datavideo

TITLE CREATOR

TC-200

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 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
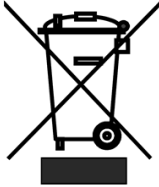
For EU Customers only - WEEE Marking

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-200, Title Creator, overlay box. The TC-200 can be used with Datavideo's Windows based Character Generator software such as CG-200, CG-250, CG-350 and CG-500. The CG Software Series and the TC-200 Title Creator form a DSK subtitle system that allows you to create professional and eye-catching DSK subtitles using your laptop, thereby simplifying and facilitating your video production using mobile switchers.

The TC-200 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 TC-200 Title Creator allows you to create subtitles with your switcher in two different ways.

1. Downstream Key
You may assign alpha signal (key source) and T-signal (fill source) to respective outputs of the TC-200 and then connect them to any switchers equipped with the DSK function such as Datavideo's HS-2800 or HS-1200 switcher.

2. CG Overlay
TC-200 may be configured as a CG overlay device that accepts external SDI video which is then combined internally with the subtitles and delivered to the device output. CG overlay is generally used for switchers without the DSK capability or videos created without subtitles.

This manual covers the TC-200 overlay box only, a separate manual is provided with the supplied Character Generator software.

Features
- HDMI input for laptop CG overlay input*.
- HD/SD-SDI video input for overlay or optional genlock
- Two HD/SD-SDI outputs can be configured as separate Key & Fill outputs or as CG overlay with video

- Supported HD video formats:
    - 1080i50 / 59.94 / 60
    - 720p50 / 59.94 / 60
- Supported SD video formats:
    - 720i 576 / 480
- Supports video resolutions up to 1080i including PAL & NTSC
- CG subtitles can be created on any computers and delivered to TC-200 via HDMI interface.
- The CG user interface runs on Windows XP/7/8.
- CG fonts are compatible with Windows fonts.
- CG software is compatible with all languages available on Windows.
- The CG software supports still and animated file formats such as JPG, TAG, GIF, BMP and PNG.
- News ticker can be positioned on either side of the screen (top, bottom, left and right).
- Unit can be powered from Battery DC voltage when using an accessory battery mounting plate [7 to 15 V DC Input].
- Easy to follow DIP switch configuration

*An optional DVI to HDMI cable or Display Port adaptor to HDMI cable may be required depending on the laptop being used.

How to download the CG-200 CG Software
To download the latest CG-200 software, visit Datavideo official website
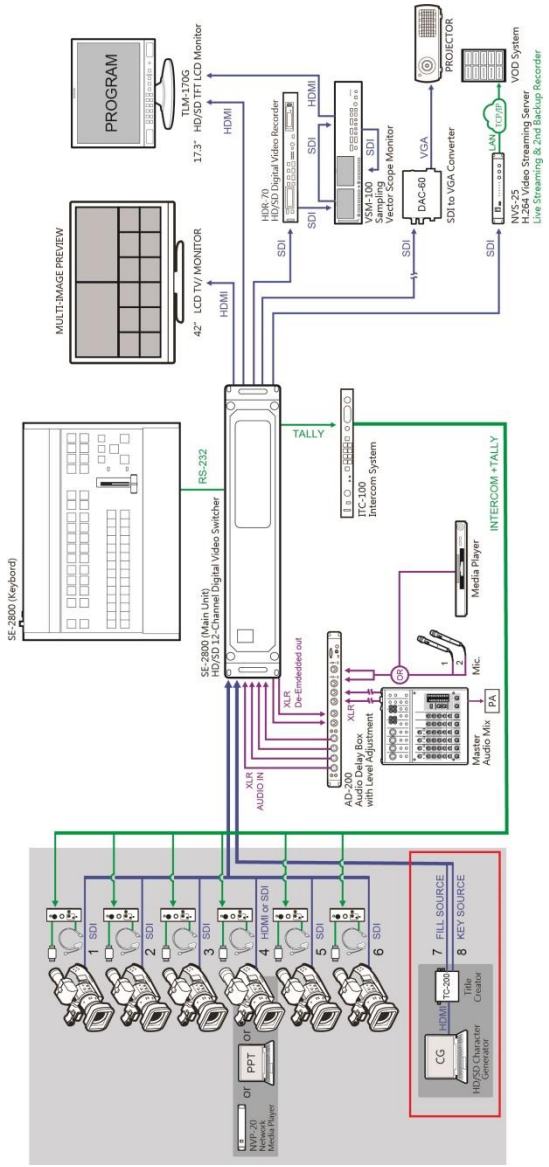http://www.datavideo.com/product/CG-200.

