Ocular Custom Driver and Configuration Utility

User's Guide

Rev. B

Table of Contents

Date	Rev	Summary
7/24/2013	A	Initial Release
10/21/2013	B	In §10.2.1. Monitor Association, added statement that the association process only works when monitors are set to extended mode. In §10.2.1. Monitor Association, updated screen shot of application. In §10.2.2. Selecting a Specific Touch Panel, updated screen shot of application. In §10.3. Event Generation Mode, updated event descriptions to match UI. Added §10.8. Update Firmware. In §11.1. Load a Configuration, added statement that file extension must be `.xcfg`. Added §11.2. Update Firmware.

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1. Introduction

Ocular's Crystal Touch: TRUE Multi-Touch projected capacitive touch panels represent the next generation of touch technology. With true positional tracking of 16 simultaneous touches, advanced electrical noise suppression features, and native support for Windows® 7 and Windows® 8, Ocular's Crystal Touch: TRUE Multi-Touch products are built for demanding environments and touch applications.

2. Custom Driver Description

Crystal Touch: TRUE Multi-Touch products are powered by the Atmel® family of maXTouch® controllers. These controllers provide direct, native support for multi-touch capabilities in Windows® 7 and Windows® 8. No additional driver is needed for these operating systems.

Crystal Touch: TRUE Multi-Touch products also function as a single touch device in Windows® XP with the assistance of a custom Windows driver provided by Ocular. In addition to providing single touch capabilities on Windows XP, Ocular's custom driver also supports multiple touch panels on multiple monitors in Windows XP, Windows 7, and Windows 8.

3. Configuration Utility Description

Ocular provides a custom Windows® configuration utility that can be used to assign a particular touch panel to a particular monitor. The Ocular utility also allows the user to alter certain configuration settings as needed.

4. Supported Operating Systems

Ocular's custom driver and utility have been tested with the following operating systems:

- Windows® XP SP3
- Windows® 7 SP1 32-bit
- Windows® 7 SP1 64-bit
- Windows® 8 32-bit
- Windows® 8 64-bit

5. Native Digitizer Support

Ocular's Crystal Touch: TRUE multi-touch products include native support for Windows® 7 and Windows 8. If the Ocular custom driver is installed on these operating systems, the native digitizer driver is replaced by Ocular's custom driver. To return to native digitizer operation, uninstall the Ocular driver. Note that the Ocular driver is required on all Windows operating systems for multi-monitor support.

6. Installation and Removal

To install the Ocular custom driver, run `OcularSetup.exe`. The touch panel(s) can be connected to the system before installation or afterwards. Note that in addition to the custom Ocular driver and programs, the installation program may also install the Microsoft® .NET Client Profile v4.0 and the Microsoft Visual C++ Runtime Library 2012.

To remove the custom driver, re-run `OcularSetup.exe` and choose the Remove option.

7. Components

The Ocular custom driver and software consists of the following components:

- Custom hardware drivers
- Third-party libraries
- System Tray application
- Configuration Utility

In addition to installing all of these components, the installation program also makes the following changes to the system:

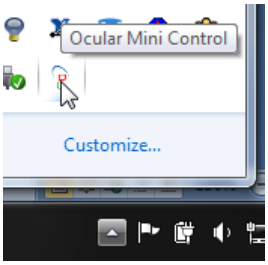
1) Configures the System Tray application to automatically run at startup
2) Adds shortcuts for the System Tray application and the Configuration Utility to the Start menu
3) Automatically starts the System Tray application when installation is complete

8. Serial Number

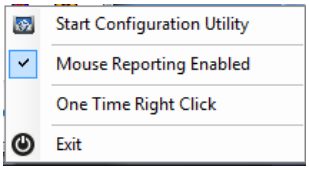
Each Ocular touch panel has been pre-programmed with a serial number matching the serial number on the monitor to which it is attached. This serial number can be used to identify a particular touch panel when using the Configuration utility command line options.

9. System Tray Application

The System Tray application must be running in order to use any touch panels connected to the system. The System Tray application also provides a link to the Configuration Utility and to the right click feature. To access these features, touch the Ocular System Tray icon:



This will open the Ocular System Tray menu:



9.1. Start Configuration Utility

Touch the "Start Configuration Utility" option to open the Ocular Configuration Utility.

9.2. Mouse Reporting Enabled

Touch the "Mouse Reporting Enabled" menu entry to disable all touch panels. NOTE: once this feature is disabled, a different pointing device (e.g., touch pad, mouse, etc.) will be needed to re-enable the touch panels.

9.3. One Time Right Click

Touch the "One Time Right Click" menu entry to activate the right click feature. The next touch (and only the next touch) will generate a right click event instead of a left click. Use this feature to bring up Windows® context menus.

