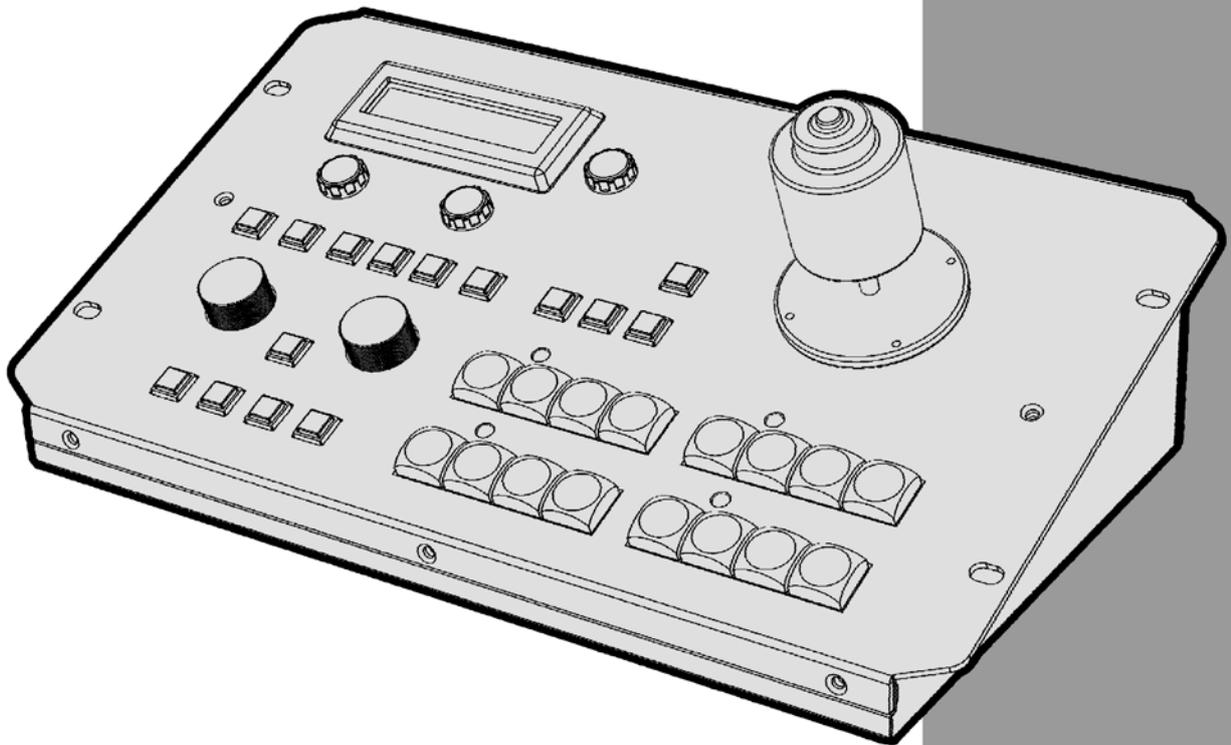


datavideo



**PTZ CAMERA
CONTROL UNIT
RMC-180**

Instruction manual

www.datavideo.com

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Disclaimer of Product and 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.

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 is 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.
- Damage caused by accident, misuse, unauthorized repairs, sand, grit or water is not covered by this warranty.
- All mail or transportation costs including insurance are at the expense of the owner.
- All other claims of any nature are not covered.
- Cables & batteries are not covered under warranty.
- Warranty only valid within the country or region of purchase.
- Your statutory rights are not affected.

Two Year Warranty

- All Datavideo products purchased after 01-Oct.-2008 qualify for a free one year extension to the standard Warranty, providing the product is registered with Datavideo within 30 days of purchase. For information on how to register please visit www.datavideo.com or contact your local Datavideo office or authorized Distributors
- Certain parts with limited lifetime expectancy such as LCD Panels, DVD Drives, Hard Drives are only covered for the first 10,000 hours, or 1 year (whichever comes first).



Any second year warranty claims must be made to your local Datavideo office or one of its authorized Distributors before the extended warranty expires.

Disposal



For EU Customers only - WEEE Marking.

This symbol on the product indicates that it should not be treated as household waste. It must be handed over to an applicable take-back scheme for the recycling of Waste Electrical and Electronic Equipment. For more detailed information about the recycling of this product, please contact your local Datavideo office or your local recycling centre.

