

TE7/TE7T/TE7S/TE7 Pro/TE7 Super/TE5/TE5T/TE5S/TE5 Pro/TE5 Super





System Recovery Guide

Contents

Contents	1
Overview	3
1 Software Installation (For Windows 7 operating system)	4
1.1 Verify System Hardware and Software	4
1.2 Making Software Recovery USB Flash drive	5
1.3 Backing Up Patient Data and Preset Data	8
1.3.1 Backup patient data	8
1.3.2 Backup preset data	8
1.4 Recovering Software	9
1.4.1 Recover Operating System and Application Software	9
1.4.2 Recover Application Software only	11
1.5 Restoring Patient Data and Preset Data	14
1.5.1 Restoring Patient Data	14
1.5.2 Restoring Preset Data	14
1.6 Verify System Software	15
1.6.1 Verify system software version	15
1.6.2 Check system function for proper operation	15
2 Software Installation (For Windows 10 operating system)	16
2.1 Verify System Hardware and Software	16
2.2 Making Software Recovery USB Flash Drive	16
2.3 Backing Up Patient Data and Preset Data	19
2.3.1 Backup patient data	19
2.3.2 Backup preset data	19
2.4 Recovering Software	20
2.4.1 Recover Operating System and Application Software	20
2.4.2 Recover Application Software Only	23
2.5 Restoring Patient Data and Preset Data	25
2.5.1 Restoring Patient Data	25
2.5.2 Restoring Preset Data	25
2.6 Verify System Software	26
2.6.1 Verify Windows 10 Activation	26
2.6.2 Verify system software version	31
2.6.3 Check system function for proper operation	31
3 Software Upgrade (From Windows 7 to Windows 10 operating system)	32
3.1 Verify System Hardware and Software	32
3.2 Making software recovery USB Flash Drive	32

3.3	Backing Up Patient Data and Preset Data.....	35
3.3.1	Backup patient data	35
3.3.2	Backup preset data.....	36
3.4	Recovering Software	36
3.5	Restoring Patient Data and Preset Data.....	39
3.5.1	Restoring Patient Data.....	39
3.5.2	Restoring Preset Data.....	39
3.6	Verify System Software	39
3.6.1	Verify Windows 10 Activation	40
3.6.2	Verify system software version	44
3.6.3	Check system functions for proper operation.....	44

Overview

- This document describes how to recover the software of the Diagnostic Ultrasound System. The recovery includes operating system (Windows 7/Windows 10) recovery and application software (Doppler software) recovery.
- Determine current software version: turn on the machine, tap  at the top-right corner of the screen and select  to enter the setup menu, tap **[About]**. Write down the current **System Software Version** number.
- Required Materials:
 - Option 1: A recovery USB flash drive or DVD disc with pre-loaded software from Mindray.
 - Option 2: Recovery package files (ZIP file) and a blank USB flash drive with minimum 16GB but less than 100 GB space.
 - Operator's Manual
- Make sure the machine is connected to AC power throughout the recovery. Do not disconnect the AC power or shut down the system during the recovery process.
- All user installed drivers, including the printer drivers will be erased during Windows 7/Windows 10 recovery. You will have to reinstall them after the software recovery.
- The presets need to be backed up prior to the software recovery.
- The patient database in V03.00.00 (Rev17583) or higher version application software is not compatible with the software version lower than V03.00.00 (Rev17583). In special situation, if downgrade is determined to be necessary, you have to reload the OS by selecting option 2 in the recovery to format the whole hard disk to erase all the patient data, and then load the lower version application software.
- Windows 10 operating system needs to be activated after the operating system recovery.
- Order the “win7twin10” key from Mindray prior to the Windows 10 system recovery or upgrade.

1 Software Installation (For Windows 7 operating system)

1.1 Verify System Hardware and Software

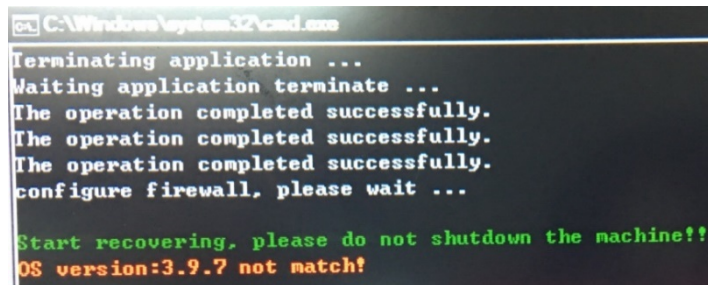
- To upgrade application software from a lower version to V02.01.00 or higher, the operating system must be upgraded to V2.9.4 (Win7 V4.0 on TDP) or higher.
- To upgrade the application software to V03.00.00 (Rev17583) or higher versions, it is recommended to upgrade the OS to version 3.9.15 or higher (Win7 V8.0 on TDP, for new CPU module) or V2.9.9 (Win7 V5.0 (updated) on TDP, for old CPU module).
- Refer to the table below for the compatibility information of CPU module and software version.

PC module type	Compatible version	Remark
Old CPU module: BIOS Version starts with SOM 5892 (available in the “About Detail” menu)	<ul style="list-style-type: none"> • Windows 7 OS: V2.9.9 (Win7 V5.0 (updated) on TDP) or lower version • Application software: Lower than V4.0.0 (Rev22748) 	/
New CPU module: BIOS Version starts with 6897 (available in the “About Detail” menu)	<ul style="list-style-type: none"> • Windows 7 OS: V3.9.7 (Win7 V6.0 on TDP) or higher version • Application software: V02.06.00 (Rev13235) or higher version, but lower than V4.0.0 (Rev22748) 	/
Replacing an old CPU module (BIOS Version starts with SOM 5892) with a new CPU module (BIOS Version starts with 6897)	<p>The OS and the application software are required to be upgraded to the following versions:</p> <p>Windows 7 OS: V3.9.7 (Win7 V6.0 on TDP) or higher version</p> <p>Doppler: V02.06.00 (Rev13235) or higher version, but lower than V4.0.0 (Rev22748)</p>	/

NOTE:

- If there is a mismatch between the Doppler version and the CPU module, an error will be displayed and the recovery will fail.

Figure 1-1



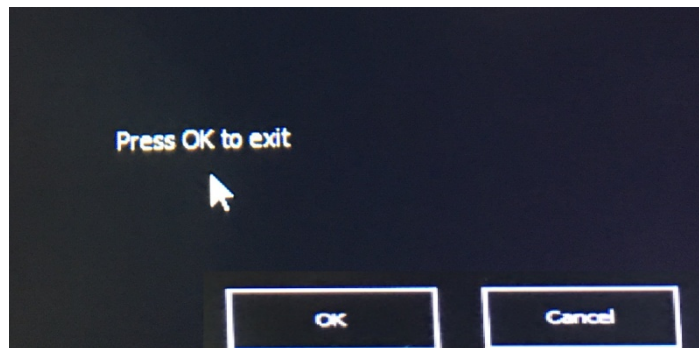
```
C:\Windows\system32\cmd.exe
Terminating application ...
Waiting application terminate ...
The operation completed successfully.
The operation completed successfully.
The operation completed successfully.
configure firewall, please wait ...

Start recovering, please do not shutdown the machine!!
OS version:3.9.7 not match!
```

Tap "Cancel", and the system will enter the Windows desktop.

- In this case, the Ultrasound system will not work until the proper application software is installed.

Figure 1-2



1.2 Making Software Recovery USB Flash drive



- Formatting the USB flash drive will erase ALL the data on it. Back them up prior to the formatting if necessary.
- The system supports USB flash drive with FAT32 only.
- The USB flash drive should contain only one partition.

NOTE:

If you already have a recovery USB flash drive ordered from Mindray, this step is not necessary. Continue to "1.4 Recovering Software".

Perform the following procedure:

- 1 Format the USB flash drive.

Plug the USB flash drive into a virus-free computer (take Windows operating system as an example). Go to **My Computer**, right click the USB flash drive (**Removable Disk**) icon and select **Format**.

Select **FAT32** as File system and click [**Start**]. Click [**OK**] if it is safe to erase all the files on the USB flash drive. A message "Format Complete" will be displayed shortly.

Figure 1-3



2 Download the software package:

Download the application software ZIP file in the path **\\Software\Ultrasound Application Software** and the operating system recovery software ZIP file in the path **\\Software\Operating System Software** from the website(TDP) provided by Mindray.

Note: Make sure locate corresponding ultrasound model folder to download the software.

3 Make software recovery USB flash drive.

- a If you want to recover both operating system and application software, extract the operating system software package ZIP file to the root directory of the USB flash drive, then extract the application software package ZIP file to the “doppler” folder. Explore the USB flash drive to make sure it contains the following files and folders.

Figure 1-4 Contents under root directory for Win7 OS package

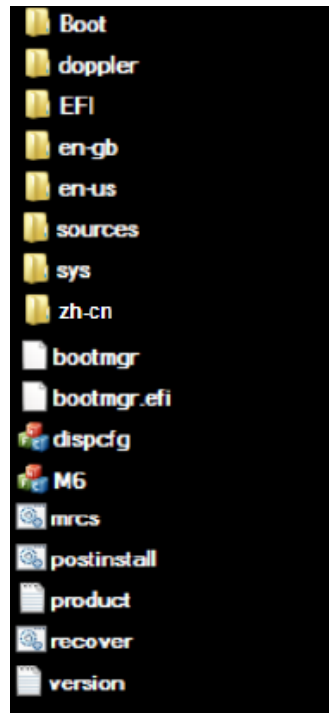
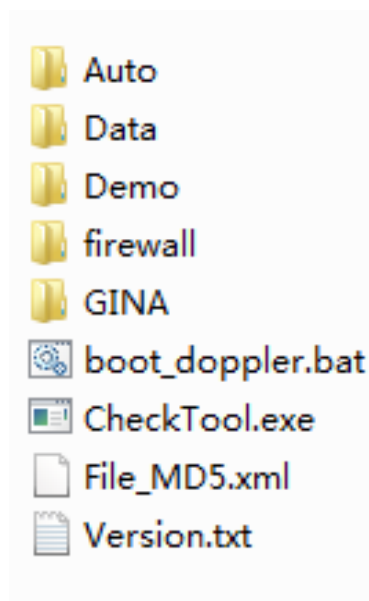


Figure 1-5 Contents under Doppler folder for application software version lower than V4.0.0



- b If you only want to recover application software, extract the application software package ZIP file to the “doppler” folder on the USB flash drive. Explore the USB flash drive to make sure it contains the correct folders and files as shown in Figure 1-4.
- 4 Disconnect the USB drive from the computer.

1.3 Backing Up Patient Data and Preset Data

1.3.1 Backup patient data



- Even though patient data including patient info, images, cine loops and reports usually will not be affected during recovery, for safety consideration, **Mindray strongly recommends having all the patient data backed up before the recovery.**
- Patient data and presets from a software version might not be compatible with other software versions.

Use the following procedure to backup patient data to USB drives.

- 1 Insert the USB flash drive then power on the system.
- 2 Go to [iStation] menu. Select the patient exams from the patient list.
- 3 Navigate to [Option] > [Backup].
- 4 Select the USB disk to export the patient data.

1.3.2 Backup preset data



User preset data may be erased during the recovery. **Mindray strongly recommends backing up user presets prior to the recovery.**

To back up user presets to a USB flash drive



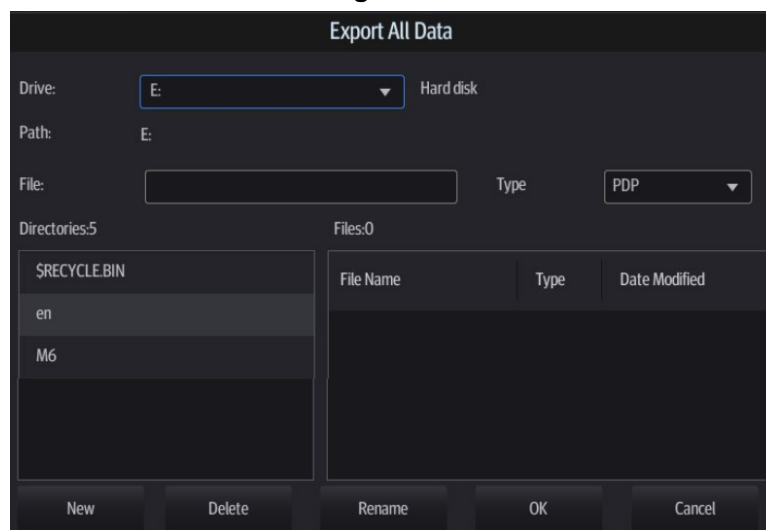
Plug a USB flash drive into the machine, tap  at the top-right corner of the screen and select  to enter the setup menu, tap [Maintenance], select the type of the preset data, and then tap [Export]. Select the USB drive, type a name for the preset data file and tap [OK].

Figure 1-6



1.4 Recovering Software

- To recover both operating system and application software, follow the instructions in “1.4.1 Recover Operating System”.
- To recover the application software only, skip 1.4.1 and follow the instructions in “1.4.2 Recover Application Software”.

NOTE:

- Do not connect other USB devices during the recovery.
- During the operating system and application software recovery, the software USB drive must be inserted into the top USB port as shown in the following figure.

