Color Laser MFP

ProXpress C3060 series
SL-C3060ND / SL-C3060FR / SL-C3060FW

(Ver 1.00)

SERVICE MANUAL

Color Laser MFP

Contents

Refer to the service manual in the GSPN (see the rear cover) for more information.

Contents

1. Precautions

In order to prevent accidents and damages to the equipment please read the precautions listed below carefully before servicing the product and follow them closely.

1.1. Safety warning

1) Only to be serviced by a factory trained service technician.

   High voltages and lasers inside this product are dangerous. This product should only be serviced by a factory trained service technician.

2) Use only Samsung replacement parts.

   There are no user serviceable parts inside the product. Do not make any unauthorized changes or additions to the product as these could cause the product to malfunctions and create an electric shocks or fire hazards.

3) Laser Safety Statement

   The printer is certified in the U.S. to conform to the requirements of DHHS 21 CFR, chapter 1 Subchapter J for Class I(1) laser products, and elsewhere is certified as a Class I laser product conforming to the requirements of IEC/EN 60825-1:2014. Class I laser products are not considered to be hazardous. The laser system and printer are designed so there is never any human access to laser radiation above a Class I level during normal operation, user maintenance or prescribed service condition.

   - Wavelength: 788 nm (-13/+12)
   - Beam divergence
     - Parallel: 8 degrees (-2/+4)
     - Perpendicular: 31 degrees (-6/+4)
   - Maximum power of energy output: 12 mW

WARNING

Never operate or service the product with the protective cover removed from Laser/Scanner assembly. The reflected beam, although invisible, can damage your eyes.

When using this product, these basic safety precautions should always be followed to reduce risk of fire, electric shock, and personal injury.

4) Lithium battery not replaceable by user

1.2. Caution for safety

1.2.1. Toxic material

This product contains toxic materials that could cause illness if ingested.

1) Please keep imaging unit and toner cartridge away from children. The toner powder contained in the imaging unit and toner cartridge may be harmful, and if swallowed, you should contact a doctor.

1.2.2. Electric shock and fire safety precautions

Failure to follow the following instructions could cause electric shock or potentially cause a fire.

1) Use only the correct voltage, failure to do so could damage the product and potentially cause a fire or electric shock.

2) Use only the power cable supplied with the product. Use of an incorrectly specified cable could cause the cable to overheat and potentially cause a fire.

3) Do not overload the power socket, this could lead to overheating of the cables inside the wall and could lead to a fire.

4) Do not allow water or other liquids to spill into the product, this can cause electric shock. Do not allow paper clips, pins or other foreign objects to fall into the product, these could cause a short circuit leading to an electric shock or fire hazard.

5) Never touch the plugs on either end of the power cable with wet hands, this can cause electric shock. When servicing the product, remove the power plug from the wall socket.

6) Use caution when inserting or removing the power cord. When removing the power cord, grip it firmly and pull. The power cord must be inserted completely, otherwise a poor contact could cause overheating leading to a fire.

7) Take care of the power cable. Do not allow it to become twisted, bent sharply around corners or power cable may be damaged. Do not place objects on top of the power cable. If the power cable is damaged it could overheat and cause a fire. Exposed cables could cause an electric shock. Replace the damaged power cable immediately, do not reuse or repair the damaged cable. Some chemicals can attack the coating on the power cable, weakening the cover or exposing cables causing fire and shock risks.

8) Ensure that the power sockets and plugs are not cracked or broken in any way. Any such defects should be repaired immediately. Take care not to cut or damage the power cable or plugs when moving the machine.

9) Use caution during thunder or lightning storms. Samsung recommends that this machine be disconnected from the power source when such weather conditions are expected. Do not touch the machine or the power cord if it is still connected to the wall socket in these weather conditions.

10) Avoid damp or dusty areas, install the product in a clean well ventilated location. Do not position the machine near a humidifier or in front of an air conditioner. Moisture and dust built up inside the machine can lead to overheating and cause a fire or cause parts to rust.

11) Do not position the product in direct sunlight. This will cause the temperature inside the product to rise possibly leading to the product failing to work properly and in extreme conditions could lead to a fire.

12) Do not insert any metal objects into the machine through the ventilator fan or other part of the casing, it could make contact with a high voltage conductor inside the machine and cause an electric shock.

13)  When replacing the SMPS board, please wait 5 minutes after unplugging the power cord, then replace it. You can get a shock by the electric discharge.

1.2.3. Handling precautions

The following instructions are for your own personal safety to avoid injury and so as not to damage the product.

1) Ensure the product is installed on a level surface, capable of supporting its weight. Failure to do so could cause the product to tip or fall.

2) The product contains many rollers, gears and fans. Take great care to ensure that you do not catch your fingers, hair or clothing in any of these rotating devices.

3) Do not place any small metal objects, containers of water, chemicals or other liquids close to the product which if spilled could get into the machine and cause damage or a shock or fire hazard.

4) Do not install the machine in areas with high dust or moisture levels, beside on open window or close to a humidifier or heater. Damage could be caused to the product in such areas.

5) Do not place candles, burning cigarettes, etc on the product, These could cause a fire.

6) Ensure that the machine is installed and used in proper area to meet the temperature and humidity specifications.

   - If the machine is stored at below zero Celsius for a long time, do not use the machine instantly after movement. It can malfunction. Take care of the machine storage. If the machine is stored at below zero Celsius for a long time, keep the machine at room temperature and install it.

1.2.4. Assembly and Disassembly precautions

1) Replace parts carefully and always use Samsung parts. Take care to note the exact location of parts and also cable routing before dismantling any part of the machine. Ensure all parts and cables are replaced correctly. Please carry out the following procedures before dismantling the product or replacing any parts.

2) Ensure that power is disconnected before servicing or replacing any electrical parts.

3) Disconnect interface cables and power cables.

4) Only use approved spare parts. Ensure that part number, product name, any voltage, current or temperature rating are correct.

5) When removing or re-fitting any parts do not use excessive force, especially when fitting screws into plastic.

6) Take care not to drop any small parts into the machine.

7) Handling of the OPC Drum

   - The OPC Drum can be irreparably damaged if it exposed to light. Take care not to expose the OPC Drum either to direct sunlight or to fluorescent or incandescent room lighting. Exposure for as little as 5 minutes can damage the surface of the photoconductive properties and will result in print quality degradation. Take extra care when servicing the product. Remove the OPC Drum and store it in a black bag or other lightproof container. Take care when working with the Covers (especially the top cover) open as light is admitted to the OPC area and can damage the OPC Drum.

   - Take care not to scratch the green surface of OPC Drum Unit. If the green surface of the Drum Cartridge is scratched or touched the print quality will be compromised.

1.2.5. Disregarding this warning may cause bodily injury

1) Be careful with the high temperature part.

   The fuser unit works at a high temperature. Use caution when working on the printer. Wait for the fuser unit to cool down before disassembly.

2) Do not put fingers or hair into the rotating parts.

   When operating a printer, do not put hand or hair into the rotating parts (Paper feeding entrance, motor, fan, etc.). If do, you can get harm.

3) When you move the printer, use safe lifting and handling techniques.

   This printer is heavy. Use the lifting handles located on each side of the machine. Back injury could be caused if you do not lift carefully.

4) Ensure the printer is installed safely.

   Ensure the printer is installed on a level surface, capable of supporting its weight. Failure to do so could cause the printer to tip or fall possibly causing personal injury or damaging the printer.

5) Do not install the printer on a sloping or unstable surface. After installation, double check that the printer is stable.

1.3. ESD precautions

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.

1) Immediately before handling a semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, employ a commercially available wrist strap device, which should be removed for your personal safety reasons prior to applying power to the unit under test.

2) After removing an electrical assembly equipped with ESDs, place the assembly on a conductive surface, such as aluminum or copper foil, or conductive foam, to prevent electrostatic charge buildup in the vicinity of the assembly.

3) Use only a grounded tip soldering iron to solder or desolder ESDs.

4) Use only an "anti-static" solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESDs.

5) Do not use Freon-propelled chemicals. When sprayed, these can generate electrical charges sufficient to damage ESDs.

6) Do not remove a replacement ESD from its protective packaging until immediately before installing it. Most replacement ESDs are packaged with all leads shorted together by conductive foam, aluminum foil, or a comparable conductive material.

7) Immediately before removing the protective shorting material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.

8) Maintain continuous electrical contact between the ESD and the assembly into which it will be installed, until completely plugged or soldered into the circuit.

9) Minimize bodily motions when handling unpackaged replacement ESDs. Normal motions, such as the brushing together of clothing fabric and lifting one's foot from a carpeted floor, can generate static electricity sufficient to damage an ESD.

2. Product specification and description

2.1. Product Specification

2.1.1. Product Overview

[**SL-C3060ND**]

[**SL-C3060FR/FW**]

1) **Printing Speed (color/mono)**
   - 30 / 30 ppm in A4 (31 / 31 ppm in Letter)
2) **Processor**
   - 800 + 400 MHz
3) **Printer Language**
   - SPL / PCL5ce / PCL6 / PostScript3 / PDF V1.7 / URF / PWG / PCLm
4) **Memory**
   - 512 MB
5) **Interface**
   - High Speed USB 2.0
   - 10/100/1000 BaseTX network connector
   - User Interface
     - C306xND : 4 Line LCD
     - C306xFR/FW : 4.3 inch Touch Screen Panel
6) **Toner cartridge yield**
   - Initial
     - C306xND/FR : Approx. 4,000 (K)/ 2,500(CMY) pages
     - C306xFW : Approx. 2,500 (K)/ 1,200(CMY) pages
   - Sales
     - C306xND/FR
       - Approx. 8,000 (K)/ 5,000(CMY) pages (CLT-K/C/M/Y503L)
     - C306xFW
       - Approx. 2,500 (K)/ 2,500(CMY) pages (CLT-K/C/M/Y503S)
       - Approx. 8,000 (K)/ 5,000(CMY) pages (CLT-K/C/M/Y503L)
7) **ADF / RADF**
   - C306xND : ADF
   - C306xFR/FW : RADF

2.1.2. Specifications

Product Specifications are subject to change without notice.

NOTE

The specification in this manual is the reference information for service engineer. Do not use this specification for sales.

2.1.2.1. General specification

Item			Specification
Processor			800MHz + 400MHz Dual CPU(A2000)
User Interface	Operational Panel		• C306xND : 4 line LCD • C306xFR / C306xFW : 4.3" TSP
Memory	Standard		512 MB
	Max. (Option)		512 MB
Interface	USB (Device)		Yes (Hi-Speed USB 2.0)
	USB (Host)		Yes (Hi-Speed USB 2.0)
	USB (EDI)		Yes (Hi-Speed USB 2.0)
	Wired LAN		Standard (Ethernet 10/100/1000 Base TX)
	Wireless LAN		• C306xND / C306xFR : Optional (IEEE 802.11b/g/n + Active NFC) • C306xFW : Standard (IEEE 802.11b/g/n + Passive NFC)
	NFC		• C306xND / C306xFR : Optional (Active type) • C306xFW : Standard (Passive type)
	RJ11 Connector		
Power Consumption	Average operating mode		Less than 500W
	Ready mode		Less than 40 W
	Power save mode		• C306xND/C306xFR : Less than 1.4 W • C306xFW: Less than 1.8 W
	Power off mode		Less than 0.5 W
Noise Level (Pressure)	Ready mode		Less than 37 dB(A)
	Print mode (Simplex / Duplex)		Less than 52 dB(A)
	Copy mode	Tray1	Less than 54 dB(A)
		Tray2	Less than 55 dB(A)
	Scan mode	Scanner glass	Less than 50 dB(A)
		Document feeder	Less than 52 dB(A)
Dimension	Width x Depth x Height		• C306xND: 420 x 452.5 x 476.8 mm (16.54 x 17.81 x 18.77 inches) • C306xFR/C306xFW: 469 x 452.5 x 504.3 mm (18.46 x 17.81 x 19.85 inches)
Weight	Machine with supplies		• C306xND : 24.62 kg (54.28 Ibs) • C306xFR/C306xFW : 26.32 kg (58.02 Ibs)
Max Monthly Duty Cycle			60,000 Images

NOTE

- Sound Pressure Level, ISO 7779. Configuration tested: basic machine installation, A4 paper, simplex printing.
- The power consumption may be affected by the machine's status, setting conditions, operating environment, and measuring equipment and method the country uses.
- Power consumption can be completely avoided only when the power cable is not connected.

2.1.2.2. Print Specification

Item		Specification
Print Speed	Simplex (Mono / Color)	30 / 30 ppm in A4 (31 / 31 ppm in Letter)
	Duplex (Mono / Color)	15 / 15 ipm in A4 (15 / 15 ipm in Letter)
FPOT	From Ready (Mono / Color)	As fast as 9 / 10 sec
	From Sleep (Mono / Color)	As fast as 17 / 17 sec
Resolution	Optical	600 x 600 dpi
	Enhanced	Up to 9,600 x 600 dpi Effective Output (600 x 600 x 4 bit)
Printer Languages		SPLC / PCL5Ce / PCL6 / PS3 / PDF V1.7
Font	PCL	96 Scalable Fonts (Include OCR-A / OCR-B) / 1 Bitmap
	Postscript3	136 Scalable Fonts
Client OS Support	Windows	Windows XP (32 / 64 bit) / 2003 Server (32 / 64 bit) / Vista (32 / 64 bit) / 2008 server (32 / 64 bit) / 7 (32 / 64 bit) / 2008 Server R2 / 10 (32 / 64 bit) / 2012 Server
	Linux	• Red Hat Enterprise Linux 5/ 6/ 7 • Fedora 15/ 16/ 17/ 18/ 19/ 20/ 21/ 22 • openSUSE 11.4/ 12.1/ 12.2/ 12.3/ 13.1/ 13.2 • Ubuntu 11.04/ 11.10/ 12.04/ 12.10/ 13.04/ 13.10/ 14.04/ 14.10/ 15.04 • SUSE Linux Enterprise Desktop 11/ 12 • Debian 6/ 7/ 8 • Mint 13/ 14/ 15/ 16/ 17
	UNIX	• Sun Solaris 9/ 10/ 11 (x86/ SPARC) • HP-UX 11.0/ 11i v1/ 11i v2/ 11i v3 (PA-RISC/ Itanium) • IBM AIX 5.1/ 5.2/ 5.3/ 5.4/ 6.1/ 7.1 (PowerPC)
	Mac OS	Mac OS: X 10.6 - 10.11
Network Protocol		TCP/IP: TCP/IPv4/v6 / HTTP / SNMPv1/v2c/v3 / SMTP / DNS /WINS / DDNS / DHCP / SSL/TLS / BOOTP / AutoIP / Standard TCP/IP Printing / LPR / FTP Print / WSD Print / IPP / UPnP(SSDP) / Bonjour / Telnet / WSD Discovery / SLP / SetIP / ThinPrint / Google Cloud Print / Air Print / SNTP / SMB / FTP / WSD Scan / LDAP Others: HTTPs / IPPs / SMTPs / LDAPs / 802.1x (EAP-MD5 / EAP-MSCHAPv2 / PEAP / TLS) / IPSec
Duplex Print		Built-in
Direct Print		PDF, JPEG, TIFF, PRN, XPS

2.1.2.3. Scan Specification

Item		Specification
Scan Method		Color CIS
Compatibility		TWAIN / WIA
Color Mode		Mono / Gray / Color
Scan Speed	B/W	• C3060FR/FW : 24 ipm @ 300 dpi • C3060ND : 18 ipm @ 300 dpi
	Gray	• C3060FR/FW : 24 ipm @ 300 dpi • C3060ND : 18 ipm @ 300 dpi
	Color	• C3060FR/FW : 24 ipm @ 300 dpi • C3060ND : 18 ipm @ 300 dpi
File Formats		TIFF-S / TIFF-M / JPEG / S-PDF / M-PDF
Resolution	Optical (ADF)	Up to 600 x 600 dpi
	Optical (Platen)	Up to 1,200 x 1,200 dpi
	Enhanced (ADF)	Up to 4,800 x 4,800 dpi
	Enhanced (Platen)	Up to 4,800 x 4,800 dpi
Scan Destinations	HDD (SD Card)	• C3060FR/FW : Yes • C3060ND : No
	USB	Yes
	Email	Yes
	Client(NetScan)	No
	SMB	Yes
	FTP	Yes
	HTTP(S)	No
	PC	Yes
	WSD	Yes
	Samsung Cloud	Yes
	WebDAV	N/A
Multi Destinations		• C3060FR/FW : Yes • C3060ND : No
Communication Protocol		SMTP / MIME(Base 64)
Scan Size	ADF	Max. 216 x 356 mm (8.5" x 14")
	Platen	Max. 210 x 297 mm (8.3" x 11.7")
Scan Original Types		Text / Text&Photo / Photo

2.1.2.4. Copy Specification

Item		Specification
Copy Speed	SDMC (Single Document Multiple Copy)	Up to 30 cpm in A4 (31 cpm in Letter)
	MDMC (Multiple Document Multiple Copy)	• C306xND : Up to 18 cpm in A4 (19 cpm in Letter) • C306xFR/FW : Up to 24 cpm in A4 (25 cpm in Letter)
FCOT (Mono / Color)	From Ready	• Less than 13 / 13 sec @ Platen
Resolution (Original Type)	Text	Scan : 600 x 600 dpi (Optical 300 x 450 dpi) @ ADF, Printing : Up to 2,400 x 600 dpi Effective, Output (600 x 600 x 2 bit) Scan : 600 x 600 dpi (Optical 600 x 600 dpi) @ Platen, Printing : Up to 2,400 x 600 dpi Effective, Output(600 x 600 x 2 bit)
	Text/Photo	Scan : 600 x 600 dpi (Optical 300 x 450 dpi) @ ADF, Printing : Up to 2,400 x 600 dpi Effective, Output (600 x 600 x 2 bit) Scan : 600 x 600 dpi (Optical 600 x 600 dpi) @ Platen, Printing : Up to 2,400 x 600 dpi Effective, Output(600 x 600 x 2 bit)
	Photo	Scan : 600 x 600 dpi (Optical 600 x 600 dpi) @ ADF, Printing : Up to 9,600 x 600 dpi Effective, Output (600 x 600 x 4 bit) Scan : 600 x 600 dpi (Optical 600 x 600 dpi) @ Platen, Printing : Up to 9,600 x 600 dpi Effective, Output(600 x 600 x 4 bit)
	Magazine	Scan : 600 x 600 dpi (Optical 300 x 450 dpi) @ ADF, Printing : Up to 9,600 x 600 dpi Effective, Output (600 x 600 x 4 bit) Scan : 600 x 600 dpi (Optical 600 x 600 dpi) @ Platen, Printing : Up to 9,600 x 600 dpi Effective, Output(600 x 600 x 4 bit)
	Copied Original	No
	Map	No
	Light Original	No
Reduce / Enlarge	Platen	25 ~ 400 %
	ADF	25 ~ 400 %
	Preset	Original (100%) / Auto Fit / A4 → A5 (71%) / LGL → LTR (78%) / LGL → A4 (83%) / A4 → LTR (94%) / EXE → LTR (104%) / A5 → A4 (141%) / 25% / 50% / 150% / 200% / 400% / Custom (25 - 400%)
Darkness Control		11 Levels
Multi Copy		1 - 9999
Copy Original Type		Text / Text&Photo / Photo / Magazine
Copy Features		N-Up / ID Card Copy(Platen Only) / Book Copy(Platen Only) / Watermark Copy / Erase Background / Erase Edge / Book Center Erase / Time & Date Stamp / ID Stamp

2.1.2.5. Fax Specification

Item		Specification
Compatibility		ITU-T G3
Communication System		PSTN / PABN / A
Modem Speed		33.6 Kbps
TX Speed		3 sec (Mono / Standard / ECM-MMR / MemoryTx / ITU-T G3 No.1 Chart)
Resolution (Mono)	Std	203 x 98 dpi
	Fine	203 x 196 dpi
	S.Fine	300 x 300 dpi
Resolution (Color)	Std	200 x 200 dpi
	Fine	N/A
	S.Fine	N/A
Compression Method		MH / MR / MMR / JBIG / JPEG
Fax Memory (Standard / Max.)		SD Card
Dual Lines		N/A
Fax Features	Handset	N/A
	On hook Dial	Yes
	Search	Yes (Address Book)
	1-Touch Dial	N/A
	Speed Dial	200 locations
	TAD I/F	N/A
	Tone/Pulse	Yes (Selectable in Tech Mode)
	Pause	Yes
	Auto Redial	Yes
	Last Number Redial	Yes
	Distinctive Ring	Yes
	Caller ID	Yes
	External Phone Interface	Yes
	Fax Forward to E-Mail	Yes
	Fax to PC	Yes
	Broadcasting	208 Locations
	Delayed Fax	Yes

2.1.2.6. Paper Handling

Item		Specification
Standard Capacity		• 250-sheet Cassette Tray @ 80 g/m² • 50-sheet Manual Tray
Max. Capacity		1,400 sheets @ 80 g/m² (250 sheet Tray1 + 50 sheet MP + 550 sheet SCF x 2)
Printing	Max. Size	216 x 356 mm (8.5" x 14")
	Min. Size	76 x 127 mm (3.0" x 5.0")
Standard Cassette Tray (Tray1)	Capacity	250 sheets @ 80 g/m²
	Media sizes	A4 / Letter / Legal / Oficio / Folio / JIS B5 / ISO B5 / Executive / A5 / Statement / A6 / Postcard / Envelope Monarch / Envelope No-10 / Envelope DL / Envelope C5 / Envelope C6 / Envelope No 9 / Custom [98 x 127 mm (3.86" x 5") - 216 x 356 mm (8.5" x 14")]
	Media types	Plain Paper / Thin Paper / Thick Paper / Cardstock / Thicker Paper / Hole Punched / Pre-Printed / LetterHead / Recycled / Archive / Bond / Label / Envelope / Cotton / Colored / Glossy
	Media weight	• Supported Weight: 60 ~ 220 g/m² (16 ~ 59 lb) • Thin Paper: 60 ~ 69 g/m² • Plain Paper: 70 ~ 90 g/m² • Thick Paper: 91 ~ 105 g/m² • Bond Paper: 105 ~ 120 g/m² • Cardstock: 121 ~ 163 g/m² • Thicker Paper: 164 ~ 220 g/m²
	Sensing	• H/W Install Detect: No • Paper Empty : Yes • Paper Type Detect: No • Paper Size Detect: No
Multi-Purpose tray	Capacity	Plain Paper : 50 sheet @ 80 g/m²
	Media sizes	A4 / Letter / Legal / Oficio / Folio / JIS B5 / ISO B5 / Executive / A5 / Statement / A6 / Index Card Stock / Postcard / Envelope Monarch / Envelope No-10 / Envelope DL / Envelope C5 / Envelope C6 / Envelope No 9 / Custom [76 x 127 mm (3" x 5") - 216 x 356 mm (8.5" x 14")]
	Media type	Plain Paper / Thin Paper / Thick Paper / Cardstock / Thicker Paper / Hole Punched / Pre-Printed / LetterHead / Recycled / Archive / Bond / Label / Envelope / Cotton / Colored / Glossy
	Media weight	• Supported Weight: 60 ~ 220 g/m² (16 ~ 59 lb) • Thin Paper: 60 ~ 69 g/m² • Plain Paper: 70 ~ 90 g/m² • Thick Paper: 91 ~ 105 g/m² • Bond Paper: 105 ~ 120 g/m² • Cardstock: 121 ~ 163 g/m² • Thicker Paper: 164 ~ 220 g/m²
	Sensing	Paper Empty : Yes

Item		Specification
Option Cassette (SCF)	Model	SL-SCF3000
	Capacity	550 sheets @ 75 g/m²
	Media sizes	A4 / Letter / Legal / Oficio / Folio / JIS B5 / ISO B5 / Executive / A5 / Statement / Custom [98 x 210 mm (3.86" x 8.3") - 216 x 356 mm (8.5" x 14")]
	Media types	Plain Paper / Thin Paper / Thick Paper / Cardstock / Hole Punched / LetterHead / Recycled / Archive / Bond
	Media weight	• Supported Weight : 60 ~ 163 g/m² • Thin Paper: 60 ~ 69 g/m² • Plain Paper : 70 ~ 89 g/m² • Thick Paper : 91 ~ 105 g/m² • Bond Paper: 105 ~ 120 g/m² • Cardstock: 121 ~ 163 g/m²
	Sensing	• H/W Install Detect : Yes • Paper Empty : Yes • Paper Type Detect : No • Paper Size Detect : No
Output Stacking	Capacity (Face-Down)	150 sheets @ 80g/m²
	Output Full sensing	Paper full Sensor
Duplex	Support	Yes
	Media sizes	A4 / Letter / Legal / Oficio / Folio / Custom [210 x 279 mm ("8.27 x 11") - 216 x 356 mm (8.5" x 14")]
	Media types	Plain Paper / Thin Paper / Thick Paper / Recycled / Bond
	Media weight	• Supported Weight : 60 ~ 120 g/m² • Thin Paper: 60 ~ 69 g/m² • Plain Paper : 70 ~ 89 g/m² • Thick Paper : 91 ~ 105 g/m² • Bond Paper : 105 ~ 120 g/m²
ADF	Capacity	50 Sheets
	Duplex Document Scanning	Yes (C3060FR/FW only)
	Document Size	• Width: 105 ~ 216 mm (4.1" ~ 8.5") • Length: 148 ~ 356 mm (5.8" ~ 14")
	Document Weight	60 ~ 120 g/m² (14 ~ 32 lb)
	Auto Detected Size	No

2.1.2.7. Software and Solution

Item		Specification
Application	Anyweb Print	N/A
	Easy Printer Manager	Windows / Mac
	Easy Color Manager	Windows / Mac
	Easy Document Creator	Windows / Mac
	Net PC Fax	• C306xND : N/A • C306xFR/FW : Windows / Mac
	Direct Printing Utility	N/A
	Easy Deployment Manager	Windows
	Easy Eco Driver	Windows
	Universal Printer Driver	Windows /Linux
	Universal Scan Driver	Windows /Linux
Mobile Printing	GCP (Google Cloud Print)	Yes
	AirPrint	Yes
	Mobile Print Application	Yes
Solution	Device Management	Fleet Admin Pro (including SNMP Agent)
	Billing & Supply Management	CounThru
	Output Management(security)	• C306xND : N/A • C306xFR/FW : SecuThru Lite
	Document Management and Distribution	• C306xND : N/A • C306xFR/FW : SmarThru WF Lite
	Mobility	SCP Public
Security	Authentication (Local)	Yes
	Authentication (Network)	Yes (Kerberos / SMB / LDAP)
	IP Address Filtering	Yes (IPv4 Filtering / IPv6 Filtering / MAC Filtering)
	HDD Overwrite (Standard)	• C306xND : N/A • C306xFR/FW : Yes(Manual Only)
	HDD Overwrite (Max. Overwrites)	• C306xND : N/A • C306xFR/FW : 9
	Secure Print	Yes
	Encrypted Secure Print	• C306xND : No • C306xFR/FW : Yes
	Encrypted PDF Mode (Encrypted Scanning)	Yes
	IP Sec	Yes
	Smart Card Authentication	N/A

2.1.2.8. Supplies

Item		Model Name	Average yield	Remark
Toner Cartridge (Initial)	Black	-	Approx. 4,000 pages	C306xND/FR only
	Cyan Magenta Yellow	-	Approx. 2,500 pages	
Toner Cartridge (Initial)	Black	-	Approx. 2,500 pages	C306xFW only
	Cyan Magenta Yellow	-	Approx. 1,200 pages	
Toner Cartridge	Black	CLT-K503S	Approx. 2,500 pages	C306xFW only
	Cyan	CLT-C503S	Approx. 2,500 pages	
	Magenta	CLT-M503S	Approx. 2,500 pages	
	Yellow	CLT-Y503S	Approx. 2,500 pages	
Toner Cartridge (High yield)	Black	CLT-K503L	Approx. 8,000 pages	
	Cyan	CLT-C503L	Approx. 5,000 pages	
	Magenta	CLT-M503L	Approx. 5,000 pages	
	Yellow	CLT-Y503L	Approx. 5,000 pages	
Waste Toner Container		CLT-W506	• Approx. 20,000 pages (Mono printing) • Approx. 5,000 pages (Color printing)	

NOTE

Declared yield value in accordance with ISO/IEC 19798. The number of pages may be affected by operating environment, printing interval, graphics, media type and media size.

Depending on the options, percentage of image area and job mode used, the toner cartridge's lifespan may differ.

CAUTION

When purchasing new toner cartridges or other supplies, these must be purchased in the same country as the machine you are using. Otherwise, new toner cartridges or other supplies will be incompatible with your machine due to different configurations of toner cartridges and other supplies according to the specific country conditions.

2.1.2.9. Maintenance Parts

Item		Part Code	Life	Remark
Transfer roller Assy		JC95-02044A	Approx. 100,000 pages	
Fuser unit	220V	JC91-01214A	Approx. 50,000 pages	
	110V	JC91-01213A		
ITB unit		JC93-01287A	Approx. 50,000 pages	
Pick-Up/Foward roller Assy for tray1		JC93-00673A	Approx. 300,000 pages	
Separation roller Assy for tray1		JC93-00794A	Approx. 100,000 pages	
ADF pick up roller Assy		JC97-04199A	Approx. 20,000 pages	For SL-C3060FR
ADF rubber pad		JC97-03069A	Approx. 20,000 pages	For SL-C3060FR
Pick-Up/Foward/Separation roller for tray2,3		JC90-01191A	Approx. 200,000 pages	For optional tray

2.1.2.10. Option

Item	Model Name	Remark
Second Cassette Feeder (SCF)	SL-SCF3000	550 sheets @ 75 g/m²
Wireless Option Kit	SL-NWE001X	802.11bgn , Active NFC C306xND and C306xFR only
Memory	N/A	

2.2. System Overview

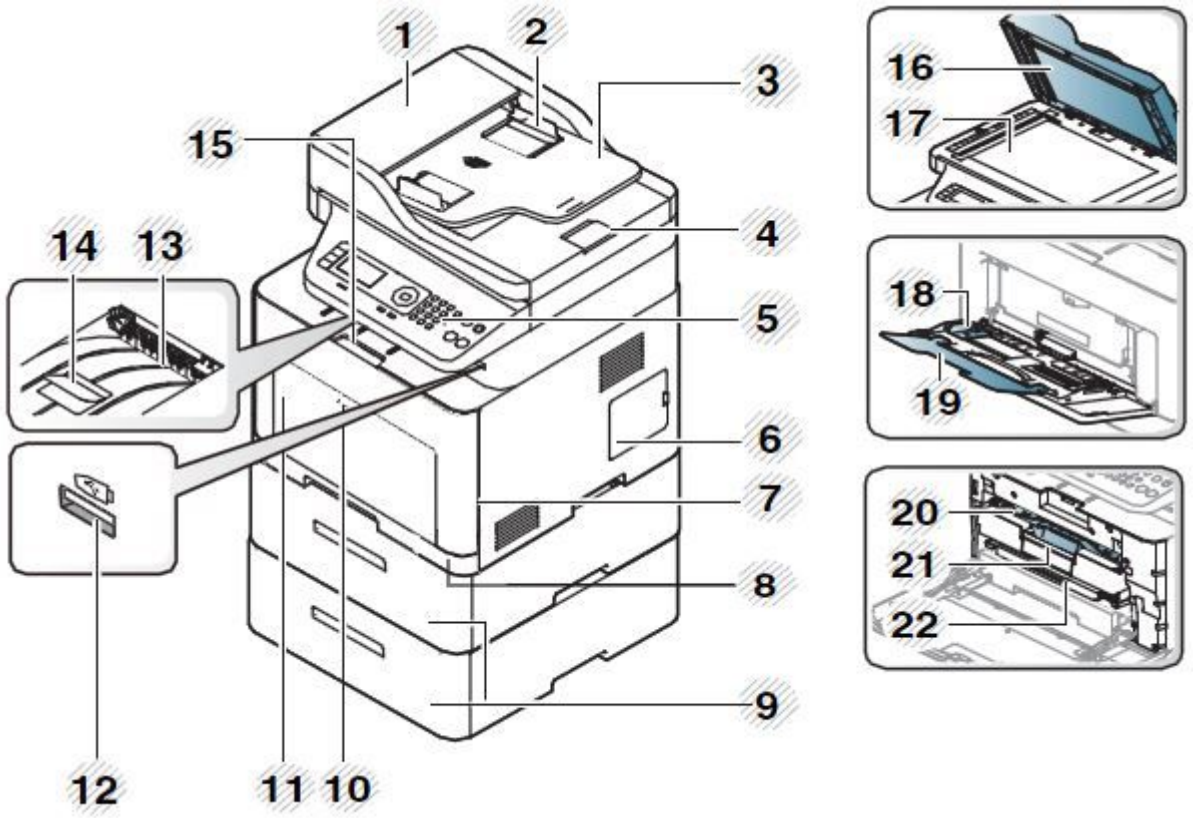
This chapter describes the functions and operating principal of the main component.

2.2.1. Front View

C306xND series

NOTE

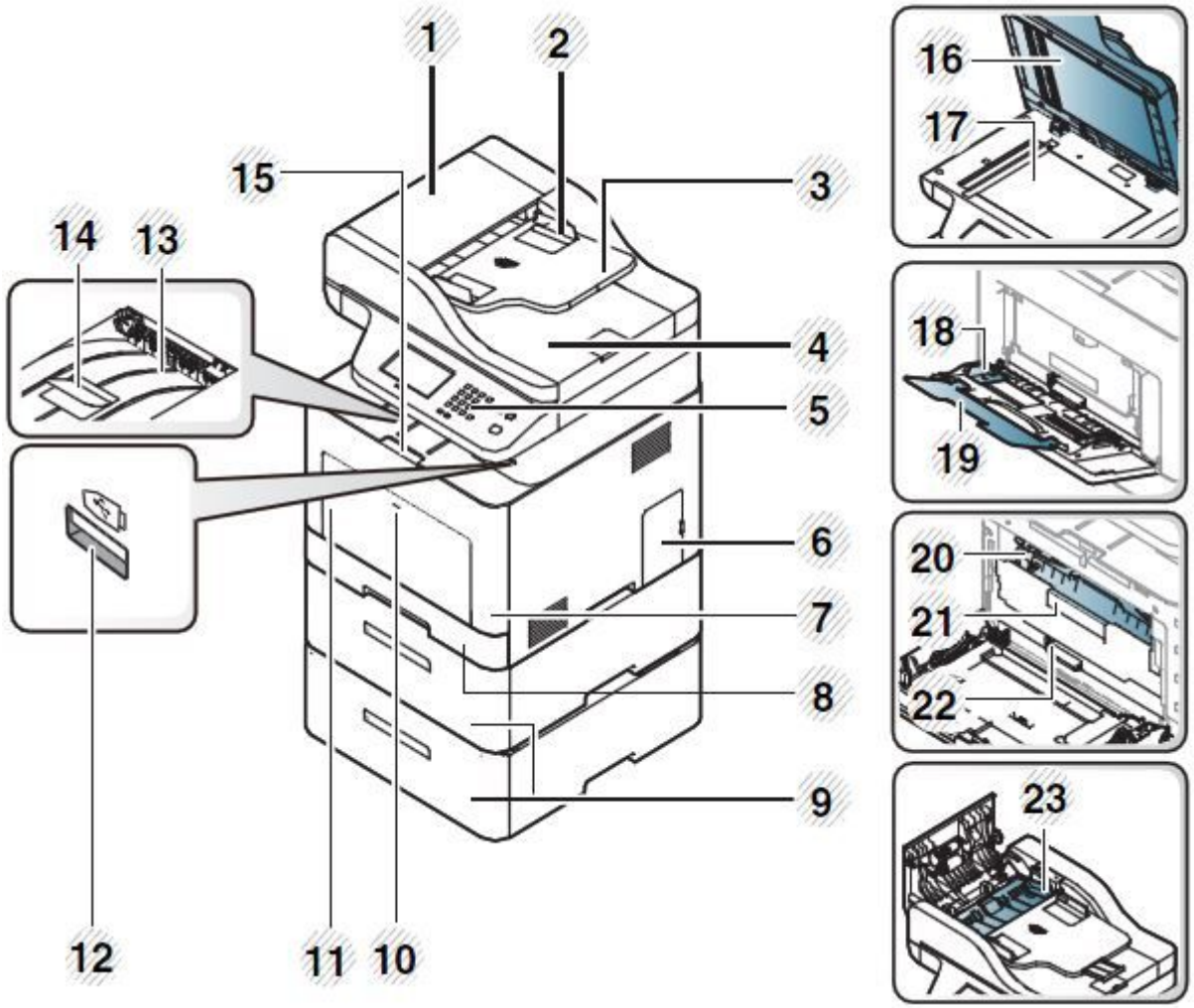
- This illustration may differ from your machine depending on your model. There are various types of machine.
- Some features and optional goods may not be available depending on model or country.



1	Automatic Document Feeder (ADF) cover
2	Automatic Document Feeder (ADF) width guide
3	Automatic Document Feeder (ADF) input tray
4	Automatic Document Feeder (ADF) output tray
5	Control panel
6	Control board cover
7	Front cover
8	Tray 1

9	Optional tray **NOTE** Max 2 optional trays can be installed to the machine.
10	Push-release of Multi-purpose tray
11	Multi-purpose tray
12	USB memory port
13	Output tray
14	Output support tray
15	Front cover handle
16	Scanner lid
17	Scanner glass
18	Paper width guides on a multipurpose tray
19	Multi-purpose support tray
20	Toner cartridges
21	Toner cartridge handle
22	Intermediate Transfer Belt (ITB)

C306xFR series



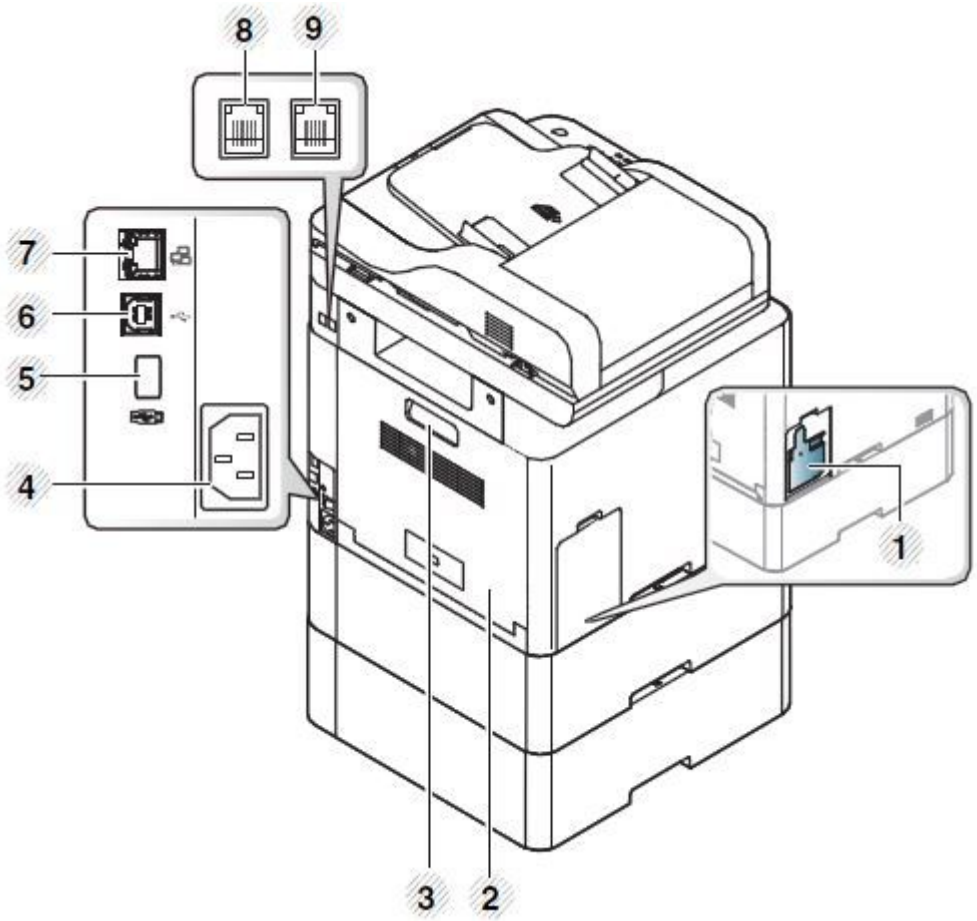
1	Reversing Automatic Document Feeder (RADF) cover
2	Reversing Automatic Document Feeder (RADF) width guide
3	Reversing Automatic Document Feeder (RADF) input tray
4	Automatic Document Feeder (ADF) output tray
5	Control panel
6	Control board cover
7	Front cover
8	Tray 1
9	Optional tray **NOTE** Max 2 optional trays can be installed to the machine.
10	Push-release of Multi-purpose tray
11	Multi-purpose tray
12	USB memory port
13	Output tray

14	Output support tray
15	Front cover handle
16	Scanner lid
17	Scanner glass
18	Paper width guides on a multipurpose tray
19	Multi-purpose support tray
20	Toner cartridges
21	Toner cartridge handle
22	Intermediate Transfer Belt (ITB)
23	RADF duplex jam cover

2.2.2. Rear View

NOTE

- This illustration may differ from your machine depending on your model. There are various types of machine.
- Some features and optional goods may not be available depending on model or country.



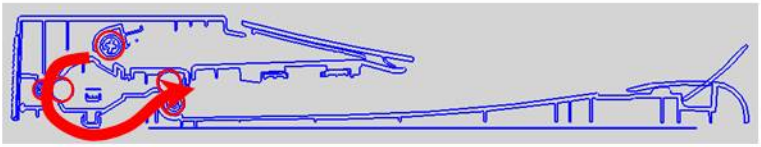
1	Waster toner container
2	Rear cover
3	Rear cover handle
4	Power receptacle
5	USB memory port
6	USB port
7	Network port
8	Telephone line socket (LINE)*
9	Extension telephone socket (EXT.)*

* C306xFR only.

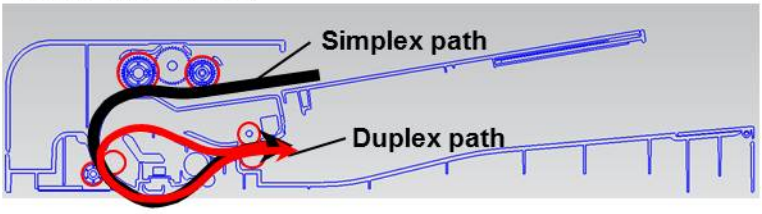
2.2.3. Paper Path

The following diagram displays the path that the paper follows during the printing process.

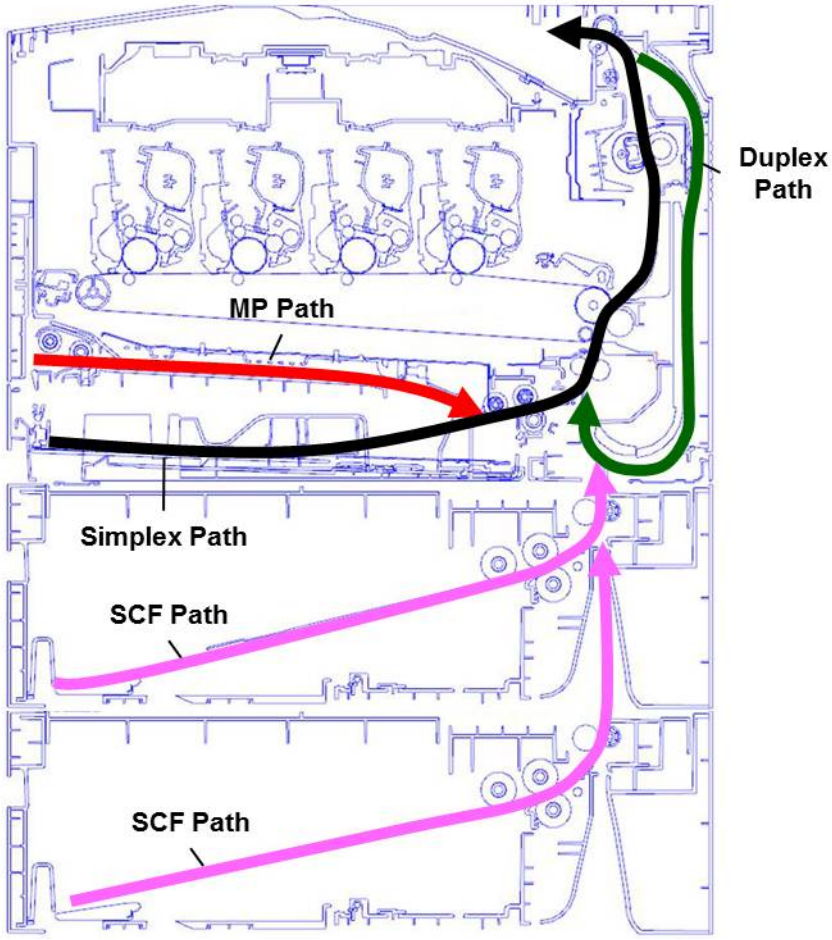
[ADF : C3060ND]



[RADF : C3060FR]



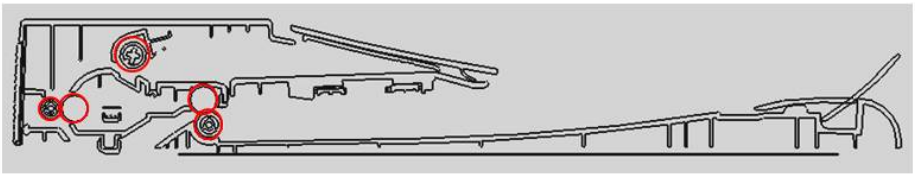
[Engine]



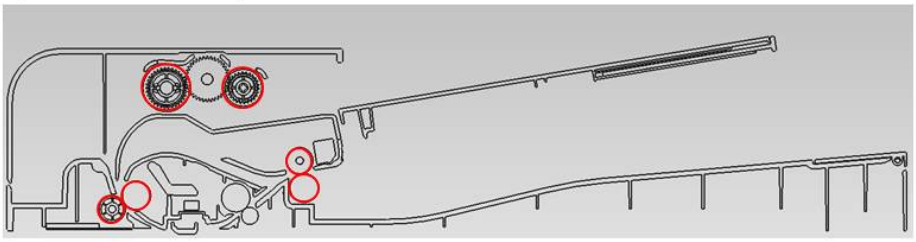
2.2.4. System Layout

This model consists of the scanner parts, engine parts, hardware parts, firmware. The scanner parts consists of ADF/RADF and platen unit. The engine parts consists of the mechanical parts comprising Frame, Toner Cartridge, Drive Unit, Transfer roller, Pick up unit, Fuser unit, Cassette. The hardware parts consists of the main board, SMPS, HVPS board, OPE board, PC interface.