1. Introduction

The Datavideo RMC-180 Controller is capable of controlling up to 4 Datavideo Pan Tilt Zoom (PTZ) cameras such as the PTC-150.

To get more value out of your equipment, please take a few minutes to read this manual thoroughly. This will help you to familiarise yourself with all aspects of the RMC-180 PTZ Camera Control Unit.

That's Datavideo; sharing the value!

1.1 Features

- Remote control of up to four Pan, Tilt and Zoom cameras
- Pan, Tilt and Zoom with speed control by joystick
- Control of Pan, Tilt and Zoom as well as Iris, Focus, Gain, and other functions over Ethernet
- Multiple presets for PTZ settings for each individual camera
- Full remote control of each camera via serial communication over affordable network cabling
- Compatible with Datavideo's switcher tally indicators
- Compact design for easy installation
- Easy integration with Datavideo HD switchers for an affordable multi-camera solution.

1.2 Compatible Control Standards

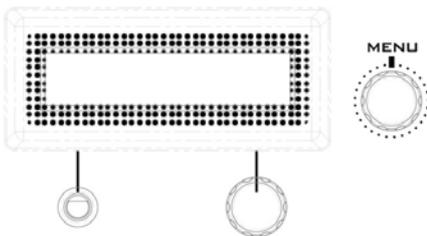
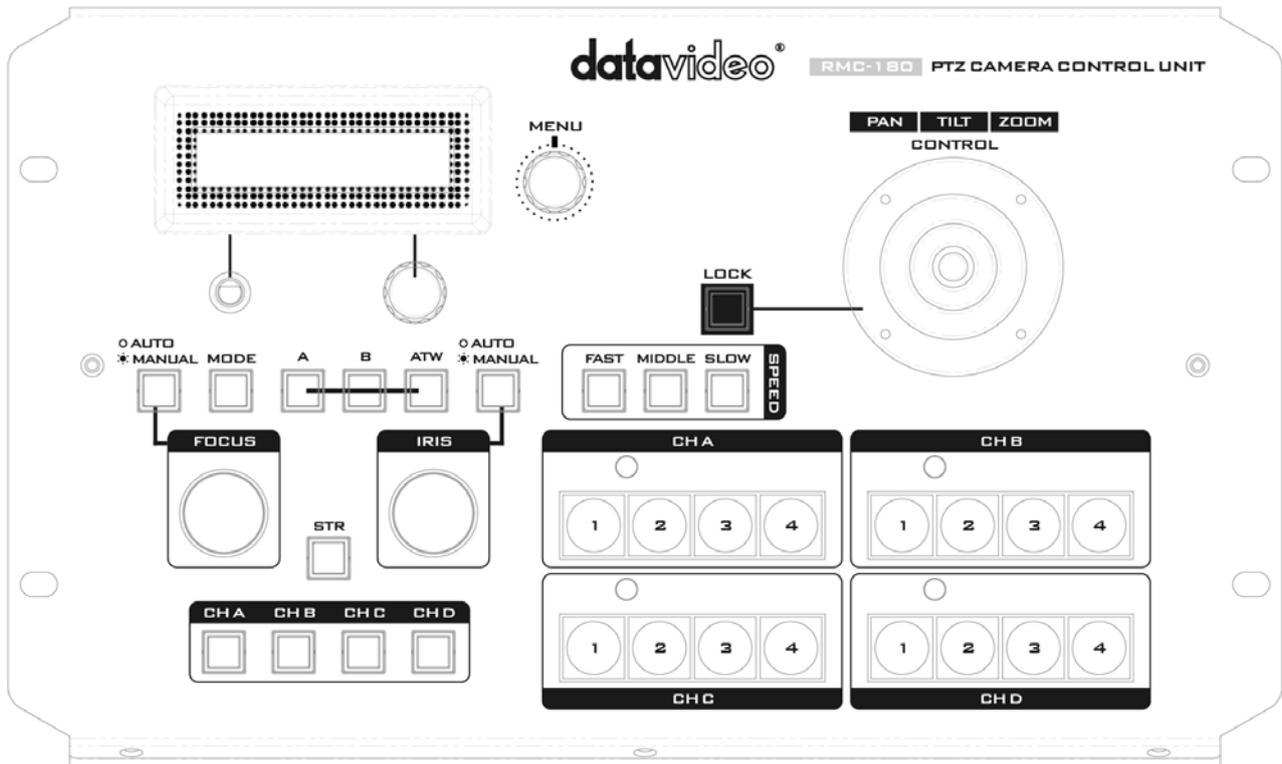
Depending on your chosen PTZ camera(s) the following control standards are available.