9.4. Exit

Touch the "Exit" menu entry to terminate the System Tray application. The System Tray application can be restarted at any time through the Ocular LCD, Inc. entry on the Start menu in Windows® 7, or through the Apps tiles in Windows 8.

10. Configuration Utility

10.1. One Monitor

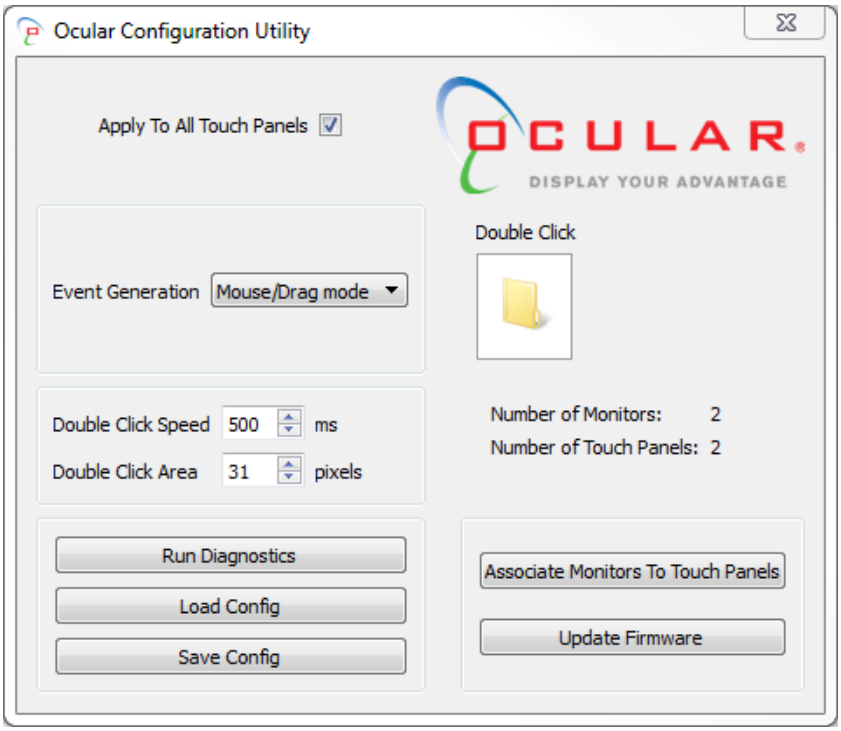
When only one monitor is connected to the system, the touch panel is automatically associated with the monitor. All options in the Configuration utility apply to the touch panel.

10.2. Multiple Touch Panels

10.2.1. Monitor Association

When more than one monitor is connected to the system and the monitors are set to Extended Mode, the user must touch "Associate Monitors To Touch Panels" button to assign each touch panel to its associated monitor.

Note: In systems with more than one monitor, it may be necessary to use a mouse during the association process since the Configuration Utility may open on the monitor that is not currently associated with the touch panel.



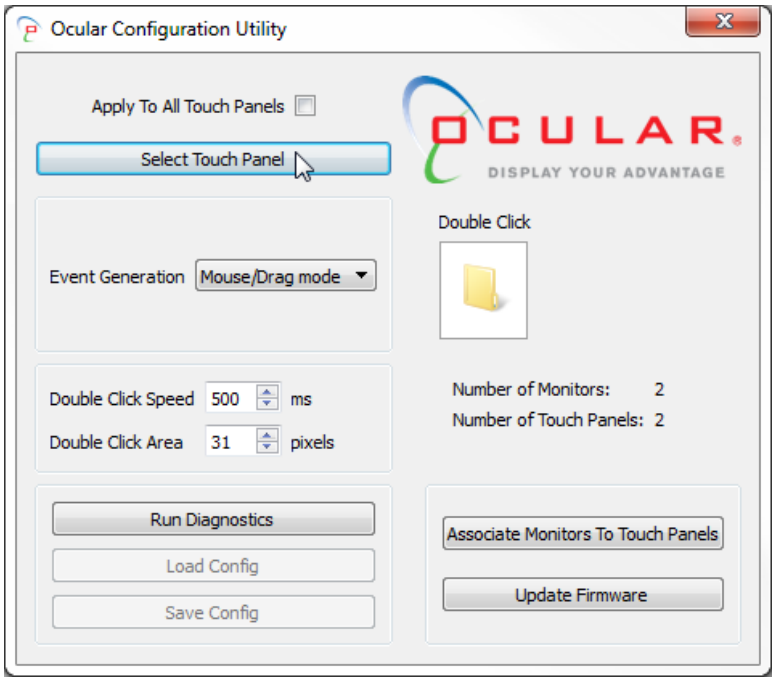
After touching the button, the Configuration utility will display a TOUCH HERE message on each monitor one at a time.