Figure 1-7

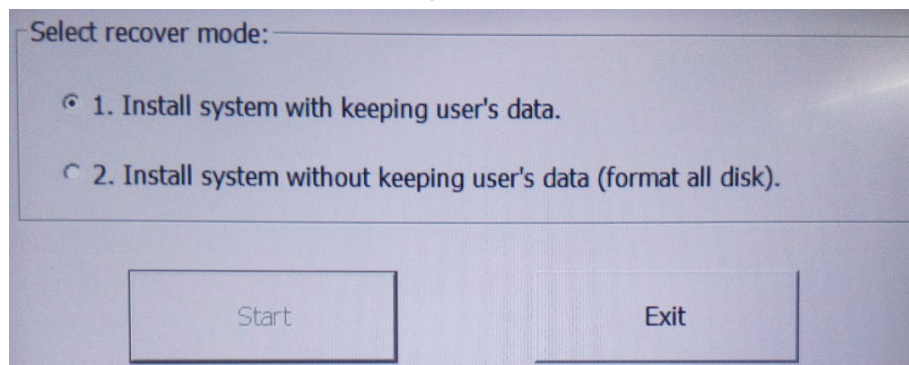


1.4.1 Recover Operating System and Application Software

Perform the following procedure:

- 1 Turn off the machine. Disconnect all the USB devices connected to the machine, and plug the Software Recovery USB flash drive to the top USB port in the back of the machine.
- 2 Turn on the machine. The system will enter the operating system recovery screen automatically.

Figure 1-8



The two installation selections are described as below:

- **1. Install system with keeping user's data.**

Drive C will be formatted; operating system and application software will be recovered. (data on drive D and E, such as patient data and network settings, will not be affected).

- **2. Install system without keeping user's data <format all disk>.**
The whole hard drive will be partitioned and formatted; operating system and application software will be recovered. (data on drive D and E, such as patient data and network settings, will be erased).
- 3 Select option **1** and tap **[Start]** to recover operating system while keeping patient data.



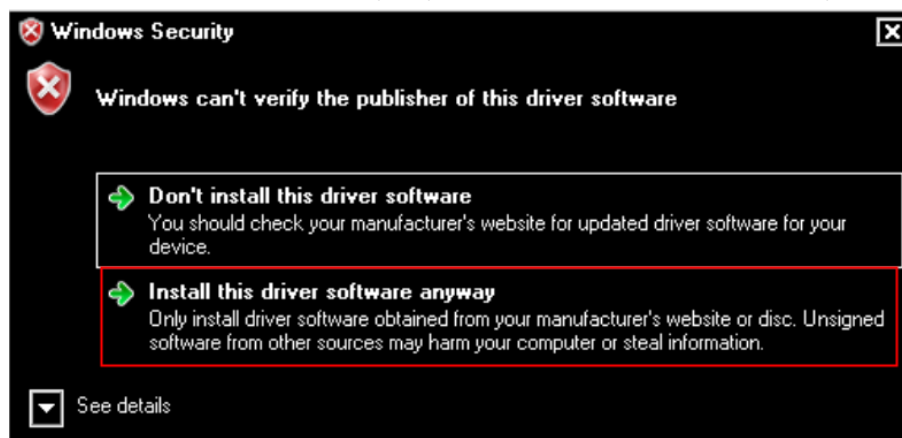
- If the SSD (Solid State Disk) card is replaced, you must select option **2**.
 - In other situations, **DO NOT** select number **2** unless instructed by Mindray. All partitions on the SSD will be formatted and all user data will be erased, including user presets, network settings and patient data if option 2 is selected and confirmed.
- 4 Tap **[Exit]** to reboot when the message “Press Exit to exit installer.” is displayed.
- 5 After restart, the application software recovery begins automatically.

Figure 1-9

```
C:\Windows\system32\cmd.exe - C:\auto_recover_doppler.bat
On computer: ULTRASO-92E1S23
DISKPART>
Disk 1 is now the selected disk.
DISKPART>
Partition 1 is now the selected partition.
DISKPART>
DiskPart successfully assigned the drive letter or mount point.
DISKPART>
Leaving DiskPart...
Terminating application ...
Waiting application terminate ...
The operation completed successfully.
The operation completed successfully.
The operation completed successfully.
configure firewall, please wait ...

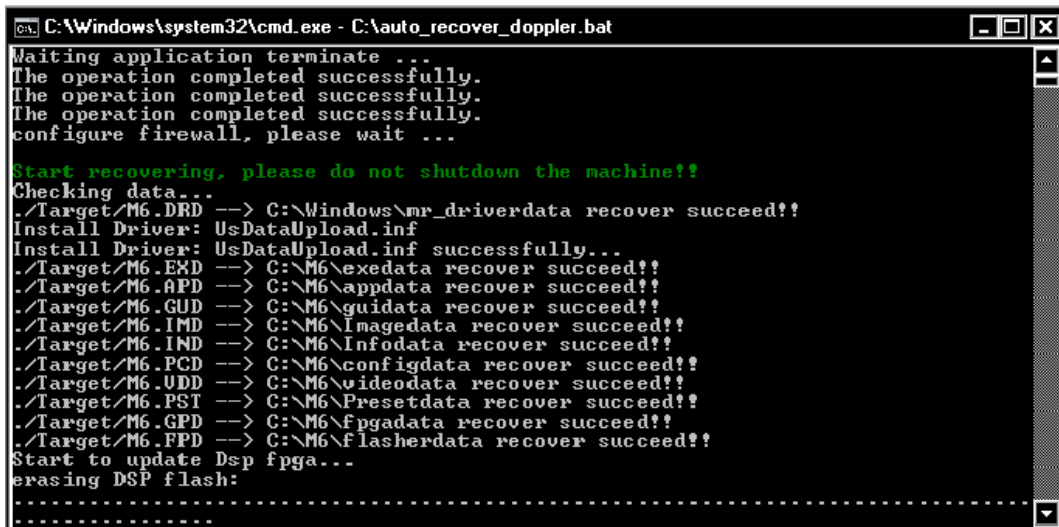
Start recovering, please do not shutdown the machine!!
Checking data... --> C:\Windows\mr_driverdata recover succeed!!
Install Driver: UsDataUpload.inf
```

- 6 Select “Install this driver software anyway” if a window like below is displayed on the screen.



- 7 The system continues to execute the application software recovery.

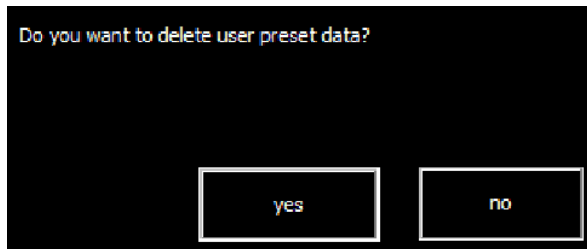
Figure 1-10



- 8 A message “Do you want to delete user preset data?” may be displayed on the screen. Tap [No] to keep the user presets, or tap [Yes] to erase the current presets and load the factory default presets.

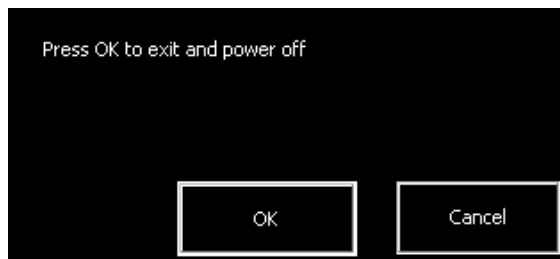
Note: For optimal performance, loading factory default presets is recommended.

Figure 1-11



- 9 Tap [OK] to power off the system when the message below is displayed on the screen.

Figure 1-12



- 10 Disconnect the Software Recovery USB drive and then turn on the machine.

1.4.2 Recover Application Software only

Perform the following procedure:

- 1 Disconnect all the USB devices connected to the machine. Plug in the Software Recovery USB flash drive, or if the application software is on a DVD disc, connect an external DVD drive and then insert the disc.




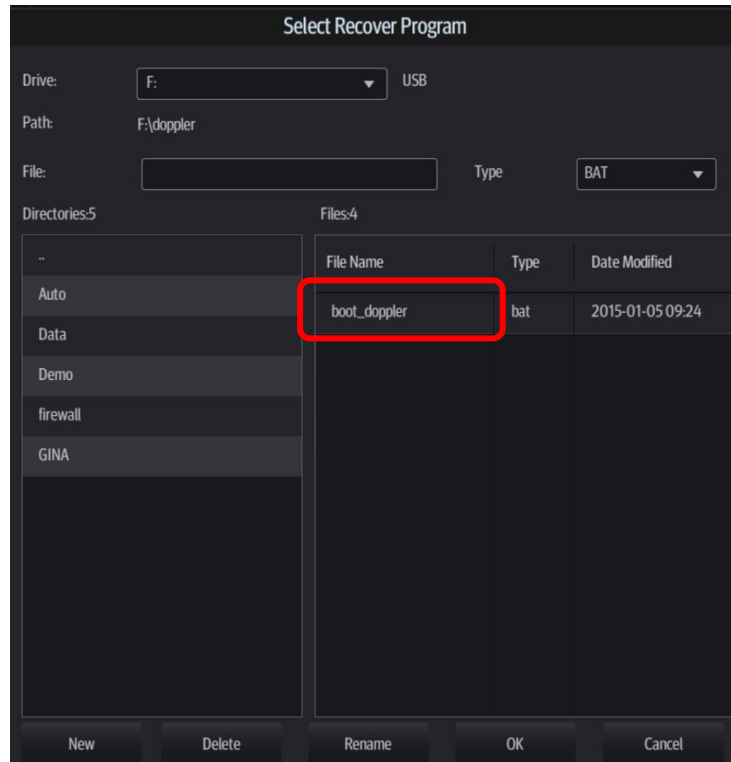
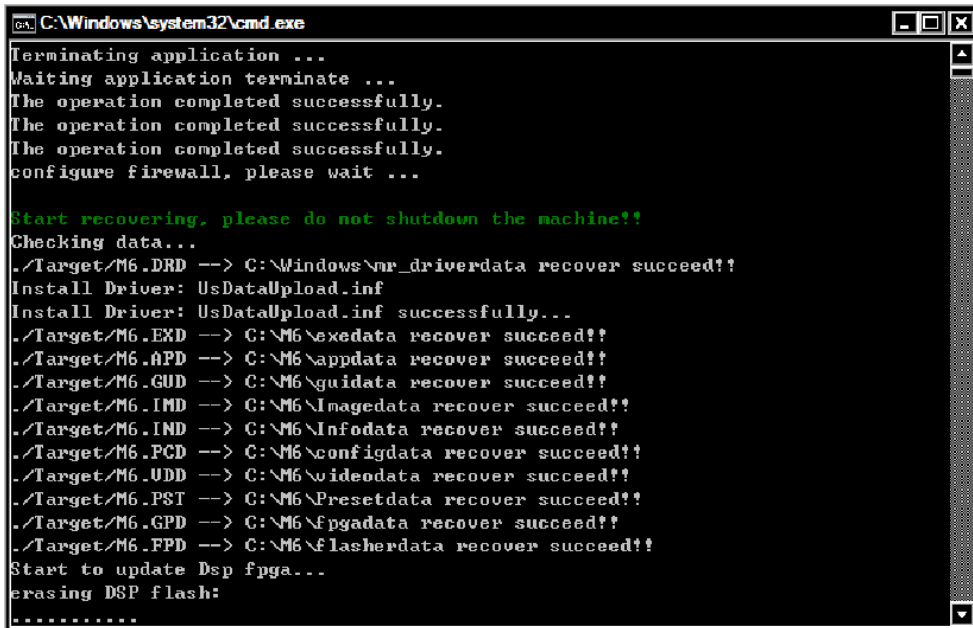
- 2 Turn on the machine and make sure the USB icon  is displayed at the top-right corner of the screen.
- 3 Tap  at the top-right corner of the screen and select  to enter the setup menu, tap **[Maintenance]** > **[Setup]** > **[Recover]**. Select the USB drive or DVD drive, and highlight the “boot_doppler.bat” file in the “Doppler” folder. Tap **[OK]**. The system will shut down.

Figure 1-13 For application software version lower than V4.0.0

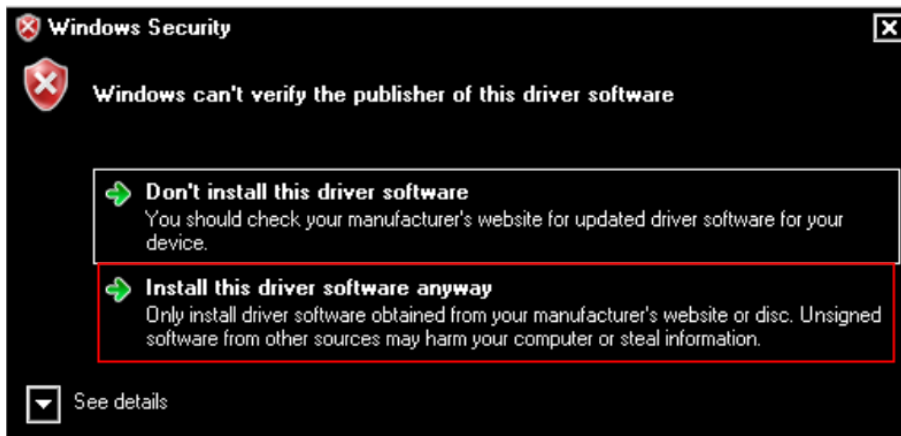


- 4 Press power button to turn on the machine. The application software recovery starts automatically.

