



**Model No. CP300**

# **Users Manual v1.4**

rev 3



**Important: Check [www.tangentwave.co.uk](http://www.tangentwave.co.uk) for updates.**

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## 1. Important safety instructions / Instructions De Sécurité Importantes



- Read this manual first before using the panel.
  - Keep these instructions for future reference.
  - Heed all warnings in this manual.
  - Follow all instructions in this manual.
  - Do not use this apparatus near water.
  - Install and use the panel only as instructed.
  - Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
  - Unplug the apparatus when it's not going to be used for long periods of time.
  - Refer all servicing to qualified personnel. Servicing is required when:
    - The apparatus has been damaged in any way.
    - Liquid has been spilled on the apparatus.
    - Objects have fallen into the apparatus.
    - The apparatus has been exposed to rain or moisture.
    - The apparatus does not operate normally.
    - The apparatus has been dropped.
- 
- Lire les instructions suivantes.
  - Conserver ces instructions.
  - Tout avertissement doit être pris compte.
  - Respecter les instructions à la lettre.
  - Ne pas utiliser cet appareil près de sources d'eau.
  - Nettoyer uniquement avec un torchon sec.
  - Installer selon le mode d'emploi fournit par la chaîne de production.
  - Ne pas installer près de sources de chaleur; c'est-à-dire radiateurs ou appareils produisant de la chaleur.
  - Débrancher l'appareil si celui-ci ne sera pas utilisé à de longs intervalles.
  - Se référer à un personnel qualifié pour toute révision de l'appareil. Une révision de l'appareil est nécessaire:
    - L'appareil a été endommagé.
    - Liquide répandu à l'intérieur de l'appareil.
    - Objets tombés à l'intérieur de l'appareil.
    - Si l'appareil a été mis au contact de la pluie ou exposé à l'humidité.
    - Ou s'il ne fonctionne pas normalement ou a été renversé.

## 2. CE Declaration of Conformity



Tangent Wave Ltd of 4 Crowbush Farm, Luton Road, Toddington, United Kingdom declare that our Wave product is in compliance with the essential requirements and other relevant provisions of Directives 2004/108/EC and 2006/95/EC and carries the CE mark accordingly.

Toddington, January 2009

A handwritten signature in black ink that appears to read 'Andy Knox'.

Andy Knox  
Operations Director

## 3. FCC Compliance Statement



This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## 4. Disposal and Recycling information



This symbol indicates that your product must be disposed of properly according to local laws and regulations. When your product reaches the end of its life please contact your supplier for disposal and recycling options.

## 5. About this manual

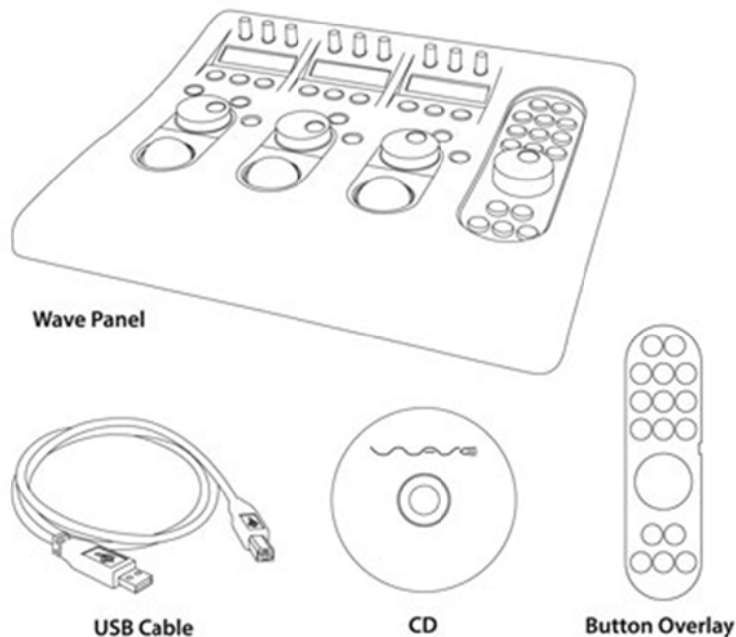
This manual applies to Wave control panel (Model No. CP300). For the latest updates please check [www.tangentwave.co.uk](http://www.tangentwave.co.uk) and look under Downloads: Documentation.

