

MICROTEK

Service Manual for Medi-7000

Professional Sheet-fed Type Film Digitizer
1200dpi (V) x 600dpi (H) / LED / CCD / USB 2.0
Compliance with ISO 13485 and FDA Standards



Features

- FDA certified
- 7 seconds per Chest X-Ray
- No warm-up time with LED light source
- 4.0 Dmax, 600 dpi optical resolution
- Archives X-Ray films from 2.5"x2.5" to 14"x35"
- Supports DICOM 3.0 and telemedicine with MiPAX
- Easy to operate, clean, and maintain

High-Speed
7 seconds per Chest X-Ray

Maximum Scan Area for X-Ray is 14" (W) x 35" (L)

Minimum Scan Area for X-Ray is 2.5" (W) x 2.5" (L)

No warm up time is needed due to Light Source is LED (Light Emitting Diode)

ScanWizard Medi V2.0 (Twain) support Medi-7000 to work under Windows 7 / Windows Vista / Windows XP / Windows 2000 system

ScanWizard Medi V2.0 support Scan Type : Gray (8 bit / 12 bit / 16 bit) and Auto Scan for Medi-7000 to do X-Ray (Film) Scan under PC Windows system

Dynamic Range of X-Ray (Film) Scan can be up to 4.0 Dmax

Support Auto Crop & Auto Deskew feature in ScanWizard Medi V2.0 or later version

Support to work with MiPAX-Xray and convert the scanned image into a DICOM 3.0 format and telemedicine with MiPAX PACS Server or other PACS Server

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The bundle package in shipping unit of **Medi-7000 (EU Version)** is as the picture below.



Medi-7000 (EU Ver.,
 P/N : 1111-03-500303)



Dress Unit of **Medi-7000**
 (P/N : I41-015393)



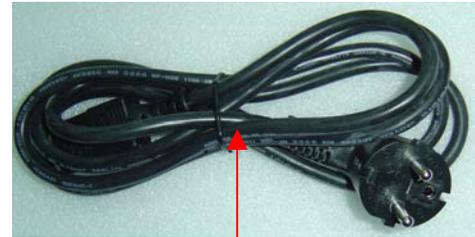
Document Kit (EU,
 P/N : I41-015488)



USB2.0 Cable, 1.5m
 (P/N : 121-44-150504)



Anti-Dust Cloth (P/N :
 389-00-500000)



EU Type AC Power Cord
 (P/N : 121-46-032005)



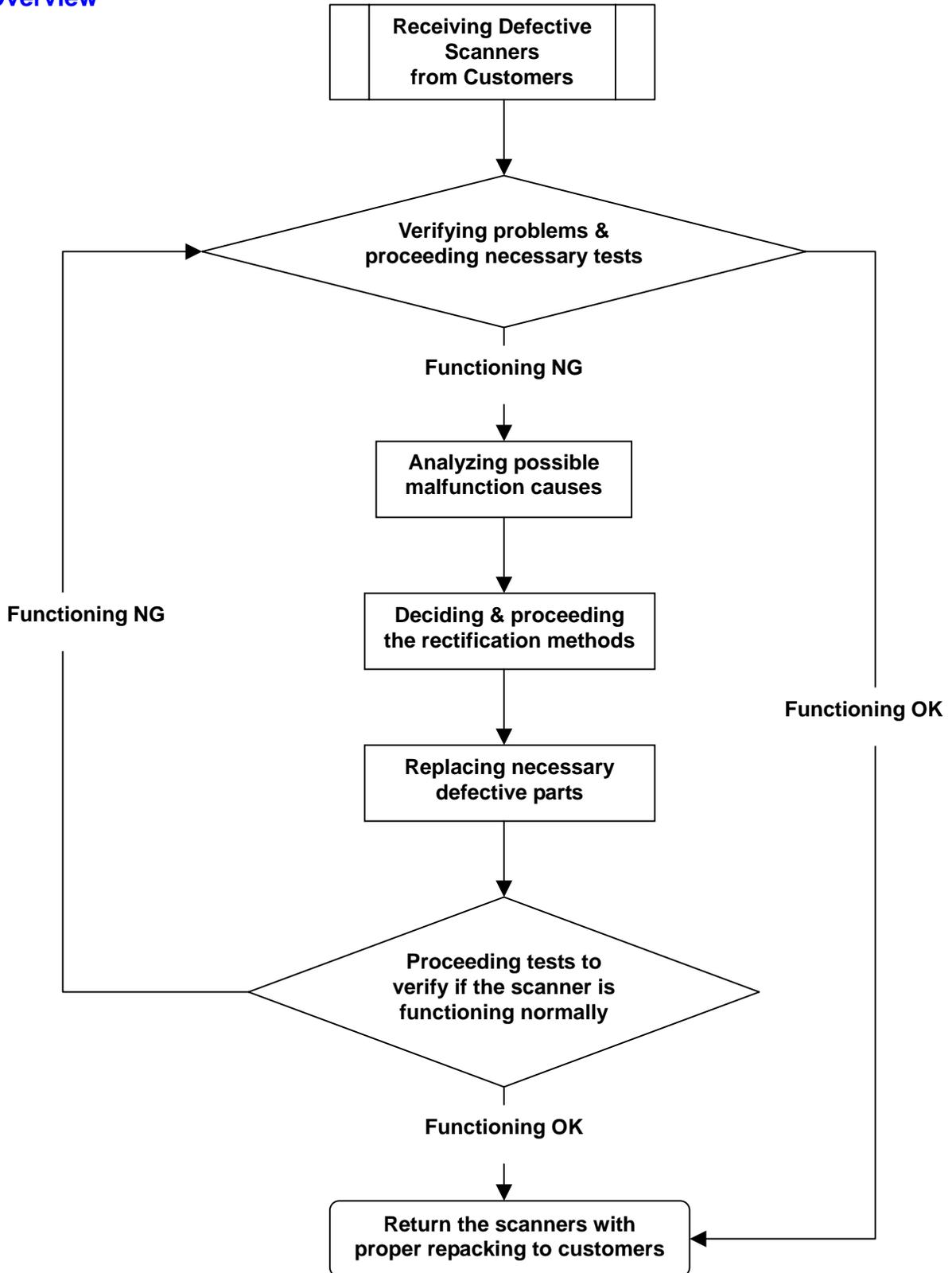
Film-in Tray Assembly
 (P/N : I41-015394)



Film-out Tray Assembly
 (P/N : I41-015395)

Chapter 1 : How to handle defective returns

Overview



A. Something You Shall Know About Medi-7000

Medi-7000 is the first Microtek Medical digitizer that meet the compliance of **ISO 13485** and **FDA** (Food & Drug Administration) standards.

The optical resolution of **Medi-7000** is 1200dpi (V) x 600dpi (H), it is a sheet-fed type digitizer with USB2.0 interface. The dynamic range of **Film Scan** from **Medi-7000** can be up to **4.0 Dmax**.

ScanWizard Medi V2.0 (Twain) or later version is the supported driver software that offers **Gray (16 bit)**, **Gray (12 bit)** and **Gray (8 bit)** and **Auto Scan** for **Medi-7000** to do X-Ray (Film) Scan under PC Windows 7 (32 bit & 64 bit) / Vista (32 bit & 64 bit) / XP (32 bit) / 2000 system through an USB2.0 connectivity.

If you want to keep **Medi-7000** to work under Windows **XP 64 bit** system through an **USB2.0** connectivity, by this way, you shall get the **hot fix : KB902390** and **KB922498** from Microsoft at first, and then install these two hot fix into **Windows XP 64 bit** system.

The maximum scan area of **Medi-7000** in ScanWizard Medi V2.0 is 14" (W) * 35" (L).
The minimum scan area of **Medi-7000** in ScanWizard Medi V2.0 is 2.5" (W) * 2.5" (L).

After you complete to install ScanWizard Medi V2.0 or later version into PC Windows system, and then you can find out the icon of " **ScanWizard Medi** " and " **MSmart Images** " will list on the Desktop of PC Windows system as the picture below.



Double click the icon of " **ScanWizard Medi** " from the Desktop of PC Windows system, and then it will get into stand-alone version of ScanWizard Medi V2.0 or later version, by this way, the customer can do X-Ray Scan with **Medi-6000 Plus** through an USB2.0 connectivity.



All of scanned images in ScanWizard Medi V2.0 or later version will be saved into folder : **MSmart Images**, its default path in PC Windows system located at " **C:\ Program Files \ Microtek \ ScanWizard Medi \ My Images** ".



This is an icon of " **Scanner Finder** " means " **Scanner is ready** ", it means scanner has linked with PC Windows system successfully. If Scanner Finder can detect **Medi-7000** link with PC through an USB2.0 connectivity well, and then this icon will show up in resident area of PC Windows system afterwards.



This is an icon of " **Scanner Finder** " means " **Scanner is not ready** ", it means PC Windows system can not detect scanner has linking successfully. If Scanner Finder can not detect **Medi-7000** link with PC through an USB2.0 connectivity well, and then this icon will show up in resident area of PC Windows system.

ScanWizard Medi V2.0

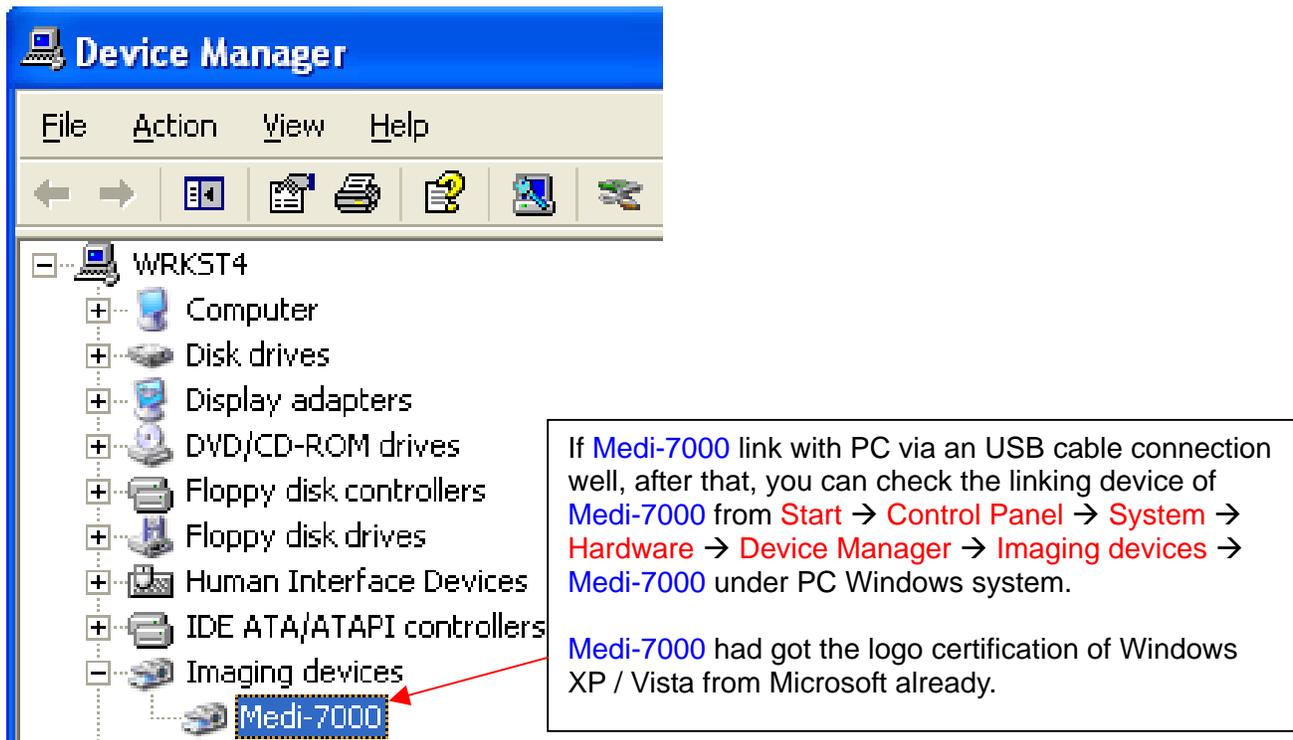
Support OS : **Windows 7 (32 & 64 bit) / Vista (32 & 64 bit) / XP (32 bit) / .2000 System**

Supported Models :

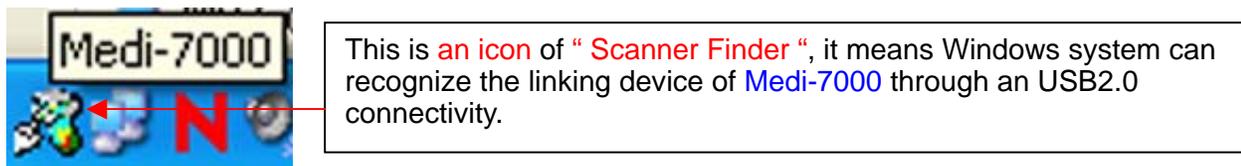
Medi-7000 (Twain), Medi-6000 Plus (Twain), Medi-6000 (Twain), Medi-3200 (Twain),
Medi-2200 (Twain), Medi-1200 (Twain)..

ScanWizard Medi V2.0 is released by Microtek RDC on **September 17, 2010**.

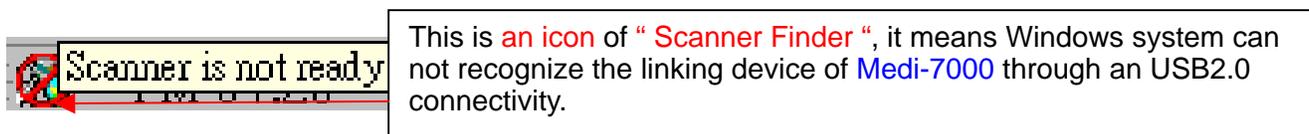
If ScanWizard Medi V2.0 is installed into PC Windows system, and then, the customer can link Medi-7000 with PC via USB cable connection, after that, the customer can check the linking device of Medi-7000 from **Start → Control Panel → System → Hardware → Device Manager → Imaging devices → Medi-7000** under PC Windows XP system as below illustration.



ScanWizard Medi V2.0 or later version can be launched under PC Windows system if **Scanner Finder** can detect the linking device of **Medi-7000** as the picture below.



If **Scanner Finder** can not detect the linking device of **Medi-7000**, by this way, it shows below icon and keep ScanWizard Medi can not be launched under PC Windows system.



B. Where to find out a WIA driver of Medi-7000 for Windows 7 / Vista / XP system ?

MSM4DW.dll is a certificated WIA driver of Medi-7000 for Windows XP system.

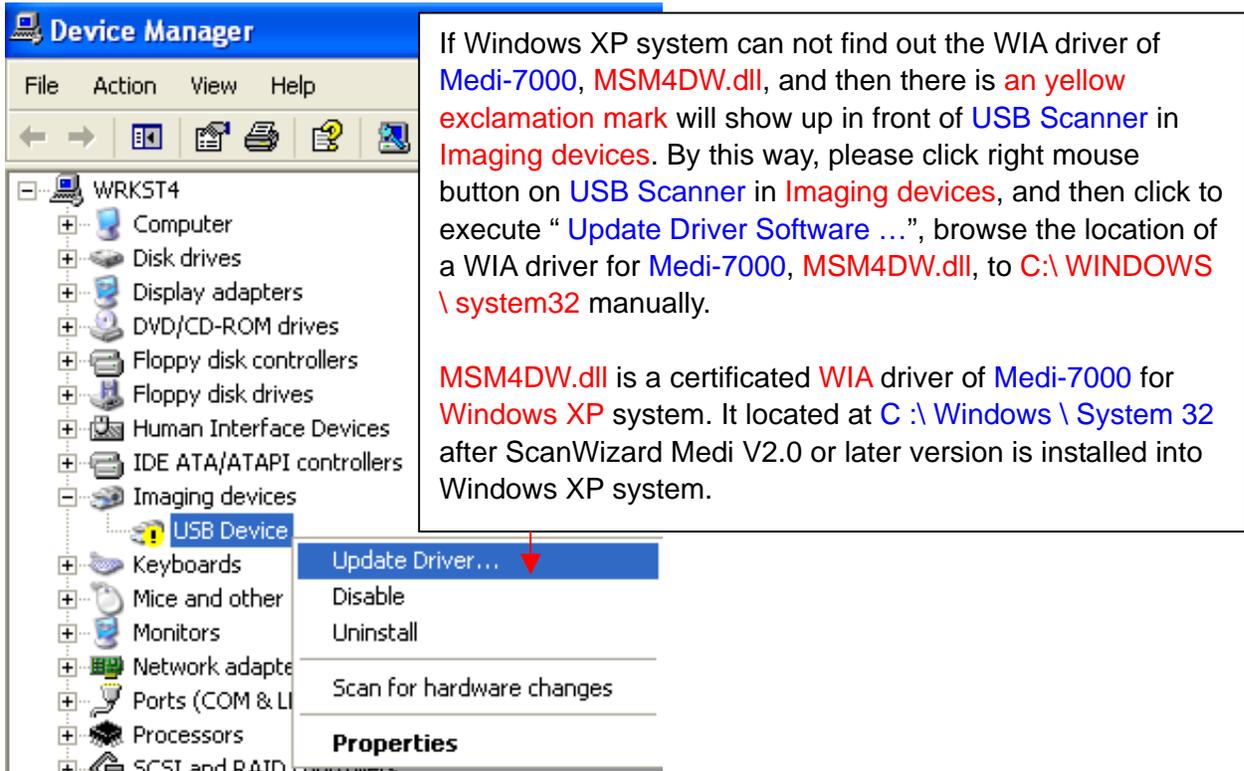
MSM4DW2.dll is a certificated WIA driver of Medi-7000 for Windows 7 / Vista system.

If PC Windows system can not detect the linking device of Medi-7000 through an USB2.0 connectivity, by this way, there is an yellow exclamation mark will show up in front of USB Scanner in Imaging devices as the picture below.

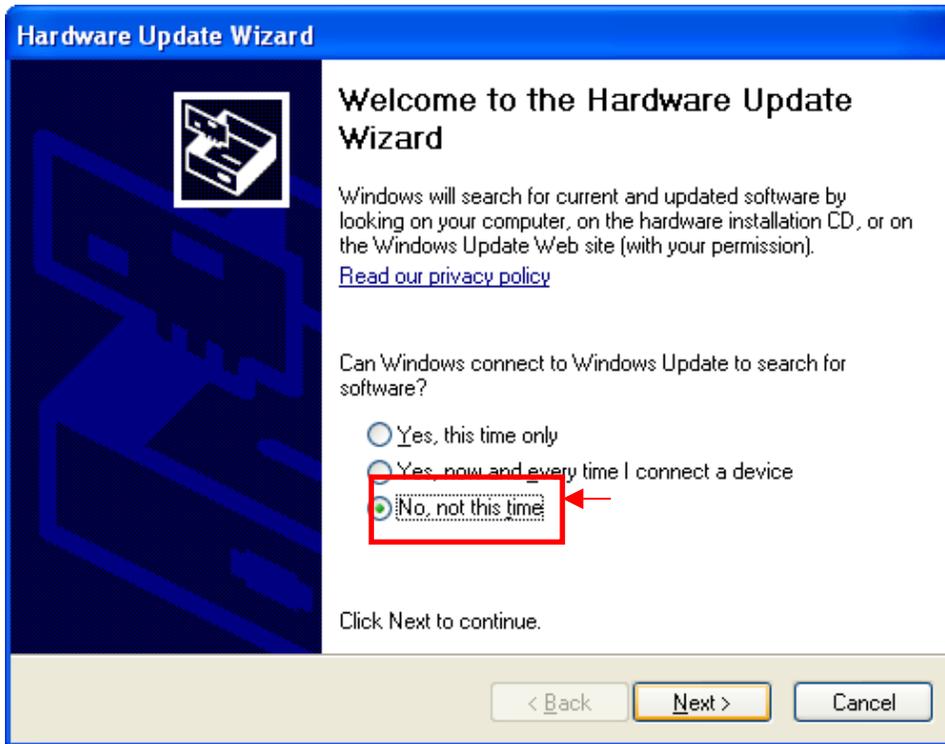


Please refer to below procedure to keep Windows system search for a WIA driver of Medi-7000.

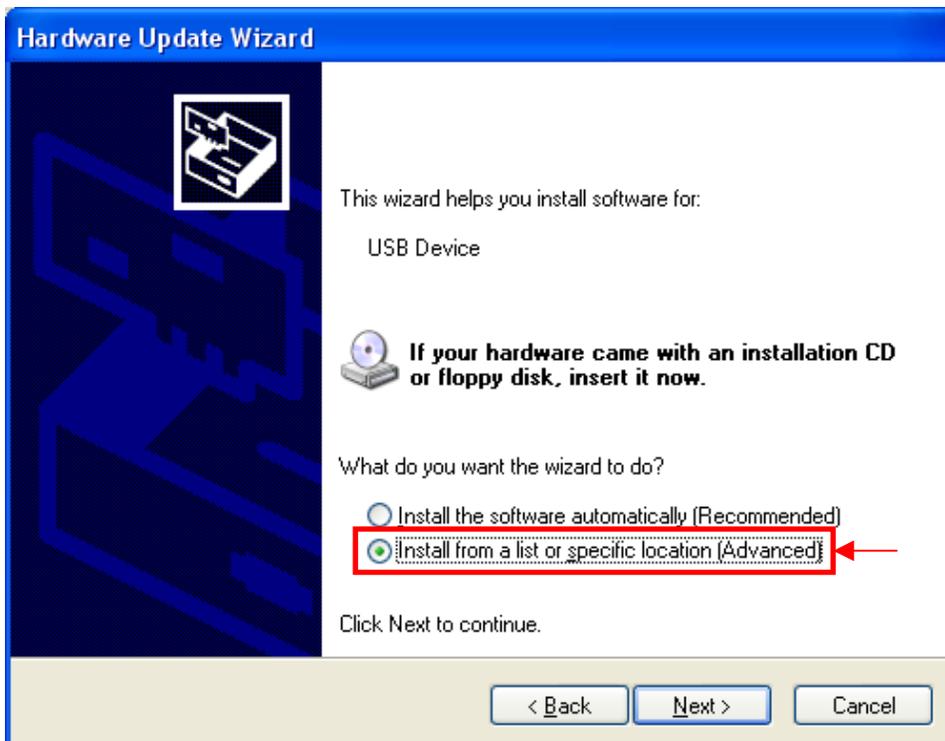
Step1. Click to execute "Update Driver Software ..." on Imaging devices as the picture below.



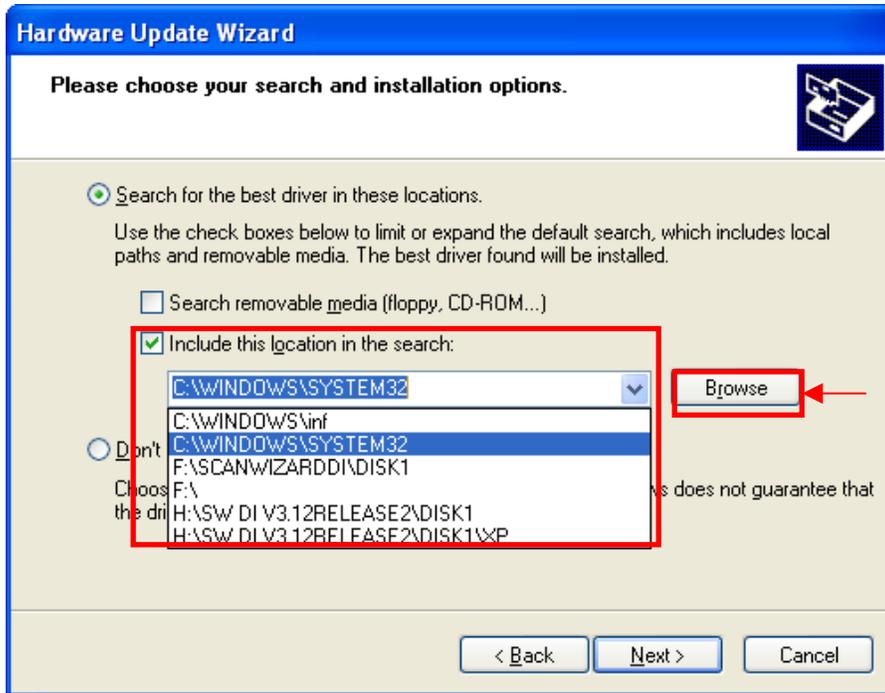
Step 2. Click to select “ No, not this time “ in Dialogue Message as the picture below.



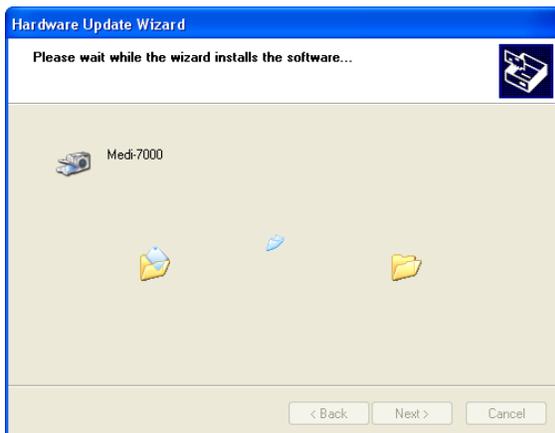
Step 3. Click to select “ Install from a list or specific location (Advanced) “ in Dialogue Message as the picture below.



Step 4. Click to browse the location of WIA driver to scanner driver S/W CD at disk drive F :, or at C : \ Windows \ System 32, or at C : \ Windows \ inf manually.



Step 5. If Windows system search for a WIA driver of **Medi-7000**, and then Device Manager will detect the linking device as **Medi-7000** in Imaging devices as the picture below.



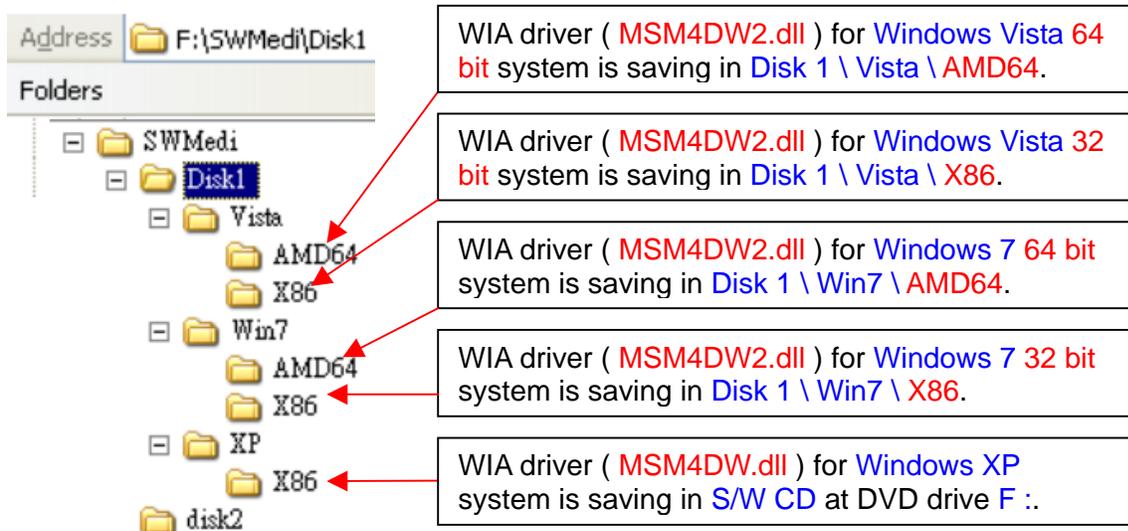
The customer can find out the WIA driver of Medi-7000 for Windows XP system is existed in ScanWizard Medi V2.0 CD (or its later Version CD) from path at DVD drive F : \ MSM4DW.dll.

The customer can find out the WIA driver of Medi-7000 for Windows Vista 64 bit system is existed In ScanWizard Medi V2.0 CD (or its later Version CD) from path at DVD drive F : \ SWMedi \ Disk 1 \ Vista \ AMD64 \ MSM4DW2.dll.

The customer can find out the WIA driver of Medi-7000 for Windows Vista 32 bit system is existed In ScanWizard Medi V2.0 CD (or its later Version CD) from path at DVD drive F : \ SWMedi \ Disk 1 \ Vista \ X86 \ MSM4DW2.dll.

The customer can find out the WIA driver of Medi-7000 for Windows 7 64 bit system is existed in ScanWizard Medi V2.0 CD (or its later Version CD) from path at DVD drive F : \ SWMedi \ Disk 1 \ Win7 \ AMD64 \ MSM4DW2.dll.

The customer can find out the WIA driver of Medi-7000 for Windows 7 32 bit system is existed in ScanWizard Medi V2.0 CD (or its later Version CD) from path at DVD drive F : \ SWMedi \ Disk 1 \ Win7 \ X86 \ MSM4DW2.dll.



MSM4DW2.dll is a certificated WIA driver of Medi-7000 for Windows 7 / Vista system. It located at C : \ Windows \ System 32 after ScanWizard Medi V2.0 or later version is installed into Windows 7 / Vista system and Medi-7000 link with PC at the first time.

MSM4DW.dll is a certificated WIA driver of Medi-7000 for Windows XP system. It located at C : \ Windows \ System 32 after ScanWizard Medi V2.0 or later version is installed into Windows XP system.

4D is a model code of WIA driver (MSM4DW.dll) for Medi-7000, you can open to read its information from path at C : \ Program Files \ Microtek \ ScanWizard Medi \ Scanners \ Msapn.ini.