When the user touches a particular touch panel, that touch panel will be associated with the monitor that is currently displaying the TOUCH HERE message. In some cases a system may have a monitor that does not included an integrated touch panel. In this case, hit the TAB key on the keyboard to move to the next monitor. If no touch is reported and the TAB key is not pressed within a few seconds, the TOUCH HERE message will automatically move to the next monitor.

Once the association process is complete, touches on a particular touch panel will be associated with the assigned monitor.

10.2.2. Selecting a Specific Touch Panel

Certain actions in the Configuration Utility can be applied to all touch panels or to a specific touch panel. To select a specific touch panel, deselect the "Apply To All Touch Panels" checkbox, then touch the "Select Touch Panel" button.



A TOUCH HERE message will be shown on all system monitors. Touch the desired touch panel to select it. The following actions can be applied to a single touch panel:

- Event Generation Mode
- Run Diagnostics
- Load Config
- Save Config

Touch the "Select Touch Panel" button again to select a different touch panel, or select the "Apply To All Touch Panels" checkbox to apply future actions to all touch panels.

10.3. Event Generation Mode

The Configuration Utility supports three different modes for generating mouse events.

1) **Mouse/Drag mode:** A touch down generates a left down event. A touch release generates a left up event.
2) **Click on Touch:** A touch down generates a left click event.
3) **Click on Release:** A touch release generates a left click event.

The mouse pointer tracks the moving finger in all three modes. If the user has selected the right click option in the System Tray menu, then right button events are generated for each of the three modes.

Each touch panel connected to the system can have a different Event Generation Mode setting.

10.4. Double Click Size and Speed

The Double Click Speed defines the maximum amount of time that can pass between two touches for them to be interpreted as a double click. A smaller number requires a faster double touch. A larger number allows a longer double touch.

The Double Click Area defines the maximum distance allowed between two touches for the two touches to be interpreted as a double click. A smaller number requires that the two touches be closer to each other. A larger number allows the two touches to be further apart.

To test the double click settings, double tap the Double Click test icon. The test image toggles between an open folder and a closed folder every time a double click is reported.

Both the double click speed and the double click distance requirements must be met for two touches to be reported as a double click. These two values apply to all touch panels.

10.5. Diagnostics

The Configuration Utility can run a series of diagnostics on every touch panel connected to the system. The diagnostic report includes PASS/FAIL and details on each test.

Diagnostics can be run on all panels or on a selected panel.

10.6. Save the Configuration

Touch the "Save Config" button to save a configuration file that includes the current settings. The configuration file, which is stored as plain text, includes the event generation mode, the double click settings, and all of the touch controller settings.

The saved configuration file is either the configuration of the primary touch panel (when "Apply To All Touch Panels" is selected) or the configuration of the selected touch panel.

10.7. Load a Configuration

Touch the "Load Config" button to load a configuration file to a touch panel. The file is loaded to all touch panels (when "Apply To All Touch Panels" is selected) or to the selected touch panel.

10.8. Update Firmware

Touch the "Update Firmware" button to update the firmware in the touch controllers. The new firmware is loaded to all touch panels (when "Apply To All Touch Panels" is selected) or to the selected touch panel. The configuration is not changed.

11. Configuration Utility Command Line Usage

11.1. Load a Configuration

The Configuration Utility can be used from the command line to load a configuration file. The command line options are:

```
CONFIGUTIL [-S] [serial number] file.xcfg
```

To load a configuration file to all touch panels in the system, provide only the name of the configuration file (the file extension must be `.xcfg`). Use quotes around the file name if it contains spaces. For example:

```
CONFIGUTIL config.xcfg
CONFIGUTIL "new config file.xcfg"
```

To load a configuration file to a specific touch panel, provide the serial number of the touch panel and the configuration file name. Use quotes around the serial number if it contains spaces. For example:

```
CONFIGUTIL -S ABCD "new config file.xcfg"
CONFIGUTIL -S "ABCD-435 HQR" "new config file.xcfg"
```

11.2. Update Firmware

The Configuration Utility can be used from the command line to update the touch controller firmware. The command line options are:

```
CONFIGUTIL [-S] [serial number] file.enc
```

To update the firmware on all touch panels in the system, provide only the name of the firmware file (the extension must be `.enc`). Use quotes around the file name if it contains spaces. For example:

```
CONFIGUTIL v2.enc
CONFIGUTIL "v2 0xAA.enc"
```

To update the firmware and the configuration file, provide both file names:

```
CONFIGUTIL v2.enc "new config.xcfg"
CONFIGUTIL -S "ABCD-435 HQR" "v2 0xAA.enc" "new config.xcfg"
```