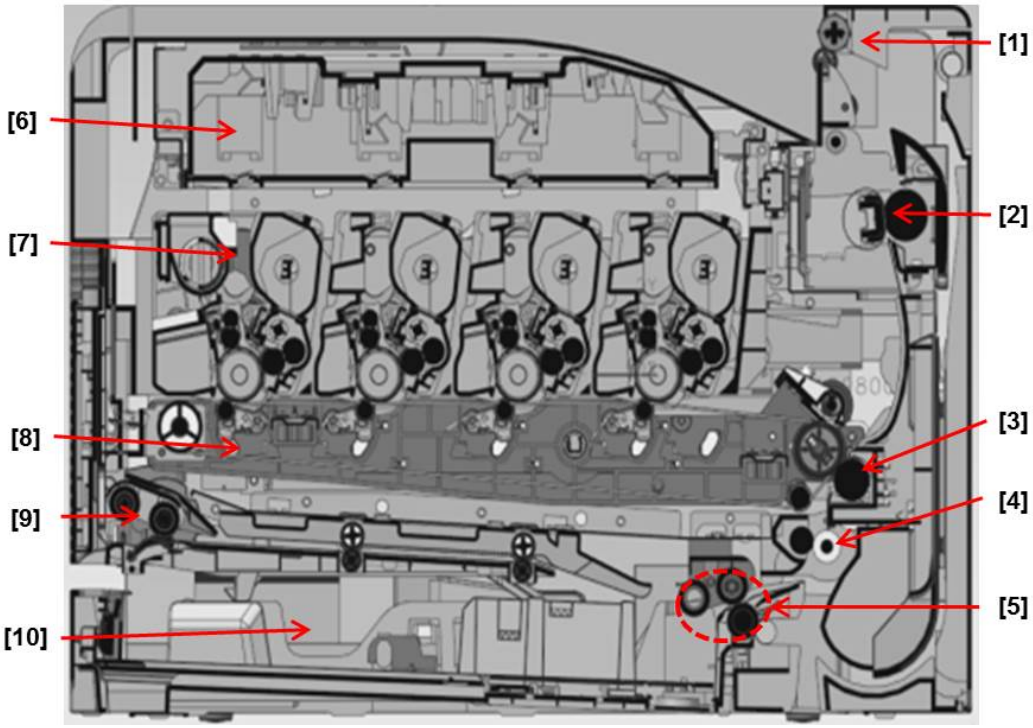
[ADF : C3060ND]



[RADF : C3060FR]



[Engine]



1	Exit Unit
2	Fuser Unit
3	T2 (Second transfer) roller
4	Registration(Regi.) roller
5	Pick up/Forward/Separation roller
6	LSU

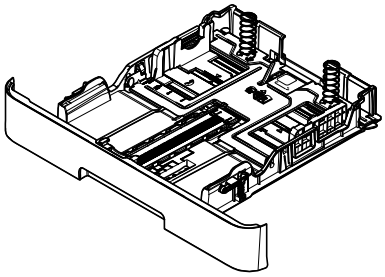
7	Toner Cartridge
8	ITB Unit
9	MP Unit
10	Cassette

2.2.4.1. Feeding Section

It is consists of a basic cassette, pick up/forward/retard roller and parts related to paper feeding.

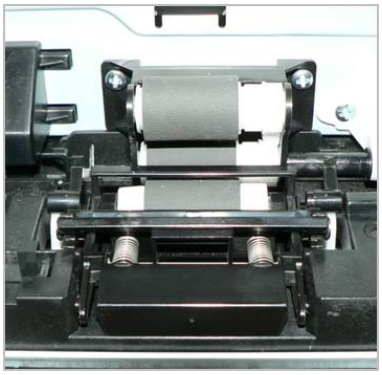
1) Cassette (Tray1)

This model has a cassette type tray. It has a paper existence sensing function, paper storing function, paper arranging function.



2) Pick up/Forward/Separation roller

They have functions such as a paper pickup function, driving control function, paper feeding function, and removing electronic static function.

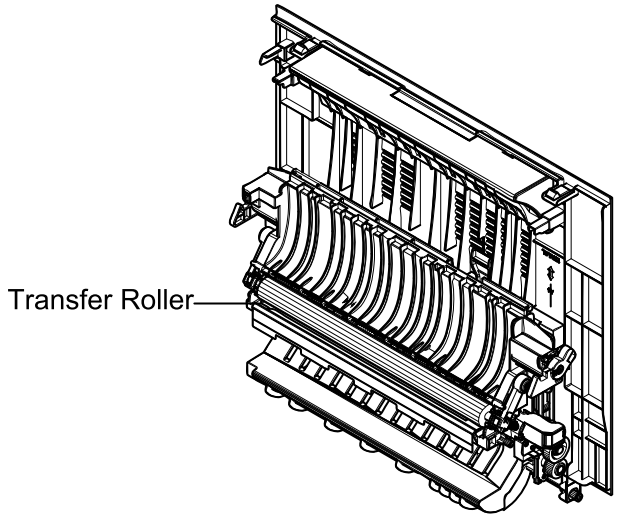


3) MP (Multi-Purpose) Tray

The MP(multi-purpose) tray can hold special sizes and types of print material, such as postcards, note cards, and envelopes. It is useful for single page printing on letterhead or colored paper.

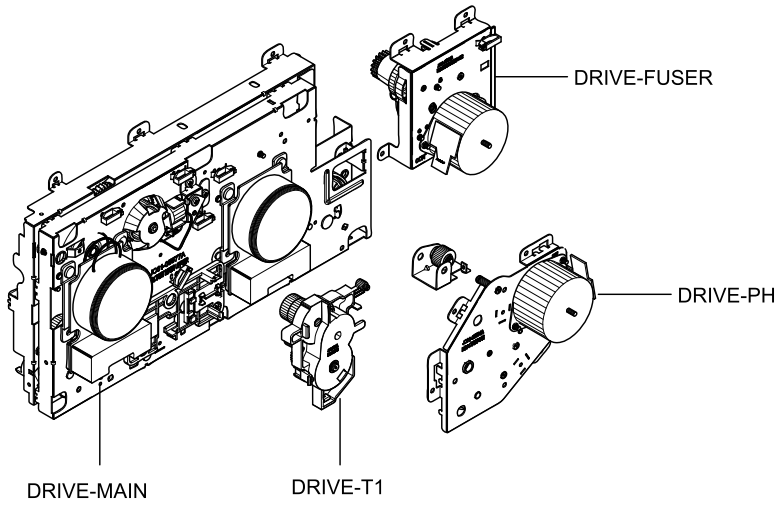
2.2.4.2. Transfer Roller

The transfer roller unit is assembled to the rear cover. The transfer roller helps to carry the toner off the OPC drum to the paper.



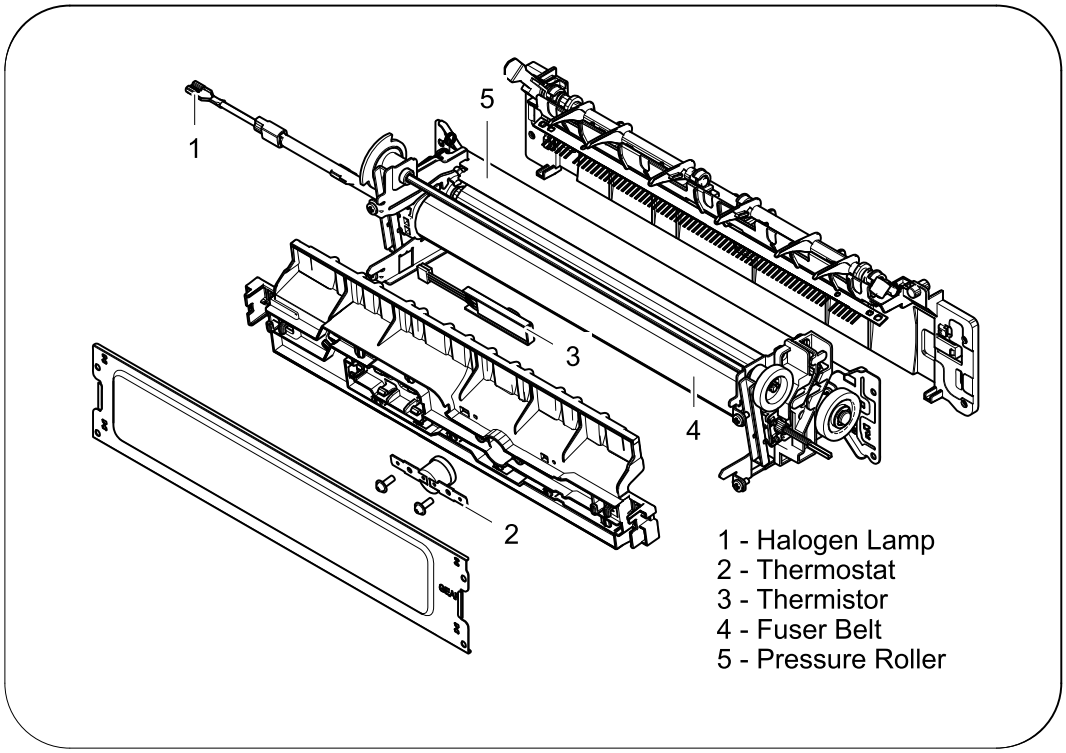
2.2.4.3. Drive Unit

This machine has various drive units. Each drive unit controls the operation for fuser, toner cartridge, duplex, pick up, feeding by using motor and gear train.



2.2.4.4. Fuser Unit

This unit consists of a halogen lamp, a fuser belt, a Thermostat, and Thermistor, etc. It fuses the toner that was transferred by the transfer roller onto the paper, by applying a combination of heat and pressure to complete fusing process.



1) **Thermostat**

When a heat lamp is overheated, a Thermostat cuts off the main power to prevent over- heating.

- Thermostat Type : Non- Contact type Thermostat
- Control Temperature : 195°C ± 5°C

2) **Thermistor**

It is a negative coefficient temperature detecting sensor.

- Temperature Resistance : 7 kΩ(180°C)

3) **Fusing Belt**

The fusing belt gets heat from the halogen lamp and transfer it to toner and paper. The thin fusing belt reduces warming up time and mode changing time.

4) **Pressure roller**

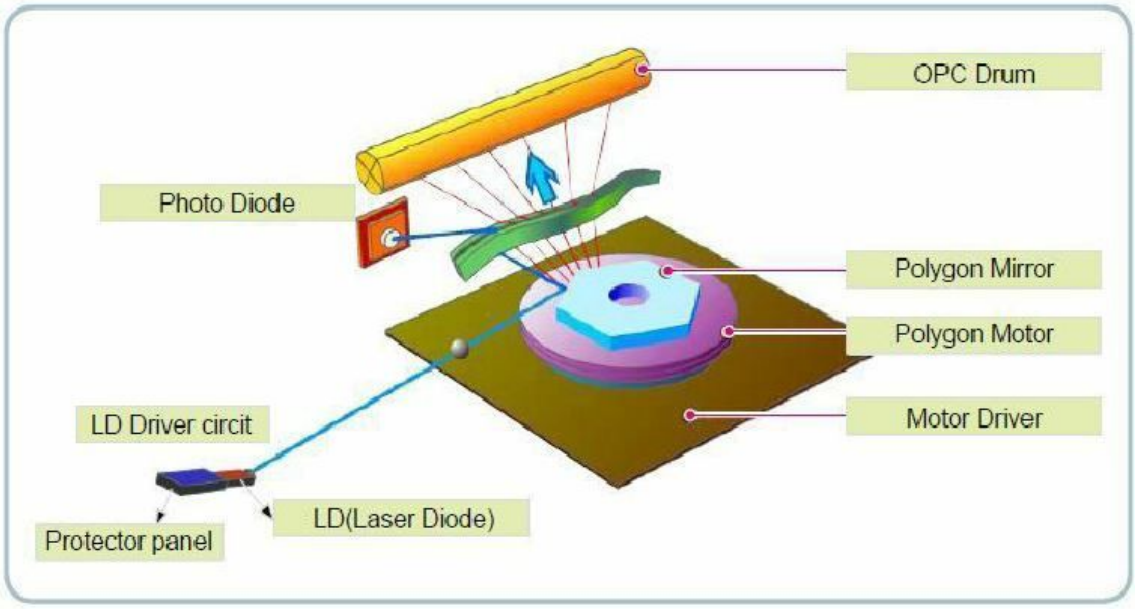
The pressure roller is a rubber roller which ensures proper nip width between the pressure roller and fusing belt. It is driven by the driving system and drives the fusing belt.

5) **Halogen Lamp**

- Voltage : 120 V (115 ± 5 %) / 220 V : 230 ± 5 %
- Capacity : 850 Watt ± 25 W

2.2.4.5. LSU (Laser Scanner Unit)

The LSU (Laser Beam Printer) is a sealed factory assembly in which the video data received to the controller is used to form an electrostatic latent image on the OPC drum. It is accomplished by use of a polygon mirror and laser beam. The OPC drum is turned with the paper feeding speed. The HSYNC signal is created when the laser beam from LSU reaches the end of the polygon mirror, and the signal is sent to the controller. The controller detects the HSYNC signal to adjust the vertical line of the image on paper. In other words, after the HSYNC signal is detected, the image data is sent to the LSU to adjust the left margin on paper. The one side of the polygon mirror is one line for scanning.

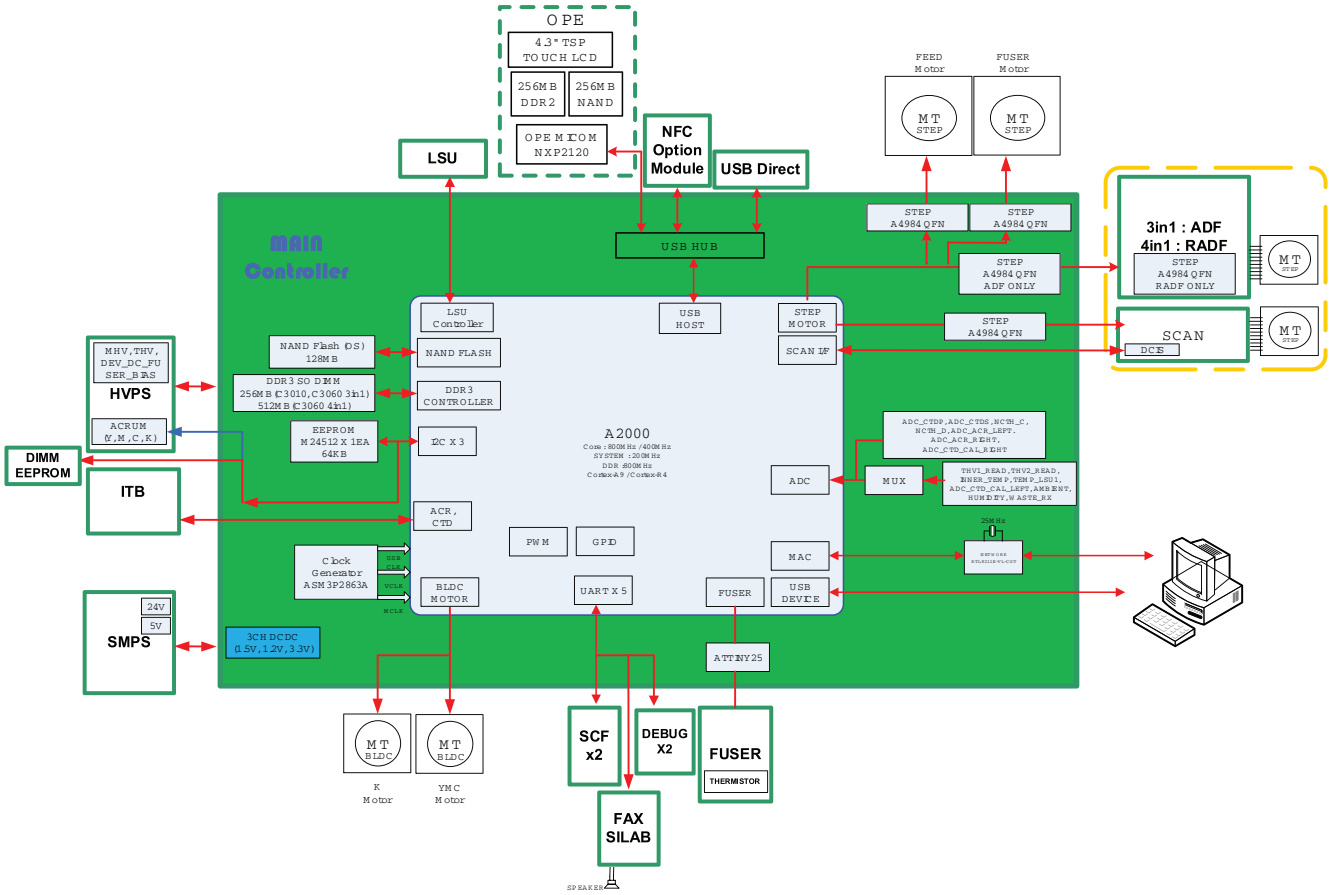


2.2.5. Hardware configuration

SL-C3060 series Electrical Circuit System consists of the following:

- Main board (System board)
- OPE board
- SMPS board
- HVPS board

Diagram of the SL-C3060 series Electrical Circuit



SL-C3060 series has a system board of integrated engine controller and video controller.

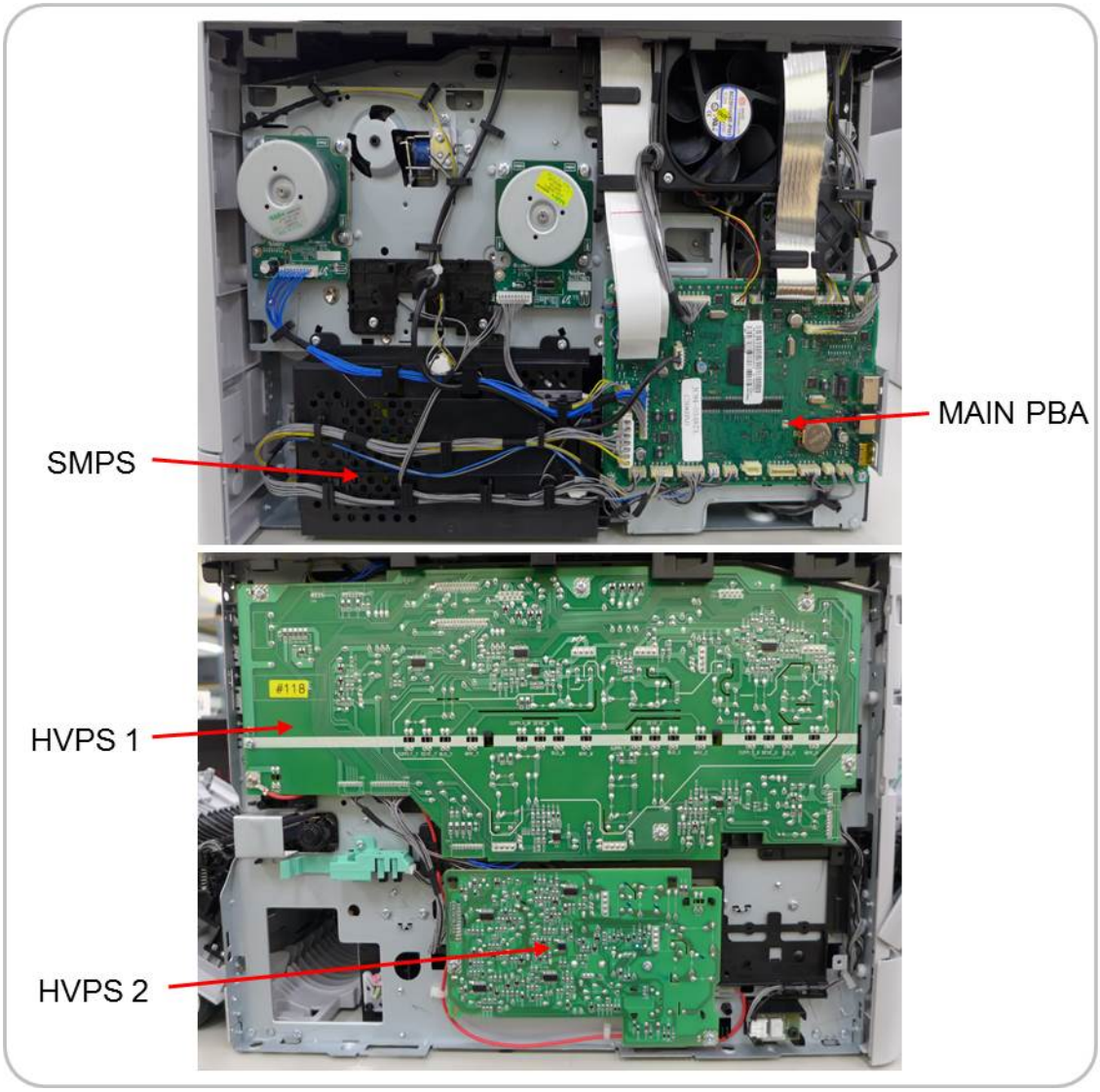
The engine controller controls all modules required to print, that is, LSU, HVPS/SMPS, Fuser, Motor etc. It communicates with the video control block inside CPU for printing. And it has the interface for all video sync signal to print out the video data.

The video controller receives print data from the host through network or USB Port. It takes this information and generates printable video bitmap data.

The main board is adopted 800 + 400 MHz CPU that is integrated with engine and video controller. It has 512 MB DDR3 memory.

Circuit board locations

The following diagrams show the locations of the printer circuit boards:



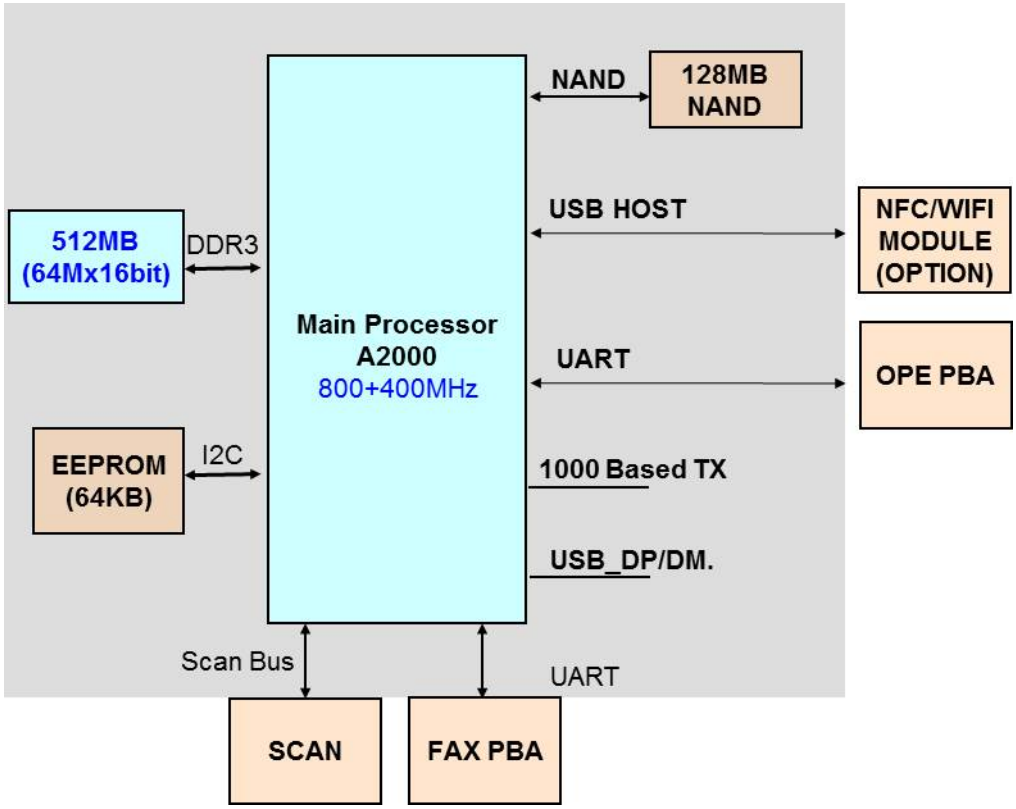
2.2.5.1. Main board

The main processor in main board is integrated engine controller and video controller.

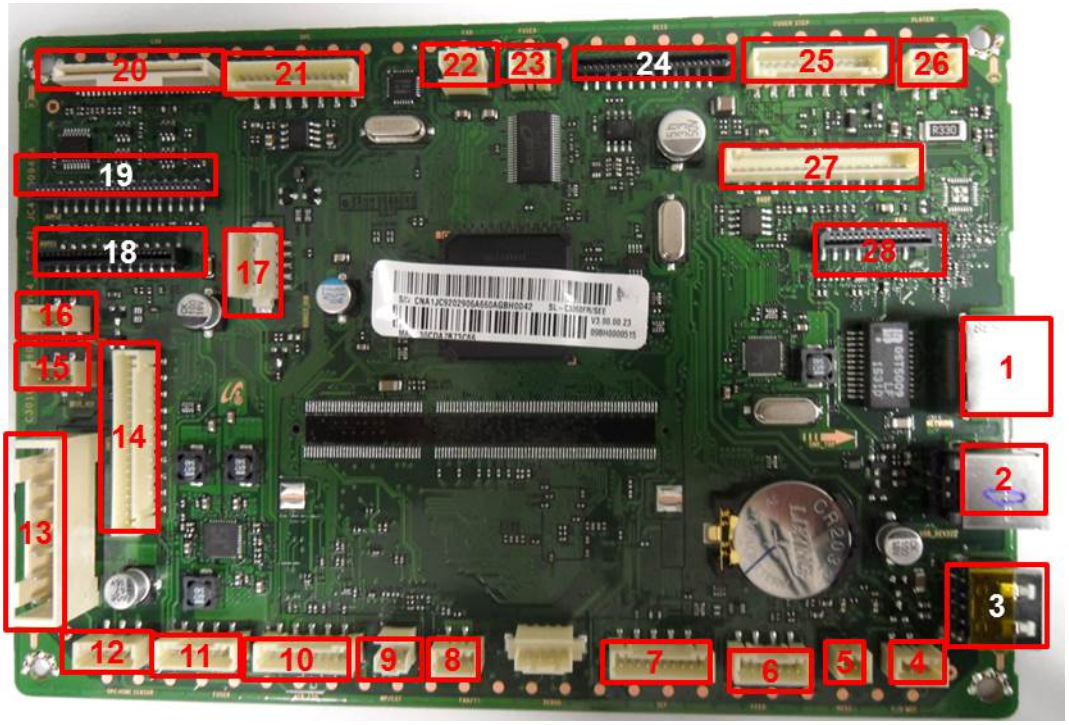
DDR3 512MB is adopted for high speed data processing. Boot adopted the 128MB NAND Flash.

USB is the embedded type and wired network supports gigibit ethernet.

[Main board diagram]



[Main board image]



- **Connection**

1	Network connector
2	USB Device connector
3	NFC Option connector
4	Feed Step Motor connector
5	Regi. Clutch connector
6	Pick Up Clutch connector
7	SCF connector
8	SMPS Fan T1 DC motor connector
9	MP Emtpy, Cassette Open connector
10	ITB Joint connector
11	Fuser CONT. connector
12	OPC Home Sensor connector
13	SMPS connector
14	BLDC Motor connector
15	DEVE Home sensor/solenoid connector

16	OPE USB connector
17	USB Direct connector
18	HVPS2 connector
19	HVPS1 connector
20	LSU connector
21	OPE connector
22	Fuser Fan connector
23	Thermistor connector
24	DCIS connector
25	Exit Motor connector
26	Platen Motor connector
27	RADF I/F connector
28	Fax I/F connector

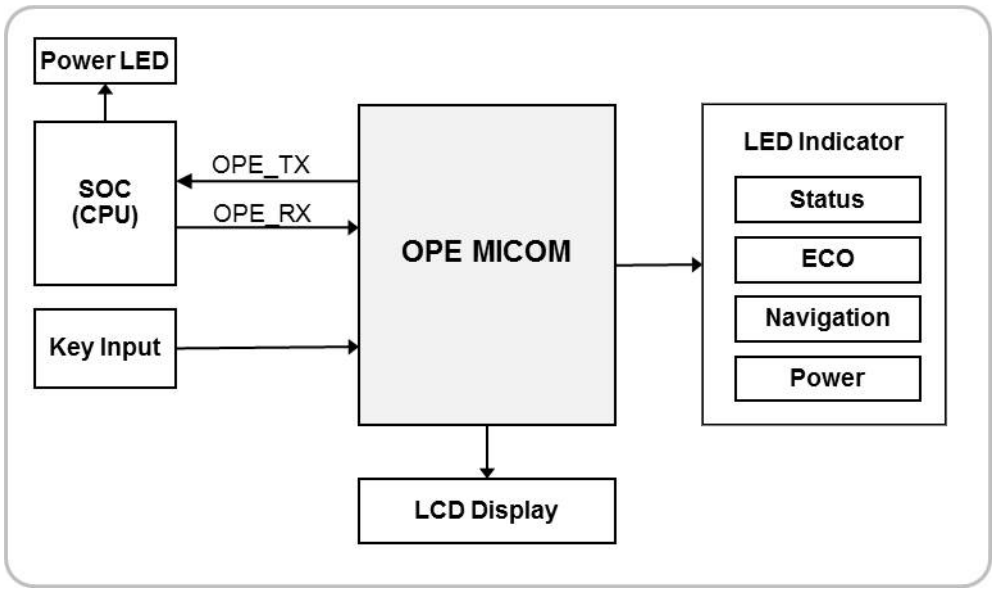
- **Information**
  - Part Code :
    - SL-C3060ND : JC92–02905A
    - SL-C3060FR : JC92–02906A
    - SL-C3060FW : JC92–02906B
  - Part Name : PBA-MAIN

2.2.5.2. 4-Line OPE Controller (C3060ND)

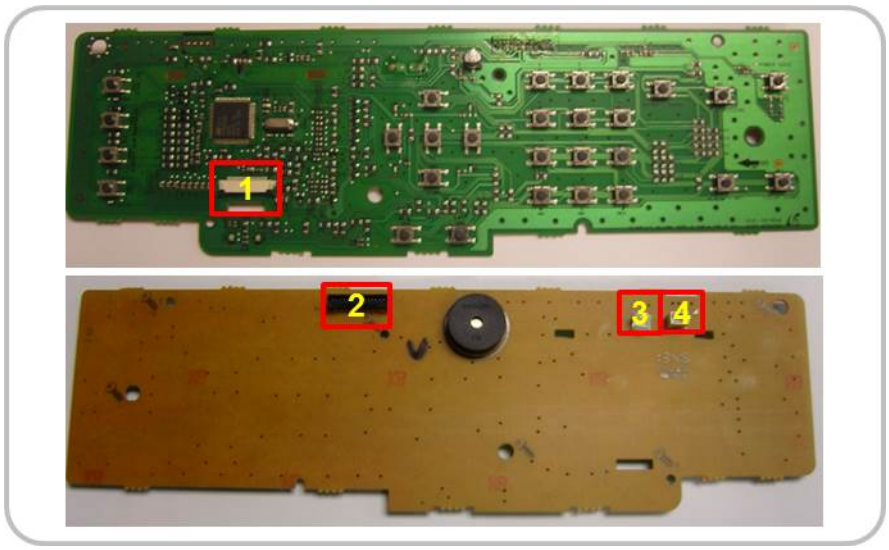
The OPE controller is composed of an OPE MICOM, Status LED, ECO LED, Power LED, Navigation LED, 4–Line LCD, Buttons.

The OPE controller communicates with main controller via UART. The power LED is controlled by the main board.

[OPE controller diagram]



[OPE controller image]

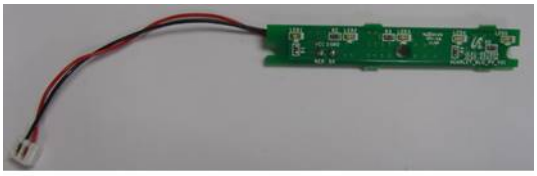


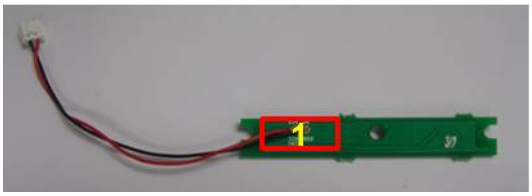
- **Information**
  - Part Code : JC92-02930A
  - Part Name : PBA-OPE
- **Connection**

1	FFC Connector to 4 line LCD
2	Interface connector to main controller
3	Interface connector to BLU (Back Light Unit) PBA
4	Interface connector to Scanner Home Sensor

BLU PBA (Back Light Unit)

This board is located over the LCD and functions the Back Light. It is included in LCD Assy and is assembled to OPE controller.





- **Information**
  - Part Code : JC92-02523A
  - Part Name : PBA-BLU
- **Connection**

1	Interface connector to OPE PBA

2.2.5.3. GUI OPE Controller (C3060FR_FW)

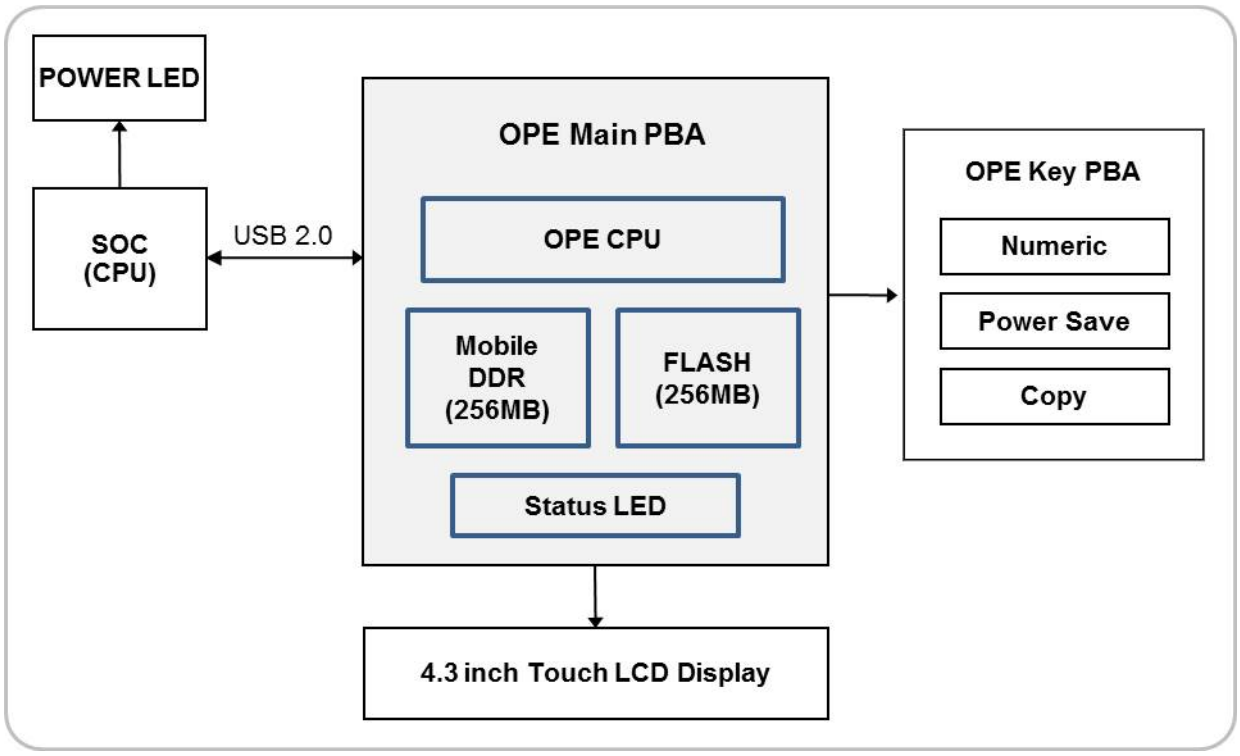
The GUI OPE controller consists of the OPE Main PBA and Key PBA.

The OPE Main PBA is composed of 1Ghz mobile CPU, 256MB DIMM DDR, 256MB Flash. It is connected to 4.3 inch touch LCD and provides the Graphic User Interface.

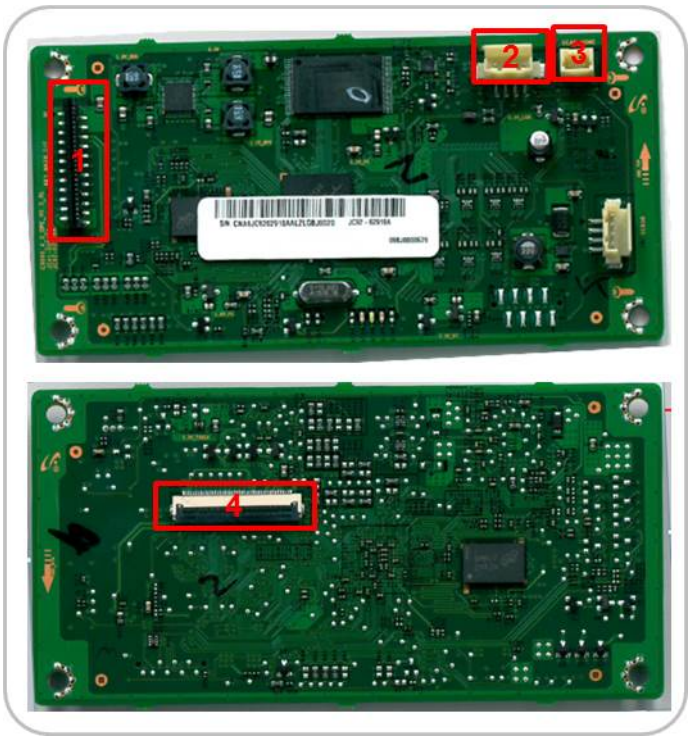
The OPE Key PBA is composed of the numeric keys, power save key, copy key.

The OPE communicates with main board via USB 2.0. The power LED is controlled by the main board.

[OPE controller diagram]



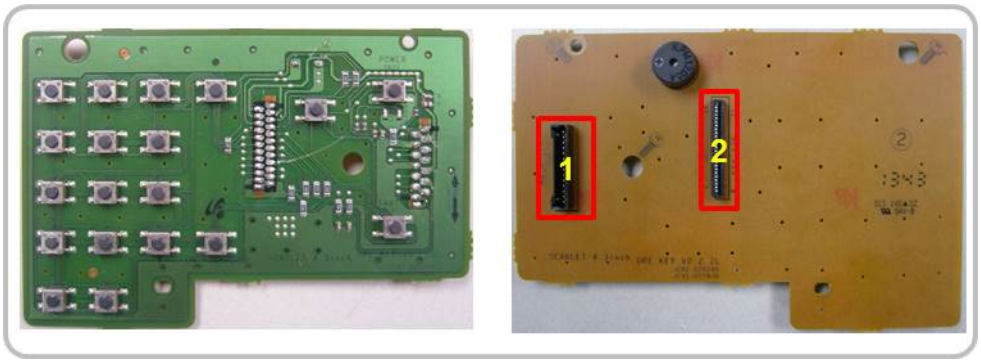
[OPE MAIN PBA]



- **Information**
  - Part Code : JC92-02918A
  - Part Name : PBA-OPE
- **Connection**

1	FFC connector to OPE Key PBA
2	USB interface connector to Main controller
3	Interface connector to Scanner home sensor
4	FFC interface connector to 4.3 inch Touch LCD

[OPE Key PBA]

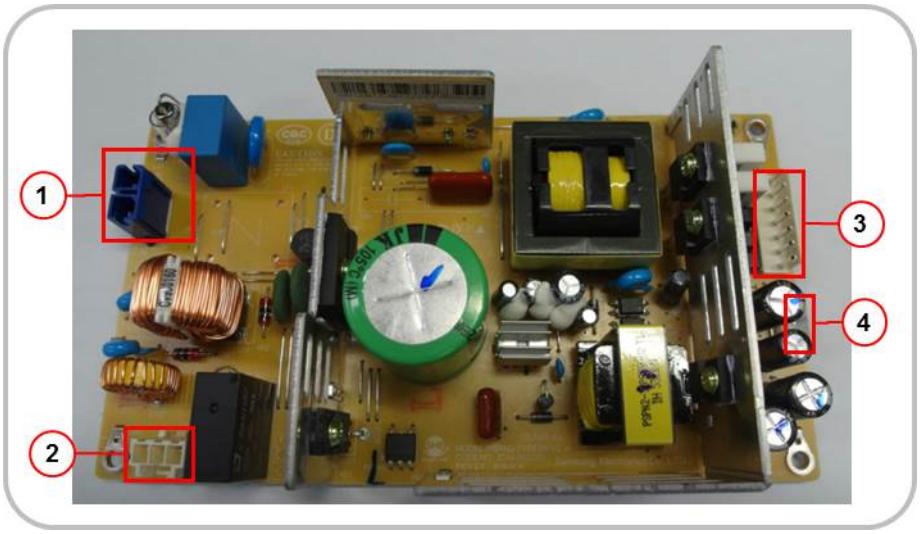


- **Information**
  - Part Code : JC92-02524B
  - Part Name : PBA-OPE KEY SUB
- **Connection**

1	Interface connector to Main controller
2	FFC connector to OPE Main PBA

2.2.5.4. SMPS board

The SMPS (Switching Mode Power Supply) Board supplies electric power to the Main Board and other boards through a Main Controller. The SMPS board converts AC voltage 110V/220V to DC voltage +5V, +24V and transfers AC power to the fuser unit.. It has safety protection modes for over current and overload.



- **Specification**
  - General Input/Output Voltage

    1) Input
       - AC 110V (90V ~ 135V)
       - AC 220V (180V ~ 270V)

    2) Output
       - DC +5V / 4.0A
       - DC +24V / 6.0A

    3) Output Power
       - DC +5V : 20W
       - DC +24V : 144W
       - FDB : 850W

- **Information**

	110V	220V
Part Code	JC44-00222D	JC44-00223D
PBA Name	PSPN2-TYPE3R-V1 A	PSPN2-TYPE3R-V2 A

- **Connection**

1	INPUT_AC
2	OUTPUT_AC(to Fuser)
3	OUTPUT_DC(to Main PBA)
4	Control Signal (from Main PBA)

- **Input / Output connector**
  - AC Input Connector(CON1)

PIN ASSIGN	PIN NO	Description
1	AC_L	AC Input
2	AC_N	

  - AC Input Connector(CON2)

PIN ASSIGN	PIN NO	Description
1	AC_L	AC Output for Fuser
2	AC_N	

  - DC Output Connector (CON3)

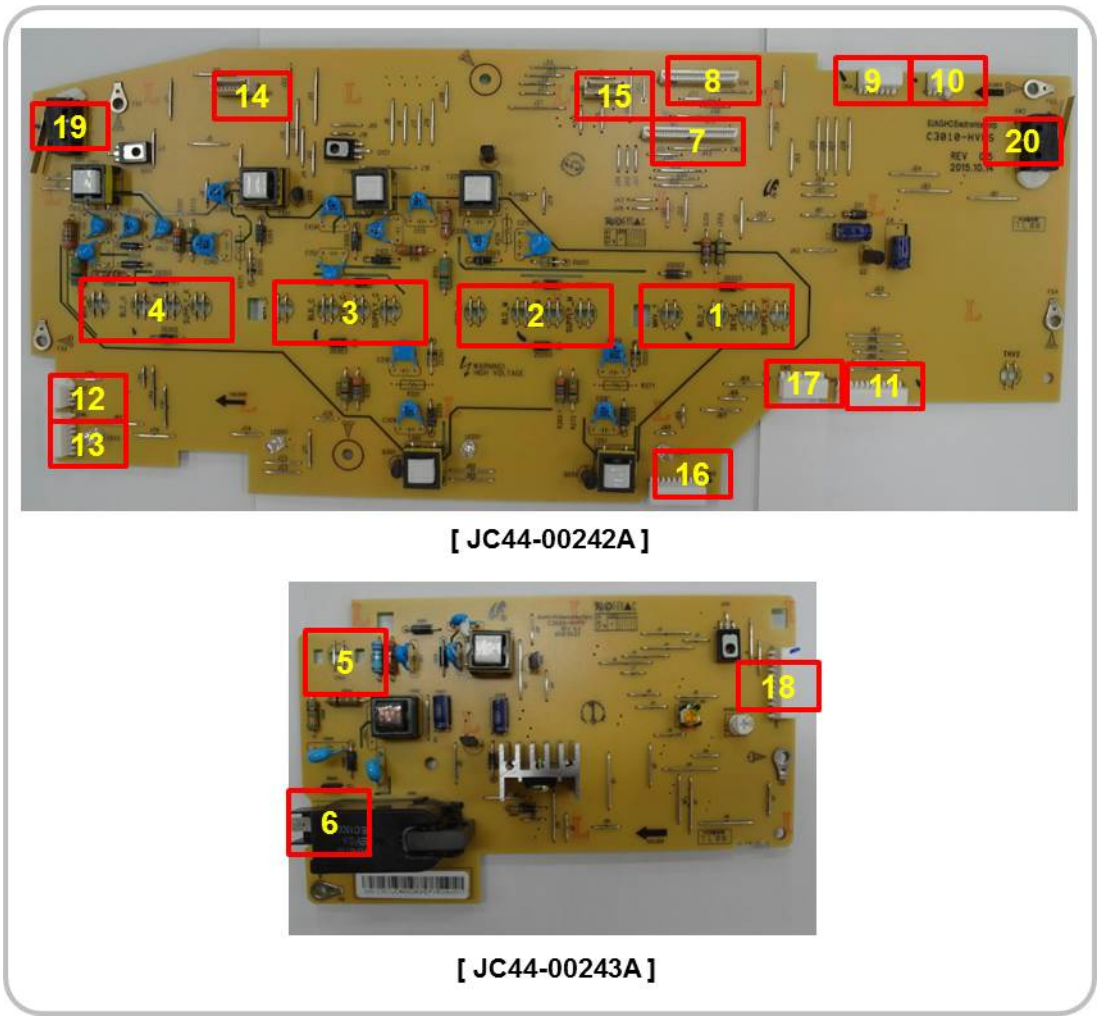
PIN ASSIGN	PIN Name	Description
1	+5V1	+5.1V Power
2	GND	Power Ground
3	+24V1	+24V Power
4	+GND	Power Ground
5	+24V2	+24V Power
6	GND	Power Ground
7	+24V3	+24V Power

  - Signal Connector2 (CON4)

PIN ASSIGN	PIN Name	Description
1	GND	Ground
2	24V_ON/OFF	24V ON/OFF
3	Relay on	Fuser Relay
4	24VS	Photo Triac Bias
5	Fuser on	Fuser on

2.2.5.5. HVPS board

The High Voltage Power Supply(HVPS) board generates high-voltage channels which includes MHV, DEV, Blade, SUP, THV1, THV2.