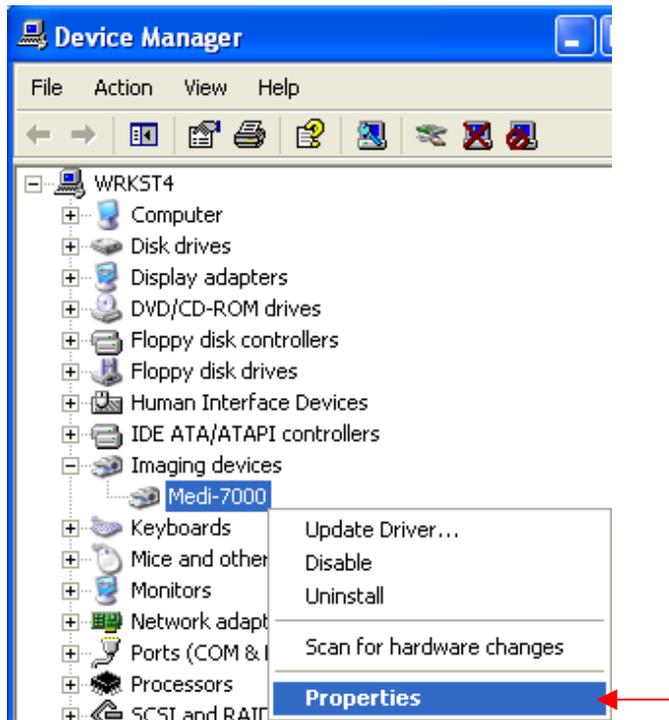
If Device Manager can recognize the linking device of Medi-7000 from Start → Control Panel → System → Hardware → Device Manager → Imaging devices → Medi-7000 under PC Windows XP system, and then Scanner Finder will show up the icon as the picture below, after that, you can launch ScanWizard Medi V2.0 or later version and do X-Ray (Film) Scan in ScanWizard Medi afterwards.



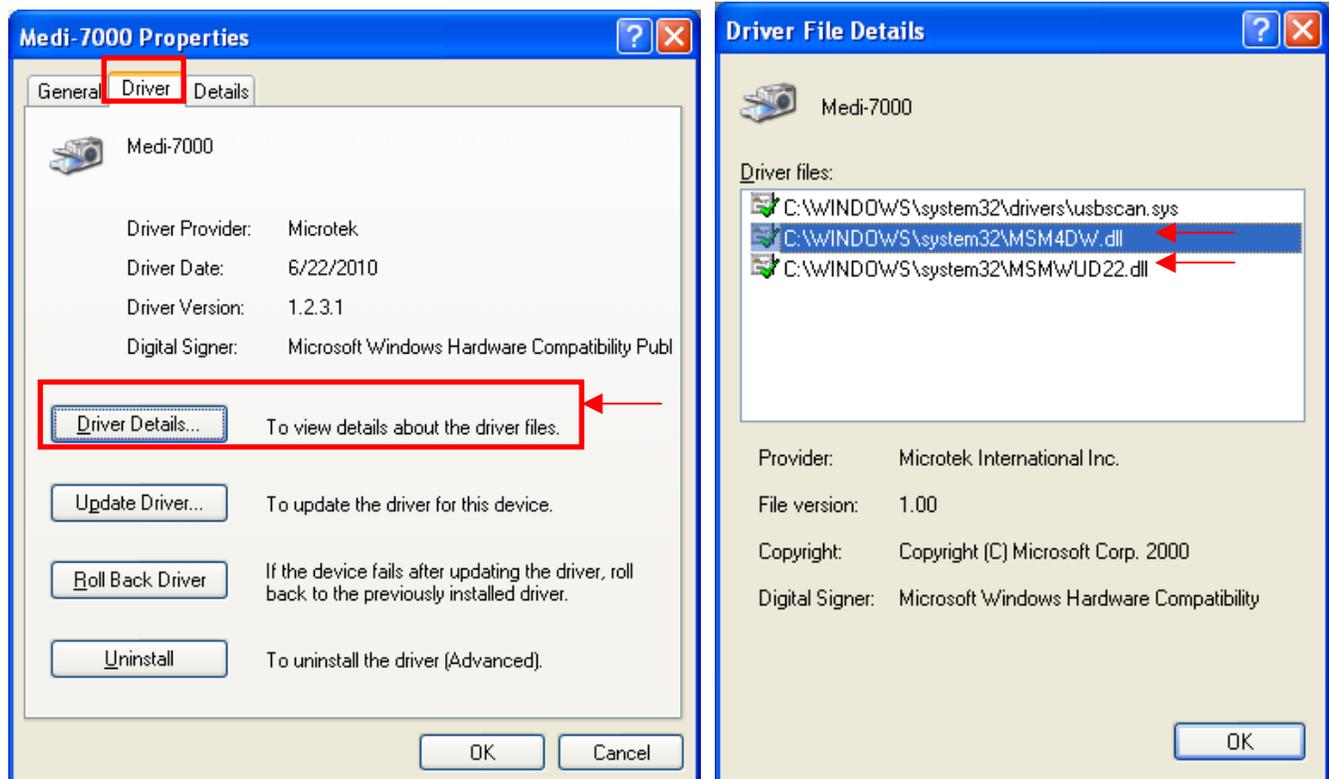
Medi-7000 is a logo certification of Medi-7000 from Microsoft.

The following procedure is to tell you how to find out the location of **WIA driver** in Device Manager.

Step 1. Click right mouse button on **Medi-7000** in **Imaging devices**, and then click to execute “**Properties**” as the picture below.



Step 2. Click “**Driver**” in Main Menu at first, and then click “**Driver Details**” to read the location of WIA driver for **Medi-7000**, **MSM4DW.dll**, which located at **C : \ Windows \ System 32**.



C. The feature of Medi-7000

Medi-7000 is a sheet-fed type of film digitizer with an USB2.0 interface and is designed with a LED (Light Emitting Diode) light source in Upper Assembly. The dynamic range from X-Ray (Film) Scan of **Medi-7000** can be up to 4.0 Dmax.

ScanWizard Medi V2.0 (Twain) or later version is the supported driver software that offers **Gray (16 bit)**, **Gray (12 bit)** and **Gray (8 bit)** and **Auto Scan** for **Medi-7000** to do X-Ray (Film) Scan under PC Windows 7 (32 bit & 64 bit) / Vista (32 bit & 64 bit) / XP (32 bit) / 2000 system through an USB2.0 connectivity.

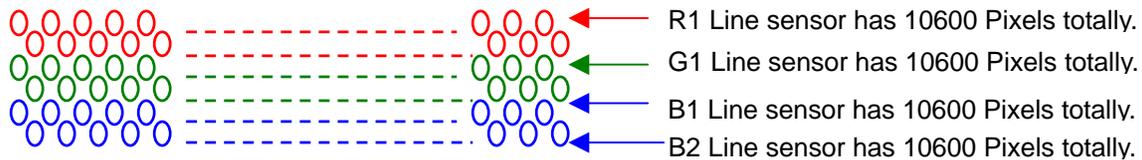
Optical Resolution : 600dpi (H) x 1200dpi (V)

Maximum Scan Area for X-Ray scan : 14" (W) x 35" (L)

Minimum Scan Area for X-Ray scan : 2.5" (W) x 2.5" (L)

CCD Sensor in Carriage Assembly of Medi-7000 : TCD-2950D (Toshiba CCD), 10600 Pixels -- 8400 effective pixels (14" x 600dpi = 8400 pixels)

TCD-2950D is with 6 rows of line sensors (R1,R2, B1,B2, G1 and G2) in it, each of CCD line sensor has 10600 pixels totally, but R1 and R2 has 0.5 pixel shift in alignment (G1and G2, B1and B2 has the same design also.).



LED Lamp Assembly (PWBA, L003, LED Type : SL1411B-WWL) located in Upper Assembly

Safety Sensor * 1 on Sensor Board (PWBA, SAGITTA-HOME FOR Medi-7000)

A/D Converter Chipset : AD9826 (16BIT/Pixel) on Main Board (PWBA, MEDI-SF-0906)

Data Processing Chipset : XC3S1000 (FPGA Chip on Main Board : PWBA, MEDI-SF-0906)

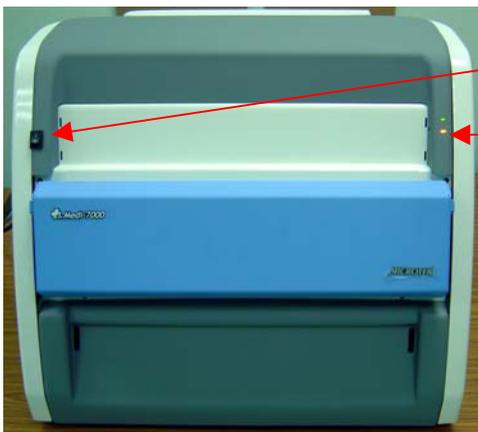
Image Data Buffer : 2M WORD DRAM BUFFER on Main Board (PWBA, MEDI-SF-0906)

Scanner Controller : CPU LPC2214 (32 BIT PROCESSOR) on Main Board (MEDI-SF-0906)

USB Controller : NET2270, USB 2.0 interface (Chip on Main Board : PWBA, MEDI-SF-0906)

FirmWare Program Memory : **Flash Memory (F/W version can be updated by PC)**
(M29W320DB, 2M Word x 2 on Main Board : PWBA, MEDI-SF-0906)

Front View of Medi-7000



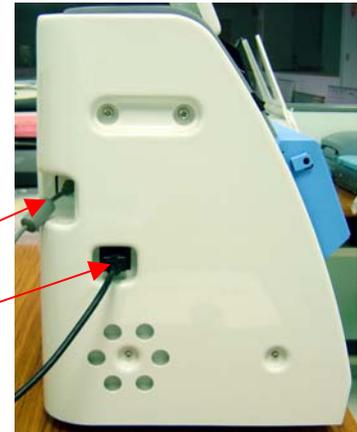
Here is a Power On / Off Switch

Here is a LED Indicator

Here is an USB 2.0 Connector

Here is an AC Power Socket

Side View of Medi-7000



D. The notice when you install ScanWizard Medi V2.0 into PC Windows system.

Notice : When you do S/W installation or S/W un-installation under PC Windows system, the scanner can not link with PC via an USB cable connection. Otherwise, the installation of scanner driver or the un-installation of scanner driver under Windows system will be affected. **Please read this notice well.**

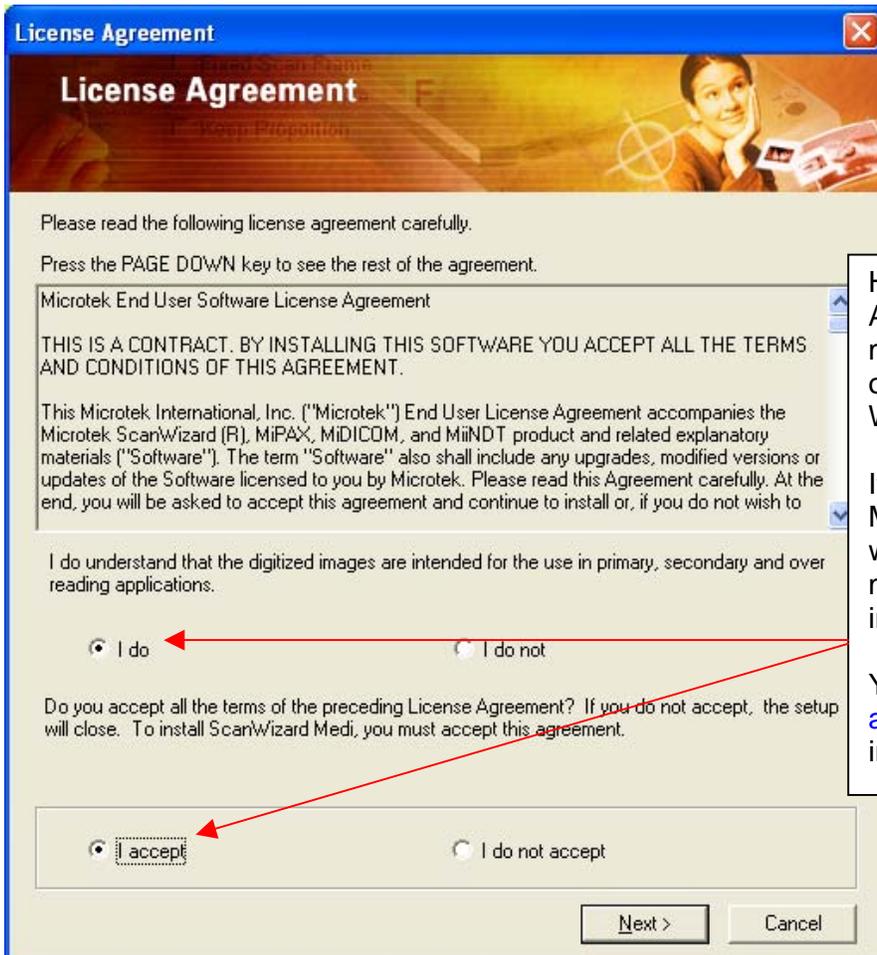
The bundled S/W CD in shipping package of Medi-7000 list you as the picture below.



Here is a bundled S/W CD (P/N : 514-30-550304) for Medi-7000.

Please refer to the following instructions and install ScanWizard Medi V2.0 into PC Windows system.

1. Make sure USB cable not link with Medi-7000 at first, and then power off Medi-7000.
2. Install ScanWizard Medi V2.0 into PC Windows system with bundled S/W CD of Medi-7000.
If the customer can not read the license agreement as the picture below during the installation of ScanWizard Medi V2.0 in the beginning. This means the installation of ScanWizard Medi V2.0 is not complete.

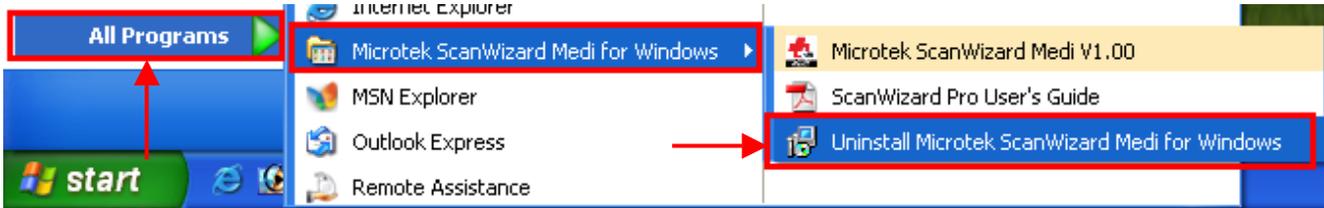


Here is the message of License Agreement, you shall read this message during the installation of ScanWizard Medi under PC Windows system.

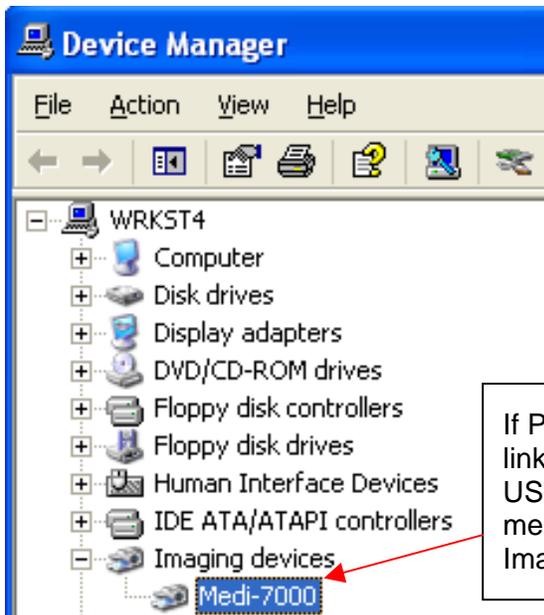
If the installation of ScanWizard Medi is not complete, by this way, you can not read the message of License Agreement in the beginning.

You shall click " I do " and " I accept ", and then proceed the installation of ScanWizard Medi.

If the installation of **ScanWizard Medi V2.0** is not complete, by this way, the customer can install **ScanWizard Medi V2.0** with bundled S/W CD of Medi-7000 again. Or the customer can uninstall **ScanWizard Medi V2.0** from PC Windows system as the picture below at first, and then install **ScanWizard Medi V2.0** with bundled S/W CD of Medi-7000 again.



3. Restart PC Windows system again after the installation of **ScanWizard Medi V2.0** is complete.
4. Power up Medi-7000, and then make an **USB** cable connection between PC and film digitizer.
5. Make sure the linking device of **Medi-7000** can be recognize by Windows system from **Start** → **Control Panel** → **System** → **Hardware** → **Device Manager** → **Imaging devices** → **Medi-7000**.



If PC Windows system can recognize the linking device of **Medi-7000** through an USB 2.0 connectivity, by this way, the message of **Medi-7000** will show up in Imaging devices of Device Manager.

6. Make sure **Scanner Finder** can recognize the linking device of **Medi-7000** and show up the icon in Resident Area of PC Windows system as the picture below.



This is an icon of "Scanner Finder", it means Windows system can recognize the linking device of **Medi-7000** through an USB2.0 connectivity.

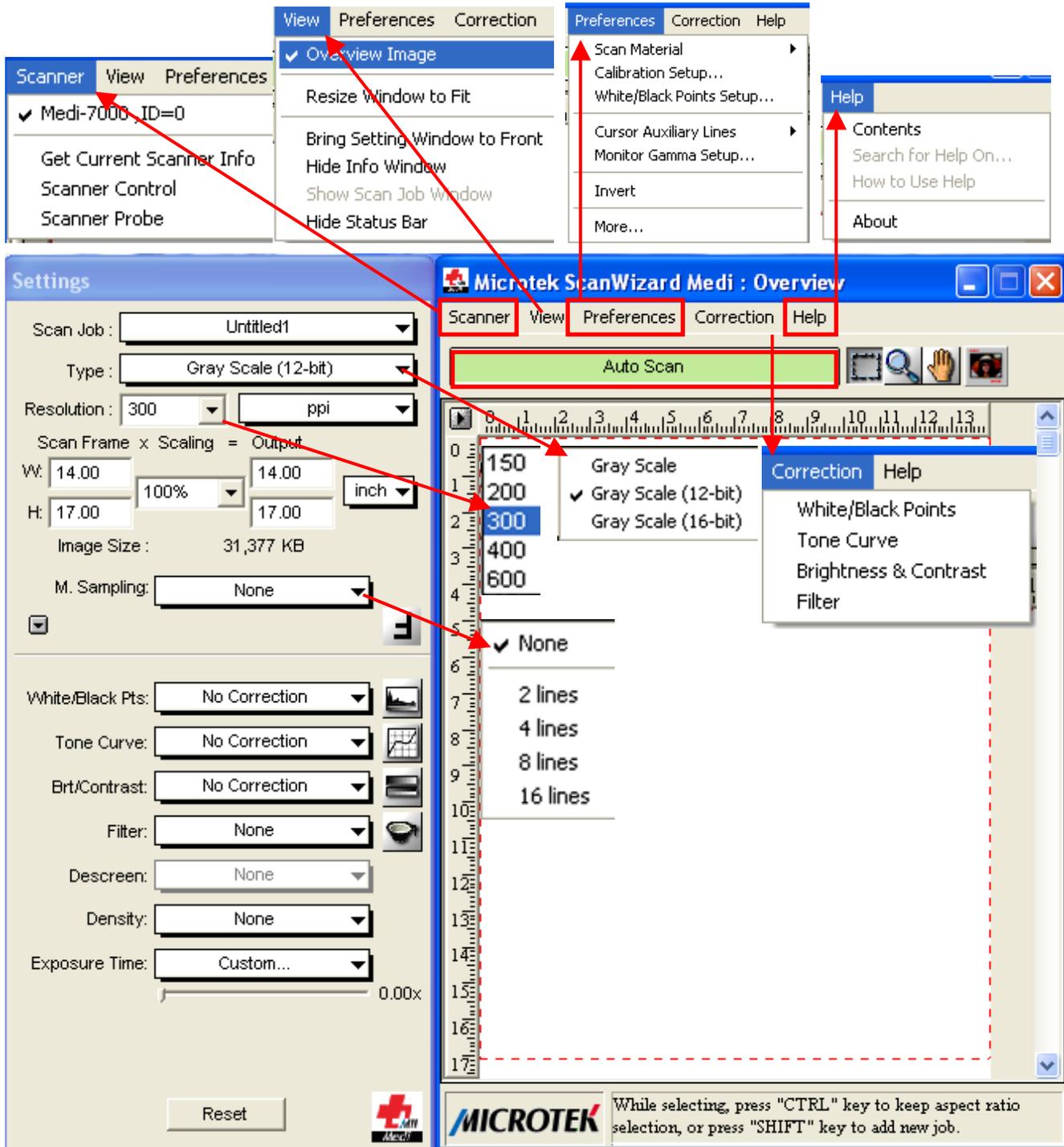
7. If **Device Manager** and **Scanner Finder** can recognize the linking device of **Medi-7000** through an USB 2.0 connectivity, and then you can click the icon of "ScanWizard Medi" on Desktop, launch **ScanWizard Medi V2.0** and do X-Ray (Film) scan with **Medi-7000** under PC Windows system.



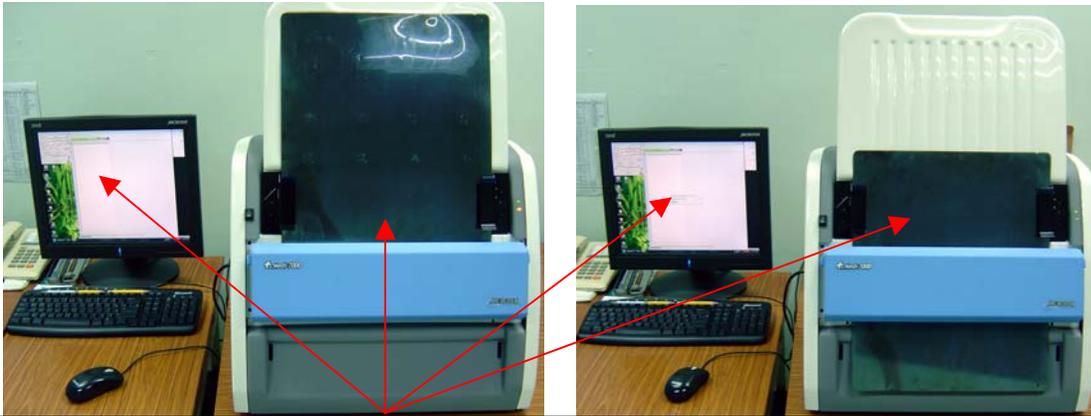
After the installation of **ScanWizard Medi V2.0** is complete, and then the customer can find out the icon of "ScanWizard Medi" and "MSmart Images" on Desktop of PC Windows system.

E. The difference between Auto Scan and Smart Scan in ScanWizard Medi V2.0

- a. When the setting of **Auto Scan** is enable in **Preferences** → **More**, and then you can view “**Auto Scan**” Button pop up in User Interface of **ScanWizard Medi V2.0** as the picture below.



When ScanWizard Medi V2.0 is launched and work with **Medi-7000** under PC Windows system, at this moment, if you place a X-Ray (Film) into a Film-in Tray Assembly as the picture below, and then the function of “**Auto Scan**” will be enable and do X-Ray (Film) scan automatically. All of scanned images from **Medi-7000** will be saved into folder, **MSmart Images**, which located in path at “**C:\ Program Files \ Microtek \ ScanWizard Medi \ My Images**”.



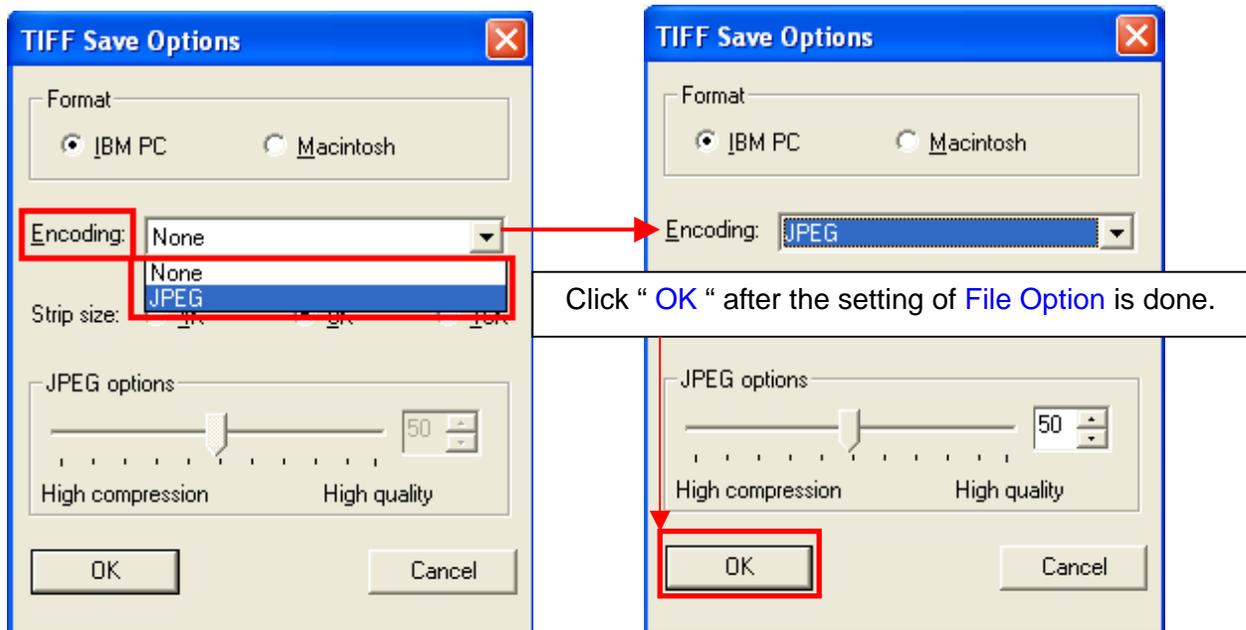
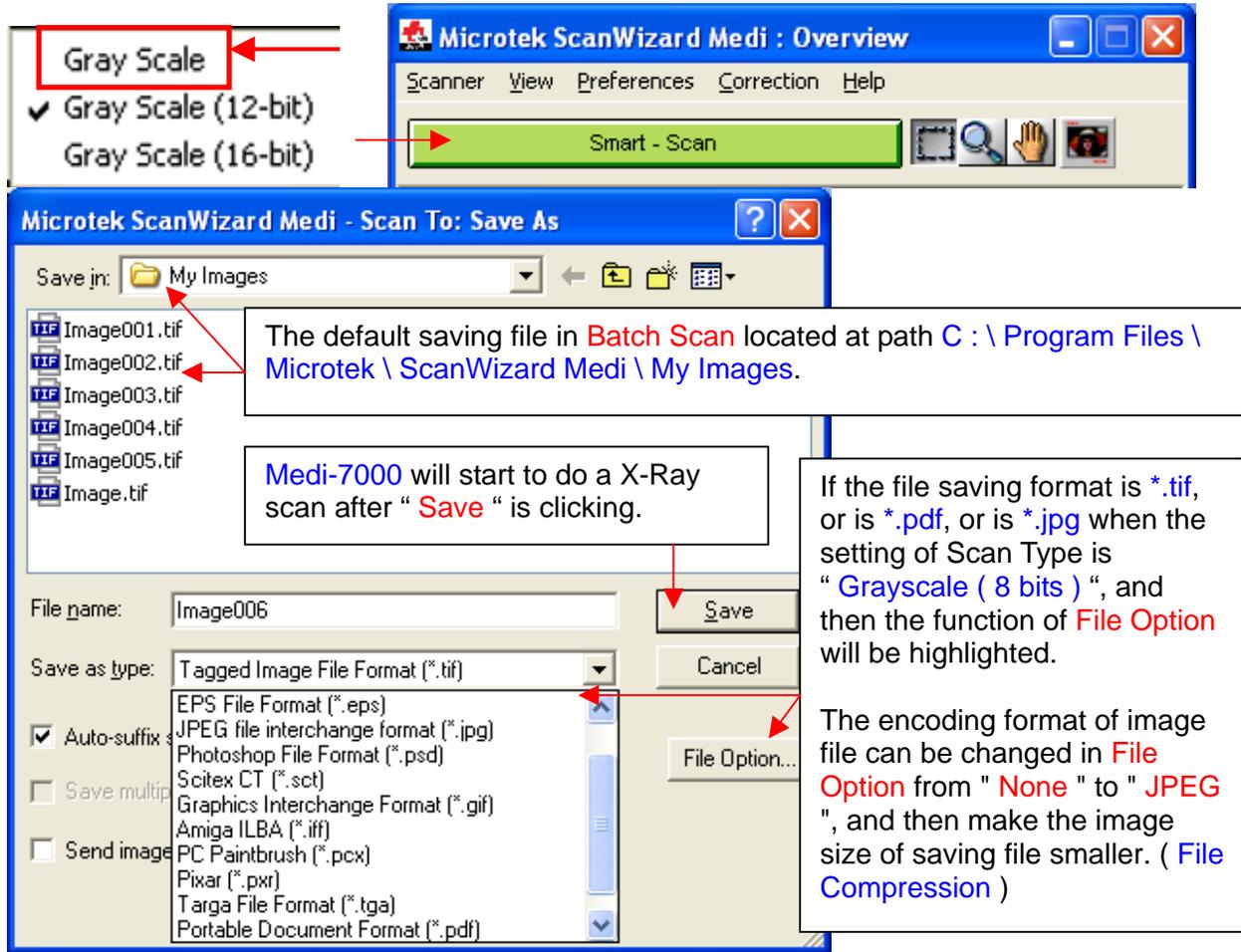
When the setting of **Auto Scan** is enable at **Preferences** → **More**, by this way, you can view “ **Auto Scan** “ will be highlighted in **User Interface** of ScanWizard Medi V2.0. At this moment, if you place a X-Ray (Film) into a Film-in Tray Assembly, and then the function of “ **Auto Scan** “ will be enable and keep **Medi-7000** do X-Ray (Film) scan in driver S/W automatically. All of scanned images from **Medi-7000** will be saved into folder, **MSmart Images**, which located in path at “ **C:\ Program Files \ Microtek \ ScanWizard Medi \ My Images** ”.

