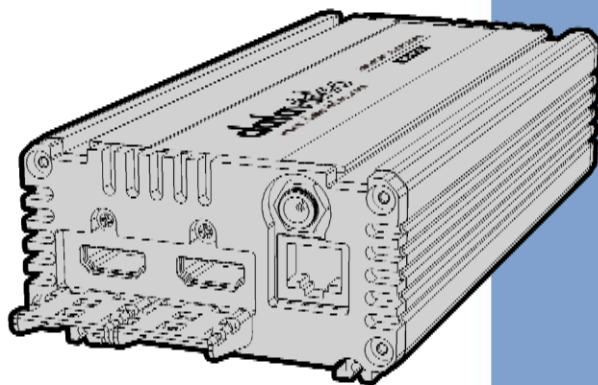


datavideo



HDMI TITLE CREATOR

TC-100

Instruction Manual

www.datavideo.com

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Disclaimer of Product & Services

The information offered in this instruction manual is intended as a guide only. At all times, Datavideo Technologies will try to give correct, complete and suitable information. However, Datavideo Technologies cannot exclude that some information in this manual, from time to time, may not be correct or may be incomplete. This manual may contain typing errors, omissions or incorrect information. Datavideo Technologies always recommend that you double check the information in this document for accuracy before making any purchase decision or using the product. Datavideo Technologies is not responsible for any omissions or errors, or for any subsequent loss or damage caused by using the information contained within this manual. Further advice on the content of this manual or on the product can be obtained by contacting your local Datavideo Office or dealer.

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.

Warnings and Precautions



1. Read all of these warnings and save them for later reference.
2. Follow all warnings and instructions marked on this unit.
3. Unplug this unit from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this unit in or near water.
5. Do not place this unit on an unstable cart, stand, or table. The unit may fall, causing serious damage.
6. Slots and openings on the cabinet top, back, and bottom are provided for ventilation. To ensure safe and reliable operation of this unit, and to protect it from overheating, do not block or cover these openings. Do not place this unit on a bed, sofa, rug, or similar surface, as the ventilation openings on the bottom of the cabinet will be blocked. This unit should never be placed near or over a heat register or radiator. This unit should not be placed in a built-in installation unless proper ventilation is provided.
7. This product should only be operated from the type of power source indicated on the marking label of the AC adapter. If you are not sure of the type of power available, consult your Datavideo dealer or your local power company.
8. Do not allow anything to rest on the power cord. Do not locate this unit where the power cord will be walked on, rolled over, or otherwise stressed.
9. If an extension cord must be used with this unit, make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord rating.
10. Make sure that the total amperes of all the units that are plugged into a single wall outlet do not exceed 15 amperes.
11. Never push objects of any kind into this unit through the cabinet ventilation slots, as they may touch dangerous voltage points or short out parts that could result in risk of fire or electric shock. Never spill liquid of any kind onto or into this unit.

12. Except as specifically explained elsewhere in this manual, do not attempt to service this product yourself. Opening or removing covers that are marked “Do Not Remove” may expose you to dangerous voltage points or other risks, and will void your warranty. Refer all service issues to qualified service personnel.
13. Unplug this product from the wall outlet and refer to qualified service personnel under the following conditions:
 - a. When the power cord is damaged or frayed;
 - b. When liquid has spilled into the unit;
 - c. When the product has been exposed to rain or water;
 - d. When the product does not operate normally under normal operating conditions. Adjust only those controls that are covered by the operating instructions in this manual; improper adjustment of other controls may result in damage to the unit and may often require extensive work by a qualified technician to restore the unit to normal operation;
 - e. When the product has been dropped or the cabinet has been damaged;
 - f. When the product exhibits a distinct change in performance, indicating a need for service.

Warranty

Standard Warranty

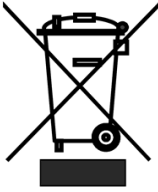
- Datavideo equipment are guaranteed against any manufacturing defects for one year from the date of purchase.
- The original purchase invoice or other documentary evidence should be supplied at the time of any request for repair under warranty.
- The product warranty period begins on the purchase date. If the purchase date is unknown, the product warranty period begins on the thirtieth day after shipment from a Datavideo office.
- All non-Datavideo manufactured products (product without Datavideo logo) have only one year warranty from the date of purchase.
- Damage caused by accident, misuse, unauthorized repairs, sand, grit or water is not covered under warranty.
- Viruses and malware infections on the computer systems are not covered under warranty.
- Any errors that are caused by unauthorized third-party software installations, which are not required by our computer systems, are not covered under warranty.
- All mail or transportation costs including insurance are at the expense of the owner.
- All other claims of any nature are not covered.
- All accessories including headphones, cables, and batteries are not covered under warranty.
- Warranty only valid in the country or region of purchase.
- Your statutory rights are not affected.

Three Year Warranty

- All Datavideo products purchased after July 1st, 2017 are qualified for a free two years extension to the standard warranty, providing the product is registered with Datavideo within 30 days of purchase.
- Certain parts with limited lifetime expectancy such as LCD panels, DVD drives, Hard Drive, Solid State Drive, SD Card, USB Thumb Drive, Lighting, Camera module, PCIe Card are covered for 1 year.
- The three-year warranty must be registered on Datavideo's official website or with your local Datavideo office or one of its authorized distributors within 30 days of purchase.