Figure 1-14



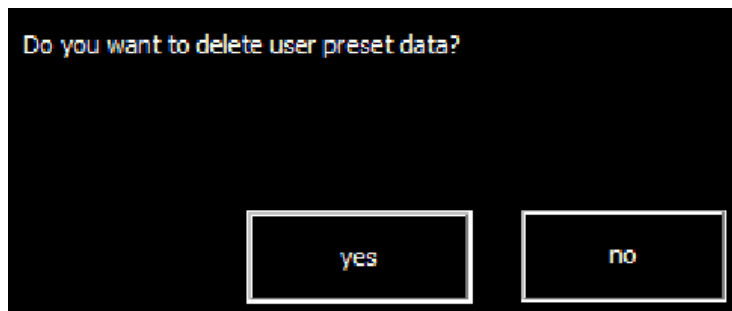
- 5 Select “Install this driver software anyway” if a window like below is displayed on the screen.



- 6 A message “Do you want to delete user preset data?” may be displayed on the screen. Tap [No] to keep the user presets, or tap [Yes] to erase the current presets and load the factory default presets.

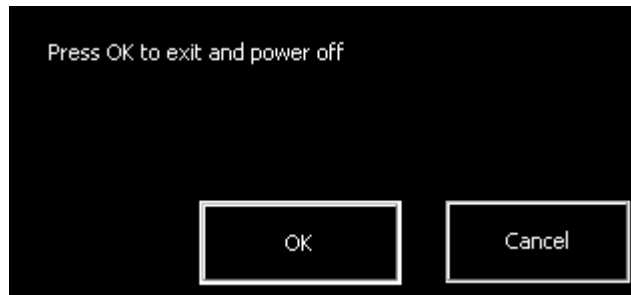
Note: For optimal performance, loading factory default presets is recommended.

Figure 1-15



- 7 Tap [OK] to power off the system when the message below is displayed on the screen.

Figure 1-16



- 8 Disconnect the Software Recovery drive.

1.5 Restoring Patient Data and Preset Data

1.5.1 Restoring Patient Data

Follow the procedure below to restore the patient data.

- 1 Insert the USB flash drive which contains the patient data then power on the system.
- 2 Go to [**iStation**] menu. Select the USB disk as the data source.
- 3 Select the patients which need to be restored.
- 4 Navigate to [**Option**] > [**Restore**] to restore the patient data.

1.5.2 Restoring Preset Data



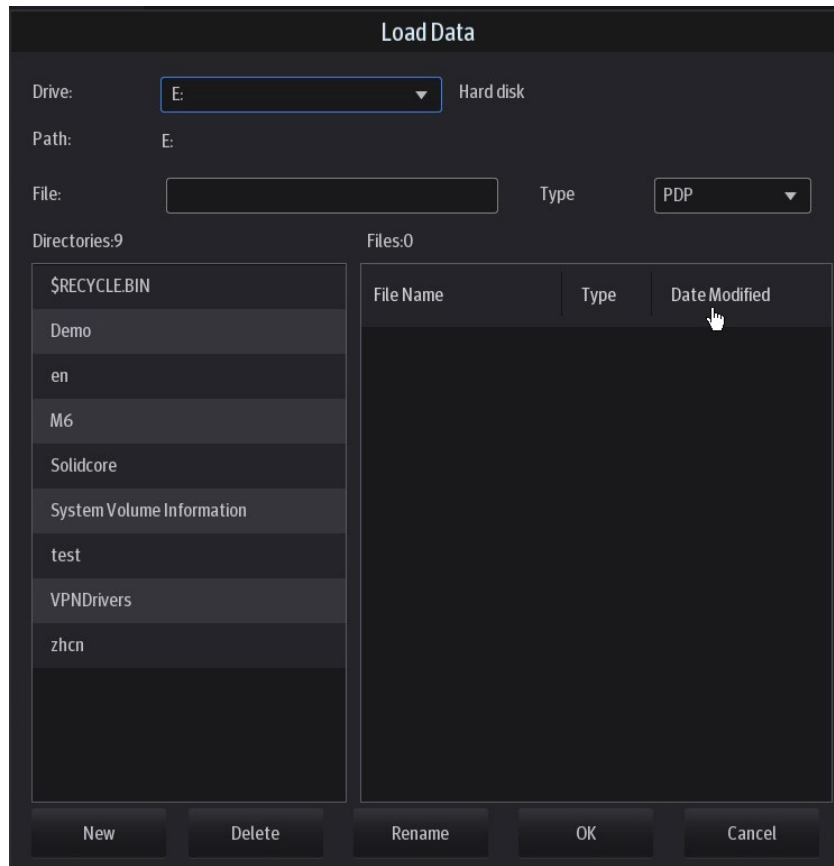
Plug a USB flash drive into the machine, tap  at the top-right corner of the screen and select  to enter the setup menu, tap [**Maintenance**], select the type of the preset data then tap [**Import**]. Select the USB drive, tap to select the desired preset data file and tap [**OK**].



Figure 1-17



1.6 Verify System Software

1.6.1 Verify system software version

Perform the following procedure:

1. Power on the machine.
2. Tap  at the top-right corner of the screen and select  to enter the setup menu. Tap **[About]**.

Ensure the version numbers including **Product Name**, **Configuration Type**, and **System Software Version** displayed on the screen match the ones in the received software package.

1.6.2 Check system function for proper operation

Check the function of installed options, peripherals, DICOM etc. Configure them if necessary.

2 Software Installation (For Windows 10 operating system)

2.1 Verify System Hardware and Software

PC module type	Compatible version	Remark
New CPU module: BIOS Version starts with 6897 (available in the "About Detail" menu)	<ul style="list-style-type: none"> Windows 10 OS: V4.1.7 (Win10 V1.0 on TDP) or higher version Application software: V4.0.0 (Rev22748) or higher version 	<ul style="list-style-type: none"> The serial number of equipment does not start with "7P" or "VD". Original operating system must be Windows 10.
Old CPU module: BIOS Version starts with SOM 5892 (available in the "About Detail" menu)	<ul style="list-style-type: none"> Windows 10 OS: V5.0.8 or higher version Application software: V4.3.2A (Rev27321) or higher version 	<ul style="list-style-type: none"> The serial number of equipment starts with "7P" or "VD". Original operating system must be Windows 10.

2.2 Making Software Recovery USB Flash Drive



- Formatting the USB flash drive will erase ALL the data on it. Back them up prior to the formatting if necessary.
- The system supports USB flash drive with FAT32 only.
- The USB flash drive should contain only one partition.

NOTE:

If you already have a recovery USB flash drive ordered from Mindray, this step is not necessary. Continue to "2.4 Recovering Software".

Perform the following procedure:

- 1 Format the USB flash drive.
 Plug the USB flash drive into a virus-free computer (take Windows operating system as an example). Go to **My Computer**, right click the USB flash drive (**Removable Disk**) icon and select **Format**.
- 2 Select **FAT32** as File system and click [**Start**]. Click [**OK**] if it is safe to erase all the files on the USB flash drive. A message "Format Complete" will be displayed shortly.

Figure 2-1



- 3 Download the software package:
Download the application software ZIP file in the path **\\Software\Ultrasound Application Software** and the operating system recovery software ZIP file in the path **\\Software\Operating System Software** from the website(TDP) provided by Mindray.
Note: Make sure locate corresponding ultrasound model folder to download the software.
- 4 Make software recovery USB flash drive.
 - a If you want to recover both operating system and application software, extract the operating system software package ZIP file to the root directory of the USB flash drive, then extract the application software package ZIP file to the “doppler” directory. Explore the USB flash drive to make sure it contains the following files and folders.

Figure 2-2 Contents under root directory for Win10 OS Package

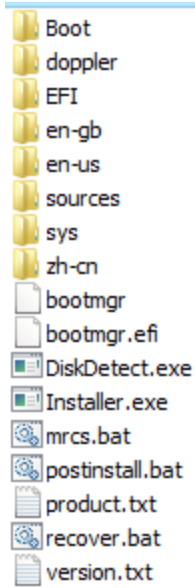
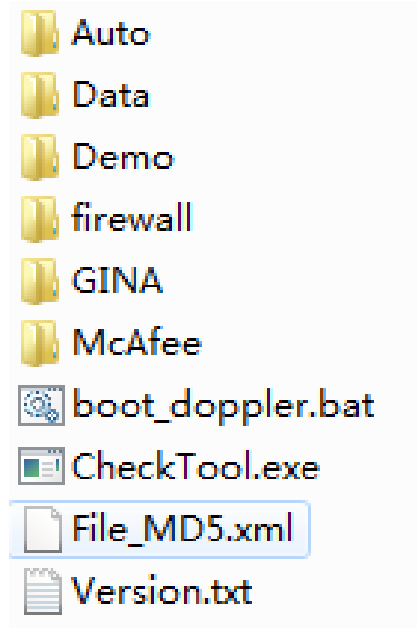


Figure 2-3 Contents under Doppler folder for application software



- b If you only want to recover application software, extract the application software package ZIP file to the "Doppler" on the USB flash drive. Explore the USB flash drive to make sure it contains the correct folders and files as shown in Figure 2-3.
- 5 Disconnect the USB drive from the computer.

2.3 Backing Up Patient Data and Preset Data

2.3.1 Backup patient data



- Even though patient data including patient info, images, cine loops and reports usually will not be affected during recovery, for safety consideration, **Mindray strongly recommends having all the patient data backed up before the recovery.**
- Patient data and presets from a software version might not be compatible with other software versions.

Use the following procedure to backup patient data to USB drives.

- 1 Insert the USB flash drive then power on the system.
- 2 Go to [iStation] menu. Select the patient exams from the patient list.
- 3 Navigate to [Option] > [Backup].
- 4 Select the USB disk to export the patient data.

2.3.2 Backup preset data



User preset data may be erased during the recovery. **Mindray strongly recommends backing up user presets prior to the recovery.**

To back up user presets to a USB flash drive



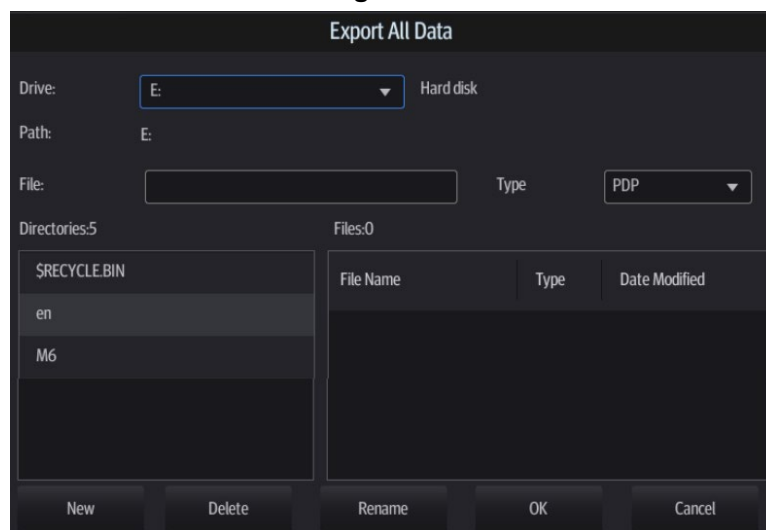
Plug a USB flash drive into the machine, tap  in the top-right corner of the screen and select  to enter the setup menu, tap [Maintenance], select the type of the preset data then tap [Export]. Select the USB drive, type a name for the preset data file and tap [OK].

Figure 2-4



2.4 Recovering Software

- To recover both operating system and application software, follow the instructions in “2.4.1 Recover Operating System”.
- To recover the application software only, skip 2.4.1 and follow the instructions in “2.4.2 Recover Application Software”.

NOTE:

- Do not connect other USB devices during the recovery.
- During the operating system and application software recovery, the software USB drive must be inserted into the top USB port as shown in the following figure.

Figure 2-5

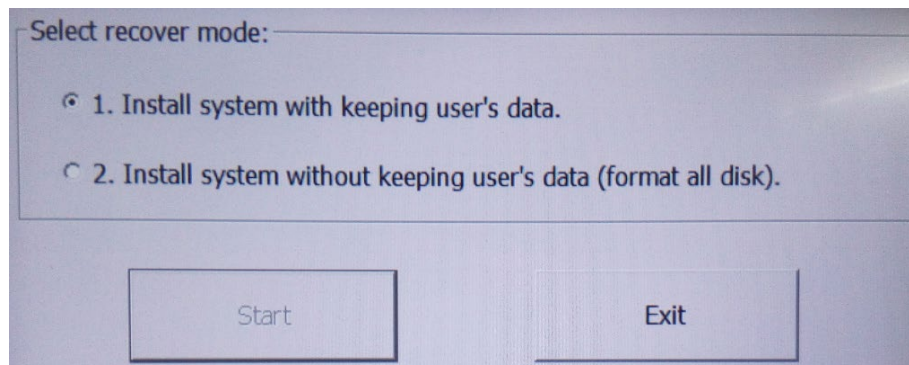


2.4.1 Recover Operating System and Application Software

Perform the following procedure:

- 1 Turn off the machine. Disconnect all the USB devices connected to the machine, and plug the Software Recovery USB flash drive to the top USB port in the back of the machine.
- 2 Turn on the machine. The system will enter operating system recovery screen automatically.

