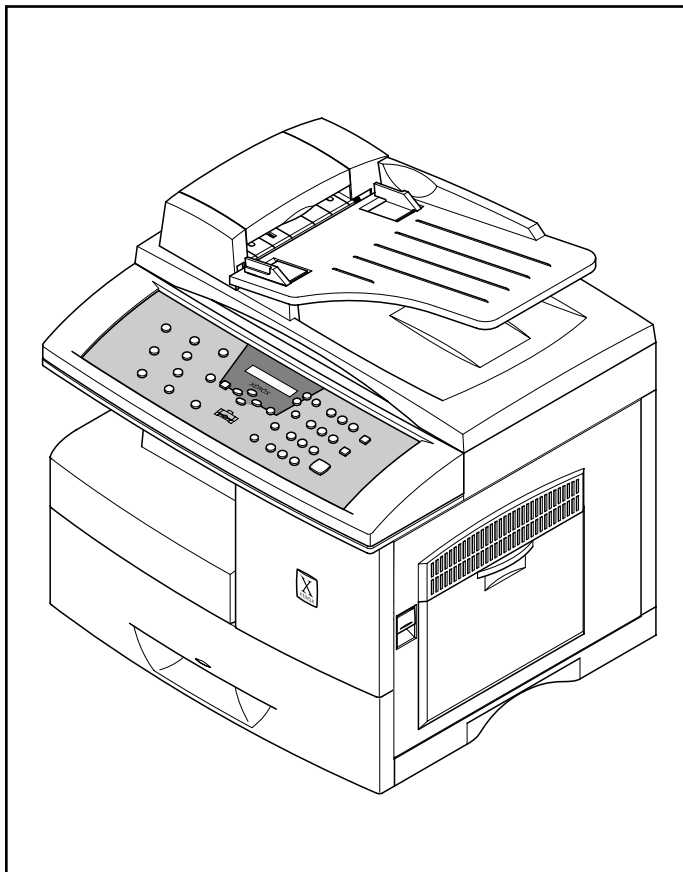


FACSIMILE

WC-M15i Series

SERVICE **MANUAL**

FACSIMILE



Contents

1. Precautions
2. Specifications
3. Circuit Description
4. Disassembly
5. Troubleshooting
6. Exploded Views and Parts List
7. Electrical Parts List
8. Block Diagram
9. Connection Diagram
10. Schematic Diagrams

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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 alterations and modifications will void the manufacturer's warranty.
5. Components, parts, and wiring that appear to have overheated or are otherwise damaged should be replaced with parts which meet the original specifications. Always determine the cause of damage or overheating, and correct any potential hazards.
6. Observe the original lead dress, especially near sharp edges, AC, and high voltage power supplies. 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.
8. 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

1. Certain semiconductor devices can be easily damaged by static electricity. Such components are commonly called “Electrostatically Sensitive (ES) Devices”, or ESDs. Examples of typical ESDs are: integrated circuits, some field effect transistors, and semiconductor “chip” components.

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.

2. 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.
3. 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.
4. Use only a grounded tip soldering iron to solder or desolder ESDs. 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 sufficient to damage an ESD.

1-3 Super Capacitor or Lithium Battery Precautions

1. Exercise caution when replacing a super capacitor or Lithium battery. There could be a danger of explosion and subsequent operator injury and/or equipment damage if incorrectly installed.
2. Be sure to replace the battery with the same or equivalent type recommended by the manufacturer.
3. Super capacitor or Lithium batteries contain toxic substances and should not be opened, crushed, or burned for disposal.
4. Dispose of used batteries according to the manufacturer’s instructions.

2. Specification

Specifications are correct at the time of printing. Product specifications are subject to change without notice. See below for product specifications.

2-1 General Specifications

Item	Description
Type of Unit	Desktop
Operation System	Win95/98/ME/ NT /2000/XP
Duplex Printing	Yes(Default)
Interface	IEEE1284(ECP)
	USB(without HUB mode)
CPU	120 MHz(ARM946ES)
Emulation	PCL6
Warming up Time	30 Sec (Stand-By), 25°C
Absolute Storage Condition	Temperature : -20°C ~ 40°C, Humidity : 10% RH ~ 95% RH
Operating Condition	Temperature : 10°C ~ 32°C, Humidity : 20% RH ~ 80 % RH
Recommended Operating Condition	Temperature : 16°C ~ 30°C, Humidity : 30% RH ~ 70% RH
Dimension(W X D X H)	560 X 433 X 459 mm
Weight	About 22.5 Kg(with CRU)
* Acoustic Noise	Less than 56/50 dB(Copy/Printing mode)
Power Rating	AC 100VAC ~ 127VAC $\pm$ 15 %, 50/60Hz $\pm$ 3Hz AC 220VAC ~ 240VAC $\pm$ 15 %, 50/60Hz $\pm$ 3Hz
Power Consumption	Avg. 320Wh
Power Save Consumption	Avg. 35Wh
Recommended System Requirement	Pentium IV 1.2 Ghz, 128 MB RAM, 220MB(Hard Disk)
Minimum System Requirement	Pentium II 400Mhz, 64 MB RAM, 120MB(Hard Disk)
LCD	16 characters X 2 lines
Memory	4 Mbyte for flash Memory , 16 Mbyte for SDRAM

* Sound Pressure Level, ISO 7779

2-2 Printer Specifications

Item	Description
Printing Method	Laser Scanning Unit + Electro Photography
*Speed	Single Side : Up to 15 PPM (Letter Size, 5% Character Pattern)
	Duplex : Up to 7.5 IPM/Images/Min) (Letter Size, 5% Character Pattern)
Source of Light	LSU(Laser Scanning Unit)
Duplex Printing	Yes(Default)
Resolution(Horizontal X Vertical)	Up to 1200 x 1200 DPI effective output
Feed Method	Cassette Type , By Pass Tray, ADF(Automatic Document Feeder)
Feed Direction	FISO(Front-In Side-Out)
Paper Capacity(Input)	Cassette : 550 Sheets By Pass Tray : 100 Sheets(based on 75g/β≥, 20lb)
Paper Capacity(Output)	Face Down : 250 Sheets
Effective Print Width	203 ± 1mm (8 inch)

* Print speed will be affected by Operating System used, computing performance, application software, connecting method, media type, media size and job complexity.

2-3 Facsimile Specification(SCX-5315F Only)

Item	Description
Standard Recommendation	ITU-T Group3(ITU : International Telecommunications Union)
Application Circuit	PSTN or behind PABX (PSTN : Public Switched Telephone Network. PABX : Private Automatic Branch Exchange)
Data coding(Compression)	MH/MR/MMR/JPEG(Transmission)
Modem speed	33600 /14400/12000/9600/7200/4800/2400 bps
Transmission Speed	Approximately 3 sec(33,600 bps)
Effective Scanning Width	8.2 inches(208 mm)
Halftone	256 Levels
Paper Capacity(Input)	ADF(Automatic Document Feeder) : 30Sheets(75g/β≥)
FAX Mode	Standard /Fine/Super Fine/Halftone
Memory	4MB

2-4 Scanner Specification

Item	Description
Type	Flatbed(with ADF)
*Speed	Mono : Up to 1.2 msec/line, Color : Up to 2.5 msec/line
Device	Color CCD(Charge Coupled Device) Module
Interface	IEEE1284(ECP Support) USB(without HUB Mode)
Compatibility	TWAIN Standard , WIA
Optical Resolution(H X V)	Up to 600 x 600 DPI effective output
Interpolation Resolution	Max. 4800 dpi
Halftone	256 Levels
Effective Scan width	8.2 inches(208 mm)

* Speed will be affected by Operating System used, computing performance, application software, connecting method, media type, media size and job complexity.

2-5 Copy Specification

Item	Description
Mode	B/W
Quality	Text/Photo/Mixed
Mono Copy Speed ⁽¹⁾	Platen(SDMP) : Up to 12 cpm in A4 size, IDC 5% pattern ADF (SDMP) : Up to 12 cpm in A4 size, IDC 5% pattern ADF (MDSP) : Text/mixed : Approx. 7 cpm in A4 size, IDC 5% pattern : Photo : Approx. 3 cpm in A4 size, IDC 5% pattern
Optical Resolution (H x V)	Up to 600 x 600 DPI effective output
Multi Copy	99 pages
Maximum Original Size	Legal
Maximum Page Size	Legal
Paper Type Selection	Plain , Legal , Cardstock , Transparency
Zoom Range	Platen : 25 ~ 400%(1% Step) ADF : 25~100 %(1% Step)

NOTE :

(1) Speed claims based on the test chart : Letter size.

SDMP : Single Document Multiple Printout

MDSP : Multiple Document Single Printout

- Speed will be affected by Operating System used, computing performance, application software, connecting method, media type, media size and job complexity.

2-6 Telephone Specification(SCX-5315F Only)

Item	Description
Speed Dial	80EA
Tone/Pulse	Tone only user modeTone/Pulse selectable in tech mode.

2-7 Consumables

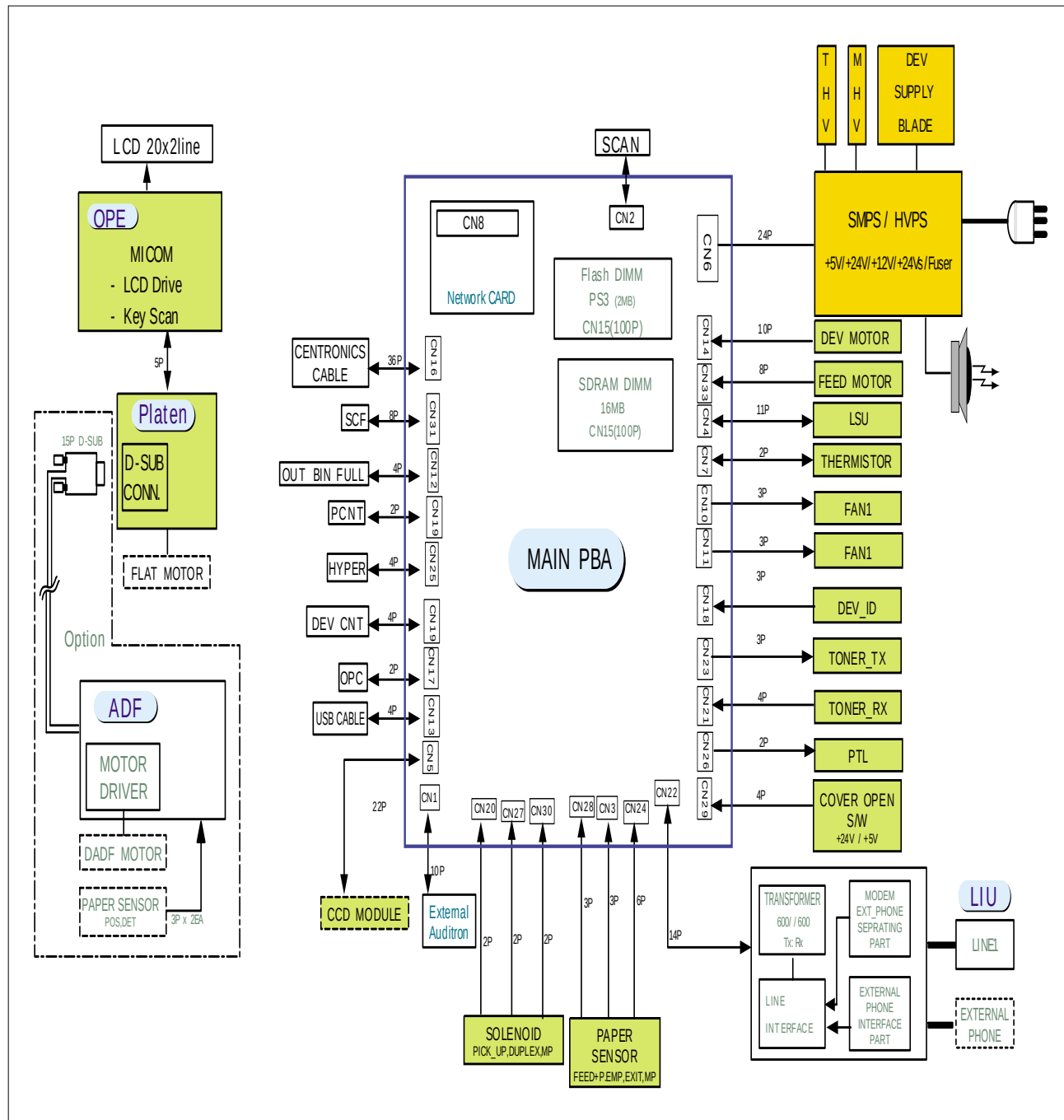
Item		Description
Type		Separate type (Toner Cartridge / Drum Cartridge)
Life	Toner Cartridge	Up to 6,000 sheets (5% coverage pattern, simplex normal mode)
	Drum Cartridge	Up to 15,000 sheets (simplex normal mode)

3. Circuit Description

3-1 Main PBA

3-1-1 Summary

The main circuit that consists of CPU, MFP controller (built-in 32bit RISC processor core: ARM946ES) including various I/O device drivers, system memory, scanner, printer, motor driver, PC I/F, and FAX transceiver controls the whole system. The entire structure of the main circuit is as follows :



<Block Diagram>

3-2 Circuit Operation

3-2-1 Clock

1) System Clock

Device	Oscillator
Frequency	12MHz

- ARM946ES RISC PROCESSOR: drives PLL internally uses 120MHz and external Bus uses 60 MHz.

2) Video Clock

Device	Oscillator
Frequency	57.0167MHz

- $F_{vd} = ((\text{PAPER 1SCAN LINE sending time} * \text{SCAN effective late} / \text{1SCAN LINE DOT \#}) * 4)$
 $= (600\text{dpi} * 600\text{dpi} * 58.208\text{mm/s} * 216\text{mm} * 4) / (25.4\text{mm} * 25.4\text{mm} * 76.1\%) = 28.697\text{MHz}$
- PAPER 1SCAN LINE sending time = SCAN LINE interval / DOCUMENT SPEED (58.208mm/S)
- 1SCAN LINE DOT # = MAZ SCAN distance (216mm) * DOT# per 1mm

3)USB Clock

Device	Oscillator
Frequency	48MHz

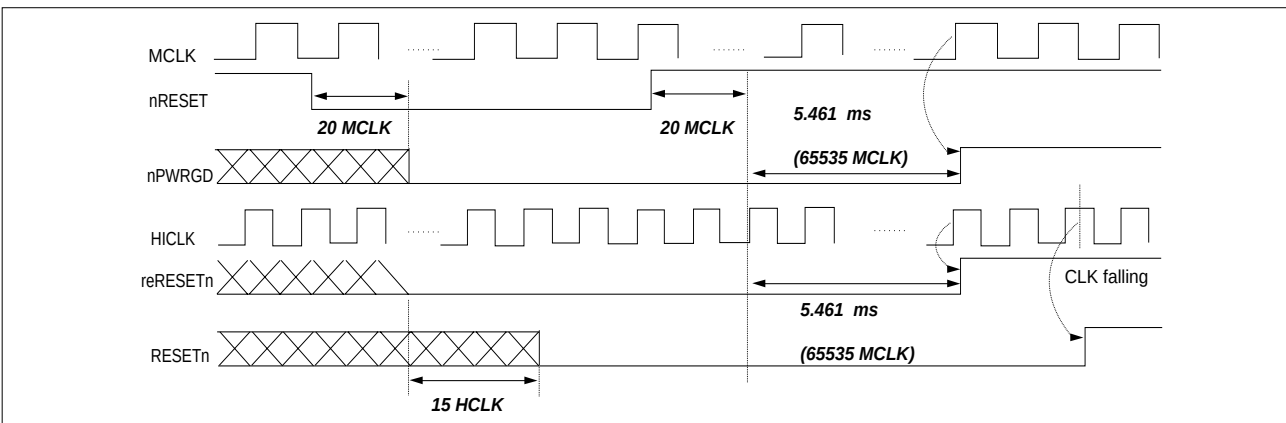
3-2-2 POWER ON/OFF RESET

1) Signal Operation

Input Signal +3.3V Power Line (VCC)
Output Signal ARM946ES nRESET and 29LU16ø
• POWER ON/OFF DETECT VCC RISING/FALLING $4.5^{\circ} \pm 4.6\text{V}$

RESET TIME (Td) 1.48~1.52ms
• $T_d = (C_t * V_{\text{sensing}}) / I_{\text{charge}}$ (... $C_t = 33\mu\text{F}$, $I_s = 100\mu\text{A}$)

2) TIMING CHART



3-2-3 RISC MICROPROCESSOR

1) RISC MICROPROCESSOR PIN & INTERFACE(SPGPm)

Ball No	Pin No	Pin Name	I/O	Description	PAD
B1	1	SD15	I/O	SDRAM Bus Data[15]	BD8TRP_TC
C2	2	VSS_PLL1	-	VSS for Core PLL	-
D2	3	VDD_PLL1	-	VDD for Core PLL (1.8V)	-
D3	4	DATA0 / GPI1	I/O	ROM Bus Data[0] / GPI[1]	BD8TRP_FT
E4	5	MCLK	I	Core PLL Clock Input (12MHz)	TLCHT_TC
C1	6	DATA6 / GPI7	I/O	ROM Bus Data[6] / GPI[7]	BD8TRP_FT
D1	7	DATA1 / GPI2	I/O	ROM Bus Data[1] / GPI[2]	BD8TRP_FT
E3	8	DATA5 / GPI6	I/O	ROM Bus Data[5] / GPI[6]	BD8TRP_FT
E2	9	VDD_RING_OSC	-	VDD for Ring Oscillator (1.8V)	-
E1	10	DATA3 / GPI4	I/O	ROM Bus Data[3] / GPI[4]	BD8TRP_FT
F3	11	DATA9 / GPI10	I/O	ROM Bus Data[9] / GPI[10]	BD8TRP_FT
G4	12	GND	-	GROUND_RING	-
F2	13	DATA8 / GPI9	I/O	ROM Bus Data[8] / GPI[9]	BD8TRP_FT
F1	14	DATA7 / GPI8	I/O	ROM Bus Data[7] / GPI[8]	BD8TRP_FT
G3	15	DATA12 / GPI13	I/O	ROM Bus Data[12] / GPI[13]	BD8TRP_FT
G2	16	DATA11 / GPI12	I/O	ROM Bus Data[11] / GPI[12]	BD8TRP_FT
G1	17	DATA10 / GPI11	I/O	ROM Bus Data[10] / GPI[11]	BD8TRP_FT
H3	18	DATA4 / GPI5	I/O	ROM Bus Data[4] / GPI[5]	BD8TRP_FT
H2	19	DATA15 / GPI16	I/O	ROM Bus Data[15] / GPI[16]	BD8TRP_FT
H1	20	DATA14 / GPI15	I/O	ROM Bus Data[14] / GPI[15]	BD8TRP_FT
J4	21	VDD_CORE	-	VDD for CORE (1.8V)	-
J3	22	DATA19	I/O	ROM Bus Data[19]	BD8TRP_FT
J2	23	DATA18	I/O	ROM Bus Data[18]	BD8TRP_FT
J1	24	DATA17	I/O	ROM Bus Data[17]	BD8TRP_FT
K2	25	DATA16	I/O	ROM Bus Data[16]	BD8TRP_FT
K3	26	DATA22	I/O	ROM Bus Data[22]	BD8TRP_FT
K1	27	DATA13 / GPI14	I/O	ROM Bus Data[14] / GPI[14]	BD8TRP_FT
L1	28	DATA20	I/O	ROM Bus Data[20]	BD8TRP_FT
L2	29	DATA21	I/O	ROM Bus Data[21]	BD8TRP_FT
L3	30	DATA25	I/O	ROM Bus Data[25]	BD8TRP_FT
L4	31	DATA26	I/O	ROM Bus Data[26]	BD8TRP_FT
M1	32	DATA23	I/O	ROM Bus Data[23]	BD8TRP_FT
M2	33	DATA24	I/O	ROM Bus Data[24]	BD8TRP_FT
M3	34	DATA29	I/O	ROM Bus Data[29]	BD8TRP_FT
M4	35	DATA30	I/O	ROM Bus Data[30]	BD8TRP_FT
N1	36	DATA27	I/O	ROM Bus Data[27]	BD8TRP_FT
N2	37	DATA28	I/O	ROM Bus Data[28]	BD8TRP_FT
N3	38	VDD_ARM	-	VDD for ARM	-
P1	39	DATA31	I/O	ROM Bus Data[31]	BD8TRP_FT
P2	40	DATA2 / GPI3	I/O	ROM Bus Data[2] / GPI[3]	BD8TRP_FT
R1	41	VDD_CORE	-	VDD for CORE (1.8V)	-
P3	42	nROMCS2	O	ROM Bank2 Select_n	B4TR_TC

Ball No	Pin No	Pin Name	I/O	Description	PAD
R2	43	nRD	O	ROM Bus Read_n	B4TR_TC
T1	44	nROMCS0	O	ROM Bank0 Select_n	B4TR_TC
P4	45	nROMCS3 / nIOCS3 / GPO1	O	ROM Bank3 Select_n / IO Bank3 Select_n / GPO[1]	B4TR_TC
R3	46	nWR	O	ROM Bus Write_n	B4TR_TC
T2	47	nROMCS1	O	ROM Bank1 Select_n	B4TR_TC
U1	48	ADDR12	O	ROM Bus Addr[12]	B8TR_TC
T3	49	ADDR10	O	ROM Bus Addr[10]	B8TR_TC
U2	50	ADDR13	O	ROM Bus Addr[13]	B8TR_TC
V1	51	ADDR15	O	ROM Bus Addr[15]	B8TR_TC
T4	52	ADDR11	O	ROM Bus Addr[11]	B8TR_TC
U3	53	ADDR14	O	ROM Bus Addr[14]	B8TR_TC
V2	54	ADDR16	O	ROM Bus Addr[16]	B8TR_TC
W1	55	ADDR19	I/O	ROM Bus Addr[19]	BD8TRP_TC
V3	56	ADDR17	I/O	ROM Bus Addr[17]	BD8TRP_TC
W2	57	ADDR20	I/O	ROM Bus Addr[20]	BD8TRP_TC
Y1	58	nIOCS0	O	IO Bank0 Select_n	B4TR_TC
W3	59	ADDR21	I/O	ROM Bus Addr[21]	BD8TRP_TC
Y2	60	nIOCS1	O	IO Bank1 Select_n	B4TR_TC
W4	61	ADDR22	I/O	ROM Bus Addr[22]	BD8TRP_TC
V4	62	ADDR18	I/O	ROM Bus Addr[18]	BD8TRP_TC
U5	63	ADDR7	O	ROM Bus Addr[7]	B8TR_TC
Y3	64	VDD_CORE	O	VDD for CORE (1.8V)	-
Y4	65	nIOCS2 / nDACK0 / GPO2	O	IO Bank2 Select_n / DMA IO Bank0 ACK_n / GPO[2]	B4TR_TC
V5	66	ADDR1	O	ROM Bus Addr[1]	B8TR_TC
W5	67	ADDR8	O	ROM Bus Addr[8]	B8TR_TC
Y5	68	ADDR9	O	ROM Bus Addr[9]	B8TR_TC
V6	69	ADDR4	O	ROM Bus Addr[4]	B8TR_TC
U7	70	ADDR6	O	ROM Bus Addr[6]	B8TR_TC
W6	71	ADDR2	O	ROM Bus Addr[2]	B8TR_TC
Y6	72	ADDR3	O	ROM Bus Addr[3]	B8TR_TC
V7	73	ADDR5	O	ROM Bus Addr[5]	B8TR_TC
W7	74	VDD_ARM	-	VDD for ARM Hard Macro(1.8V)	-
Y7	75	VDD_CORE	-	VDD for CORE (1.8V)	-
V8	76	EINT0 / TnRST	I	Ext. Interrupt0 / TAP Controller Reset_n	SCHMITT_FT
W8	77	EINT1 / TCK	I	Ext. Interrupt1 / TAP Controller Clock	SCHMITT_FT
Y8	78	EINT2 / nRXD2 / TMS	I	Ext. Interrupt2 / UART RX DATA[2] / TAP Controller Mode Select	SCHMITT_FT
U9	79	EINT3 / nTXD2 / GPO9	I/O	Ext. Interrupt3 / UART TX Data[2] / GPO[9]	BD4STRP_FT
V9	80	nRxD0	I	UART RX Data[0]	SCHMITT_FT
W9	81	nRxD1 / GPI17 / TDI	I	UART RX Data[1] / GPI[17] / TAP Controller Data In	SCHMITT_FT
Y9	82	nTxD0	O	UART TX Data[0]	B4TR_TC
W10	83	TESTMODE	I	TESTMODE (Nomal : 0)	SCHMITT_TC

Ball No	Pin No	Pin Name	I/O	Description	PAD
V10	84	nTxD1 / GPO10 / TDO	O	UART Tx Data[1] / GPO[10] / Tap Controller Data Out	B4TR_TC
Y10	85	TESTSE	I	TESTSE (Normal : 0)	SCHMITT_TC
Y11	86	VDD_CORE	-	VDD for CORE (1.8V)	-
W11	87	RXERR / GPI25	I	MAC RX Error / GPI[25]	SCHMITT_TC
V11	88	GND	-	GROUND_RING	-
U11	89	RX_DV / GPI20	O	MAC RX Data Valid / GPI[20]	SCHMITT_TC
Y12	90	RXD0 / GPI21	O	MAC RX Data[0] / GPI[21]	SCHMITT_TC
W12	91	nLFPHB1 / nPRINT	O	Motor Out B_n / Print Start_n	B4TR_TC
V12	92	nLFPHB0 / nCMMSG	O	Motor Out B / Command Message_n	B4TR_TC
U12	93	nLFPHA0 / CCLK	O	Motor Out A / Communication Clock	B4TR_TC
Y13	94	RXD1 / GPI22	I	MAC RX Data[1] / GPI[22]	SCHMITT_TC
W13	95	VDO	O	Video Data Out	B8TR_TC
V13	96	SPD / nDREQ3	I/O	DIMM Detect / DMA REQ[3]_n	BD4SRTP_TC
Y14	97	nWAIT1 / CRS	I	Wait_n / MAC Carrier Sensor	SCHMITT_TC
W14	98	COL / EINT4	I	MAC Collision Detect / Ext. Interrupt4	SCHMITT_TC
Y15	99	TX_EN	O	MAC TX Enable	B4TR_TC
V14	100	MDIO	I/O	MAC Management Data Inout	BD4STRUQP_TC
W15	101	TXD3 / GPO14	O	MAC TX Data[3] / GPO[14]	B4TR_TC
Y16	102	TXD2 / GPO13	O	MAC TX Data[2] / GPO[13]	B4TR_TC
U14	103	MDC / GPO15	O	MAC Management Data Clock / GPO[15]	B4TR_TC
V15	104	TXCLK / GPI18	I	MAC TX Clock(25MHz) / GPI[18]	SCHMITT_TC
W16	105	TXD1 / GPO12	O	MAC TX Data[1] / GPO[12]	B4TR_TC
Y17	106	PD4	I/O	Parallel Port Data[4]	BD4STRP_FT
V16	107	TXD0 / nIOCS3	O	MAC TX Data[0] / IO Bank3 Select_n	B4TR_TC
W17	108	RXD3 / GPI24	I	MAC RX Data[3] / GPI[24]	SCHMITT_TC
Y18	109	PD2	I/O	Parallel Port Data[2]	BD4STRP_FT
U16	110	PD6	I/O	Parallel Port Data[6]	BD4STRP_FT
V17	111	RXD2	I	MAC RX Data[2] / GPI[23]	SCHMITT_TC
W18	112	PWMOUT2	O	PWM Output[2]	B4TR_TC
Y19	113	VCLK	I	Video Reference Clock	TLCHT_TC
V18	114	RXCLK / GPI19	I	MAC RX Clock(25MHz) / GPI[19]	SCHMITT_TC
W19	115	PD1	I/O	Parallel Port Data[1]	BD4STRP_FT
Y20	116	nINIT	I	Parallel Port Initialization_n	SCHMITT_FT
W20	117	VSS_ADC	-	VSS for ADC	-
V19	118	ATEST_OUT	O	ADC Test Output	ANA_TC
U19	119	AIN2	I	ADC Channel2 Input	ANA_TC
U18	120	AIN1	I	ADC Channel1 Input	ANA_TC
T17	121	AIN0	I	ADC Channel0 Input	ANA_TC
V20	122	VDD_ADC	-	Analog power for ADC (3.3V)	-
U20	123	VDD_CORE	-	VDD for CORE (1.8V)	-
T18	124	GND	-	GROUND_RING	-
T19	125	VDD_CORE	-	VDD for CORE (1.8V)	-

Ball No	Pin No	Pin Name	I/O	Description	PAD
T20	126	VDD_CORE	-	VDD for CORE (1.8V)	-
R18	127	VBUS	I	USB Detect	SCHMITT_FT
P17	128	nLREADY / nEBSY	I	LSU Ready_n / Engine Busy_n	SCHMITT_FT
R19	129	nSELECTIN	I	Parallel Port Select Input_n	SCHMITT_FT
R20	130	LSUCLK / nCBSY / GPO11	O	LSU Clock / Command Busy_n / GPO[11]	B4TR_TC
P18	131	PD7	I/O	Parallel Port Data[7]	BD4STRP_FT
P19	132	PWMOUT1	O	PWM Output[1]	B4TR_TC
P20	133	PWMOUT0	O	PWM Output[0]	B4TR_TC
N18	134	nEMSG / nDACK3 / PWMOUT3	I/O	Engine Message_n / DMA ACK[3]_n / PWM Output[3]	BD4STRP_FT
N19	135	nFSYNC / nLFPHA1	I/O	Frame Sync_n / Motor Out A_n	BD4STRP_FT
N20	136	nHSYNC	I	Line Sync_n	SCHMITT_FT
M17	137	nSTROBE	I	Parallel Port Data Strobe_n	SCHMITT_FT
M18	138	PD5	I/O	Parallel Port Data[5]	BD4STRP_FT
M19	139	nWAIT0 / PDE	I/O	Wait_n / Parallel Port Data Enable	BD4STRP_TC
M20	140	nIOCS5 / nSCS4 / GPO3 / TONEOUT	O	DRAM Bank4 / IO Bank5 Select_n / GPO[3] / Tone Pulse Out	BD8TARP_TC
L19	141	PD3	I/O	Parallel Port Data[3]	BD4STRP_FT
L18	142	nFAULT	O	Parallel Port Fault_n	B4TR_TC
L20	143	nDREQ0 / GPI0 / ADDR23	I/O	DMA REQ[0]_n / GPI[0] / ADDR[23]	BD4STRP_TC
K20	144	nRESET	I	External Reset_n Input	SCHMITT_TC
K19	145	PERROR	O	Parallel Port Paper Error	B4TR_TC
K18	146	nAUTOFD	I	Parallel Port Auto Feed_n	SCHMITT_FT
K17	147	nDACK2 / DQM7 / GPO5	O	DMA ACK[2]_n / DQM[7] / GPO[5]	BD8TARP_TC
J20	148	nDREQ2 / DQM6 / GPO6	I/O	DMA REQ[2]_n / DQM[6] / GPO[6]	BD8TARP_TC
J19	149	nDREQ1 / DQM4 / GPO8	I/O	DMA REQ[1]_n / DQM[4] / GPO[8]	BD8TARP_TC
J18	150	VDD_CORE	-	VDD for CORE (1.8V)	-
J17	151	nSCS0	O	SDRAM Bank0 Select_n	BD8TARP_TC
H20	152	nSCS2	O	SDRAM Bank2 Select_n	BD8TARP_TC
H19	153	nCAS	O	SDRAM Column Address Select_n	BD8TARP_TC
H18	154	nSCS1	O	SDRAM Bank1 Select_n	BD8TARP_TC
G20	155	nIOCS4 / nSCS3 / GPO4	O	IO Bank4 / SDRAM Bank3 Select_n / GPO[4]	BD8TARP_TC
G19	156	BUSY	O	Parallel Port Busy	B4TR_TC
F20	157	PD0	I/O	Parallel Port Data[0]	BD4STRP_FT
G18	158	SLCT_OUT	O	Parallel Port Selection Out	B4TR_TC
F19	159	nACK	O	Parallel Port Acknowledge_n	B4TR_TC
E20	160	nDACK1 / DQM5 / GPO7	O	DMA ACK[1]_n / DQM[5] / GPO[7]	BD8TARP_TC
G17	161	nRSTOUT / CLKOUT / GPO0	O	Internal Reset_n Out / Internal System Clock Out / GPO[0]	B8TR_TC
F18	162	SA7	O	SDRAM Bus Addr[7]	BD8TARP_TC
E19	163	SA9	O	SDRAM Bus Addr[9]	BD8TARP_TC

Ball No	Pin No	Pin Name	I/O	Description	PAD
D20	164	VDD_USB	-	VDD for USB Hard Macro (1.8V)	-
E18	165	SA10	O	SDRAM Bus Addr[10]	BD8TARP_TC
D19	166	SA12	O	SDRAM Bus Addr[120]	BD8TARP_TC
C20	167	BA0	O	SDRAM Bus Bank Select Addr[0]	BD8TARP_TC
E17	168	nRAS	O	SDRAM Row Address Select_n	BD8TARP_TC
D18	169	DQM2	O	SDRAM Bus DQM[2]	BD8TARP_TC
C19	170	DQM1	O	SDRAM Bus DQM[1]	BD8TARP_TC
B20	171	BA1	O	SDRAM Bus Bank Select Addr[1]	BD8TARP_TC
C18	172	DQM0	O	SDRAM Bus DQM[0]	BD8TARP_TC
B19	173	DQM3	O	SDRAM Bus DQM[3]	BD8TARP_TC
A20	174	RREF	I/O	USB PHY Register Reference	ANA_FT
A19	175	VSSL	-	VSS for Deserialisation Flip flops	-
B18	176	VDDL	-	VDD for Deserialisation Flip flops (1.8V)	-
B17	177	VSSB	-	VSS for buffers	-
C17	178	DMNS	I/O	USB2 DATA-	ANA_FT
D16	179	DPLS	I/O	USB2 DATA+	ANA_FT
A18	180	VDD3_USB	-	VDD for USB1.1 FS compliance (3.3V)	-
A17	181	VSSC	-	VSS for DLL and Xor tree	-
C16	182	VDDC	-	VDD for DLL and Xor tree (1.8V)	-
B16	183	Vddb	-	VDD for buffers (1.8V)	-
A16	184	VDD_USB	-	VDD for USB Hard Macro (1.8V)	-
C15	185	UCLK	I	USB PLL Input Clock (12MHz)	TLCHT_TC
D14	186	VSS_PLL2	-	VSS for USB PLL	-
B15	187	VDD_PLL2	-	VSS for USB PLL (1.8V)	-
A15	188	SA11	O	SDRAM Bus Addr[11]	BD8TARP_TC
C14	189	SA6	O	SDRAM Bus Addr[6]	BD8TARP_TC
B14	190	SA5	O	SDRAM Bus Addr[5]	BD8TARP_TC
A14	191	SA8	O	SDRAM Bus Addr[8]	BD8TARP_TC
C13	192	SA3	O	SDRAM Bus Addr[3]	BD8TARP_TC
B13	193	SA2	O	SDRAM Bus Addr[2]	BD8TARP_TC
A13	194	SA4	O	SDRAM Bus Addr[4]	BD8TARP_TC
D12	195	SA0	O	SDRAM Bus Addr[0]	BD8TARP_TC
C12	196	SA1	O	SDRAM Bus Addr[1]	BD8TARP_TC
B12	197	CKE	O	SDRAM Clock Enable	BD8TARP_TC
A12	198	nWE	O	SDRAM Write Enable_n	BD8TARP_TC
B11	199	SD30	I/O	SDRAM Bus Data[30]	BD8TARP_TC
C11	200	SD31	I/O	SDRAM Bus Data[31]	BD8TARP_TC
A11	201	SD29	I/O	SDRAM Bus Data[29]	BD8TARP_TC
A10	202	SD25	I/O	SDRAM Bus Data[25]	BD8TARP_TC
B10	203	SD26	I/O	SDRAM Bus Data[26]	BD8TARP_TC
C10	204	SD27	I/O	SDRAM Bus Data[27]	BD8TARP_TC
D10	205	SD28	I/O	SDRAM Bus Data[28]	BD8TARP_TC
A9	206	SD21	I/O	SDRAM Bus Data[21]	BD8TARP_TC
B9	207	SD22	I/O	SDRAM Bus Data[22]	BD8TARP_TC

Ball No	Pin No	Pin Name	I/O	Description	PAD
C9	208	SD23	I/O	SDRAM Bus Data[23]	BD8TARP_TC
D9	209	SD24	I/O	SDRAM Bus Data[24]	BD8TARP_TC
A8	210	SD18	I/O	SDRAM Bus Data[18]	BD8TARP_TC
B8	211	SDCLK0	O	SDRAM Clock Output0	BD8TARP_TC
C8	212	SD20	I/O	SDRAM Bus Data[20]	BD8TARP_TC
A7	213	SD14	I/O	SDRAM Bus Data[14]	BD8TARP_TC
B7	214	SD19	I/O	SDRAM Bus Data[19]	BD8TARP_TC
A6	215	SD11	I/O	SDRAM Bus Data[11]	BD8TARP_TC
C7	216	SD16	I/O	SDRAM Bus Data[16]	BD8TARP_TC
B6	217	SDCLK1	O	SDRAM Clock Output1	BD8TARP_TC
A5	218	SD12	I/O	SDRAM Bus Data[12]	BD8TARP_TC
D7	219	SD17	I/O	SDRAM Bus Data[17]	BD8TARP_TC
C6	220	SD13	I/O	SDRAM Bus Data[13]	BD8TARP_TC
B5	221	SD8	I/O	SDRAM Bus Data[8]	BD8TARP_TC
A4	222	SD5	I/O	SDRAM Bus Data[5]	BD8TARP_TC
C5	223	SD9	I/O	SDRAM Bus Data[9]	BD8TARP_TC
B4	224	SD6	I/O	SDRAM Bus Data[6]	BD8TARP_TC
A3	225	SD3	I/O	SDRAM Bus Data[3]	BD8TARP_TC
D5	226	SD10	I/O	SDRAM Bus Data[10]	BD8TARP_TC
C4	227	SD7	I/O	SDRAM Bus Data[7]	BD8TARP_TC
B3	228	SD4	I/O	SDRAM Bus Data[4]	BD8TARP_TC
B2	229	SD1	I/O	SDRAM Bus Data[1]	BD8TARP_TC
A2	230	SD0	I/O	SDRAM Bus Data[0]	BD8TARP_TC
C3	231	SD2	I/O	SDRAM Bus Data[2]	BD8TARP_TC

2) RISC MICROPROCESSOR PIN & INTERFACE(CIP4)

No	Pin Name	I/O	Description	Pad Type	Current drive
1	GND2	P	Vss Supply	vss2i	-
2	NTEST	I	Nand Tree Test Mode Selection	pticd	-
3	TM	I	Global Test Mode Selection	pticd	-
4	TEST1	I	Test Mode Selection 1	pticd	-
5	GND17	P	Vss Supply	vss3op	-
6	TEST2	I	Test Mode Selection 2	pticd	-
7	XDACK1	I	DMA Acknowledge Signal 1	ptis	-
8	XDREQ1	O	DMA Request Signal 1	phob4	4mA
9	VDD1	P	Vdd Supply	vdd2i	-
10	XDACK2	I	DMA Acknowledge Signal 2	ptis	-
11	XDREQ2	O	DMA Request Signal 2	phob4	4mA
12	XDACK3	I	DMA Acknowledge Signal 3	ptis	-
13	XDREQ3	O	DMA Request Signal 3	phob4	4mA
14	nRESET	I	Global Reset	ptis	-
15	CLK_OUT	O	PLL Clock Out	phob12	12mA
16	GND3	P	Vss Supply	vss2i	-
17	XP	I	Clock Oscillation Input	phsosc26	10~40MHz
18	XPOUT	O	Clock Oscillation Output	phsosc26	10~40MHz
19	GNDD16	P	Vss Supply	vss2t_abb	-
20	FILTER*	O	PLL Filter Pump Out	poar50_abb	-
21	GND1	P	Vss Supply	vbb_abb	-
22	VDDA9,VDDD9	P	Vdd Supply	vdd2t_abb	-
23	GND24,GND33	P	Vss Supply	vss3t_abb	-
24	RTC_XO	O	RTC Clock Oscillation Output	poar50_abb	-
25	RTC_XI	I	RTC Clock Oscillation Input	piar50_abb	-
26	VDD8,VDD18	P	Vdd Supply	vdd3t_abb	-
27	IRQ	O	Interrupt Request Signal	phob4	4mA
28	nCS	I	CIP4 Chip Select	ptis	-
29	GND4	P	Vss Supply	vss2i	-
30	nRD	I	CIP4 CPU Read Control	ptis	-
31	nWR	I	CIP4 CPU Write Control	ptis	-
32	BA1	I	Bank Address Bus [1]	ptis	-
33	BA0	I	Bank Address Bus [0]	ptis	-
34	GND19	P	Vss Supply	vss3op	-
35	A5	I	CPU Address Bus [5]	ptis	-
36	A4	I	CPU Address Bus [4]	ptis	-
37	A3	I	CPU Address Bus [3]	ptis	-
38	VDD2	P	Vdd Supply	vdd2i	-
39	A2	I	CPU Address Bus [2]	ptis	-
40	A1	I	CPU Address Bus [1]	ptis	-
41	A0	I	CPU Address Bus [0]	ptis	-
42	GND5	P	Vss Supply	vss2i	-
43	D31	B	CPU Data Bus [31]	phbst8	8mA

No	Pin Name	I/O	Description	Pad Type	Current drive
44	D30	B	CPU Data Bus [30]	phbst8	8mA
45	D29	B	CPU Data Bus [29]	phbst8	8mA
46	D28	B	CPU Data Bus [28]	phbst8	8mA
47	GND20	P	Vss Supply	vss3op	-
48	D27	B	CPU Data Bus [27]	phbst8	8mA
49	D26	B	CPU Data Bus [26]	phbst8	8mA
50	D25	B	CPU Data Bus [25]	phbst8	8mA
51	VDD11	P	Vdd Supply	vdd3op	-
52	D24	B	CPU Data Bus [24]	phbst8	8mA
53	D23	B	CPU Data Bus [23]	phbst8	8mA
54	D22	B	CPU Data Bus [22]	phbst8	8mA
55	D21	B	CPU Data Bus [21]	phbst8	8mA
56	GND6	P	Vss Supply	vss2i	-
57	D20	B	CPU Data Bus [20]	phbst8	8mA
58	D19	B	CPU Data Bus [19]	phbst8	8mA
59	D18	B	CPU Data Bus [18]	phbst8	8mA
60	GND21	P	Vss Supply	vss3op	-
61	D17	B	CPU Data Bus [17]	phbst8	8mA
62	D16	B	CPU Data Bus [16]	phbst8	8mA
63	D15	B	CPU Data Bus [15]	phbst8	8mA
64	D14	B	CPU Data Bus [14]	phbst8	8mA
65	VDD3	P	Vdd Supply	vdd2i	-
66	D13	B	CPU Data Bus [13]	phbst8	8mA
67	D12	B	CPU Data Bus [12]	phbst8	8mA
68	D11	B	CPU Data Bus [11]	phbst8	8mA
69	GND7	P	Vss Supply	vss2i	-
70	D10	B	CPU Data Bus [10]	phbst8	8mA
71	D9	B	CPU Data Bus [9]	phbst8	8mA
72	D8	B	CPU Data Bus [8]	phbst8	8mA
73	D7	B	CPU Data Bus [7]	phbst8	8mA
74	GND22	P	Vss Supply	vss3op	-
75	D6	B	CPU Data Bus [6]	phbst8	8mA
76	D5	B	CPU Data Bus [5]	phbst8	8mA
77	D4	B	CPU Data Bus [4]	phbst8	8mA
78	VDD12	P	Vdd Supply	vdd3op	-
79	D3	B	CPU Data Bus [3]	phbst8	8mA
80	D2	B	CPU Data Bus [2]	phbst8	8mA
81	D1	B	CPU Data Bus [1]	phbst8	8mA
82	D0	B	CPU Data Bus [0]	phbst8	8mA
83	GND8	P	Vss Supply	vss2i	-
84	TX_EN1	O	Motor Control Tx Enable 1	phob4	4mA
85	TX_EN2	O	Motor Control Tx Enable 2	phob4	4mA
86	TX_A	O	Motor Control Tx Channel A	phob4	4mA
87	TX_B	O	Motor Control Tx Channel B	phob4	4mA
88	GND23	P	Vss Supply	vss3op	-

No	Pin Name	I/O	Description	Pad Type	Current drive
89	nTX_A	O	Motor Control Tx Channel A	phob4	4mA
90	nTX_B	O	Motor Control Tx Channel A	phob4	4mA
91	MOTOR_POL	I	Motor Polarity	ptis	4mA
92	VDD4	P	Vdd Supply	vdd2i	-
93	Pltg1	O	CIS/CCD Pltg1 Signal	phob8	8mA
94	PI1	O	CIS/CCD PI1 Signal	phob8	8mA
95	PI2	O	CIS/CCD PI2 Signal	phob8	8mA
96	GND9	P	Vss Supply	vss2i	-
97	PIrs	O	CIS/CCD PIrs Signal	phob8	8mA
98	PIcp	O	CIS/CCD PIsh Signal	phob8	8mA
99	ADC_CLK	O	AFE ADC Clock	phob8	8mA
100	VDD13	P	Vdd Supply	vdd3op	-
101	CDS2_CLK	O	AFE CDS2 Clock	phob8	8mA
102	SCLK1	O	AFE SIO Sync. Clock	phob8	8mA
103	SLOAD1	O	AFE SIO Read/Write Control Signal	phob8	8mA
104	VDD10	P	Vdd Supply	vdd3op	-
105	SDO1	O	AFE SIO Serial Output 1	phob8	8mA
106	SDIO1	B	AFE SIO Serial Inout/Output 1	phbst8	8mA
107	SDIO2	B	AFE SIO Serial Inout/Output 2	phbst8	8mA
108	GND10	P	Vss Supply	vss2i	-
109	AFE_D9	I	A/D Converted Data Bus [9]	ptis	-
110	AFE_D8	I	A/D Converted Data Bus [8]	ptis	-
111	AFE_D7	I	A/D Converted Data Bus [7]	ptis	-
112	AFE_D6	I	A/D Converted Data Bus [6]	ptis	-
113	VDD5	P	Vdd Supply	vdd2i	-
114	AFE_D5	I	A/D Converted Data Bus [5]	ptis	-
115	AFE_D4	I	A/D Converted Data Bus [4]	ptis	-
116	AFE_D3	I	A/D Converted Data Bus [3]	ptis	-
117	GND25	P	Vss Supply	vss3op	-
118	AFE_D2	I	A/D Converted Data Bus [2]	ptis	-
119	AFE_D1	I	A/D Converted Data Bus [1]	ptis	-
120	AFE_D0	I	A/D Converted Data Bus [0]	ptis	-
121	GND11	P	Vss Supply	vss2i	-
122	SRAM_A15	O	SRAM Address Bus [15]	phob8	8mA
123	SRAM_A14	O	SRAM Address Bus [14]	phob8	8mA
124	SRAM_A13	O	SRAM Address Bus [13]	phob8	8mA
125	SRAM_A12	O	SRAM Address Bus [12]	phob8	8mA
126	VDD14	P	Vdd Supply	vdd3op	-
127	SRAM_A11	O	SRAM Address Bus [11]	phob8	8mA
128	SRAM_A10	O	SRAM Address Bus [10]	phob8	8mA
129	SRAM_A9	O	SRAM Address Bus [9]	phob8	8mA
130	GND26	P	Vss Supply	vss3op	-
131	SRAM_A8	O	SRAM Address Bus [9]	phob8	8mA
132	SRAM_A7	O	SRAM Address Bus [9]	phob8	8mA
133	SRAM_A6	O	SRAM Address Bus [9]	phob8	8mA

No	Pin Name	I/O	Description	Pad Type	Current drive
134	SRAM_A5	O	SRAM Address Bus [9]	phob8	8mA
135	GND12	P	Vss Supply	vss2i	-
136	SRAM_A4	O	SRAM Address Bus [9]	phob8	8mA
137	SRAM_A3	O	SRAM Address Bus [9]	phob8	8mA
138	SRAM_A2	O	SRAM Address Bus [9]	phob8	8mA
139	SRAM_A1	O	SRAM Address Bus [9]	phob8	8mA
140	VDD6	P	Vdd Supply	vdd2i	-
141	SRAM_A0	O	SRAM Address Bus [9]	phob8	8mA
142	SRAM_nWR	O	SRAM Write Enable Signal	phob8	8mA
143	SRAM_D15	B	SRAM Data Bus [15]	phbst8	8mA
144	SRAM_D14	B	SRAM Data Bus [14]	phbst8	8mA
145	GND27	P	Vss Supply	vss3op	-
146	SRAM_D13	B	SRAM Data Bus [13]	phbst8	8mA
147	SRAM_D12	B	SRAM Data Bus [12]	phbst8	8mA
148	SRAM_D11	B	SRAM Data Bus [11]	phbst8	8mA
149	GND13	P	Vss Supply	vss2i	-
150	SRAM_D10	B	SRAM Data Bus [10]	phbst8	8mA
151	SRAM_D9	B	SRAM Data Bus [9]	phbst8	8mA
152	SRAM_D8	B	SRAM Data Bus [8]	phbst8	8mA
153	SRAM_D7	B	SRAM Data Bus [7]	phbst8	8mA
154	VDD15	P	Vdd Supply	vdd3op	-
155	SRAM_D6	B	SRAM Data Bus [6]	phbst8	8mA
156	SRAM_D5	B	SRAM Data Bus [5]	phbst8	8mA
157	SRAM_D4	B	SRAM Data Bus [4]	phbst8	8mA
158	GND28	P	Vss Supply	vss3op	-
159	SRAM_D3	B	SRAM Data Bus [3]	phbst8	8mA
160	SRAM_D2	B	SRAM Data Bus [2]	phbst8	8mA
161	SRAM_D1	B	SRAM Data Bus [1]	phbst8	8mA
162	SRAM_D0	B	SRAM Data Bus [0]	phbst8	8mA
163	GND14	P	Vss Supply	vss2i	-
164	GPO7/Pltg2	O	General Purpose Output [7]	phob8	8mA
165	GPO6/RLED	O	General Purpose Output [6]	phob8	8mA
166	GPO5/GLED	O	General Purpose Output [5]	phob8	8mA
167	GPO4/BLED	O	General Purpose Output [4]	phob8	8mA
168	VDD7	P	Vdd Supply	vdd2i	-
169	GPO3/Pltg3	O	General Purpose Output [3]	phob8	8mA
170	GPO2/Plsh	O	General Purpose Output [2]	phob8	8mA
171	GPO1/ LEVEL_SHIFT	O	General Purpose Output [1]	phob8	8mA
172	GPO0	O	General Purpose Output [0]	phob8	8mA
173	GND29	P	Vss Supply	vss3op	8mA
174	GPIO2B/AFE_D11	B	General Purpose Input/Output 2 [11]	phbst8	8mA
175	GPIO2A/AFE_D10	B	General Purpose Input/Output 2 [10]	phbst8	-
176	GPIO29/AFE_D9	B	General Purpose Input/Output 2 [9]	phbst8	8mA
177	GND30	P	Vss Supply	vss3op	8mA
178	GPIO28/AFE_D8	B	General Purpose Input/Output 2 [8]	phbst8	8mA

No	Pin Name	I/O	Description	Pad Type	Current drive
179	GPIO27/AFE_D7	B	General Purpose Input/Output 2 [7]	phbst8	8mA
180	GPIO26/AFE_D6	B	General Purpose Input/Output 2 [6]	phbst8	-
181	GPIO25/AFE_D5	B	General Purpose Input/Output 2 [5]	phbst8	8mA
182	VDD16	P	Vdd Supply	vdd3op	8mA
183	GPIO24/AFE_D4	B	General Purpose Input/Output 2 [4]	phbst8	8mA
184	GPIO23/AFE_D3	B	General Purpose Input/Output 2 [3]	phbst8	8mA
185	GPIO22/AFE_D2	B	General Purpose Input/Output 2 [2]	phbst8	8mA
186	GND15	P	Vss Supply	vss2i	8mA
187	GPIO21/AFE_D1	B	General Purpose Input/Output 2 [1]	phbst8	8mA
188	GPIO20/AFE_D0	B	General Purpose Input/Output 2 [0]	phbst8	8mA
189	GPIO1F/ SRAM_D15	B	General Purpose Input/Output 1 [15]	phbst8	8mA
190	GPIO1E/ SRAM_D14	B	General Purpose Input/Output 1 [14]	phbst8	-
191	GND31	P	Vss Supply	vss3op	8mA
192	GPIO1D/ SRAM_D13	B	General Purpose Input/Output 1 [13]	phbst8	8mA
193	GPIO1C/ SRAM_D12	B	General Purpose Input/Output 1 [12]	phbst8	-
194	GPIO1B/ SRAM_D11	B	General Purpose Input/Output 1 [11]	phbst8	4mA
195	GPIO1A/ SRAM_D10	B	General Purpose Input/Output 1 [10]	phbst8	-
196	VDD17	P	Vdd Supply	vdd3op	
197	GPIO19/SRAM_D9	B	General Purpose Input/Output 1 [9]	phbst8	
198	GPIO18/SRAM_D8	B	General Purpose Input/Output 1 [8]	phbst8	
199	GPIO17/SRAM_D7	B	General Purpose Input/Output 1 [7]	phbst8	
200	GND32	P	Vss Supply	vss3op	
201	GPIO16/SRAM_D6	B	General Purpose Input/Output 1 [6]	phbst8	-
202	GPIO15/SRAM_D5	B	General Purpose Input/Output 1 [5]	phbst8	-
203	GPIO14/SRAM_D4	B	General Purpose Input/Output 1 [4]	phbst8	-
204	GPIO13/SRAM_D3	B	General Purpose Input/Output 1 [3]	phbst8	-
205	GND18	P	Vss Supply	vss3op	-
206	GPIO12/SRAM_D2	B	General Purpose Input/Output 1 [2]	phbst8	-
207	GPIO11/SRAM_D1	B	General Purpose Input/Output 1 [1]	phbst8	-
208	GPIO10/SRAM_D0	B	General Purpose Input/Output 1 [0]	phbst8	-

3-2-4 PROGRAM ROM (FLASH MEMORY) CONTROL

1) DEVICE

TYPE No.	AM29LU160DB
CAPACITY	4 MBYTE (1MB * 16BITS * 2)

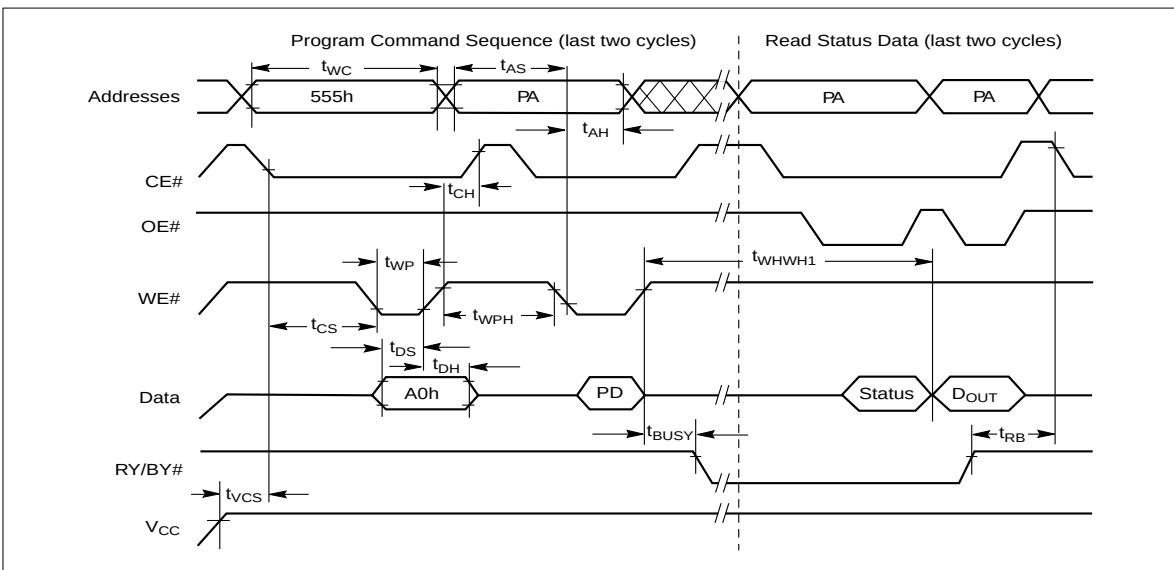
2) PROGRAMMING

BEFORE ASS'Y	EPROM PROGRAMMER or PROGRAMMING at the factory
AFTER ASS'Y	DOWNLOAD from PC

3) OPERATING PRINCIPLE

When the RCSO(ROM CHIP SELECT)signal is activated from the CPU after the POWER is ON, it activates RD SIGNAL and reads the DATA(HIGH/LOW) stored in the FLASH MEMORY to control the overall system. The FLASH MEMORY may also write. When turning the power on, press and hold the key(power switch) for 2 - 3 seconds, then the LED will scroll and the PROGRAM DOWNLOAD MODE will be activated. In this mode, you can download the program through the parallel port.

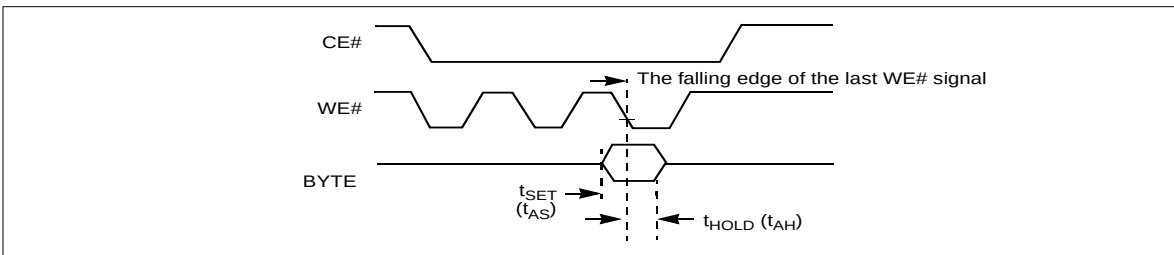
AC CHARACTERISTICS



Notes:

1. PA = program address, PD = program data, D_{OUT} is the true data at the program address.
2. Illustration shows device in word mode.

Figure 17. Program Operation Timings



Note: Refer to the Erase/Program Operations table for t_{AS} and t_{AH} specifications.

Figure 16. BYTE# Timings for Write Operations

3-2-5 DRAM CONTROL

1) DEVICE

TYPE NO.	K4S
CAPACITY	16MBYTES (1M * 16BITS * 4Bank * 2)

2) OPERATING PRINCIPLE

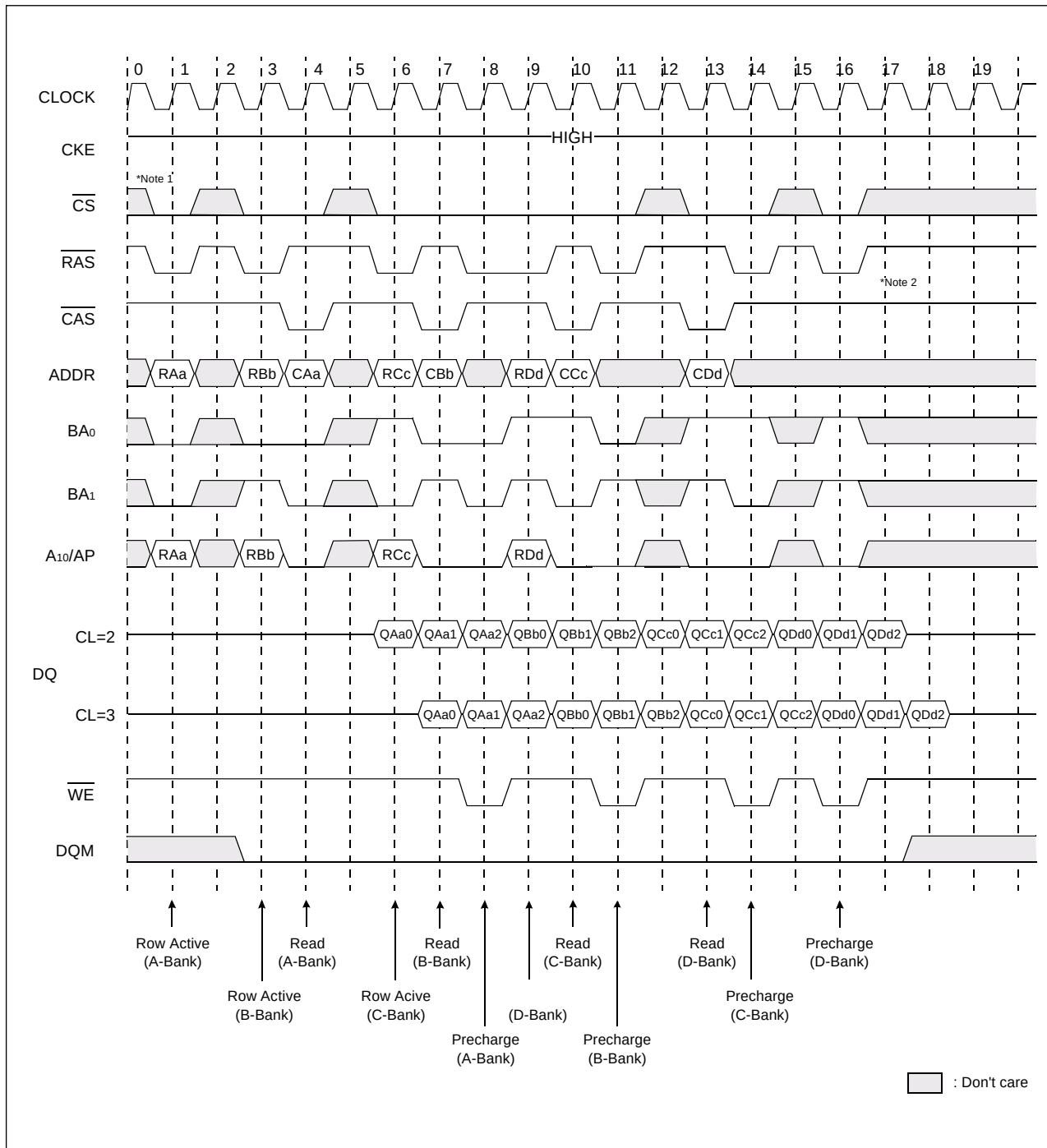
DRAM can either read or write. The data can be stored in the DRAM only when the power is on. It stores data while the CPU processes data. The address to read and write the data is specified by RAS SIGNAL and CAS SIGNAL. DRAMWE*SIGNAL is activated when writing data and DRAMOE*SIGNAL, when reading. You can expand up to 64MBYTE of DRAM in this system.

Start Address ~ End Address	Contents
0x00000000 ~ 0x00FFFFFF	ROM Bank0
0x01000000 ~ 0x01FFFFFF	ROM Bank1
0x02000000 ~ 0x02FFFFFF	ROM Bank2
0x03000000 ~ 0x03FFFFFF	ROM Bank3
0x04000000 ~ 0x0FFFFFFF	Unused
0x10000000 ~ 0x1FFFFFFF	Special Function Registers
0x20000000 ~ 0x20FFFFFF	I/O Bank0
0x21000000 ~ 0x21FFFFFF	I/O Bank1
0x22000000 ~ 0x22FFFFFF	I/O Bank2
0x23000000 ~ 0x23FFFFFF	I/O Bank3
0x24000000 ~ 0x24FFFFFF	I/O Bank4
0x25000000 ~ 0x25FFFFFF	I/O Bank5
0x26000000 ~ 0x26FFFFFF	DMA I/O Bank0
0x27000000 ~ 0x27FFFFFF	DMA I/O Bank1
0x28000000 ~ 0x28FFFFFF	DMA I/O Bank2
0x29000000 ~ 0x29FFFFFF	DMA I/O Bank3
0x2A000000 ~ 0x2FFFFFFF	Unused
0x30000000 ~ 0x30FFFFFF	RSH SRAM
0x31000000 ~ 0x31FFFFFF	HPVC SRAM
0x32000000 ~ 0x32FFFFFF	MOTOR SRAM
0x33000000 ~ 0x37FFFFFF	Unused
0x38000000 ~ 0x38FFFFFF	USB CSR & FIFO
0x39000000 ~ 0x390003FF	USB PLUG DETECT
0x38000500 ~ 0x3FFFFFFF	Unused
0x40000000 ~ 0x4FFFFFFF	SDRAM array0 (bank 0)
0x50000000 ~ 0x5FFFFFFF	SDRAM array1 (bank 1)
0x60000000 ~ 0x6FFFFFFF	SDRAM array2 (bank 2)
0x70000000 ~ 0x7FFFFFFF	SDRAM array3 (bank 3)
0x80000000 ~ 0xBFFFFFFF	SDRAM array0~4 (Mirror)
0xC0000000 ~ 0xC00007FF	MAC
0xC0000800 ~ 0xC0FFFFFF	Unused

3-2-5-1 SDRAM DRAM read timing

Basically the Extended Data Out DRAM is similar to Fast Page Mode DRAM. For FPM, the data are valid only when the $\overline{nCAS}$ is active while reading the internal data, however, it has a latch that the data will be continuously outputted even after the $\overline{nCAS}$ is inactivated.

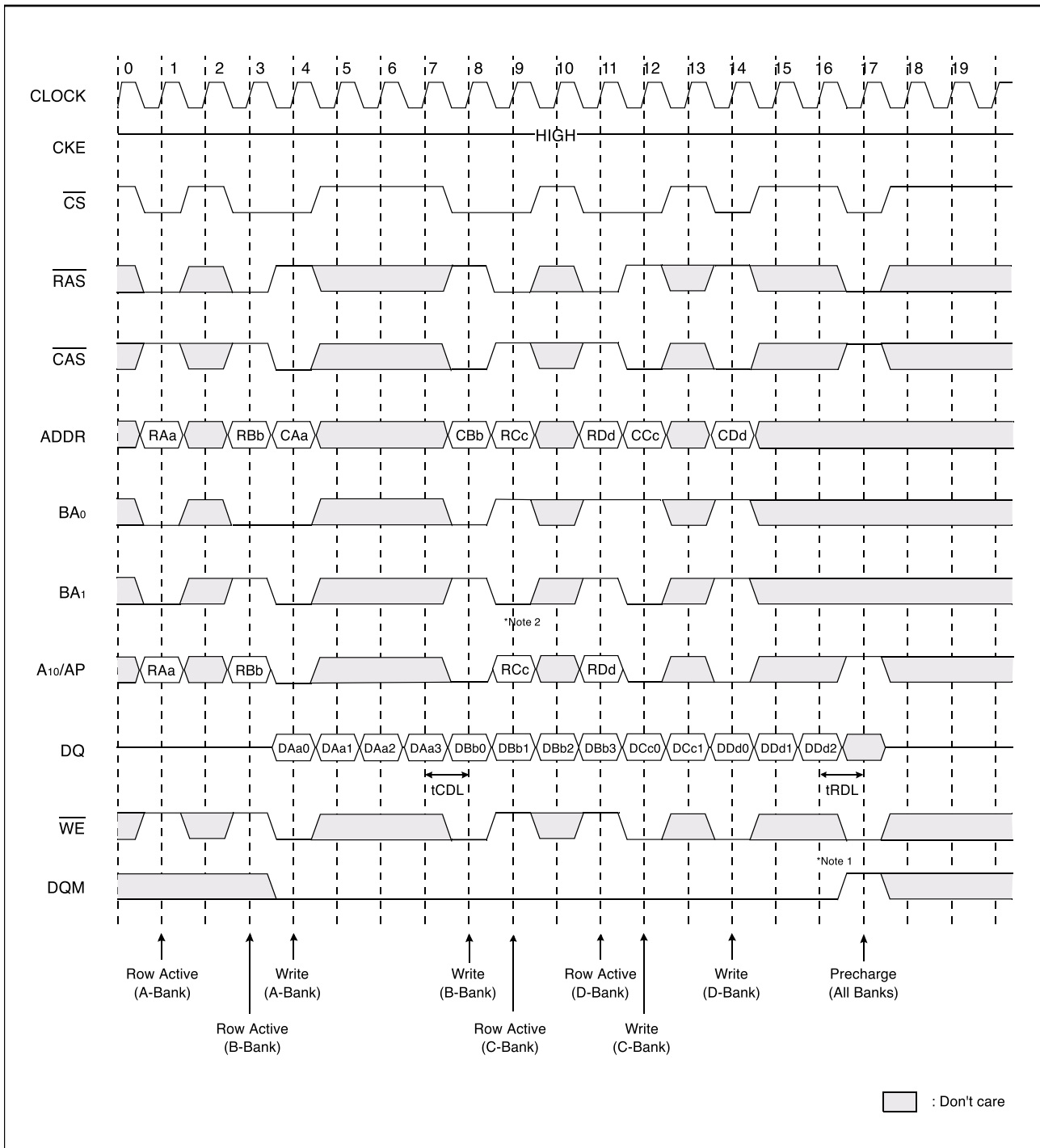
While configuring the software, you must set the timing register of SFR considering the clock speed and the DRAM spec.



* Note : 1. $\overline{CS}$ can be don't cared when $\overline{RAS}$, $\overline{CAS}$ and $\overline{WE}$ are high at the clock high going dege.