- b. When the setting of **Auto Scan** is disable in **Preferences** → **More** as the picture below, and then you can view “ **Smart Scan** “ Button pop up in User Interface of **ScanWizard Medi V2.0**.

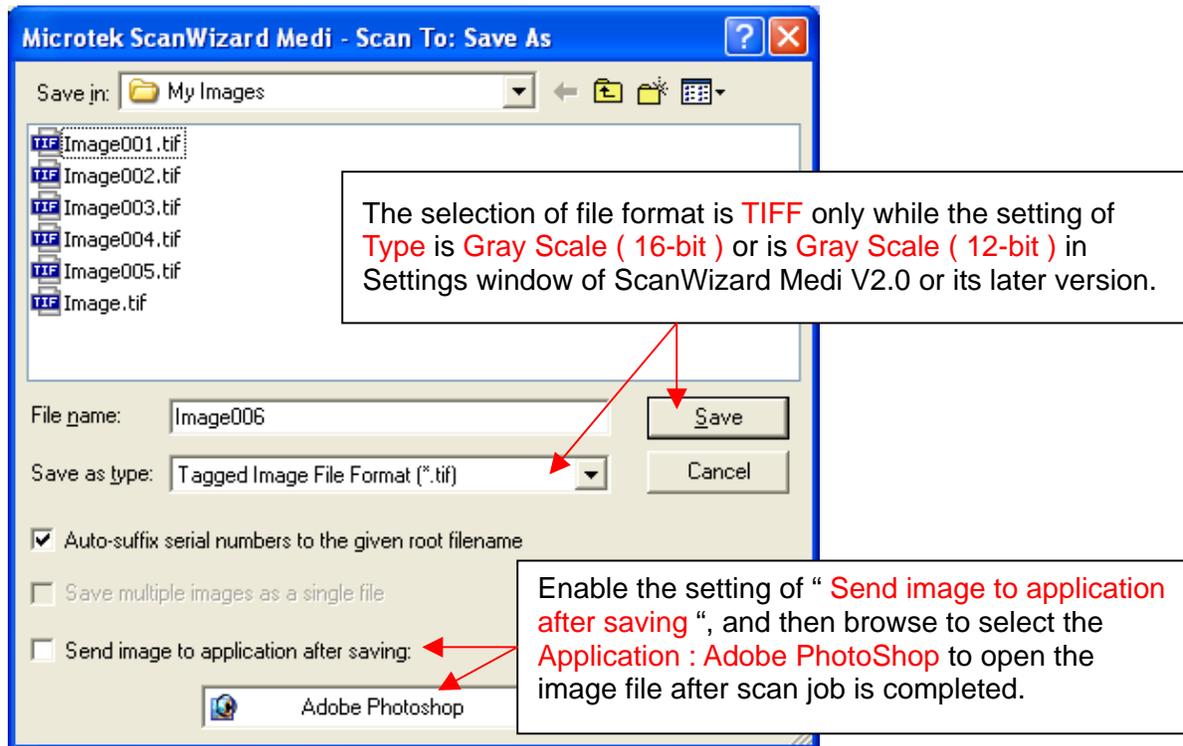
When the setting of **Auto Scan** is disable in **Preferences** → **More**, by this way, you can view “ **Smart Scan** “ will be highlighted in **User Interface** of ScanWizard Medi V2.0. At this moment, if you place a X-Ray (Film) into a Film-in Tray Assembly, and then you shall click “ **Smart Scan** “ in User Interface, after that, **Medi-7000** will start to do X-Ray (Film) scan in ScanWizard Medi afterwards.

F. File Saving format in “ Smart Scan “ of ScanWizard Medi V2.0.

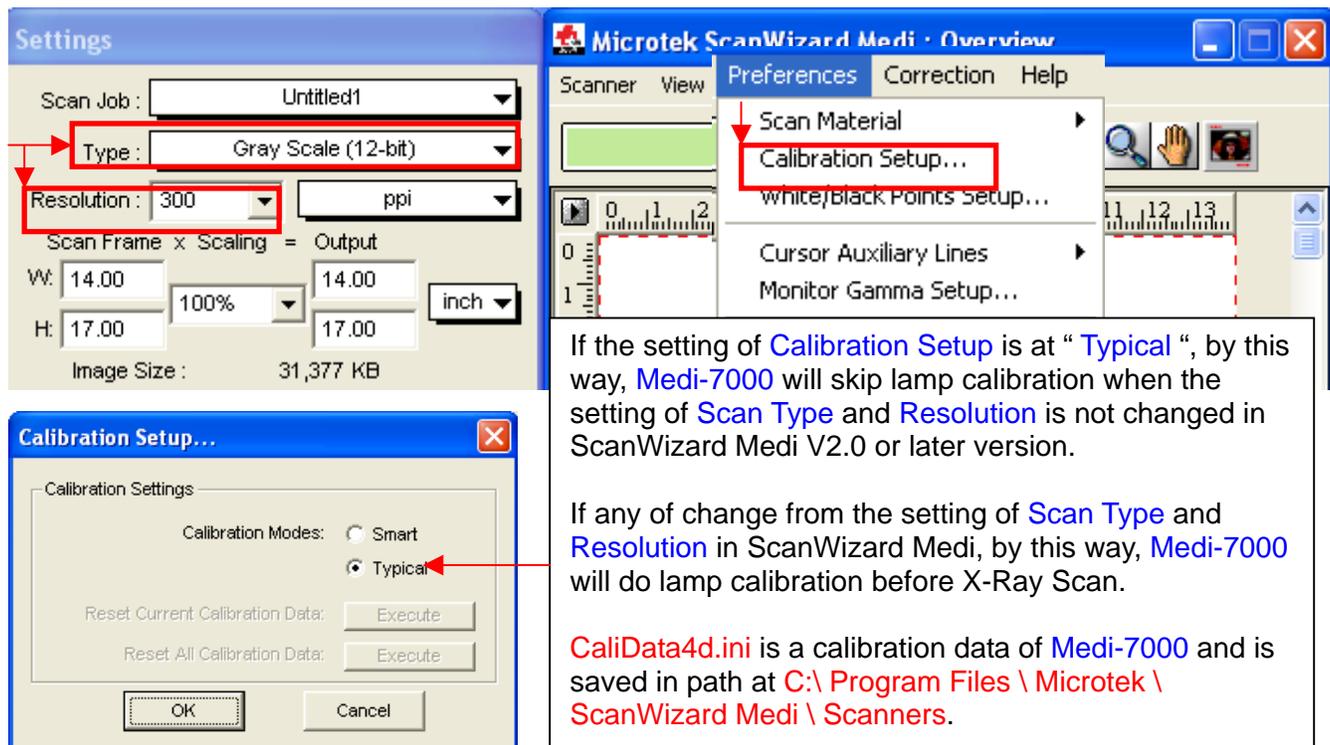
1. If the setting of Scan Type is **Gray Scale (8 bit)**, and then there is a dialogue box of file saving will show up as the picture below, after you click “ **Smart Scan** “ in ScanWizard Medi V2.0..

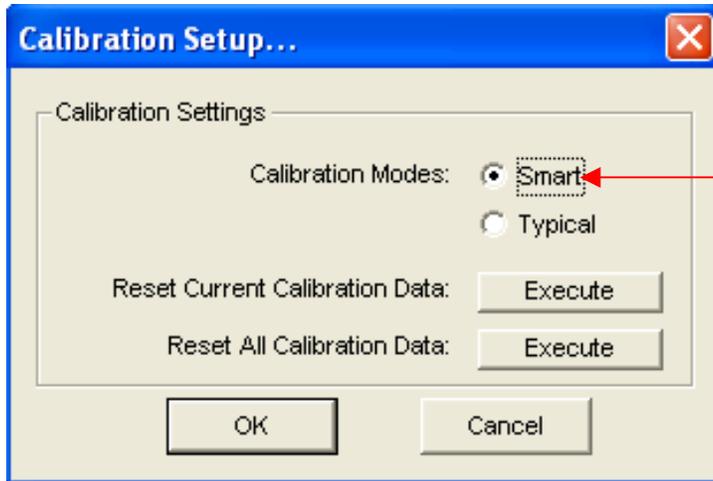


- If the setting of **Type** is **Gray Scale (16-bit)** or is **Gray Scale (12-bit)** in Settings window of ScanWizard Medi V2.0, by this way, the file saving format in **Batch Scan** include **tif** only.



- The difference between Typical Calibration and Smart Calibration in ScanWizard Medi V2.0**
The customer can click “ Calibration Setup “ in **Preferences → Calibration Setup**, and then enable the setting of **Typical Calibration** and **Smart Calibration** in **ScanWizard Medi V2.0**.





If the setting of Calibration Setup is at “ Smart “, by this way, Medi-7000 will skip lamp calibration if the same setting of Scan Type and Resolution had saved in CaliData4d.ini before.

CaliData4d.ini is a calibration data of Medi-7000 and is saved in path at C:\Program Files \ Microtek \ ScanWizard Medi \ Scanners.

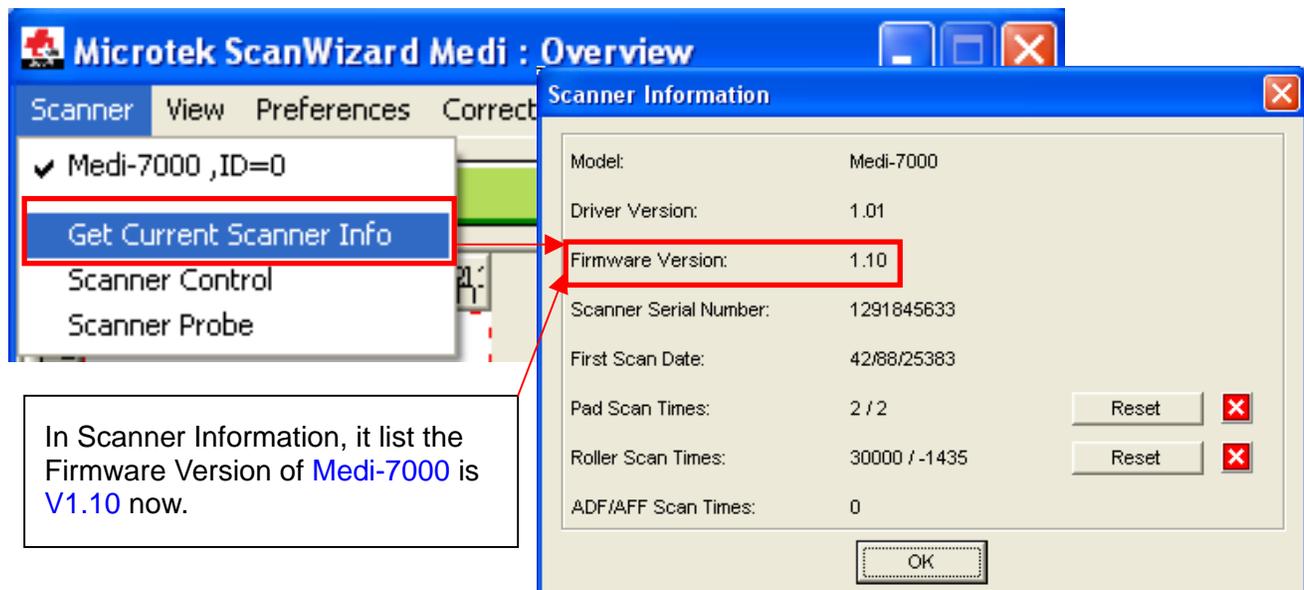
The default setting of Calibration Setup for Medi-7000 is at “ Typical “ in ScanWizard Medi V2.0.

The calibration data of Medi-7000, CaliData4d.ini, is saved in path at C:\Program Files \ Microtek \ ScanWizard Medi \ Scanners as the picture below.



G. How to identify the Firmware Version of Medi-7000 in ScanWizard Medi V2.0.

The customer can click “ Get Current Scanner Info “ in Scanner Menu as the picture below, and then identify the Firmware Version of Medi-7000 in ScanWizard Medi V2.0.

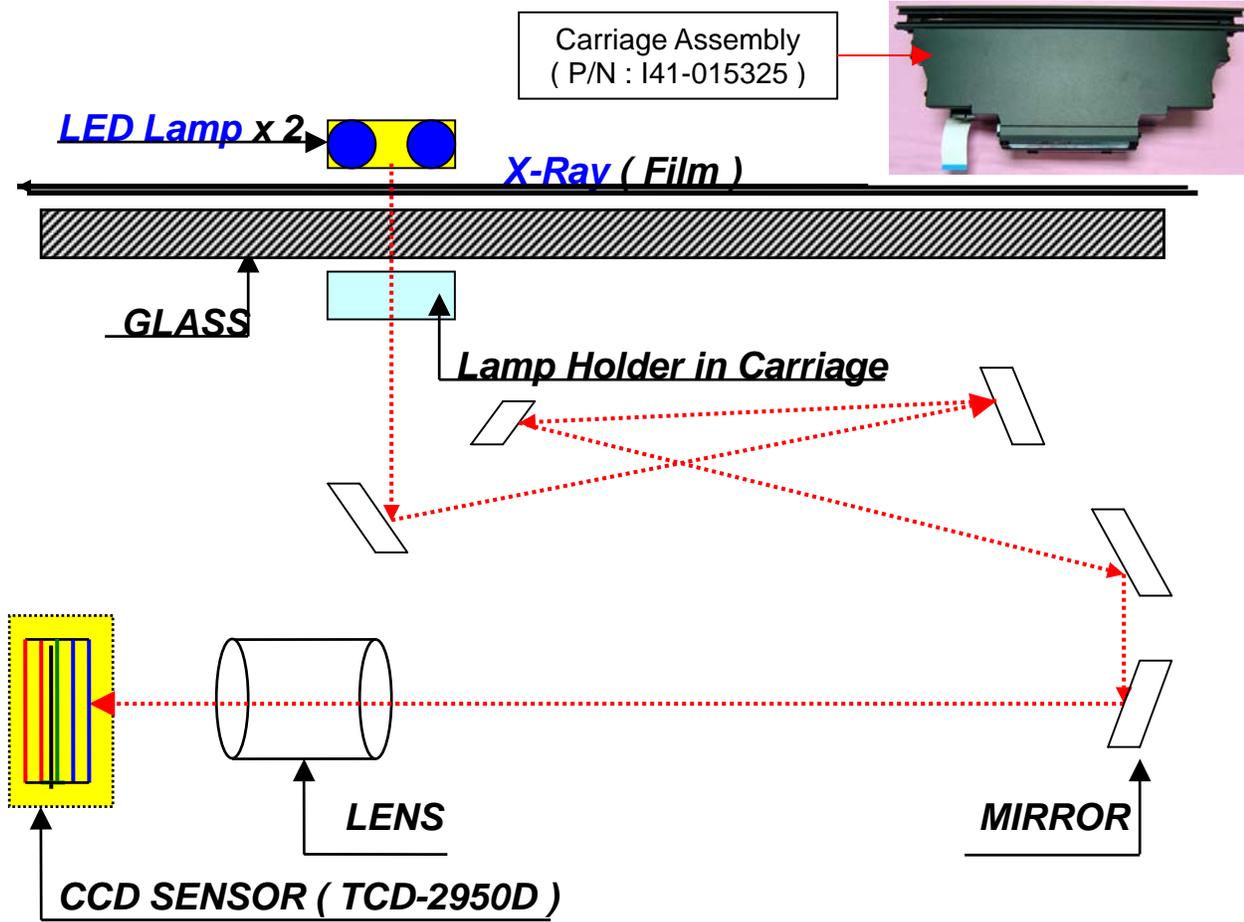


In Scanner Information, it list the Firmware Version of Medi-7000 is V1.10 now.

Notice :

The data in “ Scanner Information “ will be saved into EEPROM chipset : 93C46 (U4) in Main Board (PWBA, MEDI-SF-0906, P/N : 1108-01-500300) of Medi-7000.

Optical Drawing in X-Ray (Film) Scan of Medi-7000



OPTICAL PATH : 

There are 5 pieces of mirrors and one lens are designed in Carriage Assembly (P/N : I41-015325).

LAMP TYPE : LED Lamp Assembly, P/N : 1108-01-500306S (No Warm Up Time is needed.).
The expected life of LED is 100,000 times of On / Off (light up times)..



LED DRIVER BOARD, PWBA, D003 (P/N : 1108-01-500305S)

The function of LED Driver Board is to light up the LED Bar in LED Lamp Assembly.



It provides a constant DC voltage and a constant DC current (16mm ~ 20mm) for each LED bar in LED Lamp Assembly.

CCD Sensor : Toshiba CCD (TCD-2950D) include 6 rows of line sensors (R1,R2, B1,B2, G1, G2).
The function of CCD Sensor is to convert Optical Signal to Analogue Signal.

Power Up Sequence of Firmware in Medi-7000

(This sequence will take around **6 seconds** to complete until scanner go ready)

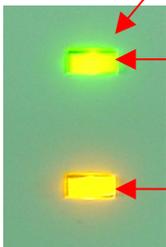
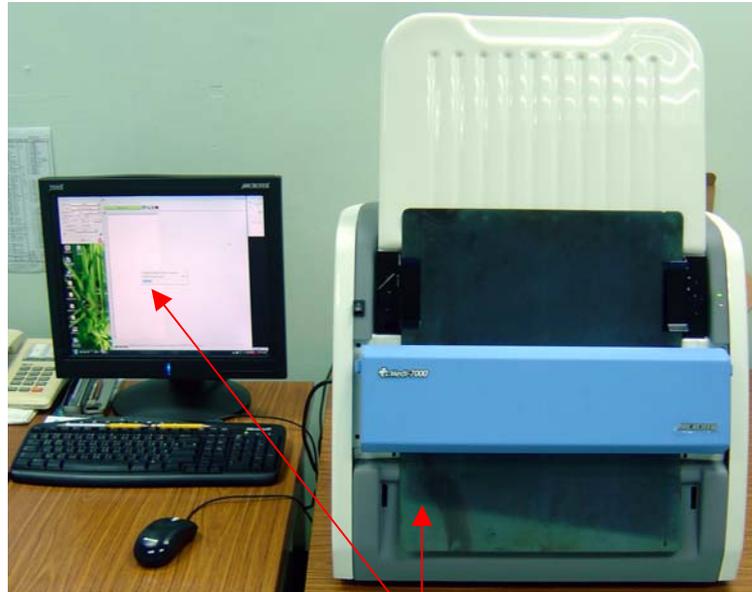
1. Initial CPU : **LPC2214, 32 bit processor** (I/O , REG. ,), **FPGA Chipset : XC3S1000** (I/O, REG. ,), **USB 2.0 controller Chipset : NET2270** on main board (PWBA, MEDI-SF-0906).
2. Light up light source, LED Lamp for X-Ray Scan, in **Medi-7000**.
3. Test RAM (SRAM , DRAM) in main board (PWBA, MEDI-SF-0906).
4. Initial **USB 2.0 controller** (Chipset : NET-2270) in main board (PWBA, MEDI-SF-0906).
5. Scanner go ready. (Status LED light up in Orange steadily)
6. Wait for HOST command (Make sure **Medi-7000** link with PC via an USB cable connection)
7. Start to scan (Get “ **Scan Command** “ from driver S/W : **ScanWizard Medi** in PC, and then start to do “ **X-Ray (Film)** “ scan from the setting of “ **Scan** “ Command in **ScanWizard Medi**.)
8. Do lamp calibration, and then process image data during scanning.
9. Send image data to PC via an USB2.0 connectivity until scan job is completed.

Notice :

Green LED is a **Power LED** indicator. **Orange LED** is a **Status LED** indicator.

If Orange LED light up steadily, it means **Medi-7000** is in “ ready “ status now.

If Orange LED keep blinking, it means **Medi-7000** is in scanning or is in lamp calibration.



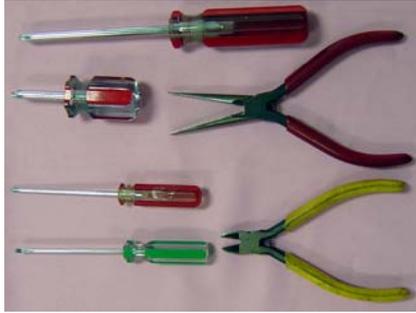
Green LED is a **Power LED** indicator in **Medi-7000**.

Orange LED is a **Status LED** indicator in **Medi-7000**.

Medi-7000 can do **X-Ray (Film)** scan in **ScanWizard Medi V2.0** or later version under PC Windows system through an **USB2.0** connectivity.

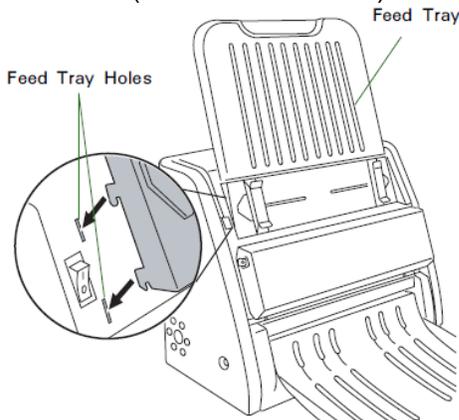
Chapter 2 : The procedure how to dismantle the unit of Medi-7000

Tool You need : the tool you need to dismantle the unit of **Medi-7000** is as the picture below.



A. Remove **Film-in Tray Assembly (P/N : I41-015394)** from **Medi-7000**.

Step 1 : Lift up **Film-in Tray Assembly** from **Tray Hole**, and then remove **Film-in Tray Assembly (P/N : I41-015394)** from **Medi-7000** with hands as the picture below.

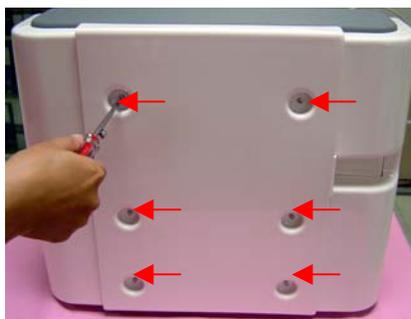


Here is a **Film-in Tray Assembly (P/N : I41-015394)**



B. Remove **Housing Back (P/N : 215-01-500305)** from **Medi-7000**.

Step 1 : Loose 6 screws on **Housing Back**, and then remove **Housing Back** from **Medi-7000** with hands as the picture below.



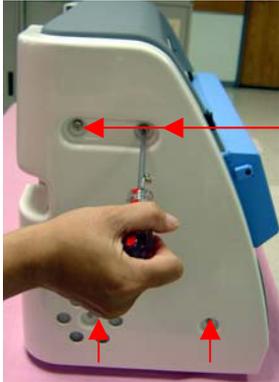
Screw, M4 x 8mm (P/N : 142-33-504008)



Here is a **Housing Back (P/N : 215-01-500305)**

C. Remove Housing Back Left (P/N : 215-01-500300) from Medi-7000.

Step 1 : Loose 4 screws on **Housing Back Left**, and then remove **Housing Back Left** from Medi-7000 with hands as the picture below.



Screw, M6 x 14mm (P/N : 142-33-506014)



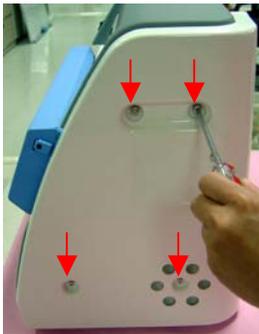
Screw, M4 x 8mm (P/N : 142-33-504008)



Here is a **Housing Back Left** (P/N : 215-01-500300)

D. Remove Housing Back Right (P/N : 215-01-500301) from Medi-7000.

Step 1 : Loose 4 screws on **Housing Back Right**, and then remove **Housing Back Right** from Medi-7000 with hands as the picture below.

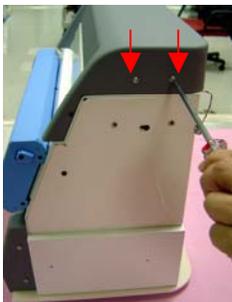


Here is a **Housing Back Right** (P/N : 215-01-500301)



E. Remove Housing Front Top (P/N : 215-01-500302) from Medi-7000.

Step 1 : Loose 4 screws on **Housing Front Top**, and then disconnect LED Wire from connector on LED Board, after that, remove **Housing Front Top** from Medi-7000 with hands.

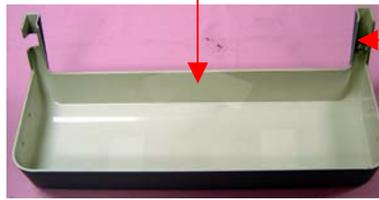


Screw, M4 x 8mm (P/N : 142-33-504008)





Here is a **Housing Front Top**
(P/N : 215-01-500302)



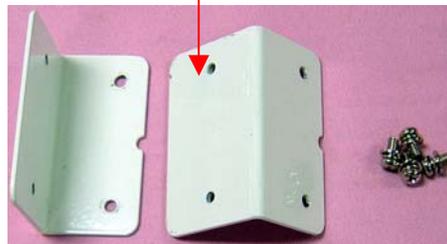
There is a **LED Board**
(P/N : 1108-01-360016 ,
PWBA, TURRET-LED
FOR XRAY) is fixed at
this corner.

F. Remove Top Support (P/N : 215-20-500304) from Medi-7000.

Step 1 : Loose 4 screws on **Top Support**, and then remove **Top Support** from Medi-7000.

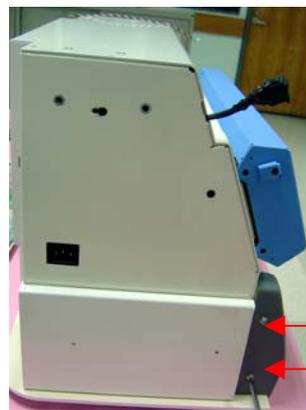
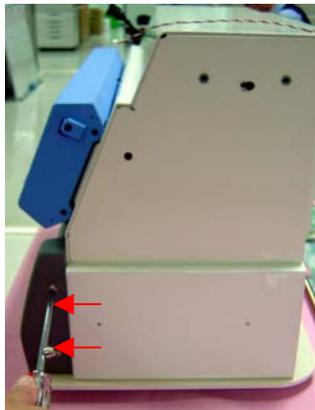


Here is a **Top Support**
(P/N : 215-20-500304)

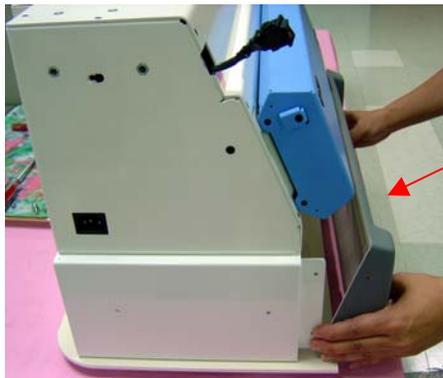


G. Remove Housing Front Bottom (P/N : 215-01-500303) from Medi-7000.

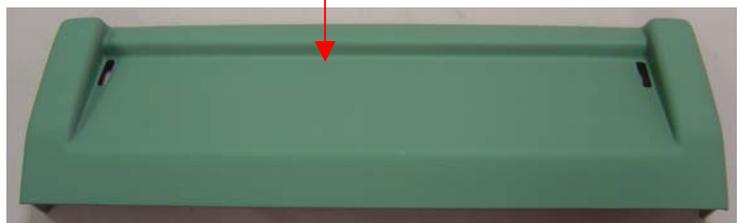
Step 1 : Loose 4 screws on both end of **Housing Front Bottom**, and then remove **Housing Front Bottom** from Medi-7000 with hands as the picture below.