Disposal



For EU Customers only - WEEE Marking

This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.



CE Marking is the symbol as shown on the left of this page. The letters "CE" are the abbreviation of French phrase "Conformité Européene" which literally means "European Conformity". The term initially used was "EC Mark" and it was officially replaced by "CE Marking" in the Directive 93/68/EEC in 1993. "CE Marking" is now used in all EU official documents.

Introduction

Thank you for purchasing the Datavideo TC-100, Title Creator, overlay box. The TC-100 can be used with Datavideo's Windows based CG-200 Character Generator software.

The TC-100 is designed to be portable and rugged as well as quick and easy to set up in the field. It allows producers to create professional CG overlays with a Windows laptop instead of transporting a high end desktop PC with PCIe cards fitted.

The box receives graphics/title signal from the PC's HDMI output and overlays graphics/title signal on the HDMI live video signal. There are two graphics/title options, either CG titles or luma key. The TC-100 box can also overlay a logo on the output signal.

This manual will cover the TC-100 overlay box only, a separate manual is provided with the supplied Character Generator software.

Features

- Live title generator
- Supports video resolutions up to 1080p 50/60
- Title editing on laptop
- No additional PCI card required
- Compatible with Windows 7/8 or above

Major Five

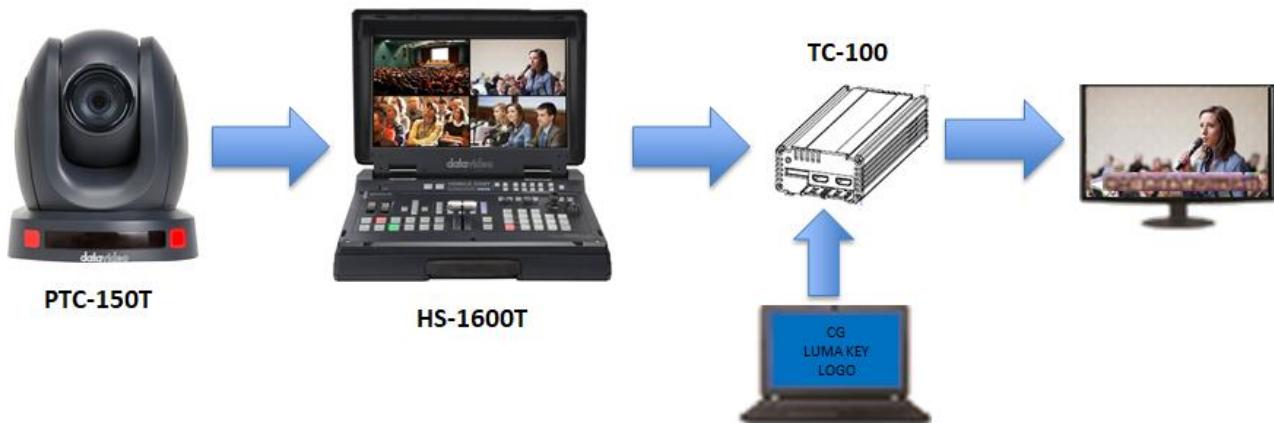
- HDMI input and output for laptop CG overlay input.
- Supports HD video up to 1080p 50/60
- Luma key for Title Overlay
- Logo overlay function
- Real-time graphics and titles

How to download the CG-200 CG Software

The CG-200 is a piece of CG software that allows users to create subtitles and logo. To download the latest CG-200 software, please visit Datavideo's official website <http://www.datavideo.com/product/CG-200>.

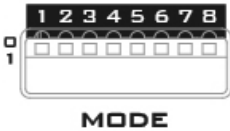
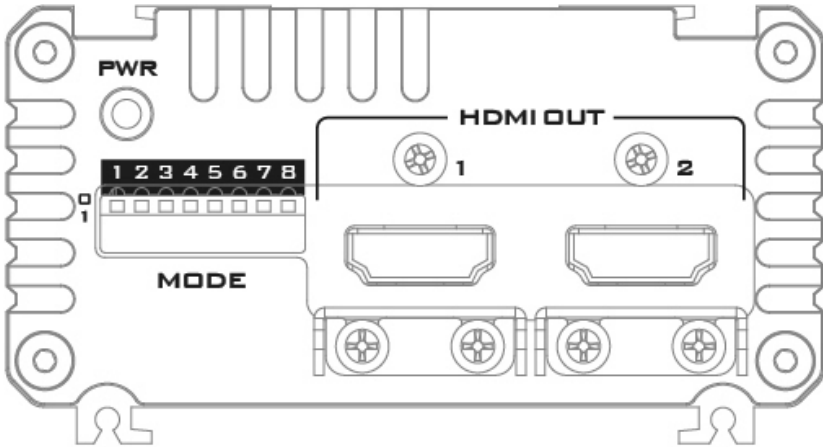
Minimum computer requirements:

See CG software manual.



Connections & Controls

Front Panel



Mode Select

The DIP Switch allows the user to configure the following TC-100 settings.

MODE			
↑ ↓ 1			
1 2 3 4 5 6 7			
DEVICE MODE	DEVICE MODE	TITLE OVERLAY	LOGO OVERLAY
00 50Hz	00 1920x1080i	00 TITLE OVERLAY OFF	0 LOGO OFF
01 60Hz	01 1920x1080p	10 CG TITLES OVERLAY	1 LOGO ON
10 59.94Hz	10 1280x720p	01 LUMA KEY TITLES OVERLAY	



HDMI Output

Output videos with title or logo overlay.