- **Connection**

1	MHV/DEV/BLD/SUP Y
2	MHV/DEV/BLD/SUP M
3	MHV/DEV/BLD/SUP C
4	MHV/DEV/BLD/SUP K
5	THV1 YMCK
6	THV2
7	Main-HVPS I/F #2

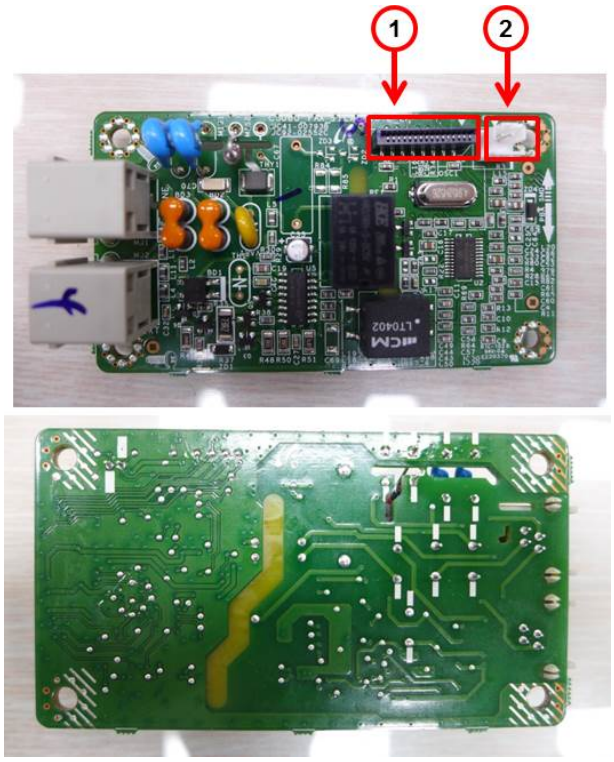
8	Main-HVPS I/F #1
9	Paper exit, Outbin full
10	Fuser Release
11	HVPS1 – HVPS2
12	Fan
13	Ambient, Humidity
14	Crum C,K

15	Crum Y,M
16	Paper Regi
17	WTB interface
18	HVPS2 – HVPS1
19	Front cover open Switch
20	Rear cover open Switch

- **Information**
  - Part Code : JC44-00242A / JC44-00243A
  - PBA Name : HVPS

2.2.5.6. Fax Board

Fax controller (FCON) controls the fax sending and receiving.

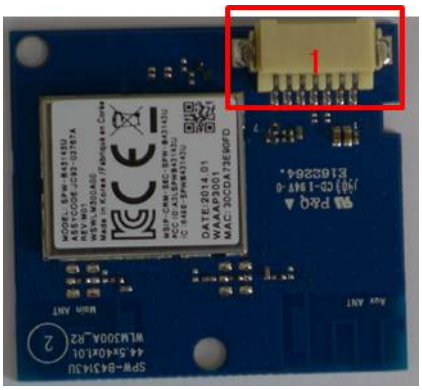


- **Information**
  - Part Code : JC92–02552C
  - PBA Name : PBA-FAX CARD
- **Connection**

1	Interface Connector to Main controller
2	Interface Connector to SPK

2.2.5.7. Wireless LAN board (C3060FW)

The Wireless LAN Module supports 802.11b/g/n. It communicates with video controller via USB.

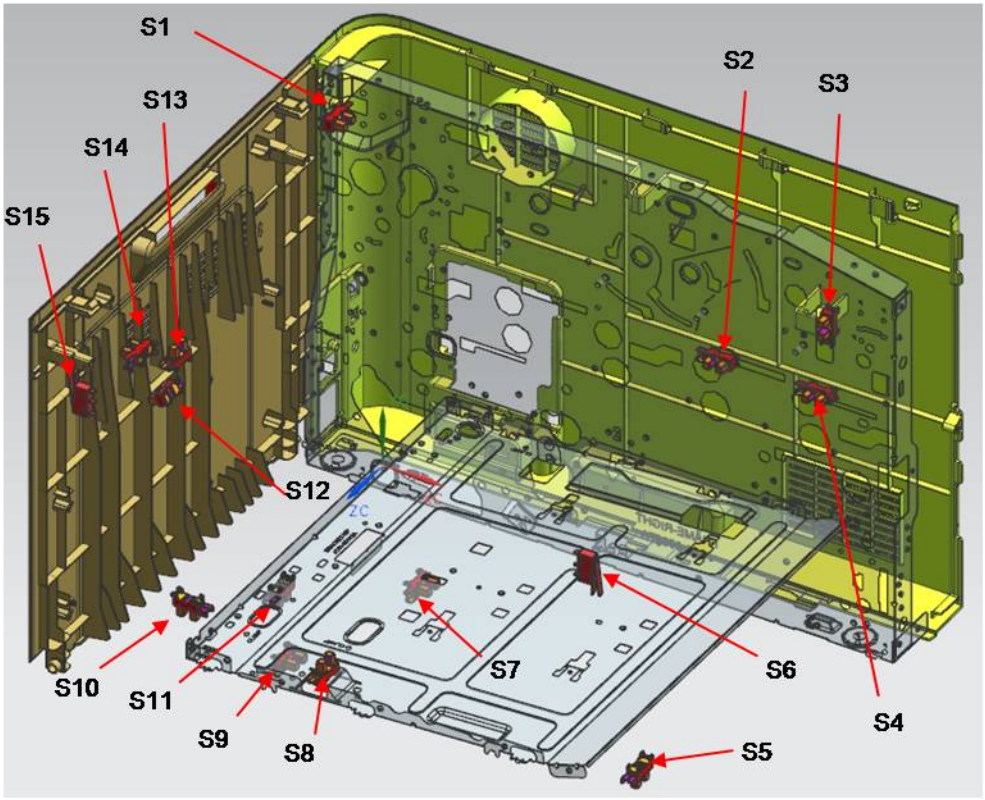


- **Information**
  - Part Code : JC92-02767A
  - PBA Name : PBA-WNPC
- **Connection**

1	Interface connector to main board

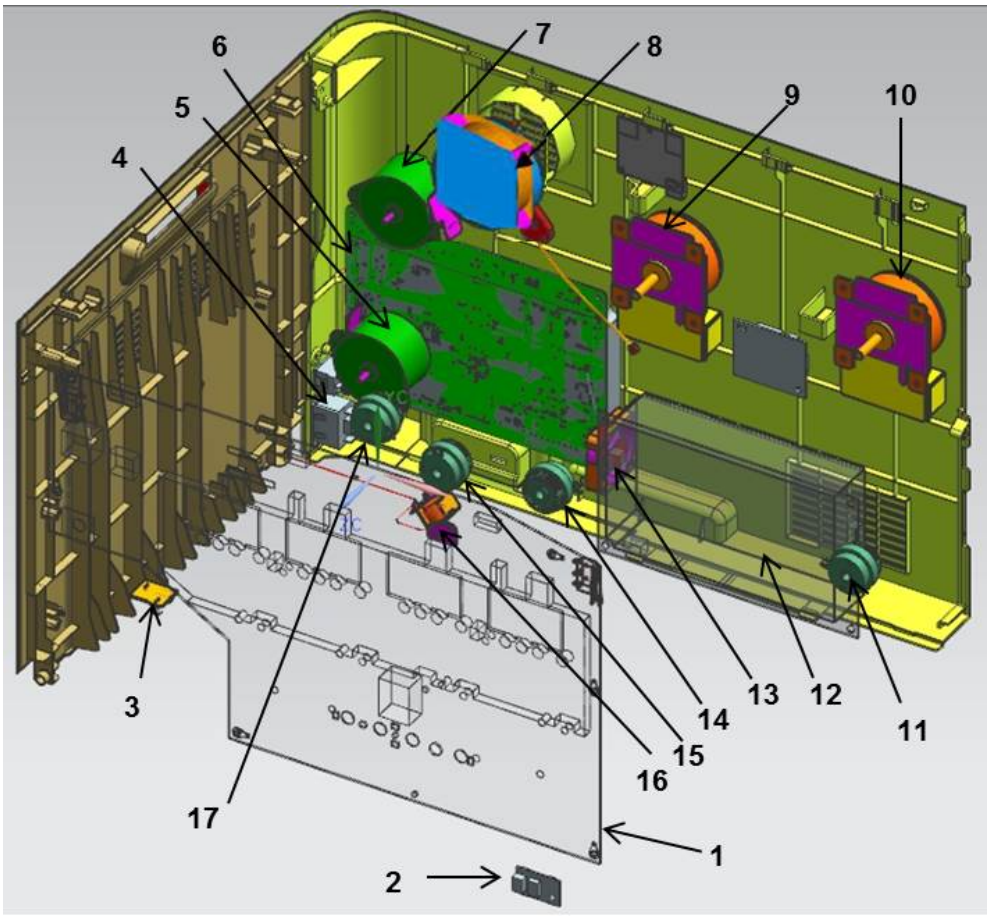
2.2.5.8. Electrical Parts Location

1) Sensors



No.	Description	Controller	Function
S1	Photo interrupter (Exit sensor)	Main Board	Exit detection
S2	Photo interrupter (Drive OPC sensor)	Main Board	Drive OPC detection
S3	Photo interrupter (Deve Nip sensor)	Main Board	Deve Nip detection
S4	Photo interrupter (Drive OPC sensor)	Main Board	Drive OPC detection
S5	Photo interrupter (MP Pickup sensor)	Main Board	MP Pickup detection
S6	Switch Front Cover (Cover Front Open sensor)	HVPS	Cover Open detection
S7	Photo interrupter (MP Feed sensor)	Main Board	MP Feed detection
S8	Photo interrupter (ITB sensor)	Main Board	ITB detection
S9	Photo interrupter (Empty sensor)	Main Board	Empty detection
S10	Photo interrupter (WTB Open sensor)	Main Board	WTB Open detection
S11	Photo interrupter (SCF Pickup sensor)	Main Board	SCF Pickup detection
S12	Photo interrupter (Fuser Cam sensor)	Main Board	Fuser Cam detection
S13	Photo interrupter (Binfull sensor)	Main Board	Binfull detection
S14	Photo interrupter (Fuser Exit sensor)	Main Board	Fuser Exit detection
S15	Switch Rear Cover (Cover Rear Open sensor)	HVPS	Cover Open detection

2) Motor, Clutch, Solenoid, etc



No.	Description
1	HVPS
2	Humidi.-Temp Sensor
3	PBA Waste Sensor
4	Power Inlet
5	Motor Step
6	Main Board
7	Motor Step
8	Fan Type-7
9	Motor BLDC

No.	Description
10	Motor BLDC-BT6
11	Clutch-Electric Z41
12	SMPS
13	Fan Type-1
14	Clutch-Electric Z41
15	Clutch-Electric Z41
16	Solenoid MP
17	Clutch-Electric Z41

2.2.6. Engine Firmware Control Algorithm

2.2.6.1. Feeding

If feeding from a cassette, the drive of the pickup roller is controlled by controlling the solenoid. The on/off of the solenoid is controlled by controlling the general output port or the external output port. Provided below are the jam conditions for the device:

Item	Description
Paper jam in tray1	• After paper pick up initialization, the paper is not fed. • After picking up the paper the lead edge does not reach to the feed sensor within a predetermined period of time, due roller slippage, etc. • After picking up the paper from the cassette, if the feed sensor is not detected, a re-pick up initialization occurs. After re-picking up, if the feed sensor is still not on after a predetermined amount of time, jam occurs. • Even though the paper reaches to the feed sensor, the feed sensor doesn't be ON.
Paper jam inside of machine	• Even though the paper reaches to the feed sensor, the feed sensor doesn't not change state. • After the tail edge of the paper passes the feed sensor, the lead edge of paper is not detected by the exit sensor within a predetermined period of time.
Paper jam in exit area	The trail edge of the paper does not clear the exit sensor within a predetermined period of time.

2.2.6.2. Transfer

The charging voltage, developing voltage and the transfer voltage are controlled by PWM (Pulse Width Modulation). Each output voltage is changeable due to the PWM duty. The transfer voltage admitted when the paper passes the transfer roller is decided by environment conditions. The resistance value of the transfer roller is changed when the Temperature and Humidity Sensor in the device senses a change in the environment. The current to the Transfer Roller is changed using an AD converter on the HVPS. The voltage value for impressing to the transfer roller is decided by the changed value.

2.2.6.3. Fusing

The temperature change of the heat roller's surface is changed to the resistance value through the use of a thermistor. The Main Board uses the resistance value of a negative coefficient Thermistor and converts it to a voltage value through the use of an AD converter, the temperature is decided based on the voltage value read. The AC power is controlled by comparing the target temperature to the value from the thermistor. If the value from the thermistor is out of controlling range, or does not change after a predetermined amount of time an error is displayed and the Fuser Power is cut off. Errors occur based on the bullets below:

- Open Heat Error

  When the engine operates the warm-up process, if the temperature of the fixing unit is not higher than a specified temperature, the engine defines Open Heat Error. When this error is detected, the engine stops all functions and keeps the error state. Also, the engine informs the error status of the main system, so it can take appropriate action; and then the error message is displayed at LCD window or LED informing the error status of the user.

- Low Heat Error

  When the engine is at stand-by, printing or warm-up mode, if the temperature of the fixing unit is lower than the specified temperature at each state and the lower temperature state is maintained during the specified time, the engine defines Low Heat Error. When this error is detected, the engine stops all functions and keeps it at the error state. Also, the engine informs the error status of the main system, so it can take appropriate action; and then the error message is displayed at LCD window or LED informing the error status of the user.

- Over Heat Error

  For overall engine state, if the temperature of the fixing unit is higher than the specified temperature and the temperature state is detected for a specific duration, then the engine defines Over Heat Error. When this error is detected, the engine stops all functions and keeps it at the error state. Also, the engine informs the error status of the main system, so it can take appropriate action; and then the error message is displayed at LCD window or LED informing the error status of the user.

2.2.6.4. LSU

LSU receives the image data from PVC or HPVC and make the latent image on OPC surface. It uses the single beam, LD. The errors related to LSU are as follows:

- By Lready

  When the printing is started, the engine drives the polygon motor of LSU. After the specified time is elapsed, if the motor is not in a ready status, the engine detects the error that the polygon motor is not in a ready status. If this error happens, the engine stops all functions and keeps it at the error state. Also, the engine informs the error status of the main system and the error message is displayed at LCD window to inform the error status of the user.

- By Hsync

  When the polygon motor is ready, the LSU sends out the signal called Hsync and used to synchronize with each image line. So, if the engine does not detect consecutively the signal for a fixed time, it defines the Hsync Error. If this error happens, the engine stops all functions and keeps it at the error state. Also, the engine informs the error status of the main system and then the error message is displayed at LCD window to inform the error status of the user. LSU Error Recovery: If the LReady or Hsync error happens, the paper is exited before the error code is initiated. The engine mode is changed to recovery mode and the engine informs the main system of the engine mode. And the engine checks the LSU error. If the error doesn't happen, the printing job resumes.

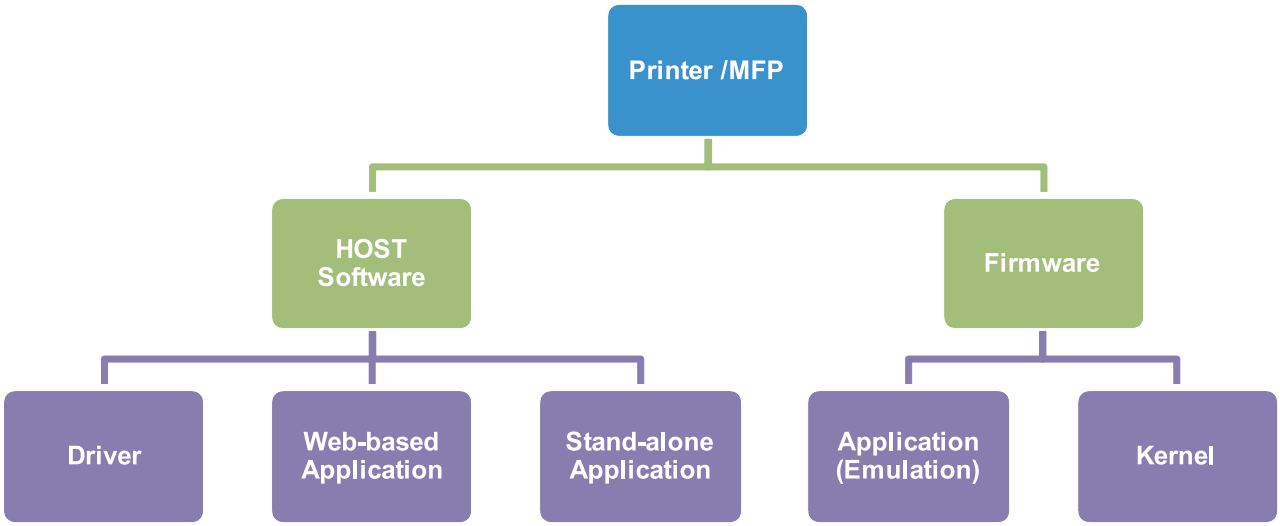
2.2.7. Software Descriptions

2.2.7.1. Software system overview

The software system of this model is constructed in the following manner:

- Host Software part that the application software operated in Window and Web Environment
- Firmware parts that is a Embedded software controls printing job.

2.2.7.2. Architecture



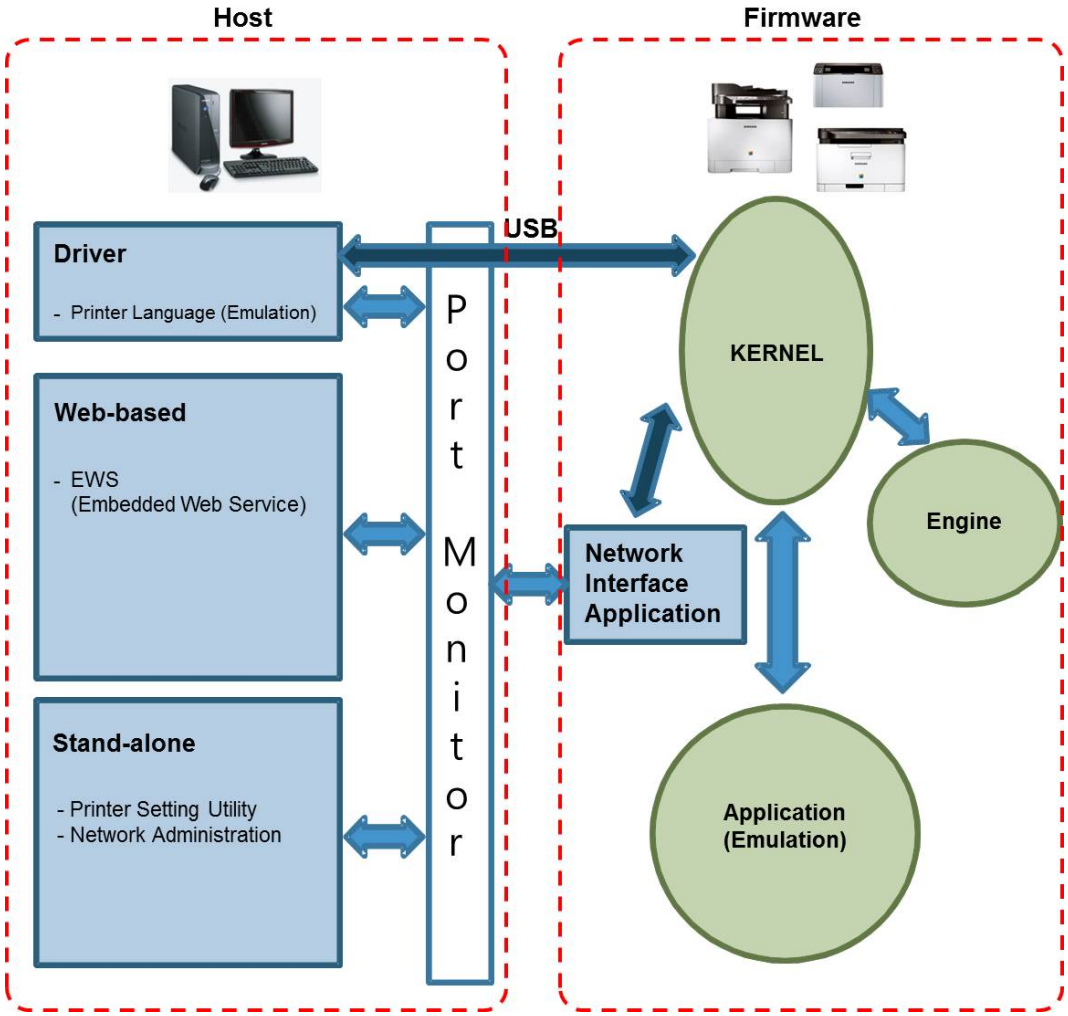
Host Software is made up of

1) Graphic User Interface offers the various editing functions to user in Host.
2) Driver translates the received document to a Printing Command language which printer can understand and transfers data to spooler.
3) Stand-alone Application offers the various printing application such as Easy Printer Manager, Printer Status in Window system.
4) Web-based-Application offers the same functions as Stand-alone Application in Web environment.

Firmware is made up of

1) The Application (Emulation) interprets and translates data received from the Host to a printing language to complete the users job.
2) The Kernel controls and manages the whole procedure including Control flow and the Printing Job before transferring it to the Engine for printing.

2.2.7.3. Data and Control Flow



The above Block Diagram is explained that:

Host Side is made up of

1) Driver that is Windows application software translate printed data to one of printer language and create spooler file.
2) Web-based Application that offer a various printer additional functions, management of printing job, printer administration, Status monitor to monitoring the printer status by real time in Web, independent environment on OS.
3) Stand-alone Application that is a similar Window software as same as above 2.
4) The Port Monitor facilitates the flow of information between the Host and Firmware.

Firmware Side is made up of

1) The Network Interface is used to relay the communication between Host and Kernel using various network protocol.
2) The Kernel is manages the flow control emulation as it receives data from Host or Network ; then manges the printing of the image by the engine.
3) The Application Layer containing the Emulation portion interprets the data from the selected emulation [PCL, PS], and transfers the data to the Kernel Layer.
4) The Engine prints the rendered bit-map data to paper with required size and type by Kernel.

3. Disassembly and Reassembly

3.1. Precautions when replacing parts

3.1.1. Precautions when assembling and disassembling

- Use only approved Samsung spare parts. Ensure that part number, product name, any voltage, current or temperature rating are correct. Failure to do so could result in damage to the machine, circuit overload, fire or electric shock.
- Do not make any unauthorized changes or additions to the printer, these could cause the printer to malfunction and create electric shock or fire hazards.
- Take care when dismantling the unit to note where each screw goes. There are 19 different screws. Use of the wrong screw could lead to system failure, short circuit or electric shock.
- Do not disassemble the LSU unit. Once it is disassembled dust is admitted to the mirror chamber and will seriously degrade print quality. There are no serviceable parts inside.
- Regularly check the condition of the power cord, plug and socket. Bad contacts could lead to overheating and fire. Damaged cables could lead to electric shock or unit malfunction.

3.1.2. Precautions when handling PBA

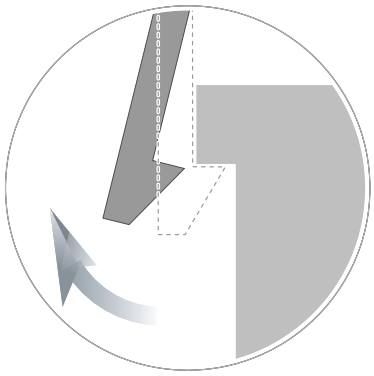
Static electricity can damage a PBA, always used approved anti-static precautions when handling or storing a PBA.

- **Precautions when moving and storing PBA**
  1) Please keep PBA in a conductive case, anti-static bag, or wrapped in aluminum foil.
  2) Do not store a PBA where it is exposed to direct sunlight.
- **Precautions when replacing PBA**
  1) Disconnect power connectors first, before disconnecting other cables.
  2) Do not touch any soldered connections, connector terminals or other electronic parts when handling insulated parts.
- **Precautions when checking PBA**
  1) Before touching a PBA, please touch other grounded areas of the chassis to discharge any static electrical charge on the body.
  2) Take care not to touch the PBA with your bare hands or metal objects as you could create a short circuit or get an electric shock. Take extra care when handling PBAs with moving parts fitted such as sensors, motors or lamps as they may get hot.
  3) Take care when fitting, or removing, screws. Look out for hidden screws. Always ensure that the correct screw is used and always ensure that when toothed washers are removed they are refitted in their original positions.

3.1.3. Releasing Plastic Latches

Many of the parts are held in place with plastic latches. The latches break easily; release them carefully.

To remove such parts, press the hook end of the latch away from the part to which it is latched.



3.2. Replacing the maintenance parts

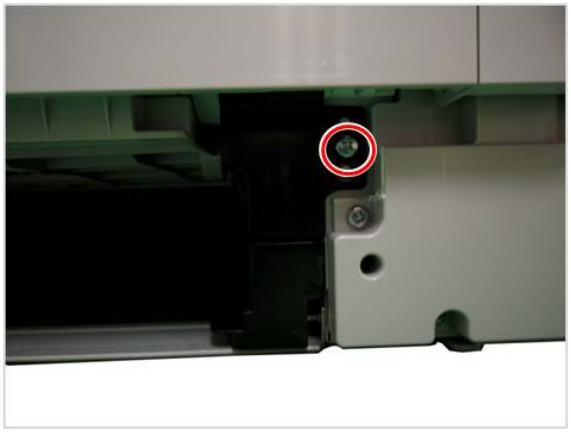
3.2.1. ITB Unit

1. Open the front cover and remove all toner cartridges.

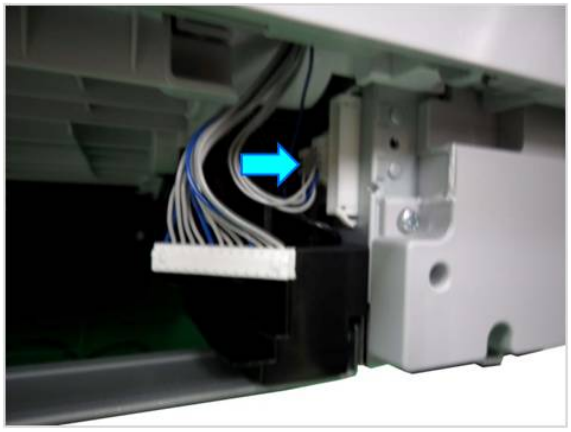
2. Remove the guide-cartridge by releasing the right hook.

3. Remove the cassette.

4. Remove the harness cover after removing 1 screw.

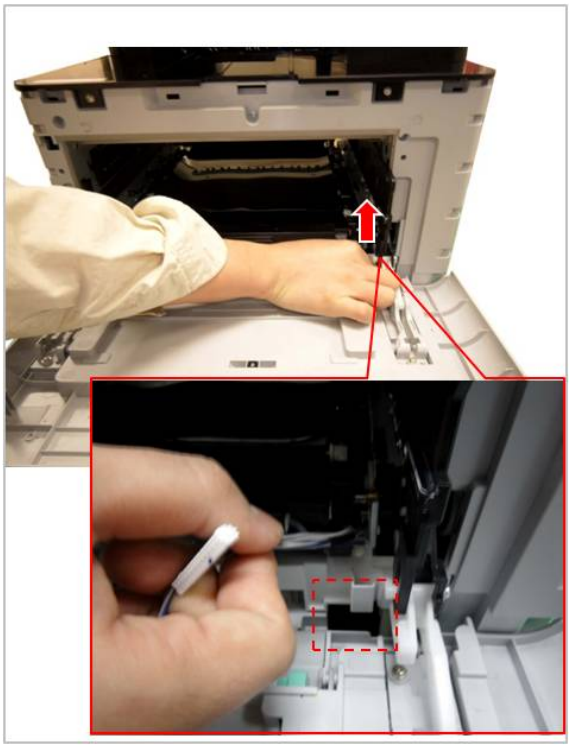


5. Unplug 2 connectors.

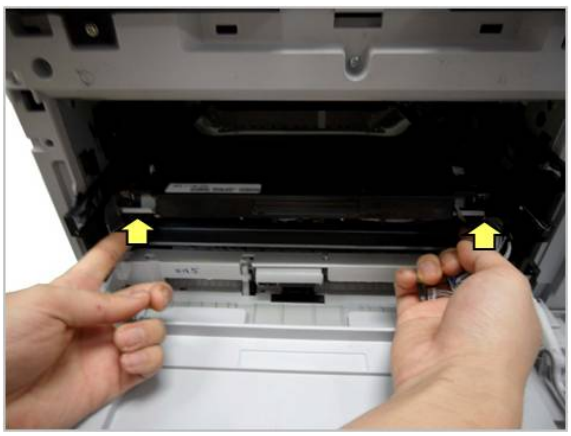


6. Open the rear cover.

7. Open the front cover. Pick out the connector that is unplugged in step 5.

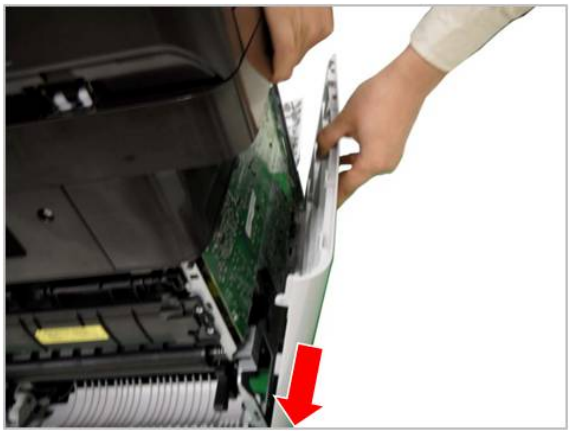


8. Lift up the both sides of the ITB Unit slightly.

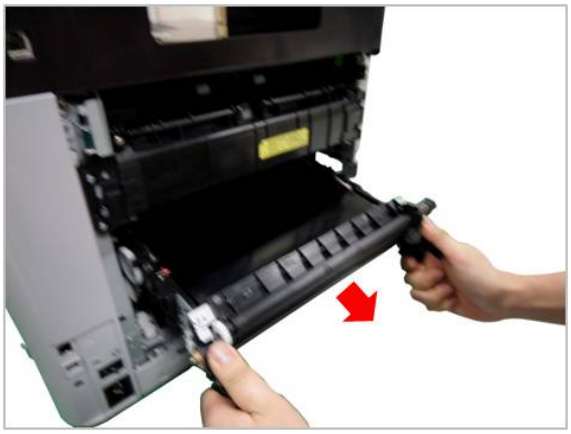


9. Remove 2 screws securing the left cover from the rear.

10. Release the left cover by pushing it to the direction of arrow.



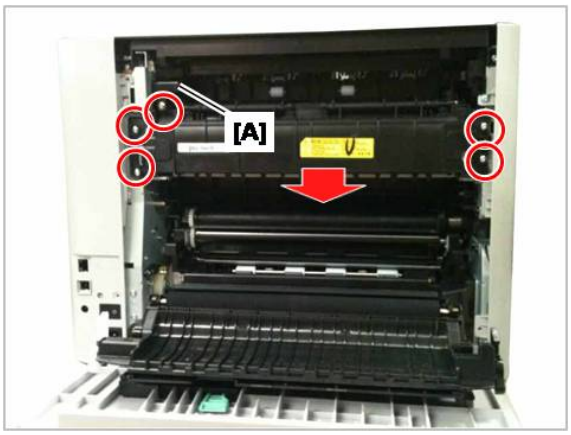
11. Remove the ITB Unit.



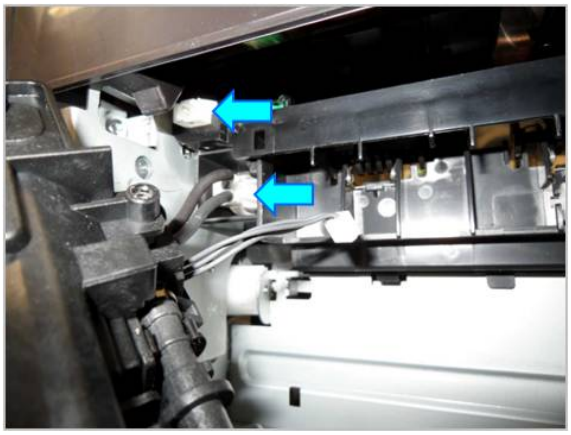
3.2.2. Fuser Unit

1. Open the rear cover. Remove 5 screws. And remove the cover[A].

2. Remove 5 screws. Rmove the cover[A]. And take off the fuser unit.



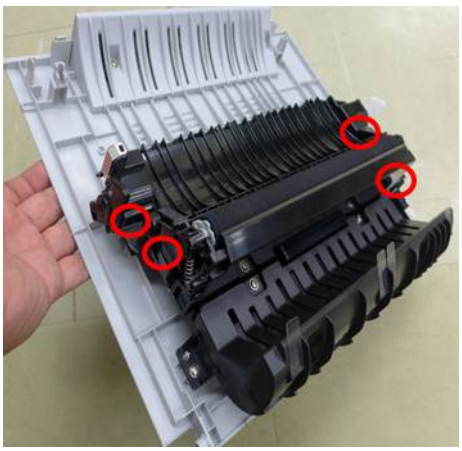
3. Unplug the connectors [see blue arrows], then remove the Fuser Unit.



3.2.3. Transfer Roller Assy

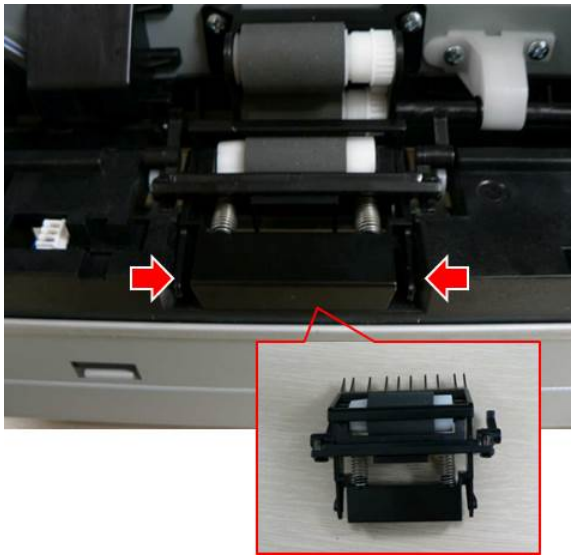
1. Open and remove the rear cover.

2. Remove the Transfer Roller Assy by releasing 4 hooks.

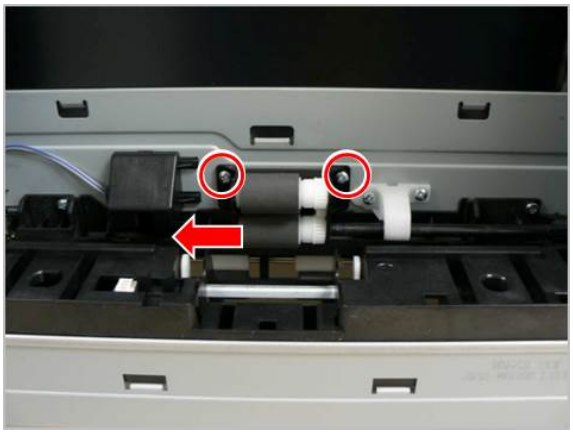


3.2.4. Pick up_Forward_Separation roller

1. Remove the cassette. Stand the machine to see the bottom.
2. Release the Reverse roller Assy by pushing both hooks.



3. Remove 2 screws. Pull and release the Pick-up/Forward roller Assy.



3.3. Replacing the main SVC parts

NOTE

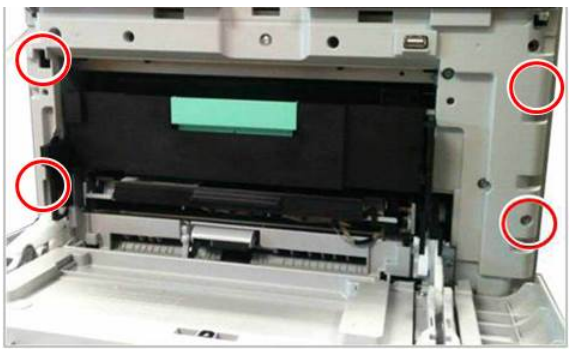
Before service, remove all toner cartridges and guide-cartridge.

3.3.1. Left and Right cover

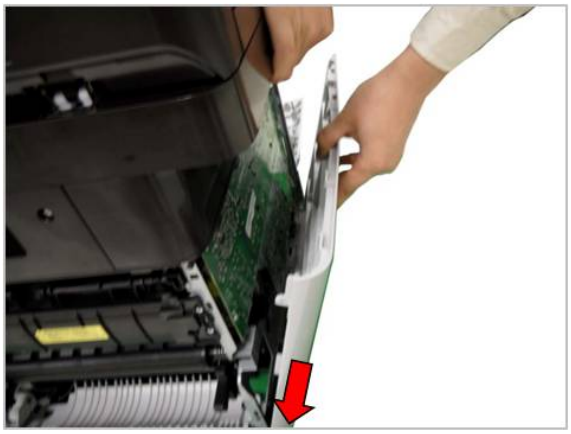
1. Open and remove the rear cover.

2. Remove 4 screws.

3. Open the front cover. And then, remove 4 screws.



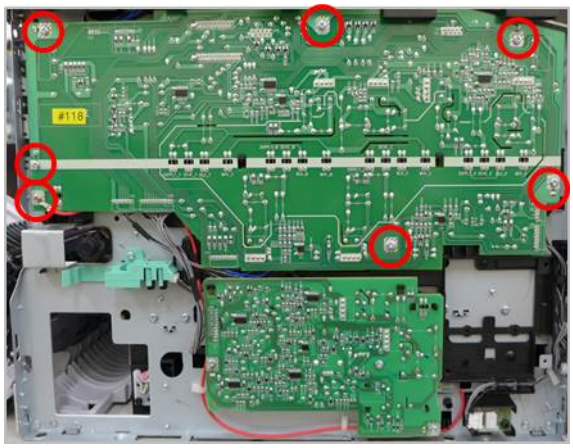
4. Release the left cover by pushing it to the direction of arrow.



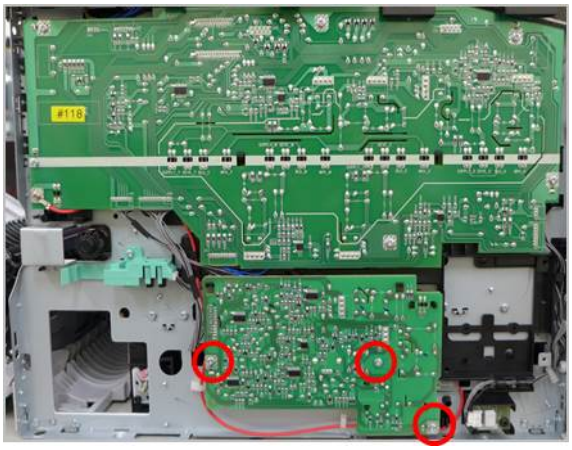
5. Release the right cover.

3.3.2. HVPS board

1. Remove the left cover. (**Refer to 3.3.1.**)
2. Remove 7 screws. Unplug the connector. And release the HVPS_1 board.

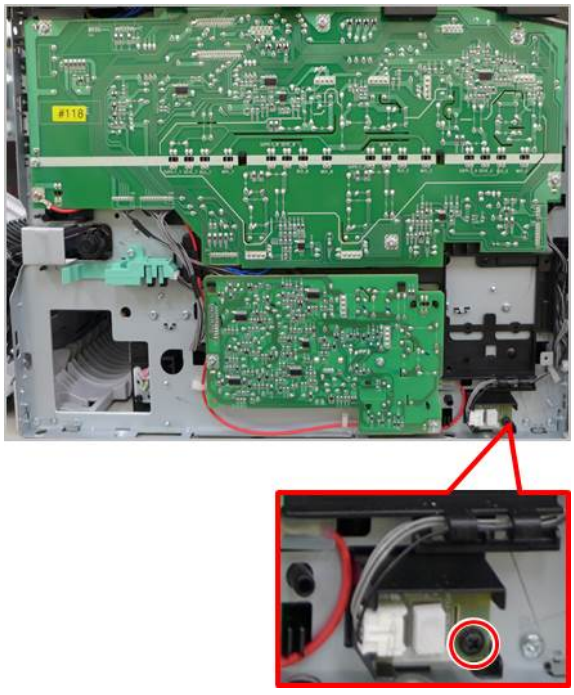


3. Remove 3 screws. Unplug the connector. And release the HVPS_2 board.



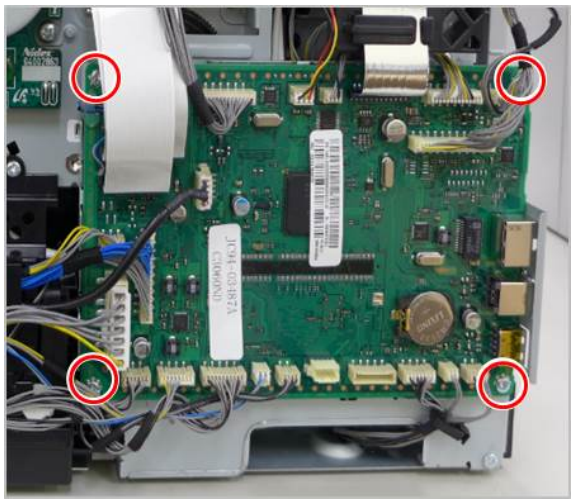
3.3.3. Outer Temperature Sensor

1. Remove the left cover. (**Refer to 3.3.1**)
2. Remove 1 screw. Unplug the connector. And remove the sensor.



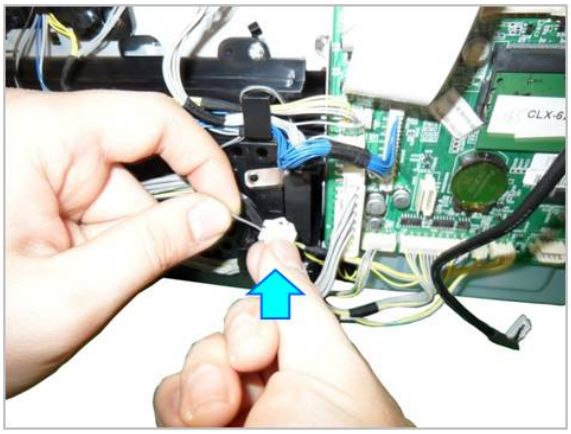
3.3.4. Main Board

1. Remove the right cover. (**Refer to 3.3.1**)
2. Unplug all connector. Remove 4 screws. And remove the main board.

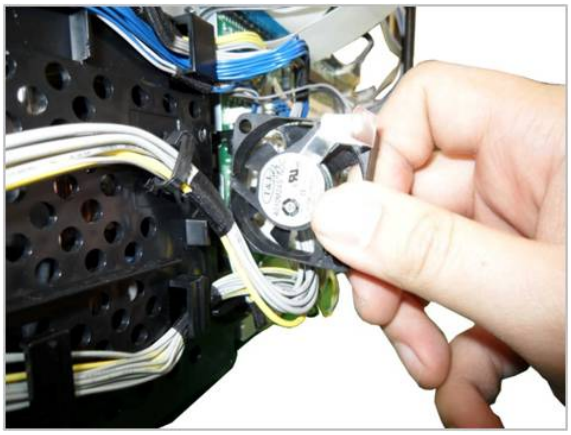


3.3.5. SMPS Fan

1. Remove the right cover. (**Refer to 3.3.1**)
2. Unplug the fan connector.

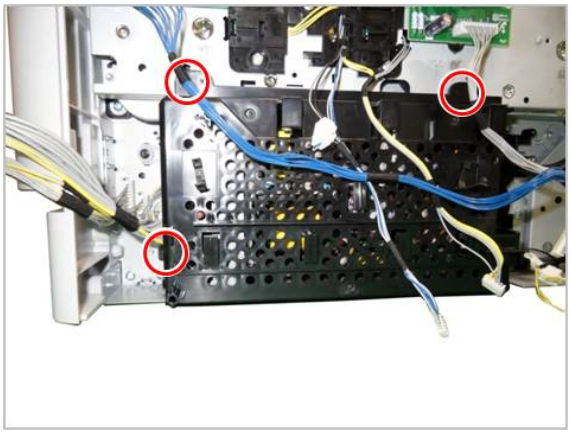


3. Remove the SMPS fan.

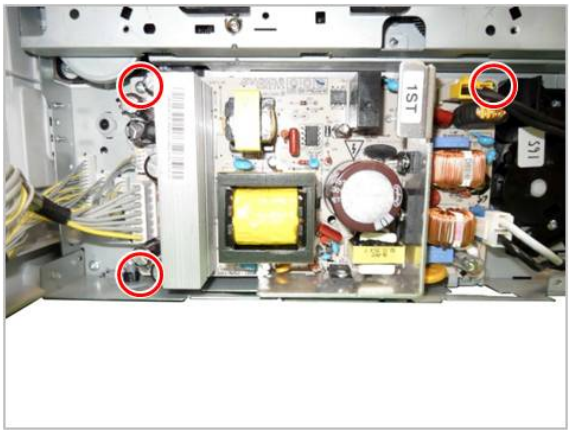


3.3.6. SMPS board

1. Remove the right cover. (**Refer to 3.3.1**)
2. Remove the SMPS board cover after removing 3 screws.



3. Unplug all connectors on SMPS board. Remove 3 screws. And remove the SMPS board.



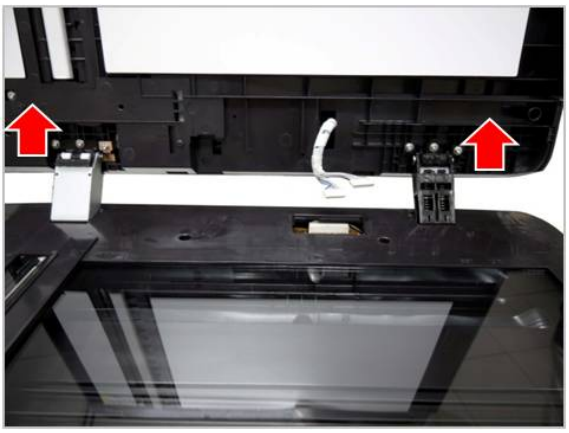
3.3.7. ADF or RADF Unit

NOTE

C3060ND : ADF / C3060FR : RADF

1. Open the ADF(RADF) unit. Unplug the connector after removing the harness cover.

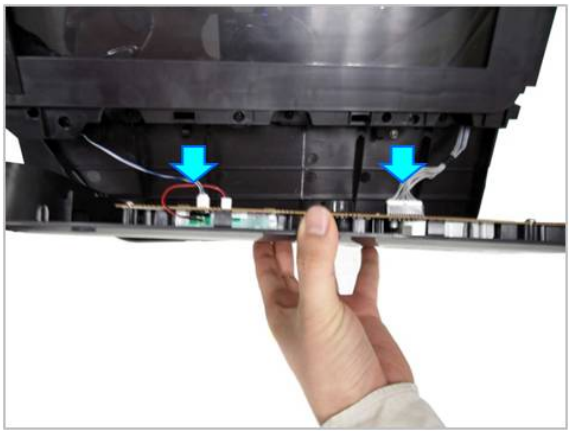
2. Lift up and release the ADF(RADF) Unit.