Screw, M4 x 8mm (P/N :
142-33-504008)

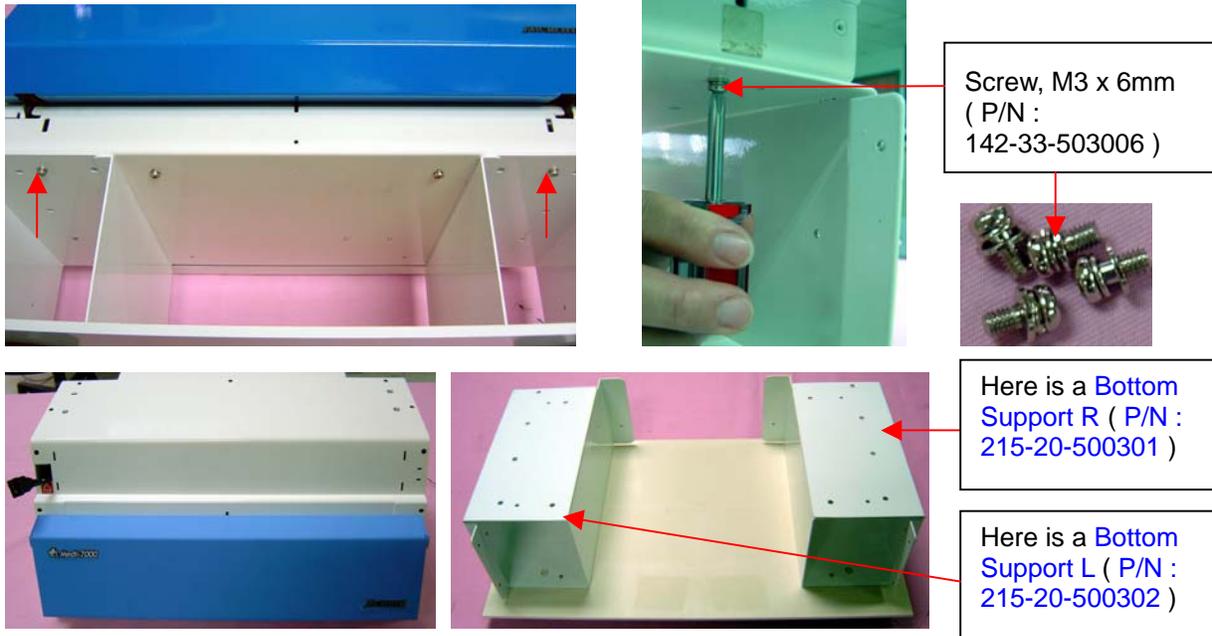


Here is a **Housing Front Bottom**
(P/N : 215-01-500303)

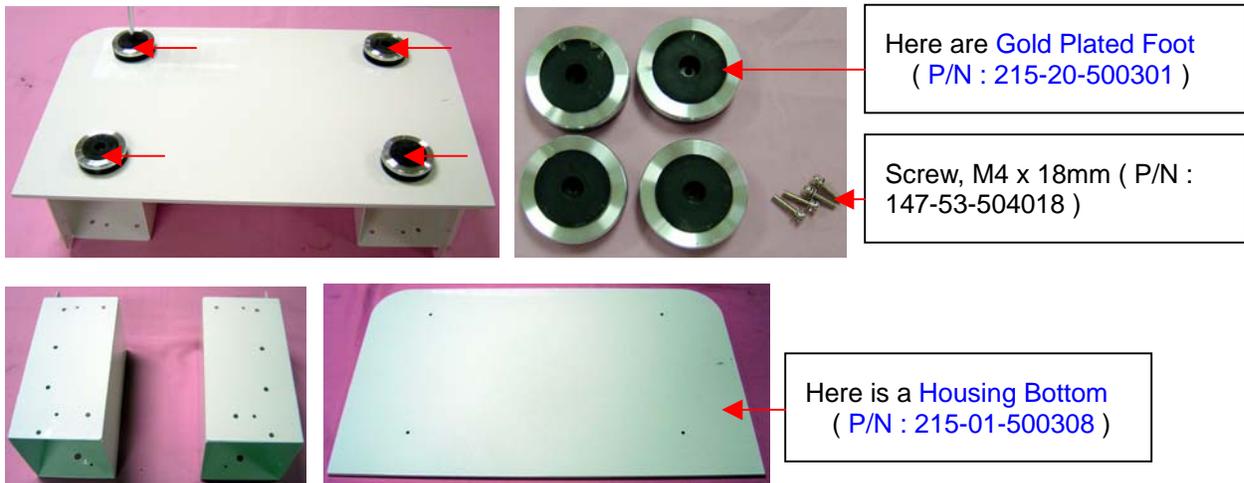


H. Remove Housing Bottom (P/N : 215-01-500308) and Bottom Support from Medi-7000.

Step 1 : Loose 4 screws on Bottom Support, and then remove Housing Bottom and Bottom Support from Medi-7000 as the picture below.

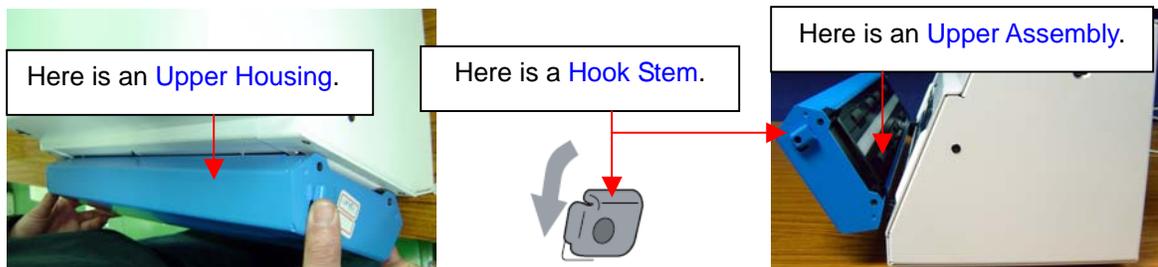


Step 2 : Loose 4 screws on Gold Plated Foot, and then separate Housing Bottom from Bottom Support as the picture below.

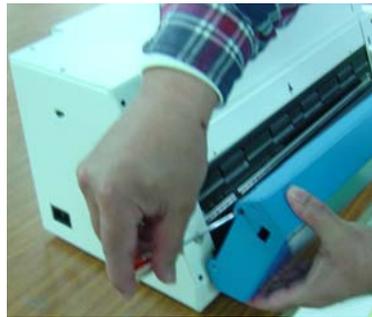


I. Remove Upper Housing (P/N : 215-21-500305) from Medi-7000.

Step 1 : Press down both ends of " Hook Stem " on Upper Housing, and then release the lock of Upper Assembly from Medi-7000 as the picture below.



Step 2 : Loose two of pan head screws from both ends of **Hook Stem**, and then remove **Hook Stem** from its fixed position, after that, loose four of flat head screws from Upper Housing as the picture below.



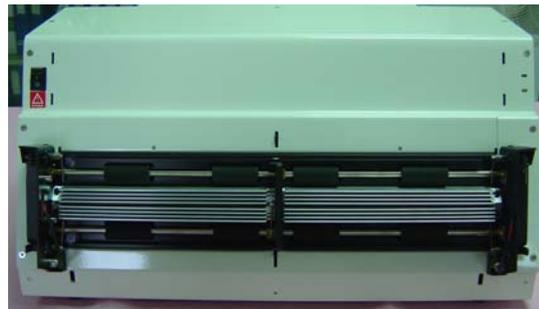
Here is **Hook Stem**
(P/N : 215-20-500307)



Step 3 : Close the Upper Assembly into Base Assembly, and then remove Upper Housing from Upper Assembly as the picture below.

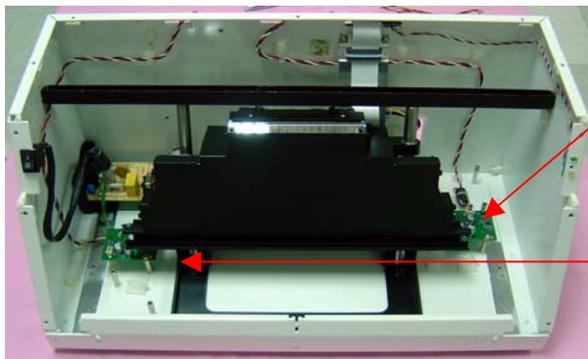


Here is an **Upper Housing**
(P/N : 215-21-500305)



J. Remove Upper Assembly (P/N : I41-015324) from Medi-7000.

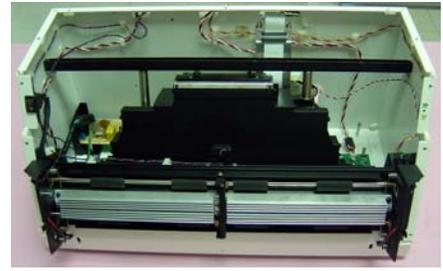
Notice : There are two wire connection of **LED Lamp** cable between Upper Assembly and Base Assembly, hence, the service technician shall remove **Bottom Housing Cover** and disconnect **LED Lamp** cable from **LED Driver Board** in Base Assembly of **Medi-7000** at first.



Here is a LED Driver Board (2),
PWBA, D003, P/N : 1108-01-500305S

Here is a LED Driver Board (1),
PWBA, D003, P/N : 1108-01-500305S

Step 1 : Loose 11 flat-head screws on **Bottom Housing Cover** (P/N : 215-21-500302), and then remove Bottom Housing Cover from **Medi-7000** as the picture below.

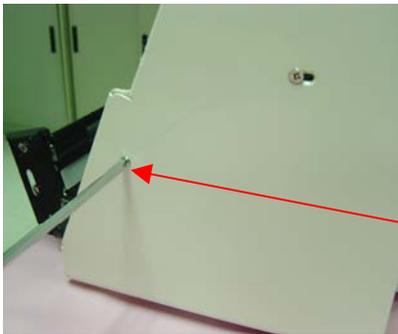


Here is a **Bottom Housing Cover** (P/N : 215-21-500302)

Here are screws, flat-head, M3 x 6mm (P/N : 142-10-503006)

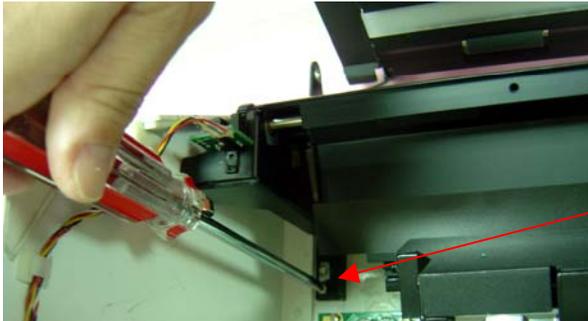


Step 2 : Loose one flat-head screws from side view of **Medi-7000** both ends as below.



Here are screws, flat-head, M4 x 8mm (P/N : 142-10-104008)

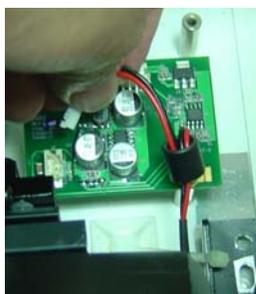
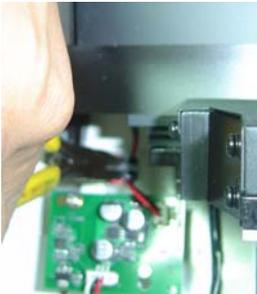
Step 3 : Loose 4 pan-head screws on Driving Roller Assembly both ends in **Medi-7000**.



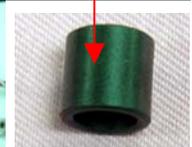
Here are screws, pan-head, M4 x 8mm (P/N : 142-33-504008)



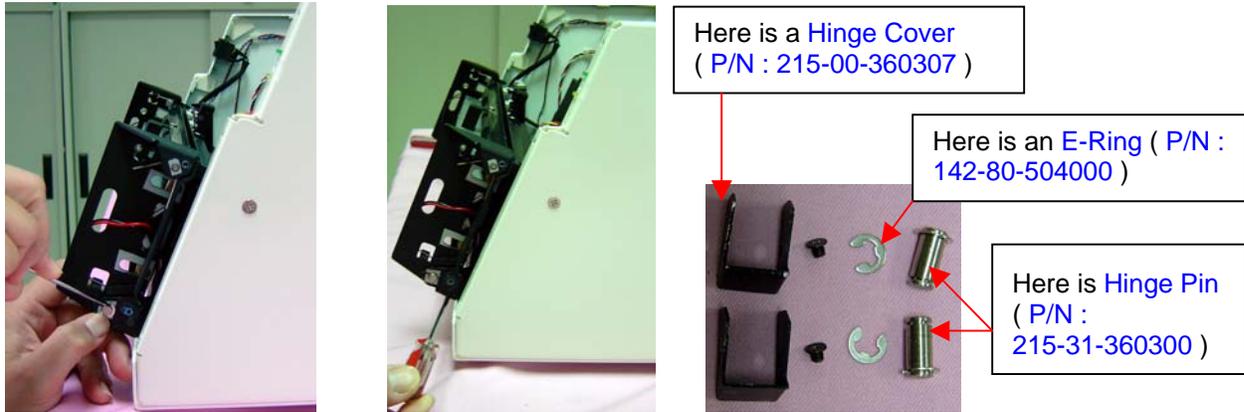
Step 4 : Cut the cable tie which fix an **EMI Core** in **LED Lamp** cable at first, and then disconnect **LED Lamp** cable from connection on **LED Driver Board** in **Medi-7000**, after that, take out the **EMI Core** (P/N : 141-10-500001) from **LED Lamp** cable as below pictures.



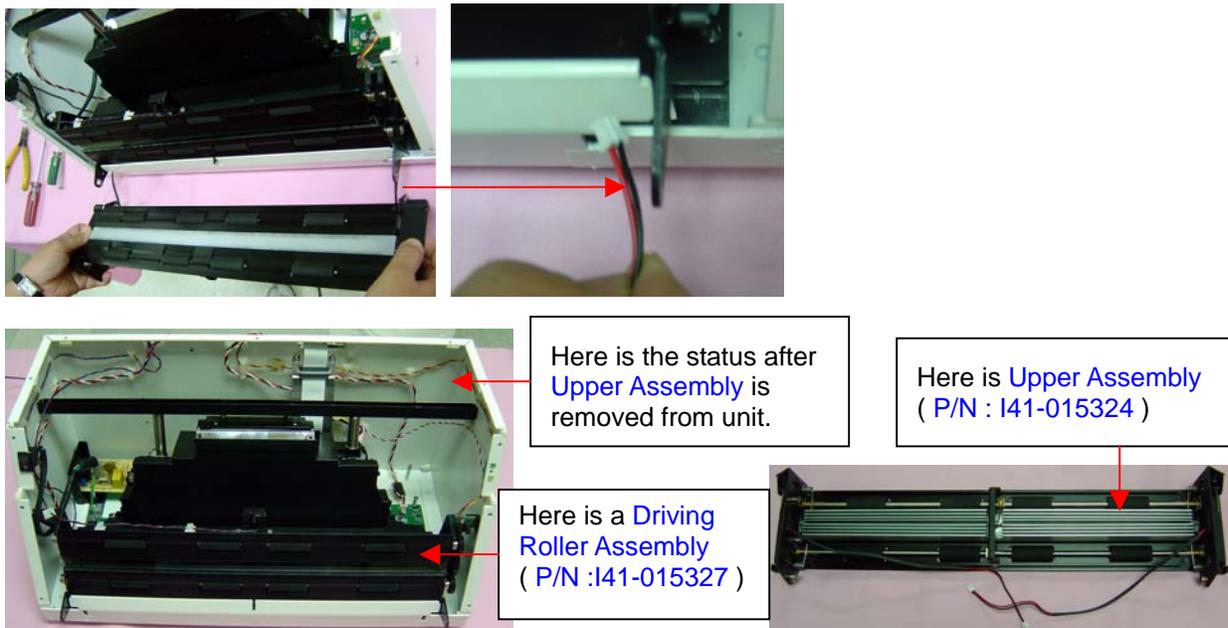
Here is an **EMI Core** (P/N : 141-10-500001)



Step 5 : Remove E-ring from both ends of “ **Hinge Pin** “ in Upper Assembly, and then take out **Hinge Pin** from Upper Assembly, loose one small flat head screw from both ends of “ **Hinge Cover** “, and then take out **Hinge Cover** from Base Assembly, after that, you can separate Upper Assembly from **Medi-7000**.



Step 6 : Take out **LED Lamp** cable, and then separate **Upper Assembly** from **Medi-7000**.



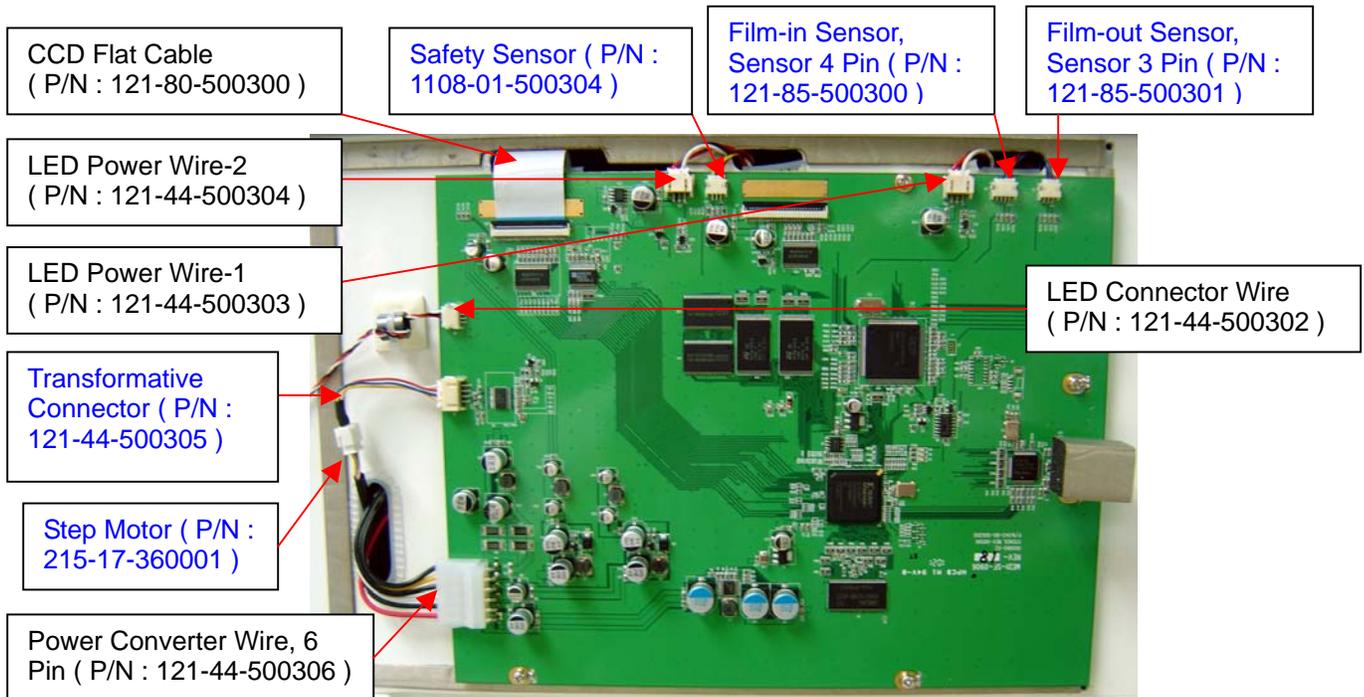
K. Remove **Driving Roller Assembly (P/N : I41-015327) from **Medi-7000**.**

Step 1 : Loose four of screws on Main Board Cover, and then separate **Main Board Cover** (P/N : 215-20-500303) from **Medi-7000** as below illustration.

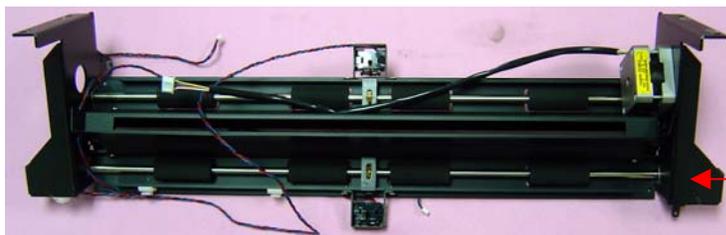
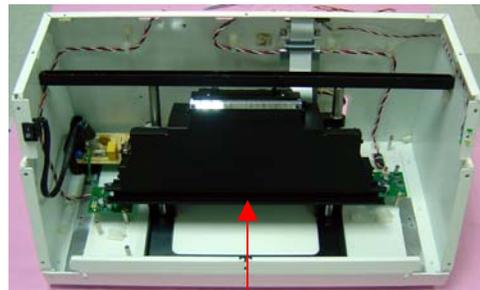
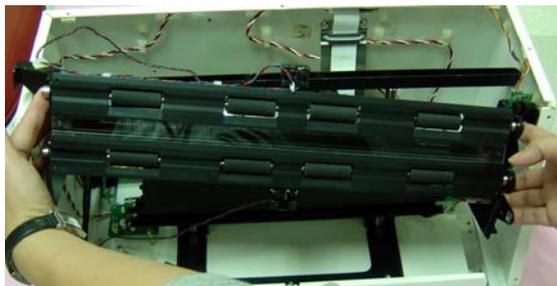


Step 2 : Disconnect **Motor cable**, **Safety Sensor cable**, **Film-in sensor cable** and **Film-out sensor cable** from connection on Main Board as the picture below.

Wiring Connection on Main Board (PWBA, MEDI-SF-0906, P/N : 1108-01-500300) of Medi-7000.



Step 3 : Take out Driving Roller Assembly from Medi-7000 with hands as below picture.



Here is a status after Driving Roller Assembly is removed from Medi-7000.

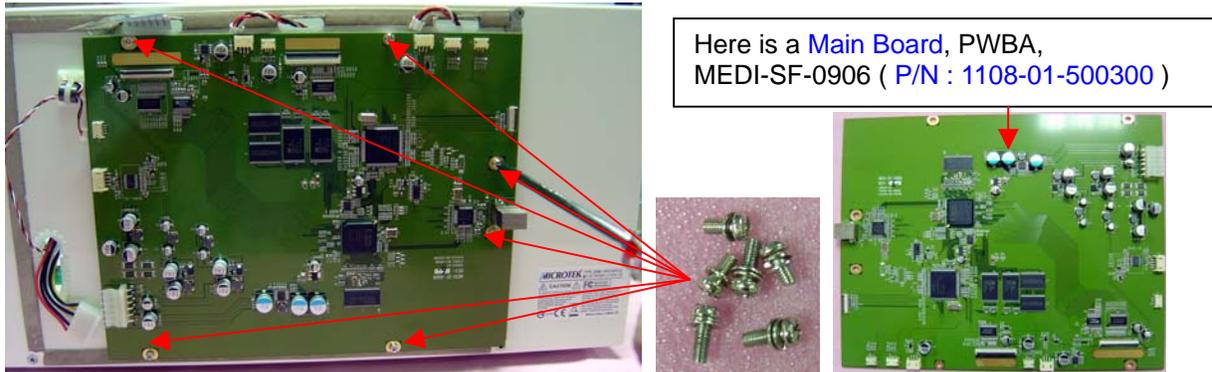
Here is a Driving Roller Assembly (P/N : 141-015327)

L. Remove Main Board (PWBA, MEDI-SF-0906, P/N : 1108-01-500300) from Medi-7000.

Step 1 : Loose four of screws on Main Board Cover, and then separate Main Board Cover (P/N : 215-20-500303) from Medi-7000 as below illustration.

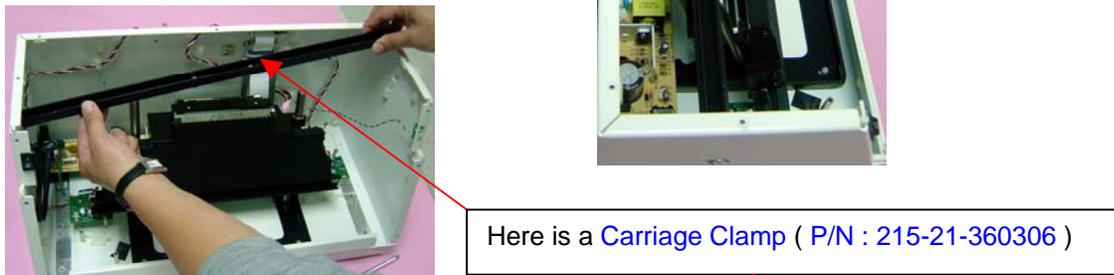
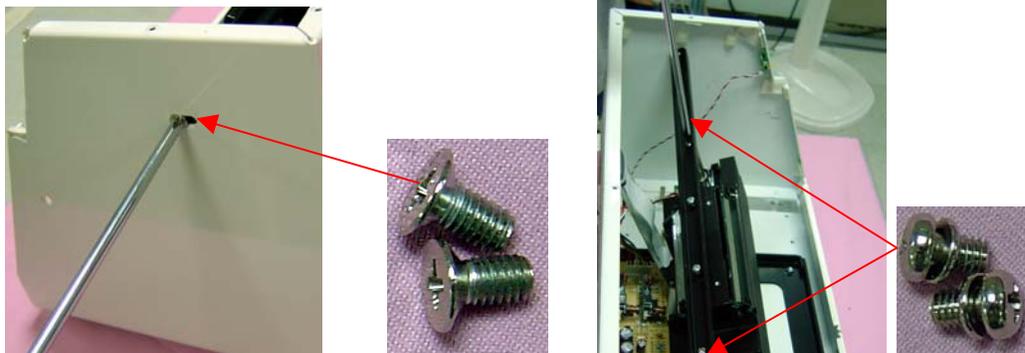
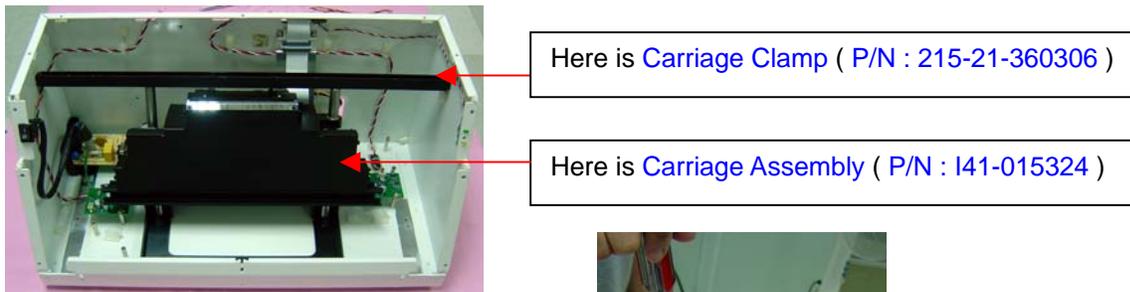


Step 2 : Disconnect all of cables on Main Board at first, and then loose six of screws on Main Board, after that, remove Main Board from Medi-7000 as the picture below.

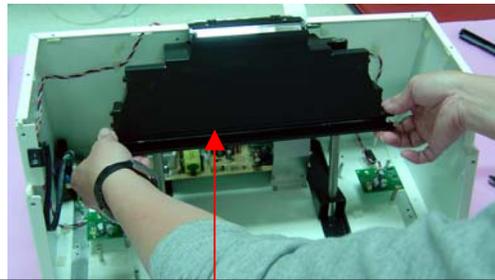
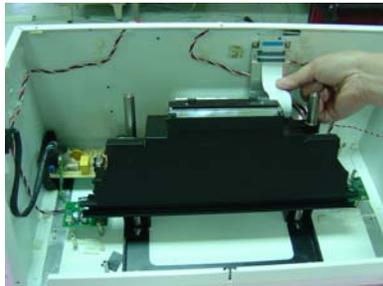


M. Remove Carriage Assembly (P/N : I41-015325) from Medi-7000.

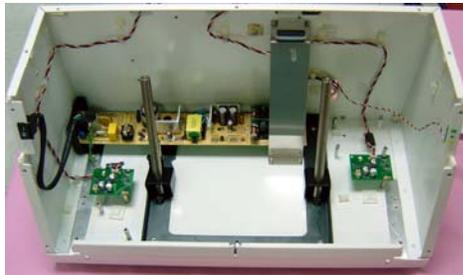
Step 1 : Loose one flat-head screw from both ends of Carriage Clamp at first, and then loose two of pan-head screw on Carriage Assembly, after that, remove Carriage Clamp from Medi-7000 as the picture below.



Step 2 : Remove Carriage Assembly from **Medi-7000**.with hands as the picture below.



Here is a **Carriage Assembly** (P/N : I41-015324)

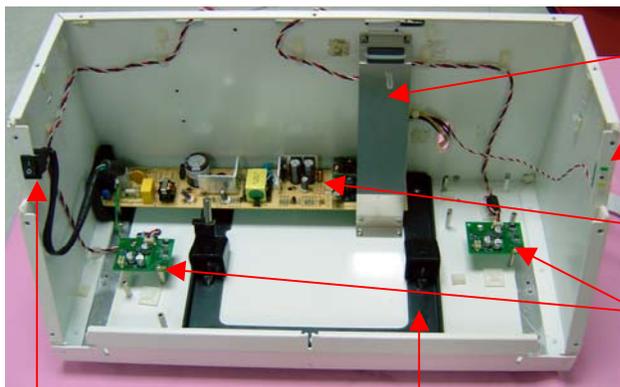
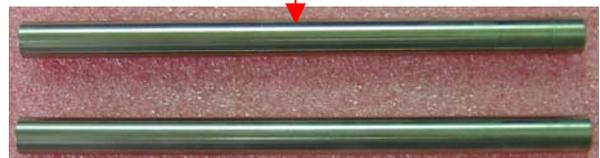


N. Remove Sliding Rod (P/N : 215-30-360300) from Medi-7000.

Step 1 : Turn the Sliding Rod in counter-clockwise direction with hand, and then remove **Sliding Rod** (P/N : 215-30-360300) from **Medi-7000** as the picture below.