Note: If you found audio or video functions not working properly, restart the device power or disconnect and then reconnect the video source.

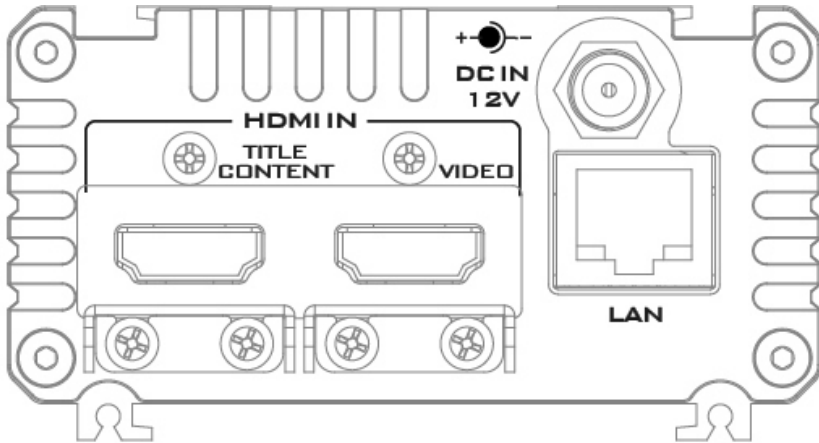
PWR



Power LED

Turned **ON** when power is connected.

Rear Panel



Title Content from PC Input (HDMI)

Connect to the PC or laptop via an HDMI cable to receive title input from the computer. Subtitles or logo will be placed on the video received at the **Video** port.



HDMI Video Input

The **HDMI Video Input** connects a video source via an HDMI cable. Subtitles or logo received at the **Title Content** port will be placed on the video.



Ethernet Port (RJ-45)

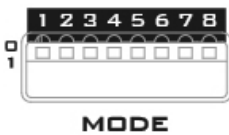
10/100M Ethernet Network Interface for connecting to the PC/laptop to access the TC-100 configuration tool.



DC In Socket

Connect the supplied 12V PSU to this socket. The connection can be secured by screwing the outer fastening ring of the DC In plug to the socket.

DIP Switch Control

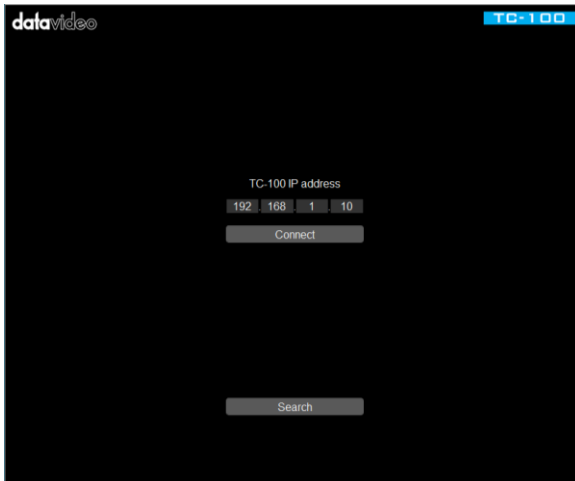


The TC-100 provides an 8 position DIP Switch for users to configure device modes, title overlay and logo overlay. Please see following table for details of the DIP Switch control.

DIP Switch Position 1/2	Device Mode (Frame Rate)
0/0	50 Hz
0/1	60 Hz
1/0	59.94 Hz
DIP Switch Position 3/4	Device Mode (Resolution)
0/0	1920 x 1080i
0/1	1920 x 1080p
1/0	1280 x 720p
DIP Switch Position 5/6	Title Overlay
0/0	OFF
0/1	Luma key titles overlay
1/0	CG titles overlay
DIP Switch Position 7	Logo Overlay
0	Logo OFF
1	Logo ON

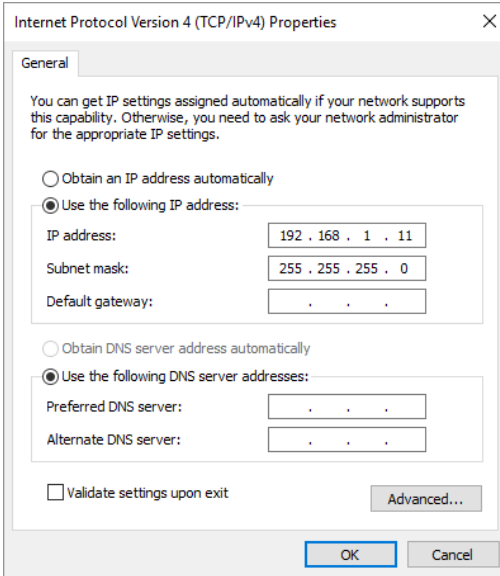
Access the TC-100 using the Configuration Tool

1. To configure the TC-100, first establish direct connection between the PC (laptop) and the TC-100 via an Ethernet cable.
2. Power ON the TC-100 by connecting a 12 V power supply to the DC In socket.
3. Once the TC-100 is powered ON, double click the TC-100 configuration tool icon to enter the IP search page.