3.3.8. OPE Unit

1. Remove ADF/RADF Unit. (**Refer to 3.3.7**)
2. Turn the OPE unit over.

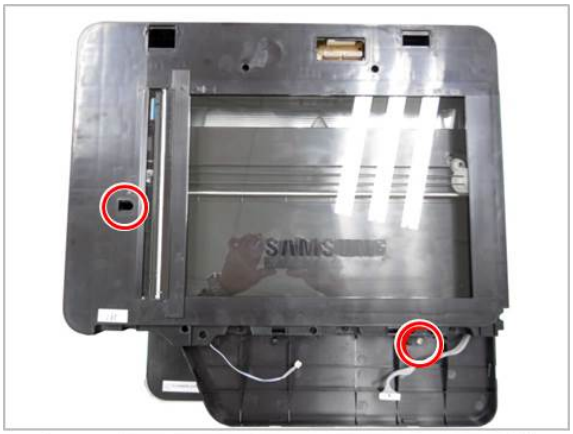
3. Unplug all connectors. And then remove the OPE unit.



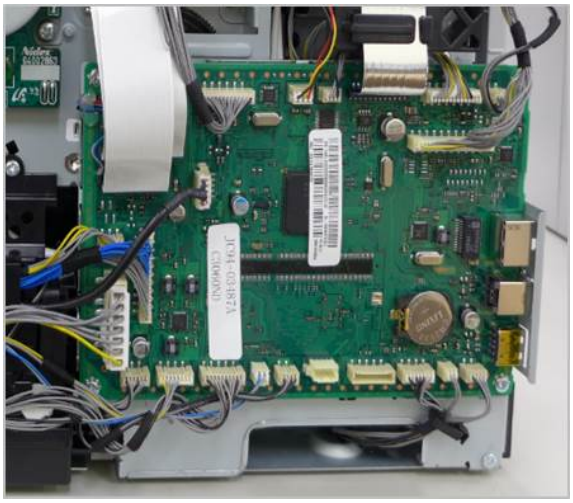
3.3.9. Platen Unit

1. Remove the right cover (**Refer to 3.3.1.**)
2. Remove the ADF/RADF unit. (**Refer to 3.3.7.**)
3. Remove the OPE unit. (**Refer to 3.3.8.**)
4. Remove the hole cap on the platen unit.

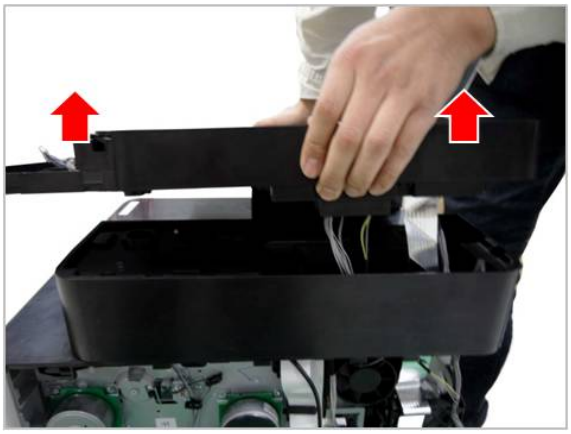
5. Remove 4 screws from the top and rear.



6. Unplug the scan-related connectors on the main board.



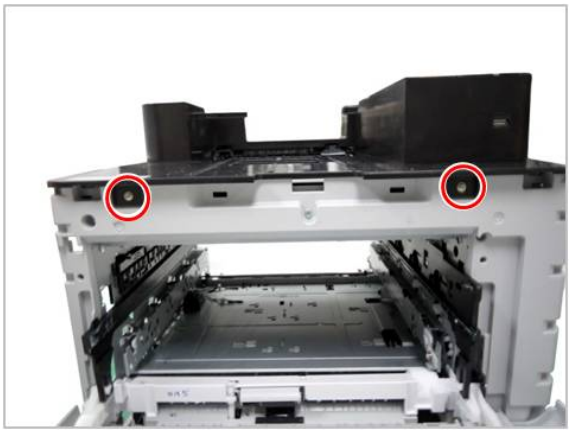
7. Lift up and release the the platen unit.



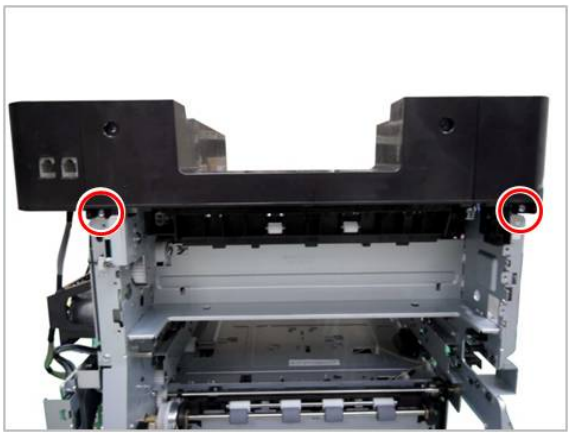
3.3.10. Middle Cover

1. Remove the right cover (**Refer to 3.3.1.**)
2. Remove the ADF/RADF unit. (**Refer to 3.3.7.**)
3. Remove the OPE unit. (**Refer to 3.3.8.**)
4. Remove the platen unit. (**Refer to 3.3.9.**)
5. Remove 2 screws from the top of the middle cover.

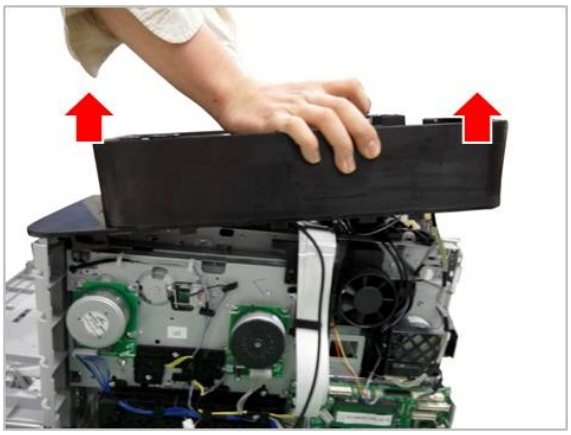
6. Remove 2 screws from the front.



7. Remove 2 screws from the rear.

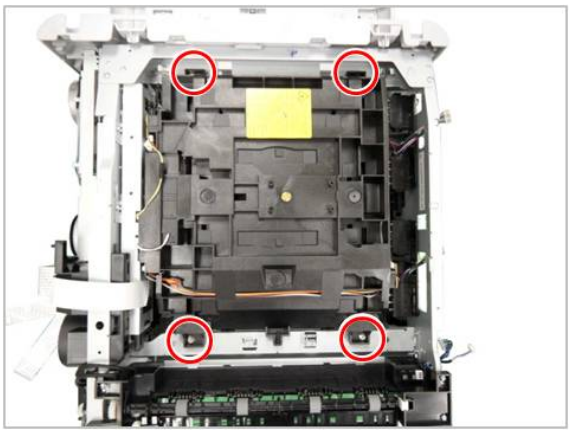


8. Lift up and release the middle cover.



3.3.11. LSU

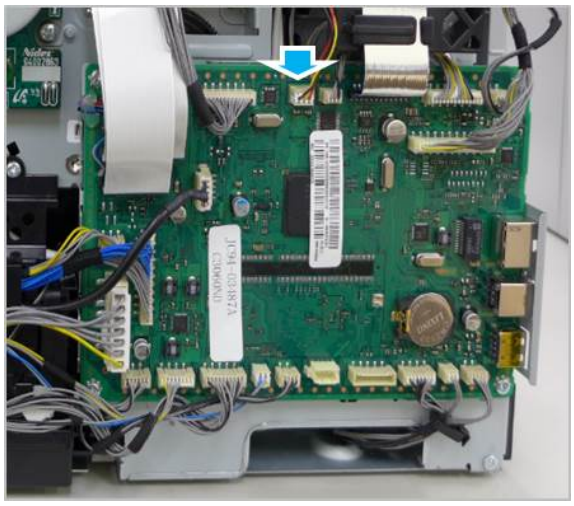
1. Remove the middle cover. (**Refer to 3.3.10**)
2. Remove 4 screws.



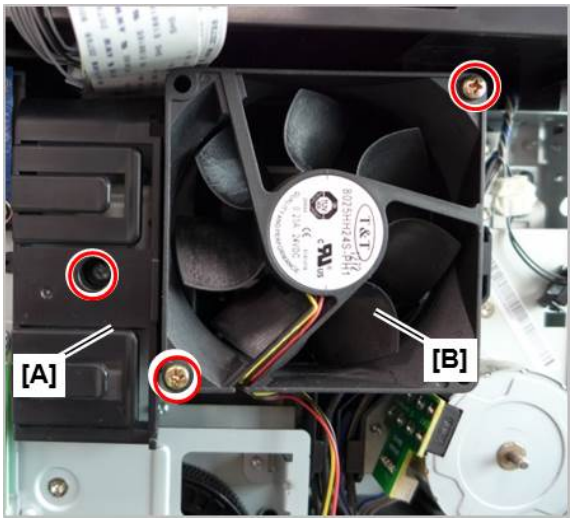
3. Unplug all connectors. And then, remove the LSU.

3.3.12. Fuser Fan

1. Remove the right cover. (**Refer to 3.3.1.**)
2. Unplug the fan connector on the main board.

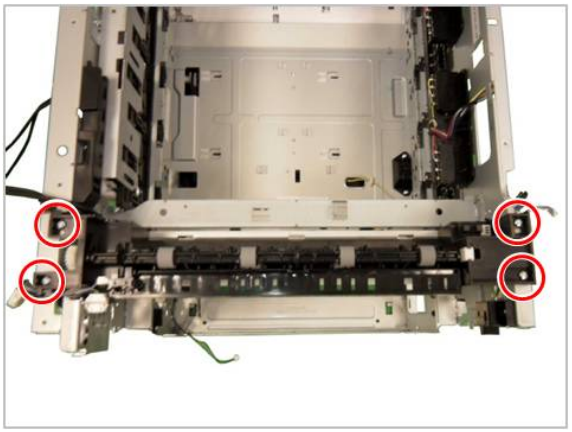


3. Remove the harness holder[A] after removing 1 screw.
4. Remove the fuser fan[B] after removing 2 screws.



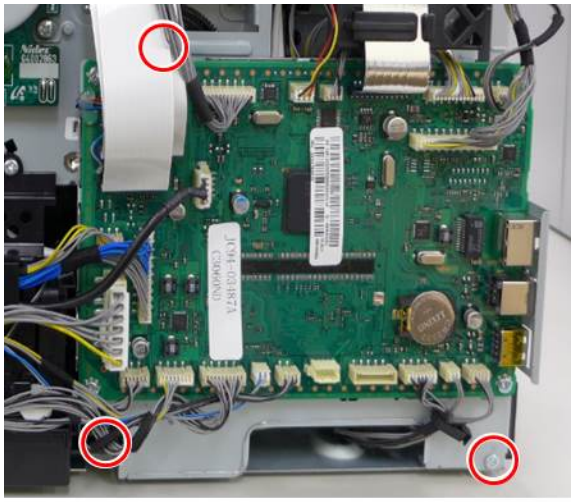
3.3.13. Exit Unit

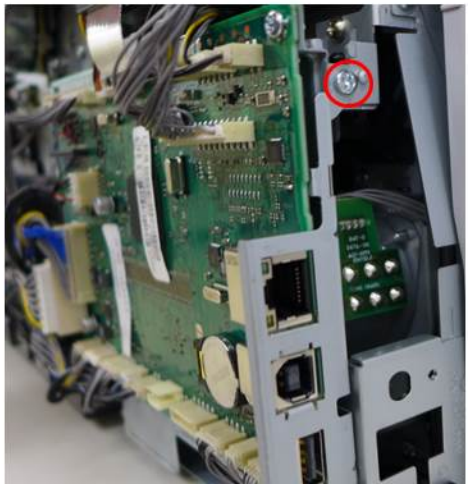
1. Remove the right cover. (**Refer to 3.3.1.**)
2. Remove the middle cover. (**Refer to 3.3.10.**)
3. Unplug the exit unit harness from the main board.
4. Release the exit unit after removing 4 screws.



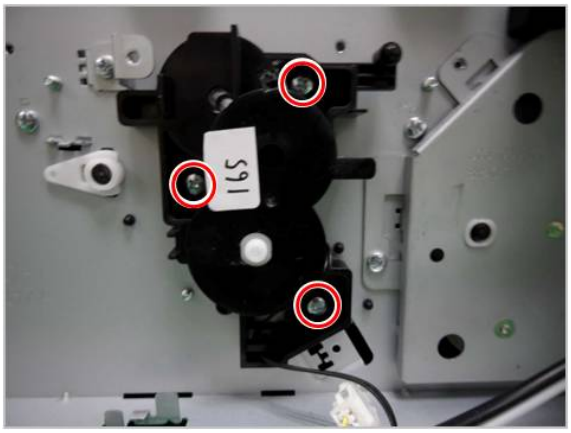
3.3.14. DRIVE-T1

1. Remove the right cover. (**Refer to 3.3.1.**)
2. Remove the SMPS board. (**Refer to 3.3.6.**)
3. Remove the main board bracket after removing 4 screws.



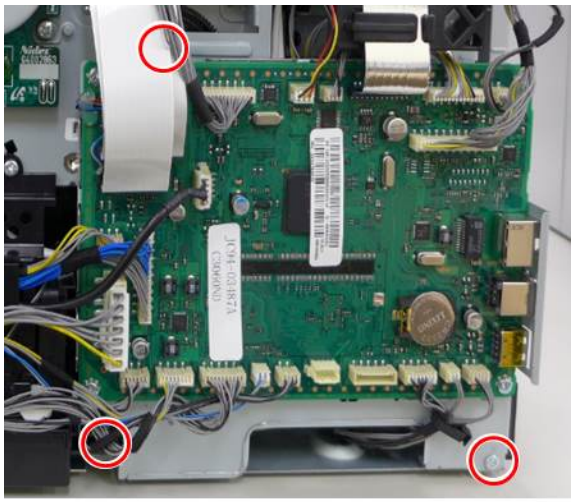


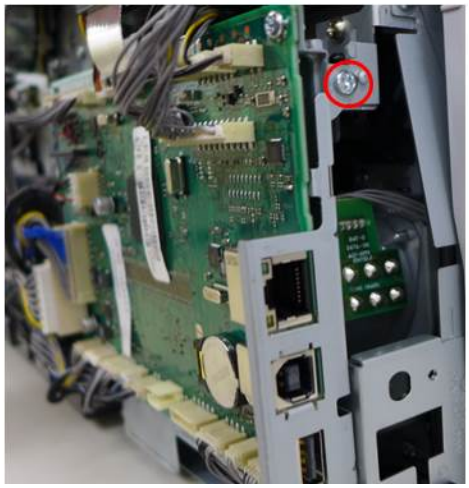
4. Release the BRACKET-T1 after removing 3 screws.



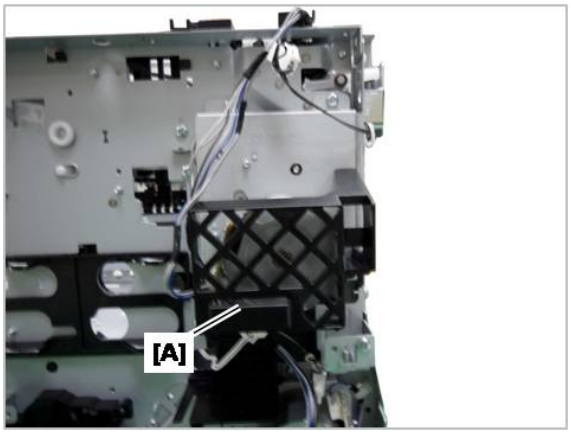
3.3.15. Fuser Drive Unit

1. Remove the right cover. (**Refer to 3.3.1.**)
2. Remove the main board bracket after removing 4 screws.

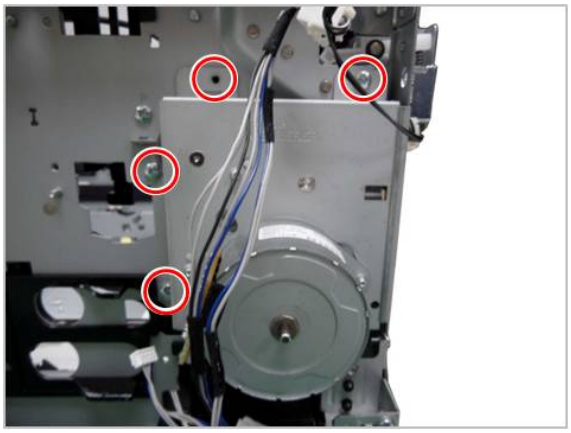




3. Remove the harness holder[A].

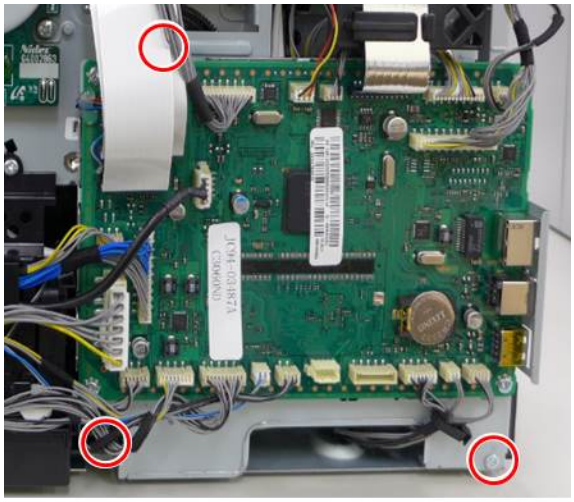


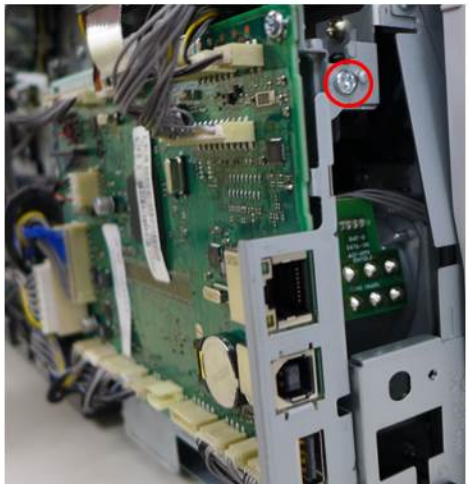
4. Remove the Fuser Drive Unit after removing 4 screws.



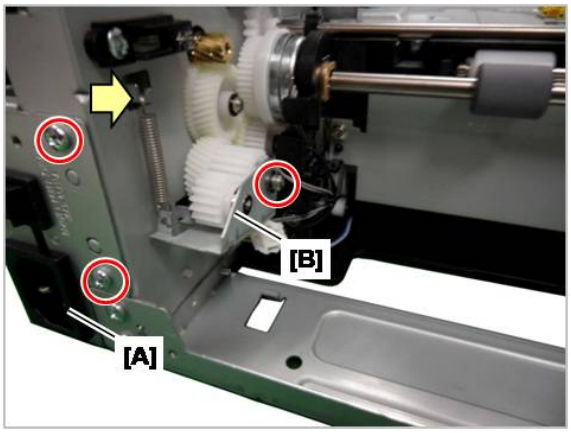
3.3.16. PH (Paper Handling) Drive Unit

1. Remove the right cover. (**Refer to 3.3.1**)
2. Remove the main board bracket after removing 4 screws.

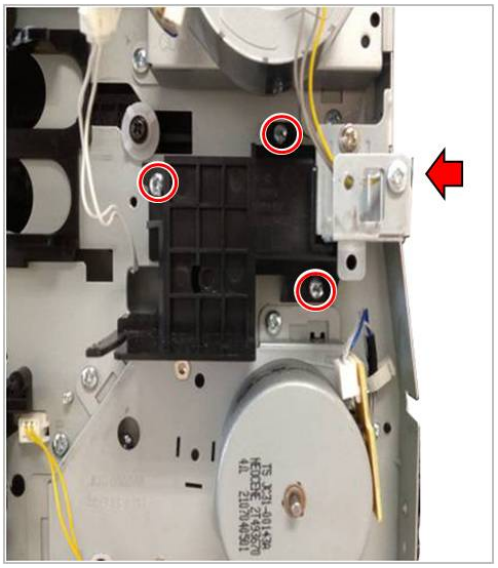




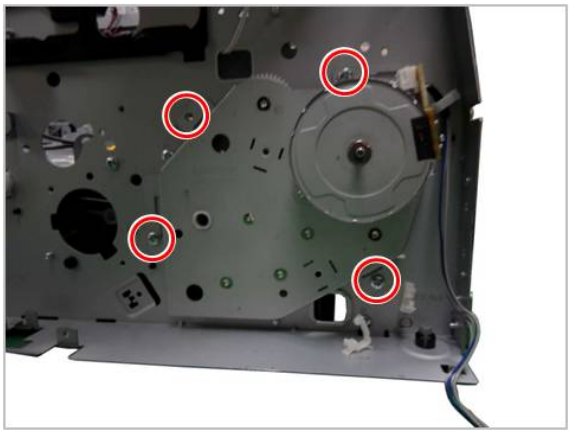
3. Remove the rear cover.
4. Release the spring. Remove the poly-washer. And remove the Duplex Swing Gear Assy [B].
5. Remove the Inlet Assy[A] after removing 2 screws.



6. Remove the Holder-TR Motor DC after removing 3 screws.

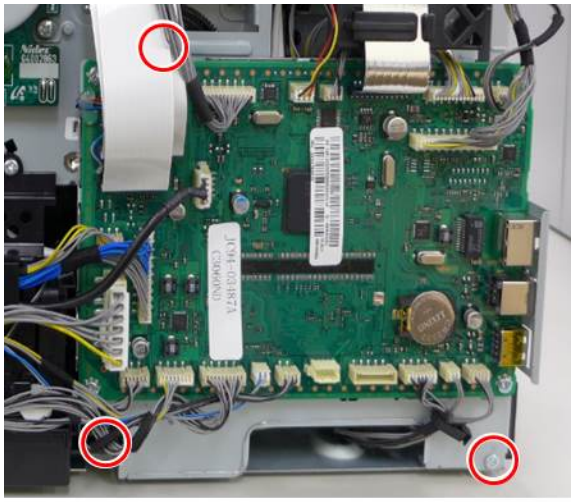


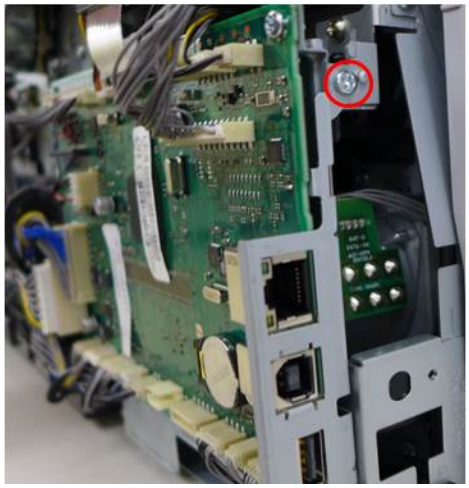
7. Remove the PH drive unit after removing 4 screws.



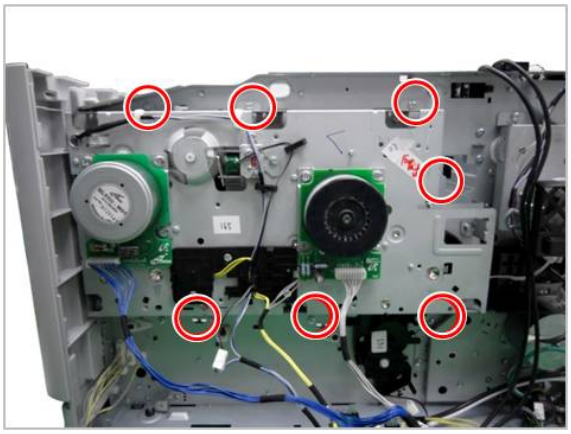
3.3.17. Main Drive Unit

1. Remove the right cover. (**Refer to. 3.3.1.**)
2. Remove the SMPS board.
3. Remove the main board bracket after removing 4 screws.

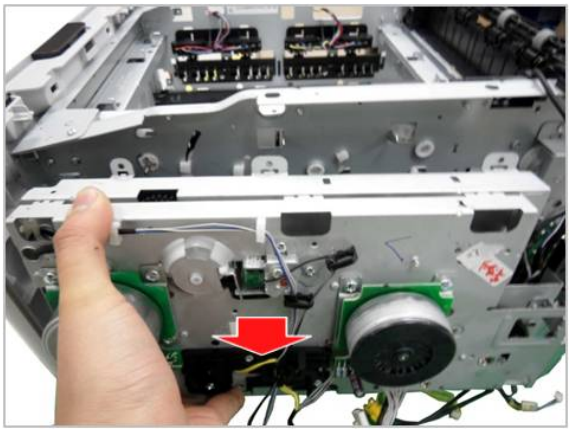




4. Remove 7 screws securing the main drive unit.

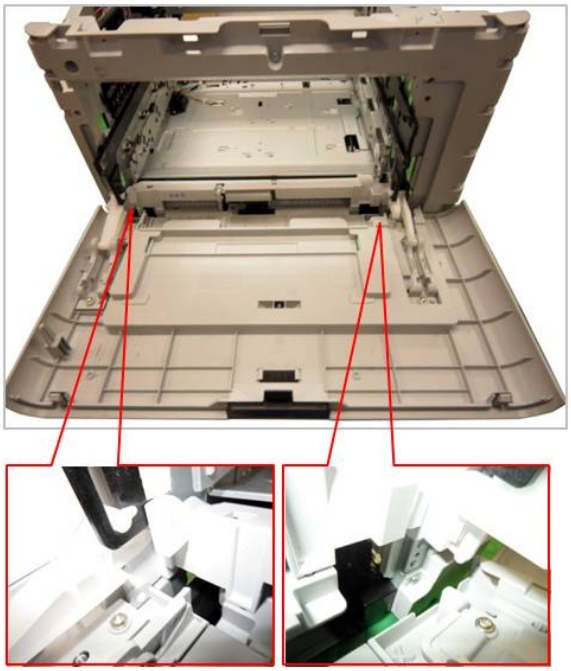


5. Release the main drive unit.

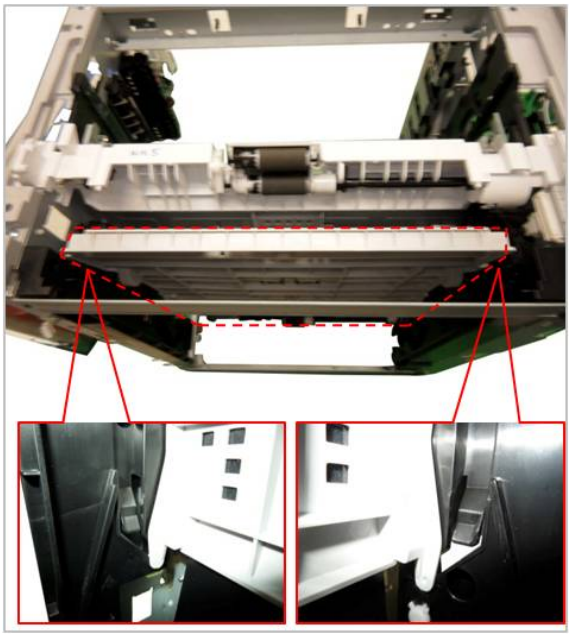


3.3.18. MP Pick-Up Unit

1. Remove the right cover and left cover. (**Refer to 3.3.1**)
2. Remove the front cover.

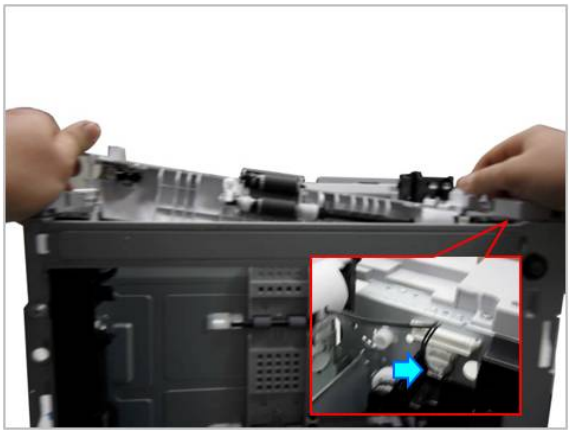


3. Remove the Frame-MP Tray.



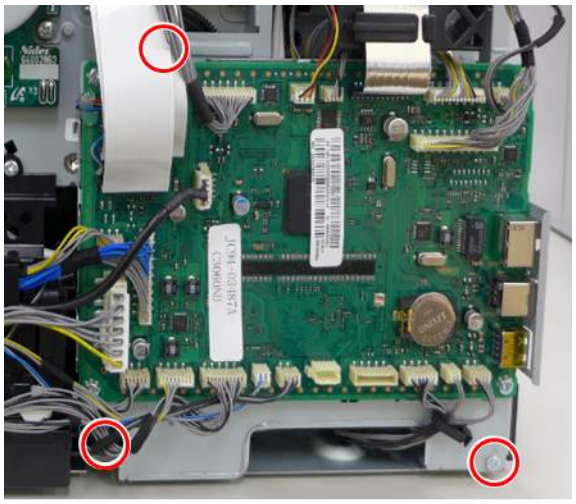
4. Remove 4 screws.

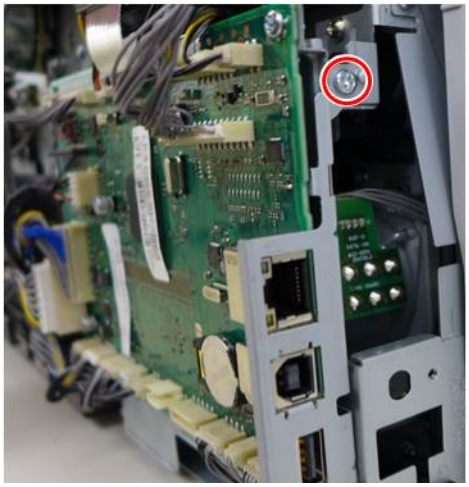
5. Remove the MP Pick-Up unit after unplug the connector.



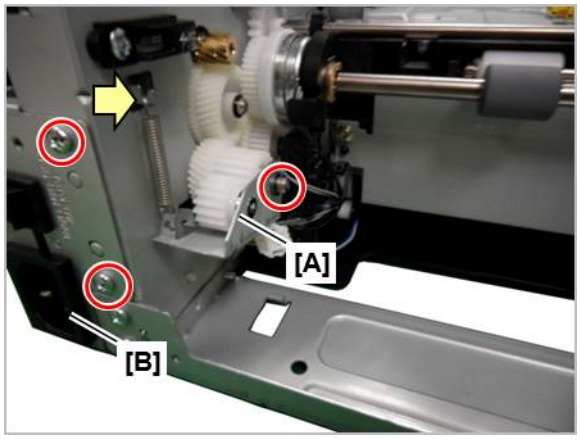
3.3.19. Solenoid

1. Remove the right cover. (**Refer to 3.3.1**)
2. Remove 4 screws. And then, release the main board bracket.

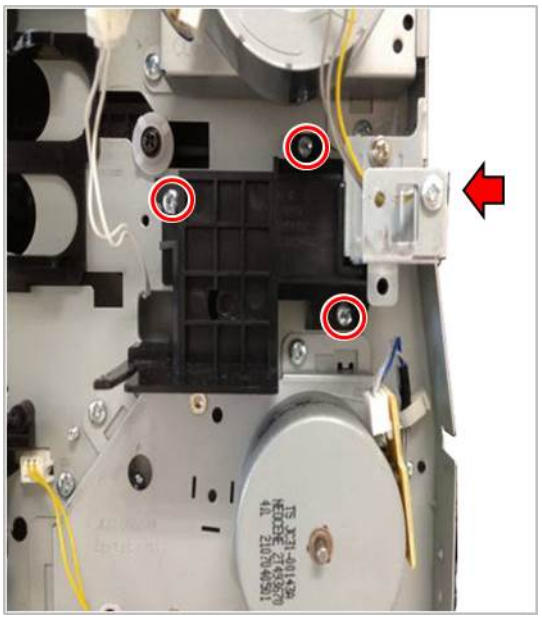




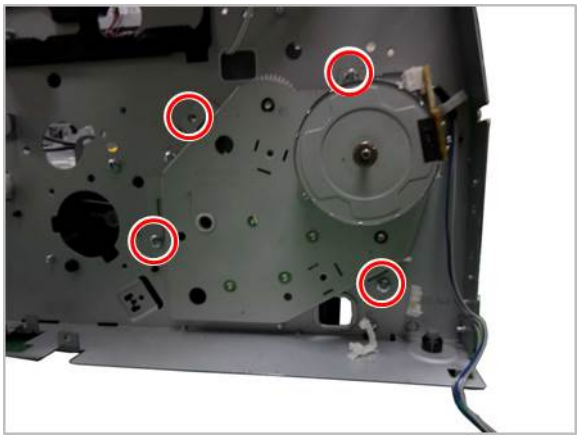
3. Remove the rear cover. (**Refer to 3.2.3.**)
4. Release the spring. Remove poly-washer. And, remove the Duplex Swing Gear Assy[A].
5. Remove 2 screws. And then, release the Inlet Assy[B].



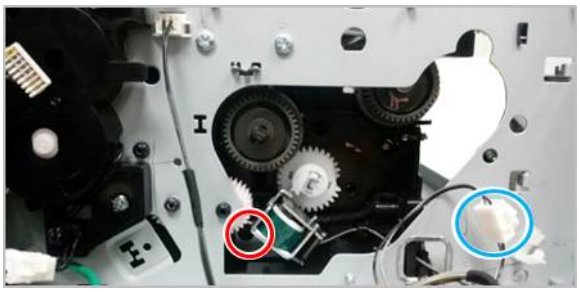
6. Remove 3 screws. And then, release the Holder-TR Motor DC.



7. Remove 4 screws. And then, release the PH Drive Unit.



8. Remove 1 screw. Unplug the harness. And then, remove the solenoid.



3.3.20. FRAME-SEPARATION UNIT

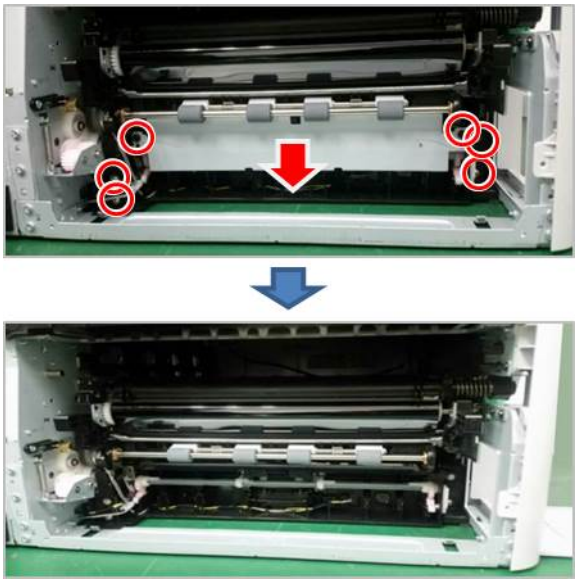
1. Remove the cassette.

2. Remove the rear cover. (**Refer to 3.2.3.**)

3. Remove the waste toner container.

4. Remove 2 screws. And then, release the Cover-Rear Bottom.

5. Remove 6 screws. And then, remove the Plate-Guide Paper.



6. Pull the right of the FRAME-SEPARATION to the front and release it.

7. Unplug the harness.

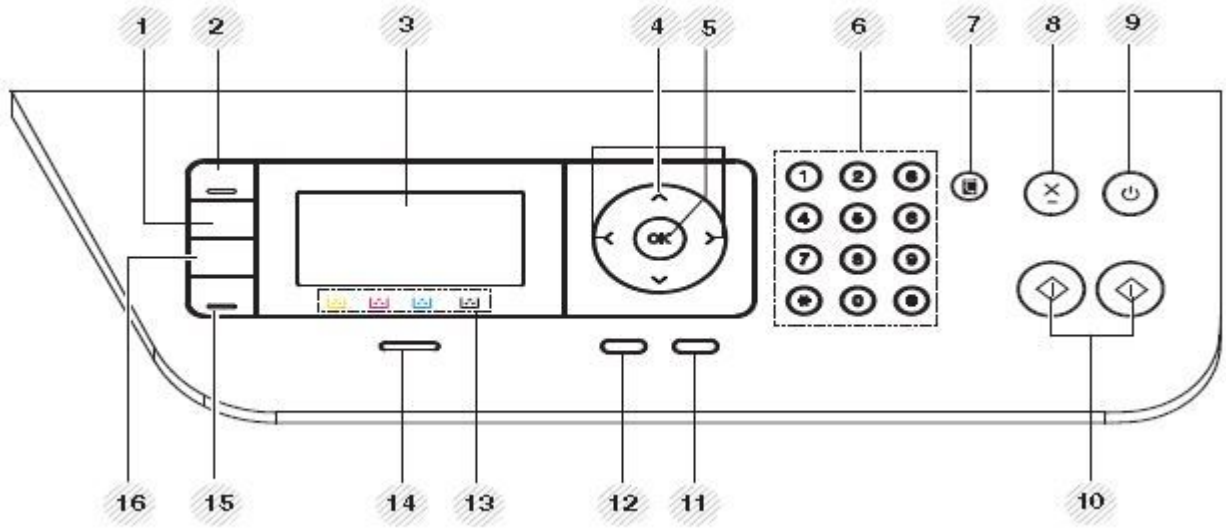
4. Troubleshooting

4.1. Control panel

NOTE

- This control panel may differ from your machine depending on its model.
- Some features and optional goods may not be available depending on model or country.

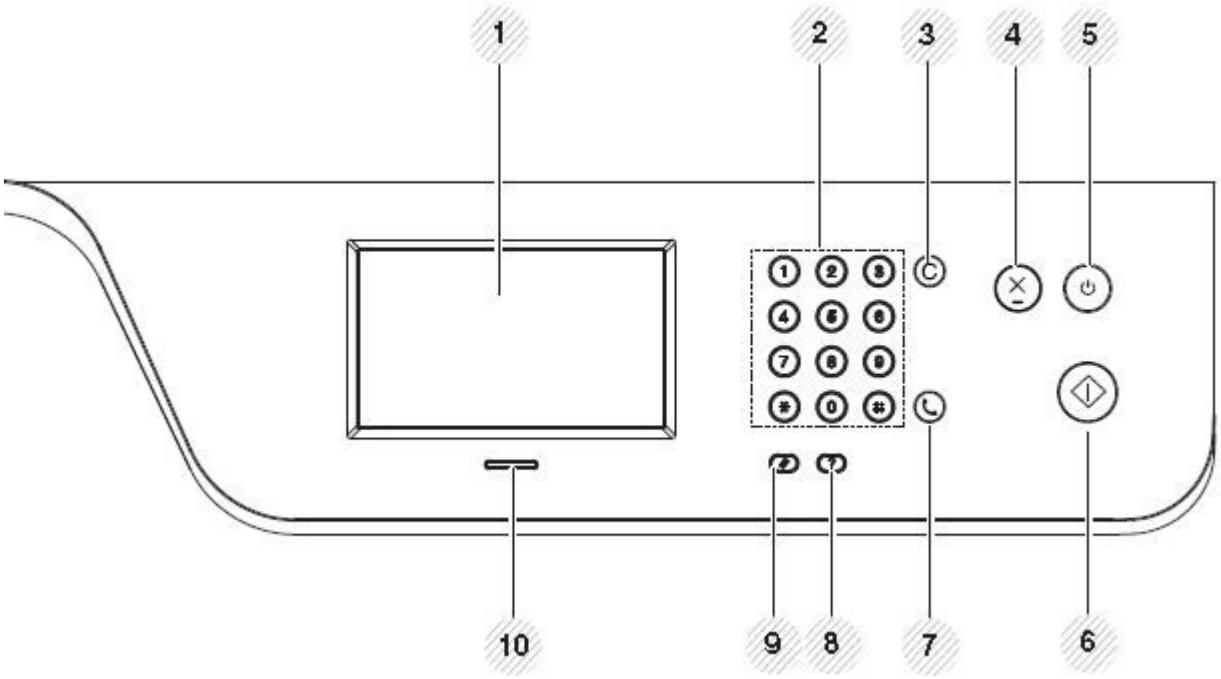
C306xND series



1	Darkness			Adjusts the brightness level to make a copy for easier reading, when the original contains faint markings and dark images.
2	Scan to			Sends scanned data.
3	Display screen			Shows the current status and prompts during an operation.
4	Arrows			Scroll through the options available in the selected menu, and increase or decrease values.
5	OK			Confirms the selection on the screen.
6	Numeric keypad			Dials a number or enters alphanumeric characters.
7	Address Book			Allows you to store frequently used email address or search for stored email address.
8	Stop/Clear			Stops current operation.
9	Power/ Wakeup			Turns the power on or off, or wakes up the machine from the power save mode. If you need to turn the machine off, press this button for more than three seconds.
10	Start	Color		Begins a printing job in color mode.
		Black		Begins a printing job in black and white mode.

11	Back		Sends you back to the upper menu level.
12	Menu		Enters Menu mode and scrolls through the available menus.
13	Toner colors		Show the status of each toner cartridge.
14	Status LED		Indicates the status of your machine.
15	Eco		Turn into eco mode to reduce toner consumption and paper usage when pc-printing and copying only.
16	Direct USB		Allows you to directly print files stored on a USB memory device when it is inserted into the USB port on the front of your machine.

C306xFR series



1	Display screen		Shows the current status and displays prompts during an operation.
2	Numeric keypad		Dials a number or enters alphanumeric characters
3	Clear	C	Deletes characters in the edit area.
4	Stop		Stops an operations at any time.
5	Power/ Wakeup		Turns the power on or off, or wakes up the machine from the power save mode. If you need to turn the machine off, press this button for more than three seconds.
6	Start		Starts a job in black or color mode.
7	On Hook Dial		When you press  (Fax) > On Hook Dial > On Hook on the Home screen, you can hear the dial tone. Then, enter the fax number. This process is similar to making a call using a speaker phone

8	Help		Gives detailed information about this machine's menus or status.
9	Reset		Resets the current machine's setup.
10	Status LED		Indicates the status of your machine.

CAUTION

When you use the touch screen, use your finger only. The screen may be damaged with a sharp pen or the like..

4.2. Understanding the status LED

The color of the LED indicates the machine's current status.

NOTE

- To resolve the error, look at the error message and its instructions from the troubleshooting part.
- You also can resolve the error with the guideline from the computers's Samsung Printing Status window.

LED	Status		Description
Status	Off		• The machine is off-line. • The machine is in power save mode.
	Blue	Blinking	When the backlight blinks, the machine is receiving or printing data.
		On	• The machine is on-line and can be used.
	Orange	Blinking	• A minor error has occurred and the machine is waiting for the error to be cleared. Check the display message. When the problem is cleared, the machine resumes. • Small amount of toner is left in the cartridge. The estimated cartridge life* of toner is close. Prepare a new cartridge for replacement. You may temporarily increase the printing quality by redistributing the toner.
		On	• A toner cartridge has almost reached its estimated cartridge life*. It is recommended to replace the toner cartridge. • The cover is opened. Close the cover. • There is no paper in the tray. Load paper in the tray. • The machine has stopped due to a major error. • A paper jam has occurred. • The waste toner container is not installed in the machine or it is full.
Power/Wake up	Blue	On	The machine is in power save mode.
		Off	The machine is in ready mode or machine's power is off.
Eco	Green	On	Eco mode is on.
		Off	Eco mode is off.

NOTE

* Estimated cartridge life means the expected or estimated toner cartridge life, which indicates the average capacity of print-outs and is designed pursuant to ISO/IEC 19798. The number of pages may be affected by operating environment, percentage of image area, printing interval, graphics, media and media size. Some amount of toner may remain in the cartridge even when red LED is on and the printer stops printing.

4.3. Updating Firmware

This chapter includes instructions for updating the printer firmware. You can update the printer firmware by using one of the following methods :

- Update the firmware by using the USB cable.
- Update the firmware by using the network.

NOTE

Please do not turn off the printer/MFP and your computer until firmware update finishes.

If you are using USB connection, disconnect all other USB printers from the PC.

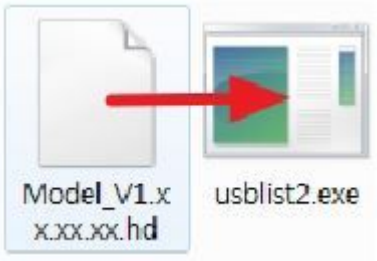
The firmware update you are about to install has been tested for compatibility with Samsung toner cartridge products ONLY. Installing The upgrade may cause a non-Samsung toner cartridge to malfunction.

Do not run your printer during the firmware update.(Do not have any print job)

4.3.1. Update the firmware by using the USB port

How to update the firmware using a USB cable

1) Make sure that the machine is connected to the PC with a USB cable. Check if the printer is the ready status.
2) Download the firmware file to your PC. Unzip the file.
3) Drag the firmware file(*.hd) and drop down it on the usblist2.exe.



And then firmware update will be started automatically.

4) Once the firmware update is complete, the machine will be rebooted automatically.