Here is **Sliding Rod** (P/N : 215-30-360300)



FFC Guide (P/N : 215-20-500300)

LED Board (P/N : 1108-01-360016)

PWBA Assembly for Scanner
(P/N : 545-00-360302)

LED Driver Board (P/N :
1108-01-500305S)

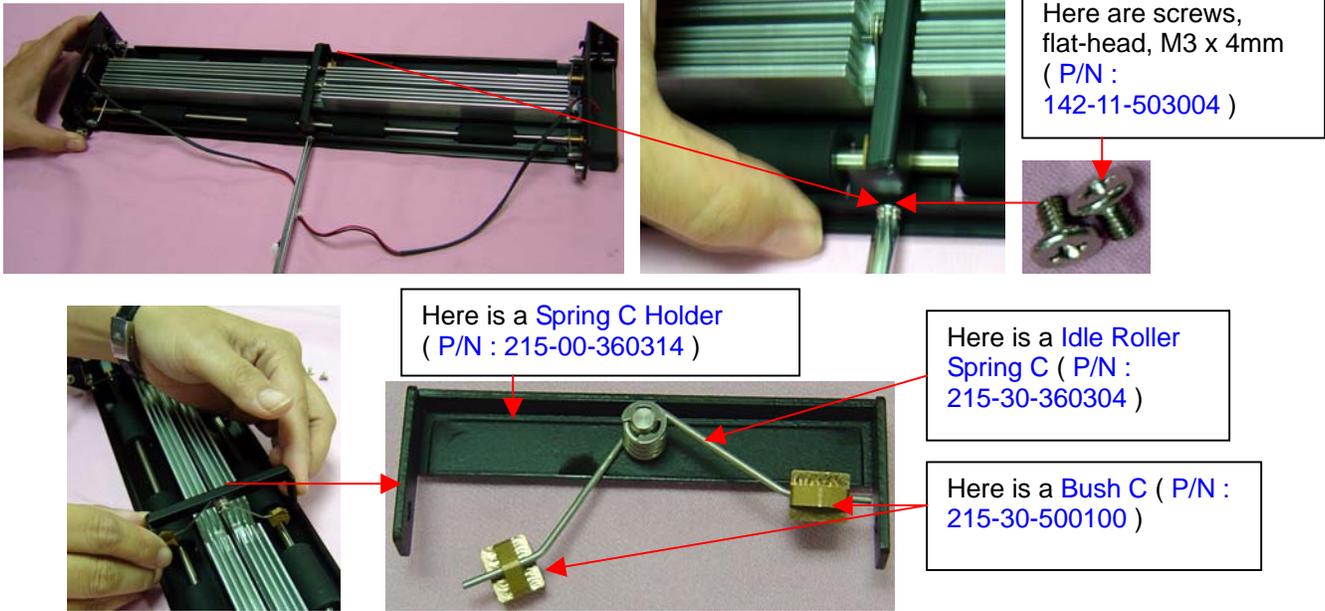
Power Switch Assembly
(P/N : 121-44-360306)

Rod Holder (P/N : 215-21-360305)

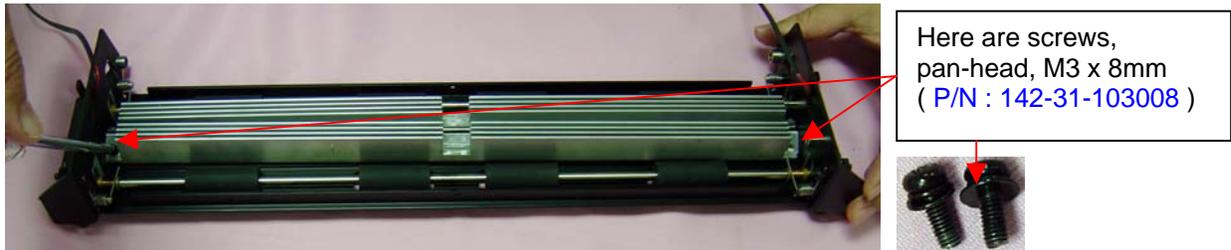
Notice : The position of **Rod Holder** in **Medi-7000** can not be moved, or the focus position of **Carriage Assembly** will be changed and make the sharpness of scanned image get poor.

O. Remove LED Lamp Assembly (P/N : 1108-01-500306S) from Upper Assembly.

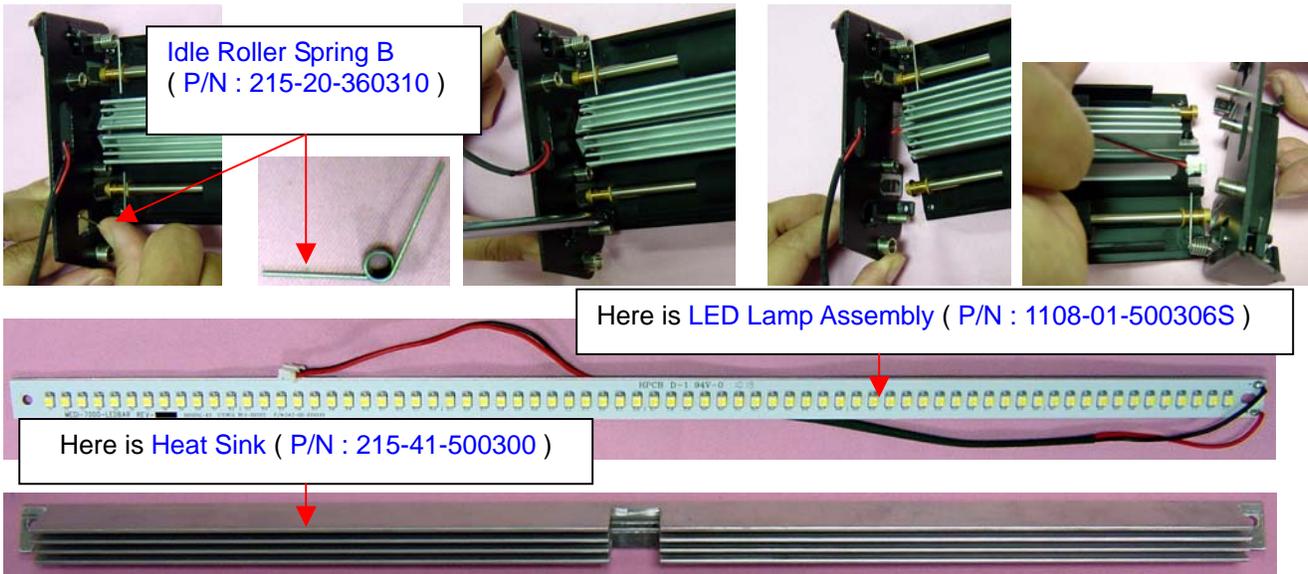
Step 1 : Loose two flat-head screws from both ends of **Spring C Holder**, and then remove **Spring C Holder** from **Upper Assembly** (P/N : I41-015324) as the picture below.



Step 2 : Loose two of screws on **LED Lamp Assembly** & **Heat Sink** both ends as below.



Step 3 : Take out **Idle Roller Spring B** from Upper Housing Left Support with hands at first, next, loose one pan head screw on **Left Support**, and then separate **Left Support** from Upper Assembly, after that, remove **LED Lamp Assembly** & **Heat Sink** from **Upper Assembly**.



The procedure to clean the dirty which leave on Glass or Diffuser in Medi-7000

If there is any particles leave on optical components (Mirrors, Glass, Diffuser, CCD sensor, Lens), then scanned image of Medi-7000 will produce **vertical white stripes** as the picture below



If this image problem is happened on X-Ray (Film) Scan, by this way, the dirty / particles may leave on Diffuser, Reflective Film or LED Lamp in Upper Assembly, or the dirty / particles may leave on Carriage Assembly or leave on Glass in Base Assembly of Medi-7000.

It is because most of optical components : Lamps, CCD Sensor, Lens and Mirrors are all in unit, and can not be touched by the customer, hence, the customer can clean the surface of Glass in Base Assembly and clean the surface of Diffuser in Upper Assembly only. If this image problem can not be fixed by the customer after cleaning, by this way, it shall be handled by trained technician locally.



Clean the surface of Glass in Base Assembly from here.



Clean the surface of Diffuser in Upper Assembly (P/N : 141-015324) from here. The LED Lamp Assembly (P/N : 1108-01-500306S) for X-Ray (Film) Scan is underneath the Diffuser.

The customer can refer to below illustration, press down the hook stem in Upper Assembly with both hands at first, and then open to release Upper Assembly from Medi-7000, after that, clean the surface of Glass in Base Assembly and clean the surface of Diffuser in Upper Assembly with lint free cloth (or lens cloth) and 95% alcohol afterwards.

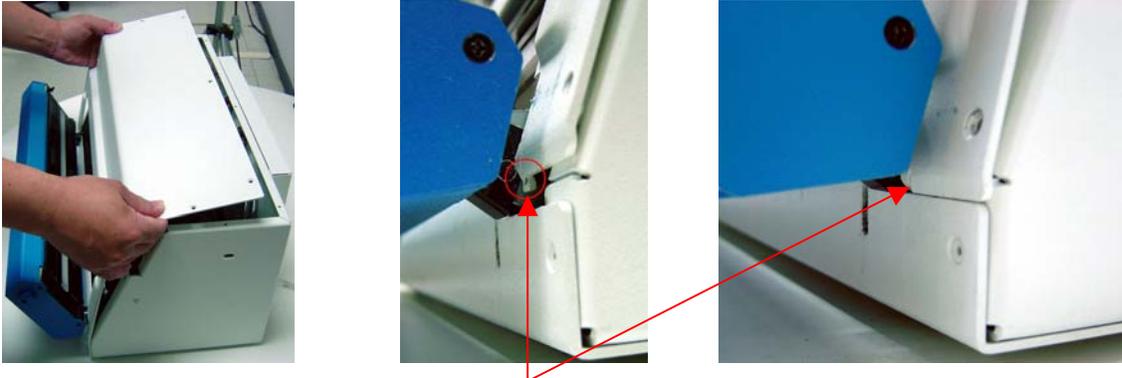


Here is Hook Stem.



The notice when you assemble Bottom Housing Cover into Medi-7000

1. While you assemble Bottom Housing Cover back to Medi-7000, please must make sure the pin in Bottom Housing Cover both side can snap into Bottom Housing Unit of Medi-7000 as the picture below.



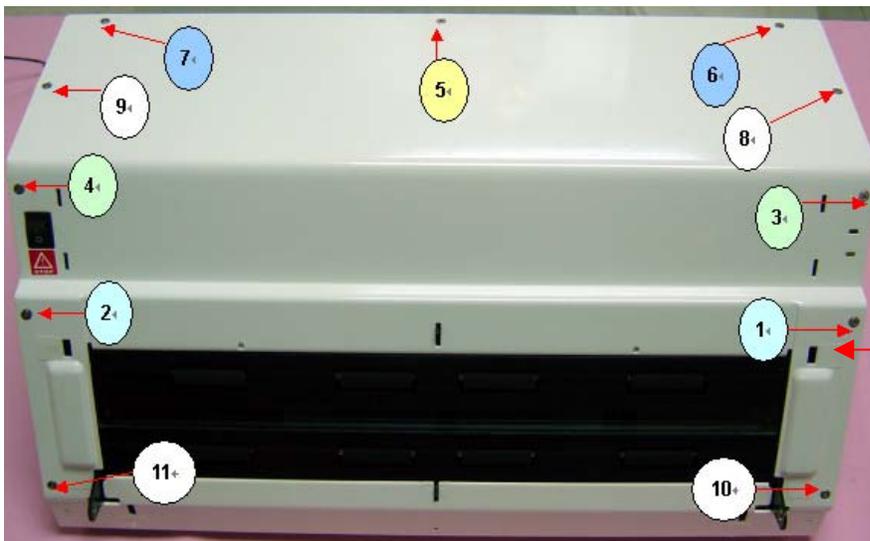
There are two pins in Bottom Housing Cover both side. These two pins must snap into Bottom Housing Unit at first, while you assemble Bottom Housing Cover back to Medi-7000.

2. Make sure both of LEDs can fit into Bottom Housing Cover, after that, push and keep Bottom Housing Cover close to Bottom Housing Unit of Medi-7000 as below illustration.



Make sure both of LEDs can fit into Bottom Housing Cover as well before you close Bottom Housing Cover back to Medi-7000.

3. Please refer to the following order in number and fix each of screw on Bottom Housing Cover.



Teflon Tape (P/N : 215-00-500100)

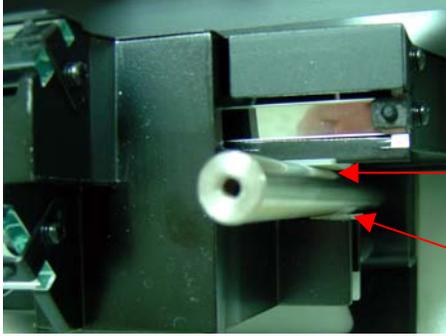
- If the Pin in Bottom Housing Cover at **right side** did not snap into Bottom Housing of **Medi-7000**, after that, you can find out the Upper Assembly on right side can not close on **Medi-7000** well, or there is an error code, **-8000**, may report in ScanWizard Medi V2.0 or later version.



The notice when you assemble Carriage Assembly into Medi-7000

If the Carriage Assembly on left side can not be fixed into position of Sliding Rod well, by this way, it may **damage the mirror** in Carriage Assembly during shipping and **affect the sharpness** of scanned image on left side, hence, please refer to the following instruction and make sure the Carriage Assembly is fixed in the position Sliding Rod well. .

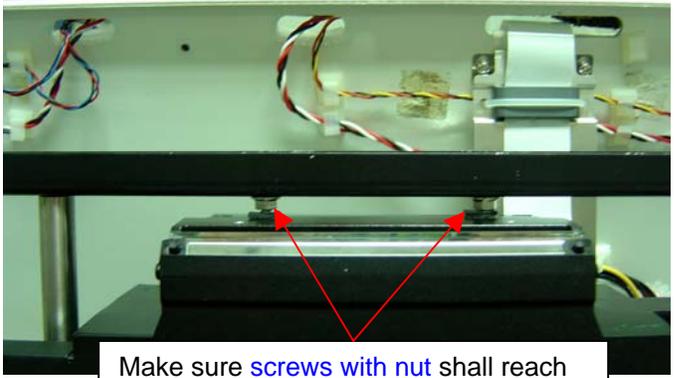
- Make sure **Slide Pad (P/N : 215-00-230005)** and **Sliding Pad (P/N : 215-00-290004)** is existed in Carriage Assembly and can keep Carriage Assembly hold in position of Sliding Rod well.



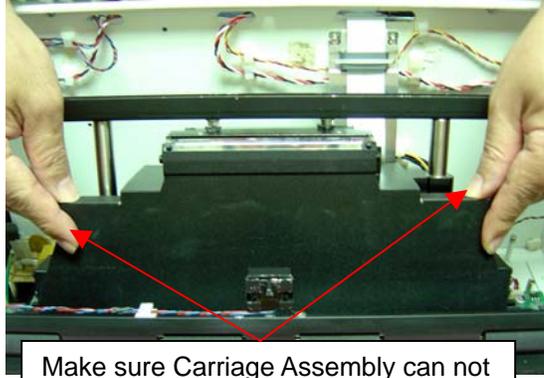
Here is a **Slide Pad (P/N : 215-00-230005)** in Carriage Assembly of **Medi-7000**.

Here is a **Sliding Pad (P/N : 215-00-290004)** in Carriage Assembly of **Medi-7000**.

- Make sure two of **fixed screws with nut** in **Carriage Clamp** can reach to the end of Carriage Assembly and make sure Carriage Assembly can not move and is still there when you move the Carriage Assembly with hands as the picture below.



Make sure **screws with nut** shall reach to the end of Carriage Assembly.



Make sure Carriage Assembly can not move when you move it with hands.

- If Carriage Assembly can fix in position of Sliding Rod well, and then you can ship this unit.

Chapter 3 : Important Notes

Packing requirement for sending the PCB assembly

PCB assembly is a kind of sophisticated electronic circuit board. A scanner mainly includes the following items : Main Board, Carriage Assembly, LED Lamp Assembly, LED Driver Board, etc.. Therefore, well packing will be required when sending them by post or by courier.

1. Some sophisticated IC components are mounted on the PCB assembly, hence it is necessary to pack each PCB assembly with a separate static protecting bag, in order to avoid static electricity.
2. CCD Board is the most important component on the Carriage Assembly, hence, Carriage Assembly must be covered by a protecting bag when mailing it, in order to prevent from damage.
3. Reliable external packing is also very important when sending the PCB assembly by post, in that it would avoid unnecessarily lost or damage.

Notice :

While touching Electrical Boards (PCB Assembly), service engineer must use Anti-Static device (for example, like Anti-static wrist strap) to prevent static electricity from IC component damaging.



Here is the package of **cordless anti-static wrist strap**, it is to prevent Static Electricity from IC component damaging while service engineer touch electrical board in **Medi-7000**.

Short of spare parts while repairing Medi-7000

If you are short of spare parts when you have some **Medi-7000** waiting to be repaired, it would be recommended to take the necessary parts from one **Medi-7000**, so that you may have as many as **Medi-7000** be repaired and sent back to your customer, and left only one or few **Medi-7000** waiting for spare parts from factory.

The definition of error code list in ScanWizard Medi

Error code	Error string	Error Definition	Checking Items
-3	Scanner hardware error	DC offset error	Main Board
-204	Scanning lamp failure	PGA gain error	Carriage Assembly or LED Driver Board
No Film	ADF is not ready or No Paper	Paper in error, No film	Film-in Sensor, Main Board
-204	Scanning lamp failure	Exposure time error	LED Lamp in Upper Assembly
-8000	Scan job is stopped	Safety sensor error	Safety Sensor
-206	Paper out error	Paper out error	Film-out Sensor, Main Board
-700	Invalid windows	Scanning frame error	S/W issue : ScanWizard Medi
-1007	Not enough memory	Not enough memory	S/W issue : ScanWizard Medi
-1004	Scanner time out	Scanner time out	S/W issue : ScanWizard Medi

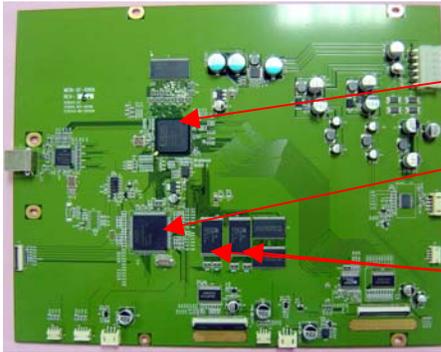
Spare part list of Medi-7000

Item	Part No.	Part Name	Quantity
1	I41-015323	Base Assembly	1
1.1	1108-01-500300	Main Board (PWBA, MEDI-SF-0906)	1
1.2	1108-01-500304	Safety Sensor (PWBA, SAGITTA-HOME FOR Medi-7000)	1
1.3	1108-01-500305S	LED Driver Board (PWBA, D003)	2
1.4	1108-01-360016	LED Board (PWBA, TURRET-LED FOR XRAY)	1
1.5	545-00-360302	PWBA Assembly for Scanner (Power Supply Module)	1
1.6	121-44-500303	LED Power Wire-1	1
1.7	121-44-500304	LED Power Wire-2	1
1.8	121-44-360306	Power Switch Assembly	1
1.9	215-21-500302	Bottom Housing Cover	1
1.a	I41-015325	Carriage Assembly	1
1.a.1	121-80-500300	CCD Flat Cable	1
1.b	I41-015327	Driving Roller Assembly	1
1.b.1	121-85-500300	Sensor 4 Pin (Film-in Sensor)	1
1.b.2	121-85-500301	Sensor 3 Pin (Film-out Sensor)	1
1.b.3	121-44-500305	Transformative Connector	1
1.b.4	215-17-360001	Step Motor in Driving Roller Assembly	1
1.c	121-44-500302	LED Connector Wire	1
2	215-20-500307	Hook Stem	2
3	215-31-360300	Hinge, Pin	2
4	I41-015324	Upper Assembly	1
4.1	1108-01-500306S	LED Lamp Assembly (PWBA, L003)	2
5	215-21-500305	Upper Housing	1
6	I41-015394	Film-in Tray Assembly	1
7	I41-015395	Film-out Tray Assembly	1
8	I41-015488	Document Kit, EU version	1

Notice : All of parts replacement shall be done by trained technician.

Electrical Parts List of Medi-7000

1. MAIN BOARD, PWBA, MEDI-SF-0906 (P/N : 1108-01-500300)



Here is a XILINX FPGA chip : **XC3S1000** on main board : MEDI-SF-0906.

Here is a CPU chip : **LPC2214 (32 BIT PROCESSOR)** on main board : MEDI-SF-0906.

Here is a flash memory chip : **M29W320DB, 2M Word** *2 pcs on main board : MEDI-SF-0906.

2. LED Driver Board, PWBA, D003 (P/N : 1108-01-500305S)



It provides a constant DC voltage and a constant DC current (16mm ~ 20mm) for each LED bar in LED Lamp Assembly.

3. CCD Assembly, PWBA, MEDI-CCD2950D (P/N : I41-015326)



The function of Image Sensor (**Toshiba CCD, TCD-2950D**) in CCD Assembly is to convert the optical signal to analogue signal.

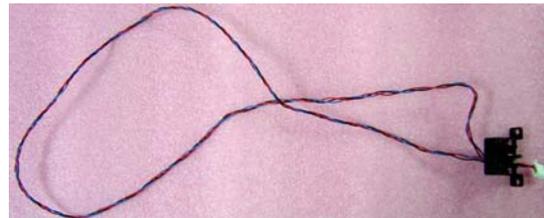
4. Safety Sensor Board, PWBA, SAGITTA-HOME FOR Medi-7000, (P/N : 1108-01-500304)



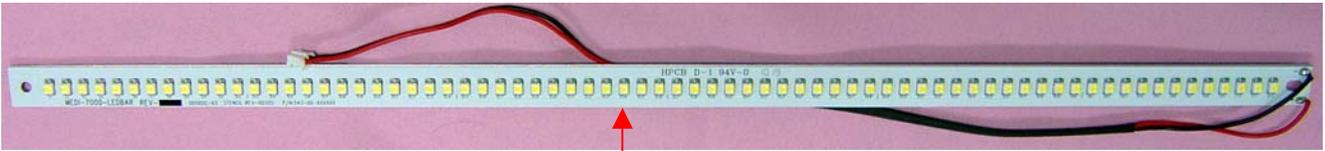
5. LED Board, PWBA, TURRET-LED, (P/N : 1108-01-360016)



6. Film-in Sensor, 4 Pin (P/N : 121-85-500300) + Film-out Sensor, 3 Pin (P/N : 121-85-500301)



7. **LED Lamp Assembly, PWBA, L003, LED Type, SL1411B-WWL (P/N : 1108-01-500306S)**



The working temperature of LED shall be less than **50 degree in Celsius**, or it will reduce the illumination and the life expectancy of LED.
The expected life of LED is 100,000 times of On / Off (light up times).

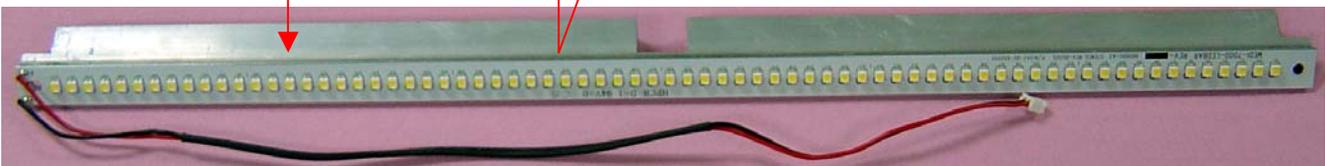
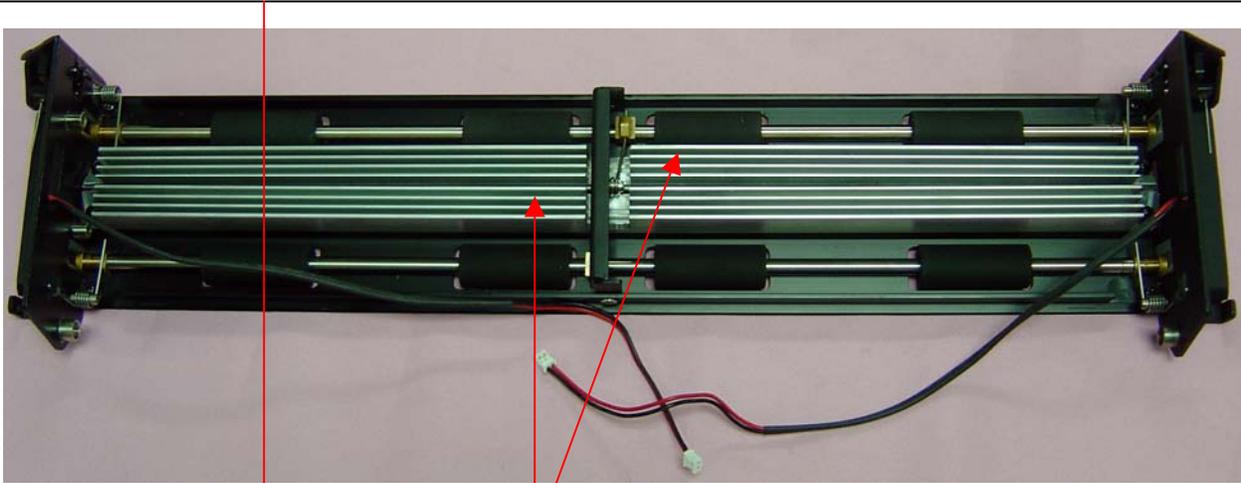
8. **Heat Sink for LED Lamp Assembly, (P/N : 215-41-500300)**



The function of **Heat Sink (P/N : 215-41-500300)** is to cool down the temperature on LED Bar in LED Lamp Assembly when LED Lamp is lit up.

There are two sets of **LED Lamp Assembly** and **Heat Sink** are fixed in **Upper Assembly** as below.