Minimum computer requirements:
Please refer to separate CG software manual.

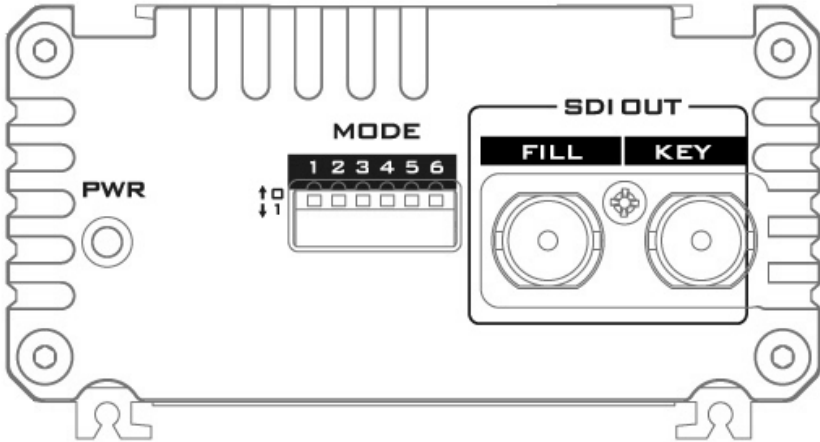## Compatibility of VGA graphics card on Laptop
Compatible with ATI and Intel VGA graphics cards
Color difference may result if used with NVIDIA graphics cards.

Example Set Up with TC-200

Connections & Controls

Front Panel

Mode Select

The DIP switch allows the user to configure the following TC-200 settings.

DEVICE MODE				CONVERSION MODE		CONTROL FROM	
000	1080i 50Hz	100	720p 60Hz	00	HDMI TITLES A-CHANNEL	0	DIP SWITCH
001	1080i 60Hz	101	720p 59.94Hz	01	HDMI TITLES OVERLAY SDI IN	1	PC
010	1080i 59.94Hz	110	576i 50Hz	10	HDMI TITLES A-CHANNEL SDI IN = GENLOCK		
011	720p 50Hz	111	480i 59.94Hz	11	NOT IN USE		
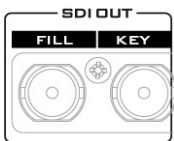
SDI Output

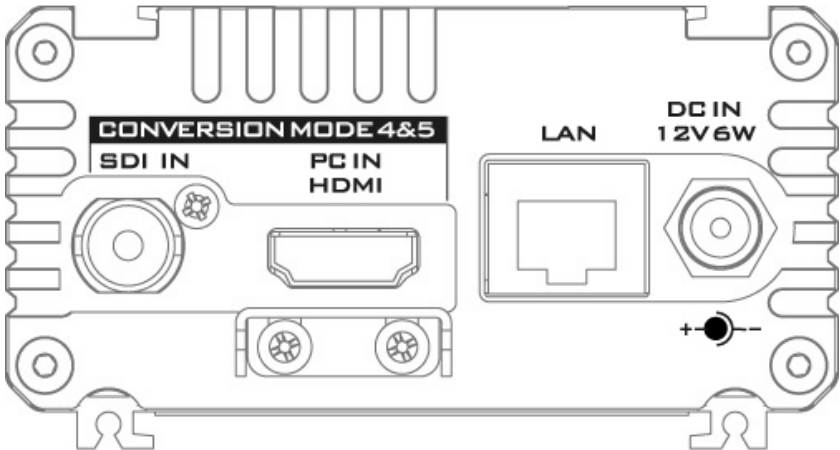Fill & Key channel outputs

PWR

⊙

Power LED
Turned ON when power is connected.

