Monitor Upgrade Solutions 2.2 Windows User's Guide

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This edition applies to Monitor Upgrade Solutions 2.2 for Windows and to all subsequent releases and modifications until otherwise indicated in new editions.

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Document Revision History

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1.01	26/08/2015	Updated **OP** Installation Requirements. Added Troubleshooting section. Added Configuration File section. Added **OP** Silent (Unattended) Installation section.
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1 Introduction to the Monitor Upgrade Solutions (MUS)

The Monitor Upgrade Solutions (or MUS) is the new solution by Toshiba Global Commerce Solutions to perform *silent and unattended* update of the touch and video firmware for monitors below:

- Toshiba SurePoint Display 4820 (Model 21x, 51x, 2Lx, 5Lx)
- Toshiba TCxWave 6140 (Model 10x, E1x, 12x, E2x)
- Toshiba TCxWave 6140 (Model A3x, E3x)
- Toshiba TCx Display 6149 (Model 5Cx, 5Nx, 5Sx)

The solution is packaged as an InstallShield executable. The core component of MUS is a Windows Service (Toshiba Monitor Update Service) to assist with touch and video firmware updates. The Toshiba Monitor Update Service will run at Windows Startup and perform touch and video firmware updates as appropriate.

NOTE: The MUS does not include touch and video drivers for the supported monitors. These drivers may be considered pre-requisites or optional to MUS installation. Please refer to 2.2.3 **OP** Installation Requirements for more information.

2 MUS Overview

The Monitor Upgrade Solutions is composed of two different installation packages:

- **O**perational **P**ackage (hereafter **OP**) which installs the software and utilities required to perform touch and video firmware upgrades.
- **U**pgrade **P**ackage (hereafter **UP**) which contains the firmware files used for updating touch and video firmware.

2.1 Windows OS Support

The following are the Microsoft Windows Operating Systems supported by the MUS:

- POSReady 2009 – 32 Bit
- Windows 7 – 32/64 Bit
- POSReady 7 -32/64 Bit
- Windows Embedded 8.1 Industry Pro 64 Bit
- Windows 10 64 Bit

2.2 Operational Package (OP)

The **OP** will install the software and utilities required to perform touch and video firmware upgrades.

2.2.1 File format

The **OP** installer is an InstallShield executable file.

File: **Monitor Upgrade Solutions <version>.exe**

NOTE: **<version>** is the **OP** installer version. E.g. 2.1.0.0

2.2.2 Components of the OP

The components included in the **OP** are:

1. Utilities used to upgrade video and touch firmware
2. Toshiba Monitor Update Service

2.2.3 OP Installation Requirements

1. The Windows user must have **Administrator** authority to execute the **OP** installer.
2. **Ocular Touch Driver** needs to be **uninstalled** if it is installed on the POS system. **Ocular Touch Driver** will interfere with touch firmware update for the following POS systems:
    - Toshiba TCxWave 6140 (Model A3x, E3x)
    - Toshiba TCx Display 6149 (Model 5Cx, 5Nx, 5Sx)
3. **QisTouch Driver** needs to be **uninstalled** if it is installed on the POS system. **QisTouch Driver** will interfere with touch firmware update for the following POS systems:
    - Toshiba TCxWave 6140 (Model A3x, E3x)
    - Toshiba TCx Display 6149 (Model 5Cx, 5Nx, 5Sx)
4. **3M Touch Driver** needs to be **installed** for following POS systems to perform touch firmware upgrade:
    - TCxWave 6140 (Model 10x, E1x, 12x, E2x)
5. **ELO Touch Driver** needs to be **installed** for following POS systems to perform touch firmware upgrade:
    - Toshiba SurePoint Display 4820 (Model 21x, 51x, 2Lx, 5Lx)
6. **POS monitor inventory driver** 1.4 or newer should be used.

** Please note that in order for MUS to function properly, you must install the Operational Package (OP) before the Upgrade Package (UP).

2.3 Upgrade Package (UP)

The **UP** will provide the necessary touch and video firmware files for **OP** to enable the firmware upgrades.

2.3.1 File format

The **UP** is an iExpress self-extracting executable file. Example:

Toshiba_4820_21x51x_VideoFW_UP_<version>.exe

NOTE: **<version>** is the **UP** version. E.g. 2.1.00.