2. To interrupt a burst read by row precharge, both the read and the precharge banks must be the same.

3-2-5-2 SDRAM write timing



*Note : 1. To interrupt burst write by Row precharge, DQM should be asserted to mask invalid input data.
 2. To interrupt burst write by Row precharge, both the write and the precharge banks must be the same.

3-2-6 FS781 (FREQUENCY ATTENUATOR)

This system used FS741 for the main clock for EMI SUPPRESSION.

It spreads the source clock in a consistent bandwidth to disperse the energy gathered in order to attenuate the energy.

The capacitor value of the loop filter(PIN 4) is set depending on the source clock used or the spread bandwidth. Refer to FS781 Spec. for detail.

3-2-7 USB (Universal Serial Bus)

NS's USBN9602 is used as the interface IC and 48MHz clock is used.

When the data is received through the USB port, EIRQ1 SIGNAL is activated to send interrupt to CPU, then it directly sends the data to DRAM by IOCS4*&DRAMA(11) SIGNAL through DRAMD (24;31).

3-2-8 SRAM : 1MByte SRAM K6F1008U2C

It stores a variety of option data.

3-2-9 FAX Transceiver

3-2-9-1. GENERAL

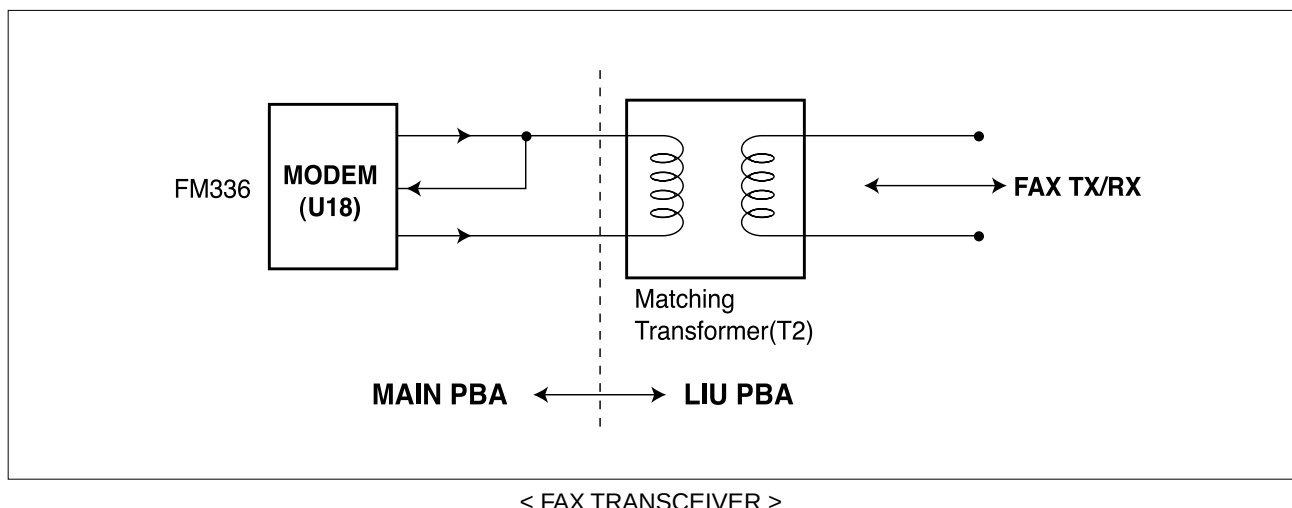
This circuit processes transmission signals of modem and between LIU and modem.

3-2-9-2. modem (u44)

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 (U3:ARM946ES) 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.



3-3 Scanner

3-3-1 SUMMARY

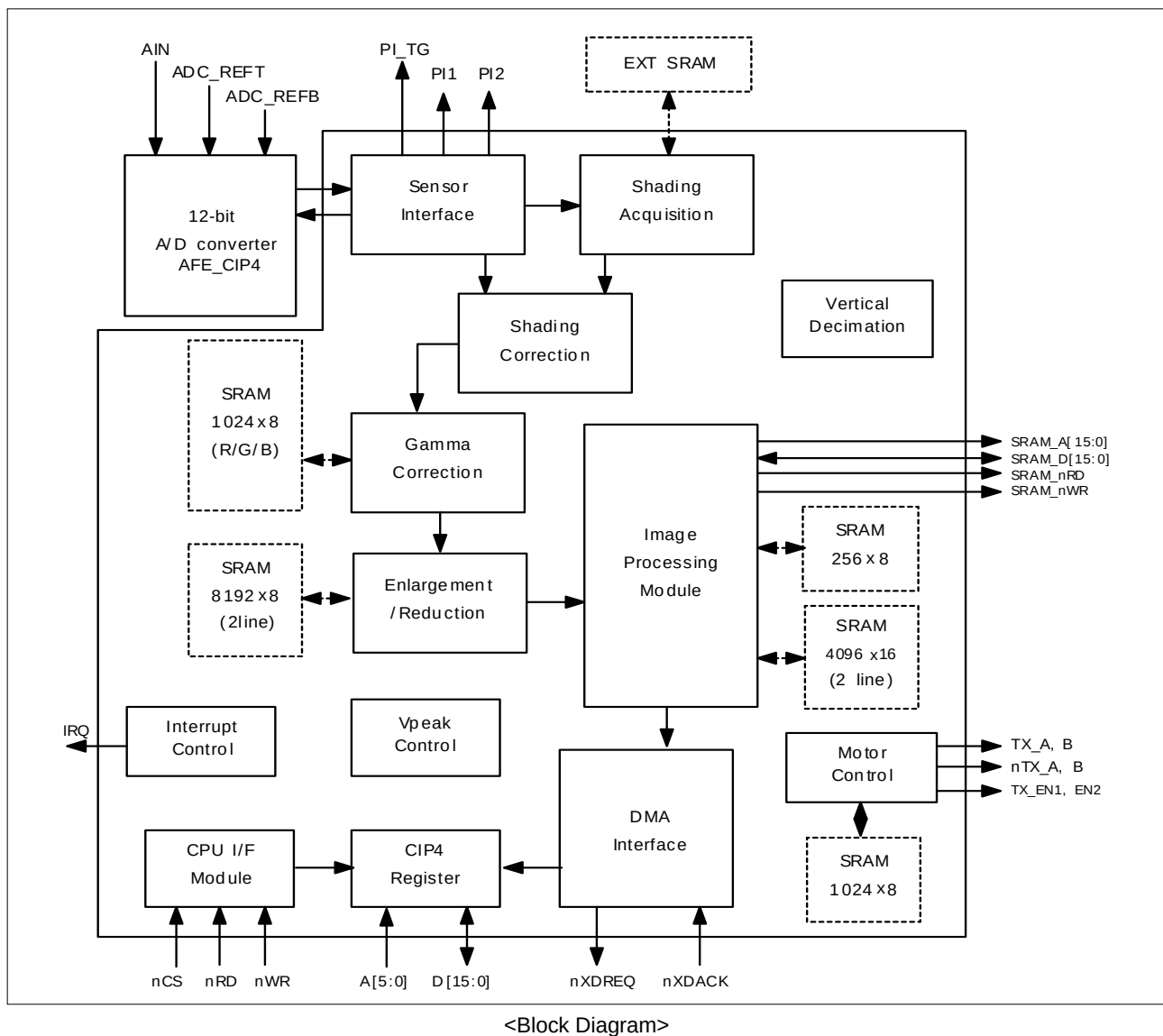
This flat-bed type device to read manuscripts has 600dpi CCD as an image sensor. There is one optical sensor for detecting CCD home position and Scan-end position. The home position is detected by a optical sensor which is attached to the CCD Module. The Scan-end position is calculated by number of motor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

CCD

Charge Coupled Device improves productivity and allows a compact design.

This machine uses a color CCD.

- Minimum Scan Line Time for One Color : 2.5mSec
- Light Source Power : +18V
- Maximum Pixel frequency : 10MHz
- Effective Sensor Element : 5340 X 3
- Clamp Level : 0.7~ 0.8V
- Bright Output : MIN 0.8V



3-3-2 Key Features

Overview

- (1) 0.5 μ m C-MOS process(TLM), 208-PIN QFP, STD85 library
- (2) Frequency : Max PLL 80 MHz
- (3) On-Chip oscillator
- (4) Method : Raster scanning method
- (5) Image Sauce : 300/400/600dpi CIS & CCD
- (6) Scanning Mode
 - color gray image: each 8 bits / RGB
 - mono gray image: 8 bits / pixel
 - binary image: 1 bit / pixel (for text/phoot/mixed mode)
- (7) Maximum scanning width : A3, 600dpi (8K effective pixels)
- (8) Ideal MSLT (A4, 600/300dpi)
 - color gray image: 3x5Kx80nsec = 1.2msec (7/28 CPM)
 - mono gray image: 1x5Kx80nsec = 0.4msec (21/84 CPM)
 - binary image: 1x5Kx80nsec = 0.4msec (21/84 CPM)
- (9) A/D conversion depth : 12bits

Pixel processing structure

- Minimum pixel processing time : 4 system clocks
- High speed pipelined processing method
(Shading correction, Gamma correction, Enlargement/Reducement, and Binarization)

Shading Correction

- (1) White shading correction support for each R/G/B
- (2) White shading data memory : 3x8Kx12bits = 288Kbits → 384Kbits (external)
- (3) Black shading data memory : 3x8Kx12bits = 288Kbits → 384Kbits (external)

Gamma Correction

- (1) Independent Gamma table for each RGB component
- (2) Gamma table data memory : 3x1Kx8bits = 24Kbits (internal)

Binarization (mono)

- (1) 256 Gray's halftone representation for Photo document : 3x5 EDF(Error Diffusion) method proposed by Stucki.
- (2) LAT(Local Adaptive Thresholding) for Text document :
 - use of 5x5 LOCAL WINDOW (TIP ALGORITHM)
 - ABC(Automatic Background Control) :Tmin Automatic change
- (3) Mixed mode processing for text/photo mixed document
- (4) EDF data memory : 2x4Kx16bits = 128Kbits (internal)
- (5) LAT data memory : 4x4Kx16bits = 256Kbits (external)

Scaling of input image

- (1) Scaling factor
 - Horizontal direction: 25 ~ 800% by 1% unit
 - Vertical direction: 25 ~ 100% by 1% unit
- (2) Scaling data memory : 2x8Kx8bits = 128Kbits (internal)

Intelligent scan motor controlloer

- (1) Automatic acceleration/deceleration/uniform velocity
- (2) Data memory : 256x16bits = 4Kbits (internal)

Auto-Run

Automatic CLK_LINE (line processing start control) and •TG (line scan start control) signal generation|

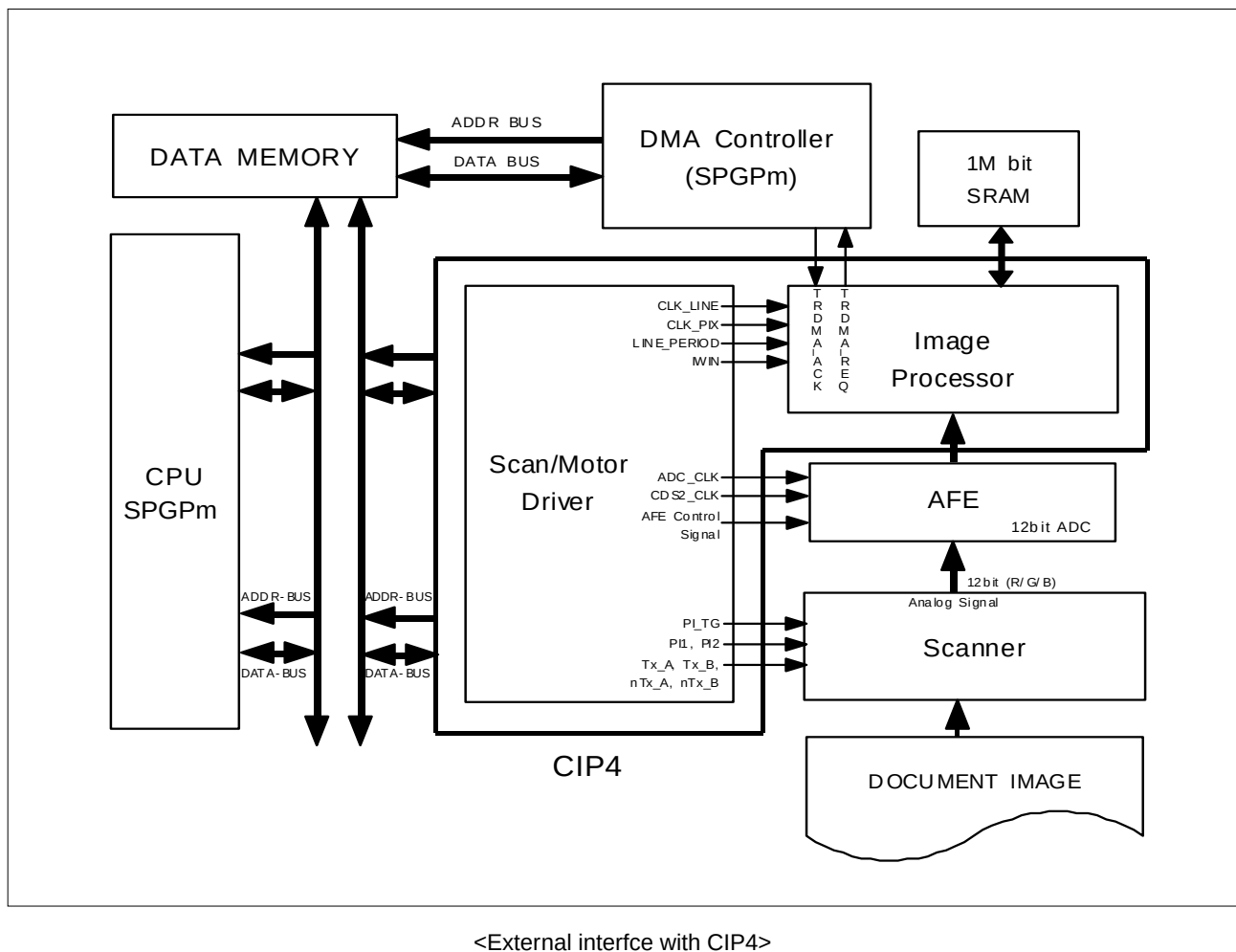
- (1) Available resynchronization of $\emptyset$ TG signal
- (2) programmable $\emptyset$ TG's period & CLK_LINE's occurrence number

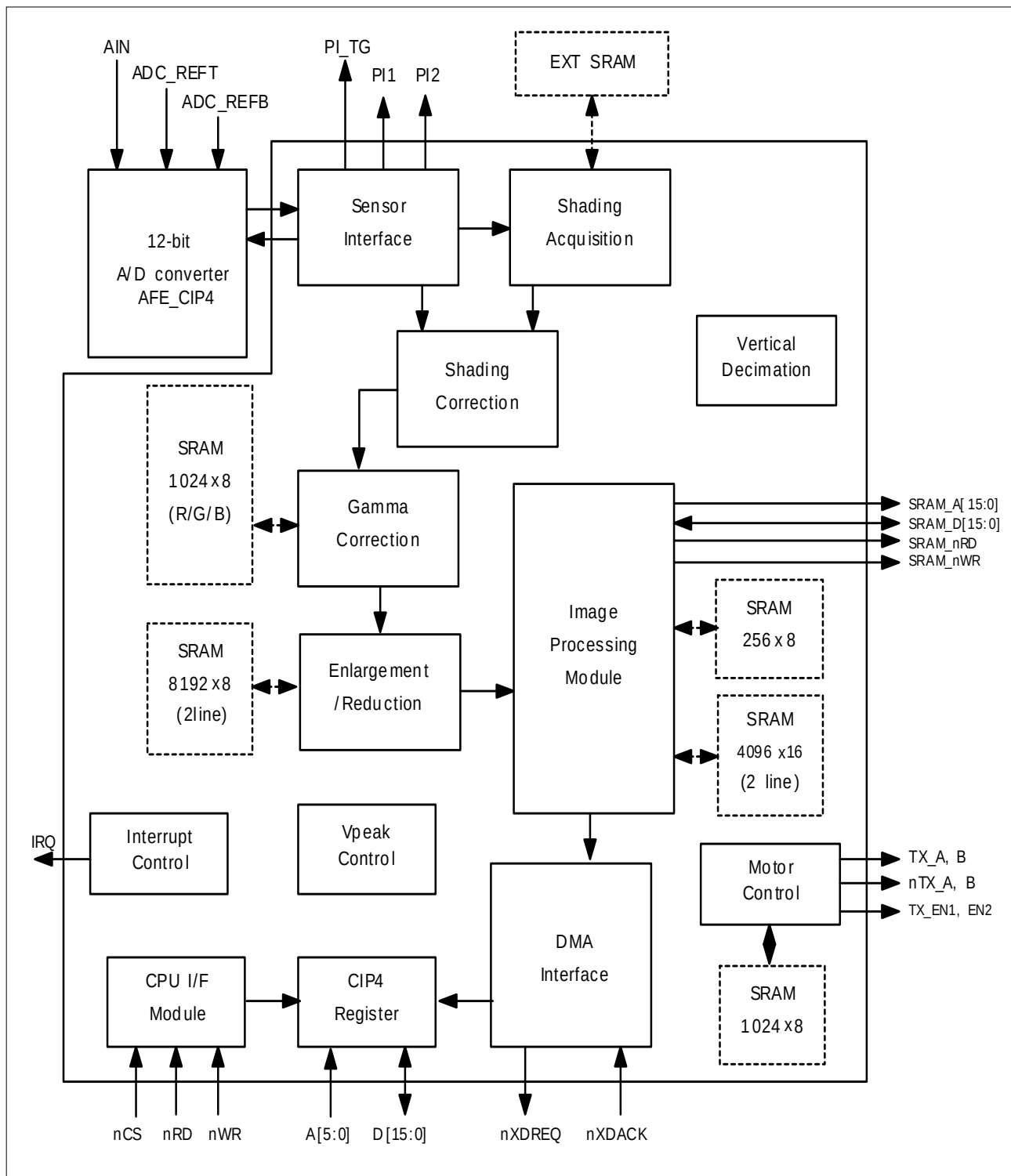
Processed data output format in DTM(Data Transfer Module)

- (1)DMA mode : Burst/On-demand mode
(2) CDIP I/F : LINE_SYNC, PIXEL_SYSNC, PIXEL_DATA[7:0]

36 General Purpose Input/Output : 8(GPO), 28(GPIO)

Black/White reversion, and Image Mirroring support





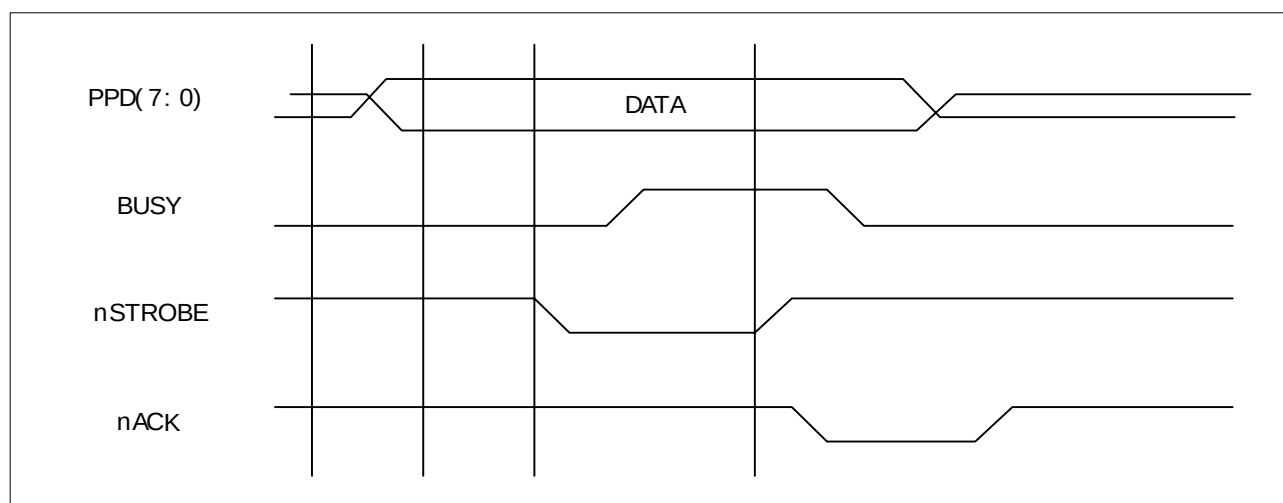
<Block diagram of CIP4>

3-4 HOST INTERFACE:

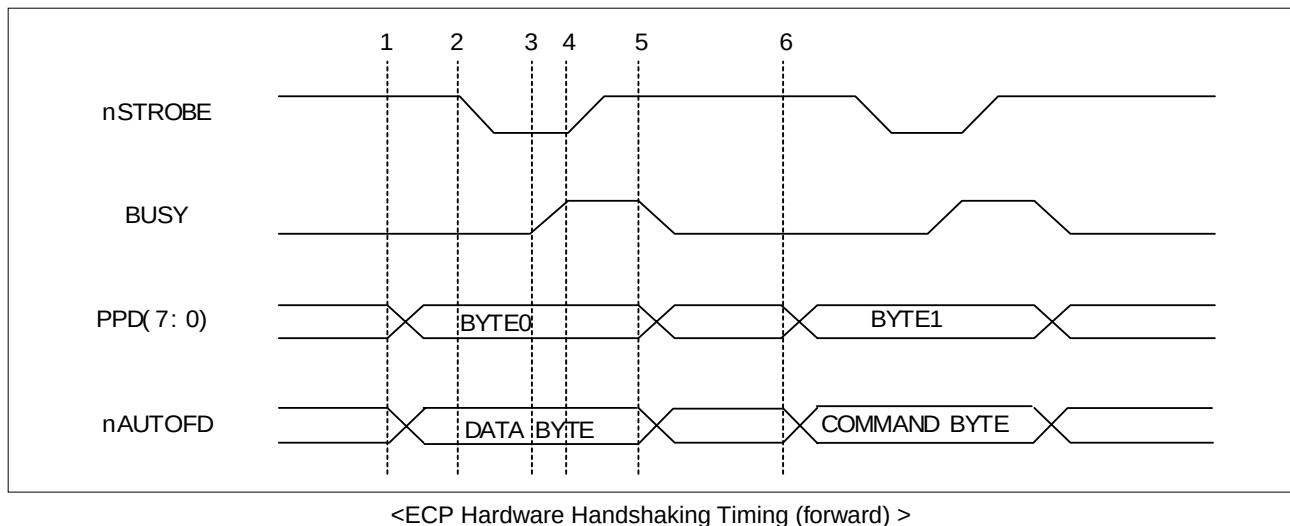
Referred to IEEE 1284 standard.

3-4-1. Host Interface

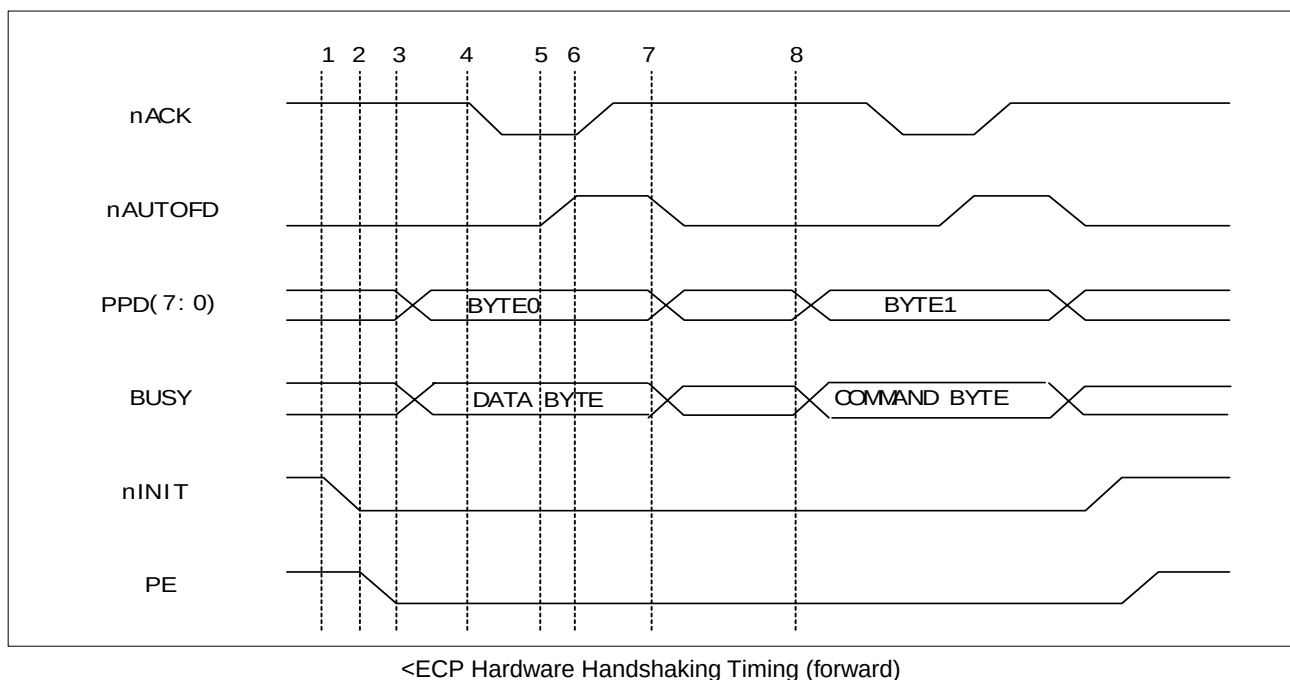
PARALLEL PORT INTERFACE PART ARM946ES has the Parallel Port Interface Part that enables Parallel Interface with PC. This part is connected to PC through Centronics connector. It generates major control signals that are used to actuate parallel communication. It is comprised of /ERROR, PE, BUSY, /ACK, SLCT, /INIT, /SLCTIN, /AUTOFD and /STB. This part and the PC data transmission method support the method specified in IEEE P1283 Parallel Port Standard (<http://www.fapo.com/ieee1284.html>). In other words, it supports both compatibility mode (basic print data transmitting method), the nibble mode (4bit data; supports data uploading to PC) and ECP (enhanced capabilities port: 8bits data - high speed two-way data transmission with PC). Compatibility mode is generally referred to as the Centronics mode and this is the protocol used by most PC to transmit data to the printer. ECP mode is an improved protocol for the communication between PC and peripherals such as printer and scanner, and it provides high speed two-way data communication. ECP mode provides two cycles in the two-way data transmission; data cycle and command cycle. The command cycle has two formats; Run-Length Count and Channel Addressing. RLE (Run-Length Count) has high compression rate (64x) and it allows real-time data compression that it is useful for the printer and scanner that need to transmit large raster image that has a series of same data. Channel Addressing was designed to address multiple devices with single structure. For example, like this system, when the fax/printer/scanner have one structure, the parallel port can be used for other purposes while the printer image is being processed. This system uses RLE for high speed data transmission. PC control signals and data send/receive tasks such as PC data printing, high speed uploading of scanned data to PC, upload/download of the fax data to send or receive and monitoring the system control signal and overall system from PC are all processed through this part.



<Compatibility Hardware Handshaking Timing>

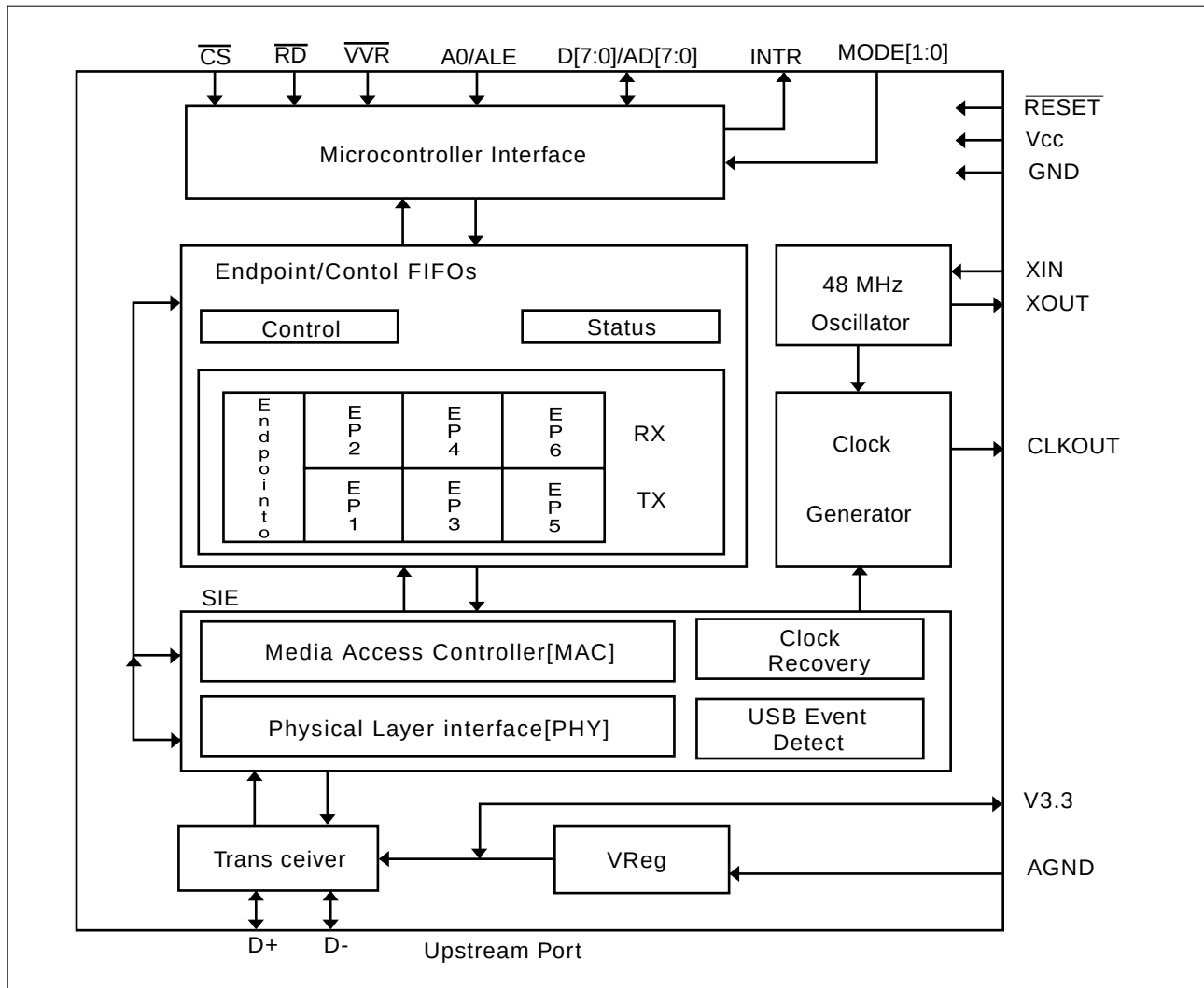


1. The host places data on the data lines and indicates a data cycle by setting nAUTOFD
2. Host asserts nSTROBE low to indicate valid data
3. Peripheral acknowledges host by setting BUSY high
4. Host sets nSTROBE high. This is the edge that should be used to clock the data into the Peripheral
5. Peripheral sets BUSY low to indicate that it is ready for the next byte
6. The cycle repeats, but this time it is a command cycle because nAUTOFD is low



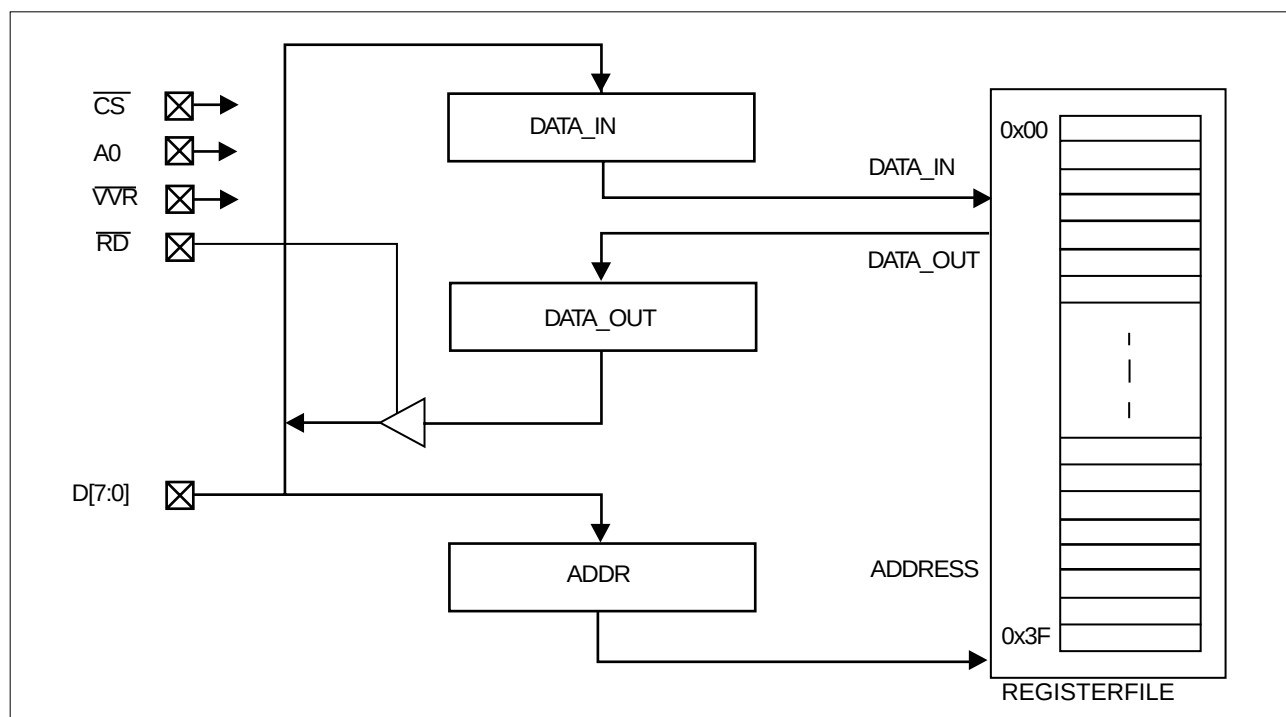
1. The host request a reverse channel transfer by setting nINIT low
2. The peripheral signals that it is OK to proceed by setting PE low
3. The peripheral places data on the data lines and indicates a data cycle by setting BUSY high
4. Peripheral asserts nACK low to indicate valid data
5. Host acknowledges by setting nAUTOFD high
6. Peripheral sets nACK high. This is the edge that should be used to clock the data into the host
7. Host sets nAUTOFD low to indicate that it is ready for the next byte
8. The cycle repeats, but this time it is a command cycle because BUSY is low

3-4-2 USB INTERFACE

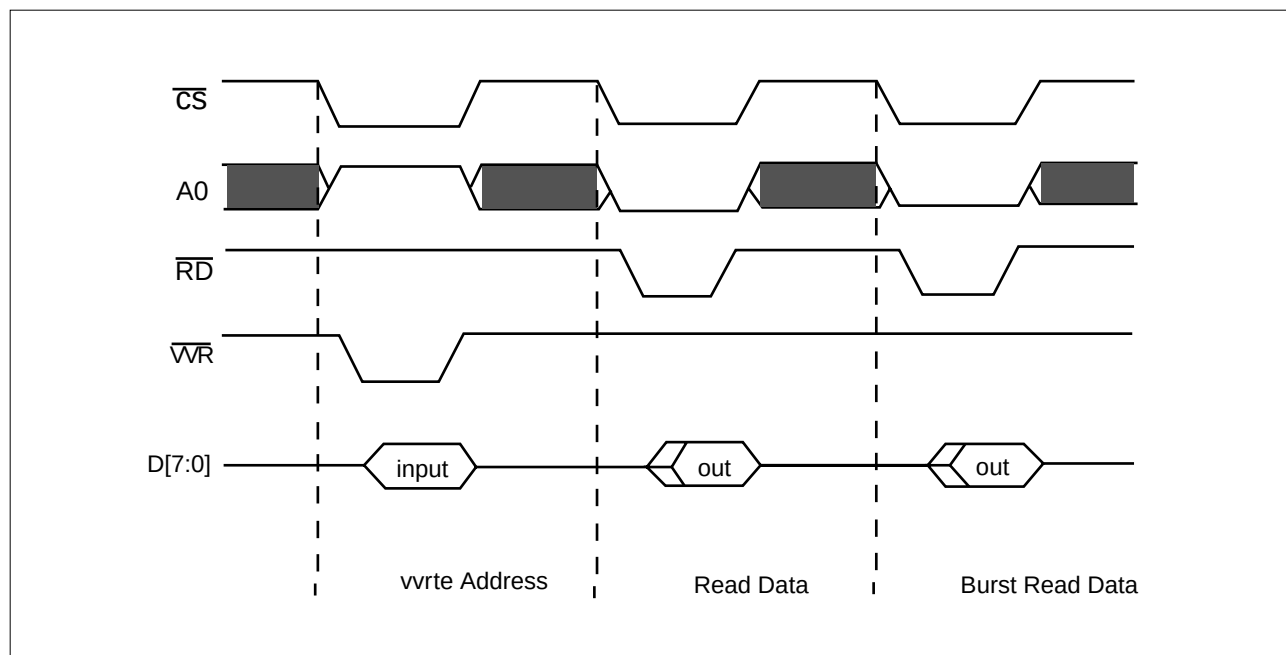


3-4-2-1 Features

- Full-Speed USB Node Device
- USB transceiver
- 3.3V signal voltage regulator
- 48 MHz oscillator circuit
- Programmable clock generator
- Serial Interface Engine consisting of Physical Layer Interface (PHY) and Media Access Controller (MAC), USB Specification 1.0 compliant
- Control/Status Register File
- USB Function Controller with seven FIFO-based End-points :
 - One bidirectional Control Endpoint 0 (8bytes)
 - Three Transmit Endpoints (2*32 and 1*64 bytes)
 - Three Receive Endpoints (2*32 and 1*64 bytes)
- 8-bit parallel interface with two selectable modes :
 - non-multiplexed
 - multiplexed (Intel compatible)
- DMA support for parallel interface
- MICROWIRE/PLUS Interface
- 28-pin SO package



<Non-Multiplexed Mode Interface Block Diagram>



<Non-Multiplexed Mode Basic Timing Diagram>

3-5 Engine Controller

3-5-1. Fuser Control / Thermistor Circuit

This circuit controls the heat lamp temperature to fix the transferred toner on the paper. It is comprised of the thermistor that has the negative resistance against the temperature and LM393 (voltage comparator) and transistor for switching.

The thermistor has the resistance value reverse proportional to the heat lamp surface temperature. The voltage value is read by #60 pin(AVIN2) of CPU referring to the parallel combined resistance with the resistor(R43) connected parallel to it and the voltage distribution of R29. The voltage read activates (inactivates) 'fuser' signal to high (or low) referring to the set temperature and when the 'fuseron' signal turns down(high) to low(high) by Q3 switching, the S21ME4 inside SMPS (PC3) turns on(off) and this eventually turns two-way thyristor(SY1) on(off) to allow(shut) AC voltage to the heat lamp.

LM393 is a H/W designed to protect the system when the software heat lamp control does not run normal. When the thermistor temperature goes up to 210°C, #1 pin's level (LM393) will turn low to turn the 'fuseron' signal to high. (forcefully shuts off Q3) In other words LM393 shuts off the heat lamp forcefully.

3-5-2. Paper Sensing Circuit

1) Cover Open Sensing

Cover Open Sensor is located on the right rear side of the printer. In case the right cover is open, it shuts +5V (LSU laser unit) and +24V(main motor, polygon motor of fixer LSU and HVPS) that are supplied to each unit. It detects the cover opening through CPU. In this case, the red LED of the OP Panel LED will turn on.

2) Paper Empty Sensing

The paper empty sensor (photo interruptor), located inside bottom of the bin cassette detects paper with the actuator connected to it and informs the CPU of whether there is paper. When there is no paper in the cassette, the red LED of the OP panel LED will turn on to tell the user to fill the cassette with papers.

3) Paper Feeding

When the paper is fed into the set and passes through the actuator of the feed sensor unit, transistor inside the photo interrupter will turn on, 'nFEED' signal will turn low and inform CPU that the paper is currently fed into the system. CPU detects this signal and sprays video data after certain time (related to paper adjustment). If the paper does not hit the feed sensor within certain time, CPU detects this and informs as "Paper Jam0" (red LED on the OP panel will turn on).

4) Paper Exit Sensing

The system detects the paper going out of the set with the exit sensor assembled to the actuator attached to the frame. If CPU does not turn back high a while after the paper hits the exit sensor, CPU detects this and inform as "Paper Jam2" (red LEDs on the OP panel will turn on).

3-5-3. LSU Circuit

1) Polygon Motor Unit (actuated by +24V)

The polygon motor inside LSU rotates by the 'PMOTOR' signal. When it reaches the motor constant velocity section through the initial transient (transient response) section, it sends the 'nLREADY' signal to the CPU.

The 'clock' pin is the pin that receives clock of the required frequency when LSU uses external CLK as the motor rotational frequency. Currently the external clock circuit is located in the HVPS and $1686\text{Hz} = 6.9083\text{MHz (crystal frequency)} \div 212(74\text{HC}4060\text{N IC})$, is used as the rotational frequency of the polygon motor.

2) Laser Unit (actuated by +5V)

After laser is turned on by 'nLD_ON' signal, it is reflected by 6 mirrors (polygon mirror) attached to the polygon motor and performs scan in horizontal way. When the laser beam hits the corner of the polygon mirror, it generates 'nHSYNC' signal (pulse) and the CPU forms the left margin of the image using this signal (horizontal synchronous signal).

3-5-4. Fan/Solenoid Actuation Circuit

The fan actuation circuit its power using NPN TR. When it receives 'FAN' signal from the CPU. The TR will turn on to make the voltage supplied to the fan to 24V in order to actuate the fan.

The solenoid is actuated in the same way. When it receives control signal from the CPU, the solenoid for paper feeding is actuated by switching circuit.

D29(1N4003) diode is applied to the both ends of the output terminal to protect Q22(KSC1008-Y) from noise pulse induced while the solenoid is de-energized.

3-5-5. PTL Actuation Circuit

PTL actuation circuit switches its power using NPN TR.

3-5-6. Motor Actuation Circuit

Motor actuation circuit is determined while selecting the initial driver IC (provided by the vendor). This system uses TEA3718(U57, U58), A2918(U59)'s motor driver IC. However, the sensing resistance (R273, R274, R292, R293) and reference resistance (R284, R289, R294, R295) can vary depending on the motor actuation current value.

It receives motor enable signal (2 phase) from CPU and generates bipolar pulse (constant-current) and sends its output to stepping motor input.

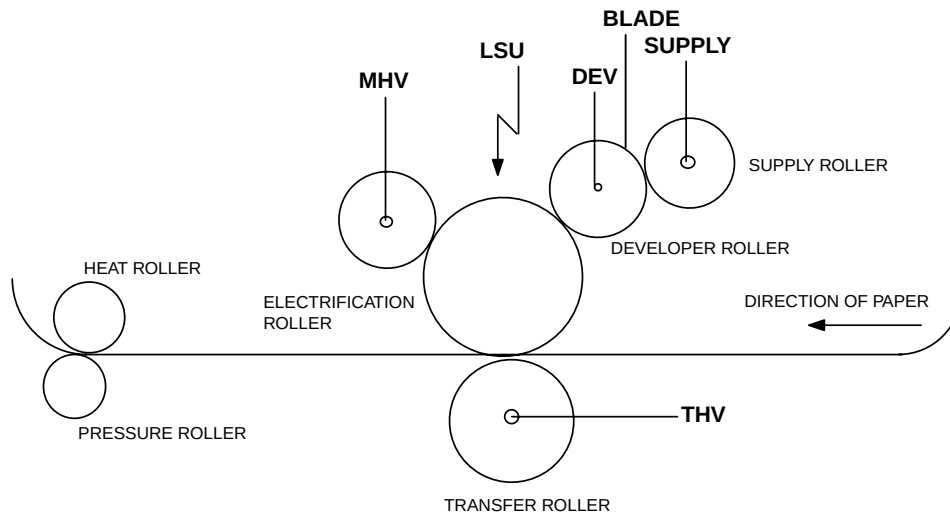
3-5-7. High Voltage Power Supply

3-5-7-1. Summary

It is the high voltage power supply that has DC+24V/DC+5V (used for the image forming device in OA digital picture developing method) as the rated inputs. It supplies electrifying voltage (MHV), supply voltage (SUPPLY), developing voltage (DEV), blade voltage (BLADE) and transferring voltage (THV). Each high voltage supply shows the voltage required in each digital picture process.

3-5-7-2. Digital Picture Process

Digital picture developing method is widely used by copy machine, laser beam printer and fax paper. The process is comprised of electrification, exposure, develop, transfer and fixing.



First, in the electrification process, retain constant charge at approx. -900V for the electric potential on the OPC surface by electrifying OPC drum at approx. -1.4KV through the electrification roller.

The electrified surface of OPC is exposed responding to the video data by the LSU that received print command due to rotation. The unexposed non-video section will retain the original electric potential of -900V, but the electric potential of the image area exposed by LSU will be approx. -180V that it will form the electrostatic latent image. The surface of the photo-conductive drum where the electrostatic latent image is formed reaches the developer as the drum rotates. Then the electrostatic latent image formed on the OPC drum is developed by the toner supplied to the developing roller by supply roller and it is transformed into visible image. It is the process to change the afterimage on the OPC drum surface formed by LSU into visible image by the toner particles.

While the supply roller energized with -450V by HVPS and the developer roller energized with -300V rotate in the same direction, it keeps the toner particles between two rollers supplied to OPC drum in negative state by the friction between two rollers.

The toner supplied to the developer roller is biased to bias electric potential by the developer roller and transferred to the developing area. After (-) toner is attached to the developer roller, it will move to the exposed high electric potential surface (-180V) rather than to the unexposed low electric potential surface (-900V) of the developer roller and OPC drum. Eventually the toner will not settle in the low electric potential surface to form the visible image.

Later, the OPC drum continues to rotate and reaches to transfer location in order to accomplish the transfer process.

This process transfers the (-)toner on the transfer roller to the printing paper by the transfer roller. The (-)toner attached to the OPC drum will be energized to hundreds to thousands of the (+)transfer voltage by HVPS. The (+)electrostatic force of the transfer roller generated has higher adhesiveness than the (-)toner OPC drum and thus it moves to the surface of the paper passing through the transfer roller.

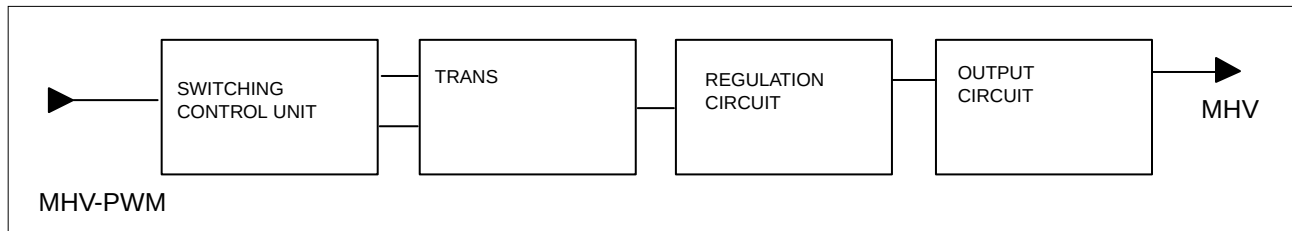
The toner transferred to the paper with weak electrostatic force is fixed to the paper by the pressure and heat of the fixer composed of pressure roller and heat roller.

The toner attached to the paper is melted by applying the heat (approx. 180°C) from the heat roller and the pressure (approx. 4kg) from the pressure roller. After the fixing process, the paper is sent out of the set to finish the printing process.

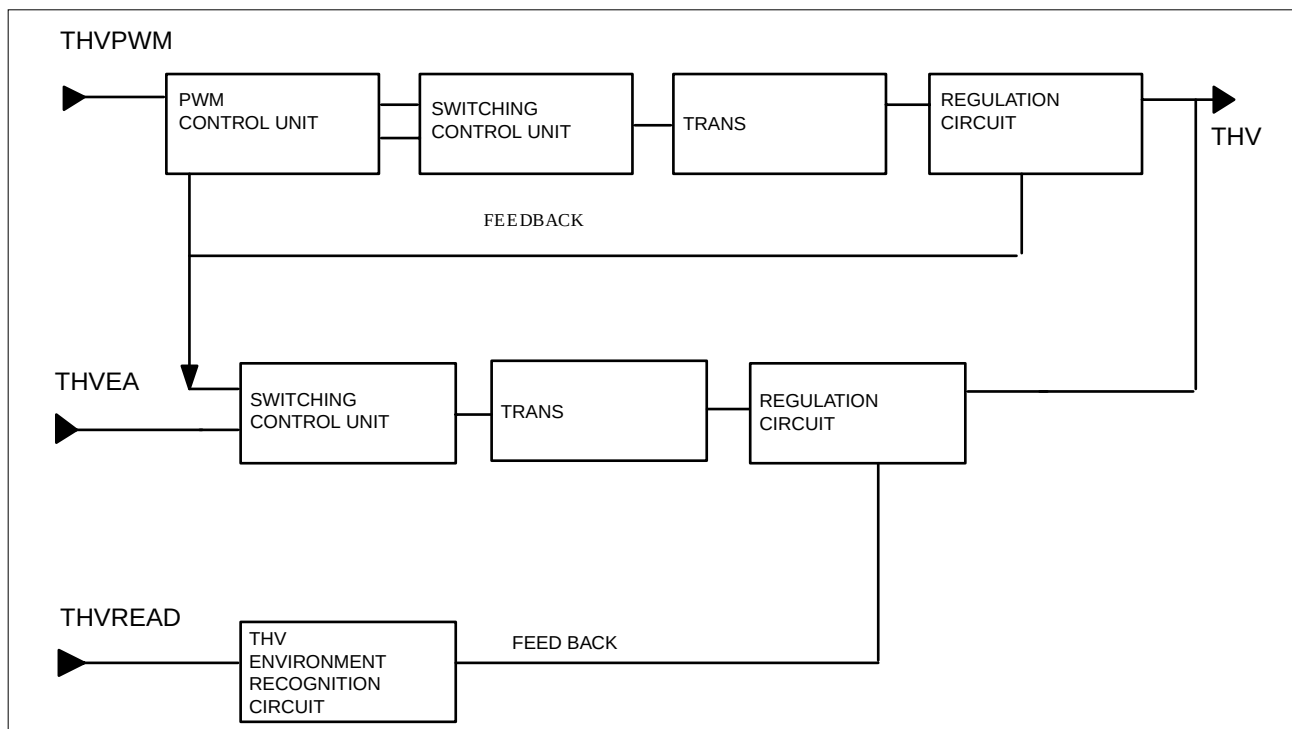
3-5-7-3. Organization of the Device

HVPS is comprised of electrification output unit, bias output unit and transfer output unit.

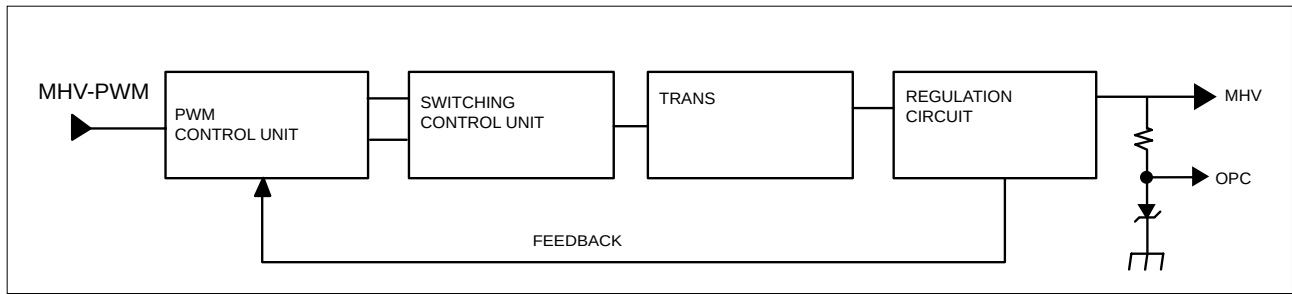
- 1) Input Unit
- 2) Electrification Output (Enable) Unit: MHV (Main High Voltage)
- 3) Bias Output (Enable) Unit: DEV (Development Voltage)/Supply(Supply Voltage)/BLADE(Blade Voltage)
- 4) Transfer '+' Output (Enable) Unit: THV(+)(Transfer High Voltage(+))
- 5) Transfer '-' Output (Enable) Unit: THV(-)(Transfer High Voltage(-))
- 6) Switching Unit
- 7) Feedback Unit
- 8) Regulation Unit
- 9) Output Unit



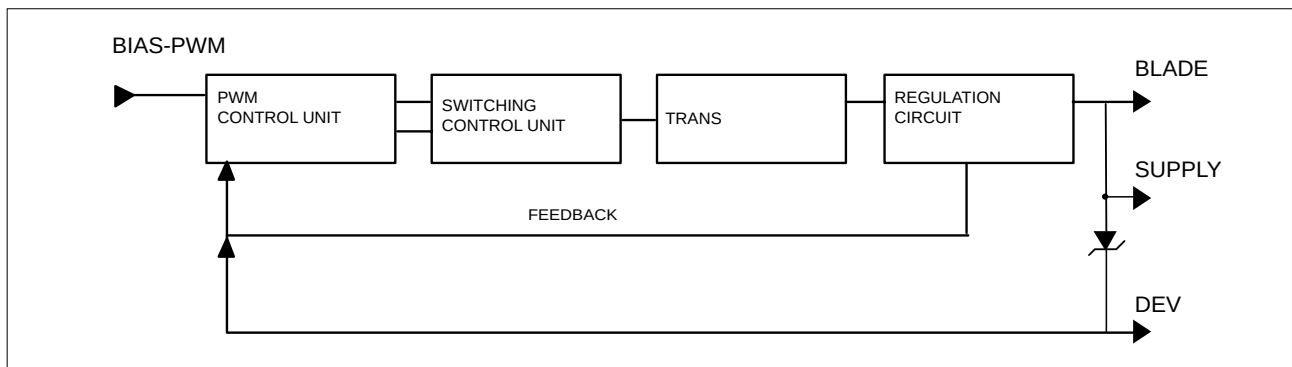
<Electrification Unit Block-Diagram>



<Transfer Output Unit Block Diagram>



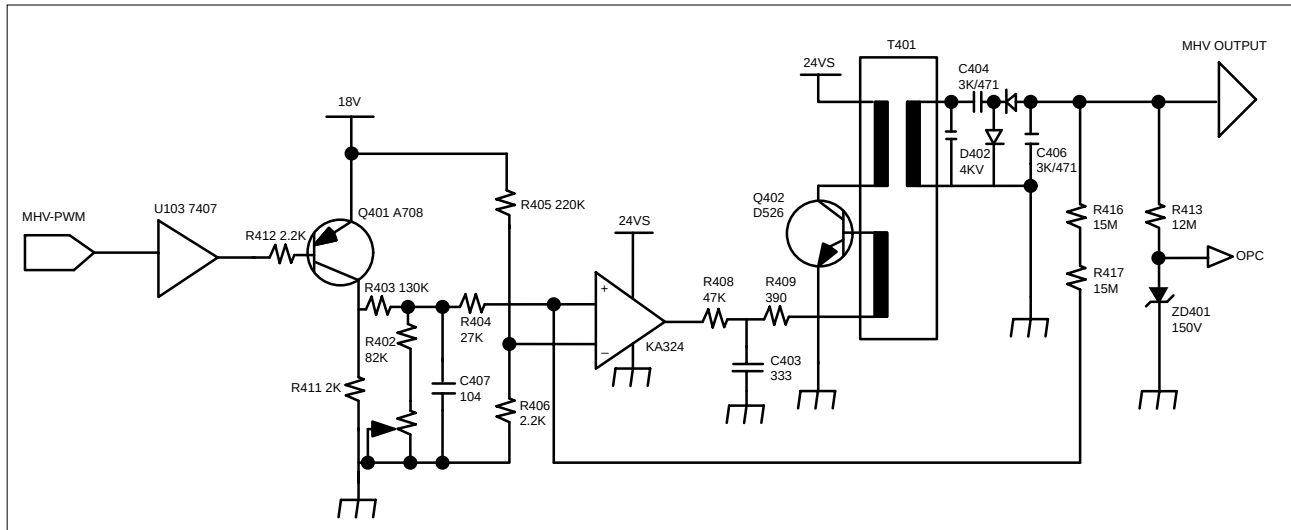
<MHV Output unit Block Diagram>



<BIAS Output Unit Block Diagram>

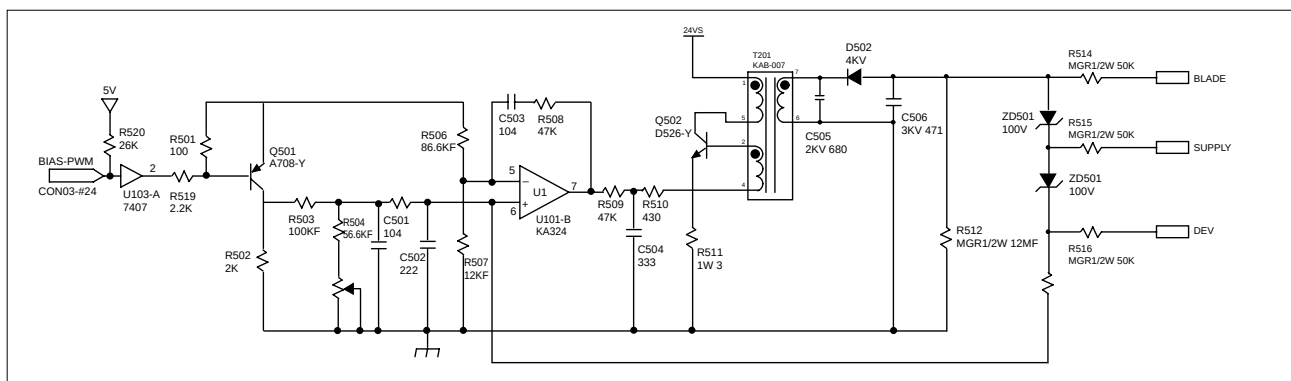
3-5-7-4 MHV (Electrification Output Enable)

Electrification Output Enable is the electrification output control signal 'PWM-LOW ACTIVE'. When MHV-PWM LOW signal is received, Q401 turns on and the steady voltage will be accepted to the non-inverting terminal of OP-AMP 324. As the voltage higher than the inverting reference voltage of OP-AMP, which is set to R405 and R406, OP-AMP output turns high. This output sends IB to the TRANS auxiliary wire through current-restricting resistance Q402 via R408 and C403 and Q402 turns on. When the current is accepted to Q402, Ic increases to the current proportional to time through the T401 primary coil, and when it reaches the Hfe limit of Q402, it will not retain the "on" state, but will turn to "off". As Q402 turns 'off', TRANS N1 will have counter-electromotive force, discharge energy to the secondary unit, sends current to the load and outputs MHV voltage through the high voltage output enable, which is comprised of Regulation- circuit.



3-5-7-5 BIAS (supply/dev/blade output unit)

BIAS (Electrification Output Enable) Electrification Output Enable is the electrification output control signal 'PWM-LOW ACTIVE'. When BIAS-PWM LOW signal is received, Q501 turns on and the steady voltage will be accepted to the non-inverting terminal of OP-AMP 324. As the voltage higher than the inverting reference voltage of OP-AMP, which is set to R506 and R507, OP-AMP output turns high. This output sends IB to the TRANS auxiliary wire through current-restricting resistance Q502 via R509 and C504 and Q502 turns on. When the current is accepted to Q502, Ic increases to the current proportional to time through the T201 primary coil, and when it reaches the Hfe limit of Q502, it will not retain the "on" state, but will turn to "off". As Q502 turns 'off', TRANS N1 will have counter-electromotive force, discharge energy to the secondary unit, sends current to the load and outputs DEV voltage through the high voltage output enable, which is comprised of Regulation-circuit.



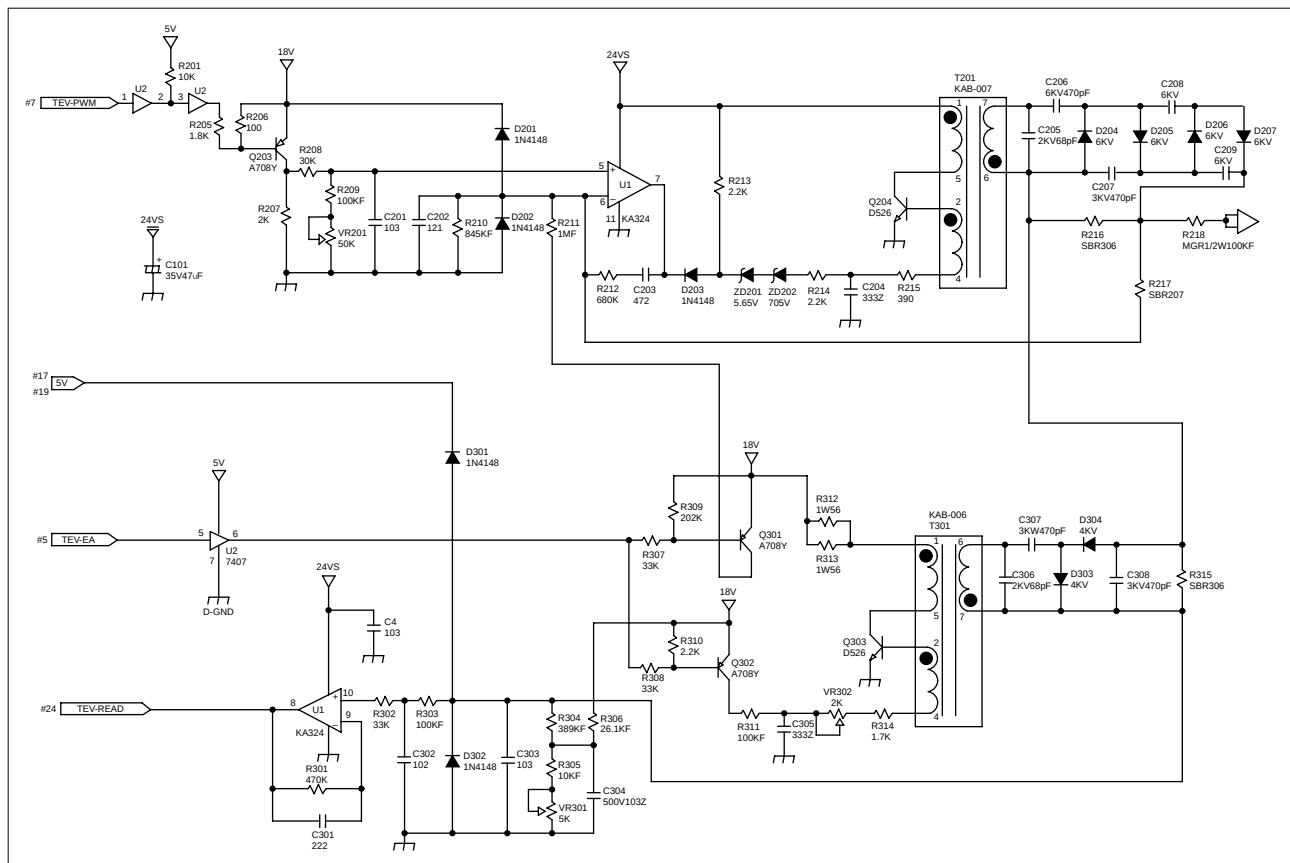
3-5-7-6. THV(THV+)/THV(-) Output Unit

Transfer(+) output unit is the transfer output control signal 'PWM-LOW ACTIVE'.

When THV-PWM LOW signal is received, Q203 turns on and the steady voltage will be accepted to the non-inverting terminal of OP-AMP 324. As the voltage is higher than the inverting reference voltage of OP-AMP, OP-AMP output turns high.

The 24V power adjusts the electric potential to ZD201 and ZD202, sends IB to TRANS auxiliary wire through current-restricting resistance R215 via R212 and C204, and eventually Q204 will turn on. When the current is accepted to Q402, Ic increases to the current proportional to time through the T201 primary coil, and when it reaches the Hfe limit of Q204, it will not retain the "on" state, but will turn to "off". As Q402 turns 'off', TRANS N1 will have counter-electromotive force, discharge energy to the secondary coil, sends current to the load and outputs THV voltage through the high voltage output enable, which is comprised of Regulation- circuit. The output voltage is determined by the DUTY width. Q203 switches with PWM DUTY cycle to fluctuate the output by fluctuating the OP-AMP non-inverting end VREF electric potential, and the maximum is output at 0% and the minimum, at 100%. Transfer(-) output unit is THV-EA 'L' enable.

When THV-EA is 'L', Q302 turns on and the VCE electric potential of Q302 will be formed and sends IB to TRANS auxiliary wire through R311, C305 and VR302 via current-restricting resistance R314, and eventually Q303 will turn on. When the current is accepted to Q303, Q303's Ic increases to the current proportional to time through the T301 primary coil, and when it reaches the Hfe limit of Q303, it will not retain the "on" state, but will turn to "off". As Q303 turns 'off', TRANS N1 will have counter-electromotive force, discharge energy to the secondary coil, send current to load and output THV(-) voltage through the high voltage output enable, which is comprised of Regulation- circuit.



3-5-7-7. Environment Recognition

THV voltage recognizes changes in transfer roller environment and allows the voltage suitable for the environment in order to realize optimum image output. The analog input is converted to digital output by the comparator that recognizes the environmental changes of the transfer roller. It is to allow the right transfer voltage to perform appropriate environmental response considering the environment and the type of paper depending on this digital output by the programs that can be input to the engine controller ROM.

This environment recognition setting is organized as follows: First, set the THV(+) standard voltage. Allow 200M Ω load to transfer output, enable output and set the standard voltage 800V using VR201. Then set 56 (CPU's recognition index value) as the standard using VR302.

This standard value with CPU makes sure that the current feedback is 4 μ A when output voltage is 800V and load is 200M Ω .

If the load shows different resistance value when 800V is output, the current feedback will also be different and thus the index value will also be different. according to the index value read by CPU, the transfer voltage output will differ according to the preset transfer table.

The changes in transfer output required by each load is controlled by PWM-DUTY.

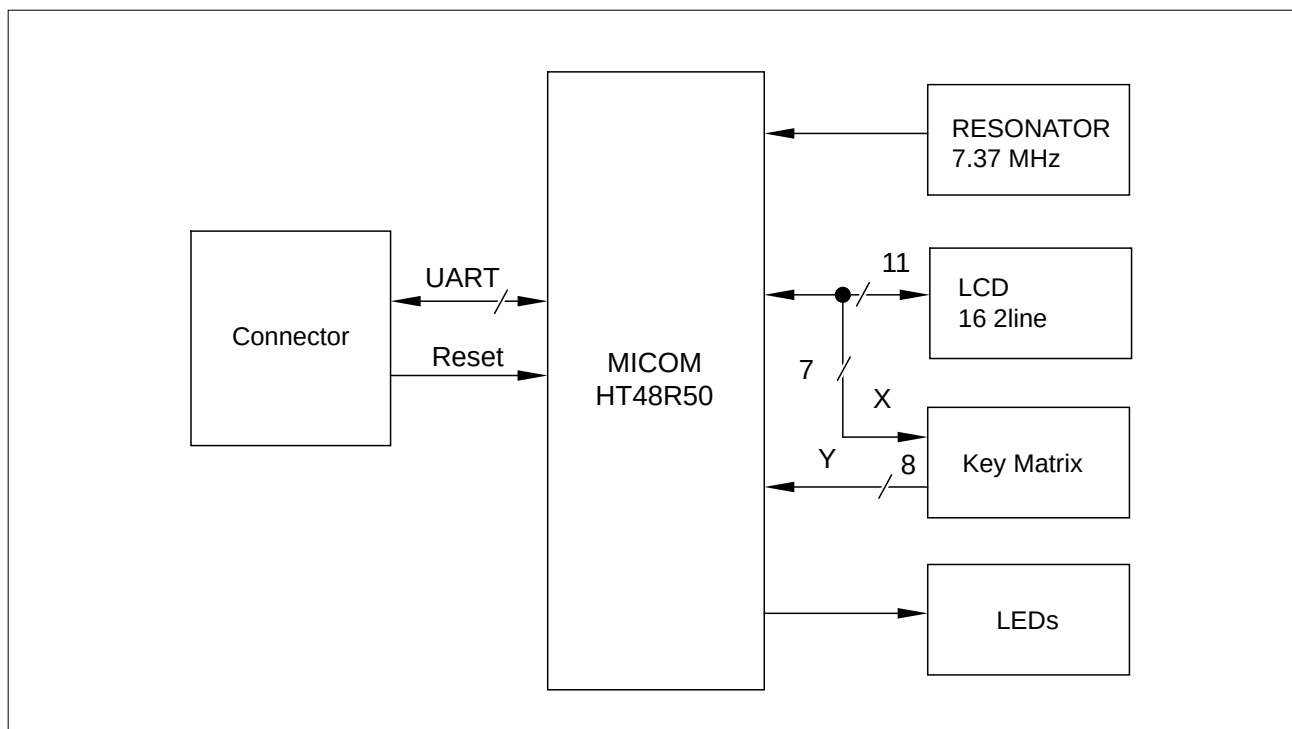
3-6 OPE PBA

3-6-1 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), 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.

OPE PBA consists of U1(MICOM, 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 U1 input pin group (D1~D6)
- U1 pin 48 (TX DATA) is the UART code sent to MAIN PBA.
- Display from the controller is received at U1 pin 5(RX DATA).
- 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 LED0~LED7.