Rear Panel

SDI IN

⊙

HD/SD - SDI Input
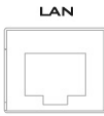The **SDI IN** connects an SDI video source via an SDI cable.

Note: The TC-200 does not support external tri-level sync and black burst genlock signals. It however uses the sync of the SDI input source.

PC IN HDMI

PC Input (HDMI)
Connect a video input from the PC via an HDMI cable.

Ethernet Port (RJ-45)
10/100M Ethernet Network Interface for FW upgrade; see ***Firmware Update*** for more details.
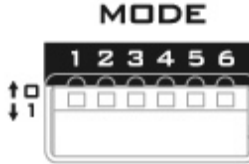
DC In Socket
Connect the supplied 12V PSU to this socket. The connection can be secured by screwing the outer fastening ring of the DC In plug to the socket.

DIP Switch Control

The TC-200 provides a 6 pin DIP switch for users to configure the video format, conversion mode and control interface. ***See the table for details***.

MODE

DIP Switch 1,2,3	Device Modes
0/0/0	1080i50Hz
0/0/1	1080i60Hz
0/1/0	1080i59.94Hz
0/1/1	720p50Hz
1/0/0	720p60Hz
1/0/1	720p59.94Hz
1/1/0	576i50Hz
1/1/1	480i59.94Hz
DIP Switch 4 & 5	**Conversion Modes**
0/0	Split HDMI signal into titles and alpha channel.
0/1	HDMI titles overlay over the input SDI signal.
1/0	Split HDMI signal into titles and alpha channel with Genlock.
1/1	Not in Use
DIP Switch 6	**Control Modes**
0	Configure TC-200 by DIP Switches
1	Configure TC-200 from RJ-45 input

Firmware Update

Datavideo usually releases new firmware containing new features or reported bug fixes from time to time. Customers can either download the TC-200 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-200 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-200 requires:
- TC-200 x 1
- 12V Power adapter x 1
- Windows PC x 1
- Ethernet Cable x 1
- Flash Update Software (the software can be downloaded from the official website)

Procedure
1. Connect the TC-200 to a Windows PC via the Ethernet interface.
Note: TC-200 has a default IP address of 192.168.0.211.
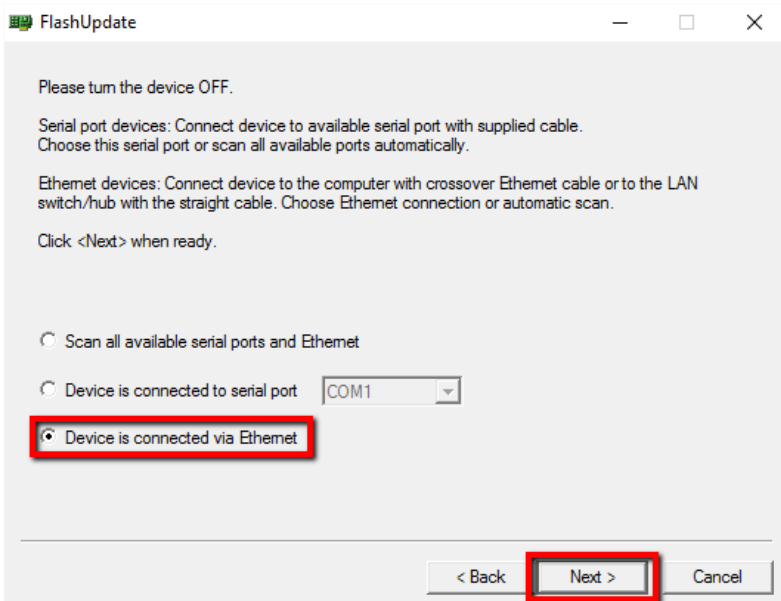
2. Set the PC's IP address to ***192.168.0.11***.