IMPORTANT: MUS 2.0 **UP** files are not compatible with MUS 2.1 **OP** or greater.

2.3.2 Components of the UP

Depending on the firmware **UP** type (video or touch firmware upgrade), the **UP** may include components below:

- Video firmware update file
- Video firmware update configuration file
- Touch firmware update file
- Touch firmware update configuration file

UP packages are separated to **Touch UP** and **Video UP** for supported monitors.

2.3.3 UP Installation Requirements

1. The Windows User must have **Administrator** authority to execute the **UP** installer.

** Please note that in order for MUS to function properly, you must install the Operational Package (OP) before the Upgrade Package (UP).

3 Using the MUS

3.1 OP Installation

The OP installer will be available in the MUS support page.

MUS support page: www.toshibacommerce.com/support then select displays under the hardware pull down. To install **OP**, simply run the **OP** installer by double clicking it and follow on screen instructions. (Executing the file requires Administrator authority).
NOTE: Related touch drivers need to be installed/uninstalled prior to installing the **OP**. Please refer to 2.2.3 **OP** Installation Requirements for additional information.

3.1.1 OP Installation Sequence

Figure 1: Preparation message when installing Monitor Upgrade Solutions.

Figure 2: Warning message about missing ELO Driver for 4820 monitors; Click [Yes] to continue

NOTE: This is just a warning message if ELO Driver is not installed on the POS system. MUS only requires ELO Driver for touch firmware update of 4820 monitors. Please refer to 2.2.3 **OP** Installation Requirements for more information.

Figure 3: InstallShield wizard Welcome Screen; Click [Next]

Figure 4: License agreement panel. Confirm license agreement choice and then click [Next] to continue.

Figure 5: Ready to install; Click [Install]

Figure 6: Monitor Upgrade Solutions installation in progress

Figure 7: Monitor Upgrade Solutions Installation completed; Click [Finish]

Figure 8: libusb driver installation; Check [Always trust software from "Toshiba Global Commerce Solutions Inc."] and click [Install] to continue

NOTE: Figure above shows the confirmation dialog for installation of libusb driver. This dialog will show only if you have ELO Touch Driver installed on the POS system and first time installing MUS on the POS system. This step is required for MUS to perform touch firmware update for following POS systems:

- Toshiba SurePoint Display 4820 (Model 21x, 51x, 2Lx, 5Lx)

3.1.2 OP Installation Verification

After the **OP** has installed, installation of the software can be verified by viewing the list of installed software on Windows (the Add or Remove Programs panel on POSReady 2009 or the Programs and Features panel on Windows 7, POSReady 7, Windows 8.1 and Windows 10). The following software should be included in the installed programs list.

- Toshiba Monitor Upgrade Solutions

Figure 9: Monitor Upgrade Solutions entry in installed programs list

The core component of Monitor Upgrade Solutions is a Windows Service. The following Window Service should be included in the list of installed Windows Services.

- Toshiba Monitor Update Service

Figure 10: Monitor Update Service entry in Windows Services list

3.2 OP Silent (Unattended) Installation

OP installer is an InstallShield executable. Silent (Unattended) Installation is supported using a response file. The response file is created during the initial installation of **OP** on a POS system. This response file can then be used to perform a Silent (Unattended) install on other POS systems.

Please refer to 3.2.1 Generate a response file on how to generate a response file to prepare for **OP** Silent (Unattended) Installation.

Please refer to 3.2.2 Play back a response file on how to use the generated response file to perform **OP** Silent (Unattended) Installation.

3.2.1 Generate a response file

To generate the response file, perform the following steps:

1. Open an elevated command prompt. An elevated command prompt is a command prompt with Administrator rights, you may open an elevated command prompt by right click on the command prompt icon and select [**Run as administrator**] from the Windows Start Menu.

   NOTE: Alternatively, you can disable **UAC** from the Windows Security Settings.