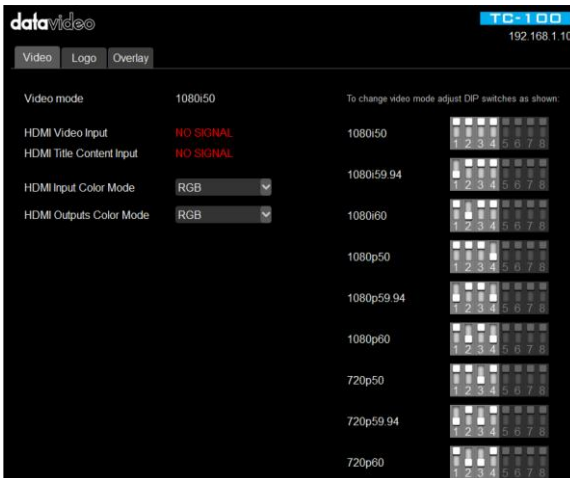
Note: Download the TC-100 configuration tool from Datavideo's official website.

4. Manually set the PC's IP address and make sure it has the same IP address range as the TC-100. In the example shown below, we have set the PC's IP address to 192.168.1.11.



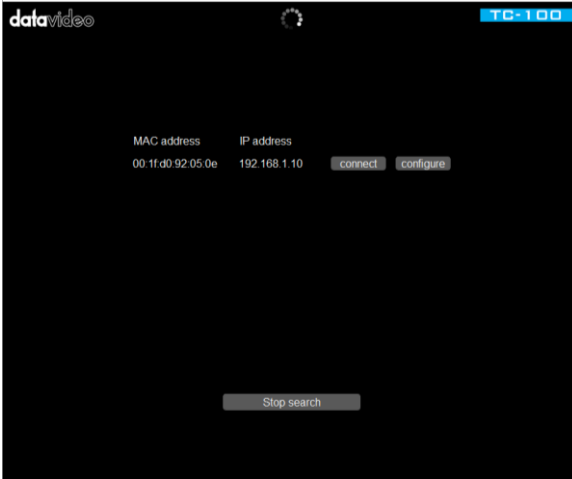
Note: If you are connected to a local area network and there are multiple TC-100 devices on your network, click “Search” to find all available devices connected.

5. After you have configured your PC’s IP address, click the “Connect” button to enter the configuration interface as shown below.



Change the device's IP address

1. On the Connect page of the configuration tool, click the search button to display a list of the connected devices.



2. Click the “configure” button to change the IP address of the device.



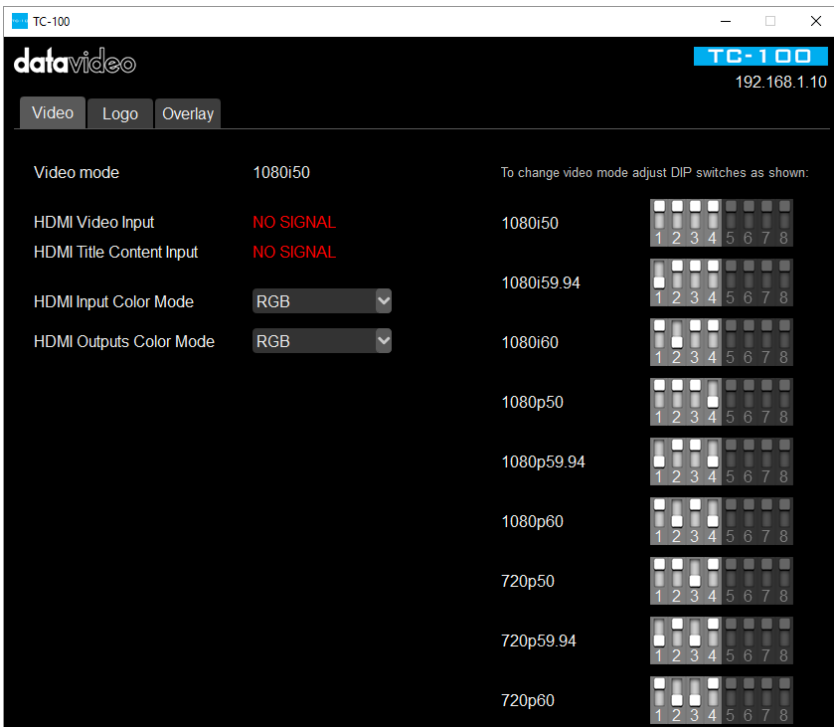
Configuration Tool

In the previous sections, once you are successfully connected to the TC-100 via Ethernet port, you will be taken directly to the Video tab and on the page that opens, you will be able to view your video settings and select color mode for HDMI video input and outputs.

Logo and Overlay tabs allow you to set the logo and subtitles to be placed on the input video respectively. Note that you are allowed to enable title and logo overlay simultaneously. See [DIP Switch Control](#) section to manually enable these modes.