This manual does not tell you how to use the panel with your software. For that information please contact your software vendor. Where we have been provided with information by the software vendors we have included this.

If you find any errors with this manual or you have any suggestions then please contact Tangent Wave. It is only through your feedback and suggestions that we can improve our services and products.

## 6. What's in the box

### Package Contents



**Note:** also included in the box is a self adhesive wrist rest. This is for you to optionally fit to your Wave. If you decide to remove it at a later date please note that it may leave residual adhesive on your Wave or may mark the surface of it.

## 7. About Wave

Wave is a control panel that is aimed at the colour correction and video post production industry. It doesn't do any processing of video data itself, it just provides a physical user interface to software packages, much like your computer keyboard and mouse. It is designed to improve speed, ease of use, and efficiency of your software by putting the controls at your finger tips without having to access them through menu functions and mouse clicks. Colourists will be familiar with the three trackerball layout for adjusting primaries and they will know how essential it is to have them on the panel for this purpose.

### **Note: What Wave will control in your software**

The Wave control panel is designed to be generic. What we mean by generic is that it is not designed specifically to be used with just one type of software. This means what function any of the controls has is not determined by Tangent Wave, but is decided by the software that you are using the panel with.


### 7.1 Drivers

There are no drivers to install for Wave. Wave uses the inbuilt HID drivers that come with all current operating systems: Windows, Mac and Linux. The HID driver is the driver that allows your USB keyboard and mouse to work with your computer.

### 7.2 Power and communication

Wave receives its power and communicates with your computer through the USB cable. The only requirement is that your computer supports high power USB devices, that is it can supply 500mA through its USB port. Most desktop computers can, it is only laptop or portable devices that can't. If your in doubt check your computers specifications.

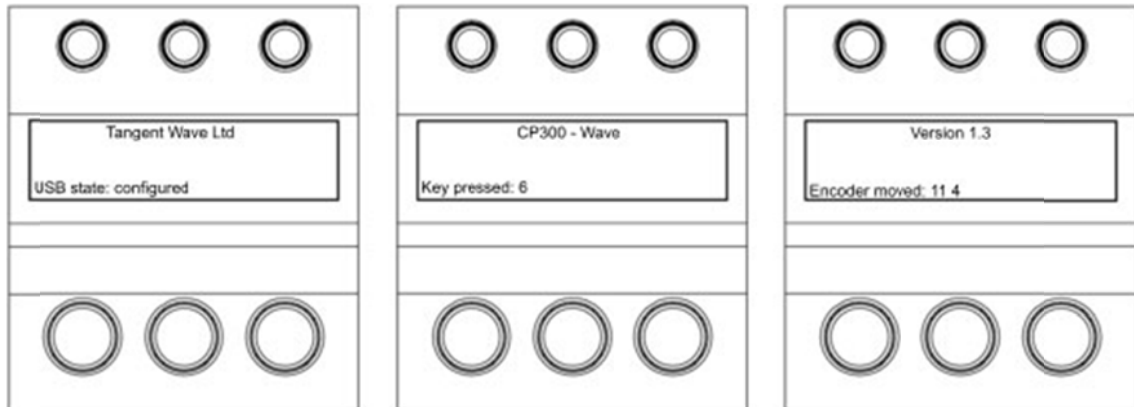
## 8. Positioning and use of the panel

	<p><b>Health Warning</b></p> <p>Some experts believe that use of any human input device may cause serious injury to hands, wrists, arms, neck or back. If you feel pain, numbness, weakness in these areas see a qualified health professional.</p> <p>To reduce the risks of such injuries follow these precautions:</p> <ul style="list-style-type: none"><li>• take frequent short breaks. Get up and walk around at least a couple of times every hour.</li><li>• vary your tasks throughout the day.</li><li>• keep your shoulder relaxed with your elbows at your side. Position your control panel so you don't have to reach.</li><li>• Adjust your chair and control panel so your wrists are straight.</li><li>• Avoid resting your wrists on sharp edges.</li></ul>
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## 9. Getting started

### Connecting the panel to your computer:

First make sure that the software you are going to use the panel with is not running on your computer. Use the supplied cable to plug the panel into a free USB slot on your computer. The USB connector is on the rear of the panel. If all is well the displays will light up showing something similar to the following:



You are now ready to use the panel with your software. Refer to the relevant section of this manual for your software which will detail how to configure the software to use the panel. Also refer to the manual that came with your software. If you can find any information in either this manual or the manual that came with your software then check the Tangent Wave website for the latest version or contact your software provided for their latest manual.