4.3.2. Updating from the Network

WARNING

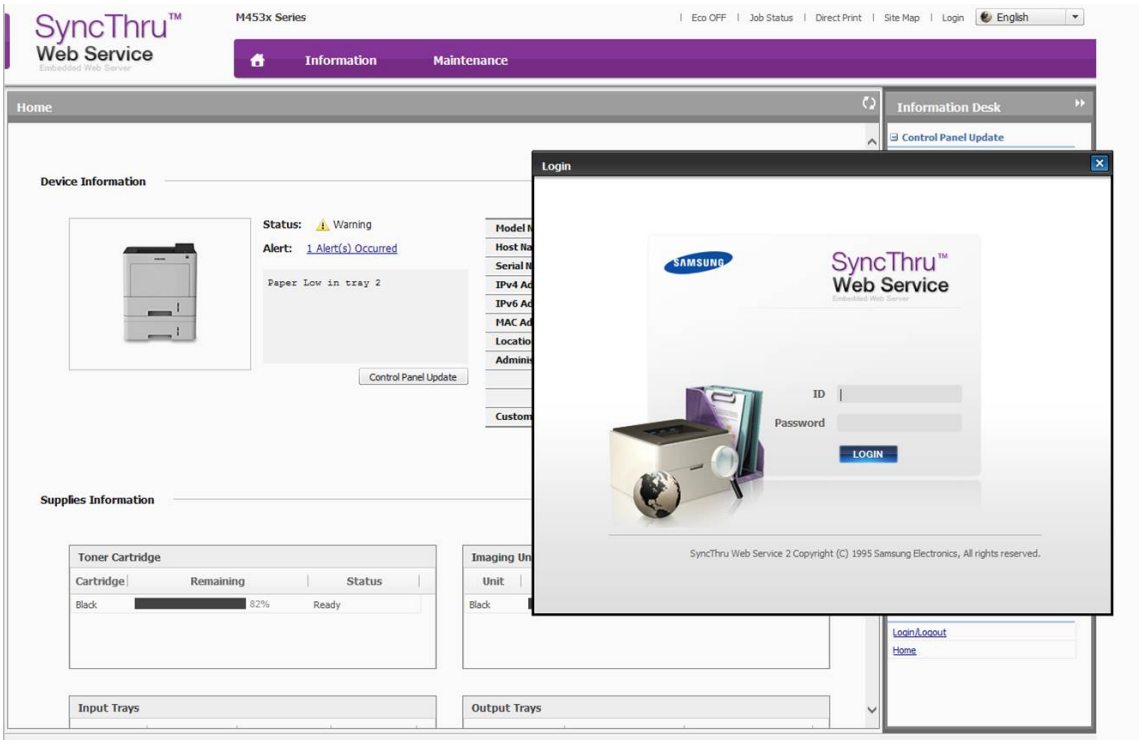
Failure to follow these instructions could lead to corruption issues and prevent the proper operation of this printer. Follow all of the instructions carefully.

Perform the following procedure to update the printer firmware from the network.

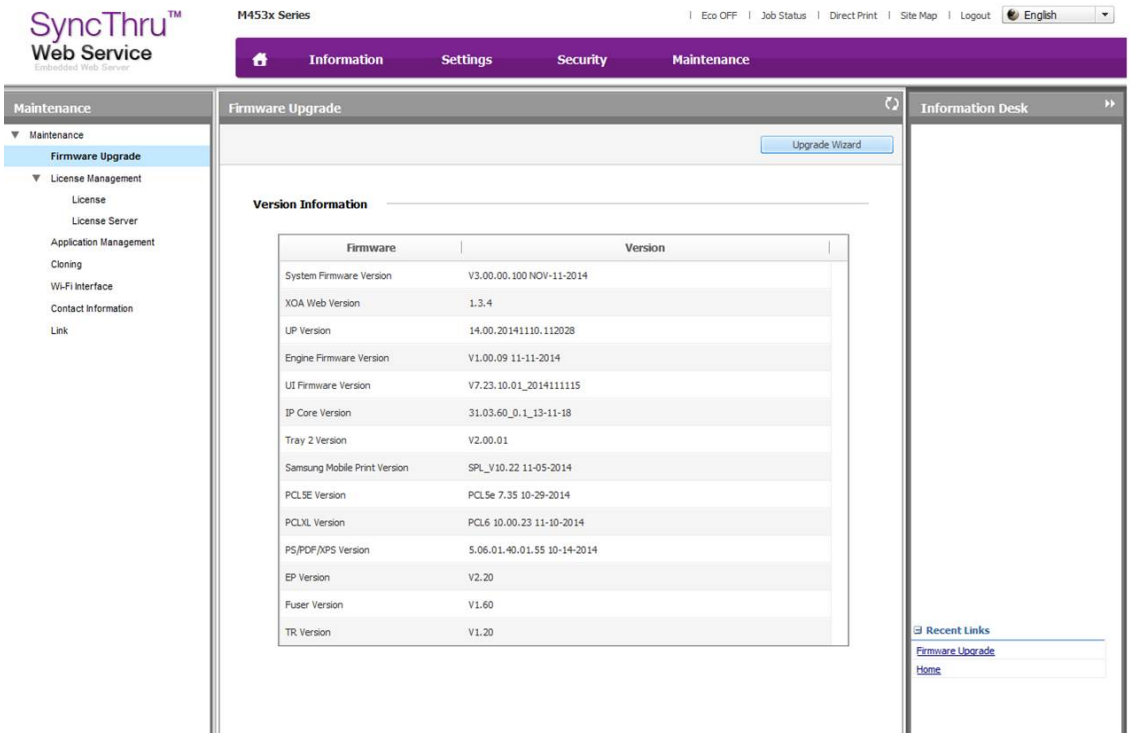
1) Access a web browser, such as Internet Explorer, from Windows. Enter the machine IP address (http://xxx.xxx.xxx.xxx) in the address field and press the Enter key or click Go. When the main page of the SyncThruWeb Service (SWS) displays, login as administrator in Sync Thru™ Web Service.

NOTE

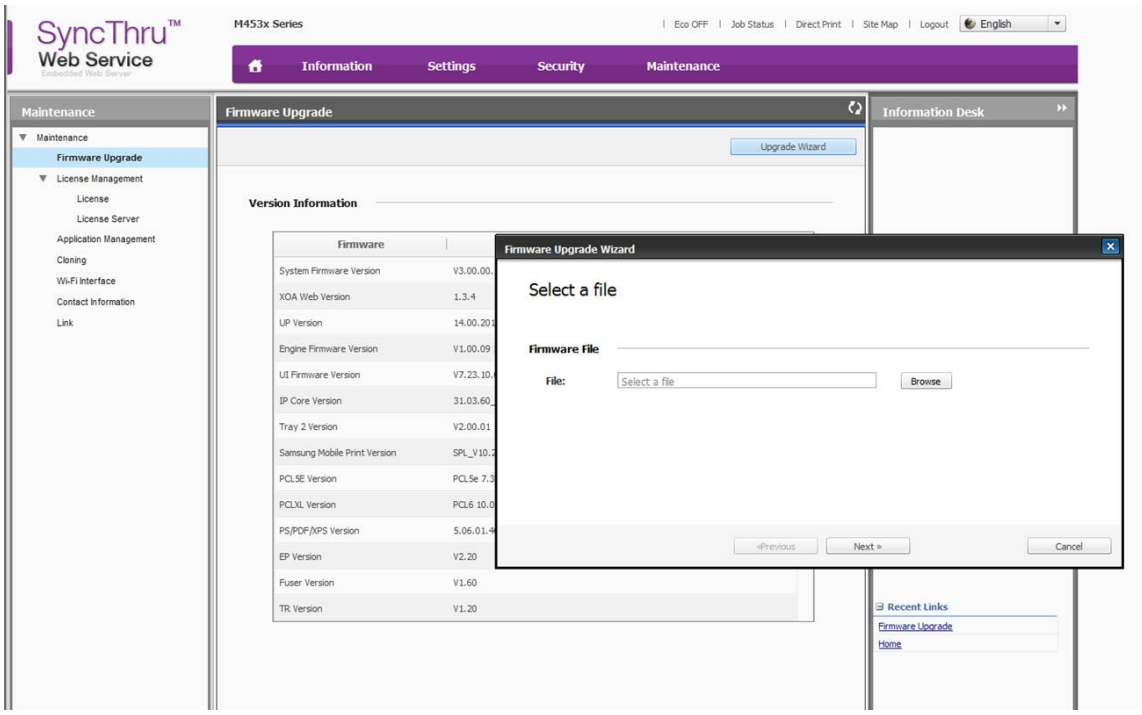
- Login using the Administrator ID and Password established during initial machine setup.
- If Admin ID and password is not established, use the default value. (ID: admin / Password: sec00000)



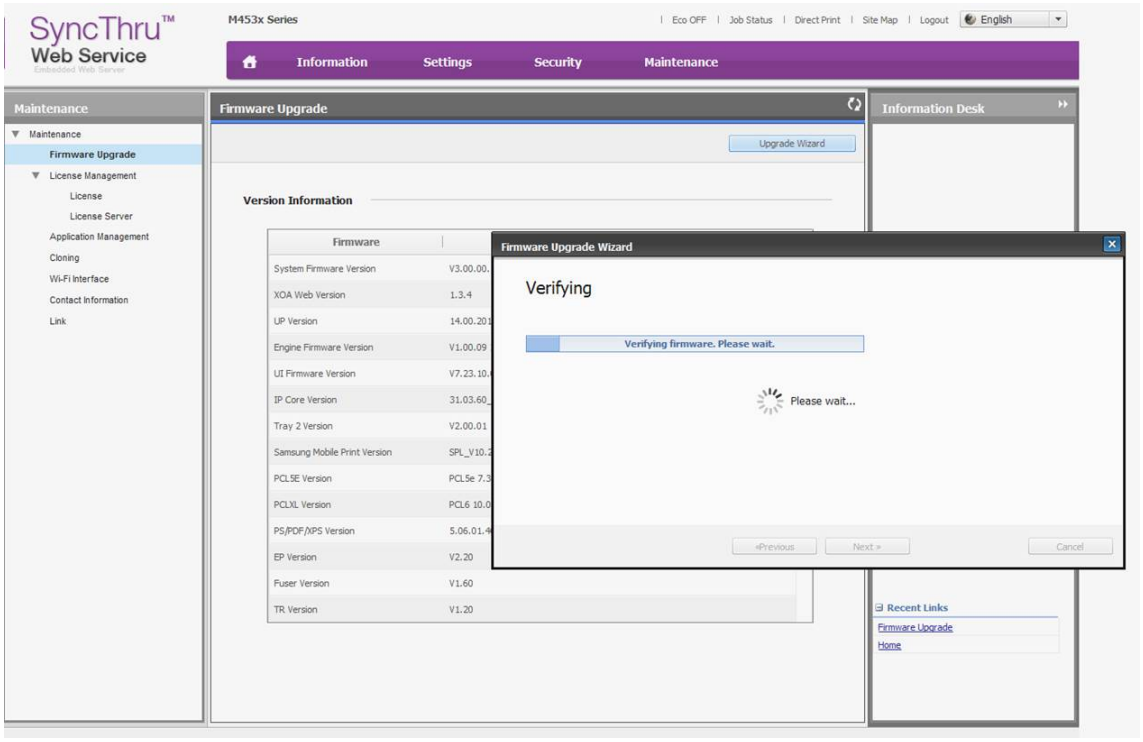
2) Click on **Maintenance > Firmware Upgrade > Upgrade Wizard**.



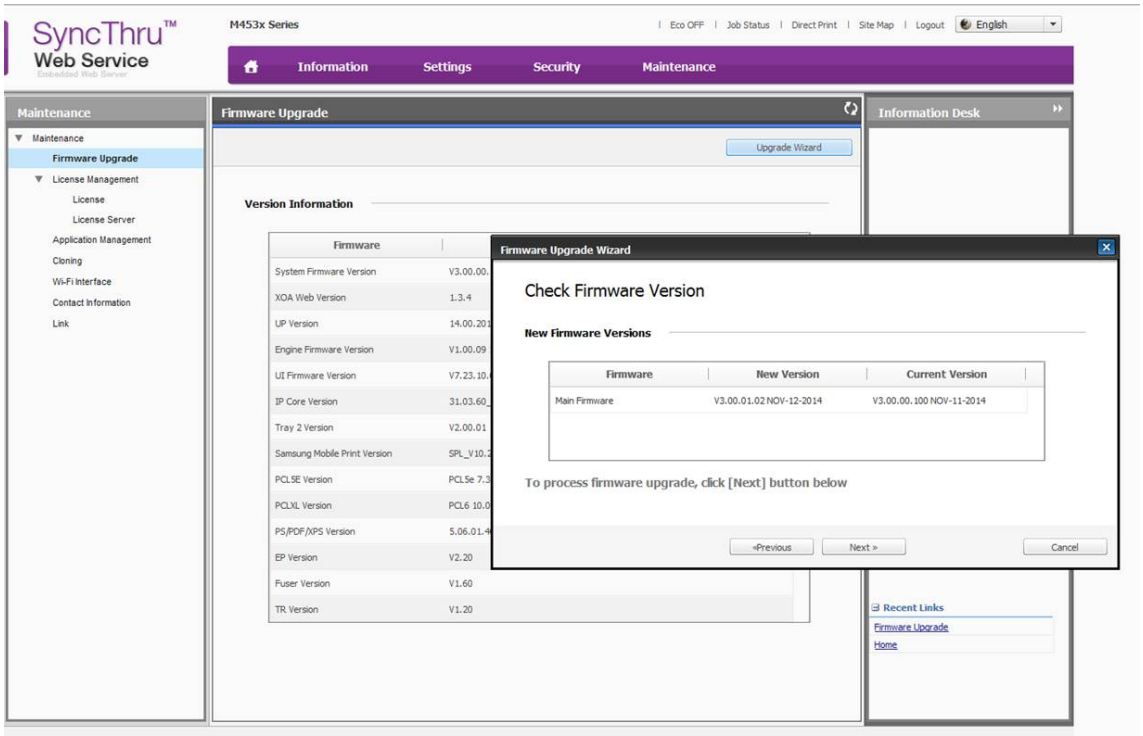
3) Choose installation file (F/W file) by browsing the file system and click [**OK**].



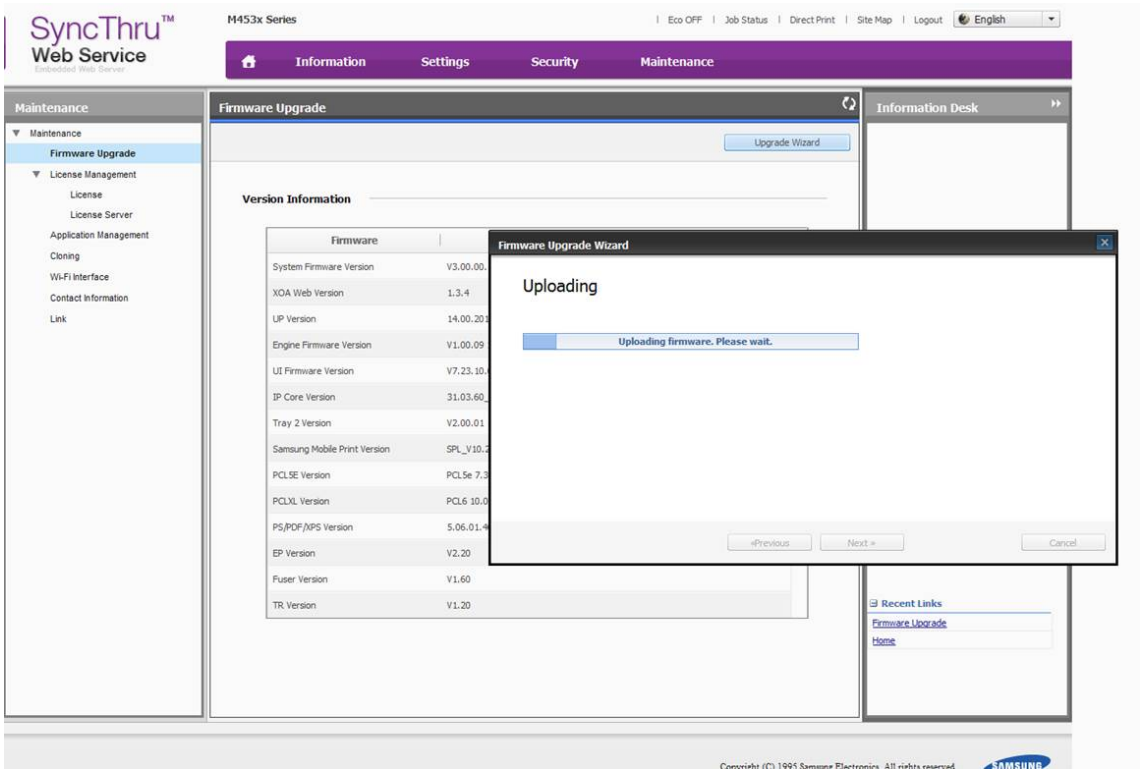
4) The uploading step will start and verify installation file (F/W file).



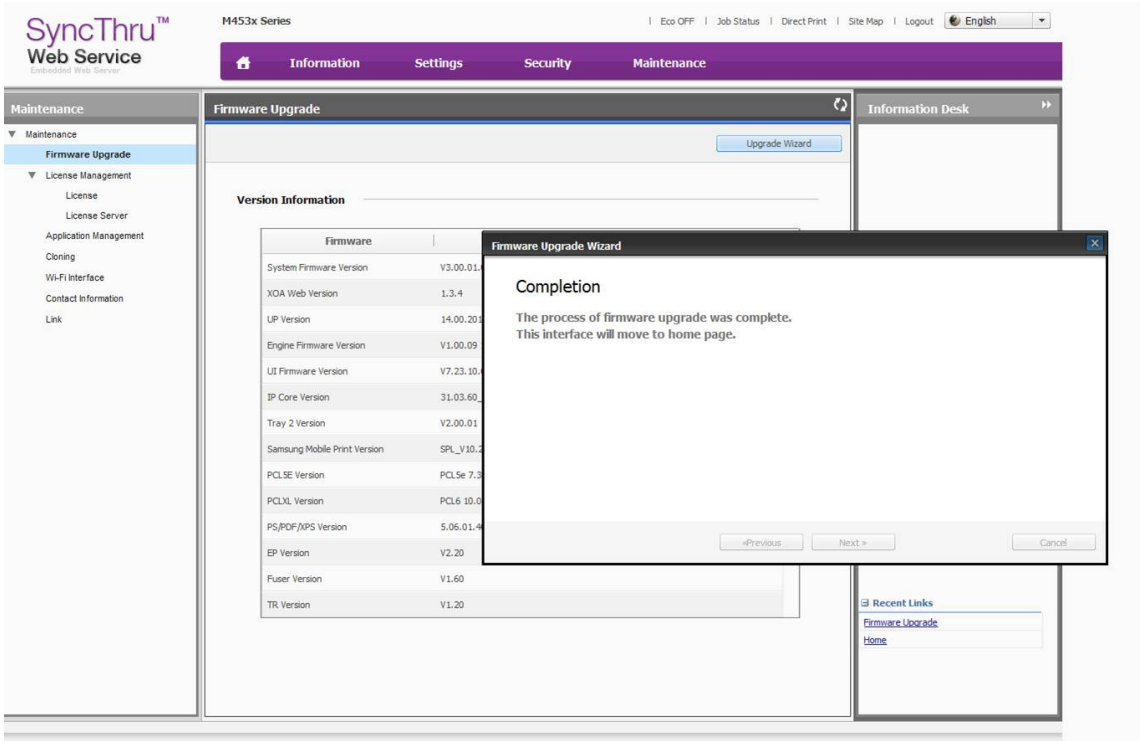
5) After uploading the f/w file on printer, validation information will appear.
Check Firmware version and click Next to upgrade Firmware and press [**Next**] to start the firmware upgrade.



6) The firmware update will start.



7) Once the installation is complete, the machine power-off and power-on automatically.



4.4. Clearing paper jams

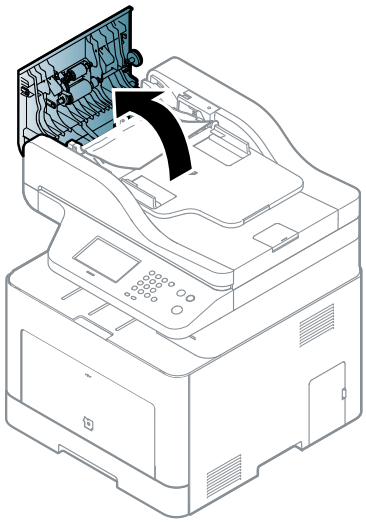
4.4.1. Clearing original document jams

NOTE

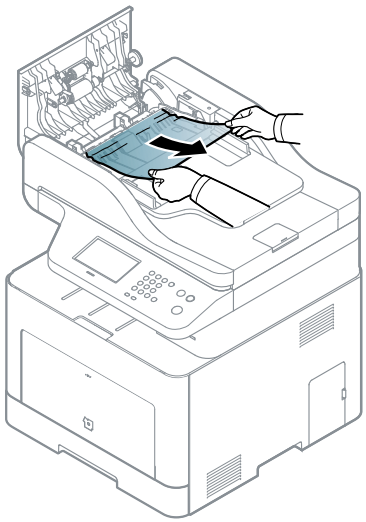
This troubleshooting may not be available depending on model or optional goods

Original paper jam in front of scanner

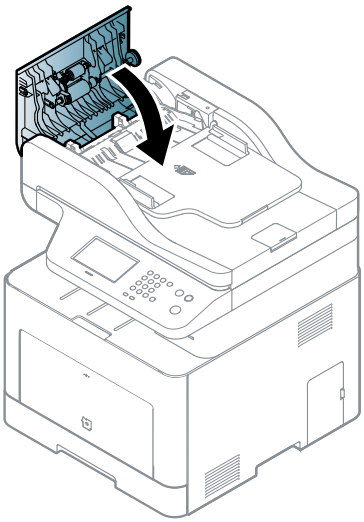
1) Open the document feeder cover.



2) Gently remove the jammed originals from the document feeder.

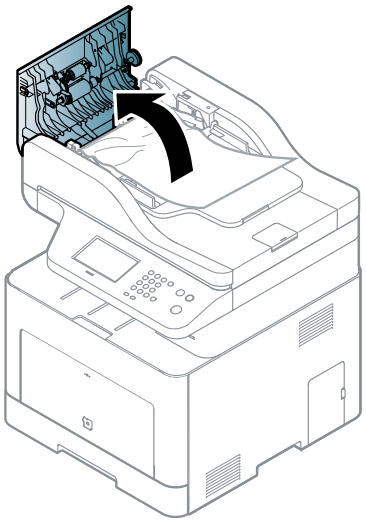


3) Close the document feeder cover.

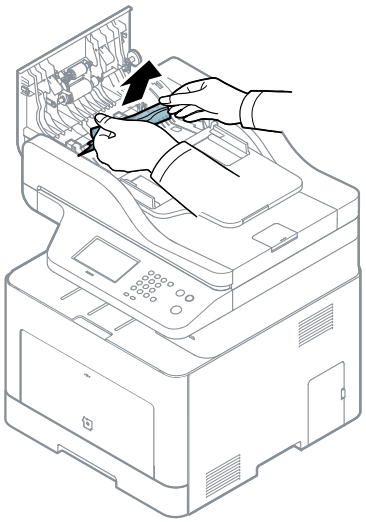


Original paper jam inside of scanner

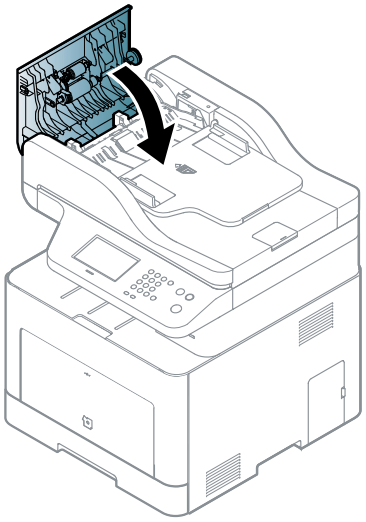
1) Open the document feeder cover.



2) Gently remove the jammed originals from the document feeder.



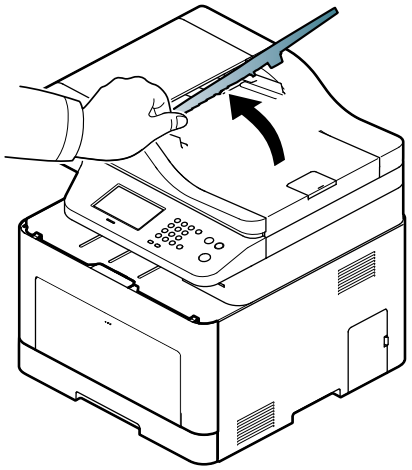
3) Close the document feeder cover.



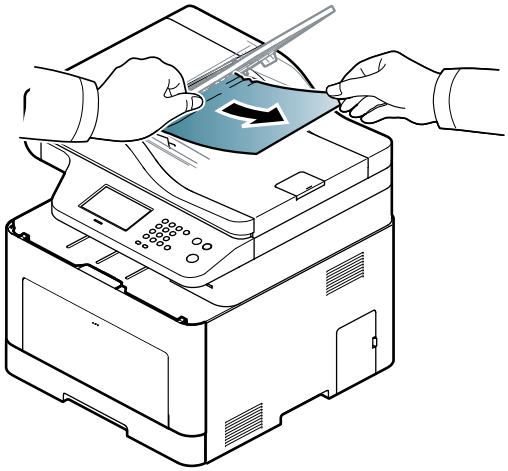
Original paper jam in exit area of scanner

1) Remove any remaining pages from the document feeder.

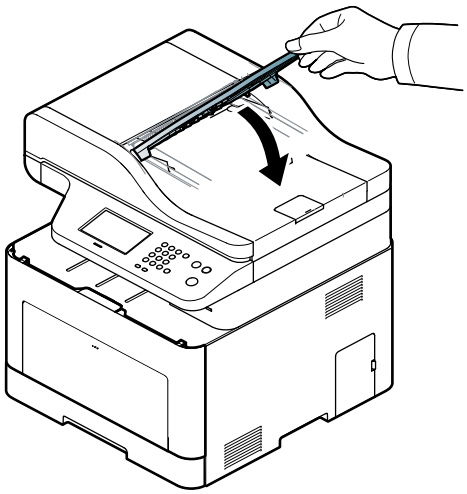
2) Open the stacker up.



3) Gently remove the jammed originals from the document feeder.



4) Close the stacker.

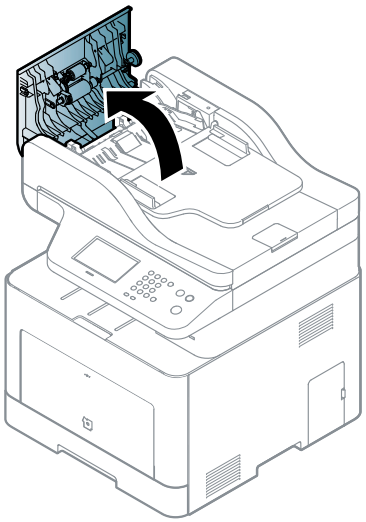


Original paper jam in scanner duplex path

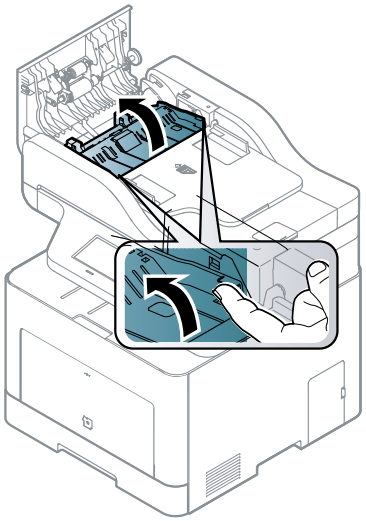
NOTE

C306xFR only.

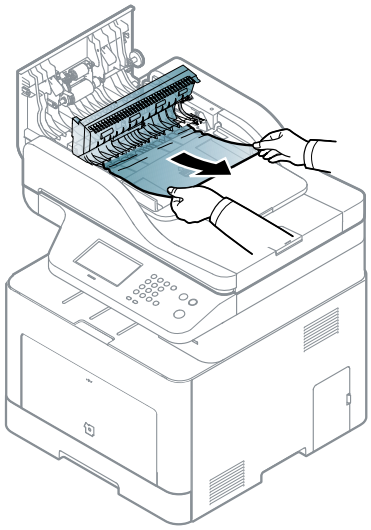
1) Open the document feeder cover.



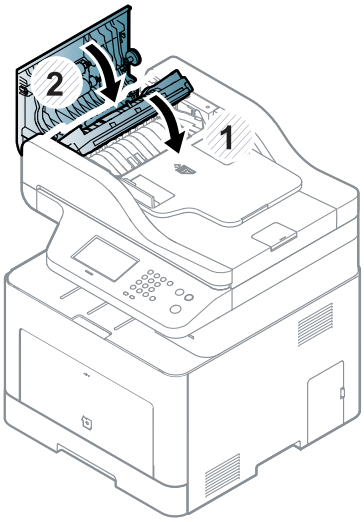
2) Open the document feeder duplex cover.



3) Gently remove the jammed originals from the document feeder.



4) Close the duplex cover and document feeder cover.



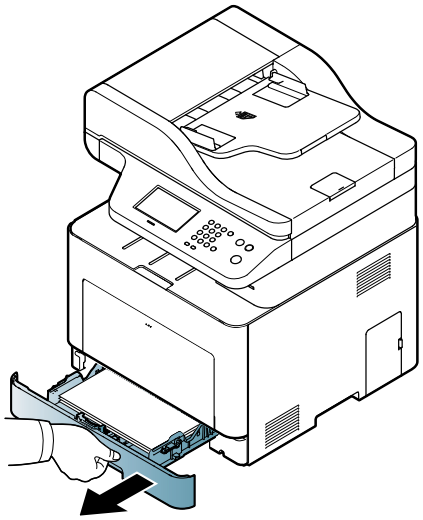
4.4.2. Clearing paper jams

NOTE

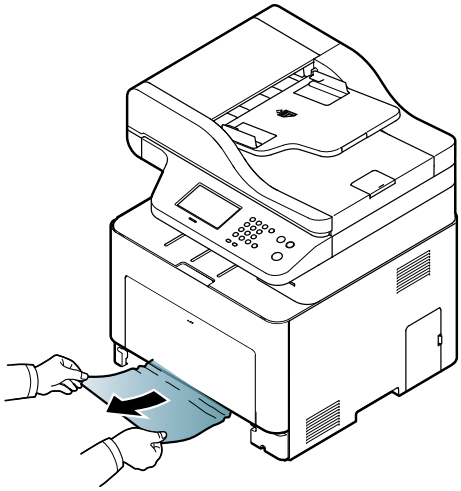
To avoid tearing the paper, pull the jammed paper out slowly and gently.

In tray1

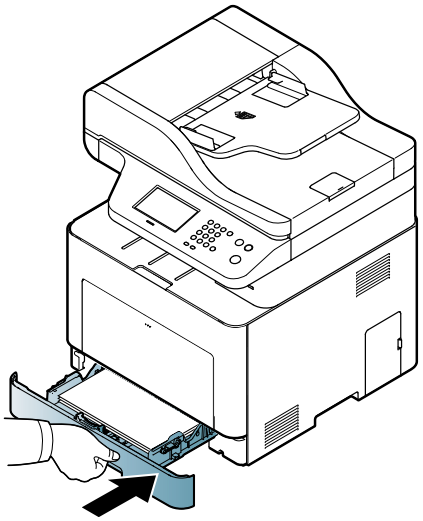
1) Take off the cassette.



2) Remove the jammed paper by gently pulling it straight out.

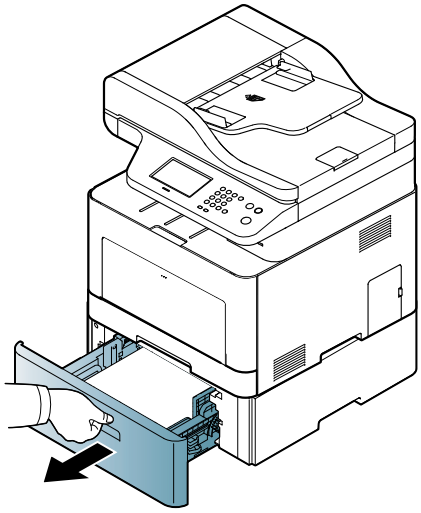


3) Reinstall the cassette.

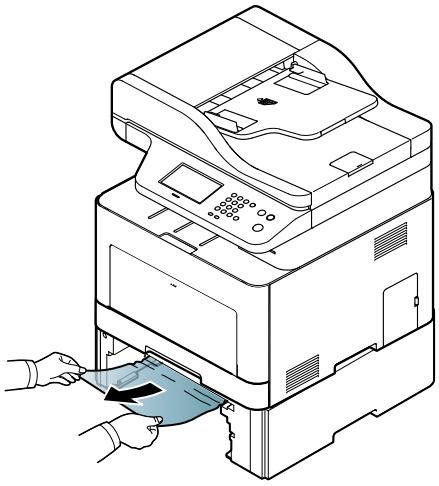


In optional tray

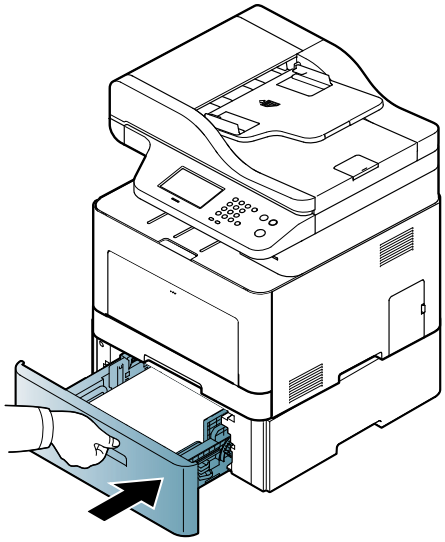
1) Take off the optional cassette.



2) Remove the jammed paper by gently pulling it straight out.

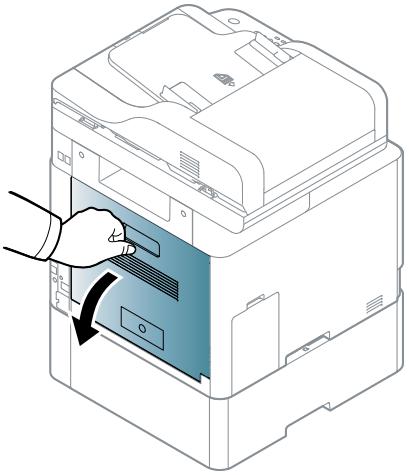


3) Reinstall the optional cassette.

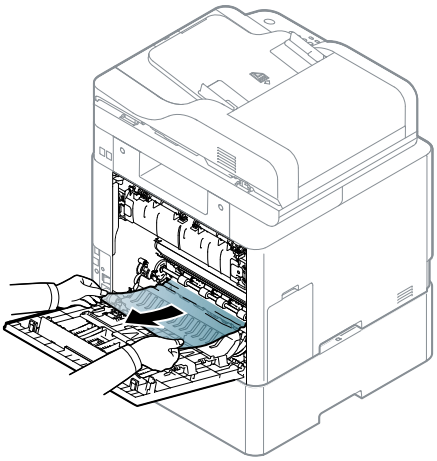


If you do not see the paper in this area, stop and go to next step:

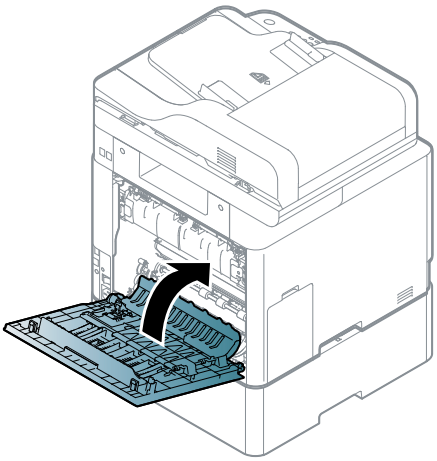
4) Open the rear cover.



5) Remove the jammed paper by gently pulling it straight out.

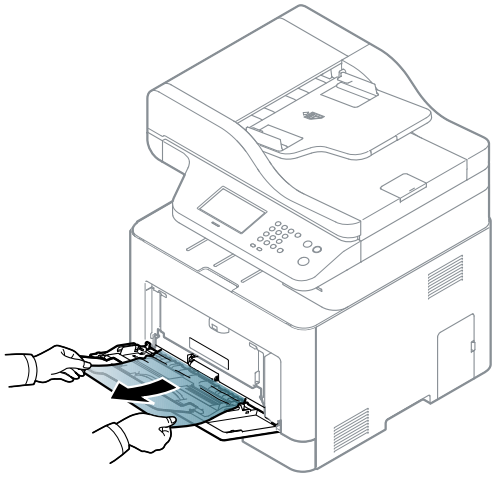


6) Close the rear cover.



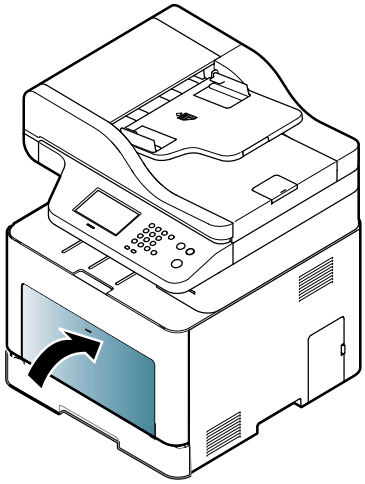
In the multi-purpose tray

1) Remove the jammed paper by gently pulling it straight out.

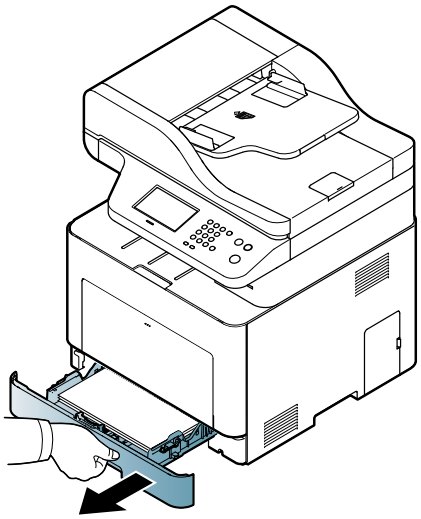


If you do not see the paper in this area, stop and go to next step:

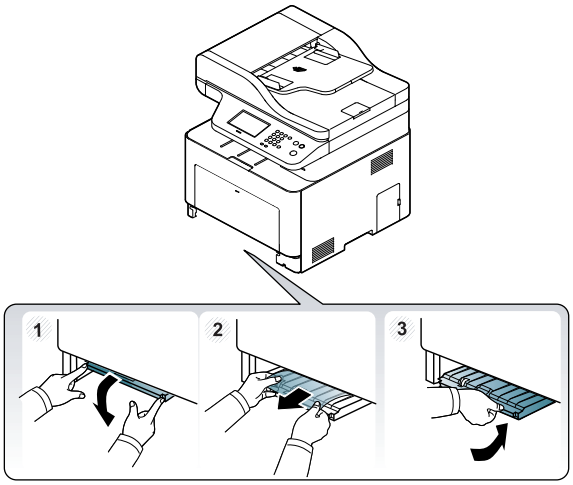
2) Close the MP tray.



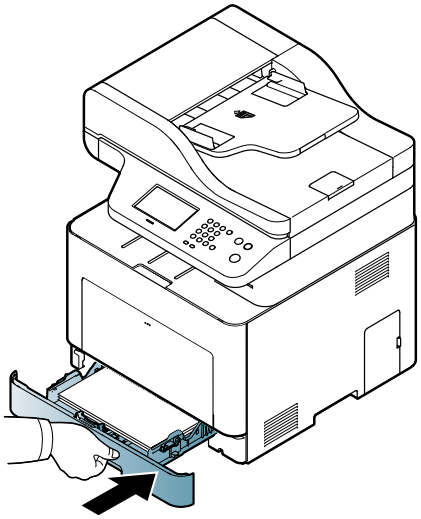
3) Take off the cassette.



4) Remove the jammed paper by gently pulling it straight out.



5) Reinstall the cassette.

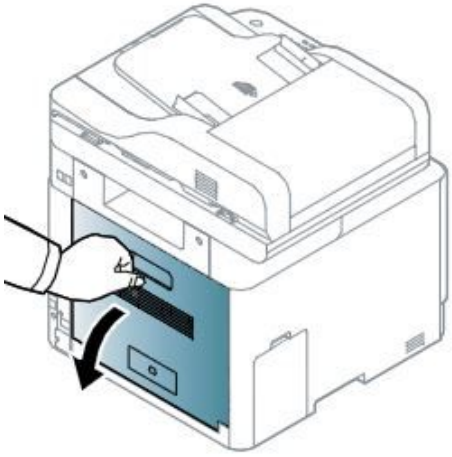


Inside the machine

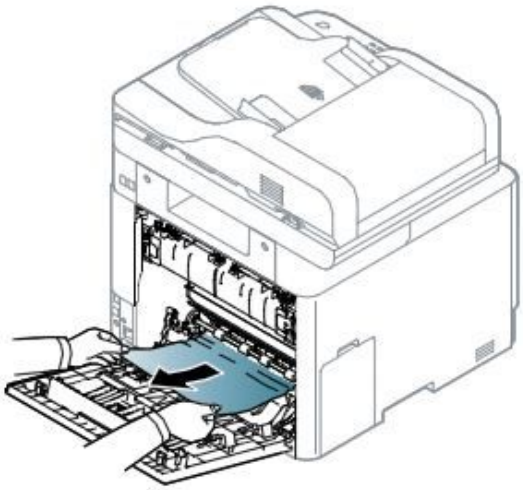
CAUTION

The fuser area is hot. Take care when removing paper from the rear of the machine.

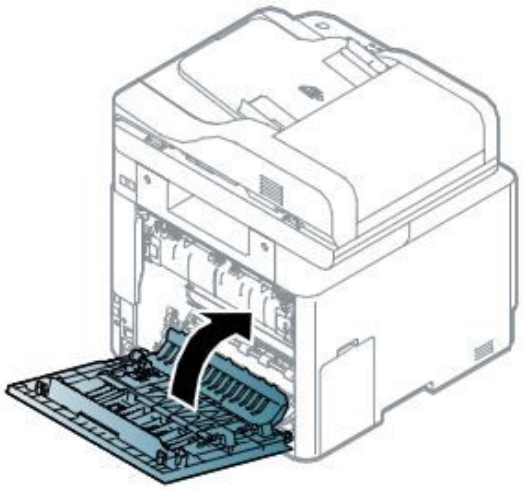
1) Open the rear cover.



2) Remove the jammed paper by gently pulling it straight out.

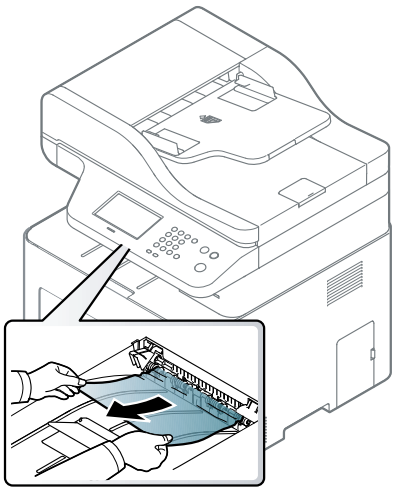


3) Close the rear cover.



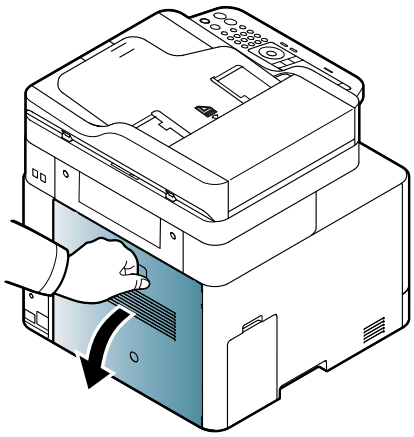
In the exit area

1) Remove the jammed paper by gently pulling it straight out.

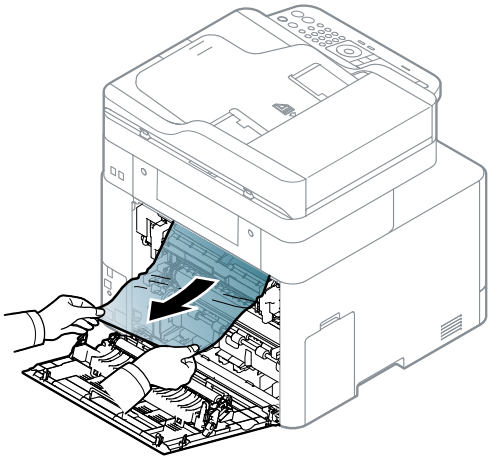


If you do not see the paper in this area, stop and go to next step:

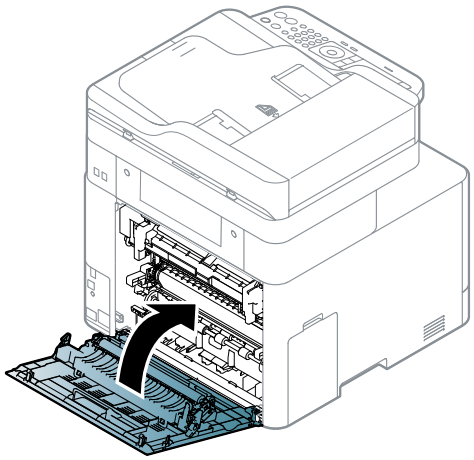
2) Open the rear cover.



3) Remove the jammed paper by gently pulling it straight out.

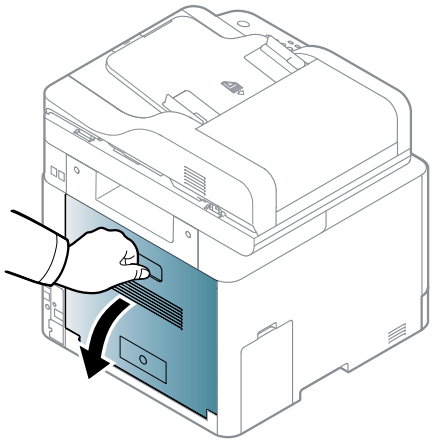


4) Close the rear cover.