Video

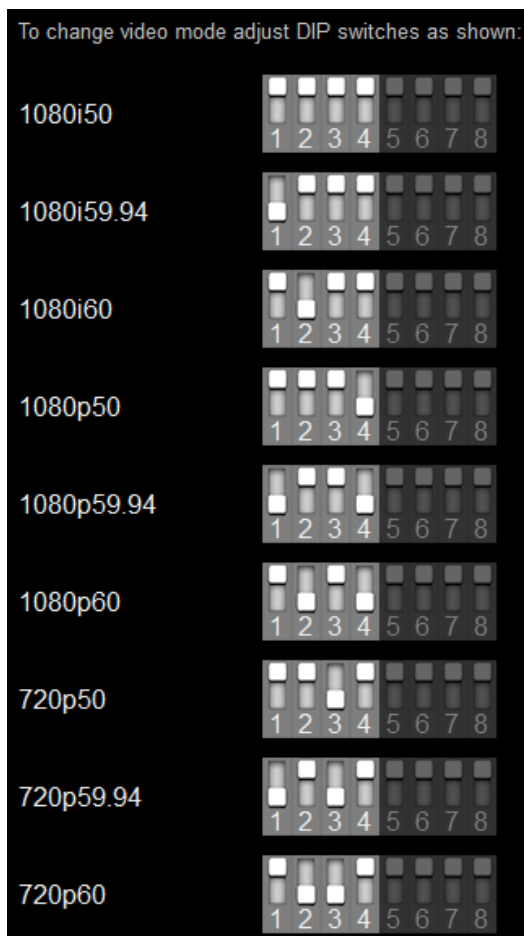
Click **Video** tab to view the video settings as shown below.



Click the color mode pull-down menu to set the color mode. The three color mode options for HDMI video input and outputs are listed as follows:

- RGB
- YUV 4:2:2
- YUV 4:4:4

To change the video mode settings, adjust the DIP Switch positions 1-4 according to the corresponding settings shown in the diagram below.



Note: you can also find these settings in the Video tab of the TC-100 configuration tool.

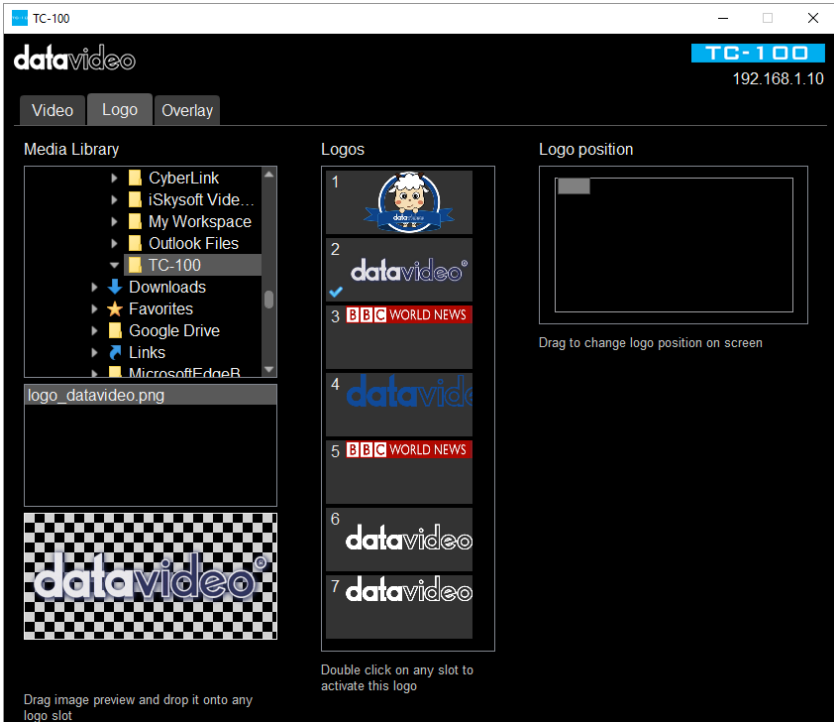
Logo

Before you use the logo function, you will have to enable it by setting the DIP Switch position 7 to 1. See [DIP Switch Control](#) section.

The **Logo** tab allows you to browse the media library on your computer's hard disk. Right below the browsing window, you will be able to see a list of available logo files. To preview the logo, simply click the file name.

Make sure the logo files are of the size of 256 x 128 pixels. Acceptable file types are tga, png, bmp, jpg, gif, lbl and bin (8 bits/Channel). If the output resolution is set to 720p, the logo will appear visually bigger to viewers.

Selected logos are displayed as thumbnail pictures in the center column. Double click to activate the desired logo. On the right, drag the small grey rectangular box to change the logo position on the output screen.