Heat Sink is taped on **LED Lamp Assembly** and is fixed in **Upper Assembly (P/N : I41-015324)**



9. **PWBA Assembly for Scanner, Power Supply Assembly (P/N : 545-00-360302)**



Mechanical Parts List of Medi-7000

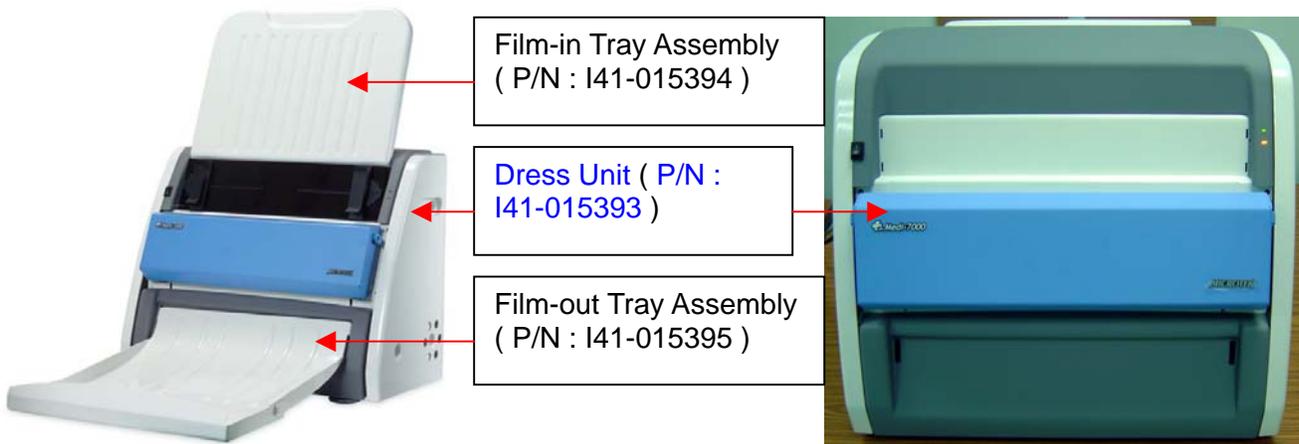
Bundled Package of Medi-7000, EU version (P/N : 1111-03-500303)

A. Dress Unit (P/N : I41-015393)

- a. Base Assembly (P/N : I41-015396)
 - a1. Bottom Housing (P/N : 215-21-500301)
 - a2. Bottom Housing Cover (P/N : 215-21-500302)
 - a3. Carriage Clamp (P/N : 215-21-360306)
 - a4. Carriage Assembly (P/N : I41-015325)
 - 1. CCD Assembly (PWBA, MEDI-CCD2950D, P/N : I41-015326)
 - 2. CCD Cover (P/N : 215-21-500300)
 - 3. Upper Lamp Holder (P/N : 215-41-130000)
 - 4. Carriage Cover (P/N : 215-21-360017)
 - 5. CCD Flat Cable (P/N : 121-80-500300)
 - 6. Slide Pad (P/N : 215-00-230005)
 - 7. Sliding Pad (P/N : 215-00-290004)
 - a5. LED Driver Board, PWBA, D003 (P/N : 1108-01-500305S)
 - a6. Sliding Rod (P/N : 215-30-360300)
 - a7. Hinge Cover (P/N : 215-00-360307)
 - a8. LED Power Wire-1 (P/N : 121-44-500303)
 - a9. LED Power Wire-2 (P/N : 121-44-500304)
 - aa. Power Converter Wire, 6 Pin (P/N : 121-44-500306)
 - ab. Power Switch Assembly (P/N : 121-44-360306)
 - ac. LED Indicator Wire (P/N : 121-44-500302)
 - ad. Main Board (PWBA, MEDI-SF-0906, P/N : 1108-01-500300)
 - ae. Safety Sensor Board (PWBA, SAGITTA-HOME FOR Medi-7000, P/N : 1108-01-500304)
 - af. LED Board (PWBA, TURRET-LED, P/N : 1108-01-360016)
 - ag. PWBA Assembly for Scanner (Power Supply Assembly, P/N : 545-00-360302)
 - ah. **Driving Roller Assembly (P/N : I41-015327)**
 - 1. Glass Assembly (P/N : I41-014684)
 - 2. Lamp Holder Assembly (P/N : I41-015328)
 - a. Anti-Dust Tunnel (P/N : 215-41-500001)
 - b. Lamp Holder (P/N : 215-41-360300)
 - c. Film-in Sensor (P/N : 121-85-500300)
 - d. Film-out Sensor (P/N : 121-85-500301)
 - e. Sensor Support (P/N : 215-20-360306)
 - 3. Step Motor (3.2Vdc / 1A, P/N : 215-17-360001)
 - 4. Transformative Connector (P/N : 121-44-500305)
 - 5. Driving Roller (P/N : 215-30-360301)
 - 6. Right Support (P/N : 215-20-360303)
 - 7. Left Support (P/N : 215-20-360304)
- b. Upper Assembly (P/N : I41-015324)
 - 1. Upper Housing Right Support (P/N : 215-20-360307)
 - 2. Upper Housing Left Support (P/N : 215-20-360308)
 - 3. Lamp Holder (P/N : 215-41-360300)

- 4. LED Lamp Assembly, PWBA, L003, (P/N : 1108-01-500306S)
 - 5. Diffuser (P/N : 215-00-360306)
 - 6. Heat Sink for LED Bar (P/N : 215-41-500300)
 - 7. Thermal for Conductive Pad (P/N : 211-81-500300)
 - 8. Spring C Holder (P/N : 215-00-360314)
 - 9. Idle Roller for Spring C (P/N : 215-30-360304)
 - 10. Bush C (P/N : 215-30-500100)
- c. Main Board Cover (P/N : 215-20-500303)
 - d. Hinge Pin (P/N : 215-31-360300)
 - e. Hook Stem (P/N : 215-20-500307)
 - f. Upper Housing (P/N : 215-21-500305)
 - g. Housing Back Left (P/N : 215-01-500300)
 - h. Housing Back Right (P/N : 215-01-500301)
 - i. Housing Front Top (P/N : 215-01-500302)
 - j. Housing Front Bottom (P/N : 215-01-500303)
 - k. Housing Back (P/N : 215-01-500305)
 - l. Housing Bottom (P/N : 215-01-500308)
 - m. Top Support (P/N : 215-20-500304)
 - n. Bottom Support R (P/N : 215-20-500301)
 - o. Bottom Support L (P/N : 215-20-500302)
 - p. Gold Plated Foot (P/N : 211-81-500303)
- B. Power Cord, 220VAC, EU type (P/N : 121-46-032005) for EU version
Power Cord, 110VAC, US type (P/N : 121-46-500000) for US version
Power Cord, 240VAC, AUS type (P/N : 121-46-000007) → Option
Power Cord, 240VAC, UK type (P/N : 121-46-000019) → Option
- C. USB 2.0 Gray Cable, 1.5m (P/N : 121-44-150504)
 - D. Carton for Medi-7000 (P/N : 219-31-500301)
 - E. Inner Carton - 1 (P/N : 219-31-500103)
 - F. Film-in Tray Assembly (P/N : I41-015394)
 - G. Film-out Tray Assembly (P/N : I41-015395)
 - H. Right Cushion (P/N : 219-44-500300)
 - I. Left Cushion (P/N : 219-44-500301)
 - J. Power Label (P/N : 219-21-500301)
 - K. Document Kit, EU Version (P/N : I41-015488)
 - 1. Medi-7000 CD (P/N : 514-30-550304)
 - 2. Quick Start Guide (P/N : 219-20-500105)
 - 3. Clean Cloth Insert (P/N : 219-20-500302)
 - L. Name Plate, Microtek (P/N : 211-48-500010)
 - M. Name Plate, Medi-7000 (P/N : 211-48-500300)
 - N. Sticker, Emergence Stop (P/N : 219-21-500103)
 - O. Unpacking Paper (P/N : 219-20-500300)
 - P. Box for Film-in Tray (P/N : 219-31-500302)
 - Q. Cushion for Film-in Tray (P/N : 219-44-500302)
 - R. Right Cushion for Film-out Tray (P/N : 219-44-500303)
 - S. Left Cushion for Film-out Tray (P/N : 219-44-500304)
 - T. Anti Dust Cloth (P/N : 389-00-500000)

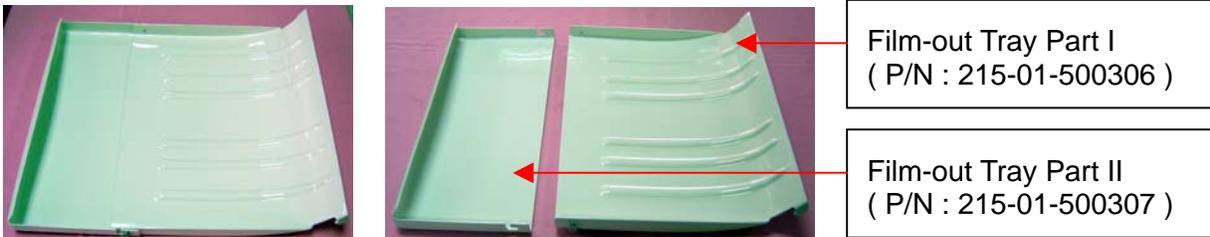
Mechanical Drawing of Medi-7000



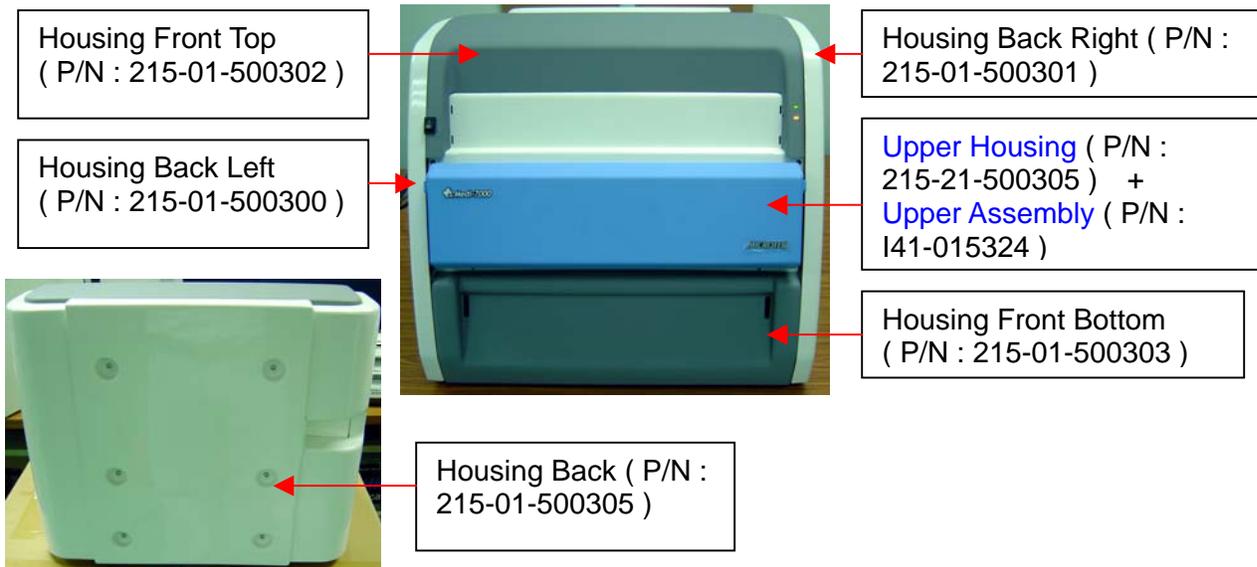
1. Film-in Tray Assembly (P/N : I41-015394)



2. Film-out Tray Assembly (P/N : I41-015395) = Film-out Tray Part I + Film-out Tray Part II



A. Dress Unit (P/N : I41-015393)



A-1. Housing Back Left (P/N : 215-01-500300)



A-2. Housing Back Right (P/N : 215-01-500301)



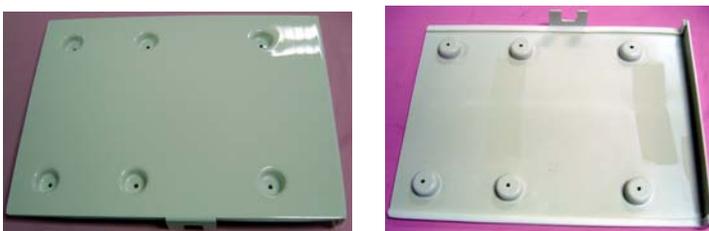
A-3. Housing Front Top (P/N : 215-01-500302)



A-4. Housing Front Bottom (P/N : 215-01-500303)



A-5. Housing Back (P/N : 215-01-500305)



A. Dress Unit-1 (After above Housings are removed.)

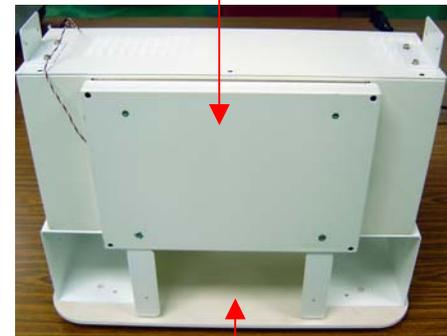
Top Support (P/N : 215-20-500304)

Bottom Support L (P/N : 215-20-500302)

Bottom Support R (P/N : 215-20-500301)



Main Board Cover (P/N : 215-20-500303)

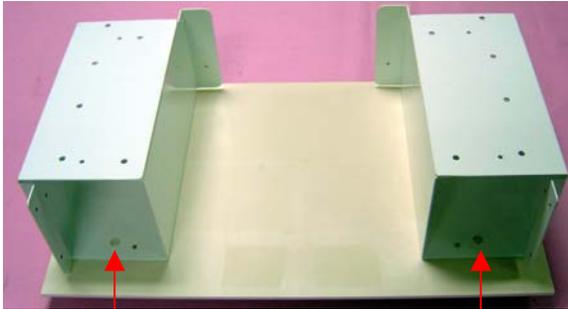


Housing Bottom (P/N : 215-01-500308)

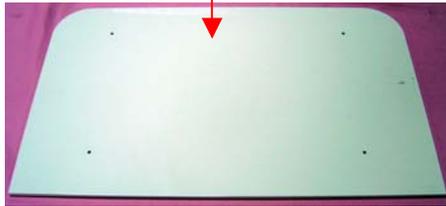
A-6. Top Support (P/N : 215-20-500304)



A-7. Housing Bottom (P/N : 215-01-500308) and Bottom Support



Housing Bottom (P/N : 215-01-500308)



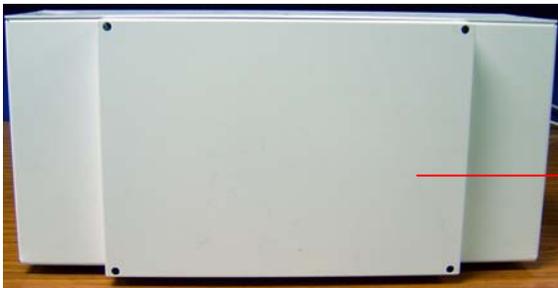
Bottom Support L (P/N : 215-20-500302)

Bottom Support R (P/N : 215-20-500301)

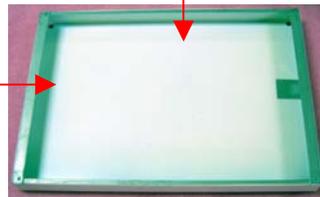


Gold Plated Foot (P/N : 211-81-500303)

B. Main Board Cover (P/N : 215-20-500303)



Main Board Cover (P/N : 215-20-500303)



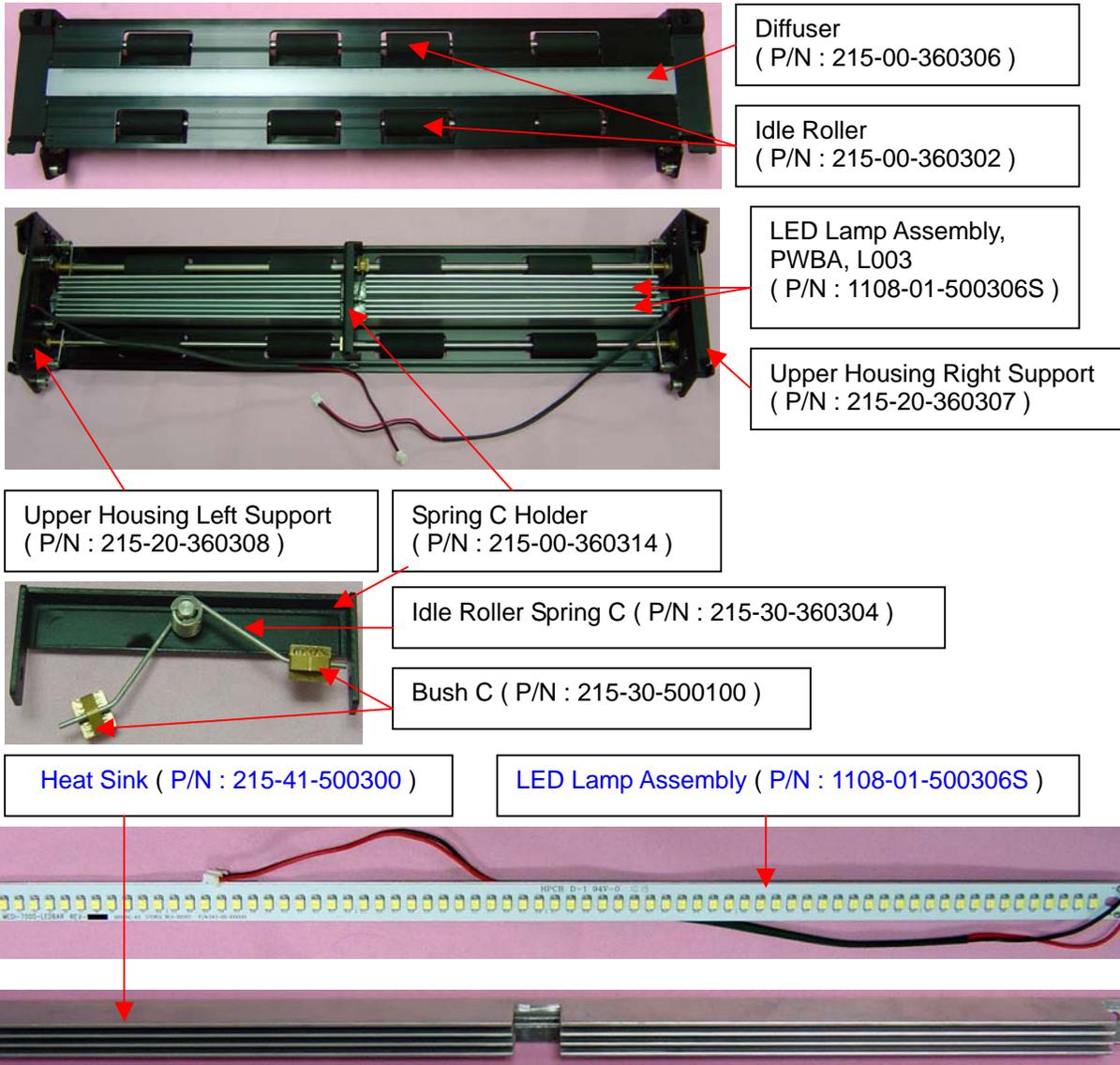
C. Upper Housing (P/N : 215-21-500305)



Name Plate, **Medi-7000** (P/N : 211-48-500300)

Name Plate, **Microtek** (P/N : 211-48-500010)

D. Upper Assembly (P/N : I41-015324)



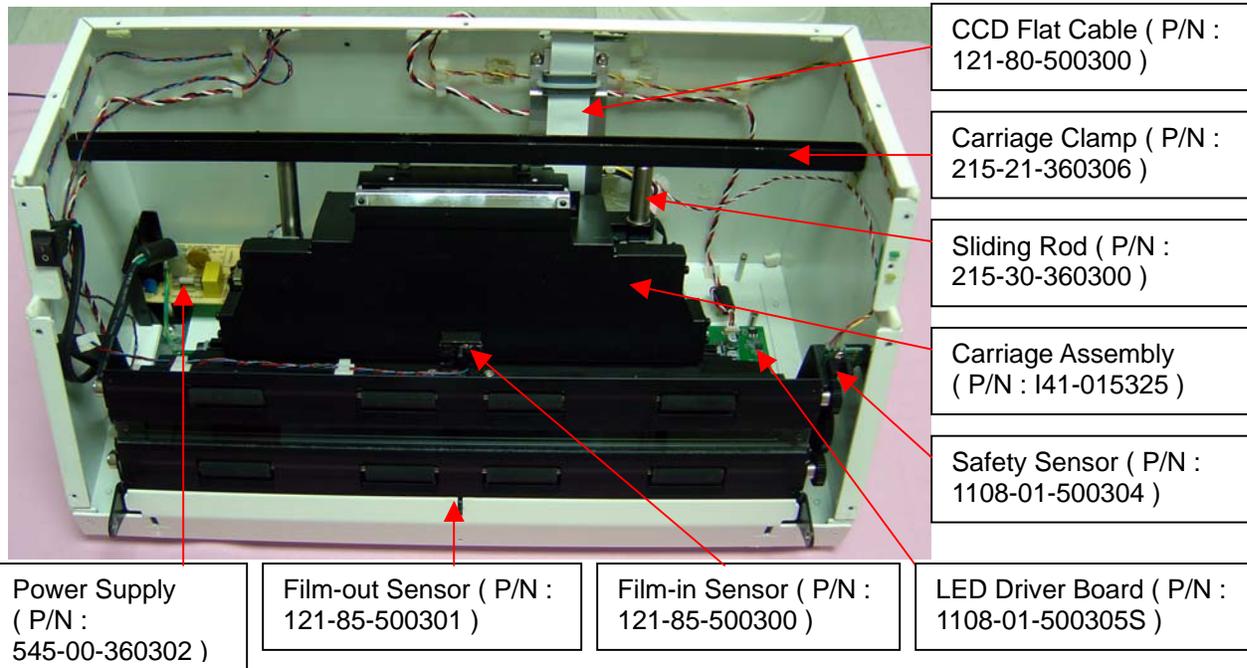
E. Base Assembly (P/N : I41-015396)



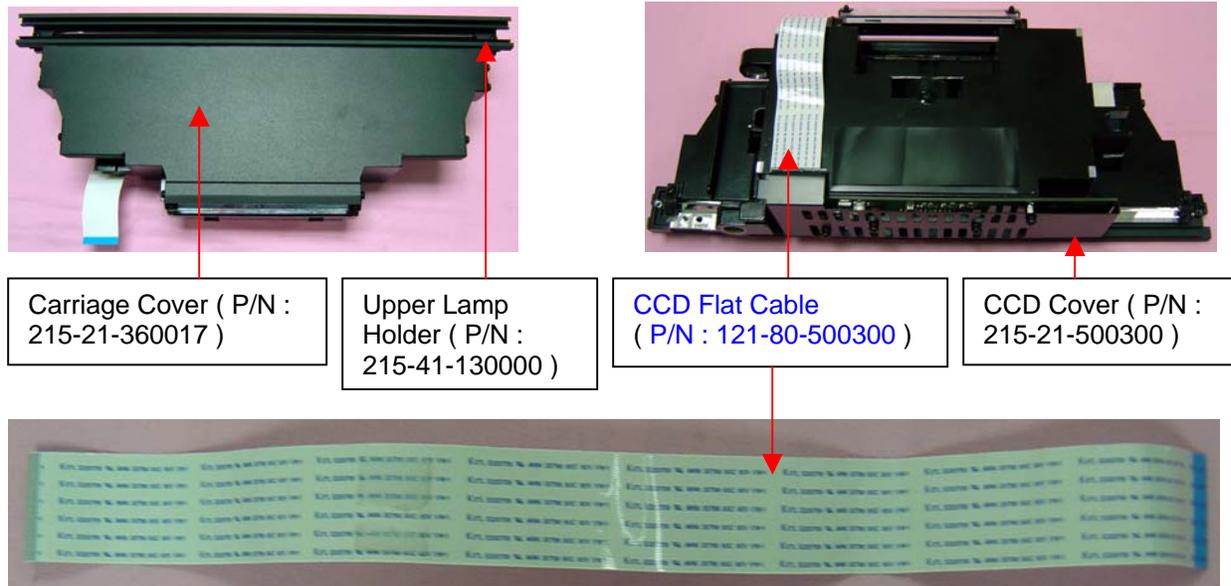
E1. Bottom Housing Cover (P/N : 215-21-500302)



The picture after **Bottom Housing Cover** (P/N : 215-21-500302) is removed from Medi-7000.



E2. Carriage Assembly (P/N : I41-015325)

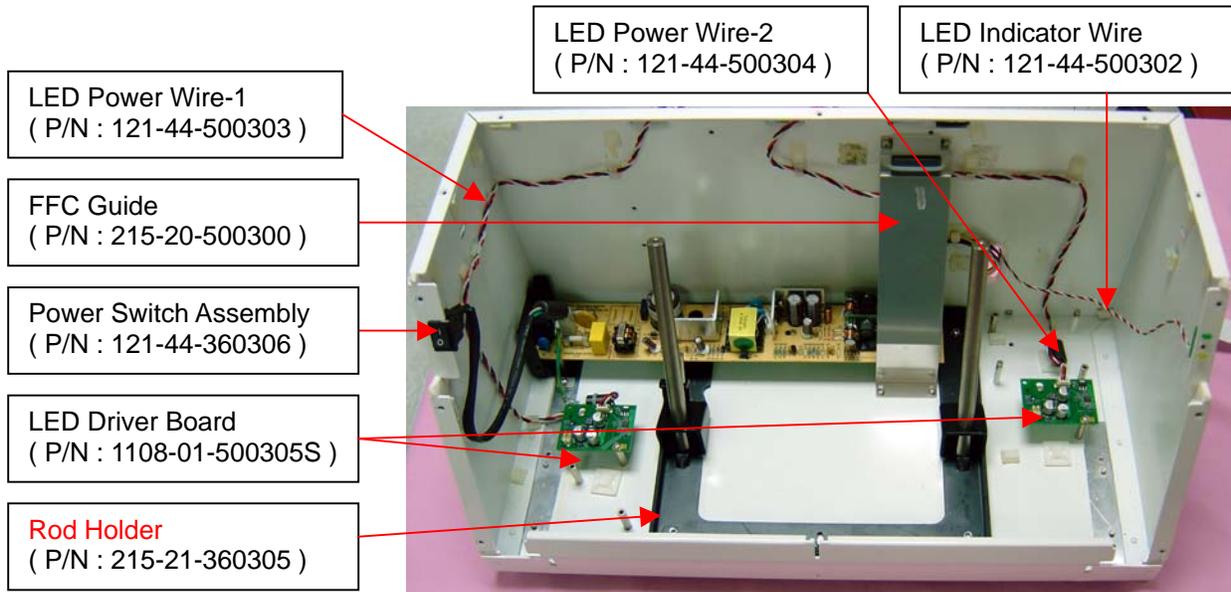


E3. Carriage Clamp (P/N : 215-21-360306)

Top View of Carriage Clamp

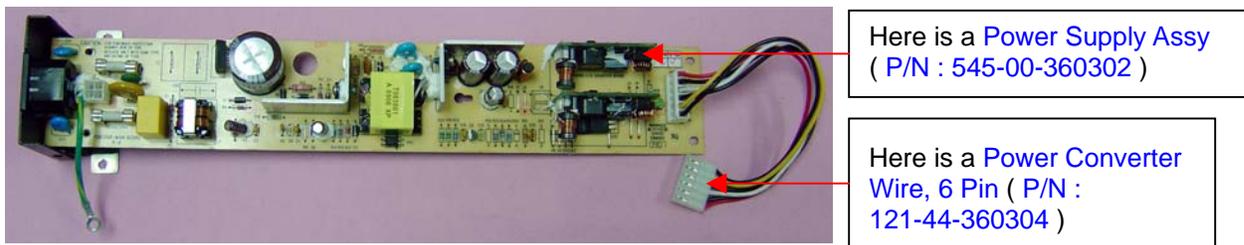
Bottom View of Carriage Clamp





The **Rod Holder** (P/N : 215-21-360305) is used to adjust the focus position of Carriage Assembly, hence, its fixed position can not be moved. Or the sharpness of scanned image will be lost totally.

E4. PWBA Assembly for Scanner (P/N : 545-00-360302) + Power Converter Wire (P/N : 121-44-360304)



E5. Power Switch Assembly (P/N : 121-44-360306)



E6. LED Power Wire-1 (P/N : 121-44-500303) + LED Power Wire-2 (P/N : 121-44-500304)



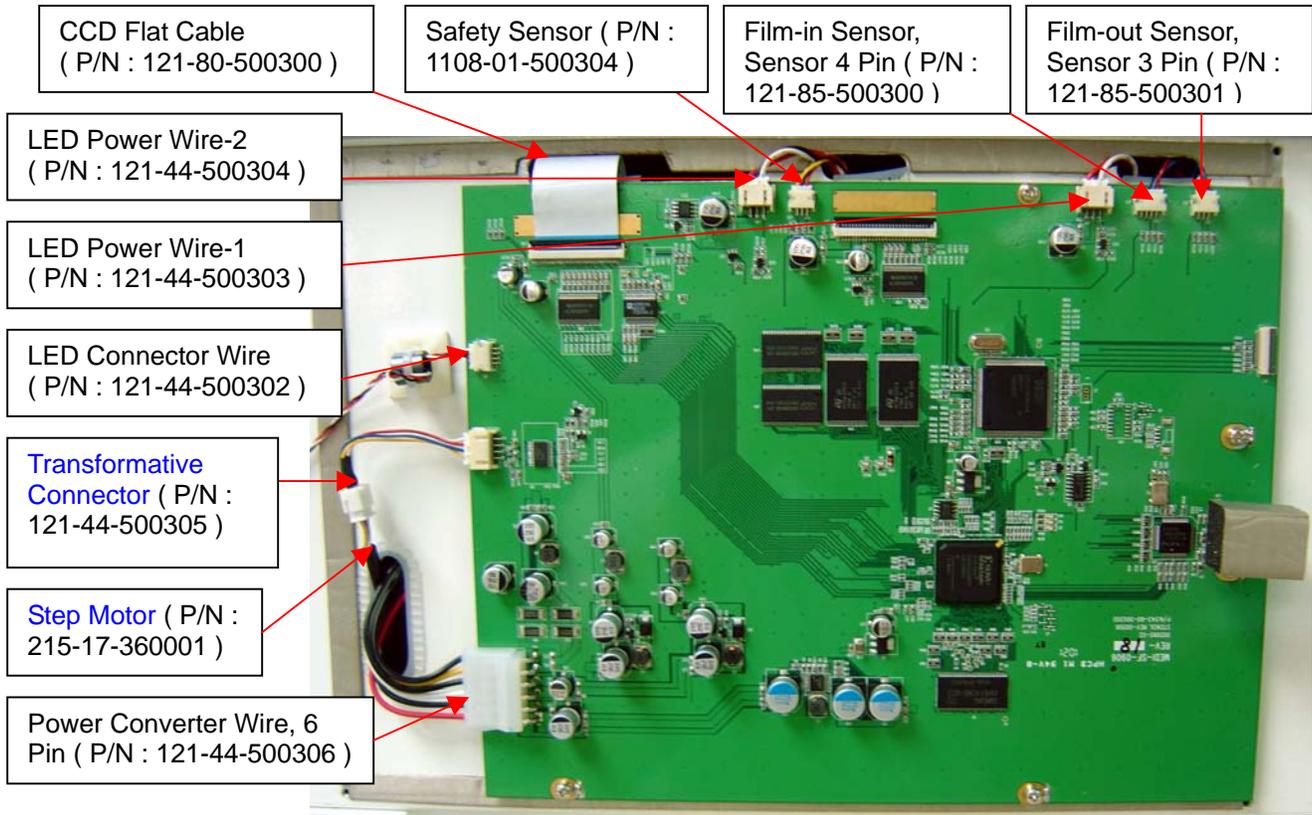
E7. Safety Sensor Board (P/N : 1108-01-500304)



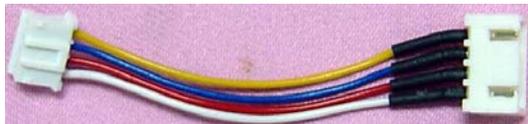
E8. LED Board (P/N : 1108-01-360016) + LED Connector Wire (P/N : 121-44-500302)



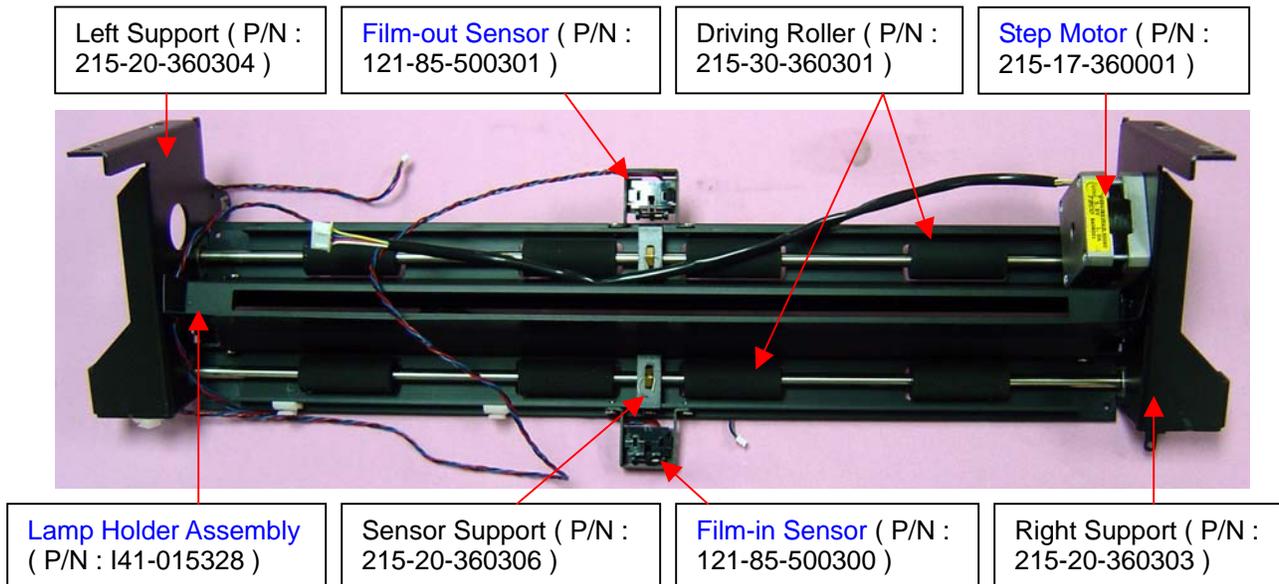
Wiring Connection on **Main Board (PWBA, MEDI-SF-0906, P/N : 1108-01-500300)** of **Medi-7000**.