Figure 2-6



Description:

- **1. Install system with keeping user's data.**

Drive C will be formatted; operating system and application software will be recovered. (data on drive D and E, such as patient data and network settings, will not be affected).

- **2. Install system without keeping user's data <format all disk>.**
The whole hard drive will be partitioned and formatted; operating system and application software will be recovered. (data on drive D and E, such as patient data and network settings, will be erased).

Note: In some rarely happened conditions for recovering the operating system from Windows 10 to Windows 10, the license error may also be displayed as shown in Figure 2-7. In this condition, please contact the Mindray service engineer to provide the "win7twin10.key". After acquiring, check and change the key name to "win7twin10" and copy "win7twin10.key" file to the root directory of the USB flash drive as displayed in Figure 2-8, then redo the operating system recovery.

Figure 2-7

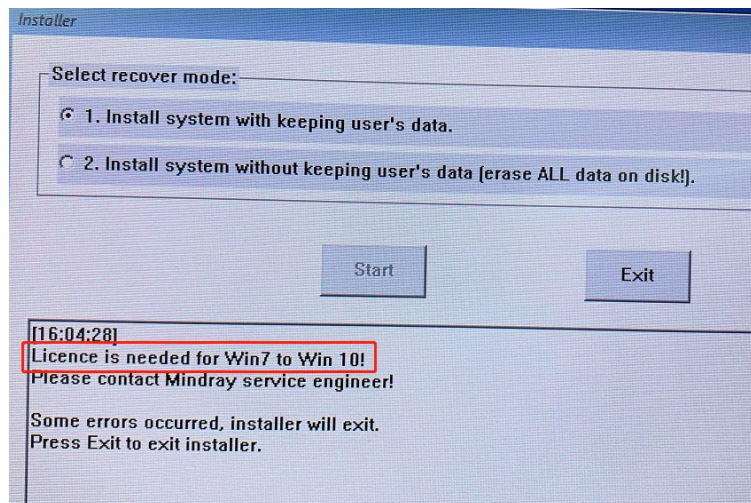
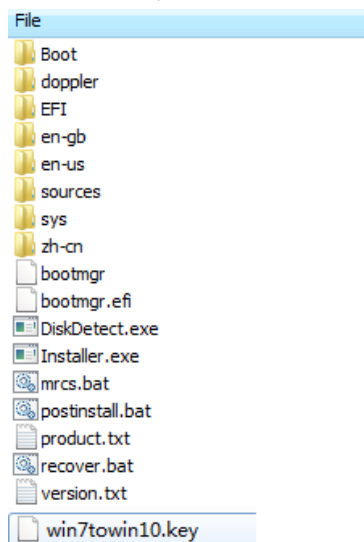


Figure 2-8



- 3 Select option **1** and tap **[Start]** to recover operating system while keeping patient data.



- If the SSD (Solid State Disk) card is replaced, you must select option **2**.

- In other situations, **DO NOT** select option **2** unless instructed by Mindray. All partitions on the SSD will be formatted and all user data will be erased, including user presets, network settings and patient data if option **2** is selected and confirmed.
- 4 The operating system recovery process will last about 15 minutes, and then tap **[Exit]** to reboot when the message “Press Exit to exit installer.” is displayed.
 - 5 After restart, the application software recovery begins automatically. Wait for about 15 minutes, and then the machine will enter Figure 2-9 interface.

Figure 2-9

```

C:\Windows\system32\cmd.exe - C:\auto_recover_doppler.bat
On computer: ULTRASO-92E1S23
DISKPART>
Disk 1 is now the selected disk.
DISKPART>
Partition 1 is now the selected partition.
DISKPART>
DiskPart successfully assigned the drive letter or mount point.
DISKPART>
Leaving DiskPart...
Terminating application ...
Waiting application terminate ...
The operation completed successfully.
The operation completed successfully.
The operation completed successfully.
configure firewall, please wait ...

Start recovering, please do not shutdown the machine!!
Checking data...
./Target/M6.DRD --> C:\Windows\mr_driverdata recover succeed!!
Install Driver: UsDataUpload.inf
  
```

- 6 The system continues to execute the application software recovery.

Figure 2-10

```

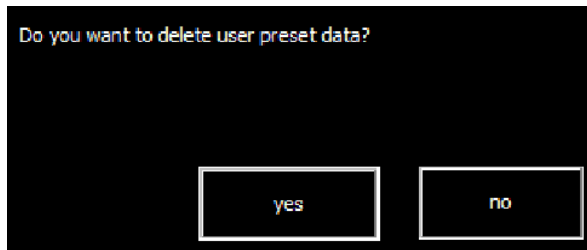
C:\Windows\system32\cmd.exe - C:\auto_recover_doppler.bat
Waiting application terminate ...
The operation completed successfully.
The operation completed successfully.
The operation completed successfully.
configure firewall, please wait ...

Start recovering, please do not shutdown the machine!!
Checking data...
./Target/M6.DRD --> C:\Windows\mr_driverdata recover succeed!!
Install Driver: UsDataUpload.inf
Install Driver: UsDataUpload.inf successfully...
./Target/M6.EXD --> C:\M6\exedata recover succeed!!
./Target/M6.APD --> C:\M6\appdata recover succeed!!
./Target/M6.GUD --> C:\M6\guidata recover succeed!!
./Target/M6.IMD --> C:\M6\imagedata recover succeed!!
./Target/M6.IND --> C:\M6\infodata recover succeed!!
./Target/M6.PCD --> C:\M6\configdata recover succeed!!
./Target/M6.UDD --> C:\M6\videodata recover succeed!!
./Target/M6.PSI --> C:\M6\Presetdata recover succeed!!
./Target/M6.GPD --> C:\M6\fpgadata recover succeed!!
./Target/M6.FPD --> C:\M6\flasherdata recover succeed!!
Start to update Dsp fpga...
erasing DSP flash:
.....
  
```

- 7 A message “Do you want to delete user preset data?” may be displayed on the screen. Tap **[No]** to keep the user presets, or tap **[Yes]** to erase the current presets and load the factory default presets.

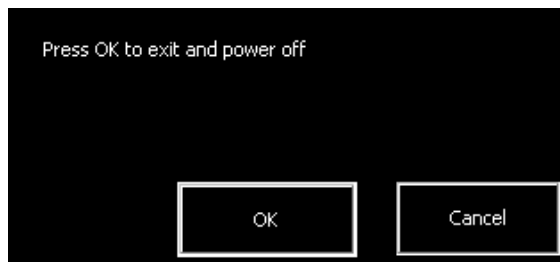
Note: For optimal performance, loading factory default presets is recommended.

Figure 2-11



- 8 Tap **[OK]** to power off the system when the message below is displayed on the screen.

Figure 2-12



- 9 Disconnect the Software Recovery USB drive and then turn on the machine.

2.4.2 Recover Application Software Only

Perform the following procedure:




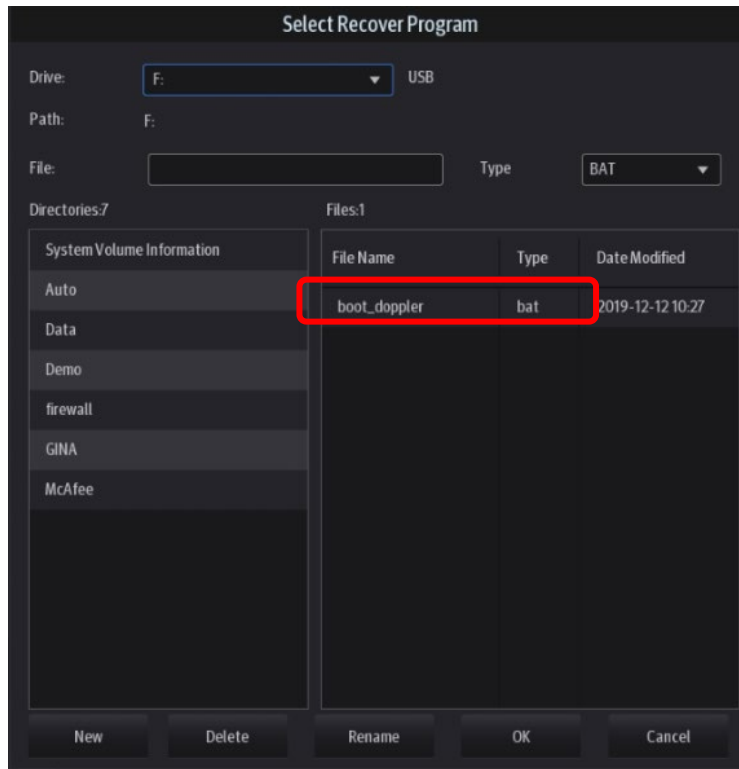
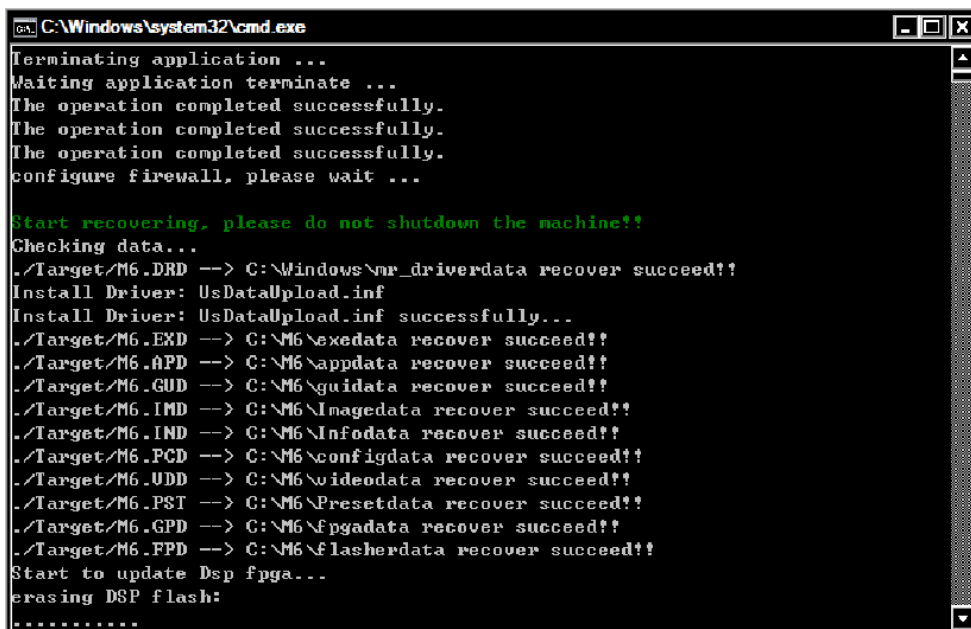
- 1 Disconnect all the USB devices connected to the machine. Plug in the Software Recovery USB flash drive, or if the application software is on a DVD disc, connect an external DVD drive and then insert the disc.
- 2 Turn on the machine and make sure the USB icon  is displayed in the top-right corner of the screen.
- 3 Tap  in the top-right corner of the screen and select  to enter the setup menu, tap **[Maintenance]** > **[Setup]** > **[Recover]**. Select **the** USB drive or DVD drive, and highlight the "boot_doppler.bat" file in the "Doppler" folder. Tap **[OK]**. The system will shut down.

Figure 2-13 For application software version



- 4 Press power button to turn on the machine. The application software recovery starts automatically.

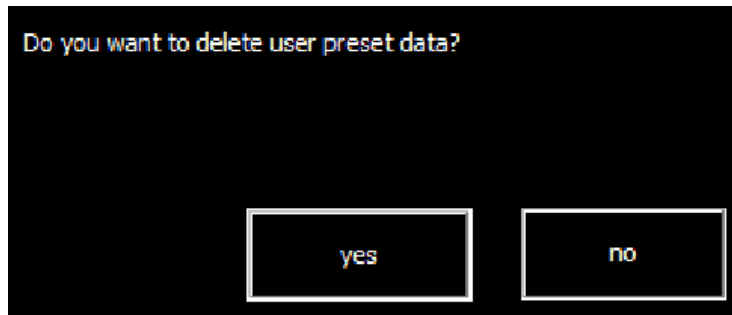
Figure 2-14



- 5 A message “Do you want to delete user preset data?” may be displayed on the screen. Tap [No] to keep the user presets, or tap [Yes] to erase the current presets and load the factory default presets.

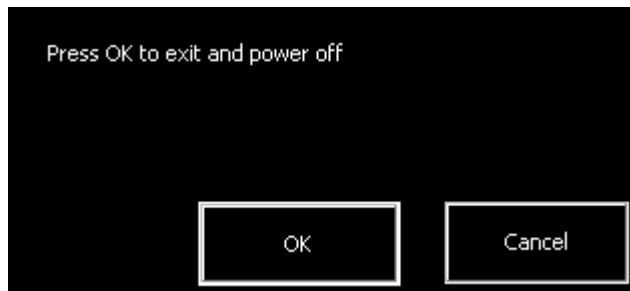
Note: For optimal performance, loading factory default presets is recommended.