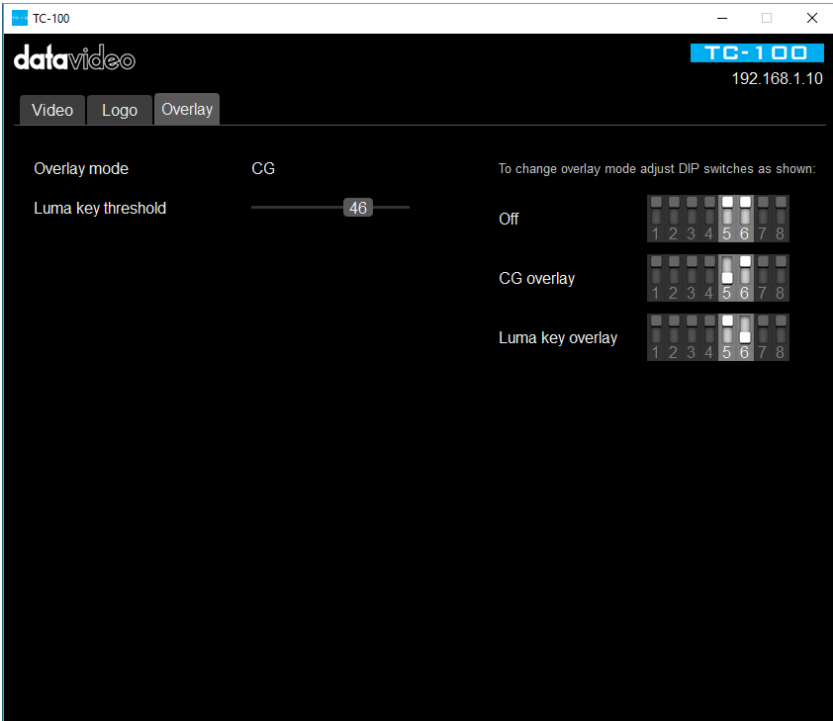


Note: Make sure the logo image that you save in the media library directory is against a transparent background.

Overlay

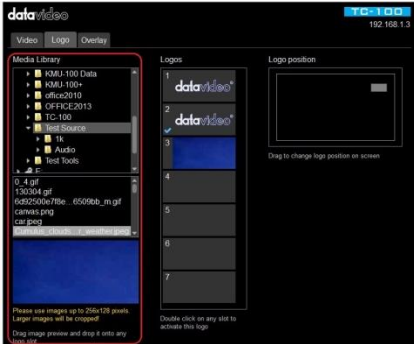
The TC-100 offers the user two ways to insert subtitles. To insert subtitles using **luma key** function, set the **DIP Switch position 5/6 to 0/1**. For instructions on how to use luma keyed subtitles, see the subsequent section for details. To insert **CG subtitles**, simply set the **DIP Switch position 5/6 to 1/0 and create CG subtitles with Datavideo's CG-200 Character Generator Software**.

To disable the Overlay function, simply set the DIP Switch position 5/6 to 0/0.

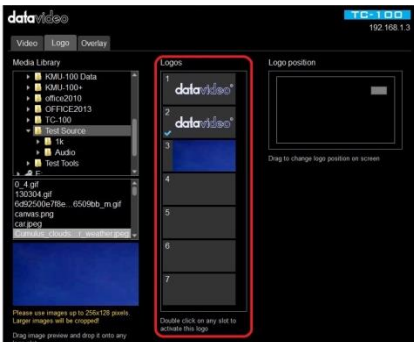


Configuring the Logo

Follow the steps below to overlay the logo on your output screen.



1. The **Logo** tab allows you to browse the media library on your computer's hard disk. Right below the browsing window, you will be able to see a list of available logo files and click the file name to preview the logo.



2. To place logos in the center screen, click and drag the selected logo file name to the **"Logos"** column.

Double click a thumb nail picture in the **"Logos"** column to activate the selected logo.

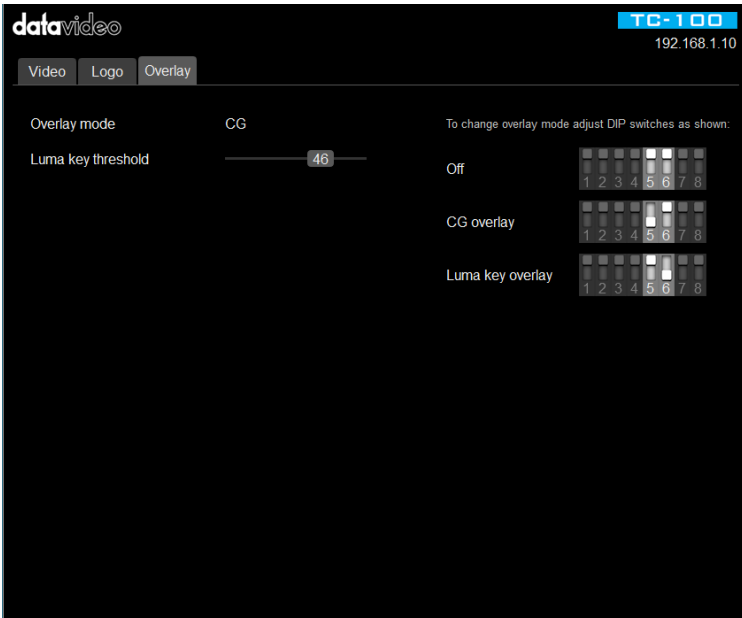


3. Drag the small grey rectangular box to the desired logo position on the output screen.

Configuring Luma Key Subtitles

Follow the steps below to create your own luma key subtitles and display them on the output screen.

1. Create a subtitle against a black or white background using PowerPoint on a laptop.
2. Depending on the color of the background, adjust the luma key threshold accordingly.



3. Set the PowerPoint to full screen to display the subtitle on the output screen.

Note: Please shut down the CG software before using the luma key function to overlay the subtitles.

Firmware Update

Datavideo usually releases new firmware containing new features or reported bug fixes from time to time. Customers can either download the TC-100 firmware as they wish or contact their local dealer or reseller for assistance.

This section outlines the firmware upgrade process which should take ***approximately 10 minutes to complete***.

The existing TC-100 settings should persist through the *firmware upgrade process, which should not be interrupted once started* as this could result in a non-responsive unit.