- SONY VISCA

Please note that a firmware update may be required to switch your RMC-180 to the same protocol as the camera you wish to control. All units are initially supplied with the VISCA protocol as this works with the Datavideo PTC-150 camera.

2. Connections and Controls

2.1 Front Panel – Keyboard



LCD Display

The RMC-180 status or the setup menu options are displayed on the LCD panel.

Menu Control Dials

The RMC-180 configuration menu can be entered and changed using these dials. Push to select a specific item and rotate to browse the menu.

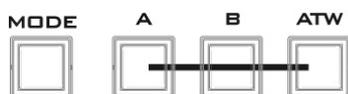


FOCUS

To manually control the **FOCUS** setting, first press the **AUTO/MANUAL** button so the button LED is turned ON.

The **FOCUS** dial can then be rotated to set the focus.

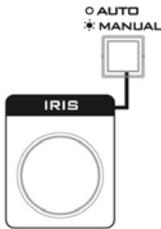
If the **AUTO/MANUAL** button is disabled (OFF), the camera will be in **AUTO FOCUS** mode.



Mode Select

MODE The selected PTC-150 camera will output colour bars. Press again to return to the PTC-150 camera view

- A Push Auto**
Push once to automatically adjust the camera white balance setting.
- B Manual**
Push to enable manual white balance setting.
- ATW Force Automatic White Balance**
Push to enable automatic white balance setting.



IRIS

To manually control the **IRIS** setting, first press the **AUTO/MANUAL** button so the button LED is turned ON.

The **IRIS** dial can then be rotated to set the exposure.

If the **AUTO/MANUAL** button is disabled (OFF), the camera will be in **AUTO IRIS** mode.



Channel A, B, C, D Buttons

To control or set up a connected camera, first select it by pressing these buttons. The selected channel button will be turned ON.



LOCK Button

When enabled, the joystick will be in the lock state. To resume its functional status, simply press the button once to unlock the joystick.



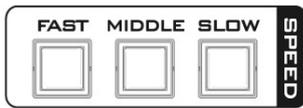
PTZ Joystick Control

Note: Before attempting to use the joystick to PAN, TILT or ZOOM a selected camera, first make sure the LOCK button is not enabled. If the LOCK button LED is ON, the joystick is locked; press the LOCK button to unlock the joystick.

PAN – Move the joystick left or right to pan the selected PTZ camera from left to right or vice versa.

TILT – Move the joystick up or down to tilt the selected PTZ camera up or down.

ZOOM – Twist the joystick clockwise (to the right) or anti-clockwise (to the left) to have the selected PTZ camera zoom in or out.



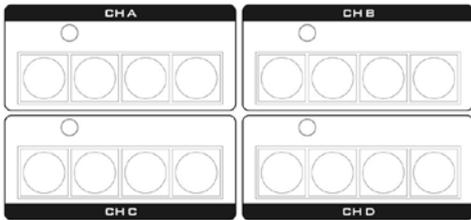
Speed

The speed at which the selected camera moves can be chosen by pressing one of the three speed buttons.



STR

Pressing this button enters the RMC-180 into STORE MODE. When activated, this allows the current camera position to be stored in a chosen Channel Memory Button. Press again to exit STORE MODE.