<OPE BLOCK DIAGRAM>

3-7 LIU PBA

3-7-1. SUMMARY

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

3-7-2. 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 :
- $-V_{DCR} = V_{L1} + I_{LINE} \times R_{20}$
- (VDCR : Tip-Ring CD Voltage, ILINE :
- Current flow)V_{L1}:Line Input Voltage, V_{L1}=V_{BD1}+V_{CE}(Q2)+V_{DS}(Q1)

3-7-3. 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 $\approx 600\Omega (\pm 30\%)$
- CTR21 : A Terminal IMPEDANCE $\approx 270+750j\Omega / 150nF$

3-7-4. 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 : $\pm 1.5\%$

High Group : 1209, 1336, 1477, 1633Hz

Low Group : 697, 770, 852, 941 Hz

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

3-7-5. 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.

3-8 SMPS (Switching Mode Power Supply) Unit.

3-8-1 SMPS Specifications

The SMPS (Switching Mode Power Supply) Unit used here is a PWM (Pulse Width Modulation) type power supply unit that supplies DC+5V to controller and control panel, and DC+5V, DC+24V and DC+12V to the engine. It also supplies AC power to fixer heat lamp.

No.	Output Channel	Ch.1	Ch.2	Ch.3
1	Channel Name	+5.1V	+24.0V	+12.0V
2	Rated Output Voltage	+5.1V	+24.0V	+12.0V
3	Rate Output Current	2A	2.5A	0.8A
4	Maximum Load Current and Load Pattern	2.5A Continued	3.0A Continued	0.8A Continued
5	Load Change Range	0.5~2.0A	0.1~0.3A	0.1~0.8A
6	Rate output voltage (For rated I/O)	+5.1V±5% (+4.84~+5.35V)	+24.0V±10% (+21.60~+26.40V)	+12V±5% (+11.40~+12.60V)
7	1) Total Output Voltage Deviation (Input, Load, Temp., Aging) 2) Dynamic Input Change 3) Dynamic Load Change	Including All +5.1V±5% (+4.84~+5.35V) Including Set Error	Including All +24.0V±10% (+21.60~+26.40V) Including Set Error	Including All +12V±5% (+11.40~+12.60V) Including Set Error
8	Refer to ripple & noise 27	150mVp-p or less	500mVp-p or less	200mVp-p or less
9	Refer to load short and overload protection 23 Refer to load short and overload protection 23	Must not ignite or generate smoke when output shorted for 5 sec.	Output voltage must shutdown withing the range of 3.5A~6.5A	Must not ignite or generate smoke when output shorted for 5 sec.

3-8-2 AC Input Stage

AC Input power path is consist of the Fuse (F1) for AC current limit, the Varistor (TNR1) for by-passing high Voltage Surge, the discharge resistor(R1), the AC Impulse Noise Filtering Circuit (C2, C4, LF1), the Common Mode Grounding Circuit (C5, C6), the 2'nd noise filter (C7, LF2), and the thermistor (TH1).

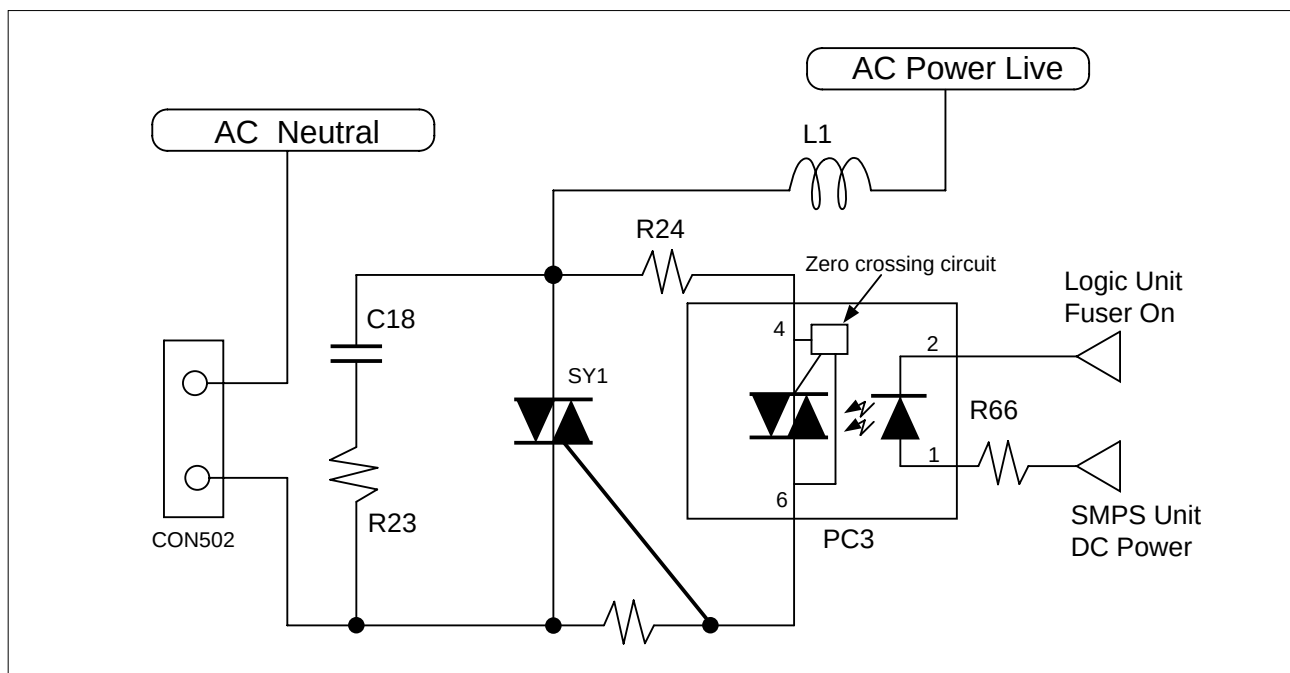
Wher power is turned on, TH 1 limits Inlush-Current by it's high resistanle, and When it's temperature rise, it's resistance become about Zero ohm.

3-8-3 SMC(Switched Mode Control)

The AC input voltage is rectified and filtered by BD1 and C10 to create the DC high voltage applied to the primary winding of T1, Q5 pin #1 is driven by the SMPS device IC2, IC2. auto-starts and chops the DC voltage. The U502 is PWM SMPS IC and has internally a SMC(switched mode control) IC and a MOSFET output stage. The SMC IC has a Auto-restart without a Power Supply for the IC and a Thermal Shutdown function and so on. R4, R5, C11, D1 clamp leading-edge voltage spikes caused by transformer leakage inductance. The power secondary winding(Pin #5~6)is rectified and filtered by D8, D9, L2, C33, C34 to create the 5V output voltage. The bias winding(Pin #9~8)is rectified and filtered by D2 and C12 to create U502 bias voltage. The secondary output 5V is regulated through the path of the voltage divide by R34, R35.

3-8-4. Fixed Temperature Control

3-8-4-1. Fixed Lamp Control Circuit



<Fixed Lamp Control Circuit>

3-8-4-2. The Concept of Fixed Lamp Control

For fixed lamp control, the logic unit "fuser on" control signal and SMPS unit DC power must be supplied. This circuit turns on only when "fuser on" sends the signal and the DC power is supplied.

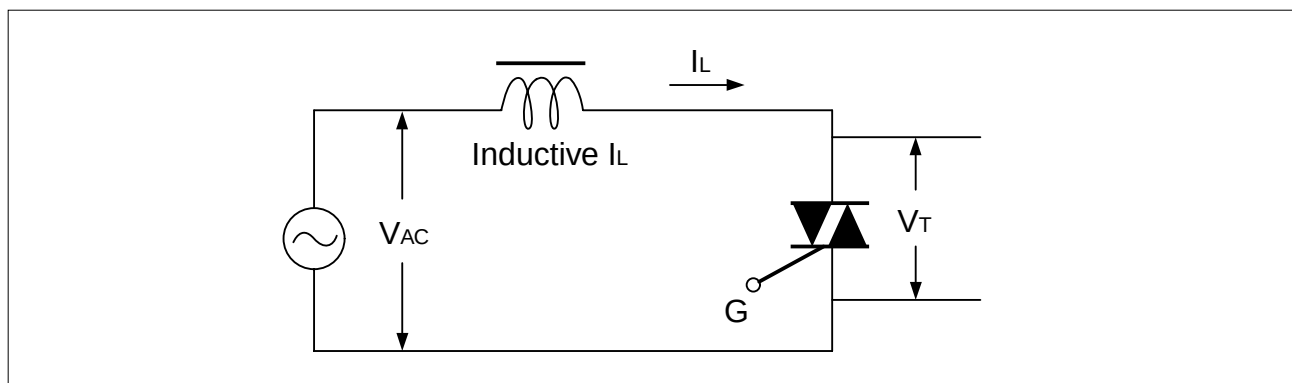
The following explains how the fixed lamp control circuit works.

logic unit "fuser on" sends trigger current to triac driver PC3 LED, then the infrared ray is detected by PC3 photo detector. Next, YC3 triac is conducted.

The conducted current sends trigger input to triac SY1 gate. At this point, SY1 is conducted and AC power is supplied to fixed lamp. Lamp is turned on and temperature rises.

As this fixed lamp control circuit uses the AC voltage ("+" and "-" are repeated) as the power supply, it used two-way triac (SY1), which has advantage over one-way SCR considering the price, size and reliability.

Triac's gate can be triggered by either forward or reverse signal. Once triac is turned on, it will not be controlled by gate signal, but will be continuously on until the current between major terminals decreases below the holding current. In other words, you cannot turn it off with reverse signal unlike SCR. This property is called current-voltage threshold rise rate (commutation: dv/dt). In AC power control application, triac has to turn off conduction in each zero crossing or switch it twice in each cycle. This switching operation is called commutation. It is possible to turn off the triac at the end of half cycle by eliminating the gate signal when the load current (I_L) is gained at the level equal to or lower than holding current. When triac commutes off-line, the direction of the voltage of the both ends of triac will be reversed and increase up to the maximum value of line voltage (VAC). At this point, the width of rise rate will be determined by dv/dt and overshoot voltage, by the circuit. When triac commutes off-line, the voltage of both ends of triac will have the same voltage as the line voltage.



<Inductive Circuit>

4. Disassembly and Reassembly

4-1 General Precautions on Disassembly

When you disassemble and reassemble components, you must use extreme caution.

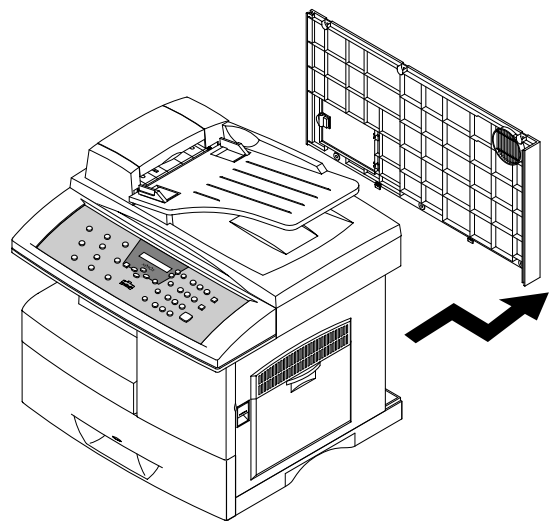
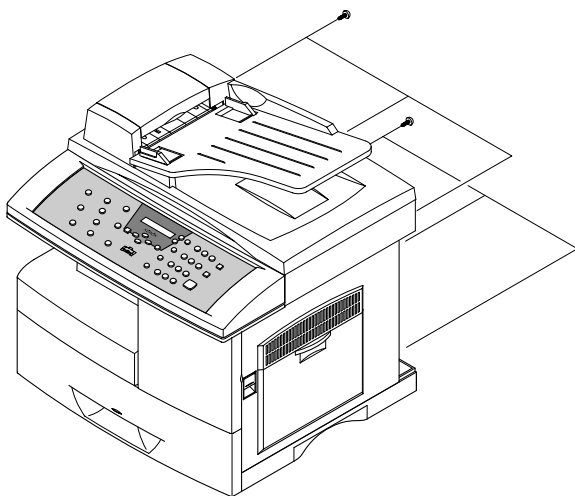
The close proximity of cables to moving parts makes proper routing a must. If components are removed, any cables disturbed by the procedure must be restored as close as possible to their original positions. Before removing any component from the machine, note the cable routing that will be affected.

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 planten plastic-material components.
6. Make sure all components are in their proper position.

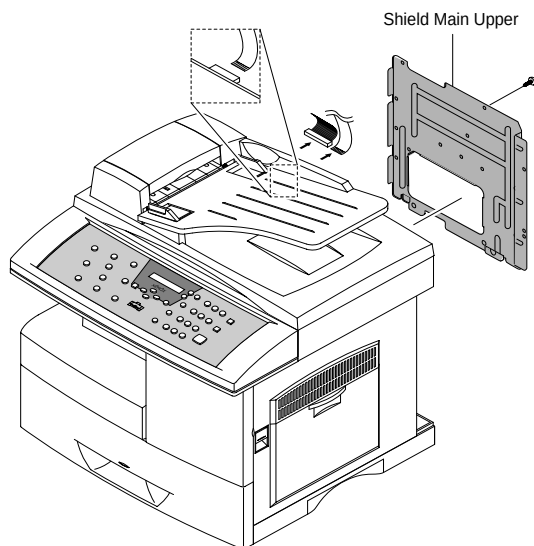
4-2 Rear Cover

1. Remove the six screws securing the Rear Cover.
2. Separate the rear cover from the base frame and Scanner Ass'y.



4-3 Scanner Ass'y

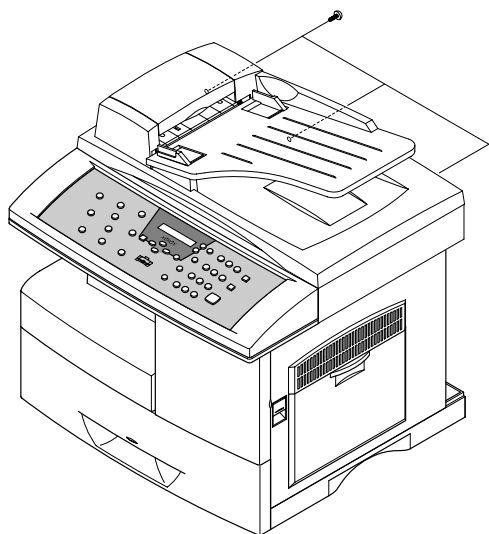
1. Before you remove the Scanner Ass'y, you should remove:
 - Rear Cover (see page 4-1)
2. Remove the six screws and take out the Shield Main Upper. Unplug the one connector and CCD cable.



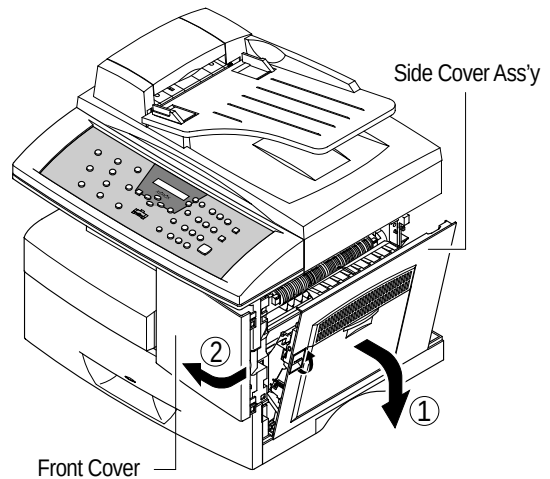
Notice :

You should connector remove the CCD cable vertically to avoid the CCD cable pin damage.

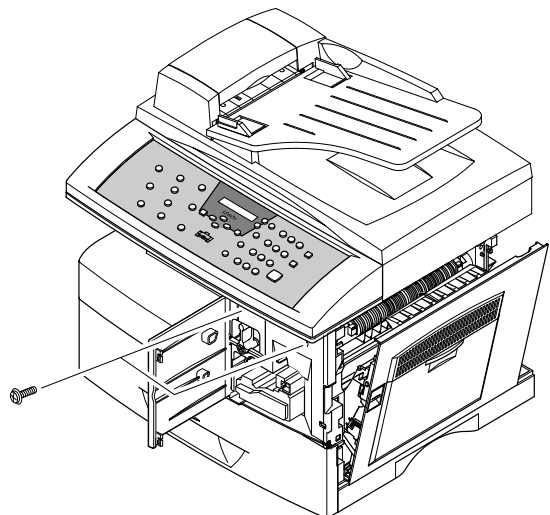
3. Remove the three screws, as shown below.



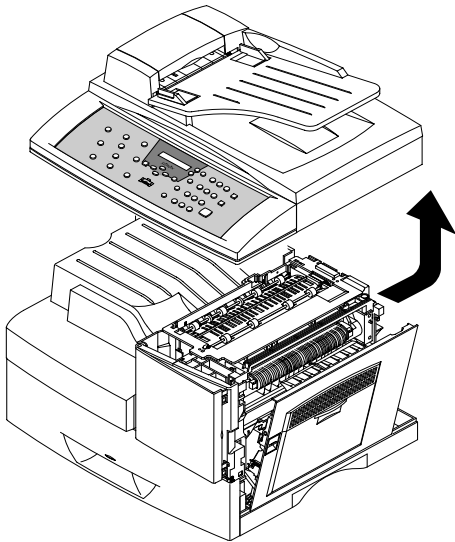
4. Open the Side Cover assembly first to open the Front cover. In the other words, close the front cover first to assembly it.



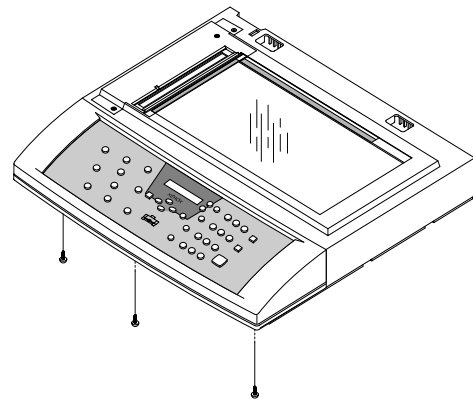
5. Remove two screws.



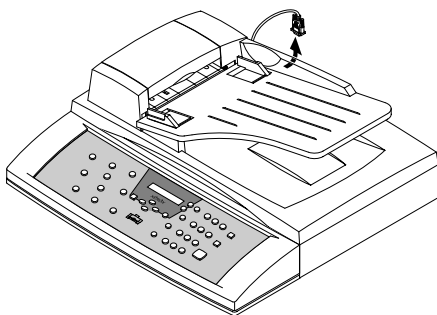
6. Pull up the Scanner Ass'y in the direction of arrow.



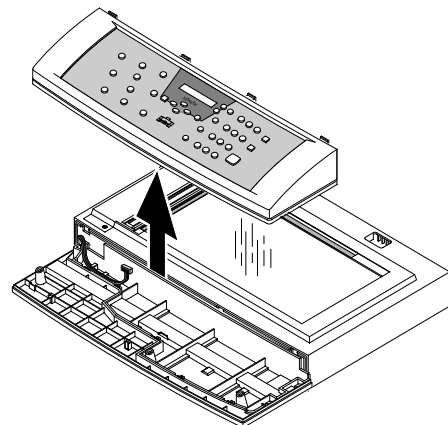
9. Remove the three screws securing the Platen Ass'y.



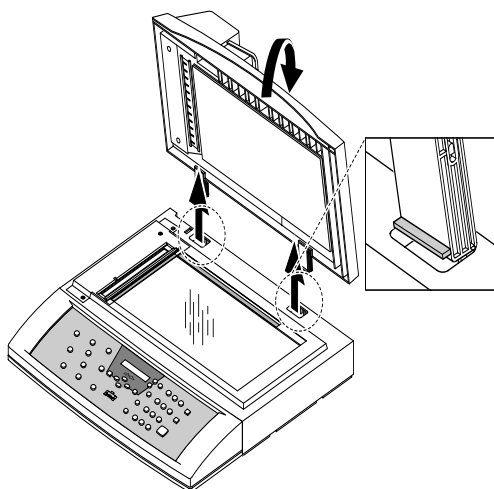
7. Remove the connector from the Platen Ass'y.



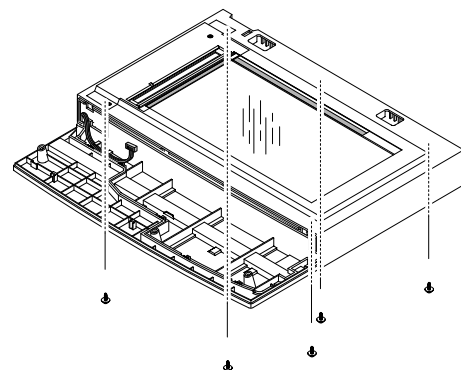
10. Pull the OPE Ass'y and unplug the one connector.



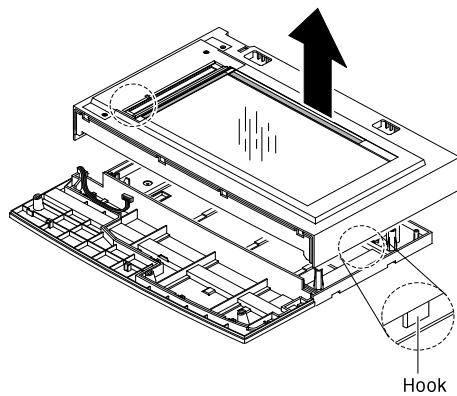
8. Open the ADF Ass'y in the direction of arrow. Pull the ADF Ass'y upward and remove it.



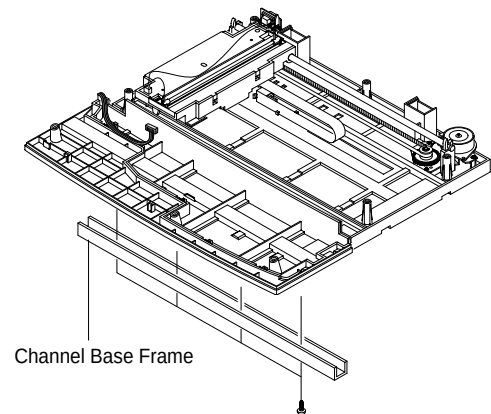
11. Remove the five screws securing the Platen Ass'y.



12. Unlatch the Scan Upper Ass'y securing the glass and remove it.



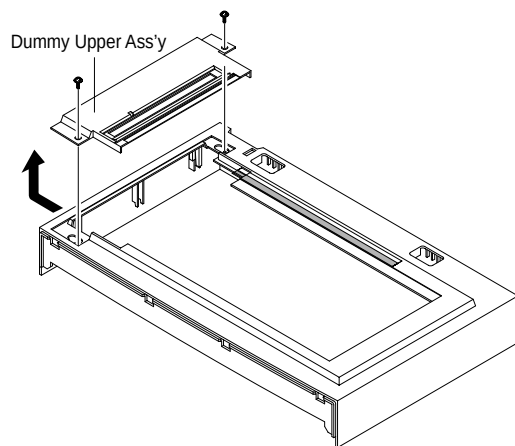
14. Remove the four screws and Channel Base Frame.



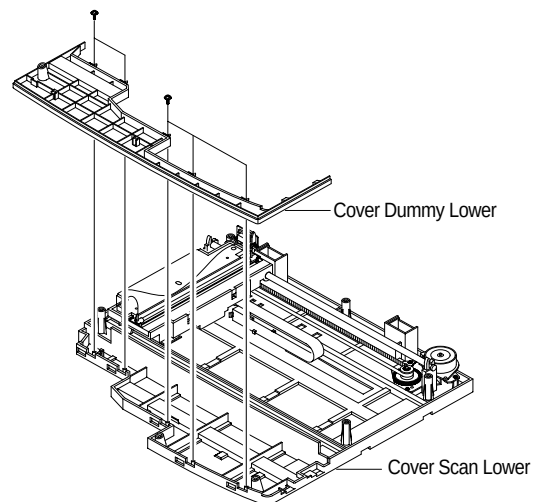
Notice :

When foreign material enters into the Scan Assy, it may cause problems in product performance and deteriorate scan image. Therefore, you should always dismantle or assemble it at a clean place.

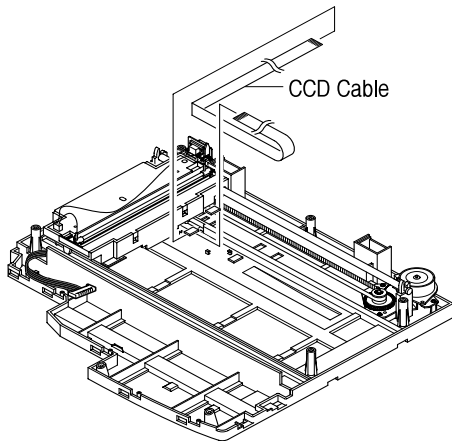
13. Remove the two screws and pull the Dummy Upper Ass'y.



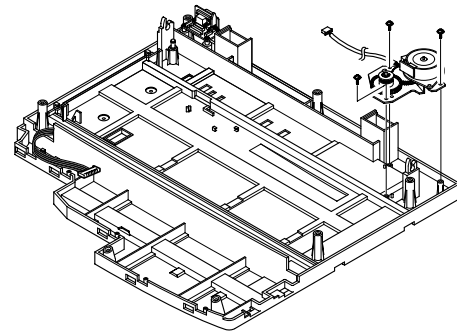
15. Remove the five screws and Dummy Scan-Lower.



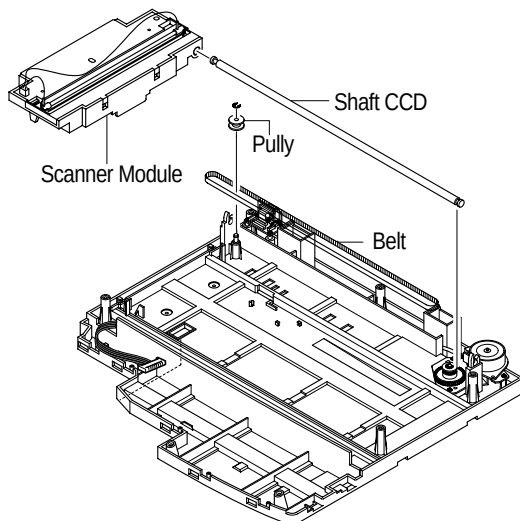
16. Remove the CCD cable.



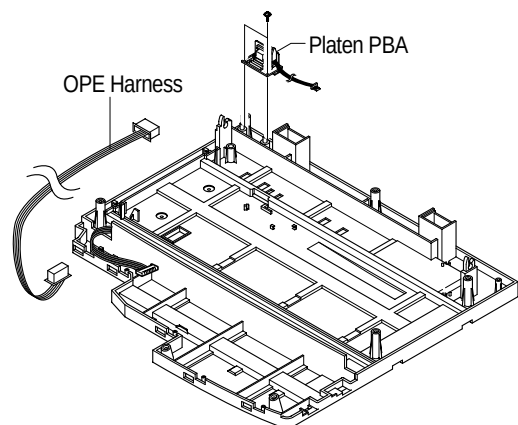
18. Remove three screws and take out the Motor Bracket.



17. Pull up the Shaft CCD and take out the Scanner Module.



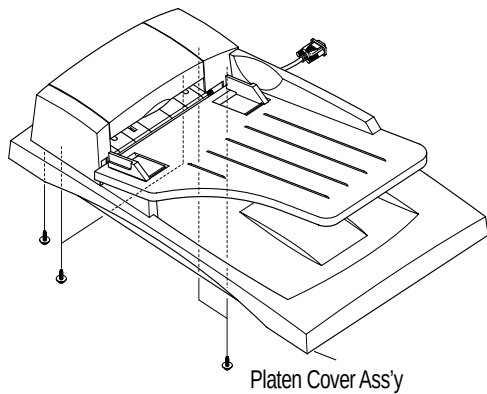
19. Remove the OPE Harness from the Platen PBA. Remove two screws and take out the Platen PBA.



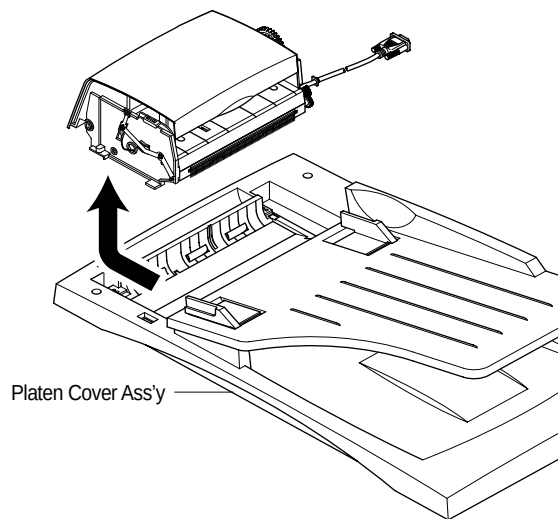
4-4 ADF Ass'y

1. Before you remove the ADF Ass'y, you should remove:
 - Rear Cover (see page 4-1)
 - Scanner Ass'y (see page 4-2)

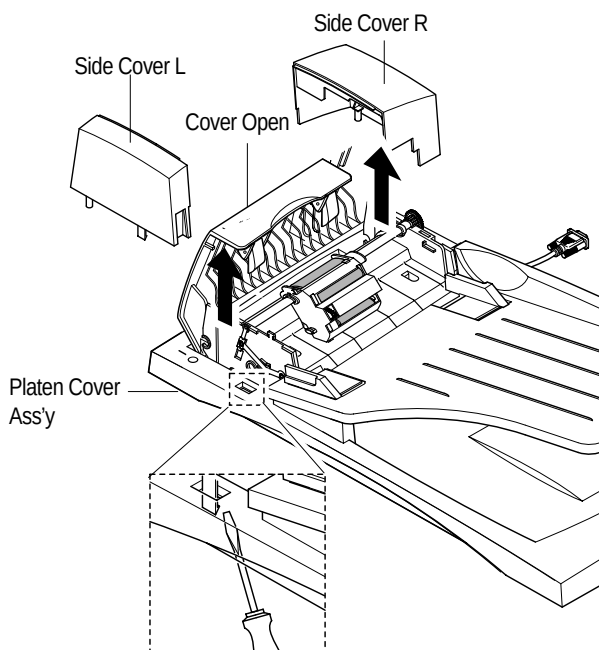
2. Remove the five screws from the Platen Cover.



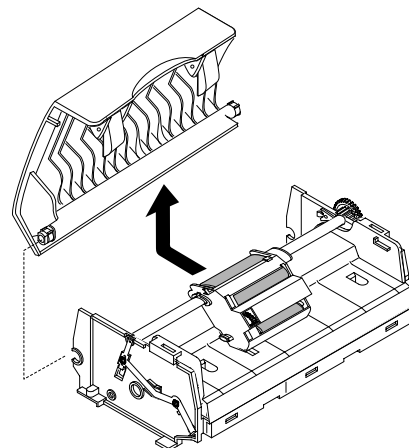
4. Pull the ADF Ass'y upward and remove it.



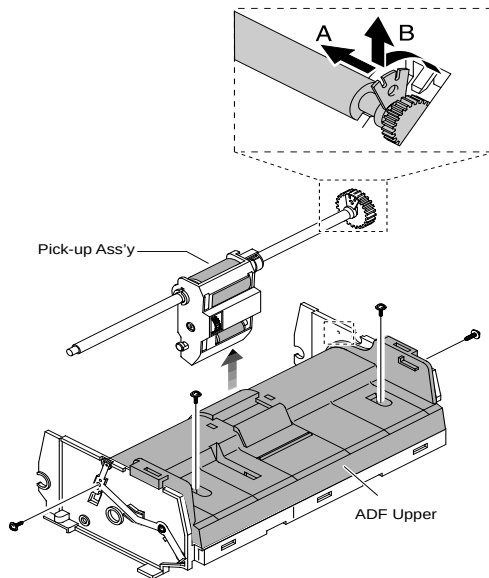
3. Open the Cover open and pull the Cover Side L and Cover Side R and unlatch the Side Cover L by pushing the part hooked the Platen Cover using a sharp tool.



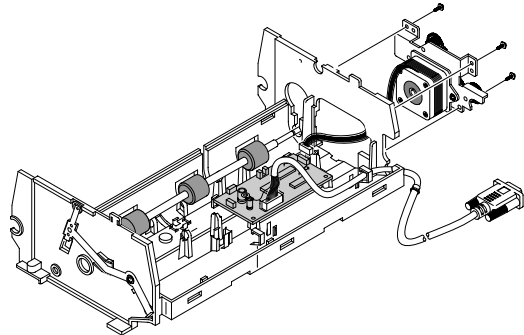
5. Tack out the Open Cover.



6. Take out the Pick-up Ass'y.
Remove the four screws and the ADF Upper.



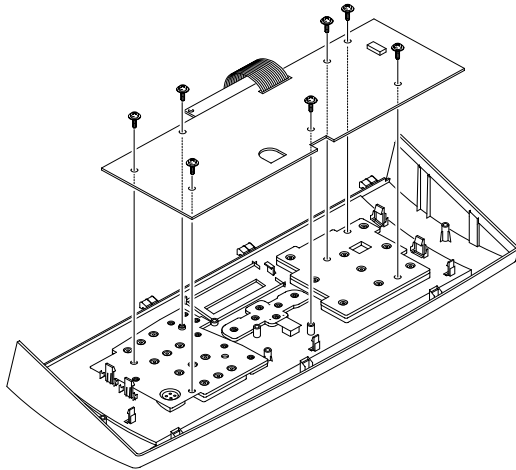
7. Remove three screws and take out the ADF Motor ass'y.



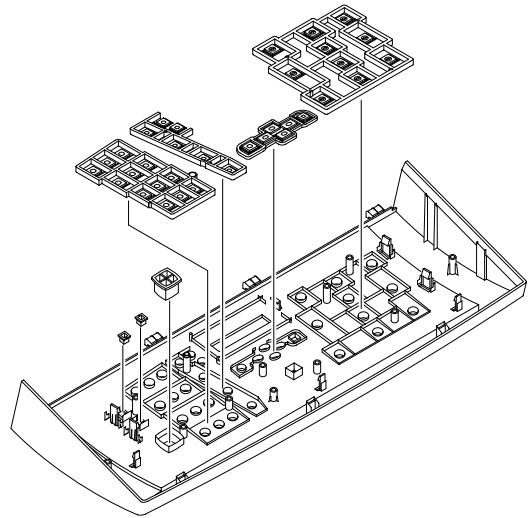
4-5 OPE Ass'y

1. Before you remove the OPE Ass'y, you should remove:
 - Rear Cover (see page 4-1)
 - Scanner Ass'y (see page 4-2)

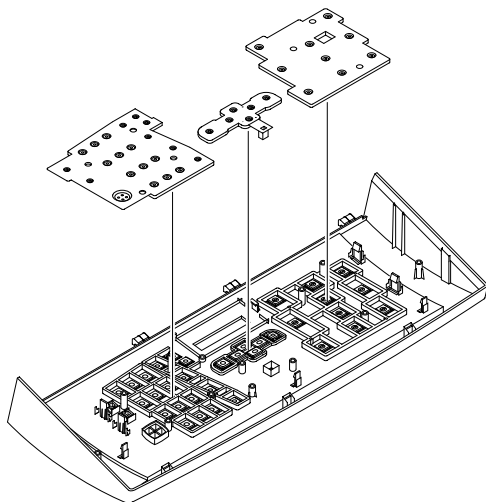
2. Remove ten screws securing the OPE PBA and the LCD Module from the OPE Cover.



4. Remove the key pad from the unit.

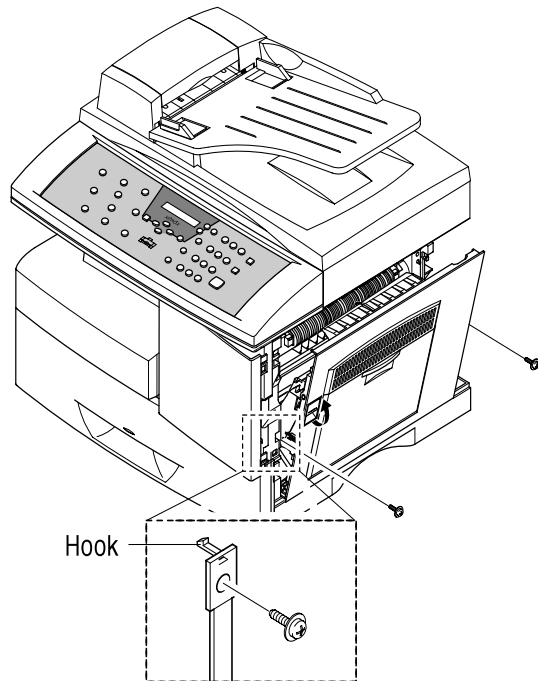


3. Remove the contact rubbers from the unit.

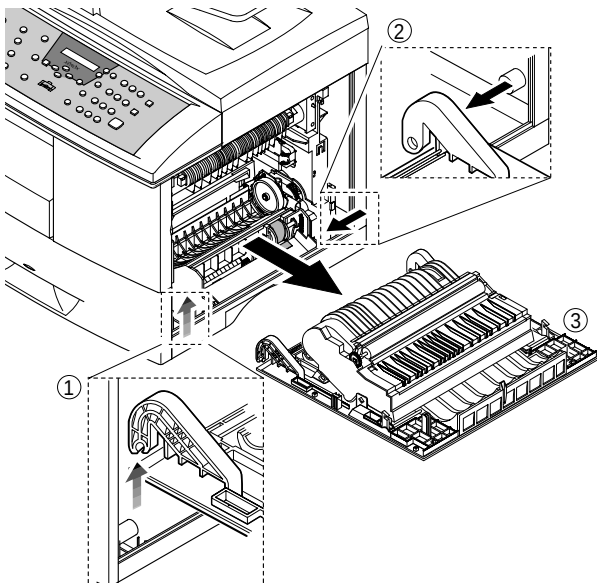


4-6 Side Cover Ass'y

1. Remove the two screws to release the Stopper(Main Frame side) securing the Side Cover to the Main Frame.

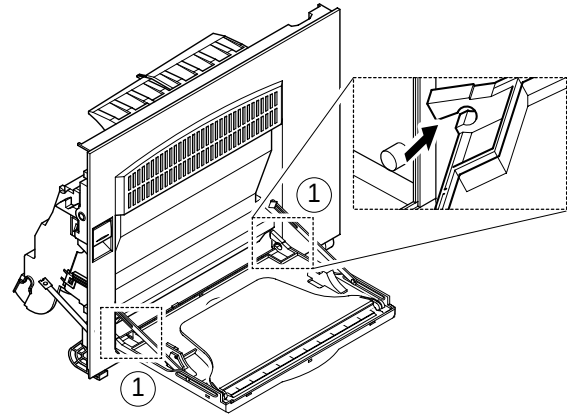


2. Completely open the Side Cover Ass'y, and after pull the ① part to the arrow direction (to the top), pull the ② part to the arrow direction (inner side).

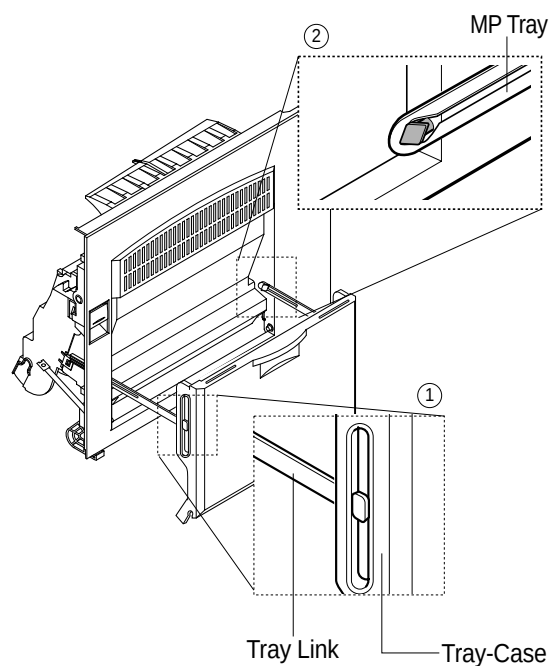


* MP-Tray

1. Pull the both side of the ① part to disassemble it.

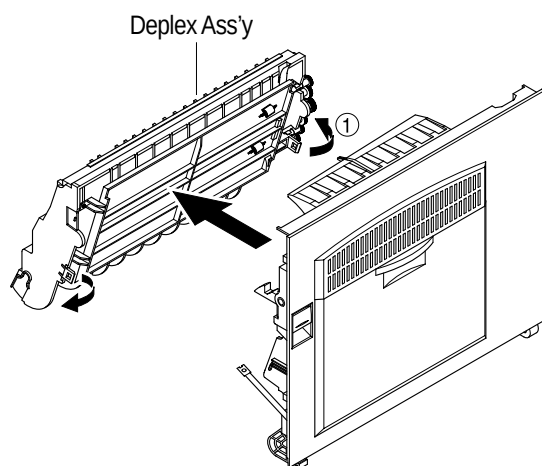


2. As the ① part, make the Tray-Case and the Tray-Link in rectangular position to disassemble the Tray-Case from the Tray Link. The Tray Link locates at an angle of 45° from the Side Cover Ass'y and then remove the Tray Link.



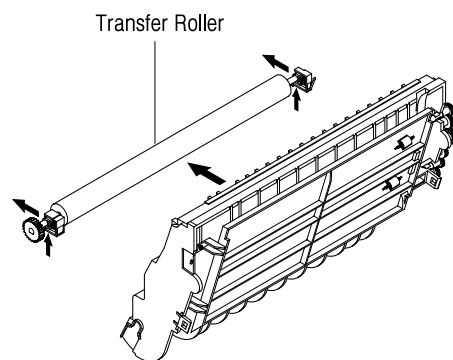
* Duplex Ass'y

1. Unite the ① part and home to the projection part of the Side Cover assembly, and widen them from each other to disassemble the Side Cover Ass'y.



* Transfer Roller Ass'y

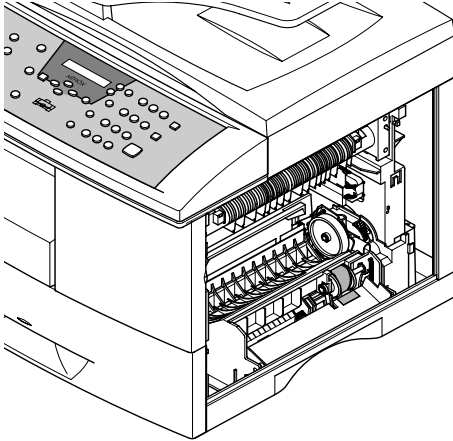
1. Take out the Transfer Roller, as shown below.



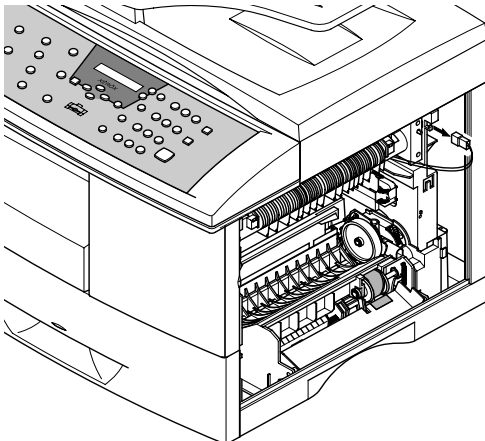
4-7 Fuser Ass'y

1. Before you remove the Fuser Ass'y, you should be power off and remove:
- Side Cover Ass'y (see page 4-9)

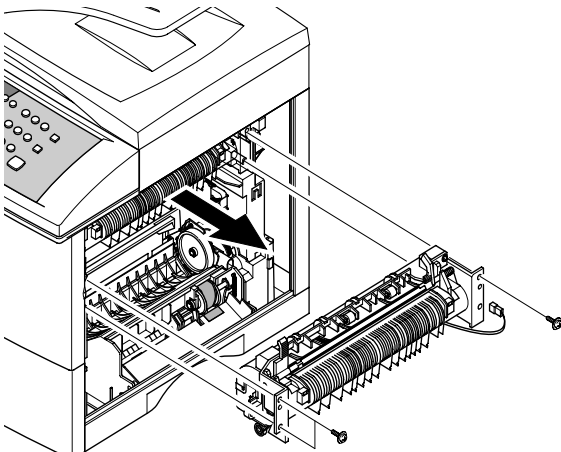
2. Remove the one screw and take out the Cover Sheet Connector.



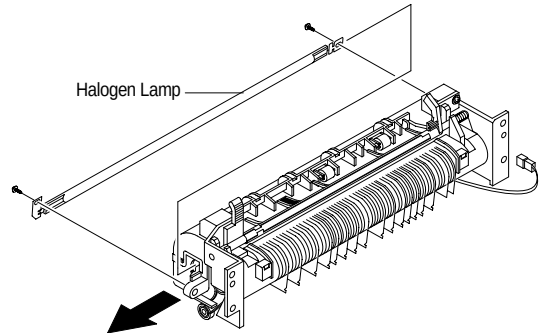
3. Unplug the one connector.



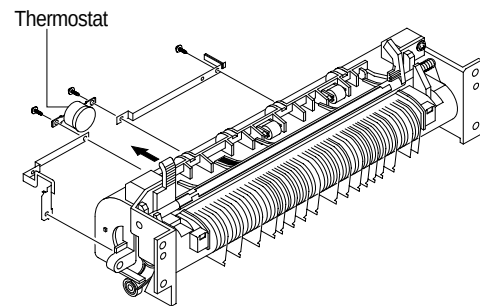
4. Remove the three screws and take out the Fuser Ass'y.



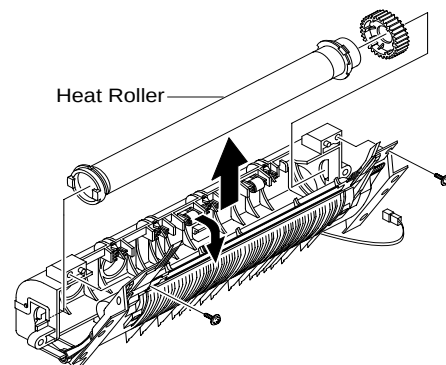
6. Remove the two screws and take out the Halogen Lamp.



5. Remove the four screws and take out the Thermostat.

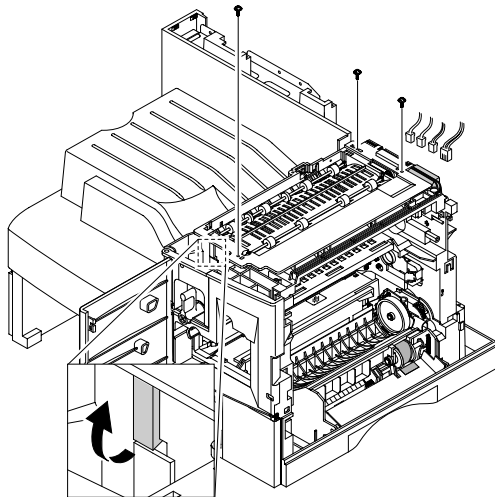


7. After remove the two screw and open the Lower Ass'y forward tack out the Heat Roller Ass'y from Upper Fuser Ass'y.

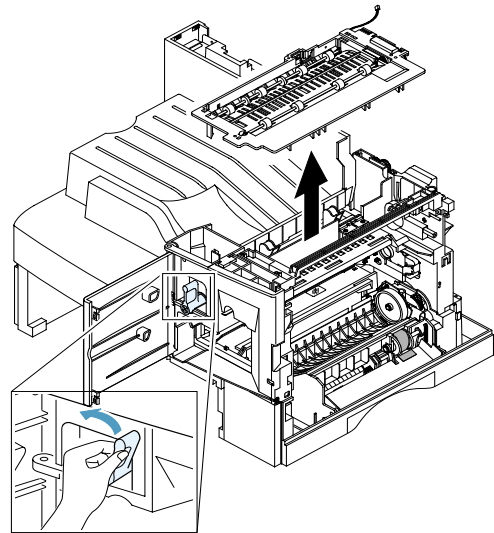


4-8 Exit Ass'y

1. Before you remove Exit Ass'y, you should remove:
 - Rear Cover (see page 4-1)
 - Scanner Ass'y (see page 4-2)
2. Remove four screws, and then untile the harness from the Exit Upper. Unplug four connectors and unlatch the Dummy Base Frame, as shown below.

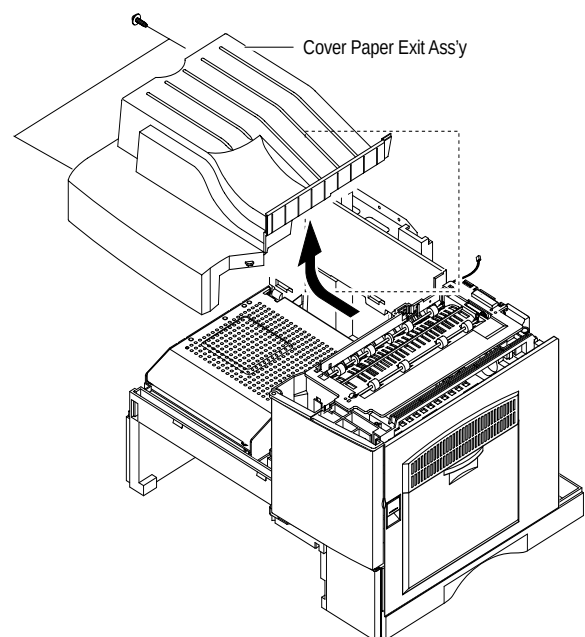


3. Pull the exit ass'y and remove it.



4-9 Cover Paper Exit Ass'y

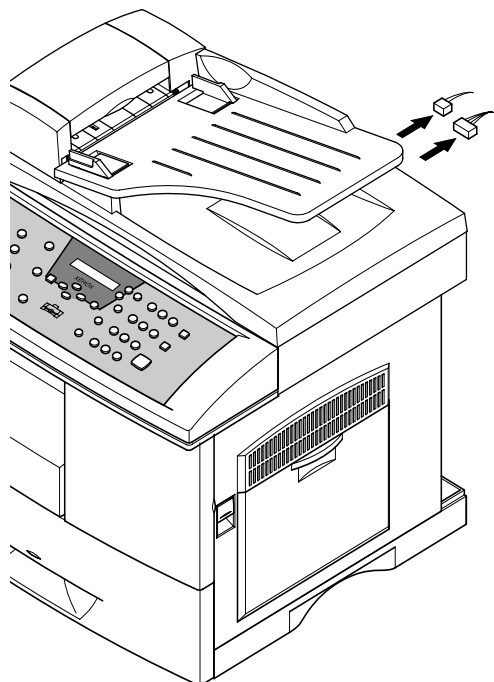
1. Before you remove the Cover Paper Exit Ass'y, you should remove:
 - Rear Cover (see page 4-1)
 - Scanner Ass'y (see page 4-2)
2. Remove two screws and Cover Paper Exit Ass'y, as shown below.



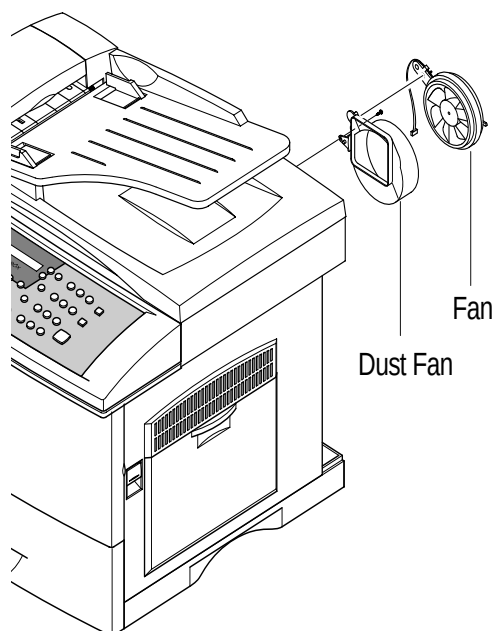
4-10 Drive Ass'y

1. Before you remove the Drive Ass'y, you should remove:
 - Rear Cover (see page 4-1)
 - Shield Main Upper (see page 4-2)

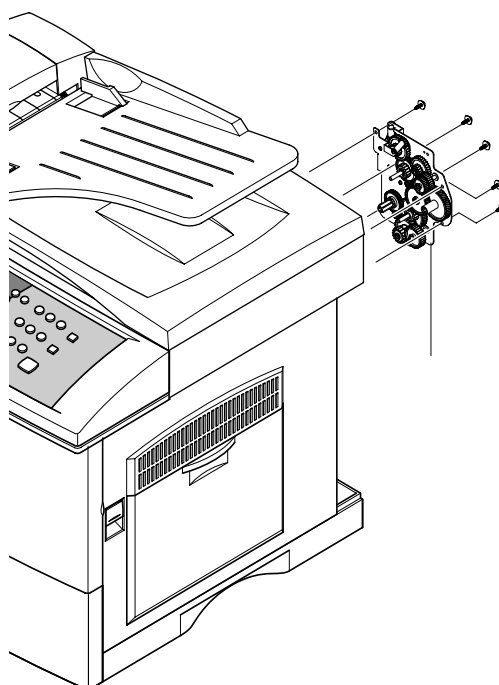
2. Unplug the two connectors.
(Main Motor:9pin, Duplex Solenoid : 2pin)



3. Remove the one screw and take out the Fan and Dust Fan.



4. Remove the five screws and take out the Drive Ass'y.

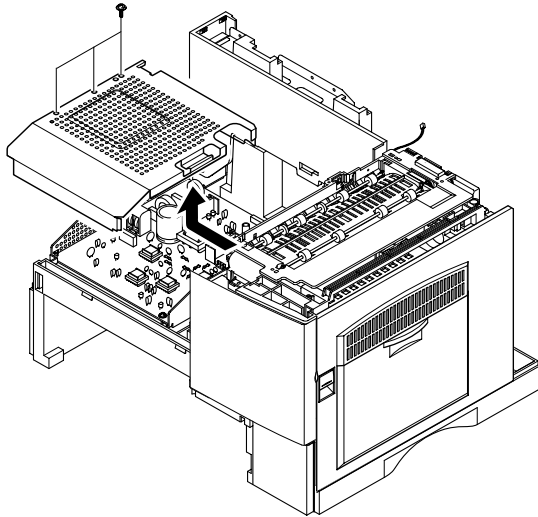


4-11 SMPS

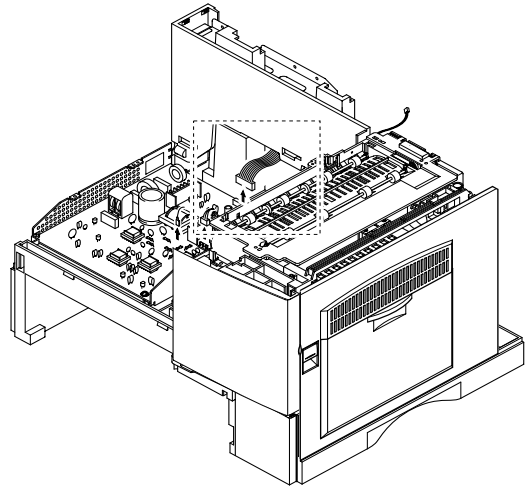
1. Before you remove the LSU, you should remove:

- Rear Cover (see page 4-1)
- Scanner Ass'y (see page 4-2)
- Cover Paper Exit Ass'y(see page 4-12)

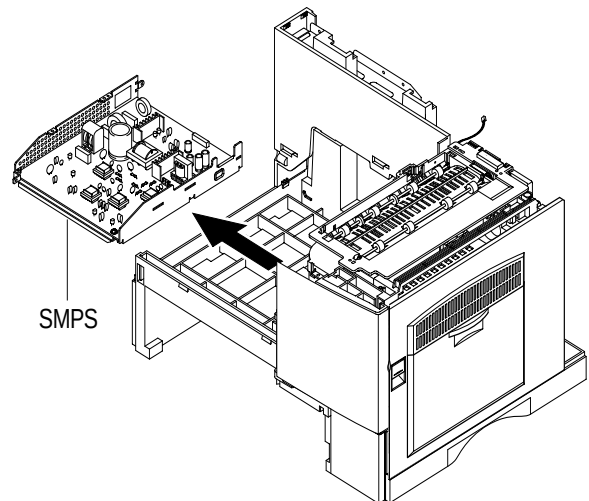
2. Remove three screws and take out the Shield SMPS Upper.



3. Unplug the all connectors.



4. Remove the SMPS, as shown below.

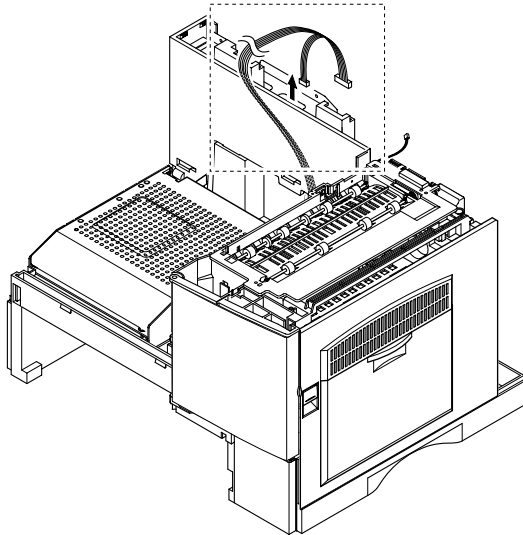


4-12 LSU (Laser Scanning Unit)

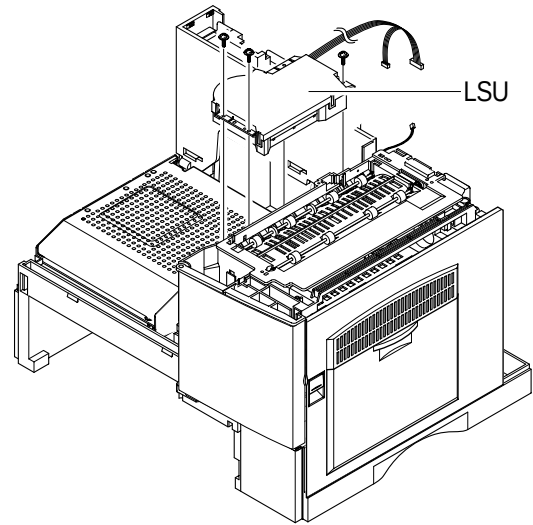
1. Before you remove the LSU, you should remove:

- Rear Cover (see page 4-1)
- Scanner Ass'y (see page 4-2)
- Cover Paper Exit Ass'y (see page 4-12)

2. Unplug the two connectors.



3. Remove the three screws and take out the LSU.

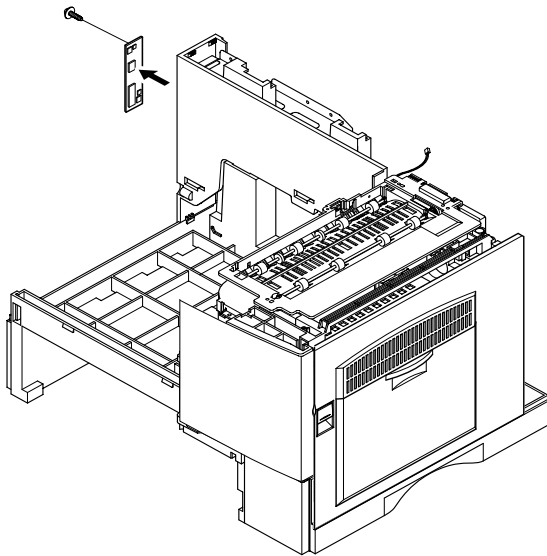


4-13 Cover Exit Rear

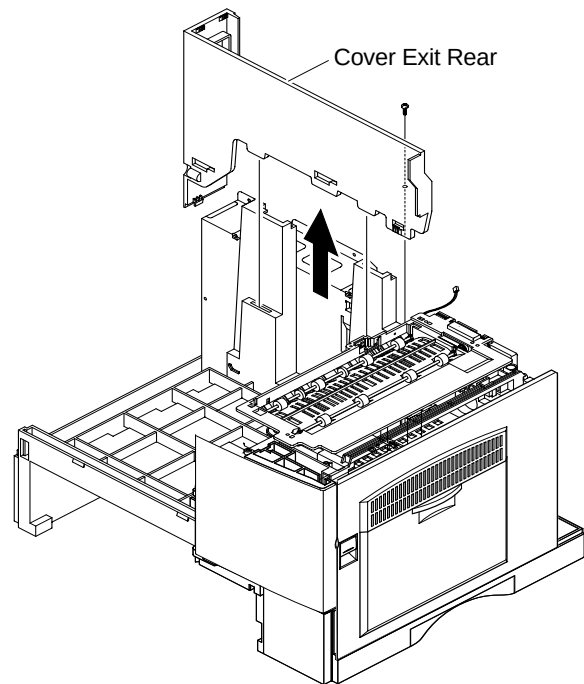
1. Before you remove the Cover Exit Rear, you should remove:

- Rear Cover (see page 4-1)
- Scanner Ass'y (see page 4-2)
- Exit Ass'y (see page 4-12)
- Cover Paper Exit Ass'y(see page 4-12)
- SMPS (see page 4-14)

2. Remove the one screw and take out the Panel Connect MPF.



3. Remove the one screw and Cover Exit Rear, as shown below.

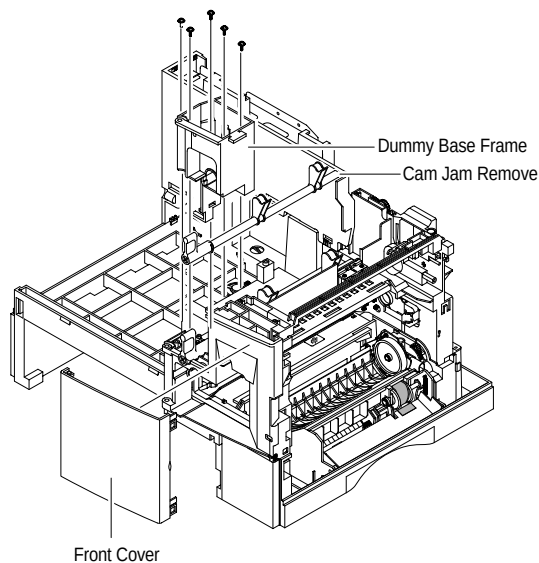


4-14 Main Frame Ass'y

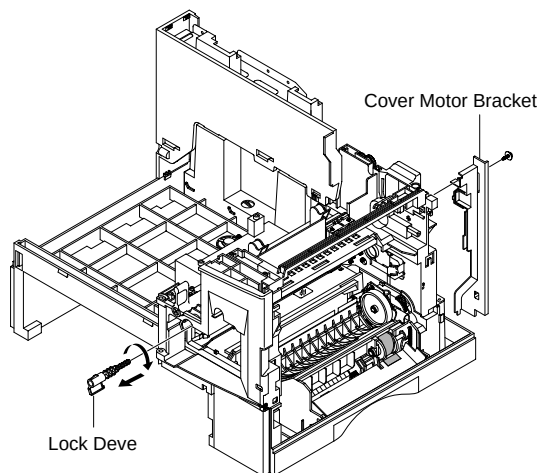
1. Before you remove the LSU, you should remove:

- Rear Cover (see page 4-1)
- Scanner Ass'y (see page 4-2)
- Side Cover Ass'y (see page 4-9)
- Fuser (see page 4-11)
- Exit Ass'y (see page 4-12)
- Cover Paper Exit Ass'y (see page 4-12)
- SMPS (see page 4-14)
- LSU (see page 4-15)

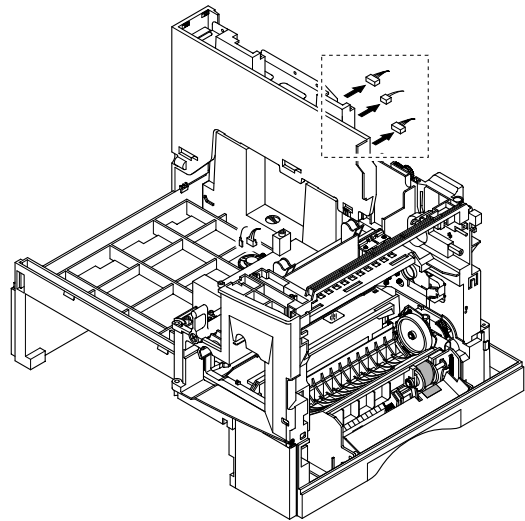
2. Remove one screw in the Channel Base Frame from the bellow section of the Base Frame, and then remove the rest of the five screws to disassemble the Dummy Base Frame, the Cover Front and the Cam Jam Remove.



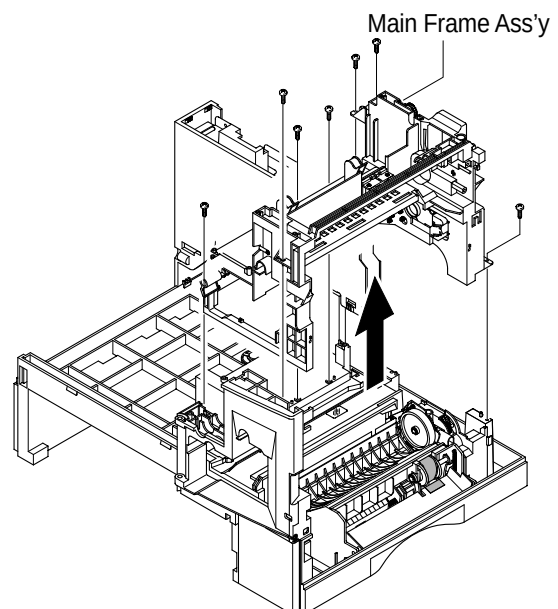
3. Remove the Locker Deve, and then remove the one screw and the Cover Motor Bracket.



4. Unplug the all connectors.



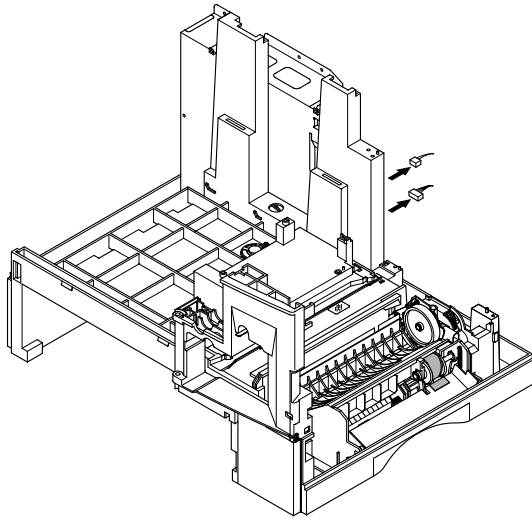
5. Remove the seven screws and take out the Main Frame Ass'y.



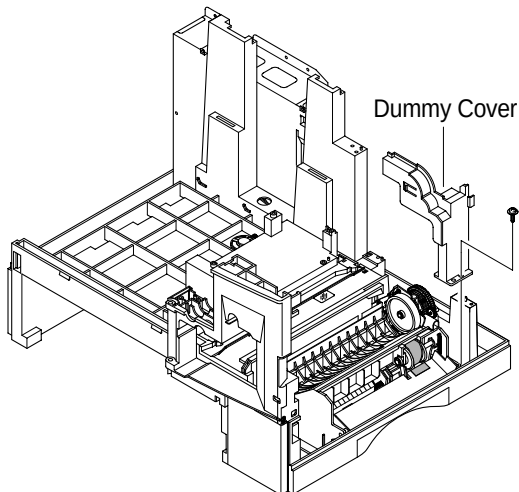
4-15 MP Ass'y

1. Before you remove the MP Ass'y, you should remove:
 - Rear Cover (see page 4-1)
 - Shield Main Upper (see page 4-2)
 - Side Cover Ass'y (see page 4-9)

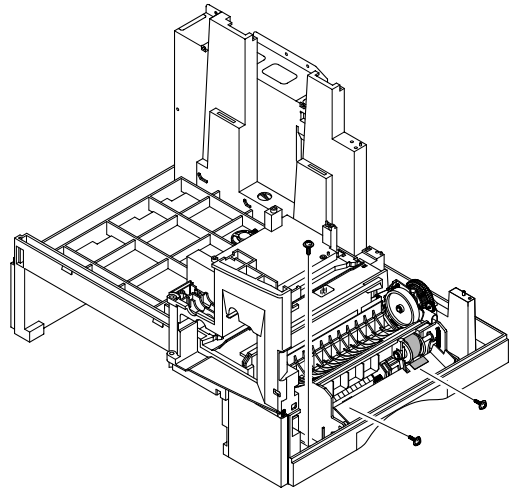
2. Unplug the two connectors.



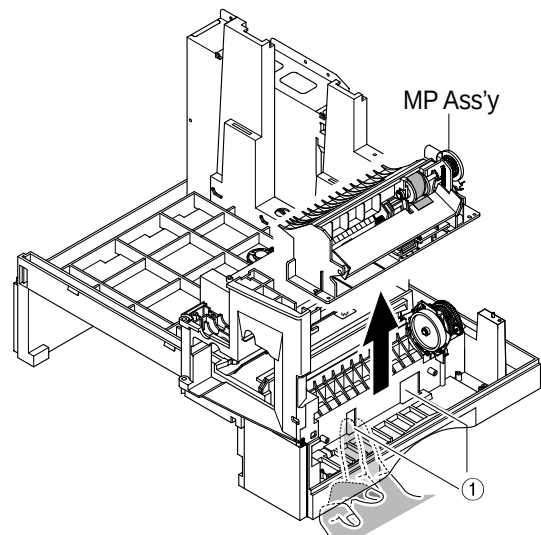
3. Remove the one screw and take out the Dummy Cover.



4. remove the three screws.