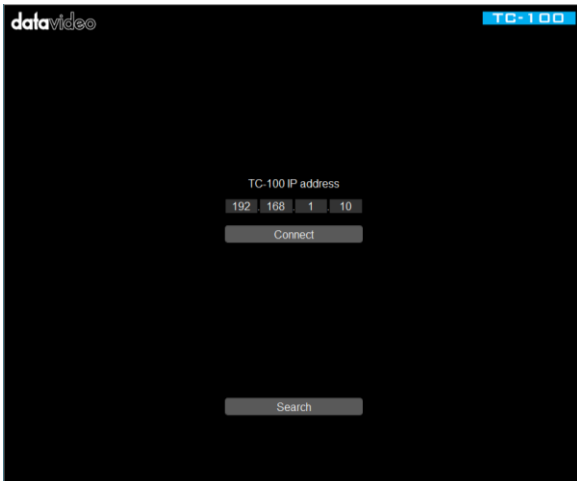
Successful firmware upgrade on TC-100 requires:

- TC-100 x 1
- 12V Power adapter x 1
- Windows PC x 1
- Ethernet Cable x 1

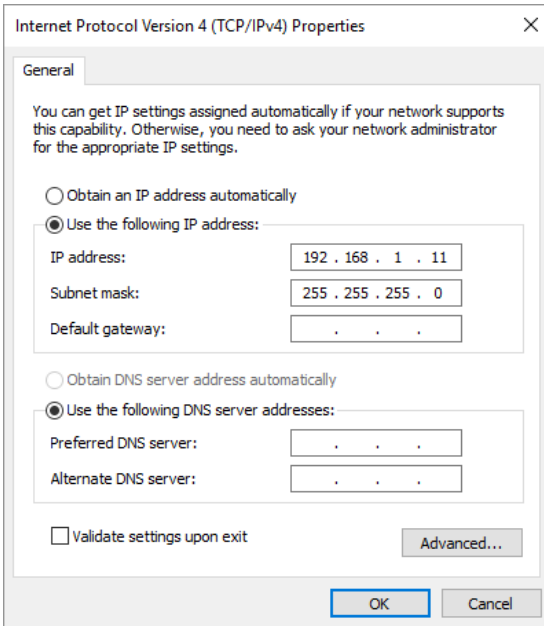
Procedure

1. Connect the TC-100 to a Windows PC via the Ethernet interface.

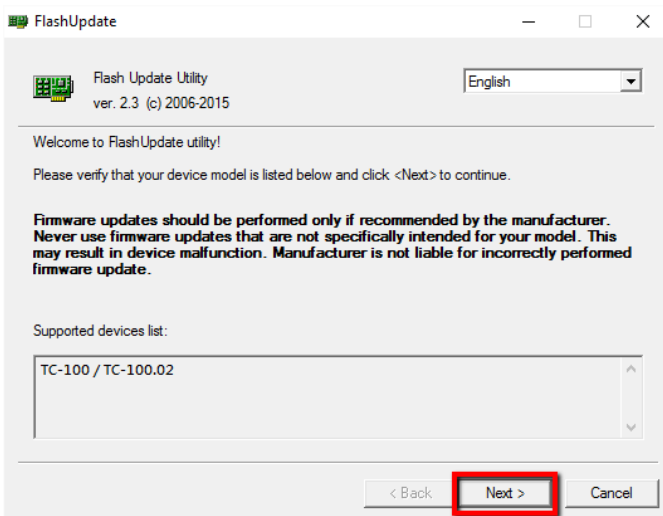
Note: In the example below, the TC-100 has a default IP address of 192.168.1.10



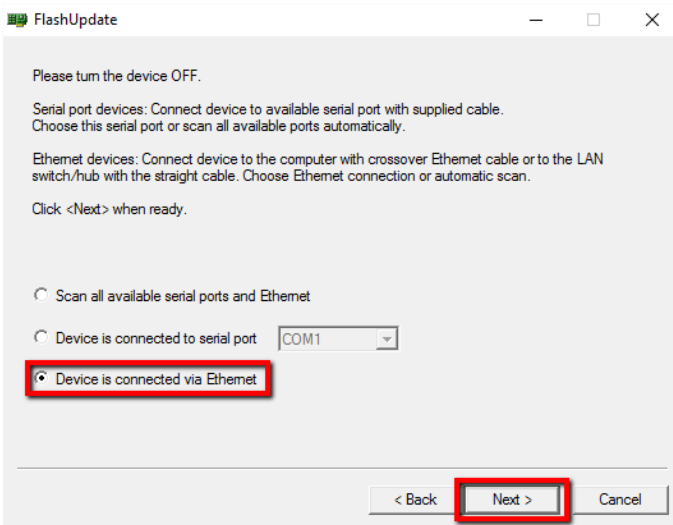
2. Set the PC's IP address to **192.168.1.11**.



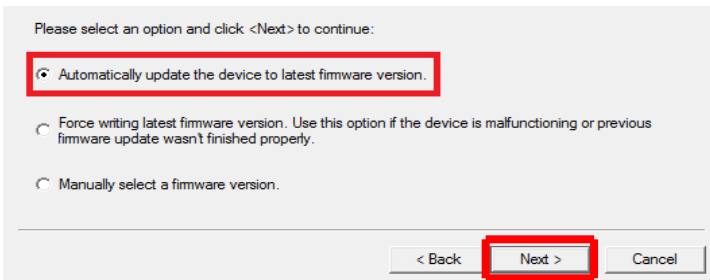
3. Run **FlashUpdate_x.xx.exe** and click **“Next”**.