2. Change location to the directory containing the **OP** installer.
3. Run the following command:

   # Monitor Upgrade Solutions <**version**>.exe -r -f1<**/path/to/my_response_file.iss**>

   Where <**version**> is the **OP** installer version and <**/path/to/my_response_file.iss**> is the absolute path and any response file name you want to use.
   For example, to create a response file for OP installer version 2.1.0.0 and place the generated response file in C:\.
   Command below will be executed:

   # Monitor Upgrade Solutions 2.1.0.0.exe -r -f1C:\my_response_file.iss

   NOTE: If no location is specified by the **-f1** option, a setup.iss file is written to the %SystemRoot%*windir* directory for Windows operating systems. For example on Windows 7, the directory might be c:\windows.

4. Follow the instructions on the screen to install the **OP**. At the end of the installation, the response file will be generated at the designated location. The response file is ready to be used for **OP** Silent (Unattended) Installation. Please refer to 3.2.2 Play back a response file.

3.2.2 Play back a response file

After you have created your response file, you can run the **OP** installation in Silent (Unattended) mode. When running the installation in Silent (Unattended) mode, no message is displayed. All messages are written to the log file. Review this log file to determine the results of the installation.

To play back a response file for **OP** Silent (Unattended) Installation, perform the following steps:

1. Open an elevated command prompt. An elevated command prompt is a command prompt with Administrator rights, you may open an elevated command prompt by right click on the command prompt icon and select [**Run as administrator**] from the Windows Start Menu.

   NOTE: Alternatively, you can disable **UAC** from the Windows Security Settings.

2. Change location to the directory containing the **OP** installer.
3. Run the following command:

   # Monitor Upgrade Solutions <**version**>.exe -s -f1<**/path/to/my_response_file.iss**>
   -f2<**/path/to/setup.log**>

Where <**version**> is the **OP** installer version and </**path/to/my_response_file.iss**> is the absolute path of the generated response file you want to use.
Please refer to 3.2.1 Generate a response file on how to generate a response file.
For example, to perform Silent (Unattended) Installation for OP installer version 2.1.0.0 and the generated response file is in C:\ my_response_file.iss.
command below will be executed:

Monitor Upgrade Solutions 2.1.0.0.exe -s -f1C:\my_response_file.iss -f2C:\setup.log

4. The **OP** installation will be performed silently and the setup log will be created in C:\setup.log. Review the setup log to determine the results of the installation.

NOTE: If you use **OP** Silent (Unattended) Installation option, the end user accepts the License Agreement file accompanying the **OP**.

3.3 UP Installation

The **UP** installer will be available on the MUS support page. If the intended **UP** installer is not available in the support page, please contact Toshiba Global Commerce Solutions support.

MUS support page: www.toshibacommerce.com/support then select displays under the

hardware pull down.

To install **UP**, perform the following steps:

1. Right-click on the **UP** installer.exe file (Toshiba_6141_TouchFW_UP_v2.00 in this example) then select [**Run as administrator**] as shown in figure below:

Figure 11: UP installation

NOTE: It is very **IMPORTANT** to follow the above step to install **UP** as Administrator rights are needed for **UP** to be installed successfully.

2. A status file will be created in **<PROGRAM_FILES>\Toshiba\Monitor Upgrade Solutions\Results**. Review the status file to determine the results of the installation. If the status file is not created, it means that you did not run the **UP** installer with Administrator rights and firmware update will fail.

3. Firmware update process will only run at Windows Startup using Toshiba Monitor Update Service. It is necessary to reboot the POS system after **UP** installation to perform firmware update.

3.4 UP Silent (Unattended) Installation

UP installer is an iExpress executable. Silent (Unattended) Installation is supported using command parameter /Q while executing **UP** installer.

To install **UP** Silently (Unattended), perform the following steps:

1. Open an elevated command prompt. An elevated command prompt is a command prompt with Administrator rights, you may open an elevated command prompt by right click on the command prompt icon and select [**Run as administrator**] from the Windows Start Menu.

   NOTE: Alternatively, you can disable **UAC** from the Windows Security Settings.
2. Change location to the directory containing the **UP** installer.
3. Run the following command:

   # Toshiba_<**type**><**version**>.exe /Q

   Where <**type**><**version**> is the type and version of **UP** installer.