5. Release the SMPS fit. Pull the MP Ass'y upward and remove it.

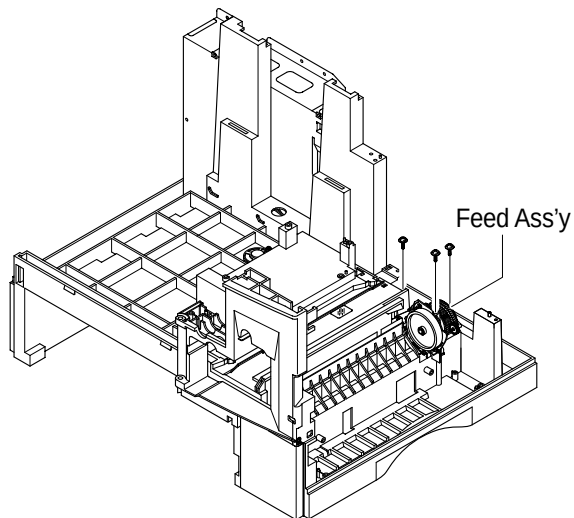


4-16 Feed Ass'y

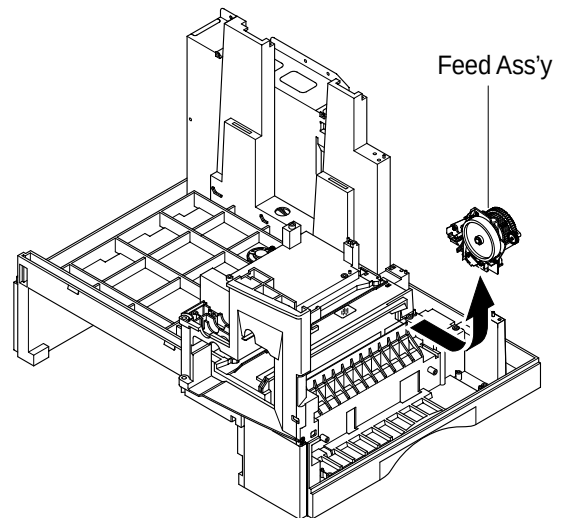
1. Before you remove the Feed Ass'y, you should remove:

- Rear Cover (see page 4-1)
- Scanner Ass'y (see page 4-2)
- Side Cover Ass'y (see page 4-9)
- Exit Ass'y (see page 4-12)
- Cover Paper Exit Ass'y(see page 4-12)
- LSU (see page 4-15)
- Main Frame Ass'y (see page 4-17)

2. Remove the three screws.



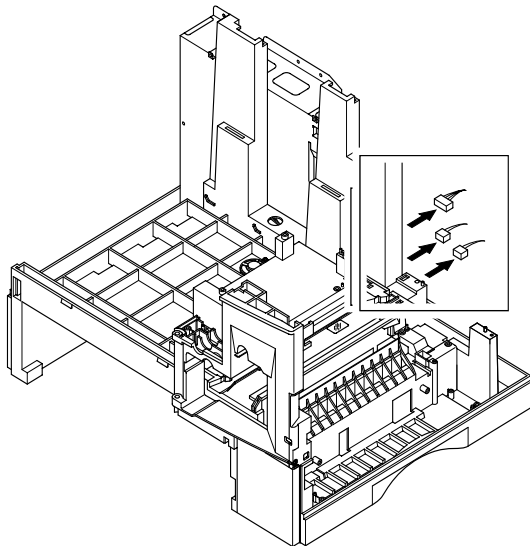
3. Pull the Feed Ass'y upward and remove it.



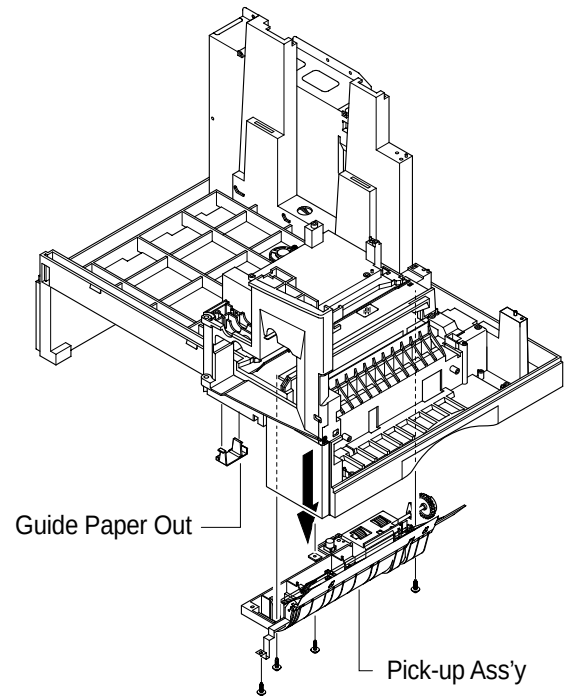
4-17 Pick Up Ass'y

1. Before you remove the Pick Up Ass'y, you should remove:
 - Rear Cover (see page 4-1)
 - Shield Main Upper (see page 4-2)
 - Drive Ass'y (see page 4-13)

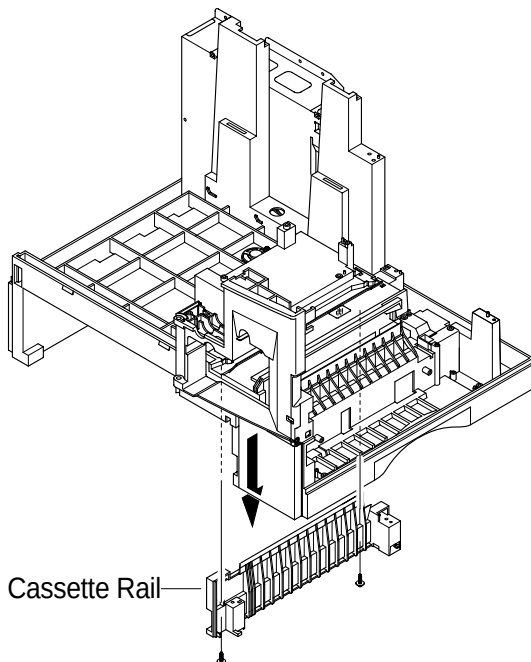
2. Unplug the three connectors.



4. Remove the four screws and take out the Pick Up Ass'y, as shown below.



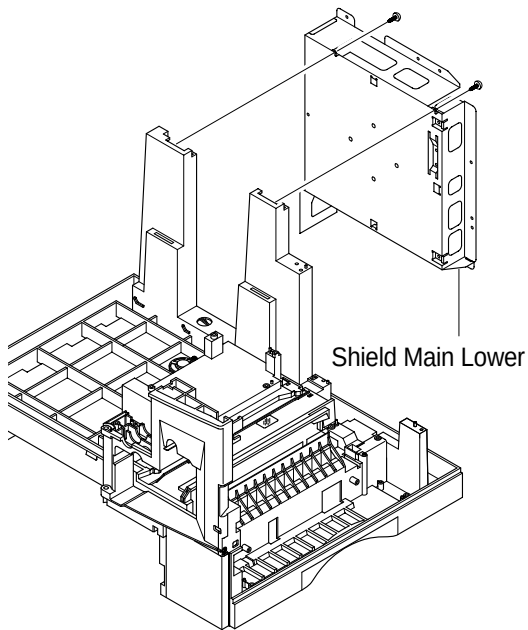
3. Remove the two screws and take out the Cas-
sette Rail.



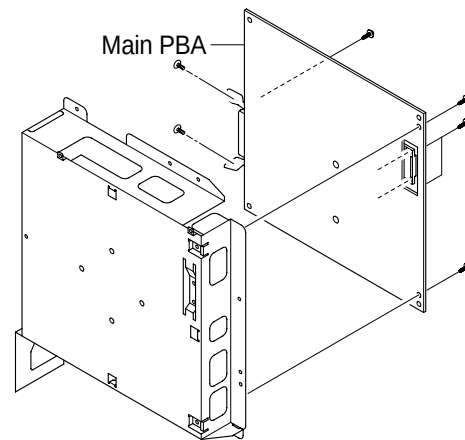
4-18 Main PBA

1. Before you remove the Main PBA, you should remove:
 - Rear Cover (see page 4-1)
 - Side Cover Ass'y (see page 4-9)
 - Cover Paper Exit Ass'y (see page 4-12)
 - SMPS (see page 4-14)

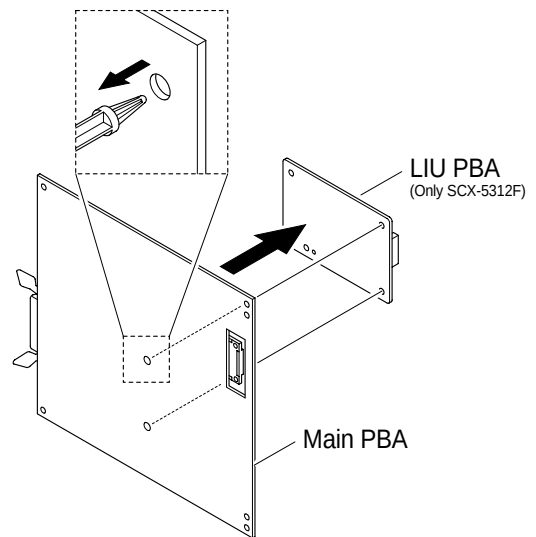
2. Remove the two screws and take out the Shield Main Lower.



3. Remove the five screws and take out the main PBA from the Shield Main Lower.



4. Remove the one screw and unlatch the LIU PBA securing the main PBA and remove it.



5. Troubleshooting

In this chapter, it was mentioned about the functions for maintaining the product, how to find the causes of the inferiority, and troubleshooting method.

5-1 Preventative Maintenance

The cycle period outlined below is a general guideline for maintenance.

The example list is for an average usage of 50 transmitted and received documents per day.

Environmental conditions and actual use will vary these factors.

The cycle period given below is for reference only.

COMPONENT	REPLACEMENT CYCLE
ADF Rubber	50,000 Pages
ADF Roller	50,000 Pages
Pick-up Roller	50,000 Pages
Transfer Roller	50,000 Pages
Fuser	50,000 Pages
Toner Cartridge	6,000 Pages
Drum Cartridge	15,000 Pages

5-2 Error Messages

ERROR MESSAGE	DESCRIPTION	SOLUTION
[BYPASS JAM]	When the machine detected the non-feeding from BYPASS Tray.	Open the side Cover and clear the jam.
COMM. ERROR	A problem with the facsimile communications has occurred.	Try again.
DOCUMENT JAM	Loaded document has Jammed in the feeder When Document Jam occurred at ADF module	Clear the document Jam.
[DOOR OPEN]	The side cover is not securely latched.	Clear the cover until it clicks in place.
DRUM WARNING	When the machine has encountered the drum life, 14000 print pages.	Use little more change if "REPLACE DRUM" is marked in LCD window.
[DUPLEX JAM] OPEN/CLOSE DOOR	When the machine detected the duplex jam in the middle of machine.	Clear the jam.
GROUP NOT AVAILABLE	You have tried to select a group location where only a single location number can be used, such as when adding locations for a multi-dial operation.	Try again, check location for group.
HEATING ERROR	During operation, Temperature does not go up.	Check thermister contact point & Heating Lamp.
LINE ERROR	Your unit cannot connect with the remote machine, or has lost contact because of a problem on the phone line. When the machine has a problem in cause of fax data reception step	Try again. If failure persists, wait an hour or so for the line to clear then try again.

ERROR MESSAGE	DESCRIPTION	SOLUTION
INVALID CARTRIDGE	You have used unauthorised cartridge.	You must use a Samsung approved cartridge.
LINE BUSY	The remote FAX didn't answer	Try again.
LOAD DOCUMENT	You have attempted to set up a sending operation with no document loaded.	Load a document and try again.
MEMORY FULL	The memory has become full.	Either delete unnecessary documents, or retransmit after more memory becomes available, or split the transmission into more than one operation.
NO ANSWER	The remote machine was not answered after all the redial attempts.	Try again. Make sure the remote machine is OK.
NO DEVELOPER CARTRIDGE	When the machine detected the toner cartridge has not been installed.	Install the Cartridge.
NO. NOT ASSIGNED	The speed dial location you tried to use has no number assigned to it.	Dial the number manually with the keypad, or assign the number.
[NO PAPER] ADD PAPER	The recording paper has run out. The printer system stops.	Load the recording paper in the paper feeder.
[PAPER JAM 0] OPEN/CLOSE DOOR	Recording paper has jammed in paper feeding area. Recording paper is jammed in pick-up unit	Press STOP and clear the jam.
[PAPER JAM 1] OPEN/CLOSE DOOR	Recording paper has jammed inside the unit. Recording paper has jammed in paper exit unit.	Clear the jam.
[PAPER JAM 2] CHECK INSIDE	Paper has jammed in the paper exit area.	
[TONER EMPTY]	When the machine has encountered the Toner Empty.	Replace the Toner Cartridge.
[TONER LOW]	The toner is almost empty.	Take out the toner cartridge and gently shake it. By doing this, you can temporarily re-establish printing operations.
REPLACE DRUM	When the machine has encountered the out of from life, 15000 print pages.	Replace the Drum Cartridge.
RETRY REDIAL?	The machine is waiting for the programmed interval to automatically redial.	You can press START to immediately redial, or STOP to cancel the redial operation.
OPEN HEAT ERROR	Thermister does not connected to main board or contact point is not coupled tightly in power on.	Check thermister contact point, Heating Camp & Thermostat.
[OVERHEAT]	The printer part has overheated.	Your unit will automatically return to the standby mode when it cools down to normal operating temperature. If failure persists, call service.
SCANNER LOCKED	Scanner is locked by locker.	Check locker. Connect the Flat-Cable.

5-3 Tech Mode

5-3-1 How to Enter Service Mode

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

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

While in Tech 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.

5-3-2 SYSTEM DATA

DIALING MODE

Select the dialing mode according to the user's line status.

- TONE: Electrical type of dial
- PULSE: Mechanical type of dial

SILENCE TIME

In ANS/FAX mode, after a call is picked up by the answering machine, the machine monitors the line. If a period of silence is detected on the line at any time, the call will be treated as a fax message and the machine begins receiving.

Silence detection time is selectable between limited (about 12 seconds) and unlimited time.

When '12 sec' is selected, the machine switches to receiving mode as soon as it detects a period of silence.

When 'unlimited' is selected, the machine waits until the answering operation is concluded even though a period of silence is detected. After the answering operation is concluded, the machine switches to receiving mode.

SEND FAX LEVEL

You can set the level of the transmission signal. Typically, the Tx level should be under -12 dBm.

Caution: The Send Fax Level is set at the best condition in the shipment from factory. Never change settings arbitrarily.

ERROR RATE

When the error rate is about to be over the setting value, the Baud rate automatically lowers up to 2400 bps to make the error rate remain below the setting value.

You can select the rate between 5% and 10%.

MODEM SPEED

You can set the maximum modem speed.

Communication is done with modem speed automatically set at lower speed when communicating with the modem with lower speed since communication is done on the standard of the side where modem speed is low for transmission/reception. It is better set 33.6Kbps as default setting.

5-3-3 MEMORY CLEAR

CLEAR ALL MEMORY

The function resets the system as its very first condition as setting in at the factory.

This function is needed to operate to reset the system to the initial value when the product is abnormally operated or malfunction. All the values are returned to the default values, and all the information, which set in by user, will be erased.

< Method >

1. Select the [MEMORY CLEAR] at the TECH MODE.
2. Push the ENTER button.
3. Select you country.
4. Push the ENTER button then it will be all memory clear. .

NOTICE : Always perform the memory clear after replace the main board. Otherwise, the system may not operate properly.

5-3-4 MAINTENANCE

CLEAN DRUM

Use this feature to get rid of the toner remained in the development unit, so you can get a clean printout.

Perform this feature if stains or specks appear on the printing materials and print quality falls.

Perform this feature several times until a clean printing material appears. The machine automatically pulls in a sheet of paper, and prints out. The toner particles on the OPC drum surface is fixed to the paper.

FLASH UPGRADE

It is Firmware Upgrade function and has two methods, Local and Remote.

More information can be found in the firmware upgrade items.

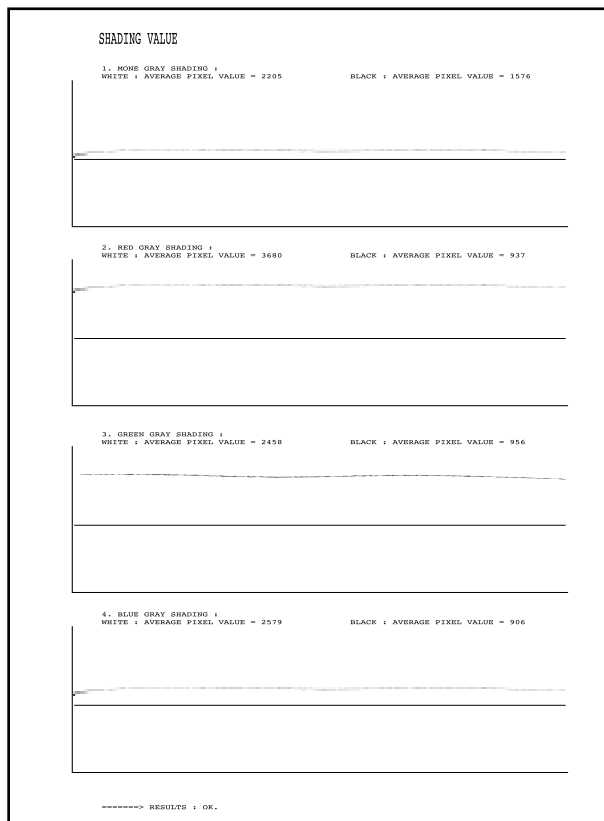
ADJUST SHADING

The function is to control to get the optimum scan quality by the specific character of the CCD (Charge Coupled Device). If the copy image quality is unsatisfied, perform the function to check the condition of the print out for checking whether or not having CCD trouble.

< Method >

1. Select the [ADJUST SHADING] at the TECH MODE.
2. Push the SET UP button then an image will be scanned.
3. After the scan, CCD SHADING PROFILE will be print out.
4. If the printed image is different to the image, the CCD is defect.

NOTICE : When you test CCD, make sure that the cover is closed.



ANSWER ON CNG

The function is to control the CNG TONE cognition times for entering receiving mode from the AUTO MODE or ANS/FAX MODE

CLEAR COUNT

This function erases information of history such as replacement times of Developing part and OPC drum, total printing pages, scan times, and etc.

- The items are in the below section of the System Data List, printed at TECH MODE.
- PASSWOEEED: 1934
- Current Drum Page Count cannot be erased.

It is possible to erase at NEW DRUM function (USER MODE ⇒ MINTENANCE ⇒ NEW DRUM)

FIRMWARE VERSION	:	1.00
ENGINE VERSION	:	1.00
EMULATION VERSION	:	PCL6 2.32 07-11-2001
	:	1.48 07-19-2001
TOTAL PAGE COUNTS	:	123
CRU PRINTS	:	123
REPLACED TONER COUNTS	:	1
REPLACED DRUM COUNTS	:	1
CURRENT DRUM COUNTS	:	112
PLATEN SCAN PAGE COUNTS	:	23
ADF SCAN PAGE COUNTS	:	10

< SYSTEM DATA LIST >

PATTERN TEST

Using this pattern printout, you can check if the printer mechanism is functioning properly. It is needed in the production progress. Service person doesn't need to use it.

ROM TEST

Use this feature to test the machine'S ROM. The result and the software version appear in the LCD display.

- FLASH VER : 1.00 V
- ENGINE VER :1.00V

DRAM TEST

Use this feature to test the machine's DRAM. The result appears in the LCD display. If all memory is working normally, the LCD shows << O K >>

SRAM TEST

Use this feature to test the machine's SRAM. The result appears in the LCD display. If all memory is working normally, the LCD shows << O K >>

MODEM TEST

Use this feature to hear various transmission signals to the telephone line from the modem and to check the modem. If no transmission signal sound is heard, it means that the modem part of the main board is poor.

SWITCH TEST

Use this feature to test all keys on the operation control panel. The result is displayed on the LCD window each time you press a key.

NOTIFY TONER LOW

With this feature enabled, when the toner becomes low, the toner low information will be sent to a specified contact point, for example, the service company. After you access this menu, select ON, and when the LCD prompts, enter the name and the number of the contact point, the customer's fax number, the model name, and the serial number.

PROGRAM DIAL

It is a function setting transmitting conditions to transmit to specific address preliminary.
When user transmit specific address set this function, the conditions applied automatically.

5-3-5 REPORT/HELP

MSG. CONFIRM

It shows the result of the last send operation.

PROTOCOL LIST

This list shows the sequence of the CCITT group 3 T.30 protocol during the most recent sending or receiving operation. Use this list to check for send and receive errors. If a communication error occurs while the machine is in TECH mode, the protocol list will print automatically.

[illegible]

HELP

It shows a brief description on the machine's basic functions and commands. Use it as a quick reference guide

RECEPTION

This journal shows a specific information concerning reception activities, the time and dates of up to 40 of the most recent receptions.

TRANSMISSION

This journal shows a specific information concerning transmission activities, the time and dates of up to 40 of the most recent transmissions.

SYSTEM DATA

This list provides a list of the user system data settings and tech mode settings.

PHONEBOOK

It lists all telephone numbers that have been stored in the machine.

SCHEDULE JOB

This list shows a specific information on the documents currently stored for delayed transmission. It provides the operation number, starting time, type of operation, etc.

ERROR CODE

It shows error history occurred using product.

5-3-6 Firmware Upgrade

It is a new Firmware, and there are two Upgrade methods by local and remote.

5-3-6-1 Local Machine

RCP(Remote Control Panel) mode

This method is for Parallel Port.or USB Port Connect to PC and activate RCP(Remote Control Panel) to upgrade the Firmware.

< Method >

How to Update Firmware using RCP

1. Connect PC and Printer with Parallel Cable or USB Cable.
2. Execute RCP and select Firmware Update. Current Firmware version and Emulation Version are displayed on Current version window.
3. Search Firmware file to update with Browse Icon.
4. Click Update icon, firmware file is transmitted to Printer automatically and printer is initialized when it finished.
5. Click Refresh icon and check what is updated.

DOS Command mode

This method is just for Parallel Port. Connect to PC with Parallel cable and enter DOS Command to upgrade the Firmware.

< Method >

- a). The first of all, need the files : **down.bat**, **down_com.bin**, **fprt.exe**, and **Rom File**: file name for upgrade.Save the files in the same folder.
- b). In the DOS, input as below and push the enter key. Then, it will be automatically upgraded.
- c) There are two commands for the conditions of product.
 - * When the product is in idle condition
down "rom file"
 - * When the product is in idle condition(TECH MODE → MAINTENANCE → FLASH UPGRADE →LOCAL)
fprt "rom file"
- d) Do not turn off the power while upgrading process.

Remote FAX

This is a function that a fax with the latest firmware sends files to a fax in long distance through telephone line.

< Method >

1. Operate a fax with the latest firmware to prepare it being upgrade.
(TECH MODE MAINTENANCE FLASH UPGRADE REMOTE)
2. Input the fax number, which needs to be upgraded.
(Several faxes can be upgrade at the same time. In this case, enter the each fax number.)
3. After push the enter button, send the firmware file by calling to the appointed number.
(Around 10~15 minutes needs to send the file.)

< Caution >

1. sending and receiving fax must be the same model.
2. A sending fax must be set up as ECM mode, and a receiving memory must be set up as 100%.
If not, the function operates abnormally.

5-4 ENGINE TEST MODE

The Engine Tests Mode supplies useful functions to check conducting condition of engine. It tests the conducting condition of each device and displays the result of the test at the LCD. It is classified in 6. items (0~5), and the functions of items are as bellows.

5-4-1 To enter the Engine Test Mode

Press **MENU**, #, **1, 9, 3, 1** in sequence, and the LCD briefly displays 'T', the machine has entered service (tech) mode.

5-4-2 Diagnostic

No.	Sub No.	Engine test	Remark
0	1	Motor Test	1: On, 2: Off
	2	PTL Test	1: On, 2: Off
	3	Fan Test	1: On, 2: Off
	4	Fuser Test	1: On, 2: Off If its temperature is lower than the Standby (160°C), the fuser is on, but if it is higher than the Standby, the fuser is off.
1	1	LSU Motor Test	1: On, 2: Off
	2	LSU Hsync Test	1: On, 2: Off
	3	LD On Test	1: On, 2: Off
	4	LSU Operation	1: On, 2: Off
2	1	Feed Sensor Test	Sensor On : FEED SENSOR ON Display
			Sensor Off : FEED SENSOR OFF Display
	2	Exit Sensor Test	Sensor On : EXIT SENSOR ON Display
			Sensor Off : EXIT SENSOR OFF Display
	3	Cover Sensor Test	Sensor On : COVER SENSOR ON Display
			Sensor Off : COVER SENSOR OFF Display
	4	1'st CAST Empty Test	Sensor On : 1'st PAPER Empty Display
			Sensor Off : 1'st PAPER No Empty Display
	5	MP Empty Sen Test	Sensor On : MP PAPER Empty Display
			Sensor Off : MP PAPER No Empty Display
	6	BIN FULL Sen TEST	Sensor On : BIN FULL SEN ON Display
			Sensor Off : BIN FULL SEN OFF Display
3	1	1'st CAST Solenoid Test	1: On, 2: Off
	2	MP Solenoid Test	1: On, 2: Off
	3	Duplex Solenoid Test	1: On, 2: Off
4	1	MHV Test	1: On, 2: Off (-1450v)
	2	DevBias Test	1: On, 2: Off (-450v)
	3	THV EN/NEG Test	1: On, 2: Off
	4	THV Test	1: On, 2: Off (1300v)
	5	THV Trigger Test	1: On, 2: Off
5	1	All Function Test	For SMD Test, Push up key : Next function All Function : No.0~4

5-4-3 ENGINE PRINT

When the function is on, sentence to explain the condition of engine is printed in the below section of the printing output.

It is needed in the development progress. Service person doesn't need to use it.

5-5 Troubleshooting

5-5-1 Scanner

5-5-1-1 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 = 2.5V - U16-98 = 3.3V - U16-99 = 1.5V
	• Check turning the CCD Lamp on when operating.	• If the CCD is defective, replace it. - CN3-19 is 5.8V when white original copying for R, B and 3.5V for G.
Black copy	• Check the CCD problem in Main PBA.	• Check the CCD harness contact.
	• Check shading profile.	• Remake shading profile in the tech mode.
	• Check the CCD problem in Main PBA.	• If the CCD is defective, replace it. - Cn3-19 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 Motor and any mechanical disturbance.	• Check the right position of the Scanner Motor, 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. - U55-1 or U55-15 = 0V to 24V swing signal when operating.

5-5-1-2 PC-Scan

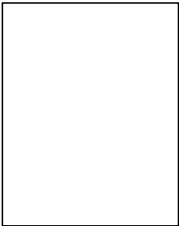
PROBLEM	ITEMS TO BE CHECKED.	HOW TO SOLVE
Scanning Error	• Check the printer cable installed.	• Check correct installation, and use standard IEEE1284 cable.
	• Check how TWAIN driver is installed.	• Remove any other scanner driver. • Reboot after reinstallation of the TWAIN driver.
	• Check the printer port(Parallel).	• Check the parallel-port-related items in the CMOS Setup. As a printer port, Select ECP among SPP(Normal), ECP, and EPP modes(increase print-ing speed)
	• Check harness contact.	• Check CN14 contact in Main PBA
	• Check the IEEE1284 signal level.	• If any signal level is defective, replace Driver PBA. - U36-66~74 in Main PBA = 0.8V to 2.4V TTL signal. • Otherwise, replace Main PBA.
	• Check the USB signal level.	• If USB signal level is defective, 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 Motor and any mechanical disturbance.	• Check the right position of the Scanner Motor, 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. - U55 or U56-1 = 0V to 24V swing signal when operating.

5-5-2 FAX

5-5-2-1 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 CN1 (LIU PBA). c) Check relay operation of LIU PBA : Is the control signal of CN20-7(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 CN20-7(main) is high. Replace LIU PBA if high but phone line cannot be connected.
Cannot MF dial	• Check CN20 (main PBA), MAIN-LIU harness, and CN1 (LIU PBA)	• Replace defective parts.
MF dial is possible but not DP dial.	• Check DP control signal of CN20-11 of MAIN PBA and the circuit around R15. U6 and Q2 of Liu PBA.	• Replace LIU PBA.
Defective fax transmission	• Check CN20 (main PBA), MAIN LIU harness, and CN1(LIU PBA). • Is the external phone hooked off? • Check 'hook off' : Refer to 'TEL LINE CANNOT BE ENGAGED' above. • Check the control signals of CN20-11. • Check transmission path : Check output of CN20-3.4 and T2-4(LIU PBA). • Check reception path : Check output CN1-1 (LIU PBA) and input of CN20-1 (main PBA).	• Replace defective parts. • 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 CN1-1(LIU PBA) is not confirmed. Replace main PBA if CN20-1(MAIN PBA) is not confirmed.
Defective automatic fax reception	• Is the ring checked? Check ring pattern at CN1-9 (LIU PBA). • Refer to 'Defective Transmission.'	• Replace LIU PBA if it cannot be checked. • Refer to 'Defective Transmission'.

5-5-3 Print Quality

Error Status	Check	Solution
Vertical black line and band 	1. Bad blade of Toner cartridge 2. LSU	1. Change Toner cartridge 2. Replace LSU
Vertical white line 	1. LSU window contamination 2. Toner cartridge	1. Clean LSU window 2. If not LSU, change Toner cartridge.
No image 	1. Seal tape is removed? 2. GND OPC is well grounded? 3. LSU running well? 4. Bias voltage is normal? 5. Lower toner? 6. Is there video data from Main PBA	1. Removing seal tape 2. Measure the resistance between frame ground and the ground spring attached frame. Confirm stable ground. Unless bad ground, detach cabinet, check where is bad point 3. Adjust LSU or replace it 4. Normal Dev bias = -350V 5. Shake toner cartridge and print. If a little good, toner is empty 6. Test engine test pattern, replace Main PBA
Light image 	1. Check seal tape removing 2. LSU light power normal? 3. Enough toner? 4. High charger voltage? 5. Lower bias voltage 6. Contamination of high voltage contact. 7. Transfer voltage and roller.	1. Check and remove tape 2. LSU light power check is difficult. Compare with new one and check. 3. Check toner and developer counter 4~5. Measure all high voltage output. 6. Leakage toner cause bad contact and increase contact resistance. Clean contaminated area.
Dark image 	1. LSU light power normal? 2. Bias voltage output is high? 3. Video data is always supplied?	1. Check the rated level and replace. 2. Set to power rating. 3. Replace defected board.

Error Status	Check	Solution
Background Digital Printer Digital Printer Digital Printer Digital Printer Digital Printer	1. High voltage output is normal? 2. C/R of Toner cartridge is contaminated?	1. Adjust to the rated status. 2. Replace Toner cartridge.
Ghost Digital Printer Digital Printer Digital Printer	1. High voltage output. 2. Pre-Transfer Lamp. 3. Bad high voltage contact.	1. Check every high voltage. 2. Check the turn-on PTL, LED crash. 3. Clean the inside machine or replace toner cartridge.
Stains on back of paper	1. Contamination of transfer roller. 2. Stains of paper path. 3. Pressure roller's contamination.	1. Clean the transfer roller with vaccum cleaner. 2. Clean the area of paper path with cloth or air cleaner. 3. Remove fuser and replace it.
Poor Fusing	1. Use recommended paper? 2. Check fusing temperature. 3. The machine was under the low temperature for a long time?	1. Should use recommended paper. 2. Check engine controller board. If you have not thermometer, measure the thermistor voltage to CPU, If $2.3V \pm 5\%$ in printing CPU works well. Then, disassemble fuser and check the thermistor contact and thermistor. 3. Re-check after putting the machine in the warm place for certain period.
Partial blank image (not periodic)	1. Toner is low? 2. The toner cartridge is out of position?	1. Replace Toner cartridge. 2. Check and adjust.

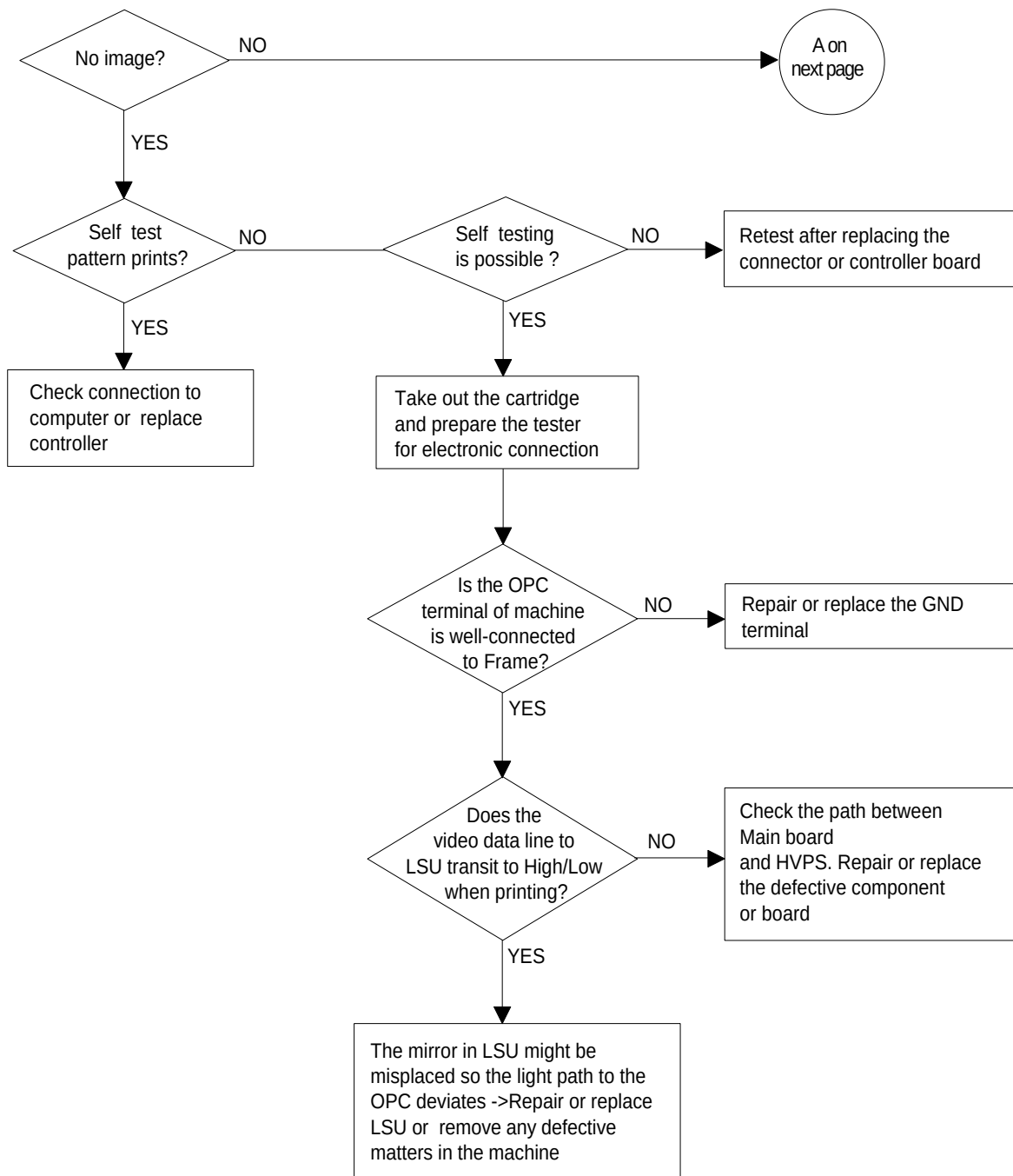
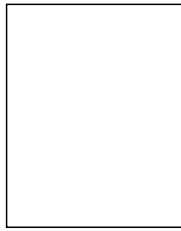
Error Status	Check	Solution
Partial blank image (periodic)	1. Develop roller scar or particle. 2. Scar or particle. (94 mm) 3. Transfer roller scar or particle . (47 mm)	1~2. Replace toner cartridge. 3. Replace transfer roller.
Different image density (left and right) 	1. Charge roller's pressure force unbalance 2. Dev. roller and OPC or Dev. roller and blade's pressure force unbalance 3. Transfer roller's pressure force unbalance of each side	1~2. Change toner cartridge 3. Check left and right spring of transfer roller and the spring pressing the developer inside the machine
Horizontal band 	1. Unstable high voltage contact 2. Charge roller's contamination 3. Contamination of heat roller 4. Malfunction of LSU	1. Clean each contact and check good contact 2. Clean charge roller 3. Replace fuser unit 4. Check Main PBA.

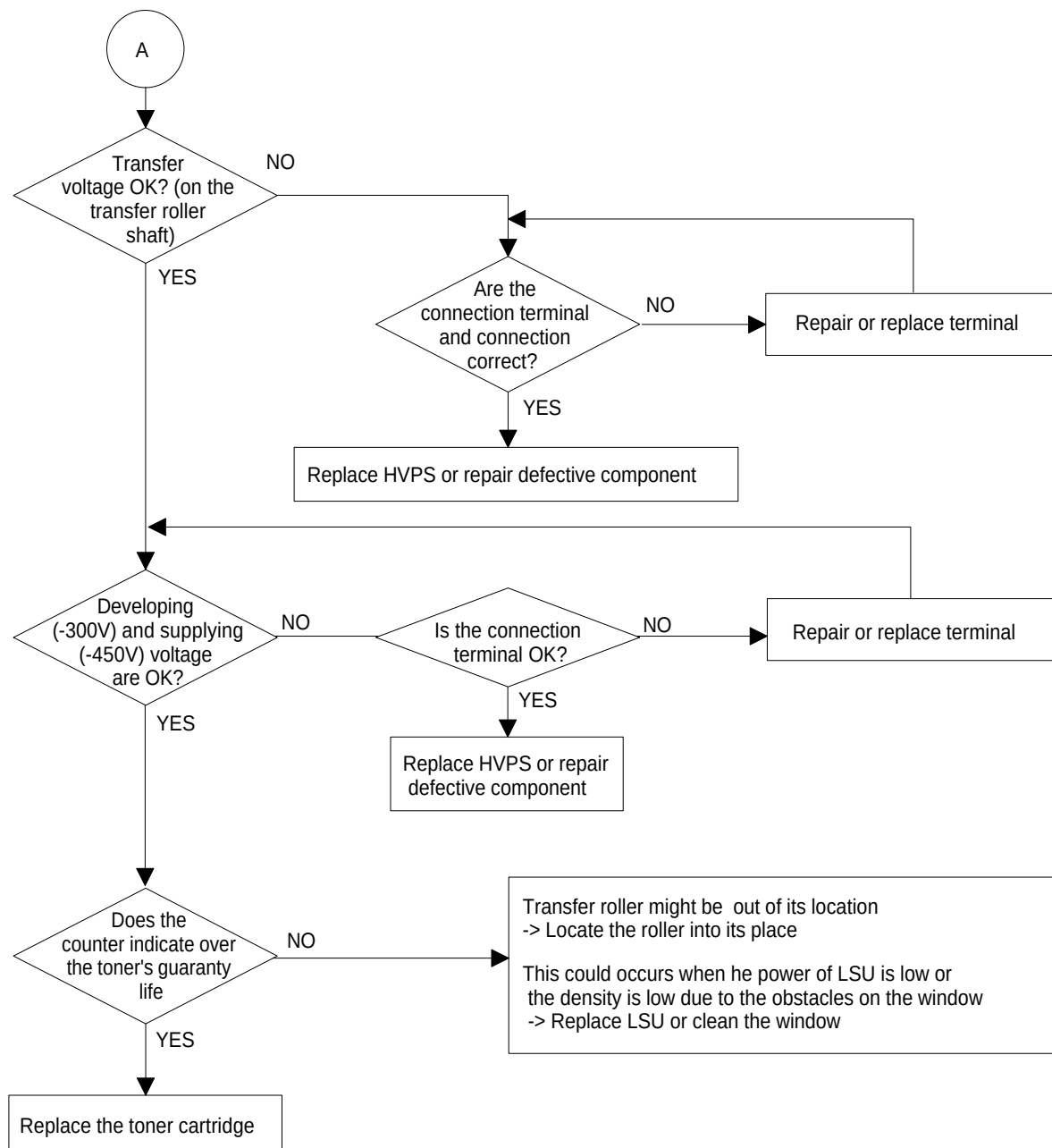
Abnormal Image Printing and Defective Roller

If abnormal image prints periodically, check the parts shown below

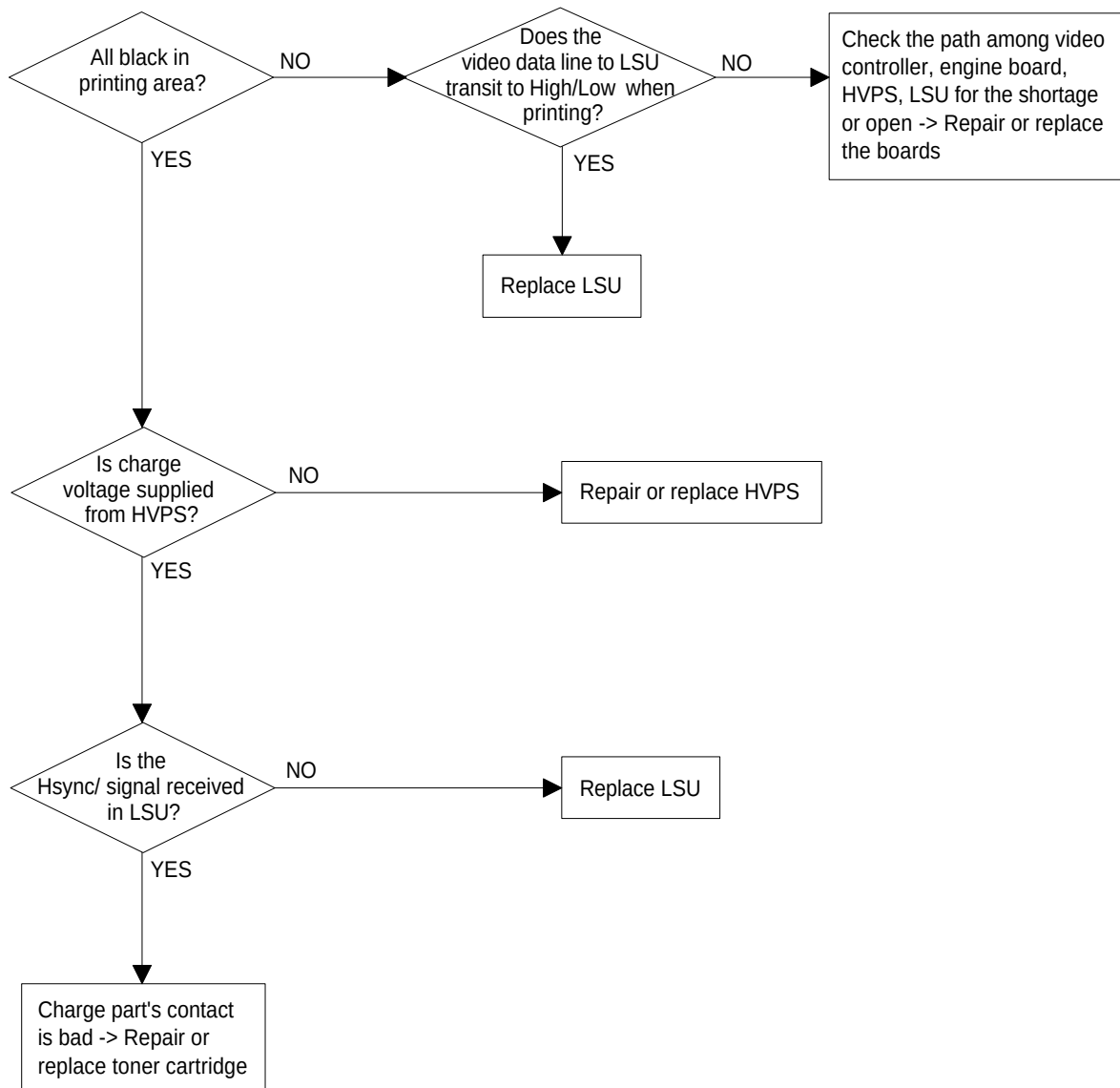
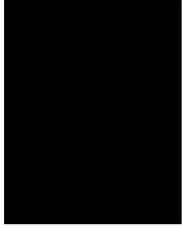
NO	Roller	Abnormal image period	Kind of abnormal image
1	OPC Drum	94.3 mm	White spot. Black spot
2	Charge Roller	37.7 mm	White spot. Black spot
3	Supply Roller	35.8 mm	Horizontal dark band
4	Develop Roller	44.8 mm	Horizontal dark band
5	Transfer Roller	57.8 mm	Black side contamination/transfer fault
6	Heat Roller	82.5 mm	Black spot, White spot
7	Pressure Roller	78.5 mm	Black side contamination

No Image



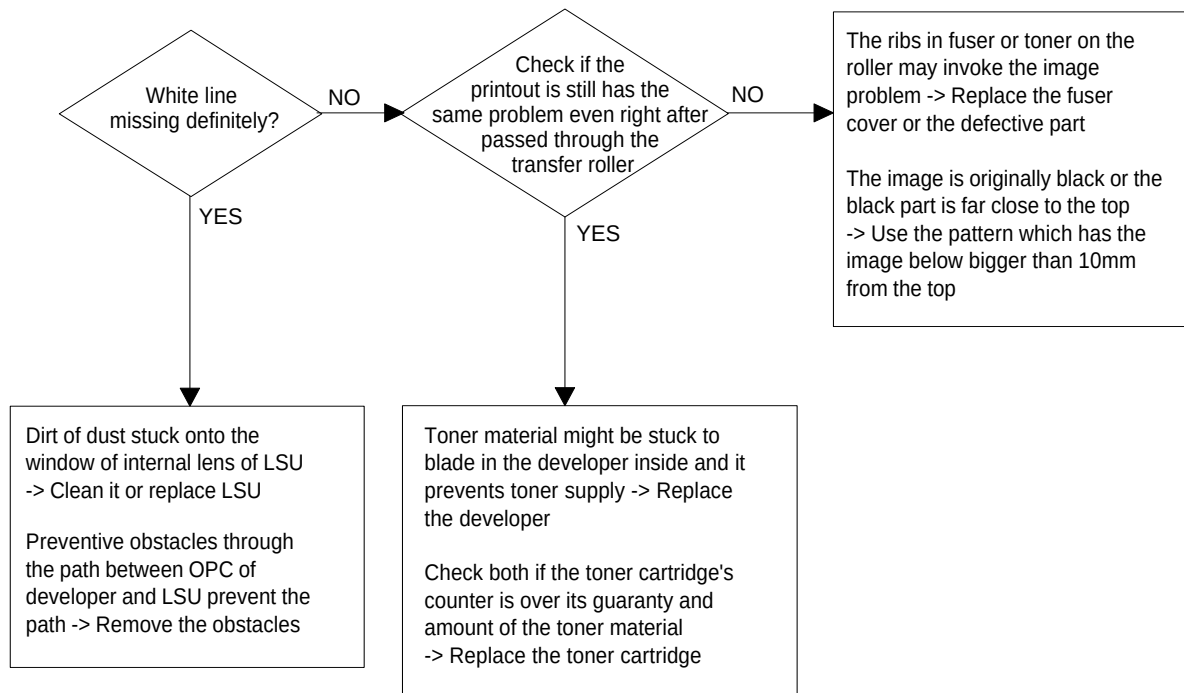


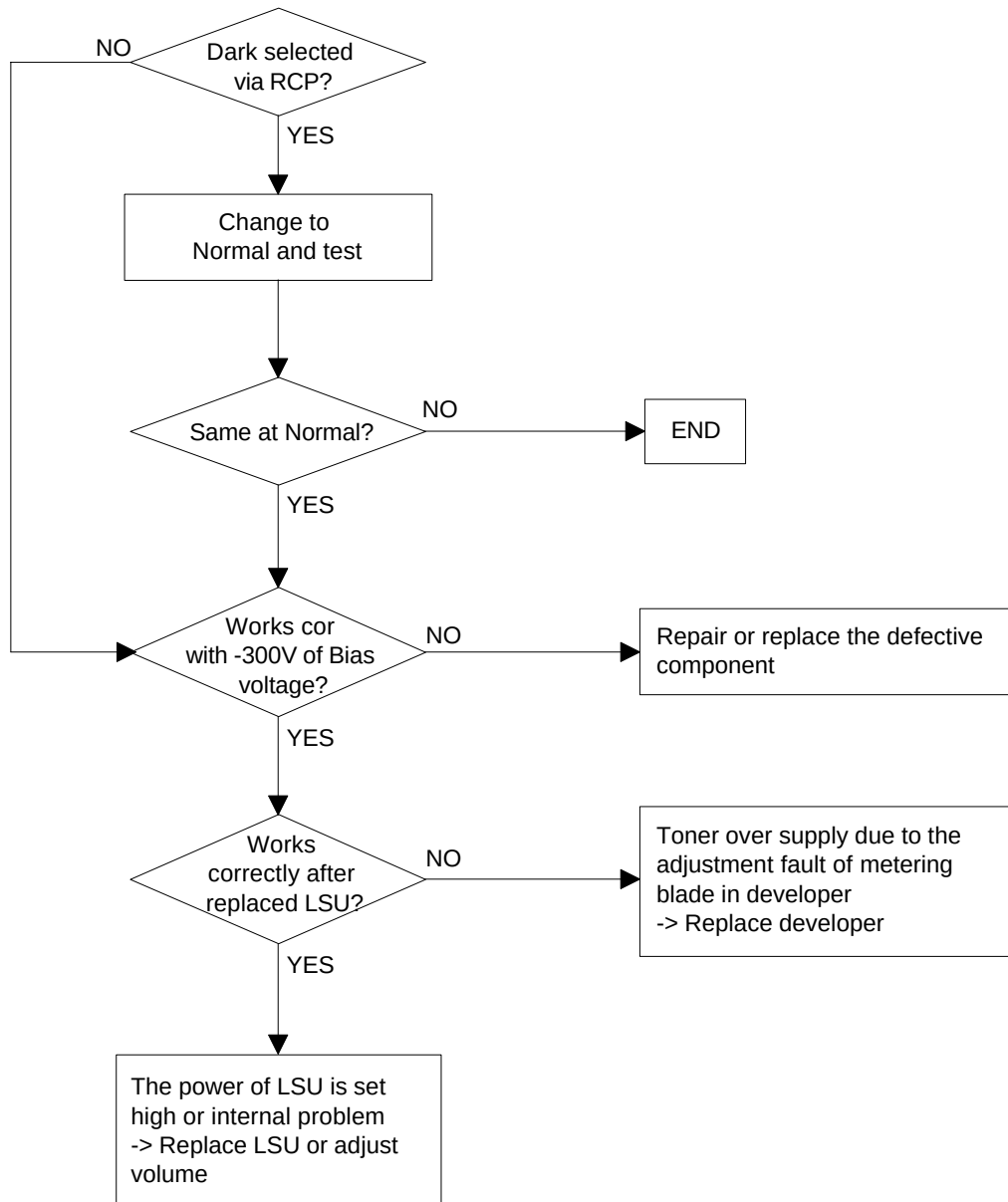
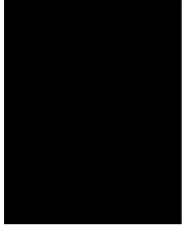
All Black



Vertical White Line (Band)

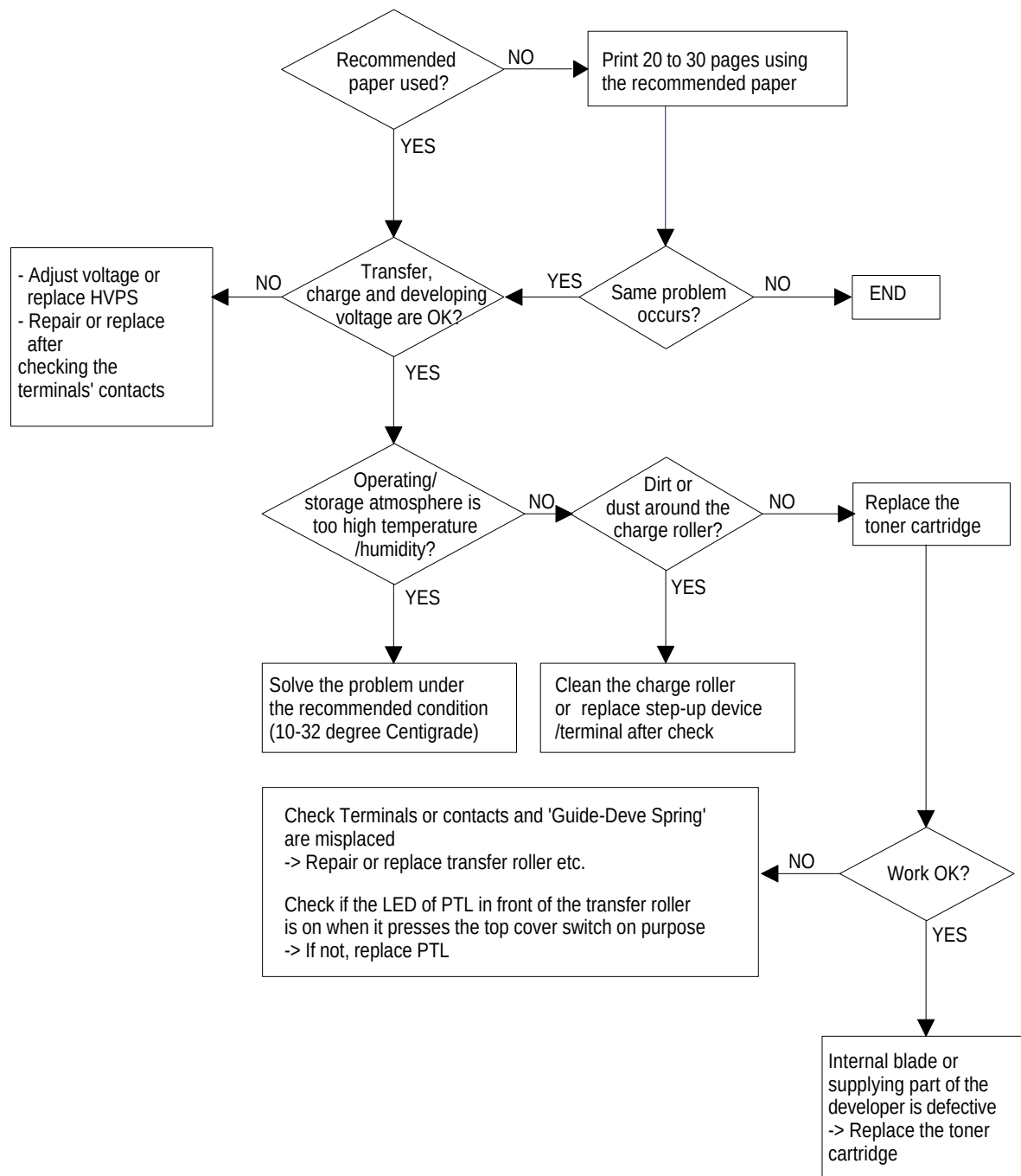
Digitizer Printer
Digitizer Printer
Digitizer Printer
Digitizer Printer
Digitizer Printer



Dark Image

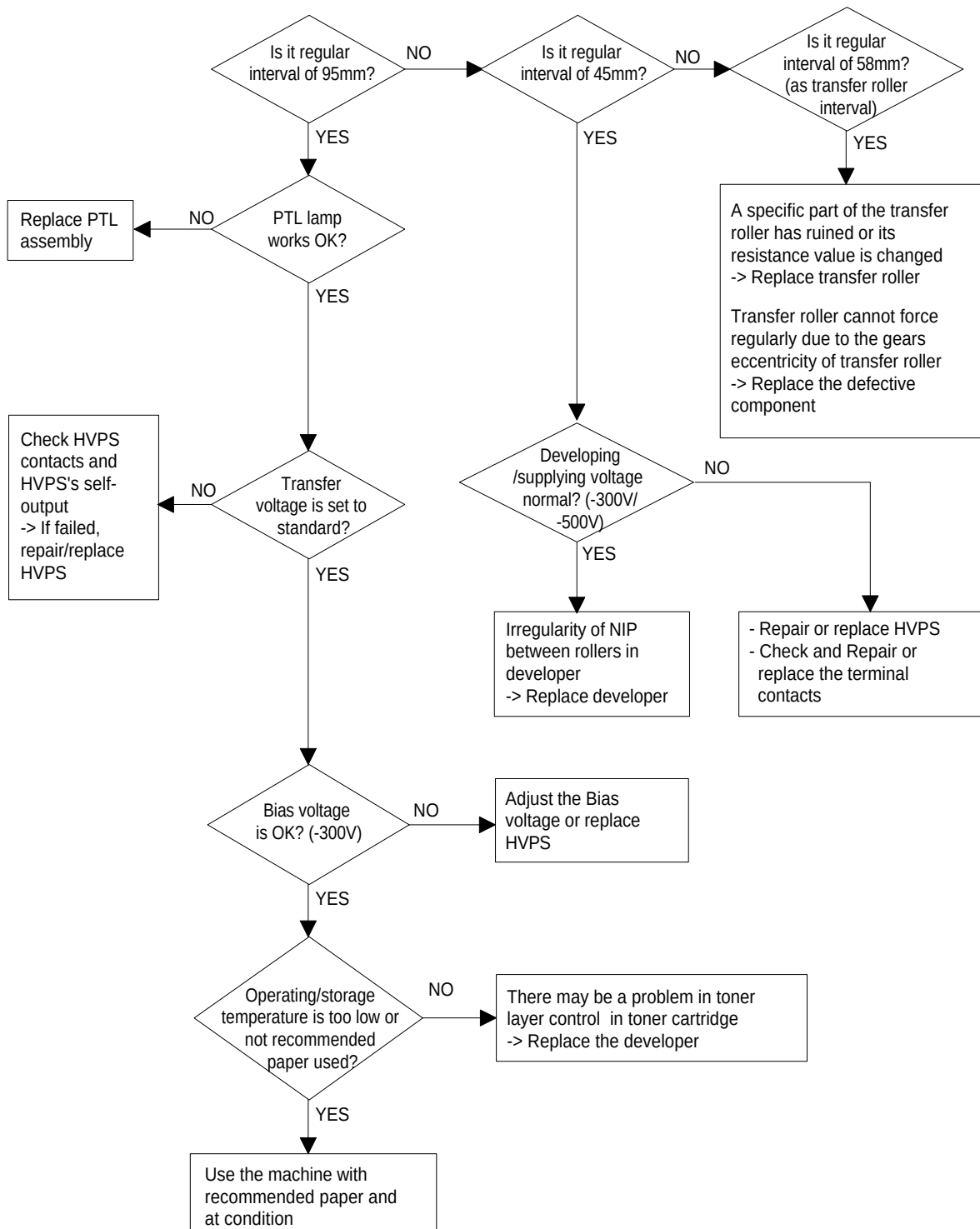
Background

Digital Printer
Digital Printer
Digital Printer
Digital Printer
Digital Printer

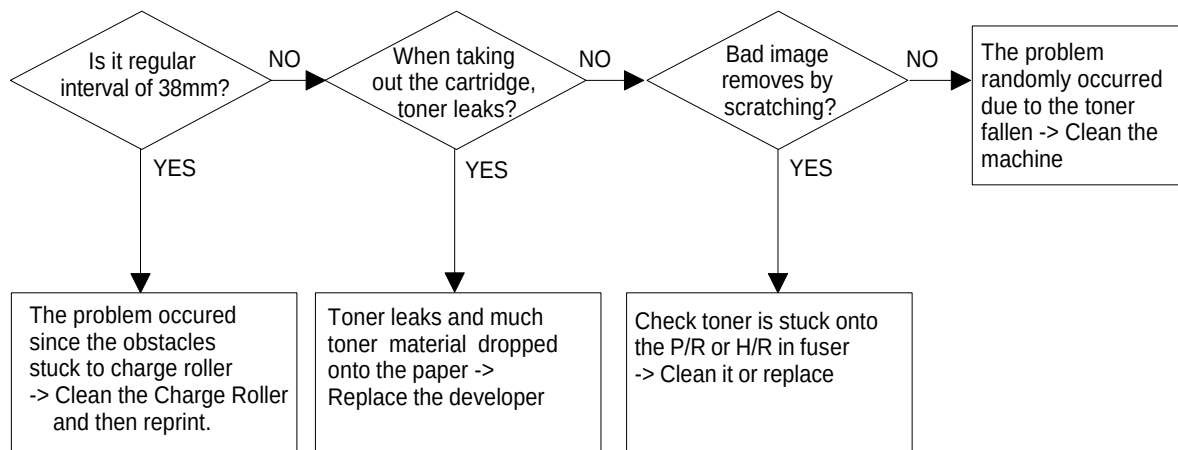


Ghost

Digital Printer
Digital Printer
Digital Printer
Digital Printer



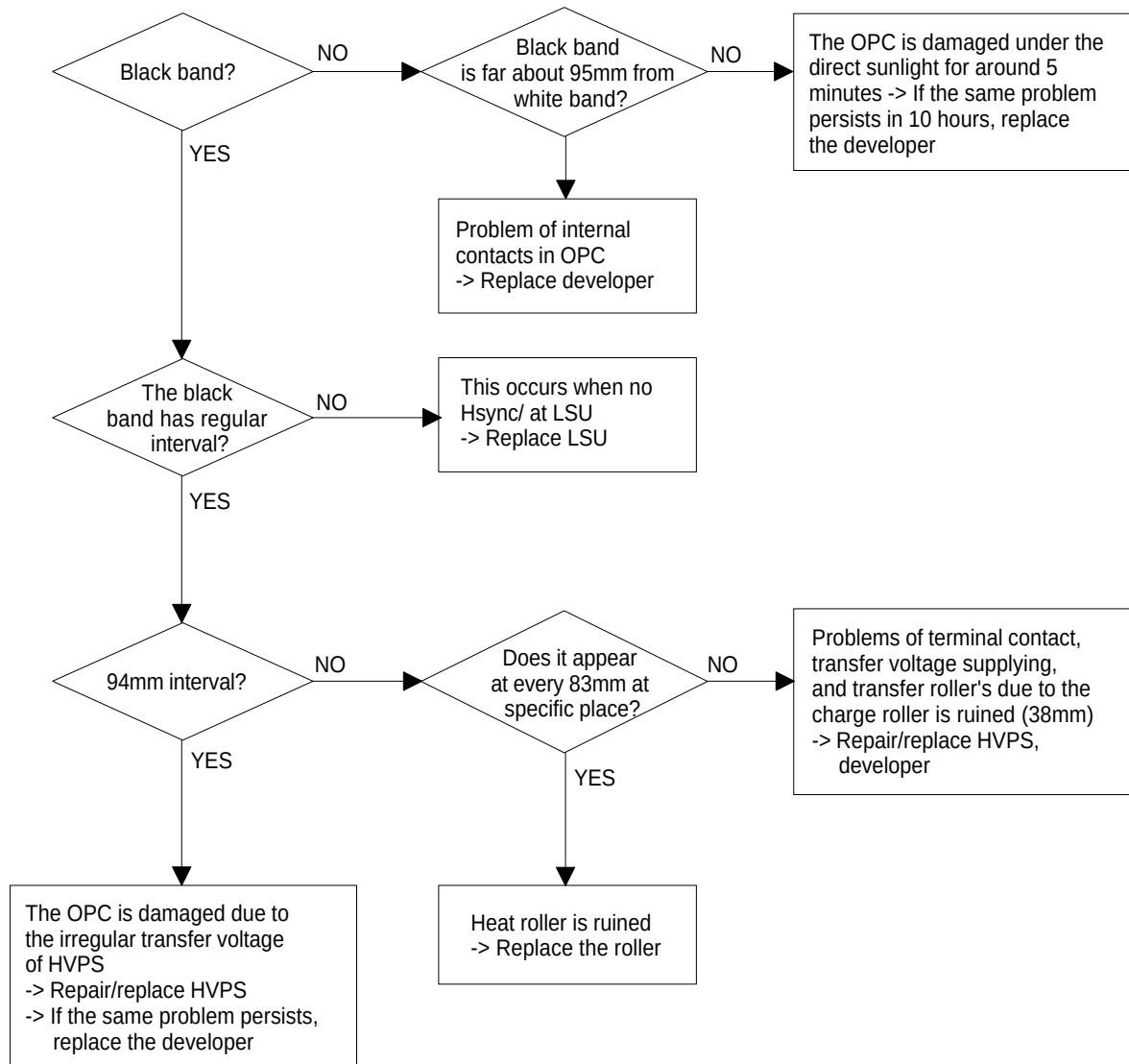
Black Spot



Horizontal Band

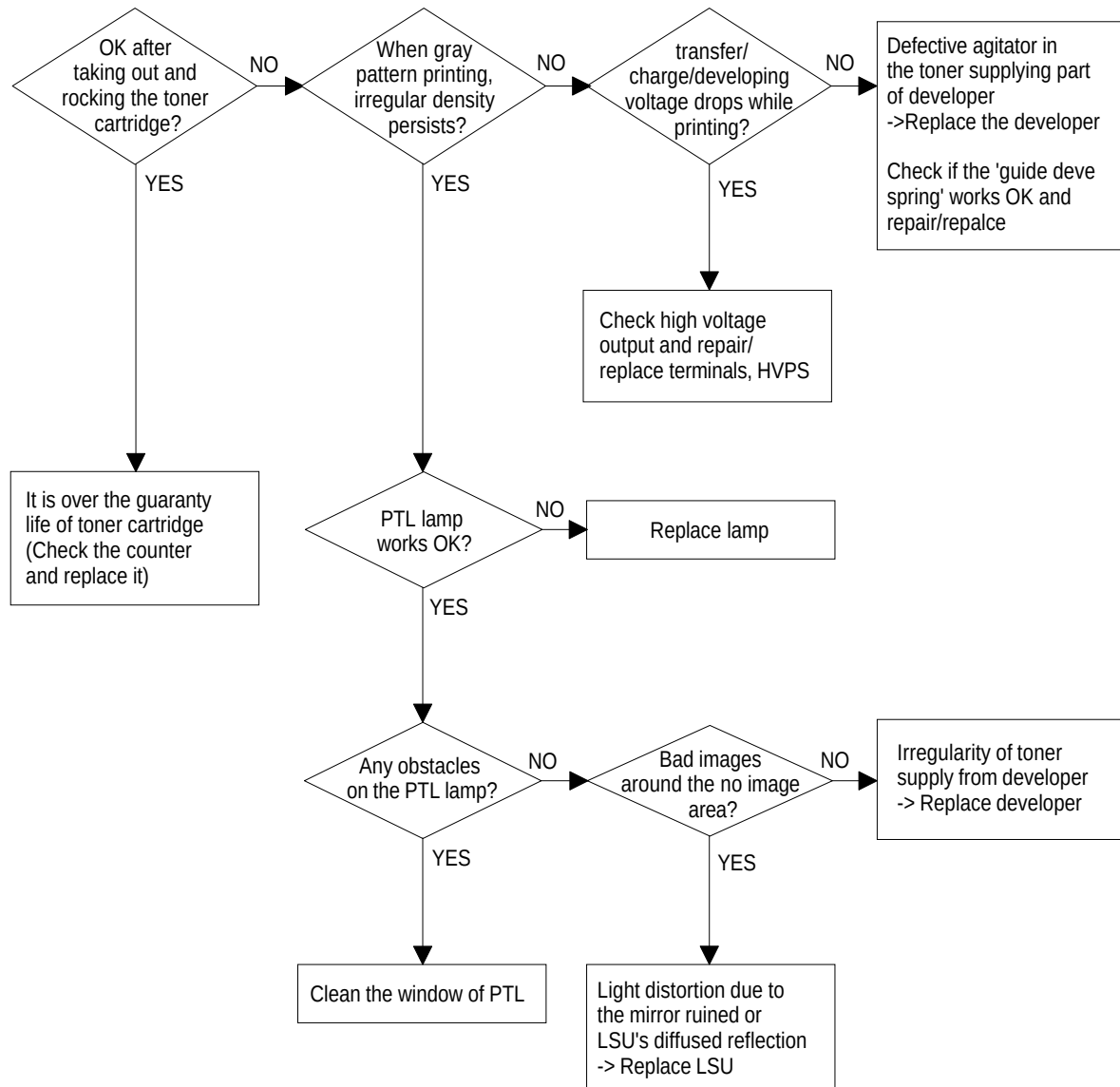
~~Digital Printer~~
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Digital Printer