Channel Memory Buttons

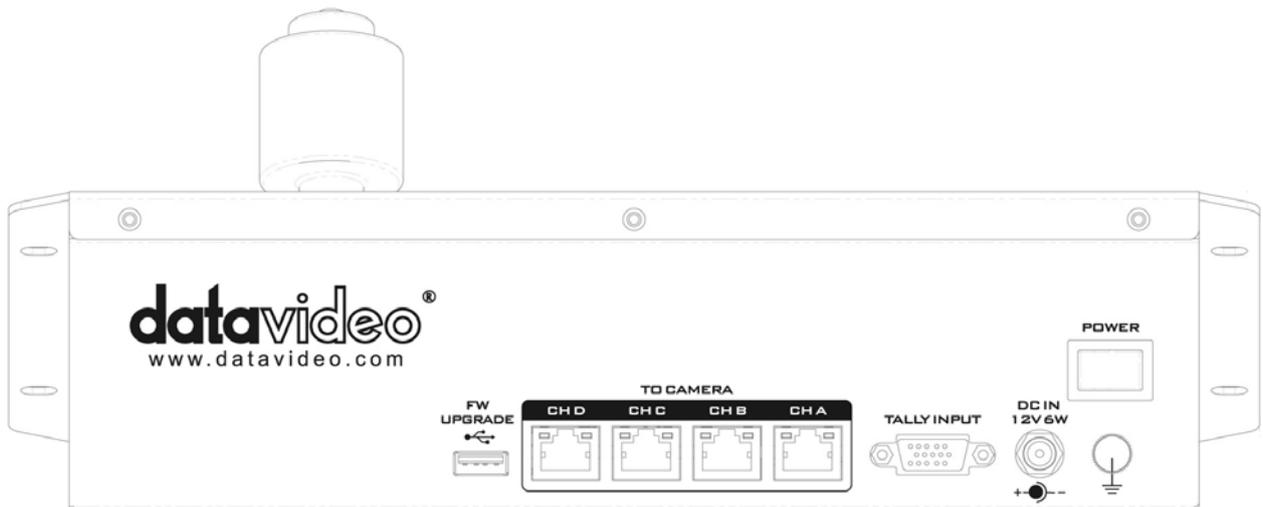
These buttons may be used to store up to four camera positions for each camera. Each button corresponds to one stored camera position. The activated button LED will be turned ON.

Tally Indicator LEDs

Each set of the four memory buttons is assigned a Tally Indicator LED. This LED feature becomes active when the RMC-180 is connected to the tally output of a compatible Datavideo Switcher such as the HS-2000 or HS-2200.

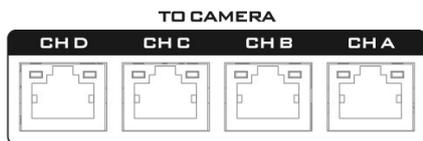
When the HS-2000 or HS-2200 Switcher is sending camera A's video to the program output, the RMC-180 CH A's tally LED will be turned ON. Additional equipment and cabling are required.

2.2 Rear Panel – Connections



Firmware Upgrade

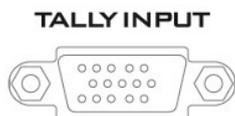
USB type A port for connection to a computer during the firmware upgrade process.



RJ-45 ports to connect cameras A, B, C & D

Four RJ-45 ports are provided on the RMC-180 rear to connect PTZ cameras. The communication protocol is **RS-422**, so use any RJ-45 cable to connect the RMC-180 to the RS-422 port located on the PTC-150 rear panel. However, before connecting the camera to these channel ports, please set the bit 4 of the camera DIP switch located at the bottom to OFF.

Note: Max allowable cable length is **300** m.



Tally Input

The RMC-180 has the ability to receive tally signals from Datavideo Switchers such as the HS-2000 or HS-2200. Upon receiving the video switcher's tally output signals, the corresponding Tally LED indicator on the RMC-180 keyboard will be turned ON, giving the operator an indication of which camera is currently live at the switcher end.



DC In Socket

Connect the supplied 12V 0.5A PSU to this socket. The connection can be secured by screwing the outer fastening ring of the DC In plug to the socket.



Power On/Off Switch

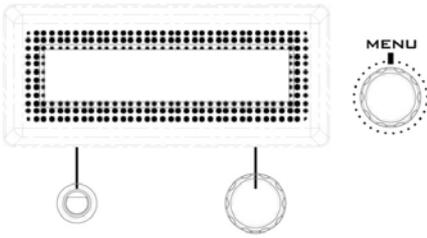
Switches the device ON / OFF.



Grounding Terminal

When connecting this unit to any other component, make sure that it is properly grounded by connecting this terminal to an appropriate point. When connecting, use the socket and be sure to use wire with a cross-sectional area of at least 1.0 mm².

3. Menu Setup



Press the **MENU** button to enter the **MENU** settings. The RMC-180 status or the setup menu options are displayed on the LCD panel.

The **Menu Control Dials** can be used to enter a particular menu option or modify the setting. Push to select a specific item and rotate to browse the menu.