4. Turn the device off then click **“Next”** after selecting **“Device is connected via Ethernet.”**



5. **POWER ON** the **TC-100** and as soon as it is discovered by the Computer, select **“Automatically update the device to latest firmware version”** then click **NEXT**.



6. Click **Yes button** to confirm you wish to perform the firmware update when you see the prompt window **“Do you really want to perform firmware update?”**.

7. The update process will now begin, taking around 15 minutes to complete.

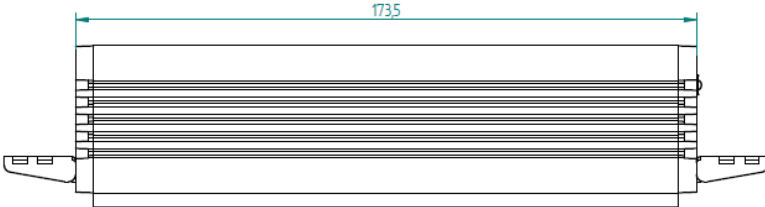
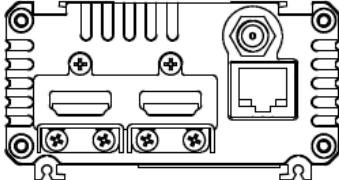
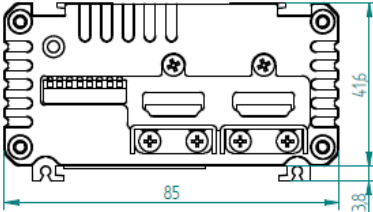
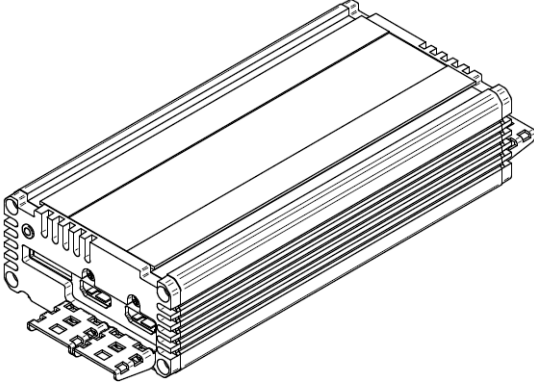
8. Once this process is complete, close the application and power cycle the TC-100.

Frequently-Asked Questions

This section describes problems that you may encounter while using the **TC-100**. If you have any questions, please refer to related sections and follow all suggested solutions. If problem still exists, please contact your distributor or the service center.

No.	Problems	Solutions
1.	Can TC-100 output 1920 x 1080 logo? Currently the maximum logo size supported is 256 x 128.	<p>256 x 128 logo size is the hardware limitation. At this point, it is not possible to increase the logo size due to DDR memory amount and bandwidth.</p> <p>If customers need full-screen graphics, I'd advise to use CG-200 software which outputs 1920x1080 picture without any problem. You can also set the output resolution to 720p to make the logo appear visually larger.</p>
2.	Sometimes audio and video functions fail to work properly after switching the input sources or changing the output format.	Output video will restore after the device power is restarted or the video source is disconnected and then reconnected.
3.	Luma key function fails to overlay subtitles on the video.	Please shut down your CG software before using the luma key overlay.
4.	I cannot open dynamic logo.	Dynamic logo is not supported on the TC-100.

Dimensions



All measurements in millimeters (mm)

Specifications

Video Input	HDMI x 2 (Video and Graphic)
Video Output	HDMI x 2
HDMI Signal Format	<ul style="list-style-type: none"> • 1920×1080p (50/59.94/60) • 1920×1080i (50/59.94/60) • 1280×720p (50/59.94/60)
Internal Processing	20 bit, YCbCr 4-2-2
Video Descriptions	<p>Live video input: HD HDMI signal</p> <ul style="list-style-type: none"> • YUV (4-2-2) • YUV (4-4-4) • RGB (4-4-4) <p>Live Video Output signal</p> <ul style="list-style-type: none"> • YUV (4-2-2) • YUV (4-4-4) • RGB (4-4-4) <p>PC HD HDMI Input signal</p> <ul style="list-style-type: none"> • RGB (4-4-4) <p>CG Software signal</p>
Logo Parameters (PC settings)	<p>Size: 256 x 128 pixels</p> <p>Formats (8bits/ch): tga, png, bmp, jpg, gif, lbl, bin</p> <p>X Position = Left to Right</p> <p>Y Position = Lower to Upper</p> <p>Options = Logo selection 1 to 8</p>
Control	<p>DIP Switch</p> <p>PC via Ethernet (RJ45)</p>
F/W Upgrade	Ethernet (RJ45)
Power Supply	7-15V DC

Service & Support

It is our goal to make your products ownership a satisfying experience. Our supporting staff is available to assist you in setting up and operating your system. Please refer to our web site www.datavideo.com for answers to common questions, support requests or contact your local office below.



Please visit our website for latest manual update.
www.datavideo.com/product/TC-100

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