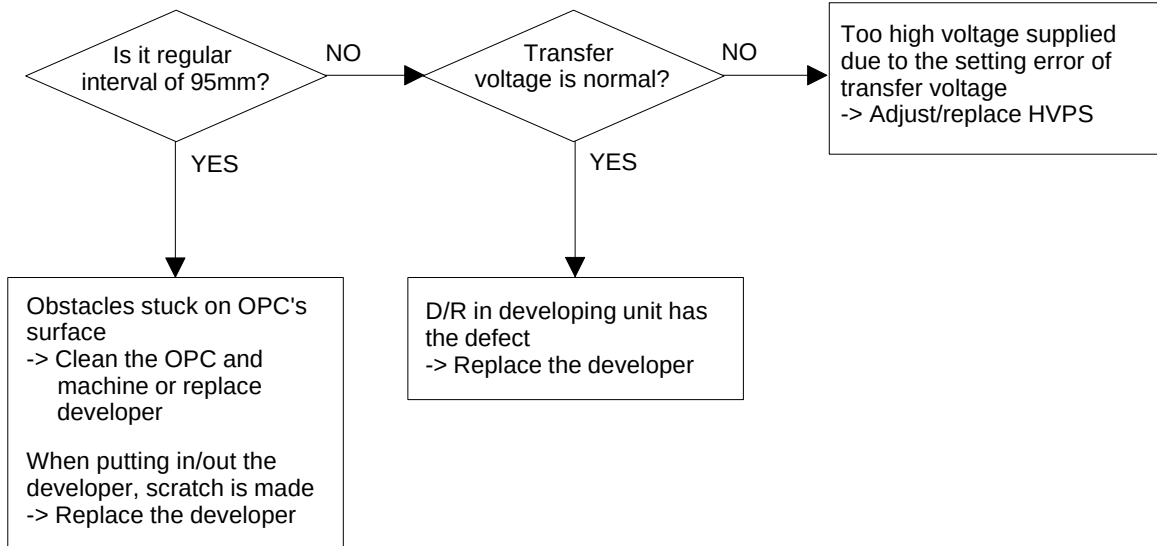
Irregular Density

Digital Printer
Digital Printer
Digital Printer
Digital Printer
Digital Printer

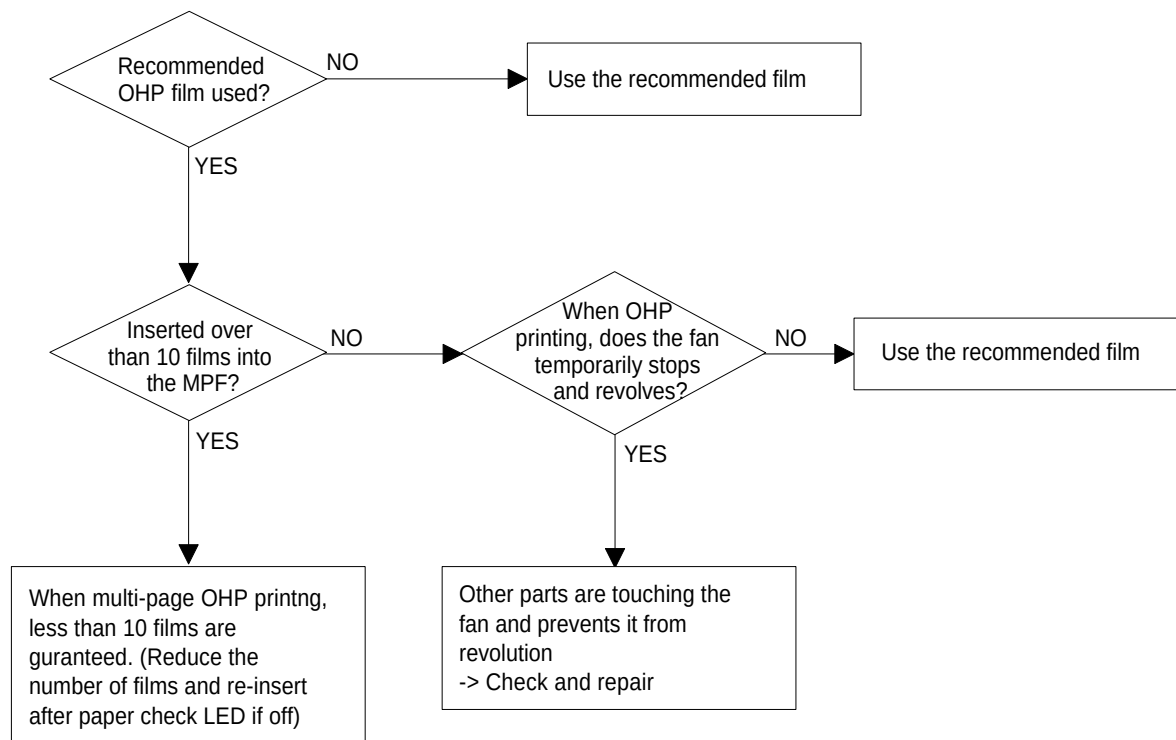


White Spot

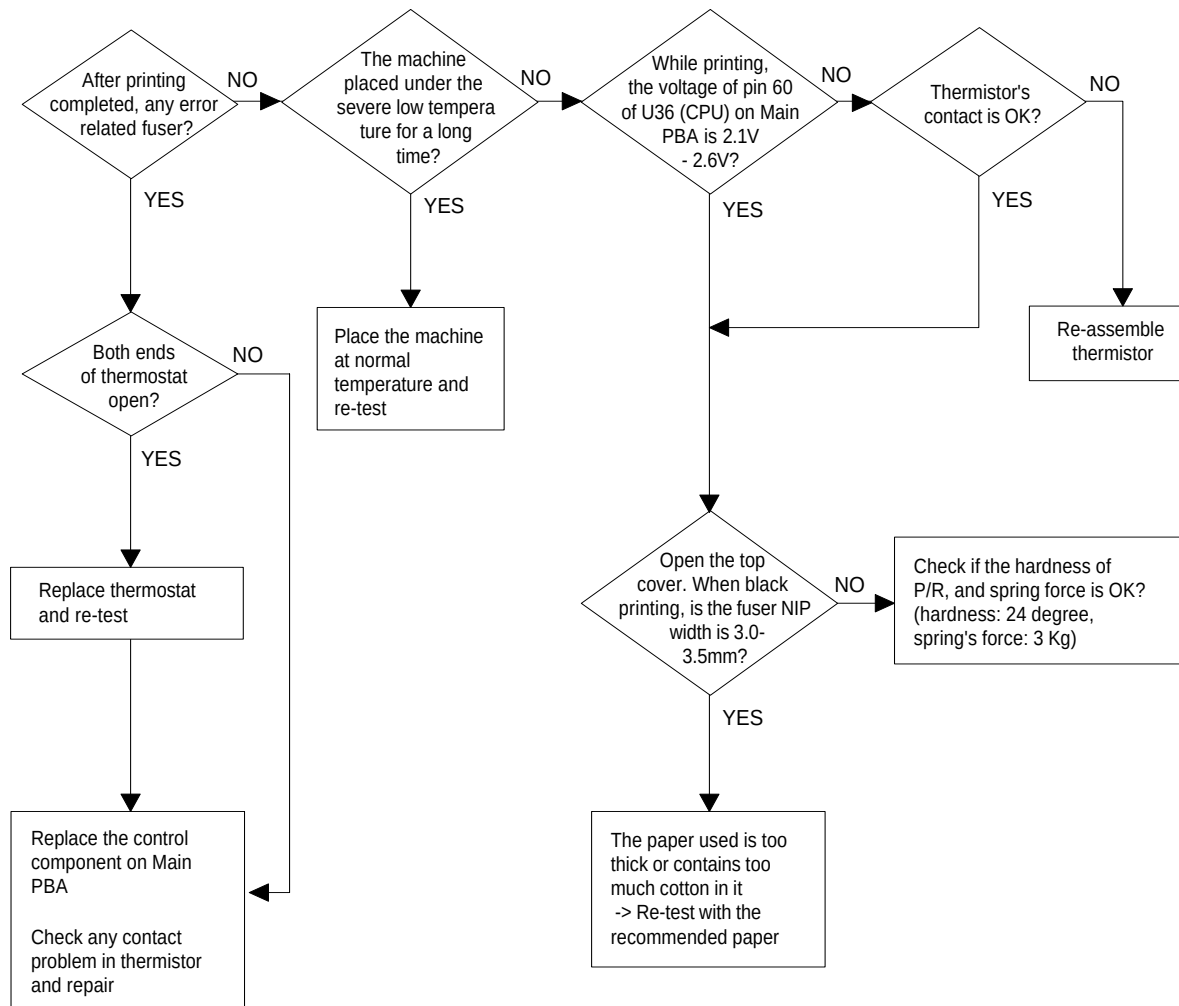
Digital Printer
Digital Printer
Digital Printer
Digital Printer
Digital Printer



Trembling at the End When OHP Printing



Poor Fusing Grade

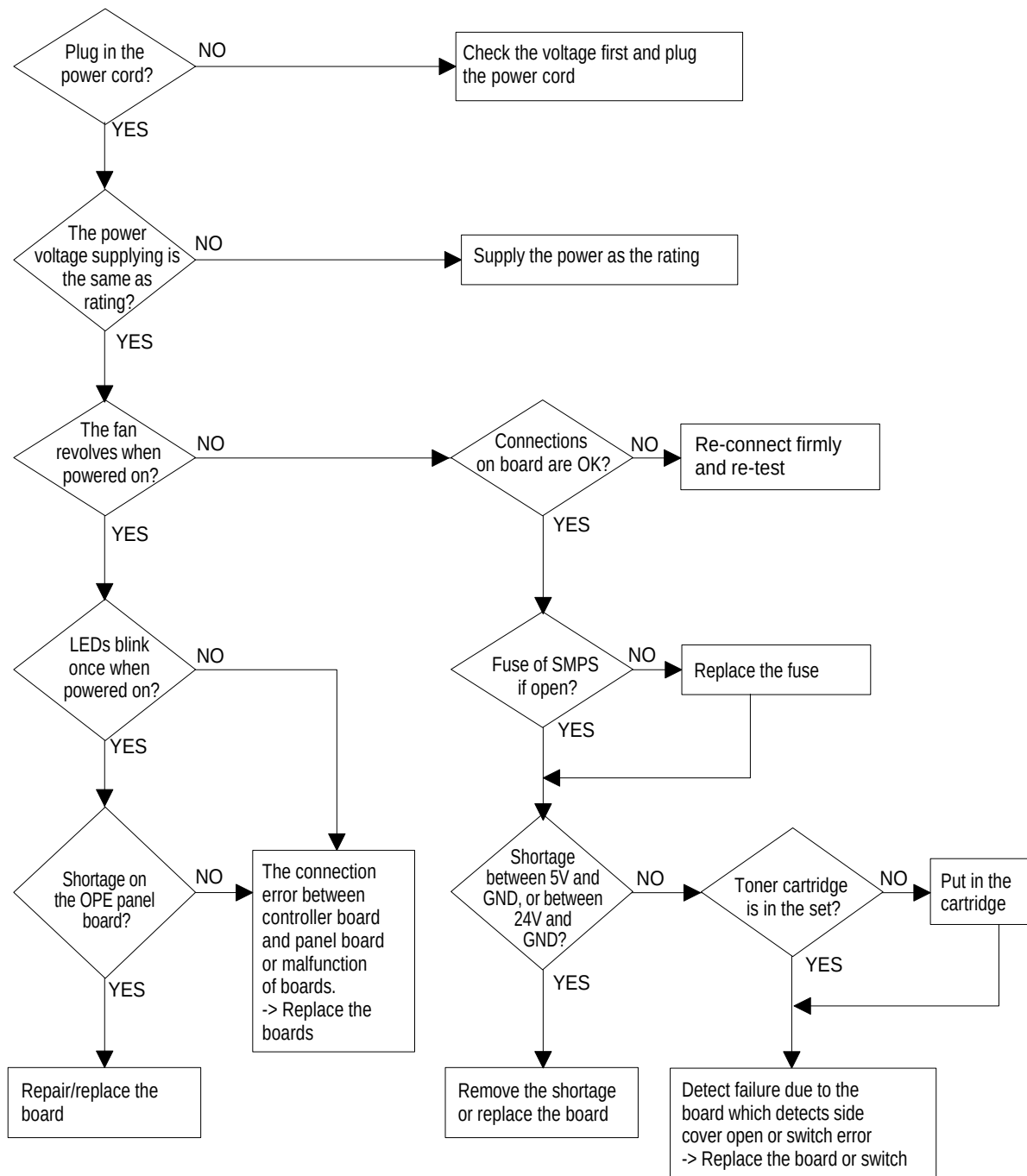


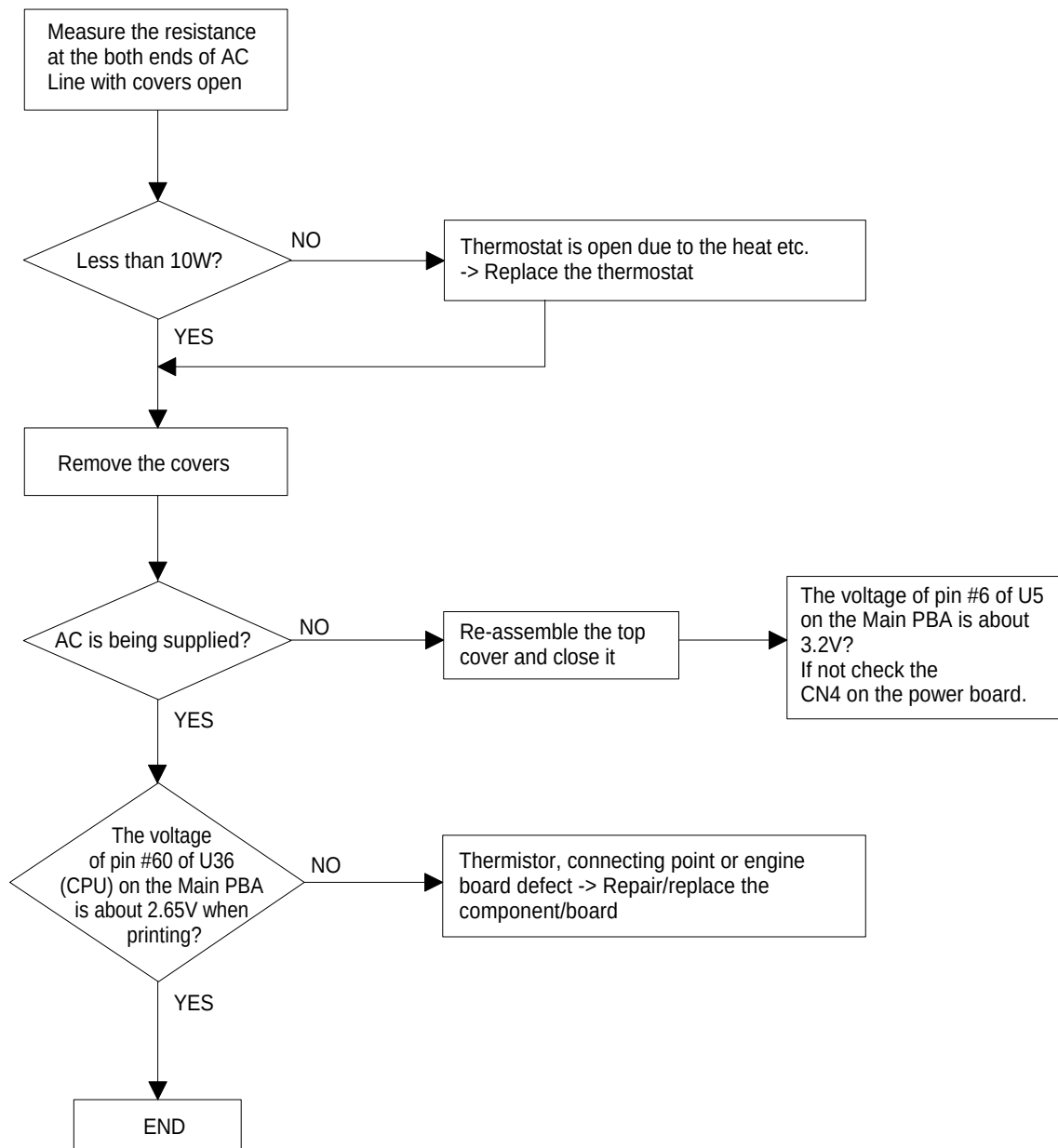
5-5-4 Malfunction

Error Status	Check	Solution
No power	1. Check power is supplying 2. Check fuse F1 open	1. If supplying power differs from machine's power rating, replace the machine. 2. Replace it.
Fuser Error	1. Thermostat open 2. AC wire open 3. Thermistor wire open 4. Main PBA	1. Detach AC connector and measure the resistance between pin 1 and 2. If it is megohm, thermostat is open, Replace it. 2. Check bad connector contact or wire is cut. 3. Check thermistor wire and its connection. 4. Replace Main PBA
Cover open	1. When close Side cover, check the lever is pressed 2. Micro switch's contact 3. CPU and related circuit	1. Open Side cover and press the lever with pen. If Controller detects cover close, there is some mechanical trouble in Side cover and lever's assembly. If not so there is electrical problem.
Jam 0	Check where Jam 0 happens 1. Paper is not picked up 2. Paper is located in feed sensor 3. Happened when inserting specific papers such as envelope into the MPF (Multipurpose Paper Feeder)? 4. Happened when inserting specific papers such as envelope into the Manual Feeder? 5. Is the Stacker Extender is folded out? 6. Does not the Guide Adjust distort the papers	1. Check whether solenoid is working or not by using Engine test mode 2. Check feed sensor malfunction. 3. Re-try inserting a few papers. •fan the papers and align •take out the loaded papers and insert them reverse direction 4. Take out the loaded papers and insert them reverse direction •inserted papers as recommended for Manual Feeding? •When loading, tap the papers until paper detect sensor senses loading 5. When using long papers, use the Stacker Extender 6. Adjust Guide to fit the paper width
Jam 1	Paper is stopped in just after of fuser unit.	1. It is mostly resulted from double feeding. Check paper is well stocked in feeder. 2. Check feed actuator position and actuator's operating. There may be stiff moving or double reflection. If not so, check the operation of feed sensor by Engine test mode. 3. Check exit lever operation. Remove jam and check actuator moving by hand. If actuator is too stiff, paper is wrapped around the heat roller. Remove obstacles or replace.
Jam 2	Check where Jam 2 happens 1. Paper is curled and cannot exit. 2. Paper is curled in the exit cover?.	1. Remove paper using pinset or some tool and watch if separate claws have any trouble. Clean around fuser. 2. Check locking works well. Watch whether the ribs of exit cover have any burr or resistive edge. If they do, remove obstacles or replace.

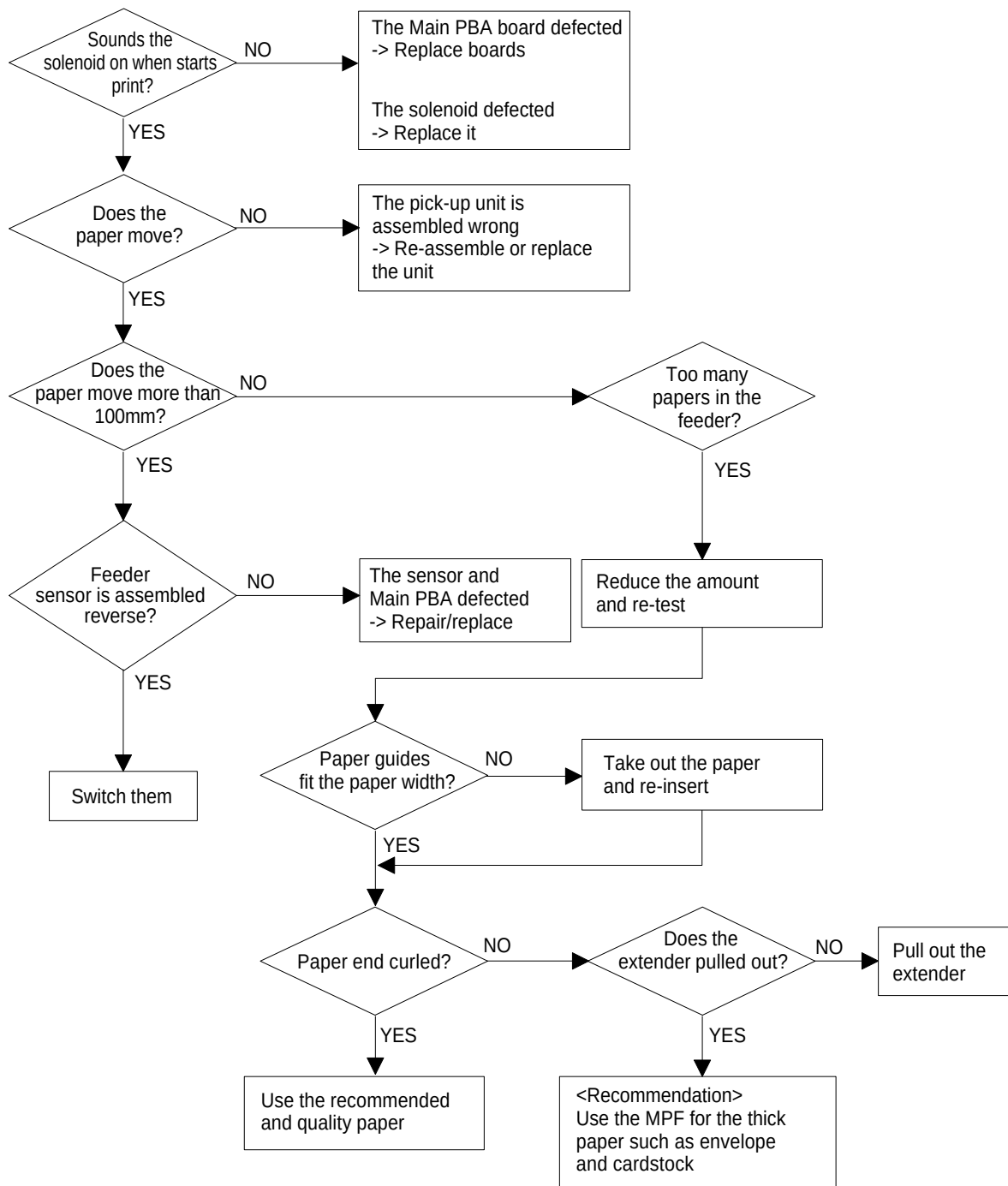
Error Status	Check	Solution
Jam 2 at face-down tray	1. Then paper is not drawn in because of the stack of papers in the Out tray. 2. Does it curl while coming out?	1. Load recommended quantity of papers 2. Open the Cover Front and check whether roller or spring, which are related to paper out, is not out of position. If so, re-locate or replace.
Clutch error	1. Check the spring of solenoid 2. Check the armature assembly/cushion 3. Electrical check	1. Check whether the spring is expanded or not. 2. Check armature is well installed. It may be unstable assemble. 3. Remove the Main PBA.
High voltage error	1. Check the terminal output voltage 2. Check HVPS	1. Remove the Toner cartridge and open the cover and press cover open switch lever and measure the voltage with high voltage probe and sending printing data. If the voltage is normal, change the toner cartridge. 2. Disassemble the left side cover, and check HV of the solder side of HVPS and change it.
Feeding obstacles	Does the Plate-knockup prevent the paper loading?	MPF : Turn the power off and on. Open and close the Side cover to return to the original state. Cassette : Adjust Guide to fit the paper width.
Skew	Is the Guide adjust set to the paper width?	Fit the paper width using the Guide adjust.
Stacking	1. Took out the Stacker extender to support long papers? 2. Stacked too many papers more than Stacker can hold?	1. Use extender as per the paper length. 2. The Face-up stacker normally can hold 100 pages when using 75g/m2, however, stacking capacity can be lowered depending on the type of papers.
Engine Error	Check CBF Harness_CN7. (Main PBA to LSU)	Refer to troubleshooting "ENGINE ERROR".
Document Jam	Document is not picked up(in ADF).	1. Check document is well stocked in ADF. 2. Check whether document was been fastened together by staple or clip. 3. Load recommended quantity of papers.
	Document is stopped after it has fed into the ADF.	1. Check whether the Reg. sensor is working or not. 2. Check whether the Feed Roller is working or not.
	Does it curl while coming out?	1. Check the Open Cover whether there are bosses. 2. Check the ADF ass'y is well assemble.

No Power (LCD NO display LED Off)

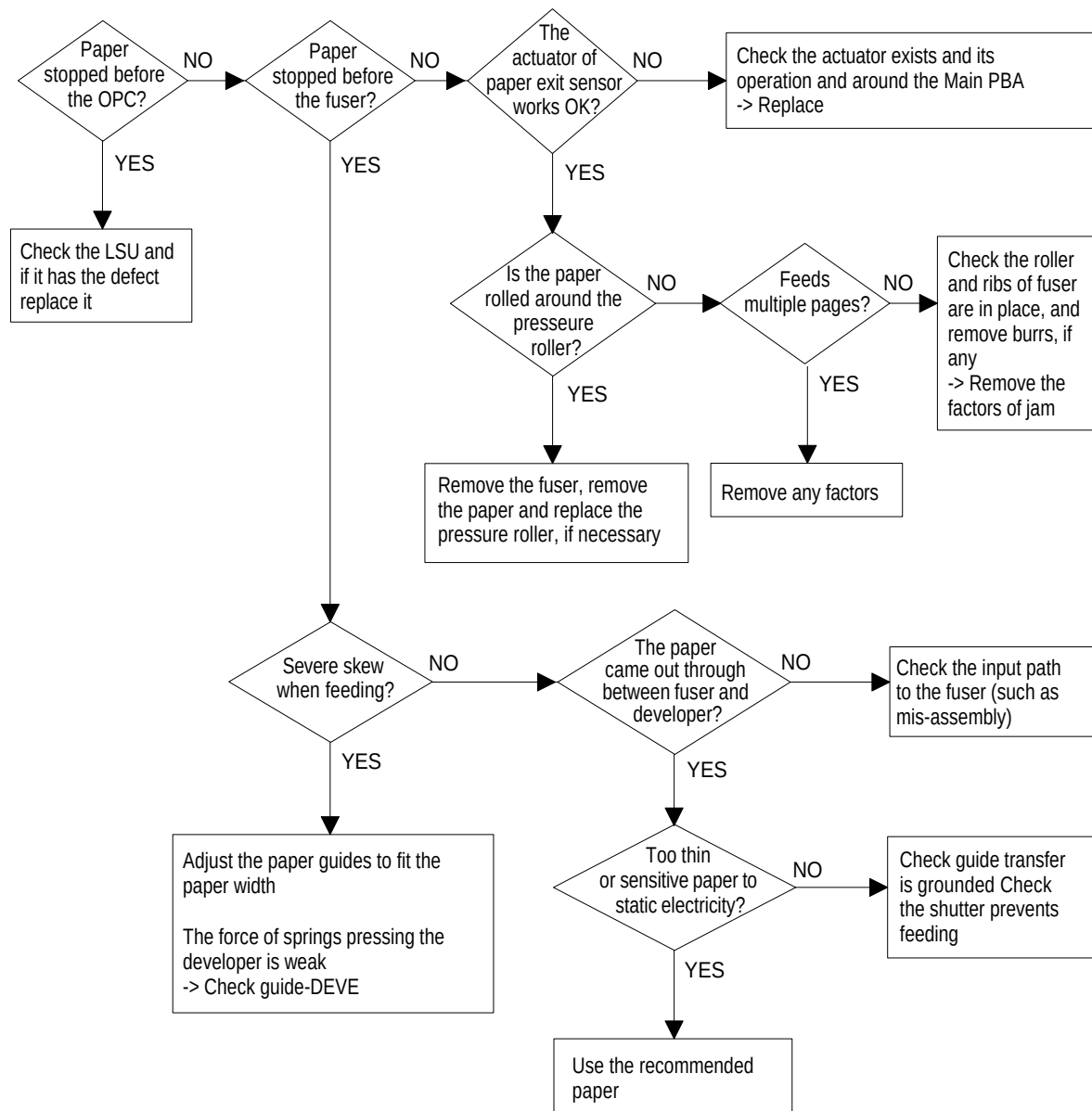


Fuser Error

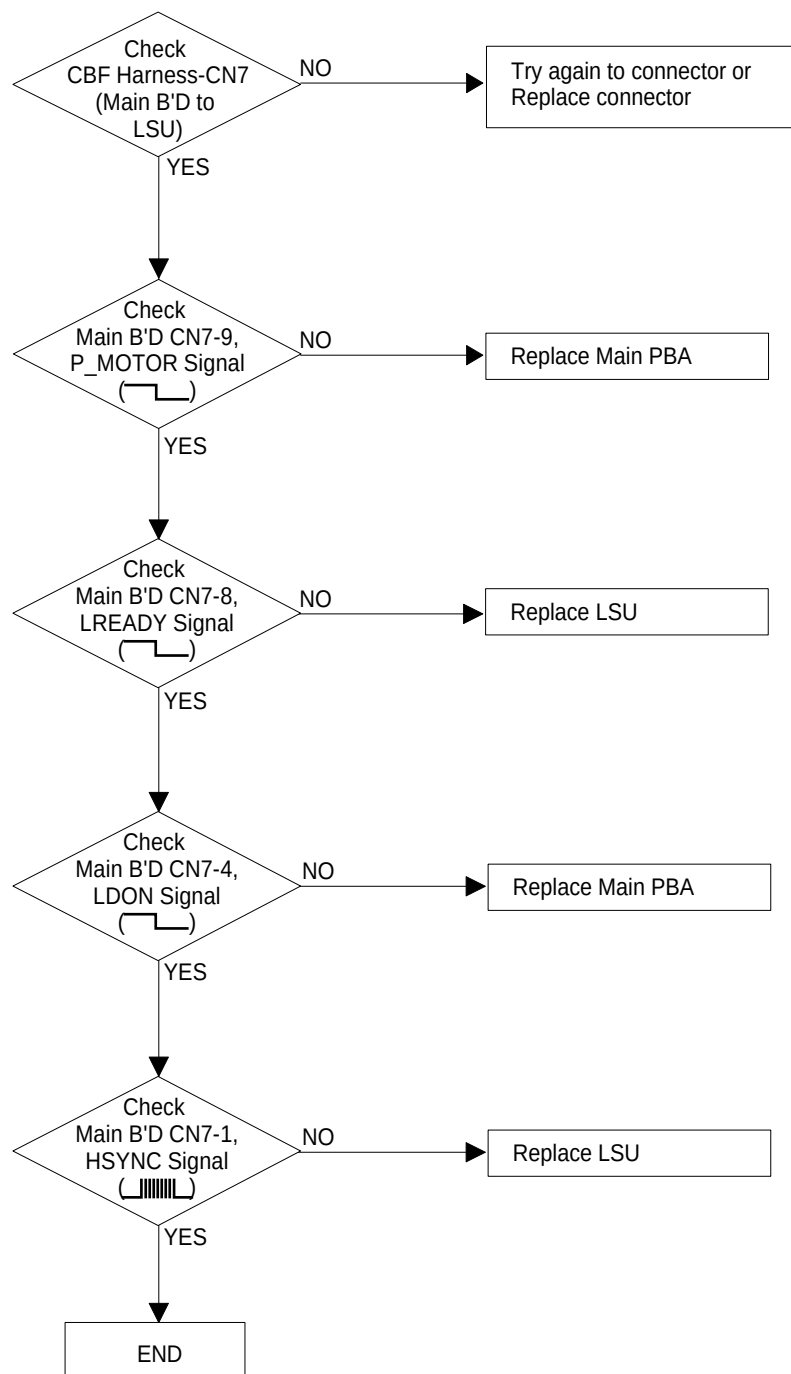
Paper Jam (Mis-Feeding)



Paper Jam(Jam 1)



Engine Error



5-5-5 Toner Cartridge and Drum Cartridge Service

It is not guaranteed for the default caused by using other toner and Drum Cartridge cartridge other than the cartridge supplied by the Samsung Electronic or caused by non-licensed refill production.

Precautions on Safe-keeping of the Drum Cartridge

Excessive exposure to direct light more than a few minutes may cause damage to the cartridge.

Service for the Life of Toner Cartridge

If the printed image is light due to the life of the toner, you can temporarily improve the print quality by redistributing the toner(Shake the toner cartridge), however, you should replace the toner cartridge to solve the problem thoroughly.

Service for Judgement of Inferior Expendables and the Standard of Guarantee

Please refer to User's Manual or Instructions on Fax/Printer Expendables SVC for the judgement of inferior expendables and the standard of guarantee besides this service manual.

5-5-5-1 Signs and Measures at Poor toner cartridge

Fault	Signs	Cause & Check	Solution
Light image and partially blank image (The life is ended.) Digital Printer Digital Printer Digital Printer Digital Printer Digital Printer	- The printed image is light or unclean and untidy. - Some part of the image is not printed. - Periodically a noise as "tick tick" occurs.	- If the image is light or unclean and untidy printed image - Shake the developer and then recheck. (1)NG: Check the weight of the developer (2)OK: Lack of toner, so the life is nearly closed. - Some part of image is not printed - Shake the developer and then recheck. (1)NG: Check the weight of the developer and clean the LSU window with a cotton swab, then recheck. (2)OK: Lack of toner, so the life is nearly closed. - Periodically a noise as "tick tick" occurs - Measure the cycle and the weight of the developer. - White vertical stripes on the whole screen or partly : Check the weight of the developer.	- All of 1, 2, 3 above- If it become better by shaking, replace with a new developer after 50-100 sheets in the closing state of the life span. - In case of 2- If it becomes better after cleaning the LSU window, then the developer is normal. (Because of foreign substance on the LSU window, the image has not been printed partly.) - In case of 3- If the cycle of noise is about 2 seconds, the toner inside the developer has been nearly exhausted. (Purchase and replace with a new developer after using about 200 sheets at the point of occurrence) - In case of 3- This is a phenomenon caused by lack of toner, so replace with a new developer.
Toner Contamination	- Toner is fallen on the papers periodically. - Contaminated with toner on prints partly or over the whole surface.	- Toner is fallen on the paper periodically. (1)Check the cycle of the falling of the toner. (2)Check the appearance of both ends of the developer OPC drum. - The center of the printed matter is contaminated with toner. (1)Check whether foreign substances or toner are stuck to the terminal (contact point) of the developer. (2)Check whether the state of the terminal assembly is normal.	- If both ends of the OPC drum are contaminated with toner: Check the life of the developer. - Check whether it could be recycled.

Fault	Signs	Cause & Check	Solution
White Black spot 	• Light or dark black dots on the image occur periodically. • White spots occur in the image periodically.	1. If light or dark periodical black dots occur, this is because the developer rollers are contaminated with foreign substance or paper particles. (1)37.7mm interval : Charged roller (2)94.3mm interval : OPC cycle 2. If white spots occur in a black image at intervals of 94, 29mm, or black spots occur elsewhere, the OPC drum is damaged or foreign substance is stuck to the surface. 3. If a black and white or graphic image is partially broken at irregular intervals, the transfer roller's life has been expired or the transfer voltage is abnormal.	1. In case of 1 above - Run OPC Cleaning Mode Print 5-5 times repeatedly to remove. Especially check foreign substance on the OPC surface, then remove them with a clean gauze moistened with IPA(Isopropyl Alcohol) not to damage OPC if necessary. Caution : Never use usual alcohol. 2. In case of 2 If they are not disappeared by running OPC Cleaning Mode Print 5-5 times. : at intervals of 94.3mm - Replace the developer. : at intervals of 37.7mm - Remove foreign substance, Clean the Charged Roller : Broken image - Replace the developer according to carelessness. 3. In case of 3 - Exchange the transfer roller because the life of the transfer roller in use has been expired. (Check the transfer voltage and readjust if different.)
Recycled product	• Poor appearance of the developer. • Unclean and rough printouts. • Bad background in the image.	1. Poor appearance of the developer. (1)Check the damage to label and whether different materials are used. (2)Check the appearance of parts of the developer, such as frame, hopper. 2. Unclean and rough printouts. (1)Check whether foreign substance or toner are stuck to the terminal (contact point) of the developer. (2)Check whether the state of the terminal assembly is normal.	1. In case of 1 - (1)If there is an evidence of disassembling the developer. (2)If materials other than normal parts of the developer are added or substituted. 2. In case of 2 - If there are any abnormalities in connection with the situation of 1. (1)It occurs when the developer is recycled over 2 times. (2)If toner nearly being expired are collected to use, it is judged as the recycled developer.

Fault	Signs	Cause & Check	Solution
Ghost & Image Contamination	• The printed image is too light or dark, or partially contaminated black. • Totally contaminated black. (Black image printed out)	1. The printed image is too light or dark, or partially contaminated black. (1) Check whether foreign substance or toner are stuck to the terminal (point of contact) of the developer. (2) Check whether the terminal assembly is normal. 2. Totally contaminated black. (Black image printed out) (1) Check whether foreign substances are stuck to the terminal (point of contact) of the developer and the state of assembly. (Especially check the charged roller terminal.)	1. All of 1, 2, 3 above (1) Remove toner and foreign substances adhered to the contact point of the developer. (2) The contact point of the unit facing that of the developer also must be cleaned. (3) If the terminal assembly is unsafe: • Fully stick the terminal to or reassemble it after disassembling. • Disassemble the side plate and push the terminal to be stuck, then reassemble it. 2. In case of 2 It is a phenomenon when the OPC drum of the developer is not electrically charged. Clean the terminals of the charged roller, then recheck it.

5-5-6 The cause and solutions of bad environment of the software

5-5-6-1 The printer is not working (1)

- **Description** : While Power turned on, the printer is not working in the printing mode.

Check and Cause	Solution
1. Check if the PC and the printer is properly connected and the toner cartridge installed. 2. Printing is nor working in the Windows. 3. Check if the printer cable is directly connected to peripheral devices	1. Replace the printer cable. If the problems not solved even after the cable replaced, check the amount of the remaining tone. 2. Check if the connection between PC and printer port is proper. If you use windows, check if the printer driver in the controller is set up. If the printer driver is properly set up, check in which program the printing is not working. The best way to find out is to open the memo pad to check the function of printing. If it is not working in a certain program, adjust the setup the program requires. Sometimes, the printout is normal within the Windows basic programs, but it's not working in a particular program. In such case, install the new driver again. If not working in the Windows basic program, Check the setup of the port of CMOS is on ECP. And check the address of IRQ 7 and 378 3. If the scanner needs to be connected to the printer, first the remove the scanner from the PC to see if the printer is properly working alone.

5-5-6-2 The printer is not working (2)

- **Description** : After receiving the printing order, no response at all or the low speed of printing occurs due to wrong setup of the environment rather than malfunction of the printer itself.

Check and Cause	Solution
1. Secure more space of the hard disk. 2. Printing error occurs even if there is enough space in the hard disk. 3. Check the parallel-port-related items in the CMOS Setup. 4. Reboot the system to print.	1. Not working with the message 'insufficient printer memory' means hard disk space problem rather than the RAM problem. In this case, provide more space for the hard disk. Secure more space using the disk utilities program. 2. The connection of the cable and printer port is not proper. Check if the connection is properly done and if the parallel port in CMOS is rightly set up. 3. As a printer port, Select ECP or SPP among SPP(Normal), ECP, and EPP modes(increase printing speed) SPP normal mode support 8-bit data transfer, while ECP Mode transfer the 12-bit data. 4. If the regular font is not printing, the cable or the printer driver may be defective. Turn the PC and printer off, and reboot the system to print again. If not solved, double-click the printer in my computer. If the regular fonts are not printed this time again. the cable must be defective so replace the cable with new one.

5-5-6-3 Abnormal Printing

- **Description :** The printing is not working properly even when the cable has no problem. (even after the cable is replaced) If the printer won't work at all or the strange fonts are repeated, the printer driver may be defective or wrong setup in the CMOS Setup.

Check and Cause	Solution
1. Set up the parallel port in the CMOS SETUP.	1. Select SPP(Normal) or ECP LPT Port the among ECP, EPP or SPP in the CMOS Setup.
2. Printer Driver Error.	2. Check the printer in My Computer.(to see if the printer driver is compatible to the present driver or delete the old driver, if defective and reinstall the new driver)
3. Error message from insufficient memory. (The printing job sometimes stops or due to insufficient virtual memory, but it actually comes from the insufficient space of the hard disk.)	3. Delete the unnecessary files to secure enough space of the hard disk and start printing job again.

5-5-6-4 SPOOL Error

- **Description :** To spool which stands for "simultaneous peripheral operations online" a computer document or task list (or "job") is to read it in and store it, usually on a hard disk or larger storage medium so that it can be printed or otherwise processed at a more convenient time (for example, when a printer is finished printing its current document).

Check and Cause	Solution
1. Insufficient space of the hard disk in the directory assigned for the basic spool.	1. Delete the unnecessary files to provide more space to start printing job.
2. If the previous printing error not solved.	2. If there are some files with the extension name of ****.jnl, Delete them and Reboot the Windows to restart printing job.
3. When expected to collide with other program.	3. Shut down all other programs except the current one, if possible.
4. When an application program or the printer driver is damaged.	4. Delete the printer driver completely and reinstall it.
5. When some files related to OS are damaged or virus infected.	5 After rebooting the computer, check for viruses, restore the damaged files and reinstall the program to do the printing job.
6. Memory is less than suggested one.	6. Add up enough memory to the PC.

How to delete the data in the spool manager.

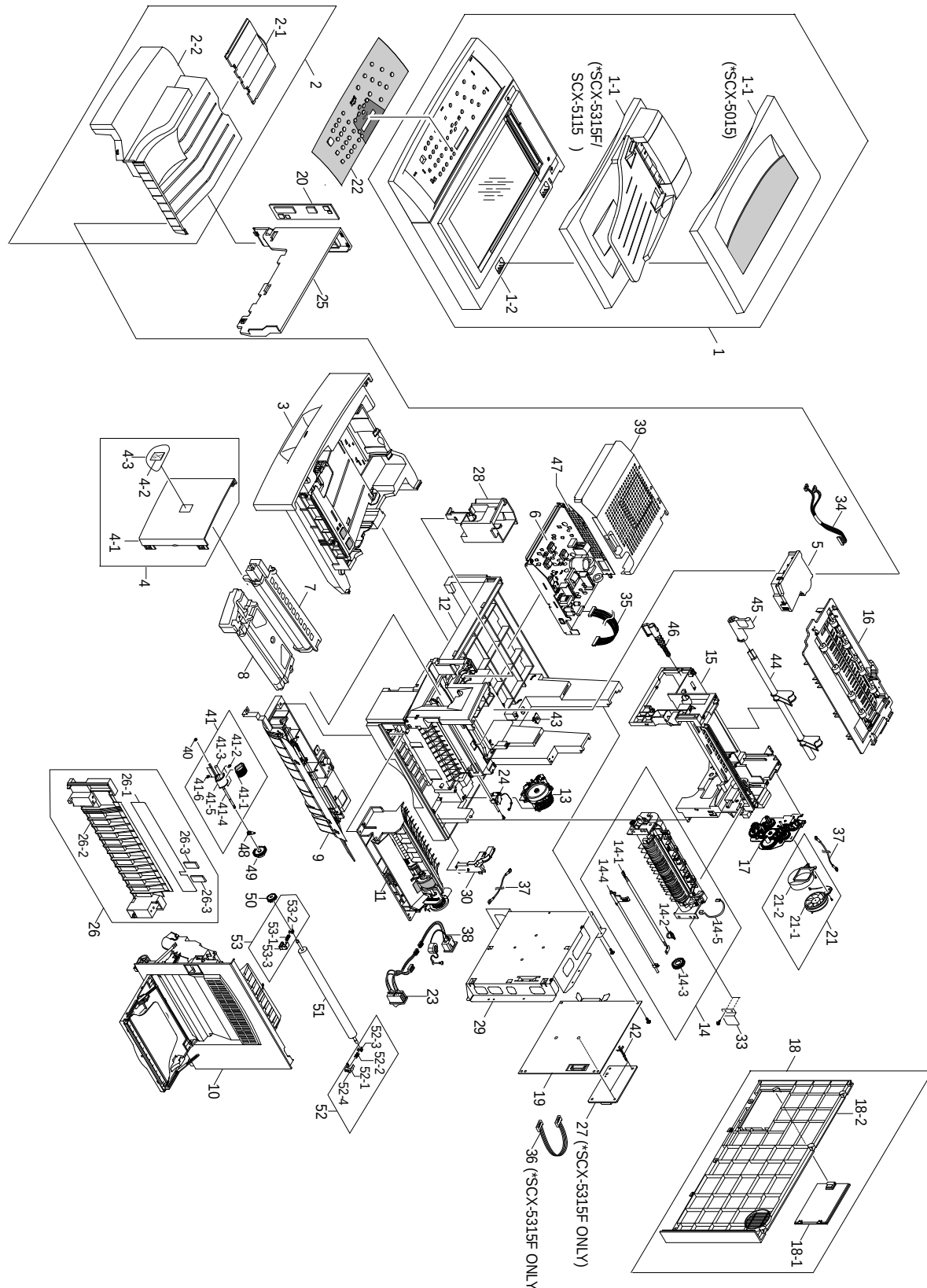
In the spool manager, the installed drivers and the list of the documents waiting to be printed are shown. Select the document to be deleted and check the delete menu.

If you intend to delete the current document being printed, the data being transferred to the printer will be put out and then the document is removed. Before choosing the document, the menu is still inactive.

Or put the document out of the list and repeat the routine as in the above or finish the spool manager.

6. Exploded View & Parts List

6-1. Main Exploded View & Parts List



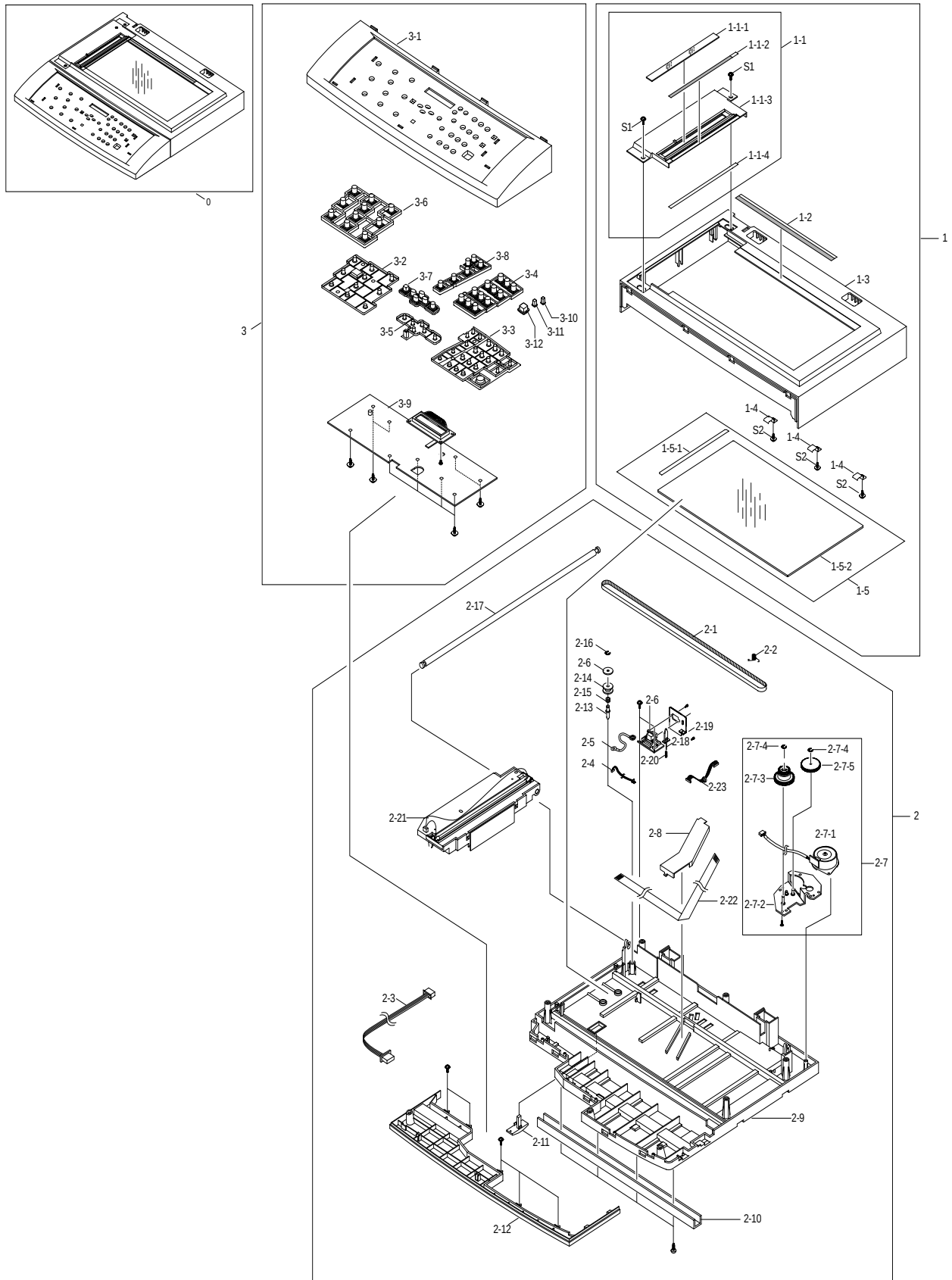
Main Parts List

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
1	SCANNER ASS'Y	JC96-02723A	1	O	SCX-5315F
	SCANNER ASS'Y	JC96-02745A	1	O	SCX-5115
	SCANNER ASS'Y	JC96-02787A	1	O	SCX-5015
1-1	ELA HOU-ADF ASS'Y	JC96-02742A	1	X	SCX-5315F/5115
	MEA UNIT-PLATEN COVER ASS'Y	JC96-02750A	1	X	SCX-5015
1-2	ELA HOU-PLATEN ASS'Y	JC96-02754A	1	X	SCX-5315F
	ELA HOU-PLATEN ASS'Y	TBD	1	X	SCX-5115/5015
2	MEA UNIT-COVER PA EXIT ASS'Y	JC97-01556B	1	O	
2-1	PMO-TRAY EXTENTION MP NE	JC72-00354B	1	O	
2-2	PMO-COVER PAPER EXIT	JC72-00786B	1	O	
3	MEC-CASSETTE ASS'Y(LETTER)	JC97-01733A	1	O	USA Ver.
	MEC-CASSETTE ASS'Y(A4)	JC97-01734A	1	O	Europe Ver.
4	MEA UNIT-COVER FRONT ASS'Y	JC97-01735A	1	O	
4-1	COVER-M-FRONT	JC63-00193A	1	X	
4-2	MPR-NAME/PLATE XRX	TBD	1	O	
4-3	PLATE-BADGE(XRX)	JC61-00777A	1	X	
5	UNIT-LSU	JC59-00014B	1	O	
6	SMPS-SMPS(V1)+HVPS	JC44-00031A	1	O	110V
	SMPS-SMPS(V2)+HVPS	JC44-00035A	1	O	220V
7	ELA-OPC UNIT SET	JC96-02238A	1	O	
8	ELA-TONER UNIT SET	JC96-02286A	1	O	Europe Ver.
	ELA-TONER UNIT SET	JC96-02239A	1	O	US/CANADA Ver.
9	ELA HOU-PICKUP ASS'Y	JC96-02715A	1	O	
10	ELA HOU-SIDE COVER ASS'Y	JC96-02183B	1	O	
11	ELA HOU-MP ASS'Y	JC96-02182A	1	O	
12	ELA HOU-BASE FRAME ASS'Y	JC96-02714A	1	X	SCX-5315F
	ELA HOU-BASE FRAME ASS'Y	JC96-02714B	1	X	SCX-5115
13	MEC-FEED ASS'Y	JC75-00143A	1	O	
14	ELA HOU-FUSER(110V)ASS'Y	JC96-02814A	1	O	110V
	ELA HOU-FUSER(220V)ASS'Y	JC96-02815A	1	O	220V
14-1	LAMP-HALOGEN (110V)	4713-001170	1	O	110V
	LAMP-HALOGEN(220V)	4713-001171	1	O	220V
14-2	THERMOSTAT	4712-000001	1	O	
14-3	GEAR-FUSER	JC66-40913B	1	O	
14-4	ACTUATOR ASS'Y	JC97-01611A	1	O	
14-5	THERMISTOR-FUSER	JC14-00001A	1	O	
15	ELA HOU-FRAME MAIN ASS'Y	JC96-02184A	1	O	
16	MEC-EXIT ASS'Y	JC75-00145A	1	O	
17	ELA HOU-DRIVE ASS'Y	JC96-02741A	1	O	
18	MEA UNIT-COVER REAR ASS'Y	JC97-01557A	1	O	
18-1	PMO-COVER SIMM,XRX	JC72-41224B	1	O	
18-2	PMO-COVER REAR	JC72-00788A	1	O	

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
19	PBA MAIN-MAIN	JC92-01479A	1	O	SCX-5315F
	PBA MAIN-MAIN	JC92-01480A	1	O	SCX-5115/5015
20	PMO-CONNECT PAPER MFP	JC63-00215A	1	X	SCX-5315F
	PMO-CONNECT PAPER MFP	JC63-00215B	1	X	SCX-5115/5015
21	ELA HOU-DUCT FAN	JC96-02311A	1	X	
21-1	FAN-DC	JC31-00012A	1	O	
21-2	PMO-DUCT FAN	JC72-00807A	1	X	
22	SHEET-OVERLAY(ENGLISH)	JC63-00218A	1	O	SCX-5315F
	SHEET-OVERLAY(ENGLISH)	JC63-00212A	1	O	SCX-5115/5015
	SHEET-OVERLAY(SPANISH)	JC63-00218B	1	O	SCX-5315F
	SHEET-OVERLAY(SPANISH)	JC63-00212B	1	O	SCX-5115/5015
23	CBF POWER STITCH GRAY	JC39-00055B	1	X	
24	SOLENOID-PICK UP	JC33-00007A	1	O	
25	PMO-COVER EXIT REAR	JC72-00790A	1	O	
26	MEA UNIT GUIDE CST PA ASS'Y	JC97-01575A	1	O	
26-1	PMO-SHEET GUIDE PAPER	JC72-00836A	1	X	
26-2	PMO-GUIDE CASSETTE RAIL	JC72-00791A	1	X	
27	PBA LIU	JC92-01355A	1	O	USA/CANADA
	PBA LIU	JC92-01355B	1	O	Western Europe
	PBA LIU	JC92-01355C	1	O	Eastern Europe
	PBA LIU	JC92-01355C	1	O	Eastern Europe
28	PMO-DUMMY BASE FRAME	JC72-00789A	1	X	
29	IPR-SHIELD MAIN LOWER	JC63-00188A	1	X	
30	PMO-COVER FEED AY	JC72-00801A	1	X	
31	PMO-COVER BRKT MOTER	JC72-00834A	1	O	
32	PMO-GUIDE PAPER OUT	JC72-00835A	1	O	
33	PMO-DUCT FAN	JC72-00807A	1	X	
34	CBF HARNESS-LSU	JC39-00163A	1	X	
35	CBF HARNESS-POWER+HVPS	JC39-00162A	1	X	
36	CBF HARNESS-LIU	JB39-00104A	1	X	
37	CBF HARNESS-LIU GND	JB39-00103A	2	X	
38	CBF HARNESS-INLET(XEROX)	JC39-00172A	1	X	
39	IPR-SHIELD SMPS UPPER	JC70-00248A	1	X	
40	PMO-BUSHING P/U.MP	JC72-41360A	1	X	
41	MEA UNIT-PICKUP ROLLER	JC97-01730A	1	X	
41-1	RUBBER-ROLLER PICKUP	JC73-00145A	1	O	
41-2	RING-E	6044-000231	2	X	
41-3	SHAFT-PICK_UP SUB	JC66-00596A	1	X	
41-4	SHAFT-PICK_UP MAIN	JC66-00595A	1	X	
41-5	HOUSING-PICK_UP	JC61-00711A	1	O	
41-6	RING-E	6044-000125	1	X	
42	SUPPORTER(T20N)	6103-001048	2	X	
43	PMO-WINDOW SENSOR DEVE	JC72-00792A	1	X	

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
44	PMO-CAM JAM REMOVE	JC72-00799A	1	O	
45	PMO-LOCKER DEVE	JC72-00805A	1	O	
46	PMO-LEVER JAM REMOVE	JC72-00804A	1	O	
47	IPR-SHIELD SMPS LOWER	JC70-00247A	1	X	
48	GEAR-PICK-UP	JC66-00335A	1	O	
49	PMO-BEARING SHAFT	JC72-41191A	1	X	
50	GEAR-TRANSFER	JC66-40947A	1	O	
51	MEC-ROLLER TRANSFER	JC75-00148A	1	O	
52	MEA UNIT-HOLDER GEAR ASS'Y	JC97-01573A	1	O	
52-1	SPRING ETC-PLATE TR	JC61-70203A	1	X	
52-2	SPRING ETC-TR_L	JC61-70961A	1	X	
52-3	PMO-BUSH	JC72-40228A	1	X	
52-4	PMO-HOLDER GND TR	JC72-00883A	1	X	
53	MEA UNIT-HOLDER GND ASS'Y	JC97-01574A	1	O	
53-1	SPRING ETC-TR_R	JC61-70906A	1	X	
53-2	PMO-BUSH	JC72-40228A	1	X	
53-3	PMO-HOLDER GEAR TR	JC72-00884A	1	X	

6-2. Platen Ass'y Exploded View & Parts List

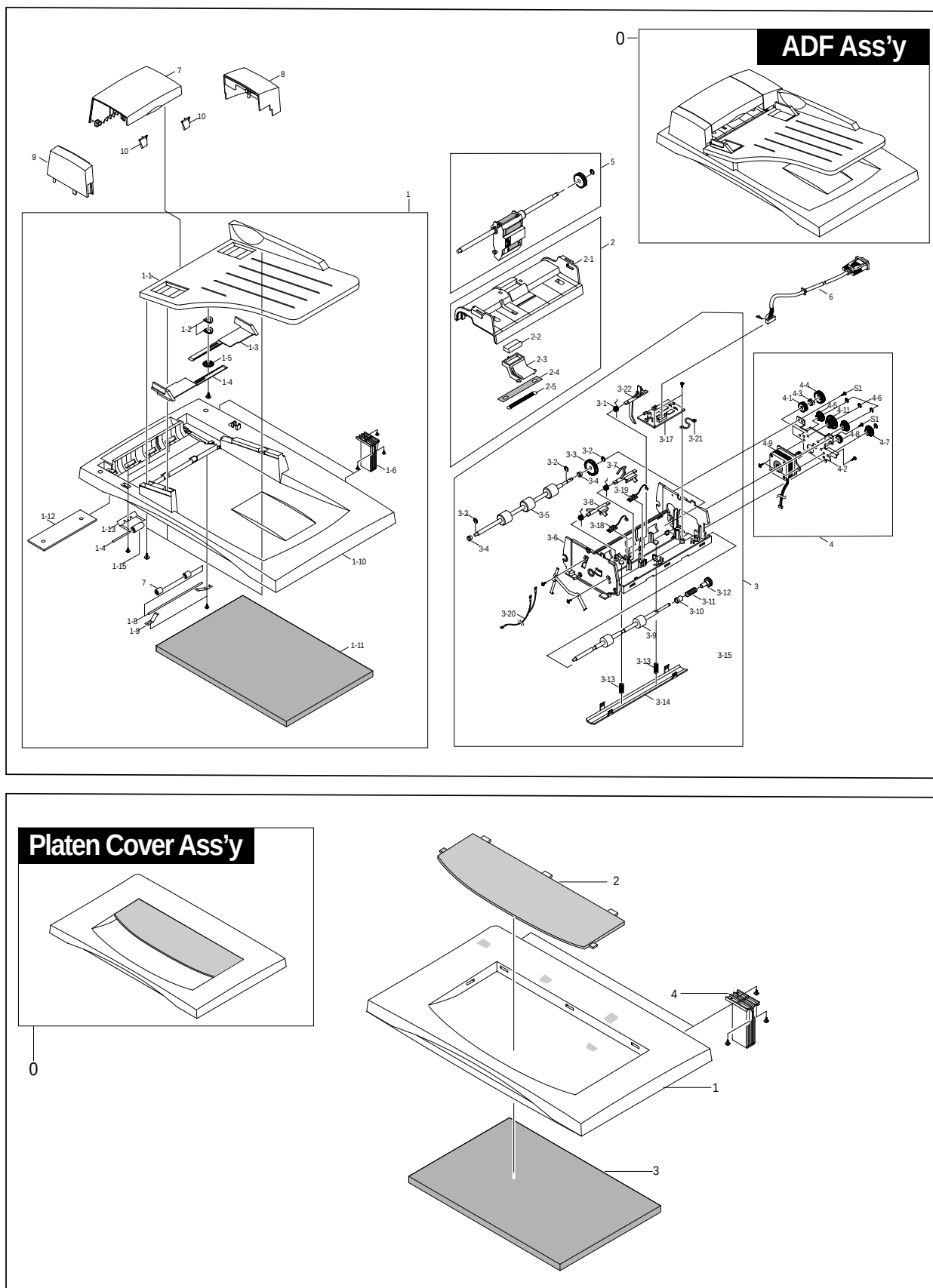


Platen Ass'y Parts List

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
0	ELA HOU-PLATEN ASS'Y	JC96-02754A	1	X	SCX-5315F
	ELA HOU-PLATEN ASS'Y	TBD	1	X	SCX-5115/5015
1	MEA UNIT-SCAN UPPER ASS'Y	TBD	1	O	
1-1	A/S MATERIAL-DUMMY UPPER ASS'Y	JC81-00426A	1	O	
1-1-1	MCT-GLASS ADF	JC74-00019A	1	X	
1-1-2	LABEL(L)-REGISTRATION EDGE (L)	JB68-00469A	1	X	
1-1-3	PMO-DUMMY UPPER	JC72-00759A	1	X	
1-1-4	SHEET-DUMMY UPPER	JC63-00074A	1	X	
1-2	LABEL(R)-REGISTRATION EDGE (R)	JC72-00809A	1	X	
1-3	PMO-COVER SCAN UPPER	JC72-00758A	1	X	
1-4	IPR-HOLDER GLASS	JB70-00148A	3	X	
1-5	MEA UNIT-GLASS PLATEN ASS'Y	JC97-01580A	1	X	
1-5-1	LABEL(P)-SHEET SHADING	JB68-00419A	1	X	
1-5-2	MCT-GLASS SCANNER(LEGAL)	JC74-00018A	1	X	
2	ELA HOU-SCAN LOWER	JC96-02706A	1	X	
2-1	BELT-TIMING GEAR	6602-001090	1	O	
2-2	SPRING ETC-BELT	JB61-00059A	1	O	
2-3	CBF HARNESS-OPE	JC39-00167A	1	X	
2-4	CBF HARNESS-MAIN-ENGINE	JC39-00030A	1	X	
2-5	CBF HARNESS-DRIVER GND	JB39-00065A	1	X	
2-6	PBA SUB-D_SUB	JC92-01381A	1	X	
2-7	ELA HOU-SCAN MOTOR	JC81-01694A	1	O	
2-7-1	MOTOR STEP-SCAN	JB31-00011A	1	X	
2-7-2	BRACKET-MOTOR PLATEN	JC61-00702A	1	X	
2-7-3	GEAR-TIMING	JC66-00531A	1	X	
2-7-4	RING-E	6044-000125	3	X	
2-7-5	GEAR-REDUCTION73/37	JC66-00530A	1	X	
2-8	COVER-M-CCD CABLE	JC63-00158A	1	X	
2-9	COVER-SCAN LOWER(UMAX)	JC63-00157A	1	X	
2-10	IPR-CHANNEL BASE FRAME	JC70-00239A	2	X	
2-11	HOLDER-M-CCD(UMAX)	JC61-00703A	1	X	
2-12	PMO-COVER DUMMY LOWER(C)	JC72-00794A	1	X	
2-13	ICT-INSERT SHAFT	JB70-00154A	1	X	
2-14	PMO-PULLEY	JB72-00763A	1	X	
2-15	PMO-HOLDER BELT	JB72-00764A	1	X	
2-16	RING-E	6044-000125	1	X	
2-17	SHAFT-CCD(UMAX)	JC66-00532A	1	X	
2-18	PMO-LEVER SENSOR	JC72-00755A	1	O	
2-19	IPR-BRK SCAN BD	JC70-00228A	1	O	
2-20	SPRING ETC-EXIT	JB61-70939A	1	X	
21	ELA HOU-CCD MODULE	JC96-02759A	1	O	

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
2-22	CBF SIGNAL-CCD FFC	JC39-00236A	1	O	
2-23	CBF HARNESS-SCAN MOTOR	JB39-00077A	1	X	
3	ELA HOU-OPE CVER ASS'Y	JC96-02172B	1	O	SCX-5315F
	ELA HOU-OPE CVER ASS'Y	JC96-02632B	1	O	SCX-5115/5015
3-1	PMO-OPE COVER	JC72-00756A	1	O	
3-2	RMP-RUBBER FUNCTION	JC73-00092A	1	O	
3-3	RMO-RUBBER TEL	JC73-00043A	1	O	
3-4	PMO-KEY TEL	JC72-00452B	1	O	
3-5	RMO-RUBBER SCROLL	JC73-00044A	1	O	
3-6	PMO-KEY FUNCTION(A)	JC72-00754B	1	O	SCX-5315F
	PMO-KEY FUNCTION(C)	JC63-00079A	1	O	SCX-5115/5015
3-7	PMO-KEY SCROLL	JC72-00453C	1	O	
3-8	PMO-KEY FUNCTION(B)	JC72-00455B	1	O	SCX-5315F ONLY
3-9	PBA-OPE(FRO)	JC81-00433A	1	O	
3-10	PMO-KEY REPORT	JC72-00457B	1	O	
3-11	PMO-KEY STOP	JC72-00451B	1	O	
3-12	PMO-KEY START	JC72-00450B	1	O	

6-3. ADF Ass'y or Platen Cover Ass'y Exploded View & Parts List



ADF Ass'y Parts List : SCX-5315F Only

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
0	ELA HOU-ADF ASS'Y	JC96-02750A	1	X	SCX-5315F/5115
1	MEC UNIT-PLATEN COVER ASS'Y	JC96-02722A	1	O	
1-1	PMO-TX STACKER	JC72-00745A	1	O	
1-2	IPR-WASHER SPRING CY	JF70-10616A	2	X	
1-3	PMO-DOC GUIDE L	JC72-00839B	1	O	
1-4	PMO-DOC GUIDE R	JC72-00838B	1	O	
1-5	GEAR PINION	JF72-41354A	1	X	
1-6	MEA UNIT-HINGE	JC97-01731A	2	O	
1-7	ROLLER EXIT	JC73-00091A	2	X	
1-8	IPR-SHAFT EXIT	JC72-00242A	1	X	
1-9	NPR-SPRING PINCH DRIVE	JB71-00038A	2	X	
1-10	PMO-COVER PLATEN	JC72-00738A	1	X	
1-11	PPR-SPONG SHEET	JC72-00751A	1	O	
1-12	PPR-SHEET PLATEN	JC72-00750A	1	X	
1-13	IPR-SPRING PINCH	JC70-00260A	3	X	
1-14	IPR-SHAFT PINCH	JC70-00265A	3	X	
1-15	PMO-ROLL PINCH	JG72-40663A	3	X	
2	MEA UNIT-ADF UPPER ASS'Y	JC97-01581A	1	O	
2-1	COVER ADF UPPER	JC72-00736A	1	X	
2-2	ADF RUBBER	JC73-00052A	1	O	
2-3	HOLDER ADF	JB72-00825A	1	O	
2-4	SPONG ADF	JB73-00913A	1	X	
2-5	SPRIG ADF	JB61-00009A	1	X	
3	MEA UNIT-ADF LOWER ASS'Y	JC81-00434A	1	O	
3-1	SPRING TORSION DOC	JB61-00076A	1	X	
3-2	E-RING	6044-000159	3	X	
3-3	GEAR-ADF 38	JB66-00103A	1	X	
3-4	PMO-BUSH	JB72-00819A	2	O	
3-5	MEC-ROLLER DRIVE	JC75-00149A	1	O	
3-6	COVER ADF LOWER	JC72-00735A	1	X	
3-7	PMO-ACTUATOR SENSOR DOC.	JC72-00837A	1	O	
3-8	PMO-ACTUATOR SENSOR REGI	JB72-00747A	1	O	
3-9	MEC-ROLLER EXIT	JC75-00150A	1	O	
3-10	BUSHING HOLDER	JG72-40732A	1	X	
3-11	SPRING CLUTCH	JC61-00062A	1	X	
3-12	GEAR-EXITE 23	JC66-00323A	1	X	
3-13	SPRING WHITE BAR	TBD	2	X	
3-14	BRKT WHITE BAR	JC70-00225A	1	O	
3-15	PPR-WHITE BAR SHEET	JC72-00752A	1	O	
3-16	PMO-ACTUATOR SENSOR REGI	JC72-00747A	1	X	
3-17	PBA SUB-ADF	JC81-00437A	1	O	