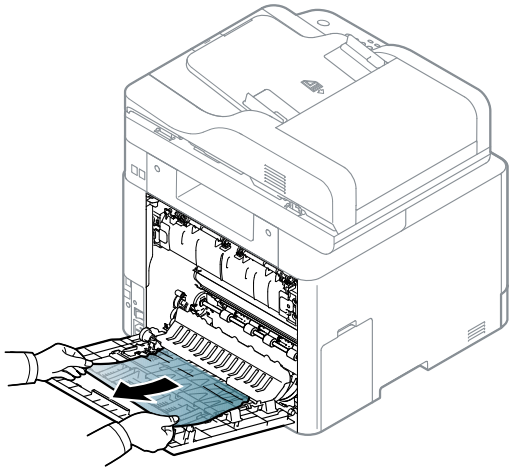


In the duplex unit area

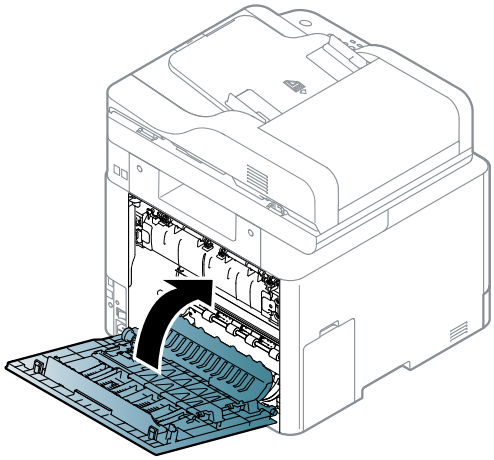
1) Open the rear cover.



2) Remove the jammed paper by gently pulling it straight out.



3) Close the rear cover.



4.5. Useful management tools

4.5.1. SyncThru™ Web Service

This chapter gives you step-by-step instructions for setting up the network environment through SyncThru™ Web Service.

NOTE

- Internet Explorer 8.0 or higher is the minimum requirement for SyncThru™ Web Service.
- Some menus may not appear on the display screen depending on the settings or models. If so, it is not applicable to your machine.

What is SyncThru™ Web Service?

If you have connected your machine to a network and set up TCP/IP network parameters correctly, you can manage the machine via SyncThru™ Web Service. Use SyncThru™ Web Service to :

- View the machine's device information and check its current status.
- Change TCP/IP parameters and set up other network parameters.
- Change the printer preference.
- Get support for using the machine.
- Upgrade machine firmware.

Accessing SyncThru™ Web Service

1) Access a web browser, such as Internet Explorer, from Windows. Enter the machine IP address of your printer (http://xxx.xxx.xxx.xxx) in the address field and press the Enter key or click Go.
2) Your machine's SyncThru™ Web Service website opens.

Logging into SyncThru™ Web Service

Before configuring options in SyncThru™ Web Service, you need to log-in as an administrator. You can still use SyncThru™ Web Service without logging in but you won't have access to Settings tab and Security tab.

1) Click Login on the upper right of the SyncThru™ Web Service website.
2) Type in the ID and Password then click Login. Type in the below default ID and password. We recommend you to change the default password for security reasons.
   - ID: admin
   - Password: sec00000

Information tab

This tab gives you general information about your machine. You can check things, such as the machine's status, supplies' status, count information, network information, and more. You can also print reports, such as configuration page.

- **Active Alerts**: Shows the alerts that have occurred in the machine and their severity.
- **Supplies**: Shows how many pages are printed and amount of toner left in the cartridge.
- **Usage Counters**: Shows the usage count by print types: simplex and duplex.
- **Current Settings**: Shows the machine's and network's information.

- **Print Information**: Prints reports such as system related reports, e-mail address, and font reports.

Settings tab

This tab allows you to set configurations provided by your machine and network. You need to log-in as an administrator to view this tab.

- **Machine Settings**: Sets options provided by your machine.
- **Network Settings**: Shows options for the network environment. Sets options such as TCP/IP and network protocols.

Security tab

This tab allows you to set system and network security information. You need to log-in as an administrator to view this tab.

- **System Security**: Sets the system administrator's information and also enables or disables machine features.
- **Network Security**: Sets settings for HTTPs, IPSec, IPv4/IPv6 filtering, 802.1x, and Authentication servers.

Maintenance tab

This tab allows you to maintain your machine by upgrading firmware and setting contact information for sending emails. You can also connect to Samsung website or download drivers by selecting the Link menu.

- **Firmware Upgrade** : You can check the firmware version used in the machine. Check the version and update it if necessary.
- **Application Management** : You can add or delete applications/license. If you add an application, you need to activate the license of the installed application. Some applications may not have a license.
- **Contact Information**: Shows the contact information.
- **Link**: You can view links to useful websites where you can:
  - view product information and get support (Samsung website).
  - download manuals and drivers.
  - order supplies.
  - register your machine on-line.

4.5.2. Samsung Easy Printer Manager

Samsung Easy Printer Manager is an application that combines Samsung machine settings into one location. Samsung Easy Printer Manager combines device settings as well as printing environments, settings/actions and launching. All of these features provide a gateway to conveniently use your Samsung machine.

NOTE

- Available for Windows and Mac OS users only.
- For Windows, Internet Explorer 6.0 or higher is the minimum requirement for Samsung Easy Printer Manager.

Understanding Samsung Easy Printer Manager

To open the program :

For Windows,

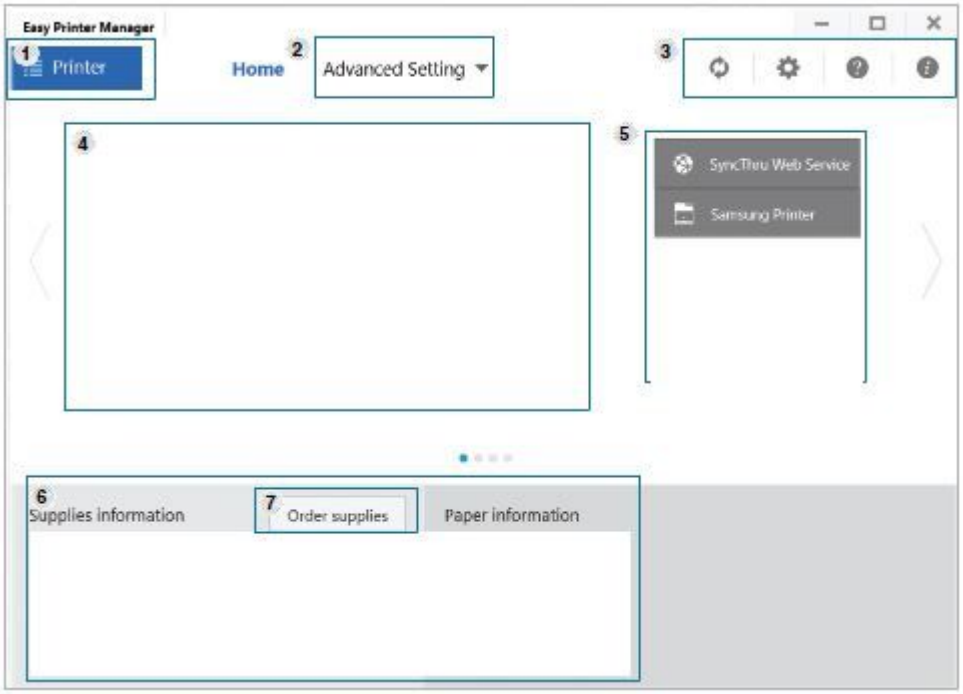
Select Start > Programs or All Programs > Samsung Printers > Samsung Easy Printer Manager .

For Mac,

The Samsung Easy Printer Manager interface is comprised of various basic sections as described in the table that follows:

NOTE

The screenshot may differ depending on operating system you are using.



1	Printer list	The Printer List displays printers installed on your computer and network printers added by network discovery (Windows only).
2	Advanced Setting	The advanced user interface is intended to be used by the person responsible for managing the network and machines. **NOTE** Some menus may not appear in the display depending on options or models. If so, it is not applicable to your machine. • **Device Settings** : You can configure various machine settings such as machine setup, paper, layout, emulation, network, and print information. **NOTE** If you connect your machine to a network, the SyncThru™ Web Service icon is enabled. • **Alert Settings (Windows only)** : This menu includes settings related to error alerting. • **Printer Alert** : Provides settings related to when alerts will be received. • **Email Alert** : Provides options relating to receiving alerts via email. • **Alert History** : Provides a history of device and toner related alerts.
3	Application information	Includes links for changing to the refresh, preference setting, help, and about.
4	Printer information	This area gives you general information about your machine. You can check information, such as the machine's model name, IP address (or Port name), and machine status. **NOTE** This button opens the Troubleshooting Guide when an error occurs. You can directly open the troubleshooting section in the user's guide.
5	Quick links	Displays Quick links to machine specific functions. This section also includes links to applications in the advanced settings. **NOTE** If you connect your machine to a network, the SyncThru™ Web Service icon is enabled.
6	Contents area	Displays information about the selected machine, remaining toner level, and paper. The information will vary based on the machine selected. Some machines do not have this feature.
7	Order supplies	Click on the Order button from the supply ordering window. You can order replacement toner cartridge(s) from online.

4.6. Service Mode (Tech Mode)

In service (tech) mode, the technician can check the machine and perform various test to isolate the cause of a malfunction. While in Tech mode, the machine still performs all normal operations.

1) Entering Service Mode

- **C306xND series**

  1) Press "**Menu > # > 1 > 9 > 3 > 4** " on the control panel continuously.

  2) Press **Menu**.

  3) Select "Tech Mode".

- **C306xFR series**

  1) Press 1,2,3 number keys on the control panel simultaneously.

  2) When the password dialog box appears, enter "1934" and press the "OK" button.

2) Service Mode Menu

NOTE

Some menu items may not appear on the display depending on the options or models.

Level 1	Level 2	Level 3	Level 4	C3060ND	C3060FR
Information	General	Machine Serial Number		X	O
		Network IP Address		X	O
	Software Version	Set Version		X	O
		Main Controller		X	O
		User Interface		X	O
		Network Controller		X	O
	Report	Configuration		O	O
		Supplies Information		O	O
		Usage Counter		O	O
		Error Information		O	O
		Fax Protocol Dump		X	O
		Fax Diagnostics		X	O
		Toner Event (Toner Event Log)		O	O
		Auto Color Registration		X	O
		Job Duty		O	O
		Auto Toning History		X	O
		Memory Usage		O	X
		Assert History		O	X
	Export Reports	Export		O	X

Level 1	Level 2	Level 3	Level 4	C3060ND	C3060FR
Maintenance Counts	Clear Counts	Enter Passcode	ADF Scan	O	O
			Platen Scan	O	O
			Fuser	O	O
			Transfer Unit	O	O
			T2 Roller	O	O
			Tray 1 Retard Roller	O	O
			Tray 2 Roller	O	O
			Tray 2 Retard Roller	O	O
			Tray 3 Roller	O	O
			Tray 3 Retard Roller	O	O
			ADF Roller	O	O
			ADF Rubber Pad	O	O
Diagnostics	Engine	NVM Initialize		O	X
		NVM Read/Write		O	O
		Test Routines		O	O
	Fax	NVM Read/Write		O	O
		Test Routines		O	O
	Scanner	Shading Test	Shading&Print	O	O
			Print	O	O
	ACS	ACS Level Adjustment	1(Color) ~ 5(Mono)	X	O
		ACS Page Adjustment	[1 ~ 5] : **5***	X	O
	System	Switch Test		O	X
	Print Test Patterns	Skew Pattern	A4/Letter	O	X
	Restart Machine			O	X
Service Functions	Memory Clear (Clear All Memory)	Country		O	O
	Clear Admin Password (Clear Admin PW)			O	O
	Format Mass Storage Device			X	O
	Engine Footer	Off *		O	O
		On			
	Part Replacement Alert	Toner	Off	O	O
			On		
	Browser Setting	Xss Auditing	Disable *	X	O
			Enable		
		Java Script Error	Off *	X	O

Level 1	Level 2	Level 3	Level 4	C3060ND	C3060FR
			Icon		
			Dialog		
		Log Level	Error *	X	O
			Info		
			Debug		
		Java Script PopUp	Disable *	X	O
			Enable		
	Capture Log	Capture Log		O	O
	UI Log Level	Normal		X	O
		Detail 1			
		Detail 2			
	SFE	SFE Code List	Off *	O	O
			On		
		Export		O	O
		Import		O	O
		Print	SFE Configuration Report	O	O
	Envelope Rotate	Off *		X	O
		90 degrees			
		180 degrees			
	Check ID Sensing	Off		O	O
		On*			

3) Information Menu

- **Information > General**

  This menu displays the machine's serial number, assigned IP address.

- **Information > Software Version**

  This menu displays all the version of the software installed in the system in detail.

- **Information > Report**

  You can print the various report that is stored in system.

  - **Configuration**

    Configuration report shows the status of the user-selectable options. You may print this list to confirm your changes after changing settings. This page provides useful information for service.

  - **Supplies Info**

    Supplies Information report shows toner cartridge information such as toner remaining, toner capacity, toner product date etc.

  - **Usage Counter**

    Usage Counter report shows the information for amount of printing usage.

  - **Error Info**

    Error Information report shows error records.

- **Information > Export Reports**

  This menu exports report to usb stick. Configuration, Error Information, Supplies Information, Usage Counter Reports are exported as the form of selected format.

4) Maintenance Counts Menu

- **Maintenance Counts > Clear Counts**

  This function resets the count value you select. After replacing the corresponding maintenance part, execute this menu to reset the count.

5) Diagnostics Menu

- **Diagnostics > Engine > NVM Read/Write**

  This menu changes a configuration value for engine firmware.

Code	Display	Meaning	Default	Max / Min
105-0030	MHV DC K	Charger HV Black DC Duty	10	20 / 0 (21Steps)
105-0031	MHV DC Color	Charger HV Color DC Duty	10	20 / 0 (21Steps)
106-0000	Deve DC Y	Deve DC Yellow	10	20 / 0 (21Steps)
106-0010	Deve DC M	Deve DC Magenta	10	20 / 0 (21Steps)
106-0020	Deve DC C	Deve DC Cyan	10	20 / 0 (21Steps)
106-0030	Deve DC K	Deve DC Black	10	20 / 0 (21Steps)
106-0121	Yellow Blade DC	Blade DC Yellow	10	20 / 0 (21Steps)
106-0122	Magenta Blade DC	Blade DC Magenta	10	20 / 0 (21Steps)
106-0123	Cyan Blade DC	Blade DC Cyan	10	20 / 0 (21Steps)
106-0124	Black Blade DC	Blade DC Black	10	20 / 0 (21Steps)
107-0030	THV K	Transfer1 HV Black Duty	10	20 / 0 (21Steps)
107-0080	THV	Transfer2 HV	10	20 / 0 (21Steps)
109-0010	Print Temp	Target Temperature during run mode.	10	20 / 0 (21Steps)
110-0040	LD Power Y	Yellow LD Power at Normal Speed	10	20 / 0 (21Steps)
110-0050	LD Power M	Magenta LD Power at Normal Speed	10	20 / 0 (21Steps)
110-0060	LD Power C	Cyan LD Power at Normal Speed	10	20 / 0 (21Steps)
110-0070	LD Power K	Black LD Power at Normal Speed	10	20 / 0 (21Steps)

- **Diagnostics > Engine > Test Routine**

  This menu performs test routines for the engine.

Code	Display	Meaning	State Displayed
100-0020	K OPC Motor	Black OPC/DEV BLDC Motor is On/Off	On[Off]
100-0030	K OPC Motor Rdy	Detect if Black OPC/DEV BLDC Motor runs at normal speed	High[Low]
100-0040	Color OPC	Color OPC BLDC Motor is On/Off	On[Off]
100-0050	Color OPC Rdy	Detect if Color DEV BLDC Motor runs at normal speed	High[Low]

Code	Display	Meaning	State Displayed
100-0120	Exit Mot Fwd	Exit Motor Forward Fast On/Off	On[Off]
100-0131	Exit Mot Bwd	Exit Motor Forward Backward On/Off	On[Off]
100-0260	SMPS Fan	Start/Stop SMPS Fan run	On[Off]
100-0340	Feed Mot	Feed Motor is On/Off	On[Off]
101-0000	MP Feed Clutch	Engages drive to pick up a paper from bypass Tray(MP Tray).	On[Off]
101-0010	Tray1 Pickup	Engages drive to pick up a paper from tray1.	On[Off]
101-0020	Tray2 Pickup	Engages drive to pick up a paper from tray2. (Optional)	On[Off]
101-0030	Tray3 Pickup	Engages drive to pick up a paper from tray3. (Optional)	On[Off]
101-0050	Registration	Engages drive to registartion rolls.	On[Off]
101-0070	Dup Gate	Engages drive to convert paper direction into duplex path.	On[Off]
101-0090	T2 Feed Clutch	T2 Feed Clutch On/Off	On[Off]
101-0100	T3 Feed Clutch	T3 Feed Clutch On/Off	On[Off]
101-0130	T2 Feed Mot	T2 Feed Motor On/Off	On[Off]
101-0131	T2 Feed Slow	T2 Feed Motor Slow On/Off	On[Off]
101-0140	T3 Feed Mot	T3 Feed Motor On/Off	On[Off]
101-0141	T3 Feed Slow	T3 Feed Motor Slow On/Off	On[Off]
101-0190	OutBin Full	Detect when a paper is at Out-Bin Full Sensor	High[Low]
101-0230	T1 Release	T1 Nip Release	On[Off]
101-0240	DR Release	DR Nip Release	On[Off]
101-0250	Knock Up Plate	Knock Up Plate	On[Off]
102-0010	Tray1 Empty	Detect when paper is in Tray1.	High[Low]
102-0080	Tray2 Empty	Detect when paper is in tray2.	High[Low]
102-0150	Tray3 Empty	Detect when paper is in tray3.	High[Low]
102-0280	MP Empty	Detects when paper is in Bypass Tray(MP Tray).	High[Low]
102-0291	MP Feed Sens	Detect when a paper is at MP Feed sensor.	High[Low]
102-0360	Regi Sens	Detect when a paper is at Regi. sensor.	High[Low]
102-0370	Exit Sens	Detect when a paper is at Exit. sensor.	High[Low]
105-0030	K MHV Bias	Black MHV bias voltage on at normal drive level	On[Off]
105-0031	Color MHV Bias	Color MHV bias voltage on at normal drive level	On[Off]
106-0000	Y Dev Bias	Yellow Dev bias voltage on at normal drive level	On[Off]
106-0010	M Dev Bias	Magenta Dev bias voltage on at normal drive level	On[Off]
106-0020	C Dev Bias	Cyan Dev bias voltage on at normal drive level	On[Off]

Code	Display	Meaning	State Displayed
106-0030	K Dev Bias	Black Dev bias voltage on at normal drive level	On[Off]
106-0060	DR Nip Home	Detect DR Nip Home position	High[Low]
106-0070	Y Blade DC	Yellow Blade DC	On[Off]
106-0080	M Blade DC	Magenta Blade DC	On[Off]
106-0090	C Blade DC	Cyan Blade DC	On[Off]
106-0100	K Blade DC	Black Blade DC	On[Off]
107-0071	YMCK THV Bias	THV bias voltage on at normal drive level	On[Off]
107-0072	YMCK THV BiasR	Detect what the THV value is on the THV Roller	Numeric 3 digits
107-0073	YMCK THV- Bias	THV bias voltage on at normal drive level	On[Off]
107-0080	THV +	iTHV plus bias voltage on at normal drive level	On[Off]
107-0090	THV + R	Detect what the THV value is on the iTHV Roller	Numeric 3 digits
107-0160	Erase Lamp	Erase Lamp 1	On[Off]
107-0161	Erase Lamp 2	Erase Lamp 2	On[Off]
107-0190	T1 Nip Home	Detect T1 Nip Home position	High[Low]
109-0000	Temp A	Detects what the temperature A is on fuser.	Numeric 3 digits
109-0011	LSU Temp	LSU Temperature	Numeric 3 digits
109-0012	Inner Temp	Inner Temperature	Numeric 3 digits
109-0013	Outer Temp	Outer Temperature	Numeric 3 digits
109-0014	Humidity	Humidity	Numeric 3 digits
109-0020	Fuser Fan Rdy	Detects if Fuser Fan Motor runs at normal speed.	High[Low]
109-0034	Fuser Mot Rdy	Detect if Fuser Motor runs at each speed	High[Low]
109-0040	Fuser Fan Run	Fuser Fan Motor On/Off	On[Off]
109-0140	Fuser Home	Detect if the fuser press is located Home position.	High[Low]
110-0000	LSU Mot1 Rdy	Detects if LSU motor1 runs at normal speed.	High[Low]
110-0060	LSU Mot1 Run	LSU Motor1 On/Off	On[Off]
110-0080	LD Power1	LSU LD1 Power On/Off (yellow)	On[Off]
110-0090	LD Power2	LSU LD2 Power On/Off (magenta)	On[Off]
110-0100	LD Power3	LSU LD3 Power On/Off (cyan)	On[Off]
110-0110	LD Power4	LSU LD4 Power On/Off (black)	On[Off]
110-0140	LSU HSync1	Detect LSU HSync1 (yellow)	High[Low]
110-0150	LSU HSync2	Detect LSU HSync2 (magenta)	High[Low]
110-0160	LSU HSync3	Detect LSU HSync3 (cyan)	High[Low]
110-0170	LSU HSync4	Detect LSU HSync4 (black)	High[Low]
111-0080	ID Sensor	Start ID sensor sensing On/Off	On[Off]
111-0090	IC Sensor Chk	Display ID sensor reading value	Numeric 3 digits

- **Diagnostics > Fax > NVM Read/Write**

  This menu changes a configuration value for fax.

Code	Name	Description	Default	Range
20-200	Pause Dial Time	Pause Time (value * 1000ms)	Country Value	0~200
20-210	Dial Pul. M/B	33 / 66 40 / 60	Country Value	0=OPTION_DP_33 1=OPTION_DP_40 2=OPTION_DP_37 3=OPTION_DP_50
20-220	AutoDial P-Time	Pause time before auto-dialing (second)	1	0~10
20-300	Ring On Time	Ring On Time (ms)	170	90~800
20-310	Ring Off Time	Ring Off Time (ms)	560	90~800
20-320	Ring Det. Freq	sets the Call Indication frequency range that will be detected by LIU	1	1=12-80hz 2=16-55hz 3=20-55hz 4=22-55hz
20-330	Ring On Max Time	Ring On Max Time (ms)	5100	3000~12000
20-340	Ring Off Max Time	Ring Off Max Time (ms)	11100	9000~22000
20-400	DTMF H-Freq Lv	DTMF High-Freq. Level (dBm)	Country Value	0~15
20-410	DTMF L-Freq Lv	DTMF Low-Freq. Level (dBm)	Country Value	0~15
20-420	DTMF Timing	DTMF duration of on/off output (Ms)	8	1=80/80 2=70/70 3=70/150 4=60/60 5=80/100 6=150/50 7=150/240 8=100/100 9=100/80
20-500	Dial Mode	Select Tone / Pulse	Country Value	0=OPTION_TONE MODE 1=OPTION_PULSE MODE
20-520	Error Rate	Adjust Error Rate (Off / 5% / 10% / 20%)	2	0=OPTION_RATE OFF 1=OPTION_RATE 5 2=OPTION_RATE 10 3=OPTION_RATE 20
20-530	Dial tone detect	detect dial tone prior to sending	Country Value	0=OPTION_OFF 1=OPTION_ON

Code	Name	Description	Default	Range
20-540	Loop cur. det.	detect if loop current is present prior to sending	Country Value	0=OPTION_OFF 1=OPTION_ON
20-550	Busy sngl det.	detect busy signal to allow redials	Country Value	0=OPTION_OFF 1=OPTION_ON
20-560	TCF Duration	Adjust TCF duration (ms)	1500	1000~3000
20-570	Continuous Frame	disables continuous TX frame command in Phase B. (DCS Only)	1	0=OPTION_OFF 1=OPTION_ON

Code	Name	Description	Default	Range
20-800	Modem Speed	Select Modem Start Speed	24	0=MODEM_V21 300BPS 1=MODEM_V27 2400BPS 2=MODEM_V27 4800BPS 3=MODEM_V29 7200BPS 4=MODEM_V29 9600BPS 5=MODEM_V33 12000BPS 6=MODEM_V33 14400BPS 7=MODEM_V17 7200BPS 8=MODEM_V17 9600BPS 9=MODEM_V17 12000BPS 10=MODEM_V17 14400BPS 11=MODEM_V34 2400BPS 12=MODEM_V34 4800BPS 13=MODEM_V34 7200BPS 14=MODEM_V34 9600BPS 15=MODEM_V34 12000BPS 16=MODEM_V34 14400BPS 17=MODEM_V34 16800BPS 18=MODEM_V34 19200BPS 19=MODEM_V34 21600BPS 20=MODEM_V34 24000BPS 21=MODEM_V34 26400BPS 22=MODEM_V34 28800BPS 23=MODEM_V34 31200BPS 24=MODEM_V34 33600BPS

Code	Name	Description	Default	Range
20-810	Fax Trans. Lv	Adjust Fax Transmission Level (dBm)	Country Value	Country Value
20-830	AutoDialTimeout	Adjust Auto Dial Timeout (second)	Country Value	30~150
20-920	CNG Det. Cnt	CNG Tone Detection check count during ANS/FAX mode.	2	1~15
20-930	Caller ID	This option is needed to guide Caller ID off for user environment.	Country Value	0=OPTION_OFF 1=OPTION_ON
20-940	Ext. Phone	Ext. Phone Detection Enable/Disable (Default : Enable 1) If disabled, Ext. Phone cannot be detected by the device.	1	0=Disable 1=Enable

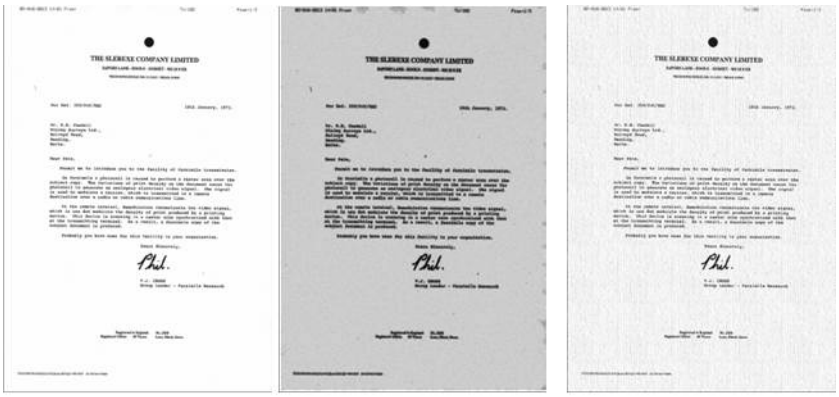
- **Diagnostics > Fax > Test Routine**

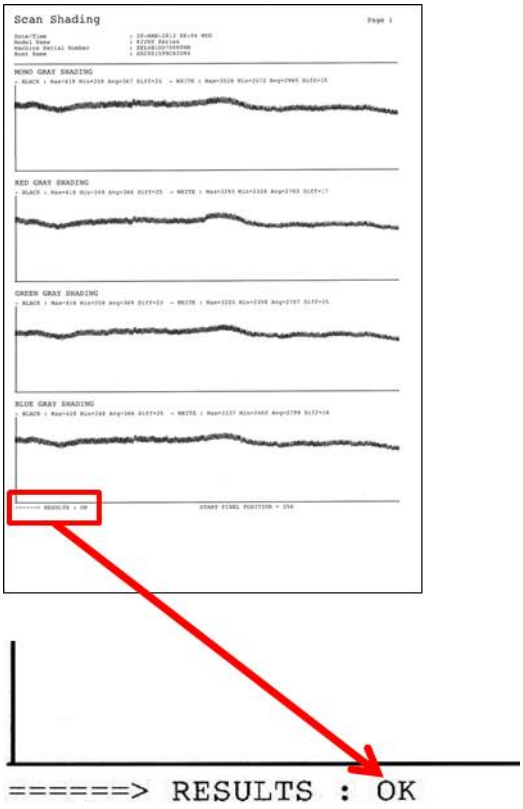
  This menu performs test routines for the fax.

Code	Name	Description	State Displayed
20-012	Sngl T 1100 L1	Emits single tone 1100Hz on line 1	On / Off
20-014	Sngl T 1650 L1	Emits single tone 1650Hz on line 1	On / Off
20-015	Sngl T 1850 L1	Emits single tone 1850Hz on line 1	On / Off
20-016	Sngl T 2100 L1	Emits single tone 2100Hz on line 1	On / Off
20-020	DTMF # L1	Emits DTMF # on line 1	On / Off
20-021	DTMF * L1	Emits DTMF * on line 1	On / Off
20-022	DTMF 0 L1	Emits DTMF 0 on line 1	On / Off
20-023	DTMF 1 L1	Emits DTMF 1 on line 1	On / Off
20-024	DTMF 2 L1	Emits DTMF 2 on line 1	On / Off
20-025	DTMF 3 L1	Emits DTMF 3 on line 1	On / Off
20-026	DTMF 4 L1	Emits DTMF 4 on line 1	On / Off
20-027	DTMF 5 L1	Emits DTMF 5 on line 1	On / Off
20-028	DTMF 6 L1	Emits DTMF 6 on line 1	On / Off
20-029	DTMF 7 L1	Emits DTMF 7 on line 1	On / Off
20-030	DTMF 8 L1	Emits DTMF 8 on line 1	On / Off
20-031	DTMF 9 L1	Emits DTMF 9 on line 1	On / Off
20-040	V.21 300 L1	Emits V.21 300 bps Line1	On / Off
20-041	V.27ter2400 L1	Emits V.27ter 2400 bps Line1	On / Off
20-042	V.27ter4800 L1	Emits V.27ter 4800 bps Line1	On / Off
20-043	V.29 7200 L1	Emits V.29 7200 bps Line1	On / Off
20-044	V.29 9600 L1	Emits V.29 9600 bps Line1	On / Off
20-045	V.17 7200 L1	Emits V.17 7200 bps Line1	On / Off
20-046	V.17 9600 L1	Emits V.17 9600 bps Line1	On / Off
20-047	V.17 12000 L1	Emits V.17 12000 bps Line1	On / Off
20-048	V.17 14400 L1	Emits V.17 14400 bps Line1	On / Off
20-049	V.34 2400 L1	Emits V.34 2400 bps Line1	On / Off
20-050	V.34 4800 L1	Emits V.34 4800 bps Line1	On / Off

Code	Name	Description	State Displayed
20-051	V.34 7200 L1	Emits V.34 7200 bps Line1	On / Off
20-052	V.34 9600 L1	Emits V.34 9600 bps Line1	On / Off
20-053	V.34 12000 L1	Emits V.34 12000 bps Line1	On / Off
20-054	V.34 14400 L1	Emits V.34 14400 bps Line1	On / Off
20-055	V.34 16800 L1	Emits V.34 16800 bps Line1	On / Off
20-056	V.34 19200 L1	Emits V.34 19200 bps Line1	On / Off
20-057	V.34 21600 L1	Emits V.34 21600 bps Line1	On / Off
20-058	V.34 24000 L1	Emits V.34 24000 bps Line1	On / Off
20-059	V.34 26400 L1	Emits V.34 26400 bps Line1	On / Off
20-060	V.34 28800 L1	Emits V.34 28800 bps Line1	On / Off
20-061	V.34 31200 L1	Emits V.34 31200 bps Line1	On / Off
20-062	V.34 33600 L1	Emits V.34 33600 bps Line1	On / Off

- **Diagnostics > Scanner > Shading Test**

Purpose	• To check quality of scanned images, especially defect in optical devices, including lens, mirror, lamp, and etc, are suspected. • To check quality problem as shown below  Normal Image Defected Image Defected Image
Operation Procedure	1) Enter SVC mdoe. Select the following menu. (**Diagnostics > Scanner > Shading Test > Shading&Print**) 2) Check if RESULTS on the printed sheet is OK.

Verification	

- **Diagnostics > ACS**

Purpose	To set the color coverage ratio of auto color mode in copy function. • Color Coverage Ratio : The ratio of color contents in the original document.
Operation Procedure	Change the level from 1 to 5. • Classifies a document as color, if color coverage of the document is higher than predefined level. • Level 1 has higher probability of classifying documents to color, while level 5 has lower probability.
Verification	Copy the ‘mono copied’ original with auto color mode and check if print out is monochrome.

- **Diagnostics > System > Switch Test**

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

- **Diagnostics > Skew Pattern**

  This menu prints the skew patten stored in the machine.

- **Diagnostics > Restart Machine**

  This menu reboots the mahcine.

6) Service Functions Menu

- **Service Functions > Memory Clear (or Clear All Mem.)**

  The function resets the system to factory default settings. This function is used to reset the system to the initial value when the product is functioning abnormally . All the values are returned to the default values, and all the information, which was set by the user, will be erased.

  NOTE

  Always perform a memory clear after replacing the main board. Otherwise, the system may not operate properly.

- **Service Functions > Clear Admin Password (or Clear Admin PW)**

  This menu resets the Admin password.

- **Service Functions > Format Mass Storage > Device**

  This menu executes SD card format.

- **Service Functions > Engine Footer**

  This function is for monitoring of the engine status. If you perform this function, at printing, the setting value for engine is shown on the bottom of the printed page.

- **Service Functions > Part Replacement Alert > Toner**

  This function is to set up whether or not to show the toner replacement alert.

- **Service Functions > Brower Setting**

  This menu provides the function to configure below items for development purpose.

  - XSS Auditing : configures whether to allow cross site scripting capability or not (Disable / Enable). Default is "Disable"
  - Java Script Error : configures whether to display java script error at browser. Default is "Off"
    - Off : No display about errors
    - Icon : When there is an error, it just shall be displayed as an icon at upper right corner. When browser move to other page, icon shall be disappeared.
    - Dialog : When there is an error, browser shall pop up window with errors. Once user press OK. dialog shall be closed.
  - Log Level : displays Log Level (Error, Info, Debug) of Web browser for debug purpose, default is "Error"
  - Java Script PopUp : configures whether to support javascript Popup (alert,confirm,prompt). Default is "Disable".
  - Reset : resets values to their default. (Xss Auditing, Java Script Error, Log Level, Java Script Popup)

- **Service Functions > Capture Log**

  This function copies all the saved log in the system to a UBS memory as a zip file. Note that the size of system log could reach up to 1GB. If the system log size become considerably huge, it will take longer time to copy to the plugged memory.

- **Service Functions >UI Log Level**

  This menu is to check the UI debug message for development.

- **Service Functions > SFE**

  Special Feature Enablement (SFE) means to provide the configurable options (On/Off) in service mode for technicians or dealers to satisfy the requirements from B2B sites easily without changing the firmware installed in a device.

SFE Code	Description
001	In case of printing in directional media (Letterhead/Preprinted/Punched), the device prints as the same output direction regardless of simplex or duplex.
002	The device always prints output as mono about PC printing.
007	The device prints as original 1 dot line without 2 dot line compensation.
008	The device ignores paper size command in PRN and prints as paper size in tray.
009	PJL readback response is changed with HPOS. 1) Add <CR><LF> to EOJ response. 2) No EOJ job but EOJ response occurs. 3) Device uses Job name instead of EOJ name.
010	Maximum value of 'Power save time' is increased as 240 min.
012	If the device is in jam status, all print jobs except secure or stored jobs are deleted automatically.
013	The device ignores the USB memory stick and detects only card reader.
014	When the authenticated user uses scan to email, user's email address is added automatically.
019	User ID is not case-sensitive for login
024	The device executes copy job as only mono even though color copy is started.
032	If this SFE option is enabled, the image processor shall not omit line that is less than 1 dot. By PCL 6 command rule, the device shall not print less than 1 dot line. But this SFE is enabled, the device shall print it.
033	If this SFE option is enabled, the image processor shall draw Letter Gothic font as previous thickness(Bitstream) thicker than URW++.
035	The device shall provide auto scale for A3/Leger to A4/Letter in case of A4 Models that doesn't support A3/Ledger size.
037	The device shall permit or ignore host printing job by permit key PJL command from solution such as IPRINT.

- **Service Functions > Envelope Rotate**

  This menu is enabling rotate when printing on envelope. The machine usually guides to load envelope with SEF direction. If this function is enabled, the user can load envelope with LEF direction and the machine shall rotate image for printing exactly on envelope.

  This function shall provide the setting options as follows:

  - Off (default) : Load envelope SEF direction
  - 90 degrees : Load envelope LEF direction
  - 180 degrees : Load envelope SEF direction with flap is bottom side

Off 90 degrees 180 degrees

NOTE

1) If the paper source is 'Auto', the device shall feed from MP Tray. Because the LEF envelope can be loaded only in MP Tray according to Paper Specification.

2) If the length of envelope is over max size of custom width, the device shall not rotate image and just determine the direction of envelope is SEF.
For example, the A4 model support custom size like W 98-216 ~ L148-356. This model doesn't support C5 Env.(162x229) DL Env.(110x220), No9 Env.(98x225), No10 Env.(105x241) rotation.

- **Service Functions > Check ID Sensing**

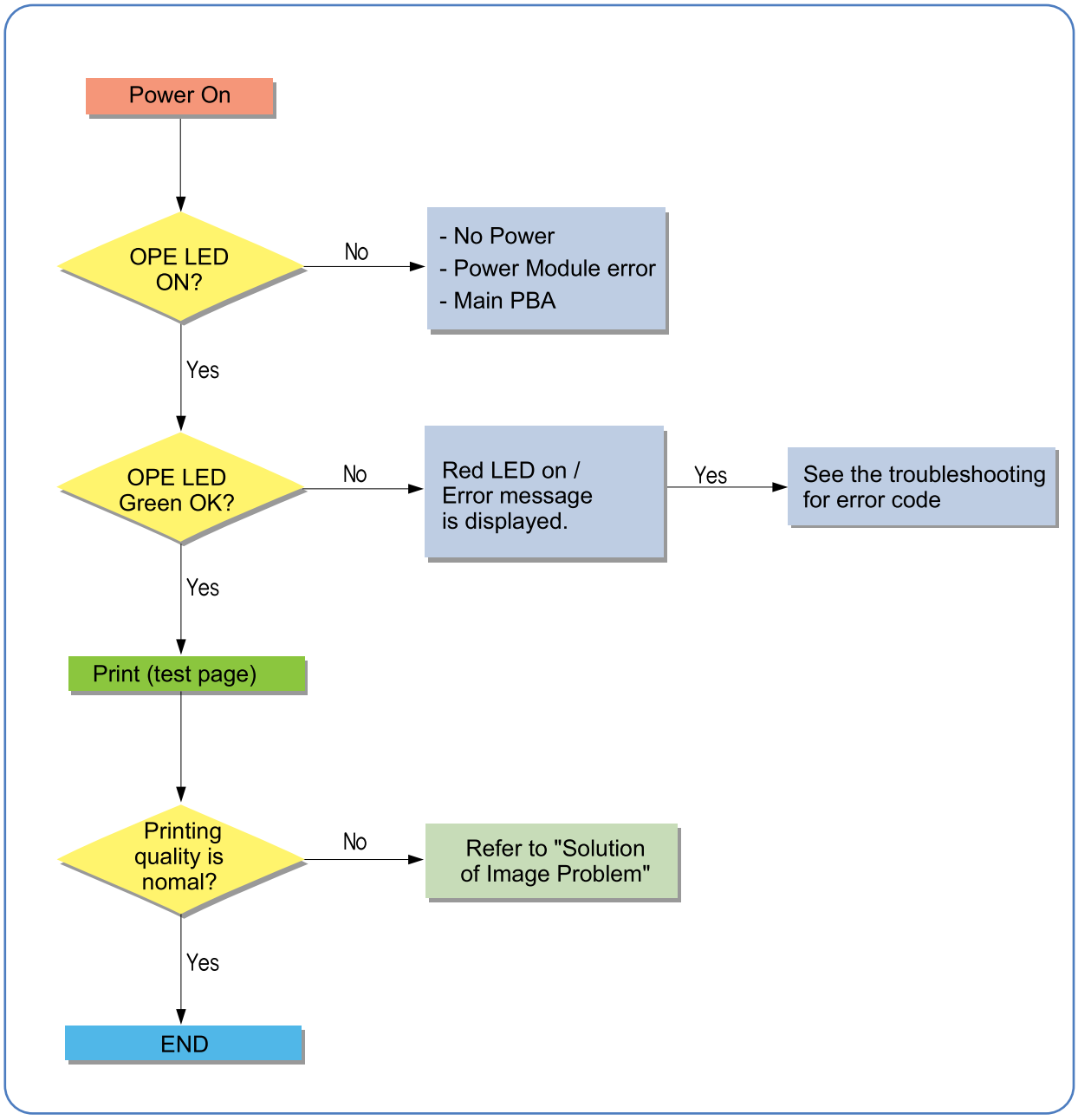
  This menu sets up operation for CTD calibraiton according to engine status.

  - On : executes CTD calibration accroding to engine status. This may skip the CTD calibraiton while machine comes to determined condition.
  - Off : executes CTD calibration according to determined condition.

4.7. Troubleshooting

4.7.1. Procedure of checking the symptoms

Before attempting to repair the printer first obtain a detailed description of the problem from the customer.



4.7.2. Error Code and Troubleshooting

Messages appear on the control panel display to indicate the machine's status or errors.

NOTE

Some messages may not appear on the display depending on the options or models.