3. Before running the Flash Update software, please set the **TC-200 DIP SW 6** to 1 (DOWN).
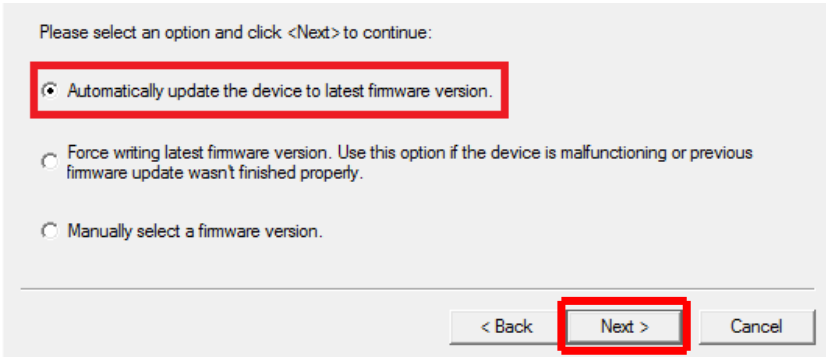
4. Run **FlashUpdate_x.xx.exe** and click "**Next**".
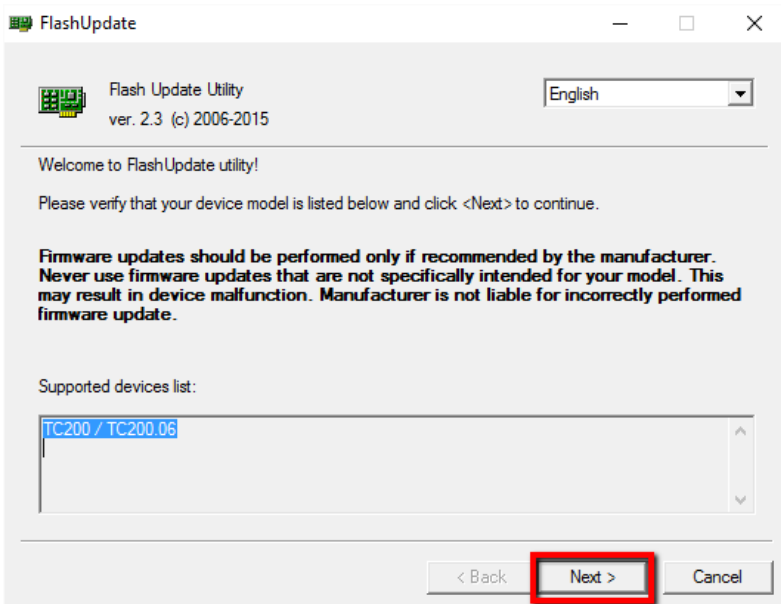
5. Select "***Device is connected via Ethernet***" and click "***Next***".

6. **POWER ON** the **TC-200** and as soon as it is discovered by the Computer, select "**Automatically update the device to latest firmware version**" then click **NEXT**.

7. 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**?".

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

9. Once this process is complete, **close the application** and **power cycle the TC-200**.

Specifications

Text Source	Frame text
	Clock
	Text file
	CSV file
File Format	JPG, PNG, BMP, TGA, GIF
Animation Format	GIF
I / O	HDMI input x 1
	HD/SD-SDI input x 1
	HD/SD-SDI output x 1
	LAN port x 1
Mode	CG overlay: HDMI input is CG; SDI in is live video
	Gen-lock mode HDMI input is CG; SDI in is reference signal
	Reference with internal signal: HDMI input is CG; SDI in isn't in use
Input Format	1920 x 1080i/50Hz
	1920 x 1080i/60Hz
	1920 x 1080i/59Hz 1920 x 1080i/60Hz (instead 1920 x 1080i/59Hz)
	1280 x 720p/50Hz
	1280 x 720p/60Hz
	1280 x 720p/59Hz 1280 x 720p/60Hz (instead 1280 x 720p/59Hz)
	720 x 576i/50Hz 1920 x 1080i/50Hz (crop to 720 x 576i/50Hz)
	720 x 480i/59Hz 1920 x 1080i/60Hz (crop to 720 x 480i/60Hz)
Conversion Mode	HDMI signal is split into titles and alpha channel.
	HDMI signal is split into titles and alpha channel with Genlock.
	HDMI titles overlay over the input SDI signal.
Controlled	By dip switch
	By PC
Power Voltage	12V
F/W Upgrade	Ethernet

Notes

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-200

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