FN1	Exit		
FN2	USB HID MODE	USB HID	vX.X
FN3	CAM ADDR	ADDR	81 / 82 / 83 / 84 / 85 / 86 / 87
FN4	JOYSTICK DIR	Pan	NORMAL
			REVERSE
		Tilt	NORMAL
			REVERSE
ERROR			
FN5	VIDEO FORMAT	1080/60i 1080/50i 720/60p 720/50p 1080/30p 1080/25p 1080/60p 1080/50p	
FN6	POWER	ON	EXECUTE
		OFF	
FN7	SCREEN MODE	MIRROR	H+V
			H
			V
			OFF
FN8	MEMORY SPEED	SPD	1-18
FN9	TALLY LED MODE	TALLY USER	TALLY OFF
			TALLY RED
			TALLY GREEN
TALLY INPUT			
FN10	R/B Gain Adj	R-G	00-FF (HEX)
		B-G	00-FF (HEX)
		WBAL. is not Manual	

FN11	FIRMWARE VER.	Version	X.X
FN12	CAM INFO.	VENDOR ID	XXXX
		MB VER	XX.XX
		FPGA VER	XXX
		MOTOR VER	XX.XX

FN1. EXIT

Exits the setup menu mode.

FN2. USB HID MODE

FN2 enters the RMC-180 into the USB HID communication mode. To operate the RMC-180 in this mode, it must be connected via a male-to-male USB cable to a laptop or PC with a specially designed user interface installed.

FN3. CAM ADDR

The camera address range is from 81 to 87.

Note: The camera address setting must match the VISCA ID setting of the PTC-150 DIP switch which can be located at the bottom of the PTC-150 camera. For example, VISCA ID 1 corresponds to the camera address 81.

FN4. JOYSTICK DIR

FN4 sets the PAN and TILT directions.

PAN toggles the camera pan direction between NORMAL and REVERSE.

TILT toggles the camera tilt direction between NORMAL and REVERSE.

Note: When ERROR message is displayed, the RMC-180 fails to detect any camera device connected.

FN5. VIDEO FORMAT

Video output format selection. Available video output formats are:

- 1080/60i
- 1080/50i
- 720/60p
- 720/50p
- 1080/30p
- 1080/25p
- 1080/60p
- 1080/50p

FN6. POWER

FN6 powers the connected PTC-150 camera ON / OFF. While executing, the camera is either rebooting or shutting down.

FN7. SCREEN MODE

The screen mode allows the user to set different mirror settings as follows.

- H+V: Horizontal and vertical image flip
- H: Horizontal image flip
- V: Vertical image flip
- OFF: Normal

FN8. MEMORY SPEED

FN8 allows you to adjust the Pan Tilt and Zoom speed of the PTZ setting stored. The speed range is 1-18.

FN9. TALLY LED MODE

There are generally two tally LED modes, which are **Tally User** and **Tally Input**. The **Tally User** mode allows the user to directly control the camera tally light. In this mode, the user can toggle between **Tally Off**, **Tally Red** and **Tally Green**.

The **Tally Input** mode is selected when the RMC-180 is connected to the tally output of a compatible Datavideo Switcher such as the HS-2000 or HS-2200.

FN10. R/B Gain Adj

FN10 allows the user to manually adjust the white balance setting. However, before you use this function, please make sure Button B is enabled (Button LED ON). Once in the R/B Gain Adjustment mode, the user will be able to adjust the R-G and B-G values which range from 00-FF (Hex number)

“WBAL. Is not Manual” will be displayed on the LCD panel if one of buttons “A” and “ATW” is enabled.

FN11. FIRMWARE VER.

FN11 displays the RMC-180 firmware version.

FN12. CAM INFO.

FN12 displays camera information such as Vendor ID, mainboard firmware version, FPGA version, and motor version.

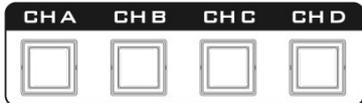
4. Storing Different Camera Positions

The RMC-180 allows you to store up to four camera positions for each of the four possible cameras, CH A, B, C and D. This means, with four PTZ cameras connected to the RMC-180, up to sixteen camera positions can be stored.

Note: The position and other settings are stored in the camera and not in the RMC-180.