Figure 2-15



- 6 Tap **[OK]** to power off the system when the message below is displayed on the screen.

Figure 2-16



- 7 Disconnect the Software Recovery drive.

2.5 Restoring Patient Data and Preset Data

2.5.1 Restoring Patient Data

Follow the procedure below to restore the patient data.

- 1 Insert the USB flash drive which contains the patient Data then power on the system.
- 2 Go to **[iStation]** menu, select the USB disk as the data source.
- 3 Select the patients which need to be restored.
- 4 Navigate to **[Option]** > **[Restore]** to restore the patient data.

2.5.2 Restoring Preset Data



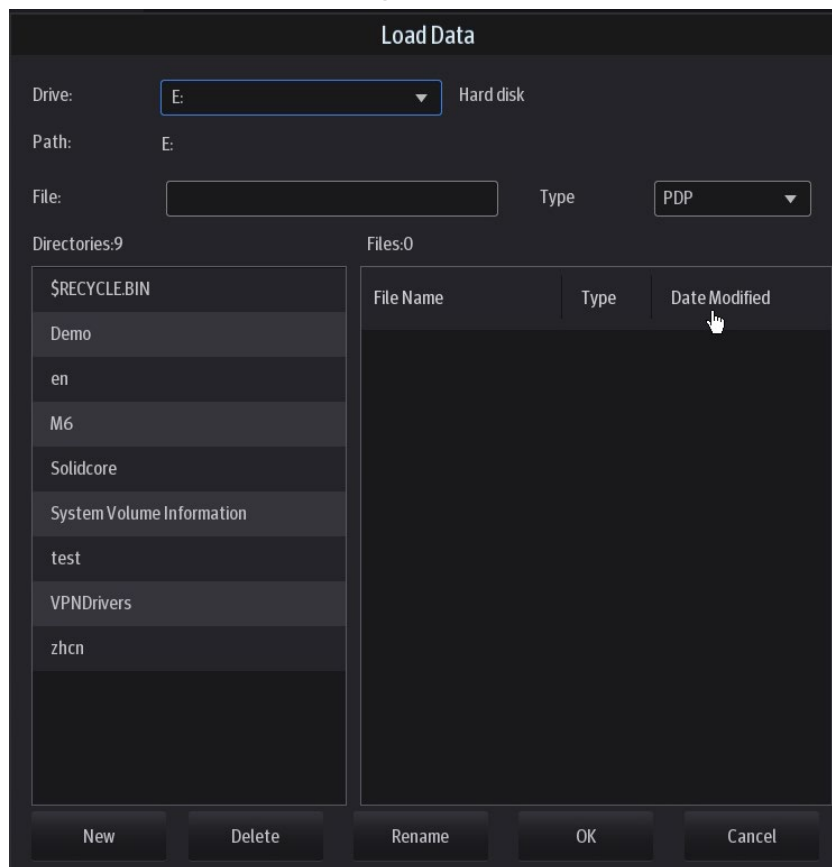
Plug a USB flash drive into the machine, tap  in the top-right corner of the screen and select  to enter the setup menu, tap **[Maintenance]**, select the type of the preset data then tap **[Import]**. Select USB drive, tap to select the desired preset data file and tap **[OK]**.

Figure 2-17



2.6 Verify System Software

NOTE:

Windows 10 needs reactivation whenever after the operating system is reloaded.

2.6.1 Verify Windows 10 Activation

To check the activation status

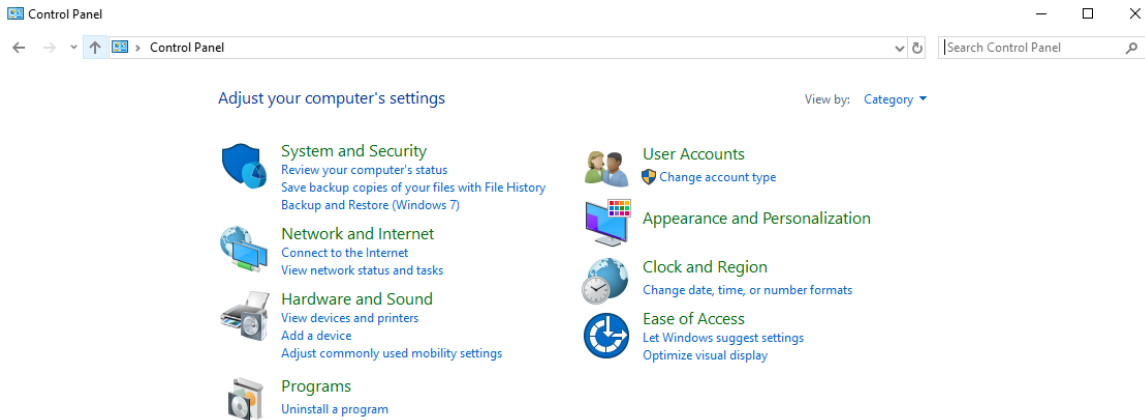
Windows 10 will be automatically activated within 5 minutes in good network conditions when the ultrasound system is connected to the Internet.

View the activation status in system information screen to check the activation status by tapping

> > [About].

Occasionally, the update of the activation status in system information screen may delay. In this case, you can enter Windows interface to view the activation status, follow the steps below:

- 1 Go to [Setup] > [Maintenance] > [Setup] > [Enter Windows], and input the password.
Please contact Mindray Service Department to obtain the password by providing the machine serial number and MAC address in Setup – About.
- 2 Input “Control Panel” in the address column in the pop-up Windows Explorer and tap [Enter] key to display Control Panel.



- 3 Select [**System and Security**], and then tap [**System**] to check the activation status.
- 4 Close all the windows to return to the ultrasound screen.

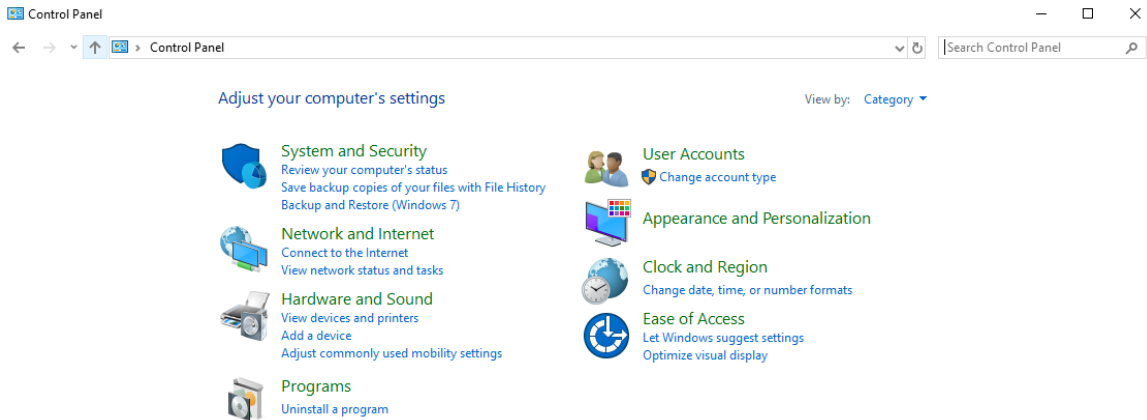
If Windows 10 is not automatically activated, activate it manually. The manual activation methods are as follows.

Online Activation

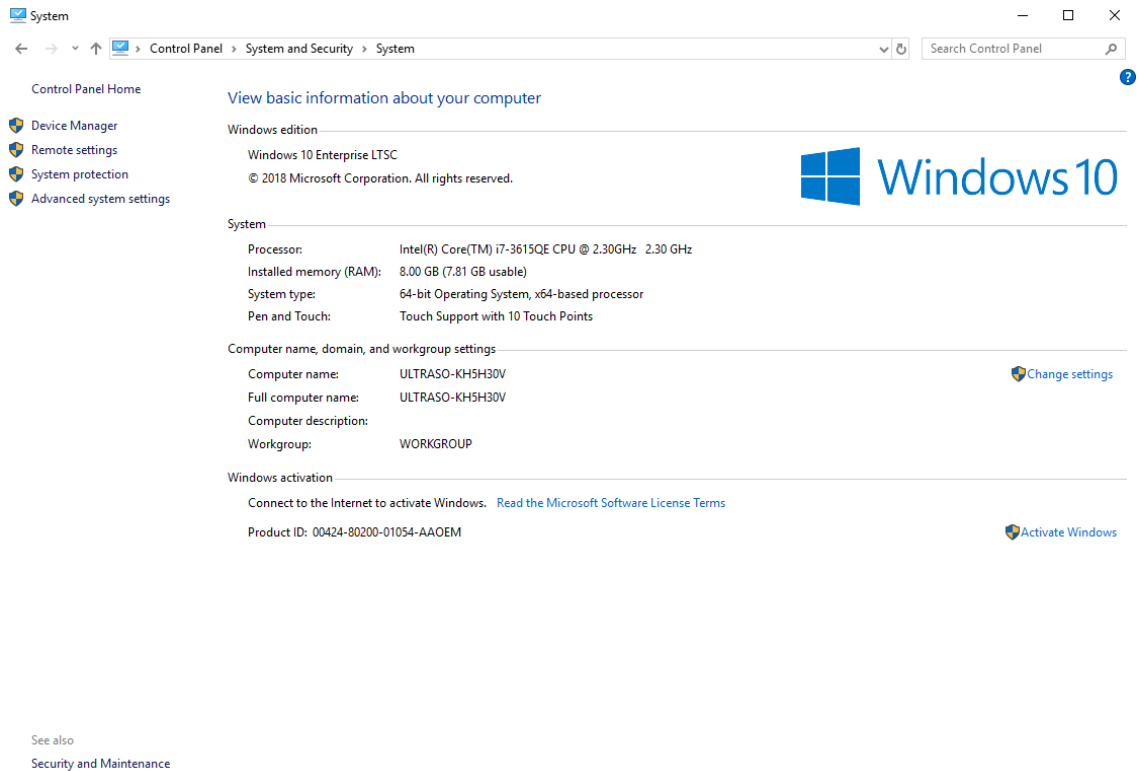
Make sure the ultrasound system is connected to the Internet.

Perform the following procedure:

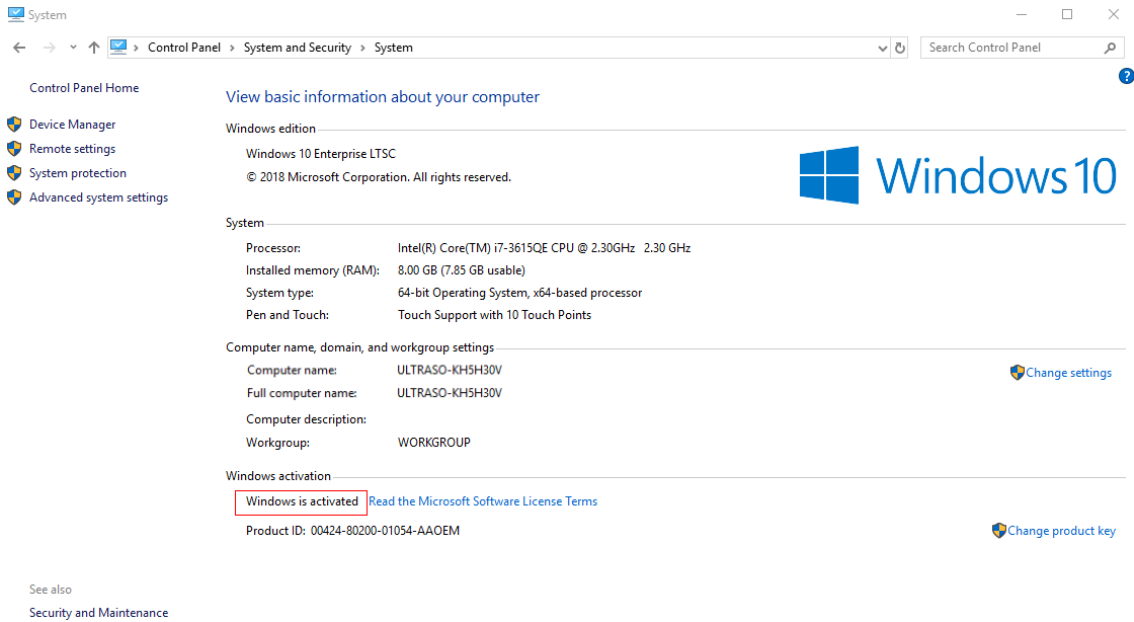
- 1 Navigate to [**Setup**] > [**System**] > [**Access Control**], and then enable the Access Control.
- 2 Navigate to [**Session Manager**] > [**Change User**] to display the **Login** dialog. Select **Admin** as the user name and input "0755" in the password box.
- 3 The "0755" will disappear right after input. Then Service user will be available on the username list. Select it and input the password, then tap [**Login**]. The system will enter service mode.
- 4 Navigate to [**Setup**] > [**Maintenance**] > [**Setup**] and tap [**Enable ms-setting**].
- 5 Select **Save** to exit and power off the system.
- 6 Power on the system and go to [**Setup**] > [**Maintenance**] > [**Setup**] > [**Enter Windows**], and input the password.
Please contact Mindray Service Department to obtain the password by providing the machine serial number and MAC address in Setup – About.
- 7 Input "**Control Panel**" in the address column in the pop-up Windows Explorer and tap [**Enter**] key to display Control Panel.