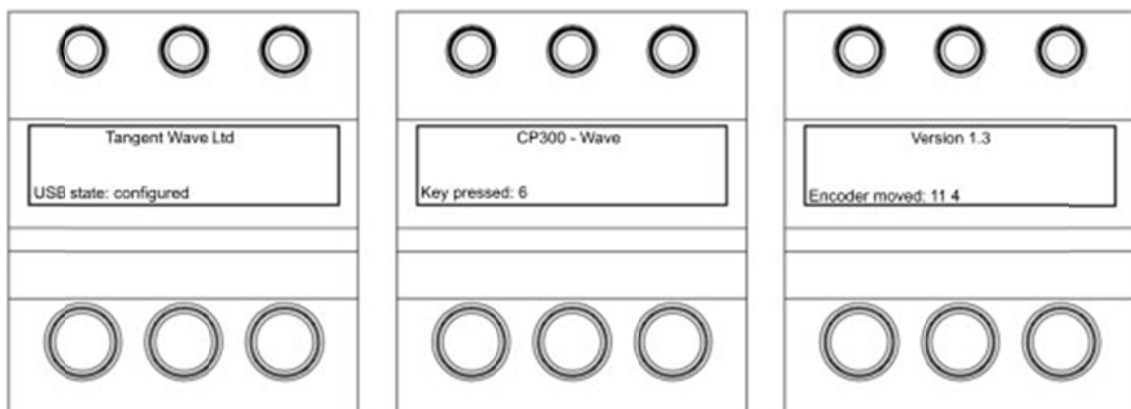
## 10. Test mode

By default the panel will come up in a test mode when you plug it into your computer and your software is not running.

To enter the Test Mode, do the following:

- Turn the panel off by unplugging the USB cable.
- Make sure your software is not running.
- Turn the panel back on by plugging in the USB cable.

The displays will now show something similar to the following:



What you see will differ slightly, but basically lines above tell you the following:

### 10.1 Version

This is the panel firmware version number. See the section on updating the firmware for more information on this.

### 10.2 USB state

This is the current status of the USB connection. This will change and update rapidly when the panel is first plugged in but it should finish by saying **configured**. If it doesn't say this after a few seconds then remove the USB connection and plug it back in again.

If you move any of the controls or press any of the buttons the appropriate bottom line of the display will change to show you the status of the control or button which has been changed. The following describes what you should see for each control or button:

### 10.3 Knobs and dials

If you move a knob, dial or a trackerball the bottom line of the right display will show something similar to this:

**Encoder moved: 11 4**

The first number is the ID number for that control, in this case 11. The second number is the amount it's moved by, in this case 4. The number gets bigger the faster you turn the control. This should be positive when the knob is turned clockwise and negative if turned anti-clockwise. If the number is always -1 or 1, or doesn't change then the knob or dial is faulty.

### 10.4 Buttons

If you press a button the bottom line of the middle display will show something similar to this:

**Key pressed: 6**

In this case button number 6 has been pressed. If this doesn't happen then the button is faulty.

Note: in test mode the buttons are scanned slowly so pressing a button too quickly and releasing it may mean that the press is missed. So be sure to press each button slowly. Under normal working conditions this will not be an issue.

### 10.5 Trackerballs

Just like the knobs and dials, moving the trackerball will cause the bottom line of the right display to show something similar to this:

**Encoder: 15 3**

The first number is the ID number for that control, in this case 15. The second number is the amount it's moved by, in this case 3. The number gets bigger the faster you turn the



control. This should be positive when the ball is moved to the right or up. It will be negative if the ball is moved to the left or down. If it does not change then the ball is faulty.

Note: due to the way the software scans the movements of the balls, it will be hard to see only changes in the left / right direction. The up / down movements are always displayed in preference by the test mode, and as it's difficult to move the ball in just the left / right direction with out moving it up / down, you'll always see mostly up / down changes.