Error Code	Error Message	Troubleshooting Page
11-2T11	Paper mismatch Tray 1 Load [A4] [Plain] ontinue ⊙ Cancel X	P.4-46
11-2T21	Paper mismatch Tray 2 Load [A4] [Plain] Continue ⊙ Cancel X	P.4-46
11-2T31	Paper mismatch Tray 3 Load [A4] [Plain] Continue ⊙ Cancel X	P.4-46
11-2T61	Paper mismatch MPT Load [A4] [Plain] Continue ⊙ Cancel X	P.4-46
A1-1210	Error: #A1-1210 / Motor Failure: #A1-1210. Turn off then on. Call for service if the problem persists	P.4–47
A1-3621	Error: #A1-3621 / Motor Failure: #A1-3621. Turn off then on. Call for service if the problem persists	P.4–48
A1-3622	Error: #A1-3622 / Motor Failure: #A1-3622. Turn off then on. Call for service if the problem persists	P.4–48
A1-4111	Error: #A1-4111 / Motor Failure: #A1-4111. Turn off then on. Call for service if the problem persists	P.4–48
A1-4112	Error: #A1-4112 / Motor Failure: #A1-4112. Turn off then on. Call for service if the problem persists	P.4–48
A1-4310	Error: #A1-4310 / Motor Failure: #A1-4310. Turn off then on. Call for service if the problem persists	P.4–48
A2-1210	Error: #A2-1210 / Fan Failure: #A2-1210. Turn off then on. Call for service if the problem persists	P.4–49
A2-2110	Error: #A2-2110 / Fan Failure: #A2-2110. Turn off then on. Call for service if the problem persists	P.4–49
A3-3211	Error: #A3-3211 / Sensor Failure: #A3-3211. Turn off then on. Call for service if the problem persists	P.4–49
A3-3212	Error: #A3-3212 / Sensor Failure: #A3-3212. Turn off then on. Call for service if the problem persists	P.4–49
A3-3311	Error: #A3-3311 / Sensor Failure: #A3-3311. Turn off then on. Call for service if the problem persists	P.4–50
A3-3312	Error: #A3-3312 / Sensor Failure: #A3-3312. Turn off then on. Call for service if the problem persists	P.4–50
A3-3320	Not proper Room Temp / The room temperature is not suitable for this set use. Please adjust room temperature	P.4–50
C2-2110	Prepare new Y toner/ Prepare new yellow toner cartridge	P.4–51
C2-2120	Replace new Y toner / Replace with new yellow toner cartridge	P.4–51
C2-2140	Replace new Y toner / End of life, Replace with new yellow toner cartridge	P.4–51
C2-2150	Replace new Y toner / Replace with new yellow toner cartridge	P.4–51
C2-2160	Replace new Y toner / Replace with new yellow toner cartridge	P.4–51
C2-2170	Replace new Y toner / End of life, Replace with new yellow toner cartridge	P.4–51
C2-2410	Y toner not installed / Install yellow toner cartridge	P.4–51

Error Code	Error Message	Troubleshooting Page
C2-2512	Y Toner Not Compatible / Yellow toner cartridge is not compatible. Check guide	P.4–52
C2-2515	Yellow toner country info. error / The toner cartridge is not compatible with your country. Install new toner cartridge	P.4–52
C2-2517	Error: #C2-2517 / Yellow Toner Failure: #C2-2517. Call for service	P.4–52
C2-2518	Error: #C2-2518 / Yellow Toner Failure: #C2-2518. Call for service	P.4–52
C2-2526	Y Toner Mismatch / Toner mismatch on yellow toner cartridge position. Install again in the proper position.	P.4–52
C2-2711	Error: #C2-2711 / Toner Cart Failure: #C2-2711. Call for service	P.4–52
C2-2712	Error: #C2-2712 / Toner Cart Failure: #C2-2712. Call for service	P.4–52
C2-2713	Error: #C2-2713 / Toner Cart Failure: #C2-2713. Call for service	P.4–52
C2-2714	Error: #C2-2714 / Toner Cart Failure: #C2-2714. Call for service	P.4–52
C2-3110	Prepare new M toner/ Prepare new magenta toner cartridge	P.4–53
C2-3120	Replace new M toner / Replace with new magenta toner cartridge	P.4–53
C2-3140	Replace new M toner / End of life, Replace with new magenta toner cartridge	P.4–53
C2-3150	Replace new M toner / Replace with new magenta toner cartridge	P.4–53
C2-3160	Replace new M toner / Replace with new magenta toner cartridge	P.4–53
C2-3170	Replace new M toner / End of life, Replace with new magenta toner cartridge	P.4–53
C2-3410	M toner not installed / Install magenta toner cartridge	P.4–53
C2-3512	M toner Not Compatible / Magenta toner cartridge is not compatible. Check guide	P.4–54
C2-3515	Magenta toner country info. error / The toner cartridge is not compatible with your country. Install new toner cartridge	P.4–54
C2-3517	Error: #C2-3517 / Magenta Toner Failure: #C2-3517. Call for service	P.4–54
C2-3518	Error: #C2-3518 / Magenta Toner Failure: #C2-3518. Call for service	P.4–54
C2-3526	M Toner Mismatch / Toner mismatch on Magenta toner cartridge position. Install again in the proper position.	P.4–54
C2-3711	Error: #C2-3711 / Toner Cart Failure: #C2-3711. Call for service	P.4–54
C2-3712	Error: #C2-3712 / Toner Cart Failure: #C2-3712. Call for service	P.4–54
C2-3713	Error: #C2-3713 / Toner Cart Failure: #C2-3713. Call for service	P.4–54
C2-3714	Error: #C2-3714 / Toner Cart Failure: #C2-3714. Call for service	P.4–54
C2-4110	Prepare new C toner / Prepare new cyan toner cartridge	P.4–55
C2-4120	Replace new C toner / Replace with new cyan toner cartridge	P.4–55
C2-4140	Replace new C toner / End of life, Replace with new cyan toner cartridge	P.4–55
C2-4150	Replace new C toner / Replace with new cyan toner cartridge	P.4–55
C2-4160	Replace new C toner / Replace with new cyan toner cartridge	P.4–55
C2-4170	Replace new C toner / End of life, Replace with new cyan toner cartridge	P.4–55
C2-4410	C toner not installed / Install cyan toner cartridge	P.4–55
C2-4512	C toner Not Compatible / Cyan toner cartridge is not compatible. Check guide	P.4–56
C2-4515	Cyan toner country info. error / The toner cartridge is not compatible with your country. Install new toner cartridge	P.4–56
C2-4517	Error: #C2-4517 / Cyan Toner Failure: #C2-4517. Call for service	P.4–56

Error Code	Error Message	Troubleshooting Page
C2-4518	Error: #C2-4518 / Cyan Toner Failure: #C2-4518. Call for service	P.4–56
C2-4526	C Toner Mismatch / Toner mismatch on Cyan toner cartridge position. Install again in the proper position.	P.4–56
C2-4711	Error: #C2-4711 / Toner Cart Failure: #C2-4711. Call for service	P.4–56
C2-4712	Error: #C2-4712 / Toner Cart Failure: #C2-4712. Call for service	P.4–56
C2-4713	Error: #C2-4713 / Toner Cart Failure: #C2-4713. Call for service	P.4–56
C2-4714	Error: #C2-4714 / Toner Cart Failure: #C2-4714. Call for service	P.4–56
C2-5110	Prepare new K toner / Prepare new black toner cartridge	P.4–57
C2-5120	Replace new K toner / Replace with new black toner cartridge	P.4–57
C2-5140	Replace new toner / End of life, Replace with new black toner cartridge	P.4–57
C2-5150	Replace new K toner / Replace with new black toner cartridge	P.4–57
C2-5160	Replace new K toner / Replace with new black toner cartridge	P.4–57
C2-5170	Replace new K toner / End of life. Replace with new black toner cartridge	P.4–57
C2-5410	K toner not installed / Install black toner cartridge	P.4–57
C2-5512	K toner Not Compatible / Black toner cartridge is not compatible. Check guide	P.4–58
C2-5515	Black toner country info. error / The toner cartridge is not compatible with your country. Install new toner cartridge	P.4–58
C2-5517	Error: #C2-5517 / Black Toner Failure: #C2-5517. Call for service	P.4–58
C2-5518	Error: #C2-5518 / Black Toner Failure: #C2-5518. Call for service	P.4–58
C2-5526	K Toner Mismatch / Toner mismatch on Black toner cartridge position. Install again in the proper position.	P.4–58
C2-5711	Error: #C2-5711 / Toner Cart Failure: #C2-5711. Call for service	P.4–58
C2-5712	Error: #C2-5712 / Toner Cart Failure: #C2-5712. Call for service	P.4–58
C2-5713	Error: #C2-5713 / Toner Cart Failure: #C2-5713. Call for service	P.4–58
C2-5714	Error: #C2-5714 / Toner Cart Failure: #C2-5714. Call for service	P.4–58
C5-1110	Prepare TR.belt / Prepare new Image transfer belt unit	P.4–59
C5-1120	Replace TR. belt / Replace with new Image transfer belt unit	P.4–59
C5-1310	Install TR. belt unit / Install transfer belt unit	P.4–59
C5-1410	TR belt Not compatible / Transfer belt unit is not compatible. Check guide.	P.4–59
C5-1710	Error: #C5-1710 / Sensor Failure: #C5-1710. Turn off then on	P.4–59
C6-1110	Prepare fuser unit / Prepare new fuser unit	P.4–60
C6-1120	Replace Fuser unit / Replace with new fuser unit	P.4–60
C7-1110	Waste toner Near full / Waste toner container is almost full. Replace with new one	P.4–60
C7-1130	Waste tank Full/ Waste toner tank is full. Replace with new one	P.4–60
C7-1311	Waste Not Installed/ Waste toner tank is not installed. Install it	P.4–61
C9-1115	Replace retard roller / Replace with new tray 1 retard roller	P.4–61
C9-1122	Replace pickup roller / Replace with new tray 2 pickup roller	P.4–61
C9-1125	Replace retard roller / Replace with new tray 2 retard roller	P.4–61
H1-1210	Paper Jam in tray 2	P.4–61
H1-1211	Paper Jam in tray 2	P.4–61

Error Code	Error Message	Troubleshooting Page
H1-1252	Paper Empty in tray 2 / Paper is empty in tray 2. Load paper	P.4–62
H1-1254	Paper Empty in tray 2 / Paper is empty in tray 2. Load paper	P.4–62
H1-1310	Paper Jam in tray 3	P.4–62
H1-1311	Paper Jam in tray 3	P.4–62
H1-1352	Paper Empty in tray 3 / Paper is empty in tray 3. Load paper	P.4–63
H1-1354	Paper Empty in tray 3 / Paper is empty in tray 3. Load paper	P.4–63
M1-1110	Paper jam in tray 1	P.4–64
M1-1610	Paper jam in MP tray	P.4–65
M1-5112	Paper Empty in tray 1 / Paper is empty in tray 1. Load paper	P.4–65
M1-5113	Paper Empty in tray 1 / Paper is empty in tray 1. Load paper	P.4–65
M1-5120	Paper Empty in all trays / Paper is empty in all trays. Load paper	P.4–65
M1-5212	Paper Empty in tray 2 / Paper is empty in tray 2. Load paper	P.4–66
M1-5213	Paper Empty in tray 2 / Paper is empty in tray 2. Load paper	P.4–66
M1-5612	Paper Empty in MP tray / Paper is empty in MP tray. Load paper	P.4–66
M2-1111	Jam inside of machine	P.4–67
M2-1114	Jam inside of machine	P.4–67
M2-2210	Jam inside of duplex	P.4–67
M3-1110	Jam in exit area	P.4–68
M3-1112	Jam inside of machine	P.4–68
M3-2130	Output bin is full / Paper in output bin is full. Remove printed paper	P.4–69
S1-2411	Error: #S1-2411 / HDD System Failure: #S1-2411. Turn off then on. Call for service if the problem persists	P.4–70
S2-1110	Error: #S2-1110 / Engine System Failure: #S2-1110. Call for service	P.4–70
S2-1210	Error: #S2-1210/ Engine System Failure: #S2-1210.Call for service	P.4–70
S2-4120	Door is open. Close it	P.4–72
S3-3122	Scanner Locked / Scanner is locked. Press Stop button	P.4–73
S4-3140	Error: #S4-3140 / Fax Failure: #S4-3140. Turn off then on. Call for service if the problem persists	P.4–73
S6-3113	Error: #S6-3113 / Network Failure: #S6-3113. Turn off then on. Call for service if the problem persists	P.4–74
S6-3123	IP Conflict / This IP address conflicts with that of other system	P.4–74
S6-3128	802.1x Network Error / 802.1x Network Error. Contact the Admin	P.4–74
S6-3231	Error: #S6-3231 / Can not find a wireless network. Please check the wireless environment	P.4–75
S6-3232	Error: #S6-3232 / Wireless security settings are incorrect. Please change the settings	P.4–75
S6-3233	Error: #S6-3233 / Not connected from the wireless AP. If you do not reconnect automatically, check the wireless settings	P.4–75
S6-3234	Error: #S6-3234 / Failed connection to WPS. Try again or setup other wireless connection	P.4–76
S6-3235	Error: #S6-3235 / Wi-Fi Direct is not ready. Turn off then on. Call for service if the problem persists	P.4–76

Error Code	Error Message	Troubleshooting Page
S6-3236	Error: #S6-3236 / Failed to connect to Wi-Fi Direct. Turn off your mobile device and turn it on	P.4–76
U1-2115	Error: #U1-2115 / Fuser Unit Failure: #U1-2115. Turn off then on. Call for service if the problem persists.	P.4–77
U1-2116	Error: #U1-2116 / Fuser Unit Failure: #U1-2116. Turn off then on. Call for service if the problem persists.	P.4–77
U1-2132	Error: #U1-2132 / Fuser Unit Failure: #U1-2132. Turn off then on. Call for service if the problem persists	P.4–77
U1-2320	Error: #U1-2320 / Fuser Unit Failure: #U1-2320. Turn off then on. Call for service if the problem persists	P.4–77
U1-2330	Error: #U1-2330 / Fuser Unit Failure: #U1-2330. Turn off then on. Call for service if the problem persists	P.4–77
U1-2334	Error: #U1-2334 / Fuser Unit Failure: #U1-2334. Turn off then on. Call for service if the problem persists	P.4–77
U1-2340	Error: #U1-2340 / Fuser Unit Failure: #U1-2340. Turn off then on. Call for service if the problem persists	P.4–77
U1-234H	Error: #U1-234H / Fuser Unit Failure: #U1-234H. Turn off then on. Call for service if the problem persists	P.4–77
U2-1111	Error: #U2-1111 / LSU Failure: #U2-1111.Turn off then on. Call for service if the problem persists	P.4–78
U2-1112	Error: #U2-1112 / LSU Failure: #U2-1112.Turn off then on. Call for service if the problem persists	P.4–78
U2-2112	Yellow LSU Failure: #U2-2112. Please turn off then on	P.4–78
U2-2113	Yellow LSU Failure: #U2-2113. Please turn off then on	P.4–78
U2-3112	Magenta LSU Failure: #U2-3112. Please turn off then on	P.4–78
U2-3113	Magenta LSU Failure: #U2-3113. Please turn off then on	P.4–78
U2-4112	Cyan LSU Failure: #U2-4112. Please turn off then on	P.4–78
U2-4113	Cyan LSU Failure: #U2-4113. Please turn off then on	P.4–78
U2-5112	Black LSU Failure: #U2-5112. Please turn off then on	P.4–78
U2-5113	Black LSU Failure: #U2-5113. Please turn off then on	P.4–78
U3-3313	Original paper jam	P.4–79
U3-3314	Original paper jam	P.4–79
U3-3413	Original paper jam	P.4–79
U3-3513	Original paper jam	P.4–79
U3-3514	Original paper jam	P.4–79
U3-4110	Scanner door open / Door of scanner is open. Close the door	P.4–79

4.7.2.1. 11–2Txx (Paper Mismatch error)

► **Error Code**

11-2T11

11-2T21

11-2T31

11-2T61

► **Error message**

Paper mismatch Tray 1 Load [A4] [Plain] ontinue ⊙ Cancel X

Paper mismatch Tray 2 Load [A4] [Plain] Continue ⊙ Cancel X

Paper mismatch Tray 3 Load [A4] [Plain] Continue ⊙ Cancel X

Paper mismatch MPT Load [A4] [Plain] Continue ⊙ Cancel X

► **Symptom**

Paper in tray is not matched to the machine paper setting.

► **Troubleshooting method**

1) Check and change the paper setting of the corresponding tray properly.

4.7.2.2. Ax-xxxx (Motor_Fan_Sensor error)

► **Error Code**

A1-1210

► **Error message**

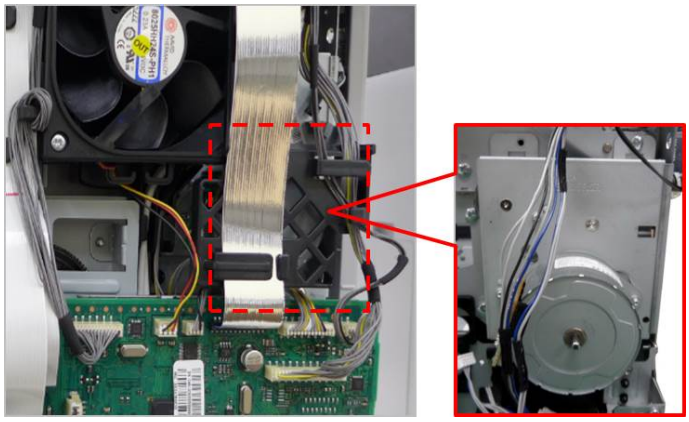
Error: #A1-1210 / Motor Failure: #A1-1210. Turn off then on. Call for service if the problem persists

► **Symptom**

The fuser motor does not operate. / The fuser motor is operating but is recognized as stop status.

► **Troubleshooting method**

1) Turn the machine off then on. If the error persists, turn the machine off again.
2) Remove the rear and right cover.
3) Check if there are any obstacles or paper around the fuser unit.
4) Check if the connection between main board and fuser motor are correct.
5) If the connection is OK, replace the fuser motor.



6) If there is a driver test for this component, please try it first. If the problem persists, replace the main board.

► **Error Code**

A1-3621 / A1–3622 / A1–4111 / A1–4112 / A1–4310

► **Error message**

Error: #A1-3621 / Motor Failure: #A1-3621. Turn off then on. Call for service if the problem persists

Error: #A1-3622 / Motor Failure: #A1-3622. Turn off then on. Call for service if the problem persists

Error: #A1-4111 / Motor Failure: #A1-4111. Turn off then on. Call for service if the problem persists

Error: #A1-4112 / Motor Failure: #A1-4112. Turn off then on. Call for service if the problem persists

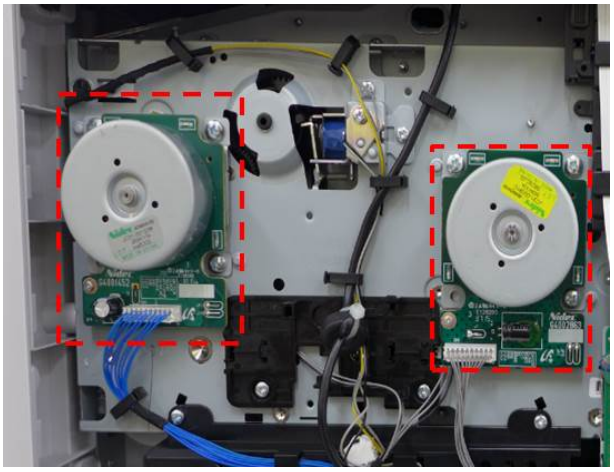
Error: #A1-4310 / Motor Failure: #A1-4310. Turn off then on. Call for service if the problem persists

► **Symptom**

The motor for OPC/Deve/ITB does not operate normally.

► **Troubleshooting method**

1) Turn the machine off then on. If the error persists, turn the machine off again.
2) Remove the right cover.
3) Check if the connection between main board and 2 motors in the main drive unit are correct.
4) If the connection is OK, replace the motor in the main drive unit.



5) If there is a driver test for this component, please try it first. If the problem persists, replace the main board.

► **Error Code**

A2-1210 / A2–2110

► **Error message**

Error: #A2-1210 / Fan Failure: #A2-1210. Turn off then on. Call for service if the problem persists

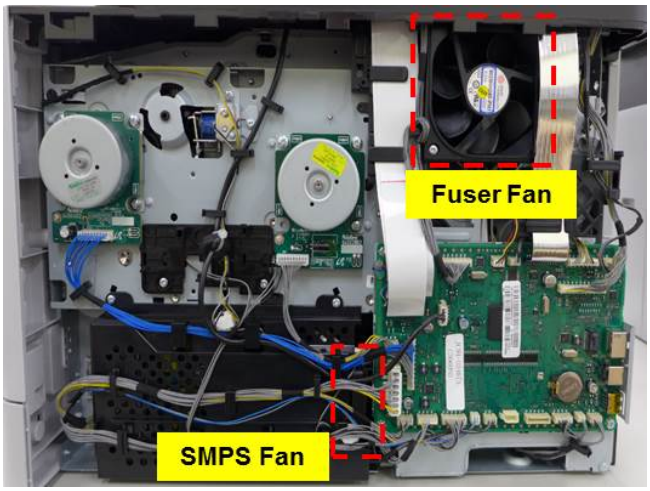
Error: #A2-2110 / Fan Failure: #A2-2110. Turn off then on. Call for service if the problem persists

► **Symptom**

The SMPS fan or Fuser fan does not operate normally.

► **Troubleshooting method**

1) Turn the machine off then on. If the error persists, turn the machine off again.
2) Remove the right cover.
3) Check if the connection between main board and the related fan is correct.



4) If the connection is OK, replace the defective fan.

► **Error Code**

A3–3211 / A3–3212

► **Error message**

Error: #A3-3211 / Sensor Failure: #A3-3211. Turn off then on. Call for service if the problem persists

Error: #A3-3212 / Sensor Failure: #A3-3212. Turn off then on. Call for service if the problem persists

► **Symptom**

The inner temperature sensor is defective.

► **Troubleshooting method**

1) Turn the machine off then on. If the error persists, turn the machine off again.
2) Enter the tech mode. Check the temperature sensor output.
3) If the sensor is defective, replace it.
4) If the temperature sensor is OK, replace the main board.

► **Error Code**

A3–3311 / A3–3312

► **Error message**

Error: #A3-3311 / Sensor Failure: #A3-3311. Turn off then on. Call for service if the problem persists

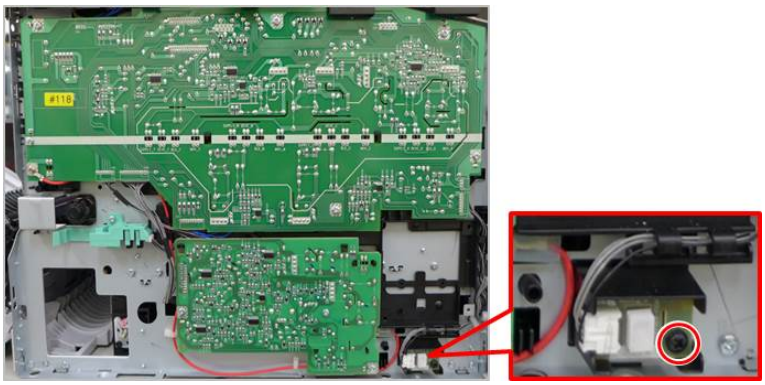
Error: #A3-3312 / Sensor Failure: #A3-3312. Turn off then on. Call for service if the problem persists

► **Symptom**

The outer temperature sensor is defective.

► **Troubleshooting method**

1) Turn the machine off then on. If the error persists, turn the machine off again.
2) Enter the tech mode. Check the temperature sensor output.
3) If the sensor is defective, replace it.



4) If the temperature sensor is OK, replace the main board.

► **Error Code**

A3–3320

► **Error message**

Not proper Room Temp / The room temperature is not suitable for this set use. Please adjust room temperature

► **Symptom**

The value of the outer temperature sensor is out of normal area.

► **Troubleshooting method**

1) Check if the machine is installed in the proper area.
2) If the temperature sensor is defective, replace it.

4.7.2.3. Cx-xxxx (Supplies and Maintenance Parts error)

► **Error Code**

C2-2110

► **Error message**

Prepare new Y toner/ Prepare new yellow toner cartridge

► **Symptom**

There is not enough toner in the yellow toner cartridge

► **Troubleshooting method**

1) Print the supply information report. Check the life remaining of the toner cartridge.
2) If its life is at the end, turn the machine off and replace the toner cartridge with new one.

► **Error Code**

C2-2120 / C2–2140 / C2–2150 / C2–2160 / C2–2170

► **Error message**

Replace new Y toner / Replace with new yellow toner cartridge

Replace new Y toner / End of life, Replace with new yellow toner cartridge

► **Symptom**

The yellow toner cartridge is at the end of its life.

► **Troubleshooting method**

1) If its life is at the end, turn the machine off and replace the yellow toner cartridge with new one.

► **Error Code**

C2-2410

► **Error message**

Y toner not installed / Install yellow toner cartridge

► **Symptom**

The yellow toner cartridge is not installed or the CRUM has some problem.

► **Troubleshooting method**

1) Check if the yellow toner cartridge is installed properly. Turn the machine off then on.
2) If the error message is not disappear, remove the yellow toner cartridge. Thoroughly roll the cartridge five or six times to distribute the toner evenly inside the cartridge. And reinstall the toner cartridge.
3) If the problem persists, check that the CRUM contact area is contaminated. Clean it.
4) If the problem persists, replace the yellow toner cartridge with new one.

► **Error Code**

C2-2512 / C2-2515 / C2–2517 / C2–2518 / C2–2526

► **Error message**

Y Toner Not Compatible / Yellow toner cartridge is not compatible. Check guide

► **Symptom**

The yellow toner cartridge is not compatible.

► **Troubleshooting method**

1) If the toner cartridge is not a Samsung genuine toner cartridge, replace with new one.

► **Error Code**

C2–2711 / C2–2712 / C2–2713 / C2–2714

► **Error message**

Error: #C2-271x / Toner Cart Failure: #C2-271x. Call for service

► **Symptom**

The yellow toner cartridge is not installed or the CRUM has some problem.

► **Troubleshooting method**

1) Check if the yellow toner cartridge is installed properly. Turn the machine off then on.
2) If the error message is not disappear, remove the yellow toner cartridge. Thoroughly roll the cartridge five or six times to distribute the toner evenly inside the cartridge. And reinstall the toner cartridge.
3) If the problem persists, check that the CRUM contact area is contaminated. Clean it.
4) If the problem persists, replace the yellow toner cartridge with new one.

► **Error Code**

C2-3110

► **Error message**

Prepare new M toner/ Prepare new magenta toner cartridge

► **Symptom**

There is not enough toner in the magenta toner cartridge

► **Troubleshooting method**

1) Print the supply information report. Check the life remaining of the toner cartridge.
2) If its life is at the end, turn the machine off and replace the magenta toner cartridge with new one.

► **Error Code**

C2-3120 / C2-3140 / C2-3150 / C2–3160 / C2–3170

► **Error message**

Replace new M toner / Replace with new magenta toner cartridge

Replace new M toner / End of life, Replace with new magenta toner cartridge

► **Symptom**

The magenta toner cartridge is at the end of its life.

► **Troubleshooting method**

1) If its life is at the end, turn the machine off and replace the magenta toner cartridge with new one.

► **Error Code**

C2-3410

► **Error message**

M toner not installed / Install magenta toner cartridge

► **Symptom**

The magenta toner cartridge is not installed or the CRUM has some problem.

► **Troubleshooting method**

1) Check if the magenta toner cartridge is installed properly. Turn the machine off then on.
2) If the error message is not disappear, remove the magenta toner cartridge. Thoroughly roll the cartridge five or six times to distribute the toner evenly inside the cartridge. And reinstall the toner cartridge.
3) If the problem persists, check that the CRUM contact area is contaminated. Clean it.
4) If the problem persists, replace the magenta toner cartridge with new one.

► **Error Code**

C2-3512 / C2-3515 / C2-3517 / C2-3518 / C2-3526

► **Error message**

M toner Not Compatible / Magenta toner cartridge is not compatible. Check guide

► **Symptom**

The magenta toner cartridge is not compatible.

► **Troubleshooting method**

1) If the toner cartridge is not a Samsung genuine toner cartridge, replace with new one.

► **Error Code**

C2–3711 / C2–3712 / C2–3713 / C2–3714

► **Error message**

Error: #C2-371x / Toner Cart Failure: #C2-371x. Call for service

► **Symptom**

The magenta toner cartridge is not installed or the CRUM has some problem.

► **Troubleshooting method**

1) Check if the magenta toner cartridge is installed properly. Turn the machine off then on.
2) If the error message is not disappear, remove the magenta toner cartridge. Thoroughly roll the cartridge five or six times to distribute the toner evenly inside the cartridge. And reinstall the toner cartridge.
3) If the problem persists, check that the CRUM contact area is contaminated. Clean it.
4) If the problem persists, replace the magenta toner cartridge with new one.

► **Error Code**

C2-4110

► **Error message**

Prepare new C toner / Prepare new cyan toner cartridge

► **Symptom**

There is not enough toner in the cyan toner cartridge

► **Troubleshooting method**

1) Print the supply information report. Check the life remaining of the toner cartridge.
2) If its life is at the end, turn the machine off and replace the cyan toner cartridge with new one.

► **Error Code**

C2-4120 / C2-4140 / C2-4150 / C2–4160 / C2–4170

► **Error message**

Replace new C toner / Replace with new cyan toner cartridge

Replace new C toner / End of life, Replace with new cyan toner cartridge

► **Symptom**

The cyan toner cartridge is at the end of its life.

► **Troubleshooting method**

1) If its life is at the end, turn the machine off and replace the cyan toner cartridge with new one.

► **Error Code**

C2-4410

► **Error message**

C toner not installed / Install cyan toner cartridge

► **Symptom**

The cyan toner cartridge is not installed or the CRUM has some problem.

► **Troubleshooting method**

1) Check if the cyan toner cartridge is installed properly. Turn the machine off then on.
2) If the error message is not disappear, remove the cyan toner cartridge. Thoroughly roll the cartridge five or six times to distribute the toner evenly inside the cartridge. And reinstall the toner cartridge.
3) If the problem persists, check that the CRUM contact area is contaminated. Clean it.
4) If the problem persists, replace the cyan toner cartridge with new one.

► **Error Code**

C2-4512 / C2-4515 / C2-4517 / C2-4518 / C2-4526

► **Error message**

C toner Not Compatible / Cyan toner cartridge is not compatible. Check guide

► **Symptom**

The cyan toner cartridge is not compatible.

► **Troubleshooting method**

1) If the toner cartridge is not a Samsung genuine toner cartridge, replace with new one.

► **Error Code**

C2–4711 / C2–4712 / C2–4713 / C2–4714

► **Error message**

Error: #C2-471x / Toner Cart Failure: #C2-471x. Call for service

► **Symptom**

The cyan toner cartridge is not installed or the CRUM has some problem.

► **Troubleshooting method**

1) Check if the cyan toner cartridge is installed properly. Turn the machine off then on.
2) If the error message is not disappear, remove the cyan toner cartridge. Thoroughly roll the cartridge five or six times to distribute the toner evenly inside the cartridge. And reinstall the toner cartridge.
3) If the problem persists, check that the CRUM contact area is contaminated. Clean it.
4) If the problem persists, replace the cyan toner cartridge with new one.

► **Error Code**

C2-5110

► **Error message**

Prepare new K toner / Prepare new black toner cartridge

► **Symptom**

There is not enough toner in the black toner cartridge

► **Troubleshooting method**

1) Print the supply information report. Check the life remaining of the toner cartridge.
2) If its life is at the end, turn the machine off and replace the black toner cartridge with new one.

► **Error Code**

C2-5120 / C2-5140 / C2-5150 / C2–5160 / C2–5170

► **Error message**

Replace new K toner / Replace with new black toner cartridge

Replace new toner / End of life, Replace with new black toner cartridge

► **Symptom**

The black toner cartridge is at the end of its life.

► **Troubleshooting method**

1) If its life is at the end, turn the machine off and replace the black toner cartridge with new one.

► **Error Code**

C2-5410

► **Error message**

K toner not installed / Install black toner cartridge

► **Symptom**

The black toner cartridge is not installed or the CRUM has some problem.

► **Troubleshooting method**

1) Check if the black toner cartridge is installed properly. Turn the machine off then on.
2) If the error message is not disappear, remove the black toner cartridge. Thoroughly roll the cartridge five or six times to distribute the toner evenly inside the cartridge. And reinstall the toner cartridge.
3) If the problem persists, check that the CRUM contact area is contaminated. Clean it.
4) If the problem persists, replace the black toner cartridge with new one.

► **Error Code**

C2-5512 / C2-5515 / C2-5517 / C2-5518 / C2-5526

► **Error message**

K toner Not Compatible / Black toner cartridge is not compatible. Check guide

► **Symptom**

The black toner cartridge is not compatible.

► **Troubleshooting method**

1) If the toner cartridge is not a Samsung genuine toner cartridge, replace with new one.

► **Error Code**

C2–5711 / C2–5712 / C2–5713 / C2–5714

► **Error message**

Error: #C2-571x / Toner Cart Failure: #C2-571x. Call for service

► **Symptom**

The black toner cartridge is not installed or the CRUM has some problem.

► **Troubleshooting method**

1) Check if the black toner cartridge is installed properly. Turn the machine off then on.
2) If the error message is not disappear, remove the black toner cartridge. Thoroughly roll the cartridge five or six times to distribute the toner evenly inside the cartridge. And reinstall the toner cartridge.
3) If the problem persists, check that the CRUM contact area is contaminated. Clean it.
4) If the problem persists, replace the black toner cartridge with new one.

► **Error Code**

C5-1110 / C5-1120

► **Error message**

Prepare TR.belt / Prepare new Image transfer belt unit

Replace TR. belt / Replace with new Image transfer belt unit

► **Symptom**

The ITB unit is at the end of its life.

► **Troubleshooting method**

1) Print the supply information report. Check the life remaining of the ITB unit.
2) If its life is at the end, turn the machine off and replace the ITB unit with new one.

► **Error Code**

C5-1310

► **Error message**

Install TR. belt unit / Install transfer belt unit

► **Symptom**

The ITB unit is not installed properly.

► **Troubleshooting method**

1) Turn the machine off. Remove and reinstall the ITB unit.
2) Turn the machine on. If the problem persists, replace the ITB unit.

► **Error Code**

C5-1410

► **Error message**

TR belt Not compatible / Transfer belt unit is not compatible. Check guide.

► **Symptom**

The ITB unit is not compatible.

► **Troubleshooting method**

1) Print the supply information report. Check information of the ITB Unit.
2) If the toner cartridge is not a Samsung genuine ITB Unit, replace with new one.

► **Error Code**

C5-1710

► **Error message**

Error: #C5-1710 / Sensor Failure: #C5-1710. Turn off then on

► **Symptom**

The ITB home position sensor has the problem.

► **Troubleshooting method**

1) Turn the machine off. Replace the ITB Unit.

► **Error Code**

C6-1110 / C6-1120

► **Error message**

Prepare fuser unit / Prepare new fuser unit

Replace Fuser unit / Replace with new fuser unit

► **Symptom**

The fuser unit is at the end of its life.

► **Troubleshooting method**

1) Print the supply information report. Check the life remaining of the fuser unit.

2) If its life is at the end, turn the machine off and replace the fuser unit with new one.

► **Error Code**

C7-1110 / C7–1130

► **Error message**

Waste toner Near full / Waste toner container is almost full. Replace with new one

Waste tank Full/ Waste toner tank is full. Replace with new one

► **Symptom**

The waste toner container is at the end of its life.

► **Troubleshooting method**

1) Print the supply information report. Check the life remaining of the waste toner container.

2) If its life is at the end, turn the machine off and replace the waste toner container with new one.

► **Error Code**

C7-1311

► **Error message**

Not Installed Waste tank

► **Symptom**

The waste toner container is not installed

► **Troubleshooting method**

1) Check if the waste toner container is installed properly.
2) Remove and reinstall the waste toner container.

► **Error Code**

C9-1115

► **Error message**

Replace retard roller / Replace with new tray 1 retard roller

► **Symptom**

The pick up / forward / separation rollers for tray1 are at the end of its life.

► **Troubleshooting method**

1) Turn the machine off.
2) Replace the pick up roller Ass'y and separation roller Ass'y for tray1, and reset its count.

► **Error Code**

C9-1122 / C9-1125

► **Error message**

Replace pickup roller / Replace with new tray 2 pickup roller

Replace retard roller / Replace with new tray 2 retard roller

► **Symptom**

The pick up / forward / separation rollers for tray2 are at the end of its life.

► **Troubleshooting method**

1) Turn the machine off.
2) Replace the pick up/forward/separation rollers for Tray2, and reset its count.

4.7.2.4. H1-xxxx (Optional Cassette error)

► **Error Code**

H1–1210 / H1–1211

► **Error message**

Paper Jam in Tray 2

► **Symptom**

The jammed paper has occurred in the tray2.

► **Troubleshooting method**

1) Remove the jammed paper.

2) If the jammed paper occurs continually, check the followings.
   a) Check if the pick up/forward/separation roller for tray2 are worn out or contaminated. Clean the contaminated part or replace it.
   b) Check if the tray2 feed actuator is assembled correctly. If it is broken or deformed, replace it with new one.
   c) Check if the tray2 feed sensor connector is connected correctly. If the feed sensor is defective, replace it.
   d) If there is a service test for this component, perform it first. If the tray2 pick up clutch is found to be defective, replace it.

► **Error Code**

H1–1252 / H1–1254

► **Error message**

Paper Empty in tray 2 / Paper is empty in tray 2. Load paper

► **Symptom**

Paper is empty in Tray2.

► **Troubleshooting method**

1) Take off the cassette. If there is no paper on the tray2, load the paper.

2) If the problem persists, check the following.
   a) Check if the paper empty actuator is assembled correctly. If it is broken or deformed, replace it with new one.
   b) Check if the paper empty sensor connector is connected correctly. If the paper empty sensor is defective, replace it.

► **Error Code**

H1–1310 / H1–1311

► **Error message**

Paper Jam in Tray 3

► **Symptom**

The jammed paper has occurred in the tray3.

► **Troubleshooting method**

1) Remove the jammed paper.

2) If the jammed paper occurs continually, check the followings.
   a) Check if the pick up/forward/separation roller for tray3 are worn out or contaminated. Clean the contaminated part or replace it.
   b) Check if the tray3 feed actuator is assembled correctly. If it is broken or deformed, replace it with new one.
   c) Check if the tray3 feed sensor connector is connected correctly. If the feed sensor is defective, replace it.
   d) If there is a service test for this component, perform it first. If the tray3 pick up clutch is found to be defective, replace it.

► **Error Code**

H1–1352 / H1–1354

► **Error message**

Paper Empty in tray 3 / Paper is empty in tray 3. Load paper

► **Symptom**

Paper is empty in Tray3.

► **Troubleshooting method**

1) Take off the cassette. If there is no paper on the tray3, load the paper.

2) If the problem persists, check the following.
   a) Check if the paper empty actuator is assembled correctly. If it is broken or deformed, replace it with new one.
   b) Check if the paper empty sensor connector is connected correctly. If there is a service test for this component perform it first. If the paper empty sensor is found to be defective, replace it.

4.7.2.5. Mx-xxxx (Jam_Paper handling error)

► **Error Code**

M1–1110

► **Error message**

Paper Jam in Tray 1

► **Symptom**

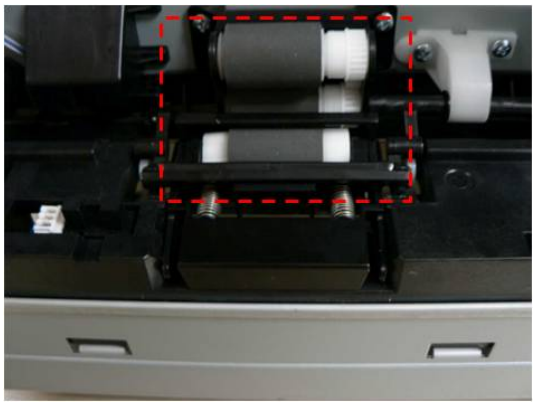
The jammed paper has occurred in the tray1.

► **Troubleshooting method**

1) Remove the jammed paper.

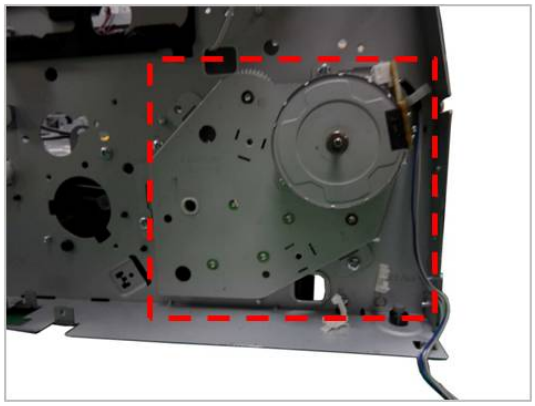
2) If the jammed paper occurs continually, check the followings.

   a) Check if the pick up/forward/separation rollers are worn out or contaminated. Clean the contaminated part or replace it.



   b) Check if the actuator is assembled correctly.

3) Check the motor operation, by checking if there is a service test for this component, perform it first. If there is any defective parts, replace it or PH drive unit.



► **Error Code**

M1–1610

► **Error message**

Paper Jamin MP tray

► **Symptom**

The jammed paper has occurred in the MP tray.

► **Troubleshooting method**

1) Remove the jammed paper.

2) If the jammed paper occurs continually, check the followings.
   a) Check if the MP pick up/forward/separation rollers are worn out or contaminated. Clean the contaminated part or replace it.
   b) Check if the actuator is assembled correctly.
   c) If there is a service test for the pick up , perform it first. If the clutch is defective, replace it.
   d) If the problem persists, replace the MP unit.

► **Error Code**

M1–5112 / M1–5113 / M1–5120

► **Error message**

Paper Empty in tray 1 / Paper is empty in tray 1. Load paper

Paper Empty in all trays / Paper is empty in all trays. Load paper

► **Symptom**

Paper is empty in tray1 or all trays.

► **Troubleshooting method**

1) Take off the cassette. If there is no paper on the tray1, load the paper.

2) If the problem persists, check the following.
   a) Check if the paper empty actuator is assembled correctly. If it is broken or deformed, replace it with new one.
   b) Check if the paper empty sensor connector is connected correctly. If the paper empty sensor is defective, replace it.

► **Error Code**

M1–5612

► **Error message**

Paper Empty in MP tray / Paper is empty in MP tray. Load paper

► **Symptom**

Paper is empty in MP tray.

► **Troubleshooting method**

1) If there is no paper on the MP tray, load the paper.

2) If the problem persists, check the following.
   a) Check if the MP paper empty actuator is assembled correctly. If it is broken or deformed, replace it with new one.
   b) Check if the MP paper empty sensor connector is connected correctly. If the paper empty sensor is defective, replace it.

► **Error Code**

M2–1111 / M2–1114 / M2–2210

► **Error message**

Paper Jam inside machine

Paper Jam inside of duplex

► **Symptom**

The jammed paper has occurred inside machine.

► **Troubleshooting method**

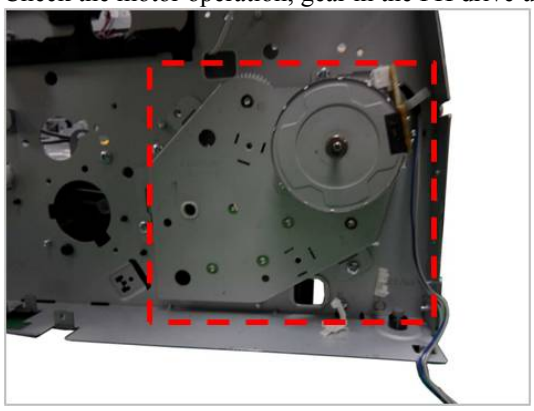
1) Open the rear cover. Remove the jammed paper.

2) If the problem persists, check the following.

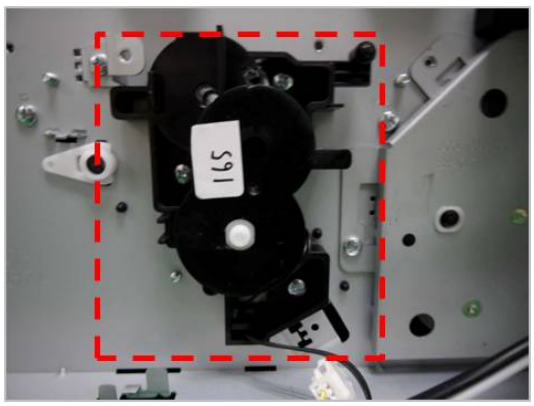
a) Check if there is any obstacles or paper on the paper path. Remove it.

b) Check if the FRAME-REGI unit and FRAME-SEPARATION unit are assembled properly. If there is any defective part in these units, replace it or Assy.

c) Check the motor operation, gear in the PH drive unit. If there is any defective parts, replace it or PH drive unit.



d) Check the T1–DRIVE unit. If there is any defective parts, replace it or T1–DRIVE unit.



► **Error Code**

M3–1110 / M3–1112

► **Error message**

Paper Jam in exit area

Paper jam inside machine

► **Symptom**

The jammed paper has occurred in the exit area.

► **Troubleshooting method**

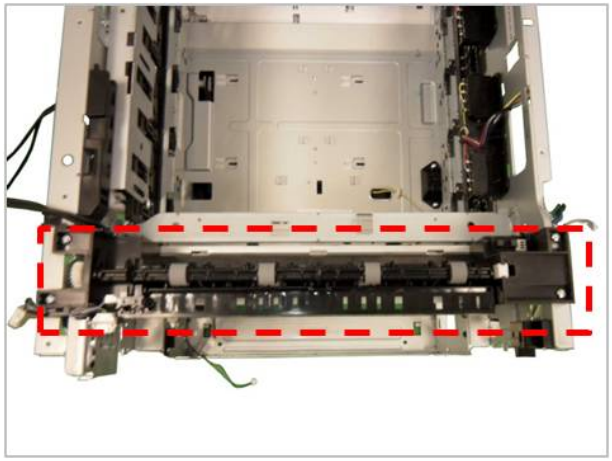
1) Remove the jammed paper.

2) If the problem persists, check the following.

   a) Check if there is any obstacles or paper on the paper path. Remove it.

   b) Check if the fuser unit is assembled properly. If the fuser unit is defective, replace it.

   c) Check if the exit unit has any defective parts. Replace the exit unit.



► **Error Code**

M3–2130

► **Error message**

Output bin is full / Paper in output bin is full. Remove printed paper

► **Symptom**

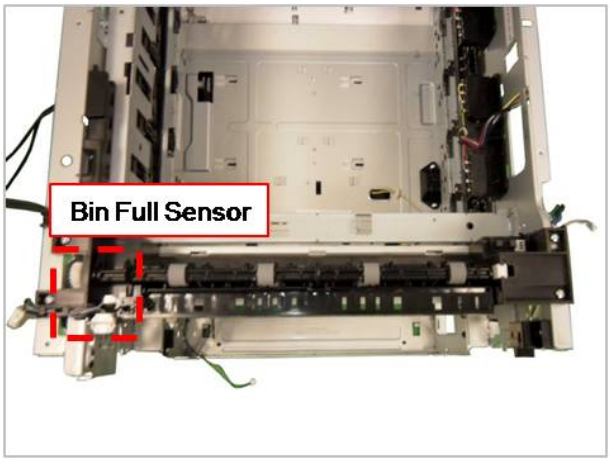
The machine detected that the output tray has got full or the bin-full sensor is defective.

► **Troubleshooting method**

1) Remove the paper on the output tray.

2) Check if the Bin-full Sensor connector is connected properly. Reconnect it.

3) If the sensor is defective, replace it.



4.7.2.6. Sx-xxxx (System error)

► **Error Code**

S1-2411

► **Error message**

Error: #S1-2411 / HDD System Failure: #S1-2411. Turn off then on. Call for service if the problem persists

► **Symptom**

SD card is not installed correctly or is defective.

► **Troubleshooting method**

1) Turn the machine off then on.
2) If the problem persists, check the followings.
   a) Enter SVC mode. And then, format the SD card.
      (Service Mode > Service Functions > Format Mass Storage Device)
   b) If SD card is defective, replace it with new one.
   c) If the problem persists, replace the main board.

► **Error Code**

S2-1110 / S2–1210

► **Error message**

Error: #S2-1110 / Engine System Failure: #S2-1110. Call for service

Error: #S2-1210/ Engine System Failure: #S2-1210.Call for service

► **Symptom**

CPU in the main board has some problem.

► **Troubleshooting method**

1) Turn the machine off then on.
2) If the problem persists, replace the main board.

► **Error Code**

S2–33xx

► **Error message**

No message

► **Symptom**

This error shows the engine status.

► **Troubleshooting method**

- S2–3310 : The engine is warming up.
- S2–3311 : The engine is ready.
- S2–3312 : The engine is printing.
- S2–3313 : The engine is in the power save state.
- S2–3314 : The engine is in the error state.
- S2–3315 : The engine is in the recovery state.
- S2–3316 : The engine is waiting.
- S2–3317 : The engine is in EDC mode.
- S2–3318 : The engine is in low power mode.
- S2–3319 : The engine is in ACR (Auto Color Registration) mode.
- S2–331A : The engine is in image density control or image stabilization mode.

When these errors display, wait until the message will be disappeared or turn the machine off then on.

► **Error Code**

S2–4120

► **Error message**

Door open Close it

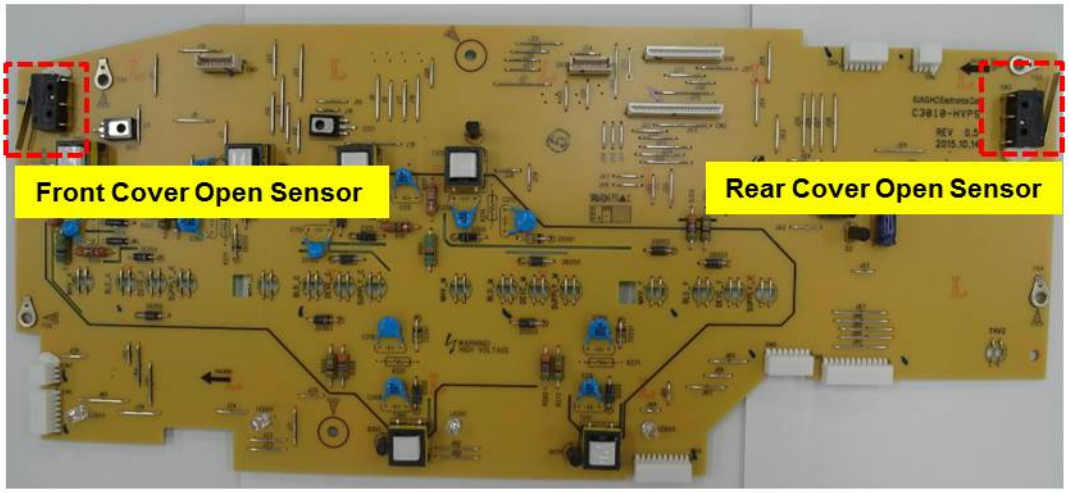
► **Symptom**

Door is open or the cover open switch is defective.

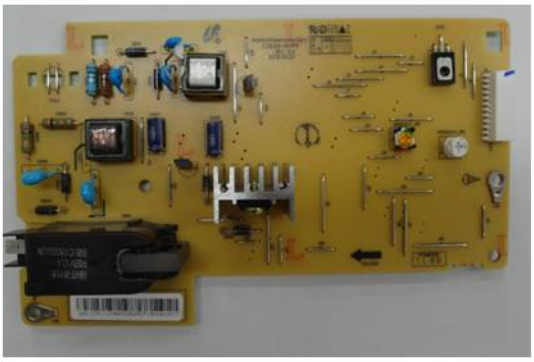
► **Troubleshooting method**

1) Check if the front cover is closed perfectly.

2) If the error persists, check that the cover-open sensor is working normally. If it is defective, replace the HVPS board.



[JC44-00242A]



[JC44-00243A]

► **Error Code**

S3–3122

► **Error message**

Scanner Locked / Scanner is locked. Press Stop button

► **Symptom**

Scanner lock error has occurred. CIS does not move.