4. The **UP** installation will be performed silently and a status file will be created in **<PROGRAM_FILES>\Toshiba\Monitor Upgrade Solutions\Results**. Review the status file to determine the results of the installation. If the status file is not created, it means that you did not run the **UP** installer with Administrator rights and firmware update will fail.

NOTE: If you use **UP** Silent (Unattended) Installation option, the end user accepts the License Agreement file accompanying the **UP**.

3.5 Configuration File

MUS has a Configuration File to customize the behavior of **OP** during execution of firmware update.

The Configuration File is located at **<PROGRAM_FILES>\Toshiba\Monitor Upgrade Solutions\Config.ini**

The contents of the Configuration File will be shown as in figure below:

```
#########################################################
#                                                       #
# Copyright 2015 Toshiba Global Commerce Solutions Inc. #
#                                                       #
# Configuration options for the Monitor Upgrade Service #
#                                                       #
# This file *must* be in the same folder as tsksvc.exe  #
#                                                       #
#########################################################
[General]
# Use this to put some time before FW update. There are instances that the device
(e.g. 4820) need to get initialized
# properly before any FW update. <0> means no pre-update time out. # Default: 60
seconds
#
#PreUpdateTimeout=

# Use this option to enable notification dialogs when MUS does a FW update.
# Values:
#     FWUP - Enable FW update process messages and error messages (e.g.
Do not unplug monitor while FW update is on-going)
#     MISC - Enable miscellaneous messages (e.g. Touch FW update is done)
#     ALL - Enable ALL types of messages (FWUP, MISC)
#     DISABLE - Disable and hide ALL types of messages
#
# Default: FWUP
#
#Notifications=

[EloTouchFlash]
# Where to find the ELO Touch flash application EloDownload.exe.
# Default: <32-Bit Program Files>\\Toshiba\\Monitor Upgrade
Solutions\\Utilities\\MTOOL\\FOUSB\\EloDownload.exe #
# EloTouchFlashAppPath=

# Timeout (milliseconds) value used to wait for the ELO FW update execution.
# Default: 300 seconds(5 minutes)
#
EloTouchFlashAppTimeout=300

[4820VideoFlash]
# Where to find the ELO Touch flash application EloDownload.exe.
# Default: <32-Bit Program Files>\\Toshiba\\Monitor Upgrade
Solutions\\Utilities\\4820MonUtil\\4820MonUtil.exe #
#4820VideoFlashAppPath=
```

```
#
# Where to find the Sampo Video RECOVERY  command line trigger file - run as an
internal task
# Default: <32-Bit Program Files>\\Toshiba\\Monitor Upgrade
Solutions\\Utilities\\4820MonUtil\\4820MonUtil.trg #
# 4820VideoRecoveryFilePath=

# Timeout value (milliseconds) used to wait for the 4820MonUtil FW update execution.
# Default: 720 seconds (6 minutes)
#
4820VideoFlashAppTimeout=720

##############################################
# 3M for TCx (6140)
#
[3MTouchFlash]
#
# Where to find the TCx 3M Touch flash application
# Default: <32-Bit Program Files>\\Toshiba\\Monitor Upgrade
Solutions\\Updates\\Touch\\3M\\6140
#
#61403MTouchFlashAppPath=

# Timeout value (milliseconds) used to wait for the 3M Touch flash application.
# Default: 90 seconds
#
61403MTouchFlashAppTimeout=90
#
[3MTouchConfiguration]
#
# Key=values TBD
##############################################

[SingleUpdatePackage]
#
# Where to find info for the current Update Package files
# Default is <32-Bit Program Files>\\Toshiba\\Monitor Upgrade Solutions\\Updates
#
# CurrentSingleUpdate=

[OPEloTouchDriver]
#
# Where to find info for EloTouch Driver files
# Default is <Program Files path>\Toshiba\Monitor Upgrade
Solutions\Temp\4820\touch\ELOSetup.exe
#
#OPEloTouchDriverPath=

# Set the default Installer Timeout (Second) OPEloTouchDriverInstallTimeout=180
```

3.5.1 Change setting in Configuration File

IMPORTANT: You **SHOULD NOT** change any values in the Configuration File unless you have a specific need to, as doing so may result in instability.