## 11. Trouble-shooting

### 11.1 A button doesn't work

Go into test mode and follow the button test procedure. If the button doesn't work in the test mode then the button is broken. In this case please contact Tangent Wave or your reseller.

If the button works in the test mode then it may be a problem with the software you are using the panel with. Contact your software vendor.

### 11.2 A knob doesn't seem to work

Go into test mode and follow the knob test procedure. If the knob doesn't work in the test mode then the knob is broken. In this case please contact Tangent Wave or your reseller.

If the knob works in the test mode then it may be a problem with the software you are using the panel with. Contact your software vendor.

Note: if the knob is turned to quickly then it is possible that the Wave will not be able to keep up with the movement. Try to avoid turning the knob too quickly.

### 11.3 A trackerball doesn't seem to work

Go into test mode and follow the trackerball test procedure. If the trackerball doesn't work in the test mode then the trackerball is broken. In this case please contact Tangent Wave or your reseller.

If the trackerball works in the test mode then it may be a problem with the software you are using the panel with. Contact your software vendor.

Note: from time to time you will need to clean the trackerballs. See Care of your panel - Cleaning the balls. If there is a build up of dust inside the panel it may affect the optical sensor used to track the balls movements.

Note: if the ball is moved to quickly then the optical sensor will not be able to track it. This will produce erratic behaviour in the output from the ball. Try to keep movements of the ball smooth and avoid rapid changes of direction or spinning the ball.

#### **11.4 My software isn't communicating with the panel**

Generally problems with communication are related to setting up your software to talk to the panel. Refer to your software vendors instructions for doing this.

Make sure the USB cable is connected properly. Also make sure the USB port on your computer can supply the 500mA the panel requires. Some laptops do not allow this.

If after doing the above, and taking any relevant action, you're still having trouble, then contact Tangent Wave or your reseller.

### **12. Care of your panel**

Your Wave panel should not be cleaned with harsh abrasives or chemical cleaning products. If they become dirty wipe them with a soft damp cloth.

#### **Cleaning the balls**

From time to time you may need to clean the balls and the trackerball unit that holds them. To do this you need to remove the clip on cover over the ball and then remove the ball. See Getting started - Fitting the balls in to the trackerballs. Clean the ball with a soft damp cloth. To clean inside the trackerball unit use a damp cotton bud, paying close attention to the three metal balls the ball sits on, and the lens which houses the optical sensor.

### **13. Firmware updates**

The firmware in your Wave panel was the most up to date version when your panel was manufactured. It is possible however that a newer version may be available from our website [www.tangentwave.co.uk](http://www.tangentwave.co.uk). Check there under the support tab to see if a newer version is available. Also be sure to read the instructions and release notes with the version.

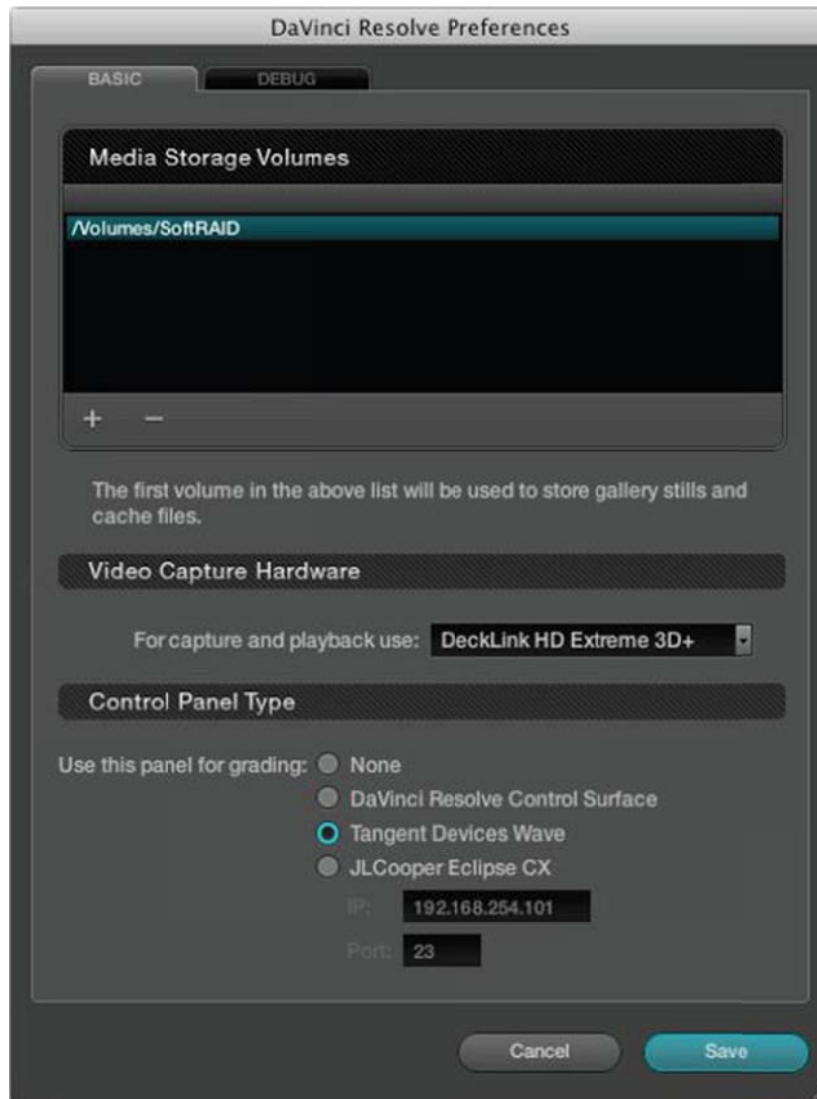
## 14. Connecting the Wave to Da Vinci Resolve