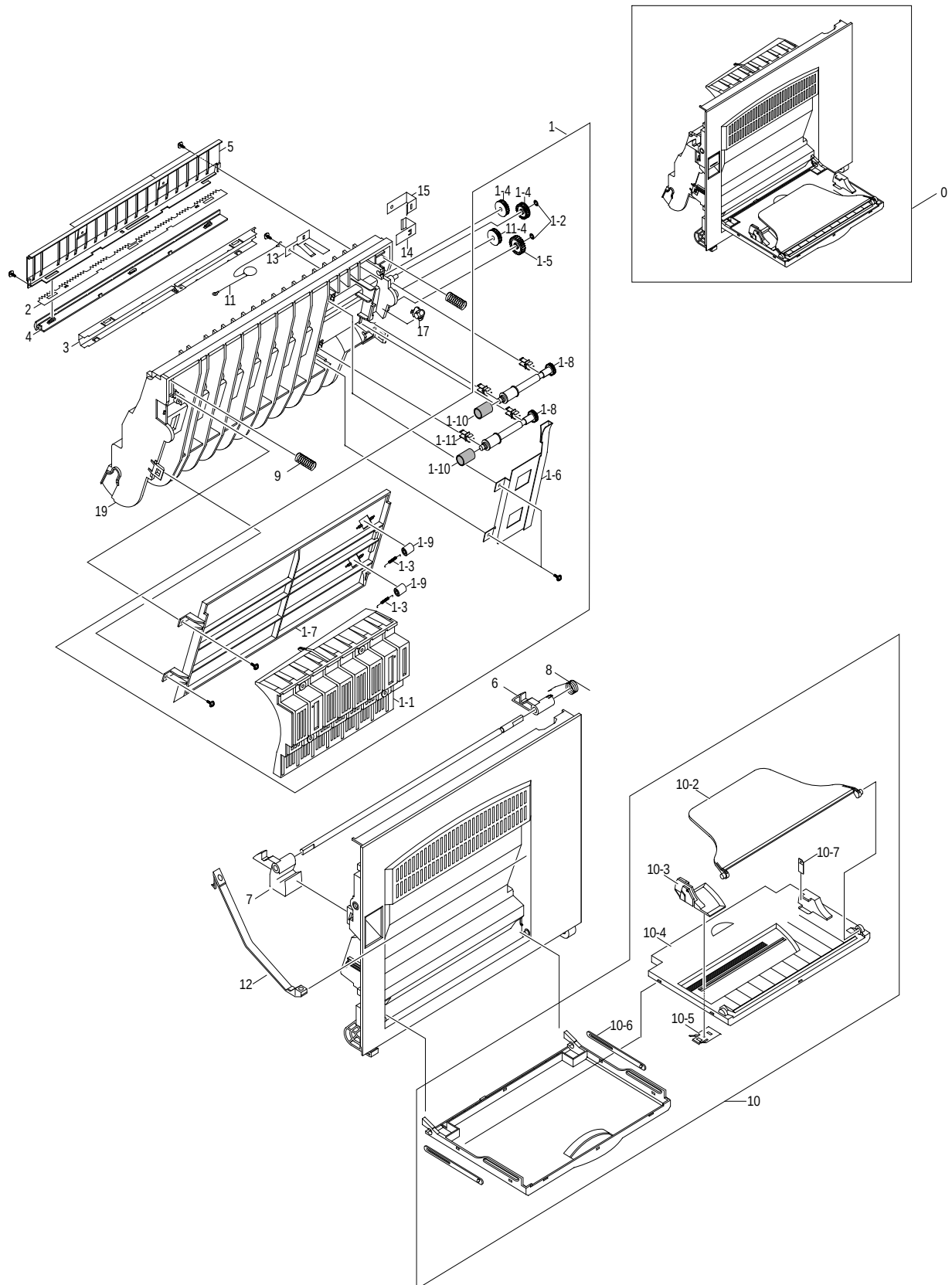
ADF Ass'y Parts List(Cont.) : SCX-5315F / SCX- 5115

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
3-18	PBA SUB-ADF POS SEN	JC92-01365A	1	O	
3-19	PBA SUB-ADF DET SEN	JC92-01366A	1	O	
3-20	CBF HARNESS-ADF ROLLER GND	TBD	1	X	
3-21	CBF HARNESS-DRIVER GND	JB39-00065A	1	X	
3-22	PMO-ACTUATOR SENSOR SCAN	JC72-00746A	1	O	
4	MEA UNIT-ADF MOTOR ASS'Y	JC81-00435A	1	O	
4-1	GEAR CLUTCH 29	JB66-00101A	1	X	
4-2	BRKT ADF MOTOR	JC70-00224A	1	X	
4-3	PMO-WHITE CLUTCH SUB 29	JB72-00844A	1	X	
4-4	GEAR-CLUTCH IDLE 39	JC66-00322A	1	X	
4-5	GEAR DOUBLE 33/20	JG61-40038A	2	X	
4-6	E-RING	6044-000159	6	X	
4-7	GEAR-DOUBLE 17/35	JG66-40039A	2	X	
4-8	GEAR IDLE 25	JG66-40036A	1	X	
4-9	MOTOR ADF	JC31-00017A	1	X	
4-10	GEAR-JAM REMOVE	JC66-00329A	1	X	
4-11	GEAR REDUCTION45/19	JC66-00324A	1	X	
5	MEC UNIT-PICK UP ASS'Y	JC97-01582A	1	O	
6	CBF HARNESS-D-SUB	JC39-00190A	1	O	
7	PMO-COVER OPEN	JC72-00737A	1	O	
8	PMO-COVER SIDE L	JC72-00739A	1	O	
9	PMO-COVER SIDE R	JC72-00740A	1	O	
10	PMO-GUIDE PAPER	JC72-00843A	2	O	
S1	SCREW-TAPTITE	6003-000269	2	X	

Platen Cover Ass'y Parts List : SCX-5015 Only

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
0	MEA UNIT-PLATEN COVER ASS'Y(C)	JC97-01680B	1	O	SCX-5015 Only
1	PMO-COVER PLATEN(C)	JC72-00873A	1	O	
2	PMO-COVER DUMMY PLAEN	JC72-00874B	1	O	
3	PPR-SPONG SHEET	JC72-00751A	1	O	
4	MEA UNIT-HINES ASS'Y(C)	JC97-01681A	2	O	

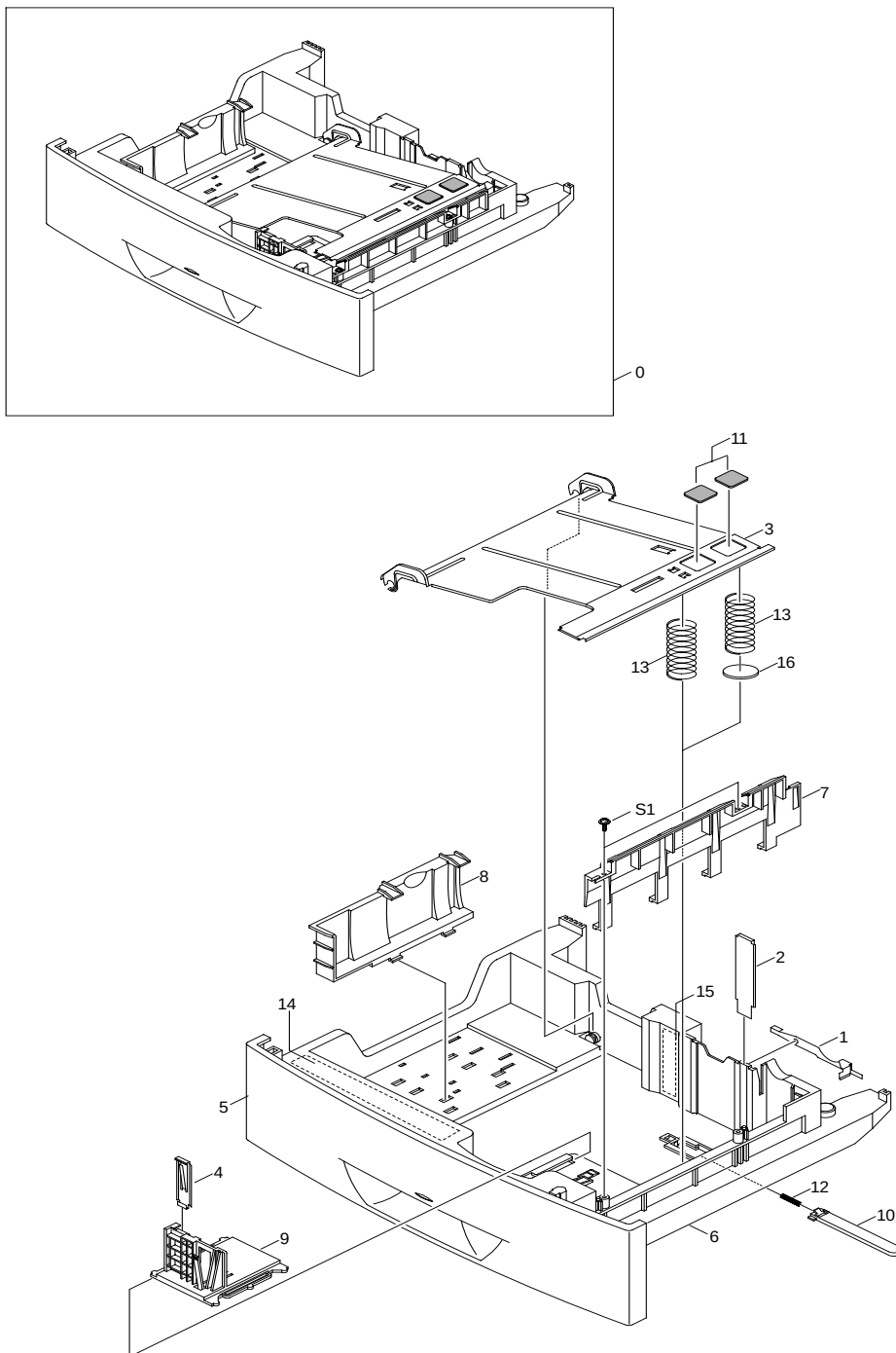
6-4. Side Cover Ass'y Exploded View & Parts List



Side Cover Ass'y Parts List

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
0	ELA HOU-SIDE COVER ASS'Y	JC96-02183B	1	O	
1	MEA UNIT-DUPLEX ASS'Y	JC97-01578A	1	X	
1-1	PMO-GUIDE DP SIDE	JC72-00806A	1	X	
1-2	RING-CS	6044-000001	2	X	
1-3	SPRING-FUSER EXIT	JC61-70976A	2	X	
1-4	GEAR-DUP IDLER 17	JC66-00341A	3	X	
1-5	GEAR-MP/DUP DRV	JC66-00346A	1	X	
1-6	IPR-BRKT G DUP	JC70-00233A	1	X	
1-7	PMO-GP LOWER DP	JC72-00732A	1	X	
1-8	PMO-SHAFT DUP DRIVER	JC72-00764A	2	X	
1-9	PMO-ROLLER_EXIT	JC72-40361A	2	X	
1-10	RPR-RUBBER EXIT	JC73-10203A	2	X	
1-11	PMO-BUSHING TX(B4)	JG72-40744A	4	X	
1-12	PMO-TIE STOPPER	JC72-00766A	2	X	
2	IPR-PLATE SAW	JC70-10232A	2	X	
3	PMO-FEED FRAME	JC72-00731A	1	X	
4	PMO-HOLDER SAW	JC72-41213A	1	X	
5	IPR-BRACKET GUIDE A	JC70-00229A	1	X	
6	PMO-LOCKER SIDE R	JC72-00763A	1	O	
7	PMO-LOCKER OPEN	TBD	1	O	
8	SPRING-LOCKER TORSION	JC61-00479A	1	O	
9	SPRING-FEED	JC61-00478A	2	O	
10	MEC UNIT-TRAY ASS'Y	JC97-01577A	1	O	
10-1	PMO-TRAY CASE, MP	JC72-00776A	1	X	
10-2	PMO-SIDE EXIT, MP	JC72-00778A	1	X	
10-3	PMO-SIDE GUIDE, MP	TBD	1	X	
10-4	PMO-TRAY COVER, MP	JC72-00777A	1	X	
10-5	IPR-GUIDE LATCH, MP	JB70-10906A	1	X	
10-6	PMO-TRAY LINK,MP	JC72-00857A	1	X	
10-7	LABEL(R)-HEIGHT,MP	JC68-00697A	1	X	
11	CBF HARNESS-OPE GND	JC39-00036A	1	X	
12	PMO-TIE STOPPER	JC72-00766A	2	O	
13	IPR-BRKT GROUND B	JC70-00230A	1	X	
14	IPR-BRKT GROUND TR	JC70-00231A	1	X	
15	IPR-BRKT GROUND A	JC70-00232A	1	X	
16	IPR-BRACKET GUIDE B	JC70-00234A	1	X	
17	PMO-BUSHING FEED	JC72-00730A	1	X	

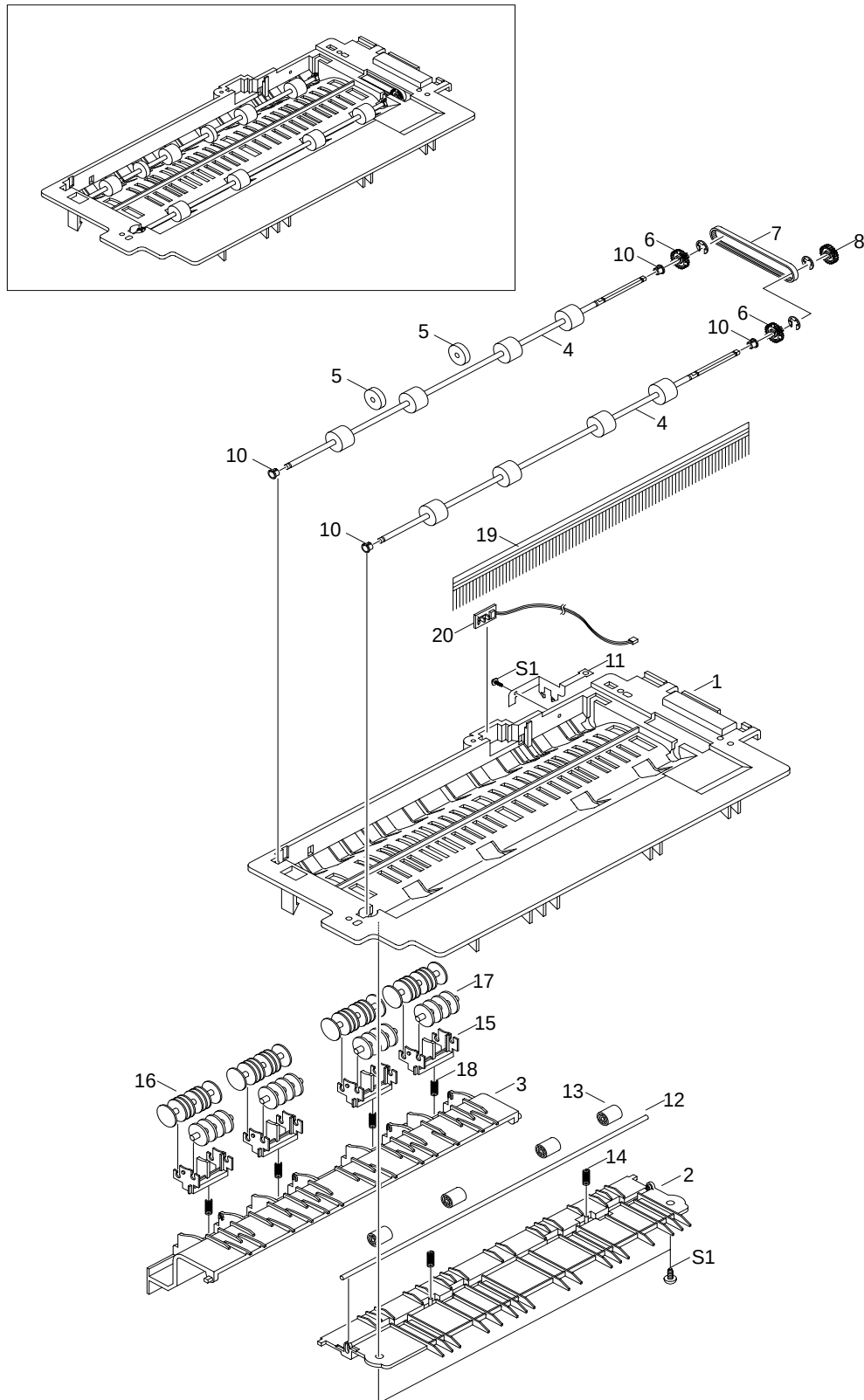
6-5. Cassette Ass'y Exploded View & Parts List



Cassette Ass'y Parts List

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
0	MEC-CASSETTE ASS'Y(LETTER)	JC97-01733A	1	O	USA Ver.
	MEC-CASSETTE ASS'Y(A4)	JC97-01734A	1	O	Europe Ver.
1	IPR-FINGE	JC70-00451A	1	X	
2	IPR-GUIDE PLT PAPER	JC70-10923A	1	X	
3	IPR-PLATE K/UP	JC70-00221A	1	X	
4	IPR-SPR PLT G/SIDE	JC70-00451A	1	O	
5	PMO-COVER CASSETTE	JC72-00713A	1	X	
6	PMO-FRAME CASSETTE	JC72-00716A	1	X	
7	PMO-GUIDE FRONT CST	JC72-00798A	1	X	
8	PMO-GUIDE REAR	JC72-00717A	1	O	
9	PMO-GUIDE/SIDE CST	JC72-40967D	1	O	
10	PMO-LOCKER PLATE	JC72-41210A	1	O	
11	PRP-PAD CAST	JC73-10910A	2	O	
12	SPRING-LOCKER PLATE	JG61-70531A	1	O	
13	SPRING-PLATE K/UP	JC61-00455A	2	O	
14	LABEL(R)-INSTRUCTION CST	JC68-00692A	1	X	
15	LABEL(R)-HEIGHT CST	JC68-00709A	1	X	
16	SHEET-CASSETTE	JC63-00216A	1	X	

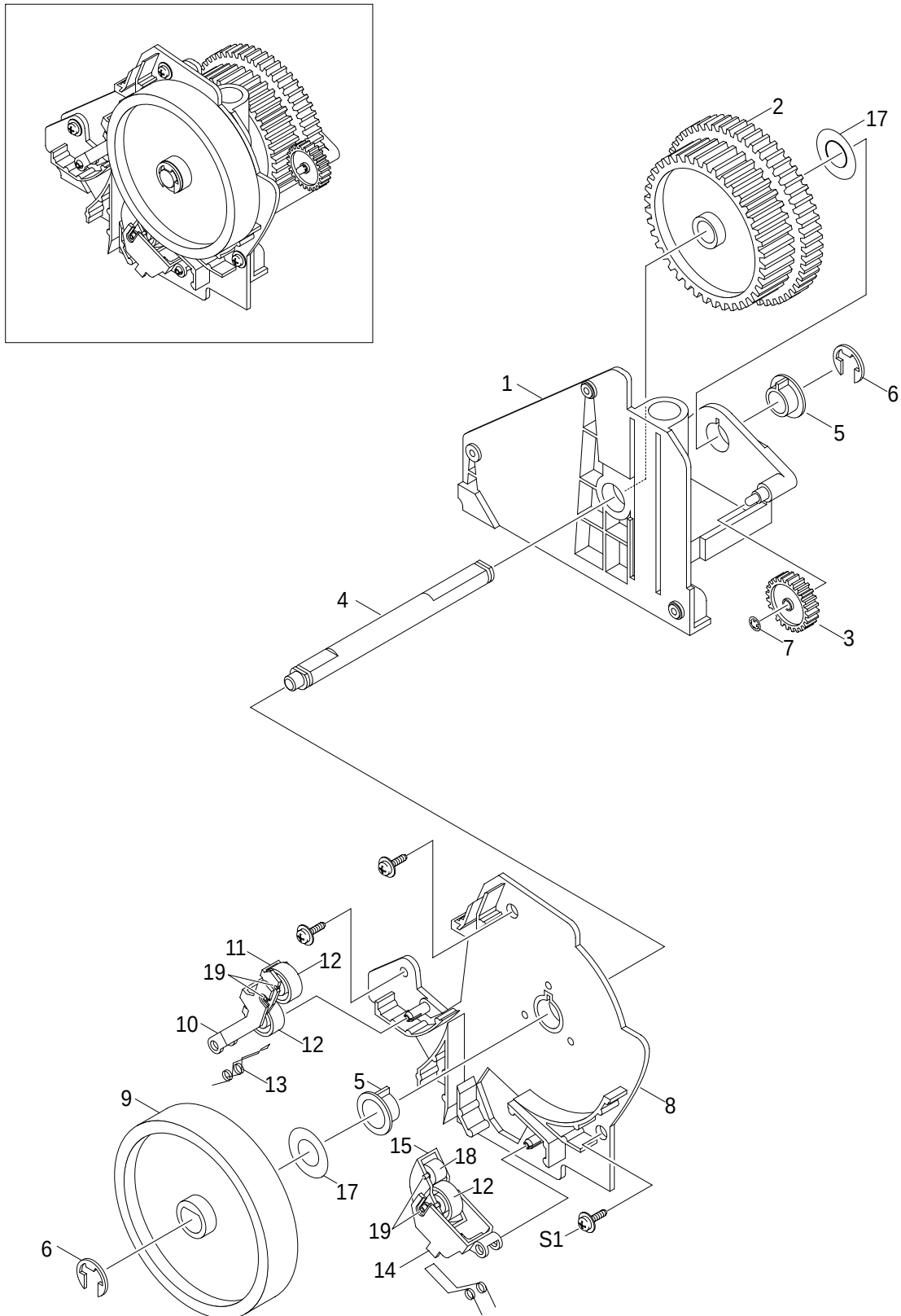
6-6. Exit Ass'y Exploded View & Parts List



Exit Ass'y Parts List

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
0	MEC-EXIT ASS'Y	JC75-00145A	1	O	
1	PMO-GUIDE-EXIT UPPER	JC72-00708A	1	X	
2	PMO-GUIDE-EXIT LOWER	JC72-00710A	1	X	
3	PMO-GUIDE-JAM REMOVE	JC72-00712A	1	X	
4	MEC-ROLLER EXIT DRV	JC75-00127A	2	O	
5	PMO-ROLLER DECURL	JC72-00833A	4	O	
6	PMO-PULLEY DUPLEX	JC72-40980A	2	X	
7	BELT-TIMING GEAR	6602-001084	1	X	
8	GEAR-DUPLEX	JC66-40912A	1	X	
9	PMO-BEARING LARGE DP	JC72-40978A	1	X	
10	PMO-BEARING LARGE DP	JC72-40978A	4	O	
11	IPR-GROUND-EXIT	JC70-00252A	1	X	
12	ICT-SHAFT-EXIT LOWER ID	JC70-00274A	1	X	
13	PMO-ROLLER_EXIT	JC72-40361A	4	X	
14	SPRING-EXIT ROLL FD	JC61-70911A	2	X	
15	PMO-HOLDER EXIT ROLL	JC72-41006A	4	X	
16	PMO-ROLLER FD F	JC72-41007A	4	X	
17	PMO-ROLLER FD R	JC72-41008A	4	X	
18	SPRING-EXIT LOWER IDLE	JC61-00484A	4	X	
19	MEC- BRUSH ANTISTATIC	JC75-00095A	1	O	
20	PBA SUB-BIN-FULL SENSOR	TBD	1	X	
S1	SCREW-TAPTITE	6003-000196	3	X	

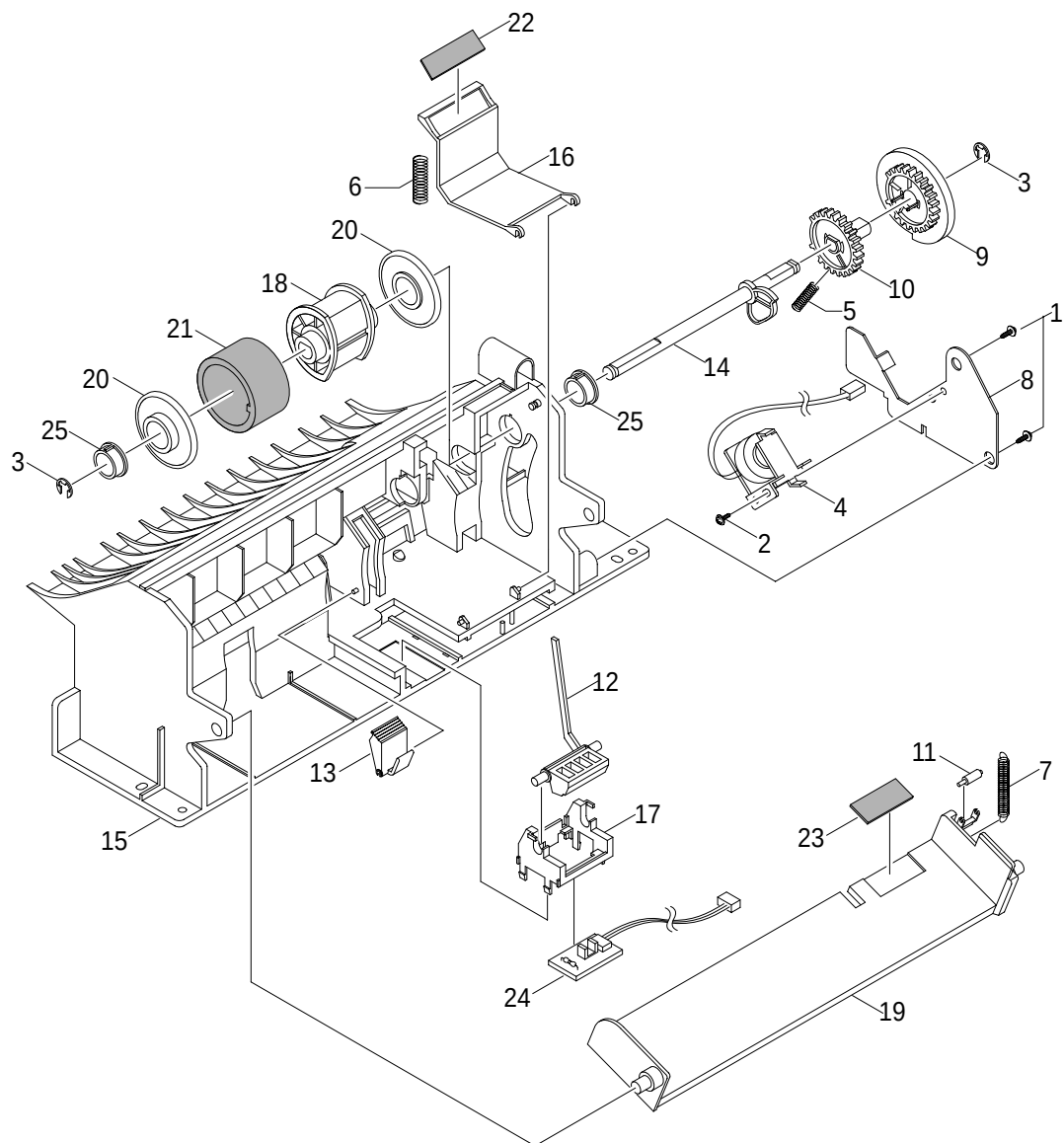
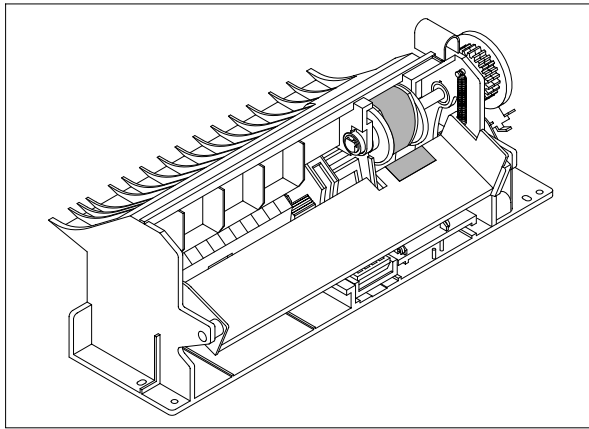
6-7. Feeder Ass'y Exploded View & Parts List



Feeder Ass'y Parts List

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
0	MEC-FEED ASS'Y	JC75-00143A	1	O	
1	PMO-FRAME FEED	JC72-00821A	1	X	
2	GEAR-FEED	JC66-00332A	1	X	
3	GEAR-MP/DUP DRV	JC66-00346A	1	X	
4	ICT-SHAFT FEED	JC70-00267A	1	X	
5	PMO-BUSHING_P/U,MP	JC72-41364A	1	X	
6	RING-E	6044-000125	2	X	
7	RING-CS	6044-000001	1	X	
8	PMO-BRKT FEED	JC72-00720A	1	X	
9	PMO-ROLLER FEED	JC72-00727A	1	O	
10	PMO-HOLDER PINCH C	JC72-00723A	1	X	
11	PMO-HOLDER PINCH SUB	JC72-00725A	1	X	
12	PMO-ROLLER FEED L	JC72-40261A	3	X	
13	SPRING-FEED CAST	JC61-00480A	1	X	
14	PMO-HOLDER PINCH M	JC72-00724A	1	X	
15	PMO-SUB HOLDER FEED	JC72-40266A	1	X	
16	SPRING-FEED MP	JC61-00481A	1	X	
17	WASHER-PLAIN	6031-000021	2	X	
18	PMO-ROLLER FEED S	JC72-40262A	1	X	
19	IPR-SHAFT FEED IDLER	JC70-10230A	4	X	
S1	SCREW-TAPTITE	6003-000196	3	X	

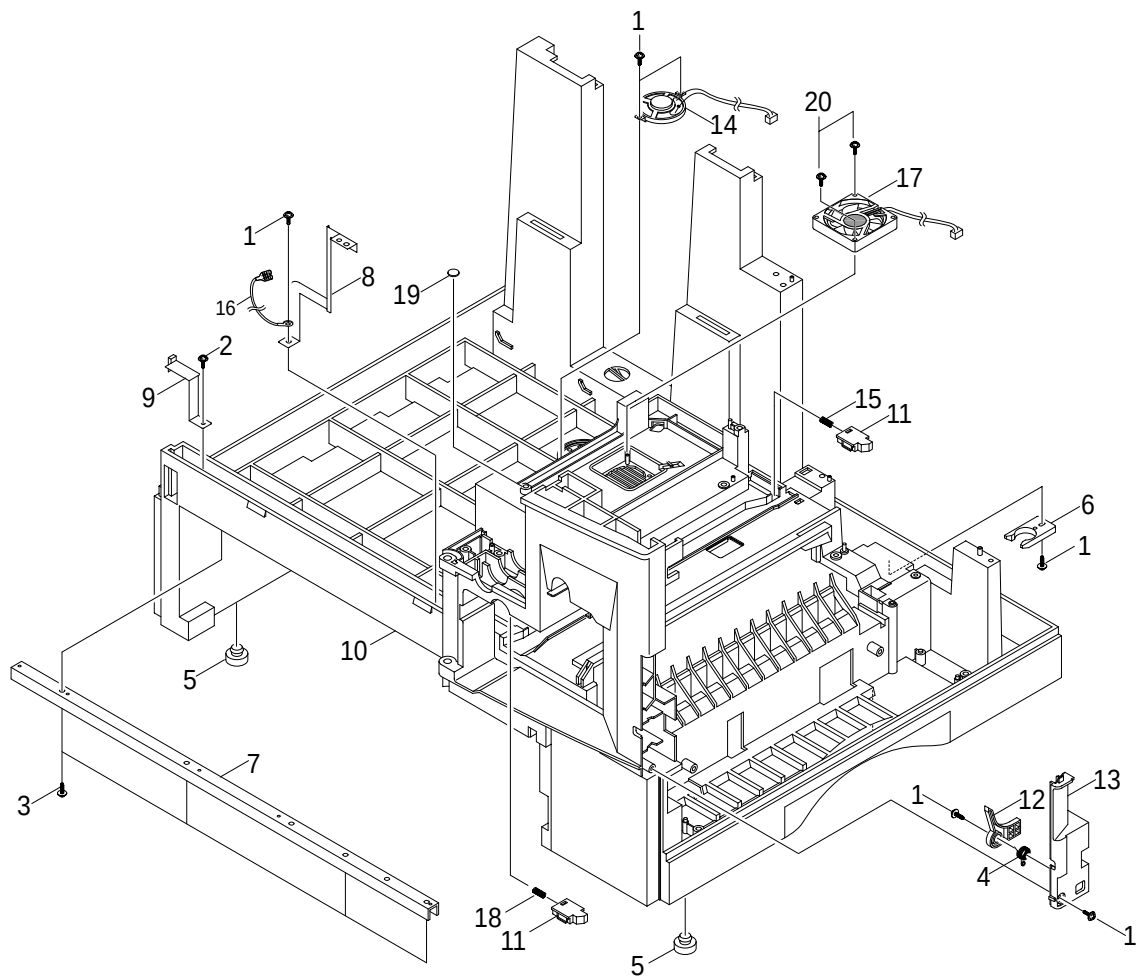
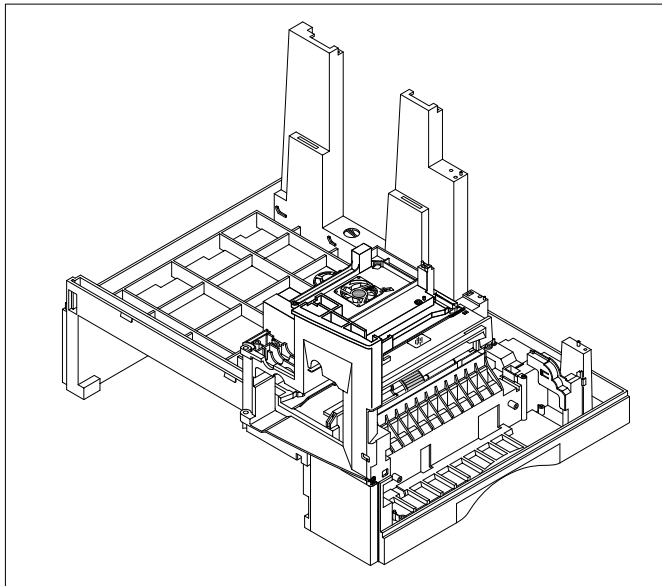
6-8. MP Ass'y Exploded View & Parts List



MP Ass'y Parts List

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
0	ELA HOU-MP ASS'Y	JC96-02182A	1	O	
1	SCREW-TAPTITE	6003-000119	2	X	
2	SCREW-TAPTITE	6003-000266	1	X	
3	RING-E	6044-000125	2	O	
4	SOLENOID-MP	JC33-00006A	1	O	
5	SPRING--CAM MP	JC61-00003A	1	O	
6	SPRING-PICK UP MP	JC61-00041A	1	X	
7	SPRING-KNOCKUP,MP	JC61-00483A	1	O	
8	IPR-BRACKET SOLENOIDE	JC70-00237A	1	X	
9	PMO-HOLDER CAM MPF	JC72-00055A	1	X	
10	PMO-GEAR P/U MPF	JC72-00056A	1	X	
11	PMO-ROLLER CAM.MP	JC72-00761A	1	X	
12	PMO-ACTUATOR,MP	JC72-00767A	1	O	
13	PMO-ADJUSTER,MP	JC72-00768A	1	O	
14	PMO-CAM PICK UP,MP	JC72-00769A	1	O	
15	PMO-FRAME,MP	JC72-00770A	1	X	
16	PMO-HOLDER PAD,MP	JC72-00771A	1	O	
17	PMO-HOLDER SENSOR,MP	JC72-00772A	1	O	
18	PMO-HOUSING PICK UP,MP	JC72-00773A	1	X	
19	PMO-PLATE KNOCK UP,MP	JC72-00775A	1	X	
20	PMO-IDLE PICK UP,MP	JC72-41027A	2	O	
21	RPR-RUBBER PICK UP,MP	JC73-00089A	1	X	
22	RPR-RCT-PAD-PICKUP,MP	JC73-00090A	1	O	
23	RPR-PAD KNOCK UP,MP	JC73-10906A	1	O	
24	PBA SUB-MP SEN	JC92-01362A	1	O	
25	PMO-BUSHING PICKUP,MP	JC72-41364A	1	O	
26	A/S MATERIAL-PICKUP,MP	JC81-00427A	1	O	

6-9. Base Frame Exploded View & Parts List

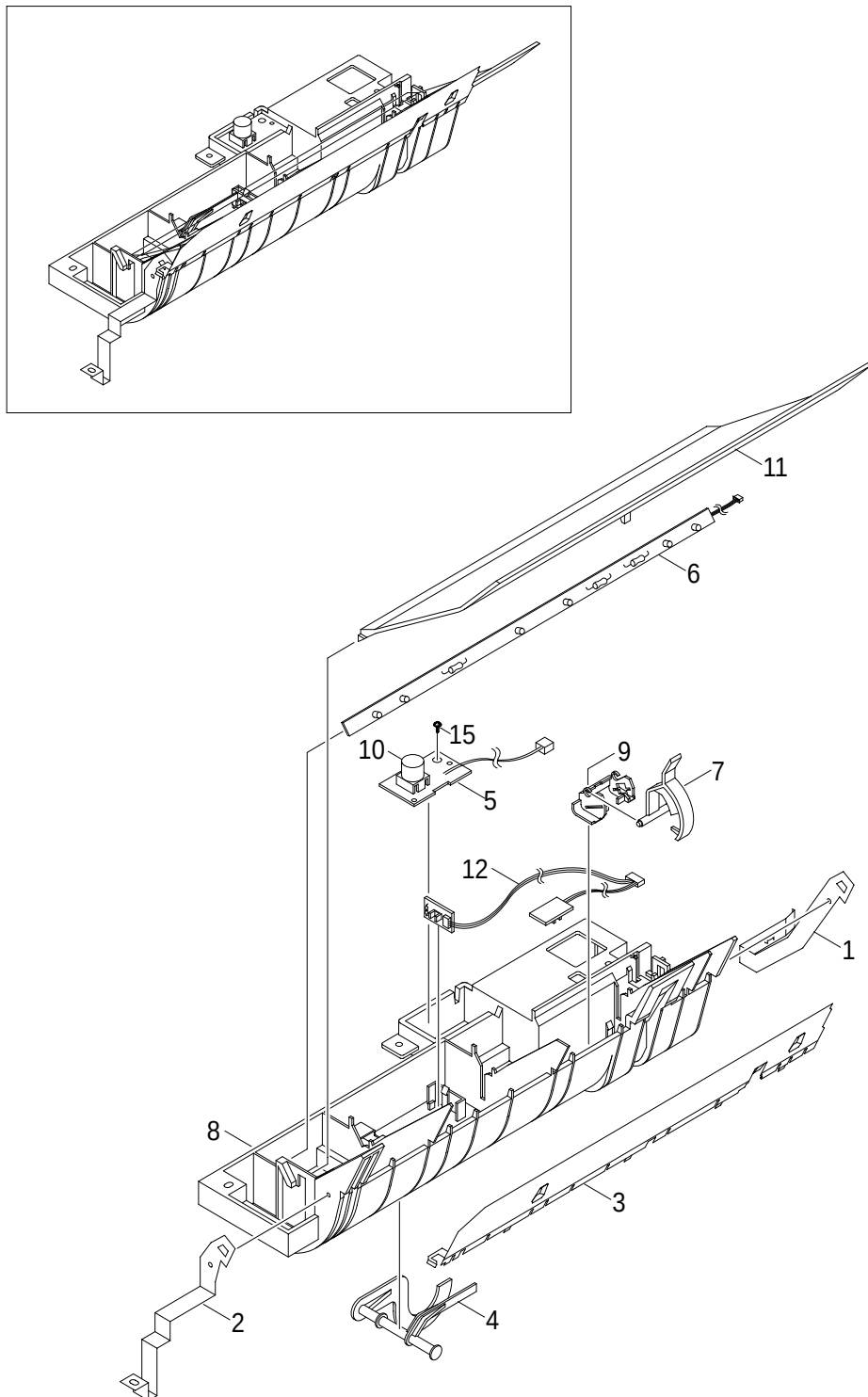


Base Frame Parts List

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
0	ELA HOU-BASE FRAME	JC96-02818A	1	X	SCX-5315F
	ELA HOU-BASE FRAME	JC96-02818B	1	X	SCX-5115
1	SCREW-TAPTITE	6003-000196	5	X	
2	SCREW-TAPTITE	6003-000269	2	X	
3	SCREW-TAPTITE	6003-001256	4	X	
4	SPRING ETC-TORSION	JC61-00486A	1	X	
5	FOOT-ML80	JC61-40001A	2	O	
6	CAM-CATCH	JC66-00050A	1	X	
7	IPR-CHANNEL BASE FRAME	JC70-00239A	1	X	
8	IPR-GROUND PLATE A(OPC)	JC70-00240A	1	O	
9	IPR-GROUND PLATE B(BASE)	JC70-00241A	1	O	
10	PMO-BASE FRAME	JC72-00779A	1	X	
11	PMO-BRACKET PUSH DEVE	JC72-00780A	2	X	
12	PMO-BRACKET SIDE OPEN	JC72-00781A	1	O	
13	PMO-COVER FRONT DUMMY	JC72-00785A	1	X	
14	ELA M/M-AUD SPEAKER	JC96-01607A	1	O	
15	SPRING ETC-DEVE REAR	JC61-00550A	1	X	
16	CBF HARNESS-OPC GND	JC39-00179A	1	X	
17	FAN-DC(LSU)	JC31-00026A	1	X	
18	SPRING ETC-DEVE FRONT	JC61-00551A	1	X	
19	SHEET-BASE FRAME	JC63-00242A	2	X	
20	SCREW-TAPPING	6002-000209	2	X	

O: Service available X: Service not available

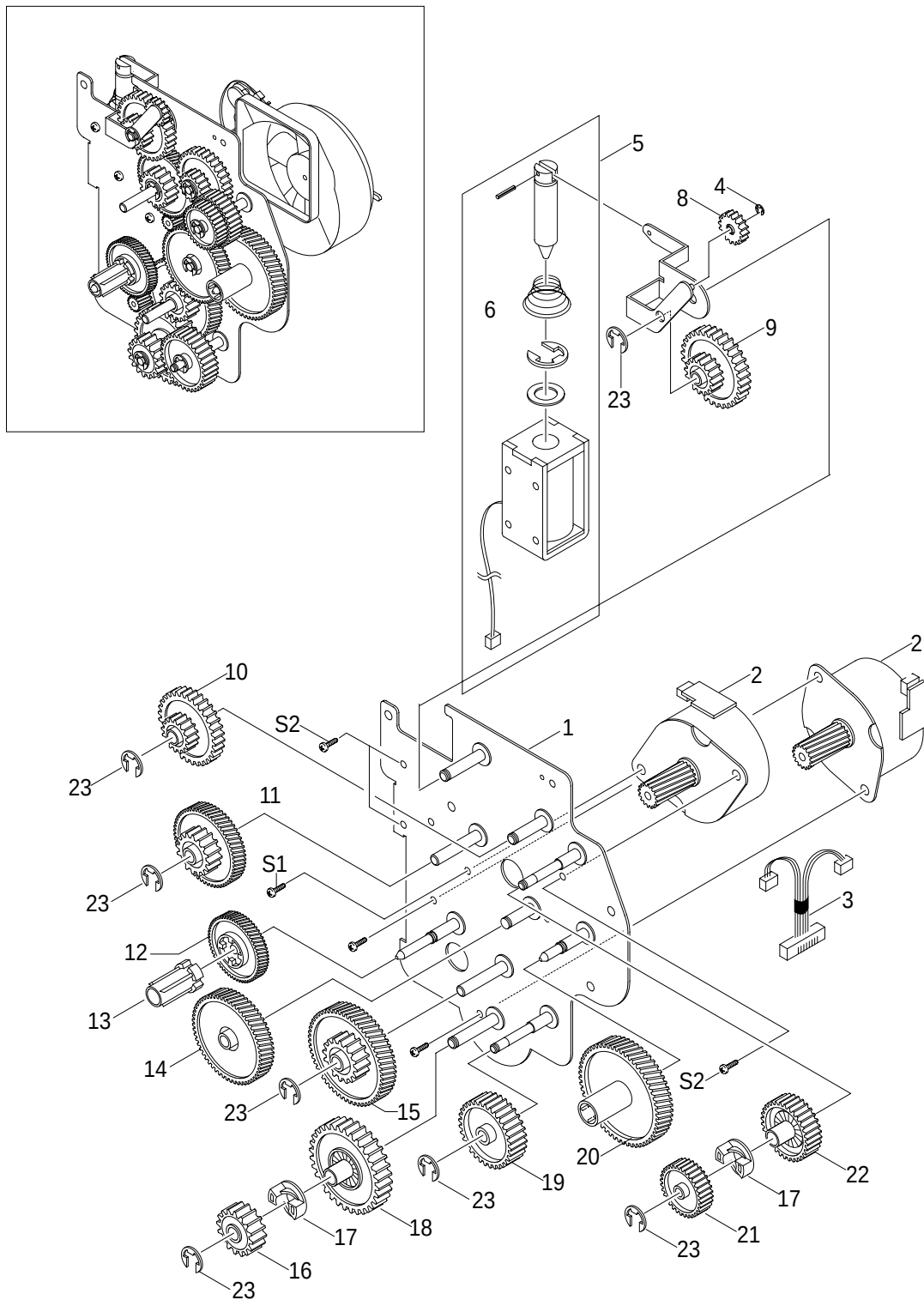
6-10.Pick-up Ass'y Exploded View & Parts List



Pick-up Ass'y Parts List

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
0	ELA HOU-PICKUP ASS'Y	JC96-02715A	1	O	
1	IPR-GND FEED	JC70-00238A	1	X	
2	IPR-GND INPUT	JC70-00235A	1	O	
3	IPR-GUIDE INPUT	JC70-00222A	1	O	
4	PMO-ACTUATOR EMPTY	JC72-00719A	1	O	
5	PBA SUB-TONER_TX	JC92-01359A	1	O	
6	PBA SUB-PTL	JC92-01361A	1	O	
7	PMO-FEED SENSOR	JC72-00721A	1	X	
8	PMO-GUIDE PAPER	JC72-00722A	1	X	
9	PMO-HOLDER SENSOR FEED	JC72-00726A	1	X	
10	PMO-LENS TONER SENSOR	JC72-00803A	1	X	
11	PMO-PTL PATH	JC72-00822A	1	X	
12	PBA SUB-FEED+P.EMP SEN.	JC92-01363A	1	O	

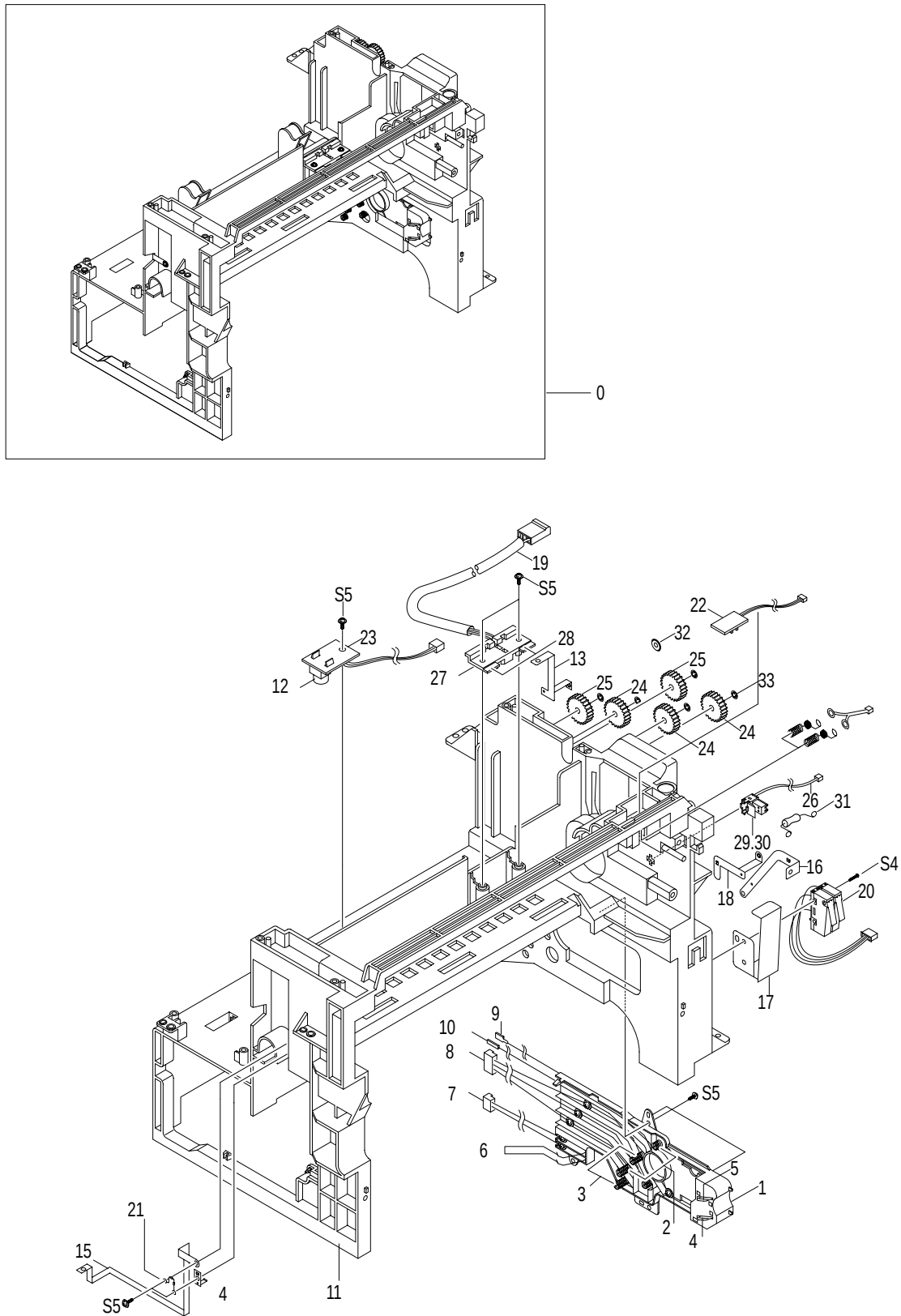
6-11. Drive Ass'y Exploded View & Parts List



Drive Ass'y Parts List

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
0	ELA HOU-DRIVE ASS'Y	JC96-02741A	1	O	
1	IPR-BRKT MOTOR	JC70-00257A	1	X	
2	MOTOR-STEP	JC31-00020B	2	O	
3	CBF-HARNESS-MOTOR	JC39-00165A	1	X	
4	RING-E	6044-000159	1	X	
5	SOLENOID-DUPLEX	JC33-00008A	1	O	
6	SPRING SOLENOID DP	JC61-70915A	1	X	
7	IPR-LINK SOLENOID	JC70-00258A	1	X	
8	GEAR-EXIT/U,ID	JC66-40211B	1	X	
9	GEAR-SWING DRV	JC66-00349A	1	X	
10	GEAR-35/19	JC66-00350A	1	X	
11	GEAR-71/23	JC66-00345A	1	X	
12	GEAR-DEVE DRV	JC66-00338A	1	X	
13	PMO-DEV/COUPLING	JC72-00743A	1	X	
14	GEAR-RDCN,OPC	JC66-00351A	1	X	
15	GEAR-86/23	JC66-00337A	1	X	
16	GEAR-RDCN FEED OUTER	JC66-00343A	1	X	
17	GEAR-HUB CLUTCH	JC66-00340A	2	X	
18	GEAR-RDCN FEED INNER	JC66-00342A	1	X	
19	GEAR-FEED DRV	JC66-00348A	1	X	
20	GEAR-OPC DRV	JC66-00347A	1	X	
21	GEAR-GEAR FUSER DRV OUTER	JC66-00334A	1	X	
22	GEAR-FUSER DRV INNER	JC66-00333A	1	X	
23	RING-E	6044-000231	8	X	
S1	SCREW-TAPTITE	6003-000196	5	X	
S2	SCREW-TAPTITE	6003-000269	7	X	

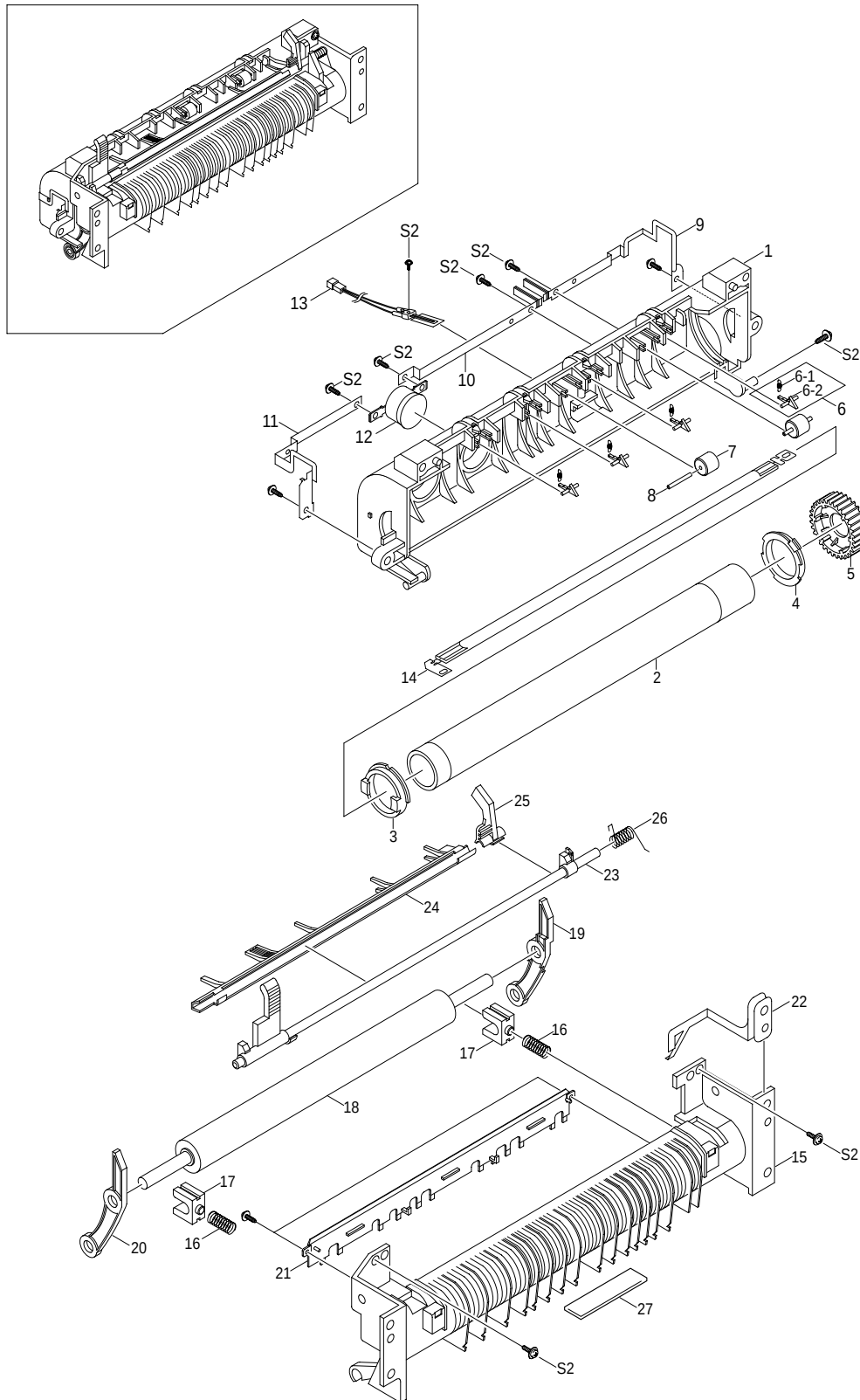
6-12. Main Frame Ass'y Exploded View & Parts List



Main Frame Ass'y Parts List

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
0	ELA HOU-FRAME MAIN ASS'Y	JC96-02184A	1	O	
1	PMO-HOUSING TERMINAL	JC72-00802A	1	O	
2	IPR-TERMINAL BLADE	JC70-00269A	2	X	
3	IPR-TERMINAL SUPPLY	JC70-00270A	2	X	
4	IPR-TERMINAL TR	JC70-00271A	1	X	
5	IPR-TERMINAL GND	JC70-00272A	1	X	
6	IPR-TERMINAL DEVE KEY	JC70-00273A	2	X	
7	CBF-HARNESS-DEV-ID	JC39-00166A	1	X	
8	CBF-HARNESS-BLADE+SUPPLY+DEV	JC39-00170A	5	X	
9	CBF-HARNESS-MAIN-THV WIRE	JC39-00168A	1	X	
10	CBF-HARNESS-MAIN-MHV WIRE	JC39-00169A	1	X	
11	PMO-FRAME MAIN	JC72-00800A	1	X	
12	PMO-LENS TONER SENSOR	JC72-00803A	2	X	
13	IPR-GND EXIT	JC70-00214A	1	X	
14	IPR-GND OPC	JC70-00216A	1	X	
15	IPR-GND OPC BASE	JC70-00217A	1	X	
16	IPR-GND FUSER	JC70-00215A	1	X	
17	IPR-GUARD C/O S/W	JC70-00218A	1	X	
18	IPR-GND TERMINAL	JC70-00219A	1	X	
19	CBF HARNESS-AC WIRE	JC39-00171A	1	X	
20	CBF-HARNESS;SWITCH-MICRO	JC81-00438A	2	O	
21	CBF-HARNESS MOTOR	JB39-00017A	1	X	
22	PBA SUB-EXIT SENSOR	JC92-01364A	1	O	
23	PBA SUB-TONER_RX	JC92-01360A	1	O	
24	GEAR-EXIT/U,ID	JC66-40211B	3	X	
25	GEAR-EXIT,IDLE(Z17)	JC66-40964A	2	X	
26	CBF-HARNESS THERMISTOR_JOINT	JC39-00164A	1	O	
27	PMO-HOUSING TERMINAL	JC72-41010A	1	X	
28	IPR-TERMINAL FU	JC70-10961A	2	X	
29	PMO-CAP CONNECTOR L	JC72-00463A	1	O	
30	PMO-CAP CONNECTOR U	JC72-00465A	1	O	
31	ELA HOU-MOTOR GND	JC96-01579A	1	X	
32	SPRING-CLUTCH	JB61-70922A	2	X	
33	RING-CS	6044-000001	5	X	
S	SCREW-TAPTITE,M3*8 BLACK,BINDER	6003-000119	17	X	

6-13. FuserAss'y Exploded View & Parts List



FuserAss'y Parts List

NO	DESCRIPTION	SEC CODE	Q'TY	SA	REMARK
0	ELA HOU-FUSER(110V)ASS'Y	JC96-02739A	1	O	110V
0	ELA HOU-FUSER(220V)ASS'Y	JC96-02740A	1	O	220V
1	PMO-UPPER FUSER	JC72-00812A	1	X	
2	RMO-ROLLER HEAT	JC73-00093A	1	X	
3	PMO-BEARING H/R-F	JC72-00814A	1	X	
4	BEARING-H/R L	JC66-10902A	1	X	
5	GEAR-FUSER	JC66-40913B	1	O	
6	MEA UNIT-CLAW ASS'Y	JC97-01577A	1	X	
6-1	SPRING-SAPERATION	JC61-70909A	4	X	
6-2	PMO-GUIDE CLAW	JC72-00376A	4	X	
7	PEX-ROLLER EXIT F-UP	JC72-20901A	2	X	
8	IPR-PIN ROLLER EXIT	JC70-00064A	2	X	
9	NPR-ELECTRODE GEAR	JC71-00029A	1	X	
10	NPR-ELECTRODE M	JC71-00030A	1	X	
11	NPR-ELECTRODE F	JC71-00028A	1	X	
12	THERMOSTAT	4712-000001	1	O	
13	THERMISTOR-FUSER	JC14-00001A	1	O	
14	LAMP-HALOGEN (110V)	4713-001170	1	O	110V
14	LAMP-HALOGEN(220V)	4713-001171	1	O	220V
15	PMO-LOWER FUSER	JC72-00820A	1	X	
16	THERMISTOR-FUSER	JC14-00001A	1	X	
17	BEARING-PRESSURE/R	JC66-10901A	2	X	
18	RMO-ROLLER PRESSURE	JC73-00094A	1	X	
19	PMO-LEVER JAM R	JC72-00819A	1	X	
20	PMO-LEVER JAM F	JC72-00818A	1	X	
21	PMO-GUIDE INPUT	JC72-00817A	1	X	
22	IPR-GROUND FU	JC70-00259A	1	X	
23	PMO-ACTUATOR EXIT	JC72-00810A	1	X	
24	ACTUATOR ASS'Y	JC97-01611A	1	O	
25	PMO-ARM ACTUATOR	JC72-00811A	1	X	
26	SPRING-PR(7300)	JC61-00056A	2	X	
27	LABEL(R)-HV FUSER	JC68-00407A	1	X	
S1	SCREW-TAPTITE	6003-000119	8	X	
S2	SCREW-TAPTITE	6003-000269	4	X	

7. Electrical Parts Lists

7-1 Main PBA

Code No.	Loc.	No.	Description	Specification
JC92-01479A	MAIN PBA	1	PBA MAIN-MAIN	SCX-5315F,SEC,USA,15PPM,MFP,
0202-000008		1	SOLDER-WIRE	S63S-W3.0,S63S,D3,63SN/37PB,-
0202-000108		1	SOLDER-CREAM	RMA-010 T-322,S63,-,-
0202-000118		1	SOLDER-WIRE	KR-19 RMA,-,D0.8,-,-
0202-001025		1	SOLDER-WIRE FLUX	KS-611,-,-,-,spray
0203-001235		1	TAPE-PAPER	YW-692,T0.15,W5.8,L4000M,-
0203-001236		1	TAPE-PAPER	YW-4620,T0.12,W6.2,L4000M,-
0204-000469		1	THINNER	#4662,-,0.795,-
0401-000116	D12	1	DIODE-SWITCHING	MMSD914T1,100V,200mA,SOD-123,TP
0401-000116	D23	1	DIODE-SWITCHING	MMSD914T1,100V,200mA,SOD-123,TP
0401-000116	D25	1	DIODE-SWITCHING	MMSD914T1,100V,200mA,SOD-123,TP
0401-000116	D33	1	DIODE-SWITCHING	MMSD914T1,100V,200mA,SOD-123,TP
0401-000116	D34	1	DIODE-SWITCHING	MMSD914T1,100V,200mA,SOD-123,TP
0401-000116	D35	1	DIODE-SWITCHING	MMSD914T1,100V,200mA,SOD-123,TP
0401-000116	D37	1	DIODE-SWITCHING	MMSD914T1,100V,200mA,SOD-123,TP
0401-000116	D38	1	DIODE-SWITCHING	MMSD914T1,100V,200mA,SOD-123,TP
0402-000129	D13	1	DIODE-RECTIFIER	1N4003,200V,1A,DO-41,TP
0402-000129	D14	1	DIODE-RECTIFIER	1N4003,200V,1A,DO-41,TP
0402-000129	D15	1	DIODE-RECTIFIER	1N4003,200V,1A,DO-41,TP
0402-000129	D19	1	DIODE-RECTIFIER	1N4003,200V,1A,DO-41,TP
0402-000129	D20	1	DIODE-RECTIFIER	1N4003,200V,1A,DO-41,TP
0402-000129	D26	1	DIODE-RECTIFIER	1N4003,200V,1A,DO-41,TP
0402-000129	D39	1	DIODE-RECTIFIER	1N4003,200V,1A,DO-41,TP
0402-000129	D40	1	DIODE-RECTIFIER	1N4003,200V,1A,DO-41,TP
0403-000350	ZD1	1	DIODE-ZENER	UZ4.3B,4.3V,4.0-4.6V,500mW,DO-
0404-000112	D16	1	DIODE-SCHOTTKY	RB420D,25V,100mA,SOT-23,TP
0404-000112	D21	1	DIODE-SCHOTTKY	RB420D,25V,100mA,SOT-23,TP
0404-000112	D22	1	DIODE-SCHOTTKY	RB420D,25V,100mA,SOT-23,TP
0404-000112	D24	1	DIODE-SCHOTTKY	RB420D,25V,100mA,SOT-23,TP
0404-000112	D36	1	DIODE-SCHOTTKY	RB420D,25V,100mA,SOT-23,TP
0407-000101	D1	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D10	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D11	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D17	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D18	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D2	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D27	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D28	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D3	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D31	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D32	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D5	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D6	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D7	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D8	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D9	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0501-000010	Q24	1	TR-SMALL SIGNAL	KSC1008,NPN,800mW,TO-92,TP,120-240

Code No.	Loc.	No.	Description	Specification
0501-000010	Q25	1	TR-SMALL SIGNAL	KSC1008,NPN,800mW,TO-92,TP,120-240
0501-000279	Q16	1	TR-SMALL SIGNAL	KSA1182-Y,PNP,150mW,SOT-23,TP,
0501-000338	Q1	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q11	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q14	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q15	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q17	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q18	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q19	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q2	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q22	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q23	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q26	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q3	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q4	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q5	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q7	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q8	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0501-000338	Q9	1	TR-SMALL SIGNAL	2SC2812,NPN,200mW,SOT-23,TP,20
0502-000245	Q10	1	TR-POWER	KSB1151-Y,PNP,1.3W,TO-126,-,16
0502-000245	Q12	1	TR-POWER	KSB1151-Y,PNP,1.3W,TO-126,-,16
0502-000245	Q13	1	TR-POWER	KSB1151-Y,PNP,1.3W,TO-126,-,16
0502-000245	Q21	1	TR-POWER	KSB1151-Y,PNP,1.3W,TO-126,-,16
0502-000245	Q6	1	TR-POWER	KSB1151-Y,PNP,1.3W,TO-126,-,16
0502-001048	Q20	1	TR-POWER	KSD1691,NPN,1.3W,TO-126,BK,160
0801-000379	U27	1	IC-CMOS LOGIC	74HC00,NAND GATE,SOP,14P,150MI
0801-000477	U31	1	IC-CMOS LOGIC	74HCT273,D FLIP-FLOP,SOP,20P,3
0801-000477	U37	1	IC-CMOS LOGIC	74HCT273,D FLIP-FLOP,SOP,20P,3
0801-001090	U18	1	IC-CMOS LOGIC	74HC14,SCHMITT INVERTER,SOP,1
0801-002095	U32	1	IC-CMOS LOGIC	74LCX245,BUFFERS,TSSOP,20P,173MIL,OCTAL,TP
0801-002095	U35	1	IC-CMOS LOGIC	74LCX245,BUFFERS,TSSOP,20P,173MIL,OCTAL,TP,
0801-002326	U22	1	IC-CMOS LOGIC	74LCX32,OR GATE,TSSOP,14P,173MIL,QUAD,TP,
0801-002326	U24	1	IC-CMOS LOGIC	74LCX32,OR GATE,TSSOP,14P,173MIL,QUAD,TP,
0801-002326	U56	1	IC-CMOS LOGIC	74LCX32,OR GATE,TSSOP,14P,173MIL,QUAD,TP,
0801-002446	U1	1	IC-CMOS LOGIC	74LCX14,SCHMITT INVERTER,TSSOP,14P,173MIL,HEX,TP,
0801-002449	U4	1	IC-CMOS LOGIC	74LVX4245,BUS TRANSCEIVER,TSSOP,24P,173MIL,OCTAL,TP,
0801-002591	U26	1	IC-CMOS LOGIC	74LVX273,D FLIP-FLOP,TSSOP,20P,173MIL,OCTAL,TP,
0801-002591	U38	1	IC-CMOS LOGIC	74LVX273,D FLIP-FLOP,TSSOP,20P,173MIL,OCTAL,TP,
0803-003263	U25	1	IC-TTL	74LCX07,HEX BUFFER,SOIC,14P,150MIL,SIX,TP,
0803-003263	U5	1	IC-TTL	74LCX07,HEX BUFFER,SOIC,14P,150MIL,SIX,TP
0803-003263	U7	1	IC-TTL	74LCX07,HEX BUFFER,SOIC,14P,150MIL,SIX,TP
0803-003263	U8	1	IC-TTL	74LCX07,HEX BUFFER,SOIC,14P,150MIL,SIX,TP,
1001-000170	U48	1	IC-ANALOG SWITCH	MC14051BD,SPDT CMOS,SOP,16P,15
1001-000171	U47	1	IC-ANALOG SWITCH	MC14053BD,SPDT CMOS,SOP,16P,15
1006-001224	U33	1	IC-LINE TRANSCEIVER	74LVX161284,TSSOP,48P,240MIL,TRIPLE,TP,
1105-001464	U40	1	IC-DRAM	K4S641632F,4MX16BIT,TSOP(II),54P,400MIL,7.5NS,3.3V,10%,
1105-001464	U49	1	IC-DRAM	K4S641632F,4MX16BIT,TSOP(II),54P,400MIL,7.5NS,3.3V,10%,
1106-001332	U55	1	IC-SRAM	6R1008,128Kx8Bit,SOJ,32P,400MIL,15nS,3.3V,10%
1106-001453	U12	1	IC-SRAM	K6R1016V1D,64Kx16BIT,TSOP(II),44P,400MIL,8NS,3.3V,10%,
1107-001286	U43	1	IC-FLASH MEMORY	29LV160,2Mx8Bit,TSOP,48P,724MIL,70nS,3V,10%,
1107-001286	U54	1	IC-FLASH MEMORY	29LV160,2Mx8Bit,TSOP,48P,724MIL,70nS,3V,10%,
1201-000105	U39	1	IC-AUDIO AMP	34119,SOP,8P,150MIL,SINGLE,-,P

Code No.	Loc.	No.	Description	Specification
1201-000167	U45	1	IC-OP AMP	358,SOP,8P,150MIL,DUAL,100V/mV
1201-000167	U50	1	IC-OP AMP	358,SOP,8P,150MIL,DUAL,100V/mV
1202-000164	U3	1	IC-VOLTAGE COMP.	393,SOP,8P,150MIL,DUAL,36V,CMO
1203-000157	U10	1	IC-POSI.ADJUST REG.	317,TO-220,3P,-,PLASTIC,1.2V/3
1203-001455	U51	1	IC-POSI.FIXED REG.	1117,DPAK,3P,265MIL,PLASTIC,3.
1203-001455	U52	1	IC-POSI.FIXED REG.	1117,DPAK,3P,265MIL,PLASTIC,3.
1203-001455	U9	1	IC-POSI.FIXED REG.	1117,DPAK,3P,265MIL,PLASTIC,3.
1203-002220	U19	1	IC-POSI.ADJUST REG.	LD1117,DPAK,3P,240MIL,PLASTIC,1.25/15V,12W,
1203-002233	U20	1	IC-RESET	XC61F,SOT-23,3P,-,PLASTIC,0.7/10V,150MW,-,-,TP
1205-001771	U15	1	IC-CLOCK GENERATOR	FS781BZB,SOP,8P,150MIL,PLASTIC,5.5V,37mW,0to+70C,TP,-
1205-001771	U21	1	IC-CLOCK GENERATOR	FS781BZB,SOP,8P,150MIL,PLASTIC,5.5V,37mW,0to+70C,TP,-
1205-001771	U36	1	IC-CLOCK GENERATOR	FS781BZB,SOP,8P,150MIL,PLASTIC,5.5V,37mW,0to+70C,TP,-
1205-001896	U42	1	IC-MODEM	FM336R6719-12,QFP,100P,-,PLASTIC,3.6V,250mW,0to+70C,TR,-
1205-002258	U34	1	IC-CLOCK GENERATOR	CY25814SC,SOIC,8P,150MIL,PLASTIC,3.6V,68MW,0TO+70C,-,-
2001-000016	R56	1	R-CARBON(S)	1OHM,5%,1/2W,AA,TP,2.4X6.4MM
2005-000168	R119	1	R-WIRE WOUND,NON	0.22ohm,5%,2W,AA,BK,4x12mm
2005-000168	R144	1	R-WIRE WOUND,NON	0.22ohm,5%,2W,AA,BK,4x12mm
2005-000168	R152	1	R-WIRE WOUND,NON	0.22ohm,5%,2W,AA,BK,4x12mm
2005-000168	R175	1	R-WIRE WOUND,NON	0.22ohm,5%,2W,AA,BK,4x12mm
2005-000168	R4	1	R-WIRE WOUND,NON	0.22ohm,5%,2W,AA,BK,4x12mm
2005-000168	R5	1	R-WIRE WOUND,NON	0.22ohm,5%,2W,AA,BK,4x12mm
2007-000070	R100	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R102	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R103	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R11	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R113	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R12	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R121	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R125	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R13	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R131	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R132	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R136	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R137	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R139	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R14	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R140	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R141	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R143	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R15	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R155	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R159	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R16	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R164	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R166	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R183	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R192	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R197	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R198	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R199	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R202	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R203	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608