It is advised to use the default values provided in the Configuration File as this is the optimal settings for MUS. The most common setting to change in the Configuration File would be the notifications setting as this will give the user different user experience for using MUS. Below are the procedures to change the notifications setting:

1. Open the Config.ini with text editor. Look for the setting that you would like to change from the Configuration File. In this case, "`Notifications`."

```
# Use this option to enable notification dialogs when MUS does a FW
update. # Values:
#     FWUP - Enable FW update process messages (e.g. Do not unplug
monitor while FW update is on-going)
#     MISC - Enable miscellaneous messages (e.g. Touch FW update is done)
#     ALL - Enable ALL types of messages (FWUP, MISC)
#     DISABLE - Disable and hide ALL types of messages
#
# Default: FWUP
#
#Notifications=
```

2. As you can see from the comments, the values that are available to "`Notifications`" are `FWUP`, `MISC`, `ALL` and `DISABLE` and the default value is `FWUP`.
3. To change the value for "`Notifications`," the preceding "#" character of "`Notifications`" need to be removed and appropriate value need to be assigned to it.
   In this example, we will assign "`DISABLE`" value to "`Notifications`" to disable all type of messages during a firmware update.

```
# Use this option to enable notification dialogs when MUS does a FW
update. # Values:
#     FWUP - Enable FW update process messages (e.g. Do not unplug
monitor while FW update is on-going)
#     MISC - Enable miscellaneous messages (e.g. Touch FW update is done)
#     ALL - Enable ALL types of messages (FWUP, MISC)
#     DISABLE - Disable and hide ALL types of messages
#
# Default: FWUP
#
Notifications=DISABLE
```

4. Save and close the Config.ini with text editor. You might need to re-open the Config.ini with text editor again to make sure it reflects the new changes.
5. The new notifications setting will be applied in the next firmware update.
6. Follow the steps from #1 to #5 above if there is a need to change other settings in the Configuration File.

3.6 Log Files

Log files are located at **<PROGRAM FILES>\Toshiba\Monitor Upgrade Solutions\Logs**

This directory contains folders below:

- **AppState**
  - Firmware Update Utility related logs.
- **OP**
  - **OP** related logs.
- **UP**
  - **UP** related logs.

Figure 12: MUS Log Directory

3.7 OP Uninstallation

The **OP** can be uninstalled from:

- Add or Remove Programs Panel (POSReady 2009)
- Programs and Features Panel (Windows 7 and POSReady 7)
- Control Panel-> Uninstall Programs (Windows 8.1 & Windows 10)

The program to uninstall is the Toshiba Monitor Upgrade Solutions. It will remove all MUS related binaries and utilities once uninstalled.

NOTE: All installed **UP** will be uninstalled once **OP** is uninstalled.

Figure 13: MUS Uninstall

3.8 UP Uninstallation

The **UP** cannot be uninstalled independently. All installed **UP** will be uninstalled once **OP** is uninstalled. Please refer to 3.7 **OP** Uninstallation for **OP** uninstallation.

4 MUS Directory Structure

The MUS installation directory is located at **<PROGRAM_FILES>\Toshiba\Monitor Upgrade Solutions** This directory contains folders and files below:

- **License**
  - License files directory.
- **Logs**
  - Logs directory. Please refer to 3.6 Log Files for more information.
- **Results**
  - Contain the status files for **UP** installation to check if **UP** is successfully installed.
- **Temp**
  - Temporary folder for **OP** execution.
- **Updates**
  - Upgrade Package directory. Firmware files in the **UP** will be extracted to this directory after installing.
- **Utilities**
  - Firmware Update Utility directory.
- **Config.ini**
  - Configuration file for **OP** execution. Please refer to 3.5 Configuration File for more information.
- **tskdrv.exe**
  - The executable of Toshiba Monitor Update Service.

NOTE: A directory will be created at C:\TGCS during the **OP** installation if ELO Touch Driver is installed on the POS system. **DO NOT** remove this directory manually.

Figure 14: MUS Installation Directory

5 Firmware Update

This is a sample update sequence of a TCx Display 6149 (Model 5Cx) Touch Firmware.

It is very **IMPORTANT** not to touch or use the monitor when MUS is performing an update.