► **Troubleshooting method**

1) Check if the CIS unit is moving when power on.
2) Check if the flat cable is connected to the CIS unit properly. Re-connect or replace the cable.
3) If the CIS is defective, replace it.
4) Check if there is any defective part in the scanner unit. (Gear, Belt, Motor etc.)
5) If the problem persists, replace the main board.

► **Error Code**

S4-3140

► **Error message**

Error: #S4-3140 / Fax Failure: #S4-3140. Turn off then on. Call for service if the problem persists

► **Symptom**

The fax modem is defective.

► **Troubleshooting method**

1) Turn the machine off then on.
2) If the problem persists, check the followings.
   a) Check if the communication line is normal. Reconnect the fax line to the another fax devcie and test it.
   b) If the fax line is normal, check the connection between the fax board and main board in the machine.
   c) Reconnect the harness.
   d) If the problem persists, replace the fax board.
   e) If the problem persists, replace the main board.

► **Error Code**

S6–3113

► **Error message**

Error: #S6-3113 / Network Failure: #S6-3113. Turn off then on. Call for service if the problem persists

► **Symptom**

Network PHY chip is defective.

► **Troubleshooting method**

1) Turn the machine off then on.
2) If the problem persists, replace the main board.

► **Error Code**

S6–3123

► **Error message**

IP Conflict / This IP address conflicts with that of other system

► **Symptom**

IP address conflicts with that of other system. / There is no response when checking the ping test.

► **Troubleshooting method**

Change the machine's IP address.

- Set-up the IP address in this order, Network -> TCP/IP (IPv4) -> STATIC.
- In case of DHCP or Bootp, reboot the machine to receive a new IP address.

► **Error Code**

S6–3128

► **Error message**

802.1x Network Error / 802.1x Network Error. Contact the Admin

► **Symptom**

The confirmation was requested for wired port, the server has rejected. / The confirmation protocol is not the same or user information (ID/Password) is wrong.

► **Troubleshooting method**

Check the setting-up for 802.1x confirmation server.

- Re-enter the server information and confirmation protocol.
- Re-enter the user information.

► **Error Code**

S6-3231

► **Error message**

Error: #S6-3231 / Can not find a wireless network. Please check the wireless environment

► **Symptom**

The machine can not find the SSID (Service Set Identifier).

► **Troubleshooting method**

1) Check the setting-up for wireless network.

► **Error Code**

S6-3232

► **Error message**

Error: #S6-3232 / Wireless security settings are incorrect. Please change the settings

► **Symptom**

Wireless security settings like a WEP/WPA/WPA2 are incorrect.

► **Troubleshooting method**

1) Turn the machine and AP off then on.
2) Change the wireless network settings.

► **Error Code**

S6-3233

► **Error message**

Error: #S6-3233 / Not connected from the wireless AP. If you do not reconnect automatically, check the wireless settings

► **Symptom**

Wireless BSSID value is 0 or wireless module is disconnected.

► **Troubleshooting method**

1) Turn the machine and AP off then on.
2) Change the wireless network settings.

► **Error Code**

S6-3234

► **Error message**

Error: #S6-3234 / Failed connection to WPS. Try again or set up other wireless connection

► **Symptom**

WPS connection to AP is failed.

► **Troubleshooting method**

1) Retry the connection with WPS button.

► **Error Code**

S6-3235

S6-3236

► **Error message**

Error: #S6-3235 / Wi-Fi Direct is not ready. Turn off then on. Call for service if the problem persists

Error: #S6-3236 / Failed to connect to Wi-Fi Direct. Turn off your mobile device and turn it on

► **Symptom**

Wi-Fi Direct library is initialized.

► **Troubleshooting method**

1) Turn the machine off then on.

2) Change the wireless network settings. Retry it.

4.7.2.7. U1-xxxx (Fuser error)

► **Error Code**

U1–21xx / U1–23xx

► **Error message**

Error: #U1-2xxx / Fuser Unit Failure: #U1-2xxx.Turn off then on. Call for service if the problem persists

► **Symptom**

The temperature control of fuser unit is abnormal.

► **Troubleshooting method**

1) Turn the machine off. Re-install the fuser unit. Then turn the machine on. Is the error message is disappeared?
2) If the problem persists, turn the machine off and remove the fuser unit.
   a) Check if the fuser connector is connected properly.
   b) Check if the input voltage is normal.
   c) Check if the thermistor is twisted or contaminated; and is in contact with the Heat Roller.
3) After confirming continuity in the fuser connector and the problem still exists; order the SMPS and Fuser Unit and install as is necessary.

4.7.2.8. U2-xxxx (LSU error)

► **Error Code**

U2–1111 / U2-1112

U2–2112 / U2-2113 / U2–3112 / U2–3113 / U2–4112 / U2–4113 / U2–5112 / U2–5113

► **Error message**

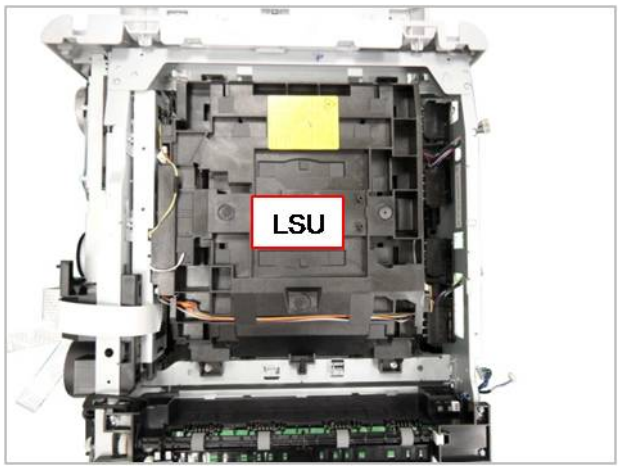
Error: #U2-xxxx Turn off then on

► **Symptom**

LSU Motor does not work normally or LSU H Sync signal is abnormal.

► **Troubleshooting method**

1) Execute the LSU motor test in SVC mode. Check LSU motor operation sound.
2) If there is no sound, remove the right cover. Check if the LSU harness is connected on the main board properly.
3) If it is OK, remove the top cover. Check if the LSU harness is connected on LSU board properly.
4) Check if the LSU harness is defective.
5) Reconnect the LSU harness and then execute the LSU motor test again.
6) If the problem persists, replace the LSU.



7) If the problem persists after replacing LSU, replace the main board.

4.7.2.9. U3-xxxx (ADF error)

► **Error Code**

U3-3313 / U3–3314 / U3–3413 / U3–3513 / U3–3514

► **Error message**

Original paper jam

► **Symptom**

A document jam was detected in the ADF unit.

► **Troubleshooting method**

1) Remove the jammed paper from ADF unit.
2) If the error persists, turn the machine off then on.
3) If the document jam occurs continually, open the ADF cover-top. Check if the ADF pick up roller is contaminated or worn out. Clean or replace it.
4) If the pick up roller is OK, check the followings.
   a) Check if the ADF motor is working normally.
   b) Check if the connector on the ADF joint board is connected correctly.
5) If the problem persists, replace the ADF unit.

► **Error Code**

U3-4110

► **Error message**

Scanner door open / Door of scanner is open. Close the door

► **Symptom**

ADF top cover is opened.

► **Troubleshooting method**

1) Close the ADF top cover.
2) If the problem persists, check the followings.
   a) Check if the cover open sensor is connected correctly. Reconnect the harness. If the sensor is defective, replace it.
   b) Check if the rib of the cover open is deformed or broken. If necessary, replace the cover open.

4.7.3. Image quality problems

Print-quality defects can be attributed to printer components, supplies, media, internal software, external software applications and environmental conditions.

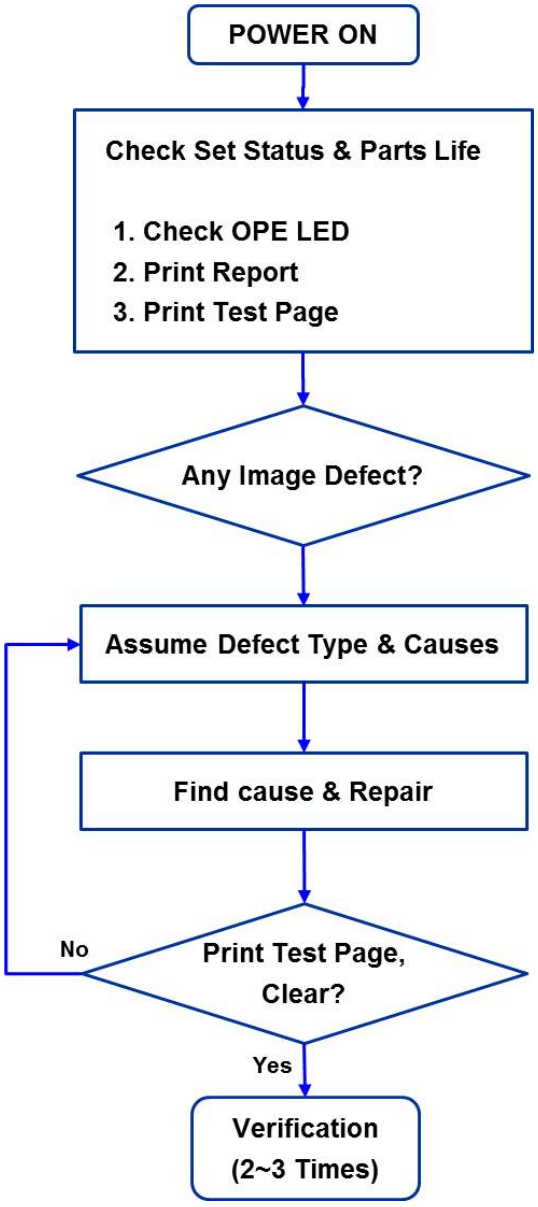
To successfully troubleshoot print-quality problems, as many variables as possible must be eliminated.

The first step is to generate prints using printable pages embedded in the printer on laser paper. The paper should be from an unopened ream that has been acclimated to room temperature and you should ensure that genuine Samsung Toner is installed in the printer.

How to analysis the defect image

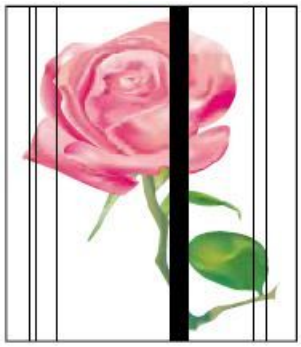
TIP

- According to the part remain life, cause can vary. Check the part remain life.
- Check the defect whether periodic or not.



1) **Vertical Black Line and Band**

- Description : Straight thin black vertical line occurs in the printed image.



Cause and Check Point	Solution
Check if the surface of the charge roller is scratched or contaminated.	Replace the corresponding toner cartridge and test again.
Check if there are grooves on the circumference of the OPC drum.	Replace the corresponding toner cartridge and test again.
Check if the cleaning blade is damaged	Replace the corresponding toner cartridge and test again.
Check if paper transfer belt is damaged or contaminated.	Replace the ITB unit and test again.

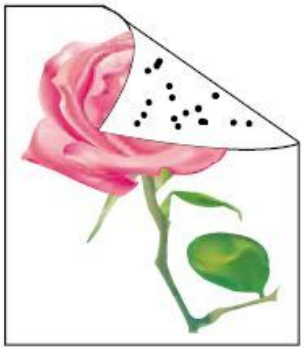
2) **Vertical White Line**

- Description : White vertical voids in the image.

Cause and Check Point	Solution
Check if the LSU window or internal lenses of LSU is contaminated.	Clean the LSU window with recommended cleaner(IPA). Clean the window with a clean cotton swab. If dirt is inside the LSU, replace the LSU.
Check if there are scratches on the circumference of the OPC drum.	Replace the corresponding toner cartridge and test again.
Check if there are scratches on the circumference of the developing roller.	Replace the corresponding toner cartridge and test again.
Check if paper transfer belt is damaged or contaminated.	Replace the ITB unit and test again.

3) **Contamination on back of page**

- Description : The back of the page is contaminated.



Cause and Check Point	Solution
Dirty registration roller, pressure roller, feed roller, etc. Any dirty rollers through the path of the paper.	Identify the roller which may cause the problem by comparing the period of the contamination on images with the size of rollers. Clean any dirt from the roller or replace the dirty roller.
Check if the transfer roller is damaged or contaminated.	Replace the transfer roller and test again.
Check if paper transfer belt is damaged or contaminated.	Replace the ITB unit and test again.

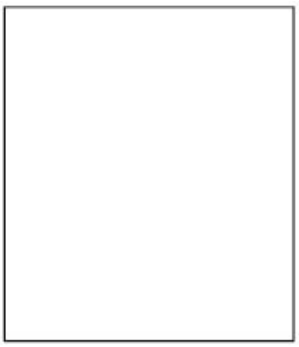
4) **Dark or Black image**

- Description : The black page is printed out.

Cause and Check Point	Solution
No charging voltage in the HVPS.	Check the connecting state between the Main PBA and HVPS. Reconnect the harness.
Poor contact between toner cartridge and set contacts.	Clean the contacts as necessary. Replace any deformed or damaged contacts.
HVPS1 is defective.	Replace the HVPS1.

5) **Blank Page**

- Description : Blank page is printed.



Cause and Check Point	Solution
Bad contacts from OPC drum and/or toner cartridge to ground.	Check the terminal of Ground-OPC.
Not working the LSU.	Check the connector of LSU.
Not working the developing bias voltage on HVPS.	Replace the defective HVPS. **NOTE** HVPS output information - If the output for MHV, DEV is abnormal, replace the HVPS1 (JC44–00242A). - If the output for 1THV, 2THV is abnormal, replace the HVPS2 (JC44–00243A).

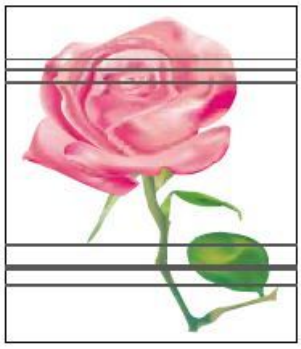
6) **Uneven Density**

- Description : Print Density is uneven between left and right.

Cause and Check Point	Solution
The rear cover is not closed correctly.	Open and remove the rear cover correctly.
The life of the Toner Cartridge has expired.	Replace the corresponding toner cartridge.
The pressure force in the left and right springs of the ITB unit is not even.	Replace the ITB Unit

7) **Horizontal Bands**

- Description : Dark or white horizontal stripes appear in the page. (These may occur at regular intervals down the page.)



Cause and Check Point	Solution
The developing roller, OPC drum or other rollers in the toner cartridge may be contaminated or deformed.	Replace the corresponding toner cartridge.
Bad contacts of HV terminals of the toner cartridge with high voltage terminals from printer set.	Clean all HV terminals in the cartridge and on the set frame. Ensure all toner or paper dust, particles are removed.

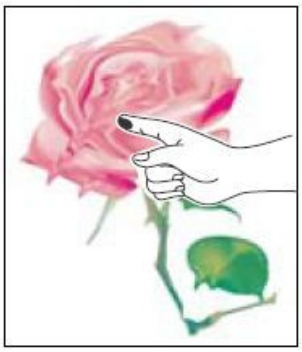
NOTE

Roller Period for Horizontal Problem

Roller Description	Band Period (mm)	Defective part
Pressure Roller	69.08 mm	Fuser Unit
Charge roller	26.7 mm	Toner Cartridge
OPC drum	75.4 mm	
Developing roller	27.5 mm	
Supply roller	37 mm	

8) **Poor Fusing**

- Description : Toner is not properly fixed on paper.



Cause and Check Point	Solution
The media doesn't meet specification	Use the proper media in specifications.
Fuser is defective	Replace the fuser unit.

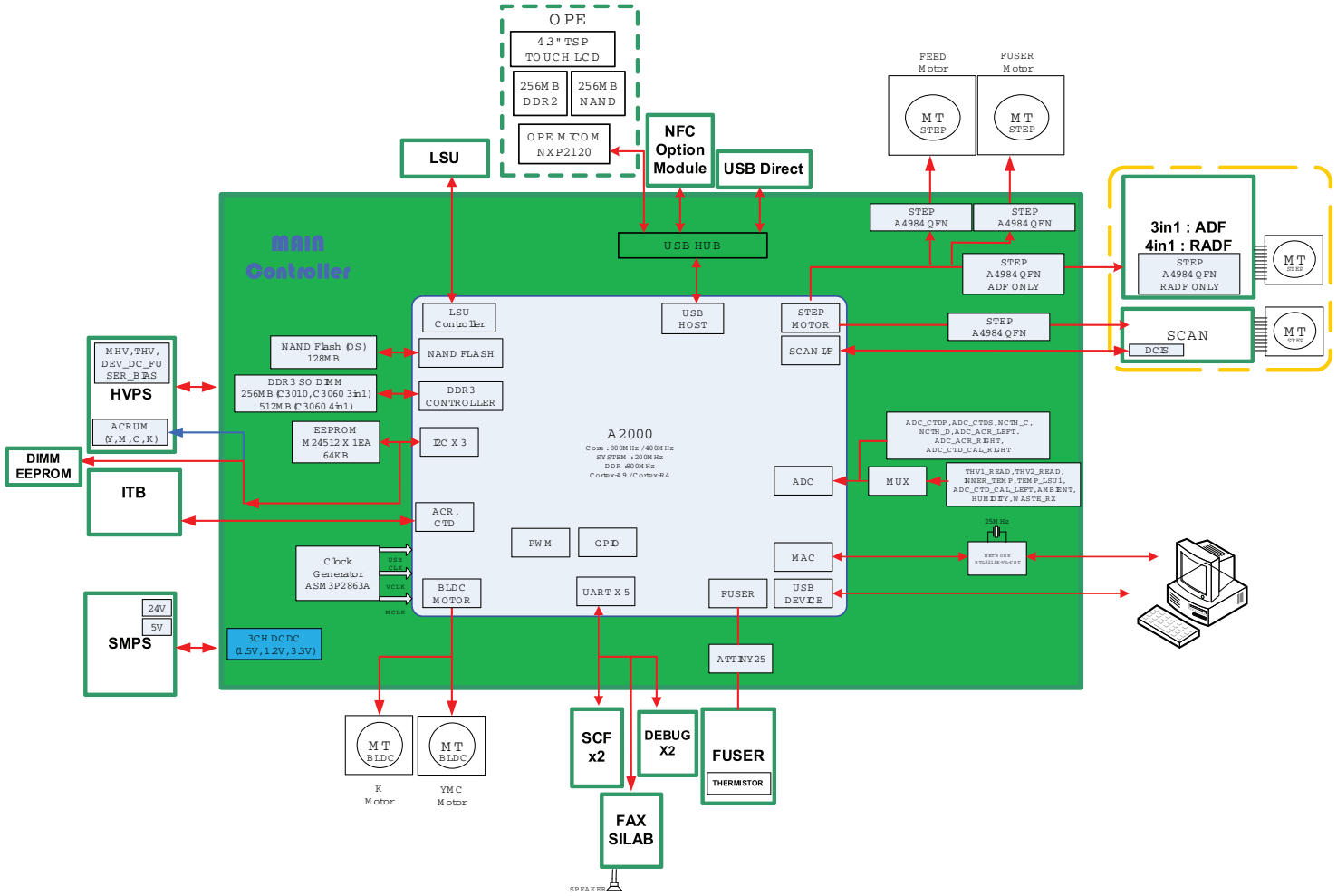
9) **Light Image**

- Description : The printed image is light, with no ghost.

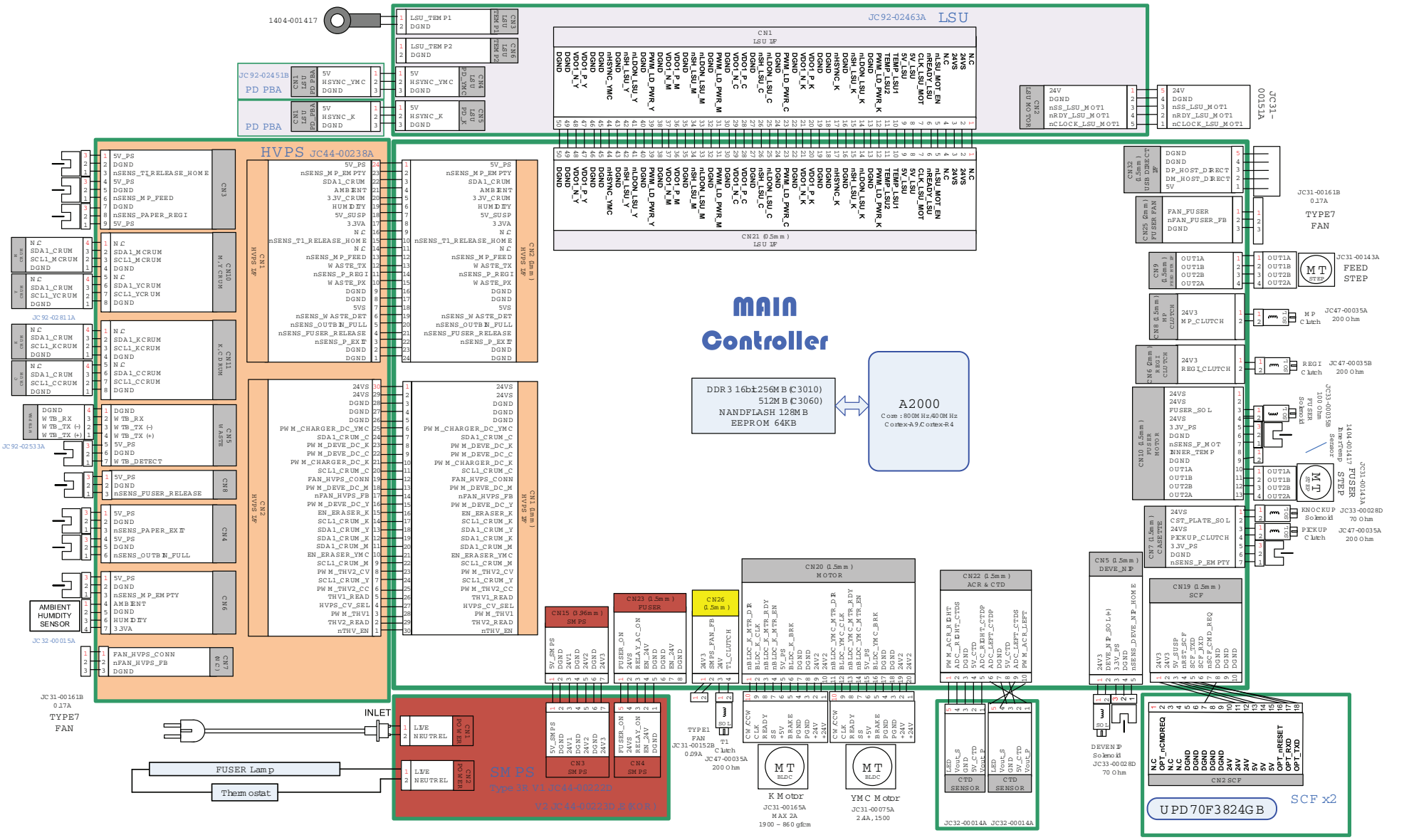
Cause and Check Point	Solution
The toner cartridge life is expired.	Check the toner remaining and replace the related toner cartridge.
HVPS terminal is contaminated.	Clean the contaminated terminal.
The output from the HVPS is abnormal.	Replace the defective HVPS. **NOTE** HVPS output information - If the output for MHV, DEV is abnormal, replace the HVPS1 (JC44–00242A). - If the output for 1THV, 2THV is abnormal, replace the HVPS2 (JC44–00243A).

5. System Diagram

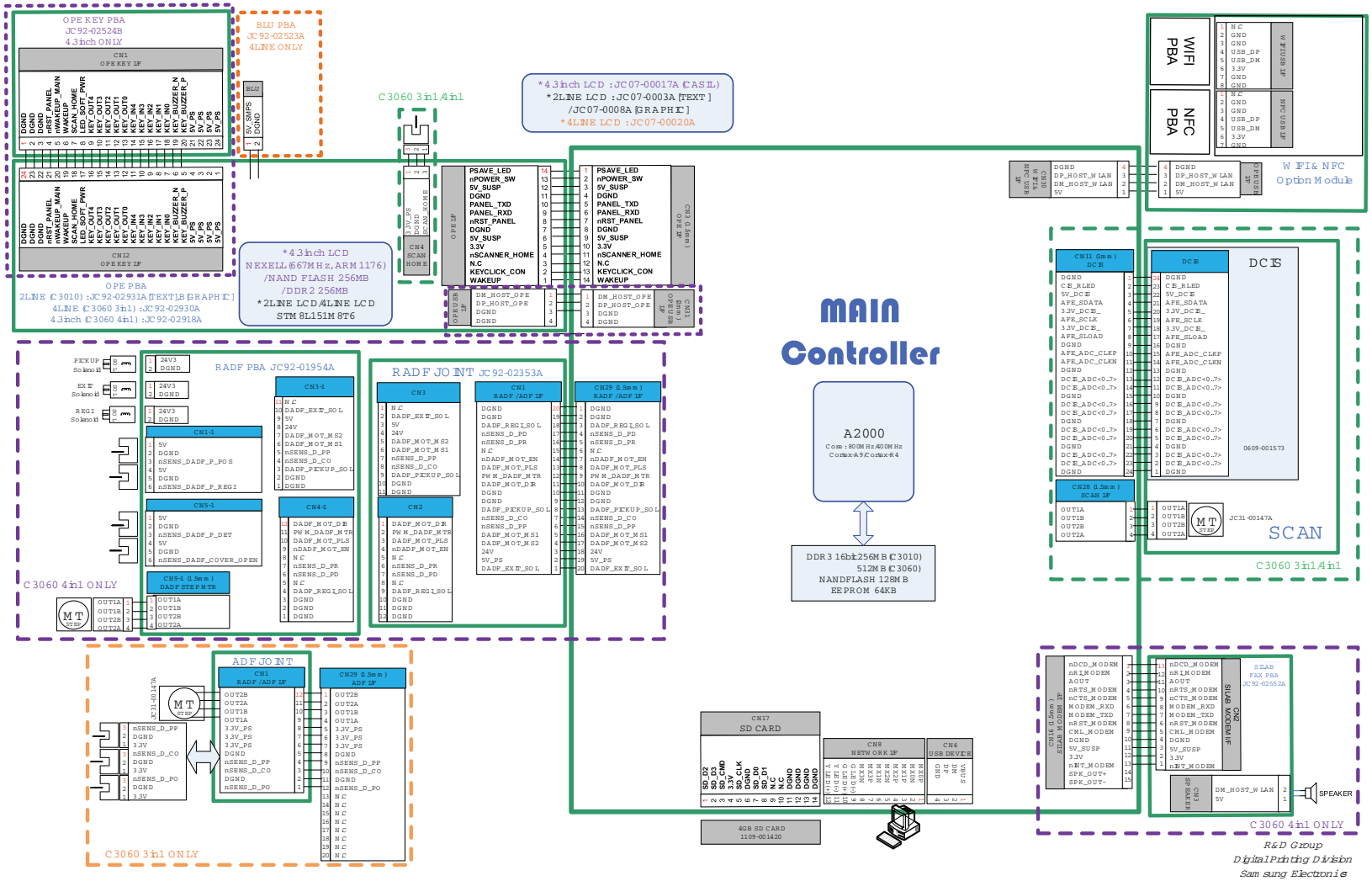
5.1. Block Diagram



5.2. Connection Diagram_1



5.3. Connection Diagram_2

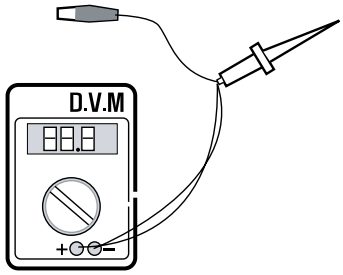
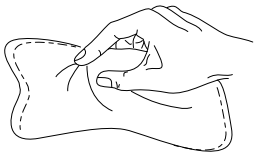
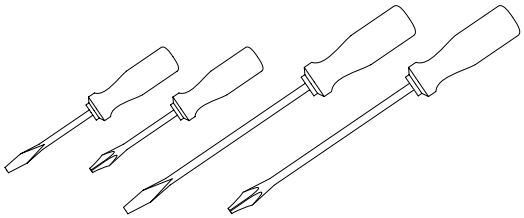
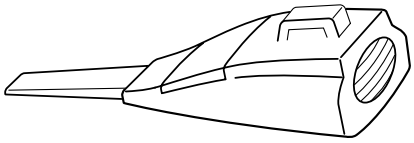
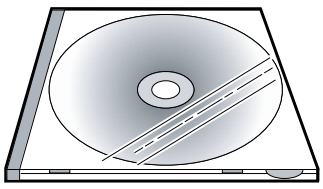


6. Reference Information

This chapter contains the tools list, list of abbreviations used in this manual, and a guide to the location space required when installing the printer. A definition of test pages and Wireless Network information definition is also included.

6.1. Tool for Troubleshooting

The following tools are recommended safe and easy troubleshooting as described in this service manual.

DVM (Digital Volt Meter) Standard : Indicates more than 3 digits. 	**Cleaning Equipments** Standard : An IPA (Isopropyl Alcohol) dry wipe tissue or a gentle neutral detergent and lint-free cloth. 
Driver Standard : "-" type, "+" type (M3 long, M3 short, M2 long, M2 short). 	**Vacuum Cleaner** 
Tweezers Standard : For general home use, small type. 	**Spring Hook** Standard : For general use 
Cotton Swab Standard : For general home use, for medical service. 	**Software (Driver) installation CD ROM** 

6.2. Glossary

The following glossary helps you get familiar with the product by understanding the terminologies commonly used with printing as well as mentioned in this user's guide and service manual.

802.11	802.11 is a set of standards for wireless local area network (WLAN) communication, developed by the IEEE LAN/MAN Standards Committee (IEEE 802).
802.11b/g/n	802.11b/g/n can share same hardware and use the 2.4 GHz band. 802.11b supports bandwidth up to 11 Mbps, 802.11n supports bandwidth up to 150 Mbps. 802.11b/g/n devices may occasionally suffer interference from microwave ovens, cordless telephones, and Bluetooth devices.
Access point	Access Point or Wireless Access Point (AP or WAP) is a device that connects wireless communication devices together on wireless local area networks (WLAN), and acts as a central transmitter and receiver of WLAN radio signals.
ADF	An Automatic Document Feeder (ADF) is a scanning unit that will automatically feed an original sheet of paper so that the machine can scan some amount of the paper at once.
AppleTalk	AppleTalk is a proprietary suite of protocols developed by Apple, Inc for computer networking. It was included in the original Macintosh (1984) and is now deprecated by Apple in favor of TCP/IP networking.
BIT Depth	A computer graphics term describing the number of bits used to represent the color of a single pixel in a bitmapped image. Higher color depth gives a broader range of distinct colors. As the number of bits increases, the number of possible colors becomes impractically large for a color map. 1-bit color is commonly called as monochrome or black and white.
BMP	A bitmapped graphics format used internally by the Microsoft Windows graphics subsystem (GDI), and used commonly as a simple graphics file format on that platform.
BOOTP	Bootstrap Protocol. A network protocol used by a network client to obtain its IP address automatically. This is usually done in the bootstrap process of computers or operating systems running on them. The BOOTP servers assign the IP address from a pool of addresses to each client. BOOTP enables 'diskless workstation' computers to obtain an IP address prior to loading any advanced operating system.
CCD	Charge Coupled Device (CCD) is a hardware which enables the scan job. CCD Locking mechanism is also used to hold the CCD module to prevent any damage when you move the machine.
Collation	Collation is a process of printing a multiple-copy job in sets. When collation is selected, the device prints an entire set before printing additional copies.
Control Panel	A control panel is a flat, typically vertical, area where control or monitoring instruments are displayed. They are typically found in front of the machine.
Coverage	It is the printing term used for a toner usage measurement on printing. For example, 5% coverage means that an A4 sided paper has about 5% image or text on it. So, if the paper or original has complicated images or lots of text on it, the coverage will be higher and at the same time, a toner usage will be as much as the coverage.
CSV	Comma Separated Values (CSV). A type of file format, CSV is used to exchange data between disparate applications. The file format, as it is used in Microsoft Excel, has become a de facto standard throughout the industry, even among non-Microsoft platforms.
DADF	A Duplex Automatic Document Feeder (DADF) is a scanning unit that will automatically feed and turn over an original sheet of paper so that the machine can scan on both sides of the paper.
Default	The value or setting that is in effect when taking a printer out of its box state, reset, or initialized.
DHCP	A Dynamic Host Configuration Protocol (DHCP) is a client-server networking protocol. A DHCP server provides configuration parameters specific to the DHCP client host requesting, generally, information required by the client host to participate on an IP network. DHCP also provides a mechanism for allocation of IP addresses to client hosts.
DIMM	Dual Inline Memory Module (DIMM), a small circuit board that holds memory. DIMM stores all the data within the machine like printing data, received fax data.

DLNA	The Digital Living Network Alliance (DLNA) is a standard that allows devices on a home network to share information with each other across the network.
DNS	The Domain Name Server (DNS) is a system that stores information associated with domain names in a distributed database on networks, such as the Internet.
Dot Matrix Printer	A dot matrix printer refers to a type of computer printer with a print head that runs back and forth on the page and prints by impact, striking an ink-soaked cloth ribbon against the paper, much like a typewriter.
DPI	Dots Per Inch (DPI) is a measurement of resolution that is used for scanning and printing. Generally, higher DPI results in a higher resolution, more visible detail in the image, and a larger file size.
DRPD	Distinctive Ring Pattern Detection. Distinctive Ring is a telephone company service which enables a user to use a single telephone line to answer several different telephone numbers.
Duplex	A mechanism that will automatically turn over a sheet of paper so that the machine can print (or scan) on both sides of the paper. A printer equipped with a Duplex Unit can print on both sides of paper during one print cycle.
Duty Cycle	Duty cycle is the page quantity which does not affect printer performance for a month. Generally the printer has the lifespan limitation such as pages per year. The lifespan means the average capacity of print-outs, usually within the warranty period. For example, if the duty cycle is 48,000 pages per month assuming 20 working days, a printer limits 2,400 pages a day.
ECM	Error Correction Mode (ECM) is an optional transmission mode built into Class 1 fax machines or fax modems. It automatically detects and corrects errors in the fax transmission process that are sometimes caused by telephone line noise.
Emulation	Emulation is a technique of one machine obtaining the same results as another. An emulator duplicates the functions of one system with a different system, so that the second system behaves like the first system. Emulation focuses on exact reproduction of external behavior, which is in contrast to simulation, which concerns an abstract model of the system being simulated, often considering its internal state.
Ethernet	Ethernet is a frame-based computer networking technology for local area networks (LANs). It defines wiring and signaling for the physical layer, and frame formats and protocols for the media access control (MAC)/data link layer of the OSI model. Ethernet is mostly standardized as IEEE 802.3. It has become the most widespread LAN technology in use during the 1990s to the present.
EtherTalk	A suite of protocols developed by Apple Computer for computer networking. It was included in the original Macintosh (1984) and is now deprecated by Apple in favor of TCP/IP networking.
FDI	Foreign Device Interface (FDI) is a card installed inside the machine to allow a third party device such as a coin operated device or a card reader. Those devices allow the pay-for-print service on your machine.
FTP	A File Transfer Protocol (FTP) is a commonly used protocol for exchanging files over any network that supports the TCP/IP protocol (such as the Internet or an intranet).
Fuser Unit	The part of a laser printer that fuses the toner onto the print media. It consists of a heat roller and a pressure roller. After toner is transferred onto the paper, the fuser unit applies heat and pressure to ensure that the toner stays on the paper permanently, which is why paper is warm when it comes out of a laser printer.
Gateway	A connection between computer networks, or between a computer network and a telephone line. It is very popular, as it is a computer or a network that allows access to another computer or network.
Grayscale	A shades of gray that represent light and dark portions of an image when color images are converted to grayscale; colors are represented by various shades of gray.
Halftone	An image type that simulates grayscale by varying the number of dots. Highly colored areas consist of a large number of dots, while lighter areas consist of a smaller number of dots.
HDD	Hard Disk Drive (HDD), commonly referred to as a hard drive or hard disk, is a non-volatile storage device which stores digitally-encoded data on rapidly rotating platters with magnetic surfaces.

IEEE	The Institute of Electrical and Electronics Engineers (IEEE) is an international non-profit, professional organization for the advancement of technology related to electricity.
IEEE 1284	The 1284 parallel port standard was developed by the Institute of Electrical and Electronics Engineers (IEEE). The term "1284-B" refers to a specific connector type on the end of the parallel cable that attaches to the peripheral (for example, a printer).
Intranet	A private network that uses Internet Protocols, network connectivity, and possibly the public telecommunication system to securely share part of an organization's information or operations with its employees. Sometimes the term refers only to the most visible service, the internal website.
IP address	An Internet Protocol (IP) address is a unique number that devices use in order to identify and communicate with each other on a network utilizing the Internet Protocol standard.
IPM	The Images Per Minute (IPM) is a way of measuring the speed of a printer. An IPM rate indicates the number of single-sided sheets a printer can complete within one minute.
IPP	The Internet Printing Protocol (IPP) defines a standard protocol for printing as well as managing print jobs, media size, resolution, and so forth. IPP can be used locally or over the Internet to hundreds of printers, and also supports access control, authentication, and encryption, making it a much more capable and secure printing solution than older ones.
IPX/SPX	IPX/SPX stands for Internet Packet Exchange/Sequenced Packet Exchange. It is a networking protocol used by the Novell NetWare operating systems. IPX and SPX both provide connection services similar to TCP/IP, with the IPX protocol having similarities to IP, and SPX having similarities to TCP. IPX/SPX was primarily designed for local area networks (LANs), and is a very efficient protocol for this purpose (typically its performance exceeds that of TCP/IP on a LAN).
ISO	The International Organization for Standardization (ISO) is an international standard-setting body composed of representatives from national standards bodies. It produces world-wide industrial and commercial standards.
ITU-T	The International Telecommunication Union is an international organization established to standardize and regulate international radio and telecommunications. Its main tasks include standardization, allocation of the radio spectrum, and organizing interconnection arrangements between different countries to allow international phone calls. A -T out of ITU-T indicates telecommunication.
ITU-T No. 1 chart	Standardized test chart published by ITU-T for document facsimile transmissions.
JBIG	Joint Bi-level Image Experts Group (JBIG) is an image compression standard with no loss of accuracy or quality, which was designed for compression of binary images, particularly for faxes, but can also be used on other images.
JPEG	Joint Photographic Experts Group (JPEG) is a most commonly used standard method of lossy compression for photographic images. It is the format used for storing and transmitting photographs on the World Wide Web.
LDAP	The Lightweight Directory Access Protocol (LDAP) is a networking protocol for querying and modifying directory services running over TCP/IP.
LED	A Light-Emitting Diode (LED) is a semiconductor device that indicates the status of a machine.
MAC address	Media Access Control (MAC) address is a unique identifier associated with a network adapter. MAC address is a unique 48-bit identifier usually written as 12 hexadecimal characters grouped in pairs (e. g., 00-00-0c-34-11-4e). This address is usually hard-coded into a Network Interface Card (NIC) by its manufacturer, and used as an aid for routers trying to locate machines on large networks.
MFP	Multi Function Peripheral (MFP) is an office machine that includes the following functionality in one physical body, so as to have a printer, a copier, a fax, a scanner and etc.
MH	Modified Huffman (MH) is a compression method for decreasing the amount of data that needs to be transmitted between the fax machines to transfer the image recommended by ITU-T T.4. MH is a codebook-based run-length encoding scheme optimized to efficiently compress white space. As most faxes consist mostly of white space, this minimizes the transmission time of most faxes.
MMR	Modified Modified READ (MMR) is a compression method recommended by ITU-T T.6.

Modem	A device that modulates a carrier signal to encode digital information, and also demodulates such a carrier signal to decode transmitted information.
MR	Modified Read (MR) is a compression method recommended by ITUT T.4. MR encodes the first scanned line using MH. The next line is compared to the first, the differences determined, and then the differences are encoded and transmitted.
NetWare	A network operating system developed by Novell, Inc. It initially used cooperative multitasking to run various services on a PC, and the network protocols were based on the archetypal Xerox XNS stack. Today NetWare supports TCP/IP as well as IPX/SPX.
OPC	Organic Photo Conductor (OPC) is a mechanism that makes a virtual image for print using a laser beam emitted from a laser printer, and it is usually green or rust colored and has a cylinder shape. An imaging unit containing a drum slowly wears the drum surface by its usage in the printer, and it should be replaced appropriately since it gets worn from contact with the cartridge development brush, cleaning mechanism, and paper.
Originals	The first example of something, such as a document, photograph or text, etc, which is copied, reproduced or translated to produce others, but which is not itself copied or derived from something else.
OSI	Open Systems Interconnection (OSI) is a model developed by the International Organization for Standardization (ISO) for communications. OSI offers a standard, modular approach to network design that divides the required set of complex functions into manageable, self-contained, functional layers. The layers are, from top to bottom, Application, Presentation, Session, Transport, Network, Data Link and Physical.
PABX	A private automatic branch exchange (PABX) is an automatic telephone switching system within a private enterprise.
PCL	Printer Command Language (PCL) is a Page Description Language (PDL) developed by HP as a printer protocol and has become an industry standard. Originally developed for early inkjet printers, PCL has been released in varying levels for thermal, dot matrix printer, and laser printers.
PDF	Portable Document Format (PDF) is a proprietary file format developed by Adobe Systems for representing two dimensional documents in a device independent and resolution independent format.
PostScript(PS)	PostScript (PS) is a page description language and programming language used primarily in the electronic and desktop publishing areas. - that is run in an interpreter to generate an image.
Printer Driver	A program used to send commands and transfer data from the computer to the printer.
Print Media	The media like paper, envelopes, labels, and transparencies which can be used in a printer, a scanner, a fax or, a copier.
PPM	Pages Per Minute (PPM) is a method of measurement for determining how fast a printer works, meaning the number of pages a printer can produce in one minute.
PRN file	An interface for a device driver, this allows software to interact with the device driver using standard input/output system calls, which simplifies many tasks.
Protocol	A convention or standard that controls or enables the connection, communication, and data transfer between two computing endpoints.
PSTN	The Public-Switched Telephone Network (PSTN) is the network of the world's public circuit-switched telephone networks which, on industrial premises, is usually routed through the switchboard.
RADIUS	Remote Authentication Dial In User Service (RADIUS) is a protocol for remote user authentication and accounting. RADIUS enables centralized management of authentication data such as usernames and passwords using an AAA (authentication, authorization, and accounting) concept to manage network access.
Resolution	The sharpness of an image, measured in Dots Per Inch (DPI). The higher the dpi, the greater the resolution.
SMB	Server Message Block (SMB) is a network protocol mainly applied to share files, printers, serial ports, and miscellaneous communications between nodes on a network. It also provides an authenticated Interprocess communication mechanism.

SMTP	Simple Mail Transfer Protocol (SMTP) is the standard for e-mail transmissions across the Internet. SMTP is a relatively simple, text based protocol, where one or more recipients of a message are specified, and then the message text is transferred. It is a client server protocol, where the client transmits an email message to the server.
SSID	Service Set Identifier (SSID) is a name of a wireless local area network (WLAN). All wireless devices in a WLAN use the same SSID in order to communicate with each other. The SSIDs are case-sensitive and have a maximum length of 32 characters.
Subnet Mask	The subnet mask is used in conjunction with the network address to determine which part of the address is the network address and which part is the host address.
TCP/IP	The Transmission Control Protocol (TCP) and the Internet Protocol (IP); the set of communications protocols that implement the protocol stack on which the Internet and most commercial networks run.
TCR	Transmission Confirmation Report (TCR) provides details of each transmission such as job status, transmission result and number of pages sent. This report can be set to print after each job or only after failed transmissions.
TIFF	Tagged Image File Format (TIFF) is a variable-resolution bitmapped image format. TIFF describes image data that typically come from scanners. TIFF images make use of tags, keywords defining the characteristics of the image that is included in the file. This flexible and platform-independent format can be used for pictures that have been made by various image processing applications.
Toner Cartridge	A kind of bottle or container used in a machine like a printer which contains toner. Toner is a powder used in laser printers and photocopiers, which forms the text and images on the printed paper. Toner can be fused by a combination of heat/pressure from the fuser, causing it to bind to the fibers in the paper.
TWAIN	An industry standard for scanners and software. By using a TWAINcompliant scanner with a TWAIN-compliant program, a scan can be initiated from within the program. It is an image capture API for Microsoft Windows and Apple Macintosh operating systems.
UNC Path	Uniform Naming Convention (UNC) is a standard way to access network shares in Window NT and other Microsoft products. The format of a UNC path is: \\<servername>\<sharename>\<Additional directory>
URL	Uniform Resource Locator (URL) is the global address of documents and resources on the Internet. The first part of the address indicates what protocol to use, the second part specifies the IP address or the domain name where the resource is located.
USB	Universal Serial Bus (USB) is a standard that was developed by the USB Implementers Forum, Inc., to connect computers and peripherals. Unlike the parallel port, USB is designed to concurrently connect a single computer USB port to multiple peripherals.
Watermark	A watermark is a recognizable image or pattern in paper that appears lighter when viewed by transmitted light. Watermarks were first introduced in Bologna, Italy in 1282; they have been used by papermakers to identify their product, and also on postage stamps, currency, and other government documents to discourage counterfeiting.
WEP	Wired Equivalent Privacy (WEP) is a security protocol specified in IEEE 802.11 to provide the same level of security as that of a wired LAN. WEP provides security by encrypting data over radio so that it is protected as it is transmitted from one end point to another.
WIA	Windows Imaging Architecture (WIA) is an imaging architecture that is originally introduced in Windows Me and Windows XP. A scan can be initiated from within these operating systems by using a WIAcompliant scanner.
WPA	Wi-Fi Protected Access (WPA) is a class of systems to secure wireless (Wi-Fi) computer networks, which was created to improve upon the security features of WEP.
WPA-PSK	WPA-PSK (WPA Pre-Shared Key) is special mode of WPA for small business or home users. A shared key, or password, is configured in the wireless access point (WAP) and any wireless laptop or desktop devices. WPA-PSK generates a unique key for each session between a wireless client and the associated WAP for more advanced security.

WPS	The Wi-Fi Protected Setup (WPS) is a standard for establishing a wireless home network. If your wireless access point supports WPS, you can configure the wireless network connection easily without a computer.
XPS	XML Paper Specification (XPS) is a specification for a Page Description Language (PDL) and a new document format, which has benefits for portable document and electronic document, developed by Microsoft. It is an XML-based specification, based on a new print path and a vector-based device-independent document format.

6.3. Document Revision List

Version	Date	Page	Description
1.00	07/May/2012	-	Release
2.00	13/Aug/2014	P.6–8	Add Document Revision List

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