Code No.	Loc.	No.	Description	Specification
2007-000070	R204	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R206	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R210	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R211	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R212	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R216	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R223	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R226	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R244	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R287	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R306	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R307	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R314	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R36	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R43	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R60	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R70	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R87	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R88	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000071	R305	1	R-CHIP	22ohm,5%,1/16W,DA,TP,1608
2007-000071	R32	1	R-CHIP	22ohm,5%,1/16W,DA,TP,1608
2007-000071	R37	1	R-CHIP	22ohm,5%,1/16W,DA,TP,1608
2007-000074	R10	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R118	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R126	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R142	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R219	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R23	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R24	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R251	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R257	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R283	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R291	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R302	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R33	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R34	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R35	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R38	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R39	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R40	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R41	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R42	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R57	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R8	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R86	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R9	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000077	R48	1	R-CHIP	470ohm,5%,1/16W,DA,TP,1608
2007-000078	R124	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000078	R133	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000078	R157	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000078	R158	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000078	R171	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608

Code No.	Loc.	No.	Description	Specification
2007-000078	R177	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000078	R178	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000078	R217	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000078	R232	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000078	R241	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000078	R243	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000078	R245	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000078	R249	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000078	R28	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000078	R286	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000078	R81	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000080	R252	1	R-CHIP	2Kohm,5%,1/16W,DA,TP,1608
2007-000082	R120	1	R-CHIP	3.3Kohm,5%,1/16W,DA,TP,1608
2007-000082	R174	1	R-CHIP	3.3Kohm,5%,1/16W,DA,TP,1608
2007-000082	R229	1	R-CHIP	3.3Kohm,5%,1/16W,DA,TP,1608
2007-000083	R285	1	R-CHIP	3Kohm,5%,1/16W,DA,TP,1608
2007-000083	R92	1	R-CHIP	3Kohm,5%,1/16W,DA,TP,1608
2007-000084	R167	1	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608
2007-000084	R182	1	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608
2007-000084	R185	1	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608
2007-000084	R195	1	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608
2007-000084	R231	1	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608
2007-000084	R25	1	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608
2007-000084	R29	1	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608
2007-000084	R295	1	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608
2007-000084	R3	1	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608
2007-000086	R215	1	R-CHIP	5.6Kohm,5%,1/16W,DA,TP,1608
2007-000086	R225	1	R-CHIP	5.6Kohm,5%,1/16W,DA,TP,1608
2007-000086	R246	1	R-CHIP	5.6Kohm,5%,1/16W,DA,TP,1608
2007-000086	R247	1	R-CHIP	5.6Kohm,5%,1/16W,DA,TP,1608
2007-000086	R298	1	R-CHIP	5.6Kohm,5%,1/16W,DA,TP,1608
2007-000086	R303	1	R-CHIP	5.6Kohm,5%,1/16W,DA,TP,1608
2007-000086	R64	1	R-CHIP	5.6Kohm,5%,1/16W,DA,TP,1608
2007-000086	R99	1	R-CHIP	5.6Kohm,5%,1/16W,DA,TP,1608
2007-000090	R106	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R110	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R112	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R115	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R130	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R145	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R146	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R160	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R176	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R179	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R18	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R184	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R186	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R191	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R193	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R2	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R20	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R205	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608

Code No.	Loc.	No.	Description	Specification
2007-000090	R213	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R220	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R254	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R258	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R26	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R260	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R263	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R264	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R265	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R266	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R267	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R269	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R27	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R275	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R288	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R308	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R309	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R31	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R310	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R311	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R312	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R313	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R44	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R50	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R51	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R53	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R54	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R67	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R68	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R77	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R78	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R82	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R83	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R84	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R96	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000091	R228	1	R-CHIP	12Kohm,5%,1/16W,DA,TP,1608
2007-000091	R234	1	R-CHIP	12Kohm,5%,1/16W,DA,TP,1608
2007-000092	R168	1	R-CHIP	15Kohm,5%,1/16W,DA,TP,1608
2007-000092	R253	1	R-CHIP	15Kohm,5%,1/16W,DA,TP,1608
2007-000092	R282	1	R-CHIP	15Kohm,5%,1/16W,DA,TP,1608
2007-000094	R1	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R122	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R123	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R134	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R153	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R154	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R277	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R80	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R90	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000096	R128	1	R-CHIP	30Kohm,5%,1/16W,DA,TP,1608
2007-000096	R138	1	R-CHIP	30Kohm,5%,1/16W,DA,TP,1608
2007-000096	R163	1	R-CHIP	30Kohm,5%,1/16W,DA,TP,1608

Code No.	Loc.	No.	Description	Specification
2007-000096	R170	1	R-CHIP	30Kohm,5%,1/16W,DA,TP,1608
2007-000096	R276	1	R-CHIP	30Kohm,5%,1/16W,DA,TP,1608
2007-000096	R91	1	R-CHIP	30Kohm,5%,1/16W,DA,TP,1608
2007-000096	R93	1	R-CHIP	30Kohm,5%,1/16W,DA,TP,1608
2007-000097	R109	1	R-CHIP	47Kohm,5%,1/16W,DA,TP,1608
2007-000097	R111	1	R-CHIP	47Kohm,5%,1/16W,DA,TP,1608
2007-000097	R149	1	R-CHIP	47Kohm,5%,1/16W,DA,TP,1608
2007-000097	R19	1	R-CHIP	47Kohm,5%,1/16W,DA,TP,1608
2007-000097	R214	1	R-CHIP	47Kohm,5%,1/16W,DA,TP,1608
2007-000097	R22	1	R-CHIP	47Kohm,5%,1/16W,DA,TP,1608
2007-000097	R240	1	R-CHIP	47Kohm,5%,1/16W,DA,TP,1608
2007-000097	R242	1	R-CHIP	47Kohm,5%,1/16W,DA,TP,1608
2007-000097	R268	1	R-CHIP	47Kohm,5%,1/16W,DA,TP,1608
2007-000097	R280	1	R-CHIP	47Kohm,5%,1/16W,DA,TP,1608
2007-000097	R284	1	R-CHIP	47Kohm,5%,1/16W,DA,TP,1608
2007-000097	R290	1	R-CHIP	47Kohm,5%,1/16W,DA,TP,1608
2007-000097	R301	1	R-CHIP	47Kohm,5%,1/16W,DA,TP,1608
2007-000097	R69	1	R-CHIP	47Kohm,5%,1/16W,DA,TP,1608
2007-000097	R89	1	R-CHIP	47Kohm,5%,1/16W,DA,TP,1608
2007-000102	R161	1	R-CHIP	100Kohm,5%,1/16W,DA,TP,1608
2007-000102	R189	1	R-CHIP	100Kohm,5%,1/16W,DA,TP,1608
2007-000102	R278	1	R-CHIP	100Kohm,5%,1/16W,DA,TP,1608
2007-000103	R271	1	R-CHIP	120Kohm,5%,1/16W,DA,TP,1608
2007-000103	R297	1	R-CHIP	120Kohm,5%,1/16W,DA,TP,1608
2007-000104	R248	1	R-CHIP	150Kohm,5%,1/16W,DA,TP,1608
2007-000106	R187	1	R-CHIP	220Kohm,5%,1/16W,DA,TP,1608
2007-000106	R262	1	R-CHIP	220Kohm,5%,1/16W,DA,TP,1608
2007-000106	R272	1	R-CHIP	220Kohm,5%,1/16W,DA,TP,1608
2007-000106	R293	1	R-CHIP	220Kohm,5%,1/16W,DA,TP,1608
2007-000109	R117	1	R-CHIP	1Mohm,5%,1/16W,DA,TP,1608
2007-000109	R129	1	R-CHIP	1Mohm,5%,1/16W,DA,TP,1608
2007-000109	R237	1	R-CHIP	1Mohm,5%,1/16W,DA,TP,1608
2007-000109	R273	1	R-CHIP	1Mohm,5%,1/16W,DA,TP,1608
2007-000109	R294	1	R-CHIP	1Mohm,5%,1/16W,DA,TP,1608
2007-000113	R135	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R180	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R181	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R190	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R200	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R201	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R207	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R208	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R221	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R233	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R235	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R236	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000116	R165	1	R-CHIP	120ohm,5%,1/16W,DA,TP,1608
2007-000120	R116	1	R-CHIP	680ohm,5%,1/16W,DA,TP,1608
2007-000120	R150	1	R-CHIP	680ohm,5%,1/16W,DA,TP,1608
2007-000120	R151	1	R-CHIP	680ohm,5%,1/16W,DA,TP,1608
2007-000121	R172	1	R-CHIP	820ohm,5%,1/16W,DA,TP,1608
2007-000121	R279	1	R-CHIP	820ohm,5%,1/16W,DA,TP,1608

Code No.	Loc.	No.	Description	Specification
2007-000122	R222	1	R-CHIP	1.2Kohm,5%,1/16W,DA,TP,1608
2007-000123	R169	1	R-CHIP	1.5Kohm,5%,1/16W,DA,TP,1608
2007-000123	R173	1	R-CHIP	1.5Kohm,5%,1/16W,DA,TP,1608
2007-000123	R95	1	R-CHIP	1.5Kohm,5%,1/16W,DA,TP,1608
2007-000124	R114	1	R-CHIP	2.2Kohm,5%,1/16W,DA,TP,1608
2007-000124	R98	1	R-CHIP	2.2Kohm,5%,1/16W,DA,TP,1608
2007-000129	R107	1	R-CHIP	27Kohm,5%,1/16W,DA,TP,1608
2007-000131	R281	1	R-CHIP	91Kohm,5%,1/16W,DA,TP,1608
2007-000132	R188	1	R-CHIP	180Kohm,5%,1/16W,DA,TP,1608
2007-000133	R292	1	R-CHIP	330Kohm,5%,1/16W,DA,TP,1608
2007-000134	R230	1	R-CHIP	33Kohm,5%,1/16W,DA,TP,1608
2007-000134	R63	1	R-CHIP	33Kohm,5%,1/16W,DA,TP,1608
2007-000136	R270	1	R-CHIP	300Kohm,5%,1/16W,DA,TP,1608
2007-000265	R58	1	R-CHIP	1.8Kohm,1%,1/16W,DA,TP,1608
2007-000309	R127	1	R-CHIP	10ohm,5%,1/16W,DA,TP,1608
2007-000309	R227	1	R-CHIP	10ohm,5%,1/16W,DA,TP,1608
2007-000309	R250	1	R-CHIP	10ohm,5%,1/16W,DA,TP,1608
2007-000368	R296	1	R-CHIP	130Kohm,5%,1/16W,DA,TP,1608
2007-000402	R274	1	R-CHIP	150ohm,5%,1/16W,DA,TP,1608
2007-000618	R147	1	R-CHIP	24ohm,5%,1/16W,DA,TP,1608
2007-000618	R148	1	R-CHIP	24ohm,5%,1/16W,DA,TP,1608
2007-000683	R49	1	R-CHIP	3.3Kohm,1%,1/16W,DA,TP,1608
2007-000839	R46	1	R-CHIP	39ohm,5%,1/16W,DA,TP,1608
2007-000839	R47	1	R-CHIP	39ohm,5%,1/16W,DA,TP,1608
2007-000839	R52	1	R-CHIP	39ohm,5%,1/16W,DA,TP,1608
2007-000839	R59	1	R-CHIP	39ohm,5%,1/16W,DA,TP,1608
2007-000839	R6	1	R-CHIP	39ohm,5%,1/16W,DA,TP,1608
2007-000839	R62	1	R-CHIP	39ohm,5%,1/16W,DA,TP,1608
2007-000839	R65	1	R-CHIP	39ohm,5%,1/16W,DA,TP,1608
2007-000839	R66	1	R-CHIP	39ohm,5%,1/16W,DA,TP,1608
2007-000839	R7	1	R-CHIP	39ohm,5%,1/16W,DA,TP,1608
2007-000839	R71	1	R-CHIP	39ohm,5%,1/16W,DA,TP,1608
2007-000839	R73	1	R-CHIP	39ohm,5%,1/16W,DA,TP,1608
2007-000839	R74	1	R-CHIP	39ohm,5%,1/16W,DA,TP,1608
2007-000965	R156	1	R-CHIP	5.1Kohm,5%,1/16W,DA,TP,1608
2007-000965	R194	1	R-CHIP	5.1Kohm,5%,1/16W,DA,TP,1608
2007-000965	R238	1	R-CHIP	5.1Kohm,5%,1/16W,DA,TP,1608
2007-001002	R17	1	R-CHIP	510ohm,5%,1/16W,DA,TP,1608
2007-001002	R209	1	R-CHIP	510ohm,5%,1/16W,DA,TP,1608
2007-001002	R239	1	R-CHIP	510ohm,5%,1/16W,DA,TP,1608
2007-001002	R299	1	R-CHIP	510ohm,5%,1/16W,DA,TP,1608
2007-001002	R300	1	R-CHIP	510ohm,5%,1/16W,DA,TP,1608
2007-001002	R94	1	R-CHIP	510ohm,5%,1/16W,DA,TP,1608
2007-001002	R97	1	R-CHIP	510ohm,5%,1/16W,DA,TP,1608
2007-001044	R162	1	R-CHIP	56ohm,5%,1/16W,DA,TP,1608
2007-001134	R304	1	R-CHIP	68ohm,5%,1/16W,DA,TP,1608
2007-002768	R75	1	R-CHIP	6.2Kohm,1%,1/16W,DA,TP,1608
2011-000651	RA15	1	R-NETWORK	10ohm,5%,63mW,L,CHIP,8P,TP
2011-000660	RA1	1	R-NETWORK	1Kohm,5%,63mW,L,CHIP,8P,TP
2011-001094	RA10	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP
2011-001094	RA11	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP
2011-001094	RA12	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP

Code No.	Loc.	No.	Description	Specification
2011-001094	RA13	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP
2011-001094	RA16	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP
2011-001094	RA17	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP
2011-001094	RA18	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP
2011-001094	RA19	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP
2011-001094	RA2	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP
2011-001094	RA3	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP
2011-001094	RA4	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP
2011-001094	RA5	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP
2011-001094	RA6	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP
2011-001094	RA7	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP
2011-001094	RA8	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP
2011-001094	RA9	1	R-NETWORK	39ohm,5%,63mW,L,CHIP,8P,TP
2011-001334	U28	1	RC-NETWORK	1K/5.1K/39ohm,10%,150pF,-,6V,28P
2203-000189	C10	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C102	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C106	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C108	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C11	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C116	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C119	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C122	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C123	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C130	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C131	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C135	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C136	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C137	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C140	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C145	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C149	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C155	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C162	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C165	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C166	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C167	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C170	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C171	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C172	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C173	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C174	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C175	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C176	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C179	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C181	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C185	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C186	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C187	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C189	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C190	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C191	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C192	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,

[illegible]

Code No.	Loc.	No.	Description	Specification
2203-000189	C335	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C336	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C337	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C338	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C341	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C348	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C35	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C38	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C39	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C4	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C43	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C44	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C45	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C46	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C50	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C51	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C52	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C54	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C55	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C56	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C63	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C64	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C65	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C66	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C67	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C69	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C70	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C71	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C72	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C73	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C75	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C76	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C79	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C81	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C83	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C85	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C86	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C88	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C91	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C92	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C93	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C94	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C95	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C96	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000192	C128	1	C-CERAMIC,CHIP	100nF,+80-20%,50V,Y5V,TP,2012,
2203-000192	C158	1	C-CERAMIC,CHIP	100nF,+80-20%,50V,Y5V,TP,2012,
2203-000192	C5	1	C-CERAMIC,CHIP	100nF,+80-20%,50V,Y5V,TP,2012,
2203-000206	C101	1	C-CERAMIC,CHIP	100nF,10%,50V,X7R,TP,2012
2203-000206	C125	1	C-CERAMIC,CHIP	100nF,10%,50V,X7R,TP,2012
2203-000206	C144	1	C-CERAMIC,CHIP	100nF,10%,50V,X7R,TP,2012
2203-000206	C156	1	C-CERAMIC,CHIP	100nF,10%,50V,X7R,TP,2012
2203-000206	C47	1	C-CERAMIC,CHIP	100nF,10%,50V,X7R,TP,2012

Code No.	Loc.	No.	Description	Specification
2203-000206	C49	1	C-CERAMIC,CHIP	100nF,10%,50V,X7R,TP,2012
2203-000236	C184	1	C-CERAMIC,CHIP	0.1nF,5%,50V,C0G,TP,1608
2203-000236	C33	1	C-CERAMIC,CHIP	0.1nF,5%,50V,C0G,TP,1608
2203-000236	C42	1	C-CERAMIC,CHIP	0.1nF,5%,50V,C0G,TP,1608
2203-000236	C74	1	C-CERAMIC,CHIP	0.1nF,5%,50V,C0G,TP,1608
2203-000236	C80	1	C-CERAMIC,CHIP	0.1nF,5%,50V,C0G,TP,1608
2203-000236	C9	1	C-CERAMIC,CHIP	0.1nF,5%,50V,C0G,TP,1608
2203-000257	C132	1	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608
2203-000257	C20	1	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608
2203-000257	C208	1	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608
2203-000257	C25	1	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608
2203-000257	C272	1	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608
2203-000257	C311	1	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608
2203-000257	C328	1	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608
2203-000257	C41	1	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608
2203-000257	C57	1	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608
2203-000257	C84	1	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608
2203-000384	C126	1	C-CERAMIC,CHIP	0.015nF,5%,50V,C0G,TP,1608
2203-000384	C236	1	C-CERAMIC,CHIP	0.015nF,5%,50V,C0G,TP,1608
2203-000384	C246	1	C-CERAMIC,CHIP	0.015nF,5%,50V,C0G,TP,1608
2203-000426	C138	1	C-CERAMIC,CHIP	0.018nF,5%,50V,C0G,TP,1608
2203-000426	C139	1	C-CERAMIC,CHIP	0.018nF,5%,50V,C0G,TP,1608
2203-000440	C1	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C110	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C127	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C147	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C157	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C193	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C200	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C201	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C202	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C213	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C222	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C229	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C23	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C24	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C274	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C278	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C286	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C288	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C3	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C300	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C301	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C308	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C32	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C331	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C334	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C40	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C53	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C58	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C59	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-
2203-000440	C60	1	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-

Code No.	Loc.	No.	Description	Specification
2203-000626	C104	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C105	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C109	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C115	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C117	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C124	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C129	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C134	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C163	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C164	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C177	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C178	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C182	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C183	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C221	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C235	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C249	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C250	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C26	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C34	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C342	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C343	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C344	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C345	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C346	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C68	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C89	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C97	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C99	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000681	C160	1	C-CERAMIC,CHIP	0.027NF,5%,50V,C0G,TP,1608
2203-000681	C161	1	C-CERAMIC,CHIP	0.027NF,5%,50V,C0G,TP,1608
2203-000681	C237	1	C-CERAMIC,CHIP	0.027NF,5%,50V,C0G,TP,1608
2203-000681	C238	1	C-CERAMIC,CHIP	0.027NF,5%,50V,C0G,TP,1608
2203-000681	C264	1	C-CERAMIC,CHIP	0.027NF,5%,50V,C0G,TP,1608
2203-000681	C265	1	C-CERAMIC,CHIP	0.027NF,5%,50V,C0G,TP,1608
2203-000783	C159	1	C-CERAMIC,CHIP	0.33NF,5%,50V,C0G,TP,1608
2203-000815	C15	1	C-CERAMIC,CHIP	0.033NF,5%,50V,C0G,TP,1608
2203-000815	C16	1	C-CERAMIC,CHIP	0.033NF,5%,50V,C0G,TP,1608
2203-000815	C17	1	C-CERAMIC,CHIP	0.033NF,5%,50V,C0G,TP,1608
2203-000815	C18	1	C-CERAMIC,CHIP	0.033NF,5%,50V,C0G,TP,1608
2203-000815	C188	1	C-CERAMIC,CHIP	0.033NF,5%,50V,C0G,TP,1608
2203-000815	C19	1	C-CERAMIC,CHIP	0.033NF,5%,50V,C0G,TP,1608
2203-000815	C225	1	C-CERAMIC,CHIP	0.033NF,5%,50V,C0G,TP,1608
2203-000815	C347	1	C-CERAMIC,CHIP	0.033NF,5%,50V,C0G,TP,1608
2203-000998	C12	1	C-CERAMIC,CHIP	0.047NF,5%,50V,C0G,TP,1608
2203-000998	C13	1	C-CERAMIC,CHIP	0.047NF,5%,50V,C0G,TP,1608
2203-000998	C14	1	C-CERAMIC,CHIP	0.047NF,5%,50V,C0G,TP,1608
2203-000998	C169	1	C-CERAMIC,CHIP	0.047NF,5%,50V,C0G,TP,1608
2203-001222	C103	1	C-CERAMIC,CHIP	820pF,10%,50V,X7R,TP,1608,-
2203-001408	C226	1	C-CERAMIC,CHIP	0.27nF,5%,50V,NP0,TP,1608
2203-001408	C258	1	C-CERAMIC,CHIP	0.27nF,5%,50V,NP0,TP,1608
2203-001408	C98	1	C-CERAMIC,CHIP	0.27nF,5%,50V,NP0,TP,1608

Code No.	Loc.	No.	Description	Specification
2203-002392	C100	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C107	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C113	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C118	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C120	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C121	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C143	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C146	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C148	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C151	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C152	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C154	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C48	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C6	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C7	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C77	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C78	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-002392	C8	1	C-CERAMIC,CHIP	220nF,+80-20%,50V,Y5V,TP,2012
2203-005065	C275	1	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608
2203-005065	C279	1	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608
2401-000042	C111	1	C-AL	100uF,20%,16V,GP,TP,6.3x7,5
2401-000042	C112	1	C-AL	100uF,20%,16V,GP,TP,6.3x7,5
2401-000042	C153	1	C-AL	100uF,20%,16V,GP,TP,6.3x7,5
2401-000042	C168	1	C-AL	100uF,20%,16V,GP,TP,6.3x7,5
2401-000042	C305	1	C-AL	100uF,20%,16V,GP,TP,6.3x7,5
2401-000042	C339	1	C-AL	100uF,20%,16V,GP,TP,6.3x7,5
2401-000042	C340	1	C-AL	100uF,20%,16V,GP,TP,6.3x7,5
2401-000042	C62	1	C-AL	100uF,20%,16V,GP,TP,6.3x7,5
2401-000042	C82	1	C-AL	100uF,20%,16V,GP,TP,6.3x7,5
2401-000042	C87	1	C-AL	100uF,20%,16V,GP,TP,6.3x7,5
2401-000414	C180	1	C-AL	10uF,20%,16V,GP,TP,4x7,5
2401-000414	C198	1	C-AL	10uF,20%,16V,GP,TP,4x7,5
2401-000414	C256	1	C-AL	10uF,20%,16V,GP,TP,4x7,5
2401-000414	C325	1	C-AL	10uF,20%,16V,GP,TP,4x7,5
2401-000414	C333	1	C-AL	10uF,20%,16V,GP,TP,4x7,5
2401-000603	C90	1	C-AL	1uF,20%,50V,GP,TP,5x11,5
2401-001185	C270	1	C-AL	33uF,20%,35V,GP,TP,5x11,5
2401-001185	C306	1	C-AL	33uF,20%,35V,GP,TP,5x11,5
2401-001363	C281	1	C-AL	470uF,20%,16V,GP,TP,10x12.5,5
2401-002300	C114	1	C-AL	47uF,20%,50V,GP,TP,6.3x11,5
2401-002300	C150	1	C-AL	47uF,20%,50V,GP,TP,6.3x11,5
2401-002300	C2	1	C-AL	47uF,20%,50V,GP,TP,6.3x11,5
2401-002300	C36	1	C-AL	47uF,20%,50V,GP,TP,6.3x11,5
2401-002300	C37	1	C-AL	47uF,20%,50V,GP,TP,6.3x11,5
2401-002300	C61	1	C-AL	47uF,20%,50V,GP,TP,6.3x11,5
2801-000140	OSC5	1	CRYSTAL-UNIT	12MHz,50ppm,28-AAM,S,30ohm,-
2801-000140	OSC9	1	CRYSTAL-UNIT	12MHz,50ppm,28-AAM,S,30ohm,-
2801-003376	OSC1	1	CRYSTAL-UNIT	0.032768MHz,20ppm,28-AAY,12.5p
2801-003699	OSC4	1	CRYSTAL-UNIT	48MHz,50ppm,28-ABM,12pF,80ohm,
2801-003960	OSC6	1	CRYSTAL-UNIT	28.224MHz,50ppm,28-AAA,18pF,35ohm,BK
2804-001163	OSC2	1	OSCILLATOR-CLOCK	20MHz,50ppm,10TTL & CMOS,ST,5V
2901-001178	F1	1	FILTER-EMI SMD	25V,2A,-,100000pF,2x1.25x1mm,TP

Code No.	Loc.	No.	Description	Specification
2901-001178	F2	1	FILTER-EMI SMD	25V,2A,-,100000pF,2x1.25x1mm,TP
2901-001178	F3	1	FILTER-EMI SMD	25V,2A,-,100000pF,2x1.25x1mm,TP
3301-000317	L11	1	CORE-FERRITE BEAD	AB,2x1.25x0.9mm,-,-
3301-000317	L4	1	CORE-FERRITE BEAD	AB,2x1.25x0.9mm,-,-
3301-000317	L5	1	CORE-FERRITE BEAD	AB,2x1.25x0.9mm,-,-
3301-000317	L6	1	CORE-FERRITE BEAD	AB,2x1.25x0.9mm,-,-
3301-000317	L7	1	CORE-FERRITE BEAD	AB,2x1.25x0.9mm,-,-
3301-000317	L8	1	CORE-FERRITE BEAD	AB,2x1.25x0.9mm,-,-
3301-000325	L13	1	CORE-FERRITE BEAD	AB,3.2x2.5x1.3mm,-,-
3301-000325	L14	1	CORE-FERRITE BEAD	AB,3.2x2.5x1.3mm,-,-
3301-000325	L2	1	CORE-FERRITE BEAD	AB,3.2x2.5x1.3mm,-,-
3301-000325	L3	1	CORE-FERRITE BEAD	AB,3.2x2.5x1.3mm,-,-
3301-000344	BD1	1	CORE-FERRITE BEAD	AA,-,3.5x0.6x6.5mm,-,-,Mn-Zn,-
3301-000344	BD2	1	CORE-FERRITE BEAD	AA,-,3.5x0.6x6.5mm,-,-,Mn-Zn,-
3301-000344	BD3	1	CORE-FERRITE BEAD	AA,-,3.5x0.6x6.5mm,-,-,Mn-Zn,-
3301-000344	BD4	1	CORE-FERRITE BEAD	AA,-,3.5x0.6x6.5mm,-,-,Mn-Zn,-
3301-001425	L1	1	CORE-FERRITE BEAD	AB,120ohm,3.2x1.6x1.1mm,900mA,TP,-,0.15ohm
3301-001425	L10	1	CORE-FERRITE BEAD	AB,120ohm,3.2x1.6x1.1mm,900mA,TP,-,0.15ohm
3702-000118	CN12	1	CONNECTOR-RIBBON	36P,FEMALE,ANGLE,AU
3708-001637	CN3	1	CONNECTOR-FPC/FFC/PIC	24P,1MM,STRAIGHT,SN
3711-000164	CN22	1	CONNECTOR-HEADER	1WALL,2P,1R,2.5mm,STRAIGHT,SN
3711-000198	CN14	1	CONNECTOR-HEADER	1WALL,3P,1R,2.5mm,STRAIGHT,SN
3711-000225	CN24	1	CONNECTOR-HEADER	1WALL,4P,1R,2.5mm,STRAIGHT,SN
3711-002807	CN20	1	CONNECTOR-HEADER	BOX,6P,1R,2mm,STRAIGHT,SN
3711-002809	CN27	1	CONNECTOR-HEADER	BOX,8P,1R,2mm,STRAIGHT,SN
3711-002812	CN2	1	CONNECTOR-HEADER	BOX,11P,1R,2mm,STRAIGHT,SN
3711-002815	CN18	1	CONNECTOR-HEADER	BOX,14P,1R,2mm,STRAIGHT,SN
3711-003204	CN4	1	CONNECTOR-HEADER	BOX,24P,2R,2mm,STRAIGHT,SN
3711-003204	CN5	1	CONNECTOR-HEADER	BOX,24P,2R,2mm,STRAIGHT,SN
3711-003408	CN13	1	CONNECTOR-HEADER	BOX,2P,1R,2mm,STRAIGHT,SN
3711-003408	CN16	1	CONNECTOR-HEADER	BOX,2P,1R,2mm,STRAIGHT,SN
3711-003408	CN21	1	CONNECTOR-HEADER	BOX,2P,1R,2mm,STRAIGHT,SN
3711-003408	CN25	1	CONNECTOR-HEADER	BOX,2P,1R,2mm,STRAIGHT,SN
3711-003408	CN6	1	CONNECTOR-HEADER	BOX,2P,1R,2mm,STRAIGHT,SN
3711-003409	CN1	1	CONNECTOR-HEADER	BOX,3P,1R,2mm,STRAIGHT,SN
3711-003409	CN19	1	CONNECTOR-HEADER	BOX,3P,1R,2mm,STRAIGHT,SN
3711-003409	CN23	1	CONNECTOR-HEADER	BOX,3P,1R,2mm,STRAIGHT,SN
3711-003410	CN17	1	CONNECTOR-HEADER	BOX,4P,1R,2mm,STRAIGHT,SN
3711-003410	CN26	1	CONNECTOR-HEADER	BOX,4P,1R,2mm,STRAIGHT,SN
3711-003410	CN7	1	CONNECTOR-HEADER	BOX,4P,1R,2mm,STRAIGHT,SN
3722-001101	CN11	1	JACK-USB	4P/1C B,8.38MM,AU,IVR,#22-28
4301-000108	M2	1	BATTERY-LI	3V,220mAH,BUTTON,20x3.2mm,NO
4302-000126	M1	1	BATTERY-NICD(2ND)	3.6V(1.2Vx3),60mAH,CYLINDR,-,3
JB13-00002A	U16	1	IC ASIC-UNICON	MJC-1300G,UNICON,QFP,44P,-
JC11-00004A	U53	1	IC MASK ROM-3.3V,SOP,44P	K3P5V1000D-GC,HIGH,ML-9400W,16M(1MX16),
JC11-00005A	U44	1	IC MASK ROM-3.3V,SOP,44P	K3P5V1000D-GC,LOW,ML-9400W,16M(1MX16),
JC13-00014A	U29	1	IC ASIC-GRAPHIC PROCES-	SPGPM,ML-1650 VE,256PIN/256+16PIN,3.3V,F668
JC41-00186A		1	PCB-MAIN	SCX-5315F,FR-4,L,V1.0,1.6T,235 X 215MM,-,-,-

7-2 LIU B'd

Code No.	Loc.	No.	Description	Specification
JC92-01355A	LIU PBA	1	PBA SUB-LIU	SCX-5100,XEROX,USA,LIU,FAX
0401-000005	D3	1	DIODE-SWITCHING	1N4148,100V,200mA,DO-35,TP
0401-000148	D4	1	DIODE-SWITCHING	1N914,100V,500mA,DO-35,TP
0401-000148	D5	1	DIODE-SWITCHING	1N914,100V,500mA,DO-35,TP
0401-000148	D6	1	DIODE-SWITCHING	1N914,100V,500mA,DO-35,TP
0401-000148	D7	1	DIODE-SWITCHING	1N914,100V,500mA,DO-35,TP
0401-000148	D8	1	DIODE-SWITCHING	1N914,100V,500mA,DO-35,TP
0401-000148	D9	1	DIODE-SWITCHING	1N914,100V,500mA,DO-35,TP
0402-000338	BD1	1	DIODE-BRIDGE	W06F,600V,1.5A,-,BK
0403-000153	ZD1	1	DIODE-ZENER	1N4746A,18V,5%,1W,DO-41,TP
0403-000153	ZD2	1	DIODE-ZENER	1N4746A,18V,5%,1W,DO-41,TP
0403-000716	ZD3	1	DIODE-ZENER	MTZJ4.7B,4.7V,4.55-4.8V,500mW,
0403-000716	ZD4	1	DIODE-ZENER	MTZJ4.7B,4.7V,4.55-4.8V,500mW,
0403-000716	ZD5	1	DIODE-ZENER	MTZJ4.7B,4.7V,4.55-4.8V,500mW,
0403-000716	ZD6	1	DIODE-ZENER	MTZJ4.7B,4.7V,4.55-4.8V,500mW,
0501-000398	Q6	1	TR-SMALL SIGNAL	KSC945,NPN,250mW,TO-92,TP,120-
0502-000133	Q2	1	TR-POWER	2SA1156,PNP,1W,TO-126,-,40-80
0505-000335	Q1	1	FET-SILICON	VN2410M,N,240V,0.19A,10ohm,7.9
0604-000118	U2	1	PHOTO-COUPLER	TR,20-300%,200mW,DIP-4,ST
0604-000118	U9	1	PHOTO-COUPLER	TR,20-300%,200mW,DIP-4,ST
0604-000142	U11	1	PHOTO-COUPLER	TR,-,200mW,DIP-4,ST
1405-000144	VAR3	1	VARISTOR	430V,1250A,14x7.2mm,TP
1405-000144	VAR5	1	VARISTOR	430V,1250A,14x7.2mm,TP
1405-000170	VAR1	1	VARISTOR	82V,1200A,9x4.1mm,TP
1405-000226	VAR2	1	VARISTOR	-,25A,5mm,TP
2001-000034	R44	1	R-CARBON	220OHM,5%,1/4W,AA,TP,2.4X6.4MM
2001-000065	R45	1	R-CARBON	10KOHM,5%,1/4W,AA,TP,2.4X6.4MM
2001-000070	R16	1	R-CARBON	15KOHM,5%,1/4W,AA,TP,2.4X6.4MM
2001-000084	R1	1	R-CARBON	100KOHM,5%,1/4W,AA,TP,2.4X6.4MM
2001-000435	R2	1	R-CARBON	1MOHM,5%,1/8W,AA,TP,1.8X3.2MM
2001-000631	R7	1	R-CARBON	30KOHM,5%,1/4W,AA,TP,2.4X6.4MM
2001-000923	R52	1	R-CARBON	680ohm,5%,1/8W,AA,TP,1.8x3.2mm
2001-001004	R4	1	R-CARBON	82OHM,5%,1/4W,AA,TP,2.4X6.4MM
2001-001004	R5	1	R-CARBON	82OHM,5%,1/4W,AA,TP,2.4X6.4MM
2003-000178	R3	1	R-METAL OXIDE	15Kohm,5%,1W,AA,TP,4.3x12mm
2003-000659	R20	1	R-METAL OXIDE(S)	33ohm,5%,1W,AA,TP,3.3x9mm
2004-000284	R15	1	R-METAL	12Kohm,1%,1/4W,AA,TP,2.4x6.4mm
2004-000432	R51	1	R-METAL	1Kohm,1%,1/4W,AA,TP,2.4x6.4mm
2004-000496	R49	1	R-METAL	2.74Kohm,1%,1/4W,AA,TP,2.4x6.4
2004-002234	R48	1	R-METAL	560ohm,1%,1/4W,AA,TP,2.4x6.4mm
2201-000119	C10	1	C-CERAMIC,DISC	100NF,+80-20%,50V,Y5V,TP,8X3MM,5
2201-000119	C11	1	C-CERAMIC,DISC	100NF,+80-20%,50V,Y5V,TP,8X3MM,5
2301-001308	C16	1	C-FILM,MPEF	15NF,10%,400V,BK,10.5X4X9MM,7.5
2301-001308	C9	1	C-FILM,MPEF	15NF,10%,400V,BK,10.5X4X9MM,7.5
2305-000566	C5	1	C-FILM,MPEF	1uF,10%,250V,BK,25.5x9x16.5mm,
2401-000026	C14	1	C-AL	3.3UF,20%,50V,GP,TP,5X11,5
2401-000480	C12	1	C-AL	10uF,20%,50V,GP,TP,5x11,5
2401-000480	C13	1	C-AL	10uF,20%,50V,GP,TP,5x11,5

Code No.	Loc.	No.	Description	Specification
2401-000962	C3	1	C-AL	22uF,20%,50V,GP,TP,5x11,5
2401-001775	C4	1	C-AL	470nF,20%,50V,GP,TP,4x7,5
3501-001160	CML_1	1	RELAY-MINIATURE	12VDC,200MW,2000MA,-,4MS,4MS
3711-002815	CN1	1	CONNECTOR-HEADER	BOX,14P,1R,2mm,STRAIGHT,SN
3722-000255	CN3	1	JACK-MODULAR	6P/4C,INVERTED,N,ANGLE,STANDARD,N,IVR,AU30U
3722-000574	CN2	1	JACK-MODULAR	6P/6C,INVERTED,N,ANGLE,STANDARD,N,BLK,AU
4715-001043	ARS2	1	SURGE ABSORBER	600V,20%,500A,-,TP
JB26-00001A	T1	1	TRANS MATCHING-REMOTE	SF-3100,-,30KOHM:30KOHM
JC39-40511A	J1	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC39-40511A	J2	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC39-40511A	JP10	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC39-40511A	JP12	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC39-40511A	JP13	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC39-40511A	JP18	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC39-40511A	JP2	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC39-40511A	JP3	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC39-40511A	JP4	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC39-40511A	JP5	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC39-40511A	JP6	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC39-40511A	JP7	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC39-40511A	JP8	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC39-40511A	JP9	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC39-40511A	R47	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC39-40511A	R54	1	CBF HARNESS	ML-80,JUMPER,AWG22,52mm,SILVER
JC41-00127B	PCB	1	PCB-LIU(XRH)	SCX-5100(XRH),FR-1,1L,V1.4,1.6T,
JC68-00573A	ASS'Y LABEL	1	LABEL(R)-BARCODE	ML-4500,PET,T0.05,10mm,20mm,-,WHT,-,-
JC68-00573A	LABEL_BARCODE	1	LABEL(R)-BARCODE	ML-4500,PET,T0.05,10mm,20mm,-,WHT,-,-
JF26-10052A	L7	1	TRANS PULSE	SF50,500V,10MOHM
JG26-50001A	T2	1	TRANS MATCHING	SF6000,-,600/600

7-3 OPE B'd

Code No.	Loc.	No.	Description	Specification
JC92-01380A	OPE PBA	1	PBA SUB-OPE(XEROX)	SCX-5100,XEROX,USA,OPE,
0401-000116	D1	1	DIODE-SWITCHING	MMSD914T1,100V,200mA,SOD-123,TP
0401-000116	D2	1	DIODE-SWITCHING	MMSD914T1,100V,200mA,SOD-123,TP
0401-000116	D3	1	DIODE-SWITCHING	MMSD914T1,100V,200mA,SOD-123,TP
0401-000116	D4	1	DIODE-SWITCHING	MMSD914T1,100V,200mA,SOD-123,TP
0401-000116	D5	1	DIODE-SWITCHING	MMSD914T1,100V,200mA,SOD-123,TP
0501-000279	Q1	1	TR-SMALL SIGNAL	KSA1182-Y,PNP,150mW,SOT-23,TP,
0601-001404	LED1	1	LED	CHIP,RED,2.0mm,660nm
0801-001090	U2	1	IC-CMOS LOGIC	74HC14,SCHMITT INVERTER,SOP,1
2007-000033	J1	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000033	J10	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000033	J11	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000033	J12	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000033	J15	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000033	J16	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000033	J2	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000033	J3	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000033	J6	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000033	J8	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000033	J87	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000033	J88	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000033	J89	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000033	J9	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000033	J90	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000033	J91	1	R-CHIP	00HM,5%,1/8W,DA,TP,3216
2007-000074	R44	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000074	R45	1	R-CHIP	100ohm,5%,1/16W,DA,TP,1608
2007-000078	R42	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000090	R12	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000094	R1	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R11	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R2	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R26	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R27	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R28	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R29	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R30	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R31	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R32	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000094	R33	1	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608
2007-000120	R14	1	R-CHIP	680ohm,5%,1/16W,DA,TP,1608
2007-000539	R43	1	R-CHIP	200ohm,5%,1/16W,DA,TP,1608
2203-000189	C14	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C16	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C2	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C3	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000236	C9	1	C-CERAMIC,CHIP	0.1NF,5%,50V,C0G,TP,1608
2203-000626	C6	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608

Electrical Parts List

Code No.	Loc.	No.	Description	Specification
2203-000626	C7	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C8	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000998	C12	1	C-CERAMIC,CHIP	0.047NF,5%,50V,C0G,TP,1608
2203-000998	C13	1	C-CERAMIC,CHIP	0.047NF,5%,50V,C0G,TP,1608
2402-000176	C1	1	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4
2404-000284	C15	1	C-TA,CHIP	10uF,20%,16V,-,TP,3528,-
2802-001069	OSC1	1	RESONATOR-CERAMIC	7.37MHz,0.5%,TP,4.7x4.1x1.7
3711-003411	CN2	1	CONNECTOR-HEADER	BOX,5P,1R,2mm,STRAIGHT,SN
JB13-00004A	U1	1	IC ASIC-OPE	SF-3100,HT48C5,SSOP,48P,16.18X10.67X2.79
JC39-00230A	LCD HARNESS	1	CBF HARNESS-LCD	SCX-5312,WIRE,UL2877,14,50,BLACK/WHIT
JC41-00126A	OPE PCB(XEROX)	1	PCB-OPE(XEROX)	SCX-5100,FR-1,1L,V1.0,1.6T,326 X 170MM,-,X2,-,-
JG07-20001A	LCD	1	LCD	SF4000,UC-162937-TNAR5-A,BLK/G

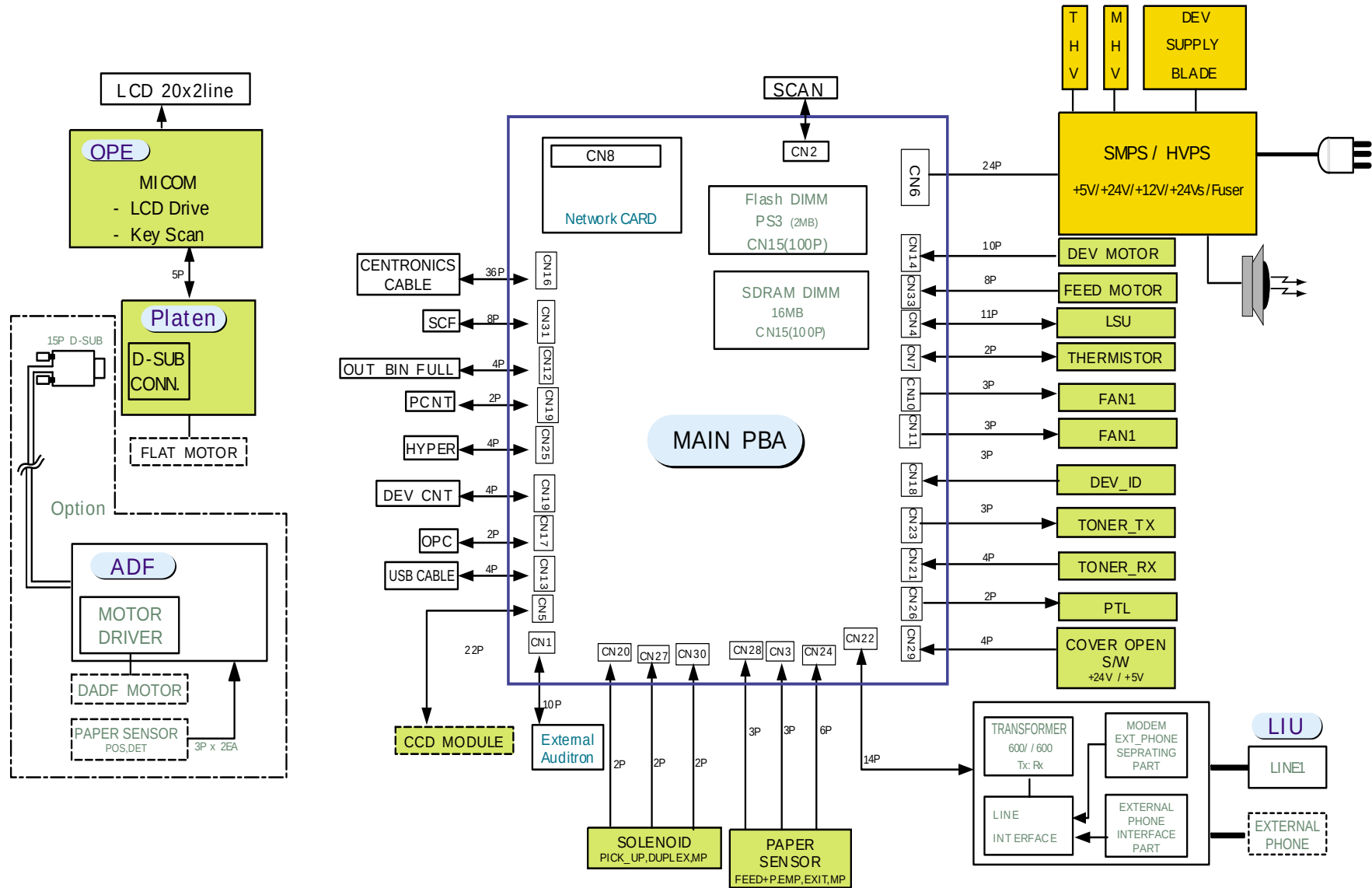
7-4 ADF B'd

Code No.	Loc.	No.	Description	Specification
JC92-01382A	ADF PBA	1	PBA SUB-ADF	SCX-5100,XEROX,USA,ADF,
0407-000101	D1	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0407-000101	D2	1	DIODE-ARRAY	DA204K,20V,100mA,C2-3,SOT-23,T
0604-001154	U4	1	PHOTO-INTERRUPTER	TR,0.2-1.0MA,80MW,DIP,ST
0801-000945	U3	1	IC-CMOS LOGIC	74HC244,BUFFER/DRIVER,SOP,20P,
1003-001102	U5	1	IC-MOTOR DRIVER	TEA3718DP,DIP,16P,300MIL,SINGL
1003-001102	U6	1	IC-MOTOR DRIVER	TEA3718DP,DIP,16P,300MIL,SINGL
2005-000419	R2	1	R-WIRE WOUND,NON	0.33ohm,1%,1W,AA,TP,4.3x12mm
2005-000419	R27	1	R-WIRE WOUND,NON	0.33ohm,1%,1W,AA,TP,4.3x12mm
2007-000033	R30	1	R-CHIP	0OHM,5%,1/8W,DA,TP,3216
2007-000070	R31	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000070	R32	1	R-CHIP	0ohm,5%,1/16W,DA,TP,1608
2007-000078	R29	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000078	R5	1	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608
2007-000080	R15	1	R-CHIP	2Kohm,5%,1/16W,DA,TP,1608
2007-000090	R20	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000090	R9	1	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608
2007-000098	R28	1	R-CHIP	56Kohm,5%,1/16W,DA,TP,1608
2007-000098	R6	1	R-CHIP	56Kohm,5%,1/16W,DA,TP,1608
2007-000113	R21	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R22	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R23	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R24	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R25	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000113	R26	1	R-CHIP	33ohm,5%,1/16W,DA,TP,1608
2007-000402	R19	1	R-CHIP	150ohm,5%,1/16W,DA,TP,1608
2203-000189	C16	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C17	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C18	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000189	C8	1	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,
2203-000626	C19	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-000626	C2	1	C-CERAMIC,CHIP	0.022NF,5%,50V,C0G,TP,1608
2203-001222	C12	1	C-CERAMIC,CHIP	820pF,10%,50V,X7R,TP,1608,-
2203-001222	C13	1	C-CERAMIC,CHIP	820pF,10%,50V,X7R,TP,1608,-
2203-001222	C5	1	C-CERAMIC,CHIP	820pF,10%,50V,X7R,TP,1608,-
2203-001222	C6	1	C-CERAMIC,CHIP	820pF,10%,50V,X7R,TP,1608,-
2203-001801	C14	1	C-CERAMIC,CHIP	10nF,10%,100V,X7R,TP,2012
2203-001801	C15	1	C-CERAMIC,CHIP	10nF,10%,100V,X7R,TP,2012
2203-001801	C9	1	C-CERAMIC,CHIP	10nF,10%,100V,X7R,TP,2012
2401-000042	C10	1	C-AL	100uF,20%,16V,GP,TP,6.3x7,5
2401-002300	C11	1	C-AL	47uF,20%,50V,GP,TP,6.3x11,5
3301-000325	L3	1	CORE-FERRITE BEAD	AB,3.2x2.5x1.3mm,-,-

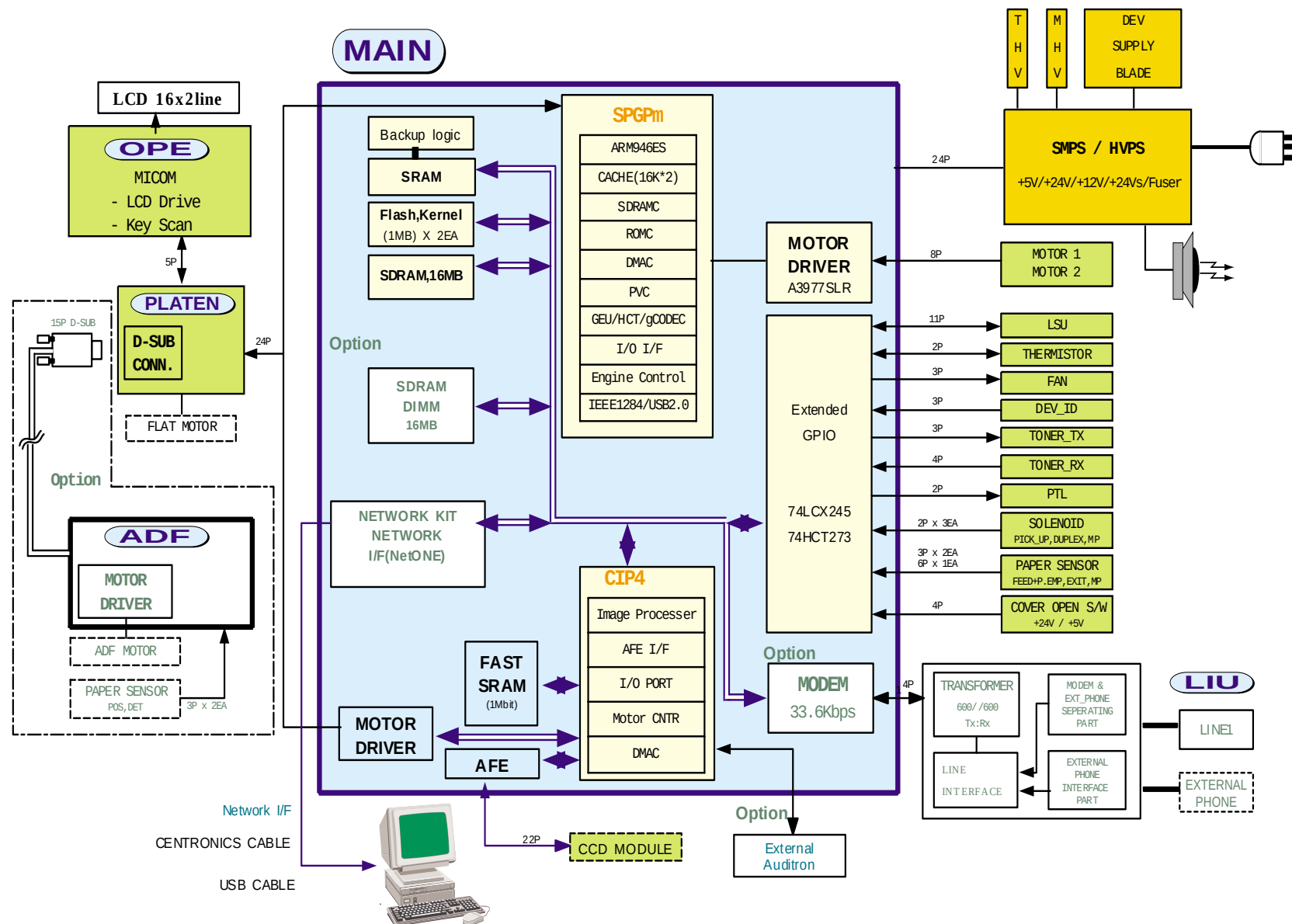
Electrical Parts List

Code No.	Loc.	No.	Description	Specification
3301-000325	L4	1	CORE-FERRITE BEAD	AB,3.2x2.5x1.3mm,-,-
3301-000325	L6	1	CORE-FERRITE BEAD	AB,3.2x2.5x1.3mm,-,-
3301-000325	L7	1	CORE-FERRITE BEAD	AB,3.2x2.5x1.3mm,-,-
3301-001425	L5	1	CORE-FERRITE BEAD	AB,120ohm,3.2x1.6x1.1mm,900mA,TP,-,0.15ohm
3711-003340	CN2	1	CONNECTOR-HEADER	BOX,16P,2R,2mm,STRAIGHT,SN
3711-003409	CN4	1	CONNECTOR-HEADER	BOX,3P,1R,2mm,STRAIGHT,SN
3711-003410	CN1	1	CONNECTOR-HEADER	BOX,4P,1R,2mm,STRAIGHT,SN
3711-003411	CN3	1	CONNECTOR-HEADER	BOX,5P,1R,2mm,STRAIGHT,SN
JC41-00129A	ADF PCB	1	PCB-ADF	SCX-5100,FR-4,2L,V1.0,1.6T
JC62-00002A	U5(HEAT-SINK)	1	HEAT SINK-(4500)	ML-4500,BRONZE,0.5,9.3,38,-,-,-
JC62-00002A	U6(HEAT-SINK)	1	HEAT SINK-(4500)	ML-4500,BRONZE,0.5,9.3,38,-,-,-

8. Block Diagrams

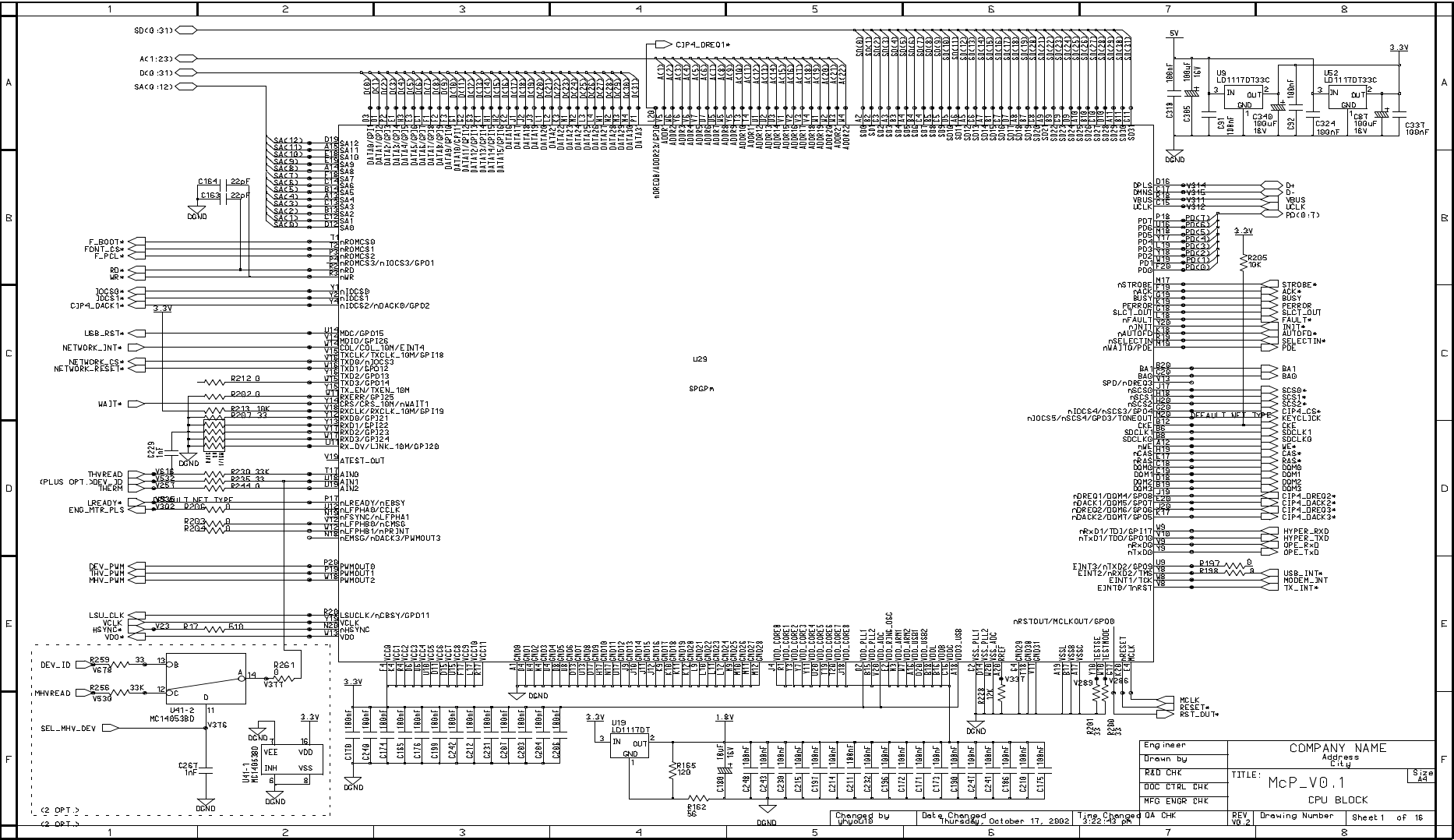


9. Connection Diagrams

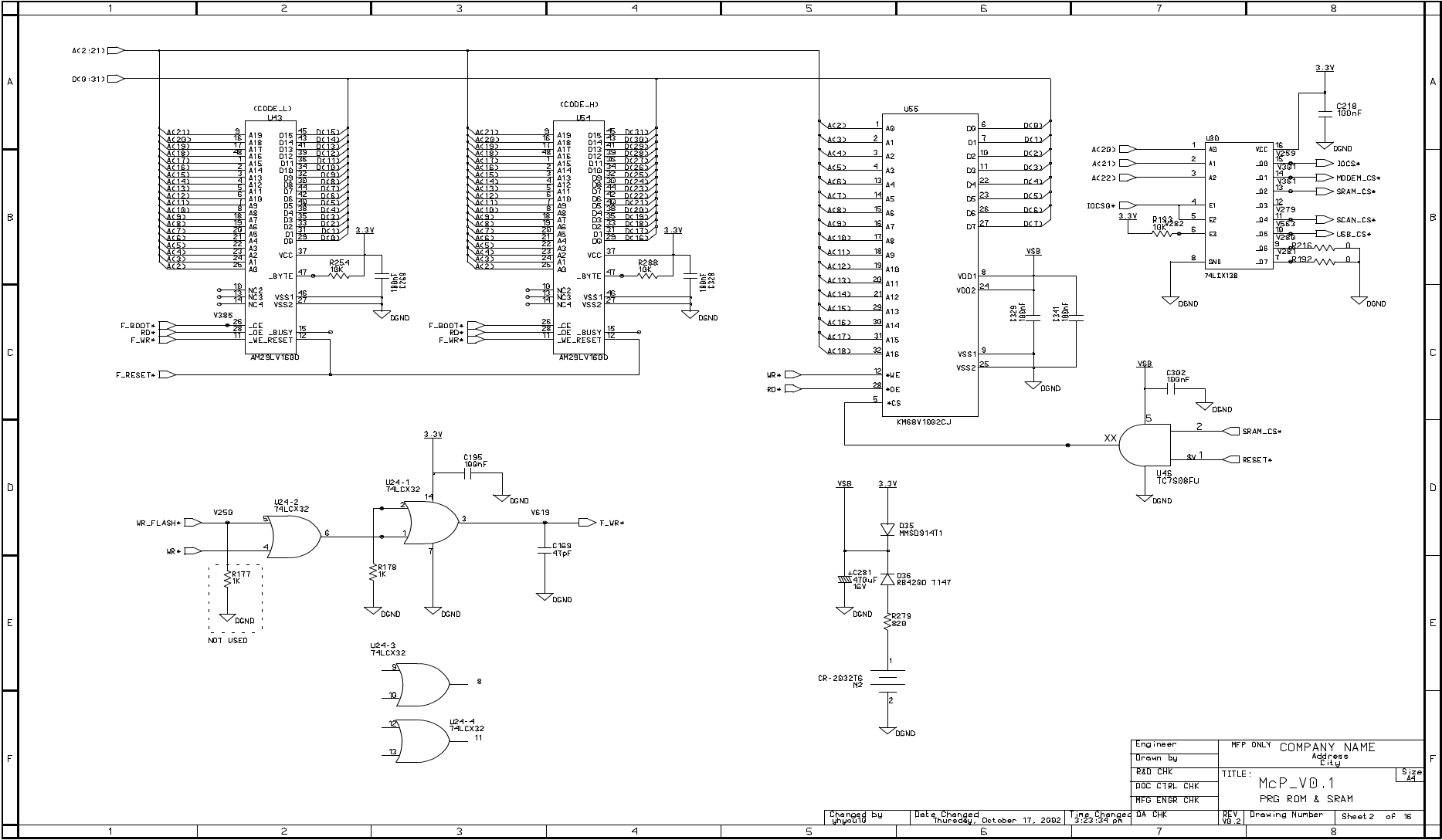


10. Schematic Diagrams

10-1 Main Circuit Diagram (1/16)

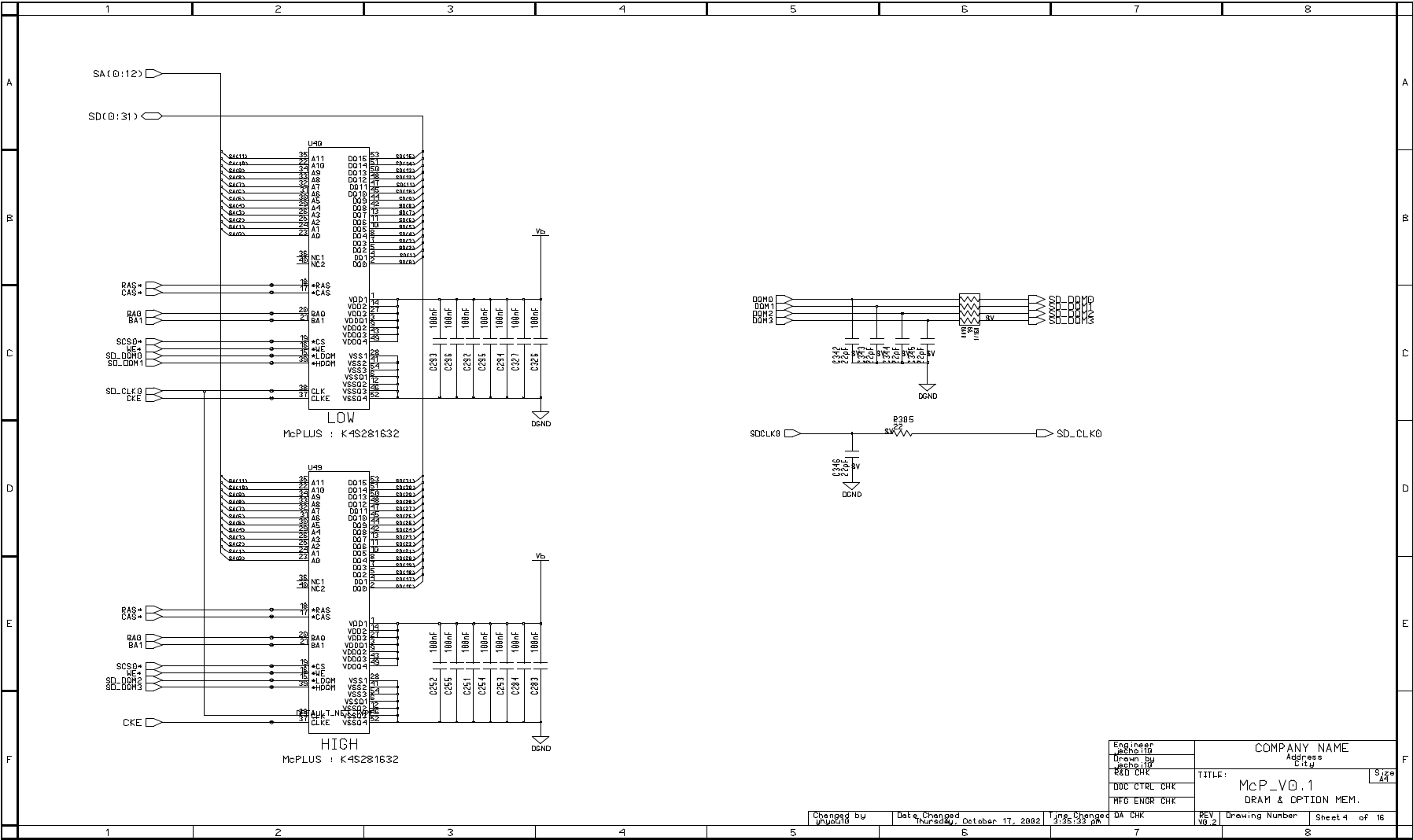


Main Circuit Diagram (2/16)



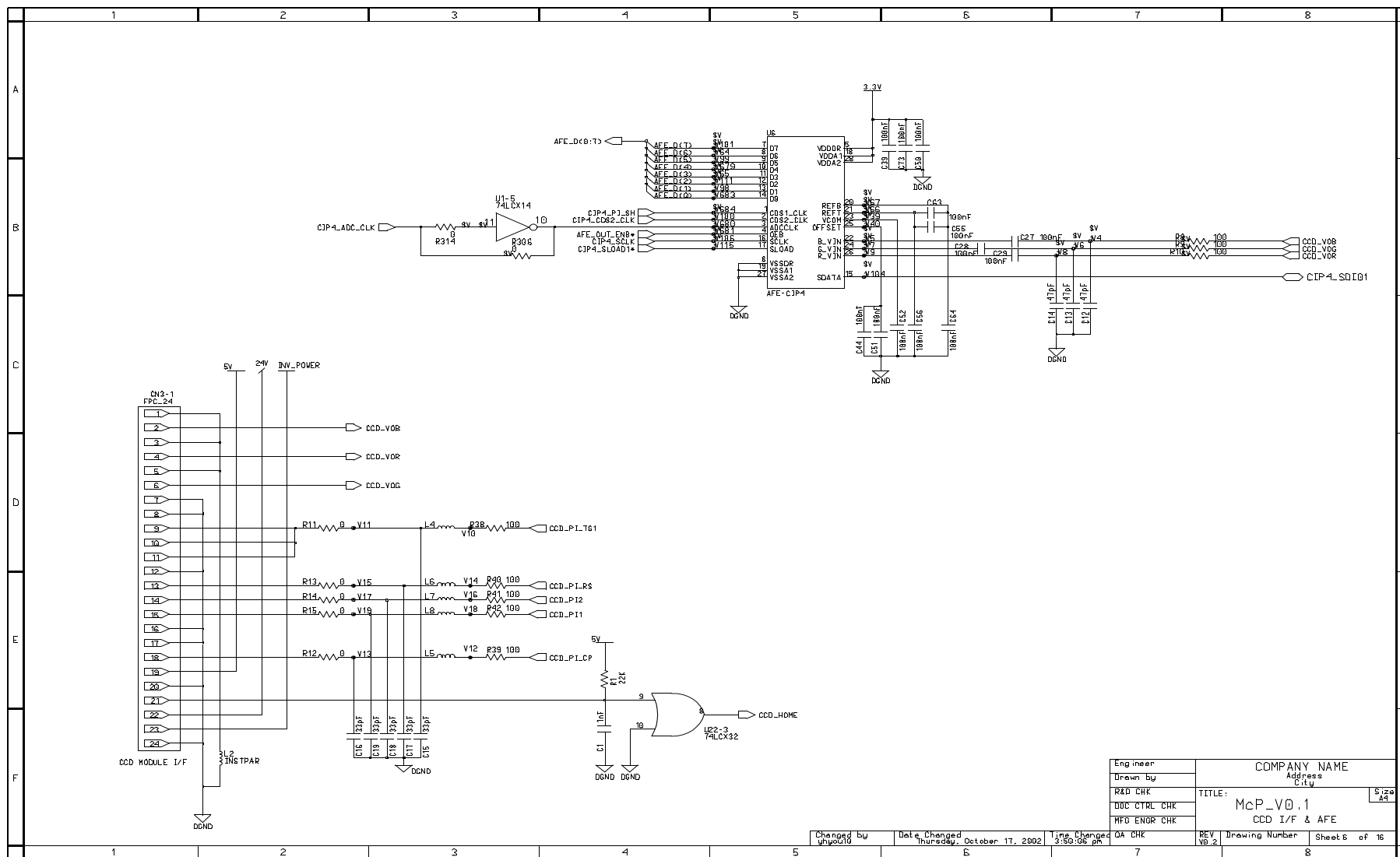


Main Circuit Diagram (4/16)