Figure 15: Firmware update in progress

Figure above shows the notification dialog with progress bar when firmware update is in progress. The notification dialog will disappear when the firmware update is complete.
IMPORTANT: Please do not touch or use the monitor when MUS is performing an update.
NOTE: By default, there will be 1 notification dialog with progress bar when a firmware update is in progress. This behavior can be customized to hide all notification dialog when a firmware update is in progress. Please refer to 3.5.1 Change setting in Configuration File for more information.

6 Firmware Recovery

There are instances where the firmware update fails for some reason. The MUS is able to perform a recovery in such conditions. The following is the sequence when recovery occurs:

1. The recoverable task will be re-attempted using the specific recovery processing by the vendor support utility.
2. If recovery routine is successful, MUS will reboot the POS system one more time to restore it to working state.
3. If the recovery fails MUS will try to attempt recovery one more time.
4. If (all) recovery attempts have failed MUS will exit the Recovery Cycle and then reboot the POS system to normal Update Cycle.
5. Please note that all installed **UP** will be uninstalled to prevent MUS from entering the Recovery Cycle again.
6. **RECOMMENDED PROCEDURE** at this point is to unplug and remove the affected monitor.
   Field support may be required. Please contact Toshiba Global Commerce Solutions support.
7. If the recovery succeeds, MUS will exit and reboot the POS system to bring it to a consistent state and boot into normal update cycle.

NOTE: The duration of a single recovery for 1 firmware update is approximately 10 minutes. The time may vary from system to system depending on the system speed. The approximated time is from attempting to reboot the POS system, do the recovery routine, reboot the POS system again and boot to normal user session.

7 Troubleshooting

Below are listed some common problems that may occur when using MUS and the possible solutions.

Please contact Toshiba Global Commerce Solutions support if the problem persists.

7.1 Firmware update does not occur after installing UP

Symptom: Firmware is not updated after installing **UP**.

Possible Solutions 1: Firmware update process will only run at Windows Startup using Toshiba Monitor Update Service. It is necessary to reboot the POS system after **UP** installation to perform firmware update.

Possible Solutions 2: Administrator rights are needed to install **UP**. Please make sure you have run the **UP** installer with Administrator rights. If you are unsure, you may run the **UP** installer again and reboot the POS system. Please refer to 3.3 UP Installation for more information.

Possible Solutions 3: A correct **UP** will be required for successful firmware update. Please contact Toshiba Global Commerce Solutions support if you are unsure which **UP** to use for firmware update.

7.2 Toshiba Monitor Update Service did not start at Windows Startup for Windows Embedded 8.1 Industry Pro x64 or Windows 10 x64

Symptom: Firmware update does not occur after installing correct **UP** and POS system is rebooted.

Possible Solutions: This may due to **fast startup** is turned on in the System Settings. The Windows Service will not start on Windows Startup if **fast startup** is turned on. As **Toshiba Monitor Update Service** is a Windows Service, the fast startup setting needs to be turned off.

To turn off the **fast startup**, go to Power Options -> System Settings as shown in Figure below.

Figure 16: Turn off fast startup; Uncheck [Turn on fast startup (recommended)] and click [Save changes]

8 Known limitations and workarounds

1. MUS does not support power loss/ unplug power cable and unplugging of powered USB cable from the attached **4820-21X/51X** monitor while a **touch** firmware update is ongoing. Doing so will cause undesirable damage to the firmware and perhaps to the monitor itself.
2. MUS does not support power loss/ unplug power cable and unplugging of powered USB cable from the attached **6149-5XX** monitor while a **touch** firmware update is ongoing. Doing so will cause undesirable damage to the firmware and perhaps to the monitor itself.
3. **Ocular Touch Driver** and **QisTouch Driver** needs to be uninstalled before installing MUS as they will interfere with touch firmware update for the following POS systems:
   - Toshiba TCxWave 6140 (Model A3x, E3x)
   - Toshiba TCx Display 6149 (Model 5Cx, 5Nx, 5Sx)
4. MUS does not support **touch upgrade across multiple 6149-5xx** monitors even if upgrade is only meant for 1 of the many 6149-5xx monitors attached. In order to upgrade the touch on 6149-5xx correctly, please ensure only one (6149-5xx) monitor is connected to the system at a time.

End of Document