8 Select **[System and Security]**, and then tap **[System]**.



9 Tap **[Activate Windows]**. It may take a while to activate Windows 10. After it is successfully activated, "Windows is activated" will be displayed on the screen as shown below.



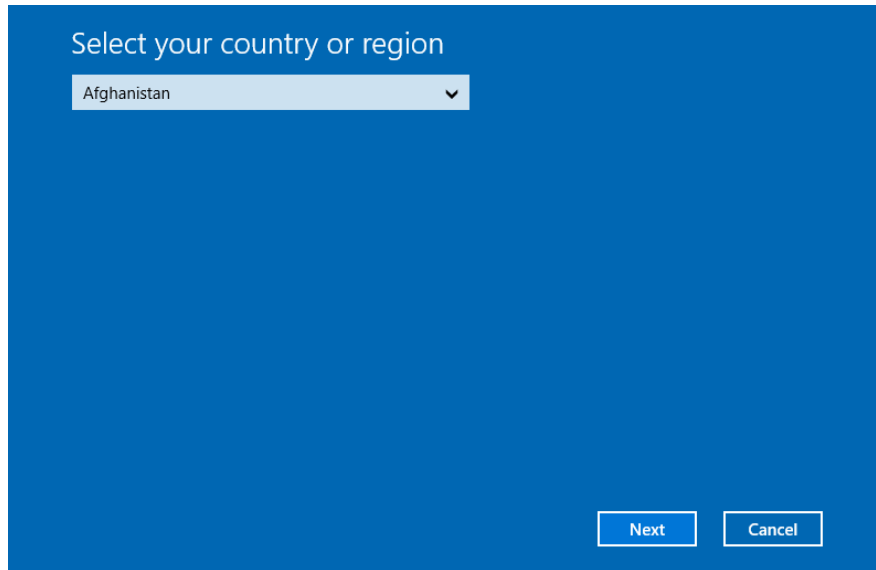
- 10 Close all the windows and run "BacktoDoppler" on the desktop to return to the ultrasound screen.
- 11 Enter service mode (refer to steps 1~3 above), and navigate to [Setup] > [Maintenance] > [Setup] and tap [Disable ms-setting].
- 12 Select [Save] to exit and power off the system.

Phone Activation

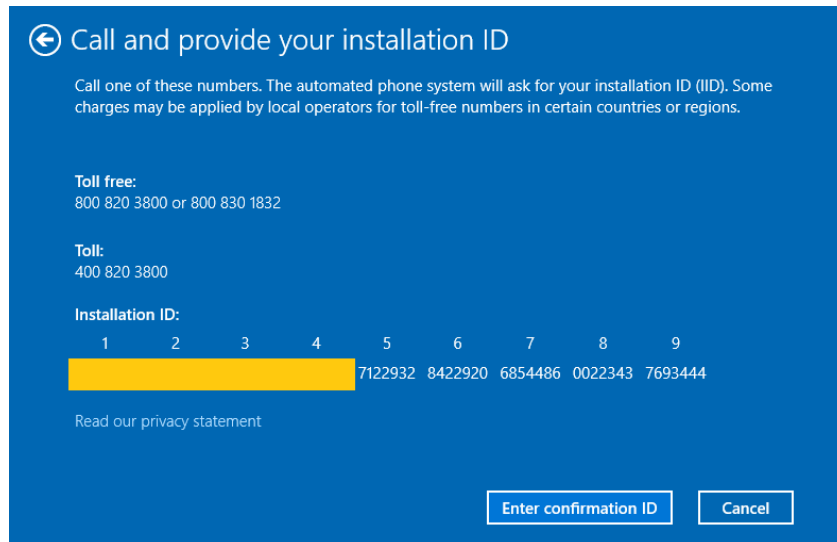
If the ultrasound system is not connected to the Internet, activate Windows 10 by phone.

Perform the following procedure:

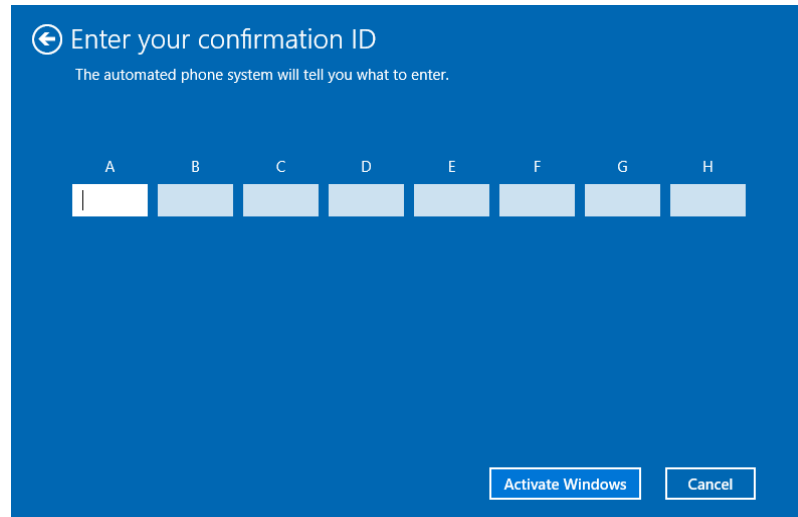
- 1 Go to [Setup] > [Maintenance] > [Setup] > [Enter Windows], and input the password.
Please contact Mindray Service Department to obtain the password by providing the machine serial number and MAC address in Setup – About.
- 2 Input "cmd" in the address column in the pop-up Windows Explorer and tap [Enter] key to display Control Panel.
- 3 Input "slui 4" in the DOS prompt and tap [Enter] key. Phone activation wizard Menu will be displayed as below.



- 4 Select your country or region, and tap **[Next]** to continue.





- 5 Call one of the phone numbers displayed on above. Choose the proper option number according to the voice prompts, and enter the **Installation ID**. Then write down the **Confirmation ID** according to the voice prompts.
- 6 Tap **[Enter confirmation ID]** to continue.



- 7 Input the **Confirmation ID** and tap [**Activate Windows**] to finish the activation.

2.6.2 Verify system software version

Perform the following procedure:

- 1 Turn on the machine.
- 2 Tap  in the top-right corner of the screen and select  to enter the setup menu. Tap [**About**].

Ensure the version numbers including **Product Name**, **Configuration Type**, and **System Software Version** displayed on the screen match the ones in the received software package.

2.6.3 Check system function for proper operation

Check the function of installed options, peripherals, DICOM etc. Configure them if necessary.

3 Software Upgrade (From Windows 7 to Windows 10 operating system)

3.1 Verify System Hardware and Software

To upgrade the machine from a lower software version to V4.0.0 (Rev22748) or higher, a “win7twin10” key has to be ordered from Mindray.

After acquiring the activation key file, check and change the key name to “win7twin10”.

PC module type	Compatible version	Remark
New CPU module: BIOS Version starts with 6897 (available in the “About Detail” menu)	<ul style="list-style-type: none"> Windows 10 OS: V4.1.7 (Win10 V1.0 on TDP) or higher version Doppler: V4.0.0 (Rev22748) or higher version 	The serial number of equipment does not start with “7P” or “VD”.
Old CPU module: BIOS Version starts with SOM 5892 (available in the “About Detail” menu)	<ul style="list-style-type: none"> Windows 10 OS: V5.0.8 or higher version Doppler: V4.3.2A (Rev27321) or higher version 	The serial number of equipment starts with “7P” or “VD”.

3.2 Making software recovery USB Flash Drive



- Formatting the USB flash drive will erase ALL the data on it. Back them up prior to the formatting if necessary.
- The system supports USB flash drive with FAT32 only.
- The USB flash drive should contain only one partition.

NOTE:

If you already have a recovery USB flash drive ordered from Mindray, this step is not necessary. Continue to “3.4 Recovering Software”.

Perform the following procedure:

- 1 Format the USB flash drive.

Plug the USB flash drive into a virus-free computer (take Windows operating system as an example). Go to **My Computer**, right click the USB flash drive (**Removable Disk**) icon and select **Format**.

- 2 Select **FAT32** as File system and click **[Start]**. Click **[OK]** if it is safe to erase all the files on the USB flash drive. A message “Format Complete” will be displayed shortly.

Figure 3-1



- 3 Download the software package:
Download the application software ZIP file in the path **\Software\Ultrasound Application Software** and the operating system recovery software ZIP file in the path **\Software\Operating System Software** from the website(TDP) provided by Mindray.
Note: Make sure locate corresponding ultrasound model folder to download the software.
- 4 Make software recovery USB flash drive.
Extract the operating system software package ZIP file to the root directory of the USB flash drive then extract the application software package ZIP file to the “Doppler” directory. Explore the USB flash drive to make sure it contains the following files and folders.

Figure 3-2 Contents under root directory for Win10 OS Package

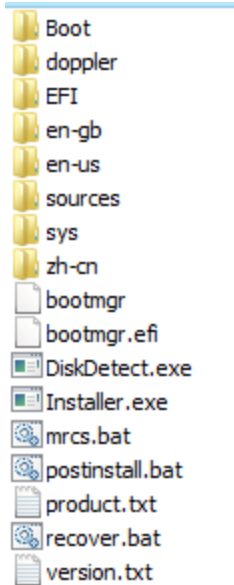
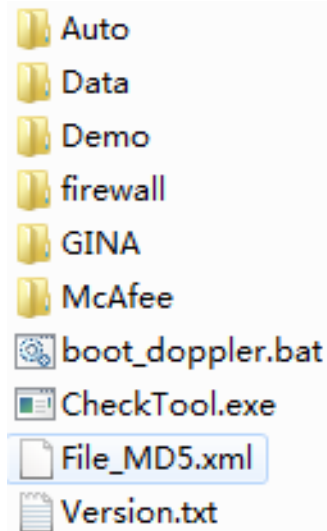
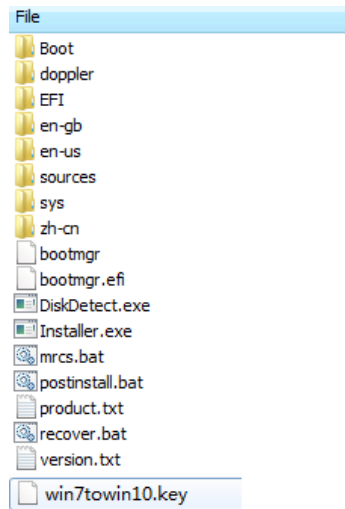


Figure 3-3 Contents under Doppler folder for application software



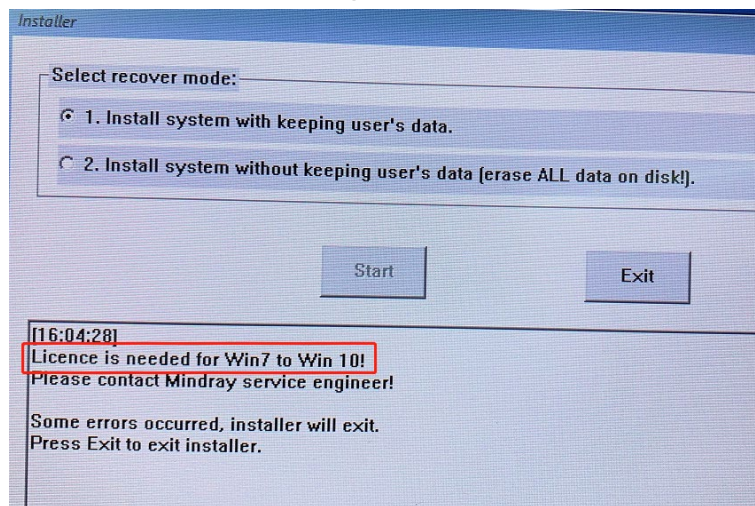
- 5 Copy the activation key to the recovery USB flash drive:
Copy the "win7twin10.key" file to the root directory of the USB flash drive as shown in Figure 3-4.

Figure 3-4



Otherwise, a license error will be displayed as shown in Figure 3-5.

Figure 3-5



6 Disconnect the USB drive from the computer.

3.3 Backing Up Patient Data and Preset Data

3.3.1 Backup patient data



- Even though patient data including patient info, images, cine loops and reports usually will not be affected during recovery, for safety consideration, **Mindray strongly recommends having all the patient data backed up before the recovery.**
- Patient data and presets from a software version might not be compatible with other software versions.

Use the following procedure to backup patient data to USB drives.

- 1 Insert the USB flash drive then power on the system.
- 2 Go to [iStation] menu. Select the patient exams from the patient list.
- 3 Navigate to [Option] > [Backup].
- 4 Select the USB disk to export the patient data.