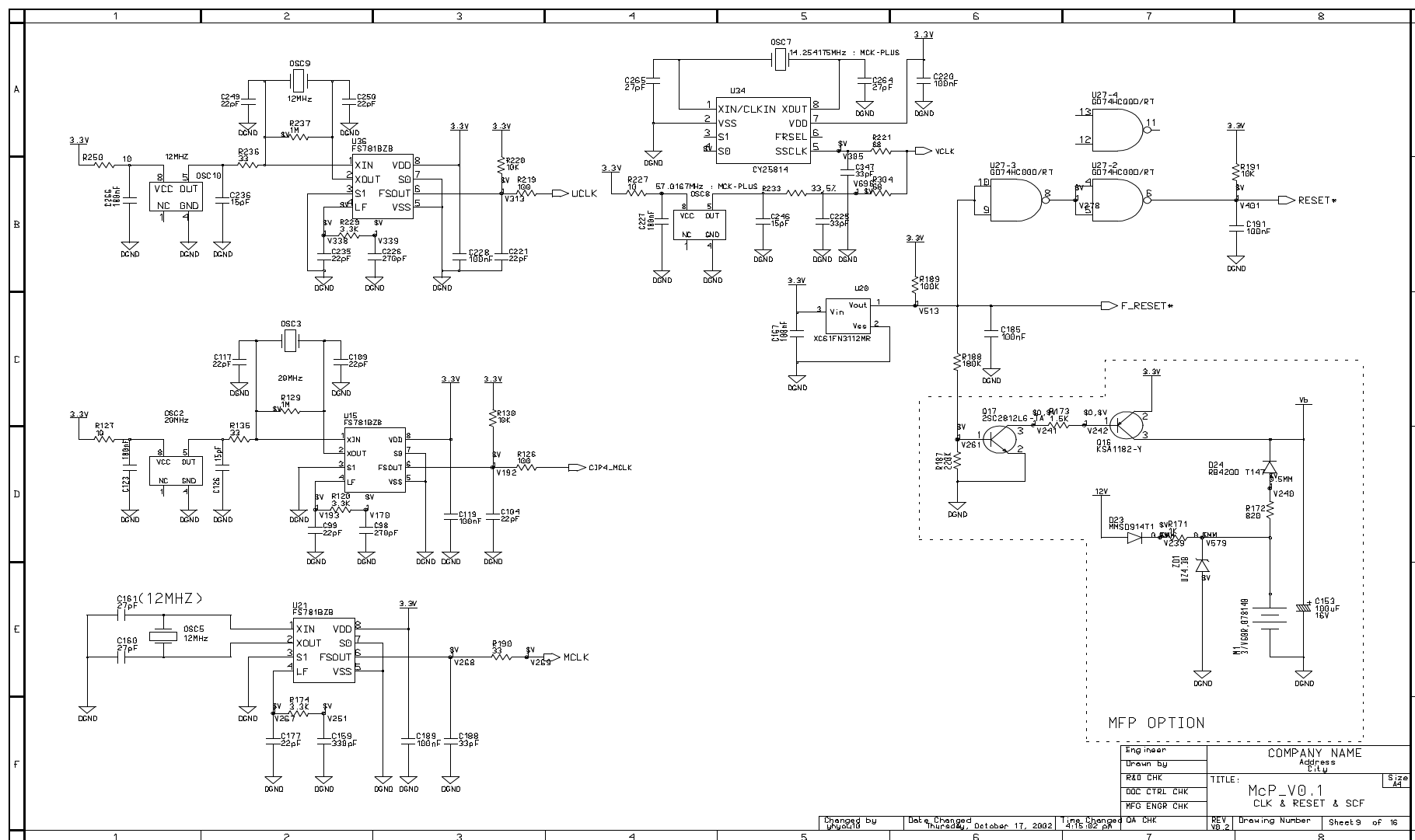
Main Circuit Diagram (6/16)



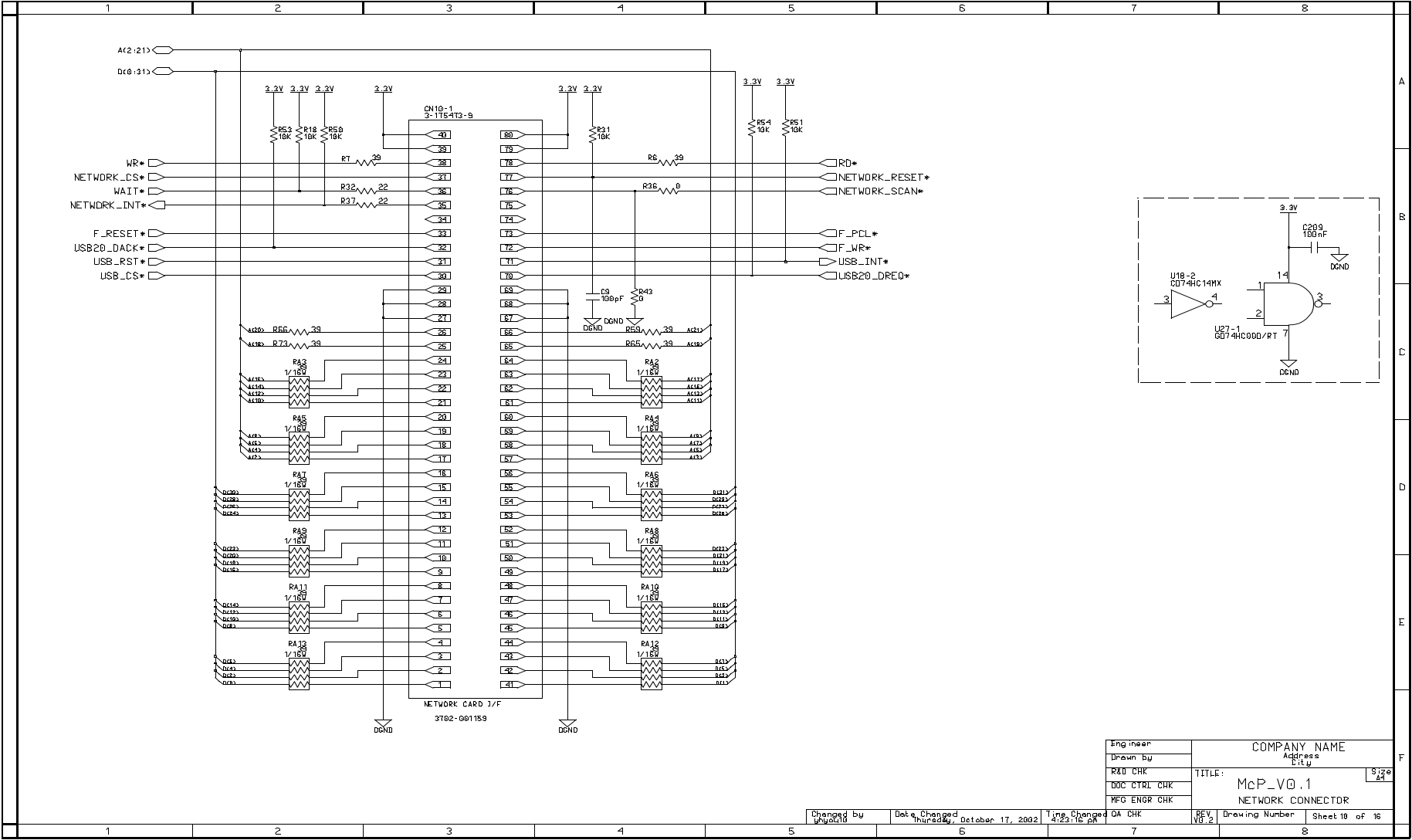




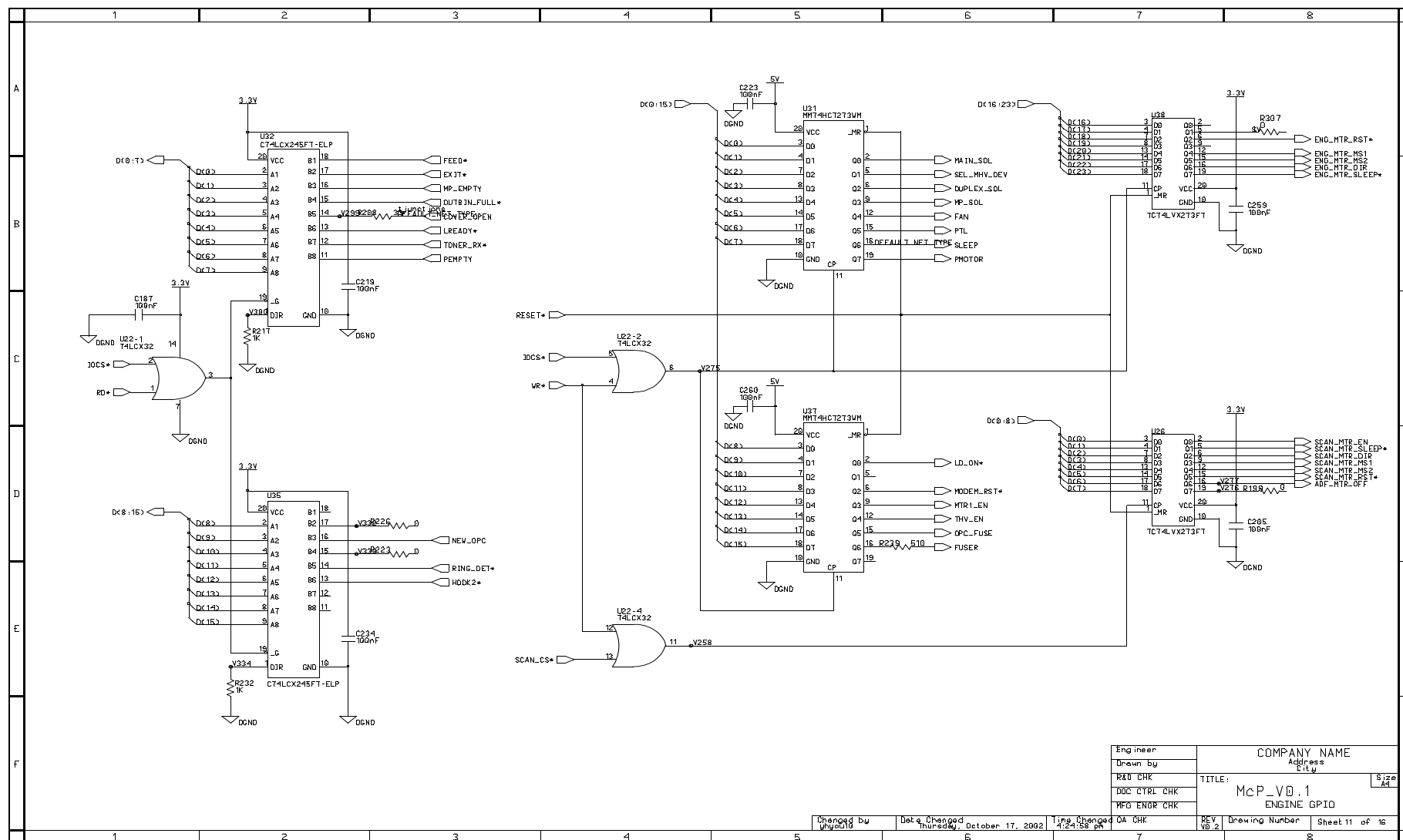
Main Circuit Diagram (9/16)



Main Circuit Diagram (10/16)



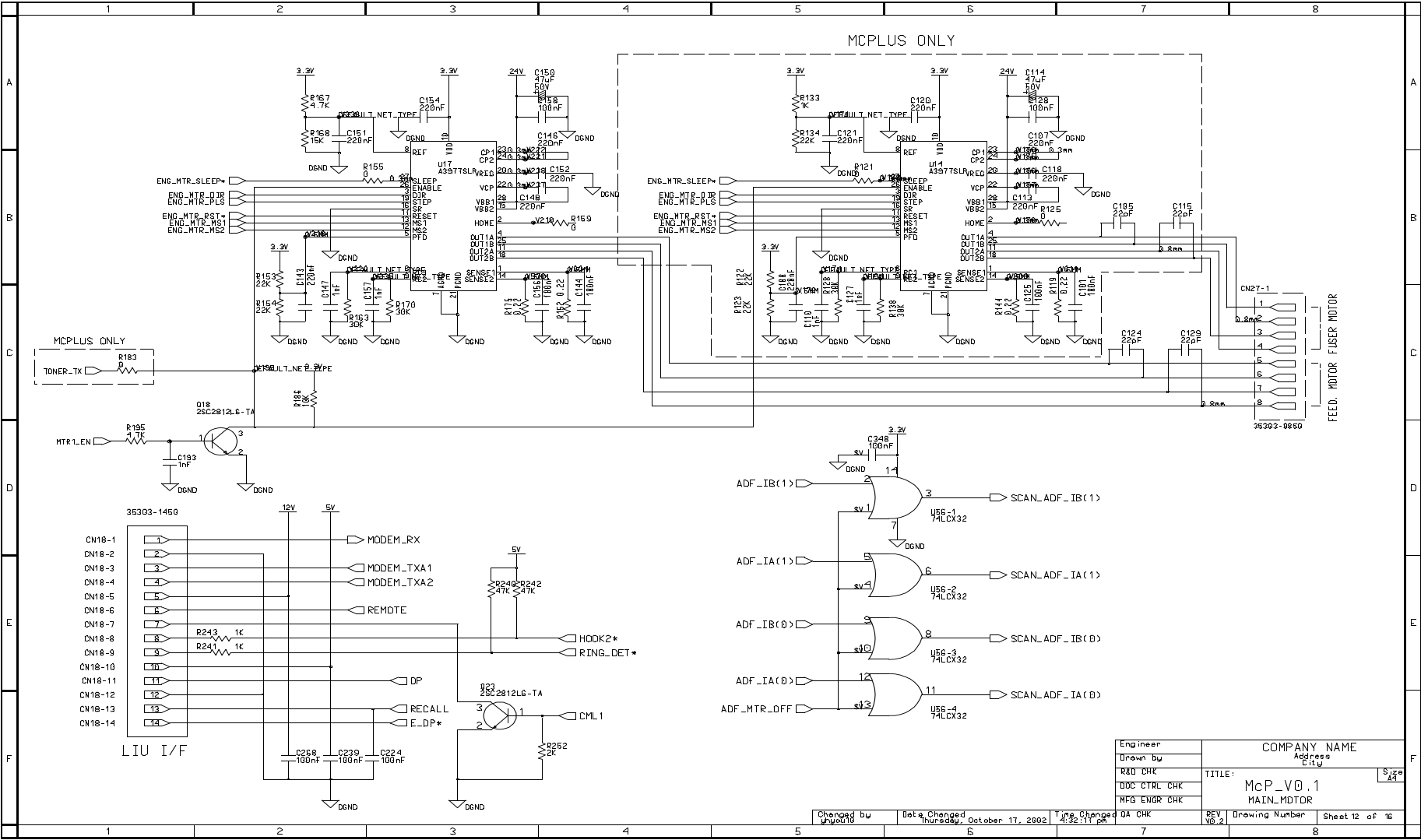
Main Circuit Diagram (11/16)



Engineer	COMPANY NAME
Drawn by	Address
REV. CHK	CITY
DOC. CTRL. CHK	TITLE: MOP_V0.1
MFG. ENGR. CHK	ENGINE GPIO

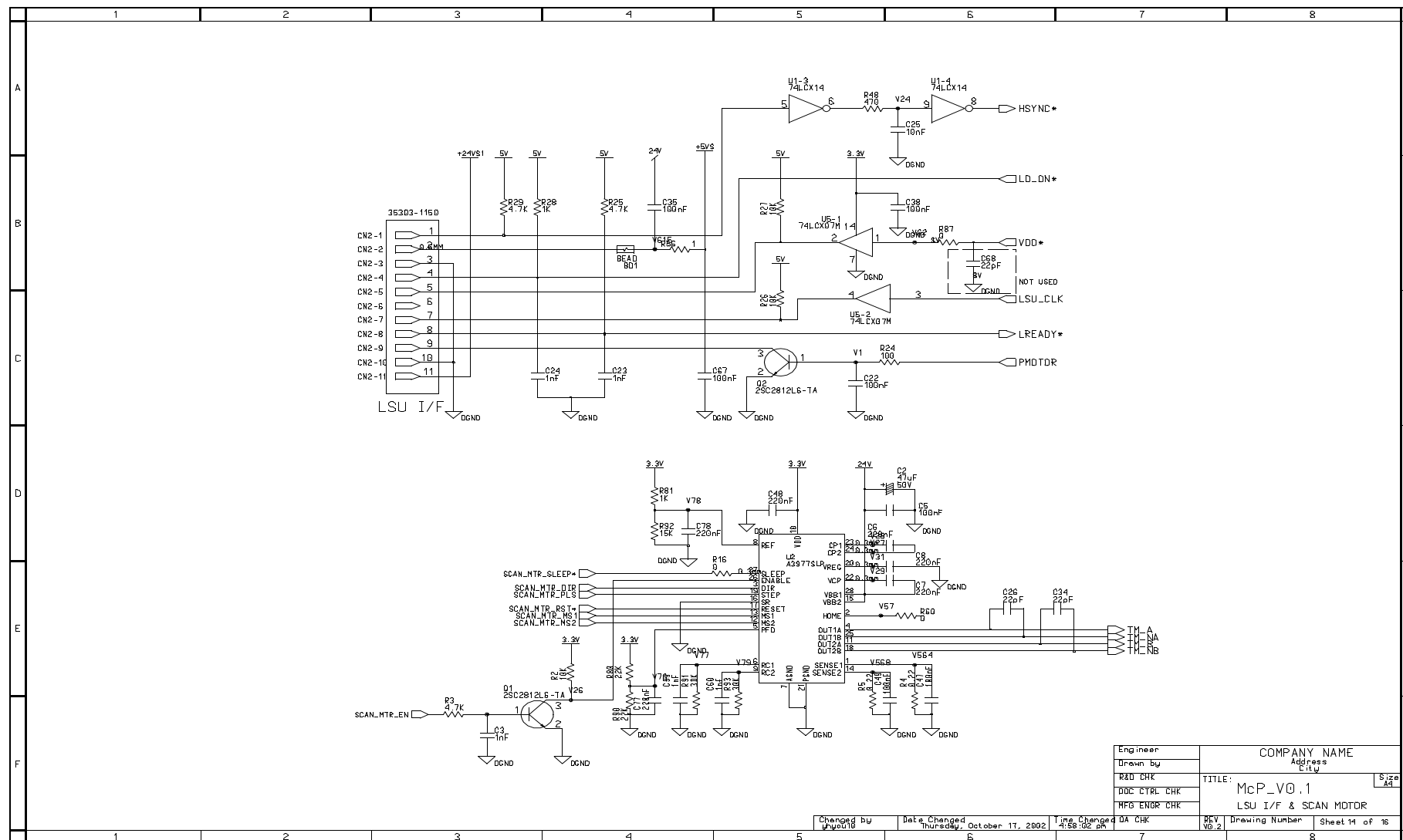
Changed by	Date Changed	Time Changed	QA CHK	REV	Drawing Number	Sheet 11 of 16
WYS/GU	Thursday, October 17, 2002	4:24:58 pm		V0.2		

Main Circuit Diagram (12/16)

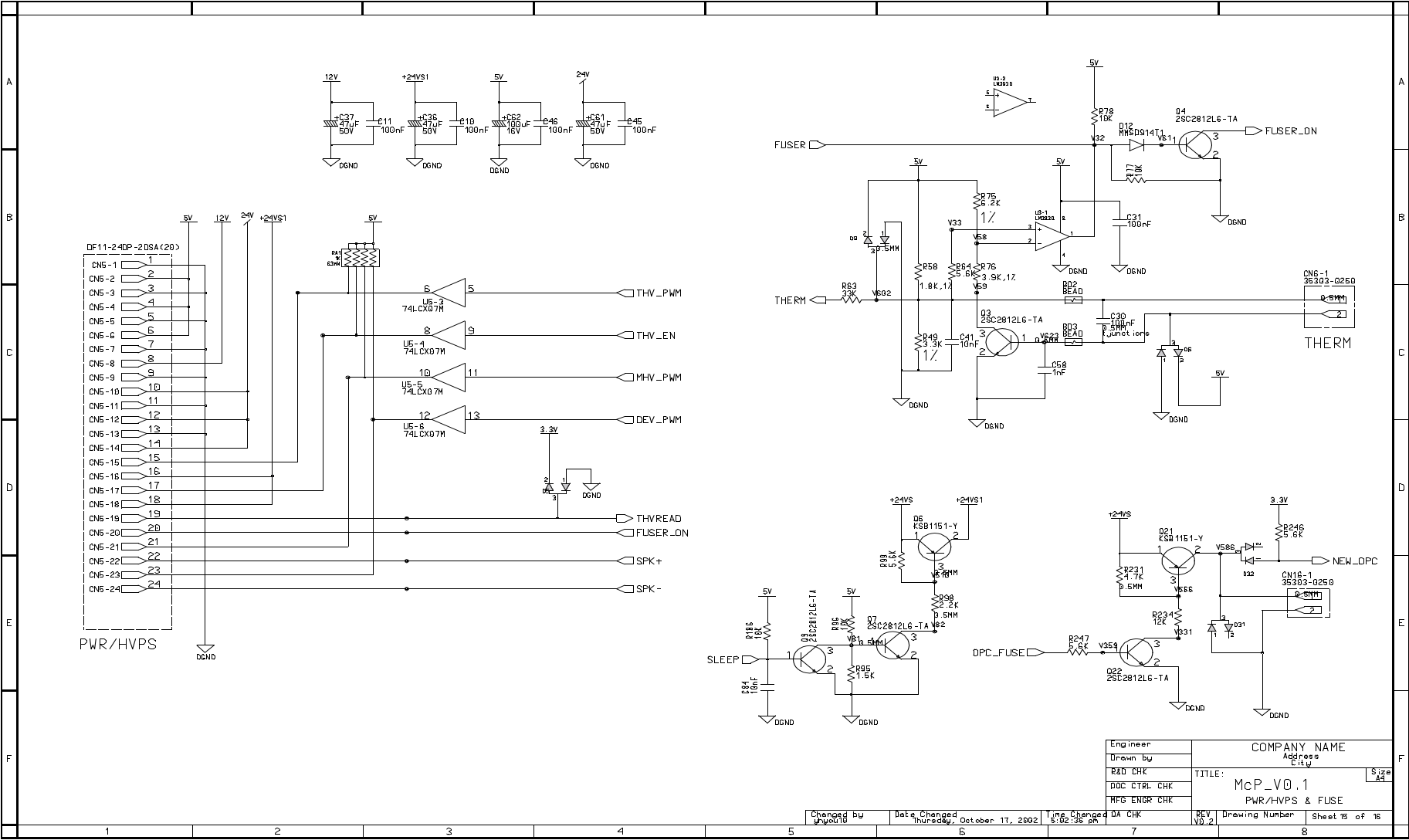




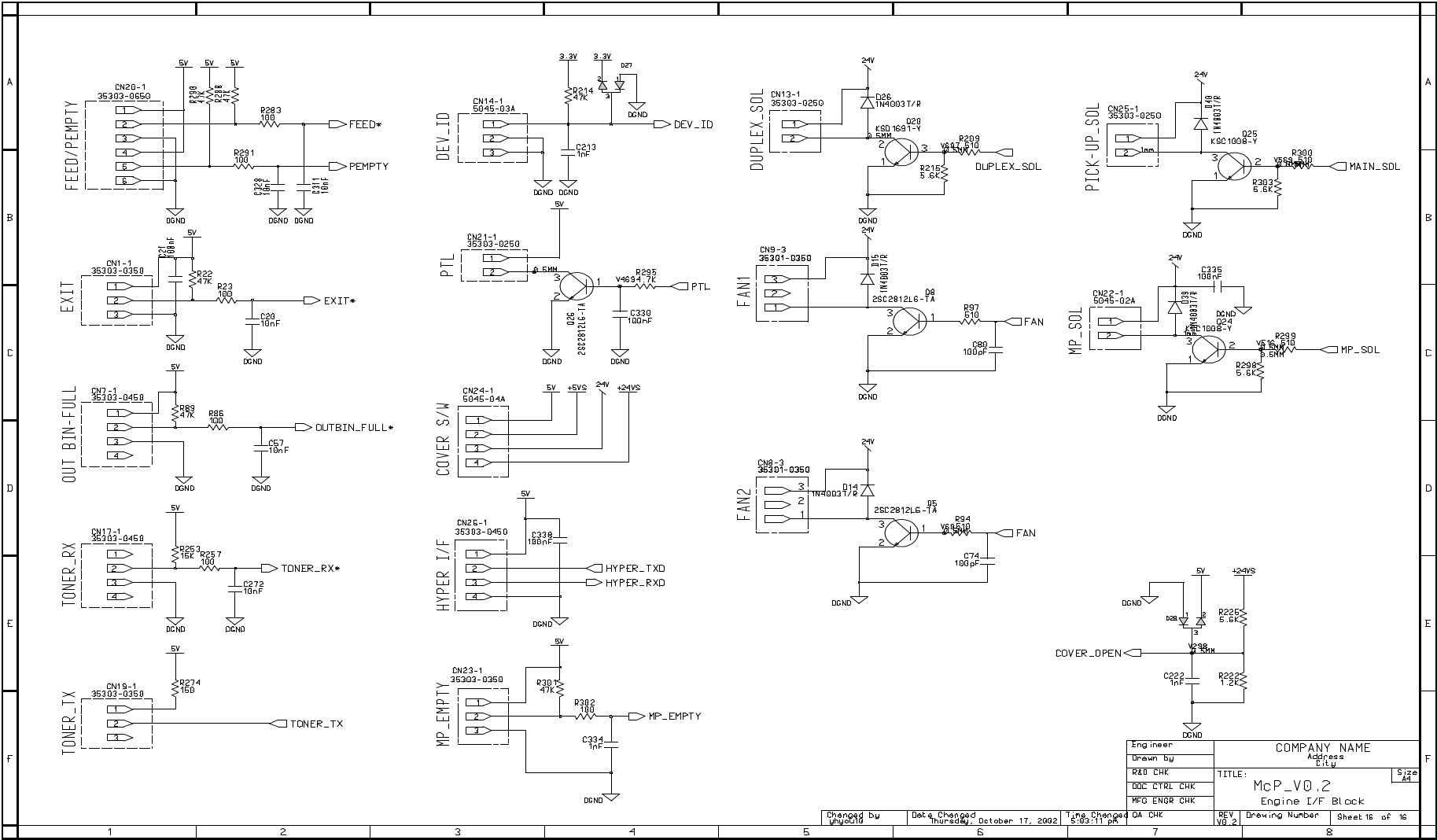
Main Circuit Diagram (14/16)



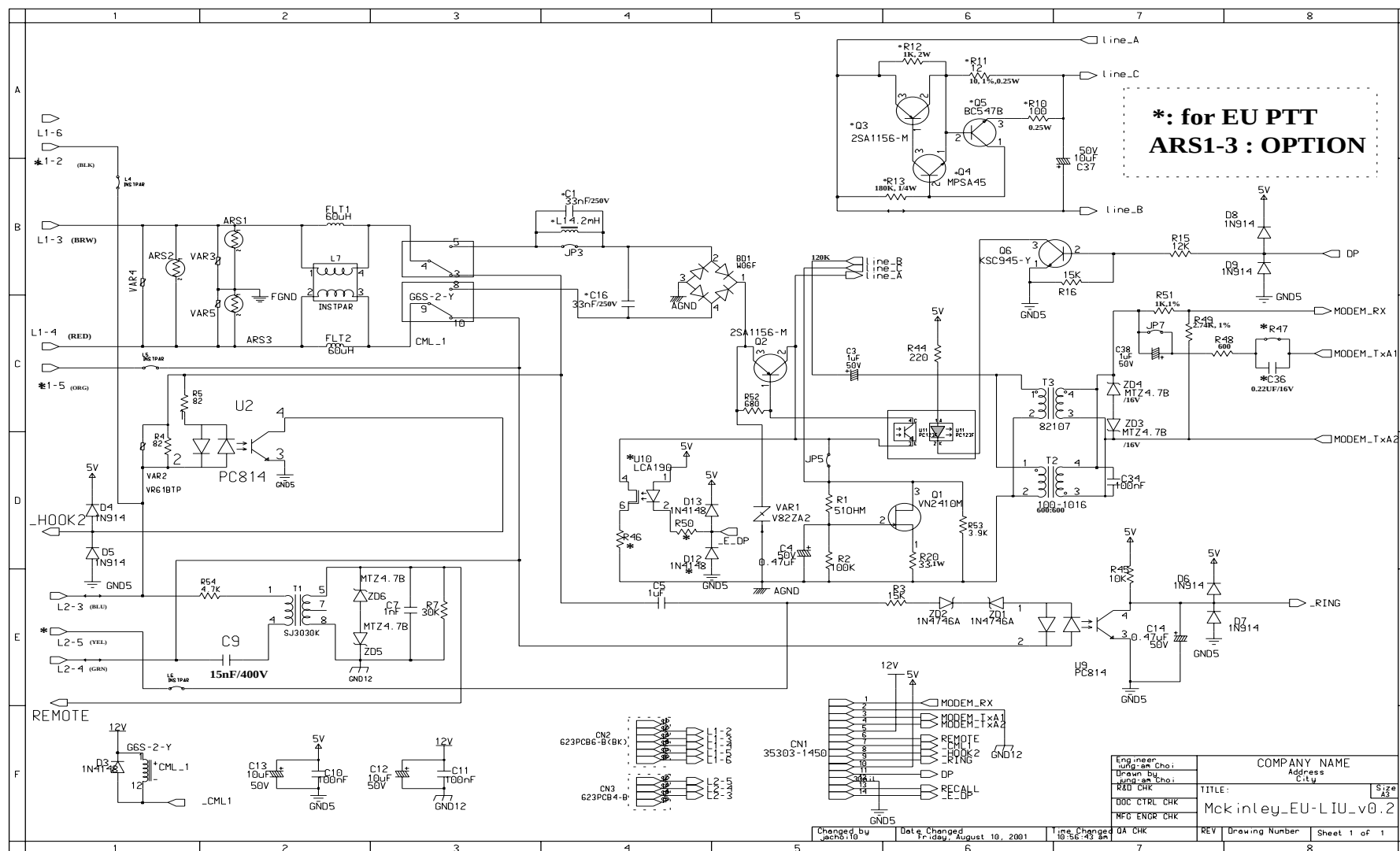
Main Circuit Diagram (15/16)



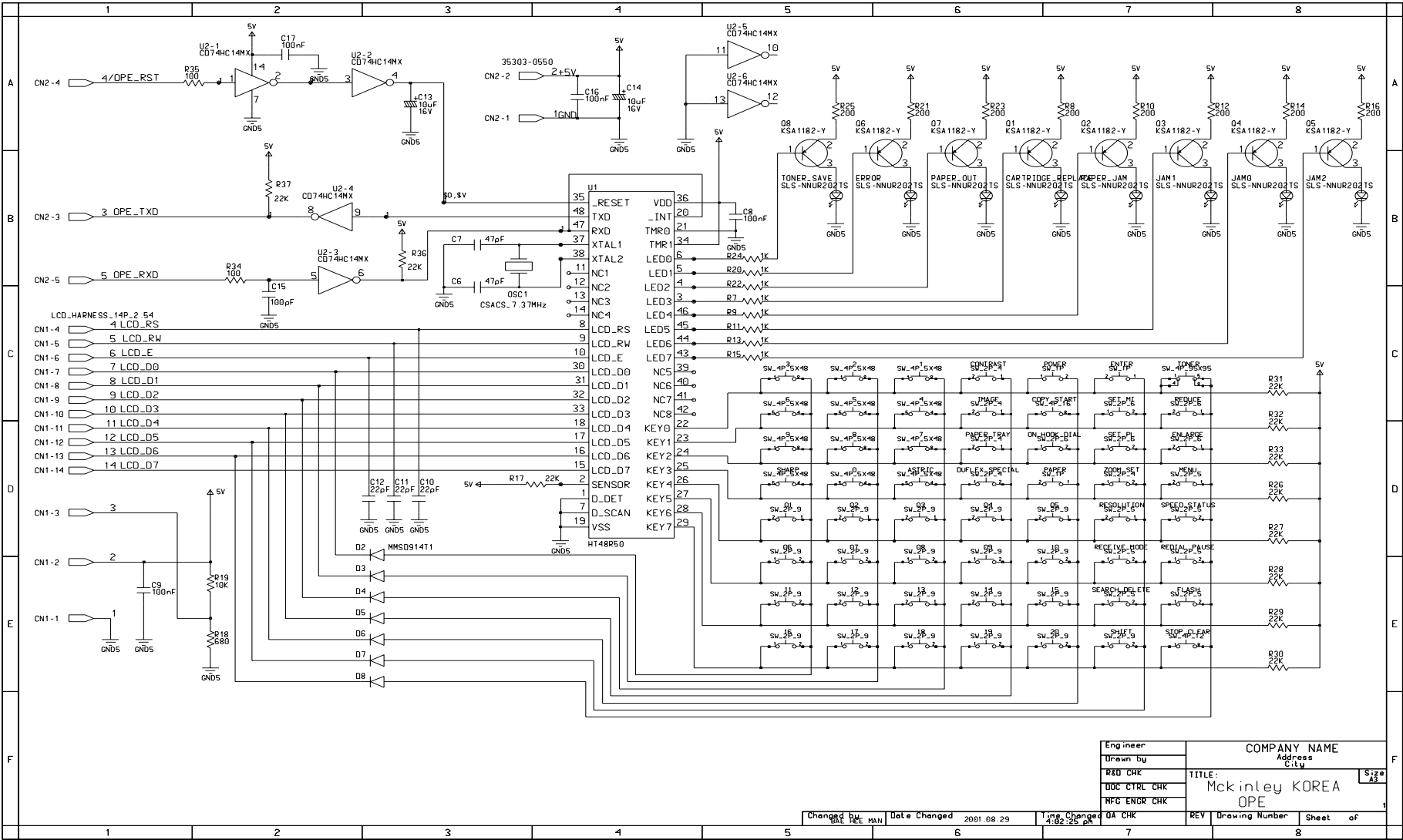
Main Circuit Diagram (16/16)



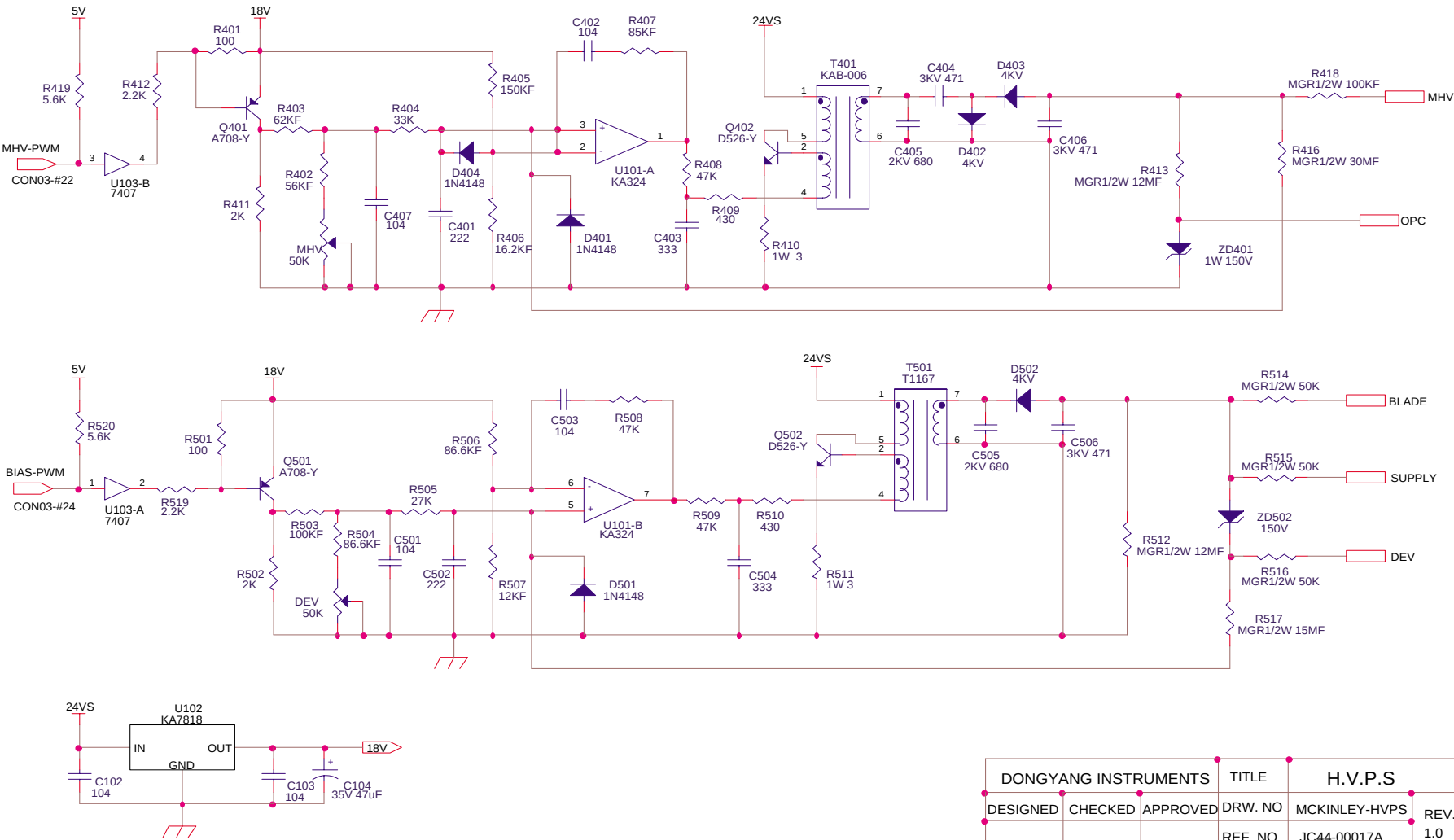
10-2 LIU Circuit Diagram



10-3 OPE Circuit Diagram

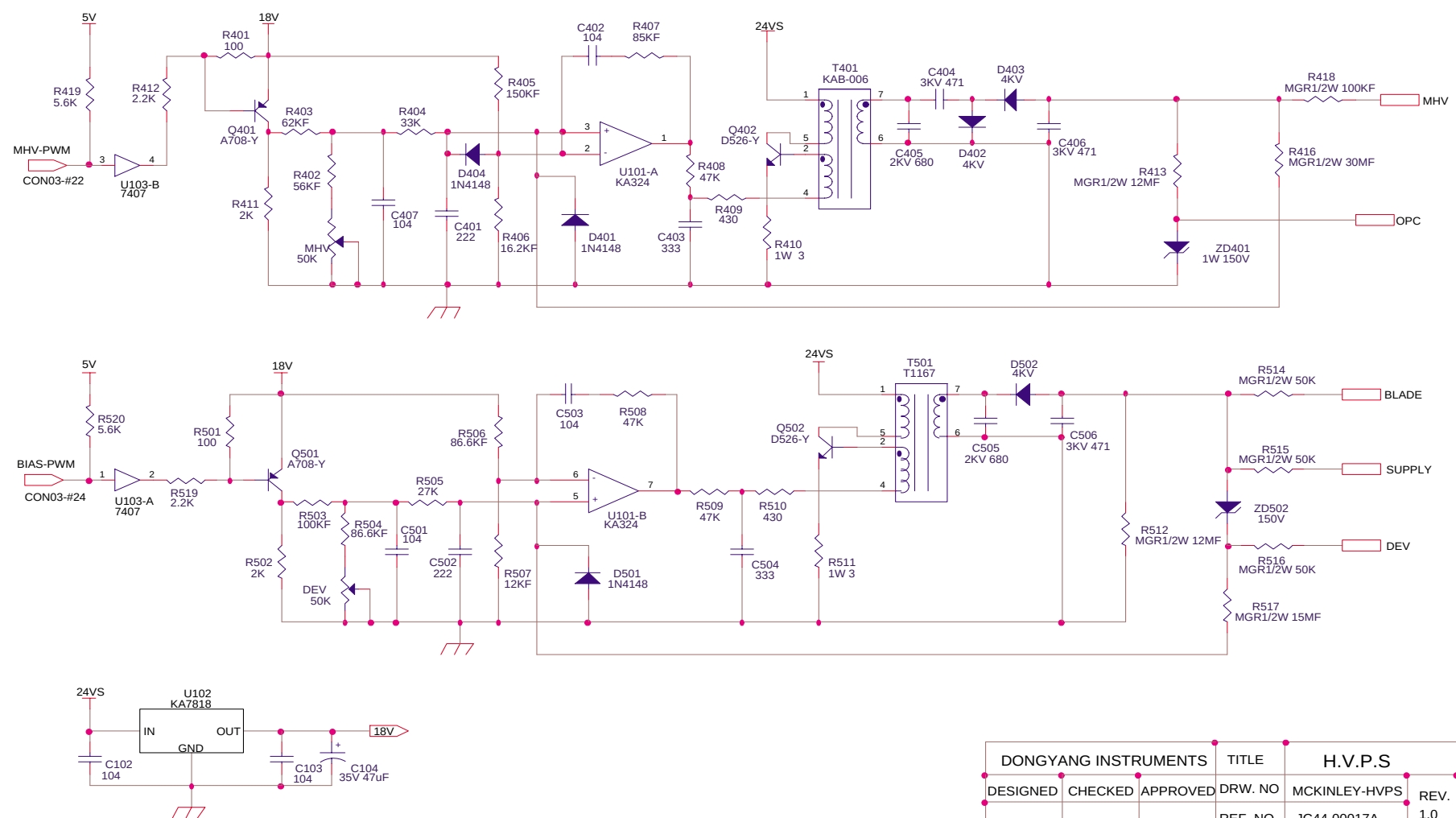


10-4 HVPS Circuit Diagram (1/2)



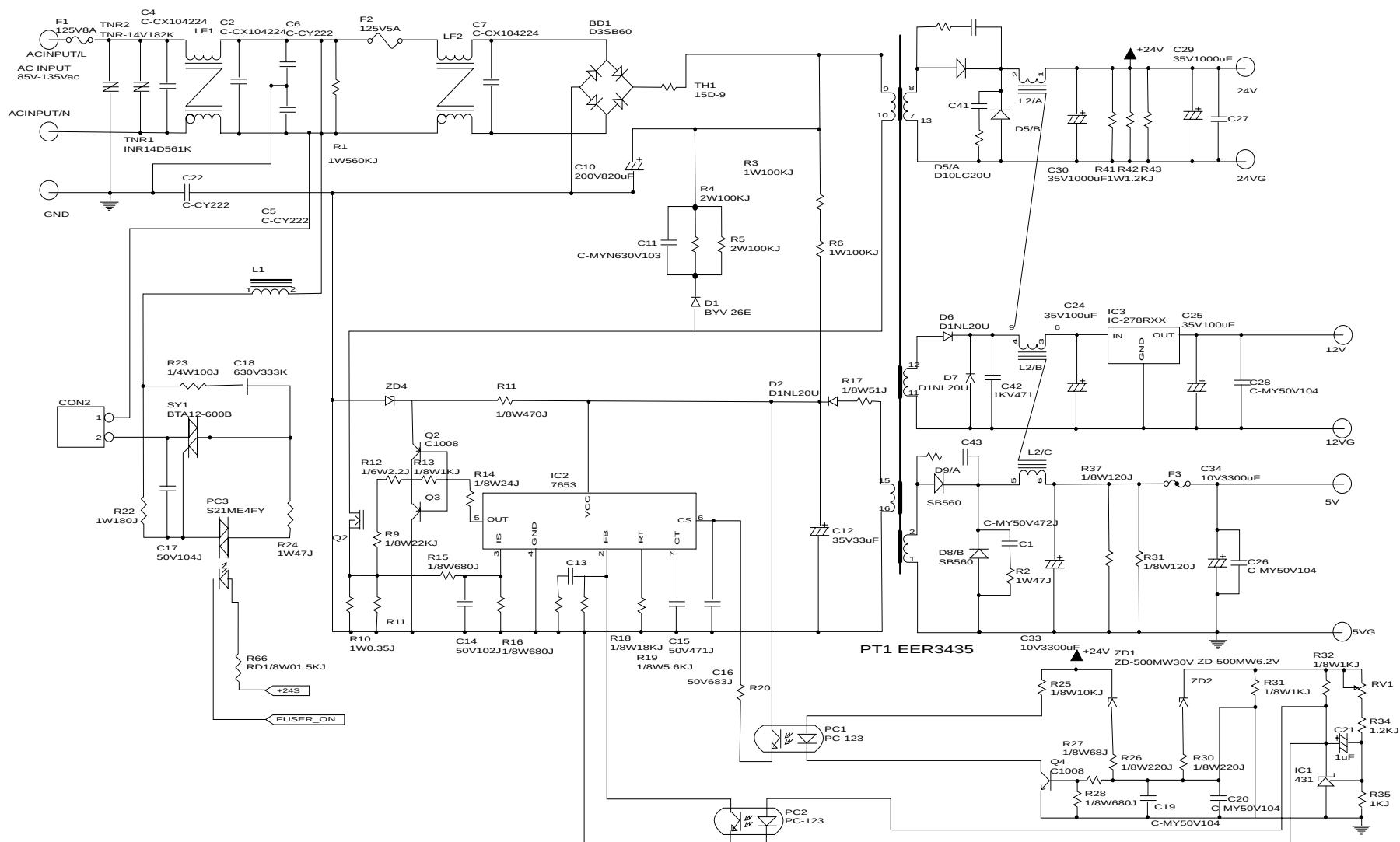
DONGYANG INSTRUMENTS			TITLE	H.V.P.S	
DESIGNED	CHECKED	APPROVED	DRW. NO	MCKINLEY-HVPS	REV.
J.S.YOUN			REF. NO	JC44-00017A	1.0
			SIZE A4	DATE 01/05/20	1 OF 2

HVPS Circuit Diagram (2/2)

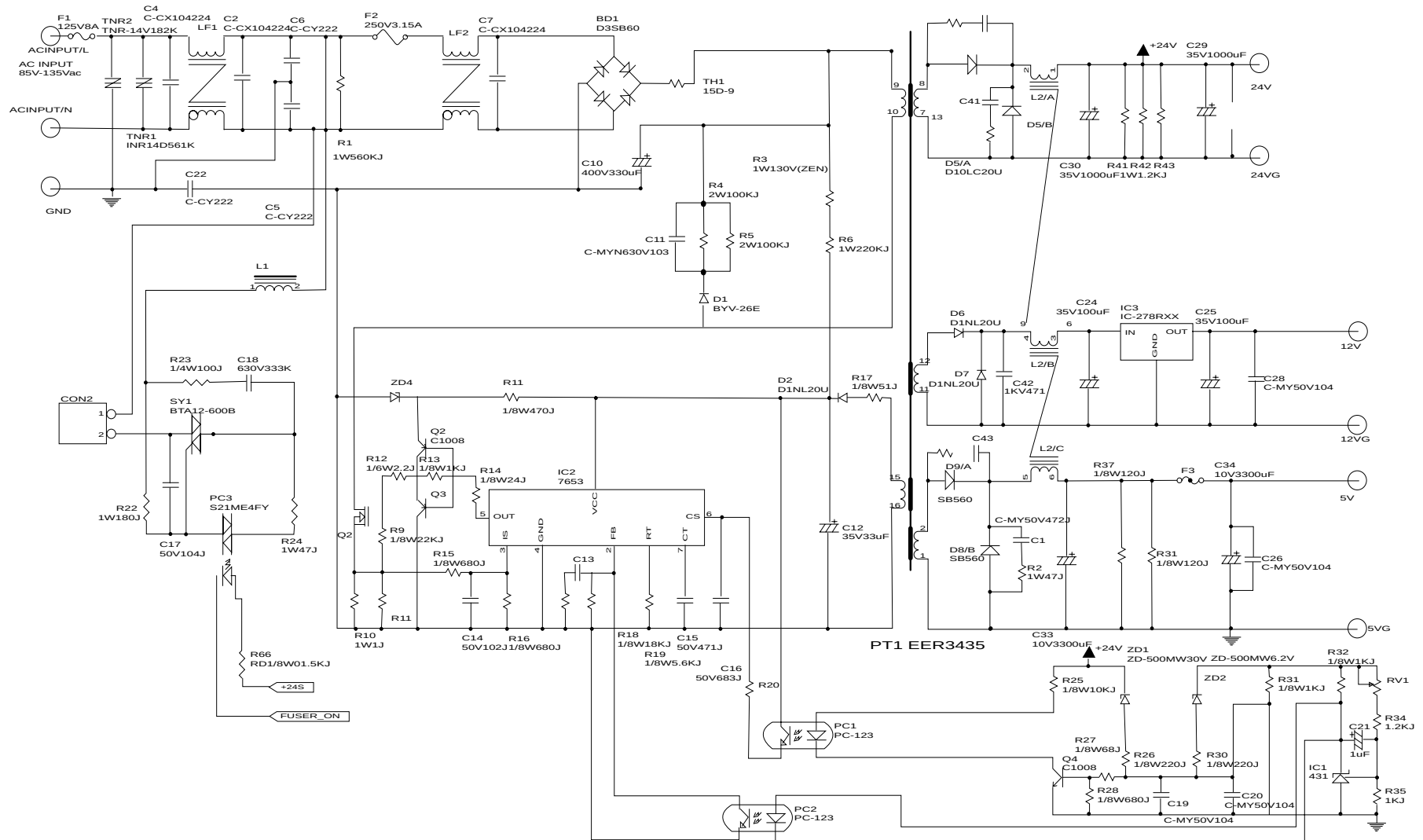


DONGYANG INSTRUMENTS			TITLE		H.V.P.S	
DESIGNED	CHECKED	APPROVED	DRW. NO	MCKINLEY-HVPS	REV.	
J.S.YOUN			REF. NO	JC44-00017A	1.0	
			SIZE A4	DATE 01/05/20	1 OF 2	

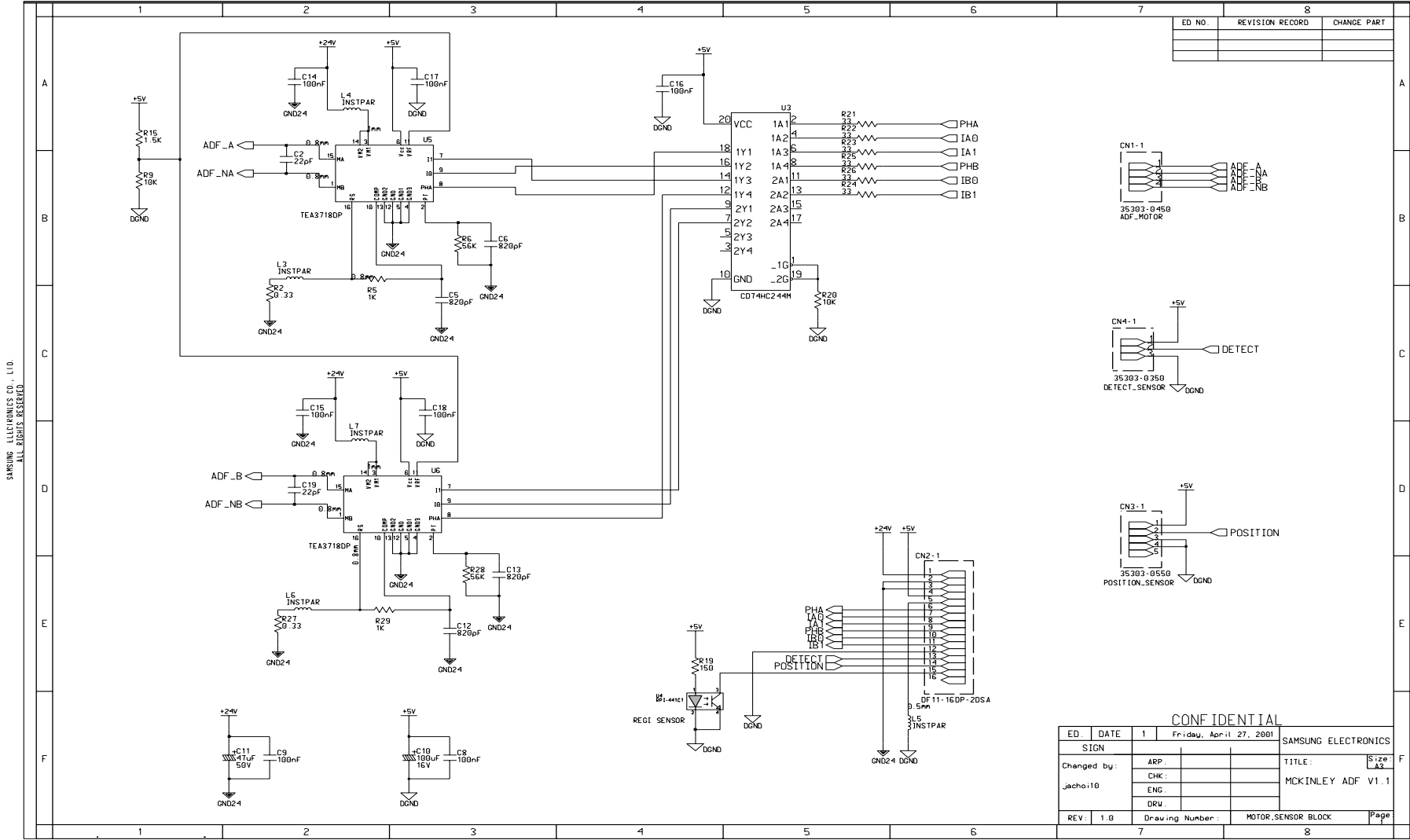
10-5 SMPS Circuit Diagram (110V)



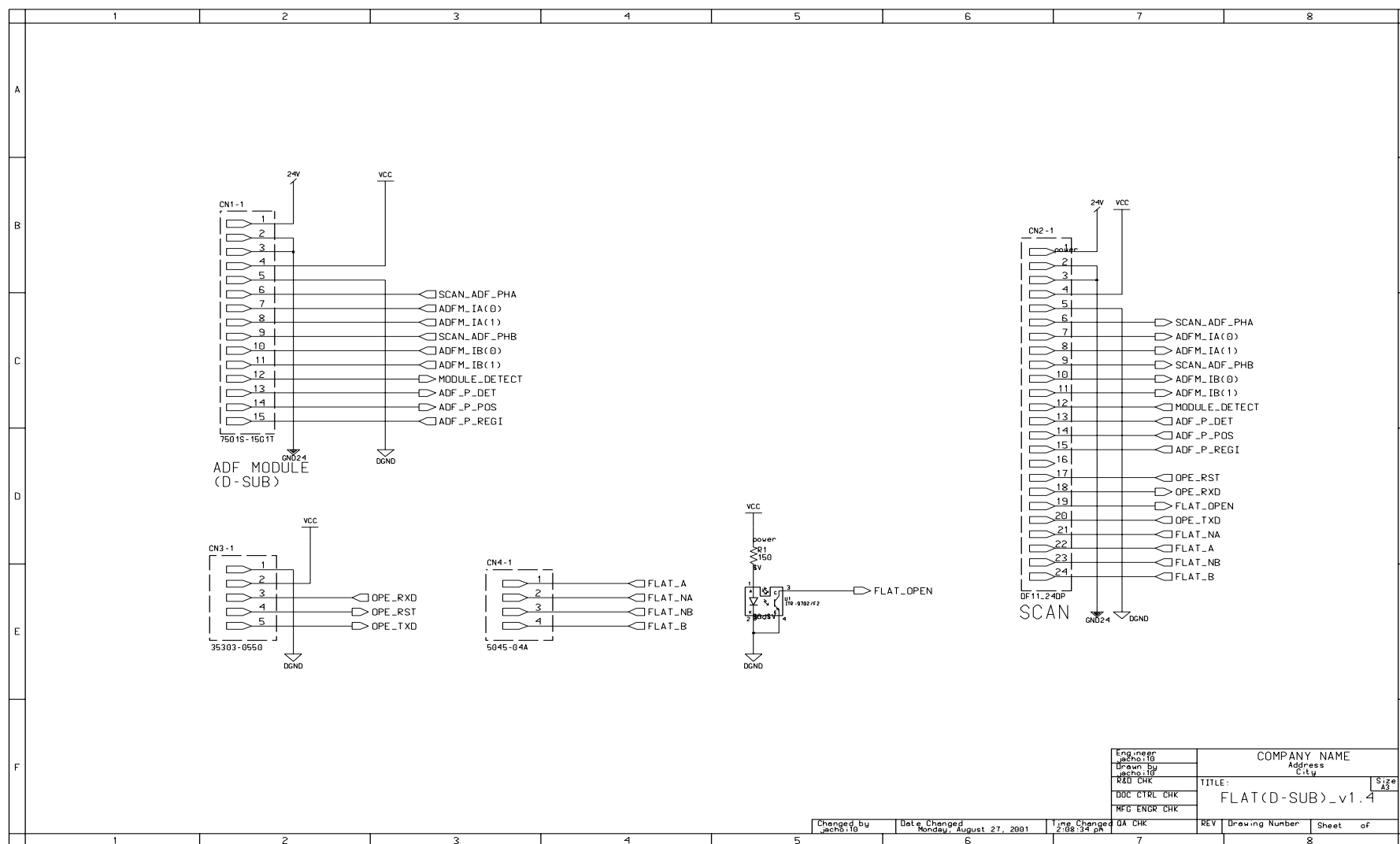
SMPS Circuit Diagram (220V)



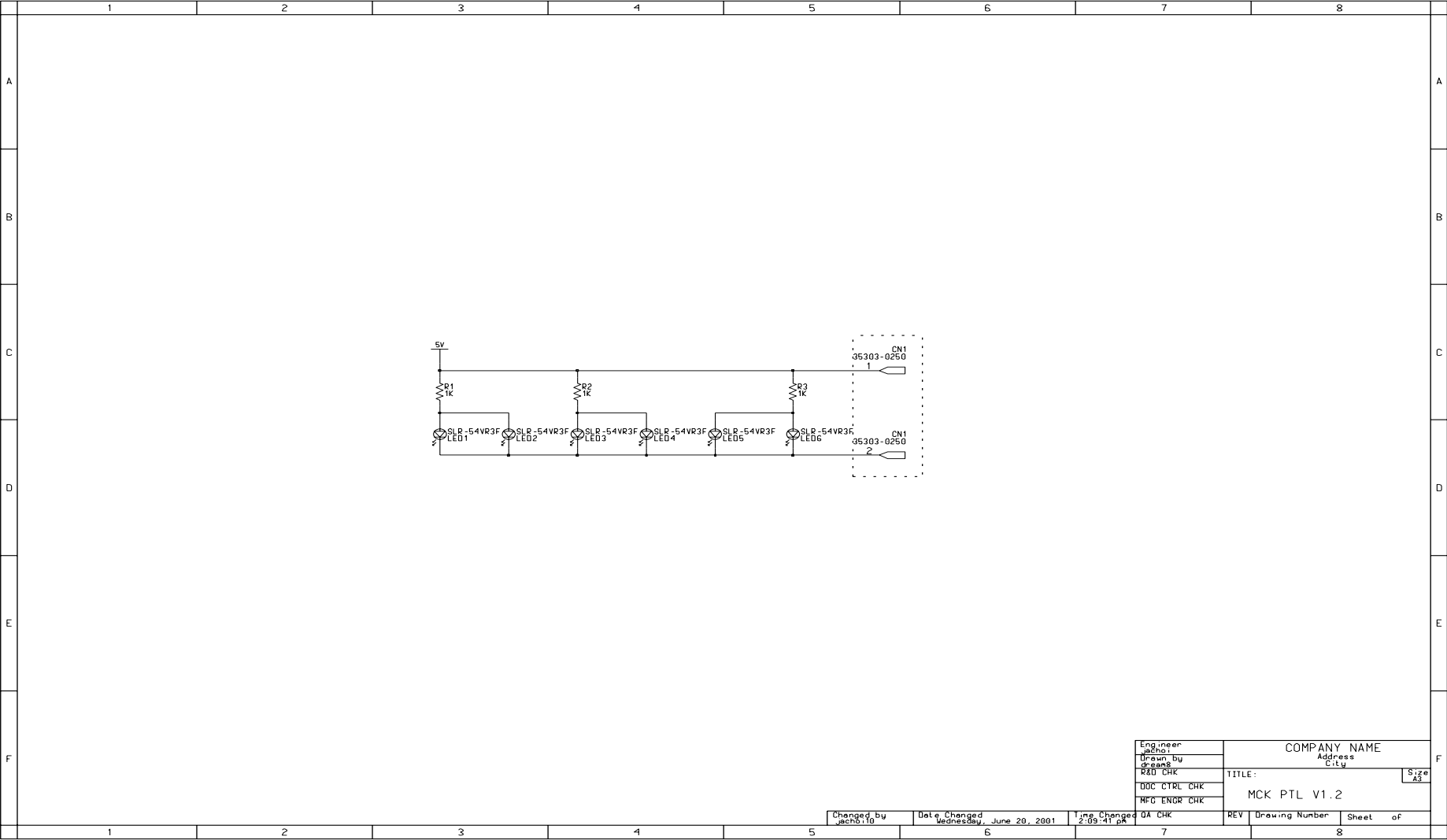
10-6 ADF Circuit Diagram



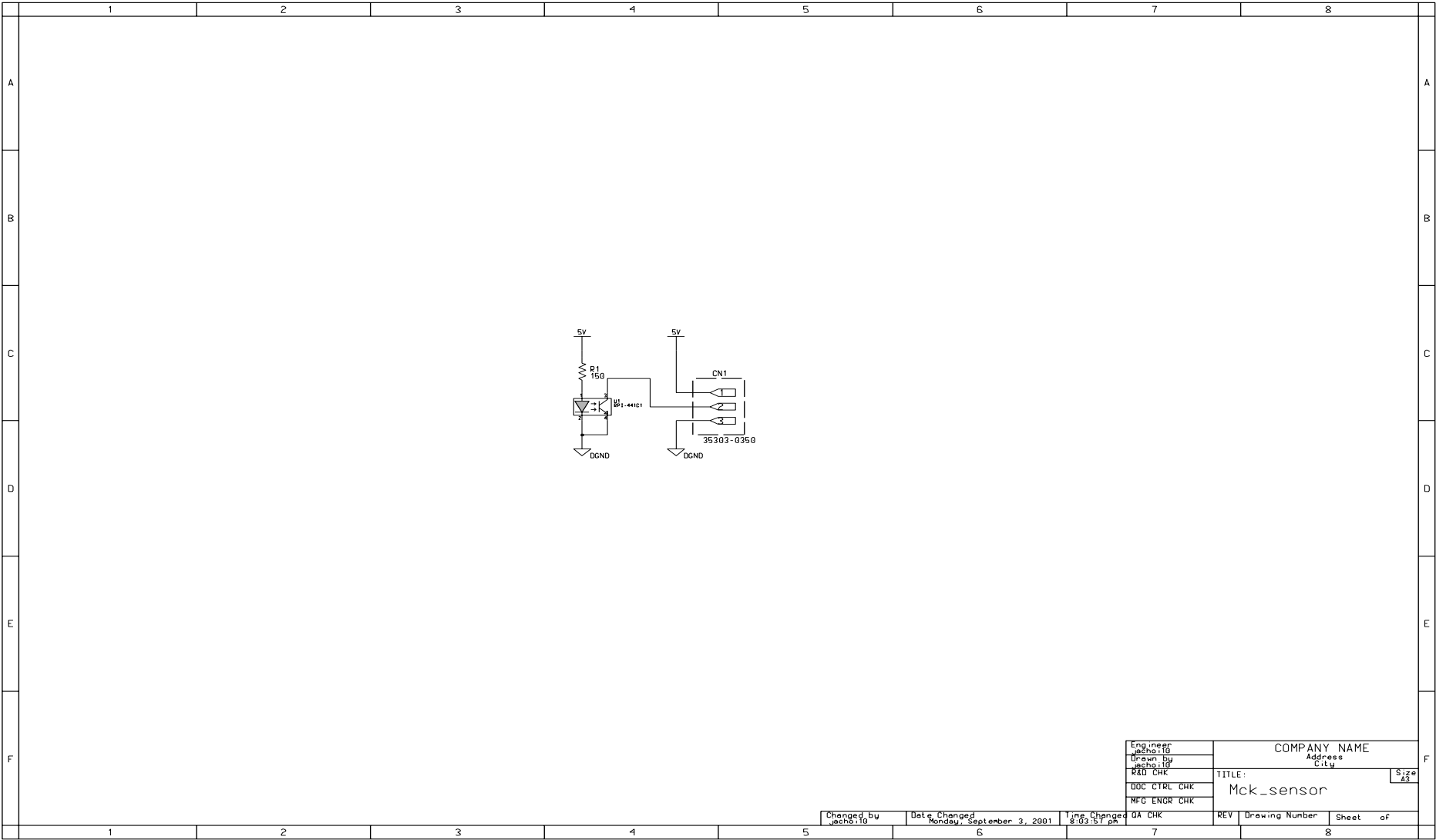
10-7 Flat Circuit Diagram



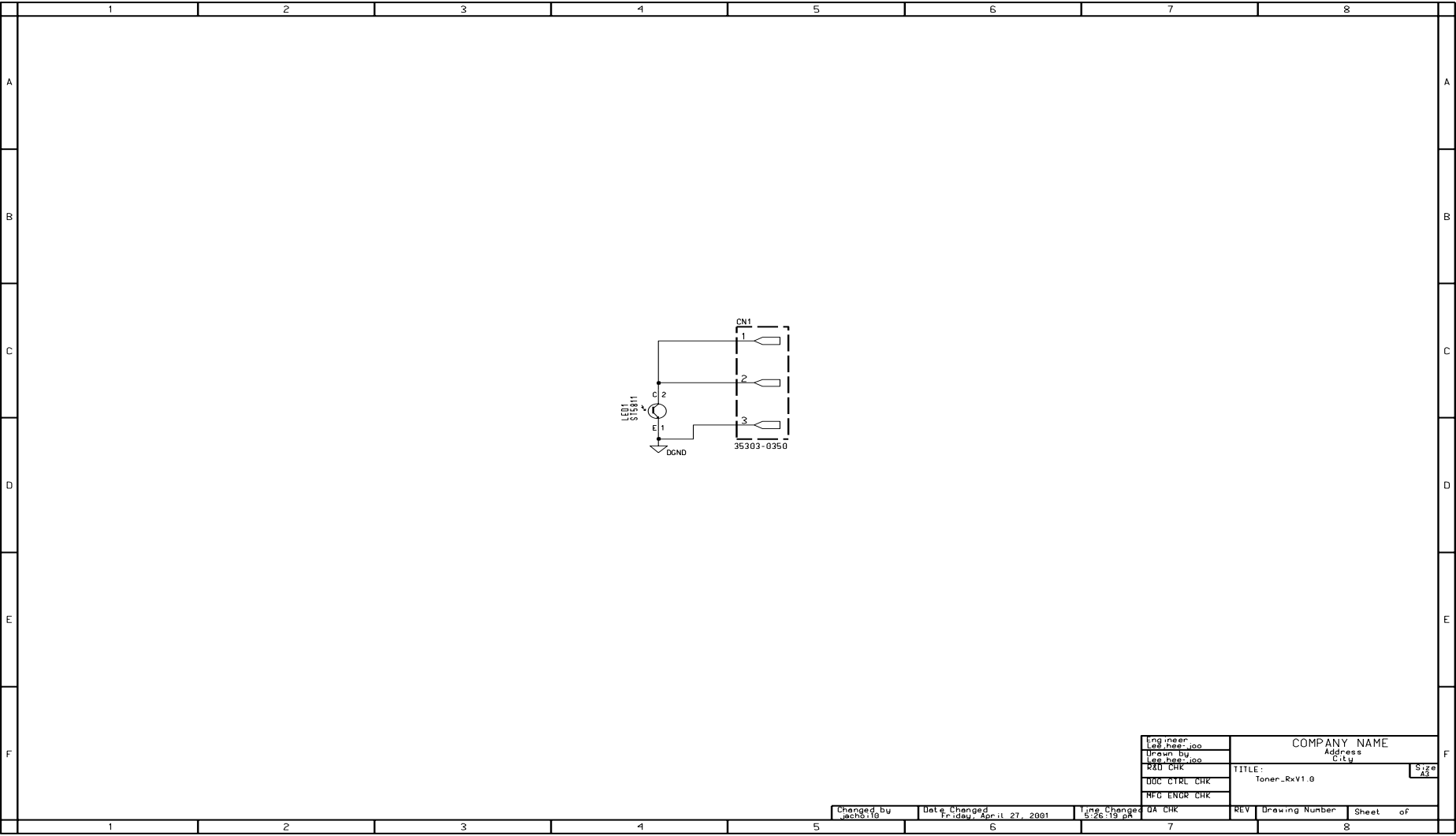
10-8 PTL Circuit Diagram



10-9 Sensor Circuit Diagram



10-10 Toner_Rx Circuit Diagram



10-11 Toner_Tx Circuit Diagram