### 14.1 Connection

Connect and install the CP300 Wave to the Resolve computer using the USB cable.

### 14.2 Configuring Resolve

When Resolve is running click Preferences and the following window will appear.



Choose **Tangent Devices Wave** from the menu and click **Save**.

### 14.3 Important Note

Please note that, when configured to use the Wave panel, Resolve takes exclusive control of the panel. This is even true when Resolve is not running.

When you want to use the Wave panel with another application then you will need to return to the above window and choose **None** as the panel option.

## 15. Connecting the Wave to Color (Apple)

### 15.1 Introduction

Although Wave does not need a driver to work with Mac OS X, it does need a plug-in to enable it to talk to Color. Also, in order for you to customise how Wave controls Color there's an application called the Panel Control Mapper. These are bundled together in a Mac OS X installation package called Tangent Color Support.

Once you have installed the Tangent Color Support package you must first run the Panel Control Mapper to select the Wave panel. Please refer to the Tangent Color Support Package Manual for details. You'll find on the disc that came with your Wave.

### 15.2 Installing the software

Insert the disc that came with your Wave panel into your Mac.

Open the disc in a finder window by double clicking on the disc icon.



Double click on the Tangent Color Support package to start the installation and follow the on-screen instructions.

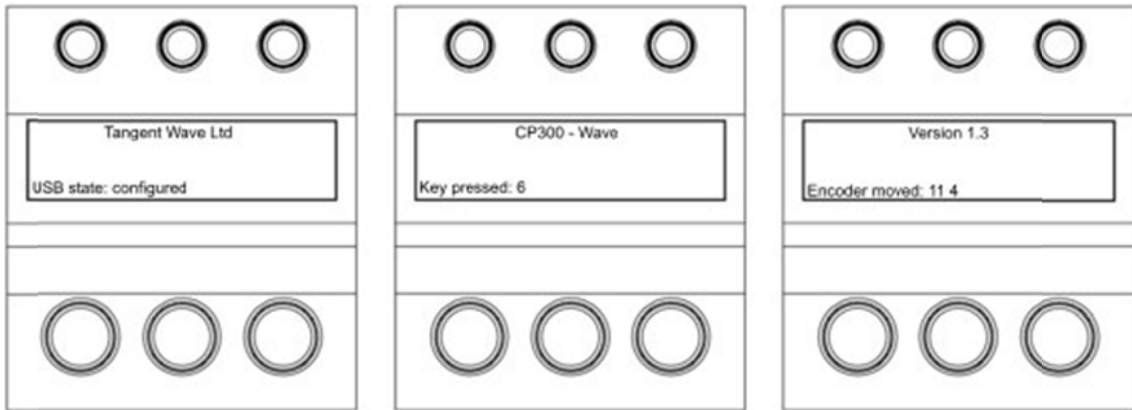


You may be prompted to enter your password. This is the password for your user account on your Mac and the password that you enter when you update your Mac's system software.