To store a camera's position:

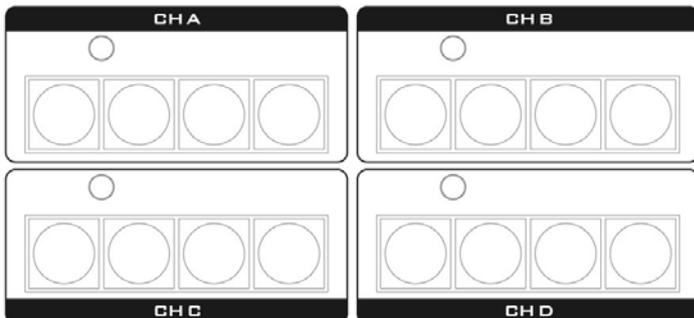
1. Select a camera first: CH A / CH B / CH C / CH D



2. Adjust the camera lens to the desired position or view using the joystick. Also set the focus, iris and zoom of the selected camera.
3. Push the **STR** (STORE) button and it will turn red.



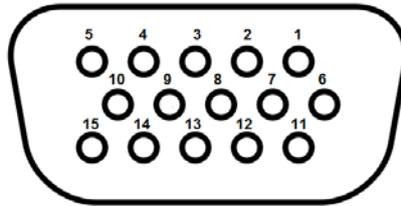
4. As soon as the corresponding four memory buttons of the selected camera channel start flashing, simply select and press a memory button to save the current PTZ setting, focus, iris and zoom.



5. The pressed memory button will remain ON for 2-3 seconds and the button LED will be turned OFF after the settings are successfully saved.

5. Tally Input Connector

PIN Assignment



D-Sub 15-PIN Female

The PIN assignment of the Tally Input Connector is shown in the following table:

Channel	CH 1	CH 2	CH 3	CH 4
PGM Tally	PIN 1	PIN 6	PIN 11	PIN 5
PVW Tally	PIN 3	PIN 8	PIN 13	PIN 15
GND	PIN 4, 9, 14			

6. Firmware Upgrade Procedure

From time to time, Datavideo may release new firmware to either add new features or to fix reported bugs in the current RMC-180 firmware. Customers can update the firmware themselves if they wish or they can contact their local dealer or reseller for assistance should they prefer this method.

This section describes the firmware update process and it should take **approximately 30 minutes to complete**. Once started, **the update process should not be interrupted in any way** as this could result in a non-responsive unit.

Requirement

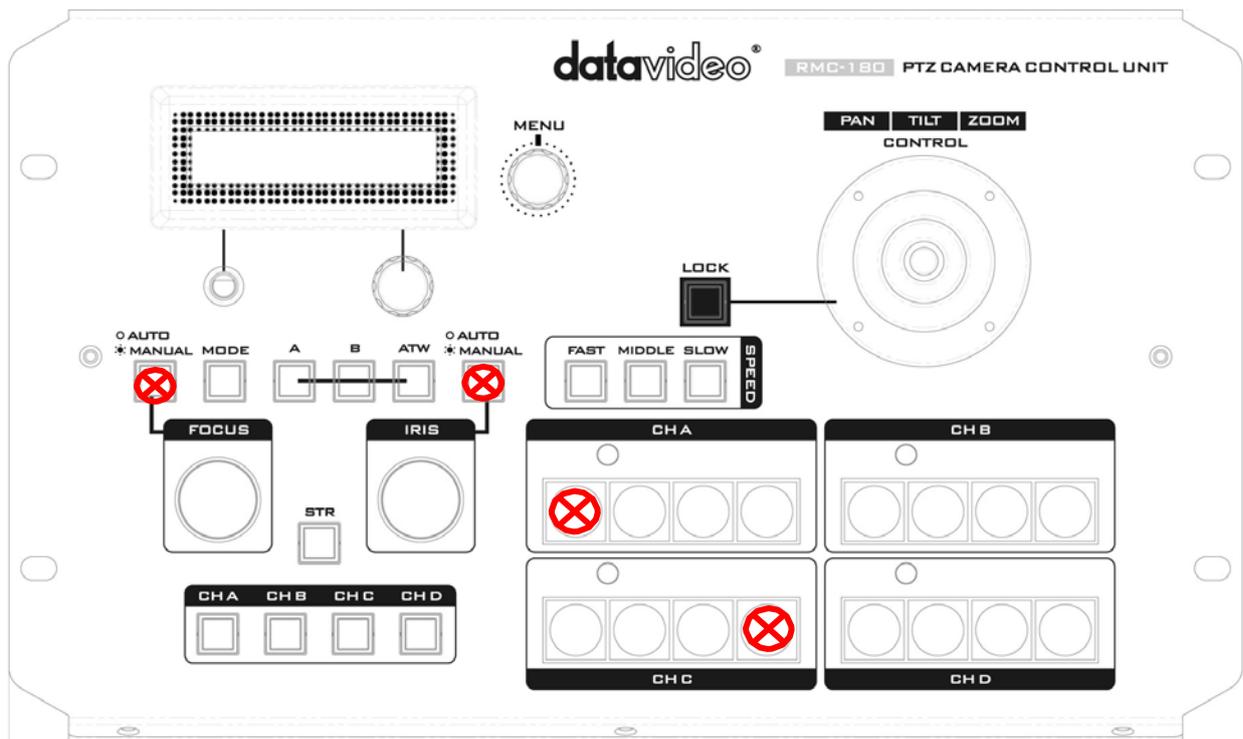
- Latest firmware update files (bootloader and application firmware)
- A USB A to USB A cable not longer than 2 meters
- A Windows PC with USB 2.0 ports