3.3.2 Backup preset data



User preset data may be erased during the recovery. **Mindray strongly recommends backing up user presets prior to the recovery.**

To back up user presets to a USB flash drive



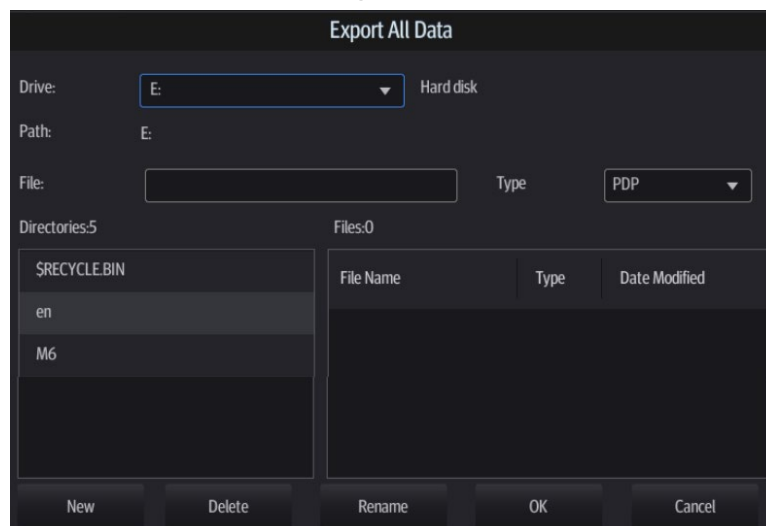
Plug a USB flash drive into the machine, tap  in the top-right corner of the screen and select  to enter the setup menu, tap [Maintenance], select the type of the preset data then tap [Export]. Select the USB drive, type a name for the preset data file and tap [OK].

Figure 3-6



3.4 Recovering Software

NOTE:

- Do not connect other USB devices during the recovery.
- During the operating system and application software recovery, the software USB drive must be inserted into the top USB port as shown in the following figure.

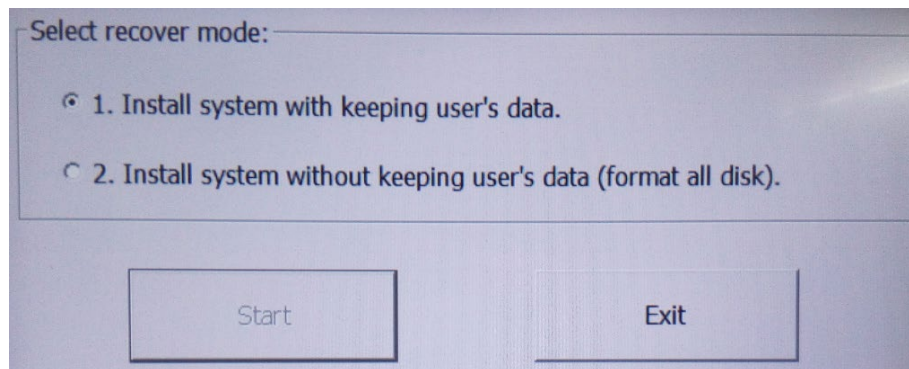
Figure 3-7



Perform the following procedure:

- 1 Turn off the machine. Disconnect all the USB devices connected to the machine, and plug the Software Recovery USB flash drive to the USB port in the back of the machine.
- 2 Turn on the machine. The system will enter operating system recovery screen automatically.

Figure 3-8



Description:

- **1. Install system with keeping user's data.**
Drive C will be formatted; operating system and application software will be recovered. (data on drive D and E, such as patient data and network settings, will not be affected).
 - **2. Install system without keeping user's data <format all disk>.**
The whole hard drive will be partitioned and formatted; operating system and application software will be recovered. (data on drive D and E, such as patient data and network settings, will be erased).
- 3 Select option **2** and tap [**Start**] to recover operating system.
 - 4 The operating system recovery process will last about 15 minutes, and then tap [**Exit**] to reboot when the message "Press Exit to exit installer." is displayed.
 - 5 After restart, the application software recovery begins automatically. Wait for about 15 minutes, and then the machine will enter Figure 3-9 interface.

Figure 3-9

```

C:\Windows\system32\cmd.exe - C:\auto_recover_doppler.bat
On computer: ULTRASO-92E1S23
DISKPART>
Disk 1 is now the selected disk.
DISKPART>
Partition 1 is now the selected partition.
DISKPART>
DiskPart successfully assigned the drive letter or mount point.
DISKPART>
Leaving DiskPart...
Terminating application ...
Waiting application terminate ...
The operation completed successfully.
The operation completed successfully.
The operation completed successfully.
configure firewall, please wait ...

Start recovering, please do not shutdown the machine!!
Checking data...
./Target/M6.DRD --> C:\Windows\mr_driverdata recover succeed!!
Install Driver: UsDataUpload.inf
    
```

- The system continues to execute the application software recovery.

Figure 3-10

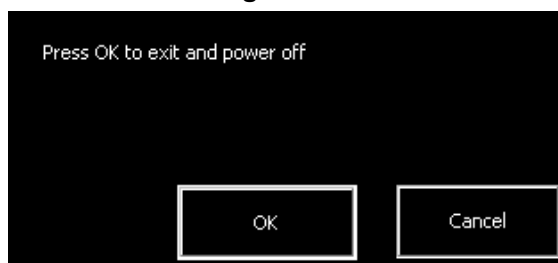
```

C:\Windows\system32\cmd.exe - C:\auto_recover_doppler.bat
Waiting application terminate ...
The operation completed successfully.
The operation completed successfully.
The operation completed successfully.
configure firewall, please wait ...

Start recovering, please do not shutdown the machine!!
Checking data...
./Target/M6.DRD --> C:\Windows\mr_driverdata recover succeed!!
Install Driver: UsDataUpload.inf
Install Driver: UsDataUpload.inf successfully...
./Target/M6.EXD --> C:\M6\exedata recover succeed!!
./Target/M6.APD --> C:\M6\appdata recover succeed!!
./Target/M6.GUD --> C:\M6\guidata recover succeed!!
./Target/M6.IMD --> C:\M6\imagedata recover succeed!!
./Target/M6.IND --> C:\M6\infodata recover succeed!!
./Target/M6.PCD --> C:\M6\configdata recover succeed!!
./Target/M6.UDD --> C:\M6\videodata recover succeed!!
./Target/M6.PST --> C:\M6\presetdata recover succeed!!
./Target/M6.GPD --> C:\M6\fpgadata recover succeed!!
./Target/M6.FPD --> C:\M6\flasherdata recover succeed!!
Start to update Dsp fpga...
erasing DSP flash:
.....
    
```

- Tap [OK] to power off the system when the message below is displayed on the screen.

Figure 3-11



- Disconnect the Software Recovery USB drive and then turn on the machine.

3.5 Restoring Patient Data and Preset Data

3.5.1 Restoring Patient Data

Follow the following procedure to restore the patient data.

- 1 Insert the USB flash drive which contains the patient Data. Power on the system.
- 2 Go to **[iStation]** menu, select the USB disk as the data source.
- 3 Select the patients which need to be restored.
- 4 Navigate to **[Option]** > **[Restore]** to restore the patient data.

3.5.2 Restoring Preset Data



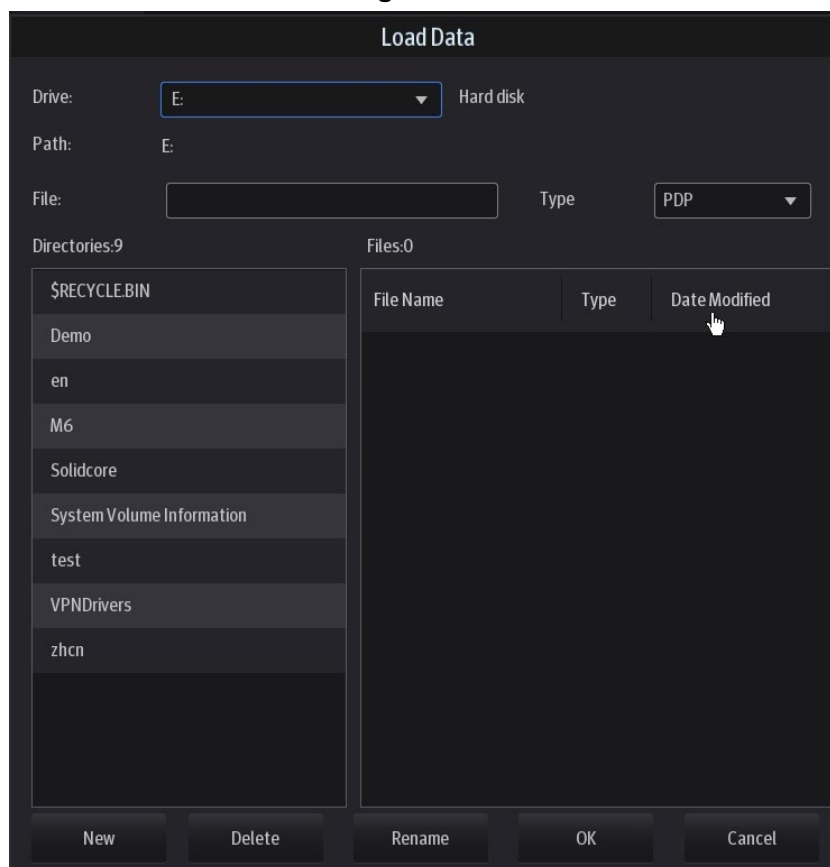
Plug a USB flash drive into the machine, tap  in the top-right corner of the screen and select  to enter the setup menu, tap **[Maintenance]**, select the type of the preset data then tap **[Import]**. Select USB drive, tap to select the desired preset data file and tap **[OK]**.

Figure 3-12



3.6 Verify System Software

NOTE:

Windows 10 needs activation after upgrading from Windows 7.

3.6.1 Verify Windows 10 Activation

To check the activation status

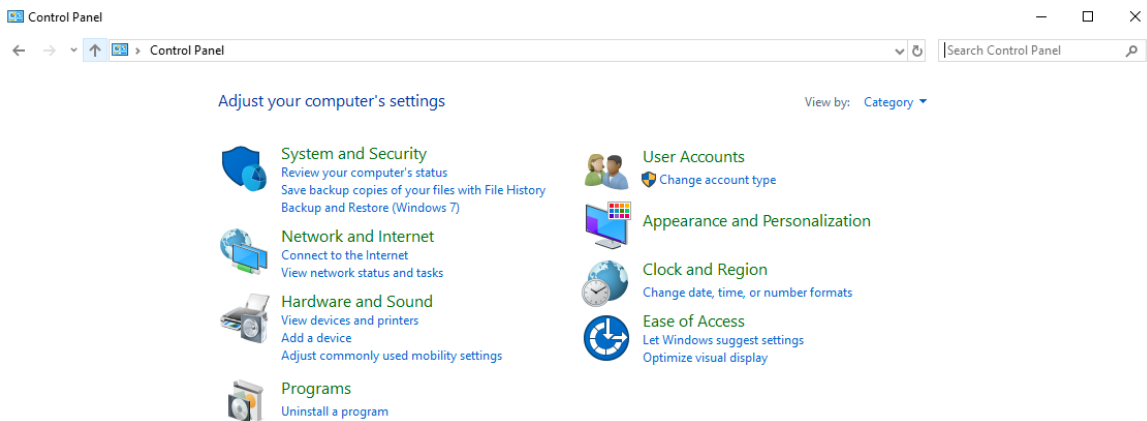
Windows 10 will be automatically activated within 5 minutes in good network conditions when the ultrasound system is connected to the Internet.

View the activation status in system information screen to check the activation status by tapping



Occasionally, the update of the activation status in system information screen may delay. In this case, you can enter Windows interface to view the activation status, follow the steps below:

- 1 Go to **[Setup]** > **[Maintenance]** > **[Setup]** > **[Enter Windows]**, and input the password.
Please contact Mindray Service Department to obtain the password by providing the machine serial number and MAC address in Setup – About.
- 2 Input “**Control Panel**” in the address column in the pop-up Windows Explorer and tap **[Enter]** key to display Control Panel.



- 3 Select **[System and Security]**, and then tap **[System]** to check the activation status.
- 4 Close all the windows to return to the ultrasound screen.

If Windows 10 is not automatically activated, activate it manually. The manual activation methods are as follows.

Online Activation

Make sure the ultrasound system is connected to the Internet.

