0,TP,3216"	C12	1
2203-001005	"C-CERAMIC,CHIP"	"0.047nF,5%,50V,NP0,TP,3216"	C13	1
2402-000176	"C-AL,SMD"	"10uF,20%,16V,GP,TP,4.3x4.3x5.4"	C1	1
2802-001069	RESONATOR-CERAMIC	"7.37MHz,0.5%,TP,4.7x4.1x1.7"	OSC1	1
3711-000988	CONNECTOR-HEADER	"BOX,5P,1R,2mm,ANGLE,SN"	CN2	1
JB13-00004A	IC ASIC-OPE	"SF-3100,HT48C5,SSOP,48P,16.18X10.67X2.79"	U1	1
JB41-00052A	PCB-OPE	"SCX-1110F,PHENOL,1L,-,1.6T,320 X 176mm,-,2,-,-"	PCB-OPE	1
JG07-20001A	DISPLAY LCD-	"SF4000,UC-162937-TNAR5-A,BLK/G"	LCD	1
JG39-41019A	CBF HARNESS-LCD	"SF4400,WIRE,UL2878,40mm,GRY,#2"	LCD HARNESS	1
JC72-00450A	PMO-KEY START	"SF-5905P,HIPS,-,HB,HR1360"		1
JC72-00451A	PMO-KEY STOP	"SF-5905P,ABS,-,HB,HG0760"		1
JC72-00452A	PMO-KEY TEL	"SF-5905P,HIPS,-,HB,HR1360"		1
JC72-00453A	PMO-KEY SCROLL	"SF-5905P,HIPS,-,V0,VE1870"		1
JC72-00454A	PMO-KEY FUNCTION(A)	"SF-5905P,HIPS,-,HB,HR1360"		1
JC72-00455A	PMO-KEY FUNCTION(B)	"SF-5905P,HIPS,-,HB,HR1360"		1
JC72-00457A	PMO-KEY REPORT	"SF-5905P,HIPS,-,HB,HR1360"		1
JC73-00043A	RMO-RUBBER TEL	"SF-5905P,SILICON,100X70X8,WHT,-"		1
JC73-00044A	RMO-RUBBER SCROLL	"SF-5905P,SILICON,50X30X8,WHT,-"		1
JC73-00045A	RMO-RUBBER FUNCTION	"SF-5905P,SILICON,100X120X8,WHT,-"		1