E9. Transformative Connector (P/N : 121-44-500305)



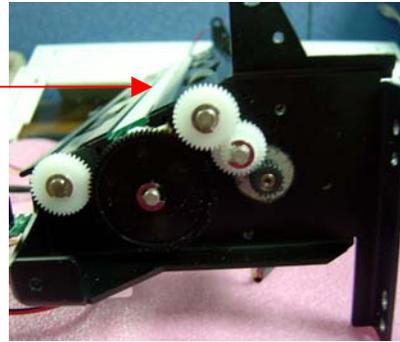
Ea. Driving Roller Assembly (P/N : I41-015327)



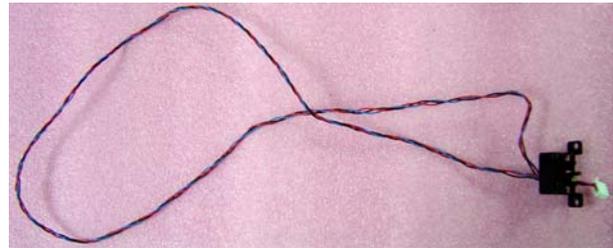
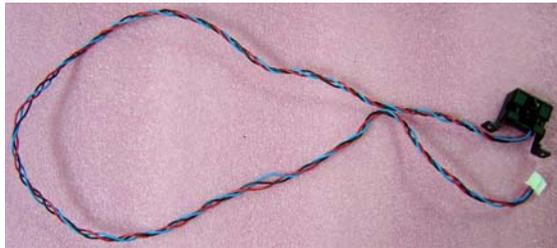


Glass Assembly
(P/N : 141-014684)

Step Motor (P/N :
215-17-360001)



Eb. Film-in Sensor, 4 Pin, (P/N : 121-85-500300) + Film-out Sensor, 3 Pin, (P/N : 121-85-500301)



Ec. Sliding Rod (P/N : 215-30-360300)



Bottom Housing
(P/N : 215-21-360301)



Sliding Rod
(P/N : 215-30-360300)

Rod Holder
(P/N : 215-21-360305)

Ed. Bottom Housing (P/N : 215-21-500301)



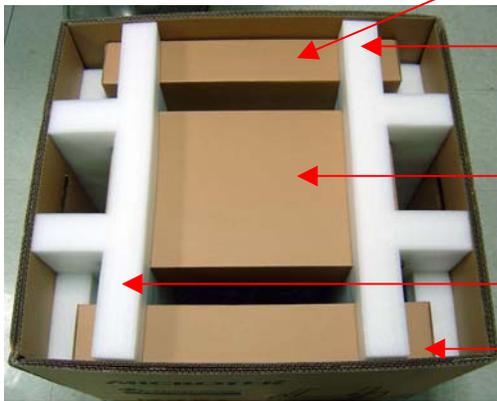
2. Carton Package of Medi-7000



Here is a **Carton Top Cover**
(P/N : 219-31-500106)

Here is a **Carton** of Medi-7000
(P/N : 219-31-500301)

Here is a **Inner Carton** for Film-out Tray Assembly (P/N : 219-31-500103)

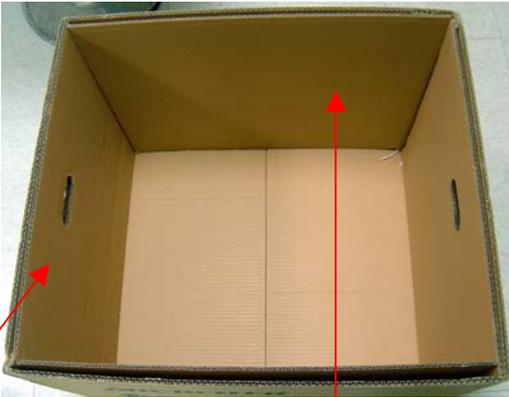
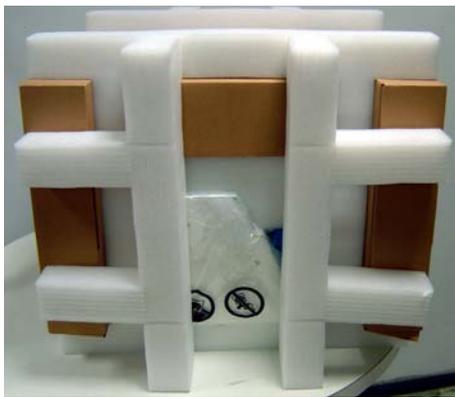


Here is a **Right Cushion** of Medi-7000
(P/N : 219-44-500300)

Here is a **Inner Carton** for Wall Support (P/N : 219-31-500104)

Here is a **Left Cushion** of Medi-7000
(P/N : 219-44-500301)

Here is a **Inner Carton** for Film-in Tray Assembly (P/N : 219-31-500103)



Here is **Card Board** (P/N : 219-31-500108)

Here is **Card Board** (P/N : 219-31-500107)



Here is **Anti Dust Cloth**
(P/N : 389-00-500000)

Dress Unit of **Medi-7000**
(P/N : I41-015393)



a. The item in Inner Carton for Film-in Tray Assembly (P/N : 219-31-500103) list you as follows :



a-1. Document Kit, EU version (P/N : I41-015488)

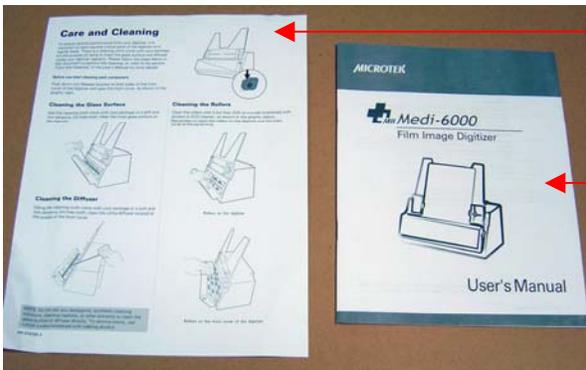
Here is Film-in Tray Assembly (P/N : I41-015394)



Document Kit, EU version (P/N : I41-015488)
 Document Kit, US version (P/N : I41-015497)



Here is a ScanWizard Medi S/W CD (P/N : 514-30-550304) for Medi-7000.



Here is a Clean Cloth Insert (P/N : 219-20-500302) for Medi-7000.

Here is a Quick Start Guide (P/N : 219-20-500105) for Medi-7000.

a-2. USB Cable, 1.5m (P/N : 121-44-150504)



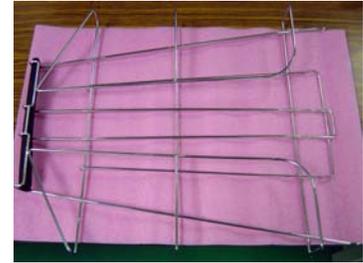
a-3. Film-in Tray Assembly (P/N : I41-015394) + Bottom Tray (P/N : 215-21-360301)



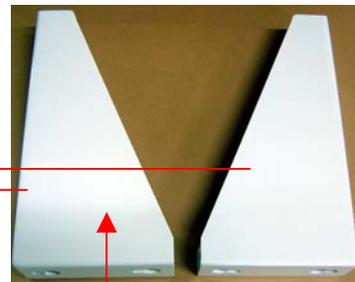
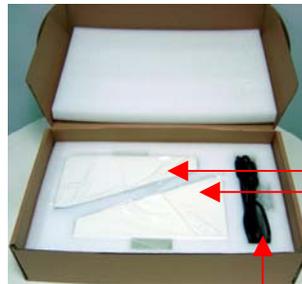
Here is Bottom Tray (P/N : 215-21-360301)



b. The item in Inner Carton for Bottom Bracket Assy (P/N : 219-31-500103) list you as follows :



c. The item in Inner Carton for Wall Support (P/N : 219-31-500104) list you as follows :



Here is AC Power Cord

Here is Wall Support
(P/N : 215-20-500012)
for Medi-7000.

AC Power Cord (P/N : 121-46-500000, US / TWN Type, 110VAC) → for US version



AC Power Cord (P/N : 121-46-032005, AP / EU / KOREA Type, 220VAC) → for EU version



AC Power Cord (P/N : 121-46-00019, UK Type, 240VAC) → Option



There is a power fuse : 13A is positioned in this cover.

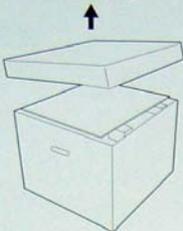
AC Power Cord (P/N : 121-46-00007, Australia Type, 240VAC) → Option



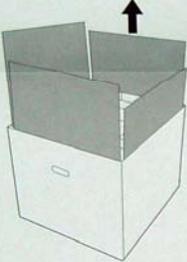
3. Unpacking Paper (P/N : 219-20-500300)

Unpacking Package Contents
Follow the steps below to take out your digitizer and other accessory components.

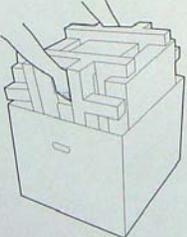
Step 1
Lift up and open the top cover.



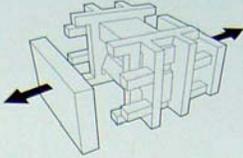
Step 2
Remove cardboards from the carton.



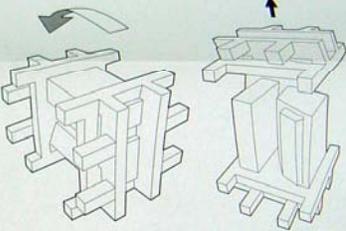
Step 3
With both hands, hold and lift up the two sides of foam supports firmly. Due to the heavy weight of the package (about 33 pounds), make sure you can handle it properly before removing it from the carton.



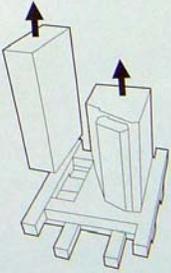
Step 4
Remove two accessory boxes (1 and 2) from the foam supports.



Step 5
Turn over the package and lift up the upper foam support.



Step 6
Pull out the accessory box 3 from the bottom foam support first; then, pull out the digitizer.



149-004363 A

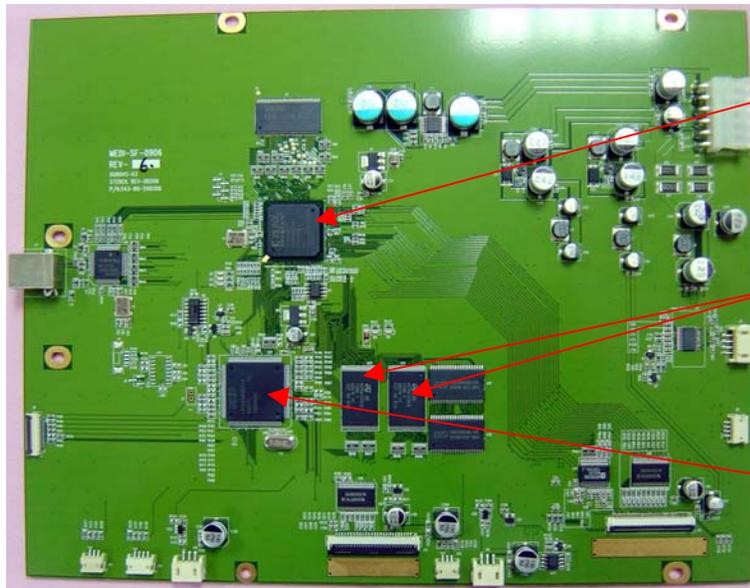
The Table of Feature List for Medi-7000

MODEL	Medi-7000
ITEM	
OPTICAL RESOLUTION	600dpi(H) * 1200dpi(V)
CARRIAGE STATUS	Carriage Assembly designed with one Lens & 5 Mirrors
OPTICAL PATH	X-Ray Scan : 600 dpi
SCAN AREA	Maximum Scan Area : 14" (W) x 35" (L) Minimum Scan Area : 2.5" (W) x 2.5" (L)
SAMPLE DEPTH	16BIT/PIXEL - GRAY
A/D CONVERTER	AD9826 – 16BIT / PIXEL
CCD SENSOR	TCD-2950D (TOSHIBA CCD)
LAMP TYPE	LED Lamp (No Warm Up Time is needed)
MOTOR TYPE	MICRO STEPPING MOTOR : 1.8°/step (3.2Vdc / 1A)
MOTOR DRIVER	A3983SLP-T, Chip on main board
CPU	LPC2214 (32 bit processor), Chip on main board
USB2.0 CONTROLLER	NET2270, Chip on main board
DATA PROCESSING CHIP	XC3S1000, FPGA Chip on main board
DIGITAL SHADING	YES
IMAGE DATA BUFFER	2M WORD
PROGRAM MEMORY	Flash Memory : M29W320DB (2M word) x 2 pcs
F/W Update From PC Host	YES
SCANNER INTRFACE	USB2.0
S/W SUPPORT (PC version)	ScanWizard Medi V2.0 or later version support Medi-7000 work under PC Windows 7 / Vista / XP / 2000 system
S/W SUPPORT (MAC version)	None
Auto Scan Feature	Enable in ScanWizard DI V2.0 or later Ver.
Certification	Compliance with ISO13485 & FDA Standards
SCANNING TYPE	Sheet-fed, Gray Scan (Gray 8 bit , Gray 12 bit or Gray 16 bit)
OPTICAL DENSITY	4.0 Dmax

The procedure to update the F/W version of Medi-7000

Notice :

There are two flash memory devices : **M29W320DB** on main board (PWBA, MEDI-SF-0906, P/N : 1108-01-500300) as below, which are used to save the program files of digitizer's F/W in it.



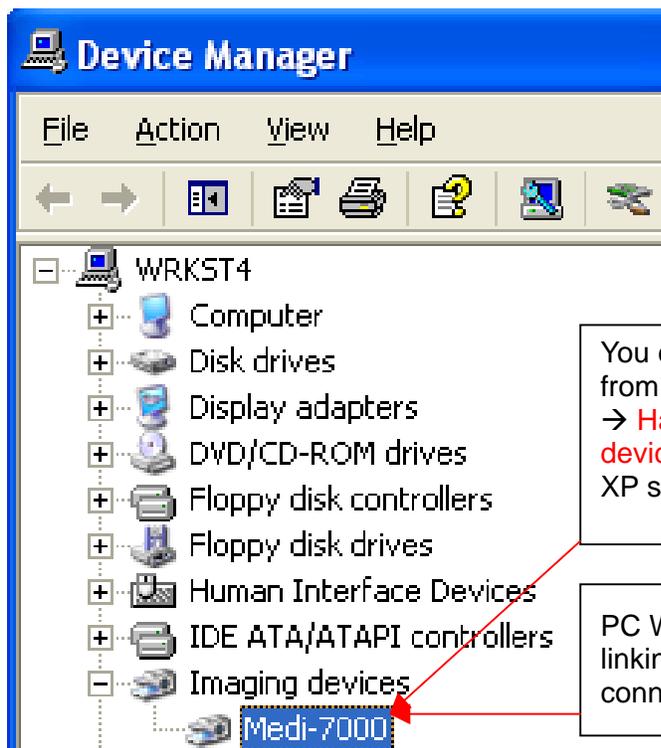
Here is XILINX FPGA chip : **XC3S1000** on main board : MEDI-SF-0906.

Here is flash memory chip : **M29W320DB**, **2M Word *2 pcs** on main board : MEDI-SF-0906.

Here is a CPU chip : **LPC2214 (32 BIT PROCESSOR)** on main board : MEDI-SF-0906.

The following procedure will tell you how to update F/W version of Medi-7000 from **V1.0** to **V1.1** with utility : **FPGA_FEPROM.EXE** . (Before you update F/W version of **Medi-7000**, please make sure the scanner driver S/W : ScanWizard Medi V2.0 or later version had installed into your PC Windows system already.)

1. Check your scanner is ready, and then link with your PC host through **USB2.0** connectivity.



You can check the linking device of **Medi-7000** from **Start** → **Control Panel** → **System** → **Hardware** → **Device Manager** → **Imaging devices** → **Medi-7000** under PC Windows XP system.

PC Windows XP system has recognized the linking device of **Medi-7000** through an **USB2.0** connectivity.

2. Make sure **Medi-7000** can work with scanner driver S/W : ScanWizard Medi V2.0 or its later version under PC Windows system.

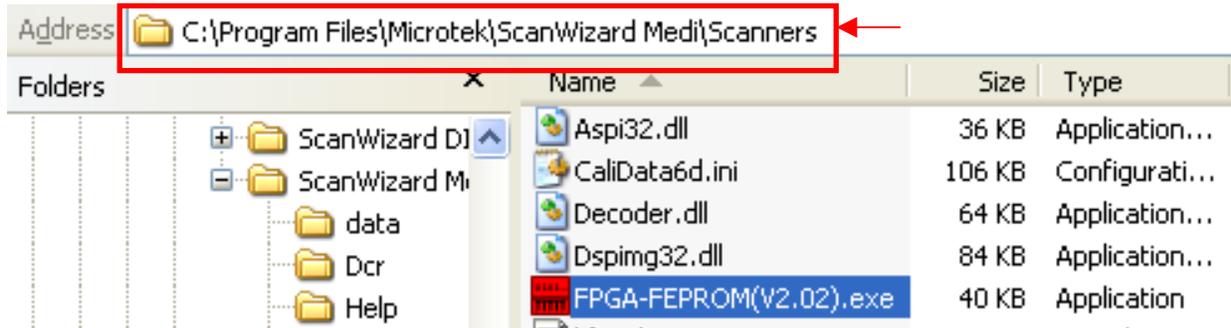


This is an icon of "Scanner Finder" show you "Scanner is ready", it means scanner has linked with PC Windows system successfully. If scanner finder can detect **Medi-7000** link with PC via an USB2.0 cable connection well, and then this icon will show up in resident area of PC Windows system.



This is an icon of "Scanner Finder" show you "Scanner is not ready", it means PC Windows system can not detect scanner has linking successfully via USB cable connection. If scanner finder can not detect **Medi-7000** link with PC via an USB2.0 cable connection well, and then this icon will show up in resident area of PC Windows system.

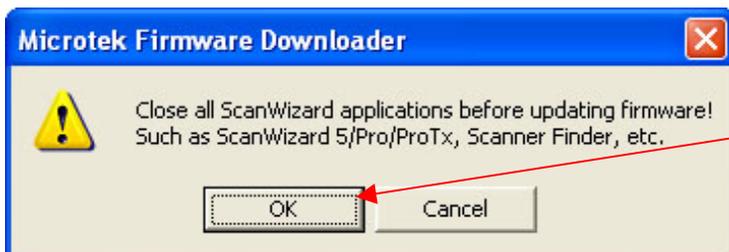
3. Make sure the Firmware downloader utility : **FPGA_FEPROM.EXE** has copied to **C:\Program Files\Microtek\ScanWizard Medi\Scanners** in PC Windows system as the picture below.



4. Create an icon of shortcut for utility : **FPGA_FEPROM.EXE** on desktop of PC Windows system.



5. Double click on icon of shortcut for utility : **FPGA_FEPROM.EXE**, and then execute Firmware downloader utility : **FPGA_FEPROM.EXE** for Firmware update of **Medi-7000** under PC Windows system.
6. Make sure to close all of ScanWizard applications (such as SW5 / SW Pro / SW Pro Tx) before you update firmware version of **Medi-7000**, and then click "OK" to update the firmware of **Medi-7000**.



Click "OK", and then execute to update the F/W version of **Medi-7000**.

7. If Medi-7000 had linked with PC through USB 2.0 connectivity well, and then the Firmware Downloader Utility will list the message as below illustration, after that, click “ Load Bin File ” for F/W update.

The screenshot shows the Microtek Firmware Downloader (V2.02) interface. Under 'Connected scanners', a Medi-7000 is listed with the following details:

- Firmware Version : 1.00
- Bootloader Version : 0.24
- FPGA Version : 1241
- Major Model Code : 0x20
- Model Code : 0x4D
- Sub Model Code : 0x00

A callout box contains the following text:

There are three files are saved in flash memory device on Main Board : MEDI-SF-0906, it included scanner F/W : V1.0, Bootloader : V0.24 and FPGA : 1241 in the list.

The Firmware downloader utility : **FPGA-FEPROM (v2.02).exe** or later version can be used to update the version of **Bootloader / FPGA / FirmWare** in utility. **If the version of Bootloader is changed, by this way, you shall refer to the following sequence to update the version of Bootloader / FPGA / FirmWare in utility, or Medi-7000 can not work anymore if you update F/W version directly.**

1. First of all, update the version of **Bootloader**.
2. Secondly, update the version of **FPGA**.
3. Finally, update the version of **FirmWare**.

At the bottom, there are buttons for 'Load Bin File', 'Upgrade', and 'Exit'. A red arrow points from the 'Load Bin File' button to a second callout box:

Click “ Load Bin File ” and update the **F/W version : V1.1** from PC to **Medi-7000**, if the version of **Bootloader is not changed**.

There are three files are saved in flash memory device : **M29W320DB** on Main Board . It saved **Bootloader file**, it is used to offer the interface for F/W update and FPGA update with downloader utility : **FPGA_FEPROM.EXE (V2.01)** or later version.

It saved **FPGA file**, it is used to program **FPGA chipset : XC3S1000** and address their I/O after scanner is powered up.

It saved **Program file of scanner’s F/W**, it is used to calibrate the light source of scanner after scanner is powered up.

8. Select to open program file of F/W : “ **Scanner.bin-214D00-1.10.bin (F/W version : V1.1)** “, and then click “ **Open** “ to update the F/W version of **Medi-7000** to V1.1 afterwards.

The screenshot shows an 'Open' file dialog box. The 'Look in:' field is set to 'Medi-7000 FirmWare V1.10'. The file list contains:

- ArmScan.bin-204D-1241.bin
- BootLoader.bin-204D00-0.24.bin
- Scanner.bin-204D00-1.10.bin

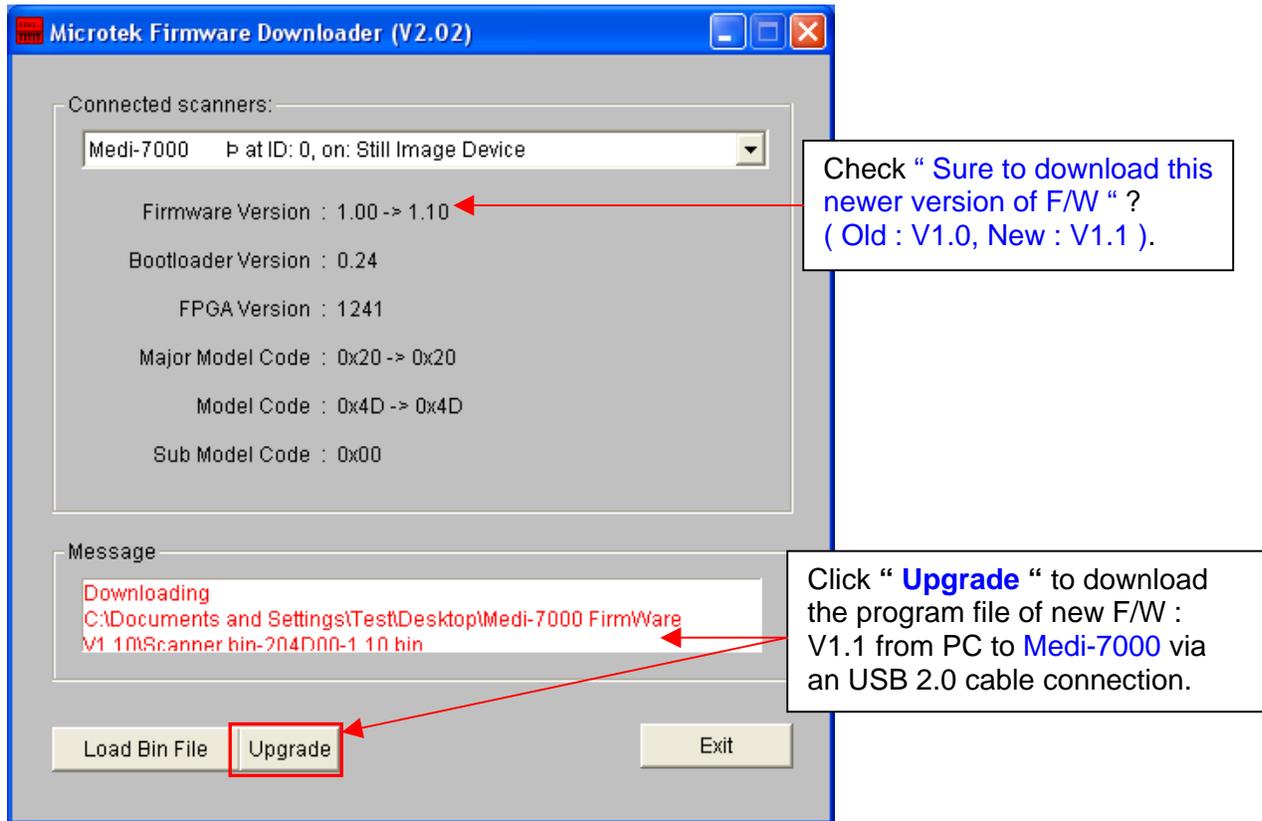
A red arrow points from the 'Scanner.bin-204D00-1.10.bin' file to a callout box:

Select to open program file of F/W : “ **Scanner.bin-214D00-1.10.bin (F/W version : V1.1)** “.

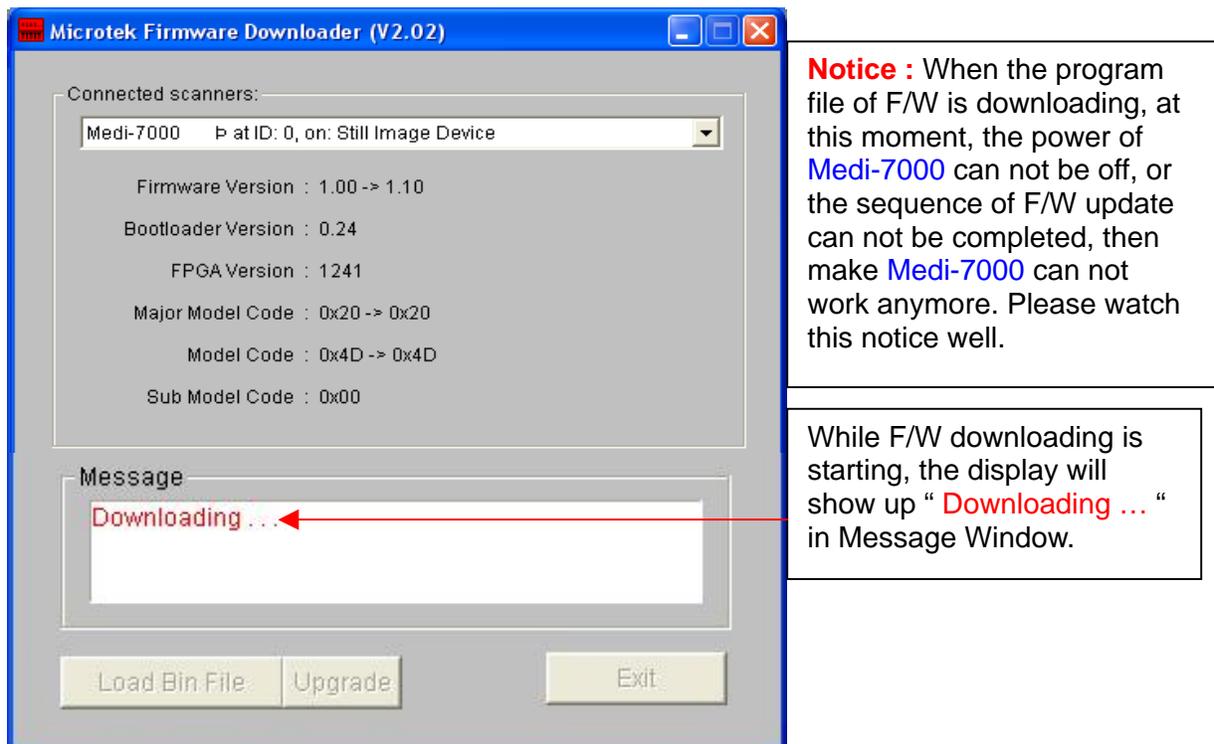
Another red arrow points from the 'Open' button to a second callout box:

Click “ **Open** “ to download the program file of new F/W : V1.1 from PC to **Medi-7000** via an USB 2.0 cable connection.