### 15.3 Configuring Color to use your Wave panel

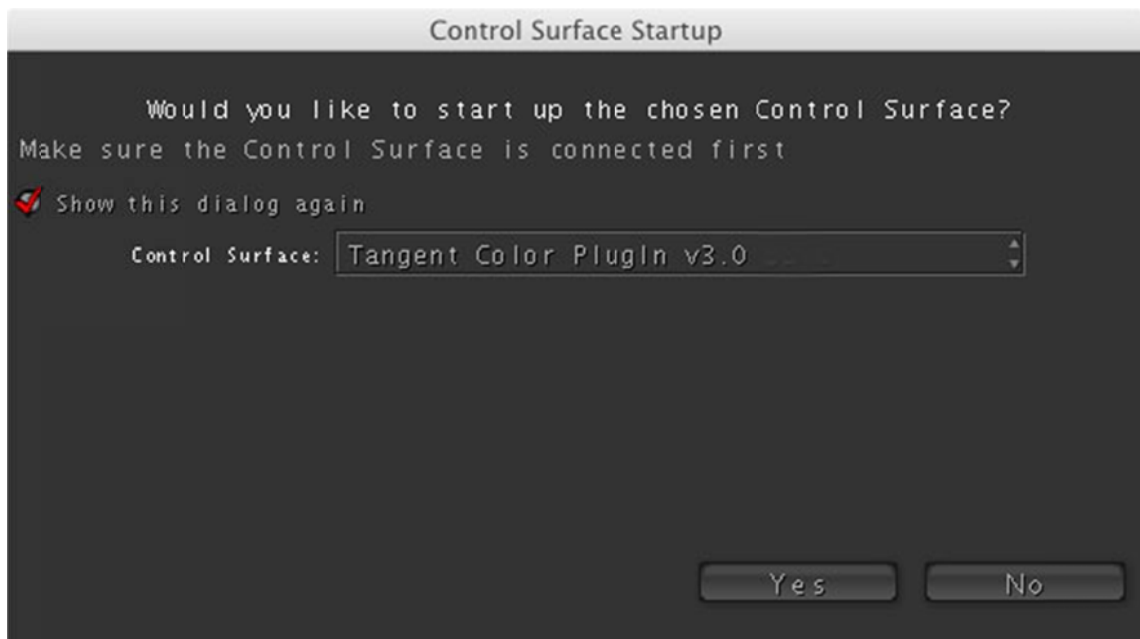
Make sure you have installed the Tangent Color Support package and configured the Panel Control Mapper as described in the Installing the software section above.

You need to plug your Wave panel into your Mac with the USB cable it came with. This is just a standard USB cable so you can use your own if you wish. If everything is ok you should see the following (or similar) on the Waves' displays:



If you don't see the above then refer to the Trouble-shooting section of this manual.

Now start Color. When you start Color you may get a pop-up dialog window similar to the one shown below. Don't worry if you don't as you can get to this window once Color is running as explained later. This is the Color Control Surface Setup window.