7-4 LIU PBA

Sec Code	Description	Spec	Location No	Q'ty
JB92-01142A	PBA SUB-LIU	"SCX-1110F,XEROX,USA,LIU,FAX,-,-,-,-"		1
0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	D3	1
0401-000148	DIODE-SWITCHING	"1N914,100V,500mA,DO-35,TP"	D4	1
0401-000148	DIODE-SWITCHING	"1N914,100V,500mA,DO-35,TP"	D5	1
0401-000148	DIODE-SWITCHING	"1N914,100V,500mA,DO-35,TP"	D6	1
0401-000148	DIODE-SWITCHING	"1N914,100V,500mA,DO-35,TP"	D7	1
0401-000148	DIODE-SWITCHING	"1N914,100V,500mA,DO-35,TP"	D8	1
0401-000148	DIODE-SWITCHING	"1N914,100V,500mA,DO-35,TP"	D9	1
0402-000339	DIODE-BRIDGE	"W06G,600V,1.5A,-,BK"	BD1	1
0403-000153	DIODE-ZENER	"1N4746A,18V,5%,1W,DO-41,TP"	ZD1	1
0403-000153	DIODE-ZENER	"1N4746A,18V,5%,1W,DO-41,TP"	ZD2	1
0403-000716	DIODE-ZENER	"MTZJ4.7B,4.7V,4.55-4.8V,500mW,"	ZD3	1
0403-000716	DIODE-ZENER	"MTZJ4.7B,4.7V,4.55-4.8V,500mW,"	ZD4	1
0403-000716	DIODE-ZENER	"MTZJ4.7B,4.7V,4.55-4.8V,500mW,"	ZD5	1
0403-000716	DIODE-ZENER	"MTZJ4.7B,4.7V,4.55-4.8V,500mW,"	ZD6	1
0501-000398	TR-SMALL SIGNAL	"KSC945,NPN,250mW,TO-92,TP,120-"	Q6	1
0502-000133	TR-POWER	"2SA1156,PNP,1W,TO-126,-,40-80"	Q2	1
0505-000335	FET-SILICON	"VN2410M,N,240V,0.19A,10ohm,7.9"	Q1	1
0604-000118	PHOTO-COUPLER	"TR,20-300%,200mW,DIP-4,ST"	U2	1
0604-000118	PHOTO-COUPLER	"TR,20-300%,200mW,DIP-4,ST"	U9	1
0604-000119	PHOTO-COUPLER	"TR,200-400%,200mW,DIL-4,ST"	U6	1
1405-000170	VARISTOR	"82V,1200A,9x4.1mm,TP"	VAR1	1
1405-000226	VARISTOR	"-,25A,5mm,TP"	VAR2	1
2001-000034	R-CARBON	"220OHM,5%,1/4W,AA,TP,2.4X6.4MM"	R44	1
2001-000065	R-CARBON	"10KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	R45	1
2001-000070	R-CARBON	"15KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	R16	1
2001-000085	R-CARBON(S)	"100KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	R1	1
2001-000085	R-CARBON(S)	"100KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	R2	1
2001-000631	R-CARBON	"30KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	R7	1
2001-001004	R-CARBON	"82OHM,5%,1/4W,AA,TP,2.4X6.4MM"	R4	1
2001-001004	R-CARBON	"82OHM,5%,1/4W,AA,TP,2.4X6.4MM"	R5	1
2003-000178	R-METAL OXIDE	"15Kohm,5%,1W,AA,TP,4.3x12mm"	R3	1
2003-000659	R-METAL OXIDE(S)	"33ohm,5%,1W,AA,TP,3.3x9mm"	R20	1
2004-000284	R-METAL	"12Kohm,1%,1/4W,AA,TP,2.4x6.4mm"	R15	1
2004-000432	R-METAL	"1Kohm,1%,1/4W,AA,TP,2.4x6.4mm"	R51	1
2004-000496	R-METAL	"2.74Kohm,1%,1/4W,AA,TP,2.4x6.4"	R49	1
2004-002234	R-METAL	"560ohm,1%,1/4W,AA,TP,2.4x6.4mm"	R48	1
2201-000119	"C-CERAMIC,DISC"	"100nF,+80-20%,50V,Y5V,TP,8x3,5"	C10	1
2201-000119	"C-CERAMIC,DISC"	"100nF,+80-20%,50V,Y5V,TP,8x3,5"	C11	1
2301-001308	"C-FILM,MPEF"	"15NF,10%,400V,BK,10.5X4X9MM,7.5"	C9	1
2305-000566	"C-FILM,MPEF"	"1uF,10%,250V,BK,25.5x9x16.5mm,"	C5	1
2401-000026	C-AL	"3.3UF,20%,50V,GP,TP,5X11,5"	C14	1
2401-000480	C-AL	"10uF,20%,50V,GP,TP,5x11,5"	C12	1
2401-000480	C-AL	"10uF,20%,50V,GP,TP,5x11,5"	C13	1
2401-000899	C-AL	"22uF,20%,100V,GP,TP,8x11mm,5mm"	C3	1
2401-001775	C-AL	"470nF,20%,50V,GP,TP,4x7,5"	C4	1
3501-001160	RELAY-MINIATURE	"12VDC,200MW,2000MA,-,4MS,4MS"	CML_1	1
3711-002809	CONNECTOR-HEADER	"BOX,8P,1R,2mm,STRAIGHT,SN"	P2	1

Sec Code	Description	Spec	Location No	Q'ty
3711-002815	CONNECTOR-HEADER	"BOX,14P,1R,2mm,STRAIGHT,SN"	P1	1
4715-000119	SURGE ABSORBER	"400V,15%,500A,-,"	ARS2	1
4715-000131	SURGE ABSORBER	"600V,15%,500A,-,"	ARS1	1
4715-000131	SURGE ABSORBER	"600V,15%,500A,-,"	ARS3	1
JB26-00001A	TRANS-MATCHING-REMOTE	"SF-3100,-,30KOHM:30KOHM"	T1	1
JB41-00054A	PCB-LIU	"SCX-1110F,PANOL,1L,-,0.8T,100*90,-,-,-,"	PCB-LIU	1
JB70-00161A	IPR-TERMINAL	"SCX-1110F,SPT,12.8,0.5T,SILVER,-,GND"	LUG1	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP1	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP10	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP11	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP12	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP13	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP14	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP15	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP16	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP17	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP18	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP2	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP3	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP4	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP5	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP6	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP7	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP8	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	JP9	1
JC39-40511A	CBF HARNESS-	"ML-80,JUMPER,AWG22,52mm,SILVER"	R47	1
JF27-60051A	COIL FILTER-	"CF5400,60uH,50mOHM,18T"	FLT1	1
JF27-60051A	COIL FILTER-	"CF5400,60uH,50mOHM,18T"	FLT2	1
JF27-60051A	COIL FILTER-	"CF5400,60uH,50mOHM,18T"	FLT3	1
JG26-50001A	TRANS MATCHING-	"SF6000,-,600/600"	T2	1

9-1 Main Board Connection Diagram



9-2 Driver Board Diagram