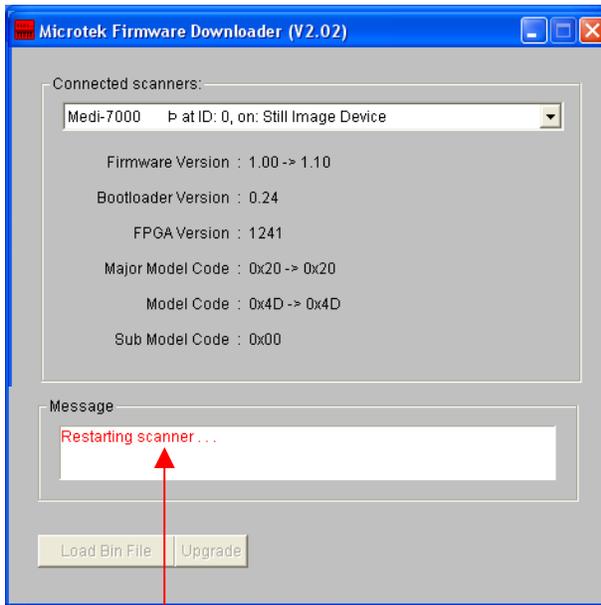
9. Check “ Sure to download this newer version of F/W “ ? (Old : V1.0, New : V1.1), and then click to select “ Upgrade “ to update new F/W version of Medi-7000.



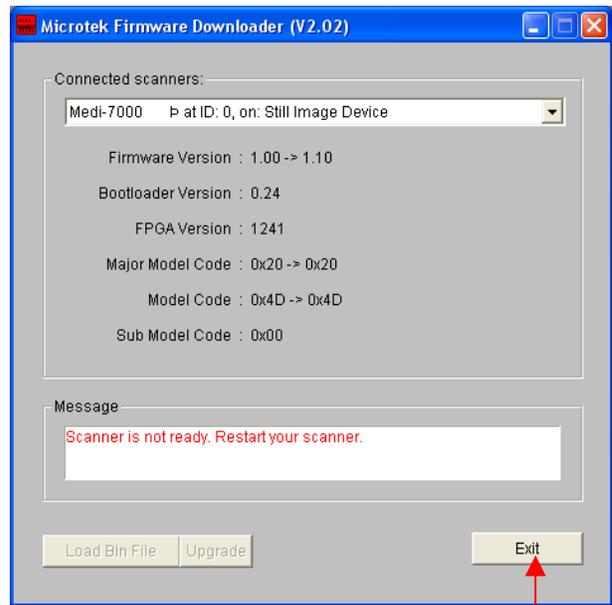
10. Below illustration is the message while new F/W is downloading from PC to Medi-7000.



11. After F/W downloading is complete, **Medi-7000** will start to initial until it go ready again.



Medi-7000 will start to initial after F/W update is completed.

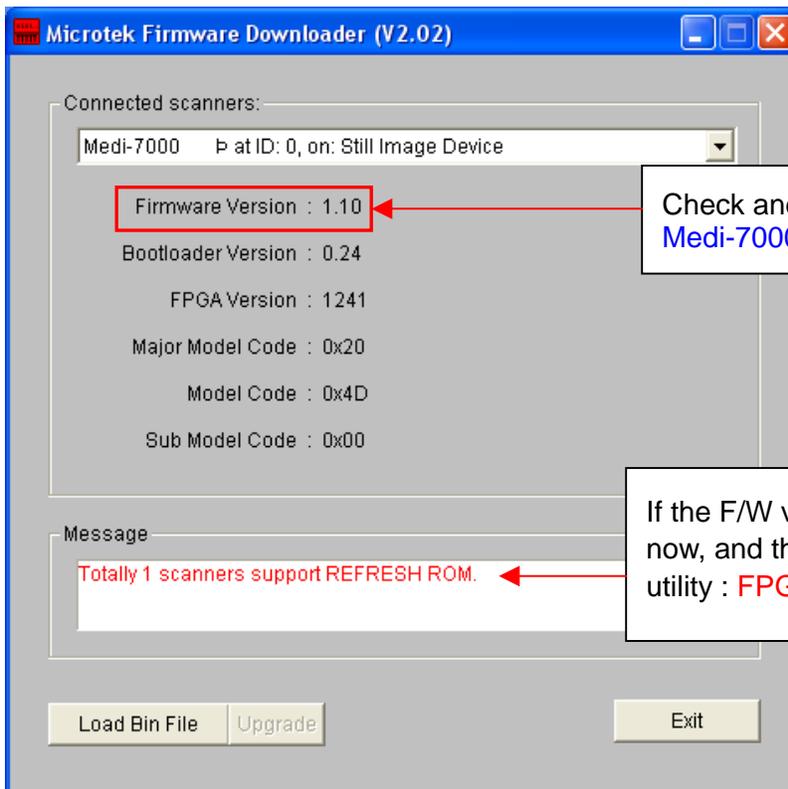


Wait until scanner is ready, and then click “ **Exit** ” to quit it form utility : **FPGA_FEPROM.EXE**.

12. Select to execute utility : **FPGA_FEPROM.EXE** again, and then check the F/W version of **Medi-7000** is V1.1 or not ?

If Yes, click “ **Exit** ” to quit it from utility : **FPGA_FEPROM.EXE**.

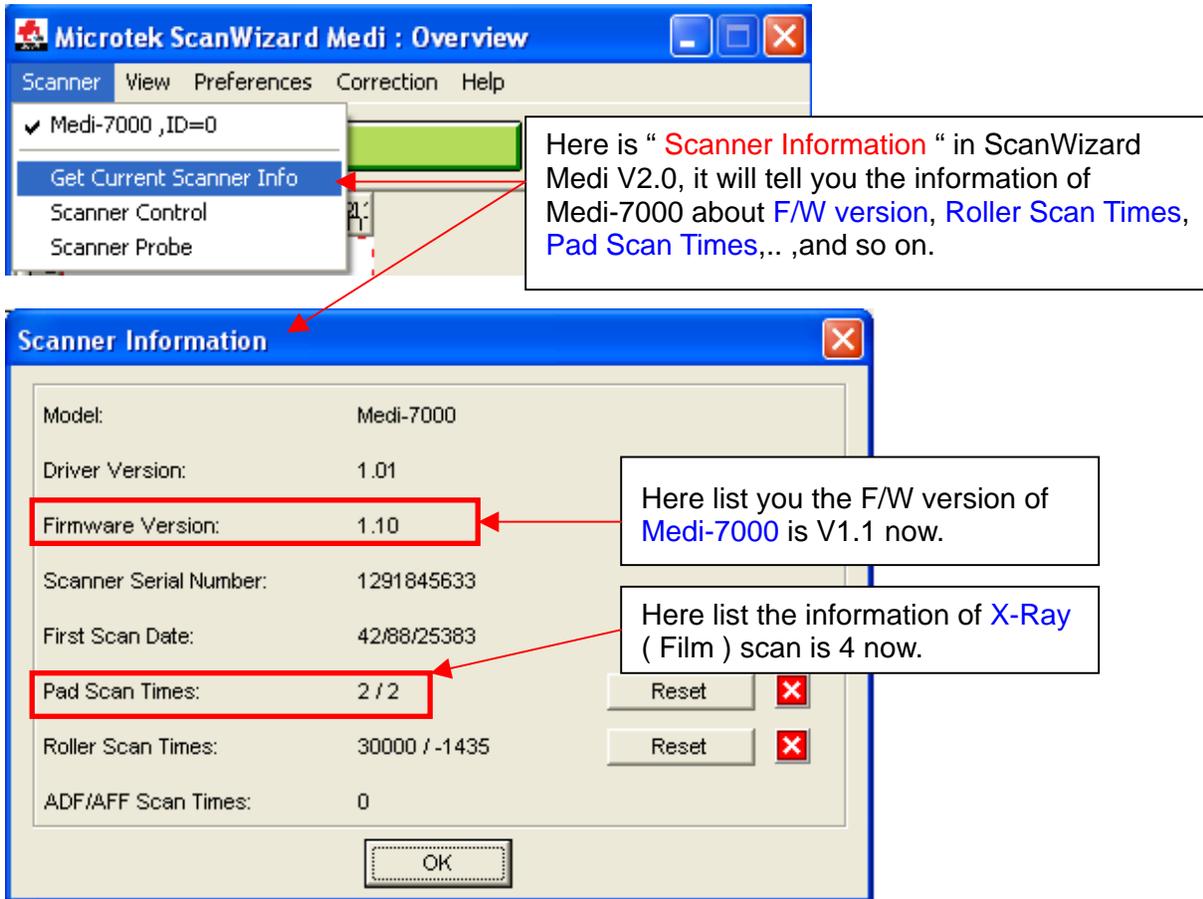
If No, click “ **Load New F/W** ” to update the F/W version of **Medi-7000** to V1.1 again.



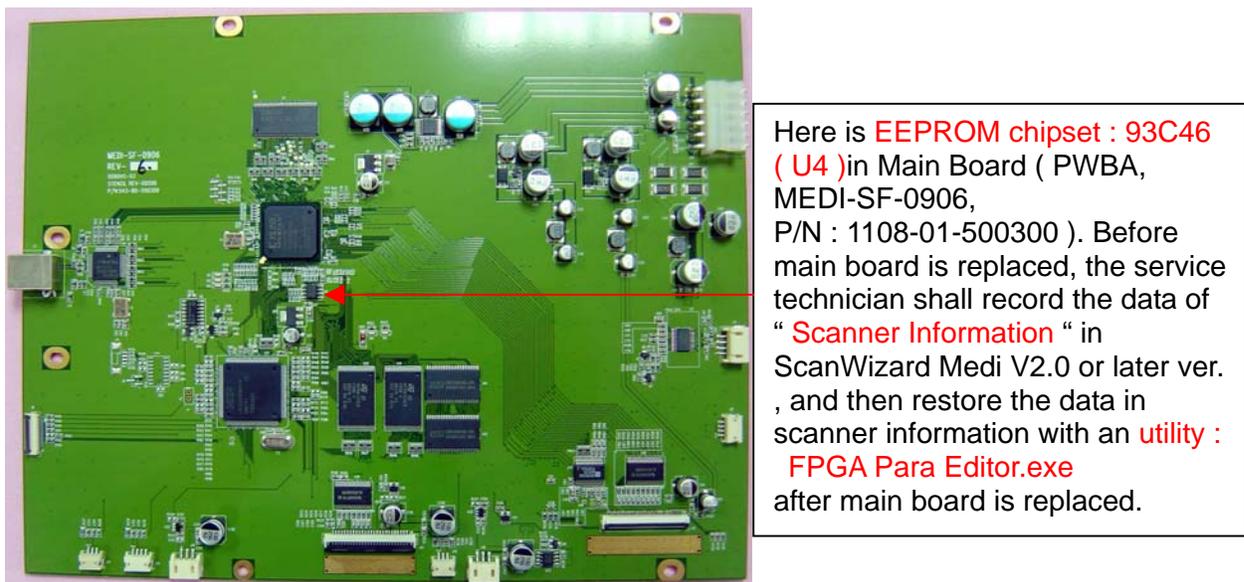
Check and identify the F/W version of **Medi-7000** is V1.1 now.

If the F/W version of **Medi-7000** is V1.1 now, and then click “ **Exit** ” to quit it from an utility : **FPGA_FEPROM.EXE**.

13. Check and identify F/W version of **Medi-7000** from scanner information in driver S/W : **ScanWizard Medi V2.0** or its later version. (Click “ **Get Current Scanner Information** “ in **Scanner** Menu of Microtek scanner driver S/W : **ScanWizard Medi V2.0** or later version, and then read the “ **Scanner Information** “ of **Medi-7000** as the picture below.)



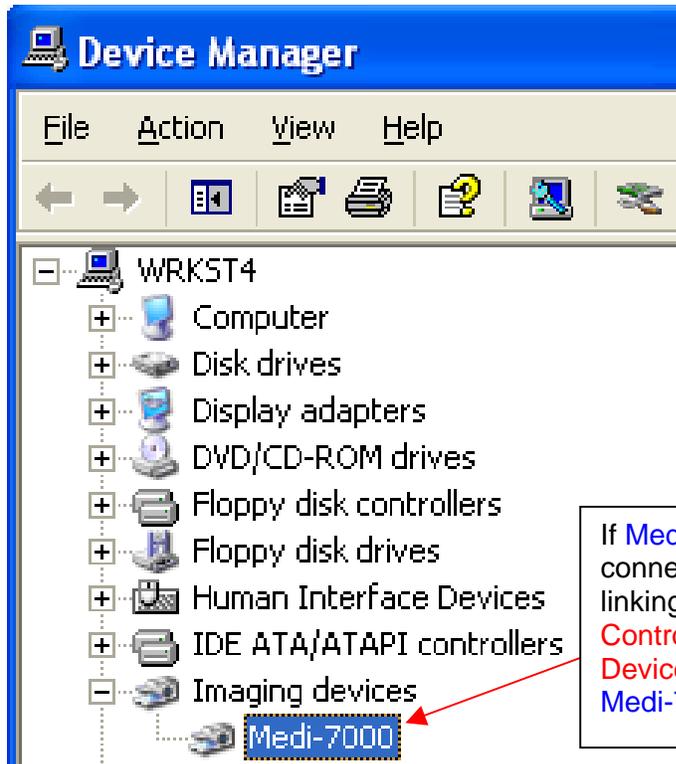
The data in “ **Scanner Information** “ will be saved into **EEPROM chipset : 93C46 (U4)** in Main Board (PWBA, MEDI-SF-0906, P/N : 1108-01-500300) of **Medi-7000**.



The Diagnostic Tool for Medi-7000

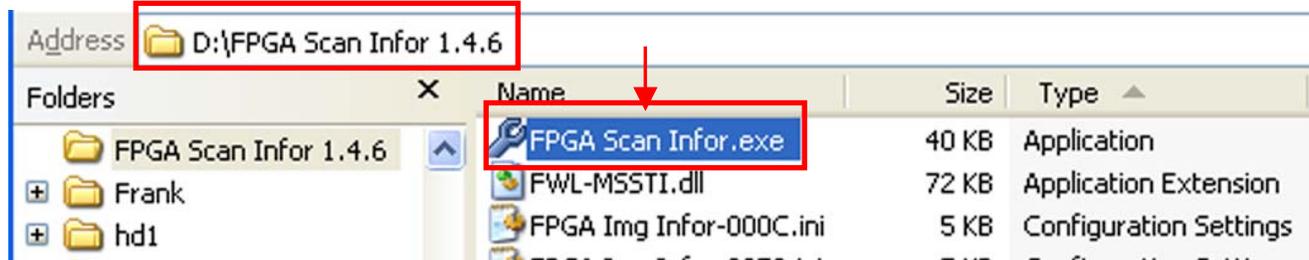
FPGA Scan Infor.exe is an utility that can support to check the H/W function of Medi-7000 in a second through an USB2.0 connectivity. Please refer to the following instruction, and then understand the procedure how to use this utility for function test.

- Step 1 :** Make sure driver S/W (ScanWizard Medi V2.0 or later version) for **Medi-7000** had installed into PC Windows system well.
- Step 2 :** Power up **Medi-7000** and wait until scanner go ready at first, and then make an USB cable connection between scanner and PC.
- Step 3 :** Make sure Device Manager can recognize the linking device of **Medi-7000** as below.



If **Medi-7000** link with PC via an USB cable connection well, after that, you can check the linking device of **Medi-7000** from **Start** → **Control Panel** → **System** → **Hardware** → **Device Manager** → **Imaging devices** → **Medi-7000** under PC Windows system.

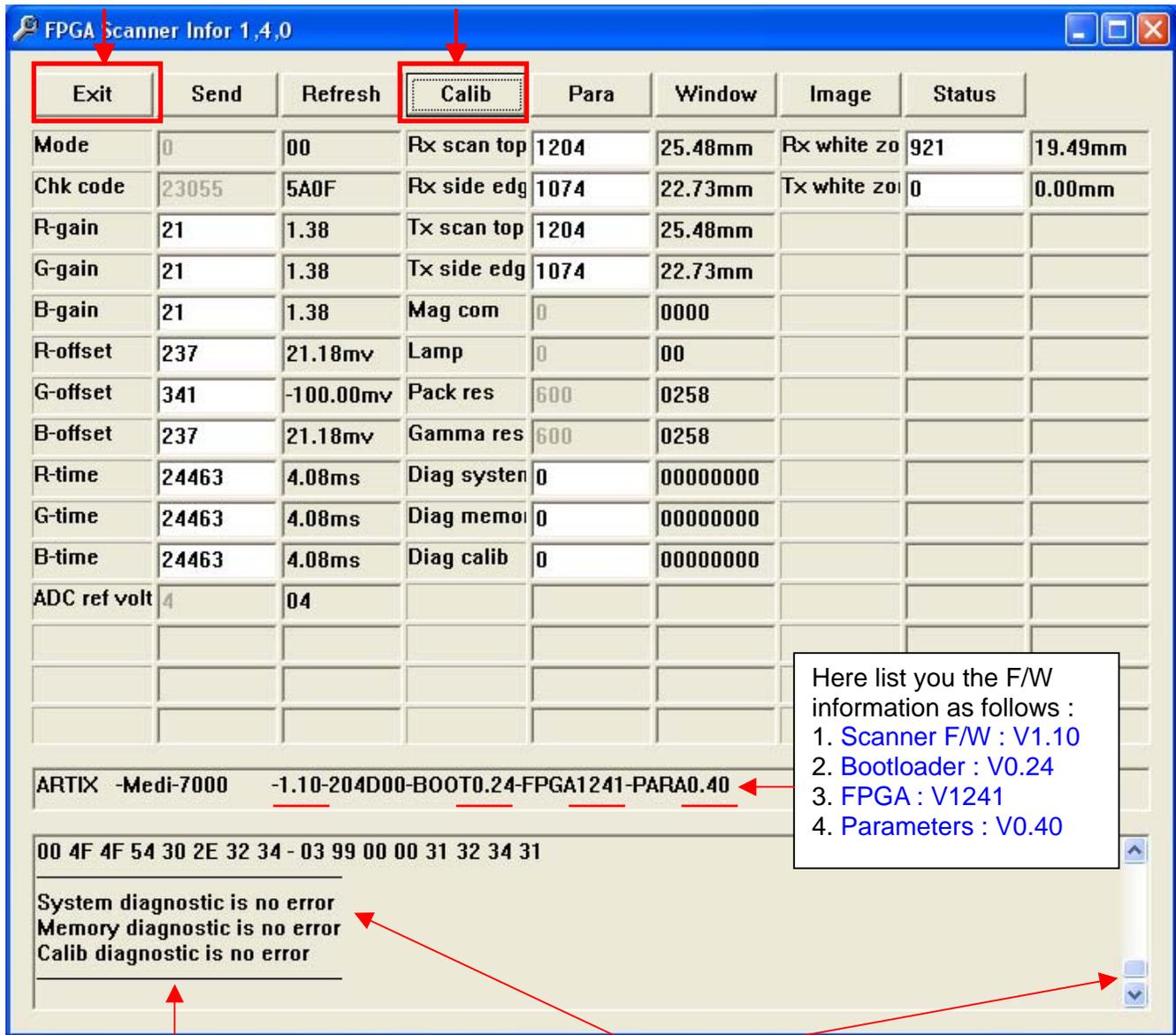
- Step 4 :** Copy program files from folder : **FPGA Scan Infor 1.4.6** into disk drive **C :** or into disk drive **D :**.



FPGA Scan Infor.exe is an utility and is used to diagnose the Hardware function of **Medi-7000**.

FPGA Scan Infor-204D.ini include error code list of **Medi-7000**, if **FPGA Scan Infor.exe** detect any H/W errors from test. (**4D** is a model code of WIA driver (**MSM4DW.dll**) for **Medi-7000**, you can open to read its information from path at **C : \ Program Files \ Microtek \ ScanWizard Medi \ Scanners \ Msapn.ini.**)

Step 5 : Click to execute an utility : **FPGA Scan Infor.exe**, and then you can view a message in dialogue box as the picture below, after that, click “ **Calib** “ for function test.



Here list you the F/W information as follows :

1. Scanner F/W : V1.10
2. Bootloader : V0.24
3. FPGA : V1241
4. Parameters : V0.40

2. After clicking “ **Calib** “ in an utility, if there is any error happen from testing, it will list you an error message here.

1. After clicking “ **Calib** “ in an utility for function test, you can find out the test item will include as follows.

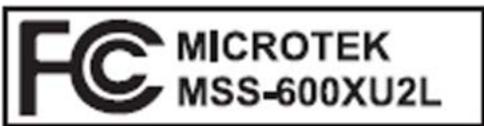
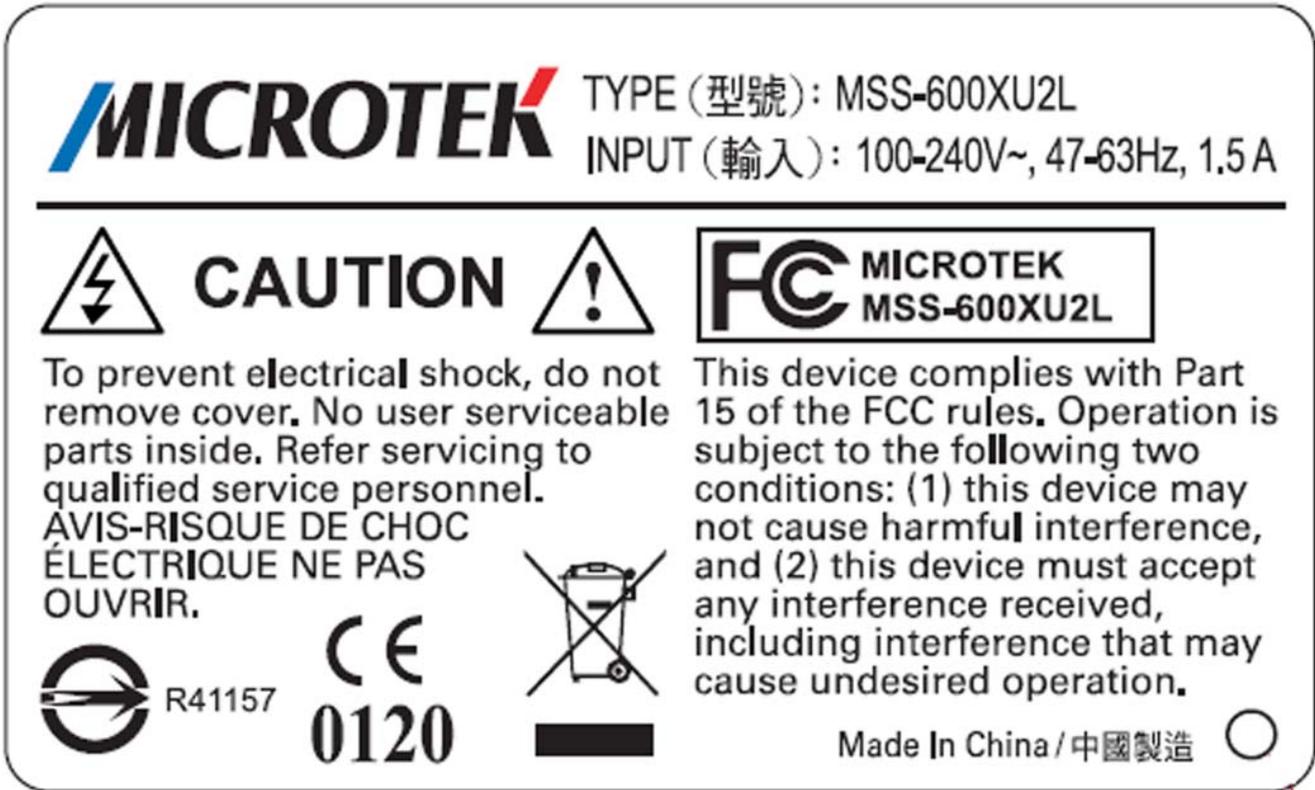
- a. **System** diagnostic test.
- b. **Memory** diagnostic test
- c. **Calib** diagnostic test.

(All of error message for Medi-7000 will list you in **FPGA Scan Infor-204D.ini** .)

Step 6 : Click “ **Exit** “ to quit it from an utility : **FPGA Scan Infor.exe** under PC Windows system.

The LOGO of Safety Mark and EMI from Power Label of Medi-7000

By the information of Power Label (P/N : 219-21-500301) in Medi-7000 (FCC ID : MSS-600XU2L), it will list you the logo of Safety Mark and EMI as the picture below.



FCC is the logo of EMI from USA.



BSMI is the logo of EMI from Taiwan.

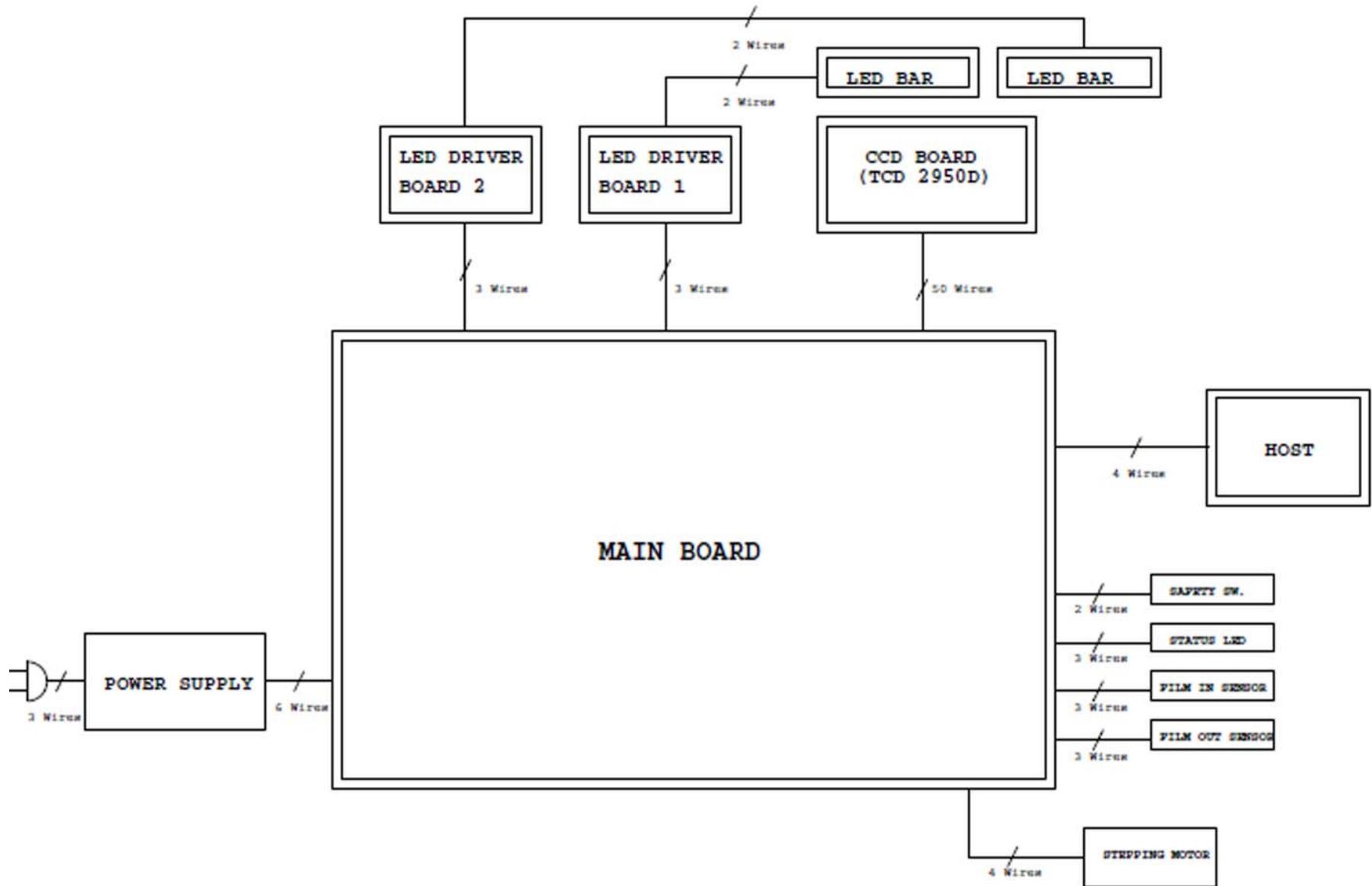


CE is the logo of Safety Mark and EMI from EU.



WEEE is the logo of Recovery, Reuse & Recycle from EU.

System Wiring Diagram of Medi-7000



System Block Diagram of Medi-7000