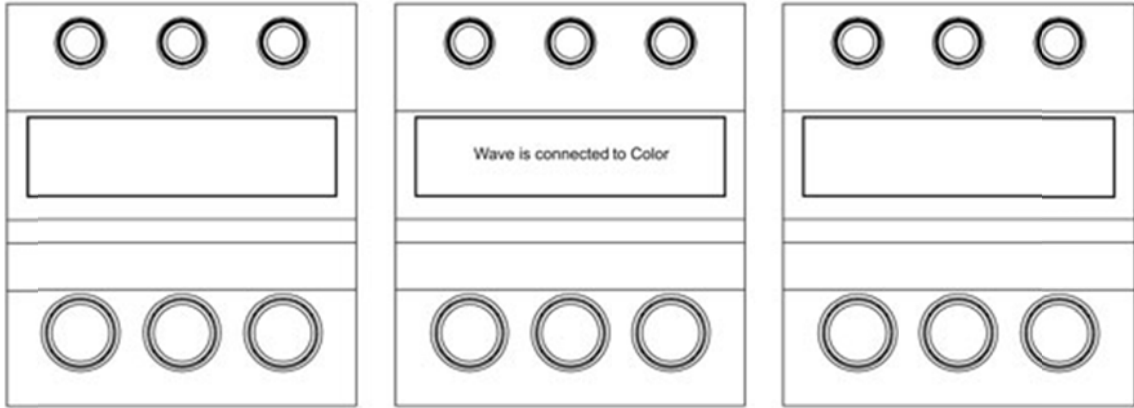


The Control Surface menu in the middle of the window allows you to choose what panel you are using Color with. If this isn't set to Tangent Color PlugIn then do this now. Then press Yes.

If you don't see the Control Surface Setup window then in Color go to the Setup room. Click on the User Prefs tab at the bottom and then click on Show Control Surface Dialog which is at the top right of the User Prefs. Don't forget you will have to load or create a

project in Color in order to get to the rooms. Once you have selected Tangent Wave Color PlugIn as the control surface type quit Color and restart it. It is a good idea for now to also check the Show this dialog again option, you can always turn this off again later.

After you have clicked Yes the display on Wave should show the following:



You now need to load a project. Once you have done this Wave will load its control map and the displays will update to reflect this.

## 16. Connecting the panels to Scratch (Assimilate)

### 16.1 Connection

Connect and install the CP300 Wave to the SCRATCH computer using the USB cable.

### 16.2 Setting up communication with SCRATCH

SCRATCH uses the `cs_devices.xml` file to configure communications with external control surface devices. This file is located at `C:\Program Files\Assimilate\Settings`.

Do not edit the default file. Instead, create a copy of the file and rename it '`cs_devices_init.xml`'. Then open this file in any text editing program such as Notepad.

The file lists all devices that can be configured with SCRATCH. Locate the section dedicated to the CP300. It will look like this:

```
<device name="Tangent CP-300 Wave" mode="disabled" >
  <driver>CsDrv_TangentCP300.dll</driver>
  <entry_data>
    <!-- The Tangent Wave panel does not require a specific ID number -->
    <vip>0x04D8</vip>
    <pid>0xFDCF</pid>
    <idle_timeout>125</idle_timeout>
  </entry_data>
  <!-- We have 3 displays with 5 lines each -->
  <display>0</display>
  <lines>15</lines>
</device>
```

To enable the CP300, change the `mode="disabled"` to `mode="enabled"`. in the first line. No further modifications are necessary, so save the file and exit the text editor.

### 16.3 Setting up the default panel mapping

SCRATCH installs a default file for use with the CP300 Wave.

In the folder `C:\Program Files\Assimilate\Settings`, locate the '`cs_mappings_Wave.xml`' file. This is the file that contains the default CP300 mappings. To use this file with SCRATCH, create a copy of this file and rename it '`cs_mappings_init.xml`'. If you already have a file with this name, make a backup copy of it before overwriting with this new version.

Launch SCRATCH and you will have the default CP300 mappings available. The display will show the current SCRATCH build number. The panels will switch to displaying the actual functions once you have entered the SCRATCH Player.

See the SCRATCH User Guide for details on customizing the control surface functions.

Note: If you have '`cs_mappings.xml`' files in your SCRATCH User folder, they will be used instead of the default mapping file. To use the default mappings, remove any existing '`cs_mappings.xml`' files from all SCRATCH User folders.

## **17. Connecting the Wave to Speedgrade / Framecycler (Iridas)**

### **17.1 Overview**

The Tangent CP300 "Wave" is supported with all IRIDAS FrameCycler and SpeedGrade 2009 products. Depending on the feature set of the application the CP300 can be used for playback control, applying looks, color grading.

### **17.2 Setup**

Connect Wave computer as described in this manual.

Open your FrameCycler or SpeedGrade application, it will automatically detect that the CP300 is present. You don't need to make any further adjustments, the device is ready to use.

### **17.3 Changing the sensitivity of trackballs, wheels and knobs**

To adjust the sensitivity simply open the settings of FrameCycler or SpeedGrade, then check for "Tangent". This area applies to both the CP200 and the CP300 series. You can leave all fields for IP address space and unit IDs blank when using the CP300. Scroll to the end of the page. Use the sliders to adjust the sensitivity.