1. Power off the RMC-180 and connect the USB A cable between the USB firmware upgrade port



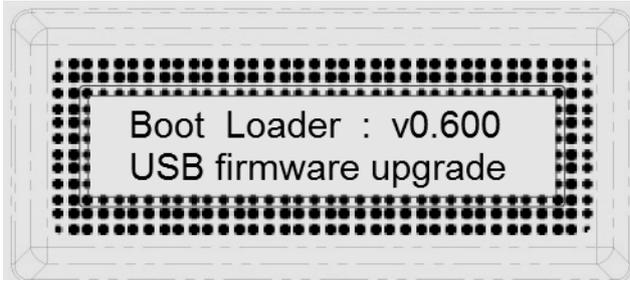
on the RMC-180 rear panel and a USB port on the computer

2. Press and hold the four buttons indicated with  at the same time

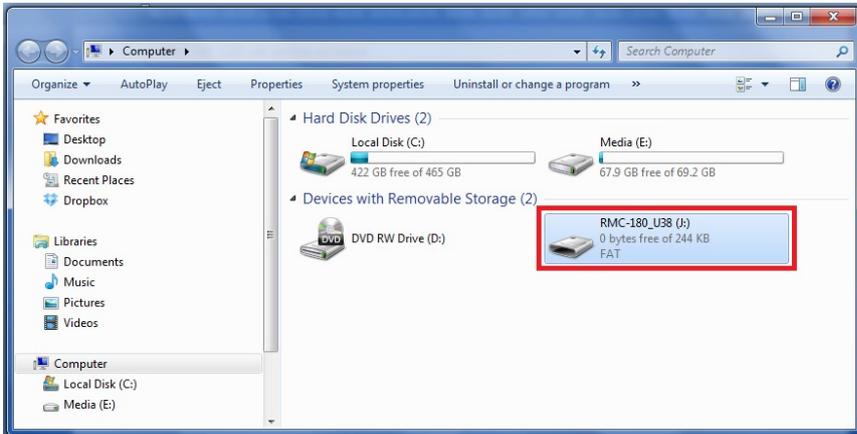


3. With an assistant's help, one person switches on the RMC-180 device while another person presses and holds the buttons indicated with 

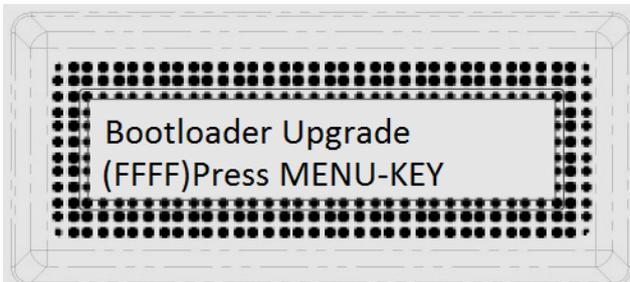
4. The user may release the buttons once the RMC-180 LCD displays the following information.