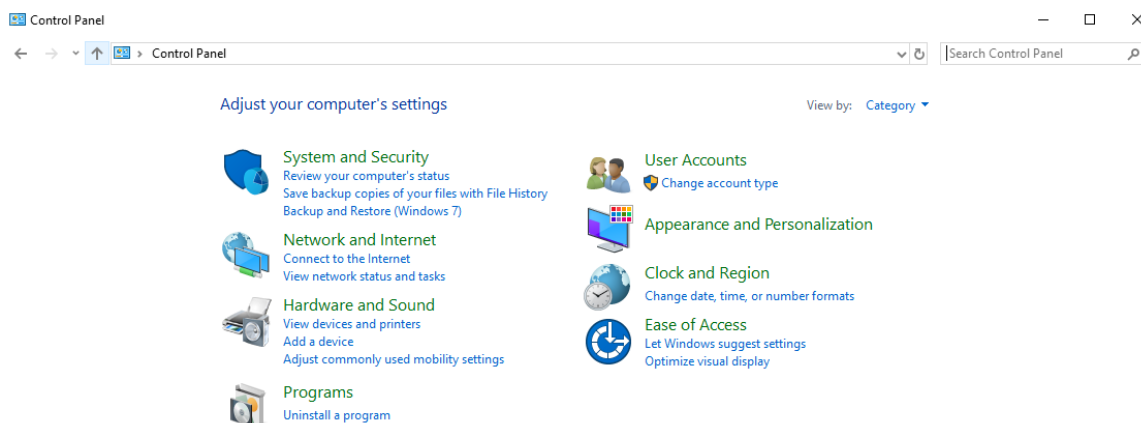
Perform the following procedure:

- 1 Navigate to **[Setup]** > **[System]** > **[Access Control]**, and then enable the Access Control.
- 2 Navigate to **[Session Manager]** > **[Change User]** to display the **Login** dialog. Select **Admin** as the user name and input “**0755**” in the password box.
- 3 The “**0755**” will disappear right after input. Then Service user will be available on the username list. Select it and input the password, then tap **[Login]**. The system will enter service mode.
- 4 Navigate to **[Setup]** > **[Maintenance]** > **[Setup]** and tap **[Enable ms-setting]**.
- 5 Select **Save** to exit and power off the system.

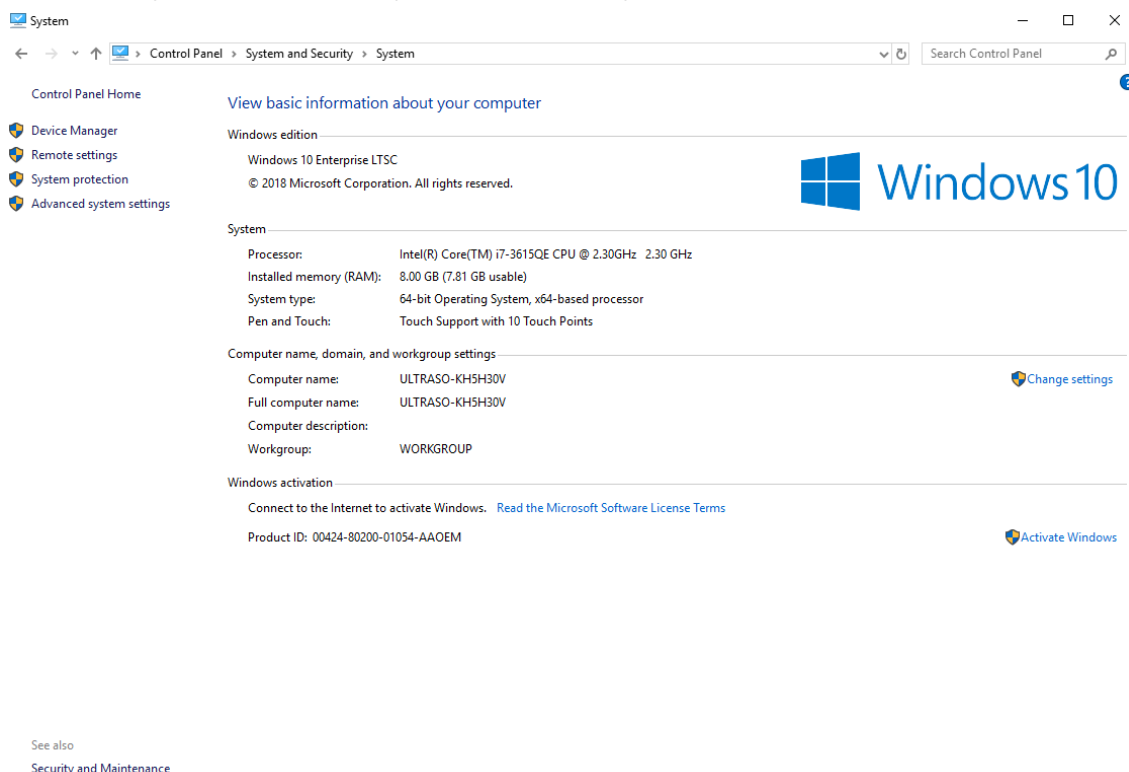
- 6 Power on the system and go to **[Setup] > [Maintenance] > [Setup] > [Enter Windows]**, and input the password.

Please contact Mindray Service Department to obtain the password by providing the machine serial number and MAC address in Setup – About.

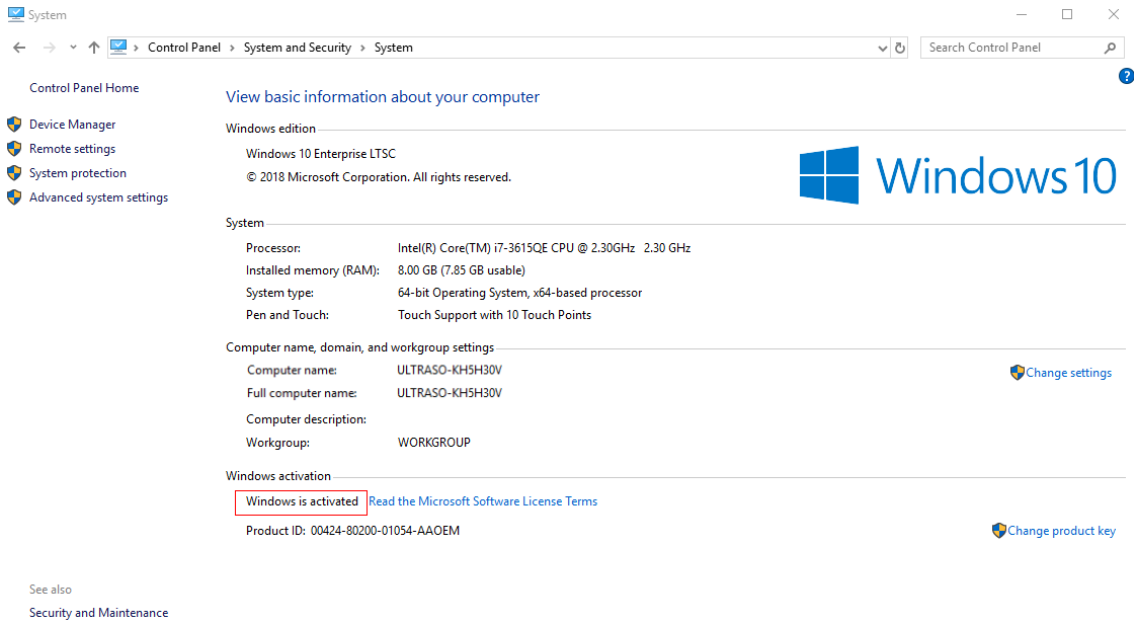
- 7 Input **“Control Panel”** in the address column in the pop-up Windows Explorer and tap **[Enter]** key to display Control Panel.



- 8 Select **[System and Security]**, and then tap **[System]**.



- 9 Tap **[Activate Windows]**. It may take a while to activate Windows 10. After it is successfully activated, “Windows is activated” will be displayed on the screen as shown below.



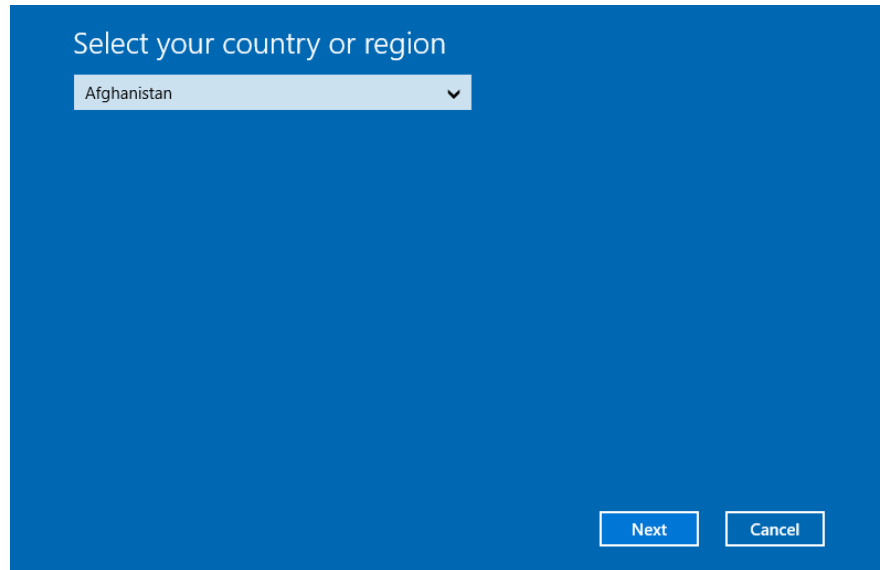
- 10 Close all the windows and run “BacktoDoppler” on the desktop to return to the ultrasound screen.
- 11 Enter service mode (refer to steps 1~3 above), and navigate to [**Setup**] > [**Maintenance**] > [**Setup**] and tap [**Disable ms-setting**].
- 12 Select [**Save**] to exit and power off the system.

Phone Activation

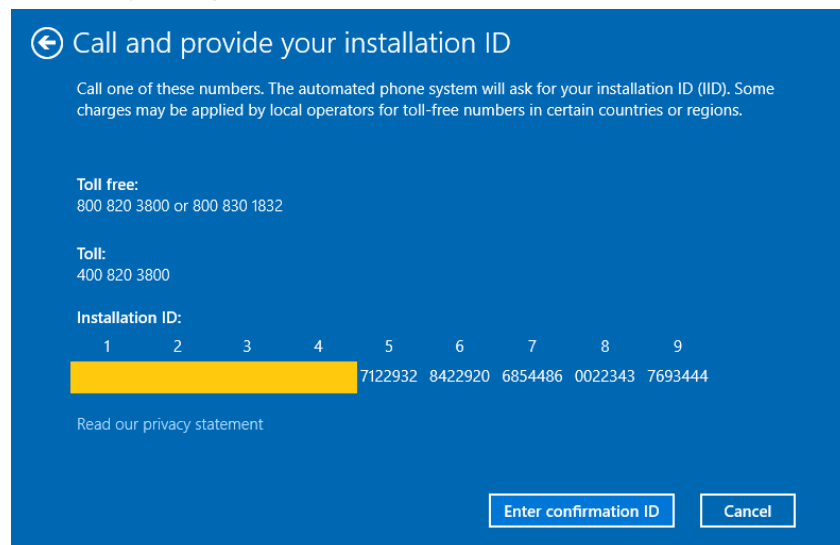
If the ultrasound system is not connected to the Internet, activate Windows 10 by phone.

Perform the following procedure:

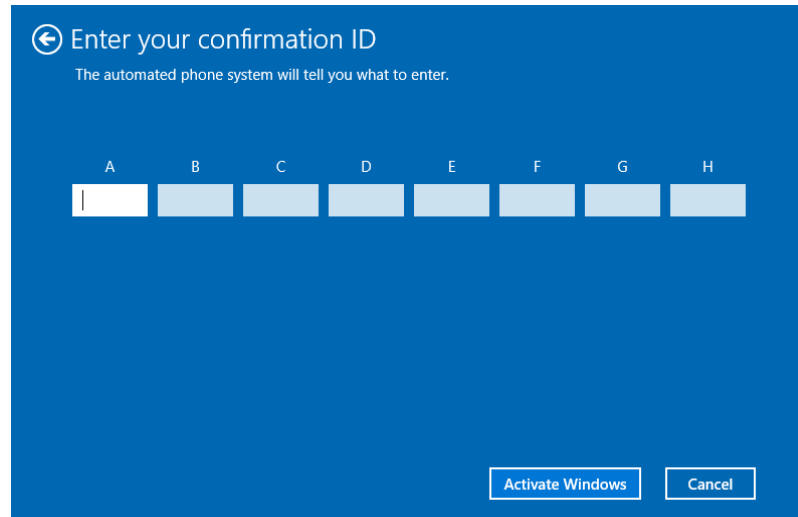
- 1 Go to [**Setup**] > [**Maintenance**] > [**Setup**] > [**Enter Windows**], and input the password.
Please contact Mindray Service Department to obtain the password by providing the machine serial number and MAC address in Setup – About.
- 2 Input “**cmd**” in the address column in the pop-up Windows Explorer and tap [**Enter**] key.
- 3 Input “**slui 4**” in the DOS prompt and tap [**Enter**] key. Phone activation wizard Menu will be displayed as below.



- 4 Select your country or region, and tap **[Next]** to continue.





- 5 Call one of the phone numbers displayed on above. Choose the proper option number according to the voice prompts, and enter the **Installation ID**. Then write down the **Confirmation ID** according to the voice prompts.
- 6 Tap **[Enter confirmation ID]** to enter the following menu.



- 7 Input the **Confirmation ID**, and tap [**Activate Windows**] to finish the activation.

3.6.2 Verify system software version

Perform the following procedure:

- 1 Turn on the machine.
- 2 Tap  in the top-right corner of the screen and select  to enter the setup menu, tap [**About**].

Ensure the version numbers including **Product Name**, **Configuration Type**, and **System Software Version** displayed on the screen match the ones in the received software package.

3.6.3 Check system functions for proper operation

Check the function of installed options, peripherals, DICOM etc. Configure them if necessary.