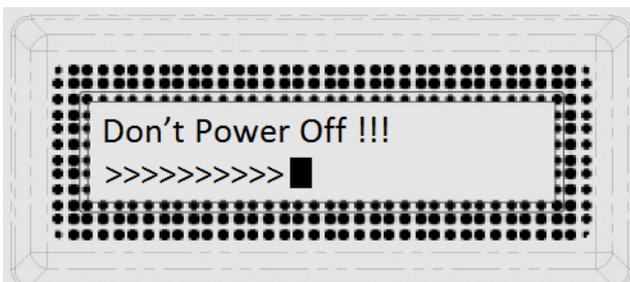
5. The RMC-180 device (**RMC-180_U38**) will appear as a removable storage device on the PC as shown below.



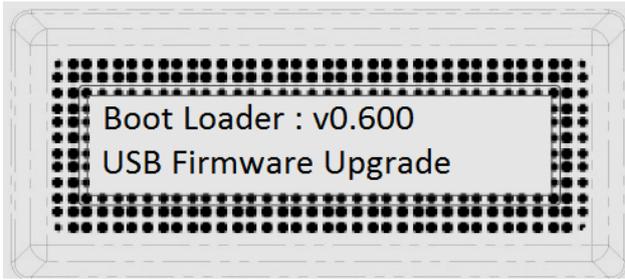
6. Double click on the RMC-180_U38 removable storage device and delete the "bootcode.bin" file
7. Copy and paste the latest firmware file (bootcode.bin) into the RMC-180_U38 removable storage device
8. Reboot the RMC-180 device until the LCD displays the following



9. Press the MENU key to start the firmware upgrade and do not disconnect the power before the upgrade is complete



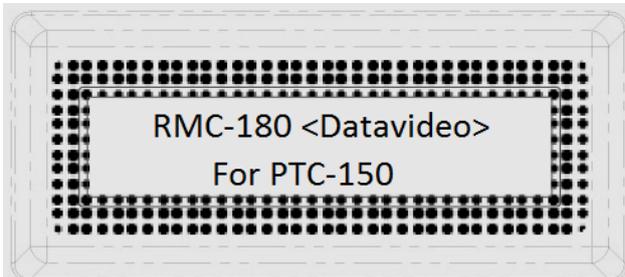
10. After the bootloader firmware upgrade is complete, the LCD display will show the following and the user may proceed to upgrading the application firmware.



11. Remove bootcode.bin from the RMC-180 device and copy and paste the application firmware into the RMC-180 device

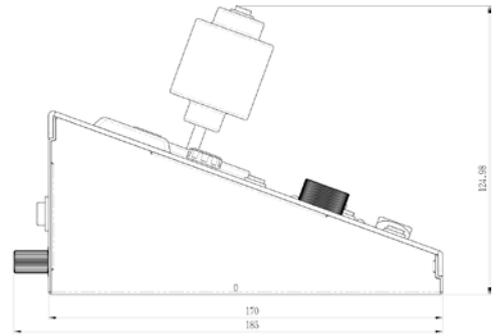
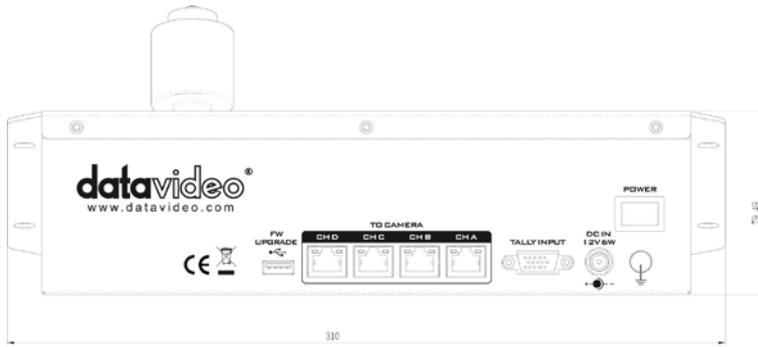
Name	Date modified	Type	Size
 RMC180_PTC150_1v002	2015/5/14 下午 0...	BIN 文件	76 KB

12. Reboot the RMC-180 device again and the LCD display will now show the following.



13. The RMC-180 device is now ready for controlling the connected cameras.

7. Dimensions



Service & Support

It is our goal to make owning and using Datavideo products a satisfying experience. Our support staff is available to assist you to set up and operate your system. Contact your local office for specific support requests. Plus, please visit www.datavideo.com to access our FAQ section.

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